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OFFICIAL GAZETTE

UNITED STATES PATENT OFFICE

VOL 92

NO 1 THRU 13

JUL- SEP-1900

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME XCII.

JULY 3 TO SEPTEMBER 25, INCLUSIVE,

1900.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1900.

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ERRATA.

653,183, page 169, in heading, assignment, for "one-third" read *one-half.*

653,670, page 393, first claim, lines 3–4, for "amidodinitrophenylamin" read *amidodinitrodiphenylamin.*

653,943, page 488, in heading, assignment, name of assignee, for "I. H. Williams & Company" read *J. H. Williams & Company.*

654,294, page 668, fourth claim, line 3, the article "a" should be stricken out.

654,805, page 885, in heading, assignment, for "assignor of one-third to Henry Newton Wood" read *assignor of two-thirds to Henry Newton Wood and Charles C. Welch.*

654,920, page 933, first claim, lines 5–6, strike out the clause "forming a separable yoke" and insert after the word "extensions," lines 4–5, same claim.

655,168, page 1022, seventh claim, lines 4–5, strike out the clause "and means to vibrate said clearer" and insert before the word "substantially," lines 5–6, same claim.

656,205, page 1458, in heading, assignment, for "two-thirds" read *one-half.*

656,206, page 1458, in heading, after residence of inventor insert *assignor of one-half to James M. Parker and Zachariah Parker, Pulaski, Tenn.*, and for "Filed May 21, 1900. Serial No. 17,428" read *Original application filed October 28, 1899, Serial No. 735,095. Divided and this application filed May 21, 1900. Serial No. 17,428.*

656,218, page 1464, in heading, assignment, name of assignee, for "E. Jencker Manufacturing Company" read *E. Jenckes Manufacturing Company.*

657,082, page 1805, fourth claim, line 2, strike out the word "in."

657,626, page 2050, in heading, date of application filed, for "1898" read *1899.*

658,038, page 2219, in heading, name of patentee, for "Guiseppe Frega" read *Giuseppe Frega.*

658,193, page 2272, first claim, line 6, for the word "fitting" read *filling.*

658,327, page 2315, in heading, residence of patentee, for "Basle, Switzerland" read *Schweizerhalle, Switzerland.*

658,399, page 2370, strike out all after number—heading, drawing, and claim—and insert CANCELED.

33,103, (Design,) page 1614, strike out all after number—heading, drawing, and claim—and insert CANCELED.

33,104, (Design,) pages 1614–1615, strike out all after number—heading, drawing, and claim—and insert CANCELED.

33,185, (Design,) page 2154, in heading, residence of patentee, for "Attleborough" read *North Attleborough*, and residence of assignee for "same place" read *Attleborough, Massachusetts.*

Commissioner's Decision, page 2508, first column, line 19, citation, for "Richards *v.* Macey" read *Richards* v. *Tracy.*

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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

JULY—SEPTEMBER, 1900.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 92—No. 1. TUESDAY, JULY 3, 1900. PRICE—$5 per year.

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Changes in Classification.

(ORDER No 1,357.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 18, 1900.

The following changes in the classification of inventions are hereby directed, to take effect this day:

Division XXXIV, class 105, Railway Rolling-Stock, establish a new subclass as follows:

259. Sanding devices, fluid-pressure.

Division IV, class 37, Excavating, establish new subclasses as follows:

47. Excavators—
Hydraulic—
Rotary-head,
48. Plow-and-carrier—
Side-delivery plow.
49. Scrapers—
Wheeled—
Annular-blade carrier.

Division XXIX, class 144, Woodworking, establish a new subclass as follows:

144.5. SHAPING, PATTERN, TEMPLET, CUTTER-GUIDING, TEMPLETS. Includes patents covering merely the construction of a templet to be used in machines of the type defined by the title.

C. H. DUELL,
Commissioner.

(ORDER No. 1,360.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 28, 1900.

The following changes in the classification of inventions are hereby directed, to take effect this day:

In Division XXXV, class 21, Buckles, Buttons, Clasps, etc., establish a new subclass as follows:

139. Shoe-fasteners—

to which transfer the patents formerly classified in class 12, Boots and Shoes, subclass 16, Shoe-fasteners, which subclass was abolished by Order No. 1,359, June 21, 1900.

WALTER H. CHAMBERLIN,
Acting Commissioner.

Payment of Patent Fees.

RULE 207. All payments of money required for Office fees must be made in specie, Treasury notes, national-bank notes, certificates of deposit, post-office money-orders, or certified checks. Money-orders and checks should be made payable to the "Commissioner of Patents." Payment may also be made to the Treasurer, or to any of the assistant treasurers of the United States, or to any of the depositaries, national banks, or receivers of public money, designated by the Secretary of the Treasury for that purpose, who shall give the depositor a receipt or certificate of deposit therefor. *This receipt or certificate of deposit shall, in case of payment of final fees, be deposited in the mail for transmission to the Patent Office, within six months from the allowance of the application.* Money sent by mail to the Patent Office will be at the risk of the sender. Letters containing money should be registered. In no case should money be sent with models.

RULE 208. The weekly issue closes on Thursday, and the patents of that issue bear date as of the third Tuesday thereafter. If the final fee in any application is not paid on or before Thursday, the patent will not go to issue until the following week.

CERTIFICATES OF REGISTRATION ISSUED JULY 3, 1900.

Labels.

7,675.—Title: "THE PINLESS." (For Skirt-Supporters.) *The Pinless Waist, Skirt and Belt Holder Manufacturing Co.*, Syracuse, N. Y. Application filed May 14, 1900.

7,676.—Title: "MANILA FRUIT." (For Canned Fruit.) *Manila Fruit Co.*, Canastota, N. Y. Application filed May 9, 1900.

7,677.—Title: "CARMELITER BITTERS." (For Bitters.) *Carmeliter Stomach Bitters Company*, New York, N. Y. Application filed June 7, 1900.

7,678.—Title: "BALM-E-OIL." (For Medicine.) *John C. McFarland Drug Co.*, Dallas, Tex. Application filed June 7, 1900.

7,679.—Title: "INADORE." (For a Lotion.) *Tyler G. Kent*, Wytheville, Va. Application filed June 4, 1900.

7,680.—Title: "PHYSICIANS', SURGEONS' AND DENTISTS' TOILET DISINFECTINE SOAP." (For Soap.) *Disinfectine Co.*, Canton, Ohio. Application filed June 7, 1900.

7,681.—Title: "YALE UNIVERSITY SPECIAL BLEND WHISKEY." (For Whisky.) *Laurence McCormick*, Philadelphia, Pa. Application filed June 6, 1900.

Prints.

240.—Title: "SLACK COOPERAGE STOCK." (For Cooperage Stock.) *Tindle & Jackson*, Buffalo, N. Y. Application filed May 7, 1900.

241.—Title: "ROUND POINTED PENS." (For Pens.) *C. Howard Hunt Pen Manufacturing Company*, Camden, N. J. Application filed May 28, 1900.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business June 26, 1900.

Room No.	Divisions and subjects of invention.	Oldest new application awaiting office action.	Oldest amended application awaiting office action.	No. of applications awaiting action.
	In arrears—Under one month.			
217	XXXIII. *DESIGNS, †TRADE-MARKS, ‡LABELS AND PRINTS, Optics.	June 23	June 15	41
38	XXXV. Advertising, Baggage, Buckles, Buttons, and Clasps, Packing and Storing Vessels, etc.	June 12	June 18	117
250	VIII. Furniture, Beds, Store Furniture, etc.	June 11	June 16	191
106	II. Farm Stock, Products, etc.	June 8	June 19	130
111	XXXII. Bottles and Jars, Carbonating Beverages, Refrigeration, Shipping and Storing Vessels, etc.	June 5	June 12	220
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	June 4	June 9	141
153	XX. Builders Hardware, Safes, Dentistry, Artificial Limbs, etc.	June 2	June 22	98
90	IV. Civil Engineering, Fire-Proof Buildings, Bridges, Water Distribution, etc.	June 1	June 13	143
240	VII. Velocipedes, Games, and Toys	June 1	June 13	214
253	X. Carriages and Wagons	June 1	June 13	122
246	I. Tillage and Fences	May 31	June 15	129
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	May 31	June 13	180
261	XXXVI. Weighing and Measuring Devices, Driers, and Drafting.	May 3.	June 12	93
211	XV. Plastics, Paper-Making Paving, Glass, Fuel, Bread Making, etc.	May 29	June 14	168
228	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	May 29	June 12	116
261	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	May 28	June 15	34
106	XI. Boots and Shoes, Harness, Hose and Belting, and Leather-Working Machinery	May 28	June 14	161
96	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	May 28	June 13	21
39	XXXI. Gas Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	May 28	June 13	139
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	May 28	June 13	106
255	XII. Mechanical Engineering, Store-Service, etc.	May 28	June 12	155
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	May 28	June 12	212
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215	XVII. Printing, Type-Writing Machines, and Linotyping.	May 28	June 12	159
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120	IX. Hydraulics, Fire-Extinguishers, etc.	May 28	June 12	121
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	May 28	June 9	274
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35	XXVIII. Pneumatics, Air and Gas Engines, etc	May 28	May 28	218
221	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	May 27	June 12	166
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128	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	May 26	June 13	101
122	XXIV. Sewing-Machines, Apparel, and Toilet.	May 26	June 5	141
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	May 7	June 1	193
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	May 5	May 18	244
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Apr. 28	May 21	243
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Under one month.			
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†Trade-Marks	June 18	June 21	54
‡Labels and Prints	June 22	June 25	8

ISSUE OF JULY 3, 1900.

Patents	403—	No. 652,738 to No. 653,200.	inclusive.
Designs	19—	No. 32,893 to No. 32,911.	inclusive.
Trade-Marks	18—	No. 34,835 to No. 34,852.	inclusive.
Labels	7—	No. 7,675 to No. 7,681	inclusive.
Prints	2—	No. 240 to No. 241,	inclusive.
Reissues	3—	No. 11,837 to No. 11,839,	inclusive.
Total issue	512		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3	----	Nevada	----	----
Alaska Territory	----	----	New Hampshire	2	----
Arkansas	2	----	New Jersey	22	4
California	13	----	New Mexico Territ'y	----	----
Colorado	5	----	New York	68	9
Connecticut	19	----	North Carolina	1	----
Delaware	1	----	North Dakota	----	----
District of Columbia	10	----	Ohio	21	3
Florida	2	---	Oklahoma Territ'y	2	----
Georgia	3	----	Oregon	2	----
Hawaii	----	----	Pennsylvania	41	1
Idaho	----	----	Rhode Island	6	1
Illinois	45	----	South Carolina	2	----
Indian Territory	1	----	South Dakota	1	----
Indiana	13	----	Tennessee	3	----
Iowa	15	----	Texas	12	3
Kansas	3	----	Utah	2	----
Kentucky	6	----	Vermont	1	----
Louisiana	2	----	Virginia	3	1
Maine	3	----	Washington	5	----
Maryland	10	----	West Virginia	3	----
Massachusetts	35	1	Wisconsin	6	----
Michigan	10	----	Wyoming	----	----
Minnesota	6	1	U. S. Army	1	----
Mississippi	1	----	U. S. Navy	----	----
Missouri	8	----			
Montana	1	----	Total to citizens of the United States	425	24
Nebraska	1	----			

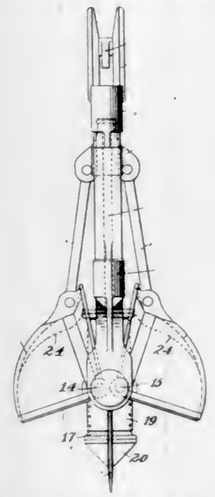
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	----	----	Italy	----	----
Australia	----	----	Japan	----	----
Austria-Hungary	2	----	Mexico	1	----
Barbadoes	----	----	Netherlands	----	----
Belgium	1	----	New South Wales	----	----
Bermuda	----	----	New Zealand	----	----
Brazil	----	----	Peru	----	----
Canada	8	----	Queensland	1	----
Chili	----	----	Roumania	----	----
China	----	----	Russia	----	----
Costa Rica	----	----	Scotland	----	----
Cuba	----	----	South Australia	----	----
Denmark	----	----	South African Republic	----	----
Egypt	----	----	Spain	----	----
England	16	1	Sweden	1	----
Finland	----	----	Switzerland	----	----
France	8	----	Tasmania	----	----
Germany	19	2	Victoria	----	----
Guatemala	----	----			
Haiti	----	----	Total to citizens of foreign countries	57	3
India	----	----			
Ireland	----	----			

PATENTS

GRANTED JULY 3, 1900.

652,738. DREDGER-BUCKET. WILLIAM H. ARNOLD, New York, N. Y. Filed Apr. 10, 1899. Renewed Apr. 24, 1900. Serial No. 14,189. (No model.)



Claim.—1. The combination with a dredging-bucket and the suspension-chains or cables, of an equalizing-bar by which said chains or cables are connected to the bucket, and projections for the frame of the bucket for protecting said bar and the chain connections therewith.

2. A dredging-bucket having a frame provided with means projecting therefrom into the material to be removed for holding the bucket in a fixed position in said material while filling, and shells or scoops each hinged to said frame and means for moving them toward and from each other.

3. A dredging-bucket having a frame to which the shells or scoops are hinged and against which they close.

4. A dredging-bucket having a frame to which the shells or scoops are hinged and which terminates in a blade or anchor.

5. The combination with a dredging-bucket, having a central frame provided with an anchoring-blade, of fluid-pressure mechanism for closing the bucket

6. The combination with a dredging-bucket provided with means for anchoring it while filling, of a fluid-pressure cylinder and piston located within the bucket and connected to the outer edges of the shells for closing and opening them.

7. In a dredging-bucket, the combination with a central frame, of the shells or scoops hinged by their inner corners to the frame, and a fluid-pressure mechanism mounted on the frame and connected to the outer edges of the shells for operating them.

8 The combination with the frame, of the shells or scoops hinged thereto by their inner corners, a fluid-pressure cylinder mounted in the frame, a cross-head connected to the piston in said cylinder and guided in said frame, and arms connecting the cross-bead to the outer edges of the shells or scoops.

9. The combination with the frame and shells hinged thereto, of arms connected to the shells for operating them, and links hinged to the frame and to the rims of the shells for bracing them during operation.

10. The combination with the frame and the shells mounted thereon, of the steel blade or anchor extending across the lower end of the frame, and removably secured thereto that it may be replaced when worn out or broken.

11. The combination with the frame and the fluid-pressure cylinder mounted therein, of a blade or anchor extending across the lower end of the frame and provided with a shield for said cylinder.

12. The combination with a dredging-bucket having a slot in its upper end and the chains or cables by which the bucket is suspended, of an equalizing-bar to the ends of which the chains or cables are attached, said bar being pivoted at its middle in said slot and protected throughout its extent by the walls of the slot.

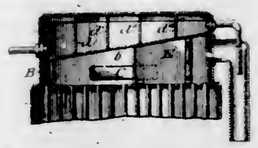
13. The combination with a dredger and its bucket, of a fluid-pressure-operating device located at the bucket, flexible tubes connected to said device, and automatic means on the dredger for taking up and paying out said tubes as the bucket is raised or lowered.

14. In a dredging-bucket, the combination with a frame and anchoring-blade, substantially as described, of the shells or scoops hinged to the frame and having their outer surface concentric with the axis of the hinge whereby any tendency on their part to lift the bucket during the scooping action is overcome.

15. In a dredging-bucket, the combination with a frame and anchoring-blade, substantially as described, of the shells or scoops hinged to the frame and having their outer surface concentric with the axis of the hinge and their inner surfaces eccentric thereto whereby the scoops are thicker near the rim and tend to enter deeper into the material to be scooped up.

16. The combination with the frame and the fluid-pressure cylinder mounted therein, of a shield for the cylinder located beneath it, and means for anchoring the bucket secured to the lower end of the frame.

652,739. DEVICE FOR DRYING EXHAUST-STEAM. LEON F. N. BALDWIN, Providence, R. I., assignor, by mesne assignments, to the Slaymaker-Barry Company, Incorporated, Connellsville, Pa. Filed Oct. 19, 1899. Serial No. 734,119. (No model.)



Claim.—1. The combination of a steam-boiler having hot-air flues, a chamber into which said flues open and made with a continuous top plate arranged above the open ends of said flues, a discharge smoke-pipe opening out of said chamber, a chamber above the first-named chamber and separated therefrom by said plate only, a steam-pipe adapted to convey exhaust-steam into said upper chamber, and a pipe opening from said upper chamber and discharging into said smoke-pipe, substantially as specified.

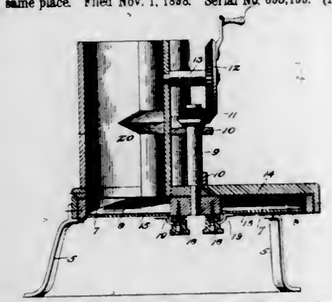
2. The combination of a steam-boiler having hot-air flues, a chamber into which said flues open and made with a continuous top plate arranged above the open ends of said flues, a discharge smoke-pipe opening out of said chamber, a chamber above the first-mentioned chamber and separated therefrom by said plate only, a series of parallel baffler-plates in said upper chamber, arranged alternately to form an extended circuit, a steam-pipe adapted to convey exhaust-steam into said upper chamber and a pipe opening from said upper chamber and discharging into said smoke-pipe, substantially as described.

3. The combination of a steam-boiler having hot-air flues, a chamber into which said flues open and made with a continuous top plate arranged above the open ends of said flues, two discharge-pipes opening out of said chamber, one of which has its outer end bent upwardly and the other of which has its outer end bent downwardly, a baffler-

plate extending radially into said chamber in a line intermediate between said discharge-pipes, a chamber above the first-mentioned chamber and separated therefrom by said top plate only, a steam-pipe adapted to convey exhaust-steam into said upper chamber and a pipe opening from said upper chamber and discharging into the downwardly-directed discharge-pipe of the lower chamber, substantially as set forth.

4. The combination of a steam-boiler having hot-air flues, a chamber into which said flues open and made with a continuous top plate arranged above the open ends of said flues, two discharge-pipes opening out of said chamber, one of which has its outer end bent upwardly and the other of which has its outer end bent downwardly, a baffler-plate extending radially into said chamber in a line intermediate between said discharge-pipes, a chamber above the first-mentioned chamber and separated therefrom by said top plate only, a series of parallel baffler-plates in said upper chamber, arranged alternately to form an extended circuit, a steam-pipe adapted to convey exhaust-steam into said upper chamber and a pipe opening from said upper chamber and discharging into the downwardly-directed discharge-pipe of the lower chamber, substantially as shown.

652,740. FRUIT OR VEGETABLE CUTTER. ISRAEL BECK, Phillipsburg, Pa., assignor of two-thirds to Harry J. Beck and Mac. R. Thompson, same place. Filed Nov. 1, 1898. Serial No. 695,199. (No model.)

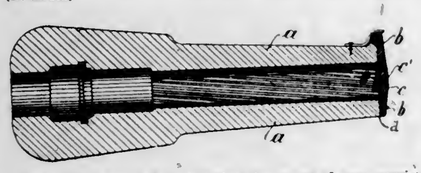


Claim.—In a fruit and vegetable cutter, the combination with the main frame and a hopper mounted thereon; of a rotary cutter-disk provided with cutter-blades, a feed-block having its rear face conforming to the contour of the inner periphery of said hopper and resting against said inner periphery when held in place and formed substantially V-shaped in cross-section to form a holding edge, a screw and thumb-nut for securing said feed-block adjustably in place, said screw being vertically adjustable in a vertical slot 22 formed in said hopper, the adjusting-cams 18 18 journaled or swiveled to the cutter-disk, and each cam 18 18 being provided with a groove, and the lips 19 19 secured to the adjustable throat-plate 15 and projecting into the grooves in said adjusting-cams 18 18, substantially as specified.

652,741. METHOD OF MAKING HYDROCYANIC ACID. EMIL BERINGER, Charlottenburg, Germany. Filed Oct. 4, 1899. Serial No. 732,544. (No specimens.)

Claim.—The herein-described process of producing hydrocyanic acid consisting in slowly adding to a boiling aqueous nitrate solution, a solution of sulphocyanide together with a mineral acid in quantity corresponding to one-half the nitrate employed, substantially as described.

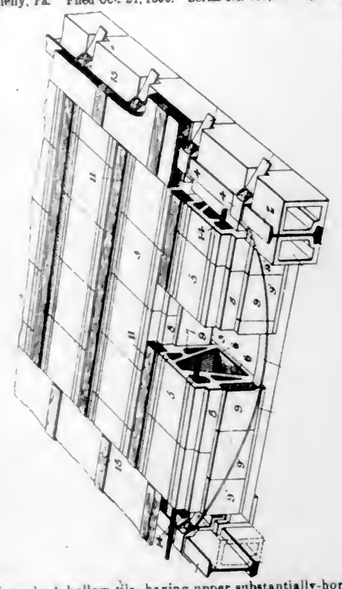
652,742. DEVICE FOR PREVENTING REPORTS OF GUNS. MAX BERNSTEIN, Berlin, Germany. Filed Nov. 17, 1897. Serial No. 658,865. (No model.)



Claim.—1. A device for preventing the report of guns, consisting of an outwardly-opening flap *b*, secured to the muzzle of the barrel by means of a spring-hinged joint, and having at its center a hinged automatic valve *c*, inwardly opening and outwardly spring-actuated, substantially as described and for the purposes specified.

2. A device for preventing the report of guns, consisting of an outwardly-opening flap *b*, having at its center a hinged automatic valve *c*, inwardly opening and outwardly spring-actuated, said flap *b* being secured to a cap or collar *a'* by a spring-hinged joint, and means for attaching said cap to the muzzle of the gun-barrel, all substantially as described and for the purposes specified.

652,743. TILE-FLOOR CONSTRUCTION. CHARLES F. BUENTE, Allegheny, Pa. Filed Oct. 21, 1899. Serial No. 734,282. (No model.)



Claim.—1. A hollow tile, having upper substantially-horizontal supporting-lugs on each side, and spaces below the lugs to receive tie-rods and supporting-blocks beneath the lugs, and a lower lateral flange upon at least one side and arranged to close the space between the adjacent courses; substantially as described.

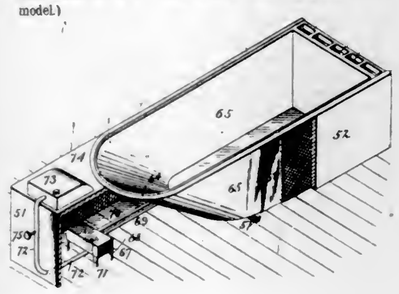
2. A hollow tile, having recesses at each side to receive sleepers, horizontal lugs below the same and recesses below the lugs arranged to receive tie-rods and supporting-blocks for the lugs, and a lower horizontal flange upon at least one side of the tile and arranged to close the spaces between the adjacent tiles; substantially as described.

3. A tile floor composed of hollow tiles having upper horizontal lugs and separate blocks resting on the tie-rods and carrying the lugs; substantially as described.

4. A tile floor having hollow main tiles provided with horizontal lugs resting on blocks carried on curved tie-rods, and hollow end tiles extending at right angles to the main tiles and of less height; substantially as described.

5. A hollow tile having upper lateral lugs at each side with recesses beneath them to receive blocks carried on tie-rods and provided upon at least one side with a lower lateral closing-flange; substantially as described.

652,744. COMBINED COUCH AND BATH-TUB. IRVING E. CARMAN, Ellenville, N. Y. Filed Oct. 28, 1899. Serial No. 735,098. (No model.)



Claim.—1. As an improvement in bath-tubs, the combination with a suitable outer casing of a series of hangers or supporting-brackets mounted in said casing; an outer support of wire; an inner support of paper or the like and a covering of zinc or its equivalent, all combined in the manner specified and for the purpose set forth.

2. The herein-described bath-tub comprising an outer casing having a recess in its inner edge; a series of hangers mounted in said recess; an outer incasement of wire-cloth; an inner reinforcement of paper or the like; a flooring laid upon said hangers and under said paper and wire, and a covering of sheet metal resting on said outer casing and means to secure the free edges of said wire, paper and metal covering in the manner specified and for the purpose set forth.

3. In an article of furniture of the character specified, a bath-tub provided with an elliptical pipe integrally formed in the bottom thereof whereby the smooth contour of the bottom of the tub is preserved, as set forth.

4. In an article of furniture of the character specified, the combination with the tub, of a heating-reservoir; an inlet-pipe 12 leading from said tub to the upper portion of said reservoir and an elliptical tube formed in the bottom of the tub; a pipe 13 connecting said elliptical tube with said reservoir whereby a circulation may be established through said elliptical tube and reservoir and thence back into the tub, all combined substantially as specified and for the purpose set forth.

652,745. DEVICE FOR CLEANING TELEPHONE-MOUTHPIECES. MARIAN N. CLARKE, Wilkes-Barré, Pa. Filed Aug. 24, 1899. Serial No. 728,388. (No model.)

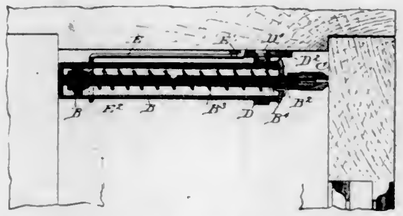


Claim.—1. An instrument for cleaning telephone-mouthpieces consisting of a handle, a pair of electrodes secured at one end of said handle, wires connecting said electrodes with a suitable source of electricity, and a fibrous material arranged between said electrodes.

2. An instrument for cleaning telephone-mouthpieces consisting of a hollow handle adapted to contain a liquid, and having an opening at one end, a pair of electrodes secured to the handle on either side of said opening, wires connecting said electrodes with a suitable source of electricity, and a fibrous material arranged between said electrodes and extending across the opening.

3. An instrument for cleaning telephone-mouthpieces consisting of a handle, a pair of electrodes secured at one end of said handle and a fibrous material between said electrodes, in combination with an induction-coil having its secondary winding connected to said electrodes, and its primary winding in circuit with the local battery of a telephone, and a switch for interrupting the primary circuit when the instrument is not in use.

652,746. DOOR-CHECK. ARTHUR R. COLBURN, Washington, D. C. Filed Jan. 22, 1900. Serial No. 2,394. (No model.)



Claim.—1. A pneumatic door-check comprising a cylinder having a closed end, a piston therein, a tubular stem communicating with the working face of said piston, to permit the discharge of air therefrom, and a tip provided upon the free end of said stem and adapted to partially or wholly prevent the discharge of air therefrom by contact with an object separate therefrom; substantially as specified.

2. A pneumatic door-check comprising a cylinder, a piston therein provided with a tubular stem having an opening in its free end adapted to wholly or partially close by contact with an object separate therefrom, and means for returning said piston to its initial position; substantially as described.

3. A pneumatic door-check comprising a cylinder, a piston therein provided with a tubular stem having an opening in its free end adapted to be wholly or partially closed by contact with an object separate therefrom, and a spring extending between said piston and a portion of the cylinder for restoring the piston to its initial position; substantially as specified.

4. A door and door casing or jamb in combination with a pneumatic door-check, comprising a cylinder pivoted to one of said members and free to oscillate independently of the other member, a piston therein, a tubular stem communicating with the working face of said piston, a compressible tip on the free end of said stem, and means for normally projecting said stem; substantially as specified.

5. A pneumatic door-check comprising a pivoted cylinder, a piston therein, a tubular stem communicating with the working face of said piston, a compressible tip on the free end of said stem, means for normally projecting said stem, and means for restoring said cylinder to its initial position after movement on its pivot; substantially as specified.

6. In a pneumatic door-check the combination of a sleeve adapted to be pivoted to a fixed or immovable object, an air-cylinder longitudinally disposed within said sleeve, a piston within said cylinder having a tubular stem extending from the same, a compressible tip on the free end of said stem, and means for normally projecting said stem; substantially as described.

7. A pneumatic door-check comprising a cylinder, a piston therein, a tubular stem extending to said piston, a tip on said stem having a discharge-outlet at its free end, adapted to be automatically varied in capacity by contact-pressure from a separated member, and means for normally projecting said stem; substantially as specified.

8. The combination with a casing and door mounted therein, of a cylinder secured to one of said members and having a tubular stem to permit the escape of air from said cylinder and adapted to contact at the free end with the other member to limit said escape; substantially as specified.

9. A pneumatic door-check comprising a cylinder, a piston therein, a tubular stem communicating with the working face of said piston, a compressible tip on the free end of said stem, and means for normally projecting said stem; substantially as specified.

10. A pneumatic door-check comprising a cylinder, a piston therein, a tubular stem connecting with the working face of said piston, means for projecting said stem, and a sleeve surrounding said cylinder and adapted to be swiveled in a support; substantially as specified.

11. A pneumatic door-check comprising a cylinder, a piston therein, a tubular stem connecting with the working face of said piston, means for projecting said stem, a sleeve surrounding said cylinder and swiveled in a support, and a restoring-spring embracing the free end of said cylinder; substantially as specified.

12. A pneumatic door-check comprising a cylinder, a compressing-piston therein, a supporting-plate, a sleeve surrounding said cylinder and swiveled in said plate, and a spring secured to said plate extending parallel with said cylinder and embracing the free end thereof; substantially as specified.

13. A pneumatic door-check, comprising a cylinder, a compressing-piston therein, a tubular stem connecting with the working face of said piston, means for normally projecting said stem, and a compressible tip upon the contact end of said stem having therein an escape-recess extending within its contact-surface; substantially as specified.

14. The combination with the door-casing and door mounted therein of a cylinder pivotally mounted upon one of said members, a piston and tubular stem within said cylinder and adapted at its free end to contact with the other member, means for projecting said stem, and means for restoring said cylinder to its initial position; substantially as specified.

15. A pneumatic door-check comprising a cylinder with means for compressing air therein, and an automatically-variable discharge-opening from said cylinder adapted to be controlled by contact with an object separate therefrom; substantially as specified.

652,747. BICYCLE-TAG. EDWIN J. COLE, Niagara Falls, N. Y. Filed Aug. 26, 1899. Serial No. 728,612. (No model.)

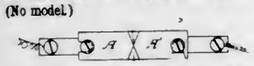
Claim.—1. A bicycle-tag comprising a body portion and two arms

projecting from opposite sides thereof, the free end of one of which is perforated and projects beyond the end of the plate in a position to be clamped between the wheel and the fork and the other arm adapted to be engaged by said perforated arm and secured thereby, substantially as described.



2. A bicycle-tag, comprising a body portion and two arms projecting from opposite sides thereof, one of which is bent and perforated and projects beyond the end of the plate in position to be clamped between the wheel and the fork, and the other of which is straight and projects from the side of the plate at a point below the bent arm and its free end adapted to be engaged by said bent arm and be secured in position thereby, substantially as described.

652,748. MANUFACTURE OF ELECTRICAL FUSES OR CURRENT-ARRESTERS. FRANCIS A. CORÉ, Ottawa, Canada, assignor of four-fifths to Toussaint G. Coursolles, same place, and Frédéric L. Béique and Charles F. Sise, Montreal, Canada. Filed Mar 31, 1899. Serial No. 711,279. (No model.)

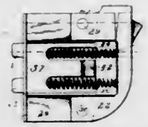


Claim.—1. An electrical fuse or current-arrester made with gold-leaf printed or embossed on an insulating-body, having the form of two strips terminating in an obtuse angle, which are connected together to form the fusing-point, as shown and for the purpose set forth.

2. As a new article of manufacture, an electrical fuse or current-arrester made with gold-leaf printed or embossed of an insulating base, substantially as shown and described

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652,749. LOCK. JULIUS W. CRIGLER, Bloomington, Ill. Filed Nov. 4, 1899. Serial No. 735,789. (No model.)



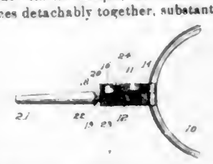
Claim.—1. A lock, comprising a base-plate, a cover-plate upon the base-plate, a slotted bolt inclosed by the cover-plate, struck-up projections upon the rear end of the cover-plate and extending inwardly thereof, and springs disposed in the slots of the bolt and encircling the struck-up portions of the housing to hold the bolt yieldably in a predetermined position.

2. In a lock, the combination with a base-plate, of a bolt yieldably mounted thereon and having a longitudinal slot, a cover-plate for the bolt, and a spring disposed in the slot of the bolt, said spring bearing at one end against the end of the slot and at the opposite end against a portion of the cover-plate to hold the bolt normally projected.

3. A lock comprising a base-plate having a cover-plate thereon, one end of the base-plate being bent across the end of the cover-plate and having openings therein, a bolt disposed within the inclosure of the cover-plate and having extensions adapted to play in the openings, slots in the bolt, springs disposed in the slots and engaging the cover-plate at their outer ends to hold the bolt normally projected, and a lever pivoted to the base-plate and to the bolt for operating the latter.

652,750. SPECTACLE-FRAME. JOHN CURRIN, Providence, R. I. Filed May 25, 1899. Serial No. 718,146. (No model.)

Claim.—1. In spectacles, the combination of a divided lens-frame provided with overlapping end pieces, one of which is slitted, and thereby formed with a yieldable jaw, a temple fitted in the slitted portion of one end piece, and two screws, one of which is screwed in the slitted end piece, to compress the yieldable jaw thereof into frictional engagement with the temple, the other screw serving to unite the two end pieces detachably together, substantially as described.

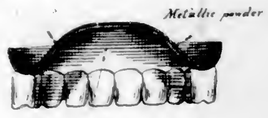


2. In spectacles, the combination of a divided lens-frame provided with overlapping end pieces, one of which is provided with a temple-screw socket and with a longitudinal slit or kerf forming a thin yieldable jaw disposed parallel to the stiff unyielding part of said end piece, a temple arranged in the slitted portion of one end piece between the stiff portion and the yieldable jaw thereof, a screw connecting the two end pieces separably together, and another screw passing idly through one end piece and having threaded engagement with the temple-screw socket, the head of the last-named screw bearing against the yieldable jaw and pressing the latter into tight frictional engagement with the temple, whereby the temple is frictionally confined in one piece and the two end pieces may be uncoupled by removing one screw without releasing the temple from its frictional engagement with one end piece, substantially as described.

3. In spectacles, the combination of an end piece, 11, having smooth and threaded openings in different vertical planes, an end piece 12, divided at its outer end to form a thin yieldable jaw 18, and having two threaded openings in its solid portions and an unthreaded opening in said yieldable jaw, a temple fitted in the division of the end piece, 12, and engaging with one face of the jaw, 18, a screw 14, connecting the two end pieces, and a screw 24, having threaded engagement with the end piece 12, and bearing on the yieldable jaw to forcibly press the latter into frictional engagement with the temple, said end piece 11, having its smooth opening fitted loosely over and housing the head of the screw, whereby the end pieces may be separated by removing the screw, 14, without disturbing the screw 24, or releasing the friction gripping of the temple, substantially as described.

4. In an eyeglass, the combination of a separable lens-frame having overlapping end pieces, one of which is slitted at its outer end and formed with an integral yieldable jaw, a temple-bow fitted in the slitted end piece only, a clamping-screw 24, having threaded engagement with the slitted end piece only and bearing on the yieldable jaw thereof for holding the temple-bow frictionally in place, the head of the screw being loosely received in an opening of the other end piece, and a screw 14 connecting the two end pieces, whereby the end pieces may be separated to open the lens-frame without disconnecting the temple-bow and the screw 24, may be adjusted for the yieldable jaw and the slitted end piece to compensate for wear and hold the temple-bow under tension at all times, substantially as described.

652,751. COATING OR COVERING VULCANIZED PLATES WITH METAL. JOHN A. DALY, Washington, D. C. Filed Aug. 8, 1899. Serial No. 726,568. (No specimens.)

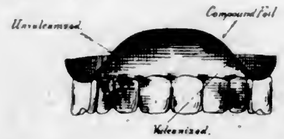


Claim.—1. The method of coating a vulcanized dental or similar plate, which consists in applying a coating of the described adhesive solution, applying thereto a quantity of comminuted metal, and drying the same.

2. The method of coating a vulcanized dental or similar plate, which consists in applying thereto a solution of celluloid, applying irregular portions of metal thereon, and burnishing the metal to form a substantially-smooth metallic surface substantially as described.

3. The method of coating a vulcanized rubber dental plate, which consists in coating the previously-vulcanized dental plate with a celluloid solution, covering the celluloid with metal having an irregular structure, and burnishing the metal into the celluloid to secure firm attachment and electrodepositing a coat of metal thereon, substantially as described.

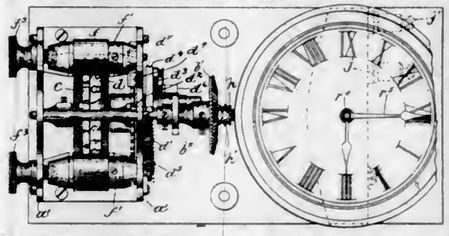
652,752. LINING OR COATING VULCANIZED PLATES WITH METAL. JOHN A. DALY, Washington, D. C. Filed Aug. 8, 1899. Serial No. 726,569. (No specimens.)



Claim.—1. The method of attaching a compound foil to a dental or similar rubber plate, which consists in inclosing a limited quantity of coating or vulcanizable material between a previously-vulcanized plate and the baser-metal face of a metal foil or film, and developing by the heat of vulcanization a gas which attacks and partially destroys or changes such baser-metal face, thereby causing the attachment of the foil to the plate, substantially as described.

2. The method of covering a vulcanized dental plate with a foil which consists in cleansing the plate by means of a chemical agent, attaching a foil having a comparatively base metal face to the plate by means of a thin layer of unvulcanized material interposed between the vulcanized plate and the base-metal face of the foil, embedding the whole in soft plaster, and vulcanizing, all substantially as described.

652,753. ELECTRICAL TIME-RECORDER. EDWARD DAVIS, Boston, Mass., assignor to Meyer A. Bernheimer and Ralph W. Gordon, New York, N. Y. Filed June 12, 1899. Serial No. 720,163. (No model.)



Claim.—1. In a device of the character specified, the combination of a type-wheel, a mechanically-driven clock-train adapted to rotate said wheel, an escapement for said train, an electromagnet for operating said escapement, an electrical make-and-break device in circuit with said magnet, and a time mechanism for operating said device.

2. In a device of the character specified, the combination of a type-wheel, a clock-train adapted to rotate said wheel, a retarding-escapement included in said clock-train, a second escapement controlling said clock-train, an electromagnet for operating said second escapement, and a time mechanism controlling the circuit of said magnet.

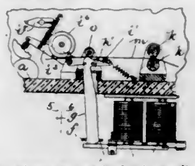
3. In a device of the character specified, the combination of a type-wheel having a shaft, a second shaft geared to said type-wheel shaft, a motive device for rotating said second shaft, an escape-wheel carried by the second shaft, a detent cooperating with said escape-wheel, an electromagnet for operating said detent, a second escape-wheel carried by said second shaft, and a pallet device coacting with said second escape-wheel as a retarder, during the action of the magnet-operated escapement.

4. In a device of the character specified, the combination of a type-wheel, a clock-train adapted to rotate said wheel, a wheel rotated by said clock-train and having a circular series of pins, a detent having stops movable into and out of the path of said pins, and successively engaging a pin to liberate the wheel one pin at a time, a retarder in the clock-train adapted to retard its movement during the escape of the pin-wheel, an electromagnet having its armature connected with and adapted to operate said detent, and means for controlling the circuit of said magnet.

5. In a device of the character specified, the combination of a printing device, an electromagnet controlling the same, a pair of contact-posts or terminals for the winding of said magnet, a base carrying said parts, a clock, an electrical make-and-break device mounted on the clock and operated by its mechanism, and contact-posts or terminals for said device mounted on the clock and separably connected with the posts on the base.

6. In a device of the character specified, the combination of a shaft, a type-wheel fixed thereto, a series of projections carried by said shaft and circularly arranged therearound, two ink-ribbon rolls provided with ratchets, a pawl device for rotating said ratchets, a suitably-journaled arm carrying said device, and adapted to be intermittently engaged and oscillated by the said projections, and yielding means, adapted to retract said arm.

652,754. REGISTER. EDWARD DAVIS, Boston, Mass., assignor to Meyer A. Bernheimer and Ralph W. Gordon, New York, N. Y. Filed June 24, 1899. Serial No. 721,681. (No model.)



Claim.—1. In a register, means for horizontally guiding a record-strip, a punch-bar, guides supporting said bar in a substantially-vertical position and constructed to permit a sliding vertical punching movement thereof transversely of the strip and a horizontal movement thereof longitudinally with the strip, and an electromagnet having its armature independently guided and adapted to impart the punching movement to said bar.

2. In a register, means for guiding a record-strip, a punch-bar guided for sliding punching movement transversely of the record-strip and for movement longitudinally with the strip, an electromagnet having an armature independently guided and adapted to impart the punching movement to said bar, a support independent of said armature, and a retracting-spring connected with said support and said punch-bar.

3. In a register, means for guiding a record-strip, a punch-bar guided for punching movement transversely of the strip and for movement longitudinally with the strip, a base, an electromagnet having an armature located on one side of said base and independently guided and adapted to impart the punching movement to said bar, and a spring attached to a stationary support and to said punch-bar on the opposite side of said base from the armature and adapted to retract the bar after its said longitudinal movement.

4. In a register, means for guiding a record-strip, a bar having a punch at its end, and mounted for movement transversely of the strip to cause said punch to perforate the strip, an electromagnet having its armature arranged to operate said bar, a fulcrum for said bar, having a sliding engagement therewith, and a guide for said bar elongated to permit oscillatory movement of the bar in the direction of travel of the strip.

5. In a register, means for guiding a record-strip, a punch-bar, two guides having slots occupied by said bar near its two ends, the slot near the punching end being longer than the width of the bar to permit a movement of the bar longitudinally with the record-strip, the other slot having a length substantially equal to the width of the bar and its end acting as a fulcrum for the bar, said slots permitting a sliding punching movement of the bar, and an electromagnet having an armature adapted to impart the punching movement to said bar.

652,755. MACHINE FOR MAKING MATTRESSES. HORATIO P. DAVISS and NAT F. DAVISS, Houston, Tex. Filed Jan. 23, 1900. Serial No. 2,531. (No model.)

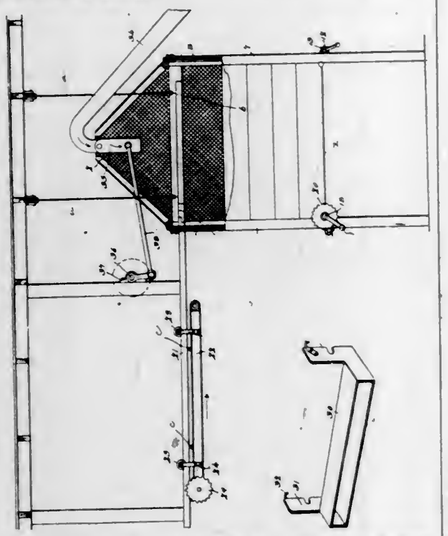
Claim.—1. The combination with a press-box having vertically-movable sides provided with racks, of a shaft in fixed supports having gears engaging said racks, an endless conveyer forming the bottom of the press-box and having an actuating-gear, and a follower movable with said sides and having an endless conveyer provided with a gear adapted to engage that of the conveyer in the bottom of the press-box, when said follower is lowered, substantially as described.

2. The combination with a press-box, an endless conveyer forming a compressing-surface at the bottom thereof, a vertically-movable follower having an endless conveyer forming its compressing-surface, and gears for driving said conveyers, said gears being normally out of engagement with each other and engaging when the follower is lowered, substantially as described.

3. In a machine of the class described, the combination of a press-box having a traveling bottom, a discharge-opening on one side thereof, and vertically-movable sides; a vertically-movable follower having the coacting traveling bottom, means for operating said sides to raise and lower the follower, and gears, engaging when the follower is lowered, to actuate the traveling bottom of said follower and press-box, substantially as described.

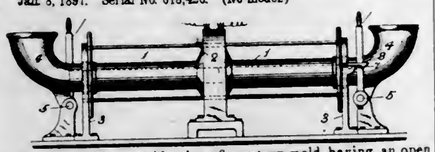
4. The combination with a press-box having vertically-movable sides, and means to operate them, of a follower carried by said vertically-movable sides, and means for operating said follower, substantially as described

5. The combination, with a press-box, of a vertically-movable follower and means for moving the same, supporting-guides for said follower extending from said press-box, and means for connecting said follower to said guides and disconnecting the same therefrom, whereby said follower can be withdrawn from and run into said press-box, substantially as described.



6. In a machine for making mattresses, a press-box having an endless movable bottom and having a discharge-spout in line therewith, vertically-movable sides to said press-box said vertically-movable sides having racks, a gear to actuate the endless movable bottom of the press-box an operating-shaft geared to the racks of the vertically-movable sides, a vertically-movable follower carried by said vertically-movable sides and having an endless movable bottom and a gear to actuate the same, said gear being adapted to engage the actuating-gear of the endless movable bottom of the press-box when the follower is lowered, substantially as described.

652,756. ROTARY MOLD. FERDINAND DEMING, Waterbury, Conn., assignor, by mesne assignments, to Mamie B. Clowes, same place. Filed Jan. 8, 1897. Serial No. 618,426. (No model.)



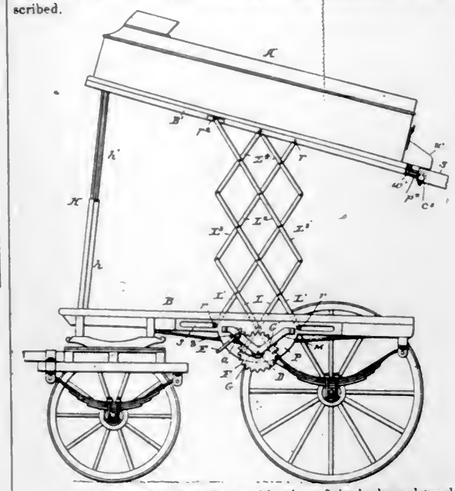
Claim.—1. The combination of a rotary mold having an open end, a pouring-mouth hinged to a support adjacent to said open end, a lever for swinging said mouth into or out of engagement with the open end of the mold, and detachable means to lock the pouring-mouth in engagement with the mold, substantially as set forth.

2. The combination of a rotary mold horizontally arranged and open at both ends, a pouring-mouth at each end of the mold hinged to a fixed support, means to move said mouths independently into or out of engagement with the respective ends of the molds, and detachable means for locking said mouths in engagement with the mold, substantially as set forth.

652,757. DUMPING-WAGON. ALEXANDER H. EGE, Mechanicsburg, Pa. Filed Dec. 30, 1899. Serial No. 742,048. (No model.)

Claim.—1. In a dumping-wagon, the combination of the body and truck frames, means for elevating the body-frame above the truck-frame, oppositely-disposed stay-bars pivotally connected to the truck and body frames adapted to lie normally transversely across the said frames, and means for locking said bars together to prevent the movement of one relative to the other, substantially as described.

2. In a dumping-wagon the combination with the body, the truck or supporting frame, of lifting-levers whose upper free ends roll, the one forward and the other rearward, in the channels of the body-sills, and whose lower free ends roll, the one forward and the other rearward in slots wrought in the truck-rails, substantially as described.



3. In a dumping-wagoo, the combination of the body and truck frames, means for elevating the body-frame above the truck-frame, oppositely-disposed sectional telescoping stay-bars pivotally connected to the truck and body frames adapted to lie normally transversely across the said frames, and means for locking said bars together to prevent the movement of one relative to the other, substantially as described.

4. In a dumping-wagon, the combination of the body and truck frames, means for elevating the body-frame above the truck-frame, oppositely-disposed sectional telescoping stay-bars pivotally connected to the truck and body frames adapted to lie normally transversely across the said frames, and means for automatically locking said bars together to prevent the movement of one relative to the other, substantially as described.

5. In a dumping-wagon, the combination of the body and truck frames, two series of levers pivoted together to form lazy-tongs, means for guiding the upper and lower ends of two or more of the levers upon the truck and body frames, and mechanism for moving the levers to and from each other, substantially as described.

6. In a dumping-wagon, the combination with the body and truck frames, of stay bars or supports to the body at any point of elevation thereof, said bars consisting of two or more longitudinal sections telescoping together, one of said sections being provided with teeth and the other with a pawl adapted to interlock therewith, as and for the purpose set forth.

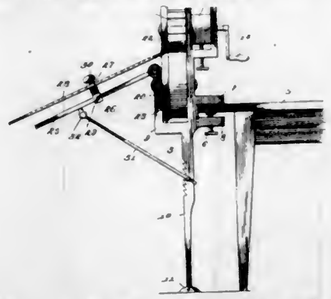
7. In a dumping-wagon, the combination of the body and truck frames, two series of levers pivoted together to form lazy-tongs, means for guiding the upper ends of one series of levers upon the truck-frame and the lower ends of the other series upon the body-frame, mechanism for moving the second set of levers to and from each other, and adjustable means for maintaining the front end of the body-frame in a fixed elevated position, substantially as described.

8. In a dumping-wagon, the combination of the body and truck frames, series of levers connected together to form a lazy-tongs, the upper and lower ends of two or more of the levers being adapted to slide longitudinally with respect to the truck and body frames, and means for positively moving the levers to and from each other, substantially as described.

9. In a dumping-wagon, the combination of the body and truck frames, two series of levers pivoted together to form lazy-tongs, one series of the said levers engaging the body-frame and mechanism carried by the body-frame for moving the levers to and from each other, the said mechanism comprising a rack-bar connected to the levers, a gear-wheel intermeshing with the rack-bar, and means for rotating the gear to reciprocate the rack-bar, substantially as described.

10. In a dumping-wagon, the combination of the body and truck frames, two series of levers pivoted together to form lazy-tongs and connected to the body and truck frames, the combined length of the levers of one series of levers being less than that of the other, and mechanism for moving the levers to and from each other, substantially as described.

652,758. SAW-SET. HARRY W. EICHER, Boynton, Pa. Filed Sept. 18, 1899. Serial No. 730,901. (No model.)



Claim.—1. In a saw-set, the combination of an anvil-wheel and a sprocket-like die-wheel, of rubber feeding-rims secured thereon, and means for adjusting the die-wheel nearer to or farther from the anvil-wheel, substantially as described.

2. In a saw-set the combination with an anvil-wheel and a sprocket-like die-wheel, rubber feeding-rims secured thereon of a bar pivotally secured to the frame, means for adjusting it on its pivot, a slidable block on the pivoted bar carrying a stud upon which to place a circular saw, and means for adjusting, and securing the block, substantially as described.

3. In a saw-set the combination with a frame comprising uprights, a depending standard having a toothed rack, and means for clamping it to a support, of a sprocket-like die-wheel, an anvil-wheel mounted between two of said uprights, rubber feeding-rims secured on said wheels, a sliding block mounted between two of said standards and having a shaft on which is secured the die-wheel, a bar pivoted to one of the uprights, a sliding block carrying a stud and a set-screw, said block mounted on the said bar, a prop pivoted to the under side of the said bar, adapted at its free end to engage the teeth of the rack on the standards.

652,759. REFRIGERATING AND REFRIGERANT. STEPHEN H. EMMENS, New York, N. Y. Filed July 15, 1899. Serial No. 723,948. (No specimens.)



Claim.—1. The method of producing refrigerants in the form of portable blocks consisting in hermetically inclosing a non-volatile liquid within sheet-metal cans, and superfreezing the same by exposure to the cooling action of liquid air.

2. The method of producing refrigerants in the form of portable blocks consisting in hermetically inclosing a mixture of water and glycerin within sheet metal cans, and superfreezing the same in the manner herein specified.

3. A refrigerant in the form of a portable block consisting of a superfrozen non-volatile liquid hermetically inclosed within a sheet-metal can.

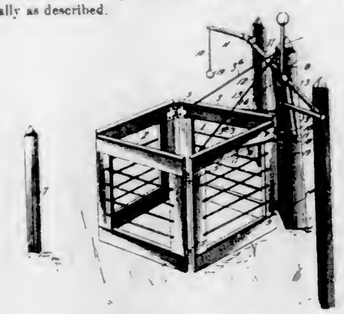
4. A refrigerant in the form of a portable block, consisting of a superfrozen mixture of water and glycerin hermetically inclosed within a sheet-metal can.

652,760. GATE. FREDERICK A. ENGLEBRIGHT, Farmington, Iowa. Filed Mar. 21, 1900. Serial No. 9,557. (No model.)

Claim.—1. A gate comprising the front and rear leaves or sections arranged in pairs, the leaves or sections at the front of the gate being hinged together at their front ends and similarly connected at their rear ends to the adjacent ends of the rear leaves or sections, and hinges for connecting the rear leaves or sections to a post or support, substantially as described.

2. A gate comprising the front and rear leaves or sections arranged in pairs, the members of each pair of leaves or sections being hinged together at their outer ends, and hinges for connecting the inner ends of the front leaves or sections to the adjacent ends of the rear leaves or sections, combined with means for swinging the rear leaves or sections to and from each other, whereby the gate is opened and closed, substantially as described.

3. The combination with a hinge-post, of a gate hinged to the hinge-post and composed of front and rear sections arranged in pairs and hinged together at their outer ends, the inner ends of the leaves or sections of one pair being hinged to the adjacent ends of the leaves or sections of the other pair, and means for operating the gate, substantially as described.

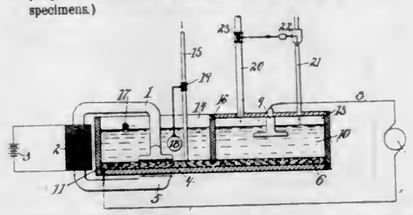


4. The combination of a gate composed of front and rear leaves or sections arranged in pairs and hinged together at their adjacent ends, and a rock-shaft provided with arms located at opposite sides of the gate and connected with the rear leaves or sections and adapted to swing the same to and from each other, whereby the gate is opened and closed, substantially as described.

5. The combination of a gate composed of front and rear leaves or sections arranged in pairs and hinged together at their adjacent ends, a rock-shaft provided with inner and outer arms, links connecting the inner arms with the rear sections of the gate, and handles connected with the outer arms, substantially as described.

6. A gate comprising the front and rear leaves or sections arranged in pairs, the members of each pair being hinged together at their outer ends, and the rear sections being shorter than the front sections and hinged to the adjacent ends thereof, substantially as described.

652,761. ELECTROLYTIC PRODUCTION OF CAUSTIC SODA, &c. JUSTUS B. ENTZ, Philadelphia, Pa., assignor to the American Alkali Company, of New Jersey. Filed May 6, 1899. Serial No. 715,814. (No specimens.)



Claim.—The process which consists in passing a current through mercury, electrolyzing a superposed fluid to effect deposition on the mercury, and subjecting the mercury to the influence of a magnetic field to cause it to move and transfer the substance deposited, substantially as described.

652,762. DERRICK. CHESTER G. FARMER, Pulaski City, Va. Filed Feb. 21, 1900. Serial No. 6,087. (No model.)

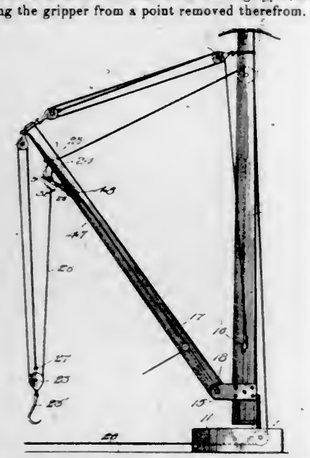
Claim.—1. In a derrick, the combination with a mast and pivoted boom, of a load-cable depending from the outer end of the boom, and a gripper carried by the boom in angular relation thereto and arranged to engage the load-cable disposed at an angle to the boom.

2. In a derrick, the combination with a mast and pivoted boom, of a load-cable depending from the outer end of the boom, an angular plate carried by the boom, and a gripper carried by the angular plate and arranged to engage the load-cable disposed at an angle to the boom.

3. In a derrick, the combination with a mast and pivoted boom, of a load-cable depending from and passed through the boom, a supporting-plate carried by the boom and located substantially transverse to the load-cable, a gripper carried by said plate and disposed at an angle to the boom for engagement with that portion of the load-cable disposed at an angle to the boom, and means for manually operating the gripper.

4. In a derrick, the combination with a mast and pivoted boom, of an angular plate secured to the boom, a gripper carried by said

plate, guide-sheaves mounted in advance of the gripper, and means for actuating the gripper from a point removed therefrom.

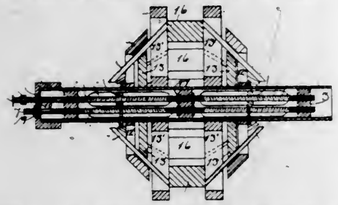


5. In a derrick, the combination with a boom, and a load-cable, of an angular plate secured to the boom, a bracket fast with the plate, guide-sheaves mounted in the bracket, a gripper having its members confined in the plate and bracket, a lever connected with one gripper member, and an adjusting-line connected to the lever, as and for the purpose described.

6. In a derrick, the combination with a mast and pivoted boom, of a load-cable, a gripper carried by the boom in angular relation thereto for engagement with the load-cable when said cable is disposed in angular relation to the boom, and means actuating the gripper from a point removed therefrom.

7. An attachment for derricks comprising a plate, a bracket fast therewith and carrying a cable-guide, a two-part gripper mounted in the bracket and the plate, a keeper on said bracket, a lever fitted to the keeper and connected with a gripper member, and a retracting-spring operating against the lever, substantially as described.

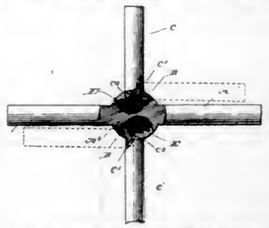
652,763. EXPANSIBLE PULLEY. BION B. FARNHAM, New York, N. Y. Filed May 4, 1900. Serial No. 15,481. (No model.)



Claim.—1. In a segmental expansible pulley having projecting arms connected to the segments, a tubular shaft, spreading-plates, clamping-plates and retaining-plates arranged upon said shaft, the spreading and clamping plates arranged to be thrust lengthwise on said shaft, and a plurality of threaded rods inside said shaft, the threading being arranged to move nuts outwardly and inwardly on said shaft in unison, said nuts being fixed respectively to the clamping-plates and to the spreading-plates, the rods having means whereby they may be revolved irrespective of the revolutions of the shaft substantially as described.

2. In a segmental expansible pulley having projecting arms connected to the segments, a tubular shaft, and spreading-plates, clamping-plates and retaining-plates arranged upon the shaft, the spreading and the clamping plates being arranged to have lateral thrust along the shaft, and a plurality of threaded rods in said tubular shaft and nuts on said rods, some of said nuts being affixed to the spreading-plates and their threads meshing with the threads on one of the rods, and other of said nuts being affixed to the clamping-plates and their threads meshing with those on the other rod in order that the said spreading and the clamping plates may be moved laterally along said tubular shaft and clamp the arms of the segments, and means whereby the threaded rods may be rotated separately or collectively, all combined substantially as described.

652,764. WATCH-CHAIN BAR. MARTIN D. FERGUSON, Knoxville, Tenn. Filed Dec. 30, 1899. Serial No. 742,078. (No model.)



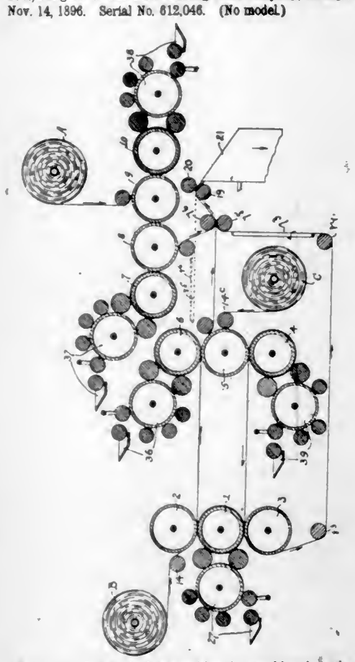
Claim.—1. A watch-chain bar comprising a main bar having supplemental bars or members pivotally connected to the center thereof, and means for normally holding the said supplemental bars or members at an angle to the main bar, substantially as shown and described.

2. A watch-chain bar comprising a main bar having a central enlargement, said central enlargement having supplemental bars or members pivotally connected thereto and means arranged within the central enlargement for normally holding the supplemental bars or members at right angles to the main bar, substantially as shown and described.

3. A watch-chain bar comprising a main bar having a supplemental enlargement recessed, as described, the supplemental bars or members pivoted in the recess of the said central portion, and the springs located in said recesses and adapted to hold the said supplemental bars or members at right angles to the main bar, substantially as shown and described.

4. In a watch-chain bar, the combination with the main bar having a central enlargement, said central enlargement being recessed as described, of the supplemental bars or members having reduced ends pivoted in the said recesses, a spring in each of the recesses one end engaging with the lug or eye and the other with the end of the recess, substantially as shown and described.

652,765. PRINTING-MACHINE. JOSEPH L. FIRM, Jersey City N. J., assignor to the Goss Printing Press Company, Chicago, Ill. Filed Nov. 14, 1896. Serial No. 612,046. (No model.)



Claim.—1. In a printing-machine, in combination, the form-cylinder 1, carrying a plurality of forms abreast for the pages of the same product, the coöperating impression-cylinders 2 and 3 on opposite sides of a plane cutting said cylinder 1 transversely to its axis,

mechanism whereby two webs are guided to said cylinders on opposite sides of said plane, mechanism whereby one of said webs is conducted across said plane and onto the other web, and mechanism whereby the printed webs are folded one inside of another, substantially as described.

2. In a printing-machine, in combination, the form-cylinder 1, carrying a plurality of forms abreast for the pages of the same product, the parallel impression-cylinder 5, the impression-cylinders 2 and 3 coöperating with cylinder 1 on opposite sides of a plane cutting the same transversely to its axis, the form-cylinders 4 and 6 coöperating with cylinder 5 on opposite sides of said plane, and mechanism whereby the printed webs are folded one inside of another, substantially as described.

3. In a printing-machine, in combination, the form-cylinder 1, carrying a plurality of forms abreast for the pages of the same product, the parallel impression-cylinder 5, the impression-cylinders 2 and 3 coöperating with cylinder 1 on opposite sides of a plane cutting said cylinders 1 and 5 transversely to their axes, the form-cylinders 4 and 6 coöperating with cylinder 5 on opposite sides of said plane, and the form-cylinders 7, 10 and impression-cylinders 8, 9 all arranged on one side of said plane, and mechanism whereby the printed webs are folded one inside of another, substantially as described.

4. In a printing-machine, in combination the form-cylinder 1, carrying a plurality of forms abreast for the pages of the same product, the parallel impression-cylinder 5, the impression-cylinders 2 and 3 coöperating with cylinder 1 on diametrically-opposite sides thereof and on opposite sides of a plane cutting said cylinders 1 and 5 transversely to their axes, the form-cylinders 4 and 6 coöperating with said cylinder 5 on diametrically-opposite sides thereof and on opposite sides of said plane, and mechanism whereby the printed webs are folded one inside of another, substantially as described.

5. In a printing-machine, in combination, the form-cylinder 1, carrying a plurality of forms abreast for the pages of the same product, the impression-cylinders 2 and 3 coöperating with said cylinder 1 on diametrically-opposite sides and on opposite sides of a plane cutting said cylinder 1 transversely to its axes, and mechanism whereby the printed webs are folded one inside of another, substantially as described.

6. In a printing-machine, in combination, the form-cylinder 1, carrying a plurality of forms abreast for the pages of the same product, the parallel impression-cylinder 5, impression-cylinders 2 and 3 coöperating with cylinder 1 on opposite sides of a plane cutting said cylinders 1 and 5 transversely to their axes, the form-cylinders 4 and 6 coöperating with cylinder 5 on opposite sides of said plane; the planes, respectively containing the axes of cylinders 1 and 5 and cylinders 2 and 6 and cylinders 3 and 4 being parallel with one another, and mechanism whereby the printed webs are folded one inside of another, substantially as described.

7. In a printing-machine, in combination the form-cylinder 1, carrying a plurality of forms abreast for the pages of the same product, the impression-cylinder 5, the impression-cylinders 2 and 3 cooperating with cylinder 1 on opposite sides of a plane cutting said cylinders 1 and 5 transversely to their axes, the form-cylinders 4 and 6 coöperating with cylinder 5 on opposite sides of said plane: the planes containing the axes of cylinders 2, 1 and 3 and of cylinders 6, 5 and 4 being parallel with each other, and mechanism whereby the printed webs are folded one inside of another, substantially as described.

8. In a printing-machine, in combination the form-cylinder 1, carrying a plurality of forms abreast for the pages of the same product, the parallel impression-cylinder 5, the impression-cylinders 2 and 3 coöperating with cylinder 1 on opposite sides of a plane cutting said cylinders 1 and 5 transversely to their axes, the form-cylinders 4 and 6 coöperating with cylinder 5 on opposite sides of said plane, the form-cylinders 7 and 10 and impression-cylinders 8 and 9 all arranged on the same side of said plane with the cylinders 2 and 6, mechanism whereby three webs are guided respectively to the cylinders 7, 8, 9, 10, the cylinders 2, 6 and the cylinders 3, 4, mechanism whereby one of said webs is conducted across said plane and associated with the other two, and mechanism whereby the printed webs are folded one inside of another, substantially as described.

9. In the folding mechanism of a printing-press the combination of a former with two sets of folding-wheels engaging respectively the folded and marginal edges of the sheet after leaving the former, the set engaging the folded edge being placed in advance of the other set to engage and fold the paper while the marginal edges are still separated.

10. In the folding mechanism of a printing-machine in combination, a former, folding-wheels 40, 41 located near the apex of the former and confined in their operation substantially to the margin adjacent to the fold and folding-wheels 42, 43, located substantially in line with the base of the former and confined in their operation substantially to the margin adjacent to the edges; said wheels 42, 43, having higher surface speed than said wheels 40, 41, substantially as described.

11. In the folding mechanism of a printing-machine in combination, a former, folding-wheels 40, 41 located near the apex of the former and confined in their operation substantially to the margin adjacent to the fold and folding-wheels 42, 43, located substantially in line with the base of the former and confined in their operation substantially to the margin adjacent to the edges and mechanism whereby said wheels may be axially adjusted during the operation of the machine, substantially as described.

12. In combination, a carrier, as 54, two sets of holding devices mounted thereon, as the pins 53 and 67, mechanism whereby a web is conducted to said carrier, mechanism whereby a cut from the web, as *a*, is conveyed away from and returned to said carrier, the movement of the said parts being so timed that the forward edges of said cut *a* and of the incoming web are successively secured by one of said sets of holding devices to said carrier; and mechanism whereby said cut *a* and a cut, as *a'*, from said incoming web are folded together off of said carrier: said set of retaining devices positively engaging with the paper so that the leading edges of such cuts *a* and *a'* are in register when the folding takes place, substantially as described.

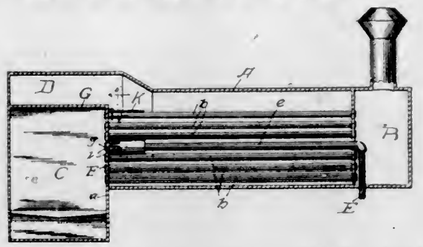
13. In a printing-machine folding mechanism, in combination, the folding-rollers 56 and 57, a carrier 54, a folding-blade mounted upon said carrier, conveying mechanism on the opposite side of said carrier from said folding-rollers whereby a cut from a web may be conveyed away from and returned to said carrier to be associated with another cut from the same web; the point at which said cut is returned to the carrier being in advance of the point at which the cut to be associated with it from the incoming web reaches the carrier and holding mechanism whereby said first-named cut is held to the carrier before being associated with said last-named cut, said holding mechanism positively engaging the associated cuts so that the leading edges of such cuts are in register when the folding takes place, substantially as described.

14. In a printing-machine folding mechanism, in combination, the carrier 54, the folding-blade and two sets of pins mounted thereon, mechanism whereby a cut is conveyed away from and returned to said carrier; the said pins and said mechanism being so arranged that the cut is returned to and held on the carrier in advance of being associated with another cut from the incoming web, said pins positively engaging the associated cuts so that the leading edges of such cuts are in register when the folding takes place, substantially as described.

15. In a web-folding apparatus, in combination, the carrier, guides for presenting a web thereto at a point, guides for conducting a leaf away from and back to said carrier at a second point less than a cycle of movement removed from the first point, means whereby said leaf is fastened to the carrier at said second point and whereby the web is subsequently fastened to the carrier over said leaf at said first point, said means of fastening positively engaging the paper so that the leading edges of the associated cuts are in register when the folding takes place, substantially as described.

16. The combination with the longitudinal folder of a printing-press of two sets of folding-wheels engaging respectively the opposite edges of the folded web, the set which engages the folded edge of the web being placed to engage the web in advance of the other set or while the marginal edges are still separated.

652,766. BOILER-CLEANER. THOMAS G. FORSTER, Newton, Kans. Filed July 22, 1899. Serial No. 724,748. (No model.)



Claim.—1. The combination with a horizontal boiler, and longitudinal flues, of a longitudinal feed-water pipe, a cylindrical chamber of increased diameter to which the rear end of said pipe is connected, and a nipple connecting said chamber to the rear flue-plate of the boiler but closing it to the fire-box, said chamber being provided with a series of openings at or adjacent to its rear end.

2. The combination with a horizontal boiler, and longitudinal

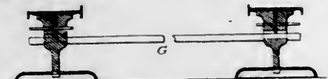
flues, of a longitudinal feed-water pipe, a chamber of increased diameter to which the rear end of said pipe is connected, a nipple the forward closed end of which extends longitudinally into said chamber and the edges of the rear open end of which are secured to the rear flue-plate of said boiler, said chamber being provided with a series of openings at or adjacent to its rear end.

3. The combination with a horizontal boiler, and longitudinal flues, of a longitudinal feed-water pipe, a chamber of increased diameter to which the rear end of said pipe is connected, a nipple the forward closed end of which extends longitudinally into said chamber and the edges of the rear open end of which are secured to the rear flue-plate of said boiler, said chamber being provided with a series of openings in its end and a series of circumferentially-arranged openings in its side contiguous thereto.

4. The combination with a horizontal boiler, longitudinal flues, and a longitudinal feed-water pipe connected to the rear flue-plate but closed to the fire-box, and provided with a series of openings at or adjacent to its rear end, of a horizontal plate secured to and projecting forward over the rear portion of the flues from its point of contact with the rear flue-plate.

5. The combination with a horizontal boiler, longitudinal flues therefor, a longitudinal feed-water pipe, a cylindrical chamber of increased diameter to which the rear end of said pipe is connected and which is provided with a series of discharge-openings at or near its rear end, and a nipple by means of which said chamber is connected to the rear flue-plate of the boiler, but closed to the fire-box, of a horizontal plate secured to and projecting over the rear portion of said flues from its point of contact with the said rear flue-plate.

652,767. TRAM-RAILWAY TRACK FOR PUBLIC HIGHWAYS. THOMAS H. GIBBON, Philadelphia, Pa. Filed Oct. 14, 1899. Serial No. 733,684. (No model.)



Claim.—1. A metallic tram-rail, composed of a broad face portion, corrugated on its under face, a web portion slotted at intervals to receive the wedge-keys and longitudinal tongues, the one on its inner edge being formed upward and downward, the outer tongue downward, said face portion being scarfed so as to receive the conjoining rail and being fitted to interlock, as and for the purpose specified.

2. A metallic tram-track chair, composed of an upright and concave base-plate, said upright being composed of a broad face portion with a deep groove on its face, a web having transverse mortises, on its bottom being formed a lug which is recessed to engage in the face of the concave base-plate, as and for the purpose specified.

652,768. VOTING-MACHINE. THOMAS W. GRAHAM, Dubuque, Iowa. Filed Feb. 14, 1899. Serial No. 705,479. (No model.)

Claim.—1. In a voting-machine, the combination with vote-indicating instrumentalities, of a device for actuating the same and means acting to set the device in a position to actuate the indicating instrumentalities then locking the same after actuation, and finally resetting the same, substantially as described.

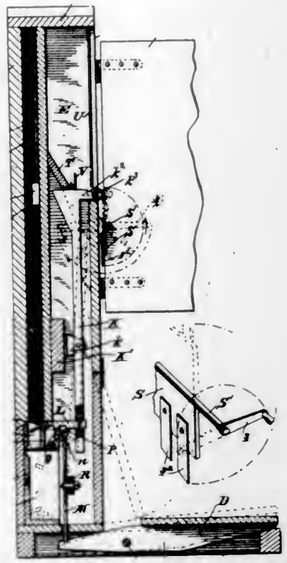
2. In a voting-machine the combination with vote-indicating instrumentalities, of a voting device normally out of position to actuate the instrumentalities, an actuating member for the device normally in an accessible position and means actuated by the voter for setting the device in position to actuate the said instrumentality, substantially as described.

3. In a check voting-machine, the combination with a casing, of a holder for receiving and holding a series of checks, a plunger for progressively removing the checks from the holder, normally out of position to operate the checks, means actuated by the voter while in the booth for adjusting the plunger to a position to operate the checks, and means for changing the relative position between the holder and plunger to cause the plunger to remove a check, substantially as described.

4. In a check voting-machine, the combination with a check-holder, of a plunger normally out of alinement with the checks in the holder, a platform for receiving the voter and means connected with the platform for adjusting the plunger to a position to operate the checks, substantially as described.

5. In a voting-machine the combination with a series of check-holders, of means for progressively removing the checks from the holders, normally located out of position to remove the checks, and means actuated by the voter for adjusting said removing means to a position to operate the checks, substantially as described.

6. In a voting-machine, the combination with vote-indicating instrumentalities, of a voting device, normally out of position to actuate the instrumentalities, an actuating member for the device normally in an accessible position and means for setting the device for actuation and resetting the same after actuation.



7. In a voting-machine, the combination with a series of vertically-arranged check-holders, of a series of independent plungers for progressively removing the checks from the holders, a series of levers for moving the plungers relative to the holders, a locking-bar, means for adjusting the same and projections on the levers against which the locking-bar strikes in its return movement for resetting the levers and plungers.

8. In a voting-machine, the combination with a casing, of a series of vertically-disposed holders therein, a series of voting-checks carried by the holders, closed storage-receptacles below the holders, a series of plungers at the lower ends of the holders for removing the checks, means for moving the plungers, a combined locking and resetting bar for the plungers and means actuated by the weight of the voter to set the bar in a locking position.

9. In a check voting-machine, the combination with a series of check-holders, of a series of pivoted plungers having shoulders on their lower edges, levers for moving the plungers and a swinging bar common to all the plungers arranged to be moved into the path of the shoulders and thereby lock the plungers in actuated positions.

10. In a voting-machine, the combination of a casing, of a series of holders mounted therein, a series of disks in the holders, plungers for progressively removing the disks, a tilting platform and means actuated by moving the platform to set the plungers in a position where they can operate the disks, to lock the same against repeated movements and to reset the plungers, substantially as described.

11. In a voting-machine, the combination with a casing, of a series of vertically-disposed holders therein, a series of voting-checks carried by the holders, a series of plungers for removing the checks, means for adjusting the plungers to a position where they can operate the checks and a lever for actuating said means, substantially as described.

12. In a voting-machine, the combination with a casing, of a series of holders mounted therein, a series of voting-checks carried by the holders, a series of plungers for removing the checks, means for adjusting the plungers to a position where they can operate the checks and resetting the same, and levers for actuating said means, substantially as described.

13. In a voting-machine, the combination with a casing, of a series of vertically-disposed tubes therein, independent voting-checks within the tubes, a series of plungers at the base of the tubes, vertical levers for actuating the plungers, and a combined setting locking and resetting device for the plungers, substantially as described.

14. In a voting-machine, the combination with a series of voting-check holders, of a series of independent voting-checks carried thereby, plungers at the ends of the series of checks, means for actuating the plungers to remove the checks progressively, a swinging locking-bar common to all the plungers, a projection on the locking-bar for resetting the plungers and a tilting platform for actuating the locking-bar, substantially as described.

15. In a voting-machine, the combination with a series of voting-check holders, of independent checks carried thereby, reciprocating plungers for removing the checks progressively, a vertically-disposed lever for each plunger having a handle at its upper end, a tilting platform, means actuated by the platform for setting the plungers to a position where they can operate to remove a check and means for returning the levers and plungers to their normal position, substantially as described.

16. In a voting-machine, the combination with a series of outwardly-movable actuating-handles, of a locking-plate having a series of projections spaced apart and registering with certain handles, and means for moving the plate to a position where the projections will be in front of the handles, substantially as described.

17. In a voting-machine, the combination with a series of holders, of a series of voting-checks carried thereby, a series of plungers for removing the checks, levers for actuating the plungers, a swinging plate and removable projections on the plate for covering the actuating ends of the levers, substantially as described.

18. In a voting-machine, the combination with a series of receptacles or holders for a series of voting-checks, of a series of reciprocating tilting plungers for removing the checks, means for reciprocating the plungers, a movable bar and means actuated by the voter to move the bar into contact with the plunger to tilt the same, substantially as described.

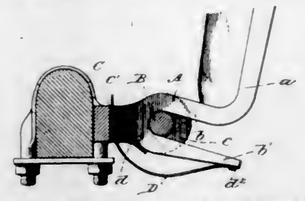
19. In a voting-machine, the combination with a series of check-holders, of a series of levers, plungers pivotally connected to the levers above the ends thereof, a swinging bar extending into the angle between the plungers and lower projecting ends of the levers, for raising the plungers and forcing the lower ends of the levers out, and means for actuating the swinging bar, substantially as described.

20. In a voting-machine, the combination with a series of holders, of a series of voting-checks carried thereby, means for removing the checks and a pivoted locking and resetting bar for adjusting and resetting said removing means, substantially as described.

21. In a voting-machine, the combination with a series of check-holders, of means for progressively removing the checks from the holders, normally in an inoperative position, means for moving the removing means to an operative position and a lever for actuating said removing means when in an operative position, substantially as described.

22. In a voting-machine, the combination of voting instrumentalities, of actuating-plungers normally out of position, for moving the same, and means actuated by the voter for adjusting said plungers to a position to operate the said instrumentalities, substantially as described.

652,769. THILL-COUPLING. ALBERT L. GRANT, Philadelphia, Pa. Filed Mar. 31, 1900. Serial No. 10,923. (No model.)

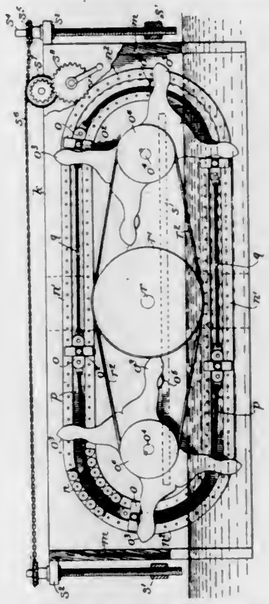


Claim.—1. In a thill-coupling having a hook formed on the free end of the thill-iron adapted to the transverse bolt of the clip carried by the axle of the vehicle, a convex spring comprising a flat metallic plate, D, of single thickness secured at the lower end to the bill of the thill-hook, a convex body portion, a tongue *d*, formed by being struck from the main body portion leaving an aperture in the main body portion, said tongue, *d*, having its free end depending and adapted to bear against the upper portion of the thill-hook operating as an auxiliary arm to keep the spring-plate, D in engagement with the adjacent side wall of the axle-clip, said tongue *d*, being so arranged and disposed in relation to its bearing-surface upon the hook member as to maintain the spring at a requisite tension when the shafts are raised in position and to relieve and release the tension when the shafts are dropped and the vehicle is not in use, substantially as described.

2. In a thill-coupling, a convex spring secured at its lower end to the bill of the thill-hook having an auxiliary tongue, *d*, formed by cutting out a portion of the main spring and bending the said cut-out portion inwardly, the free end of said tongue being adapted to bear against the outer surface of the upper portion of the hook for keeping the convex spring in engagement with the transverse wall of the clip upon the vehicle-axle, substantially as described.

3. A spring for thill-couplings comprising a flat metallic spring, D, having a foot, *d'*, formed on its lower end, a convex body portion, and a tongue, *d*, formed by cutting out a portion of the main spring and bending the said cut-out portion inwardly, for the purpose described.

652,770. SHIP PROPELLING MECHANISM. KARL P. HANGL New York, N. Y. Filed Oct. 13, 1899. Serial No. 733,482. (No model.)



Claim.—1. In a ship, the combination of a hull or body having a longitudinal channel therein, paddle-carrying means located in the said channel and means for raising and lowering the said paddle-carrying means and adjusting means for adjusting the parts of the driving mechanism to correspond with the said raising and lowering.

2. In a ship, the combination of a floating body provided with a longitudinal channel therein, propelling-paddles and their operating means located in the said channel and an inclined forward deck *g* acting upon the water in the said channel, substantially as described and for the purposes set forth.

3. In a propelling mechanism for ships, the combination of roller-bearing channels, travelers traveling in the said channels and carrying paddles and bands provided with means for adjusting their length, the said bands connecting adjacent travelers.

4. In a propelling mechanism for ships, the combination of roller-bearing channels, travelers traveling therein and carrying paddles and arms for driving the said paddles by frictional contact with a part or parts connected to the said paddles, the said frictional contact being of a springy character, substantially as described.

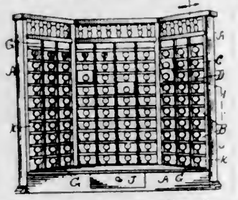
5. In a propelling mechanism for ships, the combination of the paddle-box and the traveling paddles connected by bands, and springy arms adapted to drive the said paddles.

6. In a ship, the combination of a floating body, a channel therein, paddle-carrying means located in said channel, and means for raising and lowering said paddle-carrying means, comprising in its structure adjusting-screws and a chain and windlass for rotating said screws.

652,771. HOTEL ROOM-REGISTER. WILLIAM F. HARTE, Omaha, Nebr. Filed Nov. 22, 1899. Serial No. 737,899. (No model.)

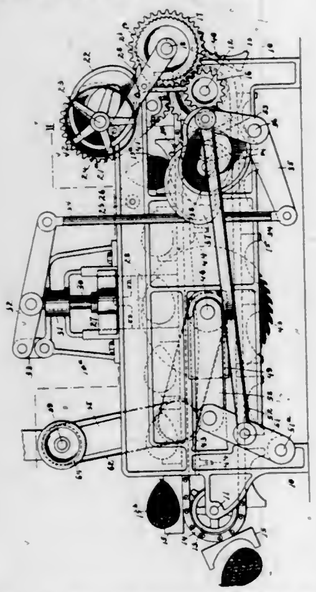
Claim.—1. The hotel room-register shown and described comprising the combination of the case A, the horizontally-arranged blocks B secured to the face of said case, and being thicker at their upper side than at the bottom and adapted to support cards placed thereon, the spring-clamps D arranged between said blocks in vertical recesses therein and having their lower ends secured to the case A, and having respectively the numbered heads K corresponding with

the numbers of the rooms, and adapted to detachably hold cards having numbers corresponding with said clamp-heads and rooms all arranged to operate substantially as and for the purpose set forth.



2. The hotel room-register shown and described, comprising the combination of the case A having the advertising-spaces F on its back, and having a drawer J in its base, the series of horizontal blocks B secured to the face of said case contiguous to each other and arranged in vertical series separated by a division-strip G, and constructed so as to be thicker at their upper side than at their lower side, and having respectively recesses E in their rear part or back and adapted to support respectively a card seated on said block, the spring-clamps D arranged respectively behind each one of said blocks B in its recess E, and having a numbered head K corresponding in number with the rooms, and adapted to respectively clamp and hold a card having a number corresponding with the clamp and room number, and adapted to have entered thereon the name and account of a guest, and the card C adapted to be detachably held by said spring-clamp, and having a number corresponding with the clamp and room number and adapted to have entered thereon the name of a guest and an account all arranged to operate substantially as and for the purpose set forth.

652,772. WOOD-SAWING MACHINE. WILLIAM HINDLEY, Hoboken, N. J., and JOSEPH W. HARDING, New York, N. Y., assignors, by mesne assignments, to the Diamond Wood Company of New Jersey. Filed Feb. 4, 1898. Serial No. 669,070. (No model.)



Claim.—1. A wood-sawing machine, comprising a series of intermittingly-moving jaws or buckets shaped to fit the stock, the jaws of the several series being held in parallel relation, a second series of vertically-movable jaws also shaped to fit the stock and adapted to close over the same when the traveling jaws are at rest, and a series of rotatable saws movable between the jaws and in the path of the stock, substantially as described.

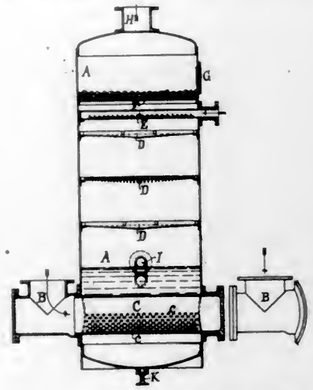
2. A wood-sawing machine, comprising a series of intermittingly-movable chains, each having buckets or jaws at stated intervals thereon, the said jaws being shaped to fit the stock and arranged with the jaws of one series parallel with those of adjacent series of chains, vertically-movable and similarly-shaped jaws adapted to close over the stock opposite one of the traveling series of jaws when the latter are at rest, and a gang of rotary saws arranged in the path of the stock and between the series of jaws, substantially as described.

3. A wood-sawing machine, comprising a series of intermittingly-movable chains, buckets or jaws arranged at intervals on the chains, the jaws of one chain parallel with those of adjacent chains, the said jaws being shaped to fit the stock, similarly-shaped vertically-movable jaws adapted to close over the stock in the traveling jaws when the latter are at rest and a gang of rotary saws arranged in the path of the stock and between the jaws, the said saws being movable backward and forward in relation to the stock, substantially as described

4. In a machine of the kind described, the combination with the series of traveling jaws shaped to fit the stock when the latter is in a certain position and arranged in parallel relation, of automatic means for tilting the stock into its fitting position in the jaws, a second series of vertically-movable jaws adapted to fit over the stock and bind it in the traveling jaws, and saws arranged in the path of the stock, substantially as described.

5. The combination with the intermittingly-moving parallel series of jaws shaped to fit the stock when the latter is in a certain position, of means as the series of rollers arranged in the path of the stock to tilt it into its best position in the jaws, a second series of vertically-movable jaws adapted to close over the stock and bind it to the traveling jaws, and a gang of saws arranged to sever the stock between the jaws, substantially as described.

652,773. APPARATUS FOR CLEANSING AND COOLING GAS. LUDWIG HIRT, Grevenbroich, Germany. Filed Aug. 23, 1899. Serial No. 728,153. (No model.)

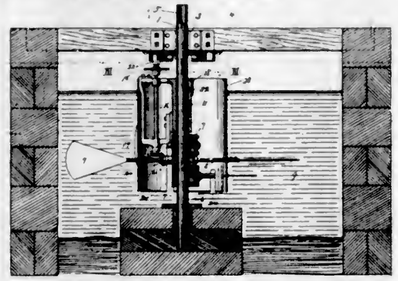


Claim.—1. In an apparatus for cleansing and cooling gases, the combination of a main vessel, gas inlet and openings therefor, a gas-distributing device extending throughout the diameter of the vessel and located in the lower portion thereof, a water-spraying device located in the upper portion of the vessel, a series of superposed grates having the openings therein the openings in each grate being angularly disposed to the openings in an adjacent grate, said grates being interposed between the water-spraying and gas-distributing devices and a filter layer located above the water-spraying device and in the path of the gas-outlet.

2. In an apparatus for cleansing and cooling gases, the combination of a gas-distributer located in the lower portion of the apparatus and comprising a pipe C open at its inlet end and perforated on its lower side, a filter layer F in the upper part of the apparatus, a gas-outlet pipe H above the filter, a water-spraying device consisting of an inlet-pipe E perforated on its under side, said water-spraying device being located under the filter layer, a plurality of superposed gratings D having the openings therein the openings in each grate being angularly disposed to the openings in an adjacent grate for fine division of the dripping water and an overflow-pipe I provided with a cooperating water seal, said overflow being located above the gas-distributer.

3. In an apparatus for cleansing and cooling gases, a filter layer, a water-inlet with water-distributing device below said filter layer, a gas-inlet device and several superposed horizontal gratings or slotted plates D, the crevices or slots of which latter are crosswise to each other, with pyramidal dropping-points for the equal distribution of the water which trickles through the crevices or slots, throughout the interior of the apparatus.

652,774. WATER-WHEEL. WILLIAM T. HOFFMAN, Kansas City, Mo.; John E. Higdon administrator of said Hoffman, deceased. Filed Dec. 26, 1899. Serial No. 741,664. (No model.)



Claim.—1. In a water-wheel, the combination of a vertical rotating shaft, horizontal rotating blade-shafts mounted on said vertical shaft and carrying at their opposite ends actuating-blades set in planes at right angles to each other, a series of short vertical shafts parallel with and mounted in bearings carried by the main shaft and located in the vertical plane of said blade-shafts, gears on said short shafts meshing with gears on said blade-shafts, and means actuated by the revolution of the wheel for rotating said short shafts and said blade-shafts, substantially as set forth.

2. In a water-wheel, the combination of a vertical rotating shaft, horizontal rotating blade-shafts mounted on said vertical shaft and carrying at their opposite ends actuating-blades set in planes at right angles to each other, a spider mounted on said vertical shaft having horizontally-extending legs, a series of short vertical shafts mounted in bearings in said legs and in the vertical plane of said blade-shafts and geared to said blade-shafts, star-wheels mounted horizontally on said short shafts above said legs, and stationary pins projecting vertically from the frame into the path of the spokes of said wheels, whereby said wheels are actuated and said blade-shafts partially rotated at each contact of said spokes with said pins, substantially as set forth.

3. In a water-wheel, the combination of a vertical rotating shaft, horizontal rotating blade-shafts mounted on said vertical shaft, a spider on said vertical shaft having horizontally-extending legs, a series of short vertical shafts mounted in bearings in said legs and geared to said blade-shafts, star-wheels on said short shafts, above said legs, vertical projections from the frame for actuating said star-wheels, angular blocks fixed on the star-wheel shafts above said star-wheels, and curved guide-flanges on the stationary frame, above said wheels, adapted to receive said blocks, said flanges having openings or breaks to permit said blocks to rotate simultaneously with said wheels, substantially as set forth.

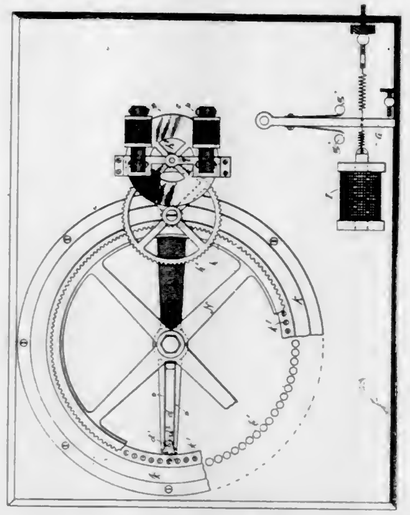
652,775. ALTERNATING-CURRENT REGULATOR. DANIEL O. HULL, Port Clinton, Ohio. Filed Mar. 1, 1899. Serial No. 707,270. (No model.)

Claim.—1. In an alternating-current regulator, a series of contact-pieces, pins or stops alternating with said contact-pieces, an arm connected with the driving mechanism of the regulator, a bar or finger pivoted to the outer extremity of said arm and projecting between said pins or stops, a spring to hold the arm and finger normally in alinement, a movable brush arranged to successively contact with said contact-pieces, and a sliding connection between said brush and said bar or finger.

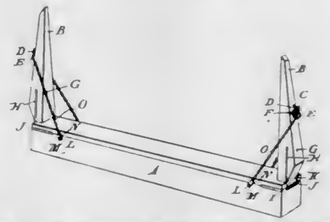
2. In a regulator for alternating currents, a pair of mains, an autoconverter connected across said mains, a series of contact-pieces connected with the windings of said converter, a movable brush in the circuit to be controlled adapted to contact with either of said contact-pieces, a solenoid in said circuit, a normally-open branch circuit 2 2ª, connected with said autoconverter, a reversible induction-motor in said branch circuit, driving connections intermediate the motor and the brush, and in said branch circuit a switch controlled by said solenoid.

3. In a regulator for alternating currents, an autoconverter in the circuit to be controlled, a movable brush in said circuit operatively connected with the converter, a branch circuit, a two-point switch in said branch circuit controlled by the main circuit, an induction-motor in said branch circuit adapted to actuate the brush, and two magnets for said motor in said branch circuit at opposite sides of its disk, one of said magnets being connected with one of the contacts of said switch, the other of said magnets being connected with the other contact of said switch.

4. In an alternating-current regulator, in combination with an autoconverter and a movable brush in the circuit to be controlled, an induction-motor operatively connected with said brush, said motor comprising a housing having a narrow flat opening therethrough, a disk journaled in said housing centrally of said opening, and a pair of electromagnets having the opposing extremities of their poles secured in said housing on opposite sides of said opening and embracing opposite margins of said disk, said housing being adapted to serve as short-circuited rings around the extremities of the magnets, substantially as shown and described.



652,776. COMBINED SOCKET AND STAKE FOR LOGGING-CARS. ASA C. HURD, Corwin, Pa. Filed Nov. 27, 1899. Serial No. 738,540. (No model.)



Claim.—1. The combination of the bolster A and stake B, with the chain O, and hook E, the stake being provided with the hinge J for connection with the bolster, the said hinge being swiveled by its upper leaf H to the stake so as to permit the same to be turned sidewise, substantially as described.

2. The bolster A and stake B, provided with the chain O, staple C, hook E, and ring D, substantially as described.

3. The combination of the staple C, hook E and ring D, on the stake B, with the lugs L, on bolster, and with chain O, by which the stake B is held in an upright position, substantially as described.

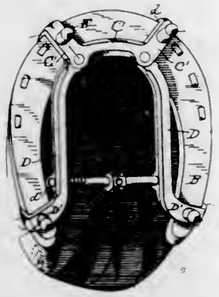
4. The hinge J, composed of two leaves, in combination with the stake B and the bolt G, on which the stake B is free to turn either to the right or to the left.

5. The combination of the hinge J provided with the leaf H, the bolster A, stake B and the bolt G on which said stake is swiveled so as to permit the stake to turn sidewise and be raised to the top of the bolster, substantially as described.

652,777. CALK ATTACHMENT FOR HORSESHOES. FRANK F. JACOBS, Indianapolis, Ind. Filed Dec. 22, 1899. Serial No. 741,259. (No model.)

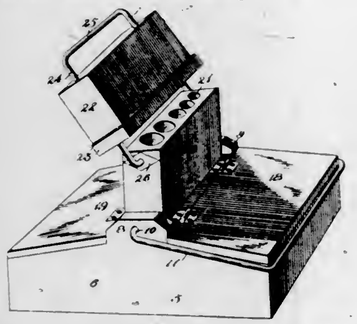
Claim.—1. In a calk-holder for horseshoes, a transverse bar to be placed near the toe of the shoe having oblique extensions terminating with hooks to engage the edges of the shoe, a pair of stems connected with the bar and extending longitudinally of the shoe and

having oblique extensions terminating with hooks, all of said oblique extensions having tapering openings, removable calks seated in said openings, and a threaded bolt to draw the two stems together, substantially as described and shown.



2. In a calk-holder for horseshoes, a transverse bar to be placed near the toe of the shoe having oblique extensions terminating with hooks to engage the edges of the shoe, a pair of stems hinged to the bar and extending longitudinally of the shoe and having oblique extensions terminating with hooks, all of said oblique extensions having tapering openings, removable calks seated in said openings, and a threaded bolt to draw the two stems together, substantially as described and shown.

652,778. TOOL-BOX. DUDLEY A. JAMES, Union Mills, Iowa. Filed Jan. 20, 1900. Serial No. 2,236. (No model.)



Claim.—1. A tool-box comprising a base portion including a central compartment and a compartment at each side thereof, a supplemental box adapted to enter the central compartment and having recesses in its opposite faces, a lid for each of the side compartments having hinged connection with the main box or base, latches carried by each lid and adapted to engage their respective recesses in the supplemental box when the lids are lowered and disengage the recesses when the lids are raised, and means for carrying each box separately.

2. A tool-box comprising a base portion including a central compartment and a compartment at each side thereof, a supplemental box adapted to enter the central compartment and having recesses in its opposite faces, a lid for each of the side compartments having hinged connections with the base, pins carried by the lids for engagement with the recesses of the supplemental box when the lids are lowered and adapted to disengage the recesses when the lids are raised, a bail engaged with the base, a bail engaged with the supplemental box, and a cover for the supplemental box, said cover having slidable engagement with the bail of its box.

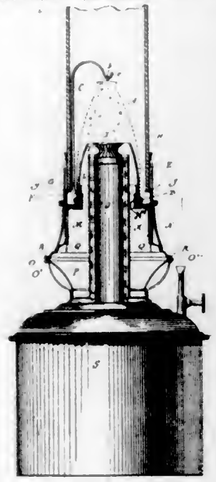
3. A tool-box comprising a base portion divided into compartments, a supplemental holder adapted to enter one of the compartments, recesses in the supplemental holder, a lid for one of the compartments having a latch adapted to move into and out of engagement with a recess of the supplemental holder as the lid is lowered and raised, and a carrying-bail for the box.

652,779. LAMP-CHIMNEY. ROBERT D. JAMISON, Cameron, Mo. Filed Oct. 21, 1899. Serial No. 734,366. (No model.)

Claim.—A lamp-chimney provided on its exterior with enlargements or bosses having upwardly-extending grooves forming inclined rear walls to be engaged by the springs or arms of a burner, and provided with side walls adapted to engage the side edges of such springs or arms, whereby the chimney is held against the burner and is prevented from moving laterally, substantially as described.



652,780. LAMP-BURNER. JOSEPH JAUCH, Meriden, Conn., assignor to the Bradley & Hubbard Mfg. Co., same place. Filed Mar. 24, 1899. Serial No. 710,360. (No model.)

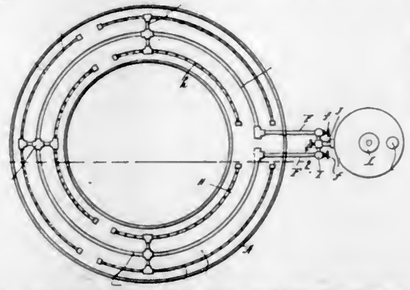


Claim.—1. As a new article of manufacture, a combined burner-cone and mantle-spreader made in one and the same piece, and furnished with a mantle-support by means of which a mantle is supported at its upper end, the lower end of the mantle being entered by the said combined part which not only forms the burner-cone of the burner, but also prevents the mantle from lateral displacement and from collapsing.

2. In a lamp-burner, the combination with a burner-body formed with a concentric collar, of an inner and an outer wick-tube, an air-distributer or flame-spreader located within the upper end of the inner tube, a chimney-gallery formed with a collar which coacts with that of the burner-body in holding the gallery in place, and a combined burner-cone and mantle-spreader formed in one piece and provided with a mantle-support, and adapted at its lower end to set over the said collar of the gallery, whereby it is centered and held in place, the upper end of the said combined burner-cone and mantle-spreader extending above the upper ends of the inner and outer wick-tubes and into the plane of the upper end of the air-distributer or flame-spreader, from which it is separated by an annular space.

652,781. DEVICE FOR HEATING WHEEL-TIRES. HENRY DE BARN JOHNSON, Piermont, N.Y. Filed Aug. 31, 1899. Serial No. 729,072. (No model.)

Claim.—1. An improved device for heating wheel-tires, comprising an annular or ring-shaped trough or receptacle, an approximately-circular main pipe arranged therein and provided with lateral branch pipes, segmental auxiliary pipes connected with said lateral branch pipes and extending at both sides of the main pipe and provided with gas jets or openings, an oil-reservoir, a pneumatic forcing device communicating therewith and a pipe connection between said oil-reservoir and the main pipe, substantially as shown and described.



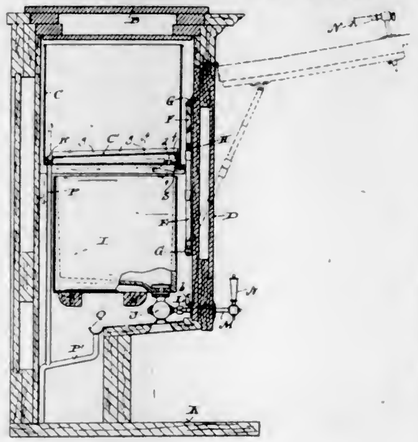
2. An improved device for heating wheel-tires, comprising an annular or ring-shaped trough or receptacle, an approximately-circular main pipe arranged therein, a series of segmental auxiliary pipes extending at the sides of the main pipe and connected therewith and provided with gas jets or openings, and means for feeding oil to said main pipe, substantially as and for the purpose set forth.

652,782. SASH-FASTENER. SAMUEL J. JOHNSTON, Leesburg, Va. Filed Sept. 1, 1899. Serial No. 729,203. (No model.)



Claim.—In a sash-fastener, a casing comprising a vertical plate 7, a closed boxing, 17, having openings in the top and bottom, and an open bracket, 9, integral with the plate and said boxing, a slidable angular bolt, 16, having a stem and fitted slidably in the boxing, a spring bearing against a shoulder of the bolt and housed within the boxing, and an angular finger-plate, 18, fast with the stem, below the boxing, and arranged for its inner edge to ride against the plate and for its outer edge to project beyond the vertical plane of the boxing, combined with a rack, and a revoluble look-wheel and pinion journaled in the bracket and plate for its notched disk to lie in the path of said bolt, substantially as described.

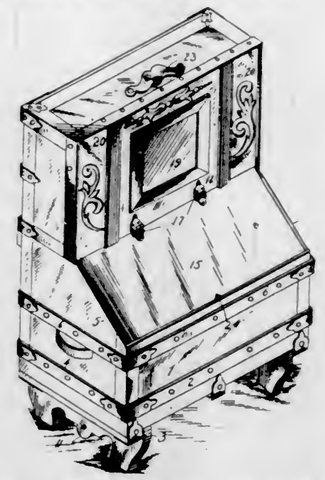
652,788. REFRIGERATOR. CHARLES F. KADE, Sheboygan, Wis., assignor to Isabella Francis Kade and Katharine Francis Winter, same place. Filed Apr. 24, 1899. Serial No. 714,192. (No model.)



Claim.—1. A refrigerator having an upper ice-compartment provided with a lid, another compartment immediately below the one aforesaid, jars arranged in the lower of said compartments to have their faucets register with bottom openings in an overhang of same, a hinged upwardly-swinging closure for the jar-compartment, self-locking telescopic braces for holding the closure open on its hinges, and outside handles having stems arranged to turn in said jar-compartment closure, the inner ends of these stems being made to have free angular engagement with the plugs of said faucets when the aforesaid jar-compartment closure is swung down.

2. A refrigerator ice-box having a bottom air-slot, a corrugated ice-rack having apertures in the apexes of its upwardly-extending ridges, a drain-trough depending from the ice-rack at a right angle to the corrugations thereof to constitute a support, and another ice-rack support opposite the trough in the form of a depending angular strip provided at intervals of its length with transverse apertures.

652,784. CONVERTIBLE TRUNK. ALBERT L. KAHN, Madison, Ind. Filed Jan. 6, 1900. Serial No. 607. (No model.)



Claim.—1. In a convertible trunk, a body portion proper cut away on its forward side and having a telescoping lid secured thereto, in combination with the inclosing section 18 having leaf-sections pivoted thereto, said parts being designed to inclose the open part of the lid when raised, said inclosing section being further provided with a desk-section hinged thereto adapted to rest at a desired angle upon the edge of the forward side of the trunk, whereby a desk or support will be provided in the manner specified and for the purpose set forth.

2. In a convertible trunk, a body portion having its forward part cut away, a telescoping lid hinged to the body whereby said cut-away portion will be inclosed, in combination with an inclosing section 18, a desk-section hinged thereto; leaf-sections pivoted to said inclosing section and suitable supporting-racks secured to the inner portion of the lid, all combined in the manner specified and for the purpose set forth.

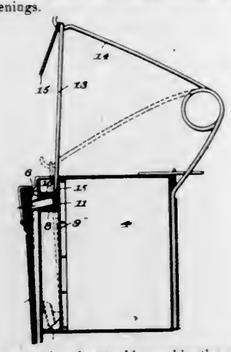
652,785. LUBRICATOR FOR WINDMILLS. HORACE M. KEITH, Commerce, Mich. Filed Oct. 14, 1899. Serial No. 733,621. (No model.)

Claim.—1. For lubricating the bearing parts of windmills and in combination with a fixed oil-containing tank having guides on its inner walls and openings near its top, a bar arranged horizontally to slide vertically in guideways on the inner wall of the tank provided with spouted cups or cells in coincident relation to the wall-openings, a rope having suitable connection with said cup-bar and tank, for immersing the bar to fill its cups, means for lifting said cup-bar, means for rocking the bar against the wall to cause the spouts to project into said openings, and conducting-tubes extending from said openings.

2. A lubricating device consisting of a fixed tank for containing oil having wall-openings and conducting-tubes, a bar arranged horizontally and vertically slidable within the tank upon its wall provided with spouted cups or cells in vertical alinement with said openings, means for sliding said bar on the wall, and means whereby said bar is caused to rock or turn to carry its spouts into said openings.

3. For lubricating bearings and in combination with a fixed tank

for containing oil, having openings near its top, a bar slidable in vertical guides on said tank, having spouted cups or cells disposed in vertical alinement with the wall-openings, their ends bearing upon the tank-wall, means for immersing the cups, means for lifting said bar and means whereby said bar is caused to rock to tilt the spouts into said wall-openings.



4. For lubricating bearings and in combination with a fixed tank for containing oil having openings in its upper wall, a bar slidable in vertical guides on the wall of the tank, having spouted cups or cells, disposed in vertical alinement with said openings, each end of said bar rounded at the lower rear angle, a rod jointed to said bar in a manner to cause it to rock, a spring constantly exerting a force to lift the bar, and a rope connected to pull down said rod for the purpose stated.

5. For lubricating bearings and in combination with a fixed tank having openings near the top in its wall, and vertical guides on the inner side of said wall, a bar slidable in said guides and having cups or cells in vertical alinement with said wall-openings, means for lifting said bar to empty its cups and means for conducting the oil to the bearings.

6. In a lubricator, the combination with a fixed oil-containing tank, having openings near the top in its wall, a horizontal bar having spouted cups or cells, the spouts standing obliquely to the bar and in vertical alinement with said wall-openings, means for immersing said bar, means for lifting said bar and means whereby it is caused to automatically rock to tilt said spouts at the limit of its ascent.

7. For lubricating the bearing parts of windmills and in combination with a fixed tank for containing oil, having openings near the top in its walls, tubes fixed thereon extending from said openings and vertical guides, of a bar having spouted cups or cells in vertical alinement with said wall-openings, a rod jointed to said bar in a manner to lift it with its spouts pressed against said wall and for rocking said bar, means for lifting the bar, means for immersing the bar, and tubes leading from the tank-tubes to the bearings.

652,786. TOY. OSCAR KORN, New York, N. Y. Filed June 15, 1899. Serial No. 720,611. (No model.)



Claim.—1. A device of the class described, comprising a barrel, an independent movable piston-plug which operates within said barrel and in the operation of the device is not removed therefrom, independent means for operating said piston-plug, and an independent end plug which in the operation of said device is inserted alternately into the ends of said barrel, substantially as shown and described.

2. A device of the class described, comprising a barrel, a plunger-rod shorter than said barrel and provided at one end with a handle by which the extent of insertion of said plunger-rod into said barrel is limited, a movable independent piston-plug which operates within said barrel and the path of motion of which is shorter than said barrel, and an independent end plug which in the operation of said device is inserted alternately in the ends of said barrel, substantially as shown and described.

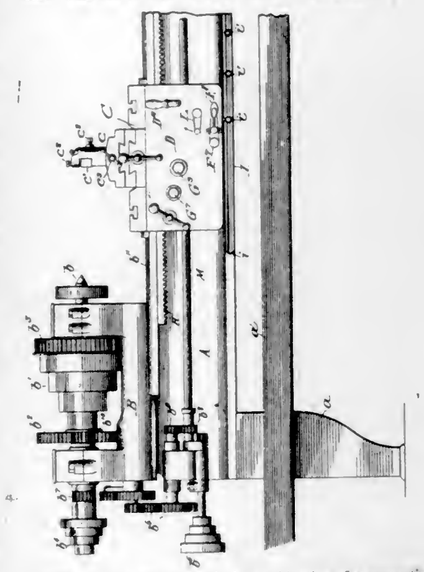
652,787. CUFF-HOLDER. EDWARD N. LA VEINE, Kansas City, Mo. Filed Feb. 17, 1899. Serial No. 705,925. (No model.)



Claim.—1. As an article of manufacture, the herein-described cuff-holder, consisting of a lower member provided with a shank portion provided with downwardly and rearwardly projecting ears having buttons thereon, a clamping portion provided with an aperture, and a member provided with a projection, which member is pivoted to the lower member, substantially as specified.

2. As an article of manufacture, the herein-described cuff-holder, comprising a lower member having a shank portion provided with rearwardly and downwardly projecting ears having buttons mounted thereon, a clamping portion provided with a tapering opening, the top member pivoted to said lower member which top member is provided with a projection, said projection being provided with lateral projections, substantially as specified.

652,788. MACHINE-TOOL. RICHARD K. LE BLOND, Cincinnati, Ohio. Filed Dec. 22, 1899. Serial No. 741,275. (No model.)



Claim.—1. In a machine-tool, the combination of a supporting-frame, a carriage movable thereon, and carrying a tool, means for moving the carriage along the frame, and stopping mechanism, means for actuating the stopping mechanism to stop the carriage at a predetermined point in its travel, and devices for tripping said means to permit the carriage to continue its travel in the same direction from the said predetermined point to continue the action of said cutting-tool.

2. In a machine-tool, the combination of a supporting-frame, a carriage movable thereon, and carrying a cutting-tool, means to move the carriage along the frame, an arresting device, a stopping mechanism, a stopping-actuator adapted to contact with said arresting device and thereby actuate the stopping mechanism to stop the travel of the carriage at a predetermined point, and means to free the stopping mechanism from control of said actuator to permit the carriage to continue its travel from said point to continue the action of said cutting-tool.

3. In a machine-tool, the combination of a supporting-frame, a carriage movable thereon and carrying a tool, adjustable arresting devices mounted on said frame, a stopping mechanism, a stopping-actuator adapted to contact with said arresting devices and be moved thereby, and means to free the stopping mechanism from control of said stopping-actuator to permit the carriage to continue to travel from the point at which it was stopped by contact of the actuator and arresting device to continue the action of said tool.

4. In a machine-tool, the combination of a supporting frame or bed, a carriage movable thereon, arresting devices mounted on said frame or bed, a stopping mechanism, a stopping-actuator adapted to contact with the said arresting devices and be moved thereby, trip devices interposed between the stopping mechanism and actuator to transmit movement of the latter to the former, and means for freeing said devices from control of the said actuator.

5. In a machine-tool, the combination of a supporting frame or bed, a carriage movable thereon and carrying a tool, a stopping mechanism mounted on said carriage, means for actuating said stopping mechanism at predetermined points in the travel of said carriage to stop the carriage, and devices for tripping said means to permit the carriage to continue its travel in the same direction from said point to continue the action of said tool.

6. In a machine-tool, the combination of a supporting frame or bed, adjustable pins mounted on said frame or bed, a carriage movable along the frame or bed, a stopping mechanism, a stopping-actuator controlling the action of said stopping mechanism, and having a part adapted to contact with said pins to thereby move the actuator and operate the stopping mechanism and a trip device interposed between the stopping mechanism and actuator to free the former from control of the latter when desired.

7. In a machine-tool, the combination of a frame or bed, arresting-pins mounted thereon, a carriage, means including a clutch for moving said carriage along the bed, devices operative by contact with the arresting-pins to disengage the clutch and stop the travel of the carriage at a desired point, and means for freeing the clutch from the control of said devices to permit the carriage to continue its travel from said point.

8. In a machine-tool, the combination of a frame or bed, a carriage movable thereon, a stopping mechanism, arresting-pins mounted on the frame or bed, a stopping-actuator for controlling the action of said stopping mechanism, and adapted to engage said arresting-pins, and a trip device comprising a lever, a pin controlled thereby and interposed between the stopping mechanism and actuator.

9. In a machine-tool, the combination of a frame or bed, arresting-pins mounted on said frame or bed, a carriage, means including a clutch for moving said carriage along the bed, a spring for normally holding the clutch members in engagement, a stopping-actuator adapted to contact with and be moved by said arresting-pins, devices interposed between the actuator and clutch to transmit motion of the former to the latter, and a trip to free the clutch from control of the actuator.

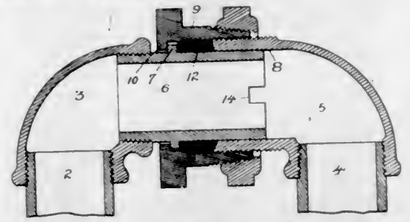
10. In a machine-tool, the combination of a frame or bed, a carriage movable along the same, an apron connected to said carriage, mechanism including a clutch for controlling the movement of said carriage and mounted on said apron, arresting-pins mounted on the frame below the apron, a stopping-actuator having an end projecting below the apron and adapted to contact with said arresting-pins, motion-transmitting devices interposed between the clutch and actuator, and a hand-operated trip for freeing the clutch from control of the actuator after it has been operated thereby.

11. In a machine-tool, the combination of a frame or bed, a feed-shaft, a carriage movable along the bed and carrying gears loosely mounted on said shaft, said gears having clutch-faces, a sleeve or thimble interposed between the ends of said gears, a clutch member also interposed between said gears and mounted on said sleeve or thimble, said clutch member and sleeve or thimble being splined to said shaft and means connected to each of said gears for moving the carriage.

652,789. FLEXIBLE JOINT FOR PIPES. ADOLPH LEITELT, Jr., Grand Rapids, Mich., assignor to Aaron S. Nichols, Chicago, Ill. Filed Aug. 17, 1899. Serial No. 727,488. (No model.)

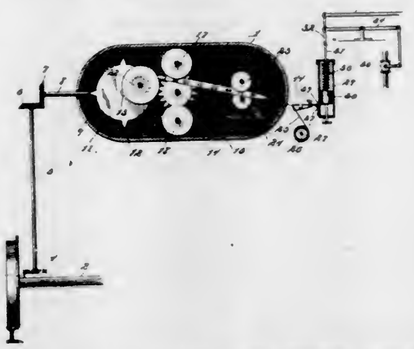
Claim.—1. The combination in a flexible joint for pipes, of the tube 6, threaded to one of the parts joined, and sliding in the other and having an exterior collar, the gland engaging said collar and threaded to the exterior of the other part to be joined, and also having one end tapered and threaded exteriorly, and also slitted, and a lock-nut fitting said tapered and slitted end of the gland, substantially as specified.

2. The combination in a flexible joint for pipes, of a tube fastened to one of the movable pipes or elbows, and sliding in the other, a tapering, threaded and slitted gland for drawing the pipes or elbows together, and a lock-nut compressing the slitted portion of the gland, substantially as specified.



3. The combination in a flexible joint for pipes, of a gland 9, held to one of the movable pipes or elbows and threaded on the other, and also tapered, threaded and slitted at the end thus threaded on the movable pipe or elbow, a lock-nut compressing said slitted end of the gland, and a packing 12 surrounded by said gland and compressed between opposing surfaces at its ends, one of said surfaces being beveled inwardly, substantially as and for the purpose set forth.

652,790. AUTOMATIC INDICATOR. VITO LETO, Newark, N. J. Filed Aug. 21, 1899. Serial No. 727,977. (No model.)



Claim.—1. An indicator for locomotives comprising a ribbon provided with two rows of indicating-figures; a delivery-roll; a receiving-roll; means for driving said rolls by the travel of the locomotive and means for automatically folding the ribbon as it passes to the receiving-roll.

2. An indicator for locomotives comprising a shaft operated by the travel of the locomotive; a toothed wheel geared to said shaft, a roller provided with teeth and adapted to be driven by the toothed wheel; an indicating-ribbon provided with two rows of indicating-figures, said rows commencing at different distances from the end of the ribbon; a delivery-roll; a receiving-roll; and guide-rollers.

3. The combination with an indicator of a movable ribbon provided with two rows of indicating-figures, said rows commencing at different distances from the end of the ribbon; means for simultaneously operating a signal and valve, comprising a cylinder; a spring-pressed plunger; levers for operating the signal and valve; and a catch or clamp for engaging the ribbon and controlling the movement of the plunger.

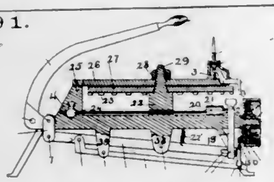
4. The combination with a casing an indicator mechanism therein; of means for operating the latter by the travel of a locomotive; a traveling ribbon provided with two rows of indicating-figures, said rows commencing at different distances from the end of the ribbon, and means for folding the ribbon consisting of a flanged roller cooperating with a plain-faced roller.

652,791. METHOD OF BRANDING. HEIMAN H. LEVY, Baltimore, Md. Filed Oct. 30, 1899. Serial No. 735,218. (No model.)

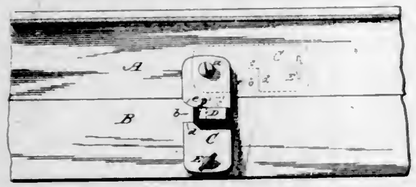
Claim.—1. The method of branding, consisting of applying heat to the surface of the material opposite to that on which the die is applied, substantially as described.

2. The method for branding, consisting of compressing the material between a die and a heated counter, substantially as described.

652,791.



652,792. SASH-LOCK. DANIEL LLOYD, Cambridge, Md., assignor of one-half to C. Fred. Auslund, same place. Filed Mar. 15, 1900. Serial No. 8,698. (No model.)



Claim.—A sash-fastener comprising a pivot-screw, a keeper constructed with a screw-threaded stem, a square shank, and an oblong head, a binding thumb-screw, and an oblong plate constructed with a smooth hole, at its inner end, for the pivot-screw, a screw-threaded hole, at its outer end, for the binding thumb-screw, and an oblong keeper-opening, extending inwardly from one side, formed with a base in line with its smooth and screw-threaded holes, a square seat for the square shank of the keeper, a curved corner on the inner side of the keeper-opening and a square corner on the outer side of the keeper-opening.

652,793. CAP FOR CLOSING VESSELS. ABBOT A. LOW, New York, N. Y. Filed Sept. 25, 1899. Serial No. 731,599. (No model.)

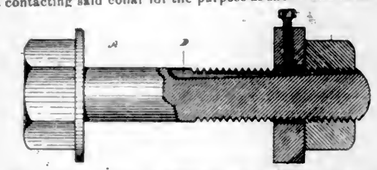


Claim.—1. A sealing-cap for vessels consisting of a tubular portion as E, provided with means as D, for securing it tightly over the discharge-opening of the vessel and for removing it; dome as I, adapted to trap air to aid the discharge of the contents and located above said tubular portion E; said dome being provided at its top with a discharge-opening as J, and means for opening and tightly closing it all constructed, arranged and combined to operate substantially as and for the purposes specified.

2. In a closing-cap for vessels, the combination consisting of the barrel E, provided with screw-thread D, and flange K at its bottom, annular flange G, above said barrel; dome I adapted to trap air to aid the discharge of the contents and located above said barrel E and annular flange G, discharge-tube J, at top of dome or chamber I, provided with screw-thread; and screw-cap L, all constructed and combined to operate, when applied to the neck of a vessel to hermetically seal it, and when in use for discharging the contents of the vessel to permit an even flow, substantially as hereinbefore specified.

652,794. COUPLING-BOLT. ENOCH L. LOWE, San Francisco, Cal., assignor to Susanna Lowe, same place. Filed Oct. 10, 1898. Serial No. 693,196. (No model.)

Claim.—1. In a coupling-bolt, a headed bolt provided with a screw-thread thereon, a longitudinal groove cut at right angles to the screw-threads in said bolt, a collar adapted to slide over said bolt, said collar provided with a set-screw, and a screw-threaded nut on said bolt contacting said collar for the purpose as shown and described.

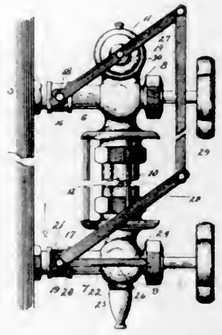


2. In a coupling-bolt, a headed bolt provided with a screw-thread thereon, a tapering groove cut in said bolt and screw-thread, a collar adapted to slide over said bolt, and groove therein, said collar being provided with a set-screw, said set-screw passing through said collar and engaging said tapering groove and the means for forcing said collar toward the head of said bolt for the purpose as specified.

3. In a coupling-bolt, a headed bolt provided with a screw-thread thereon, a tapering groove cut in said bolt and through said screw-thread, a collar adapted to slide over said bolt and groove therein, said collar being provided with a set-screw which engages the bottom of said tapering groove, and the means for preventing said collar from turning on said bolt, in combination with a screw-threaded nut for engaging the screw-threaded bolt and forcing said collar toward the head of said bolt for the purpose as shown and described.

4. In a coupling-bolt, a headed bolt provided with a screw-thread thereon, a longitudinal tapering groove cut in said bolt which increases in depth from the nut end toward the head end of said bolt, a collar adapted to slide over said bolt, said collar being provided with a set-screw, said set-screw passing through said collar, and the end of said set-screw engaging the bottom of said tapering groove, the end of said set-screw also adapted to contact the walls of said tapering groove, and the means for forcing said collar toward the head of said bolt, for the purpose as specified.

652,795. SAFETY CUT-OFF FOR WATER-GAGES. PARISH J. MACDONALD, Zacatecas, Mexico. Filed Oct. 28, 1899. Serial No. 735,081. (No model.)



Claim.—1. The combination with the water-gage glass, of a steam-boiler provided with steam and water cocks, of a gravity-lever secured to the stem of one of the cocks in position, when raised, to hold the steam-cock open and when lowered, to close it, a stop to hold the lever raised and held in position by the steam-pressure in the gage-glass, and means whereby a continuously-operated force is applied to withdraw the stop when the pressure is lessened or dissipated, substantially as described.

2. The combination with the water-gage glass, of a steam-boiler provided with steam and water cocks, of a gravity-lever secured to the stem of one of the cocks in position, when raised, to hold the steam-cock open and when lowered, to close it, a stop to hold the lever raised and said stop being held in position by the steam-pressure in the gage-glass, and a spring acting upon the stop in the opposite direction to withdraw it and permit it to fall and close the cock when the steam-pressure is lessened or cut off, substantially as described.

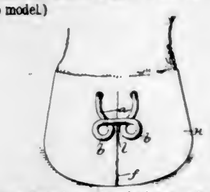
3. The combination with a water-gage glass, of a steam-boiler provided with the usual steam and water cocks, of gravity-levers secured to the stems of the cocks, a link connecting the levers, a stop held in the path of one of the levers by the pressure of steam in the gage-glass, and means whereby a continuous force is exerted upon the stop to withdraw it from under the lever when the pressure is cut off, substantially as described.

4. The combination with a water-gage glass of a steam-boiler provided with the usual steam and water cocks, of gravity-levers secured to the stems of the cocks, a link connecting the levers, a stop held in the path of one of the levers by the pressure of steam in the gage-glass, and a spring whereby a continuous force is exerted upon the stop to withdraw it from under the lever when the pressure is cut off, substantially as described.

5. The combination with the water-gage glass of a steam-boiler, and the usual steam and water cocks, of a gravity-lever on the stem of one of the cocks arranged to hold the cock open when raised and closed when lowered, a cylinder, a piston-head therein forced in one direction by the pressure of the steam in the gage-glass into the path of the gravity-lever to hold it raised and a spring arranged to force the piston in the opposite direction, out of the path of the lever when the steam-pressure is removed, to permit the levers to fall and close the cocks, substantially as described.

6. The combination with a water-gage glass of a steam-boiler provided with the usual steam and water cocks, a link connecting the levers, a stop held in the path of the lever by the pressure of steam in the gage-glass, a spring exerting a continuous force against the stop to remove it from the path of the levers when the pressure is removed, and a stop manually operable to hold the levers up while steaming up, substantially as described.

652,796. SPRING-CLAMP FOR TREATING HOOF-CRACKS. SAMUEL W. MACKEY, Baltimore, Md. Filed Oct. 22, 1898. Serial No. 694,309. (No model.)

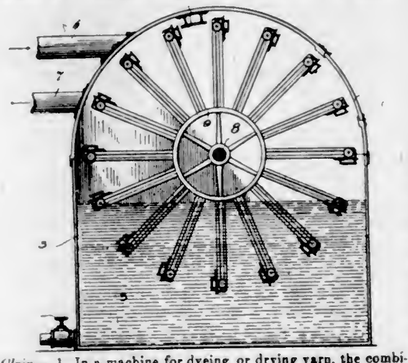


Claim.—1. A spring-clamp for closing hoof-cracks, consisting of a pair of spring-arms adapted to react toward each other and connected by spring-coil connections at one end, each arm being provided at its free end with a rigid finger projecting at an angle to the arm both fingers being turned in the same direction, substantially as described.

2. A spring-clamp for hoof-cracks comprising a pair of arms having their free ends provided each with a rigid finger projecting at substantially right angles to its arm, the two fingers being inclined toward each other, and the opposite ends of the arms being connected by spring-coil connections, substantially as described.

3. A clamp for treating hoofs, comprising a single continuous piece of metal coiled to provide arms extending in substantially the same plane, each arm being provided with a pendent finger, said fingers being provided with corrugated portions, substantially as described.

652,797. APPARATUS FOR DYEING, &c. GEORGE MALLINSON, Caroline, R. I. Filed Apr. 16, 1900. Serial No. 13,100. (No model.)



Claim.—1. In a machine for dyeing or drying yarn, the combination with a suitable tank or vat, and a shaft journaled therein, of a frame comprising a hub mounted on said shaft, slotted slides radiating therefrom and open at the ends, and yarn-stretching frames adapted to be inserted radially and secured in said slides, substantially as described.

2. In a machine for dyeing or drying yarn, the combination with a suitable tank or vat, and a shaft journaled therein, of a frame comprising a hub mounted on said shaft, slotted slides radiating therefrom and open at their ends, yarn-stretching frames adapted to be inserted radially in said slides, means for securing said frames in the slides, and means for changing the position of the skeins on the frames, substantially as described.

3. In a machine for dyeing or drying yarn, the combination with a rotatable main frame provided with radiating slides, of yarn-frames provided with rotatable yarn-supporting rods and adapted to be removably mounted in said slides, a pinion journaled in bearings at the outer end of each slide, a coupling for connecting said pinion and one of the rotatable rods of the yarn-frame, and a rack mounted on the inside of the tank in the path of rotation of the main frame for engaging said pinions, substantially as described.

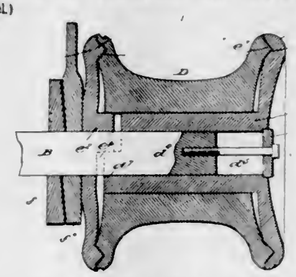
4. In a machine for dyeing or drying yarn, a yarn-stretching frame comprising two parallel bars, rods for rigidly securing said bars together, bearings in one end of said bars, a square rod journaled in said bearings and provided with a projecting square end, adjustable bearings in the opposite end of said bars, and a rod mounted to rotate in said adjustable bearings, substantially as described.

5. In a machine for dyeing or drying yarns in skeins, a stretching-frame comprising parallel bars, rods for securing them rigidly together, a square rod mounted at one end of the frame, rectangular frames at the opposite ends of the bars provided with longitudinal slots in their sides, bearing-rings in said rectangular frames having trunnions projecting into said slots, a rod rotatable in said bearing-rings, and screws for moving said bearing-rings longitudinally of said frames, substantially as described.

6. In a machine for dyeing or drying yarn, a yarn-stretching frame comprising parallel bars, rods for securing them rigidly together, closed bearings at opposite ends of one of the bars, open bearings at opposite ends of the other bar, means for closing the open side of said bearings, spring-bolts for securing them in their closed positions, and rods upon which to stretch the skein adapted to be inserted longitudinally in the closed bearings and laterally in the open bearings, substantially as described.

7. In a machine for dyeing or drying skein-yarn, a rotatable main frame comprising a hub, and radiating slides provided with longitudinal slots open at their ends, spring-latches for closing the slots at their outer ends, a bearing mounted upon the outer end of each slide over its slot, a shaft journaled in said bearing, a pinion on the upper end of said shaft, and a coupling-socket on the lower end of said shaft, substantially as described

652,798. WINCH-HEAD. SAMUEL MATTSON, New York, N. Y., assignor to the Lidgerwood Manufacturing Company, of New York. Filed Mar. 23, 1898. Renewed June 3, 1899. Serial No. 719,304. (No model.)



Claim.—1. The combination with a hoisting apparatus having two drums, of a winch-head on the shaft of each of said drums, means for throwing each of said winch-heads into and out of gear with its respective shaft, and connections between said means, whereby as one winch-head is thrown into gear, the other is thrown out of gear, substantially as set forth.

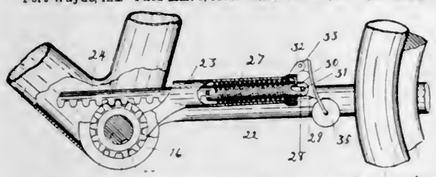
2. The combination with a hoisting apparatus having two drums, of a winch-head mounted on the shaft of each drum, each of said winch-heads being composed of sections, one of which is fast to its shaft, a movable rotary collar on each shaft designed to bind said sections together, and connections between said collars, whereby they will be operated together, substantially as set forth.

3. The combination with the shaft of a hoisting apparatus, of a winch-head consisting of two end sections having elongated hubs connected together so that one of said sections may be moved longitu-

dinally on said shaft, the other end section and its hub being fast to said shaft, an intermediate section interposed between said end sections, and means for binding said sections together, substantially as set forth.

4. The combination with the shaft of a hoisting apparatus, of a winch-head consisting of an outer part or section having a circular flange and a hub or sleeve fast on said shaft and formed with cut-away portions, an inner part or section having a circular flange and a hub or sleeve having extensions designed to fit in said cut-away portions of said former sleeve, and a central section fitted on said sleeves and having an annular concavity, the opposed faces of said parts or sections having interlocking grooves and projecting portions, and means for binding said parts or sections together, substantially as set forth.

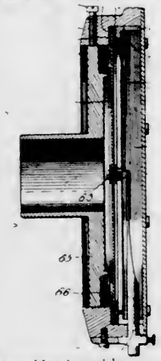
652,799. BACK-PEDALING BRAKE. FREDERICK A. MILLER. Fort Wayne, Ind. Filed Mar. 6, 1899. Serial No. 707,831. (No model.)



Claim.—1. In a bicycle, or other vehicle, the driving sprocket or gear loosely mounted upon the driving-wheel, and having formed in its inner surface a groove that is formed into a series of continuous cams with shoulders or locking-lugs on one side of the groove, a slidably-mounted key which is adapted to be moved back and forth in said groove, and a keyway in which said key is loosely placed combined with a driving-wheel, and means for causing it to revolve, whereby the said sprocket is made to revolve the wheel when turning in a forward direction, and to remain an idler when turning backward, substantially as shown.

2. In a bicycle, or other vehicle, the driven wheel, the fixed sleeve fast to the hub of the driven wheel and provided with a longitudinal groove in its surface, and the sprocket-gear loosely mounted on said sleeve, and having formed in its inner surface a groove that is formed into a series of continuous cams with shoulders or locking-lugs on one side of the groove, combined with a key slidably mounted in the groove in the fixed sleeve, and adapted to hold the said gear and cause it to revolve with the driven wheel when turning in a forward direction, and to release the gear when turning in an opposite one, substantially as described.

652,800. GRAMOPHONE SOUND-BOX. HENRY S. MONTGOMERY, Topeka, Kans. Filed Aug. 15, 1899. Serial No. 727,316. (No model.)



Claim.—1. The combination with a sound-box, of a diaphragm therein and fixed thereto at the periphery of the diaphragm, a plug in the box engaging the diaphragm at one side intermediate its center and periphery to establish a node, a separate resonator for each segment of vibration of the diaphragm, said diaphragm being adapted to vibrate in its entirety and in segments, and a stylus operatively connected with the diaphragm at the opposite side from the plug.

2. The combination with a sound-box, of a diaphragm fixed in the box at the periphery of the diaphragm, a plug in the box, a cushion between the plug and the diaphragm and engaging the diaphragm at one side thereof between its periphery and its center to establish a node, a separate resonator for each segment of vibration of the diaphragm, whereby the diaphragm will vibrate in its entirety and in sections, and a stylus operatively connected with the diaphragm at the opposite side from the plug.

3. The combination with a sound-box, of a diaphragm therein and fixed thereto, said diaphragm having a yieldable support at one side between its center and its connection with the box, whereby the diaphragm will vibrate in its entirety and in sections, a separate resonator for each section of the diaphragm, and a stylus operatively connected with the diaphragm for vibrating it.

4. The combination with a sound-box, of a diaphragm having a yieldable connection with the box, a yieldable contact with the diaphragm intermediate said connection and the center of the diaphragm, whereby the diaphragm will vibrate in its entirety and in sections, and a stylus operatively connected with the diaphragm for vibrating it.

5. The combination with a sound-box, of a diaphragm yieldably connected with the box, a yieldable contact with the diaphragm on a continuous line concentric with the diaphragm, whereby the diaphragm will vibrate in its entirety and in sections, and a stylus operatively connected with the diaphragm for vibrating it.

6. The combination with a sound-box, of a diaphragm within the box and connected thereto, and a plug adapted for engagement with the box, said plug having a sound tube, and concentric recesses in the end of the plug resulting in the formation of a flange, said flange lying between the peripheries of the plug proper and the edge of the sound-tube and engaging the diaphragm between its center and its connection with the sound-box, whereby the diaphragm will vibrate in sections.

7. The combination with a sound-box, of a diaphragm within the box and fixed thereto, and a plug, said plug having concentric depressions in its end, said depressions having different depths and resulting in the formation of a flange adapted for engagement with the diaphragm between its center and its connection with the box, whereby the diaphragm will vibrate in its entirety and in sections.

8. The combination with a sound-box having a diaphragm yieldably connected therewith, of a plug for the box having concentric recesses in its end resulting in the formation of a flange, a gasket disposed between the flange and the diaphragm and in contact with both, said gasket engaging the diaphragm between its center and its connection with the box, whereby the diaphragm will vibrate in its entirety and in sections, a sound-tube leading through the plug, and a stylus connected with the diaphragm for operating it.

9. The combination with a sound-box and the diaphragm therein, of a sound-tube in operative relation to the diaphragm, a bushing adapted to hold the diaphragm in place, a cover for the bushing and diaphragm and engaged with the box, and a stylus-arm connected with the diaphragm and lying between it and the cover.

10. The combination with a sound-box having a diaphragm therein, of an arm adapted to receive a stylus and having rigid connection with the box, and with the diaphragm, said arm having a spring portion intermediate its points of connection and the point of connection of the arm with the box being between the stylus-receiving end and the point of attachment to the diaphragm.

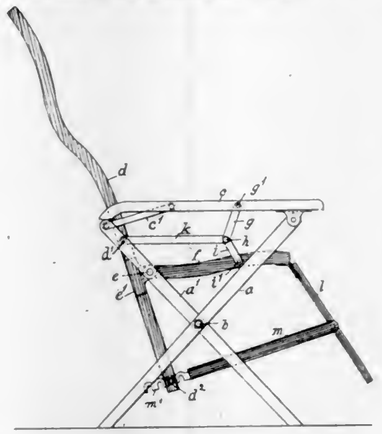
11. The combination with a sound-box having a diaphragm, of a stylus-arm fixed rigidly to the box and to the diaphragm and adapted to receive a stylus, said arm being reduced in diameter in the direction of vibration of the diaphragm to form a spring and the point of connection of the arm with the box being between the stylus-receiving end and the point of attachment to the diaphragm.

12. The combination with a sound-box, of a diaphragm therein, said diaphragm having a support at one side between its center and its connection with the box, whereby the diaphragm will vibrate in its entirety and in sections, and a stylus-arm connected rigidly with the box, said arm being connected with the diaphragm at one side of its connection with the box and having a stylus at the opposite side of its connection with the box, whereby the stylus and diaphragm will be operated, one by the other.

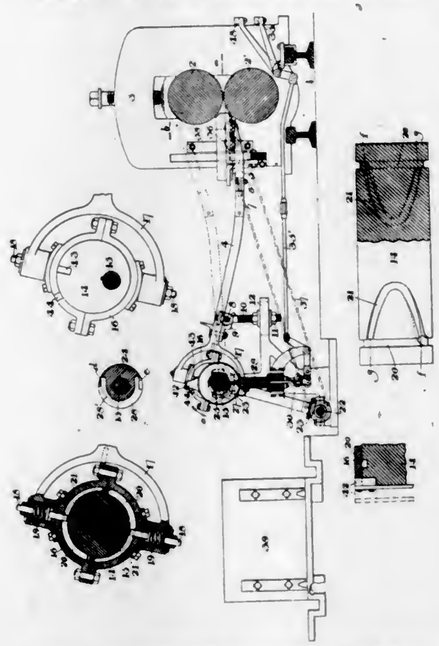
652,801. CHAIR. JOHN T. MOORE, Langley, England. Filed Oct. 20, 1899. Serial No. 734,204. (No model.)

Claim.—1. In a tilting-chair the combination of two stationary side frames, a chair-back movable between said side frames on pivots, a chair-seat hinged at its back end to the chair-back, a suspension-link on each side of the chair-seat rocking on a pivot fixed thereto near to its front end, a radius-link on each side swinging on a fixed fulcrum on the stationary side frame, and connected at its free end by a pin to the suspension-link, and a rod at each side connecting said pin to a stud on the side of the chair-back.

2. In a tilting-chair the combination of two stationary side frames, a chair-back movable between said side frames on pivots, a chair-seat hinged at its back end to the chair-back, a suspension-link on each side of the chair-seat rocking on a pivot fixed thereto near to its front end, a radius-link on each side adapted to swing on a fixed fulcrum on the stationary side frame, and connected at its free end to the suspension-link, by a pin, a rod connecting said pin to a pivot on the side of the chair-back, a leg-rest hinged to the front of the chair-seat and a rod connecting a pivot on the leg-rest to stud on the downward extension of the side of the back-frame.



652,802. ROLLING-MILL APPLIANCE. JAMES M. MURPHY, Pittsburg, Pa. Filed Feb. 12, 1900. Serial No. 4,932. (No model.)



Claim.—1. The combination in a rolling-mill, of lifting mechanism adapted to raise the metal upwardly from a roll-pass, and an eccentric whereby the same is given a forward motion at the end of its travel; substantially as described.

2. The combination in a rolling-mill, of lifting-arms adapted to raise the metal upwardly from a roll-pass, and guiding mechanism whereby on the downward motion, the arms are spread to clear a metal sheet; substantially as described.

3. The combination in a rolling-mill, of tilting lifting-arms adapted to raise the metal upwardly from the roll-pass, mechanism for tilting the same, and mechanism whereby said arms may be moved in a radial sweep to transfer the metal; substantially as described.

4. The combination in a rolling-mill, of a tilting arm or arms, a fulcrum-bar on which it is supported, and actuating mechanism adapted to tilt the arm thereon and to impart to it forward motion at the end of its stroke; substantially as described.

5. In a rolling-mill, the combination of an eccentric, a tipping arm adapted to receive the metal from the rolls and to deliver it at a different level, a fulcrum for the arm, and a connection between the arm and the eccentric; substantially as described.

6. In a rolling-mill, the combination of an eccentric and strap, tipping arms mounted thereon and adapted to receive the metal, said strap being laterally movable relatively to the arms, and a guiding-groove on the eccentric adapted to move the same to spread the arms; substantially as described.

7. In a rolling-mill, the combination of an eccentric and strap, tipping arms mounted thereon, and adapted to receive the metal, and a locking device adapted to connect the eccentric with its yoke to cause the radial sweep of the arms; substantially as described.

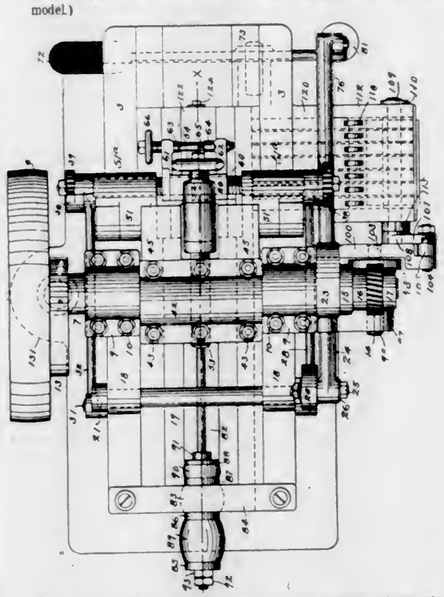
8. The combination with the lifting-arms, of an eccentric adapted to operate them, and mechanism adapted to impart to the eccentric an oscillatory motion throughout an arc of more than half the circumference; substantially as described.

9. The combination in a rolling-mill, of lifting-arms, an eccentric for operating the same, a fulcrum-bar 8 on which they tip, and hooks 9 engaging the bar; substantially as described.

10. The combination in a rolling-mill, of lifting-arms adapted to raise the metal upwardly from a roll-pass, and guiding mechanism whereby on the downward motion the arms are spread to clear a metal sheet, said arms being pivoted and adapted to be deflected; substantially as described.

11. The combination with the eccentric, of a yoke, a pin or pins thereon, and lateral grooves adapted to receive the pin or pins, and to shift the yoke; substantially as described.

652,803. RASP-PUNCHING MACHINE. JAMES A. MCHARDY, Providence, R. I., assignor of fifty-one one-hundredths to Elton C. Church, same place. Filed Aug. 12, 1899. Serial No. 727,078 (No model.)



Claim.—1. In a machine for the manufacture of rasps, the tooth-cutting device herein described, consisting of the combination of the main shaft and the crank thereon, the head or block having a circular aperture through which the crank passes, a projection from said head or block, two link-bars pivotally mounted at their top to said head or block and pivotally mounted at the bottom to the frame of the machine, a tool-holder pivotally mounted on said projection and extending angularly therefrom and a tool fitted in and extending from the lower edge of said tool-holder, substantially as shown.

2. In a machine for the manufacture of rasps, the tooth-cutting device herein described, consisting of the combination of the main shaft and the crank thereon, the head or block having a circular aper-

ture through which the crank passes, a projection from said head or block, two link-bars pivotally mounted at their top to said head or block and pivotally mounted at the bottom to the frame of the machine, a tool-holder pivotally mounted on said projection and extending angularly therefrom, a rod pivotally mounted at one end upon the rear of said tool-holder, an oscillating block properly supported, through which said rod loosely passes, compressible rubber blocks on said rod and washers, collars and nuts on said rod, all arranged substantially as shown and operating as and for the purpose specified.

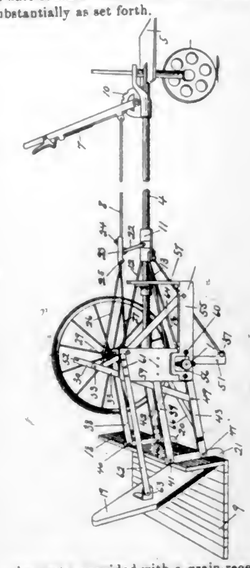
3. In a machine for the manufacture of rasps, the combination of the main shaft and the crank thereon, the head or block having a circular aperture through which the crank passes, and also having a screw-threaded bore and two parallel beveled ways, the carriage having a central outwardly-beveled projection by which it is mounted and movable on said ways of the head or block and provided with a projection made with an aperture, two links pivotally mounted at the top thereof to said carriage and at the bottom to the frame of the machine, a shaft mounted in bearings of the carriage, a tool-holder having a tubular head mounted on the last named shaft and extending angularly from said carriage, a tool held in and projecting from the lower edge of the tool-holder and a shouldered adjusting-screw passing through the aperture of the projection of the carriage and having its threads engageable with the screw-threaded bore of said block or head for the purpose of adjusting the position of the shaft whereon the tool-holder is mounted horizontally into a vertical plane nearer to or farther from the vertical plane of the main shaft to vary the angular direction of the tool, as desired, substantially as specified.

4. In a machine for the manufacture of rasps, the cross-feeding mechanism herein described consisting of the main shaft having an eccentric thereon, the link-arm pivotally mounted at its center upon the frame of the machine and having its upper portion curved and slotted, the rod reciprocally moved by said eccentric and having a pin at its outer end engageable with the slot of the link-arm, the feed-rod pivotally connected at one end with the bottom of said link-arm and pivotally connected at its opposite end with a rocker-arm, the pawl mounted on the last-mentioned end of the feed-rod, the screw-rod mounted loosely in bearings of the carriage and engageable by its threads with a sleeve, a projection from the sleeve engageable with the head of the tool-holder and the ratchet fastened upon said screw-rod and engaged by said pawl, substantially as set forth.

5. In a machine for the manufacture of rasps, the alternating cross-feed mechanism herein described, consisting of the main shaft having an eccentric thereon, a rock-shaft mounted on brackets of the frame, a link-arm centrally fastened on the rock-shaft and having its upper portion curved and slotted, the rod reciprocally moved by the eccentric and having a pin at its outer end engageable with the slot of the link-arm, the feed-rod pivotally connected at one end with the bottom of said link-arm and pivotally connected at its opposite end with a rocker-arm, the pawl mounted on the last-mentioned end of the feed-rod and provided with an angularly-projecting tailpiece, the screw-rod mounted loosely in bearings of the carriage and engaged by its threaded portion in a sleeve having a projection engageable with the head of the tool-holder, the ratchet fastened upon said screw-rod and engaged on its under side by said pawl, a trip-pin extending from the face of the ratchet and adapted to strike the tailpiece of the pawl to disengage the same from the ratchet, the link-arm on the opposite end of the first-named rock-shaft, the feed-rod pivotally connected with the bottom of the last-named link-arm, and pivotally connected at its opposite end with a rocker-arm, a pawl upon the end of the last-named feed-rod provided with a tailpiece projecting angularly therefrom, the ratchet on the opposite end of the screw-rod engaged on its upper side by the pawl last mentioned and having on its face a trip-pin adapted to strike said tailpiece of the last-named pawl to disengage it from the last-named ratchet, the said two ratchets of the screw-rod being so placed and fastened thereon, that the teeth of one of them is turned half a tooth's length in advance of the teeth of the other, all arranged and operating substantially as shown and for the purpose specified.

652,804. ELEVATING OR LOWERING DEVICE FOR HARVESTER-PLATFORMS. JAMES D. V. MCWILLIAMS, Alert, Okla. Filed Feb. 23, 1900. Serial No. 6,240. (No model.)

Claim.—1. In a harvester, a platform elevating and lowering device, comprising brackets on which the platform is carried, an adjustable operating-lever, right and left pull-rods connected with said lever, vertically-disposed right and left brackets supported on the axle, brace-links pivoted at their upper ends to said pull-rods and at their lower ends to said axle-brackets, platform-levers, pivoted at their inner ends to said axle-brackets and at their outer ends to said platform-brackets, cross-links pivoted at their upper ends to said brace-links and at their lower ends to said platform-levers, and platform-links, parallel with said platform-levers, and pivoted at their inner ends to said axle-brackets and at their outer ends to said platform-brackets, substantially as set forth.



2. In a harvester provided with a grain-receiving platform, carried in front of the machine, and an elevator mounted at one end of said platform, the combination, with means of elevating and lowering said platform, of a substantially right-angular plate, having a front portion, supported on the outer end of the axle adjacent to said elevator, and a rear portion extending transversely of the machine and secured on the tongue, a vertical standard secured to the front portion of said plate and extending above the axle, and a brace pivotally connected at its inner end to said standard, and at its outer end to said elevator, substantially as set forth.

3. In a harvester, a platform elevating and lowering device, comprising brackets on which the platform is carried, an adjustable operating-lever, right and left pull-rods connected with said lever, vertically-disposed right and left brackets supported on the axle, brace-links pivoted at their upper ends to said pull-rods and at their lower ends to said axle-brackets, platform-levers, pivoted at their inner ends to said axle-brackets and at their outer ends to said platform-brackets, cross-links pivoted at their upper ends to said brace-links and at their lower ends to said platform-levers, and platform-links, parallel with said platform-levers, and pivoted at their inner ends to said axle-brackets and at their outer ends to said platform-brackets, said axle-brackets being provided with a plurality of pivot-holes, in different horizontal planes, for varying the adjustment of said platform-links and platform-levers, to carry the platform at different elevations, substantially as set forth.

4. In a harvester, a platform elevating and lowering device, comprising brackets on which the platform is carried, an adjustable operating-lever, right and left pull-rods connected with said lever, vertically-disposed right and left brackets supported on the axle, brace-links pivoted at their upper ends to said pull-rods and at their lower ends to said axle-brackets, platform-levers, pivoted at their inner ends to said axle-brackets and at their outer ends to said platform-brackets, cross-links pivoted at their upper ends to said brace-links and at their lower ends to said platform-levers, and platform-links, parallel with said platform-levers, and pivoted at their inner ends to said axle-brackets and at their outer ends to said platform-brackets, said axle-brackets being provided with a plurality of pivot-holes, in different vertical planes, for varying the adjustment of said platform-links, to carry the platform at different inclinations, substantially as set forth.

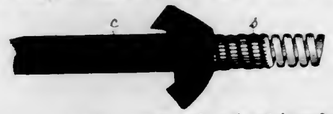
652,805. ELASTIC STIRRUP. WILLIAM A. NEAL, Bungers, W. Va. Filed Oct. 8, 1898. Serial No. 693,006. (No model.)

Claim.—1. As an improvement in stirrups, a bow-section; a horizontally-disposed strap-section; spring-sections connecting said strap-section and the ends of said bow, and a removable tread-piece having recesses in each end, adapted to rest upon said strap and be held thereon by said spring-sections engaging said recesses, all combined as set forth.

2. As an improvement in stirrups, a rigid bow-section having holes in each end thereof; spring side sections having their upper ends extended through said holes and terminating at their lower ends in loops; a strap connecting said loops with each other, and a tread-piece formed of wood or the like having recesses in each end adapted to receive said loops, said tread-piece being adapted to rest upon said strap, as specified and for the purpose set forth.



652,806. FLEXIBLE ELECTRICAL CONDUIT. HARRY G. OSBURN, Chicago, Ill. Filed Dec. 8, 1898. Serial No. 698,619. (No model.)



Claim.—1. A condnit consisting of a series of circumferentially-extending elements of semiflexible material and binding material interwoven therewith, substantially as described.

2. A conduit consisting of a helix of semiflexible material and a binding material interwoven therewith, substantially as described.

3. A conduit consisting of a helix of semiflexible material and a flexible material interwoven therewith, substantially as described.

4. A conduit consisting of a skeleton of semiflexible material and a pliable or flexible material, as cotton, interwoven therewith, substantially as described.

5. A conduit consisting of a series of circumferential woofs of semiflexible material and a series of warps interwoven therewith, substantially as described.

6. A conduit consisting of a helical woof of semiflexible material and a series of warps interwoven therewith, substantially as described.

7. A conduit consisting of a series of circumferentially-extending elements of semiflexible material, a binding material interwoven therewith and an outer covering or sheath, substantially as described.

8. A conduit consisting of a series of circumferentially-extending elements of semiflexible material, a binding material interwoven therewith and a braided covering inclosing the same, substantially as described.

9. As a new article of manufacture, a helical coil of material having sufficient rigidity of structure to prevent collapsing under the usual conditions of use, and binding material interwoven therewith to impart strength in a longitudinal direction to the structure, substantially as described.

10. As a new article of manufacture, a tube-like structure comprising circumferentially-extending elements of material having sufficient rigidity of structure to prevent collapsing under the usual conditions of use, and binding material interwoven therewith to impart strength in a longitudinal direction to the structure, substantially as described.

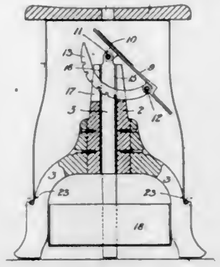
11. As a new article of manufacture, a helical coil of material having sufficient rigidity of structure to prevent collapsing under the usual conditions of use, and pliable or flexible material interwoven with the convolutions of said helical coil to impart strength to the structure in a longitudinal direction, substantially as described.

12. As a new article of manufacture, a flexible conduit formed of circumferentially-extending elements and binding material interwoven therewith to impart strength to the structure in a longitudinal direction, the whole forming a tube-like structure having sufficient rigidity to prevent collapsing under the usual conditions of use, substantially as described.

652,807. SHOE-POLISHING CABINET. ALFRED L. OVERCASHER, Pittsburg, Pa. Filed Oct. 27, 1899. Serial No. 735,003. (No model.)

Claim.—1. A hollow standard provided with supporting-legs, a post adjustably mounted therein, a foot-rest pivotally mounted on the post, and a pivoted supporting-arm therefor provided with means for locating the foot-rest at varying angles.

2. A hollow standard provided with supporting-legs, a post adjustably mounted therein, a foot-rest pivotally mounted on the post, and a pivoted curved supporting-arm, provided with notches adapted to engage a locking-stop in the post and to support the foot-rest at varying angles.



3. A hollow standard provided with supporting-legs, a tubular post adjustably mounted therein, a foot-rest provided with adhesive material on its upper face pivotally mounted on the top of the post, a curved supporting-arm pivotally attached at one end to the under side of the foot-rest, passing through slots in the post and provided with notches on its outer edge adapted to engage the edge of the post and to support the foot-rest at varying angles.

4. A hollow standard provided with supporting-legs, a tubular post adjustably mounted therein, a foot-rest provided with adhesive material on its upper face pivotally mounted on the top of the post, a curved supporting-arm pivotally attached at one end to the under side of the foot-rest, passing through slots in the post and provided with notches on its outer edge adapted to engage the edge of the post and to support the foot-rest at varying angles, and a pan-receptacle mounted between the legs at the base.

5. A shoe-polishing cabinet comprising a standard, a post adjustably mounted therein, a foot-rest pivotally mounted on the post, a pivoted curved supporting-arm therefor provided with means for locating the foot-rest at varying angles, and a removable cover provided with a seat-top.

6. A shoe-polishing cabinet comprising a standard, a post adjustably mounted therein, a foot-rest pivotally mounted on the post, a pivoted curved supporting-arm therefor provided with means for locating the foot-rest at varying angles, a pan-receptacle in the base, and a removable cover provided with a seat-top.

7. A shoe-polishing cabinet comprising a standard, a post adjustably mounted therein, a foot-rest pivotally mounted on the post, a pivoted curved supporting-arm therefor provided with means for locating the foot-rest at varying angles, a pan-receptacle in the base, a holding device subject to foot-pressure, and a removable cover provided with a seat-top.

652,808. PIPE-BENDING MACHINE. JOHN E. PARKER, Chicago, Ill. Filed Mar. 23, 1900. Serial No. 9,866. (No model.)

Claim.—1. In a pipe-bending machine comprising suitable means for gripping and bending the pipe, a non-flexible mandrel adapted to be inserted within the pipe and having its forward end rounded and arranged to support the pipe internally at the bending-point.

2. A pipe-bending machine comprising a former, means for gripping and bending the pipe about said former, and a long, straight and non-flexible mandrel adapted to be inserted within the pipe and having its forward end rounded and arranged to support the pipe internally at the bending-point.

3. A pipe-bending machine comprising a suitable former, means for gripping and bending the pipe around said former, and a mandrel having one side only of its end rounded substantially as and for the purpose described.

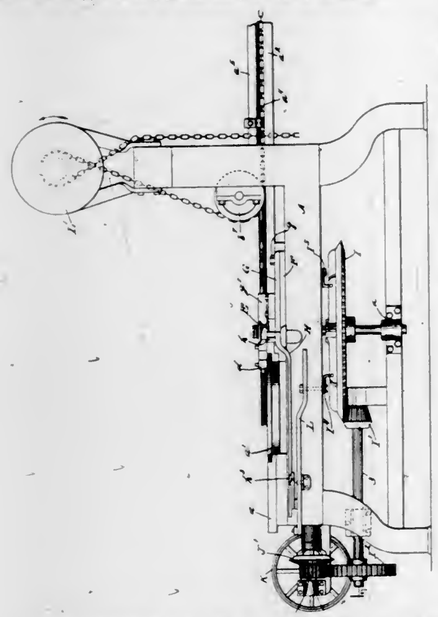
4. The combination of mechanism for gripping and bending the pipe, and a mandrel having the outer side only of its forward end portion rounded, substantially as and for the purpose described.

5. A pipe-bending machine comprising a rotary shaft, a former mounted upon said shaft, a clamping device also mounted upon said shaft and adapted to grip the pipe, and a non-flexible mandrel having its forward end rounded and arranged to support the pipe internally at the bending-point.

6. A pipe-bending machine comprising a rotary former, a traveling support for clamping the pipe against said former, a clamping device for gripping and bending the pipe about said former, and a mandrel having one side only of its forward end portion rounded, substantially as and for the purpose described.

7. A pipe-bending machine comprising suitable mechanism for

gripping and bending the pipe, and a stationary and non-flexible mandrel which supports the pipe internally at the bending-point.



8. The combination of a rotary former, a traveling support for clamping the pipe against the said former, means for gripping and bending the pipe about said former, and a stationary and non-flexible mandrel which supports the pipe internally at the bending-point.

9. A pipe-bending machine comprising a rotary former, an adjustable member provided with a traveling support for holding the pipe against the said former and provided also with means for holding said support against the pipe, a swinging clamping device adapted to grip and bend the pipe about the said former, and a non-flexible mandrel which supports the pipe internally at the bending-point.

10. A bending-machine comprising a rotary former, a swinging plate provided with a sliding block for clamping the pipe against said former, a lever for shifting said plate, a clamping device for gripping and bending the pipe around said former, and a straight and non-flexible mandrel which supports the pipe internally at the bending-point.

11. A bending-machine comprising a former, means for gripping and bending the pipe about said former, a mandrel for supporting the pipe internally at the bending-point, a swinging member provided with a sliding block for holding the pipe against the said former, said sliding block being arranged to bear against the pipe back of the bending-point, and a hand-lever for shifting said swinging member.

12. A pipe-bending machine comprising a suitable former, means for gripping and bending the pipe about said former, a mandrel for supporting the pipe internally at the bending-point, a swinging member provided with a traveling support for holding the pipe against the said former, a lever pivoted adjacent to the said swinging member, and a link for connecting said lever and swinging member.

13. In a pipe-bending machine, the combination of a rotary former, and a non-flexible mandrel having the outer side only of its end portion rounded or curved on the line of a circle struck from a point near the center of said former.

14. In a pipe-bending machine, the combination of a rotary former, and a non-flexible mandrel having a rounded end which extends beyond or forward of the periphery of said former, substantially as and for the purpose of supporting the pipe internally at the bending-point.

15. In a pipe-bending machine, the combination of a rotary former, and a mandrel having the outer side only of its end rounded and arranged beyond or forward of the periphery of said former, substantially as and for the purpose described.

16. In a bending-machine, a rotary former, means for gripping and bending the pipe about said former, a mandrel for supporting the pipe internally at the bending-point, a friction-clutch for starting and stopping said rotary former, and means for automatically operating said clutch for the purpose of automatically stopping the said former.

17. A bending-machine comprising a rotary former, a clamping device mounted to swing in unison with said former and adapted to grip and bend the pipe about the same, a mandrel for supporting the pipe internally at the bending-point, a friction-clutch for starting and stopping the former and clamping device, and means for automatically operating said clutch for the purpose of automatically interrupting the motion of the said former and clamping device.

18. A bending-machine comprising a rotary former, a clamping device mounted to swing in unison with said rotary former, a mandrel for the purpose described, a friction-clutch for controlling the motion of said former and clamping device, a hand-lever for operating said clutch, and means for automatically shifting said lever for the purpose of automatically stopping the former and clamping device.

19. A pipe-bending machine comprising a former, a clamping device for gripping and bending the pipe about the said former, a mandrel for supporting the pipe internally at the bending-point, and a power-actuated device for applying pressure to the pipe in the direction in which the pipe is moved along said mandrel by the bending mechanism, substantially as and for the purpose described.

20. In a pipe-bending machine, the combination of mechanism for gripping and bending the pipe, and mechanism for applying longitudinal pressure to the pipe in the same direction in which the pipe is moved by the said bending mechanism, substantially as and for the purpose described.

21. In a pipe-bending machine, the combination of bodily-swinging mechanism for gripping and bending the pipe, a movable abutment arranged to bear against the rear end of the pipe, and mechanism for impelling said abutment for the purpose of subjecting the pipe to a constant forward pressure during the operation of bending its forward portion, substantially as and for the purpose described.

22. A pipe-bending machine comprising bodily-swinging mechanism for gripping and bending the pipe, a mandrel, a trough for supporting the pipe and mandrel, a cross-head arranged to slide upon said mandrel and bear against the rear end of the pipe, and means for impelling the cross-head forward for the purpose of subjecting the pipe to a constant forward pressure during the operation of bending its forward portion, substantially as and for the purpose described.

23. A bending-machine comprising suitable bending mechanism, a mandrel held or secured at its rear end, a cross-head arranged to slide upon said mandrel and bear against the rear end of said pipe, means for impelling said cross-head forward, and one or more springs arranged intermediate of said impelling means and cross-head, substantially as and for the purpose described.

24. A pipe-bending machine comprising mechanism for gripping and bending the pipe, a mandrel held or secured at its rear end, a cross-head arranged to slide upon said mandrel and bear against the rear end of the pipe, rods extending through said cross-head and having their threaded ends provided with nuts, coil-springs arranged upon said rods and between said nuts and the cross-head, and chains or cables for connecting said rods with a suitable windlass or winding device, substantially as described.

25. In a bending-machine, the combination of mechanism for gripping and bending the forward portion of the pipe, and one or more springs for applying pressure to the rear end of the pipe for the purpose of subjecting the latter to a constant forward pressure during the operation of bending its forward portion.

26. A bending-machine comprising a former, means for gripping and bending the pipe about said former, and a stationary and longitudinally-adjustable mandrel having its forward end rounded to support the pipe internally at the bending-point.

27. The combination of a rotary former, and a long, straight and non-flexible mandrel having its forward end rounded to support the pipe internally at the bending-point and its rear end adjustably connected with a portion of the body-frame.

28. A bending-machine comprising mechanism for gripping and bending the pipe, a long, straight and non-flexible mandrel having its forward end rounded to support the pipe internally at the bending-point and its rear end adjustably connected with the frame, a cross-head arranged to slide upon said mandrel and bear against the rear end of the pipe, a trough for supporting the pipe and mandrel intermediate of the latter's ends, and means for impelling the said cross-head forward for the purpose of subjecting the pipe to a constant forward pressure during the operation of bending its forward portion.

29. A pipe-bending machine comprising bending mechanism, a long, straight mandrel having its forward end adapted to support the pipe internally at the bending-point, means for applying pressure to the pipe in the direction in which it is moved along the mandrel by the bending mechanism, and means for inclosing the pipe and mandrel for the purpose described.

30. The combination of bending mechanism, a mandrel, and one or more springs adapted and arranged for applying pressure to the pipe in the direction in which the same is moved along the mandrel by the said bending mechanism.

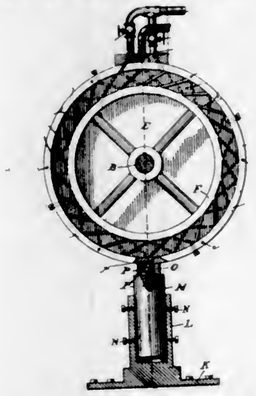
31. The combination of a rotary former, means for gripping and bending the pipe about said former, a sliding block for holding the pipe against said former, a mandrel having the outer side of its forward end rounded to support the pipe internally at the bending-point, means for holding the rear end of the mandrel, and one or more springs for applying pressure to the pipe in the direction in which the same is moved along said mandrel.

32. The combination of a former, a mandrel, a clamping device for gripping and bending the pipe about the said former and consisting of jaws held together by tapered keys, and a traveling support for holding the pipe against the said former.

33. A pipe-bending machine comprising bending mechanism, a mandrel, a V-shaped trough for supporting the pipe and mandrel, and a T-iron arranged above the pipe and mandrel, substantially as and for the purpose described.

34. The combination of a rotary former, means for gripping and bending the pipe about said former, a sliding or traveling block adapted and arranged to bear against the pipe back of said former, and antifriction-rolls for backing and holding the block against the pipe, the said rolls being mounted upon a horizontally-swinging plate or casting.

652,809. ROTARY ENGINE. SAMUEL A. S. PORTER, Pickens, S. C. Filed Feb. 5, 1900. Serial No. 4,006. (No model.)



Claim.—1. The combination with a base, of a post adjustably mounted on said base, a shaft journaled in bearings carried by said post, a piston fixed on said shaft, a cylinder-casing loose on said shaft and adapted to be turned thereon, and means for locking said cylinder-casing in adjusted positions circumferentially of said shaft, substantially as described.

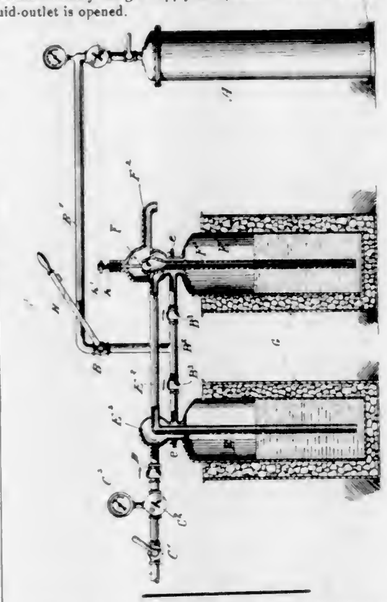
2. The combination of a rotary-engine casing, a shaft on which the same is rotatably mounted, a support for said shaft, means for securing said support in adjusted position, and means for holding said casing in circumferentially-adjusted positions on said shaft, substantially as described.

3. The combination of a rotary-engine casing, a shaft on which the casing is rotatably supported, a bearing-support for said shaft, and means for locking the casing in different position, circumferentially relative to said shaft, substantially as described.

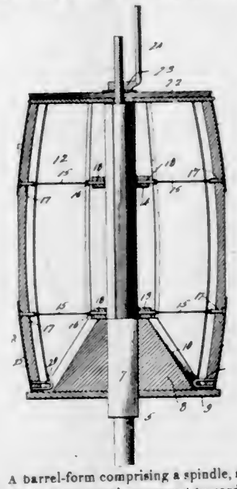
652,810. APPARATUS FOR CARBONATING AND DISPENSING LIQUIDS. HARRY ROBERTSON, New York, N. Y., assignor to Koch & Robertson, same place. Filed June 3, 1898. Serial No. 682,513. (No model.)

Claim.—1. In an apparatus for carbonating and dispensing liquids, the combination of a gas-supply under pressure and a liquid-supply through valves, a mixing-chamber to which said gas and liquid are supplied, a valve for dispensing liquid from said mixing-chamber and a mechanism by the operation of which first the valve controlling the gas supply and pressure is closed and second the said dispensing-valve opened, the valve through which the liquid is supplied adapted to be closed by the gas-pressure and opened by the liquid-pressure.

2. In an apparatus for carbonating and dispensing liquids the combination of a mixing-chamber provided with a gas-supply under pressure and a liquid-supply through tubes having valves thereon and an outlet for the carbonated liquid; the valve on said liquid-supply tube admitting of influx into said mixing-chamber by the pressure of the liquid, and adapted to be closed by the gas-pressure, and means whereby the gas supply and pressure is shut off when the liquid-outlet is opened.



652,811. BARREL-FORMER. WILLIAM M. SCHOOLFIELD, Pocomoke City, Md. Filed Apr. 28, 1900. Serial No. 14,755. (No model.)



Claim.—1. A barrel-form comprising a spindle, staves connected with the spindle for bodily pivotal movement toward and away from the spindle, means for moving the staves upon their pivots, a block upon the spindle having guide-grooves, and projections upon the staves engaging the grooves for movement therethrough to prevent lateral displacement of the staves.

2. A barrel-form comprising a spindle having a wedge-block thereon, staves hinged to the spindle for bodily movement toward and away from the spindle, said staves lying against the block, and means for moving the staves longitudinally against the wedge-block to press them outwardly.

3. A barrel-form comprising a spindle having a wedge-block thereon and provided with guide-grooves, staves hinged to the spindle for movement toward and away from the spindle and resting with their ends against the block, projections on the staves engaging the guide-grooves, and means for moving the staves longitudinally against the wedge-block to force the staves outwardly.

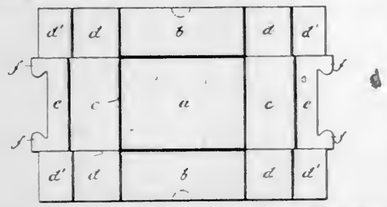
4. A barrel-form comprising a spindle having a wedge-block there-

on provided with longitudinal guide-grooves, staves, plates hinged at their ends to the staves and to the spindle, whereby the staves may be moved bodily and pivotally toward and away from the spindle, a screw extension of the spindle, a clamping-plate upon the screw for engagement with the staves to move them longitudinally against the wedge-block to expand the form, a nut engaged with the screw to operate the plate, and projections upon the staves engaging the guide-grooves to hold the staves from lateral displacement.

5. A barrel-form comprising a spindle, a plurality of staves hinged to the spindle for bodily and pivotal movement toward and away from the spindle, said staves having their outer faces flattened between their ends, and means for moving the staves pivotally and longitudinally to expand the form.

6. A barrel-form comprising a spindle, a plurality of staves pivotally connected with the spindle for movement toward and away from the spindle and provided with clenching-plates, a clamping-plate having means for moving it against the staves to move them pivotally and a second plate provided with indicating means to indicate the interspaces between the staves.

652,812. KNOCKDOWN PAPER BOX. EBEN M. SCOTT, Bridgeport, Conn., assignor to the Warner Brothers Company, same place. Filed Mar. 21, 1900. Serial No. 9,540. (No model.)



Claim.—1. A box or cover for a box having an upright turned-in portion provided with a wing adapted to be turned back down onto the same, an end piece adapted to fold over the upper edge of the turned-in portion and provided with means for engaging the wing, substantially as described.

2. A box or cover for a box having upright turned-in portions provided with a wing or wings adapted to be turned back down onto the same, an end piece adapted to fold over the upper edges of the turned-in portions and provided with an extension having means for engaging the wing or wings, substantially as described.

3. A box or cover for a box having upright, turned-in portions provided with a wing or wings adapted to be turned back down onto the same, an end piece adapted to fold over the upper edges of the turned-in portions and provided with means for engaging the wing or wings, substantially as described.

4. A box or cover for a box having upright turned-in portions *d*, *d* provided with wings *d'*, *d'* and an end piece *c* having an extension *e* and means *f*, *f* for engaging the wings when the end piece is folded over the upright turned-in portions, substantially as described.

652,813. MULTIPLE PRESS-VULCANIZER. FRANK A. SEIBERLING, Akron, Ohio. Filed Mar. 29, 1900. Serial No. 10,621. (No model.)

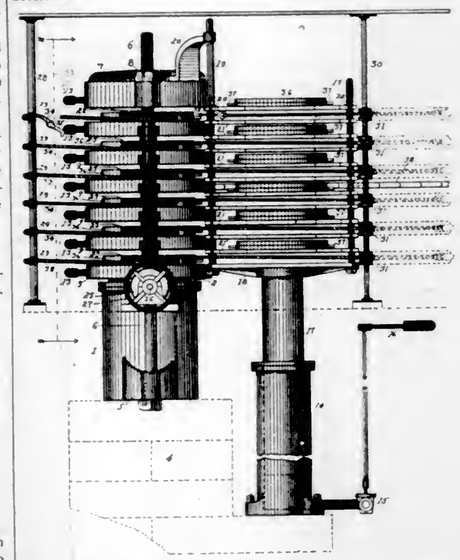
Claim.—1. The combination with a vertically-acting vulcanizer and means for operating it, a vertically-moving plunger-actuated platform in juxtaposition therewith with independent means for operating it, of means for transferring molds from said platform to said vulcanizer and removing them therefrom.

2. The combination with a vertically-acting vulcanizer and means for operating it, a vertically-moving plunger-actuated platform in juxtaposition therewith with independent means for operating it, of means for supplying said vulcanizer with a complement of molds at one operation.

3. The combination with a vertically-acting vulcanizer and means for operating it, a vertically-moving plunger-actuated platform in juxtaposition therewith with independent means for operating it, of means for simultaneously supplying said vulcanizer with a complement of molds at one operation and removing all of said molds simultaneously at a succeeding operation.

4. The combination with a vertically-acting vulcanizer, mechanism arranged to fill said vulcanizer with molds at one operation and empty it at a next succeeding operation, of a plunger-actuated platform arranged to operate in conjunction therewith provided with compartments for holding the molds containing the unvulcanized articles to be supplied to said vulcanizer and receive a like number of molds with vulcanized products from said vulcanizer.

5. In a vulcanizer of the class specified the combination with a hydraulic cylinder and its plunger, guide-rods connected with said cylinder and a head attached to and supported by said guide-rods, of hollow cases arranged to be heated by live steam having guides to run on said rods, and collars secured to said guide-rods to limit the descent of said several cases respectively, substantially as shown and described.



6. In a vulcanizer of the class specified, the combination with a hydraulic cylinder and its plunger, guide-rods connected with said cylinder and a head attached to and supported by said guide-rods, and hollow cases arranged to be heated by steam adapted to run on said rods and be raised by said plunger, of a hydraulic cylinder adjacent to said first cylinder having a plunger bearing a series of platforms held at certain distances apart arranged to bear and receive tire-holding molds and to be brought in horizontal alinement with the spaces between said cases, substantially as shown and described.

7. In a vulcanizer of the class specified the combination with a series of hollow cases adapted to be heated, arranged in vertical alinement and means for moving said cases to and from each other, of a hydraulic cylinder and a plunger adapted to reciprocate therein, bearing a series of platforms in vertical alinement double the number of spaces between said cases and adapted to bring one-half of said platforms alternately in the same horizontal planes with said cases, substantially as shown and described.

8. In a vulcanizer of the class specified the combination with a series of hollow cases arranged in vertical alinement, and means for moving said cases to and from each other and a series of platforms arranged at intervals in vertical alinement and means for bringing said platforms in horizontal alinement with the spaces between said cases, of molds adapted to lie between said cases, and a series of cords adapted to be severally connected with said molds, sheaves in horizontal alinement with said platforms for said cords to run on, and means for simultaneously drawing said cords to move said molds from said platforms to said cases and to return them to the platforms, substantially as shown and described.

9. In a vulcanizer of the class specified the combination with a series of hollow cases in vertical alinement, and means for severally heating them and for separating and forcing them together, of an adjacent hoisting apparatus arranged to simultaneously bring a number of tire-holding molds in horizontal alinement with the spaces between said cases, and means for simultaneously transferring said molds to said spaces, substantially as shown and described

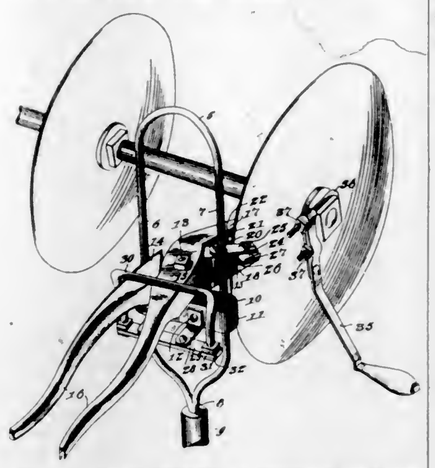
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652,814. COMBINATION SQUARE AND BEVEL. MICHAEL SETZER, Helena, Mont. Filed July 2, 1898. Serial No. 685,052. (No model.)



Claim.—In a combination-tool, a stock, one end of which is perforated transversely and slotted longitudinally and the opposite end is provided with a shouldered recess and a slot leading tangentially therefrom to the end of the stock near one edge and the opposite edge is provided with a dovetailed recess, and the intermediate portion of the stock is recessed upon one edge, a slotted graduated blade in the slot of the stock, one end of which is perforated and provided with a level, a clamping-screw through the perforation in the stock and through the slot in the blade, a level in the recess in the intermediate portion of the stock, a tape-measure in the shouldered recess provided with a handle and having its end extending through the tangential recess, and a graduated gage in the dovetailed recess, the outer end of which carries an arm which extends part way across the end of the stock, substantially as described.

652,815. DISK-SHARPENER. JOHN J. SMITH, Dwight, Ill. Filed Oct. 21, 1899. Serial No. 734,393. (No model.)



Claim.—1. In a disk-sharpener, the combination with a frame and a support, of plates clamped upon the frame and adapted for vertical adjustment thereon, tongs passed through the frame and having a pivot-bolt engaged with the plates, said tongs being adapted to receive the disk to be operated upon, a cutting-blade carried by one member of the tongs, a bearing upon the opposite member of the tongs, and means for gripping the blade and the bearing against the disk.

2. The combination with a frame having a support, of a separable cross-head mounted upon the frame and adjustable vertically thereof, tongs passed through the frame and pivoted upon the cross-head, a cutting-blade carried by one member of the tongs, a bearing upon the other member of the tongs, and means for clamping the blade and the bearing against the disk.

3. A disk-sharpener, comprising a frame, a cross-head adjustably mounted upon the frame, tongs pivotally mounted upon the cross-head, a bearing carried by one member of the tongs, a cutting-blade carried by the other member of the tongs, and a guide-rod connected with the cross-head and lying in a plane rearwardly thereof, and in contact with the members of the tongs.

4. A disk-sharpener, comprising a frame, a cross-head comprising plates having recesses engaging the frame, means for clamping the plates in different positions with respect to the frame, tongs pivoted upon the cross-head, angle-irons secured to the cross-head, a guide-bar secured to the angle-iron and lying upon the members of the tongs, a recess in one jaw of the tongs, a ball within the recess, a plate disposed over the recess and having an opening through which the ball projects, a recess in the opposite jaw, a cutting-blade within the last-named recess, a plate covering the recess and engaging the blade, and clamping-bolts for said plate.

652,816. PIPE-UNION. MAX SNYDER, Beatty, Pa. Filed Mar. 21, 1900. Serial No. 9,611. (No model.)

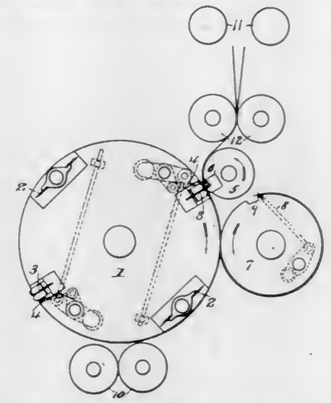
Claim.—1. A joint comprehending two members provided, respectively, with a depression and a projection, the opposed faces of the depression and projection constituting bearing-faces, one of which is formed with a series of separated contact-surfaces and the other of which is located in the same plane throughout.

2. A packingless joint comprising two members one of which is provided with a bearing-surface lying in the same plane throughout, and the other of which is formed with a bearing-surface composed of a series of separate contact-faces located in the same plane and arranged for engagement with the bearing-surface of the other member, said bearing-surfaces, when in contact, being located in a plane removed from, but parallel with, the plane of the opposed faces of the members.



3. In a joint, the combination with a female member provided with an annular depression having its entire bottom wall located in the same plane, of a male member provided with an annular projection having a series of separated contact-surfaces opposed to the bottom wall of the depression in the other member, and means for drawing the members into effective contact.

652,817. CUTTING, FOLDING, AND COLLECTING MECHANISM. WILLIAM SPALCKHAVER, New York, N. Y., assignor to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, same place. Filed Oct. 7, 1899. Serial No. 732,854. (No model.)



Claim.—1. In a cutting, folding and collecting mechanism, the combination with a pair of cutting-cylinders, one of which is provided with suitable folding-off devices, of a collecting-cylinder independent of the cutting-cylinders, means whereby said collecting-cylinder is caused to take all the sheets of a number to be collected except the last, and means whereby said sheets are retransferred from the collecting-cylinder to the cutting-cylinder to be folded off therefrom, substantially as described.

2. In a cutting, folding and collecting mechanism, the combination with a pair of cutting-cylinders, one of said cylinders being provided with sheet-taking devices and folding-off devices, of a collecting-cylinder independent of the cutting cylinders, said collecting-cylinder being provided with sheet-taking devices, means whereby the sheet-taking devices on the collecting-cylinder are caused to take all of a number of sheets to be collected except the last, and means whereby said sheets are retransferred from the collecting-cylinder to the cutting-cylinder to be folded off therefrom, substantially as described.

3. In a cutting, folding and collecting mechanism, the combination with a pair of cutting-cylinders, one of said cylinders having one or more sets of sheet taking and retaining pins and suitable folding-off devices, of an independent collecting-cylinder having sheet taking and retaining pins, means whereby the pins on the collecting-cylinder are caused to take all of a number of sheets to be collected except the last, and means whereby said sheets are retransferred from the collecting-cylinder to the cutting-cylinder to be folded off therefrom, substantially as described.

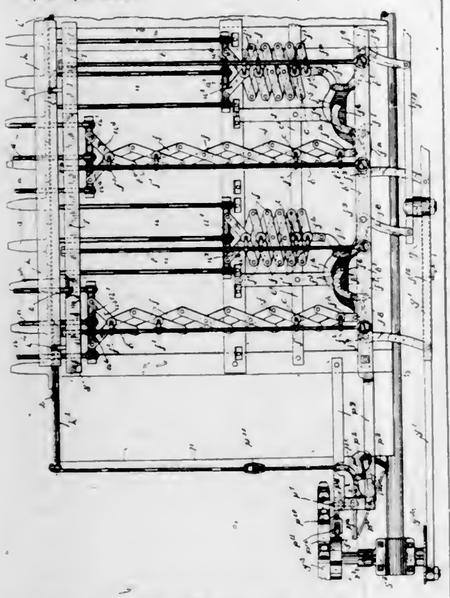
4. In a cutting, folding and collecting mechanism, the combination with suitable web-guides, of a folding-cylinder 1 having cutting-blades, as 3, sheet-retaining pins 4, and folding-blades 2, a cooperating cutting-cylinder 5 of smaller diameter than the cylinder 1 provided with a cutting-block 6, an independent collecting-cylinder 7 hav-

ing sheet taking and retaining pins 8 and provided with a gap 9, and means whereby the pins 8 are caused to take all of a number of sheets to be collected except the last from the pins 4 and after the sheets are collected retransfer them to said pins 4 to be folded off by the folding-blades 2, substantially as described.

5. In a cutting, folding and collecting mechanism, the combination with a pair of cutting-cylinders, one of said cylinders being smaller than the other and the larger cylinder having sheet taking and retaining and folding-off devices, of an independent collecting-cylinder having sheet taking and retaining devices and provided with a gap to permit the cutting devices on the cutting-cylinder to pass it, the sheet taking and retaining devices on said cylinder, operating to take all of a number of sheets to be collected except the last from the sheet taking and retaining devices on the cutting-cylinder and retransfer them to the cutting-cylinder to be folded off, substantially as described.

652,818. GRAIN-ERECTING ATTACHMENT FOR HARVESTERS.

DANIEL SVENSON, Twin Valley, Minn. Filed Mar. 22, 1900. Serial No. 9,659. (No model.)



Claim.—1. The combination with a harvester, of a plurality of lifting-fingers mounted for approximately-horizontal reciprocations, and means for projecting said fingers forward of the sickle-bar and then elevating them while projected, to lift the falling grain, substantially as described.

2. The combination with a harvesting-machine of reciprocating and pivotally-mounted lifting-fingers projecting forward of the cutter-bar, and a lifting blade or bar extended beneath said fingers and having connections for lifting the same, substantially as described.

3. The combination with a harvester, of a plurality of lifting-fingers and means for projecting them forward of the cutter-bar, of a pivoted lifting-blade extended below said fingers and operating to raise the same when projected, substantially as described.

4. The combination with a harvesting-machine, of reciprocating fingers pivoted in groups to heads or carriers, lazy-tongs connections to said heads or carriers, and means for operating the said lazy-tongs, substantially as described.

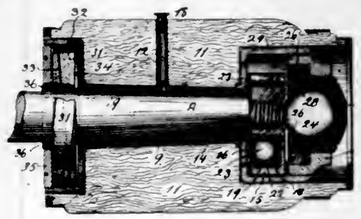
5. The combination with a harvesting-machine, of reciprocating lifting-fingers pivoted in groups to heads or carriers, lazy-tongs connections to said heads or carriers, and means for extending and contracting adjacent lazy-tongs in alternate order, substantially as described.

6. The combination with a harvester, of reciprocating lifting-fingers pivoted in groups to reciprocating heads or carriers, lazy-tongs connections for reciprocating alternate heads or carriers in reverse order, a lifting-blade pivoted below the free portions of said lifting-fingers, and means for operating the said blade to lift said fingers while projected forward of the cutter-bar, substantially as described

7. The combination with a harvesting-machine, of the lifting-fingers *a* pivoted to the heads *a'*, the lazy-tongs *f* operating said heads *a'*, the guide-rods *b* serving to support and guide said lazy-tongs *f*, the bell-crank and intermediate lever connections to said lazy-tongs, the crank and pitman connection to said bell-cranks, the pivoted lifting-blade *k* underlying the lifting-fingers *a*, a cam for operating said blades, and lever connections between said cam and said blade operating substantially as described.

652,819. ROLLER-BEARING.

ANDREW J. THEIRING, Cincinnati, Ohio. Filed Jan. 27, 1900. Serial No. 3,004. (No model.)



Claim.—1. The combination in a hub and axle-bearing of means whereby the hub is endwise confined on the axle against movement in either direction, balls interposed between these means and the opposite surfaces at the end of the hub and holders whereby each one of these balls is confined in position.

2. In a hub and axle-bearing, the combination of an axle-journal, a hub having a recess in its outer end mounted thereon, means occupying this recess whereby the hub is confined on the axle against endwise movement, balls interposed between these means and the opposite end of the hub and holders for each of these balls.

3. In a hub and axle-bearing, the combination of a hub having a recess in its outer end, means contained in this recess whereby the hub is confined on the axle against endwise movement in either direction, balls interposed between these means and the opposite end of the hub, holders for each one of these balls and a dust-cap to close this recess.

4. In a hub and axle-bearing, the combination of an axle-journal, a hub mounted thereon, a nut carried at the outer end of the former to hold the hub in position and having sockets provided in its inner side and a ball contained in each one of these sockets and adapted to bear against the opposite end of the hub.

5. In a hub and axle-bearing, the combination of an axle-journal, a hub mounted thereon, a nut carried at the outer end of the former to hold the latter in position and having sockets provided in its inner side, a bearing-ring secured to the outer end of the hub and balls interposed between this latter and the nut, one contained in each of the sockets of this latter

6. In a hub and axle-bearing, the combination of an axle-journal, a hub having a recess in its outer end mounted thereon, a nut carried at the outer end of the axle-journal to hold the hub in position and occupying the recess in the outer end of this latter, a dust-cap to close this recess and a ball carried by this latter and adapted to bear against the end of the axle-journal.

7. The combination in a hub and axle-bearing of means whereby the hub is confined on the axle against endwise movement in either direction, balls interposed between opposite surfaces of endwise-engaging parts of these means, separable holders for each of these balls whereby they are partly inclosed and which have openings to permit the balls to come in contact with the opposite surface.

8. In a hub and axle-bearing, the combination of an axle-journal, a hub mounted thereon having a recess in its outer end, and means attached to it within said recess adapted to bear against the opposite end of the axle-journal thereby preventing the hub from moving inwardly on this latter and a nut at the outer end of the axle-journal which operating in conjunction with the means mentioned confines the hub in both directions.

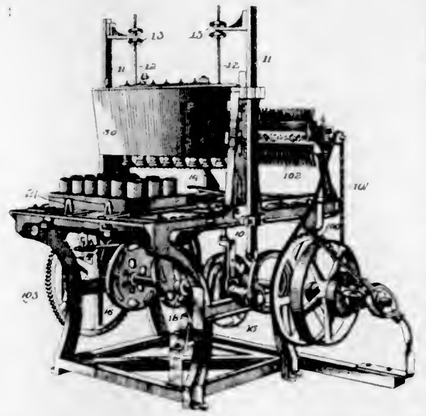
9. The combination of an axle-journal, a hub recessed in both its ends mounted thereon, a nut 15 having sockets 17 to hold it in place, balls in each of these sockets, holders 18 and 19 adjustably secured by means of a screw connection which hold these balls in position, a ball 24 supported opposite the end of the axle-journal and adapted to bear against the same, a dust-cap to close the recess in the front end of the hub and a washer to perform the same function at the rear end.

10. The combination of an axle-journal, a hub recessed in both its ends mounted thereon, a nut 15 having sockets 17 to hold it in place balls in each of these sockets, holders 18 and 19 adjustably secured by means of a screw connection which hold these balls in position, a ball 24 adapted to engage and bear against the outer end of the axle and a socketed dust-cap within the outer recess of the hub which supports this ball and holds the same in position on the hub.

11. In a hub and axle-bearing, the combination of an axle-journal, a hub mounted thereon, a nut to hold it in position, a ball adapted to engage and bear against the end of the axle-journal and means attached to the hub which supports this ball and confines the same to a position whereby it is held opposite the center of the axle-journal.

652,820. MACHINE FOR FILLING LIQUIDS INTO CANS.

JAMES W. TUTTLE, Baltimore, Md., assignor to the Sinclair-Scott Company, same place. Filed Apr 3, 1900. Serial No. 11,349. (No model.)



Claim.—1 A brining-machine comprising a tank having filling-tubes secured to apertures in its bottom, valves at the top of the tubes and cups, sliding on the tubes, to empty their contents into the cans when the valves are opened, substantially as described.

2 A brining-machine comprising a tank having filling-tubes secured to apertures in its bottom, valves at the top of the tubes having rods secured thereto which pass through the tubes, and cups sliding on the tubes to empty their contents into the cans, when the valves are opened by pressure of the cans against the rod, substantially as described

3 A brining-machine comprising a tank having filling-tubes secured to apertures in its bottom, valves at the top of the tubes having rods secured thereto passing through the tubes, cups sliding on the tubes, and a vertically-movable table, for raising the cans to open the valves through the intervention of the rods and thus to fill them, substantially as described.

4 A brining-machine comprising a tank having filling-tubes secured to apertures in its bottom, valves at the top of the tubes, cups sliding on the tubes and resting on a plate, sliding rods for raising the plate and cams for operating the rods, substantially as described

5. A brining-machine comprising a tank having filling-tubes secured to apertures in its bottom, valves at the top of the tubes, cups sliding on the tubes, a plate on which the cups rest, adjustably secured to sliding rods for raising the plate and cams for operating the rods, substantially as described

6 A brining-machine comprising a tank having filling-tubes secured to apertures in its bottom, valves at the top of the tubes having rods secured thereto which project through the bottom of the tubes, cups sliding on the tubes and resting on a plate, sliding rods for raising the plate, cams for operating the rods and a vertically-movable table for raising cans to coact with the valve-rod to open the valves and empty the cups, substantially as described.

7. A brining-machine comprising a tank having filling-tubes secured to apertures in its bottom, valves at the top of the tubes having rods secured thereto which project through the bottom of the tubes, cups sliding on the tubes, sliding rods for raising the cups, cams for operating the rods and a vertically-movable table for raising cams to coact with the valve-rods to open the valves and empty the cups, substantially as described

8. A brining-machine comprising a tank having filling-tubes secured to apertures in its bottom, valves at the top of the tubes having rods secured thereto which project through the bottom of the tubes, cups sliding on the tubes, sliding rods adjustably secured to the cups, cams for operating the rods, a vertically-movable table for raising cans to coact with the valve-rods to open the valves and empty the cups, and cams for raising the table, substantially as described.

9. A brining-machine comprising a tank having filling-tubes secured to apertures in its bottom, valves at the top of the tubes having rods secured thereto passing through the tubes, spiders secured to the lower ends of the rods and caps surrounding the lower ends of the tubes to effect a closure with the cans, substantially as described.

10. A brining-machine comprising a bed-plate, a brining-tank thereover, an impelling device for pushing a tray of cans under the brining-tank, and vertically-movable tables taking under opposite sides of the tray for raising the cans up to the bottom of the brining-tank to be filled, substantially as described.

11. A brining-machine comprising the combination of a bed-plate, a brining-tank above the plate, an impelling device for moving the trays along the table, a tilting table in the path of the trays, a shaft and a bell-crank for securing the table to the shaft, substantially as described.

12. A brining-machine comprising a combination of a bed-plate, an impelling device sliding in ways in the plate operating at one end of the table to move the cans along the table, a brining-tank above the table, a tilting table inset in the bed-plate beyond the brining-tank and within the path of the cans and a rotary brush beyond the tilting table, substantially as described.

13. A brining-machine comprising the combination of a bed-plate, a brining tank above the table, an impelling device sliding in ways in the bed-plate at one end of the table, a slotted cam and lever for moving the device positively in both directions, and a tilting table in the path of the cans at the other end of the horizontal table, substantially as described.

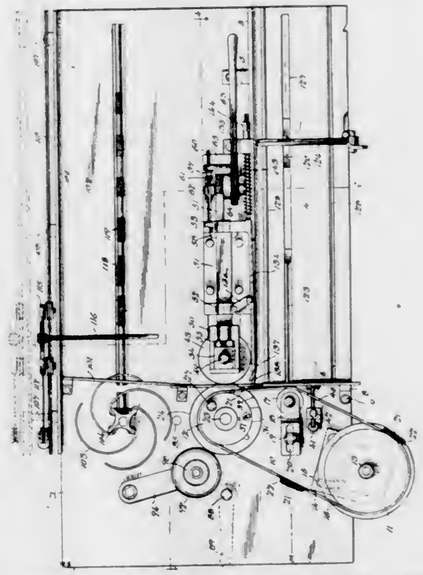
14. A brining-machine comprising the combination of a power-shaft and a cam-shaft geared thereto, a brining-tank above the table, a reciprocating impelling device, and a tilting table on opposite sides of the brining-tank, vertically-movable tables under the brining-tank and connections between these parts and cams on the cam-shaft to move them in proper order, substantially as described.

15. A brining-machine comprising a bed-plate, a brining-tank above the plate, a tilting table inset in the bed-plate beyond the brining tank and a cam and connections for operating the tilting table to remove the superfluous brine from the cans, substantially as described.

16. A brining-machine comprising a tank having filling-tubes secured to apertures in its bottom, cups sliding on the tubes, to empty their contents into the cans when raised and mechanism for raising the cups, substantially as described.

652,821. STAMP-CANCELING MACHINE.

EDWARD M. VAIL and GIDEON POTTER, Kewanee, Ill. Filed May 8, 1899. Serial No. 715,973. (No model.)



Claim.—1. In a mail-marking machine, the combination with a letter-way and means for advancing letters therein, and printing mechanism, of a transverse letter-guide arranged adjacent to an outlet-throat at the inner end of the letter-way and disposed laterally with

respect to the printing mechanism, letter-feeding devices for advancing letters successively through the throat, said transverse letter-guide being adjustable toward and from the plane of the letter-feeding devices and of the printing mechanism, and means for securing said letter-guide in its adjusted positions, substantially as specified.

2. In a mail-marking machine, the combination with a letter-way and means for advancing letters therein, and printing mechanism, of a transverse letter-guide arranged adjacent to an outlet-throat at the inner end of the letter-way, letter-feeding devices for advancing letters successively through the throat, said letter-guide being pivoted for movement toward and from the plane of the letter-feeding devices, and having a guide pin or pins, a guide or guides in which said pins operate, and fastening devices for securing the pin or pins in an adjusted position, substantially as specified.

3. In a mail-marking machine, the combination with a letter-way and means for advancing letters therein, and printing mechanism, of a transverse letter-guide arranged adjacent to a lateral outlet-throat at the inner end of the letter-way and disposed laterally with respect to the printing mechanism, an endless letter-feeding belt arranged in operative relation with said transverse letter-guide and provided with spurred elements for successively engaging the letters, and means for adjusting the letter-guide toward and from the plane of the active portions of the printing mechanism and the letter-feed belt, substantially as specified.

4. In a mail-marking machine, the combination with a letter-way and means for advancing letters therein, and printing mechanism, of a transverse letter-guide arranged adjacent to a lateral outlet-throat at the inner end of the letter-way and disposed laterally with respect to the printing mechanism, an endless letter-feeding belt or carrier arranged in operative relation with said transverse letter-guide and provided with spaced spurred plates for successively engaging the letters, and means for adjusting the letter-guide toward and from the plane of the active portions of the printing mechanism and the letter-feed belt, substantially as specified.

5. In a mail marking machine, the combination with a letter-way and means for advancing letters therein, and printing mechanism, of a transverse letter-guide arranged adjacent to a lateral outlet-throat at the inner end of the letter-way, an endless letter-feeding belt or carrier provided with spaced seats, spurred plates removably fitted in said seats, and means for operating the belt or carrier, substantially as specified.

6. In a mail-marking machine, the combination with a letter-way and means for advancing letters therein, and printing mechanism, of a transverse letter-guide arranged adjacent to a lateral outlet-throat at the inner end of said letter-way and disposed laterally with relation to the printing mechanism, an endless letter-feeding belt or carrier supported and actuated by vertically-arranged rollers for one lead of said carrier to face the transverse letter-guide, spurred elements secured at intervals to said belt or carrier for successively engaging with mail-matter to advance the same through said throat, a pressure-roller engaging with said belt or carrier between its supports and opposite to the letter-guide, and means for adjusting the pressure-roller relative to the belt or carrier and the letter-guide, whereby the position of the spurred elements on the belt or carrier may be changed relative to a given position of the letter-guide, substantially as described.

7. In a mail-marking machine, the combination with a letter-way and means for advancing letters therein, and printing mechanism, of a transverse letter-guide arranged adjacent to a lateral outlet-throat at the inner end of the letter-way, an endless letter-feeding belt or carrier provided at intervals with spurred elements for successively engaging elements to advance them through said throat, a pressure-roll arranged in contact with said belt or carrier at an intermediate point to hold the latter in operative relation with the transverse letter-guide, an adjustable supporting-bracket for said pressure-roll, means for securing said bracket in its adjusted positions, and means for operating the belt or carrier, substantially as specified.

8. In a mail-marking machine, the combination with a letter-way and means for advancing letters therein, and printing mechanism, of a transverse letter-guide arranged adjacent to a lateral outlet-throat at the inner end of the letter-way, an endless letter-feeding belt or carrier provided at intervals with spurred elements for successively engaging elements to advance them through said throat, a pressure-roll arranged in operative relation with the belt or carrier at an intermediate point to maintain it in operative relation with the transverse letter-guide, a slotted supporting-bracket for said pressure-roll, set-screws for securing said bracket at the desired adjustment, and means for operating the belt or carrier, substantially as specified.

9. In a mail-marking machine, the combination with a letter-way and means for advancing letters therein, and printing mechanism, of a transverse letter-guide arranged adjacent to a lateral outlet-throat at the inner end of the letter-way, an endless letter-feeding belt or carrier provided at intervals with spurred elements for successively engaging elements to advance them through said throat, a pressure-roll arranged in contact with the belt or carrier at an intermediate point for maintaining the same in operative relation with the transverse letter-guide, a pressure-roll-supporting device mounted for angular and linear adjustment to vary the point of contact of the pressure-roll with the belt or carrier, means for securing said support at the desired adjustment, and operating devices for the belt or carrier, substantially as specified.

10. In a mail-marking machine, the combination with a letter-way and means for advancing letters therein, and printing mechanism, of a transverse letter-guide arranged adjacent to a lateral outlet-throat at the inner end of the letter-way, an endless belt or carrier provided at intervals with spurred elements for successive engagement with letters to advance them through said throat, operating and idle belt-carriers traversed by said belt, means for actuating the operating belt-carrier, an adjustable bracket supporting the idle belt-carrier, and means for securing said bracket in its adjusted positions, substantially as specified.

11. In a mail-marking machine, the combination with a letter-way and means for advancing letters therein, and printing mechanism, of a transverse letter-guide arranged adjacent to a lateral outlet-throat at the inner end of the letter-way, an endless belt or carrier provided at intervals with spurred elements for successive engagement with letters to advance them through said throat, operating and idle belt-carriers traversed by said belt, means for actuating the operating belt-carrier, a pivotal bracket supporting the idle belt-carrier, and means for securing said bracket in its adjusted positions, substantially as specified.

12. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of a vertical printing-roller having coaxially-arranged printing and carrier drums engaging laterally one with the other, a letter-feeding belt or carrier traversing said carrier-drum and provided at intervals with spurred elements for successively engaging letters to advance them through said throat, said drums being capable of relative angular adjustment, means for laterally clamping said drums together and holding them in their adjusted relative positions, and operating mechanism for the printing-drum, substantially as specified.

13. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of a printing-roller having coaxially-arranged printing and carrier drums, a common shaft carrying said drums, said printing-drum being fast with the shaft and the carrier-drum being loose on the shaft and angularly adjustable with relation to the printing-drum, means for laterally clamping said drums together and holding the printing-drum in its adjusted position with relation to the other, operating devices for said shaft, and an endless feed belt or carrier traversing the carrier-drum and provided at intervals with spurred elements for successively engaging letters to advance them through said throat, substantially as specified.

14. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of a printing-drum, a shaft carrying the printing-drum, a peripherally-spurred carrier-drum fitted loosely upon the shaft of the printing-drum and provided with a segmental slot for angular adjustment with relation to the latter, a clamping-bolt through said slot for securing the carrier-drum in its adjusted positions with relation to the printing-drum, operating devices for the said shaft, and an endless letter-feeding belt or carrier traversing said carrier-drum and provided at intervals with spurred elements for successively engaging letters to advance them through said throat, substantially as specified.

15. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of a printing-drum, a shaft carrying the printing-drum, a segmentally-slotted carrier-drum mounted upon said shaft coaxially with the printing-drum, a cap-plate carried by said shaft, a locking-pin connecting said cap-plate and printing-drum and extending through the slot of the carrier-drum for securing the latter at the desired adjustment, means for operating said shaft, and an endless letter-feeding belt or carrier traversing said carrier-drum and provided at intervals with spurred elements for successively engaging elements to advance them through said throat, substantially as specified.

16. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of a printing-drum, a shaft carrying the printing-drum, a segmentally-slotted carrier-drum mounted upon said shaft coaxially with the printing-drum, a cap-plate threaded upon said shaft, a locking-pin engaging registering openings in said cap-plate and printing-drum, and extending through the segmental slot of the carrier-drum to secure the latter at the desired adjustment, means for operating said shaft, and an endless letter-feeding belt or carrier traversing said carrier-drum and provided at intervals with spurred elements for successively engaging elements to advance them through said throat, substantially as specified.

17. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of a letter-marking drum and means for operating the same, letter-feeding mechanism coöperating with said drum for advancing letters through the throat, a letter-engaging disk carried by the marking-drum, and a bed-roller in opposition to the printing-drum and carrying a letter-engaging disk arranged to coöperate with the similar disk of said printing-drum, said bed-roller being yieldably mounted for deflection laterally with respect to the face of the printing-drum, and for the axis of the bed-roller to assume an inclined position relative to the axis of the printing-roller, whereby the faces of the printing drum and the bed-roller may be separated while the letter-engaging disks remain in their operative relations, substantially as described.

18. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of a letter-marking drum and means for rotating the same, letter-feeding mechanism coöperating with said drum for advancing letters through the throat, a letter-engaging disk carried by the marking-drum, and a peripherally and axially variable bed-roller arranged in opposition to the printing-drum and carrying a letter-engaging disk for coöperation with the similar disk of said printing-drum, said bed-roller provided with a yieldable impression-surface in the plane of the marking characters on said printing-drum and the bed-roller being also yieldably mounted for deflection laterally to an inclined position relative to the printing-drum, whereby the bed-rollers may be inclined to the drum and the letter-engaging disks remain in operative relation one to the other, substantially as described.

19. In a mail-marking machine, a printing-drum provided with a peripheral seat or cavity, a type-holder having an open top and fitted in said seat or cavity, a cap-plate fitted removably on said type-holder, and a catch attached to the printing-drum and having interlocking connection with the cap-plate, said type-holder and the cap-plate each provided with means for securing interlocking connection between said elements individually with interposed type, substantially as described.

20. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, and letter-feeding mechanism for successively advancing letters through said throat, of printing mechanism having a printing-drum provided with a peripheral seat or cavity, a type-holder having an open side and the studs, a shouldered perforated cap-plate engaging with said studs on the type-holder, and a catch attached to the drum and engaging with the shoulder of the cap-plate, said type-holder and cap-plate having ribs for interlocking with type in the holder and also provided on their exposed edges with printing characters, substantially as described.

21. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of letter-feeding mechanism for successively advancing letters through said throat, and printing mechanism having the coaxially-arranged printing and carrier drums, said carrier-drum engaging with the letter-feed mechanism and provided with a latch-rod slot, and said printing-drum provided with a seat or cavity, a type-holder in said seat, displacing-springs for unseating the type-holder, a catch between the carrier-drum and the printing-drum for engaging and maintaining the type-holder in opposition to said displacing-springs, and a terminally-exposed latch-operating rod extending through the latch-slot in the latch-drum, substantially as described.

22. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of printing mechanism having a printing-drum and a coöperating revoluble letter-engaging disk, feeding mechanism for successively advancing letters through said throat to the printing mechanism, operating mechanism for the printing-drum, and a bed-roller having a letter-engaging disk for coöperation with the similar disk of the printing-drum, said bed-roller being also provided with an elastic cushion-core and a relatively-hard friction-surface, the latter being seated on the yieldable core and arranged in coöperative relation with the type-surface on the printing-drum, substantially as described.

23. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of printing mechanism having a printing-drum and a coöperating revoluble letter-engaging disk, feeding mechanism for successively advancing letters through said throat to the printing mechanism, operating mechanism for the printing-drum, and a bed-roller having a letter-engaging disk for coöperation with that which is actuated by the printing-drum, and also provided with a relatively-hard pressure-ring arranged in opposition to the type characters on the printing-drum and encircling the yieldable cushion-core which is concentric with the axis of the bed-roller, said bed-roller being yieldably mounted relative to the printing-drum to assume an inclined position thereto for spreading the surfaces of the drum and the roller without disalining the letter-engaging disks, substantially as specified.

24. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of printing mechanism having a printing-drum and a coöperating revoluble letter-engaging disk, feeding mechanism for successively advancing letters through said throat to the printing mechanism, operating mechanism for the printing-drum, and a bed-roller having a central spindle, a letter-engaging disk having a sleeve mounted upon said spindle, a cushioned bearing-ring fitted upon said sleeve in the plane of the printing-drum, and a cap threaded upon the sleeve to maintain said bearing-ring in operative position thereon, substantially as specified.

25. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of printing mechanism having a printing-drum and means for communicating rotary motion thereto, feed mechanism for successively advancing letters through said throat, and a bed-roller, provided in the plane of said printing-drum with a cushioned bearing-ring for contact with the opposite side of a letter from the printing-drum, and an idle spindle on which the bed-roller is mounted, said spindle being yieldably held at one end for the bed-roller to move laterally and assume an inclined relation to the face of the printing-drum, substantially as specified.

26. In a mail-marking machine, the combination with a letter-way provided with a lateral throat, a revolubie printing-drum, and feed mechanism for advancing letters through said throat, of a yoke yieldably mounted for reciprocating play toward and from said printing-drum, and a bed-roller mounted for tiltable movement in said reciprocatory yoke, said bed-roller movable with the yoke relatively to the printing-drum and capable of a tiltable movement independent of the reciprocatory yoke, substantially as described.

27. In a mail-marking machine, the combination with a printing-drum, and feed mechanism for advancing letters thereto, of a yoke movable with respect to the printing-drum, a bed-roller having an arbor fitted loosely at one end in said yoke, a spring-actuated bearing confined in the yoke and supporting the other end of the bed-roller arbor, and means for normally holding the yoke and the bed-roller in coöperative relation to the printing-drum, said bed-roller being movable bodily with the yoke toward or from the printing-drum and also capable of a tiltable movement laterally with respect to the printing-drum and independently of its travel with the yoke, substantially as described.

28. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of printing mechanism having a printing-drum and means for communicating rotary motion thereto, feed mechanism for successively advancing letters through said throat, an armed yoke, a bed-roller having a cushioned bearing-surface arranged in the plane of and in opposition to the printing-drum, and bearing-boxes in the arms of said yoke for the extremities of the spindle of the bed-roller, one of said bearing-boxes being mounted for outward yielding movement and provided with actuating or cushion springs, substantially as specified.

29. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of printing mechanism having a printing-drum and means for communicating rotary motion thereto, feed mechanism for successively advancing letters through said throat, a bed-roller having a cushioned bearing-surface arranged in the plane of and in opposition to the printing-drum, an idle tiltable spindle on which said roller is mounted, means for yieldably holding the idle spindle and the bed-roller normally in parallel relation to the printing-drum, and adjustable devices for changing the spindle and bed-roller to varying positions relative to the printing-drum, substantially as specified.

30. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of printing mechanism having a printing-drum and means for communicating rotary motion thereto, feed mechanism for successively advancing letters through said throat, a yielding plunger having a forked inner end, the arms of the fork being provided respectively with upper and lower spindle-bearings, of which the former is yieldingly mounted for movement toward and from the transverse plane of the axis of the printing-drum, and is spring-actuated to maintain it in its normal position, and a bed-roller having its spindle mounted in said bearings and provided with a cushioned bearing-surface arranged in the plane of the printing-drum, substantially as specified.

31. In a mail-marking machine, the combination with a letter-way provided at its inner end with a lateral throat for the passage of letters, of printing mechanism having a printing-drum and means for communicating rotary motion thereto, feed mechanism for successively advancing letters through said throat, a yielding spring-actuated plunger mounted for longitudinal movement toward and from the transverse plane of the axis of the printing-drum, a bed-roller

mounted in said plunger for coöperation with the printing-drum, an adjustable stop mounted upon the plunger for coöperation with a fixed stop in the path thereof, a shifting lever arranged in operative relation with a shoulder on the plunger, and having a latch-arm, and a yielding catch for engagement with said latch-arm to maintain the shifting lever in its normal position, substantially as specified.

32. In a mail-marking machine, the combination with a drive-shaft, a letter-way having a transverse outlet-throat at its inner end, and feeding and printing mechanisms operatively connected with said drive-shaft, of a driving-clutch having one of its members feathered upon said drive-shaft, a bed-roller arranged in operative relation with the printing mechanism and carried by a reciprocatory plunger, a shifting lever arranged in operative relation with a shoulder on the plunger, a latch-arm carried by the shifting lever, a catch yieldingly held in the path of said latch-arm, a shifting rocker operatively connected with one member of said clutch, and having connection with said shifting lever, and means for actuating the catch to disengage the latch-arm, substantially as specified.

33. In a mail-marking machine, the combination with a letter-way having a lateral feed-throat, and letter-feed devices for advancing letters through said way and through the feed-throat, of a printing mechanism having a movable letter-pressure element coöperating therewith, means for driving the printing mechanism and the letter-feed devices, a shifting lever in operative relation to the letter-pressure element of the printing mechanism, and trip devices in the path of the letter-feed device in said letter-way and operable to automatically arrest the driving mechanism and to act through the shifting lever in repressing the letter-pressure element from operative relation to the printing mechanism, as set forth.

34. In a mail-marking machine, the combination with a letter-way, a letter-advancing carriage movable parallel with said letter-way, and printing and feed mechanism, of a variable feeding device for said carriage consisting of a weight-cord, a plurality of weight members each successively increasing in width and loosely threaded on said weight-cord, and a vertical fixed weight-guide frame having its side bars gradually widened from the bottom toward the top and forming a series of seats which are spaced at variable distances apart in different horizontal planes, said weight members slidably engaging the weight-guide frame and adapted to be successively applied to the weight-cord as the carriage recedes from one end of the letter-way and to be successively relieved from the weight-cord as the carriage approaches the other end of said letter-way, substantially as described.

35. In a mail-marking machine, the combination with a letter-way, a letter-advancing carriage movable parallel therewith, and printing and feeding mechanism, of a variable feeding device for the carriage consisting of a weight-cord, a series of main and auxiliary weight members, and a tapered and shouldered weight-guide frame provided with stops for respectively limiting the movement of the weight members as the carriage approaches the end of the letter-way, said weight members successively increasing in width and engaging slidably with the shouldered side bars of the weight-guide frame, substantially as described.

36. In a mail-marking machine, the combination of feeding and receiving letter-ways having front and rear guides respectively parallel with said ways, the rear guide being provided with transverse pins under the bed of the machine and mounted for transverse adjustment, means for securing said rear guide in its adjusted positions a letter-advancing follower for traversing the feed letter-way, means for actuating said follower, printing and feeding mechanisms arranged at the inner end of the feed letter-way, and a second follower arranged for operation in the receiving letter-way and having a carriage mounted upon tracks carried by said rear guide, substantially as specified.

37. In a mail-marking machine, the combination of feeding and receiving letter-ways having front and rear guides respectively parallel with said ways, the rear guide being mounted for transverse adjustment, a transverse pin extending forward from the rear guide, a rotary gravity-latch mounted upon said pin and adapted for coöperation with a stop on the machine to limit the rearward adjustment of said guide, followers for respectively traversing said letter-ways, and printing and letter-feeding mechanisms arranged adjacent to the inner end of the feed letter-way, substantially as specified.

38. In a mail-marking machine, the combination with a letter-way, a transverse letter-guide at the inner end of said letter-way, and printing and feed mechanisms adjacent to said letter-guide, of a separating or restraining shoe arranged in coöperative relation to the transverse letter-guide, said shoe movable toward or from the letter-guide and also movable laterally in a path rearwardly from said letter-guide, a sliding and swinging carrier for said shoe, means for impelling said shoe-carrier toward the letter-guide and normally holding the shoe in operative relation thereto, and means for limiting the shoe-carrier, on the repression of the shoe, to lateral movement away from the letter-guide, substantially as described.

39. In a mail-marking machine, the combination with a letter-way provided at its inner end with a transverse letter-guide, means for advancing letters in the letter-way, and printing and feed mechanisms arranged adjacent to the inner end of the letter-way, of a letter-separating or restraining device having a shouldered shoe arranged adjacent to said transverse letter-guide, and provided with a stem or shank mounted for longitudinal and swinging movements, whereby said shoe is adapted for outward and rearward deflection, substantially as specified.

40. In a mail-marking machine, the combination with a letter-way provided at its inner end with a transverse letter-guide, means for advancing letters in the letter-way, and printing and feed mechanisms arranged adjacent to the inner end of the letter-way, of a letter separating or restraining device having a terminally-deflected shoe and provided with a shank or stem fitted near its outer end for longitudinal movement in a fixed guide, a swinging link connected with said stem or shank at an intermediate point, and a spring for yieldingly holding said shank or stem in its normal position, substantially as specified.

41. In a mail-marking machine, the combination with a letter-way provided at its inner end with a transverse letter-guide, means for advancing letters in the letter-way, and printing and feed mechanisms arranged adjacent to the inner end of the letter-way, of a letter separating or restraining device having a terminally-deflected shoe and provided with a shank or stem fitted near its outer end for longitudinal movement in a fixed guide, a swinging link connected with said stem or shank at an intermediate point, a spring for yieldingly holding the shank or stem in its normal position, and an adjustable stop for limiting the inward advance movement of the shank or stem, substantially as specified.

42. In a mail-marking machine, the combination of a letter-way provided at its inner end with a transverse outlet-throat, a transverse letter-guide forming one side of said throat and having an upper strip cut away adjacent to the throat, means for advancing letters in the letter-way, printing and feed mechanisms arranged adjacent to the inner end of the letter-way, and a letter separating or restraining device having a yielding shoe of which the body portion is arranged for coöperation with said upper strip, and which is provided with a projecting portion to extend into the cut-away portion of said strip to cause longitudinal bowing of an interposed letter, substantially as specified.

43. In a mail-marking machine, the combination with a letter-way having a parallel longitudinal letter-guide and a transverse letter-guide at the inner end of the letter-way, means for advancing letters in the letter-way, feeding and printing mechanisms, and postal-card attachments having members for engagement respectively with said longitudinal and transverse letter-guides for reducing the width of the throat therebetween, substantially as specified.

44. In a mail-marking machine provided with a letter-way, and printing mechanism adjacent to the outlet thereof, the combination of a letter-guide projecting across the outlet of the letter-way and arranged laterally with respect to the printing mechanism, a feeding device coöperating with said letter-guide for conveying letters along the guide from the letter-way to the printing mechanism, and means for adjusting the letter-guide laterally with respect to the feeding device, substantially as described.

45. In a mail-marking machine provided with a letter-way, and printing mechanism adjacent to the outlet thereof, the combination of an adjustable letter-guide projecting across the outlet of the letter-way and arranged laterally with respect to the printing mechanism, and an endless feeding device arranged in coöperative relation to the letter-guide for conveying the letters along said guide from the letter-way to the printing mechanism, substantially as described.

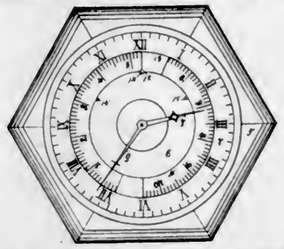
46. In a mail-marking machine provided with a letter-way, and printing mechanism adjacent to the outlet thereof, the combination of a letter-guide projecting across the outlet of the letter-way and arranged laterally with respect to the printing mechanism, and an endless feeding device coöperating with the letter-guide and diverging laterally therefrom toward both ends, substantially as described.

47. In a mail-marking machine provided with a letter-way, and printing mechanism adjacent the outlet thereof, the combination of a letter-guide projecting across the outlet of the letter-way and arranged laterally with respect to the printing mechanism, an endless letter-feeding device in coöperative relation to the letter-guide, and means for adjusting said letter-guide and the endless feeding device laterally and independently of each other, substantially as described.

48. In a mail-marking machine provided with a letter-way and printing mechanism adjacent to the outlet thereof, the combination with a letter-guide in front of said outlet, of an endless feeding device and means for adjusting the initial contact-point of the feeding device toward and from said outlet, and laterally across the same.

49. In a mail-marking machine provided with a letter-way and printing mechanism adjacent to the outlet thereof, the combination with two drums, an endless belt thereon, a pressure-roller intermediate said drums, and means for adjusting the position of said roller laterally and longitudinally relatively to the letter-way.

652,822. WORKMAN'S TIME-INDICATOR. LOUIS E. VOORHEIS, Cincinnati, Ohio. Filed Jan. 28, 1899. Serial No. 703,715. (No model.)

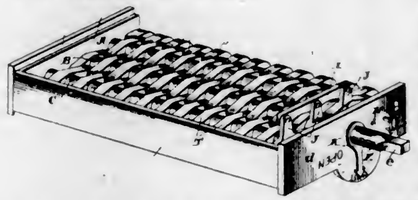


Claim.—1. In a clock, the combination with the face and the hour-dial of contiguous sectors of a similar dial attached to the face and concentric with the hour-dial, said sectors being adjustable more or less apart to form a gap between their adjacent ends, whereby the time occupied in the movement of the hour-hand across the gap will not be indicated by the numbers on the succeeding sector, for the purpose specified.

2. In a clock, the combination with the face having a dial, of a plurality of independent graduated dial-sectors secured to the face, and adjustable relative to each other and to the dial, substantially as set forth.

3. In a clock, the combination with the dial-face, of a plurality of independent dial-sectors, and means detachably secured to the clock-face for loosely holding such sectors in position contiguous to the dial, whereby the sectors may be adjusted relative to such dial and to each other, substantially as set forth.

652,823. GRATE. JOSEPH P. WEBER, St. Paul, Minn. Filed Dec. 10, 1897. Serial No. 661,363. (No model.)



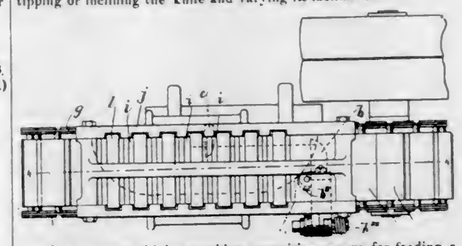
Claim.—1. In a grate, the combination with a frame, a series of grate-bars having their cylindric bodies journaled therein, and means for holding said bodies in adjusted position; of a series of single teeth within the frame and a series of double teeth on said grate-bar bodies, all intermeshing with each other, each tooth having its side faces flat and parallel and its upper and lower edges converging outwardly from said bodies and its rounded outer ends fitting closely into the space between the similar members next adjacent, all as and for the purpose set forth.

2. In a grate, the combination with the frame, a series of grate-bars having their cylindric bodies journaled therein, means for causing said bodies to oscillate in unison, and a locking device for removably holding the bars against such oscillation and in various adjusted positions; of a series of double teeth on said grate-bar bodies, all intermeshing with each other, each tooth having its side faces flat and parallel and its upper and lower edges converging outwardly from said bodies and its rounded outer ends fitting closely into the space between the similar members next adjacent, all as and for the purpose set forth.

652,824. COUNTER-SKIVING MACHINE. HAROLD A. WEBSTER, Haverhill, Mass., assignor of one-half to Herbert B. Newton, same place. Filed Feb. 23, 1900. Serial No. 6,191. (No model.)

Claim.—1. A counter-skiving machine comprising a tipping skiving-knife, means for feeding a counter against said knife, and means controlled by the curved edge of the counter, for varying the position of the knife.

2. A counter-skiving machine comprising means for feeding a counter lengthwise, a tipping skiving-knife yieldingly held with its cutting edge approximately parallel with the plane of the counter and means controlled by the curved edge portions of the counter, for tipping or inclining the knife and varying its inclination.



3. A counter-skiving machine comprising means for feeding a counter, a skiving-knife, an oscillatory yielding arm which normally holds the knife in the path of the counter, with its cutting edge approximately parallel with the plane of the counter, and a gage on said arm arranged to coöperate with the curved edge of the counter in tipping or inclining the knife.

4. A counter-skiving machine comprising means for feeding a counter, a skiving-knife, an oscillatory arm for supporting the knife and pivoted to an oscillatory support, springs acting on the arm and support to normally hold the knife with its cutting edge approximately parallel with the plane of the counter, and a gage on said arm adapted to coöperate with the curved edge of the counter in alternately displacing the knife from its normal position and permitting it to return thereto.

5. A counter-skiving machine comprising a fixed knife arranged to skive the straight edge of a counter, a tipping knife arranged to skive the curved edge of the counter, means for feeding a counter against said knives, and means controlled by the curved edge of the counter for varying the position of the tipping knife.

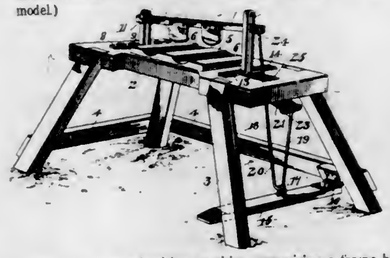
6. A counter-skiving machine comprising counter holding and feeding mechanism, including a progressively-moving rigid or unyielding counter-supporting bed and a series of holding-down rolls coöperating with the bed, and a skiving-knife inclined relatively to the bed and arranged to skive one edge of the blank.

7. A counter-skiving machine comprising counter holding and feeding mechanism, including a progressively-moving counter-supporting bed and a series of holding-down rolls coöperating with the bed, a skiving-knife located in the path in which the counter is moved by said bed and rolls, said knife having a tipping movement, and means controlled by the curved edge of the counter for varying the position of the tipping knife.

8. A counter-skiving machine comprising counter holding and feeding mechanism including a progressively-moving counter-supporting bed and a series of holding-down rolls coöperating with the bed, skiving-knives located in the path of the counter, one of said knives being fixed and arranged to act on the straight edge of the counter, while the other is adapted to tip and is arranged to act on the curved edge of the counter, and means controlled by the said curved edge for varying the position of the tipping knife.

9. A counter-skiving machine comprising an endless counter-supporting bed composed of sections connected to form an endless chain, wheels for supporting and propelling said bed, a fixed support for one of the stretchers of the bed, a series of pressure-rolls located over the supported portion or stretch of the bed and arranged to coöperate with the bed, and inclined skiving-knives arranged to skive the edges of the counter while it is being fed by the bed and rolls.

652,825. CORN-HUSKING MACHINE. ANTON WERNER, Jr., New Braunfels, Tex. Filed Mar. 22, 1899. Serial No. 710,128. (No model.)



Claim.—1. A corn-husking machine comprising a frame having a table, a treadle-lever hung on the frame below the table, a spring arranged beneath the table, a vibratory cutter-bar provided with a

cutter, and a stiff looped rod loosely connected at its looped end to the treadle-lever, and having its other ends attached pivotally to the spring and cutter-bar respectively, substantially as described.

2. A corn-husking machine comprising a suitable framework having a slotted table, a bed-plate provided with the transverse parallel seats, the standards secured to the table at opposite ends of the bed-plate, a treadle-lever hung on the framework below the table, a leaf-spring attached to the table on the under side thereof, a cutter-bar fulcrumed in one standard, guided in the other standard and provided with knives or cutters arranged to be presented to the seats of the bed-plate, and a stiff looped rod loosely connected at its doubled end to the treadle-lever and having its ends attached pivntally to the spring and the cutter-bar, respectively, substantially as described.

3. In a corn-husking machine, the combination with a table, of a vibratory cutter-bar carrying a cutter, a spring attached to the table, a treadle, and a bent connecting-rod connected at the bend with the treadle and having its ends connected pivotally to the spring and cutter-bar respectively, substantially as described.

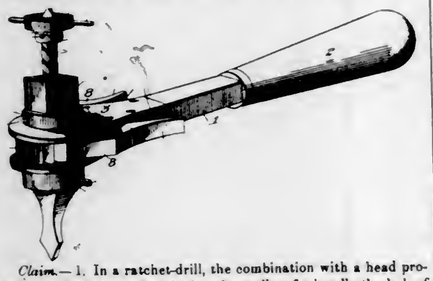
652,826. OZONIZED-SOAP PREPARATION. THEODOR WEYL, Charlottenburg, Germany. Filed May 22, 1899. Serial No. 717,818. (No specimens.)

Claim.—1. A toilet article consisting of a preparation of soap impregnated with ozone.

2. A toilet article consisting of a liquid preparation of soap impregnated with ozone.

3. A toilet article consisting of a soap solution impregnated with ozone.

652,827. RATCHET-DRILL. DANIEL S. WILLIAMS, Salida, Colo., assignor of two-thirds to Fred R. Waters and G. W. Bennett, same place. Filed Dec. 30, 1899. Serial No. 742,126. (No model.)

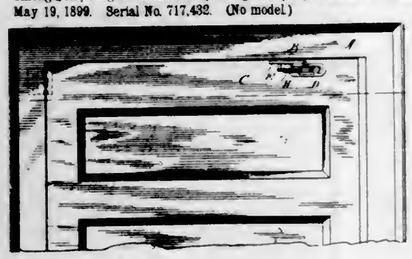


Claim.—1. In a ratchet-drill, the combination with a head provided with drill-channels in its interior walls, of a handle the hub of which surrounds the head, and pawls attached to the handle, whereby the device may be employed as a holder for rock-drills.

2. In a metal-drill, the combination with a head provided with an opening of the same cross-sectional contour throughout, whereby said head may be employed as a rock-drill holder, of a drill-bit and screw-block having shanks fitted in the opposite ends of the head, and a feed-screw passing axially through the screw-block and telescoping with the shank of the bit.

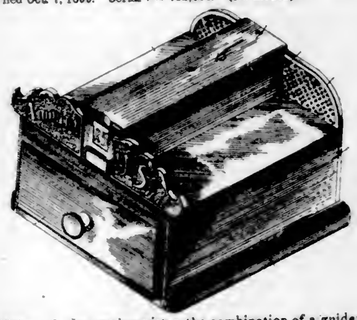
3. In a metal-drill, the combination with a head provided with an opening of the same cross-sectional contour throughout and having bit-channels, whereby said head may be employed as a rock-drill holder, of a drill-bit and screw-block having shanks fitted in the opposite ends of the head, and a feed-screw passing axially through the screw-block and telescoping with the shank of the bit.

652,828. DOOR CHECK AND CLOSER. HERBERT L. BAILEY, Chicago, Ill., assignor to the Handy Things Company, same place. Filed May 19, 1899. Serial No. 717,432. (No model.)



Claim.—In a door check and closer, the combination with a bracket secured to the door near the upper edge thereof and a pin or projection depending from the top of the door-frame, of a bifurcated jaw pivoted to the bracket and adapted and arranged to engage said pin, a spring secured at its ends, respectively, to said jaw and bracket so as to swing across the dead-center when the jaw is swung upon its pivot and a stop for said jaw, substantially as described.

652,829. CASH-REGISTER. THOMAS H. BLAIR, Northborough, Mass., assignor to the Whiting Manufacturing Company, same place. Filed Oct. 7, 1899. Serial No. 732,886. (No model.)



Claim.—1. In a cash-register, the combination of a guideway for receiving the checks inserted into the machine by hand, and a check-receiver in which the checks are successively stacked to economize in space and form a record of the sequence in which the transactions represented by the checks have taken place, substantially as described.

2. In a cash-register, the combination of a money-drawer, a guideway for checks inserted into the machine by hand, connections for releasing the money-drawer by the insertion of a check into the guideway, and a check-receiver in which the checks are successively stacked to economize in space and form a record of the sequence in which the transactions represented by the checks have taken place, substantially as described.

3. In a cash-register, the combination of a guideway for receiving checks inserted into the machine by hand, and a check-receiver in which the checks are successively stacked to economize in space and form a record of the sequence in which the transactions represented by the checks have taken place, said check-receiver being detachably secured in the frame of the machine so that it can be removed therefrom when desired, substantially as described.

4. In a cash-register, the combination of a guideway at the front of the machine for receiving the checks inserted therein by hand, a check-receiver at the rear of the guideway arranged to expose the check last used until a succeeding check is inserted into the machine, a cash-drawer arranged below the check-receiver, and connections for releasing the cash-drawer, substantially as described.

5. In a cash-register, the combination of a guideway at the front of the machine for receiving the checks inserted therein by hand, a check-receiver at the rear of the guideway arranged to expose the check last used until covered by a succeeding check, and means for forcing the successive checks back into the check-receiver to stack the successive checks therein, substantially as described.

6. In a cash-register, the combination of a guideway formed by grooves for receiving the side projections of a check, a spring latch or pawl for engaging above the side projections of the check to prevent the check from being removed after having once been inserted into the guideway, and a check-receiver in which checks are successively stacked to economize in space and form a record of the sequence in which the transactions represented by the checks have taken place, substantially as described.

7. In a cash-register, the combination of a guideway formed by grooves for receiving the wings or side projections of a check, and a depressible lever arranged to first be depressed by the insertion of a check into the guideway, and to then move the check back out of the guideway when its side projections pass below the bottoms of the grooves, substantially as described.

8. In a cash-register, the combination of a guideway formed by grooves for receiving the side projections of a check, a check-receiver, and a lever arranged to first be depressed by the insertion of a check into the guideway, and to then move the check back into the check-receiver when the side projections of the check pass down out of the grooves, substantially as described.

9. In a cash-register, the combination of a guideway formed by grooves for receiving the side projections of a check, a check-receiver at the rear of said guideway, said check-receiver being detachably secured in place so that the same may be removed from the machine, and a lever arranged to first be operated by the insertion of a check into the guideway, and to then move the check back into its check-receiver when the side projections of the check pass below the bottoms of the grooves, substantially as described.

10. As an article of manufacture, a check of a substantially inverted-T shape for use in connection with cash-registers having side projections or wings at its bottom for holding it in position during its passage through the guideway of the cash-register, but permitting it to be moved back when its projections pass out of the bottom of the grooves forming the guideway, substantially as described.

11. As an article of manufacture, a check of a substantially inverted-T shape for use in cash-registers comprising a body portion having side wings or projections at one end for holding it in position during its passage through the guideway of the cash-register, but permitting it to be moved back when its projections pass out of the bottoms of the grooves forming the guideway, and having turned-over edges forming grooves for retaining cards or slips, substantially as described.

12. In a cash-register, the combination of guideways formed by grooves for receiving the side projections of a check, a cash-drawer normally held in its locked or closed position, and a lever arranged to be engaged by a check as the same is inserted in the guideway to first release the cash-drawer and to then force the check back from said guideway when its side projections pass down out of the grooves forming the guideway, substantially as described.

13. In a cash-register, the combination of a guideway at the front of the machine formed by grooves for receiving the side projections of a check, a check-receiver at the rear of said guideway, a cash-drawer arranged below these parts and normally held in its locked or closed position, and a lever arranged to first be operated by the insertion of a check into the guideway to release the cash-drawer, and to then force the check back into the check-receiver when the side projections of the check pass down below the grooves forming the guideway, substantially as described.

14. In a cash-register, the combination of a guideway at the front of the machine formed by grooves for receiving the side projections of a check, a check-receiver detachably secured in place behind the guideway, a cash-drawer arranged below these parts and normally held in its locked or closed position, a lever, and a bell arranged to be sounded when the cash-drawer opens, said parts being arranged so that when a check is inserted in the guideway, the lever will first be depressed to release the cash-drawer, and will then act to force the check back out of the guideway into the check-receiver when the side projections of the check pass down out of their grooves, substantially as described.

15. In a cash-register, the combination of a plurality of guideways for receiving and exhibiting the checks inserted therein, and a check-receiver in which the checks inserted in each guideway are successively stacked for economy in space and to form records of the sequence in which the transactions represented by the checks have taken place, substantially as described.

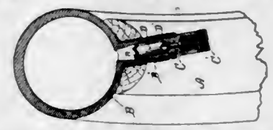
16. In a cash-register, the combination of a cash-drawer, an operating-lever having one end thereof forming a detent for holding the cash-drawer in its closed or locked position, and having its opposite end arranged to be engaged and directly actuated by a check when the same is inserted into the machine, substantially as described.

17. In a cash-register, the combination of a guideway at the front of the machine for receiving and exhibiting checks inserted therein, a pivoted lever extending to the rear of the guideway, the rear end of said lever forming a detent for holding the cash-drawer in its locked or closed position, and the front end of the lever being arranged to be engaged and directly actuated by a check when the same is inserted into the machine, substantially as described.

18. In a cash-register, the combination of a guideway at the front of the machine formed by grooves for receiving the side projections of a check, a check-receiver secured in place behind the guideway, a cash-drawer arranged below these parts, and a pivoted lever having its rear end forming a detent for holding the cash-drawer in its locked or closed position, and having a cam or inclined portion at its front end arranged in position to be engaged and operated by the insertion of a check into the guideway to first release the cash-drawer, and to then rise and force the check back into the check-receiver when the side projections of the check pass down below the grooves forming the guideway, substantially as described.

652,830. VALVE FOR INFLATION. CHARLES E. BOWN, Battle Creek, Mich., assignor to the Bown Machine Works, same place. Filed Oct. 24, 1899. Serial No. 734,689. (No model.)

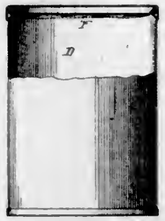
Claim.—1. In a valve for pneumatic tires, the combination of a tube made of a single piece having a restricted passage at its central portion; an enlarged passage toward each end, internally screw-threaded at its outer portion and crimped at its inner end; a rubber ball D′ within the chamber at the inner end and a screw-cap C′ to fit within the outer end, all coacting for the purpose specified.



2. In a valve for pneumatic tires, the combination of a tube made of a single piece having a restricted passage at its central portion and an enlarged passage toward each end, the inner end of the restricted passage being expanded into a valve-seat and the inner end of said tube being crimped or indented inwardly; a rubber ball arranged within the chamber at the inner end and a cap for the outer end, for the purpose specified.

3. In a valve the combination of a tube made of a single piece having a passage therethrough which is enlarged at the inner end; the inner end of said tube being crimped; a rubber ball arranged within the chamber at the inner end and a suitable cap for the outer end of the tube as specified.

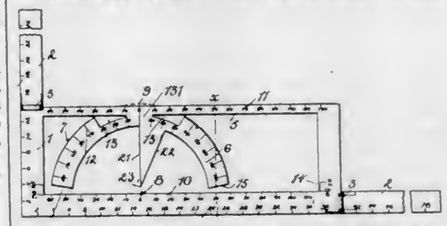
652,831. SHIPPING PACKAGE OR CAN. HARRY K. BUCK, Philadelphia, Pa. Filed Mar. 21, 1899. Serial No. 709,911. (No model.)



Claim.—1. A package or can having a perforated lid, combined with a friable layer directly attached to the outside surface of the lid so as to cover the perforations therein, and a body of material such as wax or resin or mixtures of these unacted upon by caustic lye directly attached to the inner surface of the perforated lid in a thick layer so as to completely bridge over and fill the perforations and be attached directly to the under surface of the friable layer where exposed through the perforations of the lid to form a direct shield and support for the said friable layer whereby it is protected against the action of the lye and liability of accidental rupture but permits rupture when the contents are to be removed.

2. A package or can having a perforated lid, combined with a friable layer directly attached to the outside surface of the lid so as to cover the perforations therein, and a body of materials such as wax or resin or mixtures of these unacted upon by caustic lye directly attached to the inner surface of the perforated lid in a thick layer so as to completely bridge over the perforations and form a direct shield and support for the friable layer whereby it is protected against the action of the lye and liability of accidental rupture but permits rupture when the contents are to be removed.

652,832. DRAFTSMAN'S INSTRUMENT. LUTHER M. CARMICAL, Jonesville, Va. Filed Nov. 11, 1899. Serial No. 736,640. (No model.)



Claim.—1. A draftsman's instrument consisting of a frame, a protractor carried therein, an extension-arm hinged to one corner of the frame on a line parallel with its plane and adapted to extend from one side thereof, and graduation-marks on all parts, substantially as described.

2. A draftsman's instrument consisting of a frame whose top and

bottom bars are parallel and inscribed with computing-scales both commencing at zero and extending outward in both directions, all of the graduations being opposite each other; and a protractor held rigidly between said bars with the center of its arc at one of said zero-marks, the computing edge of the upper bar forming a small chord of said arc which is thus broken at either side of its center, for use substantially as described.

3. A draftsman's instrument consisting of a frame whose top and bottom bars are parallel and inscribed with computing-scales both commencing at zero and extending outward in both directions, all of the graduations being opposite each other; and a protractor held rigidly between said bars with the center of its arc at one of said zero-marks, the body of the protractor being integrally connected with the upper bar by a web and being cut out at either side of the same, as and for the purpose set forth.

4. A draftsman's instrument consisting of a frame whose top and bottom bars are parallel and inscribed with computing-scales both commencing at zero and extending outward in both directions, all of the graduations being opposite each other; and a protractor held rigidly between said bars with the center of its arc at one of said zero-marks, the computing edge of the upper bar forming a small chord of said arc which is thus broken at either side of its center, and the body of the protractor being united to said bar by a narrow web which is cut out at either side for the insertion of a pencil-point, substantially as described.

5. A draftsman's instrument consisting of a frame having parallel bars with correspondingly-disposed computing-scales each running from zero both ways, and a protractor within said frame with the center of its arc opposite the zero on one bar and its body connected at its mid-length with the other bar, its ends being cut away, as and for the purpose set forth.

6. A draftsman's instrument consisting of a frame having parallel bars with correspondingly-disposed computing-scales each running from zero both ways, and a protractor within said frame with the center of its arc opposite the zero on one bar and its body connected at its mid-length with the other bar, its ends being cut away, and transparent graduated extensions filling the cut-away portions and uniting the ends of the protactor-body to the lower bar of the frame, as and for the purpose set forth.

7. A draftsman's instrument comprising a frame having two parallel bars with scales thereon, a protractor whose body is united at the center of its length to one bar and inscribed with graduations, and a point extending from said body inward toward the other bar with one straight edge at right angles to the length of the two bars, as and for the purpose set forth.

8. A draftsman's instrument comprising a frame having two parallel bars with scales thereon, a protractor whose body is united at the center of its length to one bar and inscribed with graduations, and a point extending from said body inward toward the other bar with one straight edge at right angles to the length of the two bars, all said parts being integral and with the extremities of the protractor-body and the tip of the point slightly remote from the lower bar, as and for the purpose set forth.

9. A draftsman's instrument comprising a frame having scales marked thereon, ears rising from the frame, and bearings supported by the ears; combined with a shaft removably mounted in said bearings, rollers on the shaft standing beyond the end bars of the frame, and means for permitting a limited vertical movement of the shaft with respect to the frame whereby in one position the rollers are raised above the paper and in the other position of said shaft the frame is raised above the paper and the rollers rest thereon, as set forth.

10. A draftsman's instrument comprising a frame having scales marked thereon, ears rising from the frame, and bearings supported by the ears; combined with a shaft mounted in said bearings and carrying rollers, and spring-catches supported by the ears and adapted to retain the shaft and rollers in an elevated or depressed position with respect to the frame, as and for the purpose set forth.

11. A draftsman's instrument comprising a rectangular frame with scales marked thereon, ears rising from the end bars of the frame, and spring-catches on the ears; combined with plates moving in guides on said ears and engaged by said catches, springs normally supporting said plates, and rollers having their axes journaled in the plates, substantially as described.

12. A draftsman's instrument comprising a rectangular frame with scales marked thereon, ears rising from the end bars of the frame and vertically slotted, and spring-catches in the slots; combined with plates having stub-shafts moving in the slots of the ears and engaged by said catches, bearings on the plates, and rollers having their axes journaled in said bearings, substantially as described.

13. A draftsman's instrument comprising a rectangular frame with scales marked thereon, ears rising from the end bars of the frame and vertically slotted, and spring-catches in the slots; combined with plates moving in guides on the ears, stub-shafts on the plates moving in said slots and engaged by the catches, bearings in the upper ends of the plates, a shaft extending across the instrument and journaled in said bearings, and rollers on the extremities of the shaft, substantially as described.

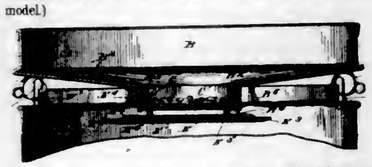
652,833. ALLOY AND PROCESS OF MAKING SAME. ROLLA C. CARPENTER, Ithaca, N. Y. Filed Mar. 30, 1900. Serial No. 10,780. (No specimens.)

Claim.—1. An alloy of aluminium, zinc and tin in which the quantity of aluminium is in excess of that of either the zinc or the tin.

2. An alloy of aluminium, zinc and tin combined in the proportion of fifty parts aluminium to twenty-five parts tin and twenty-five parts zinc.

3. The herein-described process of compounding an alloy of aluminum, tin and zinc, which consists in first fusing the aluminium, then adding thereto tin in quantity less than that of the aluminium, and lowering the temperature of the molten mass, and then adding zinc in quantity less than that of the aluminium.

652,834. COVER FOR CREAM-SEPARATORS. SHELDON H. CASWELL, Newark, N. Y. Filed Mar. 16, 1900. Serial No. 8,933. (No model.)



Claim.—1. A cover for creaming-cans formed with an aperture provided with a screen, a horizontally-disposed aerating-plate having a perforated central portion separated from its periphery by an annular convex flange, and means for supporting said plate beneath said screen to receive and aerate liquid passing through said screen; substantially as specified.

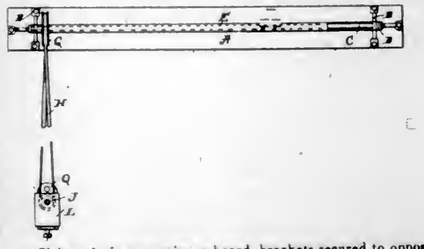
2. An aerating-plate for a creaming apparatus comprising a substantially-flat plate having a perforated central portion surrounded by an annular convex bead, and a peripheral discharge portion beyond this bead, a band for supporting said plate, and hangers extending from said band to said plate; substantially as specified.

3. A cover for cream-separators provided with a discharging-neck having a screening-surface, a band surrounding said neck, and an aerating-plate supported from said band and provided with a perforated central portion separated from its periphery by an annular convex flange; substantially as specified.

4. A cover for cream-separators provided with a discharging-neck having a screening-surface, a band surrounding said neck, and an aerating-plate supported from said band and provided with a perforated central portion separated from its periphery by an annular convex flange, a holder for said cover having a supporting-frame surrounding the central discharge-neck of the cover and provided at its ends with posts extending downward to engage the side of the can and upward to engage the inclined wall of the cover; substantially as specified.

5. A holder for a cover or strainer consisting of cross-arms, a frame connecting the same, and posts or standards at the ends of said frame extending above and below the arms at substantially a right angle thereto; substantially as specified.

652,835. AWNING. ALFRED L. CLARK, Dubuque, Iowa. Filed Oct. 19, 1899. Serial No. 734,142. (No model.)



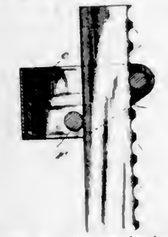
Claim.—1. In an awning, a board, brackets secured to opposite ends of the board, and a rod which has its ends passed through the brackets, combined with nuts which are applied to the ends of the

rod for stretching it, a sleeve which is placed upon the rod in between the brackets, and a wheel secured to the sleeve for causing it to revolve independently of the rod, substantially as shown.

2. In an awning, the supporting-plate Q attached directly to the wall of the building, and which has its lower perforated end S turned outwardly, the box L provided with inwardly-turned points or projections R for catching behind the plate, and which box is vertically adjustable upon the plate, and is provided with a perforation through its outer side, combined with a vertically-adjustable supporting-plate N, which is provided with an outwardly-turned projection at its lower end, and a horizontal bearing at its upper one, the adjusting-screw T which is passed through the lower outwardly-turned ends of both of the plates, and by means of which the box and the parts connected therewith are adjusted vertically, and a sprocket-wheel having a socket formed in its inner end and a projection formed upon its outer one, the projection being made to pass through the opening in the outer side of the box, and the projection upon the upper end of the sliding plate being made to catch in the socket formed in the wheel, whereby the wheel is made to connect both the box and the sliding plate so that they move together, substantially as set forth.

3. In an awning, the plate secured directly to the side of the building, the vertically-sliding plate in direct contact therewith, and which plate is provided with a projection or bearing at its upper end, and a vertically-sliding box which is connected to and slides upon the plate secured to the wall, combined with a wheel having a socket in its inner end to receive the projection upon the upper end of the sliding plate, and having a projection upon its outer side which extends through an opening in the box, whereby the wheel is made to connect the sliding plate and the box in such a manner as to cause them to move together, and a screw for adjusting the plate, box and wheel vertically, substantially as specified.

652,836. LIFTING-JACK. JAMES C. COVERT, Watervliet, N. Y., assignor to the Covert Manufacturing Company, same place. Filed Dec. 19, 1899. Serial No. 740,848. (No model.)



Claim.—In a lifting-jack, the combination with a lifting-bar having notches in its rear edge, of a bracket formed of sheet metal bent into substantially U shape having its connected portion between the sides presented outward and its edge upward, its sides embracing the bar, a cross-bar connecting the upper portion of the rear ends of the sides and arranged to engage the notches, and a cross-bar connecting the lower portions of the sides in advance of and below the other cross-bar, and in front of the lifting-bar, substantially as described.

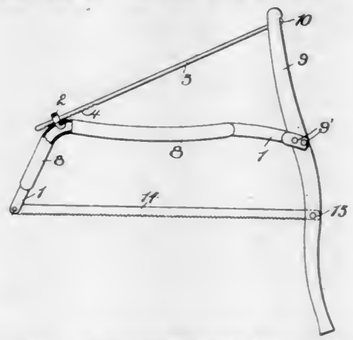
652,837. WHEEL FOR VEHICLES. MICHAEL J. DONOVAN, Waterdown, Canada, assignor of one-half to Daniel McNamara, Burlington Canada. Filed Nov. 17, 1899. Serial No. 737,273. (No model.)



Claim.—1. In a wheel, lugs or blocks secured to the inner side of the outer rim, a wire rod connecting each two blocks, a movable plate made to slide on said wire, a compound-curved flat spring pivotally connected to a cross-pin of the sliding plate and to the inner rim, a spiral spring surrounding the wire in rear of the slide-plate to prevent it going back too far, all constructed substantially as and for the purpose specified.

2. A wheel constructed with an outer wooden tire *a*, and an inner metallic rim *b*, with a space between each, a series of projections or blocks *d*, *c*, attached to the outer tire, a wire *g*, held between the said blocks, a slide-plate *h*, made to be carried on said wire *g*, a compound-curved flat spring *j*, pivotally connected to a pin *i*, on the slide-plate *h*, and the opposite end rigidly connected to the inner rim *b*, a spiral spring *k*, made to surround the wires *g*, and impinge on the slide-plates *h*, and the rear block *c*, substantially as specified.

652,838. BUCKSAW-FRAME. LOUIS E. EICKELBERG, Waterloo, Iowa. Filed Dec. 11, 1899. Serial No. 740,023. (No model.)

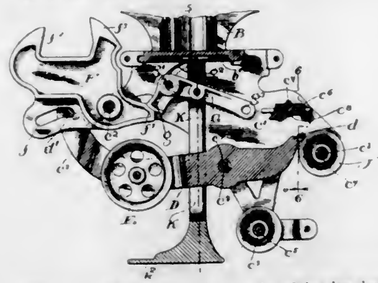


Claim.—1. In a bucksaw-frame, the perforated and hooked clutch 2, in combination with the notched rod 3, the flattened tubular beam 1 provided with the perforation 15 and adjustable bifurcated end with holes 9' 9', the handle 9 and saw-blade 14, provided with suitable connections substantially as described.

2. In a bucksaw-frame, the perforated and hooked clutch 2, in combination with the notched rod 3, the beam 1 having concavity upward in its longer limb and depressed end to connect with handle, and in the upper portion of curve of shorter limb provided with the opening 15, the handle 9 and blade 14, having suitable connections, substantially as described.

3. In a bucksaw-frame, a perforated and hooked clutch 2, notched rod 3 and beam provided with the perforation 15, with suitable connections, substantially as described.

652,839. HAY-CARRIER. HENRY L. FERRIS, Harvard, Ill. Filed Dec. 18, 1899. Serial No. 740,639. (No model.)



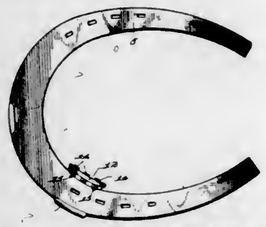
Claim.—1. The combination, in a carrier of the class described, and with a traveler and draft-rope, of a lever pivoted between its ends to the carrier, a bearing upon the carrier opposite to one end of said lever and adapted to coact with said end to clamp the rope between the two, a pulley over which the draft-rope runs, journaled upon said lever, upon the opposite side of the pivot from the clamping end, means for raising and locking said pulley in its raised position and means for tripping the lock to release the lever; substantially as described.

2. The combination, in a carrier of the class described of a traveler, a draft-rope, a bearing upon the carrier, a lever pivoted between its ends to the carrier and having one of its ends arranged to grip the rope between it and the bearing, a pulley upon the lever upon

the opposite side of the pivot and arranged to carry the draft-rope, devices for oscillating the lever upon its pivot, a trigger adapted to lock the lever away from the draft-rope and means for pulling said trigger and releasing the lever; substantially as described.

3. In a carrier of the class described, the combination with a suitable traveler and a framework suspended therefrom, of a lever pivoted between its ends to the carrier, adapted to grip the rope between one of its ends and a portion of the frame, and having a pulley upon its opposite end, a draft-rope running over said pulley, a track-operated dog connected with the pulley end of the lever and adapted to raise it, a trigger arranged to engage the dog, when the lever is raised and means for actuating the trigger to release the dog and the lever; substantially as described.

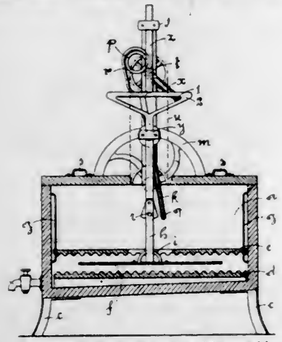
652,840. CALK-ATTACHING CLAMP. HARRY L. FORESMAN, South Williamsport, Pa. Filed Feb. 16, 1900. Serial No. 5,551. (No model.)



Claim.—1. A calk-attaching clamp comprising a plate having a calk thereon, the sides of the base-plate adapted to lie against the under face of a shoe and being projected upwardly, one of the upwardly-projected portions being adapted to engage over the edge of a shoe, and the other upwardly-projected portion having a series of threaded perforations, and screws engaged with the perforations and lying with their axes parallel with the upper face of the base-plate, said screws having conical ends disposed to engage against the edge of the upper face of the shoe and wedge the shoe against the base-plate.

2. A calk-attaching clamp comprising a plate carrying a calk, the side edges of the plate being projected upwardly to lie at opposite edges of the shoe, one of the upwardly-projected portions having a flange for engagement over the edge of a shoe and the other upwardly-projected portion having threaded perforations, a set-screw engaged with one of the perforations and adapted to impinge against the inner edge of the shoe, and an additional screw at each side of the set-screw and having a tapered extremity disposed to impinge against the upper face of the shoe and clamp the shoe against the plate.

652,841. CLOTHES-WASHING MACHINE. ZÉNAÏDE GAILLARD, La Roche, France. Filed Apr. 5, 1899. Serial No. 711,338. (No model.)

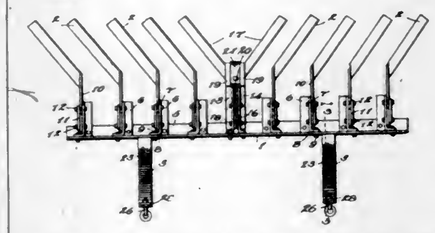


Claim.—1. In a washing-machine and in combination with the vat, a stationary plate, a movable plate, both having parallel and opposing corrugations, an intermediate clothes-plate, and detachable means substantially as described for reciprocating said clothes-plate vertically and horizontally, as and for the purpose set forth.

2. In a clothes-washing machine and in combination with the vat, a stationary corrugated plate *d*, a vertically-movable corrugated plate *e*, an intermediate clothes-plate, a vertical rod, a swinging rod, a removable pin uniting said rods, a yoke connecting the vertical rod with the clothes-plate, and means operatively connected with said rods whereby the clothes-plate can be reciprocated vertically and horizontally, substantially as described.

3. In a clothes-washing machine and in combination with a vat, a stationary corrugated plate and a movable corrugated plate, with an intermediate clothes-plate loosely connected with a central vertical shaft, said shaft, another shaft carrying a chain-wheel and the drive-wheel, a frame carried upon the vat, a shaft *l* in said frame, a chain-wheel fast thereupon, a chain connecting said chain-wheels, a disk mounted upon shaft *l* and having a yoke pivoted to the frame, said yoke, a triangular opening in said vertical shaft, means for engaging the lower end of said yoke with said vertical shaft, and a crank engaging said opening, as and for the purpose set forth.

652,842. CULTIVATOR. CHARLES F. GRIMM and RUFUS FULLERTON, Oakesdale, Wash. Filed Apr. 9, 1900. Serial No. 12,201. (No model.)



Claim.—1. In a cultivator, a frame comprising a transverse angle-beam, having one side extending rearwardly in substantially a horizontal plane from the opposite side thereof, angle-plates having their horizontal sides connected to the horizontal side of the frame-beam, and their opposite upstanding sides provided with inner lateral flanges that are secured to the rear face of the upstanding side of the frame-beam, and pendent scraper-blades secured to the respective angle-plates.

2. In a cultivator, a frame comprising a transverse angle-beam, rearwardly-extending angle-plates, having their respective sides connected to the horizontal side of the frame-beam, and their opposite, upstanding sides provided with inner lateral flanges secured to the upstanding side of the frame-beam, scraper-blades having upwardly and forwardly inclined shanks fitted flat against the outer sides of the upstanding parts of the respective angle-plates, clamp-straps extending transversely across the respective shanks, and fastenings connecting the opposite ends of the straps to the angle-plates and clamping said straps upon the shanks.

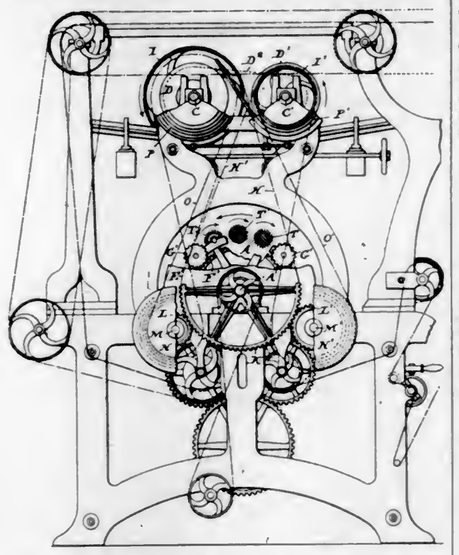
3. In a cultivator, a frame, comprising a transverse angle-beam, a pair of angle-plates, having their horizontal sides connected to the horizontal side of the frame-beam, the upstanding sides of the plates being arranged adjacent to each other, and provided with inner and oppositely-extending flanges secured to the upstanding side of the frame-beam, one or more scraper-blades, each blade having its shank located between the adjacent sides of the angle-plates, opposite fastenings connecting the adjacent sides of the plates and clamping the latter upon the shank, and a seat supported upon the rear ends of the plates.

4. The combination with a cultivator, of a draft device, comprising a draft-bar, having a rear pendent flange to fit against the frame of the cultivator, and provided with a plurality of vertically-disposed openings, a fastening for engagement with any of the openings and to vertically adjustably secure the bar to the frame, the main portion of the bar being inclined downwardly and forwardly, and provided with a terminal upstanding flange, a brace-bar fitted to the under side of the draft-bar, connected to the lower end of the rear flange, and having a front upstanding flange snugly fitting the similar flange of the draft-bar, and an eyebolt extending through the combined flanges, and for connection with a draft-animal.

652,843. NAPPING-MACHINE. NICOLAS H. GROSSELIN, Sedan, France, assignor to Charles Heap, Rochdale, England. Filed Nov. 26, 1895. Serial No. 570,171. (No model.)

Claim.—1. The combination in a napping-machine, of a revolving head, two sets of napping-rolls carried thereby and adjustable driving-gearing between the sets of rolls whereby they may be connected to drive one by the other or disconnected and separately and positively driven, substantially as described.

2. The combination in a napping-machine, of a revolving head, two sets of napping-rolls carried thereby, and adjustable gearing whereby the sets of rolls may be connected to drive one by the other, or disconnected and separately and positively driven, and means for varying the speed of each set of rolls, substantially as described.



3. The combination with the revolving head and its shaft A', of a napping-machine, of two sets of napping-rolls constructed to act with different working energies, arranged upon said head, two counter-shafts, and means whereby to connect each counter-shaft with the shaft A', and means for connecting and disconnecting said counter-shafts, substantially as set forth.

4. The combination in a napping-machine of a revolving head carrying two sets of rolls with their teeth set in opposite directions, two counter-shafts connected, one with one set of rolls, and the other with the other, reverse cones upon the counter-shafts and a belt adjustable upon said cones to vary the relative rotations of said shafts, substantially as set forth.

5. The combination with a revolving head of a napping-machine, of two sets of napping-rolls and means whereby they are caused to operate with different degrees of working energy, loose gears at opposite ends of the head connected each to drive one set of rolls, independent means for driving the gears, and means for connecting the said driving means and for disconnecting the same, substantially as set forth.

6. The combination in a napping-machine of the revolving head and two sets of napping-rolls carried thereby, gears at opposite ends of the head, one for operating each set of rolls, separate driving devices for driving the said gears, including two counter-shafts connected to operate said driving devices, and means for connecting and disconnecting the counter-shafts and means for driving either counter-shaft positively substantially as set forth.

7. The combination in a napping-machine of the revolving head and two sets of napping-rolls carried thereby, gears at opposite ends of the head, one for operating each set of rolls, separate driving devices for driving the said gears, including two counter-shafts connected to operate said driving devices, and means for connecting and disconnecting the counter-shafts, and means for varying the driving action and means whereby either shaft may be connected with a driving-shaft, substantially as set forth.

8. In a napping-machine, a drum carrying two series of rolls, one set for acting with and the other set against the nap, and means for either driving each set of rolls independently of the other and of the cloth, or for connecting the rolls to permit one set driven by the cloth to drive the other set, substantially as described.

652,844. BEARING. JOHN P. HALIFAX, Chicago, Ill., assignor to the Geo. L. Thompson Manufacturing Company, of Illinois. Filed Mar. 6, 1899. Serial No. 707,897. (No model.)



Claim.—1. As a new article of manufacture, a bearing made of a blank cut from soft semisteel and made dense and substantially homogeneous throughout by cold-pressing between dies to which pressure is applied gradually and sufficient to cause the metal to flow and take the form of the cavity between the dies and thereafter case-hardened, substantially as described.

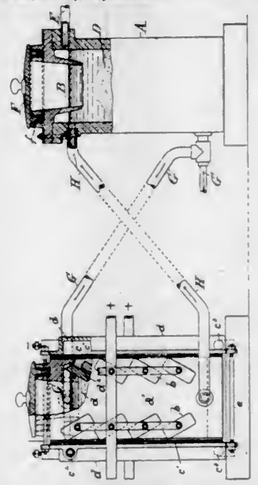
2. As a new article of manufacture an annular bearing for bicycles and the like, made from an annular blank of soft semisteel of rectangular form in cross section, and having its interior made dense and substantially homogeneous by cold-pressing between dies to which a pressure is applied gradually and sufficient to cause the metal to flow and take the form of the cavity between the dies, substantially as described.

652,845. METHOD OF MAKING SEMISTEEL BEARINGS, &c. JOHN B. HALIFAX, Chicago, Ill. Filed Nov. 9, 1899. Serial No. 736,315. (No model.)



Claim.—The method of making bearings and analogous articles of the general character described, which consists in forming a blank of semisteel larger in cross-sectional area than, and of distinctly-different form from, that of the proposed article, cold-pressing said blank between dies to which pressure is applied gradually and sufficient to condense the metal and at the same time cause it to flow into the required form and finally case-hardening the article.

652,846. PROCESS OF PURIFYING AND STRENGTHENING BRINE FOR USE IN ELECTROLYTIC CELLS. JAMES HARGREAVES, Farnworth-in-Widnes, England. Original application filed Feb. 12, 1898, Serial No. 670,101. Divided and this application filed Aug. 29, 1898. Serial No. 689,790. (No specimens.)



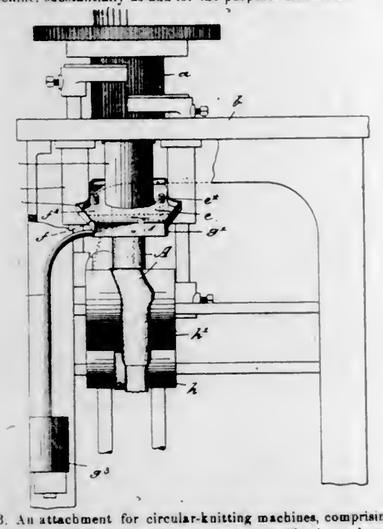
Claim.—In the electrolysis of salts, the herein-described process for separating soluble from insoluble matter for strengthening weakened brine solution from electrolytic cells and for conducting the strengthened brine to the electrolytic cells, consisting in conducting the weakened brine from the electrolytic cells, forcing same upward directly through and in intimate contact with a mass of impure salt contained in a sealed vessel by means of a steam-jet, and then conducting the strengthened brine solution from the upper end of the said vessel back to the electrolytic cells.

652,847. ATTACHMENT FOR CIRCULAR-KNITTING MACHINES. THOMAS HENRY, Jr., Philadelphia, Pa. Filed Apr. 13, 1900. Serial No. 12,664. (No model.)

Claim.—1. In a circular-knitting machine, the combination of a needle-cylinder, a tube through which the fabric is adapted to pass as it leaves the needles of the cylinder, said tube being located within the needle-cylinder, and an extension or floor located at the lower end of said tube and extending below the base of the needle-cylinder, substantially as and for the purposes described.

2. An attachment for circular-knitting machines, comprising a tube adapted to fit the interior of the needle-cylinder and to receive the knit fabric, and an inclined floor surrounding the base of said

tube, said floor projecting downward from the rear to the front of the machine, substantially as and for the purposes described.



3. An attachment for circular-knitting machines, comprising a tube, an inclined floor surrounding the base of said tube, and means for supporting said floor upon the frame of the machine so that the tube is adapted to fit into the interior of the needle-cylinder of the machine, substantially as and for the purposes described.

4. In a circular-knitting machine, the combination of a needle-cylinder, a tube through which the fabric is adapted to pass as it leaves said cylinder, said tube being located between the cylinder and the fabric, an inclined floor or base surrounding the lower edge of said tube, and means for supporting said floor and tube, substantially as and for the purposes described.

5. An attachment for circular-knitting machines, comprising a tube and an inclined floor or base surrounding the lower edge of said tube, said floor having its edges surrounded by a rim, and provided with indentations and a gutter into which the indentations lead, substantially as and for the purposes described.

652,848. APPLICATOR. JOSEPH B. HILL, Ovid, Mich. Filed July 11, 1898. Serial No. 685,643. (Model.)



Claim.—An applicator having a stem with a concave recess in one end, an aperture running obliquely from the said recess rearwardly and outwardly to the outer surface and a longitudinal groove leading from the rear outlet of said aperture through the surface of the stem to the said recessed end of the latter, and a longitudinal concave depression at the opposite extremity, and a single tube flared into a bell at one end and applicable to either extremity of the stem.

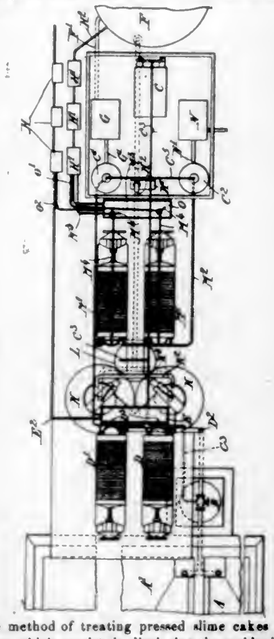
652,849. PROCESS OF EXTRACTING METALS FROM ORES OR SLIMES. SAMUEL H. JOHNSON and HENRY L. SULMAN, London, England, assignors to the S. H. Johnson & Company, Limited, same place. Filed Dec. 11, 1899. Serial No. 740,003. (No specimens.)

Claim.—1. The method of treating pressed slime cakes containing residual water, which consists in displacing the residual water in the cakes with a solvent solution.

2. The method of treating ores or slimes, which consists in removing a portion of the water from the ores or slimes by pressure, and then displacing the residual water in the pressed ores or slimes with an equal volume of a solvent solution.

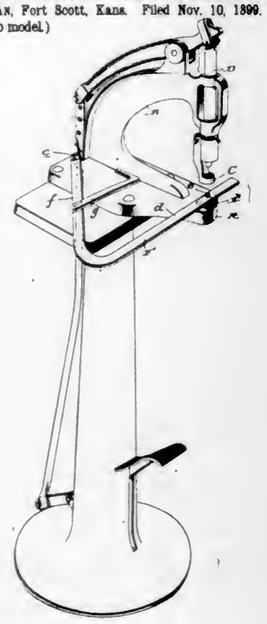
3. The method of treating pressed slime cakes containing residual water, which consists in displacing the residual water with a solvent solution, mixing the cakes with a further quantity of solvent solution, and removing the metal-bearing solvent solution by pressure.

4. The method of treating pressed slime cakes containing residual water, which consists in displacing the residual water with a solvent solution, mixing the cakes with a further quantity of solvent solution, removing the metal-bearing solvent solution by pressure, and displacing the remaining portion of such metal-bearing solution with water



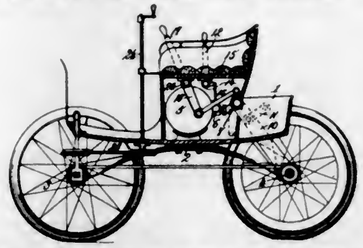
5. The method of treating pressed slime cakes containing residual water, which consists in displacing the residual water with an equal volume of a solvent solution, mixing the cakes with a further quantity of solvent solution, removing the metal-bearing solvent solution by pressure, displacing the remaining portion of such metal-bearing solution with water, and extracting the metal from said metal-bearing solution, whereby all the operations may be performed with an approximately-constant volume of the solvent solution.

652,850. ATTACHMENT FOR RIVETING-MACHINES. WILLIAM L. KELLERMAN, Fort Scott, Kans. Filed Nov. 10, 1899. Serial No. 738,462. (No model.)



Claim.—The combination with a riveting-machine; of an attachment pivotally connected thereto and comprising an outer, work-holding arm provided with an upwardly-extending teat, and an inner arm disposed at an angle to the outer arm and provided with a stop for engaging the machine and thereby limiting the inward-swinging movement of the attachment, substantially as specified.

652,851. AUTOMOBILE VEHICLE. HOSEA W. LIBBEY, Boston, Mass. Filed Oct. 2, 1899. Serial No. 732,402. (No model.)



Claim.—1. In an automobile vehicle, the combination of motor-wheels attached to the inner sides of the rims of the rear vehicle-wheels and each provided with buckets, blades or vanes, having symmetrical sides, a storage-reservoir for compressed or liquefied air or gas, carried by the vehicle, a distributing-chamber having rotatable conduits projecting laterally in opposite directions from the ends of said chamber, nozzles connected with the outer ends of said conduits to direct jets of compressed or liquefied air or gas against the buckets of the motor-wheels, a reducing-valve intermediate said storage-reservoir and said distributing-chamber and adapted to communicate with each, lever mechanism for operating said valve, and independent lever mechanism for each conduit and its nozzle, whereby said nozzles may be swung into position separately or together.

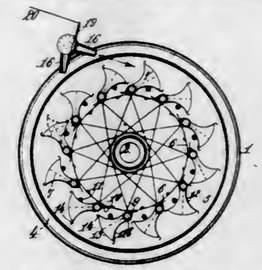
2. In an automobile vehicle, the combination with a storage-reservoir for compressed or liquefied air or gas, carried on said vehicle, motor-wheels attached to the inner sides of the rims of the vehicle-wheels and each having its periphery provided with buckets having symmetrical sides, a distributing-chamber having rotatable conduits projecting laterally from its opposite ends, nozzles connected with the outer ends of said conduits and depending therefrom to direct jets of compressed or liquefied air or gas against the buckets of the motor-wheels, links pivotally mounted on the rear axle and extending upwardly and forwardly therefrom to support said conduits, a reducing-valve intermediate the storage-reservoir and distributing-chamber and adapted to communicate with each, lever mechanism for operating said valve, and independent lever mechanism for each conduit and its nozzle, whereby said nozzles may be adjusted separately or together to discharge a jet or jets against the motor-wheels in a direction to propel the same forwardly or rearwardly, substantially as described.

3. In an automobile vehicle, the combination of motor-wheels attached to the inner sides of the rims of the rear vehicle-wheels and each provided with buckets, blades or vanes, links pivotally mounted on the rear axle and extended upwardly and forwardly therefrom, means for suspending the upper ends of said links, rotatable conduits supported by the upper ends of said links, nozzles connected with the outer ends of said conduits to direct jets of compressed or liquefied air or gas against the buckets of the motor-wheels, a distributing-chamber connected with the inner ends of said conduits, a storage-reservoir for compressed or liquefied air or gas mounted on the vehicle, a reducing-valve intermediate said storage-reservoir and said distributing-chamber and adapted to communicate with each, lever mechanism for operating said valve, and independent lever mechanism for each conduit and its nozzle, whereby said nozzles may be swung into position, separately or together, to direct a jet or jets against the motor-wheels in a direction to propel the same forwardly or rearwardly, substantially as described.

4. In an automobile vehicle, the combination of a storage-reservoir for compressed or liquefied air or gas carried on said vehicle, a reducing-valve adapted to communicate with said reservoir to control the discharge therefrom, lever mechanism for operating said valve, a distributing-chamber in communication with said valve, rotatable conduits connected with the ends of said chamber and extended therefrom in lateral directions, nozzles on the outer ends of said conduits, motor-wheels attached to the inner sides of the rims of the rear vehicle-wheels and provided with buckets, links pivotally mounted on the rear axle and extended forwardly and upwardly therefrom to support the rotatable conduits, independent lever mechanism for each conduit whereby the said conduits and their attached nozzles can be adjusted into position, either independently or together, to direct jets of compressed or liquefied air or gas against the buckets of the motor-wheels to propel the same either forwardly or rearwardly and to serve as a brake, and steering mechanism for said vehicle, substantially as described.

5. In an automobile vehicle, the combination with the vehicle-body, forward and rear axles, and springs supported on said axles and on which the vehicle-body is mounted, of a storage-reservoir for compressed or liquefied air or gas mounted on the vehicle-body, motor-wheels attached to the inner sides of the rims of the rear vehicle-wheels and provided with buckets, swinging nozzles to direct jets of compressed air or gas against the buckets of said motor-wheels, rotatable conduits with which said nozzles are connected, a distributing-chamber intermediate the ends of said conduits, links pivotally mounted on the rear axle and extended upwardly and forwardly therefrom to support the rotatable conduits, and short links connecting the upper portions of said conduit-supporting links with the vehicle-body, lever mechanism for rotating the conduits and their nozzles, independently or together, a reducing-valve intermediate the reservoir and the distributing-chamber, lever mechanism for operating said valve, and steering mechanism, substantially as described.

652,852. MOTOR-WHEEL FOR VEHICLES. HOSEA W. LIBBEY, Boston, Mass. Filed Oct. 2, 1899. Serial No. 732,406. (No model.)



Claim.—1. A motor-wheel for vehicles, provided with a series of independently-reversible buckets, in combination with a double nozzle for applying fluid-pressure to said buckets to rotate the wheel in either direction, substantially as described.

2. A motor-wheel for vehicles, provided with an annular series of independently-reversible buckets, means for maintaining said buckets against the action of gravity, and devices through which the power applied to said buckets is transmitted to the wheel, in combination with a double nozzle for applying fluid-pressure to said buckets to rotate the wheel in either direction, substantially as described.

3. A motor-wheel for vehicles, provided with an annular series of reversible buckets, wedge projections on the pivotal ends of the several buckets, springs bearing against said wedge projections to maintain the several buckets against the action of gravity, and pins projecting from the wheel intermediate the buckets and through which power applied to said buckets is transmitted to the wheel, in combination with a double nozzle for applying pressure to said buckets, and a valve for controlling the blast through said nozzles, substantially as described.

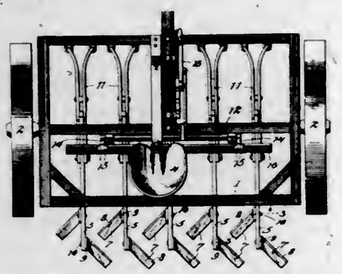
4. The combination with a motor-wheel provided with an annular series of reversible buckets, springs for maintaining said buckets against the action of gravity, and pins or projections through which the power applied to the buckets is transmitted to the wheel, of a double nozzle for applying a blast to said buckets in either direction, and a valve for controlling the blast through the branches of said nozzle, substantially as described.

5. The combination with a motor-wheel provided with an annular series of reversible buckets and laterally-projecting pins intermediate the several buckets, and springs to maintain said buckets against the action of gravity, of a double nozzle through which to apply a blast to said buckets in either direction, a valve for controlling the blast through the branches of said double nozzle, and operating mechanism for said valve, each bucket being provided with hooked flanges to insure quick reversal of the bucket when the air-blast is reversed, substantially as described.

652,853. CULTIVATOR. WILLIAM F. MAGILL, Dufur, Oreg. Filed Feb. 15, 1900. Serial No. 5,877. (No model.)

Claim.—1. In a cultivator, the combination with a draft-frame, of a cutter-blade (one or more) connected at its front end to the draft-frame whereby the cutter-blade is adapted to be drawn or trailed, said cutter-blade having a cutting edge on its lower side extending

throughout the length thereof, and provided with laterally-extending cutter-wings on its sides, adapted to operate under the surface of the soil and means to raise and lower said cutter blade, substantially as described.



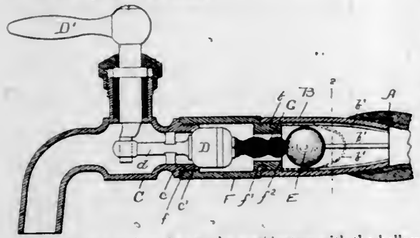
2. In a cultivator, the combination with a draft-frame, of a cutter-blade (one or more) connected at its front end to the draft-frame, whereby the cutter-blade is adapted to be drawn or trailed, said cutter-blade having a cutting edge on its lower side extending throughout the length thereof, and provided with laterally-extending cutter-wings on its sides, adapted to operate under the surface of the soil and a lever mounted on the draft-frame and connections between said lever and said cutter-blade, to raise and lower the latter and hold the same when depressed, substantially as described.

3. In a cultivator, the combination with a draft-frame, of a series of trailing cultivator-blades connected at their front ends to the draft-frame and having cutting edges on their lower sides and laterally-projecting cutter-wings on their sides, adapted to operate under the surface of the soil, a bar bearing on and connecting said series of trailing cultivator-blades, a rock-shaft carried by the draft-frame and having rock-arms, a lever to turn said rock-shaft, and links connecting said rock-shaft to said bar, substantially as described.

4. A cultivator cutter-blade or runner adapted to be trailed or drawn from its front end and having the cutting edge on its lower side extending throughout its length, and the laterally-extending cutter-wings on its sides, for the purpose set forth substantially as described.

5. In a cultivator, a series of cutter-blades having cutting edges on their lower sides adapted for entering the earth, and laterally-disposed cutter-wings on the sides of said cutter-blades, adapted to operate under the surface of the earth, the wings on the proximate sides of said series of cutter-blades being disposed in overlapping relation to each other, for the purpose set forth, substantially as described.

652,854. COCK OR FAUCET. ANGELO MARUBIO, Chicago, Ill., assignor to himself and Dominick Rocca, same place. Filed Jan. 6, 1900. Serial No. 534. (No model.)



Claim.—1. In a cock or faucet, the combination with the hollow imperforate base-piece B, of valve-shell C, valve D, supplemental valve E, supplemental screw-threaded thimble F, and removable extension or projection G, substantially as specified.

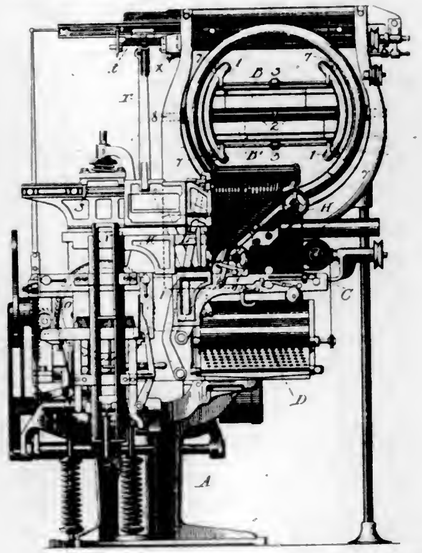
2. In a cock or faucet, the combination with the hollow imperforate base-piece B, of valve-shell C, valve D, supplemental valve E, supplemental screw-threaded thimble F, extension or projection G, and a device *b'* in said base-piece B to prevent valve E fitting watertight therein, substantially as specified.

3. In a cock or faucet, the combination with the removable screw-threaded valve-shell having a valve-seat, and a reciprocating main valve and valve-stem, of an imperforate stem or base-piece, a supplemental hollow stem or thimble screw-threaded thereto and to said valve-shell and provided with a valve-seat at its end connecting with said base-piece, and a supplemental valve in said base-piece held normally open or unseated and automatically seating itself when the removable shell and main valve are removed, substantially as specified.

4. In a cock or faucet, the combination with the removable screw-theaded valve-shell having a valve-seat, and a reciprocating main valve and valve-stem, of an imperforate hollow stem or base-piece, a supplemental hollow stem or thimble having internal screw-threads at one end connecting it with said valve-shell, said supplemental hollow stem or thimble having its opposite end shouldered and furnished with external screw-threads connecting it with said base-piece and provided at said end with a valve-seat, a supplemental valve in said base-piece held normally open or unseated and automatically seating itself wheo the removable shell and main valve are removed; and an extension or projection for holding said supplemental valve normally open or unseated when the main valve and shell are in place, substantially as specified.

5. In a cock or faucet, the combination with the base-piece B, of valve-shell C, valve D, supplemental valve E, supplemental screw-threaded thimble F, and extension or projection G screw-threaded to the stem of the main valve, substantially as specified.

652,855. LINOTYPE-MACHINE. CARL MUEHLEISEN, Baltimore, Md., assignor to the Mergenthaler Linotype Company, of New York. Filed Apr. 7, 1900. Serial No. 12,005. (No model.)



Claim.—1. In a linotype or kindred machine, two magazines mounted for inversion therein.

2. In a linotype-machine, in combination with a distributer and a composing mechanism, two intermediate parallel magazines, and supports permitting said magazines to be inverted, whereby one or the other may be brought into operative position.

3. In a linotype-machine, two magazines mounted to slide endwise in relation to each other, in combination with supports adapted to permit the magazines to be tipped from an inclined to a horizontal position and also to permit them to be inverted.

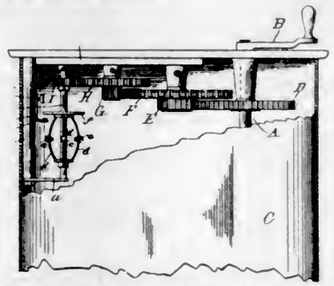
4. In a linotype-machine, the combination of a supporting-frame 6, mounted on horizontal axes, a secondary frame 1 revoluble within the frame 6 at right angles to its axes, and two magazines sustained and movable endwise within the frame 1, substantially as described.

5. In a linotype-machine having a distributing mechanism and a composing or assembling mechanism, two flat intermediate reversely-arranged magazines, and supports permitting one magazine or the other to be brought into operative relation to the distributing and composing mechanisms.

6. In a linotype-machine, two flat parallel magazines provided with escapement devices on their proximate faces, and revoluble supporting devices for said magazines, allowing either magazine to be brought uppermost at will.

652,856. SPEED-GOVERNOR FOR ELECTRICAL CONTROLLERS. JAMES H. MCGURTY, Jersey City, N. J. Filed Mar. 31, 1900. Serial No. 10,885. (No model.)

Claim.—1. In a speed-governor for electrical controllers, the combination with the controller-shaft, of a friction-producing appliance and a train of gears connecting the two, said appliance involving a number of springs with attached weights, arranged to operate substantially as shown and described.



2. In a speed-governor for electrical controllers, the combination of the controller-shaft, a train of gears, a governor-shaft, weighted springs applied on said governor-shaft, a friction-disk connected with said springs, and a friction-pad for contact with the disk, substantially as shown and described.

3. In a speed-governor for electrical controllers, the combination with the friction-disk operated by the weighted springs and driven by the controller-shaft, of the pad for contact with said disk, the pad being mounted on an adjustable arm, substantially as shown and described.

4. In a speed-governor for electrical controllers, the combination with the controller-shaft, of the gear-wheel mounted on said shaft for communicating movement to the governor, the connection between said gear and shaft being substantially as described, to permit the shaft to be turned a trifle without disturbing the gear, for the purposes and objects named.

652,857. TOBACCO-PIPE. ANGUS MCINTYRE, Duluth, Minn. Filed Aug. 4, 1899. Serial No. 726,083. (No model.)



Claim.—In a pipe, the combination with the bowl 1 having the stub-stem 2, 3, with concentric tubular extensions 6, 8, of the mouthpiece 4, 5, with concentric tubular extensions 7, 9, and the thimble 10 which is angular in cross-section is closed at one end and serrated or irregularly formed at its other end, the said parts being arranged substantially as and for the purposes set forth.

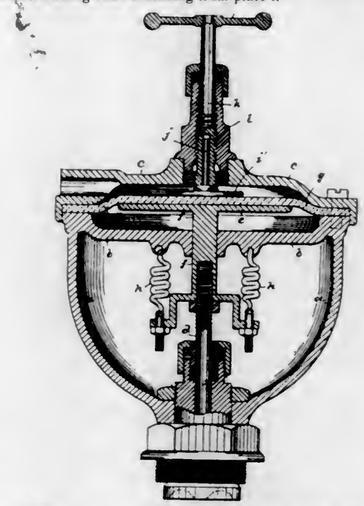
652,858. BUNG AND BUSHING THEREFOR. HENRY NADORFF, Louisville, Ky. Filed Nov. 27, 1899. Serial No. 738,346. (No model.)



Claim.—The combination of a bushing adapted to be fixed in the wall of a barrel and having an interior flange, at a suitable distance from its outer end, provided in its edge with grooves, and at its inner side with oppositely-disposed, inclined planes extending in opposite directions from said grooves, the removable bung C arranged in the bushing and having the exterior flange at its outer end, and the exterior lugs *h* at an intermediate point of its length, engaging the interior flange of the bushing, and also having the bore *i* in its inner portion adapted to receive a stopper, and the inwardly-directed, kerfed flange *j* at its outer end, and one or more stops *l* at the inner side thereof; said flange *j* and stops *l* being designed for the engagement of a key having lugs, and a gasket surrounding the bung and interposed between the exterior flange thereof, and the flange at the inner end of the bushing, substantially as specified.

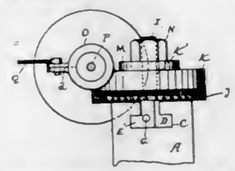
652,859. DIAPHRAGM DEVICE FOR OPERATING VALVES, &c. FREDERICK S. NEWMAN, Springfield, Mass. Filed Jan. 17, 1898. Serial No. 666,995. (No model.)

Claim.—1. The combination of a suitable diaphragm-chamber, a diaphragm mounted therein, a plate as *e* located below the diaphragm, a stem attached to said plate and projecting through the wall and a plate *i* arranged above the diaphragm restrained from lateral movement but free to move vertically through the medium of a reciprocating stem extending from plate *i*.



2. The combination of a suitable diaphragm-chamber, a diaphragm mounted therein, a plate as *e* located below the diaphragm, a stem attached to the plate *e* and projecting through the wall, a plate *i* arranged above the diaphragm restrained from lateral movement but free to move vertically, through the medium of a reciprocating stem extending from plate *i* and threaded stem *k* arranged to engage the plate *i* substantially as shown.

652,860. DETACHABLE TAPER-CUTTING ATTACHMENT FOR LATHES. THOMAS J. PERRIN, Dayton, Ohio. Filed Nov. 7, 1899. Serial No. 736,116. (No model.)



Claim.—1. The combination with a tool-holder A, of a detachable attachment for cutting tapers on lathes, the same consisting of two pivotally-united parts, to wit: a tool-supporting frame, and a main frame or rest K; a disk having a graduated scale thereon, and means for detachably connecting said rest K, and disk to the tool-holder A, substantially as described.

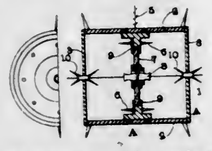
2. The combination with a tool-holder A of a lathe, of a tool-support consisting of two pivotally-united parts, a graduated disk having the degrees of a circle marked thereon, binding parts by means of which the stationary member of the tool-support, and the graduated disk are detachably united to the tool-holder A, a bolt rigidly projected from one of said binding parts and upon which the graduated disk is fixed, and upon which the pivotal member of the tool-support is pivoted, substantially as described.

3. The combination with a tool-holder A of a lathe, of a tool-support consisting of pivotal and stationary parts, a graduated disk having the degrees in a circle marked thereon, a bolt or stem forming a rigid support for said disk and a pivotal support for the pivotal member of the tool-support, and friction-pieces for securing said bolt to the tool-holder A, substantially as described.

4. A taper-cutting attachment for lathes, comprising a pivotal frame for holding the cutting-tool, and adapted to be moved in a circle, a graduated disk having marks indicating the degrees in the circle, a stem or bolt to which said disk is fixed and to which said frame is pivoted above the disk and on one side of the tool-holding portion, and friction-pieces to one of which said bolt or stem is fixed, and a

draw-bolt passing through said friction-pieces and adapted to expand the same and thereby secure the attachment to a lathe.

652,861. OVERHEAD-WIRE LIGHTNING-PROTECTOR. JOSEPH A. POCHÉ, New Orleans, La. Filed Dec. 26, 1899. Serial No. 741,550. (No model.)



Claim.—1. The combination with a conducting-pole and a conducting-conduit secured thereto, of a conductor located centrally therein and passing theretbrough, and lightning-discharge-receiving points extending from the outside of said conduit.

2. The combination with a conducting-pole, of a metallic conduit supported thereon and supporting an electric conductor which extends through the conduit and which is electrically insulated therefrom, lightning-discharge-dissipating points attached to the conductor at the ends of the conduits, lightning-discharge-receiving points extending from the outside of said conduit, and lightning-discharge-dissipating points electrically connected upon the inside of the conduit, and insulated from the conductor.

652,862. WHEEL. HENRY H. PORTER, Dowagiac, Mich. Filed Mar. 6, 1900. Serial No. 7,606. (No model.)

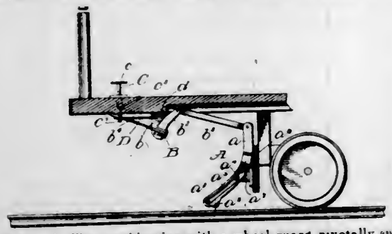


Claim.—1. In a wheel the combination of the wooden felly A; the channel-shaped tire A′ set upon the same and forming a peripheral groove; wire spokes having a connection C at their outer ends extending through the felly and the channel-shaped tire A′ to apply tension and connect them securely together; and a cushion or solid-rubber tire B in the peripheral groove of the channel-shaped tire, to protect the outer ends of the connections all coacting substantially as described for the purpose specified.

2. In a wheel the combination of a suitable felly of wood; a channel-shaped metal tire on said felly forming a peripheral groove around the wheel; wire spokes having connections at their outer ends extending through the felly and the channel-shaped tire to connect them securely together; and a cushion or solid-rubber tire within the peripheral groove formed by the channel-shaped tire to protect the connections, for the purpose specified.

3. In a wheel, the combination of a felly of wood, a metal tire; wire spokes having connections at their outer ends which extend through the felly and the metal tire to connect them securely together; and a cushion or solid-rubber tire outside of the metal tire to protect the connections, for the purpose specified.

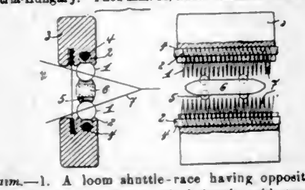
652,863. WHEEL-GUARD. RICHARD F. PREUSSER, Washington, D. C. Filed Dec. 6, 1899. Serial No. 739,404. (No model.)



Claim.—1. The combination with a wheel-guard pivotally supported in such manner as to throw the weight of the guard to the rear of its pivotal points, of a rock-shaft carrying rearward-projecting arms and a forward-projecting plate, links connecting the arms and the wheel-guard, and a foot-lever in engagement with the plate to project the guard into operative proximity to the road-bed, substantially as described.

2. The combination with a wheel-guard pivotally supported in such manner as to throw the weight of the guard to the rear of its pivotal points, of a rock-shaft carrying rearward-projecting arms and a forward-projecting plate, links connecting the arms and the wheel-guard, a foot-lever in engagement with the plate to project the guard into operative proximity to the road-bed, and a spring for exerting upward pressure on the plate, whereby, normally, to keep the guard out of contact with the road-bed, substantially as described.

652,864. SHUTTLE-GUIDING DEVICE. PAUL SCHMIDT, Vienna, Austria-Hungary. Filed Mar. 16, 1900. Serial No. 8,922. (No model.)



Claim.—1. A loom shuttle-race having oppositely-arranged straight resilient serrated or toothed shuttle guide-tracks, in combination with a shuttle having carrier-wheels engaging both tracks and suitable means for propelling said shuttle, for the purpose set forth.

2. A loom shuttle-race having oppositely-arranged straight resilient serrated or toothed shuttle guide-tracks, said serrations or teeth forming guides for the warp-threads; in combination with a shuttle having carrier-wheels engaging both tracks and suitable means for propelling said shuttle, for the purpose set forth.

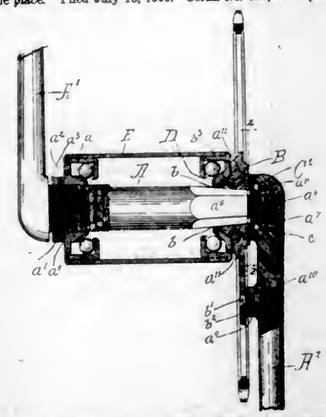
3. A loom shuttle-race having oppositely-arranged resilient shuttle guide-tracks consisting of two straight coils of wire; in combination with a shuttle having carrier-wheels engaging both tracks, and suitable means for propelling said shuttle, for the purpose set forth.

4. A loom shuttle-race having oppositely-arranged resilient guide-tracks composed of straight coils of wire whose interspaces form guides for the warp threads; in combination with a shuttle having carrier-wheels engaging said tracks, and suitable means for propelling the shuttle, substantially as set forth.

5. A loom shuttle-race having oppositely-arranged resilient guide-tracks for the shuttle-wheels, said tracks formed of coils of wire; in combination with retaining or staying coils intermeshing with the track-coils, for the purpose set forth.

6. A loom shuttle-race having oppositely-arranged resilient guide-tracks for the shuttle-wheels, said tracks formed of wire coils whose interspaces form guides for the warp-threads; in combination with retaining or staying coils intermeshing with the track-coils, for the purpose set forth.

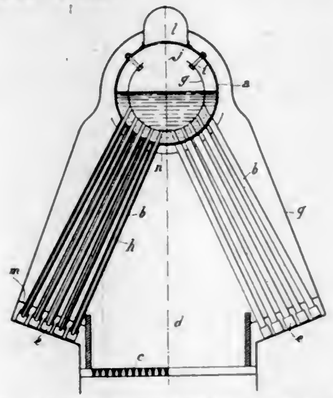
652,865. VELOCIPEDE CRANK-AXLE. JAMES P. SCOVILL, Chicago, Ill., assignor to the George L. Thompson Manufacturing Company, same place. Filed July 18, 1898. Serial No. 686,206. (No model.)



Claim.—1. The combination with a shaft having a screw-threaded portion, a driving member non-rotatably mounted upon the shaft adjacent to the screw-threaded part, a locking member for holding the driving member against endwise movement upon the shaft provided with a socket adapted to receive the threaded part of the shaft, an adjusting sleeve interposed between, and having screw-threaded connection with the shaft and locking member, and means for adjustably locking the sleeve and locking member rigid with each other.

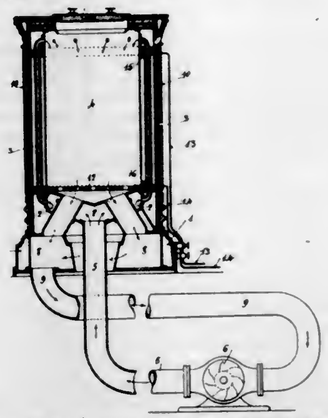
2. The combination with a crank-axle having a screw-threaded end portion and a tapered seat adjacent to the threaded portion, a sprocket-wheel non-rotatably mounted upon said seat, a crank-arm provided with a socket to receive the threaded end of the axle and arranged to hold the sprocket upon its seat, an adjusting-sleeve interposed between, and having screw-threaded connection with, the shaft and crank-arm, a locking-ring for adjustably locking the adjusting-sleeve immovable within said crank-arm socket, and means for locking the crank-arm and sprocket-wheel together to form a driving connection.

652,866. WATER-TUBE BOILER. LOUIS TURGAN, Paris, France, assignor to Georges Doré, same place. Filed May 13, 1898. Serial No. 680,602. (No model.)



Claim.—In a tubular boiler or steam-generator the combination with the generator of a collector of the form of a partial cylinder suspended along its free edges within said generator, the open side of said generator being in the steam-space, sets of circulator-tubes, each composed of an outer tube closed at its lower end and communicating at its inner end with the generator, and inner tubes bayonet-jointed to the collector and extending from the latter to near the lower end of each circulator-tube, said sets of tubes forming legs arranged to straddle a furnace, substantially as described.

652,867. ELECTRICAL DRYING APPARATUS. JEAN M. J. E. VIGNON-DAETO, Lyons, France. Filed Apr. 15, 1899. Serial No. 713,203. (No model.)



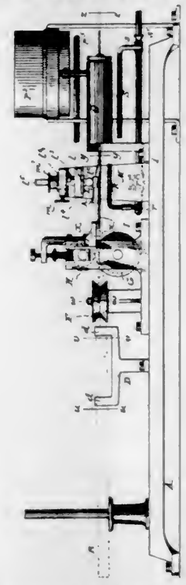
Claim.—1. The combination with a drying-chamber of tubes arranged around the drying-chamber and constructed of material such as described, means for causing an electrical current to heat the said inclosing tubes and means adapted to cause air to continuously circulate through the tubes and into and through the drying-chamber.

2. The combination with a drying-chamber, having a perforated bottom and air-inlet openings at the opposite end, of a draft-fan, a box below the bottom of the chamber, a pipe leading from the box and in communication with the fan, tubes arranged around the drying-chamber and in communication with the box and the air-inlet openings of the drying-chamber, and a tube leading from the fan and in communication with the perforated bottom of the drying-chamber.

3. The combination with a drying-chamber, of tubes surrounding said chamber and constructed of material such as described, means for causing an electrical current to heat the said inclosing tubes, and means adapted to cause air to continuously circulate through the tubes and into and through the drying-chamber, and a casing of heat non-conducting material surrounding the tubes.

4. The combination with a drying-chamber having a perforated bottom and air-inlet openings at the opposite end, of tubes surrounding said chamber and constructed of material such as described, means for causing an electrical current to heat the inclosing tubes, a draft-fan and connections between the latter and the perforated bottom and the air-inlet openings of the drying-chamber whereby the fan is adapted to produce a continuous circulation of air through the tubes and into and through the drying-chamber.

652,868. APPARATUS FOR MAKING PAPER TUBES. JOHN H. WHITE and EDWARD L. WHITE, Washington, D. C. Original application filed Apr. 28, 1899, Serial No. 714,892. Divided and this application filed May 16, 1900. Serial No. 16,904. (No model.)



Claim.—1. The combination of means for forming a tube from a paper strip, a hollow matrix, a mandrel extending therethrough and means for heating the matrix.

2. The combination, substantially as hereinbefore set forth, of means for folding one edge of a paper strip upon the body of the strip, means for pressing the folded edge upon the strip, and means for bending or wrapping the folded strip into tubular form.

3. The combination, substantially as hereinbefore set forth, of means for forming a tube from a paper strip, a heater for softening the sizing to enable the tube to retain its tubular form, before entering the ironer, and an ironer which heats and presses the tube into its final form.

4. The combination, substantially as hereinbefore set forth, of means for forming a paper tube, of a hollow block or matrix, a mandrel extending therethrough, means for heating this block, and a coating-chamber communicating therewith, to coat the tube, as it passes therethrough.

5. The combination, substantially as hereinbefore set forth, of means for forming a paper tube, means for heating the tube to impart a stiffness thereto to enable it to retain its tubular form, and means for coating the tube while hot.

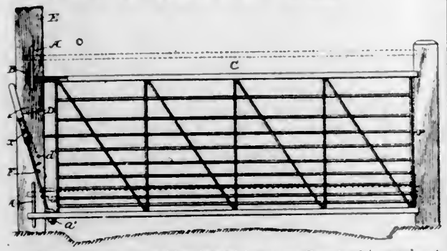
6. A curved longitudinally-twisted folding-guide, having a guide-groove on each edge, one of which grooves serves to hold the edge of the paper strip traversing it in proper position, while the other

groove folds its edge upon the body of the strip adjacent thereto, leaving the other edge free, substantially as hereinbefore set forth.

7. The combination, substantially as hereinbefore set forth, of a curved longitudinally-twisted folding-guide, which folds one edge or side of the paper strip traversing it, upon the body or central portion of said strip, a wrapping-guide which folds the edges of the strip into contact, and a mandrel extending through the wrapping-guide and around which the tube is formed.

8. The combination of a mandrel, devices for wrapping a paper strip around the mandrel, and a folding device for giving a preliminary fold to the strip, consisting of a plate having guide-grooves in its opposite longitudinal edges, and having one of its grooved edges gradually folded over toward the body of the plate, but terminating inside the opposite edge thereof.

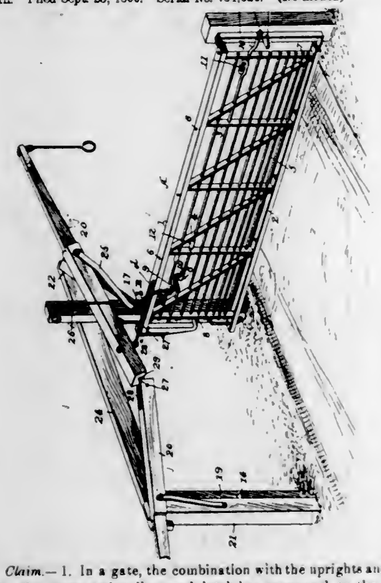
652,869. GATE-HINGE. WILLIAM R. WHITE, Bloomington, Ill. Filed Apr. 30, 1898. Serial No. 679,351. (No model.)



Claim.— 1. The combination with a gate C and with staples A to which the gate is hung so as to slide vertically, of a lever, and a connection between the lever and the gate, substantially as set forth.

2. The combination with the gate C hung to swing and move vertically, of a lever D pivoted to the gate-post near one end, a connecting-rod F, and a pin *d*, substantially as set forth.

652,870. SWINGING GATE. WILLIAM R. WHITE, Bloomington, Ill. Filed Sept. 25, 1899. Serial No. 731,629. (No model.)



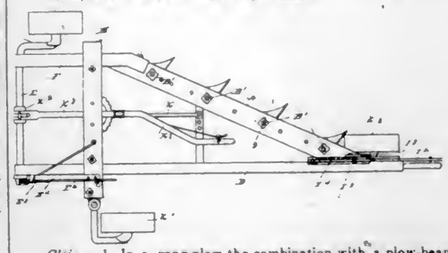
Claim.— 1. In a gate, the combination with the uprights and the latch, of a cross-sectionally-round latch-bar connected to the latch and supported in said uprights to slide longitudinally therein, said bar being formed of two sections, one of which is provided with a vertically-disposed loop forming a handhold and a crank-shaped portion between two of its supports, and the other section having a horizontally-disposed loop with which a latch-actuating arm engages, and a coupling into which the opposing ends of the sections are screwed, substantially as set forth.

2. In a gate, the combination with the uprights and the latch, of a cross-sectionally-round latch-bar connected to the latch and supported in said uprights to slide longitudinally therein, said bar having a vertically-extending loop near one end to form a handhold, and a crank-shaped portion between two of its supports to prevent it from turning in its bearings, substantially as set forth.

3. In a gate, the combination with a fixed, longitudinally-extending bar having a horizontally-disposed loop formed therein, of a sliding latch-bar having a horizontally-disposed loop extending oppositely to the loop in the fixed bar, a latch connected to the latch-bar, an arm pivoted in the gate and having a crank-shaped portion engaging the loops, and means to actuate the arm, substantially as set forth.

4. In a gate, the combination of the operating-levers 20, an arm having an eye at its upper end, a crank-shaped lower end, and a lateral extension supported in the top rail of the gate and forming a pivot about which the arm may turn, a link connected to said eye and one of the levers, a fixed bar in the gate having a horizontally-disposed loop, a sliding latch-bar also having a horizontally-disposed loop, said loops extending in opposite directions and being engaged by the crank-shaped portion of the arm, substantially as set forth.

652,871. PLOW. ALPHONSO V. WILBUR, Stockton, Cal. Filed Oct. 10, 1899. Serial No. 733,196. (No model.)



Claim.— 1. In a gang-plow the combination with a plow-beam having flanges turned toward the ground and having suitable perforations for fastening-bolts extended through the web of the beam; of a landside-beam having flanges horizontally extended to infold the rear end of the said plow-beam and depressed in front to receive the draft-bar; a short beam having flanges turned horizontally to infold the forward end of the said plow-beam and depressed in front to aline with the forward end of the said landside-beam to receive the draft-bar: suitable fastenings to secure the said beams together; and a draft-bar to extend between and mounted in the depressed ends of the said landside and short beams, substantially as described.

2. In a gang-plow the combination with a plow-beam adapted to receive and hold plow-standards; of a landside-beam attached to the rear end of the plow-beam and bent to depress the forward end to the desired height to receive the draft-hitch; a short beam attached to the forward end of the plow-beam and bent to depress the forward end to aline with the forward end of the landside-beam; clevises having a shank to fit between the flanges of the said land and short beam and provided with a head having perforations to receive the draft-bar at varying heights above the ground; and a draft-bar adapted to be inserted in the perforations in the heads of the said clevises substantially as described.

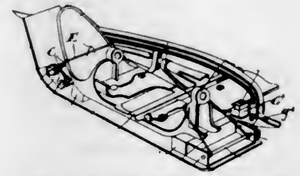
652,872. ELEVATED PLEASURE-RAILWAY. EDWARD WISHART, Waterford, Pa. Filed Mar. 26, 1900. Serial No. 10,267. (No model.)

Claim.—1. An elevated railway comprising a framework having depending stub-shafts fixed thereon, sprocket-wheels rotatably mounted upon the stub-shafts and disposed to rotate in a common horizontal plane, a sprocket-chain engaged with the sprocket-wheels and disposed to travel in ever-changing directions, hangers attached to the framework and depending below the chain, a track secured to the hangers and lying at all points below the chain and conforming in direction thereto, cars mounted to run upon the track and a flexible connection between each car and a corresponding link of the chain, whereby the cars may have swinging movement independently of the chain.

2. An elevated railway comprising an elevated framework including radiating beams and cross-braces, a plurality of stub-shafts attached to the frame and depending therefrom, a sprocket-wheel rotatably mounted upon each shaft, a sprocket-chain engaged with the sprocket-wheels and disposed to travel in changing directions, the angle of each pair of diverging portions of the chain being divided by a bracing portion of the framework, a track disposed below the chain and conforming in direction thereto, and cars slidably engaged with the track and having flexible connections with the chain.



652,873. PEA-HARVESTER. WILLIAM H. WORTMAN, London, and WILLIAM RICHMOND, Blythe, Canada. Filed June 26, 1899. Serial No. 721,981. (No model.)



Claim.—1. The combination with the finger-bar and end shoe of the same, of a supplemental shoe, and loops having swinging movement carried by the supplemental shoe and portions on the end shoe engaged by the loops to hold the said shoes together, substantially as described.

2. The combination with the finger-bar and end shoe of the same, of a supplemental shoe, and loops having swinging movement carried by the supplemental shoe portions on the end shoe engaged by said loops to hold said shoes together, and means for placing a tension on said loops, substantially as described.

3. The combination with the finger-bar and end shoe, of a supplemental shoe, and pivoted devices carried by the supplemental shoe engaging portions located at opposite ends of the main shoe for holding said shoes together.

4. The combination with the finger-bar and end shoe, of a supplemental shoe, pivoted loops carried thereby adapted to swing in reverse directions, and portions located at opposite ends of the main shoe engaged by said loops.

5. The combination with the finger-bar and end shoe, of a supplemental shoe, pivoted loops carried thereby adapted to swing in reverse directions, portions located at opposite ends of the main shoe engaged by said loops and means for locking said loops in position, substantially as described.

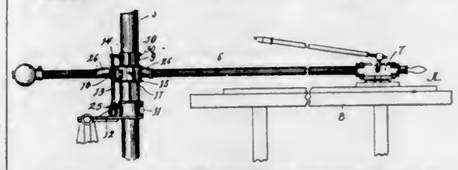
6. The combination with the finger-bar and end shoe, of a supplemental shoe, pivoted loops carried thereby adapted to swing in reverse directions, portions located at opposite ends of the main shoe engaged by said loops and means for locking said loops in position, said means comprising ratchets carried by the loops and pawls pivotally connected to the supplemental shoe.

7. The combination with the finger-bar and end shoe, of a supplemental shoe, bearing-plates secured thereto, spindles journaled in said plates, ratchet-wheels secured to said spindles, pawls engaging the ratchets and loop carried by said spindle, engaging the ordinary end shoe, substantially as described.

8. The combination with the finger-bar and end shoe, of a supplemental shoe, bearing-plates secured thereto, square-headed spindles journaled therein, ratchet-wheels fixed to said spindles, pawls engaging the same, portions located at opposite ends of the end shoe, and loops fixed to said spindles engaging said portions, substantially as described.

9. The combination with the finger-bar and finger, a shoe straddling the end of one of said fingers, a block interposed between the finger-bar and said shoe, and a fastening-bolt passing through said bar, block and shoe, substantially as described.

652,874. ABRADING OR POLISHING MACHINE. CHARLES S. YARNELL, Minneapolis, Minn., assignor to the Moore Carving Machine Company, same place. Filed Feb. 3, 1900. Serial No. 3,781. (No model.)



Claim.—1. In an abrading-machine, the combination with a horizontally-disposed carriage guide-bar, of a standard, a non-revoluble collar fitted movable vertically on the standard, and supporting the guide bar, a nut fixed on the collar and projecting laterally therefrom and a screw alongside of and parallel with the standard turning through said nut, the screw being supported revolubly but against endwise movement and being adapted to raise and lower said collar alongside on the standard.

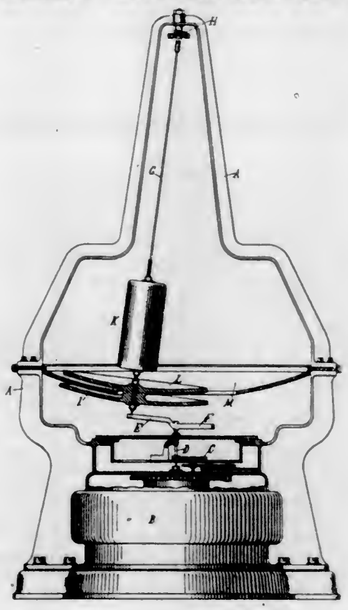
2. The combination in an abrading-machine, of a standard, a collar movable on the standard, a screw turning through a nut on the collar and adapted to adjust the collar on the standard, a ledge on the collar, a ring swiveled on the ledge, and a carriage guide-bar pivoted in the ring.

3. The combination in an abrading-machine, of a standard, a bearing on the standard provided with a longitudinal slot, a collar fitted on the bearing and provided with a key fitted loosely in the slot in the bearing, a screw turning in the collar against the key, a carriage guide-bar supported on the collar, and means for moving the collar adjustably on the bearing.

4. The combination in an abrading-machine, of a guide-bar provided with a swiveling support permitting lateral swing of the guide-bar, and adjustable stops near the guide-bar one at each side of its swiveling support, the stops being adjustable toward and from the guide-bar and adapted to limit its lateral swing.

5. In an abrading-machine, the combination of a standard, a collar adjustable vertically on the standard, a carriage guide-bar swiveled on the collar so as to have lateral swing thereon, arms projecting from the collar substantially parallel with the guide-bar, and stops on the arms secured thereto adjustable toward and from the guide-bar, the stops being severally on different sides of the swiveling support of the bar.

652,875. ELECTRIC-CLOCK PENDULUM. ERNEST K. ADAMS, New York, N. Y. Filed Nov. 7, 1899. Serial No. 736,207. (No model.)

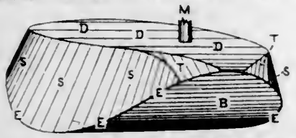


Claim.—1. The combination with a conical pendulum, of a retarder consisting of a closed conductor and a magnet, one being stationary and the other adapted to be rotated by the pendulum, as and for the purpose set forth.

2. The combination with a conical pendulum of a magnetic disk carried thereby, and an annular conducting-plate embraced by the disk when the pendulum is in motion, as set forth.

3. The combination with a conical pendulum of a circular magnetic disk having two flanges and carried by the pendulum, and an annular conducting-plate, the inner edge of which is embraced by the flanges of the magnetic disk when the pendulum swings from the vertical position, as set forth.

652,876. HULL FOR SHIPS OR BOATS. CIPRIANO ANDRADE, Jr., Haverford, Pa. Filed Apr. 17, 1899. Serial No. 713,258. (No model.)



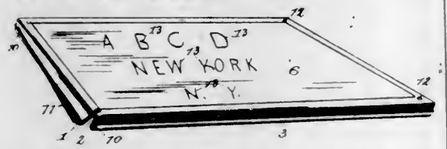
Claim.—In the hulls of ships and boats, a substantial edge (whose lateral aspect is a straight line, or a broken line or curve whose midship portion is lower than its forward or after end), formed by the intersection of the hull's bottom with a side disclosing a deck narrower than said bottom in transverse section.

652,877. PROCESS OF OBTAINING HARDENING OR TOUGHENING COMPOUNDS FOR ALLOYING WITH IRON OR STEEL. RICHARD C. BAKER, London, England. Filed Feb. 24, 1900. Serial No. 6,361. (No specimens.)

Claim.—1. The process of obtaining simultaneously calcium carbid and the borid of a metal capable of use as a hardening or toughening agent, which consists in subjecting a mixture of calcium borate, carbon and a material containing such metal to heat sufficient to effect the reaction.

2. The process of obtaining simultaneously calcium carbid and the borid of a metal capable of use as a hardening or toughening agent, which consists in subjecting a mixture of calcium borate, carbon and such metal to heat sufficient to effect the reaction.

652,878. ADVERTISING-SIGN. EMIL BANSIEN, Hamburg, Germany, assignor to Ludwig Goetz, New York, N. Y. Filed Apr. 16, 1900. Serial No. 12,973. (No model.)



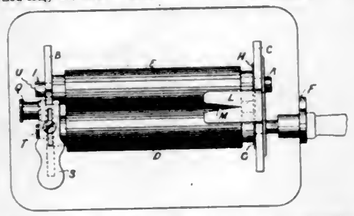
Claim.—1. The process of securing an elastic transparent covering on a suitable backing consisting in superposing a lining-sheet provided with adhesive material upon the backing, superposing the covering-sheet on the lining-sheet, providing the former with an adhesive substance, pressing the superposed sheet and covering firmly onto the backing, and then clenching the sheets and backing by conjointly drawing their edges taut and clenching them upon themselves, as and for the purposes described.

2. The process of making a sign, consisting in producing upon the non-exposed side of a sheet of transparent and flexible material suitable designs, securing a lining-sheet on a self-supporting backing, securing the first-named sheet upon the lining-sheet, subjecting both sheets to the pressure upon the backing, then drawing both sheets taut and doubling the edges of said sheets and backing upon themselves to clench them, as and for the purposes described.

3. As an article of manufacture, a sign comprising a self-supporting backing, a lining-sheet superposed and secured upon the backing, and a transparent and flexible sheet superposed and secured upon the lining and having a design produced upon its inner surface, the edges of the backing, lining, and sheet being offset and bent upon themselves to clench the union of the parts, substantially as described.

4. In a sign, the combination with the backing 1, lining 4, and flexible sheet 6, the latter two being superposed, the same having the offset flanges 3, and clenched edges 10, the sheet and lining being held within the clenched edge, substantially as described.

652,879. APPARATUS FOR SHARPENING RAZORS, KNIVES OR CUTTING INSTRUMENTS. GEORGE F. BARNETT, London, England. Filed Aug. 17, 1899. Serial No. 727,553. (No model.)

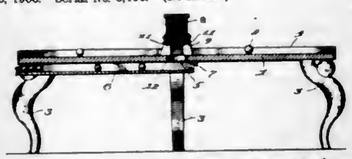


Claim.—1. In an edge-tool sharpener, the combination with a pair of sharpening-rolls and means for revolving the same in opposite directions; of a tool-holder at one end and a tool-rest at the opposite end of and in line with the meeting edges of said rolls, and means for locking the tool against endwise motion to said tool-rest, for the purposes set forth.

2. In an edge-tool sharpener, the combination with a pair of sharpening-rolls and means for revolving the same in opposite directions; of a tool-holder at one end of and in line with the meeting edges of said rolls, a tool-rest at the opposite end of and also in line with said meeting edges of the rolls, means for adjusting said tool-rest vertically and means for locking the tool against endwise motion to its rest, for the purpose set forth.

3. In an edge-tool sharpener, the combination with a support, a pair of sharpening-rolls of equal diameter mounted thereon and geared together, one of said rolls provided with a crank; of a horizontal lug projecting over one end of the rolls and provided with an angular slot M in line with the meeting edges of said rolls, a vertical slot N in said support at the opposite end of the rolls also in line with their meeting edges, a tool-rest O adjustable along said slot and the sliding gate S, substantially as and for the purpose set forth.

652,880. GAME. JOHN W. BATDORF, Hollister, Cal. Filed Mar. 10, 1900. Serial No. 8,190. (No model.)



Claim.—1. A game apparatus of the class described, comprising a table or equivalent support, having an opening or pocket formed therein, an obstruction superposed above the opening, and having a passage leading thereto, and a stop-shoulder pendent from the upper wall of the passage and disposed above the opening.

2. A game apparatus of the class described, comprising a table or equivalent support, having an opening or pocket formed therein, an obstruction superposed above the opening, and provided with a passage leading thereto, the upper wall of the passage being inclined inwardly and downwardly across the opening, and forming a pendent stop-shoulder located above the latter and contracting the passage.

3. A game apparatus of the class described, comprising a table or equivalent support, having a pocket or opening formed therein, an obstruction superposed above the opening and provided with a plurality of passages, which intersect across the opening, and a pendent stop-shoulder at the point of intersection of the passages.

4. A game apparatus of the class described, comprising a table or equivalent support having an opening or pocket formed therein, and an obstruction superposed above the opening and having a plurality of angularly-related passages intersecting across the opening, the upper walls of the passages being beveled or inclined downwardly and inwardly, and the point of intersection of the inclined walls forming a pendent stop-shoulder.

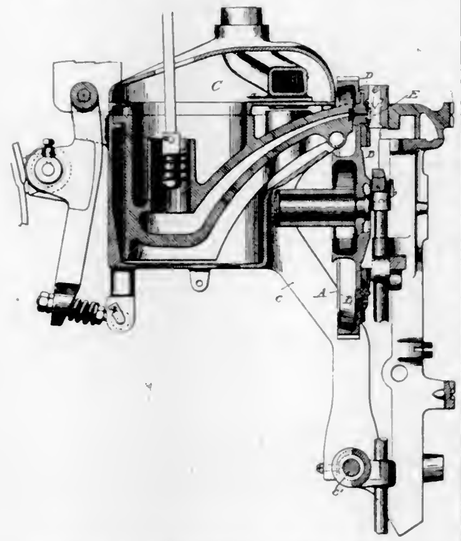
5. A game apparatus of the class described, comprising a table or equivalent support, having a central opening or pocket formed therein, an upstanding marginal rim or cushion, a plurality of balls or equivalent movable playing devices, and an obstruction superposed above the opening, and having a plurality of angularly-related passages intersecting across the opening, and a stop-shoulder pendent from the point of intersection of the upper walls of the passages, the lower end of the stop-shoulder being disposed above the upper surface of the support less than the height of the playing devices.

6. In a game apparatus, the combination with a table or equivalent support, having an opening or pocket formed therein, of balls or equivalent movable playing devices, and an obstruction superposed over the pocket or opening at a distance above the table less than the height of the playing devices.

7. In a game apparatus, the combination with a table or equivalent support, having an opening or pocket formed therein, of balls or equivalent movable playing devices, and an obstruction superposed over the opening or pocket, and having a plurality of downwardly and inwardly inclined faces, which intersect centrally above the opening and at a distance above the table less than the height of the playing devices.

8. A game apparatus of the class described, comprising a table or equivalent support, having an opening or pocket formed therein, and an obstruction superposed above the opening and having a transverse passage intersecting the opening or pocket and opening at diametrically-opposite sides of the obstruction, and a lateral stop-shoulder located within the passage and centrally of the opening or pocket in the support.

652,881. LINOTYPE-MACHINE. GEORGE A. BATES, New York, N. Y., assignor to the Mergenthaler Linotype Company, of New York. Filed Apr. 11, 1900. Serial No. 12,467. (No model.)



Claim.—1. In a linotype-machine constructed to produce type-high slugs, a low mold in combination with a filling-piece, adapted to coöperate therewith substantially as described.

2. A linotype-machine having a matrix-support D, adapted to sustain matrices in proper relation to a type-high mold, in combination with a low mold B and a filling-piece E, adapted to close the front of said mold.

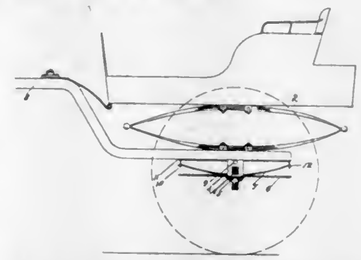
3. In a linotype-machine, a mold below type height in combination with a filling-piece adapted to enter the first elevator and to close the face of the mold, substantially as described.

4. The attachment of a linotype-machine, comprising a mold of less than type height and a filling-piece adapted to coöperate with and close said mold, substantially as described and shown.

652,882. REGULATING DEVICE FOR RIDING-CARTS. YOUNG H. BOUDREAU, Modesto, Cal. Filed Jan. 31, 1900. Serial No. 3,390. (No model.)

Claim.—1. In a two-wheeled cart and in combination, an axle having a rigid bar fixed transversely across each end, shafts fulcrumed in line above the axle, curved springs having their center fixed above the rigid bar, and the ends pressing against the lower part of the shafts upon each side of the axle.

2. In a two-wheeled cart and in combination, a crank or bent axle upon the central portion of which the vehicle-body is supported, and the upwardly and outwardly turned ends form the wheel-spindles, clips fixed to the axles between the wheel-spindles and the crank portion, fulcrum-pins extending through the upper part of the clips and supporting the shafts by which the vehicle is drawn, rigid bars clipped beneath the axle extending parallel to and beneath the shafts, springs having the center clipped between the axle and the rigid bars, their ends upturned and forming elastic contacts with the lower part of the shafts at each side of the axle.

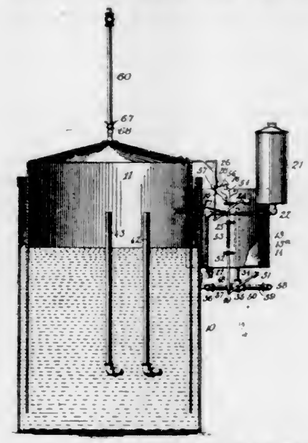


3. In a two-wheeled cart and in combination, a crank-axle having wheel-spindles at the outer ends, a depressed central portion upon which the vehicle-body is supported, rigid bars extending transversely beneath the axle between the spindle and the crank portion, springs having the central portion resting upon said bars and the ends curved upwardly, clips slotted to fit over the axle extending down upon each side of the springs and their supporting-bars, a clip-plate through which the screw-threaded lower ends of the clips pass, and nuts by which the bar spring and axle are clamped rigidly together, fulcrum-pins passing through the upper part of the clips and shafts to which said fulcrum-pins are connected

4. In a two-wheeled vehicle and in combination, shafts fulcrumed above the axle, rigid bars extending beneath the axle parallel with the shafts, springs clamped between said bars and the axle having upturned ends and plates hinged beneath the shafts and forming connection with the spring ends.

5. In a two-wheeled cart, an automatic device for reducing the vehicle-body motions consisting of shafts pivotally connected above the axle ends, bars extending parallel with and beneath said shafts and the axle, springs having the centers clamped between the bars and the bottom of the axle, the ends upturned toward the shafts and plates flexibly connected with the shafts having the lower ends slotted, the spring ends passing through the slots, said plates also forming stops to limit the motion of the parts.

652,883. ACETYLENE-GAS GENERATOR. BERT F. BOWLING, Burr Oak, Mich., assignor of one-half to Benjamin S. Bowling, same place. Filed Apr. 17, 1899. Serial No. 713,433. (No model.)



Claim.—1. The combination with a floatable bell and generators, of water-pipes arranged to discharge individually into said generators and having valves, the said pipes being adjacently arranged and the valves therein at the same vertical elevation, operating projections connected to the said valves and having weights to normally hold the valves closed, and a single trip device connected to and movable with the bell and composed of an upper tubular length and a lower rod adjustable longitudinally in relation to said length, the said

rod having reversely-positioned normally-rigid trip projections at different elevations, the lower trip projection being stationary on and adjustable with the rod and the upper one vertically adjustable independent of the adjustment of the rod, whereby said projections may be rendered alternately inactive, the trip rod and projections being unconnected to and movable between the planes of the projections of the valves to operate the latter to control the admission of water to the valves successively, the said valves being automatically closed by the weighted projections after they are opened by contact with the projections on the trip-rod.

2. The combination with a floatable bell and generators, of water-pipes arranged to discharge individually into said generators and having valves with operating projections which automatically move to normally close the valves, and a single trip device rigidly connected to and movable with the bell between the said projections and having reversely-positioned normally-rigid projections at different elevations unconnected to and adapted to bear against the said automatically-operating valve projections to open the valves and control the admission of water to the generators successively, the said projections on the trip device having upper contacting edges or terminations to loosely bear against the valve projections and independently adjustable to render them alternately inactive.

3. The combination with a generator, and a cover-locking device therefor, of a gas-pipe, a three-way valve in said gas-pipe and having communication under abnormal conditions, with a vent, means for normally holding the valve in a position to establish a gas-passage to a gasometer, and an automatic freely-slidable connection between the valve and the cover-locking device operable on the manipulation of said locking device to release the cover, to permit the valve-actuating device to instantaneously open communication from the generator to the vent.

4. The combination with a generator, a cover-locking device therefor, a gas-pipe, and a three-way valve located in said pipe and having communication under abnormal conditions with a vent, of means for normally holding the valve in a position for gas to pass to a gasometer, and a spring-actuated rod connected to the valve-actuating means and having interlocking connection with the cover-locking devices to be released from restraint thereby on removal of the cover, substantially as described.

5. The combination with a generator, a cover-locking device therefor, a gas-pipe, and a three-way valve in said pipe and having communication under abnormal conditions with a vent, of a weighted lever connected to said valve, and a spring-lifted rod pivoted to the valve-lever and having interlocking engagement with the cover-locking device, for the purpose described, substantially as set forth.

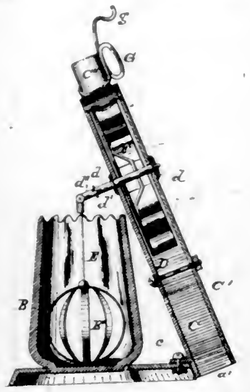
6. The combination with a generator, a gas-pipe, and a three-way valve in said pipe and having communication under abnormal conditions with a vent, of a locking-bar pivoted to the generator-cover, brackets with which the locking-bar engages when adjusted to an operative position, a rod having adjustable interlocking engagement with said locking-bar, and valve-actuating means having operative connections with said rod, substantially as described.

7. In an acetylene-gas apparatus, the combination with a generator having a removable cover, of a gas-pipe leading therefrom, a vent-pipe, a three-way valve connected to said gas-pipe and the vent-pipe and normally held in a position to establish communication from the generator to said gas-pipe, a locking-rod mounted on the generator-cover and engaging with keepers on the generator-shell, a valve-rod having a forked head to engage with the locking-rod, and means connected with said valve-rod to normally hold its head in engagement with the locking-rod and to adjust the valve to a position to cut off communication between the generator and the vent-pipe, substantially as described.

8. In an acetylene-gas apparatus, the combination with a gasometer, and a series of generators, of a drip-trap, gas-pipes leading from the generators to the gasometer and having communication with the drip-trap, a service-pipe, an outlet-pipe from the generator to the service-pipe and also connected with the drip-trap, a vent-pipe having a branch connection to the drip-trap, three-way valves communicating with the gas-pipe and the vent-pipe, means for normally holding said valves in position to cut off communication from the generators to the vent pipe, and a vent-valve in communication with the outlet and vent pipes and disposed in the path of the gasometer-bell, substantially as described.

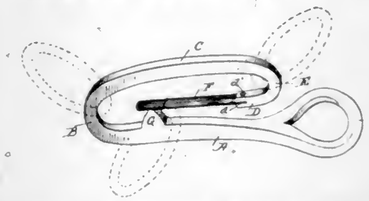
9. The combination with a floatable bell, generators, and water-pipes arranged to discharge individually into said generators, of a single trip-rod attached to the bell and including a lower longitudinally-adjustable member provided with a lower shoulder projecting outwardly at one side only and having an upstanding trip-plate, and an adjustable collar clamped to said member above the shoulder and carrying a trip-plate located opposite to the position of the plate fixed to the said member, valves in said pipes, weighted levers on said valves between which the trip-rod moves and in the path of the trip-plates, and arms fastened individually to said valves and adapted to be engaged respectively by said shoulder and collar on the trip-rod.

652,884. WATER-MOTOR FOR EGG-BEATERS, &c. JOHN D BROTHERSTON, Buffalo, N. Y. Filed Mar. 9, 1900. Serial No. 7,960 (No model.)



Claim.—As an improved article of manufacture, a water-motor for egg-beaters and the like, consisting, essentially, of an open base, a casing attached thereto and obliquely arranged with reference to said base, a cover secured to said case, a turbine wheel within said casing, a shaft for said wheel having its bearings in said cover and casing respectively, and protruding from the face of said casing, a universal-joint connection on the end of said shaft, and suitable means for removably attaching the said casing to a water-faucet, as and for the object set forth.

652,885. SNAP-HOOK. GEORGE W. BROWN, Hot Springs, Ark. Filed Sept. 6, 1899. Serial No. 729,652. (No model.)



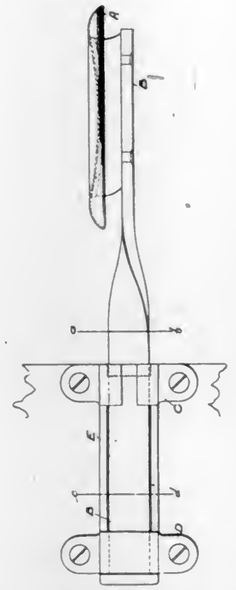
Claim.—1. As a new article of manufacture, a hook comprising a shank, a bill having a return part provided with a yielding tongue continuation, lying between said shank and bill and contacting with a part on said shank, said shank having a stop-shoulder with which a ring when on the hook is adapted to engage, whereby the accidental displacement of the ring is prevented.

2. As a new article of manufacture, a hook comprising a shank, a bill extending from the forward portion of the shank rearwardly and having a rigid return extension intermediate the shank and bill and spaced from the shank, a spring-tongue secured to said extension and projecting forwardly between the shank and bill, and a stop-lug on the shank rearward of the forward end of said spring-tongue and on which said spring-tongue rests, substantially as described.

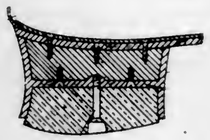
652,886. SEAT FOR SHOP ASSISTANTS, &c. JOSEPH B. BRUCE, Birmingham, England. Filed Nov. 11, 1899. Serial No. 736,709. (No model.)

Claim.—1. In a seat for shop assistants, &c., the combination with a counter or like support, of a longitudinally-sliding bar having a connection therewith means for automatically rotating said bar during its reciprocation, and a seat carried by said bar adapted to turn in a vertical plane during the reciprocation of said bar, substantially as described.

2. In seats for shop assistants and for like purposes, the combination with the seat proper or base-piece A, of the rectangular twisted bar B and brackets C and D, the said bracket C receiving and supporting the portion of the said bar B with its wide sides in a vertical position and having the sides of the slot or aperture through it curved and tapered to correspond with the twisted portion of the bar, and the said bracket D having a circular aperture formed through it of a diameter slightly in excess of the width of the bar B, substantially as set forth.

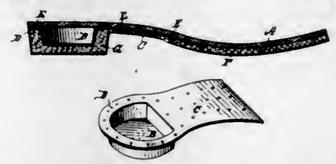


652,887. HEEL FOR BOOTS OR SHOES. GEORGE F. BUTTERFIELD, Stoneham, Mass. Filed July 1, 1897. Serial No. 643,079. (No model.)



Claim.—A boot or shoe having secured to its heel portion a heel-shaped metallic shell, open at bottom and roughened along its lower margin, in combination with a yielding cushion fitting within and protruding below said shell and provided with detachable fastenings permitting its removal, substantially as set forth.

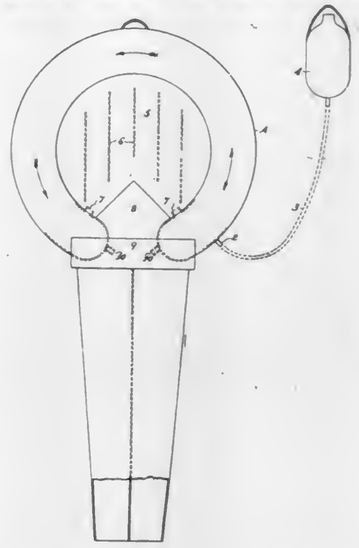
652,888. SOLE AND HEEL FOR BOOTS OR SHOES. GEORGE F. BUTTERFIELD, Stoneham, Mass. Filed July 1, 1897. Serial No. 643,080. (No model.)



Claim.—1. A hollow, metallic heel-form, closed at the bottom, open at the top, and having a narrow, perforated flange along its upper edge, and the shank-stiffening tongue extending forward from its front, the whole adapted to be embedded in the shoe heel and sole and firmly secured thereto, substantially as set forth.

2. The described composite shoe sole and heel, consisting of the leather body A, the hollow heel-form B, formed with a projecting tongue or shank-plate C and perforated flange D, secured firmly to said sole, and the rubber sole and heel F G firmly vulcanized to such sole, heel-form and shank-plate, and covering the fastenings thereof, substantially as set forth.

652,889. SURGICAL OR OBSTETRICAL PAD. TILLIE CAMPBELL, Oakland, Cal. Filed Apr. 16, 1900. Serial No. 13,044. (No model.)



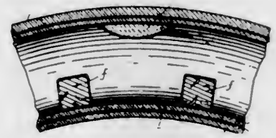
Claim.—1. The combination in a surgical pad of a rim, capable of distention, a hot-water supply, and connections by which it is admitted into said rim, a base or floor interior to the rim formed in two attached parts, and connection by which water is admitted from the rim into the space between the two parts of the floor.

2. The combination in a surgical pad of a rim capable of distention, a source of water-supply, and a pipe connecting it with the pad, a floor formed double and having longitudinal lines of connection whereby separate water-chambers are formed with intermediate depressions and connections between the exterior pad and said spaces whereby it is filled simultaneously with the filling of the pad.

3. The combination in a surgical pad of an exterior rim capable of distention, a source of hot-water supply, and a pipe connecting said source with the hollow rim, a floor or base interior to the interior periphery of the rim, said floor being made double and having longitudinally-connecting seams and a connection between the pad and the interior of said floor whereby the parts intermediate between the seams are filled with water and form ridges with depressed channels along the lines of the seams.

4. The combination in a surgical pad of an exterior rim, a floor interior to the rim made double and having the two parts connected by parallel seams, connections between the rim and the interspaces of the floor, a source of hot-water supply and a pipe connecting it with the rim, whereby the latter and the floor may be filled with hot water, a drainage-canal connecting with the pad and its floor and discharge-passages opening from the rim directly into said channel.

652,890. PNEUMATIC TIRE. GEORGE H. CLARK, Boston, Mass., assignor to the Clark Cycle Tire Company, Portland, Me. Filed Nov. 13, 1899. Serial No. 736,764. (No model.)



Claim.—1. A pneumatic tire having a valve for inflation adapted to be pierced by a tubular needle and having a protecting-plate opposite said valve, substantially as described.

2. A pneumatic tire having a valve for inflation adapted to be pierced by a tubular needle and having a protecting-plate secured to the inside of the air-tube opposite said valve, substantially as described.

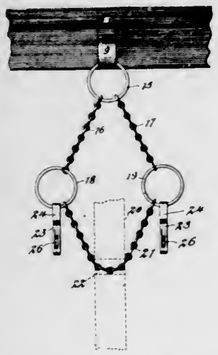
3. A pneumatic tire containing a valve for inflation and having a valve-receiving recess located opposite said valve, substantially as described.

4. A pneumatic tire containing a valve for inflation and having a valve-receiving recess located opposite said valve formed by projections which limit the movement of the opposite walls of the tire toward each other, substantially as described.

5. A pneumatic tire having within it a valve for inflation and projections in the air-tube opposite said valve which are located a short distance apart and which limit the movement of the walls of the tire toward each other, substantially as described.

6. A pneumatic wheel-tire having within it a valve for inflation and rubber-covered projections disposed within and secured to the air-tube opposite said valve which limit the movement of the walls of the tire toward each other, substantially as described.

652,891. UMBRELLA-CARRYING DEVICE. MARIA H. COCHRAN, Denver, Colo. Filed Feb. 12, 1900. Serial No. 4,967. (No model.)



Claim.—1. A device of the class described comprising a ring having chain-sections each having one end connected therewith, additional rings connected with the opposite ends of the chain-sections, a chain having its ends connected with the last-named rings and adapted for engagement with an article to be carried, and hooks carried by the last-named rings for engagement with additional articles to be carried.

2. A device of the class described comprising a belt having a slot therein, a hook having its stem passed through the slot and bent to lie with its upper portion against the rear face of the belt and its lower portion against the outer face of the belt and with its intermediate portion in the slot of the belt and at right angles to the upper and lower portions, a ring engaged with the hook, chains having their ends connected with the ring, additional rings connected with the opposite ends of the chains, a chain connected with the last-named rings and adapted to lie in an opening in an article to be carried, and hooks removably engaged with the last-named rings and adapted for engagement with additional articles to be carried.

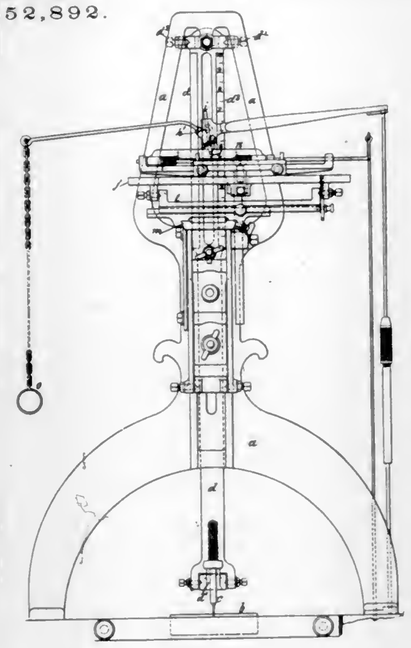
3. A device of the class described comprising a plurality of rings connected to form an endless series by interposed flexible elements, one of the elements being constructed for engagement with an article to be suspended and the diameters of the rings at the ends of said element being greater than that of the element, to prevent displacement of the article therefrom.

4. A device of the class described comprising a plurality of rings connected to form an endless series by interposed flexible elements, one of the elements being constructed for engagement with an article to be suspended, and the diameters of the rings at the ends of said element being greater than that of the element, to prevent displacement of the article therefrom, and attaching-hooks connected with said rings.

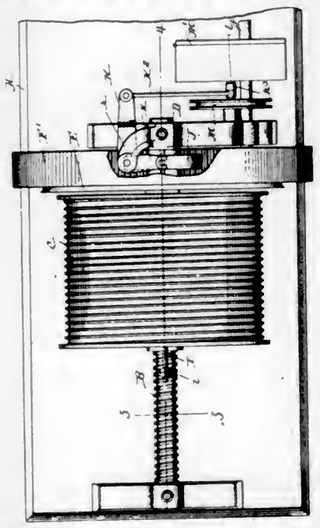
652,892. ENGRAVING-MACHINE. WILLIAM S. EATON, Sag Harbor, N. Y., assignor to the Eaton & Glover Company, New York, N. Y. Filed Mar. 1, 1900. Serial No. 8,903. (No model.)

Claim.—In an engraving-machine, the combination of a tracer with a vertical freely-swinging lever, a yoke pivoted thereto, a support vertically adjustable in said yoke, and a tool-holder pivoted to the support, the pivots of the tool-holder extending at right angles to the pivots of the yoke, substantially as specified.

652,892.



652,893. ELEVATOR. FRANK E. HERDMAN, Winnetka, Ill. Filed Feb. 14, 1900. Serial No. 5,128. (No model.)



Claim.—1. In an elevator, the combination, with the cable-wound drum and its actuating mechanism, of means for imparting to the drum a movement parallel to its axis, the control mechanism, a stop or stops in line of travel of the drum, and connections between the stop or stops and the control mechanism, substantially as described.

2. In an elevator, the combination, with the cable-wound drum, of actuating mechanism for imparting to the drum simultaneously a movement of rotation and a movement parallel to its axis, the control mechanism, a stop or stops in line of axial travel of the drum, and connection between the stop or stops and the control mechanism, substantially as described.

3. In an elevator, the combination with the cable-wound drum, provided with longitudinally-extending grooves, arms parallel to the drum-shaft and engaging said grooves, actuating mechan'sm for revolving said arms aroond said shaft, whereby the drum is rotated, and means for imparting to the drum a simultaneous movement parallel to its axis, substantially as described.

4. In an elevator, the combination with the cable-wound drum, provided with longitudinally-extending grooves, arms parallel to the drum-shaft and engaging said grooves, actuating mechanism for revolving said arms around said shaft, whereby the drum is rotated and means for imparting to the drum a simultaneous movement parallel to its axis, a stop or stops in line of axial travel of the drum, and connection between the stop or stops and control mechanism, substantially as described.

5. In an elevator, the combination with the cable-wound drum, of a stationary shaft threaded along part of its length, the drum having a plurality of bearings on said shaft, one bearing being internally threaded and engaging the threaded part of the shaft, the other bearing being loose on the unthreaded part of the shaft, and means for imparting a movement of rotation to said drum, substantially as described.

6. In an elevator, the combination, with the drum, of a stationary shaft threaded along part of its length, the drum having a plurality of bearings on said shaft, one bearing being internally threaded and engaging the threaded part of the shaft, the other bearing being loose on the unthreaded part of the shaft, means for imparting a movement of rotation to said drum, the drum being grooved spirally for the reception of the lifting cable or cables, the pitch of the screw coinciding with the pitch of the spiral grooves, whereby the cable will be maintained in a constant line during the combined rotary and side movement of the drum, substantially as described.

7. In an elevator, the combination, with the cable-wound drum, of a stationary screw-shaft, an internally-threaded bearing on the drum engaging said shaft, the drum being provided with longitudinally-extending grooves, a revoluble disk, arms projecting therefrom and engaging said grooves, and means for rotating said disk, substantially as described.

8. In an elevator, the combination, with the cable-wound drum, of a stationary shaft threaded along part of its length, the drum having a plurality of bearings on said shaft, one bearing being internally threaded and engaging the threaded part of the shaft, the other bearing being loose on the unthreaded part of the shaft, the drum being provided with longitudinally-extending grooves, a revoluble disk, arms projecting therefrom, rollers carried thereby engaging said grooves, the driving-shaft, and gearing between said driving-shaft and the disk, substantially as described.

9. In an elevator, the combination, with the cable-wound drum, of a stationary screw-shaft, an internally-threaded bearing on the drum engaging said shaft, means for rotating said drum, the control mechanism, a stop or stops in line of travel of the drum, and connections between said stop or stops and the control mechanism, substantially as described.

10. In an elevator, the combination, with the cable-wound drum, of a stationary shaft, threaded along part of its length, the drum having a plurality of bearings on said shaft, one bearing being internally threaded and engaging the threaded part of the shaft, the other bearing being loose on the unthreaded part of the shaft, means for rotating said drum, a stop or stops in line of travel of the last-named bearing, and connections between said stop or stops and the control mechanism, substantially as described.

11. In an elevator, the combination, with the cable-wound drum, of a stationary screw-shaft, an internally-threaded bearing on the drum engaging said shaft, a sleeve loose on said shaft, means whereby said sleeve and the drum are rotated, means permitting the drum to move axially on its threaded bearing, a ring keyed to the sleeve so as to revolve therewith and be capable of lateral movement thereupon, rods extending longitudinally of the drum and secured to said ring, stops on said rods in line of travel of the drum, the control mechanism and connections between said ring and the control mechanism, whereby when the drum engages said stops, said ring will be moved along the sleeve and actuate the control mechanism, substantially as described.

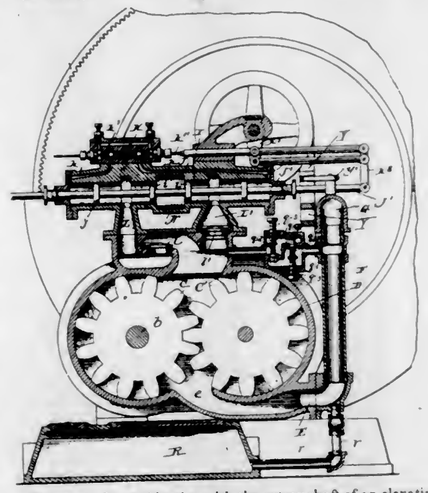
12. In an elevator, the combination, with the cable-wound drum, of a stationary shaft threaded along part of its length, the drum having a plurality of bearings on said shaft one bearing being internally threaded and engaging the threaded part of the shaft, the other bearing being loose on the unthreaded part of the shaft, a sleeve loose on the unthreaded part of said shaft, means whereby said sleeve and the drum are rotated, means permitting the drum to move axially on its threaded bearing, a ring feathered to the sleeve so as to revolve therewith and be capable of lateral movement thereupon, rods extending longitudinally of the drum and secured to said ring, stops on said rods in line of travel of the drum, the control mechanism, whereby when the drum nears its limit of travel in either direction, the said bearing engages said stops and moves said ring along the sleeve to actuate the control mechanism, substantially as described.

13. In an elevator, the combination, with a cable-wound drum, of a stationary screw-shaft, an internally-threaded bearing on the drum engaging said shaft, a sleeve loose on said shaft, means whereby said sleeve and the drum are rotated, means permitting the drum to move axially on its threaded bearing, a ring feathered to the sleeve so as to revolve therewith and be capable of lateral movement thereupon, rods extending longitudinally of the drum and secured to said ring, stops on said rods in line of travel of the drum, a non-rotatable collar around said ring and engaging the same by a flange-and-groove connection, bell-crank levers secured to said collar, the control mechanism, and connections between the bell-crank levers and the control mechanism, substantially as described.

14. In an elevator, the combination, with the cable-wound drum, of a stationary screw-shaft, an internally-threaded bearing on the drum engaging said shaft, the drum being provided with longitudinally-extending grooves, a revoluble disk, arms projecting therefrom and engaging said grooves, a sleeve loose on said shaft and rotating with said disk, a ring feathered to the sleeve so as to revolve therewith and be capable of lateral movement thereupon, rods extending longitudinally of the drum and secured to said ring, stops on said rods in line of travel of the drum, the control mechanism, and connections between said ring and the control mechanism, whereby when the drum engages said stops, said ring will be moved along the sleeve and actuate the control mechanism, substantially as described.

15. In an elevator, the combination, with the cable-wound drum, of a stationary shaft threaded along part of its length, the drum having a plurality of bearings on said shaft, one bearing being internally threaded and engaging the threaded part of the shaft, the other bearing being loose on the unthreaded part of the shaft, the drum being provided with longitudinally-extending grooves, a revoluble disk, arms projecting therefrom, rollers carried thereby engaging said grooves, the driving-shaft, and gearing between said driving-shaft and the disk, a sleeve loose on the unthreaded part of said shaft and rotating with said disk, a ring feathered to the sleeve so as to revolve therewith and be capable of lateral movement thereupon, rods extending longitudinally of the drum and secured to said ring, stops on said rods in line of travel of the last-named drum bearing the control mechanism, whereby when the drum nears its limit of travel in either direction, the said bearing engages said stops and moves said ring along the sleeve to actuate the control mechanism, substantially as described.

652,894. OPERATIVE MECHANISM FOR ELEVATORS. FRANK E. HERDMAN, Winnetka, Ill. Filed Feb. 20, 1900. Serial No. 5,877. (No model.)



Claim.—1. In combination with the rotary shaft of an elevating mechanism, of a casing provided with liquid, a rotary pump in said casing, connection between said pump and the rotary shaft whereby the shaft and pump rotate together, a passage from one side to the other of said casing, adapted to convey liquid, and means controlled by the motor-controlling mechanism to open and close said passage.

2. In combination with the rotary shaft of an elevating mechan-

ism, of a casing provided with liquid, a rotary pump in said casing, connection between said pump and the rotary shaft whereby the shaft and pump rotate together, a passage from one side to the other of said casing, adapted to convey liquid, a valve controlling said passage and operative connection between said valve and the motor-controlling mechanism.

3. In combination with the rotary shaft of an elevating mechanism, of a casing provided with liquid, a rotary pump in said casing, connection between said pump and the rotary shaft whereby the shaft and pump rotate together, a passage adapted to convey liquid, provided at one end with an opening into said casing, a valve-chamber, into which the other end of said passage opens, a valve, ports on opposite sides of the valve opening from said valve-chamber into the casing and operative connection between said valve and the elevator controlling mechanism.

4. In combination with the rotary shaft, of an elevating mechanism, of a casing provided with liquid, a rotary pump in said casing, connection between said pump and the rotary shaft whereby the shaft and pump rotate together, a passage, adapted to convey liquid, provided at one end with an opening into said casing, a valve-chamber, into which the other end of said passage opens, a valve, ports on opposite sides of the valve opening from said valve-chamber into the casing and operative connection between said valve and the elevator controlling mechanism, and a valve in each of said ports the valve in one port opening toward the casing, the valve in the other opening toward the valve-chamber.

5. In combination with the rotary shaft, of an elevating mechanism, of a casing provided with liquid, a rotary pump in said casing, connection between said pump and the rotary shaft whereby the shaft and pump rotate together, a passage from one side to the other of said casing, adapted to convey liquid, a valve controlling said passage and operative connection between said valve and the motor-controlling mechanism, a connection between the passage and the casing independent of the valve and pressure-valves in said connection.

6. In combination with the rotary shaft of an elevating mechanism and a source of power for operating the same, of a casing provided with liquid, a rotary pump in said casing, connection between said pump and the rotary shaft whereby the shaft and pump rotate together, a passage from one side to the other of said casing, adapted to convey liquid, a valve controlling said passage and operative connection between said valve and the motor-controlling mechanism, a second valve in said passage and connection between said second valve and the source of power adapted when the power is on to hold said second valve open, said second valve being self-closing.

7. In combination with the rotary shaft of an elevating mechanism, and a source of power for operating the same, of a casing provided with liquid, a rotary pump in said casing, connection between said pump and the rotary shaft whereby the shaft and pump rotate together, a passage, adapted to convey liquid, provided at one end with an opening into said casing, a valve-chamber, into which the other end of said passage opens, a valve in said chamber, ports on opposite sides of the valve opening from said valve-chamber into the casing and operative connection between said valve and the elevator controlling mechanism, a second valve in said passage and connection between said valve and the source of power adapted when the power is on to hold said valve open, said valve being self-closing.

8. In combination with the rotary shaft of an elevating mechanism, of a casing provided with liquid, a rotary pump in said casing, connection between said pump and the rotary shaft whereby the shaft and pump rotate together, a passage from one side to the other of said casing, adapted to convey liquid, and means controlled by the motor-controlling mechanism to open and close said passage, a source of liquid-supply and connection between said casing and the source of liquid-supply.

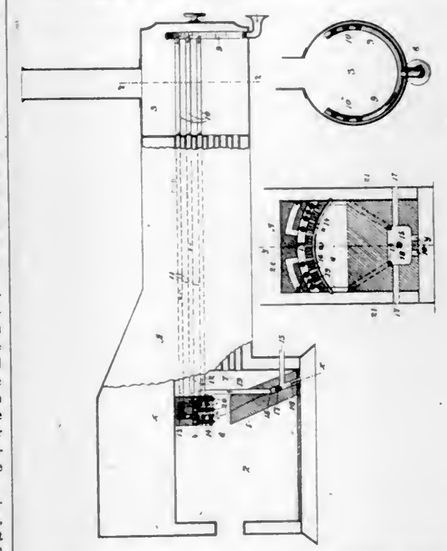
9. In combination with the rotary electric motor of an elevating mechanism and a source of electric power for operating the same, of a casing provided with liquid, a rotary pump in said casing, connection between said pump and the rotary motor whereby the motor and pump rotate together, a passage from one side to the other of said casing, adapted to convey liquid, a valve controlling said passage and operative connection between said valve and the motor-controlling mechanism, a second valve in said passage, a solenoid or magnet in electrical connection with the source of electrical power and the motor, adapted when energized to hold said valve open, said valve being self-closing.

10. In combination with the rotary electric motor of an elevating mechanism and a source of electric power for operating the same, of a casing provided with liquid, rotary pump in said casing, connection between said pump and the rotary motor whereby the motor and pump rotate together, a passage adapted to convey liquid, provided at one end with an opening into said casing, a valve-chamber, into which the other end of said passage opens, a valve, ports on opposite sides of the valve opening from said valve-chamber into the casing and operative connection between said valve and the elevator controlling mechanism, a second valve in said passage, a solenoid or magnet in electrical connection with the source of electrical power and the motor, adapted when energized to hold said second valve open, said second valve being self-closing.

11. In an elevating mechanism, in combination a motor, a source of power for said motor and power-controlling mechanism for said power, a brake-wheel, a pivoted brake-lever for said wheel, a brake-strap connected to said lever, a bar, having a depression, a roller on said bar, connection between said roller and the brake-lever, said bar being provided with a rack, a pinion meshing with said rack and connection between said pinion and the motor-power-controlling mechanism.

12. In combination with a rotary shaft, of an elevating mechanism, of a casing provided with liquid, a rotary pump in said casing, connection between said pump and the rotary shaft, whereby the shaft and pump rotate together, a passage from one side to the other of said casing, adapted to convey the liquid, a valve controlling said passage, check-valves located so that when the valve controlling said passage is thrown one way the rotary pump and shaft can revolve in only one direction and when thown in the other way the rotary pump and shaft can revolve only in the opposite direction, and operative connection between said valve and the motor-controlling mechanism.

652,895. FUEL-ECONOMIZER. JOHN H. HOBART, El Paso, Tex., assignor of one-half to Edwin R. Phillips, same place. Filed Jan. 29, 1900. Serial No. 3,168. (No model.)



Claim.—1. The combination of a boiler and the fire-box thereof, an arch fitted in the upper part of the fire-box and having an internal chamber, a wall built up from the lower part of the fire-box and forming a heat-passage between itself and the arch above, passages made in said wall and connections therewith from the fire-box, means connecting said passages with the chamber of the arch and means connecting the said chamber with the heat-passage between the arch and wall.

2. The boiler and fire-box thereof, an arch fitted in the upper part of the fire-box, supporting-tubes extending beneath the arch and connecting with the water-legs of the fire-box upon either side, a wall built up from the lower part of the fire-box forming the heat-passage between itself and the arch above, passages made in said wall and connections therewith from the front of the fire-box, a chamber or chambers formed in the arch above, with which the passages in the lower wall are connected, and openings in the bottom of said arch whereby the air is delivered into the intermediate heat-passage.

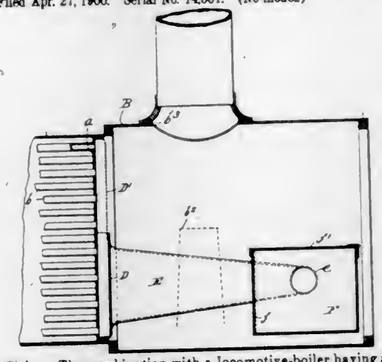
3. The combination of a boiler and the fire-box thereof, an arch fitted in the upper part of the fire-box and having superposed chambers connected one with the other, means for supplying air to said chambers said upper chamber being curved to convey the air to the center of the lower chamber, and means for supporting the arch consisting of transverse water-pipes having their ends connecting directly with the water-legs of the fire-box.

652,896. DEVICE FOR JOGGING BABY-CARRIAGES. ASHER R. JOHNSON and JOSEPH H. LEPSCH, Carrollton, N. Y. Filed July 31, 1899 Serial No. 725,648. (No model.)



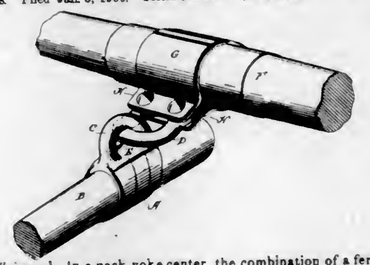
Claim.—The combination with a carriage-body having a yielding or resilient support, of a drive-rod or reciprocating bar composed of a lower tubular member and an upper rod telescopically adjustable in the said tubular member, a motor and an exteriorly-exposed disk with a plain surface having radially-arranged pairs of openings therein, a portion of said openings being in planes at an angle to the others and occupying different distances from the center of the disk, the lower tubular member of the drive-rod or reciprocating bar being removably attached to the disk and adjustable in relation to either one of the pairs of the radial openings.

652,897. SPARK-CATCHER. NATHAN KERSHNER, Reading, Pa. Filed Apr. 27, 1900. Serial No. 14,531. (No model.)



Claim.—The combination with a locomotive-boiler having a forwardly-extending smoke-box with smoke-stack outlet at the top thereof, of a spark-catcher mechanism in said box comprising a partition located in front of the flue-sheet of said boiler and arranged to form a spark-collecting chamber, exit-conduits extending from each side of said chamber below the center line of the boiler, and a spark-receptacle connected to the forward ends of said conduits and having a perforated or screen wall and provision for emptying the same, substantially as set forth.

652,898. NECK-YOKE CENTER. WILLIAM W. LIGHT, Racine, Wis. Filed Jan. 3, 1900. Serial No. 238. (No model.)



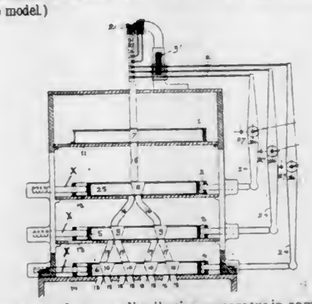
Claim.—1. In a neck-yoke center, the combination of a ferrule; a loop extending up therefrom; and a staple passing through the loop, said staple having that portion which passes through the loop curved upwardly, substantially as described.

2. In a neck-yoke center, the combination of a ferrule; a loop extending up therefrom; a staple passing through said loop, said staple having that portion which passes through the loop curved upwardly substantially as described; and a strap or band G connected to the ends of the staple and adapted to be passed about and around a neck-yoke.

3. In a neck-yoke center, the combination of a ferrule A provided with an integrally-formed loop C; a staple D passing through said loop, said staple having that portion which passes through the loop curved upwardly substantially as described; a neck-yoke F; a strap or band G passing about said neck-yoke and having its ends H extending outwardly from each side of the ends of the staple; and fastening devices passing through said ends H and the ends of the staple.

4. In combination with a neck-yoke, a staple secured thereto, said staple being curved upwardly at its outer end, substantially as and for the purpose described; and means for connecting said staple to a vehicle-pole.

652,899. AUTOMATIC TYPE-DISTRIBUTING MACHINE. ERNST F. NYDAHL, Stockholm, Sweden. Filed Sept. 6, 1899. Serial No. 729,623. (No model.)



Claim.—1. In a type-distributing apparatus in combination, a receiver or holder for the dead-type, a series of distributing-frames, means controlled by the type for shifting said frames in predetermined position relatively to each other and directing-tubes.

2. In a type-distributing apparatus, in combination, a receiver or holder for the dead-type, a series of distributing-frames, means controlled by the type for shifting said frames in a predetermined position relative to each other, in planes at angles to each other and directing-tubes, substantially as described.

3. In a type-distributing apparatus in combination a receiver or holder for the dead-type, a series of distributing-frames, a series of levers for shifting said frames, a series of bell-crank levers controlled by the type for controlling the frame-shifting levers and directing-tubes, substantially as described.

4. In a type-distributer, a holder for the type, a series of frames, directing-boppers carried thereby, and controlled by the type for shifting said frames to position said hoppers relatively to each other and directing-tubes, substantially as described.

5. In combination, the holder for the type, a stationary hopper receiving the discharge therefrom, a series of frames in different horizontal planes, directing-hoppers carried by the same and means controlled by said type for shifting said frames to bring the same and the hoppers carried thereby in predetermined vertical planes and directing-tubes, substantially as described.

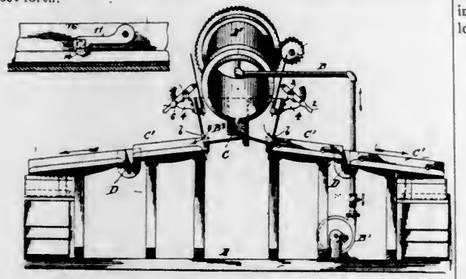
6. In combination, the frame or case for the type, a stationary hopper, a series of sets of hoppers, said sets being arranged in different horizontal planes and means controlled by the type for shifting each set in a relative position to the other sets, and stationary directing-tubes for connecting said sets, substantially as described.

652,900. GOLD-SAVING APPARATUS. ROBERT H. POSTLETHWAITE, San Francisco, Cal., assignor to the Risdon Iron and Locomotive Works, same place. Filed Dec. 6, 1897. Serial No. 660,939. (No model.)

Claim.—1. In a gold-saving apparatus, the combinatioo of a rotary open grizzly, a distributing-box arranged longitudinally beneath the grizzly and adapted to receive the material from the different parts of the latter, an inclined perforated distributing-trough arranged between the upper portion of the grizzly and box, a series of escape-openings formed along the longitudinal sides of the distributing-box, gates for said openings, and inclined tables or platforms arranged at the sides of said distributing-box and adapted to receive the material escaping from said openings, substantially as described.

2. In a gold-saving apparatus, the combination of a rotary grizzly, means for delivering the material into the same, and a distributing-box arranged longitudinally beneath the grizzly having a bot-

tom composed of longitudinal oppositely-inclined portions of different widths onto each of which portions the material escaping from the grizzly falls, and having side discharge-openings substantially as set forth.



3. In a separating table or platform for gold-saving apparatus, the combination of a series of parallel troughs or channels located side by side so as to form distinct runways for the material from which the precious metal is to be extracted, of a blanket or layer of fibrous material located in each trough or runway, a layer of perforated expanded material having a roughened upper face and placed over the blanket or layer of fibrous material, the rods or strips for holding the said layers in position, and of the lock-cams fulcrumed to the flanges of the troughs or channels, which cams hold the rods or strips firmly in place.

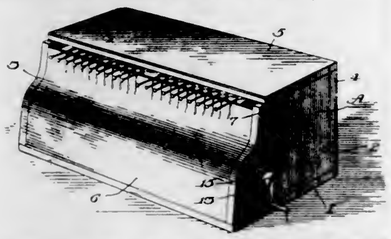
4. In a separating table or platform, the combination with the removable blanket or layers of fibrous material, of an upper layer or plate of perforated expanded metal having a roughened upper face and of devices for securing the said layers to the tables or platforms.

5. A separating table or platform for recovering precious metals, having its riffle-plate or upper surface composed of a piece or layer of perforated expanded metal having a roughened upper face.

6. The combination of a separating-table, a blanket thereon, and a perforated expanded metal plate on said blanket having the metal around said perforations upturned or bent to form roughened surfaces for the plate, substantially as described.

7. The combination with a separating-table and a blanket thereon, of a sheet of expanded metal on said blanket provided with perforations, and having portions of the metal between the perforations bent to extend at an angle to the surface of the blanket to form pockets, substantially as and for the purpose set forth.

652,901. PIN-HOLDER. ERNEST A. ROEBER, Philadelphia, Pa. Filed Oct. 31, 1899. Serial No. 735,876. (No model.)

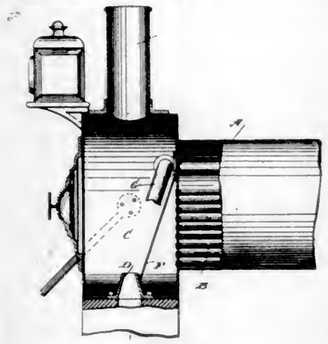


Claim.—1. A pin-case comprising in combination a removable roll-holding rod 10, slotted bearings therefor in the walls of the case, a guide-rod 7 over which the paper-roll of pins is fed forward, and a winding-up rod 12 with means to rotate the same, whereby parallel rows of pins are successively fed forward, and their heads projected through a slot or opening in the case; substantially as described.

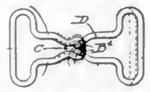
2. A pin-case comprising fixed side walls 2, 3 and hinged top and front walls, 5 and 6, a roll-holding rod 10, open grooves 8, 9 in said fixed side walls, a guide-rod 7, a longitudinally-slotted winding-up rod 12, having its bearings in the said fixed side walls, a ratchet and pawl mounted on a projecting end thereof, and means to rotate said rod; substantially as described.

652,902. LOCOMOTIVE-EXHAUST. EBENEZER N. SLOCUM, Fort Smith, Ark., assignor of two-thirds to Henry H. Hoover, same place. Filed Aug. 18, 1899. Serial No. 727,657. (No model.)

Claim.—In a locomotive, a boiler-shell, a smoke-box connected with the front of the boiler-shell and having an extension both above and below the same, a stack rising from the top of the upper extension of said smoke-box, there being provided an exhaust-port of large diameter in the bottom of the lower extension of the smoke-box, and a short and wide exhaust-nozzle secured in the bottom of the lower extension of the smoke-box over the port directly opposite and pointing toward the stack and whose tip is below the discharge of the lowermost flue in the boiler-shell as and for the purpose set forth.



652,903. FASTENING DEVICE. CLARENCE E. SMITH, New Britain, Conn., assignor to the North & Judd Manufacturing Company, of Connecticut. Filed May 11, 1900. Serial No. 16,319. (No model.)



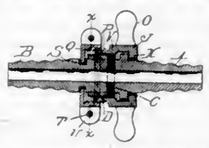
Claim.—1. In a fastening device in combination, a hook member comprising a holding-bar, a frame carrying an offset hook having an enlarged bill, an eye member coöperating therewith and comprising a holding-bar, a pair of laterally-yielding side arms and inturned hooks at the free ends of said arms, said hooks being located in substantially the same plane with said arms, and a constricted passage between said side arms near said hooks.

2. In a fastening device in combination, a hook member comprising a holding-bar, a frame carrying an offset hook having an enlarged bill integral therewith, an eye member coöperating therewith and comprising a holding-bar, a pair of laterally-yielding side arms integral therewith and inturned hooks at the free ends of said arms, said hooks being located in substantially the same plane with said arms, and a constricted passage between said side arms near said hooks.

3. In a fastening device in combination, a hook member comprising a holding-bar, a frame carrying an offset hook having an enlarged bill, an eye member coöperating therewith and comprising a holding-bar, a pair of laterally-yielding side arms and inturned hooks at the free ends of said arms, said hooks being located in substantially the same plane with said arms, and abrupt shoulders forming a constricted passage between said side arms near said hooks.

4. In a fastening device in combination, a hook member comprising a holding-bar, a frame carrying an offset hook having an enlarged bill, an eye member coöperating therewith and comprising a holding-bar, a pair of laterally-yielding side arms and inturned hooks at the free ends of said arms, said hooks being located in substantially the same plane with said arms, and notches forming abrupt shoulders in turn forming a constricted passage between said side arms near said hooks.

652,904. HOSE-COUPLING. GEORGE STROH, Detroit, Mich. Filed July 16, 1898. Serial No. 686,121. (No model.)

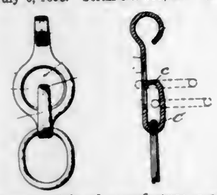


Claim.—1. In a coupling, the combination of two coupling members, one provided with cam-flanges having cut-away portions and the other carrying a coupling-sleeve upon it having a longitudinal sliding engagement therewith and provided with interior coupling-lugs, and a nut upon said coupling member held in position thereon against endwise displacement, said nut being free to turn upon said coupling member and having a screw-thread engagement with the coupling-sleeve on said member.

2. In a hose-coupling, the combination of two coupling members, one provided with cam-flanges terminating in stops and having cut-away portions adjacent thereto, and the other coupling member carrying a coupling-sleeve held in position thereon from turning—free to slide longitudinally thereon—and provided with interior coupling-lugs, a packing-ring inclosed in said coupling-sleeve, and a nut upon said coupling member held in position thereon against endwise displacement—free to turn thereon, said nut having an interior screw-thread engaging with an exteriorly-screw-threaded portion of the coupling-sleeve.

3. In a hose-coupling, the combination of two tubular members having at one end means for attaching the hose thereto and at the other end an enlarged head terminating in an annular seat, interrupted screw-flanges terminating in stops or offsets on the head of one of said members, depressions formed in said flanges adjacent to the stops, a coupling-sleeve J having a sliding connection on the head of the other member and a screw-nut Q turning loosely on said member and having a screw-thread engagement with the coupling-sleeve.

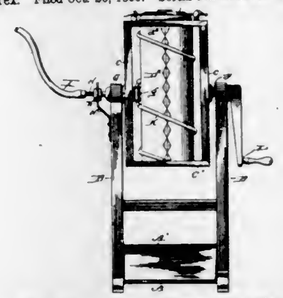
652,905. CURB-HOOK FOR BRIDLES. FRANK SWALES, London, England. Filed July 6, 1898. Serial No. 685,226. (No model.)



Claim.—1. As a new article of manufacture, a curb-hook comprising a main circular body portion having a centrally-disposed aperture formed therein, a hook member integral with the main body portion having its free end turned to form an underbent counter-hook extending into the central aperture within the planes of the front and rear faces of the main body portion, and means for attaching the hook at the opposite end, substantially as described.

2. In a curb-hook having a curved body portion centrally apertured and a curved arm integral with the main body portion forming the hook member, an underbent counter-hook formed on the free end of the main hook member having a rounded head extending into the central aperture within the planes of the front and rear faces of the main body portion, substantially as described.

652,906. CHURN. WILLIAM R. WELKE and MAX BIEDERSTAEDT, Dallas, Tex. Filed Oct. 26, 1899. Serial No. 734,866. (No model.)



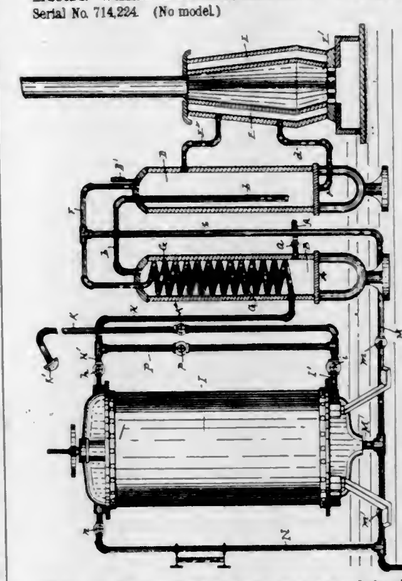
Claim.—1. In a churn, the combination, with the standards of a revoluble frame mounted thereon, a can secured within said frame, means for hermetically sealing the same, perforated tubes encircling the can, and means for supplying water thereto during the operation of the churn, substantially as described.

2. In a churn, the combination with the standards, of a frame mounted thereon, a hollow trunnion for said frame, a can secured within the frame, perforated tubes extending from the said trunnion and encircling the can, and means for supplying water to said pipes during the operation of the churn, substantially as described.

3. A churn comprising the standards, a frame mounted thereon, a can secured to said frame, an absorbent covering detachably secured to the can, and tubes encircling the can and having apertures therein, whereby water may be supplied from said tubes to the absorbent, substantially as described.

4. A churn comprising the tub-like base, the standards, the frame mounted therebetween, a can secured within the frame, an absorbent covering therefor, a stationary rod detachably secured within the can, a circular perforated dasher secured to said rod, tubes encircling the can and having apertures therein, said tubes secured to a hollow trunnion of the can, and means for supplying water to said tubes and trunnion during the operation of the churn, substantially as described.

652,907. APPARATUS FOR STERILIZING AND FILTERING LIQUIDS. WILLIAM M. DEICHLER, Lancaster, Pa. Filed Apr. 24, 1899. Serial No. 714,224. (No model.)



Claim.—1. The combination, in an apparatus of the character described, of a sterilizer, a filter, a pipe extending from the sterilizer to the filter, a stop-cock in said pipe, a discharge-pipe attached to the filter, a stop-cock in the discharge-pipe, a pipe beneath the filter and connected with the pipe extending from the sterilizer to the filter and between the stop-cock therein and the sterilizer, a connection between the bottom of the filter and the pipe beneath said filter, a stop-cock in the pipe beneath the filter and located between the filter and the connection of said pipe with the pipe extending from the sterilizer to the filter, a cleaning-pipe connected with the top of the filter, and a stop-cock in the cleaning-pipe, for the purpose specified.

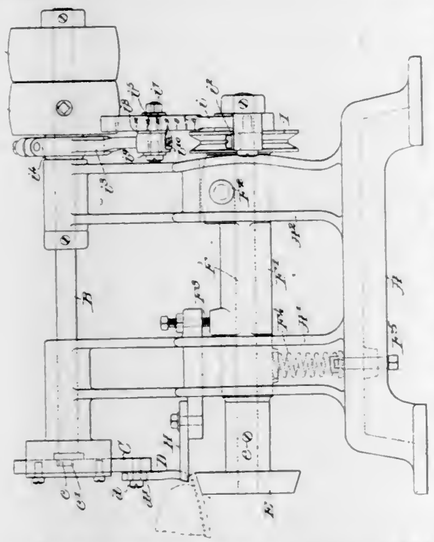
2. The combination, in an apparatus of the character described, of a sterilizer, a filter, a pipe extending from the sterilizer to the filter, a stop-cock in said pipe, a discharge-pipe attached to the filter, a stop-cock in the discharge-pipe, a pipe beneath the filter and connected with the pipe extending from the sterilizer to the filter and between the stop-cock therein and the sterilizer, a connection between the bottom of the filter and the pipe beneath said filter, stop-cocks in the pipes beneath the filter, one of said stop-cocks being located on each side of the connection between said pipe and the bottom of the filter, a cleaning-pipe connected with the top of the filter, and a stop-cock in the cleaning-pipe, for the purpose specified.

652,908. STITCH-SEPARATING MACHINE. JOHN B. HADAWAY, Brockton, Mass. Filed May 2, 1900. Serial No. 15,207. (No model.)

Claim.—1. A stitch-separating machine, having, in combination, a stitch-separating tool, a feeding device acting on the bottom of the sole arranged to permit the sole to be moved in either direction by the action of the tool on the stitches, and mechanism to actuate the feed to cause it to feed the sole uniform distances, and mechanism to actuate the separating-tool, substantially as described.

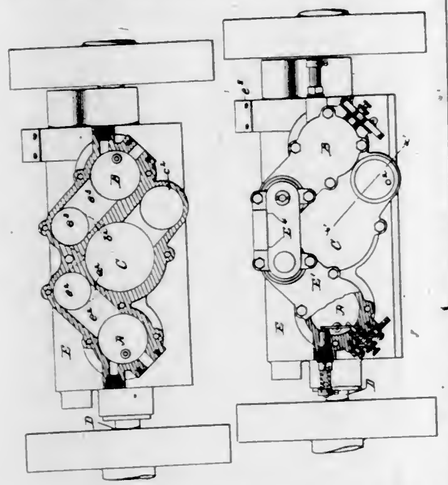
2. A stitch-separating machine, having, in combination, a stitch-separating tool, feed mechanism movable in either direction by the action of the tool on the stitches, means to actuate the feed mechanism to feed the sole uniform distances in one direction, and mechanism for actuating the tool, substantially as described.

3. A stitch-separating machine, having, in combination, a feed-roll, movable in either direction by the action of the tool on the stitches, mechanism for actuating the feed-roll to feed the sole uniform distances, having provision for releasing it to permit its movement by the separating-tool, and mechanism for actuating the tool, substantially as described.



4. A stitch-separating machine, having, in combination, a stitch-separating tool, a feeding device in constant engagement with the work arranged to permit the work to be moved in either direction by the action of the tool on the stitches, mechanism to actuate the feed to cause it to feed the work uniform distances, and mechanism to actuate the separating-tool, substantially as described.

652,909. GAS-MOTOR. CHARLES L. MAYHEW, Newark, N. J., assignor of two-thirds to James A. Pickett and William E. Burroughs, New York, N. Y. Filed June 16, 1899. Serial No. 720,769. (No model.)



Claim.—1. In a compound gas-motor comprising two high-pressure cylinders and a low-pressure cylinder, located side by side, parallel to each other, with the low-pressure cylinder between the others, and in which the said high-pressure cylinders alternately exhaust into said low-pressure cylinder during the instrokes of the alternate full strokes of the respective pistons of said high-pressure cylinders, the combination with said several cylinders, of a single head common thereto to close the front or inward ends thereof and containing two explosion-chambers located therein respectively opposite to and in open communication with said high-pressure cylinders, two ports respectively leading divergently therein from inlet-apertures at their outward ends on the front side of said head above the central cylinder to said explosion-chambers, two ports respectively leading convergently therein from said outward ends of said inlet-ports to said low-pressure cylinder and respectively communicating with said inlet-ports by apertures which are respectively located oppositely to and registering with said inlet-apertures, and two valve-seats respectively located in said communication-apertures between said ports, together with two valves respectively working to said valve-seats to control communication between the respective high-pressure cylinders and the low-pressure cylinder; substantially as and for the purpose specified.

2. In a compound gas-motor comprising two high-pressure cylinders and a low-pressure cylinder, located side by side, parallel to each other, with the low-pressure cylinder between the others, and in which the said high-pressure cylinders alternately exhaust into said low-pressure cylinder during the instrokes of the alternate full strokes of the respective pistons of said high-pressure cylinders, the combination with the said several cylinders, of a single head common thereto to close the front or inward ends thereof and containing two explosion-chambers located therein respectively opposite to and in open communication with said high-pressure cylinders, two ports respectively leading divergently therein from inlet-apertures at their outward ends on the front side of said head above said central cylinder to said explosion-chambers, two ports respectively leading convergently therein from said outward ends of said inlet-ports to said low-pressure cylinder and communicating with said inlet-ports by apertures which are respectively located oppositely to and registering with said inlet-apertures, and two valve-seats respectively located in said communication-apertures between said ports, and having valves which respectively work to said seats, together with a port leading downwardly in said head from said low-pressure cylinder to an outlet on the front side thereof, and a valve-seat in said outlet, with a valve working to said seat to control the exhaust from said low-pressure cylinder; substantially as and for the purpose specified.

3. In a compound gas-motor comprising two high-pressure cylinders and a low-pressure cylinder, located side by side, parallel to each other, with the low-pressure cylinder between the others, and in which the said high-pressure cylinders alternately exhaust into said low-pressure cylinder during the instrokes of the alternate full strokes of the respective pistons of said high-pressure cylinders, the combination with the said several cylinders, of a single head common thereto to close the front or inward ends thereof and containing two explosion-chambers located therein respectively opposite to and in open communication with said high-pressure cylinders, two ports respectively leading divergently therein from inlet-apertures at their outward ends on the front side of said head above the central cylinder to said explosion-chambers, and an inlet-piece on the front side of said head and common to said inlet-apertures therein and having two apertures which are respectively opposed to and register with said inlet-apertures, and two valve-seats respectively located in said inlet-piece apertures, with two valves carried by said inlet-piece and respectively working to said seats therein to control the inlet of gas to the explosion-chambers of the respective high-pressure cylinders; substantially as and for the purpose specified.

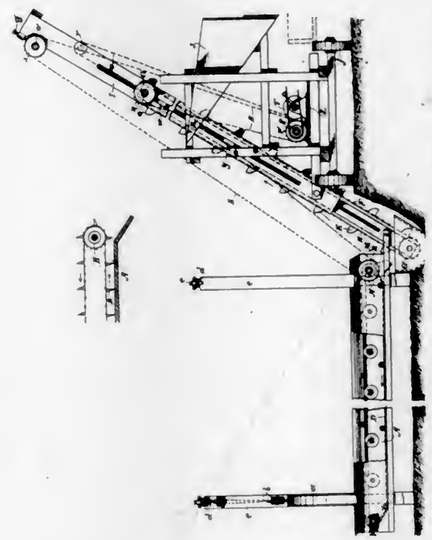
4. In a compound gas-motor comprising two high-pressure cylinders and a low-pressure cylinder, located side by side, parallel to each other, with the low-pressure cylinder between the others, and in which the said high-pressure cylinders alternately exhaust into said low-pressure cylinder during the instrokes of the alternate full strokes of the respective pistons of said high-pressure cylinders, the combination with the said several cylinders, of a single head common thereto to close the front or inward ends thereof and containing the explosion-chambers of said high-pressure cylinders, two ports respectively leading therein from inlet-apertures on the front side of said head above the central cylinder to said explosion-chambers, two ports respectively leading therein from the inlet ends of said inlet-ports to said low-pressure cylinder and communicating with said inlet-ports by apertures which respectively register with said inlet-apertures, and two valve-seats respectively located in said communication-apertures between said ports, together with a crank-shaft common to the respective pistons of the several cylinders, a cam-shaft driven by said crank-shaft, a casing which is common to and incloses the rear or outward ends of said several cylinders and within which said shafts have bearings and work, and two valves respectively working to said valve-seats and provided with stems which extend rearwardly through said head and above and parallel to said central cylinder and into said casing to operative engagement, respectively, with cams on said cam-shaft; substantially as and for the purpose specified.

5. In a compound gas-motor comprising two high-pressure cylinders and a low-pressure cylinder, located side by side, parallel to each other, with the low-pressure cylinder, between the others, and in which the said high-pressure cylinders alternately exhaust into said low-pressure cylinder during the instrokes of the alternate full strokes of the pistons of said high-pressure cylinders, the combination with the said several cylinders, of a single head common thereto and closing the front or inward ends thereof, and containing the explosion-chambers of said high-pressure cylinders and in its upper part ports which act as gas-inlets to said explosion-chambers and also establish communication between the inward ends of said high-pressure cylinders and that of said low-pressure cylinder, with valves respectively governing said ports, together with an exhaust-port leading downwardly in said head from said low-pressure cylinder to an outlet on the front side thereof between said cylinder and an adjoining high-pressure cylinder, a valve working to a seat in said outlet and having a stem extending rearwardly below said cylinders, a reciprocatory rod playing in a guide above said cylinders and actuated by a cam on a shaft having bearings at the rear or outward ends of said cylinders, and a lever extending transversely of the cylinders and operatively connecting said rod and said valve-stem; substantially as and for the purpose specified.

652,910. PROCESS OF MAKING YEAST EXTRACTS. JEAN PEETERS, Schaerbeek, Belgium. Filed Nov. 30, 1897. Serial No. 660,315. (No specimens.)

Claim.—A process for the manufacture of extracts of yeast consisting in washing the yeast, after it has been strained, in a solution acidulated with acetic acid, dissolving and digesting at a temperature of at least 40° centigrade the washed yeast with an addition of a suitable acid, washing the product of the digestion with alcohol, and evaporating such product to the desired consistency.

652,911. PORTABLE CONVEYER AND ELEVATOR. GEORGE E. BOWERS, San Francisco, Cal. Filed Nov. 1, 1899. Serial No. 735,454. (No model.)



Claim.—1. The combination of a horizontal carrier, means whereby it may be raised and lowered, an elevator, and means whereby it may be raised and lowered in unison with the carrier.

2. A horizontal carrier, consisting of a trough, an endless conveyer, mechanism by which it may be raised or lowered, an elevator into the buckets of which the carrier discharges, and means for adjusting the elevator in unison with the adjustment of the carrier.

3. A conveyer consisting of an essentially horizontally disposed trough, an endless carrier adapted to move therethrough and transfer material from one end to the other, devices by which said trough may be raised or lowered and also moved transversely of the line of travel of the carrier, and an elevator with means for adjusting it in unison with the vertical movements of the carrier, and also with its transverse movements.

4. A conveyer consisting of a trough, an endless carrier adapted to move therethrough, bales connected with the trough, transversely-disposed rails supported above the trough, trolley-wheels adapted to travel upon the rails and means by which the trolley-wheel frames are connected with the suspending-bales of the trough.

5. A conveyer consisting of a trough, an endless carrier adapted to move therethrough and transfer material from end to end, means for raising and lowering said trough, and a chain of elevator-buckets into which the material is delivered from the carrier, a frame upon which said chain of buckets is carried, guides in which said frame is slidable and means whereby said frame is raised and lowered in unison with the vertical adjustments of the horizontal carrier.

6. A conveyer consisting of a horizontal trough, an endless carrier movable therethrough, means for raising and lowering the carrier, an elevator including a slidable frame and a chain of buckets mounted therein and adapted to receive the discharge of the carrier, guides between which the slidable frame is movable and means whereby said frame is raised and lowered in unison with the movements of the carrier, sprocket-wheels and supports therefor mounted upon the bed of the elevator, the upper portion of the guides, the slidable frame and the carrier, respectively, and endless chains passing around said sprocket-wheels whereby the carrier and elevator are driven in unison, and the tension of the chains maintained for any vertical adjustment of the parts.

7. A conveyer consisting of a horizontal trough, an endless carrier movable therethrough, means for raising and lowering the conveyer, an elevator consisting of an endless chain of buckets into which the carrier discharges, a frame upon which the chain of buckets is mounted, guides in which said frame is slidable to raise and lower it in unison with the movements of the carrier, tongue-plates fixed upon the slidable frame and projecting into channels in the guides, corresponding plates fixed upon the guides and projecting into channels of the slidable frame, and means for raising and lowering the elevator-frame with relation to the guides.

8. A conveyer consisting of a trough, an endless carrier adapted to move through said trough, means for raising and lowering said carrier, means for moving it transversely to the line of travel of the buckets, an elevator consisting of a chain of buckets, a slidable frame upon which the buckets are mounted, guides and a mechanism by which said frame is raised and lowered in unison with the movements of the carrier and a carriage upon which the elevator is mounted, said carriage being capable of movement in unison with the transverse movement of the carrier.

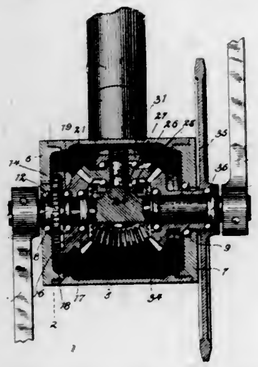
9. A conveyer consisting of a trough, a carrier adapted to move therethrough, journal-boxes for the sprocket-wheel shafts about which the chains pass, and means for adjusting said boxes to compensate for variations in the length of the chain, an elevator consisting of an endless chain of buckets, a slidable frame upon the upper and lower ends of which the sprocket-wheel shafts of the bucket-chains are journaled, guides in which said frame is slidable, and mechanism by which it is raised and lowered in unison with the movements of the carrier, endless chains passing around the sprocket on the carrier-driving shaft, sprockets on the carrier-shaft, sprockets on a shaft journaled in the upper end of the elevator-guide, sprockets upon the end of the shaft on the slidable elevator-frame and sprockets upon a main driving-shaft, said shafts and sprockets being so disposed that the length of the chains passing over them is automatically adjusted in unison with the movements of the elevator-carrying frame.

10. A conveyer consisting of a trough, a carrier adapted to move therethrough, means for raising and lowering the carrier, an elevator into which the carrier discharges, means for adjusting said elevator, sprocket-wheels and endless chains automatically adjustable for length in unison with the raising or lowering of the carrier and elevator, slidable boxes in which the shafts of the sprocket-wheels are journaled and devices by which the boxes may be adjusted independently of the automatic adjustment of the chains.

11. An apparatus consisting of a carrier, means for raising and lowering and moving it transversely with relation to the line of travel, an elevator, means for adjusting it in unison with the adjustments of the carrier, a hopper or receiver into which material delivered by the carrier to the elevating-buckets is discharged, and gates through which the material may be discharged from the hopper.

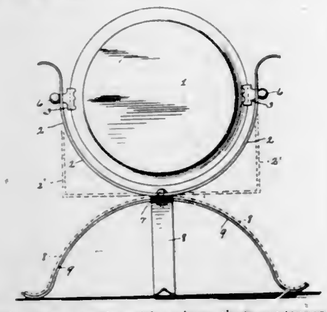
12. A conveyer consisting of a trough, a carrier movable therethrough, bales attached to the trough, horizontal tracks supported transversely of the line of travel of the carrier, trolleys journaled in frames and movable upon the transverse tracks, mechanism connecting the trolley-frames with the bales upon the trough whereby the trough may be raised or lowered and also moved transversely.

652,912. BICYCLE-GEAR. ALFORD BRADY, Galveston, Tex., assignor of one-half to Gus Reymershoffer, M. Rosenberger, and M. M. Levy, same place. Filed Aug. 30, 1899. Serial No. 728,996. (No model.)



Claim.—In a bicycle the combination with a tubular crank-hanger having disks engaged with its ends, said disks being movable into and out of the crank-hanger, of a crank-shaft passed through the disks and hanger and having a gear fixed thereon, a bevel-gear mounted loosely upon the crank-shaft and carrying an internal gear, said internal gear encircling the gear fixed upon the crank-shaft, pinions mounted upon a disk adjacent the internal gear and movable with the disk into and out of engagement with the internal gear and the gear that is fixed upon the crank-shaft, a plurality of stub-shafts upon the crank-shaft, bevel-gears rotatably mounted upon the stub-shafts and engaging the first-named bevel-gears, a bevel-gear mounted loosely upon the crank-shaft and engaging the bevel-gears upon the stub-shafts, and a sprocket secured to the loosely-mounted gear.

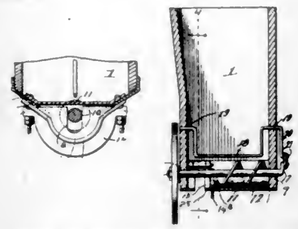
652,913. PORTABLE LOOKING-GLASS FRAME AND HOLDER. GEORGE F. COLBERT, Pittsburg, Pa. Filed Jan. 27, 1900. Serial No. 2,980. (No model.)



Claim.—In combination with a mirror, the frame thereof, consisting of the base formed in two semicircular sections, the one capable of being folded within the other, and when opened the one section at right angles with the other to form a base, a bolt or rivet 7 joining the one section with the other, a metallic spring-frame connected to the base by the said bolt or rivet, the clips or holders 3 pivotally connected to opposite sides of the frame, each of which consists of a casting, provided with a V-shaped groove, and adapted to take a frictional hold upon the edges of the glass and confine the same in position by the spring or elasticity of the frame, substantially as and for the purpose described.

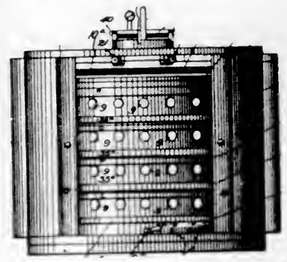
652,914. COTTON-PLANTER AND FERTILIZER-DISTRIBUTER. FRANKLIN C. DAVIS, Toccoa, Ga. Filed Feb. 8, 1900. Serial No. 4,519. (No model.)

Claim.—1. A planting attachment for plows, comprising a seed-box adapted for attachment to the rear side of a plow, in combination with a shaft journaled in said seedbox and having a feed-worm, a crank, and an operating-wheel, the latter being adapted for rotation by contact with the ground as the plow advances, an oscillating stirrer in said seedbox and having an exterior crank-arm, and a link connecting said crank-arm to the crank of the wheel-shaft, substantially as described.



2. In a planter, the seedbox having the bottom plate forming a channel, said channel having a transversely-disposed discharge-opening near one end thereof, a vertically-adjustable cut-off plate disposed in the said opening, said cut-off plate having a discharge-opening in its upper side and means to adjust said cut-off plate vertically, in combination with a shaft journaled in bearings with which the box is provided, said shaft being disposed in said channel of said bottom plate and having a feed-worm therein, and extending through the discharge-opening in the upper side of the cut-off plate and means to rotate said shaft, substantially as described.

652,915. VOTING-MACHINE. JOSIAH FAIN and MARTIN HERSTROM, Denver, Colo. Filed Aug. 22, 1899. Serial No. 728,139. (No model.)



Claim.—1. In a voting-machine, the combination with a suitable casing and a door, of a rotary frame inclosed thereby, suitable registers mounted on the frame, push-keys supported on the frame and connected with the registers, the keys for voting straight tickets being arranged in horizontal series adjacent the tickets, which extend around the frame and occupy positions parallel to each other, the keys corresponding to the same office of all the tickets being arranged in vertical series, and suitable slides shifted by the actuated key, for locking the other slides in the same vertical series, against movement when any key is pressed inwardly, another vertical slide for locking the actuated key at its inward limit of movement, and means operated by the closing of the door for acting on the last-named slide, whereby the actuated key is released and allowed to return to its normal position.

2. The combination with the casing and a door, of a rotary frame inclosed thereby, a vertical shaft around which the frame moves, said shaft being provided with a bottom flange or plate and having a vertical movement, vertical partitions radially arranged on the rotary frame, push-keys mounted on said partitions, one above another, registers also mounted on the partitions and adapted to be operated by the keys, which are positioned in horizontal series around the rotary frame, collars mounted on the rotary frame adjacent the shaft and surrounding the same, dogs mounted on the rotary frame and located between each collar and all the keys in the corresponding horizontal series, said dogs engaging the collar and said keys, a suitable connection between the collars and the shaft, whereby, when the rotary frame is properly adjusted, the vertical movement of the shaft will raise the collar and operate all the keys in the same horizontal series, through the instrumentality of the interposed dogs, and suitable means actuated by the closing of the door, for imparting the vertical movement to the shaft.

3. The combination with a casing, of a rotary frame journaled therein on a vertical axis, and suitable vote-registers mounted on the frame, push-keys mounted on the rotary frame for actuating the registers, said keys being arranged in vertical and horizontal series, means operated by an actuated push-key for locking all the other keys in the same vertical series against movement, means for locking the actuated key in the operated position, and suitable means for releasing the actuated key, whereby the operating parts are returned to their normal position ready for the next voter.

4. The combination with a suitable case and doors, of a rotary frame journaled in said casing on a vertical axis, counting-registers mounted on the frame, push-keys mounted on the rotary frame and adapted to actuate the registers, said keys being arranged in horizontal and vertical series, means actuated by the inward thrust of any key for locking all the other keys in the same vertical series against movement, means for locking the actuated key at its inward limit of movement, and means operated by the closing of the door for releasing the actuated key.

5. The combination with a casing provided with a door, of a rotary frame journaled in the casing, counting-registers mounted on the rotary frame, push-keys mounted on said frame and arranged in vertical series, means operated by an actuated key for locking all the other keys in the same vertical series against movement, a vertically-movable slide for locking the actuated key in the operated position, and means operated from the door of the casing for raising said slide and releasing the actuated key.

6. The combination with a casing and a door, of a rotary frame journaled therein on a vertical axis, spring-held push-keys mounted on the said frame and arranged in vertical and horizontal series, vertical slides arranged one above another and operated by the actuated push-key, whereby the keys above in the same vertical series are locked against movement, a vertical slide for locking the actuated push-key in the operated position, dogs mounted on the rotary frame and engaging the inner extremity of each push-key, a central vertical shaft, vertically movable but normally locked against rotary movement, collars mounted on the rotary frame and surrounding the shaft, said collars being arranged to turn with the rotary frame and move vertically with the shaft independently of the rotary frame, the shaft and collars being so connected that by the proper adjustment of the frame the upward movement of the shaft raises a collar, the collars being positioned to engage the dogs whereby, as a collar is raised, all the push-keys in the same horizontal series are actuated, and a yoke-lever interposed between the shaft and the door, whereby the closing of the door raises the shaft.

7. The combination with a casing, of a rotary frame journaled in said casing, a vertically-movable shaft surrounded by the rotary frame, push-keys mounted on the rotary frame and projecting inwardly toward the shaft, means interposed between the push-keys and the shaft whereby the vertical movement of the shaft actuates the push-keys, and suitable means for imparting the vertical movement to the shaft.

8. The combination with a casing, of a rotary frame journaled therein on a vertical axis, a vertically-movable shaft surrounded by the rotary frame, push-keys mounted on said frame and projecting inwardly toward the shaft, a suitable connection between the said shaft and the keys whereby the vertical movement of the shaft actuates the keys, and suitable means for actuating the shaft.

9. The combination with a casing, of a rotary frame journaled therein, a vertically-movable shaft surrounded by said frame, push-keys mounted on the frame and projecting inwardly toward the shaft, a suitable connection between the shaft and the keys whereby the vertical movement of the shaft actuates the keys, and suitable means for operating the shaft.

10. The combination with a casing and a door, of a rotary frame journaled in the casing, push-keys mounted on the casing, a suitable connection between the keys and the shaft whereby the movement of the shaft actuates the keys, and means operated by the door for actuating the shaft.

11. The combination with a suitable casing, vote-registers, and operating means therefor, of a shaft vertically movable in said casing, and a connection between the shaft and the vote-registering mechanism, whereby the movement of the shaft actuates the vote-registering means.

12. The combination with a casing and a door, and vote-registering mechanism inclosed by the casing, of a shaft vertically movable in said casing, a connection between said shaft and the vote-registering mechanism, whereby the movement of the shaft actuates said mechanism, and means actuated by the door of the casing for actuating the said shaft.

13. The combination with a casing and suitable vote-registering mechanism, of a vertical shaft vertically movable in said casing, a slide-shoe for locking the shaft to the casing to prevent rotation, a crank-shaft, blocks arranged to slide on the casing, and in which the crank-shaft is journaled, a vertical projection made fast to the shaft and having an opening engaged by the crank of the crank-shaft, a lever-arm made fast to the crank-shaft whereby the vertical shaft may be raised by the raising of the said lever-arm, the arrangement of the parts being such that, as the lever is raised, the shoe is shifted to release the shaft.

14. The combination with a suitable casing and vote-registering mechanism inclosed thereby, of a vertical shaft vertically movable in said casing and normally arranged to operate the vote-registering mechanism, a total-vote register, and a suitable connection between the shaft and the said register whereby the raising of the shaft operates the register.

15. In a voting-machine the combination with a suitable casing, of a set of push-keys arranged one above another, each key being provided with two inclined faces and two shoulders, locking-slides arranged one above another and engaging each other, one of these slides normally engaging one inclined face of each key except the uppermost, whereby as any key is thrust inwardly, its inclined face actuates its engaging slide, raises said slide and all other slides above it, whereby a slide is brought immediately in the rear of one shoulder of each key, locking the inactive keys against movement, and a long vertical slide normally engaging the other inclined face of each key, whereby as any key is pushed inwardly the slide is raised and lowered to fall in front of the other shoulder on the actuated key whereby the latter is locked against the return movement.

16. In a voting-machine, the combination of a casing and a set of push-keys arranged one above another, each key having an inclined face and a shoulder, a long vertical slide normally engaging the inclined face of each key, whereby as any key is pushed inwardly, the slide is raised and allowed to fall in front of the shoulder on the actuated key, whereby the latter is locked against the return movement, a vertically-movable shaft located in the center of the casing, and a suitable connection between said shaft and the inner extremities of the push-keys whereby the movement of the shaft actuates said keys.

17. The combination with a voting-machine, of a number of push-keys arranged one above another and provided with beveled faces and shoulders, a number of short slides arranged one above another, a slide normally resting on an inclined face of each key except the uppermost, and a long slide normally resting on a beveled face of each key, whereby when any key except the uppermost is pressed, the short slides are raised to positions immediately in the rear of shoulders on the inactive keys, whereby the latter are locked against inward movement, the long slide being raised by the actuated key until the slide drops in front of a shoulder on said key, thus locking the latter against the return movement.

18. In a voting-machine, the combination of a casing, a door and a set of spring-returned push-keys arranged one above another, each key having an inclined face and a shoulder, a long, vertical slide normally engaging the inclined face of each key, whereby as any key is pushed inwardly, the slide is raised and allowed to fall in front of the shoulder on the key, whereby the latter is locked against the return movement, and means for automatically raising the long slide to release the push-key comprising a vertically-movable shaft provided with a flange adapted to engage the long slide as the shaft is actuated, and a connection between the door and the shaft whereby the closing of the door actuates the shaft.

19. The combination, in a voting-machine, of a number of push-keys arranged one above another and provided with beveled or inclined faces and shoulders, a number of short slides arranged one above another, a slide normally resting on an inclined face of each key except the uppermost, and a long slide normally resting on a beveled face of each key, whereby when any key except the uppermost is pressed, the short slides are raised to positions immediately in the rear of shoulders on the inactive keys, whereby the latter are locked against inward movement, the long slide being raised by the actuated key until the slide drops in front of a shoulder on said key, thus locking the latter against the return movement, and means for automatically raising the long slide sufficiently to release the actuated key and allow the latter to return to its normal position, whereby the short slides are allowed to return to their normal positions, unlocking the inactive push-keys.

20. The combination with a casing, a door and vote-registering mechanism inclosed by the casing, of a vertical shaft located in said casing, a connection between the door and the shaft whereby the movement of the door actuates the shaft vertically, and a connection between the shaft and the vote-registering mechanism, whereby the said movement of the shaft actuates the said mechanism.

21. The combination with a casing, a door, and vote-registering mechanism, of a vertical shaft for operating said mechanism, a lever-yoke engaging the shaft, and a connection between said door and the yoke, whereby the movement of the door actuates the yoke.

22. The combination with a casing, of a rotary frame adjustably mounted therein, vote-registering mechanism carried by said frame, a vertically-movable shaft arranged to operate said mechanism, and means for actuating the shaft.

23. The combination with a casing and a door, of a rotary frame mounted therein, vote-registering mechanism carried by said frame, and means for locking the frame in a predetermined position comprising a locking-dog mounted on the outer part of the casing and engaging teeth formed on the adjacent portion of the rotary frame,

the arrangement being such that the closing of the door engages the dog and unlocks the rotary frame.

24. The combination with a casing provided with a door, of a rotary frame mounted therein, on a vertical axis, vote-registering mechanism carried by said frame, a locking-dog for holding the frame in any desired position of adjustment, the arrangement being such that the closing of the door engages the dog and unlocks the frame, and suitable means for returning the frame automatically to its normal position.

25. The combination with a casing and a door, of a rotary frame mounted therein, on a vertical axis, vote-registering mechanism carried by said frame, a locking-dog mounted on the outer part of the casing and engaging teeth formed on the adjacent portion of the rotary frame, the arrangement being such that the closing of the door engages the dog and unlocks the frame, and suitable means for returning the frame automatically to its normal position, comprising weights supported by cords connected with the rotary frame, whereby as the latter is turned by the voter, the weights are raised.

26. The combination with a casing, of a cylindrical frame journaled in said casing, a central vertically-movable shaft and vote-registering mechanism carried by said frame and adapted to be actuated by the movement of the shaft.

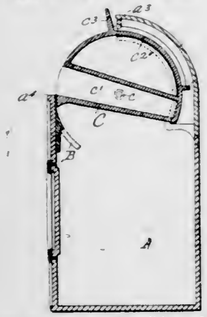
27. The combination with a casing, of a cylindrical frame journaled in said casing on a vertical axis, vote-registering mechanism carried by said frame, and a vertically-movable shaft surrounded by said frame and arranged to operate the vote-registering mechanism.

28. The combination with a casing, of a cylindrical frame journaled therein, a central vertically-movable shaft, vertical radial partitions mounted on said frame, vote-registers carried by said partitions, and push-keys also carried by the partitions and arranged to operate the registers the push-keys being operated by the movement of the shaft.

29. The combination of a casing, vote-registering mechanism inclosed thereby, a vertical shaft located in the casing for operating said mechanism, a yoke-lever having arms engaging said shaft, wings pivoted on said lever, and doors connected with the casing and provided with rollers which engage the said wings and actuate the lever as the doors are closed, the said rollers passing under the wings during the opening movement of the doors.

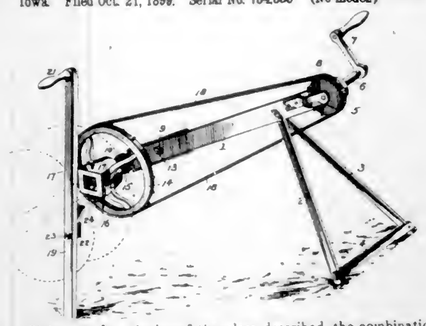
30. The combination with a casing, and vote-registering mechanism inclosed thereby, of two doors hinged to the casing and provided with engaging segmental racks, whereby the doors must move simultaneously, and a suitable connection between the doors and the vote-registering mechanism, whereby the movement of the doors operates said mechanism.

652,916. LETTER-BOX. JOHN A. KLINE, Reading, Pa. Filed Aug. 11, 1899. Serial No. 726,882. (No model.)



Claim.—A rain and dust proof mail-box of the class described having a body formed with an open front at its upper end and a fixed circular roof which covers approximately the rear half of the box-top; said body also having side walls which extend above the bottom of its open portion and have curved top edges, and said roof being arranged above the tops of said curved edges and extending concentrically therewith and also extending laterally, so that the inner surfaces of its sides will be beyond the planes of the inner surfaces of said curved top edges, to form closed ways in the sides of the rear portion of the curved top of the box; said ways having mouths at the front and being bounded at the top and side by the top and side, respectively, of the roof, and below by the curved top edges of the sides of the body; said roof also having a front edge a^3; and a rotary receiving-chute, having a diametrical receiving-chamber and a cylindrical wall, said cylindrical wall serving normally to close the open front of the box and having lateral extensions which overhang the curved top edges of the body sides and travel in said ways; and radial ribs projecting from said cylindrical wall and arranged on opposite sides of said front edge a^3 for the purposes specified.

652,917. DISK-SHARPENER. GEORGE MEINHARDT, Donnellson, Iowa. Filed Oct. 21, 1899. Serial No. 734,333. (No model.)



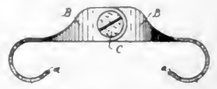
Claim.—1. In a device of the class described, the combination with a staff, of a clamping-plate having a recessed face located next the staff, a bolt passing through the plate and the staff, and a sharpening-knife having one side beveled and provided with a cutting edge offset from said beveled side, said knife being fitted in the recess aforesaid and held against the staff by the plate.

2. In a device of the class described, the combination with a frame composed of an arm and legs connected thereto, of a sprocket journaled in said frame and having a socket and set-screws for securing the axle of the disk therein, a crank-shaft having a sprocket and a chain running over said sprockets.

3. In a device of the class described, the combination with a frame composed of an arm and legs connected thereto, of a plate having a bearing and provided with a longitudinal slot, a bolt passing through the slot and the arm, a sprocket having a stub-shaft journaled in the bearing and provided with a socket and set-screws for clamping the disk-axle therein, a crank-shaft journaled in the arm and having a sprocket, and a chain running over the sprockets.

4. In a device of this class described, the combination with a frame composed of an arm and legs connected thereto, of a plate having a recessed side which receives the arm and provided with a bearing and a longitudinal slot, a bolt extending through the slot and the arm, a sprocket having a stub-shaft journaled in the bearing and itself provided with a socket and set-screws for clamping the disk-axle therein, a bracket secured to the arm, a crank-shaft journaled in the arm and bracket, a sprocket secured on the shaft between the arm and bracket and a chain running over the sprockets.

652,918. CHAIN-REPAIR LINK. JOSEPH H. MUCKERHEIDE, North Milwaukee, Wis., assignor to Edwin F. Van Vechten, Milwaukee, Wis. Filed Sept. 23, 1899. Serial No. 731,381. (No model.)

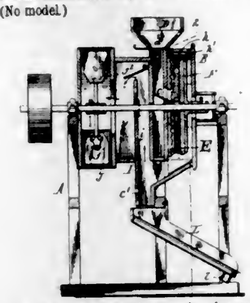


Claim.—1. A repair-link for sprocket-chains, comprising two hook-shaped members provided with shanks adapted to be inserted through the links of a sprocket-chain; and having cross-bars on the hooked ends of said members, adapted to engage the side bars of the chain-links; and means for uniting the shanks of the members to form a hinge-joint.

2. A repair-link for sprocket-chains, comprising two hook-shaped members provided with shanks adapted to be inserted through the links of a sprocket-chain; and having cross-bars on the hooked ends of said members, adapted to engage the side bars of the chain-links; and also provided with tongues extending from the outer edges of the cross-bars; and means for uniting the shanks of the members to form a hinge-joint.

3. A repair-link for sprocket-chains, comprising two hook-shaped members, provided with shanks adapted to be inserted through the links of a sprocket-chain, the ends of the shanks being twisted so that their flat surfaces are adapted to meet in a plane perpendicular to that of the chain, the hooked ends of the members having cross-bars, adapted to engage the side bars of the chain-links; and a bolt and nut for securing the meeting ends of the shanks together in the form of a hinge-joint.

652,919. PEANUT-HULLER. JAMES B. MCHUGH, Lockport, N. Y., assignor to John McLean, same place. Filed May 7, 1898. Serial No. 679,981. (No model.)

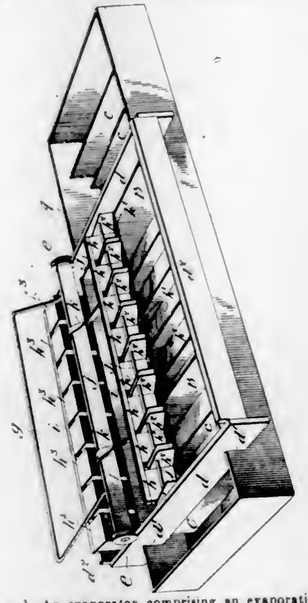


Claim.—1. A brush for a hulling or cleaning machine consisting of a stock or disk having bristles projecting from one of its flat sides and arranged in the form of radial arms or sections which are separated by intervening spaces or recesses and a marginal ring of bristles encircling the outer ends of said arms, substantially as set forth.

2. The combination with a rotary hulling-disk, a stationary hulling-disk, and the inclosing casing, of a soft, yielding protector arranged within said casing opposite the periphery of the rotary disk to receive the impact of the material thrown outward by the disk, thereby preventing breakage of the grains or kernels, substantially as set forth.

3. The combination with a rotary hulling-disk, a stationary hulling-disk, and the inclosing casing, of a soft, protecting lining secured to said casing and separated therefrom by an intervening space, said lining being arranged opposite the periphery of the rotary disk, substantially as set forth.

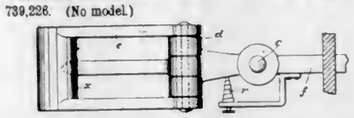
652,920. EVAPORATING-PAN. JOHN V. PENDER, Falth, Ky. Filed Apr. 7, 1900. Serial No. 12,011. (No model.)



Claim.—1. An evaporator, comprising an evaporating-pan divided into sections by a partition having a controllable opening, each section having partitions of gradually-reduced depth, guide-rails above the pan, a skimming device comprising a beam carrying wheels which move on the rails, arms extending at the side of the beam, a rod passed through the end of the arms, a gang of skimmers pivotally hung on the rod and weighted at their inner ends and means at the side of the pan in the path of the skimmers operating at the end of the movement of the latter to tilt the skimmers in the manner substantially as described.

2. In combination, an evaporating-pan, guide-rails above the pan, bars at the ends of the rails, and a double skimming device comprising a beam carrying wheels which move on the rails, arms extending at each side of the beam, rods passed through the ends of the arms, a gang of skimmers pivotally hung on each rod and weighted at their inner ends, said skimmers adapted to alternately contact with and be tilted by the bars in the manner substantially as described.

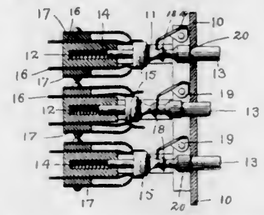
652,921. COUPLING FOR RAILWAY-VEHICLES. ANTON PISKUR, Remetincez, Austria-Hungary. Filed Dec. 2, 1899. Serial No. 739,226. (No model.)



Claim.—1. A railway-vehicle coupling comprising coupling-links provided with bevel or curved surfaces to guide the coupling-hooks, coupling-hooks adapted to slide one on the other after the ends come into contact and engage the links, brackets hinged at their rear ends by horizontal hinges to a draw-piece and hinged at their forward ends by vertical hinges to the coupling links and hooks, a spring for keeping the bracket in position, a spring supported on the bracket for keeping the link in position, a draw-bar and adjustable mechanism between the draw bar and piece adapted to be operated from the side to vary the distance between the draw-bar and draw-piece.

2. A railway-vehicle coupling comprising coupling-links provided with bevel or curved surfaces to guide the coupling-hooks, coupling-hooks adapted to slide one on the other after the ends come into contact and engage the links, brackets hinged at their rear ends by horizontal hinges to a draw-piece and hinged at their forward ends by vertical hinges to the coupling links and hooks, a spring for keeping the bracket in position, a spring supported on the bracket for keeping the link in position, a draw-bar, adjustable mechanism between the draw bar and piece adapted to be operated from the side to vary the distance between the draw-bar and draw-piece, and a chain attached to the link and extending to the side of the vehicle.

652,922. TELEPHONE-SWITCH. OSGOOD PLUMMER, Worcester, and CHARLES E. MONROE, Boston, Mass., assignors to Frank O. Plummer, Boston, Mass. Filed Jan. 4, 1900. Serial No. 308. (No model.)



Claim.—1. As an article of manufacture, a telephone-switchboard comprising a plurality of circuit-making plungers, terminals cooperating with the plungers to form connections between telephone instruments, and a retaining device for holding the plungers in their pushed-in or operative position, whereby any desired number of plungers may be successively operated to bring a successive number of telephones into simultaneous connection, said retaining device being constructed so as to be released when one of the plungers is pushed to the limit of its travel, whereby all previously-made connections will be cut out and a connection with a single desired telephone established, substantially as described.

2. As an article of manufacture, a telephone-switchboard comprising a vertical face-plate, a plurality of horizontally-movable circuit-making plungers arranged in tiers over each other, springs normally forcing the plungers outwardly, contact-arms cooperating with each plunger, a vertically-movable gravity-actuated pivotally-mounted detent-strip for each tier of plungers, and a connection for simultaneously turning the detent-strips, substantially as described.

3. As an article of manufacture, a telephone-switchboard comprising a face-plate, a plurality of circuit-making plungers, springs normally forcing the plungers outwardly, an operating-piece rectangular in cross-section mounted on each of the plungers, contact-arms engaging opposite faces of the rectangular operating-pieces so as to hold the plungers from turning, and means for holding the plungers in their pushed-in or operative position, substantially as described.

4. As an article of manufacture, a telephone-switchboard com-

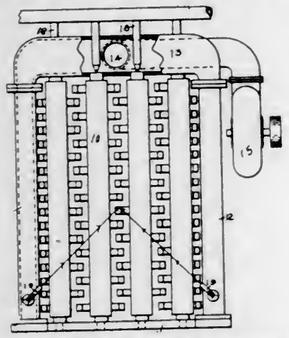
prising a face-plate, a plurality of circuit-making plungers, springs normally forcing the plungers outwardly, contact-arms coöperating with each plunger, a pivotally-mounted swinging detent-strip, a catch-section on each plunger arranged to be engaged by the detent-strip for holding the plunger in its pushed-in or operative position, and a releasing-section on each plunger separate and distinct from the catch-section thereof for raising the detent-strip to release previously-actuated push-buttons, substantially as described.

5. As an article of manufacture, a telephone-switchboard comprising a face-plate, a plurality of circuit-making plungers, each having an operating-section, a catch-section, and a releasing-section, springs normally forcing the plungers outwardly, a pivotally-mounted swinging detent-strip coöperating with the catch and releasing sections of the plungers, and a clearing-out or releasing push-button or plunger arranged to lift the detent-strip when it is desired to release all previously-actuated circuit-making plungers, substantially as described.

6. In a telephone-switchboard, the combination of a face-plate 10, a plurality of circuit-making plungers 13, each having an operating-section, a catch-section, and a releasing-section, two sets of terminals coöperating with the operating-section of each plunger, springs 14 normally forcing the plungers outwardly, pivotally-mounted swinging detent-strips 19 for holding the plungers in their pushed-in or operative position, and a call-button for throwing in a calling-circuit when desired, substantially as described.

7. In a telephone-switchboard, the combination of a face-plate, a bridge-piece carried by said face-plate, terminals carried by said bridge-piece, and a plurality of circuit-making plungers extending through the face-plate and having their rear ends fitting into sockets which do not extend completely through the bridge-piece, substantially as described.

652,923. SMOKELESS FURNACE. FRANKLIN M. REED, Indianapolis, Ind., assignor to the Reed Smokeless Furnace Company, same place. Filed Sept. 28, 1899. Serial No. 731,975. (No model.)

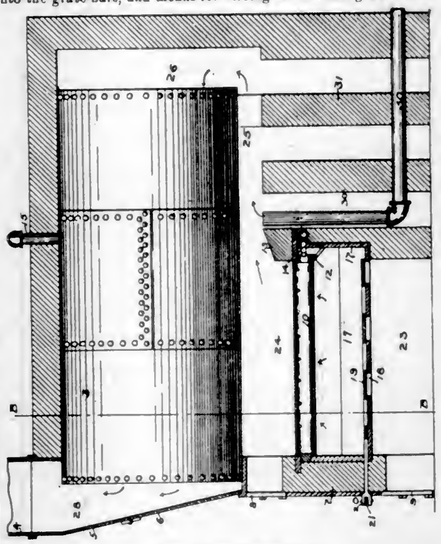


Claim.—1. In a furnace, a series of hollow perforated grate-bars open at their rear ends, an air-box in which the rear ends of said grate-bars are mounted and which extend beside the series of grate-bars and higher than the same, means for forcing air into said air box or chamber, outlet-pipes from the side extensions of said air box or chamber that direct the air therefrom above the grate-bars, and steam-injector pipes extending into the air-box close to the open ends of the grate-bars for driving steam and air therein.

2. In a furnace, a series of hollow perforated grate-bars open at their ends, an air box or chamber in which the rear ends of said grate-bars extend that is provided with extensions beside the series of grate-bars and higher than the same and to the front end thereof, means for forcing air into said air box or chamber, outlet-pipes at the front end of the side extensions of the air box or chamber so turned as to direct the air issuing therefrom above the grate-bars and toward the rear, and steam-injector pipes leading from the rear into the air box or chamber to the open end of the grate-bars whereby steam and air are driven therein forward.

652,924. SMOKELESS FURNACE. FRANKLIN M. REED and RICHARD R. SPAIN, Indianapolis, Ind., assignors, by direct and mesne assignments, to the Reed Smokeless Furnace Company, same place. Filed Oct. 2, 1899. Serial No. 732,358. (No model.)

Claim.—A furnace including a grate-box air-tight excepting at the top, hollow perforated grate-bars across the top thereof with one end opening into said box, a steam-supply pipe, injector-pipes leading therefrom through the wall of said box into the open ends of the grate-bars for injecting steam therein and drawing air from the box into the grate-bars, and means for forcing air into the grate-box.



652,925. FIREPLACE-FENDER. THOMAS J. RUSSELL, Woodville, Tex. Filed Oct. 24, 1899. Serial No. 734,652. (No model.)



Claim.—1. An extensible fireplace-fender comprising two separable overlapping horizontally-swinging sections horizontally adjustable in relation to each other to expand or contract the fender, each section being provided at its overlapping end with means for detachably engaging the other section, the fender being reinforced by the overlapping of the sections when closed and the sections being readily disengaged and swung in opposite directions apart from each other to afford access to the fire.

2. An extensible fireplace-fender comprising two separable overlapping horizontally-swinging sections horizontally adjustable in relation to each other to expand or contract the fender, each section being provided at its overlapping end with hooks for detachably engaging the other section, the fender being reinforced by the overlapping of the sections when closed and the sections being readily disengaged and swung in opposite directions apart from each other to afford access to the fire.

3. An extensible fireplace-fender composed of two overlapping sections, each section being composed of horizontal bars having hooks and loops at their opposite ends, and a vertical bar integral with and connecting said loops.

4. An extensible fireplace-fender composed of two overlapping sections, each section being composed of horizontal bars having hooks and loops at their opposite ends, a vertical bar integral with and connecting said loops and screen material between said bar.

652,926. SOUND TRANSMITTING AND RECEIVING DEVICE. COLIN SALMOND, San Francisco, Cal. Filed Sept. 7, 1899. Serial No. 729,786. (No model.)

Claim.—1. The combination with an unsupported trumpet-like sound receiving and transmitting instrument having a mouthpiece, of a branch pipe communicating with the air-passage in the smaller end of the instrument and provided with an earpiece; substantially as described.

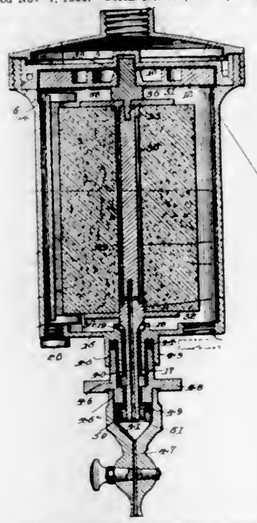
2. In a sound receiving and transmitting instrument, a pipe provided with a mouthpiece, a branch pipe communicating with said first-mentioned pipe and provided with an earpiece, and means for maintaining one of said pipes closed during the time the other of said pipes is open for use; substantially as described.



3. In a sound receiving and transmitting instrument, a pipe provided with a mouthpiece, a branch pipe communicating with said first-mentioned pipe and provided with an earpiece, and a gate pivoted between the openings in the said pipes and adapted to be swung to close either of said pipes and thus leave the other pipe open, said gate being provided with means for holding it in position to close either pipe during the period of use of the other pipe; substantially as described.

4. In a sound receiving and transmitting instrument, a pipe provided with a mouthpiece, a branch pipe communicating with said first-mentioned pipe and provided with an earpiece, and a member normally yieldingly maintained in position to close the first-mentioned pipe, said second-mentioned pipe being normally open; substantially as described.

652,927. WATER-FILTER. ANDREW G. SHEAK, Binghamton, N. Y. Filed Nov 7, 1899. Serial No. 736,161. (No model.)



Claim.—1. A filter comprising an exterior casing, a top composed of two separate sections, the upper section forming a cover and engaging over the upper edge of the exterior casing, and the lower section fitting within the exterior casing, an interior rotary filtering-casing, a water-wheel connected with the inner casing, and a stationary cleaning device, substantially as described.

2. A filter comprising an exterior casing, a top provided with an interior chamber and composed of an upper section extending over the upper edges of the exterior casing, and a lower section fitting within the same and having a recess at its lower face forming a depending annular flange having openings or passages communicating with the said chamber, an interior rotary filtering-casing, and a wheel connected with the interior casing and operating in the said recess, substantially as described.

3. A filter comprising an exterior casing, an interior rotary filtering-casing, a water-wheel connected with the interior casing, the upper and lower substantially U-shaped guides located above and below the inner casing, and a cleaning device supported in the guides and engaging the exterior of the inner casing, substantially as described.

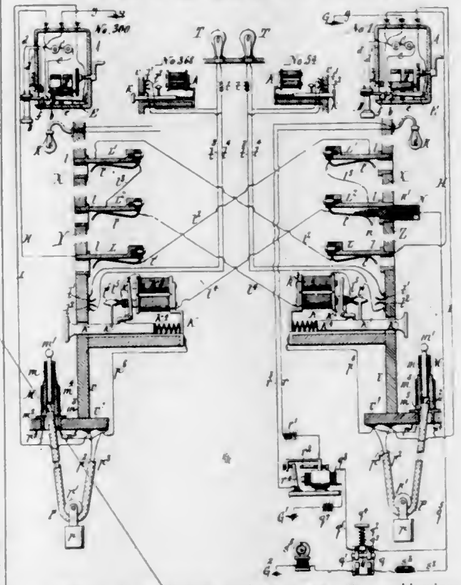
4. A filter comprising an exterior casing, an interior rotary filtering-casing, a supporting-frame consisting of a shaft, extending through the inner casing, a lower plate fixed to the shaft and engaging the lower end of the inner casing, an upper plate engaging the top of the inner casing, and a screw passing through the upper plate and engaging the shaft and adapted to clamp the said plates against the casing, and a water-wheel connected with the screw, substantially as described.

5. A filter comprising an exterior casing having a depending tube and provided with an annular flange concentric with the tube, an inner rotary filtering-casing provided with a depending tubular portion communicating with its interior and having a shoulder or seat, a nut engaging the said flange and arranged to engage the said shoulder or seat, and a stop-cock carried by the nut, substantially as described.

6. A filter comprising an exterior casing provided with a depending tube and having a concentric flange interiorly threaded and arranged adjacent to the tube to form a recess, an inner rotary filtering-casing having a depending tubular portion communicating with its interior and provided at its lower end with a shoulder or seat, a nut having a tubular body portion provided with upper and lower screw-threads and engaging the annular flange and fitting in the said recess, and a stop-cock having an interiorly-threaded end engaging the lower screw-threads of the nut, substantially as described.

7. A filter comprising an exterior casing, an inner rotary filtering-casing, the upper and lower approximately U-shaped guides located above and below the inner casing, one of the guides being detachably interlocked with the exterior casing, and a cleaning device arranged in the said guides and engaging the interior casing, substantially as described.

652,928. TELEPHONE-EXCHANGE SYSTEM. WALTON SMITH, Ridley Park, Pa., assignor to James S. Thompson, North Tonawanda, N. Y. Filed Mar. 28, 1899. Serial No. 710,757. (No model.)



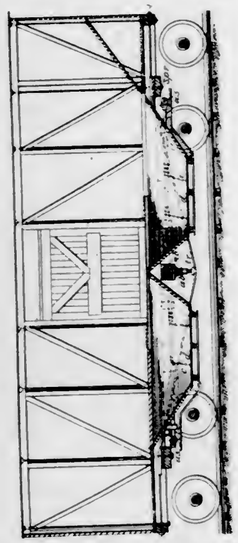
Claim.—1. In a telephone-exchange system, the combination with a metallic circuit which connects a subscriber's station with a central office and which is normally grounded at the subscriber's station and normally ungrounded at the central office, of a number of coupling-jacks each of which consists of only two cooperating contacts connected in series in the metallic circuit at the central office so that all of the coupling-jack contacts are in circuit when a subscriber is connected with another subscriber, an annunciator arranged at the central office in one side of said circuit, a speaking apparatus and a signaling apparatus arranged at the subscriber's station in the opposite side of said circuit, a ground arranged at the subscriber's station, a switch whereby the ground and signaling apparatus or the speaking apparatus may be connected with the metallic circuit, a coupling-plug connected by branch wires with the metallic circuit on the same side which includes the annunciator, and a switch which is operated by the coupling-plug and which cuts out the coupling-plug from the circuit when the same is retracted and which cuts in the coupling-plug when the same is withdrawn, substantially as set forth.

2. The combination with a metallic circuit connecting a subscriber's station with a central-office switchboard, of a ground-line connected with the metallic circuit at the subscriber's station, a plug which is adapted to be connected with the metallic circuit at the central office and which is connected with a line having two grounded branches, one branch including a constant-current generator and a

relay-coil, while the other branch includes an alternating-current generator and an indicator, a local circuit including an indicator and a generator and controlled by the relay, and a switch whereby either one or the other of said branches is connected with the line of the plug, substantially as set forth.

3. In a telephone-exchange system, the combination with a metallic circuit which connects a subscriber's station with a central office and which is normally grounded at the subscriber's station and normally ungrounded at the central office, of a number of coupling-jacks each of which consists of only two cooperating contacts connected in series in the metallic circuit at the central office so that all of the coupling-jack contacts are in circuit when a subscriber is connected with another subscriber, an annunciator arranged at the central office in one side of said circuit, a speaking apparatus and a signaling apparatus arranged at the subscriber's station in the opposite side of said circuit, a ground arranged at the subscriber's station, a switch whereby the ground and signaling apparatus or the speaking apparatus may be connected with the metallic circuit, a coupling-plug connected by branch wires with the metallic circuit on the same side which includes the annunciator, a switch which is operated by the coupling-plug and which cuts out the coupling-plug from the circuit when the same is retracted and which cuts in the coupling-plug when the same is withdrawn, a ground-line arranged at the central office and including an indicator, and an operator's plug connected with the ground-line at the central office and provided with a single contact and with an insulating member, said operator's plug being adapted, when inserted in a coupling-jack, to pass with its insulating member between the contacts of the coupling-jack and separate the same so as to break the circuit on the side containing the annunciator, while the contact thereof is adapted to engage the contact of the coupling-jack which is included in the side of the metallic circuit containing the signaling and speaking apparatus of the subscriber's station, whereby the annunciator is not affected when the operator tests a line or calls up a subscriber's station, substantially as set forth.

652,929. DUMPING-CAR. JACOB J. SOUDER, Washington, D. C. Filed Apr. 22, 1899. Renewed Dec. 6, 1899. Serial No. 739,438. (No model.)



Claim.—1. In a dumping railway-car, the combination with the "center sills" of the car, of the intermediate longitudinal sill, carrying the winding-shaft; and the endless bracing and supporting frame, bearing outwardly against the fixed inwardly-bearing portions of the hoppers; substantially as described.

2. In a dumping-car, the combination with the three-part built-up center and intermediate sill, and with the oppositely-placed or coincident hoppers, of the described bracing-frame, bolted to the "center sills," and to the fixed inner portions of the hoppers, substantially as specified.

3. In a dumping-car, the combination with the three-part built-up center and intermediate sill, and with the oppositely-placed or coincident hoppers; of the described bracing-frame, bolted to the "center sills," and to the fixed inner portions of the hoppers, and provided with the swivel-pin, the swivel-bar, and the bar-supporting lugs: substantially as described and shown.

4. In a dumping-car, the combination with the "center sills" of the car, of the described bracing-frame, and the transversely-extending bearing-bar or chute-iron, having hooked ends, to engage the outer sills, and having also, at its mid-length, the upwardly-extending recess, to receive the bracing-frame, the bracing-frame and the chute-iron being secured together, and to the adjacent portions of the hopper; substantially as set forth.

5. In a dumping-car, central longitudinal sills; central, endless bracing-frames, secured to the bottom surface of such sills; oppositely-placed hoppers, abutting such bracing-frames; and a winding mechanism, and a locking mechanism, connected to and inclosed within the bracing-frames: in combination, substantially as described.

6. In a dumping-car, the combination with the "center sills," each having a recess, as described, along its outer and lower extremity; of the inclined body of the inner portion of the hopper, beveled at the upper extremity of such body, as shown, to adapt it to the longitudinal recess in the corner of the sill; substantially as specified.

7. In a dumping-car, the combination with the hopper, having in its bottom surface, along the margin of the discharging-openings of such hopper, and from end to end of each side thereof, a recess or continuous groove; of a pivoted drop-door or dumping-section, hinged at its upper extremity, as shown, and having along the entire margin or boundary of the supporting-face of the same, an upwardly-projecting flange which is adapted to the recess or groove in the bottom, or exterior face of the hopper; substantially as set forth.

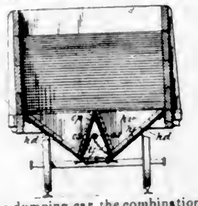
8. In a dumping-car, the combination with central, longitudinal sills, of oppositely-placed hoppers, having between them a continuous longitudinal open space, and a winding-shaft for closing the hopper-doors, the shaft being supported by the central sills, and the open space being adapted to receive the air-brake mechanism: substantially as described.

9. In a dumping-car, the combination with the "center sills," *cs*, *cs*, each resting upon a longitudinal truss-rod *tr* and an intermediate longitudinal sill *ls*, the three being united as one; of a winding-shaft, supported in bearings of the intermediate sill; oppositely-placed hopper-doors; and chains, connecting each door with the winding-shaft; the shaft operating to open or to close the doors, simultaneously; and the operating mechanism being wholly outside the body of the car.

10. In a dumping-car, the combination with the "center sills," and with the outer sills thereof; of longitudinal truss-rods, each of which in its central or mid-length portion, and in its end portions, is solid; and each of which in its remaining portions is tubular; substantially as described

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652,980. DUMPING-CAR. JACOB J. SOUDER, Washington, D. C. Filed Apr 28, 1899. Renewed Dec. 6, 1899. Serial No. 739,439. (No model.)



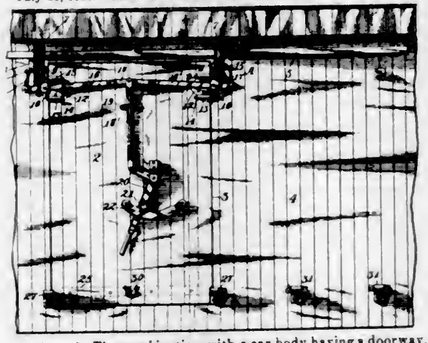
Claim.—1. In a dumping-car, the combination with the bed-frame of the car, of the oppositely-placed metallic end sections, having inclined and vertical portions as described; the chute-irons, resting upon opposite parts of the bed-frame, and placed in coincidence with the vertical ends, to support the same, and the compound girder, flanged as specified, engaged with the flanges upon the end sections, and extending from end to end of the discharge-opening of the hopper; substantially as set forth.

2. In a dumping-car, the combination with the bed-frame, and with the vertical frame of the car, of the hopper, embracing oppositely-placed end sections, each comprising an inclined and a vertical portion, facing the center of the car, the vertical portion having outstanding flanges as described; a transversely-extending supporting-bar or chute-iron, adapted to be united to the flanges of the end section, and the described girder, A-shaped in transverse section, having end flanges as shown, extending from end to end of the vertical portion of the hopper, bestriding the central portion of the chute-iron, and the superposed outstanding flange, and united to the flange, and to the vertical portion of the end section; substantially as shown.

3. In a dumping-car, a hopper which in its discharging portion is provided with a central support or girder which is composed of metallic plates, and is of A shape in transverse section, and is rigidly attached to the end walls of such discharging portion.

4. In a dumping-car, a hopper which in its discharging-opening has a metallic transversely-A-shaped girder, which is in plane with the center sill of the car, and which is composed of two sections, one of which is received within the other, and each of which is secured to the vertical end portion of the discharging-opening of the hopper.

652,931. CAR-DOOR. SINCLAIR J. JOHNSON, Nutley, N. J. Filed July 29, 1899. Serial No. 725,471. (No model.)



Claim.—1. The combination, with a car-body having a doorway, of a door fitting flush therein; a stationary support secured to the car-body; a carrier in permanent engagement with and shiftable on said support and embodying crank mechanism for supporting the door; and actuating means for shifting said door, independently of any movement of the whole carrier, upwardly and outwardly.

2. The combination, with a car-body having a doorway, of a stationary track secured to said body; a door; means shiftable on said track for supporting said door for parallel movement independently of such track and effective to maintain such parallel movement during the shifting of the door; and means operative to shift the door into position to be moved away from the doorway.

3. The combination, with a car structure having a doorway, of a door; carrying mechanism for supporting said door on said body for parallel movement outwardly and upwardly; and actuating means effective to shift said door outwardly and upwardly into position to be moved away from the doorway.

4. The combination, with a car-body having a doorway, of a door; a plurality of means for supporting said door on said body; and means operative to shift the door from its closed position into a position in readiness to be moved away from the doorway and embodying equalizing means in operative connection with one part of each of said supporting means.

5. The combination with a car-body having a doorway, of a door; a plurality of means for supporting said door on said body for movement into position to be moved away from the doorway; an equalizer in operative connection with one part of each of said means; and means in operative connection with said equalizer for shifting said door.

6. The combination, with a car structure having a doorway, of a door; a plurality of means embodying cranks for supporting said door on said body for movement into position to be shifted away from the doorway; an equalizer in operative connection with one part of each of said supporting means; and an actuator for operating said cranks through said equalizer to move the door.

7. In combination, with a car structure having a doorway, a door flush with the wall of such structure; a pair of carriers for supporting said door on said body; and actuating means embodying equalizing means for shifting the door simultaneously outwardly and upwardly.

8. In combination, with a car-body having a doorway, a door flush with the wall of such body; a pair of carriers for supporting said door on said body; and a lever system embodying an equalizer for operating a pair of said carriers to shift the door outwardly and upwardly.

9. The combination, with a car-body having a doorway, of a door therefor; a pair of carriers shiftably supported on said body and supporting said door; and actuating means embodying equalizing means in operative connection with one part of each of said carriers for moving the door into position to be shifted away from the doorway.

10. The combination, with a car-body having a doorway, of a door; a plurality of means for supporting said door on said body for movement into position to be shifted away from the doorway; means for moving said door into such position and including equalizing means in operative connection with each of said supporting means and an actuator; and means for maintaining said actuator in position against movement.

11. The combination, with a car-body having a doorway, of a door, a plurality of means for supporting said door on said body for movement into position to be shifted away from the doorway; means for moving said door into such position and including equalizing means in operative connection with each of said supporting means and an actuator; and pawl-and-ratchet mechanism for maintaining said actuator in position against movement.

12. The combination, with a car-body having a doorway, of a door therefor; a pair of hangers shiftably supported on said body; crank mechanism connecting said hangers and door; and actuating means for said crank mechanism and including an equalizer and effective to operate said crank mechanism and move the door into position to be shifted away from the doorway.

13. The combination, with a car-body having a doorway, of a door fitting flush therein; a stationary track secured to said body; a carrier in permanent engagement with and shiftable on said track and embodying crank mechanism for supporting said door; and a lever system in connection with said crank mechanism and effective to shift the door outwardly and upwardly.

14. The combination, with a car-body having a doorway, of a door; a track, a hanger shiftably supported on said track for permanent engagement therewith, crank mechanism connecting said hanger with said door to permit movement of said door independently of said hanger; and means for actuating said crank mechanism to move the door outwardly and upwardly, and into position to be shifted away from the doorway

15. The combination with a car-body having a doorway, of a door flush with the wall of such body; a track, a hanger shiftably supported on said track for permanent engagement therewith; crank mechanism connecting said hanger with said door to permit movement of the door independently of said hanger; and a lever system for operating said crank mechanism to shift the door outwardly and upwardly.

16. The combination, with a car-body having a doorway, of a door therefor; a hanger shiftably supported on said car-body; a pair of parallelly-located cranks connecting said hanger and door thereby to maintain parallel movement of said door; and actuating means for operating said cranks, thereby to move the door into position to be shifted away from the doorway.

17. The combination, with a car-body having a doorway, of a door therefor; a pair of hangers shiftably supported on said car-body; a pair of parallelly-located cranks connecting each of said hangers with said door thereby to maintain parallel movement of said door; and actuating means for operating said cranks thereby to move the door into position to be shifted away from the doorway.

18. The combination, with a car-body having a doorway, of a door therefor; a track supported on said body; a hanger shiftable on said track; a plurality of parallelly-located cranks connecting said hanger and door thereby to maintain parallel movement of said door; and means for actuating said cranks to move the door into position to be shifted away from the door-opening.

19. The combination, with a car-body having a doorway, of a stationary track secured to said body; a door; means shiftable on said track for supporting the door for parallel movement independently of such track into position to be moved away from the doorway and effective to maintain such parallel movement during the shifting of the door; means for moving said door into such position and including an actuator; and pawl-and-ratchet mechanism for maintaining such actuator in position against movement.

20. In combination, with a car structure having a doorway, a door fitting flush therein; a track supported on said structure; a carrier comprising a hanger movable on said track, and a pair of cranks pivotally secured to said hanger and door; and means for actuating said cranks thereby to shift the door from its flush position outwardly and upwardly, such means comprising a lever system.

21. In combination, with a car-body having a doorway, a door fitting flush therein; a hanger supported by said car-body; a pair of cranks pivotally carried thereby and secured to said door; means for actuating said cranks to shift the door into position to be shifted away from the doorway, such means including an actuator; and means for maintaining the same in its adjusted position.

22. In combination, with a car-body having a doorway, a door fitting flush therein; a hanger supported by said car-body; a pair of cranks pivotally carried thereby and secured to said door; means for actuating said cranks thereby to shift the door, such means including an actuator; and a pawl-and-ratchet mechanism for maintaining said actuator in its adjusted position.

23. In combination, with a car structure having a doorway, a door fitting flush therein; a pair of carriers supporting said door and including a pair of cranks; a pair of connecting-levers, one connected

to each of said cranks; and an actuator for operating said levers thereby to throw said cranks into position to shift the door into and out of its flush position.

24. In combination, with a car-body having a doorway, a door fitting flush therein, a track carried by said body; a pair of hangers shiftable thereon; two sets of crank-arms pivotally secured to said hangers and to said door; a pair of levers pivotally secured to said hangers and having connection with a crank-arm of each set; an equalizer secured to said levers; and an actuator connected to said equalizer and effective to shift the door from its closed position into a position to be moved away from the doorway.

25. In combination, with a car-body having a doorway, a door fitting flush therein; a track carried by said body; a pair of hangers shiftable thereon; two sets of cranks pivotally secured to said hangers and door; a pair of levers pivotally secured to said hangers, each having connection with one crank of each set; an actuating-lever secured to said door and operatively connected with said levers; and pawl-and-ratchet mechanism for maintaining said actuating-lever in its adjusted position.

26. The combination, with a car-body having a doorway, of a door therefor, one of said parts having a flanged bar, a stationary track secured to said body; means shiftable on said track for supporting the door for parallel movement independently of such track and effective to maintain such parallel movement during the shifting of the door; means for moving the door into position to be shifted away from the doorway; and means carried by the other of said parts and coöperating with such flanged bar to control the bottom of said door.

27. The combination, with a car-body having a doorway, of a door therefor provided with a flanged bar, means for supporting said door on said body for parallel movement outwardly and upwardly, and effective to maintain such parallel movement during the shifting of the door outwardly and upwardly and means for moving the door into position to be shifted away from the doorway, and flanged members secured to said car-body and coöperating with the flanged bar on the door to control the bottom of said door

28. The combination, with a car-body having a doorway, of a door therefor, a hanger shiftably supported on said body; a pair of parallelly-located cranks connecting said hanger and door thereby to maintain parallel movement of said door; means for actuating said cranks to move the door into position to be shifted away from the doorway, and means for supporting the bottom of said door

29. The combination, with a car-body having a door, of a door therefor, a track secured to said body, a pair of hangers shiftably supported on said track and in permanent engagement therewith; crank mechanism connecting said hangers with said door to permit movement of said door independently of said hangers; means for actuating said crank mechanism to move said door outwardly and upwardly; a flanged bar secured to said door; and brackets coöperating with said flanged bar to maintain the bottom of said door in position in the doorway and for supporting said door during the shifting thereto

30. In combination, with a car-body having a doorway, a door fitting flush therein; a track carried by said body; a pair of hangers shiftable thereon, two sets of cranks pivotally secured to said hangers and door; a pair of levers pivotally secured to said hangers, each having connection with one crank of each set; an actuating-lever secured to said door and operatively connected with said levers; pawl-and-ratchet mechanism for maintaining said actuating-lever in its adjusted position; and means for maintaining the bottom of said door in its closed position

31. In combination, with a car-body having a doorway, a door fitting flush therein, a track carried by said body; a pair of hangers shiftable thereon; two sets of crank-arms pivotally secured to said hangers and door; a pair of levers pivotally secured to said hangers, each having connection with one crank of each set; an actuating-lever secured to said door and operatively connected with said levers; pawl-and-ratchet mechanism for maintaining said actuating-lever in its adjusted position; and means for maintaining the bottom of the door in its shifted position

32. In combination, with a car-body having a doorway, a door fitting flush therein, a track carried by said body; a pair of hangers shiftable thereon; two sets of cranks pivotally secured to said hangers and door, a pair of levers pivotally secured to said hangers, each having connection with one crank of each set, an actuating-lever secured to said door and having connection with said levers; pawl-and-ratchet mechanism for maintaining said actuating-lever in its adjusted position, and means for maintaining the bottom of the door in its closed position and in its shifted position

33. In combination with a car-body having a doorway, a door fitting flush therein; a track carried by said body; a pair of hangers shiftable thereon, two sets of crank-arms pivotally secured to said hangers and door; a pair of levers pivotally secured to said hangers, each having connection with one crank of each set; an equalizing member pivotally connected with said levers; an actuating-lever pivotally secured to said door and having connection with said equalizing member; pawl-and-ratchet mechanism for maintaining said actuating-lever in its adjusted position; and means for maintaining the bottom of the door in its closed and shifted positions, respectively

34. The combination, with a car-body having a doorway, of a door therefor; a track carried by said body; a hanger running on said track for supporting said door; a pair of parallelly-located cranks connecting said door and hanger for maintaining parallel movement of said door; actuating means for said cranks and effective to move the door into position to be shifted on its track away from the doorway; a flanged bar secured to said door; and a plurality of flanged brackets secured to said body and coöperating with said flanged bar to support and guide the door.

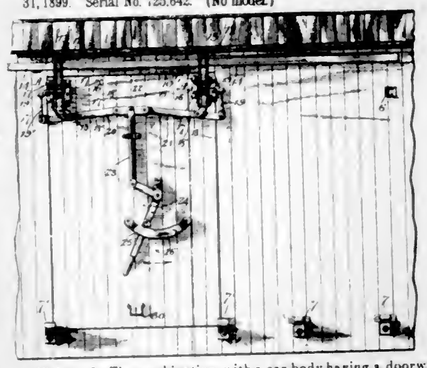
35. The combination, with a car-body having a doorway, of a door therefor; a hanger shiftably supported on said body; a pair of parallelly-located cranks connecting said door and shiftable hanger, thereby to maintain parallel movement of said door the connections of said cranks with said door being below the connection thereof with said hanger; and means for actuating said cranks to move the door into position to be shifted away from the doorway.

36. The combination, with a car-body having a doorway, of a door therefor; a pair of hangers shiftably supported on said body; a crank connecting each of said shiftable hangers with said door, the connection of each of said cranks with the door being below the connection thereof with the hangers; and means for actuating said cranks thereby to move the door outwardly and upwardly into position to be shifted away from the doorway.

37. The combination, with a car-body having a doorway, of a door therefor; a hanger shiftably supported on said car-body, a crank connecting said hanger and door and having its axis in a horizontal plane, whereby the door may be moved outwardly and upwardly; and actuating means for operating such crank, thereby to move said door into position to be shifted away from the doorway.

38. The combination, with a car-body having a doorway, of a door therefor; a pair of hangers shiftably supported on said car-body a crank connecting each of said hangers with said door and having its axis in a horizontal plane whereby the door may be moved outwardly and upwardly; and actuating means for operating said cranks thereby to move said door into position to be shifted away from the doorway.

652,932. DOOR. SINCLAIR J. JOHNSON, Nutley, N. J. Filed July 31, 1899. Serial No. 725,642. (No model.)



Claim.—1. The combination, with a car-body having a doorway, of a door therefor; a hanger shiftably supported on said car-body; a crank connecting said shiftable hanger and door and having its connection with said door above the connection thereof with said hanger, and also having its journal parts horizontally disposed and parallel to the plane of the door, and means for actuating said crank thereby to move the door outwardly and upwardly and into position to be shifted away from the doorway.

2. The combination, with a car-body having a doorway, of a door; a hanger for supporting said door; a plurality of cranks connecting said hanger with said door and having their connection with the door above the connection thereof with said hanger, and also having their journal parts horizontally disposed, and parallel to the plane of the door, and means for actuating said cranks and thereby the door outwardly and upwardly and into position to be shifted away from the doorway.

3. In combination, with a car-body having a doorway, a door; carriers for supporting said door and embodying cranks; and means including an equalizer for actuating said cranks to shift the cranks thereof into a perpendicular position and thereby the door outwardly and upwardly.

4. The combination, with a car-body having a doorway, of a door; a track secured to said body; a hanger shiftable on said track; a plurality of parallelly-disposed cranks connecting said shiftable hanger and door and having their connection with said door above their connection with said hanger, and also having their journal parts horizontally disposed, and parallel to the plane of the door, and means for actuating said cranks, thereby to move the door outwardly and upwardly into position to be shifted away from the doorway.

5. In combination, with a car-body having a doorway, a hanger supported thereon and carrying crank mechanism having its journal parts horizontally disposed, and parallel to the plane of the door, a door hung on said crank mechanism above the pivotal axis thereof with said hanger; and means for actuating said crank mechanism thereby to shift the door outwardly and upwardly.

6. In combination, with a car-body having a doorway, hangers supported thereon and carrying crank mechanism; a door hung on said crank mechanism above the pivotal axis thereof with said hanger; and means embodying equalizing means for actuating said crank mechanism thereby to shift the door into position to be moved away from the doorway.

7. In combination, with a car-body having a doorway, a track carried thereby; a hanger supported thereon for shiftable movement and carrying crank mechanism having its journal parts horizontally disposed, and parallel to the plane of the door; a door hung on said crank mechanism above the pivotal axes thereof with said hanger; and means for actuating said crank mechanism thereby to shift the door outwardly and upwardly.

8. In combination, with a car-body having a doorway, a track carried thereby; a pair of hangers movable on said track; cranks supported by said hangers, a door hung on said cranks above the pivotal axes of said cranks with the haugers; and means for actuating said cranks thereby to shift the door into position to be moved away from the doorway.

9. In combination, with a car-body having a doorway, a hanger supported thereon and embodying crank mechanism having its journal parts horizontally disposed, and parallel to the plane of the door; a door hung on said crank mechanism above the pivotal axis thereof with said hanger; means for actuating said crank mechanism thereby to shift the door outwardly and upwardly; and means for maintaining the bottom of the door in its closed position.

10. In combination, with a car-body having a doorway, a track carried thereon; a door fitting flush within said doorway; a pair of hangers movable on said track; cranks supported by said hangers, and having their journal parts horizontally disposed, and parallel to the plane of the door; a door hung on said cranks above the pivotal axes of said cranks with the hangers; means for actuating said cranks thereby to shift the door outwardly and upwardly; and means for maintaining the bottom of the door in its closed position.

11. The combination, with a car-body having a doorway, of a door therefor; a hanger supported on said body; a pair of double cranks connecting said hanger with said door; and means for actuating said cranks, thereby to shift the door from its closed position into position to be moved away from the doorway.

12. In combination, with a car-body having a doorway, a track carried thereby; a pair of hangers supported thereon; two sets of double cranks secured to said hangers and to said door; and means for actuating said cranks thereby to shift the door outwardly and upwardly, said means embodying equalizing means.

13. In combination, with a car-body having a doorway, a hanger supported thereon and carrying a crank mechanism having its journal parts horizontally disposed, and parallel to the plane of the door; a door hung on said crank mechanism above the pivotal axes thereof with the hanger; means for actuating said crank mechanism to shift the door outwardly and upwardly, said means including an actuator; and means for locking said actuator in position.

14. In combination, with a car-body having a doorway, a track secured thereto; a hanger movable on said track and carrying crank mechanism having its journal parts horizontally disposed, and parallel to the plane of the door; a door hung on said crank mechanism above the pivotal axis thereof with said hanger; means for actuating said crank mechanism thereby to shift the door outwardly and upwardly, said means including an actuator secured to said door; a pawl carried thereby; and a ratchet fixed to said door.

15. The combination, with a car-body having a doorway, of a door therefor; a track carried by said body; one or more hangers shiftable on said track; crank mechanism connecting said hanger or hangers with said door, and having its journal parts horizontally located, and parallel to the plane of the door; and means for actuating said crank mechanism to move the door into position to be shifted away from the doorway, such crank mechanism being operative outwardly and upwardly and into an angular position to maintain the door closed or to maintain it locked open against the side of the car.

16. The combination, with a car-body having a doorway, of a door; a pair of hangers shiftably supported on said body; cranks connecting said hangers with said door and having their connection with said door above the connection thereof with said hangers; actuating means including an equalizer for actuating said cranks, thereby to move the door into position to be shifted away from the doorway; and means for locking said actuating means in position against movement.

17. The combination, with a car-body having a doorway, of a door therefor; a shiftable hanger supported on said body; a pair of double cranks connecting said hanger and door and having connection with said door at each side of said hanger; and means for actuating said cranks to move the door into position to be shifted away from the doorway.

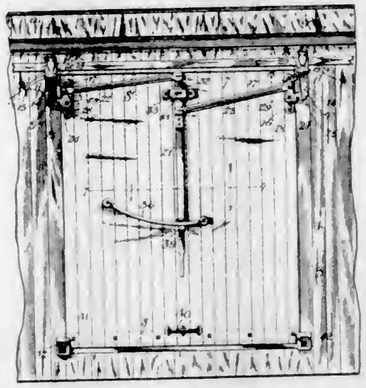
18. The combination, with a car-body having a doorway, of a door therefor; a shiftable hanger supported on said body; a double crank connecting said hanger and door and having connection with said door at each side of said hanger; and means for actuating said crank to move the door into position to be shifted away from the doorway.

19. The combination, with a car-body having a doorway, of a door therefor; a pair of hangers shiftably supported on said body; a double crank connecting each of said shiftable hangers with the door; and means for actuating said cranks to move the door into position to be shifted away from the doorway.

20. The combination, with a car-body having a doorway, of a door therefor; a pair of hangers shiftably supported on said body; a pair of double cranks connecting each of said hangers with said door; and means for actuating said cranks, thereby to move the door into position to be shifted away from the doorway.

21. The combination, with a car-body having a doorway, of a door fitting therein flush with the car-wall; one or more carriers embodying crank mechanism for supporting said door on said body; means for actuating said crank mechanism to move the door into position to be shifted away from the doorway; and flanged brackets having beveled inner faces disposed in position to coöperate directly with the bottom of the door to maintain the same flush with the car-wall and to support the same when the crank mechanism is operated to move the door away from its closed position.

652,933. CAR-DOOR. SINCLAIR J. JOHNSON, Nutley, N. J. Filed Nov. 3, 1899. Serial No. 735,677. (No model.)



Claim.—1. The combination, with a car-body having a doorway, of a door therefor; one or more hangers shiftably supported on said body; crank mechanism connecting said hanger or hangers with said door; a bell-crank in operative connection with said crank mechanism and having its direction of movement parallel to the plane of the doorway; and actuating means in connection with said bell-crank and effective to move the door into position to be shifted away from the doorway.

2. The combination, with a car-body having a doorway, of a door therefor; means for supporting said door on said body for shiftable movement, and said door having a movable pivot connection with said supporting means; and means for shifting said door into position to be moved away from the doorway and comprising a pair of members and equalizing means intermediate said members.

3. The combination, with a car-body having a doorway, of a door; a plurality of carriers shiftably supported on said body and each embodying crank mechanism including a bell-crank; and means for actuating said bell-cranks to move the door into position to be

shifted away from the doorway, said actuating means including an equalizer.

4. The combination, with a car-body having a doorway, of a door; a pair of carriers shiftably supported on said body and each embodying crank mechanism including a bell-crank; and means for actuating said bell-cranks to move the door into position to be shifted away from the doorway, said actuating means including a floating-lever actuator.

5. The combination, with a car-body having a doorway, of a door; supporting means for said door and comprising hangers mounted on said body for shiftable movement; a supporting-crank connecting each of said hangers with said door; a bell-crank carried by each of said hangers and in connection with said supporting-cranks; and means for operating said bell-cranks thereby to move the door into position to be shifted away from the doorway.

6. The combination, with a car-body having a doorway, of a track secured to said body; a door; a pair of hangers shiftably mounted on said track; a supporting-crank connecting each of said hangers with said door; a bell-crank supported on each of said hangers and in connection with said supporting-crank; and a lever system for operating said bell-cranks thereby to move the door into position to be shifted away from the doorway.

7. The combination, with a car-body having a doorway, of a door; one or more hangers shiftably supported on said body, each comprising a pair of hinged members; a crank connecting each of said hangers with said door; and actuating means for operating said crank or cranks thereby to move the door into position to be shifted away from the doorway.

8. The combination, with a car-body having a doorway, of a door; a plurality of hangers shiftably supported on said body, each comprising a pair of hinged members; a crank connecting each of said hangers with said door; and actuating means for operating said crank or cranks thereby to move the door into position to be shifted away from the doorway, said actuating means including equalizing means.

9. The combination, with a car-body having a doorway, of a track secured to said body; a pair of hangers mounted on said track, each comprising a pair of hinged members: a door; crank mechanism connecting said hangers with said door; a bell-crank supported on each of said hangers and in connection with said crank mechanism; and means for operating said bell-cranks thereby to move the door into position to be shifted on said track.

10. The combination, with a car-body having a doorway, of a pair of hangers supported for shiftable movement on said body; a door having a movable pivot connection with said hangers; crank mechanism connecting said hangers with said door; and means for operating said crank mechanism thereby to move the door into position to be shifted away from the doorway.

11. The combination, with a car-body having a doorway, of a door therefor; a pair of hangers supported on said body for shiftable movement relatively thereto and each having a movable connection with said door; a crank connecting each of said hangers with said door; and means for operating said cranks thereby to move the door into position to be shifted away from the doorway.

12. The combination, with a car-body having a doorway, of a door provided with recesses therein; a pair of hangers supported on said body for shiftable movement, each having a projection extending into one of said recesses, whereby the door has movable pivot connections with said hangers; a crank connecting each of said hangers with said door; and means for operating said cranks thereby to move the door into position to be shifted away from the doorway.

13. The combination, with a car-body having a doorway, of a door therefor; a pair of hangers supported on said body for shiftable movement, said door having a movable connection with each of said hangers; a crank connecting each of said hangers with said door; and means for operating said cranks to move the door into position to be shifted away from the doorway, and including an equalizer.

14. The combination, with a car-body having a doorway, of a door therefor; a track secured to said body; a pair of hangers mounted on said track for shiftable movement, said door having a movable connection with each of said hangers; a crank connecting each of said hangers with said door; and means including a floating actuator for operating said cranks to move the door into position to be shifted away from the doorway.

15. The combination, with a car-body having a doorway, of a door therefor; one or more hinge-formed members shiftably supported on said body, said door having a movable pivot connection with said hinge-formed member or members, whereby said door may be shifted with one part of said hinge-formed member and simultaneously moved in a transverse direction independently thereof; and means for moving the door relatively to said member or members and into position to be shifted away from the doorway.

16. The combination, with a car-body having a doorway, of a door fitting therein; a pair of hinge-formed hangers supported on said body for shiftable movement, said door having a movable connection with each of said hangers; a crank connecting said door with each of said hangers; and means for operating said cranks thereby to move the door into position to be shifted away from the doorway.

17. The combination, with a car-body having a doorway, of a door fitting therein; a track secured to said body; a pair of hinge-formed hangers supported on said track for shiftable movement, said door having a movable connection with each of said hangers; a crank connecting said door with each of said hangers; means for operating said cranks thereby to move the door into position to be shifted away from the doorway, said means including equalizing means.

18. The combination, with a car-body having a doorway, of a door fitting therein; a track supported on said body; a pair of hangers mounted on said track for shiftable movement, each of said hangers comprising a pair of hinged members, said door having a movable connection with one member of each of said hangers; a supporting-crank connecting said door with each of said hangers; a bell-crank pivoted to each hanger and in operative connection with said supporting-cranks; and actuating means for operating said bell-cranks thereby to move the door into position to be shifted away from the doorway.

19. The combination, with a car-body having a doorway, of a door fitting therein; a track secured to said body; a pair of hangers supported on said track for shiftable movement, each of said hangers comprising a pair of hinged members, said door having a movable pivot connection with one member of each of said hangers; cranks connecting said door with said hangers, said cranks forming the pintles of said hinged members; and means for operating said cranks and thereby the door into position to be shifted away from the doorway.

20. The combination, with a car-body having a doorway, of a door fitting therein; a pair of hangers mounted on said body for shiftable movement, said door having a movable connection with each of said hangers; a supporting-crank connecting each of said hangers with said door; a bell-crank mounted on each of said hangers and having connection with said supporting-cranks; and means for operating said bell-cranks and thereby the supporting-cranks to move the door into position to be shifted away from the doorway.

21. The combination, with a car-body having a doorway, of a door fitting therein; a pair of hangers mounted on said body for shiftable movement, said door having a sliding and pivotal connection with each of said hangers; a supporting-crank connecting each of said hangers with said door; a bell-crank mounted on each of said hangers and having connection with said supporting-cranks; means for operating said bell-cranks and thereby the supporting-cranks to move the door into position to be shifted away from the doorway, and including an actuator; and means for locking said actuator.

22. The combination, with a car-body having a doorway, of a door fitting therein: a pair of hangers mounted on said body for shiftable movement, said door having a movable pivot connection with each of said hangers; a supporting-crank connecting each of said hangers with said door; a bell-crank mounted on each of said hangers and having connection with said supporting-cranks; and means for operating said bell-cranks and thereby the supporting-cranks to move the door into position to be shifted away from the doorway, said means including an equalizer.

23. The combination, with a car-body having a doorway, of a door fitting therein; a pair of hangers mounted on said body for shiftable movement, said door having a sliding and pivotal connection with each of said hangers; a supporting-crank connecting each of said hangers with said door; a bell-crank mounted on each of said hangers and having a connection with said supporting-cranks; and means for operating said bell-cranks and thereby the supporting-cranks to move the door into position to be shifted away from the doorway, said means including an equalizer comprising a floating lever.

24. The combination, with a car-body having a doorway, of a door fitting therein; a track mounted on said body; a pair of hangers mounted on said track for shiftable movement, said door having a sliding and pivotal connection with each of said hangers; a supporting-crank connecting each of said hangers with said door; a bell-crank mounted on each of said hangers and having connection with said supporting-cranks; a floating actuating-lever supported on said door and having connection with each of said bell-cranks; and means for locking said actuating-lever in position.

25. The combination, with a car-body having a doorway, of a door fitting therein; a track mounted on said body; a pair of hangers mounted on said track for shiftable movement, said door having a movable pivot connection with each of said hangers; a supporting-crank connecting each of said hangers with said door; a bell-crank mounted on each of said hangers and having connection with said supporting-cranks; a floating actuating-lever supported on said door and having connection with each of said bell-cranks; and means for locking said actuating-lever in position and comprising a notched bar and a shiftable wedge effective to wedge the actuator into engagement with said bar.

26. The combination, with a car-body having a doorway, of a door therefor; a pair of carriers shiftably supported on said body and including crank mechanism in connection with said door; a slotted keeper secured to said door; an actuator provided with a projection extending into said slot; connectors secured to said crank mechanism and having their inner ends pivotally connected to said actuator one above and one below the projection thereof.

27. The combination, with a car-body having a doorway, of a door fitting therein; a track mounted on said body; a pair of hangers supported on said track for shiftable movement, said door having a movable connection with each of said hangers; a supporting-crank connecting each of said hangers with said door; a bell-crank mounted on each of said hangers and having connection with each of said supporting-cranks; a slotted keeper secured to said door; an actuating-lever provided with a projection extending into said slot; connectors secured to said bell-cranks and having their inner ends pivotally connected to said actuating-lever one above and one below the projection thereof.

28. The combination, with a car-body having a doorway, of a door fitting therein; a track mounted on said body; a pair of hangers supported on said track for shiftable movement, said door having a movable connection with each of said hangers; a supporting-crank connecting each of said hangers with said door; a bell-crank mounted on each of said hangers and having connection with each of said supporting-cranks; a slotted keeper secured to said door; an actuating-lever provided with a projection extending into said slot; connecting-levers secured to said bell-cranks and having their inner ends pivotally connected to said actuating-lever one above and one below the projection thereof; and means for locking said actuating-lever in position.

29. The combination, with a car-body having a doorway, of a door therefor; means for supporting said door for shiftable movement on said car-body, means for moving said door into position to be shifted away from said doorway and including an actuator; and means for locking said actuator in position and comprising a notched member, a keeper, and a shiftable wedge effective to wedge the actuator into engagement with said notched member.

30. The combination, with a car-body having a doorway, of a door therefor; means for supporting said door; one or more hangers shiftably supported on said body; crank mechanism connecting said hanger or hangers with said door; means for moving said door into position to be shifted away from the doorway and including an actuator; and means for locking said actuator and comprising a notched member, a keeper, and a shiftable wedge mounted on said actuator and shiftable into position intermediate the actuator and said keeper to maintain the actuator in engagement with said notched member.

31. The combination, with a car-body having a doorway, of a door fitting therein; a track mounted on said body; a pair of hangers mounted on said track for shiftable movement, each of said hangers comprising a pair of hinged members, said door having a sliding and pivotal connection with each of said hangers, a supporting-crank connecting each of said hangers with said door; a bell-crank mounted on each of said hangers and having connection with said supporting cranks; an actuator having a pin-and-slot connection with said door; connectors pivoted to said bell-cranks and actuator one above and one below said pin-and-slot connection; locking means for said actuator, comprising a notched member at the under side of said actuator, a keeper at the outer side thereof, and a shiftable wedge for maintaining said actuator in engagement with said notched member; and means for maintaining the bottom of the door in the doorway and for supporting the same when moved outwardly therefrom.

32. The combination, with a car-body having a doorway, of a door therefor; means including crank mechanism for supporting said door on said body for shiftable movement, and also for swinging movement, whereby it may be swung at an angle to the car-body, said door also having a movable pivot connection with said supporting means; and means including crank mechanism for moving said door into position to be shifted away from the doorway.

33. The combination, with a car-body having a doorway, of a door therefor; means including crank mechanism for supporting said door on said body for shiftable and also for swinging movement, whereby it may be swung at an angle to the car-body, said door also having a movable connection with said supporting means; and means for moving said door into position to be shifted away from the doorway.

34. The combination, with a car-body having a doorway, of a door therefor; means for supporting said door on said body for shiftable movement and for swinging movement, whereby it may be swung at an angle to the car-body, said door having a movable pivot connection with said supporting means; and actuating means for moving said door into position to be shifted away from the doorway.

35. The combination, with a car-body having a doorway, of a door; a plurality of means for supporting said door on said body for swinging movement relatively to said body, and means in connection with each of said supporting means and including equalizing means for moving said door into position to be shifted away from the doorway.

36. The combination, with a car-body having a doorway, of a door: a plurality of means for supporting said door on said body for swinging movement relatively to said body, and actuating means in connection with each of said supporting means for moving said door into position to be shifted away from the doorway, said actuating means including equalizing means comprising a floating lever.

37. The combination, with a car-body having a doorway, of a door: a plurality of means for supporting said door on said body for swinging movement at an angle to said car-body, and for shiftable movement away from the doorway, and means having connection with each of said supporting means for moving said door into position to be shifted away from the doorway and embodying crank mechanism and equalizing means.

38. The combination, with a car-body having a doorway, of a door; a plurality of means for supporting said door on said body for swinging movement at an angle to the car-body, and for shiftable movement away from the doorway, and means having connection with each of said supporting means for moving said door into position to be shifted away from the doorway and embodying crank mechanism and equalizing means, said equalizing means comprising a floating actuator.

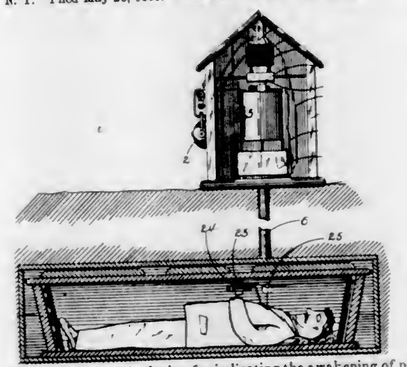
39. The combination, with a car-body having a doorway and a track, of a door flush with the wall of said body and supported on said track for shiftable movement, and for swinging movement at an angle to the car-body, and means for moving said door from its flush position outwardly and upwardly into position to be shifted on said track away from the doorway, and comprising a pair of members and equalizing means intermediate said members.

40. The combination, with a car-body having a doorway and a track, of a door flush with the wall of said body and supported on said track for shiftable movement, and for swinging movement at an angle to the car-body, and means for moving said door from its flush position outwardly and upwardly into position to be shifted on said track away from the doorway, and comprising a pair of members, and equalizing means comprising a floating lever intermediate said members.

41. The combination, with a car-body having a doorway, of a door flush with the wall of said car-body and supported for shiftable movement away from the doorway and for swinging movement relatively to said wall; actuating means for moving said door into position to be shifted away from the doorway and comprising a pair of members and equalizing means intermediate said members; and means for locking said actuating means in position.

42. The combination with a car-body having a doorway, of a pair of hangers shiftably supported on said body; a door flush with the car-wall and supported on said body for swinging movement at an angle to said car-body; crank mechanism connecting said hangers and door; means for moving said door outwardly and upwardly into position to be shifted away from the doorway; and means for maintaining said door in position in the doorway and for supporting the bottom thereof when moved outwardly and upwardly.

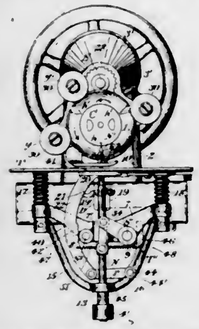
652,934. ELECTRIC DEVICE FOR INDICATING THE AWAKENING OF PERSONS BURIED ALIVE. WALTER J. MCKNIGHT, Buffalo, N. Y. Filed May 20, 1899. Serial No. 717,556. (No model.)



Claim.—An electric device for indicating the awakening of persons buried alive, comprising a casket, two arms arranged above the supposed corpse and normally out of contact, an electric alarm, a cell or battery, wires connecting the alarm, cell or battery, and the arms in

the casket, and an angular wire attached to one of the arms and having its lower end arranged in close proximity to the chest of the person and adapted to be lifted into contact with the opposing arm to complete the circuit to operate the alarm upon the elevation of the chest of the buried person from breathing, as set forth.

652,935. SEWING-MACHINE. HUBERT P. RICHARDS, New Britain, Conn. Filed Jan. 12, 1898. Serial No. 666,432. (No model.)



Claim.—1. In a sewing-machine, the combination, with a yieldingly-supported work-table, of means independent of said work-table and of the stitch-forming mechanism for feeding the fabric; stitch-forming mechanism including a needle and a needle-bar, and a looper, located, respectively, at opposite sides of said work-table; and means for operating the stitch-forming mechanism.

2. In a sewing-machine, the combination, with a yieldingly-supported work-table and a fixed presser-foot coöperative therewith for holding the work, of means independent of said work-table and of the stitch-forming mechanism for feeding the fabric; stitch-forming mechanism including a needle and a needle-bar, and a looper, located, respectively, at opposite sides of said work-table; and means for operating the stitch-forming mechanism.

3. In a sewing-machine, the combination, with a work-table shiftable into two extreme positions, of means independent of said work-table and of the stitch-forming mechanism for feeding the fabric; means for locking said work-table in one of its extreme positions; stitch-forming mechanism including a needle and a needle-bar, and a looper, located, respectively at opposite sides of said work-table; and means for operating the stitch-forming mechanism.

4. In a sewing-machine, the combination, with a yieldingly-supported work-table, of means independent of said work-table and of the stitch-forming mechanism for feeding the fabric; means for shifting said work-table vertically and locking the same in its shifted position; stitch-forming mechanism including a needle, a needle-bar, and a looper, said looper being located above the work-table, and the needle and the needle-bar being disposed below said work-table; and means for operating said stitch-forming mechanism.

5. In a sewing-machine, the combination, with a shiftably-supported work-table, of fabric-feeding means independent of said work-table and of the stitch-forming mechanism; means for elevating said table and for normally maintaining the same in its elevated position; independent means for depressing said work-table and for locking the same in its depressed position; stitch-forming mechanism including a needle, a needle-bar, and a looper, said looper being located above the work-table; and means for operating said stitch-forming mechanism.

6. In a sewing-machine, the combination, with fabric-holding means including a yieldingly-supported work-table, of fabric-feeding means independent of said work-table and of the stitch-forming mechanism; a presser-foot fixedly supported above and coöperative with the work-table for holding the work or fabric; a work-table depressing and locking device coöperative with the work-table; stitch-forming mechanism including a needle, a needle-bar, and a looper, said looper being located above the work-table; and means for operating the stitch-forming mechanism.

7. In a sewing-machine, the combination, with a yieldingly-supported work-table, of fabric-feeding means independent of said work-table and of the stitch-forming mechanism; a fixed presser-foot disposed above and coöperative with the work-table to clamp the work; stitch-forming mechanism including a looper situated above the work-table; and means for operating the stitch-forming mechanism.

8. The combination, with fabric-feeding mechanism, of an independent vertically-adjustable work-table; means coöperative with the work-table for holding the work to be advanced by the feeding mechanism, fabric-feeding mechanism operable independently of said work-table and of the stitch-forming mechanism; stitch-forming mechanism including a looper the latter mounted above the work-table; and means for operating the stitch-forming mechanism.

9. In a sewing-machine, the combination, with a vertically-adjustable work-table, of a presser-foot fixed above and coöperating with the work-table; means for locking the work-table in one position relatively to the presser-foot; a fabric-feeder independent of the stitch-forming mechanism and extending through and operable in a recess in the work-table; actuating means for said fabric-feeder; stitch-forming mechanism including a looper located above the work-table; and means for operating the stitch-forming mechanism.

10. In a sewing-machine, the combination, with fabric-feeding mechanism including a reciprocatory feed-bar and actuating means therefor, of an independent work-table having a recess in which the feed-bar operates; a presser-foot fixedly supported above and coöperative with the work-table; instrumentalities for shifting the work-table toward and away from the presser-foot; a locking device for holding the work-table in a shifted position; stitch-forming mechanism independent of the fabric-feeding mechanism; and means for operating the stitch-forming mechanism.

11. In a sewing-machine, the combination, with a bed-plate or frame, of fabric-holding mechanism including a horizontally-disposed work-table or cloth-plate; springs yieldingly supporting the work-table in an elevated position; a presser-foot fixedly supported above and coöperative with the work-table to clamp the fabric; a work-table-depressing device carried on the bed-plate or frame and operable for shifting the table into an ineffective or non-clamping position, and embodying means for locking such table in such position; fabric-feeding mechanism, stitch-forming mechanism independent of the fabric-feeding mechanism and including a looper mounted above the work-table; and means for operating the stitch-forming mechanism.

12. In a sewing-machine, the combination, with fabric-feeding mechanism including a shiftable work-table and a presser-foot fixedly supported above said work-table, of a fabric-feeder carried by the work-table support and shiftable with the work-table; means for actuating the fabric-feeder; stitch-forming mechanism including a reciprocatory needle and a looper, said looper being located above the work-table; and means for operating said stitch-forming mechanism.

13. A sewing-machine comprehending fabric-holding and fabric-feeding mechanism including a shiftable work-table; a presser-foot fixedly supported with relation to said work-table; means including a cam-arm and a bearing-block for shifting the work-table and locking the same in a shifted position; a fabric-feeder; a feed-bar extending through a recess in the work-table and shiftable in two directions; and means for actuating the feed-bar.

14. In a sewing-machine, the combination, with a horizontally-disposed shiftable work-table, of springs yieldingly supporting said work-table; a fixed presser-foot located above and coöperative with the work-table to clamp the fabric thereon; a reciprocatory feed-bar operable independently of the work-table and disposed in a recess therein; means for imparting movement to the feed-bar; independent means for depressing the work-table and for holding the same temporarily in a depressed position for the purpose of applying or removing the work; and stitch-forming mechanism including a looper disposed above the work-table.

15. In a sewing-machine, the combination, with a horizontally-disposed work-table or cloth-plate, of springs yieldingly supporting said work-table; a presser-foot fixedly supported above and coöperative with the work-table to clamp the fabric thereon, a reciprocatory feed-bar operable independently of the work-table and pivotally connected to and operable in a recess in said work-table; means for imparting movement to the feed-bar; means in connection with and effective for elevating and depressing the work-table and feed-bar simultaneously for the purpose of applying or removing the work; stitch-forming mechanism including a shuttle located above the work-table; and means for operating the stitch-forming mechanism.

16. In a sewing-machine, the combination, with fabric-holding mechanism including a shiftable work-table, of fabric-feeding mechanism comprehending a feed-lever having at the one end thereof a feed-bar seated in a recess in the cloth-plate; a feed-bar-actuating rocker pivotally mounted on the work-table support and having an arm pivotally connected to the lower end of and supporting said lever, whereby on the movement of the work-table the feed-lever will have a corresponding movement; means independent of the work-table for imparting cloth-engaging and cloth-advancing movements to the feed-lever; and means for retracting the feed-lever.

17. In a sewing-machine, the combination, with fabric-holding mechanism including a vertically-shiftable cloth-plate or work-table, of fabric-feeding mechanism comprising a vertically-disposed feed lever or carrier having a feed-bar at the upper end thereof which extends through a recess in the cloth-plate; a feed-bar-actuating rocker fulcrumed on, and carried by, the cloth-plate support, and having an arm pivotally connected to the lower end of and supporting the feed-lever, whereby on a vertical movement of the cloth-plate the feed-lever will have a corresponding movement; means operative independent of the cloth-plate for imparting first an upward and then a cloth-advancing movement to the feed-lever; means for retracting the feed-lever; and a feed-adjuster in operative relation with the feed-lever and effective for regulating the throw thereof.

18. In a sewing-machine, the combination, with a yieldingly-supported work-table, of a reciprocatory needle-bar; a looper located above the work-table; a fabric-feeder independent of the needle-bar and operable independently of the work-table; a needle-bar and a fabric-feeder actuating shaft; and means carried by said shaft for actuating the needle-bar and fabric-feeder in proper relation.

19. In a sewing-machine, the combination, with a depressible work-table and with stitch-forming mechanism including a reciprocatory needle-bar disposed below the bed-plate of the machine, and a looper located above the work-table, a fabric-feeder; a rock-shaft; means carried by the rock-shaft for directly actuating the needle-bar and fabric-feeder in proper timing, one relatively to the other; and means for actuating said rock-shaft.

20. In a sewing-machine, the combination, with a bed-plate having an overhanging arm, of a presser-foot fixed to said arm; a work-table yieldingly supported for vertical movement below and coöperating with the presser-foot for holding the work; means for feeding the work, said means being operable independently of said work-table and of the needle-bar; a reciprocatory needle-bar disposed below said work-table; a looper located above the work-table, and means for operating the looper and needle-bar to form a stitch.

21. In a sewing-machine, the combination, with fabric-holding means, of fabric-feeding mechanism including a feed-lever having a feed-bar; a rocker having an arm pivotally connected to the lower end of and supporting the feed-bar and also having another arm; two shafts located between the feed-lever and one arm of the rocker, and having cams in bearing engagement with said lever and arm; a retracting device for holding the feed-lever and rocker-arm in engagement with the cams; and means for actuating said shafts.

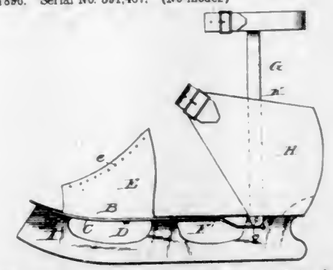
22. A sewing-machine comprehending, in connection with a fabric-holding means, fabric-feeding mechanism including a feed-lever having a feed-bar at one end thereof and also having a cam-face; a rocker in pivotal connection with said feed-lever; means including two rock-shafts having cams in bearing engagement one with the cam-face of the feed-lever and the other with the rocker, and which cams have their working faces so disposed relatively to each other that on the oscillation of said rock-shafts one of said cams will operate in advance of the other and impart a lever-actuating movement to the rocker, and the other will subsequently impart a fabric-advancing movement to the feed-lever; and means for actuating the rock-shafts.

23. In a sewing-machine, the combination, with work-holding mechanism including a yieldingly-supported work-table, and work-feeding mechanism including a lever having a feed-bar at one end thereof extending through the work-table, of a rocker having an arm in connection with and supporting the feed-lever and having another arm; two rock-shafts having cams in bearing engagement, respectively, with the feed-lever and one of the arms of the rocker, and having their working faces disposed relatively to each other to impart movement successively to the feed-lever; means for actuating said rock-shafts; and a retracting device in connection with the feed-lever.

24. In a sewing-machine, the combination, with stitch-forming mechanism including a looper disposed above the work-table and a looper-actuating shaft, of a stitch-changing device including an oscillatory loop-diverter pivotally supported above the work-table and having its working end shiftable into position for engaging portions of successive loops as said loops are carried around the looper; an angle-lever fulcrumed on the head of the machine and having one end thereof in engagement with an arm of the loop-diverter; and a cam carried by the looper-actuating shaft in position to operate the angle-lever to impart an effective movement to the loop-diverter at predetermined points in the rotation of said shaft.

25. In a sewing-machine, the combination, with stitch-forming mechanism including a looper and a looper-actuating shaft, of a stitch-changing device including a loop-diverter having its working end shiftable into position for engaging portions of successive loops as said loops are carried around the looper; an angle-lever having an arm in connection with the loop-diverter, said lever also having an extensible arm or member; a cam fixed to the looper-actuating shaft and having its working face normally in engagement with the extensible arm whereby to actuate said arm and to impart a loop-deflecting movement to the loop-diverter; means for imparting a retractive movement to the loop-diverter and for normally maintaining the extensible arm in engagement with the cam; and means for shifting said extensible arm out of engagement with said cam.

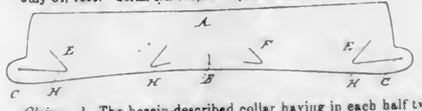
652,936. SKATE. HARRY TAYLOR, Sullivan, Me. Filed May 13, 1896. Serial No. 591,407. (No model.)



Claim.—1. The combination with the skate, of the draw-plates longitudinally movable thereon, the levers or heel and ankle supports pivoted beside the heel portion of the skate-body and adapted to be moved in a plane parallel to the skate-blade, means for fastening said levers in an upright position, means whereby the upward movement of said levers shall retract said draw-plates, flaps secured to the edges of said draw-plates and adapted to snugly receive the foot of the skate's user, and means whereby the user's foot is held from moving backward upon the skate, substantially as and for the purpose set forth.

2. The combination with the skate, of the draw-plates movable thereon and provided with means whereby a rearward pull applied thereto gives them a centripetal motion, the levers, or heel and ankle supports pivoted beside the heel portion of the skate-body and adapted to be moved in a plane parallel to the skate-blade, means for fastening said levers in an upright position, a strap secured to said levers and passing back of the heel, the rocking arm operated by said levers and connected to said draw-plates, and means whereby the rearward and centripetal movement of the said draw-plates shall grip the forefoot of the skate's user, substantially as and for the purpose set forth

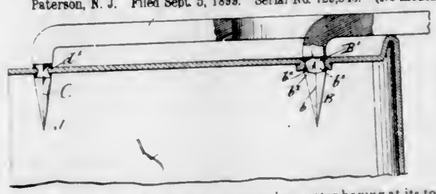
652,937. COLLAR. GEORGE E. VAN TUYL, Detroit, Mich. Filed July 31, 1899. Serial No. 725,565. (No model.)



Claim.—1. The herein-described collar having in each half two V-shaped slits forming passages within the body of the collar for inserting the string-tie, said slits forming V-shaped flaps or tongues in the collar projecting with their points toward each other and adapted to close the passages formed by the slits and to clamp the string-tie in position in the collar.

2. As a new article of manufacture, the herein-described collar having in each half the oppositely-inclined slits E, E, each formed with an offset at its lower end near the lower edge of the collar, one slit being adjacent to the buttonhole in the center of the collar and the other near the end and having the buttonhole therein formed integral with the offset of the slit, said slits forming V-shaped flaps in the collar adapted to fully close the openings formed by the slits and clamp a string-tie inserted through said slits.

652,938. CAN-OPENER. WILLIAM VOGEL, New York, N. Y., assignor to Johann C. C. Hacke, Hamburg, and Alice B. S. P. Foerster, Gross Flottbek, Germany, and the Fischer Manufacturing Company, Paterson, N. J. Filed Sept. 5, 1899. Serial No. 729,546. (No model.)



Claim.—1. In a can-opener, a puncturing-cutter having at its top tapering rearwardly-extending side grooves, forming between them a neck V-shaped in transverse section, the lower portions of said grooves being inclined outwardly and the said neck having a forward cutting edge, substantially as set forth.

2. In a can-opener, a puncturing-cutter having a beveled point

and above the same, near its top, tapering rearwardly-extending side grooves, forming a neck between them which is V-shaped in transverse section, the lower portions of said grooves being outwardly inclined, and said neck being provided with a forward-curved cutting edge, substantially as set forth.

652,939. GARMENT-FASTENER. FRANKLIN R. WHITE, Waterbury, Conn., assignor to the Patent Button Company, same place. Filed Apr. 10, 1900. Serial No. 12,301. (No model.)

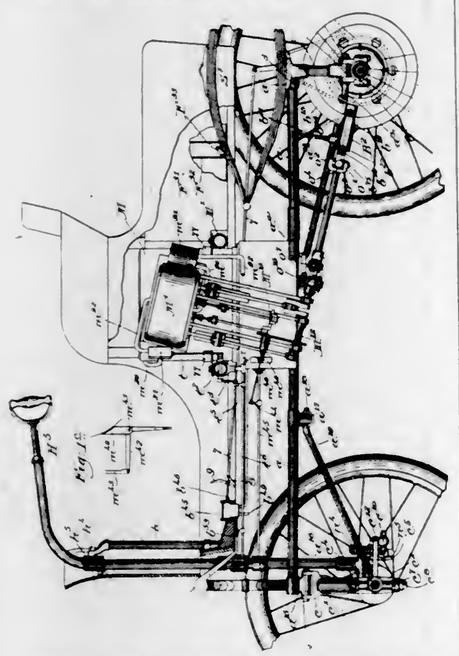


Claim.—1. A garment-fastener, consisting of a hook and bar, the face-plate of either of which is bent or folded over, and acts as an anvil to upset or curl the piercing end of a tack or rivet, the said folded or bent portion acting as an anchorage for said upset or curled tack, substantially as described.

2. A garment-fastener consisting of a hook or bar, either of which is formed with a face-plate having a portion thereof bent or folded over, said face-plate acting as an anvil to upset or curl the piercing end of a tack or rivet, said bent or folded portion being perforated, in combination with a tack or rivet, adapted to pass through said perforation and be curled or upset by said face-plate, upon or around said folded-over portion, substantially as described.

3. A garment-fastener, consisting of a hook and bar, the face-plate of either of which has its ends bent over, perforated and depressed to form pockets, in combination with tacks or rivets, adapted to pass through said perforations, and be upset within said pockets by said face-plate, substantially as described.

652,940. MOTOR-VEHICLE. GEORGE E. WHITNEY, Boston, Mass., assignor to the Whitney Motor Wagon Company, same place. Filed Jan. 21, 1898. Serial No. 667,391. (No model.)



Claim.—1. In a road-vehicle, propulsion devices, steering, speed-regulating, and reversing mechanisms, a manually-operated controller for the vehicle, controlling means intermediate said manual controller and said mechanisms, said controller having a main swinging movement and auxiliary independent rotative and longitudinal movements whereby the several mechanisms are governed as to their operation by the different movements of the controller.

2. In a road-vehicle, propulsion devices, steering, speed-regulating, and reversing mechanisms, a common, manually-operated controller for the vehicle, operating connections between the controller and said mechanisms, the said controller having a lateral movement to steer the vehicle, and also having auxiliary independent rotative and longitudinal movements in the path of lateral movement, one of said auxiliary movements governing the speed-regulating mechanism, the other auxiliary movement governing the reversing mechanism.

3. A road-vehicle having steering and propelling mechanisms, speed-regulating and reversing devices for the latter, and controlling means for the vehicle, including a manually-operated member laterally movable in a single path to steer the vehicle, said member being also capable of rotative and longitudinal movement in and at any part of said path, to vary the speed of and to reverse the direction of movement of the vehicle.

4. In a road-vehicle, propelling mechanism and devices for regulating the speed of and reversing the same, and steering mechanism for the vehicle, including a steering-head, combined with a hand-actuated controlling member, a support therefor rigidly mounted on said head and movable laterally by corresponding movement of said member to steer the vehicle, said controlling member having also two independent auxiliary movements in the plane of said support, and connections between said member and the speed-regulating and the reversing devices, to operate the said devices by the auxiliary movements of the controlling member to thereby regulate the speed and reverse the direction of movement of the vehicle.

5. In a road-vehicle, propulsion devices, steering and braking mechanisms, a steering-lever constructed and arranged to be moved in a lateral path to steer the vehicle, a handle mounted on said steering-lever, and controlling means intermediate said handle and the propulsion devices and braking mechanism, said handle having a plurality of auxiliary movements to independently control the propulsion devices and braking mechanism.

6. In a road-vehicle, propelling mechanism, speed-regulating and reversing devices therefor, a hollow steering-head for the vehicle, having an overhanging arm at its upper end, a rotatable and longitudinally-movable member mounted in said head, independent connections between said member and the speed-regulating and reversing devices, a hand-controller carried by the overhanging arm and adapted to be rotated and longitudinally moved, and connected with said member, to operate the latter in conformity with the movement of the hand-controller.

7. In a road-vehicle, propelling mechanism, speed-regulating and reversing devices therefor, a steering-head for the vehicle, and a two-part overhanging arm on the head, one of said parts being rotatably and longitudinally movable relatively to the other part, combined with independently-operative connections between the speed-regulating and reversing devices and the relatively-movable member of the overhanging arm, to be controlled by movement of the latter.

8. In a road-vehicle, propelling mechanism having speed-regulating and reversing devices, a steering-head for the vehicle, having an overhanging arm adapted to be swung laterally, a rotatable, manually-controlled member mounted to slide longitudinally on said arm, connections between said member and the speed-regulating device, to operate the latter by rotation of the member, and connections between the latter and the reversing device, to be operated by a longitudinal movement of the said manually-controlled member.

9. In a road-vehicle, propelling mechanism, speed-controlling and reversing means therefor, steering mechanism including a steering-head, a laterally-movable, manually-operated controller mounted on said steering-head, and adapted to be longitudinally and torsionally movable relative thereto, and independently-operative connections between the controller and said speed-controlling and reversing means, the controller being movable laterally to steer the vehicle, longitudinally at any point in its lateral path to operate the reversing mechanism, and torsionally at any point in said path to actuate the speed-controlling means, to thus start, stop or vary the speed of the vehicle while moving either forward or back in any direction.

10. In a road-vehicle, propelling mechanism, a reversing device therefor, steering mechanism, a two-part overhanging extensible arm connected with said steering mechanism and movable laterally in substantially a single plane, to steer the vehicle, the extensible part of said arm being connected with said propelling mechanism and reversing device and operative independently at any point in the path of lateral movement without departing therefrom, to control said propelling mechanism and its reversing device respectively.

11. In a road-vehicle, propelling mechanism, speed-regulating and reversing means therefor, brake mechanism, steering mechanism to steer the vehicle, a laterally-movable, extensible hand-controller, and connections between it and said brake and steering mechanisms, speed-regulating and reversing means respectively, said hand-controller being adapted to be swung laterally to steer the vehicle and to be moved longitudinally and rotated at any point in its lateral path to operate the speed-regulating and reversing means, to thereby start, stop and control the speed and reverse the movement of the vehicle, one of the latter two movements controlling the speed and the other the reversing and propelling mechanism, prolongation of one of such movements also operating the brake mechanism.

12. In a road-vehicle, propelling mechanism, speed-regulating and reversing means therefor, steering mechanism to steer the vehicle, a laterally-movable, extensible, rotatable hand-controller, and connections between it and said steering mechanism, speed-regulating and reversing means, respectively, said hand-controller being adapted to be swung laterally to steer the vehicle, and to be moved longitudinally and rotated at any point in its lateral path, to operate the speed-regulating and reversing means, to thereby start, stop, control the speed and reverse the movement of the vehicle, one of the latter two movements controlling the speed and the other reversing the propelling mechanism.

13. In a road-vehicle, propelling mechanism and means for controlling the same, steering mechanism, a laterally-movable, extensible, rotatable hand-actuated controller connected with said steering mechanism and adapted to be swung laterally to steer the vehicle, connections between said hand-controller and said propulsion-controlling means, whereby a longitudinal or rotative movement of said hand-controller at any point in its path of lateral movement will operate said propulsion-controlling means and thereby start, stop, reverse and vary the speed of the vehicle.

14. In a road-vehicle, wheels, a body yieldingly connected therewith, steering mechanism, including a steering-head, a support for the latter, on said body, provided with a bearing in which the head is rotatively suspended, said bearing also providing a fulcrum on which the head is adapted to rock.

15. In a road-vehicle, wheels, a body yieldingly connected therewith, a steering-head, a support therefor carried by the body, and a connection between said support and head, whereby rotative and rocking movement of the latter is permitted and provided for.

16. In a road-vehicle, steering and running wheels, a body yieldingly connected therewith, a steering-head supported by the body and capable of rotative and rocking movement, and means independent of the body and intermediate the head and steering wheel or wheels, to position the lower end of the steering-head and guide the vehicle through rotative movement of the head, while permitting the latter to adapt itself to relative movement of the body and wheels.

17. In a road-vehicle, wheels, a body yieldingly connected therewith, steering mechanism, a rotatable steering-head suspended on said body and having a rigidly-attached foot at its lower end, a vertically-movable fulcrum for said foot, and a vertically-movable connection between the eccentric end of said foot and said steering mechanism.

18. In a road-vehicle, wheels, a body yieldingly connected therewith, a rotative steering-head carried by the body, a positioning device for the lower end of the head, independent of the body and providing a vertically-movable fulcrum about which said lower end of the head moves, steering devices for the vehicle, and connections between said devices and the head, whereby rotative movement of the latter will operate to steer the vehicle.

19. In a road-vehicle, steering and running wheels, a body yieldingly connected therewith, a rotative steering-head carried by the body, a positioning device for the lower end of the head, independent of the body and providing a vertically-movable fulcrum about which said lower end of the head moves, and a connection between the steering wheel or wheels and the lower end of the head, eccentrically attached thereto to operate the steering wheel or wheels by rotative movement of the said head.

20. In a road-vehicle, wheels, a body yieldingly connected therewith, a rotative steering-head supported on the body and having a rigidly-attached foot at and oppositely extended from its lower end, a radius-bar pivoted on the steering-axle and jointed at its free end to one extension of the foot, to provide a vertically-movable fulcrum therefor, and an operating connection between the steering wheel or wheels and the laterally-movable extension of the foot.

21. In a road-vehicle, wheels, a body yieldingly connected therewith, an axle, wheel-spindles pivotally mounted thereon, an arm set at an angle on each spindle, and a cross-rod connecting the extremities of the said arms, combined with a rotatable steering-head having at its lower end a rigidly-attached foot, a supporting-bearing for said head, mounted on the vehicle-body, a positioning member connected with and providing a vertically-movable fulcrum for said foot, and a connection between the cross-rod and the foot and attached thereto eccentrically to the head, to rock the wheel-spindles by movement of the steering-head and attached foot on their said fulcrum.

22. In a road-vehicle, a main frame, a body connected therewith by springs, an axle, a horizontal pivot connection between said axle and frame, steering devices carried by the axle, a steering-head mounted on the body and having a rotative and rocking movement relative thereto, connections between the steering devices and the head, to operate the former by rotation of the latter, the lower end of the head being fulcrumed on the axle by a radius-bar, whereby relative movement of the body, frame and axle is permitted without straining the head or its connections.

23. In a road-vehicle, a main frame, a body connected therewith by springs, an axle, a horizontal pivot connection between said axle and frame, a steering-head connected with the body to move therewith as said body moves on its springs, a foot rigidly secured to the steering-head at its lower end, said lower end of the head being fulcrumed on the axle, steering devices, and connections between said devices and the head, to guide the vehicle by rotative movement of the head.

24. In a road-vehicle, wheels, a body connected therewith by springs, an axle, steering devices mounted thereon, a rotative steering-head carried by the body, a rigidly-attached foot at the lower end of and transverse to the head, vertical pivot members located at the ends of and adapted to rock in unison on the foot, a radius-bar mounted on the axle and connected with one of said pivot members, and a connecting-rod between the other pivot member and the steering devices, jointed to the latter, the radius-bar positioning the foot and forming a fulcrum therefor adapted to rise or fall with the movement of the body.

25. In a road-vehicle, wheels, a body yieldingly connected therewith, steering devices for the vehicle, a rotative steering-head carried by the body, a rigidly-attached foot on and transverse to the head, a radius-bar jointed at one end to one end of the foot, and jointed at the other end to a relatively-fixed support, and a rod jointed to the other end of the foot and connective of said foot and steering devices and jointed to the latter, the radius-bar positioning the foot and forming a fulcrum therefor adapted to rise or fall with longitudinal movement of the head.

26. In a road-vehicle, wheels, a body connected therewith by springs, an axle, steering devices mounted thereon, a rotative steering-head carried by the body, a rigidly-attached foot at the lower end of and transverse to the head, vertical pivot members located at the ends of and adapted to rock in unison on the foot, a radius-bar mounted on the axle and connected with one of said pivot members, and a connecting-rod between the other pivot member and the steering devices, jointed to the latter, the radius-bar positioning the foot and forming a fulcrum therefor adapted to rise or fall with the movement of the body, and dust-caps between said pivot members and the foot, and between the radius-bar, connecting-rod, and said attached pivot members.

27. A steering-head for road-vehicles, having a transverse foot rigidly attached to its lower end, and connected pivot members located at the ends of and mounted on the foot and adapted to rock in unison thereon, said pivot members being parallel to each other.

28. A steering-head for road-vehicles, having a transverse foot rigidly attached to its lower end, and connected pivot members located at the ends of and carried by the foot and adapted to rock in unison thereon, said pivot members being parallel to each other, and dust-caps interposed between the ends of the foot and said pivot members, and also at the ends of each of said pivot members.

29. In a road-vehicle, a main frame, a body connected therewith by springs, an axle, steering devices carried thereby, a steering-head mounted on the body and having a rotative and rocking movement relative thereto, a rigidly-attached foot on the lower end of the head, a radius-bar connecting the axle and one end of the foot, and a connecting-rod between the other end of the foot and the steering devices, said radius-bar and connecting-rod being constructed and arranged to permit of their partial rotative movement without twisting or breaking.

30. In a road-vehicle, a main frame, a body connected therewith by springs, an axle, steering devices carried thereby, a horizontal pivot connection between the frame and axle, a rotative steering-head, a horizontal fulcrum therefor mounted on the body, and connections between the steering devices and the head, to guide the vehicle by rotative movement of the head.

31. In a road-vehicle, propelling mechanism, speed-regulating and reversing devices therefor, a hollow steering-head for the vehicle, having an overhanging arm at its upper end, a rotatable and longitudinally-movable shaft mounted in said head, independent connections between said shaft and the speed-regulating and reversing devices, a hand-controller carried by the overhanging arm and adapted to be rotated and longitudinally moved, and a flexible connection between said controller and the shaft in the steering-head, to operate said shaft in conformity with the movement of the hand-controller.

32. In a road-vehicle, propelling mechanism, speed-regulating and reversing devices therefor, a rotative steering-head having an overhanging arm at its upper end, an external, segmental rack vertically movable on and carried by the lower portion of the head to turn therewith, a pinion in continuous engagement with said rack and forming a part of one of the propulsion-controlling devices, a hand-controller carried by the overhanging arm and adapted to be

rotated and also longitudinally moved, a rotatable, longitudinally-movable shaft in the head, a flexible connection between the shaft and the hand-controller, means to transform rotative movement of the shaft into vertical movement of the rack, to thereby rotate the pinion, and connections between the other of said propulsion-controlling devices and the shaft, whereby longitudinal movement of the latter will operate said controlling device.

33. In a road-vehicle, propelling mechanism, speed-regulating means therefor, a rotative steering-head having an overhanging arm at its upper end, an external, segmental rack movable on and carried by the lower portion of the head to turn therewith, a pinion in continuous engagement with the rack and forming a part of said speed-regulating means, a rotatable hand-controller carried by the overhanging arm, a shaft mounted in the head and connected with and to be rotated by the hand-controller, and means to transform rotative movement of said shaft into vertical movement of the rack to thereby rotate the meshing pinion and operate the speed-regulating means.

34. In a road-vehicle, a main frame, an axle having wheel-spindles fulcrumed at its ends, main and auxiliary horizontal king-bolts in substantial alinement and pivotally connecting said frame and axle, braces mounted on and extending from the auxiliary king-bolt to or near to the ends of the axle, an upright steering-head, operating connections between said head and the wheel-spindles, a positioning device mounted on the axle and connected with the lower end of the head, and a bearing on the body in which the head is rotatively suspended and providing a fulcrum on which the head is adapted to rock.

35. In a road-vehicle, a truss-frame axle comprising an arched compression member having outturned, upright yokes at the ends thereof, wheel-spindles, pivots therefor extended through said yokes, and a tension member attached to the pivots of the wheel-spindles.

36. In a road-vehicle, axle-bearings, the driving-axle comprising a tubular shaft and a concentric sleeve, each mounted in a bearing and having a rigidly-attached wheel, the shaft extending through the sleeve-bearing, compensating mechanism connecting said shaft and sleeve, and a connecting-rod extended through the wheel-hubs and tubular shaft, to prevent longitudinal displacement of the parts.

37. In a road-vehicle, the main frame having rigidly-attached depending members at the rear end thereof, bearings carried by said members, a compound axle rotatable in said bearings and comprising concentrically-arranged members to which driving-wheels are respectively attached, a compensating mechanism connecting said concentric members, and an intermediate bearing for the axle, adjacent said mechanism and rigidly mounted on the frame, to decrease vibration.

38. In a motor-vehicle, driving-wheels, an axle connecting them, a yieldingly-supported body, a motor carried thereby above the horizontal plane of the said axle, an inclined main driving-shaft for the motor, substantially at right angles to the driving-axle, and a rotatable, flexible power-transmitting connection between the axle and motor-shaft and in alinement with the latter.

39. In a motor-vehicle driving-wheels therefor, a body yieldingly connected with the wheels, a motor, comprising a boiler and attached engine, carried by and concealed by said body, the engine being attached exteriorly to the boiler and at an angle thereto and having its driving-shaft inclined to the horizontal, and a rotatable power-transmitting connection between the driving-wheels and the engine driving-shaft and substantially in alinement with the latter.

40. In a motor-vehicle, driving and steering wheels therefor, a main frame mounted thereon, a body yieldingly supported on the frame, a motor carried by the body, a rotatable, flexible power-transmitting connection between the motor and driving-wheels, and variable power mechanism mounted solely on said connection, to operate upon and effect a differential rotation between the ends of said connection.

41. In a road-vehicle, a rotatable driving-axle having a bevel-gear carried thereby, an actuating-shaft and a pinion on said shaft in mesh with said bevel-gear, an adjustable conical, rolling, side-thrust bearing for the bevel-gear, opposite the point of engagement of the pinion and gear, and a relatively-fixed support for said pinion and rolling bearing, the gear rotating between the latter and the pinion, the said conical bearing being mounted eccentrically in its support, to be adjustable to compensate for wear.

42. In a road-vehicle, a main frame, a rotatable driving-axle having a bevel-gear carried thereon, an actuating-shaft and a pinion thereon in mesh with said bevel-gear, a support for said pinion through which the shaft passes, a conical, rotatable side-thrust bearing carried by said support and bearing upon the bevel-gear opposite the pinion, to prevent relative lateral movement of the bevel-gear and pinion, and a depending connection between said frame and support and jointed to each.

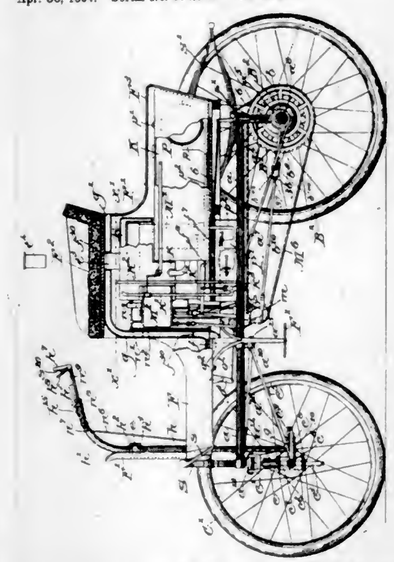
43. In a motor-vehicle, steering and driving wheels, a main frame, a rotatable compound axle carried thereby, for the driving wheels, compensating mechanism connecting the axle members, a bevel-gear forming a part of said mechanism, an actuating-pinion in mesh with said gear, a rolling side-thrust bearing for the bevel-gear, a common yoke-like support for said pinion and bearing mounted on said frame and axle, and a body yieldingly mounted on the frame, combined with a motor carried by the body, and a flexible, rotatable, power-transmitting connection between the motor and the actuating-pinion.

44. In a motor-vehicle, a motor, a driving-axle for the vehicle, and power-transmitting connections between them, said connections including shafts connected respectively with the motor and the axle, clutch mechanism and speed-reducing gearing between and carried solely by the shafts, and means to throw said clutch mechanism into operation and render the reducing-gearing inoperative, and vice versa.

45. In a motor-vehicle, a driving-axle, a motor and a power-transmitting shaft rotated thereby, a clutch member fast thereon, a bevel-gear and pinions intermeshing therewith, carried by a spider, said gear and spider being rotatable with the shaft and also movable longitudinally thereof, a fixed bevel-gear to at times mesh with the pinions, an actuating-shaft to rotate the driving-axle of the vehicle, a clutch member thereon, and means to disengage the pinions from the fixed gear and to bring the clutch members into coöperative relation, and vice versa.

46. In a motor-vehicle, a motor, a driving-axle having a bevel-gear thereon, an actuating-pinion in mesh therewith, and a rotatable power-transmitting connection between said pinion and the motor, combined with power-varying means, comprising a rotatable shaft, a shaft for the pinion in alinement therewith, a clutch member rotatable with the pinion-shaft, a cooperating clutch member and a bevel-gear rotatable with said motor-actuated shaft, the gear being in constant mesh with the bevel-pinions carried by a spider, a fixed bevel-gear facing said rotatable bevel-gear, and means to move said rotatable bevel-gear and the spider longitudinally, to bring said pinions into engagement with the fixed gear and thereby effect differential rotation of said motor-actuated and pinion shafts, or to bring the clutch members into coöperative position, to rotate said shafts at the same speed.

652,941. MOTOR-VEHICLE. GEORGE E. WHITNEY, Boston, Mass., assignor to the Whitney Motor Wagon Company, same place. Filed Apr. 30, 1897. Serial No. 634,514. (No model.)



Claim.—1. In a road-vehicle, propelling mechanism, speed-controlling means therefor, a steering-head having a rotative movement to steer the vehicle, and a compressible handhold mounted on the steering-head connected with the speed-controlling means, to regulate the latter by variation of hand-pressure on said handhold, substantially as described.

2. In a road-vehicle, propelling mechanism, speed-controlling means therefor, a steering-head having an overhanging arm adapted to travel in a lateral path to steer the vehicle, and a compressible handhold on said arm, having a connection with the speed-controlling means, whereby variation in hand-pressure on the handhold will regulate the speed, substantially as described.

3. In a road-vehicle, propelling mechanism, speed-controlling means therefor, a steering-head having an overhanging arm adapted to be swung in a lateral path to steer the vehicle, a handhold on said arm having a movable member, and a shaft supported on the arm and rocked by movement of said member, the latter having a connection with and to actuate the speed-controlling means by variation of hand-pressure by the operator, substantially as described.

4. In a road-vehicle, propelling mechanism, reversing and speed-controlling means therefor, and a steering-head having an extension-arm movable in a lateral path and provided with a compressible handhold, combined with connections between said arm and handhold and the propelling mechanism to operate the latter by longitudinal movement of the arm and compression of the handhold, substantially as described.

5. In a road-vehicle, propelling mechanism, reversing means therefor, a steering-head having an overhanging extensible arm movable laterally to steer the vehicle, and a connection between the extension-arm and said reversing means, to operate the latter by longitudinal movement of the former, substantially as described.

6. In a road-vehicle, steering mechanism, propelling mechanism and speed-governing means therefor, and a compressible speed-controlling member connected with and to control both the said steering mechanism and speed-controlling means, substantially as described.

7. In a road-vehicle, steering mechanism, propelling mechanism and speed-governing means therefor, and a compressible speed-controlling member connected and moving with the steering member, to control the speed of the vehicle, substantially as described.

8. In a road-vehicle, propelling mechanism, reversing mechanism, steering mechanism and a single compressible hand-controller connected with and to control said propelling, reversing and steering mechanism, one of said mechanisms being controlled by the compression of said controller, substantially as described.

9. In a road-vehicle, propelling mechanism, reversing mechanism, steering mechanism and a single longitudinally-moving compressible hand-controller connected with and to control said propelling, reversing and steering mechanism, one of said mechanisms being controlled by the longitudinal movement of said compressible hand-controller, substantially as described.

10. In a road-vehicle, propelling mechanism, reversing means therefor, a steering-head having an overhanging extensible arm movable laterally to steer the vehicle, a two-part telescopic rock-shaft mounted on said arm and a compressible handhold on the latter, connected with and to rock the shaft when desired, and a connection between the extension-arm and said reversing means, to operate the latter by longitudinal movement of the former, combined with speed-controlling means connected with and operated by partial rotation of said rock-shaft, due to variation of pressure on the handhold, substantially as described.

11. In a road-vehicle, propelling mechanism, reversing means therefor, a steering-head having an overhanging extensible arm movable laterally to steer the vehicle, a locking device to prevent accidental longitudinal movement of the extensible part of the arm, and connections between the extensible part of the arm and reversing means, to operate the latter by longitudinal movement of the former, substantially as described.

12. In a road-vehicle, a steering-axle, wheel-spindles pivoted to the ends thereof, and an arm set at an angle on each wheel-spindle, and a connection between the extremities of said arms, combined with a rotatable steering-head having a rigidly-attached arm at its lower end, a link connecting said arm and the connection between the spindle-arms, a fulcrum supported on the steering-axle for said rigidly-attached arm, and a supporting-bearing on the vehicle-body, in which said head is suspended and permitted to rock, substantially as described.

13. In a road-vehicle, a main frame, a body connected therewith by springs, a steering-axle, wheel-spindles pivoted to the ends thereof, and a horizontal pivot connection between the axle and frame, combined with a rotatable steering-head suspended from and adapted to rock in a bearing on the vehicle-body, an arm rigidly secured to the lower end of the head, and connections between said arm and wheel-spindles, to rock the latter on their fulcra and steer the vehicle, substantially as described.

14. In a motor-vehicle, variable-speed propelling mechanism, steering mechanism including a steering-head having a rotating movement to steer the vehicle, and a multipart hand-controller the parts of which are movable relatively to each other, the controller being mounted on the steering-head and by bodily movement rotating the latter, a member of the controller being operatively connected with the propelling mechanism to control the same by relative movement of said member by the hand of the operator while the controller as a whole is also manipulated by the hand.

15. In a road-vehicle, a main frame, a truss-frame axle horizontally pivoted to said main frame, a vertical strut at or near the center of the truss-frame axle, and a steering-arm loosely embracing at one end said strut, combined with steering-wheels connected to the said arm, a rotative steering-head rigidly secured at its lower end to the arm near the strut, the vehicle-body yieldingly connected with the main frame, and a bearing on said body for the upper end of the steering-head, from which bearing said head is suspended, substantially as described.

16. In a road-vehicle, a main frame, a body connected therewith with springs, an axle, a steering-head connected with said body to move therewith as the body moves on its springs, an arm rigidly secured to said steering-head at its lower end, said arm being fulcrumed on said axle and connected therewith by a universal joint, substantially as described.

17. In a road-vehicle, a main frame, a body connected therewith by springs, a steering-head having a rigidly-attached arm at its lower end, said steering-head and arm being connected with said body to move therewith as the body moves on its springs, a fulcrum for said arm, a truss-frame axle and vertical strut, such fulcrum loosely embracing such vertical strut and connected with the main frame by a universal joint, substantially as described.

18. In a road-vehicle, a main frame, a body yieldingly connected therewith with springs, a steering-head suspended on said body to move therewith as the body moves on its springs, an arm rigidly secured to said steering-head at its lower end, an axle having wheel-spindles at its ends, and each having an arm set at an angle from said spindle, said spindle-arms connected by a cross-rod at their ends, a fulcrum for said steering-head arm at one end thereof, and connected to said axle by a universal joint, substantially as described.

19. In a road-vehicle, a main frame, a truss-frame axle horizontally pivoted on said main frame and provided with a central, vertical strut, a body yieldingly connected with said frame, a rotatable steering-head and a suspension-bearing therefor on the vehicle-body, said head being adapted to rock in said bearing, combined with an arm rigidly secured to the lower end of the steering-head and fulcrumed on a collar loosely embracing said strut, and means operated by rotative movement of the steering-head, to steer the vehicle, substantially as described.

20. In a road-vehicle, a main frame, an axle having wheel-spindles fulcrumed at its ends, independent main and auxiliary horizontal king-bolts connected to said axle and supported by main-frame bearings in substantial alinement, braces reaching from the auxiliary king-bolt to or near to the ends of the axle, and means, including an upright steering-head independent of and extended between the inner, separated ends of the king-bolts, to swing the wheel-spindles to steer the vehicles, substantially as described.

21. A motor-vehicle containing a pair of propelling-wheels, a pair of steering-wheels, a body yieldingly sustained on said wheels through the medium of a plurality of longitudinal substantially-horizontal fulcra arranged one in front of and separated from the other and about which said steering-wheels may rock, a motor mounted on said body and operatively connected with said propelling-wheels, and combined steering and speed controlling devices operatively connected respectively with said steering-wheels and with said motor and working directly between said fulcra.

22. In a motor-vehicle, the combination of a body, a shaft carrying a propelling wheel or wheels and also carrying a gear-wheel, a crank or other drive-shaft provided with a gear-wheel, a belt connecting the gear-wheels on the said shafts, a motor connected with and adapted to rotate the drive-shaft and movably connected with the body, whereby it is adapted to be adjusted on the body and with respect to the shaft carrying the propelling wheel, or wheels, and a longitudinally-adjustable rod connecting the two shafts, substantially as specified.

23. In a motor-vehicle, the combination of a main frame, a body mounted on springs on the main frame, a shaft journaled in the main frame and carrying a propelling wheel or wheels, a motor carried by and movably connected with the body, a crank or other drive-shaft connected with and carried by the motor, gearing intermediate of the two shafts, and a longitudinally-adjustable rod pivotally connected with the shaft carrying the propelling wheel or wheels and connected in a swiveled manner with the drive-shaft of the motor, substantially as specified.

24. In a road-vehicle, a frame, a driven axle mounted in bearings thereon, a body yieldingly connected with the frame, a motor mounted to partake of the body's yielding movements, and also movable fore and aft relatively to the body, direct driving connections between the motor and axle, to drive the latter, and means to maintain a substantially-predetermined distance between the motor and driven axle in the path of power transmission.

25. In a road-vehicle, a frame, a driven axle mounted in bearings thereon, propelling-wheels operatively connected with the axle, steering-wheels connected with the frame, the side bars of the latter

maintaining a fixed distance between the said axle and the steering-wheel connections, a body yieldingly connected with the frame, a motor mounted to partake of the body's yielding movements, and also movable fore and aft relatively to the body, direct driving connections between the motor and axle, to drive the latter, means to maintain a substantially-predetermined distance between the motor and driven axle in the path of power transmission, and means to control the steering-wheels to guide the vehicle.

26. In a road-vehicle, a frame, a driven axle mounted in bearings thereon, combined with a body yieldingly connected with said frame, a motor carried by said body and adjustable fore and aft thereon to vary the distance between it and said driven axle, and driving connections between said motor and axle for driving the latter by the former, substantially as described.

27. In a road-vehicle, a driven axle having attached wheels, a main frame mounted on said axle, a body yieldingly connected with the main frame, a motor with its weight supported solely on said body, a longitudinally-adjustable distance-rod, connecting said driven axle and motor, an endless, flexible power-transmitting connection between said motor and axle, to rotate the latter, adjustment of the distance-rod moving the motor relatively to the body and serving to take up and adjust the flexible power-transmitting connection, substantially as described.

28. In a road-vehicle, a driven axle having attached wheels, a main frame mounted thereon, a body yieldingly connected with the main frame, a motor whose weight is supported on said body, a longitudinally-rigid adjustable distance-rod connecting said driven axle and motor, and having a universal joint between said driven axle and motor, an endless flexible, power-transmitting connection between said motor and axle to rotate the latter, adjustment of the distance-rod moving the motor relatively to the body and serving to take up and adjust the flexible connection, substantially as described.

29. In a road-vehicle, a main frame having bearings, and a driven axle mounted therein and having a sprocket-wheel, combined with a body yieldingly connected with the frame, a support on the body, a motor mounted on said support and movable fore and aft thereon, a driving-chain from the motor to the axle sprocket-wheel, and an adjustable distance-rod connected at one end to the axle and at the other end to the motor, adjustment of the distance-rod moving the motor on its support and adjusting the chain, substantially as described.

30. In a road-vehicle, a main frame, fixed bearings thereon, a driven axle mounted in said bearings, a body, springs connecting it with the main frame, and a motor mounted to partake of the body's yielding movements, and also movable fore and aft relatively thereto, combined with a distance-rod between the motor and driven axle to position the former, and maintain a substantially-predetermined distance between said motor and axle, and a universal joint connecting the motor and the distance-rod, whereby the body may move freely on its supporting-springs, substantially as described.

31. In a motor-vehicle, propelling-wheels, a driven shaft connected with and to rotate said wheels, a yieldingly-sustained prime drive-shaft connected with and to rotate said driven shaft, and a distance-rod acting about a fixed fulcrum at or adjacent said driven shaft, to maintain a substantially-predetermined distance between said shafts.

32. In a motor-vehicle, a pair of propelling-wheels, a non-yieldingly-supported and fixedly-positioned driven shaft operatively connecting them, a yieldingly-supported body, a motor and its prime drive-shaft mounted to partake of the body's yielding movements, endless flexible power-transmitting means between said drive-shaft and driven shaft, and a distance-rod acting to control bodily movement of said drive-shaft and maintain a substantially-predetermined distance between said shafts while permitting the movement of said drive-shaft due to the body's yielding movements.

33. In a motor-vehicle, one or more propelling-wheels, a yieldingly-sustained prime drive-shaft connected with and to rotate said wheel or wheels, and longitudinally-adjustable means acting about a fixed fulcrum at or adjacent the axis of said wheel or wheels to maintain a substantially-predetermined distance between said prime drive-shaft and the axis of said wheel or wheels in the path of power transmission.

34. In a motor-vehicle, propelling-wheels, a driven shaft connected with and to rotate said wheels, a yieldingly sustained prime drive-shaft connected with and to rotate said driven shaft, and universally-jointed means acting about a fixed fulcrum at or adjacent said driven shaft to maintain a substantially-predetermined distance between said shafts in the path of power transmission.

35. In a motor-vehicle, running-gear including fixedly-positioned propelling-wheels, springs, and a body thereon sustained on said running-gear, a motor and its prime drive-shaft mounted to partake of the body's yielding movement and operatively connected with said propelling-wheels, a distance member acting about a fixed fulcrum at or adjacent the axis of said propelling-wheels to maintain a substantially-predetermined distance between said prime drive-shaft and the axis of said wheels in the path of power transmission, and means to prevent torsional strain of said distance member when the body tips on its supporting-springs.

36. In a motor-vehicle, a pair of propelling-wheels, a fixedly-positioned driven shaft operatively connecting them, a spring-supported body, a motor and its prime drive-shaft, symmetrically located relative to said wheels and mounted to partake of the body's yielding movements, a power-transmitting connection between said shafts, and a distance-rod held at one end midway between the propelling-wheels and at its other end having a connection with the prime drive-shaft, to maintain the latter at a proper working distance from the driven shaft while permitting freedom of movement of the body on its springs.

37. A motor-vehicle provided with propelling-wheels, yieldingly-sustained propulsion means, power-transmitting connections between said propulsion means and said wheels, and a distance member between said means and said wheels and bifurcated at its ends to span said power-transmitting connections thereat.

38. In a motor-vehicle, a pair of propelling-wheels, a fixedly-positioned driven shaft operatively connecting them, a spring-supported body, a motor and its prime drive-shaft, symmetrically located relative to said wheels and mounted to partake of the body's yielding movements, power-transmitting connections between said shafts acting upon the driven shaft midway between the propelling-wheels, and distance means connected with the driven shaft at each side of the said power-transmitting connections, and correspondingly connected with the prime drive-shaft, to maintain the latter at a proper working distance from the driven shaft while permitting freedom of movement of the body on its springs.

39. In a motor-vehicle, propelling-wheels and a rotatable driven shaft connecting and to rotate them, compensating mechanism mounted on said shaft, a motor and its prime drive-shaft, power-transmitting means between said prime drive-shaft and the compensating mechanism, and a distance-rod interposed between the said shafts, and bifurcated to straddle said transmitting means at one end of said distance-rod and to straddle the compensating mechanism at the other end thereof.

40. In a road-vehicle provided with one or more propelling-wheels, a driven shaft connected therewith and having a sprocket-wheel, a motor provided with a prime drive-shaft, a sprocket-chain connecting said drive-shaft, and sprocket-wheel to rotate the driven shaft, a yoke loosely mounted on the latter shaft and straddling the sprocket-wheel, a distance-rod pivotally connected with said yoke to swing laterally relatively thereto, and a ball-and-socket joint connecting said rod and the motor and prime drive-shaft, whereby the latter shaft and motor are always maintained at a proper operative distance from the driven shaft whatever be the other movements of the one relative to the other.

41. In a motor-vehicle, propelling-wheels, a driven shaft connected with and to rotate them, a spring-supported body, a vertically-acting motor mounted to partake of the body's yielding movements and also movable fore and aft relatively to the body, power-transmitting means between said motor and driven shaft, and distance means acting about a fixed fulcrum at or adjacent said driven shaft to maintain a substantially-predetermined distance between a given part of said motor and said driven shaft while permitting the otherwise free yielding bodily movement of said motor with the body, said motor, power-transmitting means, and the distance means being arranged and acting symmetrically relatively to the longitudinal vertical median plane of the vehicle, to prevent the operation of said motor from causing oscillations of the spring-supported portions of the vehicle.

42. In a motor-vehicle, a frame, a fixedly-positioned axle thereon, propelling-wheels rigidly secured to the axle, a driven gear fast on the axle, a yieldingly-sustained body, a motor and its prime drive-gear mounted to partake of the body's yielding movements, endless flexible power-transmitting means directly between said drive and driven gears, said gears and the transmitting means being all located along the longitudinal center of the vehicle, and a distance member also arranged along such longitudinal center to maintain said drive and driven gears at a substantially-predetermined distance one from the other while permitting free yielding movements of the body.

43. In a motor-vehicle, running-gear, including propelling-wheels, a driven shaft connected with and to rotate said propelling-wheels, a spring-supported body having a seat, a steam-generator supported on said body under the seat, a vertically-acting reciprocating engine in front of said generator, and a substantially-horizontal, direct power-transmitting connection operating below said generator and between the engine and the driven shaft.

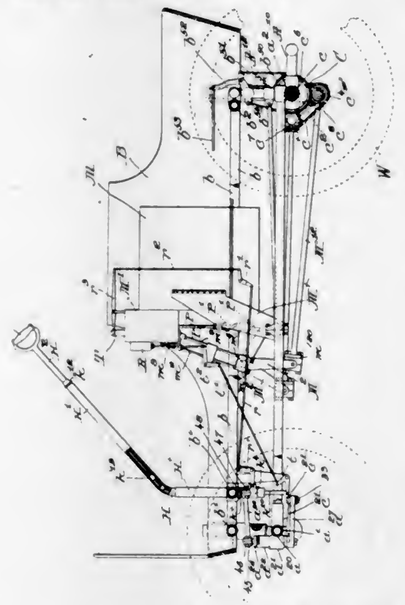
44. A motor-vehicle having a frame, fixedly-positioned propelling-wheels supporting opposite sides of the frame at one end thereof, steering-wheels supporting the other end of said frame, a longitudinal, substantially-horizontal pivot connection between the steering-wheels and frame, the several wheels acting to support said frame a

three points in a plane substantially parallel with the plane of the axis of the propelling-wheels, a motor and its prime drive-shaft yieldingly sustained within said three points of support, direct operating connections between said drive-shaft and propelling-wheels, and means operating about a fixed fulcrum at or adjacent the axis of the propelling-wheels to maintain a substantially-predetermined distance between such axis and said drive-shaft adjacent the operating connections while permitting the yielding bodily movement of said drive-shaft relatively to the propelling-wheels.

45. In a motor-vehicle, a pair of steering-wheels, a pair of propelling-wheels, a driven shaft in actuating engagement with the propelling-wheels, a yieldingly-supported body having a seat, a steam-generator supported by the body and substantially concealed within it and under the seat, a substantially vertical-acting steam-engine, including a prime drive-shaft, supported by said body in front of the generator, said engine being substantially concealed within the body and under the seat, direct, substantially-horizontal power-transmitting means passing under said generator and transmitting the power from the prime drive-shaft to said driven shaft, and means to maintain a predetermined distance between said shafts in the path of power transmission, while permitting the otherwise free yielding bodily movement of said drive-shaft relative to said driven shaft.

46. In a road-vehicle, propelling-wheels, a yieldingly-sustained body, a steam-generator and connected motor having a drive-shaft, all mounted to partake of the body's yielding movements and also movable fore and aft relatively to the body, driving connections between the said shaft and the propelling-wheels, to actuate the latter, and means to maintain said generator, motor and its drive-shaft at a substantially-predetermined distance from the axis of rotation of said wheels.

652,942. MOTOR-VEHICLE. GEORGE E. WHITNEY, Boston, Mass., assignor to the Whitney Motor Wagon Company, same place. Filed June 9, 1899. Serial No. 719,876. (No model.)



Claim.—1. In a motor-vehicle, a flexible frame, a crank-shaft provided with driving-wheels and mounted on the frame, a motor, and connecting means between the motor and crank-shaft, universally jointed to each.

2. In a motor-vehicle, a crank-shaft provided with driving-wheels, a motor, actuating connecting means between the motor and crank-shaft, universally jointed to each, and means to maintain a constant distance between the motor and the crank-shaft.

3. In a motor-vehicle, a crank-shaft provided with driving-wheels, a yieldingly-supported motor, direct and longitudinally-rigid connections between and universally jointed to the motor and crank-shaft, and means to maintain a constant distance between the motor and the crank-shaft while permitting their relative movement.

4. In a motor-vehicle, a crank-shaft provided with driving-wheels, compensating mechanism connective of said shaft and wheels to permit differential rotation of the latter, a motor, and direct connecting means between the motor and crank-shaft, universally jointed to each.

5. In a motor-vehicle, a crank-shaft provided with driving-wheels, compensating mechanism connective of said shaft and wheels to permit differential rotation of the latter, a motor, direct connecting means between the motor and crank-shaft universally jointed to each, and means to maintain a constant distance between the motor and crank-shaft while permitting their relative movement.

6. In a motor-vehicle, a crank-shaft provided with driving-wheels, compensating mechanism connective of said shaft and wheels to permit differential rotation of the latter, a yieldingly-supported motor, direct actuating means between the motor and crank-shaft universally jointed to each, and means to maintain a constant distance between the motor and the shaft while permitting relative movement thereof.

7. In a motor-vehicle, a flexible frame, steering and driving wheels mounted upon the frame, a crank-shaft to actuate the driving-wheels, a motor, longitudinally-rigid actuating means between the motor and crank-shaft and universally jointed to each, and distance members jointed respectively to the motor and crank-shaft bearings, to maintain a constant distance between the motor and crank-shaft.

8. In a motor-vehicle, a motor provided with rocking transmitting members, a crank-shaft provided with driving-wheels, connecting-rods between and universally jointed to the crank-shaft and rocking members of the motor, and means to maintain a constant distance between the motor and crank-shaft while permitting relative movement thereof.

9. In a motor-vehicle, a main frame, a driving-shaft mounted thereupon and provided with driving-wheels, an auxiliary frame yieldingly connected with the main frame, a motor on the auxiliary frame, actuating connections between the motor and driving-shaft universally jointed to each, and means to maintain a constant distance between the motor and the driving-shaft while permitting relative movement of the main and auxiliary frames.

10. In a motor-vehicle, a frame, a truss mounted thereon and provided with bearings, a crank driving-shaft mounted in said bearings and provided with driving-wheels, a yieldingly-supported motor, and actuating connections between the motor and crank-shaft and universally jointed to each.

11. In a motor-vehicle, a main frame provided with steering and driving wheels, upright standards on the main frame, an auxiliary frame provided with devices to engage and move vertically upon said standard, supporting-springs interposed between the main and auxiliary frames to yieldingly support the latter, retaining devices to prevent accidental removal of the auxiliary frame, a motor on the latter, and connections between the motor and driving-wheel to actuate the latter.

12. In a motor-vehicle, driving and steering wheels, a frame yieldingly supported on said wheels, a motor and a steering-head carried by the frame, operative connections between the motor and driving-wheels, and between the steering-head and the steering wheel or wheels, and a detachable body mounted on the frame independently of the steering and motive mechanisms of the vehicle.

13. In a motor-vehicle, a flexible frame provided with a driving-shaft and wheels, a yieldingly-supported motor, and an independent detachable body, both adapted to be carried by the frame, and actuating connections between the motor and the driving-shaft.

14. A flexible frame for motor-vehicles, comprising side bars, front and rear cross-bars, the side bars having slip connections with the front cross-bar, a reach pivotally connected with the side bars and front cross-bar to prevent their separation, bearings carried by the rear cross-bar, and a driving-shaft mounted therein, and a steering wheel or wheels for the vehicle operatively mounted on the front cross-bar.

15. A flexible frame for motor-vehicles provided with driving-wheels, a front cross-bar forming a part of said frame, and wheel-spindles pivotally mounted upon said bar, a vertical rock-shaft mounted upon the said cross-bar and having a rearwardly-extended rigid arm, connecting-rods jointed to said arm and to the spindles to swing the latter, a second arm extended from the rock-shaft at an angle to the rearwardly-extended arm, a steering-head yieldingly supported relatively to the frame, and a jointed connection between the head and said second arm, to steer the vehicle by movement of the steering-head.

16. A motor-vehicle having a main frame provided with driving-wheels, a front cross-bar forming a part of said frame, and wheel-spindles pivotally mounted thereupon, a vertical rock-shaft mounted upon said bar, a rearwardly-extended arm fast on the shaft, connecting-rods jointed respectively to the spindles and to the said arm, a second arm on the rock-shaft, an auxiliary frame yieldingly connected

with the main frame, a steering-head mounted on the auxiliary frame and having a laterally-extended foot, and a link universally jointed to said foot and to the second arm of the rock-shaft to steer the vehicle by rotative movement of the steering-head.

17. In a motor-vehicle, steering and driving wheels, a crank-shaft to actuate the driving-wheels, a yieldingly-supported body, a motor movable therewith, connecting-rods between the motor and crank-shaft and universally jointed to each, to rotate said shaft, means to maintain a constant distance between the motor and crank-shaft, a steering-head mounted to move with the body, and connections between said head and the steering-wheels to control the latter.

18. A frame for motor-vehicles comprising side, and front and rear cross-bars, the rear cross-bar being made in two parts, a double truss rigidly connecting the parts of said bar and provided with bearings, a crank driving-shaft mounted in said bearings, driving-wheels connected with said shaft, steering-wheels carried by the frame, and a yieldingly-supported steering-head operatively connected with and to control the steering-wheels.

19. In a motor-vehicle, a crank driving-shaft provided with wheels, a yieldingly-supported motor comprising a vertical boiler and cylinders, rocking transmitting members, longitudinally-rigid connecting-rods universally jointed to the transmitting members and the crank-shaft to rotate the latter, and distance-rods jointed to the motor and crank-shaft support to maintain a constant distance between the motor and crank-shaft.

20. In a road-vehicle, a main frame provided with wheel-spindles pivotally mounted thereupon, an arm set at an angle on each spindle, and rods jointed to the extremities of the said arms, combined with an auxiliary frame yieldingly connected to the main frame, a tubular upright support on the auxiliary frame, a steering-head rotatable in said support and having at its lower end a rigidly-attached foot, a vertical rock-shaft provided with a rearwardly-extended arm jointed to the inner ends of the rods connected with the spindles, and connections between the foot of the steering-head and the rock-shaft to rock the wheel-spindles by rotative movement of the steering-head.

21. In a road-vehicle, propelling mechanism, speed-regulating and reversing devices therefor, a rotative steering-head having an overhanging arm at its upper end, a transverse segmental guideway vertically movable on and carried by the lower portion of the head to turn therewith, a right and left hand threaded nut in continuous engagement with the guideway and with a threaded portion of the steering-head, operative connections between one of the propulsion-controlling devices and said guideway, operated by vertical movement of the latter, a hand-controller carried by the overhanging arm and adapted to be rotated and also longitudinally moved, a rotatable longitudinally-movable shaft in the head and connected with and to rotate the threaded nut, a flexible connection between the shaft and the hand-controller, and connections between the other of said propulsion-controlling devices and the shaft, operated by longitudinal movement of the latter.

22. In a road-vehicle, propelling mechanism, speed-regulating and reversing devices therefor, a rotative steering-head having an overhanging arm at its upper end, a hand-controller carried by the overhanging arm and adapted to be rotated and also longitudinally moved, connections between the propulsion-controlling devices and said shaft, one of said devices being actuated by longitudinal and the other by rotative movement of the said shaft, and a flexible connection between the shaft and the hand-controller, said connection comprising a plurality of rocking bearing-blocks supported within the arm and head, and links between adjacent blocks jointed to the latter, the joint with one block being substantially at right angles to the joint with the adjacent block.

23. In a road-vehicle, propelling mechanism, speed-regulating and reversing devices therefor, a rotative steering-head having an overhanging arm at its upper end, a hand-controller carried by the overhanging arm and adapted to be rotated and also longitudinally moved, a shaft in the head, connections between the propulsion-controlling devices and said shaft, one of said devices being actuated by longitudinal and the other by rotative movement of the said shaft, and a flexible connection between the shaft and the hand-controller, said connection comprising rounded bearing-blocks adapted to slide and rock within the head and overhanging arm, and links connecting adjacent blocks, said links being bent at right angles at their opposite ends and inserted in holes in the blocks, the end of one link being substantially at right angles to the end of another link connected to the same block.

24. In steering mechanism for motor-vehicles, a tubular steering-head having an overhanging arm, a rotative and longitudinally-movable controlling member mounted in the arm, a shaft in the head, and a flexible connection between said shaft and controlling member, comprising a plurality of rocking bearing-blocks supported within the head and arm, and connecting-links between adjacent blocks and jointed thereto, the joint with one block being substantially at right angles to the joint with the adjacent block.

25. In a motor-vehicle, a crank member, a substantially vertically acting motor, means to convert the substantially-vertical action thereof to a substantially-horizontal action, and a longitudinally-rigid universally-jointed power-transmitting connection between said converting means and the crank member.

26. In a motor-vehicle, a crank member, a substantially vertically acting, yieldingly sustained motor, means to convert the substantially-vertical action thereof to a substantially-horizontal action, and a longitudinally-rigid universally-jointed power-transmitting connection between said converting means and the crank member, and a longitudinally-rigid universally-jointed means to maintain a substantially-constant distance between said motor and the crank member.

27. In a motor-vehicle, a frame, a crank-shaft fixedly positioned thereon, and provided with propelling-wheels, steering-wheels connected with the frame, the side bars of the latter maintaining a fixed distance between the shaft and steering-wheel connections, a body yieldingly connected with the frame, a motor mounted to partake of its movements, actuating connecting means between the motor and crank-shaft, universally jointed to each, and means to maintain a constant distance between the motor and crank-shaft while permitting yielding movements of the motor with the body.

28. In a motor-vehicle, a frame provided with laterally-separated shaft-bearings, a crank-shaft rotatably mounted in said bearings and having its crank members located between the latter, propelling-wheels operatively connected with the shaft, a body yieldingly connected with the frame, a motor mounted to partake of the movements of the body, reciprocating power-transmitting members between the motor and crank members of the shaft, and means to maintain a substantially-constant operative distance between the crank-shaft and motor while permitting yielding movements of the motor with the body.

29. In a motor-vehicle, a frame having shaft-bearings at one end, a crank-shaft mounted in said bearings and having its crank members located between the latter, propelling-wheels operatively connected with the ends of the crank-shaft, a body yieldingly connected with the frame, a steam-motor mounted on the body and including cylinders located adjacent its longitudinal center, power-transmitting means, including universally-jointed connecting-rods, between said motor and the crank members of the shaft, and means to maintain a substantially-constant distance between the crank-shaft and motor.

30. In a motor-vehicle, a frame provided with laterally-separated shaft-bearings, a crank-shaft rotatably mounted in and having its crank members located between said bearings, propelling-wheels, compensating mechanism connective of said wheels and shaft, a body yieldingly supported on the frame, a motor mounted to partake of the movements of the body, longitudinally-rigid, parallel distance-rods jointed to said motor and adjacent the shaft-bearings, to maintain the motor and shaft a substantially-constant distance apart while permitting yielding movements of the motor with the body, and reciprocating power-transmitting members operating between said distance-rods and universally connected with the motor and the crank members of the shaft.

31. In a motor-vehicle, a frame, a crank-shaft mounted in bearings on said frame and provided with driving-wheels, compensating mechanism, means to transmit the differential action of said compensating mechanism through the crank of said shaft, a truss member of the frame to support said shaft on opposite sides of the crank, a yieldingly-supported body, a motor mounted on said body, longitudinally-rigid universally-jointed connecting-rods to transmit power from the motor to said crank-shaft, and means to maintain a constant distance between the motor and crank-shaft.

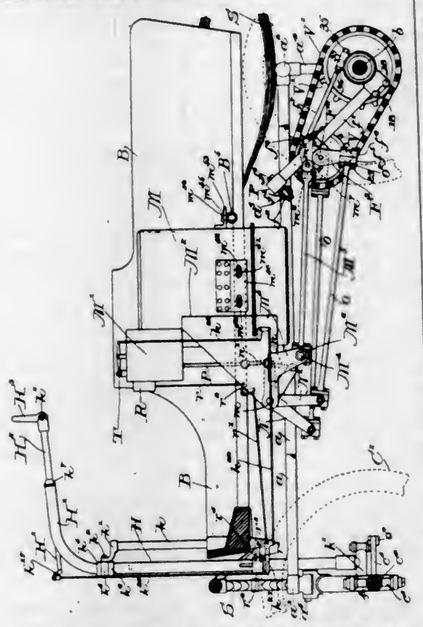
32. In a motor-vehicle, a frame including a transversely-arranged truss, outer bearings carried by the frame, and inner bearings in alinement therewith, carried by the truss, and a crank-shaft the crank portion whereof is located between the inner, truss-supported bearings.

33. In a motor-vehicle, propelling-wheels, a substantially vertically acting motor, a crank-shaft operatively connected with and to rotate said wheels, substantially horizontally acting connecting-rods connected with and to rotate said crank-shaft, and bell-crank levers interposed between and connecting said motor and said connecting-rods, to operate as described.

34. In a motor-vehicle, propelling-wheels, and a crank-shaft connected with and to drive the same, a substantially vertically acting engine including reciprocating piston-rods, bell-crank levers to which the piston-rods are connected, and substantially horizontally acting connecting-rods joining said bell-crank levers and crank-shaft.

35. In a motor-vehicle, propelling-wheels, a crank-shaft connected with and to drive the same, a substantially vertically acting engine, substantially horizontally acting connecting-rods, and bell-crank levers connecting the piston-rods of said engine with said connecting-rods, the horizontal arrangement of the latter permitting rise and fall of said motor with reference to said crank-shaft, without disturbing the operative connection of the two.

652,948. MOTOR-VEHICLE. GEORGE E. WHITNEY, Boston, Mass., assignor to the Whitney Motor Wagon Company, same place. Filed June 10, 1899. Serial No. 720,030. (No model.)



Claim.—1. In a road-vehicle, propulsion devices, steering, speed-regulating, and reversing mechanisms, a manually-operated controller for the vehicle, controlling means intermediate said controller and said mechanisms, the said controller having a main swinging movement to steer the vehicle, and auxiliary fore-and-aft tipping and bodily longitudinal movements, whereby the speed-regulating and reversing mechanisms are governed as to their operation by the auxiliary movements of the controller.

2. In a road-vehicle, propulsion devices, steering, speed-regulating, and reversing mechanisms, a common manually-operated controller for the vehicle, operating connections between the controller and said mechanisms, said controller having a lateral movement to steer the vehicle, and also having auxiliary independent fore-and-aft tipping and bodily longitudinal movements at all points in the path of lateral movement, one of said auxiliary movements governing the speed-regulating mechanism, the other auxiliary movement governing the reversing movement.

3. In a road-vehicle, propulsion devices, steering, speed-regulating, and reversing mechanisms, a common manually-operated controller for the vehicle, operating connections between the controller and said mechanisms, said controller having a lateral movement to steer the vehicle, and also having auxiliary independent tipping and bodily longitudinal movements in the path of lateral movement, one of said auxiliary movements governing the speed-regulating mechanism, and the other auxiliary movement governing the reversing movement, and means to prevent bodily movement of said controller when the speed-regulating mechanism is in operation.

4. A road-vehicle having steering and propelling mechanisms, speed-regulating and reversing devices for the latter, and controlling means for the vehicle, including a manually-operated member movable in a single path to steer the vehicle, said member being also capable of bodily longitudinal movement in and at any part of said path, and of tipping in the direction of such longitudinal movement to vary the speed of and to reverse the direction of movement of the vehicle, by said movements.

5. In a road-vehicle, propelling mechanism and devices for regulating the speed of and reversing the same, and steering mechanism for the vehicle, including a steering-head, combined with a manually-actuated controlling member, a support therefor rigidly mounted on the head and movable laterally by and with corresponding movement of said member to steer the vehicle, said controlling member being constructed to tip fore and aft relative to said support and to be moved bodily longitudinally relative to the support, and connections between the controlling member and the speed-regulating and the reversing devices, to operate the said devices by the tipping and the bodily longitudinal movements of the controlling member to thereby regulate the speed and reverse the direction of movement of the vehicle.

6. In a road-vehicle, propelling mechanism having speed-regulating and reversing devices, a steering-head for the vehicle, having an overhanging arm adapted to be swung laterally, a manually-controlled tipping member mounted to slide longitudinally on said arm and also adapted to tip fore and aft relatively to the arm, connections between said member and the speed-regulating device, to operate the latter by the tipping of said member, and connections between the latter and the reversing device, to be operated by bodily longitudinal movement of said manually-actuated member.

7. In a motor-vehicle, driving-wheels, a motor, a crank-driving member, a longitudinally-rigid, universally-jointed, actuating connecting member between the motor and crank member, and power-changing transmitting means between the crank member and the driving-wheels.

8. In a motor-vehicle, driving-wheels, an axle connecting them, a crank-shaft, an endless flexible power-transmitting connection between it and the wheel-axle, a yieldingly-supported motor for the vehicle and connecting-rods between the motor and crank-shaft, to rotate the latter, said connecting-rods being united by universal joints to the crank-shaft and the actuating members of the motor.

9. In a motor-vehicle, connected crank and wheel shafts, driving-wheels attached to the latter, a yieldingly-supported body, a motor mounted thereon, having rocking actuating members, connecting-rods between said members and the crank-shaft to effect rotation of the latter, universal joints between said rods and the parts to which they are attached, and longitudinally-constant distance members jointed to and connecting the motor and the crank-shaft bearings.

10. In a motor-vehicle, driving-wheels, a shaft connecting them, a crank-shaft, a sprocket-wheel on each shaft and a sprocket-chain connecting them, means to maintain a fixed distance between said shafts, a yieldingly-supported motor, connecting-rods between its actuating members and the crank-shaft, to rotate the latter, universal joints connecting the rods with the actuating members and the crank-shaft, and distance members between the motor and crank-shaft.

11. In a motor-vehicle, a shaft, driving-wheels attached to it, a yieldingly-supported motor, a crank-shaft between it and the wheel-shaft, universally-jointed connecting-rods intermediate the motor and crank-shaft, to rotate the latter, and power-changing transmitting means connective of the crank and wheel shafts.

12. In a motor-vehicle, a frame, a shaft mounted in bearings on the frame, driving-wheels attached to the shaft, a hanger connected with the frame and having intermediate bearings for the wheel-shaft, a crank-shaft carried by the hanger, power-transmitting means connecting the shafts, a motor, and actuating connecting-rods between the motor and crank-shaft, to rotate the latter.

13. In a motor-vehicle, a frame having depending bearings at its rear end, a driving-wheel shaft mounted in said bearings, a bifurcated hanger pivotally connected with the frame and having center bearings for the wheel-shaft, a crank-shaft mounted on the hanger, a sprocket-chain and sprocket-wheels transmitting power from the crank to the wheel-shaft, a yieldingly-supported motor, and connecting-rods universally jointed to the actuating members of the motor and to the crank-shaft to rotate the latter.

14. In a motor-vehicle, a frame, driving-wheels and an intermediate connected gear, all supported by the frame, a bifurcated hanger attached at or near its apex to the frame and supported at two other points at opposite sides of the gear, a second gear mounted on the hanger, the gear axes being maintained in parallelism by the hanger, and power-transmitting means between the gears.

15. In a motor-vehicle, a frame, driving-wheels and an intermediate connected sprocket-wheel, all supported by the frame, a bifurcated hanger attached at or near its apex to the frame and supported at two other points at opposite sides of the sprocket-wheel a second sprocket-wheel adjustably mounted on the hanger, the latter maintaining the axes of said sprocket-wheels in parallelism, a sprocket-chain connecting the sprocket-wheels, and means to vary the distance between the latter, to take up slack of the chain.

16. In a motor-vehicle driving-wheels, a substantially vertically acting motor, a crank-shaft, means to convert the vertical action of the motor into substantially-horizontal action to operate the crank-shaft, and power changing and transmitting means between said crank-shaft and driving-wheels.

17. In a motor-vehicle, a frame, wheel-carrying and crank shafts mounted thereon, power-transmitting connections between said shafts, a yieldingly-supported motor, connecting-rods between the motor and crank-shaft, to rotate the latter, universal joints connective of said rods and the members to which they are attached, and longitudinally-rigid, universally-jointed distance members intermediate said motor and the crank-shaft to maintain a fixed distance therebetween while permitting free yielding movement of the motor.

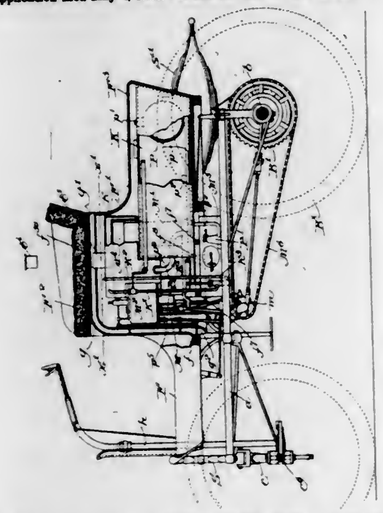
18. In a motor-vehicle, a frame having bearings, a shaft mounted therein and driving-wheels attached to the shaft, a cross-bar on the frame, rigid hanger members connected at their upper ends to each other and to the cross-bar and having at their lower ends center bearings for the wheel-shaft, a crank-shaft, bearings therefor adjustably secured to the hanger members, a power-transmitting connection between the shafts, the latter being maintained in parallelism by the hanger members, and adjustable distance-rods between the crank and wheel shaft bearings.

19. In a motor-vehicle, motor mechanism comprising both vertical and horizontal acting driving members, with power-changing means intermediate the horizonal-acting members and the vehicle-driving wheels.

20. In a motor-vehicle, a frame, driving-wheels supported thereon, a yieldingly-supported motor, a shaft mounted on the frame, actuating means between the motor and said shaft, to rotate the latter, and power-transmitting connections between the shaft and the driving-wheels, and means to maintain the axes of said shaft and driving-wheels a predetermined distance apart and in parallelism.

21. In a motor-vehicle, a frame, driving-wheels, and a connecting-shaft therefor mounted on the frame, a gear on the said shaft, means having a single connection with the frame and connected with the wheel-shaft at each side of the gear thereon, a second gear mounted on said means, the latter maintaining the gears a predetermined distance apart with their axes in parallelism, and power-transmitting means between the gears.

652,944. MOTOR-VEHICLE. GEORGE R. WHITNEY, Boston, Mass., assignor to the Whitney Motor Wagon Company, same place. Original application filed Apr. 30, 1897, Serial No. 634,514. Divided and this application filed May 4, 1900. Serial No. 15,450. (No model.)



Claim.—1. In a motor-vehicle, a steam-boiler, a water-jacket around the upper portion thereof, the vehicle-seat above said jacket, a water-supply receptacle, and a pump adapted to draw the water from said receptacle through said jacket and to pump it into the boiler, substantially as described.

2. In a motor-vehicle, the body having an extended boot, a boiler supported on the body, a water-tank in the boot, branched to partially embrace the boiler, a connected water-jacket inclosing the upper part of the boiler, and a feed-pipe from the jacket to the boiler, substantially as described.

3. In a motor-vehicle, the body having an extended boot, a boiler supported on the body, a water-tank in the boot, branched to partially embrace the boiler, a connected water-jacket inclosing the upper part of the boiler, a feed-pipe from the jacket to the boiler, and a fuel-tank within the water-tank, connected with the boiler-furnace, substantially as described.

4. In a motor-vehicle, the body having a seat, a steam-generator supported on the body beneath the seat and having a downturned escape-flue to convey the products of combustion away from the proximity of the seat, an auxiliary upturned flue communicating with the generator, an open-ended air-passage extending up in front of the generator and between the latter and the seat, to protect the occupants of the vehicle, said upturned flue intersecting the passage beneath the seat, an engine adjacent the generator, and beneath the seat, and means to induce draft by the introduction of steam in the downturned flue after steam has been raised in the generator.

5. In a motor-vehicle, a body having a seat, a steam-generator having a downturned escape-flue to convey the products of combustion away from the proximity of the seat, an auxiliary upper outlet or flue communicating with the generator, an engine adjacent the said generator, both engine and generator being mounted on the body beneath the seat and substantially concealed by the seat and body, and means to induce draft by the introduction of steam in the downturned flue after steam has been raised in the generator.

6. In a motor-vehicle, a body having a seat, a boiler carried on the body beneath the seat and having a hood and a downturned escape-flue, combined with an auxiliary upturned flue or outlet, and means to close the auxiliary flue.

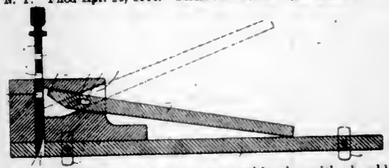
7. In a motor-vehicle, a body having a seat, a boiler carried on the body beneath said seat and having a hood and a downturned escape-flue, combined with an auxiliary upturned flue extended through the seat and a damper to close the auxiliary flue below the seat, substantially as described.

8. In a motor-vehicle, a body having a seat, a boiler carried on the body beneath said seat and having a hood and a downturned escape-flue, combined with an auxiliary upturned flue extended through the seat, a telescopic extension for said auxiliary flue, and a damper to close the auxiliary flue below the seat, substantially as described.

9. In a motor-vehicle, the body having a seat, a boiler carried by the body beneath the seat and having a hood and a communicating downturned escape-flue to effect the discharge of the products of combustion at or near the lower end of the boiler, and an upper draft-outlet for the hood, opening below the seat.

10. In a motor-vehicle, the body having a seat, a boiler carried by the body beneath said seat and having a hood and a downturned escape-flue, combined with an auxiliary flue opening beneath the seat, an extension attachable to said flue when in use, and a damper to close the auxiliary flue when not in use, substantially as described.

652,945. MORTISING-TOOL. HENRY WITHERWAX, Guilderland, N. Y. Filed Apr. 10, 1900. Serial No. 12,344. (No model.)



Claim.—1. In a mortising-tool, the combination with a head having a vertical slot, of a chisel movable in said slot and provided with a stop to limit the downward movement of the same, and a lever having a pivotal and limited longitudinal movement in said head, substantially as shown and described.

2. In a mortising-tool, the combination with a head provided with a vertical slot, of a chisel having transverse apertures formed therein, and a lever fulcrumed in said head and movable lengthwise therein by means of a slot and adapted to enter the apertures formed in said chisel, substantially as shown and described.

3. In a mortising-tool, the combination with a head having a vertical slot, of a chisel extending above said head and movable in said slot, and a lever having a pivotal and limited longitudinal movement, and adapted to engage with the side of said chisel and raise the same, substantially as shown and described.

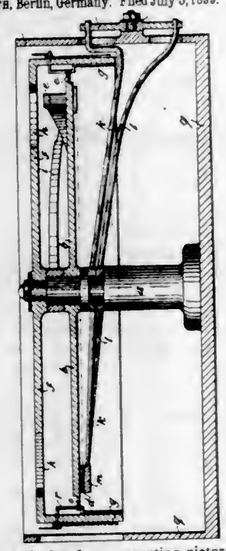
652,946. PUZZLE. HAROLD A. WRIGHT, Chicago, Ill. Filed Apr. 19, 1900. Serial No. 13,439. (No model.)



Claim.—1. The herein-described puzzle consisting of a body-piece composed of two sections hinged together, one of said sections having two side portions united by a series of spiral coils, and the other section having two side portions suitably united, in combination with a guard member permanently interlocked with the main or body member and movable thereon, and a ring member removably mounted on the body member, said ring member being of such diameter that it cannot be passed over the guard or directly over the spiral coils.

2. The herein-described puzzle consisting of a body-piece composed of two sections hinged together, one section comprising the parallel sides 1, 1', the intermediate coils 2, and the eyes 3, and the other section comprising the parallel sides 5, 5', the transverse portion 6, and the eyes 4, in combination with a guard permanently interlocked with said body-piece, and a ring removably mounted on said body-piece, substantially as described.

652,947. APPARATUS FOR SUCCESSIVELY REPRESENTING MOVABLE OR IMMOVABLE PICTURES OR ADVERTISEMENTS. MORITZ BARTH, Berlin, Germany. Filed July 5, 1899. Serial No. 722,814. (No model.)

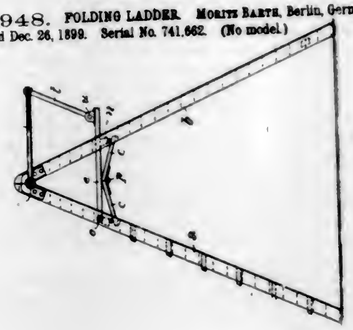


Claim.—1. A device for representing pictures, composed of a frame, an axle rotatably mounted therein, a disk mounted on said axle and provided with peripheral projections, a drum loosely mounted on said axle and having figures secured to its periphery, said figures being adapted to be operated by the projections on said disk, means for turning said drum from said disk, and means for rotating the latter, substantially as set forth.

2. A device for representing pictures, composed of a suitable frame, an axle rotatably mounted therein, a disk mounted on said axle and provided with different-shaped peripheral projections, a drum loosely mounted on said axle and having figures movably secured to its periphery, said figures having pendulums adapted to be engaged by the projections on the disk, means for rotating said drum, and means for rotating said disk, substantially as set forth.

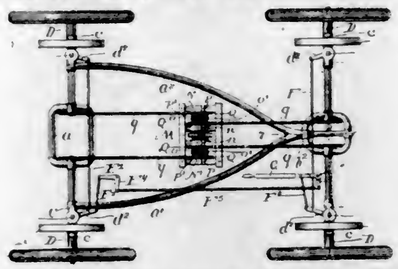
3. A device for representing pictures, composed of a frame having an opening therein, an axle rotatably mounted in said frame, a disk mounted on said axle and provided with different-shaped peripheral projections, a drum loosely mounted on said axle and having figures movably secured to its periphery, said figures having pendulums adapted to be engaged by said projections, reciprocating arms for rotating said disk, and means for operating said drum from said disk, substantially as set forth.

652,948. FOLDING LADDER. MORITZ BARTH, Berlin, Germany. Filed Dec. 26, 1899. Serial No. 741,662. (No model.)



Claim.—A collapsible or folding ladder comprising a hinged platform *e*, a rail 1, and a link or rod *l* connecting said platform to said rail, the latter being made of suitable form and of rigid material and pivoted on the ladder in such a way that the rail automatically follows any movement of the platform when the latter is collapsed or extended, substantially as hereinbefore described.

652,949. RUNNING-GEAR FOR AUTOMOBILES. CHARLES COTTA, Shannon, Ill. Filed Jan. 17, 1900. Serial No. 1,728. (No model.)

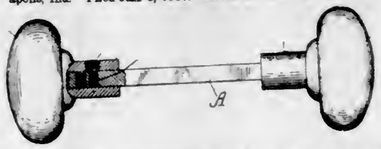


Claim.—1. In a device of the class described, the combination with four wheels, suitable axles and independent shafts connected with said wheels, of compensating gearing adapted for connection with a motor, two sets of independent compensating gearing receiving power equally and independently from the first and means for connecting the wheel-shafts respectively with the respective members of the said two sets of compensating gearing, whereby the power of the motor is applied equally and independently to all four wheels; substantially as described.

2. In a device of the class described, the combination with an axle containing a middle, horizontal loop, of a second axle and a pivot-pin connected to said second axle and turning in bearings in the opposite sides of said horizontal loop; substantially as described.

3. In a device of the class described, the combination with an axle made up of tubular end portions, connected by a middle loop, of driving-shafts journaled within said end portions and provided with gear-wheels secured to their inner ends within said loop; substantially as described.

652,950. KNOB ATTACHMENT. ROBERT P. DAGGETT, Indianapolis, Ind. Filed Jan. 8, 1900. Serial No. 732. (No model.)



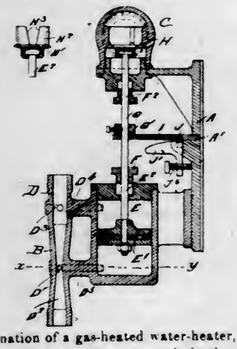
Claim.—1. The combination, of the knob having a shank with a socket, said shank having a screw-threaded perforation through one of its sides leading into said socket transversely thereof, a lock-spindle mounted in said socket and also provided with a transverse screw-threaded perforation arranged to register with said perforation in one side of said shank, the perforation in said shank being of one size and that in said spindle of a smaller size, and a screw mounted in said perforation in the spindle with its head projecting above its surface and into the perforation in the the shank, whereby said spindle and shank are held against longitudinal movement one upon the other, and a jam-screw driven into the screw-threaded perforation in the shank against the head of the screw in the spindle, whereby said screw is locked in place, substantially as set forth.

2. The combination, of the knob having a shank with a socket, said shank being formed with a screw-threaded perforation in one side, a spindle mounted in said socket and having a screw-threaded perforation adapted to register with that of the shank, a screw mounted in the perforation in the spindle with its head projecting into the perforation in the shank, and a jam-screw mounted in said perforation in the shank and driven against the head of the screw in the spindle, said jam-screw being threaded reversely to the screw in the spindle, substantially as set forth.

652,951. CONTROLLER FOR WATER-HEATERS. MATTHEW A. ADAM, London, England. Filed Oct. 4, 1899. Serial No. 732,543. (No model.)

Claim.—1. In apparatus for controlling the supply of heat to a

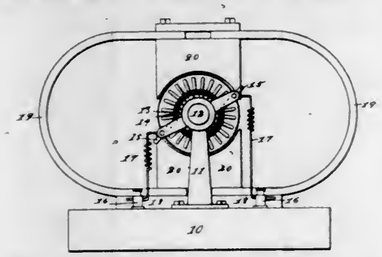
gas-heated water-heater, the combination of a water-supply pipe whose bore has a contracted area gradually expanding to the normal area, with a cylinder having connecting-passages from the normal and contracted areas of said pipe to opposite sides of a piston, adapted to automatically operate a gas-valve controlling the supply of gas to the heater-burner, substantially as set forth.



2. The combination of a gas-heated water-heater, with an automatic gas-regulator consisting of a contracted pipe having its normal and contracted areas respectively connected to the opposite sides of a piston or diaphragm attached to a valve which controls the flow of gas to the heating-burner, substantially as set forth.

3. In a gas-heated water-heater the combination of a contracted pipe such as D with passages such as D^4 and D^5 communicating with a cylinder such as E and a piston such as E' with a rod E^2 carrying a gas-valve on its end and means for applying a tension to the said rod, substantially as and for the purpose set forth.

652,952. MAGNETO-ELECTRIC MOTOR. EVERETT M. ANDREWS and MELVIN N. ANDREWS, Des Moines, and CHARLES M. CONGER, Adel, Iowa. Filed May 10, 1900. Serial No. 16,175. (No model.)



Claim.—1. In a magneto-electric motor, the combination of two or more series of permanent magnets, arranged to encircle the armature, and having the opposite poles of the adjacent series of magnets, magnetically connected.

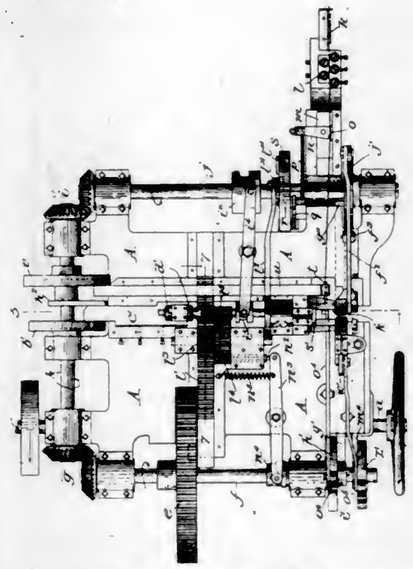
2. In a magneto-electric motor, the combination of two or more series of permanent magnets arranged to encircle the armature, having the opposite poles of the adjacent series of magnets magnetically connected, and means for insulating said magnets from the base.

3. In a magneto-electric motor, the combination of a base made of insulated material, two series of horseshoe-magnets supported above the base, arranged in a complete circuit around the armature, and having the positive poles of one series adjacent to the negative poles of the other series, and field-pieces with their inner surfaces concave to conform to the contour of the armature magnetically connected with the adjacent poles of the magnets, substantially as, and for the purposes stated.

652,953. MACHINE FOR MAKING BALE-TIES. FRED H. DANIELS and CLINTON S. MARSHALL, Worcester, Mass., assignors to the American Steel and Wire Company of New Jersey. Filed Feb. 19, 1900. Serial No. 5,746. (No model.)

Claim.—1. In a machine for making wire ties, the combination of wire-feeding mechanism, mechanism for cutting off suitable lengths of the wire, mechanism for bending the cut lengths into loop form to make the grips, mechanism for passing the ends of the tie-wires through the grips, and mechanism for twisting the ends of the tie-wires together.

2. In a machine for making wire ties, the combination of wire-feeding mechanism, mechanism for cutting off suitable lengths of the wire, a former or mandrel, a looper for bending the cut lengths around the mandrel or former to make the grips, mechanism for passing the ends of the tie-wires through the grips, and mechanism for twisting the tie-wire ends together.



3. In a machine for making wire ties, the combination of wire-feeding mechanism, mechanism for cutting off suitable lengths of the wire, a mandrel or former, a looper for bending the cut lengths around the mandrel or former to make the grips, mechanism for passing the ends of the tie-wires through the grips, mechanism for bending the tie-wire ends back upon the wire, and mechanism for twisting the ends of the tie-wires together.

4. In a machine for making wire ties, the combination of wire-feeding mechanism, mechanism for cutting off suitable lengths of the wire, a mandrel or former, a looper for bending the wire around the mandrel or former to make the grips, mechanism for passing the ends of the tie-wires through the grips, mechanism for bending the tie-wire ends back upon the wire, and mechanism for rotating the grips and thereby twisting the tie-wire ends together.

5. In a machine for making wire ties, the combination of wire-feeding mechanism, mechanism for cutting off suitable lengths of the wire, a mandrel or former, mechanism for looping the wire around the mandrel or former to make the grips, mechanism for passing the ends of the tie-wires through the grips, mechanism for bending the tie-wires back upon the wire, mechanism for rotating the grips and thereby twisting the tie-wire ends together, and mechanism for stripping the grips from the mandrel.

6. In a machine for making wire ties, the combination of wire-feeding mechanism, mechanism for cutting off suitable lengths of the wire, a mandrel or former, mechanism for looping the wire around the mandrel or former to make the grips, mechanism for passing the ends of the tie-wires through the grips, mechanism for bending the tie-wire ends back upon the wire, mechanism for gripping and holding the tie-wire, and mechanism for rotating the grips and thereby twisting the tie-wire ends together.

7. In a machine for making wire ties, the combination of wire-feeding mechanism, mechanism for cutting off suitable lengths of the wire, a mandrel or former, a looper for bending the wires around the mandrel or former to make the grips, dies for closing the ends of the grips, mechanism for passing the ends of the tie-wires through the grips, mechanism for bending the tie-wire ends back upon the wire, jaws for clamping and holding the tie-wire, mechanism for rotating the grips and thereby twisting the tie-wire ends together while so holding, and mechanism for releasing the tie-wires and stripping the grips from the mandrel.

8. In a machine for making wire ties, the combination of wire-feeding mechanism, mechanism for cutting off suitable lengths of the wire, mechanism for bending the cut lengths into loop form to make the grips, a magazine for holding cut lengths of tie-wires, mechanism

for ejecting the tie-wires one at a time from the magazine and passing their ends through the grips, and mechanism for bending the ends of the tie-wires back and twisting the tie-wire ends together.

9. In a machine for making wire ties, the combination of wire-feeding mechanism, mechanism for cutting off suitable lengths of the wire, mechanism for bending the cut lengths into loop form to form the grips, a magazine for holding cut lengths of tie-wires, mechanism for ejecting the tie-wires out of the magazine one at a time and bending their ends, mechanism for feeding the tie-wires laterally so as to pass the bent ends through the grips, mechanism for bending the tie-wire ends back on the wire, clamps for holding the ends of the tie-wire, and mechanism for rotating the grips and thereby twisting the tie-wires together.

10. The combination of the reciprocating wire-guide, and the rotating head having the knife, the wire-stop, the mandrel, and the reciprocating looper.

11. The combination of the reciprocating wire-guide, and the rotating head having the knife, the wire-stop, the mandrel, the reciprocating looper, and mechanism for locking the rotating head.

12. The combination of the reciprocating wire-guide, and the rotating head having the knife, the wire-stop, the mandrel, the reciprocating looper, and the dies for completing the grips.

13. The combination of the reciprocating wire-guide, and the rotating head having the knife, the wire-stop, the mandrel, the reciprocating looper, the dies completing the grips, and the stripper.

14. The combination of the rotary head, the reciprocating looper, the rack l', the pinion l^4 engaging the rack, the elongated looper-pinion l^3, the wheel l^4, the ratchet-and-pawl connection between the wheel and pinion l^3, and mechanism for reciprocating the looper.

15. The combination of the mandrel having a guide-groove in its face, the passage-way parallel therewith, and the hook for passing the wires down through the groove and passage-way.

16. The combination of the rotary head, the reciprocating looper, the rack l', the pinion l^4 engaging the rack, the looper-pinion, the wheel l^4, and the ratchet-and-pawl connection between the wheel and pinion.

17. The combination with the tie-wire magazine, of the ledge, the finger for ejecting the wires one at a time from the magazine across the ledge, and the reciprocating jaw for bending the wire over the edge of the ledge.

18. The combination with the tie-wire magazine, of the ledge, the finger for ejecting the wires one at a time from the magazine across the ledge, and the reciprocating jaw c^6 for bending the wire over the edge of the ledge, the jaw having a toe f^6 to confine the wire.

19. The combination of the tie-wire magazine, the ledge, the reciprocating jaw having the toe f^6 and the edge c^6, and mechanism for operating the plunger first to confine the wire and next to bend the same over the corner of the ledge.

20. The combination with the tie-wire magazine, of the ledge, the guide-passage leading therefrom, the finger for ejecting the wires one at a time from the magazine over the ledge into the passage-way, and the hook for carrying the wires downward.

21. The combination with the tie-wire magazine, of the ledge, the guide-passage leading therefrom, the finger for ejecting the wires one at a time from the magazine over the ledge into the passage-way, the hook for carrying the wires downward, and the spring for holding the wires up to the action of the hook.

22. The combination of the tie-wire magazine, the ledge, the plunger having the toe f^6 to confine the wire, and the jaw c^6 to bend the same over the edge of the ledge, the finger r', and mechanism for operating the finger to eject the wire from the magazine under the jaw.

23. The combination of the tie-wire magazine, the ledge, the plunger having the toe f^6 to confine the wire and the jaw c^6 to bend the same over the edge of the ledge, the finger r', and mechanism for operating the finger first to eject the wire from the magazine under the jaw, and then to give it a further movement to push the wire from under the jaw off the ledge.

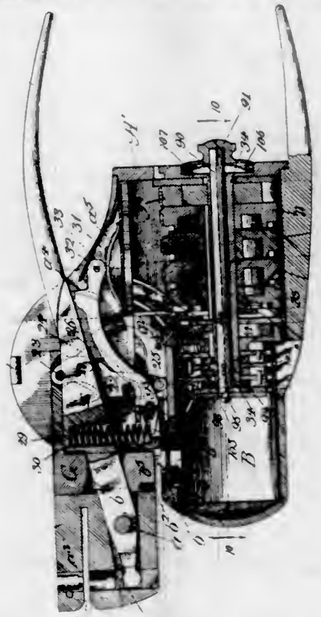
24. In a machine for making wire ties, the combination of wire-feeding mechanism, mechanism for cutting off suitable lengths of the wire, mechanism for bending the cut lengths into loop form to make the grips, mechanism for passing the ends of the tie-wires through the grips, and mechanism for rotating the grips and thereby twisting the tie-wire ends together.

25. The combination of a mandrel having a guide-groove in its face, the magazine, means for bending the ends of the tie-wires, the passage-way leading from the magazine, and the hook for passing the wires down through the passage-way with their bent ends in the groove.

26. The combination of the reciprocating wire-guide, the rotating head having the knife, the mandrel, and the reciprocating looper

27. The combination with the tie-wire magazine, of the ledge, the reciprocating jaw to bend the end of the wire over the ledge, the passage leading downward from the ledge, the finger for ejecting the wires one at a time from the magazine over the ledge into the passage-way, and the hook for carrying the wires downward.

652,954. COMBINATION TICKET-PUNCH. WILLIAM C. DOWNING, Chicago, Ill. Filed Dec. 13, 1897. Serial No. 661,697. (No model.)



Claim.—1. The combination with the lever-handle, of the curved horizontal lever, with which the former is adapted to have a moving contact, of an impression-plate, having a loose pivotal connection with said horizontal lever, and a spring, inserted between the impression-plate and its actuating-lever.

2. The combination with a chambered impression-plate, of a curved horizontal lever, having one end inserted therein and pivotally connected thereto, a spring inserted between the inner bottom side of said plate and connecting-lever, and the actuating lever-handle.

3. The combination with the impression-plate, having an elongated slot opening transversely therethrough, of a lever, pivotally connected thereto by a pin inserted through said slot, and the printing-disks, whereby said plate will automatically adjust itself in its working position and provide for the insertion of an object of a different thickness between the plate and the printing-disks.

4. The combination with a bridge or bracket, of companion disk-wheels, to which the respective ends of said bridge are rigidly secured, an inking-roller, having the ends of its carrying-shaft journaled in the angle ends of said bridge, and a ticket-bar, having its ends turned at right angles, loosely mounted on the respective ends of the inking-roller shaft, and means for returning said parts to their normal position.

5. The combination with the ticket-bar, provided with an extended end, of the closing cap end, provided on the inner side thereof with a shoulder or ledge ending in a drop recess, said extended end being adapted to ride on said shoulder.

6. The combination with its supporting-shaft, of a ticket-bar, loosely connected thereto and provided, longitudinally, with a ticket-bearing groove and normally held in its uppermost position.

7. The combination with a cam-arm, of a projecting pin, fixed therein, a fulcrumed lever H, having the rear end bent downwardly and provided on the upper side with an irregular surface over which said pin rides, the slotted link 49, with which the rear end of said lever is adapted to engage when in its opposite position from that of normal, and means for automatically returning said lever to its normal position when the working pressure is relaxed.

8. The combination with a fulcrumed lever H, having the rear end bent downwardly, of a spring, bearing on the opposite end thereof, a cam-arm, a projecting pin, fixed therein, a slotted link, a disk-wheel,

carrying a pin engaging said link, a circular plate, having a cut-out edge on which the link-pin rides, a yoke, provided with lugs engaging a slot in said circular plate and having a pin fixed in the lower end, the escapement mechanism, and the printing mechanism.

9. The combination with the case, having a ticket-slot opening through one side and end, of a disk-wheel, having a high part and adapted to close that portion of the slot opening in the end of the case, and the ticket-bar, adapted to close that part of the slot running along the side, when only the punch parts are being used.

10. The combination with the disk-wheels 47 and 58, each being provided with a high part which is in the same plane when said wheels are in their normal position, of the impression-plate, adapted to come to a stop on said high parts when no ticket is inserted.

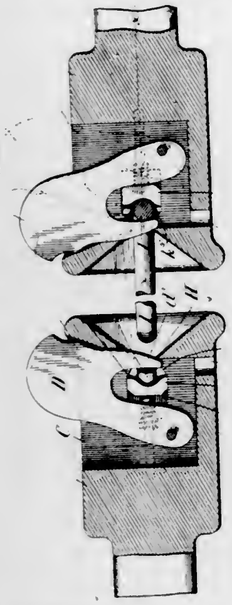
11. The combination with the case and the locking mechanism, of a spring, recessed in the outer side of the case and bearing against the knob end of the spindle and adapted to prevent the lock-tumblers from accidentally turning.

12. The combination with a cam-plate, loosely mounted on a fixed pin and provided with a turning-tooth, of an angle-bar, having a rocking movement, of the bridge 57, adapted to come in contact with the vertical end of said bar and push the same upwardly when a ticket is inserted; the opposite end of said bar being brought into engagement with the turning-tooth on and rotating said cam-plate in one direction, and the spring for returning said cam-plate to its normal position.

13. The combination with a cam-plate, loosely mounted and provided with a turning-tooth and a tripping-tooth, of an angle-bar having one end in position to engage the turning-tooth, the cam-arm 22, provided on the lower end with a projection, the bridge 57, adapted to have a push contact with the opposite end of said angle-bar and rotate the cam-plate far enough to bring the tripping-tooth into position to be engaged by the projection on said cam-arm, the bell-hammer arm, the pin, fixed in the cam-plate and engaging said arm, and the striking-spring.

14. The combination with the bell-cap, provided with a lug having an aperture therethrough, of the stationary shaft 72, having one end inserted through said lug and locking said cap in its closed position.

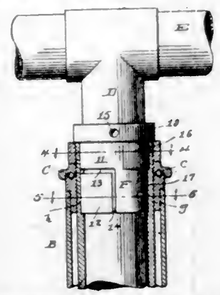
652,955. CAR-COUPLING. PETER P. DUKET, Bowling Green, Ohio. Filed Mar. 12, 1900. Serial No. 8,336. (No model.)



Claim.—1. In a car-coupler, the combination with the draw-head of a gravity-latch adapted to be raised by the insertion of the draft-link and two spring-buffers, one on each side of said latch, said buffers having their forward ends provided with curved notches, for centering and holding the link in coupling position, substantially as described.

2. In a car-coupler, the combination with the draw-head of a gravity-latch adapted to be raised by the insertion of the draft-link, and two spring-buffers one on each side of the said latch, the said buffers having their link-engaging ends curving inwardly and provided with curved notches, whereby the outer ends engage the links in advance of the inner ends and hold the same in coupling position, substantially as described.

652,956. HANDLE-BAR AND SEAT POST BINDER. EMIL FAHLSTROM and FREDERICK W. LUSEBRINK, Bridgeport, Conn. Filed Oct. 16, 1899. Serial No. 733,728. (No model.)



Claim.—1. The combination with a tube having at its upper end a circular recess and below said circular recess an eccentric recess, of a binding-sleeve having a circular portion corresponding with the circular recess and a spring-eccentric corresponding with the eccentric recess substantially as shown, for the purpose specified.

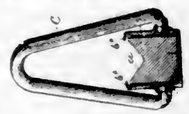
2. The combination with a tube having at its upper end a circular recess and below said circular recess an eccentric recess, of a binding-sleeve having a circular portion adapted to lie within the circular recess, a spring-eccentric adapted to lie within the eccentric recess and a collar adapted to engage the top of the tube whereby the sleeve may be oscillated to lock or release a post.

3. The combination with a tube having at its upper end a circular recess and below said circular recess an eccentric recess, of a binding-sleeve having a circular portion adapted to engage the circular recess and below said circular portion an eccentric portion having horizontal and vertical slots to impart spring action, said eccentric portion being adapted to lie in the eccentric recess, the relatively-thick portion of the spring-eccentric corresponding with the relatively-thin portion of the wall of the recess so that when the binding-sleeve is oscillated the spring-eccentric will be compressed and will bind a post.

4. The binding-sleeve F having a circular portion 11, eccentric portion 12 and slots 13 and 14 substantially as shown, for the purpose specified.

5. The binding-sleeve F having collar 10 with hole 15, circular portion 11, eccentric portion 12 and slots 13 and 14 substantially as shown, for the purpose specified.

652,957. SCALE-LOOP. EDWIN FINN, Elkhart, Ind., assignor to the Stimpson Computing Scale Company, same place. Filed Mar. 13, 1900. Serial No. 8,442. (No model.)



Claim.—1. In a scale-loop, the combination of a box or mounting of required tenacity, a bail for said mounting having pivotal connection therewith, and a bearing-block of hard, non-corrosive material held by said mounting, substantially as and for the purpose set forth.

2. In a scale-loop, the combination of a mounting provided with side perforations, side supporting members having inturned ends engaging said perforations, and a bearing-block of agate, held by said mounting, substantially as and for the purpose set forth.

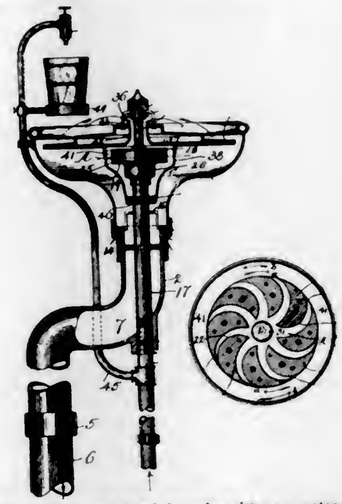
3. In a scale-loop, the combination of a mounting provided with side perforations, side supporting members having inturned upwardly-inclined ends engaging said perforations, and a bearing-block of agate, held by said mounting, substantially as and for the purpose set forth.

4. In a scale-loop, the combination of a mounting provided with hollow side bosses, side supporting members having inturned ends and shoulders at the bases of said ends engaging said bosses, and a bearing-block of hard, non-corrosive material held by said mounting, substantially as and for the purpose set forth.

5. In a scale-loop, the combination of a mounting formed from sheet metal and having bottom, ends and boss-equipped perforated sides, side supporting members having inturned ends pivoted in said sides, and a bearing-block of agate, held by said mounting, substantially as and for the purpose set forth.

6. In a scale-loop, the combination with two bearings, of side links *d* having inturned ends pivotally connected with said bearings, and a connection binding said links together, substantially as and for the purpose set forth.

652,958. CENTRIFUGAL FOUNTAIN-SPITTOON. PETER FRASER, Bridgewater, Mass. Filed July 5, 1899. Serial No. 722,788. (No model.)



Claim.—1. In a centrifugal fountain-spittoon, a water-wheel, consisting of a series of concentrically-arranged curvilinear buckets, in combination with two flanges, one of said flanges having an opening in the center thereof to receive the water by which said wheel is rotated, and the other flange having a sprayer fast thereto, whereby the effluent water is thrown outwardly from the center thereof.

2. In a centrifugal fountain-spittoon, a water-wheel, consisting of a series of concentrically-arranged curvilinear buckets, in combination with two flanges, one of said flanges having an opening in the center thereof to receive the water by which said wheel is rotated, the other flange having a sprayer fast thereto, in combination with a casing encircling said wheel, with a water-space between the perimeter of said wheel and said casing.

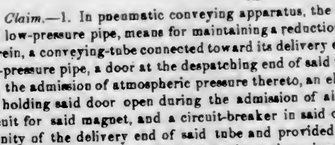
3. In a centrifugal fountain-spittoon, a water-wheel consisting of a series of concentrically-arranged curvilinear buckets, in combination with two flanges, one of said flanges having an opening in the center thereof to receive the water by which the wheel is rotated, the other flange having a sprayer fast thereto, and a disk 33 fast to said sprayer, in combination with a casing encircling said wheel, with a water-space between the perimeter of said wheel and said casing, and having an extension 37 thereon, by which the effluent water is directed against said sprayer.

4. In a fountain-spittoon, in combination, a bowl, a rotary water-wheel, an inlet-passage to said water-wheel, a casing surrounding said water-wheel, a sprayer fast to said water-wheel, an outlet from said casing arranged to direct the water against said sprayer, and an outlet to conduct the effluent water from said bowl.

652,959. BUTTON. HENRY C. LLU FRIO, Providence, R. I. Filed Oct. 6, 1899. Serial No. 732,775. (No model.)

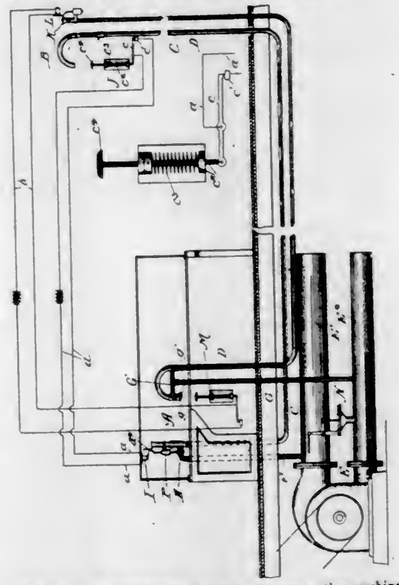
Claim.—1. As a new article of manufacture, a button having a head, a post integral with or fixedly attached to the head, a shoe or base portion integral with or fixedly attached to the post, a cross-bar forming part of or fixedly secured to the post between the head and shoe, a tubular shank surrounding said post, and a spring or springs within said shank adapted to engage with said post to hold the shank in any of the positions it is adapted to assume.

2. As a new article of manufacture, a button having a head, a square post integral with or fixedly secured to the head, a shoe or base portion integral with or fixedly attached to the post, a cross-bar forming part of or fixedly secured to the post between the head and shoe, a tubular shank encircling said post, and a flat spring or springs within said shank and having central longitudinal shouldered portions adapted to engage with said post and hold the shank in any of the positions it is adapted to assume.



3. As a new article of manufacture, a button having a head, a square post integral with or fixedly attached to the head, a shoe or base portion integral with or fixedly attached to the post said shoe being downwardly inclined toward its ends, a tubular shank encircling said post, and a flat spring or springs within said shank and having central longitudinal shouldered portions adapted to engage with said post and hold the shank in any of the positions it is adapted to assume.

652,960. PNEUMATIC CONVEYER. MELVIN J. FOYER, Chicago, Ill. Filed Oct. 9, 1899. Serial No. 733,071. (No model.)



Claim.—1. In pneumatic conveying apparatus, the combination of a low-pressure pipe, means for maintaining a reduction of pressure therein, a conveying-tube connected toward its delivery end with said low-pressure pipe, a door at the despatching end of said tube controlling the admission of atmospheric pressure thereto, an electromagnet for holding said door open during the admission of air, an electric circuit for said magnet, and a circuit-breaker in said circuit in the vicinity of the delivery end of said tube and provided with a movable part located in the path of the carrier and serving when moved by the carrier to deenergize the magnet and permit the door to close, substantially as and for the purpose set forth.

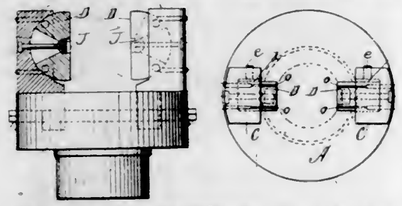
2. The combination of an outgoing distributing-tube, an incoming collecting-tube, a blower in communication at its high-pressure side with the despatching end of said distributing-tube and at its low-pressure side with the delivery end of said collecting-tube, a valve controlling the admission of air from said blower to said distributing-tube, an electromagnet, an armature for said magnet connected with said valve, a spring tending to hold said valve closed, an electric circuit for said magnet, a circuit-breaker in said circuit near the delivery end of said distributing-tube, a door at the despatching end of said collecting-tube, means tending to hold said door closed, an electromagnet for holding said door open during the admission of atmos-

pheric pressure, an electric circuit for said last-named magnet, a circuit-breaker for said last-named circuit located in the vicinity of the delivery end of said collecting-tube, and means connected with said apparatus for regulating the speed of said blower, substantially as and for the purpose set forth.

3. In pneumatic conveying apparatus, the combination of a conveying-tube, a low-pressure pipe connected with the delivery end thereof near the point of discharge of the carrier, means for maintaining a reduction of pressure in said pipe, a door at the discharge end of said tube, means for holding said door normally closed, a door at the despatching end of said tube for controlling the admission of atmospheric pressure, means for holding said last-named door normally closed, an electromagnet for holding said last-named door open during the admission of air, an electric circuit for said magnet, and a circuit-breaker for said circuit located in the vicinity of the delivery end of said tube for deenergizing the magnet to permit the door at the despatching end of the tube to close, substantially as and for the purpose set forth.

4. In pneumatic conveying apparatus, the combination of a conveying-tube, means for producing movement of air therethrough, a valve controlling the admission of air to the despatching end of said tube, a spring tending to hold said valve normally closed, an electromagnet provided with a movable armature serving to hold said valve open during the admission of air, an electric circuit for said magnet, a circuit-breaker in said circuit, located in the vicinity of the delivery end of said tube and in the path of the carrier, for deenergizing the magnet, and means for cushioning the movement of the valve in closing, substantially as and for the purpose set forth.

652,961. AUTOMATIC MACHINE-CHUCK. OWEN F. GARVEY, Providence, R. I. Filed Dec. 29, 1899. Serial No. 741,935. (No model.)



Claim.—1. In a chuck the combination of two opposite movable jaws, each jaw carrying a holding-block with flat sides and having a recess in its face, a nut fitted to move in each recess, a screw passing through each jaw and holding-block and screwing into the nut, a slot in each block to admit of its moving on its screw, substantially as described.

2. In a chuck the combination of two opposite movable jaws having recesses with flat sides in their faces, holding-blocks fitted to move in said recesses, screws in the sides of said jaws to tighten or adjust said holding-blocks laterally, recesses in the faces of the holding-blocks, nuts fitted to move in the recesses in the holding-blocks, screws passing through the jaws and blocks and screwing into the nuts, slots in the holding-blocks to allow them to move on the latter screws, substantially as described.

3. The combination of a chuck-jaw having a recess in its face, a holding-block fitted to move in said recess, and having a recess in its working face, a nut movably held in said recess in the block, a screw passing through the jaw and block and screwing into the nut an opening in said block to allow it to move on the screw, and set-screws in the top of the jaw bearing against said block, substantially as described.

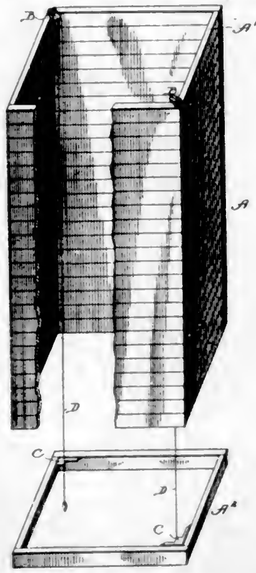
652,962. PLUMBING DEVICE. JOHN J. HILL, Denver, Colo. Filed Apr. 11, 1900. Serial No. 12,398. (No model.)

Claim.—1. In a plumbing device, the combination of a plumb-line, a plumb-line-suspending implement carrying a spool on which the line is wound and provided with a squared positioning edge and a projecting guide for the line, and a companion implement having a squared positioning edge and a projecting plumb-point conforming in relative dimensions with the positioning edge and guide of the suspending implement, substantially as set forth.

2. In a plumbing device, the implement B, having the squared projecting positioning-tongue *g*, and projecting guide *h*, substantially as described.

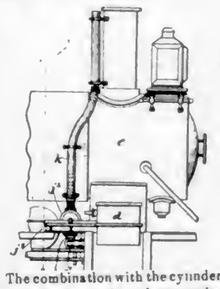
3. In a plumbing device, the line-suspending implement B, having the squared projecting positioning-tongue *g*, and projecting guide *h*, and a rotary line-holding spool upon the said implement, substantially as set forth.

4. In a plumbing device, the combination with a plumb-line and plumb-line-suspending implement having the squared positioning-tongue *g* and guide *h*, of the implement C having the plumb-point projection *k* and squared edges *i*, substantially as and for the purpose set forth.



5. In a plumbing device, the combination with a plumb-line and plumb-line-suspending implement having the squared positioning-tongue *g* and guide *h*, of the implement C having the plumb-point projection *k* and squared edges *i* provided with scales, substantially as and for the purpose set forth.

652,963. EXHAUST MECHANISM FOR LOCOMOTIVES. HENRY H. HUFF, Boston, Mass., assignor of two-thirds to Arthur D. Curran, same place, and Smith P. Burton, Jr., Reading, Mass. Filed Nov. 6, 1899. Serial No. 735,900. (No model.)



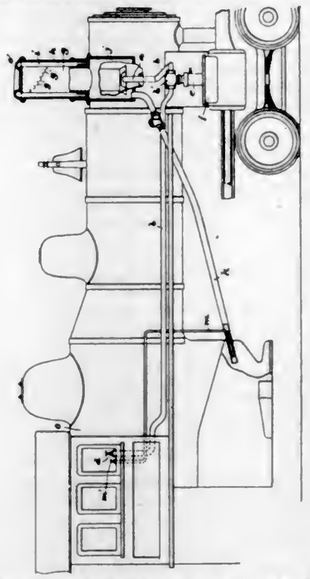
Claim.—1. The combination with the cylinders, exhaust-passages, and exhaust-nozzle, of a reservoir, and connections between said reservoir and the exhaust-passages, the connections being such that the reservoir is caused to alternately receive and deliver exhaust-steam through said connections, and means for controlling the passage of steam into and out of said reservoir.

2. The combination with the cylinders, exhaust-passages, and exhaust-nozzle, of a reservoir, pipes *j' j'* communicating with the two exhaust-passages, a single pipe *j* connecting the pipes *j' j'* with the reservoir, and a valve adapted to open and close the pipe *j*.

652,964. AUTOMATIC BLOWER. HENRY H. HUFF, Boston, Mass., assignor of two-thirds to Arthur D. Curran, same place, and Smith P. Burton, Jr., Reading, Mass. Filed Nov. 6, 1899. Serial No. 735,902. (No model.)

Claim.—1. A locomotive having a blower-nozzle, a conduit connecting it with the boiler, and means controlled alternately by pressure in a steam-chest of the locomotive, and by pressure in the boiler, for alternately closing and opening said conduit.

2. In a locomotive, the combination of a blower-nozzle, a steam-conduit connecting said nozzle with the boiler, a valve adapted to control the said conduit, and means acted on by steam-pressure in a steam-chest of the locomotive, to hold the valve in its closed position, the valve and its closing means being adapted to yield to the steam-pressure in the boiler and permit the passage of steam to the blower when steam is shut off from the steam-chest.



3. In a locomotive, the combination of a blower-nozzle, a steam-conduit connecting said nozzle with the boiler, a valve arranged to close said conduit against the boiler-pressure therein, a cylinder communicating with a steam-chest of the locomotive, and a piston in said chamber connected with the said valve, the steam-pressure in the steam-chest acting on the piston to hold the valve closed until steam is shut off from the steam-chest, when the piston and valve yield to the boiler-pressure and permit steam to pass to the blower.

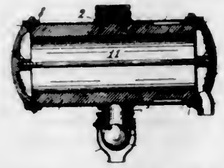
652,965. CAKE-MACHINE. HENRY H. HUNGERFORD, Chicago, Ill., assignor to Frank M. Peters, same place. Filed Sept. 26, 1898. Serial No. 691,873. (No model.)



Claim.—In a cake-machine, the combination, with a suitable casing, of a slotted feed-cylinder therein, radially-movable blades or paddles mounted in said slots, transverse arms connecting said blades in diametrically-opposite pairs, said arms being provided with slots for the passage of the axis of the cylinder and with projections at their ends, and the casing being provided with cam-grooves in its end walls with which said projections engage, substantially as described.

652,966. FILTER. WILLIAM JANDUS, Cleveland, Ohio. Filed Nov. 14, 1899. Serial No. 736,984. (No model.)

Claim.—1. A filter composed of a hollow cylindrical filtering-body having a filtered-water outlet from its interior chamber, a cylindrical casing surrounding said body to form a space around the same and closed at the ends, partitions in said space forming a winding channel around said body and in said space, and a water-inlet through the casing into such channel and having a greater cross-sectional area than said channel, substantially as set forth.



2. A filter composed of a hollow cylindrical filtering-body having a filtered-water outlet from its interior chamber, a cylindrical casing surrounding said body to form a space around the same and closed at the ends, partitions in said space forming winding channels around said body and in said space and passing around opposite sides, and a water-inlet through the casing into the channels and having a greater cross-sectional area than the joint cross-sectional areas of said channels, substantially as set forth.

3. A filter composed of a hollow cylindrical filtering-body having a filtered-water outlet from its interior chamber, a cylindrical casing surrounding said body to form a space around the same and closed at the ends, partitions in said space forming a winding channel around said body and in said space, a water-inlet through the casing into such channel and having a greater cross-sectional area than said channel, and a valve-controlled waste-water outlet at the opposite side of the casing to the inlet, substantially as set forth.

4. A filter composed of a hollow cylindrical filtering-body having a filtered-water outlet from its interior chamber, a cylindrical casing surrounding said body to form a space around the same and closed at the ends, partitions in said space forming winding channels around said body and in said space and passing around opposite sides, a water-inlet through the casing into the channels and having a greater cross-sectional area than the joint cross-sectional areas of said channels, and a valve-controlled waste-water outlet opposed to said inlet, substantially as set forth.

5. A filter composed of a hollow cylindrical filtering-body having a filtered-water outlet from its interior chamber, a cylindrical casing surrounding said body to form a space around the same and closed at the ends, partitions in said space extending longitudinally in the same and alternately projecting from opposite ends to form a longitudinally-winding channel in the space around the body and on both sides of the same, and a water-inlet through the casing into two branches of said winding channel and having a greater cross-sectional area than the joint cross-sectional area of said branches, substantially as set forth.

6. A filter composed of a hollow cylindrical filtering-body having a filtered-water outlet from its interior chamber, a cylindrical casing surrounding said body to form a space around the same and closed at the ends, partitions in said space extending longitudinally in the same and alternately projecting from opposite ends to form a longitudinally-winding channel in the space around the body and on both sides of the same, a water-inlet through the casing into two branches of said winding channel and having a greater cross-sectional area than the joint cross-sectional area of said branches, and a valve-controlled waste-water outlet opposed to said inlet, substantially as set forth.

7. In a filter, the combination of a hollow cylindrical filtering-body having a filtered-water outlet from its interior chamber, a cylindrical casing surrounding said body to form a space around the same closed at the ends and provided with a water-inlet at one side, and partitions in said space extending longitudinally in the same and alternately projecting from opposite ends to form a longitudinally-winding channel in the space around the body and on both sides of the same from the inlet and having the alternating ends of the partitions connected to form curved ends for the longitudinally-winding ends of the channel, substantially as set forth.

8. A filter having a casing provided with a water-inlet nipple, a filtered-water outlet, and a waste-water-outlet nipple, said inlet-nipple and outlet-nipple being so constructed that the inlet-nipple of one filter unit may be connected to the outlet-nipple of another filter unit to form a series of two or more connected filter units, substantially as set forth.

9. The combination of a filter having a cylindrical casing formed with an inlet-nipple on one side and an opposed waste-outlet nipple and with a filtered-water outlet upon one head, and a filter having a cylindrical casing formed with an inlet-nipple on one side adapted to be coupled to the waste-outlet of the former filter and an opposed waste-outlet and having a nipple upon one head adapted to couple

with the filtered-water outlet of the former filter and with a filtered-water outlet in one head, substantially as set forth.

10. In a filter, the combination with a cylindrical casing formed from metal tubing, of a ring sweated or similarly secured upon said casing and formed with integral inlet and outlet nipples communicating with the interior of the casing through the walls of the same, substantially as set forth.

11. In a filter, the combination with a cylindrical casing formed from metal tubing, of a cast-metal ring sweated or similarly secured upon said casing and having an internally-screw-threaded inlet-nipple and an externally-screw-threaded waste-outlet nipple formed upon it, the bores of said nipples communicating through the walls of the casing with the interior of the same, substantially as set forth.

12. In a filter, the combination with a waste-outlet nipple, of a nozzle longitudinally movable upon said nipple and provided with an open cage within it, and a valve-ball supported in said cage to be moved to and from a seat against the end of the nipple by the movement of the cage and nozzle, substantially as set forth.

13. In a filter, the combination with a waste-outlet nipple, of an open cage supported longitudinally movable upon said nipple, and a valve-ball supported in said cage to be moved to and from a seat against the end of the nipple by the movement of the cage toward and from the end of the nipple, substantially as set forth.

14. In a filter, the combination of an externally-screw-threaded waste-outlet nipple, an internally-threaded collar upon the nipple, an open cage having its upper end beaded upon said collar, a valve-ball supported in said cage, and a nozzle having its upper end beaded upon the bead of the cage and the collar, substantially as set forth

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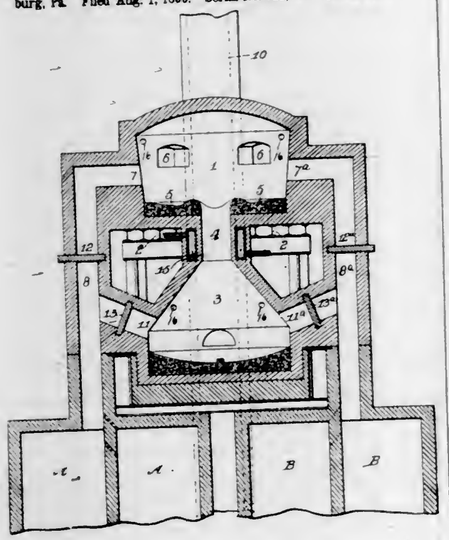
652,967. PNEUMATIC TIRE. JOHN A. JONES, Cincinnati, Ohio. Filed Jan. 29, 1900. Serial No. 3,120. (No model.)



Claim.—1. In combination with a pneumatic tire, a tire-protector consisting of a hoop of rubber encircling the tire and having inwardly-projecting flanges at intervals along its inner circumference between it and the tire and curved springs seated in the flanges and clasping the pneumatic tube, substantially as shown and described.

2. In a tire-protector the combination of a hoop having inwardly-projecting flanges at intervals along its inner circumference to fit the periphery of a pneumatic tube so as to leave spaces between the tire the hoop and the flanges, and springs seated in the flanges to hold them closely to the tube, substantially as shown and described.

652,968. METALLURGICAL FURNACE. EDWARD KERR, Pittsburg, Pa. Filed Aug. 1, 1899. Serial No. 725,737. (No model.)



Claim.—1. A metallurgical furnace having in combination a melting-chamber, a crucible arranged below the melting-chamber, an opening or passage between the melting-chamber and crucible for the passage of products of combustion and the molten metal into the crucible, the melting-chamber having a port or opening for the admission of heating-gases, flues or passages leading to the stack and connected by ports or openings to opposite sides of the crucible and valves controlling the flow of products of combustion from the crucible, substantially as set forth.

2. A metallurgical furnace having in combination a melting-chamber, a crucible arranged below the melting-chamber, an opening or passage connecting the melting-chamber and crucible for the passage of products of combustion and the molten metal into the crucible, regenerating-chambers, flues connecting said chambers with the melting-chamber and crucible, and valves controlling the flow of gases through said flues, substantially as set forth.

3. A metallurgical furnace having in combination a melting-chamber, a crucible arranged below the melting-chamber, an opening or passage connecting the crucible and melting-chamber for the passage of products of combustion and the molten metal into the crucible, ports or openings on opposite sides of the melting-chamber for the admission of heating-gases, valves controlling said ports or openings, ports or openings on oppposite sides of the crucible and valves controlling the flow of gases from the crucible, substantially as set forth.

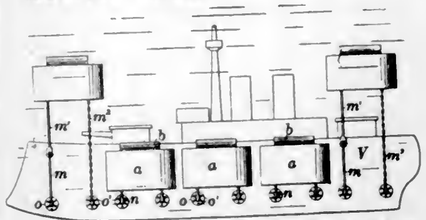
4. In a metallurgical furnace, the combination of a melting-chamber, a crucible arranged below the melting-chamber, an opening or passage connecting the crucible and melting-chamber for the passage of products of combustion and the molten metal into the crucible, the passage or opening being arranged to one side of the center of the melting-chamber, a port or opening for the admission of heating-gases to the melting-chamber, and a connection from the crucible to the stack, substantially as set forth.

652,969. PROCESS OF MAKING IONONE. WILHELM KRAUTH, Griesheim-on-the-Main, Germany. Filed Dec. 2, 1899. Serial No. 738,944. (Specimens.)

Claim.—1. Process for the preparation of ionone by condensing by means of alkali allo-citral with acetone and converting the aliphatic undecanylmethylketone thus obtained into ionone by means of dilute mineral acid, substantially as described.

2. The process for the preparation of ionone consisting in first shaking a mixture of equal parts by weight of allo-citral and acetone with baryta water for several days then separating from the product of this condensation the uncondensed constituents by means of steam and finally converting the undecanylmethylketone thus obtained into ionone by boiling it with very dilute sulfuric acid to which glycerin is added to raise the boiling-point, substantially as described.

652,970. APPARATUS FOR RECOVERING CARGOES FROM SUNKEN VESSELS. SIMON LAKE, Baltimore, Md. Filed Mar. 10, 1898. Serial No. 673,357. (No model.)



Claim.—1. A submarine car comprising an air-tight tank, air and water valves for use in admitting and expelling air and water to and from the same, means external thereto for actuating said valves, and a batch or batches adapted for admitting freight to the interior of the same.

2. A submarine car comprising an air-tight tank, air and water valves for use in admitting and expelling air and water to and from the same, means external thereto for actuating said valves, a hatch or hatches adapted for admitting freight to the interior of the same, and supporting caster-wheels for sustaining the same movably upon the water-bed when submerged.

3. A submarine car comprising a closed tank or receptacle provided with valves for the admission and expulsion of water, and mechanical means governed by the trim of the car for automatically controlling said valves.

4. A submarine car comprising an air-tight tank, air and water inlet valves, an air-escape valve, and water-outlet pipes at the ends leading from the bottom and having pendulum-actuated valves reversely operated by changes in the trim of the car, as and for the purpose set forth.

5. A submarine car comprising an air-tight tank, air and water inlet valves, an air-escape valve, water-outlet pipes at the ends leading from the bottom and having pendulum-actuated valves reversely operated by changes in the trim of the car, and automatically-closing covers constituting check-valves for preventing the inflow of water through said inlet-pipes, as and for the purpose set forth.

6. A submarine car comprising an air-tight tank with suitable air and water valves whereby to effect the admission and expulsion of water for affecting its buoyancy, and with means for positively attaching it to the skin of a sunken vessel, and supporting caster-wheels upon the bottom of the car for sustaining it movably upon the water-bed during submergence.

7. The combination, with a submarine car comprising a normally-closed tank or receptacle, air and water valves for the same, means for actuating said valves for the admission and expulsion of water to and from the same, and a hatch or hatches for admitting freight to the interior thereof, of means for introducing freight into said tank or receptacle through its hatch or hatches while the latter are open and during submergence.

8. The combination, with a submarine wrecking-boat provided with means, as a derrick, for transferring freight from submerged wrecks, of a normally-closed tank or receptacle provided with hatches for the introduction of freight, and means for effecting the admission and expulsion of water to and from said tank or receptacle.

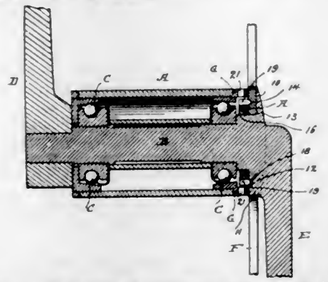
652,971. PAINT FOR SHIPS' BOTTOMS. HARRY LOUDERBOUGH, Jersey City, N. J. Filed Sept. 9, 1899. Serial No. 729,898. (No specimens.

Claim.—1. An antifouling-paint comprising pine-tar, benzin, kidney-oil, rosin, a suitable metallic pigment, and antimony in substantially the proportions specified.

2. An antifouling-paint comprising a "vehicle," iron, silica, aluminium and antimony in substantially the proportions specified.

3. An antifouling-paint comprising pine-tar, benzin, kidney-oil, rosin, iron, silica, aluminium and antimony in substantially the proportions specified.

652,972. LOCKING DEVICE FOR CYCLE SPROCKET-WHEELS. FREDERICK W. LUSEBRINK, Bridgeport, Conn. Filed Oct. 16, 1899. Serial No. 733,701. (No model.)



Claim.—1. In a cycle the combination with a crank-shaft having a crank-shaft flange, a crank-shaft lug and a threaded enlargement, of a sprocket-wheel having a slot adapted to receive the crank-shaft lug, said sprocket-wheel and said lug being provided on their inner faces with grooves which together form a circle and a locking-collar threaded to engage the enlargement and having a laterally-extending flange adapted to engage the grooves, so that when the locking-collar is turned outward on the crank-shaft the sprocket-wheel will be clamped between the locking-collar and the crank-shaft flange, the walls of the slot will be caused to clamp the crank-shaft lug and the sprocket-wheel will be centered upon the crank-shaft.

2. In a cycle the combination with a crank-shaft having a crank-shaft flange, a crank-shaft lug and a threaded enlargement, of a sprocket-wheel having a slot adapted to receive the crank-shaft lug, said sprocket-wheel and said lug being provided on their inner faces with grooves which together form a circle, a locking-collar threaded to engage the enlargement and having a laterally-extending flange adapted to engage the grooves, and recesses 19 in its periphery, and a bracket-cup having holes 21 so that when a suitable key is passed through one of the holes 21 and engaged with one of the recesses 20 rotation of the crank-shaft will move the locking-collar in either direction as may be required.

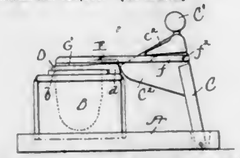
3. In a cycle the combination with a crank-shaft and crank-shaft lug, of a sprocket-wheel having a slot which receives the lug and on its inner face a circular groove and a locking-collar having a laterally-extending flange adapted to engage the inner face of the groove so that when the locking-collar is moved outward on the crank-shaft the walls of the slot are caused to clamp the lug and the sprocket-wheel is centered on the crank-shaft.

4. The locking-collar H having laterally-extending flange 18 and recesses 19 in its periphery substantially as shown, for the purpose specified.

5. The crank-shaft B having crank-shaft flange 10, crank-shaft lug 11 having clearance-groove 12; and threaded enlargement 16, said lug extending from the periphery of the enlargement substantially as shown, for the purpose specified.

6. The sprocket-wheel F having slot 13, and circular groove 14 substantially as shown, for the purpose specified.

652,973. INK-WELL. JOHN Y. MILLS, Peoria, Ill. Filed Aug 21, 1899. Serial No. 727,869. (No model.)



Claim.—1. In an ink-well, the combination of the balance-stand ard C, suitably pivoted to allow it to oscillate and provided with the weight C^3 and the shoulders c^3 c^3, the plate F, and the arms f f' connected with plate F and pivotally connected with the balance-standard, all substantially as described and shown.

2. In an ink-well, the combination with the base A, and the ink-well B of the pivoted balance-standard C, provided with the extension C^3, the lugs c^3 c^3 and the knob C', the ink-well top formed of the plate F, the beveled plate G, and the intervening pad G', the arms f f' extending from plate F, and pivotally connected with balance-standard C, all substantially as described and shown.

3. In an ink-well, the combination with the ink-well B, with the plate D, in the mouth of the dip-cup provided with a grooved rearward extension, of the balance-standard C, pivoted at its lower end, and provided with the weight C^3, on one side, on which are the shoulders c^3 c^3, the plate F, suitably formed to close the top of the ink-well and provided with the arms f f', projecting therefrom and pivotally connected with the balance-standard, all substantially as described and shown.

4. In an ink-well, the combination with the base A, and the ink-well B provided with the plate D, of the balance-standard C, pivoted at its lower end and provided with the weight C^3 having the shoulders c^3 c^3, the plate F, and the arms f f', connected therewith and pivotally connected with the balance-standard, all substantially as described and shown.

5. In an ink-well, the combination with the ink-well B, provided with the plate D, and gasket E, of the shiftable plate F, provided with projecting arms f f' and the balance-standard C, with which arms f f' are pivotally connected, the balance-standard C suitably provided with the extension C^3, the lugs c^3 c^3 and the knob C' and pivoted at its lower end to permit it to oscillate, all substantially as described and shown.

652,974. ACETYLENE-GAS GENERATOR. JOHN A. MOSHER, Chicago, Ill., assignor to the Adams & Westlake Company, of Illinois. Filed Feb. 26, 1900. Serial No. 6,532 (No model.)

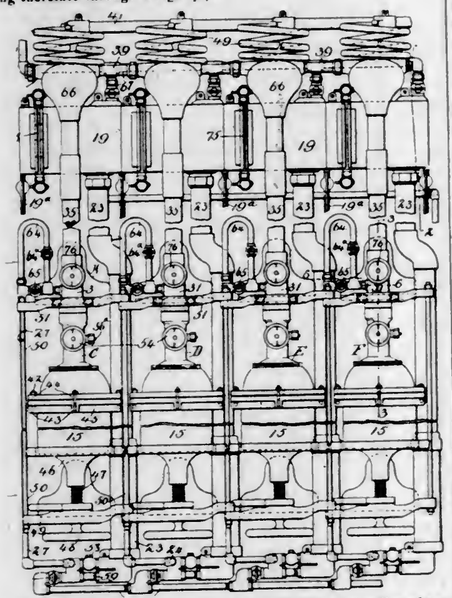
Claim.—1. In an acetylene-generator, in combination, a plurality of generating-cells, a source of water-supply for the several cells, the head of water for the several cells not being uniform, and means for maintaining an equal gas-pressure in the several cells.

2. In an acetylene-generator, in combination, a plurality of generating-cells, a source of water-supply for the several cells, the head of water for the several cells not being uniform, and a gas-pipe leading from each cell to a receiver common to all.

3. In an acetylene-generator, in combination, a plurality of generating-cells, a source of water-supply, a pipe connecting the water-supply with each cell and leading upwardly to its connection therewith, a valve at the delivery end of the water-pipe, an upwardly-extending by-pass around such valve, and means for maintaining an equal gas-pressure in the several cells.

4. In an acetylene-generator, in combination, a water-tank, a generating-cell below the tank, a water-pipe leading from the tank downwardly below the cell and thence upwardly and discharging into the cell from above, a check-valve in the water-pipe, a by-pass around the check-valve and a back-pressure valve controlling such by-pass.

5. In an acetylene-generator, in combination, a water-tank, a generating-cell, a gas-pipe leading from the cell and adapted to connect with a gas-receiver, such gas-pipe being enlarged above the tank, and a water-pipe leading from the tank to the cell and discharging thereinto through the gas-pipe.



6. In an acetylene-generator, in combination, a plurality of generating-cells, a source of water-supply, a pipe connecting the water-supply with each cell and leading upward to its connection therewith, such pipe being subdivided at its delivery end into branches extending to different elevations, means for diverting the water through either branch, and means for maintaining an equality of pressure in the several cells.

7. In an acetylene-generator, in combination, a generating-cell, a source of water-supply to the cell, and a submerged relief-valve for the cell, such valve being held to its seat by a column of water exceeding in weight the gas-pressure desired.

8. In an acetylene-generator, in combination, a generating-cell, a source of water-supply to the cell, a U-shaped water-filled relief-passage for the cell, the outer leg of such passage carrying a column of water exceeding in weight the gas-pressure desired, and a back-pressure relief-valve located within such passage.

9. In an acetylene-generator, in combination, a water-tank, a generating-cell, a gas-pipe leading from the cell and adapted to connect with a gas-receiver, such gas-pipe being enlarged above the tank, and a water-pipe leading from the tank to the cell.

652,975. RUBBER-COVERED ARTICLE OR TUBING AND METHOD OF MAKING SAME. FRANK J. NEWBURY, Trenton, N. J., assignor to the John A. Roebling's Sons Company, same place. Filed Feb. 12, 1900. Serial No. 4,906. (No model.)



Claim.—1. The method of forming seams between the edges of rubber tubing, which consists in compressing together the edges and a piece of rubber extending parallel therewith, substantially as described.

2. The method of forming seams between the edges of rubber tubing, which consists in compressing together the edges and a cylindrical piece of rubber extending parallel therewith, substantially as described.

3. The method of forming seams between the edges of rubber tubing, which consists in compressing together the edges and a tube of rubber extending parallel therewith, substantially as described.

4. The method of forming rubber tubing which consists in wrapping the rubber longitudinally about a core with the edges abutting at the seam, adding at the seam a piece of rubber parallel with the edges, and compressing the edges and piece of rubber to form the seam, substantially as described.

5. The method of forming rubber tubing which consists in wrapping the rubber longitudinally about a core with the edges abutting at the seam, adding at the seam a cylindrical piece of rubber parallel with the edges, and compressing the edges and piece of rubber to form the seam, substantially as described.

6. The method of forming rubber tubing which consists in wrapping the rubber longitudinally about a core with the edges abutting at the seam, adding at the seam a tube of rubber parallel with the edges, and compressing the edges and rubber tube to form the seam, substantially as described.

7. The method of forming rubber tubing which consists in wrapping the rubber longitudinally about a core with the edges of the wrapper abutting and projecting at the seam, inserting between the core and the rubber wrapping at the seam and parallel with the edges a piece of rubber, and trimming off the projecting edges and compressing the edges and piece of rubber to form the seam, substantially as described.

8. The method of forming rubber tubing which consists in wrapping the rubber longitudinally about the core with the edges of the wrapper abutting and projecting at the seam, inserting between the core and the rubber wrapping at the seam and parallel with the edges a cylindrical piece of rubber, and trimming off the projecting edges and compressing the edges and piece of rubber to form the seam, substantially as described.

9. The method of forming rubber tubing which consists in wrapping the rubber longitudinally about a core with the edges of the wrapper abutting and projecting at the seam, inserting between the core and the rubber wrapping at the seam and parallel with the edges a tube of rubber, and trimming off the projecting edges and compressing the edges and rubber tube to form the seam, substantially as described.

10. The method of covering a conductor or other article with rubber which consists in wrapping the rubber longitudinally about the article with the edges abutting and projecting, inserting a piece of rubber at the seam parallel with the edges, and trimming off the projecting edges and compressing the edges and piece of rubber to form the seam by running the article with the rubber wrapping and piece of rubber between compressing and cutting rollers, substantially as described.

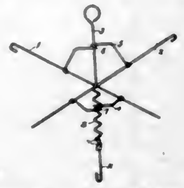
11. The method of covering a conductor or other article with rubber which consists in wrapping the rubber longitudinally about the article with the edges abutting and projecting, inserting a cylindrical piece of rubber at the seam parallel with the edges, and trimming off the projecting edges and compressing the edges and piece of rubber to form the seam by running the article with the rubber wrapping and piece of rubber between compressing and cutting rollers, substantially as described.

12. The method of covering a conductor or other article with rubber which consists in wrapping rubber longitudinally about the conductor with the edges abutting and projecting, inserting a tube of rubber at the seam parallel with the edges, and trimming off the projecting edges and compressing the edges and rubber tube to form the seam by running the article with the rubber wrapping and rubber tube between compressing and cutting rollers, substantially as described.

13. A rubber-covered article having a rubber cover with a longitudinal seam or seams consisting of the edges of the cover-sheet and a small piece of rubber extending parallel with said edges and compressed therewith, substantially as described.

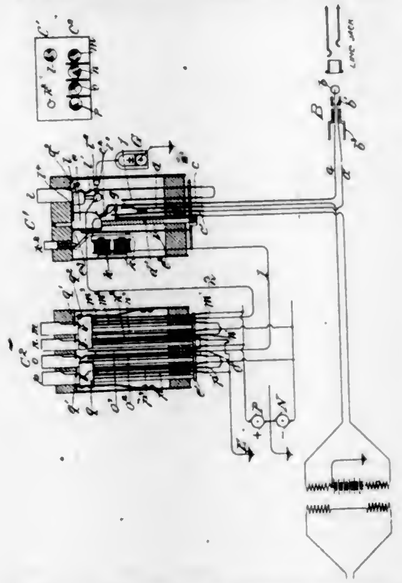
14. Rubber tubing with a longitudinal seam or seams consisting of the edges of the tubing and a small piece of rubber extending parallel with said edges and compressed therewith, substantially as described.

652,976. PLAQUE-HOLDER. GEORGE W. NORTON, Boston, Mass. Filed Aug. 14, 1895. Serial No. 559,300. (No model.)



Claim.—The combination of the rod 3, the wires 1 2, the wires 4 5, the loops 6 7 and the wire 11, the wires 4 5 connecting the wires 1 2 and each constructed with a loop, the loop of the wire 5 inclosing the upper portion of the rod 3, the loop of the wire 4 inclosing the helix of the rod 3 and serving as an engaging piece, the rod 3 consisting of a straight rod at its upper portion, its middle portion in the form of a helix, terminating in a coil, with which the extending wire 11 forms a swivel-joint.

652,977. SIGNALING APPARATUS FOR TELEPHONE-SWITCHBOARDS. JOSEPH J. O'CONNELL, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Oct. 25, 1899. Serial No. 734,759. (No model.)



Claim.—1. A party-line ringing appliance for telephone-switchboards comprising a master-key having switch-contacts operated thereby for changing the cord-circuit connections, auxiliary keys having subsidiary switch-contacts operated thereby, each of said auxiliary keys being adapted when actuated to operate the master-key as well as its particular subsidiary switch-contacts, suitable sources of signaling-current being connected with the said subsidiary contacts, and interlocking mechanism, brought into play by the depression of either of the auxiliary keys, for preventing the depression of any other auxiliary key, substantially as set forth.

2. In a signaling apparatus for telephone-switchboards, the combination with a plug for making connection with a telephone-line spring-jack, of a cord-circuit whereof said plug is the terminal, a mastey-key for connecting a strand of the cord-circuit with a contact associated with the said master-key, sources of signaling-current, auxiliary switch-keys adapted to connect a source of signaling-current with the said contact, and means, operated by the actuation of either of the auxiliary keys, for actuating the master-key, substantially as described.

3. In a signaling apparatus for telephone-switchboards, the combination with a conductor *a* adapted to be connected with a telephone-line, of a master-key and switch-contacts actuated thereby for breaking the continuity of said conductor and connecting the severed end thereof, which leads to the plug, with a contact *f*, a source of signaling-current G, an auxiliary switch-key *l* adapted to connect said source of signaling-current with the contact *f*, a mechanical connection between the master-key and the auxiliary key, whereby the auxiliary key is adapted when actuated to operate simultaneously the master-key, and other auxiliary keys for connecting other sources of current with the contact *f*, substantially as set forth.

4. In a signaling apparatus for telephone-switchboards, the combination with a connecting-plug having two contact-surfaces for making electrical connection with the two limbs of a telephone-line, of a cord-circuit having two strands, of which the said contact-surfaces are terminals, a master-key adapted to break the continuity of the said strands and to connect the severed terminals thereof, which lead to the plug, with contact-pieces *f g* of the master-key, sources of current of different characters, and auxiliary keys each adapted when actuated to operate the master-key and to connect one of the sources of current with one or the other of the said contact-pieces *f g*, substantially as set forth.

5. In a signaling apparatus for telephone-switchboards, the combination with a plug for making connection between a switch-cord conductor and the spring-jack of a telephone-line, of a master-key adapted when actuated to connect the cord conductor with a contact-piece of the key, sources of current of differing character, and auxiliary keys each adapted when actuated to operate the master-key and to connect one of the sources of current with the said contact-piece, substantially as described.

6. The combination with a plug for making connection with a telephone-line spring-jack, of a cord conductor of which the plug is a terminal, a master-key for effecting changes in the cord-circuit, subsidiary circuits connected with the master-key, and a series of auxiliary keys, each adapted when actuated to operate the master-key and to effect changes in said subsidiary circuits, substantially as described.

7. The combination with a telephone-line having a plurality of substations connected therewith, of signal-receiving instruments, one for each substation, each adapted to respond to current of a peculiar or distinctive character, sources of current, a number of switch-keys corresponding to the number of substations, each key when actuated being adapted to connect with the telephone-line a source of current of suitable character to actuate a corresponding signal-receiving instrument of the telephone-line, means, controlled by the flow of current in the telephone-line for holding either of said keys in its depressed or operative position when such key is once actuated, a switch at each substation for controlling the flow of current in the line, whereby the release of a depressed key is effected by the operation of said switch, and locking mechanism brought into play during the actuation of either of said keys, for preventing the actuation of the other keys, substantially as described.

8. In a central-office apparatus for telephone-switchboards, the combination with a plug and a cord conductor *d'* having a terminal contact *b'* on the plug, of a master-key adapted to change the circuit of the cord conductor and connect the same with a contact *g*, a conductor 1 extending from the contact *g*, sources of current P N and switch-keys *o p* each adapted when actuated to operate the master-key and to complete the circuit of conductor 1 to ground or other return conductor through one or the other of said sources of current, substantially as and for the purposes set forth.

9. The combination with a telephone-line and a plurality of substations connected on the line, each of said substations having a signal-receiving instrument and a switch for controlling the flow of current in the line, of a conductor *a* at the central office adapted to be connected with the telephone-line, a master-key having a contact *g* associated therewith and being adapted when actuated to break the electrical continuity of the conductor *a'* and connect the end thereof with said contact *g*, a conductor 1 extending from the contact *g* to the earth, a plurality of sources of signaling-current of different characters corresponding to the signaling instruments of the substations, a plurality of auxiliary keys adapted each to connect one of said sources of signaling-current in circuit with the said conductor 1, and an electromagnet controlling the said keys when depressed, the said magnet being included in the conductor 1, whereby a key may be maintained depressed until the switch at one of said substations is operated, substantially as set forth.

10. The combination with a telephone-line, having two limbs and having a plurality of substations connected therewith, each of said substations having a switch adapted to control the flow of current across the two limbs, and a signal-bell responsive to the current of a distinctive character, of a plug, a cord-circuit therefor having two strands terminating in corresponding contact-surfaces of the plug and adapted thus to form extensions of the two limbs of the line, respectively, a master-key adapted to break the continuity of the conductors and connect the severed terminals thereof with conductors 1 2, means for maintaining the master-key depressed, a magnet included in circuit with conductor 1 adapted when energized to release the master-key, a plurality of sources of signaling-current for operating the signal-bells at the several substations, auxiliary keys each adapted to connect one of said sources of signaling-current with one or the other of said conductors 1 2 and so with one or the other of the limbs of the telephone-line, and switch-contacts closed in one or more of the idle auxiliary keys, connecting that conductor of the pair 1 2 over which such current was not sent out, with a return-path for the current, whereby the flow of current may be controlled by the switch at the called station, substantially as described.

11. A party-line ringing appliance for telephone-switchboards comprising a master-key and switch-contacts operated thereby for changing the cord-circuit connections, auxiliary keys each adapted when actuated to operate the master-key, said auxiliary keys having subsidiary switch-contacts operated thereby to connect suitable

sources of ringing-current with the master-key, an electromagnet *k* controlling the keys when depressed, and means for energizing said magnet, substantially as set forth.

12. The combination with a telephone-line having a plurality of substations connected on the line, each of said substations having a signal-bell connected on the line and a switch for controlling the flow of current in the line, of a signaling appliance at the central office comprising a master-key and auxiliary keys, each of said auxiliary keys having contacts connected with the contacts of the master-key and being adapted when actuated to operate the master-key, the switch-contacts of the master-key being adapted to control the circuit of the telephone-line, sources of ringing-current connected with the contacts of the auxiliary keys, whereby any station on the line may be signaled by actuating a corresponding auxiliary key, and an electromagnet, controlled by the flow of current in the line, for controlling the keys, whereby a key may be maintained depressed until the switch at one of the stations on the telephone-line is actuated to control the flow of current in the line, substantially as set forth.

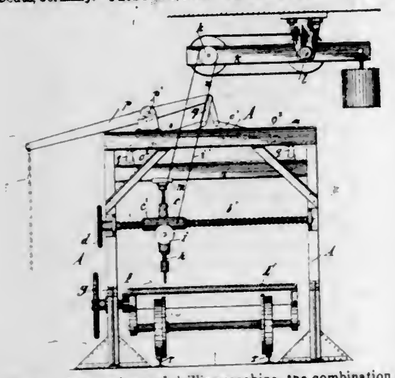
13. A signaling appliance for telephone-switchboards comprising a master-key and auxiliary keys, each of said auxiliary keys having contacts connected with contacts of the master-key and being adapted when actuated to operate the master-key, the said master-key having switch-contacts for changing the cord-circuit connections, and sources of ringing-current connected with the contacts of the auxiliary keys, substantially as and for the purpose set forth.

14. A signaling appliance for telephone-switchboards comprising a master-key and auxiliary keys, each of said auxiliary keys having contacts connected with contacts of the master-key and being adapted when actuated to operate the master-key, the said master-key having switch-contacts for changing the cord-circuit connections, sources of ringing-current connected with the contacts of the auxiliary keys, locking mechanism brought into play during the actuation of one of said auxiliary keys, for preventing the actuation of another key, and an electromagnet for controlling the release of the keys when they are depressed, said electromagnet being controlled by the flow of ringing-current, substantially as set forth.

15. A ringing appliance for telephone-switchboards comprising a master-key and auxiliary keys associated therewith, said master-key having a plunger *e* adapted to be depressed and having a spring e^3 tending to restore the plunger to its elevated position, a plate *f* carried by the plunger of the master-key and adapted to be engaged by the auxiliary keys, whereby either of said auxiliary keys will, when depressed, depress the plunger of the master-key, and whereby the master-key when restored by the spring, will restore the auxiliary keys, an electromagnet controlling the release of the keys, and means for energizing the electromagnet, substantially as and for the purpose set forth.

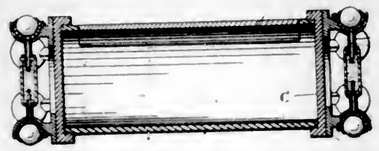
16. A ringing appliance for telephone-switchboards comprising a master-key and auxiliary keys associated therewith, each of said auxiliary keys being adapted when actuated to operate the master-key, switch-contacts operated by the master-key for altering the cord-circuit connections, switch-contacts operated by the auxiliary keys and connected with the master-key, a source of alternating current G connected with one of the auxiliary keys, and sources of positive and negative pulsating current P, N, respectively, connected with others of the auxiliary keys, substantially as and for the purpose set forth.

652,978. BORING AND DRILLING MACHINE. JOSEF POHL, Jr., Deutz, Germany. Filed Feb. 2, 1899. Serial No. 704,215. (No model.)



Claim.—In a boring and drilling machine, the combination of a supporting-frame, a threaded bar mounted in said frame, a tool-support longitudinally adjustable on said bar, a tool-spindle and socket vertically movable in and rotatably mounted in said tool-support, a bar vertically movable in the machine-frame and having a slidable connection with the tool-spindle, and means for vertically moving said bar, consisting of levers and links as shown and described.

652,979. CARRIER FOR PNEUMATIC-DESPATCH TUBES. SAMUEL N. POND, Chicago, Ill. Filed May 4, 1899. Serial No. 715,510. (No model.)



Claim.—1. In a carrier adapted for transit in a despatch-tube, the combination with the body of the carrier of a series of balls or spheres grouped around and carried by the carrier, and journaled in relation thereto so as to be capable of a universal rolling movement, whereby the carrier is capable of conforming to the combined longitudinal and rotary movement of the propelling-current without friction against the inner walls of the tube, substantially as described.

2. In a carrier adapted for transit in a despatch-tube, the combination with the shell of the carrier and the heads closing the ends of the same of a series of balls or spheres grouped around and carried by the heads of the carrier, and journaled in relation thereto so as to be capable of a universal rolling movement, whereby the carrier is capable of conforming to the combined longitudinal and rotary movement of the propelling-current without friction, against the inner walls of the tube, substantially as described.

3. In a carrier adapted for transit in a despatch-tube, the combination with the shell of the carrier and the heads closing the ends of the same of a series of balls or spheres grouped around and carried by the heads of the carrier, and antifriction-bearings in which said balls or spheres are journaled so as to be capable of a universal rolling movement, whereby the carrier is capable of conforming to the combined longitudinal and rotary movement of the propelling-current without friction against the inner walls of the tube, substantially as described.

4. In a carrier adapted for transit in a despatch-tube, the combination with the shell of the carrier and the heads closing the ends of the same of a series of balls or spheres grouped around and carried by the heads of the carrier, antifriction-bearings in which said balls or spheres are journaled so as to be capable of a universal rolling movement, and an automatic oiling device carried by and supplying lubricant to said antifriction-bearings, whereby the carrier is capable of conforming to the combined longitudinal and rotary movement of the propelling-current without friction against the inner walls of the tube, substantially as described.

5. In a carrier adapted for transit in a despatch-tube, the combination with the shell of the carrier and the heads closing the ends of the same of a series of brackets secured to each head, antifriction-bearings formed in said brackets, and balls or spheres journaled in said antifriction-bearings so as to be capable of a universal rolling movement, whereby the carrier is capable of conforming to the combined longitudinal and rotary movement of the propelling-current without friction against the inner walls of the tube, substantially as described.

6. In a carrier adapted for transit in a despatch-tube, the combination with the shell of the carrier and the heads closing the ends of the same of a series of brackets secured to each head, antifriction-bearings formed in said brackets, balls or spheres journaled in said antifriction-bearings so as to be capable of a universal rolling movement, and an automatic oiling device arranged centrally of the series of brackets and connected with and supplying lubricant to the antifriction-bearings, substantially as described.

7. In a carrier adapted for transit in a despatch-tube, the combination with the shell of the carrier and the heads closing the ends of the same of a ring secured to each head, a series of brackets equidistantly spaced around said ring and projecting from the outer face thereof, antifriction-bearings formed in the outer ends of said brackets, balls or spheres journaled in said antifriction-bearings so as to be capable of a universal rolling movement, an oil-receptacle arranged centrally of the series of brackets, short pipes connecting said oil-receptacle with the antifriction-bearings, and means in said pipes and receptacle for automatically effecting a uniform supply of lubricant to said antifriction-bearings, substantially as described.

652,980. MANUFACTURE OF MOLDED BLOCKS OF STEEL OR OTHER MATERIAL. LOUIS PERIN, St. Amand-les-Eaux, France. Filed Jan. 26, 1900. Serial No. 2,876. (No specimens.)

Claim.—The process of manufacturing cast and other steels melted in a cupola which consists in melting, by means of coke, any kind of old steel and iron with a mixture of manganese, silicon, lime, magnesia, aluminium, chromium, nickel, and tungsten, used in variable proportions; in casting the steel thus melted in appropriate molds; in piling up, around the cast pieces, in suitable containing vessels iron ore mixed with lime and chips or scales from rolled iron and the like, and in raising, in a reheating or annealing furnace, the molded pieces and the surrounding mixture to a temperature sufficient for the ore to take up the excess of carbon contained in the pieces, substantially as above described.

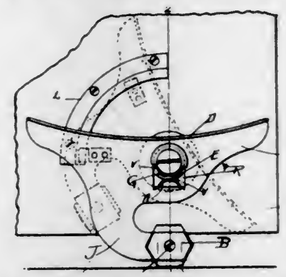
652,981. VELOCIPEDE-HANDLE. RALPH W. PRATT, Orwell, N. Y. Filed May 24, 1897. Serial No. 637,532. (No model.)



Claim.—1. The combination of a tubular handle-bar provided with inlet and outlet openings, an inflatable handpiece consisting of a tube encircling the handle-bar and inclosing an internal chamber communicating with the outlet-opening of the handle-bar, said handpiece being extended beyond opposite sides of the outlet-opening of the handle-bar, means for closing one end of the tube forming the handpiece, a split ring encircling the other end of said tube, and a sleeve adjustable lengthwise of the handle-bar and engaged with the split ring for clamping the same in its operative position, substantially as and for the purpose specified.

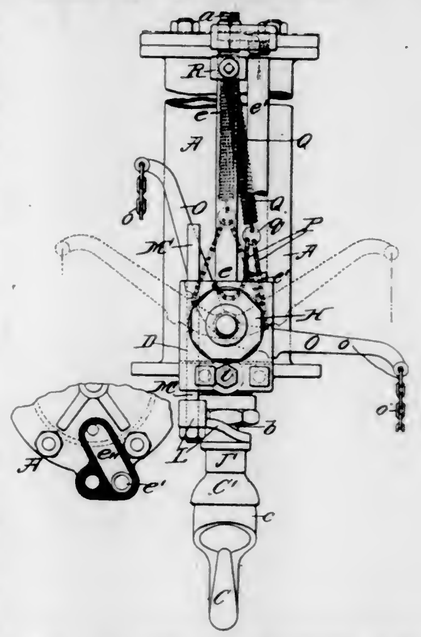
2. The combination of a tubular handle-bar provided with inlet and outlet openings and an annular groove, an inflatable handpiece consisting of a tube encircling the handle-bar and inclosing an internal chamber communicating with the outlet-opening of the handle-bar, said handpiece being extended beyond opposite sides of the outlet-opening and the annular groove of the handle-bar, and having its outer end formed with an inwardly-projecting flange or shoulder engaged with the adjacent end face of the handle-bar, a split ring encircling the other end of said tube and alined with the annular groove of the handle-bar, a sleeve adjustable lengthwise of the handle-bar and engaged with the split ring for clamping the same in its operative position, and thereby closing the corresponding end of the internal chamber of said handpiece and a cap for closing the other end of the tube, and thereby closing the other end of said internal chamber, said cap being engaged with the inwardly-projecting flange or shoulder of the tube and being formed with a substantially-central projection screwing within the adjacent end of the handle-bar, substantially as and for the purpose described.

652,982. DOOR-CHECK. LOUIS H. SCHNEIDER, New York, N. Y. Filed Aug. 15, 1899. Serial No. 727,305. (No model.)



Claim.—In a door-check the combination of a plate having its upper edge turned over to form a flange for the foot, and an opening made in it, a stud and a spring occupying said opening said spring operative to press the plate down and producing frictional engagement between the stud and plate, an arm on the lower edge of the plate carrying a friction-block, substantially as described.

652,983. AIR-HOIST. GEORGE F. STEEDMAN, St. Louis, Mo. Filed June 12, 1899. Serial No. 720,191. (No model.)



Claim.—1. In a pneumatic hoist, the combination with the cylinder and its piston, of a valve-casing, a disk valve operating therein, a port *d*", controlled by said disk valve, and a stem on which said valve is mounted, said stem being formed with an exhaust-passage; substantially as described.

2. In a pneumatic hoist, the combination with the cylinder and its piston, of a valve-casing, a disk valve operating therein, a port *d*" having leads *x* and *x'*, controlled by said disk valve, and a stem on which said valve is mounted, said stem being formed with an exhaust-passage; substantially as described.

3. The combination with a valve-casing formed with a pressure-supply duct *d*, an exhaust-passage *d'*, and a cylinder-port *d*", of a disk valve cooperating with the cylinder-port to open the same to pressure from the valve-chamber, and said valve being provided with a passage *f*", for registry with the cylinder-port, a valve stem or spindle formed with a passage *g*, in constant register with the passages *d'* and *f*", and means connected to said spindle for rotating the valve; substantially as described.

4. In a pneumatic hoist, the combination with the cylinder and its piston, of a valve for admitting and exhausting pressure to and from said cylinder, and means capable of being clamped to the piston at different points for operating said valve to admit or exhaust pressure to and from the cylinder to compensate for an increase or decrease in the load carried by the piston, said means comprising a spring-actuated lever arranged on the valve-stem, a rod for operating said lever, a collar to which said rod is connected, and a clamping-screw in said collar; substantially as described.

5. In a pneumatic hoist, the combination with the cylinder and its piston, of a valve for admitting an exhausting pressure to and from said cylinder, and means capable of being clamped to the piston at different points for operating said valve to admit or exhaust pressure to and from the cylinder to compensate for an increase or decrease in the load carried by the piston, said means comprising a lever O arranged on the valve-stem, a link N, connected to said lever, a rod M, to which the other end of said link is connected, an arm L on rod M, a collar J on the piston-rod, with which collar the arm L engages, a binding-screw *k* in the collar, and a handle K on said binding-screw; substantially as described.

6. In a pneumatic hoist, the combination with the cylinder and its piston, of a valve for admitting and exhausting pressure to and from said cylinder, a lever attached to the valve-stem for operating the same, flexible connections on each side of the pivotal point of said lever, and means for holding said connections normally taut and restoring the lever to its normal position; substantially as described.

7. In a pneumatic hoist, the combination with the cylinder and its piston, of a valve for admitting and exhausting pressure to and from said cylinder, a lever attached to the valve-stem for operating the same, flexible connections on each side of the pivotal point of said lever, and a tension-spring to which said flexible connections are attached; substantially as described.

8. The combination with lever O, of cords or chains P, connected thereto, on each side of its pivotal point, a spring Q, to which the other ends of said cords or chains are connected, and an adjustable support R for regulating the tension of said spring; substantially as described.

9. In a pneumatic hoist, the combination with the cylinder and its piston, of a valve for admitting and exhausting pressure to and from said cylinder, a lever attached to the valve-stem for operating the same, flexible connections on each side of the pivotal point of said lever, and mechanism capable of being clamped to the piston-rod at different points for coöperating with said lever and moving the valve to its neutral position, and also locking the lever against further opening movement, and permitting exhaust movement when the piston rises above its designed position.

10. In a pneumatic hoist, the combination with the cylinder and its piston, of a valve for admitting and exhausting pressure to and from said cylinder, a lever attached to the valve-stem for operating the same, flexible connections on each side of the pivotal point of said lever, and means capable of being clamped to the piston at different points for operating said valve to admit or exhaust pressure to and from the cylinder to compensate for an increase or decrease in the load carried by the piston, whereby, said piston is maintained in a designed position under varying loads; substantially as described.

11. In a pneumatic hoist, the combination with the cylinder and its piston, of a valve for admitting and exhausting pressure to and from said cylinder, a lever attached to the valve-stem for operating the same, flexible connections on each side of the pivotal point of said lever, and means capable of being clamped to the piston at different points for operating said valve to admit or exhaust pressure to and from the cylinder to compensate for an increase or decrease in the load carried by the piston, said means comprising a lever arranged on the valve-stem, a rod for operating said lever, a collar to which said rod is connected, and a clamping-screw in said collar; substantially as described.

12. In a pneumatic hoist, the combination with a valve-casing formed with an inlet and exhaust port, of a valve for controlling said ports, a cylinder-port, a threaded plug I forming a throttle-valve for controlling the available area of said cylinder-ports, and a cap i, threaded upon the outer end of said throttle-valve, and acting as a jam-nut to lock the same in its adjusted position; substantially as described.

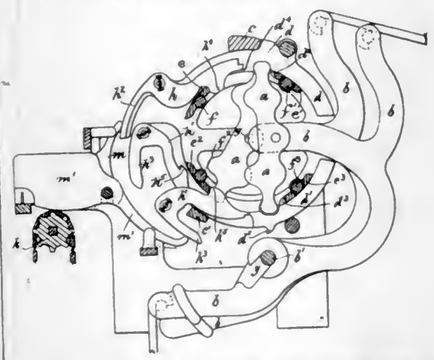
13. In a pneumatic hoist, the combination with a valve-casing formed with inlet and exhaust ports, of a valve coöperating therewith, a cylinder-port, the valve-casing on opposite sides of said cylinder-port being formed with threaded openings in alinement with each other, and a threaded plug fitting in one of said openings and adapted to be closed by being received by the other opening; substantially as described.

14. The combination with a valve-casing formed with a pressure-supply duct d, an exhaust-passage d', and a cylinder-port d'', of a disk valve coöperating with the cylinder-port to open the same to pressure from the valve-chamber, and said valve being provided with a passage f'', for registry with the cylinder-port, a valve stem or spindle formed with a passage g, in constant register with the passages d' and f'', means connected to said spindle for rotating said valve and restoring the valve to a non-operative position, said means comprising a lever O, cords or chains P connected thereto on each side of its pivot-point, and a spring Q, to which the other ends of said cords or chains are connected; substantially as described.

652,984. LOOM SHEDDING MECHANISM. FREDERICK WADDINGTON, Keighley, England. Filed Dec. 29, 1897. Serial No. 664,346. (No model.)

Claim.—1. In a loom shedding mechanism, a dobby-frame, a series of heddle-levers, a series of cross-levers pivoted thereto, segmental slides engaging the ends of said cross-levers, guides on the dobby-frame supporting said slides and guiding the same in circular paths, said slides and guides making a structure of general cylindrical form, draw-bars moving in circular paths, and pattern-controlled mechanism adapted to effect operative engagement between said draw-bars and slides.

2. In a loom shedding mechanism, a series of heddle-levers, a series of cross-levers pivoted thereto, segmental slides directly engaging opposite ends of said cross-levers, and making a structure of general cylindrical form, stationary guides supporting said slides and arranged to direct them in circular paths, oscillating draw-bar levers, draw-bars attached directly thereto and moving in circular paths outside of the slides, and pattern-controlled mechanism adapted to effect operative engagement between said draw-bars and slides.



3. In a loom shedding mechanism, a series of heddle-levers, a series of cross-levers pivoted thereto, a series of slides engaging said cross-levers, a series of pattern-controlled catches pivotally mounted on said slides, the connection between said catches and slides comprising a pivot-stud on one of the members, on which the other member turns, the said stud being formed with a recess contracted at its mouth, and a split pin sprung into said recess and having its ends bent over to overlap the said other member, and draw-bars adapted to engage the catches and cause the operation of the heddle-levers.

4. In a loom shedding mechanism, a shaft, a series of levers loosely pivoted thereon side by side, and having hubs in contact with each other and slotted radially to permit of the lateral removal of said levers from the shaft, and closing-pieces fitted in said slots and held therein longitudinally of the shaft, only by friction and the proximity of neighboring lever-hubs, said levers and their closing-pieces being free to oscillate on the shaft independently of each other.

5. In a loom shedding mechanism, a pattern-cylinder and means for rotating the same in either direction, said means comprising a toothed wheel on the cylinder-shaft, a regularly-reciprocated member, a dog pivoted to swing freely on said member and operating when in a central or intermediate position to move said toothed wheel, and means for stopping said dog on one side or the other to cause it to operatively engage the toothed wheel on the forward strokes only, or on the backward strokes only, of the reciprocating member.

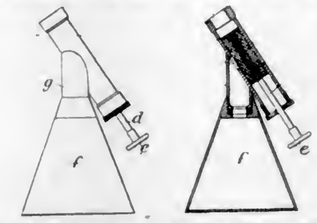
6. In a loom shedding mechanism, a pattern-cylinder and means for rotating the same in either direction, said means comprising a toothed wheel on the cylinder-shaft, a regularly-reciprocated member, a dog pivoted to swing freely on said member and operating when in a central or intermediate position to move said toothed wheel, a part movable on the reciprocatory member and having two abutments adapted to stop the dog on opposite sides respectively, thereby causing it to operatively engage the toothed wheel on the forward strokes only or on the backward strokes only, of the said reciprocatory member, and manually-operated means for moving the said part.

7. In a loom shedding mechanism, a dobby-frame, a pattern-cylinder and means for rotating the same in either direction, said means comprising a toothed wheel on the cylinder-shaft, a reciprocatory sliding bar, a dog loosely pivoted thereto, a member movably mounted on said slide and having two abutments adapted to engage said dog on either side and forming rigid stops therefor, causing the dog to operatively engage the toothed wheel on the forward strokes only, or on the backward strokes only of said slide, and a cam mounted on the dobby-frame and engaging and operating said slide to bring one or the other of said abutments into action.

8. In a loom shedding mechanism, a dobby-frame, a series of heddle-levers, a series of cross-levers pivoted thereto, pattern-controlled mechanism engaging said cross-levers and forming a substantially-cylindrical structure inclosing the same, draw-bars coöperating with said mechanism to operate the heddle-levers, levers pivoted independently to the dobby-frame on opposite sides thereof and supporting said draw-bars, a cross-shaft, means for oscillating said shaft, and toothed gear connections between said shaft and the draw-bar-supporting levers whereby the latter are simultaneously oscillated.

9. In a loom shedding mechanism, the combination of a heddle-frame, the independently-pivoted levers t u, means for oscillating said levers, the link w connecting said levers, and a connection between said link and the harness-frame, whereby the latter is moved in a rectilinear path by the oscillation of said levers.

652,985. SYRINGE, INJECTOR, &c. JOHN H. WALKER, Charters Towers, Queensland. Filed Jan. 2, 1900. Serial No. 143. (No model.)



Claim.—In an injector, the combination with a reservoir, provided with a threaded delivery-orifice, of an injector-cylinder, exterior to said reservoir disposed at an angle to the longitudinal axis of said reservoir, and provided with a reciprocating plunger, an inlet-aperture in its side and a discharge-aperture directly in line with the line of movement of said plunger, and a connecting-tube, communicating with the aperture in the side of the cylinder and provided with a portion adapted to fit into the threaded delivery-orifice of said reservoir, substantially as described.

652,986. GARMENT-SUPPORTER. OSCAR WARLICH, Chicago, Ill., assignor of one-third to David E. Terriere, same place. Filed Jan. 20, 1900. Serial No. 2,126. (No model.)



Claim.—1. In a garment-supporter, a supporting strap or cord having a lug thereon, in combination with a pair of lever-jaws and shanks mounted on said strap, and having a longitudinal movement thereon, whereby and through a wedge action of the lug between the shanks, the jaws are urged together; said strap being extended above and below the jaws and shanks, and both of the jaws being located on the same side of the strap, substantially as described.

2. In a garment-supporter, a supporting strap or cord having a lug thereon, in combination with a pair of lever-jaws and shanks mounted on said strap, and having a longitudinal movement thereon, whereby and through a wedge action of the lug between the shanks, the jaws are urged together; one of said jaws having the raised part 16 open at its lower end, and gradually decreasing in depth toward its upper end, for receiving said lug; said strap being extended above and below the jaws and shanks, and both of the jaws being located on the same side of the strap, substantially as described.

3. In a garment-supporter, a supporting strap or cord having a lug thereon, in combination with a pair of lever-jaws and shanks mounted on said strap, and having a longitudinal movement thereon, whereby and through a wedge action of the lug between the shanks, the jaws are urged together, and means acting between said strap and jaws for preventing the movement of the lug above the shanks; said strap being extended above and below the jaws and shanks, and both of the jaws being located on the same side of the strap, substantially as described.

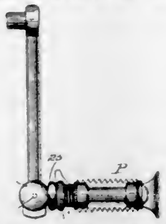
4. In a garment-supporter, a supporting strap or cord, having a lug thereon, in combination with a member slidingly mounted on the strap having a groove or raised part 16 on one side of the strap, the inwardly-projecting parts 21 on the opposite side, and a jaw on said opposite side, a second and coacting jaw pivoted to said member, located on said opposite side and having a shank working against said strap opposite the raised part 16, substantially as described.

652,987. CIGAR-PIPE AND INHALER. DAVID R. WATSON, Washington, D. C. Filed Oct. 28, 1899. Serial No. 735,119. (No model.)



Claim.—In a device of the character described, a cylinder, a mouthpiece containing a filtering agent, said cylinder having holes at the end opposite the mouthpiece, a perforated plug fitted to the end opposite the mouthpiece, a valve for controlling the perforations having a head, a valve-stem seated in a central aperture of the plug, and a cross-bar engaging the head for limiting the movement of the valve.

652,988. BICYCLE-CRANK. CARL B. WELLS, Chelsea, Mass. Filed Sept. 28, 1899. Serial No. 731,903. (No model.)



Claim.—1. In a device of the class specified, a crank, a pedal shiftably connected to the crank and having a turning frame, and locking means normally ineffective and automatically set in action upon the shifting movement of the pedal to prevent said frame from turning.

2. In a device of the class specified, a crank, a pedal hinged to the crank and shiftable into line with, to form a prolongation of, said crank, and having a turning frame, and locking means carried by the pedal normally inoperative and automatically set in action upon the shifting movement of and by said pedal, to prevent the frame from turning.

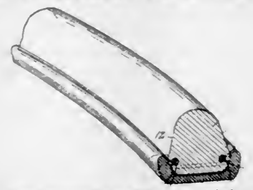
3. In a device of the class specified, a crank, a pedal shiftably connected to the crank, two projections upon the crank, a ring upon the pedal adapted to engage either projection, and a nut upon the pedal located to engage said ring.

4. In a device of the class specified, a crank, a pedal shiftably united to the crank, a spring-actuated locking-bolt, a device carried by the pedal-frame and adapted to be engaged by said bolt when the latter is in its working position, to prevent the pedal-frame from turning on its spindle, and means upon the crank to throw the bolt into working position.

5. In a device of the class specified, a crank, a pedal shiftably united to the crank and having a turning frame, a locking device carried by the pedal, a cam upon the crank for advancing said locking device, means for normally holding the locking device in its ineffective position thereby to permit the frame to turn, and a device upon the pedal-frame adapted to be engaged by said locking device to prevent the frame from turning upon its spindle.

6. In a device of the class specified, a crank-arm, a pedal shiftably united to the crank, and including a pin, a sleeve turning upon said pin, a cylindrical notched keeper within the sleeve, a bolt having a head to enter said notch, a cam upon the crank to advance the bolt, and a spring acting in opposition to said cam.

652,989. RUBBER TIRE FOR VEHICLES. CHARLES H. WHEELER, Akron, Ohio. Filed Apr. 24, 1899. Serial No. 714,248. (No model.)



Claim.—1. The combination, with a channeled metallic rim, of a rubber tire fitting within said rim and provided at each side with a continuous open groove or channel, retaining-pieces extending transversely of the tire immediately inward from said grooves, and retaining-wires located in said grooves and bearing on the retaining-pieces, substantially as described.

2. The combination, with a metallic rim having outwardly-diverging flanges forming a channel, of a rubber tire having a correspondingly-shaped inner portion to fit said channel, an outer portion the sides of which are at an angle to the inner portion, and provided at each side along the lines of junction with a continuous open groove or channel, said grooves or channels lying within the outer peripheries of the flanges, retaining-pieces extending transversely of the tire immediately inward from said grooves, and retaining-wires located in said grooves and bearing on the retaining-pieces, substantially as described.

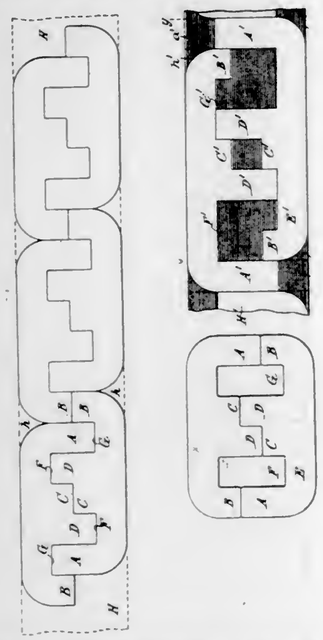
3. The combination, with a channeled metallic rim, of a rubber tire fitting within said rim and provided at each side with a continuous open groove or channel, flat retaining-pieces extending transversely of the tire immediately inward from said grooves and each

having an extended bearing-surface, and retaining-wires located in said grooves and bearing on the retaining-pieces, substantially as described.

4. The combination, with a channeled metallic rim, of a rubber tire fitting within said rim and provided at each side with a continuous open groove or channel, retaining-pieces extending transversely of the tire immediately inward from said grooves and having outwardly-extending extremities, and retaining-wires located in said grooves and bearing on the retaining-pieces adjacent to their extremities, substantially as described.

5. The combination, with a metallic rim having outwardly-diverging flanges forming a channel, of a rubber tire having a correspondingly-shaped inner portion to fit said channel, and an outer portion the sides of which are at an angle to the inner portion, said tire being provided at each side with a continuous open groove or channel located within the outer periphery of the flanges of the rim and the outer portion of the tire extending inward in the form of ribs to cover and protect said grooves, retaining-pieces extending transversely of the tire immediately inward from said grooves, and retaining-wires located in said grooves and bearing on the retaining-pieces, substantially as described.

652,990. ELECTRIC TRANSFORMER. JAMES J. WOOD, Fort Wayne, Ind. Filed Mar. 31, 1900. Serial No. 10,904. (No model.)



Claim.—1. A transformer-punching having end limbs of unequal length and an intermediate or core limb which is longer on one side of its middle than on the other, and having the shorter end limb adjacent to the longer side of the intermediate limb.

2. A transformer-punching having end limbs one of which is twice as long as the other, and an intermediate or core limb which is twice as long at one side of its middle as at the other.

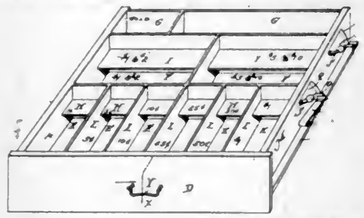
3. A transformer-punching having end limbs of unequal length and an intermediate or core limb which is longer on one side of its middle than on the other, and having the shorter end limb adjacent to the longer side of the intermediate limb, the distance between the adjacent limbs being the same as the width of the end limbs, and the intermediate limb being twice as wide as the end limbs.

4. A transformer-punching having end limbs one of which is twice as long as the other and an intermediate or core limb which is twice as long at one side of its middle as at the other, its shorter end limb being adjacent to the longer side of its intermediate limb.

5. A transformer-punching having end limbs one of which is twice as long as the other and an intermediate or core limb which is twice as long at one side of its middle as at the other, the distance between the adjacent limbs being the same as the width of the end limbs, and the intermediate limb being twice as wide as the end limbs.

6. A transformer-punching having end limbs one of which is twice as long as the other and an intermediate or core limb which is longer on one side of its middle than on the other, and having the shorter end limb adjacent to the longer side of the intermediate limb, the distance between the adjacent limbs being the same as the width of the end limbs, and the intermediate limb being twice as wide as said end limbs.

652,991. MONEY-DRAWER. SAMUEL C. ANDERSON, Springfield, Ohio. Filed Sept. 30, 1899. Serial No. 732,171. (No model.)



Claim.—1. The combination with a money-drawer, of a table pivotally supported therein and adapted to receive purchase-money thereon, means for normally holding said table in a substantially-horizontal plane, and means operated by the drawer for moving said table out of said plane on opening the drawer, whereby money which is placed upon the table may remain thereon until the drawer is pulled out, all substantially as shown and described.

2. The combination with a money-drawer, divided into receptacles for different denominations of money, of a table for each receptacle pivotally mounted therein, means for normally holding said tables in a substantially-horizontal plane, and means for moving each of said tables out of a horizontal plane by opening said drawer, such tables being adapted to receive purchase-money thereon and hold the same thereon until moved out of a horizontal plane, thereby discharging such money into its respective receptacle, all substantially as shown and described.

3. The combination with a money-drawer, divided into receptacles for different denominations of money, of a table mounted in each receptacle upon which the money for its receptacle is adapted to be deposited, said tables also holding the money deposited thereon until the drawer is opened, and means to discharge the money into its proper compartment by opening said drawer, all substantially as shown and described.

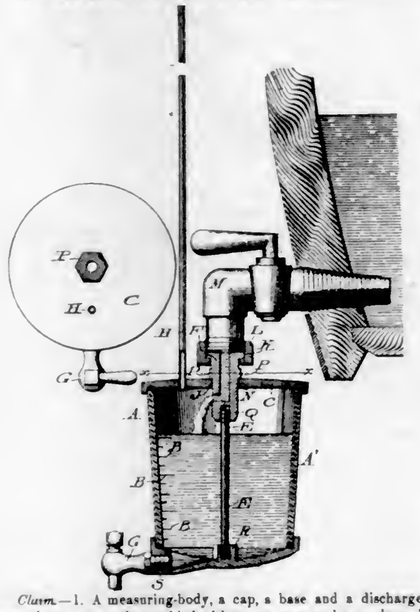
4. The combination with a money-drawer divided into receptacles for different denominations of money, of a table for each of said receptacles and mounted therein, one or more pivoted rods to which said tables are secured and means for rocking said rods by the opening of said drawer before purchase-money may be placed upon any of said tables, thereby discharging money previously placed upon any of them into its respective receptacle, all substantially as shown and described.

5. The combination with a counter, of a money-drawer adapted to slide therein, a transparent cover over said drawer, a double row of receptacles in said drawer, one row of receptacles being for money of smaller denominations while the other row of receptacles is for money of larger denominations, a rod for each row of receptacles, said rods each having a crank, a table for each receptacle adapted to be secured to the rod for such receptacle, a guide-strip upon which said cranks normally rest, means to normally hold said cranks in such position and to return them thereto after being partially rotated, a spring supported at one end by said counter above said guide-strip and at its other end resting upon said guide-strip in the path of said cranks, whereby when said drawer is pulled out the cranks will ride over said spring and partially rotate said tables, and when said drawer is pushed in said cranks will ride under said spring without moving said tables.

6. The combination with a counter, of a money-drawer slidingly mounted therein, said drawer being divided into suitable receptacles for various denominations of money, of a swinging table for each of said receptacles, a rod extending through said receptacles, a weighted lever connected with said rod to normally hold said tables in their normally-raised position, and an inclined spring for raising said crank and partially rotating said tables, whereby money placed upon the tables will be deposited in its proper receptacle, all substantially as shown and described.

7. In a money-drawer, a series of longitudinal receptacles and a series of transverse receptacles, a rod adapted to extend through said transverse receptacles and having its bearings in the partitions between them, a table for each of said receptacles secured to its respective rod, a crank for each of said rods, a weight upon each of said cranks and adapted to operate upon said cranks to normally hold said tables in their normally-raised position, and an inclined spring adapted to operate each of said cranks to partially rotate said tables when said drawer is pulled out and adapted to yield to permit said cranks to pass beneath it when the drawer is pushed in, all substantially as shown and described.

652,992. MEASURING-FAUCET. ERNEST ARNOLD, Philadelphia, Pa. Filed Mar. 22, 1900. Serial No. 9,688. (No model.)



Claim.—1. A measuring-body, a cap, a base and a discharge-faucet thereon, a nozzle provided with a port open to the supply-cock and to the interior of said body, a socket in the under portion of said nozzle, and a clamping-rod connected with said socket, and a socket in said base, said nozzle being rotatably mounted in said cap.

2. A measuring-body, a cap, a base thereon, a discharge-faucet thereon, a nozzle on said cap, a socket in said nozzle and in said base, and a connecting-rod fitted to said sockets, said nozzle being rotatably mounted in said cap and provided with a supporting-shoulder which is seated on said cap.

3. A measuring-body, a cap, a base thereon, a discharge-faucet thereon, a nozzle on said cap, a socket in said nozzle and in said base, and a connecting-rod fitted to said sockets, said nozzle being rotatably mounted in said cap and provided with a supporting-shoulder which is seated on said cap, and means for coupling with the supply-cock.

652,993. POOL-BALL. GEORGE H. BURT, Milburn, N. J. Filed Mar. 30, 1900. Serial No. 10,722. (No model.)



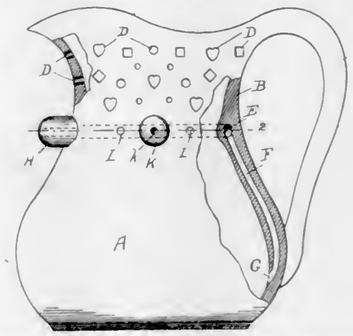
Claim.—1. As a new and useful article of manufacture, a ball consisting of a nucleus of moldable material having pockets therein of greater length than width extending less than the circumference of the ball with opposing facets of substantially-equal extent and masses of moldable material filling the said recesses, the whole being structurally united into an integral structure.

2. The herein-described ball consisting of a nucleus of moldable plastic material having pockets therein bounded by converging opposing facets of substantially-equal extent and masses of plastic material filling the said recesses, the said nucleus and masses being structurally united into an integral whole.

3. The herein-described ball consisting of the oppositely-placed intersecting wedge-shaped bodies *a*, *b*, having between them segmental wedge-shaped recesses *c* and masses of moldable material filling the said recesses and united to the nucleus, substantially as described and for the purposes set forth.

4. A pool-ball composed of plastic material having a nucleus of a general cross shape, the arms of the cross extending entirely through the ball and giving a surface effect of intersecting double stripes extending entirely around the ball and masses of moldable material contrasting in appearance with the stripes filling the pockets intervening between the arms of the cross substantially as described.

652,994. PUZZLE OR TRICK DEVICE. MARY A. BUTLER, Roscoe, N. Y. Filed Apr. 28, 1900. Serial No. 14,658. (No model.)



Claim.—1. A pitcher or similar vessel provided in the neck thereof with holes or openings, and in the walls of the neck and around the base thereof, with an annular passage, another passage in the walls of the pitcher communicating with and extending from said annular passage downwardly approximately to the bottom of the pitcher and communicating with the interior thereof, the neck of said pitcher being also provided with a nipple which communicates with said annular passage, substantially as shown and described.

2. A pitcher or similar vessel the neck of which is provided with holes or openings, and below said holes or openings and in the walls thereof, with an annular passage, said pitcher being also provided in the back wall thereof with a passage which communicates with said annular passage and extends downwardly approximately to the bottom of the pitcher and communicates with the interior thereof, and the neck of the pitcher being also provided with a nipple at the front thereof which communicates with said annular passage, substantially as shown and described.

3. A pitcher or similar vessel the neck of which is provided with holes or openings, and below said holes or openings and in the walls thereof, with an annular passage, said pitcher being also provided in the back wall thereof with a passage which communicates with said annular passage and extends downwardly approximately to the bottom of the pitcher and communicates with the interior thereof, and the neck of the pitcher being also provided with a nipple at the front thereof which communicates with said annular passage, and said neck being also provided at the opposite sides with holes or openings which communicate with said annular passage, substantially as shown and described.

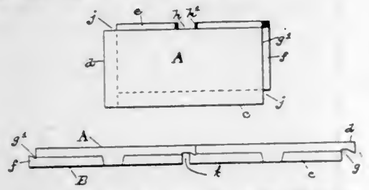
4. A pitcher or similar vessel the neck of which is provided with holes or openings, and below said holes or openings and in the walls thereof, with an annular passage, said pitcher being also provided in the back wall thereof with a passage which communicates with said annular passage, and extends downwardly approximately to the bottom of the pitcher and communicates with the interior thereof, and the neck of the pitcher being also provided with a nipple at the front thereof which communicates with said annular passage, and said neck being also provided at the opposite sides with holes or openings which communicate with said annular passage, and between said holes or openings at each side with a blind nipple, substantially as shown and described.

5. A pitcher or similar vessel the neck of which is provided at the base thereof with an annular passage formed in the walls thereof, another passage in the walls of the pitcher which communicates with said annular passage and extends downwardly and communicates with the interior of said pitcher, said neck being also provided with a nip-

ple which communicates with said annular passage, substantially as shown and described.

6. A pitcher the walls of which are provided with a passage which communicates with the interior of said pitcher at or near the bottom thereof and extends upwardly and communicates with a passage formed in the neck of the pitcher, and extending around said neck to a nipple formed on said neck and communicating with said last-named passage, the neck of the pitcher being also provided above said last-named passage with holes or openings, substantially as shown and described.

652,995. TILE. SEWARD H. CALKINS, Baltimore, Md. Filed Mar. 28, 1900. Serial No. 10,451. (No model.)



Claim.—1. A tile-block having an exposed surface and a concealed surface—the concealed surface having at certain sides a flange which projects beyond the exposed surface said flange having an inclined top surface forming a V-groove, and the exposed surface provided at sides opposite from those of the concealed surface with an overlapping flange which on its under side has a V-point or dovetail that takes in said V-groove.

2. A tile-block having an exposed surface and a concealed surface the exposed surface having at certain sides a flange which projects beyond the concealed surface, and the concealed surface having at other sides a flange which is narrower than the flange on the exposed surface and said narrower flange provided with a beveled notch.

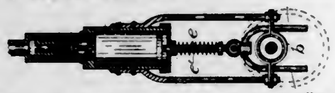
3. A tile-block having an exposed surface, A, and a concealed surface, B, and provided with two overlapping flanges, *c*, *d*, at right-angled sides and on the same plane as the exposed surface, and two underlapping flanges, *e*, *f*, at opposite right-angled sides on the same plane as the concealed surface—and all the flanges being dovetail-shaped by the formation of a V-groove, *g*, on the under surface of the overlapping flanges, a like V-groove, *g'*, on the upper surface of the underlapping flanges.

652,996. SNAP-HOOK. JOHN S. COTTER, Sterling, Iowa. Filed Jan. 29, 1900. Serial No. 3,183. (No model.)



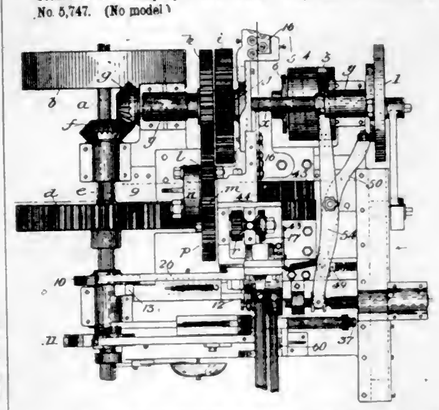
Claim.—A safety-hook provided with a loop, a recessed seat and a shoulder therein to act as a stop, a rotatable locking-disk located in the recessed seat and having a notch, and a shoulder upon its edge to engage the stop, and a lug upon its face, and a concavo-convex disk-spring located upon the locking-disk and having notches upon its edge to correspond in form and engage respectively with the notch and the lug upon the locking-disk, substantially as and for the purpose set forth.

652,997. BICYCLE-PUMP. ALBERT L. CRANDALL, Oak's Corners, N. Y. Filed Nov. 27, 1899. Serial No. 738,298. (No model.)



Claim.—In a wheel having a pneumatic tire, a collar secured on the hub, uprights secured to the said collar and supporting a pump, a spring-controlled piston in said pump, guide-rods projecting from the piston-rod and through the collar on the hub, a lateral arm on the piston-rod, and a cam on the end of the hub bearing against said lateral arm.

652,998. WIRE-BALE-TIE MACHINE. FRED H. DANIELS and CLINTON S. MARSHALL, Worcester, Mass., assignors to the American Steel and Wire Company of New Jersey. Filed Feb. 19, 1900. Serial No. 5,747. (No model.)



Claim.—1. The combination of a rotary twister having a longitudinally-slotted head, mechanism for delivering the wire into the slot, an arbor sliding in the head and crossing the slot, and a coiler adapted to coil the wire around the arbor.

2. The combination of a rotary twister having a longitudinally-slotted head, mechanism for delivering the wire into the slot, an arbor sliding in the head and crossing the slot, a coiler adapted to coil the wire around the arbor, and mechanism for withdrawing the arbor on the completion of the twist to release the tie.

3. The combination of a rotary twister having a longitudinally-slotted head, mechanism for delivering the wire into the slot, an arbor sliding in the head and crossing the slot, a coiler adapted to coil the wire around the arbor, and mechanism for backing off the coiler as it wraps the wire around the arbor.

4. The combination of a rotary twister having a longitudinally-slotted head, mechanism for delivering the wire into the slot, an arbor sliding in the head and crossing the slot, a coiler mounted on the machine-frame and adapted to be projected into the slot of the head and coil the wire around the arbor, and mechanism for withdrawing the coiler on the completion of the eye to allow the head to rotate to twist the wire.

5. The combination of a rotary twister having a longitudinally-slotted head, mechanism for delivering the wire into the slot, an arbor sliding in the head and crossing the slot, a coiler separate from the head and mounted on the machine-frame, mechanism for locking the twister and projecting the coiler into the slot of the head, mechanism for rotating the coiler to form an eye in the wire around the arbor, and mechanism for withdrawing the coiler and rotating the twister.

6. The combination of a rotary twister having a longitudinally-slotted head, mechanism for delivering the wire into the slot, an arbor sliding in the head and crossing the slot, a coiler adapted to coil the wire around the arbor, jaws for gripping the wire in front of the twister, mechanism for withdrawing the coiler and permitting the revolution of the twister, and mechanism for withdrawing the arbor on the completion of the twist to release the tie.

7. The combination of a rotary twister having a slotted head, a spring-pressed arbor sliding in the head and standing normally across the slot, an opening in the head in line with the arbor on the opposite side of the slot, a coiler, mechanism for delivering the wire into the slot of the head and onto the arbor, mechanism for projecting the coiler into the opening and rotating it to wrap the wire around the arbor, mechanism for withdrawing the coiler to permit the revolution of the head, and mechanism for withdrawing the arbor to release the tie, the twister being adapted to move lengthwise toward the jaws during the twisting operation.

8. The combination of a rotary twister having a slotted head, a spring-pressed arbor sliding in the head and standing normally across the slot, an opening in the head in line with the arbor on the opposite side of the slot, mechanism for delivering the wire into the slot of the head and onto the arbor, mechanism for projecting the coiler into the opening and rotating it to wrap the wire around the arbor, mechanism for withdrawing the coiler, mechanism for rotating the head to twist the wire ends together, and mechanism for withdrawing the arbor to release the tie.

9. The combination of a rotary twister having a slotted head, an arbor sliding in said head across the slot, a coiler adapted to wrap the wire around the arbor, gripping-jaws arranged in front and to one side of the head, mechanism for feeding the wire into the slot of the head, and mechanism for advancing the jaws to grip and hold the wire during the rotation of the head, and returning said jaws after the twisting is completed to permit the feeding in of a new wire.

10. The combination of mechanism for feeding a strand of wire forward and cutting it into lengths, a receiver to hold the projecting wire while being cut, a hopper, a twister and coiler beneath the receiver, mechanism for delivering the wire from the receiver into the hopper, a passage-way beneath the hopper crossing the plane of the twister and coiler, an ejector for delivering the wires one at a time from the hopper into the passage-way, and a feeding-hook working in said way and adapted to feed said wires into line with the twister and coiler.

11. The combination of mechanism for feeding a strand of wire forward and cutting it into lengths, a receiver to hold the projecting wire while being cut, a hopper, a twister and coiler beneath the receiver, mechanism for delivering the wire from the receiver into the hopper, a passage-way beneath the hopper crossing the plane of the twister and coiler, an ejector for delivering the wires one at a time from the hopper into the passage-way, a feeding-hook working in said way and adapted to feed the wire from the hopper into line with the twister and coiler, and a discharge-hook for discharging the completed tie from the twister and coiler.

12. The combination of the hopper to hold the tie-wires, the ledge at the bottom thereof, the ejector for pushing the wires one at a time out of the hopper over the ledge, and the cooperating spring-plunger between which and the ejector the wire is held.

13. The combination of the hopper to hold the tie-wires, the passage-way below and to one side of the hopper, the ledge leading from the bottom of the hopper to the passage-way, the ejector and the cooperating spring-plunger for delivering the wires one at a time from the hopper to the passage-way, and the feeding-hook reciprocating in the passage-way.

14. The combination of mechanism for feeding a strand of wire forward and cutting it into lengths, a receiver to hold the projecting wire while being cut, a hopper beneath the receiver, mechanism for delivering the lengths from the receiver into the hopper, a ledge at the bottom of the hopper, a coiler and twister located at one side of the hopper lengthwise of and below the same, a passage-way leading downward from the ledge across the plane of the coiler and twister, an ejector for pushing the wires one at a time out of the hopper into the passage-way, a feeding-hook working in the passage-way for delivering the wires to the coiler and twister, and a discharge-hook for discharging the completed tie, said discharge-hook being adapted to yield on its upward movement to pass the wire held in the coiler and twister.

652,999. VACCINATING INSTRUMENT. LOUIS A. DENIS, West Hoboken, N. J. Filed Jan. 31, 1899. Serial No. 703,967. (No model.)



Claim.—As a new article of manufacture, a vaccinating instrument consisting of a flat, thin, elongated piece *a*, of celluloid or the like, and a needle-like scarifier *b*, having its body portion embedded in the mass of the piece *a*, and its sharp extremity projecting slightly beyond the extremity of the piece *a*, substantially as set forth.

653,000. BOILER-BRACE. PATRICK F. DUNDON, San Francisco, Cal. Filed Mar. 19, 1900. Serial No. 9,254. (No model.)

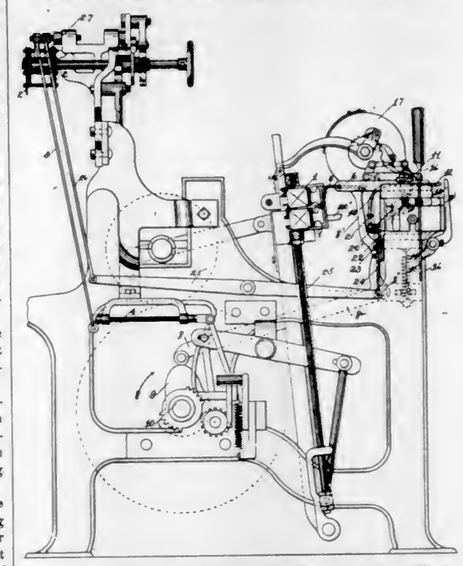


Claim.—1. A brace or stay of the character described, slit at the ends to form two lugs, these latter bent outward to form footings at each end of the brace, equally at each side, and to suit the angles of the faces to which the brace is attached, substantially as specified and shown.

2. A brace or stay made of plate metal of uniform thickness and width, slit to form two lugs at each end, rivet-ways in each lug in like relation to the line of the brace and to sustain an equal strain, substantially as described.

3. A brace or stay made of plate metal, slit at the ends to form lugs 4, turned outward from the inside of the folded plate, and lugs 3 at the other end spread in an opposite plane, substantially as specified.

653,001. LOOM. WILLIE G. EATON, Nashua, N. H., assignor, by mesne assignments, to the Crompton & Knowles Loom Works, Worcester, Mass. Filed Feb. 23, 1900. Serial No. 6,160. (No model.)



Claim.—1. In a loom the following instrumentalities, viz: a filling-changing mechanism, means for operating the same to effect a change of filling, and pattern-controlled devices for throwing said means into and out of operative relation to said mechanism.

2. In a loom the following instrumentalities, viz: drop-shuttle-boxes, a filling-changing mechanism, means for operating the same to effect a change of filling, and pattern-controlled devices for throwing said means into and out of operative relation to said mechanism.

3. In a loom the following instrumentalities, viz: drop shuttle-box mechanism, a filling-changing mechanism, separate means for operating said shuttle-boxes and filling-changing mechanisms, and devices for putting one of said means into operative and the other into inoperative relation with said mechanisms.

4. In a loom the following instrumentalities, viz: drop-shuttle-box mechanism, a filling-changing mechanism, means for operating said shuttle-box and filling-changing mechanisms, and a pattern mechanism for controlling the operative condition of the shuttle-box and filling-changing mechanisms with respect to their operating means for shifting the shuttle-boxes or changing the filling.

5. In a loom the following instrumentalities, viz: a filling-changing mechanism and pattern-controlled means for operating the same to effect a change of filling.

6. In a loom the following instrumentalities, viz: a filling-changing mechanism, a drop-shuttle-box mechanism, and pattern-controlled means for operating either of said mechanisms.

7. In a loom the following instrumentalities, viz: a filling-changing mechanism, a stopping mechanism, and a pattern-controlled device for acting on either of said mechanisms.

8. In a loom the following instrumentalities, viz: a filling-changing mechanism, a drop-shuttle-box mechanism, pattern-controlled devices for rendering the drop-shuttle-box mechanism operative or inoperative as desired, and pattern-controlled devices for acting on either the filling changing or stopping mechanism.

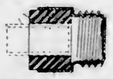
9. In a loom, an automatic filling-supply mechanism, a drop-shuttle-box mechanism, and a pattern-chain mechanism to determine the time of operation of the filling-supply mechanism to transfer filling, and the drop-shuttle-box mechanism, substantially as shown and described.

10. In a loom, an automatic filling-supply mechanism, a drop-shuttle-box mechanism, a weft-feeler-fork mechanism, and a pattern-chain

mechanism to determine the time of operation of the filling-supply mechanism to transfer filling and the drop-shuttle-box mechanism, substantially as shown and described.

11. In a loom, in combination, an automatic filling-changing mechanism, and means for operating the same, a drop-shuttle-box mechanism, and means for operating the same, and a pattern-chain mechanism to determine the time of operation of said mechanisms to transfer filling and move the shuttle-boxes, and connections intermediate said pattern-chain mechanism and the automatic filling-changing, and the drop-shuttle-box mechanism, substantially as shown and described.

653,002. DEVICE FOR ATTACHING FILTERS TO FAUCETS, &c. JOHN ELLIS, Lynn, Mass. Filed Dec. 15, 1898. Renewed Dec. 11, 1899. Serial No. 740,017. (No model.)



Claim.—1. A device for the purpose described, consisting of a tube with internal shoulder, and screw-threads at one end for the attachment of a filter, a yielding sleeve within the tube resting upon the said shoulder, and an annular flange at the end of the screw-threaded portion with a hole therethrough and an annular bead outside said hole, as and for the purpose specified.

2. A device for the purpose described, consisting of a tube with screw-threads and internal shoulder, the threaded end of the tube being partially closed forming an inwardly-extending flange with opening and annular bead, as and for the purpose specified.

653,003. ILLUMINATED SIGN. SAMUEL EVANS, Chicago, Ill., assignor of one-half to Charles L. Rawson, same place. Filed Mar. 14, 1900. Serial No. 8,573. (No model.)



Claim.—1. In a sign, the combination of the front plate formed of glass or some similar translucent substance, with the thin opaque background placed on the rear side of the front plate and having openings therein, the jewels arranged on the back of said front plate in the openings in said background so as to form a design, a chamber back of said front plate, and a source of illumination in said chamber and in the rear of the jewels, which are arranged so as to have their convex sides extending through said opaque background and into the chamber, substantially as described.

2. In a sign, the combination of the front plate formed of glass or some similar translucent substance, with the thin opaque background placed on the rear side of the front plate and having openings therein, the jewels arranged on the back of said front plate in the openings in said background so as to form a design, a chamber back of said front plate, with a reflector back of the jewels, and a source of illumination in said chamber interposed between the reflector and the jewels which are arranged so as to have their convex sides extending through said opaque background and into the chamber, substantially as and for the purpose described.

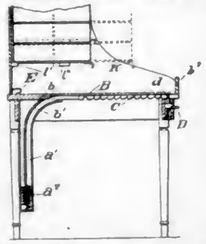
3. In a sign, the combination of the front plate consisting of a sheet of glass having a clear outer surface, and having the jewels arranged on the back thereof to form a design, with a layer of opaque material over the back of said glass, except the portion covered by the jewels, a chamber back of the front plate, and a source of illumination in said chamber and in the rear of the jewels, which are arranged so as to have their convex sides extending through said opaque material and into the chamber, substantially as and for the purpose described.

4. In a sign, the combination of the front plate consisting of a sheet of plate-glass having a clear outer surface, and having the jewels arranged on the back thereof to form a design, with a layer of opaque material over the clear portions of the back of said glass except those covered by the jewels, with a reflector back of the jewels, and a light interposed between the jewels and the reflector, said jewels being arranged so as to have their convex sides extending through said opaque material and into the chamber, substantially as and for the purpose described.

5. In a sign, the combination of the front plate consisting of a sheet of glass, having a clear outer surface, and having the jewels arranged on the back thereof over clear portions to form portions of a design chipped or etched on said back, with a layer of opaque material over the back of said glass except the portion covered by the design, a chamber back of the front plate, and a source of illumination in said chamber and in the rear of the jewels.

6. In a sign, the combination of the front plate consisting of a sheet of glass having a clear outer surface, and having the jewels arranged on the back thereof over clear portions to form part of a design chipped or etched on said back, with a layer of opaque material over the back of said glass except the portion covered by the design, and another layer of opaque material over the portion of the back of the glass forming the design except that covered by the jewels, the colors of said layers being contrasted, a chamber back of the front plate, and a source of illumination in said chamber and in the rear of the jewels, substantially as described.

653,004. LETTER-CARRIER'S TABLE. CHARLES C. FIELDS, Baltimore, Md. Filed Apr. 24, 1900. Serial No. 14,100. (No model.)



Claim.—1. A device of the character described, comprising a table having a top formed with a guideway and a well into which the guideway opens, a paper-supporting slide fitted in said guideway flush with the upper surface of the table-top and having a flexible rear portion arranged in the well, the lower face of said slide being formed with notches, a spring secured to the flexible portion of said slide and adapted to draw the same into the well, and a spring-pressed catch on the front of the table below the top and adapted to take into the notches to hold the slide at various extensions.

2. In a device of the character described, a table having a top formed with a guideway and a well extending below the top into which the rear of the guideway opens, a paper-supporting slide fitted in said guideway flush with the upper surface of the table-top and having a slatted rear portion movable in the well, said slide being also formed with a series of notches extending from the slatted portion to the front end of the slide, a stop-plate at the front end of the slide, a contractile spring secured to the lowermost slat and the bottom of the well and adapted to draw the slide inward, and a spring-pressed sliding bolt on the front of the table below the top and adapted to take into the notches to hold the slide at various extensions.

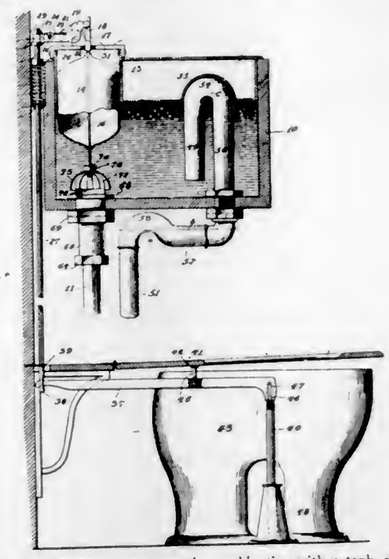
3. A letter-carrier's table formed with two guideways *f* and a guiding-strip F separating said guideways, and two letter-supporting slides fitted in said guideways and each of which is formed with a recessed side edge lying over the strip and abutting against the corresponding edge of the other slide, and a stop-plate secured to one end of each slide.

653,005. FLUSHING APPARATUS. WILLIAM P. HASTINGS, New York, N. Y. Filed Dec. 31, 1898. Serial No. 700,820. (No model.)

Claim.—1. In a flushing apparatus, the combination with a tank and a discharge-pipe, of a valve-casing having a valve-seat, a dash-pot isolated within the casing, and spaced from said seat, a float-operated valve, and a separate piston carried by the valve-stem, and movable into and entirely out of the dash-pot, said piston being provided with relief-ports, substantially as set forth.

2. In a flushing apparatus, the combination with the tank and a discharge-pipe, of a valve-casing having a valve-seat, a dash-pot isolated within the casing, and spaced from said seat, a float-operated valve working into the valve-seat and provided with a plurality of leak-passages, and a separate piston carried by the valve-stem, and movable into and entirely out of the dash-pot, substantially as set forth.

3. In a flushing apparatus, the combination with a tank and a discharge-pipe, of a float-operated supply-valve, a reciprocatory member carrying a pivotal latch having a catch engagement with the valve-stem, and a fixed trip arranged below and in the path of the latch to provide for disengaging the same from the valve-stem by a continued downward movement of the reciprocatory member, substantially as set forth.



4. In a flushing apparatus, the combination with a tank, a discharge-siphon, and a float-operated valve, of a reciprocatory operating-rod, a pivotal latch carried by the operating-rod, and adapted to engage with the valve-stem, said latch being provided with a cam-face, and a fixed guide receiving the upper end of the valve-stem, and arranged in the path of the cam-face of the latch to constitute a trip therefor, substantially as set forth.

5. In a flushing apparatus, the combination with a tank having a discharge-siphon, and a float-operated supply-valve, of an operating-rod, means for reciprocating the same by the movement of a water-closet seat, a cross-head carried by said rod, a pivotal latch carried by the cross-head for engagement with a catch on the valve-stem, and a fixed trip arranged below and in the path of said latch to provide for disengaging the latter by a continued downward movement of the operating-rod, substantially as specified.

6. In a flushing apparatus, the combination with a tank having a discharge-siphon, and a float-operated supply-valve, of an operating-rod, means for reciprocating the same by the movement of a water-closet seat, a cross-head on said operating-rod, a pivotal yielding latch carried by the cross-head, a catch-block connected with the float-operated valve, and a fixed trip arranged below and in the path of the latch to provide for disengaging the latter by the continued downward movement of the operating-rod, substantially as specified.

7. In a flushing apparatus, the combination with a tank having a discharge-siphon, and a float-operated supply-valve, of an operating-rod, means for reciprocating the same by the movement of a water-closet seat, a cross-head adjustably mounted upon said operating-rod, a latch carried by the cross-head, a pivotal catch-block operatively connected with the stem of the float-operated valve, and a fixed trip arranged below and in the path of said latch to provide for disengaging the latter by the continued downward movement of the operating-rod, substantially as specified.

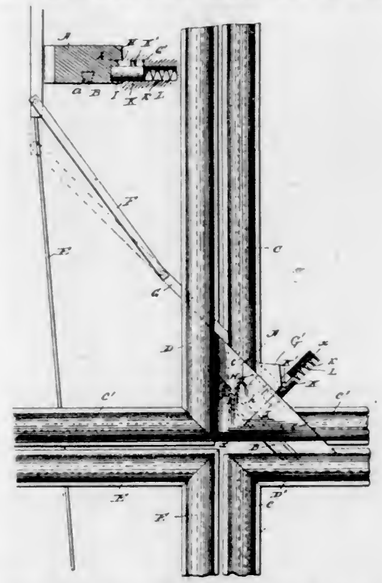
8. In a flushing apparatus, the combination with a tank having a discharge-siphon, and a float-operated supply-valve, of a lever adapted for actuation by a water-closet seat, a reciprocatory cross-head operatively connected with said lever, a pivotal latch carried by the cross-head, a shouldered catch-block operatively connected with the stem of said float-operated valve, an actuating-spring for said latch, the latter being provided with a cam-face, and a fixed trip arranged below and in the path of said cam-face of the latch to provide for disengaging the latter by the continued downward movement of said cross-head, substantially as specified.

9. In a flushing apparatus, the combination with a tank having a discharge-siphon, and a float-operated supply-valve, of a lever adapted for actuation by a water-closet seat, a cross-head operatively connected with said lever, a pivotal latch carried by the cross-head and provided with a rearwardly-extending tail portion, a spring carried by the cross-head and arranged in operative relation with the tail portion of the latch, guide-ears arranged at opposite sides of the plane of the spring, a catch-block operatively connected with the stem of the float-operated valve, and a fixed trip arranged below and in the path of the latch, substantially as specified.

10. In a flushing apparatus, the combination with a tank, of an upstanding siphon arranged wholly inside of the tank, a flushing-pipe having an approximately-horizontal trap-arm arranged wholly exterior to the tank and in communication with the discharge-leg of the interior siphon, said approximately-horizontal trap-arm being provided with an elevated gooseneck adjacent to its junction with the flushing-pipe, of which elevated gooseneck the lower side is approximately in the plane of the upper side of the body portion of the trap-arm, and a float-operated intermittent valve associated with the water-inlet port for the tank, substantially as set forth.

11. In a flushing apparatus, the combination with a tank and a discharge-pipe, of a valve-casing having a valve-seat, a dash-pot isolated within the casing and spaced from said seat, a float-operated valve, a separate piston carried by the valve-stem and provided with relief-ports, said piston being movable into and entirely out of the dash-pot, a reciprocatory member, means controlled by the closet-seat for actuating said member, and a clutch connection between the reciprocatory member and the stem of the valve.

653,006. RAILWAY-CROSSING. JOSEPH S. JENCKES, Jr., Terre Haute, Ind. Filed Apr. 20, 1900. Serial No. 13,662. (No model.)



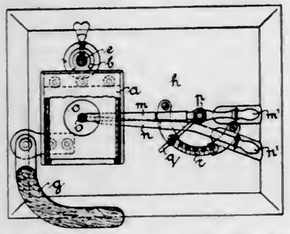
Claim.—1. In a railway-crossing, the combination with the tracks thereof of a sliding block, a groove in the bottom thereof, a track adapted to support said block, a groove and recesses in the rear of said block, a rod having an inward extension to slide in said groove, a locking-bolt, a pin secured thereto, and a cylindrical casing for said locking-bolt, substantially as described.

2. In a railway-crossing, the combination with the tracks thereof of a sliding block, a groove in the bottom thereof, a track to work in said groove, a groove in the rear of said block, an extension to work in said groove, and a locking device substantially as described.

658,007. PORTABLE MELTING APPARATUS. NEWELL S. JENKINS, Dresden, Germany. Filed Feb. 7, 1900. Serial No. 4,333. (No model.)

Claim.—1. The muffle *a*, of refractory material having a hole in the bottom and an opening in the front, the carrier *b* connected to the muffle and having a hole therein, a vertical supporting-rod *c* passing through the hole in the carrier, and a screw for clamping the

carrier and muffle to said rod, in combination with the arm *g* pivoted at one side to the muffle so that its free end can be swung around opposite the opening in the front of the muffle, substantially as set forth.

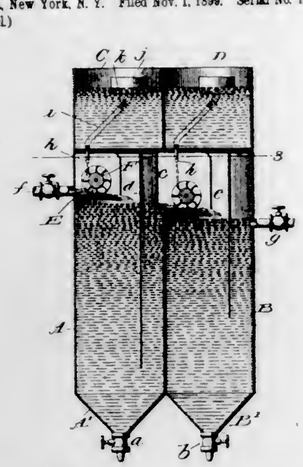


2. The muffle *a* of retractory material having a hole in the bottom and an opening in the front, the arm *g* pivoted to said muffle, and the rod *e* for supporting said muffle, in combination with the pipes *m* and *n* for gas and air a burner at the end of said pipes below the opening in the bottom of the muffle, a cock *p*, in the gas-pipe *m*, a graduated scale *r* adjacent to said cock and an arm *q* secured to said cock and extending over said scale, substantially as and for the purposes set forth.

653,008. PROCESS OF PURIFYING WATER. CHARLES H. KOYL, New York, N. Y. Filed Nov. 1, 1899. Serial No. 735,517. (No specimens.)

Claim.—The process of treating water for purposes of purification which consists in first preparing the water by intimately mixing with it sodium hydroxide and then adding to the thus-prepared water ferrous sulphate, substantially as and for the purposes hereinbefore set forth.

653,009. APPARATUS FOR PURIFYING WATER. CHARLES H. KOYL, New York, N. Y. Filed Nov. 1, 1899. Serial No. 735,518. (No model.)

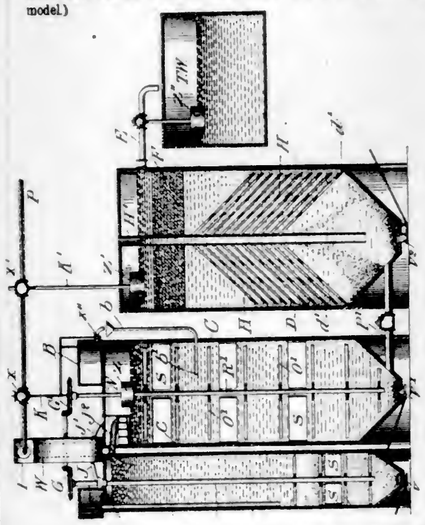


Claim.—1. The combination with the chambers through which the water to be treated successively passes, tanks containing the ingredients to be added to the water, and discharge-nozzles *h* through which the said ingredients pass into the chambers, of the troughs E over the floors of which the incoming water successively passes, and bucket-wheels F, one in each trough, mounted on a horizontal axis and arranged so that the ingredients which discharge from the nozzles *h* shall fall upon and be caught by the buckets of the wheels as they revolve, substantially as and for the purposes hereinbefore set forth.

2. In combination with a chamber provided with ducts for the entrance and escape of water, of the trough E, the bucket-wheel F, the nozzle *h*, the flexible tube *i* and float *j*, and the tank containing said tube and float, under the arrangement and for joint operation as hereinbefore set forth.

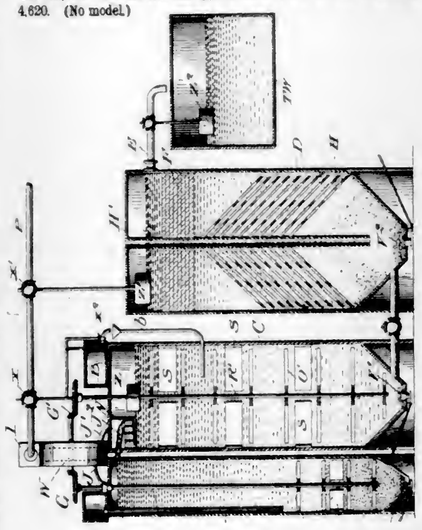
3. The chambers A and B, provided with baffle-plates or vertical partitions *d*, *e*, inlet *f*, outlet *g*, and communicating duct *c*, of the trough E in each chamber, the bucket-wheel F in each trough, and a nozzle *h* arranged over each wheel and connecting with a source of supply of the ingredients to be added to the water, as and for the purposes hereinbefore set forth.

653,010. APPARATUS FOR PURIFYING WATER. CHARLES H. KOYL, New York, N. Y. Filed Dec. 20, 1899. Serial No. 740,958. (No model.)



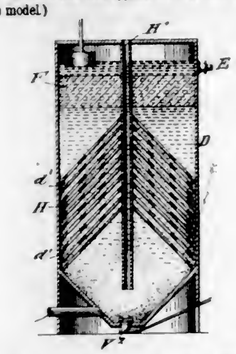
Claim.—In apparatus for the continuous purification of water, a reaction-tank, means for supplying water thereto, reservoirs for containing the several reagents to be mixed with and act upon the water, pipes or inlets leading from said reservoirs respectively and opening into the reaction-tank at different levels, substantially as described, so that the water entering and passing through said tank shall meet and be acted upon by the several reagents successively and in sequence only, a stirrer contained in said tank and means for actuating the same, substantially as and for the purposes hereinbefore set forth.

653,011. APPARATUS FOR PURIFYING WATER. CHARLES H. KOYL, New York, N. Y. Original application filed Dec. 20, 1899, Serial No. 740,958. Divided and this application filed Feb. 9, 1900. Serial No. 4,620. (No model.)



Claim.—In apparatus for the continuous purification of water, a reaction-tank, means for supplying water thereto, reservoirs for containing the several reagents to be mixed with and act upon the water, pipes or inlets leading from said reservoirs respectively and opening into the reaction-tank at different levels, substantially as described, so that the water entering and passing through said tank shall meet and be acted upon by the several reagents successively and in sequence only, a stirrer contained in said tank and means for actuating the same, substantially as and for the purposes hereinbefore set forth.

653,012. APPARATUS FOR PURIFYING WATER. CHARLES H. KOYL, New York, N. Y. Original application filed Dec. 20, 1899, Serial No. 740,958. Divided and this application filed Feb. 9, 1900. Serial No. 4,621. (No model.)

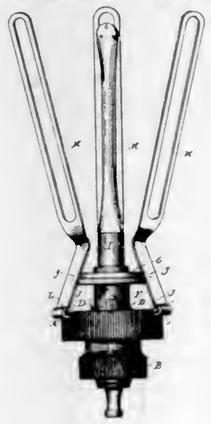


Claim.—1. A settling-tank provided with a settling-surface composed of a series of superposed hollow cones placed small end uppermost, but separated from one another by intervals which constitute shallow settling-chambers, and provided with slits or perforations arranged in radial lines, substantially as and for the purposes hereinbefore set forth.

2. In combination with the settling-tank a series of superposed hollow radially-perforated settling-cones placed small end uppermost but separated from one another by intervals which constitute shallow settling-chambers, there being also an annular space between their outer rims and the inner wall of the tank, substantially as and for the purposes hereinbefore set forth.

3. In combination with the settling-tank and an axial core or support therein, a series of superposed settling-cones placed small end uppermost but separated from one another by intervals which constitute shallow settling-chambers and composed each of radially slitted or perforated segments H which at their inner and upper ends rest against the axial core or support, and at their outer and lower ends rest upon brackets projecting from the inner wall of the tank, substantially as and for the purposes hereinbefore set forth.

653,013. SYRINGE. WILLIAM A. ARMOUR, Thomaston, Conn. Filed Apr. 2, 1900. Serial No. 11,042. (No model.)



Claim.—1. The herein-described combined speculum and syringe, consisting of a body, a nut swivelly connected therewith, a slide extending through said nut and adapted to be longitudinally moved by the rotation of the nut, said slide formed at its upper end with a disk, speculum-arms secured to said body, and having inclined ends adapted to bear against said disk, and a discharge-nozzle carried by said slide, substantially as described.

2. The herein-described combined speculum and syringe, consisting of a body, a nut extending through said body and swivelly connected therewith and formed at its upper end with cam-surfaces, a slide extending through said nut, and having studs for engagement with the said cam-surfaces, whereby the movement of the nut will force the slide upward, a disk carried by said slide, speculum-arms secured to said body, and adapted at their lower ends to bear upon the edges of said disk, and a discharge-nozzle carried by said slide, substantially as described.

3. The herein-described combined speculum and syringe, consisting of a body, a nut swivelly connected therewith, a slide extending through said body, and adapted to be longitudinally moved by the rotation of said nut, a disk at the upper end of said slide, a discharge-nozzle extending through said slide, and speculum-arms pivotally connected with said body and adapted to bear upon the edge of the said disk, substantially as described.

653,014. PROCESS OF SILKIFYING COTTON. DWIGHT ASHLEY, Paterson, N. J., assignor to the Ashley & Bailey Company, same place. Filed Oct. 6, 1899. Serial No. 732,784. (No specimens.)

Claim.—1. The herein-described process of treating cotton or other cellulose material which consists in subjecting said material to a bath composed of silk and an alkali of appreciable causticity, substantially as described.

2. The herein-described process of treating cotton or other cellulose material which consists in first dissolving silk in an alkaline solution to form a bath and in subsequently subjecting said material to the action of said bath, substantially as described.

3. The method of effecting a combination of silk with cotton or other cellulose material which consists in first subjecting the silk to the action of an alkaline solution so as to dissolve said silk in the alkaline solution and in then subjecting the cotton, or other cellulose material to the action of the silk-laden alkaline solution, so as to first impregnate the cells thereof with the particles of silk and then contract them, substantially as described.

4. The herein-described process of treating cotton or other cellulose material which consists in preparing a solution comprising an alkali, silk, and sumac and in immersing said material in said solution, substantially as described.

5. The herein-described process of treating cotton or other cellulose material which consists in preparing a solution comprising caustic soda, silk, sumac and gelatine, and in immersing said material in said solution, substantially as described.

653,015. APPARATUS FOR MANUFACTURING ILLUMINATING-GAS. EDUARD R. BESEMFELDER, Charlottenburg, Germany. Filed Mar. 10, 1900. Serial No. 8,172. (No model.)

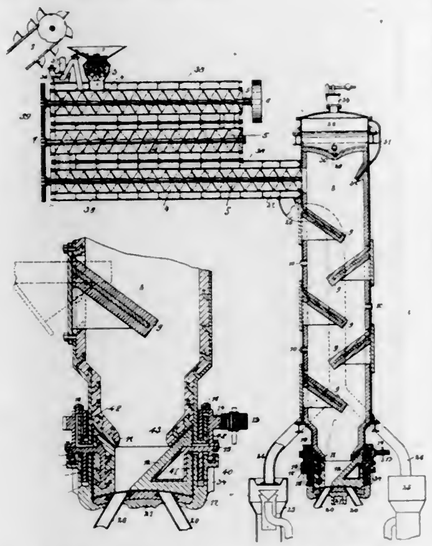
Claim.—1. An apparatus for making illuminating-gas, consisting of a series of superposed retorts connected alternately at opposite ends, rotary conveyers in said retorts, a conducting-tower connected with the lowermost retort, inclined shelves located alternately at opposite sides of said tower, a rotary delivery mechanism for the glowing material below the lower end or throat of the tower, and means for connecting water-gas generators with said delivery mechanism, substantially as set forth.

2. An apparatus for making illuminating-gas, consisting of a series of superposed retorts connected alternately at opposite ends, rotary conveyers in said retorts, a conducting-tower connected with the lowermost retort, said tower being provided with inclined shelves located alternately at opposite sides, a reservoir for the liquid-hydrocarbon material at the upper end of the tower, means for supplying said liquid hydrocarbon to the upper part of the tower, and a delivery mechanism for the glowing coke at the lower end or throat of the tower, substantially as set forth.

3. In an apparatus for the continuous production of illuminating-gas, the combination of a series of connected superposed retorts, rotary conveyers in said retorts, and a conducting-tower having a contracted lower end or throat, with a delivery mechanism consisting of an exterior casing, an interior distributing-cone, a supporting-frame for the distributing-cone, and means for tightly connecting the supporting-frame of the distributing-cone with the lower end of the tower and the casing of the delivery mechanism, substantially as set forth.

4. In an apparatus for the continuous production of illuminating-gas, the combination of a series of superposed retorts, rotary convey-

ers in the same, a tower connected with the lowermost retort, said tower being provided with a series of inclined shelves arranged alternately at opposite sides of the tower, a reservoir for liquid hydrocarbon at the upper end of the tower, means for supplying said liquid hydrocarbon into the tower, means for equalizing the pressure in the tower and reservoir, and a delivery mechanism at the lower end of said tower, substantially as set forth.



5. In an apparatus for the continuous production of illuminating-gas, the combination of a series of connected superposed retorts, rotary conveyers in said retorts, exterior jackets surrounding said retorts, a tower connected with the lowermost retort, inclined shelves arranged alternately at opposite sides in said tower, a reservoir at the upper end of said tower for liquid hydrocarbon, means for supplying said liquid hydrocarbon to the tower, a rotary delivery mechanism at the lower end of said tower, chutes for connecting the delivery mechanism with water-gas generators below said tower, and flues for connecting said water-gas generators with the jacket of the lowermost retort for conducting the waste gases from the water-gas generators successively through the jackets of the different retorts, substantially as set forth.

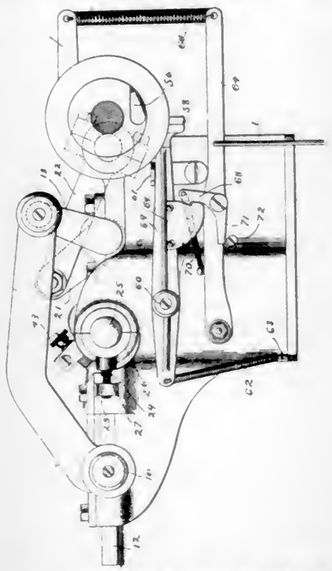
6. In an apparatus for the continuous production of illuminating-gas, the combination of a series of superposed retorts, rotary conveyers in said retorts, a tower connected with the lowermost retort, inclined shelves arranged alternately at opposite sides of said tower, a delivery mechanism located below the contracted lower end or throat of said tower, said delivery mechanism being composed of an interior distributing-cone, a supporting-frame for said cone, means for rotating said supporting-frame and cone, a casing surrounding the distributing-cone, and chutes for conducting the glowing material from the distributing-cone to water-gas generators located below the delivery mechanism, substantially as set forth.

7. In an apparatus for the continuous production of illuminating-gas, the combination, with a conducting-tower having inclined shelves at alternately-opposite sides and a contracted lower end or throat, of a delivery mechanism consisting of an exterior casing provided with chutes for conducting the glowing material to the water-gas generators located below the tower, a distributing-cone in said casing, a suspension-frame for said distributing-cone, means for rotating said suspension-frame and cone, a tightening-joint between the suspension-frame and the lower end of the tower and between the distributing-cone and casing, means for rotating the casing, and means for raising or lowering said delivery mechanism, substantially as set forth.

8. In an apparatus for the continuous production of illuminating-gas, the combination, with a conducting-tower having inclined shelves arranged alternately at opposite sides, of a delivery mechanism, consisting of a casing, means for rotating the same on its axis, an interior distributing-cone, means for rotating said delivery-coue, a carriage, and means between said carriage and the casing of the delivery mechanism for raising and lowering the latter, substantially as set forth.

9. In an apparatus for the continuous production of illuminating-gas, the combination of a conducting-tower, inclined shelves arranged alternately at opposite sides of the same, a delivery mechanism below the lower end or throat of the tower, said delivery mechanism consisting of an exterior casing having an exteriorly-threaded center spindle, a distributing-cone in said casing, a supporting-frame for said distributing-cone, means for rotating said supporting-frame and cone, an interiorly-threaded post for supporting the spindle of the casing, means for rotating said casing so as to raise or lower the same, and a carriage for the supporting-post of the casing, substantially as set forth.

653,016. HEEL-SCARFING MACHINE. SAMUEL J. BRISSETTE, Swampscott, Mass., assignor to George A. Emerson, Lynn, Mass. Filed July 10, 1899. Serial No. 723,257. (No model.)



Claim.—1. A heel-scarfing machine comprising a substantially horizontally reciprocating knife, a cutter-block which is adapted to receive the heel-blank and against the face of which the knife is adapted to operate, said block being inclined with its face underneath, and means mounted on said block for holding the heel-blank against the under face thereof.

2. A heel-scarfing machine comprising a substantially horizontally reciprocating knife, a cutter-block which is adapted to receive the heel-blank and against the face of which the knife is adapted to operate, said block being inclined with its face underneath, and means mounted on said block for holding the heel-blank against the under face thereof, said means having a portion projecting forwardly above the knife to act as a guard.

3. A heel-scarfing machine comprising a knife, a cutter-block to receive the heel-blank and resist the thrust of the knife, and a combined knife-guard and heel-guide connected to said cutter-block.

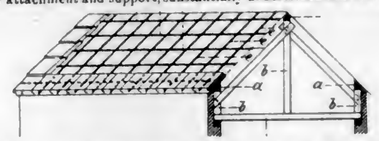
4. A heel-scarfing machine comprising a knife, a cutter-block for the knife to cut against, means for holding said block at an inclination to the horizontal with its operative face downward, means for moving said knife in a substantially-horizontal plane, means carried by said block for holding a heel-blank yieldingly against the said under face of the said block, and a gage carried by the under face of said block for positioning the heel-blank thereon.

5. A heel-scarfing machine, comprising a crank-shaft, a knife-carrier, a rock-shaft having diverging arms, and rods connecting said arms with said knife-carrier and said crank-shaft respectively.

6. A heel-scarfing machine comprising a crank-shaft, a slide, means connecting said slide with said shaft, and an oscillatory knife-carrier connected with said slide

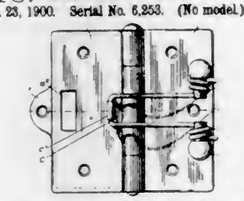
653,017. ROOF. GEORG BRUCK, Berlin, Germany. Filed Jan. 17, 1900. Serial No. 1,743. (No model.)

Claim.—1. In a roof construction, the combination with the roof-frame, of wires stretched upon the frame, and tiles or roof-plates formed with channels extending through the body thereof, said wires being tautly stretched upon the framework of the roof and passed through the channels of the tiles or roof-plates, thereby serving for their attachment and support, substantially as described and set forth.



2. In a roof construction, the combination with the roof, and wires supported thereon, of individual tiles or plates formed with channels to receive said wires to support the tiles or plates, substantially as set forth and described.

653,018. SPRING-HINGE. GEORGE W. CLUM, Columbus, Ohio. Filed Feb. 23, 1900. Serial No. 6,253. (No model.)



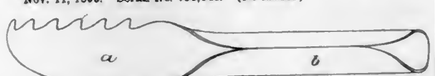
Claim.—1. A hinge comprising a member having a cavity or recess on its under side and an opening from the face thereof into said cavity, and a second leaf or member swinging on the first-mentioned member, in combination with a curved spring attached to said second leaf or member adapted to enter said cavity or recess through said opening and frictionally engage the edge thereof to hold said second member, or a door attached thereto in any position to which it may be adjusted while the spring is in said cavity or recess, substantially as described.

2. A hinge comprising a leaf or member having an opening, and a second leaf or member swinging on the first-mentioned member in combination with a curved spring attached to said second leaf or member arranged to enter said opening to hold the door open and to engage the face of the leaf or member to close the door, substantially as described.

3. A hinge comprising a leaf or member having a depending peripheral flange *a* forming a box-like cavity, and an opening a^3 into said cavity, and a second leaf or member swinging on the first-mentioned member in combination with a curved spring secured to said second member and adapted to bear on the first-named leaf or member, and arranged to enter and engage a wall of said opening, substantially as described.

4. A hinge comprising a leaf or member having an opening therein near its outer edge, and a second leaf or member swinging on the first-mentioned member having pins b', in combination with a curved spring C made of bent wire and having curved arms c^3 and coils c^3 engaging the pins b' on the second leaf or member and adapted to bear upon the face of the first-named leaf and enter the opening therein, substantially as described.

653,019. HAND WEEDING-TOOL. WILLIAM L. FAXON, Middleborough, Mass., assignor of one-half to Cornelius H. Leonard and Thomas S. Hodgson, same place, and Isaac Sampson, Lakeville, Mass. Filed Nov. 11, 1899. Serial No. 736,645. (No model.)

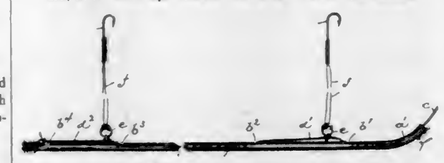


Claim.—1. A weeding implement comprising a grip or handle formed to be held in the hand, and an elongated blade formed on and projecting from one end of the handle and having a serrated longer edge, the blade and its serrated edge standing at an obtuse angle with the handle and constituting an extension thereof, the relative arrangement of the handle and blade being such that when the handle is held in an inclined position above the surface of the ground, the blade projects horizontally from the lower end of the handle, away from the grip portion thereof.

2. A weeding implement comprising a blade having a serrated front edge, and a downwardly-curved rear edge, and an inclined handle joining the inner portion of the blade.

3. A weeding implement comprising a sheet-metal blade, and a sheet-metal handle integral therewith, the blade having a serrated front edge and a downwardly-curved rear edge, while the handle is inclined relatively to the blade and is approximately tubular and elastic or compressible in cross-section.

653,020. SINKER FOR FISH-LINES. THOMAS W. FIERS, Newark, N. J. Filed Apr. 7, 1900. Serial No. 11,924. (No model.)



Claim.—1. A sinker for fish-lines, having at intervals of its length means extending around the fish-line and holding the same to itself without preventing independent longitudinal movement thereof, said fish-line having leaders and hooks between said holding means, substantially as set forth.

2. The combination with a fish-line having leaders and hooks thereon, of a sinker engaging said line between the leaders and holding said line normally in line with the sinker without preventing independent longitudinal movement, substantially as set forth.

3. A sinker for fish-lines adapted to loosely surround alternate portions of the line and expose the intermediate portions, whereby the said line is held closely adjacent to the sinker, but limited independent movement is permitted, substantially as set forth.

4. A sinker for fish-lines which engages alternate points on the line and leaves intermediate parts exposed and capable of being drawn outwardly away from the sinker, substantially as set forth.

5. The herein-described sinker for fish-lines, comprising a long body portion adapted to loosely grasp the line at intervals and being free from said line at intermediate portions and permitting limited independent movement of the line and sinker, substantially as set forth.

6. A sinker for fish-lines comprising a tube having independent openings along its side through which a fish-line may be threaded, substantially as set forth.

7. The combination of a tubular sinker having openings along its side, a fish-line threaded through said sinker, leaders attached to the exposed portions of said lines, and hooks on said leaders, substantially as set forth.

8. The combination with a fish-line, of a tubular sinker up-curved at one end and having means at the other for fastening the line, said sinker having openings along its side and the fish-line being threaded through said tubular sinker and having leaders projecting from its exposed portions, substantially as set forth

9. The combination of a tubular sinker having openings along its side, a fish-line threaded through said sinker and having alternate exposed portions, rings or eyes attached to said exposed portions and leaders fastened to said rings, substantially as set forth.

10. The combination of a tubular sinker having openings at its sides, a fish-line threaded through said sinker and having alternate exposed portions and being longitudinally movable in said sinker, and leaders fastened to said exposed portions near one end thereof, substantially as set forth.

653,021. MOORING-LINE ATTACHMENT. CHARLES S. HAMILTON, New Haven, Conn. Filed Apr. 25, 1900. Serial No. 14,306. (No model.)

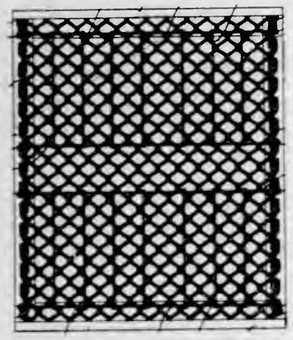


Claim.—1. A mooring-line attachment, comprising a shank, recessed body and nose, a tongue pivoted to the body and adapted to engage with the onter end of the nose, a bar or bearing between the sides of the body at the back, a sleeve on said shank and formed with an arm extending into engagement with the tongue, a handle secured to the onter end of the shank, a loop connecting the handle and sleeve and coupled with a mooring-line, and a lanyard also secured to the said sleeve and extending over the bearing in the body of the hook and into connection with the said mooring-line, substantially as described.

2. A mooring-line attachment, comprising an angular shank, recessed body and nose, a tongue pivoted to said body and extending

into engagement with the outer end of the nose, said tongue being formed with a slot, a bar or roller bearing between the sides of the body at the back, a sleeve on said shank and having an arm extending upward into engagement with the slot in the tongue said sleeve formed at its rear edge with two holes, a handle secured to the outer end of the shank, and provided with a passage, a loop connecting the handle and sleeve and connected to a mooring-line, and a lanyard also secured to the said sleeve and extending over the bearing in the body of the hook and into connection with the said mooring-line, substantially as described.

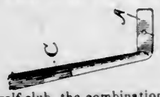
653,022. WIRE MATTRESS. CARL O. HASSELBARTH, Albany, N. Y. Filed Apr. 23, 1900. Serial No. 13,889. (No model.)



Claim.—1. As an article of manufacture, a woven-wire mattress having plain, straight wires extending longitudinally through the coil of wires forming the sides of the mattress; two or more plain, straight wires extending crosswise through the wire loops forming said mattress and attached to the longitudinal wires, and other plain, straight wires connecting said cross-wires, substantially as described and for the purposes set forth.

2. The combination with a spring-mattress suspended from the ends of a frame; of the plain, straight wires extending longitudinally through the coils of the wires forming the sides of the mattress; and four or more plain, straight wires extending crosswise of said mattress through the loops of woven wire and attached rigidly to said longitudinal wires, together with a series of plain, straight wires connecting the cross-wires, substantially as described and for the purposes set forth.

653,023. GOLF-CLUB. LIBERTY D. HOLDEN, Cleveland, Ohio. Filed Oct. 18, 1898. Serial No. 693,870. (No model.)



Claim.—1. In a golf-club, the combination of the head, and a shaft secured to and projecting upward from one end of said head, with a straight direction-rod secured to the rear side of said head about midway between its ends, and projecting rearward therefrom, which rod, when the club is in its usual position lies in a vertical plane at substantially right angles to the plane of the face of the head, substantially as specified.

2. In a golf-club, the combination of a head, and a shaft-socket which is integral with one end of said head, with a straight, slim direction-rod which is removably secured to the rear side of said head about midway between its ends and which projects rearwardly from said head, and when the club is in its usual operating position lies in a vertical plane at substantially right angles to the plane of the face of the head, substantially as specified.

3. In a golf-club, the combination of the head and a straight direction-rod which is screwed into a threaded hole in the rear side of said club, from which it projects rearwardly, and lies, when the club is in the usual operative position, in a position at substantially right angles to the plane of the face of the head, substantially as specified.

653,024. PROCESS OF ORNAMENTING HOLLOW WARE. WILLIAM H. KING, Newark, N. J. Filed Feb. 10, 1900. Serial No. 4,723. (No specimens.)

Claim.—1. The process of ornamenting ware in open-work metal, which consists in applying a continuous or unbroken deposit of metal to the surface of the article, then applying a design in color or material which can easily be removed, then applying a groundwork in resisting material which will not be removed by the means employed for removing the design, then removing the design-color and subjecting the uncovered metal to the depositing-bath and adding to the first deposit and cutting or engraving the edges of the final deposit and simultaneously cutting away the thin background metal, substantially as set forth.



2. The process of ornamenting ware in open-work metal which consists in applying to said ware, a continuous or solid electrodeposit of metal comprising a heavy design and thinner background between or at the sides of the parts of the deposit forming said heavy design and cutting away the thin background in the act of engraving and finishing the heavy-design metal, substantially as set forth.

3. The process of ornamenting hollow ware, which consists in electrodepositing a continuous coating of metal over the surface of the hollow ware, parts of said coating being extremely thin, and other parts being made thick, and removing said thin parts of the coating to form an ornamental network of protecting metal about the said ware, substantially as set forth.

653,025. GATE. PETER LAHR, Prescott, Iowa. Filed Mar. 28, 1900. Serial No. 10,531. (No model.)



Claim.—1. The combination of a tilting gate, an oscillating frame or lever fulcrumed in rear of the gate and extending over the same when the gate is closed and connected with the said gate, a latch carried by the gate and connected with the oscillating frame or lever, and operating mechanism for oscillating the frame or the lever to actuate the gate and to disengage the latch, substantially as described.

2. The combination of a tilting gate, an oscillating frame or lever fulcrumed between its ends in rear of the gate and extending over the latter when the same is closed, a counterbalancing-weight connected with the rear portion of the frame or lever, a latch mounted on the gate, operating mechanism for swinging the frame or lever, and means for connecting the latter with the gate and with the latch, substantially as described.

3. The combination of a tilting gate, an oscillating frame or lever fulcrumed between its ends in rear of the gate and extending over the latter when the same is closed, connections between the gate and the frame or lever, a cushioning device connected with the frame or lever and being under tension when the gate is open and closed, and means for operating the oscillating frame or lever, substantially as described.

4. The combination of a tilting gate, an oscillating frame or lever fulcrumed between its ends and connected with the gate, a weight connected with the rear portion of the lever for partially counterbalancing the gate, a cushioning device connected with the frame or lever and being under tension when the gate is open and closed, and operating mechanism for oscillatting the frame or lever, substantially as described.

5. The combination of a tilting gate, an oscillating frame or lever connected with the gate, operating mechanism for oscillating the frame or lever, and a cushioning device connected with the frame or lever and being under tension when the gate is open and closed, said cushioning device comprising a compressible spring, and an adjusting device for regulating the tension of the spring, substantially as as described.

6. The combination of a tilting gate, an oscillating frame or lever connected with the same, a cushioning-spring, an adjusting device engaging the spring for regulating the tension of the same, a pulley mounted on a suitable support, and a flexible connection arranged or the pulley and extending from the adjusting device to the frame or lever, substantially as described.

7. The combination of a tilting gate, a support, an oscillating frame or lever fulcrumed on the support and connected with the gate, a cushioning-spring mounted upon the support above the lever or frame, a vertically-movable adjusting device guided on the support and engaging the spring, and means for connecting the adjusting device with the lever, substantially as described.

8. The combination of a tilting gate, a support, a frame or lever fulcrumed on the support and connected with the gate, a compressible spring mounted on the support above the lever and connected with the same and being under tension when the gate is open and closed, and operating mechanism for oscillating the lever, substantially as described.

9. The combination of a tilting gate, a support, a lever fulcrumed on the support and connected with the gate, a pair of compressible springs mounted on the support and located above the lever, a yoke adjustably connected with the springs, a pulley mounted on the support above the lever, and a flexible connection extending from the yoke to the lever and passing beneath the pulley, substantially as described.

10. The combination of a tilting gate, a support, a lever fulcrumed on the support and connected with the gate, a compressible spring mounted upon the support above the lever, a vertically-movable yoke guided on the support and connected with the spring, and means for connecting the yoke with the lever, substantially as described.

11. The combination of a tilting gate, a support, a lever fulcrumed on the support and connected with the gate, means for oscillating the lever, a pair of elliptic springs arranged one upon the other and mounted upon the support above the lever, a yoke guided on the support and receiving the springs between its sides and connected with the upper spring, and means for connecting the yoke with the lever, substantially as described.

12. The combination of a tilting gate, a support, a forked lever fulcrumed on the support and arranged to receive the gate between its sides, connections between the lever and the gate, a cushioning device connected with the lever and being under tension when the gate is open and closed, and means for operating the lever, substantially as described.

13. The combination of a tilting gate, a support located in rear of the gate, a forked lever fulcrumed on the support and extending over the gate when the latter is closed, and adapted to receive the gate when the same is open, connections between the gate and the lever, a cushioning device mounted upon the support at a point above the lever, a substantially V-shaped connecting-piece having its sides connected with the sides of the forked lever, and connections between the V-shaped connecting-piece and the cushioning device, substantially as described.

14. The combination of a tilting gate, a latch mounted on the tilting gate, an oscillating lever fulcrumed on a suitable support and connected with the gate, a bell-crank lever mounted on the oscillating lever and having one of its arms connected with the latch, a spring connected with the other arm of the bell-crank lever, and operating mechanism connected with the bell-crank lever, substantially as described.

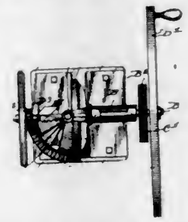
15. The combination of a tilting gate, a latch mounted on the tilting gate, front and rear latch-levers fulcrumed on the gate and connected with each other, the front latch-lever being also connected with the latch, an oscillating frame or lever fulcrumed in rear of the gate and extending over the said gate when the latter is closed and connected with the same, operating mechanism, and a lever fulcrumed on the oscillating frame or lever and connected with the operating mechanism and with the rear latch-lever of the gate, substantially as described.

16. The combination of a tilting gate, a forked lever fulcrumed in rear of the gate and connected with the same, a latch mounted on the gate, the side bell-crank levers mounted on the forked lever, the side L-shaped levers mounted on the forked lever in advance of the bell-crank levers, connections between the bell-crank levers and the L-shaped levers, operating mechanism connected with the bell-crank levers, and a connection extending from the latch and slidably connected with the L-shaped levers, substantially as described.

17. The combination of a tilting gate provided with a latch, a rear latch-lever fulcrumed on the gate and connected with the latch, a forked lever fulcrumed in rear of the gate and connected with the same, a lever 19 mounted on the forked lever, a connection extending from the rear latch-lever, and slidably connected with the lever 19, and operating mechanism connected with the lever 19 and with the forked lever, substantially as described.

18. The combination of a tilting gate, a forked lever fulcrumed in rear of the gate and connected with the same, a latch mounted on the gate, bell-crank levers arranged at opposite sides of the forked levers, links depending from the bell-crank levers, springs mounted on the forked lever and connected with the links, connections between the bell-crank levers and the latch, and operating mechanism connected with the bell-crank levers, substantially as described.

653,026. ROTARY CUTTER. CHARLES S. LOCKE, Joliet, Ill., assignor to Horace Humphrey, Horace Fred Humphrey, and Harry B. Humphrey, same place. Filed Sept. 2, 1899. Serial No. 729,309. (No model.)



Claim.—1. In a cutting-machine, in combination, a receptacle having an open upper end and two open sides, the walls of which receptacle are curved, and taper toward the bottom; a rotatable cutter-head adapted to close one of said open sides of the receptacle; cutting-knives for said cutter-head; said receptacle being located to one side of the rotatable center of said cutter-head; a follower in the receptacle, which follower is pivotally mounted to have a movement concentric with the curved circumference of the upper edge of the receptacle; and means for moving the follower to feed the substance to be cut into contact with the cutting-knives.

2. In a cutting-machine, in combination, a receptacle shaped substantially like a quarter-section of a bowl; a rotatable cutter-head adapted to close one of the open sides of the receptacle; cutting-knives for said cutter-head; a follower in the receptacle, which follower is pivotally mounted to have a movement concentric with the curved circumference of the upper edge of the receptacle; and means for moving the follower to feed the substance to be cut into contact with the cutting-knives.

3. In a cutting-machine, in combination, a receptacle shaped substantially like a quarter-section of a bowl; a rotatable cutter-head adapted to close one of the open sides of the receptacle; cutting-knives for said cutter-head; said receptacle being located to one side of the rotatable center of said cutter-head; a follower in the receptacle, which follower is pivotally mounted to have a movement concentric with the curved circumference of the upper edge of the receptacle; and a rack and pinion for moving the follower to feed the substance to be cut into contact with the cutting-knives.

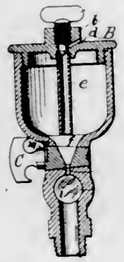
4. In a cutting-machine, in combination, a receptacle having an open upper end and two open sides, also having a curved side wall tapering toward the bottom of said receptacle; a rotatable cutter-head adapted to close one of the open sides of the receptacle; said receptacle being located to one side of the rotatable center of said cutter-head; cutting-knives for said cutter-head; a vertically-pivoted follower in the receptacle, which follower is pivotally mounted to have a movement concentric with the curved circumference of the upper edge of the receptacle; a curved rack secured to the upper edge of said receptacle; a pinion pivotally mounted on said follower, for engaging said curved rack; and a hand-wheel rigidly connected to said pinion for moving the follower to feed the substance to be cut into contact with the cutting-knives.

5. In a cutting-machine, in combination, a cutter-head; a cutting-knife fixed thereon; an open receptacle; a pivoted follower in said receptacle; a stud on said follower; a pinion rotatably mounted on said stud; a curved rack fixed concentric with relation to the axis upon which the follower moves; and a hand-wheel for rotating said pinion.

6. In a cutting-machine, in combination, a cutter-head; a cutting-knife fixed thereon; an open receptacle; a pivoted follower for closing one side of said receptacle; a stud on said follower; a curved rack concentric with the pivotal bearing of the follower; a pinion rotatably mounted on said stud, adapted to engage said rack; and a hand-wheel for rotating said pinion.

7. In a cutting-machine, in combination, a main shaft; a drive-wheel on said shaft; a cutter-shaft; a cutter-head on the cutter-shaft; a cutting-knife on the cutter-head; an open receptacle, one of the sides of which is closed by the cutter-head; a pivoted follower for closing one side of said receptacle; a stud on said follower; a curved rack concentric with the pivotal bearing of the follower; a pinion rotatably mounted on said stud, adapted to engage said rack; and a hand-wheel for rotating said pinion.

653,027. GRAPHITE LUBRICATOR. EDMUND H. LUNKEN, Denver, Colo., and HENRY RITTER, Delhi, Ohio, assignors to the Lunkenheimer Company, Cincinnati, Ohio. Filed Nov. 20, 1899. Serial No. 737,816. (No model.)



Claim.—1. In a lubricator, the combination of a cup for the lubricant having a funnel-shaped discharge end, a tube passing down through the cup and opening into the funnel-shaped discharge end, a cover or cap for the cup having an orifice therethrough into said tube and a cock in the cover for regulating the size of said orifice, substantially as described.

2. In a lubricator, the combination of a cup for the lubricant having a funnel-shaped discharge end, a regulating-cock therein for the discharge of the lubricant, a sight-feed aperture below said regulating-cock, a tube passing down through the cup and opening into the funnel-shaped discharge end, a cover or cap for the cup having an orifice therethrough into said tube and a cock in the cover for regulating the size of said orifice, substantially as described.

653,028. DISAPPEARING-GUN CARRIAGE. SAMUEL M. MANSFIELD, U. S. Army, and FRANK S. MASON, Malden, Mass. Filed June 26, 1897. Serial No. 642,468. (No model.)

Claim.—1. A gun-carriage of the character specified, comprising two tracks of different gage, means for varying the relative positions of said tracks, and a gun truck or cradle engaged with both tracks.

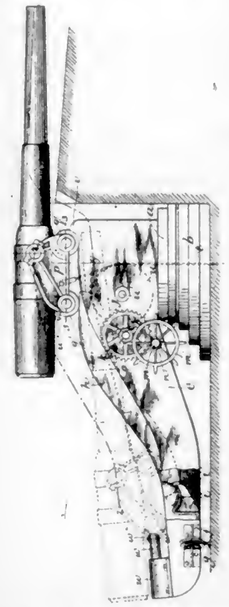
2. A gun-carriage of the character specified, comprising two tracks of different gage, means for vertically adjusting one of said tracks, and a gun truck or cradle engaged with both tracks.

3. A gun-carriage of the character specified, comprising a main chassis constituting a track, an adjustable supplemental chassis constituting another track, means for adjusting the supplemental chassis, and a gun truck or cradle engaged with both tracks.

4. A gun-carriage of the character specified, comprising a main chassis constituting a track, a supplemental chassis constituting another track, a hinge or pivotal connection between the main and the supplemental chassis, means for swinging the supplemental chassis in a vertical plane, and a gun truck or cradle engaged with both tracks.

5. A gun-carriage of the character specified, comprising a main chassis having the profiles of its side pieces formed to present alternating salient and reëntrant curves, constituting a track, a supplemental chassis having the profiles of its side pieces formed to present alternating salient and reëntrant curves and constituting another track, and a gun truck or cradle engaged with both tracks.

6. A gun-carriage of the character specified, comprising tracks having salient and reëntrant curves, and a gun truck or carriage engaged with said tracks.



7. A gun-carriage of the character specified, comprising tracks having elevated salient curves, depressed reëntrant curves, and rear inclines extending from the reëntrant curves, and a gun truck or cradle engaged with said tracks.

8. A gun-carriage of the character specified, comprising tracks having elevated salient curves, depressed reëntrant curves, and rear inclines extending from the reëntrant curves, a gun truck or cradle engaged with said tracks, and a recoil-check arranged to permit the gun to overrun its loading position during recoil.

9. In a disappearing-gun carriage, the combination of a gun truck or cradle, a gun immovably affixed to said truck, track rails or members engaged with said truck, two pulleys arranged to permit the depression of the gun-barrel to a point between the pulleys, and a counterbalance connected with the truck by cords passing over said pulleys.

10. In a disappearing-gun carriage, the combination of a gun truck or cradle having two sets of wheels, a gun immovably affixed to said truck, and two tracks of different gage engaged with said wheels, one or both of said tracks being adjustable to determine the angle of fire of the gun.

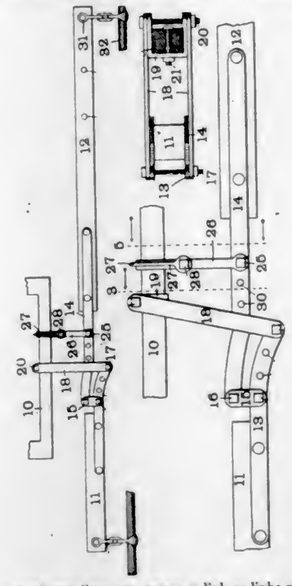
11. The combination of a gun, a truck or cradle in which the gun is fixed, said truck having two pairs of wheels adapted to tracks of different gage, a broad-gage track engaged with one pair of wheels, a narrow-gage track engaged with the other pair of wheels, and means for adjusting one of said tracks to vary the inclination of the truck and gun.

653,029. DRAFT-EQUALIZER. HENRY F. MIEHER, CHARLES MIEHER, and GUSTAVUS H. MIEHER, Carlinville, Ill. Filed June 22, 1899. Serial No. 721,409. (No model.)

Claim.—1. In a draft-equalizer, two beams pivotally connected together, a connection between one of said beams and the object to which the power is to be applied for exerting a thrust on said object, a connection between the other of said beams and said object for exerting a pull thereon, and means for adjusting said connections at an angle to each other without varying the relative length of the lever-arms of said beams.

2. In a draft-equalizer, two beams, the end of one of said beams being pivotally connected to a point intermediate of the length of the other beam, a connection between said latter beam and the object to which the power is to be applied for exerting a thrust on said object, a connection between the other of said beams and said object for exertiing a pull thereon, and means for adjusting said connections at an angle to each other without varying the relative length of the lever-arms of said beams.

3. In a draft-equalizer, two beams, the end of one of said beams being pivotally connected to a point intermediate of the length of the other of said beams, a connection between said latter beam and the object to which the power is to be applied, a connection between the other of said beams and said object, means for adjusting the distance between the point of attachment of said beams and the point of attachment of said first-named connection to its beam, and independent means for adjusting said connections at an angle to each other.

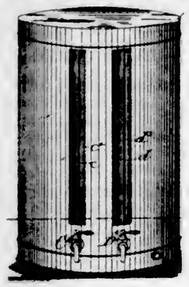


4. In a draft-equalizer, two beams, a link or links pivotally connecting the end of one of said beams to a point intermediate the length of the other of said beams, a connection between said latter beam and the object to which the power is to be applied for exerting a thrust on said object, and a connection between the other of said beams and said object for exerting a pull thereon.

5. In a draft-equalizer, two beams, the end of one of said beams being pivotally connected to a point intermediate of the length of the other of said beams, said latter beam being provided with a forwardly-projecting end, a connection between said forwardly-projecting end and the object to which the power is to be applied, and a connection between said other beam and said object, said connections being adapted to be arranged at an angle to each other.

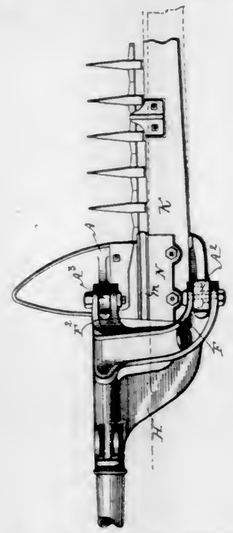
6. In a draft-equalizer, two beams, a link or links connecting the end of one of said beams to a point intermediate of the length of the other of said beams, said latter beam being provided with a forwardly-projecting end, a connection between said forwardly-projecting end and the object to which the power is to be applied, a connection between the other beam and said object, and means for adjusting said connections at an angle to each other without varying the relative length of the lever-arms of said beams.

653,030. MEASURING-TANK. PETER MÜLLECKER, New York, N. Y. Filed Mar. 2, 1900. Serial No. 7,064. (No model.)



Claim.—A measuring-tank, comprising a tank provided with vertical depressions, a partition-wall in said tank dividing the same into two compartments having bottoms at the same level, discharge-cocks for said compartments arranged at a level with each other respectively below said depressions, graduated gage-glasses, one for each compartment, arranged at a level with each other, in said depressions, and a cock located below the level of the discharge-cocks for permitting and shutting off a flow of liquid from one compartment to the other, substantially as set forth.

653,031. DEVICE FOR ADJUSTING FINGER-BARS. WILLIAM D. MYERS, Humboldt, Iowa. Filed Mar. 9, 1900. Serial No. 7,985. (No model.)



Claim.—1. In a reaper and mower, a shoe having integral lugs for pivotally connecting it with a coupling-frame for hinging a finger-bar to the machine and one of the lugs on the shoe provided with an adjustable bearing for a pivotal bolt to operate in the manner set forth for the purposes stated.

2. The shoe A having lugs A^1 and A^2, a recess B in one of the lugs an opening C and slots J intersecting the recess and a block or pivot-bearing B^2 having an extension *d* fitted in said recess and intersecting openings and clamping-screws extended through the pivot-bearing and the slots in the lug on the shoe, as shown and described for the purposes stated.

3. In a reaper or mower the combination of a shoe having integral lugs or pivot-bearings, an adjustable block or bearing for a bolt or pivot fitted in a recess in one of said lugs, a finger-bar fixed to the shoe and a coupling-frame having bifurcated ends to admit the lugs on the shoe, to operate in the manner set forth for the purposes stated.

653,032. GRAIN-DRIER. JAMES MCDANIEL, Minneapolis, Minn. Filed Feb. 3, 1900. Serial No. 3,774. (No model.)

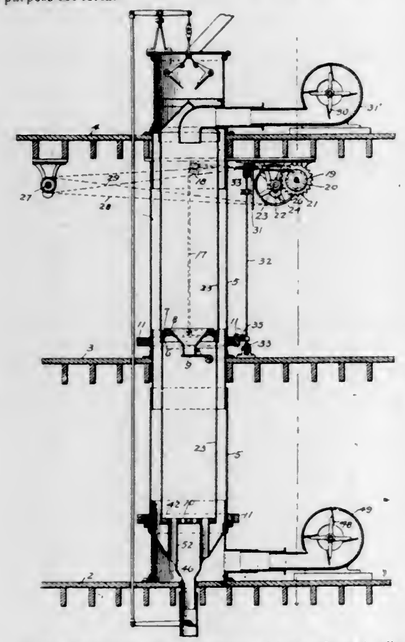
Claim.—1. In a grain-drier, the combination, with an upright perforated cylinder and means for forcing air into the opposite ends of said cylinder, of a transverse partition within said cylinder dividing the same into an upper and lower compartment, a hopper arranged in said partition, and a valve in said hopper arranged to open automatically upon the accumulation of material in the hopper, for the purpose set forth.

2. In a grain-drier, a perforated cylinder divided into two compartments by a hopper provided with a suitable valve adapted to open automatically upon the accumulation of a certain predetermined weight of material, for the purpose set forth.

3. In a grain-drier, the combination, with the outer perforated cylinder 5, of the inner perforated cylinder divided into two compartments by a transverse partition, provided with a suitable hopper having a balanced valve, for the purpose set forth.

4. In a grain-drier, the combination, with the upright perforated cylinder having a bottom or lower head provided with a series of openings, of a hopper arranged in said cylinder and forming a trans-

verse partition therein, and a suitable valve closing the bottom of said hopper and adapted to open automatically upon the accumulation of a certain predetermined weight of material in the hopper, for the purpose set forth.



5. In a grain-drier, the combination, with a perforated cylinder, of a ring-brush surrounding said cylinder, and means for reciprocating said brush longitudinally of said cylinder, for the purpose set forth.

6. In a grain-drier, the combination, with a perforated cylinder, of an adjustable ring-brush surrounding said cylinder and means for reciprocating said brush longitudinally of said cylinder, for the purpose set forth.

7. In a grain-drier, the combination, with a perforated cylinder, of a brush surrounding said cylinder and consisting of a series of overlapping sections, and means for adjustably securing said sections together, for the purpose set forth.

8. In a grain-drier, the combination, with the perforated cylinder extending above and below the floor 3, of the ring-brushes surrounding both sections of said cylinder, means connecting said brushes, and means for reciprocating said brushes, for the purpose set forth.

9. The combination, with the perforated cylinder and the reciprocating brush surrounding said cylinder, of the belt-shifter provided with the spring-actuated auxiliary shifting-rod, for the purpose set forth.

653,033. WIRE SLEEVE OR CONNECTOR. CHARLES H. MCINTIRE, Newark, N. J. Filed Mar. 16, 1900. Serial No. 3,896. (No model.)

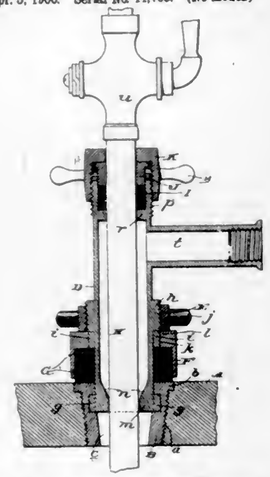


Claim.—1. A sleeve or connector for electrical conductors, consisting of a tube or sleeve substantially circular in cross-section and having its end portions beveled, and provided with a longitudinal slit extending through the entire length of the sleeve or tube, and also provided with an enlarged opening or slot, substantially as and for the purposes described.

2. A joint or connector for electrical conductors, consisting of a tube or sleeve, substantially circular in cross-section and having its end portions beveled, and provided with a longitudinal slit extending through its entire length, and also provided at or near its central portion with a slot or opening for the reception of soldering material, substantially as and for the purposes described.

3. A joint or connector for electrical conductors, consisting of a sleeve or tube substantially circular in cross-section and having its end portions beveled and provided with a longitudinal slit extending through its entire length, and also provided at or near its central portion with an elongated slot adjacent to and communicating with the longitudinal slit, substantially as shown and described.

653,034. TAPPING DEVICE. HENRY NADORFF, Louisville, Ky. Filed Apr. 5, 1900. Serial No. 11,703. (No model.)



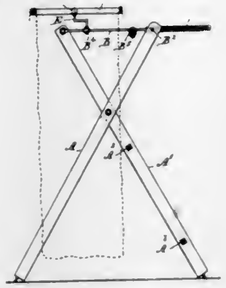
Claim.—1. In a tapping device, the combination with a bushing adapted to be fixed in the bung-hole of a barrel and hold a bung; said bushing having an inwardly-directed flange provided in its inner edge with one or more grooves; of a sleeve-section having one or more lugs *g* at its inner end adapted to engage the flange of the bushing, and also having exterior threads at an intermediate point of its length, and one or more lugs *i* between said threads and its inner end, one or more packing-rings surrounding the sleeve-section between the lugs *i* and *g*, the circular housing surrounding the packing-rings and sleeve-section and having the inwardly-directed flange at its outer end provided in its inner edge with one or more grooves receiving the lug or lugs *i* of the sleeve-section, and an interiorly-threaded ring or annulus surrounding the exteriorly-threaded portion of the sleeve-section and bearing on the outer end of the housing, substantially as specified.

2. In a tapping device, the combination of a bushing adapted to be fixed in the bung-hole of a barrel and hold a bung; said bushing having an inwardly-directed flange provided in its inner edge with grooves, a sleeve-section having lugs *g* at its inner end adapted to engage the flange of the bushing, exterior threads at an intermediate point of its length, and lugs *i* between said threads and its inner end, and also having exterior threads at its outer end and an apertured diaphragm adjacent to said outer end, one or more packing-rings surrounding the sleeve-section between the lugs *i* and *g*, the circular housing surrounding the packing-rings and sleeve-section and having its inwardly-directed flange at its outer end provided in its inner edge with grooves receiving the lugs *i* of the sleeve-section, an interiorly-threaded ring or annulus surrounding the exteriorly-threaded intermediate portion of the sleeve-section and bearing on the outer end of the housing, a draft-tube extending through the apertured diaphragm of the sleeve-section, a packing-ring of compressible material arranged in said diaphragm and surrounding the draft-tube, an annulus J surrounding the draft-tube above the packing-ring, and an interiorly-threaded cap-nut screwed on the outer end of the sleeve-section and having an aperture receiving the draft-tube, substantially as specified.

653,035. BAG-HOLDER. EDWARD NOBLE, Oso Station, Canada. Filed Mar. 23, 1900. Serial No. 9,853. (No model.)

Claim.—1. A bag-holder comprising a supporting-frame consisting of two pairs of crossed legs pivoted at their intersections, and adjustable in height to the length of a bag, a supporting-rod connected to each pair of legs near the top to permit said legs to close together, and a compressible spring bag-retaining ring connected to said rods by crank-arms pivoted thereto, said arms yielding by a swinging motion to permit the circumference of said ring to be reduced by external manual pressure and by resiliency expand the mouth of the bag, as set forth.

2. In a bag-holder, the combination with a supporting-frame consisting of two pairs of crossed legs, of horizontal supporting-rods connecting the upper part of each pair of legs, crank-arms pivotally connected to said rods, and a spring bag-retaining ring pivotally connected to said arms diametrically, said arms swinging to permit the circumference of the ring to be reduced by external pressure, as set forth.



3. In a bag-holder, the combination of a supporting-frame comprising two pairs of crossed legs pivoted at their intersections to allow of elevation and depression to suit the length of a bag, supporting-rods bearing on said each pair of legs above the intersections, and a spring bag-retaining ring connected to said rods by crank-arms hinged thereto to swing when the circumference of the ring is reduced by external pressure, as set forth.

4. In a bag-holder, the combination with a supporting stand or frame, of parallel supporting-rods and a spring bag-retaining ring connected to said rods by crank-arms pivoted thereto, as and for the purpose set forth.

653,036. SHAFT-TUG. JAMES O'CONNELL, Mount Sterling, Ky., assignor of one-half to Thomas Heinrich, same place. Filed Mar. 31, 1900. Serial No. 10,935. (No model.)



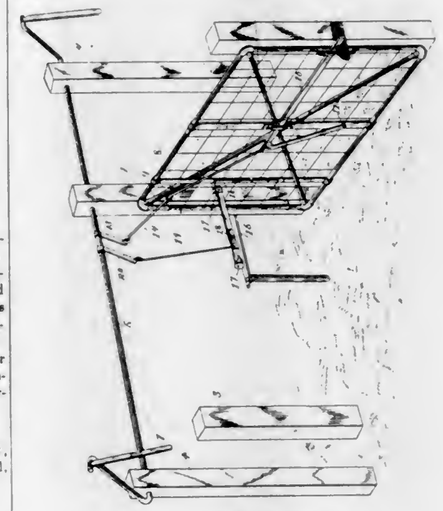
Claim.—1. A shaft-tug, comprising a shank having a shaft-bearing on its lower end, a spring-pressed tongue pivoted on the shank and having a cross-piece extending from one member of the bearing to and through the other, and means carried by the members of the bearing for engaging the tongue at the cross-piece and holding the tongue against upward movement when pressure is exerted thereupon by the shaft, and to relieve the pivot of the tongue of undue strain, substantially as shown and described.

2. A shaft-tug, comprising a shank having an approximately-oval shaft-bearing, lugs on the back of the shank on opposite sides of an opening in the rear member of the bearing, and a spring-pressed tongue pivoted on the upper end of the shank, and formed at its lower end with a cross-piece extending from one member of the bearing through said opening, to engage with its rear, free end the said lugs, as set forth.

3. A shaft-tug, comprising a shank having an approximately-oval shaft-bearing, lugs on the back of the shank on opposite sides of an opening in the rear member of the bearing, a spring-pressed tongue pivoted on the upper end of the shank, and formed at its lower end with a cross-piece extending from one member of the bearing through said opening, to engage with its rear, free end the said lugs, and a lug on the front member of the bearing for engaging the forward, lower end of said tongue, substantially as shown and described.

653,037. GATE. DAVID PETERS, Homer, Ill. Filed Jan. 11, 1900. Serial No. 1,118. (No model.)

Claim.—The combination with the hinge-post and rock-shaft posts, of a rock-shaft journaled in said posts and provided with operating-handles, a gate hinged to the hinge-post and provided with a latch, arms fixed to the rock-shaft, a suitable support, clips pivoted to the gate and said support to turn upon vertical axes, a jointed link the free ends of the sections of which are pivoted by transverse pins to said clips, and rods, one of which connects one of the arms of the rock-shaft to one section of the jointed link and the other of which connects the other arm of the rock-shaft to the latch, substantially as set forth.



653,038. INCANDESCENT ELECTRIC LAMP. JOSEF PLECHATI, Berlin, Germany. Filed Nov. 13, 1899. Serial No. 736,757. (No model.)



Claim.—1. In an incandescent electric lamp, a socket, a lamp-bulb having a contracted portion or neck, points or teats projecting from said neck, and a helical spring interposed between and in frictional contact with the socket and lamp-bulb, said points or teats entering between the convolutions of said spring and preventing the turning of the lamp relatively thereto, substantially as set forth.

2. In an incandescent electric lamp, a socket, a lamp-bulb having a contracted portion or neck, a layer of heat-insulating material applied to the contracted portion or neck of the bulb, and a helical spring interposed between and in frictional contact with the socket and said heat-insulating layer, substantially as set forth.

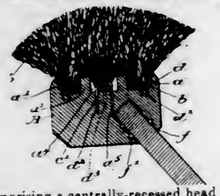
3. In an incandescent electric lamp, a socket, a lamp-bulb having a contracted portion or neck, a friction-layer applied to the contracted portion or neck of the bulb, and a helical spring interposed between and in frictional contact with the socket and said friction-layer, substantially as set forth.

4. In an incandescent electric lamp, a socket, a lamp-bulb having a contracted portion or neck, points or teats projecting from said neck, a perforated friction-layer applied to the contracted neck or bulb, and a helical spring interposed between and in frictional contact with the socket and said friction-layer, said points or teats passing through the perforations of said friction-layer and entering between the convolutions of said spring, substantially as set forth.

653,039. BRUSH. GRANVILLE ROWELL, Auburn, Me. Filed Jan. 22, 1900. Serial No. 2,269. (No model.)

Claim.—1. A brush comprising a centrally-recessed head provided with an annular groove in its face having a straight inner and flaring outer wall, series of doubled tufts of fibers inserted in the groove throughout its length and flared by the outer wall thereof, a binder extended through the bights of said tufts, means to fasten the

binder in the groove, and a central doubled tuft of filling fibers forced into the central recess and secured therein, substantially as described.

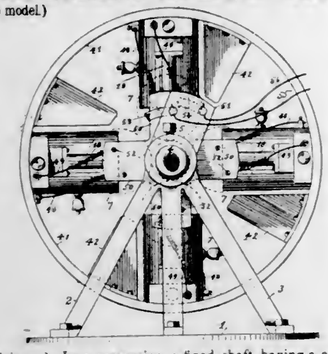


2. A brush comprising a centrally-recessed head provided with an annular groove in its face having a straight inner and flaring outer wall, series of doubled tufts of fibers inserted in the groove throughout its length and flared by the outer wall thereof, a wire binder extended through the bights of the said tufts, staple-like fasteners straddling said binder and driven into the bottom of the groove, a filling-tuft of doubled fibers butted into the central recess of the head, and crossed staple fasteners through the bight of the tufts and driven into the head, substantsally as described.

3. A brush comprising a head provided with a groove near its edge having a straight inner and a flaring outer wall, series of doubled tufts of fibers inserted in the groove throughout its length and flared by the outer wall thereof, means to retain said tufts firmly in the groove, a filling-tuft of doubled fibers secured to the portion of the head within the groove, and means to retain the filling-tuft in place, substantially as described.

4. A brush comprising a head provided with a groove in its face having a straight inner and a flaring outer wall, series of doubled tufts of fibers butted into said groove and flared by the outer wall, a binder secured in the groove and extended through the bights of the tufts, and stiffening fibers bent around the butts of the tufts and held in place between them and the walls of the groove, substantially as described.

653,040. GAS-ENGINE. THOMAS B. ROYSE, San Miguel, Cal., assignor of one-half to Thomas J. Hennessey, same place, and Henry Heidland, San Francisco, Cal. Filed June 14, 1898. Serial No. 683,421 (No model.)



Claim.—1. In a gas-engine, a fixed shaft having a central passage, a revoluble drum, mounted loosely upon said fixed shaft, a fixed crank, a series of motive cylinders set radially in said drum and connected to said fixed crank, in the cheeks or sides of which are annular chambers communicating with the central passage in the crank-shaft and by other passages or side pipes with the outer ends of the motive cylinders, substantially as specified.

2. In a gas-engine, a fixed shaft, having axial inlet and outlet passages for the impelling and waste gases, a crank in the center of said shaft, a plurality of pistons linked to said crank, cylinders in which said pistons move, said cylinders mounted on bearings arranged to revolve around the fixed shaft at each side of the central crank therein, crank-plates on the said tubular shaft adjacent to said crank, having annular passages 15, 24 passages or ports extending from said axial passages radially out through the crank at each side and communicating with annular grooves 15, 24 in the crank-plates, and side pipes 18, 22 leading into the engine-cylinders, substantially as specified.

3. In a gas-engine, a main frame, a central fixed tubular crank-shaft held thereon, a central crank in said shaft, a plurality of pistons linked to said crank, a plurality of cylinders in which the said pistons move, side pipes 18, 22 forming passages for impelling and waste gases to and from the outer ends of the cylinders, crank-plates on said tubular crank-shaft adjacent to said crank, having annular passages 15, 24 therein, connecting said side pipes with the hollow of the tubular crank-shaft, exhaust ways or passages, a plurality of exhaust-valves, one for each cylinder, mounted therein and revolving therewith, oscillating levers 28 arranged to bear upon and open said exhaust-valves, gear-wheels mounted on and arranged to revolve with the said cylinders, and meshing into a pinion fixed on the crank-shaft, and cams 30 on these gear-wheels to engage and operate levers 28 and the exhaust-valves, substantially as specified.

4. In a gas-engine, a fixed crank-shaft, a central stationary crank in said shaft, a plurality of pistons linked to said crank, passages through the axis of said shaft for the admission and escape of impelling and waste gases, exhaust-valves to open and close said passages for waste gases, oscillating levers arranged to operate said valves, and weights 37 connected to said levers whereby at a predetermined speed the exhaust-valves will be held open and no charge of impelling gas be drawn in, substantially as and for the purposes specified.

5. In a gas-engine, the revoluble drum 6, multiple motive cylinders 7 mounted therein, outlet or exhaust valves 21 for each cylinder, and the oscillating levers 28 to open the same, a centrifugal weight 37 attached to and adapted to move the lever 28 and hold the exhaust-valves 21 open at some predetermined speed of the drum 6, whereby the charges of fuel are cut out or not drawn in, substantially as specified.

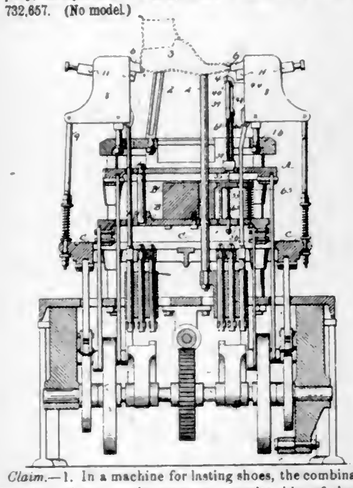
6. In a gas-engine, the rotating cylinders 7, automatic inlet-valves 19 and outlet or exhaust valves 21, the sliding centrifugal weights 37, stems 38 and springs 39 and 40, combined and operating substantially as and for the purposes specified.

653,041. PROCESS OF PURIFYING OILS OR FATS. HEINRICH SCHLINCK, Ludwigshafen, Germany. Filed Oct. 4, 1899. Serial No. 732,531. (No specimens.)

Claim.—1. The herein-described process of purifying vegetable and animal oils and fats, which consists in the following steps: first, saponifying the free fatty acids contained in the oil, second, separating the soap solution thereby formed from the oil, and lastly subjecting the acidless oil to the action of superheated steam for deodorizing the same, substantially as set forth.

2. The herein-described process of purifying vegetable and animal oils and fats, which consists in the following steps: first, saponifying the free fatty acids contained in the oil by a suitable alkali, second, separating the soap solution from the oil, third, subjecting the remaining oil to successive washing operations, and lastly, subjecting the so-washed acidless oil to the action of superheated steam, so as to remove the volatile ingredients contained in the same, substantially as set forth.

653,042. LASTING-MACHINE. WILLIAM SELLERS and JOHN S. BANCROFT, Philadelphia, Pa., assignors to the William Sellers & Company, Incorporated, of Pennsylvania. Filed Oct. 5, 1899. Serial No. 732,657. (No model.)



Claim.—1. In a machine for lasting shoes, the combination, with devices for acting upon the upper on opposite sides of the machine, of actuating mechanism for moving each of said devices inwardly toward the last, said mechanism being secured to the machine so as to be pivotally movable thereon and a bar connecting the actuating mechanisms on opposite sides adjacent to their pivotal connections, whereby when one of said devices contacts with the last further movement of its actuating mechanism will advance toward the last the device upon the opposite side.

2. In a machine for lasting shoes, the combination, with the pads for directly acting upon the upper on opposite sides of the machine, carriages upon the upper inner ends of which said pads are carried, said carriages being pivoted at their lower inner ends, mechanism connecting the carriages together and for swinging the carriages to advance said pads, and means for actuating said mechanism, whereby when the pads on one carriage are held from further inward movement said mechanism will be actuated to swing only the opposite carriage.

3. In a machine for lasting shoes, the combination with pads for directly acting upon the upper on opposite sides of the machine, swinging carriages upon which said pads are carried, a connection between said carriages whereby when the pads on one carriage are held from further inward movement the said carriage will swing and actuate said connection to advance the opposite carriage, and means for operating said carriages and connections.

4. In a machine for lasting shoes, the combination with pads for directly acting upon the upper on opposite sides of the machine, carriages upon the upper inner ends of which said pads are carried, links depending from the lower inner ends of said carriages, said links being pivoted on the machine, means connected to the outer ends of said carriages for swinging the same, and a bar connecting the links on opposite sides of the machine.

5. In a machine for lasting shoes, the combination with a frame for supporting the operating parts, a series of clamp-bars adapted to be brought into contact with the leather upon the last, a series of crimping-bars for turning certain portions of the depending leather inward, a series of folding-bars for carrying said leather inward against the insole carried by the last, mechanism for retracting said crimping-bars to permit the folding-bars to operate, and means for effecting said movements.

6. In a machine for lasting shoes, the combination with a frame for supporting the operating parts, a series of stretchers for drawing the leather downward, a series of clamps adapted to be brought into contact with the leather upon the last, a series of crimping-bars for turning certain portions of the depending leather inward, a series of folders for carrying said leather inward against the insole carried by the last, mechanism for retracting said crimpers to permit the folders to operate, and means for effecting said movements.

7. In a machine for lasting shoes, the combination with a frame for supporting the operating parts, of guides in the frame, a series of crimping-bars slidable in said guides, a lever engaging each of said crimping-bars, a spring-pressed rod for actuating said lever to move said bar inwardly to turn a certain portion of the depending leather inwardly, a second lever connected with the first-named lever, and means for actuating the second lever to return the first lever toward its initial position against the action of its spring-pressed actuating-rod, and retract said crimping-bars.

8. In a machine for lasting shoes, the combination with a frame for supporting the operating parts, of guides on the frame, a series of crimping-bars slidable on said guides, bell-cranks, each of which engages one of said crimping-bars, a spring-pressed rod for actuating said bell-crank to move said bar inwardly, a lever pivoted on said bell-crank and engaging the frame, a lever pivoted on the frame and engaging the first-named lever, and means for actuating the second lever.

9. In a machine for lasting shoes, a nipper comprising a jaw member, having a slot, a block in said jaw member of substantially the width of the slot, a second opposing bifurcated jaw member embracing the first-mentioned jaw member and provided with slots at an angle with the slot in the first-mentioned jaw member, blocks in the slots in the bifurcated jaw member, a movable rod carrying said blocks on a common axis.

10. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaw members pivoted thereto, each of said members having a slot, the slots in the two jaw members being at an angle with each other, and a rod engaging both of said slots and slidable upon the supporting-bar.

11. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaw members pivoted thereto, each of said members having a slot, one of said slots having straight faces, the other curved faces locking means on the supporting-bar adapted to engage one of said jaw members, and a rod engaging both of said slots and slidable upon the supporting-bar.

12. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaw members pivoted thereto, each of said members having a slot, one of said members having an inset, a block on said supporting-bar, a dog spring-connected with said block and adapted to engage said inset, and a rod engaging both of said slots and slidable upon said supporting-bar.

13. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaw members pivoted thereto, both of which are movable, slots on both of said jaw members, the slot on one jaw member being curved and the slot on the other jaw member being straight, a rod engaging said slots and a retarding device acting against the movement of the jaw having the straight slot, whereby the movement of the rod in one direction operates only the jaw with the curved slot until the rod reaches the end of the straight slot, thereby first closing the jaws and then swinging both jaw members simultaneously on their pivot.

14. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaw members pivoted thereto, both of which are movable, cams on both of said jaw members and a rod engaging said cams and adapted, when actuated to successively move one of said jaw members toward the other to close the jaws and then swing both members simultaneously on their pivots, in combination with a block slidable upon the supporting-bar, said rod being connected to said block, a tube connected to said supporting-bar, a rod connected to said block, and extending alongside of said tube, a block through which the last-named rod and the tube extend, springs surrounding said rod and tube, a movable table over which the last-named block rests, two horizontal plates rigidly connected together, a rod connected to the first-named block extending down through said tube and said horizontal plates, a fixed collar and a loose collar on the last-named rod between said horizontal plates, a spring surrounding the last-named rod between said collars, a second movable table, a bolt connecting it loosely with the upper horizontal plate, a spring surrounding said bolt, a manually-operated lever, and a rod connecting the lower horizontal plate with the manually-operated lever.

15. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaw members pivoted thereto, both of which are movable, cams on both of said jaw members and a rod engaging said cams and adapted when actuated to successively move one of said jaw members toward the other to close the jaws and then swing both members simultaneously on their pivots, in combination with a manually-operated lever, and a connection between the rod and the lever.

16. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaw members pivoted thereto, both of which are movable, cams on both of said jaw members and a rod engaging said cams and adapted when actuated to successively move one of said jaw members toward the other to close the jaws and then swing both members simultaneously on their pivots, in combination with a manually-operated lever, a connection between the rod and the lever, and automatic means for locking said lever.

17. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaw members pivoted thereto, both of which are movable, cams on both of said jaw members and a rod engaging said cams and adapted when actuated to successively move one of said jaw members toward the other to close the jaws and then swing both members simultaneously on their pivots, in combination with a manually-operated lever, a connection between the rod and the lever, automatic means for locking said lever, a cam in alinement with said locking means, and means for bringing said cam, at a predetermined point in the operation of the machine, into engagement with said locking means to move the same to unlock said lever.

18. In a machine for lasting shoes, a nipper comprising a supporting bar, two jaws pivoted thereto, and a rod connected with and adapted to close said jaws, a block slidable upon said supporting-bar, said rod being connected to said block, means for actuating said block to close said jaws and move said nipper bodily, and a spring against which said block is adapted to move.

19. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaws pivoted thereto, and a rod connected with and adapted to close said jaws, a block slidable upon said supporting-bar, said rod being connected to said block, means for actuating said block to close said jaws and move said nipper bodily, a block to which said supporting-bar is connected, and a spring against which the last-named block is adapted to move.

20. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaws pivoted thereto, and a rod connected with and adapted to close said jaws, a block slidable upon said supporting-bar, said rod being connected to said block, means for actuating said block to close said jaws and move said nipper bodily, a block to which said supporting-bar is connected and springs against which said blocks are adapted to move.

21. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaws pivoted thereto, and a rod connected with and adapted to close said jaws, a block slidable upon said supporting-bar, said rod being connected to said block, a second rod connected to said block, plates to which the second rod extends, a fixed collar thereon, a spring surrounding the second rod between said plates and bearing against said collar, and means for operating said plates whereby said spring is actuated to move the second rod, and through it the first rod to close said jaws and move said nipper bodily.

22. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaws pivoted thereto, and a rod connected with and adapted to close said jaws, a block slidable upon said supporting-bar, said bar being connected to said block, a second rod connected to said block, plates to which the second rod extends, a fixed collar thereon, a spring surrounding the second rod between said plates and bearing against said collar, a table spring-connected with said plates, means to move said plates, and means to move said table and through it the plates, whereby the second rod will be moved against the action of its spring.

23. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaws pivoted thereto, and a rod connected with and adapted to close said jaws, a block slidable upon said supporting-bar, said rod being connected to said block, a second rod connected to said block, a movable table, a connection between the movable table and the second rod, and springs interposed in said connection.

24. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaws pivoted thereto, and a rod connected with and adapted to close said jaws, a block slidable upon said supporting-bar, said rod being connected to said block, means for actuating said block to close said jaws and move said nipper bodily, a block to which said supporting-bar is connected and springs against which said blocks are adapted to move.

25. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaw members pivoted thereto, both of which are movable, cams on both of said jaw members and a rod engaging said cams and adapted, when actuated, to successively move one of said jaw members toward the other to close the jaws and then swing both members simultaneously on their pivots, manual means connected with said rod to operate the same to produce the specified operation of the jaw members and move said nipper bodily downward, and automatic means connected with and operating said rod to further draw down said nipper.

26. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaw members pivoted thereto, both of which are movable, two movable tables, and devices spring-connected with said tables and engaging cams on both of said jaw members, said tables actuating said devices to successively move one of said jaw members relatively toward the other to close the jaws, then swing both members simultaneously on their pivots, then depress said jaw members, and then swing said members back and open the jaws.

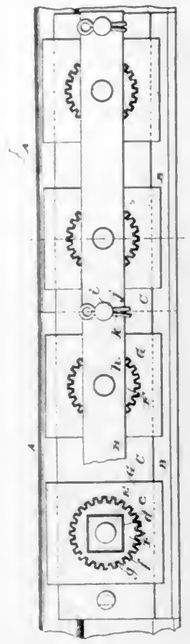
27. In a machine for lasting shoes, a nipper comprising a supporting-bar, two jaw members pivoted thereto, both of which are movable, two movable tables, devices engaging cams on said jaw members adapted when operated in one direction to successively move one of said jaw members toward the other to close the jaws, then swing both members simultaneously on their pivots and then depress said jaw members, and when operated in the other direction to swing said members back and open the jaws, a movable table spring-connected with said devices to impart to them the specified movements, a second movable table, and springs interposed between said devices and the second table.

653,043. NUT-LOCK. JOHN P. STRAND, Alta, Iowa, assignor of one-half to Elias Forney, same place. Filed Apr. 21, 1900. Serial No. 13,780. (No model.)

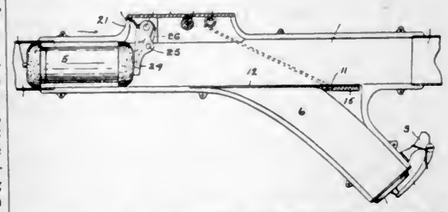
Claim.—1. In a nut-lock, the combination of two parts to be connected, a threaded bolt extending through said parts, a lock-piece arranged on the bolt and engaging one of the parts to be connected so as to be held against rotation, an angular nut mounted on the bolt, a circular disk having an angular aperture snugly receiving the nut and also having peripheral teeth, a plate having a circular aperture snugly receiving the disk, and teeth on the wall of said aperture intermeshed with those of the disk, and also having flanges engaging the lock-pieces, and means for retaining the disk in engagement with the lock-pieces, substantially as specified.

2. In a nut-lock, the combination of two parts to be connected, a threaded bolt extending through said parts, a lock-piece arranged on the bolt and engaging one of the parts to be connected so as to be held against rotation, and having outwardly-extending apertured studs, an angular nut mounted on the bolt, a circular disk having an angular aperture snugly receiving the nut and also having peripheral teeth, a plate having a circular aperture snugly receiving the disk, and teeth on the wall of said aperture intermeshed with those of the disk, and also having flanges engaging the lock-piece, a retaining-bar having an aperture receiving the threaded bolt and other apertures receiving the studs of the lock-piece, and means for securing said bar on the studs of the lock-piece, substantially as specified.

3. In a nut-lock, the combination of two railway-rails arranged end to end, fish-plates disposed at opposite sides of said rails, threaded bolts extending through coincident apertures in the rails and fish-plates, a lock-bar arranged alongside one of the fish-plates and partially below the heads of the rails and having lateral studs provided with apertures, angular nuts mounted on the bolts, circular disks having angular apertures snugly receiving the nuts, and also having peripheral teeth, plates having circular apertures snugly receiving the disks, and teeth on the walls of said apertures intermeshed with those of the disks, and also having flanges engaging the lock-pieces, a retaining-bar having apertures receiving the threaded bolts and other apertures receiving the studs of the lock-bar, and means for securing and retaining said bar on the studs of the lock-bar, substantially as specified.



653,044. AUTOMATIC SWITCH FOR PNEUMATIC CARRIERS. FRED R. TAISEY, Indianapolis, Ind. Filed July 10, 1899. Serial No. 723,337. (No model.)



Claim.—1. In a pneumatic carrier, the combination with the main tube, of switch-tubes leading therefrom, switch-tongues for deflecting the carrier-boxes from the main tube into the switch-tubes, trigger mechanisms for operating said switch-tongues that extend into the passage-way to the main tube, and a series of carrier-boxes having centrally-located pins graduated in length to operate said trigger mechanisms.

2. In a pneumatic carrier, the combination with the main tube, of switch-tubes leading therefrom, switch-tongues for deflecting the carrier-boxes from the main tube into switch-tubes, a series of trigger mechanisms for operating such switch-tongues that extend into the passage-way to the main tube and provided with actuating-pawls graduatingly arranged in series, and a series of carrier-boxes having centrally-located pins graduated in length to operate such pawls.

3. In a pneumatic carrier having switches, a series of trigger mechanisms for operating said switches including an actuating-pawl and a trigger to which the pawl is pivoted, the distance between the front or engaging faces of the respective triggers and pawls being graduated in the series.

4. In a pneumatic carrier having switches, a series of trigger mechanisms for actuating the switches having an actuating-pawl and a trigger to which the pawl is pivoted, the distance between the front or engaging faces respectively of the triggers and pawls being graduated in the series, and carrier-boxes with ends to engage said triggers and centrally-located pins graduated in length so as to engage the pawl before the end of the box engages the trigger.

5. In a pneumatic carrier having switches, a series of trigger mechanisms for actuating the switches having an actuating-pawl, a trigger to which said pawl is pivoted, and means for holding the pawls in the various trigger mechanisms in such position that the distance between the front or engaging faces of the triggers and the pawls will be graduated in the series.

6. In a pneumatic carrier having switches, a series of trigger mechanisms for actuating said switches comprising a shaft, a ratchet secured thereon, a trigger loosely pivoted on the shaft, a pawl pivoted in the trigger to engage the ratchet, and means for so holding the pawl that the distance between the front or engaging faces of the triggers and pawls in the trigger mechanisms will be graduated.

7. In a pneumatic carrier, the combination with the main tube, of a switch-tube leading therefrom, means for deflecting said carrier-box into said switch-tube, a return air-tube leading from the switch-tube back to the main tube, and a valve for closing the main tube between the switch-tube and return-tube that is actuated through the same mechanism that actuates the means for deflecting the carrier-box into the switch-tube.

8. In a pneumatic carrier, the combination with the main tube, of a switch-tube leading therefrom, a switch-tongue for deflecting the carrier-box from the main tube into the switch-tube mounted on a pin at the junction of said tubes, a crank secured on said pin, a shaft mounted in an extension from the main tube, a trigger mechanism mounted thereon and extending into the passage-way through the main tube, a crank on said shaft, and a rod connecting the crank on the trigger-shaft and the crank on the switch-tongue pin.

9. In a pneumatic carrier, the combination with the main tube, of a switch-tube leading therefrom, a switch-tongue for deflecting the carrier box from the main tube into the switch-tube, a shaft carried in an extension from the main tube, connection between said shaft and the switch-tongue whereby the latter is actuated, a trigger mechanism mounted on said shaft and extending into the passage-way of the main tube whereby said shaft is actuated, and a spring for returning said shaft to its normal position after it has been operated.

10. In a pneumatic carrier, the combination with the main tube, of a switch-tube leading therefrom, a tongue for deflectiug the carrier-box from the main tube into the switch-tube, a shaft mounted in an extension from the main tube, connection between said shaft and the switch-tongue whereby the latter is operated, a ratchet secured to said shaft, a finger mounted loosely on said shaft and extending into the passage-way of the main tube, a pawl mounted on said finger and in such position that it will when actuated engage the ratchet, and a spring for holding it normally out of engagement with the ratchet.

11. In a pneumatic carrier, the combination with the main tube, of a switch-section interposed between portions of the main tube and secured thereto, a switch-tube leading from said switch-section, a switch-tongue for deflecting the carrier-box from the switch-section into the switch-tube, an extension on one side of said switch-section, a removable plate for closing said extension, a trigger mechanism mounted in said extension and extending into the passage-way through the switch-section, a rib formed on another side of said switch-section, a removable plate secured to said rib, and a connection between the trigger mechanism and the switch-tongue located in said inclosure.

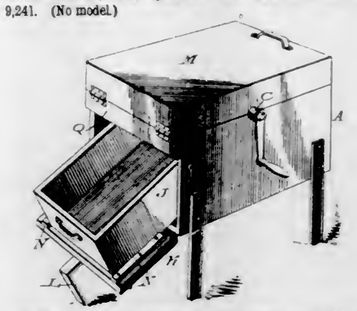
12. In a pneumatic carrier, the combination with the main tube, of a switch-tube leading therefrom, a switch-tongue for deflecting the carrier-box from the main tube into the switch-tube, a valve for closing the passage-way through the main tube, and means actuated by the carrier-box in its passage for simultaneously operating the switch-tongue and valve.

13. In a pneumatic carrier, the combination with the main tube, of a switch-tube leading therefrom, a switch-tongue for deflecting the carrier-box from the main tube into the switch-tube, a shaft at the junction of said tubes on which the switch-tongue is mounted, a crank secured to said shaft, means actuated by the carrier-box in its passage for operating said shaft, a valve for closing the main passage-way mounted on a suitable shaft, a crank secured to said shaft for its actuation, and a slotted connecting-rod between the crank on the switch-tongue shaft and the crank on the valve-shaft.

14. In a pneumatic carrier, the combination with the main tube, of a switch-tube leading therefrom, a spring-pressed cap closing the discharge end of said tube, a valve for closing the passage-way through the main tube, means operated by the carrier-box before it is switched for actuating said valve, means for locking said valve when closed and a connection between said locking mechanism and the cap-controlling mechanism at the discharge end of the switch-tube, whereby when the carrier-box in its discharge opens the cap said connection will release the locking mechanism controlling the valve in the passage-way through the main tube.

15. In a pneumatic carrier, the combination with the main tube, of a switch-tube leading therefrom, a spring-pressed cap for closing the discharge end of the switch-tube, a return air-tube extending from the switch-tube near its discharge end back to the main tube, a switch-tongue for deflecting the carrier-box from the main tube into the switch-tube, a valve for closing the passage-way through the main tube located between the switch-tube and return-tube and so arranged that gravity will return it to its normal position after actuation, and means actuated by the carrier-box before it is switched for simultaneously operating said switch-tube and valve.

653,045. ASH OR COAL SIFTER. WALDEMAR WALTER and FRANK WALTER, Philadelphia, Pa. Filed Mar. 19, 1900. Serial No. 9,241. (No model.)



Claim.—1. A sifter, consisting of a casing with a hinged cover, a rotary screen in said casing, a door on an end of said casing, and an arm connected with said door, so as to move therewith, said arm being so constructed and arranged that it will support said cover when raised and form a prop to sustain said door when thrown down.

2. In a sifter, a casing with a hinged cover, a rotary screen in said casing, a door on an end of said casing, a stationary cross-piece on said end above said door, the cover being hinged to said piece, and an angular arm secured to and movable with said door, the attaching-limb of said arm extending upwardly along said piece adjacent to the lower end of said cover.

653,046. WOODEN RIM FOR WHEELS. CALVIN L. WASHBURN and ALFRED C. PERHAM, Paris, Me. Filed Apr. 6, 1900. Serial No. 11,885. (No model.)



Claim.—1. A wooden rim consisting of adjacent, annular strips of opposing grains, provided with longitudinal, interlocking tongues and grooves, and having the lateral parts of the said strips converging outwardly to the same lateral line on each side, in order that the opposing grains of these converging lateral parts may brace each other and make a single strong edge on each side, substantially as set forth.

2. A wooden rim consisting of adjacent, annular strips provided with interlocking, longitudinal tongues and grooves which are pointed in cross-section and of varying depths in order that the strain may be distributed through different layers of the grooved wood, substantially as set forth.

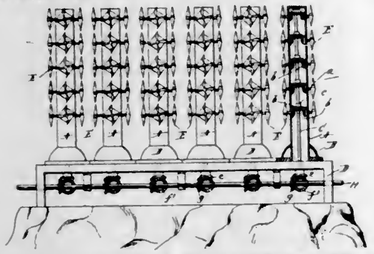
3. A wooden rim consisting of adjacent, annular strips having longitudinal, interlocking tongues and grooves which are pointed in cross-section and of depths varying so that a mean line in said cross-section passing through all the tongues from edge to edge of the rim is approximately at an equal distance from the convex and concave surfaces of the said rim at all points, thus bisecting the said rim into two crescent-form parts, substantially as set forth.

4. A wooden rim, concavo-convex in cross-section and composed of an annular strip B forming the convex or inner periphery of said rim, and two parallel annular strips D, D, forming the concave or outer periphery of said rim, said strips being provided with interlocking, longitudinal tongues and grooves, and said parallel strips not quite meeting at their inner edges, so as to leave a narrow annular

portion B' of the strip B visible between said edges, each of the countersinkings for the spoke-washers being made in said strip B at B' and in the adjacent parts of the strips D, D, substantially as and for the purpose set forth.

653,047. APPARATUS FOR UTILIZING POWER OF THE WINDS.

LEOPOLD A. WERNER, New York, N. Y. Filed Oct. 30, 1899. Serial No. 735,210. (No model.)



Claim.—An apparatus for utilizing the power of the winds, which comprises a plurality of towers or columns, vertical shafts mounted centrally of each of said columns, a plurality of series of fan-wheels journaled in different sides of the columns, whereby a plurality of the same will be turned by the wind or winds, said fan-wheels being adapted to turn in but one direction, gearing connecting the same with the vertical shafts in such manner as to cause said shafts to be turned by said fan-wheels, but not to be capable of turning the same, whereby such of the fan-wheels as do not lie in the path of the wind or winds will remain stationary; a power-shaft mounted in relative proximity to the said vertical shafts; and gearing connecting the said vertical shafts thereto, substantially as shown and described.

653,048. SUPPORT FOR RUBBER-TIRED VEHICLE-WHEELS.

CURTIS WIGG, New York, N. Y. Filed Dec. 13, 1899. Serial No. 740,221. (No model.)



Claim.—1. In a support for a rubber-tired vehicle-wheel, the same being provided with a groove, an inclined approach to the central part thereof from the level of the roadway, and supports on which the flanges of the rim rest, and the weight of the wheel and vehicle is sustained, for the purpose set forth.

2. In a support for a rubber-tired vehicle-wheel, a block provided with a groove, an inclined approach to the center thereof from the level of the roadway, said groove being so proportioned in width that when a wheel is mounted therein, the flanges of the rim will engage the top of the block and the tire will be sustained substantially free from contact with the walls of said groove, for the purpose set forth.

3. A support for a rubber-tired vehicle-wheel, consisting of a block having a longitudinal groove in the upper side thereof whereby two ribs are formed, said ribs being cut away at the ends to form inclined planes, and said groove being so proportioned in size that the weight of the wheel and vehicle will be sustained by said ribs in conjunction with the flanges of the rim, substantially as and for the purpose set forth.

4. The herein-described support for rubber-tired vehicle-wheels, consisting of a block 6, having flat bottom 7, groove, 8, ribs 9, and 10, with inclined ends 11, and recesses 12, substantially as and for the purpose set forth.

653,049. COMBINED SPRAYING DEVICE AND TORCH.

RUSSELL B. WILLIAMSON, Clifton Springs, N. Y. Filed Jan. 29, 1900. Serial No. 3,102. (No model.)

Claim.—1. A combined spraying device and torch, comprising a tank adapted to contain oil or other suitable liquid, a pump, a tube leading from the interior of said tank and terminating in operative proximity to the discharge end of said pump, and a second tube leading from said tank and provided with a suitable wick.

2. A combined spraying device and torch, comprising a tank containing oil or other suitable liquid, a pump and a tube leading to the interior of said tank and terminating in operative proximity to the discharge end of said pump, and a torch device provided in the wall of said tank and projecting into the path of the spray from said pipe, substantially as described.

3. A spraying device, comprising a tank, a pump and a tube leading from the interior of said tank and terminating in operative proximity to the discharge end of said pump, and adjustable means for spreading the spray as it leaves the nozzle of said pump, substantially as described.

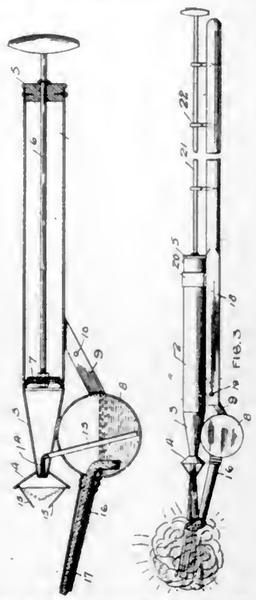


FIG. 3.

4. A spraying device, comprising a tank or reservoir, a pump, a tube leading from the interior of said tank, said tube penetrating the wall of said pump and having a bent or curved outer end concentric with the longitudinal axis of said pump, for the purpose specified.

5. The combination, with a tank or reservoir, of a pump, a tube leading from the interior of said tank and terminating in operative proximity to the discharge end of said pump, and flexible plates provided in front of said discharge end in position to be engaged by the spray therefrom, substantially as described.

6. The combination, in a device of the class described, with a tank, of a pump and a tube leading from the interior of said tank and terminating in operative proximity to the discharge end of said pump, the funnel 14 provided on the discharge end of said pump and the plates 15 provided on said funnel, for the purpose specified.

7. In a device of the class described, the combination, with a tank containing oil or other suitable liquid, of a pump, a tube leading from the interior of said tank and terminating near the discharge end of said pump, a torch device connected with said tank and having its outer end in the path of the spray discharged therefrom by said pump, and a suitable extension provided on the barrel of said pump, for the purpose specified.

8. The combination, with a tank containing a supply of oil or other suitable liquid, of a pump, a tube leading from the interior of said tank to the discharge end of said pump, a funnel provided on the discharge end of said pump, flexible plates carried by said funnel in position to engage the spray as it is discharged, a tube leading from said tank to a point in the path of the spray and a wick provided in said tube, substantially as described.

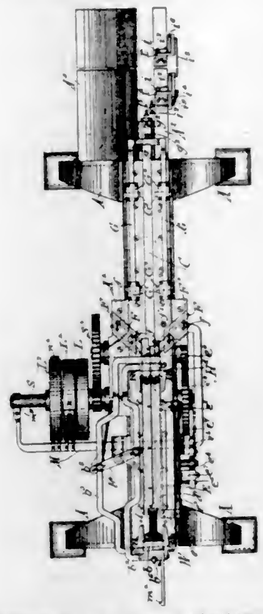
9. In a spraying device, the combination, with a pump, of a tank, a tube leading from the interior of said tank and terminating in operative proximity to the nozzle of said pump, a funnel provided on said nozzle and adjustable means provided on said funnel and projecting into the path of the spray, substantially as described.

653,050. MACHINE FOR TRIMMING STEREOTYPE-PLATES.

HERMANN WINTER, New York, N. Y., assignor to the F. Wesel Manufacturing Company, same place. Filed Dec. 15, 1899. Serial No. 740,422. (No model.)

Claim.—1. The combination, with a supporting-bed having guideways, of a reciprocating carriage guided thereon, gripper-bars on said carriage, one of said gripper-bars being stationary and the other laterally movable, feeding-standards located directly over the path of said gripper-bars, mechanism for dropping one stereotype-plate after another from said standards upon said gripper-bars, gripper-closing rollers and stationary trimming-knives arranged on said supporting-bed, substantially as set forth.

supporting-bed, and stationary trimming-knives also arranged on said supporting-bed, substantially as set forth.



2. The combination, with a supporting-bed having guideways, of a reciprocating carriage guided thereon, gripper-bars on said carriage, one of said gripper-bars being stationary and the other laterally movable, feeding-standards located directly over the path of said gripper-bars, mechanism for dropping one stereotype-plate after another from said standards upon said gripper-bars, gripper-closing rollers and stationary trimming-knives arranged on said supporting-bed, substantially as set forth.

3. The combination, with a supporting-bed having guideways, of a reciprocating carriage guided thereon, gripper-bars on said carriage, a spring-actuated straightening-bar pivotally supported on said bed, and means for moving said bar over the gripper-bars at the beginning of the forward stroke of the carriage, substantially as set forth.

4. The combination, with a reciprocating carriage, of gripper-bars for clamping a stereotype-plate, stationary trimming-knives, one at each side of the path of the gripper-bars, means for removing the stereotype-plate from the gripper-bars after being trimmed, and means for depositing the stereotype-plate on the carriage on completing its return stroke, substantially as set forth.

5. The combination, with a supporting-bed having guideways, of a reciprocating carriage guided thereon, stationary trimming-knives arranged on said supporting-bed, lifting-bolts arranged on said supporting-bed at each side of the path of the carriage and having beveled ends, means for guiding said bolts, and means for moving said bolts toward and from each other respectively at the end of each forward and return motion of the carriage, substantially as set forth.

6. The combination, with a reciprocating carriage, of gripper-bars for clamping a stereotype-plate, stationary trimming-knives, one at each side of the path of the gripper-bars, means for removing said plate from the gripper-bars when the carriage arrives at the end of its forward stroke, means for depositing the stereotype-plate upon the carriage when the same arrives at the end of its return stroke, mechanism for shifting said plate in lateral direction, and means for guiding the same to a suitable receptacle, substantially as set forth.

7. The combination, with a supporting-bed having guideways, of a reciprocating carriage guided thereon, gripper-bars on said carriage, brackets extending from the forward end of said bed, a conveyer-plate supported on one of said brackets, pendent shifting-fingers supported on the opposite bracket, and means for actuating said fingers at the end of each forward stroke of the carriage, substantially as set forth.

8. The combination, with a reciprocating carriage, of gripper-bars for receiving and clamping a stereotype-plate, stationary trimming-knives, one at each side of the path of the gripper-bars, means for removing the trimmed plate clear of the gripper-bars, and means for depositing the plate on the end of the carriage on the return motion of the same, said removing and depositing mechanism being operated by the carriage at the end of its forward and at the end of its return motion, substantially as set forth.

9. In a machine for trimming stereotype-plates, the combination, with a supporting-bed having guideways, of a reciprocating carriage guided thereon, gripper-bars on said carriage, and a feeding mechanism for feeding stereotype-plates to said gripper-bars, said mechanism comprising upright guide-standards arranged on said supporting-bed, two sets of feeding-fingers arranged in each standard, said fingers having beveled inner ends, and means for actuating said fingers so that while one set is moved inward the other is moved outward, substantially as set forth.

10. In a machine for trimming stereotype-plates, the combination, with a reciprocating carriage, of a stationary gripper-bar on said carriage, a movable gripper-bar on said carriage having a longitudinal taper strip secured to the same, and means for closing said gripper-bars, substantially as set forth.

11. In a machine for trimming stereotype-plates, a reciprocating carriage provided with a stationary gripper-bar a movable and spring-actuated gripper-bar guided on a longitudina l b of the stationary gripper-bar, a taper strip arranged at the side of the spring-actuated gripper-bar, means for longitudinally adjusting said strip, and means for pressing said movable gripper-bar toward the stationary gripper-bar for clamping a stereotype-plate, substantially as set forth.

12. In a machine for trimming stereotype-plates, a gripping device for gripping and clamping a stereotype-plate, consisting of a stationary gripper-bar, a movable and spring-actuated gripper-bar alongside of the same, means for guiding said movable gripper-bar relatively to said stationary gripper-bar, and an adjustable taper strip in the outer edge of the movable gripper-bar, substantially as set forth.

13. In a machine for trimming stereotype-plates, the combination, with a reciprocating carriage, of gripper-bars supported on the same, guide-standards for the stereotype-plates, means for dropping one plate after another from said guide-standards on said gripper-bars, a straightening device arranged alongside of the gripper-bars, and means for oscillating the straightening device so as to place the stereotype-plate in proper position in the gripper-bars, substantially as set forth.

14. In a machine for trimming stereotype-plates, the combination, with a reciprocating carriage, of gripper-bars supported on the same, one of said gripper-bars being stationary and the other spring-cushioned and laterally movable, a straightening-bar arranged alongside of said gripper-bars, and means for moving said straightening-bar over the stereotype-plate as soon as the same is dropped on the gripper-bars, substantially as set forth.

15. In a machine for trimming stereotype-plates, the combination, with a supporting-bed having guideways, of a reciprocating carriage guided thereon, gripper-bars on said carriage, and a straightening device, consisting of lever-arms pivoted below the level of said gripper-bars, a straightening-bar at the outer ends of said lever-arms and a tripping mechanism for oscillating said arms, substantially as set forth.

16. In a machine for trimming stereotype-plates, the combination, with a reciprocating carriage, of gripper-bars on the same for clamping the stereotype-plates, and a removing mechanism arranged at both sides of the end of the carriage, said mechanism consisting of laterally-reciprocating bolts having beveled inner edges, a U-shaped actuating-frame, means for connecting said U-shaped frame with said bolts, and spring-studs at the outer end of said actuating-frame, substantially as set forth.

17. In a machine for trimming stereotype-plates, the combination, with a supporting-bed having guideways, of a reciprocating carriage guided thereon, gripper-bars on said carriage, and a plate-removing mechanism, consisting of lifting-bolts having beveled inner ends and guided in keepers of the supporting-bed, a U-shaped frame, a pivoted segment connecting each bolt with said frame, and means for actuating said U-shaped frame, substantially as set forth.

18. In a machine for trimming stereotype-plates, the combination, with a reciprocating carriage, of gripper-bars arranged at one end of said carriage, stationary trimming-knives arranged at opposite sides of the path of said gripper-bars, means for removing the trimmed plate from the same, means for depositing it on the carriage when the same arrives at the end of its return stroke, mechanism for shifting the trimmed plate in lateral direction, means for actuating the shifting mechanism when the carriage arrives at the end of its forward stroke, and an inclined conveyer over which the plate is conducted to a suitable receptacle, substantially as set forth.

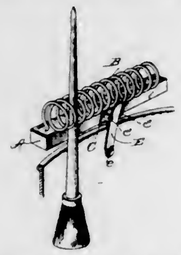
19. In a machine for trimming stereotype-plates, mechanism for shifting a trimmed plate, consisting of pendent and spring-actuated arms, pivot-rods connecting the lower ends of said arms, fulcrumed levers engaged by the upper ends of said arms and arranged at right angles thereto, stop-pins for said fulcrumed levers, and oscillating fin-

gers actuated by said levers so as to produce the shifting of the plate in lateral direction, substantially as set forth.

20. In a machine for trimming stereotype-plates, the combination, with a supporting-bed having guideways, of a reciprocating carriage guided thereon, bracket-bars extending from one end of said supporting-bed, and a delivery mechanism, consisting of a conveyer-plate supported on one of said brackets, pendent shifting fingers supported on the opposite bracket, intermediate fingers movable against said pendent fingers, a spring-actuated frame connected with said intermediate fingers, and means for actuating said frame, substantially as set forth.

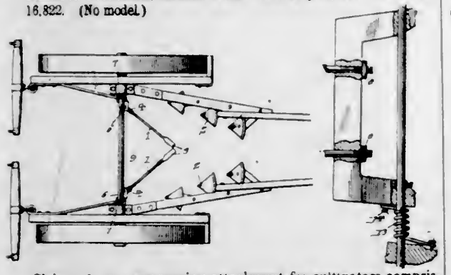
21. In a machine for trimming stereotype-plates, the combination, with a reciprocating carriage having gripper-bars at one end, and adapted at its opposite end to receive the plate after the same has been trimmed, of pendent fingers for shifting the trimmed plate laterally over the end of the carriage when the same arrives at the forward end of its motion, means engaging said carriage for actuating said laterally-shifting fingers, and an inclined conveyer-plate arranged opposite to said shifting device, substantially as set forth.

653,051. PAINT-BRUSH HOLDER. CHARLES W. WOODS, Cowen, W. Va. Filed June 9, 1899. Renewed Apr. 26, 1900. Serial No. 14,501. (No model.)



Claim.—In combination, the block, A, the helical spring-wire coil, B, fixed to said block, the spring sheet-metal bracket, C, encompassing said block A and having its shorter arm, *c*, formed with the ears, c^1 c^1, and terminating in the curved lug, *c'*, and its longer arm in the finger, c^2, and the spring-actuated clip, E, fulcrumed in said ears and terminating in the depending finger, *e*, substantially as shown and described.

653,052. WEED-TURNING ATTACHMENT FOR CULTIVATORS. FRANK A. YOUNGBERG, Garfield, Wash. Filed May 15, 1900. Serial No. 16,822. (No model.)



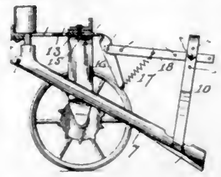
Claim.—1. A weed-turning attachment for cultivators comprising a pair of brackets provided with means for securing them to a cultivator, a pair of vertical shafts journaled in suitable bearings of the brackets, the horizontally-movable weed-turning arms or rods converging rearwardly and having their rear ends contiguous to each other, springs adapted to hold the arms or rods normally in such position and to permit them to swing backward to pass an obstruction, and means for limiting the backward swing of the rods or arms, substantially as and for the purpose described.

2. A weed-turning attachment for cultivators comprising a pair of brackets provided with means for securing them to a cultivator, vertical shafts journaled in suitable bearings of the brackets, horizontally-movable weed-turning rods or arms mounted on the shafts and converging rearwardly and having their rear ends contiguous to each other, springs for holding the arms or rods normally in such position, and collars mounted on the shafts and provided with set-screws adjustably engaging the same and projecting from the collars and arranged to engage the brackets to limit the forward and rearward swing of the arms or rods, substantially as described

3. A weed-turning attachment for cultivators comprising a pair of brackets provided at their upper and lower ends with projecting arms having bearings, upright shafts journaled in the bearings and depending from the brackets, fastening devices carried by the brackets for securing them to a cultivator, rods extending from the lower end of the shafts and having their rear ends flattened and arranged contiguous to each other, and springs connected with the rods, substantially as described

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653,053. SEEDING-MACHINE. MATTHES ZÖLLNER and CARL ZÖLLNER, Fate, Tex. Original application filed Sept. 30, 1899. Serial No. 732,187. Divided and this application filed Jan. 16, 1900. Serial No. 1,663. (No model.)



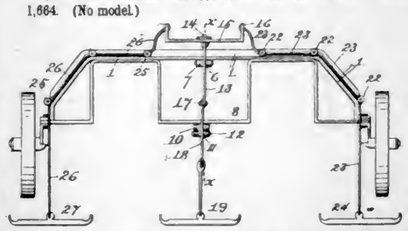
Claim.—1. The combination, with a frame, and the seed-tubes, of means for flexibly and adjustably hanging the tubes from the frame, comprising the tube-standard, the hanger, the lever pivoted to the standard and to the hanger, and the spiral spring connected to the lever and to the hanger.

2. The combination in means for flexibly hanging seed-tubes, of the brackets to which the tubes are pivoted, the tube-standards, the hangers adjustably secured to a suitable frame and having a depending portion, the levers pivoted to the said depending portion and to the said standards, and the spiral springs connecting the depending portions with the said levers.

3. The combination, with a seed-tube having a vertically-disposed standard forked at one end and slotted at the other, of the angle-hanger having a flat end and a depending portion, the lever pivoted to the depending portion and to the said slotted end, and the spiral spring having one end secured to the said depending portion and the other end secured to the lever between the pivoted portions of the latter.

4. The combination, with a frame, the hopper-bar connected to the frame, and the tubes having a vertically-disposed standard, of the brackets depending from the said bar and in which the tubes are pivoted to swing vertically, and the flexible means to control the vertical movement of the tubes.

653,054. DRAFT-EQUALIZER. MATTHES ZÖLLNER and CARL ZÖLLNER, Fate, Tex. Original application filed Sept. 30, 1899, Serial No. 732,1899. Divided and this application filed Jan. 16, 1900. Serial No. 1,664. (No model.)



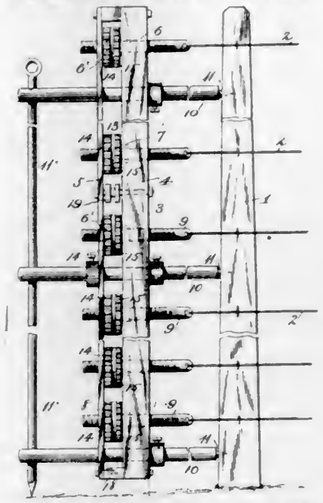
Claim.—1. A draft-equalizer comprising a pair of levers pivoted together, each lever having another separate pivot, a yoke swiveled to one of the levers, a suitable cable or rope attached to each end of the yoke and carrying singletrees, and a singletree connected to the other lever.

2. The combination, with a cultivator or similar frame, a slotted pivot-bearing arm secured to the top of the frame, and a slotted pivot-bearing plate secured to the bottom of the said frame, of the levers pivoted together one in each of the said slots, a singletree connected to one of the said levers, a yoke pivoted to the other of the said levers and having vertically-disposed ears to which is attached a cable or rope carrying a singletree.

3. The combination of the levers pivoted together, each of said levers being further pivoted separately, and a yoke pivoted or swiveled to the end of one of the levers to turn at right angles to the motion of the levers.

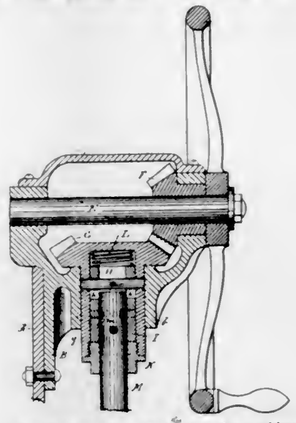
4. The combination, with the cultivator-frame having a series of guide-pulleys, of the levers pivoted together and to the said frame, a yoke swiveled to one of the levers, a cable attached to each end of the yoke and extending through the said pulleys and having singletrees, and a singletree connected to the other of the said levers, as set forth.

653,055. WIRE-STRETCHER. CHARLES E. BAKER, Bloomdale, Ohio. Filed Mar. 23, 1900. Serial No. 9,920. (No model.)



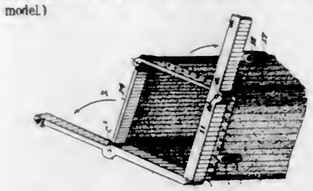
Claim.—In a wire-stretcher, the combination with a standard provided with screws, ratchet-wheels journaled in said standard, nuts rotated by said ratchet-wheels to move the screws longitudinally, a reciprocatory bar provided with pawls to engage said ratchet-wheels, and a lever connected to said standard and to the reciprocatory bar to reciprocate the latter, substantially as set forth.

653,056. CAR-BRAKE DEVICE. JOHN S. BAKER, Beverly, Mass., assignor to the Beverly Engine and Machine Company, Providence, R. I. Filed Nov. 7, 1898. Renewed Mar. 30, 1900. Serial No. 10,845. (No model.)



Claim.—In brake-operating mechanism, the combination with a bracket secured to a stationary part of a vehicle, and provided with vertical and horizontal bearings, of a shaft rotatably mounted in the horizontal bearings of said bracket and provided with operating means a pinion fixed to said shaft, a sleeve rotatably mounted in the vertical bearings of said bracket, a gear-wheel on said sleeve meshing with said pinion, a brake-staff extending into said sleeve, a clutch interposed between said staff and sleeve, one of the members of which is secured to said staff, and the other is provided with elongated slots, and a pin secured to said sleeve and extending transversely therethrough and through said slots, as and for the purpose set forth.

653,057. THROAT-FRAME FOR MAIL-BAGS. CHARLES BATEMAN, Gales Creek, Oreg. Filed Nov. 16, 1899. Serial No. 737,158. (No model.)

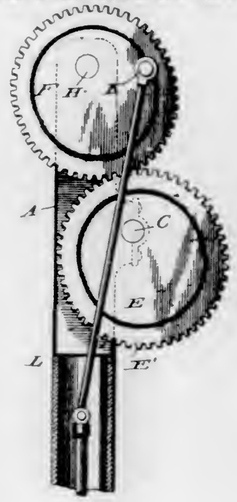


Claim.—1. A throat-frame for bags, consisting of a pair of side bars hinged together at one end and formed with reduced portions on their inner faces extending from their middle to their free ends, one of said bars being L-shaped in cross-section, a second pair of side bars one-half the length of the first-named bars and hinged together at one end and with their opposite ends hinged to the first-named bars in the inner ends of the reduced portions thereof, the shorter bars being adapted to lie against the reduced portions of the longer bars when the frame is closed and engaging as stops the adjacent other portions of the longer bars when the frame is open, and the horizontal member of the L-shaped longer bar covering the remaining three bars when the frame is closed, as set forth.

2. A throat-frame for bags, comprising a pair of side bars hinged together at one end and having their opposing side faces reduced from a point between their ends to their free ends, one of said bars being L-shaped in cross-section, a second pair of side bars hinged together at one end and having their opposite ends hinged to the first-named bars in the inner ends of the reduced portions thereof, said second pair of bars being of a length and thickness equal to the reduced portions of the respective bars to which they are hinged, being adapted to lie against the reduced portions of such bars when the frame is closed and engaging as stops the adjacent ends of the other portions when the frame is open, and the horizontal member of the L-shaped side bar being of a width sufficient to cover the other bars when the frame is closed, as set forth.

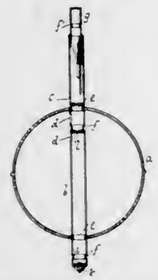
3. In a device of the character described, the combination with two long frame-bars, two short frame-bars pivoted together at an end of each bar, the other ends respectively having pivoted engagement with one of the long frame-bars at the longitudinal center thereof, each long frame-bar having an outer half portion reduced in thickness to receive laterally one of the short frame-bars, one of the long frame-bars being L-shaped in cross-section, permitting the three other frame-bars to fold beneath the top horizontal flange on said long frame-bar, and a spring-actuated slide-bolt on one of the long frame-bars, loosely engaging a slot in the horizontal flange of the other frame-bar, said bolt having a perforation in the portion projected above the frame-bar through which it passes, for the reception of a hasp-lock.

653,058. GEARING FOR WINDMILLS. CHARLES S. BROOS, Ashland, Ill. Filed Feb. 28, 1900. Serial No. 6,837. (No model.)



Claim.—A gearing for windmills, comprising the hollow standard having a solid projecting portion, the inner and outer faces of the latter being flush respectively with the outer and inner surfaces of said hollow standard, combined with the stud H secured to the upper end of said projection, a gear-wheel F eccentrically journaled thereon, the pin K carried by the latter, the operating-shaft journaled on the edge of the standard, the gear-wheel rotating with said shaft and meshing with said wheel F, and the pitman pivoted to said pin K, and connected to the pump-rod, as shown and described.

653,059. TOP. OLIVER BENSON, New York, N. Y. Filed Dec. 29, 1899. Serial No. 741,955. (No model.)



Claim.—1. A hollow elastic body having a tubular stem extended entirely through said body and projecting therefrom at both ends, to provide at one end of said stem a bearing-point for use of the device as a top, and having a whistle-aperture in the other projecting end of said tubular stem, substantially as described.

2. A hollow elastic body having a tubular stem provided with a whistle-aperture, said stem being longitudinally adjustable in and removable from the body and extended entirely through said body to provide a bearing-point for use of the device as a top, substantially as described.

3. A hollow elastic body having a tubular stem provided with a whistle, said stem having notches for engaging the body and being extended entirely through said body to provide a bearing-point for use of the device as a top, substantially as described.

4. A hollow elastic body having a tubular stem provided with a mouth or squirt-opening, and a valve for closing said mouth, said stem being extended entirely through said body to provide a bearing-point for use of the device as a top, substantially as described.

5. A top comprising a hollow body having a removable tubular stem extended entirely through said body and provided with a series of notches to adjustably engage the edges of said body, substantially as described.

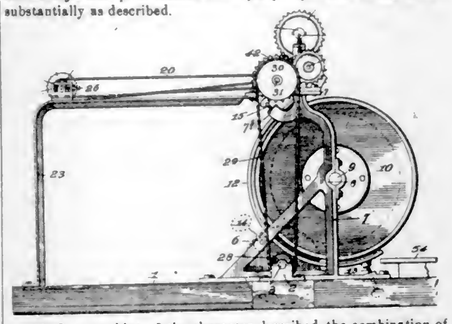
6. A hollow elastic body having a tubular stem provided with a series of notches to adjustably engage the edges of said body, said stem being extended entirely through said body to provide a bearing-point for use of the device as a top and having an inlet-opening within said body, a whistle-aperture in one projecting portion of the stem, and a valved squirt-opening or mouth at the other end, whereby the stem may be lougitudinally adjusted in said body to serve as a whistle or as a squirt, substantially as described.

7. A tubular elastic body having a longitudinally-adjustable tubular stem extended entirely through said body and projecting therefrom at both ends, to provide at one end of said stem a bearing-point for use of the device as a top, one projecting end of said tubular stem being provided with a whistle-aperture and the other end having a squirt-opening and a valve to control said squirt-opening, substantially as described.

8. A hollow elastic body having a tubular stem provided with a whistle *c*, a partition *l* in said stem, apertures *d* at opposite sides of said partition, shoulders *e* and *f* for holding the stem in adjusted position with one of the apertures *d* respectively in and outside the body, said stem being extended entirely through said body to provide a bearing-point for use of the device as a top and having in one end a squirt or mouthpiece *i* and a valve for closing the squirt, substantially as described.

653,060. MACHINE FOR MAKING PRETZELS. CHARLES BETZ, St. Louis, Mo. Filed Dec. 26, 1899. Serial No. 741,524. (No model.)

Claim.—1. In a machine of the character described, the combination of dough-cutting means, a carrier on which the dough is conveyed to said cutting means, a pliable roller located beneath said cutting means, and over which said carrier travels, a dough-rolling drum, and an adjustable plate located at the periphery of said rolling-drum, substantially as described.



2. In a machine of the character described, the combination of a dough-rolling means, an endless dough-carrier, means for operating said endless dough-carrier intermittently, a dough-cutting knife, an eccentric-carrying shaft, the eccentrics thereon, and offset connections between said eccentrics and said dough-cutting knife, substantially as described.

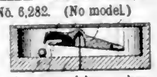
3. In a machine of the character described, the combination of a dough-rolling means, an endless dough-carrier, means for operating said endless dough-carrier intermittently, a dough-cutting knife, an eccentric-carrying shaft, the eccentrics thereon, sectional collars encircling said eccentrics, and offset connections between said sectional collars and dough-cutting knife, substantially as described.

4. In a machine of the character described, the combination of a dough-rolling means; a dough-carrier, a cutting-knife, means for operating said parts, and a revolving wiper-blade arranged to turn into contact with said knife, substantially as described.

5. In a machine of the character described, the combination of a dough-rolling means, a dough-carrier, a cutting-knife, means for operating said parts, a revolving wiper-blade arranged to turn into contact with said knife, and a spring-controlled wiper-plate arranged in the path of rotation of said wiper-blade, substantially as described.

6. In a machine of the character described, the combination of a dough-rolling means, a cutting-knife, means for operating said parts, an endless dough-carrier, rollers on which said carrier is arranged; and means for operating said carrier, comprising a driven disk provided with an undercut groove, a block located in said groove, a pin or screw seated in said block, a pitman connected to said pin, a ratchet-wheel fixed to the shaft of one of said rollers, a rocker loosely hung on said roller-shaft and pivotally connected to said pitman, and a pawl carried by said rocker arranged in engagement with the teeth of said ratchet-wheel, substantially as described.

653,061. PUZZLE. ALBA C. BOOTH, Burlington, Vt. Filed Feb. 23, 1900. Serial No. 6,282. (No model.)



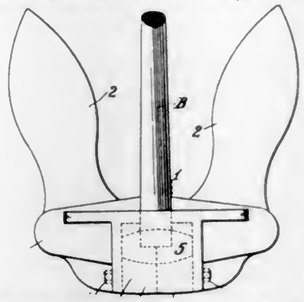
Claim.—1. A puzzle, comprising a box, a ball in the box and adapted to roll on the bottom thereof, and a poise mounted in the box to turn and swing, said poise being normally held in an inclined position, out of contact with the bottom of the box, and provided at one end with an internal pocket adapted to receive and hold the ball concealed therein, as and for the purpose set forth.

2. A puzzle, comprising a box, a pin arranged in the box, a poise mounted on said pin, and having at its forward end at the bottom thereof an opening leading to a recess in the body of the poise, and a ball adapted to roll in the box and adapted to pass through said opening into the recess, as set forth.

653,062. ANCHOR. LA MONT M. BOWERS, Binghamton, N. Y. Filed Feb. 10, 1900. Serial No. 4,786. (No model.)

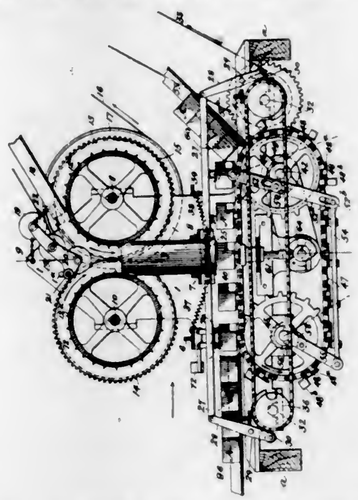
Claim.—1. An anchor having its head made in a single piece of metal chambered out through the center, a shank having a cross-head and blocks or bearings fitting the shank and the chamber of the head whereby to absolutely close the end of the chamber and constitute bearings for the cross-head of the shank.

2. An anchor comprising a head made in a single piece with a chambered or recessed center, one end of which is rectangular in form and the other substantially V-shaped, the two portions of the chamber in communication with and extending crosswise of each other, a shank having a cross-piece at its lower end, of a length just equal to the length of the lower chamber in the anchor-head and blocks or bearings in which the cross-piece turns, said blocks or bearings fitting and filling the lower portion of the chamber in said head.



3. An anchor having its head made in a single piece of metal chambered out through the center, a shank having a cross-head, and blocks or bearings fitting the shank and the chamber of the head whereby to absolutely close the end of the chamber and constitute bearings for the cross-head of the shank, and a bolt or equivalent means passing through the blocks or bearings and the head for removably holding the blocks and shank to said head.

658,063. CAN-FILLING MACHINE. JOHN R. BROWN, Vancouver Canada. Filed Aug. 8, 1899. Serial No. 726,615. (No model.)



Claim.—1. In a machine for filling cans with fish, comprising a guide; means for withdrawing the fish-body from the guide and simultaneously bending it to the shape of the can and shoving it lengthwise into the can; an intermittently-operating can-conveyer adapted to bring and hold the cans at predetermined intervals into a position to receive the fish-body as it is drawn from the guide and bent up to enter the can; and intermittently-operating devices for simultaneously severing the fish-body and stopping further feed of the fish-body as the filled can passes off and another can moves into position, substantially as shown and for the purposes described.

2. In a can-filling machine, in combination with the forming-rolls 12 and 13, said rolls having fluted peripheries and held to turn in a suitable framing; of the spout 23, disposed directly between the said rolls; shafts 32 journaled at the opposite ends of the machine; cams 31, secured upon said shafts; levers 28, fulcrumed to cross-bars of the machine; rollers 30, on the lower ends of said levers, said rollers engaging the cams 31, and having their opposite ends connected to rods 27; the knives 25, arranged in suitable slideways beneath and adjacent the depending mouth of the spout 23, and means for imparting movement to the shaft 32, as specified.

3. In a can-filling machine of the character described; the combination with the fluted rolls 12 and 13; the spout 23, disposed between the coacting surfaces of the rolls and means for cutting off the fish-body projecting below the spout; and the chute 18, for conveying the fish-body between the fluted rolls and spring-pressed devices for holding the fish-body against one of the rolls as set forth.

4. In a machine of the kind described having the forming-rolls 12 and 13 with serrations on their fluted surfaces, and the spout 23, disposed beneath the coacting fluted surfaces of the rolls 12 and 13 and having diameters and form corresponding with the space between the coacting surfaces of the rolls 12 and 13, said spout being arranged with its upper end between the lower sides of the rolls, and its lower end resting between cross-bars 7 and 8 secured to the opposite side frames of the machine, an inverted funnel 40 secured with its contracted orifice upward beneath the lower end of said spout, the reciprocating knives 25 arranged to close and open the said orifice and means for operating the said knives, in combination with shafts 41 and 42 suitably mounted in the frame of the machine on a horizontal plane below and on opposite sides of the funnel 40, a double sprocket-wheel 45 secured to the shaft 41 and a like sprocket 46 loosely mounted on the shaft 42, and a belt 47 having can-carriers 48 fixed thereto taking around said wheels, a crank 49 fixed on the front end of the shaft 42, a lever 52 fulcrumed to the frame of the machine, a slot in said lever receiving the pin of the crank 49, a lever 55 pivoted to the front end of the shaft 41 having a pawl 58 engaging a fixed rack 56 on such shaft and a connecting-rod 54 connecting the depending ends of the levers 55 and 52, and means for transmitting a uniform movement to the shafts 32 and 42, whereby an intermittent movement will be given to the carriers 48, and the knives 25 will be drawn back while said carriers are at rest and pushed forward before the onward movement of the carriers takes place.

5. In a machine for the purposes described having forming-rolls 12 and 13 arranged to turn in a suitable frame composed of side plates 1 and 2, secured together by cross-bars 3, 4, 5, 6, 7 and 8, a spout 23 arranged below and between the forming-rolls, an outwardly-flared funnel 40 fixed below the spout and reciprocating knives 25 arranged to pass between the spout and the funnel, means for operating the said knives, an intermittent traveling belt having carriers 48 fixed thereto arranged to pass on a horizontal plane beneath the funnel 40, means for delivering a can to each carrier, mechanism for stopping each carrier beneath the funnel 40 while the knives 25 are drawn back, a shaft 65 journaled directly beneath the funnel 40, a cam 64 on such shaft, a vertical movable stem 61 passing through the cross-bar 5, a roller 63 on the end of said stem engaging the cam, and a cap-piece 61^a engaging the lower side of the belt and means for imparting a uniform movement to the shaft 65, whereby the cam 64 will push upward each time a carrier is brought to rest beneath the funnel 40, substantially as and for the purposes set forth.

6. In a can-filling machine having can-forming rolls 12 and 13 with the spout 23 for delivering the material to the cans, a belt 47 passing over a sprocket-wheel 45 fixed to a shaft 41 and over a like sprocket 46 loosely mounted on a shaft 42 suitably journaled in the side frames of the machine, can-carriers 48 attached to the belt 47 at regular intervals, and said belt being made to pass on a horizontal plane, a lever 52 fulcrumed to the frame of the machine, a crank 49 fixed to the front end of the shaft 42, the pin of which takes into a slot 51 in the said lever 52, a lever 55 engaging a ratchet-and-pawl mechanism on the shaft 41, and a rod 54 connecting the levers 52 and 55, and means for imparting a regular movement to the shaft 42, whereby the carriers will be moved along at intervals and brought to rest beneath the spout 23, for the purposes specified.

7. In a can-filling machine having a frame with the parallel vertical sides 1 and 2, shafts 10 and 11 mounted on the opposite upper sides of said frame, rolls 12 and 13 having fluted engaging surfaces with serrations in said flutes, and movable depressing-rolls 19 mounted in a frame 20 poised over the roll 13, and a chute 18 of concave form for delivering strips of divided fish to the rolls 13, as specified.

8. In a machine for filling fish into cans, frame-plates 1 and 2 secured together by cross-bars 3, 4, 5, 6, 7 and 8, fluted rolls 12 and 13 mounted on a horizontal plane near the upper part and on opposite sides of the plates 1 and 2, a chute 18 for delivering the fish, and rolls 19 for pressing it down so that it will be curved into tubular or cylindrical form, in combination with a spout 23 fixed beneath and between the rolls 12 and 13, a support for the spout and for an inverted funnel 40 beneath, reciprocating knives 25 arranged to move at regular intervals between the spout 23 and the funnel 40, means for operating the knives and means for holding a can-mouth in the funnel while the knives are drawn back, substantially as specified.

9. In combination with a spout 23 for receiving the material to be filled and an inverted funnel or opening 40 beneath for receiving the open end of a can, knives 25 of V-shaped form arranged in slideways between the spout and the funnel, cam-and-lever mechanism for driving the knives forward, cutting off the material and closing the opening in the spout and funnel, and springs 37 and 38 for returning said knives, substantially as specified.

10. In combination with a frame having cross-bars 3, 4, 5, 6, 7 and 8, a spout 23, and an outwardly-flared opening 40 at its bottom, said spout being arranged between the cross-bars 7 and 8 and resting on guides 24 secured to the said cross-bars, means for feeding the material into the spout, knives 25 of V shape arranged to slide between the spout, and the flared opening 40, cam-wheels 31 secured on shafts 32 mounted beneath the opposite ends of the machine, levers 28 fulcrumed on oppositely-projecting lugs on the cross-bars 3 and 4, rolls 30 on the lower ends of said levers engaging the said cams, rods 27 connecting the upper ends of the levers 28 with the frames of the said knives and means for imparting a uniform movement to the said shafts 32 whereby the knives will be reciprocated at intervals.

11. A machine for the purposes set forth having side frame-plates 1 and 2 secured together by the cross members 3, 4, 5, 6, 7 and 8, in combination with a spout 23, an inverted funnel 40 at its bottom, and a pair of oppositely-movable knives of V shape made to reciprocate between the spout and the inverted funnel, such reciprocation of the knives being a simultaneous moving backward and a like movement forward at regular intervals, a chain belt 47 having can-carriers 48 attached thereto at regular intervals, means for communicating a transmittent movement to the chain belt, such movement being so arranged that each carrier 48 will be brought to rest beneath the funnel 40, a chute 59 for delivering a can to each carrier, and a cam 64, a vertically-movable stem 61 engaging the cam 64, directly beneath the funnel 40, the movement of the cam arranged to coact with the movement of the carriers and drive each of the carriers upward when brought to rest beneath the funnel 40, as specified and for the purposes set forth.

12. In a can-filling machine having a suitable frame, fluted forming-rolls 12 and 13, having coacting surfaces, the spout disposed between and beneath said surfaces, a flared opening or funnel 40 inverted beneath the spout, cut-off knives 25 arranged to pass between the spout and the funnel, means for inserting a can-mouth in the funnel and simultaneously opening the knives, and a like means for closing the knives while said can is inserted, as specified.

13. In a machine of the class described having forming-rolls 12 and 13 mounted on a suitable frame and a spout 23 to receive the materials therefrom, the wheels 45 and 46, a belt 47 arranged to pass around the wheels 45 and 46 and horizontally beneath the spout, can-carriers fixed at regular intervals to the belt, a chute 59 placed on a declivity toward the travel of the carriers, means for stopping the carriers as each can is brought beneath the said spout 23, and a vertical movable stem for elevating the carrier so held beneath the spout and reciprocating knives for cutting off the material and closing the spout, as specified.

14. In a machine of the class described having a suitable frame composed of side plates 1 and 2 with cross members 3, 4, 5, 6, 7 and 8, fluted forming-rolls 12 and 13 mounted in the upper opposite sides of the plates 1 and 2, a spout 23 for receiving the material from said rolls, carriers for cans passing beneath the spout, means for pushing a can into the spout, and for moving it along intermittently, and a depressor 69 for pressing the material down within the can, substantially as specified.

15. In a can-filling machine, a depressor 69 suspended to a cross-bar 6 over the track of the cans, said depressor consisting of a cover for the cans having a groove therearound for the rim of the can to rest in, a member for entering the same, and an outwardly and downwardly flared flange 69ª for receiving the mouth of the cans, links 70 and 71 movably suspending the depressor, right-angled members 71ª on the links 71 and a weight 72 fixed to the same for normally holding the depressor forward, for the purposes set forth.

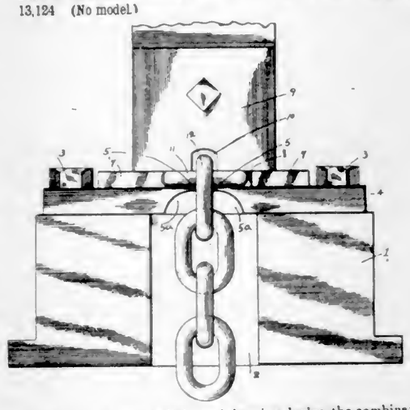
16. In combination with forming-rolls for pressing material the proper diameter of the can to be filled, a spout 23 for receiving the same and an inverted funnel 40 beneath the spout, intermittently-reciprocating knives 25 made to slide between the spout and the funnel 40, cams 31 secured to shafts 32 near each end of the machine, levers 28 fulcrumed on rods 29 fixed to the frame of the machine, rollers on the lower ends of the levers 28 engaging said cams, and connecting-rods 27 communicating between the levers 28 and the knives 25, and means for imparting uniform movement to the shafts 32, whereby the knives will be driven forward at intervals, and springs 37 and 38 for pulling the knives back.

17. In a machine for the purposes set forth having fluted forming-rolls 12 and 13 mounted in a suitable frame, said rolls having coacting surfaces, flutes on the coacting surfaces of the two rolls being formed the size or diameter of the cans to be filled, and a spout 23 having a diameter to correspond with the form of the engaging flutes of the rolls provided with a flange 23ª on its opposite sides forming its supports, reciprocating knives 25 arranged to move in suitable frames 24 in proximity with the lower mouth of the spout, an elevating-stem 61 beneath the said spout, a cam 64 on a shaft 65 for lifting said stem, and can-carriers 48 fixed at intervals to a belt 47 made to travel over the elevating-stems and beneath the spout, flared funnel 40, and mechanism for causing each of the carriers to lie at rest beneath the spout, and for lifting said can to a flared or funnel opening below said spout and for causing the said knives 25 to withdraw simultaneously with the rest movement of the resting elevated can, and to return the knives before the can drops to its normal moving plane, substantially as specified.

18. In a machine of the class described, cut-off knives 25 consisting of plates of steel having V-shaped edges beveled from opposite sides, and guides for holding the shearing edges to slide in close proximity to each other.

19. In a can-filling machine as described, the fluted rolls 12 13, having coacting surfaces; said surfaces having projected spurs; a receiver located below the coacting surfaces into which the said surfaces discharge; a can-conveyer for bringing the cans under the discharge-mouth of the receiver; cutting mechanism, and means for intermittently operating the said mechanism, all being arranged substantially as shown and described.

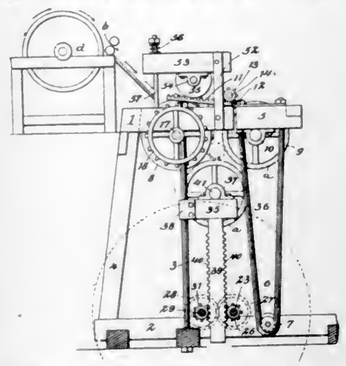
653,064. DEVICE FOR STRAIGHTENING CHAIN-LINKS. DANIEL CARROLL, Columbus, Ohio. Filed Apr. 16, 1900. Serial No. 13,124 (No model.)



Claim.—1. In a chain-link-straightening device, the combination with a horizontal link-supporting plate 4 and means for supporting an end link of a chain thereon, of a plate 7 detachably secured upon said supporting-plate and a hammer adapted to impart a blow on a link supported on said plate 4 and upon the plate 7, substantially as specified.

2. In a device for straightening chain-links, the combination with a horizontal plate 4 having a lateral recess 5, of an angular plate 7 detachably secured upon said plate 4 and extending on two sides of said recess, substantially as specified.

653,065. ROLLER-COMPRESS. EDWARD D. CARTER, Brenham, Tex. Filed Mar. 30, 1900. Serial No. 10,801. (No model.)



Claim.—1. In a roller-press, the combination of a roll in fixed bearings, a vertically-movable roll carried by a vertically-movable support, a laterally-movable roll carried by a laterally-movable support, a flexible connecting driving element for said rolls, said flexible element being engaged by tension devices carried by the movable supports, and means connecting said vertically and laterally movable supports whereby they are actuated in unison, substantially as described.

2. In a roller-press, the combination of a roll in fixed bearings, a vertically-movable roll carried by a vertically-movable support having vertical rack-bars above and below the roll, a laterally-movable roll carried by a laterally-movable support, a flexible driving connecting element for said rolls, tension devices, carried by the vertically and laterally movable supports and engaging said flexible connecting element, a shaft connected to and driven from the relatively-circuit, of key-operated devices for controlling said circuits, and means fixed roll and having a pinion engaging the lower rack-bar, a shaft having a pinion engaging the upper rack-bar, and connections between said shaft and the laterally-movable support, substantially as described.

3. In a roller-compress, the combination of a roll in fixed bearings, counter-rolls in movable bearings, a flexible driving element connecting said rolls, a brake-wheel, and connections between the latter and one of the movable rolls, whereby said wheel is rotated as said roll moves toward and from the fixed roll, substantially as described.

4. In a roller-compress, the combination of a roll in fixed bearings, counter-rolls in movable bearings, a flexible driving element connecting said rolls, a brake-wheel, connections between the latter and one of the movable rolls, whereby said wheel is rotated as said roll moves toward and from the fixed roll, and a brake to retard the rotation of said wheel, substantially as described.

5. In a roller-compress, the combination with a series of rolls movable toward and from one another, of a flexible driving element connecting said rolls, a shaft, connections between the latter and said flexible driving element, a brake-wheel on said shaft and friction devices to retard the rotation of said brake-wheel, substantially as described.

6. In a roller-compress, the combination with a roll in fixed bearings, of counter-rolls, in movable bearings and adapted to move away from each other and said fixed rolls as the bale is formed, a flexible driving element connecting said rolls and movable tightening devices carried by the supports of the counter-rolls engaging said flexible driving element and connected and movable in unison with said movable rolls, substantially as described.

7. In a roller-compress, the combination with a positively-driven roll in fixed bearings, of counter-rolls in movable bearings and adapted to move away from each other and the fixed rolls as the bale is formed, a flexible driving element connecting said rolls, means carried by the supports of the counter-rolls to maintain the tension of said flexible connecting driving element, substantially as described.

8. In a roller-press, the combination of a roll in fixed bearings, a vertically-movable counter-roll, a vertically-movable support therefor having a vertical rack-bar, intergeared shafts engaging said rack-bar, one of said shafts having a brake-wheel and the other being connected to and actuated by the relatively-fixed roll, a rocking frame, a counter-roll carried thereby, a flexible driving element connecting the rolls, tension devices carried by the supports of the counter-rolls engaging said flexible connecting element and connections between the vertically-movable supports of the respective counter-rolls, for the purpose set forth, substantially as described.

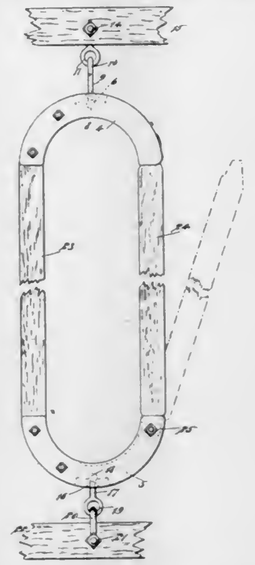
9. In a roller-compress, the combination of a roll in fixed bearings, a vertically-movable roll, a laterally-movable roll, a flexible driving element engaging said rolls and adapted to rotate the same in unison, and connections between said rolls for moving said vertically and laterally movable rolls, said means forming tension devices for said driving flexible element, substantially as described.

653,066. CATTLE-STANCHION. WALTER D. CASE, Granby, Conn. Filed Apr. 4, 1899. Serial No. 711,681. (No model.)

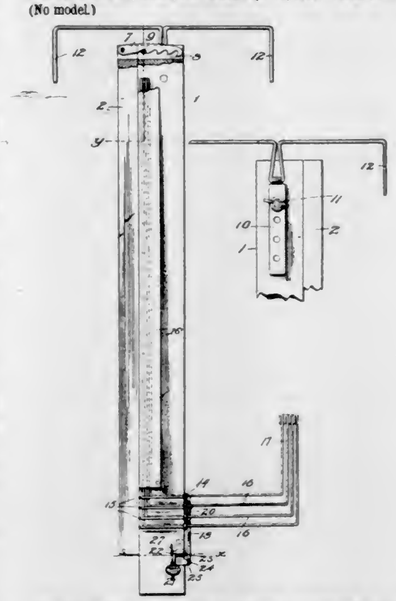
Claim.—1. A cattle-stanchion, having a swinging side section, an end section formed of two cheek-plates with a web rigidly joining them, the free end of the side section being adapted to fit loosely between the cheek-plates of the end sections and to bear against the web thereof, guideways formed respectively on the cheek-plates of the side sections, and a gravity-latch mounted to slide in the guideways and having a beveled lower portion engaged by the free end of the swinging side section, to automatically raise the latch to permit the entry of the side section, the latch being adapted to gravitate outside of the side section to hold the same in place.

2. A cattle-stanchion, having two end sections, a side section extending between and rigidly joined to the end sections, the upper end section being arched or curved, a second side section pivoted to the lower end section and swinging toward and from the other end section, and a curved latch mounted on the upper end section and sliding longitudinally therewith to automatically engage the free end of the swinging side section, whereby to hold the stanchion closed.

3. A cattle-stanchion, having a curved or arched end section provided with guideways conforming to the curvature thereof, a curved latch sliding in said guideways, and a swinging side section, the free end of which is movable toward and from the latch of the end section, the side section serving to engage the latch and automatically raise the same to hold the side section in closed position.



653,067. MUSIC-LEAF TURNER. WALTER L. CATWOOD and JOHN M. GASAWAY, Hume, Mo. Filed Sept. 13, 1899. Serial No. 730,293. (No model.)



Claim.—In a music-leaf turner, a clamp consisting of two longitudinally-parallel parts, a spring incased in one part near its lower end, a bolt having one end hinged to the other part and its other end projecting through said spring and provided with a head, a rack-bar pivoted in a recess formed in the upper end of one part, and a

transverse pin stored in a recess of the upper end of the other part to coact with said rack-bar, a vertically-adjustable back-piece secured to one of said parts, and clamping-arms hinged to said back-piece.

653,068. ELECTRIC-LAMP SOCKET. WALTER A. CHURCH, Pittsburg, Pa. Filed Dec. 21 1899. Serial No. 741,106. (No model.)

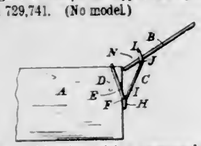


Claim.—1. The combination with an electric lamp, of a socket provided with a transversely-extending opening, an auxiliary contact-spring secured to the top of said opening and suitably connected to a lamp, a main contact-spring arranged upon the bottom of said opening and adapted to be connected to a suitable source of electrical supply, a negative binding-post secured to the top of said opening and suitably connected to said lamp, and means suitably arranged in said opening and constructed of non-conducting material and adapted when operated to bring the said contact-springs in engagement with each other, substantially as described.

2. The combination with an electric lamp, of a socket constructed entirely of non-conducting material and provided with a transversely-extending opening, an auxiliary contact-spring secured to the top of said opening and provided with a downwardly-extending end, a main contact-spring mounted upon the bottom of said opening and having its inner end extending upwardly and adapted to engage the downwardly-extending end of the auxiliary contact-spring, said main contact-spring connected to a suitable source of electrical supply, a shaft extending through said socket and provided with a key at one end thereof, a negative binding-post secured to the top of said opening and suitably connected to said lamp, and a circuit-forming block constructed of non-conducting material suitably mounted upon said shaft and adapted to operate the upwardly-extending end of said main spring to bring the same into contact with the downwardly-extending end of the auxiliary spring, substantially as set forth.

3. The combination with an electric lamp, of a socket constructed entirely of non-conducting material and provided with a transversely-extending opening, an upwardly-extending collar of the same material formed integral therewith, a main contact-screw arranged in the top of said socket, an auxiliary contact-spring arranged at the top of said opening suitably connected to said contact-screw and provided with a downwardly-extending outer end, a main contact-spring mounted upon the bottom of said opening, connected to the binding-post for the positive wire and provided with an upwardly-extending inner end, a binding-post for the negative wire secured to the top of said opening and suitably connected to said lamp, a shaft suitably mounted in the said socket and provided on one of its ends with a key, and a circuit-forming block constructed of a non-conducting material adapted when operated to bring the extending ends of the main and auxiliary springs together, substantially as described.

653,069. CIGAR-BOX-LID HOLDER. GEORGE W. CLARKE, Rochester, N. Y., assignor to Joseph M. Appel, same place. Filed Sept. 7, 1899. Serial No. 729,741. (No model.)



Claim.—1. The combination with a receptacle having a hinged lid, of a lid-holder comprising a hook to engage the edge of one wall of the box, a second hook to engage the edge of the lid, a support resting against the rear wall of the box, and two diagonal members projecting from the support and joining respectively the box-hook and the lid-hook, substantially as described.

2. The combination with a receptacle having a hinged lid, of a lid-holder comprising a hook adapted to engage the edge of one wall of the box, a member extended diagonally downward from said hook to the rear wall of the box, a horizontal member projecting from the diagonal member and resting against the rear wall of the box, a U-shaped member projecting downward from the horizontal member, a member extending diagonally upward from the U-shaped member, and a hook on the upper end of the last-named diagonal member to engage the edge of the box-lid, substantially as described.

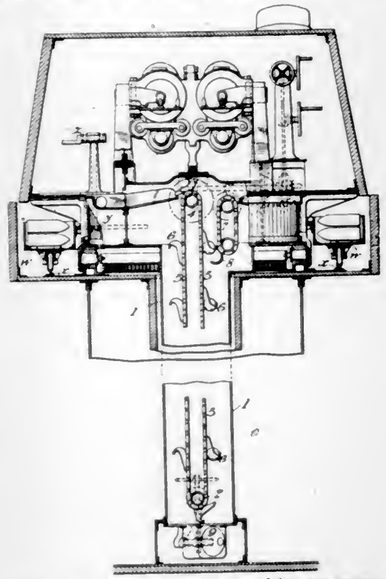
3. A lid-holder made of a single length of wire bent at one end to form a hook, then projected downward diagonally, then projected at right angles transverse to the diection of the hook, then bent downward and formed into a U-shaped loop, then projected diagonally upward at the opposite angle to the first-mentioned diagonal extension, and finally bent to form a hook, substantially as described.

653,070. CAN-OPENER. WILLIS F. DALE, Ortonville, Minn. Filed Mar. 22, 1899. Serial No. 710,112. (No model.)



Claim.—A can-opener formed from a single sheet of metal or blank, presenting a straight body portion, members *a a* at one end of said body portion having straight inner edges and curved outer edges joining in a point at the outer ends of said members, a tongue a^3 formed between said members at the inner ends thereof, the other end of the blank having a reduced portion a^2; the said blank being bent upon itself longitudinally and the tongue bent downward, as herein shown and for the purpose set forth

653,071. APPARATUS FOR SUPPLYING AMMUNITION TO TURRET OR BARBETTE GUNS. ARTHUR T. DAWSON, London, and JAMES HORNE, Barrow-in-Furness, England, assignors to the Vickers, Sons & Maxim, Limited, Sheffield, England. Original application filed Oct. 24, 1899, Serial No. 734,643. Divided and this application filed Mar. 9, 1900. Serial No. 8,060. (No model.)

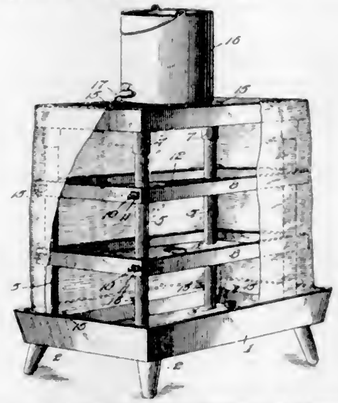


Claim.—1. In combination with a revolving gun turret or barbette, a hoist-shaft attached to and revolving with said turret or barbette, sprocket-wheels arranged in the upper and lower portions of said hoist-shaft, endless chains traveling about said sprocket-wheels, endless chains arranged in the upper part of the hoist-shaft parallel to the first-mentioned chains and traveling about sprocket-wheels, means for causing said last-mentioned chains to travel faster than the chains first named, and curved projecting blades carried by each set of chains and adapted to carry charges of explosive, and the blades on the faster-moving chains operating to remove a portion of the charges from the blades on the slower-moving chains, substantially as described.

2. The combination with a revolving gun turret or barbette, a hoist-shaft attached to and revolving with said turret or barbette, an endless carrier arranged in said hoist-shaft and provided with curved projecting holders each adapted to lift a plurality of charges, said holders operating to discharge the charges at the top of the endless carrier and to one side of the latter, an auxiliary endless carrier arranged in the upper part of the hoist-shaft parallel with the elevator-carrier, and means for causing said auxiliary carrier to travel faster than the elevator-carrier, said auxiliary carrier being provided with

curved projecting holders arranged to travel between the holders on the elevator-carrier and operating to remove a portion of the charges from the latter and discharge them on the side opposite to the elevator-carrier, substantially as described.

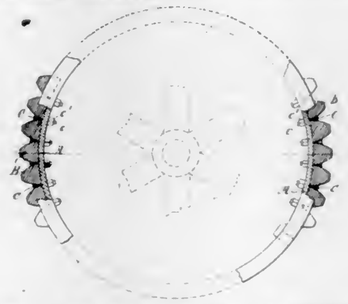
653,072. MILK-COOLER. WILLIAM V. DEAN, Valley Mills, Tex. Filed Jan. 30, 1900. Serial No. 3,310. (No model.)



Claim.—1. In a milk-cooler, the combination with a bottom tray and a top tray, both of which are provided with bent edges and prongs secured between said bent edges and the tray itself, standards rising from the bottom tray and detachably connected to it and to the top tray, shelves secured to said standards, and a capillary-feed fabric having its upper and lower edges engaged with the prongs on the top and bottom trays, respectively.

2. In a milk-cooler, the combination with a bottom tray and a top tray, both of which have stub-standards and are provided with bent edges and prongs secured between said bent edges and the tray itself, standards rising from the bottom tray and telescoping with the stub-standards on top and bottom trays, a capillary-feed fabric having its upper and lower ends engaged with the prongs on the top and bottom trays, and shelves having apertures through which the standards loosely pass, whereby the shelves can be adjusted on the standards, and provided with set-screws which are threaded through the shelves and are adapted to be screwed against the standards to bind thereon and clamp the shelves thereto.

653,073. COG-WHEEL WITH DETACHABLE TEETH. GEORG DORNAUF, Frankfort-on-the-Main, Germany. Filed July 18, 1899. Serial No. 724,287. (No model.)



Claim.—1. A cog wheel or rim, having a ring A of channel-section, cogs B of suitable construction, and wedges C screwed to the ring A by studs *c* and nuts *c'* between the cogs so as to hold the latter securely in position and to allow of their easy attachment or removal, substantially as described.

2. A gear-wheel having a rim, cogs or teeth mounted on said rim, wedges fitting between the cogs or teeth and binding them together, and bolts attached to the wedges and fastened through the rim.

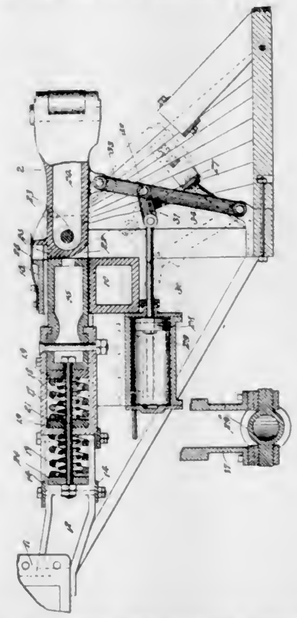
3. A gear-wheel having a rim, cogs or teeth mounted thereon, wedges fitted between the cogs or teeth to bind them together, and means extending from the wedges through the rim of the wheel by which to hold the wedges in position.

653,074. STUD FOR GARMENT-SUPPORTERS. LOCIUS D. DRAPER, Boston, Mass., assignor of four-ninths to Edward W. Phillips, same place. Filed Jan. 29, 1900. Serial No. 3,089. (No model.)



Claim.—A stud for garment-supporters comprising a base-plate; a metal shank; a metal head-plate which extends across the outer end of the shank; and a sheet of soft material covering the top surface and edge of the head-plate, and with its edge turned in under the head-plate and clamped between the head-plate and the end of the shank, substantially as described.

653,075. LOCOMOTIVE-PILOT RIGGING. JAMES F. DUNN, Salt Lake City, Utah. Filed Aug. 29, 1899. Serial No. 728,965. (No model.)



Claim.—1. The combination of a pivoted coupler-head, toggle-links having connection therewith to raise and lower the same, and means in connection with the toggle-links for throwing them.

2. The combination of a pivoted coupler-head adapted to move vertically on a horizontal axis, toggle-links mounted beneath the coupler-head and engaging therewith to raise and lower the same, and means for throwing the toggle-links.

3. The combination of a coupler-head pivotally mounted and movable vertically, toggle-links mounted beneath the coupler-head and connected therewith to raise and lower the same, and a cylinder and piston, the latter having a rod in connection with the toggle-links to impart movement thereto.

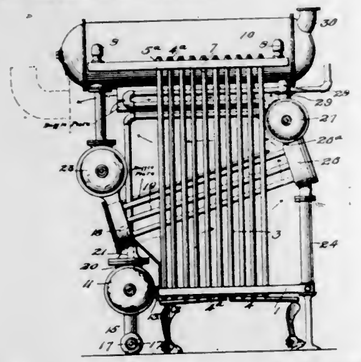
4. The combination with the pilot of a locomotive, of a coupler-head pivotally mounted at the top thereof, toggle-links respectively pivoted to the coupler-head and to the heel of the pilot, the toggle-links being connected with each other and movable forward and backward to raise and lower the coupler-head, and means in connection with the toggle-links for moving the same.

5. In a locomotive, the combination of a buffer-beam, draw-bar stops or brackets attached to the buffer-beam and extending rearwardly to and having connection with the cylinder-saddles, and coupler mechanism held by the draw-bar stops or brackets.

6. In a locomotive, the combination of a buffer-beam, cylinder-saddles, draw-bar stops or brackets extended between and fastened to the buffer-beam and cylinder-saddles, and coupler mechanism having portions held by the stops or brackets.

7. In a locomotive, the combination with the pilot having an opening in the front thereof, of a coupler-head pivotally mounted on the locomotive and capable of swinging downward into the opening in the pilot to lie below the surface of the pilot, and a saddle-bar having its ends fastened rigidly to the pilot-bars and extending transversely below the pilot across the opening therein, to form a seat in which the coupler-head is received when thrown down into the opening in the pilot.

653,076. STEAM-BOILER. GUSTAV EBELING, Chester, Pa., assignor of one-half to William M. Boulden, same place. Filed Mar. 15, 1900. Serial No. 8,772. (No model.)



Claim.—1. In a tubular steam-boiler, the combination with the lower rectangular hollow tube-supporting frame connected by pipe connections with the lower cylinder 11; the upper rectangular hollow tube-supporting frame connected by pipe connections with the steam-drum; a set of vertical tubes connecting said lower and upper hollow supporting-frames; the open vertical partitions in said lower and upper hollow tube-supporting frames; the inclined tubes having their open ends secured in the spaced tube-holding sheets; vertical pipes or tubes connecting said lower rectangular supporting-frame with said spaced front tube-holding sheets; the front cylinder and its pipes connected with the steam-drum and with said spaced front tube-holding sheets; pipes connecting said spaced front tube-holding sheets with said lower hollow supporting-frame; pipes connecting the lower rear tube-holding sheets with the lower and upper rear cylinders of the steam-boiler; a vertical pipe connecting said lower rear cylinder with the mud-drum; pipe connections between the lower rear tube-holding sheets, the lower rear cylinder and the upper rear cylinder; a vertical pipe connecting the upper rear cylinder with said steam-drum; and the circuitous feed-water inlet-pipe connecting a source of water-supply with said lower rear cylinder; substantially as specified.

2. In a tubular steam-boiler, the combination of the front cylinder, the lower and upper rear cylinders; the spaced tube-holding sheets and their inclined tubes, the steam-drum and the mud-drum and water and steam circulating pipes or tubes connecting said parts; of the upper and lower hollow supporting-frames provided with open partitions; vertical tubes connecting said supporting-frames between said open partitions; removable screw-plugs in screw-seats opposite the ends of each vertical tube; and a feed-water inlet-pipe connected with said lower rear cylinder; substantially as specified.

653,077. PROCESS OF TREATING MINERAL WOOL. ALEXANDER D. ELBERS, Hoboken, N. J. Filed Oct. 23, 1899. Serial No. 734,546. (No specimens.)

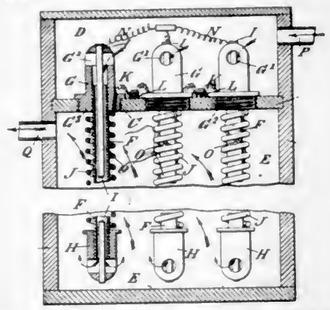
Claim.—1. The herein-described method of making elastic mineral-wool moldings, which consists in compressing loose mineral wool as evenly as practicable to a suitable density, in molding the compressed wool in the dry state, in thoroughly permeating the moldings with a suitable agglutinating solution without saturating them fully with it, and in drying the moldings thus prepared.

2. The herein-described method of making elastic mineral-wool moldings, which consists in compressing loose mineral wool as evenly as practicable to a suitable state of density, in molding the compressed wool in the dry state, in bringing each molding in contact with about as much of an agglutinating solution as it is to absorb, and in furthering the capillary action of the solution by subjecting the absorbing mass to slight pressure until it is thoroughly permeated by the solution, and in drying the moldings thus prepared.

3. The herein-described method of making elastic mineral-wool moldings, which consists in compressing loose mineral wool as evenly as practicable to a suitable density, in molding the compressed wool in the dry state, in thoroughly permeating the moldings with a highly-attennated solution of alkaline silicate without fully saturating them with it, and in drying the moldings thus prepared.

4. The herein-described method of making elastic mineral-wool moldings, which consists in compressing loose mineral wool as evenly as practicable to a suitable density, in molding the compressed wool in the dry state, in thoroughly permeating the moldings with a solution of silicate of soda of less than 1.05 specific gravity without fully saturating them with it, and in drying the moldings thus prepared.

653,078. APPARATUS FOR GENERATING OZONE. WILLIAM ELWORTHY, London, England. Filed Apr. 17, 1900. Serial No. 13,267. (No model.)



Claim.—Apparatus for generating ozone consisting of tubes of dielectric material fitted air-tight in a partition in a box which divides the box into two hermetically-separated compartments, metal conductors passing through the said tubes out of contact therewith, metal conductors coiled helically around the said tubes out of contact therewith, the said metal conductors within the tubes being connected with one terminal of a source of electricity while the said metal conductors surrounding the tubes are connected with the other terminal of the same source of electricity, an inlet for air to be ozonized in the upper compartment of the box and an outlet for the ozonized air in the lower compartment of the box substantially as and for the purpose described.

653,079. AUTOMATIC DRIVING-BOX WEDGE. JOHN P. EVANS Charlton, Iowa, assignor of one-half to Jesse C. Evans, same place. Filed Mar. 29, 1900. Serial No. 10,683. (No model.)

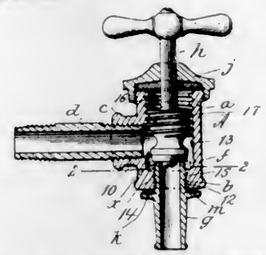


Claim.—1. In an automatic driving-box wedge for locomotive-engines, the combination with the parallel depending supporting-arms, of the friction-plates loosely engaging said depending arms, the pedestal-yoke removably secured between said depending arms, the journal-box engaging said friction-plates, the vertically-disposed adjusting-rods passing through spring-seats near one end of said yoke-spool, the upper spiral springs encircling the upper ends of said adjusting-rods and secured at their upper ends in seats in the base of the journal-box wedge, and spiral springs encircling the projecting lower ends of said adjusting-rods and tension-regulating thumb-nuts on the projecting lower ends of said adjusting-rods, substantially as set forth.

2. In an automatic driving-box wedge for locomotives, the combination of the depending supporting-arms, the journal-box, the friction-plates and the pedestal-yoke, the removable rod for connecting the pedestal-yoke to the lower ends of the supporting-arms, a wedge, adjusting-rods extending through said pedestal-yoke and adjustably connected to the wedge, a set of springs confined between the lower ends of the rods and the yoke, a set of springs confined between the yoke and the lower end of the wedge, and tightening-nuts on the lower ends of said adjusting-rods, substantially as set forth.

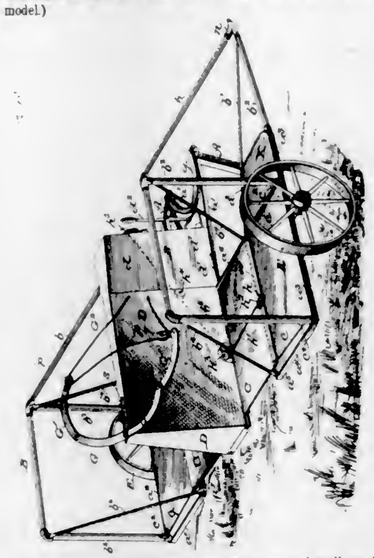
653,080. FAUCET OR VALVE. BENJAMIN F. FARRAR, Springfield, Mass. Filed Apr. 20, 1900. Serial No. 13,612. (No model.)

Claim.—1. A valve or faucet consisting of a body composed of a T-coupling the lateral and lower limbs of which are internally screw-threaded, the inlet-pipe section *d* screwing into the lateral limb, the nozzle-section *g* having its upper end portion *f* externally screw-threaded and screwing into and through the lower threaded portion of the lower limb, which said portion is internally thickened, and whereby the portion of the nozzle screwing therethrough is surrounded by an annular space *x*, and constitutes the valve-seat, the valve-stem having the usual threaded enlargement 17 and the valve adapted to close downwardly against said valve-seat portion *f* substantially as described.



2. A valve or faucet consisting of a body, composed of a T-coupling the lateral and lower limbs of which are internally screw-threaded, and the portion of the body next above the junction therewith of the passage 12 through said lower limb constructed with a chamber *x* of greater diameter than said passage 12, the inlet-pipe section *d*, screwing into the lateral limb, the nozzle-section, *g*, having its upper annular end portion *f* externally screw-threaded and screwing into and through the threaded portion of the lower limb, and having a clear portion thereof standing within the space or annular chamber *x*, and provided with the external flange *k*, the annular packing *m* between the flange and the lower end of the said lower limb, the valve-stem having the usual threaded enlargement 17 screw-engaging in the chamber of the said T-coupling and provided with the valve adapted to seat upon the internally-located upstanding end portion of the said nozzle-section, substantially as shown.

653,081. CORN HARVESTER AND SHOCKER. JOHN FEDDERMAN, Harrisburg, Pa. Filed Sept. 6, 1899. Serial No. 729,619. (No model.)



Claim.—1. A corn-harvester having a central wall or former, sliding shelves for supporting the gathered corn in two bunches, means for withdrawing said shelves, horizontal constricting-arms pivoted upon the extreme upper edge of the central wall or former, and having their outer ends connected by a rope, whereby the stalks are loosely inclosed and held while being dropped and before being bound, and the permanent binding-cord may be next applied to the shock above the constricting-arms, with the stalks on the ground, and the constricting-arms are then drawn through the middle of the shock below the permanent binding-cord, substantially as described.

2. A corn-harvester having a central wall or former, sliding shelves for supporting the gathered corn in two bunches, means for withdrawing said shelves, horizontal constricting-arms pivoted at their rear ends to the former to have an independent swing from a position having their free ends in front to a position having their free ends in the rear, so as to be drawn through the space between the two halves of the shock and below the permanent binding-cord, and an adjustable cord connecting the free ends of the constricting-arms, substantially as described.

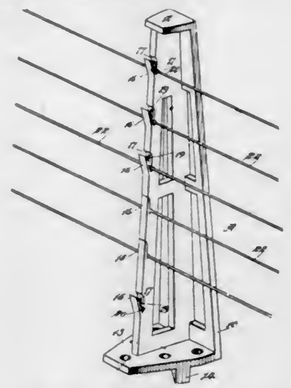
3. A corn-harvester having a central wall or former, sliding shelves for supporting the gathered corn in two bunches, means for withdrawing said shelves, horizontal constricting-arms pivoted to the rear upper end of the central wall or former, upon the same axis, and each having an independent range of movement from a position with their free ends forward to a position with their free ends to the rear, said arms having each a joint intermediate of their lengths, and a cord connecting their free ends substantially as and for the purpose described.

4. A corn-harvester having a central core or former about which the two halves of a shock are formed, and pivoted compressing devices mounted upon said core or former and having thereon a sliding motion substantially as and for the purpose described.

5. In a corn-harvester, the combination of a frame having an opening with a rear outlet, a removable shelf forming a temporary floor to said opening, an upright guard-rail arranged on the outer side thereof and having hollow posts or legs, coil-springs arranged in said legs and connected to the shelf, and means for locking the shelf in the opposite position from that in which it is drawn by the springs substantially as described.

6. In a corn-harvester, the combination of a horizontal frame having two openings each with an outlet to the rear, removable shelves arranged above said openings, a middle wall between them with inclined sides, and a pair of horizontally-swinging binding-arms hinged to the upper rear end of said wall each arm being made flexible and said arms having their outer ends connected by cords, substantially as and for the purpose described.

653,082. FENCE-WIRE LOCK. EDWIN L. FROGGATT, Spearfish, S. D. Filed Oct. 11, 1899. Serial No. 733,238.



Claim.—1. A fence-post provided with a tongue and a recess opposed to the tongue, into which recess the tongue is adapted to fit, a wall of the said recess being provided with a longitudinal slot and a transverse slot having a depression between its ends, and a rib formed on the tongue, adapted to enter the longitudinal slot in the wall of the said recess and cross the depression in the transverse slot, as described.

2. A fence-post provided with a recess in an upper outer surface thereof, and a tongue at the recessed portion adapted to fit in the recess, the tongue being normally at an angle to said recess, a wall of said recess being provided with a longitudinal slot and a transverse slot crossing the longitudinal slot, the transverse slot having a portion of its rear wall provided with a semicircular depression, and a rib longitudinally located on the inner face of the tongue, which rib is adapted to enter said longitudinal slot, crossing the depressed portion of the transverse slot, whereby a wire placed in said transverse slot will conform to the contour of said slot when the tongue is forced into said recess.

653,083. END-GATE. JOSEPH T. HALL, Confederate, Ky. Filed Apr. 4, 1900. Serial No. 11,496. (No model.)

Claim.—1. In a device of the class described, the combination of a frame or body provided at the rear end of its bottom with a hinged section adapted to swing downward below a horizontal position, and a hinged end-gate secured to the outer end of the said hinged section and adapted to form a continuation thereof to provide an inclined skid or chute without extending the end-gate above the sides of an ordinary wagon body or frame, substantially as and for the purpose described

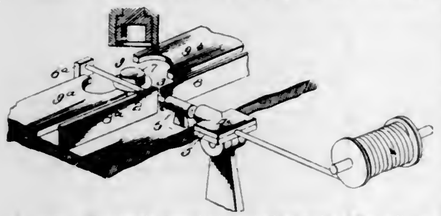


2. In a device of the class described, the combination of a frame or body provided with a bottom having a rear section, adapted to be lowered to an inclined position, and an end-gate adapted to be arranged in an inclined position, to form a continuation of the said section to provide a skid or chute without extending the end-gate above the sides of an ordinary wagon body or frame, substantially as described.

3. In a device of the class described, the combination of a frame or body having a bottom provided at its rear end with a binged section, fastening devices for locking the hinged section in a horizontal position, an end-gate hinged to the outer end of the said hinged section, whereby a skid or chute may be provided without extending the end-gate above the sides of an ordinary wagon body or bed, and means for securing the end-gate in alinement with the hinged section, to form a skid or chute, substantially as described

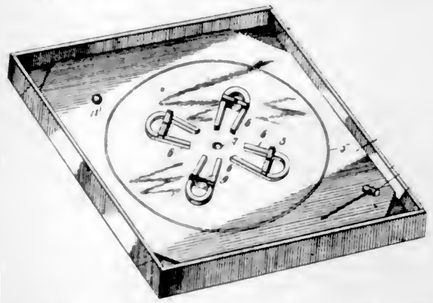
4. In a device of the class described, the combination of a frame or body having a bottom provided at its rear end with a hinged section, the side-bars of the bottom being extended rearward and provided with recesses, the lateral extensions projecting from the outer portion of the hinged section and arranged in the said recesses, fastening devices mounted on the side-bars of the bottom and securing the extensions in the recesses, an end-gate hinged to the outer end of the hinged section and fastening devices for rigidly connecting the end-gate to the hinged section when the parts are arranged to form an inclined skid or chute, substantially as described.

653,084. METHOD OF MAKING WASHERS. HUBERT C. HART, Unionville, Conn. Filed Mar. 7, 1900. Serial No. 7,689 (No model.)



Claim.—The herein-described method of making flat split-ring washers from wire consisting of making independent rings from the wire and then subjecting said rings to pressure to flatten and increase their density and decrease their volume.

653,085. GAME-BOARD. WILLIAM H. HILLYER, Atlanta, Ga. Filed Mar. 27, 1900. Serial No. 10,368. (No model.)

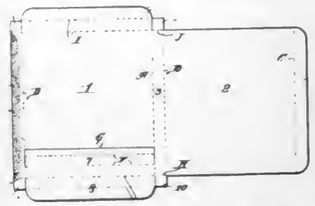


Claim.—1. A game-board, comprising a base having a raised edge and a circular field, permanent magnets arranged within the field and having their poles pointing to a common center, and a rolling device of magnetic material movable over the board, substantially as specified.

2. A game-board, comprising a base having a raised or box-like edge, and pockets at the corners, permanent magnets secured to the base and having their poles pointing to a pocket at the center of the board, a ball of magnetic material, and a propelling device for the ball, substantially as specified.

3. A game-board, comprising a base having a raised edge and a center field, pockets provided at the corners of the base, and a pocket at the center of the base, permanent magnets attached to the base and having their poles directed toward the center pocket, a ring-shaped armature for the magnets, a ball of magnetic material, and means for propelling said ball over the board, substantially as specified.

653,086. DISPLAY-BOX. MICHAEL L. HOUTS, St. Louis, Mo. Filed Mar. 23, 1900. Serial No. 9,906. (No model.)



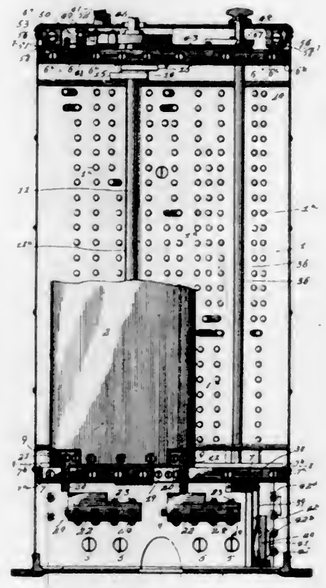
Claim.—1. A blank for a display-box body constructed with a front section having a free edge section, inner and outer flaps at the lower end of the front section, and a scored cover-section at the upper end of the front section, a back section having a free edge section, and an intermediate edge sectioo located between the front and back sections.

2. A blank for a display-box body constructed with a front section having a free edge section formed with corner-flaps, inner and outer flaps at the lower end of the front section, and a scored cover-section at the upper end of the front section, a back section having a free edge sectioo, and an intermediate section having corner-flaps and located between the front and back sections.

3. A display-box body constructed with a front section having a free edge section folded backward, inner and outer flaps at the lower end of the front section both folded backward, and a scored cover-section at the upper end of the front section, a back section having a free edge section folded forward, and an intermediate edge section located between the front and back sections.

4. A display-box body constructed with a front section having a free edge section folded backward and provided with corner-flaps, inner and outer flaps at the lower end of the front section both folded backward, and a scored cover-section at the upper end of the front section, a back section having a free edge section folded forward, and an intermediate edge section located between the front and back sections and provided with corner-flaps

653,087. ELECTRIC CONTROLLER. SLAUGHTER W. HUFF, Baltimore, Md., assignor of one-half to Jesse Hilles, same place. Filed July 12, 1898. Renewed June 9, 1900. Serial No. 19,788. (No model.)



Claim.—1. In an electric controller the combination of a plane back, a plane carriage parallel to the back and supported vertically upon the sliding bearing in front of said back, said parts carrying terminals and bridging-contacts, and a shaft lying transversely to the path of travel of the carriage and having connections with the ends of said carriage whereby uniform movement is imparted to the latter; said shaft having means for rotating it; substantially as explained.

2. In an electric controller, the combination with a suitable back and a carriage movable horizontally in front thereof, the one carrying electric terminals and the other carrying contacts bearing against said terminals, a shaft mounted at an intermediate point between the carriage and back and extending transversely to the movement of the carriage, and connections between the ends of said shaft and the carriage, imparting to the carriage a uniform motion at all angles of rotation of the shaft, to bring the contacts successively upon different terminals.

3. In an electric controller, the combination with the plane back and sliding plane carriage moving thereon, carrying, the one electric terminals and the other bridging-contacts, the shaft extending transversely to the movement of the carriage, located between the carriage and back at an intermediate point in the travel of the carriage and having driving-peripheries, and positive connections between the driving-peripheries and the carriage, transmitting from the former to the latter uniform movement at all angles of revolution of the shaft, to bring the contacts successively upon different terminals.

4. In an electric controller, the combination of a back, cleats upon the back near its ends, a carriage having cleats upon its face overlapping those of the back, means for securing the cleats in sliding relation, and means for moving the carriage; substantially as set forth.

5. In an electric controller, the combination of the back and the carriage, having overlapping cleats, with opposed grooves in the adjacent faces of said cleats, removable tongues inserted in the opposed grooves for securing the carriage in sliding relation to the back, and means for imparting movement to the carriage; substantially as and for the purposes set forth.

6 In a controller, the combination of the back and carriage, the cleats secured to one of said parts and affording means for connecting them in sliding relation and spacing them apart, terminals and contacts secured to the respective parts and overlapping in the space between the parts, and the strips 10 secured to one of the parts and closing the ends of the space between them; substantially as and for the purposes set forth.

7. In a controller, the combination of the back, the carriage mounted in sliding relation in front of the back, a shaft mounted longitudinally on said back, and winding connections on the shaft connected to the respective sides of the carriage for imparting movement to it in opposite directions; substantially as set forth.

8. In a controller, the combination of the back, the carriage mounted in sliding relation to the back, a controlling-shaft, winding-drums fixed upon said shaft, and tapes or bands wound in opposite directions upon said drum and secured to the respective sides of the carriage for reciprocating the latter as the shaft is rotated in opposite directions; substantially as explained.

9. In a controller, the combination of the back, the carriage mounted in sliding relation to the back, the shaft, an attaching-plate connected to said shaft through the medium of winding connections, and a detachable connection between the attaching-plate and the carriage; substantially as and for the purposes set forth.

10. In a controller, the combination of the back, the shaft mounted in said back, winding connections extending from said shaft, an attaching-plate to the ends of which said winding connections are attached, and a carriage having dowel-pin connection with said attaching-plate, through the medium of which the plate may move the carriage while the carriage is permitted to be moved ont of engagement with the attaching-plate; substantially as explained.

11. In a controller, the combination of the back, the carriage, the cleats secured to the carriage, through the medium of which said carriage has sliding connection with the back, projections 20 secured to one of said cleats, and a stop 19 provided on the back; substantially as and for the purposes set forth.

12. In a controller, the combination of the back, the carriage the cleats secured to the back and affording sliding bearings for the carriage, and a shaft mounted in a depression in the back, having reciprocating connections with the carriage, and having bearings secured to the rear sides of the cleats upon the back; substantially as and for the purposes set forth.

13. In an electric controller, the combination of terminals 42^a, 42^b, bridging-contact 41, controlling rod 36, and locking-lever 43 engaging said rod 36 to prevent its movement, and circuit-controlling connections having operating mechanism which controls said locking-lever, whereby the latter engages the rod 36 only under certain conditions of said circuit-controlling connections; substantially as and for the purposes set forth.

14. In a controller, the combination of a suitable mounting, circuit-terminals, bridging-contact 41, block 40, connecting-spring 39, offset 38, engaging a shoulder on the mounting, and controlling-rod 36, arranged and operating substantially in the manner and for the purpose set forth.

15. In a controller, the combination of the terminals and the bridging-contact, the controlling-rod 36 provided with notch 44, the locking-lever 43, the circuit-controlling mechanism with means for operating it, including the star-wheel against which a locking-lever is caused to bear; said star-wheel being formed to admit the locking-lever when the controlling mechanism is at the "off" point and to release the controlling-rod at such time only, substantially in the manner and for the purposes set forth.

16. In an electric controller, the combination of relatively-moving parts carrying terminals and bridging-contacts, a ratchet device for marking the successive steps of the moving part, a controlling-handle for moving one of said parts relatively to the other, a stop and projection mounted respectively upon a fixed part of the controller in position to arrest the handle at the "off" point and upon the handle, and means for withdrawing one of said parts out of the path of the other to permit a continued movement of the handle beyond the stop; substantially as set forth.

17. In an electric controller, the combination of two relatively-movable parts respectively carrying terminals and bridging-contacts, of which some of the terminals are connected in normal running circuits and others are connected in abnormal circuits, a handle controlling the movements of one of the parts relatively to the other, a stop for arresting the movement of the handle at a point which leaves the contacts intermediate of the normal and abnormal terminals, a movable projection on the handle through the medium of which the stop arrests the handle, and having means for withdrawing it from the path of the stop to permit movement of the handle beyond the limits of the normal movement; said stop being provided with cam-faces on one side whereby it automatically displaces the projection on the handle on the return movement of the lattter; substantially as and for the purposes set forth.

18. In combination with an electric controller arranged for making both forward and reversing circuits, a rotary handle controlling the said circuits by movement over the same dial in opposite directions, a stop for arresting the movement of the handle at a common off point in either direction, which leaves the contacts intermediate of the forward and reversing terminals, a movable projection on the

handle through the medium of which the stop arrests the handle, and having means for withdrawing it from the path of the stop to permit movement of the handle beyond the limits of the forward movement; substantially as described.

19. In combination with an electric controller having connections for establishing forward and reverse running connections, a controlling-shaft establishing different phases of the forward circuits by a revolution of the shaft in one direction, and establishing the phases of the reverse-running circuits by a revolution over the same path in the opposite direction; substantially as herein explained.

20. In combination with an electric controller having connections for establishing forward and reverse running connections, a shaft having connections with the moving part of the controller which establish the phases of the forward-running connections by a revolution of the shaft in one direction, and the phases of the reverse-running connections by a revolution of the shaft over the same path in the opposite direction, and a star-wheel and ratchet for marking the steps in the revolution of the shaft in both directions and thereby serving in common for the forward as well as the rear running operation of the controller.

21. In combination with a controller having forward and rear running connections, a shaft having connections for actuating the moving part of the controller in both directions by revolutions over the same path in opposite directions, a star-wheel and pawl serving in common to indicate the steps of revolution of the shaft in both directions, an arresting-stop in the path of the handle of said shaft and positively-operated means for releasing the handle from engagement by the stop; substantially as herein explained.

22. A controlling-handle carrying a trip-lever pivoted to the handle and terminating in a ring surrounding the grip of the handle whereby the hand of the operator may be pressed upon said ring to operate the trip-lever without releasing the grip, substantially as set forth.

23. In a controller, the combination of a back or mounting 1, a terminal 1*, screw 30, thimble 32 introduced from the side of the back or mounting opposite to the terminal, and conductor 33 passing through the thimble 32 and impinged by the screw 30; substantially as and for the purposes set forth.

24. The combination of the mounting 1, the terminal 1*, screw 30, split thimble 32 having eye 34, an insulated conductor 33 bared at points 35 and introduced through the opening of the thimble into the eye 34; said thimble being countersunk in the mounting 1 and having threaded into it the screw 30 impinging conductor 33, substantially as and for the purposes set forth.

25. In combination with an insulated conductor, a split sleeve or binding-post 32 formed with an eye 34 for the passage of the conductor, and a threaded screw-socket intersected by the plane of its split opening; substantially as and for the purposes set forth

26. A binding-post or thimble formed with a transverse eye and a longitudinal screw-socket, and split from one end to the transverse eye; substantially as explained and for the purpose set forth

27. The combination of the contact-block 25 having countersinks or bores 26, and the bridging-contacts consisting of disks 28 secured to the block at points between the countersinks or bores, and brushes 27 secured at intermediate points to said disks and having their inner ends in the bores with their outer ends projecting for contact with terminals which enter the bores, substantially as and for the purposes set forth.

28. The herein-described bridging-contact, comprising the hinging-spring and the solid segmental enlargements on the ends of the leaves of said spring; substantially as and for the purposes set forth.

29. The herein-described bridging-contact, comprising the hinging-spring and the solid segmental enlargements on the ends of the leaves of said spring, and protruding lengthwise beyond the edges thereof; substantially as and for the purposes set forth.

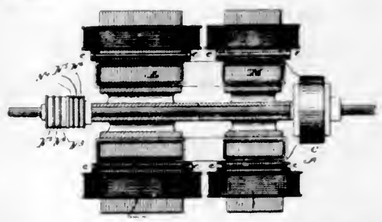
30. In combination with a recessed mounting, a bridging spring-contact working in the recess and having protruding contact ends, substantially as set forth.

31. In combination with a recessed mounting, a bridging-contact countersunk therein and having protruding contact ends extending through the mounting and beyond the surface thereof opposite the recess; substantially as set forth.

32. In combination with the motors of an electrically-propelled vehicle; electrical connections for establishing the various phases of circuits including said motors, a controller for shifting the connections with the various circuits; the initial or starting circuit being arranged to connect the armatures of the motors in multiple, and the fields in series with both armatures, substantially as herein explained and for the purpose set forth.

33. In combination with the motors of an electrically-propelled vehicle; a series of circuits of varying phases of which the first or starting circuit connects the armatures in multiple, and the fields in series with each other and with both armatures, for the purpose set forth.

653,088. APPARATUS FOR EXCITING ALTERNATING-CURRENT DYNAMO ELECTRIC MACHINES. MAURICE HUTIN and MAURICE LEBLANC, Paris, France. Filed Apr. 13, 1899. Serial No. 712,893. (No model.)



Claim.—1. An exciter for an alternating-current machine having its field magnetism supplied by two relatively-moving elements, the one having dephased alternating excitation, the other, in the armature-circuit of the exciter, producing a driving-flux and a flux compensating for armature reactions, substantially as described.

2. An exciter for an alternating-current machine having its field magnetism supplied by two relatively-moving elements, the one having dephased multiphase excitation, the other, in the armature-circuit of the exciter, producing a driving-flux and a flux compensating for armature reaction, substantially as described.

3. An exciter for an alternating-current machine having a pair of normally-dephased alternating-current field-windings, a driving-field winding and an armature-winding subject to the conjoint influence of the three fields, substantially as described.

4. An exciter for an alternating-current machine having its field magnetism supplied by two relatively-moving elements, the one having dephased alternating-current excitation producing a vector summation of electromotive forces proportional to the load and to the pressure at the machine-terminals respectively, the other in the armature-circuit of the exciter producing a driving-flux, substantially as described.

5. An exciter for an alternating-current machine having its field magnetism supplied by two relatively-moving elements, the one having dephased alternating-current excitation producing a vector summation of electromotive forces proportional to the load and to the pressure at the machine-terminals respectively, the other in the armature-circuit of the exciter producing both a driving-flux and a flux compensating for armature reaction, substantially as described.

6. An exciter for an alternating-current machine having a pair of dephased alternating-current field-windings, a driving and armature-reaction-compensating field winding and an armature-winding subject to the conjoint influence of the three fields, substantially as described.

7. An exciter for an alternating-current machine having a pair of dephased, multiphased, alternating-current field-windings, a driving-field winding and an armature-winding subject to the conjoint influence of the three fields, substantially as described.

8. An exciter for an alternating-current machine having a pair of dephased, multiphased, alternating-current field-windings, a driving and compensating field winding and an armature-winding subject to the conjoint influence of the three fields, substantially as described.

9. An exciter for an alternating-current machine supplied by two relatively-moving elements, the one having dephased, multiphase, alternating-current excitation producing a vector summation of electromotive forces proportional to the load and to the pressure at the machine-terminals respectively, the other in the armature-circuit of the exciter producing a driving-flux, substantially as described.

10. An exciter for an alternating-current machine having its field magnetism supplied by two relatively-moving elements, the one having dephased multiphase alternating-current excitation producing a vector summation of electromotive forces proportional to the load and pressure at the machine-terminals respectively, the other in the armature-circuit of the exciter producing both a driving-flux and a flux compensating for armature reactions respectively, substantially as described.

11. The combination with an alternating-current machine and an exciter mechanically disconnected therefrom which of its own accord runs in synchronism therewith, the exciter having three independent field-circuits, the windings of one of which are in series with the armature of the alternator, the windings of another being in shunt therefrom, and the windings of the third producing a driving-flux, substantially as described.

12. The combination with an alternating-current machine of an exciter mechanically disconnected therefrom which of its own accord runs in synchronism therewith, the exciter having three independent fields produced by independent field-circuits, one of which is practically constant, the other is variable with the currents in the armature of the alternator and the third of which produces a driving-flux, substantially as described.

13. The combination of an alternating-current machine and an exciter therefor comprising a series and a shunt coil, a generating-coil in inductive relation with both and a driving-field and armature reaction compensating coil, substantially as described.

14. The combination of an alternator and an exciter therefor comprising three independent fields, one field being practically constant in magnitude and phase, the other varying in magnitude and phase with a current in the alternator-armature, the third producing a driving-flux, and a generator-winding within the inductive influence of all three fields, substantially as described.

15. The combination of an alternating-current machine and an exciter therefor comprising a series and a shunt coil, a generating-coil in inductive relation with both and a coil producing a driving-field and compensating for armature reaction, substantially as described.

16. The combination of an alternating-current machine and an exciter therefor comprising a multiphase series coil, a multiphase shunt-coil, a generating-coil in inductive relation with both and a driving-field coil, substantially as described.

17. The combination of an alternator and an exciter therefor comprising three independent fields, each produced by multiphase current, one field being practically constant in magnitude and phase, the other varying in magnitude and phase with the current in the alternator-armature, the third producing a driving-flux, and a generating-winding within the inductive influence of all three fields, substantially as described.

18. The combination of an alternating-current machine comprising a multiphase series coil and a multiphase shunt-coil, a generating-coil in inductive relation with both and a coil producing a driving-field, substantially as described.

19. A rotary transformer comprising two primary windings each on a separate magnetic circuit, a secondary winding common to both and connected to a commutator and brushes, and a driving-field for rotating the windings, substantially as described.

20. A rotary transformer comprising two primary windings each on a separate magnetic circuit, a secondary winding common to both and connected to a commutator and brushes, and a driving-field in series with the brushes for rotating the winding, substantially as described.

21. An exciter for an alternating-current dynamo-machine comprising in combination means for creating a rotary field of constant magnitude, means for creating a rotary field varying in magnitude and phase with the variations in volume and current supplied by the alternator, a generating-winding in the inductive influence of both fields and a driving-field winding, substantially as described.

22. The combination of an alternator and an exciter therefor comprising in combination means for creating a rotary field of constant magnitude, means for creating a rotary field varying in magnitude and phase with a variation of the current supplied by the alternator, a generating-winding in the inductive influence of both fields, and a winding producing a driving-field and compensating for armature reactions, substantially as described.

23. The combination of an alternator and an exciter therefor mechanically disconnected therefrom but of its own accord running in synchronism therewith, comprising in combination means for creating a rotary field of constant magnitude, means for creating a rotary field varying in magnitude and phase with the variation of the current supplied by the alternator, and a winding producing a driving-field.

24. The combination of an alternator and an exciter therefor mechanically disconnected therefrom but of its own accord running in synchronism therewith, comprising in combination means for creating a rotary field of constant magnitude, means for creating a rotary field varying in magnitude and phase with the variation of the current supplied by the alternator, a generating-winding in inductive influence of both fields, and a winding producing a driving-field, substantially as described.

25. The combination of an alternator, an exciter therefor and a provisional constant-current exciter in series with the fields of the alternator and exciter, substantially as described.

26. The combination of an alternator, an exciter therefor and a provisional constant-current series-wound exciter therefor in series with the fields of the alternator and exciter, substantially as described.

27. The combination of an alternator, an exciter therefor and a provisional series-wound exciter having its field-winding shunted by a rheostat, the provisional exciter being in series with the fields of the alternator and exciter, substantially as described.

28. The combination of an alternator and an exciter therefor having field-circuits supplied by the alternator-armature, an exciter-field circuit in series with the alternator-field and a set of simultaneously-moving switches in the circuits leading from the alternator-armature to the exciter-fields, substantially as described.

29. The combination of an alternator and exciter therefor having field-circuits supplied by the alternator-armature, an exciter-field circuit in circuit with the alternator-field, a set of simultaneously-moving switches in the circuits leading from the alternator-armature to the exciter-field and indicating devices in shunt of the switches, substantially as described.

30. The combination of an alternator, an exciter therefor having a field-circuit in series with brushes resting on the commutator of the exciter, a rheostat shunting these brushes and a provisional constant-current exciter in series with the fields of the alternator and exciter, substantially as described.

31. The combination of an alternator, an exciter therefor having a field-circuit in series with brushes resting on the commutator of the exciter, a rheostat shunting these brushes, a set of switches in the circuits leading from the alternator-armature to the exciter-fields and a provisional constant-current exciter in series with the field of the alternator and a field of the exciter, substantially as described.

32. An exciter for an alternating-current machine supplied by two relatively-moving elements, the one having dephased, alternating-current excitation producing a vector summation of magnetomotive force, normally at an angle, proportional to the load and to the pressure at the machine-terminals respectively, the other in the armature-circuit of the exciter producing a driving-flux, substantially as described.

33. An exciter for an alternating-current dynamo-machine comprising means for creating a rotary field of constant magnitude, means for creating a rotary field, normally at an angle to that last specified, varying in magnitude and phase with the variations in volume and current supplied by the alternator, a generating-winding in the inductive influence of both fields and a driving-field winding, substantially as described.

34. An exciter comprising two associated rotary-field primary windings, a secondary winding common to both, the three forming a mechanically-connected system, and a fourth winding in relative rotation thereto, which serves to cancel the magnetomotive force of the secondary winding and to supply determinate poles to maintain the apparatus in motion, substantially as described.

35. The combination of an alternator and an exciter therefor, mechanically disconnected therefrom but rotating in synchronism therewith, comprising a field constant in magnitude and phase, a field normally at an angle thereto varying in magnitude and phase with a current in the alternator-armature and a driving-field, substantially as described.

36. The combination of an alternator and an exciter mechanically disconnected therefrom but running in synchronism therewith, having means for producing fields normally at an angle, means for producing a driving-field and an armature-winding subject to the conjoint influence of the three fields for supplying the alternator, substantially as described.

37. The combination with an alternating-current machine and an exciter mechanically disconnected therefrom which of its own accord runs in synchronism therewith, the exciter having means for producing a field of constant magnitude and phase, means for producing a field normally at an angle to that specified varying in magnitude and phase with a current in the alternator-armature and means for producing a driving-field, substantially as described.

38. The combination with an alternating-current machine and an exciter mechanically disconnected therefrom which of its own accord runs in synchronism therewith, the exciter having means for producing a field of constant magnitude and phase, means for producing a field normally at an angle to that specified varying in magnitude and phase with a current in the alternator-armature and means producing a driving-field and compensating for armature reaction.

39. The combination of an alternator and an exciter mechanically disconnected therefrom but running in synchronism therewith, which exciter delivers to the field-winding of the alternator currents derived from the vector sum of electromotive forces normally acting at an angle, one of which is proportional to the current in the armature of the alternator and the other to the pressure at a predetermined point in the external circuit and means for producing a driving-flux for the exciter, substantially as described.

40. The combination of an alternator and an exciter mechanically disconnected therefrom but running in synchronism therewith, which exciter delivers to the field-winding of the alternator currents derived from the vector sum of electromotive forces normally acting at an angle, one of which is proportional to the current in the armature of the alternator and the other to the pressure at a predetermined point in the external circuit and means for producing a driving-flux for the exciter and for compensating for armature reaction, substantially as described.

41. The combination of an alternator and an exciter mechanically disconnected therefrom but running in synchronism therewith,

having means for producing fields normally at an angle, means for producing a driving-field, and an armature-winding subject to the conjoint influence of the three fields for supplying the alternator, and means for neutralizing the armature reaction, substantially as described.

42. An exciter for an alternating-current machine having its field magnetism supplied by two relatively-moving elements, the one having means for producing fields normally at an angle, the other, in the armature-circuit of the exciter producing a driving-flux, substantially as described.

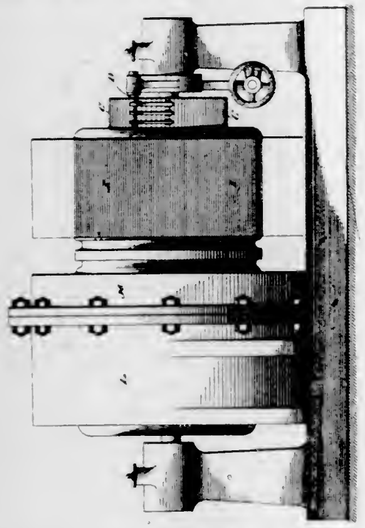
43. An exciter for an alternating-current machine having its field magnetism supplied by two relatively-moving elements, the one having multiphase excitation produced by the vector summation of magnetomotive forces normally at an angle, the other, in the armature-circuit of the exciter, producing a driving-flux, substantially as described.

44. An exciter comprising two associated primary windings, an armature-winding connected to a commutator common to both, the three forming a mechanically-connected system, and a fourth winding in relative rotation thereto which, by the adjustment of the brushes on the commutator, serves to cancel the magnetomotive force of the secondary winding and to supply determinate poles to maintain the apparatus in motion, substantially as described.

45. The combination of an alternator and an exciter therefor mechanically disconnected therefrom but rotating synchronously therewith, said exciter comprising two associated primary windings, an armature-winding connected to a commutator common to both, the three forming a mechanically-connected system, and a fourth winding in relative rotation thereto which, by the adjustment of the brushes on the commutator, serves to cancel the magnetomotive force of the secondary winding and to supply determinate poles to maintain the apparatus in motion, substantially as described.

46. The combination of an alternator and an exciter, said exciter having a field varying with the armature-current, a field normally at an angle thereto varying with the pressure at a predetermined point of the system, an armature-winding connected to a commutator, and a single field-winding which, by the adjustment of the commutator-brushes, supplies component fluxes to drive the armature and to neutralize the armature reactions, substantially as described.

653,089. EXCITER FOR ALTERNATING-CURRENT DYNAMO-ELECTRIC MACHINES. MAURICE HUTIN and MAURICE LEBLANC, Paris, France. Filed Nov. 22, 1899. Serial No. 737,916. (No model.)



Claim.—1. An exciter comprising series and shunt fields, an armature having an image-winding connected to a commutator, with one of its sections under the influence of these fields, and a field in series with the brushes on the commutator acting on the other section, substantially as described.

2. An exciter comprising dephased series and shunt fields, an armature having an image-winding connected to a commutator with one of its sections under the influence of these dephased fields, and a field in series with the brushes on the commutator acting on the other section, substantially as described.

3. An exciter comprising multiphase, dephased series and shunt fields, an armature having an image-winding connected to a commutator with one of its sections under the influence of these multiphase fields, and a field in series with the brushes on the commutator acting on the other section, substantially as described.

4. An exciter for an alternator comprising in combination stationary means for creating a rotary field of constant magnitude, stationary means for creating a rotary field varying in magnitude and phase with the variations in volume and phase of the current supplied by the alternator and an armature-winding in the inductive influence of both fields, substantially as described.

5. The combination with an alternator, of an exciter comprising a stationary series winding producing a field varying with the load on the alternator, a stationary shunt-winding producing a constant field, an armature-winding in inductive relation with the two stationary windings, a commutator connected to said armature-winding and brushes thereon connected with the alternator-field, substantially as described.

6. The combination with an alternator, of an exciter driven in synchronous relation therewith, the exciter having two stationary field-windings, one of which is in series with the armature of the alternator and the other in shunt therefrom, substantially as described.

7. The combination with an alternator, of an exciter driven in synchronous relation therewith, the exciter having two stationary field-windings, one of which is in series with the armature of the alternator and the other in shunt therefrom, a commutator connected to the exciter-armature and brushes bearing thereon connected to the alternator-field, substantially as described.

8. The combination with an alternator, of an exciter driven in synchronous relation therewith, the exciter having two stationary field-windings, one of which produces a practically-constant field and the other of which produces a field variable with the current in the armature of the alternator and an armature-winding in inductive relation to both exciter-fields for supplying the alternator-field, substantially as described.

9. The combination of an alternator, and an exciter comprising series and shunt fields, an armature having an image-winding connected to a commutator, with one of its sections under the influence of both fields, a field in series with the brushes on the commutator acting on the other section of the image-winding and electrical connections between the commutator-brushes and alternator-field, substantially as described.

10. The combination with an alternator, and an exciter comprising dephased series and shunt fields, an armature having an image-winding connected to a commutator with one of its sections under the influence of these dephased fields, a field in series with the brushes on the commutator acting on the other section of the image-winding and electrical connections between the brushes and alternator-field, substantially as described.

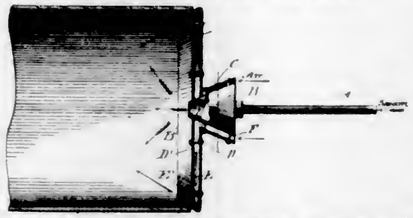
11. The combination of a polyphase alternator, and an exciter comprising multiphase, dephased series and shunt fields, an armature having an image-winding connected to a commutator with one of its sections under the influence of the multiphase fields, a field in series with the brushes on the commutator acting on the other section of the image-winding and electrical connections between the brushes and alternator-field, substantially as described.

12. The combination of an alternator and an exciter comprising stationary means for creating a rotary field of constant magnitude, stationary means for creating a rotary field varying in magnitude and phase with the variations in volume and phase of the current supplied by the alternator, and an armature-winding in the inductive influence of both fields for supplying current to the alternator-field, substantially as described.

13. The combination of an alternator and an exciter comprising stationary field-windings connected respectively in series and shunt with the alternator-armature circuits and in dephased relation with each other, an exciter-armature having an image-winding by means of which the field caused to rotate in space in the region of one of its sections by the series and shunt windings is converted into a field stationary in space in the region of its other section, but varying in direction in accordance with the variations of the current in the series winding and electrical connections between the exciter-armature and the alternator-field, substantially as described.

653,090. BOILER-TUBE CLEANER. WORTHINGTON H. INGERSOLL, Hamburg, N. J. Filed Apr. 17, 1900. Serial No. 13,268. (No model.)

Claim.—1. A cleaner for tubes and flues, comprising a discharge nozzle or head tapered toward the discharge end, a tapering sleeve or air-drum surrounding said head and spaced therefrom, a transverse plate or disk extending outwardly from the narrow end of the sleeve, and another transverse plate or disk parallel with the first-named plate, and extending in advance of the narrow end of the sleeve, the space between said plates communicating with the air-space surrounding the head, and being open at the periphery.



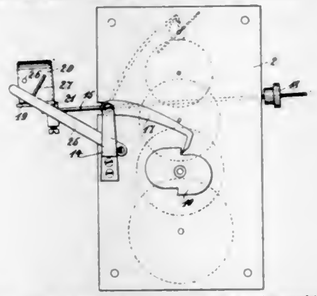
2. A cleaner for tubes and flues, comprising a discharge nozzle or head, a sleeve or air-drum surrounding said head and spaced therefrom, and transverse plates or disks at the discharge end of the head, the space between said plates communicating with the air-space surrounding the head, and the outer portions of the plates having inwardly-bent flanges forming a discharge-channel between them.

3. A cleaner for tubes and flues, comprising a discharge nozzle or head, a sleeve or air-drum surrounding said head and spaced therefrom, a transverse plate or disk extending outwardly from the forward end of said sleeve and spaced from the head, another transverse plate or disk arranged in front of the first-named plate in contact with the head, the plates being spaced to form an air-chamber, said chamber being open at the periphery.

4. An attachment for tube and flue cleaners, comprising a sleeve and two spaced transverse plates or disks located at the front end thereof, one of said plates extending outwardly from the front end of the sleeve, and the other being in front of said end and having a central aperture.

5. An attachment for tube and flue cleaners, comprising a sleeve and two spaced transverse plates or disks located at the front end thereof, one of said plates extending outwardly from the front end of the sleeve, and the other being in front of said end and having a central aperture, the outer end of the rear plate having an inward flange.

653,091. AUTOMATIC SUPPLY-MACHINE. WILLY JAEGER, Berlin, Germany. Filed Mar. 12, 1900. Serial No. 8,355. (No model.)

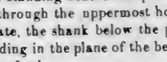


Claim.—The improvement in automatic supply-machines consisting of the hook 16 which holds the flying pinion 7 of the clock-work, of a hook 17 which is raised by a graduated disk 10 in the clock-work and of a lever 15 with a balance-weight 18, these three parts being connected together rigidly and further of a plate 19 arranged on the said lever 15 upon which the cup 20 intended for the coin 24 is arranged, and of this cup which is provided with a pin 26 which abuts against an arm 25 fixed to the frame.

653,092. NECKTIE-FASTENER. ARTHUR F. JAMES, Chadville, Pa. Filed Dec. 11, 1899. Serial No. 739,952. (No model.)

Claim.—1. The combination with a necktie having a knot, and a neck-band moving through the knot; of a fastener consisting of a support attached to the knot, and a pin having a shank connected with the support so as to revolve on its longitudinal axis, a pointed barb projecting below the same, and a handle between the shank and barb and beneath the knot, as and for the purpose set forth.

2. The combination with a necktie having a knot, and a neck-band moving through the knot; of a fastener consisting of a support attached to the knot, and a pin having a shank loosely connected with the support so as to permit a partial revolution on its longitudinal axis, a pointed barb below the support, and a handle, all as and for the purpose set forth.



3. The combination with a necktie having a knot, and a neck-band moving through the knot; of a fastener consisting of a support attached to the knot, and a pin having a shank loosely connected with the support so as to permit a partial revolution on its longitudinal axis, a pointed barb below the support, and a handle between the shank and barb and projecting obliquely from the plane passing through the shank and barb, as and for the purpose set forth.

4. The combination with a necktie having a knot, and a neck-band moving through the knot; of a fastener consisting of a support attached to the knot, and a pin whose shank has a shoulder and clamp facing in opposite directions longitudinally of the shank and each passing loosely through and engaging the support so as to prevent longitudinal motion but permit a partial rotation thereof, the pin having its lower end projecting below the support in a pointed barb, as and for the purpose set forth.

5. The combination with a necktie having a knot, and a neck-band moving through the knot; of a fastener consisting of a plate attached to the knot and having two holes, and a pin having a clamp at its upper end and a shoulder within the body of its shank respectively engaging the upper and lower holes loosely so as to permit a partial rotation, and its lower end formed into a pointed barb, as and for the purpose set forth.

6. The combination with a necktie having a knot, and a neck-band moving through the knot; of a fastener consisting of a plate attached to the knot and having two holes of which the uppermost is elongated into a slot, and a pin having a clamp at its upper end and a shoulder within the body of its shank respectively engaging the upper and lower holes loosely so as to permit a partial rotation, as and for the purpose set forth.

7. The combination with a necktie having a knot, and a neck-band moving through the knot; of a fastener consisting of a plate having two laterally-elongated holes, and a pin whose shank has a shoulder and a clamp passing loosely through said holes, and whose lower end is formed into a pointed barb, as and for the purpose set forth.

8. The combination with a necktie having a knot, and a neck-band moving through the knot; of a fastener consisting of a plate having two holes, and a pin whose shank lies on the face of the plate, has a double bend forming a shoulder passing through the lowermost hole, a back piece standing behind the plate, and a clamp at its upper end passing through the uppermost hole and turned over onto the face of the plate; the shank below the plate being formed into a handle, and at its lower end into a pointed barb standing in the plane of the bends and clamp and in a plane at an angle to said handle, as and for the purpose set forth.

9. The combination with a necktie having a knot, and a neck-band moving through the knot; of a fastener consisting of a plate having two holes, and a pin whose shank lies on the face of the plate, has a double bend forming a shoulder passing through the lowermost hole, a back piece standing behind the plate, and a clamp at its upper end passing through the uppermost hole and turned over onto the face of the plate, the shank below the plate being formed into a pointed barb standing in the plane of the bends and clamp, all as and for the purpose set forth.

10. The combination with a necktie having a knot, and a neck-band moving through the knot; of a fastener consisting of a support attached to the knot, and a pin having a shank loosely connected with the support so as to permit a partial revolution on its longitudinal axis, a pointed barb below the support deflected from the line of said axis, and a handle between the shank and barb and projecting obliquely from the plane passing through the shank and barb, as and for the purpose set forth.

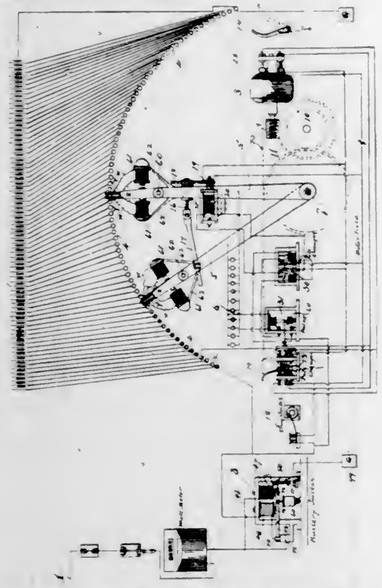
11. The combination with a necktie having a knot, and a neck-band moving through the knot; of a fastener consisting of a support attached to the knot, and a pin having a shank loosely connected with the support so as to permit a partial revolution on its longitudinal axis, a pointed barb below the support deflected from the line of said axis, and a handle, all as and for the purpose set forth.

12. The combination with a necktie having a knot, and a neck-band moving through the knot; of a fastener consisting of a support attached to the knot, and a pin having a shank connected with the support so as to revolve on its longitudinal axis, a pointed barb projecting below the same and deflected at an angle to the line of its shank, and a handle between the shank and barb and beneath the knot, as and for the purpose set forth.

13. The combination with a necktie having a knot, and a neck-band moving through the knot; of a fastener consisting of a plate having holes, and a pin whose shank has a double bend forming a

shoulder passing through one hole, a back piece standing behind the plate, and a clamp at its upper end passing through the other hole; the shank below the plate being formed into a handle, and at the lower end into a pointed barb standing in the plane of the bends and clamp and in a plane at an angle to said handle, all as and for the purpose set forth.

653,093. APPARATUS FOR SUPPLYING CURRENTS OF PREDETERMINED VOLTAGE FROM MAIN LINES OF HIGHER VOLTAGE. WILLIAM W. KING, Huntsburg, Ohio. Filed Oct. 30, 1899. Serial No. 735,186. (No model.)



Claim.—1. In a device for the purpose set forth, the combination with a storage battery and cell-contacts, and a lamp-circuit and lamps, of two switch-arms having a common pivotal point, and normally including between them a definite number of cells supplying the lamp-circuit, means automatically controlled by the lighting-circuit whereby the said switch-arms are set constantly in motion over the entire series of contacts, and automatically-controlled means for including between the switch-arms a greater or less number of cells than those normally required, as the tension on the lamp-circuit varies, substantially as described.

2. In a device for the purpose described, a storage battery and series of cell-contacts, in combination with, two switch-arms arranged to normally include between them a definite number of cells supplying the lamp-circuit, means automatically controlled for varying the number of cells included between them as required to supply voltage to the consumption-circuit, and means for moving the said arms over the entire series of contacts in succession, substantially as described.

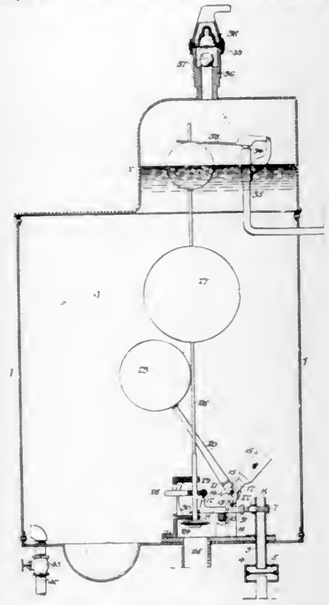
3. In a device for the purpose set forth, the combination with storage-battery cells, and contacts therefor, of duplicate switch-arms, means for passing them at predetermined speed over the entire switchboard, means for automatically separating the arms to include between them the number of cells required to feed the consumption-circuit, and means for preventing the breaking of the circuit when the switch-arms move from one contact to another, substantially as described.

4. In an apparatus for the purpose specified, the combination with a line-circuit of a high degree of tension, and a lamp-circuit of lower tension, of a battery of storage-cells a battery-switch constructed and arranged to automatically maintain a constant voltage in said cells, a series of contact-points connected respectively with each storage-cell, two switch-arms adapted to move in unison over the contact-points, the said switch-arms being so placed upon the contact-points as to include between them the contacts of cells having, in aggregate the voltage required in the lamp-circuit, means derived from the battery-circuit for adjusting automatically the distance between the arms whereby the lamp-circuit can be maintained of constant voltage in spite of variations in the cell-voltage, and means for automatically moving said switch-arms over the entire series of contact-points at regular intervals, one point at a time, and from one extreme end of the series to the other whereby all the cells are charged and discharged in succession, and the times for charging or discharging each cell shall be maintained equal in all, substantially as described.

5. The apparatus for the purpose described a line-circuit and adjacent lamp-circuit of lower voltage than the line-circuit, a series of storage-cells and cell-contacts connected with the line-circuit, a battery-switch between the line and storage-cells, switch-arms engaging said cell-contacts and connecting the storage-cells and lamp-circuit, separated to include a predetermined number of cells and adapted to move from end to end of the series of contacts, a motor, a pole-changer and a time-switch for the arms, in the battery-circuit, a motor and mechanism deriving movement therefrom whereby the switch-arms are separated or drawn together, and a relay and pole-changer for said arms, the said relay deriving its power from the lamp-circuit, and the pole-changer from the battery-circuit substantially as described.

6. In a switch-arm, the combination therewith of a movable point therefor, with means for quickly throwing the point from one contact to another at the moment of engagement with both said contacts, consisting of a contact-plate, secured to the movable point but insulated therefrom, and a magnet opposite the advancing side of the movable point and secured to a projection from the switch-arm, and an armature upon the movable point, the said magnet being connected electrically with the said insulated plate and switch-arm, substantially as described

653,094. HYDRAULIC AIR-COMPRESSOR. DANIEL KIRKMAN, Philadelphia, Pa. Filed Dec. 23, 1899. Serial No. 741,420. (No model.)



Claim.—1. A hydraulic air-compressor in which are combined a vessel having a valved outlet for compressed air, a valved inlet and a valved outlet for water, an air-pressure relief and inlet valve or valves, and means for operating the same, a water-outlet valve-stem having a float for lifting the same, a support for holding the water-outlet valve in the open position, and float mechanism for withdrawing said support as the water falls in the vessel, substantially as specified.

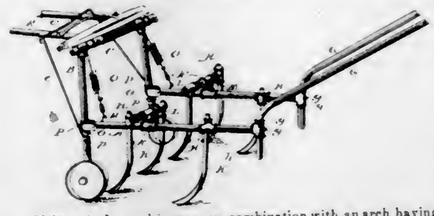
2. A hydraulic air-compressor in which are combined a vessel having a valved outlet for compressed air, a valved inlet and a valved outlet for water, an air-pressure relief and inlet valve, or valves, and means for operating the same, a water-outlet valve-stem having a float for lifting the same, a support on the stem of the water-inlet valve for holding the water-outlet valve in the open position, and float mechanism for opening the inlet-valve and withdrawing said support as the water falls in the vessel, substantially as specified.

3. A hydraulic air-compressor in which are combined a vessel having a valved outlet for compressed air, a valved water-inlet and a valved water-outlet, a water-outlet valve-stem, a float for raising the same, an air-pressure relief and inlet valve or valves, and mechanism for operating the same, a support on the stem of the water-inlet valve for holding the water-outlet valve in the open position, and float mechanism for opening the inlet-valve and withdrawing said support as the water falls in the vessel, the water-outlet valve-stem having a portion for engaging with the said support when said outlet-valve is closed, whereby the water-inlet valve is retained in the open position, substantially as specified.

4. A hydraulic air-compressor in which are combined a vessel having a valved outlet for compressed air, a valved water-inlet, and a valved water-outlet, an air-pressure relief and inlet valve or valves, and mechanism for operating the same, a float for opening the water-outlet valve, means for supporting said outlet-valve in the open position, a weighted rocker for imparting motion to said supporting device, and a float-lever for operating said weighted rocker, substantially as specified.

5. A hydraulic air-compressor in which are combined a vessel having a valved outlet for compressed air, a valved water-inlet, and a valved water-outlet, an air-pressure relief and inlet valve or valves, mechanism for operating the same, a float for opening the water-outlet valve, an arm on said valve-stem carrying an antifriction roller, a supporting device engaging with said antifriction-roller and serving to hold the outlet-valve in the open position, and float-operated mechanism for actuating said support, substantially as specified.

653,095. CULTIVATOR. JOHN W. KLINGELE, Quincy, Ill. Filed Oct. 12, 1899. Serial No. 733,395. (No model.)



Claim.—1. In a cultivator, the combination with an arch having means for the attachment of a draft-animal and ground-wheels journaled at the lower ends of the legs of the arch, of independent beams, collars surrounding the legs of the arch and adjustable thereon to which the beams are pivotally connected, sockets on the rear ends of the beams, handles adjustably mounted in said sockets, and teeth adjustably mounted on the beams intermediate the handles and arch; substantially as described.

2. In a cultivator, the combination with the frame to which the draft-animal is attached, of tubular beams pivotally connected with said frame at their forward ends, a series of double T-couplings adjustably mounted on said beams and teeth having circular shanks adjustably mounted in said T-couplings: substantially as described.

3. In a cultivator, the combination with the frame to which the draft-animal is attached, of tubular beams pivotally connected with said frame at their forward ends, double T-couplings adjustably mounted on said beams, cross-beams mounted in said T-couplings, teeth carried by said cross-beams and independent handles for said beams; substantially as described.

4. In a cultivator, the combination with an arch formed of a tubular cross-piece and tubular legs adjustably connected therewith by T-couplings and ground-wheels journaled on said legs, of tubular beams, collars surrounding and adjustable vertically on said arch-legs, pivotal connections between said collars and beams, T-couplings adjustably mounted on the beams, teeth adjustably mounted in the intermediate T-couplings and handles adjustably mounted in the rear T-couplings: substantially as described.

5. In a cultivator, the combination with the arch to which the draft-animal is attached and independent beams pivotally attached to the legs of said arch with a controlling-handle for each beam, of T-couplings on said beams, telescopic cross-beams carried by said T-couplings and teeth carried by the ends of said cross-beams, whereby the said teeth may be adjusted transversely of the line of draft; substantially as described.

653,096. PIPE-WRENCH. SOLOMON KREISHER, Shamokin, Pa. Filed Apr. 17, 1900. Serial No. 13,246. (No model.)

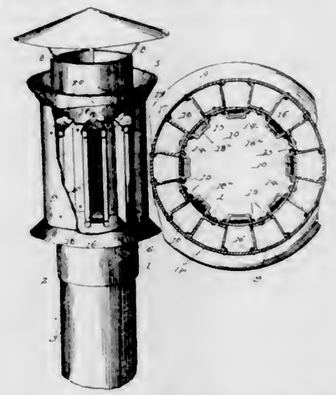
Claim.—1. In a pipe-wrench, the combination of a lever or handle provided at one end with a head extended laterally to form terminal hooks and having opposite serrated engaging faces and provided between the same with a central smooth portion, adapted to receive a large pipe or rod and capable of permitting a chain to be moved across it without being cut, and the chain connected at one end with the handle or lever and adapted to engage either of the hooks, substantially as described.



2. In a pipe-wrench, the combination of a handle or lever provided with a head having opposite terminal hooks and provided with a central longitudinal groove and with smooth central faces at opposite sides of the groove, said head being provided with serrated faces located between the central faces and the terminal hooks, and a chain connected with the handle or lever and adapted to engage the hooks, substantially as described.

3. In a pipe-wrench, the combination of a handle or lever provided with a head extended laterally to form hook-shaped extremities, and having the smooth central faces 5 and provided with a longitudinal groove located between the smooth faces 5, said head being also provided at opposite sides of its central portion with serrated engaging faces, link-rods pivotally connected to the head, and a chain permanently connected at one end to the free ends of said link-rods and adapted to engage either of the hooks, substantially as described.

653,097. VENTILATOR FOR CHIMNEYS. ERNST KREUTZBERG, Marine, Ill., assignor of one-half to John H. Brandes, Jr., same place. Filed Mar. 21, 1900. Serial No. 9,598. (No model.)



Claim.—1. A device of the class described comprising inner and outer casings spaced apart, the space between the inner and outer casings being divided into a series of open and closed vertical passages, the said inner casing being provided at the lower ends of the closed passages with apertures, substantially as described.

2. A device of the class described comprising inner and outer casings spaced apart, the space between the inner and outer casings being divided into a series of vertical passages, the passages being alternately open and closed at their upper ends, and the inner casing being provided at the lower ends of the closed passages with apertures, substantially as described.

3. A device of the class described comprising an inner casing provided with apertures, an outer casing, a series of vertical partitions forming passages between the casings, caps arranged at intervals and closing the alternate passages, said caps being located directly above the apertures, substantially as described.

4. A device of the class described comprising an inner casing provided with apertures, an outer casing spaced from the inner casing, a series of vertical boxes located between the casings and at points between the said apertures, and caps located over the spaces between the boxes and connecting the adjacent sides of the same, substantially as described.

5. A device of the class described comprising an inner casing having apertures provided with interior guards arranged to deflect the

smoke and other products of combustion from the said apertures, an outer casing spaced from the inner casing, an annular series of partitions arranged in the space between the casings, and the caps supported by the partitions and arranged at intervals to form closed passages at the said apertures, substantially as described.

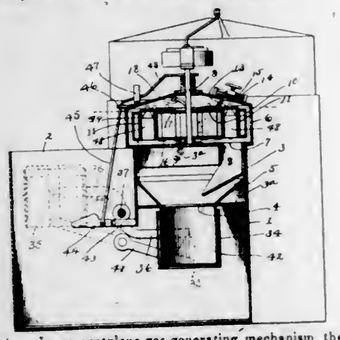
653,098. NON-RECLOSABLE BOTTLE. JOHN E. LAIDLAW, Vancouver, Canada. Filed Apr. 13, 1900. Serial No. 12,710. (No model.)



Claim.—1. A bottle-neck having a diaphragm, with a port on one side some distance from its mouth, in combination with a packing-disk 13 lying on said diaphragm, and a hole through such disk coinciding with the port in the diaphragm, a stopper lying on the packing with a port on its opposite side to the port in the diaphragm but susceptible of being alined therewith, a retaining-ring lying in a groove in said stopper and a like groove in the bottle-neck, a rack-and-pawl mechanism allowing the stopper to be turned until the port in the same and the port in the diaphragm are brought in alinement, and locking said stopper in such position, and a detachable handle on the upper end of said stopper, substantially as specified.

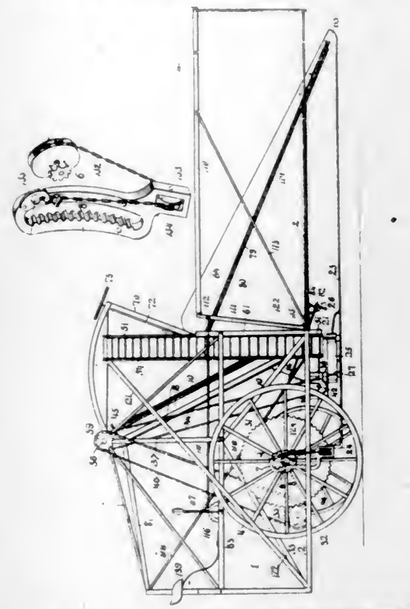
2. In combination with a bottle-neck having a diaphragm with a port on one side, a suitable packing over such diaphragm with an opening therein corresponding with the opening in same, a valve-stopper 15 held down upon the packing by a retaining-ring 19, a port 16 in the stopper, a rack-and-pawl mechanism for allowing the stopper to turn but one way and locking it when the port in the stopper and the port in the diaphragm are alined, and a detachable handle for turning the stopper, as specified.

653,099. ACETYLENE-GAS GENERATOR. JOHN E. LANDRUM, Sr., GEORGE F. DILLON, and JOHN E. LANDRUM, Jr., Centreburg, Ohio. Filed Sept. 18, 1899. Serial No. 730,806. (No model.)



Claim.—In an acetylene-gas-generating mechanism, the combination with a main casing 1 provided with a gas-compartment which communicates with said main casing, a gasometer and a pipe connecting the latter with said gas-compartment, a transverse shaft in said casing 1 having an operating-arm, a bucket-holding cage swung from said shaft and adapted to be retained immediately beneath the communicating opening between the compartment 3 and casing 1 or to be swung to a position in the upper portion of said casing 1, of a rotary carbid-supply hopper journaled above the compartment 3, said hopper containing a circular row of vertical openings adapted to detachably support charges of carbid, a ratchet-wheel carried on the shaft of said hopper, a gravity-pawl engaging the teeth of said ratchet-wheel and having a depending pin, means for imparting rotary motion to the ratchet through the movement of its pawl, a trigger journaled within the casing 1 in the path of the swinging bucket-cage and a rod connected with said trigger and adapted by the upward movement of the latter to contact with said pawl-pin, substantially as specified.

653,100. CORN-HARVESTER. WILLIAM J. LANG, Oyens, Iowa. Filed Apr. 21, 1897. Serial No. 633,176. (No model.)



Claim.—1. In a corn-harvester, the combination with a passage way, of a pair of picking-rolls arranged side by side, and one in advance of the other, at the rear end of said passage-way, a deflecting-board pivoted adjacent to the rear roll, so that its free edge may swing over to the forward roll for deflecting ears in their passage to the rolls, and means arranged in connection with the passage-way and adapted to contact with the standing cornstalks, for operating the aforesaid deflecting-board, and holding it in the required position, substantially as shown and described.

2. In a corn-harvester, the combination with the picking-rolls, of the deflector-board pivoted and adapted to deflect the corn-ears in their passage to said rolls, a slotted passage-way for the cornstalks, a pivoted and swinging shoe arranged in said passage-way, and means which connect it with the deflector-board, substantially as shown and described, whereby said board is operated by the shoe as specified.

3. In a corn-harvester, the combination with picking-rolls, one arranged in advance of the other, of a deflector-board, a passage-way for cornstalks, a shoe arranged in such passage-way and adapted to swing laterally and means which connect the shoe with said board, for operating in the manner described.

4. In a corn-harvester, picking-rolls arranged one in advance of the other, a deflector-board for deflecting the ears in their passage to the rolls, a shoe suitably connected to the deflector-board and adapted to operate the latter when contacted by the stalks of the corn, and means for returning the deflector-board and the shoe to their normal positions, substantially as described.

5. In a corn-harvester, picking-rolls arranged one in advance of the other, a bearing-frame for said rolls, journal-blocks carried by said frame and provided with bearings receiving said picking-rolls, a deflector-board journaled in said frame, a shoe suitably connected to said deflector-board and adapted to operate the latter, a passage-way for the cornstalks, the said shoe being arranged in such passage-way, and means for returning said shoe and the deflector-board to their normal positions when the husks have been removed, substantially as described.

6. In a corn-harvester, picking-rolls arranged one in advance of the other, a bearing-frame for said rolls, journal-blocks arranged upon said frame, and provided with bearings receiving the picking-rolls, a deflector-board journaled in said frame, a series of guide-boards disposed beneath the picking-rolls and spaced from each other, a series of cranks journaled upon one of said guide-boards, one of said cranks being suitably connected to the deflector-board, and a shoe carried by said cranks and closing the space between the guide-boards, whereby said shoe is adapted to be contacted by the stalks of the corn in the passage of the machine, and the deflector-board to deflect the ears in their passage to the picking-rolls, substantially as described.

7. In a corn-harvester, picking-rolls arranged one in advance of the other, a bearing-frame for said rolls, journal-blocks arranged upon said frame, and provided with bearings receiving the picking-rolls, a deflector-board journaled in said frame, a series of guide-boards disposed beneath the picking-rolls and spaced from each other, a series of cranks journaled upon one of said guide-boards, one of said cranks being suitably connected to the deflector-board, a shoe carried by said cranks and closing the space between the guide-boards, whereby said shoe is adapted to be contacted by the stalks of the corn in their passage through the machine and the deflector-board suitably positioned to deflect the ears in their passage to the picking-rolls, and means for returning the shoe and the deflector-board to their normal positions after the stalks have cleared the shoe, substantially as described.

8. In a corn-harvester, a frame, a driving-wheel journaled therein, picking-rolls journaled upon said frame, a deflector-board arranged adjacent to and above the picking-rolls, a shoe disposed below the picking-rolls and suitably connected to the deflector-board, whereby the latter is operated when the shoe is contacted by the stalks of the corn and positioned to deflect the ears in their passage to the picking-rolls, and a series of chains arranged in front of the picking-rolls and provided with gathering-fingers adapted to feed the stalks to the picking-rolls, substantially as described.

9. In a corn-harvester, a frame, a driving-wheel journaled therein, picking-rolls journaled upon the frame and arranged one in advance of the other, a deflector-board arranged adjacent to and above the picking-rolls, a shoe disposed below the picking-rolls and suitably connected to the deflector-board, said shoe being adapted to be contacted by the stalks of the corn to position said board for deflecting the ears in their passage to the picking-rolls, a conveyer arranged adjacent to the picking-rolls and adapted to receive the ears after the husks have been removed therefrom, and suitable gearing between the driving-wheel and the picking-rolls for operating the latter and the conveyer, substantially as described.

10. In a corn-harvester, a frame, a driving-wheel journaled therein, inclined picking-rolls journaled upon the frame and arranged one in advance of the other, a deflector-board arranged adjacent to and above the picking-rolls, a shoe disposed below the picking-rolls and suitably connected to the deflector-board, said shoe being adapted to be contacted by the stalks of the corn to position said board for deflecting the ears in their passage to the picking-rolls, a conveyer arranged adjacent to the picking-rolls and adapted to receive the ears after the husks have been removed therefrom, a series of chains arranged in advance of the picking-rolls and provided with gathering-fingers adapted to feed the corn to the picking-rolls, and suitable gearing between the driving-wheel and the picking-rolls for operating the latter, the conveyer and the chains, substantially as described.

11. In a corn-harvester, picking-rolls, a deflector-board arranged adjacent thereto and adapted to deflect the ears in their passage to the rolls, a guide-board arranged adjacent to the deflector-board, means for moving the deflector-board and means for returning it to its normal position, the guide and deflector boards forming a trough for the reception of the ears when the deflector-board is returned to its normal position, substantially as described.

12. In a corn-harvester, picking-rolls, a bearing-frame therefor, a deflector-board provided at its upper and lower ends with shaft extensions journaled in said bearing-frame, said board being adapted to deflect the ears in their passage to the rolls, means for moving said deflector-board, means for returning it to its normal position, and a guide-board arranged adjacent to the deflector-board, said guide and deflector boards being adapted to form a trough for the reception of the ears when the deflector-board is returned to its normal position, substantially as described.

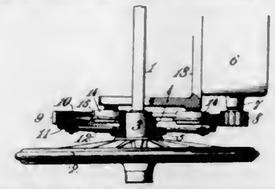
653,101. WOOD-FILLER COMPOSITION. ALBERT M. LENNIG, Jacksonville, Fla., assignor, by mesne assignments, to Clarence S. Hammatt, same place. Filed Aug. 7, 1899. Serial No. 726,461. (No specimens.)

Claim.—The herein-described filler composition, consisting of gum extracted from palmetto; dextrine; soda silicate; powdered silex; and distilled water, combined in substantially the proportions specified.

653,102. MOTOR-VEHICLE. CHARLES A. LIEB, New York, N. Y. Filed May 6, 1899. Serial No. 715,821. (No model.)

Claim.—1. The combination with the axle of a vehicle and a supporting-wheel thereon, of a motor, a pinion driven thereby, a ring gear-wheel meshing with said pinion and surrounding said axle, supporting-rollers for said gear-wheel, and a flexible connection between said gear-wheel and said supporting-wheel.

2. The combination with the axle of a vehicle and a supporting-wheel thereon, of a motor, a pinion driven thereby, a ring gear-wheel meshing with said pinion, means for supporting said gear-wheel independent of the axle and the supporting-wheel, and a disk of yielding material connecting said gear and supporting wheels.



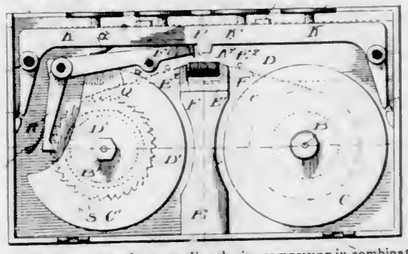
3. The combination with the axle of a vehicle and a supporting-wheel thereon, of a motor, a pinion driven thereby, a ring-gear meshing with said pinion, surrounding said axle and provided with an annular groove on its inner surface, a stationary bracket, a plurality of guide and supporting rollers carried thereby, each having a peripheral web thereon which fits within said groove, and a yielding connection between said gear-wheel and said supporting-wheel.

653,103. CUSHIONED RUNNER FOR ROCKING-CHAIRS OR THE LIKE. JULIUS A. LINDEMAN, Atlanta, Ga. Filed Feb. 27, 1900. Serial No. 6,723. (No model.)



Claim.—The combination with the runner of a rocking-chair or like article of furniture, having a longitudinal groove formed in its under face, said groove being shallow at its intermediate portion and deep at its opposite ends, of a cushioning-strip snugly seated in said groove, having its intermediate portion projecting outwardly therefrom, and its opposite ends merging into the under face of the runner, opposite fastenings connecting the strip to the runner, and opposite metallic plates, each plate being interposed between the strip and the adjacent side of the runner, having a perforation to receive the adjacent fastening, and also provided with a plurality of spurs or prongs struck up at the outer side of the plate and to enter the cushioning-strip.

653,104. POCKET-RECORDER. EUGENE M. LONG, Washington, D. C. Filed Apr. 4, 1899. Renewed Mar. 29, 1900. Serial No. 10,701. (No model.)



Claim.—1. A pocket recording device comprising in combination with the casing and reels mounted therein, the ratchet-wheel secured to one of said reels, a standard, an impression-block mounted between the reels and over which a recording-strip is designed to pass, the L-shaped type-carrying levers pivoted at their angled ends, of springs bearing yieldingly against said ends, each of said type having a pointed apex and designed when pressed lightly to make a dot and under a heavier pressure to make a dash, a vertical dash-printing lever pivoted to the casing, and a pawl pivoted to its outer end and spring designed to hold the hooked end of said pawl in engagement with the ratchet-wheel on the reel at the depression of any one of said keys.

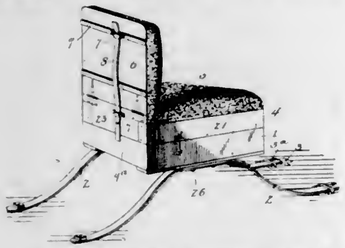
2. In a pocket recording device, the combination with the casing, the standard, the impression-block mounted thereon, reels, and a ratchet-wheel secured to one of said reels, the pivoted keys and type carried thereby, the lever pivoted to the casing and having a vertical dash-printing type integral with one end of said lever, which is disposed underneath the series of levers adapted to be actuated when-

ever any one of said type levers is operated, the pawl pivoted to said lever and designed to engage with the teeth of said ratchet-wheel, whereby as any key is depressed the recording-strip is adapted to be actuated, as shown and described.

3. In a pocket-recorder, the combination with the casing having a hinged face, the standard, the impression-block mounted thereon the reels, ratchet-wheel secured to one of the latter, the type-keys mounted in pairs and on common pivots at the opposite ends of said casing and in parallel rows, stops disposed over said keys to limit their upward throw, and guide-blocks against which the outer faces of said type engage, and the lever having a dash-printing type designed to be actuated when any of said keys are depressed, and means for operating the reels as the keys are depressed.

4. A pocket type-writer comprising a casing, printing mechanism and finger-keys, located and constructed so that the instrument may be held in and operated by one hand, substantially as set forth.

653,105. LOCOMOTIVE-SEAT. ALEXANDER MACLEAY, Richmond, Canada. Filed Jan. 2, 1900. Serial No. 197. (No model.)

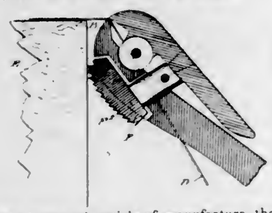


Claim.—1. The combination of a receptacle having yieldable supports and a seat hingedly connected with the receptacle and adapted to close the same, said seat comprising a base portion, a back portion hingedly connected with the base portion, and a strap-spring connected with the base and having one end engaging the back and the other end projecting beyond the base and adapted to engage the receptacle when the seat is in an upright position.

2. The combination with a receptacle of leaf-springs connected therewith and adapted to yieldably support it, and a seat hingedly connected with the receptacle and adapted to close it, said seat comprising a base having a back hingedly connected thereto, a plate carried by the back; and a strap-spring fixed to the seat-base and having one end engaging said plate carried by the back, the other end extending beyond the base and adapted to engage the receptacle when the seat is an upright position.

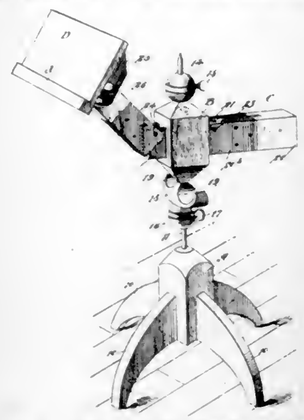
3. The combination with a receptacle of leaf-springs fixedly connected therewith, one end of each spring being rigidly connected at one end with a suitable support, the opposite end engaging slidably with plate carried by the support, and a seat hinged to the receptacle and adapted to close it, said seat comprising a base portion having a back hinged thereto, a plate carried by the back, and a strap-spring fixed to the base and engaging at one end said plate carried by the back, the other end projecting below the base and adapted to engage the receptacle.

653,106. STRAPPING-TOOL. WILLIAM MAX, New York, N. Y. Filed Apr. 28, 1900. Serial No. 14,705. (No model.)



Claim.—As an improved article of manufacture, the described tool for use in strapping boxes, &c., the same being constructed of an elongated handle and a fixed gripping-jaw which are formed integrally, a short movable jaw pivoted to the fixed one, and provided with a tailpiece extending back on the handle, and the movable fulcrum-block arranged in a guide-socket in the under side of the handle, and having a foot or shank which passes through the handle, and is secured therein, and adapted to work in contact with the tailpiece of the movable jaw, as shown and described.

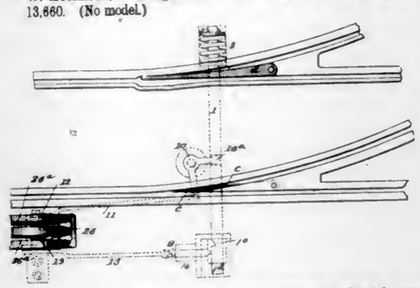
653,107. ADJUSTABLE BOOK-REST OR TABLE. MAJOR MILLER, Lowell, Wis. Filed Dec. 22, 1899. Serial No. 741,300. (No model.)



Claim.—1. A book-rest or table, comprising a base, an upright on said base, a sleeve having a transverse opening and mounted to move vertically on said upright and also to rotate thereon, an arm having a portion for passing through the opening in said sleeve, a swinging section for the arm, a table adjustable on said swinging section, collars on the upright for holding the sleeve as adjusted, and a foot-rest movable vertically on and adapted to rotate on the upright, substantially as specified.

2. A book-rest or table, comprising a base, an upright on said base, a sleeve mounted to move vertically on said upright and also to rotate thereon, the said sleeve having two openings extended horizontally through it, an arm having side portions for passing respectively through said openings, a vertically-swinging section for the arm, a table adjustable on said swinging section, collars on the upright for holding the sleeve as adjusted, and a foot-rest movable vertically on and adapted to rotate on the upright, substantially as specified.

653,108. RAILWAY-SWITCH-SETTING MECHANISM. GEORGE W. MOCKABEE, Washington, D. C. Filed Apr. 20, 1900. Serial No. 13,660. (No model.)



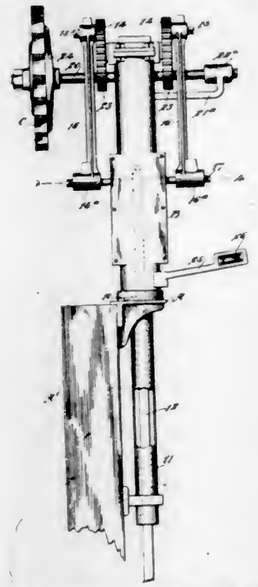
Claim.—1. A switch-operating mechanism comprising in combination with the switch-tongue; a throw-bar spring-actuated in one direction of movement, a detent mechanism engaging the said bar and adapted to automatically move into a locked engagement therewith when the said bar is moved from its normal or spring-set position, lever devices adapted to be operated by a trip on a passing car to shift the throw-bar from the normal or spring-set position, and a second set of lever devices adapted to be operated by a trip upon a passing car connected with and arranged to release the aforesaid throw-bar detent mechanism, all being arranged substantially as shown and for the purposes described.

2. The combination in a switch mechanism as described with the reciprocally-held throw-bar with which the switch-tongue connects, spring-actuated in one direction of movement, said bar having a locking-notch, and the spring-actuated locking member 9, arranged to engage the said locking-notch of the throw-bar; of the levers 12 13, pivotally mounted with their ends projected in a plane of the movement, of tripper members extended down from the car-platform, a link connection joining the member 9 and the lever 13, the bell-crank lever 10, one arm of which joins with the throw-bar, and the pitman 11, connecting the throw-arm of the crank-lever 10, all being arranged substantially as shown and described.

3. In a switch-operating mechanism as described, the combination with the throw-bar 1, the bracket members 2 2, in which the said bar is reciprocally held, one of the said brackets having a laterally-extending hub or barrel portion, the bar 1 having a locking-notch movable in line of the said barrel portion, a spring moving the bar in one direction, a bell-crank-lever mechanism arranged to be operated by a tripper upon a passing car to shift the bar 1, in a direction against its spring tension, a spring-actuated plunger held in the aforesaid bracket barrel portion, and a car-trip-engaged mechanism joined with the said plunger and adapted to draw the plunger against its spring tension when the lever means is engaged by a car-tripper as set forth.

4. In a switch mechanism as described, the combination with the reciprocally-held throw-bar with which the switch-tongue connects, a spring-actuated locking-detent for holding the said bar under its spring tension when shifted in one direction, a lever mechanism for shifting the bar against its spring tension, and a second lever mechanism for releasing the locking-detent, the said two lever mechanisms each including a pivotal member having one end arranged to be projected in position to be engaged by a trip member pendently projected from the car, of a trip mechanism mounted on the car-platform including a casing, a foot-pressed plunger movable in said casing, the lower end thereof forming the trip, a spring for normally holding the plunger out of an operative position, a detent automatically engaging said plunger when depressed to hold it to its depressed position, said detent having foot-pressed releasing devices for moving it to its released position as set forth.

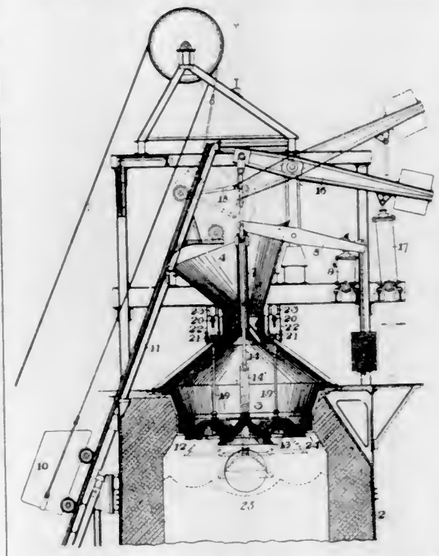
653,109. WINDMILL-GEAR. GIDEON J. MOORE and FRANK E. COOK, Eureka, Cal. Filed Jan. 18, 1900. Serial No. 1,897. (No model.)



Claim.—1. In a windmill, the combination of a hollow and slotted head, a shaft extending loosely through the slot of the head and to which the pump-rod is secured, a wind-wheel shaft mounted in brackets projecting from the head and provided with pinions, a transverse shaft mounted on the upper end of the head at the center thereof and having its ends projecting beyond the same and carrying gear-wheels meshing with the pinions of the wind-wheel shaft, said gear-wheels being provided with crank-pins, and pitmen having their upper ends pivoted to the said crank-pins and their lower ends to the shaft to which the pump-rod is secured, substantially as described.

2. In a windmill, the combination, with a closed tubular head having a longitudinal slot, a shaft extending loosely through the slot of the head, and a pump-rod attached to the said shaft, the pump-rod extending within the head, of a wind-wheel shaft carried by the head, a driven shaft mounted in the upper end of the head directly above the pump-rod, pinions carried by the wind-wheel shaft, a gear on each end of the driven shaft, engaging with the said pinions, and pitmen connected with the said gears and with the end portions of the pump-rod shaft, for the purpose specified.

653,110. APPARATUS FOR FEEDING STOCK TO FURNACES. THOMAS MORRISON, Braddock, Pa. Filed Jan. 23, 1899. Serial No. 703,074. (No model.)



Claim.—1. A blast-furnace having a closed top and a side gas-offtake, and provided with a feeding apparatus comprising a vertical movable annular section having an intermediate ridge arranged to split the stock and distribute it in the form of a central core and an annular surrounding core, and a closed central bell of larger diameter than the opening in the annular section, and seated upwardly against it, and mechanism for moving the bell downwardly beyond the limit of motion of the section, substantially as described.

2. A blast-furnace having a closed top and a side gas-offtake, a charging-bell comprising an annular section having an intermediate ridge arranged to split the stock and distribute it in the form of a central core and an annular outer core and a central closed section arranged to close the opening of the annular section and support the same, means for moving the central section vertically, and a stop adapted to limit the motion of the annular section, substantially as described.

3. A blast-furnace having a closed top and a side gas-offtake, a charging-bell comprising an annular section having an intermediate ridge arranged to split the stock and distribute it in the form of a central core and an annular surrounding core and a closed central section arranged to close the opening of the annular section and support the same, means for moving the central section vertically, and a spring-stop adapted to limit the motion of the annular section; substantially as described.

4. A blast-furnace having a closed top and a side gas-offtake, a charging-bell comprising an annular section having an intermediate ridge arranged to split the stock and distribute it in the form of a central core and an annular surrounding core and a closed central section arranged to close the opening of the annular section and support the same, means for moving the central section vertically, and an adjustable stop adapted to limit the motion of the annular section; substantially as described.

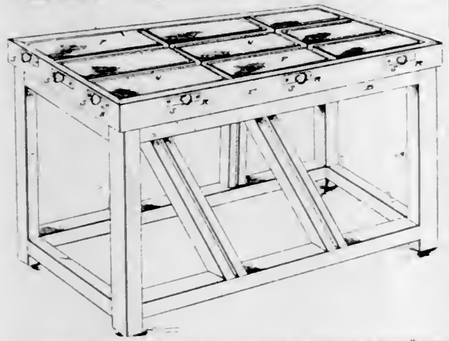
5. A blast-furnace having a closed top and a side gas-offtake, a charging-bell comprising a movable annular section having an intermediate ridge arranged to split the stock and distribute it in the form of a central core and an annular surrounding core and a movable closed middle section adapted to close the opening of the annular section and to support the stock; one of said sections being movable downwardly beyond the limit of motion of the other, and means for varying independently the extent of the motions of said sections; substantially as described.

6. A blast-furnace having a closed top and a side gas-offtake, a main charging-hopper, a bell for said hopper comprising a movable

annular section having an intermediate ridge arranged to split the stock and distribute it in the form of a central core and an annular surrounding core and a movable closed middle section adapted to close the opening of the annular section and to support the stock; a second hopper having a vertical throat above the main hopper, and a bell for said throat adapted to effect the discharge of stock from said throat into the main hopper upon the sections of the bell thereof, substantially as described.

7. A blast-furnace having a closed top and a side gas-offtake, a charging-bell having an annular section with an intermediate ridge arranged to split the stock and distribute it in the form of a central core and an annular surrounding core, and a closed central section having a central support and arranged to close the opening in the annular section and support the same, the rods secured to the annular section and extending through the closed cover or top and provided with stops, the central section being movable downwardly beyond the limit of motion of the annular section, substantially as described.

653,111. CLOTH-CUTTING APPARATUS. CHARLES H. McINTIRE, New York, N. Y. Filed Jan. 17, 1900. Serial No. 1,751. (No model.)



Claim.—1. A cutting-table consisting of a support, an open frame with vertical slots, intermediate inclined framework with coincident slots, a top composed of independent and loosely-mounted sections with slots therebetween and independent adjusting devices for each section, substantially as and for the purpose specified.

2. A cutting-table, consisting of an open frame, a series of adjusting devices carried by the sides of said frame, a series of sections mounted between said frame and surrounded thereby, a metal border or guard surrounding each of said sections, and sockets carried by the outer sections adapted to be engaged by the adjusting devices for the purpose set forth.

653,112. GIN-SAW CLEANER. TURNER H. NANCE, Talladega, Ala. Filed Mar. 29, 1900. Serial No. 10,676. (No model.)



Claim.—1. A gin-saw-cleaning knife comprising a plate having upturned blades on the sides thereof, said blades having cutting edges on their upper sides, substantially as described.

2. A gin-saw-cleaning knife comprising a plate having outwardly-flared upturned blades on the sides thereof, substantially as described.

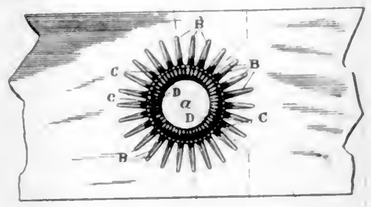
3. A gin-saw-cleaning knife comprising a plate having upturned blades on the side thereof, said plate having an extended shaft adapted to secure said knife to a suitable support, substantially as described.

4. A gin-saw-cleaning knife comprising a plate having upturned blades on the sides thereof, said plate having an elastic haft, for the purpose set forth, substantially as described.

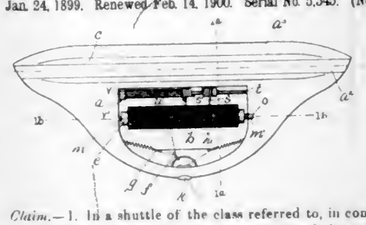
653,113. OVERSEAM-EYELET. DONALD NOBLE, London, England, assignor to The Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Filed Mar. 5, 1900. Serial No. 7,410. (No model.)

Claim.—The herein-described seam for sewed articles comprising a fabric provided with a perforation, the edge of which perforation is provided with a series of contiguous overedge-stitches and also provided with a line of plain lock-stitches intersecting and securing said overedge-stitches at a point intermediate said perforation and the outer extremity of said overedge-stitches.

653,113.



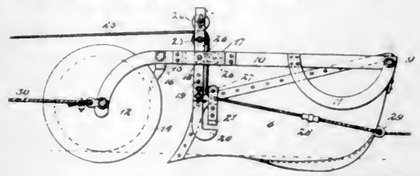
653,114. SHUTTLE. EDWIN OLDFIELD, Norwich, Conn. Filed Jan. 24, 1899. Renewed Feb. 14, 1900. Serial No. 5,545. (No model.)



Claim.—1. In a shuttle of the class referred to, in combination with the quill-supporting pin, a tension device consisting of a pintle supported in the shuttle-body, parallel with the quill-supporting pin and having a radial arm x and stop projection x' as set forth, a spring coiled upon the said pintle and having one end in engagement with the said tension-arm x and operating to hold said arm in yielding engagement with the quill, as specified, and means for adjusting the torsional tension of said spring.

2. A shuttle comprising, in combination, the body portion a, the back-section a^3, and the rack-section a^2 interposed between the said body and back sections, one exposed face of the section a^2 being formed with rack-teeth the pitch-line of said teeth being in line with the center of the shuttle-body as set forth and the other exposed face being cut away to form the bottom or wearing portion of the guide-way c.

653,115. SCRAPER. WILLIAM H. ONION, New Orleans, La. Filed Oct. 24, 1899. Serial No. 734,671. (No model.)



Claim.—1. In a scraper, the combination with a frame, of a bucket mounted to swing thereon, a latch movably mounted on the frame and acting with the bucket to hold it in normal position, and means carried by the latch for frictionally engaging a line therewith, by which line the latch is actuated.

2. In a scraper, the combination of a frame, a bucket mounted to swing thereon, a latch pivotally mounted on the frame and working with the bucket to hold it normally in active position, a line passing by the latch, means on the latch for frictionally engaging the line with the same, an eye on the bucket, through which eye the line is rove, and a stop attached to the line intermediate the line and latch.

3. In a scraper, the combination of a frame, a bucket mounted to swing thereon, guide devices on the bucket, a line rove through the guide devices, a stop attached to the line intermediate the guide devices, a latch mounted pivotally on the frame and working with the bucket to hold it in normal position, the latch being engaged by the line, and means carried by the latch for frictionally engaging the line.

4. In a scraper, the combination of a frame, a bucket mounted to swing thereon, a latch mounted on the frame and working with the bucket to hold it in operative position, and a roller mounted on the latch and movable vertically thereon, the roller being adapted to drop by gravity and formed with means for frictionally engaging a line with the latch.

5. In a scraper, the combination of a frame, a bucket mounted to swing on the frame, a rope having sliding connection with the bucket, a stop on the rope, and a latch pivotally mounted on the frame and working with the bucket to hold the same in operative position, the rope having frictional engagement with the latch, for the purpose specified.

6. The combination of a frame, a bucket mounted to swing thereon, two guide devices attached to the bucket, a rope rove through the guide devices, a stop attached to the rope intermediate the guide devices, a latch pivotally mounted on the frame and normally hanging by gravity in a vertical position, the lower end of the latch working with a part of the bucket to hold the bucket in operative position, and a friction device carried by the upper portion of the latch and working with the line.

7. In a scraper, the combination with a frame, of a bucket mounted to swing thereon and having two guide devices, a line rove through the guide devices, a stop attached to the line intermediate the guide devices, and means supported by the frame above the bucket, for carrying the line.

8. In a scraper the combination of a frame, a bucket movably mounted thereon, a latch working between the frame and bucket, and a rope having sliding connection with the bucket and with the latch, for the purpose specified.

9. In a scraper, the combination of a frame, a bucket movably mounted thereon and having two guide devices, a rope rove through the guide devices, and a stop on the rope intermediate the guide devices, the rope having sliding connection with the frame.

10. The combination with a scraper, of a frame, a bucket movably mounted thereon, a latch working between the frame and bucket, and a rope having sliding connection with the bucket and latch, for the purpose specified.

11. The combination with a scraper, of a frame, a bucket movably mounted thereon, a latch working between the frame and bucket, and a rope having sliding connection with the latch.

653,116. WINDOW. PASQUALE C. PASCALE, New York, N. Y. Filed Feb. 26, 1900. Serial No. 6,538. (No model.)



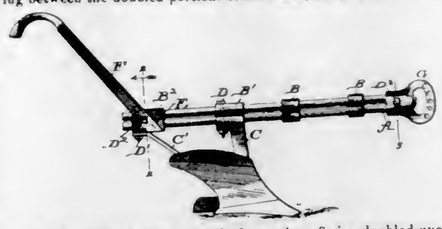
Claim.—1. A window-sash, comprising two vertical members and a single connecting horizontal member, and frames having a hinged connection with the vertical members, which frames are adapted to receive one or more panes of a transparent material, as specified.

2. The combination of an upper and lower sash, the upper sash comprising side members and an upper connecting member, and the lower sash comprising side members and a lower connecting member, and a pair of frames containing one or more panes of glass, hinged to the side members of each sash, the upper members of the hinged frames of one sash and the lower members of the hinged frames of the other sash forming the meeting-rails of the sashes, substantially as described.

3. The combination, with an upper sash and a lower sash, the upper sash comprising side members and an upper connecting member, and the lower sash comprising side members and a connecting horizontal bottom member, one sash being adapted to slide in front of the other and one of the said sashes having a greater space between its members than does the opposing sash, of frames having hinged connection with the side members of the sashes, the frames of each sash having means for overlapping engagement with each other, each frame being adapted to carry one or more panes of a transparent material, and locking devices for the said frames, for the purpose specified.

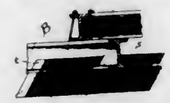
653,117. PLOW-BEAM. RICHARD H. PURNELL, Rosedale, Miss. Filed Nov. 14, 1899. Serial No. 736,955. (No model.)

Claim.—1. In a plow, a beam formed of a section of pipe doubled closely upon itself, couplings securing the doubled portions of the pipe rigidly together, a clevis on the forward doubled end of said beam, and a connecting device passed through said clevis and extending between the doubled portions of the beam, as set forth.



2. In a plow, a beam formed of a section of pipe doubled upon itself, a series of couplings securing the doubled portions rigidly together, bolts passed vertically through two of said couplings and adapted to hold the standard and standard-brace thereto, and the rear coupling being formed with a forwardly and downwardly extending recess in each side in which the handles are adapted to fit, a bolt being passed laterally through said coupling in the recessed portions thereof and adapted to hold the handles in place, as and for the purpose set forth.

653,118. FURNACE. JOHN N. QUINN, Cincinnati, Ohio. Filed Feb. 15, 1900. Serial No. 5,397. (No model.)

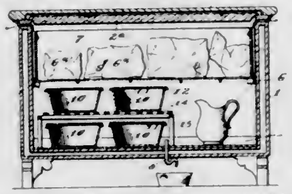


Claim.—1. In a furnace, in combination with flanged supporting-beams, a tile having notches in its edges abutting the beams, adapted to fit the flanges thereof, the faces of the tile transverse to the beams, being inclined to the cross-section thereof, substantially as specified.

2. In a furnace, in combination with supporting flanged beams, a tile having notches in its edges, abutting the beams, and adapted to fit the flanges thereof, the faces of the tile transverse to the beams, being in parallel planes at an angle to the cross-section of said beams, substantially as specified.

3. In a furnace, the combination of a series of horizontal flanged beams, a series of tiles each having the two of its opposite faces abutting the beams, provided with grooves adapted to fit the flanges, the abutting faces of the tiles overlapping each other vertically and the interior faces of said tiles being shaped to conjointly produce the lining-facing of the furnace, substantially as specified.

653,119. REFRIGERATOR. RUFUS H. REEVES, Asheville, N. C. Filed Apr. 5, 1900. Serial No. 11,756. (No model.)

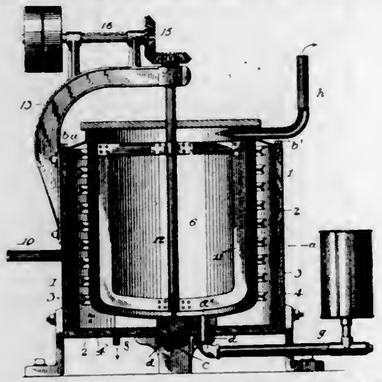


Claim.—1. In a refrigerator, the combination with a chest, of an ice-tray arranged in the upper part of the chest, one end portion of the said tray being imperforate to protect articles placed thereunder from the drippings from the ice and the other portion of said tray being reticulated to permit the drippings to fall upon vessels placed thereunder for containing articles to be refrigerated, substantially as described.

2. In a refrigerator, the combination with a chest, of an ice-tray removably supported in the upper portion thereof and comprising a casing open at its upper end and provided with a bottom one portion of which is imperforate and the other portion reticulated, substantially as described.

3. In a refrigerator, the combination with a chest, of an ice-tray arranged in the upper part of the chest and extending from end to end and front to rear of the latter, one end portion of the tray being imperforate and the other portion thereof being reticulated, and a table removably arranged in the bottom of the chest and provided with a slatted top for supporting covered vessels beneath the reticulated portion of the tray, substantially as described.

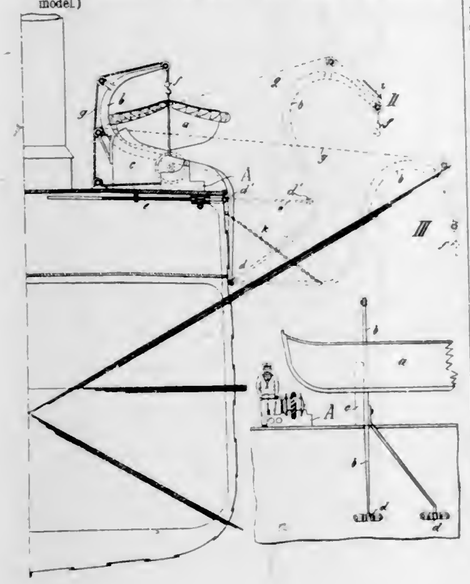
653,120. PASTEURIZING APPARATUS. ALBAN H. REID, Philadelphia, Pa. Filed Dec. 14, 1899. Serial No. 740,263. (No model.)



Claim.—1. In a pasteurizing apparatus the combination with an outer casing, of a non-rotary heating vessel fixed therein and leaving an intermediate unobstructed surrounding space, a series of ribs fixed to and surrounding the heating vessel at intervals with unobstructed spaces between them, and means for freely introducing steam under pressure tangentially into the surrounding space through an unobstructed opening in the side of the casing; whereby the steam will be free to traverse the spaces between the ribs with a whirling action, and whereby the ribs will serve the double function of absorbing the heat and collecting the water of condensation.

2. In a pasteurizing apparatus the combination of an outer casing, a non-rotary heating vessel fixed therein with a surrounding space between them, a series of metal strips secured at their inner edges to the heating vessel and extending around the same horizontally with unobstructed spaces between them, said ribs having their outer edges incised at intervals and the intermediate lips bent alternately upward and downward, and means for introducing steam under pressure into the surrounding space; whereby the upwardly and downwardly bent lips will offer extended surfaces for the absorption of heat, and whereby the downwardly-extended lips will direct the water of condensation downward and maintain the surface of the heating vessel free from the same.

653,121. BOAT-LOWERING MECHANISM. CARL SCHNEEMANN, Bremen, Germany. Filed May 7, 1898. Serial No. 680,057. (No model.)



Claim.—1. In a windlass, the combination of a drum, gearing for driving the same, a clutch, a push-rod, gearing connecting the push-rod with the clutch to drive the push-rod in unison with the drum, a screw geared to turn with the drum, a nut on the screw and moved thereby, a threaded shaft mounted adjacent to the screw and having connection with the nut, and means connecting the threaded shaft with the clutch by which to control the clutch.

2. The combination of gearing comprising a clutch which controls the gearing, a screw driven by the gearing, a nut movable on the screw, a threaded shaft mounted to turn adjacent to the screw and having connection with the nut, and means connecting the threaded shaft with the clutch to control the clutch.

3. The combination of a winding-drum, a driving-shaft geared therewith, a clutch in connection with the winding-drum, a push-bar driven from the clutch, and means operating in unison with the drum by which to automatically control the clutch.

4. The combination of a winding-drum, a drive-shaft geared therewith, to turn the same, a clutch in connection with the drive-shaft, a push-bar, a swinging davit operated by the push-bar, a connection between the davit and the drum, and means worked in unison with the drum by which to automatically control the clutch.

5. The combination of a hauling mechanism, a push-rod also driven in time therewith, a swinging davit moved outboard by the push-rod, and a connection between the davit and the hauling mechanism, whereby to move inboard the davit.

6. The combination with a motor, of a winding-drum driven thereby, a push-rod driven thereby, a davit mounted to move and thrown outboard by the push-rod, a connection between the drum and davit to return the davit, and gearing driven in time with the push-rod and drum automatically to control the motor.

7. The combination of a motor, a drum driven thereby, a push-rod also driven thereby, a swinging davit moved outboard by the push-rod, and connections between the drum and davit, whereby to move inboard the davit.

8. The combination with a source of motive power, of a drum driven thereby, a push-rod also driven thereby, a movable davit moved in one direction by the push-rod, and a connection between the davit and drum to move the former in the opposite direction.

9. The combination with a source of motive power, of a drum driven thereby, a pushing member also driven thereby, a swinging davit engaged by the pushing member to be thrown in one direction, and a connection between the drum and davit, for returning the latter.

10. The combination with a source of motive power, of a movable davit, two means operated by the source of motive power respectively for moving the davit inboard and outboard, and controlling devices for the source of motive power, such devices being driven in time with the said two means to automatically control the source of motive power in time with the movement of the davit.

11. The combination with a source of motive power, of a swinging davit, means driven by said source of motive power by which to throw the davit in and out, and controlling devices for the source of motive power, such controlling devices being driven in time with the said means and serving automatically to stop the movement of said means according to the position of the davit.

12. The combination with a motor, of hoisting mechanism driven thereby, a clutch transmitting movement from the motor to said hoisting mechanism, a controlling device for the motor by which to stop the action thereof, and tripping devices driven in time with the said hoisting mechanism and serving to throw the clutch and controlling device in a certain time with the movements of the said hoisting mechanism.

13. The combination with a motor, of a drum geared direct therewith, a member also geared with the motor, the gearing of such member comprising a clutch by which to break the gearing, a controlling device for the motor, and tripping devices driven in time with the said member, such tripping devices serving to operate the clutch and motor-controlling device in a certain time with the movements of the said member.

14. The combination with a motor and with a movable davit, of a drum geared direct to the motor, a push-rod geared to the motor through the medium of a clutch, the push-rod serving to throw the davit outboard, a connection between the drum and davit to throw the davit inboard, a controlling device for the motor, and tripping devices driven in time with the push-rod and serving automatically to throw the clutch and motor-controlling device in time with the movement of the push-rod.

15. The combination with a source of power, of a drum and a push-rod, both driven from the source of motive power in time with each other, and a movable davit actuated by the drum and push-rod.

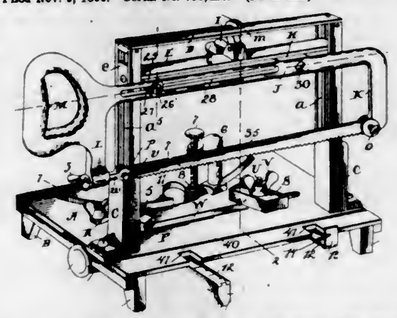
16. The combination with a source of motive power, of a swinging davit, and two means driven by the source of motive power respectively for throwing the davit inboard and outboard, such means working simultaneously and in unison, the one actively as the other works passively.

17. The combination with a movable davit, of a motor, two means geared with and driven by the motor respectively for throwing the davit outboard and inboard, such means working simultaneously, the one passively as the other works actively, and controlling devices for the motor driven in time with the said means and serving automatically to reverse the motor to reverse the action of the said means for throwing the davit.

18. The combination with a movable davit, of a motor, two separate means driven simultaneously thereby, the one for throwing the davit outboard and the other for throwing the davit inboard, and the one working actively as the other works passively, a controlling device for the motor to reverse the action thereof, whereby to reverse the action of the said separate means, a screw driven in time with the said means, and a nut working on the screw and periodically engaging the said controlling means of the motor, for the purpose explained.

19. The combination with a movable davit, of a motor, a means for throwing the davit in one direction, such means being geared with the motor, a second means for throwing the davit in the other direction, the second means being geared with the motor through the medium of a clutch, a reversing-gear for the motor, a screw driven with the motor, an actuating-lever for the clutch, and a nut working on the screw and serving to operate the motor-reversing gear and the actuating-lever of the clutch, for the purpose specified.

653,122. METAL BENCH-SAW. CHARLES L. SHOWLE, Tuscola, Ill. Filed Nov. 9, 1899. Serial No. 736,426. (No model.)



Claim.—1. A bench sawing-machine comprising a base having parallel vertically-arranged standards, said standards having at their inner sides vertically-arranged slots, a saw-supporting track having its ends reduced and fitting and sliding within said vertical slots, and a saw horizontally movable upon the same track, substantially as described.

2. A sawing-machine comprising a base having vertical standards with vertical slots, a horizontal saw-supporting track having its ends provided with vertically-elongated bearings fitting the said standards for holding it against lateral movement, a saw, the saw and the saw-supporting track provided with horizontally-elongated bearings for holding the saw against lateral movement, substantially as described.

3. A sawing-machine comprising a base provided with vertical standards, the vertical standards having vertical slots and vertical grooves at their inner and outer sides, a horizontal saw-supporting track provided at its ends with projections passing through the said slots and provided with elongated bearing-plates fitting within said grooves, a saw, the supporting-track provided with a horizontal slot and a horizontal groove, elongated bearing-plates within the grooves, and a connection between the saw and the elongated bearing-plates, substantially as described.

4. A sawing-machine comprising a base having vertical standards, a horizontal saw-supporting track vertically movable upon said standards, the said track provided with a horizontal slot, a projection supported and carried by one end of the track, a saw provided with a horizontal slot, the projection passing through the said slot for supporting one end of the saw, and the opposite end of the saw having elongated bearing-plates fitting the said horizontal track, substantially as described.

5. A sawing-machine comprising a base, a vertically and horizontally movable saw supported thereby, the base having a slot extending longitudinal the saw, a block adjustably supported within the said groove and means for clamping the said block, and a pivoted block adjustably clamped to the said base and coacting with the first said block for holding the work at the desired angle, substantially as described.

6. A sawing-machine comprising a base, a vertically and horizontally movable saw, the base having a slot extending longitudinal the saw, a head beneath the base having a screw-threaded stem extending through the slot, a block and a clamping-screw upon the said stem, and a screw-threaded rod supported at the under side of the base and extending longitudinally of the slot and passing through the said stem-provided block, and a pivoted block coacting with the first said block, substantially as described.

7. A sawing-machine comprising a base, a vertically and horizontally movable saw supported thereby, and a clamp for the work comprising an inverted-L-shaped arm provided with a vertically-arranged clamping-screw, the lower end of the clamping-screw adapted to coöperate with the base for clamping the article thereon, substantially as described.

8. A sawing-machine comprising a base, a vertically and horizontally movable saw supported thereby, and a clamp for the work comprising an inverted-L-shaped arm having the lower end of its stem portion adjustably connected with the base, and a vertically-arranged clamping-screw passing through the lateral portion of the L and extending downward and adapted to coöperate with the base for clamping the work thereon, substantially as described.

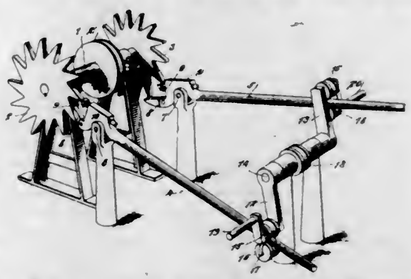
9. A sawing-machine comprising a base, the base having a longitudinally-arranged slot, a vertically and horizontally movable saw supported by the base and movable in a direction longitudinally of said slot, and an inverted-L-shaped clamping member having the lower end of its stem portion removably and adjustably connected to the base within the said slot, the upper laterally-projecting end of its said clamping-arm provided with a downwardly-adjustable clamping-screw adapted to coöperate with the base for clamping the work, substantially as described.

10. A sawing-machine comprising a base, a vertically and horizontally movable saw, the base having a curved slot arranged at one side of the saw and being nearest the saw at a point intermediate its ends, said slot being of a length practically equal to the length of the base, and a clamping member movable within the said slot, substantially as described.

11. A sawing-machine comprising a base, a vertically and horizontally movable saw supported thereby, the base provided with a slot, a clamping-arm having a flange above and below the base and reduced intermediate portion, and an opening in communication with the slot, of a size adapted to permit the passage of the lower flange or shoulder therethrough, substantially as and for the purpose described.

12. A sawing-machine comprising a base, a vertically and longitudinally movable saw supported thereby, the under side of the base provided with two depending bearings, a screw-rod supported in said bearings, a rule extending transverse the under side of the base and having one end provided with a screw-threaded socket receiving the screw-threaded rod and its outer end movably supported by one of said shaft-supporting journals, the free end of the said rule adapted to project beyond the adjacent side of the base, substantially as described.

653,123. DRIVING MECHANISM. ANTON E. H. J. THORLDEN, Ansonia, Conn. Filed Apr. 19, 1900. Serial No. 13,460. (No model.)

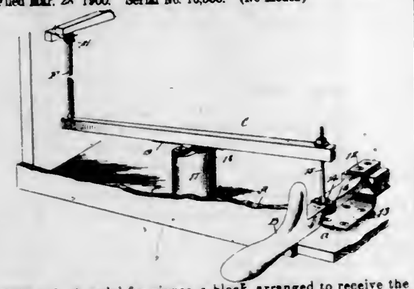


Claim.—1. A driving mechanism, comprising a driving-shaft, ratchet-wheels mounted on said shaft, levers coacting with said wheels, a vertically-swinging pawl carried by each lever, a boxing on the upper side of each lever, a spring-pressed thrust-pin in each boxing for engaging with the pawls, and means for operating the levers, substantially as specified.

2. A driving mechanism, comprising a driving-shaft, ratchet-wheels mounted on said shaft, levers coacting with the wheels, a crank-shaft, cranks on said shaft one for each lever, and rollers mounted on the cranks and between which the longer members of the levers engage, substantially as specified.

3. A driving mechanism, comprising a driving-shaft, ratchet-wheels mounted on said shaft, levers coacting with the wheels, a crank-shaft, cranks on said shaft, one for each lever, and rollers between which the longer members of the levers engage, one roller being journaled on the crank-pin and the other roller being journaled on a hanger mounted to swing on the crank-pin, substantially as specified.

653,124. PEDAL-ACTION. ROBERT K. THUMLER, New York, N. Y. Filed Mar. 28, 1900. Serial No. 10,535. (No model.)



Claim.—1. A pedal for pianos, a block arranged to receive the heel of the pedal, the pedal being removably attached to the block, and a spring-support for the block, arranged for attachment to the case of the piano, as described.

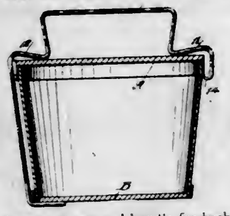
2. The combination, with an angular spring and a block secured to an elevated member of the spring, the said block having a recess in its upper face, of a pedal the heel of which fits into the recess in the block, and means for detachably securing said pedal to said block.

3. In a piano-action a pedal-lever, a support for the same and a spring secured midway its ends to the support and on opposite sides of said support to the lever.

4. In a piano-action, the combination, with a pedal-lever and a support therefor, of a spring-plate attached to the said lever, the support being recessed beneath the plate, and wings at the sides of the plate, secured to the said support at each side of said recess, as described.

5. In a piano-action, the combination, with an angular spring-plate, a block secured to an elevated member of the plate and a pedal detachably attached to said block, of a lever, a support therefor, a spring connection between the lever and its support, and a connecting-bar uniting the lever and the pedal, which connecting-bar is passed through an opening in the pedal and through a yielding material crossing the said opening, as set forth.

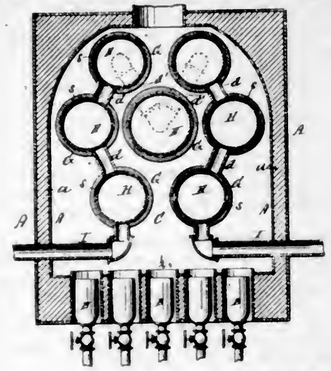
653,125. COVER-CLAMP AND HANDLE FOR BASKETS. MAJOR TUCKER, Brocton, N. Y., assignor of one-half to Charles F. Crandall, same place. Filed Feb. 27, 1900. Serial No. 6,722. (No model.)



Claim.—1. A cover-clamp and handle for baskets, comprising a handle-section, clamping-sections extending in opposite directions from the handle-section, a sustaining-section extending downwardly from one of the clamping-sections and provided with means for engagement with a side of the basket, and a longer sustaining member or section extending downward from the opposing clamping-section and provided with means for engagement with the bottom of the basket, for the purpose described.

2. A cover-clamp and handle for baskets, consisting of a spring material bent upon itself to form a horizontal upper handle-section, clamping-sections extending from the terminals of the handle-section outwardly and upwardly in opposite directions, one clamp-section being provided with a downwardly-extending vertical section having a hook-terminal arranged for engagement with a side of the basket, the opposite clamping-section being also provided with a downwardly-extending sustaining-section having a hook arranged for engagement with the bottom of the basket, for the purpose described.

653,126. PRESSURE-GENERATOR. INGLIS M. UPPERCU, Newark, N. J. Filed Feb. 12, 1900. Serial No. 4,860. (No model.)



Claim.—1. In a pressure-generator of the class designated, the combination of a series of generating-tubes connected successively one with the other by suitable conduits, each generating-tube having a sealed hollow vacuum tube or core located therein, an inlet-pipe connected with the first generating-tube of the series and an outlet-pipe connected with the last generating-tube of the series, and means for heating said series of generator-tubes externally for the purpose set forth.

2. In a pressure-generator of the class designated, the combination of a generating-tube having an inlet-pipe and an outlet-pipe, a vacuum-tube in said generating-tube forming a core, and means for heating the exterior of said generating-tube, for the purpose set forth.

653,127. MECHANICAL TOY. GEORGE WALE, Jr., Everett, Mass. Filed Jan. 3, 1900. Serial No. 742. (No model.)



Claim.—1. A mechanical toy, comprising the figure of a human being, the figure having arms which releasably hold a ball, a leg mounted to swing to kick the ball, and means for controlling such parts.

2. A mechanical toy, comprising the figure of a human being, having an arm serving to releasably hold a ball and an arm mounted to swing, means for actuating the arm and leg, and a restraining device for said means.

3. A mechanical toy, comprising the figure of a human being, having an arm serving to releasably hold a ball, and a swinging leg, a spring in connection with the arm to move the same to release the ball, a spring in connection with the leg to throw the same to kick the ball, and restaining devices for the arm and leg.

4. A mechanical toy, comprising a body portion or casing, a device mounted thereon to releasably hold a ball, a second device mounted on the body portion or casing to strike the ball, and means for controlling and actuating said devices.

5. The combination with a body or trunk, of two arms, a part serving to mount each arm on the trunk, such parts being relatively slidable in the trunk and turnable to adjust the arms, and a spring acting between said parts to frictionally engage one of the arms with the trunk.

6. The combination of a casing or body portion, an arm mounted movably thereon to releasably hold a ball, a spring tending to throw the arm to open position, a leg mounted to swing on the casing or body portion to kick the ball, a spring tending to actuate the leg, and a sliding rod serving to releasably hold the arm and leg.

7. A mechanical toy, comprising a figure with a movable arm capable of releasably holding a ball, a leg movable to strike the ball when released by the arm, and means for controlling the arm and leg.

653,128. RAILROAD CATTLE-GUARD. ROBERT F. ADAMS, Horsecreek, Ala. Filed Sept. 29, 1899. Serial No. 732,058. (No model.)

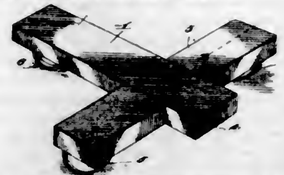


Claim.—1. Two gates fulcrumed at their outer ends and facing inwardly toward each other and connecting mechanism whereby the descent of the inner end of one gate raises the inner end of the other gate substantially as described.

2. A cattle-guard consisting of two oppositely-facing gates arranged horizontally along a railroad-track, and hinged upon axes transverse to the rails near their outer ends and levers arranged beneath the inner end of one gate and the inner end of the opposite gate substantially as described whereby when one gate is stepped upon at its outer end it raises that gate and when stepped upon on the inner end it raises the opposite one as described.

3. A cattle-guard consisting of two oppositely-facing gates arranged horizontally along a railroad-track and hinged upon axes transverse to the rails, a cross-bar lying under the free end of one gate, another cross-bar arranged near the fulcrum of the opposite gate and levers connecting the two to cause the depression of one gate to raise the oppositely-facing one substantially as and for the purpose described.

653,129. BARREL-TRUCK. GEORGE W. ARNOLD, Girard, Ohio. Filed Sept. 5, 1899. Serial No. 729,488. (No model.)



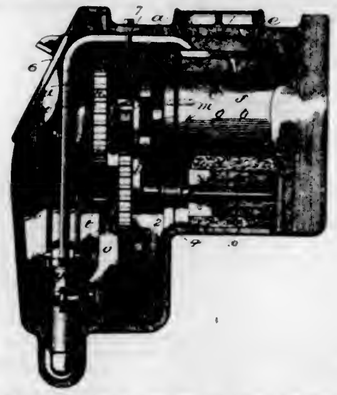
Claim.—1. In a barrel-truck, the combination of a frame comprising bars arranged and secured in planes at right angles to each other, the one end of one bar projecting beyond the adjacent edge of the other a short distance to arrange both bars in the form of a cross, the extremities of the said bars when applied resting against the head of the barrel and completely within the confines of the chime, and non-swivel rollers rotatably secured against the end portion of both extremities of one bar and the one extremity of the other bar and located completely under the bars, whereby the parts of the truck are fully located under the head of the barrel when applied and without projection beyond the chime.

2. In a barrel-truck, the combination of a frame comprising a longitudinal bar and a transverse bar, the transverse bar being attached to the longitudinal bar adjacent one of the extremities of the latter to provide a short projecting portion of said longitudinal bar, and the full length of the bar being such as to be completely confined under the head of the barrel to which they are applied and within the chime, non-swivel rollers having integral gudgeons located under both extremities of the transverse bar and under one extremity of the longitudinal bar, divergent staples for providing hangers for the said gudgeons and bearing-blocks having grooved edges fitted in the staples between the gudgeons and the under adjacent surface of the bars, each roller being similarly held on opposite sides, and all the rollers fully located under the bars and without projections beyond any part of the bottom of the barrel.

653,130. LUBRICATING DEVICE FOR JOURNAL-BOXES. PERRY BROWN, Wilmington, Del. Filed Sept. 13, 1899. Serial No. 730,327. (No model.)

Claim.—1. The combination in a journal-box, of a pump, an axle, a wiper arranged under the axle and intermediate gearing for giving the wiper and pump slower motions than the axle, substantially as described.

2. The combination with the journal-box and axle thereof, of a pump supported by said axle and arranged to deliver the lubricant over the axle, a wiper arranged under the axle, and a reducing mechanism between said axle and the pump and wiper and driving each of the latter at a slower speed than the axle, substantially as described.

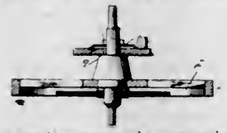


3. The combination of a box, an axle working therein, a lubricant-applier, gearing for transmitting the motion of the axle to said lubricant-applier, and a non-rotatable frame hanging from the axle and supporting the gearing independently of the box, substantially as described.

4. The combination of a box, an axle working therein, a lubricant-applier receiving motion from said axle, a shaft supported by said axle and having teeth thereon, a non-rotatable frame hanging from said shaft, a gear-wheel supported by said frame and engaging the teeth carried by the aforesaid shaft, and means for transmitting the motion of said gear-wheel, substantially as described.

5. The combination in a journal-box, of an axle working therein, a pump, a frame set in the box and supported by the axle, a shaft set in said frame and connected to the axle at one end and carrying teeth at its other end, a gear-wheel engaging with the teeth on said shaft, means for transmitting the motion of said gear-wheel to the aforesaid pump, and a pipe for conducting the lubricant from said pump to said axle, substantially as described.

653,131. BALANCE-ESCAPEMENT. MERRITT BURT, Jacksonville, Fla. Filed July 30, 1898. Serial No. 687,346. (No model.)



Claim.—In a watch-movement, the combination with a balance-staff, a roller-table loosely arranged on the staff to have a limited movement longitudinally thereof and provided with a jewel-pin, and a collar arranged on the balance-staff and retaining the roller-table on the balance-staff, of a cushioning and friction spring mounted on the staff and engaging the roller-table, and adapted to yield and cushion the said roller-table and capable of enabling the watch-movement to be put in beat by simply shaking it, substantially as and for the purpose described.

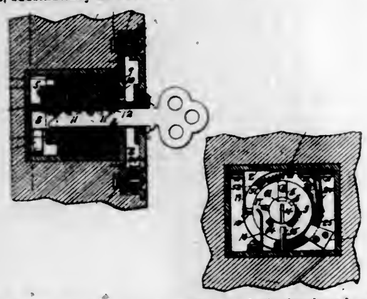
653,132. CIRCUIT-CONTROLLER. HENRY G. CARLETON, New York, N. Y., assignor to the Carleton Electric Company, same place. Filed Sept. 23, 1899. Serial No. 731,391. (No model.)

Claim.—1. In a circuit-controller for electric locks, the combination with a normally-inoperative lock-circuit and a normally-inoperative alarm-circuit, of key-operated devices for independently controlling said circuits, substantially as described.

2. In a circuit-controller for electric locks, the combination with a normally-inoperative lock-circuit, and a normally-inoperative alarm-circuit, of key-operated devices for controlling said circuits, and means whereby said devices are caused on the insertion of the proper key to render the lock-circuit operative and the alarm-circuit inoperative and on the insertion of an improper key to render only the alarm-circuit operative, substantially as described.

3. In a circuit-controller for electric locks, the combination with

a normally-inoperative lock-circuit, and a normally-inoperative alarm-circuit, of key-operated devices for controlling said circuits, and means whereby said devices are caused on the insertion of the proper key to render the lock-circuit operative and the alarm-circuit inoperative, and on the insertion of an improper key to cause the alarm-circuit to become operative and render the lock-circuit inoperative at a second point, substantially as described.



4. The combination with a normally-open lock-circuit and a normally-open alarm-circuit, of key-operated devices operating on the insertion of the proper key to close the lock-circuit and on the insertion of an improper key to close the alarm-circuit, substantially as described.

5. The combination with a normally-open lock-circuit and a normally-open alarm-circuit, of key-operated devices operating on the insertion of the proper key to close the lock-circuit and on the insertion of an improper key to close the alarm-circuit and open the lock-circuit at a second point, substantially as described.

6. The combination with a normally-inoperative lock-circuit and a normally-inoperative alarm-circuit, of a movable controller for each circuit, means whereby upon the insertion of a proper key the controller for the lock-circuit is made operative and upon the insertion of an improper key the controller for the alarm-circuit is made operative, substantially as described.

7. The combination with a normally-open lock-circuit and a normally-open alarm-circuit, of a movable controller for the lock-circuit, a movable controller for the alarm-circuit which also operates to open the lock-circuit, and means whereby upon the insertion of a proper key the lock-circuit shall be closed and upon the insertion of an improper key the alarm-circuit shall be closed and the lock-circuit opened, substantially as described.

8. The combination with a normally-inoperative lock-circuit and a normally-inoperative alarm-circuit, of a rotating key-operated controller for each circuit, means carried by the controller for the alarm-circuit for operating on the lock-circuit to render it still further inoperative, and means whereby upon the insertion of a proper key the controller for the lock-circuit shall be rotated alone, but upon the insertion of an improper key both controllers shall be rotated, substantially as described.

9. The combination with a normally-inoperative lock-circuit, of a rotating controller therefor, a normally-inoperative alarm-circuit, a rotating controller for said circuit, means operated by the alarm-circuit controller for acting upon the lock-circuit, means whereby upon the insertion of a proper key the controller for the lock-circuit is rotated and the circuit made operative, and means whereby upon the insertion of an improper key both controllers rotate, and the alarm-circuit controller renders its circuit operative and acts upon the lock-circuit to render it still further inoperative, substantially as described.

10. The combination with a normally-open lock-circuit, of a rotating controller for closing the same, a normally-open alarm-circuit, a rotating controller for closing the same, means operated by the controller for the alarm-circuit for acting upon the lock-circuit to open it, means whereby upon the insertion of a proper key the controller for the lock-circuit will be rotated to close the same, and means whereby upon the insertion of an improper key both controllers will be rotated and the alarm-circuit controller will operate to close the alarm-circuit and open the lock-circuit, substantially as described.

11. The combination with a movable part carrying circuit-controlling devices, of a second movable part also carrying circuit-controlling devices, and key-operated devices acting to normally lock the two parts together, the first movable part being adapted to be independently operated by a key which releases the locking devices, and both parts being adapted to be operated simultaneously by a key which does not release the locking devices, substantially as described.

12. The combination with a cylinder carrying circuit-controlling devices, of a movable support in which it is mounted, said support also carrying circuit-controlling devices, key-operated devices serving to normally lock the two parts together, the cylinder being adapted to be rotated by a key which releases the locking devices, and both the cylinder and support being adapted to be operated by a key which does not release the locking devices, substantially as described.

13. The combination with a pair of rotating cylinders, each cylinder carrying circuit-controlling devices, of means whereby the two cylinders are locked together, and key-operated means by which said locking means may be released so that the cylinders may operate independently of each other, substantially as described.

14. The combination with a normally-inoperative lock-circuit and a normally-inoperative alarm-circuit, of a pair of cylinders, each cylinder carrying a controller for one of the circuits, locking devices whereby the cylinders may be caused to rotate together, and key-operated means whereby the locking devices are released and the cylinders allowed to rotate independently of each other, substantially as described.

15. The combination with an alarm-circuit and a lock-circuit, of a pair of cylinders, means whereby one cylinder acts as a controller for the lock-circuit, means whereby the other cylinder acts as a controller for both circuits, locking devices whereby the two cylinders may be caused to rotate together, and key-operated means for releasing the locking devices so that the cylinders may rotate independently of each other, substantially as described.

16. The combination with a normally-open lock-circuit and a normally-open alarm-circuit, of two rotating cylinders, means carried by one of the cylinders for closing the lock-circuit, means carried by the other cylinder for closing the alarm-circuit and opening the lock-circuit, locking devices whereby the two cylinders may be caused to rotate together, and key-operated means for releasing the locking devices so that the cylinders may rotate independently of each other, substantially as described.

17. The combination with a pair of rotating cylinders, of a series of pins for locking the cylinders together, a series of pins, one or more of which differs, in length from the other pins, for operating the locking-pins, a key-slot into which said pins project, and circuit-controlling devices carried by the cylinders, substantially as described.

18. The combination with a rotating outer cylinder, of a rotating inner cylinder mounted therein, a series of locking-pins operating to lock the two cylinders together, a series of lifting-pins, one or more of which differs in length from the others, said pins projecting into a key-slot in the inner cylinder, a lock-circuit, controlling means therefor carried by one cylinder, an alarm-circuit, and controlling means therefor carried by the other cylinder, substantially as described.

19. The combination with a rotating outer cylinder, of an inner cylinder mounted therein, a series of locking-pins carried by the outer cylinder and serving to lock the two cylinders together, a series of lifting-pins, one or more of which differs in length from the others, said pins projecting into a key-slot in the inner cylinder, a lock-circuit, controlling means therefor carried by the inner cylinder, an alarm-circuit, controlling means therefor carried by the outer cylinder, said outer cylinder also carrying a second controlling means for the lock-circuit, substantially as described.

20. The combination with a rotating outer cylinder, of an inner cylinder mounted therein, a series of locking-pins carried by the outer cylinder and serving to lock the two cylinders together, a series of lifting-pins, one or more of which differs in length from the others, said pins projecting into a key-slot in the inner cylinder, a normally-open lock-circuit, a closing device therefor carried by the inner cylinder, a normally-open alarm-circuit, and a closing device therefor carried by the outer cylinder, said outer cylinder also carrying means by which the lock-circuit is opened when the alarm-circuit is closed, substantially as described.

21. In a circuit-controller, the combination with an outer cylinder, of means for preventing its rotation except in one direction, an inner cylinder, means for preventing its rotation except in one direction, means for limiting the amount of rotation of said inner cylinder, and circuit-controlling devices carried by each of the cylinders, substantially as described.

22. In a circuit-controller, the combination with an outer cylinder carrying a contact-point and a circuit-closing projection, of a circuit-terminal lying in the path of the contact-point, circuit-closing devices adapted to be operated by the projection and lying in the path thereof, an inner cylinder, means for locking the two cylinders together, means for releasing said locking means, a contact-point carried by the inner cylinder, a circuit-closing terminal lying in the path of the contact-point, means for preventing the rotation of the inner cylinder except in one direction, and means for limiting its rotation in that direction, substantially as described.

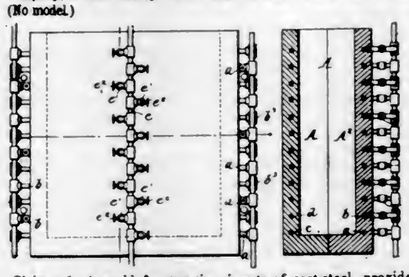
23. The combination with a casing, of a protective plate therefor, the plate being insulated from the casing, a headed holding device for securing the plate to the casing, said holding device passing through the plate and casing and having a reduced portion, said reduced portion lying in a perforation in one of the members and the other portion being long enough to span the distance between the casing and plate, insulation between the headed holding device and that member which surrounds its reduced portion, the head of the holding device lying in a countersunk recess in said member, a suitable source of electrical energy to which the plate and casing are connected, and an alarm in the connections, substantially as described.

24. The combination with a casing, of a protective plate therefor, said plate having a countersunk recess, insulation between the plate and the casing, a screw having a reduced portion passing through perforations in the plate and the casing and the head of the screw lying in the recess in the plate, the reduced portion of the screw lying in the perforation of said plate and its other portion being long enough to span the distance between the plate and the casing, a suitable source of electrical energy to which the plate and the casing are connected, and an alarm in said connections, substantially as described.

25. The combination with a casing, of a protective plate therefor, of an outer cylinder contained in the casing, an inner cylinder extending through the front of the casing and the protective plate, an insulated washer interposed between the cylinder and the plate, insulation between the casing and the plate, securing devices for holding the plate to the casing, insulation between the securing devices and the plate, a source of electrical energy to which the plate and the casing are connected, and an alarm in the connections, the securing devices being adapted to establish an electrical connection between the plate and the casing when they are withdrawn, substantially as described.

26. The combination with a casing, of a protective perforated plate therefor, an outer rotating cylinder secured in the casing, an inner cylinder mounted in the outer cylinder, said inner cylinder extending through the casing and the plate and having a shoulder overlapping the edges of the perforation in the plate, a recess surrounding the perforation, an insulating-collar in the recess insulation between the plate and the casing, securing devices for connecting the plate and the casing, insulation between said securing devices and the plate, a source of electrical energy to which the casing and plate are connected, and an alarm in the connections, the securing devices being adapted to establish an electrical connection between the plate and the casing when they are withdrawn, substantially as described.

653,133. APPARATUS FOR TREATING INGOTS OF STEEL. JAMES H. CARPENTER, Reading, Pa., assignor to the Carpenter Steel Company, of New Jersey. Filed Mar. 14, 1896. Serial No. 541,739. (No model.)



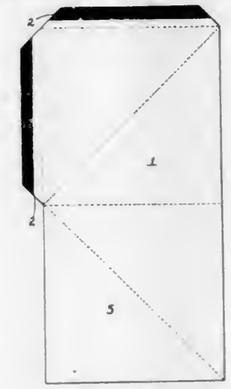
Claim.—1. A mold for treating ingots of cast-steel, provided with two series of passages extending alternately from opposite sides of the mold, connections with a source of cooling liquid for each series, and a centrally-arranged supply-pipe having connections with the alternate passages, substantially as described.

2. A mold for treating ingots of cast-steel, provided with two series of passages extending alternately from opposite sides of the mold across one face thereof and each series having passages extending partially across one end, and a supply and discharge pipe connected to each series of passages at opposite ends thereof, substantially as described.

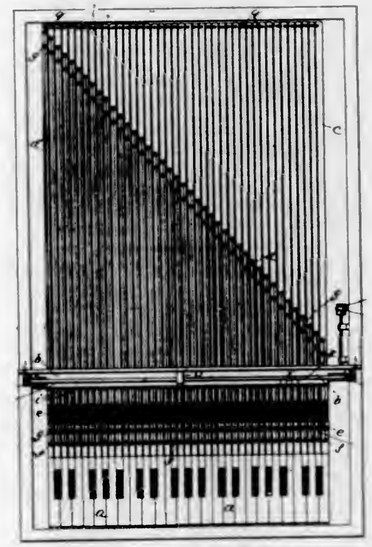
3. A mold for treating ingots of cast-steel, provided with two series of passages extending alternately from opposite sides of the mold across one face thereof and each series having passages extending partially across one end, a supply and discharge pipe for each series at opposite ends thereof, and an intermediate supply-pipe connected to all the passages, substantially as described.

653,134. COMBINED LETTER-SHEET AND ENVELOP. ARTHUR CHRISTEY, Buffalo, N. Y., assignor to E. G. Christey, same place. Filed June 3, 1899. Serial No. 719,177. (No model.)

Claim.—A combined letter-sheet and envelop formed from a single blank and comprising a main or envelop portion of substantially-square formation having extensions extending from two sides and at right angles to each other to form flaps, and an additional letter-sheet of substantially-square formation extending from one of the remaining sides; the letter-sheet square being adapted to fold upon the envelop-square and the two squares to fold diagonally upon themselves on a line between two of their ends to form front and rear portions of similar triangular outline and equal size, as set forth.



653,135. MUSICAL INSTRUMENT. RUFUS J. CLARK, Franklin, Tenn. Filed Apr. 20, 1899. Serial No. 713,817. (No model.)



Claim.—The combination of the bow-frame, having a wheel mounted at each end thereof, the bow or endless band stretched upon the wheels at the ends of the frame, bearings fastened to the bow-frame, and small rollers journaled therein, with the movable sounding-boxes having a string on each box, the rollers situated opposite the spaces between the strings, substantially as set forth.

653,136. IMPLEMENT FOR DIGGING AND GATHERING POTATOES. ANTON DAMRACHER, Munich, Germany. Filed May 26, 1899. Serial No. 718,397. (No model.)

Claim.—1. An implement for digging and gathering potatoes, comprising a framework mounted on wheels, a potato lifter-wheel *c*, capable of being raised and lowered, mounted on an axle, gearing for driving said axle from the main axle, means for releasing such gearing from operation, the said lifter-wheel consisting of central cases *w*, spring-arms *m* and peripheral lifters *o*, slides *t*, hinged flaps *p* and levers

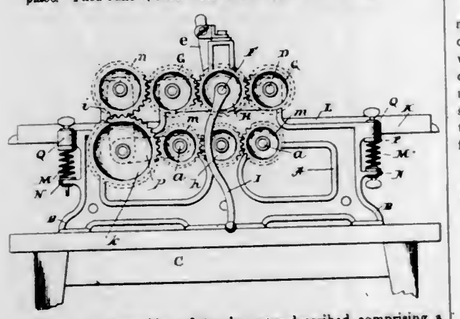
u, disks *v*, a collector *s*, and means for conveying the potatoes from the lifter-wheel to said collector, all substantially as described.



2. An implement for digging and gathering potatoes, comprising a framework *d*, mounted on wheels, a frame *h*, suspension means *i k* for said frame, guide and adjustment means *l*, a potato lifter-wheel *c* mounted on an axle carried by said frame *h*, gearing for driving said axle from the main axle, said lifter-wheel consisting of central cases *n*, spring-arms *m* and peripheral lifters *o*, slides *t*, hinged flaps *p* and levers *u*, disks *v* mounted on said frame *h*, a sieve *q* and elevator rake device *r*, a roller-brush *z* mounted on said framework *d*, a collector-box *s*, gearing for driving said devices *r z* from the main axle, and suitable mechanism *e e'* for disengaging said gearing from the traveling wheels *a*, substantially as described.

3. In an implement for digging and gathering potatoes, a lifter-wheel *c*, comprising central cases *n*, spring-arms *m* and peripheral lifters *o*, slides *t*, hinged flaps *p* and levers *u*, all substantially as and for the purposes hereinbefore set forth.

653,187. FAT-SEPARATING MACHINE. PHILLIP FEITEN, Cleveland, Ohio, assignor of five-sixths to George E. Mittinger, Jr., same place. Filed June 6, 1899. Serial No. 719,588. (No model.)



Claim.—1. A machine of the character described comprising a frame carrying rollers, a spring-supported table, rollers situated under the said table and projecting therethrough and below the upper rollers, and a knife carried by the table and extending thereacross, the table having an opening in advance of the knife for the passage of the skin, substantially as described.

2. A machine of the character described comprising a frame carrying transversely-extending upper rollers, a spring-supported table having roller-openings, transversely-extending lower feed-rollers situated under the upper rollers and projecting through the openings in the said table, a horizontal knife for removing the fat from the skin, and a vertically-arranged knife or knives for dividing the material into strips, substantially as described.

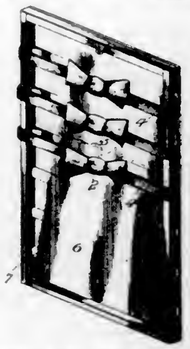
3. A machine of the character described comprising a frame, upper parallel corrugated rollers carried by the frame and extending transversely thereof, a longitudinally-extending spring-supported table, lower feed-rollers situated under the upper rollers and carried by the said table, the table having openings through which the lower rollers project, a horizontal knife carried by the table, and an operating means for the rollers, substantially as described.

4. A machine of the character described comprising a frame, transversely-arranged feed-rollers, a supporting-table, a horizontally-arranged knife for separating the fat from the skin, and laterally-adjustable vertically-arranged knives for separating the material into strips, substantially as described.

5. A machine of the character described comprising a frame, transversely-arranged feed-rollers, a supporting-table, a horizontally-arranged knife for separating the fat from the skin, and a vertically-arranged knife for separating the material, substantially as described

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653,188. DISPLAY-FRAME. JACOB H. FLEISCH, New York, N. Y. Filed Apr. 24, 1900. Serial No. 14,139. (No model.)

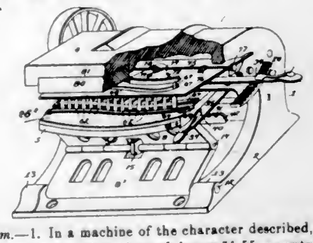


Claim.—1. A display-frame comprising a suitable rim notched upon the rear faces of two of its opposite sides, and a card, paper, or the like, secured upon said rim; substantially as and for the purposes set forth.

2. A display-frame comprising a rigid rim of transverse dimension sufficient to give depth to the frame, and having the rear faces of two of its opposite sides notched to afford bearings for the goods applied to the frame, and a backing of paper, card, or the like, secured upon the rear face of the frame and slit to provide tongues coincident with the notches and yielding to admit the goods into the notches to permit the serving of the functions of the latter, notwithstanding the backing.

3. A display-frame comprising a rigid rim of wood or equivalent material having a straight outer perimeter, and having the rear faces of two of its opposite sides notched substantially as shown, to provide seats for the goods applied to the frame, a backing of paper, card, or the like applied over the rear face of the frame and over the notches, and tongues over the said notches formed in the backing by slitting the latter coincident with the ends of the notches, which tongues yield to admit the goods into the notches and preserve the function of the latter, notwithstanding the backing.

653,189. EYELET-HOLE MACHINE. WILLIAM W. GREEN, Fort Dodge, Iowa, assignor of one-half to Robert O. Green, same place. Filed Mar. 18, 1897. Serial No. 628,156. (No model.)



Claim.—1. In a machine of the character described, the combination of two sets of pivoted punch-levers 51 55, a central punch-lever *a* arranged between said two sets, punches carried by said levers, means for moving the free ends of said levers of sets 51 55 to adjust

the punches toward or from each other and toward or from said central lever, and further means for moving the free ends of all of the levers in the same direction to vary the line of curvature of the punches, as set forth.

2. In a machine of the character described, the combination of a punch-jaw, a bed-plate thereon having a slot and a detachable front section, a series of pivoted punch-levers having bifurcated outer ends arranged above said slot, punches fitted in the slot and bifurcated ends of the levers, and a guard-plate connected with said detachable bed-plate section, substantially as set forth.

3. In a machine of the character described, the combination of a punch-jaw having a curved guide-slot, a set of punches moving in said slot, means for simultaneously adjusting the punches toward or from each other, and further means for simultaneously adjusting said punches in the same direction to change their position in the guide-slot and thereby vary their line of curvature, as set forth.

4. In gang-punches, the combination of the tilting punch-jaw, the sliding bars 43 47 on said jaw, the two sets of punch-levers connected with the bars and carrying punches, and a lever 29 pivotally connecting said sliding bars to simultaneously move the punch-levers and adjust the punches to operate upon different sizes of uppers, substantially as described.

5. In gang-punches, the combination of the tilting punch-jaw, the sliding bars 43 47 on said jaw, the two sets of punch-levers connected with the bars and carrying punches, a lever 29 pivotally connecting said sliding bars to move the punch-levers and adjust the punches to operate upon different sizes of uppers, an arm 23 connected with the said lever 29 and jaw to have limited independent sliding movement, and a pivoted lever 35 connected with said arm, whereby the punch-levers may be adjusted to conform to the width of the shoe-upper being operated upon, substantially as described.

6. In gang-punches, the combination of a platen, a tilting punch-jaw provided with a slot, a fixed stripping-plate having a slot in alinement with that in the jaw, a series of punches adjustable in the slot of the jaw, a gage-plate pivoted to the stripping-plate adjacent to the slot therein and having a slot-and-stop connection therewith and a rack, and a shaft mounted on said stripping-plate and provided with a pinion to engage said rack and adjust the gage-plate, substantially as described.

7. In gang-punches, a frame having a platen, a fixed stripping-plate below the platen provided with a slot, an adjustable gage-plate on the stripping-plate, a punch-jaw pivoted to tilt below said stripping-plate, mechanism for tilting the jaw, the sliding bars 43 47 on said jaw, the two sets of punch-levers connected therewith, a sliding arm 23, a lever 29 pivoted to said arm and to the sliding bars, the lever 35 also pivoted to said arm and the jaw, and punches connected with said punch-levers, substantially as described.

8. In gang-punches, the combination with a frame, of the tilting punch-jaw, the sliding bars 43 47 mounted on said jaw, the two sets of punch-levers connected to the bars and carrying punches, a pivoted lever 29 having at one end a head pivotally connecting said sliding bars to adjust the punch-levers and punches to operate upon different sizes of uppers and provided at its free end with a pawl, an arm 23 connected with the said lever 29 and jaw to have limited independent sliding movement and provided at its outer end with a rack with which the pawl on said lever 29 is adapted to engage, and a pivoted lever 35 connected with said arm and provided with a pawl to engage a rack 41 on said frame, substantially as described.

9. In gang-punches, the combination of a frame having a platen, a tilting punch-jaw provided with a curved slot 63, a stripping-plate interposed between the punch-jaw and platen and provided with a slot in alinement with the slot in the jaw, adjustable bars 43 47 mounted on the punch-jaw, the two sets of punch-levers 51 55 pivoted to said bars, punches connected with said levers, and a spring gage-pin mounted upon the outer punch-lever 55' of the set of punch-levers 55 and projecting through the slot in the said stripping-plate, substantially as described.

10. In gang-punches, the combination with a frame, having a platen, of a tilting punch-jaw provided with a curved slot 63, a stripping-plate interposed between the punch-jaw and platen and provided with a slot, a guard-plate mounted on the jaw on either side of the slot therein, a pair of sliding bars 43 47 on the jaw, a set of punch-levers pivoted to each bar, each lever having its outer end bifurcated or formed with an open-ended slot, a tubular punch 62 mounted on each of said levers, each punch having a base-collar 61 adapted to fit in said slotted or bifurcated end and formed with a groove 60 to receive one of the arms of the bifurcation, and a gage-pin connected with one of said sets of levers, substantially as described.

11. In gang-punches, the combination with a frame having a platen, of a tilting punch-jaw, a stripping-plate interposed between the punch-jaw and platen and provided with a slot, an adjustable gage-plate on said stripping-plate, a pair of adjustable bars 43 47 on said jaw, two sets of punch-levers 51 55 one set pivotally connected with each bar, a series of detachable punches carried by said levers and projecting through the slot in the stripping-plate, a lever 29 pivoted at one end to the adjustable bars 43 47 and carrying at its outer end a pawl, an arm 23 connected with said lever and having a limited independent sliding movement and provided with a rack with which the pawl on the lever 29 is adapted to engage, and a pivoted lever 35 connected with said arm, substantially as described.

12. In a machine of the character described, the combination of a frame, a movable punch-jaw provided with a sinuously-curved transverse guide, a set of punches adapted to traverse the guide, and means for simultaneously adjusting the punches in the same direction along the guide to cause the same to occupy a different portion of said guide and thereby vary their line of curvature.

13. In a machine of the character described, the combination of two sets of pivoted punch-levers 51 55, carrying punches, said levers having two operative adjusting movements—one in which the free ends of all the levers are simultaneously moved in one direction to vary the line of curvature of the punches, and the other in which said free ends of the levers are adjusted toward or from each other to vary the distance between the punches, and means operatively connected with the levers for effecting such adjustments.

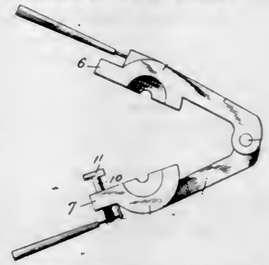
14. In a machine of the character described, the combination of two sets of pivoted punch-levers 51 55 carrying punches, said levers having two operative adjusting movements—one in which the free ends of all the levers are simultaneously moved in one direction to vary the line of curvature of the punches, and the other in which said free ends of the levers are adjusted toward or from each other to vary the distance between the punches, means for moving the levers to accomplish the first adjustment, and further means for moving the levers to accomplish the second adjustment.

15. In a machine of the character described, the combination of two sets of pivoted punch-levers 51 55, carrying punches, said levers having two operative adjusting movements—one in which the free ends of all the levers are simultaneously moved in one direction to vary the line of curvature of the punches, and the other in which said free ends of the levers are adjusted toward or from each other to vary the distance between the punches, a central pivoted punch-lever *a* also carrying a punch and adapted to be moved with the other punch-levers in the first adjustment, but to remain stationary in the second adjustment referred to, and means for operating the levers to effect said adjustments.

16. In a machine of the character described, the combination of a bed-plate having a detachable front section separated therefrom and forming therewith a guide-slot, a set of pivoted punch-levers, each having its outer end bifurcated or formed with an open-ended slot, a tubular punch carried by each lever, each punch being provided with a base-collar 61 adapted to fit in said slotted or bifurcated end, and formed with a groove 60 to receive one of the arms of the bifurcation, and guard-plates mounted on said bed-plate section at opposite sides of the guide-slot, whereby the front bed-plate section and the guard-plate may be detached to permit of the removal of the punches, substantially as described.

17. In a machine of the character described, the combination of two sliding bars, a set of punch-levers pivoted to each bar, a transverse arm, a pivoted hand-lever pivotally connecting said sliding bars, a central punch-lever arranged between said two sets of punch-levers and connected at its inner end to said transverse arm but independent of said lever, punches carried by said punch-levers, and a second pivoted hand-lever operatively connected with the transverse arm, substantially as described.

653,140. LOCK FOR SECTIONAL GLASS-MOLDS. EDWARD S. HART, Dunkirk, Ind., assignor of three-fourths to Matthew H. Hart and Charles F. Birch, Sr., same place, and Thomas F. Hart, Muncie, Ind. Filed Aug. 12, 1899. Serial No. 726,973. (No model.)

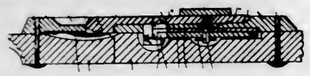


Claim.—1. The combination with the two sections of a glass-mold, each of said sections having a projection and one of said pro-

jections having an opening and a beveled outer surface, of an axially-movable locking-bolt carried by the other section and having a beveled head to engage said beveled surface, means for causing said head to pass freely through said opening while the mold is being opened and closed, and means by which the axial movement of the bolt also causes it simultaneously to move longitudinally in its bearing, substantially as described, whereby the locking of the sections is effected by two movements simultaneously produced, for the purposes specified.

2. The combination with the two sections of a glass-mold, each of said sections having a projection and one of said projections having an opening and a beveled outer surface, and the other of said projections having a threaded bearing, of a locking-bolt having a threaded portion to engage said bearing, a beveled head attached to one end of said bolt, to engage the beveled surface of the other projection, a lever attached to the other end of said bolt and extending beyond the same, and a stop to engage the extended end of the lever and hold said beveled head in position to pass freely through the opening in the other projection, said parts coacting to effect simultaneously two closing actions of the bolt upon the sections, substantially as described and for the purposes specified.

653,141. TRUNK-LOCK. CHARLES G. JOHNSON, West Superior, Wis., assignor of one-half to Alfred Petterson, same place. Filed Aug. 28, 1899. Serial No. 728,805. (No model.)



Claim.—1. A trunk-lock comprising in combination, an upper and a lower plate securable, respectively, on the cover and the body of the trunk, the upper plate having a pivoted arm with a single hook or ward adapted to enter horizontally into the front of the lock when the arm hangs down, the lower plate having an aperture for said hook to pass through, and at its rear side a plurality of concentric locking-disks, and at its front side a plurality of graduated concentric operating-dials, each of which is secured by a shaft or sleeve to one of the locking-disks; said disks having each a notch in its edge for the hook to pass through and engage the rear of the disks when they are turned away from the opening and locking position; the front locking-disk having an annular flange projecting rearwardly flush with the rear side of the rear disk, substantially as set forth.

2. A trunk-lock comprising in combination an upper and a lower plate securable the former to the cover and the latter to the body of a trunk, the upper plate having a pivoted arm with a single locking-hook adapted to enter the lock from the front, the lower plate having an aperture for said hook, and a plurality of locking-disks arranged concentrically at the rear side of the plate, and provided with notches in their edges for the locking-hook to pass through and engage the rear of the disks, said disks having shafts or sleeves projecting forward through the plate and graduated operating-dials secured on them in front of the plate; said plates having the guides 7 and the pockets 8 adapted to engage each other; and a suitable mark on the lower plate or on the locking-arm to indicate the unlocking position of the dials according to predetermination, substantially as set forth.

3. In a trunk-lock, the combination with two lock frame-plates adapted to be secured one to the trunk proper, and the other to the trunk-cover, of a pivoted locking-arm suspended from the upper plate and having the angular side shoulders 29, and the two plates being grooved to receive the arm flush with their outer surface, and the lower plate having the angular shoulders 30 engaging the shoulders 29, and means for locking said arm in said groove, substantially as and for the purpose set forth.

4. In a permutation-lock, the combination with two concentric locking-disks, both having a notch in their edge, of a single locking-hook adapted to engage the rear of the disks and to pass through the notches in a direction parallel to the axis of the disks when locking and unlocking take place; said disks being one smaller than the other and sunk into a cylindrical cavity in the side of the larger disk so that the two disks present an even surface, to the hook or ward, and suitable marked dials for turning the disks, substantially as set forth.

653,142. TYPE-SETTING APPARATUS. LOUIS K. JOHNSON and ABBOT A. LOW, New York, N. Y., assignors to the Alden Type Machine Company, same place. Filed Nov. 24, 1899. Serial No. 738,208. (No model.)



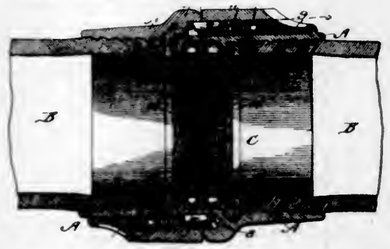
Claim.—1. The combination of a type-channel holder having a channel-socket of maximum width, a type-containing channel of less than maximum width, and a fillet-lining for said channel-holder socket, the side walls of said fillet-lining being formed to compensate for and centralize the said channel within the holder, substantially as and for the purpose set forth.

2. The combination of the channel-holder H formed with the channel-socket h^3, the fillet-lining F, and a type-containing channel C, for the purpose described.

3. The combination of the channel-holder H, formed with the channel-socket h^3, and pusher-slot P, the fillet F, formed with the pusher-slot f, and a type-containing channel C, substantially as described.

4. A channel-holder for type-channels formed of two plates which when united form a holder which is bilaterally symmetrical substantially as shown and described.

653,143. HOSE-COUPLING. JENS C. MARTIN, Spokane, Wash. Filed Nov. 8, 1899. Serial No. 736,232. (No model.)



Claim.—1. In a hose-coupling, the combination of the duplicate coupling-sections, each having engaging segmental flanges and grooves and provided with a space between said flanges, and a corresponding tenon or boss on the opposite side, and means for locking the sections when duly engaged, substantially as shown and described.

2. In a hose-coupling, the combination of the duplicate coupling-sections, each having two projecting segmental clutch members which are separated by a space, and on the opposite side two arc grooves and an intermediate bose, and slidable spring-latches for automatically locking the sections together substantially as shown and described.

3. In a hose-coupling, the combination of duplicate coupling-sections, having segmental clutch members 2 and 3, which are separated as specified, and an opposite boss, which, when the sections are engaged by a sliding lateral movement, enters the space 4 between said members, and thus serves as a guide, as shown and described.

4. In a hose-coupling, the combination with coupling-sections, of a slidable locking-latch, a spiral spring encircling the same, a finger-pull forming a part of the latch and a curved plate-spring interposing said spiral spring and finger-pull, as shown and described.

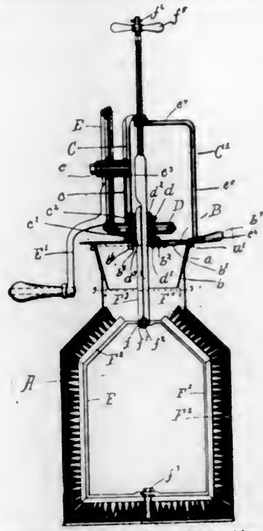
5. In a hose-coupling, the combination of a coupling-section provided with a lateral housing having internal lateral recesses, a slidable locking-latch composed of a pin and finger piece or pull, which parts are detachably connected, and a curved or segmental spring applied between said pin and pull-piece, with ends resting in said recesses, as shown and described.

6. In a hose-coupling, the combination of two sections adapted to be engaged and locked together and each provided with an internal dovetail socket or groove located adjacent to the face, and two annular gaskets which are held in the respective sockets, the interior hollow portions of the gaskets projecting circumferentially toward each other so that when the coupling is effected the gaskets are in position to be acted on by the pressure of water and to yield and flatten thereunder, as shown and described.

7. In a hose-coupling, the combination, with sections adapted to be coupled, of two expansible gaskets formed of duly-elastic material, the bases of said gaskets being inserted in grooves formed in the inner sides of such coupling-sections, and their free edges being turned outward and then inward upon themselves and forming hollow rings or loops which project beyond the ends of the sections, and sockets formed in the inner portions of the sections, as shown and described, whereby the entire inner sides of the loops present an unbroken and smooth surface, as specified.

653,144. MILK-CAN WASHER. CHARLES MARWITZ, Oak Park, Ill. Filed Sept. 18, 1899. Serial No. 730,843. (No model.)

Claim.—1. In a receptacle-washing machine, the combination of a pair of brush-frames hinged together and provided with independent shanks arranged to extend parallel with each other, a driving-pinion constructed to telescope upon and engage said shanks to hold the brush-frames in operative position and means for rotating the pinion.



2. In a receptacle-washing machine, the combination of a pair of brush-frames, hinged together and each provided with a shank, one of which is longer than the other, said frame being hinged so as to enable the shanks to be brought together to form in effect a single shank when the brush-frames are in operative position, a pinion apertured to receive said shanks when the latter are brought together and having sliding but non-rotative engagement with the same, a frame supporting said pinion and a driving-gear mounted upon the frame and intermeshing with the pinion.

3. In a receptacle-washing machine, the combination of a pair of brush-frames, hinged together and each provided with a shank, one of which is longer than the other, said frames being hinged so as to enable the shanks to be brought together to form in effect a single shank when the brush-frames are in operative position, a pinion apertured to receive said shanks when the latter are brought together and having sliding but non-rotative engagement with the same, a frame supporting said pinion, a driving-gear mounted upon the frame and intermeshing with the pinion, the end of the longer shank being extended beyond the pinion and provided with a rotatably-connected handle whereby the brush-frames may be manipulated during rotation.

4. In a milk-can-washing apparatus the combination with a brush mechanism, of a base-plate for supporting said mechanism, provided at its under side with a conical guide adapted to engage the flaring mouth of the milk-can to center the apparatus relatively to the can.

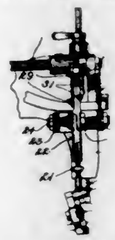
5. In a milk-can-washing apparatus, the combination with a brush mechanism, of a base-plate for supporting said mechanism, provided at its under side with a conical guide adapted to engage the flaring mouth of the milk-can to center the apparatus relatively to the can and means for positively locking said base-plate to the can.

6. In combination with a milk-can-brushing apparatus, and a base-plate adapted to support said apparatus upon the milk-can, a clamping mechanism comprising a clamping-lever, pivotally mounted between its ends upon the base-plate, clamping-arms pivotally connected with said lever at points equidistant from, and at opposite sides of, its pivotal support and means for locking the clamping-lever in a determined position.

7. In a milk-can-brushing apparatus, the combination of the hinged frames F F', having the shanks F^2 F^4, the base-plate B, the supporting-frame C C mounted upon said base, the intermeshing gears D, E mounted in said frame, the former having sliding but non-rotative engagement with the shanks of the brush-frames, and the handle f^3 mounted upon the upper end of the extended shank, substantially as set forth.

653,145. STITCH-SEPARATING MECHANISM FOR SEWING-MACHINES. FRANK W. MERRICK, Boston, Mass. Filed Nov. 25, 1898. Serial No. 697,319. (No model.)

Claim.—1. In a sewing-machine, the combination with the stitching devices, of the indenting-tool, supporting means therefor and actuating means for the said tool moving its working end in a path cutting obliquely the path of movement of the needle, whereby to carry said working end in its descent in beneath the overhanging portion of the upper of the said shoe, substantially as described.



2. In a sewing-machine, the combination with the stitching devices, and the presser-foot, of the indenting-tool, means for supporting the same on the said presser-foot in an inclined position, and actuating devices for the said tool moving the latter in a path cutting obliquely the path of movement of the needle, whereby to carry said working end in its descent in beneath the overhanging portion of the upper of the said shoe, substantially as described.

3. In a sewing-machine, the combination with the stitching devices, of the indenting-tool, supporting means therefor, and actuating means for the said tool moving its working end in a path cutting obliquely the path of movement of the needle, and operating to advance the same to the stitch-making point in the machine, there impress it between the stitches, and then retract the same to a position horizontally removed from the path of movement of the said devices, whereby to carry said working end in its descent in beneath the overhanging portion of the upper of the said shoe, substantially as described.

4. In a sewing-machine, the combination with the stitching devices, and presser-foot, of the indenting-tool, means for supporting the same, actuating devices for the said tool, guiding devices determining the path of movement of the working end of the said tool, and means for adjusting said guiding devices whereby to enable the position of the said path to be varied, substantially as described.

5. In a sewing-machine, the combination with the stitching devices and presser-foot, of the indenting-tool, means for supporting said tool, actuating devices for the said tool, the cam and bearing determining the path of movement of the working end of the said tool, and the adjusting means whereby the position of the said path is varied, substantially as described.

6. The combination with the presser-foot, and the indenting-tool, the said parts having guiding devices to control the path of movement of the working end of the tool, of the bell crank operatively connected with the tool, the actuating-lever operatively linked to the bell-crank, and the actuating-tappet, substantially as described.

7. The combination with the presser-bar, the presser-foot, the indenting-tool, and the bell-crank pivoted to the presser-foot, of the actuating-lever, the link having universal-joint connections with the said bell-crank and actuating-lever, and means to actuate the said actuating-lever, substantially as described.

8. The combination with the indenting-tool, means for supporting the same, the actuating-lever, and operating connections intermediate the said tool and lever, of the operating-tappet, the movable contact-face intermediate the said tappet and lever, and means to adjust the said contact-face, whereby to vary the depth of the impressions produced by the tool, substantially as described.

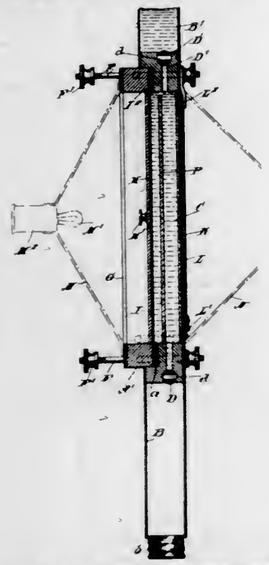
653,146. DEVELOPING-TRAY. STUART B. MOORE, New York N. Y. Filed Aug. 31, 1899. Serial No. 729,045. (No model.)

Claim.—1. A developing-tray having openings in opposite sides, non-actinic transparent windows for closing said openings, one of said windows being movable toward and from its opening so as to cover or uncover the same, means for making a water-tight joint between said window and the tray when closed, means for securing a plate-holder to the tray and releasing the plate therefrom, and means for introducing and discharging the various liquids for the treatment of the plate, substantially as described.

2. A developing-tray having a non-actinic transparent sliding window, and means for pressing said window against the body of the tray to produce a liquid-tight joint and to hold said window against accidental movement.

3. A developing-tray, having two chambers, one adapted to receive the plate to be treated and having windows closed by non-actinic plates, one of said plates being mounted to slide to permit the

introduction of the negative or photographic plate, clamps adapted to temporarily secure a plate-holder to this side of the tray and covering the window thereof, a liquid-holding tank at one end of the tray and having a passage connecting therewith, and a valve controlling the said passage, said tank having a filling-opening and cap, substantially as described.



4. A developing-tray, having two chambers, one adapted to receive the plate to be treated and having opposite windows closed by non-actinic plates, one of said plates being mounted to slide to permit the introduction of a negative or photographic plate, a hinged opaque cover for the opposite window, a removable opaque cover for the sliding window-plate, clamps adapted to temporarily secure a plate-holder to the side of the tray having the sliding plate and covering the window-opening on the said side, a liquid-holding tank at one end of the tray and having a passage connecting therewith, a valve controlling said passage, the tank having a filling-opening, and a cap closing the same, substantially as described.

5. A developing-tray, having two connecting chambers, a valve controlling the connection between said chambers, one chamber constituting a liquid-storing tank and the other a developing and plate-receiving chamber, a frame having an opening equal to that of the plate to be treated, a slide of non-actinic and transparent material mounted to slide in guides on the tray and adapted to close one side of the plate-receiving chamber, means for clamping the said frame to the tray with the slide between them, and means for temporarily securing a plate-holder to the outer side of this frame, substantially as described.

6. A developing-tray, having two connecting chambers, a valve controlling the connection between said chambers, one chamber constituting a liquid-storing tank and the other a developing and plate-receiving chamber, a frame having an opening equal to that of the plate to be treated, a slide of non-actinic and transparent material mounted to slide in guides on the tray and adapted to close one side of the plate-receiving chamber, means for clamping the said frame to the tray with the slide between them, and means for temporarily securing a plate-holder to the outer side of this frame, the tray having a window opposite its slide closed by a transparent non-actinic plate, substantially as described.

7. A developing-tray, having two connecting chambers, a valve controlling the connection between said chambers, one chamber constituting a liquid-storing tank and the other a developing and plate-receiving chamber, a frame having an opening equal to that of the plate to be treated, a plate of non-actinic and transparent material mounted to slide in guides on the tray and adapted to close one side of the plate-receiving chamber, means for clamping the said frame to the tray with the non-actinic transparent slide between them, means for temporarily securing a plate-holder to the outer side of this frame, the tray having a window opposite its slide closed by a transparent non-actinic plate, and opaque removable outer covers for said window and plate-receiving opening, substantially as described.

8. A developing-tray having in one of its large or flat sides, an aperture of sufficient size for the flatwise insertion of a photographic plate, a non-actinic transparent window movably connected with the tray so as to cover or uncover said aperture, and a device for pressing said window against the body of the tray to produce a liquid-tight joint and to hold said window against accidental movement.

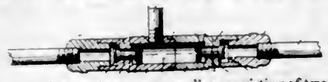
9. A developing-tray, having opposite non-actinic windows, means for securing a plate-holder to the tray and transferring the plate therefrom to the tray without exposing it, means for introducing and discharging the various liquids for the treatment of the plate, and hoods securable over opposite windows, one hood having an artificial lighting means within it and the other having a view-opening, substantially as described.

10. A developing-tray, having opposite non-actinic windows, means for securing a plate-holder to the tray and transferring the plate therefrom to the tray without exposing it, means for introducing and discharging the various liquids for the treatment of the plate, a hood attachable to the tray to cover one window, and an electric lamp within said hood, substantially as described.

11. A developing-tray, having windows upon opposite sides closed by non-actinic observation-plates, one of said plates being mounted as a slide to permit the introduction of a negative, clamps for temporarily securing a plate-holder to this side of the tray and in registry with the window-opening, removable opaque covers for the windows, and a tank having a valved connection with the plate-holding chamber, whereby the proper liquids may be introduced and discharged for treating the plate, substantially as described.

12. A developing-tray, having a plurality of chambers, one adapted to receive the plate to be treated and having windows closed by non-actinic plates, one of said plates being mounted to slide to permit the introduction of the negative or photographic plate, clamps adapted to temporarily secure a plate-holder to this side of the tray and covering the window thereof, the other chambers constituting liquid-holding tanks one at each end of the tray and having passages connecting with the plate receiving or developing chamber, and valves controlling the said passages, said tanks having each a filling-opening and cap therefor, substantially as described.

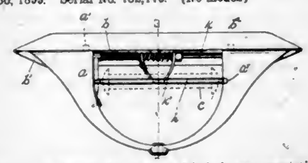
658,147. CYLINDER DRAIN-COCK. WILLIAM P. MOSES, Huntington, Ind. Filed Mar. 29, 1900. Serial No. 10,669. (No model.)



Claim.—1. In a drain-cock, a coupling consisting of two sections, a valve-chamber therein, partitions at the ends of said chamber, an aperture extending through each partition, and a valve-seat in each end of each aperture, duplex valves connected by a stem passing through the apertures in the partitions, said valves being of different areas, connections at the ends of said sections to the steam-cylinder, and a connection provided with a cock for reversing the valves, substantially as described.

2. In a drain-cock, a central coupling comprising two sections, a valve-chamber therein having apertured end partitions, duplex valves seated in said apertures, said valves each consisting of a headed bolt having a flattened stem and a valve-head connected to said stem by screw-threads, and connections to the steam-cylinder, one of said connections having a stop-cock for reversing the valves, substantially as described.

658,148. SHUTTLE. EDWIN OLDFIELD, Norwich, Conn. Filed Sept. 30, 1899. Serial No. 732,176. (No model.)



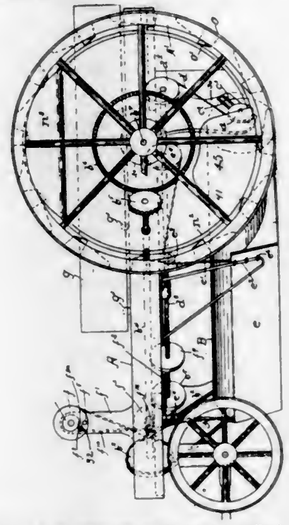
Claim.—1. A shuttle for narrow-fabric looms consisting, in combination, of a body-section having spring-receiving chambers, and a back-section formed with a rack and with offset guide-ribs that lie within the outer or rear face of the said rack.

2. In combination, in a shuttle, a rack-section, and a bow-shaped body-section consisting of a cast-metal shell having spring-receiving chambers and bridges a^4, a^5 and a^7, substantially as specified.

3. In combination, in a shuttle, a bow-shaped body-section consisting of a cast-metal shell having spring-receiving chambers and bridges a^4 a^5 a^6, as set forth, and a back-section having a central rack and offset ribs, substantially as specified.

4. In a shuttle, in combination, a bow-shaped body-section consisting of a cast-metal shell having a chambered bridge a^4 and an oppositely-located slotted bridge a^5, as set forth, a spring within the bridge a^4 and a pin extending transversely through the inner end of the said spring for the purpose specified.

658,149. APPARATUS FOR SWEEPING AND CLEANING STREETS. JEREMIAH A. PAIGE, Manchester, N. H. Filed June 24, 1899. Serial No. 721,698. (No model.)



Claim.—1. In an apparatus of the kind described, a wheel-supporting frame, an obliquely-arranged clearing device, a revoluble carrier or conveyer, and a fixed receiving-chamber projecting into said carrier or conveyer, substantially as described.

2. In an apparatus of the kind described, a wheel-supporting frame, a fixed receiving-chamber, a carrier or conveyer inclosing said receiving-chamber, and an obliquely-arranged clearing device projecting into said receiving-chamber, substantially as described.

3. In an apparatus of the kind described, a wheel-supporting frame, an obliquely-arranged clearing device, a fixed receiving-chamber having an open bottom and open side, and a carrier or conveyer having vanes or pockets, said carrier or conveyer surrounding the receiving-chamber and adapted to revolve around the same, substantially as described.

4. In an apparatus of the kind described, a wheel-supporting frame, an obliquely-arranged clearing device, a revoluble carrier or conveyer, and a receiving-chamber projecting into the carrier or conveyer and mounted upon a plate fixed to the supporting-frame, substantially as described.

5. In an apparatus of the kind described, a wheel-supporting frame, an oblique clearing device carried by it, a moving carrier or conveyer, a receiving-chamber projecting into said carrier or conveyer at the rear of said clearing device and having an open bottom beneath which said carrier or conveyer moves and an open side for the entrance of the material, a delivery-chute over which said carrier or conveyer moves and a circular rim extending from said receiving-chamber to said delivery-chute which in conjunction with the moving carrier or conveyer forms an inclosed recess, substantially as described.

6. In an apparatus of the kind described, a wheel-supporting frame, an oblique clearing device carried by it, a moving carrier or conveyer, a receiving-chamber projecting into said carrier or conveyer at the rear of said clearing device and having an open bottom beneath which said carrier or conveyer moves and an open side for the entrance of the material, a delivery-chute over which said carrier or conveyer moves and a circular rim held in fixed position concentric to said moving carrier or conveyer which conceals the dirt-carrying receptacles borne by said carrier or conveyer, substantially as described.

7. In an apparatus of the kind described a wheel-supporting frame, a clearing device carried by it, upwardly-inclined bearings which receive the journals of said clearing device, a revoluble carrier or conveyer, and a fixed receiving-chamber projecting into said carrier or conveyer, substantially as described.

8. In an apparatus of the kind described, a wheel-supporting frame, a clearing device carried by it having journals with pinions thereon, upwardly-inclined bearings having rack-teeth which engage the pinions on the journals of the clearing device, pulleys on the outer ends of the journals of the clearing device, pulleys carried by brackets supported on the frame, and a rope or chain connecting the pulleys on the said journals with the pulleys on the said brackets for the purpose of raising or lowering the clearing device, substantially as described.

658,150. BADGE-BUTTON AND PIN-BACK THEREFOR. AUGUSTUS PHELPS, Newark, N. J. Filed Mar. 19, 1900. Serial No. 9,185. (No model.)



Claim.—1. The combination with the back plate of a button, having an inwardly-extending part b', with a perforation g, and ears d, d, and a headed pin extending through said perforation and held by said ears, substantially as set forth.

2. The combination with the back plate comprising an annular piece having an inwardly-projecting broadened part at one side, said broadened part being perforated, and at its inner end provided with forwardly-extending ears adapted to form a tube-like socket for the pin, and a headed pin extending through said perforation and socket, the head of said pin being held between the broadened part and a stay, substantially as set forth.

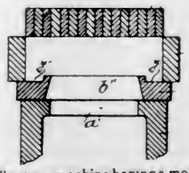
3. The combination in a badge-button, of a back plate having an inwardly-projecting tongue at one side, a tubular pin-socket on said tongue, and a removable pin inserted in said socket and having its end held between said socket and the edge of the back plate, substantially as set forth.

4. The combination in a badge-button, of a back plate having a tongue projecting radially inward from one side, a tubular pin-socket on said tongue, and a separable pin in said socket and having its end held in a recess between the socket and edge of the back plate, substantially as set forth.

5. The combination with the button having an integral tube formed at the back of said button, the longitudinal axis of the tube extending parallel with the plane of the body of the button, and radially inward toward the center of said button, and a straight separable pin having a head at one end and a point at the other, the said head serving as a stop, substantially as set forth.

6. The combination with the body of the button, having a tube formed of a pair of integral ears d, d, said tube having its longitudinal axis lying radially with respect to the center of said body, a pin held in said tube and lying diametrically across the back of said body, substantially as set forth.

653,151. LINE-CASTING MACHINE. FRANK H. PIERPONT, Berlin, Germany, assignor to the Typograph Gesellschaft mit Beschränkter Haftung, same place. Filed Dec. 23, 1897. Serial No. 663,150. (No model.)



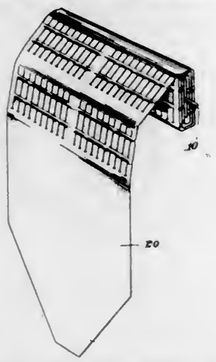
Claim.—1. In a linotype-machine having a movable slide inserted between the mold and the pot-nozzle, the combination with said slide of means for removing the bur from the back of the slug when the slide is moved, at a point below the full height of the slug as represented by solid full cast ledges at the back of the slug substantially as described.

2. In a linotype-machine of the class specified, the combination of a movable slide having projections at suitable points of the length of the type-line to be cast, said projections extending partially into

the mold and having metal-inlet openings within their length, substantially as described.

3. In a linotype-mold, the hereinbefore-described combination of a four-sided mold, a four-sided mold for its sprue and means for making the latter nearly register with the former and for afterward breaking the sprue away from the linotype.

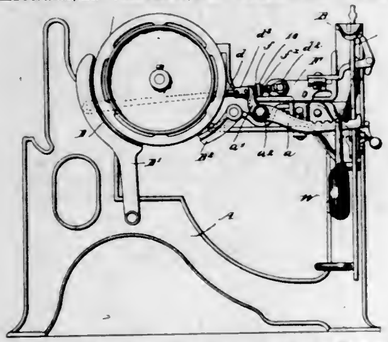
653,152. PIN-PACKAGE. ERNEST A. ROEBER, Philadelphia, Pa. Filed Dec. 14, 1899. Serial No. 740,252. (No model.)



Claim.—1. As a new article of manufacture a paper roll of pins in which the pins are inserted in a series of parallel rows, in the direction of the length of the roll and all pointing in the same direction, said roll being folded to bring the series of rows of pins on the outside of the fold in one continuous series of folds, and having a free end adapted to cover the folded rows of pins, said folded end being shaped or cut to form a lip at its extremity; substantially as described.

2. As a new article of manufacture, a paper roll of pins in which the pins are inserted in a series of parallel rows in the manner described, said roll being folded with the series of rows of pins on the outside of the fold in one continuous series of folds, a rod 10 inserted in the rear or folded-in end, and an outer or free end adapted to cover the folded rows of pins, said end being shaped or cut to form a lip at its extremity; substantially as described.

653,153. BRAKE MECHANISM FOR LOOMS. ALFRED E. STAFFORD, Hopedale, Mass., assignor to the Draper Company, same place and Portland, Me. Filed Jan. 29, 1900. Serial No. 3,126. (No model.)

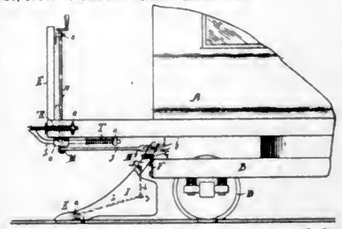


Claim.—1. In a loom, a brake-shoe, a longitudinally-movable brake-rod connected therewith and provided with a collar secured thereto, an abutment adjustably mounted on the collar, an actuator provided with a toe to engage said abutment and thereby apply the brake, and stopping means for the loom, stopping movement of said means effecting the operation of the actuator.

2. In a loom, stopping means, a brake, an actuator therefor, means for supporting an abutment on one and a cooperating toe on the other, mechanism for adjusting the abutment with relation to its supporting means, and separate means to lock the abutment in position, the operation of said stopping means effecting the operation of the actuator.

3. In a loom, stopping means, a brake, a connected brake-rod having a lateral extension, an abutment adjustable on said extension, means to lock the abutment in adjusted position and an actuator for the brake, having a toe movable in the path of and to engage said abutment, to apply the brake, operation of the stopping means effecting the operation of the actuator to apply the brake.

653,154. CAR-FENDER. JAMES SULLIVAN, Boston, Mass. Filed Mar. 29, 1900. Serial No. 10,653. (No model.)



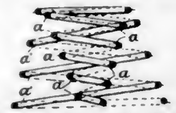
Claim.—1. A fender for street-cars consisting of angle-iron sides, connected together by rods, and carried by a rod passing through same, the ends of said rod working in slots formed in angle-pieces attached to the forward end of the truck, whereby said rod is allowed a short longitudinal movement; as set forth.

2. A fender for street-cars consisting of angle-iron sides, connected together by rods; rollers on the outer or lower rod to travel on the road-bed, and buffers on said rod to prevent too great a jar when the fender is lowered.

3. A fender for street-cars, consisting of angle-iron sides and carried by a rod working in slots formed in angle-pieces secured to the forward end of the truck, a longitudinal rod forked at one end to embrace the upper or rear connecting-rod of the sides, an upright rod inside of the dashboard having a handle at its upper end and a crank at its lower end connected to the forward end of said longitudinal rod; as and for the purpose set forth.

4. In combination with a car buffer and fender, a bar arranged longitudinally under the front end of the car-body, and held by a spring so that its forward end is in contact with the buffer, said bar having a projection on its upper side, and a disk on the upright rod, said disk having a tooth or projection in contact with the former projection for operating the fender; substantially as and for the purpose set forth.

653,155. COIL-SPRING. MARSHALL TILDEN, Willimantic, Conn. Filed Mar. 26, 1900. Serial No. 10,181. (No model.)



Claim.—1. An extension-spring made of a single piece of wire, comprising a conical body or spring having its enlarged end at the top, and another conical spring having its enlarged end at the base as shown and described.

2. An extension-spring made of a single piece of wire comprising a conical body or spring having its enlarged end at the top, and a lateral extension-top, formed by continuing the upper coil one or more turns around the end, and another conical spring having its enlarged end at base, as shown and described.

3. An extension-spring formed of a single piece of wire, comprising one spring encircled by another; the outer spring having a less number of coils than the inner spring, formed by continuing the upper coil of the inner spring conically, increasing in diameter to a base horizontal with the other end of said inner spring.

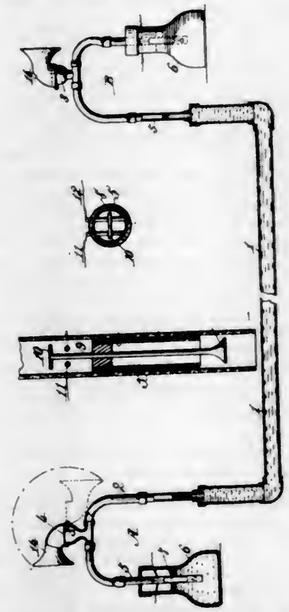
4. An extension-spring formed of one piece of wire comprising a spiral body and an onter skirt or support formed by extending the upper coil around said body to the base; the general direction of said skirt being divergent relatively to the general direction of the coils of said body.

5. An extension-spring formed of one piece of wire comprising a spiral body, a lateral extension-top formed by continuing the upper coil one or more turns around the end of said body, and an outer spring, having a less number of coils than the inner spring, extending to the base.

6. An extension-spring formed of a single piece of wire, comprising a conical body and a flat or horizontal top formed by continuing the upper coil one or more turns on the same level, and then conically, each coil increasing in diameter, to a base horizontal with the other end of said conical body.

7. An extension-spring formed of a single piece of wire comprising a conical body and a flat or horizontal top formed by continuing the upper coil one or more turns on the same level, then conically, each coil increasing in diameter, to a base horizontal with the other end of said conical body; then continuing in a series of like conical extension-springs around this central body, until a spring of sufficient diameter is formed; as shown and described.

653,156. APPARATUS FOR TRANSMITTING SOUNDS. ELLIOTT TOXEY, Mobile, Ala. Filed July 25, 1899. Serial No. 725,059. (No model.)



Claim.—1. In apparatus of the character and for the purpose described, a conduit containing throughout its length an incompressible liquid as the transmitting medium, a diaphragm connected therewith adapted to be actuated either manually or by sound-waves, and a removable mouthpiece for said diaphragm, as and for the purpose set forth.

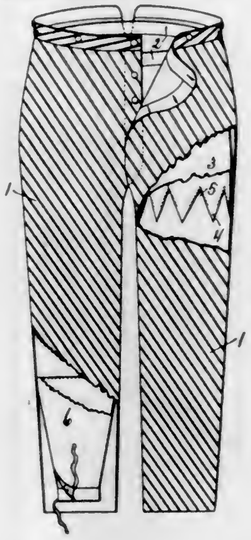
2. In apparatus of the character and for the purpose described, a conduit, transmitting and receiving mechanism connected therewith, the transmitting mechanism adapted to be actuated either manually, or by sound-waves, and a pivotally-mounted mouthpiece for the transmitting mechanism, as and for the purpose set forth.

3. In apparatus for transmitting signals from one point to another, a tubular conduit between the transmitting and receiving stations, a liquid-containing receptacle in each station, a pipe connecting said conduit with the interior of said receptacle, a transmitter in said pipe, a float supported by the liquid in said receptacle, also located in said pipe, and a contact-maker carried by said float adapted to open and close an electric circuit, as and for the purpose set forth.

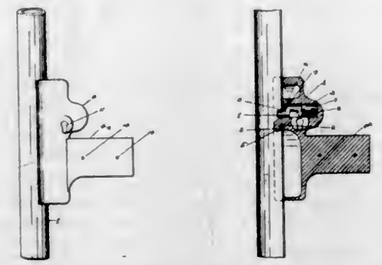
4. In apparatus for transmitting signals from one point to another, a tubular conduit connecting the transmitting and receiving stations and containing an incompressible liquid throughout its length, a liquid-containing receptacle in each station, a tube of insulating material leading down into the liquid in said receptacle, circuit-terminals in said tube, a pipe connecting said conduit with said tube, a transmitter in said pipe, a float in said tube supported by the liquid in said receptacle, the said float comprising an inverted-cup-shaped base, a stem extending therethrough, and a contact-maker on said stem, cooperating with said circuit-terminals, as and for the purposes set forth.

653,157. TROUSERS. WILLIAM G. TURNER, French Camp, Cal. Filed Aug. 29, 1899. Serial No. 728,863. (No model.)

Claim.—As an improved article of manufacture, the combination-garment comprising a pair of pantaloons, a pair of breeches arranged within the upper portion of the pantaloons, and having the alternate V-shaped points 4 and recesses 5 at the lower ends of its legs, and series of stitches arranged at intervals apart so as to leave openings for the passage of lint and connecting the breeches and pantaloons at the apices of the V-shaped recesses 5, substantially as and for the purpose set forth.



653,158. CORNER-COUPLING FOR METALLIC BEDS. FREDERICK W. WALKER, Utica, N. Y. Filed May 3, 1899. Serial No. 715,417. (No model.)



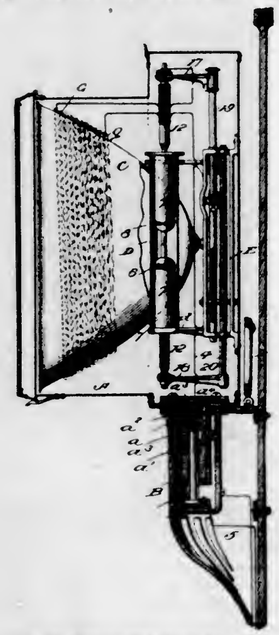
Claim.—1. A slotted tubular bed-post, in combination with a coupling having the concavity conforming substantially to the exterior surface of the post and provided with the lug in said concavity to enter the slot of the post, said coupling formed with a recess or socket opening into said concavity adjacent to said lug, a bolt in said recess and movable to project beyond the face of the concavity or withdraw within its recess, said coupling formed with a key-receiving opening adjacent to said bolt, whereby the bolt can be operated by a key inserted in said opening, substantially as described.

2. A slotted post, in combination with the coupling having its face formed with a concavity to partially embrace said post, said coupling having a rigid lug in its concavity to enter the slot of the post, and formed with a socket or recess at its inner end opening into said concavity in the plane of said slot in the post, a reciprocating spring-held bolt in said recess and normally projected into said concavity and said slot of the post, said bolt constructed to be withdrawn from the post-slot by a key, substantially as described.

3. A longitudinally-slotted post, in combination with the coupling having the concavity to receive and partially embrace said post, and the shouldered lug projecting from the coupling within said concavity, said coupling provided with the movable bolt inclosed within the same and normally projected into the concave face above said lug, substantially as described.

4. In combination, the longitudinally-slotted post, the coupling having the concavity to receive and partially embrace said post and the rigid shouldered lug projecting into said concavity intermediate of the length thereof, said coupling provided with a recess or socket opening into said concavity immediately above said lug, and a transverse keyhole intersecting said recess, a spring-held bolt in said recess normally projecting into said concavity, and means retaining the bolt in said recess, substantially as described.

653,159. ELECTRIC HEADLIGHT-LAMP. HARLAN P. WELLMAN, Ashland, Ky. Filed Dec. 14, 1899. Serial No. 740,304. (No model.)



Claim.—1. In an electric headlight-lamp, a reflector having a spiral groove on its exterior, and a resistance-coil within such groove, as set forth.

2. In an electric headlight-lamp, a reflector having a spiral groove on its exterior, a heat-resistance enamel covering in such groove, and a resistance-coil also within the groove, as set forth.

3. In an electric headlight-lamp, a reflector having a groove or ridged strip encircling its exterior, an insulating, heat-resisting covering for such strip, and a resistance-coil held by said strip, as set forth.

4. In an electric lamp, an arc-inclosure, caps extending inwardly therein to near the arc-forming point having central openings for the carbons, said caps engaging at their outer ends the ends of the inclosure, and a heat-resisting coating for such caps, as set forth.

5. In an electric lamp, an arc-inclosure, caps extending inwardly therein to near the arc-forming point having central openings for the carbons, said caps at their outer ends having flanges engaging the ends of the inclosure and a heat-resisting enameled coating for such caps, as set forth.

6. The combination, in an electric lamp having carbon-feeding rods, of a bracket, for one of the carbons, journaled at one end on one of said rods, and a spring tending to hold said bracket in its normal position, substantially as set forth.

7. The combination in an electric lamp having carbon-feeding rods, of a bracket, for one of the carbons, journaled at one end on one of said rods, stops to limit the axial movements of said bracket, a spring tending to hold the latter in its normal position, and means for locking the bracket to its rod, substantially as set forth.

8. The combination, in an electric lamp having carbon-feeding rods, of a bracket, for one of the carbons, journaled at one end on one of said rods and having an opening, for such rod, tapered at its ends, a collar on such rod having a tapered surface, a washer also having a tapered surface, said washer and collar conforming to the tapers of the bracket, and a screw for binding the latter, substantially as set forth.

9. The combination, in an electric lamp having carbon-feeding rods, of a bracket, for one of the carbons, journaled at one end on one of said rods and having an opening for the latter tapered at its top and bottom, a collar and washer on said rod fitting against the tapered ends of said opening, a screw for binding said parts, and a spring within the bracket for holding it in its normal position in relation to the rod, substantially as set forth.

10. In an electric lamp having positive and negative carbons, and mechanism for feeding such carbons together comprising vertically-movable rods, one of said rods being serrated longitudinally, a clutch having jaws paralleling opposite sides of the latter rod and having serrated faces for engaging the serrated portion of the latter, an electromagnet within the lamp-circuit, an armature, a connection between the latter and the clutch, and a spring tending to hold the clutch out of engagement, as set forth.

11. In an electric lamp having positive and negative carbons, and mechanism for feeding such carbons together, comprising vertically-movable rods, one of which has a serrated surface, a clutch having jaws paralleling and designed to engage opposite sides of such rod and contacting with the serrated surface, a support for said clutch pivoted at one end, an electromagnet, within the lamp-circuit, having an armature to which said clutch is connected, and a spring acting on said support tending to hold the clutch disengaged, as set forth.

12. In an electric lamp having positive and negative carbons, and mechanism for feeding such carbons together, comprising vertically-movable rods, one of which has a serrated surface, a clutch having jaws for engaging opposite sides of such rod and contacting with the serrated surface, a pivoted arm on which said clutch is pivotally mounted, a spring tending to hold said clutch out of engagement with the rod, and an electromagnet, within the lamp-circuit, having an armature to which the clutch is connected, substantially as set forth.

13. In an electric lamp having positive and negative carbons, and mechanism for feeding such carbons together, comprising vertically-movable rods, one of which has a serrated surface, an arm pivoted at one end, a clutch, pivoted on said arm and having a serrated jaw for engaging with the serrated portion of said rod, and also having an outwardly-projecting arm, an electromagnet, within the lamp-circuit, having an armature, a link connecting said armature to the clutch-arm, stops for limiting the downward movements of the pivoted arm and the clutch, and a spring tending to hold the clutch out of engagement, substantially as set forth.

14. The combination with an electric vehicle, of a bracket mounted on the dash thereof, a casing swiveled on said bracket, and having a vertical opening and a contact-terminal in the latter, a stud projecting from said casing, a spring engaging said stud for holding the casing in its normal position, a lamp mounted on the casing and having contacts designed to be located in said vertical opening for engaging said terminal, and a handle for turning the casing and lamp to the right or left, substantially as set forth.

15. The combination with an electric vehicle, of a bracket mounted on the dash of such vehicle having a depending rounded portion formed with an opening for the passage of the current-wires, a casing pivotally mounted on said bracket and having a rounded portion fitted in said former rounded portion and an opening to accommodate said wires, a handle secured to the casing for effecting the turning thereof, and a lamp mounted on the casing, substantially as set forth.

16. The combination with a casing having an insulated terminal stud and a central opening into which the stud projects, of the lamp having a hollow plug, a bushing therein formed with a central opening to receive said stud, a spring, and two end contact-pieces, said spring and contact-pieces being within said bushing, and an electrical connection between said spring and end contact-pieces in the lamp-circuit, substantially as set forth.

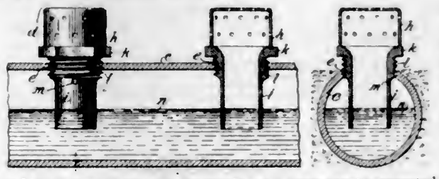
17. The combination with a casing having an insulated terminal stud and a central opening into which the stud projects, of the lamp having a hollow plug, a bushing therein formed with a central opening to receive said stud, a spring and two end contact-pieces also within said opening, a cap over said opening, a wire leading from said cap and connected to the lamp-circuit, and a pivoted cover for closing over said casing when the lamp is removed, substantially as set forth

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653,160. FILTER. JAMES E. WILLIAMSON, New York, N. Y., assignor to Henry B. Anderson, same place. Filed Nov. 21, 1899. Serial No. 737,749. (No model.)

Claim.—1. A system of piping, nozzles on the branches of said piping, an air-supply and a water-supply leading into the piping, means for forming a water seal in the piping to restrict its cross-sectional area, and a small air-passage located above said water seal, substantially as described.

2. A system of piping, an air-supply, and a water-supply connected to said piping, nozzles on the branches of said piping, and means for restricting the cross-sectional area of said piping through which the air may pass, substantially as described



3. A system of piping, an air-supply and a water-supply connected therewith, valves for controlling said air-supply and said water-supply respectively, a drain-pipe for allowing the water to escape a valve for said drain-pipe, nozzles on the branching of the piping system, projections extending inwardly into the said piping, and air-passages suitably located to allow the air from the air-supply to be forced out.

4. A system of piping suitably located under a bed of filtering material, an air-supply and a water-supply connected with said piping, suitable means for controlling said air-supply and water-supply, nozzles on the branches of the piping, and extensions on said nozzles projecting into the pipes.

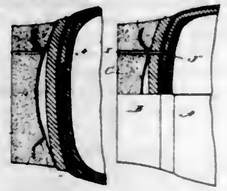
5. A system of piping located under a bed of filtering material, an air-supply and a water-supply connected to said system of piping, suitable means for controlling the water-supply to form a water seal in the piping, nozzles on the branches of said piping, extensions on said nozzles projecting into the pipes and below the said water seal, and small air-passages in the sides of said nozzles above the water seal.

6. A nozzle consisting of a sieve-like cap, means for fastening the nozzle to a filter-pipe below said cap, and a tubular extension below said fastening means.

7. A nozzle consisting of a sieve-like cap, means for fastening the nozzle to a filter-pipe below said cap, a tubular extension below said fastening means, and an opening in the side of said tubular extension.

8. A nozzle consisting of a sieve-like cap, a flange below said cap, a tubular extension below said flange, and external screw-threads formed on said tubular extension above its end, substantially as described.

653,161. ELASTIC TREAD FOR BOOTS OR SHOES. ELMER E. WOLF, Springfield, Ohio, assignor, by direct and mesne assignments, to the Springfield Elastic Tread Company, of Ohio. Filed Feb. 23, 1900. Serial No. 6,256. (No model.)



Claim.—1. In an attachment for boots and shoes, the combination with an elastic body, of a holding-plate substantially embedded within said body and having a bearing against the under side of a boot or shoe, the outer edges of said plate being turned downward and outward and upward to form hook-like extensions, said hook-like extensions acting to compress the outer edges of said elastic body, and holding means for connecting said holding-plate with the boot or shoe, all substantially as shown and described.

2. In an elastic attachment for boots and shoes, the combination with an elastic body having its upper face dished, of a holding-plate conforming to the shape of said dished upper face and having its outer edges turned downward and outward, and forming hook-like extensions and also having holes therein, and means for engaging with said plate and with a boot or shoe to hold said elastic body in position, all substantially as shown and described.

3. In an elastic attachment for boots and shoes, the combination with an elastic body having its upper face dished in cross-section and also longitudinally, of a holding-plate adapted to fit upon said elastic body in said dished face, said plate having its outer edges turned downward and outward, and also having holes therein, and means to project through said holding-plate and engage therewith and extend into said shoe or boot to secure said plate and resilient or elastic body in place, all substantially as shown and described.

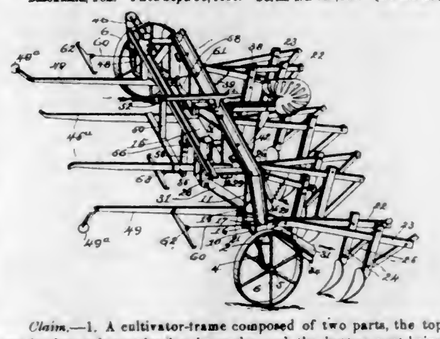
4. In an elastic attachment for boots and shoes, the combination with an elastic body, of a holding-plate having its outer edges turned downward and outward, such outer edges being scalloped to form hook-like extensions, such hook-like extensions being cupped out, said turned-down portions extending within the body portion of said elastic body, all substantially as shown and described.

5. As an article of manufacture, a holding-plate having its outer edges bent downward and outward and scalloped to form hook-like extensions, such hook-like extensions being cup-shaped, said plate being turned down and outward along its outer edge and also curved downward in cross-section and longitudinally and also having holes or openings near its outer edges adjacent to said turned-down portions, all substantially as shown and described.

6. In an elastic attachment for boots and shoes, the combination with an elastic body, of a holding-plate having its outer edges turned downward and outward, such outer edges being scalloped and forming hook-like extensions, said turned-down portions extending within the body portion of said elastic body, all substantially as shown and described.

7. In an elastic attachment for boots and shoes, the combination with an elastic body, of a holding-plate having a bearing substantially in the shape of a horseshoe for fitting against the base of a shoe-heel, holes formed in said bearing through which fastening devices may be driven into the base of said heel, said plate having turned-down portions outside of said bearing, such turned-down portions also extending outward and being formed after the fashion of a hook opening upward, whereby the rubber heel will be compressed along its upper edges and will be held from lateral spreading, all substantially as shown and described.

658,162. CULTIVATOR. MATTHES ZÖLLNER and CARL ZÖLLNER, Blackland, Tex. Filed Sept. 30, 1899. Serial No. 732,187. (No model.)



Claim.—1. A cultivator-frame composed of two parts, the top part having ends terminating in angles, and the bottom part being formed into vertical and horizontal portions which terminate at and are secured to the said angles, said top part having downwardly-slanting members which form braces between certain of the said vertical and horizontal portions.

2. A cultivator-beam having a forked front end, one of the forks being longer than the other, and diverging rear wings adapted to carry a plow or other cultivator.

3. The combination, with the cultivator-frame, of the cultivator-beams having a forked front end pivoted to the frame, a spring attached to the extended end of the fork forward of the said pivot and connected to the said frame to give the beams flexibility, and the stops engaged by said extended fork ends to control the downward movement of the beams.

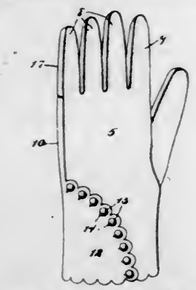
4. The combination, with the frame, and the axles attached thereto to form a tilting pivot for the frame, of means for holding the frame tilted, comprising the shafts having an upward projection, a hand-lever pivoted to the said projection, and a hook on the said lever adapted to engage the top of the frame, as set forth.

5. The combination, with the frame, and the pivoted plates adjustably secured to the frame and provided with stop projections, of the cultivator-beams having rear diverging wings, and a front fork pivoted to said plates to move vertically, one member of the said fork being extended under the said stops to control the downward movement of the beams, and a spiral spring having one end attached to the end of the extended fork member and the other end secured to the frame, to control the upward movement of the beams.

6. The combination, with the frame, the seat-post secured to the frame, and the seat having a forward extension to which the top end of the post is pivoted, of a vertical projection having one end secured to the frame and the other end adjustably pivoted to the said extension, substantially as set forth.

653,163. DRESS-GLOVE. MARTHA ANDERSON, Victor, Colo. Filed Nov. 13, 1899. Serial No. 736,837. (No model.)

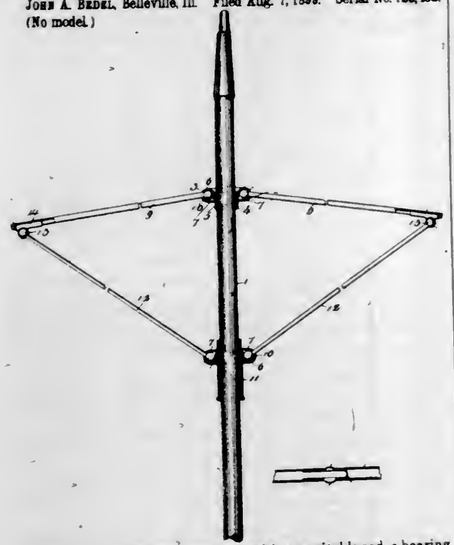
Claim.—1. In a glove, a blank therefor comprising two united sections struck or cut from a single piece of material, finger portions extending from one of said sections, the other section being substantially rectangular and provided with a flap adapted to engage the first-named section and a slit finger portion extending from the central upper edge of the blank, substantially as described.



2. As a new article of manufacture, a glove comprising the sections 5 and 10, provided with the cut-out portions 15 and 16, the finger portions 8 and 9, and front finger-sections adapted to be secured to the section 10 and portions 8, substantially as and for the purpose set forth.

653,164. JOINT FOR UMBRELLA RIBS AND STRETCHERS.

JOHN A. BEDELL, Belleville, Ill. Filed Aug. 7, 1899. Serial No. 726,432. (No model.)

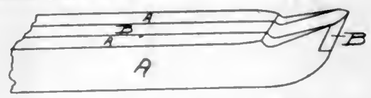


Claim.—An umbrella-frame, comprising a suitable rod, a bearing secured to the latter, suitable ribs, balls forming the ends of the said ribs, and adapted to be received by said bearings, bearing secured within the ribs in a longitudinal direction with the latter, and consisting of a strip of metal bent transversely about its medial portion, semicircular-cup-shaped extensions projecting from each side of said strip, and located opposite one another, whereby a suitable space is left between said extension, and a ball carried by one end of the stretcher members, and adapted to be received between the cup-shaped extensions, said strip being secured to the rib with its bent portion thereof pointing toward the free end of the same, whereby the bearing thus formed is prevented from spreading, substantially as described.

653,165. METHOD OF MAKING COMPOUND CUTTER-BARS.

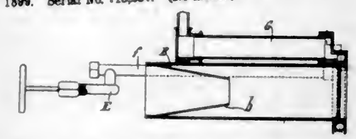
JOSEPH BEDFORD and JOSEPH ASHTON, Sheffield, England, assignors of one-half to William H. Babcock, Washington, D. C. Original application filed Nov. 8, 1897, Serial No. 657,792. Divided and this application filed Oct. 27, 1899. Serial No. 734,904. (No model.)

Claim.—The method or process of forming a compound integral bar of metal suitable for making cutting-tools without casting or welding, consisting in placing a harder bar of a quality incapable of being welded within a groove made in the softer bar and securing the two together by pressure, the harder bar having parts so shaped as to be overlapped by the softer bar when rolled or forged thereon, substantially as set forth.



653,166. OPEN BUNSEN BURNER.

HENRY B. CARY, Los Angeles, Cal., assignor to Frederick W. Braun, same place. Filed May 1, 1899. Serial No. 715,237. (No model.)



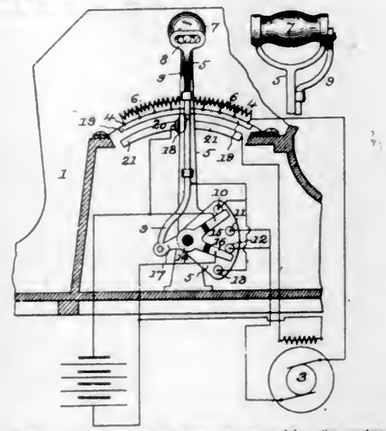
Claim.—1. An open Bunsen burner comprising a tube provided at one end with an inwardly-tapering injector-funnel, and at the other end with an inwardly projecting collar; an expanding and mingling chamber being formed in the tube between the inwardly-projecting funnel and the collar; and a gas-jet piece to discharge a jet into the injector-funnel.

2. An open Bunsen burner comprising a tube provided at one end with an inwardly-tapering injector-funnel and at the other end with an inwardly-projecting concave collar; and a gas-jet piece to discharge a jet into the injector-funnel.

3 An open Bunsen burner comprising the tube; a conical intake member arranged with its larger end closing one end of the tube and with its smaller end projecting into the tube; an inwardly-projecting ring having a concave face presented toward the intake member and a straight face presented toward the open discharge end of the burner, a mixing-chamber being provided between the intake member and the ring, and a gas-jet piece arranged to inject a jet axially into the tube through the conical intake member.

653,167. MOTOR-VEHICLE.

CLYDE J. COLEMAN, Chicago, Ill., assignor to Thomas J. Ryan, New York, N. Y. Filed Aug. 11, 1899. Serial No. 726,930. (No model.)



Claim.—1. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch means capable of independent actuation carried by the movable member of the current-controller and having operative connection with said switch, and a single grip for operating the circuit-controller and the reversing-switch, substantially as set forth.

2. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch, means capable of independent actuation carried by the movable member of the current-controller and having operative connection with said switch, a single grip for operating the circuit-controller and the reversing-switch, substantially as set forth.

3. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch, means capable of independent actuation carried by the movable member of the current-controller, the same comprising a semirotary grip having operative connection with the movable member of the reversing-switch, and a single grip for operating the circuit-controller and the reversing-switch, substantially as set forth.

4. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch, means capable of independent actuation carried by the movable member of the current-controller and having operative connection with said switch, a single grip for operating the circuit-controller and the reversing-switch and means for locking said switch against movement except when the controller mechanism is in its starting position, the same comprising a laterally-projecting pin on the switch-operating connection, and a confining-bar adapted to be engaged by said lateral pin to prevent a shifting of the switch except when the pin is moved out of engagement with said bar, substantially as set forth.

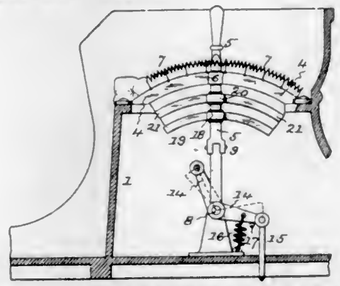
5. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch comprising a fixed and movable member arranged concentric to the pivot-axis of the circuit-controller, means capable of independent actuation carried by the movable member of the current-controller and having operative connection with the movable member of said switch, and a single grip for operating the circuit-controller and the reversing-switch, substantially as set forth.

6. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch comprising a fixed and movable member arranged concentric to the pivot-axis of the circuit-controller, means capable of independent actuation carried by the movable member of the current-controller and having operative connection with the movable member of said switch, a single grip for operating the circuit-controller and the reversing-switch and means for locking said switch against movement except when the controller mechanism is in its starting position, substantially as set forth.

7. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch comprising a fixed and movable member arranged concentric to the pivot-axis of the circuit-controller, means capable of independent actuation carried by the movable member of the current-controller and having operative connection with the movable member of said switch, a single grip for operating the circuit-controller and the reversing-switch and means for locking said switch against movement except when the controller mechanism is in its starting position, the same comprising a laterally-projecting pin on the switch-operating connection, and a confining-bar adapted to be engaged by said lateral pin to prevent a shifting of the switch except when the pin is moved out of engagement with said bar, substantially as set forth.

653,168. MOTOR-VEHICLE.

CLYDE J. COLEMAN, Chicago, Ill., assignor to Thomas J. Ryan, New York, N. Y. Filed Aug. 11, 1899. Serial No. 726,931. (No model.)



Claim.—1. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, comprising duplicate stationary members in parallel and separated relation, a movable member common to both, and means for insuring the return of the movable member to its starting position before a reversal of the current can be effected, substantially as set forth.

2. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, comprising duplicate stationary members in parallel and separated relation, a movable member common to both, and means for insuring the return of the movable member to its starting position before a reversal of the current can be effected the same comprising a separator-bar interposed between the stationary controller member, substantially as set forth.

3. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, comprising duplicate stationary members in parallel and separated relation, a movable member common to both and formed by a pivoted lever capable of longitudinal and lateral movements, and means for insuring the return of the movable member to its starting position before a reversal of the current can be effected, the same comprising a separator-bar interposed between the stationary controller members, substantially as set forth.

4. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, comprising duplicate stationary members in parallel and separated relation, a movable member common to both, and a brake-actuating mechanism having operative connection with the movable controller member, and adapted to be operated by a continued movement of such movable member past the point where it effects an interruption of the motor-circuit, substantially as set forth.

5. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, comprising duplicate stationary members in parallel and separated relation, a movable member common to both and formed by a pivoted lever capable of longitudinal and lateral movements and a brake-actuating mechanism having operative connection with the movable controlling member and adapted to be operated by a continued movement of such movable member past the point where it effects an interruption of the motive circuit, substantially as set forth.

6. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, comprising duplicate stationary members in parallel and separated relation, a movable member common to both and means for insuring the return of the movable member to its starting-point before a reversal of the current can be effected, and a brake-actuating mechanism having operative connection with the movable controller member and adapted to be operated by a continued movement of such movable member past the point where it effects an interruption of the motor-circuit, substantially as set forth.

7. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, comprising duplicate stationary members in parallel and separated relation, a movable member common to both and means for insuring the return of the movable member to its starting position before a reversal of the current can be effected, the same comprising a separator-bar interposed between the stationary controller members, and a brake-actuating mechanism having operative connection with the movable controller member, and adapted to be operated by a continued movement of such movable member past the point where it effects an interruption of the motor-circuit, substantially as set forth.

8. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, comprising duplicate stationary members in parallel and separated relation, a movable member common to both and formed by a pivoted lever capable of longitudinal and lateral movements, means for insuring the return of the movable member to its starting position before a reversal of the current can be effected, the same comprising a separator-bar interposed between the stationary controller members, and a brake-actuating mechanism having operative connection with the movable controller member and adapted to be operated by a continued movement of such movable member past the point where it effects an interruption of the motor-circuit, substantially as set forth.

653,169. MOTOR-VEHICLE.

CLYDE J. COLEMAN, Chicago, Ill., assignor to Thomas J. Ryan, New York, N. Y. Filed Aug. 11, 1899. Serial No. 726,932. (No model.)

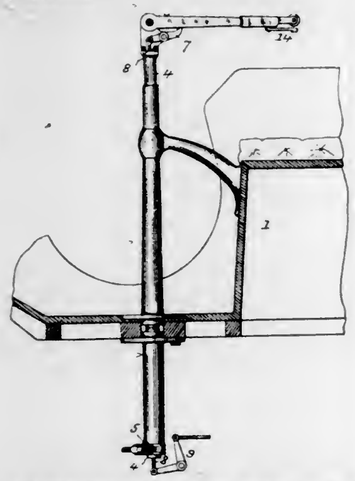
Claim.—1. In a motor-vehicle, the combination of a steering-handle having a combined horizontal and vertical movement, and a disconnected brake-actuating mechanism having operative connection with said steering-handle and adapted to be actively actuated by a downward movement of the steering-handle, substantially as set forth.

2. In an electrically-propelled vehicle, the combination of a steering handle, a combined current controller and reversing switch, and means capable of independent actuation carried by the steering-handle within easy reach of the operator's hand and having operative connection with the controller, substantially as set forth.

3. In an electrically-propelled vehicle, the combination of a steering-handle, a combined current controller and reversing switch carried by said steering-handle, and means extending into adjacent relation to the grip portion of said handle and adapted to operate the controller, substantially as set forth.

4. In an electrically-propelled vehicle, the combination of a steering-handle, a combined current controller and reversing switch, carried by said steering-handle, and comprising a pair of segmentally-

arranged series of stationary contact-points, and a movable contact-finger, and means extending into adjacent relation to the grip portion of said handle and adapted to operate the movable contact-finger, substantially as set forth.

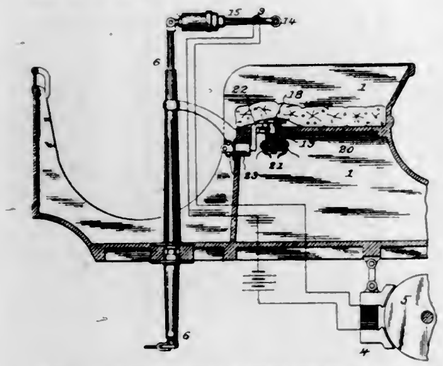


5. In an electrically-propelled vehicle, the combination of a steering-handle having a combined horizontal and vertical movement, a brake-actuating mechanism having operative connection with said steering-handle, a combined current controller and reversing switch, and means capable of independent actuation carried by the steering-handle within easy reach of the operator's hand and having operative connection with the controller, substantially as set forth.

6. In an electrically-propelled vehicle, the combination of a steering-handle having a combined horizontal and vertical movement, a brake-actuating mechanism having operative connection with said steering-handle, a combined current controller and reversing switch, carried by said steering-handle, and means extending into adjacent relation to the grip portion of the handle and adapted to operate the controller, substantially as set forth.

7. In an electrically-propelled vehicle, the combination of a steering-handle having a combined horizontal and vertical movement, a brake-actuating mechanism having operative connection with said steering-handle, a combined current controller and reversing switch carried by said steering-handle and comprising a pair of segmentally-arranged series of stationary contact-points, and a movable contact-finger, and means extending into adjacent relation to the grip portion of said handle and adapted to operate the movable contact-finger, substantially as set forth.

653,170. **MOTOR-VEHICLE.** CLYDE J. COLEMAN, Chicago, Ill., assignor to Thomas J. Ryan, New York, N. Y. Filed Aug. 21, 1899. Serial No. 727,983. (No model.)



Claim.—1. In an electrically-propelled vehicle, the combination of a steering-handle, an electric brake and an electric-brake-actuating mechanism mounted upon said handle in convenient relation to the grip portion of such handle, substantially as set forth.

2. In an electrically-propelled vehicle, the combination of a stationary handle, having the usual steering movement and an independent rotative movement, and the operating means of a current-controller mounted directly upon said handle and adapted to be operated by the rotative movement of the handle, substantially as set forth.

3. In an electrically-propelled vehicle, the combination of a steering-handle having the usual steering movement and an independent rotative movement, and a current-controller mounted directly upon said handle and adapted to be operated by the rotative movement of the handle, substantially as set forth.

4. In an electrically-propelled vehicle, the combination of a steering-handle having the usual steering movement and an independent rotative movement and a combined current controller and reverser mounted directly upon said handle and adapted to be operated by the rotative movement of the handle, substantially as set forth.

5. In an electrically-propelled vehicle, the combination of a steering-handle, formed by two members one of which is capable of rotative movement on the other, and the cooperative means of a current-controller, the stationary member of which controller is carried by one handle member and the movable member of such controller by the other and rotative handle member, substantially as set forth.

6. In an electrically-propelled vehicle, the combination of a steering-handle, formed by two members one of which is capable of a rotative movement on the other, and a current-controller, the stationary portion of which controller is carried by one handle member and the movable portion of such controller by the other or rotative handle member, substantially as set forth.

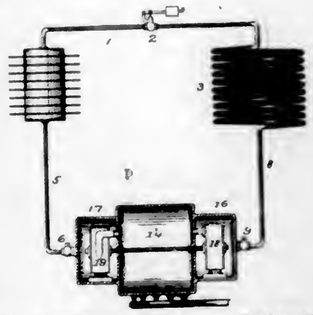
7. In an electrically-propelled vehicle, the combination of a steering-handle, formed by two members one of which is capable of a rotative movement on the other, and a combined current controller and reverser, the stationary portion of which controller and reverser is carried by one handle member, and the movable portion of such controller and reverser by the other and rotative handle member, substantially as set forth.

8. In an electrically-propelled vehicle, the combination with the motor, the source of electric energy, and the circuit connecting the same of a current-controller and an auxiliary circuit-breaker arranged in said circuit and located in the seat-board of the vehicle and adapted to be automatically operated by the occupancy of the seat, to close the circuit, substantially as set forth.

9. In an electrically-propelled vehicle, the combination with the motor, the source of electric energy, and the circuit connecting the same, of a current-controller and an auxiliary vertically-moving circuit-breaker arranged beneath the cushion of the seat and adapted to be automatically operated by the occupancy of the seat to close the circuit, substantially as set forth.

10. In an electrically-propelled vehicle, the combination with the motor, the source of electric energy, and the circuit connecting the same, of a current-controller and an auxiliary circuit-breaker arranged in said circuit and located in the seat-board of the vehicle and adapted to be automatically operated by the occupancy of the seat to close the circuit against its normal tendency to open said circuit, and a lock mechanism for locking said circuit-breaker in its open condition.

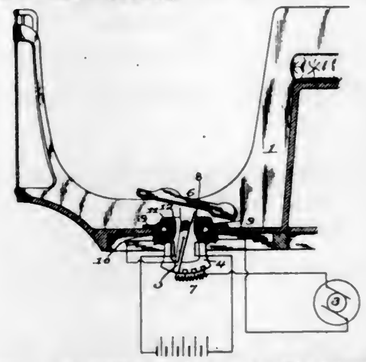
653,171. **SYSTEM OF REFRIGERATION.** CLYDE J. COLEMAN, Chicago, Ill., assignor to Thomas J. Ryan, New York, N. Y. Filed Sept. 9, 1899. Serial No. 730,006. (No model.)



Claim.—1. The herein-described system of refrigeration, the same comprising the storage of the refrigerating medium, the expansion thereof to effect a cooling action, and the return of such expanded medium to the storage-chamber by thermal agency, acting dynamically upon the gaseous refrigerant medium to transfer the same independent of chemical affinity from the expansion to the storage chamber of the system, substantially as set forth.

2. The herein-described system of refrigeration, the same comprising the storage of the refrigerating medium, the expansion thereof to effect a cooling action, and the return in a constant manner of such expanded medium to the storage chamber by thermal agency, acting dynamically upon the gaseous refrigerant medium to transfer the same independent of chemical affinity from the expansion to the storage chamber of the system, substantially as set forth.

653,172. **MOTOR-VEHICLE.** CLYDE J. COLEMAN, Chicago, Ill., assignor to Thomas J. Ryan, New York, N. Y. Filed Oct. 2, 1899. Serial No. 732,357. (No model.)



Claim.—1. In a system of electrical propulsion for motor-vehicles the combination of a current-controller, a current-reversing switch, and a pedal capable of a combined rocking and swiveling movement, and operatively connected with such controlling and reversing mechanisms, substantially as set forth.

2. In a system of electrical propulsion for motor-vehicles the combination of a current-controller, a current-reversing switch, a pedal having movement in a vertical and in a horizontal plane, and operative connections between said pedal and the controlling and reversing mechanisms, substantially as set forth.

3. In a system of electrical propulsion for motor-vehicles, the combination of a current-controller, a current-reversing switch, a pedal having movement in a vertical and in a horizontal plane, a movable ring carrying the movable members of the controlling and reversing mechanisms, and a fixed ring carrying the stationary member of the reversing mechanism, substantially as set forth.

4. In a system of electrical propulsion for motor-vehicles the combination of a current-controller, a current-reversing switch, a pedal having movement in a vertical and in a horizontal plane, a movable ring carrying the movable members of the controlling and reversing mechanisms, a fixed ring carrying the stationary members of the reversing mechanism, ball-races formed in the adjacent faces of said rings, a series of interposed balls, and an adjustable cone-piece securing the parts in relative position, substantially as set forth.

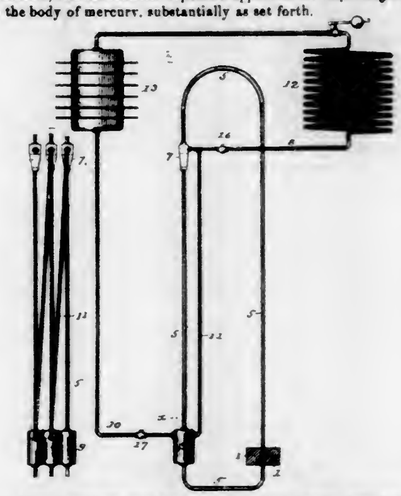
5. In a system of electrical propulsion for motor-vehicles the combination of a current-controller having a lever-shaped movable member, a current-reversing switch, a pedal carried by the movable lever member of the controller, a movable ring having pivotal connection with the movable controller member and carrying the movable member of the current-reverser, and a fixed ring carrying the stationary member of the current-reverser, substantially as set forth.

6. In a system of electrical propulsion for motor-vehicles, the combination of a current-controller, having a lever-shaped movable member, a current-reversing switch, a pedal carried by the movable lever member of the controller, a movable ring having pivotal connection with the movable controller member and carrying the movable member of the current-reverser, a fixed ring carrying the stationary member of the current-reverser, ball-races formed in the adjacent faces of said rings, a series of interposed balls, and an adjustable cone-piece securing the parts in relative position, substantially as set forth.

653,173. **REFRIGERATION APPARATUS.** CLYDE J. COLEMAN, Chicago, Ill., assignor to Thomas J. Ryan, New York, N. Y. Filed Oct. 14, 1899. Serial No. 733,688. (No model.)

Claim.—1. In a refrigeration system of the class herein described the combination with the storage-chamber, and the cooling-chamber, of a conducting column of mercury, and an electrical repulsion apparatus for varying the height of such column, substantially as set forth.

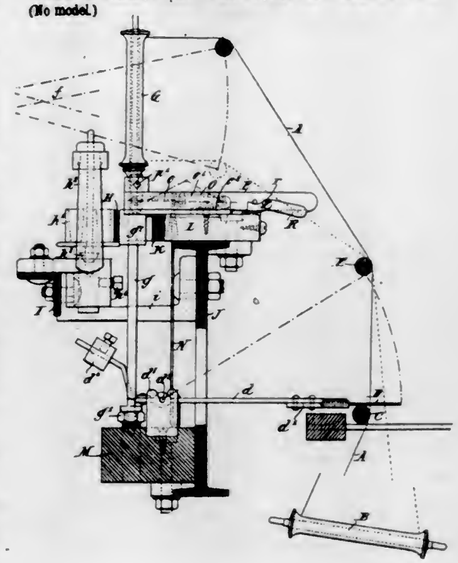
2. In a refrigeration system of the class herein described the combination with the storage-chamber, and the cooling-chamber, of an endless tubular loop containing a body of mercury, a pumping apparatus connected to such loop, and to the storage and expansion chambers, and an electrical repulsion apparatus for imparting motion to the body of mercury, substantially as set forth.



3. In a refrigeration system of the class herein described, the combination with the storage-chamber, and the cooling-chamber, of an endless tubular loop containing a body of mercury, a jet-pump or injector connected to such loop and to the storage and expansion chambers, and an electrical repulsion apparatus for imparting motion to the body of mercury, substantially as set forth.

4. In a refrigeration system of the class herein described the combination with the storage-chamber, and the cooling-chamber, of a series of endless tubular loops, containing a body of mercury, a series of jet-pumps or injectors connected to such loops and to the storage and expansion chambers, and an electrical repulsion apparatus for imparting motion to such bodies of mercury, the pumps being connected together in series, substantially as set forth.

653,174. **MACHINE FOR CLEARING SILK OR OTHER TEXTILE THREADS.** CHARLES G. DIEDERICHS and MARIE A. E. MARQUELET, Ste. Colombe les Vienne, France. Filed May 12, 1898. Serial No. 680,480. (No model.)



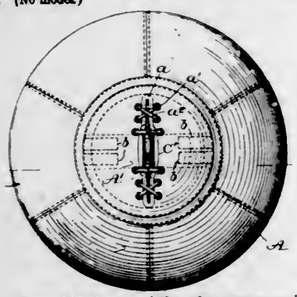
Claim.—1. The combination of the driving device, the winding-spool adapted to engage the same, the lever in which said spool is journaled off the center or fulcrum of the lever, the toggle-levers connected at one end with a stationary support, and at the other with the first-named lever at a distance from its fulcrum, a trimmer through which the thread is adapted to pass, said trimmer being movable by irregularities of the thread, and an operative connection whereby the movement of the trimmer will actuate the toggle-levers.

2. The combination of the driving device, the winding-spool movable into and out of engagement with said driving device, the hinged or toggle levers connected to the spindle of the spool to shift the same, a trimmer through which the thread is adapted to pass, said trimmer being movable by irregularities of the thread, a spring for drawing the toggle-levers together or keeping them in an extended position, and a tripping-rod actuated by the trimmer to throw the toggle-levers out of the extended position.

3. The combination of the driving device, the winding-spool movable into and out of engagement with said driving device, the hinged or toggle levers connected to the spindle of the spool to shift the same, a trimmer through which the thread is adapted to pass, said trimmer being movable by irregularities of the thread, and an operative connection whereby the movement of the trimmer will actuate the toggle-levers.

4. The combination of the winding-spool, driving mechanism on one side thereof, a brake on the other side of the spool, the latter being movable between the driving mechanism and the brake, a trimmer through which the thread is adapted to pass, said trimmer being movable by irregularities of the thread, an operative connection whereby the movement of the trimmer will throw the winding-spool from an engagement with the driving mechanism to an engagement with the brake, and means for holding the spool in an intermediate position.

658,175. PUNCHING-BAG. JOHN GAMBLE, Philadelphia, Pa., assignor to George A. Reach, same place. Filed Oct. 4, 1899. Serial No. 732,447. (No model.)



Claim.—A punching-bag consisting of an outer covering provided with a slit, a cap secured to said covering also provided with a slit registering with the slit in the covering, a looped strap having its ends secured to said cap, a reinforcing-piece having a lacing-slit therein and fitting over said loop and upon said cap and secured thereto, and means for lacing said slit at opposite sides of said projecting loop, whereby, by reason of said lacings, the edges of said slit adjacent to said loop and between said lacings are yielding and serve to take up the strain from the loop-fastenings incident to sudden and rapid blows on the bag, as set forth.

658,176. DEVICE FOR OVERCOMING DEAD-CENTERS. ANDREWS R. GRIDER, Milwaukee, Wis. Filed Oct. 16, 1899. Serial No. 733,730. (No model.)

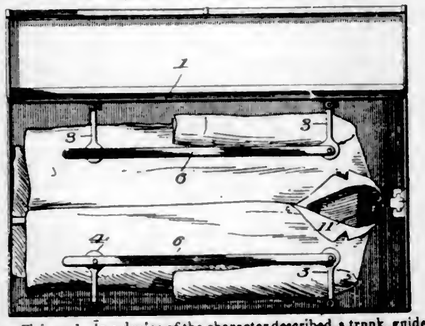


Claim.—1. The combination with a rotatable shaft, of a crank-arm mounted on the shaft yieldingly and so as under excess of normal strain to yield thereunder moving laterally limitedly past the shaft at an oblique angle to the line of its wrist and the shaft, and means for retrieving the crank-arm when excess of strain thereon has ceased.

2. The combination with a shaft provided with a head having parallel bearing-surfaces transversely of and extending past the axis of the shaft, of a crank-arm slidable transversely on said head, said crank-arm being provided with a slot at an oblique angle to the line of its shaft-axis and its wrist which slot receives therein, and permits the arm to slide transversely on, the bearing part of the shaft-head adjacent to and past the axis of the shaft, and means for holding the crank-arm yieldingly in that position on the shaft-head in which the wrist is at its greatest distance from the shaft.

3. The combination with a shaft provided with a head having transverse bearing-surfaces, of a crank-arm slidable transversely on said head, said crank-arm being provided with a slot at an oblique angle to the line of its shaft-axis and its wrist which slot receives therein and permits the arm to slide transversely on the bearing part of the shaft-head, a cap secured to the shaft-head and holding the slidable crank-arm on the head, and a spring attached to the crank-arm and to the cap and adapted to distend the crank-arm normally yieldingly to its greatest distance from the shaft.

658,177. WARDROBE-TRUNK. THOMAS J. HAMILTON, New York, N. Y. Filed May 14, 1900. Serial No. 16,566. (No model.)



Claim.—1. In a device of the character described, a trunk, guide-rods secured therein, presser-arms adjustable longitudinally and radially on the guide-rods, and a connecting-bar pivoted to the presser-arms, substantially as described.

2. In a device of the character described, a trunk, guide-rods secured therein, presser-arms adjustably slidable on the guide-rods, and connecting-bars pivoted to the presser-arms, substantially as described.

3. In a device of the character described, a trunk, guide-rods secured therein, adjustable padded presser-arms slidable on the guide-rods, and connecting-bars pivoted to the presser-arms, substantially as described.

4. In a device of the character described, a trunk, guide-rods secured therein, adjustable presser-arms slidable on the guide-rods, a guide in one end of the trunk, a slide fitting therein, and a suspension-rod carried by the slide, substantially as described.

658,178. LOOM. HENRY L. HARRIMAN, New York, N. Y. Filed Mar. 28, 1900. Serial No. 10,439. (No model.)

Claim.—1. In a weft-replenishing loom, in combination, means for supplying reserve weft including a holder independent of the lay for a plurality of charges of reserve weft, and detector devices to ascertain the occurrence of the predetermined emergency in connection with the reserve supply.

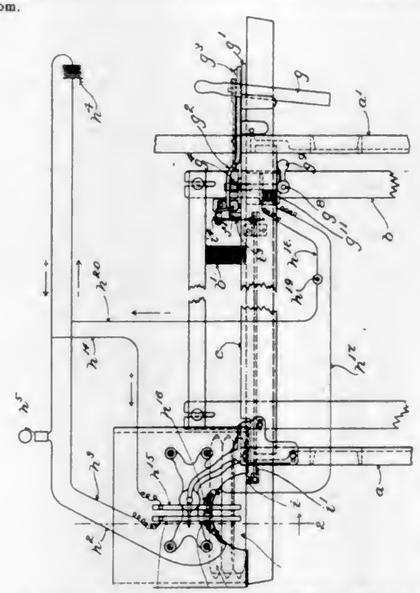
2. In a weft-replenishing loom, in combination, means for supplying reserve weft including a holder independent of the lay for a plurality of charges of reserve weft, detector devices to ascertain the occurrence of the predetermined emergency in connection with the reserve supply, and unshipping appliances for the loom.

3. In a weft-replenishing loom, in combination, a holder for a reserve supply of weft comprising a plurality of charges of reserve weft, and devices to signal the occurrence of the predetermined condition or emergency in connection with the said supply.

4. In a weft-replenishing loom, in combination, a holder for a reserve supply of weft comprising a plurality of charges of reserve weft, and devices whereby the fact is signaled when depletion of such supply reaches the predetermined stage.

5. In a weft-replenishing loom, in combination, a holder for a number of reserve shuttles, a feeler acting in connection with the said shuttles, and a signal under operative control of the said feeler, whereby the attendant weaver is notified when the reserve becomes depleted to the predetermined extent.

6. In a weft-replenishing loom, in combination, a holder for a reserve supply of weft comprising a plurality of charges of reserve weft, devices to signal the occurrence of the predetermined condition or emergency in connection with the said supply, and unshipping appliances to enable the weaver to arrest the working of the loom.



7. In a weft-replenishing loom, in combination, a holder for a reserve supply of weft, devices to ascertain the condition of said supply, unshipping appliances normally remaining in inoperable relations and established in operable relations by the said devices without stoppage of the loom when the predetermined condition of the said reserve supply occurs, and a device operable at the will of the weaver to cause the stoppage of the loom to be effectuated through the said appliances after the said operable relations have been established.

8. In a weft-replenishing loom, in combination, a holder for a reserve supply of weft, devices to ascertain the condition of the said supply, a signal under control of the said devices to apprise the weaver of the occurrence of the predetermined condition or emergency in connection with the reserve supply, unshipping appliances normally remaining in inoperable relations and established in operable relations by the said devices without stoppage of the loom when the predetermined condition or emergency occurs, and a device operable at the will of the weaver to cause the stoppage of the loom to be effectuated through the said appliances after the said operative relations have been established.

9. In combination, a series of looms, each loom provided with a holder for a reserve supply of weft, with detector devices to ascertain the occurrence of the predetermined emergency in connection with the reserve supply, and with unshipping appliances normally remaining in inoperable relations and controlled by the said detector devices to establish operable relations on said occurrence, without effecting stoppage of the loom, and master connections for the unshipping appliances of the series of looms, operating through the said appliances to effect stoppage of the particular loom in which the said occurrence has been detected.

10. In combination, a series of looms, each loom provided with a holder for a reserve supply of weft, with detector devices to ascertain the occurrence of the predetermined emergency in connection with the reserve supply, and with unshipping appliances normally remaining in inoperable relations and controlled by the said detector devices to establish operable relations on said occurrence, without effecting stoppage of the loom, signaling means under control of the respective detector devices to apprise the weaver of the action of the latter, and master connections for the unshipping appliances of the series of looms operating through the said appliances to effect stoppage of the particular loom in which occurrence of the predetermined emergency has been detected.

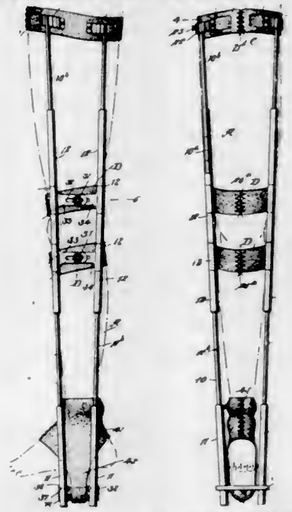
11. In a weft-replenishing loom, in combination, a holder for a reserve supply of weft for purposes of replenishment, devices to institute the replenishing action, and means to suppress the replenishing action in case the said reserve supply is exhausted or not in condition to permit replenishment to be effected.

12. In a weft-replenishing loom, in combination, a holder for a reserve supply of weft for purposes of replenishment, weft-indicator devices adapted to control the replenishing instrumentalities, and means to render the said devices inoperative to act in case the said reserve supply is exhausted or not in condition to permit replenishment to be effected.

13. In a weft-replenishing loom, in combination, a holder for a reserve supply of weft for purposes of replenishment, weft-indicator devices adapted to control the replenishing instrumentalities, a feeler, coöperating with weft in said holder in readiness for transfer, and means through which the said feeler controls the working of the said weft-indicator devices.

14. In a weft-replenishing loom, in combination, a holder for a reserve supply of weft, weft-indicator devices including a weft-fork, a feeler at the delivery-point of the said holder, and means connected with said feeler to control the working of said weft-fork.

658,179. SPLINT. JAMES G. HUGHES, Port Arthur, Tex. Filed Sept. 14, 1899. Serial No. 730,478. (No model.)



Claim.—1. A splint consisting of adjustable stays each comprising a body-section and a lower receiving-section in which the body-section is adapted to telescope, a stirrup carried by the lower receiving-sections, and pads carried by the body-sections of said stays, substantially as described.

2. A splint comprising adjustable stays each consisting of a sectional body, a receiving-section for the lower part of the body, sleeves mounted on the body, and a stirrup and pads carried by said stays, substantially as set forth.

3. A splint consisting of adjustable stays, pads connected with the said stays, and a stirrup provided with bifurcated arms connected with the corresponding sections of the stays, as described.

4. In a splint, a telescopic stay, a nut located in one section of the stay, a screw carried by said nut, arranged for engagement at one end with an entering section of the stay, and means for turning the said screw, as described.

5. A splint consisting of a series of adjustable stays, one section being adapted to slide in the other, the receiving-section being provided with an adjusting device adapted for engagement with the entering end of the entering section, and a stirrup removably attached to the receiving-sections of the stays, for the purpose set forth.

6. In a splint, the combination, with adjustable stays and a stirrup carried thereby, of adjustable pad-supports connected with the stays, and pads adapted for attachment to said supports, each pad comprising an inflatable section and casing-section, the said pads being divided at a point in their circumference, and means for connecting the ends of a pad at such division, for the purpose described.

7. In a splint, the combination with a series of stays, of pad-supports arranged for connection with the stays, and pads adapted for attachment to said supports, each pad comprising an inflatable section and casing-section, the said pads being divided at a point in their circumference and means for connecting the ends of the pad, substantially as specified.

8. In a splint, a series of adjustable stays, a pad adapted to be carried at the upper ends of said straps, the said pad being provided at each side with means for engaging the said upper ends of the stays

to form bearings for the same, and an adjusting device for each of said stays, substantially as described.

9. A splint consisting of a series of adjustable stays each comprising a body and a lower section, inflatable pads arranged for connection with the said stays, devices carried by one of said pads and with which the upper ends of the body-sections of the stays are removably connected, the said devices serving as upper bearings for the stays, and a stirrup removably attached to the lower sections of the stays, the said lower sections being provided with adjusting devices adapted for engagement with the body-sections of the stays, substantially as set forth.

10. In a splint, a series of stays, clips each comprising a sleeve loosely mounted on one of the stays and a shank extending from said sleeve, the shanks of the clips carried by the stays at each side of the splint being adapted to overlap, a pad for said stays, and means for connecting the overlapping shanks of the clips with each other and with the pad, substantially as set forth.

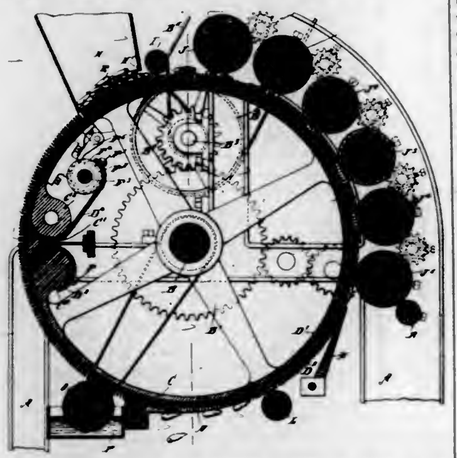
11. A splint comprising four stays, two of said stays being located at each side of the apparatus, the said stays each consisting of telescopic sections, pads connected with the said stays, a nut secured in the lower or receiving section of each stay, a screw extending through said nut and adapted to engage the lower end of the entering section of the stay and a stirrup provided with arms, each arranged to engage one of the receiving-sections of the stays, and the nut carried thereby, substantially as set forth.

12. In a splint having adjustable stays, the combination with the lower sections of the several stays, of a stirrup provided with arms adapted to engage slots formed in the said sections, substantially as described.

13. In a splint, the combination with the adjustable stays, of a stirrup carried by said stays and having a concaved under or lower face, and a sock provided with a strap adapted to engage the concaved face of the stirrup, substantially as shown and described.

14. In a splint, a stay made in sections, auxiliary sections for said stay, and sleeves for holding the sections in position, substantially as described.

658,180. RAISIN-SEEDER. FRANK H. PETERMAN, New York, N. Y. Filed Apr. 6, 1899. Serial No. 711,943. (No model.)

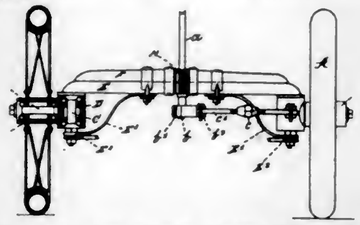


Claim.—1. A raisin-seeder, having a cylinder or drum with an opening in the face thereof, a flexible belt passed over the cylinder or drum and having its ends passed through the opening and secured to the cylinder or drum inside the face or periphery thereof, pins mounted on the flexible belt, a member attached to the cylinder or drum and fitting in the opening thereof to form a continuation of the periphery of the drum, and pins attached to said member.

2. A raisin-seeder having a cylinder or drum with an opening in the face thereof, a belt strained over the cylinder or drum and having its end projected through the openings therein thus forming a break in the circular continuity of the belt, means for fastening one end of the belt to the cylinder within said opening, a roller carried by the cylinder inside of the periphery thereof and adjacent to the opening, the other end of the belt being attached to the roller, means for adjustably holding the roller permitting the tension of the belt to be regulated by the roller, and a member removably attached to the cylinder or drum and fitted within the opening therein to fill the said break in the circular continuity of the belt, said member having pins attached to its outer face.

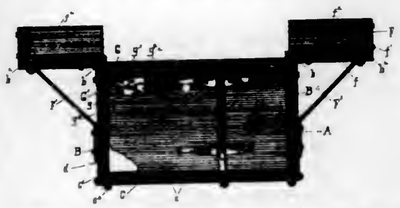
3. In a raisin-seeder, the combination with a frame, of a drum mounted to turn therein and having its periphery formed with an opening extending transversely across it, the drum having rounded offset or enlarged portions at each side of said opening, a flexible belt passed over the periphery of the drum, the ends of the belt being extended through the opening therein to the inside of the drum and around the respective offset portions, one end being fastened to one offset portion, a roller mounted within the drum and having the other end fastened thereto, means for holding the roller to keep the belt strained on the drum, impaling-pins carried by the belt, a block removably set into the opening in the drum and having its outer surface forming a continuation of the surface of the belt, impaling-pins attached to said block in circumferential line with the impaling-pins on the belt, a roller mounted at the periphery of the drum and working with the same to press the raisins into engagement with the impaling-pins, and means for removing the raisins and seeds from the impaling-pins.

658,181. RUNNING-GEAR FOR AUTOMOBILES. HIRAM M. QUICK, Paterson, N. J. Filed Aug. 11, 1899. Serial No. 726,876. (No model.)



Claim.—The combination with a bolster, of an axle having its ends bent downwardly at right angles, forming spindles integral therewith, each of its spindles being provided with an integral shoulder, the lower face thereof being partly beveled, a hub having a horizontal lever and a horizontal spindle both integral therewith, mounted to rotate on said axle-spindle and provided with two ball-raceways, one at the upper and one at the lower portion thereof, an adjustable ring and ball-bearing beveled on its upper face adapted to fit on said axle-spindle and under said hub, means for supporting said adjustable ring and hub on said axle-spindle and balls located in the raceways of said hub, a steering-handle and connections between said steering-handle and said horizontal lever, substantially as set forth.

658,182. WAGON-BODY. CHARLES A. QUIGLEY, Salt Lake City, Utah. Filed Jan. 19, 1899. Serial No. 702,714. (No model.)

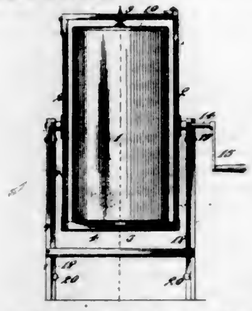


Claim.—1. In a sheep-camp, the combination of the bottom, the vertical sides B having lateral extensions F above the sides, the sides being rabbeted to the bottom and to the extensions so as to make dust-proof and air-tight joints, and a tail-gate composed of the opposite parts E', E^2; with a front end consisting of a vertical portion D' rigidly secured in position near one side and a swinging portion D hinged to the inner edge of the vertical portion D' and means for locking the hinged portion D in closed position, consisting of the hook G pivoted to the plate g, said plate g being pivoted to the part D', and the battens for making close joints between the hinged and fixed parts, all constructed and arranged substantially as described.

2. In a sheep-camp, the combination of the bottom C, sides B, the sides being rabbeted to the bottom and to the extensions so as to make dust-proof and air-tight joints, lateral extensions F, and rear end-gate; with the front gate consisting of a vertical portion D' rigidly secured to one side and to the bottom of the camp below the extensions, and the batten d' attached to the inner edge of the vertical part D'; with a swinging part D hinged to the inner edge of the vertical part D', and means for fastening said part D when closed, substantially as described.

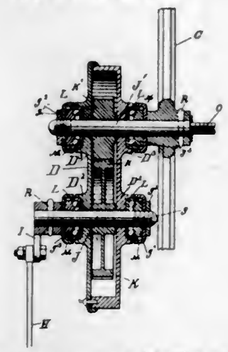
3. In a sheep-camp, the combination of the bottom C, vertical sides B and lateral horizontal extensions F at the upper edges of the sides, the extension consisting of the bottom boards f and side-boards f', front end boards f^3 and rear end board f^2 extending across the body, the sides being rabbeted to the bottom and to the extensions so as to make dust-proof and air-tight joints; with a tail-gate composed of the opposite parts E', E^2, each consisting of two boards arranged to form overlapping joints at their meeting edges, and the front end consisting of a vertical portion D' fixed in position, and a swinging portion D hinged to part D', and the locking device for part D consisting of the hook G pivoted to the plate g, said plate g being pivoted to the part D, and the eye G' adapted to be engaged by the hook, all constructed and arranged for the purpose and substantially as described.

658,183. CHURN. GEORGE W. RAWSON, Belleville, Ill., assignor of one-third to Bruce Rawson, same place. Filed Oct. 28, 1899. Serial No. 735,063. (No model.)



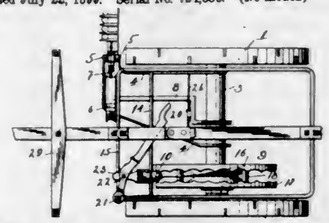
Claim.—A churn comprising a supporting-frame, a rotating churn-frame consisting of side pieces each having a gudgeon whereby it is journaled on the supporting-frame, a bottom piece, a cross-strip, a top piece, a hinge connecting the top piece with one of the side pieces, hinged straps pivoted to the other side piece, and a lever-cam journaled in the hinged straps, and adapted to bear on the outer end of the top, a central pin fitting in the bottom piece and in the cross-strip, a churn-body having a central bottom recess adapted to receive the central pin and a cover having a socket-piece, and a screw working through the top piece and seating in the socket of the cover of the churn-body; substantially as described.

658,184. BALL-BEARING. ELI S. REED, Hill City, Tenn. Filed Feb. 3, 1900. Serial No. 3,798. (No model.)



Claim.—The herein-described ball-bearing, comprising the shaft having the screw-threaded end g, nut g' screwed thereon, the shell L also on said end g, a series of balls between the nut g' and shell L, the dust-cap M having its edge surrounding the edge of shell L so as to prevent the entrance of dust thereinto, a lock-nut g^2 clamping the dust-cap M firmly in place upon the nut g', the sleeve g^3 located on the other end of the shaft, and having a smooth non-threaded interior, a shell L and dust-cap M likewise on said end of shaft J, together with a circular series of balls between sleeve g^3 and shell M, substantially as described.

658,185. MOWING-MACHINE. WALTER F. REED, Camden, S. C. Filed July 22, 1899. Serial No. 724,858. (No model.)



Claim.—1. In a mowing-machine, the combination with the main drive-shaft, of a wave-wheel mounted on the same, a vibrating lever journaled in the main frame, a cutter having connection with the same, a friction-roller carried by the same, a spring upon the journal to normally hold said roller in engagement with the wave-wheel, a foot-lever for throwing the roller out of engagement with the wave-wheel, and the fulcrum of said vibrating lever being adjustable with relation to the cutter.

2. In a mowing-machine, the combination with the main drive-shaft, of a wave-wheel rigidly mounted on the same, a cutter, a vibrating lever journaled in the main frame and having a linked connection with the cutter, means for adjusting the fulcrum of the vibrating lever, a friction-roller on the vibrating lever for receiving motion from the wave-wheel, a spring upon the lever-journal to hold the roller in engagement with the wave-wheel, a foot-lever for throwing the same out of engagement with the wave-wheel, a joint in the vibrating lever, and a pulley and hand-lever for elevating the cutting mechanism when the device is inoperative, substantially as described.

3. In a mowing-machine, the combination with the main frame, of a guard supported by a series of rods journaled in the whiffletree of the machine, a series of bolt-holes in the rods so that they may be vertically adjusted in the said whiffletree, chains connecting the bottoms of said rods, and chains extending from the bottoms of the outer rods to the tongue of the machine, substantially as described.

658,186. CIRCULATING APPARATUS FOR ROTARY DIGESTERS, &c. CLARENCE W. SMITH, Cambridge, Mass. Filed Dec. 31, 1898. Serial No. 700,804. (No model.)



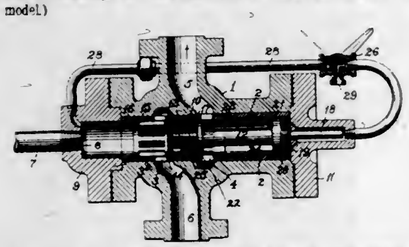
Claim.—1. A digesting apparatus comprising a digesting-receptacle, steam-inlets therete, discharge-pipes horizontally arranged

within said receptacle and adapted to be immersed in the liquor therein, and automatic injectors interposed between said discharge-pipes and steam-inlets and having provisions for combining the steam and liquor and introducing them to the discharge-pipes, condensation ensuing owing to the immersion of the injector, each injector consisting of steam and discharge nozzles inclosed in a perforated casing, the steam-nozzle being the smaller, and each nozzle being narrowed or constricted and expanding both ways from the constriction, as shown, the injector with its discharge-pipe constituting a circulator, the discharge-pipe of one circulator having its outlet directed toward a neighboring circulator.

2. A digesting apparatus comprising a digesting-receptacle mounted for rotation on a horizontal axis, a steam-inlet to said receptacle, a discharge-pipe located horizontally along the wall of the receptacle, and an automatic injector interposed between the steam-inlet and the discharge-pipe, and having provisions for combining the steam and liquor and introducing the completely-condensed steam and liquor to the discharge-pipe, said injector being located in the neighborhood of the axial line of the receptacle, whereby it may be kept constantly immersed, and consisting of steam and discharge nozzles inclosed in a perforated casing, the steam-nozzle being the smaller, and both nozzles being narrowed or constricted and expanding both ways from the constriction, as shown.

3. A digester comprising a hollow receptacle for the stock and liquor, a steam-inlet pipe connected therewith, a valve in said pipe controlling the passage of steam into the receptacle, a steam-supply pipe connected with said inlet-pipe and discharging into the receptacle through said pipe only, a blow-off leading off from said supply-pipe, and a valve controlling said blow-off, the said arrangement providing for the removal of accumulations of rust or other sediment from the piping before steam is admitted through said piping into the receptacle.

653,187. VALVE FOR HYDRAULIC MACHINERY. JOSEPH K. SMITH, Pittsburg, Pa. Filed Mar. 3, 1899. Serial No. 708,254. (No model.)



Claim.—1. In a valve, the combination with the valve-casing, of a bushing having two series of ports, a fluid-supply passage, an exhaust-passage and a passage to the machine, one of the series of ports in the bushing registering with the passage to the machine and the other series of ports registering with the exhaust-passage, a cage-valve 10 in the supply-passage and connected with a valve-stem having enlarged heads and a cup-leather between one head and the valve 10, substantially as set forth.

2. In a valve, the combination with the valve-casing, of a bushing having a series of ports 3 and 4, a fluid-supply passage, an exhaust-passage and a passage to the machine, a cage-valve 10 in the supply-passage and connected with valve-stem 12, cup-leather 17, cap 9, a follower 16, and a cup-packing 15, held between said follower and one end of the bushing, substantially as set forth.

3. In a valve, the combination with the valve-casing, of a bushing having a series of ports 3 and 4, a fluid-supply passage, an exhaust-passage and a passage to the machine, a cage-valve 10 in the supply-passage and connected with valve-stem 12, and a cup-leather between the valve-stem and the cage-valve, adapted to make a seal between the exhaust-passage and the passage to the machine while fluid is passing from inlet to machine passage, substantially as set forth.

4. In a valve, the combination with the valve-casing, of a bushing having a series of ports 3 and 4, a fluid-supply passage, an exhaust-passage and a passage to the machine, a cage-valve 10, valve-stem 12, said cage-valve in the supply-passage and arranged to reciprocate with the valve-stem, a cup-leather 17, and a cup-packing 15 securely held against the end of the bushing, substantially as set forth.

5. In a valve, the combination with the valve-casing, of a cylindrical bushing having a series of ports 3 and 4, said bushing for a portion of its length being of greater internal diameter than the remaining portion, a fluid-supply passage, an exhaust-passage and a passage to the machine, a cage-valve, a valve-stem having enlarged heads, one of the heads having a greater diameter than the other head, cup-packing, and cup-leathers, substantially as described.

6. In a valve, the combination with the valve-casing, a fluid-supply passage, an exhaust-passage and a passage to the machine, a bushing having two series of ports, one series registering with the exhaust-passage and the other series registering with the passage to the machine, a cage-valve in the supply-passage and connected with a valve-stem having enlarged ends, and cup-leathers held against the ends of the valve-stem, substantially as set forth.

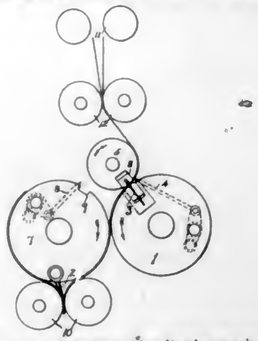
7. The combination, with a main valve having a fluid-supply passage, an exhaust-passage and a passage to the machine, of a bushing provided with ports one registering with the exhaust-passage and one with the machine-passage, said bushing for a portion of its length being of greater internal diameter than the remaining portion, a cage-valve in the supply-passage connected with and adapted to move with the valve-stem, cup-packing and cup-leathers, and a three-way pilot-valve connected with the main valve, substantially as set forth.

8. In a valve, the combination, with the valve-casing having an exhaust-passage and a passage to the machine, of a removable bushing provided with ports registering with said passages, a valve-stem provided with enlarged heads one head being of greater diameter than the other, a cage-valve, caps on the ends of the casing one adapted to receive a square stem connected with one head of the valve-stem and the other cap containing the fluid-supply passage and adapted to receive a portion of the cage-valve, substantially as set forth.

9. In a valve, the combination, with the valve-casing, of a fluid-supply passage, an exhaust-passage and a passage to the machine, a removable bushing having two series of ports one registering with the passage to the machine and the other with the exhaust-passage, said bushing for a portion of its length being of greater internal diameter than the remaining portion and provided with an external annular shoulder adapted to bear against a wall of the exhaust-passage, a valve-stem having enlarged heads at both ends one head being of greater diameter than the other, a cage-valve in the supply-passage and connected with the valve-stem, cup-leathers arranged on both heads of the valve-stem, and a pilot-valve connected with the main valve, substantially as set forth.

10. In a valve, the combination, with the casing, of inlet, machine and exhaust passages, a removable bushing provided with ports registering with the machine and exhaust passages, a plunger adapted to reciprocate within the bushing, a cage-valve in the inlet-passage and connected with the plunger, a pilot-valve, said plunger and cage-valve arranged to utilize the fluid-pressure to move them, and a cup-leather held between one end of the plunger and the cage-valve which is adapted to make a seal between the machine and exhaust passages while the fluid is passing to the machine, substantially as set forth.

653,188. CUTTING, FOLDING, AND COLLECTING MECHANISM. WILLIAM SPALCKHAVER, New York, N. Y., assignor to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, same place. Original application filed Oct. 7, 1899, Serial No. 732,854. Divided and this application filed Nov. 29, 1899. Serial No. 738,624. (No model.)



Claim.—1. In a cutting, folding and collecting mechanism, the combination with a pair of cutting-cylinders, of a collecting-cylinder independent of the cutting-cylinders, and means whereby said collecting-cylinder is caused to take each sheet directly from one of the cutting-cylinders, substantially as described.

2. In a cutting, folding and collecting mechanism, the combination with a pair of cutting-cylinders, one of said cylinders being provided with sheet-taking devices, of a collecting-cylinder independent of the cutting-cylinders, said collecting-cylinder being provided with sheet-taking devices, and means whereby the sheet-taking devices on the collecting-cylinder are caused to take each sheet directly from the sheet-taking devices on the cutting-cylinder, substantially as described.

3. In a cutting, folding and collecting mechanism, the combination with a pair of cutting-cylinders, one of said cylinders having sheet taking and retaining pins, of an independent collecting-cylinder having sheet taking and retaining pins, and means whereby the pins on the collecting-cylinder are caused to take each sheet directly from the sheet taking and retaining pins of the cutting-cylinder, substantially as described.

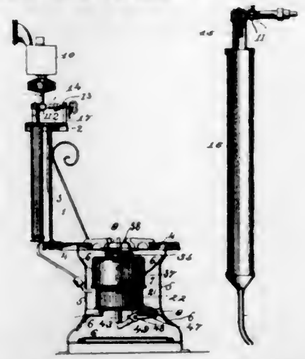
4. In a cutting, folding and collecting mechanism, the combination with a pair of cutting-cylinders, of a collecting-cylinder independent of the cutting-cylinder, means whereby said collecting-cylinder is caused to take each sheet directly from one of the cutting-cylinders, and suitable folding-off means carried by said collecting-cylinder, whereby the collected sheets are folded off said cylinder, substantially as described.

5. In a cutting, folding and collecting mechanism, the combination with a pair of cutting-cylinders, one of said cutting-cylinders having sheet taking and retaining pins, of an independent collecting-cylinder having sheet taking and retaining pins, means whereby the pins on the collecting-cylinder are caused to take each sheet directly from the sheet taking and retaining pins of the cutting-cylinder, and a folding-blade on the collecting-cylinder for folding off the collected sheets, substantially as described.

6. In a cutting, folding and collecting mechanism, the combination with suitable web-guides, of cutting-cylinder 1 having a cutting-blade, as 3, and sheet taking and retaining pins 4, cooperating cutting-cylinder 5 provided with cutting-block 6, independent folding and collecting cylinder 7 having sheet taking and retaining pins 8 and provided with gap 9, and means whereby the pins 8 are caused to take each sheet directly from the pins 4, substantially as described.

7. In a cutting, folding and collecting mechanism, the combination with a pair of cutting-cylinders, one of which is provided with sheet taking and retaining devices, of an independent collecting and folding cylinder having sheet taking and retaining and folding-off devices and having a gap to permit the cutting devices on the cutting-cylinder to pass it, the sheet taking and retaining devices of the folding and collecting cylinder operating to take each sheet directly from the sheet taking and retaining devices of the cutting-cylinder, substantially as described.

653,189. VAPOR-STOVE. LOUIS STOCKSTROM, St. Louis, Mo., assignor of one-half to Charles A. Stockstrom, same place. Filed Dec. 23, 1898. Serial No. 700,149. (No model.)

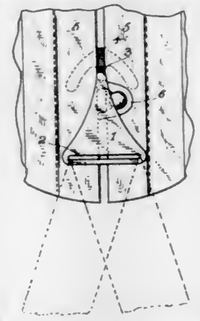


Claim.—1. A vapor-stove comprising a burner, an elevated supply-tank located at a considerable height above the burner so as not to be affected by the heat of the latter, a needle-valve controlling the flow of oil from the tank, a discharge-nipple connected with the needle-valve adjacent to the tank, a feed-tube surrounding the nipple, and extending vertically from near the tank to a point near the burner, and a lateral supply-pipe; said tube being made sufficiently large to permit the oil to be introduced in free falling drops from the nipple without touching the walls of the pipe, so that on one hand a rapid extinction of the flame follows the cutting off of the feed and on the other hand a quick supply of oil to the burner is afforded on the opening of the valve while the valve is situated sufficiently remote from the burner as not to be affected by the heat of the latter.

2. In a vapor-burner, the combination of a base constructed to permit the passage of air, a vaporizing-cup located on the base, the inner perforated cylinder having a closed top, the outer perforated cylinder arranged over the vaporizing-cup, an outer imperforate cylinder surrounding the perforated cylinders, an imperforate diaphragm located within said inner perforated cylinder, and a central air-tube extending through the base of the burner to a point above said diaphragm and discharging against the closed top; substantially as set forth.

3. In a vapor-burner, the combination of a base constructed to permit the passage of air, a vaporizing-cup located on the base, the inner perforated cylinder having a closed top, and the outer perforated cylinder arranged over the vaporizing-cup, an outer imperforate cylinder surrounding the perforated cylinders, an imperforate and a perforated diaphragm located within said inner perforated cylinder, a disk located beneath said perforated diaphragm, and a central air-tube extending through the base of the burner to a point above said imperforate diaphragm, and discharging against the closed top; substantially as set forth.

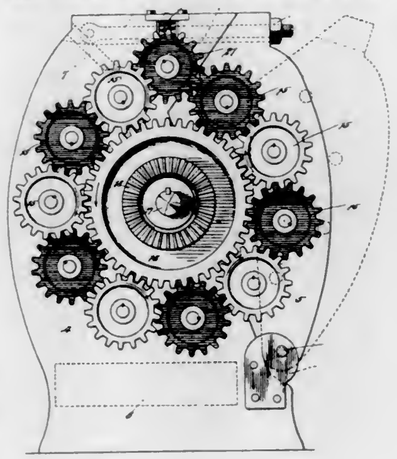
653,190. COMBINED CORSET-STEEL LOCK AND GARMENT-SUPPORTING HOOK. HENRY H. TAYLOR and MYRON R. HAMMOND, Bridgeport, Conn. Filed Feb. 26, 1900. Serial No. 6,573. (No model.)



Claim.—1. A combined corset-steel lock and garment-supporter, comprising a metal plate having the supporter-tapes depending from the bottom thereof and having a cross-bar connected to the plate by an offset neck, the neck being of such thickness as to prevent, when interposed between the corset-steels, their movement toward each other, and the cross-bar when in effective position extending beneath the steels and athwart the same, while the neck projecting between the steels rests upon one of the clasps, substantially as set forth.

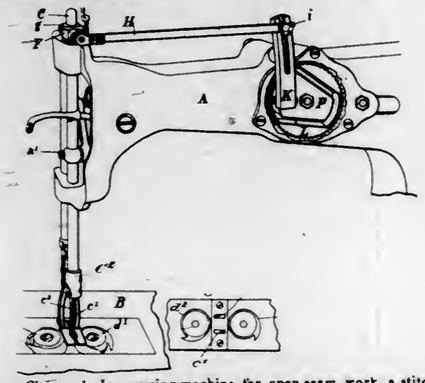
2. A combined corset-steel lock and garment-supporter, comprising a metal plate having the supporter-tapes depending from the bottom thereof, an offset neck, a cross-bar connected to said neck, the arms of the cross-bar being curved rearwardly toward the plate and flared obtusely to the neck, whereby, when in effective position, the arms of the cross-bar extend beneath the steels and the neck rests upon a clasp of the corset, and the neck and cross-bar are readily inserted and withdrawn, substantially as set forth.

653,191. COTTON-PRESS. ALBERT L. TREESE, Jennings, Okla., assignor to himself, Wilbur E. Canfield, and George W. Canfield, same place. Filed Oct. 18, 1899. Serial No. 733,976. (No model.)



Claim.—A press, comprising the combination of a frame or support, a number of rollers mounted to turn in the framing or support and disposed circularly to form a circular compression-chamber, a driven spur-gear mounted on the framing or support centrally with respect to said circular compression-chamber, and a gear fastened to each roller, alternate of such gears being situated out of the plane of the other gears on the rollers and overlapping said other gears, and all of the gears on the rollers being meshed with the spur-gear, the face of such spur-gear being of greater width than that of the faces of the gears on the rollers.

653,192. HEMSTITCH SEWING-MACHINE. CHARLES M. ABERCROMBIE, Bridgeport, Conn., assignor to The Wheeler & Wilson Manufacturing Company, same place. Filed Aug. 26, 1899. Serial No. 728,614. (No model.)



Claim.—1. In a sewing-machine for open-seam work, a stitch-forming mechanism, including a needle-carrying bar provided with two eye-pointed needles having movements in the arc of a circle about the vertical axis of the needle-bar as a center, and complementary loop-taking mechanism therefor, in combination with means to cause the needles to penetrate the material in one vertical plane, and to be withdrawn in a different vertical plane, with respect to the plane of the material, substantially as described.

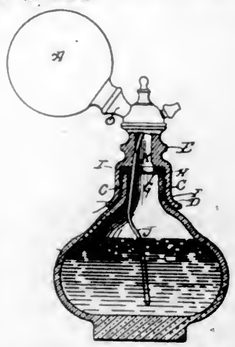
2. In a sewing-machine for open-seam work, a stitch-forming mechanism having a vertically-reciprocated needle-bar, provided with two eye-pointed needles, a pattern-cam, and connections interposed between said needle-bar and cam whereby the needles are caused to penetrate the material in one vertical plane and are then moved about the vertical axis of the needle-bar and withdrawn in a different vertical plane with respect to the plane of the material, and means to change the degree of such movement about the vertical axis of the needle-bar, substantially as described.

3. In a sewing-machine for open-seam work, the combination of vertically-mounted rotary loop-takers, with a vertically-reciprocated needle-bar, provided with two eye-pointed needles, a pattern-cam, and connections interposed between said needle-bar and cam whereby the needles are caused to penetrate the material in one vertical plane and are then moved about the vertical axis of the needle-bar and withdrawn in a different vertical plane with respect to the plane of the material, and means to change the degree of such movement about the vertical axis of the needle-bar, substantially as described.

4. In a sewing-machine for open-seam work, a reciprocating needle-bar, provided with two eye-pointed needles, means to impart to said needles vibratory movements in the arc of a circle during the formation of a stitch, and complemental stitch-forming mechanism, said needle-bar comprising a main portion reduced at one end and provided with a loose sleeve upon such reduced portion to be engaged by a reciprocating medium, a needle-holder fixed to said reduced portion, and a portion to be engaged by said vibrating means, substantially as described.

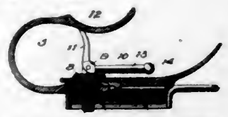
5. In a sewing-machine for open-seam work, a reciprocating needle-bar, a loose sleeve thereon, a needle-holder fixed to said needle-bar and carrying two eye-pointed needles, and complemental stitch-forming mechanism, in combination with a pattern-cam, and an adjustably-connected operating-link interposed between the needle-bar and cam for moving the needles about the vertical axis of the needle-bar after they have penetrated the material, and causing their withdrawal from the material in a different vertical plane from that by which they entered it, and for controlling the degree of such movement of the needles about the vertical axis of the needle-bar, substantially as described.

653,193. STOPPER FOR ATOMIZERS OR PERFUMERY-BOTTLES. JOSEPH ALBIES, New York, N. Y. Filed Dec. 21, 1899. Serial No. 741,098. (No model.)



Claim.—In a device of the character described, a bottle having an external threaded neck with tapering shoulders therebeneath, a sleeve threaded on the neck of the bottle with its outwardly-flaring lower edge fitting against the tapering shoulders and its upper edge turned over the mouth of the bottle, a washer seated on the upper end of the sleeve, screw-threads formed on the outside of the sleeve directly opposite the internal threads thereof, and an atomizer having a socket provided with internal threads fitting the external threads of the sleeve, an outwardly-flaring flange on its lower end seated in the flaring edge of the sleeve, and an inwardly-projecting shoulder seated in the washer, substantially as described.

658,194. CHECKREIN-HOOK. ROBERT H. BERKSTRESSER, York, Pa., assignor to Cornelius M. Fulton, same place. Filed May 9, 1899. Serial No. 716,082. (No model.)



Claim.—The improved checkrein-hook herein described, comprising a base or frame, a hook having one end extended beneath said frame and its other end extended over the same, a vertically-disposed bolt passed through the frame and having upon its lower end a nut bearing upon the under side of the lower portion of the hook and provided at its upper end with ears, and an angle-lever pivotally mounted between said ears with a normally vertically disposed curved short arm engaging the under side of the upper portion of the hook, and its longer arm weighted and disposed beneath said upper portion of the hook and adapted to contact therewith to limit the downward movement of the curved short arm of the lever, all substantially as herein shown and described.

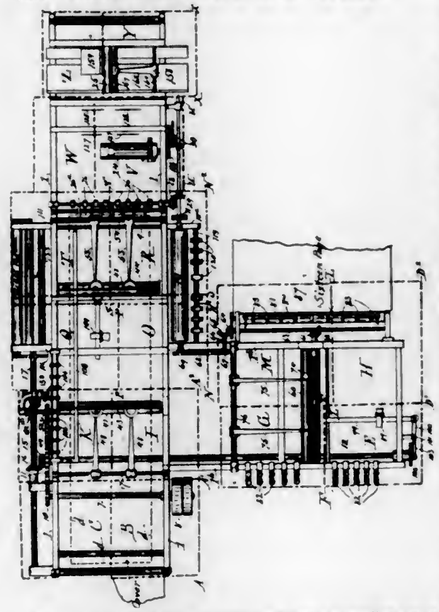
658,195. BELL. ABNER A. BEVIN and PHILIP C. ARNOLD, East Hampton, Conn., assignors to the Bevin Brothers Manufacturing Company, same place. Filed Oct. 4, 1897. Serial No. 653,986. (No model.)



Claim.—1. In combination in a bell, a clamp and base, a post secured at one end to the base and bearing a gong at its other end and a second gong yieldingly mounted upon the post and held against undue movement by the post and base, and means for sounding the gong.

2. In combination in a bell, a clamp and a base, a post secured at one end to the base and bearing at its other end a gong having a lug on its interior surface, a second gong yieldingly mounted upon the post and held against undue movement by the post and base and having a lug projecting upwardly in proximity with the lug on the first-mentioned gong and means for sounding said gongs.

653,196. MACHINE FOR FORMING BOOKS, &c. TALBOT C. DEXTER, Pearl River, N. Y., assignor to the Dexter Folder Company, same place. Filed Feb. 24, 1899. Serial No. 706,705. (No model.)



Claim.—1. A book-forming machine comprising an endless apron for carrying the signatures in the process of assembling them, mechanism imparting longitudinal movement to said apron, a plurality of signature-conveyers communicating with said apron at different portions of its length, and mechanisms actuating said conveyers and timed to deliver the signature from each succeeding conveyer upon the top of the signature delivered from the preceding conveyer.

2. A book-forming machine comprising an endless apron for carrying the signatures in the process of assembling them, mechanism imparting longitudinal movement to said apron, a plurality of signature-conveyers communicating with said apron at intervals of its length, mechanisms actuating said conveyers and timed to deliver the signature from each succeeding conveyer upon the top of the signature delivered from the preceding conveyer and means for positioning the piles of said signatures upon the apron.

3. A book-forming machine comprising an endless apron, mechanism imparting longitudinal movement to said apron, a plurality of signature-conveyers communicating with said apron at intervals of its length, mechanisms actuating said conveyers and timed to deliver the signature from each succeeding conveyer upon the top of the signature delivered from the preceding conveyer, and means for folding the signature in transit from the conveyers.

4. A book-forming machine comprising an endless apron, mechanism imparting longitudinal movement to said apron, a plurality of signature-conveyers communicating with said apron at intervals of its length, mechanisms actuating said conveyers and timed to deliver the signature from each succeeding conveyer upon the top of the signature delivered from the preceding conveyer, means for folding the signatures in transit from the conveyers, and means for positioning the piles of signatures upon the apron.

5. A book-forming machine comprising an endless apron, mechanism imparting longitudinal movement to said apron, a plurality of conveyers supplying the signatures to said apron at intervals of its length, mechanisms actuating said conveyers and timed to deliver the signature from each succeeding conveyer onto the top of the signature delivered from the preceding conveyer, means for positioning the piles of signatures upon the apron, means for automatically stapling said piles, and conveyers delivering the piles from the apron to the stapling means.

6. A book-forming machine comprising a traveling apron, means for delivering the cover-sheet to the receiving end of said apron, a plurality of signature-supplying conveyers communicating with the apron at intervals of its length, and mechanisms actuating said conveyers and timed to deliver the signature from each succeeding conveyer onto the top of the signature delivered from the preceding conveyer, and means for positioning the piles upon the apron.

7. A book-forming machine comprising a traveling apron, means for delivering the cover-sheet to the receiving end of said apron, a plurality of signature-supplying conveyers communicating with the apron at intervals of its length, mechanisms actuating said conveyers to deliver the signature from each succeeding conveyer onto the top of the signature delivered from the preceding conveyer, and means for folding the signatures in transit from the conveyers as set forth.

8. A book-forming machine comprising a traveling apron, conveyers delivering the cover-sheet to the receiving end of said apron, signature-supplying conveyers communicating with the apron, at intervals of its length, mechanisms actuating the signature-conveyers to deliver the signature from each succeeding conveyer onto the top of the signature delivered from the preceding conveyer, and means for folding the signatures in transit from the conveyers as set forth.

9. A book-forming machine comprising a traveling apron, conveyers delivering the cover-sheet to the receiving end of said apron, signature-supplying conveyers communicating with the apron at intervals of its length, mechanisms actuating the signature-conveyers to deliver the signature from each succeeding conveyer onto the top of the signature delivered from the preceding conveyer, means for folding the signatures in transit from the conveyers, and means for positioning the piles of signatures and cover upon the apron as set forth.

10. A book-forming machine comprising a traveling apron, conveyers delivering the cover-sheet to the receiving end of said apron, signature-supplying conveyers communicating with the apron, at intervals of its length, mechanisms actuating the signature-conveyers to deliver the signature from each succeeding conveyer onto the top of the signature delivered from the preceding conveyer, means for folding the signatures in transit from the conveyers, means for positioning the piles of signatures and cover upon the apron, means for automatically stapling said piles, and conveyers delivering the piles from the apron to the stapling means as set forth.

11. A book-forming machine comprising a traveling apron, conveyers delivering the cover-sheet to the receiving end of said apron, signature-supplying conveyers communicating with the apron at intervals of its length, mechanisms actuating said signature-conveyers to deliver the signature from each succeeding conveyer to the top of the signature delivered from the preceding conveyer, means for folding the signatures in transit from the conveyers, means for positioning the piles of signatures and cover upon the apron, means for automatically stapling said piles, tapes delivering the piles from said apron to the stapling means, and a packing-box disposed to receive the stapled piles from said tapes all combined to operate consecutively in the order set forth.

12. A book-forming machine comprising a traveling apron, conveyers delivering the cover-sheet to the receiving end of said apron, signature-supplying conveyers disposed at right angles to the line of travel of the apron, and communicating with the apron at intervals of its length, mechanisms actuating the signature-conveyers to deliver the signature from each succeeding conveyer to the top of the signature delivered from the preceding conveyer, means for positioning the piles of signatures and cover upon the apron, means for automatically stapling said piles and conveyers delivering the piles to the stapling means.

13. The combination of a traveling apron, a plurality of signature-supplying conveyers communicating with said apron at intervals of its length, mechanisms actuating said conveyers to deliver the signature from each succeeding conveyer onto the top of the signature delivered from the preceding conveyer, folding-rollers interposed between the conveyers and apron to fold the signatures in transit, means for automatically stapling the piles of signatures, and conveyers delivering the piles from the apron to the stapling means.

14. A book-forming machine comprising a traveling apron, a plurality of signature-supplying conveyers communicating with said apron at intervals of its length, mechanisms actuating said conveyers and timed to deliver the signature from each succeeding conveyer onto the top of the signature delivered from the preceding conveyer, conveyers extending from the delivering end of the apron to receive the piles of signatures, means for automatically stapling the piles in transit on said conveyers, and means for automatically arresting the movement of said piles during the stapling operation as set forth.

15. A book-forming machine comprising a traveling apron, conveyers delivering the cover-sheet to the receiving end of said apron, a plurality of signature-supplying conveyers communicating with the apron at intervals of its length, mechanism actuating said conveyers to deliver the signature from each succeeding conveyer onto the top of the signature delivered from the preceding conveyer, folding-rollers disposed to fold the signatures in transit from said conveyers, means for positioning the piles upon the apron, conveyers extending from the delivering end of the apron to receive the piles of signatures, means for automatically stapling the piles in transit on said conveyers, means for intermittently arresting the movement of said piles during the stapling operation, and a packing-box disposed to receive the stapled piles as set forth.

16. The combination of a traveling apron, sheet-conveyers communicating with the receiving end of said apron, paper-folding rollers disposed at right angles to the direction of travel of the apron and above the same, and guides leading from said rollers to the apron and conveyers delivering the paper to the folding-rollers.

17. The combination of a traveling apron, sheet-conveyers communicating with the receiving end of said apron, paper-folding rollers disposed at right angles to the direction of travel of the apron and above the same, guides leading from said rollers to the apron, gages secured to the apron to position the sheets thereon, and conveyers delivering the paper to the folding-rollers.

18. The combination of a traveling apron, cover-conveyers communicating with the receiving end of said apron, folding-rollers disposed at right angles to the direction of travel of the apron and above the same, conveyers delivering the signatures to said rollers, guides leading from said rollers to the apron, gages secured to the apron to position the sheets thereon, conveyers extending from the delivering end of the apron to receive the sheets therefrom, and means for automatically stapling the sheets in transit on the latter conveyers as set forth.

19. The combination of a traveling apron, cover-conveyers communicating with the receiving end of said apron, folding-rollers disposed at right angles to the direction of travel of the apron and above the same, conveyers delivering the signatures to said rollers, guides leading from said rollers to the apron, gages attached to the apron to position the sheets thereon, conveyers extending from the delivery end of the apron to receive the sheets therefrom, means for automatically stapling the sheets in transit on the latter conveyers, means for folding the stapled sheets, and a packing-box disposed to receive said folded sheets as set forth.

20. The combination of a traveling apron, sheet-conveyers communicating with the receiving end of said apron, paper-folding rollers disposed transversely to the line of travel of the apron and above the same, guides leading from said rollers to the apron, gages secured transversely to the apron, and mechanism transmitting motion to said apron and timed to move the same slower than the surface speed of the folding-rollers as and for the purpose set forth.

21. The combination of a traveling apron, sheet-conveyers communicating with the receiving end of said apron, paper-folding rollers disposed parallel with the line of travel of the apron, tapes extending from said rollers transversely over the apron, a gage arresting the movement of the paper on said tapes, folding-rollers beneath said tapes and at right angles to the line of travel of the apron, guides leading from the latter rollers to the apron, and gages secured transversely to the apron to position the sheets thereon as set forth.

22. The combination of a traveling apron, a plurality of paper-folding rollers disposed over different parts of the length of said apron and at right angles to the line of its travel, guides leading from said rollers to the apron, and conveyers delivering the paper to the folding-rollers.

23. The combination of a traveling apron, sheet-conveyers communicating with the receiving end of said apron, a plurality of folding-rollers disposed over different parts of the length of the apron and at right angles to its line of travel, conveyers delivering the paper to said rollers and guides leading from said rollers to the apron

24. The combination of a traveling apron, sheet-conveyers communicating with the receiving end of said apron, a plurality of folding-rollers disposed over different parts of the length of the apron and at right angles to the line of its travel, conveyers delivering the paper to said rollers, guides leading from the rollers to the apron, and a plurality of gages secured to the apron to position the paper thereon.

25. The combination of a traveling apron, conveyers delivering the cover-sheet to the receiving end of the apron, a plurality of folding-rollers disposed over different parts of the length of the apron and at right angles to the line of its travel, tapes conveying the paper over said folding-rollers, gages arresting the movement of the paper on the tapes and positioning said paper in relation to the apron, guides leading from said folding-rollers to the apron and a plurality of gages positioning the paper on the apron.

26. The combination of a traveling apron, conveyers delivering the cover-sheet to the receiving end of said apron, a plurality of folding-rollers disposed over different parts of the length of the apron, and at right angles to the line of its travel, conveyers delivering the paper to said rollers, guides leading from said rollers to the apron, a plurality of gages secured to the apron to position the paper thereon, means for automatically stapling the paper and conveyers delivering the paper from the apron to the stapling means as set forth.

27. The combination of a traveling apron, conveyers delivering the cover-sheet to the receiving end of said apron, a plurality of paper-folding rollers disposed over different parts of the length of the apron, conveyers delivering the paper to said rollers, guides leading from said rollers to the apron, a plurality of gages attached to the apron to position the paper thereon, means for automatically stapling the paper, conveyers delivering the paper from the apron to the stapling means, and folding-rollers disposed to receive the stapled paper as set forth.

28. The combination of a traveling apron, conveyers delivering sheets to the receiving end of said apron, a plurality of folding-rollers over different parts of the length of the apron, conveyers delivering the paper to said rollers, guides leading from said rollers to the apron, a plurality of gages on the apron to position the paper thereon, means for automatically stapling the paper, conveyers delivering the paper from the apron to the stapling means, folding-rollers disposed to receive the stapled paper, and a packing-box under the latter folding-rollers as set forth.

29. The combination of a traveling apron, a plurality of sets of paper-folding rollers over said apron at different parts of the length thereof, a paper-folding machine, tapes conveying the folded paper from said machine to a position over one set of the aforesaid folding-rollers, tapes conveying paper over the other set of folding-rollers, gages arresting the sheets on the tapes and positioning the sheets in relation to the apron, blades tucking the sheets, after being arrested, into the bites of said rollers, guides leading from the latter rollers to the apron, gages attached to the apron to position the paper thereon, conveyers extending from the delivery end of the apron, means for automatically stapling the paper in transit on the latter conveyers, and intermittently-operating gages temporarily arresting the paper during the stapling operation.

30. The combination of a traveling apron, separate sets of paper-folding rollers over different parts of the length of said apron, a paper-folding machine, tapes conveying the folded sheets to a position over one of the aforesaid sets of rollers, tapes conveying paper over the other set of folding-rollers, gages arresting the sheets on said tapes, blades tucking the arrested sheets into the bites of said rollers, guides leading from said rollers to the apron, gages attached to the apron to position the sheets thereon, conveyers extending from the delivery end of the apron, means for automatically stapling the sheets on the latter conveyers, intermittently-operating gages arresting the sheets during the stapling operation, folding-rollers disposed to receive the stapled sheets, and a packing-box under said folding-rollers as set forth.

31. The combination of a traveling apron, a paper-feeding roller extending across the receiving end of said apron, separate sets of paper-folding rollers over different parts of the length of the apron, a paper-folding machine, a registering device alining the sheets on said machine, tapes conveying the folded sheets from said machine to a position over one of the aforesaid sets of rollers, tapes conveying paper over the other set of said rollers, gages arresting the sheets on said tapes, and positioning said sheets in relation to the apron, blades tucking the arrested sheets into the bites of said rollers, guides leading from said rollers to the apron, gages attached to said apron to position the sheets thereon, conveyers extending from the delivery end of the apron, means for automatically stapling the sheets in transit on the latter conveyers and intermittently-operating gages arresting the sheets during the stapling operation.

32. The combination of a traveling apron, a feed-roller extending across the receiving end of said apron to deliver thereto the cover-sheet, folding-rollers disposed over said apron, tapes conveying the paper over the aforesaid rollers, sheet-inverting rollers in the path of said tapes, a blade tucking the sheet into the bite of the aforesaid folding-rollers, and guides leading from said folding-rollers to the apron as set forth.

33. The combination of a traveling apron, a feed-roller extending across the receiving end of said apron to deliver thereto the cover-sheet, folding-rollers disposed over said apron, tapes conveying the paper over the aforesaid folding-rollers, registering devices alining the paper on said tapes, sheet-inverting rollers interposed between said tapes and folding-rollers, a blade tucking the sheet into the bite of said folding-rollers, and guides leading from the latter rollers to the apron.

34. The combination of a traveling apron, a feed-roller extending across the receiving end of said apron to delivor thereto the cover-sheet, folding-rollers disposed over said apron, tapes conveying the paper over the aforesaid rollers, sheet-inverting rollers interposed between tapes and folding-rollers, a blade tucking the sheet into the bite of said rollers, guides leading from the latter rollers to the apron, means for automatically stapling the sheets, conveyers delivering the sheets from the apron to the stapling means, and intermittently-operating gages arresting the sheets during the stapling operation.

35. The combination of a traveling apron, a sheet-feeding roller extending across the receiving end of said apron, folding-rollers disposed over said apron, tapes conveying the paper over the aforesaid folding-rollers, sheet-inverting rollers interposed between said tapes and folding-rollers, a blade tucking the sheet into the bite of said folding-rollers, guides leading from the latter rollers to the apron, means for automatically stapling the sheets, conveyers delivering the sheets from the apron to the stapling means, final-folding rollers disposed to receive the stapled sheets and a packing-box under the final-folding rollers.

36. The combination of a traveling apron, a sheet-feeding roller extending across the receiving end of said apron, separate sets of folding-rollers disposed over said apron, a paper-folding machine, a registering device alining the paper on said machine, tapes conveying the paper from said machine over one of the aforesaid sets of folding-rollers, tapes conveying paper over the other of said sets of folding-rollers, sheet-inverting rollers in the path of the latter tapes, gages arresting and positioning the sheets upon the tapes, blades tucking the arrested sheets into the bite of the folding-rollers, guides leading from said folding-rollers to the apron, gages attached to the apron to position the sheets thereon, means for automatically stapling the sheets and conveyers delivering the sheets from the apron to the stapling means.

37. The combination of a traveling apron, a sheet-feeding roller extending across the receiving end of said apron, separate sets of folding-rollers disposed transversely to the line of travel of the apron and above the same, a paper-folding machine, a registering device alining the paper on said machine, tapes conveying the folded paper from the folding-machine over one of the aforesaid sets of folding-rollers, tapes conveying paper from a separate source to a position over the other set of folding-rollers, sheet-inverting rollers in the path of the latter tapes, gages arresting and positioning the sheets on the tapes, blades forcing the sheets into the bites of the folding-rollers, guides leading from said rollers to the apron, means for automatically stapling the sheets, conveyers delivering the sheets from the apron to the stapling means, intermittently-operating gages arresting the sheets during the stapling operation, final-folding rollers receiving the stapled sheets and a packing-box under said final-folding rollers.

38. The combination of a traveling apron, separate sets of folding-rollers disposed over different parts of the length of the apron, separate sets of tapes delivering paper from different sources to positions over the aforesaid folding-rollers, and blades forcing the delivered sheets into the bites of the folding-rollers and timed to operate in consecutive order and thereby cause the delivered sheets to be deposited in piles upon the apron.

39. The combination of a traveling apron, a feeding-roller extending across the receiving end of said apron to deliver thereto the cover-sheet, separate sets of folding-rollers disposed over different parts of the length of the apron, conveyers delivering paper from different sources to positions over the aforesaid folding-rollers, gages arresting the movement of the paper on the tapes, and blades forcing the paper into the bites of the folding-rollers and timed to operate consecutively and thereby cause the folded sheets to be deposited in a pile upon the cover-sheet.

40. The combination of a traveling apron, feeding devices delivering the cover-sheet upon the receiving end of said apron, a plurality of separate sets of folding-rollers disposed over different parts of the length of the apron, separate sets of tapes delivering paper from different sources to positions over the aforesaid folding-rollers, gages arresting the movement of the paper on said tapes, blades forcing the arrested sheets into the bites of the folding-rollers and timed to operate consecutively and thereby pile the folded sheets upon the cover-sheet, means for automatically stapling the sheets and conveyers delivering the sheets to the stapling means.

41. The combination of a traveling apron, feeding devices delivering the cover-sheet upon the receiving end of the apron, a plurality of separate sets of folding-rollers disposed over different parts of the length of the apron, tapes delivering paper from different sources to positions over the aforesaid folding-rollers, gages arresting the delivered paper upon the tapes, blades forcing the arrested sheets into the bites of said folding-rollers and timed to operate consecutively and thereby pile the folded sheets upon the cover-sheet, conveyers extending from the delivery end of the apron, means for automatically stapling the piles in transit on the latter conveyers, final-folding rollers disposed to receive the stapled piles, and a packing-box under said final-folding rollers.

42. The combination of a traveling apron, feeding devices delivering the cover-sheet upon the receiving end of said apron, separate sets of folding-rollers disposed over different parts of the length of the apron, a paper-folding machine located at the side of the apron and opposite one of the sets of folding-rollers, tapes delivering the folded sheet from said folding-machine over the adjacent folding-rollers, feed-rollers at the side of the apron and opposite another of the aforesaid set of folding-rollers, sheet-inverting rollers at the opposite side of the apron, paper-conveying tapes running on said feed-rollers and inverting-rollers, a gage arresting the movement of the sheets on the said two sets of tapes, blades forcing the sheets into the bites of the folding-rollers and timed to operate consecutively and thereby pile the folded sheets upon the cover-sheet carried on the apron, conveyers extending from the delivery end of the apron, and means for automatically stapling the piles in transit on said conveyers.

43. The combination of a traveling apron, feeding devices delivering the cover-sheet upon the receiving end of said apron, separate sets of folding-rollers disposed over different parts of the length of the apron, a paper-folding machine located at the side of the apron and opposite one of the sets of folding-rollers, tapes delivering the folded sheet from said folding-machine over the adjacent folding-rollers, feed-rollers at the side of the apron and opposite another of the aforesaid sets of folding-rollers, sheet-inverting rollers at the opposite side of the apron, paper-conveying tapes running on said feed-rollers and inverting-rollers, a gage arresting the movement of the sheets on the said two sets of tapes, blades forcing the sheets into the bites of the folding-rollers and timed to operate consecutively and thereby pile the folded sheets upon the cover-sheet carried on the apron, conveyers extending from the delivery end of the apron, and means for automatically stapling the piles in transit on said conveyers.

44. The combination of a traveling apron, feeding devices delivering the cover-sheet upon the receiving end of said apron, separate sets of folding-rollers disposed over different parts of the length of the apron, a paper-folding machine located at the side of the apron and opposite one of the sets of folding-rollers, tapes delivering the folded sheet from said folding-machine over the adjacent folding-rollers, feed-rollers at the side of the apron and opposite another of the aforesaid set of folding-rollers, sheet-inverting rollers at the opposite side of the apron, paper-conveying tapes running on said feed-rollers and inverting-rollers, a gage arresting the movement of the sheets on the said two sets of tapes, blades forcing the sheets into the bites of the folding-rollers and timed to operate consecutively and thereby pile the folded sheets upon the cover-sheet carried on the apron, conveyers extending from the delivery end of the apron, means for automatically stapling the piles in transit on said conveyers, final-folding rollers disposed to receive the stapled sheets, and a packing-box under said final-folding rollers as set forth.

45. The combination of a traveling apron, feeding devices delivering the cover-sheet upon the receiving end of said apron, separate sets of folding-rollers disposed transversely over different parts of the length of the apron, a paper-folding machine located at the side of the apron and opposite one of the aforesaid sets of folding-rollers, a registering device alining the sheet upon the folding-machine, tapes delivering the folded sheet from said machine to a position over the adjacent set of folding-rollers, tapes conveying paper from a different source and landing the same over the set of folding-rollers in the same direction as the conveying-tapes of the aforesaid folding-machine, a sheet-arresting gage extending across both of the aforesaid sets of tapes, and blades forcing the arrested sheets into the bites of the folding-rollers and timed to operate consecutively and thereby pile the folded sheets upon the aforesaid cover-sheet.

46. The combination of a traveling apron, feeding devices delivering the cover-sheet upon the receiving end of said apron, separate sets of folding-rollers disposed transversely over different parts of the length of the apron, a paper-folding machine located at the side of the apron and opposite one of the aforesaid sets of folding-rollers, a registering device alining the sheet upon the folding-machine, tapes delivering the folded sheet from said machine to a position over the adjacent set of folding-rollers, tapes conveying paper from a different source and landing the same over the other set of folding-rollers in the same direction as the conveying-tapes of the aforesaid folding-machine, a sheet-arresting gage extending across both of the aforesaid sets of tapes, blades forcing the arrested sheets into the bites of the folding-rollers and timed to operate consecutively and thereby pile the folded sheets upon the aforesaid cover-sheet, conveyers extending from the delivery end of the apron, and means for automatically stapling the piles in transit on said conveyers.

47. The combination of a traveling apron, feeding devices delivering the cover-sheet upon the receiving end of said apron, separate sets of folding-rollers disposed transversely over different parts of the length of the apron, a paper-folding machine located at the side of the apron and opposite one of the aforesaid sets of folding-rollers, a registering device alining the sheet upon the folding-machine, tapes delivering the folded sheet from said machine to a position over the adjacent set of folding-rollers, tapes conveying paper from a different source and landing the same over the other set of folding-rollers in the same direction as the conveying-tapes of the aforesaid folding-machine, a sheet-arresting gage extending across both of the aforesaid sets of tapes, blades forcing the arrested sheets into the bites of the folding-rollers and timed to operate consecutively and thereby pile the folded sheets upon the aforesaid cover-sheet, conveyers extending from the delivery end of the apron, means for automatically stapling the piles in transit on said conveyers, final-folding rollers disposed to receive the stapled sheet, and a packing-box under said final-folding rollers as set forth.

48. The combination of a traveling apron, a paper-feeding roller extending across the receiving end of said apron, separate sets of folding-rollers disposed over different parts of the length of the apron,

tapes delivering sheets over said rollers, blades forcing the delivered sheets into the bite of said folding-rollers, guides leading from said rollers to the apron, conveying-tapes extending from the delivery end of the apron to receive the sheets therefrom, and automatic stapling mechanism disposed to operate on the sheets in transit on said tapes.

49. The combination of a traveling apron, a paper-feeding roller extending across the receiving end of said apron, separate sets of folding-rollers disposed over different parts of the length of the apron, tapes delivering sheets from different sources of supply to positions over said folding-rollers, blades forcing the sheets into the bites of said rollers and timed to operate consecutively and thereby depositing the sheets in a pile upon the apron, sheet-positioning gages attached to said apron, conveying-tapes extending from the delivery end of the apron to receive the piled sheets therefrom, automatic stapling mechanism disposed to operate on the sheets in transit on said tapes, final-folding rollers disposed to receive the stapled sheets from said tapes and a packing-box under said final-folding rollers as set forth.

50. The combination of a traveling apron, feeding devices delivering the cover-sheet upon the receiving end of said apron, separate sets of folding-rollers disposed transversely over different parts of the length of the apron, a paper-folding machine located at the side of the apron and opposite one of the aforesaid sets of folding-rollers, a registering device aliining the sheet upon the folding-machine, tapes delivering the folded sheet from said machine to a position over the adjacent set of folding-rollers, tapes conveying paper from a different source and landing the same over the set of folding-rollers in the same direction as the conveying-tapes of the aforesaid folding-machine, a sheet-arresting gage extending across both of the aforesaid sets of tapes, blades forcing the arrested sheets into the bites of the folding-rollers and timed to operate consecutively and thereby pile the folded sheets upon the aforesaid cover-sheet, conveying-tapes extending from the delivery end of the aproo to receive the piled sheets therefrom, and means for automatically stapling the piles in transit on said tapes.

51. The combination of a traveling apron, feeding devices delivering the cover-sheet upon the receiving end of said apron, separate sets of folding-rollers disposed transversely over different parts of the length of the apron, a paper-folding machine located at the side of the apron and opposite one of the aforesaid sets of folding-rollers, a registering device alining the sheet upon the folding-machine, tapes delivering the folded sheet from said machine to a position over the adjacent set of folding-rollers, tapes conveying paper from a different source and landing the same over the set of folding-rollers in the same direction as the conveying-tapes of the aforesaid folding-machine, a sheet-arresting gage extending across both of the aforesaid sets of tapes, blades forcing the arrested sheets into the bites of the folding-rollers and timed to operate consecutively and thereby pile the folded sheets upon the cover-sheet, conveyers extending from the delivery end of the apron, means for automatically stapling the piles in transit on said conveyers, intermittently-operating gages temporarily arresting the sheets on said tapes during the stapling operation, final-folding rollers disposed to receive the stapled sheets from said tapes and a packing-box under said final-folding rollers.

52. The combination of a traveling apron, feeding devices delivering the cover-sheet upon the receiving end of said apron, separate sets of folding-rollers disposed over different parts of the length of the apron, a paper-folding machine located at the side of the apron and opposite one of the aforesaid sets of folding-rollers, tapes delivering the folded sheet from said folding-machine over the adjacent folding-rollers, feed-rollers at the side of the apron and opposite another of the aforesaid set of folding-rollers, sheet-inverting rollers at the opposite side of the apron, paper-conveying tapes running on said feed-rollers and inverting-rollers, a gage arresting the movement of the sheets on the said two sets of tapes, blades forcing the sheets into the bites of the folding-rollers and timed to operate consecutively and thereby pile the folded sheets upon the cover-sheet carried on the apron, tapes extending from the delivery end of the apron to receive the piled sheets therefrom, and automatic stapling mechanism disposed to operate on the sheets in transit on said tapes.

53. The combination of a traveling apron, feeding devices delivering the cover-sheet upon the receiving end of said apron, separate sets of folding-rollers disposed over different parts of the length of the apron, a paper-folding machine located at the side of the apron and opposite one of the aforesaid sets of folding-rollers, tapes delivering the folded sheets from said folding-machine over the adjacent folding-rollers, feed-rollers at the side of the apron and opposite another of the aforesaid set of folding-rollers, sheet-inverting rollers at the opposite side of the apron, paper-conveying tapes running on said feed-rollers and inverting-rollers, a gage arresting the movement of the sheets on the said two sets of tapes, blades forcing the sheets into the bites of the folding-rollers and timed to operate consecutively and thereby pile the folded sheets upon the cover-sheet carried on the apron, tapes extending from the delivery end of the apron to receive the piled sheets therefrom, automatic stapling mechanism disposed to operate on the sheets in transit on said tapes, final-folding rollers disposed to receive the stapled sheets from said tapes, and a packing-box under said final-folding rollers.

54. The combination of a traveling apron, sheet-assembling gages mounted transversely on said apron, and a plurality of sheet-delivering mechanisms delivering the sheets in the direction of the travel of the apron and timed to pile the sheets against the rear faces of the aforesaid gages.

55. The combination of a traveling apron, a plurality of separate sets of folding-rollers disposed transversely over different parts of the length of said apron, conveyers delivering sheets from different sources to the respective sets of folding-rollers, blades forcing the sheets into the bites of said rollers, and timed to operate consecutively and thereby deposit the sheets in a pile upon the apron, and an assembling-gage traveling with said apron and disposed to receive the advance edges of the delivered sheets and thereby squaring the front face of the pile.

56. The combination of a traveling apron, a plurality of sheet-delivering devices receiving the sheets from different sources of supply and timed to operate consecutively to deposit the sheets in a pile upon the apron, an assembling-gage traveling with said apron and receiving the advance edges of the delivered sheets and mechanism transmitting motion to the apron, and timed to move said apron slower than the travels of the sheets to the said assembling-gage and thereby insure impacts of the advance edges of the sheets against said gage and effectually square the front face of the piles.

57. The combination of a traveling apron, a plurality of paper-supplying devices distributed lengthwise of said apron to deposit paper thereon, a machine disposed to receive said paper from the apron, a switch interposed between the apron and the said machine and movable to intercept the passage of the paper, trippers traveling with the apron and movable to and from position to actuate said switch, mechanisms actuating said trippers, and mechanical feelers controlling said actuating mechanisms and disposed to be actuated by the sheets in transit from the supplying devices to the apron.

58. The combination of a traveling apron, a plurality of paper-supplying devices distributed lengthwise of said apron and timed in their action to deposit the sheets in a pile upon the apron, conveyers extending from the delivery end of the apron, automatic stapling mechanism disposed to operate on the pile in transit on said conveyers, a switch interposed between the apron and conveyers and movable to intercept the pile of paper, trippers traveling with the apron and movable to and from position to actuate said switch, mechanisms actuating said trippers, and mechanical feelers controlling said actuating mechanisms and disposed to be actuated by the sheets in transit from the aforesaid supplying devices to the apron, as set forth.

59. The combination of a traveling apron, a plurality of paper-supplying devices distributed lengthwise of said apron to deposit paper thereon, a machine disposed to receive said paper from the apron, a switch interposed between said machine and apron and movable to intercept the paper in transit, trippers traveling with the apron and movable to and from position to actuate said switch, mechanisms actuating said trippers, mechanical feelers actuated by the paper passing to the apron and controlling the aforesaid actuating mechanisms, and means for automatically restoring the trippers to their normal position.

60. The combination of a traveling apron, a plurality of paper-supplying devices distributed lengthwise of said apron to deposit paper thereon, a machine disposed to receive the paper from said apron, a switch interposed between said machine and apron and movable to intercept the paper in transit, laterally-movable bars carried on said apron, mechanisms moving said bars to position to actuate the switch, and mechanical feelers actuated by the paper passing from the aforesaid paper-supplying devices to the apron and controlling the movement of the aforesaid bars as set forth.

61. The combination of a traveling apron, a plurality of paper-supplying devices distributed lengthwise of said apron to deposit paper thereon, a machine disposed to receive said paper from the apron, a switch interposed between said machine and apron and movable to intercept the paper in transit, laterally-movable bars carried on said apron, means in the path of said bars to place them in their normal position, mechanisms for moving said bars to position to actuate the aforesaid switch, and mechanical feelers controlling said mechanisms and actuated by the paper passing from the aforesaid supplying devices to the apron.

62. The combination of a traveling apron, a plurality of paper-supplying devices distributed lengthwise of said apron to deposit paper thereon, a machine disposed to receive the paper from the apron, a switch interposed between said machine and apron and movable to intercept the paper in transit, laterally-movable bars carried on said apron, lugs projecting from said bars, a pusher in the path of said lugs to move the bars to their normal position, mechanisms moving said bars to position to actuate the aforesaid switch, and mechanical feelers controlling said mechanisms and actuated by the paper passing from the aforesaid supplying devices to the apron as set forth.

63. The combination of a traveling apron, a plurality of paper-supplying devices distributed lengthwise of said apron and timed in their action to deposit the sheets in a pile on said apron, conveyers extending from the delivery end of the apron, automatic stapling mechanisms disposed to operate on the piles in transit on said conveyers, final-folding rollers disposed to receive the stapled piles, a packing-box under said folding-rollers, a switch movable to intercept the paper delivered from the apron, trippers traveling with the apron and movable to and from position to actuate said switch, mechanisms actuating said trippers, and mechanical feelers controlling said mechanisms and disposed to be actuated by the paper passing from the aforesaid supplying devices to the apron.

64. The combination of a traveling apron, a plurality of paper-supplying devices distributed lengthwise of said apron and timed in their action to deposit the paper in a pile upon the apron, conveyers extending from the delivery end of the apron, automatic stapling mechanism disposed to operate on the piles in transit on said conveyers, a switch interposed between said apron and conveyers and movable to intercept the paper in transit, stop mechanism for simultaneously throwing the stapling mechanism out of gear and the switch into its intercepting position, trippers traveling with the apron and movable to and from position to actuate said stop mechanism, mechanisms actuating said trippers, and mechanical feelers controlling the latter mechanisms and actuated by the paper passing from the aforesaid supplying devices to the apron as set forth.

65. The combination of a traveling apron, a plurality of paper-supplying devices distributed lengthwise of said apron and timed in their action to deposit the paper in a pile upon the apron, conveyers extending from the delivery end of the apron, automatic stapling mechanism disposed to operate on the piles in transit on said conveyers, a switch interposed between said apron and conveyers and movable to intercept the paper in transit, stop mechanism for simultaneously throwing the stapling mechanism out of gear and the switch into its intercepting position, laterally-movable bars carried on the apron, lugs projecting from said bars, a pusher in the path of said lugs to move the said bars to their normal position, mechanisms moving said bars to position to actuate the aforesaid stop mechanism, and mechanical feelers controlling said actuating mechanism and disposed to be actuated by the paper passing from the aforesaid supplying devices to the apron, as set forth.

66. The combination of a traveling apron, a plurality of paper-supplying devices distributed lengthwise of said apron and timed in their action to deposit the sheets in a pile upon the apron, paper-folding rollers beyond the delivery end of the apron, conveying-tapes extending from said end of the apron to said folding-rollers, automatic stapling mechanism disposed to operate on the piles in transit on said tapes, a switch interposed between the delivery end of the apron and receiving ends of the tapes and movable to and from a paper-intercepting position, laterally-movable bars carried on the apron, lugs projecting from said bars, a pusher in the path of said lugs to move said bars to their normal position, mechanisms moving said bars to position to actuate the aforesaid switch, and mechanical feelers controlling said mechanism and actuated by the paper passing from the aforesaid supplying devices to the apron as set forth.

67. The combination of a traveling apron, paper-supplying devices depositing paper upon said apron, a machine disposed to receive the paper from said apron, a switch interposed between said machine and apron and movable to and from a position to intercept the paper, laterally-movable bars carried on the apron, lugs projecting from said bars, a rock-arm, a plunger moved by said rock-arm to and from a position to move the aforesaid laterally-movable bars to a position to actuate the aforesaid switch, a rotary cam, a lever transmitting motion from said cam to the aforesaid rock-arm, and a pusher in the path of the aforesaid lugs to restore the laterally-movable bars to their normal position as set forth.

68. The combination of a traveling apron, paper-supplying devices depositing the paper upon said apron, a machine disposed to receive the paper from the apron, a switch interposed between said machine and apron and movable to and from a position to intercept the paper, laterally-movable bars carried on the apron, lugs projecting from said bars, a pusher in the path of said lugs to move said bars to their normal position, mechanisms adapted to move the bars from said position, a lever disposed to be actuated by the lugs of said bars when out of their normal position and thereby upon the switch to intercept the paper, a cam restoring said lever to its original position and thereby closing the switch, mechanical feelers actuated by the paper passing to the apron and controlling the mechanism which moves the aforesaid bars from their normal position, as set forth.

69. The combination of a traveling apron, paper-supplying devices depositing paper upon said apron, conveyers extending from the delivery end of the apron, automatic stapling mechanism disposed to operate on the paper in transit on said conveyers, a switch interposed between said conveyers and apron and movable to and from a position to intercept the paper, a clutch mechanism for throwing the aforesaid machine in and out of gear, laterally-movable bars carried on the apron, lugs projecting from said bars, a pusher in the path of said lugs to move the bars to their normal position, mechanisms adapted to move the bars from said position, mechanical feelers actuated by the paper passing to the apron and controlling the aforesaid mechanism, a lever disposed to be actuated by the lugs of the bars when out of their normal position, means transmitting motion from said actuated lever to the aforesaid clutch mechanism and thereby throwing the stapling-machine out of gear, and means for simultaneously throwing the switch into its intercepting position as set forth.

70. In combination with a traveling apron, paper-supplying devices depositing paper upon said apron, and a machine disposed to receive the paper from said apron, a switch interposed between said machine and apron and movable to and from a position to intercept the paper, bars carried on the apron and movable to and from position to trip the switch to its open position, a plunger movable to a position to actuate said bars and thereby trip the switch, and a mechanical feeler consisting of a finger pivoted intermediate its ends and having one end extending to the paper-passage of the aforesaid supplying devices to be actuated by the passing paper and the opposite end of said finger movable to and from a position to arrest the movement of the aforesaid plunger as and for the purpose set forth.

71. In combination with a traveling apron, paper-supplying devices depositing paper upon said apron and a machine disposed to receive the paper from the apron, a switch interposed between said machine and apron and movable to and from a paper-intercepting position, laterally-movable bars carried on the apron, lugs projecting from said bars, a pusher in the path of said lugs to move the bars to their normal position, a plunger moving the bars from said position, a lever actuated by the lugs of the abnormally-disposed bars and throwing the switch into its intercepting position, a rotary cam, a lever transmitting motion from said cam to the aforesaid plunger and a finger pivoted intermediate its ends and having one end extending to the paper-passage of the aforesaid supplying devices to be actuated by the passing paper and the opposite end of said finger movable to and from a position to arrest the movement of the aforesaid plunger as set forth.

72. In combination with a traveling apron, paper-supplying devices depositing paper upon said apron, conveyers extending from the delivery end of the apron, automatic stapling mechanisms disposed to operate on the paper in transit on said conveyers, a switch interposed between said conveyers and apron and movable to and from a position to intercept the paper, a clutch for throwing said machine in and out of gear, laterally-movable bars carried on the apron and having lugs projecting from them, a pusher in the path of the lugs to move the bars to their normal position, mechanism moving the bars from said position, mechanical feelers actuated by the passage of the paper to the apron and controlling said mechanisms, a tripping-lever pivoted intermediate its ends and having its upper end in the path of the bar moved out of its normal position, a shaft, means attached to said shaft for throwing the aforesaid clutch in and out of engagement, a pair of arms on said shaft, a pitman connecting one of said arms to the lower end of the aforesaid tripping-lever, an arm attached to the axis of the aforesaid switch and a rod connecting said arm to the second arm of the aforesaid pair as set forth and shown.

73. In combination with the traveling apron, a paper-feeding roller back of the receiving end of said apron, drop-rollers over said feeding-roller, guides leading from the feeding-roller to the apron and a machine disposed to receive the paper from the delivery end of the apron, a switch interposed between said machine and apron and movable to and from a position to intercept the paper, a shaft disposed transversely above the aforesaid guides, fingers attached to said shaft and extending with their free ends to the guides adjacent to the apron, an arm extending upwardly from the end of the said shaft, a bell-crank connected at one end by a rod to the aforesaid arm, a rock-shaft disposed transversely above the apron, an arm attached to one end of said rock-shaft, a pitman connecting the free end of said arm to an L-shaped lever, a cam imparting rocking motion to said lever, a detent projecting from the aforesaid rock-shaft and having its free end movable to and from a position to engage the aforesaid bell-crank, a laterally-movable bar carried on the apron, mechanism actuating the aforesaid switch and controlled by the position of the aforesaid bar, an arm attached to the aforesaid rock-shaft, and a plunger connected to said arm and moving the bar to its operative position in relation to the switch-actuating mechanism as set forth.

74. The combination with the main supporting-frame, of tracks extending from the rear end of said frame part way toward the opposite end thereof, sprocket-wheels at opposite ends of said tracks, chains extending lengthwise of the tracks and carried on said sprocket-wheels, an apron carried on said chains, paper-delivery devices depositing paper on said apron, brackets attached to the chains at intervals of their lengths, rollers pivoted to said brackets and riding

on the aforesaid tracks, laterally-projecting guides secured to one of said chains, bars sliding in said guides, a switch at the delivery end of the apron and movable to and from a position to intercept the paper, mechanism actuating said switch, a pusher on the aforesaid frame moving the bars to their normal position, mechanisms moving the bars to operative position in relation to the switch-actuating mechanism, and mechanical feelers actuated by the paper in transit to the apron and controlling the actuating mechanisms of the bars.

75. The combination, with a pair of paper-folding rollers and means depositing the paper with one of its edges directly over the bite of said rollers, of a switch introducing said edge of the paper between the folding-rollers, an auxiliary roller disposed parallel at one side of the folding-rollers and geared to rotate therewith, and drop-rollers over said auxiliary roller to assist the switch in its aforesaid operation, as set forth.

76. The combination, with a pair of paper-folding rollers and means depositing the paper with one of its edges directly over the bite of said rollers, of an auxiliary roller disposed parallel at the side of one of the folding-rollers and geared to rotate therewith and carry the edge of the sheet to the bite of the folding-rollers, a rock-shaft parallel with the auxiliary roller, arms on said rock-shaft, a shaft carried on the free end of said arms, rollers mounted on the latter shaft, and a switch attached to said rock-shaft and disposed to press the edge of the sheet into the bite of the folding-rollers as set forth.

77. In combination with the stapling-machine and conveyers carrying the paper to said machine, a stationary bracket over the conveyers beyond the stapling-machine, vertical guides on said bracket, a hanger sliding in said guides and provided with a horizontal arm, a paper-arresting gage carried on said arm, a rock-shaft and an arm attached to said rock-shaft and imparting vertical movement to the aforesaid hanger as set forth.

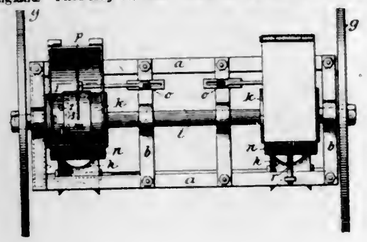
78. In combination with the stapling-machine and conveyers carrying the paper to said machine, stationary brackets over said conveyers and at different distances beyond the stapling-machine, vertical guides on said brackets, hangers sliding in said guides and provided with horizontal arms, paper-arresting gages carried on said arms, rock-shafts, separate cams actuating said rock-shafts and set to operate the shafts alternately, and arms attached to the rock-shafts and imparting vertical movement to the aforesaid hangers as set forth.

79. In combination with paper-conveyers, a vertically-movable hanger disposed over said conveyers and provided with a horizontal arm, a collar mounted longitudinally adjustable on said arm, a paper-arresting gage attached to said collar, and mechanism imparting vertical movement to the aforesaid hanger as set forth.

80. In combination with paper-conveyers, a stationary bracket over said conveyers and formed with vertical guides, a hanger formed with a vertical limb sliding in said guides and with a horizontal limb on its lower end, a collar mounted longitudinally movable on said horizontal limb, a set-screw holding said collar adjustably on said limb, a paper-arresting gage attached to said collar, a stud-pin projecting horizontally from the vertical limb of the hanger, a rock-shaft and an arm attached to said rock-shaft and engaging the aforesaid stud-pin to impart vertical movement to the hanger as set forth.

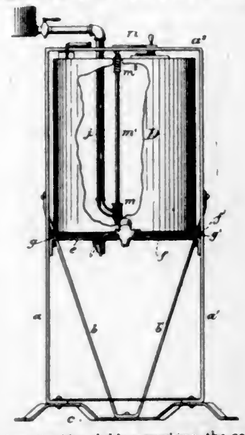
81. In combination with a stapling-machine and conveyers carrying the paper to said machine, stationary cross-bars over the conveyers and different distances beyond the stapling-machine, brackets attached to said cross-bars and formed with vertical guides, hangers sliding in said guides and provided with horizontal limbs, collars mounted longitudinally adjustable on said limbs, paper-arresting gages attached to said collars, stud-pins projecting from said hangers, rock-shafts over the aforesaid brackets, arms attached to said rock-shafts and engaging the aforesaid stud-pins, levers pivoted to the main frame, separate cams set to operate said levers alternately, arms attached to the ends of the aforesaid rock-shafts, and rods connecting the said end arms to the aforesaid levers as set forth.

653,197. SEED-SOWING MACHINE. JOHN GREEN, Treeton, England. Filed May 11, 1898. Serial No. 680,422. (No model.)



Claim.—In a seed-sowing machine of the class described, the combination of a hopper with a seed-distributing cylinder K provided with recesses 1 and 2 of the same pitch but not in the same axial line of the cylinder, and with another series of recesses of a different pitch around the periphery, means for rotating said cylinder, a sliding plate M, and means for operating same, a conducting-spout, share for opening furrow in ground and means for closing said furrow upon the deposited seed substantially as set forth.

653,198. LIQUID-WEIGHING MACHINE. SAMUEL P. MACKEY, Ridgefield, Wash. Filed Feb. 1, 1899. Serial No. 704,157. (No model.)



Claim.—1. In a liquid-weighing machine, the combination of a supporting-stand; a cylindrical rocking receptacle having a discharge-faucet and axial bearings at the base, whereby it is supported in said stand; means limiting the rocking motion of the receptacle to an upright and tilting position; means for holding a measuring-weight, whereby to retain the receptacle in an upright position until the liquid introduced therein overbalances the said weight; an inlet-pipe depending from the supporting stand or frame in said receptacle, and discharging at the bottom thereof over its axis; a spring-controlled valve normally closing the outlet of said pipe; a stem extending upwardly from the valve; an arm or handle on the said stem; a latch whereby the said arm of the valve-stem may be engaged to hold the valve open against the spring while the receptacle remains in an upright position; and means carried by the receptacle for automatically releasing the arm of the valve-stem again from the latch upon the receptacle being tilted, substantially as described.

2. In a liquid-weighing machine, the combination of a supporting-stand; a cylindrical rocking receptacle, having a discharge-faucet, and axial bearings at the base, whereby it is supported in said frame; means limiting the rocking motion of the receptacle to an upright and tilting position; an arm projecting rearward from the top of the receptacle and supporting balancing and measuring weights for holding the receptacle in an upright position until the liquid introduced therein overbalances the said weights; an inlet-pipe dependent from the supporting-frame, entering said receptacle, and discharging at the bottom thereof, immediately over its axis; a spring-controlled spigot-valve normally closing the outlet of said pipe; a stem extending upward from the spigot; an arm or handle on said stem; a latch whereby the said arm of the valve-stem may be engaged to hold the valve open against the spring while the receptacle remains in an upright position, and means carried by the receptacle for automatically releasing the arm of the valve-stem again from the latch upon the receptacle being tilted, substantially as described.

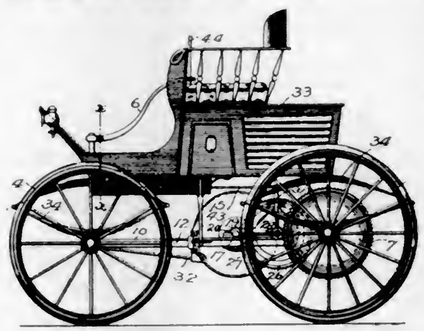
3. In a liquid-weighing machine, the combination of a supporting-stand; a cylindrical rocking receptacle, having a discharge-faucet, and axial bearings at the base, whereby it is supported in said frame; means limiting the rocking motion of the receptacle to an upright and tilting position; an arm projecting rearward from the top of the receptacle and supporting balancing and measuring weights for holding the receptacle in an upright position until the liquid introduced therein overbalances the said weights; an inlet-pipe dependent from the supporting-frame, entering said receptacle, and discharging at the bottom thereof, immediately over its axis; a spring-controlled spigot-valve normally closing the outlet of said pipe; a stem extending upward from the spigot; an arm or handle on the said stem; a trigger-like latch for engaging said arm of the valve-stem, to hold the valve open against the spring while the receptacle

remains in an upright position, and a trip carried by the receptacle for releasing said valve-arm from the said latch again upon the receptacle being tilted, said trip being so positioned as not to come in contact with said catch until the receptacle has gained sufficient momentum to minimize the retarding effect of the impact between the said trip and latch, substantially as described.

4. A liquid-weighing machine comprising in combination a supporting-frame, a rocking receptacle, having a discharge-faucet, the axis of motion of such receptacle being at the bottom thereof, means limiting the rocking movement of the receptacle to an upright and slightly-tilting position, an arm projecting rearward from the top of the receptacle, from which to support the balancing and measuring weights for holding the receptacle in an upright position until the liquid introduced therein overbalances the said weights, an inlet-pipe discharging at the bottom of the receptacle; a self-closing valve at the discharge end of such pipe; a mechanism supported on the frame and engaging the top of the receptacle whereby the latter may be lifted from its normal or tilted position to its upright or receiving position, and simultaneously with such movement the inlet-valve will be opened, and a latch for holding the valve open while the receptacle remains in the receiving position, but releasing the valve again upon the receptacle beginning to tilt, substantially as described.

5. A liquid-weighing machine, comprising in combination a supporting-frame; a rocking cylindrical receptacle having an axle at the bottom thereof, slightly rearward of the center of gravity, and journaled in said frame, the box-bearings being adapted to allow the said axle to turn therein, an arm projecting rearward from the top of the receptacle from which to support the balancing and measuring weights for holding the receptacle in an upright position until the liquid introduced therein overbalances the said weights; an inlet-pipe discharging at the bottom of the receptacle, over its axis; a self-closing valve at the discharge end of such pipe; a segment-gear, as *o*, journaled in the frame; a crank-handle as *q*, and a crank-arm as *p* fast on the axle of said gear, the crank-arm having a pin traveling in a slot provided on the cover of the receptacle, there being a switch in such slot controlling the course of travel of the said pin, a dog as *o'*, a segment-gear as *n'* affixed on the inlet-valve stem, and having an arm, a latch for engaging such arm, and means for tripping the latch upon the receptacle beginning to tilt, substantially as described.

653,199. MOTOR-VEHICLE. JOHN H. MUNSON, Chicago, Ill. Filed May 16, 1898. Serial No. 680,792. (No model.)



Claim.—1. The combination, in an electric-motor vehicle, of the running-gear or truck, with a suitably-connected storage battery and electric motor thereon, the latter being adapted to drive the vehicle, and an explosion-engine of less power than said motor and adapted to drive the same to recharge or replenish said battery when the motor is disconnected from the vehicle, substantially as described.

2. The combination, in an electric motor, of the truck or running-gear, with a storage battery arranged thereon, an electric motor in circuit with said truck, an explosion-engine of less power than said motor and adapted to be connected therewith, said motor having double windings, governing-switches for connecting the same with said battery, and a controller whereby said engine is adapted to operate said motor as a dynamo to charge said battery, substantially as described.

3. The combination, in a motor-vehicle, of the truck, with the motor-dynamo arranged thereon to drive the same, said motor-dynamo having independent field-windings, respectively in series and multiple arrangement with the windings of its armature, a storage battery in circuit therewith, means interposed between said battery and said motor-dynamo for electrically governing or controlling the same, and an explosion-engine upon said truck of less power than said motor-dynamo but adapted to drive the same as a dynamo to replenish said battery, substantially as described.

4. The combination, in a motor-vehicle, of the truck, with the motor-dynamo arranged thereon to drive the same, said motor-dynamo having independent field-windings, respectively in series and multiple arrangement with the windings of its armature, a storage battery in circuit therewith, means interposed between said battery and said motor-dynamo for electrically governing or controlling the same, an explosion-engine upon said truck of less power than said motor-dynamo but adapted to drive the same as a dynamo to replenish said battery, and an automatic circuit-breaker included in the battery-circuit, as and for the purpose specified.

5. The combination, in a motor-vehicle, of the truck, with the motor-dynamo arranged thereon to drive the same, said motor-dynamo having independent field-windings, respectively in series and multiple arrangement with the windings of its armature, a storage battery in circuit therewith, means interposed between said battery and said motor-dynamo for electrically governing or controlling the same, an explosion-engine upon said truck of less power than said motor-dynamo but adapted to drive the same as a dynamo to replenish said battery, the igniter of said engine, the local circuit thereof, and an automatic circuit-breaker included therein, whereby when said battery has been fully charged said engine will be automatically stopped, substantially as described.

6. The combination, in a motor-vehicle, of the truck, with the motor-dynamo arranged thereon to drive the same, said motor-dynamo having independent field-windings, respectively in series and multiple arrangement with the windings of its armature, a storage battery in circuit therewith, means interposed between said battery and said motor-dynamo for electrically governing or controlling the same, an explosion-engine upon said truck of less power than said motor-dynamo but adapted to drive the same as a dynamo to replenish said battery, the igniter-circuit of said engine, and an automatic circuit-breaker included in the circuit of said storage battery and motor-dynamo and adapted to automatically break said circuit and said igniter-circuit upon the cessation of current in the battery of the circuit, substantially as described.

7. The combination, in a motor-vehicle, of the truck, with the carriage-body mounted thereon, the storage battery arranged in said body, the electric-motor dynamo geared to the rear driving-wheels of said truck, and electrically connected with said storage battery, controlling and reversing switch included in the circuit of said battery and arranged upon said body, said motor-dynamo having independent windings respectively connected with its armature-windings, means upon the motor for connecting either of said windings in circuit, an explosion-engine arranged on said truck, a clutch for connecting the same with the armature-shaft of said motor-dynamo, and said motor-dynamo being capable of disconnection from the wheels of said truck, whereby said engine may be employed to operate said motor-dynamo to recharge said battery, substantially as described.

8. The combination, in a motor-vehicle, of the truck, with the carriage-body mounted upon springs thereon, the storage battery arranged in said body, the electric-motor dynamo geared to the rear wheels of said truck and connected with said battery, a controlling and reversing switch included in the circuit of said battery, an explosion-engine arranged upon said truck, means for connecting the same with said motor to drive the same as a dynamo to recharge said batteries, and the water and gasolene tanks for said engine arranged upon said carriage-body, substantially as described.

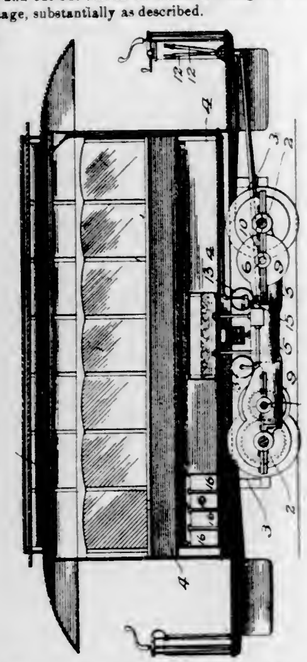
9. The combination, in a motor-vehicle, of the truck, with the carriage-body mounted upon springs thereon, the storage battery arranged in said body, the electric-motor dynamo geared to the rear wheels of said truck and connected with said battery, a controlling and reversing switch included in the circuit of said battery, an explosion-engine arranged upon said truck, means for connecting the same with said motor to drive the same as a dynamo to recharge said batteries, and the water and gasolene tanks depending from the forward part of said carriage-body, substantially as described.

10. The combination, with the rear and forward axles, and the wheels thereon, of the reach extending between said axles, the outer reach-sections, the explosion-engine, and the motor-dynamo, a clutch arranged between the shafts of said engine and motor-dynamo, the clutch-lever, the reduction-gears between the shafts of said motor-dynamo and the rear wheels, the movable pinion included in said gearing, the brake mechanism arranged in connection with said gearing, the body supported upon said axles, and a storage battery connected with said motor and dynamo, substantially as described.

653,200. INDEPENDENT MOTOR-VEHICLE. JOHN H. MUNSON, La Porte, Ind., assignor of one-half to William F. Roberts, same place. Filed Aug. 29, 1898. Serial No. 689,786. (No model.)

Claim.—1. The vehicle, in combination, with the explosion-engine, suitably coupled thereto to drive the same, the electric storage bat-

tery provided upon said vehicle, an electric motor suitably coupled to said explosion-engine, to be driven by the surplus power of said engine, while the vehicle is in motion, said motor being connected with said storage battery to charge the same and to receive energy therefrom when the engine requires assistance, as in starting the vehicle, a suitable controller provided in the circuit of said battery and motor to regulate the operation of said motor, and means in connection with the controller and the armature-circuit to interpose resistance in said circuit in advance of a change to a higher pressure upon said circuit and cut out resistance before a change to a lower pressure or voltage, substantially as described.



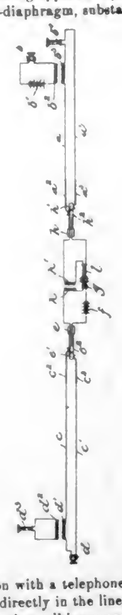
2. A car or vehicle carrying an explosion-engine permanently coupled thereto, and capable of driving said vehicle under normal conditions, a storage battery upon said car or vehicle, a shunt-motor normally coupled to said engine to operate therewith, said motor being connected with said storage battery, and means also connected therewith for controlling said motor and through the medium of said motor, controlling said engine and the vehicle, the motor being the governor therefor when running, substantially as described.

REISSUES.

11,837. TELEPHONE-REPEATER. WILLIAM M. DAVIS, Chicago Ill., assignor to the Stromberg-Carlson Telephone Manufacturing Company, same place. Filed Feb. 9, 1900. Serial No. 4,695. Original No. 625,247, dated May 16, 1899.

Claim.—1. The combination with a telephone-line having a source of electricity and a microphone-transmitter connected directly in the line, of a second telephone-line having means for producing talking-currents on the line, and a repeater interposed between the two lines comprising a microphone-transmitter and the primary of an induction-coil in circuit with the first line and a telephone-receiver and the secondary of an induction-coil in circuit with the second line, the transmitter and the receiver of the repeater being opposed in position so that the receiver vibrates the transmitter-diaphragm, substantially as described.

2. The combination with a telephone-line having a source of electricity and a microphone-transmitter connected directly in the line, of a second telephone-line having a microphone-transmitter in a local circuit connected with the telephone-line through an induction-coil, and a repeater interposed between the two lines comprising a microphone-transmitter and the primary of an induction-coil in circuit with the first line, and a telephone-receiver and the secondary of an induction-coil in circuit with the second line, the transmitter and the receiver of the repeater being opposed in position so that the receiver vibrates the transmitter-diaphragm, substantially as described.



3. The combination with a telephone-line having a microphone-transmitter connected directly in the line, of a second telephone-line having means for producing talking-currents on the line, and a connecting device for joining the said lines together comprising two pairs of terminals one pair being adapted to be connected with the first line and having in circuit between the same a source of electricity, a microphone-transmitter and the primary of an induction-coil, the second pair of terminals being adapted to be connected with the second telephone-line and having a circuit therewith the secondary of an induction-coil and a receiver situated opposite said transmitter, substantially as described.

4. In a telephone system, the combination with a telephonic circuit extending between telephone-stations, said telephonic circuit serving to propagate voice-currents from either telephone-station to the other, of a repeater associated with the telephonic circuit comprising two inductively-related windings traversed by currents due to the telephonic apparatus at the stations, a receiving element or receiver, and a transmitting element or transmitter associated with said inductively-related windings, the receiving element acting upon the transmitting element, substantially as described.

5. In a telephone system, the combination with a telephonic circuit extending between telephone-stations, of a repeater associated with the telephonic circuit comprising two inductively-related windings traversed by voice-currents, a battery-transmitter and a battery therefor in circuit with one of the windings, and a receiver in circuit with the remaining winding and acting upon the transmitter, substantially as described.

6. In a telephone system, the combination with a telephonic circuit extending between telephone-stations, of a winding traversed by voice-currents, a receiver in circuit therewith, a second winding in inductive relation with the aforesaid winding, and a battery-transmitter with its battery in circuit with the said second winding, the said receiver acting upon the said transmitter to vary the current of the transmitter-circuit, the said inductively-related windings serving to propagate voice-currents in the telephonic circuit, substantially as described.

7. In a telephone system, the combination with a telephonic circuit extending between telephone-stations, of a winding traversed by voice-currents, a receiver in circuit therewith, a battery-transmitter acted upon by the receiver, to vary the resistance between the transmitter-electrodes, a second winding traversed by voice-currents and in inductive relation with the aforesaid winding and a battery in circuit with the second winding and the transmitter, substantially as described.

8. In a telephone system, the combination with a telephonic circuit extending between stations, of an induction-coil with its secondary winding traversed by voice-currents emanating from a telephone-station, a receiver in circuit with the said secondary winding, a battery-transmitter, and a battery therefor in circuit with the transmitter and the primary winding of the induction-coil, the said receiver acting upon the transmitter to vary the current of the transmitter-circuit, the said induction-coil serving to propagate voice-currents in the telephonic circuit, substantially as described.

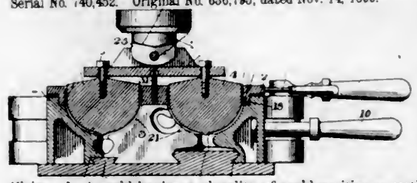
9. In a telephone system, the combination with a telephonic circuit extending between telephone-stations, of an induction-coil, a receiver in circuit with the secondary winding of the induction-coil, a battery-transmitter acted upon by the receiver to vary the resistance between the tranmitter-electrodes, and a battery for the transmitter in circuit with the primary winding of the induction-coil, the said induction-coil serving to propagate voice-currents in the telephone-circuit, substantially as described.

10. In a telephone system, the combination with two telephone-lines extending to telephone-stations and united to establish telephonic communication between the telephone-stations, of inductively-related windings serving to propagate voice-currents between the telephone-stations, each telephone-line including one of the said windings, a receiver in circuit with one winding, and a transmitter and battery in circuit with the other winding, the said receiver acting upon the transmitter to vary the current in the transmitter-circuit, substantially as described.

11. In a telephone system, the combination with two telephone-lines extending from telephone-stations and united for conversation of an induction-coil for propagating voice-currents over the telephonic circuit, a receiver and the secondary of the induction-coil being in circuit with a telephone-line, a battery with the primary of the induction-coil in circuit with the other telephone-line, and a transmitter in circuit with the battery and primary of the induction-coil, the receiver acting upon the transmitter to vary the current flowing through the latter, substantially as described.

12. In a telephone system, the combination with a telephonic circuit extending between stations and serving to propagate or transmit voice-currents from either of the telephonically-united stations to the other, of a receiver traversed by voice-currents and a transmitter acted upon by said receiver and serving to reimpress voice-currents passing to a telephone-station, substantially as described.

11,838. MOLD FOR PRESSED GLASSWARE AND POTTERY WARE. ALBERT R. GROTZ, Lazearville, W. Va. Filed Dec. 15, 1899. Serial No. 740,452. Original No. 636,795, dated Nov. 14, 1899.



Claim.—1. A mold having a plurality of mold-cavities, a vertically-disposed fulcrum-pin located about medially of the mold-cavities, a cross-head mounted upon the upper end of the fulcrum-pin to tilt in any direction, plungers loosely connected with the cross-head and adapted to coöperate with the mold-cavities, and means for applying pressure to the cross-head in vertical line with the fulcrum-pin, substantially as set forth.

2. In combination with a mold having mold-cavities, a cross-head mounted to rock, plungers located upon opposite sides of the fulcrum of the said cross-head and having their top sides sloping from a central point in all directions, and a vertical pivotal connection between the cross-head and plungers, substantially as set forth.

3. In combination with a mold having mold-cavities, and a cap-plate applied to the top side of the mold and formed with guide-openings, plungers adapted to work through the guide-openings of the cap-plate, a cross-head carrying the plungers and mounted upon a fulcrum-pin applied to the cap-plate, and a plunger-head pivotally connected with the cross-head, substantially as set forth.

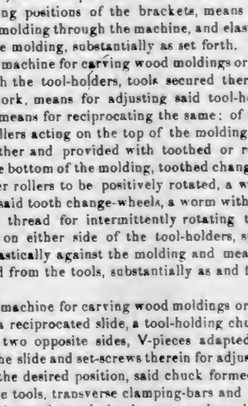
4. In combination, a mold having mold-cavities, a cross-head bearing plungers and mounted to rock, and having spaced ears upon its top side, and a plunger-head having its lower portion reduced and pivotally connected between the said spaced ears and having the shoulders formed at the base of the reduced portion oppositely inclined, substantially as described.

5. The combination of a mold having a plurality of mold-cavities, a plunger-head, a cross-head pivoted to the plunger-head and adapted to rock, and plungers for the molds individually secured directly by universal joints with the cross-head; substantially as described.

6. The combination of a sectional hinged mold having a plurality of mold-cavities, a plunger-head, a cross-head pivoted to the plunger-head and adapted to rock, and plungers for the molds individually secured directly by universal joints with the cross-head; substantially as described.

7. The combination of a mold having a plurality of mold-cavities, a plunger-head, a cross-head pivoted to the plunger-head and adapted to rock, and plungers for the molds individually secured directly to the cross-head by connections arranged to allow universal rocking of the plungers relatively thereto; substantially as described.

11,839. CARVING-MACHINE. HENRY MARLES, London, England, assignor, by mesne assignments, to the Marles Carved Moulding Company, of West Virginia. Filed Dec. 30, 1899. Serial No. 742,089. Original No. 616,002, dated Dec. 13, 1898.



Claim.—1. A machine for carving wood moldings or the like, consisting of a frame, a bracket angularly adjustable thereon in a more or less upright position, a bracket angularly adjustable thereon in a more or less horizontal position, said brackets having guides lengthwise thereon, slides adapted to work along said guides, a tool-holding device adjustable on each slide, means for reciprocating the slides, and means for intermittently holding the molding and feeding it through the machine, substantially as set forth.

2. In a machine for carving wood moldings or the like, the combination of a frame, two brackets angularly adjustable toward each other in a vertical plane on the frame, and having guides lengthwise thereon, a slide adapted to slide on each bracket and provided with adjustable tool-holder and tools for making a cut into the molding, which cuts meet at an angle, means for reciprocating the slides, upper and lower rollers between which the molding is intermittently held and fed into the machine, and elastic means for holding down the molding, substantially as and for the purpose set forth.

3. In a machine for carving wood moldings or the like, the combination of a frame, two brackets angularly adjustable toward each other on the frame in a vertical plane and having guides lengthwise thereon, a slide adapted to slide on each bracket and provided with adjustable tool-holder and tools for making a cut into the molding, which cuts meet at an angle, a shaft rotating in bearings on the frame, means thereon in combination with connecting-rods for reciprocating the slides, said rods provided with means for length adjustment to suit varying positions of the brackets, means for intermittently feeding the molding through the machine, and elastic means for holding down the molding, substantially as set forth.

4. In a machine for carving wood moldings or the like, the combination with the tool-holders, tools secured thereto and coöperating in the work, means for adjusting said tool-holders in different planes, and means for reciprocating the same: of two smooth upper weighted rollers acting on the top of the molding, two lower rollers geared together and provided with toothed or roughened surfaces acting on the bottom of the molding, toothed change-wheels for causing the lower rollers to be positively rotated, a worm-wheel for operating the said tooth change-wheels, a worm with part straight and part helical thread for intermittently rotating the worm-wheel, a presser-pad on either side of the tool-holders, springs for holding said pads elastically against the molding and means for guiding the latter to and from the tools, substantially as and for the purpose set forth.

5. In a machine for carving wood moldings or the like, the combination of a reciprocated slide, a tool-holding chuck formed with V-grooves on two opposite sides, V-pieces adapted to said grooves, cheeks on the slide and set-screws therein for adjusting and fixing the V-pieces in the desired position, said chuck formed with a recess for receiving the tools, transverse clamping-bars and set-screws therein for holding down the tools in the recess when they have been adjusted in position, a transverse flange on the chuck and set-screws passing therethrough for setting the tools severally up to the work,

a lug on the slide and a set-screw passing therethrough and attached to the chuck and having nuts for pushing forward or drawing back the entire chucks with the tools fixed and adjusted therein, said chuck being removable bodily for sharpening the tools by merely loosening one of the last-named nuts and by setting back one of the V-pieces, substantially as set forth.

6. A machine for carving wood moldings or the like, consisting of a frame, a bracket angularly adjustable thereon in a more or less upright position, a bracket angularly adjustable thereon in a more or less horizontal position, said brackets having guides lengthwise thereon, slides adapted to work along the said guides, a part-circular guide on the frame, a part-circular slide adapted to work in said guide and having a connection to the horizontal slide, tool-holding devices adjustable on each of the three slides, a shaft rotating in bearings on the frame, means thereon in combination with connecting-rods for reciprocating the first-named slide or the secondly-named slide with its part-circular slide, and means for intermittently holding the wood and feeding it through the machine, substantially as set forth.

7. In a machine for carving wood moldings or the like, the combination of the frame, the table E adjustable on the frame toward and from the work and angularly relatively thereto, the bracket F adjustable on said frame vertically toward and from the work and angularly relatively thereto, said table and bracket having guides lengthwise thereon, slides adapted to work along said guides, a tool-holding device adjustable on each slide, means for reciprocating the slides, and means for intermittently holding the molding and feeding it through the machine, substantially as set forth.

8. In a machine for carving wood moldings or the like, the combination with the main frame, a vertical and a horizontal bracket adjustable angularly on said frame, tool-holders connected with and having motion on said brackets and means for reciprocating the tool-holders; of an auxiliary tool-holder oscillating in a plane angular relatively to the plane of motion of one of the first-named tool-holders, and means for oscillating the auxiliary tool-holder, for the purpose set forth.

9. In a machine for carving wood moldings or the like, the combination with the main frame, a vertical and a horizontal bracket adjustable angularly on said frame, tool-holders connected with and having motion on said brackets and means for reciprocating said tool-holders; of an auxiliary tool-holder-fulcrumed to oscillate on one of the aforesaid brackets and connected with and oscillated by the tool-holder thereon, for the purpose set forth.

10. A machine for carving wood moldings or the like, consisting of a frame, a bracket angularly adjustable thereon in a more or less vertical position, a second bracket angularly adjustable on said frame in a more or less horizontal position, tool-carriers having sliding motion in said brackets, and means for reciprocating the tool-carriers, for the purpose set forth.

11. The combination of a series of tools arranged in succession in the line of feed of the work, and means for reciprocating the tools of said series simultaneously, of means for repeatedly feeding the work for each reciprocation of the series of tools a distance equal to that between the centers of adjacent tools, said tools being shaped to form a portion of a complete design resulting from the coöperation of all the tools.

12. In a carving-machine, the combination with a reciprocating chuck, of a plurality of carving-tools carried thereby, and arranged in succession in the line of feed of the work and means for feeding the material to be carved a distance equal to that between the centers of adjacent tools and intermittently stopping it for the action of the carving-tools, all constructed and arranged so that the tools act successively and progressively to produce the design upon the material to be carved, substantially as described

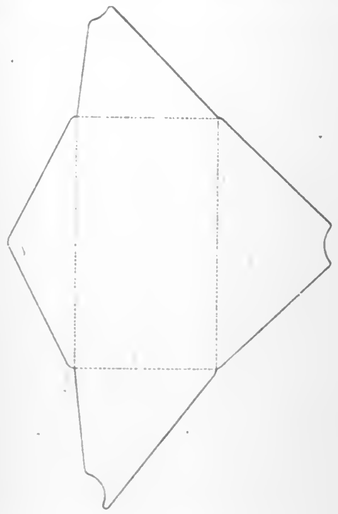
DESIGNS.

32,893. BADGE. SAMUEL A. ANDREWS, Tacoma, Wash. Filed May 22, 1900. Serial No. 17,610. Term of patent 7 years.



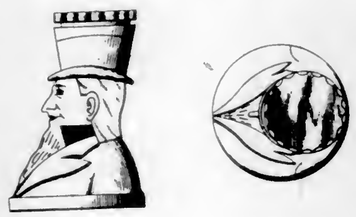
Claim.—The design for a badge, herein shown and described.

32,894. ENVELOP-BLANK. AUGUSTUS D. KLABER, New York, N. Y. Filed Aug. 4, 1899. Serial No. 726,206. Term of patent 7 years.



Claim.—The design for an envelop-blank herein shown and described.

32,895. BOTTLE. ULYSSES S. HUGGINS, Wellsburg, W. Va. Filed May 28, 1900. Serial No. 18,335. Term of patent 3½ years.



Claim.—The design for a bottle, as herein shown and described.

32,896. CURB-HOOK. FRANK SWALES, London, England. Filed May 29, 1900. Serial No. 18,467. Term of patent 14 years.



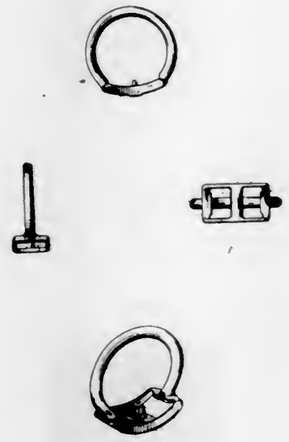
Claim.—The design for curb-hook substantially as herein shown and described.

32,897. HIP-STRAP BUCKLE. AUGUSTUS C. WOOLMAN, Bellefontaine, Ohio. Filed June 9, 1900. Serial No. 19,782. Term of patent 7 years.



Claim.—The design for a hip-strap buckle substantially as herein shown and described.

32,898. REIN-GUIDE. HERSCHEL J. M. BARNHART, What Cheer, Iowa. Filed June 1, 1900. Serial No. 18,780. Term of patent 7 years.



Claim.—The design for a rein-guide substantially as herein shown and described.

32,899. LUGGAGE-CARRIER. JAMES R. ELLIOTT, London, Canada. Filed June 1, 1900. Serial No. 18,782. Term of patent 7 years.



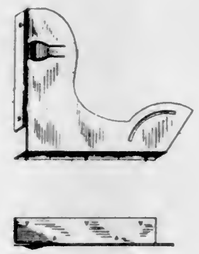
Claim.—The design for a luggage-carrier, as herein shown and described.

32,900. HINGE MEMBER. WILLIAM W. HUELSTER, Grand Rapids, Mich. Filed May 21, 1900. Serial No. 17,461. Term of patent 14 years.



Claim.—The design for a hinge member, as herein shown and described.

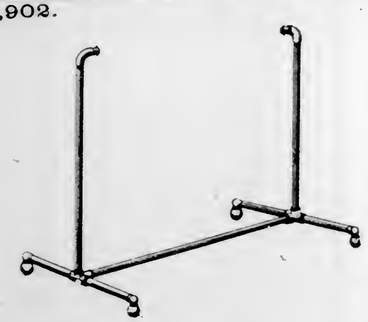
32,901. HINGE MEMBER. WILLIAM W. HUELSTER, Grand Rapids, Mich. Filed May 21, 1900. Serial No. 17,462. Term of patent 14 years.



Claim.—The design for a hinge member, as herein shown and described.

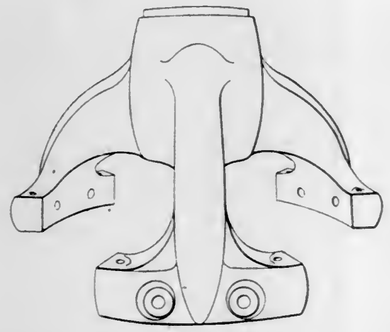
32,902. BASSINET-STAND. LOUIS MARCHAND, Jr., Pittsburg, Pa. Filed May 12, 1900. Serial No. 16,520. Term of patent 7 years.

82,902.



Claim.—The design for a bassinet-stand as herein described and illustrated in the accompanying drawing.

82,903. ORE-CRUSHER FRAME. ALBERT J. GATES and THOMAS W. CAPEN, Chicago, Ill., assignors to the Gates Iron Works, same place. Filed May 28, 1900. Serial No. 18,328. Term of patent 14 years.



Claim.—The design for an ore-crusher frame, as herein shown and described.

82,904. PEDESTAL-URINAL. FRANCIS T. MEYER, Montclair, N. J., assignor to The Meyer-Sniffen Company, Limited, New York, N. Y. Filed Apr. 9, 1900. Serial No. 12,251. Term of patent 14 years.



Claim.—The design for a pedestal-urinal substantially as shown and described.

82,905. CLOTHES-PIN. JAMES B. WALKER, Rush Springs, Ind. Ter., assignor of one-half to Henry S. Hughes, same place. Filed Mar. 31, 1900. Serial No. 11,026. Term of patent 3½ years.



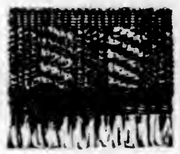
Claim.—The design for a clothes-pin herein shown and described.

82,906. TRIMMING. PAUL GUMBINNER, New York, N. Y. Filed May 4, 1900. Serial No. 15,549. Term of patent 7 years.



Claim.—The design for a trimming herein shown and described.

82,907. SKIRT-PROTECTOR. CHRISTIAN SEIDEL, New York, N. Y., assignor to Christopher E. Hertlein, same place. Filed June 6, 1900. Serial No. 19,326. Term of patent 7 years.



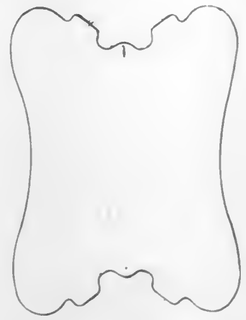
Claim.—The design for a skirt-protector, as shown and described.

82,908. SKIRT-PROTECTOR. CHRISTIAN SEIDEL, New York, N. Y., assignor to Christopher E. Hertlein, same place. Filed June 6, 1900. Serial No. 19,327. Term of patent 7 years.



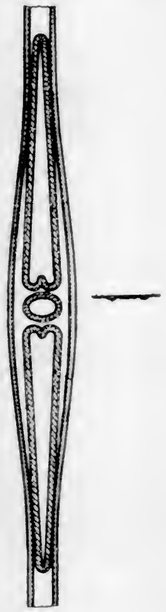
Claim.—The design for a skirt-protector, as shown and described.

82,909. SHIRT-FRONT. FRANCIS HENRY WHITEHOUSE, Sheffield, England. Filed Feb. 12, 1900. Serial No. 5,031. Term of patent 14 years.



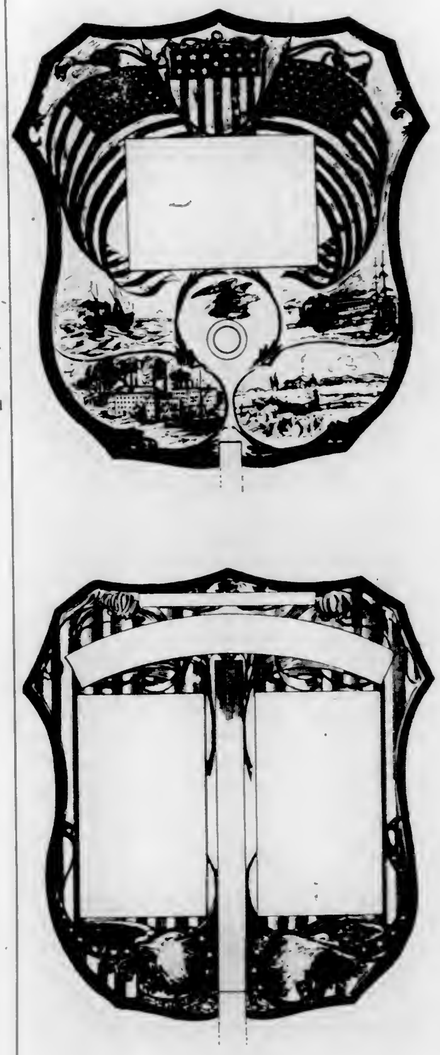
Claim.—The design for a shirt-front as herein shown and described.

82,910. BELT-BODY. HENRY J. GAISMAN, New York, N. Y. Filed Apr. 9, 1900. Serial No. 12,252. Term of patent 3½ years.



Claim.—The design for a belt-body, as herein shown and described.

82,911. FAN. WILLIAM W. HANLON, Barnesville, Ohio. Filed May 3, 1900. Serial No. 15,415. Term of patent 3½ years.



Claim.—The design for a fan, as herein shown and described.

TRADE-MARKS

REGISTERED JULY 3, 1900.

34,835. UNBLEACHED-COTTON PIECE GOODS NOT FIGURED OR PRINTED. ASHTON, HOARE & COMPANY, LIMITED, Manchester, England. Filed May 7, 1900.



Essential feature.—The representation of a lion's head upright resting on a Roman lictor's fasces, in turn resting upon another heraldic device, all substantially after the style or manner of a crest. Used since April 4, 1899.

34,836. VELVET RIBBONS. A. & M. LEVY, New York, N. Y. Filed May 26, 1900.



Essential feature.—An annulus and the numeral "2000." Used since January 1, 1898.

34,837. LEATHER FOOTWEAR. PRESTON B. KEITH SHOE COMPANY, Brockton, Mass. Filed June 2, 1900.

KONQUEROR

Essential feature.—The word "KONQUEROR." Used since March 10, 1900.

34,838. CERTAIN NAMED SADDLERY GOODS. FAATZ FELTING CO., Lestershire, N. Y. Filed May 24, 1900.



Essential feature.—The representation of an eagle. Used since 1888.

34,839. CAVIAR. THE BUCKEYE FISH COMPANY, Cleveland, Ohio. Filed May 28, 1900.

ERO

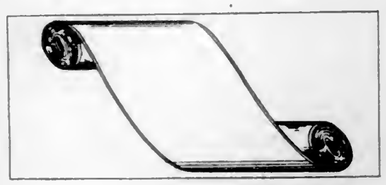
Essential feature.—The word "ERO." Used since April 1, 1900.

34,840. WHEAT-FLOUR. GEORGE C. CHRISTIAN, Minneapolis, Minn. Filed Mar. 29, 1900.

NEW CENTURY.

Essential feature.—The words "NEW CENTURY." Used since February 1, 1900.

34,841. OLEOMARGARIN AND BUTTERINE. THE OAKDALE MANUFACTURING COMPANY, Providence, R. I. Filed Jan. 22, 1900.



Essential feature. The representation of a scrolled band, red in color, presenting rolls at its ends and a broad ogee-curved surface between its ends and arranged upon a rectangular background of blue. Used since July 1, 1891.

34,842. SNUFF. AMERICAN SNUFF COMPANY, Jersey City, N. J., and New York, N. Y. Filed May 12, 1900.

HORSE SHOE

Essential feature.—The words "HORSE SHOE." Used since April 20, 1900.

34,843. CERTAIN NAMED FOOD COMPOUNDS. CHANNING H. COOK, New York, N. Y. Filed May 24, 1900.



Essential feature.—The figure of a man and a column showing the man about to cut or sculpture a column with hammer and chisel. Used since April 25, 1900.

34,844. TONIC. JOHN C. WILSON, Houston, Tex. Filed Dec. 5, 1899.



Essential feature.—The representation of a shield, flags, and a liberty-cap. Used since August 1, 1899.

34,845. TONIC. JOHN C. WILSON, Houston, Tex. Filed Apr. 16 1900.

Vinosula

Essential feature.—The word "VINOSULA." Used since August 1, 1899.

34,846. PHARMACEUTICAL PREPARATIONS FOR LUNG TUBERCULOSIS. GUSTAV KÖHER, Hanover, Germany. Filed Mar. 1, 1900.

TUBERKEL TOD



Essential feature.—The representation of a thorax and the compound word "TUBERKEL-TOD." Used since October, 1899.

34,847. CARBON-PAPER. MITTAG & VOLGER, Park Ridge, N. J. Filed May 23, 1900.

GALLINIPPER

Essential feature.—The word "GALLINIPPER." Used since April 26, 1896.

34,848. PENS. C. HOWARD HUNT PEN MANUFACTURING COMPANY, Camden, N. J. Filed May 1, 1900.

97

Essential feature.—The numeral "97." Used since April 14, 1900.

84,849. FONTS OF TYPE. AMERICAN TYPE FOUNDERS' COMPANY, New York, N. Y. Filed Apr. 14, 1900.

CAMELOT

Essential feature.—The word "CAMELOT." Used since November, 1898.

84,850. ILLUMINATING ARTICLES AND PARTS THEREOF AND INCANDESCENT THREADS FOR ELECTRIC LIGHTING. "ORLOW" GESELLSCHAFT FÜR ELEKTRISCHE BELEUCHTUNG, MIT BESCHRÄNKTER HAFTUNG, Berlin, Germany. Filed Nov. 7, 1899.

ORLOW

Essential feature.—The word "ORLOW." Used since December 1, 1898.

84,851. CERTAIN NAMED FURNITURE. H. HERRMANN LUMBER COMPANY, New York, N. Y. Filed May 7, 1900.

Essential feature.—The letters "H H" in monogram form and the representation of a seal. Used since 1897.

84,852. PORTLAND CEMENT. THE ALMA PORTLAND CEMENT COMPANY, Wellston, Ohio. Filed Apr. 27, 1900.

Essential feature.—The representation of a man holding aloft a ball or globe. Used since June 11, 1898.

PHOTO-LITH. THE NORRIS PETERS CO. WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

LEPRINCE *v.* ILER & MORRIS.

Decided June 16, 1900.

1. TRADE-MARK INTERFERENCE—PRIORITY—ADOPTION AND USE IN FOREIGN COUNTRY.

In an interference between a registrant and an applicant, the latter being the last to adopt and use the trade-mark in the United States, although having adopted and used it in a foreign country prior to the adoption and use by the registrant in the United States, *Held* that priority of adoption and use must be awarded to the registrant in the absence of any proof of fraud on his part.

2. SAME—SAME—SAME.

I. & M., registrants, filed their application on June 2, 1885, and a certificate of registration was issued to them on July 14, 1885. L., an applicant and junior party, filed his application on November 30, 1898, and proved adoption and use of the mark in France about January 1, 1880. He did not use the mark in the United States prior to June 2, 1885. *Held* that I. & M. on this state of facts are entitled to an award of priority.

3. SAME—SAME—SAME.

Where L. insists that he is the lawful owner of the trade-mark in France and that he is entitled under the treaty relating to trade-marks existing between France and the United States to an award of priority and to receive the same privileges in this country as in France, *Held* that he is entitled to no other or further rights because he is a citizen of France than if he were a citizen of the United States, and a citizen of the United States is not entitled to avail himself of foreign adoption and use over another party who has adopted and used the mark in this country.

APPEAL from Examiner of Interferences.

TRADE-MARK FOR MEDICINE.

Application of Maurice Leprince for registration filed November 30, 1898, No. 57,152. Trade-mark of Iler & Morris registered July 14, 1885, No. 12,407.

Mr. James L. Skidmore for Leprince.

Messrs. Munn & Co. for Iler & Morris.

DUELL, *Commissioner:*

This appeal from the decision of the Examiner of Interferences awarding priority of adoption and use of the trade-mark "Cascarine" for a medicine to Iler & Morris presents the single question whether an applicant for the registration of a trade-mark must to prevail against a registrant prove adoption and use by him in this country prior to the date of registration of his adversary's mark.

Iler & Morris are registrants, having a certificate of registration granted to them July 14, 1885, upon an application filed June 2, 1885. They have taken no testimony, relying upon their record date.

Leprince has proven the adoption and use of the mark in France not later than January 1, 1880, or more than five years prior to Iler & Morris's record date. His application for the registry of the mark in this country was filed November 30, 1898, more than thirteen years after the registration by Iler & Morris. The testimony does not warrant a finding that the trade-mark was used by Leprince in this country prior to June 2, 1885. It is true that Leprince in answer to question 5 says:

> The mark has been used, since the date of introduction by me, throughout the world, especially in England, the United States, Russia, Spain, etc. I have sent to private individuals in the United States my "Cascarine" as early as 1883. These persons had used the "Cascarine" before while abroad, and not being able to find it in their own country they had applied to me for it. Gradually the sale increased until I began to export my medicine by large quantities, and now it is an article of extensive use. In the hands of my agents, Messrs. Fougera & Co., of New York, for whom I have filled orders for ten thousand boxes at a time.

Disregarding the fact that this statement is entirely unsupported, it is not sufficient to prove adoption and use of the mark by Leprince in this country prior to June 2, 1885. The Circuit Court of Appeals for the Third Circuit in *Richter* v. *Reynolds et al.* (67 O. G., 404) laid down a rule which is controlling in this case as to the extent of use necessary to establish adoption and use in this country of a trade-mark. The court said:

> The defendants in the case before us, had, in good faith, used the mark complained of as early as in the fall of 1887; and, as appears from the findings of the court below, the complainant, although there is evidence of his having established a branch house in New York at some time not fixed, but certainly after May 1, 1887, has not shown sales of his medicines in this country prior to the defendants' use, nor any importations, except to a limited extent upon especial orders, to supply particular customers. This is not enough. It does not amount to use "in such circumstances, as to publicity and length of use, as to show an intention to adopt it as a trade-mark for a specific article." It indicates no intention to acquire title, and therefore none was acquired.

It must also be borne in mind that Iler & Morris being registrants the burden of proof to establish priority is upon Leprince. (*Manitowoc Manufacturing Co.* v. *Dickerman*, 57 O. G., 1721.)

If the time of the use of the trade-mark by Leprince in this country is immaterial and prior adoption and use by him of the mark in a foreign country is sufficient, then he is entitled to prevail in this proceeding. Prior use of the mark in a foreign country is not, however, in my opinion, sufficient. Suppose Leprince, claiming a common-law right to the trade-mark in question, should bring suit in the proper forum against Iler & Morris for infringement. Under the facts disclosed by this record I apprehend that he could not successfully maintain his claim. Without some trade in this country he could not have in the United States a common-law trade-mark. His adoption and use

of the trade-mark in this country being subsequent to that of Iler & Morris, they could not be held to be infringers of a right which did not exist (*Richter* v. *Anchor Remedy Co.*, 52 Fed. Rep., 455, 458.)

It is strenuously insisted that Leprince being the lawful owner of the mark in France is entitled under the treaty relating to trade-marks existing between France and the United States to an award of priority and to receive the same privileges that he has in France. It is my understanding that he is entitled to no other or further rights because he is a citizen of France than though he were a citizen of the United States. Conceding that under the trade-mark treaty between the United States and France he is entitled to the same protection as a citizen of the United States, that does not help him at all. If this proceeding was pending between two citizens of the United States one of whom relied upon a foreign adoption and use of the trade-mark and the other upon the home adoption and use of the trade-mark, the latter would prevail.

There is no escape from the conclusion that in an interference between a registrant and an applicant (the latter being the last to adopt and use the trade-mark in the United States, although having a foreign adoption and use prior to the United States adoption and use by the registrant) that priority of adoption and use must be awarded to the registrant in the absence of any proof of fraud in the adoption and use of the mark in question. It follows, therefore, that the decision of the Examiner of Interferences awarding priority to Iler & Morris was correct, and it is therefore affirmed.

EX PARTE ADAM.

Decided June 26, 1900.

COPIES OF AN APPLICATION NOT FURNISHED TO LICENSEE.

A party having a mere personal license for certain of the States which is not transferable owns no interest in the invention either legal or equitable and his rights will not be prejudiced by a refusal to allow him to inspect or obtain copies of the application. *Held*, therefore, that he is not entitled to copies.

IN the matter of the petition of William J. Adam to inspect and obtain copies of the application of William B. Folger filed May 31, 1895, No. 551,090.

Messrs. Banning & Banning for the petitioner.

Mr. George J. Murray for the applicant.

CHAMBERLIN, *Assistant Commissioner:*

It appears from the showing in this case that Adam is manufacturing water-heaters made in accordance with the description in the application above referred to under a license given him by Folger. That license is recorded in this Office. It is merely personal for certain of the States and is not transferable.

As to the ground upon which the copies requested should be furnished, Adam says:

* * * As such licensee your petitioner is interested in knowing the condition of said application and whether the same has been and is being duly and vigorously prosecuted. * * *

The question, however, is not whether he wishes and it would be to his advantage to know the condition of the application, but is whether he has such an interest in the invention or in the patent, if granted, as will entitle him to see the case in spite of the opposition of the applicant, Folger.

It is well settled that a licensee does not own an interest in the patent under which he is operating. (*Heaton Button Fastener Co.* v. *Eureka Specialty Co.*, 78 O. G., 171.) In that case the court said:

A license operates only as a waiver of the monopoly as to the licensee "and estops the licensor from exercising its prohibitory powers in derogation of the privileges conferred by him upon the licensee." (Rob. on Pats., sects. 806-808.)

It has been said that the sole matter conveyed in a license is the right not to be sued. (*Hicks* v. *Stiebel*, 4 Hun., 146.)

A licensee is one who is not the owner of an interest in the patent, but who has by contract acquired a right to make, or use, or sell machines embodying the invention.

From a careful examination of the license I am satisfied that Adam not only owns no interest in the invention covered by the application either legal or equitable, but it does not appear that his rights will be prejudiced by the refusal to allow him to obtain copies of that application. Copies of the papers in the case would inform him whether the application was being diligently prosecuted and whether a patent was likely to be granted on it and might help him to determine whether or not he wished to keep the license alive; but if he wished the right to be kept informed as to the progress of the application he should have provided for it when he made the contract of license.

Copies of applications have in some instances been furnished to parties having an equitable interest in the inventions, (*Reiner* v. *Macphail*, 89 O. G., 521; *ex parte Swan*, 67 MS. Dec., 398;) but no such interest appears in this case.

The petition is denied.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—First Circuit.

KOENEN *v.* DRAKE *et al.*

Decided April 26, 1900.

KOENEN—DESIGN FOR AN EYEGLASS-CASE—NO INVENTION—INVALID.

Letters Patent No. 29,485, granted to John G. Koenen on October 18, 1898, for a design for an eyeglass-case, *Held* to be void, as a comparison of the patented design with the old form of eyeglass-case shows it to be neither new nor original and not to involve invention.

APPEAL from the Circuit Court of the United States for the District of Massachusetts.

This was a suit in equity for infringements of Design Patent No. 29,485, issued to complainant for a design for eyeglass-cases.

Mr. H. Albertus West for the appellant.

Mr. Alexander P. Browne for the appellees.

Before COLT, PUTNAM, and WEBB, Judges.

COLT, *J.:*

This is an appeal from a decree dismissing a bill for alleged infringement of a patent for a design. The circuit court rested its decision mainly on the question of infringement, although it doubted the patentability of the design. We are clear that the design does not show any patentable features. The prior art discloses eyeglass-cases having substantially the characteristics or distinctive marks of this design as set forth in the specification of the patent. To entitle a person to a patent under section 4929, Revised Statutes, the design must be new, useful, and original in shape or configuration. A comparison of the patented design with the old forms of eyeglass cases shows that it does not meet the requirements of the statute. It is not shown to be either new or original, and such changes in outline as are visible to the eye relate merely to details and do not involve any invention.

The decree of the circuit court is affirmed, and the costs of appeal are awarded to the appellees.

Revision of Classification.

(ORDER NO. 1,355.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 9, 1900

The following changes in classification of inventions are hereby directed, to take effect this day:

Division XVIII, class 121, Steam-Engines, subclass 54, Steam-sanding, is abolished and the patents composing the same are transferred to class 105, Railway Rolling-Stock, subclass Sanding devices. Division XXXIV.

Division XI, class 1, Nailing and Stapling, establish the following subclass and definition:

24.5. MACHINE-, SHOE, STRIPS. Strips in which pegs, nails, or tacks are mounted to be fed into the various strip-machines.

Division XIV, class 153, Metal-Bending, abolish all the subclasses and substitute therefor the following list of subclasses:

CLASS 153.—METAL-BENDING.

11. Angular—
12. Combined reciprocating bender and pivoted side-shaper,
13. Combined reciprocating bender and sliding side-shaper,
15. Pivoted bender—
16. Bed-clamped work—
17. Multiple side—
18. Inclosed forms,
19. Rotary,
20. Bender-attached work,
21. Reciprocating bender—
25. Bed-clamped work—
26. Rotary,
27. Rotary bending-head,
22. Inclosed forms,
23. Fan-shaped dies,
24. Screw-operated,
28. Roll—
29. Flanging—
31. Pivoted table,
30. Tinners' rolls,
14. Roofers' carriages.
9. Beading and crimping rolls.
1. Binding and covering.
64. Coiling—
65. Shunt-guide,
66. Spiral die,
67. Traveling guide or mandrel.
2. Combined operations—
3. Angular bending and curving—
4. Pivoted bender—
5. Changeable former,
6. Angular bending and twisting,
7. Curving and corrugating—
8. Hammer-action.
68. Corrugating—
74. Bed and cylinder,
75. Pivoted bender,
76. Reciprocating bender,
77. Roll,
69. Tubes—
70. Longitudinal bend,
Corrugatnig—
Tubes—
71. Spiral bend—
72. Roll,
73. Transverse bend.
32. Curving or straightening—
62. Boiler-formers,
33. Combined reciprocating bender and pivoted side-shaper,
34. Combined reciprocating bender and sliding side-shaper,
63. Flexible cores,
37. Flier-frame,
39. Pivoted bender—
40. Bender-attached work—
41. Beading and curving,
42. Beading or tube-forming,
43. Traveling bed,
44. Opposing jaws,
45. Sweep-arm—
46. Stationary clamped work,
47. Variable die-face,
48. Reciprocating bender—
50. Automatic bend-detector,
49. Inclosed forms,
52. Laterally-traveling,
53. Screw-operated,
51. Variable die-face,
54. Roll—
56. Angle-bar—
57. Sectional rolls,
58. Barrel-shaped,
59. Edge-curling,
61. Inclosed-work releasing,
55. Hoop,
60. Skewed,
35. Stretching,
38. Three-joint jacks,
36. Traveling flexible core.
10. Miscellaneous.
78. Twisting.

C. H. DUELL,
Commissioner.

CLASS 153.—METAL-BENDING.

DEFINITIONS.

Class.

153. METAL-BENDING. This class includes all machines and processes which simply bend metal and are not elsewhere classified under more specific titles.

(Note.—It does not include machines or processes for closing or pressing lock-seams, for drawing plates by spinning or by die-presses to form dished or tubular articles, or forming horseshoes, or hooks and eyes.)

Subclasses.

11. ANGULAR. Miscellaneous subclass of machines and processes which make angular bends in metal. In some cases the work is bent back upon itself.

12. ANGULAR, COMBINED RECIPROCATING BENDER AND PIVOTED SIDE-SHAPER. Employs a reciprocating bender to perform one step and one or more pivoted benders operating at the side of the reciprocating bender to perform the other step.

13. ANGULAR, COMBINED RECIPROCATING BENDER AND SLIDING SIDE-SHAPER. Employs a reciprocating bender to perform one step and one or more sliding benders operating at the side of and at or near a right angle to the reciprocating bender to perform the other step.

15. ANGULAR, PIVOTED BENDER. The part or bender which engages the metal to form the bend is pivoted.

16. ANGULAR, PIVOTED BENDER, BED-CLAMPED WORK. The work is secured to a bed by a movable clamping-jaw, while the bender operates upon the free or projecting portion thereof. Contains mostly devices for turning the edges of sheets to form seaming-hooks.

17. ANGULAR, PIVOTED BENDER, BED-CLAMPED WORK, MULTIPLE SIDE. Bends more than one of the free portions of the work extending beyond the sides of the bed or clamp.

18. ANGULAR, PIVOTED BENDER, BED-CLAMPED WORK, MULTIPLE SIDE, INCLOSED FORMS. Makes inclosed bodies or polygonal shapes from rods and sheets.

19. ANGULAR, PIVOTED BENDER, BED-CLAMPED WORK, ROTARY. The bending device operates on a plate clamped to a rotating bed. The bender is, as a rule, carried by a pivoted frame and may have an engaging antifriction-roller.

20. ANGULAR, PIVOTED BENDER, BENDER-ATTACHED WORK. The bender which has the work attached thereto turns about a pivot or a fixed axis.

21. ANGULAR, RECIPROCATING BENDER. The part or bender which engages the metal has a reciprocating or right-line movement.

25. ANGULAR, RECIPROCATING BENDER, BED-CLAMPED WORK. The portion of the work projecting beyond the bed on which it is clamped is bent.

26. ANGULAR, RECIPROCATING BENDER, BED-CLAMPED WORK, ROTARY. The work while clamped to a rotating bed is bent, usually to form flanges. The bender is in most cases provided with an antifriction-roller.

27. ANGULAR, RECIPROCATING BENDER, BED-CLAMPED WORK, ROTARY BENDING-HEAD. A rotating bending-head, usually carrying antifriction devices, moves in the path of the metal to be bent. Mostly for flanging holes.

22. ANGULAR, RECIPROCATING BENDER, INCLOSED FORMS. Makes tube-shaped or polygonal bodies from bars or sheets.

23. ANGULAR, RECIPROCATING BENDER, PAN-SHAPED DIES. Includes a female die, shaped like the common angular bake-pan, into which the male die presses sheets to form pan-shaped bodies, the dies being adapted to permit the projection of the ears at the angles.

24. ANGULAR, RECIPROCATING BENDER, SCREW-OPERATED. The non-rotating bender is drawn by a screw in the path of a portion of the work. This subclass also includes devices which bend by repeated hammer-strokes and are fed by a screw to progressively bend the work. The devices are mostly for flanging holes.

28. ANGULAR, ROLL. Makes angles by the action of rolls. Mere antifriction-rolls carried by a pivoted or a reciprocating bender are found under the subclasses having these titles.

29. ANGULAR, ROLL, FLANGING. Flanges plates, usually circular, by passing them between feeding-rolls.

31. ANGULAR, ROLL, FLANGING, PIVOTED TABLE. Flanges plates by feeding them between rolls while the table or bed supporting the plates is gradually tilted.

30. ANGULAR, ROLL, FLANGING, TINNERS' ROLLS. Forms flanges by means of the common machine known as "tinners' rolls." They usually form seaming-flanges on the edges of sheets or inclosed forms.

14. ANGULAR, ROOFERS' CARRIAGES. Devices drawn or pushed along by roofers to turn up the flanges or form hooks for the seams.

9. BEADING AND CRIMPING ROLLS. Beads and crimps metal by means of rolls, commonly known as "tinners' rolls." They do not curl the edges, devices which perform such an operation being under Curving or straightening, roll, edge-curling, in this class.

1. BINDING AND COVERING. Binds and covers with metal various articles, as stove-boards, moldings, corset-stays, etc.

64. COILING. Includes the bending of tubes, bars, and sheets into coils, but does not include the combined operations of bending and tempering.

65. COILING, SHUNT-GUIDE. A shunting device, usually an inclined block or an offset or skewed roll, guides the metal to form a helix.

66. COILING, SPIRAL DIE. The metal is forced through a spiral die or the latter is forced over the metal to form a helix.

67. COILING, TRAVELING GUIDE OR MANDREL. The metal to be coiled is fed from a traveling guide or the mandrel passes along the guide as the coil is formed.

2. COMBINED OPERATIONS. Includes all combined operations not belonging wholly to any other subclass.

3. COMBINED OPERATIONS, ANGULAR BENDING AND CURVING. The metal bent is given both an angle and a curve.

4. COMBINED OPERATIONS, ANGULAR BENDING AND CURVING, PIVOTED BENDER. That part of the bender which engages the metal is pivoted.

5. COMBINED OPERATIONS, ANGULAR BENDING AND CURVING, PIVOTED BENDER, CHANGEABLE FORMER. Makes angles and curves of various forms by interchanging forming-blocks, over which the work is bent, often by hand.

6. COMBINED OPERATIONS, ANGULAR BENDING AND TWISTING. The metal is both angularly bent and twisted.

7. COMBINED OPERATIONS, CURVING AND CORRUGATING. The metal is both curved and corrugated.

8. COMBINED OPERATIONS, CURVING AND CORRUGATING, HAMMER-ACTION. Operates by a reciprocating or oscillating hammer-stroke, usually to make curved moldings, and works progressively along the metal as it is fed.

68. CORRUGATING. Forms corrugations. Devices for making corrugations by forming one bend at a time are included whenever the mechanism is especially adapted or constructed to make a series of bends.

74. CORRUGATING, BED AND CYLINDER. A corrugated cylinder or a segment thereof coöperates with a corrugated bed to corrugate the metal between them.

75. CORRUGATING, PIVOTED BENDER. A pivoted device engages the metal.

76. CORRUGATING, RECIPROCATING BENDER. A reciprocating device engages the metal.

77. CORRUGATING, ROLL. Makes corrugations by passing the work between feeding-rolls.

69. CORRUGATING, TUBES. Makes corrugations in tubes.

70. CORRUGATING, TUBES, LONGITUDINAL BEND. Makes longitudinal corrugations in tubes and tube-like articles, such as caps and cups.

71. CORRUGATING, TUBES, SPIRAL BEND. Makes spiral bends or screw-threads in tubes or tube-like articles, such as caps.

72. CORRUGATING, TUBES, SPIRAL BEND, ROLL. Makes spiral bends in tubes or tube-like articles by passing them between feeding-rollers.

73. CORRUGATING, TUBES, TRANSVERSE BEND. Makes transverse bends in tubes or tube-like articles.

32. CURVING OR STAIGHTENING. Miscellaneous subclass of machines and processes for curving or straightening metal.

62. CURVING OR STRAIGHTENING, BOILER-FORMERS. Formers or patterns over or about which washboilers are bent or shaped.

33. CURVING OR STRAIGHTENING, COMBINED RECIPROCATING BENDER AND PIVOTED SIDE-SHAPER. Machines having a reciprocating bender performing one step and one or more pivoted benders operating at the side of the reciprocating bender and performing the other step.

34. CURVING OR STRAIGHTENING, COMBINED RECIPROCATING BENDER AND SLIDING SIDE-SHAPER. Machines having a reciprocating bender performing one step and one or more sliding benders operating at the side of and at or near a right angle to the reciprocating bender and performing the other step.

63. CURVING OR STRAIGHTENING, FLEXIBLE CORES. Cores or fillers which are put into tubes to support the walls during the bending action. Includes such fillers as spheres, sand, liquid, as well as coils of wire, plates, etc.

37. CURVING OR STRAIGHTENING, FLIER-FRAME. The metal is straightened by passing through a rotary frame which bends every part in a circular lateral direction.

39. CURVING OR STRAIGHTENING, PIVOTED BENDER. The part or bender which engages the metal is pivoted.

40. CURVING OR STRAIGHTENING, PIVOTED BENDER, BENDER-ATTACHED WORK. The work is attached to and moves with the pivoted bender. Cylinders and rods having means, as a slot or a clamp, for securing the work may be found here or in the subclasses subordinate hereto.

41. CURVING OR STRAIGHTENING, PIVOTED BENDER, BENDER-ATTACHED WORK, BEADING AND CURVING. Forms a bead or curl, as under the last subclass above, and in addition forms a curve in a similar manner. This subclass is mostly composed of machines for making beaded eaves-troughs.

42. CURVING OR STRAIGHTENING, PIVOTED BENDER, BENDER-ATTACHED WORK, BEADING OR TUBE-FORMING. Form tubes or tube-like beads on the edges of sheets.

43. CURVING OR STRAIGHTENING, PIVOTED BENDER, BENDER-ATTACHED WORK, TRAVELING BED. The work is attached to a cylinder or other pivoted device, while a traveling bed upon which the work is laid slides so as to support it at the line of curvature.

44. CURVING OR STRAIGHTENING, PIVOTED BENDER, OPPOSING JAWS. The work is bent by jaws which move toward each other.

45. CURVING OR STRAIGHTENING, PIVOTED BENDER, SWEEP-ARM. The work is bent by an arm having a portion which sweeps or travels along the form or bed upon which the work remains stationary.

46. CURVING OR STRAIGHTENING, PIVOTED BENDER, SWEEP-ARM, STATIONARY CLAMPED WORK. The work is held from endwise movement by a clamp, while a sweep-arm bends the metal over the bed or form.

47. CURVING OR STRAIGHTENING, PIVOTED BENDER, VARIABLE DIE-FACE. The working face of the die may be adjusted to various shapes or contours. This subclass is mostly composed of machines for bending leaf-springs.
(Note.—Machines and processes involving tempering are elsewhere classified.)

48. CURVING OR STRAIGHTENING, RECIPROCATING BENDER. The part or bender which engages the metal has a reciprocating or right-line movement.

50. CURVING OR STRAIGHTENING, RECIPROCATING BENDER, AUTOMATIC BEND-DETECTOR. Bends are detected by feelers which make the bend-correcting device operative.

49. CURVING OR STRAIGHTENING, RECIPROCATING BENDER, INCLOSED FORMS. Forms tube-shaped or annular bodies from sheets or bars. Here may be found many machines for forming eyes on rods or beads or tubes on sheets.

52. CURVING OR STRAIGHTENING, RECIPROCATING BENDER, LATERALLY-TRAVELING. The bender not only reciprocates, but is also movable, together with its carrier-frame, bodily along the bed or work.

53. CURVING OR STRAIGHTENING, RECIPROCATING BENDER, SCREW-OPERATED. A screw actuates the bender to reciprocate it.

51. CURVING OR STRAIGHTENING, RECIPROCATING BENDER, VARIABLE DIE-FACE. The working face of the die may be adjusted to various shapes or contours. This subclass is mostly composed of machines for bending leaf-springs.
(Note.—Machines and processes involving the step of tempering are classified elsewhere.)

54. CURVING OR STRAIGHTENING, ROLL. Bends by passing the work through feeding-rolls.

56. CURVING OR STRAIGHTENING, ROLL, ANGLE-BAR. Bends railroad-rails and other angle-bars by rolls especially constructed for such work.

57. CURVING OR STRAIGHTENING, ROLL, ANGLE-BAR, SECTIONAL ROLLS. The rolls are composed of sections exchangeable or adjustable, to accommodate angle-bars of various shapes and dimensions.

58. CURVING OR STRAIGHTENING, ROLL, BARREL-SHAPED. Employs one or more barrel-shaped rolls, which thin the metal on a longitudinal line to make or remove curves.

59. CURVING OR STRAIGHTENING, ROLL, EDGE-CURLING. Curls or beads the edges of metal. Sometimes curls the edge over a wire.

61. CURVING OR STRAIGHTENING, ROLL, INCLOSED-WORK RELEASING. Machines having mechanism for releasing inclosed work, as tubes, tires, etc., from the rolls.

55. CURVING OR STRAIGHTENING, ROLL, HOOP. Flares or flares and curves hoops.

60. CURVING OR STRAIGHTENING, ROLL, SKEWED. The rolls have their axes angularly arranged relatively to each other.

35. CURVING OR STRAIGHTENING, STRETCHING. The metal is stretched to take out bends and unevenness.

38. CURVING OR STRAIGHTENING, THREE-POINT JACKS. Small portable devices engaging the metal at three points, one point being movable to bend the work. This subclass is composed mostly of axle-benders and jim-crows.

36. CURVING OR STRAIGHTENING, TRAVELING FLEXIBLE CORE. Machines for bending tubes in which a flexible core or a series of spheres or spools is made to travel within the tube.

10. MISCELLANEOUS. Miscellaneous subclass of machines and processes not classifiable in any of the other subclasses.

78. TWISTING. Gives twist to metal to form lightning-rods, augers, conveyer-flights, etc.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 92—No. 2. TUESDAY, JULY 10, 1900. PRICE—$5 per year.

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Registration of American and Spanish Patents in Cuba.

HEADQUARTERS DIVISION OF CUBA,
Havana, May 26, 1900.

The Military Governor of Cuba, upon the recommendation of the Secretary of Agriculture, Commerce, and Industries, directs the publication of the following order:

I. Notice is hereby given to all persons in legal possession of Letters Patent registered in Madrid, Spain, and extended to the Island of Cuba to exhibit the duplicates of models, plans, and specifications of their patents or an authenticated copy of the same, together with a certificate that they are in force in Spain, in accordance with section 5 of the Royal Decree of May 14, 1880, within six months from the date of this order, in order to protect them from pending infringements.

II. American patents already forwarded for registration and those that may hereafter be forwarded will at once be entered in the special register in the office of the Secretary of Agriculture, Commerce, and Industries conditionally, reserving the decision in regard to the definite inscription or absolute rejection of such as are determined to be infringements in accordance with the proofs obtained within the period of six months, as provided in paragraph I of this order, upon the expiration of which period the inscription will be made in full, leaving to the parties concerned after that date the right of settling their differences before courts of justice.

J. B. HICKEY,
Assistant Adjutant-General.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

CERTIFICATES OF REGISTRATION ISSUED JULY 10, 1900.

Labels.

7,682.—Title: "WOODROW'S ELECTRIC STRAW CLEANER." (For Cleaning Straw Hats.) *James Arthur Stirling Woodrow*, Boston, Mass. Application filed May 21, 1900.

7,683.—Title: "ANONA CHOP JAPAN TEA." (For Tea.) *Arbuckle Bros.*, New York, N. Y., and Chicago, Ill. Application filed June 15, 1899.

7,684.—Title: "FORTRESS." (For Coffee.) *James Heekin & Co.*, Cincinnati, Ohio. Application filed June 7, 1900.

7,685.—Title: "FOUNTAIN SQUARE." (For Coffee.) *James Heekin & Co*, Cincinnati, Ohio. Application filed June 7, 1900.

7,686.—Title: "THE BANKER." (For Cigars.) *John A. Crabb*, Eminence, Ky. Application filed June 18, 1900.

7,687.—Title: "CREAM OF MEXICAN CACTUS." (For Complexion-Cream.) *Ed. E. Dismuke*, Waco, Tex. Application filed May 28, 1900.

7,688.—Title: "EUREKA HAIR RESTORER." (For Hair-Restorer.) *Charles Specht*, New York, N. Y. Application filed June 18, 1900.

7,689.—Title: "DIAMOND STAR EMBROCATION." (For Rubbing.) *J. T. Wills*, Oakland, Cal. Application filed June 4, 1900.

7,690.—Title: "DR. GORDON'S LIVER PILLS." (For Liver-Pills.) *Gordon Medicine Co.*, Dunellen, N. J. Application filed June 7, 1900.

7,691.—Title: "DR. WASHINGTON'S AMERICAN LIFE BITTERS." (For Bitters.) *Henry Tielkemeyer*, St. Louis, Mo. Application filed June 18, 1900.

7,692.—Title: "KENDRICK'S PROPHYLAXIS." (For a Medicine.) *W. T. Kendrick*, Montgomery, Ala. Application filed June 4, 1900.

7,693.—Title: "GLORIA PASTILLES." (For a Medicine.) *Adolf D. Lindemann*, New York, N. Y. Application filed June 15, 1900.

7,694.—Title: "DR. KAY'S KIDNEYCURA." (For a Medicine.) *Dr. B. J. Kay Medical Company*, Saratoga Springs, N. Y. Application filed April 26, 1900.

7,695.—Title: "ANTI-SCOURS FOR CALVES." (For a Remedy.) *Philip M Egert*, Holland Patent, N. Y. Application filed June 14, 1900.

7,696.—Title: "ARIZONA KHAKIS." (For Melons.) *Phœnix Melon Growers' Association*, Phœnix, Ariz. Application filed June 5, 1900.

7,697.—Title: "UTAKA SUNBURST MANTLE." (For Light-Mantles.) *The Iowa Mantle Manufacturing Company*, Davenport, Iowa. Application filed June 19, 1900.

7,698.—Title: "NEW ERA MANTLE." (For Mantles.) *John Hermann Dubroic*, Columbus, Ohio. Application filed June 15, 1900.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business July 3, 1900

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. of applications awaiting action.
	In arrears—Under one month.			
217	XXXIII. *DESIGNS, †TRADE-MARKS, ‡LABELS AND PRINTS, Optics.	July 3	July 3	----
38	XXXV. Advertising, Baggage, Buckles, Buttons, and Clasps, Packing and Storing Vessels, etc.	June 29	July 2	30
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250	VIII. Furniture, Beds, Store Furniture, etc.	June 18	June 28	117
111	XXXII. Bottles and Jars, Carbonating Beverages, Refrigeration, Shipping and Storing Vessels, etc.	June 15	June 26	163
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153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	June 11	June 25	56
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	June 9	June 21	115
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	June 8	June 23	176
105	XI. Boots and Shoes, Harness, Hose and Belting, and Leather-Working Machinery.	June 8	June 21	116
240	VII. Velocipedes, Games, and Toys	June 8	June 20	192
39	XXXI. Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	June 7	June 30	63
122	XXIV. Sewing-Machines, Apparel, and Toilet.	June 7	June 20	126
228	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	June 6	June 25	90
246	I. Tillage and Fences	June 6	June 21	107
95	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	June 6	June 21	84
93	XXI. Textiles, etc	June 6	June 20	95
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	June 5	June 30	89
221	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	June 5	June 22	115
255	XII. Mechanical Engineering, Store-Service, etc.	June 5	June 21	141
102	XIX. Stoves and Furnaces	June 4	June 22	145
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	June 4	June 22	98
80	IV. Civil Engineering, Fire-Proof Buildings, Bridges, Water Distribution, etc.	June 4	June 21	132
253	X. Carriages and Wagons	June 4	June 21	109
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	June 4	June 21	122
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87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	June 4	June 20	94
248	XVIII. Steam-Engineering, etc	June 4	June 18	133
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	Between one and two months.			
35	XXVIII. Pneumatics, Air and Gas Engines, etc.	June 3	June 3	222
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	June 2	June 18	144
215	XVII. Printing, Type-Writing Machines, and Linotyping.	June 2	June 16	103
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	June 1	June 20	109
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209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	May 3	June 18	154

Total number of applications awaiting action.....4,169

Applications Under Examination—Continued.

Under one month.			
*Designs	July 3	July 3	----
†Trade-Marks	July 3	July 3	----
‡Labels and Prints	July 3	July 3	----

ISSUE OF JULY 10, 1900.

Patents	447—	No. 653,201 to No. 653,647, inclusive.
Designs	29—	No. 32,912 to No. 32,940, inclusive.
Trade-Marks	42—	No. 34,853 to No. 34,894, inclusive.
Labels	17—	No. 7,682 to No. 7,698, inclusive.
Reissues	2—	No. 11,840 to No. 11,841, inclusive.
Prints	None.	
Total issue	537	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	1	Nevada		
Arizona		2	New Hampshire	5	
Arkansas			New Jersey	16	1
California	13	3	New Mexico Territ'y		
Colorado	13		New York	63	23
Connecticut	9		North Carolina	3	
Delaware			North Dakota	1	
District of Columbia	5	1	Ohio	31	4
Florida	1		Oklahoma Territ'y	4	
Georgia	5		Oregon		
Hawaii			Pennsylvania	40	
Idaho	3		Rhode Island	5	
Illinois	52		South Carolina		
Indian Territory			South Dakota	1	
Indiana	10		Tennessee	6	
Iowa	9	1	Texas	6	1
Kansas	1		Utah	1	
Kentucky	3	1	Vermont	4	
Louisiana	4		Virginia	3	
Maine	5		Washington	3	
Maryland	17	1	West Virginia	2	
Massachusetts	37	7	Wisconsin	9	
Michigan	15	1	Wyoming		
Minnesota	4	2	U. S. Army		
Mississippi	2		U. S. Navy		
Missouri	10	2			
Montana	1		Total to citizens of the United States	427	52
Nebraska	4	1			

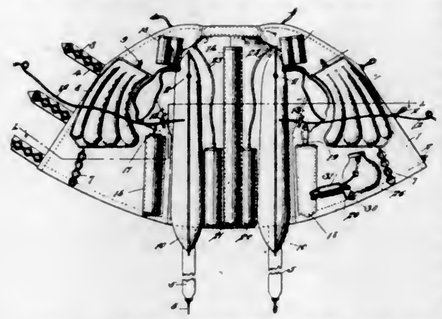
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina			Italy		
Australia			Japan		
Austria-Hungary	1		Mexico		
Barbadoes			Netherlands		
Belgium			New South Wales		
Bermuda			New Zealand	1	
Brazil			Peru		
Canada	6	1	Queensland		
Chili	2		Roumania		
China			Russia	1	
Costa Rica			Scotland	1	
Cuba			South Australia		
Denmark			South African Republic		
Egypt			Spain		
England	19	2	Sweden		
Finland			Switzerland		
France	4	1	Tasmania		
Germany	13	3	Victoria	1	
Guatemala					
Haiti			Total to citizens of foreign countries	49	7
India					
Ireland					

PATENTS

GRANTED JULY 10, 1900.

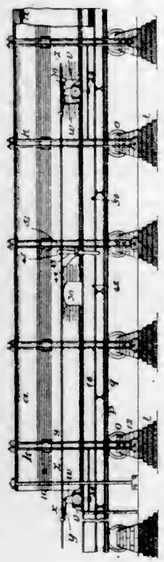
653,201. LIFE-PRESERVER. ZENUS C. ANGEVINE, New York, N. Y. Filed Oct. 21, 1899. Serial No. 734,321. (No model.)



Claim.—1. A life-preserver, comprising a jacket, a food-receptacle, a hook on said receptacle, staples on the jacket for receiving said hook, a cord or the like connection between the receptacle and the jacket, and a loop on the jacket for receiving the cord when folded, substantially as specified.

2. A life-preserver, comprising a jacket, supporting devices extended up the back thereof, one at each side of the center line, a signal-receiver extended along the center line of the back, liquid-holders on the jacket between said signal-receiver and the supporting devices signal-receivers on each shoulder portion of the jacket, and supporting devices at the front portion of the jacket, substantially as specified.

653,202. ORE-ROASTING FURNACE. PHILIP ARGALL, Denver, Colo. Filed Sept. 28, 1899. Serial No. 731,971. (No model.)



Claim.—1. An ore-roasting furnace provided with a reciprocating bottom, longer than the said furnace, and means for moving said bottom back and forth a specific distance equal to said excess of length, whereby the furnace always remains closed at the bottom, substantially as specified.

2. In an ore-roasting furnace, a reciprocating bottom, and means for moving the same, in combination with a series of rabbles, fixed relatively to the said moving bottom, and arranged across the furnace and bed, substantially as specified.

3. In an ore-roasting furnace, in combination, a reciprocating bottom, means for moving said bottom, a series of rabbles arranged across the furnace and bed, and means for adjusting said rabbles vertically with reference to said bottom, substantially as specified.

4. In an ore-roasting furnace, in combination, a reciprocating bottom, means for moving the said bottom, a series of rabbles arranged transversely to the line of motion of said bottom, means for delivering a charge of ore on said bottom, means for simultaneously depressing said rabbles into the ore, and means for lifting said rabbles out of the ore to clear the same on the return movement of the bottom, substantially as specified.

5. In an ore-roasting furnace, in combination, a reciprocating bottom, a hollow rabble-arm, one or more, mounted transversely to the line of motion of said bottom, a series of rabbles mounted on said rabble-arm, means for adjusting the height of said rabble-arm relatively to the said bottom, means for lifting and depressing the rabbles independently of said adjustment, and means for passing a cooling fluid through said hollow rabble-arm, substantially as specified.

6. In an ore-roasting furnace, a reciprocating bottom supported on a movable track way, said bottom being longer than the furnace, and means for moving said bottom back and forth a distance equal to the excess of length of the bottom over that of the furnace, whereby a portion of said bottom is alternately exposed outside the furnace at each end, affording space for spreading the fresh ore, and for cooling the roasted ore, at the respective delivery and discharge ends of the furnace, substantially as specified.

7. In an ore-roasting furnace, a reciprocating bottom, means for moving said bottom, means for feeding ore upon said bottom, means for discharging ore from said bottom, means for mechanically stirring the ore during its movement by rabbles inserted therein, and means for periodically arresting the movement of the said bottom, during the operation of roasting, substantially as specified.

8. In an ore-roasting furnace, having a fire-chamber at one end, a chimney-flue at the other end, and a reverberatory arch between, a movable hearth or bottom extending the entire length of the furnace, and a given distance beyond, means for supporting the said bottom on rotary supports, means for moving the said bottom back and forth, a feed-hopper for ore at the chimney end, a discharge-hopper for ore at the fire-chamber end, and rabbles, fixed against horizontal movement but adjustable vertically, substantially as specified.

9. In an ore-roasting furnace, in combination, a reciprocating hearth or bottom, means for reciprocating the same, a series of hollow rabble-arms extending transversely across said movable hearth or bottom at definite intervals, rabbles fixed upon said rabble-arms, crank-arms on the ends of said rabble-arms, horizontal rods extending the whole length of the furnace on each side, adjustable link connections between the said rods and the said crank-arms, and means for moving the said rods, whereby all the rabble-arms are simultaneously moved and the rabbles thereby lifted from the ore, substantially as specified.

10. In an ore-roasting furnace, a reverberatory arch, having openings in the sides thereof, a reciprocating bottom, means for reciprocating said bottom, rabble-arms arranged transversely to said bottom, with rabbles thereon, means for raising and lowering said rabbles, means for feeding the ore, means for discharging the ore, a combustion chamber or chambers for heating the ore, and a flue or flues for carrying away the products of combustion, substantially as specified.

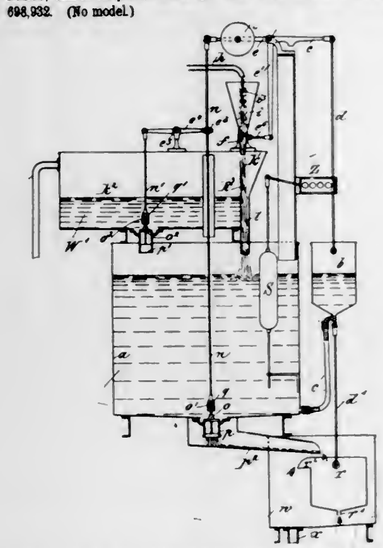
11. In an ore-roasting-furnace, in combination, a reciprocating bottom, means for moving the same, and means in connection with

said bottom for automatically reversing the motion thereof at the end of each forward movement, substantially as specified.

12. In an ore-roasting furnace, in combination, a reciprocating bottom, means for moving the same, means in connection with said bottom for automatically reversing the motion thereof at the end of each reciprocating movement in either direction, and means for automatically effecting a pause for a predetermined period between each return movement and the succeeding forward movement, substantially as specified.

13. In an ore-roasting furnace, in combination, a reciprocating bottom, means for moving the same, a series of rabbles arranged across the said furnace and bottom, said rabbles being vertically adjustable and also movable relatively to said bottom toward and from the same, and means coördinated with said moving bottom for automatically lifting and depressing said rabbles, substantially as specified.

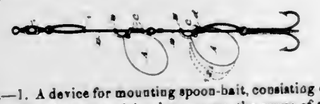
653,203. MEASURING APPARATUS FOR LIQUIDS. MAX ARNDT, Aix-la-Chapelle, Germany. Filed Dec. 10, 1898. Serial No. 698,932. (No model.)



Claim.—1. In an automatic measuring apparatus for liquids the combination of a stationary main assembling vessel, an additional movable vessel communicating therewith, a lever actuated by the additional vessel, a discharging-valve for the main assembling vessel controlled by the lever, an admitting-channel placed above the main assembling vessel, and a rocking funnel controlled by the said lever to be temporarily presented to the admitting-channel.

2. In an automatic measuring apparatus for liquids, the combination of a stationary main assembling vessel, an additional movable vessel communicating therewith, a lever actuated by the additional vessel, a discharging-valve for the main assembling vessel controlled by the lever, an admitting-channel placed above the main assembling vessel, a rocking funnel controlled by the said lever to be temporarily presented to the admitting-channel, and a supplemental vessel connected to the additional vessel and placed beneath the discharging-opening of the main assembling vessel.

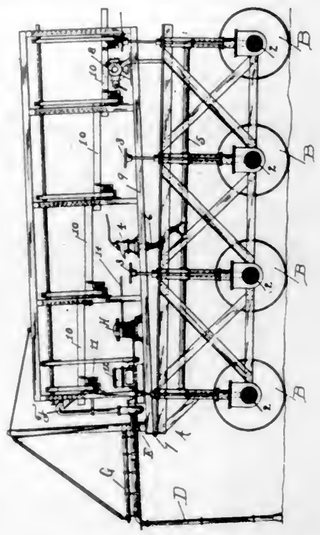
653,204. SPOON-HOOK FOR FISHING-TACKLE. GEORGE H. BACON, Burlington, Vt. Filed Aug. 19, 1898. Serial No. 689,056. (No model.)



Claim.—1. A device for mounting spoon-bait, consisting of a ring bent upon itself to form a semicircular support, the curve of the semicircular bend freely supporting the spoon and the bent end portions adapted to receive a rod longitudinally therethrough, substantially as described.

2. A fishing-tackle device comprising a rod for the attachment of hooks and spoons, a metallic ring bent upon itself and serving to mount a spoon on the rod by passing the bent ring through the spoon and then passing the rod through the bent portion of the ring substantially as described.

653,205. PLACER-MINING DREDGE. SAMUEL K. BEHREND, Washington, D. C. Filed Jan. 29, 1900. Serial No. 3,215. (No model.)



Claim.—1. The combination with hollow rollers, of a platform having a horizontally-hinged connection with said rollers, and a dredge carried on said platform.

2. The combination with a truck constructed and adapted for support directly upon the water bottom whereby the truck is upon a fixed and immovable support, of a platform carried by the truck and capable of vertical adjustment with respect thereto, and a dredge on the platform.

3. A truck adapted to run on soft soil without sinking and carrying a horizontally-hinged platform, a sluice on this platform, and means on the platform for hoisting material and discharging it into the sluice.

4. The combination with a truck-frame of hollow cylinders or rollers upon which said frame is mounted, and means for filling said rollers or cylinders with water and for removing the water therefrom.

5. The combination with a truck-frame of hollow cylinders or rollers upon which said frame is mounted, a water-gate for letting water into the hollow rollers or cylinders and means for removing the water therefrom.

6. The combination with a truck and rollers upon which it is mounted, of a platform hinged thereto and carrying dredging and separating mechanism.

7. The combination with a truck and rollers upon which it is mounted, of a platform hinged thereto and carrying dredging and separating mechanism and means for adjusting the level of the said platform.

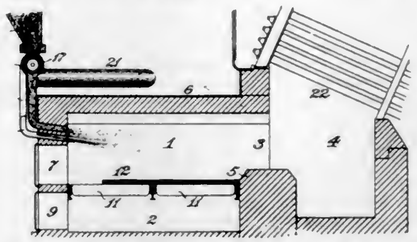
8. The combination with a truck and a platform hinged thereto, of a capstan for drawing the apparatus endwise in either direction.

9. The combination with a truck and platform connected therewith, of hollow cylinders or rollers upon which the truck is mounted, water-gates connected with each hollow cylinder or roller, pipes connecting said cylinders and a pump connected with a pipe for withdrawing the water contained in the cylinders or rollers.

10. The combination with a truck and means for rolling it and retaining it in a submerged condition and means for withdrawing a portion of its weight, of a superstructure or framework hinged to said truck and carrying dredging and separating mechanism.

11. A self-contained placer-mining apparatus comprising a truck mounted on suitable rollers, said rollers being hollow and capable of being filled with water and having the water removed therefrom, a frame or superstructure hinged to the truck-frame and capable of having its level adjusted, a dredge, a laterally-movable sluice into which the dredge discharges, carried by the frame or superstructure.

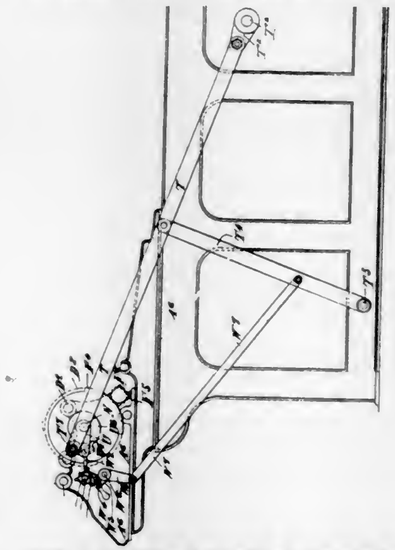
653,206. METHOD OF BURNING PULVERIZED FUEL. JOHN BOLE and DAVID R. W. PATTERSON, Pittsburg, Pa. Filed May 8, 1899. Serial No. 715,914. (No model.)



Claim.—1. The improvement in the method of burning pulverized fuel which consists in feeding the pulverized fuel into a suitable combustion-chamber, suspending said fuel in said chamber upon an underlying blast of an oxygen-bearing fluid, and burning the fuel while thus suspended.

2. The improvement in the method of burning pulverized fuel which consists in feeding the pulverized fuel to a combustion-chamber, suspending the fuel in said chamber upon an underlying air-blast, and burning the fuel while thus suspended.

653,207. SHEET-FEEDING APPARATUS. JOSEPH BOYLAN, Bradford, England. Filed Dec. 10, 1898. Serial No. 698,888. (No model.)



Claim.—1. In combination, the table, the quadrant D, means for moving the same, the rollers E carried by the quadrant and bearing upon the paper, means carried by the quadrant for pressing the rollers onto the paper and the pawl and ratchet for holding the roller against movement in one direction, the said quadrant also bearing on the paper to hold back all of the sheets excepting the top one of the pile, substantially as described.

2. In combination, the table, the quadrant carrying the bearing-roller, means for moving the quadrant, the feathering-finger J, the vibrating arm carrying the same, the pin on the quadrant engaging a part on the vibrating arm for operating the same, the rod K^4 for raising the finger connected thereto and means for raising and lowering the rod K^4, substantially as described.

3. In combination, the table, the quadrant for feeding the paper sheets off from said table and means for operating the quadrant comprising the shaft N, the arm U loosely mounted thereon, a pawl U^2, engaging a projection connected with the shaft N and automatically-operating means for throwing said pawl out of operation, substantially as described.

4. In combination, the table, the quadrant, means for lifting the table comprising a pawl-and-ratchet mechanism, controlling means bearing on the paper pile to throw the pawl out of operation, means for operating the quadrant, a pawl controlling said means and means for throwing the pawl out of operation, substantially as described.

5. In combination, the table, the quadrant, the rock-shaft D^2 for rocking the quadrant, the gear-wheel D^4 having a cam-groove, the arm D^5 on the shaft D^2 engaging a cam-groove in the wheel D^4, a pawl carried thereby and means for operating the wheel D^4 comprising the pawl with means for throwing it out of operation consisting of the star-wheel with means for operating the same, substantially as described.

6. In combination, the table, the quadrant, the gear D^4 having a cam-groove, means operated thereby for rocking the quadrant and the tape-roller having a check-piece, the said wheel D^4 having a toothed portion and a plain portion, the latter of which engages the check-piece to hold the tape-roller from movement, substantially as described.

7. In combination, the table, the quadrant, means for oscillating the same comprising the pawl and disk with projections, and the loose arm carrying said pawl, the rod T connected to the arm, the crank for reciprocating the rod, the star-wheel controlling the pawl and means controlling the star-wheel consisting of the link T^4 and the rod W^7 connected to the star-wheel and to the link, substantially as described.

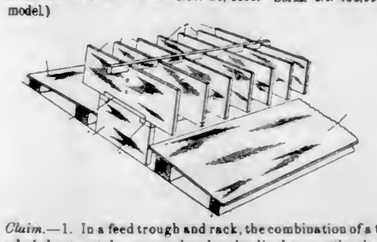
8. In combination, the tape-roller, the claws engaging a groove therein and a cam with connections to the claw for moving the tape-roller longitudinally, substantially as described.

653,208. EXPLOSIVE CHARGE FOR GUNS. JOHN H. BROWN, Reading, Pa. Filed Sept. 6, 1899. Serial No. 729,602. (No model.)



Claim.—A propelling charge composed of a body of explosive material and a body of water contained in a casing which may be readily melted, burned or broken and inserted in the body of explosive material, the said body of water being normally held out of contact with the explosive material and subject to the heat and pressure of the explosive material to be brought into intimate contact therewith, substantially as set forth.

653,209. COMBINED FEED TROUGH AND RACK. GEORGE F. BUCK, Kenton, Ohio. Filed Nov. 28, 1899. Serial No. 738,603. (No model.)



Claim.—1. In a feed trough and rack, the combination of a trough formed of sheet metal, supported on longitudinal supporting-bars, end supports for said bars, transverse partitions above said trough extending beyond the sides thereof, supported on said end supports and means on said supports for securing said partitions thereon, substantially as specified.

2. In a feed-trough and rack, the combination of a trough supported on suitable supports, a rack above said trough consisting of transverse partitions extending beyond the sides thereof, supported on longitudinal supporting-bars, said supporting-bars being adapted to rest on said trough-supports, and means on said trough-supports for locking the longitudinal bars thereon, and longitudinal wires or rods extending through said partitions at different points in the center thereof, substantially as specified.

3. In a feed trough and rack, the combination of a trough formed of sheet metal supported on longitudinal supporting-bars, end supports for said bars, a rack above said feed-trough consisting of rectangular transverse partitions at suitable distances apart, extending beyond the sides of said trough, with square ends supported adjacent to the sides of said trough on longitudinal bars attached to and resting on longitudinal supports of greater width than said bars, said last-named supports being adapted to rest in recesses at respective sides of said end supports for the trough and a turn-bar pivotally attached to the top of said end supports adapted to engage and lock said rack-supports, substantially as specified.

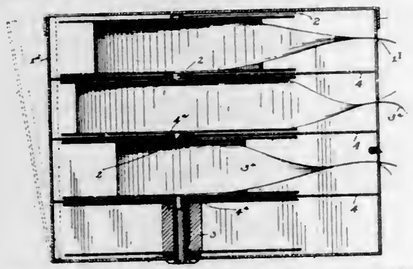
653,210. NUT-LOCK. CHARLES O. BULMER, Nooksachk, Wash. Filed Mar. 16, 1900. Serial No. 8,932. (No model.)



Claim.—1. In a nut-lock the combination, with a grooved bolt, of a nut, a raised cylindrical portion thereon inclosed by a groove, and a ring in said groove adapted to engage the grooves in said bolt.

2. In a nut-lock the combination, with a grooved bolt, of a nut, a raised cylindrical portion thereon inclosed by a groove, a ring in said groove, and ends to the ring projecting from the groove in the plane thereof and engaging the grooves in the bolt.

653,211. BOX FOR SPOOL GOODS. JOHN H. CALKINS, Columbus, Ohio. Filed Apr. 3, 1900. Serial No. 11,344. (No model.)

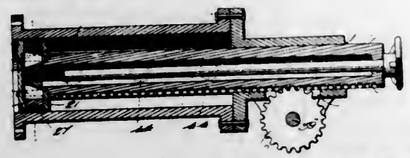


Claim.—1. A box or cabinet for spool goods having in one side a vertical series of horizontally-extending slots, combined with a vertical spindle in the box, non-rotative partitions to separate spools on the spindle, and a removable cover permitting the introduction and removal of the partitions and spools, substantially as described.

2. A box or cabinet for spool goods having in one side a vertical series of horizontally-extending slots, combined with a vertical spindle, non-rotative partitions to separate spools on the spindle, a removable cover for the box at the free end of the spindle, and a removable vertical side of the box, substantially as described.

3. In a box or cabinet for spool goods a vertical spindle, non-rotative partitions to separate spools on the spindle, and a removable cover for the box at the free end of the spindle, substantially as described.

653,212. CUT-OFF FOR STEAM-FEEDS FOR SAWMILLS. WILLIAM M. CARROLL, Beaumont, Tex. Filed Apr. 14, 1900. Serial No. 12,891. (No model.)



Claim.—1. The combination with a steam-feed cylinder having a plurality of ports, of a piston in the cylinder and adapted for movement over the ports to cut them into and out of operative relation to the cylinder, a rack carried by the piston and a gear engaging the rack for holding the piston at different points of its movement.

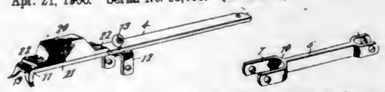
2. The combination with a steam-feed cylinder having a plurality of ports and a sleeve extension, of a piston in the cylinder for movement over the ports to cut them into and out of operative relation to the cylinder, a rack carried by the piston, and a gear-wheel mounted upon the sleeve and engaging the rack to operate the piston.

3. The combination with a steam-feed cylinder having a plurality of ports, of a hollow piston-rod slidably disposed in the cylinder a disk engaged with the rod and having a hub provided with longitudinal slots, a follower slidably disposed in the hub and having slots alining with those of the hub, segmental blocks mounted upon the hub and having lugs which enter the slots of the hub and follower, the ends of the lugs and the bottoms of the follower-slots being beveled in opposite directions, packing-strips upon the blocks, and a screw rotatably mounted in the rod and engaging the follower to reciprocate it and move the blocks and strips radially.

4. The combination with a steam-feed cylinder having a plurality of ports, of a hollow piston-rod slidably disposed in the cylinder, a disk engaged with the rod having a hollow hub provided with longitudinal slots extending entirely through the hub, a follower slidably disposed within the hub and having slots registering with those of the hub, a disk engaged with the outer end of the hub to prevent outward displacement of the follower, segmental blocks mounted upon the hub and having lugs which enter the slots of the hub and follower, the ends of the lugs and bottoms of the slots being oppositely beveled, a screw passed through the rod and engaged with the follower to reciprocate it and move the blocks radially, a rack carried by the rod and a gear-wheel engaged with the rack for reciprocating the rod.

5. The combination with a steam-feed cylinder having a plurality of ports, of a piston in the cylinder and having a tubular rod, means for operating the rod to move the piston over the ports and cut them into and out of operative relation to the cylinder, means for operating the rod to move the piston, and means carried by the rod for expanding the piston to hold it at different points of its movement.

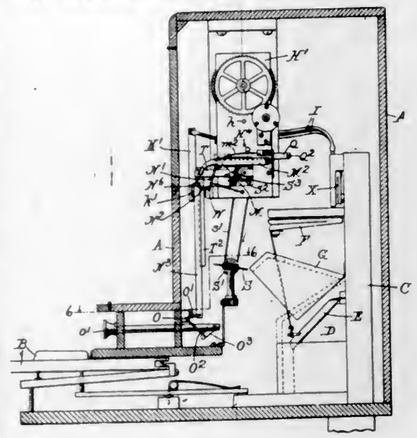
653,213. GATE. GEORGE E. CHAMPION, Pleasant Hill, Ky. Filed Apr. 21, 1900. Serial No. 13,796. (No model.)



Claim.—1. The combination of a swinging gate, a short stake or support located at one side of the gate, a link having forked ends 6 and 7, the forked ends 7 being enlarged and pivoted to the post or support, the weighted lever hinged at one end to the gate and having its other end bent downward and forked or bifurcated to straddle the link adjacent to the shoulders formed by the forked ends 7, whereby the lever is held against lateral and longitudinal displacement, a shackle or yoke arranged beneath the weighted lever and receiving the adjacent end of the link and pivoted to the same, a pivot connecting the shackle or yoke with the weighted lever and having an eye or opening above the same, and operating mechanism connected with the eye or opening of the pivot and located at a point between the ends of the weighted lever, the latter having its weight arranged at one side of such operating mechanism, whereby it may be changed without affecting the same, substantially as described.

2. The combination of a swinging gate, the lever 4 hinged at one end to the gate and having its other end 11 bent downward and forked, a link located beneath the lever and pivotally connected with the same at a point between the ends thereof and having one end fulcrumed on a suitable support, said link being provided with a shoulder arranged to be engaged by the forked end 11 of the lever, operating mechanism connected with the lever at a point between the ends thereof adjacent to the point of connection of the link, and a weight detachably secured to the lever adjacent to the forked end 11 and adapted to be removed without affecting the operating mechanism, substantially as described.

653,214. ORGAN. MELVILLE CLARK, Chicago, Ill. Filed Dec. 3, 1897. Serial No. 660,574. (No model.)



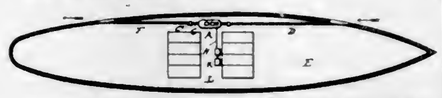
Claim.—1. In an organ, in combination with the sounding devices, automatic playing mechanism; the train which drives such automatic mechanism; stop connections for arresting and releasing the train to cause it to come to rest or permit it to operate; and a starting device connected to the stop connections and adapted to be moved in driving engagement with a shaft of the train by the train-releasing movement of the stop.

2. In an organ, in combination with the sounding devices; automatic playing mechanism; the train which drives such automatic mechanism; stop mechanism for arresting and releasing the train, and causing it to come to rest or permit it to operate; and a starting device constructed and arranged to engage with a shaft of the train to arrest the same and movable while thus engaged in a direction suitable for rotating the shaft and afterward passing out of engagement therewith; such starting device having operative connection with the train-controlling stop mechanism calculated to cause said device to be carried out of such engagement by the completion of the train releasing movement of said stop mechanism.

3. In an organ, in combination with the sounding devices, automatic playing devices comprising the playing and rewinding roll for carrying a perforated music-sheet or equivalent device, the mechanical motor which operates such rolls comprising trains in connection with the rolls respectively, and an actuated wheel which is adapted to be shifted into driving connection with either of said trains at will; a stop connection for arresting and releasing the train and a stop connection for shifting said wheel; a starting device adapted to be moved in engagement with a shaft of the motor-train by the train-releasing movement of the first stop, said starting device having also connection with the shifting-stop connections, whereby it is similarly moved when the driving-wheel is shifted to the rewinding-train.

4. In combination substantially as set forth, the automatic playing devices comprising the playing and rewinding rolls; the train which operates them comprising a gear which is shifted to communicate driving power to either of said rolls at will, and the lever which carries said gear; the governor or "tempo-stop" adapted to arrest and release the train, and the shifting stop adapted to shift said lever to change the connection of the gear thereon, a starting device comprising the bar Q having an abutment adapted to engage a shaft of the train; the rock-shaft N having lever-arms which operate respectively the train-arresting device and the starting device, and having other lever-arms connected respectively to the tempo-stop and the shifting or rewinding stop, whereby the starting device is actuated upon the withdrawal of either of said stops.

653,215. DEVICE FOR REMOVING ASHES FROM MARINE VESSELS. PENN E. COALE, Rutherford, N. J. Filed Feb. 15, 1900. Serial No. 5,314. (No model.)



Claim.—The combination with a marine vessel, of a chamber in the same, below the water-line, pipes extending from the ends of said chamber to the sides of the vessel at the bow and stern and below the water-line and open at their outer ends, valves for closing said pipes, a cover for closing an opening in said chamber and means for removing water from said chamber, substantially as herein shown and described.

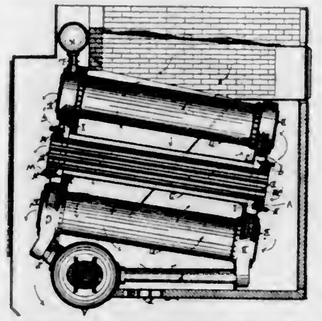
653,216. WATER-TUBE BOILER. CHARLES R. COWLEY, Everett, Mass., and HOWELL C. COOPER, Oil City, Pa. Filed Aug. 21, 1899. Serial No. 728,001. (No model.)

Claim.—1. The combination with a water tube or she , of one or more clusters of fire-tubes, the tubes in each cluster being connected together and extending from one end to the other of the said shell; and means whereby each cluster of tubes as a whole may be readily removed and replaced, substantially as and for the purpose described.

2. The combination with a water tube or shell; of removable fire-tube heads therefor, the said heads being about the same in diameter as that of the shell; and a cluster of fire-tubes extending from one of the said heads to the other whereby the entire cluster of fire-tubes may be removed at once to render the interior of the shell accessible, as set forth.

3. The combination with a removable fire-tube head, of a water shell head, and adjustable packing-glands and adjusting-screws with protected ends, substantially as and for the purpose described.

4. The combination with a fire-tube boiler, of a supplementary normally-closed draft-passage leading from the top of the boiler directly into the uptake and adapted when opened to afford a direct passage for the draft whereby the fire-tubes are freed from the hot gases and may be inspected, plugged, &c., without shutting down the boiler, substantially as shown and described.



5. The combination of a number of water tubes or shells each containing one or more fire-tubes arranged in such a manner that the hot gases of combustion impinge first upon said water tubes or shells and becoming somewhat cooled are thence passed through the fire-tubes and finally out into the smoke-box at a low temperature and means whereby said tubes may be readily removed and replaced to afford access to the interior of said water-shells, substantially as shown and described.

6. In a boiler, the combination with a water tube or shell; of removable heads for the ends of said shell; a cluster of fire-tubes extending from one of the said heads to the other whereby said heads and fire-tubes may be removed to afford access to the interior of the shell; and packing devices for said heads, substantially as described.

7. The combination with water tubes or shells, of connecting-headers fastened thereto and provided with openings opposite the ends of said water tubes or shells for the insertion of removable fire-tube heads; and a cluster of fire-tubes extending through each of said shells from one of said heads to the corresponding opposite head, the said tubes being connected with said heads, whereby each cluster of fire-tubes and its attached heads may be removed, leaving the interior of the shells accessible, substantially as described.

653,217. CHAFE-IRON FOR VEHICLES. JOSEPH H. CUTLER, Medway, Mass. Filed Oct. 17, 1899. Renewed May 18, 1900. Serial No. 17,172. (No model.)



Claim.—The combination with an attaching-plate formed with parallel ears having alined openings; of a roller formed at one end with a conical journal, and at its opposite end with a conical bearing; a coil-spring, a disk and a washer between the conical journal and the wall of its bearing; a conical pin extending through one of the ears of the plate and projecting into the conical bearing of the roller; a screw-plug for securing said pin; and a coil-spring, disk and cup-shaped washer between the conical pin and the conical wall of the roller-opening.

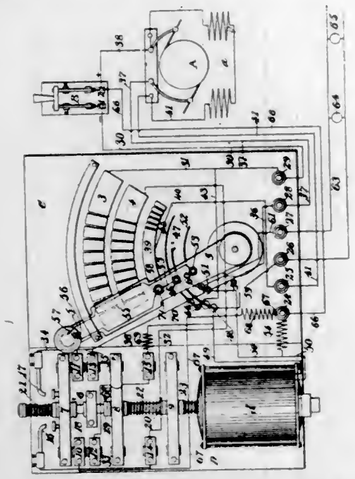
653,218. MOTOR-CONTROLLER. DAVID H. DARRIN, Cranford, N. J. Filed Sept. 2, 1899. Serial No. 729,278. (No model.)

Claim.—1. The combination of a motor, a main circuit therefor, a controlling-rheostat and a switch in said main circuit, electrical means for holding the switch in one of its positions, and means for deënergizing said last-named means, whereby said switch is permitted to be moved to the opposite direction independently of the operation of said rheostat, substantially as described.

2. The combination of a motor and a main circuit therefor, a controlling-rheostat and a switch in said main circuit, a magnet adapted to move said switch to one of its positions when energized, means for energizing said magnet, and means for deënergizing said magnet independently of the operation of said rheostat, whereby said switch may be moved to the opposite position from that in which it was held by the magnet, substantially as described.

3. The combination of a motor, a main circuit therefor, a controlling-rheostat and a switch in said main circuit, means for holding said switch closed, and means for deënergizing said last-named means and opening said switch independently of the operation of

said rheostat whereby said circuit will be broken, substantially as described.



4. The combination of a motor, a main circuit therefor, a controlling-rheostat and a switch in said main current, a magnet adapted to close said switch when energized, means for energizing said magnet, and means for deënergizing said maguet and opening said switch, whereby said circuit will be broken independently of the operation of said rheostat, substantially as described.

5. The combination of a motor, a main circuit therefor, a controlling-rheostat and a normally-open switch in said main circuit, a magnet acting when energized to hold said switch closed, a local circuit adapted to energize said magnet, and means for withdrawing said local circuit from said magnet independently of the operation of said rheostat, whereby said main circuit may be broken, substantially as described.

6. The combination of a motor, a main circuit therefor, a controlling-rheostat and a normally-open switch in said main current, a magnet acting when energized to hold said switch closed, a local circuit adapted to energize said magnet, and means for short-circuiting said local circuit, whereby said magnet will be deënergized and said switch be opened independently of the operation of said rheostat, substantially as described.

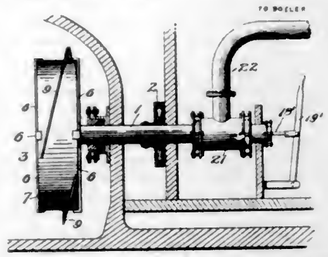
7. The combination of a motor, a main circuit therefor, a controlling-rheostat and a normally-open switch in said main circuit, a magnet acting when energized to hold said switch closed, a local circuit adapted to energize said magnet, means for short-circuiting said local circuit whereby said magnet will be deënergized and said switch opened independently of the operation of said rheostat, and means for opening said short circuit only when the rheostat is in such position that current not exceeding a predetermined strength can be delivered to the motor, substantially as described.

8. The combination of a motor, a main circuit therefor, a controlling-rheostat and a normally-open switch in said main current, a magnet acting when energized to hold said switch closed, a local circuit adapted to energize said magnet, means for opening and closing a short circuit through said local circuit whereby when said short circuit is established, the magnet will be deënergized and said switch be opened independently of the operation of said rheostat, and whereby when said short circuit is broken, said magnet will again be energized, substantially as described.

653,219. PROPELLER. JOSEPH DAVENPORT, Zoar, Ohio. Filed May 3, 1900. Serial No. 15,381. (No model.)

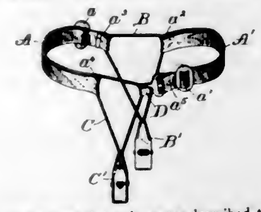
Claim.—1. In a propeller of the class described, the combination of a hollow shaft, a hub rigidly connected to said shaft, hollow propeller-blades rigidly connected to said hub and in connection with said hollow shaft, a wheel or band corrugated on its inner side surrounding said blades and loosely mounted on said hub, spirally-arranged blades fixed on the periphery of said band or wheel, means for admitting water to the said hollow blades, means for controlling the admission of steam to said blades from said hollow shaft to force said water out of said blades and against the corrugations of said band, to rotate said blades and band in opposite directions, substantially as and for the purpose set forth.

2. In a propeller of the class described, the combination of a hollow shaft having inlet and outlet ports, a hub rigidly connected to one end of said hollow shaft and having ports communicating with said shaft-ports, radially-disposed hollow blades rigidly connected to said hub, and provided with inner and outer compartments for the reception of steam-pipes and the admission of water, a wheel or band corrugated on its inner side surrounding said blades and loosely mounted on said hub, means for controlling the admission of steam to the said steam-pipes through the aforesaid ports, openings for allowing water to enter said water-compartments, a series of short tubes through which water is forced out of said water-compartments, a series of short tubes connecting said steam-pipes with said water-tubes, to allow steam to force the water through said water-tubes from said water-compartment against the corrugations on said band or wheel to rotate said blades and band in opposite directions, substantially as and for the purpose set forth.



3. In a propeller of the class described, the combination of a hollow shaft having at one end a series of radially-disposed inlet-ports, a packed joint, rotatably connecting said shaft-ports with a steam-supply pipe, the opposite end of said hollow shaft being provided with two sets of outlet-ports, a valve sliding within said hollow shaft having ports adapted to open and close said shaft-ports, a valve rod and lever for actuating said valve, a hub rigidly connected to the outlet end of said hollow shaft, radially-disposed hollow blades rigidly connected to said hub and provided with an outer annular water-channel, a steam-pipe chamber, and a packed partition between said channel and chamber and having main steam-supply pipes located within said steam-pipe chamber, communicating with the steam-ports in said hub, a series of short steam-tubes projecting from said steam-pipes, a series of short water-tubes projecting through the outer edge walls of said propeller-blades adapted to loosely engage the ends of said steam-tubes, openings through the sides of said blades communicating with said water-channel, a band or wheel surrounding said blades and loosely supported by said hub, having corrugations on its inner side and provided with spirally-arranged blades on its periphery, substantially as and for the purpose set forth.

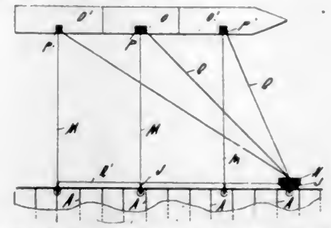
653,220. GARTER. WILLIAM M. DEACON, New Orleans, La. Filed Sept. 6, 1899. Serial No. 729,658. (No model.)



Claim.—In a garter of the character described, the combination of the looped elastic sections A and A′; the looped cord B inclosed within the loops a^2 and a^2 of said sections respectively and non-detachably connecting said sections; the clasp B connected to and uniting the ends of said cord; looped cord C inclosed within the loop a^4 at the opposite end of one section A; the hook D non-detachably attached to the opposite end of the other section A′ and adapted to detachably engage said cord C; and the clasp C′ connected to and uniting the ends of said looped cord C, substantially as described.

653,221. ELECTRIC-TRACTION BALLOON. MARIE J. A. DEYDIER, Nyons, France. Filed Aug. 11, 1898. Serial No. 688,388. (No model.)

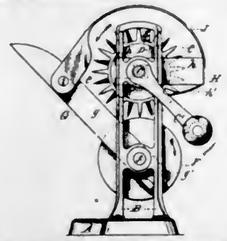
Claim.—1. In a system of the character described, the combination with a balloon having a car attached thereto, and a framework of bamboo canes secured to and extending around the balloon, of a motor-car, a trackway upon which the motor-car is adapted to travel, guide-cables extending longitudinally of said trackway, a guiding device carried by the car, and engaging the guide-cables, a cable connecting the motor-car with the car of the balloon, a second cable extending from the latter car, and a guiding device carried by the latter cable and engaging the guide-cables.



2. In an electric-traction balloon, in combination with one or more balloons; an electric motor-car; guiding apparatuses and safety and traction cables; a railway-track comprising metallic ties secured to wooden or metal posts sunk in the ground; a conducting-wire cable attached on insulators secured to the metallic ties, to lead the electric current to the motor-car; a wooden superstructure arranged on the end portions of the metallic ties, metallic rails placed on the wooden superstructure of the track for the running of the motor-car and to serve as conductors for the return of the current; and cables secured under the metallic ties to guide the pulleys of the guiding apparatuses, substantially as described and for the purpose set forth.

3. In a system of the character described, the combination with a series of balloons flexibly connected together and each having a car attached thereto, of a motor-car, a trackway upon which the motor-car is adapted to travel, guide-cables extending longitudinally of the trackway, a guiding device carried by the motor-car and engaging the guide-cables, a cable connecting each of the balloon-cars with the motor-car, a second cable having one end attached to each of the balloon-cars, and a guiding device carried by the opposite end of each of the latter cables and engaging the guide-cables.

653,222. MEAT-TENDERER. THOMAS DON and CHARLES M. FOWLER, Lowell, Mass.; said Don assignor to said Fowler. Filed Oct. 28, 1899. Serial No. 735,145. (No model.)



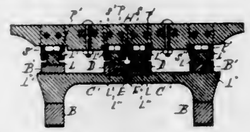
Claim.—1. The herein-described meat-tendering device consisting in combination a base-plate provided with standards, a rotary tendering-roll journaled in said standards and having radially-projecting teeth, a loosely-rotating supporting-roll journaled in said standards below the tendering-roll, a detachable feed-table, and a hood pivotally connected to the latter, substantially as and for the purpose set forth.

2. In a meat-tendering device in combination a rotary tendering roll, having a series of prongs or teeth, a loosely-journaled supporting-roller arranged below said tendering-roll, a detachable feed-table, a hood or cover pivotally connected to the latter, and a detachable comb-bar having projections arranged between the rows of teeth on the tendering-roll, substantially as and for the purpose set forth.

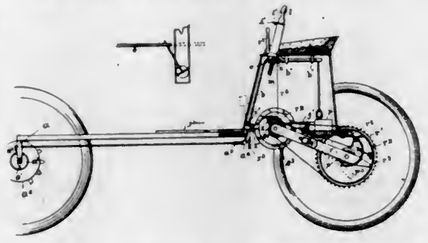
3. In a meat-tendering device a rotary roll D, having secured to it one or more rings E, provided with radial teeth or prongs *e*, *e*, combined with a loosely-rotating supporting-roll F, and a removable feed-table having pivoted to it a hood or cover, and a removable pronged comb-bar H having inwardly-projecting cleaning-prongs *h*, *h*, substantially as and for the purpose set forth.

653,228. BOB-SLED. AARON DROWN, Barton, Vt. Filed Apr. 7, 1900. Serial No. 11,960. (No model.)

Claim.—In a sled or sleigh of the character described, the combination with the two independently-rocking runners of a section, and the bolster H extending across said runners; of the joints each comprising the plate L, L″ formed with the pivot or pintle L′ and secured to the upper side of one of the parts of said section, and the plates P, S provided with the sockets P′, S′ and secured to the front and rear sides respectively of the bolster without vertically perforating or extending vertically any securing appliance through the same at said joints, substantially as described.



653,224. MOTOR-VEHICLE. CHARLES E. DURYEA, Peoria, Ill., assignor to the Duryea Manufacturing Company, same place. Filed May 16, 1898. Serial No. 680,826. (No model.)



Claim.—1. In a motor-vehicle, a single steering-wheel having a large diameter short-length hub journaled on a steering-head, which is pivoted on a body-support passing through said wheel and head, means for steering the wheel consisting of arms projecting oppositely sidewise from the said head to the extremities of which tensile connections are attached.

2. In a motor-vehicle, steering-centers mounted on a spring body-support, a steering-head with sidewise-projecting arms pivoted on said centers, a steering-wheel journaled on said head and tensile connections attached to said arms for controlling the direction of said wheel.

3. In a motor-vehicle, a controlling-lever having a direction-indicator mounted thereon and connected with reversing-clutches by suitable means to effect reverse movement of the vehicle when the pointer is reversed.

4. In a motor-vehicle, a steering-lever pivoted in or near the forward edge of the seat to permit oscillation crosswise the vehicle and connected by suitable means to the steering-wheel.

5. In a vehicle, the controlling-handle mounted upon a centrally-located lever adapted to oscillate crosswise the vehicle for steering purposes, said controlling-handle being likewise capable of longitudinal and rotative movements.

6. In a vehicle, a controlling-lever pivoted on the front edge of the seat at the middle thereof, projecting downward inside the vehicle-box and upward between two riders occupying the seat; said lever being adapted to swing sidewise for steering purposes and carrying a controlling-handle adapted to rotate around the longitudinal axis of the lever and move longitudinally thereon.

7. In a vehicle, a controlling-lever pivoted on the front edge of the seat at the middle thereof, projecting down and inside the vehicle-box and upward between two riders occupying the seat; said lever being adapted to swing sidewise for steering purposes.

8. In a motor-vehicle, a motor having its driving-shaft crosswise the vehicle with means for applying a starting-crank to either end thereof, and starting mechanism having its controlling-lever arranged substantially midway between the ends of said driving-shaft, substantially as and for the purpose specified.

9. In a motor-vehicle, a speed-changing mechanism consisting of a pinion affixed to the motor-shaft, a ring-gear encircling same, idlers meshing into and between said pinion and ring-gear, a sprocket-drum inclosing the whole and friction-clutches adapted to engage said sprocket-drum and lock it to the idler-frame and the ring-gear.

10. In a motor-vehicle, a speed-changing mechanism consisting of a motor-pinion, a ring-gear, one or more idlers meshing between and into said pinion and gear, necessary framework for maintaining said idlers and gear concentric with the motor-pinion and friction-

clutches adapted to engage a sprocket-drum and fix it immovable as regards either the idler-frame or the ring-gear frame, or both, at will.

11. In a motor-vehicle, a speed-changing mechanism consisting of a motor-pinion, a ring-gear, one or more idlers meshing between and into said pinion and gear, necessary framework for maintaining said idlers and gear concentric with the motor-pinion, and one or more friction-clutches carried by the ring-gear frame and adapted to engage at will the sprocket-drum or a fixed frame.

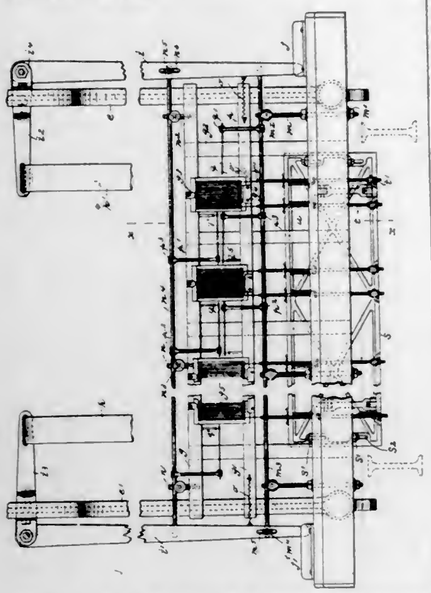
12. In a motor-vehicle, a speed-changing mechanism consisting of a motor-pinion, a ring-gear, idlers meshing into and between said ring-gear and pinion, an idler-frame carrying journals for said idlers, and friction-clutches for engaging a sprocket-drum; said idler-frame being engaged by a clutch-frame adapted in turn to engage a fixed frame and hold the idler-frame stationary.

13. In a motor-vehicle, a motor-pinion, ring-gear and idlers meshing into and between same, said idlers mounted upon a framework carrying a friction-clutch normally in engagement with a sprocket-drum; said frame being further provided with means for releasing the engagement with the sprocket-drum and making an engagement with a stationary frame.

14. In a motor-vehicle, a speed-changing mechanism concentric with a motor-shaft in combination with a removable power-transmitting wheel, mounted upon a drum adapted to be engaged by friction-clutches.

15. In a motor-vehicle a balance-gearing consisting of a sprocket-wheel, driving-pinions mounted on a frame concentric with the driving-axle and attached to the driving-sprocket, driving-gears fixed one to a full-length axle and the other to a sleeve telescoping over one end of said axle in combination with a vehicle-wheel mounted on said sleeve, said wheel being maintained on said sleeve and said sleeve on said axle by a single nut on the projecting axle end.

653,225. LOOM. WILLIAM FISCHER, Sr., and WILLIAM FISCHER, Jr., Paterson, N. J., assignors, by mesne assignments, to the American Automatic Loom Company, of New Jersey. Filed Apr. 26, 1899. Serial No. 714,470. (No model.)



Claim.—1. In a loom provided with suitable warp-controlling mechanism, the combination with the reed, batten, weft-carriers mounted on said batten and adapted to reciprocate transversely of the reed and mechanism for operating said batten and weft-carriers, of a looper-carrying frame and mechanism for reciprocating the same in a path transverse to the path of travel of the weft-carriers, and loopers mounted on and individually hinged to said frame and spring-pressed away from the reed, whereby said loopers, while reciprocated collectively and as a group to enter and quit their respective loops, are individually and independently spring-yielding and movable toward and away from the reed, substantially as and for the purposes hereinbefore set forth.

2. In a loom the combination with warp-controlling mechanism, a batten and a reed mounted on said batten, weft-carriers also carried by said batten and adapted to reciprocate transversely of said reed, and mechanism for operating said weft-carriers, of a reciprocatory looper-carrying frame, means for reciprocating said frame, and individually spring-pressed oscillating loopers mounted on and carried by said frame, substantially as and for the purposes hereinbefore set forth.

653,226. BALE-TIE. WALTER T. FORBES, Atlanta, Ga. Filed Oct. 9, 1899. Serial No. 733,028. (No model.)



Claim.—1. A bale-tie comprising a plurality of ties, a shaft connecting the ends of the ties and provided at one end with means for engaging a wrench or key, whereby it is adapted to be rotated to tighten the ties, said shaft being provided between its ends with an opening, and a removable locking device passing through the said opening and arranged to engage a bale, whereby the shaft is held against retrograde rotation, substantially as described.

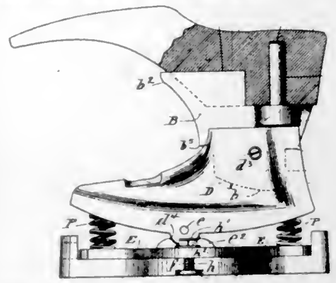
2. A bale-tie comprising a plurality of ties, a shaft journaled on the ties at one end thereof and receiving and adapted to wind the other end of the ties, whereby the latter are simultaneously tightened, and a locking device, substantially as described.

3. A bale-tie comprising a plurality of ties, a shaft connected with and adapted to rotate independently of one end of each tie, and provided with openings for the reception of the other end of each tie, whereby the ties are connected to it adjustably, and means for locking the shaft, substantially as described.

4. A bale tie or binding comprising a plurality of flexible ties provided with terminal loops, a tube passed through the said loops and provided with diametrical openings for the reception of the opposite ends of the ties, and a suitable device for preventing retrograde movement of the tube.

5. In a bale tie or binding, the combination with a tube provided with transverse apertures, of a plurality of ties provided with terminal loops surrounding the tube and having their opposite ends passed through the apertures therein, detachable locking-pins projecting from the tube, and means for applying power to the tube to effect its rotation and the coiling of one end of each of the ties.

653,227. SHOE-JACK. WILLIAM E. FORSTER, Lynn, Mass., assignor to the United Shoe Machinery Company, Paterson, N. J. Filed June 25, 1896. Serial No. 596,839. (No model.)



Claim.—1. In a shoe-jack, the combination with a last and its supporting-standard, of suitable bearings for said standard upon which it is free to tip longitudinally, elastic supports for said standard on opposite sides of its bearings, and means for laterally adjusting said standard and for swinging it about a vertical axis, substantially as described.

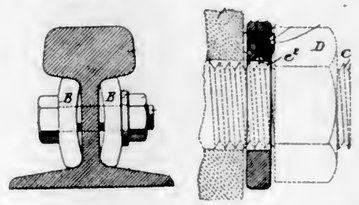
2. In a shoe-jack, the combination with a last, of a longitudinally-tipping supporting-standard therefor, the bearing about which said standard tips being located forward of the center of the standard, whereby when pressure is applied to the last the toe portion thereof will be caused to tip upward, substantially as described.

3. In a shoe-jack the combination with a supporting or base plate, of a last-supporting standard mounted thereon, and connections between the base-plate and standard arranged to permit a lateral adjustment of the standard in right lines, and a swinging adjustment thereof in a curved path, substantially as described.

4. In a shoe-jack, the combination with a suitable supporting-standard, of a removable last-holder mounted thereon, an upwardly and forwardly extending instep-rest on the last-holder, a spindle on the last-holder, and a last provided with a slot to engage the instep-rest, and a socket to engage the spindle, substantially as described.

5. In a shoe-jack, the combination with a swinging standard having a slotted bearing in its upper end, of a last-holder removably fitted to the said bearing, a forwardly-projecting instep-support in said last-holder, and a last having a slotted instep arranged to receive the instep-support of the last-holder, substantially as described.

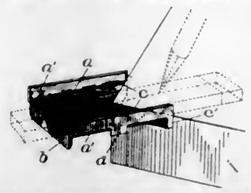
653,228. NUT-LOCK. FRANK FREESE, Philadelphia, Pa., assignor to himself and Emil J. Bahls, same place. Filed Apr. 7, 1900. Serial No. 11,958. (No model.)



Claim.—1. A nut-lock consisting of an annular washer having an oblique perforation extending from face to face in combination with a stud of less diameter than the perforation in the washer said stud being centrally pivoted in said perforation and having sharpened ends adapted to project beyond or lie substantially flush with the faces of the washer as the stud is oscillated on its pivot.

2. A nut-lock consisting of an annular washer having an oblique perforation extending from face to face and at its center lying close to the inner wall of the washer, in combination with a stud of less diameter than the perforation in the washer, said stud being centrally pivoted in said perforation on a projection from the inner wall of the perforation forced in from the inner wall of the washer and having sharpened ends adapted to project beyond or lie substantially flush with the faces of the washer as the stud is oscillated on its pivot.

653,229. GAGE FOR USE WITH RULES. LESLIE J. GAMBLE Moline, Ill. Filed Feb. 10, 1900. Serial No. 4,813. (No model.)



Claim.—1. A rule appliance comprising a plate having parallel flanges extending along the edges of one side thereof, oppositely-located triangular-shaped projections on the opposite side of the plate between its ends, a transverse lip or flange at one end on the same side as said projections, and a V-shaped notch at its opposite end, substantially as described.

2. A rule appliance comprising a plate having oppositely-located triangular-shaped projections on one side and an end flange on the same side as the said projections.

3. A rule appliance comprising a plate having oppositely-located triangular-shaped projections on one side and a notch at one end with flanges along its edges on the same side of the plate as the said projections.

4. A rule appliance comprising a plate having oppositely-located triangular-shaped projections on one side, and an end flange on the same side as the said projections, and parallel flanges extending along the edges thereof opposite and at right angles to said end flange, substantially as described.

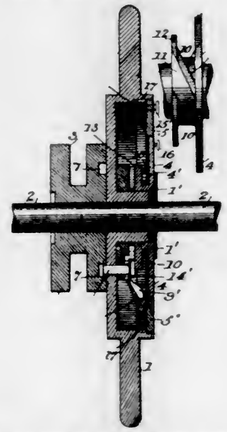
5. A rule appliance comprising a plate having oppositely-located projections intermediate the ends thereof on one side, a notch at one end with flanges extending along the edges thereof, a transverse lip or flange at the opposite end of the plate on the same side as the said projections, and parallel flanges extending along the plate on the side thereof opposite the said projections and at right angles to said lip, substantially as described.

6. A rule appliance comprising a plate having parallel flanges on one side thereof, end flanges or lips on the opposite side thereof, and intermediate oppositely-located projections on the side thereof between said end flanges, substantially as described.

7. A rule appliance comprising a plate flanged along its sides and at the ends, the end flanges extending oppositely to the side flanges, and the plate having oppositely-located triangular-shaped projections on the side from which the end flanges protrude.

8. A rule appliance comprising a plate with parallel right-angle flanges along its sides, a lip at one end extending oppositely to said flanges, a notch at the other end with flanges along its sides protruding correspondingly with said lip, and oppositely-located triangular-shaped projections on the same side of the plate as the latter.

653,230. LOCK FOR BICYCLES. FRANK H. GARDNER, Jackson, Mich. Filed Dec. 16, 1899. Serial No. 740,613. (No model.)

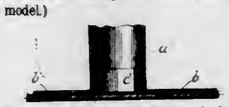


Claim.—1. In a lock for bicycles, a sprocket-wheel, a lock-bolt mounted in said sprocket-wheel and adapted to be moved into engagement with the bicycle-frame, a permutation-tumbler on the sprocket-wheel, and means carried by said permutation-tumbler for operating said locking-bolt as described.

2. In a lock for bicycles, a sprocket-wheel, a lock-bolt mounted in the sprocket-wheel and adapted to be moved into engagement with the bicycle-frame, one or more permutation-tumblers in the sprocket-wheel, and means controlled by said tumblers for operating said locking-bolt, as described.

3. In a lock for bicycles a sprocket-wheel, a lock-bolt mounted in the sprocket-wheel and adapted to be moved into engagement with the frame, and means in the sprocket-wheel for operating said lock-bolt as described.

653,231. CASE FOR PHONOGRAPH-RECORDS. JOSEPHINE GILGEN and GERTRUDE GILGEN, Chicago, Ill. Filed Mar. 17, 1900. Serial No. 9,035. (No model.)

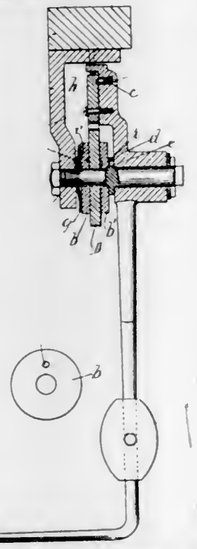


Claim.—1. In a case for phonograph-records having a bottom consisting of a plurality of layers; tubes for holding said records, an upper layer consisting of strawboard or similar material having apertures wherein the extremities of said tubes are fitted; strips of canvas or similar flexible fabric extending in transverse directions upon the under side of said upper layer, and having extremities projecting through said apertures, said projecting extremities being secured to the surface of said tubes by means of an adhesive; a lower layer consisting of strawboard or similar material secured to said upper layer; an adhesive interposed between said layers for fastening the same together, said adhesive serving to stiffen said bottom and also to secure in place the portions of said strips lying between said layers; and canvas or similar fabric covering said case for protecting the same.

2. In a case for phonograph-records, having a bottom consisting of a plurality of layers; tubes for holding said records, an upper layer having apertures wherein the extremities of said tubes are fitted; strips of canvas or similar fabric extending in transverse directions

upon the under side of said upper layer and having extremities projecting through said apertures, said projecting extremities being secured to the inner surface of said tubes; a lower layer secured to said upper layer by means of an adhesive interposed between said layers; projections at the bottom of said case formed by said layers; canvas or similar fabric covering the sides or bottom of the case and having a junction at said projections; and binding-strips inclosing said edges and affording means for securing the adjacent edges of said canvas.

653,232. PICKER-CHECK. MERRILL GLEASON, Woonsocket, R. I., assignor of one-half to Fred. B. Wilkins, same place. Filed Oct. 16, 1899. Serial No. 733,771. (No model.)



Claim.—1. In a picker-check, the combination of a bracket, a stud adjustably held in said bracket, a ratchet-wheel held on the stud, a spring-washer and a friction-washer held on the stud on one side of the ratchet-wheel, a friction-washer held on the other side of the ratchet-wheel, a lever held loosely on said stud, a double pawl held on the upper end of the lever to engage with the ratchet-wheel, and a weight held on the lower part of said lever, substantially as described.

2. In a picker-check, the combination of a bracket, a stud held adjustably in said bracket a ratchet-wheel held to turn on the stud, a spring-washer having a projection on it entering a hole in the bracket, a friction-washer also held on the stud and having a projection raised on it entering into a cavity in said spring-washer, a friction-washer on the other side of the ratchet-wheel having a projection on it fitting into a hole in a collar fast on the stud, a lever held to swing on said stud, a double pawl held on a pivot in the upper end of the lever, a spring-actuated pin held in the lever and having a conical point to enter cavities in said pawl and hold it in engagement with the ratchet-wheel, substantially as described.

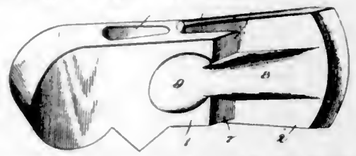
653,233. EGG-BEATER. ERNEST R. GODWARD, Invercargill, New Zealand. Filed Apr. 12, 1900. Serial No. 12,599. (No model.)



Claim.—1. An egg-beater comprising a cylindrical receptacle, a spindle extending axially thereof from end to end of the same, a coiled cutter arranged transversely of the spindle centrally thereof and conically-coiled cutters on each side of the transverse cutter having their apices arranged adjacent to the transverse cutters, substantially as described.

2. In an egg-beater, the combination of a cylinder, covers fastened to the cylinder by bayonet-joints, a spindle, spiral cutters of thin metal fixed to the spindle and a coiled cutter arranged between the spiral cutters, substantially as set forth.

653,234. AX-BLADE. JAMES W. GRAHAM, Old Fort, N. C. Filed Oct. 28, 1899. Serial No. 735,094. (No model.)



Claim.—1. An ax-head, having means for the attachment of a handle, and opposite knees projecting laterally from opposite sides of the head, located between the cutting edge thereof and the means for the attachment of a handle, and rounded or convexed in directions at substantially right angles.

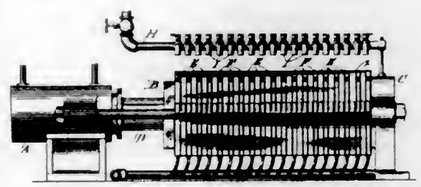
2. An ax-head, having an eye for the reception of a handle, and a pair of convexed and substantially-circular knees projecting laterally from opposite sides of the head, located between the eye and the cutting edge of the head, and rounded both longitudinally and transversely of the latter.

3. An ax-head, comprising a poll, a blade thinner than the poll and of substantially the same thickness throughout its length, longitudinal wedges provided upon opposite sides of the blade, located centrally thereof, inclined outwardly and rearwardly from the cutting edge of the blade, and narrower than the length of said cutting edge, and outwardly and rearwardly inclined shoulders located at the forward end of the head, upon opposite sides thereof, and at opposite sides of each wedge.

4. An ax-head, having each side provided with a longitudinal centrally-disposed wedge inclining outwardly and rearwardly from the cutting edge of the blade, and a convex knee located at the rear end of the wedge, having its forward surface merging into the wedge, and the remainder of the surface gradually rounding into the side of the head, said knees being alined transversely of the head, and providing a fulcrum therefor, substantially as and for the purpose set forth.

5. An ax-head, comprising a poll, having an intermediate eye for the reception of a handle, a blade thinner than the poll and of substantially the same thickness throughout its length, opposite outwardly and rearwardly inclined shoulders at the forward end of the poll and upon opposite sides of the ax, outwardly and rearwardly inclined wedges upon opposite sides of the blade and intermediate of the respective opposite inclined shoulders, and a convexed knee at the rear end of each wedge, and located between the adjacent inclined shoulders and the eye for the reception of a handle.

653,235. APPARATUS FOR MOLDING WAX. ALANSON M. GRAY, Elizabeth, N. J. Filed Nov. 28, 1899. Serial No. 738,575. (No model.)



Claim.—1. A flat open-sided mold permanently closed at its bottom and ends and having an opening at the top for the introduction of the material, in combination with independent removable hollow chilling-plates forming the closing sides thereof, a support upon which the mold and plates are mounted and upon which they are independently movable laterally or flatwise, and means for circulating a cooling medium through the plates, whereby the mold and plates may be pressed together thus closing the mold at its sides and separated after the material in the mold is chilled or solidified to permit the removal of the cake laterally from the mold.

2. The combination of a series of flat open-sided molds permanently closed at their bottoms and ends and having openings at the top for the introduction of material, a series of hollow flat chilling-plates arranged in alternation with the molds and forming the closing sides thereof, a support upon which the molds and plates are mounted and upon which they are independently movable laterally or flatwise, means for setting up or pressing the assemblage of molds and plates together and also releasing them from pressure to permit their separation, and means for circulating a cooling medium through the plates, whereby after the material is chilled or solidified the molds and plates may be separated and the cakes removed laterally from the molds.

3. The combination of a series of flat open-sided molds, open at the top, a series of hollow flat chilling-plates arranged in alternation with the molds and forming the closing sides thereof, means for setting up or pressing the assemblage of molds and plates together, means for circulating a cooling medium through the plates and means for introducing into the molds fluid material to be chilled and molded.

4. The combination of the abutment, side bars and pressure-cylinder, a series of flat open-sided molds open at the top and adapted to be hung vertically upon the side bars, a series of hollow flat chilling-plates adapted to be similarly hung and arranged in alternation with the molds and forming the closing sides thereof, a supply-pipe with outlets in proper relation to the top openings of the molds to deliver melted material thereto when the molds and plates are pressed up together and means whereby a cooling medium may be circulated through the plates.

5. The combination of the abutment, side bars and pressure device, of a series of flat molds open at the top and both sides and divided by a partition to form two molding-compartments, a series of hollow flat chilling-plates arranged in alternation with the molds and forming the closed sides thereof, the assemblage of plates and molds being hung vertically upon the side bars and adapted to be pressed together, a supply-pipe arranged above the assemblage of plates and molds and having a series of outlets arranged one above each mold-compartment to deliver the melted material to the mold, and means for circulating a cooling medium through the hollow chilling-plates.

6. The combination of the flat open-sided molds, open at the top, the hollow chilling-plates arranged in alternation therewith and forming the closing sides thereof, the frame or bars D D upon which the assemblage of molds and plates are mounted, means for pressing the assemblage of molds and plates together, a common supply-pipe for carrying a cooling medium, and flexible hose connections between such supply-pipe and the respective hollow chilling-plates for the introduction thereinto of a cooling medium.

7. The combination of a series of flat open-sided molds having openings at the top for the introduction of material, a series of plates arranged in alternation with the molds and having the central parts of their upper edges depressed below the outer edges of the molds, end plates whose upper edges are as high as the sides of the molds, means for setting up or pressing the plates together for the introduction into the molds of the material to be molded and then releasing the molds and plates from pressure to permit their separation for the extraction of the cakes from the molds.

8. The combination of a series of flat open-sided molds having openings at the top for the introduction of material, a series of hollow plates arranged in alternation with the molds and having the central parts of their upper edges depressed below the outer edges of the molds, end plates whose upper edges are as high as the sides of the molds, means for setting up or pressing the plates together for the introduction into the molds of the material to be molded, then releasing the molds and plates from pressure to permit their separation for the extraction of the cakes from the molds, and means for circulating a cooling medium through the hollow plates.

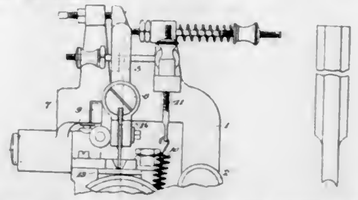
9. The combination of an assemblage of molds open at the side and also at the top for the introduction of material and plates closing the molds at the side, means for setting up or pressing the assemblage of molds and plates together for the introduction into the molds of the material to be molded and for releasing them from pressure to permit the separation of the molds and plates and the extraction of the cakes from the molds.

10. The combination of an assemblage of molds open at the side and also at the top for the introduction of material, and hollow plates closing the molds at the side, means for setting up or pressing the assemblage of molds and plates together for the introduction into the molds of the material to be molded and for releasing them from pressure to permit the separation of the molds and plates and the extraction of the cakes from the molds, and means for circulating a cooling medium through the hollow plates.

11. The combination of the abutment, side rail, cylinder and ram, of an assemblage of molds open at the sides and also at the top for the introduction of material, and plates closing the sides of the molds whereby the assemblage of molds and plates may be pressed up together by the action of the power-cylinder, the molds filled, the pressure then relieved, the molds and plates separated and the cakes extracted from the molds.

12. The combination with the abutment, side rail, cylinder and ram of an assemblage of molds open at the sides and also at the top for the introduction of material, hollow plates closing the sides of the molds whereby the assemblage of molds and plates may be pressed up together by the action of the power-cylinder, the molds filled, the pressure then relieved, the molds and plates separated, and the cakes extracted from the molds, and means for circulating a cooling medium through the hollow plates.

653,236. STITCH SEPARATING AND SHAPING MACHINE. JOHN B. HADAWAY, Brockton, Mass. Filed Jan. 5, 1900. Serial No. 420. (No model.)

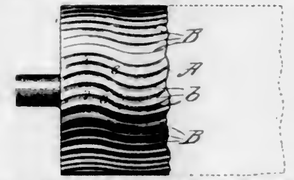


Claim.—In a machine for separating and shaping stitches, the combination with a work-support, of a stitch separating and shaping tool provided with a separating-blade and a shaping-groove located at one side of and above said blade, and means for automatically locating the separating-blade in the intervals between the stitches and the shaping-groove on the crowns of the stitches whether said stitches be of uniform or varying length, substantially as described.

653,237. SIZING. WILLIAM A. HALL, Bellows Falls, Vt. Filed May 13, 1899. Serial No. 716,759. (No specimens.)

Claim.—A sizing for paper, straw goods, &c., consisting of a chemical combination of casein, ammonia and formaldehyde, in substantially the proportions specified.

653,238. MEANS FOR FORMING SHEET-GLASS OF THE PRISMATIC TYPE. CHARLES C. HARTUNG, St. Louis, Mo., assignor to Edward Walsh, Jr., same place. Filed Sept. 25, 1899. Serial No. 731,608. (No model.)



Claim.—1. In a device of the character described, the combination with one of the elements between which molten glass is rolled into sheet form, of a series of inclined faces arranged in compound curves or serpentine design, which compound curves or serpentine faces are eccentric with each other, substantially as described.

2. In a device of the character described, the combination with one of the elements between which molten glass is rolled into sheet form, of inclined faces of ratchet-tooth shape, said inclined faces being arranged in a compound curve or serpentine design and eccentric with each other, substantially as described.

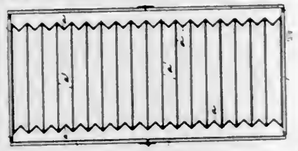
3. In a device of the character described, the combination with one of the elements between which molten glass is rolled into sheet form, of inclined faces, the lines of which are described from different centers, but with the same radii, substantially as described.

4. In a device of the character described, the combination with one of the elements between which molten glass is rolled into sheet form, of straight faces and inclined faces arranged in serpentine form and eccentric with each other, the degree of inclination varying from a point where said shoulders are most widely separated to a point where said shoulders most nearly approach each other, substantially as described.

5. In a device of the character described, the combination with one or the other of the two elements between which molten glass is rolled into sheet form, a plurality of serpentine ribs or projections on the face, of one of said elements which are eccentric with each other, at least one of the faces of said ribs being inclined, the height of said ribs varying from a point where the ribs are most widely separated to a point where they most nearly approach each other, substantially as described.

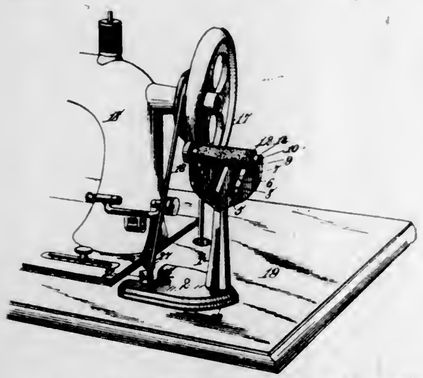
6. In a device of the character described, the combination with one or the other of the two elements between which molten glass is rolled into sheet form, a plurality of serpentine ribs or projections on the face of one of said elements which are eccentric with each other, at least one of the faces of said ribs being inclined, the height of said ribs varying from a point where the ribs are most widely separated to a point where they most nearly approach each other, whereby, when a mass of molten glass is rolled into sheet form by said elements, a plurality of serpentine, eccentric, grooves are impressed thereinto; substantially as and for the purpose specified.

653,239. DOCUMENT-FILE. JOSEPH HILBERT, Dusseldorf, Germany. Filed Feb. 20, 1899. Serial No. 706,163. (No model.)



Claim.—A file composed of a series of superposed flexible bellows having partitions, covers secured to the upper and lowermost bellows, eyes on the covers, folding upright frame-bars composed of a pair of hinged sections, and pins that project laterally from the ends of the frame-bars and are adapted to removably engage the eyes, substantially as specified.

653,240. GRINDING ATTACHMENT FOR SEWING-MACHINES. WILLIAM T. HODGSON, Sioux City, Iowa, assignor of one-half to Charles L. Beatty, same place. Filed Nov. 16, 1899. Serial No. 737,229. (No model.)



Claim.—1. A grinding and sharpening attachment for a sewing-machine consisting of a frame adapted to be secured to the sewing-machine table, and provided with a plurality of blade guiding and supporting fingers at its upper end, and a grinding-cylinder journaled in the upper end of said frame above said fingers, and provided with a friction-disk adapted to contact with the driving or belt wheel of the sewing-machine, substantially as described.

2. A grinding and sharpening attachment for a sewing-machine, consisting of an upright frame constructed at its upper end with a plurality of inclined blade guiding and supporting fingers and having a flattened base-plate to rest upon the surface of the machine-table and constructed with a recess to extend around the belt-hole in said table, a clamp constructed to pass through said belt-hole and engage the flattened base-plate and the under side of the machine-table, and a grinding-cylinder journaled in the upper end of the upright frame above said inclined blade guiding and supporting fingers and having a shaft provided with a friction-disk arranged in direct contact with the driving or belt wheel of the sewing-machine, substantially as described.

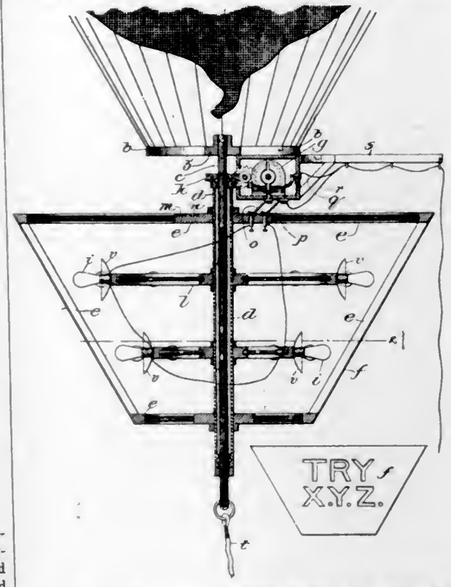
3. A grinding and sharpening attachment, consisting of a vertical frame having a slotted upper end to provide a blade guiding and supporting finger, a grinding cylinder or roller journaled on the frame over said finger and having its periphery in close proximity to the upper end of the latter, a driving disk or wheel mounted on the shaft of the cylinder or roller and arranged in direct contact with the belt-wheel of a sewing-machine to be driven by frictional contact therewith, and means for holding the frame in a fixed position, substantially as described.

4. A grinding and sharpening attachment for a sewing machine, consisting of an upright frame having its upper end constructed with an inclined slot forming a blade guiding and supporting finger having an inclined face, a foot or base-plate on the frame, a clamp for securing the foot or base-plate to the sewing-machine work-table, a grinding cylinder or roller journaled on the frame over said finger and having its surface in close proximity to the upper end of the latter, and a friction-disk connected to the shaft of the cylinder or roller and arranged to be driven by the sewing-machine driving-wheel, substantially as described.

5. A grinding and sharpening attachment, consisting of a standard having a head constructed with slots and blade or tool guiding and supporting fingers having inclined faces, a grinding cylinder or roller journaled on the head over the upper ends of said fingers, means for driving the cylinder or roller, and means for holding the standard in a fixed position, substantially as described.

6. A grinding and sharpening attachment, consisting of a frame having separated, inclined fingers constructed with concaved upper ends, a grinding cylinder or roller journaled on said frame and set down in the concaved upper ends of the fingers, a disk or wheel on the shaft of the cylinder or roller for driving the latter, and means for clamping the frame in a fixed position, substantially as described.

653,241. ADVERTISING DEVICE. DANIEL W. HOGAN, Medford, Mass. Filed July 28, 1899. Serial No. 725,381. (No model.)



Claim.—1. The combination with a balloon, of a frame suspended therefrom, a standard fixed in said frame, a rotatable sleeve surrounding said standard, a display-sign secured to said sleeve and supported therefrom, lamp-carrying arms also secured to said sleeve, and means for rotating said sleeve whereby the sign and the lamps are caused to rotate simultaneously, substantially as described.

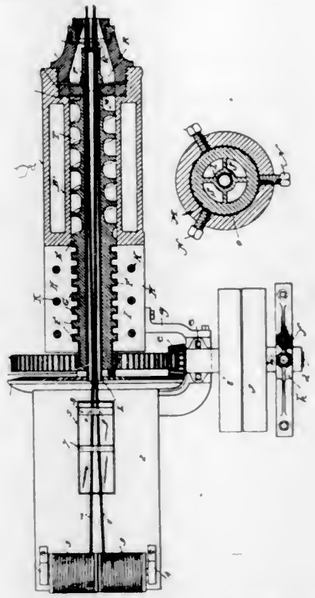
2. The combination of a balloon, the fixed vertical standard, the rotatable sleeve thereon, the frusto-pyramidal sign secured thereto and having transparent characters in its faces, a series of lamps disposed inside of the sign behind the characters and supported to rotate therewith, and means for rotating the sign and the lamps, substantially as described.

3. The combination of a balloon, a depending standard, a rotatable sign, electric lamps carried by said sign, conducting-wires, a supporting-arm projecting beyond said sign to keep the wires clear therefrom and means for maintaining said wires constantly in circuit with the lamps, substantially as described.

653,242. APPARATUS FOR PLACING LINING IN OPENINGS IN PLASTIC MATERIAL. ALBERT T. HOLT, Springfield, Ohio. Filed Oct. 24, 1899. Serial No. 734,625. (No model.)

Claim.—1. In a machine for placing lining within openings in plastic material, the combination with a former, a feed device for feeding plastic material into said former, said feeding device having a longitudinal passage therein, a stationary tube extending through said passage, a mandrel-support forming a continuation of said tube and carrying one or more hollow mandrels projecting within said former, a lining-holder mounted adjacent to one end of said machine and carrying one or more lining-rolls, as also a liquid-cement receptacle, means for guiding said linings into said cement, and means for feeding said lining into the plastic material as rapidly as such material is being formed, all substantially as shown and described.

2. In a machine for placing lining within openings in plastic material, the combination with a former adapted to shape plastic material, means for feeding said plastic material and causing it to pass through said former, one or more mandrels having longitudinal passages therein projecting within said former, said machine also having a longitudinal passage therein communicating with said mandrels, a lining-support, a receptacle for liquid cement, means to guide said lining into said liquid cement and means for guiding said lining into the longitudinal passage in said machine, and a device for clamping said lining after passing through the former, a rope carrying a weight at one end and at its other end connected to said device, said rope passing beneath one pulley and over another pulley, substantially as shown and described.

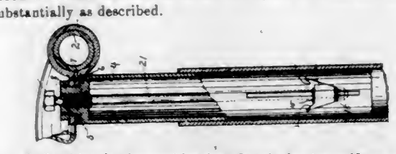


3. In a machine for placing lining within openings in plastic material, the combination with a former, a feed device for feeding plastic material to said former, said feeding device having a longitudinal passage therein, a stationary tube extending through said passage, a mandrel-support forming a continuation of said tube and carrying a pair of hollow mandrels adapted to project within said former, a lining-holder mounted adjacent to one end of said machine and carrying a pair of lining-rolls, as also a liquid-cement receptacle, means for guiding said linings into said cement and tube, such linings being adapted to extend through the mandrel-support, as also through said mandrels, a rope carrying a weight at one end and a clamp at the other, said clamp being adapted to engage with said linings after passing through said mandrels and adapted to draw the linings along with the same rapidity as plastic material passes through said former, all substantially as shown and described.

4. In a machine for placing lining within openings in plastic material, the combination with a machine proper, of a lining-support and cement-receptacle mounted adjacent to one end of said machine proper and a plastic-material support mounted adjacent to the other end of said machine proper, a former carried by said machine proper and adapted to form plastic material passing through such machine, a pair of mandrels projecting into said former each having a longitudinal opening therein, said machine also having a longitudinal central opening communicating with said mandrel-openings, and a rope carrying a clamp at one end and a weight at its other end and adapted to extend around a pulley to engage the linings after passing through said machine proper and to cause them to travel with the same rapidity as plastic material passes through said former, all substantially as shown and described.

653,243. BICYCLE TUBE-CLAMP. PATRICK L. HUSSEY, Dayton, Ohio. Filed Sept. 25, 1899. Serial No. 731,585. (No model.)

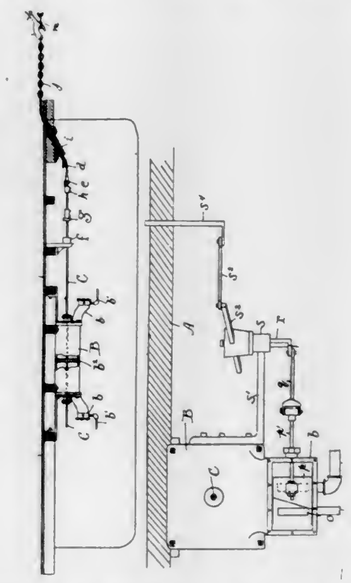
Claim.—1. In a bicycle, the combination of a tube having openings on opposite sides, the said openings having inner and outer tapering sides, slots extending longitudinally on opposite sides of the tube and terminating at said openings, a block inclosed within said tube and conforming to the shape of the openings, in cross-section, and a rod to which said block is connected and by means of which said block is moved in either direction to expand or contract the tube, substantially as described.



2. In a bicycle, the combination of a tube having uniform openings on opposite sides, said openings having inner and outer tapering sides, slots extending longitudinally above and below said openings, the lower slot being terminated at a point above the lower extremity of the tube, a block inclosed within said tubes with its ends projected into the openings therein, the said block having inner and outer contraction and expansion surfaces which engage with the similar surface of the said openings, and a rod to which said block is secured, the said rod projecting above the upper end of the tube, whereby the block may be raised or lowered in the tube to contract or expand said tube, substantially as described.

3. In a bicycle, the combination of a tube having the upper end thereof reduced, made solid and provided with a screw-threaded opening, said reduced portion being adapted to receive a handle-bar clamp, and tapering slots on opposite sides in the lower portion of said tube, with slots extending from said tapering openings, an expansion-block inclosed within said tube with its ends projected into said tapering openings, and a rod having its lower ends attached to said expansion-block, and the upper end of said rod having a screw-threaded engagement with the solid screw-threaded end of the stem, and a rigid head on said rod by means of which said rod may be moved up or down to raise or lower the expansion-block, substantially as and for the purposes specified.

653,244. DEVICE FOR FASTENING FERRY-BOATS. WARRICK O. JONES, Deering, Me. Filed Nov. 24, 1899. Serial No. 738,612. (No model.)



Claim.—1. In a fastening device for ferry-boats, the combination of a cylinder, a piston and piston-rod therefor, a flexible connection secured to the end of the piston-rod and means for fastening the same to the ferry-slip.

2. In a fastening device for ferry-boats, the combination of a cylinder, a piston and piston-rod therefor extending entirely through said cylinder, a steam chest and valve on each end of said cylinder, a flexible connection on each end of said piston-rod and means for fastening said flexible connection to the ferry-slip.

3. In a fastening device for ferry-boats, the combination of a cylinder, a piston and piston-rod therefor located beneath the deck,

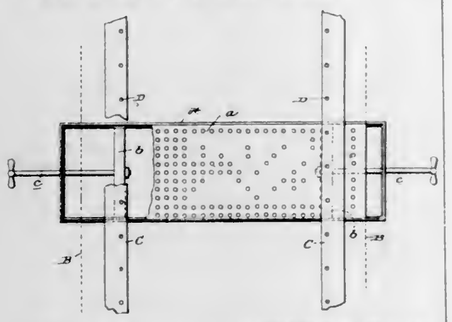
a flexible connection on the end of said piston-rod extending at an inclination up through said deck toward the end of the boat and a hook for fastening said flexible connection to the ferry-slip.

4. In a fastening device for ferry-boats, the combination of a cylinder, a piston and piston-rod therefor, a hook for fastening said flexible connection to the ferry-slip and a buffer to take the longitudinal thrust of said piston-rod.

5. In a fastening device for ferry-boats, the combination of a cylinder, a piston and piston-rod therefor, a flexible connection on the end of the piston-rod, a hook for fastening the said flexible connection to the ferry-slip and a joint in said flexible connection adapted to be drawn apart by an excessive strain.

6. In a fastening device for ferry-boats, the combination of a cylinder, a piston and piston-rod therefor, a wire rope on the end of said piston-rod, means for fastening said wire rope to the ferry-slip and a connecting member between said wire rope and said piston-rod composed of a tapering socket in which the end of said wire rope is inserted and expanded and a lateral opening back of said socket to admit melted Babbitt or other fused metal.

653,245. DECKLE-STRAP. MARBLE D. KEENEY, Holyoke, Mass. Filed Nov. 23, 1899. Serial No. 738,059. (No model.)



Claim.—1. An improved deckle or deckle strap for paper-making machines provided with means for admitting air to its underside as it passes over the suction-box of a machine.

2. An improved deckle or deckle-strap for paper-making machines provided with a duct for admitting air to its under side as it passes over the suction-box of a machine, substantially as specified.

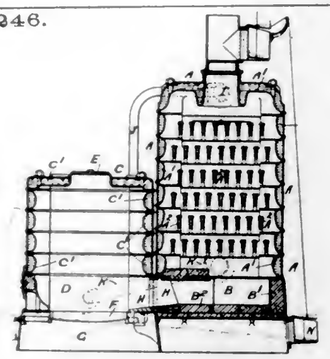
3. An improved deckle or deckle-strap for paper-making machines provided, at intervals in its length, with ducts for admitting air to its under side as it passes over the suction-box of a machine, substantially as specified.

4. An improved deckle or deckle-strap for paper-making machines provided, at intervals in its length, with apertures extending from its lower to its upper side; the said apertures being designed to admit air to the lower side of the strap as the same passes over the suction-box of a machine, substantially as specified.

5. In a paper-making machine, the combination of a suction-box, an adjustable head therein, and a deckle or deckle-strap provided with a duct for admitting air to its under side as it passes over the suction-box; said duct having its discharge arranged adjacent to the inner edge of the deckle, substantially as and for the purpose specified.

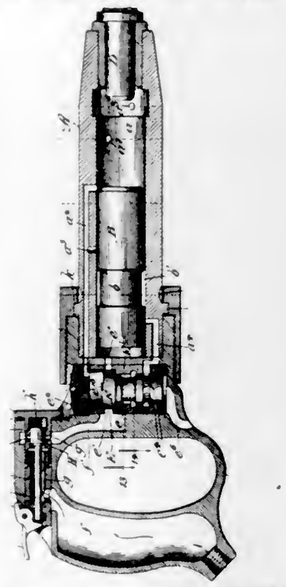
6. In a paper-making machine, the combination of a suction-box, an adjustable head therein, and a deckle or deckle-strap provided, at intervals in its length and adjacent to its inner edge, with allied apertures extending from its under to its upper side; the said apertures of the strap being adapted to be sealed by the adjustable head of the suction-box, substantially as and for the purpose specified.

653,246. SECTIONAL BOILER. JAMES KEITH, London, England. Filed Nov. 14, 1899. Serial No. 736,979. (No model.)



Claim.—In a hot-water boiler, the combination of a main boiler composed of a series of water-containing sections joined together and inclosing a central combustion-chamber having a fire-brick bottom, each section having its water-space connected to that of its neighbors and an auxiliary water-heater or furnace connected thereto by a fire-brick passage, and composed of a single or a series of water-containing sections similarly jointed and inclosing a central fuel-space provided at its upper end with a firing-door and at its lower end with a fire-grate, the main boiler and auxiliary heater having the water-spaces of their highest and lowest sections connected together by flow and return pipes respectively.

653,247. PNEUMATIC HAMMER. HENRY J. KINMAN, Chicago, Ill. Filed Oct. 16, 1899. Serial No. 733,750. (No model.)



Claim.—1. In a portable pneumatic hammer having an inlet-passage for the admission of motive fluid, the combination with a throttle-valve controlling such passage of a sleeve in which the valve is mounted made in two parts, one part substantially immovably secured to the hammer and the other part adjustably secured to the immovable part of the sleeve so as to change the relation of the port-openings therein relative to said throttle-valve, substantially as described.

2. In a pneumatic hammer having an inlet-passage for the admission of the motive fluid, the combination with a throttle-valve controlling said passage of an adjustable sleeve in which said valve is mounted, a spring for moving the valve in one direction to close the inlet-passage, and a trigger or operating-lever arranged to have a uniform swing or motion and be limited in its motion in each direction, whereby the controlling-valve may be moved the same distance each time, substantially as described.

3. In a pneumatic hammer having an inlet-passage for the admission of the motive fluid, the combination with a throttle-valve controlling said passage of a sleeve in which said sleeve is mounted formed in two parts one of which is relatively or substantially immovably secured in the hammer and the other having threaded engagement therewith so as to shorten or extend the length of the valve-bushing and thereby change the relation of the port-openings relative to said throttle-valve, and means for retarding the rotation of the movable part of the valve-bushing, substantially as described.

4. In a pneumatic hammer having an inlet-passage for the admission of the motive fluid, the combination with a throttle-valve controlling said passage of a sleeve in which said valve is mounted formed in two parts, one of which is relatively immovably secured in the hammer and the other having threaded engagement therewith so as to shorten or extend the length of the valve-bushing and thereby change the relation of the port-openings relative to said throttle-valve, a head on the movable part of the valve-bushing having its inner surface adjacent to a portion of the hammer and provided with a series of indentations or the like on such surface, and a spring-pressed pin arranged to engage with the indentations in the sleeve-head and retard the free rotation of the bushing, substantially as described.

5. In a portable pneumatic hammer, the combination of a fluid-pressure cylinder, a piston-hammer reciprocatingly mounted therein a handle provided with an inlet-passage for supplying the motive fluid and attached to the fluid-pressure cylinder, valve-bushing transversely of the handle neck or rim adjacent to the fluid-pressure cylinder, and having a central longitudinal passage or bore of different diameters forming a valve-chamber, a controlling-valve of differential diameters in the valve chamber of the bushing, and a screw-plug entered into the handle neck or rim, engaging and holding the bushing in place and forming a head for the valve-chamber and provided with a port communicating with the valve-chamber, substantially as described.

6. In a portable pneumatic hammer, the combination of a fluid-pressure cylinder, a piston-hammer reciprocatingly mounted therein, a handle having a neck or rim with a cup-shaped recess for the insertion of one end of the fluid-pressure cylinder and forming a head for the end of the fluid-pressure cylinder, a sleeve engaging with the handle neck or rim and with the fluid-pressure cylinder to hold the parts together, a valve-bushing transversely of the handle neck or rim adjacent to the head of the fluid-pressure cylinder, and having a central longitudinal passage or bore of different diameters forming a valve-chamber, a controlling-valve of differential diameters in the valve-chamber of the bushing and a plug screw-threaded into the handle neck or rim and engaging and holding the bushing in place, and forming a head for the controlling valve-chamber and provided with a port communicating with the valve-chamber, substantially as described.

7. In a portable pneumatic hammer, the combination of a fluid-pressure cylinder provided with an annular shoulder at its rear end, a handle having a neck or rim provided with an exterior screw-thread a sleeve having a shoulder at its front end arranged to engage the shoulder of the fluid-pressure cylinder and provided with an interior thread to engage the screw-thread of the handle neck or rim, ratchet-teeth on the exterior of the fluid-pressure cylinder forward of the shoulder and a pawl carried by and wholly incased within the sleeve and operating to engage the ratchet-teeth and prevent rotation of the parts in one direction and permit rotation thereof in an opposite direction, substantially as described.

8. In a portable pneumatic hammer, the combination of a fluid-pressure cylinder provided with an annular shoulder or rim at its rear end, a handle having a neck or rim provided with a socket to receive the rear end of the fluid-pressure cylinder and with a threaded outer periphery, engaging teeth on the exterior of the fluid-pressure cylinder forward of and adjacent to the shoulder or rim thereon, a threaded sleeve engaging the threaded periphery of the handle neck or rim and provided with a shoulder or flange at its front end to engage the shoulder or rim on the fluid-pressure cylinder, a recess in the shoulder or flange having an opening or perforation leading therefrom out through the periphery of the sleeve, and a spring-pressed click located wholly within the recess and operating to engage the teeth on the fluid-pressure cylinder and permit rotation of the parts in one direction and prevent rotation of the parts in the other direction until a pin or other object is inserted in the perforation and the click disengaged from the teeth, substantially as described.

9. In a portable pneumatic hammer having an inlet-passage for the admission of the motive fluid, the combination with a throttle-valve of a controlling-valve bushing inserted in the hammer and provided with a bore of large and small diameters, a differential valve in said controlling-valve bushing provided with a large-headed portion for the large bore of the bushing and a reduced portion for the reduced bore of the bushing and further provided with an annular ring or bead arranged adjacent to the large head of the valve so that as the valve is forced in one direction the area of the free opening in the valve-bushing is reduced so as to restrict the passage of air therein and act as a cushion for the valve, substantially as described.

10. In a portable pneumatic hammer, the combination of a fluid-pressure cylinder, a reciprocating piston-hammer in the cylinder, a handle provided with an induction-passage for the fluid-pressure and with a neck or rim for attachment to the fluid-pressure cylinder, a bushing in the handle neck or rim transversely thereof, a central longitudinal chamber in the bushing of different diameters, a valve having a head or disk traversing the larger diameter of the chamber and a body or stem traversing the smaller diameter of the chamber, and an initial induction-port in the bushing communicating with the chamber thereof for supplying fluid-pressure to the inner face of the valve head or disk and initially moving the valve, substantially as described.

11. In a portable pneumatic hammer, the combination of a fluid-pressure cylinder, a reciprocating piston-hammer in the cylinder, a handle provided with an induction-passage for the fluid-pressure and with a neck or rim for attachment to the fluid-pressure cylinder, a bushing in the handle neck or rim transversely thereof, a central longitudinal chamber in the bushing of different diameters, a valve having a head or disk traversing the larger diameter of the chamber and a body or stem traversing the smaller diameter of the chamber, an initial induction-port in the bushing communicating with the chamber thereof back of the valve head or disk for supplying fluid-pressure to initially move the valve, and a full induction-port controlled by the valve head or disk, substantially as described.

12. In a portable pneumatic hammer, the combination of a fluid-pressure cylinder, a reciprocating piston-hammer in the cylinder, a handle provided with an induction-passage for the fluid-pressure and with a neck or rim for attachment to the fluid-pressure cylinder, a bushing in the handle neck or rim transversely thereof, a central longitudinal chamber in the bushing of different diameters, a valve having a head or disk traversing the larger diameter of the chamber and a body or stem traversing the smaller diameter of the chamber, an annular groove in the valve body or stem adjacent to the head or disk, an initial induction-port in the bushing communicating with the annular groove of the valve body or stem, and a full induction-port controlled by the valve head or disk, substantially as described.

13. In a portable pneumatic hammer, the combination of a fluid-pressure cylinder, a reciprocating piston-hammer in the cylinder, an induction-passage for the fluid-pressure, a bushing interposed between the fluid-pressure cylinder and the induction-passage and provided with a central longitudinal chamber of different diameters, a valve having a head or disk traversing the larger diameter of the chamber, and a body or stem traversing the smaller diameter of the chamber, an initial induction-port in the bushing, a full induction-port in the bushing communicating with the induction-passage and with the fluid-pressure cylinder and controlled by the valve head or disk, and an annular groove in the valve body or stem communicating with the full induction-passage, substantially as described.

14. In a portable pneumatic hammer, the combination of a valve-bushing located transversely of the hammer-body and provided with a central longitudinal valve-chamber of different diameters, an initial fluid-pressure induction-port and a full fluid-pressure induction-port in the bushing, an annular passage for eduction in the bushing, a valve traversing the chamber of the bushing, a head or disk on the valve controlling the full induction-port, a groove in the body or stem of the valve communicating with the initial induction-port, a groove in the body or stem of the valve for communication with the eduction-passage of the bushing, and eductioo-openings from the eduction groove or passage of the valve leading into the interior of the valve body or stem, substantially as described.

15. In a portable pneumatic hammer, the combination of a valve-bushing located transversely of the hammer-body and provided with a central longitudinal valve-chamber of different diameters, an initial fluid-pressure induction-port and a full fluid-pressure induction-port in the bushing, an annular passage for eduction in the bushing, a valve traversing the chamber of the bushing, a head or disk on the valve controlling the full induction-port, a groove in the body or stem of the valve communicating with the initial induction-port, a groove in the body or stem of the valve for communication with the eduction-passage of the bushing, eduction-openings from the eduction groove or passage of the valve leading into the interior of the valve body or stem, and an eduction-passage through the wall of the chamber, substantially as described.

16. In a portable pneumatic hammer, the combination of a controlling valve-chamber of different diameters and provided with an initial induction-port, a full induction-port and an eductioo-port, and a reciprocating valve located and operating in the chamber and having a head or disk and a body or stem corresponding to the large and small diameters respectively of the bushing-chamber and provided with a central longitudinal chamber, an exterior channel or groove, a depressed portion forming an annular passage around the body or stem, an annular passage or channel around the body of the stem communicating with the eduction-port, and eduction-openings between the annular eduction passage or channel and the interior chamber of the valve for the induction and eduction of fluid-pressure, substantially as described.

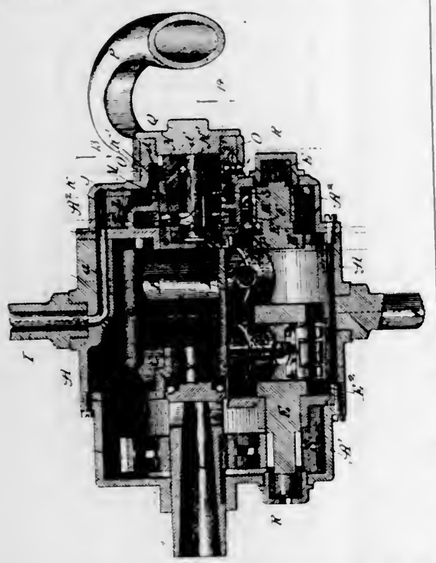
17. In a portable pneumatic hammer, the combination of a fluid-pressure induction-passage and a fluid-pressure eduction-passage, a valve-bushing located transversely of the induction-passage and having a chamber of different diameters and provided with an initial induction-port, a full induction-port, and an eduction-port, a controlling-valve in the bushing-chamber having a head or disk and a body or stem corresponding respectively to the large and small diameters

of the bushing-chamber and provided with an interior longitudinal chamber and an exterior annular groove, an exterior annular passage and an exterior channel with openings therefrom leading into the valve-chamber for inducting and educting fluid-pressure, substantially as described.

18. In a portable pneumatic hammer, the combination of a bushing having therein a valve-chamber with an induction and eduction port, a cap closing one end of the bushing and provided with a port, a valve traversing the chamber of the bushing and having a contact end engaging the face of the bushing and furnishing a pressure-space between the bushing and the valve for cushioning effect, substantially as described.

19. In a portable pneumatic hammer, the combination of a handle having fluid-pressure induction and eduction passages, a valve-bushing located transversely of the induction-passage, a chamber of different diameters in the bushing and having induction and eduction ports, a valve in the bushing-chamber controlling the induction and eduction ports and having an interior chamber and provided with an exterior annular groove, an exterior annular passage, and an exterior annular chamber with openings leading therefrom into the interior chamber of the valve, and a hammer-tube provided with induction and eduction fluid-pressure passages and ports controlled by the movements of the valve for operating a reciprocating piston-hammer in the chamber of the hammer-tube, substantially as described.

653,248. ENGINE FOR PORTABLE PNEUMATIC DRILLS. HENRY J. KIMMAN, Chicago, Ill. Filed Nov. 28, 1899. Serial No. 738,510. (No model.)



Claim.—1. In a portable pneumatic drilling-machine, the combination of two sets of fluid-pressure cylinders arranged in different transverse planes and in lateral parallel lines to a crank-shaft, each set consisting of two cylinders with the cylinders of a set standing at an inclination to each other and in a transverse parallel line on opposite sides of the crank-shaft, a reciprocating piston in each cylinder, a crank-shaft having two cranks one for each set of pistons, and a triple valve common to the two cylinders on the same side of the crank-shaft, each valve controlling ports and passages for the induction of fluid-pressure to and the eduction of fluid-pressure from the two cylinders with which the valve coacts, substantially as described.

2. In a portable pneumatic drilling-machine, the combination of a casing provided with two sets of fluid-pressure cylinders arranged in different transverse planes and in lateral parallel lines to a crank-shaft, each set consisting of two cylinders standing at an inclination to each other and arranged on opposite sides of the crank-shaft in a transverse parallel line with each other, a reciprocating piston in each cylinder, a rotating crank-shaft connected with the piston in each cylinder and a triple valve for the two cylinders in line on the same side of the crank-shaft, each valve common to the ports and passages of the two cylinders with which it coacts and operating to cut off fluid-pressure from and admit fluid-pressure to each cylinder of its line of cylinders, and a tool-operating mechanism connected with and adapted to be rotated by the crank-shaft in reverse directions, substantially as described.

3. In a portable pneumatic drilling-machine, the combination of a casing provided with two sets of fluid-pressure cylinders arranged in different transverse planes and in lateral parallel lines with a crank-shaft, each set of cylinders consisting of two cylinders arranged on opposite sides of the crank-shaft at an inclination to each other and in the same transverse parallel line and diagonally operating in relation to each other, a reciprocating piston in each cylinder, a crank-shaft provided with two cranks one crank in line with a set of cylinders and having the cranks connected with the pistons of its set of cylinders, a triple valve for the two cylinders on the same side of the crank-shaft with the valves arranged in a transverse plane and parallel with each other and with the cylinders and connected with the crank-shaft to be operated thereby, each valve controlling induction and eduction ports and passages to regulate the admission and the exhaust of fluid-pressure to and from its set of cylinders, simultaneously admitting pressure to two diagonally-opposite cylinders and exhausting pressure from two diagonally-opposite cylinders, and a tool-operating mechanism connected with and adapted to be rotated by the crank-shaft, substantially as described.

4. In a portable pneumatic drilling-machine, the combination of a casing, a front set and a rear set of fluid-pressure cylinders in the casing, each set of cylinders consisting of two cylinders standing at an incliuation to each other and arranged in parallel lines on opposite sides of a crank-shaft and in different transverse planes, a reciprocating piston in each cylinder, a crank-shaft having a crank opposite each set of cylinders and connected with the pistons, a valve-casing forming a cap for the main casing and provided with a fluid-pressure chamber and valve-chambers, one valve-chamber for each line of cylinders on the same side of the crank-shaft, a triple valve for each valve-chamber connected with the crank-shaft and operated therefrom, controlling the induction ports and passages and the eduction ports and passages for the pressure-cylinders of each line of cylinders and a controlling-valve for the fluid-pressure chamber, substantially as described.

5. In a portable pneumatic drilling-machine, the combination of a main casing, a front set and a rear set of fluid-pressure cylinders in the casing, each set of cylinders consisting of two cylinders arranged in a parallel line and at an inclination with each other for two cylinders to be in line on opposite sides of a crank-shaft, a reciprocating piston in each cylinder, a crank-shaft provided with a crank for each set of cylinders and connected with the pistons of its cylinders, a valve-casing forming a cap for one end of the cylinder-casing and provided with a fluid-pressure chamber and valve-chambers, one valve-chamber for each line of pressure-cylinders on the same side of the crank-shaft, a triple valve in each valve-chamber connected with the crank-shaft and operated therefrom and controlling the supply to and exhaust from the line of cylinders of fluid-pressure through the reciprocating movements of the triple valve, a valve controlling the induction of fluid from the pressure-chamber, and eduction-passages controlled by the same valve for exhausting the fluid-pressure from the cylinders, substantially as described.

6. In a portable pneumatic drilling-machine, the combination of a front set and a rear set of fluid-pressure cylinders, each set of cylinders consisting of two cylinders with a cylinder of one set laterally in line with a cylinder of the other set on the same side of a crank-shaft, and having the cylinders of a set transversely opposite each other for the two cylinders to stand inclined to each other and to a crank-shaft in a transverse parallel line, a triple valve for the two cylinders of each lateral line of cylinders common to both cylinders in the line with the two valves inclined to each other and to the crank-shaft, a piston for each cylinder, a crank-shaft operated from the traverse of the pistons and operating the triple valves, and induction ports and passages and eduction ports and passages for the cylinders of a line of cylinders both controlled by the triple valve of the line of cylinders for simultaneously supplying fluid-pressure to and exhausting fluid-pressure from two diagonally-opposite cylinders in each lateral line of cylinders, substantially as described.

7. In a portable pneumatic drilling-machine, the combination of a casing, a system of cylinders arranged in sets within the casing to form a front set and rear set of cylinders, each set having its cylinders arranged on opposite sides of a crank-shaft in line with each other and standing at an inclination forming on each side of the crank-shaft a lateral line of cylinders, an induction-passage for fluid-pressure in the main casing, an induction and eduction passage both in one for each cylinder, a cap or head at one end of the main casing, a port in the cap or head for each cylinder-passage of the main casing, a valve-chamber for each line of cylinders, a triple valve in each valve-chamber controlling the ports in the cap or head, a fluid-pressure chamber in the cap or head, a second fluid-pressure chamber communicating with the valve-chambers and controlled by the triple valve for admitting pressure to and exhausting pressure from the cylinder-passages of the casing through the ports therefor, substantially as described.

8. In a portable pneumatic drilling-machine, the combination of a main casing, a fluid-induction passage in said casing, a cap or head closing one end of the main casing, a port in the cap or head communicating with the fluid-induction passage of the casing, a main fluid-pressure chamber in the head, a casing or bushing entered into the cap or head, a fluid-induction passage in the casing or bushing, a semirotating valve carried by the casing or bushing, a port in the valve in communication with the passage of the valve casing or bushing, a longitudinal passage in the body of the valve, a port leading from the longitudinal passage, a port communicating with the port of the valve, and a second or inner fluid-pressure chamber receiving a supply of fluid-pressure from the main fluid-pressure chamber through the valve and the ports and passages coacting therewith, substantially as described.

9. In a portable pneumatic drilling-machine, the combination of a main casing, a fluid-induction passage in said casing, a cap or head closing one end of the main casing, a port in the cap or head communicating with the fluid-induction passage of the casing, a main fluid-pressure chamber in the head, a casing or bushing entered into the cap or head, a fluid-induction passage in the casing or bushing, a semirotating valve carried by the casing or bushing, a port in the valve in communication with the passage of the valve casing or bushing, a longitudinal passage in the body of the valve, a port leading from the longitudinal passage, a port communicating with the port of the valve, a second or inner fluid-pressure chamber receiving a supply of fluid-pressure from the main pressure-chamber through the valve and the ports and passages coacting therewith, a valve-chamber at each end of the second or inner fluid-pressure chamber, a port leading from the chamber to each valve-chamber, and a triple valve in each valve-chamber controlling the induction and eduction of fluid-pressure, substantially as described.

10. In a portable pneumatic drilling-machine, the combination of a main casing, a fluid-induction passage in said casing, a cap or head closing one end of the main casing, a port in the cap or head communicating with the fluid-induction passage of the casing, a main fluid-pressure chamber in the head, a casing or bushing entered into the cap or head, a fluid-iuduction passage in the casing or bushing, a semirotating valve carried by the casing or bushing, a port in the valve in communication with the passage of the valve casing or bushing, a longitudinal passage in the body of the valve, a port leading from the longitudinal passage, a port communicating with the port of the valve, a second or inner fluid-pressure chamber receiving a supply of fluid-pressure from the main pressure-chamber through the valve, and the ports and passages coacting therewith, a valve-chamber at each end of the second or inner fluid-pressure chamber, a port leading from the chamber to each valve-chamber, a triple valve in each valve-chamber controlling the induction and eduction of fluid-pressure, a line of cylinders on each side of the main casing, passages in the main casing communicating with the cylinders, a port in the cap or head for each casing-passage, and passages adjacent to the valve-chambers in the cap or head for alternately supplying fluid-pressure to and exhausting fluid-pressure from the cylinders of each line of cylinders, substantially as described.

11. In a portable pneumatic drilling-machine, the combination of a main casing, an induction-passage for fluid-pressure in the main casing, a series of line-cylinders on each side of the main casing, induction and eduction passages both in one for the cylinders, a cap or head for closing one end of the casing, an induction-port in the cap or head communicating with the induction-passage of the casing, ports in the cap or head communicating with the induction-eduction passages of the casing, a fluid-pressure chamber in the cap or head, a semirotatable valve controlling the induction from the fluid-pressure chamber and having a longitudinal passage with a port leading therefrom into and a port leading therefrom, a second or inner fluid-pressure chamber communicating with the outport of the valve, a valve-chamber on each side of the main casing communicating with the second or inner fluid-pressure chamber, a triple valve in each valve-chamber, passages in the cap or head adjacent to the valve-chambers and communicating with the ports of the induction-eduction passages of the main casing, an eduction-port common to both sets of eduction-passages, a main eduction fluid-pressure chamber, a second fluid-pressure eduction-chamber and a discharge from the second fluid-pressure eduction-chamber controlled by a semirotating handle, substantially as described.

12. In a portable pneumatic drilling-machine, the combination of a first or primary induction fluid-pressure chamber, a second or intermediate fluid-pressure induction-chamber, a valve-chamber on each side of the second or intermediate fluid-pressure induction-chamber and in connection therewith, a controlling-valve in each valve-chamber, each valve inducting and educting fluid-pressure to and from a line of cylinders for each valve, an eduction fluid-pressure chamber common to both controlling-valves and to both lines of cylinders and a main valve interposed between the two induction-chambers and the eduction-chamber and controlling the induction of fluid-pressure between the first or primary and the second or intermediate induction-chambers and the flow of fluid-pressure into and out from the eduction-chamber, substantially as described.

13. In a portable pneumatic drilling-machine, the combination of a casing, a system of cylinders arranged in sets within the casing, each set having its cylinders arranged on opposite sides of a crank-shaft in lateral line with each other and in different transverse planes to the crank-shaft and each receiving fluid-pressure, a valve-chamber for each lateral line of cylinders having ports and passages from each valve-chamber leading to the respective cylinders on the same side as the valve-chamber, and a triple valve for each valve-chamber controlling the ports and passages leading to the lateral line of cylinders, substantially as described.

14. In a portable pneumatic drilling-machine, the combination of a system of cylinders arranged in sets, each set having its cylinders on opposite sides of the crank-shaft in lateral line with each other and in different transverse planes to the crank-shaft, a valve-chamber for each lateral line of cylinders, a triple valve in each valve-chamber, a chamber for the induction of fluid to the valve-chambers and ports and passages to and from the valve-chambers for supplying fluid-pressure to and exhausting fluid-pressure from the respective line of lateral cylinders, substantially as described.

15. In a portable pneumatic drilling-machine, the combination of a first or primary induction fluid-pressure chamber, a second or intermediate fluid-pressure induction-chamber, a valve-chamber on each side of the second or intermediate fluid-pressure induction-chamber and in communication therewith, a controlling-valve in each valve-chamber, each valve inducting and educting fluid-pressure to and from a line of cylinders for each valve, an eduction fluid-pressure chamber common to both controlling-valves and to both lines of cylinders, a semirotating main valve interposed between the two induction-chambers and the eduction-chamber, and a semirotating handle for moving the valve and controlling the induction of fluid-pressure between the first or primary and the second or intermediate induction-chambers and the flow of fluid-pressure into and out from the eduction-chamber, substantially as described.

16. In a portable pneumatic drilling-machine, the combinatiot of at least two sets of fluid-pressure cylinders arranged in different planes and in parallel lines having two cylinders in each set substantially at right angles to each other, a reciprocating piston in each cylinder, a crank-shaft provided with a crank-shaft opposite each set of cylinders and connected with the movable piston therein, a valve-casing forming a cap for the cylinder-casing and provided with a fluid-pressure chamber and valve-chambers arranged at right angles to each other, one for each line of parallel-arranged cylinders, a reciprocating piston-valve in each valve-chamber connected with the crank-shaft and arranged to be operated thereby, passages leading from the chambers of the controlling-valves to the fluid-pressure chambers to control the exhaust and supply of fluid thereto, a common throttle-valve arranged in the inlet-passage between the fluid-pressure chamber and the valve-chambers and arranged to be rotated and provided with two or more ports and passages, whereby the rotations of the throttle-valve convert the inlet-passages into exhaust-passages and vice versa, substantially as described.

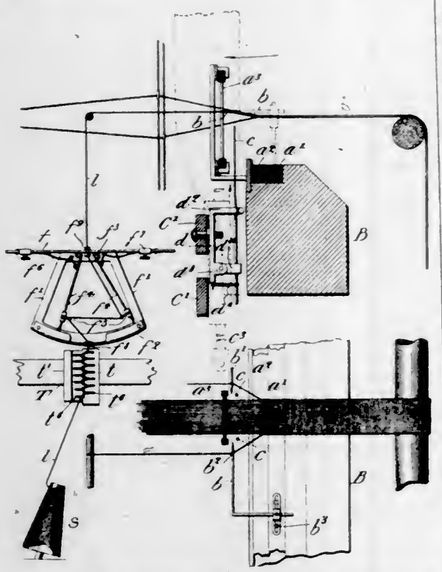
17. In a portable pneumatic drilling-machine, the combination of a casing, at least two sets of fluid-pressure cylinders having at least two cylinders in each set arranged substantially parallel with the cylinders in the adjacent set, a reciprocating piston in each cylinder, a single crank-shaft connected with all of the pistons, a controlling reciprocating valve arranged for each set of the parallel-arranged cylinders parallel therewith and adjacent to the crank-shaft to admit and exhaust fluid-pressure in each line of parallel-arranged cylinders, a tapered throttle-valve arranged in the inlet-passage between the supply of motive fluid and the controlling-valves arranged to have a partial rotation and provided with two or more ports and passages connected with the exhaust and inlet of each of the controlling-valves, whereby the rotation or partial rotation of the throttle-valves converts the exhaust into an inlet passage and vice versa, substantially as described.

658,249. LOOM. GEORGE F. KUETT, Paterson, N. J., assignor to the American Automatic Loom Company, of New Jersey. Filed Dec. 13, 1899. Serial No. 740,172. (No model.)

Claim.—1. In a loom, the combination, substantially as hereinbefore set forth, of the following elements: a lay, a reed mounted thereon, a filling-inserting needle movable lengthwise of the lay, a filling-loop-engaging needle, means for reciprocating it in a path transverse to that of the filling-inserting needle, and provisions for moving said loop-engaging needle toward the reed and the edge of the warp.

2. In a loom, the combination, substantially as hereinbefore set

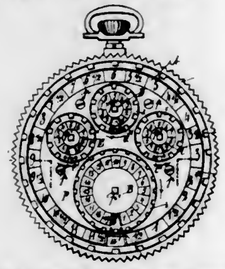
forth, of the following elements: a lay, a reed mounted thereon, a filling-inserting needle, a tension device, a take-up interposed between the tension device and filling-inserting needle, and a filling-loop-engaging needle adapted to yield toward the reed and the edge of the warp.



3. In a loom, the combination, substantially as hereinbefore set torth, of the following elements: a lay, a reed mounted thereon, filling-inserting needles for inserting filling into the warp from opposite sides thereof, tension devices for the filling, take-ups interposed between the tension devices and filling-inserting needles, and filling-loop-engaging needles yieldable toward the reed and the edge of the warp.

4. In a loom, the combination, substantially as hereinbefore set forth, of the following elements: a lay, a reed mounted thereon, a series of filling-inserting needles, tension devices for the filling, take-ups interposed between the tension devices and filling-inserting needles, and a series of filling-loop-engaging needles collectively movable to engage and quit the filling and individually movable toward and from the reed and the edge of the warp.

653,250. REGISTER. GEORGES LAFOND, Paris, France. Filed Apr. 18, 1899. Serial No. 713,473. (No model.)



Claim.—1. In a register or counter, two circular dials disposed one above the other and having a series of numbers arranged along the edge thereof, the upper dial being fixed and having an opening therethrough in the space corresponding to the zero position, through which opening a number on the lower dial is adapted to be exposed for observation, a bearing-surface beneath the outer edge of the movable dial against and along which a point or finger depending from the movable dial is adapted to travel, said bearing-surface having a depression therein at a point corresponding to the location of the observation-opening in the fixed dial.

2. In a register or counter, two circular dials disposed one above the other and having a series of numbers arranged along the edge thereof, the upper dial being fixed and having an opening therethrough in the space corresponding to the zero position, through which opening a number on the lower dial is adapted to be exposed for observation, and the lower dial having a series of openings or recesses therein in proximity to the numbers on the fixed dial respectively, said openings or recesses being adapted to be engaged by the point of a pin or the like for rotating the movable dial, and a bearing-surface beneath the outer edge of the movable dial against and along which the point of said pin is adapted to travel in imparting a rotary movement to the movable dial, said bearing-surface having a depression therein at a point corresponding to the location of the observation-opening in the fixed dial.

3. In a register or counter, two circular dials disposed one above the other and each having a series of numbers arranged about the upper face thereof, the upper dial being fixed and having an opening therethrough in the space corresponding to the zero position through which opening a number on the lower dial is adapted to be exposed for observation, and an upwardly-projecting flange around the edge of the movable dial concentric to the fixed dial, said flange having openings therein corresponding to the numbers on the dials respectively and adapted to be engaged by the point of a pin or the like for rotating the movable dial.

4. In a register or counter, a plurality of circular dials, each having a series of numbers thereon and arranged in pairs indicating different denominations, each pair comprising a lower rotatable dial and an upper fixed dial, the latter having an opening in the space corresponding to the zero position through which a number on the rotatable dial is adapted to be exposed for observation, a shaft rotatable with each movable dial, a toothed wheel for each shaft, a pawl-and-ratchet connection between each shaft and its toothed wheel, and a finger or tooth carried by each shaft and adapted upon a complete rotation of its corresponding movable dial to engage the toothed wheel of the shaft of the next highest denomination and move said dial a distance of one space.

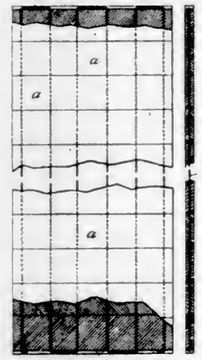
5. The combination with a circular casing, of two large dials located one above the other concentrically within said casing, the upper dial being fixed and the lower dial rotatable, a plurality of small dials arranged one above another in two or more pairs within the circumference of the large dials, the upper dial of each pair being fixed and the lower dial rotatable, and gearing for communicating motion from the large outer movable dial to the small movable dials in succession.

6. The combination with a circular cup-like casing, of an annular frame arranged concentrically and rotatable within said casing, said frame carrying a dial about its upper face, a fixed frame secured to the bottom of the casing and located within said rotatable frame and embracing an upper dial-plate, a dial on said plate in juxtaposition with reference to the dial on the rotatable frame, small circular fixed and rotatable dials arranged concentrically, the former above the latter, and both entirely within the circumference of the large dials and supported on the fixed frame, and gearing whereby rotary motion may be communicated from one of the movable dials to the other.

7. The combination with a circular cup-like casing, of an annular frame arranged concentrically and rotatable within said casing, said frame carrying a dial about its upper face, a fixed frame within said rotatable frame, said fixed frame consisting of a lower disk secured to the bottom of the casing, posts on said disk, a dial-plate supported on the upper ends of said posts and carrying a dial juxtaposed with relation to the movable dial, pins on said fixed frame projecting upwardly through openings in the dial-plate, small fixed dials secured to the upper extremities of the pins above the dial-plate of the fixed frame, bearing-sleeves one on each of said pins, small movable dials one carried by each of said sleeves and located below the small rotatable dials respectively, and suitable gearing or devices connecting the rotatable frame carrying the large rotatable dial and the sleeves carrying the small rotatable dials whereby movement may be communicated from one of said dials to the others in succession.

8. The combination with a circular cup-like casing, of an annular frame arranged concentrically and rotatably within said casing, said frame carrying a dial about its upper face, a fixed frame within said rotatable frame, said fixed frame consisting of a lower disk secured to the bottom of the casing, posts on said disk, a dial-plate supported on the upper ends of said posts and carrying a dial juxtaposed with relation to the movable dial, pins on said fixed frame projecting upwardly through openings in the dial-plate, small fixed dials secured to the upper extremities of the pins above the dial-plate of the fixed frame, bearing-sleeves one on each of said pins, small movable dials one secured to the upper end of each of said sleeves, a disk secured to the lower end of each sleeve and having a finger or tooth projecting from its edge, (excepting that for the dials for indicating the highest denomination,) a toothed or gear wheel rotatably mounted on each pin below the disk on the sleeve, the toothed wheel corresponding to each rotatable dial (excepting that of the small rotatable dial indicating the lower denomination) being in position to be engaged by the tooth on the disk corresponding to another rotatable dial, a pawl-and-ratchet connection between each disk and its juxtaposed toothed wheel, and means for imparting motion from the rotatable frame to the toothed wheel corresponding to the small rotatable dial indicating the lowest denomination.

658,251. WAINSCOTING. VICTOR LAHAIE, Montreal, Canada. Filed Feb. 23, 1900. Serial No. 6,202. (No model.)



Claim.—A rigid flooring, wainscoting, or the like, comprising a series of members arranged edgewise in abutting relation, in a common plane, and each member interlocked by tongue-and-groove joints with adjacent members, the end members being provided with the grooves in their exposed edges, and each of the members provided with a series of openings in registration with like openings of the other members, and a continuous, pliable metallic binder threaded through said openings of the members and clenched at its ends within the exposed grooves, said binder serving to draw all the members tightly together into firm and interlocking relation, substantially as described.

658,252. TILE. CHARLES F. LAWTON, ALBERT L. LAWTON, and ARTHUR W. LAWTON, New York, N. Y. Filed Apr. 24, 1899. Serial No. 714,332. (No model.)

Claim.—1. A tile having retaining-points attached to it by a cement solution hardened by drying and rendered insoluble by drying and exposure, or by drying and heating to a temperature below that of fusion, substantially as described.

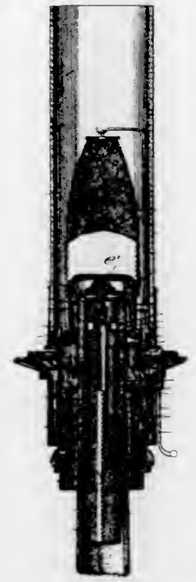
2. A slab or piece of glass, porcelain, or metal, having retaining-points consisting of finely-broken glass, finely-divided rock, or sand, fixed to it by a cement solution, which becomes hard by drying, and is rendered insoluble by drying and exposure, or by drying and heating to a temperature below fusion, and which unites both with the tile and with the retaining-points, forming an inseparable bond.

3. A slab or piece of glass, having a backing of a cement solution, containing an alkaline silicate, holding color, and thereon a granular back, presenting retaining-points, the cement being insoluble and firmly holding the retaining-points to the glass, whereby the tile will present color by the color showing through from the back to the front of the tile, and the glass will, at once, be provided with retaining-points for holding it in place when set, substantially as described.

4. A tile made of glass, porcelain, metal or terra-cotta having retaining-points of fine granular matter attached to the back of the tile by means of a compound cement made of a water solution of a soluble silicate compounded with insoluble silicate in a state of fine division, the whole forming a tile with a finely-granulous back which becomes unaffected by water by simply drying and then heating to a temperature below fusion.

653,258. INCANDESCENT-LAMP BURNER. OTTO LEHMAN, New York, N. Y., assignor, by mesne assignments, to the Standard Incandescent Burner Company, Portland, Me. Filed Feb. 11, 1899. Serial No. 705,354. (No model.)

Claim.—1. In a lamp-burner, the combination with a fixed central air-tube, of a wick-adjusting device a portion of which is exterior to said tube, a vertically-movable tube loosely surrounding said air-tube but adapted to tightly encircle a wick held between said air-tube and said vertically-movable tube so that the latter may be raised and lowered by frictional contact with the wick as the wick is moved by said wick-adjusting device, said vertically-movable tube having an inturned lip at its upper end, and stops for limiting the up and down movements of the said vertically-movable tube as the latter is moved by the wick, said stops permitting a vertical movement of the wick independently of said vertically-movable tube after the latter has reached the limit of its movement in either direction.

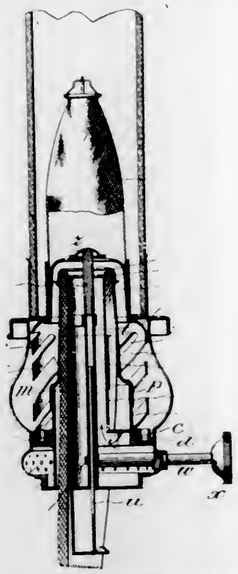


2. In a lamp-burner, the combination with a fixed central air-tube, of a wick-adjusting device a portion of which is exterior to said tube, a vertically-movable tube loosely surrounding said air-tube but adapted to tightly encircle a wick held between said air-tube and said vertically-movable tube so that the latter may be raised and lowered by frictional contact with the wick as the wick is moved by said wick-adjusting device, said vertically-movable tube having an inturned lip at its upper end, and stops for limiting the up and down movements of the said vertically-movable tube as the latter is moved by the wick, said stops permitting a vertical movement of the wick independently of said vertically-movable tube after the latter has reached the limit of its movement in either direction, a spreader or cap above the said air-tube, and a cone encircling the said spreader or cap.

3. In a lamp-burner, the combination with a fixed central air-tube, of a wick-adjusting device a portion of which is exterior to said tube, a vertically-movable tube loosely surrounding said air-tube but adapted to tightly encircle a wick held between said air-tube and said vertically-movable tube so that the latter may be raised and lowered by frictional contact with the wick as the wick is moved by said wick-adjusting device, said vertically-movable tube having an inturned lip at its upper end, stops for limiting the up and down movements of the said vertically-movable tube as the latter is moved by the wick, said stops permitting a vertical movement of the wick independently of said vertically-movable tube after the latter has reached the limit of its movement in either direction, a spreader or cap above the said air-tube, a cone encircling the said spreader or cap, and an incandescing mantle supported above said cone.

4. In a lamp-burner, the combination with a fixed central air and wick tube, of a vertically-movable tube loosely surrounding the upper portion of said fixed tube and provided at its upper end with an inturned lip or flange, means for positively limiting the vertical movements of said movable tube either up or down, and a wick-adjusting device interposed between said tubes, there being sufficient space between said wick-adjusting device and the said vertically-movable tube so that the wick, which is to surround the said wick-adjusting device, and which is to be encircled by said vertically-movable tube, will be embraced by the latter with sufficient friction to cause said vertically-movable tube to be moved up and down with the said wick when not positively restrained from such movement, the wick being capable of a vertical movement independent of the said vertically-movable tube when the latter is positively held from movement.

653,254. INCANDESCENT-LAMP BURNER. OTTO LEHMAN, New York, N. Y., assignor, by mesne assignments, to the Standard Incandescent Burner Company, Portland, Me. Filed Nov. 15, 1899. Serial No. 737,079. (No model.)



Claim.—1. In a burner, the combination with the base thereof, provided with an air-heating chamber, of a draft-tube with which said chamber communicates, a vertically-movable wick-tube outside of said draft-tube and between which latter and said draft-tube the wick is received, and which tightly encircles said wick, a wick-adjusting device also between said draft-tube and wick-tube, a vertically-movable chimney-gallery support, a cone sustained by said support, and means for holding an incandescing mantle above the said cone.

2. In a burner, the combination with the base thereof, provided with an air-heating chamber, of a draft-tube with which said chamber communicates, a vertically-movable wick-tube outside of said draft-tube and between which latter and said draft-tube the wick is received, and which tightly encircles said wick, said wick-tube having an inturned lip at its upper end, a wick-adjusting device also between said draft-tube and wick-tube, a vertically-movable chimney-gallery support, a cone sustained by said support, and means for holding an incandescing mantle above the said cone.

3. In a burner, the combination with the base thereof, a casing attached to said base, a vertically-movable chimney-gallery mounted on said casing, a cone supported by said chimney-gallery, draft and wick tubes with means for holding a wick between them, and a mantle-holder consisting of a sleeve provided with a mantle-supporting rod, said sleeve loosely surrounding the top of said cone with a space between these parts to receive the skirt of the mantle, the base of said cone serving as a stop for insuring the proper vertical adjustment of said sleeve.

4. In a burner, the combination with the base thereof, a casing attached to said base, a vertically-movable chimney-gallery mounted on said casing, a cone supported by said chimney-gallery, draft and wick tubes with means for holding a wick between them, and a mantle-holder consisting of an open-work sleeve provided with a mantle-supporting rod, said sleeve loosely surrounding the top of said cone with a space between these parts to receive the skirt of the mantle, the base of said cone serving as a stop for insuring the proper vertical adjustment of said sleeve.

5. In a burner, the combination with the base thereof, of a draft-tube fixed to said base, a wick-controlling tube loosely surrounding said draft-tube with space between said tubes for the reception of a wick, said wick-controlling tube tightly encircling said wick so as to be moved up and down thereby and being vertically movable relative to said base and being provided at its upper end with an inturned lip, a casing attached to said base, a chimney-gallery supported by said casing and provided with a cone, and a cap supported by the said draft-tube and arranged centrally in the opening of said cone and slightly above the top of the latter.

6. In a burner, the combination with the base thereof, of a draft-tube fixed to said base, a vertically-movable wick-controlling tube loosely surrounding said draft-tube with space between said tubes for the reception of a wick, said wick-controlling tube tightly encircling said wick so as to be moved vertically therewith and having at its upper end an inturned lip and being provided at its lower portion with bayonet-joint slots, and the said burner-base being provided with an upwardly-projecting flange having pins engaging said slots, a casing attached to said base, a chimney-gallery supported by said casing and provided with a cone, and a mantle-holder supported by said chimney-gallery.

7. In a burner, the combination with the base thereof, of a draft-tube fixed to said base, a wick-controlling tube loosely surrounding said draft-tube with space between said tubes for the reception of a wick which said wick-tube tightly encircles so as to be moved vertically therewith, an outer casing attached to said base, a vertically-movable chimney-gallery provided with a depending sleeve inclosed by said outer casing, said depending sleeve having at its interior upper portion an abrupt shoulder forming a contracted opening at the top of said sleeve, a cone supported by said chimney-gallery and the central opening of which communicates with the said contracted opening of said depending sleeve, and a filamentary mantle surmounting said cone.

653,255. AUTOMATIC AIR-VALVE FOR WATER-MAINS. CHRISTIAN E. LOETZER, Sayre, Pa. Filed Oct. 6, 1899. Serial No. 732,821. (No model.)



Claim.—1. A device for automatically relieving water-mains of accumulated air, comprising a casing having an apertured attaching-plug at one end with an inlet port or ports therein and an extension above and surrounding said ports forming a seat for a superimposed valve-supporting shell, a cover for the opposite end of said casing having a central bore or valve-chamber and a valve-seat therein, and a comparatively-light inverted cup-like shell having its open end seated on said extension and carrying a valve at its closed upper end working in the bore of said cap, said shell being adapted to rest on said extension and permit the escape of air until the water rises within the casing to a certain point whereupon the shell will float and close the valve to prevent the escape of the water, substantially as described.

2. An automatic air-valve for water-mains comprising a suitable casing having a cap or cover with air vent or port therein and a float-valve arranged within said casing and adapted to close said air-vent when the float rises and to open the same when the float falls, a plug or nipple at the base of said casing detachably secured thereto and adapted for attachment to a water-main; said plug having a centrally-disposed water way or passage communicating with an outwardly-inclined inlet port or ports for deflecting the water laterally as it enters the casing, and a seat or support for said float, extending above said inlet port or ports, whereby the accumulation of air within the casing will cause the float to fall and open the air-vent to permit the air to escape while the rising of the water beyond a predetermined height will close said air-vent to prevent the escape of the water, substantially as described.

3. An automatic air-valve for water-mains comprising an open-ended vertically-disposed cylinder having at one end a detachable plug with fluid-inlet therein for attachment to a water-main, and at the other end thereof a removable cap having a differential bore and air-vent, the fluid-inlet in said plug communicating with the interior of said cylinder by a port or ports adapted to deflect the current toward the sides of the said cylinder or casing, a valve working in the bore of larger diameter, and a float within the casing supporting said valve, whereby the accumulation of air within the casing will cause the float to fall and open the air-vent to permit the air to escape while the rising of the water beyond a predetermined height will close the valve to prevent the escape of water, substantially as described.

4. An automatic air-valve for water-mains comprising a vertically-disposed casing having a removable cap or cover at one end and a plug or nipple at the other for attachment to a water-main, said cap being centrally bored to form a valve-chamber and having an air-vent above said chamber, and said plug being removably secured to said casing and provided with a fluid-inlet port or ports for deflecting the water laterally as it enters the casing, together with a float supporting a valve which is slidingly arranged in the bore of said cap so as to close the outlet therefrom or open the same under varying degrees of pressure of accumulated air operating to raise and lower the float, substantially as described.

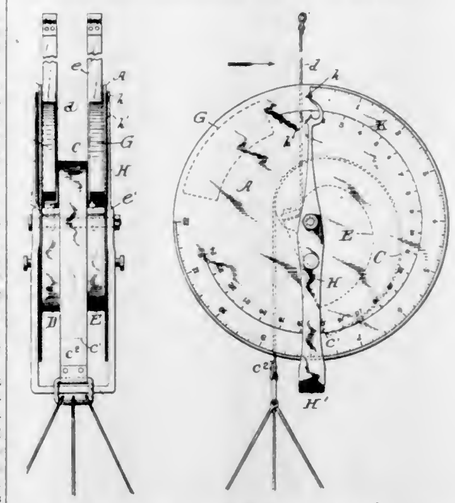
5. In combination with the valve-casing, the removable plug or nipple having a central bore or opening and a port or ports establishing communication between the same and the interior of the casing, and an inverted cone-like extension of said plug within the casing having vertically-disposed ribs or flanges thereon to serve as guides for a superimposed float, together with a cap at the top of the casing having an air vent or port therein and a valve controlling said port, said valve being mounted on an inverted cup-like shell the lower open end of which embraces said guides and rests on said cone-like extension when the valve falls, substantially as described.

6. In combination with the cylindrical casing having a fluid-inlet port or ports at one end and means for attaching the same to a water-main, the removable cap at the opposite end of said casing having a central bore or passage for the admission or escape of air, and a float-valve controlling said passage, consisting of a piston-valve working in the bore of the cap and having its stem or rod joined to the closed end of an inverted cup-like shell located within the cylinder so as to provide a passage between the same and the interior of the cylinder for the accumulation and escape of air, substantially as described.

7. An automatic air-valve for water-mains comprising a vertically-disposed cylindrical casing open and internally screw-threaded at both ends, a cap or cover for said casing having an externally-threaded portion for screwing into said casing, and a differential bore forming a valve-chamber and seat for the valve, a plug or nipple having an externally-threaded extension at one end for screwing into a correspondingly internally threaded aperture in the water-main, and a threaded portion at its opposite end for screwing into said casing; the said plug having an internal bore provided with an inlet port or ports communicating with the interior of the casing, and a float-valve consisting of an inverted cup-like shell having a valve rod or stem thereon supporting a valve arranged to slide to and fro within the bore of larger diameter in said cap, so as to open or close the air-vent therein according to the position of the float, whereby accumulated air is permitted to escape until the water reaches a predetermined height, whereupon the valve will be closed until again opened by a further accumulation of air, substantially as described.

8. An automatic air-valve for water-mains, comprising a cylindrical casing having a detachable apertured plug with fluid-inlet port at its base, and a cap or cover with air vent or port therein removably secured at its top, a float-valve within said casing adapted to close said air-vent when the water rises to a predetermined height and to open the same when the float falls, said float being seated on an extension of said plug within the casing and above the inlet-port, by which the water is deflected laterally out of the plane of the lower end of the float, substantially as described.

653,256. GRAVITY-BALANCE. CHARLES H. MANN, Orange, N. J. Filed May 5, 1900. Serial No. 15,596. (No model.)



Claim.—1. A gravity-balance composed of a pair of disks provided with concentrically-arranged graduated scales and with weighted pointers loosely pivoted to their centers; a two-part system of differential paracentric cams affixed to and inclosed between said disks; a corresponding system of flexible suspenders appropriately connected to said cams for suspending said disks and the parts immediately connected therewith from a stationary object and for suspending from one part of said system of cams the load which is to be weighed.

2. In a gravity-balance substantially such as described, the two-part system composed of three paracentric cams arranged side by side, the exterior two of said cams constituting one part of said system and the inner cam constituting the other part of said system, the said parts having the same pitch but differing from each other in radius upon any given radial line to the same prescribed extent; a corresponding two-part system of flexible suspenders, one part of said system of suspenders connected at one end to the heel of the part of said system of cams having the smaller radius and connected at the opposite end to the stationary object from which the gravity-balance is suspended and constituting a flexible fulcrum, the other part of said system of flexible suspenders connected at one end to the toe of the part of said system of cams having the larger radius and adapted at the opposite end for connection with the load to be weighed.

3. In a gravity-balance substantially such as described, a pair of disks inclosing and affixed to a multiplicity of radially-differentiated paracentric cams arranged side by side and having a common pole in alinement with the geometrical axes of said disks, in combination with a two-part system of flexible suspenders appropriately attached to said cams for suspending said gravity-balance from a stationary object and for suspending from said gravity-balance the load to be weighed.

4. In a gravity-balance substantially such as described, a pair of disks, a multiplicity of radially-differentiated paracentric cams arranged side by side, affixed to and inclosed between said disks, counterbalancing-weights affixed to said disks in positions radially opposite the center of gravity of said cams, whereby the center of gravity of the rotating structure is made to coincide with the common pole of said paracentric cams and the geometrical axes of said disks.

5. In a gravity-balance substantially such as described, a pair of disks affixed to and inclosing suitably arranged and proportioned paracentric cams; two differently-figured scales arranged concentrically one within the other, on the face of each or both of said disks, a weighted hand loosely pivoted to the center of each of said disks and adapted to retain a vertical position, in combination with increasers adapted to be attached to said hands for the purpose of increasing the weighing capacity of said gravity-balance.

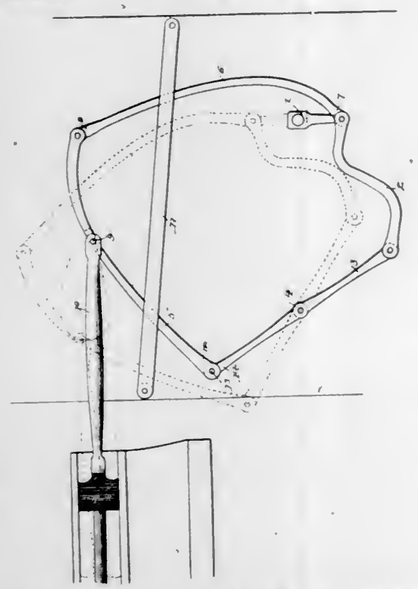
6. In a gravity-balance a self-adjusting rotatable counterpoise composed of a system of suitably-graduated disks and weighted pointers loosely pivoted to the center of said disks, and a two-part system of differential paracentric cams arranged side by side between and affixed to said disks, in combination with a flexible fulcrum composed of a suspending device appropriately attached to one-half of said system of paracentric cams and to the stationary object from which said gravity-balance is to be suspended, and a flexible suspender appropriately attached to the other part of said system of paracentric cams and adapted for connection with the load which is to be weighed, whereby the application of said load by causing the flexible load-suspender to unwind from the part of the paracentric-cam system with which it is connected induces a rotation of said disks and the winding up of said flexible fulcrum upon the other part of said system of paracentric cams until the center of gravity of the disks and parts immediately connected therewith is carried so far laterally from the vertical plane of the flexible fulcrum as to counterbalance the load which is to be weighed.

7. In a gravity-balance the combination as herein set forth of a rotatable structure containing the described paracentric cams; weighted hands loosely pivoted to said structure; flexible apparatus and load-suspenders, and a concentrically-arranged scale formed upon either face of said structure with its graduation-marks respectively

conforming in their relative positions to the limits of the different ranges of rotation of said rotatable structure induced by different loads in the pan or other device for sustaining objects to be weighed.

8. In a rotative gravity-balance provided with a loosely-pivoted weighted pointer or pointers and with suitably-arranged scale-marks, a two-part system of differential paracentric cams arranged side by side and affixed to one another, in combination with a corresponding two-part system of flexible suspenders appropriately connected to said paracentric cams for suspending said apparatus from a stationary object and for suspending from said apparatus the load to be weighed.

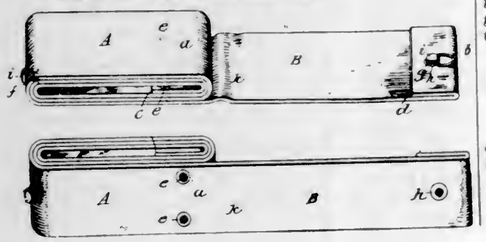
653,257. DEVICE FOR OVERCOMING DEAD-CENTERS. JAMES MARTIN, Howard Lake, Minn. Filed Mar. 31, 1900. Serial No. 11,009. (No model.)



Claim.—1. In a device of the class described, the combination of a crank, the curved link 6 pivoted at its inner end to the outer end of the crank, the lever 3 fulcrumed between its ends and disposed opposite the link 6, the short sigmoidally-bent link 2 connecting one end of the lever with the outer end of the crank, the long slightly-curved link 5 disposed opposite the link 2 and connecting the other end of the lever with the outer end of the link 6, and a pitman connected with one of the links, substantially as described.

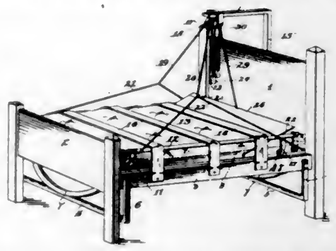
2. In a device of the class described, the combination of a crank, the curved link 6 pivoted at its inner end to the outer end of the crank, the lever 3 fulcrumed between its ends and disposed opposite the link 6, the short sigmoidally-bent link 2 connecting one end of the lever with the outer end of the crank, the long slightly-curved link 5 disposed opposite the link 2 and connecting the other end of the lever with the outer end of the link 6, a pitman pivotally connected with the link 5, and a guide receiving the links 5 and 6, substantially as described.

653,258. ARM-REST. EDWARD S. MAY, Washington, D. C. Filed Jan. 30, 1900. Serial No. 3,379. (No model.)



Claim.—As an article of manufacture the arm-rest A, B consisting of the pad A composed of a number of plies of fabric, eyelets *e*, *e* and *f* for securing said plies together, the strap B having the eyelet *h*, the hooks *i* secured to eyelets *f*, *h* and ring *b* to engage with the said hooks, substantially as described and for the purpose set forth.

653,259. INVALID-BED. EMIL OTTO, Elmhurst, Ill. Filed Aug 12, 1899. Renewed May 18, 1900. Serial No. 17,173. (No model.)

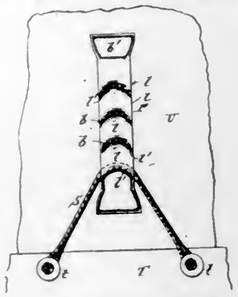


Claim.—1. The combination with a bedstead provided with parallel bars or trackways, of a mattress; rockers depending from the mattress; rollers removably supported at each side of said mattress, and a plurality of transverse straps passing over said rollers, and secured at their ends to the side rails of the bedstead.

2. The combination with a bedstead provided with depending bars or tracks; a mattress having end rockers adapted to said tracks, stops for limiting the downward movement of said mattress, a support overhanging the bed, pulleys on said support, and pull-cords attached to the sides of the mattress and passing over said pulleys.

3. The combination with a bedstead provided with rocker-supports, of a wire mattress provided with rockers; a support overhanging the bed; pulleys on said support, and pull-cords attached to the sides of the mattress and passing over said pulleys.

653,260. GARMENT-SUPPORTING DEVICE. GEORGE R. PERRY, New York, N. Y. Filed Sept. 25, 1899. Serial No. 731,527. (No model.)



Claim.—1. An upper garment provided with a series of permanent loops one above the other, said series being disposed upon the surface of said garment in such relation thereto as to receive a suspender-tab for the support of a lower garment, as set forth.

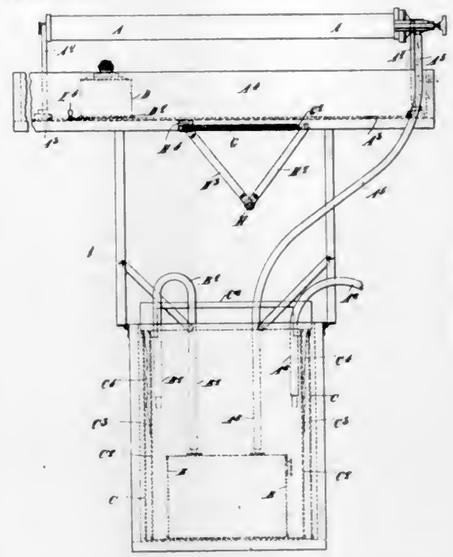
2. An upper garment provided with a series of permanent loops disposed upon the surface of the garment one above the other in such relation thereto as to receive a suspender-tab for the support of a lower garment, each loop being individually attached at the bottom to the garment in a curved line to form an arched bearing for said suspender-tab, as set forth.

653,261. APPARATUS FOR MAKING AND STORING OXYGEN. WILLIE RILEY, Bradford, and ABRAM KERSHAW, Leeds, England. Filed Mar. 31, 1899. Serial No. 711,251. (No model.)

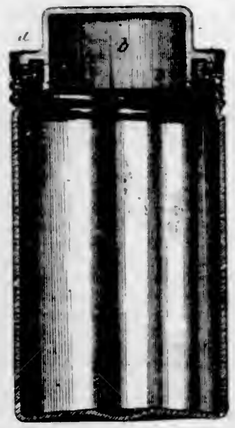
Claim.—1. The combination with the toggle-levers H^3 and H^4, of the slide F, the lamp-carriage D^2, means for engaging the slide and lamp-carriage substantially as herein shown and described.

2. The combination with the toggle-levers H^3 and H^4, of the slide F and the lamp-carriage D^2 fitted with the pawls D^3 and D^4 substantially as herein shown and described.

653,261.



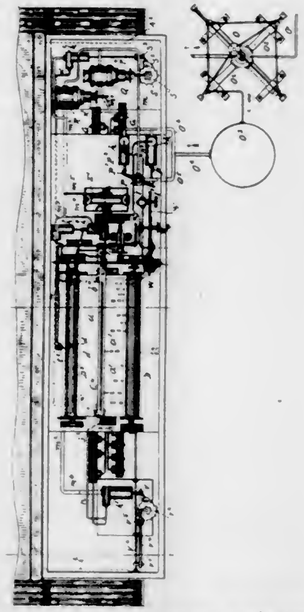
653,262. MUCILAGE-BOTTLE. WILLIAM RODIGER, Chicago, Ill. Filed Mar. 27, 1899. Serial No. 710,584. (No model.)



Claim.—1. The combination with a mucilage-bottle having a shouldered top and a rim projecting above the top and around the mouth of the bottle, of an inverted-cup-shaped cap adapted when removed from the bottle to form a receptacle for a quantity of mucilage, a laterally-projecting exterior flange on the body dividing the body to have the inner end thereof form a rim to enter the rim and neck of the bottle and extend below the plane of the shouldered top and clear of the rim, neck and shoulder, an outer rib or bead on the under side of the flange, an interlocking band having an open top forming a shoulder to engage the flange of the cap, a screw-thread on the body of the band and a screw-thread on the body of the bottle for drawing the top of the band into engagement with the flange of the cap and holding the cap in position on the bottle, substantially as described.

2. The combination with a mucilage-bottle having a shouldered top and a rim projecting above the top around the mouth of the bottle and having on its body below the shouldered top an exterior screw-thread, of an inverted-cup-shaped cap adapted when removed from the bottle to form a receptacle for a quantity of mucilage, a laterally-projecting exterior flange on the body of the cap dividing the body to have the inner end thereof form a rim to enter the rim of the bottle-top and have its end extend below the plane of the shouldered top and clear of the rim, neck and shoulder, an outer rib or bead on the under side of the flange forming a channel between the rib or bead and the body of the cap, a band having an opening for the passage of the outer end of the cap and a shoulder engaging the flange and having on its interior a screw-thread engaging the exterior screw-thread of the body and a packing-strip on the shouldered top engaged by the rib or bead of the flange, substantially as described.

653,263. SELF-PLAYING ATTACHEMENT FOR KEY MUSICAL INSTRUMENTS. HARRY M. SALYER, New York, N. Y., assignor to Ludwig & Co., same place. Filed July 17, 1899. Serial No. 724,064. (No model.)



Claim.—1. In a self-playing attachment for key musical instruments, the combination with two rollers upon which a perforated tune-sheet is wound, of a motor for rotating said rollers, a brake-disk loosely mounted on one roller, a brake-lever engaging said brake-disk, a clutch on the shaft of said roller for rotating the brake-disk when the roller rotates in one direction, only, substantially as herein shown and described.

2. In a self-playing attachment for key musical instruments, the combination with two rollers, upon which a tune-sheet is wound, a motor for rotating said rollers alternately, a governor operated by said motor, a brake-lever acting on said governor and means adjacent to one roller for controlling the brake-lever according to the amount of the tune-sheet wound on said roller, substantially as herein shown and described.

3. In a self-playing attachment for key musical instruments, the combination with two rollers, upon which a tune-sheet is wound, a motor for rotating said roller, a governor operated by said motor, a brake-disk on said governor, a spring brake-lever bearing on said brake-disk, a wedge rested against the said brake-lever and means for shifting said wedge automatically from the tune-sheet as the same is wound upon one roller, substantially as herein shown and described.

4. In a self-playing attachment for key musical instruments, the combination with two rollers upon which a tune-sheet is wound, a motor for operating said roller, a governor operated by the motor, a brake-lever acting on said governor, a wedge adjacent to said brake-lever, an adjustable abutment for said wedge and means for shifting said wedge from the quantity of tune-sheet wound on one roller, substantially as herein shown and described.

5. In a self-playing attachment for key musical instruments, the combination with two rollers upon which a tune-sheet is wound, of a motor for rotating said roller, a governor operated by said motor, a brake-lever acting on said governor, a wedge bearing against said brake-lever, an angle-lever, one end of which forms an abutment for said wedge, a screw on which the other end of said angle-lever rests

and a pointer for indicating the adjustment of said screw, substantially as herein shown and described.

6. In a self-playing attachment for key musical instruments, the combination with two rollers upon which a note-sheet is wound, of a motor for rotating said rollers, a governor operated by the motor, a brake-lever acting on the governor, a wedge resting against said brake-lever, a pivoted lever having one end adjacent to the circumference of one of the note-sheet rollers and a connection between the opposite end of said lever and said wedge, whereby said wedge is moved in relation to the brake-lever by the action of the note-sheet wound on that end of the lever adjacent to the periphery of the note-sheet roller, substantially as herein shown and described.

7. In a self-playing attachment for key musical instruments, the combination with two rollers upon which a tune-sheet is wound, of a motor for rotating said rollers alternately, a governor for said motor, gearing for throwing the motor in gear with either of said rollers, a wedge connected with said gearing and moving with the same, a brake-lever on which said wedge acts and which brake-lever acts on the governor and an abutment for said wedge, substantially as herein shown and described.

8. In a self-playing attachment for key musical instruments, the combination with rollers upon which a tune-sheet is wound, a motor for rotating these rollers alternately, gearing for throwing the motor in gear with either of said rollers, a governor operated by the motor, a brake-lever acting on said governor, two wedges in contact, of which one acts on the brake-lever and an abutment against which the other wedge rests and means for shifting one wedge when the tune-sheet is being wound on one roller and means for shifting the other wedge before the tune-sheet is being wound on the other roller, substantially as herein shown and described.

9. In a self-playing attachment for key musical instruments, the combination with rollers upon which a note-sheet is wound, a motor for rotating these rollers alternately, gearing for throwing the motor in gear with either of said rollers, a governor operated by the motor, a brake-lever acting on said governor, two wedges in contact, of which one acts on the brake-lever and an abutment against which the other wedge rests means for shifting one wedge when the motor-gearing is in engagement with one roller and means for shifting the other wedge as the quantity of tune-sheet wound on the other roller increases, substantially as herein shown and described.

10. In a self-playing attachment for key musical instruments, the combination with two rollers upon which a note-sheet is wound, a motor, a cog-wheel rotated by the motor and adapted to engage either of said rollers, a swinging lever supporting the said cog-wheel, a governor operated by the motor, a brake-lever acting on the governor, a wedge adjacent to said brake-lever and a rod connecting said wedge with the lever that throws the swinging cog-wheel into gear for rotating the one roller or the other, substantially as herein shown and described.

11. In a self-playing attachment for key musical instruments, the combination with a compressed-air chamber extending across the keys of the instrument in close proximity thereto, of a series of cylinders connected with the compressed-air chamber, a piston in each cylinder, a piston-rod on each piston, which piston-rods each act directly on a key, a perforated note-sheet for controlling the admission of compressed air into said cylinders and means for moving said sheet, substantially as herein shown and described.

12. In a self-playing attachment for key musical instruments, the combination with a bridge-piece having a number of ducts terminating in its flat top, of a valve for each duct, a spring to which each valve is attached and a key-lever above each spring, substantially as herein shown and described.

13. In a self-playing attachment for key musical instruments, the combination with a bridge-piece having a series of ducts terminating in its flat top, of a valve above each duct, a spring for each valve, to which the valve is attached, a pivoted key-lever above each spring and means for depressing and holding down all the key-levers together, substantially as herein shown and described.

14. In a self-playing attachment for key musical instruments, the combination with a bridge-piece having a series of ducts terminating in its flat top, of a valve above each duct, a spring-strip for each valve to which spring-strips the valves are attached, a pivoted key-lever above each valve, an arm projecting from each key-lever, a shaft having a flat side and extending over the several arms and mounted to turn axially and means for turning said shaft to press down the several key-levers and close the several valves, substantially as herein shown and described.

15. In a self-playing attachment for key musical instruments, the combination with two rollers upon which a slotted note-sheet is wound, of a motor for rotating said rollers alternately, a bridge-piece having a series of ducts terminating in the flat top of the bridge-piece, a valve above each duct, a key-lever for each valve, a shaft for pressing down the several key-levers and means for operating said shaft to press down the key-levers at the same time that the motor is thrown in gear with one of said tune-sheet rollers, substantially as herein shown and described.

16. In a self-playing attachment for key musical instruments, the combination with two rollers upon which a note-sheet is wound, a motor rotating said rollers alternately, means for throwing the motor in gear with either of said rollers, a bridge-piece having a series of ducts terminating in the top of the bridge-piece, a valve for each duct, a key-lever for each valve, a shaft for pressing down the several key-levers and closing the several ducts, means for turning said shaft axially which means are operated by the same mechanism which throws the motor in gear with one of the rollers, substantially as herein shown and described.

17. In a self-playing attachment for key musical instruments, the combination with two rollers, upon which a note-sheet is wound, of a motor for operating said rollers alternately, means for throwing the motor in gear with either of said rollers, a bridge-piece having ducts terminating in the same, a valve for each duct, a key-lever for each valve, an arm on each key-lever, a half-round shaft above the said arms and mounted to rotate, a crank on the end of said half-round shaft, a rod connecting said crank with the mechanism for shifting the motor-gear from one of said tune-sheet rollers to the other, substantially as herein shown and described.

18. In a self-playing attachment for key musical instruments, the combination with a plurality of compressed-air chambers extending across the keys and means for supplying them with compressed air, of a series of mechanisms operated by compressed air, a valve-casing for each such mechanism, a compressed-air-escape tube connected with one end of each valve-casing and means for controlling said compressed-air-escape tube, substantially as herein shown and described.

19. In a self-playing attachment for key musical instruments, the combination with a compressed-air chamber extending across the keys and means for supplying the same with compressed air, of a series of mechanisms operated by compressed air, a valve-casing for each mechanism, a compressed-air-escape tube connected with one end of each valve-casing and a perforated tune-sheet for controlling said air-escape tubes, substantially as herein shown and described.

20. In a self-playing attachment for key musical instruments, the combination with a compressed-air chamber extending across the keys and means for supplying the same with compressed air, of a series of mechanisms operated by compressed air, a valve-casing for each mechanism, a compressed-air-escape tube connected with one end of each valve-casing, a perforated tune-sheet for controlling the air-escape tubes and a compressed-air-operated mechanism for moving the note-sheet, substantially as herein shown and described.

21. In a self-playing attachment for key musical instruments, the combination with a compressed-air chamber extending across the keys and means for supplying it with compressed air, of a series of mechanisms operated by compressed air, a valve-casing for each mechanism, a compressed-air-escape tube connected with one end of each valve-casing, a bridge-piece in which the several air-escape tubes terminate, valves for controlling the several air-escape tubes and means for moving a note-sheet for the purpose of operating the said valves, substantially as herein shown and described.

22. In a self-playing attachment for key musical instruments, the combination with a compressed-air chamber extending across the keys and means for supplying it with compressed air, of a series of mechanisms operated by compressed air, a valve-casing for each mechanism, a compressed-air-escape tube connected with one end of each valve-casing, a bridge-piece in which the several air-escape tubes terminate, a valve for each tube, a key-lever for each valve, means for moving a note-sheet over the key-levers to operate the same, substantially as herein shown and described.

23. In a self-playing attachment for key musical instruments, the combination with a compressed-air chamber extending across the keys and means for supplying it with compressed air, of a series of mechanisms operated by compressed air, a valve-casing for each mechanism, a compressed-air-escape tube connected with one end of each valve-casing, a valve for each air-escape tube, means for moving a note-sheet over said valves to operate the same, an additional air-escape-controlling valve in some of said air-escape tubes, for the purpose of operating some of the mechanism at the will of the operator, substantially as herein shown and described.

24. In a self-playing attachment for key musical instruments, the combination with a plurality of compressed-air chambers of a series of mechanisms to be operated by compressed air for the purpose of actuating the keys, a main valve for controlling the supply of compressed air to the attachment, compressed-air mechanism for operating said main valve, a valve-casing for each such compressed-air mechanism, which valve-casing has one end closed, a compressed-air-escape tube connected with the closed end of each valve-casing, means for moving a note-sheet for controlling some of said escape-tubes, a cock in the air-escape tube in the compressed-air mechanism for operating the main valve, which cock has a body provided with a bore for receiving a plug, the plug having a transverse opening and the body having an opening that can register with the opening in the plug, the plug also having an opening extending from its transverse opening to the circumference of the plug and the body having an opening extending from the opening that registers with the opening in the plug to the surface of the body to permit of adjusting this plug in different position for various purposes, substantially as herein shown and described.

25. In a self-playing attachment for key musical instruments, the combination with a compressed-air chamber and means for supplying the same with compressed air, of a series of mechanisms to be operated by the compressed air for the purpose of operating the keys, a valve in the main compressed-air-supply pipe, two such compressed-air mechanisms for operating said main valve, a valve-casing for each such compressed-air mechanism, a compressed-air-escape tube connected with one end of each compressed-air-valve casing, mechanism for moving a tune-sheet controlling some of the compressed-air-escape tubes, a hand-operated valve in the compressed-air-escape tube of one of the mechanisms for operating the main valve and a hand-operated valve in the compressed-air-escape tube of the other compressed-air mechanism for operating the main valve, which latter hand-operated valve is capable of adjustment in various positions for various purposes, substantially as herein shown and described.

26. In a self-playing attachment for key musical instruments, the combination with a plurality of compressed-air chambers extending across the keys and means for supplying them with compressed air, of a series of mechanisms operated by compressed air, a valve-casing for each such mechanism, a compressed-air-escape tube connected with one end of each valve-casing, means for controlling said air-escape tubes and a pressure-regulating valve connected with the compressed-air-supply tube, substantially as herein shown and described.

27. In a self-playing attachment for key musical instruments, the combination with a plurality of compressed-air chambers and means for supplying them with compressed air and a series of mechanisms operated by compressed air, a valve-casing for each such mechanism, a compressed-air-escape tube connected with each valve-casing means for controlling said compressed-air-escape tubes, a pressure-controlling valve in the compressed-air-supply tube, a ratchet-and-pawl mechanism for operating said controlling-valve, and one of the above-described compressed-air mechanisms for operating the ratchet-and-pawl mechanism above mentioned, substantially as herein shown and described.

28. In a self-playing attachment for key musical instruments, the combination with a plurality of compressed-air chambers and means for supplying them with compressed air, of a series of mechanisms operated by compressed air for operating the keys and another series of such operated air mechanisms for actuating other parts, a valve-casing for each such mechanism, a main compressed-air-supply tube for the mechanisms for operating the parts other than keys, a hand-controlled pressure-regulator in said tube, another air-supply tube for the compressed-air mechanisms for operating the keys and an automatically-controlled pressure-regulator in said latter tube, substantially as herein shown and described.

29. In a self-playing attachment for key musical instruments, the combination with a plurality of compressed-air chambers and means for supplying them with compressed air, of a series of mechanisms to be operated by compressed air for operating the keys and another series of such mechanisms for actuating other parts, a valve-casing for each such mechanism, a compressed-air-supply tube for the mechanism for operating the parts other than keys, a hand-controlled pressure-regulator in said tube, another air-supply tube for the compressed-air mechanism for operating the keys, an automatically-controlled pressure-regulator in said latter tube, and means for operating said latter air-controlling valve automatically by means of one of the above compressed-air mechanisms, substantially as herein shown and described.

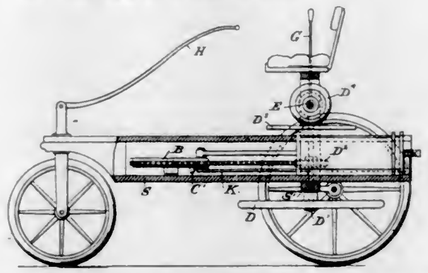
30. In a self-playing attachment for key musical instruments, the combination with a plurality of compressed-air chambers and means for supplying them with compressed air of a series of mechanisms operated by compressed air for operating the keys, compressed-air mechanisms for operating the pedals, a valve-casing for each such compressed-air mechanism, a compressed-air-escape tube connected with one end of each valve-casing, means for automatically controlling said compressed-air-escape tubes, a ratchet-and-pawl mechanism operated by the compressed-air mechanism for the pedal, and means for operating the pedal-levers from said ratchet and pawl, substantially as herein shown and described.

31. In a self-playing attachment for key musical instruments, the combination with compressed-air chambers and means for supplying them with compressed air, of a series of mechanisms to be operated by compressed air, for operating the keys, compressed-air mechanisms for operating the pedals, a valve-chamber for each compressed-air mechanism, a compressed-air-escape tube connected with one end of each valve-chamber, means for automatically controlling the compressed-air-escape tubes, a pawl-lever operated by each compressed-air mechanism for the pedals, a ratchet-wheel operated by such pawl-lever a tooth-wheel on the same shaft with the ratchet-wheel, a lever actuated by the toothed wheel and means for operating the pedals from said levers, the toothed wheel of one of the mechanisms having each tooth provided with a shoulder, substantially as herein shown and described.

32. In a self-playing attachment for key musical instruments, the combination with a plurality of compressed-air chambers and means for supplying them with compressed air, of a series of compressed-air-operated mechanisms for operating the keys, compressed-air-operated mechanisms for working other parts, compressed-air-operated mechanisms for automatically controlling the pressure of the compressed air admitted to the key-operating mechanism, a valve in the compressed-air-supply tube for said compressed-air-operated mechanism and a compressed-air mechanism for operating said valve, substantially as herein shown and described.

33. In a self-playing attachment for key musical instruments, the combination with a compressed-air motor, of tune-sheet rollers operated by said motor, a series of compressed-air-operated mechanisms for working the keys, a reversing-gear for gear driven by said motor, a compressed-air mechanism for operating the reversing-gear, compressed-air-operated mechanisms for working the pedals, a main supply-tube for the compressed air, a valve in the same, a compressed-air-operated mechanism for controlling said main valve and means for controlling all said compressed-air-operated mechanisms from a tune-sheet wound on the above-mentioned roller, substantially as herein shown and described.

653,264. ROAD-CART. ROBERT P. SCOTT, Cadiz, Ohio. Filed July 1, 1896. Serial No. 597,720. (No model.)



Claim.—1. A road-car comprising the combination of a vehicle, an explosive-engine mounted thereon, a pitman, a crank-shaft, a horizontal fly-wheel on a separately-movable shaft and multiplying-gearing between the crank and fly-wheel shafts, whereby the total weight of the car is reduced and its steadiness increased substantially as described.

2. A road car comprising the combination of a vehicle, an explosive-engine mounted thereon, its crank-shaft, a fly-wheel on a separately-movable shaft in proximity to the cylinder and a sprocket-chain connecting the crank and fly-wheel shafts, whereby the strain on the frame is confined in area substantially as described.

3. A four-cycle gas-engine comprising the combination of a crank-shaft carrying a sprocket-wheel, a sprocket-chain having a length double its circumference a coöperating sprocket-wheel and cylinder-operating device controlled by the chain substantially as described.

4. A four-cycle explosive-engine comprising the combination of a crank-shaft carrying a sprocket-wheel, a sprocket-chain having a length double its circumference a coöperating sprocket-wheel and an exhaust-operating device controlled by the chain substantially as described.

5. A road-car comprising the combination of a vehicle a four-cycle explosive-engine mounted thereon, its crank-shaft carrying a sprocket-wheel, a fly-wheel on a separate shaft carrying a smaller sprocket-wheel, a sprocket-chain connecting the sprocket-wheels of twice the length of the circumference of the crank-shaft sprocket and cylinder-operating devices controlled by the chain substantially as described.

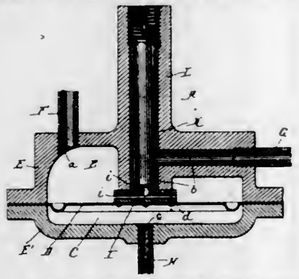
6. A road-car comprising the combination of a vehicle, a four-cycle explosive-engine mounted thereon, its crank-shaft carrying a sprocket-wheel, a fly-wheel on a separate shaft in proximity to the cylinder and carrying a smaller sprocket-wheel, a sprocket-chain connecting the sprocket-wheels of twice the length of the circumference of the crank-shaft sprocket and cylinder-operating devices controlled by the chain substantially as described.

7. A road-car comprising the combination of a vehicle, a horizontal cylinder, a crank-shaft, a vertical fly-wheel shaft having a horizontal fly-wheel and a friction-disk mounted thereon, a vertical friction-wheel coöperating therewith and connections between the parts substantially as described.

8. A road-car comprising the combination of a vehicle, a horizontal cylinder thereon near the rear of the machine, a horizontal crank-disk near the front of the machine, a vertical shaft carrying a fly-wheel near the cylinder and connections between the parts substantially as described.

9. A road-car comprising a horizontal friction-disk a radially-movable friction-wheel, a balance-gear deriving motion from the friction-wheel and a second friction-wheel moved thereby coöperating with the pneumatic vehicle-wheel substantially as described.

653,265. STEAM HEATING APPARATUS. WILLIAM C. SERRELL, Philadelphia, Pa., assignor to the Warren Webster & Company, of New Jersey. Filed Mar. 9, 1900. Serial No. 8,006. (No model.)



Claim.—1. A valve or trap for a steam heating apparatus, consisting of an outer casing having an inlet and an outlet and a passage-way between said inlet and outlet, a valve-piece to control the passage-way through said casing, a pressure-motor to control said valve-piece, and an adjustable regulating-piece to control the size of the passage-way afforded by said valve-piece.

2. A valve or trap for a steam heating apparatus, consisting of an outer casing having an inlet and an outlet and a passage-way between said inlet and outlet, a valve-piece to control the passage-way through said casing having a normally-small open passage-way, a pressure-motor to control said valve-piece, and an adjustable regulating-piece to control the size of the passage-way afforded by said valve-piece.

3. A valve or trap for steam heating apparatus, consisting of an outer casing, an internal flexible diaphragm dividing said casing internally into two compartments, one of said compartments having an inlet for water of condensation and a discharge-outlet, and the other compartment a steam-inlet, a valve-piece having a small valve passage-way carried by said diaphragm and located at said discharge-outlet, and a regulating-piece located in said discharge-outlet and adjustable with reference to said valve-piece to control the size of the thoroughfare afforded by said valve passage-way.

4. A valve or trap for steam heating apparatus, consisting of an outer casing, an internal flexible diaphragm dividing said casing internally into two compartments, one of said compartments having an inlet for water of condensation and a discharge-outlet, and the other compartment having a steam-inlet, a valve-piece having a valve passage-way carried by said diaphragm and located at said discharge-outlet, and a thermostatic expanding piece located in said discharge-outlet adjacent to the passage-way in said valve-piece.

5. A valve or trap for steam heating apparatus, consisting of an outer casing, an internal flexible diaphragm dividing said casing internally into two compartments, one of said compartments having an inlet for water of condensation and a discharge-outlet terminating in a seat *d*, and the other compartment having a pressure-inlet, a valve-piece I carried by said diaphragm, adapted to bear upon the seat *d* of said discharge-outlet and provided with a valve passage-way i, and a regulating-plug K adjustable to and from said valve-piece I to regulate the thoroughfare afforded by said valve passage-way i.

6. A valve or trap for steam heating apparatus, consisting of an outer casing, an internal flexible diaphragm dividing said casing internally into two compartments, one of said compartments having an inlet for water of condensation and a discharge-outlet terminating in a seat *d*, and the other compartment having a pressure-inlet, a valve-piece I carried by said diaphragm, adapted to bear upon the seat *d* of said discharge-outlet and provided with a valve passage-way i, and a thermostatic regulating-plug K of expanding material adjustable to and from said valve-piece I to regulate the thoroughfare afforded by said valve passage-way i.

7. In a steam heating apparatus, the combination with a drip or bleeder, of a trap into which said bleeder discharges, a return leading from said trap, a valve-piece to control the outlet within the trap to said return provided with a valve passage-way open into said return, a regulating-plug adjustable to or from said valve-piece to regulate the normal thoroughfare afforded by said valve passage-way, and a pressure-motor controlled by the pressure in the system for controlling said valve-piece.

8. In a steam heating apparatus, the combination with a drip or bleeder, of a trap into which said bleeder discharges, a return leading from said trap, a valve-piece to control the outlet within the trap to said return provided with a valve passage-way open into said return, a thermostatic regulating-plug composed of expansible material, adjustable to or from said valve-piece to regulate the normal thoroughfare afforded by said valve passage-way, and a pressure-motor controlled by the pressure in the system for controlling said valve-piece.

9. In a steam heating apparatus, the combination with a drip or bleeder, of a trap into which said bleeder discharges provided with a thoroughfare, a return leading from said trap, a valve-piece to control the thoroughfare within the trap to said return provided with a small valve passage-way normally open to said return, and a pressure-motor controlled by the pressure in the system to control said valve-piece and the size of the thoroughfare to the return.

10. In a steam heating apparatus, the combination of a trap having a permanently-open but variable valve passage-way for the discharge of water of condensation, a movable valve-piece to control the area of said passage-way controlled by the water of condensation in said trap and a pressure-motor connected with the system and acting on said valve-piece to control its movements.

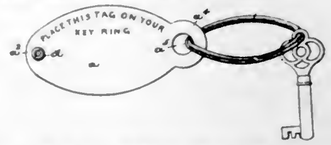
653,266. SPIKE. LEVI S. SHERWOOD, West Bay City, Mich. Filed Mar. 21, 1900. Serial No. 9,502. (No model.)



Claim.—1. In a railroad-spike having a flat front face, a point having wedge-shaped cutting edges 2 flush with the face of the spike, and a body comprising two rearwardly-extending concaved sides forming between them the rearwardly-extending web 3, said concaved sides and rearwardly-extending web merging at their lower part into the point of the spike in manner substantially as described and for the purposes set forth.

2. A spike consisting of a flat front face; a point having wedge-shaped cutting edges flush with the face of the spike; and narrow rearwardly-extending side edges; and two concaved rearwardly-extending faces forming between them a central rearwardly-extending web, said concaved sides and rearwardly-extending web merging at their lower part into the point of the spike, substantially as described.

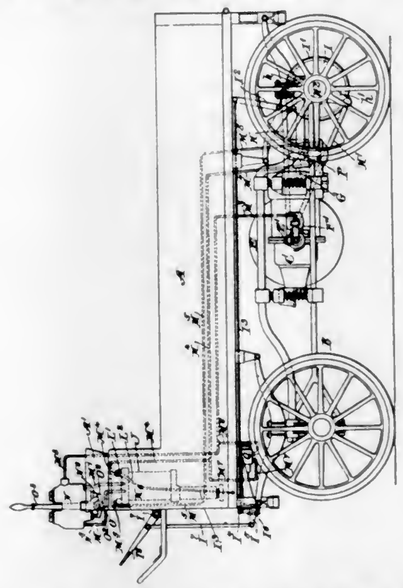
653,267. IDENTIFICATION-TAG. JOSEPH B. SHORT, Newark, N. J., assignor to the Whitehead & Hoag Company, of New Jersey. Filed Dec. 27, 1899. Serial No. 741,724. (No model.)



Claim.—1. The herein-described identification-tag, consisting, essentially, of a pair of covers or plates *a* and *a'* of a resistible material, having holes or perforations a^3, and an intermediate tablet or tablets *c* between said covers or plates *a* and *a'*, having a hole or perforation c^3 corresponding to the hole a^3 in said covers or plates *a* and *a'*, and means at the opposite ends of said tablet or tablets and said covers for pivotally connecting the same and permitting the said covers to slide laterally across said tablet or tablets, substantially as and for the purposes set forth.

2. The herein-described identification-tag, consisting, essentially, of a pair of covers or plates *a* and *a'* of a resistible material, having holes or perforations a^3, and an intermediate tablet or tablets *c* between said covers or plates *a* and *a'*, having a hole or perforation c^3 corresponding to the hole a^3 in said covers or plates *a* and *a'*, and an eyelet or rivet *d* for pivotally securing said tablet and covers or protector-plates together, substantially as and for the purposes set forth.

653,268. CONTROLLING MECHANISM FOR ENGINES. GEORGE S. STRONG, New York, N. Y., assignor to John P. Murphy, Philadelphia, Pa. Filed Nov. 14, 1899. Serial No. 736,939. (No model.)



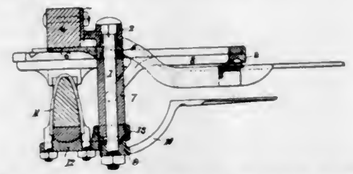
Claim.—1. Hydraulic mechanism for shifting the position of a crank-pin comprising, in combination, an accumulator and a reservoir for liquid not under pressure, a constantly-running pump arranged to draw liquid from the reservoir and force it into the accumulator, a device operated by the fluid in the accumulator acting to cut off and open the connection between the pump and reservoir as the fluid rises or falls with reference to a determined point, a valve-controlled conduit leading from the accumulator to the mechanism acting directly on the crank-pin, a valve-controlled passage leading from said conduit to the reservoir, and valve-actuating mechanism for opening said valves at will.

2. Hydraulic mechanism for shifting the position of a crank-pin comprising, in combination, an accumulator and a reservoir for liquid not under pressure, a constantly-running pump arranged to draw liquid from the reservoir and force it into the accumulator, a device operated by the fluid in the accumulator acting to cut off and open the connection between the pump and reservoir as the fluid rises or falls with reference to a determined point, a valve-controlled conduit leading from the accumulator to the mechanism acting directly on the crank-pin, a valve-controlled passage leading from said conduit to the reservoir, valve-actuating mechanism for opening said valves at will, a by-pass connecting the suction-pipe of the pump and the pipe leading from the accumulator, a valve in said by-pass, a brake for checking the motion of the mechanism actuated by the crank-pin and brake-actuating mechanism arranged when operated to open said valve.

3. Hydraulic mechanism for shifting the position of a crank-pin comprising in combination an accumulator and a reservoir for liquid not under pressure, a constantly-running pump arranged to draw liquid from the reservoir and force it into the accumulator, a device operated by the fluid in the accumulator acting to cut off and open the connection between the pump and reservoir as the fluid rises or falls with reference to a determined point, a conduit comprising the connected valve-chambers N' N^2 and the pipe M^2 leading from the accumulator to the mechanism acting directly on the crank-pin, a valve-controlled port connecting the chambers N' and N^2 and a similar valve-controlled port, connecting chamber N^2 with the reservoir, normally-seated valves N^4 N^5 for controlling said ports, each having actuating-rods as N^6 N^6, rock-levers O' O^2 secured together and resting substantially in contact with the rods N^6 N^6 and a lever for actuating the rock-levers and through them the valves N^4 N^5.

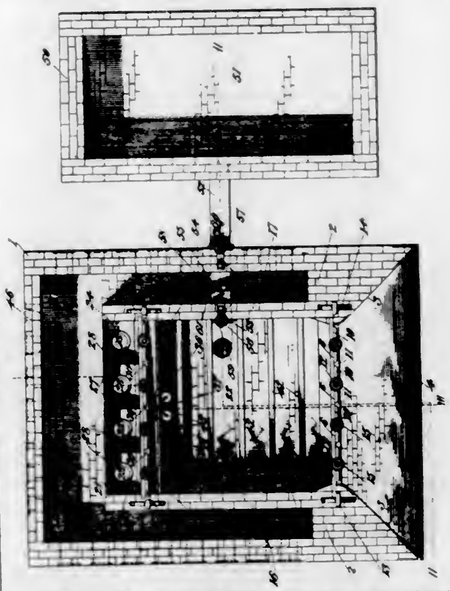
653,269. KING-BOLT SOCKET. HENRY C. SWAN, Oshkosh, Wis. Filed May 12, 1900. Serial No. 16,453. (No model.)

Claim.—1. The combination with a king-bolt socket, of a clip-tie rigidly secured to the axle and provided with the collar encircling the king-bolt socket and adjustable longitudinally thereof, substantially as described.



2. The combination with a sleeve rigidly secured to the lower fifth-wheel and forming a part of the king-bolt socket, of a clip-tie provided with a collar offset from said clip-tie encircling said sleeve and movable longitudinally thereof, substantially as described.

653,270. WAVE-POWER. JUAN TONKIN Th., Iquique, Chile. Filed Oct. 17, 1898. Serial No. 693,797. (No model.)



Claim.—1. The combination with a supply-tank provided with wave-entrapping mechanism, of a discharge-tank operatively communicating therewith, and means within the supply-tank for repressing the tumultuary tendency of water received through the wave-entrapping mechanism in the said tank, substantially as set forth.

2. The combination with a supply-tank and wave-entrapping mechanism, of a discharge-tank operatively communicating with the supply-tank, and baffling-beams extending across the supply-tank transversely to the wave-entrapping mechanism, substantially as set forth.

3. The combination with a supply-tank provided with wave-entrapping mechanism, of a discharge-tank operatively communicating therewith, a head-controlling mechanism between the supply and discharge tanks, respectively.

4. The combination with a supply-tank provided with wave-entrapping mechanism, and a discharge-tank operatively communicating therewith, of intermediate head-controlling mechanism consisting of an apertured gate, and means for raising and lowering the gate proportionably to the rise and fall of the level of water in the supply-tank, substantially as set forth.

5. The combination with a supply-tank provided with wave-entrapping mechanism, of a discharge-tank operatively communicating therewith, and intermediate head-controlling mechanism consisting of an apertured gate, and a buoyant support, or float, adapted to rest upon the level of water in the supply-tank, and to automatically control the rise and fall of the gate, substantially as set forth.

6. The combination with a supply-tank provided with wave-entrapping mechanism, of a discharge-tank, a transverse partition be-

tween the supply and discharge tanks, a vertically-elongated aperture in said partition, and a float-supported apertured gate working in said aperture in the partition, substantially as set forth.

7. The combination with a supply-tank provided with wave-entrapping mechanism, of a discharge-tank, a transverse partition between the supply and discharge tanks, a vertically-elongated aperture in said partition, a float-supported apertured gate working in said aperture in the partition, and a recessed screen connecting the two parts of the partition within the supply-tank in front of the gate and its float substantially as set forth.

8. The combination with an exterior wall terminating in head-sections, connected by wave-entrapping mechanism, of valve-controlled discharge-ports in said wall, interior walls connecting the head-sections, and defining within the first-named wall a supply-tank communicating with the wave-entrapping mechanism, and means of communication between said supply-tank and the discharge-tank defined by the first-named wall, substantially as set forth.

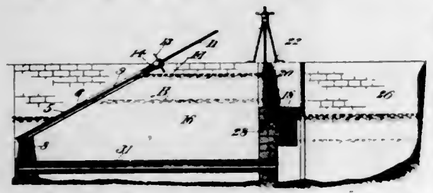
9. The combination with a discharge-tank provided with valve-controlled discharge-ports, an included supply-tank operatively communicating therewith, wave-entrapping mechanism, and end sections common to the supply and discharge tanks, and provided with inclined faces converging toward the wave-entrapping mechanism, substantially as set forth.

10. The combination with a supply-tank provided with means for obtaining therein a head of water at a higher level, a discharge-tank provided with means for drawing off the water from the supply-tank to a lower level, an auxiliary tank, and means for establishing communication between the supply and discharge tanks, alternately, and the auxiliary tank, substantially as set forth.

11. The combination with supply and discharge tanks provided, respectively, with means for obtaining different levels therein, of an auxiliary tank, a pipe connecting the three tanks, respectively, and gates adapted to establish independent communication between the auxiliary tank, and either the supply-tank, or discharge-tank, at will, substantially as set forth.

12. The combination with a supply-tank and a discharge-tank, of supply-ports defined by convergent walls, communicating with the supply-tank and with the sea, and inwardly-opening valves in said ports.

653,271. WAVE-POWER. JUAN TONKIN Th., Iquique, Chile. Filed Oct. 17, 1898. Serial No. 693,798. (No model.)



Claim.—1. The combination with a discharge-tank provided with means of preserving a low-water level therein, of a supply-tank provided with an inclined gate movable edgewise and adapted to afford means of preserving a higher level therein.

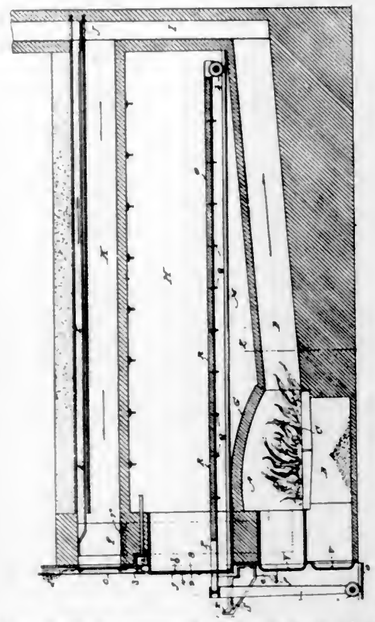
2. The combination with a discharge-tank provided with means of preserving a low-water level therein, of a supply-tank, a series of movable inclined gates in front of the supply-tank, and independent means for raising and lowering the gates, substantially as set forth.

3. The combination with a supply and a discharge tank, and means of preserving a low-water level in the discharge-tank, of a fixed inclined plane in front of said tanks, and a movable inclined plane, or gate cooperating with said inclined plane in front of the supply-tank, substantially as and for the purpose specified.

4. The combination with side walls and an end wall, of a fixed inclined plane connecting the side walls near their respective ends, opposite the end wall, a horizontal partition extending between the side and end walls, and the upper edge of the inclined plane, means of preserving a low-water level below the horizontal partition, and a movable inclined gate adapted to be elevated and depressed, with respect to the upper edge of the fixed inclined plane, and to afford means of preserving a high-water level above the horizontal partition, substantially as set forth.

653,272. BAKE-OVEN. PHILIP VETTER, Springfield, Ohio. Filed Oct. 4, 1899. Serial No. 732,453. (No model.)

Claim.—1. In a bake-oven, the combination with an oven proper, of a fire-box located immediately beneath the forward portion of said oven proper, flues adapted to connect with said fire-box having spaces between them, said flues also forming a portion of the bottom of said oven proper, means for conducting the heat around the rear end and over the top of said oven proper, means for conducting a portion of the products of combustion from the fire-box around the forward end of said oven proper, and a return-flue adapted to retard the products of combustion and hold them longer within the passages or flues surrounding the oven proper, whereby the oven will take up a larger number of heat units, all substantially as shown and described.



2. In an oven, the combination with an oven proper, of separated flues having spaces between them forming the bottom of said oven, means for communicating with said separated flues to conduct the products of combustion about one end of said oven proper and another flue above said oven and parallel therewith, a return-flue of smaller diameter than said latter flue and communicating therewith, substantially as shown and described.

3. In a bake-oven, the combination with an oven proper, adapted to extend from the forward end to near the rear end thereof, of a fire-box beneath said forward end and forming a portion of the bottom of said oven, flues for communicating with said fire-box, and separated from each other and having a space between them and also forming a portion of the bottom of said oven, another flue communicating with said separated flues between the rear end of the oven proper and the outer wall, a pair of flues above said oven proper, one of which communicates with said end flue and conducts the products of combustion to the forward end of said oven proper immediately above it, while the other flue is of smaller area and is adapted to act as a return-flue for said products of combustion, and one or more dampers located in said end flue adapted to open and close the passage therein, whereby a direct draft or indirect draft may be had, all substantially as shown and described.

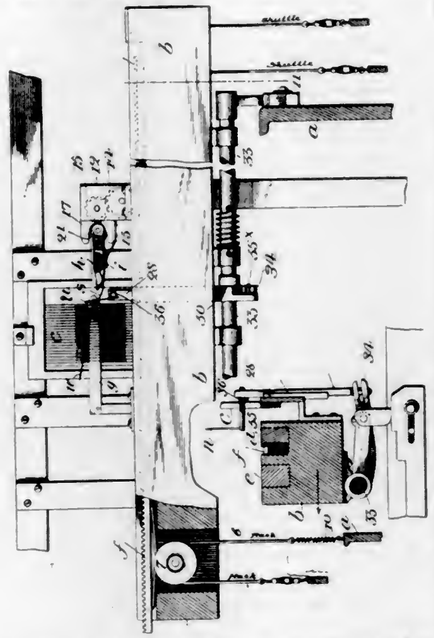
653,273. PYROTECHNIC DEVICE. EDWARD H. WAGNER, New York, N. Y., assignor to the Edward H. Wagner Company, of New Jersey. Filed July 13, 1897. Serial No. 644,443. (No model.)



Claim.—A pyrotechnic device consisting of two separable parts, one of which carries the pyrotechnic charge and the other of which

is provided with a suspending device and forms an inclosing casing for the other part, means by which the part carrying the charge may be pulled out of the inclosing case, a striking-surface on one of said parts and an igniting compound on the other part, whereby the parts may be separated and the igniting compound and striking-surface brought into contact by the use of one hand only, substantially as shown and described.

653,274. LOOM. WILLIAM WEAVER, Norwalk, Conn., assignor of seven-twelfths to W. T. P. Hollingsworth, New York, N. Y. Filed Mar. 10, 1900. Serial No. 8,185. (No model.)



Claim.—1. In a loom, the combination substantially as set forth of the following elements: a lay, a reed thereon, a filling-inserting needle mounted on, and movable lengthwise of, the lay, a selvage-thread shuttle or carrier mounted on the lay, means for engaging the filling with the selvage-thread, and a filling-loop-engaging needle also mounted on the lay and movable in a path transverse to that of the filling-inserting needle to enter and engage the weft-loop and hold the same during the take-up operation so as to free the selvage-thread from strain at this time.

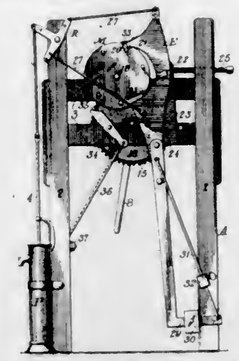
2. In a loom the combination substantially as hereinbefore set forth, of the following elements: a lay, a reed thereon, a filling-inserting needle movable lengthwise of the lay, a selvage-thread shuttle or carrier, means for engaging the filling with the selvage-thread, a filling-loop-engaging needle, and provisions for moving said filling-loop-engaging needle toward the reed and the edge of the warp.

3. In a loom the combination substantially as hereinbefore set forth, of the following elements: a lay, a reed, mounted thereon, a filling-inserting needle mounted on and reciprocable lengthwise of the lay and entering the warp-shed from one edge thereof, a selvage-thread shuttle also mounted on and reciprocable lengthwise of the lay and entering the warp-shed from the opposite edge thereof, a looper carried by and movable with said shuttle, and operating means whereby said looper is caused to pass the filling-loop around the shuttle.

4. The combination with the filling-inserting needle of the selvage-thread shuttle and its supporting-case, the traverse-bar carrying the same, the looper mounted in said case, gearing for driving said looper, and a traverse rack-bar engaging said gearing—the combination being and acting substantially as hereinbefore set forth.

5. In a loom the combination substantially as hereinbefore set forth of the following elements: a lay, a reed mounted thereon, a filling-inserting needle mounted on and movable lengthwise of the lay, a filling-loop-engaging needle mounted on the lay and movable in a path transverse to that of the filling-inserting needle to enter and engage the weft-loop and hold the same during the take-up operation so as to relieve the selvage-thread from strain at this time, a selvage-thread shuttle or carrier, mounted on the lay, means for engaging the filling with the selvage-thread, and a controller for taking care of the slack selvage-thread during the forward movement of the lay.

653,275. PUMP-MOTOR. WILHELM WEINER, Wymore, Nebr., assignor of one-half to Henry Schmitz, same place. Filed Apr. 1, 1899. Serial No. 711,414. (No model.)



Claim.—1. The combination with a motor, of a wheel connected thereto and having projections, an escapement device having pallets adapted to engage the said projections, the said escapement device being located to one side of the center of the wheel and having a substantially-vertical normal position, a rocker pivotally mounted in operative relation to and on the opposite side of the wheel and escapement and including a series of arms, links pivoted to two of the arms of the rocker at opposite sides of the axis of the latter and also similarly connected to the escapement device in planes above and below the pivot of the same, and a connection movably attached to the remaining arm of the rocker and adapted to be united to the plunger of the pump or other device.

2. The combination with a motor, of a wheel adapted to be operated thereby and provided with projections, an escapement device pivotally connected adjacent to the said wheel and adjustable to and from the latter, the said escapement device having oppositely-disposed pallets to engage the projections of the said wheel and also provided with a lower extension with an angular extremity, a weight adjustably mounted on the said angular extremity, a rod connecting the angular extremity and a part of the extension, a weight adjustable on the said rod, a rocker, links connecting opposite portions of the escapement device and a connection also attached to the rocker and adapted to be secured to a plunger-rod of a pump or other device.

3. The combination with a motor, of a wheel having projections extending therefrom, a pivotally-mounted carrier, an escapement device pivotally mounted on the carrier and having oppositely-disposed pallets to engage the projections of the said wheel, said escapement device also being provided with lower adjustable weights, a rocker, links movably attached to the rocker and a connection secured to the rocker and adapted to be attached to the plunger-rod of a pump or other device.

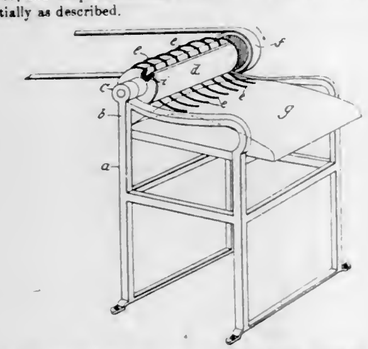
4. The combination with a motor, of a wheel having projections extending outwardly therefrom, a pivotally-mounted carrier adjacent the said wheel, an adjusting device for shifting the said carrier, an escapement device pivotally mounted on the carrier and provided with opposite pallets to engage the projections extending of said wheel, and also provided with lower adjustable weights, a brake for the said wheel, a rocker, links connected to the rocker and the pallets on opposite sides of the axes of the said device, and a connection also attached to the rod and adapted to be secured to the plunger-rod of a pump or other device.

653,276. MACHINE FOR WHIPPING FURS. PAUL R. WEISSE, Chicago, Ill. Filed Aug. 15, 1898. Serial No. 688,638. (No model.)

Claim.—1. In a beating-machine, the combination with a standard *a*, of a rotating support, whips mounted upon said support, and a support for the articles to be beaten, curving from its highest portion downwardly toward and extending beneath the whip-support, a curved portion of the article-support being beneath and directly opposed to the whip-support substantially as described.

2. In a beating-machine, the combination with a rotatably-mounted whip-support provided with a longitudinal groove, of a retaining-strip disposed within said groove, and whips anchored in said retaining-strip, substantially as described.

3. In a beating-machine, the combination with a rotatably-mounted cylindrical whip-support provided with a longitudinal groove, of a retaining-strip disposed within said groove, said retaining-strip being provided with a longitudinal groove, whose opposed walls are curved, and whips anchored at their ends to said retaining-strip, substantially as described.



4. In a beating-machine, the combination with a rotatably-mounted whip-support provided with a longitudinal groove, of a retaining-strip disposed within said groove and made practically flush at its outer surface with said whip-support, and whips secured in said groove, substantially as described.

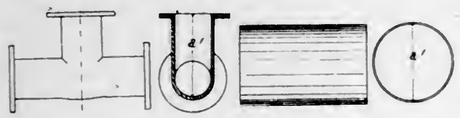
653,277. PROCESS OF MAKING BLACK SULFUR DYE. ARTHUR ASHWORTH and JOSHUA BÜRGER, Bury, England. Filed May 8, 1899. Serial No. 716,068. (Specimens.)

Claim.—The production of coloring-matters, dyeing cotton black, or brown from an alkaline bath which consists in treating the bodies obtained by the action of nitrosophenols on phenols, in sulfuric-acid solution, with alkali and sulfur at a temperature of about 180° centigrade, substantially as described.

653,278. BROWN SULFUR DYE. ARTHUR ASHWORTH and JOSHUA BÜRGER, Bury, England. Original application filed May 8, 1899, Serial No. 716,068. Divided and this application filed Nov. 7, 1899. Serial No. 736,098. (No specimens.)

Claim.—As new products the coloring-matters derived from the products obtained by the action of sulfuric acid on nitrosophenol and phenol and known as Liebermann's bodies, and produced by subsequent treatment of these bodies with caustic soda and sulfur, dyeing cotton from an alkaline bath black to brown shades, the alkaline salts of the color being soluble in water; insoluble in ether; slightly soluble in hot alcohol, and the free color precipitated from its alkaline salts by mineral acids, insoluble in water.

653,279. PIPE-FITTING AND METHOD OF MAKING SAME. FRIEDRICH W. BARTHELS, Hamburg, Germany. Filed Jan. 13, 1900. Serial No. 1,373. (No model.)



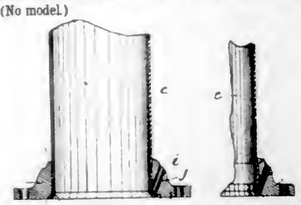
Claim.—1. As a new article of manufacture, a T or other shaped tubular connection having angular portions, the material being driven toward and accumulated at the angles, substantially in the manner set forth.

2. In the manufacture of T and other shaped connections from seamless tubes, swaging or reducing portions of the sides of the tubes to form the branches of the connection, and compressing the material at the angles between said branches, as set forth.

3. In the manufacture of T and other shaped connections from seamless tubes, reducing portions of the tube to form the several parts of the connection, compressing the material at the angles or bends, and perforating the ends of the closed parts to open same, substantially as set forth.

4. In the manufacture of tubular connections having parts at an angle to each other, reducing and compressing a seamless tube of a diameter equal to the greatest cross-diameter of the finished article, to form the said parts, substantially in the manner set forth.

653,280. FLANGED TUBE. FRIEDRICH W. BARTHELS and WILHELM SCHAEFER, Hamburg, Germany. Filed Mar. 10, 1900. Serial No. 8,134. (No model.)

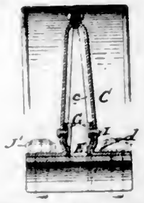


Claim.—1. The combination of a tube and a flange having a hub or collar with recessed internal bore for the reception and expanding of the tube, and a series of closely-proximate channels leading from the exterior of said hub to the internal bore for the reception of brazing material, whereby when heat is applied said material melts, runs down the channels and forms a union between the tube and flange.

2. The combination of a tube, and a flange having a collar or hub to embrace said tube, and chamfered edge or face to said hub over which the end of the tube is upset, and a series of closely-proximate channels leading from the exterior of said hub to the chamfered face for the reception of brazing material, whereby when heat is applied to the flange said material melts and brazes together flange and hub.

3. The combination of a tube and a flange having a hub or collar with recessed and chamfered internal bore for the reception, expansion and upsetting of the tube, and a series of closely-proximate channels leading from the exterior of the hub to the internal bore at the chamfered portion thereof, as and for the purpose described.

653,281. SHEET-METAL PULLEY. CHARLES A. BRINLEY and EDWARD G. BUDD, Philadelphia, Pa., assignors to the American Pulley Company, of Pennsylvania. Filed Jan. 27, 1899. Serial No. 703,530. (No model.)



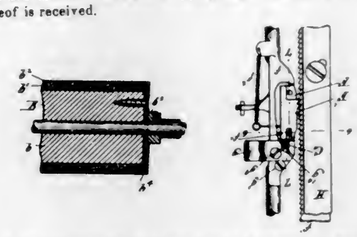
Claim.—1. In a sheet-metal pulley, the combination of radial spoke-arms formed integral with a semicircular hub-piece and from which they radiate and separated throughout their length beginning at the hub-piece, and a semi-annular plate secured directly to each of the radial arms adjacent to the semicircular hub-piece whereby torsional strain between the shaft and rim of the wheel shall be distributed between the several spoke-arms.

2. In a sheet-metal pulley, the combination of radial spoke-arms formed integral with a semicircular hub-piece and from which they radiate and separated throughout their length beginning at the hub-piece and further being provided with corrugations or ribs in the direction of their length, a semi-annular plate secured directly to each of the radial arms adjacent to the semicircular hub-piece and having a series of raised portions formed in the face thereof adapted to the curvature or irregularity of the corrugations in the spoke-arms, and rivets or bolts passing through the corrugations of each of the spoke-arms and each of the raised portions of the semi-annular plate for firmly securing them together, whereby torsional strain between the shaft and rim of the wheel shall be distributed between the several spoke-arms.

3. In a sheet-metal pulley, the combination of the rim portion with a series of radial spoke-arms united at their inner ends integrally with a semicircular hub portion arranged substantially at right angles to said radial spoke-arms and in which the said spoke-arms are formed with ribs or corrugations c which terminate at a short distance from the semicircular hub portion so as to leave a small space *d* between said corrugations and the semicircular hub portion whereby the bend between said hub portions and the spoke-arms is not weakened by the additional bends of the corrugations.

653,282. TYPE-WRITING MACHINE. EBENEZER F. BUMPUS, Boston, Mass., assignor of one-half to William H. Bliss, Newton, Mass. Filed June 3, 1898. Serial No. 682,420. (No model.)

Claim.—1. In a type-writing machine, a movable carriage carrying a rack in combination with an oscillating frame, a holding-dog and a stopping-dog mounted upon said frame, said stopping-dog having a sliding movement, a buffer-holder adjustably mounted upon said frame having a yielding extension and a buffer located in said extension and in rear of the line of said stopping-dog, whereby the rearward movement of said stopping-dog is limited and the blow thereof is received.



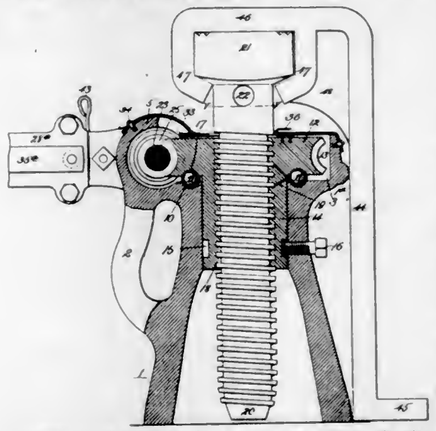
2. The combination in a type-writing machine, of a movable carriage carrying a rack, an oscillating frame, holding and stopping dogs mounted thereon, a buffer-holder also located on said frame and comprising two arms substantially parallel with each other and connected together, said buffer-holder being provided with a recess in rear of said stopping-dog to receive a suitable buffer, as and for the purposes set forth.

3. The combination in a type-writing machine of an oscillating frame, a movable-carriage receiving and holding dog mounted thereon, a buffer-holder comprising two arms substantially parallel with each other and connected at one end, one of which arms has elongated holes g^7, g^8 and the other of which arms is yielding and carries a dog-buffer, the said buffer, screws for fastening said holder to the oscillating frame and a locking device for locking the holder in any desired position on said frame.

4. In a type-writing machine, the improved platen herein described, the same comprising a cylinder or core B and a platen-bed enveloping said cylinder or core, comprising a thick cushion of continuously-resilient pervious material like felt, and which forms the only cushion of the platen, and a very thin impervious surfacing or covering of rubber applied over the outer surface of the cushion and adapted to protect it and provide it with continuity, smoothness and finish but not to impart resiliency to the platen, as and for the purposes set forth.

5. A platen for type-writing machines above described, consisting of a solid interior core or section surrounded by a resilient bed of felt, whereby there is furnished a platen resilient to the action of type, said platen having a thin finishing layer of rubber to protect it from disintegration, providing a smooth surface therefor, in combination with the end plates b^3 and the interposed thin dampers b^4 of non-metallic material, as and for the purposes set forth.

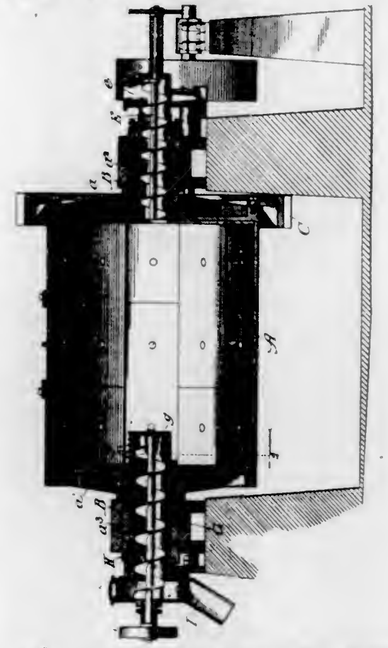
653,288. LIFTING-JACK. JACK CALDWELL, Kansas City, Mo., assignor of one-half to Charles Howard, same place. Filed Mar. 10, 1899. Serial No. 708,584. (No model.)



Claim.—1. In a lifting-jack, a base or stand, a screw therein, a worm-wheel therein engaging the screw, a shaft having a worm-thread engaging said wheel, and a ratchet-wheel keyed to said shaft, a lever journaled on said shaft, consisting of a plate 27^a having flanges 27^c and 29^a, a plate 28^a bearing against said flanges and provided with an opening 38, between flange 29^a and the ratchet-wheel, a dog 40, pivoted between said plates, a spring 35^a secured to the plate provided with the opening 38, and provided with a tooth 37 projecting through said opening and engaging said dog, and a handle 30^a fitting between the plates and flanges 27^c and 29^a, substantially as described.

2. In a lifting-jack, a base or stand, a screw therein, a worm-wheel therein engaging the screw, a shaft having a worm-thread engaging said wheel, a ratchet-wheel carried on said shaft, and a lever journaled on said shaft, consisting of the plate 27^a, a plate 28^a secured to the plate 27^a, a dog pivoted between said plates and provided with a pair of teeth, a pawl carried by plate 28^a and engaging said dog to hold one of its teeth or the other in engagement with the ratchet-wheel, lugs 32^a projecting from plate 27^a, and a lever or handle 33^a pivoted to and between said lugs, and provided with an extension 34^a adapted to bear against plate 27^a when the handle extends at about a right angle from said plate 27^a, substantially as and for the purpose set forth.

653,284. TUBE OR PEBBLE MILL. CHARLES L. CARMAN, Chicago, Ill., assignor to the Gates Iron Works, same place. Filed July 29, 1899. Serial No. 725,485. (No model.)



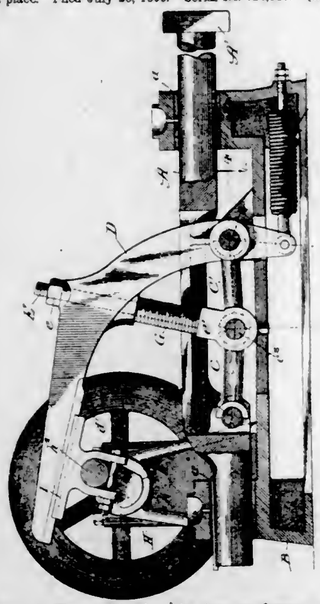
Claim.—1. In a mill of the class described, the combination of a rotatable tubular portion provided with a grinding-chamber and an axial discharge-opening at one end of the tubular portion, an inclined screen arranged inside the grinding-chamber of the tubular portion adjacent to the axial discharge-opening over which the balls or pebbles may pass and through which the ground material may be screened so as to be discharged through the axial discharge-opening, substantially as described.

2. In a mill of the class described, the combination of a tubular portion provided with a hollow journal at one end, a tube projecting through the hollow journal and provided with a pocket on its inside portion in the grinding-chamber, an inclined upper surface formed of a plurality of ribs or bars forming a screen on the pocket over which the balls or pebbles may pass and through which the materials may be screened so as to be discharged out through the tubular portion thereof, substantially as described.

3. In a mill of the class described, the combination of a tubular portion provided with a hollow journal at one end, a tube projecting through the hollow journal and provided with a pocket on its inside portion in the grinding-chamber, an inclined upper surface formed of a plurality of ribs or bars forming a screen on the pocket over which the balls or pebbles may pass and through which the materials may

be screened so as to be discharged out through the tubular portion thereof, and a helical screw in the discharge-tube for forcing the ground material out through the tube, substantially as described.

653,285. ACTUATING MECHANISM FOR CONCENTRATING-TABLES. DAVID COLE, Chicago, Ill., assignor to the Gates Iron Works, same place. Filed July 20, 1899. Serial No. 724,518. (No model.)



Claim.—1. The combination of a base or frame, a sliding bar having bearing therein, a pair of pivotally-connected toggle-links, one pivoted at one end to said bar and the other pivoted at the opposite end to the base, an operating-lever pivoted at its outer end to the base on the same line with the link last mentioned, and pivotally connected at another point with the pivot connection of the toggles, a spring for forcing said lever in one direction, and an actuating crank-shaft connected with said lever to vibrate the same, substantially as described.

2. In mechanisms of the class described, a reciprocating bar, a frame or base portion in which it is slidingly mounted, pivotally-connected toggle-links one fulcrumed at one end on the base and the other at the other end to the reciprocating bar, an operating-lever fulcrumed on the base portion, a pitman connected with said lever and engaging the pivot connection of the toggle-links, a spring for assisting in moving the operating-lever in one direction, a crank-shaft and pin connected with the free end of the operating-lever to vibrate the same by and during its rotations, substantially as described.

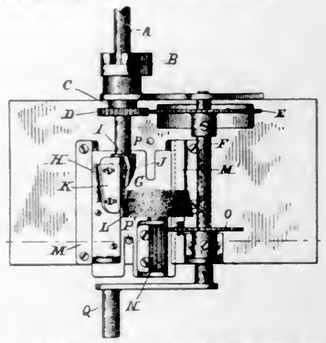
3. In mechanisms of the class described, a reciprocating bar, a base portion in which it is slidingly mounted, pivotally-connected toggle-links one fulcrumed at one end on the base portion and the other at the other end to the reciprocating bar, an operating-lever pivoted on the base portion, a pitman pivotally secured to the central pivot connection of the toggle-links and adjustably secured to the operating-lever, a spring connected with the operating-lever to assist in vibrating it in one direction, and a crank-shaft and crank connected with the free end of the operating-lever to vibrate the same, substantially as described.

4. In mechanisms of the class described, the combination of a reciprocating bar, a base portion in which it is slidingly mounted, pivotally-connected toggle-links one fulcrumed at one end upon the base portion and the other at the other end to the reciprocating bar, and arranged to reciprocate the said bar by and during their vibrations, an operating-lever fulcrumed upon the base portion, a pitman pivotally secured to the pivot connection of the toggle-links and having a threaded end passed through a smooth perforation in the operating-lever, an adjusting-nut on its outer end, an expansible washer inserted between the operating-lever and the pitman, a spring secured to the operating-lever and to the base portion to assist in vibrating it in one direction, a crank-shaft and crank rotatably mounted on the frame portion, and a shoe pivotally mounted on the crank and having a sliding engagement with the free end of the operating-lever to vibrate the same by and during the rotation of the crank-shaft, substantially as described.

5. In a machine of the class described, the combination of a reciprocating bar, a frame or base portion in which the said bar is reciprocatingly mounted, pivotally-connected toggle-links one fulcrumed at one end upon the base portion and the other at the other end to the reciprocating bar to reciprocate the same by and during their vibrations, an operating-lever pivotally mounted upon the frame portion at one fulcrum-point of the toggle-links, a pitman pivotally secured to the toggle-links at the pivot connection thereof and having a threaded end portion passed through a smooth perforation in the operating-lever, an adjusting-nut on the threaded outer end of the pitman, an extensible spring-washer surrounding the pitman and inserted between it and the operating-lever, a crank-shaft and crank rotatably mounted in the frame portion, a shoe pivotally mounted upon the crank and having its saddle engaging with a slide on the operating-lever, and a spring secured to the operating-lever and the frame portion to assist in vibrating the operating-lever in one direction, substantially as described.

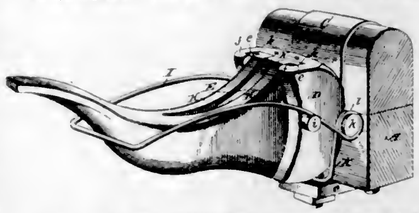
6. In mechanisms of the class described, the combination of a reciprocating bar, a base portion in which it is slidably mounted, pivotally-connected toggle-links one fulcrumed at one end upon the base portion and the other at the other end to the reciprocating bar and arranged to reciprocate the said bar by and through their vibrations, an operating-lever fulcrumed upon the base portion, a pitman pivotally secured to the pivot connection of the toggle-links and adjustably secured to the operating-lever, a spring secured to the operating-lever and base portion to assist in vibrating the operating-lever, and a crank-shaft slidably connected with the operating-lever to operate the same, substantially as described.

653,286. PENCIL-SHARPENER. MOSES G. COOK, Lynn, Mass. Filed Aug. 25, 1899. Serial No. 728,501. (No model.)



Claim.—In a pencil-sharpener, a rotating pencil-clamp, a sliding carriage adapted to be controlled by the operator and having mounted upon it a wood-cutting device and a rotating grinding-wheel, mechanism for rotating the pencil-clamp and grinding-wheel, including a spur-gear, said wheel having a long pinion engaging the spur-gear whereby the sliding movement of the carriage does not detach it from the rotating mechanism, substantially as and for the purpose set forth.

653,287. SHAFT OR THILL COUPLING. ROBERT F. CORNELL, Phillipsburg, Mont. Filed May 8, 1900. Serial No. 15,897. (No model.)

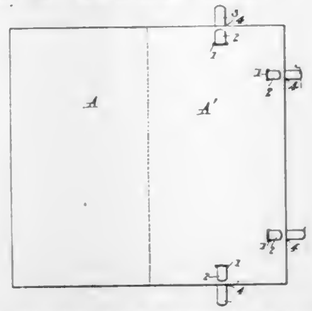


Claim.—1. A shaft or thill coupling, consisting of a coupling-head having segmental coupling-grooves and outwardly-extending pins or lugs upon its sides, a shaft or thill iron adapted to engage the grooves, and a combined shaft or thill support and an antirattler comprising a spring-loop adapted to engage the shaft or thill iron upon the under side thereof, the arms of said loop bearing against the pins or lugs upon the coupling-head and terminating in spring antirattler-arms which extend up into the coupling-grooves and are adapted to bear against the end of the shaft or thill iron, substantially as and for the purpose set forth.

2. A shaft or thill coupling, comprising a coupling-head having segmental grooved guides with inwardly-projecting shoulders, and a central tongue between the guides and terminating at its outer end in a ball, and a shaft or thill iron having a longitudinal socket for engaging with the ball and outwardly-extending flanges to engage with the grooved guides, substantially as and for the purpose described.

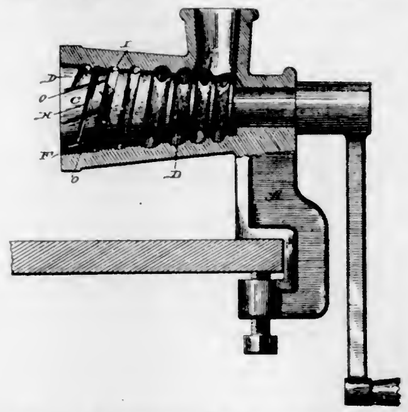
3. A shaft or thill coupling, comprising a coupling-head having a projecting tongue terminating in a ball, shouldered grooved upon each side of the tongue, lugs projecting from the sides of the coupling-head, a shaft or thill iron having a longitudinal socket to engage with the ball, and outwardly-extending flanges to engage with the shouldered grooved guides, and a spring-loop adapted to engage the shaft or thill iron upon the under side thereof, the sides of the loop engaging the lugs upon the sides of the coupling-head and terminating in U-shaped spring antirattler-arms, the upright arms thereof extending up through the coupling-head and adapted to bear against the flanges of the thill-iron, substantially as and for the purpose specified.

653,288. MAILING-WRAPPER. SIMON DANCYGER, Dayton, Ohio. Filed Sept. 3, 1897. Serial No. 650,438. (No model.)



Claim.—As a new article of manufacture a mailing-wrapper comprising a folded blank of paper with abutting edges, and provided with metallic clasps on the three edges of one section of said blank, the other section being adapted to fold over and under the side clasps of the same and to have the other clasps bent over its end edges, substantially as described.

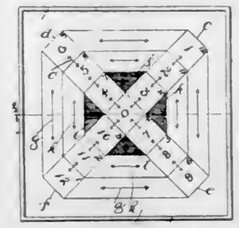
653,289. GRINDING-MILL. WILLIAM T. DAVIS, Battle Creek, Mich. Filed May 23, 1899. Serial No. 717,881. (No model.)



Claim.—1. The combination in a mill of the character described, of a casing having spiral grooves and a smooth grinding portion at its discharge end and also a hopper to feed the same at the other end, a tapered grinding-screw within the said casing having a smooth grinding portion at its discharge end to engage the smooth grinding portion of the said casing, the said casing and grinder being correspondingly tapered and fitting each other sufficiently closely to coact with each other and being provided with screw-threads as aforesaid, and with additional angular grooves diverging from said screw-threads, which receive, intermediate of their length, the extremities of said screw-threads, said screw-threads and grooves all becoming shallower until they merge into the said smooth grinding portions to partly reduce the kernels and force them between the said smooth grinding portions, substantially as set forth and for the purposes described.

2. The combination in a mill of the character described, of an internally-tapered casing having spiral grooves and a smooth grinding portion at its discharge end, and also a hopper to feed the mill at the other end, a tapered grinding-screw within the said casing having a smooth grinding portion at its discharge end to engage the said smooth grinding portion of the casing, said grinding-cone having a thread D encircling it regularly for a portion of its length, but gradually increasing in size, and then running at a greater pitch toward the discharge end and having a number of grooves H, I, and J diverging from said thread D on its inner side, and additional short grooves O, O, O, diverging from said grooves in a more nearly axial direction, and receiving, intermediate of their length, and being intersected by the extremities of the said grooves D', H, I, J, all of said grooves beyond the said points of divergence becoming shallower until they merge into the said smooth grinding portion, substantially as and for the purposes set forth.

653,290. PUZZLE. CATHARINE T. DUKES, Huron, S. D. Filed Mar. 10, 1900. Serial No. 8,138. (No model.)



Claim.—1. A puzzle, comprising a cross the arms of which are divided into corresponding spaces, the spaces in each arm, except those next to the center of the cross, being connected by indicated pathways with corresponding spaces upon the adjacent arms, each space upon said arms being designated by two different numerals selected respectively from two sets of ordinals corresponding respectively to the number of spaces upon said arms, and a series of successively-numbered blocks corresponding in the aggregate to the number of spaces upon said arms, whereby said blocks may be placed upon the spaces bearing one set of numbers corresponding therewith and readjusted by movement over said spaces and pathways until they assume the respective positions designated by the second set of numerals, substantially as described.

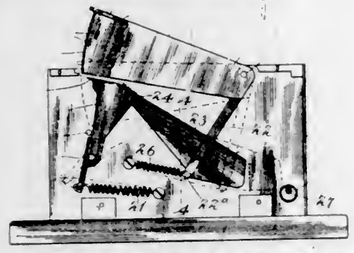
2. A puzzle, comprising a cross, each arm of which is divided into an equal number of spaces arranged in a single row, said spaces, except those next to the center of the cross, being connected by indicated pathways with corresponding spaces upon the adjacent arms, each space upon said arms being designated by two different numerals selected respectively from two sets of ordinals corresponding respectively to the number of spaces upon said arms, and a series of successively-numbered blocks corresponding in the aggregate to the number of spaces upon said arms, substantially as and for the purposes specified.

3. A puzzle of the class described, in which is combined a base having thereon the configuration of a cross, the arms of which are divided into a corresponding number of spaces respectively, each space bearing primary and secondary numbers arbitrarily placed thereon, a central space, designated pathways connecting the spaces in the several arms, except those next to the center, with corresponding spaces upon the adjacent arms, and a series of movable blocks numbered to conform to said primary and secondary numbers respectively, substantially as and for the purpose set forth.

653,291. CIGAR-CUTTER. GEORGE S. ELDRED, Chicago, Ill. Filed May 12, 1900. Serial No. 16,456. (No model.)

Claim.—1. In a cigar-cutter, in combination, a frame, a bell-crank lever having an aperture to receive the tip of a cigar, a swinging arm, a blade carried by the arm and so disposed as to move across the lever-aperture, a tailpiece projecting from the blade-carrying lever and being normally engaged by the bell-crank lever, means for

disengaging the tailpiece from said lever, and springs for returning the said lever and arm to their normal positions.



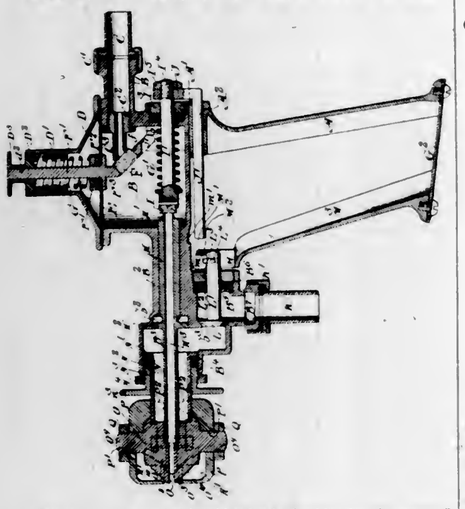
2. In a cigar-cutter, in combination, a frame, a bell-crank lever having an aperture to receive the tip of a cigar, a swinging arm, a blade carried by the arm and so disposed as to move across the lever-aperture, a notched tailpiece pivoted to the blade-carrying lever and being normally engaged by the bell-crank lever, one arm of the bell-crank lever being norma ly in engagement with the notch of the said tailpiece, a trip for disengaging the tailpiece from the lever, and springs for returning the said lever and arm to their normal positions.

3. In a cigar-cutter, in combination, a frame, a bell-crank lever having an aperture to receive the tip of a cigar, a swinging arm, a blade carried by the arm and so disposed as to move across the lever-aperture, a notched tailpiece pivoted to the blade-carrying lever and being normally engaged by the bell-crank lever, one arm of the bell-crank lever being normally in engagement with the notch of the said tailpiece, an adjustable trip for disengaging the tailpiece from the lever, and springs for returning the said lever and arm to their normal positions.

4. In a cigar-cutter, in combination, a frame, a bell-crank lever having one arm apertured to receive the tip of a cigar, a spring for holding the lever in its normal position, an oscillating spring-controlled blade having a movement across the lever-aperture, connection between the lever and blade whereby the movement of the lever retracts the blade, and means for disconnecting such parts

5. In a cigar-cutter, in combination, a frame, a spring-retracted lever, a spring-controlled reciprocating blade, connection between the lever and blade whereby the one retracts the other, and means for breaking such connection.

653,292. APPARATUS FOR SPRAYING PAINT. ABEL FISHER, Wellsville, Ohio. Filed Apr. 9, 1898. Serial No. 676,974. (No model.)



Claim.—1. A spraying-head having in combination the center O formed with conical ends O^{10} O^{10}, a fluid-port as O^7 O^8 opening from its center and air-ports as O^2 O^3 opening through its conical sides and the caps P P adapted to fit over the conical ends of the center O and form air-chambers as R′ having ports as P^6 opening on the edge of the air-port O^3.

2. A spraying-head having in combination the center O formed with conical ends O^{10} O^{10}, a fluid-port, as O^7 O^8, opening from its center, outwardly-extending end walls O^9 O^9 at each end of the fluid-port, and air-ports as O^2 O^3 opening through its conical sides and the caps P P adapted to fit over the conical ends of the center O and form air-chambers as R′ having ports as P^6 opening on the edge of the air-port O^3

3. A spraying-head having in combination the center O formed with conical ends O^{10} O^{10}, a fluid-port, as O^7 O^8, opening from its center, and air-ports as O^2 O^3 opening through its conical sides, and the caps P P adapted to fit over the conical ends of the center O and formed with partitions P^5 P^5 whereby air-chambers R R are formed on each side of the center the outer chambers R′ having ports as P^6 opening on the edge of the fluid-port O^8

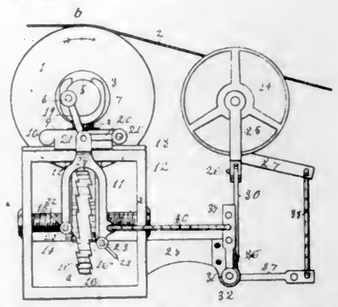
4. A spraying-head having in combination the center O formed with conical ends O^{10} O^{10}, a fluid-port, as O^7 O^8, opening from its center, outwardly-extending end walls O^9 O^9 at each end of the fluid-port, and air-ports as O^2 O^3 opening through its conical sides and the caps P P adapted to fit over the conical ends of the center O and formed with partitions P^5 P^5 whereby air-chambers R R′ are formed on each side of the center the outer chambers R′ having ports as P^6 opening on the edge of the fluid-port O^8

5 A spraying-head having in combination the center O formed with conical ends O^{10} O^{10}, a fluid-port as O^7 O^8 opening from its center, air-ports as O^2 O^3 opening through its conical side and threaded studs O^9 O^9 extending from the ends of the conical ends and the caps P P adapted to fit over the studs and the conical ends of the center O and form air-chambers as R′ having ports as P^6 opening on the edge of the air-port O^3.

6. In a painting-nozzle the paint-chamber B and air-chamber B^3 connected by a tube B^2 and said air-chamber connected with a threaded tubular section B^4 in combination with a spraying-head, an air-tube N secured to the head and having a flange N′ fitting in the tubular section B^4, a paint-tube H H^3 also secured to the head, extending through the tube N, chamber B^3 and tube B^2 into the paint-chamber, a packing-flange as H^2 secured on the paint-tube and adapted to make a tight joint between the chamber B^3 and tube B^2 and a threaded packing-annulus as N^2 n^3 fitting on tube N and screwing in the tube B^4 so as to hold packing between its end and the flange N′ of tube N.

7. In a painting-nozzle, substantially as described, the combination of valves L and I for regulating the admission of air and paint into the tubes leading to the head with a spring-supported grip-lever M^2 normally resting in position to permit the valves to remain closed, valve-actuating devices arranged to be acted on by the lever M^2 when it is moved and whereby the valves L and I are successively opened, and a detent as m' arranged to engage and partially hold the grip-lever when moved to its normal valve-opening position.

653,293. AUTOMATIC WIRE OR FELT GUIDE FOR PAPER-MAKING MACHINES. WILLIAM M. GILBERT, THEODORE M. GILBERT, and WILLIAM C. NASH, Neenah, Wis. Filed Jan. 30, 1900. Serial No. 3,381. (No model.)

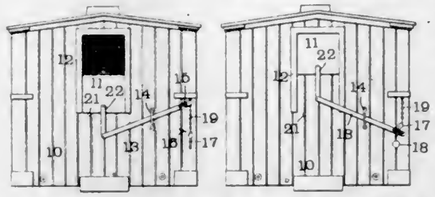


Claim.—1. In an apparatus of the character described, the combination of a guide-roll provided with journals, an endless making wire or belt thereon, a bearing for one of the journals of said roll arranged to move parallel with the line of movement of said wire or belt, a pulley under the edge of and in contact with said wire or belt, and in front of the end of said guide-roll which is arranged for said parallel movement, the outer end of said pulley being in a higher plane than its inner end, a pivotally-mounted stand in which said pulley is mounted, said stand being adjustable vertically and transversely, and having its pivotal point in substantially the same vertical plane as the edge of the aforesaid wire or belt, and mechanism operated by the oscillation of the aforesaid pulley for moving the journal-bearing of the said guide-roll forward and backward in a line parallel with the normal line of travel of said wire or belt, substantially as described.

2. In an apparatus of the character described, the combination of a guide-roll provided with journals, an endless making wire or belt thereon, a bearing for one of the journals of said roll arranged to move parallel with the line of movement of said wire or belt, a pulley under the edge of and in contact with said wire or belt, and in front of the end of said guide-roll which is arranged for said parallel movement, the outer end of said pulley being in a higher plane than its inner end, a pivotally-mounted stand in which said pulley is mounted, said stand being adjustable vertically and transversely, and having its pivotal point in substantially the same vertical plane as the edge of the aforesaid wire or belt, an arm extending outward from said stand, a rod arranged for an oscillating movement in suitable bearings below said stand and being in a position substantially parallel with the axis of said guide-roll, means for holding said rod from endwise movement, a spring having tension-regulating means arranged for acting upon the oscillations of said rod, an arm near the inner end of said rod adjustable in position thereon, a connection from said arm to the outward-extending arm of the pivotally-mounted stand aforesaid, an arm extending upward from the outer end of said rod, and a connection therefrom to mechanism consisting of a ratchet-bar having dogs and a ratchet-wheel having teeth for being engaged by said dogs, said ratchet-bar being arranged for a continual up-and-down movement from the revolutions of said guide-roll and to be brought into operative action intermittently upon the ratchet-wheel for turning it in one direction or the other, by the oscillations of the aforesaid pulley, for moving the journal-bearing of said guide-roll forward or backward in a line parallel with the normal line of travel of said wire or belt, substantially as described.

3. In an apparatus of the character described, in combination with its guiding-roll 1, the wire 2, journal-shaft 4, crank-wheel 5, crank-pin 6, journal-box 7 having a pivot 8 pivoted in the holder 9, the boss 10′ on said holder, the depending ears 11 of said holder, the stand 12 having ways 13 and shelf 14 for supporting said holder, the fixed screw 15, the ratchet-wheel 16 mounted upon the screw 15 between the ears 11 and having the teeth 16′ and 16″, the ratchet-bar 17 having grooves 18 therethrough, the links 19 and 20, the pins 21 and 21′, the dogs 22, the set-screws 23, the pulley 24, the stand 25 having the pivotal point 26, and the arm 27, the arm 28 secured upon the stand 12, it having a slot 29, the arm 30 having the pivotal bolt 30′, the rod 31, the drop-journals 32 and 33, the set-collars 34, the set-collar 35, the spring 36 its free end bearing against a fixed part, the arm 37, the connection 38, the arm 39 and the connection 40, said parts being arranged and operating substantially as shown and set forth.

653,294. END DOOR FOR CARS. ETHAN A. GOODRIDGE, Palestine, Tex. Filed Oct. 30, 1899. Serial No. 735,152. (No model.)



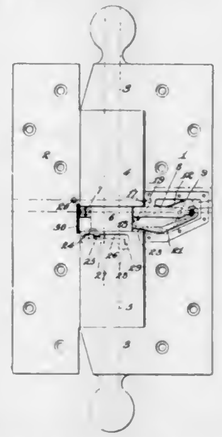
Claim.—The combination with a railway-car provided with an opening in its end, of a door for closing said opening, a connection leading from said door to a point adjacent to the side of the car, and a sealing device for said connection arranged at said point for ready inspection.

653,295. DOOR-CHECK. CHARLES F. HANINGTON, New York, N. Y., assignor to the Mechanical Door Hinge Check Company, same place. Filed Oct. 25, 1899. Serial No. 734,697. (No model.)

Claim.—1. In a mechanical door-check, the combination of the two hinge-leaves, an abutment carried by or with one of said leaves, a pivoted checking-bolt carried by or with the other of said leaves and normally arranged in the same plane as said abutment, whereby the said bolt and abutment will engage together to perform a checking operation, a locking-lever for locking said bolt in its normal position, said lever being carried by and projecting through the leaf which carries the bolt and adapted to be engaged by a part of the other leaf, substantially as set forth.

2. In a mechanical door-check, the combination of the two hinge-leaves, an abutment carried by or with one of said leaves, a pivoted checking-bolt carried by or with the other of said leaves and normally arranged in the same plane as said abutment, whereby the said bolt and abutment will engage together to perform a checking operation, a locking-lever for locking said bolt in its normal position, said lever being carried by and projecting through the leaf which carries the bolt and adapted to be engaged by a part of the other leaf, and an elastic device with which said pivoted bolt engages during the checking operation, substantially as set forth.

3. In a mechanical door-check, the combination of the two hinge-leaves, an abutment carried by or with one of said leaves, a pivoted checking-bolt carried by or with the other of said leaves and normally arranged in the same plane as said abutment, whereby the said bolt and abutment will engage together to perform a checking operation, a locking-lever for locking said bolt in its normal position, said lever being carried by and projecting through the leaf which carries the bolt and adapted to be engaged by a part of the other leaf, and an elastic device with which said pivoted bolt engages during the checking operation, substantially as set forth.



4. In a mechanical door-check, the combination of the two hinge-leaves, an abutment carried by or with one of said leaves, a pivoted checking-bolt carried by or with the other of said leaves and normally arranged in the same plane as said abutment, whereby the said bolt and abutment will engage together to perform a checking operation, a locking-lever for locking said bolt in its normal position, said lever being carried by and projecting through the leaf which carries the bolt and adapted to be engaged by a part of the other leaf, and means for resetting said bolt upon the opening movement of the hinge members, substantially as set forth.

5. In a mechanical door-check, the combination of the two hinge-leaves, an abutment carried by or with one of said leaves, a pivoted checking-bolt carried by or with the other of said leaves and normally arranged in the same plane as said abutment, whereby the said bolt and abutment will engage together to perform a checking operation, a locking-lever for locking said bolt in its normal position, said lever being carried by and projecting through the leaf which carries the bolt and adapted to be engaged by a part of the other leaf, a resetting-lever carried by the leaf to which said bolt is pivoted, and a resetting-cam carried with or by the other leaf for engagement with said resetting-lever during the opening movement of the hinge-leaves, substantially as set forth

6. In a mechanical door-check, the combination of the two hinge-leaves, an abutment carried by or with one of said leaves, a pivoted checking-bolt carried by or with the other of said leaves and normally arranged in the same plane as said abutment, whereby the said bolt and abutment will engage together to perform a checking operation, a locking-lever for locking said bolt in its normal position, said lever projecting through the leaf which carries the bolt and adapted to be engaged by a part of the other leaf, a resetting-lever carried by the leaf to which said bolt is pivoted, a resetting-cam carried with or by the other leaf for engagement with said resetting-lever during the opening movement of the hinge-leaves, and means for adjusting the position of said cam, substantially as set forth.

7. In a mechanical door-check, the combination of the two hinge-leaves, an abutment carried by or with one of said leaves, a pivoted checking-bolt carried by or with the other of said leaves and normally arranged in the same plane as said abutment, whereby the said bolt and abutment will engage together to perform a checking operation, a locking-lever for locking said bolt in its normal position, said lever projecting through the leaf which carries the bolt and adapted to be engaged by a part of the other leaf, a resetting-lever carried by the leaf to which said bolt is pivoted, a resetting-cam car-

ried with or by the other leaf for engagement with said resetting-lever during the opening movement of the hinge-leaves, means for adjusting the position of said cam, and means for moving said cam out of the path of the resetting-lever, substantially as set forth.

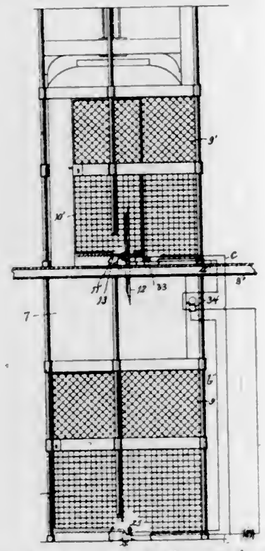
653,296. BILL-HOOK. WILLIAM HORNICH, Jr., Newark, N. J., assignor to the Whitehead & Hoag Company, of New Jersey. Filed Jan. 28, 1899. Serial No. 703,655. (No model.)



Claim.—1. As a new article of manufacture, a bill-hook, comprising a card or placard, a plate secured thereto, said plate having a grooved or channeled portion, extending in a direction away from said card or placard, a wire body portion arranged in said grooved or channeled portion and movable vertically and rotatable between said card or placard and the inner part of said grooved or channeled portion, a receiving-hook at the lower portion of said wire, adapted to be turned so as to lie flat in relation to said card or placard and the plate, and a holding means at the opposite end of said wire adapted to be forced in holding engagement with a part of the said plate, when the receiving-hook on said wire has been turned in a plane at right angles to the plane of the card or placard and that of the plate, substantially as and for the purposes set forth.

2. As a new article of manufacture, a bill-hook, comprising a card or placard, a plate secured thereto, said plate having a pair of parallel and vertically-arranged grooved or channeled portions, extending in a direction away from said card or placard, a wire body portion arranged in one of said grooved or channeled portions and movable vertically and rotatable between said card or placard and the inner part of said grooved or channeled portion, a receiving-hook on the lower portion of said wire adapted to be turned so as to lie flat in relation to said card or placard and the plate, and a locking or holding hook at the opposite end of said wire adapted to be forced in holding engagement with the other grooved or channeled portion in said plate, when the receiving-hook on said wire has been turned in a plane at right angles to the plane of the card or placard and that of the plate, substantially as and for the purposes set forth.

653,297. SAFETY DEVICE FOR ELEVATORS. MURRAY M. HUNTER, Milwaukee, Wis. Filed Mar. 14, 1900. Serial No. 8,584. (No model.)



Claim.—1. In a safety device for elevators, the combination of an elevator-shaft, an opening and closing door at the landing of said shaft, a horizontally-arranged rack extending transversely of the door, and throughout the width, or substantially the width, of said door, a bolt movable toward and from the rack and normally in engagement with any of the teeth of the rack so as to hold the door locked against being further opened whether said door is fully closed or only partially closed, a rock-shaft, an arm extending from the rock-shaft and adapted to actuate the bolt, a crank-arm extending at an angle from the rock-shaft, a device carried by the elevator-cage and movable in a direction substantially parallel to the crank-arm and adapted to contact with the crank-arm, whereby when said contact is made the bolt is withdrawn from engagement with the rack, and means acting to thrust the bolt into engagement with the rack when the device carried by the elevator-cage ceases to act on the crank-arm.

2. In a safety device for elevators, the combination of an elevator-shaft, an opening and closing door at the landing of said shaft, an elevator-cage, a movable locking dog or catch, means for causing said dog to normally engage the door for the purpose of holding the door in a closed or partially-closed position, a crank-arm provided with an adjustable arm extending at an angle therefrom, a connection between the crank-arm and the locking-dog, and mechanism carried by the elevator-cage and adapted to act on the arm extending from the crank-arm, when the cage approaches a landing, so as to disengage the locking-dog and thereby permit of the opening of the door.

3. In a safety device for elevators, the combination of an elevator-shaft, an opening and closing door at the landing of said shaft, a horizontally-arranged rack extending transversely across the bottom of the door, and throughout the width, or substantially the width, of said door, a vertical bolt movable toward and from the rack and normally in engagement with any of the teeth of the rack so as to hold the door locked against being further opened whether said door is fully closed or only partially closed, a rock-shaft, an arm extending from the rock-shaft and adapted to actuate the bolt, a crank-arm extending upwardly at an angle from the rock-shaft, a device carried by the elevator-cage, and movable in a direction substantially parallel to the crank-arm and adapted to contact with the crank-arm, whereby when said contact is made the bolt is withdrawn from engagement with the rack, and means for thrusting the bolt into engagement with the rack when the device carried by the elevator-cage ceases to act on the crank-arm.

4. In a safety device for elevators, the combination of an elevator-shaft, an opening and closing door at the landing of said shaft, an elevator-cage, an electrical circuit, an alarm within the circuit, make-and-break mechanism at the landing of the elevator-shaft and also within the electrical circuit, and consisting of contact-strips and a contact-arm adapted, when contacting with the strips, to complete the electrical circuit, mechanism carried by the opening and closing door and adapted to engage one end of the contact-arm, when the door is closed, and thereby break the circuit, and mechanism carried by the elevator-cage and adapted to engage the opposite end of the contact-arm, when the elevator-cage approaches a landing, thereby breaking the circuit at that time, even though the door is opened, the circuit, however, being completed and the alarm sounded when the elevator-cage leaves the landing and the door is left open or partially open.

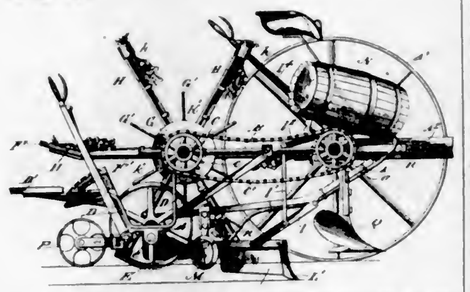
5. In a safety device for elevators, the combination of an elevator-shaft, an opening and closing door at the landing of the elevator-shaft, an elevator-cage, a locking dog or catch, means for causing said dog or catch to normally engage the door for the purpose of holding the door in a closed or partially-closed position, an electrical circuit, an alarm within the circuit, make-and-break mechanism at the landing of the elevator-shaft and also within the electrical circuit, and consisting of contact-strips and a contact-arm adapted, when contacting with the strips, to complete the electrical circuit, mechanism carried by the opening and closing door and adapted to engage one end of the contact-arm, when the door is closed, and thereby break the circuit, and mechanism carried by the elevator-cage and adapted to act on the locking-dog, when the cage approaches a landing, so as to disengage said dog and thereby permit of the opening of the door, and adapted also at this time to engage the opposite end of the contact-arm and thereby break the circuit, even though the door is open, the circuit, however, being completed and the alarm sounded when the elevator-cage leaves the landing and the door is left open or partially open.

653,298. TRANSPLANTER. WARNER A. KING, Marysville, Ohio. Filed Oct. 25, 1899. Serial No. 734,693. (No model.)

Claim.—1. In a transplanting-machine, the combination of a hand, comprising opposite hinged movable plates and a flexible or yielding plant-grasping band having its opposite extremities connected to the free ends of said plates and adapted to be opened and closed by the swinging of the plates, and means for operating said plates.

2. In a transplanting-machine, the combination of a stem, oppositely-movable plates attached thereto, a flexible plant-grasping band, having its extremities attached to the opposite plates and its intermediate portion loosely connected to the stem whereby the band may be opened or closed, by moving said plates, and means for operating said plates to cause the opening and closing thereof.

3. In a plant-holding device for transplanting-machines, the combination of a stem, the opposite hinged plates attached thereto, the flexible band between said plates having its extremities connected thereto, and its center portion yieldingly connected to the stem whereby said band is kept taut in all positions of the plates, substantially as described.



4. In a plant-holding device for transplanting-machines the combination of a stem, the opposite curved plates hinged thereto, the flexible band inclosed between said plates and having its extremity connected to the outer ends thereof and its center portion yieldingly connected to the stem by a spring-rod, and means for operating said plates, substantially as described.

5. In a plant-holding device for transplanting-machines, the combination of a stem, the opposite plates hinged thereto, and a yielding plant-grasping device between said plates and operated thereby; with a rotary support for said stem, the toggles for actuating the plates, and the opposite cam-plates beside the rotary support adapted to operate said toggles, for the purpose and substantially as described.

6. In a plant-holding device for transplanting-machines, the combination of a stem, the opposite plates hinged thereto, and the flexible band inclosed between said plates and having its extremities connected to the outer ends thereof; with a rotary support for said stem, the rods for actuating the plates, the toggle connections between said rods, and the opposite cam-plates beside the rotary support adapted to engage said cams, for the purpose and substantially as described.

7. In a plant-holding device for transplanting-machines, the combination of a stem, the opposite curved plates hinged thereto, the flexible band inclosed between said plates and having its extremities connected to the outer ends thereof and its center portion yieldingly connected to the stem by a spring-rod whereby said band is kept taut in all positions of the plate; with a rotary support for said stem, the hinged rods for actuating the plates, the toggle connections between said rods, the opposite cams attached to said rods, and the opposite cam-plates beside the rotary support adapted to engage said cams, for the purpose and substantially as described.

8. In a transplanting-machine, the combination of a furrow-opener, a rotary disk, a feed-table beside the disk, a series of mechanical hands attached to said disk, each consisting of a stem, a pair of hinged plant-grasping plates attached to the outer ends of the said stem, the hinge-rods of said plates, the cams attached to the inner ends of said rods, and the cam-plates fixed beside the disk adapted to cause the opening and closing of the said plates.

9. In a transplanting-machine, the combination of the rotary disk, the opposite segmental cam-plates beside the same, a series of plant-holding hands secured to said disk and rotated thereby, each consisting of a stem, a pair of hinged plates at the outer end of said stem, the flexible piece interposed between said plates having its outer ends connected thereto and the spring attached to the central portion of said flexible piece and the stem, whereby a yielding grasp is had upon the stems of the plants, for the purpose and substantially as described.

10. In a transplanting-machine, the combination of the rotary disk, the opposite segmental cam-plates beside the same, a series of plant-holding hands secured to said disk and rotated thereby, each consisting of a stem, a pair of hinged plates at the outer end of said stem, the hinged rods supporting said plates extending inwardly toward the disk, and the cam-pieces attached to the opposite rods respectively adapted to engage the opposite cam-plates whereby the hands are opened and closed at the proper times.

11. In a transplanting-machine, the combination of the rotary disk, the opposite segmental cam-plates beside the same, a series of plant-holding hands secured to said disk and rotated thereby, each consisting of a stem, a pair of hinged plates at the outer end of said stem, the hinged rods supporting said plates extending inwardly toward the disk, the cam-pieces attached to the opposite rods respectively adapted to engage the opposite cam-plates whereby the hands are opened and closed at the proper times, the flexible piece interposed between said plates having its outer ends connected thereto, and the spring attached to the central portion of said flexible piece and the stem, whereby a yielding grasp is had upon the stems of the plants, for the purpose and substantially as described.

12. In a transplanting-machine, the combination of a furrow-opener, a rotary disk, a feed-table beside the disk, a series of mechanical hands attached to said disk, each consisting of a stem, a pair of hinged plant-grasping plates at the outer ends of said stem, and means for opening and closing the said plates; with the water-tank, a pipe leading from said tanks into the furrow-opener, and the valves in said pipe adapted to be opened by the swinging hands, substantially as described.

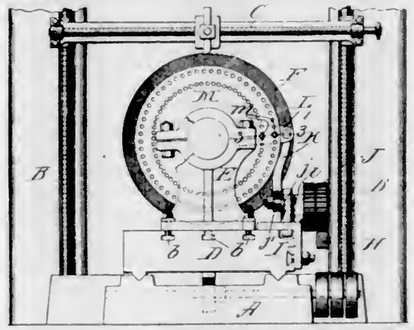
13. In a transplanting-machine, the combination of a furrow-opener, a hinged frame, a rotary disk journaled therein, a feed-table beside the disk, a series of mechanical hands attached to said disk, each consisting of a stem, a pair of hinged plant-grasping plates at the outer ends of said stem, the hinged rods of said plates, and the cams attached to the inner ends of said rods, the cam-plates fixed beside the disk adapted to cause the opening and closing of the said plates; with means for adjusting said furrow-opener and said frame relatively to the ground, for the purpose and substantially as described.

14. In a transplanting-machine, the combination of a furrow-opener, a rotary disk, a feed-table beside the disk, a series of mechanical hands attached to said disk, each consisting of a stem, a pair of hinged plant-grasping plates at the outer ends of said stem, the hinge-rods of said plates, and the cams attached to the inner ends of said rods, and the cam-plates fixed beside the disk adapted to cause the opening and closing of the said plates; the main frame, the water-tank thereon, pipes leading from said tank into the furrow-opener, and the valve in said pipe adapted to be opened by the swinging hands, and means for adjusting said furrow-opener and said frame relatively to the ground, for the purpose and substantially as described.

15. The combination of the wheeled frame, the swinging frame attached thereto, a rotary shaft journaled in said frame, and means for driving said shaft from the main wheels, a rotary disk on said shaft, and the slotted table supported on said frame in rear of said disk; with a series of hands attached to said disk and rotated thereby, each having a pair of opposite hinged clamping-plates on its outer end, the hinged rods of said plates extending inward toward the disk, and the fixed segmental cams beside the disk adapted to cause the opening and closing of the hands, for the purpose and substantially as described.

16. The combination of the wheeled frame, the swinging frame attached thereto, a rotary shaft journaled in said frame, and the sprockets and chains for driving said shaft from the main wheel, a rotary disk on said shaft, the slotted table also supported on said frame in rear of said disk; a series of hands attached to said disk and rotated thereby, each having a pair of opposite hinged clamping-plates on its outer end, the hinged rods of said plates extending inward toward the disk, and the fixed segmental cams attached to said frame beside the disk adapted to cause the opening and closing of the hands; with a furrow-opener in front of said disk, covering or packing wheels in rear of said furrow-opener, the water-supply pipes, and the adjustable caster-wheel attached to the rear of the frame, for the purpose and substantially as described.

653,299. MACHINE FOR CONFIGURING GLASS-MAKING ROLLS. CHARLES LAMBRECHT, St. Louis, Mo., assignor to Edward Walsh, Jr., same place. Filed Sept. 25, 1899. Serial No. 731,604. (No model.)



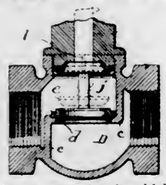
Claim.—1. In a machine for configuring rolls, the combination of a reciprocating bed, means for supporting the roll thereon, a cutter, a rock-arm adapted to be secured directly to the roll, mechan-

ism carried by the bed and connected to said rock-arm for rocking the same, and a stationary element coöperating with said mechanism for imparting motion thereto, substantially as described.

2. In a machine for configuring rolls, the combination of a reciprocating bed, means for supporting the roll thereon, a cutter, a rock-arm adapted to be secured to the roll, a rotatable device carried by the reciprocating bed, mechanism between said rotatable device and said arm for reciprocating the latter, and a stationary element coöperating with said rotatable device for rotating the same, substantially as described.

3. In a machine for configuring rolls, the combination of a reciprocating bed, means for supporting the roll thereon, a cutter, a rock-arm adapted to be secured to said roll, mechanism carried by the reciprocating bed and connected to the rock-arm for rocking the same, a stationary element coöperating with said mechanism for imparting motion thereto, and a templet adapted to be secured to the roll and to the rock-arm for holding the roll in adjusted positions, substantially as described.

653,300. RENEWABLE-SEAT VALVE. EDMUND H. LUNKEN, Denver, Colo., assignor to the Lunkenheimer Company, Cincinnati, Ohio. Filed Feb. 5, 1900. Serial No. 3,976. (No model.)



Claim.—1. In valve construction in which the valve moves to and from its seat in constantly-parallel planes, the combination of the body having inlet and outlet openings and an interposed seat-opening, a ring-seat fitted to said last-named opening, an arm on each side of the valve-passage bearing upon said ring-seat, a ring connecting the upper ends of said arms and engaged by the cap of the valve, means for holding said ring and arms from turning, and the valve which engages with the ring-seat, substantially as described.

2. In valve construction in which the valve moves to and from its seat in constantly-parallel planes, the combination of the body having inlet and outlet openings and an interposed seat-opening, a reversible ring-seat fitted to said last-named opening, an arm on each side of the valve-passage bearing upon said ring-seat, a ring connecting the upper ends of said arm and engaged by the cap of the valve, and means for holding said ring and arms from turning, and the valve which engages with the ring-seat, substantially as described.

3. In valve construction in which the valve moves to and from its seat in constantly-parallel planes, the combination of the body having inlet and outlet openings and an interposed seat-opening, a ring-seat fitted to said last-named opening, a groove on the upper side of said ring-seat, an arm on each side of the valve-passage having its lower end resting in the groove of the ring-seat, a ring connecting the upper end of said arm and engaged by the cap of the valve, means for holding said ring-seat and arm from turning, and the valve which engages the ring-seat, substantially as described.

4. In valve construction in which the valve moves to and from its seat in constantly-parallel planes, the combination of the body having inlet and outlet openings and an interposed seat-opening, a ring-seat fitted to said last-named opening, an arm on each side of the valve-passage bearing upon said ring-seat, a ring connecting the upper ends of said arms and engaged by the cap of the valve, a groove in the neck of the valve, a projection upon the ring-seat holder fitted into said groove to hold the ring and arms from turning, and the valve which engages the ring-seat, substantially as described.

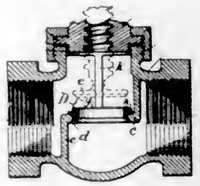
5. In valve construction in which the valve moves to and from its seat in constantly-parallel planes, the combination of the body having inlet and outlet openings and an interposed seat-opening, a ring-seat fitted to said last-named opening, an arm on each side of the valve-passage bearing upon said ring-seat, a ring connecting the upper end of said arms and swiveled to the cap of the valve, means for holding said ring and arms from turning, and the valve which engages with the ring-seat, substantially as described.

6. In valve construction of the character described, and as a new article of manufacture, the ring-seat holder composed of the ring *i* with pendent arms *j* and lugs *k* projecting from the exterior of the ring, substantially as described.

7. In valve construction in which the valve moves to and from its seat in constantly-parallel planes, the combination of the body having inlet and outlet openings and an interposed seat-opening, a ring-seat fitted to said last-named opening, an arm on each side of the valve-passage bearing upon said ring-seat, a split ring connecting the upper ends of said arms and engaged by the cap of the valve, said split ring serving by its elasticity to hold itself and said arms from turning, and the valve which engages with the ring-seat, substantially as described.

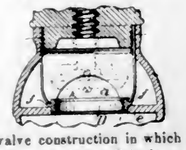
8. In valve construction in which the valve moves to and from its seat in constantly-parallel planes, the combination of the body having inlet and outlet openings and an interposed seat-opening, a ring-seat fitted to said last-named opening, an arm on each side of the valve-passage bearing upon said ring-seat, a split ring connecting the upper ends of said arms and engaged by the cap of the valve, means for holding said ring and arms from turning, and the valve which engages with the ring-seat, substantially as described.

653,301. RENEWABLE-SEAT VALVE. EDMUND H. LUNKEN, Denver, Colo., assignor to the Lunkenheimer Company, Cincinnati, Ohio. Filed Mar. 3, 1900. Serial No. 7,172 (No model.)



Claim.—In valve construction in which the valve moves to and from its seat in constantly-parallel planes, the combination of the body having inlet and outlet openings and an interposed seat-opening, a ring-seat fitted to said last-named opening and having a rabbet on its upper exterior edge, an arm on each side of the valve-passage bearing upon said rabbet of the ring-seat, a ring connecting the upper ends of said arms and provided with a flange or gasket adapted to be clamped between the bonnet and neck of the valve to hold the ring-seat arms from turning, and the valve which engages with the ring-seat, substantially as described.

653,302. VALVE. EDMUND H. LUNKEN, Denver, Colo., assignor to the Lunkenheimer Company, Cincinnati, Ohio. Filed Apr. 13, 1900. Serial No. 12,771. (No model.)



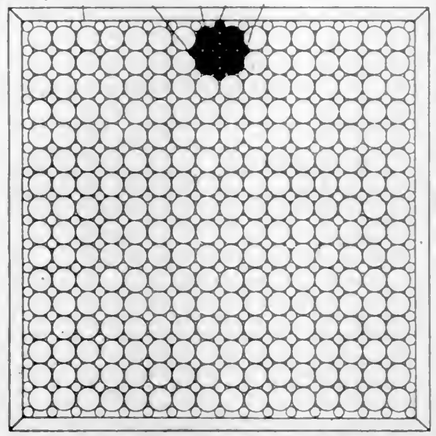
Claim.—1. In valve construction in which the valve moves to and from its seat in constantly-parallel planes, the combination of the body having inlet and outlet openings and an interposed seat-opening, a pair of independently insertible and removable seat-holding arms having dovetailed edges and fitted into dovetailed recesses on opposite sides of the neck of the valve and whose lower ends bear upon the ring-seat, and the valve which engages with the ring-seat, substantially as described.

2. In valve construction in which the valve moves to and from its seat in constantly-parallel planes, the combination of the body having inlet and outlet openings and an interposed seat-opening, a ring-seat fitted to said last-named opening, a pair of independently insertible and removable seat-holding arms with dovetailed edges confined in dovetailed recesses within the interiorly-threaded neck of the valve, said recesses being sufficiently deep so that when the arms are inserted they are beyond the inner ends of the threads so as not to interfere with the same, and the lower ends of which arms bear upon the ring-seat, and a valve-stem provided on its lower end with a valve-disk coöperating with the seat of the valve to open and close the same, substantially as described.

3. As a new article of manufacture, a holder for removable ring-seats of valves, consisting of an arm with dovetailed edges adapted to engage dovetailed recesses in the neck of the valve and whose lower ends are adapted to engage the ring-seat, said arms being of sufficient length so that when inserted to hold the ring-seat in place their upper ends are pressed down by the securing of the bonnet to the valve, substantially as described.

653,303. GAME. ANNIE C. E. MACDONALD, Toronto, Canada. Filed Sept. 11, 1899. Serial No. 730,171. (No model.)

653,303.



Claim.—In a game device, a board divided up into a series of rows of large and small spaces in juxtaposition, the smaller ones being in the interstices between the larger ones and in combination with a series of sets of counters or disks of large and small sizes adapted to fit the said two sizes of spaces, substantially as and for the purpose specified.

653,304. SUSPENDERS. HUGH G. MACWILLIAM, New York, N. Y. Filed Aug. 23, 1899. Serial No. 728,187. (No model.)

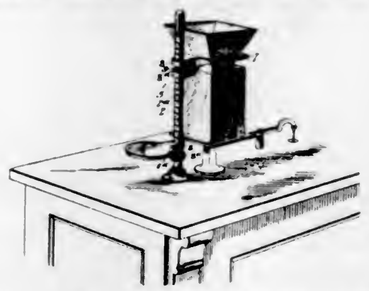


Claim.—1. A pair of suspenders, comprising the shoulder-straps, a hanger comprising loops hinged at substantially-equal distances apart and all directly upon a common support, and an endless cord engaging all of said loops and the rear ends of the shoulder-straps and adapted to be detachably connected with the rear of the trousers-band.

2. In a suspender of the class described, a hanger consisting of a plurality of loops all hinged directly upon, and extending outwardly from, a central rigid supporting device.

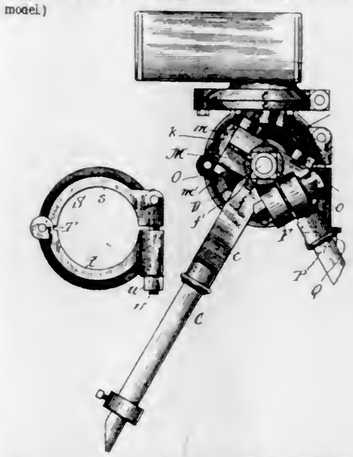
3. A pair of suspenders comprising shoulder-straps, and means for connecting the same with the rear portion of the trousers consisting of a rigid supporting device, a plurality of loops all hinged directly upon, and projecting outwardly from, said supporting device, and an endless cord having running engagement with all of said loops and with the rear ends of the shoulder-straps and means for detachable connection with the trousers.

653,305. BAG-FILLING APPLIANCE. WILLIAM S. MALLARD, Darien, Ga. Filed May 18, 1899. Serial No. 717,296. (No model.)



Claim.—An appliance of the character described, comprising a standard having a series of horizontal seats, and a vertical circular bearing-face intermediate each pair of horizontal seats; in combination with the holder consisting of a rest portion 6 and a hub portion 6ª, the hub portion having upper and lower ring members 8 8ª, of a diameter greater than the diameter of the standard, whereby the said hub has a limited lateral play on the standard, the rings 8 8ª being in different vertical planes, and the lower ring 8ª, having an inwardly-projecting lip 10, adapted to engage the horizontal seats of the standard, the said two rings 8 8ª being so disposed relatively to the circular bearing-faces of the standard that the outer portion of the upper ring will bear against one of the said circular faces when the lip 10 is in engagement with one of the annular faces, all being arranged substantially as shown and described.

653,306. TRIPOD AND CLAMP FOR ROCK-DRILLS. WILLIAM K. MILLHOLLAND, Chicago, Ill., assignor to the George D. Whitcomb Company, of Illinois. Filed May 11, 1899. Serial No. 716,358. (No model.)



Claim.—1. In a tripod for rock-drills, in combination, a shaft having threaded ends, a sleeve fixed upon the shaft and constituting a saddle-support, a leg having its upper end bifurcated, its two arms being swiveled upon the sleeve, clamps for locking such arms and sleeve against relative movement, a hip-ring swiveled upon the shaft at each end of and abutting against the sleeve, and a nut fitted to each end of the shaft for clamping the hip-rings against the sleeve.

2. In a tripod for rock-drills, in combination, a circular saddle-support having a V-shaped periphery, a saddle-block having a semi-circular base adapted to slide upon the circular support, a semicircular strap for completing the circle of the support and means for drawing such base and strap together to clamp them upon the support.

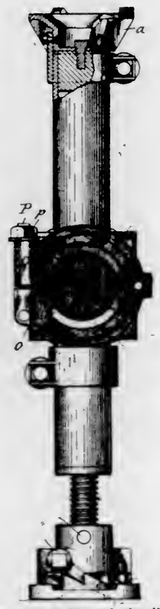
3. In a tripod for rock-drills, in combination, a circular saddle-support having a V-shaped periphery, a saddle-block having a semi-circular base adapted to slide upon the circular support, a semicircular strap pivotally attached at one end to such base and adapted to complete therewith the circle of the support, and a draw-bolt pivoted to the base and engaging the free end of the strap whereby the base and strap may be tightened upon the support to clamp them thereto.

4. In a swivel-joint for drills, &c., in combination, a pair of flat circular plates of substantially the same diameter and adapted to bear and to have free radial and rotative movement one upon the other, such plates having their peripheries beveled backwardly from their contacting faces, and being adapted, the one to be secured to a support and the other to carry a drill-frame; a pivotally-jointed strap for encircling the peripheries of such plates and having its inner face grooved to receive their beveled edges; and a draw-bolt for tightening such strap to clamp the plates.

5. In a tripod for rock-drills, in combination, an axle having its ends reduced, a bifurcated leg having its arms swiveled upon the central portion of the axle, a saddle-block swiveled upon the axle between the arms, an independent clamp for the arms and for the saddle-block, a hip-ring swiveled upon each reduced end of the axle, and a nut applied to each end of the axle to bind the hip-ring against the enlarged portion.

653,307. DRILL-SUPPORTING COLUMN AND COLUMN-CLAMP. WILLIAM K. MILLHOLLAND, Chicago, Ill., assignor to the George D Whitcomb Company, of Illinois. Filed May 18, 1899. Serial No. 717,272 (No model.)

Claim.—1. In a column for rock-drills and the like, in combination, a shaft, a screw fixed in the block and entering the shaft end, a foot-plate upon which the screw is adapted to rest and turn, an annular ratchet formed on the upper face of the plate, a block fixed to the screw, and a pawl secured to the block and cooperating with the ratchet.

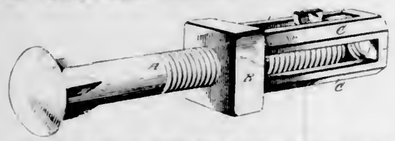


2. In a column for rock-drills and the like, in combination, a shaft, a foot-plate, a screw entering the shaft end, and resting in a recess in the plate, an annular ratchet formed on the upper face of the plate, a block fixed upon the screw and having a face tangential thereto, and a pawl secured to the tangential face of the block and cooperating with the ratchet.

3. In a column for rock-drills and the like, in combination, a shaft, a foot-block, a screw fixed in the block and entering the shaft end, a boss formed on the block and having a face tangential thereto, a foot-plate upon which the screw is adapted to rest and turn, an annular ratchet formed on the upper face of the plate, the abrupt faces of the ratchet-teeth being on planes radial as to the ratchet, and a pawl secured to the tangential face of the boss and cooperating with the ratchet.

4. In a column for rock-drills and the like, in combination, a shaft, a foot-block, a screw fixed in the block and entering the shaft end, a foot-plate upon which the screw is adapted to rest and turn, the lower face of such plate being concave, an annular ratchet formed on the upper face of the plate, and a pawl secured to the block and cooperating with the ratchet.

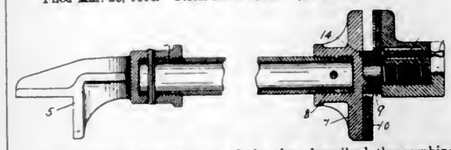
653,308. NUT-LOCK. EDWIN MORSE, Stockton, Ill. Filed Oct. 19, 1899. Serial No. 734,084. (No model.)



Claim.—1. A nut-lock comprising a screw-threaded bolt having a transverse key-opening, a nut having a plurality of stay-bars and a head interiorly screw-threaded, and a key constructed with a head adapted to occupy a position between two stay-bars, and with a shoulder beneath the head adapted to engage the inner side of a stay-bar to prevent the withdrawal of the key when seated.

2. A nut-lock comprising a screw-threaded bolt having a transverse key-opening, a nut having a plurality of stay-bars and a head interiorly screw-threaded, and a key constructed with a head adapted to occupy a position between two stay-bars, with an inner end adapted to occupy a position between the opposite stay-bars, with an outer shoulder adapted to engage the inner side of the adjacent stay-bar and prevent the withdrawal of the key when seated, and with an inner shoulder adapted to engage the inner side of the opposite stay-bar and limit the inner movement of the key when seated.

653,309. TRACK-GAGE. EDWIN H. MCHENRY, St. Paul, Minn. Filed Mar. 28, 1898. Serial No. 675,466. (No model.)



Claim.—1. In a track-gage of the class described, the combination with a bar having shoulders or stops at opposite ends, of shims having pivotal support adjacent to one of said shoulders and provided with openings, a pin, and means for forcing said pin into the openings in said shims to hold any desired number thereof in raised position.

2. In a track-gage of the class described, the combination with a bar having shoulders or stops at opposite ends, of shims having pivotal support adjacent to one of said shoulders and provided with openings, a pin, and a spring for forcing said pin into the openings in said shims to hold part of them in raised position and the remainder in lowered position.

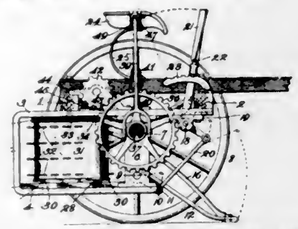
3. In a track-gage of the class described, the combination with a bar having shoulders or stops at its opposite ends, of a spindle projecting from one of said stops, and a series of shims carried by said spindle and adapted to swing thereon.

4. In a track-gage of the class described, the combination with a bar having shoulders or stops at its opposite ends, of a spindle projecting from one of said stops, a series of shims mounted upon said spindle and adapted to swing thereon, means for holding said shims upon said spindle, and means for locking any desired number thereof in raised position.

5. In a track-gage of the class described, the combination with a bar having shoulders or stops at its opposite ends, of a series of shims having pivotal support adjacent to one of said stops, means outside said shims adapted to rest upon the surface of an adjacent rail, and means carried thereby for securing any desired number of said shims in raised position.

6. In a track-gage of the class described, the combination with a bar having shoulders or stops at its opposite ends, of a series of shims having pivotal support adjacent to one of said stops, an extension beyond said shim adapted to rest upon an adjacent rail, and means for holding any desired number of said shims in raised position between said stop and extension.

653,310. SIDE-DELIVERY HAY-RAKE. OTIS J. NUGENT, Hiawatha, Kans. Filed July 28, 1899. Serial No. 725,363. (No model.)



Claim.—1. A side-delivery hay-rake, comprising a wheeled frame, a rake carried thereby with its front end depressed so as to pass underneath the hay, and a driven endless conveyer mounted on vertical rollers in the wheeled frame and arranged to receive the hay as it is gathered up by the rake and forced by its own accumulation upward and backward against said conveyer, said conveyer then discharging the hay adjacent to one of the carrying-wheels, substantially as described.

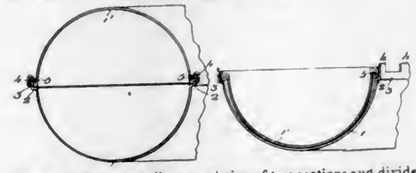
2. A side-delivery hay-rake, comprising a wheeled frame, a rake carried thereby with its forward end depressed, a driven endless conveyer, mounted on vertical rollers, to receive the hay from the rake and discharge it adjacent to one of the carrying-wheels, and means to throw the rake to an inoperative position by elevating its front end, substantially as described.

3. A side-delivery hay-rake, comprising a wheeled frame, a rake carried thereby with its front end depressed, an endless conveyer mounted on vertical rollers and geared to one of the wheels of the frame to receive the hay from the rake and discharge it adjacent to one of the carrying-wheels, and means to throw said conveyer out of gear with said wheel, substantially as described.

4. A side-delivery hay-rake, comprising a wheeled frame, embodying a pair of vertical rectangular frames and a platform connecting their lower ends, a rake carried with its front end depressed, and a driven endless conveyer mounted on vertical rollers and arranged to receive the hay from the rake and discharge it adjacent to one of the carrying-wheels, substantially as described.

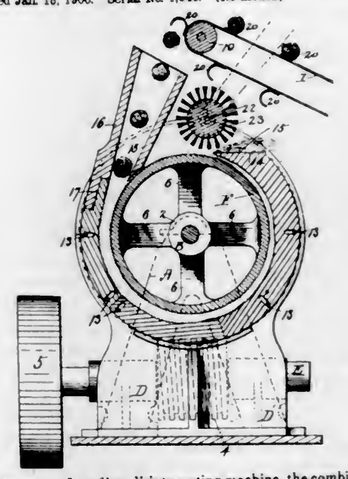
5. A side-delivery hay-rake, comprising a wheeled frame embodying a pair of vertical frames and a platform connecting their lower ends, vertical shafts journaled in said vertical frames, belt-rollers thereon carrying sprocket-wheels, an endless conveyer in the form of a belt and a sprocket-chain connecting said rollers and said sprocket-wheels, respectively, said belt being provided with hook-arms, means to operate said conveyer, and a pivoted rake having its front end depressed, substantially as described.

653,311. STOVEPIPE-ELBOW. PHILIP PFEIL, Chicago, Ill. Filed June 14, 1897. Serial No. 640,674. (No model.)



Claim.—A stovepipe-elbow consisting of two sections and divided on the plane in which are located the centers of all the cross-sections of the pipe, the edges of one section 1, forming an outwardly-radial offset 2, and being then bent tangentially forward beyond such offset and forming fingers or tongues 4, the edges of the opposite section 1' being bent rearwardly upon the outside of the said section and then in a return-bend forming a U-shaped groove upon the exterior of the section, having its base located behind the edge of the section, and provided with openings 6 to receive the tongues 4 when the sections are assembled, the edges of the section 1' resting directly against the outwardly-radial offsets 2 of the section 1, and thus forming a smooth interior smoke-tight joint, the tongues being bent back against the body of the pipe, substantially as set forth.

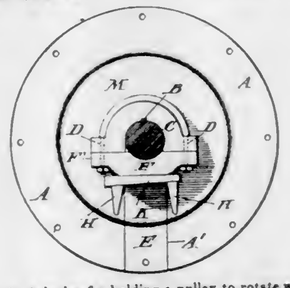
653,312. DISINTEGRATING-MACHINE. GOLDSBURY H. POND, Ashburnham, Mass., assignor to the Cosmos Company, of New Jersey. Filed Jan. 18, 1900. Serial No. 1,946. (No model.)



Claim.—1. In a fiber-disintegrating machine, the combination of a rotary cylinder having a continuous working surface composed of angular corrugations in line with the axis and presenting sharp edges, the faces of which corrugations are equally inclined to a radius of the cylinder, and a stationary, rigidly-held, concave shell substantially surrounding the cylinder and having a continuous working surface corrugated similarly to that of the cylinder; said concave surface being curved upon radii decreasing regularly from the entrance to the discharge end, and means for feeding and permitting the discharge of the material located between the adjacent ends of the concave, substantially as specified.

2. In a fiber-disintegrating machine, the combination of a rotary cylinder having a continuous working surface composed of angular corrugations in line with the axis and presenting sharp edges, the faces of which corrugations are equally inclined to a radius of the cylinder, and a stationary, rigidly-held, concave shell substantially surrounding the cylinder and having a continuous working surface corrugated similarly to that of the cylinder; said concave surface being curved upon radii decreasing regularly from the entrance to the discharge end, and a rotating brush located between the approaching ends of the concave in the path of the discharging material, whereby the material discharged is prevented from being carried over the cylinder and is swept free from the discharge end of the channel.

653,313. SPLIT DISK FOR HOLDING PULLEYS TO SHAFTS. WILLIAM H. F. RAIFSNYDER, Sackett, Pa. Filed May 19, 1900. Serial No. 17,275. (No model.)



Claim.—1. A device for holding a pulley to rotate with a shaft, comprising a disk, recessed in from its circumference, a segment-block which is concaved at its inner end, and adapted with the inner curved end of said recess to embrace a shaft, a U-shaped bolt and tightening-nuts for holding said segment to the disk, projections on the face of said disk, and a wedge-shaped block interposed between a shoulder on said segment, and said projections, as set forth.

2. A device for holding pulley-wheels to rotate with the shaft, comprising a disk recessed in from its circumference and terminating in a curved shoulder or flange on the opposite faces of said disk, a segment-block having flanges projecting from its opposite faces, and recessed at its inner end, a U-shaped bolt passing about one of the flanges of the disk, and passing through registering apertures in the flanges of the disk and segment, threaded nuts mounted on said bolt, lugs on the face of the disk, and a wedge-shaped member interposed between said lugs and the flat face of the flanged portion of the segment, and a key for holding the disk to the shaft.

3. A device for holding a pulley to rotate with the shaft, comprising the disk recessed in from its circumference, flanges on opposite faces of said disk, which are concaved, a segment-block having flanges on its opposite faces, and concaved on its inner end, the flanges of said segment-block adapted to be held flat against the faces of the flanges of said disk, the lower end of the segment adapted to rest on shoulders on opposite walls of the recessed portion of the disk, lugs on the face of the disk, on opposite sides of said recess, the wedge-shaped member interposed between the ends of said lugs and the flattened portion of one of the flanges of said segment, and the U-shaped bolt for holding the segment to the disk, as shown and described.

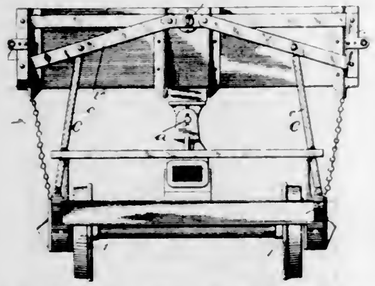
653,314. DUMPING-CAR. JAY B. RHODES, Harvey, Ill., assignor to Frederick C. Austin, Chicago, Ill. Filed Feb. 26, 1900. Serial No. 6,544. (No model.)

Claim.—1. A dumping-car comprising a suitable truck or body-frame, a receptacle thereon mounted and arranged to tilt about a horizontal axis, side gates for closing the open sides of said receptacle, when in a horizontal position, said gates having swinging connections with the ends of the receptacle, and telescoping connections between said gates and body-frame or truck, substantially as and for the purpose set forth.

2. A tilting receptacle, a base or body upon which said receptacle is mounted, a swinging gate for closing the open side of said receptacle, when the receptacle is in a horizontal position, and one or more telescoping connections between said gate and said base or body, substantially as and for the purpose set forth.

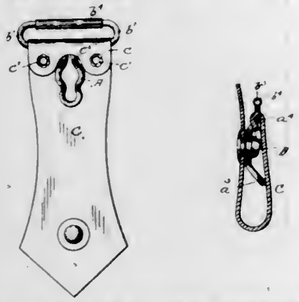
3. A dumping-car comprising a base or body, a receptacle mount-

ed thereon and arranged to tilt about a horizontal and longitudinally-extending axis, side gates adapted to close the open sides of said receptacle, when the latter is in a horizontal position, said gates being provided with arms having pivotal connections with the ends of said receptacle, and telescoping connections between said gates and said base or body.



4. A base or body, a tilting receptacle mounted thereon, side gates arranged to close the open sides of said receptacle and provided with arms which are pivoted to the ends of the receptacle, tubes having their lower ends pivoted to said base or body, and rods sliding in said tubes and having their upper ends suitably connected with said gates.

653,315. FASTENER FOR GARMENTS, SUSPENDERS, &c. WILLIAM S. RICHARDSON, Boston, Mass., assignor to the Ball and Socket Fastener Company, same place and Nashua, N. H. Filed Aug. 15, 1896. Serial No. 602,919. (No model.)



Claim.—1. In a fastener for suspenders, garments and other uses, a member having means such as a suspending loop, buckle, pin or hooks whereby it is adapted to be attached or secured to webbing or other material and an integral depending socket-section comprising the extensions a^4 integral with said suspending means arranged closely together above the socket and integral sections a, a' opening from the said extensions a^4 to form a yielding socket-entrance a^2 and the integral connecting-sections a^3 connecting the lower ends of the sections a, a', as and for the purposes described.

2. In a fastener for suspenders, garments, &c., a member having means such as a suspending loop, buckle, pin or hooks whereby it is adapted to be attached or secured to webbing or other material and a depending socket-section comprising the extensions a^4 integral with the frame of the attaching means brought closely together above the socket-entrance, the integral sections a, a' opening from the extension a^4 to form a yielding socket-entrance a^2 and the lower integral section a^3 connecting the lower ends of the sections a, a', the said extension a^4 being bent outwardly from the plane of the attaching means and the said section a^3 being bent inwardly from the plane of the socket-entrance, as and for the purposes set forth.

3. In a fastener for suspenders, garments, &c., a member having a rectangular buckle or loop frame, the lower bar of which is extended downwardly to provide the integral extension a^4 brought closely together above the socket, the integral sections a, a' opening from the extension a^4 to form a yielding socket-entrance a^2 and the lower integral section a^3 connecting the lower ends of the sections a, a'.

4. In a fastener for suspenders, garments, &c., a member made of wire having a loop or buckle frame substantially rectangular in shape, the upper bar of which comprises the ends of the wire from which the member is made fastened or connected together, and the lower bar of which has an integral downward extension formed to provide a yielding socket-entrance, as and for the purposes set forth.

5. In a fastener for suspenders, garments and other uses, in combination, a tab carrying at one end a button or stud, and having at the other end means consisting of a loop or buckle for attachment to a piece of suspender-webbing or the like, said loop or buckle having integral therewith a socket extension adapted to engage said button or stud and when so engaged, to cause said tab to form a flexible holding-loop, as and for the purposes set forth.

653,316. TROLLEY. WILLIAM H. RUSSELL, Watertown, Mass. Filed Nov. 23, 1899. Serial No. 738,022. (No model.)



Claim.—1. A sectional trolley-wheel comprising groove-forming flanges of wear-resisting metal extending into the tread portion of the wheel to run against the trolley-wire, and a relatively-thin disk of softer metal interposed in the tread for carrying the current into the wheel.

2. A sectional trolley-wheel comprising groove-forming flanges of wear-resisting metal extending into the tread portion of the wheel to run against the trolley-wire, a relatively-thin disk of softer metal interposed in the tread for carrying the current into the wheel, interlocking hub-sections, and clamping devices securing the hub-sections, the disk, and the side flanges together.

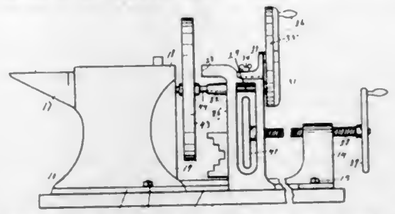
3. A sectional trolley-wheel comprising interlocking hub-sections having annular wings forming webs of the wheel, groove-forming flanges of wear-resisting metal extending between said wings and into the tread portion of the wheel to run against the trolley-wire, a relatively-thin disk of softer metal for conducting the current into the wheel, said disk being interposed between the hard-metal flanges and extending between the sleeves of the hub-sections, and clamping devices securing the hub-sections, the wheel-flanges, and the soft-metal disk together.

4. A sectional trolley-wheel comprising hub-sections having sleeves with male and female screw-threads and also having annular wings forming webs of the wheel, a relatively-thin disk of soft metal clamped between the said sleeves, groove-forming flanges of wear-resisting metal extending between the said wings and into the tread portion of the wheel to run against the trolley-wire on opposite sides of the soft-metal disk, and clamping devices securing the hub-sections, side flanges, and disk together, substantially as described.

5. In a trolley, the combination with the pole end fitting and the wheel-support mounted thereon, of a hollow pivot connecting these parts and constituting a lubricant-container, the same having a port in the rear side near the upper end through which the lubricant may escape to the bearing, substantially as described.

6. In a trolley, the combination of a pole end fitting transversely bored, a wheel-supporting frame having portions extending above and below the bored portion of said fitting and itself correspondingly bored, and a hollow lubricant-containing pivot extending through the registering bores of the frame and the pole-fitting and having a port at the upper rear portion for escape of the lubricant, substantially as described.

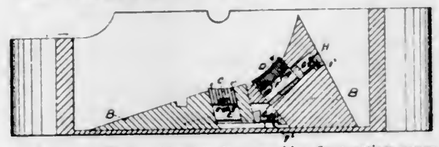
653,317. CONVERTIBLE APPARATUS. CHRISTIAN A. SALZMAN, Hamilton, Ohio, assignor of one-half to John A. Robbins, same place. Filed Jan. 10, 1900. Serial No. 1,010. (No model.)



Claim.—1. The combination with a T-shaped track formed with a boss on one end, an anvil attached to the other end thereof, a vertical jaw movably engaging with the track, and formed with a lateral face adapted to engage with the heel of the anvil, and a hand-screw threaded in the boss and swiveled in the jaw, of a drill-spindle journaled in the jaw, a pinion secured thereon, and a gear-wheel removably mounted on the jaw and engaging with the pinion.

2. The combination with a T-shaped track formed with a boss on one end and a hook on the other end, an anvil formed with a notch adapted to engage with the hook, a jaw movably engaging with the track and formed with a laterally-projecting face adapted to engage with the heel of the anvil, a hand-screw threaded in the boss and swiveled in the jaw, and a hand-wheel secured on each end of the screw, of a drill-spindle journaled in the jaw, a pinion thereon, and an internal gear-wheel removably mounted on the jaw, and arranged to engage with the pinion.

653,318. BEATING-ENGINE. ADOLPH F. SCHOLZ, West Chester, Ohio. Filed Apr. 5, 1897. Serial No. 630,748. (No model.)



Claim.—1. The combination, in a machine for treating paper-stock, of a cutting-plate adapted to reduce the stock; a cutting-plate adapted to finish the stock; a roll adapted to bring the stock in contact with the cutting-plates; and mechanism whereby either cutting-plate may be thrown into or out of action, substantially as and for the purpose set forth.

2. The combination, in a machine for treating paper-stock, of a cutting-plate having thick knives with comparatively-wide spaces between them and adapted to reduce the stock, a cutting-plate having thin knives with comparatively-narrow spaces between them and adapted to finish the stock; a roll adapted to bring the stock into contact with the knives; and mechanism whereby either cutting-plate may be thrown in or out of action, substantially as and for the purpose set forth.

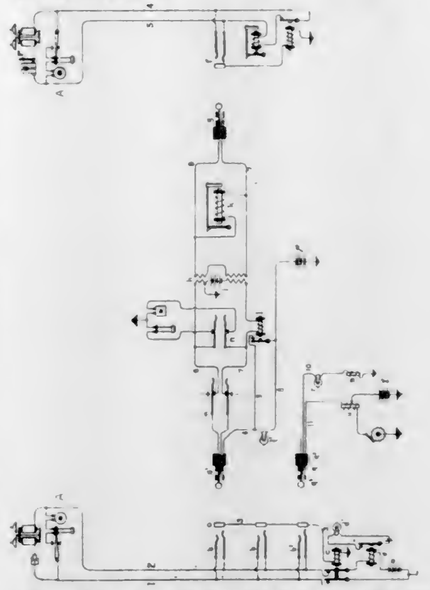
3. The combination, in a machine for treating paper-stock, of a cutting-plate containing knives placed at an acute angle with the surface of wear, the outer or cutting ends of the knives being thrown forward toward the approach of the pulp, substantially as and for the purpose set forth.

4. The combination, with the roll of a machine for treating paper-stock, of a cutting-plate containing knives placed at an angle to the radii of the roll, the outer or cutting ends of the knives being thrown forward toward the pulp, substantially as and for the purpose set forth.

5. The combination, in a machine for treating paper-stock, of a roll; a cutting-plate having knives placed at an angle with the radii of the roll, the outer or cutting ends being thrown forward toward the approach of the stock, and adapted to reduce the stock; a cutting-plate having knives approximately normal to the surface of wear; and mechanism whereby either cutting-plate may be thrown in or out of action, substantially as and for the purpose set forth.

6. The combination, in a machine for treating paper-stock, of a roll revolving in stationary bearings; a cutting-plate having knives placed at an angle with the radii of the roll, the outer or cutting ends being thrown forward toward the approach of the stock, the knives being arranged parallel to each other, and forming an angle at the center whose apex is turned away from the approach of the stock; a cutting-plate containing knives approximately normal to the surface of wear and arranged in parallel waves; and means for throwing either cutting-plate in or out of action, substantially as and for the purpose set forth.

653,319. SUPERVISORY AND BUSY-TEST APPLIANCE FOR TELEPHONE-LINES. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Oct. 3, 1898. Serial No. 692,487. (No model.)



Claim.—1. The combination with a telephone-line and multiple spring-jacks thereof in different sections of a switchboard, and a test-circuit for the multiple spring-jacks, of a source of specialized test-current and means for connecting the said source of current with the test-circuit of the line at one of said sections, a signal at the same section and means for connecting it with the line simultaneously with the connection of the test-current, means for closing the test-circuit at another section of the switchboard to obtain a test-signal, and other means at said second-mentioned section made operative in establishing connection with the line to display the said signal, as described.

2. The combination with a telephone-line, multiple spring-jacks thereof at different sections of the switchboard, and a test-circuit for the spring-jacks, of a source of specialized test-current and a supervising-signal connected with the plug at one of the sections, means at another section for detecting the connection of said source of specialized test-current with the test-circuit, and a source of current at said second-mentioned section, and switch-contacts made operative in establishing connection with the line at said second-mentioned section to connect the said source of current with the line to operate the signal at the other section, substantially as described.

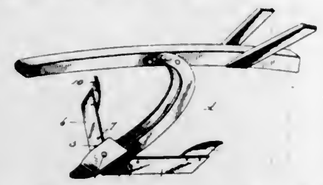
3. The combination with a telephone-line, multiple spring-jacks thereof in different sections of the switchboard, and a normally-open test-conductor uniting the test-contacts of the spring-jacks; of a source of specialized test-current, a plug having a contact-piece adapted to make connection with the normally-open test-conductor, connected with said source of test-current, a signal and a conductor including the signal connected with another contact-piece of the same plug; means at another section for testing the line to determine the presence of such specialized test-current; a plug for making connection with the line at such other section, and a source of current in circuit therewith adapted to be brought into circuit with the signal in making connection with the spring-jack, as described.

4. The combination with a telephone-line and multiple spring-jacks thereof in different sections of a switchboard, of connecting-plugs at the different sections, and a local test-conductor uniting the

test-contacts of the spring-jacks; a source of specialized test-current connected with a contact-piece of one of the plugs adapted for connection with said local test-conductor, a signal and an impedance-coil in a conductor connected with another contact-piece of said plug adapted to register with a line-contact of the spring-jack; a source of current connected with the corresponding line-contact of the other plug; whereby a signal is given to disconneot the source of specialized testing-current from the line when the required connection is made with the line, as described.

5. The combination with the telephone-line, multiple spring-jacks thereof in different sections of a switchboard, and normal ground connections of the line, the cut-off relay for severing such ground connections and the grounded local test-circuit including the actuating magnet of said relay; of a connecting-plug at one of the sections, a source of steady current for operating the cut-off relay and a source of specialized test-current, connected with a contact-piece of said plug adapted to make connection with the test-circuit, and a conductor connected with a line-contact of the plug including a signal together with an impedance-coil; another connecting-plug at a different section, a source of current connected with the contact-piece thereof adapted to make connection with the test-circuit, and a second source of current connected with the line-contact thereof to operate the signal at the other section; whereby a specialized busy-test may be applied at one section, a signal may be given from the other section to disconnect such specialized testing-current, and the cut-off relay is made operative during the existence of either connection, as described.

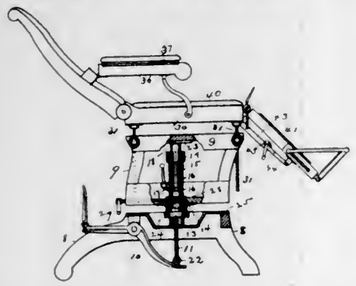
653,320. SCRAPER. CHARLES T. SEWELL, Sargent, Ga. Filed Nov. 16, 1899. Serial No. 737,166. (No model.)



Claim.—1. The combination of a central angular piece, provided with a rectangular hole in the middle part thereof and a series of holes in its wings, a pair of blades each provided with an elongated notch at their meeting ends and with a series of holes in different planes, and means, as bolts, for coupling the blades and the angular piece together, substantially as described.

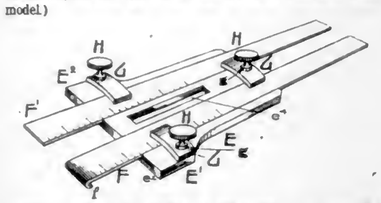
2. A scraper involving the combination of a central angular plate having a rectangular hole and a series of holes in each of its wings, a pair of blades each having an elongated notch at their meeting edges and a plurality of holes in different planes, means for clamping the angular piece and the blades together, and curved attachments connected with the blades, substantially as described.

653,321. ADJUSTABLE SURGICAL CHAIR. TIFFIN J. SHACKELFORD, Warsaw, and CHARLES A. L. KIRKPATRICK, Fort Wayne, Ind. Filed July 26, 1898. Serial No. 686,908. (No model.)



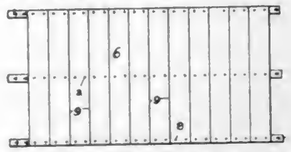
Claim.—In a surgical chair, a supporting-frame provided with vertical openings, and the seat of the chair, and vertical rods secured thereto and passing down through the openings in the supporting-frame, combined with ball-and-socket joints by means of which the upper ends of the rods are connected to the seat; and endwise-moving rods to clamp the vertical rods in position so as to support the seat of the chair at any desired angle, substantially as described.

653,322. TUCKING-GUIDE FOR SEWING-MACHINES. JOHN STRONG, Waterville, Me. Filed Feb. 12, 1900. Serial No. 4,994. (No model.)



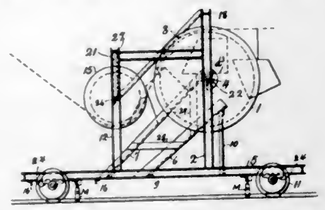
Claim.—In a tucker for sewing-machines, a bed-plate E having a front guiding edge e^3, pins g, screw-tapped holes h', and longitudinal grooves e, e', with gage-slide F having downward terminal hook f and movable endwise in one of the said grooves, guiding-slide F' movable in the other of said grooves, clamping-plates G for the said slides, clamping-screws H passing through holes in the said clamping-plates and into screw-threaded holes of the said bed-plate, and raised pins rigid with the said bed-plate which enter holes in the said clamping-plates to prevent the latter from turning on the said screws, and thus keep them in position to overlap the said slides and clamp them in position, substantially as set forth.

653,323. METHOD OF MANUFACTURING PACKAGE MATERIAL. WILLIAM S. STUCKENBERG, Indianapolis, Ind., assignor to the Metal Bound Package Company, Chicago, Ill. Filed Nov. 13, 1899. Serial No. 736,744. (No specimens.)



Claim.—The method of manufacturing package material from green or wet wood sheets, consisting in applying thereto transverse metal binders and attaching such binders to the sheet at intervals corresponding to the width of the desired slats, then scoring the sheet between the fastenings, and then allowing the sheet to dry, whereby the shrinkage completes the severation along the lines of the scoring and converts the sheet into separated and spaced slats, substantially as specified.

653,324. BUCKET CONVEYER. GUSTAVUS L. STUEBNER, New York, N. Y. Filed Sept. 27, 1899. Serial No. 731,861. (No model.)



Claim.—1. A filler comprising a box open at one end, with vertical sides and a curved front, a chute formed in one of the sides thereof and a bottom with a portion thereof raised with a smooth curve; a suitable frame; truck-wheels; guide-barrels and guide-sheaves supported on the frame, and rail-clamps substantially as described.

2. A dumping device comprising a platform; truck-wheels carrying said platform; stanchions mounted on the platform; braces connecting the stanchions; an axle secured by means of supports to two opposite stanchions on the bucket-entering end of the platform; two guide-rollers turning on said axle; inclined runways curved over and supported at their upper ends on said axle, and at their lower ends connected to the platform by a cross-brace; inclined guides parallel to the runways and secured above the same; a chute running under and parallel to the runways, and secured to the platform; two supports secured to two stanchions on the bucket-leaving end of the platform; pins secured in said supports; guide-rollers turning on said pins; and rail-clamps to secure the dumping device to tracks.

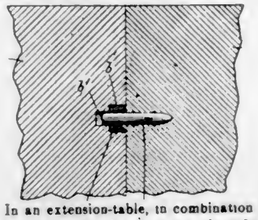
3. A conveyer comprising drive-chains; buckets suspended from the drive-chains; a filler consisting essentially of a box with curved bottom and open at one end; a dumping device; axles on the dumping device for turning the buckets; a chute under the dumping device; a guide-truck for the drive-chains; sprocket drive-wheels; guide-sheaves; guide-barrels; cut-offs for regulating the supply of material to be conveyed to the filler, all substantially as described.

653,325. PROCESS OF EXTRACTING PRECIOUS METALS. CHARLES P. TATRO and GEORGE DELIUS, Seattle, Wash. Filed Oct. 4, 1899. Serial No. 732,548. (No specimens.)

Claim.—1. In extracting precious metals from ores, the process comprising the following steps; first, pulverizing the ore to a fine pulp; second, dissolving the metals from the foreign matter by immersing the pulp in a bath comprising an aqueous solution of common salt, caustic lime, and a small percentage of bromin fluor-spar and saltpeter; third, recovering the precious metals from the bath by means of electrolytic action.

2. In the process of extracting precious metals from ores, the steps comprising the reduction of the ore to a pulp; dissolving the precious metals from the ore in the pulp in a bath comprising fluor-spar, saltpeter and solvents for the precious metals; and recovering the precious metals from the bath by means of electrolytic action.

653,326. EXTENSION-TABLE. EMIL TYDEN, Hastings, Mich. Filed Nov. 3, 1899. Serial No. 735,664. (No model.)



Claim.—1. In an extension-table, in combination with the top boards, dowels or tenons projecting from one edge of said boards at each junction, and metal sockets let into the adjacent edge at such junction, such sockets being axially apertured and countersunk at the outer end of such aperture, the pin being of substantially-uniform diameter throughout its protruding portion.

2. In an extension-table, in combination with the boards of the table-top, dowels or tenons projecting from one edge of said boards, and recesses in the adjacent or facing edge at each junction, the recesses being at least as deep as the full length of the protruding portion of the tenons and metal sockets, or linings for said recesses, having axial apertures countersunk at their outer ends, and at their narrowest point substantially equal in diameter to the diameter of the tenons, said narrowest point being at the limit of the countersink, and relatively remote from the bottom of the recess.

3. In an extension-table, in combination with the boards of the table-top, metal dowels set into the edge of one board at each junction, the facing edge of the adjacent board having recesses as deep, at least, as the projecting portion of the metal dowels; metal sockets, or linings, for said recesses, having axial apertures countersunk at their outer ends, and at their narrowest point substantially equal in diameter to the diameter of the dowels, said narrowest point being at the limit of the countersink, and relatively remote from the bottom of the recess.

4. In an extension-table, in combination with the boards of the table-top, dowel-pins or tenons projecting from one edge at each junction, and metal sockets let into the adjacent edge, such sockets being axially apertured and countersunk at the outer end of such aperture, and exteriorly provided with a fine ratchet-shaped bead or circumferential thread, having its abrupt face forward and a long, sloping face rearward.

5. In an extension-table in combination substantially as set forth, the adjacent boards of the table-top provided at their abutting edges, one with the dowel or tenon, and the other with a metal socket adapted to receive said tenon, the socket being axially apertured from end to end and said aperture being enlarged taperingly at the outer end, the board in which such socket is set having a bore of suitable diameter and depth to permit the socket to be set in flush with the outer edge and having a further bore extended back from the center of the first of reduced diameter but of a diameter slightly greater than that of the aperture in the socket at the inner end of the latter.

653,327. METAL DOWEL-PIN. EMIL TYDEN, Hastings, Mich. Filed Nov. 3, 1899. Serial No. 735,665. (No model.)

Claim.—1. A dowel-pin made of cylindrical metal rod or wire, having at the opposite ends cylindrical portions and between such cylindrical portions a portion which is flattened to a thickness less than the diameter of the cylindrical portion and widened so as to form fins protruding at both sides beyond such cylindrical portions, the lower edges of such protruding fins being acute, and the upwardly-facing shoulders of the lower cylindrical portion, where the device is reduced in thickness to form the flattened portion, being abrupt.



2. A dowel-pin made of cylindrical metal rod or wire having at the ends cylindrical portions, and between such cylindrical portions a portion which is flattened to a thickness less than the diameter of the cylindrical portions, and widened to form fins which project at both sides beyond such cylindrical portions, the edges of the lower ends of the protruding fins being acute and their upper ends constituting abrupt shoulders.

3. A dowel-pin made of cylindrical metal rod or wire having at the opposite ends cylindrical portions, and between such cylindrical portions a portion which is flattened to a thickness less than the diameter of the cylindrical portion and widened to form fins projecting at both sides beyond such cylindrical portions, the lower ends of such projecting fins being acute, their upper ends forming abrupt shoulders, the lower cylindrical portion presenting abrupt shoulders facing upward where the pin is reduced in thickness at the flattened part.

4. A dowel-pin made of cylindrical rod or wire, having at the opposite ends cylindrical portions, and between such cylindrical portions a portion which is flattened to a thickness less than the diameter of the cylindrical portion and widened to form fins which project at both sides beyond such cylindrical portions, such fins extending down a short distance alongside the lower cylindrical portion and terminating acutely at their lower ends and abruptly at their upper ends, said lower cylindrical portion being relatively considerably extended beyond the acute terminals of the pins to constitute a pilot or steering portion for the dowel-pin.

5. A dowel-pin made of cylindrical metal rod or wire having cylindrical end portions, and intermediate such cylindrical portions a portion which is flattened to a thickness less than the diameter of the cylindrical portions and widened to form fins which extend at both sides beyond such cylindrical portions, the lower cylindrical portion being extended suitably to adapt it to serve as a pilot or steering portion for the pin, and having abrupt, upwardly-facing shoulders at opposite sides where the thickness is reduced to form the flattened portion, the upper cylindrical portion having long, sloping, downwardly-facing shoulders where said reduction in thickness occurs.

653,328. DOWEL-PIN. EMIL TYDEN, Hastings, Mich. Filed Feb. 5, 1900. Serial No. 3,971. (No model.)



Claim.—1. A dowel-pin of metal rod or wire, having a straight, substantially-cylindrical, portion at the inner end to serve as a pilot, and next to such pilot portion a portion which is thinned and widened to form laterally-projecting fins, such thin portion being thicker at the middle of its width, and tapering off into thin lateral edges of such projecting fins.

2. A dowel-pin of metal rod or wire comprising an embedded or root portion having a straight, substantially-cylindrical, terminal to serve as a pilot, and, forward of such pilot portion, a thinned and widened portion forming laterally-projecting fins, and tapered in thickness from the middle of its width to the lateral edges of such fins; and having a protruding or tenon portion which is of uniform cross-section for a distance from the root outward, and has a tapered outer terminal.

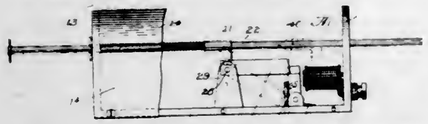
3. A dowel-pin of metal rod or wire comprising an embedded or root portion and a protruding or tenon portion, having a tapered terminal and a straight or non-tapered portion back of such terminal; in combination with an L-shaped or angle socket escutcheon-plate adapted to clasp the lower corner of the board having the socket, and having in its upstanding lip an aperture adapted to receive the non-tapered portion of the tenon of the dowel-pin, having both lips extended laterally and provided with screw-holes in the two lips out of range of each other and both beyond the socket.

4. A dowel-pin of metal rod or wire comprising an embedded or root portion and a protruding or tenon portion, having a tapered terminal and a straight or non-tapered portion back of such terminal, in combination with an L-shaped or angle socket escutcheon-plate adapted to clasp the lower corner of the board which has the socket, and having in its upstanding lip an aperture adapted to receive the

non-tapered portion of the tenon of the dowel-pin, having both lips extended laterally as respects the socket, the horizontal lip having screw-holes at opposite sides of the socket, and the vertical lip having screw-holes more remote from the socket than those of the horizontal lip.

5. In combination with a dowel-pin, an L-shaped or angle socket escutcheon-plate adapted to clasp the lower corner of the board which has the socket to receive the dowel-pin, and having in its upstanding lip an aperture registering with the socket and adapted to receive the pin, both lips of the plate being extended laterally as respects the socket, and provided with screw-holes to secure the plate to the board, the screw-holes in the vertical lip being disposed at opposite sides of the position of the socket and above the level of the socket-aperture, and laterally more remote therefrom than the screw-holes of the horizontal plate.

653,329. SHIFTER FOR BELTS. ALFRED B. WALES, Abington, Mass. Filed Aug. 29, 1899. Serial No. 728,854. (No model.)



Claim.—1. In a device of the class specified, a shifter; mechanical means to force the shifter forward; a latch located to hold the shifter in its retracted position; and a member shiftable independently of the latch for holding said latch in its effective position.

2. In a device of the class specified, a shifter; mechanical means to force the shifter forward, a latch located to hold the shifter in its retracted position; and an electrically-controlled member shiftable relatively to the latch and serving to hold said latch in its effective position.

3. In a device of the class specified, a shifter; mechanical means to force the shifter forward, a latch located to hold the shifter in its retracted position; and an electromagnet, the armature of which is shiftable relatively to and is adapted to engage said latch to hold the same in its effective position.

4. In a device of the class specified, a shifter, a spring for forcing the shifter forward, a latch located to hold the shifter normally in its retracted position, and a member shiftable independently of the latch for holding the latch in its effective position.

5. In a device of the class specified, a shifter comprising two rods; bearings for supporting the same; a cross-piece uniting the rods; coiled springs encircling the rods and acting against the cross-piece and one of said bearings; and a latch located to hold the shifter in its retracted position with the springs compressed.

6. In a device of the class specified, a shifter comprising two rods; bearings for supporting the same; a cross-piece uniting the rods; coiled springs encircling the rods and acting against the cross-piece and one of said bearings; a latch located to hold the shifter in its retracted position with the spring compressed; and stops secured to said rods and adapted to engage one of the bearings, thereby to limit the forward movements of the shifter.

7. In a device of the class specified, a spring-actuated shifter; an offset upon the same; a latch having two arms united by a transverse piece and each of the arms having a notch adapted to receive said offset; and an electromagnet the armature of which is adapted to sustain the free ends of the latch-arms.

653,330. CHECK-ROW PLANTER. CHARLES H. WELCH, Hindsborough, Ill. Filed Mar. 14, 1900. Serial No. 8,653. (No model.)

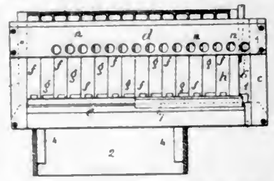
Claim.—1. In a check-row planter, the combination with the frame, the shaft and ground-wheels, a rock-shaft for regulating the dropping of the seed, an arm on said rock-shaft, an angle trip-lever pivoted to said beam, a rod connecting said arm and lever, a shaft H, and means for driving same by connections with the main shaft, an arm H′ at right angles to and rotating with said shaft H, and adapted to trip the upper end of said angle-lever, at each revolution of the shaft A, and a spring for returning the angle-lever to its normal position, as set forth.

2. In combination with the frame of a check-row planter, the pivoted and spring-actuated angle-lever, the shaft with arm rotating therewith, which latter is adapted to trip said angle-lever, the rock-shaft with arm D′ thereon, and connections between the latter and the said angle-lever, the longitudinally-movable angled marker-rod D having a slotted arm disposed at an angle as shown, an upright arm carried by the rock-shaft, and provided with a contracted portion near its free end, which is designed to work in said slotted arm, as set forth.

653,330.



653,331. BEEHIVE. LEWIS A. ASPINWALL, Jackson, Mich., assignor to the Aspinwall Manufacturing Company, same place. Filed Dec. 16, 1899. Serial No. 740,528. (No model.)



Claim.—1. In a beehive, the combination with the open brood or comb frames, of dummy frames intermediate and alternating with the comb-frames and of approximately-equal area and having substantially closely-spaced-apart equidistant parallel slats filling and forming part of the said dummy frames, substantially as set forth.

2. In a beehive, the combination with the support, the bottom and end and corner plates, of the perforated side bars, a cross-bar, a wedge and a closing-board and a series of frames held in place by the closing-board, the wedge and the cross-bar, substantially as set forth.

3. In a beehive, the combination with a supporting-frame, of a hive-body composed of a double bottom, end and crossing pieces, and bolts for securing the same together, a series of frames within the hive, an alighting-board and an entrance-block thereon extending part way of the length of the hive, and a closing-slat on the back side of the hive extending the full length thereof, and means, substantially as specified, for holding the series of frames compactly together, substantially as set forth.

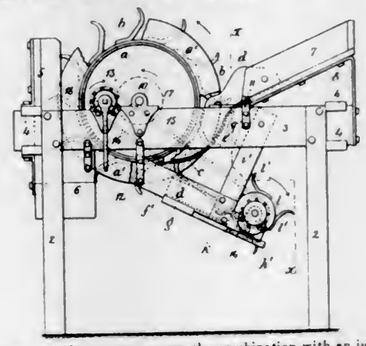
4. In a beehive, the combination with a supporting-frame, of a hive-body composed of a double bottom, end and crossing pieces and bolts for securing the same together, a series of frames within the hive, an alighting-board and slat thereon extending part way of the length of the hive and a closing-slat on the rear side of the hive extending the full length thereof, side bars extending across between the ends and perforated, and a cross-bar in the perforations of the side bars, a follow-board coming at one end of the series of frames, and a wedge between the follow-board and the cross-bar for compacting the series of frames and holding them in place, substantially as set forth.

5. In a beehive, the combination with a supporting-frame, of a hive-body composed of a double bottom, end, and cross pieces and bolts for securing the same together, a series of frames within the hive, an alighting-board and an entrance-block thereon extending part way of the length of the hive, and a closing-slat on the rear side of the hive extending the full length thereof, and means substantially as specified, for holding the series of frames compactly together, and an auxiliary bottom at one end of the frame, the same coming beneath the series of frames when the hive is filled to its maximum capacity, and a removable strip thereon, substantially as set forth.

6. In a beehive, the combination with the support and the body of a series of brood or comb frames and a series of dummy frames interchangeable with the brood or comb frames and adapted to be placed alternately therewith in the hive, said dummy frames being filled with series of approximately-parallel or closely-placed slats whereby space is provided for the bees between the brood or comb frames to obviate the tendency of swarming, substantially as set forth.

7. In a beehive, the combination with the ends and the perforated side bars, of a series of open brood or comb frames and a series of dummy frames made with closely-spaced-apart filling-slats, the dummy frames being interchangeable with the brood or comb frames and adapted to be placed alternately therewith in the hive, the said frames being located between and supported upon the side bars, and means for holding the said frames closely together regardless of the number of frames in the hive, substantially as specified.

653,332. POTATO-SORTER. LEWIS A. ASPINWALL, Jackson, Mich., assignor to the Aspinwall Manufacturing Company, same place. Filed Dec. 16, 1899. Serial No. 740,530. (No model.)



Claim.—1. In a potato-sorter, the combination with an inclined hopper and bars connected therewith, of a cylinder and means for rotating the same, and picking-forks at intervals secured to the surface of said cylinder and adapted in the rotation of the cylinder to lift and carry over the cylinder larger-sized potatoes, and a stop-frame at the other side of the cylinder, and a hopper beneath the same and into which the potatoes are delivered, substantially as set forth.

2. In a potato-sorter, the combination with a cylinder and means for rotating the same, of picker-forks upon the surface of the cylinder inclined away from the direction of rotation, a hopper into which the potatoes to be sorted are delivered, curved bars connected at one end to the lower edge of the said hopper and extending downward and beneath the said cylinder with their free ends closely adjacent to the cylinder, and spaced apart, so that they come between the tines of the picking-forks and between the forks, substantially as and for the purposes set forth.

3. In a potato-sorter, the combination with a cylinder and means for rotating the same, of picker-forks upon the surface of the cylinder inclined away from the direction of rotation, a hopper into which the potatoes to be sorted are delivered, curved bars connected at one end to the lower edge of the said hopper and extending downward and beneath the said cylinder with their free ends closely adjacent to the cylinder, and spaced apart so that they come between the tines of the picking-forks and between the forks, the said bars being wider at their free ends than at their point of attachment, so that the intermediate spaces are narrower at the free ends and wider adjacent to the hopper, substantially as and for the purposes set forth.

4. In a potato-sorter, the combination with a cylinder and means for rotating the same, of picker-forks upon the surface of the cylinder inclined away from the direction of rotation, a hopper into which the potatoes to be sorted are delivered, curved bars connected at one end to the lower edge of the said hopper and extending downward and beneath the said cylinder with their free ends closely adjacent to the cylinder and spaced apart so that they come between the tines of the picking-forks and between the forks, one edge of each bar adjacent to the hopper being notched, and a transverse bar beneath the said bars adjacent to the edge of the hopper and provided with fingers having one edge of each notched, and means for adjusting the transverse bar, substantially as set forth.

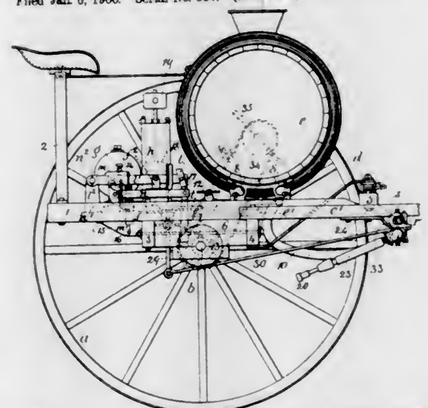
5. In a potato-sorter, the combination with a cylinder having edge flanges and means for rotating the same, of picker-forks having inclined tapering tines connected to the surface of the said cylinder, an inclined hopper receiving the potatoes to be sorted, curved bars connected to the lower edge of the said hopper and extending downward toward and adjacent to the under surface of the said cylinder and side guide-bars connected to the sides of the hopper and extending forward and downward toward the main cylinder and within the limits of the flanges of the cylinder as a guide for the potatoes, substantially as and for the purpose set forth.

6. In a potato-sorter, the combination with an inclined hopper, curved bars extending downward from the lower edge thereof, and guide-bars connected thereto, of a main cylinder having side flanges, means for rotating the cylinder, picker-forks connected to the surface of the said cylinder and spaced apart and staggered in their relations to one another, a hopper beneath the main cylinder and the said curved bars and bars connected to the said hopper, and an auxiliary cylinder at the lower end of the hopper and picker-forks upon the surface thereof, and means for rotating the auxiliary cylinder, substantially as set forth.

7. In a potato-sorter, the combination with an inclined hopper curved bars connected to the lower edge thereof, a main cylinder and picker-forks upon the surface thereof, of a hopper beneath the said main cylinder and bars comprising a cross-piece and sides and parallel curved bars and inclined strips, supporting-bars connecting the said hopper to the frame of the sorter at its higher end and adjacent to its lower end, an auxiliary cylinder at the lower end of the said hopper, bearings for the same upon the sides and picking-forks upon the surface of the cylinder similar to but smaller than the picking-forks of the main cylinder, and means for rotating the auxiliary cylinder, substantially as set forth.

8. In a potato-sorter, the combination with an inclined hopper, and means for supporting the same, of curved bars connected to the lower portion of the said hopper and inclined forward and downward, and notched on similar edges adjacent to the lower end of the said hopper, a transverse bar *e* beneath the upper ends of the said bars and adjacent to the lower edge of the hopper, fingers projecting out from one side of the said bar and each having an edge notched to correspond with the notches of the curved bars, threaded ends to the said transverse bar and plate-supports upon the side frames of the machine through which the threaded ends pass and in which the bar is adjustable, and nuts upon the said threaded ends for clamping the transverse bar in position, substantially as set forth.

653,333. LIQUID-SPRAYER. LEWIS A. ASPINWALL, Jackson Mich., assignor to the Aspinwall Manufacturing Company, same place. Filed Jan. 6, 1900. Serial No. 537. (No model.)



Claim.—1. In a liquid-spraying device, the combination with a pump-cylinder and inlet and exit pipes connected therewith, of a plunger and a pivoted beam connected therewith, a bar connected to the said pivoted beam and extending downward and occupying a substantially-vertical position, means for actuating the bar and plunger in one direction and other and independent means for actuating the same in the opposite direction, substantially as set forth.

2. In a liquid-spraying device, the combination with a pump-cylinder and inlet and exit pipes connected therewith, of a plunger and a pivoted beam connected therewith, a bar connected to the said pivoted beam and extending downward and occupying a substantially-vertical position, means for acting upon the bar and plunger to elevate the same and raise one end of the pump-beam, a yoke straddling the pump-beam and means for adjusting the same and springs

connecting the said yoke to the platform of the liquid-spraying device, which springs act to draw down the pump-beam and to force out the liquid, substantially as set forth.

3. In a liquid-spraying device, the combination with a pump-cylinder and inlet and exit pipes connected therewith, of the plunger and a pivoted beam connected therewith, a bar connected to the said pivoted beam and extending downward and occupying a substantially-vertical position, a rotatable disk and means for actuating the same, studs on the said disk, adapted to come in contact with the lower end of the said bar to elevate the same and to raise one end of the pump-beam, and adjustable devices connected to the said pivoted beam for drawing down the same and forcing out the liquid, substantially as set forth.

4. In a liquid-spraying device, the combination with a pump-cylinder and inlet and exit pipes connected therewith, of a plunger and a pivoted beam connected therewith, a bar connected to the said pivoted beam and extending downward and occupying a substantially-vertical position, means for actuating the said bar and plunger to raise one end of the pump-beam, springs connected at their lower ends to the platform of the liquid-spraying device, and at their upper ends connected to an adjustable device in engagement with the pump-beam and which springs act to draw down the pump-beam and to force out the liquid, substantially as set forth.

5. In a liquid-sprayer, the combination with the frame, the wheels upon which the same is mounted, and the power devices actuated thereby, of a liquid-receptacle, a pump, spraying devices and pipes connecting the receptacle, the pump and the spraying devices, a receptacle located above the pipe between the pump and the spraying devices for holding paris-green or similar poisonous material in a moist condition, a regulatable connection between said receptacle and said pipe through which such poisonous material is delivered, a piston in said receptacle above the paris-green material and means for forcing down the piston to press the moist poisonous material into the liquid, substantially as set forth.

6. In a liquid-spraying device, the combination with a pump-cylinder and inlet and exit pipes connected therewith, of the plunger and a pivoted beam connected therewith, a bar connected to the said pivoted beam and extending downward and occupying a substantially-vertical position, a rotatable disk and means for actuating the same, studs on said disk adapted to come in contact with the lower end of the said bar to elevate the same and to raise one end of the pump-beam, a yoke straddling the pump-beam and means for adjusting the same, and springs connecting the said yoke to the platform of the liquid-spraying device, which springs act to draw down the pump-beam and to force out the liquid, substantially as set forth.

7. In a liquid-spraying device, the combination with a pump-cylinder and inlet and exit pipes connected therewith, of the plunger and a pivoted beam connected therewith, a bar connected to the said pivoted beam and extending downward and occupying a substantially-vertical position, a rotatable disk and means for actuating the same studs on said disk adapted to come in contact with the lower end o the said bar to elevate the same and to raise one end of the pump-beam, a yoke straddling the pump-beam, and means for adjusting the same and springs connecting the said yoke to the platform of the liquid-spraying device, which springs act to draw down the pump-beam and to force out the liquid, and a beam parallel with the pump-beam, and a connection therefrom to the vertically-moving bar, and a means connected to the free end of the latter beam for swinging the bar rearward and holding the same out of action, substantially as set forth.

8. In a liquid-spraying device, the combination with a pump-cylinder and inlet and exit pipes connected therewith, of a plunger and a pivoted beam connected therewith, a bar connected to the said pivoted beam and extending downward and occupying a substantially-vertical position, a rotatable disk and means for actuating the same, studs on said disk adapted to come in contact with the lower end of the said bar to elevate the same and to raise one end of the pump-beam, a yoke straddling the pump-beam, and means for adjusting the same and springs connecting the said yoke to the platform of the liquid-spraying device, which springs act to draw down the pump-beam and to force out the liquid, and a beam parallel with the beam of the pump, and a connection from one end of the same to the vertically-moving bar for actuating the pump-beam, a slotted standard through which the opposite end of the latter beam passes, and a hook device on the free end of said beam adapted to engage the upper edge of the slotted standard and to draw the vertically-moving bar away from the devices for actuating the same, substantially as set forth.

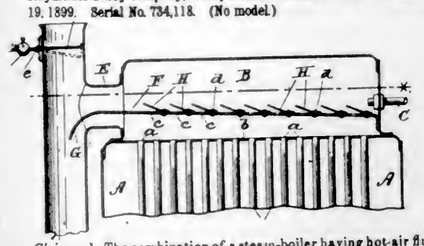
9. In a liquid-spraying device, the combination with a pump, the pipes for liquid passing to and from the same and the plunger, of a beam connected to the plunger and pivoted to the frame of the liquid-spraying device, a bar connected to the free end of the said pump-beam, and means for raising the said bar to elevate the plunger of the pump, and a yoke *m* pivoted at the pivot of the pump-beam and straddling the beam, and a set-screw passing through the upper part of said yoke and bearing upon the said beam for adjusting the relation of the yoke and the beam, and springs *m'* connected at their upper ends to ends of the yoke at either side of the beam, and at their lower ends to the frame of the liquid-spraying device for drawing down the beam and plunger and forcing the liquid from the pump, substantially as set forth.

10. In a liquid-spraying device, the combination with devices for holding and for forcing the spraying liquid, of the spraying-nozzles, flexible adjustable connections therefrom to the pipe for supplying the liquid, and means substantially as set forth, and under the control of the feet of the driver or operator for changing the inclination of the spraying-nozzles and the direction of the liquid sprayed, substantially as set forth.

11. In a liquid-spraying device, the combination with the devices for holding and forcing the spraying liquid, of pairs of spraying-nozzles at either side of the machine, arms to which the said spraying-nozzles are connected, adjustable pivotal connections to said arms, and supports therefor from the frame of the machine, and means, substantially as specified, and under the control of the feet of the operator for changing the inclination of the spraying-nozzles and the direction of the spraying liquid, substantially as set forth.

12. In a liquid-spraying device, the combination with the devices for holding and forcing the spraying liquid, of the spraying-nozzles from which the liquid is discharged, a pipe and couplers at the ends thereof, and flexible connections therefrom to the said spraying-nozzles, and flexible connections from the said couplers to the supply-pipe of the machine, swivel-couplers connected to the said pipes and supports therefor connected to the frame of the machine, and set-screws at the swivel-couplers by the loosening or tightening of which the inclination of the spraying devices may be altered, and the devices clamped when set as desired, for delivering the spraying liquid, and platforms for the feet of the operator, supports for the said platforms and cranks and rods connected therewith and extending to the spraying devices, whereby the same may be shifted at the pleasure of the operator, substantially as set forth.

653,334. DEVICE FOR DRYING EXHAUST-STEAM. LEON F. N. BALDWIN, Providence, R. I., assignor, by mesne assignments, to the Slaymaker-Barry Company, Incorporated, Connellsville, Pa. Filed Oct. 19, 1899. Serial No. 734,118. (No model.)



Claim.—1. The combination of a steam-boiler having hot-air flues through it, a chamber above the boiler into which said flues open, a pipe entering said chamber and adapted to convey exhaust-steam from a receptacle containing the same, a smoke-pipe and a pipe connecting said chamber with the smoke-pipe, and a plate extending in a direction slightly inclined from a horizontal line, through said chamber a short distance above the upper ends of said flues and located below said steam-pipe, substantially as specified.

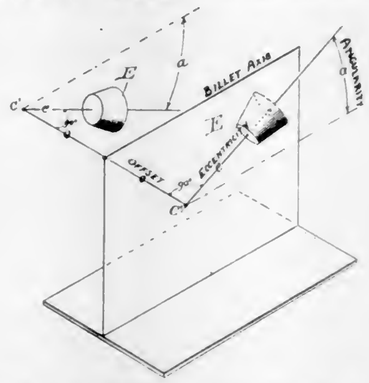
2. The combination of a steam-boiler having hot-air flues through it, a chamber above the boiler into which said flues open, a pipe entering said chamber and adapted to convey exhaust-steam from a receptacle containing the same, a smoke-pipe and a pipe connecting said chamber with the smoke-pipe, and a plate having a series of perforations and extending in a direction slightly inclined from a horizontal line through said chamber a short distance above the upper ends of said flues and located below said steam-pipe, substantially as described.

3. The combination of a steam-boiler having hot-air flues through it, a chamber above the boiler into which said flues open, a pipe entering said chamber and adapted to convey exhaust-steam from a receptacle containing the same, a smoke-pipe and a pipe connecting said chamber with the smoke-pipe, a plate having a series of perforations arranged in parallel rows, which plate extends in a direction slightly inclined from a horizontal line through said chamber a short distance above the upper ends of said flues and located below said steam-pipe, and a series of angularly-inclined baffler-plates fastened to said plate and extending over the rows of perforations, respectively, substantially as shown.

4. The combination of a steam-boiler having hot-air flues through it, a chamber above the boiler into which said flues open, a pipe entering said chamber and adapted to convey exhaust-steam from a receptacle containing the same, a smoke-stack open at both ends and a pipe connecting said chamber with the smoke-pipe at a place intermediate between the ends of the smoke-pipe, a plate having a series of perforations arranged in parallel rows, which plate extends in a direction slightly inclined from a horizontal line through said chamber a short distance above the upper ends of said flues and located below said steam-pipe, a series of angularly-inclined baffler-plates fastened to said plate and extending over the rows of perforations, respectively, and a curved tongue extending from said plate through said connecting-pipe and down into the smoke-pipe, substantially as set forth.

5. The combination of a steam-boiler having hot-air flues through it, a chamber above the boiler into which said flues open, a pipe entering said chamber and adapted to convey exhaust-steam from a receptacle containing the same, a smoke-pipe open at both ends and a pipe connecting said chamber and smoke-pipe at a place intermediate between the ends of the smoke-pipe, a plate having a series of perforations arranged in parallel rows, which plate extends in a direction slightly inclined from a horizontal line through said chamber a short distance above the upper ends of said flues and located below said steam-pipe, a series of angularly-inclined baffler-plates fastened to said plate and extending over the rows of perforations, respectively, a curved tongue extending from said plate through said connecting-pipe and down into the smoke-pipe, and a damper across the upper end of the smoke-pipe, pivotally hung at one side of said pipe and provided with an arm and a counterpoise thereon, substantially as and for the purpose specified.

653,335. SEAMLESS-TUBE-ROLLING MACHINE. JOSEPH BECKER, Washington, D. C., assignor to John E. Searles, New York, N. Y., and William C. Lovering, Taunton, Mass. Filed May 12, 1900. Serial No. 16,494. (No model.)



Claim.—1. In a seamless-tube or tubular-blank rolling machine having equal rolls to be similarly arranged with relation to the work, roll-adjusting means comprising three independent non-interfering adjustments of which one is angular and one is rectilinear.

2. In a seamless-tube or tubular-blank rolling machine having equal rolls to be similarly arranged with relation to the work, roll-adjusting means comprising three independent non-interfering adjustments of which one is angular and two are rectilinear.

3. In a seamless-tube or tubular-blank rolling machine having equal rolls to be similarly arranged with relation to the work, roll adjusting means comprising three independent non-interfering adjustments of which two are rectilinear and at right angles and the third is angular in a plane perpendicular to one of the other two.

4. In a seamless-tube or tubular-blank rolling machine having a pair of equal rolls to be similarly arranged with relation to the work, roll-adjusting means comprising three adjustments of which one is rectilinear along the common perpendicular of the roll-axes, the other is rectilinear along the roll-axis and the last is angular on the said common perpendicular as an axis.

5. In a seamless-tube or tubular-blank rolling machine having a pair of equal rolls to be similarly arranged with relation to the work, carriages for said rolls, roll-carriage-adjusting means comprising three adjustments of which one is rectilinear along the common perpendicular of the roll-axes, the other is rectilinear along the roll-axis and the last is angular on the said common perpendicular as an axis.

6. In a seamless-tube or tubular-blank rolling machine a pair of rolls and adjustments for varying their offset, angularity and eccentricity.

7. In a seamless-tube or tubular-blank rolling machine a pair of rolls adjustable in angularity and eccentricity, and suitable gearing arranged to keep the rolls constantly in connection with a fixed source of power through all adjustments.

8. In a seamless-tube or tubular-blank rolling machine, a pair of rolls adjustable in offset, angularity and eccentricity, and suitable gearing arranged to keep the rolls constantly in connection with a fixed source of power through all adjustments.

9. In a seamless-tube or tubular-blank rolling machine, a pair of rolls adjustable in angularity and eccentricity, and suitable gearing for equally and simultaneously varying at will, in both rolls, either one of the two coördinates without changing the other.

10. In a seamless-tube or tubular-blank rolling machine, a pair of rolls adjustable in offset, angularity and eccentricity, and suitable gearing for equally and simultaneously varying at will, in both rolls, either one of the three coördinates without changing the other two.

11. In a seamless-tube or tubular-blank rolling machine, coöperating skew-rolls mounted to be adjustable longitudinally of their axes, and means for so adjusting them, the means of the different rolls being connected by gearing to act equally.

12. In a seamless-tube or tubular-blank rolling machine, a pair of rolls adjustable in angularity and offset, and suitable gearing for equally and simultaneously varying at will, in both rolls, either one of the two coördinates without changing the other.

13. In a seamless-tube or tubular-blank rolling machine, a pair of rolls adjustable in offset and eccentricity, and suitable gearing for equally and simultaneously varying at will, in both rolls, either one of the two coördinates without changing the other.

14. Turn-tables mounted for angular adjustment, gearing for so adjusting them according to a certain law, shafts lying in the axes of said tables and geared to be revoluble according to the same law, parts mounted on said table for adjustment with respect to the tables, and adjusted by suitable connections with the said shafts.

15. Turn-tables mounted for adjustment according to a certain law, shafts lying in the axes of said tables and geared to be revoluble according to the same law, parts mounted on said table for equal radial adjustment with respect to the tables and so adjusted by suitable connection with the said shafts.

16. Turn-tables mounted for equi-angular adjustment in opposite directions, shafts lying in the axes of said tables and geared to be likewise equally revoluble in opposite directions, parts mounted on said tables for equal radial adjustment thereon and so adjusted through suitable connection with the said shafts.

17. In a machine for rolling solid or hollow ingots, billets or blanks to form tubes or tubular blanks, in combination with the mandrel thereof, coöperating rolls of the class described arranged to have their axes cross without meeting, and suitable supports for said rolls, all constructed and arranged to form structural coördinates in three dimensions on which the factors of roll relation may be directly measured, and the twisting effect of said rolls approximately determined, substantially as described.

18. In a machine for rolling solid or hollow ingots, billets or blanks to form tubes or tubular blanks, in combination with the mandrel thereof, coöperating rolls of the class described arranged to have their axes cross without meeting, and suitable supports for said rolls, all constructed and arranged to form structural coördinates in three dimensions on which the factors of roll relation may be directly measured, one of said coördinates being such as to lie in and coincide with the structural axis of the machine.

19. In a machine for rolling solid or hollow ingots, billets or blanks to form tubes or tubular blanks, coöperating rolls of the class described set to form a taper pass and having two coördinate adjustments contrived and arranged to change the twisting effect of the rolls independently and differently when changed to vary the dimensions of the pass, whereby the twisting effect of the rolls or the dimensions of the pass may be changed either separately or together, substantially as described.

20. In a machine for rolling solid or hollow ingots, billets or blanks to form tubes or tubular blanks, coöperating rolls of the class described set to form a pass tapering in the same direction as the rolls and having two coördinate adjustments contrived and arranged to change the twisting effect of the rolls independently and differently when changed to vary the dimensions of the pass, whereby the twisting effect of the rolls or the dimensions of the pass may be changed either separately or together, substantially as described.

21. In a machine for rolling solid or hollow ingots, billets or blanks to form tubes or tubular blanks, coöperating rolls of the class described

set to form a taper pass and having two coördinate adjusments for changing the set of the rolls without changing the direction of the common perpendicular of their axes, such adjustments contrived and arranged to change the twisting effect of the rolls independently and differently when changed to vary the dimensions of the pass, whereby the twisting effect of the rolls or the dimensions of the pass may be changed either separately or together, substantially as described.

22. In a machine for rolling solid or hollow ingots, billets or blanks to form tubes or tubular blanks, coöperating rolls of the class described set to form a taper pass and having two coördinate adjusments for changing the set of the rolls without changing the direction or location of the common perpendicular of their axes, such adjustments contrived and arranged to change the twisting effect of the rolls independently and differently when changed to vary the dimensions of the pass, whereby the twisting effect of the rolls or the dimensions of the pass may be changed either separately or together, substantially as described.

23. In a machine for rolling solid or hollow ingots, billets or blanks to form tubes or tubular blanks, coöperating rolls of the class described set to form a taper pass and having two coördinate adjustments for changing offset and eccentricity to vary the relative position of such rolls without changing the direction of the common perpendicular of the roll-axes, both of said adjustments being changeable independently whereby they may be used differentially to change the twisting effect of the rolls or the dimensions of the pass.

24. In a machine for rolling solid or hollow ingots, billets or blanks to form tubes or tubular blanks, coöperating rolls of the class described set to form a pass tapering in the same direction as the rolls and having two coördinate adjustments for changing offset and angularity to vary the relative position of such rolls without changing the direction of the common perpendicular of the roll-axes, both of said adjustments being changeable independently whereby they may be used differentially to change the twisting effect of the rolls or the dimensions of the pass.

25. In a machine for rolling solid or hollow ingots, billets or blanks to form tubes or tubular blanks, coöperating rolls of the class described set to form a taper pass, means for giving such rolls any operative relative position without changing the direction of the common perpendicular of the roll-axes and without disturbing the symmetrical disposition of the rolls about the pass-axis, and having two coördinate adjustments for changing offset and eccentricity to vary the relative position of such rolls without changing the direction of the common perpendicular of the roll-axes, both of said adjustments being changeable independently whereby they may be used differentially to change the twisting effect of the rolls or the dimensions of the pass.

26. In a machine for rolling solid or hollow ingots, billets or blanks to form tubes or tubular blanks, coöperating rolls of the class described set to form a taper pass, means for giving such rolls any operative relative position without changing the direction or location of the common perpendicular of the roll-axes and without disturbing the symmetrical disposition of the rolls about the pass-axis, and having two coördinate adjustments for changing offset and eccentricity to vary the relative position of such rolls without changing the direction of the common perpendicular of the roll-axes, both of said adjustments being changeable independently whereby they may be used differentially to change the twisting effect of the rolls or the dimensions of the pass.

27. In a machine for rolling solid or hollow ingots, billets or blanks to form tubes or tubular blanks, in combination with the mandrel thereof, coöperating rolls of the class described, adjusting means for placing such rolls in any conceivable relation symmetrical with respect to the pass-axis without changing the location or direction of the common perpendicular.

28. In a machine of the class described, and in combination with rolls adjustable in offset, angularity and eccentricity, means for varying the twisting effect of the rolls without varying the dimensions of the pass.

29. In a machine for rolling solid or hollow ingots or blanks to form tubes or tubular blanks, frustum-rolls, and roll-adjusting means for setting such frustums so they shall lie in the relative non-twist position of any one pair of the equivalent, different but approximately equal, non-twist, hyperboloidal zones.

30. In a machine for rolling solid or hollow ingots or blanks to form tubes or tubular blanks, equal rolls having substantially the shape of conoidal frustums, and adjusting means for setting such rolls so their rotative effect on a dummy circular billet that fits between them shall be greater for the smaller roll-circles than for the larger ones.

31. Equal rolls having the shape of conical or conoidal frustums with a swell near their smaller end and set so the twisting effects due to the swell shall be equal and opposite to make the rolls as a whole non-twisting.

32. Equal rolls having the shape of a cone-frustum terminated at its smaller end by another cone-frustum of greater taper in the same direction, such rolls being set so the larger frustum shall be fore twisting and the smaller one back twisting to an equal extent.

33. In a machine for rolling solid or hollow ingots or blanks to form tubes or tubular blanks, equal rolls having substantially the shape of a cone-frustum terminated at its smaller end by another cone-frustum of greater taper in the same direction, and roll-adjusting means for setting such rolls so the larger frustum shall be fore twisting and the smaller one back twisting to an equal extent.

653,336. COW-TAIL HOLDER. PLEASANT T. BROCK, Troy, Idaho. Filed May 8, 1900. Serial No. 15,908. (No model.)

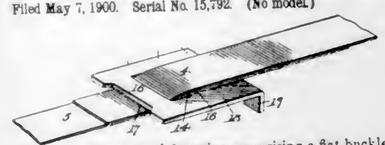


Claim.—1. A cow-tail holder, comprising a harness to be supported upon the cow, and a tail-engaging device, which embraces one side only of the tail and is located upon the inner side of the harness.

2. A cow-tail holder, comprising a harness to be supported upon a cow, and a hook located upon the inner side of the harness and forming a tail-engaging device, which embraces one side only of the tail.

3. A cow-tail holder, comprising a harness for application to an animal, and a tail-engaging device located upon the inner side of the harness and formed from a single length of wire bent intermediate of its ends into a loop-shaped hook, the opposite end portions being brought together into a shank, the opposite ends of which are passed through openings in a portion of the harness, the outer end of the shank being upset against said harness.

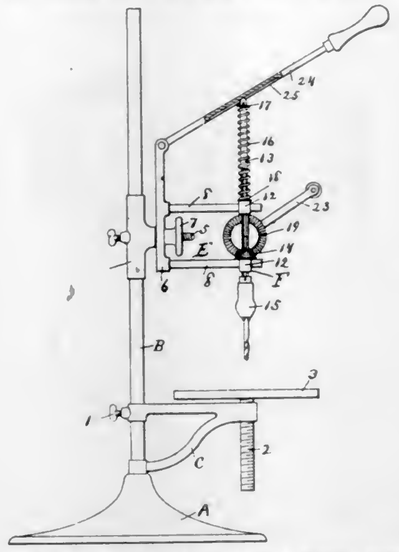
653,337. BALE-BAND FASTENING. DOUGLAS M. CAMPBELL, Houston, Tex., assignor of one-half to Sinclair Taliaferro, same place. Filed May 7, 1900. Serial No. 15,792. (No model.)



Claim.—1. A bale-band fastening comprising a flat buckle-plate adapted to turn bodily upon one edge as a fulcrum, and provided with a band-receiving eye or opening, said plate being further provided with a pair of offset catch-hooks projecting laterally from the same side of the plate, and a separate locking-key arranged flat against and wholly upon the side of the plate from which the hooks project, and having opposite portions engaging said hooks and the portion between the latter engaging transversely across the band, substantially as set forth.

2. A bale-band fastening comprising a flat buckle-plate adapted to turn bodily upon one edge as a fulcrum and provided with a band-receiving eye or opening, said plate being further provided with a pair of parallel holding-arm extensions having terminal hooks projecting laterally from the same side thereof, and a separate locking-key consisting of a substantially-straight body portion provided at one end with an inserting-prong, said key being adapted to be arranged flat against and wholly upon the side of the holding-arm extension from which the hooks project, and having its end portions engaging said hooks and the portion between the latter extending transversely beneath the band, substantially as set forth.

653,338. DRILL-PRESS. HENRY DE TAMBLE, Aurora, Ill., assignor of one-half to Charlie P. Dorn, Naperville, Ill. Filed Mar. 27, 1899. Renewed June 13, 1900. Serial No. 20,217. (No model.)



Claim.—A drill-press comprising a base, a standard mounted thereon, a bracket vertically and revolubly mounted thereon, a screw-threaded opening in the free end of said bracket, a plate having a screw-threaded shank adapted to enter said opening, carried by said bracket, a sleeve longitudinally and revolubly adjustable on said standard, a screw-threaded shank on said sleeve, a frame revoluble on said shank and adapted to be adjustably secured by means of a hand-wheel, said frame comprising a standard having two horizontal arms rigid therewith, and a lever pivotally mounted upon the upper end thereof and provided with a groove in its lower face, a frame slidably mounted on said parallel arms of said first-named frame and carrying two arms extending transversely to said arms of said first-named frame, bearings in the end of said arms, a vertical spindle journaled in said bearings and longitudinally and revolubly movable therein, a groove in said spindle, a collar thereon above said uppermost bearing adapted to engage said groove, a spring surrounding said spindle at its upper end and bearing against said collar and a second collar at the upper end of said spindle, a conical end on said spindle adapted to enter said groove in said pivoted arm on said first-named frame, a bevel-pinion on said spindle and longitudinally movable thereon, a horizontal crank-shaft journaled in bearings in said last-named frame, and a bevel gear-wheel carried by said crank-shaft and intermeshing with said bevel-pinion on said spindle, substantially as described.

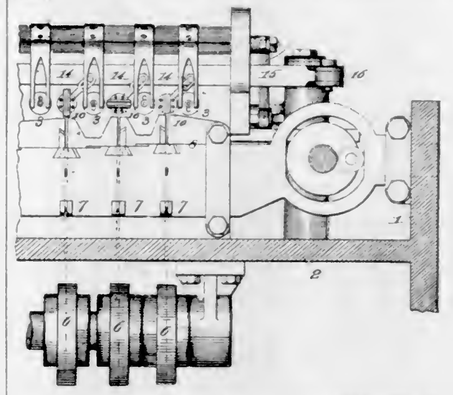
653,339. WIRE-FENCING MACHINE. WILLIAM EDENBORN, Chicago, Ill. Filed Nov. 13, 1899. Serial No. 736,762. (No model.)

Claim.—1. In a wire-fence machine, means for coiling the sections of stay-wires around the strand-wires, in combination with means for holding said sections after they are cut off and by which the sections are turned to bring them against their respective strand-wires, substantially as set forth.

2. In a wire-fence machine, means for coiling the sections of stay-wires around the strand-wires, in combination with means for holding said sections after they are cut off and by which each section is turned to bring one of its ends beneath one of its strand-wires and its other end over its other strand-wire, substantially as set forth.

3. In a wire-fence machine, means for coiling the sections of stay-wires around the strand-wires, in combination with disks or heads adapted to receive the stay-wires and hold the sections after they are cut off, and means for turning said disks or heads to bring said sections against their respective strand-wires, substantially as set forth.

4. In a wire-fence machine, means for coiling the sections of stay-wires around the strand-wires, in combination with heads or disks provided with grooved faces to receive the stay-wires, and means for turning said disks or heads after the stay-wires are cut off, to bring the sections against their respective strand-wires, substantially as set forth.



5. In a wire-fence machine, means for coiling the sections of stay-wires around the strand-wires, in combination with disks or heads located between said coiling means, and means for turning the disks or heads; each disk or head being provided with a groove and a spring located in the groove, substantially as set forth.

6. In a wire-fence machine, means for coiling the sections of stay-wires around the strand-wires, in combination with disks or heads located between said coiling means, and means for turning the disks or heads; each disk or head having a groove, one wall of which is undercut and to the other wall of which a spring is secured, substantially as set forth.

7. In a wire-fence machine, the combination of spindles provided with coiling-fingers, disks or heads located between the spindles and which are adapted to receive and hold the sections of stay-wires, and means for turning the disks or heads to bring said sections against their respective strand-wires, substantially as set forth.

8. In a wire-fence machine, spindles provided with fingers for coiling the stay-wires around the strand-wires, in combination with disks adapted to receive and hold the sections of stay-wires, and means for turning the disks; said disks being set slightly back of the front ends of said spindles, substantially as set forth.

9. In a wire-fence machine, means for coiling the sections of stay-wires around the strand-wires, in combination with means for holding said sections after they are cut off, and for turning the sections to bring them against their respective strand-wires, and means for straightening said sections, substantially as set forth.

10. In a wire-fence machine, spindles provided with fingers for coiling the sections of stay-wires around the strand-wires, in combination with means for carrying said sections against their respective strand-wires, a movable head provided with forks, and means for moving the head, substantially as and for the purpose set forth.

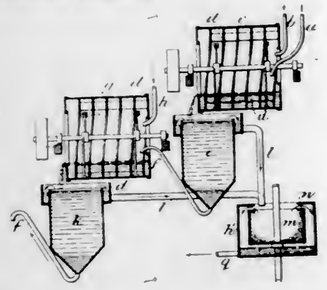
11. In a wire-fence machine, the combination with spindles having conical ends and provided with coiling-fingers, of disks or heads located between the spindles and which are adapted to receive and hold the sections of stay-wires, and means for turning the disks or heads to bring said sections against their respective strand-wires, substantially as set forth.

653,340. APPARATUS FOR SEPARATING METALLIC FROM ROCKY CONSTITUENTS OF ORES. FRANCIS E. ELMORE, Leeds, England. Original application filed Apr. 10, 1899. Serial No. 712,454. Divided and this application filed Sept. 23, 1899. Serial No. 731,464. (No model.)

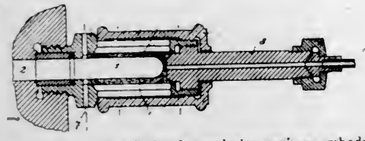
Claim.—1. The combination in an apparatus for separating metallic from rocky constituents of ore, of a rotary drum having internal helical ribs, pipes for delivering oil and ore and water into one end of said drum, a water-subsiding vessel arranged below the drum and receiving the oil, ore and water therefrom, a centrifugal drum arranged below said water-subsiding vessel, and a pipe for conducting the metallic portions and the oil from the top of the water-subsiding vessel into said centrifugal drum, substantially as described.

2. The combination in an apparatus for separating metallic from rocky constituents of ore, of a rotary drum having internal helical ribs divided into cells by longitudinal blades, pipes for delivering oil and ore and water into one end of said drum, a water-subsiding ves-

sel arranged below the drum and receiving the oil, ore and water therefrom, a centrifugal drum arranged below the water-subsiding vessel and constructed with an inwardly-projecting lip and a surrounding casing, and a pipe for conducting the metallic portions and oil from the top portion of the water-subsiding vessel into said centrifugal drum at a point in proximity to the inwardly-projecting lip thereof, substantially as described.



653,341. TUBE-IGNITER FOR EXPLOSIVE-ENGINES. ANTON C. VON FAHNENFELD, Schloss Thurn, near Laybach, and ERNST S. VON WOLFERSGRÜN, Laybach, Austria-Hungary. Filed Mar. 31, 1900. Serial No. 11,006. (No model.)



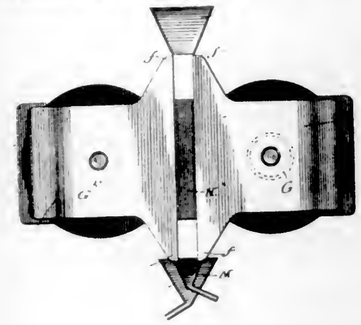
Claim.—1. An igniting device for explosion-engines, embodying in combination: the tube 3 surrounding the igniting tube or pin 1 rigidly secured to the explosion-chamber 2, a body of platinum shavings 4 in the space between the said tube 3 and the igniting tube or pin 1, a passage connecting the said space with the feed-conduit 8 for the combustible mixture, and discharge-openings 7 connecting the said space with the atmosphere, to allow of the combustible mixture admitted to the previously-heated body of platinum shavings being condensed and ignited by the latter, to thereby heat the said igniting-pin, and to allow of the products of combustion generated being discharged, the part 5 surrounding the iguiting-pin and having the openings 6, and the removable sleeve 9 adapted to close the said openings during the operation of the device and for the protection of the igniting tube or pin.

2. In an igniting device an outer tube provided with lateral openings and having an end portion adapted to be applied to the explosion-chamber of an explosion-engine and another end portion adapted to have a conduit for the combustible mixture applied thereto, an igniting tube or pin secured in the one end portion so as to project into the said outer tube, an inner tube surrounding the said igniting tube or pin within the said outer tube, a body of platinum shavings within the space between the said outer and inner tubes, discharge-openings in the outer tube, connecting the said space with the atmosphere, a feed-conduit for the combustible mixture, communicating with the said space and secured to the other end portion of the said outer tube, and an adjustable sleeve mounted on the latter to partly open and close the said lateral openings in the same, all combined substantially as described.

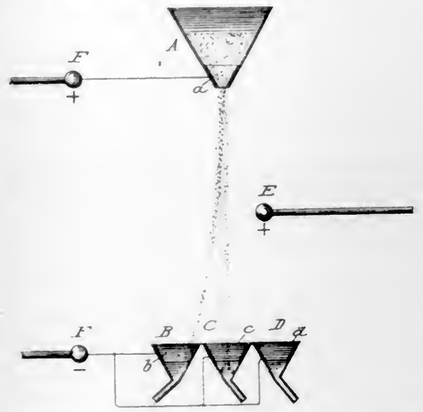
3. In an igniting device for explosion-engines a chamber communicating at opposite ends with the feed-conduit for the combustible mixture and with the atmosphere, respectively, and containing an igniting tube or pin and a tube surrounding the said igniting tube or pin at such distance therefrom as to leave an intermediate space capable of being filled with platinum shavings, lateral openings in said chamber, means as described for closing said openings and for varying their width when opened, substantially as and for the purpose described.

653,342. DIAMAGNETIC SEPARATION. ELMER GATES, Chevy Chase, Md., assignor to Theodore J. Mayer, Washington, D. C. Filed Sept. 26, 1899. Serial No. 731,762. (No specimens.)

Claim.—The method of separating diamagnetic particles from a mixture containing them, which consists in feeding the mixture into a relatively-intense part of a magnetic field, continuing it in and subjecting it to the action of the magnetic field until the diamagnetic particles to be separated have gradually moved out from the mixture into a relatively-weak part of the field, and then collecting said particles separately as heads, substantially as described.



653,343. ELECTROSTATIC SEPARATION. ELMER GATES, Chevy Chase, Md., assignor to Theodore J. Mayer, Washington, D. C. Filed Dec. 2, 1899. Serial No. 739,006. (No specimens.)



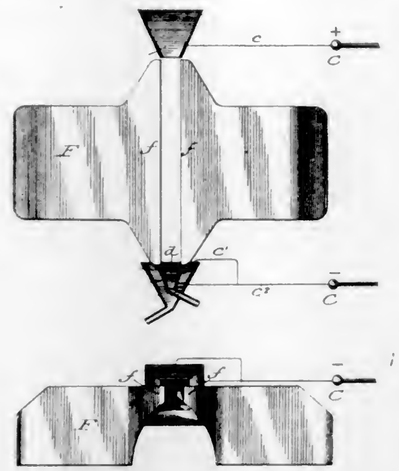
Claim.—1. The method of separating from a mixture particles of relatively-greater electrostatic capacity than the remainder, which consists in passing the mixture through a field of convective discharge of static electricity, thereby charging said mixture electrostatically, and diverting the particles of greater electrostatic capacity by causing the electrified mixture to pass through another field of convective discharge of static electricity, the direction of whose lines of force intersects that of the first, substantially as described.

2. The method of separating from a mixture particles of relatively-greater electrostatic capacity than the remainder, which consists in passing the mixture through a field of convective discharge of static electricity, thereby charging said mixture electrostatically, and diverting the particles of greater electrostatic capacity by causing the electrified mixture to pass through another field of convective discharge of static electricity, the direction of whose lines of force intersects that of the first, and whose discharge-terminal is located midway between the terminals of the first, substantially as described.

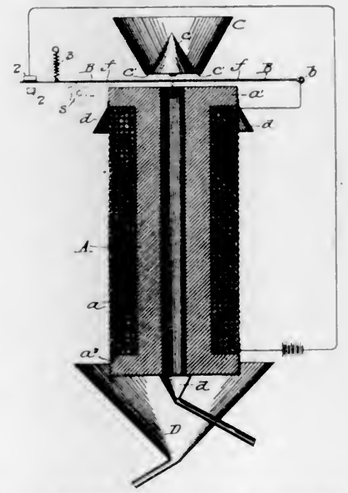
653,344. DIAMAGNETIC SEPARATION. ELMER GATES, Chevy Chase, Md., assignor to Theodore J. Mayer, Washington, D. C. Filed Dec. 2, 1899. Serial No. 739,007. (No specimens.)

Claim.—The method of separating diamagnetic particles from a mixture containing them, which consists in feeding the mixture into a relatively-intense part of a magnetic field, simultaneously charging the mixture electrostatically, and subjecting the electrostatically-charged mixture to the action of the magnetic field until the diamagnetic particles to be separated have gradually moved out from the mixture into a relatively-weak part of the field, and then collecting said particles as heads, substantially as described.

653,844.



653,345. DIAMAGNETIC SEPARATION. ELMER GATES, Chevy Chase, Md., assignor to Theodore J. Mayer, Washington, D. C. Filed Dec. 2, 1899. Serial No. 739,008. (No specimens.)

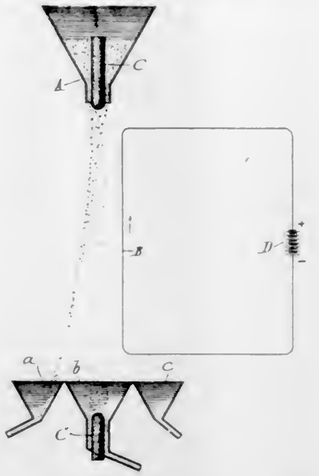


Claim.—1. The method of diamagnetic separation which consists in introducing the mixture into a zone of median magnetic intensity, agitating the mixture while detained in said zone until the particles of varying susceptibility move in opposite directions, and collecting the separated particles and conducting them away separately.

2. The method of diamagnetic separation which consists in feeding the mixture onto a support midway between the boundaries of a belt or zone of magnetic intensity, agitating the support until the substances of different susceptibility move laterally in opposite directions across said belt or zone, and collecting the separated substances at different points and conducting them away separately.

653,846. MAGNETIC SEPARATION. ELMER GATES, Chevy Chase Md., assignor to Theodore J. Mayer, Washington, D. C. Filed Dec. 2 1899. Serial No. 739,009. (No specimens.)

Claim.—The method of separating from a mixture, particles of conductive material which consists in passing an electric current through a moving body of the mixture, and diverting the conducting particles by causing the moving mixture to pass through an auxiliary field of force, substantially as described.



653,347. ACETYLENE-GAS BURNER. DAVID GENESE, Baltimore, Md. Filed June 12, 1899. Serial No. 720,210. (No model.)



Claim.—1. A burner for acetylene gas made of thin sheet metal and having molded about the same a protective jacket composed of a non-friable or refractory substance, substantially as described.

2. A burner for acetylene gas made of malleable metal and incased in a hard protective jacket, substantially as described.

3. A burner for acetylene gas made of a single sheet of metal doubled upon itself and provided with a series of independent gas-passages extending between the two thicknesses of metal, substantially as described.

4. A burner for acetylene gas made of a single sheet of platinum doubled upon itself and firmly pressed together at interrals, and affording between such united portions a series of converging gas-passages, substantially as described.

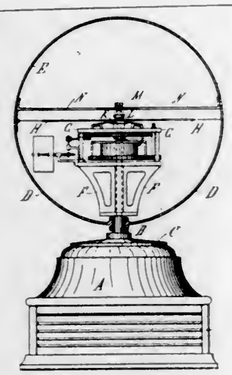
5. A flat burner for acetylene gas having a series of non-communicating passages extending therethrough in the same plane and converging toward the upper end of the burner, the outlet ends of said passages lying in the plane of the upper edge of the burner being at such distances apart that the separate flames issuing therefrom will unite by attraction into a solid flame extending in the same plane as the burner, substantially as described.

6. A burner for acetylene gas having a series of non-communicating, tapering passages extending therethrough in the same plane and converging toward the upper end of the burner, the outlet ends of said passages being at such distances apart that the separate flames issuing therefrom will unite by attraction into a solid flame extending in the same plane as the burner, substantially as described.

653,848. INCASEMENT OR HOUSING FOR MECHANICAL MUSICAL INSTRUMENTS. FRANZ J. HERTEL, Leipsic-Gohlis, Germany, assignor to Emil Fiedler, Klingenthal, Germany. Filed June 6, 1899. Serial No. 719,624. (No model.)

Claim.—In a mechanical musical works having a note-disk and a central disk-supporting spindle and means for rotating the same, the combination of a spherical housing having two halves hinged together, a square end to the said works-spindle and a cross-bar in the said housing having a square socket to fit onto the said spindle end when the two halves are closed in the manner and for the purpose substantially as described.

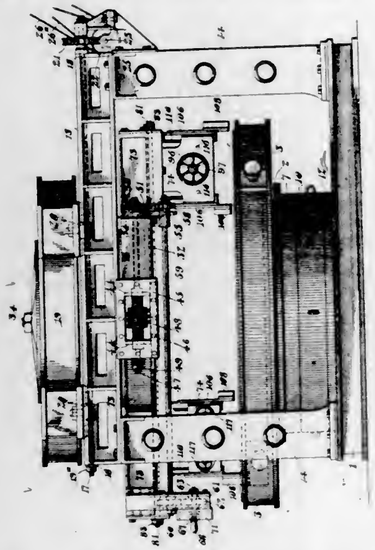
653,348.



653,349. MATCH. WILLIAM P. JONES, St. Martins, and HENRY M. BATES, London, England. Filed Nov. 13, 1899. Serial No. 736,805. (No specimens.)

Claim.—A non-poisonous composition for match tops, comprising chlorate of potash, sulphide of antimony, a metallic thiosulphate, oxide of manganese, bichromate of potash, an inert substance, red prussiate of potash, and adhesive material, substantially in the proportions set forth.

653,350. GEAR-MOLDING MACHINE. FERDINAND KEPP, Allegheny, Pa. Filed Mar. 6, 1900. Serial No. 7,487. (No model.)



Claim.—1. In a gear-molding machine, a stationary table, an elevated non-rotatable support, a revoluble pattern-carrying mechanism having a frame suspended from the under side of the said non-rotatable support and having a journal connection therewith, and pattern-carriages suspended from the said frame, substantially as set forth.

2. In a gear-molding machine, an elevated non-rotatable support shiftable in a rectilinear path, a revoluble pattern-carrying mechanism suspended from the under side of said non-rotatable support and having a journal connection therewith, and means for mechanically rotating the said pattern-carrying mechanism upon its journal connection with the support as an axis, substantially as set forth.

3. In a gear-molding machine, a table, pattern-carrying mechanism having a frame carrying separate sets of oppositely-arranged patterns, each of said sets including a pair of vertically-movable patterns for internal and external work, said patterns being arranged in corresponding positions respectively at the inner and outer sides of the supports therefor, adjusting mechanism for the individual patterns, and means for causing the oppositely-located similar patterns to operate upon diametrically-opposite sides of the mold at one operation, substantially as set forth.

4. In a gear-molding machine, the stationary table, an elevated shiftable support, and a revoluble pattern-carrying mechanism arranged above the table and suspended from the support, said mechanism having means for operating upon diametrically-opposite sides of a mold at one operation, substantially as set forth.

5. In a gear-molding machine, a table, a pattern-carrying mechanism having opposite sets of patterns arranged to operate at opposite sides of the mold, each of said sets including a pair of patterns for internal and external gears, said patterns being arranged in corresponding positions respectively at the inner and outer sides of the supports therefor, similar individual adjusting mechanism for each pattern, and means for causing a relative rotation between the table and the pattern-carrying mechanism, substantially as set forth.

6. In a gear-molding machine, the combination of a stationary table, a revoluble pattern-carrying mechanism arranged to swing over the table, and carrying separate sets of oppositely-arranged patterns, each of said sets including a pair of vertically-movable patterns for internal and external work, said patterns being arranged in corresponding positions respectively at the inner and outer sides of the supports therefor, and similar individual adjusting mechanism for each pattern.

7. In a gear-molding machine, an elevated shiftable support, a revoluble pattern-carrying mechanism suspended from the under side of said support and having a journal connection therewith, said mechanism also having separate sets of patterns, each of said sets including patterns for internal and external gears, and similar individual adjusting mechanism for each pattern, substantially as set forth.

8. In a gear-molding machine, the combination with the stationary table, of an elevated support, the revoluble pattern-carrying frame having a journal connection with said support and suspended beneath the same, and a pair of pattern-carriages adjustably supported by the said frame and carrying individually-adjustable patterns, said carriages being arranged at diametrically-opposite sides of the point of support for the pattern-carrying frame, substantially as set forth.

9. In a gear-molding machine, a table, an elevated support, a pattern-carrying frame pivotally suspended and arranged to swing horizontally above the table, a pair of pattern-carriages adjustably supported by said frame and arranged to work at diametrically-opposite sides of the point of pivotal support therefor, each of said carriages carrying a pair of individually-adjustable patterns, respectively for internal and external work, and means for causing a relative rotation between the pattern-carrying frame and the table, substantially as set forth.

10. In a gear-molding machine, the stationary frame, an elevated horizontal hanger mounted upon said stationary frame and shiftable thereon, means for shifting the said hanger, a table, a pattern-carrying frame suspended from the under side of the said horizontally-shiftable hanger, a pair of oppositely-arranged carriages adjustably carried by said pattern-carrying frame, and means for causing a relative rotation between the table and the pattern-carrying frame, substantially as set forth.

11. In a gear-molding machine, a stationary table, an elevated shiftable hanger-frame, a revoluble pattern-carrying frame, suspended from beneath the hanger-frame and having a journal connection therewith, and pattern-carriages adjustably suspended from the pattern-carrying frame, substantially as set forth.

12. In a gear-molding machine, the combination with a stationary table, of an elevated horizontally-shiftable hanger, a revoluble pattern-carrying frame suspended from beneath the hanger and having a journal connection therewith, and independently-adjustable pattern-carriages suspended from said frame, substantially as set forth.

13. In a gear-molding machine, the table, an elevated stationary support, a separate shiftable hanger horizontally movable upon said support, and a revoluble pattern-carrying frame having a journal connection with said hanger, and suspended from and swinging beneath the latter, substantially as set forth.

14. In a gear-molding machine, an elevated stationary support, a separate horizontally-shiftable top hanger-frame movable upon said support, shifting mechanism having an operative connection with said hanger-frame, a revoluble pattern-carrying frame having a journal connection with said hanger-frame, and suspended from and swinging beneath the latter, and pattern-carriages suspended from said pattern-carrying frame, substantially as set forth.

15. In a gear-molding machine, the table, elevated stationary supporting-beams arranged above the table, a horizontally-shiftable hanger-frame slidable upon said beams and carrying running-nuts, shifting-screws arranged longitudinally of said beams and engaging the running-nuts of the hanger-frame, drive-gearing for said shifting-screws, and a revoluble pattern-carrying frame having a journal connection with said hanger-frame, the said revoluble pattern-carrying frame being arranged to be suspended from and to swing beneath the under side of the hanger-frame, substantially as set forth.

16. In a gear-molding machine, the table, elevated stationary supporting-beams arranged above the table and provided with longitudinal ways, a horizontally-shiftable hanger-frame carrying a plurality of running-nuts working in the ways of the supporting-beams, shifting-screws arranged longitudinally of the supporting-beams and engaging said nuts of the hanger-frame, drive-gearing for said shifting-screws, and a revoluble pattern-carrying frame having a journal connection with said hanger-frame, the said revoluble pattern-carrying frame being arranged to be suspended from and to swing beneath the under side of the hanger-frame, substantially as set forth.

17. In a gear-molding machine, the table, elevated stationary supporting-beams arranged above the table and provided with longitudinal ways, a shiftable spider hanger-frame, provided with a plurality of slide-arms extending over the supporting-beams and carrying running-nuts working in the ways thereof, shifting-screws arranged longitudinally of the supporting-beams and engaging the ends of the spider hanger-frame, drive-gearing for the shifting-screws, and a revoluble pattern-carrying frame having a journal connection with said hanger-frame, the said revoluble pattern-carrying frame being arranged to be suspended from and to swing beneath the under side of the hanger-frame, substantially as set forth.

18. In a gear-molding machine, the table, an elevated stationary support arranged above the table, a separate hanger-frame arranged upon the elevated support and provided with a central pendent bearing, and a revoluble pattern-carrying frame having a central journal mounted in the pendent bearing of the hanger-frame, the said revoluble pattern-carrying frame being arranged to be suspended from and to swing beneath the under side of the hanger-frame, substantially as set forth.

19. In a gear-molding machine, the table, an elevated stationary support arranged above the table, a horizontally-shiftable hanger-frame arranged upon the elevated support and provided with a central pendent bearing, and a revoluble pattern-carrying frame having a central journal mounted in the pendent bearing of the hanger-frame, the said revoluble pattern-carrying frame being arranged to be suspended from and to swing beneath the under side of the hanger-frame, substantially as set forth.

20. In a gear-molding machine, the table, an elevated stationary support arranged above the table, a hanger-frame arranged upon said support and provided with a pendent cylindrical bearing-shell, a revoluble pattern-carrying frame having a central cylindrical journal registering within said bearing-shell, the pattern-carrying frame being arranged to be suspended from and to swing horizontally beneath the hanger-frame, and fastening means detachably connecting the revoluble pattern-carrying frame with the hanger-frame, substantially as set forth.

21. In a gear-molding machine, the table, an elevated stationary support arranged above the table, a separate top hanger-frame shiftable upon the elevated support in a rectilinear path, said hanger-frame being provided with an elongated pendent cylindrical bearing-shell, a revoluble pattern-carrying frame having a cylindrical journal portion registering within the bearing-shell of the hanger-frame, the said pattern-carrying frame being arranged to swing horizontally beneath the hanger-frame upon its journal connection as an axis, and means, carried by the pattern-carrying frame, for rotating the same upon the hanger-frame substantially as set forth.

22. In a gear-molding machine, an elevated hanger-frame provided with an elongated pendent cylindrical bearing-shell, a revoluble pattern-carrying frame having a cylindrical journal portion registering in the bearing-shell and provided with a retaining-ring engaging the upper end of said shell, and a central king-bolt between the hanger-frame and the journal portion of the pattern-carrying frame, substantially as set forth.

23. In a gear-molding machine, the table, an elevated hanger-frame having a pendent cylindrical bearing-shell, a revoluble pattern-carrying frame having a journal portion registering in said bearing-shell, and a king-bolt connection between the hanger-frame and the journal portion of the pattern-carrying frame, substantially as set forth.

24. In a gear-molding machine, the combination with a stationary table, of an elevated hanger-frame having a pendent bearing-shell carrying a stationary master-gear, a revoluble pattern-carrying frame arranged for suspension beneath the under side of the hanger-frame and having a journal portion working in the said bearing-shell, and means, carried by the pattern-frame, cooperating with the master-gear to provide for rotating the pattern-frame, substantially as set forth.

25. In a gear-molding machine, the table, an elevated hanger-frame having a pendent cylindrical bearing-shell, a stationary master worm gear-wheel fitted to the lower end of the bearing-shell, a revoluble pattern-carrying frame having a central journal portion working in the bearing-shell of the hanger-frame, and operating devices supported by the pattern-carrying frame and including a feed-worm having a traveling engagement with the master worm gear-wheel, substantially as set forth.

26. In a gear-molding machine, the table, an elevated hanger-frame having a pendent cylindrical bearing-shell, a stationary master worm gear-wheel fitted to the lower end of said bearing-shell, a pattern-carrying frame having a central journal portion registering in said bearing-shell, and also provided with a circular gear case or housing encircling the stationary master worm gear-wheel, and operating devices, supported by the pattern-carrying frame and including a feed-worm having a traveling engagement with the master worm gear-wheel, substantially as set forth.

27. In a gear-molding machine, the table, an elevated hanger-frame having a pendent cylindrical bearing-shell, a stationary master worm gear-wheel fitted to the lower end of the bearing-shell, a revoluble pattern-carrying frame provided with a central journal portion registering in said bearing-shell and also having an upstanding gear case or boxing encircling the master worm gear-wheel, said gear case or boxing having an extension at one side, and operating devices supported by the pattern-carrying frame and including a feed-worm housed within the extension of the case or boxing, and having a traveling engagement with the periphery of the master worm gear-wheel, substantially as set forth.

28. In a gear-molding machine, the table, an elevated hanger-frame having a pendent bearing-shell, a stationary master worm gear-wheel fitted to said bearing-shell, a revoluble pattern-carrying frame having a journal portion registering within the bearing-shell and also having a gear case or boxing encircling the master-wheel, and provided at one side with a bearing-bracket extension, a bearing-bracket fitted in said extension of the gear case or boxing, and operating devices supported by the pattern-carrying frame and including a feed-shaft working in said bearing-bracket and carrying a worm arranged within the bearing-bracket extension and having a traveling engagement with the worm gear-wheel, substantially as set forth.

29. In a gear-molding machine, the table, an elevated hanger-frame carrying a stationary master worm gear-wheel, a revoluble pattern-carrying frame having a journal connection with the hanger-frame and provided with an offset hanger-bracket, the revoluble pattern-carrying frame being arranged to be suspended from and to swing horizontally beneath the under side of said hanger-frame, and operating devices supported by the pattern-carrying frame and including a feed-worm having a traveling engagement with the master worm gear-wheel, and lever-controlled actuating means carried by said offset hanger-bracket, substantially as set forth.

30. In a gear-molding machine, the table, an elevated hanger-frame carrying a stationary master worm gear-wheel, a revoluble pattern-carrying frame having a journal connection with the hanger-frame and provided at or contiguous to one end with an offset hanger-bracket, the revoluble pattern-carrying frame being arranged to be suspended from and to swing horizontally beneath the under side of said hanger-frame, and turning mechanism for the pattern-carrying frame comprising a feed-shaft carrying a traveling worm meshing with the master worm gear-wheel, an operating-shaft having a changeable-gear connection with said worm feed-shaft, and lever-controlled actuating means carried by said offset hanger-bracket and operatively connected with said operating-shaft, substantially as described.

31. In a gear-molding machine, the table, the pattern-carrying frame arranged above the table and having a longitudinal slideway at its under side, a pair of pattern-carriages engaging with said slideway and arranged respectively at diametrically-opposite sides of the point of support for the pattern-carrying frame, similar individual adjusting mechanism for each carriage, a pair of inner and outer vertically-movable patterns supported by each carriage, and similar individual adjusting mechanism for each pattern, substantially as set forth.

32. In a gear-molding machine, the stationary table, a revoluble pattern-carrying frame supported above the table and provided at its under side with a longitudinal slideway consisting of parallel-spaced guide-strips having upstanding ribs or tongues, and individually-adjustable pattern-carriages pendent from the carrying-frame and having at their upper ends slide-heads provided with grooved under sides slidably interlocking with said ribs or tongues of the guide-strips, substantially as set forth.

33. In a gear-molding machine, the stationary table, an elevated hanger, a revoluble pattern-carrying frame suspended from the under side of the said hanger and having a journal connection therewith, said pattern-carrying frame being provided at its under side with a longitudinal slideway, a pendent pattern-carriage having individual feed mechanism including a revoluble feed-nut, and a stationary feed-screw supported by the carrying-frame and engaged by said feed-nut.

34. In a gear-molding machine, the table, a pattern-carrying frame supported above the table and provided with a slideway, a stationary feed-screw supported by the pattern-carrying frame, a pendent pattern-carriage suspended from said slideway, said carriage having individual feed mechanism including a revoluble feed-nut working upon the stationary feed-screw, and adjustable stops arranged to limit the play of the carriage, substantially as set forth.

35. In a gear-molding machine, the table, the pattern-carrying frame supported above the table, a common stationary carriage-feed screw supported by said pattern-carrying frame, pendent pattern-carriages slidably suspended from the carrying-frame, each carriage having feed mechanism including a revoluble feed-nut working upon the said feed-screw, and individually-adjustable patterns, supported by each carriage, substantially as set forth.

36. In a gear-molding machine, the table, the pattern-carrying frame supported above the table, a pendent pattern-carriage slidably suspended from the carrying-frame, individual feed mechanism for the carriage having a controlling hand-wheel disposed at one side thereof, and separate patterns supported by the carriage and having individual adjusting mechanism provided with controlling hand-wheels exposed at the opposite side of the carriage, substantially as set forth.

37. In a gear-molding machine, the table, a pattern-carrying frame supported above the table, a stationary feed-screw fitted to the pattern-carrying frame, a pendent carriage slidably suspended from the pattern-carrying frame, a carriage-feed mechanism comprising a revoluble gear-carrying bushing supported in an upright position within the carriage-casing and carrying gear-wheels upon opposite ends, a short operating-shaft carrying an exterior controlling hand-wheel and an interior gear meshing with that at the lower end of the gear-carrying bushing, and a revoluble feed-nut working upon the stationary feed-screw and carrying a gear meshing with that at the upper end of said gear-carrying bushing, substantially as set forth.

38. In a gear-molding machine, the table, the pattern-carrying frame, a pattern-carriage adjustably supported by the frame, a pair of vertically-movable patterns supported by the carriage and arranged respectively for internal and external gearwork, and individual adjusting mechanism for each pattern including an adjusting-screw connected with the pattern-support, and a suitably-rotated, fixedly-positioned feed nut or bushing engaging said screw, substantially as set forth.

39. In a gear-molding machine, the table, a pattern carrying frame, a pattern-carriage adjustably supported by the carrying-frame, said carriage being provided at the front and rear sides thereof with vertical guideways, pattern-holding slides working in said guideways and carrying non-rotating adjusting-screws, feed-nuts supported in fixed positions and engaging with said adjusting-screws, and means for rotating said feed-nuts in either direction, substantially as set forth

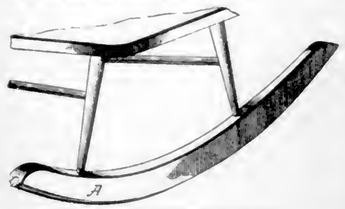
40. In a gear-molding machine, the pattern-carrying frame, a pattern-carriage adjustably supported by said frame and provided at the frout and rear sides thereof with vertical guideways, vertically-adjustable pattern-holding slides working in said guideways, and carrying vertically-arranged adjusting-screws, pattern-operating shafts mounted in the carriage and carrying exterior controlling hand-wheels, and a pair of intermeshing spiral gears associated with each adjusting-screw and the operating-shaft therefor, one of said gears carrying an interior-threaded portion engaging with the adjusting-screw, substantially as set forth.

41. In a gear-molding machine, the combination with the machine-base, of a flask-supporting table separate from the base and detachably resting thereon, an elevating rim or annulus removably interposed between the base and the said table, and a pattern-carrying mechanism arranged above the table, substantially as set forth.

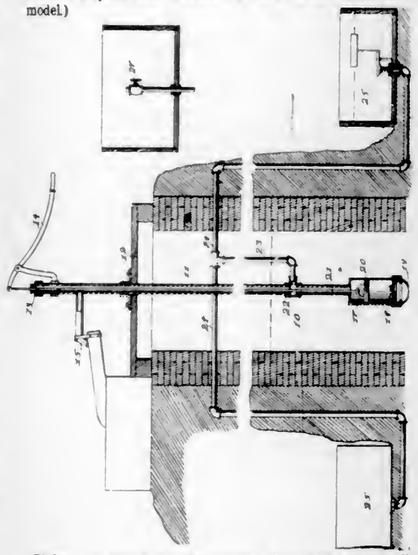
42. In a gear-molding machine, the combination with the machine-base, of a flask-supporting table separate from the base and removably resting thereon, and an elevating rim or annulus removably interposed between the base and the table and having an interlocking engagement therewith, substantially as set forth.

653,351. ELASTIC ROCKER ATTACHMENT. THOMAS F. KNIPHUISEN and WILLIAM P. KNIPHUISEN, Clymer, N. Y. Filed Feb. 9, 1900. Serial No. 4,624. (No model.)

Claim.— In combination with a rocker having a grooved bottom, an elastic cushion having wings which are secured to the rocker, said cushion being apertured and having a series of slits spaced apart and extending beyond the center of the cushion and in the plane of the upper faces of the wings, apertured disks seated one in each of said slits, the aperture of each disk when thus seated, being in registration with an aperture through the cushion at right angles to the slit, and a nail passed through said aperture and washer, and driven into the rocker, the head of the nail being seated against the lower face of the washer, as shown and described.

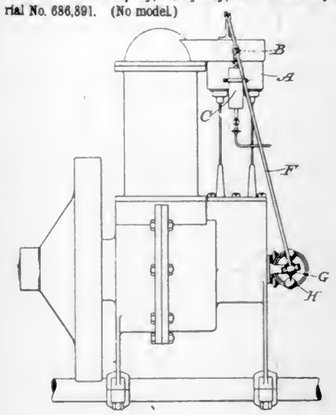


653,352. APPARATUS FOR DISTRIBUTING WATER. JAMES T. LACKEY, Gosport, Iowa. Filed Nov. 27, 1899. Serial No. 738,493. (No model.)



Claim.—An attachment for pumps, of the submerged-cylinder type, comprising a siphon-pipe arranged above the water-level and leading to a point of discharge below the water-level, and a branch pipe communicating with said siphon-pipe and also communicating with the well-tube of the pump at a point below the water-level and above the submerged pump-cylinder, for the purposes stated.

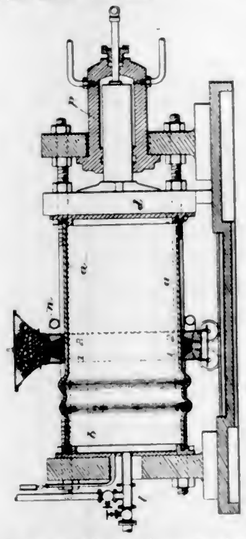
653,353. IGNITER FOR EXPLOSIVE-ENGINES. FRED A. LAW Hartford, Conn., assignor, by mesne assignments, to the Columbia and Electric Vehicle Company, Jersey City, N. J. Filed July 26, 1898. Serial No. 686,891. (No model.)



Claim.—1. The combination in an explosive-engine with a cylinder or explosion-chamber and an igniter, of a chamber connected with the cylinder or explosion-chamber through said igniter, a governor operated by the engine and means controlled by said governor to vary the capacity of said last-named chamber.

2. The combination in an explosive-engine with a cylinder or explosion-chamber and an igniter, of a chamber connected to said cylinder or explosion-chamber through said igniter, a plunger movable in said last-named chamber, a governor operated by the engine, and a connection between said governor and said plunger.

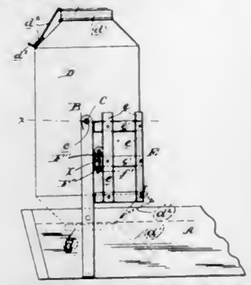
653,354. MEANS FOR MANUFACTURING CORRUGATED TUBES. WLADYSLAW MACIEJEWSKI, Sielce, Russia. Filed Dec. 22, 1899. Serial No. 741,326. (No model.)



Claim.—1. In the manufacture of corrugated metal tubes, the combination of means for heating the tube at the point where a corrugation is to be produced, means for filling the interior of the tube with a compressible fluid under pressure, and means for subjecting the tube to longitudinal compression when heated, whereby the heated portion of the tube is expanded, substantially as set forth.

2. A means of manufacture of corrugated metal tubes consisting in a fixed plate, a movable press-plate between which plates the tube to be corrugated is placed in a cold condition, and a movable furnace, for heating the tube at the point where a corrugation is to be produced.

653,355. FEED-TANK. WILBER R. MAGIK, Paulding, Ohio, assignor of one-half to P. A. Dix and I. J. Dix. Filed Sept. 13, 1899. Serial No. 730,309. (No model.)



Claim.—1. In combination with a feed-trough, a revoluble feed-tank suitably mounted thereabove and having a discharge-opening therein, said opening being below the edge of the trough when in its lowermost position, substantially as described.

2. In combination with a trough or receptacle, a revoluble feed-tank having a suitable discharge projecting into the trough when in its lowermost position, and means for locking the tank in different positions, substantially as described.

3. In combination with a trough or receptacle, a revoluble feed-tank having a suitable discharge, and a gate of substantially the contour of the outside of the tank and extending above and below the pivot of the tank for locking the same in desired positions, substantially as described.

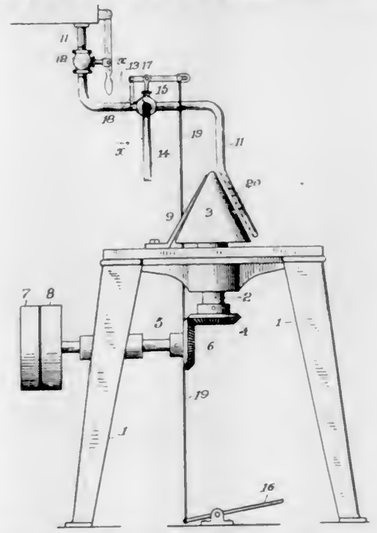
4. In combination with a trough or receptacle, a feed-tank having a suitable discharge, means for revolubly supporting the feed-tank thereon, and a hinged gate for locking the tank in righted or reversed position, the gate extending above and below the pivot of the tank, substantially as described.

5. In combination with a trough or receptacle, a revoluble feed-tank substantially circular in cross-section, and means for locking the tank in desired position, comprising a pivoted gate substantially semicircular in cross-section and extending above and below the pivot of the tank, and means for holding the gate in closed position, substantially as described.

6. In combination with a trough or receptacle, a revoluble tank having a suitable discharge projecting into the trough in its lowermost position, supporting means on the trough for the tank, a gate for locking the tank in reverse positions hinged to the supporting means, and means for locking the gate in closed positions, substantially as described.

7. In combination with a feed-trough, a feed-tank having a discharge-opening projecting below the upper edge of the trough when in its lowermost position, and means for mounting the tank above the trough so as to enable it to swing to and away from the same, substantially as described.

653,356. HAT-CLEARING MACHINE. JOHN MARSHALL, Fall River, Mass., assignor to James Marshall & Brothers, same place. Filed Jan. 22, 1900. Serial No. 2,355. (No model.)

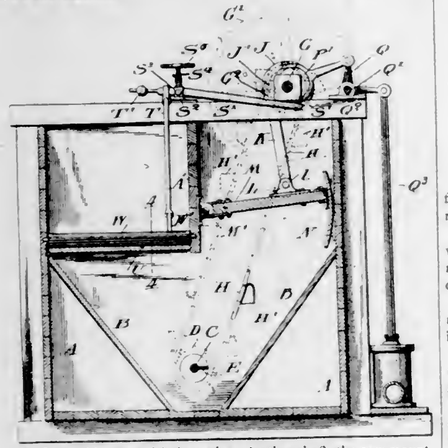


Claim.—1. In a machine for clearing hats, the combination of a rotary cone, a scraper-finger extending close to said cone, suitable pipes leading from a soda solution and hot water in close proximity to said cone and perforated opposite the cone and valves and suitably-operated means whereby said solution and hot water are discharged at will against the hats, substantially as set forth.

2. In a machine for clearing hats, the combination of a rotary cone, a pipe leading from a soda-solution supply and having its lower extremity perforated and extending in proximity to said cone, a pipe leading from a hot-water supply and communicating with the first-mentioned pipe, suitable valves in each of said pipes, and independent means for operating said valves whereby the soda solution or the hot water may be discharged against the hats as desired, substantially as shown and described.

653,357. COAL-JIGGER. JAMES A. MONTGOMERY, Brookwood, Ala., assignor of one-half to Murray S. Hitchcock, same place. Filed Mar. 10, 1900. Serial No. 8,218. (No model.)

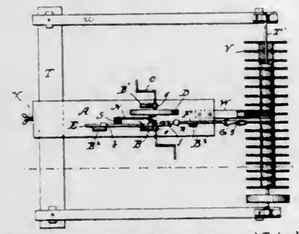
Claim.—1. In combination in a coal-jigger, of the hinged plunger, the concaved plate adjacent to its free swinging edge, and means for operating said plunger, the compartment having a screen-bottom, the coal-outlet passage in the vertical wall of said compartment, a rocking gate, an angle-lever secured thereto, having a slot in one of its arms, a tilting lever and means for tilting the same, and connections between said lever and the slotted angle-lever, substantially as shown and described.



2. In combination with the main operating-shaft, the cam mounted thereon, a compartment with screen-bottom, a rocking slate-gate journaled in the walls of said compartment, a slotted angle-arm integral with or secured to said gate, a pivotal lever having one end contacting with the circumference of said cam-wheel and having pivotal connection with said slotted arm, as shown and described.

3. In combination with the main operating-shaft, the cam-wheel thereon, the lever and box in which said lever is pivoted, an adjacent screw for raising and lowering said lever, one end of the latter adapted to contact with the circumference of said cam, a weight carried at its other end, a compartment having a screen-bottom, a rocking gate mounted adjacent to the outlet of said compartment, a slotted angle-arm connected to said gate, and pivotal connections between said angle and tilting levers, as shown and described.

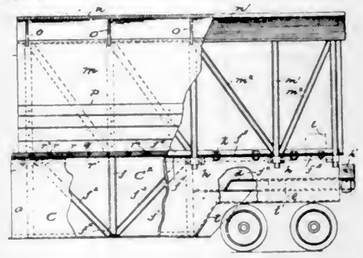
653,358. GIN-SAW-FILING MACHINE. JOSEPH A. MCGOWEN, Gallion, La. Filed Aug. 8, 1899. Serial No. 726,610. (No model.)



Claim.—The combination with the trestles *u*, and T, bed-piece A, secured to the transverse piece T, clamp X, adjustable thumb-screw *x*, bifurcated bar W, ratchet mechanism consisting of the adjustable slotted ratchet-bar H, provided with the inverted pyramidal plate M pin *i*, link A^3, slotted link I, spring I', lever S, set-screw K, cap or cover *h*, and its rear block secured thereto; of the reciprocating bar E, standards B, B', B^2, B^3, springs F, F, provided with the collar R, secured to the bar E, adjustable file-carriers G, G, secured to the springs F, F, one of which is provided with the perforation *g'*, files *g*, secured to the carriers, double-crank shaft journaled in the standards B, B' link N, connecting crank-shaft to the ratchet-lever S, and fly-wheel mounted upon the crank-shaft, substantially as and for the purpose set forth.

653,359. RAILROAD FREIGHT-CAR. THOMAS J. NEWBERRY and JOHN V. ERICSON, Chicago, Ill. Filed Jan. 8, 1900. Serial No. 712. (No model.)

Claim.—1. The combination with end-notched, connected, cushioned, and braced sets of vertical webs, of tanks, with corresponding end notches, on said cushions, and flush with the top of said webs, substantially as specified.



2. The combination with vertical, transversely-connected and top-flanged webs, of a removable, base-flanged, car-body and means to removably connect said flanges, substantially as specified.

3. The combination with end-notched, transversely-connected, vertical and flanged webs provided with means for giving transverse rigidity, of a car-body, flanged at the base of its walls, and means to connect said car-body and webs, substantially as specified.

4. The combination with a sheet-metal car-body and a sheet-metal floor, integral with its walls, of a wooden floor and wainscoting holding said floor, substantially as specified.

5. The combination with a sheet-metal car-body and a sheet-metal floor provided with ribs, and floor-boards between said ribs, of a wainscoting holding said floor to its place, substantially as specified.

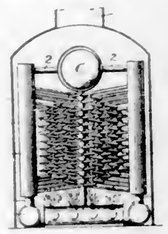
6. The combination with flanged vertical webs provided with stake-pockets, of a sheet-metal car-body stiffened with channel-irons which extend into said pockets, substantially as specified.

7. The combination with flanged vertical webs provided with stake-pockets, of a sheet-metal car-body stiffened by channel-irons which extend into said pockets, and bolts through said flanges to connect said webs and car-body, substantially as specified.

8. The combination with end-notched vertical webs and trucks therefor, of a sheet-metal floor with ribs and boards between said ribs and pins through said ribs to hold said boards, substantially as specified.

9. In railroad freight-cars, the combination with vertical side webs, and a central web, having their top edges in the same plane, and transverse connections to said webs, of a floor and means to removably secure the same to said webs, substantially as specified.

653,360. STEAM-BOILER. GEORGE OFELDT, New York, N. Y. Filed May 1, 1900. Serial No. 15,089. (No model.)



Claim.—1. In a water-tube boiler, the combination with a header, of a series of coils, each attached at its respective ends thereto and the convolutions of each coil interlocking with the convolutions of the adjacent coils.

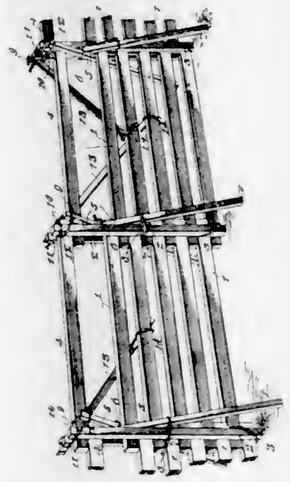
2. In a water-tube boiler, the combination with a header, of a series of interlocking coils, each attached at its respective ends thereto, said coils being wound alternately right and left handed.

3. The combination with a mud-drum and a dry-steam dome, of a header communicating at its respective ends with said drum and dome, and a series of interlocking coils extending laterally from the header between the mud-drum and steam-dome, the respective ends of each coil connected with said header.

4. The combination with a series of headers, a mud-drum common to all the headers and a dry-steam dome common to all the headers, of a series of interlocking coils connected independently with each header.

5. The combination with two series of headers and a dry-steam dome between said headers and common to all of them, of a series of interlocking coils connected independently with each header, the coils of one series of headers extending toward the coils of the other series of headers under the steam-dome and forming a baffle.

653,361. FENCE. CHARLES G. OGDEN, Milan, Tenn. Filed Oct. 11, 1899. Serial No. 733,277. (No model.)



Claim.—A fence comprising the vertical bars arranged in pairs and spaced apart, the horizontal rails 1 having their ends arranged between the vertical bars, the inclined lateral braces crossed near their upper ends, above the rails 1 to form a crotch, the top rails supported within the crotch, the top tie composed of sides 10 and 11 and extending across the top of the fence and passing around the inclined braces and embedded in their outer faces and interlocked therewith and coiled around one of the vertical bars, the inclined lever secured at its lower end to the fence and having its upper end engaging the top tie, the greater portion of the top tie lying in a horizontal plane, and the side 11 being slightly inclined between the vertical bars whereby any sagging of the fence will operate to bow the intermediate portion of the top tie downward, and thereby tighten it and bind the top of the fence more closely together, and means for connecting the inclined braces with the vertical bars, substantially as described.

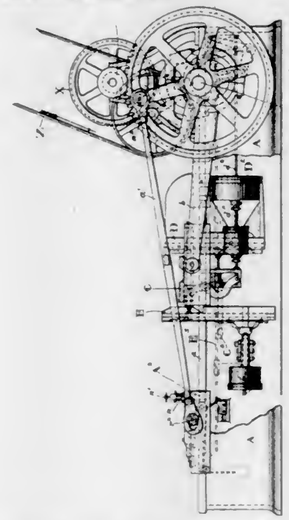
653,362. METAL-WHEEL MACHINE. GEORGE W. PACKER, Chicago, Ill. Filed Mar. 30, 1900. Serial No. 10,824. (No model.)

Claim.—1. A machine of the kind described, comprising a clamping device arranged to receive and firmly hold a spoke, and means for operating said device, a second clamping device arranged to engage with and firmly hold the rim end of the spoke, means for operating said device, and means for decreasing the distance between the two devices while so clamping the spoke, in combination with a press arranged to compress the spoke extension of a hub and the hub end of the spoke when assembled, and means for operating the press, substantially as described.

2. A machine of the kind described, comprising a clamping device arranged to receive and firmly hold a spoke and means for operating said device, a second clamping device arranged to engage with and firmly hold the rim end of the spoke, means for operating said device, and means for decreasing the distance between the two devices while so clamping the spoke, in combination with a hub-supporting member, a press, means for operating the press, and means for engaging the hub end of the clamped spoke with the hub spoke extension between the operating-jaws of the press, substantially as described.

3. A machine of the kind described, comprising a clamping device arranged to receive and firmly hold a spoke and means for operating said device, a second clamping device arranged to engage with and firmly hold the rim end of the spoke, means for operating said device, and means for decreasiug the distance between the two devices while so clamping the spoke, in combination with a hub-supporting member, means for moving the same toward the clamped spoke and engaging the hub extension therewith, a press arranged to compress the hub extension firmly upon the spoke end, and means for operating said press, substantially as described.

4. A machine for the kind described, comprising a clamping device supported upon a movable carriage and arranged to receive and firmly hold a spoke, and means for operating said device, a second clamping device arranged to engage with and firmly hold the rim end of the spoke, means for operating said device, and means for forcibly moving the carriage toward the second clamping device while the spoke is firmly clamped by both devices, in combination with a press arranged to embrace the spoke extension of a hub and the hub end of the spoke when assembled, and means for operating the press, substantially as described.



5. A machine of the kind described, comprising a clamping device supported upon a movable carriage, and arranged to receive and firmly hold a spoke, and means for operating said device, a second clamping device provided with means for adjusting its position relative to the first device, and arranged to engage with and firmly hold the rim end of the spoke, means for operating said device, and means for forcibly moving the carriage toward the second clamping device while the spoke is so clamped by both devices, in combination with a press arranged to embrace a spoke extension of the hub and the hub end of the spoke when assembled, and means for operating the press, substantially as described.

6. A machine of the kind described, comprising a clamping device supported upon a movable carriage and arranged to receive and firmly hold a spoke, and means for operating said device, a second clamping device arranged to engage with and firmly hold the rim end of the spoke, means for operating said device, and means for forcibly moving the first clamping device toward the second while the spoke is so clamped by both devices, in combination with a hub-supporting member mounted upon a movable carriage, a press, means for operating the press, and means for moving the carriage supporting the hub to engage the hub extension with the hub end of the spoke between the operating-jaws of the press, substantially as described.

7. An upsetting-machine for forming the ends of spokes or rods, comprising a spoke or rod clamping device and means for operating the same, in combination with a second clamping device arranged to engage with and firmly hold the extreme end of the spoke or rod, means for operating said device, and means for decreasing the distance between the two devices while the spoke or rod is so clamped by both so as to upset the rod or spoke between them, substantially as described.

8. In a machine of the kind described, a driven shaft having mounted thereon one or more eccentrics, a movable cross-head or carriage and eccentric-rods connecting the eccentrics with said movable carriage, a clamping device supported by said carriage and arranged to receive and firmly hold a spoke or rod, and means for operating said clamping device, in combination with a second clamping device arranged to maintain a fixed position in relation to the first, and adapted to engage with and firmly hold the end of a spoke or rod positioned in the first device, and means for operating said second device, substantially as described.

9. In a machine of the kind described, a driven shaft A' having mounted thereon eccentrics B B, a movable carriage B' suitably supported upon ways, eccentric-rods connecting the eccentrics with the

carriage, and a clamping device and means for operating the same supported by said carriage, in combination with a clamping device D, means for operating the same, and means for adjusting the position of the same relative to the clamping device upon the carriage, substantially as described.

10. In a machine of the kind described, a driven shaft A′ having mounted thereon eccentrics B B, a carriage B′ having mounted thereon a clamping device and means for operating the same, and eccentric-rods *b b* connecting the eccentrics with the carriage, in combination with an adjustable cross-head F having mounted thereon a clamping device D, and means for operating said clamping device, a cross-bar F′ and means for regulating the distance between the carriage F and the cross-bar F′, substantially as described.

11. In a machine of the kind described, a periodically-reciprocated carriage B′ having mounted thereon and carrying the following elements therewith: clamping-jaws C′ C′, an air-pressure apparatus, mechanism for controlling the same, an intermediate mechanism for transmitting the movement of the air-pressure mechanism to the jaws, in combination with a second clamping device arranged to engage with and firmly hold the end of a spoke or rod to cooperate with the action of the first clamping mechanism in forming the end of a spoke or rod, and means for operating the second clamping device, substantially as described.

12. In a machine of the kind described, a periodically-reciprocated carriage B′ having mounted thereon and carrying therewith the following elements: clamping-jaws C′ C′, an air-pressure apparatus, longitudinally-movable rods C^3 C^3, means for operating the same, and toggle-levers arranged to transmit the movement of the rods C^3 C^3 to the clamping-jaws C′ C′, in combination with a second clamping device arranged to cooperate with the first in forming the end of a spoke or rod held by the clamping-jaws C′ C′ and means for operating the second clamping device, substantially as described.

13. In a machine of the kind described, a clamping device comprising a support having mounted thereon and carrying therewith opposing jaws, in combination with an air-pressure apparatus provided with a piston and piston-rod d^2, means for transmitting the movement of the piston-rod to operate the jaws, a valve-stem controlling the air-pressure apparatus, a lever connected with the valve-stem and a driven cam for operating the lever, substantially as described.

14. In a machine of the kind described, a clamping device comprising a movable support having mounted thereon and carrying therewith opposing jaws *d d′*, in combination with an air-pressure apparatus provided with a piston and piston-rod d^2, a movable block d^7 operated by the action of said piston-rod, and toggle-bars d^3 d^3 transmitting the movement of the piston to the jaws *d d′* to move them in opposing directions, and means for controlling the air-pressure device, substantially as described.

15. In a machine of the kind described, a press comprising opposing jaws *e e′*, in combination with an air-cylinder E^2 provided with a piston and a piston-rod e^3, intermediate mechanism transmitting the motion of the piston-rod to the jaws, a valve-stem e^4 controlling the operation of the air apparatus, and a reciprocating rod E^5 arranged to periodically operate the valve-stem, substantially as described.

16. In a machine of the kind described, a press comprising opposing jaws *e e′*, and toggle-levers arranged to force the jaws toward each other, in combination with an air-cylinder E^2 provided with a piston and a piston-rod e^3, means for transmitting the motion of the piston-rod to the toggle-levers, a valve-stem e^4 controlling the operation of the air apparatus, a bell-crank lever e^7 connected with the valve-stem, a spring adapted to normally hold the bell-crank lever and valve-stem in an inoperative position, and a longitudinally-movable rod E^5 arranged to periodically operate the bell-crank lever against the force of the spring, substantially as described.

17. In a machine of the kind described, a press arranged substantially as described, an air-cylinder E^2 provided with a piston and a piston-rod e^3, means for transmitting the motion of the piston-rod to operate the press, a valve-stem e^4 controlling the operation of the air apparatus, a bell-crank lever e^7 attached at one end to the valve-stem and at the other end to a longitudinally-movable bar e^8, and a spring arranged to normally hold the bell-crank and valve-stem in an inoperative position, in combination with a longitudinally-movable rod E^5 provided with a trip e^{11} adapted on the movement of the rod in one direction to engage with the bar e^8 to operate the same against the force of the spring, substantially as described.

18. In a machine of the kind described, a press substantially as described, a compressed-air apparatus arranged to operate the press, a valve-stem e^4 controlling the operation of the air apparatus, a bell-crank lever e^7 having one arm engaged with the valve-stem and the other arm with a longitudinally-movable bar e^8, and a spring adapted to hold the bell-crank lever in its normal position, in combination with a longitudinally-movable rod E^5 provided with a trip e^{11} adapted to engage the bar e^8 and operate the same against the force of the spring, a driven shaft A′, and mechanism connecting the shaft with the bar E^2 and arranged to periodically reciprocate the same, substantially as described.

19. A hub and spoke assembling machine, comprising a spoke-clamping device and means for operating the same, in combination with a reciprocating hub-carriage, means for mounting and retaining a hub thereon, a press arranged between the clamp and the hub-carriage in line with the engaged hub and spoke, and means for operating the press, substantially as and for the purpose set forth.

20. In a machine of the kind described, a clamping device arranged to receive and firmly hold a spoke and means for operating the same, in combination with a reciprocating carriage A^3 provided with a hub-support, means for periodically rotating the hub a limited distance thereon, a press arranged between the clamping device and the carriage, and means for operating said press, substantially as described.

21. In a machine of the kind described, a clamping device arranged to receive and firmly hold a spoke and means for operating the same, a reciprocating carriage A^3 provided with a hub-supporting shaft *n*, a ratchet device for periodically rotating the hub a limited distance to bring the hub extension in line with a spoke positioned in the clamping device and upon the reciprocation of the carriage to engage the two, in combination with a press arranged between the clamping device and the carriage in line with the engaged hub and spoke, and means for operating said press, substantially as described.

22. In a machine of the kind described, a clamping device arranged to receive and firmly hold a spoke and means for operating said device, a reciprocating carriage A^3 provided with a rotatable hub-supporting shaft *n*, means for securing a hub thereon, means for periodically rotating the shaft and hub a limited distance to successively bring the hub extensions in line with the spoke and upon the forward movement of the carriage engage the two, and a locking device supported by the carriage and adapted to securely lock the hub in such position, in combination with a press arranged between the clamping device and the carriage in line with the engaged hub and spoke, and means for operating said press, substantially as described.

23. A hub and spoke assembling machine, comprising a spoke-clamping device and means for operating the same, in combination with a longitudinally-movable hub-carriage, means for mounting and retaining a hub thereon, a driven shaft, means for transmitting the motion of the shaft to reciprocate the hub-carriage, a press arranged between the clamp and the hub-carriage in line with the engaged spoke and hub, and means for operating the press, substantially as and for the purpose set forth.

24. A hub and spoke assembling machine, comprising a spoke-clamping device and means for operating the same, in combination with a longitudinally-movable hub-carriage, means for mounting and retaining a hub thereon, a driven shaft, means for transmitting the motion of the shaft to reciprocate the carriage, a press arranged between the clamp and the hub-carriage in line with the engaged hub and spoke, and means driven by the shaft for controlling the press, substantially as and for the purpose set forth.

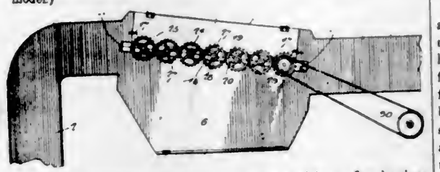
25. In a machine of the kind described, a reciprocating carriage A^3 provided with a rotatable hub-supporting shaft *n*, means for securing a hub thereto, and means for periodically rotating the hub a limited distance as described, in combination with a locking device comprising a spring-lever I′ constructed at its free end to engage the hub to lock the same in its adjusted position, an operating-lever R arranged at one end to engage the spring-lever to operate the same, and means for periodically operating the lever R, substantially as described.

26. In a machine of the kind described, a clamping device comprising the following elements in combination: a reciprocated carriage having mounted thereon and carrying therewith clamping-jaws C′ C′, an air-pressure apparatus, valve mechanism for controlling the same, and mechanism for transmitting the movement of the air-pressure apparatus to operate the jaws, substantially as described.

27. In a machine of the kind described, clamping mechanism comprising the following elements in combination: a reciprocated carriage B′ having mounted thereon and carrying therewith clamping-jaws C′ C′, an air-pressure apparatus, longitudinally-movable rods C^3 C^3, mechanism connecting the air-pressure apparatus with the latter to operate the same, and toggle-levers arranged to transmit the movement of the rods to the clamping-jaws, substantially as described.

28. In a machine of the kind described, clamping mechanism comprising the following elements in combination: a reciprocated carriage B′ having mounted thereon and carrying therewith clamping-jaws C′ C′, reinforcing-bars C^3 C^3, slides *c c*, &c., toggle-levers c^3 c^3, &c., longitudinally-movable bars C^3 C^3, a rock-shaft C^4, crank-arms c^5 transmitting the movement of the rock-shaft to the rods C^3, and an air-pressure apparatus adapted to operate the rock-shaft, substantially as described.

658,868. PNEUMATIC CONVEYER AND CLEANER. JOSEPH A. PARKER, Dripping Springs, Tex., assignor of one-half to Pedernales Leinneweber, same place. Filed Feb. 6, 1900. Serial No. 4,270. (No model.)



Claim.—A pneumatic cotton-conveyer comprising a flue having a straight downwardly-inclined section, a dust-receptacle on the lower side thereof and communicating therewith, a screen in the lower side of said flue above said dust-receptacle, bearings in one side of the said section, a door in the opposite side thereof, a divided bar on the outer side of the flue and door, and having bearings formed in its contacting sides and centering with the free side of the door, and a series of revoluble beaters having their shafts adapted to be journaled in said bearings and removable therefrom at will as the door is opened, substantially as described.

653,364. PLIERS. GIOVANNI B. PITTAVINO, New York, N. Y. Filed Sept. 13, 1899. Serial No. 730,305. (No model.)

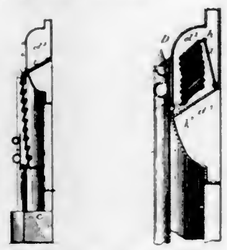


Claim.—1. Pliers of the class described, comprising handles provided with jaws movably connected therewith, the relative construction and arrangement being such that in the movement of said jaws the operative faces thereof at all times project in planes of constant relation, and an adjustable set device which operates in connection with one of said jaws whereby the play thereof may be limited, substantially as shown and described.

2. Pliers of the class described, comprising pivoted movable handles provided with pivoted jaws, means for causing said jaws to reciprocate upon movement of said handles, and an adjustable set device arranged to operate in connection with one of said jaws whereby the movement thereof may be limited, substantially as shown and described.

3. Pliers of the class described, comprising handles pivoted together, and each provided at one end with a pivoted jaw which is slotted at its inner end, pins connected with said handles and operating within said slots, and a set-screw operatively connected with one of said handles and bearing upon the inner end of one of said jaws, substantially as shown and described.

653,365. BLOWER FOR GRATES. JAMES S. ROARK, Americus, Ga., assignor of one-half to Richie T. Harper, same place. Filed Feb. 24, 1900. Serial No. 6,342. (No model.)

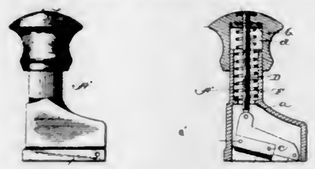


Claim.—1. A blower such as described, consisting of a collapsible screen formed of a plural number of partially-overlapping double slats or back-lined plates, said plates having each rivets at either end thereof, and transverse slots mediate said rivets, adapted to engage corresponding slots and rivets, respectively, in the next adjacent plate, and a supporting-frame having a pocket with a closed bottom, substantially as described.

2. The combination with a frame having a pocket in the top thereof open toward the front, of a blower consisting of a collapsible screen formed of a plural number of metal slats or plates, said plates having each rivets at either end and transverse slots mediate said rivets, adapted to engage corresponding slots and rivets, respectively, in the next adjacent plate, said screen having a hinged connection in said pocket and a depending plate to close said pocket when the screen is not in use, substantially as described.

3. The combination with an open-grate fireplace, of a mantle attachment or frame, comprising top and lateral members, the top member formed as a receptacle or pocket open toward the front and having an inclined bottom, of a blower consisting of a collapsible screen formed of a plural number of metal slats or plates having a front double-flanged member and a back member embraced thereby, with a space between said plates for heat radiation, said back member having rivets substantially near its ends and transverse slots mediate said rivets adapted to engage corresponding slots and rivets, respectively, in the next adjacent plate, a plate hinged to the upper of said slats and to near the rear of the pocket whereby the screen can be collapsed and folded back therein, and a hinged plate depending from the lowermost slat, adapted to serve as a closure for the pocket, and a shelf or plate extending laterally across the front of the grate and against which the screen is adapted to abut when in its lowermost position for completely closing the fireplace save through the grate, substantially as described.

653,366. STAMP-MUTILATOR. CHARLES A. SKINNER, Homer, N. Y. Filed Apr. 11, 1900. Serial No. 12,446. (No model.)

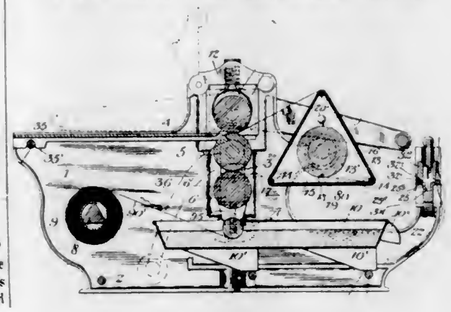


Claim.—1. In a stamp-mutilator the combination with the body having the upwardly-extending tubular stem, of the knife-carrier pivoted at one end in said body near the bottom, the blades mounted on said carrier at the opposite end and adapted to be projected with a shearing cut as the carrier is swung on its pivotal center, an operating-stem for said carrier extending up through the tubular projection of the body, a handle connected with said stem and a spring for holding the knife-carrier and knives normally retracted; substantially as described.

2. In a stamp-mutilator the combination with the body having the transverse projection or enlargement and the upwardly-extending tubular projection, of a knife-carrier pivotally mounted in the transverse extension near the bottom, a series of cutting-blades mounted on said carrier and having substantially-straight cutting edges, whereby they are projected by the swinging of the carrier on its pivot with a shearing action, a jointed stem connected with said carrier and projecting through the tubular extension of the body and a handle connected with the upper end of said stem and a retracting-spring; substantially as described.

3. In a stamp-mutilator the combination with the body, the knife-carrier pivoted therein at one end and near the bottom of the body, cutting-blades mounted on said knife-carrier near its free end and adapted to project below the plane of the body with a shearing movement commencing at one end of the blades, an operating-stem for said carrier, a retracting-spring and an adjustable stop for limiting the movement of the carrier whereby the length of the cut made by the blades may be regulated; substantially as described.

653,367. ROLLER COPYING-PRESS. NORMAN C. STILES, Watertown, N. Y. Filed Dec. 13, 1899. Serial No. 740,167. (No model.)



Claim.—1. A roller copying-press comprising a series of vertically-alined three-high rollers and a dampening-roller carried by the frame; a reel upon which the paper to receive the impression is wound; a winding-reel for receiving the impressed material; a removable dampening tank or vat beneath the rollers; and means whereby when said tank is moved into position it will be raised to immerse the dampening-roller therein.

2. In a machine of the class specified, the combination, with a series of pressure and drying rolls and with a copying-roller, of a reel from which the paper is passed over and between said rollers; a dampening-roll; a frame; and a water tank or vat mounted on said frame and provided with inclined portions on its under side cooperating with fixtures of the frame.

3. In a machine of the class specified, the combination, with a dampening-roller, of a removable water-tank, and means whereby when the water-tank is moved into position it will be elevated to immerse the dampening-roller in the liquid contained in said tank.

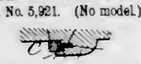
4. In a machine of the class specified, the combination, with a series of driven rollers, of a non-driven dampening-roller; a removable water-tank; means whereby when said tank is moved into position it is raised to immerse the dampening-roller therein; and a reel for winding the impressed paper after it leaves the rollers.

5. In a machine of the class specified, the combination, with a frame having open bearings, of a series of three-high rollers having their axes in vertical alinement: a dampening-roller journaled in stationary bearings of the frame; a reel for holding the roll of paper: a take-up reel mounted in the open bearings of the frame; and means for actuating said reel.

6. The combination, with a series of three-high rollers having their axes in vertical alinement, of a dampening-roller located below and out of contact with the lowest of said rollers; a water pan or tank; means for raising said tank as it is moved into position; and a take-up reel mounted in bearings at the top of the frame.

7. In a machine of the class specified, the combination, with a series of three-high rollers, of a lever having eccentrics working in the boxes of the upper roller; caps for closing the channels in which the journal-boxes are placed; and springs carried by said caps and bearing against the upper boxes.

653,368. DOOR-CHECK. OSCAR TSCHIEKY, New York, N. Y. Filed Feb. 20, 1900. Serial No. 5,921. (No model.)

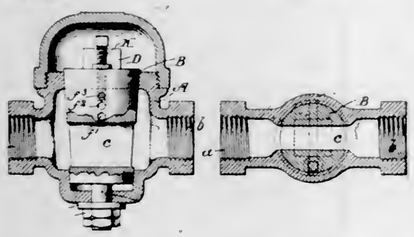


Claim.—1 The combination of the rabbet of a door-frame provided with a groove which has different widths in cross-section, a door-check adapted to be retained in said groove, said door-check comprising a shank which extends into the narrow portion of the groove, shoulders carried by said shank which under compression abut against the bottom of the wider portion of the groove, and a facing of felt or other soft material for said shoulders against which a door abuts, and the door.

2. A check or stop for doors which extends longitudinally of the rabbet of a door-frame, comprising a compressible shank, shoulders provided on the shank, and a facing of felt or other soft material for the shoulders against which said door abuts.

3. The combination of the rabbet of a door-frame provided with a groove which has different widths in cross-section, a door-check adapted to be retained in said groove, said door-check comprising a shank which extends into the narrow portion of the groove and shoulders provided on said shank which under compression abut against the bottom of the wider portion of the groove, and a door.

653,369. VALVE FOR STEAM-HEATING SYSTEMS. WARREN WEBSTER, Merchantville, N. J. Filed Nov 3, 1899. Serial No. 735,673. (No model.)



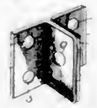
Claim.—1 In a valve, the combination of the valve-body, a valve-piece having a passage-way of relatively-large area forming a main thoroughfare adapted to be opened and closed by the manipulation of said valve-piece, said valve-piece being further provided with a relatively-small thoroughfare independent of the main thoroughfare so arranged with reference thereto as to remain closed while the main thoroughfare is open, and means to independently control said small auxiliary thoroughfare to open it when the main thoroughfare is closed and to increase or decrease its size, substantially as and for the purposes described.

2. In a valve, the combination of the valve-body, a valve-piece having a passage-way of relatively-large area forming a main thoroughfare, and a series of small passage-ways of relatively-small area, so arranged with reference to said main passage-way as to be open when said main passage-way is closed, and an adjustable piece to open or close one or more of said small passage-ways to control the size of the thoroughfare afforded thereby.

3. A valve device having a main thoroughfare of relatively-large area, and an auxiliary thoroughfare of relatively-small area formed of a series of small independent passage-ways, and embracing a main valve-piece to control said main thoroughfare, and an independent valve-piece adapted to open or close one or more of said small passage-ways to control the size of the small thoroughfare afforded thereby when the main thoroughfare is closed.

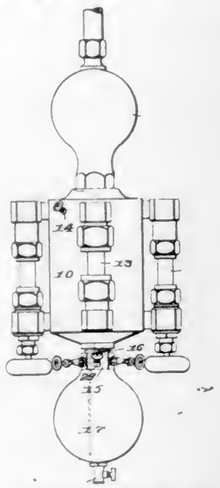
4. In a valve, the combination of the valve-body, the valve-piece having a main thoroughfare c of relatively-large area and a series of small passage-ways arranged transversely thereto and adapted to be opened into the valve-body when said main thoroughfare is closed, and an adjustable piece K movable transversely through said small passage-ways and adapted to open or close one or more thereof to regulate the size of the thoroughfare afforded thereby.

653,370. HINGE. LOUIS WELKER, Sr., and WILLIAM N. WELKER, Williamsport, Pa. Filed Nov. 18, 1898. Serial No. 696,813. (No model.)



Claim.—A hinge comprising two leaves each having a wing or flange at one edge, each of said wings or flanges having a projection or bearing-point at one end to bear against the other wing or flange and said flanges or wings pivoted together between said projections or bearing-points.

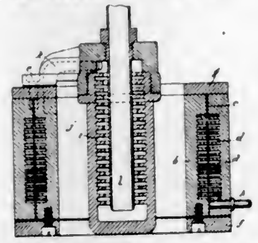
653,371. FILLER FOR SIGHT-FEED LUBRICATORS. FRANK E. ALLEN and ABRAM F. FINCH, Boone, Iowa. Filed Jan. 11, 1900. Serial No. 1,080. (No model.)



Claim.—1. The combination with a sight-feed lubricator of the class in which the oil is displaced by steam condensation, of an auxiliary chamber supported beneath the lubricator-chamber, means for providing communication between the bottom of the lubricator-chamber and the top of the auxiliary chamber, means for cutting off said communication, closable means at the top of the auxiliary chamber for filling it and closable means at the bottom of the auxiliary chamber for effecting drainage.

2. The combination with a sight-feed lubricator of the class in which the oil is displaced by steam condensation, of a block permanently secured beneath the lubricator-chamber and having passage-ways extended through it from its top to its bottom, means for closing said passage-ways, an auxiliary chamber permanently connected with said block, closable means at the top thereof for filling purposes, and a petcock at its bottom, substantially as and for the purposes stated.

653,372. STEAM-BOILER. CHARLES ALTMANN, Lyons, France. Filed Mar. 7, 1900. Serial No. 7,684. (No model.)

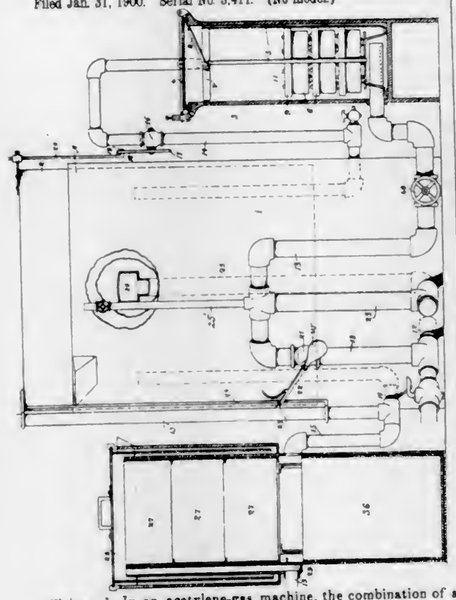


Claim.—1. A boiler comprising an inner and outer ring with a narrow space between the same, the ends of said spaces being closed, a series of narrow recesses extending into the body of the rings from said space, and inlet and exhaust pipes communicating with said space, substantially as described.

2. A boiler comprising inner and outer rings with a narrow space between, means for closing the space at its end, the means at one end being yieldable, recesses in the rings, and inlet and outlet pipes communicating with said space, substantially as described.

3. A boiler comprising inner and outer rings with a space between, means for closing said space at each end, recesses in the rings, an inlet-pipe, and overheating-chambers depending axially of the rings within the same, a pipe leading from the space between the rings to the overheating-chamber and an outlet-pipe from the overheating-chamber, substantially as described.

653,373. ACETYLENE-GAS GENERATOR. CHARLES A. BACON, Lockford, Cal., assignor of one-half to Samuel H. Cohn, Stockton, Cal. Filed Jan. 31, 1900. Serial No. 3,411. (No model.)



Claim.—1. In an acetylene-gas machine, the combination of a generator, a gasometer and means connecting it with the generator, a frame consisting of vertical bars, a support near the bottom and a band at the top said frame having supporting-legs and being open at one side to permit the carbid-containers to be inserted and removed sidewise, the independent carbid-containers superposed one above another, means for admitting water into the generator at a point below the lowermost carbid-container, and means whereby the water successively enters each container after the carbid in the one below has become exhausted.

2. In an acetylene-gas machine, the combination of a generator, a gasometer and means connecting it with the generator, means for admitting water to the generator, carbid-containers including boxes having lugs at the bottom for separating adjacent boxes and thereby forming a gas-passage, said boxes formed with an annular bead at the top and a series of water-inlet passages below the bead, and covers for the boxes having depending flanges covering the said inlet-openings and separated therefrom by said bead, and said covers having openings in their tops for the escape of gas into the space between the separated boxes.

3. In an acetylene-gas machine, the combination of a gasometer, a generator and a valve-controlled pipe connecting it with the gasometer, a valve-controlled water-supply pipe connecting the lower part of the tank with the generator, and having a vertically-disposed curved trap in its length, carbid-containers within the generator, and a pipe connection between the interior of the gasometer and the trap whereby gas which continues to generate when the valves are closed will act to force any remaining water from the generator into the gasometer, said connection also serving to transfer gas thus produced to said gasometer.

4. In an acetylene-gas machine, the combination of a gasometer, a generator, a valve-controlled pipe between the gasometer and generator, a valve-controlled water-supply, carbid-containers, and means connecting with the water-pipe whereby gas and water remaining in the generator after the main valves are closed are conducted to the gasometer.

5. In an acetylene-gas machine, a gasometer, a water-tank within which it is adapted to rise and fall, an exterior generator comprising a series of independent superposed carbid-containers, a pipe connecting the lower part of the gasometer-tank with the lower port of the generator whereby water is admitted to successively submerge the carbid-containers, a pipe connecting the generator-chamber with the gasometer through which gas is delivered into the gasometer, a cock and a lever-arm connected with and actuated by the rise and fall of the gasometer whereby said cock is closed when the gasometer is sufficiently filled, a similarly-actuated cock by which the water-supply to the generator is cut off at the same time, an upwardly-curved trap between the water-supply cock and the generator, and connections between the upper part of said trap and the interior of the gasometer whereby gas which continues to generate will act to force any remaining water from the generator into the gasometer, said connection serving also to transfer gas thus produced to the gasometer.

6. In an acetylene-gas machine, a gasometer, a tank containing water in which a gasometer is adapted to rise and fall, an exterior generator consisting of a vertical chamber, removable independent carbid-containers, superposed one upon the other within the generator, with openings whereby water may be admitted and gas discharged from each container as they are successively submerged, a pipe connecting the upper part of the generator with the gasometer to deliver gas therein, a water-supply pipe connecting the lower part of the gasometer-tank with the lower part of the generator, an intermediate upwardly-curved trap and connection between said trap and the interior of the gasometer, a cock whereby the direct admission of gas from the generator to the gasometor is cut off when the latter is sufficiently filled, another cock by which the water-supply from the gasometer-tank is cut off from the trap at the same time, a connection between the trap and the interior of the gasometer whereby the gas which is subsequently produced in the generator forces the remaining water back into the gasometer-tank, and an overflow box or device within the gasometer through which the water and gas thus entering must pass.

7. In an acetylene-gas machine, a rising and falling gasometer, a water-containing tank within which the gasometer moves, a generator with independent carbid-containers, means for supplying water to successively submerge said containers, a pipe connecting the upper part of the generator with the interior of the gasometer, a water-supply pipe connecting the lower part of the gasometer-tank with the lower part of the generator and a trap intermediate thereof, a cock betweeo the generator and the gasometer, and a similar cock between the water-tank and the trap leading to the generator, said cocks having forked lever-arms connected therewith, the lower fork of each arm extending in line with the lever and the upper one forming a segmental curve of less length than the lower arm, rods connected with the gasometer extending vertically downward by the sides of said lever-arms and having pins fixed thereto and projecting so as to enter the forks of the levers, said pins acting to close the cock when

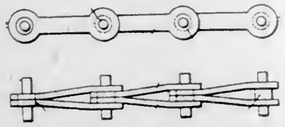
the gasometer is sufficiently filled and to be disengaged from the forked levers as they rise after said closing, and to again engage the levers and open the cocks when the gasometer sinks.

8. In an acetylene-gas machine, a generator, a rising and falling gasometer, connections between the generator and the gasometer for the transmission of gas and a controlling-cock therefor, other connections between the lower part of the gasometer-tank and the lower part of the generator for the transmission of water, and a controlling-cock therefor, a trap intermediate between said cock and the generator, connections between said trap and the interior of the gasometer whereby surplus gas produced after the closing of the main cocks is admitted into the gasometer, and water from the generator is also forced back, and an overflow box or device through which the gas and water thus transmitted are returned without agitation of the water in the gasometer-tank.

9. In an acetylene-gas apparatus, a generator, a gasometer, connections by which the gas is transmitted from the generator to the gasometer, and a separate passage through which surplus gas and water remaining in the generator after the main flow is cut off are also conducted to the generator, a pipe by which the gas is conveyed from the gasometer to the service-pipes, and a means for drying the gas thus discharged, consisting of a dry-carbid container through which the gas is passed.

10. In an acetylene-gas machine, a gasometer, a water-containing tank in which it is adapted to rise and fall, a plurality of generators exterior thereto consisting of exterior chambers with removable hermetically-closed tops, a series of carbid-containers superposed and fitting each of the chambers, connections between the lower part of the gasometer-tank and the lower part of the generators, and controlling-cocks whereby water is admitted successively to each of the generators, gas-conducting pipes opening from the upper part of the generators and connecting with a pipe common to both which leads to the gasometer, cocks by which the branch to either generator may be closed or opened with connected lever-arms, rods connected with the gasometer having pins fixed thereto and adapted to contact with the lever-arms whereby the latter are opened or closed by the movements of the gasometer, supplemental pipes leading from the branches of each generator, a trap through which said pipes deliver into the lower part of the gasometer whereby surplus gas generated after the closing of the main cock is allowed to pass into the gasometer, and a muffler or disperser whereby the flow of gas into the gasometer is prevented from agitating the water in the gasometer-tank.

653,374. CHAIN. JAMES H. BARRY, London, England. Filed Dec. 27, 1897. Serial No. 663,657. (No model.)



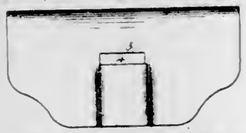
Claim.—1. In a driving-chain, the combination with links, each consisting of two like parts, of pins pivotally connecting the links, said pins being loosely supported to permit them to turn freely, and having their central portions of greater diameter than their ends, which latter project beyond the sides of the links to engage sprocket-teeth, substantially as described.

2. In a driving-chain, the combination with links each consisting of two like parts, of pins pivotally connecting the links, said pins being loosely supported to permit them to turn freely and having their central portions of greater diameter than their ends, and means for connecting the parts of the links, substantially as described.

3. In a driving-chain, the combination with links each consisting of two like parts slotted as at *a'*, of pins pivotally connecting the links, said pins being loosely supported to permit them to turn freely and having enlarged central portions, and clips extending through said slots, substantially as described

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653,375. MUSICAL WHISTLE. MICHAEL BARTHEL, San José, Cal. Filed Nov. 21, 1899. Serial No. 737,533. (No model.)



Claim.—1. A musical whistle, essentially T-shaped in form, having an apertured mouthpiece, an open-ended pipe across the effluent end of said mouthpiece and of a greater length than the width of the aperture and a lip and a slot-like opening at the junction of said mouthpiece and pipe, substantially as described.

2. A musical whistle, essentially T-shaped in form, having an apertured mouthpiece, an open-ended pipe across the effluent end of said mouthpiece and of a greater length than the width of the aperture and a lip and a slot-like opening at the junction of said mouthpiece and pipe, and having devices movably secured to the ends of said cross-pipe to vary the note produced, substantially as described.

653,376. POP-GUN. ALONZO K. CHAPMAN, Placerville, Cal. Filed May 2, 1900. Serial No. 15,272. (No model.)



Claim.—1. In a pop-gun, the combination with a suitable cylinder, and a plunger, of a holder for a strip of paper, and means for automatically closing the exit of air upon depression of the plunger, whereby further compression of the air ruptures the paper and produces an explosion, substantially as described.

2. In a pop-gun, the combination of a cylinder, a plunger therein, a holder mounted at the end of the cylinder, and adapted to support a strip of paper thereon, and a flexible disk over said paper so supported, and arranged to be depressed upon said paper by the operation of the plunger and make an air-tight joint thereon whereby the compression of the air by further operation of the plunger ruptures the paper and produces an explosion, substantially as described.

3. In a pop-gun, the combination of a cylinder, a plunger therein, a holder mounted on the end of the cylinder having a depressed, apertured central portion with side slits through which a piece of paper can be inserted, and means whereby the depression of the plunger automatically renders the central chamber air-tight, whereby further depression thereof ruptures the paper and causes an explosion, substantially as described.

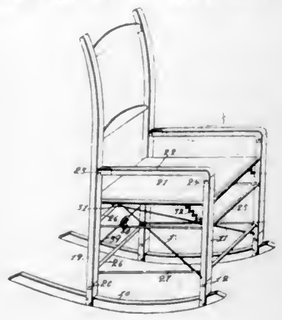
4. In a pop-gun, the combination of a cylinder, a plunger therein, a holder mounted on the end of the cylinder having a depressed apertured central portion with side slits for permitting the pieces of paper to be inserted and rest upon said central portion, and a flexible apertured disk mounted in the cylinder above said depressed portion substantially as described.

653,377. BUTTON-FASTENER. BENNETT J. COBLEIGH, Kingston, Pa. Filed Sept. 5, 1899. Serial No. 729,490. (No model.)



Claim.—A button-fastener comprising a base-plate and a shank attached thereto, said shank being provided with an eye adapted to receive the shank of a button and with an entrance-slot extending from said eye to the outer edge of the shank and inclined away from said base-plate, whereby when the fastener is applied to the fabric, the mouth of said entrance-slot will be near the surface of said fabric to facilitate the insertion of the button in the fastener.

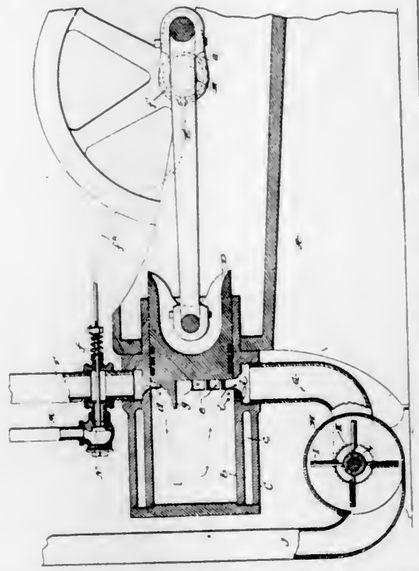
653,378. FOLDING ROCKING-CHAIR. JOSEPH W. CURRY, Adelphi, Iowa. Filed Dec. 9, 1899. Serial No. 739,773. (No model.)



Claim.—1. A locking-hinge for folding rocking-chairs or the like, comprising a hinge member consisting of a straight piece, a disk-shaped projection on the end of the straight piece, having a notch formed therein, a mating hinge member, comprising a straight piece, one or more disk-shaped projections to overlap the side or sides of the aforesaid projection, each of said latter projections having a notch therein capable of being moved into alinement with the aforesaid notch, a pintle passed concentrically through the disk-shaped projection, a lever fulcrumed to the straight portion of one of the hinge members, and having a wide, downwardly-projecting end designed to enter the notches in each of the disk-shaped projections when said notches are in alinement, and a yielding pressure device to normally hold the lever in the notches, for the purposes stated.

2. An improved folding rocking-chair comprising in combination two rockers 10, uprights 11 fixed thereto, joints 12 in said uprights having notches 13 therein, levers 14 fulcrumed to the uprights and designed to enter said notches, springs 16 for holding the levers in the notches, cords 17 whereby the levers may be drawn out of the notches, rear uprights 19 having hinged joints 20 therein, a seat 21 pivoted to the forward end uprights, arms 22 pivoted with forward and end uprights, rounds 25 connecting the forward uprights with each other, rounds 26 connecting the rear uprights with each other, rods 27 pivotally connecting forward and rear rounds, and contractile springs 32 attached to the seat and to the forward uprights, all arranged and combined for operation substantially in the manner set forth and for the purposes stated.

653,379. EXPLOSIVE-ENGINE. CARL R. DAELLENBACH, Park Gate, Pa. Filed Sept. 9, 1899. Serial No. 729,970. (No model.)



Claim.—1. An explosive-engine comprising a cylinder, and a piston therein; the said cylinder being provided with inlet and exhaust ports open to the air and arranged to be simultaneously uncovered by the piston and being also provided with a comparatively-minute exhaust-port arranged to be uncovered by the piston prior to the uncovering of the inlet-port, and means for causing a current of air to pass through the cylinder and ports when the latter are uncovered, substantially as specified.

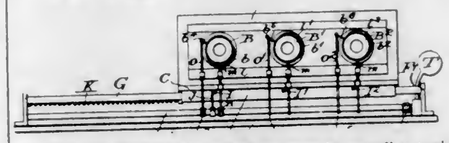
2. An explosive engine comprising a cylinder, and a piston therein; the said cylinder being provided with inlet and exhaust ports open to the air and arranged to be simultaneously uncovered by the piston, and being also provided with a comparatively-minute exhaust-port arranged to be uncovered by the piston prior to the uncovering of the inlet-port, a valve-controlled fuel-supply conduit connected with the inlet-port, and means for causing a current of air to pass through the cylinder and ports when the latter are uncovered, substantially as specified.

3. An explosive-engine comprising a cylinder and a piston therein; the said cylinder being provided with inlet and exhaust ports open to the air and arranged to be simultaneously uncovered by the piston and being also provided with a comparatively-minute exhaust-port arranged to be uncovered by the piston prior to the uncovering of the inlet-port, and a suction device connected with the exhaust-ports, substantially as specified.

4. An explosive-engine comprising a piston, a cylinder receiving the piston and having an inlet-port open to the air and connected with a source of fuel-supply and an exhaust-port, said inlet and exhaust ports arranged to be simultaneously uncovered by the piston, and also having a minute exhaust-port arranged to be uncovered by the piston prior to the uncovering of the inlet-port, a normally-closed valve controlling the fuel-supply, a suction device connected with the exhaust-ports, and means for opening the said valve, substantially as specified.

5. An explosive-engine comprising a piston, a cylinder receiving the piston and having an inlet-port and an exhaust-port, said inlet and exhaust ports arranged to be simultaneously uncovered by the piston, an air-supply pipe connected with the inlet-port, a fuel-supply pipe connected with the air-pipe, a normally-closed valve controlling communication between the fuel and air pipes, means for positively opening said valve at intervals, a fan-chamber connected with the exhaust-port, and a suction-fan in said chamber, substantially as specified.

653,380. CAMERA FOR COLOR PHOTOGRAPHY. WILLIAM N. L. DAVIDSON, Southwick, England. Filed Sept. 11, 1899. Serial No. 730,142. (No model.)



Claim.—1. In means for taking photographs according to the three-color process, a camera having three divisions each provided with a lens having its proper color-screen and with shutter mechanism, a sliding carriage carrying said camera, springs tending to draw the camera toward one end of the stand, and mechanism whereby the lenses can be exposed in turn and between each exposure the camera moved so that all three exposures are made at the same position, substantially as set forth.

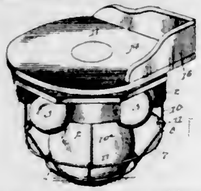
2. In means for taking photographs according to the three-color process, a camera having three divisions each provided with a lens having its proper color-screen, and with shutter mechanism, a sliding carriage carrying said camera, a base-board having guides for said carriage, springs whereby the camera is moved from one end of the base-board to the other when its movement is permitted, a rod extending along said base-board and provided with air-ball or other mechanism whereby it can be vibrated through a small angle, and means whereby such vibration will cause the operation of each shutter as it is brought to the position from which the exposure is made and whereby the camera is moved to bring each of the lenses into position for exposure in turn, substantially as set forth.

3. In means for taking photographs according to the three-color process, a camera having three divisions each provided with a lens having its proper color-screen, and with shutter mechanism, a sliding carriage carrying said camera, a base-board having guides for said carriages, springs whereby the camera is moved from one end of the base-board to the other when its movement is permitted, a rod extending along said base-board and provided with air-ball or other mechanism whereby it can be varied through a small angle, a projection upon said rod which causes the shutter of the lens when it is in position for exposure to move to the exposing position, a sliding piece whereby on further operation of the air-ball a further vibration of the rod is permitted, a projection which will then release the shutter thus allowing it to close again, and a projection which is disengaged from a catch on the camera so as to permit the camera to move under the influence of the springs to bring the next lens into position for exposure, said projection then stopping it at that position, substantially as set forth.

4. In means for taking photographs according to the three-color process, a camera having three divisions each provided with a lens having its proper color-screen and with shutter mechanism, a sliding carriage carrying said camera, a base-board having guides for said carriage, springs whereby the camera is moved from one end of the base-board to the other when its movement is permitted, a rod extending along said base-board and provided with air-ball or other mechanism whereby it can be vibrated through a small angle, a projection upon said rod which causes the shutter of the lens which is in position for exposure to move to the exposing position, a spring-rod which stops each shutter at that position to allow for time exposure, a sliding portion by which a further vibration of the rod is

permitted when the air-ball is again operated, a projection which releases the spring-rod on such further vibration to permit the shutter to close and a projection which is disengaged from a catch on the camera so as to permit the camera to move under the influence of its springs to bring the next lens into position for exposure, said projection stopping it at that position substantially as set forth.

653,381. BALL-CASTER. WILLIAM P. FINK, Caperton, W. Va. Filed Mar. 6, 1900. Serial No. 7,584. (No model.)



Claim.—1. A ball-bearing caster comprising a body, detachable lugs mounted on the body and having bearings, rollers having journals arranged in the bearings, a large ball fitting against the rollers, a cage spaced from the rollers and from the large ball and interlocked with the lugs, and fastening devices retaining the cage in engagement with the lugs, substantially as described.

2. A ball-bearing caster comprising a body, a plate pivoted to the body, lugs arranged at the lower face of the body and provided with bearings, rollers journaled in the bearings, a large ball, and a depending cage provided with upper and lower rings and having braces 10 and 10ª connecting the rings, the upper ends of the braces 10 fitting in sockets of the adjacent lugs, and the other braces 10ª being provided with eyes and secured to the lug by fastening devices passing through the eyes, substantially as described.

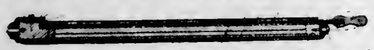
653,382. VALVE FOR BOTTLES CONTAINING GASES OR LIQUIDS, &c. HEINRICH L. FUGE, Hanover, Germany. Filed Sept. 18, 1899. Serial No. 730,900. (No model.)



Claim.—1. In combination, the casing, a valve-body, having an annular flange with a portion of the body projecting above and below the flange, a packing-ring arranged above the flange and around the upwardly-extending portion of the body, yielding means engaging the under side of the flange and surrounding the lower portion of the body and a stem independent of the valve-body and bearing thereon, said packing engaging a seat in the casing above the annular flange substantially as described.

2. In combination, the casing, the valve having the shoulder *b'* and packing above and below the said shoulder and between the same and bearing-surfaces on the casing, substantially as described.

653,383. APPARATUS FOR MAKING RADIOGRAPHS. ELMER GATES, Chevy Chase, Md., assignor to Theodore J. Mayer, Washington, D. C. Filed Sept. 26, 1898. Serial No. 691,909. (No model.)



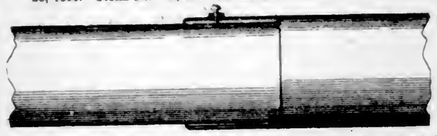
Claim.—1. A plate-holder for a sensitive surface comprising a removable slide made wholly or in part of a material that is impervious or nearly so to X-rays.

2. A plate-holder for a sensitive surface, comprising a slide made in whole or in part of material which is impervious, or nearly impervious, to X-rays, and a guard or protector in front of the slide adapted to prevent contact of the slide with the object to be represented on the sensitive surface, substantially as set forth.

3. A plate-holder for a sensitive surface comprising, in combination, a guard that is pervious to X-rays but impervious to light-rays, and a slide which is impervious to X-rays.

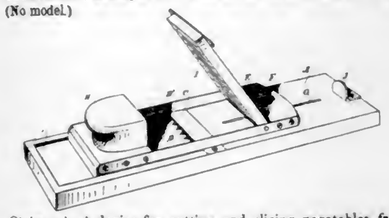
4. A plate-holder for use with an X-ray apparatus comprising, in combination, a plate sensitive to such rays, a slide impervious thereto, and a guard that is impervious to light-rays but pervious to X-rays.

653,384. STOVEPIPE. SAMUEL GROVE, Altoona, Pa. Filed Dec. 23, 1899. Serial No. 741,432. (No model.)



Claim.—The combination with a stovepipe-section formed with an inwardly-extending annular recessed flange, and a housing or pocket: of a second section fitting within the first-named section and having an outwardly-flared flange, and a series of indentations; a nut secured in the housing or pocket; and a set-screw extending through the housing and nut.

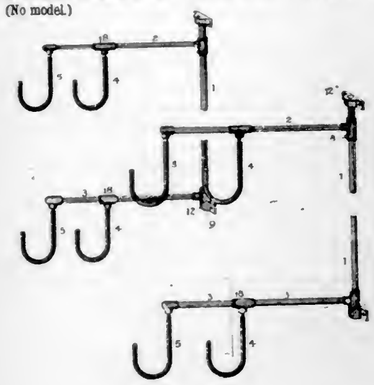
653,385. POTATO-CUTTER. JOHN E. HOWELL and WILLIAM A CHAMBERLAIN, Montague, Cal. Filed Sept. 5, 1899. Serial No. 729,456. (No model.)



Claim.—1. A device for cutting and slicing vegetables, fruits, &c., including a table or support having surfaces at different elevations and one of said surfaces provided with a longitudinally-extending slot, vertical and horizontal knives or cutters secured to said surfaces, a slide including end heads and connecting sides forming an open center adapted to receive the article to be operated upon, a bolt passing through one of said heads and the said slot, and a cover confined between said heads and sides and hinged at one end whereby it may be closed upon said article.

2. A device for cutting and slicing vegetables, fruits, &c., comprising a table or support provided with knives or cutters and a longitudinally-extending slot, a horizontal frame having means engaging said slot whereby it is guided, said frame including end heads and connecting sides forming an opening for the article to be operated upon, one of said heads having a block or abutment to close up against the knives and to serve as a handpiece for operating the frame, a stop on the table or support against which the sliding frame strikes to limit its movement, and a cover occupying the opening between the heads and sides of the sliding frame and pivoted at one end to said sides whereby its free end may engage the said article.

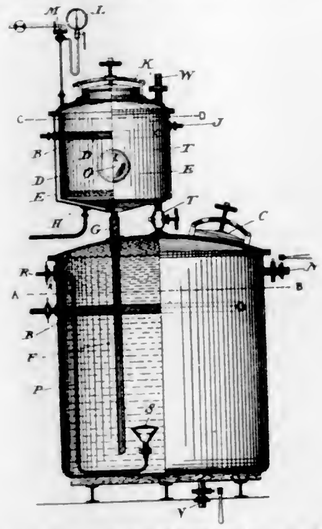
653,386. BICYCLE-CARRIER FOR STREET CARS. ANDREW HUNTER, San Francisco, Cal. Filed June 23, 1899. Serial No. 721,669. (No model.)



Claim.—1. A bicycle-carrier comprising the fixed upright rods, a pair of bracket-arms on each rod, consisting of an upper and a lower arm disposed one above the other and pivotally connected to swing into extended and folded positions, each arm being adjustable on its rod to vary the vertical distance between the two arms, and a pair of hook-shaped hangers on each arm, those on the upper arm being directly above those on the lower arm, substantially as described for operation as set forth.

2. In a bicycle-carrier the combination of the upright rod stationary as to position, the block 14 fitted to swing in a horizontal plane on the rod, and also movable vertically thereon, said block having a curved recess in the top, the stirrup-piece 15, the bolts 16, 17 and the arm 2 pivotally attached to the stirrup by the bolt 17 on which it is adapted to swing in a vertical arc into extended and folded position.

653,387. APPARATUS FOR TOP FERMENTATION OF BEERS NOT IN VACUO. ANTHONY D. W. KING, London, England, assignor of one-half to James Henry Howell, Bristol, England. Filed Dec. 5, 1899. Serial No. 739,292. (No model.)

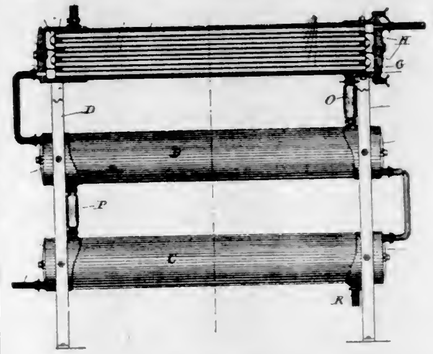


Claim.—1. In combination in an apparatus for the top fermentation of beer not *in vacuo*, and storing the yeast produced, an air-light vessel A, a beer-inlet pipe leading thereto, an air-tight vessel arranged above the vessel A, a pipe leading from the top of the vessel A up into the other vessel having its discharge end located in the upper part of the same, a pipe leading from the bottom of the upper vessel through the lower vessel having its discharge end near the bottom of the latter, valves in said pipes, an air-pipe discharging into the bottom part of the tank A, a discharge-pipe leading from the bottom of the tank A, a valve controlling the latter, and a pipe leading from the top of the upper chamber, substantially as described.

2. In combination in an apparatus for the top fermentation of beer not *in vacuo*, and storing the yeast produced, an air-tight vessel A, a beer-inlet pipe leading thereto, an air-tight vessel arranged above the vessel A, a pipe leading from the top of the vessel A up into the other vessel having its discharge end located in the upper part of the same, a pipe leading from the bottom of the upper vessel through the lower vessel having its discharge end near the bottom of the latter, valves in said pipes, an air-pipe discharging into the bottom part of the tank A, a discharge-pipe leading from the bottom of the tank A, a valve controlling the latter, and a pipe leading from the top of the upper chamber and an attemperator in each vessel, substantially as described.

653,388. CLOSED REFRIGERATOR. ANTHONY D. W. KING, London, England, assignor of one-half to James Henry Howell, Bristol, England. Filed Dec. 5, 1899. Serial No. 739,293. (No model.)

Claim.—A refrigerator apparatus for beer comprising a series of cylinders suitably supported, pipes connecting the cylinders leading through the sides of the same, independent pipes L connecting the cylinders leading through the heads of the same, flat tubes projecting from the sides of the cylinders in staggered relation, said tubes extending longitudinally of the same and terminating a distance from the cylinder-heads, heads supporting said tubes and forming a chamber at each end of the cylinder between the ends of the tubes and the main cylinder-heads and partitions dividing said chambers, said pipes L communicating with said chambers, the beer flowing outside of said tubes and the cooling medium inside, substantially as described



653,389. CARTRIDGE-CLIP. JAMES P. LEE, Hartford, Conn. Filed Aug. 8, 1899. Serial No. 726,536. (No model.)



Claim.—1. A cartridge-clip including two coöperative rigid members; and means operative on a longitudinal movement of one member relatively to the other for imparting an advancing cartridge-locking movement to one member.

2. A cartridge-clip comprising a clip-body or holding member; a cartridge-locking member; and means for imparting a forward cartridge-engaging movement to both ends of the locking member, simultaneously, on one longitudinal movement of one member relatively to the other, and for effecting the release of both ends of said locking member, simultaneously, on another longitudinal movement of said member.

3. A cartridge-clip embodying two substantially-rigid members disposed for longitudinal movement one relatively to the other to lock and release a row of cartridges; and means for advancing both ends of one member to engage the cartridges on one longitudinal movement of the members relatively, and for releasing both ends of said member from engagement with said cartridges on another longitudinal movement of said members.

4. The combination with a clip-body, of a cartridge-locker disposed for longitudinal movement with relation to said body; and means on the body and locker to coöperate and impart to the locker, bodily, a forward cartridge-engaging movement on the longitudinal movement of the body or locker relatively, and to positively hold both ends of said locker against retractive movement when in a cartridge-locking position.

5. A cartridge-clip including a substantially-rigid channeled body or holder; a locker loosely disposed in the channel of said body for bodily movements both longitudinally and transversely of said body; and means on the body and locker to impart a forward cartridge-engaging movement to both ends of said locker on a longitudinal movement of said body or locker one relatively to the other.

6. A cartridge-clip comprising a channeled clip-body having locker advancing and relieving portions at opposite ends; and a locker having cartridge-locking faces at opposite ends on the front face thereof and having locker-actuating projections near opposite ends on the rear face thereof, which latter projections coöperate with the clip-body to impart a forward cartridge-locking movement to opposite ends of said locker simultaneously on a longitudinal movement of the body or locker one relatively to the other.

7. In a cartridge-clip, a cartridge-locker having a locking projection at each end on the front face thereof, and also having a resilient actuating cam or projection at each end on the rear face thereof, substantially as and for the purpose described.

8. A cartridge-clip comprising a substantially-rigid channeled clip-body having a locker-advancing wall at the end thereof and also having a recess or relieving-space immediately adjoining said wall; a cartridge-locker having an actuating cam or projection on the rear face near the end thereof coöperating with the locker-advancing wall

of the clip-body for normally holding the locker in tight locked engagement with the cartridges and which projection is adapted on a longitudinal movement of said body or locker, one relatively to the other, for entering the recess in said body to release the locker from its locked engagement with said cartridge

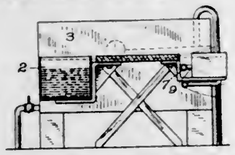
9. In a cartridge-clip a longitudinally-channeled clip-body, in combination with a rigid cartridge-locker loosely disposed in said channel; and means effective on a longitudinal movement of said body or locker, one relatively to the other, for imparting an advancing movement bodily to said locker to throw the same into tight locked engagement with the cartridges and for holding the same against retractive movement until another longitudinal movement of said body or locker, relatively.

10. The combination with a cartridge-clip body, of a non-flexible locker having cartridge-locking projections on the front face at opposite ends and having locker-actuating projections on the rear face at opposite ends, substantially as described and for the purpose set forth.

11. A cartridge-clip including two cooperative rigid members; means operative on longitudinal movements of one member relatively to the other for effecting forward and backward movements of one member bodily with relation to the other member; and means for limiting the longitudinal movement of one member relatively to the other and for preventing accidental displacement of said members relatively.

12. The combination of a clip-body having a recess near one end thereof, and a rigid cartridge-locker disposed for longitudinal and transverse, bodily, movements with relation to said body and having a forwardly-projecting locking-face and a rearward hook-like actuating projection at one or both ends thereof the latter of which is constructed to impart a forward cartridge-locking movement to the locker on a longitudinal movement of the locker or body, relatively, and is also adapted to engage over the edge of the wall of the recess in said body when said locker is released from said cartridges, whereby to limit the longitudinal movement of the locker and prevent accidental displacement thereof relatively to said body.

653,390. HAT-SIZING APPARATUS. JOHN MARSHALL, Fall River, Mass., assignor to James Marshall & Brothers, same place. Filed Oct. 10, 1899. Serial No. 733,161. (No model.)



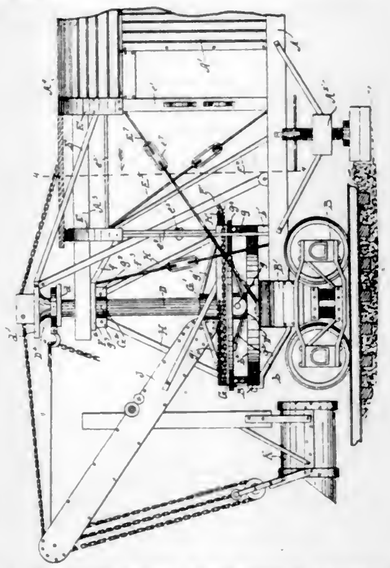
Claim.—1. In a hat-sizing apparatus having the usual sizing tanks and table, the combination of a water-reservoir, a water-supply pipe leading therein and provided with a valve, a float attached to said valve whereby a normal level of water is maintained in said reservoir, a service-pipe leading from said reservoir throughout the length of the sizing-table, small water-boxes suitably supported at proper locations throughout the length of said table and provided at their bottoms with outlets, and connections between said service-pipe and boxes whereby a normal level of water in said boxes is maintained from said reservoir, substantially as set forth.

2. In a hat-sizing apparatus comprising the usual sizing tanks and table, a series of small water-boxes suitably supported below the level of said table at predetermined locations throughout the length of such table, a waste-pipe, connections between the bottoms of said boxes and said pipe, a reservoir-tank, a pipe for supplying the water within said tank, means for automatically maintaining a certain level of the water in said tank, a service-pipe extending from said tank throughout the length of said table and in proximity to said water-boxes, and connections between said service-pipe and boxes, substantially as set forth.

3. In a hat-sizing apparatus having the usual sizing tanks and table, the combination of the reservoir-tank, means for automatically maintaining a certain level of water in said tank, the service-pipe extending from said tank below the level of said table and parallel therewith, the water-boxes suitably supported at certain intervals throughout the length of said table and having at their inner ends inclined perforated partitions, strainers over said perforations, connections between said service-pipe and the inner partitioned ends of said boxes, said boxes having outlets, a waste-pipe, and connections between said outlets and pipe, substantially as set forth.

653,391. STEAM-SHOVEL. WILLIAM MULLEN, Elizabethtown, Pa. Filed Oct. 25, 1899. Serial No. 734,720. (No model.)

Claim.—1. The combination, with a movable platform, of a turn table on the platform, a crane having the post thereof passing through the center of the turn-table, a revoluble sleeve on the post and located above the turn-table, and a brace on the side of said post opposite the jib of the crane and having one end secured to the revoluble sleeve and the other end secured to the turn-table, for the purpose specified.



2. The combination, with a movable platform, of a turn-table on the platform, a crane having the post thereof passing through the center of the turn-table, a revoluble sleeve on the post and located above the turn-table, and a brace passing between the longitudinal members of the jib of the crane and having one end secured to the revoluble sleeve and the other end secured to the turn-table, for the purpose specified.

3. The combination, with a movable platform, of a turn-table on the platform, a crane having the post thereof passing through the center of the turn-table, a revoluble sleeve on the post and located above the turn-table, and braces on opposite sides of said post and in line with the jib, said braces having the upper ends secured to the revoluble sleeve and the lower ends secured to the turn-table, for the purpose specified.

4. The combination, with a movable platform, of a turn-table on the platform, rollers under the turn-table, a crane having the post thereof passing through the center of the turn-table, a revoluble sleeve on the post and located above the turn-table, and braces on opposite sides of said post and in line with the jib, the upper end of each of said braces being secured to the revoluble sleeve and the lower end of each secured to the turn-table above one of said rollers, for the purpose specified.

5. The combination, with a movable platform, of a track-plate projecting beyond the edge of the platform, a bracket supporting the projecting portion of the track-plate, a turn-table on the track-plate, a crane having the post thereof passing through the center of the turn-table, a revoluble sleeve on the post and located above the turn-table, and a brace passing between the longitudinal members of the jib of the crane and having one end secured to the revoluble sleeve and the other end secured to the turn-table, for the purpose specified.

6. The combination, with a movable platform, of a track-plate projecting beyond the edge of the platform, a bracket supporting the projecting portion of the track-plate, a turn-table having rollers engaging the track of said plate, a crane having the post thereof passing through the center of the turn-table, a revoluble sleeve on the post and located above the turn-table, and braces on opposite sides of said post and in line with the jib, the upper end of each of said braces being secured to the revoluble sleeve and the lower end of each secured to the turn-table above one of said rollers, for the purpose specified.

7. The combination, with a movable platform, of a crane on said platform, an arch extending transversely of the platform and located behind the crane, a vertical post supporting one end of the arch, struts supporting the other end of said arch and so disposed as to permit the jib of the crane to swing under said other end of the arch, and braces connected with the arch and supporting the upper end of the post of the crane, for the purpose specified.

8. The combination, with a movable platform, of a crane on said platform, an arch extending transversely of the platform and located behind the crane, a vertical post supporting one end of the arch, struts connected with the ends of the arch, each of said struts extending transversely of the platform and having its lower end secured thereto, braces adapted to prevent transverse movement of the arch and so disposed as to permit the jib of the crane to be swung under the end of said arch unsupported by a post, and braces connected with the arch and supporting the upper end of the post of the crane, for the purpose specified.

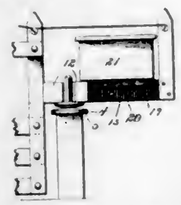
9. The combination, with a movable platform, of a crane on said platform, an arch extending transversely of the platform and located behind the crane, a vertical post supporting one end of the arch, struts supporting the other end of the arch and so disposed as to permit the jib of the crane to swing under said other end of the arch, a horizontal brace-beam supported on the arch and having connected therewith the upper end of the post of the crane, and diagonally-disposed braces connected with the arch and with the upper end of the post of the crane, for the purpose specified.

10. The combination, with a movable platform, of a crane on said platform, an arch extending transversely of the platform and located behind the crane, a vertical post supporting one end of the arch, struts supporting the other end of the arch, braces adapted to prevent movement of the arch, a horizontal brace-beam supported on the arch and engaged by the upper end of the post of the crane, braces extending from the upper end of the post rearwardly to the platform, and braces extending from the upper end of said post and connected with the arch, all said braces being so disposed as to permit the jib of the crane to swing under the end of the arch unsupported by a post, for the purpose specified.

11. The combination, with a movable platform, of a crane on said platform, an arch extending transversely of the platform and located behind the crane, a vertical post supporting one end of the arch, struts supporting the other end of the arch, a second arch parallel with and located behind the first arch, horizontal braces connecting the ends of the two arches, a horizontal brace-beam supported by both arches and having the upper end of the crane-post secured thereto, and braces extending from the upper end of the crane-post and connected with the first arch, all braces being so disposed as to permit the jib of the crane to swing under said end of the first arch unsupported by a post, for the purpose specified.

12. The combination, with a movable platform, of a crane on said platform, an arch extending transversely of the platform and located behind the crane, a vertical post supporting one end of the arch, struts supporting the other end of the arch, a second arch parallel with and located behind the first arch, horizontal braces connecting the ends of the two arches, a horizontal brace-beam supported by both arches and having the upper end of the crane-post secured thereto, braces connected with the second arch and extending to the platform, a brace connected with the top of the crane-post and extending to the second arch, diagonally-disposed braces connected with the upper end of the crane-post and with the first arch, and diagonally-disposed braces connected with the upper end of the crane-post and with said platform, all braces being so disposed as to permit the jib of the crane to swing under said end of the first arch unsupported by a post, for the purpose specified.

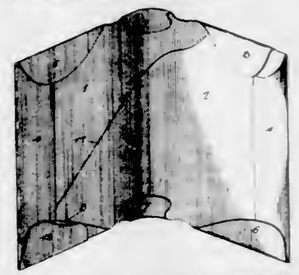
653,392. GATE. PETER MCCOLLUM, Fayette, Mo. Filed Nov. 4, 1899. Serial No. 735,784. (No model.)



Claim.—1. The combination with a post provided with a vertical socket; of a pivot-rod supported therein; a disk secured to the rod at about midway the length of the rod and having a convex upper surface; a gate having a laterally-extended weighted bar formed with a bearing for the upper end of the pivot-bolt; a disk formed with a convex surface secured to the under side of the weighted bar, and coacting with the disk on the pivot-bolt; and means for supporting and securing the free end of the gate.

2. The combination with a post; of a pivot-bolt seated in the upper end thereof, and provided intermediate its ends with a disk having a convex upper surface, a gate having a laterally-extended weighted bar formed with an opening to receive the upper end of the pivot-bolt, a disk secured to the under side of said weighted bar, said disk having a central opening registering with the opening in the bar and a convex under surface, and means for supporting the free end of the gate comprising depending loops projecting from a post.

653,393. BOOK-COVER. ELLSWORTH M. PAGE, Buffalo, N. Y., assignor of two-thirds to Robert L. Clark, Munnsville, N. Y. Filed Oct 20, 1899. Serial No. 734,250. (No model.)



Claim.—1. A book-cover of the character set forth, comprising in its complete make-up two duplicate triangular sections which have their meeting edges joined and the joint extended diagonally across the central connecting portion of the back of the book to which the cover is applied.

2. A book-cover comprising separate sections having diagonal edges adapted to be joined and also provided with flaps and tongues on different sides which are reversely arranged in the opposite sections, the diagonal joint of the said sections extending across the central connecting portion of the back of the book to which the cover is applied.

3. A book-cover of the character set forth, comprising separate sections of duplicate contour adapted to be joined on a diagonal line across the back of the book to which they are applied and having intermediate tongues for engagement with the hinge portion of the book, recesses extending inwardly on opposite sides of the intermediate tongues and having the adjacent edges of outer and inner tongues gradually merging thereinto.

4. A blank for a section of a temporary book-cover having a substantially-triangular form and provided with an outer side flap, outer intermediate and inner tongues on one edge and a closing-flap on the opposite edge, the edge between the inner tongue and the said closing-flap being in a diagonal plane.

653,394. HORSE-DETACHER. JESSE L. PANGLE, Athol, Idaho. Filed Mar. 16, 1900. Serial No. 8,946. (No model.)



Claim.—In a detacher the combination, with a cross-pin; of a box within the upper surface thereof; a slotted hub; a pin swiveled thereto at the bottom and projecting into the box and cross-pin, said box serving as a bearing for the hub; a stud swiveled to the hub; a brace extending over and secured to the stud; a screw engaging said brace and the lower pin and retaining the same in position; a tree revoluble within the hub; hooks at the ends thereof; and a lever secured to the tree and projecting through the slot.

653,395. HEEL FOR BOOTS OR SHOES. FLOYD J. PARKER, Rochester, N. Y. Filed Jan. 29, 1900. Serial No. 3,214. (No model.)



Claim.—1. In a heel for boots and shoes, a body or section fixed on the boot or shoe and comprising an upper layer of leather, a metallic frame of less size than the leather layer connected to the under side of said layer, and a strip of leather arranged below and con-

nected to the leather layer and covering the sides and rear portion of the metallic frame, a removable section comprising a tap layer of suitable material, and a metallic plate connected to said tap layer, and means for detachably connecting the metallic plate of the removable section and the metallic frame of the body or fixed section, substantially as specified.

2. In a heel for boots and shoes, a body or section fixed on the boot or shoe and comprising an upper layer of leather, a metallic frame of less size than the leather layer connected to the under side of said layer and having a curved portion provided in its inner side with a groove, and a curved strip of leather arranged below and connected to the leather layer and covering the curved portion of the metallic frame, a removable section comprising a tap layer of suitable material, and a metallic plate connected to said tap layer and having a flange adapted to enter the groove in the metallic frame of the body, and suitable means for holding the removable section against casual movement with respect to the body, substantially as specified.

3. In a heel for boots and shoes, a body or section fixed on the boot or shoe and comprising a metallic frame having a curved portion provided in its inner side with a groove, and also having an aperture in its forward portion and a recess in its under side in communication with said aperture, a removable section comprising a tap layer of suitable material, and a metallic frame or plate having an aperture adapted to coincide with that of the metallic frame of the body, and a flange adapted to enter the groove in the metallic frame of the body, and a fastener comprising a cylindrical portion adapted to normally rest in the apertures in the frames of the sections, and a lateral projection adapted to normally rest in the recess of the frame of the body or fixed section, substantially as specified.

653,396. CRATE FOR TILTING DEMIJOHNS. GEORGE W. PECK, Roselle, N. J., executor of George W. Banker, deceased. Filed Mar. 1, 1900. Serial No. 7,038. (No model.)



Claim.—1. In an apparatus of the class stated, the combination of a crate inclosing the vessel, a frame provided with standards, trunnions at the upper ends of the standards respectively which support the crate and upon which it may tilt, trunnion-guards on the outside of the standards formed of flat pieces of metal pivoted to the standards at the upper side of the trunnions when the parts are in position for transportation, for the purposes set forth.

2. In an apparatus of the class stated, the combination of a crate inclosing the vessel, a frame provided with standards, trunnions at the upper ends of the standards respectively which support the crate and upon which it may tilt, trunnion-guards on the outside of the standards and resting against their outer surfaces, formed of flat pieces of metal pivoted to the standards adjacent to the trunnions, and recesses beneath the trunnion-guards in which the head or nut of the trunnion may be received, for the purposes set forth.

3. In an apparatus of the class stated, the combination of a crate inclosing the vessel, a frame provided with standards, trunnions at the upper ends of the standards respectively which support the crate and upon which it may tilt, trunnion-guards on the outside of the standards and resting against their outer surfaces, formed of flat pieces of metal pivoted to the standards adjacent to the trunnions, and recesses beneath the guards sufficiently large to receive the head or nut of the trunnions and to afford finger-space whereby they may be manipulated, for the purposes set forth.

653,397. COUPLING. JOHN W. PETTIJOHN, Montesano, Wash., assignor of one-half to William H. Bush, same place. Filed Nov. 13, 1899. Serial No. 736,826. (No model.)



Claim.—1. A coupling comprising an element having a recess in one side and opening through the end thereof, and a passage formed transversely and opening into the recess, the ends of the passage having continuous walls, and a second element comprising a stem and a head, the head being adapted to enter the recess and to be turned to lie in the passage with the stem projecting outwardly of the passage through the end of the first-named element.

2. A coupling comprising an element adapted for attachment to an article to be coupled and having a recess in one face and opening through its end, a passage through the element opening into the recess, the ends of the passage having continuous walls, and a second element comprising a stem having an enlarged base provided with a passage for the attachment of an article to be coupled and having a head, said head being adapted to enter the recess of the first element and to be turned therein to lie in the passage thereof, the stem being adapted to lie in the recess and to project outwardly thereof through the end of the first element.

3. A coupling comprising a block having intersecting passages, one of which extends through an end of the block, a follower disposed in the second passage, a spring for the follower, and a second element comprising a stem and a head, the head being adapted to enter one of the passages against the tendency of the follower and its spring, and to be turned to lie in the second passage and with its stem projecting outwardly through the end of the block.

4. A coupling comprising an element having a recess in one side and opening through the end thereof, a perforation in the element at the opposite end of the recess, a passage formed transversely and opening into the recess, the ends of the passage having continuous walls, a follower in the passage, a spring seated in the perforation and engaging the follower, and a second element comprising a stem and a head, the head being adapted to enter the recess and to be turned to lie in the passage with the stem projecting outwardly of the passage through the end of the first-named element.

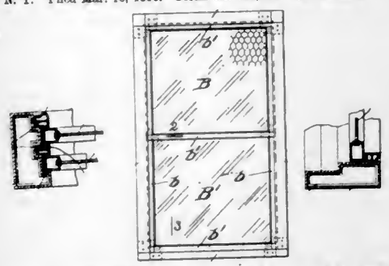
653,398. KNIT FABRIC. JOHN G. POWELL, Philadelphia, Pa., assignor of one-half to Edward Powell, same place. Filed Nov. 24, 1899. Serial No. 738,123. (No specimens.)



Claim.—1. In a stocking, the combination of a foot portion, comprising two independently-knit webs, united by intertwined yarns, and a leg portion of single, continuous, tubular-knit web, substantially as set forth.

2. In a stocking, the combination of a foot portion, comprising two independently-knit webs having a pair of their proximate edges united by intertwined yarns, and having the other pair of said edges united by interknit loops, and a leg portion of single, continuous, tubular-knit web, substantially as set forth.

653,399. SASH AND SASH-FRAME. JOHN W. RAPP, New York, N. Y. Filed Mar. 10, 1899. Serial No. 708,526. (No model.)



Claim.—1. The combination with a sash-frame, of the metallic top and bottom pieces, the metallic side pieces each formed in a single piece, said top, bottom, and side pieces being formed from tubing and each drawn through a die to give it the requisite shape in cross-section, and elbows serving as couplings for the top and side pieces and bottom and side pieces, substantially as described.

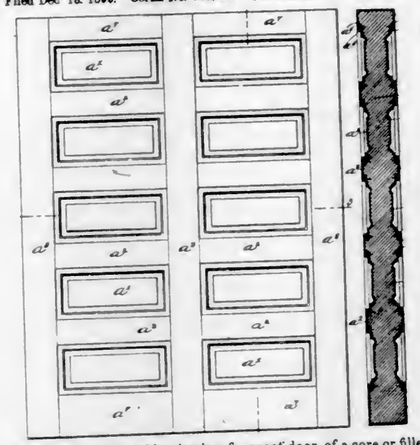
2. The combination in a sash-frame, of the metallic top and bottom pieces, the metallic side pieces each formed in a single piece, beads secured to the side pieces for forming sash-slides, elbows serving as couplings for the top and side pieces and bottom and side pieces, and sashes sliding in the slides of said frame, substantially as described.

3. The combination in a sash-frame of the metallic top, bottom,

and side pieces, and metallic elbows for connecting together said top, bottom, and side pieces, said elbows being provided with shoulders against which the ends of the parts connected thereby abut.

4. The combination of a sash-frame, and sashes located therein, each of said sashes comprising metallic side pieces and top and bottom rails, and metallic elbows connecting said side pieces and top and bottom rails, said elbows being provided with shoulders against which the ends of the parts connected thereby abut.

653,400. FIREPROOF DOOR. JOHN W. RAPP, New York, N. Y. Filed Dec 18, 1899. Serial No. 740,656. (No model.)



Claim.—1. The combination in a fireproof door, of a core or filler and a metallic covering therefor, said covering comprising front and back panels and connecting-rails, and top and bottom rails and stiles for fitting over the edges of the core or filler.

2. The combination in a fireproof door, of a core or filler and a metallic covering therefor, said covering comprising front and back panels, each having marginal lips, connecting-rails, having marginal lips which engage with the marginal lips of the panels, and top and bottom rails and stiles fitting over the edges of the core or filler and connected with adjacent panels and connecting-rails.

3. The combination in a fireproof door, of a core or filler and a metallic covering therefor, said covering comprising front and back panels, each having marginal lips, connecting-rails having marginal lips which engage with the marginal lips of the panels, and top and bottom rails and stiles fitting over the edges of the core or filler, said top and bottom rails and stiles being each provided with marginal lips which engage with the lips of adjacent panels and connecting-rails.

653,401. STOVE-LID LIFTER. ISAAC RADSOE, Black River Falls, Wis. Filed Jan. 13, 1900. Serial No. 1,342. (No model.)

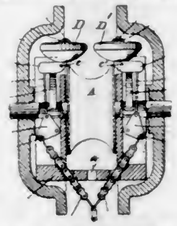


Claim.—1. The combination with a stove-lid lifter, of a sliding clamp arranged thereon, formed from a single piece of wire bent to form oppositely-disposed loops which embrace the edges of the lifter, and having its ends bent forward to form curved clamping-fingers adapted to engage the flange or rim of the article to be lifted.

2. The combination with a stove-lid lifter formed on its rear surface with projecting lugs; of a sliding wire clamp bent to form oppositely-disposed loops adapted to embrace the lifter and to contact with said lugs, and having its ends bent or curved forward to form clamping-fingers.

653,402. SAFETY-TROLLEY. JOHN W. RICHMOND, Fishkill-on-the-Hudson, N.Y. Filed Mar. 28, 1900. Serial No. 10,443. (No model.)

Claim.—1. In a trolley device of the character herein set forth, the combination with the main pulley and the flanged wheels of the two safety-pulleys axled upon the hinged bars, the latter being connected with branches of the trolley-line and being supported by a frame extending up on each side of the main pulley and within the flanged wheels, substantially as shown and described.



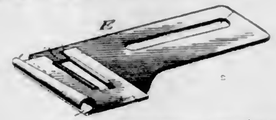
2. In a trolley device of the character herein set forth, the combination with the main pulley and its axle, of the frame, the safety-pulleys axled upon the hinged bars, coupling-rods, hinged plates, springs bearing against the bars, and branches of the trolley-line connected with the hinged plates, substantially as and for the purposes set forth.

3. In a trolley device of the character herein set forth, the combination with the main and safety pulleys and frame sustaining the latter, of the flanged wheels mounted upon the axle of the main pulley, substantially as shown and for the purposes set forth.

4. In a trolley device of the character herein set forth, the combination with the frame secured upon the trolley-pole head, of the safety-pulleys, means for operating said pulleys, and the exterior flanged wheels, the said frame being supplied with inner face-plates to protect the operating devices, substantially as shown and for the purposes set forth.

5. In a trolley device, the combination as before set forth, of the main pulley and axle, the two safety-pulleys and means for operating the same, the frame, the flanged wheels, and a trolley-pole head on which the frame is coupled, substantially as shown and for the purposes set forth.

653,403. CORDING ATTACHMENT. GEORGIANA ROBINSON, Orange, N. J., assignor to Alexander Cristadoro, New York, N. Y. Filed July 20, 1899. Serial No. 724,524. (No model.)



Claim.—1. In a cording attachment, a base-plate provided with a tapering tubular guide located upon its upper face and within the edge thereof and having a longitudinal edge at its lower portion extending parallel with and above the edge of the base-plate; substantially as specified.

2. In a sewing-machine, the combination of a cording attachment comprising a base-plate having on its upper face a tubular guide provided with a longitudinal slot, stitch-forming mechanism including a needle located immediately adjacent to the delivery end of said slot, and a presser-foot disposed substantially parallel to the delivery end of said slot; substantially as specified.

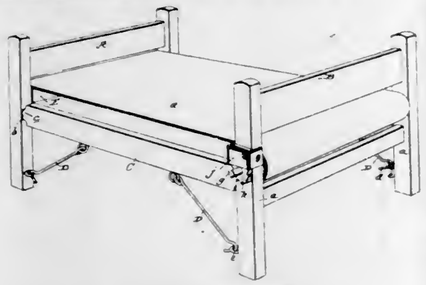
3. In a sewing-machine, the combination of a cording attachment comprising a base plate having on its upper face a tubular guide provided with a longitudinal slot, stitch-forming mechanism including a needle and feeding means located immediately adjacent the delivery end of said slot, and a presser-foot located at one side of said needle and having a face disposed at an angle to the direction of feed from said needle; substantially as specified.

4. A cording attachment for sewing-machines comprising a base-plate having one of its edges curved back upon itself to form a tapering tubular guide within the edge of the base-plate and having a longitudinal edge parallel with and above the bent edge of said base-plate; substantially as specified.

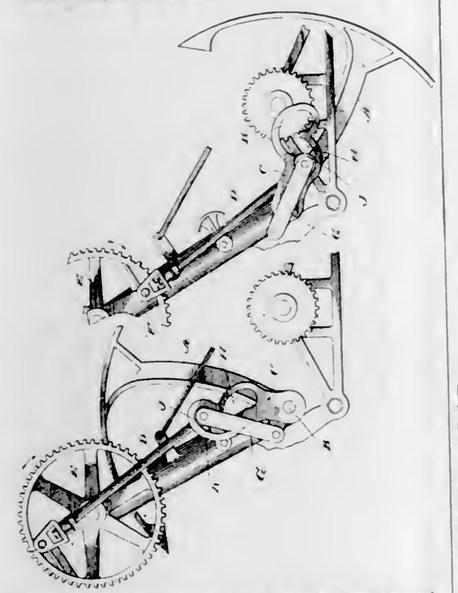
653,404. PORTABLE BED. JACOB SKITTERS and ROBERT B. MCDONALD, McMinnville, Oreg. Filed Dec. 4, 1899. Serial No. 739,146. (No model.)

Claim.—The herein-described portable and knockdown bed comprising the headboard having the cross-bar E, and also having the shallow sockets *b* in the inner sides of its posts below the bar E, and the keepers *c* below the sockets, the footboard having the shallow

sockets *b* in the inner sides of its posts at an intermediate point of its height, and also having the keepers *c* below said sockets, the side rails having reduced ends *c* arranged in the sockets *b* of the head and foot boards whereby said boards are enabled to rock on the side rails, the brace-rods loosely connected to the side rails and having hooks adapted to engage the keepers on the head and foot boards, the roller journaled in the footboard above the sockets therein and provided with a ratchet and an angular portion for the engagement of a wrench, a pawl connected to the footboard and arranged to engage the ratchet, and a flexible bed-bottom disposed above the side rails and connected to the bar E and the roller and adapted to be wound upon the latter, substantially as and for the purpose set forth.



653,405. NEEDLE-OPERATING MECHANISM FOR GRAIN-BINDERS. HERBERT B. SPERRY, Springfield, Ohio. Filed Dec. 14, 1899. Serial No. 740,236. (No model.)



Claim.—1. In a grain-binder, a needle-shaft and needle, a crank-arm connected to said shaft, a pitman connected at one end to said crank-arm, an operating-gear to which the other end of said pitman is connected, and means for automatically moving the crank-arm connection of said pitman along said crank-arm to vary the leverage of said pitman upon said crank-arm in approximately-reciprocal proportion to the variation of power exerted by said gear upon said pitman, as and for the purpose set forth.

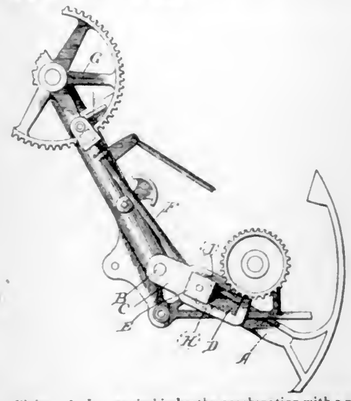
2. In a grain-binder, a needle-shaft and needle, a crank-arm mounted on said shaft, an operating-gear, a pitman connected at one end to said operating-gear and at the other end connected to said crank-arm, and means for moving the crank-arm connection of said pitman along the crank-arm to vary the leverage exerted by said pitman approximately in reciprocal proportion to the variation in power exerted by said drive-gear upon said pitman, as and for the purpose set forth

3. In a grain-binder, a needle-shaft and needle, a crank-arm connected to said shaft, said crank-arm provided with a curved slot, a pitman engaging in said curved slot, an operating-gear for said pitman, and a rod connected to the framework and to said pitman for moving the crank-arm connection of said pitman along the slot in said crank-arm, to vary the leverage exerted by the pitman upon the crank-arm in approximately-reciprocal proportion to the variation in power exerted by said operating-gear, as and for the purpose set forth.

4. In a grain-binder, a needle-shaft and needle, a crank-arm connected to said shaft and provided with a slot, said slot having a reversely-curved portion, a pitman engaging in said slot, an operating-gear for said pitman, and a rod connected to the framework and to said pitman for moving the crank-arm connection of said pitman along the slot in said crank-arm, to vary the leverage exerted by the pitman upon the crank-arm in approximately-reciprocal proportion to the variation in power exerted by said operating-gear, as and for the purpose set forth.

5. In a grain-binder, a needle-shaft and needle, a crank-arm connected to said shaft and provided with a curved slot, a pitman carrying a projection arranged to extend into said slot, an operating gear-wheel to which said pitman is eccentrically connected, and a rod connected at one end to the framework and at the other end to the projection carried by the pitman, for moving said projection along said slot to vary the leverage exerted by the pitman upon said crank-arm in approximately-reciprocal proportion to the variation in power exerted by said drive-gear, as and for the purpose set forth.

653,406. NEEDLE-OPERATING MECHANISM FOR GRAIN-BINDERS. HERBERT B. SPERRY, Springfield, Ohio. Filed Dec. 14, 1899. Serial No. 740,237. (No model.)



Claim.—1. In a grain-binder the combination with a needle-shaft having a crank-arm connected thereto and a sliding block mounted thereon, of a pitman pivotally connected to said block, gearing connecting said block and crank-arm to effect relative movement thereof and means for actuating said pitman, as and for the purpose set forth.

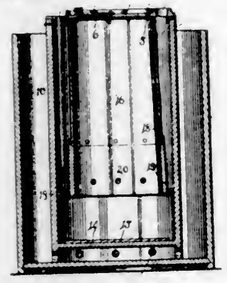
2. In a grain-binder, a needle-shaft having a crank-arm, said crank-arm provided with a rack, in combination with a pitman having a movable connection with said crank-arm and provided with gearing arranged to engage the rack on said crank-arm, whereby said pitman exerts its force upon said crank-arm with an increasing leverage, and means for actuating said pitman, as and for the purpose set forth.

3. In a grain-binder, a needle-shaft having a slotted crank-arm, said crank-arm provided with a rack, in combination with a block mounted to slide in said slot, a pitman provided with gear-teeth and pivotally connected to said block, and means for actuating said pitman, as and for the purpose set forth.

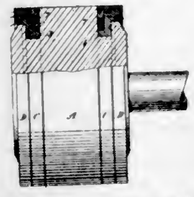
653,407. FEED-COOKER AND TANK-HEATER. THOMAS L. STOCUM and FRANK W. LAMBERT, Davenport, Nebr.; said Lambert assignor to McConnell S. Gray, same place. Filed Mar. 6, 1899. Serial No. 707,955. (No model.)

Claim.—1. In a feed-cooker, a casing having a top provided with an opening for a lid, a bottom forming the bed of the fire-box, and a downwardly-flared magazine formed of two sections, the lower section being provided with ports; a depending tube terminating on a line with the ports of the magazine and connected with an orifice in the top of said casing, substantially as described.

2. In a feed-cooker, a casing having a top provided with an opening for a lid; a downwardly-flared magazine having in its lower section a series of ports, a depending tube terminating near the bottom of the magazine and connected with an orifice in the top of said casing, substantially as described.



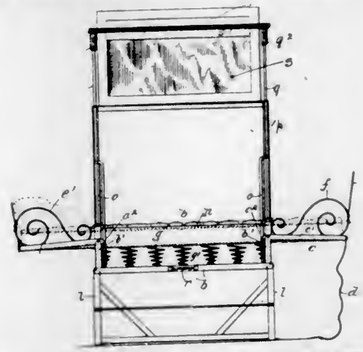
658,408. PACKING FOR PISTONS. AMBROSE A. TRIPOLD, New York, N. Y., assignor to the Ambrose Machine Company, same place. Filed Apr. 2, 1900. Serial No. 11,096. (No model.)



Claim.—1. A piston-packing comprising a ring D provided with an outer flange 1 having a bearing-surface 6 and an inner flange 8 and intermediate depression 9 and a ring C substantially L-shaped in cross-section rested partly on the flange 8 and partly on the depression 9 of the ring D and having a bearing-surface 4, the bearing-surface 6 of the ring D and the bearing-surface 4 of the ring C being of substantially-equal extents, whereby equalization of pressure is effected.

2. A packing for steam and other pistons formed of two split expansive rings C and D, the ring D having the flanges 8 and 1, and intermediate depression 9, the flange 8 and the depression 9 being within the ring C, the bearing-surface of the said two rings being of substantially-equal extent, whereby equalization of the pressure is effected.

658,409. FOLDING BED. LEVI N. BACHAND, Chicago, Ill., assignor of one-half to William J. Garvy, same place. Filed Dec. 22, 1896. Renewed Feb. 23, 1900. Serial No. 6,297. (No model.)



Claim.—1. In a folding bed, the combination of a rotatably-mounted bed-body formed in three sections, the end sections being adapted to be folded substantially at right angles to the middle section, with means for securing said sections in this angular adjustment, and rotatably-supported head and foot pieces *e f* adapted to secure the bedding in position conforming to the position of the folded sections, substantially as and for the purpose described.

2. In a folding bed, the combination of a bed-body formed in three sections adapted to be folded substantially at right angles to each other, means for securing said sections in this angular adjustment, and a base-frame with supporting-links *k* rotatably secured to said base-frame and bed-body, arms *o o* secured to said bed-body, a vertical frame provided with guideways, a canopy provided with extension-rods which are adapted to be engaged by said arms *o o* and to travel within said guideways, substantially as and for the purpose described.

3. In a folding bed, the combination with vertical guides, of vertically-movable extension rods or portions *q' q'* adapted to be guided in their travel by said guides, a canopy rigidly secured to said extension-rods, a bed, a mounting therefor adapted to permit the bed to swing in a vertical plane, the frame of the bed having engagement with the extension-rods *q' q'* whereby as the bed is raised and lowered the canopy is lowered and raised, substantially as described.

4. In a folding bed, the combination with vertically-movable extension-rods *q' q'*, a canopy rigidly secured thereto, vertical guides adapted to guide the extension-rods in their travel, a bed having a mounting which permits the bed to swing in a vertical plane, arms *o o* rigidly secured to the bed and engaging the extension-rods *q' q'* whereby as the bed is raised and lowered the canopy is lowered and raised, substantially as described.

5. In a folding bed, the combination with vertically-movable extension-rods *q' q'*, a canopy supported thereby, vertical guides adapted to direct the extension-rods in their travel, a bed, a mounting therefor permitting the bed to swing in a vertical plane, arms *o o* rigidly secured to the bed having separable engagement with the extension-rods and also being engaged and directed in their movement by said guides, and means for limiting the canopy in its downward travel as the bed is being swung into its folded position, the arms *o o* thereupon being disengaged from the extension-rods during the rest of the movement of the bed, substantially as described.

6. In a folding bed, the combination with a bed-body formed in a middle and two end sections, the end sections being adapted to be folded substantially at right angles to the middle section, of means for securing said sections in this angular adjustment, and swinging head and foot pieces adapted to secure the bedding in a position conforming to the position of the folded sections, substantially as and for the purpose specified.

7. In a folding bed, the combination with a bed-body divided in its length into three sections, the end sections being adapted to be folded substantially at right angles to the middle section, means for securing the sections in this angular adjustment, a vertical frame between the end sections and contiguous to the middle section, the bed having a mounting at its central portion which permits it to be swung in a vertical plane to a position in front of the vertical frame, either end of the bed being thus adapted to be used as the head when unfolded, substantially as described.

8. In a folding bed, the combination with a bed-body, of supports *k* and *l*, the supports *k* being linked at their upper ends to the frame of the bed and pivotally mounted at their lower ends, while the supports *l* are linked at their upper ends to the bed-frame, links *m* uniting supports *l* with supports *k*, and a vertical frame *p* against which the bed-body is adapted to rest when the bed is unfolded, the supports *k* inclining toward the vertical frame when the bed is unfolded, the latter supports in their movement being adapted to thrust the supports *l* outwardly through the medium of the links *m* when the bed is lowered and to draw said supports *l* close to the bed when it is elevated, substantially as described.

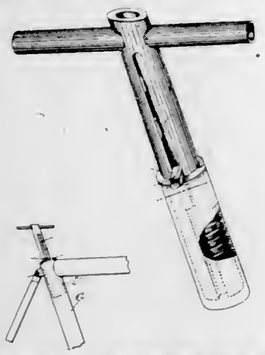
9. In a folding bed, the combination with a bed-body, of supports *k* and *l*, the supports *k* being linked at their upper ends to the frame of the bed and pivotally mounted at their lower ends, while the supports *l* are linked at their upper ends to the bed-frame, links *m* uniting supports *l* with supports *k*, a vertical frame *p* against which the bed-body is adapted to rest when the bed is unfolded, the supports *k* inclining toward the vertical frame when the bed is unfolded, the latter supports in their movement being adapted to thrust the supports *l* outwardly through the medium of the links *m* when the bed is lowered and to draw said supports *l* close to the bed when it is elevated, and an attachment to the bed having sliding engagement with the vertical frame, substantially as described.

10. In a folding bed, the combination with a rotatably-mounted bed-body, of a vertically-movable canopy, guiding means for directing the travel of said canopy in a vertical direction, said bed having separable engagement with said canopy, and means for effecting the separation of the bed-body and canopy for limiting the canopy in its downward movement as the bed is being swung to a folded position, substantially as described.

11. In a folding bed, the combination with vertical guides, of vertically-movable extension rods or portions adapted to be guided in their travel by said guides, a dresser top or canopy secured to said extension-rods, a bed, a mounting therefor adapted to permit the bed to swing in a vertical plane, the frame of the bed having engagement

with the extension-rods, whereby as the bed is raised and lowered, the dresser top or canopy is lowered and raised, substantially as described.

653,410. BICYCLE SEAT-POST. JAMES H. CASH, Toronto, Canada, assignor to James Brewer Rittenhouse, same place. Filed Aug. 24, 1899. Serial No. 728,299. (No model.)



Claim.—In an adjustable but non-moving tubular seat-post for bicycles the combination of the tubular post, longitudinal dovetailed groove therein, lower threaded integral portion of said post, the internally-threaded, and rigidly-held sleeve, the key, having the dovetailed portion *e* thereof movably held in the said dovetailed groove and the tapered rectangular side *a* of said key designed to engage with the locking-slot in said sleeve when the post is adjusted, and thus lock said post in position, substantially as set forth and for the purpose specified.

653,411. PROCESS OF MAKING TOBACCO-BROWN WRAPPING-PAPER. JOHN CRAWFORD, Canaan Four Corners, N. Y., assignor to Frederick C. Bostwick, same place. Filed Apr. 18, 1900. Serial No. 13,287. (No specimens.)

Claim.—The process of producing tobacco-brown wrapping-paper described, the same consisting in subjecting, separately straw of grain and tobacco-stems, in proportions, by weight as described, to the actions of separate cookings with unslaked lime in proportion and for respectively different lengths of time and thoroughly cleansing these differently-cooked products mixing these products and beating the mixed products to a pulpy condition, then incorporating with the pulp charge catechu coloring solution described, and following the same by copperas and blue-vitriol solutions and tobacco-dust, each separately as described and subjecting the now-completed pulp charge to further beating, as described, and then thoroughly washing and cleansing the now-colored pulp product and spreading the same into a web to form paper, all substantially as herein set forth.

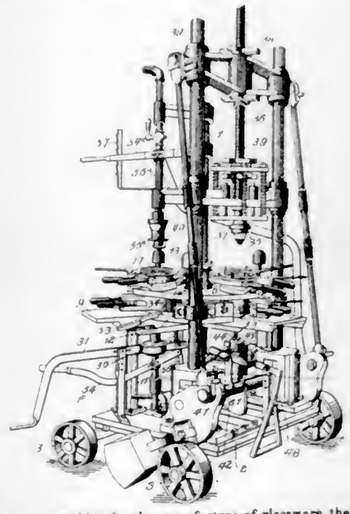
653,412. MACHINE FOR MANUFACTURING GLASSWARE. PHILLIP EBELING, Findlay, Ohio, assignor to the Dalzell, Gilmore & Leighton Company, same place. Filed Jan. 26, 1900. Serial No. 2,826. (No model.)

Claim.—1. In a machine for the manufacture of glassware the combination of a glass-pressing and a glass-blowing mechanism, two movable supports for mold-sections arranged in different horizontal planes, each of said supports being provided with means for centering the mold-sections, means for adjusting said supports toward and from each other and means for securing the equal and synchronous movements of both supports, substantially as set forth.

2. In a machine for the manufacture of glassware the combination of two movable supports for mold-sections arranged in different horizontal planes, each support being provided with means for centering the mold-sections, such centering means being in alinement with each other, and means for securing the equal and synchronous movements of both supports, substantially as set forth.

3. In a machine for the manufacture of glassware, the combination of a movable support having a series of openings, a series of mold-sections arranged on the support, portions of the mold-sections projecting through the said openings, a support arranged below the openings of the other support and movable therewith, mold-sections arranged on the lower support in line with the sections in the upper support, and interchangeable mold-sections constructed to inclose the projecting ends of the upper and lower mold-sections, substantially as set forth.

4. In a machine for the manufacture of glassware, the combination of a movable support having a series of openings, a series of mold-sections arranged on said support, portions of the mold-sections projecting through said openings, a continuous support arranged below the other support and movable therewith, projections, disks adapted to form the bottoms of molds arranged on the second support in line with the openings in the upper support and interchangeable mold-sections formed at their ends for the reception of the projecting ends of the upper mold-sections and the disks, substantially as set forth.



5. In a machine for the manufacture of glassware, the combination of a mold-support having an opening therein, a section of a press-mold arranged on the support a portion of said section projecting through the opening, a second support, a disk or lower mold-section having an opening therethrough arranged in a seat in the second support, and forming a mold-bottom, a mold-section inclosing said disk and the projecting portion of the upper mold-section, a pin and means for raising said pin through the disk into the lower mold-section, substantially as set forth.

6. In a machine for the manufacture of glassware, the combination of a mold-support, a mold formed of sections provided with pivotally-connected handles and with lugs and projections on the sides opposite the handles, and means mounted on the machine for engaging the lugs or projections on the mold-sections and holding them in closed position, substantially as set forth.

653,413. PROCESS OF IMPROVING ARMOR-PLATES. EMIL EHRENSBERGER, Essen, Germany, assignor to Fried. Krupp, same place. Original application filed Apr. 21, 1896, Serial No. 588,513. Divided and this application filed Oct. 19, 1899. Serial No. 734,113. (No specimens.)

Claim.—1. The herein-described process for imparting special hardness to one side and maximum toughness to the other side of plates made of steel, or mixture of steel capable of being hardened, consisting in heating the side which is to be hardened to a temperature corresponding to the degree of hardness desired, while heating the other side, which is to become tough, to a heat below that necessary to produce hardening but high enough to produce toughening, and then cooling suddenly only the side which has been heated to the higher temperature.

2. The herein-described process for imparting special hardness to one side and maximum toughness to the other side of plates made of steel, or mixtures of steel capable of being hardened, consisting in first subjecting the plate to a high temperature permitting an easy molecular rearrangement, then suddenly cooling the plate, then heating the side which is to be hardened to a temperature corresponding to the degree of hardness desired, while heating the other side, which is to become tough, to a lower heat and below that necessary to produce hardening, and then cooling suddenly only the side which has been heated to the higher temperature.

3. The herein-described process for imparting special hardness to one side and maximum toughness to the other side of plates made of steel, or mixtures of steel capable of being hardened, consisting in first subjecting the plate to a high temperature permitting an easy molecular rearrangement, then suddenly cooling the plate, then heating the plate to a low heat, not high enough to produce hardening, then cooling and shaping the plate after cooling; then reheating the side of the plate which is to be hardened to a temperature corresponding to the degree of hardness desired, while heating the other side which is to become tough to a red heat below that necessary to produce hardening, and then cooling suddenly only the side which had been heated to the higher temperature.

653,414. PROCESS OF EXTRACTING COPPER OR OTHER METALS FROM TAILINGS OR ORES OF SUCH METALS. EDWARD FINK, Milwaukee, Wis. Filed Sept. 23, 1899. Serial No. 731,463. (No specimens.)

Claim.—1. The process of extracting copper and other metals from tailings or ores of such metals, which consists in subjecting the tailings or ore to the action of a solution containing sulfuric acid and to the action of an oxid or oxids of nitrogen, in the presence of air or oxygen under pressure, whereby the metal is oxidized and dissolved and the oxid or oxids of nitrogen are converted alternately into a lower and a higher oxid or oxids, and finally separating the solution from the earthy matter of the tailings or ore and separating the metal from the solution, substantially as and for the purposes set forth.

2. The process of extracting copper and other metals from tailings or ores of such metals, which consists in subjecting the tailings or ore to the action of a solution containing sulfuric acid and to the action of an oxid or oxids of nitrogen confined in the presence of the solution, whereby the metal contained in the tailings or ore is oxidized and dissolved, supplying air or oxygen under pressure to the nitrous fumes from which oxygen has been taken by the metal, and reconverting them into a higher oxid or oxids to be again reduced to a lower oxid or oxids by acting on the tailings or ores, until the metal is extracted therefrom, and finally separating the earthy matter and the metal from the solution, substantially as and for the purposes set forth.

3. The process of extracting copper and other metals from tailings or ores containing such metals, which consists in subjecting the tailings or ore alternately to the action of a solution containing sulfuric acid and to the action of an oxid or oxids of nitrogen confined in the presence of the solution and capable of oxidizing the metal contained in the tailings or ore, supplying air or oxygen under pressure to the nitrous fumes from which oxygen has been taken and thereby reconverting them into a higher oxid or oxids to further act on the tailings or ore, until the metal is dissolved in the solution, and finally separating the matrix or earthy matter and the metal from the solution, substantially as and for the purposes set forth.

4. The process of extracting copper and other metals from tailings or ores containing such metals, which consists in subjecting the tailings or ore to the action of a solution containing sulfuric acid and to the action of a corrosive oxid of nitrogen, confining the nitrous fumes given off by the solution in the presence of the solution and supplying air or oxygen under pressure to such fumes, whereby they are converted into a higher oxid or oxids capable of again imparting oxygen to the metal contained in the tailings or ore until the metal is extracted therefrom and dissolved in the solution, separating the matrix or earthy matter and the metal from the solution, and finally utilizing the remaining nitrous fumes for treating other tailings or ore, substantially as and for the purposes set forth.

5. The process of extracting copper and other metals from tailings or ores containing such metals, which consists in subjecting the tailings or ore to the action of a solution containing sulfuric acid and a substance capable of liberating nitric oxid, confining the nitrous fumes given off from the solution in the presence of the solution, supplying air or oxygen under pressure to such fumes whereby the lower oxids are repeatedly converted into the higher oxids of nitrogen capable of imparting oxygen to the metal contained in the tailings or ore and the process is rendered continuous, until the metal has been dissolved in the solution, and finally separating the matrix or earthy matter and the metal from the solution, substantially as and for the purposes set forth.

6. The process of extracting copper and other metals from tailings or ores containing such metals, which consists in subjecting the tailings or ore alternately to the action of a solution containing sulfuric acid and a substance capable of liberating nitric oxid, and to the action of nitrous fumes given off by and confined in the presence of such solution, supplying air or oxygen under pressure to such fumes and thereby converting them to a higher oxid or oxids before and after they act upon and impart oxygen to the tailings or ore, and finally after the metal is extracted from the tailings or ore and dissolved in the solution, separating the matrix or earthy matter and the metal from the solution, substantially as and for the purposes set forth.

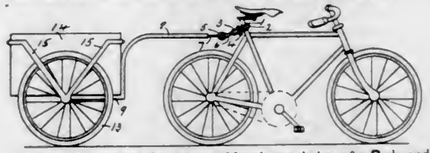
7. The process of extracting copper and other metals from tailings or ores containing such metals, which consists in subjecting the tailings or ore to the action of a solution containing sulfuric acid and a substance capable of liberating nitric oxid and to the action of nitrous fumes given off by and confined in the presence of the solution, supplying air or oxygen under pressure to such fumes thereby converting and repeatedly restoring them to higher oxids capable of imparting oxygen to the tailings or ore until the metal is extracted therefrom, separating the matrix or earthy material and the metal from such solution, and finally conducting off the remaining nitrous fumes for treating other tailings or ore, substantially as and for the purposes set forth.

8. The process of extracting copper from tailings or ores of that metal, which consists in subjecting the tailings or ore to the action of a solution containing sulfuric acid and primarily a compound of nitrogen, capable of liberating nitric oxid, and to the action of a higher oxid or oxids produced and repeatedly reproduced by supplying air or oxygen under pressure to the liberated nitric oxid and to the higher oxid or oxids which have been reduced by acting on the tailings or ore and are confined in the presence of the solution until the metal contained in the tailings or ore is dissolved in the solution; separating the matrix or earthy matter from the solution, and separating and precipitating the copper from the solution, substantially as and for the purposes set forth.

9. The process of extracting copper from tailings or ores containing that metal, which consists in subjecting the tailings or ore alternately to the action of a solution containing sulfuric acid and primarily a compound of nitrogen, capable of liberating nitric oxid, and to the action of a higher oxid or oxids produced and repeatedly reproduced by supplying air or oxygen under pressure to the liberated nitric oxid and to the higher oxid or oxids which have been reduced by acting on the tailings or ore and are confined in the presence of the solution until the metal contained in the tailings or ore is dissolved in the solution, then separating the matrix or earthy matter from the solution, and finally separating and precipitating the copper from the solution, substantially as and for the purposes set forth.

10. The process of extracting copper from tailings or ores containing that metal, which consists in subjecting the tailings or ore to the action of a solution containing sulfuric acid and primarily a compound of nitrogen, capable of liberating nitric oxid, and to the action of a higher oxid or oxids produced and repeatedly reproduced by supplying air or oxygen under pressure to the liberated nitric oxid and to the higher oxid or oxids which have been reduced by acting on the tailings or ore and are confined in the presence of the solution until the metal contained in the tailings or ore is dissolved in the solution, separating the matrix or earthy matter from the solution, precipitating the copper from the solution, confining and conducting off the remaining nitrous fumes for the treatment of other tailings or ore, substantially as and for the purposes set forth.

653,415. BICYCLE ATTACHMENT. STONEWALL J. FORD, Jacksonville, Fla. Filed Feb. 23, 1900. Serial No. 6,151. (No model.)



Claim.—1. An attachment to a bicycle consisting of a D-shaped carrier-framework, an axle comprising part of said framework at each end of which is an ordinary bicycle-wheel working loosely, a shaft or pole fastened to said carrier-framework and connected by a flexible link to a coupling fastened to the seat-post of a bicycle, said coupling comprising a flexible collar which grasps the post, a yoke over the collar, a plate connecting the two ends of the yoke and two nuts for holding the coupling together about the seat-post substantially as described.

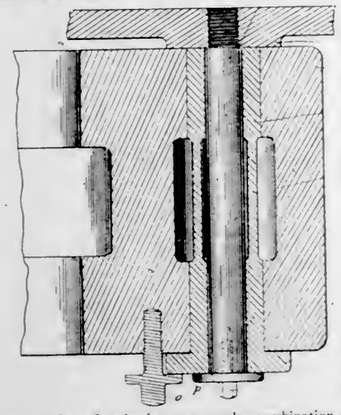
2. An attachment to a bicycle consisting of a shaft or pole fastened to a carrier-framework on wheels, a flexible link consisting of a double-ring joint 5 connecting said shaft to a coupling, said coupling being bolted to the seat-post of a bicycle by a yoke and a plate grasping the post and secured by two nuts substantially as shown.

3. An attachment to a bicycle consisting of a cart on wheels, the shaft or pole 8 fastened to the cart, the double-ring joint 5 fastened to the shaft, the coupling device fastened to the ring-joint 5 and bolted to the seat-post of a bicycle, said coupling device comprising a pliable collar 1, a yoke 2, a plate 4 connecting the two ends of the yoke and two nuts 3 for holding the coupling device together about the seat-post substantially as described.

4. An attachment to a bicycle consisting of a cart on wheels, the two wheel-guards or axle-stays 15 fastened to the cart and to the ends

of the axle outside of said wheels, the shaft or pole fastened to the cart and connected by a flexible link to a coupling, said coupling comprising a collar, a yoke, a plate and two nuts arranged around and about the seat-post of a bicycle substantially as shown.

658,416. GOVERNOR. HARRY L. IDE, Springfield, Ill., assignor to the A. L. Ide & Sons, same place. Filed Mar. 31, 1900. Serial No. 10,824. (No model.)



Claim.—1. In a fly-wheel governor, the combination with an inertia-bar, of an eccentric operated thereby, a journal-pin carrying the bar, a rotatably-adjusted journal-bushing receiving the said pin, the outer circumference of the bushing being concentric with the pin, said pin being located eccentrically with relation to the shaft of the fly-wheel, and means for securing the bushing to the fly-wheel in any position of rotary adjustment, the said means permitting readjustment of the bushing, substantially as described.

2. In a fly-wheel governor, the combination with an inertia-bar, of an eccentric operated thereby, a journal-pin carrying the bar, a rotatably-adjusted journal-bushing receiving the said pin, the outer circumference of the bushing being concentric with the pin, said bushing being provided with a shoulder *l* affording means for effecting the rotary adjustment of the bushing and preventing it from being withdrawn from the fly-wheel, the journal-pin being provided with a shoulder *n* to prevent it from being withdrawn from the bushing, and means for securing the bushing to the fly-wheel in its position of rotary adjustment, substantially as described.

3. In a fly-wheel governor, the combination with an inertia-bar, of an eccentric operated thereby, a journal-pin carrying the bar, a rotatably-adjusted journal-bushing receiving the said pin, the outer circumference of the bushing being concentric with the pin, said bushing being provided with a shoulder *l* affording means for effecting the rotary adjustment of the bushing and preventing it from being withdrawn from the fly-wheel, the journal-pin being provided with a shoulder *n* to prevent it from being withdrawn from the bushing, and a clamping-screw provided with a shoulder *p* adapted to engage the shoulder *l* and secure the bushing to the fly-wheel in any position of rotary adjustment, substantially as described.

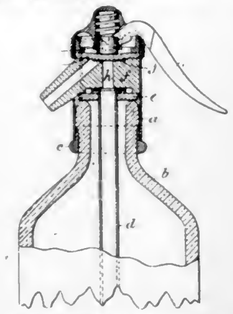
4. In a fly-wheel governor, the combination with an inertia-bar, of an eccentric operated thereby, a journal-pin carrying the bar, a rotatably-adjusted journal-bushing receiving the said pin, the outer circumference of the bushing being concentric with the pin, said bushing being provided with a shoulder *l* affording means for effecting the rotary adjustment of the bushing and preventing it from being withdrawn from the fly-wheel, the journal-pin being provided with a shoulder *n* to prevent it from being withdrawn from the bushing, a bolt *m* for securing the collar *n* in place, and means for securing the bushing to the fly-wheel in its position of rotary adjustment, substantially as described.

5. In a fly-wheel governor, the combination with an inertia-bar, of an eccentric operated thereby, a journal-pin carrying the bar, a rotatably-adjusted journal-bushing receiving the said pin, the outer circumference of the bushing being concentric with the pin, said pin being located eccentrically with relation to the shaft of the fly-wheel, the bore of the bushing being enlarged at its central interior portion, and means for securing the bushing to the fly-wheel in any position of rotary adjustment, the said means permitting readjustment of the bushing, substantially as described.

6. In a fly-wheel governor, the combination with an inertia-bar, of an eccentric operated thereby, a journal-pin carrying the bar, a rotatably-adjusted journal-bushing receiving the said pin, the outer circumference of the bushing being concentric with the pin, said pin being located eccentrically with relation to the shaft of the fly-wheel, the bushing being reduced upon its exterior at its central portion, and means for securing the bushing to the fly-wheel in any position of rotary adjustment, the said means permitting readjustment of the bushing, substantially as described.

7. In a fly-wheel governor, the combination with an inertia-bar, of an eccentric operated thereby, a journal-pin carrying the bar, a rotatably-adjusted journal-bushing receiving the said pin, the outer circumference of the bushing being concentric with the pin, said pin being located eccentrically with relation to the shaft of the fly-wheel, the bushing being reduced at its central portion upon its exterior and having its bore at its central portion enlarged, and means for securing the bushing to the fly-wheel in any position of rotary adjustment, the said means permitting readjustment of the bushing, substantially as described

653,417. SIPHON FOR AERATED LIQUIDS. THOMAS H. W. IDRIS and RICHARD H. GRIFFITS, London, England. Filed Mar. 6, 1900. Serial No. 7,605. (No model.)



Claim.—1. The combination of a siphon-body, a block of earthenware or like material having perforations in it leading from its upper face to the inside of the siphon and to the spout, an annular washer between the block and the body, a disk washer on the upper face of the block, means for pressing the edge of the disk washer and at the same time with it the block and annular washer toward the body, and means for pressing the middle of the disk washer against the upper face of the block.

2. The combination of a siphon-body, a block of earthenware or like material having perforations in it leading from its upper face to the inside of the siphon and to the spout, an annular washer between the block and the body, a disk washer on the upper face of the block, a ring above the disk washer, a tube surrounding the block and connected to the body, a cap screwing onto the tube and pressing on the ring, and means for pressing the middle of the disk washer against the upper face of the block.

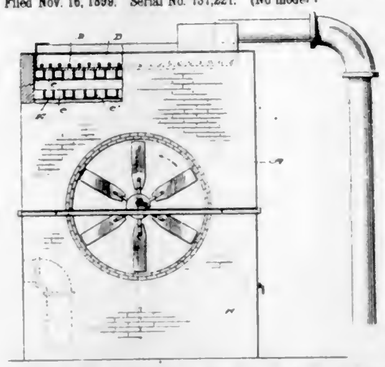
3. The combination of a siphon-body, a block of earthenware or like material having perforations in it leading from its upper face to the inside of the siphon and to the spout, an annular washer between the block and the body, a disk washer on the upper face of the block, a ring above the disk washer, means for forcing the ring toward the body, and a lever working on the ring as a fulcrum and having one end acting on the middle of the disk washer.

4. The combination of a siphon-body, a block of earthenware or like material having perforations in it leading from its upper face to the inside of the siphon and to the spout, an annular washer between the block and the body, a disk washer on the upper face of the block, a ring above the disk washer, a tube surrounding the block and connected to the body, a cap screwing onto the tube and pressing on the ring, and a lever working on the ring as a fulcrum and having one end acting on the middle of the disk washer.

5. The combination of a siphon-body, a block of earthenware or like material having perforations in it leading from its upper face to the inside of the siphon and to the spout, an annular washer between the block and the body, a disk washer on the upper face of the block, a ring above the disk washer, a tube surrounding the block and connected to the body, a cap screwing onto the tube and pressing on the ring, a block in contact with the middle of the disk washer, a spring inside the cap pressing the block against the washer, and a lever working on the ring as a fulcrum and having one end pivoted to the block.

6. The combination of a siphon-body, a block of earthenware or like material having perforations in it leading to the inside of the siphon, and to the spout, a washer interposed between the block and the siphon-body, a tube secured to the siphon-body surrounding the block and extending above it, a disk on the upper face of the block, a cap above the disk secured to the upper end of the tube, and a loose ring interposed between the cap and the washer.

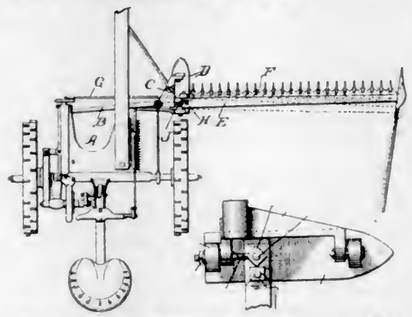
653,418. WATER-COOLER. WALTER R. JENNISON, Atlanta, Ga. Filed Nov. 16, 1899. Serial No. 737,221. (No model.)



Claim.—1. An apparatus for cooling water comprising a series of pipes having openings in their upper portions, a series of tiers of troughs arranged below the pipes, the troughs being arranged with spaces between them, the troughs and spaces of alternate tiers being so arranged that the troughs of one tier are over the spaces between the troughs of the next lower tier, and a plurality of oppositely-arranged fans whereby currents of air are caused to impinge against each other and are brought into contact with water falling from the troughs, substantially as described.

2. An apparatus for cooling water comprising a tank or reservoir, pipes attached to the lower portion of the tank or reservoir and extending therefrom, the pipes having their outer ends closed and being provided in their upper portion with a series of openings, a plurality of tiers of troughs parallel to the pipes and arranged below the same, each trough being provided near its lower end with openings and a shaft arranged below the troughs and provided with two fans, the fans being of equal size and having their vanes oppositely arranged, substantially as described.

653,419. MOWING-MACHINE. MAURICE KANE, Austin, Ill. Filed Dec. 11, 1899. Serial No. 739,901. (No model.)



Claim.—1. In a mowing-machine, the combination with a finger-bar, in which the cutter-bar is carried, a shoe upon which said finger-bar is supported, said shoe being pivotally mounted, whereby the finger-bar may be folded into convenient position for transportation, an actuating-pitman for said cutter-bar, of means for adjusting the position of the finger-bar upon and with reference to said shoe; whereby alinement between said bar and its actuating-pitman is restored and maintained, as and for the purpose set forth.

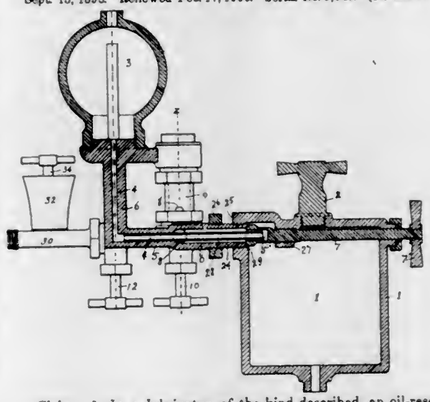
2. In a mowing-machine, a finger-bar, in which the cutter-bar is carried, a shoe for supporting the same, and an actuating-pitman for the cutter-bar, in combination with means for swinging the cutter-bar forwardly upon and with reference to said shoe, to restore and maintain alinement between said cutter-bar and pitman, as and for the purpose set forth.

3. In a mowing-machine, a finger-bar adapted to carry a cutter-bar, a pitman for actuating said cutter-bar, and a shoe for supporting the finger-bar, in combination with means for adjusting the finger-bar upon and with reference to said shoe, whereby the outer end of said finger-bar may be moved forwardly to restore and maintain alinement between said cutter-bar and its actuating-pitman, as and for the purpose set forth.

4. In a mowing-machine, a finger-bar adapted to carry a cutter-bar, an actuating-pitman for the latter, a shoe, the finger-bar being pivotally supported thereon, said shoe provided with a laterally-extending elongated slot, a bolt passing through such slot and securing the finger-bar to the shoe, in combination with an eyebolt engaging the first-mentioned bolt, and means for adjusting such eyebolt; whereby said finger-bar is capable of being rocked about its pivot, to restore and maintain alinement between said bar and pitman, as and for the purpose set forth.

5. In a mowing-machine, a finger-bar, a cutter-bar supported thereby, an actuating-pitman for said cutter-bar, a supporting-shoe for said finger-bar, said shoe provided with an upturned heel or lug and an elongated slot, a securing-bolt for said finger-bar and shoe, an adjusting-bolt for said finger-bar and shoe, said adjusting-bolt arranged to pass through the elongated slot in said shoe, an eyebolt arranged to be engaged by said adjusting-bolt, and having its stem arranged to pass through said upturned heel or lug, and set-nuts mounted upon said eyebolt-stem and arranged on opposite sides, respectively, of said upturned heel or lug, whereby said finger-bar may be rocked or swung upon said shoe to restore and maintain alinement between said cutter-bar and pitman, as and for the purpose set forth.

653,420. LUBRICATOR. JOHN F. LEWIS, Scranton, Pa. Filed Sept. 15, 1898. Renewed Feb. 17, 1900. Serial No. 5,649. (No model.)

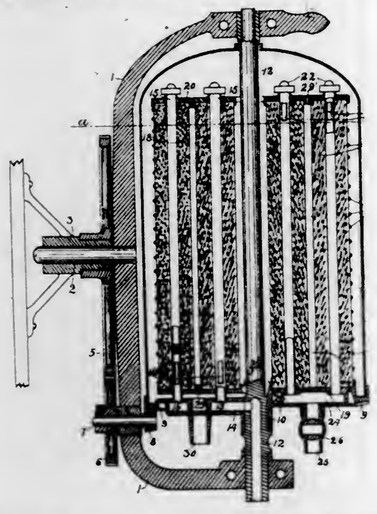


Claim.—1. In a lubricator of the kind described, an oil-reservoir and a condenser, the said condenser situated at a higher level than said reservoir and having a passage for condensation-water leading thereto through a tube projecting into the upper part of said reservoir in substantially a horizontal position, the said horizontal tube leading through an annular passage-way provided for the exit of lubricant and adapted to contain a considerable portion thereof, in combination with a valve having a cup-shaped end adapted to cover the end of the tube aforesaid projecting into the oil-reservoir, and to form with the said annular passage around it, a temporary substitute for the oil-reservoir during the process of refilling, substantially as specified.

2. In a lubricator of the kind described having an oil-reservoir and condenser adapted to drive oil thereout by condensation-water, the combination of an induction-tube leading from said condenser in a substantially-horizontal position and projecting inward of said reservoir and adapted to lead condensation-water therein, with an annular eduction-passage for lubricant surrounding said induction-tube, and delivery-passages extending from said annular passage with a cup-shaped valve adapted to cover the projecting end of the induction-tube aforesaid, and simultaneously to close the annular passage surrounding it, the said induction-tube adapted to communicate with the interior of the oil-reservoir through the annular space in the hood or cup of the valve covering it when the said valve is open, for the purpose described, substantially as specified.

653,421. FILTER. WILLIAM LOREY, Philadelphia, Pa. Filed Aug. 22, 1899. Serial No. 728,090. (No model.)

Claim.—1. In a filter, a revoluble frame, a casing revoluble within said frame, a pair of concentric diaphragms within said casing, a chamber between said diaphragms, a passage for conducting water to said chamber, and a passage for conducting impurities from said chamber, substantially as specified.



2. In a filter, a pair of concentric diaphragms, means for strengthening said diaphragms, a chamber located between said diaphragms, a cap for said diaphragms and chamber, a base for said diaphragms and chamber, a passage for conducting water to said chamber, and a separate open passage for conducting impure matter from said chamber, substantially as specified.

3. In a filter, a frame, a shaft revoluble in said frame, a casing fixed upon said shaft, a chamber within said casing, a channel within said shaft leading to said chamber, a pair of diaphragms, a chamber between said diaphragms, a water-passage leading from said first to said second chamber, and a passage for conducting impurities from said second chamber, substantially as specified.

4. In a filter, a pair of concentric porous diaphragms, a chamber located between said diaphragms, a cap having a channel formed therein covering said chamber, a base for supporting said diaphragms and closing said chamber, a tube for supplying water to said chamber, and a tube for receiving the overflow leading from said chamber, substantially as specified.

5. In a filter, a frame having a conduit therein, an axle having a conduit therein journaled in said frame, a casing having a chamber therein communicating with said conduits, a pair of concentric diaphragms, a chamber between said diaphragms, a passage leading from said casing-chamber to said diaphragm-chamber, and a passage for carrying off the overflow from said diaphragm-chamber, substantially as specified.

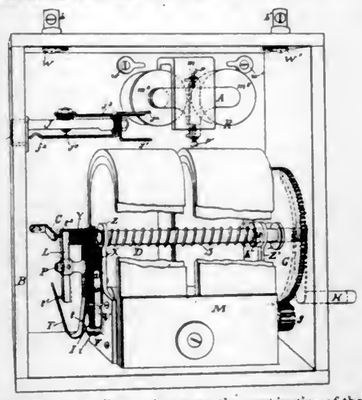
6. In a filter, a pair of concentric stones, a base upon which said stones are supported, a chamber between said stones, a cap having a channel therein for covering said stones and closing said chamber, a tube passing through said base for supplying water to said chamber, a tube having an inlet located in said channel for carrying off the overflow from said chamber, and a scouring device in said chamber, substantially as specified.

7. In a filter, a bearing, a shaft journaled in said bearing, a frame fixed to said shaft, a shaft and a casing thereon journaled in said frame, a fixed gear-wheel, a shaft and a gear-wheel thereon journaled in said frame and driven by said first-named gear-wheel, a gear-track fixed on said casing, and gearing connecting said gear-track with said last-named shaft, substantially as specified.

8. In a filter, a casing, a series of vertical shafts supported by the top and bottom of said casing, a filtering apparatus comprising a series of cylindrical diaphragms arranged in pairs, a cap and a base for each series of diaphragms centered upon said vertical shafts, one or more tubes having apertures therein between each of said pairs of diaphragms, a chamber between each of said pairs of diaphragms communicating with said tubes, a second chamber communicating with said tubes for supplying water to said first chamber, and chambers for receiving water that filters through said diaphragms, substantially as specified.

9. In a filter, a casing, a series of vertical shafts supported by the top and bottom of said casing, a filtering apparatus comprising a series of cylindrical diaphragms arranged in pairs, a cap and a base for each of said series of diaphragms centered upon each of said vertical rods, one or more tubes having apertures therein between each of said pairs of diaphragms, one or more chambers between each of said pairs of diaphragms communicating with said tubes, a second chamber communicating with said tubes for supplying water to said first chambers, a tube between each of said pairs of diaphragms having an aperture near the top thereof for receiving the overflow or impurities, and passages for conducting away the overflow from said second tubes, substantially as specified.

658,422. TELEPHONE-TEST SET. ALBERT C. LUDINGTON, Marquette, Mich., assignor of one-half to Nathan M. Kaufman, same place. Filed Jan. 13, 1900. Serial No. 1,851. (No model.)



Claim.—1. In a lineman's test set, the combination of the following instrumentalities: a vibrator responsive to alternating current, a magneto-generator included in circuit with said vibrator, a commutator for said generator constantly connected to deliver intermittent direct current; a terminal spring connected to take off alternating current from the generator, included in a normally-closed branch around the commutator, and means operated at will, by the working shaft of the generator, to open and close said branch, substantially as described.

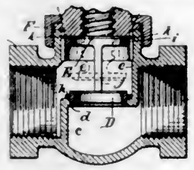
2. A lineman's test set consisting of the following instrumentalities: a vibrator responsive to alternating current, a generator having its armature constantly connected to a collector-spring to deliver alternating current, and to a commutator for delivering direct current of one polarity, a normally-closed circuit including a spring-brush, from said commutator to the vibrator, a normally-open circuit or branch around the commutator and including the collector-spring, a shaft for driving the generator geared to the armature thereof and having endwise movement in its bearings, and a switch included in the collector-spring circuit adapted to make or break the same, and controlled by the endwise movement of the shaft, substantially as described.

3. In a testing-generator the combination of the following instrumentalities: a driving-shaft having endwise movement in its bearings, an armature geared to said shaft, terminal contacts connected to the armature-winding, and adapted to rotate with the armature, a collector-spring constantly pressing against one of said contacts, and a commutator-spring intermittently engaging with the other of said contacts, constantly-closed circuit connections from said commutator-spring and the other end of the armature-winding to circuit-terminals; a switch-lever mounted in proximity to the extremity of the generator-shaft and carrying an insulating-button for engagement therewith, the lower end of the switch-lever carrying a contact for engagement with the collector-spring, and a branch circuit connection from such switch-lever around the commutator-spring to the same terminal, substantially as described.

4. In a lineman's test set, a vibrator, and a generator, a driving-shaft for the generator having endwise movement in its bearing, armature-terminals for the generator connected to deliver alternating or intermittent direct current respectively, and means controlled by the endwise movement of a shaft for rendering operative one set or the other of armature-terminals, at will, substantially as described.

5. In a lineman's test set the combination of the following instrumentalities: a containing-case, a generator therein adapted to deliver alternating or direct current, means controlled through the handle of said generator to determine what current shall be delivered, a vibrator responsive to alternating current only, a spring-jack included in the circuit of the generator and vibrator and normally completing the same, a telephone-receiver and a plug connected thereto and adapted to be inserted into the spring-jack to cut out the generator and vibrator and cut in the telephone, substantially as described.

658,423. RENEWABLE-SEAT VALVE. EDMUND H. LUNKEN, Denver, Colo., assignor to the Lunkenheimer Company, Cincinnati, Ohio. Filed Mar. 3, 1900. Serial No. 7,173. (No model.)



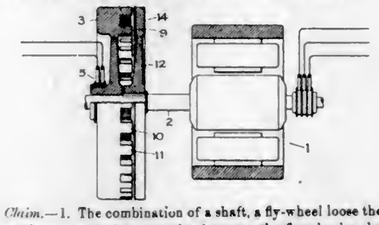
Claim.—1. In valve construction in which the valve moves to and from its seat in constantly-parallel planes, the combination of the body having inlet and outlet openings and an interposed seat-opening, a ring-seat fitted to said last-named opening, an arm upon each side of the valve-passage bearing upon the ring-seat, a ring connecting said arms, a non-revoluble washer fitted in the neck of the valve-body and adapted when the bonnet is secured in place to press down the arms to hold the ring-seat in place, and the valve which engages the ring-seat, substantially as described.

2. In valve construction in which the valve moves to and from its seat in constantly-parallel planes, the combination of the body having inlet and outlet openings and an interposed seat-opening, a ring-seat fitted to said last-named opening, an arm upon each side of the valve-passage bearing upon the ring-seat, a ring connecting the upper ends of said arms and fitted within the neck of the valve-body, a non-revoluble washer fitted in the neck of the valve-body and resting upon the aforesaid ring and adapted when the bonnet is secured in place to press down the arms and hold the ring-seat securely in place, and the valve which engages the ring-seat, substantially as described.

3. In valve construction in which the valve moves to and from its seat in constantly-parallel planes, the combination of the body having inlet and outlet openings and an interposed seat-opening, a ring-seat fitted to said last-named opening, an arm upon each side of the valve-passage bearing upon the ring-seat, a ring connecting said arms, a washer fitted in the neck of the valve-body and provided with one or more retaining-lugs fitted in grooves in the neck of the body and adapted when the bonnet is secured in place to press down the arms to hold the ring-seat securely in place, and the valve which engages with the ring-seat, substantially as described.

4. In valve construction in which the valve moves to and from its seat in constantly-parallel planes, the combination of the body having inlet and outlet openings and an interposed seat-opening, a ring-seat fitted to said last-named opening, an arm upon each side of the valve-passage bearing upon the ring-seat, a ring connecting the upper ends of said arms and fitted within the neck of the valve-body, a washer fitted in the neck of the valve-body and provided with one or more retaining-lugs fitted in grooves in the neck of the body and resting upon the aforesaid ring and adapted when the bonnet is secured in place to press down the arms and hold the ring-seat securely in place, and the valve which engages with the ring-seat, substantially as described.

658,424. SPEED-EQUALIZING DEVICE. ALEXANDER D. LUNT, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Apr. 30, 1900. Serial No. 14,816. (No model.)



Claim.—1. The combination of a shaft, a fly-wheel loose thereon and an electromagnetic connection between the fly-wheel and shaft.

2. The combination of a shaft, a fly-wheel loose thereon, and electrical means for producing a drag between the fly-wheel and shaft.

3. The combination of a shaft, a relatively-rotatable fly-wheel, and electrical means for restraining such rotation.

4. The combination of a shaft or other device of variable speed, a fly-wheel capable of movement relatively thereto, and electrical means for restraining such movement.

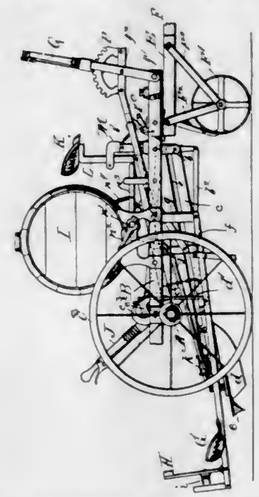
5. The combination of a shaft or other device of variable speed, a moving mass of high inertia capable of movement relatively to said shaft or other device, and electrical means for restraining such relative movement.

6. The combination of a shaft or other device of variable speed, a moving mass possessing inertia and capable of movement relatively to said shaft or other device, and energy-consuming means exerting a torque between said mass and said shaft or other device approximately proportional to their deviation from synchronism.

7. The combination of a dynamo-electric machine, a fly-wheel loose on the shaft of the machine, and a closed conductor and a field-magnet one of which moves with the shaft and the other with the fly-wheel.

8. The combination of a dynamo-electric machine, a fly-wheel, and a closed conductor and a field-magnet one of which moves synchronously with the dynamo-electric machine and the other with the fly-wheel.

658,425. TRANSPLANTER. CHRIST MOEHRING, Middletown, Ohio, assignor to the McSherry Manufacturing Company, same place. Filed Sept. 18, 1899. Serial No. 730,964. (No model.)



Claim.—1. In a transplanter, the combination of the main frame, a drag-bar pivoted thereto, a furrow-opener carried by said drag-bar, a driver's seat over the forward end of and supported in part on and connected by leverage to said drag-bar, a shiftable fulcrum between said driver's seat and drag-bar, whereby the pressure on the furrow-opener can be varied, and plant-setters' seats on each side of and in the rear of the furrow-opener, substantially as described.

2. In a transplanter, the combination of the main frame, a drag-bar pivoted thereto, a furrow-opener carried by said drag-bar, a driver's seat supported in part on said drag-bar, a shiftable fulcrum between said driver's seat and drag-bar, and a hand lock-lever within reach of the driver's seat for shifting and locking said shiftable fulcrum, whereby the pressure on the furrow-opener can be varied, substantially as described.

3. In a transplanter, the combination of the main frame, a drag-bar pivoted thereto, a furrow-opener carried by said drag-bar, a driver's seat supported in part on said drag-bar, a shiftable fulcrum between said driver's seat and drag-bar, a caster-wheel connected to, and turning with the tongue of the machine, a locking-dog between the main frame and the tongue of the machine, a connection between said shiftable fulcrum and locking-dog, and a hand lock-lever within reach of the driver's seat for shifting and locking said shiftable fulcrum and throwing said locking-dog out of engagement with the tongue, substantially as described.

4. In a transplanter, the combination of the main frame, a drag-bar pivoted thereto a furrow-opener carried by said drag-bar, an axle for the main frame rotated by the forward movement of the machine, a disk on said axle provided with studs or pins, a water-tank

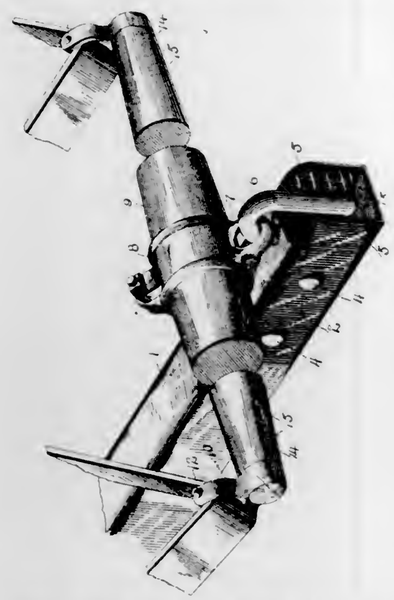
on the main frame having a discharge-cylinder adjacent to the furrow-opener, a valve in said discharge-cylinder, lever mechanism between said valve and the disk on the axle of the machine, and a hand-pusher in the rear of said cylinder and connected to said lever mechanism, whereby at predetermined intervals, during the rotation of the axle, the valve is opened to discharge water into the furrow, and the hand-pusher is actuated, substantially as described.

5. In a transplanter, the combination of the drag-bar *c* carrying the furrow-opener *d* and pivoted to the main frame, the bar N pivoted at its rear end to a hand lock-lever J, a lifting connection between said hand lock-lever and the drag-bar, the driver's seat supported on the bar N, the bar O carrying a locking-segment and the shiftable fulcrum *g'*, and the hand lock-lever Q pivoted to the main frame and to the bar O concentric with the segment-rack thereof, substantially as described.

6. In a transplanter, the combination and arrangement of the drag-bar *c* carrying the furrow-opener *d* and pivoted to the main frame, a water-tank carried by the main frame, a cylinder carried by the furrow-opener and drag-bar and connected to the water-tank, a discharge-valve in said cylinder for depositing water in the furrow, the disk a^2 provided with pins *a'* on the rotating axle of the machine the dog-rod *l* coacting with said pins, the lever *r*, to which said dog-rod is pivoted, the rod *o* likewise pivoted to the lever *r* and connected to the valve in the cylinder, the hand-pusher *b'* in rear of the cylinder, and the rod b^2 connecting said hand-pusher and the lever *r*, substantially as, and for the purpose specified.

7. In a transplanter of the character described, the combination and arrangement of the rotating disk a^2 provided with pins *a'*, the dog-rod *l* pivoted at one end to a lever *r*, and guided at its end next to the disk in a lifting-dog *x* pivoted to a fixed part of the frame, the valve-rod *o* pivoted to the lever *r*, and the hand-pusher rod b^3 likewise pivoted to the lever *r*, substantially in the manner, and for the purpose specified.

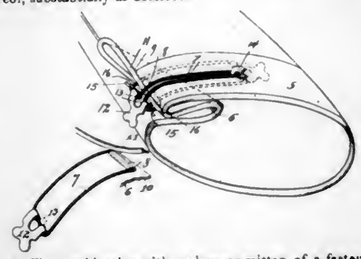
653,426. WAGON-POLE TIP. LOUIS A. NADEAU, St. Athanase, Canada. Filed Oct. 31, 1899. Serial No. 735,443. (No model.)



Claim.—A pole-tip, comprising at its rear end flanges adapted to embrace the end of the pole, bolts for securing said tip to the pole, said tip having at its front end a partially-inclosed recess, a hook rigidly secured to said tip and having its free end extending into said recess, whereby a neck-yoke, having an attaching-ring may be removably secured on said hook portion, substantially as described.

653,427. GLOVE-FASTENER. ERNEST WAINWRIGHT, Chicago, Ill., assignor to the Hall & Ross Husking Glove Company, same place. Filed Nov. 28, 1899. Serial No. 738,537. (No model.)

Claim.—1. The combination with a glove or mitten having a gore in the wrist thereof, of a fastener therefor composed of a cord doubled to provide a loop and secured to the wristlet of the glove at one side of the gore, runners secured to the wristlet on the opposite side of the gore, a tab or finger-piece having tubular portions through which the cord passes, a stud or button secured to the wristlet and adapted to hold the free end of the loop, and said tab or finger-piece being movable lengthwise of the loop whereby to contract the strands thereof, substantially as described.



2. The combination with a glove or mitten, of a fastener therefor comprising a cord, having its ends united by means of a metal sheath embracing both ends and secured to the wristlet of the glove, substantially as described.

3. In a cord-fastener for gloves, a finger-piece consisting of a metal body having furcations provided with tubular portions through which the cord passes, said tubular portions being separated to adapt the tab or finger-piece to span the head of a stud or button whereby the cord may be engaged, substantially as described.

4. In a cord-fastener for gored gloves, the combination, with a cord doubled upon itself to provide a loop, said loop being attached to the wristlet of the glove near one edge of the gore, runners attached to the wristlet on the opposite sides of the gore and through which the strands of the cord pass, a button or stud attached to the wristlet and a finger-piece or tab movably connected with and arranged to embrace both strands of the cord and of such width that when moved lengthwise of the strand after engagement of the latter with the button or stud the cord is tensioned, substantially as described.

5. The combination with a glove or mitten, of a fastener therefor comprising a cord, having its ends united by means of a metal sheath embracing both ends and secured to the wristlet of the glove, in a position substantially at right angles to the direction of pull upon the strands when holding the gore closed

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653,428. MANDREL. CHARLES M. WALES, New York, N. Y. Filed Sept. 27, 1899. Serial No. 731,847. (No model.)



Claim.—1. In a mandrel for forging hollow shafts the combination with two hollow members having a central bore, of a rod within said bore, and means whereby said two hollow members may be held together upon said rod while the shaft is being forged and removed separately from the completed forging

2. In a mandrel for forging hollow shafts the combination with two hollow members having a central bore and an external taper, of a rod within said bore, and means whereby said two hollow members may be held together upon said rod while the shaft is being forged and removed separately from the completed forging.

3. A mandrel for forging hollow shafts consisting of a hollow shell in combination with a removable center adapted to be inserted in the hollow shell while the shaft is being forged and to be removed therefrom prior to the removal of the hollow shell from the hollow shaft.

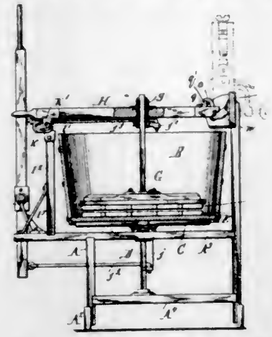
4. A mandrel for forging hollow shafts consisting of a hollow shell having an internal taper, in combination with a removable center for said hollow shell having a taper to correspond with the internal taper of said shell, whereby said removable center may be inserted in said hollow shell to reinforce it during the process of forging and be withdrawn therefrom to permit the introduction of water to cool and contract the shell to facilitate its removal from the hollow shaft.

5. A mandrel for forging hollow shafts consisting of a hollow shell in combination with a removable center, and means whereby said removable center may be secured in said hollow shell during the process of forging and removed therefrom prior to the removal of the hollow shell from the hollow shaft.

6. A mandrel for forging hollow shafts consisting of a hollow shell having an external and an internal taper in combination with a removable center for said hollow shell having a taper to correspond with the internal taper of said shell.

7. In a mandrel for forging hollow shafts the combination with the tubular shell of a rod adapted to be held within the tubular shell during the process of forging, and means whereby said rod may be withdrawn to introduce a stream of water previous to the withdrawal of the tubular shell.

653,429. WASHING-MACHINE. FREDERICK H. WIARD, East Avon, N. Y. Filed Oct. 10, 1898. Serial No. 693,098. (No model.)

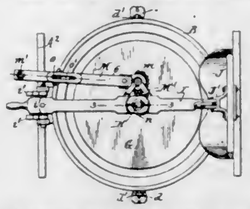


Claim.—1. The combination with the oscillating tub and the stationary supporting-frame of the machine having standards arranged on opposite sides of the tub, of a horizontally-slotted lug or bearing arranged at the upper end of one of said standards and provided between its ends with an opening which communicates with the slot of the lug, and a vertically-swinging yoke or cross-bar carrying a rubber and provided at one end with a horizontal pivot which is arranged in said slotted lug and which is adapted to be inserted and removed through the opening thereof, substantially as set forth.

2. The combination with the stationary frame of the machine and an oscillating tub or vessel, of standards or supports arranged on opposite sides of the tub, a bracket or socket arranged on one of said standards and provided in its bottom with a slot or recess, a yoke or cross-bar carrying a rubber and pivoted at one end to one of said standards and having at its opposite end an upright latch pivoted to swing lengthwise of the yoke and provided below the yoke with a hook which interlocks with the opening of said bracket and means for retaining said latch in engagement with said bracket, substantially as set forth.

3. The combination with the stationary frame of the machine and an oscillating tub or vessel, of standards or supports arranged on opposite sides of the tub, a bracket or socket arranged on one of said standards and provided in its bottom with a slot or recess, a yoke or cross-bar carrying a rubber and pivoted at one end to one of said standards and having at its opposite end an upright latch pivoted to swing lengthwise of the yoke and provided above the yoke with a locking-nose and below the same with a hook which interlocks with the slot of said bracket, and a laterally-swinging locking cam or wedge pivoted to the upper side of the yoke and adapted to engage under the nose of the said latch, substantially as set forth.

653,430. WASHING-MACHINE. FREDERICK H. WIARD, East Avon, N. Y. Filed Sept. 25, 1899. Serial No. 731,676. (No model.)



Claim.—In a washing-machine, the combination with a stationary frame and an oscillating tub supported therein and provided at one side with an upright pin, of a yoke attached to said frame and extending across the top of the tub, an oscillating rubber arranged in the tub, an upright shaft carrying the rubber and journaled in said yoke and provided with a horizontal gear-segment, a bracket projecting laterally from the central portion of said yoke, and a horizontally-swinging hand-lever pivoted to said bracket and having at its inner end a gear-segment which meshes with the gear-segment of the rubber-shaft and provided between its ends with a longitudinal slot in which the upright pin of the tub engages, substantially as set forth.

653,431. TRUCK. GEORGE M. WILLIAMS, Santa Rosa, Cal. Filed Jan. 19, 1900. Serial No. 2,023. (No model.)



Claim.—1. A truck of the character described, having its wheels each provided with a circular series of notches or sockets near its periphery, guide-brackets, and a sliding bar having shoulders adapted to engage said guide-brackets, said bar also adapted to engage said notches or sockets, substantially as set forth.

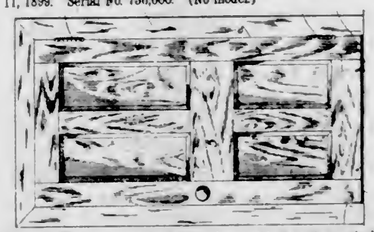
2. A truck of the character described, having a sliding bar adapted to be automatically held in locking engagement with its wheels, and a locking device for holding said bar disengaged from said wheels when not in use, substantially as specified.

3. A truck of the character described, having a sliding bar adapted to engage its wheels and a rocking bar or rod having catches adapted to engage said sliding bar, substantially as set forth.

4. A truck of the character described, having slotted brackets or castings, a spring-pressed sliding bar adapted to engage and lock the truck-wheels relatively to the axle, a spring-pressed rocking bar or rod having catches adapted to engage said sliding bar, substantially as set forth.

5. A truck of the character described, having slotted brackets or castings, a spring-pressed sliding bar adapted to engage and lock the truck-wheels relatively to the axle, a spring-pressed rocking bar or rod hung in said brackets and having bevel-ended catches adapted to engage said sliding bar, substantially as set forth.

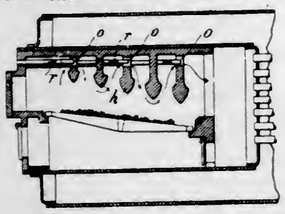
653,432. DOOR. GEORGE J. WINTER, Buffalo, N. Y. Filed Nov. 11, 1899. Serial No. 736,600. (No model.)



Claim.—The combination with a door-casing having a shallow depression in the lower portion of one of its sides, of a door mounted therein and having a central longitudinal slot extending throughout

its bottom edge, a metal plate closing the outer end of said slot, and having its exterior flush with the side edge of the door, a weather-strip shaped to fit and operate in said slot and having the upper portion of its outer end cut away, and elongated openings having straight sides and extending diagonally with respect to said strip, a horizontal rod extending from the inner wall of the cut-away portion of the outer end, a spiral spring mounted on said rod and adapted to bear against the outer metal plate, pins or bolts passed through the sides of the door and the diagonal openings, an inner metal plate set flush in the depression in the casing side against which the inner end of the strip presses, and a strip of flexible material attached to the lower surface of the weather-strip and extending throughout its length, as set forth.

653,433. FURNACE. ROBERT ZEILLER, Munich, Germany. Filed Sept. 30, 1899. Serial No. 732,228. (No model.)



Claim.—1. In a furnace, the combination of a series of transversely-disposed ribs extending downwardly from the roof of the fire-box, said ribs depending for a distance increasing toward the smoke-exit of the furnace, substantially as and for the purposes set forth.

2. In a furnace, the combination of a series of transversely-disposed ribs extending downwardly from the roof of the fire-box, said ribs having apertures therein, and means for bringing external air from the front of the furnace and delivering it into said apertures, substantially as and for the purposes set forth.

3. In a furnace, the combination of a series of transversely-disposed ribs extending downwardly from the roof of the fire-box, said ribs having apertures connecting their interspaces and arranged in proximity to the roof of the fire-box, and means for bringing external air from the front of the furnace and delivering it into said apertures, substantially as and for the purposes set forth.

4. In a furnace, the combination of a series of transversely-disposed ribs extending downwardly from the roof of the fire-box, the alternate ribs having apertures therein, and means for bringing external air from the front of the furnace and delivering it into said apertures, substantially as set forth.

5. In a furnace, the combination of a series of transversely-disposed ribs extending downwardly from the roof of the fire-box, said ribs depending for a distance increasing toward the smoke-exit of the furnace, said ribs having an enlarged lower edge, substantially as and for the purposes set forth.

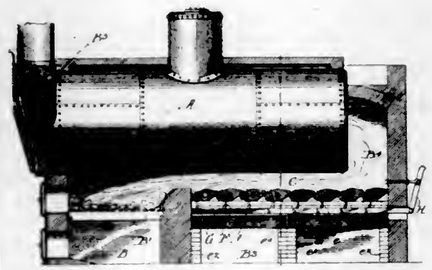
6. In a furnace, the combination of a series of transversely-disposed ribs extending downwardly from the roof of the fire-box, said ribs having apertures connecting their interspaces and arranged in proximity to the roof of the fire-box, and a tube extending through the front of the furnace and along the upper portion of the fire-box and terminating in each of the said apertures, substantially as and for the purposes set forth.

7. In a furnace, the combination of a series of transversely-disposed ribs extending downwardly from the roof of the fire-box, said ribs depending for a distance increasing toward the smoke-exit of the furnace and a deflector-wall at the rear of the fire-box extending upwardly and inwardly toward said ribs, substantially as and for the purposes set forth.

653,434. FURNACE. ALFRED C. ADAMS and NUTE C. KNUTSON, Woodstock, Ill. Filed July 1, 1899. Serial No. 722,611. (No model.)

Claim.—1. In a furnace, the combination with a fire-box and a combustion-chamber into which the products of combustion pass from the fire-box, of a grate arranged in the upper part of the combustion-chamber in the direct path of the outgoing products of combustion and extending horizontally beneath the boiler, said grate consisting of grate-bars made of substantially non-conducting material sufficiently refractory to withstand heating to incandescence, and means whereby said bars are closed to form a closed partition and opened to discharge the collected soot, &c.

2. In a furnace, the combination with a fire-box and a combustion-chamber into which the products of combustion pass from the fire-box, of a regenerated grate arranged in the upper part of the combustion-chamber in the direct path of the outgoing products of combustion and extending horizontally beneath the boiler, said grate consisting of grate-bars made of fire-brick and capable of overlapping in one adjustment and separating in another adjustment, and means whereby said adjustments are accomplished.



3. In a furnace, the combination with a fire-box and a combustion-chamber into which the products of combustion from the fire-box pass, of a grate arranged in the upper part of the combustion-chamber in the path of the products of combustion and extending horizontally beneath the boiler, said grate consisting of grate-bars made of fire-brick pivotally supported so as to be capable of movement to open and close the grate, and devices below the grate for adjusting and agitating the bars.

4. In a furnace, the combination with a fire-box, a combustion-chamber into which the products of combustion pass from the fire-box and a bridge-wall interposed between the fire-box and combustion-chamber, of a grate arranged in the upper part of the combustion-chamber and completely dividing the latter, said grate consisting of one or more series of grate-bars made of fire-clay of relatively-flat form and arranged parallel with each other at a suitable distance apart to cause their edges to overlap and contact shutter fashion, thereby preventing circulation of air and products of combustion between the bars, each of said bars being pivotally supported at its ends and provided with a downwardly-depending arm and a shifting bar extending beneath and engaged with the arms of each of the grate-bars.

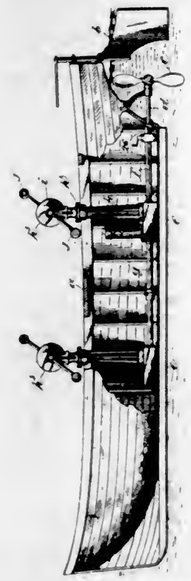
5. In a furnace, the combination with a fire-box, a combustion-chamber into which the products of combustion pass from the fire-box and a bridge-wall interposed between the fire-box and combustion-chamber, of a grate arranged in the upper part of the combustion-chamber and completely dividing the latter, said grate consisting of two longitudinally-extending grate-bars individual bars of which are made of fire-clay of relatively-flat form in cross-section and arranged to extend transversely the furnace parallel with each other at such distance apart as to cause their edges to overlap and contact with each other shutter fashion when in position with their flat sides approximately horizontal, and thereby convert said grate into a closed partition, means for pivotally supporting said bars comprising trunnions secured to each end of each bar and having bearing engagement in bearing-blocks of refractory material and means for oscillating the grate-bars simultaneously comprising arms connected with and depending from the several grate-bars and a shifting bar arranged to extend longitudinally beneath each series of grate-bars and having pivotal engagement with each of the several arms of the series of grate-bars beneath which it extends, substantially as described.

6. In a furnace, the combination of a fire-box and a combustion-chamber, a regenerating-grate arranged in the combustion-chamber in the path of the products of combustion and extending beneath the boiler and consisting of a series of movable, refractory blocks adapted to be closed to shut off the products of combustion from the lower part of the combustion-chamber and to be opened to varying degrees to permit more or less circulation around them, to suit varying conditions of use, and means for operating said bars and holding them in their adjusted position, as and for the purposes set forth.

7. The combination with a boiler-furnace having a boiler, a fire-box and a combustion-chamber, of a refractory regenerating-grate arranged in the combustion-chamber in the path of the products of combustion, this grate consisting of a series of separated, movable parts, and means for varying the spaces between the parts of the grate whereby the quantity of circulation in the part of the combustion-chamber below the grate may be varied to suit the varying conditions.

653,435. MEANS FOR PROPELLING VESSELS. GEORGE BORMERMANN, New York, N. Y. Filed Nov. 23, 1899. Serial No. 738,051. (No model.)

Claim.—1. The combination with a boat, a propeller-shaft mounted therein, a propeller on said shaft, driving-gears at two points along said shaft, and upright shafts at these points gearing with the propeller-shaft, of two boxes *e*, inclosing the gearing at the said points, a tube *g* inclosing the propeller-shaft and connecting said boxes, a tube *f* inclosing the propeller-shaft and extending from the after box to the stern of the boat and open to the water of flotation, and an antifriction-bearing in one of said boxes to take the end thrust of the propeller-shaft, whereby the gearing and said thrust-bearing are submerged.



2. The combination with a boat, a propeller-shaft mounted therein, and a propeller on said shaft, of a box inclosing said shaft at the point where the driving-gears are situated, the said gears, the driving-shaft, a casing *f*, connecting said box with the boat at the point where the propeller-shaft passes out, and a cut-off in said casing, whereby the influx of water may be stopped at will.

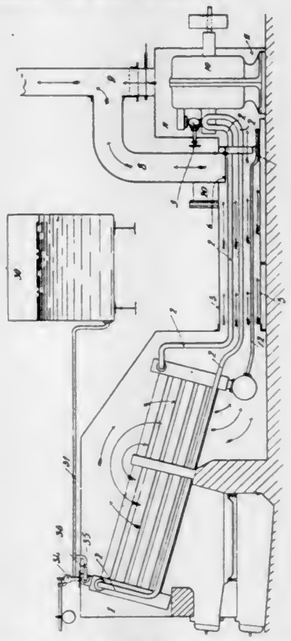
3. The combination with a boat, a propeller-shaft mounted therein, and a propeller on said shaft, of a box inclosing said shaft at the point where the driving-gears are situated, the said gears, the driving-shaft, a casing *f*, connecting said box with the boat at the point where the propeller-shaft passes out, and a cut-off in said casing near its outer end, said cut-off comprising a box 27, in the casing *f*, a cut packing-ring 33, embracing the propeller-shaft, and means for clamping said ring on the shaft.

4. The combination with the boat, the propeller-shaft mounted therein, and the propeller on said shaft, of the roller, end-thrust bearing for the propeller-shaft, the roller shaft-bearing therefor, the pinion *p* on the propeller-shaft, the upright driving-shaft, the wheel *o* thereon gearing with the pinion *p*, said wheel having in it a hollow to receive an antifriction-roller bearing for the driving-shaft, the said roller-bearing, and a box *e* inclosing all of said bearings and gearing and connected with the water of flotation for submerging the same, substantially as set forth.

5. The combination with a boat, a propeller-shaft mounted therein, a propeller on said shaft, an upright shaft geared below to the propeller-shaft and above to a crank-shaft for operation by hand, the said crank-shaft provided with cranks, and antifriction thrust-bearings for the propeller-shaft, of a casing inclosing the propeller-shaft, the gearing to the upright shaft, and the thrust-bearings, said casing being open to the water of flotation, and means for cutting off the influx of water to the said casing.

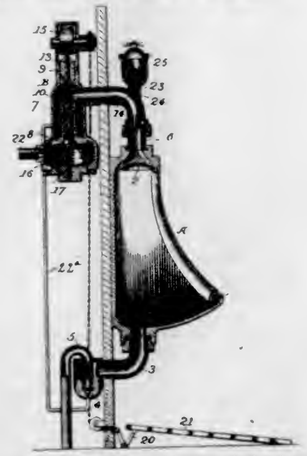
653,436. STEAM-GENERATOR. HENRY A. BUCK, London, England. Filed Oct. 4, 1899. Serial No. 732,527. (No model.)

Claim.—1. In combination, an engine, a boiler, a pipe leading from the boiler to the engine having a return to the boiler, a cock adapted to cut off the supply to the engine, a supply-chamber having a connection to the boiler, and a storage-tank adapted to receive the overflow-discharge from the boiler, having a controlled passage to said supply-chamber, substantially as described.



2. In combination, an engine, a boiler, a pipe for conveying hot water from the boiler to the engine, a condenser connected with the engine, a hot-well connected with the condenser, a pipe leading from the hot-well to the boiler, a pump for forcing the water from the hot-well to the boiler, a pipe for supplying the pump, an expansion-chamber 16 in said pipe, a pipe leading from the pump back to the condenser and a second pipe leading from the expansion-chamber back to the condenser, substantially as described.

653,437. URINAL. FRANZ BURGER and HENRY M. WILLIAMS, Port Wayne, Ind.; said Burger assignor of one-half to said Williams. Filed Apr. 21, 1898. Serial No. 678,385. (No model.)



Claim.—1. In a urinal, the combination of a bowl, an inlet-pipe leading thereto, an outlet-pipe leading therefrom, a main valve for controlling the flow of water through the inlet-pipe provided with a hollow stem and a valve-seat at one end thereof, an auxiliary valve adapted to control the flow of water through the hollow stem and

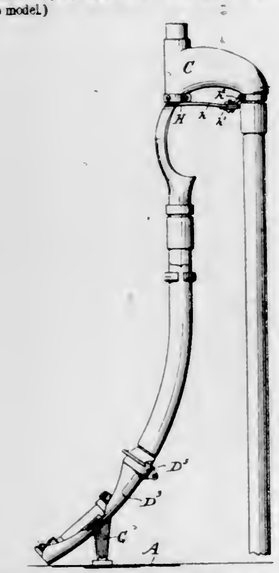
having a stem projecting through the stem of the first valve, a pipe connecting the hollow stem and the inlet-pipe, a rotatable cam movably supported to engage the stems of both valves, and means for rotating the cam in one direction to cause its initial movement to open both valves, then in its further movement to permit the main valve to close while holding the auxiliary valve open, and independently-operating means for returning the cam to its normal position, substantially as set forth.

2. In a urinal, the combination of a bowl, an inlet-pipe leading thereto, an outlet-pipe leading therefrom, a main valve for controlling the flow of water through the inlet-pipe provided with a hollow stem and a valve-seat at one end thereof, an auxiliary valve adapted to control the flow of water through the hollow stem and having a stem projecting through the stem of the first valve, a pipe connecting the hollow stem and the inlet-pipe, a cam movably supported to engage the stems of both valves, means to move the cam in one direction to cause its initial movement to open both valves, and then in its further movement to permit the main valve to close while holding the auxiliary valve open, and means to move the cam in the opposite direction and cause it to again open the main valve and temporarily hold both valves open, and then to permit both valves to close, substantially as set forth.

3. In a urinal, the combination of a bowl, an inlet-pipe leading thereto, an outlet-pipe leading therefrom, a valve-casing, two independent conduits leading from said casing to the inlet-pipe, independently-movable valves to control the flow of water through said conduits, and a common mechanism to control the movement of both valves, and operating first to open both valves to permit water to flow through both conduits simultaneously, then permitting one valve to close, then again opening the closed valve and temporarily holding both valves open, and then permitting both valves to close, substantially as set forth.

653,438. TERMINAL FOR PNEUMATIC-DESPATCH TUBES.

CHARLES H. BURTON, Chicago, Ill., assignor to the National Pneumatic Service Company, same place. Filed May 17, 1900. Serial No. 16,955. (No model.)



Claim.—1. In a consecutive-delivery terminal, the combination with a hollow coupling adapted to be connected to the end of the receiving-tube and having a vertical tubular member for the passage of discharging-carriers, and a lateral branch for the passage of the air-current to the exhausting device, of a flap-valve pivoted on said lateral branch and normally closing the lower end of said tubular member of the coupling, and a delivery-chute connected to the latter, said delivery-chute being cut away in the rear near its upper end for the purpose of permitting the free operation of the valve and also to prevent the formation of a vacuum in rear of a discharging-carrier, substantially as described.

2. In a consecutive-delivery terminal, the combination with a hollow coupling adapted to be connected to the end of the receiving-tube and having a vertical tubular member for the passage of discharging-carriers, and a lateral branch for the passage of the air-current to the exhausting device, of a suitably-pivoted valve-disk normally closing the lower end of said tubular member of the coupling, and a delivery-chute connected to the latter, said delivery-chute being cut away on its rear and front sides near its upper and lower ends respectively for the respective purposes of permitting the free operation of the valve-disk and the consecutive removal of the discharging-carriers, substantially as described.

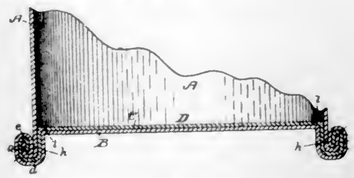
3. A delivery-chute for consecutive-delivery terminals, comprising in combination an upper or hopper section adapted to be secured in line with the discharging end of the receiving-tube, a lower or footpiece section in which the carriers are brought to rest, and an intermediate tubular section, the length and curvature of which may be varied to suit the requirements of individual systems, said parts being separably united to form a complete chute, substantially as described.

4. In a consecutive-delivery terminal, a delivery-chute comprising an upper or hopper section adapted to be secured in line with the discharging end of the receiving-tube, a lower or footpiece section in which the carriers are brought to rest, and an intermediate tubular section, the length and curvature of which may be varied to suit the requirements of individual systems, said parts being separably united to form a complete chute, in combination with a sending terminal-piece adapted to be separably connected to the sending-tube, and which in respect of length and curvature may also be varied to suit the requirements of individual systems, substantially as set forth.

5. In a consecutive-delivery terminal, a delivery-chute comprising an upper or hopper section adapted to be secured in line with the discharging end of the receiving-tube, a lower or footpiece section in which the carriers are brought to rest, and an intermediate tubular section, the length and curvature of which may be varied to suit the requirements of individual systems, said parts being separably united to form a complete chute, in combination with a sending terminal-piece adapted to be separably connected to the sending-tube, and which conforms substantially in respect of length and curvature to the intermediate section of the delivery-chute, and means for uniting the same laterally in fixed relation to the delivery-chute, all substantially as and for the purposes set forth.

653,439. ANTIRUST VESSEL. JOSEPH E. BYRNES, Newark, N. Y.

Filed Feb. 10, 1900. Serial No. 4,836. (No model.)



Claim.—1. A sheet-metal vessel having a bottom plate and an antirust sheet or plate superimposed thereon, the body of the vessel being formed with an outwardly-projecting flange and said bottom plate and antirust sheet having outwardly-projecting flanges adjacent to and coacting with said flange of the body, the flanges of the two bottom plates or sheets extending beyond the flange of the body of the vessel, the one bent over the other and both embracing the flange of the body substantially as and for the purpose specified.

2. A sheet-metal vessel having a bottom plate, and a superimposed antirust sheet or plate, the body of the vessel and said antirust sheet and the bottom plate each having an outwardly-turned flange, the flange of the antirust sheet extending beyond the flange of the body of the vessel, and the flange of the bottom plate extending beyond the flange of the antirust sheet, the flanges of the antirust sheet and bottom being bent one over the other and over the flange of the body and all again bent and lying contiguous to the wall of the vessel substantially as shown and described.

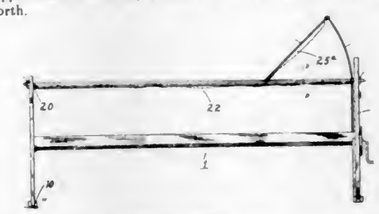
3. A vessel of the kind described, having the bottom formed of two sheets one placed upon the other, one being of antirust material, the body of the vessel and the two bottom plates being formed with outwardly-projecting parts or flanges, said three flanges being of different lengths and bent one over the other and folded or rolled into an external bead or band for the vessel, substantially as shown and described.

653,440. INVALID'S BED. ALBERT B. CLARK, Hamburg, N. Y.

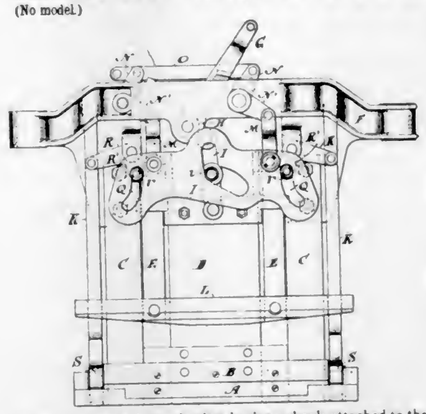
Filed Aug. 1, 1898. Serial No. 687,463. (No model.)

Claim.—A bed for invalids, &c., comprising a main frame having one of its vertical posts provided with a series of holes or openings

a supplementary adjustable frame mounted on said main frame, means for raising and lowering said frame, an adjustable pillow-support in the form of a frame with its ends bent at substantially right angles and pivoted to the bed-frame; said pillow-support having adjustment independent of the adjustment of the supplementary frame, an arm having a forked end connected to said pillow-support, a lever pivoted to the bed so as to have a vertical movement upon said pivot, a rope extending from said lever to the lower portion of said forked arm, and a pin adapted to fit into any one of the holes in the frame-post to support the lever in any position to which it may be adjusted, as set forth.



653,441. GRIP MECHANISM FOR CABLE-RAILWAYS. JAMES CRAIG, Jr., New York, N. Y. Filed Aug. 4, 1898. Serial No. 687,669 (No model.)



Claim.—1. In a grip mechanism having a shank attached to the movable jaw, in combination, a link, secured to the movable shank; jaw-operating mechanism connected to the link, whereby the shank and jaw are raised and lowered; and ejector mechanism, adapted to engage with and operate the jaw-operating mechanism only when the jaw is closed and raise the shank by means of the link, substantially as described.

2. In a grip mechanism, the combination with a jaw-operating mechanism having a toggle-joint; of an ejector mechanism; and means connecting the toggle-joint with the ejector mechanism, whereby the latter engages with the jaw-operating mechanism to raise the jaw only when the jaw is closed, substantially as described.

3. In a grip for cable-railways, in combination, a movable jaw; mechanism for operating the same; cable-ejectors; an ejector mechanism; and means connecting the ejector mechanism and the jaw mechanism, whereby the ejector mechanism engages with and operates the jaw mechanism only when the jaw is closed, and moves independently of the jaw mechanism when the jaw is open, substantially as described.

4. In a grip for cable-railways, in combination, a movable jaw; mechanism for operating the same a toggle-joint connecting the jaw mechanism and the jaw; cable-ejectors; an ejector mechanism; and means connected with the ejector mechanism whereby the latter engages with and operates the toggle-joint when the jaw is closed, and moves independently of the same when the jaw is open, substantially as described.

5. In a grip mechanism, in combination, a movable jaw; a toggle-joint connected to the movable jaw and to mechanism operated from the end of the car, whereby the jaw is raised and lowered; cable-ejectors; ejector mechanism arranged to operate the latter; and a plate connected with the ejector mechanism and with the toggle-joint, whereby the plate engages with and operates the latter when the jaw is closed to open the grip and moves independently of the same when the jaw is open, substantially as described.

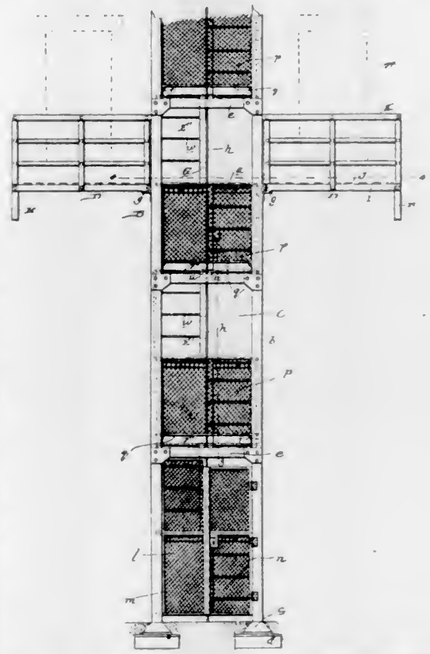
6. In a grip mechanism, in combination, a movable jaw; a toggle-joint I connected to the movable jaw and to mechanism operated from the end of the car, whereby the jaw is raised and lowered; cable-ejectors; ejector mechanism arranged to operate the latter; and a plate P connected to the ejector mechanism and having the slots $p\ p'$ adapted to engage the joint of the toggle I, substantially as described.

7. In a grip for cable-railways, in combination, cable-ejectors provided with means for holding the cable in the grip; and ejector mechanism, adapted to raise the ejectors to eject the cable, and to exert a vertical downward pressure through the ejectors on the cable, whereby the cable is confined in the grip, substantially as described.

8. In a grip for cable-railways, in combination with the jaw-operating mechanism; an ejector mechanism, whereby the ejectors are elevated to throw out the cable from the grip and are held down on the cable when the latter is in the grip; and means connecting the ejector mechanism and the jaw-operating mechanism whereby the ejector mechanism engages with and operates the grip-operating mechanism when the jaw is closed to open the grip and moves independently of the latter, when the jaw is open, substantially as described

9. In a grip mechanism, in combination, a movable jaw; a toggle-joint I connected to the movable jaw and to mechanism operated from the end of the car, whereby the jaw is raised and lowered; cable-ejectors provided with downwardly-projecting hooks S; a plate P adapted to engage with and elevate and push down the ejectors, and having the slots $p\ p'$ arranged to engage with the joint of the toggle I; and mechanism whereby the plate is raised by devices in the conduit; and other mechanism whereby the plate is raised and lowered from the car, substantially as described.

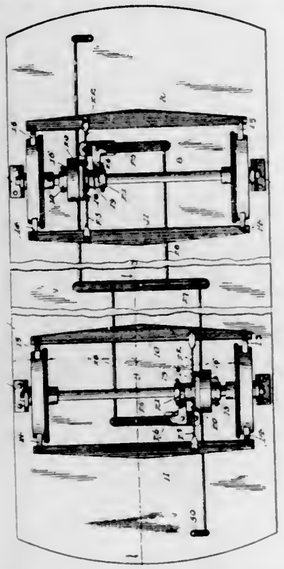
653,442. OUTSIDE STAIRWAY. ALFRED O. DUNK, Reed City, Mich. Filed Dec. 16, 1899. Serial No. 740,548. (No model.)



Claim.—In an outside stairway, a vertical shaft arranged alongside the wall of a building and comprising a main frame having parallel upright bars *h* extending throughout its height and connected together at intervals and forming a partition, and also having outer corner-uprights connected at intervals in their length by horizontal bars *e*, and also having horizontal bars arranged against and fixed to the wall of a building, the bars E E' disposed at opposite sides of the partition-bars *h* and having stringer portions at an intermediate point of their length and also having horizontal portions at their ends arranged on and connected to the bars *e a*, respectively, and also having treads connected to the stringer portions of the bars E, E', and inner and outer platforms arranged on the horizontal por-

tions of the bars E, F and arranged between the partition-bars A and the outer portion of the frame and between said partition-bars and the building-wall, respectively, and balconies arranged in the same planes as the inner platforms of the shaft, and extending laterally from the shaft and resting below openings in the wall of the building all substantially as and for the purpose set forth.

653,443. CAR-BRAKE. RICHARD W. ENNIS, Buffalo, N. Y. Filed Dec. 27, 1899. Serial No. 741,745. (No model.)



Claim.—1. In a brake mechanism, the combination with an axle and the wheels mounted thereon, of brake-shoes adapted for engagement with the wheels, a clutch comprising a member fixed to the axle and a member mounted loosely upon the axle, bars connected with the brake-shoes and eccentrically pivoted to the loose member, and means for moving the loose member into and out of operative relation to the fixed member, substantially as described.

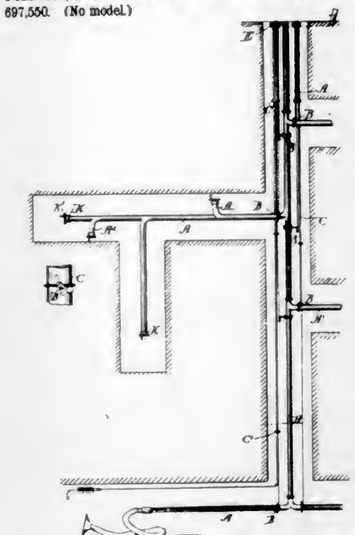
2. In a brake mechanism, the combination with a rotatable body and brake-shoes adapted for movement into and out of operative relation to the rotatable body, of a clutch member fixed to the rotatable body, a movable clutch member adapted for movement into and out of engagement with the fixed clutch member, bars connected with the brake-shoes and eccentrically pivoted to the loose member, and means for throwing the movable member into and out of operative relation to the fixed clutch member, substantially as described.

3. In a brake mechanism, the combination with an axle and wheels fixed thereto, of brake-shoes adapted for engagement with the wheels, a clutch member having fixed relation to the wheels, a second clutch member adapted for movement into and out of operative relation to the fixed clutch member, means for moving the movable clutch member, and bars connected with the brake-shoes and eccentrically pivoted to the loose member, substantially as described.

4. In a brake mechanism, the combination with an axle and wheels fixed thereto, of brake-shoes adapted to engage the wheels, a clutch member fixed to the axle, a second clutch member mounted loosely upon the axle and adapted for slidable movement thereon into and out of engagement with the fixed member, a lever operatively connected with the movable member for moving it along the axle, means for operating said lever, brake-beams for the brake-shoes, and bars connected at their outer ends to the brake-beams and eccentrically pivoted at their inner ends to the movable clutch member, substantially as described.

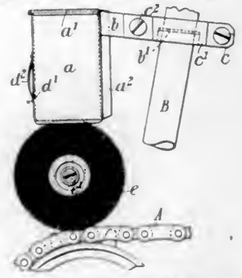
5. The combination with a vehicle, axles, wheels fixed to the axles, of brake-beams located at opposite sides of the axles and provided with brake-shoes for engaging the wheels, clutch members fixed to the axles, sliding clutch members loosely mounted on the axles and slidably connected therewith, links connected with the brake-beams and eccentrically pivoted to the movable clutch members, the L-shaped levers fulcrumed at their angles and having short arms curved downward and connected with the sliding members, the lever 27 fulcrumed between its ends and connected with the long arms of the L-shaped levers, and operating mechanism connected with the lever 27, substantially as described.

653,444. APPARATUS FOR VENTILATING MINES. HENRY FULLWOOD, North Carlton, Victoria. Filed Nov. 26, 1898. Serial No. 697,550. (No model.)



Claim.—In apparatus to be used in the ventilation of mines, in combination, a system of pipes having dampers set in the pipes near each junction of two pipes, such dampers having spindles with bearings formed by the flanges of the adjacent pipe lengths, the projecting end of spindle carrying a weight, a cord attached to such weight passing over pulleys, and secured to one end of a lever whereby the dampers are operated.

653,445. CHAIN-LUBRICATOR FOR BICYCLES, &c. HERBERT GARLAND, West Kirby, England, assignor of two-thirds to George Woolliscroft, same place, and Henry Reddin, Church Stretton, England. Filed Sept. 9, 1899. Serial No. 729,954. (No model.)

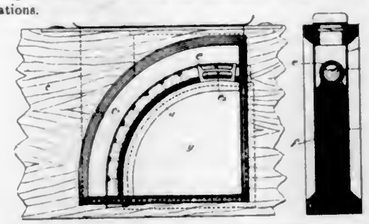


Claim.—1. In a driving-chain-lubricating apparatus, the combination with a case adapted to receive a solid block of lubricant and having its end adjacent to the chain entirely open, of a revoluble chain-engaging brush adjacent to said open end of said casing, means for feeding said block of solid lubricant toward said brush and means for holding said block of lubricant out of contact with said brush when desired, substantially as described.

2. In a driving-chain-lubricating apparatus the combination with a case adapted to receive a solid block of lubricant, and having its end adjacent to the chain entirely open, of a revoluble chain-engaging brush adjacent to said open end of said casing, and an auxiliary reservoir for liquid lubricant provided with a discharge-aperture adjacent to said brush, substantially as described.

653,446. INCLINOMETER. ADOLF GOHL, Wangen, Germany. Filed Nov. 10, 1899. Serial No. 736,529. (No model.)

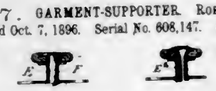
Claim.—1. The combination in an instrument of the character described, with a straight-edge and a quadrant-tube containing an indicating-bubble and having graduations on its exposed side, of an indicating-clip having an orifice and being adapted to slide on the tube to cause said orifice to register with said bubble, said clip having another orifice arranged to expose said graduations, and a pointer extending into said latter orifice and arranged to register with said graduations.



2. The combination in an instrument of the character described, with a straight-edge and a quadrant-tube containing an indicating-bubble and having graduations on its exposed side, of an indicating-clip adapted to slide on the tube, said clip comprising a pair of bands encircling the tube for about two hundred degrees, pairs of narrow strips connecting the bands, one pair on each side of its middle portion, and a pointer on one of said bands extending toward the other band and adapted to register with said graduations, substantially as set forth.

3. The combination of a straight-edge having an interiorly-disposed indicating-tube exposed at opposite sides of the instrument, the straight-edge having parallel longitudinal grooves one on each side of said tube, and a casing having parallel sides connected by a narrow strip, said sides adapted to slide longitudinally in said grooves to cover and to expose said tube, substantially as and for the purposes set forth.

653,447. GARMENT-SUPPORTER. ROBERT GORTON, Newton, Mass. Filed Oct. 7, 1896. Serial No. 608,147. (No model.)



Claim.—1. The combination of a base-plate, a shank or stem projecting therefrom, an attaching-rivet and a piece of yielding material interposed between the end of the shank and the head of the rivet and extending laterally therefrom.

2. The combination of a base-plate, a shank or stem projecting therefrom and having a flange on its upper end, a rivet, and a piece of yielding material interposed between the flange of the shank and the head of the rivet and extending laterally therefrom.

3. The combination of a base-plate, a shank or stem projecting therefrom, a piece of yielding material on the end of the shank and which extends laterally therefrom, and a headed stud projecting from the end of the shank and between the head of which and the end of the shank the yielding material is held.

4. As a new article of manufacture a button having a stem, and a head, the head of greater diameter than the stem, a disk on the stem, and a rubber bearing-piece on the head extending beyond the periphery thereof and held in position by the disk.

5. A garment-supporter button comprising a base supporting a non-elastic shank, a ring formed of suitable yielding material, said ring being of larger diameter than the diameter of the shank and forming the periphery of the button-head, a rivet passing through said shank and holding the ring between itself and said shank.

6. As a new article of manufacture, a button having a stem and a flat head, comprising two metallic disks and a ring of yielding material clamped between the disks, projecting beyond the same and constituting the periphery of the button-head, substantially as described.

7. The combination of a hollow shank having a flange at one end, a headed stud passing into the shank, and a piece of yielding material interposed between the said flange and the head of the stud.

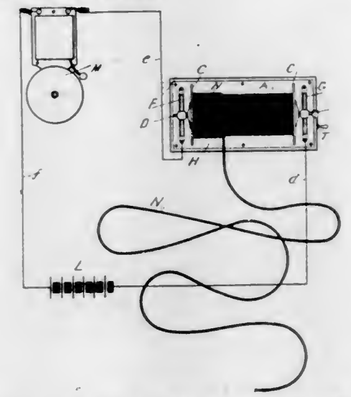
8. A garment-supporter button or stud, comprising a base supporting a non-elastic shank, a yielding ring of larger diameter than the diameter of said shank, a tubular rivet passing through said shank and base and engaging and securely holding said yielding ring, substantially as and for the purpose specified.

9. A button comprising a perforated base-plate, a hollow shank supported by said base-plate around the perforation, an outwardly-projecting flange toward the upper end of said hollow shank, a rivet having a flange on its upper end, and a ring of yielding material, the inner edge of said ring being securely held between the flanged portions of said rivet and said shank, when the parts are assembled.

10. A button provided with a base, a stem, a head having two disks, a yielding material clamped between and projecting beyond the periphery of said disks and constituting the yielding periphery of the head, and a central rivet connecting the parts, substantially as set forth.

11. A stud for garment-supporters provided with a base, a stem, a head having disks, a ring of suitable yielding material confined between the disks larger in diameter than the diameter of the stem and forming the periphery of the head, the disks, stem and ring being riveted together, substantially as set forth.

653,448. REEL OR SPOOL FOR ELECTRIC THERMOSTATIC CABLES. JOHN D. GOULD, New York, N. Y. Filed July 10, 1899. Serial No. 723,409. (No model.)



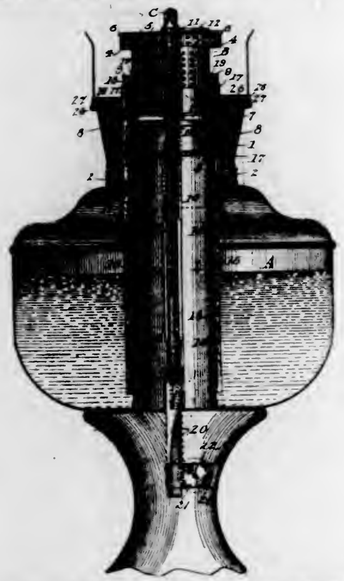
Claim.—1. In an electric fire-alarm apparatus, a reel or spool comprising a wooden barrel having metal flanges forming heads at the opposite ends of the barrel, journal-pins located in the barrel and projecting from the ends thereof, metal brackets in which the free ends of said pins are journaled, a wire connected at one end to one of the metal heads, extending longitudinally through the body of the barrel and terminating at a point adjacent to the opposite metal head, a second wire connected to the last-named metal head and terminating at a point adjacent to the end of the first-named wire but insulated therefrom, combined with an electric cable arranged to be wound on said spool or reel, said cable being composed of two wires insulated from each other, one of which wires is composed of fusible material, said wires being electrically connected at one end, respectively, to the two separate wires carried by the spool, an electric battery having the poles thereof connected respectively to the two metal brackets in which the spool or reel is journaled, and a bell in the battery-circuit, substantially as described.

2. In an electric fire-alarm apparatus, a reel or spool comprising a wooden barrel having metal flanges forming heads at the opposite ends of the barrel, journal-pins located in the barrel and projecting from the ends thereof, metal brackets in which the free ends of said pins are journaled, a crank-handle on the end of one of said pins by which the barrel may be rotated, a wire connected at one end to one of the metal heads, extending longitudinally through the body of the barrel and terminating at a point adjacent to the opposite metal head, a second wire connected to the last-named metal head and terminating at a point adjacent to the end of the first-named wire but insulated therefrom, combined with an electric cable arranged to be wound on said spool or reel, said cable being composed of two wires insulated from each other, one of which wires is composed of fusible material, said wires being electrically connected at one end, respectively, to the two separate wires carried by the spool, an electric battery having the poles thereof connected, respectively, to the two metal brackets in which the spool or reel is journaled, and a bell in the battery-circuit, substantially as described.

653,449. LAMP. JOSEPH GREGORY, New York, N. Y. Filed Apr. 27, 1898. Serial No. 678,972. (No model.)

Claim.—1. In a lamp, the combination with inner and outer tubular portions forming a wick-space between them, the inner part having its upper end portion perforated, of a spreader movable vertically and having a space formed between it and the upper perforated portion of the inner part or wick-tube, substantially as and for the purpose set forth.

2. In a lamp, the combination with inner and outer tubular parts having a wick-space formed between them, the inner part having its upper end portion perforated and formed with an outer flange overhanging the wick-space and adapted to rest upon and come in contact with the upper end of the wick, of a spreader movable vertically and having an annular space formed between it and the upper perforated portion of the inner tubular part of the wick-tube, substantially as and for the purpose set forth.



3. In a lamp of the character described, spaced inner and outer tubes, the inner tube having an annular shoulder near its upper end and having a portion projected vertically above the said shoulder forming with the upper portion of the outer tube a space permanently inclosed from the central draft, a vertically-movable spreader, and a wick-lifter movable vertically with the spreader and in frictional engagement with the lower portion of the inner tube and having its upper portion adapted to operate in the space formed between the upper end portions of the inner and outer tubes and provided with spring-teeth forced into engagement with the wick by riding upon the aforesaid annular shoulder of the inner tube and automatically releasing the wick when clearing the said shoulder in the upward movement of the wick-lifter, substantially as described.

4. In a lamp, the combination with a wick-tube, and a spreader movable vertically with reference to the wick-tube, of a lifting-rod having connection with the spreader, and a guide for the lifting-rod located within the wick-tube and formed of a single piece of sheet metal and consisting of a ring, and radial arms having outwardly-curved parts, the latter unitedly forming a guide-opening for the lifting-rod, substantially as specified.

5. In a central-draft burner, the combination of the wick-tube, and spreader, with a band secured to the spreader and movable therewith and having its upper portion perforated for the escape of gas from the inside of the wick, and having its upper end bent outwardly forming a guard, and a centrally-disposed rod for limiting the vertical movement of the spreader and band, substantially as described.

6. In a central-draft burner, the combination with the wick-tube, of a vertically-movable spreader carrying a member having a guard adapted to rest upon and cover the upper end of the wick, and gas-vents adjacent to said guard, substantially as set forth.

7. In a central-draft burner, the combination with an inner wick-tube, of a vertically-movable spreader carrying a member having lateral gas-vents disposed to permit the escape of the gas from the wick-space into an air-space between said spreader and the aforesaid member, said air-space being permanently inclosed from the central draft, substantially as specified.

8. In a central-draft burner, the combination with an inner wick-tube, of a vertically-movable spreader carrying a member having a guard adapted to rest upon and cover the upper end of the wick, and with gas vents or perforations immediately below the plane of said guard, substantially as set forth.

9. In a lamp, the combination with an inner wick-tube, of a vertically-movable spreader carrying a guard, a deflector carried by said spreader and occupying a fixed relation to said guard, said guard adapted to rest upon and cover the end of the wick, and said deflector being arranged above the guard, and a centrally-disposed rod limiting the upward movement of the spreader, as set forth.

10. In a central-draft burner, the combination with an inner wick-tube, of a vertically-movable spreader, a band arranged on the exterior of the spreader and movable therewith, said band being provided at its upper end with an outturned guard for the wick, and a plurality of gas vents or perforations contiguous to and below the plane of said guard, substantially as set forth.

11. In a central-draft burner, the combination with an inner wick-tube, of a vertically-movable spreader comprising spaced concentric portions of different relative heights, the inner portion having an annular deflecting-ring projecting over the wick-space, and the outer portion provided with an outwardly-extending annular guard adapted to rest upon and cover the upper end of the wick, the distance between the guard and the deflecting-ring remaining fixed at all adjustments of the spreader, substantially as and for the purposes set forth.

12. In a central-draft burner, the combination with an inner wick-tube, of a vertically-movable spreader comprising concentric portions of different relative heights, the inner portion provided with a deflecting-ring arranged to overhang the wick-space and also with a vertical extension at its outer edge, the parts of said inner portion which lie above and below said deflecting-ring being perforated, and the outer portion of the spreader having a guard arranged to rest upon the upper edge of a wick, said outer portion of the spreader having perforations in a plane below said guard, substantially as and for the purposes set forth.

13. In a central-draft lamp, the combination with an inner wick-tube, of a vertically-movable spreader, a band carried by the spreader and having its upper edge provided with an outwardly-extending continuous flange forming a guard adapted to rest upon and cover the end of a wick, and a centrally-disposed rod for limiting the vertical movement of the spreader and band, substantially as described.

14. The combination with a wick-tube, of a vertically-movable spreader provided with a guard adapted to rest upon the upper end of a wick, and means for permitting the escape of gas from the interior of the wick, said guard preventing the passage of the flame to the upper inner edge of the wick, substantially as described.

15. In a central-draft burner, the combination of an outer wick-tube, a spreader, and a wick-guard, concentrically disposed, an air-space being formed between the wick-guard and the spreader, and said wick-guard being adapted to cover the inner side of and bear upon the upper edge of the wick, that portion of said guard on the inner side of the wick having openings to establish communication between the central draft and the air-space, and said air-space being otherwise closed to the central draft, substantially as described.

16. In a lamp, the combination of an outer wick-tube, an inner wick-tube, a perforated spreader movable with relation thereto, and a guard carried by said spreader and movable therewith, a space being left between the spreader and the guard for the escape of vapor from the wick.

17. In a lamp, the combination of an outer wick-tube, an inner wick-tube the upper end of which terminates a distance below the outer wick-tube, a perforated spreader movable with relation to both of said tubes, and a guard carried by the spreader and leaving a space between the spreader and the guard for the escape of vapor from the inside of a wick, substantially as described.

653,450. MOP-WRINGER. ISAAC C. HART, Cincinnati, Ohio, assignor of one-half to John W. Herron, Jr., same place, and William D. McCracken, Sanford, Fla. Filed Oct. 2, 1899. Serial No. 732,282. (No model.)



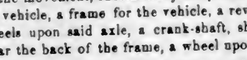
Claim.—1. In a mop-wringer the combination of two rollers, means for supporting them hinged together at their forward ends to a bracket so that the rollers lie side by side in their closed position and swing apart in a common plane, backward-projecting arms at the rear ends of the rollers, and the bracket to be secured to a bucket, substantially as shown and described.

2. In a mop-wringer the combination of two frames hinged together at their forward ends to a bracket and each having a backward-projecting arm, a roller having journal-pins at each end journaled in bearings in each of said frames so that the rollers lie adjacent to each other in the closed position and swing apart in substantially the same plane and the bracket to be secured to the edge of a bucket, substantially as shown and described.

3. In a mop-wringer the combination of two rollers, means for supporting them hinged together at their forward ends to a bracket so that the rollers are adjacent to each other in the closed position and open outward in substantially the same plane, a swinging handle secured at the forward end of the rollers, backward-projecting arms at the rear of the rollers and the bracket to be secured to the edge of a bucket, substantially as shown and described.

4. In a mop-wringer the combination of two frames each having a perforated lug at its forward end, a pivot passing through the lugs into a bracket, a roller having journal-pins at each of its ends journaled in bearings in each of said frames so that the rollers lie adjacent to each other in the closed position and open out in substantially the same plane, a backward-projecting arm at the rear of each frame, a swinging handle secured to the front of one of said frames and the bracket to be secured to a bucket, substantially as shown and described.

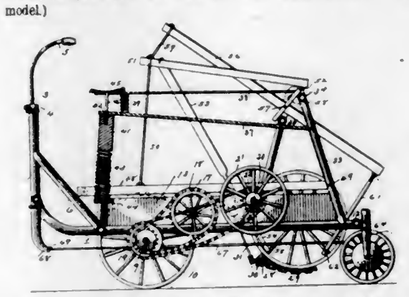
653,451. MOUTH-HARMONICA. HANS HOHNER, Trossingen, Germany. Filed July 22, 1899. Serial No. 724,836. (No model.)



Claim.—1. A cover for mouth-harmonicas comprising a pair of plates which have arched portions located over the vibrating tongues, said plates being connected by the portions extending in contact with the mouth-engaging side of the chamber-block, said communicating plate having apertures opposite the chambers in the block, and having strips bent inwardly and engaging the walls of said chambers, substantially as set forth.

2. A cover for a mouth-harmonica comprising a pair of plates, each plate having separate non-communicating arched portions extending from the side opposite the mouth-engaging side toward the opposite side, said plate being in contact with the upper and lower faces of the chamber-block except at said separate arched portions, said plates being connected by a portion extending in contact with the mouth-engaging side of the chamber-block, said connecting-plate having apertures opposite the chambers in the block, and having strips bent inwardly and adapted to engage the walls of said chambers, substantially as set forth.

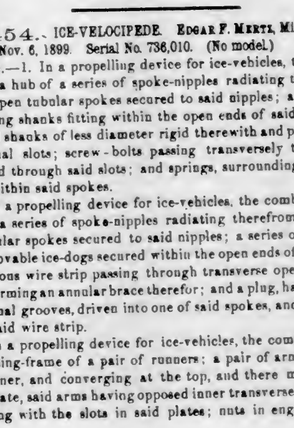
653,452. LEVER-DRIVEN MECHANISM. FRIEDRICH KLEINVOGEL, Newport, Ky. Filed Jan. 30, 1900. Serial No. 3,315. (No model.)



Claim.—1. In mechanism such as described, a crank-shaft, wheels mounted upon separate axes and having a partial rotatory or rocking movement in opposite relation to each other, segments secured to the lower peripheries of said wheels, and chains guided upon said segments and connecting the crank-shaft and wheels, pedal-levers pivoted at their rear extremities to a stationary part, a series of levers operatively connecting said pedal-levers and wheels for imparting a rocking movement to the latter, means for transferring motion from the crank-shaft upon a driven shaft, and including a balance-wheel to regulate the movement, substantially as specified.

2. In a vehicle, a frame for the vehicle, a revoluble front axle, traction-wheels upon said axle, a crank-shaft, shafts journaled in bearings near the back of the frame, a wheel upon each shaft, having each a partial rotatory or rocking movement in opposite relation to the other, segments secured to the lower peripheries of said rocking members or wheels, and chains guided upon said segments and connecting the crank-shaft and wheels, pedal-levers pivoted to the rear of the frame, a series of levers operatively connecting said pedal-levers and wheels for imparting a rocking movement to the latter, and means for transferring motion from the crank-shaft upon the front axle, including a balance-wheel to regulate the movement, substantially as described.

653,453. WINDOW-SHADE ADJUSTER. JAMES E. MARTIN, Fairfield, Ill. Filed Mar. 7, 1900. Serial No. 7,700. (No model.)



Claim.—1. A device of the class described comprising a casing having an outer end wall and provided with side walls, a dog concealed within the casing and arranged to clamp a cord, the exterior loop arranged at a point between the top and bottom of the casing and having its sides disposed on the outer faces of the side walls of the said casing, and means for connecting the loop with the dog, substantially as described.

2. A device of the class described comprising a casing closed at the front and sides, a dog pivotally mounted within and wholly concealed by the casing and arranged to clamp a cord against the inner face of the outer wall of the same, and an approximately U-shaped loop receiving the outer portion of the casing at a point between the top and bottom thereof, and projecting beyond the same and connected with the dog, substantially as described.

3. In a device of the class described, the combination of a casing, a dog arranged within the casing and adapted to clamp a cord, a loop arranged on the exterior of the casing and extended inward through the sides of the same and connected with the dog, said loop being extended beyond the casing, and a cord engaged by the dog and passing through the loop, substantially as described.

4. In a device of the class described, the combination of a casing provided at its top and back with flanges and having an opening at its front, a pulley journaled at the opening, a dog arranged within the casing, and an exterior loop arranged between the top and bottom of the casing and connected with the dog, substantially as described.

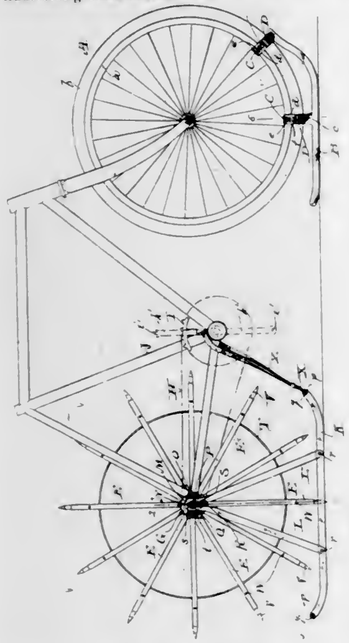
653,454. ICE-VELOCIPEDE. EDGAR F. MERTZ, Milwaukee, Wis. Filed Nov. 6, 1899. Serial No. 736,010. (No model.)

Claim.—1. In a propelling device for ice-vehicles, the combination with a hub of a series of spoke-nipples radiating therefrom; a series of open tubular spokes secured to said nipples; a series of ice-dogs having shanks fitting within the open ends of said spokes, and additional shanks of less diameter rigid therewith and provided with longitudinal slots; screw-bolts passing transversely through said spokes and through said slots; and springs, surrounding said slotted shanks, within said spokes.

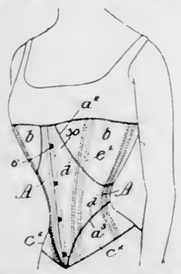
2. In a propelling device for ice-vehicles, the combination with a hub of a series of spoke-nipples radiating therefrom; a series of open tubular spokes secured to said nipples; a series of spring-controlled movable ice-dogs secured within the open ends of said spokes; a continuous wire strip passing through transverse openings in said spokes, forming an annular brace therefor; and a plug, having exterior longitudinal grooves, driven into one of said spokes, and securing the ends of said wire strip.

3. In a propelling device for ice-vehicles, the combination with a supporting-frame of a pair of runners; a pair of arms rising from each runner, and converging at the top, and there merging into a slotted plate, said arms having opposed inner transverse grooves communicating with the slots in said plates; nuts in engagement with

said grooves; a hub-axle passing through the said plate-slots above said grooves; a hub supported on said axle and having propelling-spokes radiating therefrom; nuts secured to the ends of said axle, and having inwardly-projecting sleeves, rigid with said nuts, passing through said plate-slots; and plates mounted on said nut-sleeves and bearing against said slotted plates, and having inwardly-offset downwardly-projecting screw-bolts in engagement with the nuts engaged by the transverse grooves in said arms.



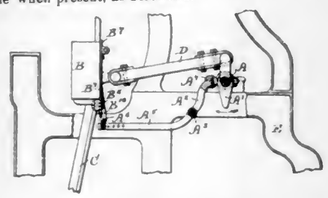
653,455. APPAREL-CORSET. ANITA H. MORFORD, Cambridge, Mass. Filed Mar. 23, 1899. Serial No. 710,166. (No model.)



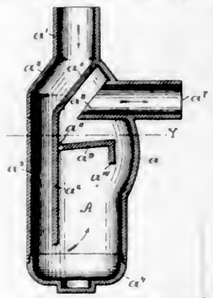
Claim.—A corset each half of which is composed of an integral body-piece extending continuously from front to back and having single concaved portions removed from its top and bottom edges to provide single continuous recesses under the arm and over the hip, an upper edge piece fitted to the continuous recess beneath the arm and secured to the body-piece, a facing composed of a portion extending from the top to the bottom of and secured to the back of the body-piece and having a wing or hip piece secured to the body-piece and filling the continuous recess over the hip.

653,456. LOOM. WILLIAM MCMICHAEL, Woonsocket, R. I. Filed Oct. 13, 1898. Serial No. 693,440. (No model.)

Claim.—In a loom, the combination with the lay, the crank-shaft, the connections between the crank-shaft and the lay, and the picker, of the wiper A' secured to the crank-shaft, the lever A^3 pivotally supported in front of and below the crank-shaft the short arm of said lever bearing on the wiper, the picker-stick B^4 pivotally connected with the lay, the bell-crank lever B^9 pivoted to the lay, the rod B^8 connecting the bell-crank lever with the picker-stick, the flexible strap B^{10} connecting the bell-crank lever with the long arm A^5 of the lever A^3, and the resilient coiled spring B^6 connecting the heel of the picker-stick with the lay; whereby, at each rotation of the crank-shaft, the picker motions on the ends of the lay are operated to throw the shuttle when present, as described.



653,457. SANITARY TRAP. ALBERT S. NEWTON, Providence, R. I. Filed Mar. 1, 1900. Serial No. 6,897. (No model.)

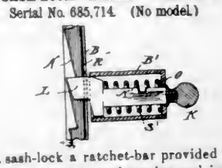


Claim.—1. A trap having the interior divided by a partition into a downward water-passage of less than half the interior of the trap, an upward water-passage of more than half the sectional area, an inlet-duct, an outlet-duct the walls of which extend into the upward water-passage, and a baffle-plate extending from the partition across the greater part of the upward water-passage, as described.

2. In a sanitary trap, the combination with the body A of the trap having the swell a, the detachable cap a^4, the neck a', the inwardly-extending end a^8 of the outlet-duct, and the outlet-duct a^7, of the partition a^5 extending obliquely from the outlet side of the body of the trap, the partition a^6 extending from the partition a^5 to near the bottom and forming the inlet-duct of the trap, the baffle-plate a^9, the lip a^{10}, and the opening a^{11} in the baffle-plate, as described.

3. In a sanitary trap, the combination with the neck a', the conical portion a^2 of the trap-body, and the partition, dividing the trap, having the inclined upper portion a^3, of the outlet-duct a^7 the walls of which extend into the interior of the trap, terminating in the obliqne end a^6 parallel with the partition a^5, as described.

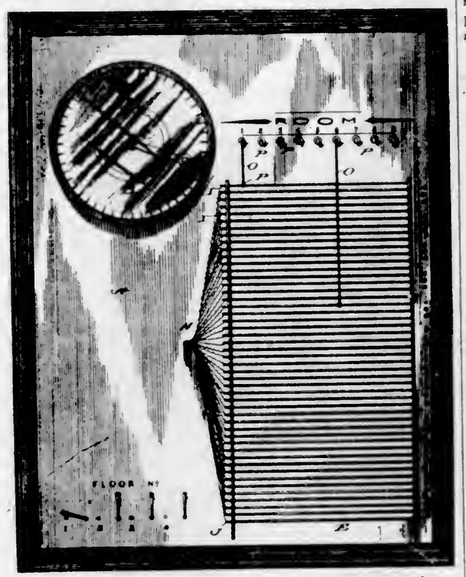
653,458. SASH-LOCK. HERMAN A. PAQUETTE, Chicago, Ill. Filed July 11, 1898. Serial No. 685,714. (No model.)



Claim.—In a sash-lock a ratchet-bar provided with a longitudinal T projection through its central portion and integral therewith, a pawl actuated by a spring, the pawl being divided providing two points of engagement with the ratchet-teeth on the ratchet-bar and having a square open space between the two points of engagement adapted to engage with the flanges and slide on the T projection as specified.

653,459. AUTOMATIC HOTEL CALL-BELL. GEORGE B. REABEN, Summit, Miss., assignor to Vincent Gray, New Orleans, La. Filed Nov. 1, 1899. Serial No. 735,526. (No model.)

Claim.—1. In a device of the character described, a switchboard provided with a number of binding-posts, a series of switch-cords connected at one end to the binding-posts, engaging means on the other ends of the switch-cords, and a series of bars arranged on an incline and adapted to be engaged by the engaging means, substantially as and for the purpose set forth.

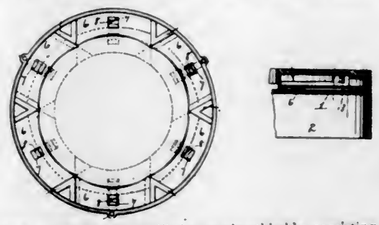


2. In a device of the character described, a switchboard provided with a number of binding-posts, a series of switch-cords connected at one end to the binding-posts, metallic hooks on the other end of the switch-cords, a series of parallel bars arranged on an incline and adapted to be engaged by the hooks, a timing contact device, and connections between the contacts of said device and the parallel bars, substantially as and for the purpose set forth.

3. In a device of the character described, a switchboard provided with a number of binding-posts, flexible switch-cords connected thereto at one end, metallic hooks on the other ends of the switch-cords, weights suspended by the switch-cords, a series of bars arranged on an incline and adapted to be engaged by the hooks, binding-screws mounted on the bars, a timing contact device, and connections between the contacts of said device and the binding-screws, substantially as and for the purpose set forth.

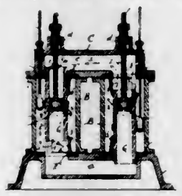
4. In combination with an electrical annunciator-circuit leading from several rooms or apartments, a number of binding-posts each connected with one of the wires of said annunciator-circuit, flexible switch-cords also connected with the binding-posts at one of their ends, hooks on their other ends, a series of parallel bars arranged on an incline and adapted to be engaged by the hooks, a timing contact device, and connections between the contacts of said device and the bars, substantially as and for the purpose set forth.

653,460. STOVEPIPE-THIMBLE. JOSEPH F. SACKSTEDER, Dayton, Ohio. Filed Nov. 17, 1899. Serial No. 737,289. (No model.)



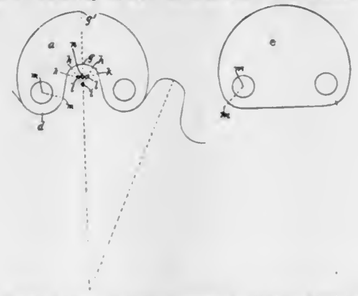
Claim.—The herein-described stovepipe-thimble, consisting of a base-plate adapted to be projected into an opening in the wall and having on its inner face a series of V-shaped lugs, slides inclosed between said lugs and guided in their movements thereby, blocks secured to said slides said blocks having slots therein which slots are essentially wider at their ends than elsewhere, a face-plate, a series of curved ribs or cams on the inner side of said face-plate which lie in the grooves or slots in said blocks and two of which ribs terminate in shoulders or stops which limit the movement of said face-plate, a rabbet formed in the outer edge of said face-plate, and a rabbeted ring fitting therein and adapted to be secured to the rim of the base-plate whereby said plates are securely united, substantially as shown and described.

653,461. HYDRAULIC ENGINE. LORENZO D. B. SHAW, New York, N. Y. Filed July 10, 1899. Serial No. 723,298. (No model.)



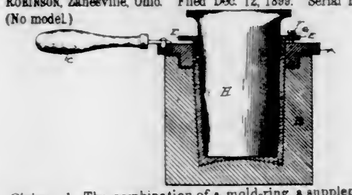
Claim.—In an engine the combination of two pistons moving in the same direction, sliding cylinders or valves reciprocating in opposite directions and in which said pistons work, one of said cylinders or valves acting as a supply and the other as an exhaust substantially as set forth.

653,462. SPROCKET-CHAIN. JONATHAN B. WEST, Rochester, N. Y. Filed Aug. 12, 1897. Serial No. 648,045. (No model.)



Claim.—A sprocket-chain composed of U-shaped links and plain links, the U-shaped links being arranged on the inner sides of the plain links, and pintles for connecting said series of links, both series of links being substantially of the same width and length, substantially as described.

653,468. GLASS-MOLD RING. WILLIAM WHITE and THOMAS ROBINSON, Zanesville, Ohio. Filed Dec. 12, 1899. Serial No. 740,059. (No model.)



Claim.—1. The combination of a mold-ring, a supplemental ring fitting and movable vertically in the mold-ring aperture, and means for limiting the vertical movement of said supplemental ring, substantially as shown and described.

2. The combination of a mold-ring, a supplemental ring fitting and movable vertically in the mold-ring aperture, a lip or flange projecting from said supplemental ring and overlapping the mold-ring and projections on the mold-ring adapted to engage and limit the movement of said flange, substantially as shown and described.

3. The combination of a mold-ring, a supplemental ring fitting and movable vertically in the mold-ring aperture, a lip or flange projecting from said supplemental ring and overlapping the mold-ring, and springs engaging the flange and holding it normally against the mold-ring, substantially as shown and described.

4 The combination of a mold-ring, a supplemental ring fitting and movable vertically in the ring-aperture, and springs for resisting upward movement of the supplemental ring, substantially as shown and described.

5. The combination of a mold-ring, a supplemental ring fitting and movable vertically in the mold-ring aperture, said supplemental

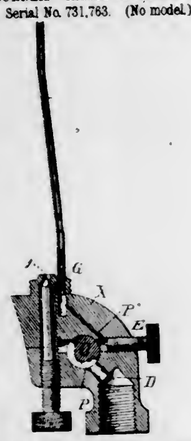
ring having a lip or flange overlapping the mold-ring, pins projecting from the latter upon which said flange has limited vertical movement, and springs on the pins for holding the flange and supplemental ring normally depressed, substantially as shown and described.

6. The combination with a mold ring or cover, of a supplemental ring closely fitting within the mold ring or cover and projecting into the mold-cavity and movable vertically therein, substantially as shown and described.

7. The combination of a mold, a mold ring or cover adapted to form a continuation of the mold-cavity, and a relatively-thin supplemental ring closely fitting within the mold ring or cover and projecting into the mold-cavity and movable vertically therein, substantially as shown and described.

8. The combination of a glass-mold, a mold ring or cover, a vertically-compensating ring fitting the bore of the mold ring or cover and of same thickness as the article to be pressed, thereby normally closing a vertical continuation of the molding-cavity, substantially as shown and described.

653,464. GAS-BURNER. SAMUEL BERNSTEIN, New York, N. Y. Filed Sept. 26, 1899. Serial No. 731,763. (No model.)



Claim.—1. In an incandescent gas-burner, a base-piece of the burner provided with a passage supplying gas to a Bunsen burner, a pin regulating the supply of gas to the Bunsen burner, a by-passage supplying gas to a pilot-tube and a plug by which the flow of the gas can be turned from the passage to the Bunsen burner to the by-passage to the pilot-tube and vice versa, substantially as described.

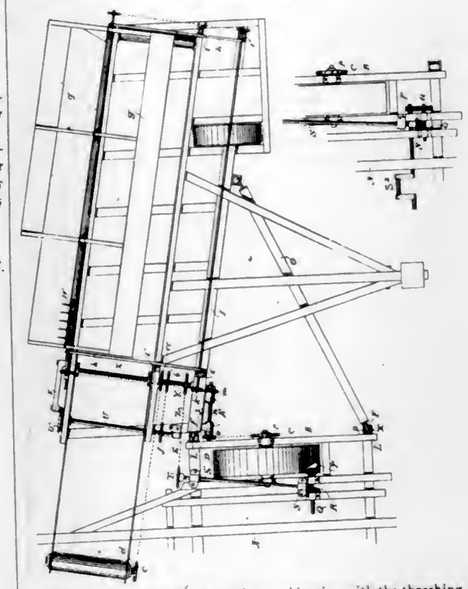
2. In an incandescent gas-burner, a base-piece of the burner made of metal cast in one piece and provided with a passage supplying gas to a Bunsen burner, a pin regulating the supply of gas to the Bunsen burner, a by-passage supplying gas to a pilot-tube and a plug by which the flow of the gas can be turned from the passage to the Bunsen burner to the by-passage to the pilot-tube and vice versa, substantially as described.

3. In an incandescent gas-burner, a base-piece of the burner made of metal cast in one piece and bending or extending to one side above and provided with a passage supplying gas to a Bunsen burner, a pin passing through the lateral extension and regulating the supply of gas through the passage to the Bunsen burner and operating vertically and centrally with the tube of the Bunsen burner, a by-passage supplying gas to a pilot-tube and a plug by which the flow of the gas can be turned from the passage to the Bunsen burner to the by-passage to the pilot-tube and vice versa, substantially as described.

4. In an incandescent gas-burner, a base-piece of the burner which bends or extends to one side above and which is provided with a passage supplying gas to a Bunsen burner, a pin passing through the lateral extension and regulating the supply of gas through the passage to the Bunsen burner and operating vertically and centrally with the tube of the Bunsen burner, a by-passage supplying gas to a pilot-tube and a plug by which the flow of the gas can be turned from thelpas sage to the Bunsen burner to the by-passage to the pilot-tube anc vice versa, substantially as described.

653,465. TRAVELING HARVESTER. DANIEL BEST, San Leandro, Cal. Filed Oct. 17, 1899. Serial No. 733,916. (No model.)

Claim.—1. In a traveling harvester and in combination with the threshing-machine and header frames thereof, means connecting the rear inner corner of the header-frame with the other frame and including a normally-open socket on one frame and a hook on the other frame forming with said socket a substantially-universal joint whereby the outer end of the header-frame is permitted to rise and fall and the front of the header-frame is permitted to be raised and depressed for cutting different heights of grain.



2. In a traveling harvester, the combination with the threshing-machine and header frames, of a substantially-universal coupling-joint between the two and composed of members separable from each other by a single movement, and adapted to provide for a rise and fall of the front of the header-frame and to transmit the forward movement of one frame to the other.

3. In a traveling harvester and in combination with the threshing-machine and header frames thereof, a plate fixed to the threshing-machine frame and having outwardly-projecting lugs and a transverse pin, another plate fixed to the rear inner corner of the header-frame and having a downturned hook adapted to engage the pin of the first-named plate with a substantially-universal movement whereby the outer end of the header-frame may rise and fall and the front of said header-frame may be elevated and depressed to cut different heights of grain, and a brace-timber connected at its opposite ends to said frames by substantially-universal joints.

4. In a traveling harvester, and in combination with the threshing-machine and header frames thereof, and a brace-timber therebetween and detachably connected thereto, of an open-top socket device on the thresher-frame and a projecting hook at substantially the rear inner corner of the header-frame and forming with the socket device a substantially-universal coupling-joint composed of members separable from each other by a single movement whereby the header-frame is readily detachable for transportation purposes.

5. In a traveling harvester and in combination with the threshing-machine and header frames, and a brace-timber therebetween and connection therewith, of an open socket device on the threshing-machine frame and a downturned hook on substantially the rear inner corner of the header-frame, adapted to engage said socket device and form therewith a substantially universal-joint coupling whereby the front of the header-frame may be raised and depressed to cut grain of different heights.

6. In a traveling harvester and in combination with the threshing-machine and header frames thereof, and a brace-timber therebetween and connected therewith at both ends by a substantially universal-joint coupling, of a plate fixed to the threshing-machine frame and having outwardly-projecting lugs and a connecting transverse pin, a plate fixed to substantially the rear inner corner of the header-frame and having a downwardly-bent hook adapted to detachably engage the pin of the other frame and to provide a substantially universal-joint coupling to permit the front of the header-frame to be adjusted vertically to cut grain of different heights, and a locking-pin adapted to extend above the hook to prevent its disengagement.

7. In a traveling harvester the combination with the frame which supports the threshing-machine, and the frame which supports the heading mechanism, of a universal coupling-joint between said frames at substantially the rear inner corner of the header-frame said joint composed of members separable from each other by a single movement whereby the header-frame is readily detachable for transportation purposes.

8. In a traveling harvester and in combination with the threshing-machine and header frames thereof, and hook-and-socket universal-joint connection between said frames at the rear inner corner of the header-frame, means for transmitting power from the main bearing-wheel of the threshing-machine to the mechanism of the header consisting of a shaft journaled approximately lengthwise of the threshing-machine frame next to the stubble side of the bearing-wheel, gearing by which power is transmitted from the bearing-wheel to said shaft, a shaft journaled upon the header-frame, sprocket-wheels upon both of said shafts, and a chain whereby power is transmitted from one to the other and independent movement of the header-frame with relation to the threshing-machine frame permitted.

9. In a traveling harvester and in combination with the header and thresher thereof, a substantially-universal coupling-joint between the header and thresher and formed of members separable from each other by a single movement, a power-shaft journaled upon the threshing-machine frame next to the stubble side of the bearing-wheel, gearing by which motion is transmitted thereto from the bearing-wheel, sickle and belt-driving shafts, and a counter-shaft journaled upon the threshing-machine frame, sprocket-wheels fixed upon the sickle, belt-driving, and counter shafts respectively, and chains by which motion is transmitted from the counter-shaft to the other shafts, a receiving sprocket-wheel fixed upon the counter-shaft and a sprocket-wheel upon the power-shaft on the threshing-machine frame and a chain extending between the two, whereby power is transmitted to drive the header mechanism.

10. In a traveling harvester, the combination of the header and threshing-machine frames and a brace-timber therebetween, substantially-universal coupling-joints between said frames and between the threshing-machine frame and brace-timber said joints composed of members separable from each other by a single movement, a shaft journaled in boxes on the rear inner portion of the header-frame, and having a sprocket-wheel, a sprocket-wheel on the grainward end of the bearing-wheel shaft, a chain connection between said sprocket-wheels, a reel and reel-frame carried upon the header-frame, and sprocket-wheels and chain connections whereby power is transmitted to the reel.

11. In a combined header and separator, and means forming a substantially-universal coupling-joint between the two at the rear inner corner of the header and including members separable from each other by a single movement, means for transmitting power between the driving devices of the separator and the header mechanism consisting of flexible chains extending between said mechanism and the driving devices of the separator, and sprocket-wheels over which said chains pass.

653,466. MEASURING-SPOON. EDWARD L. BIGELOW and KATHERINE K. BIGELOW, Everett, Mass. Filed Dec. 6, 1899. Serial No. 739,395. (No model.)



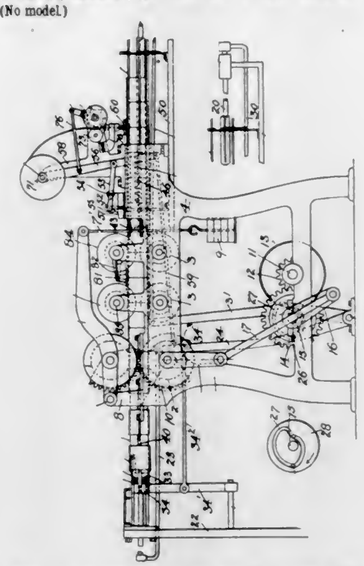
Claim.—1. A spoon measure consisting of a plurality of receptacles or bowls of varying capacities all connected together by a joint admitting of movement of the several receptacles or bowls relative to each other.

2. A spoon measure consisting of a plurality of receptacles or bowls of varying capacities joined together by a swivel or pivotal connection.

3. A spoon measure consisting of a plurality of receptacles or bowls of varying capacities each having a projection of suitable length thereon and swivel or pivotal connections between said projections.

4. A spoon measure consisting of a plurality of receptacles or bowls each having a projecting handle thereon and an eyelet adapted to loosely connect all of said handles together.

653,467. MACHINERY FOR SIDE-SEAMING CANS. WILLIAM D. BROOKS, Baltimore, Md. Filed Dec. 9, 1899. Serial No. 739,832. (No model.)



Claim.—1. In combination, the mandrel, a cage in rear of the same to receive the bodies from the mandrel, and a burner-tube extending from the rear end of the mandrel within the cage, substantially as described.

2. In combination, the mandrel, fluxing and soldering devices, and a burner-tube extending from the rear end of the mandrel, substantially as described.

3. In combination, a hollow mandrel having a reservoir therein and a burner-tube extending from the mandrel, substantially as described.

4. In combination, the solder-feeding devices, the fluxing device, the lever 56, means for oscillating said lever, and connections therefrom to the solder-feeding and fluxing devices, substantially as described.

5. In a can-making machine, a reciprocating mandrel and a die-face having movement with said mandrel with operating means, said mandrel having its opposite ends free for the feeding and discharge of the body-blanks, substantially as described.

6. In combination, a reciprocating mandrel and a die-roller having oscillating movement in unison with the movement of the mandrel with operating means, substantially as described.

7. In combination with a mandrel, a rotary die-roller operating upon the can-body on the mandrel with means for operating the die-roller positively, substantially as described.

8. In combination, the reciprocating mandrel, an oscillating die-roller and operating means whereby the oscillation of the roller will be in unison with the reciprocation of the mandrel, substantially as described.

9. In combination, the upper and lower die-rollers, a reciprocating mandrel between the rollers and operating means, said mandrel having its opposite ends free for the feeding of the body-blanks and the discharge of the bodies, substantially as described.

10. In combination, the reciprocating mandrel, upper and lower die-rollers geared together and means for operating the parts, substantially as described.

11. In combination, a mandrel, means for feeding the bodies along the same, a die-roller, and means for applying pressure yieldingly to said roller, said mandrel having its opposite ends free for the feeding and discharge of the material, substantially as described.

12. In combination, a reciprocating mandrel, means for feeding the bodies along the same, the upper and lower die-rollers, and means for applying a yielding pressure to the upper roller, said mandrel having its opposite ends free for the feeding and discharge of the material, substantially as described.

13. In combination, a reciprocating mandrel, a die and the means for moving the cans along the mandrel through said die, said mandrel having its opposite ends free for the feeding and discharge of the material, substantially as described.

14. In combination, the mandrel, the die, said mandrel having

reciprocating movement and a detent for moving the cans along the mandrel, said detent being fixed in relation to the movement of the mandrel, the can-bodies being fed at one end of the mandrel and discharged at the other end, substantially as described.

15. In combination, a mandrel, oscillating die-rollers and means for oscillating the die-rollers, the said mandrel being free to reciprocate between the rollers under the action thereof, substantially as described.

16. In combination, a mandrel, a die and means for moving the mandrel longitudinally, said means engaging the end of the mandrel at intervals, substantially as described.

17. In combination, the mandrel, a die, and means for pushing the mandrel, said means being located at opposite ends thereof and engaging and disengaging the same, substantially as described.

18. In combination, a mandrel and die, a pushing device at the end of the mandrel with means for operating the same toward and from the mandrel, substantially as described.

19. In combination, a mandrel and die, a pushing device at each end of the mandrel, and means for operating said pushing device toward and from the mandrel to allow the feed and discharge of the can-bodies, substantially as described.

20. In combination, a reciprocating mandrel, a device for acting on the can-body while on the mandrel, means for reciprocating the mandrel and a feed-block opposite the front end of the mandrel adapted to receive the can-body to be placed on the mandrel, substantially as described.

21. In combination, a reciprocating mandrel, a device acting on the can-body thereon, a feed-block at the front end of the mandrel, and means for moving the can-body from the feed-block onto the mandrel, substantially as described.

22. In combination, a reciprocating mandrel, a device acting upon the can-body thereon, and a fixed feed-block at the front end of the mandrel upon which the can-body is placed to be taken by the mandrel, substantially as described.

23. In combination, a reciprocating mandrel, a die, through which the mandrel passes, and means for holding the mandrel against circumferential displacement, said mandrel being free at both ends for the feeding and discharging of the blanks and bodies, substantially as described.

24. In combination, a mandrel, means for acting upon the can-body thereon, said mandrel being free to reciprocate and means engaging the groove at the seam of the can to prevent the mandrel from turning, said mandrel having a groove to receive the thickened part at the seam, substantially as described.

25. In combination with a mandrel, a cage to receive within it the can-body and means for acting upon the can-bodies while in the cage, the cans being forced through the cage by the movement of the preceding cans, substantially as described.

26. In combination, a mandrel, a support for the cans at the end of the mandrel adapted to receive the can-bodies within it and means for acting upon the can-bodies while in said support, the cans being forced through the cage by the movement of the preceding cans, substantially as described.

27. In combination, a reciprocating mandrel, a fixed support to receive the can-bodies therefrom, and means for acting upon the can-bodies while sustained by said fixed support, substantially as described.

28. In combination, a reciprocating mandrel, a fixed support adapted to receive the can-bodies within it as discharged from the mandrel and means for acting upon the can-bodies while in said support, substantially as described.

29. In combination, a reciprocating mandrel, a cage independent thereof and of open form adapted to receive within it the can-bodies, substantially as described.

30. In combination, a reciprocating mandrel and a fixed support of open form to receive the can-bodies therefrom, substantially as described.

31. In combination with the reciprocating mandrel, the fixed cage, the flux-pan, the brush controlled by the cam, a roller and soldering means, substantially as described.

32. In combination in a can-soldering machine, the soldering-iron having an opening through which the solder is fed, means for feeding the solder-wire through the iron and means for supporting a can, substantially as described.

33. In combination, a hollow mandrel, means for acting upon the can-body, a burner-tube extending from the hollow mandrel, and air-controlling means for regulating the feed of gasolene to the burner-tube, substantially as described.

34. In combination, a mandrel, means for operating upon the can thereon, and a feed-block with means for separating the feed-block and mandrel, substantially as described.

35. In combination, a reciprocating mandrel and means acting upon the can-bodies thereon, said mandrel having its opposite ends free, substantially as described

36. In combination, a reciprocating mandrel, means acting upon the can-bodies thereon and means for moving the can-bodies along the mandrel, said mandrel having its opposite ends free, substantially as described.

37. In combination, a mandrel free at its ends, means for acting on the cans while on the mandrel and means for preventing the mandrel from turning, substantially as described.

38. In combination with a mandrel, means for feeding the material along the same, a die acting on the material as it passes thereunder, a cage at the rear of the mandrel to receive the bodies as discharged from the mandrel and means for acting on the bodies while in the cage, substantially as described.

39. In a can-making machine, a reciprocating mandrel and a die moving in unison with said mandrel, operating means, and soldering means, substantially as described.

40. In combination, the fixed frame, the upper and lower die-rollers, a mandrel reciprocating between said die-rollers and means for feeding the blanks past the die-rollers, said rollers having contacting surfaces embracing substantially all of the surface of the mandrel, substantially as described.

653,468. METHOD OF RENDERING ANTHRACITE COAL CONDUCTIVE, &c. WILLIAM J. BURKE, Scranton, Pa., assignor of one-half to Henry A. Kaufhold, same place. Filed Apr. 27, 1900. Serial No. 14,622. (No specimens.)



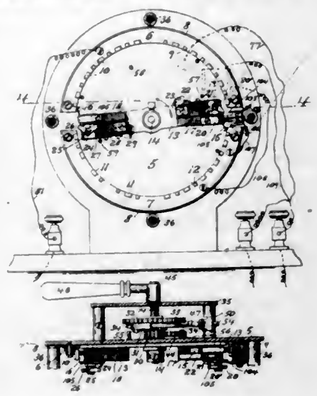
Claim.—1. The herein-described method of rendering anthracite or hard coal electrically conductive, or of transforming it into a conductor, which consists in heating the same in its natural condition of solidity, in a retort closed to external influences until the impurities are driven off.

2 The herein-described method of rendering anthracite or hard coal electrically conductive, or of transforming it into a conductor, which consists in placing the same in a retort, then covering the coal with a layer of suitable fabric, then applying a layer of clay and finally a layer of coal dust or ashes, then heating the retort to drive out the objectionable elements in the form of gases and to convert the coal to commercially-pure carbon, and continuing the heat till the escaping gases cease to burn.

3. As a new article of manufacture, conducting-carbon formed from anthracite or hard coal by freeing it from its volatile non-conducting elements or constituents.

4. As a new article of manufacture, a carbon formed from a piece of anthracite coal freed from its volatile non-conducting elements or constituents and cut to shape.

653,469. ELECTRIC SIGNALING APPARATUS. HENRY G. CARLETON, New York, N. Y., assignor to the Carleton Electric Company, same place. Filed Mar. 16, 1900. Serial No. 8,889. (No model.)



Claim.—1. The combination with a plurality of sets of connected circuit-terminals, of a circuit-closer, means for producing a relative movement between the circuit-closer and the sets of terminals whereby each of the terminals of each set and the circuit-closer may be brought into operative position and means whereby the closer may be caused to coöperate with a predetermined number of the terminals of each set during the continuation of the relative movement.

2. The combination with a plurality of sets of connected circuit-terminals of a traveling circuit-closer its path of travel being such that it is brought into operative position with respect to each of the terminals of each set, and means whereby the closer may be caused to coöperate with a predetermined number of the terminals of each set during its movement; substantially as described

3. The combination with a plurality of sets of connected circuit-terminals, of a circuit-closer having a plurality of circuit-closing devices, means for producing a relative movement between the circuit-closer and the sets of terminals, whereby each of the terminals of each set and the circuit-closing devices of the closer may be successively brought into circuit-closing position, and adjustable means for controlling the operation of the circuit-closing devices, substantially as described.

4. The combination with a traveling circuit-closer having a plurality of sets of circuit-closing devices of a plurality of sets of connected circuit-terminals arranged in the path of travel of the circuit-closer, and adjustable means for controlling the operation of the circuit-closing devices of the closer, substantially as described.

5. The combination with a plurality of sets of connected circuit-terminals, of a circuit-closer having a plurality of sets of circuit-closing devices, means for producing a relative movement between the circuit-closer and the terminals, means whereby each of the circuit-closing devices of the closer may be rendered operative to close a circuit, and adjustable means whereby the closer and terminals are rendered inoperative to close a circuit, substantially as described.

6. The combination with a traveling circuit-closer having a plurality of circuit-closing devices, of a plurality of sets of connected circuit-terminals, means whereby the circuit-closing devices of the closer and the terminals may be rendered operative to close a circuit, and adjustable means whereby the circuit-closer and the terminals may be rendered inoperative to close a circuit, substantially as described.

7. The combination with a plurality of connected circuit-terminals, of a circuit-closer, means for producing a relative movement between the terminals and the closer, a pin for rendering the closer and terminals operative to close the circuit, and an adjustable pin for rendering said closer and terminals inoperative to close the circuit, substantially as described.

8. The combination with a plurality of connected circuit-terminals, of a circuit-closing device, means for producing a relative movement between the terminals and the circuit-closing device, a circuit-controller, means for operating the controller to render the circuit-closing device and the terminals operative to close the circuit, and means for operating the controller to render said circuit-closing device and terminals inoperative to close the circuit, substantially as described.

9. The combination with a plurality of connected circuit-terminals, of a circuit-closing device, means for producing a relative movement between the terminals and the circuit-closing device, a circuit-controller, means for operating the controller to render the circuit-closing device and the terminals operative to close the circuit, and adjustable means for operating the controller to render said circuit-closing device and terminals inoperative to close the circuit, substantially as described.

10. The combination with a plurality of connected circuit-terminals, of a rotating carrier having a circuit-closing device mounted thereon, a circuit-controller carried by the carrier, means for operating the controller to render the circuit-closing device and the terminals operative to close the circuit, and means for operating the controller to render said circuit-closing device and terminals inoperative to close the circuit, substantially as described.

11. The combination with a plurality of connected circuit-terminals, of a rotating carrier having a circuit-closing device mounted thereon, a circuit-controller carried by the carrier, means for operating the controller to render the circuit-closing device and the terminals operative to close the circuit, and adjustable means for operating the controller to render said circuit-closing device and terminals inoperative to close the circuit, substantially as described.

12. The combination with a plurality of connected circuit-terminals, of a circuit-closing device, means for producing a relative movement between these parts so as to cause the terminals and circuit-closing device to be successively brought into circuit-closing position, a circuit-controller, a shaft upon which said controller is mounted, means for rotating the shaft to position the controller so that the terminals and circuit-closing device are operative to close the circuit, and means for rotating the shaft to position the controller so that the circuit-closing device and the terminals are inoperative to close the circuit, substantially as described.

13. The combination with a plurality of connected circuit-terminals, of a circuit-closing device, means for producing a relative movement between these parts so as to cause the terminals and circuit-closing device to be successively brought into circuit-closing position, a circuit-controller, a shaft upon which said controller is mounted, means for rotating the shaft to position the controller so that the terminals and circuit-closing device are operative to close the circuit, and adjustable means for rotating the shaft to position the controller so that the circuit-closing device and the terminals are inoperative to close the circuit, substantially as described.

14. The combination with a plurality of connected circuit-terminals, of a rotating carrier having a circuit-closing device mounted thereon, a circuit-controller, a shaft on the carrier upon which one of the parts of the controller is mounted, means located in the path of the carrier for rotating the controller-shaft to position the controller so that the circuit-closing device and the terminals will operate to close the circuit, and means also located in the path of the carrier for rotating the controller-shaft so as to position the controller to render the circuit-closing device and the terminals inoperative to close the circuit, substantially as described.

15. The combination with a plurality of connected circuit-terminals, of a rotating carrier having a circuit-closing device mounted thereon, a circuit-controller, a shaft on the carrier upon which one of the parts of the controller is mounted, means located in the path of the carrier for rotating the controller-shaft to position the controller so that the circuit-closing device and the terminals will operate to close the circuit, and adjustable means also located in the path of the carrier for rotating the controller-shaft so as to position the controller to render the circuit-closing device and the terminals inoperative to close the circuit, substantially as described.

16. The combination with a plurality of connected circuit-terminals, of a rotating carrier, a contact carried thereby, a circuit-controller, a shaft on the carrier upon which one of the parts of the controller is mounted, a pin located in the path of the carrier for rotating the controller-shaft to position the controller so that the contact and terminals close the circuit, and a pin also located in the path of the carrier for rotating the controller-shaft to position the controller so that the contact and terminals will not close the circuit, substantially as described.

17. The combination with a plurality of connected circuit-terminals, of a rotating carrier, a contact carried thereby, a circuit-controller, a shaft on the carrier upon which one of the parts of the controller is mounted, a pin located in the path of the carrier for rotating the controller-shaft to position the controller so that the contact and terminals close the circuit, and an adjustable pin also located in the path of the carrier for operating the controller-shaft to position the controller so that the contact and terminals will not close the circuit, substantially as described.

18. In a signaling instrument the combination with a carrier, of a circuit-controller mounted thereon, a shaft on which one of the parts of the controller is mounted, and means located in the path of the carrier for rotating the shaft in opposite directions, substantially as described.

19. In a signaling instrument the combination with a rotating carrier, of a circuit-controller mounted thereon, a shaft on which one of the parts of the controller is mounted, and means located in the path of the carrier for rotating the shaft in opposite directions, substantially as described.

20. In a signaling instrument the combination with a carrier, of a circuit-controller, a shaft on which one of the parts of the controller is mounted, a tumbler-block on the shaft, and means located in the path of the carrier for rocking the tumbler-block so as to separate the parts of the controller, substantially as described.

21. In a signaling instrument the combination with a rotating carrier, of a circuit-controller, a shaft on which one of the parts of the controller is mounted, a tumbler-block on the shaft, and means located in the path of the carrier for rocking the tumbler-block so as to separate the parts of the controller, substantially as described.

22. The combination with a plurality of connected circuit-terminals, of a rotating carrier having a contact thereon, a circuit-controller, a shaft on the carrier on which one of the parts of the controller is mounted, a tumbler-block on the shaft, a pin in the path of the carrier for operating the tumbler-block to rock the shaft to bring together the parts of the controller, and an adjustable pin located in the path of the carrier for operating the tumbler-block to separate the parts of the controller, substantially as described.

23. The combination with two sets of connected circuit-terminals, of a circuit connected with each set of terminals, a carrier having two circuit-closing devices, one cooperating with each set of circuit-terminals, means for producing a relative movement between the sets of circuit-terminals and the carrier, two circuit-controllers, means

for positioning each controller so that its circuit-closing device will coöperate with one set of terminals to close the circuit, and adjustable means for so positioning each controller as to render its circuit-closing device and coöperating set of terminals inoperative to close the circuit, substantially as described.

24. The combination with two plates, each provided with a plurality of circuit-terminals, of a circuit connected with each plate, a carrier having two circuit-closing devices, one coöperating with each plate, means for producing a relative movement between the plates and the carrier, two circuit-controllers, means for positioning each controller so that its circuit-closing device will coöperate with the terminals and one of the plates to close the circuit, and adjustable means for so positioning each controller as to render its circuit-closing device and coöperating plate inoperative to close the circuit, substantially as described.

25. The combination with two sets of connected circuit-terminals, of a circuit connected with each set of terminals, a rotating carrier having two circuit-closing devices, one coöperating with each set of terminals, two circuit-controllers, means for positioning each controller so that its circuit-closing device will coöperate with one set of terminals to close the circuit, and adjustable means for so positioning each controller as to render its circuit-closing device and coöperating set of circuit-terminals inoperative to close the circuit, substantially as described.

26. The combination with two sets of connected circuit-terminals, of a circuit connected with each set of terminals, a rotating carrier having two circuit-closing devices, one coöperating with each set of terminals, two circuit-controllers, a pin for positioning each controller so that its circuit-closing device will coöperate with one set of terminals to close the circuit, and an adjustable pin for so positioning each controller as to render its circuit-closing device and coöperating set of circuit-terminals inoperative to close the circuit, substantially as described.

27. The combination with two plates, each provided with a plurality of circuit-terminals, of a circuit connected with each plate, a rotating carrier having two circuit-closing devices, one coöperating with each plate, two circuit-controllers, means for positioning each controller so that its circuit-closing device will coöperate with the terminals on one of the plates to close the circuit, and adjustable means for so positioning each controller as to render its circuit-closing device and coöperating plate inoperative to close the circuit, substantially as described.

28. The combination with two plates, each provided with a plurality of circuit-terminals, of a circuit connected with each plate, a rotating carrier having two circuit-closing devices, one coöperating with each plate, two circuit-controllers, a pin for positioning each controller so that its circuit-closing device will coöperate with the terminals on one of the plates to close the circuit, and an adjustable pin for so positioning each controller as to render its circuit-closing device and coöperating plate inoperative to close the circuit, substantially as described.

29. The combination with a support, of a plurality of connected circuit-terminals mounted on said support, a rotating carrier, a circuit-closing contact mounted on the carrier, a controller, a front plate having a plurality of perforations corresponding to the terminals, a pin in the path of the carrier for operating the controller to position its parts so that the terminals and contact will close the circuit, and a pin which can be inserted in any of the perforations of the front plate for operating the controller to position the parts so that the contact and terminals will not close the circuit, substantially as described.

30. The combination with a support, of a plurality of connected circuit-terminals mounted on said support, a rotating carrier, a circuit-closing contact mounted on the carrier, a perforated plate having a plurality of perforations corresponding to the terminals, a controller, a shaft on the carrier on which one of the parts of the controller is mounted, a tumbler-block on the shaft, a pin in the path of the carrier for operating the tumbler-block to position the controller so that the contact and terminals will close the circuit, and a pin which can be inserted in any of the perforations in the plate for operating the controller to position the parts so that the contact and terminals will not close the circuit, substantially as described.

31. The combination with a support, of two series of connected circuit-terminals mounted thereon, a rotating carrier having two contact devices, one coöperating with each set of circuit-terminals, a front plate having two sets of perforations corresponding to the two sets of circuit-terminals, a plurality of pins, means whereby each pin operates to cause a contact device and one set of terminals to close the circuit, movable pins which may be placed in the perforations of the front plate, and means whereby said movable pins make the contact devices and circuit-closing terminals inoperative to close the circuits, substantially as described.

32. The combination with a plurality of connected circuit-terminals, of a carrier, a circuit-closer carried thereby, a controller on the carrier, means for operating the controller, a circuit including the circuit terminals, controller and closer, and a recording device operated from a magnet in said circuit, substantially as described.

33. The combination with a plurality of connected circuit-terminals, of a carrier, a circuit-closer carried thereby, a controller on the carrier, adjustable means for operating the controller, a circuit including the circuit terminals, controller and closer, and a recording device operated from a magnet in said circuit, substantially as described.

34. The combination with a plurality of sets of spaced connected circuit-terminals, of a rotating carrier, a circuit-closer on the carrier, a controller, a circuit including the terminals, controller and closer, a plurality of adjustable devices for operating the controller, and a recording device operated from a magnet in said circuit, substantially as described.

35. The combination with a plurality of connected circuit-terminals, of a plate having a plurality of perforations corresponding to the terminals, a carrier, means for producing a relative movement between the terminals, the plate and the carrier, a circuit-closer on the carrier, a controller, a movable pin which can be placed in any perforation to operate the controller, a circuit including the terminals, the controller and circuit-closer, and a recording device operated by a magnet in said circuit, substantially as described.

36. The combination with a circuit including a plurality of circuit-terminals, of a second circuit including a plurality of circuit-terminals, two recording devices operated by a magnet in each circuit, two circuit-closers, means for producing a relative movement between the terminals and the circuit-closers, and adjustable devices for controlling the operation of the circuit-closers, substantially as described.

37. The combination with a circuit including a plurality of circuit-terminals, of a second circuit including a plurality of circuit-terminals, two recording devices operated by a magnet in each circuit, two circuit-closers, two circuit-controllers, means for producing a relative movement between the terminals, the controllers and the circuit-closers, and adjustable devices for operating the controllers, substantially as described.

38. The combination with a circuit including a plurality of circuit-terminals, of a second circuit including a plurality of circuit-terminals, a rotating carrier, two circuit-closers mounted on the carrier, one coöperating with each set of terminals, two controllers, adjustable means for operating the controllers, and two recording devices operated by a magnet in each circuit, substantially as described.

39. The combination with a circuit including a plurality of circuit-terminals, of a second circuit also including a plurality of circuit-terminals, a carrier having two circuit-closers, two circuit-controllers, means for producing a relative movement between the terminals, the closers and the controllers, a plate having sets of perforations corresponding to the terminals, movable pins which can be placed in any of the perforations to operate the controllers, and two recording devices operated by a magnet in each of the circuits, substantially as described.

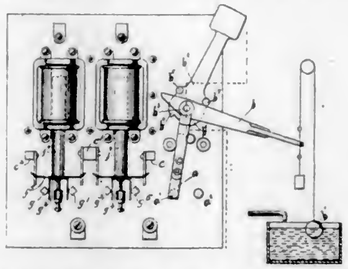
40. The combination with a circuit including a plurality of circuit-terminals, of a second circuit also including a plurality of circuit-terminals, a rotating carrier having two circuit-closers, two circuit-controllers, a plate having sets of perforations corresponding to the terminals, movable pins which can be placed in any of the perforations to operate the controllers, and two recording devices operated by a magnet in each of the circuits, substantially as described.

41. The combination with a circuit having a plurality of circuit-terminals, of a second circuit also having a plurality of circuit-terminals, a rotating carrier, two circuit-closers mounted on the carrier, two circuit-controllers, a plate having sets of perforations corresponding to the terminals, pins on the plate for operating the controllers to close the circuits, movable pins which can be placed in the perforations of the plate for operating the controllers to open the circuits, and two recording devices operated by a magnet in each of the circuits, substantially as described.

653,470. SELF-STARTER FOR ELECTRIC MOTORS. HENRY H. CUTLER, Chicago, Ill. Filed June 8, 1899. Serial No. 719,815. (No model.)

Claim.—1. In combination an electric motor and a resistance therefor, in series with the armature, a plurality of electromagnets adapted to be successively energized to remove the resistance from circuit step by step, and means controlled by an electromagnet first to operate for operatively including a succeeding electromagnet in circuit, substantially as described.

2. In combination, an electric motor and a resistance therefor, two or more electromagnets adapted to be successively energized to remove the resistance from circuit step by step, a short circuit around one of said electromagnets, and means controlled by the other electromagnet for opening said short circuit to include said short-circuited electromagnet operatively in circuit, substantially as described.



3. In combination, an electric motor and a resistance therefor, an electromagnet adapted to be included in a parallel branch around the armature a second electromagnet, and means operated by said first electromagnet for including said second electromagnet in a parallel branch around the armature, substantially as described.

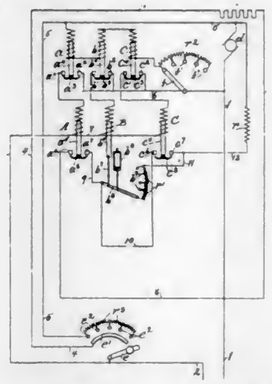
4. In combination, an electric motor and a resistance therefor, an electromagnet adapted to be included in a parallel branch around the armature, a second electromagnet, and means operated by said first electromagnet for including said second electromagnet in series with said first electromagnet in said parallel branch, substantially as described.

5. In combination, an electric motor and a resistance therefor, an electromagnet in a branch of definite resistance in parallel with the armature, a second electromagnet, and means operated by the first electromagnet for including the second electromagnet in parallel with the armature in a branch of greater resistance, substantially as described.

6. In combination, an electric motor and a resistance therefor, a plurality of electromagnets adapted to be connected in parallel with the armature, and means operated by the respective electromagnets for including the succeeding electromagnet in a parallel path of increased resistance, substantially as described.

7. In combination, an electric motor and a resistance therefor, a plurality of electromagnets adjusted to be energized by the flow of a current of definite value, and means operated by the electromagnets for including the same in parallel paths of successively-increased resistance, substantially as described.

653,471. CONTROLLER FOR DYNAMO-ELECTRIC MACHINES. HENRY H. CUTLER, Chicago, Ill. Filed Aug. 24, 1899. Serial No. 728,265. (No model.)



Claim.—1. The combination with a dynamo-electric machine, of means for regulating the voltage thereof within prearranged limits and auxiliary means for checking the rise or fall of voltage beyond said prearranged limits, substantially as described.

2. The combination with a dynamo-electric machine, of a solenoid for regulating the voltage thereof within prearranged limits and auxiliary solenoids for checking the rise or fall of the voltage beyond said limits, substantially as described.

3. The combination with a dynamo-electric machine, of a solenoid for regulating the voltage thereof within prearranged limits, a solenoid for checking the rise of voltage above said limits, and a solenoid for checking the fall of voltage below said limit, substantially as described.

4. The combination with a dynamo-electric machine, of a solenoid for regulating the voltage thereof within prearranged limits, a solenoid for checking the rise of voltage above said limit, a solenoid for checking the fall of voltage below said limit, and solenoids for controlling the respective solenoids above mentioned and arranged to be actuated at different voltages, substantially as described.

5. The combination with a dynamo-electric machine, of a solenoid for regulating the voltage thereof within prearranged limits, a second solenoid for checking the rise of voltage above said limit, a third solenoid for checking the fall of voltage below said limit, a solenoid for controlling said first solenoid above mentioned and arranged to be energized at a prearranged voltage, a solenoid for controlling said second solenoid above mentioned and arranged to respond to a higher voltage, and a solenoid for controlling said third solenoid above mentioned and arranged to respond to a lower voltage, substantially as described.

6. The combination with a motor and a supply-circuit for supplying current thereto, of means for regulating the voltage of the motor within prearranged limits, and auxiliary means for checkiug the rise or fall of the voltage beyond said prearranged limits, substantially as described.

7. The combination with an electric motor and a supply-circuit for supplying current thereto, of a solenoid for regulating the voltage of said motor within prearranged limits, and auxiliary solenoids for checking the rise or fall of said voltage beyond said prearranged limits, substantially as described.

8. The combination with an electric motor, of means for regulating the speed thereof within prearranged limits, and auxiliary means for checking the rise or fall of the speed beyond said prearranged limits, substantially as described.

9. The combination with an electric motor, of means for regulating the current supplied to the armature thereof within prearranged limits, and auxiliary means for checking the rise or fall of the voltage beyond said prearranged limits, substantially as described.

10. The combination with an electric motor, of a resistance associated with the armature thereof, means for varying the said resistance to regulate the voltage of the motor within prearranged limits, and auxiliary means for checking the rise and fall of said voltage beyond said prearranged limits, substantially as described.

11. The combination with an electric motor, of a resistance associated with the armature thereof, means for varying said resistance to regulate the voltage of the motor within prearranged limits, means for materially and abruptly increasing the resistance to prevent the voltage from passing the prearranged limit in one direction, and means for materially and abruptly decreasing the resistance to prevent the voltage from passing the prearranged limit in the other direction, substantially as described.

12. The combination with an electric motor, of means for regulating the voltage thereof within prearranged limits, means for checking the rise of voltage beyond said prearranged limits, means for checking the fall of voltage beyond said prearranged limits, and solenoids for controlling said respective means and arranged to be operated at different voltages, substantially as described.

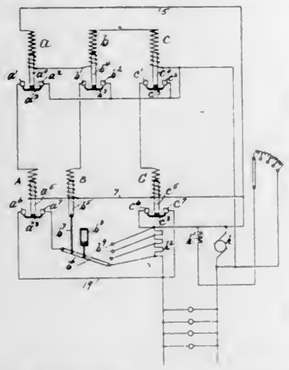
13. The combination with an electric motor, of means for regulating the voltage thereof within prearranged limits, means for checking the rise of voltage beyond said prearranged limits, means for checking the fall of voltage beyond said prearranged limits, and solenoids for controlling said respective means, connected in parallel with the armature of said motor and arranged to operate at different voltages, substantially as described.

14. The combination with an electric motor, of means for regulating the voltage thereof within prearranged limits, means for checking the rise of voltage beyond said limits, means for checking the fall of voltage beyond said limits, solenoids for controlling said respective means and connected in series in a branch circuit in parallel with the armature and arranged to be operated at different voltages, substantially as described.

15. The combination with an electrical circuit, of means for regulating the electrical condition of the same within prearranged limits, and auxiliary means for checking the variation of the circuit conditions in either direction beyond said prearranged limits, substantially as described.

16. The combination with an electrical circuit, of a regulator for controlling the electrical condition thereof within prearranged limits, circuit-controlling devices for checking the variation in either direction beyond said prearranged limits, an electromagnet responding to a definite current for controlling said regulator, and electromagnets responding respectively to currents above and below the actuating-current of said first-mentioned electromagnet for controlling said circuit-controlling devices, substantially as described.

653,472. CONTROLLER FOR DYNAMOS OR GENERATORS. HENRY H. CUTLER, Milwaukee, Wis. Original application filed Aug. 24, 1899, Serial No. 728,265. Divided and this application filed Jan. 29, 1900. Serial No. 3,125. (No model.)



Claim.—1. The combination with an electric generator and a working circuit containing translating devices supplied thereby, of means for regulating the voltage thereof within prearranged limits, and auxiliary means for checking the rise or fall of said voltage beyond said prearranged limits, substantially as described.

2. The combination with an electric generator and a working circuit containing translating devices supplied thereby, of a solenoid for regulating the voltage thereof within prearranged limits, and auxiliary solenoids for checking the rise and fall of voltage beyond said limits, substantially as described.

3. The combination with an electric generator and a working circuit containing translating devices supplied thereby, of a solenoid for regulating the voltage thereof within prearranged limits, a solenoid for checking the rise of voltage above said limit, and a solenoid for checking the fall of voltage below said limit, substantially as described.

4. The combination with an electric generator, of means for varying the field strength thereof to regulate the voltage thereof within prearranged limits and means for checking the rise or fall of voltage beyond said prearranged limits, substantially as described.

5. The combination with an electric generator, of means for varying the field strength thereof to regulate the voltage of the generator within prearranged limits, means for materially and abruptly decreasing the field strength, and means for materially and abruptly increasing the field strength, substantially as and for the purpose set forth.

6. The combination with an electric generator, of a solenoid for varying the field strength thereof within prearranged limits, a solenoid for checking the rise of voltage above said limits, and a solenoid for checking the fall of voltage below said limits, substantially as described.

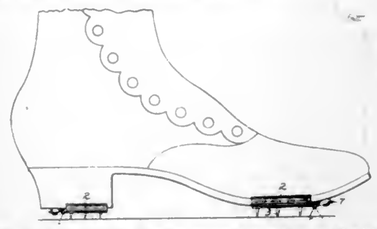
7. The combination with an electric generator, of means for regulating the voltage thereof within prearranged limits, means for checking the rise of voltage above said limit, means for checking the fall of voltage below said limits, and solenoids for controlling said respective means and responding to different voltages of the generator, substantially as described.

8. The combination with an electric generator, of means for regulating the voltage thereof within prearranged limits, means for checking the rise of voltage above said limits, means for checking the fall of voltage below said limits, and solenoids for controlling said respective means connected in parallel with the armature of the generator and arranged to respond to different voltages, substantially as described.

9. The combination with an electric generator, of means for regulating the voltage thereof within prearranged limits, means for checking the rise of voltage above said limits, means for checking the fall of voltage below said limits, and solenoids for controlling said respective means connected in series in a parallel branch around the armature of the generator and arranged to respond to different voltages, substantially as described.

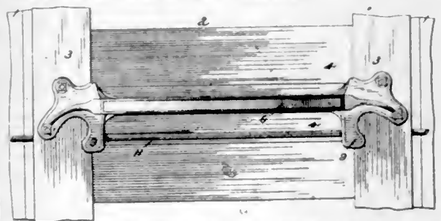
653,473. ICE-CREEPER. KATE P. DEGGE, St. Louis, Mo. Filed Mar. 5, 1900. Serial No. 7,364. (No model.)

Claim.—1. As an article of manufacture, an ice-creeper, comprising a plate, hooks integral with said plate, points integral with the under side of said plate, ears integral with the front edge of said plate, a rod carried by said plate below the said ears, locking-clips pivoted upon said rod, means for holding said clips in a horizontal position when in use, and points carried by said locking-clips for engaging in the shoe-sole, substantially as specified.



2. In an ice-creeper, a plate, points stamped integral with said plate, there being apertures in said plate corresponding to said points whereby the device is made lighter, hooks for securing said plate to a shoe, a rod carried by one side of said plate, locking-clips pivotally carried by said rod, means whereby said clips are held in a horizontal position when in use, and points integral with said clips for engaging in the shoe-sole, substantially as specified.

653,474. SILO. GEORGE D. HARDER, Cobleskill, N. Y. Filed May 29, 1900. Serial No. 18,437. (No model.)



Claim.—1. The combination with a round silo having an opening in the wall thereof, hoops encircling the silo and spanning said opening, and a sectional door closing the opening, of means for guiding the hoops at each side of said opening to hold the spanning portions of said hoops away from the door-sections, substantially as described.

2. The combination with a round silo having an opening in the wall thereof extending throughout the length of the same and hoops encircling said silo and spanning the opening, of braces extending between the edges of said opening, said braces providing guides for said hoops, substantially as described.

3. The combination with a round silo having an opening in the wall thereof extending throughout the length of the same, reinforcing-strips overhanging the edges of said opening, door-sections for closing the opening, a brace-bar spanning said opening having shoulder portions abutting the strips, hoops encircling the silo and spanning said opening, and depending portions integral with the braces having guide-openings through the same for the hoops, substantially as described.

653,475. MECHANISM FOR HOLDING AND MOVING HULLS OF VESSELS ON WATER. JOHN K. HOWE and JAMES CLARK, Albany, N. Y. Filed Apr. 29, 1899. Serial No. 714,986. (No model.)

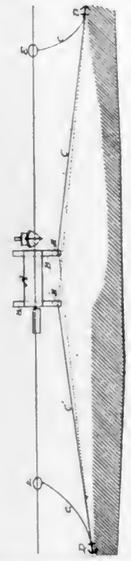
Claim.—1. The combination with a hull of a vessel and one or more vertically-movable posts extended below the bottom of the same, of one or more lines connected with the lower end of said posts and an anchor attached to the outwardly-extended end of each line, as and for the purposes set forth.

2. The combination with a hull of a vessel and one or more adjustable vertically-movable posts adapted to be fixed pendent below the bottom of the hull, of one or more lines suitably connected to the lower end of each post and an anchor attached to the outer end of each line, substantially as and for the purposes set forth.

3. The combination with a hull of a vessel and one or more vertically-movable posts extended below the bottom of the same, of one or more line-guiding devices provided at the lower end of each post, a line run through each said guiding devices, and an anchor attached to the outer end of each line as and for the purposes set forth.

4. The combination with a hull of a vessel and one or more vertically-movable posts, of one or more line-guiding devices at the lower end of each post, lines running through said guiding devices, an anchor attached to each line, and mechanisms for vertically moving each post in either direction and holding it in place adjusted to, substantially as and for the purposes set forth.

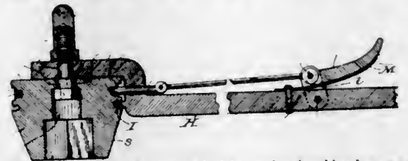
5. The combination with a hull of a vessel of one or more vertically-movable posts, of one or more line-guiding devices secured to the lower end of each post, of lines running through said guiding devices, an anchor attached to each line and mechanism adapted to pay out, haul in, and hold said lines, substantially as and for the purposes set forth.



6. The combination with a hull of a vessel and one or more vertically-movable posts, of one or more line-guiding devices secured to the lower end of each post, one or more lines moving through said guiding devices, an anchor attached to each line, mechanisms adapted to vertically move each post in either direction and hold it fixed, and mechanism adapted to pay out, haul in, and hold each said line, substantially as and for the purposes set forth.

7. The combination with a hull of a vessel, one or more submerged anchor-lines, an anchor attached to one end of each such line, and a pendent vertically-movable post which is connected by its upper end portion to the hull, of line-guiding devices secured to the submerged end of the pendent post and adapted to allow said submerged lines to be freely moved through them, in either direction, suitable mechanisms, carried by the hull and under control of an operator, adapted to pay out, haul in and hold said lines, and a float connected with each anchor, substantially as and for the purposes set forth.

653,476. WRENCH. FREDERIC C. HUTT and THOMAS S. STAFFORD, Kenneth, Ind., assignors of one-third to Margaret Greenbank, same place. Filed Apr. 14, 1900. Serial No. 12,795. (No model.)



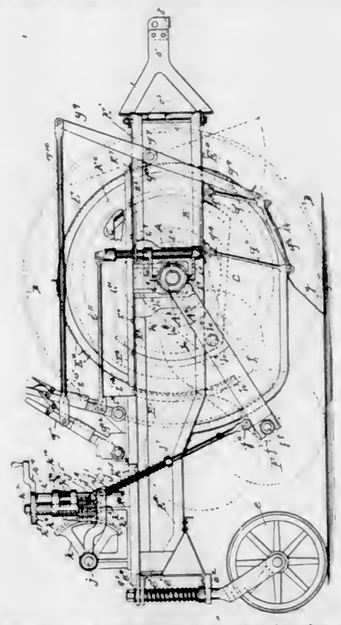
Claim.—1. A wrench provided with a socket-head having an annular groove in the periphery thereof and sockets in the bottom of the groove, a lever pivoted to the socket-head, and a bolt mounted in the head and registering with the sockets.

2. A wrench including a socket-head having an annular groove in the periphery thereof having sockets therein, a main lever pivoted to the socket-head and having a latch-bolt slidingly mounted therein in register with the sockets, a finger-lever pivoted to the main lever, and a rod connected to the finger-lever and also to the latch-bolt.

3. A wrench including a socket-head having an annular groove and sockets therein, a main lever pivoted to the socket-head and having a latch-bolt slidingly mounted therein in register with the sockets, finger-lever pivoted to the main lever, a rod connected to the finger-lever and also to the latch-bolt, and a tongue and a groove working in connection whereby the lever-head is reinforced.

4. In a wrench, the combination of the socket-head, the lever-head, the lever formed integral with the lever-head, the axial bolt secured in the lever-head and working in the socket-head, the annular groove in the socket-head having the sockets therein, the annular guide-groove in the socket-head, the finger-lever, the finger-lever spring, the latch-bolt, the rod connecting the latch-bolt with the finger-lever, and the tongue attached to the lever-head and engaging the guide-groove, substantially as set forth.

658,477. STREET-SWEEPER. JOSEPH C. KANE and ANTHONY J. LIST, Allegheny, Pa., assignors, by direct and mesne assignments, to the Improved Street Sweeper Company, Pittsburg, Pa. Filed Oct. 19, 1898. Serial No. 694,000. (No model.)



Claim.—1. In a street-sweeper, the combination of an axle, driving-wheels loosely mounted thereon, a casing supported around the axle, a receiving-tank, conveyers between the casing and tank, a rotatable broom mounted in a frame in the rear of the axle, shafts within the broom-frame, sprocket-wheels on said shafts connected by sprocket chains with sprocket-wheels on shafts driven through gearing by the driving-wheels, and sprocket-wheels on said last-named shafts connected by sprocket-chains with sprocket-wheels on the conveyer-shafts, whereby the conveyers are driven in a direction reverse to that of the driving-wheels.

2. In a street-sweeper, the combination of an axle, driving-wheels loosely mounted thereon, a casing supported around the axle, a tank secured to the axle, conveyers between the casing and tank, a rotatable broom mounted in a frame in the rear of the axle, shafts within the broom-frame, gear-wheels connected to the driving-wheels and meshing with pinions on transverse shafts, sprocket-wheels on said transverse shafts connected by sprocket-chains to sprocket-wheels on the broom-shafts, and sprocket-wheels on said transverse shafts connected by sprocket-chains with sprocket-wheels on the conveyer-shafts, whereby the conveyers are driven in a direction reverse to that of the driving-wheels.

3. In a street-sweeper, the combination of an axle, driving-wheels loosely mounted thereon, a receiving-tank secured to the axle, a cross-bar to which the draft mechanism is attached, a horizontal bar at each end of the axle and rigidly secured thereto, and mechanism consisting of a flange at each end of the cross-bar and a lug or bolt on each of the horizontal bars engaging with the flanges, for securing the two bars removably together.

4. In a street-sweeper, the combination of an axle, driving-wheels loosely mounted thereon, a receiving-tank secured to the axle, a horizontal bar at each end of the axle and rigidly secured thereto, a cross-bar to which the draft mechanism is attached having a flange at each end passing through an opening in the horizontal bars, and a lug or

bolt on each horizontal bar adapted to engage with a seat in the flange to lock the bars together.

5. In a street-sweeper, the combination of an axle, supporting and driving wheels loosely mounted around the axle, a rotatable broom mounted in the rear of the axle, connections from the driving-wheels to the broom, adjustable spring-rods secured to said broom and pivotally swiveled in sleeves pivoted in arms secured to a shaft supported above the broom, a worm-gear wheel on said shaft meshing with a worm on an upright shaft, and an operating wheel or disk on said upright shaft having lugs or projections thereon adapted to be engaged by a spring-operated rod supported adjacent to said upright shaft.

6. In a street-sweeper, the combination of an axle, supporting and driving wheels loosely mounted around the axle, a rotatable broom mounted in the rear of the axle, connections from the driving-wheels to the broom, adjustable spring-rods secured to said broom and pivotally swiveled in sleeves pivoted in arms secured to a shaft supported above the broom, a worm-gear wheel on said shaft meshing with a worm on an upright shaft, an operating wheel or disk on said upright shaft having lugs or projections thereon adapted to be engaged by a spring-operated rod supported adjacent to the upright shaft, and a projection or treadle on the lower end of said spring-rod for releasing the same from the lugs on the disk.

7. In a street-sweeper, the combination of an axle, driving-wheels loosely mounted around the axle, a rotatable broom adjustably mounted around the axle, connections from the driving-wheels to the broom, and sleeves loosely mounted on said broom having a square portion thereon adapted to loosely engage with square portions on the oper ends of the broom-frames.

8. In a street-sweeper, the combination of an axle, driving-wheels loosely mounted around the axle, a casing supported around the axle, a tank rigidly secured to the axle, conveyer-wheels between the casing and tank, a rotatable broom adjustably mounted in the rear of the axle, connections from the driving-wheels to the broom, and a series of flexible conveyers secured to the conveyer-wheels adapted to bear against the casing and tank in movement.

9. In a street-sweeper, the combination of an axle, driving-wheels loosely mounted around the axle, a casing supported around the axle a tank rigidly secured to the axle, conveyer-wheels between the casing and tank, a rotatable broom adjustably mounted in the rear of the axle, connections from the driving-wheels to the broom, and a plate extending across and secured to the conveyer-wheels having a series of flexible conveyers secured thereto and adapted to bear against the casing and tank in movement.

10. In a street-sweeper, the combination of an axle, a casing supported around the axle and provided with an opening in the bottom thereof, a tank rigidly secured to said axle, means on said axle for dumping and holding the tank in place, a removable door fitting over the opening in the bottom of the casing to allow the tank to be emptied, straps pivoted to said door and to the casing, and a series of levers pivoted to said door for raising and lowering the same.

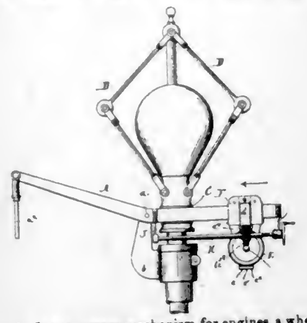
11. In a street-sweeper, the combination of an axle, a casing supported around the axle and provided with an opening in the bottom thereof, a tank rigidly secured to said axle, means on said axle for dumping and holding the tank in place, a removable door fitting over the opening in the bottom of the casing to allow the tank to be emptied, straps pivoted to said door and to the casing, bars pivoted to said door, and a series of levers pivoted to said bars for raising and lowering the door.

12. In street-sweepers, the combination of an axle, a casing supported around the axle and provided with an opening in the bottom thereof, a tank rigidly secured to said axle, means on said axle for dumping and holding the tank in place, a removable door fitting over the opening in the bottom of the casing to allow the tank to be emptied, straps pivoted to said door and to the casing, bars pivoted to said door and pivoted to levers mounted around a shaft supported in front of the casing, and a rod pivoted to the upper end of one of said levers and pivoted to an operating-lever fulcrumed on the casing.

13. In a street-sweeper, the combination of an axle, driving-wheels loosely mounted on the axle, a casing supported on the axle, a rotatable broom mounted in the rear of the axle, gear-wheels loosely mounted on the hubs of said driving-wheels and having connections to said broom for operating the broom, clutches mounted on hubs of the driving-wheels and having faces adapted to engage with faces on said gear-wheels, upright shafts journaled on each side of said casing, crank-arms on the upright shafts for engaging with said clutches, arms mounted on said upright shafts, rods pivoted to said arms, said rods being connected to a cross-shaft and operating-lever having a direct pull, and mechanism by which said lever may be locked in position.

14. In a street-sweeper, the combination of an axle, a casing supported around the axle, a frame formed of an upper and lower bar secured to each side of said casing, a journal-box secured to said frame on each side of the sweeper and a removable journal-bearing seated in each of said journal-boxes.

658,478. GOVERNOR MECHANISM FOR ENGINES. CHARLES G. Y. KING, Chicago, Ill. Filed Dec. 30, 1899. Serial No. 742,137. (No model.)



Claim.—1. In a governor mechanism for engines, a wheel threaded upon a screw-rod, means for holding one of said parts against longitudinal movement whereby the rotation of the wheel will cause the other of said parts to move longitudinally in one or the other direction, means whereby the two-and-fro motion of the moving part is caused to vary the resistance of the governor mechanism, means for rotating said wheel comprising an electric motor and gearing between the shaft of said motor and said wheel.

2. The combination with the lever-arm of a governor, of an electric motor mounted to slide in the direction of the length of said arm and suitable gearing whereby the revolution of the motor-shaft shall effect its back-and-forth movement.

3. The combination with the lever-arm of a governor, of an electric motor movably mounted upon said arm and suitable gearing whereby the revolution of the motor-shaft shall effect its back-and-forth movement upon the lever-arm.

4. The combination with the lever-arm of a governor, of an electric motor movably mounted upon said arm, a spring interposed between the motor-support and said arm, and suitable gearing for effecting the longitudinal movement of said motor with respect to the arm.

5. The combination with the lever-arm of a governor, of an electric motor movably mounted thereon, a threaded rod connected to said governor, a threaded sleeve engaging said rod, a worm-wheel mounted upon said sleeve and a worm on the motor-shaft engaging said worm-wheel.

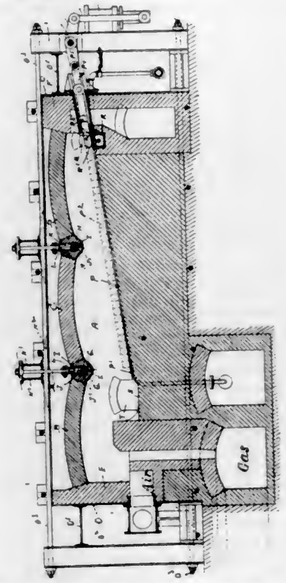
6. The combination with the lever-arm of a governor, of an electric motor movably mounted upon said arm, a threaded rod connected with said arm, suitable gearing between said threaded rod and the motor-shaft, and means whereby said shaft may be held rigid or allowed to revolve, and means at the end of said threaded rod whereby it may be manually operated.

653,479. REVERBERATORY FURNACE. CHARLES H. MORGAN, Worcester, Mass., assignor to the Morgan Construction Company, same place. Filed May 7, 1894. Serial No. 510,414. (No model.)

Claim.—1. In a furnace, the combination of a pair of vertical and parallel walls, an overhead framework resting upon said walls, an arched roof having the axes of its arches at right angles with said walls and suspended from said overhead framework, whereby the weight of said roof is received in vertical planes by said walls, a pair of walls forming the end walls of the furnace and arranged to receive the end thrust of said arched roof, vertical piers parallel with the outside of said end walls, beams placed between said end walls and piers, whereby the thrust of the arched roof exerted upon said end walls is communicated to said piers and tie-rods extending lengthwise, and connecting the piers at opposite ends of the furnace, substantially as described.

2. In a furnace for heating billets, the combination of a heating-chamber, a pushing mechanism arranged to act through one of the end walls of said chamber and push the billets by a sidewise movement toward the opposite end of the chamber, an opening in one of the side walls adapted to admit a billet into the path of said pushing mechanism by an endwise movement at right angles to the movement of said pushing mechanism, and a delivery-opening through which the heated billets are removed from said chamber, substantially as described.

3. In a furnace for heating billets, the combination of a heating-chamber, an opening at or near one end of said chamber for the delivery of heated billets, a pushing mechanism arranged to act through the opposite end wall of the chamber and push a billet by a sidewise movement toward the delivery end of said chamber, an opening in one of the side walls of the chamber adapted to receive a billet into the path of said pushing mechanism and a longitudinal track over which the billets are pushed from the admission to the delivery end of the chamber, substantially as described.



4. In a furnace, the combination with a heating-chamber provided with an opening at or near one end for the delivery of heated billets therefrom and an opening in its side wall at its opposite end adapted to admit a billet by an endwise movement, a sole-plate inclosed within the walls of said chamber and opposite said admission-opening, and a flange on said sole-plate to guide the advancing end of the billet, substantially as described.

5. In a furnace, the combination with a heating-chamber provided with an opening at or near one end for the delivery of heated billets therefrom and an opening in its side wall at its opposite end adapted to admit a billet by an endwise movement, a sole-plate inclosed within the walls of said chamber and opposite said admission-opening, and a flange on said sole-plate to guide the advancing end of the billet, said flange having openings to admit reciprocating pushing-bars inclosed in said openings by which the billet is pushed off said sole-plate, substantially as described.

6. In a furnace provided with an opening in its side wall and at the receiving end of the furnace, adapted to receive a billet by an endwise movement, a hollow metal sole-plate inclosed in the heating-chamber of the furnace and extending transversely thereto and in alinement with said opening, and water-pipes connected with said hollow sole-plate and extending lengthwise the heating-chamber whereby a water circulation is maintained through said sole-plate, substantially as described.

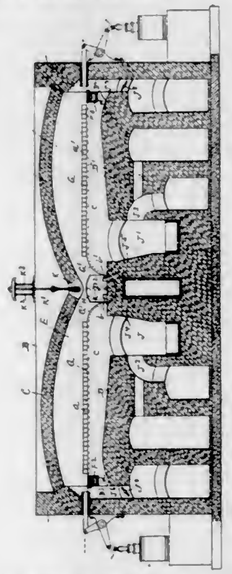
7. In a furnace, the combination of a heating-chamber provided with an opening in one of its side walls at one end of said chamber to admit a billet, a sole-plate opposite said opening extending transversely across said chamber and adapted to receive a billet moved endwise into said chamber, said sole-plate having a series of recesses in its upper surface to receive a series of skids and a series of skids extending across said sole-plate and forming a longitudinal track over which the billets are moved, and a delivery-opening for the heated billets at the opposite end of said chamber, substantially as described.

8. In a furnace, the combination of a heating-chamber having an opening at one end for the delivery of heated billets therefrom and an opening in its side wall at the opposite end of the heating-chamber to receive a billet moving endwise, a sole-plate within the heating-chamber and in alinement with said opening, upon which the billet is received, said chamber having an opening in its end wall to receive a pushing mechanism and a pushing mechanism arranged to act through said end wall upon the billet resting on said sole-plate, substantially as described.

9. In a furnace, the combination of a heating-chamber provided with a delivery-opening at one end, an opening in its side wall at the opposite end to receive a billet by an endwise movement, restricted openings in its end wall to receive a pushing mechanism, a pushing mechanism consisting of a series of bars capable of a sliding movement in the openings of said end wall and means outside said end wall whereby a reciprocating motion is imparted to said bars, substantially as described.

10. In a furnace, the combination of a floor or bed extending lengthwise the furnace in an inclined plane, a roof extending horizontally over said floor or bed and consisting of a series of arches with their axes arranged transversely to said floor and provided with a series of ribs or projections extending transversely across the furnace and projecting downwardly toward said inclined floor whereby the space between said roof and floor is contracted at intervals, with the area of said contracted space gradually increasing toward the delivery end of the furnace, substantially as described.

658,480. FURNACE. CHARLES H. MORGAN, Worcester, Mass., assignor to the Morgan Construction Company, same place. Filed Dec. 27, 1897. Serial No. 663,529. (No model.)



Claim.—1. A furnace for heating billets having openings at its ends for the admission of billets, tracks extending from the charging ends of the chamber toward a central hearth, a central hearth means for delivering billets from each of said tracks by a sidewise movement, and an opening opposite said hearth and in the side wall of the furnace, for the delivery of billets by an endwise movement and at right angles to their line of movement over said tracks, substantially as described.

2. In a furnace for heating billets, the combination of two heating-chambers placed end to end and in alinement with each other, openings at the outer ends of said chambers for the admission of billets, a hearth common to said chambers and between them, tracks leading from the charging ends of said chambers to said hearth, means for pushing billets by a sidewise movement along said tracks upon said hearth and an opening in the side wall of the furnace and at one side of said hearth for the delivery of billets by an endwise movement, substantially as described.

3. In a furnace for heating billets the combination of two communicating heating-chambers placed end to end and in alinement with each other, a common hearth between said chambers, openings at the outer ends of said chambers for the admission of billets, tracks leading from the charging ends of said chambers to said hearth, means for moving the billets by a sidewise movement over said tracks, fuel-openings upon each side of said hearth, escape-flues at the charging ends of said chambers and an opening at one side of said hearth by which the billets are removed by an endwise movement, substantially as described.

4. In a furnace for heating billets the combination of two heat-

ing-chambers placed end to end and in substantially a straight line a common hearth between said chambers for the reception of heated billets, means for pushing the billets by a sidewise movement from the outer ends of said chambers upon said hearth, and means for removing the heated billets from said hearth, in a line at right angles to their line of movement through said heating-chambers, substantially as described.

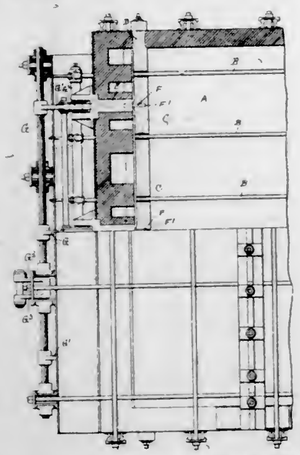
5. A furnace for heating billets having openings at its opposite ends for the admission of billets to the interior of the furnace, an opening at its central section for the delivery of billets therefrom, ports for the admission of gaseous fuel upon each side of said central delivery-opening and escape-flues at opposite ends of the furnace, substantially as described.

6. A furnace for heating billets inclosing two communicating heating-chambers, two series of ports for the admission of gaseous fuel near the central section of the furnace, escape-flues at opposite ends of the furnace and means for closing said flues whereby the currents of heated gases may be directed from either of said series of ports to either of said escape-flues, substantially as described.

7. In a furnace for heating billets, the combination of two heating-chambers placed end to end, a common hearth between said chambers, means for delivering billets from each of said chambers to said hearth by a sidewise movement of the billets, and means for delivering the billets from said hearth by an endwise movement, substantially as described.

8. In a furnace for heating billets, the combination of two heating-chambers placed end to end and having their axes parallel, openings at the outer ends of said heating-chambers for the admission of billets, tracks leading from the charging ends of said chambers toward the opposite or inner ends of said chambers, means for pushing the billets by a broadside movement along said tracks, a common receiving-hearth at the inner ends of said tracks, and a common billet-delivery opening through which billets are delivered from said hearth, substantially as described.

653,481. MECHANISM FOR FEEDING BILLETS FROM THE CHARGING TO THE DELIVERY ENDS OF FURNACES. CHARLES H. MORGAN, Worcester, Mass., assignor to the Morgan Construction Company, same place. Original application filed May 7, 1894, Serial No. 510,414. Divided and this application filed Mar. 12, 1900. Serial No. 8,266. (No model.)

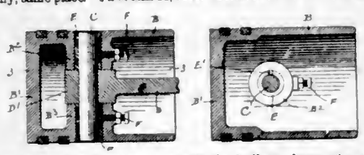


Claim.—1. In a furnace for heating billets, the combination with a heating-chamber provided with a series of restricted openings in one of its end walls, of a pushing mechanism consisting of a series of pushing-bars substantially of the same area in cross-section as said openings and capable of a longitudinal sliding motion in said openings and mechanism by which said pushing-bars are simultaneously moved, substantially as described.

2. In a furnace for heating billets, the combination with a heating-chamber provided with an opening in one of its end walls, of a pushing-bar substantially equal in its cross-section to the cross-section of said opening, and mechanism for imparting a longitudinal, reciprocating motion to said bar in said opening, by which the end of said bar is moved forward to push the billet toward the opposite end of the heating-chamber and backward to provide a space for the introduction of another billet, with the end of said bar held in said opening at the end of its backward movement, in order to keep said opening closed during the introduction of the billet to the heating-chamber, substantially as described.

3. In a furnace for heating billets, the combination with a heating-chamber having restricted openings in one of its end walls for longitudinally-sliding pushing-bars, and an opening for the admission of a billet in front of said pushing-bars, of pushing-bars entering said restricted openings and substantially closing the same, substantially as described.

653,482. PISTON FOR SINGLE-ACTING ENGINES. RALPH L. MORGAN, Worcester, Mass., assignor to the Morgan Construction Company, same place. Filed Jan. 11, 1899. Serial No. 701,876. (No model.)

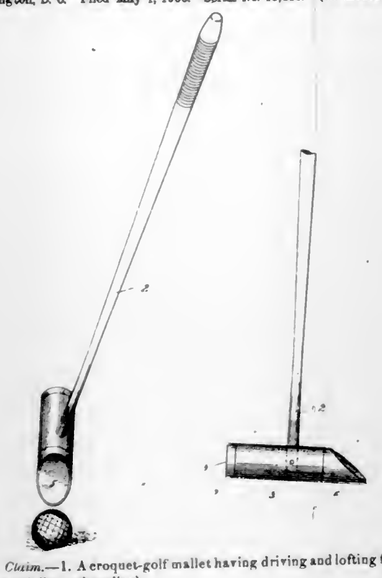


Claim.—1. The combination with the hollow piston of a single-acting engine provided with interior tubular bosses, of a piston-rod, a pin carried by said rod and having its ends journaled in said tubular bosses, bushings partially inclosing the ends of said pin, said bushings being cut apart to form slots, leading from the outside of the piston to the bearing-surface of said pin and means for compressing said bushings to compensate for wear, substantially as described.

2. The combination with the cylinder and the hollow piston of a single-acting engine having interior tubular bosses, of a piston-rod, a pin carried by said piston-rod and held from turning therein with its ends entering said tubular bosses and split bushings partially inclosing the ends of said pin, whereby slots are formed to provide access to the bearing-surface of said pin for lubricating material from the interior of the cylinder, substantially as described.

3. The combination with the cylinder of a single-acting engine, of a hollow piston B having interior bosses B^3, B^3, which are provided with holes in diametrical alinement and extending entirely through said bosses, a piston-rod D having its end D′ pivotally connected to said piston, a pin C held from turning in the end of the piston-rod with its ends journaled in said bosses, bushings E, E, cut apart on one side forming slots E′, E′, extending the entire length of said bushings and tightening-screws F, F, held in said bosses with their ends bearing against one side of said bushings, substantially as described.

653,483. CROQUET-GOLF MALLET. HENRY MCCREA, Washington, D. C. Filed May 1, 1900. Serial No. 15,110. (No model.)



Claim.—1. A croquet-golf mallet having driving and lofting faces, substantially as described.

2. A croquet-golf mallet the head of which has an upwardly and rearwardly inclined elliptical operating-face, the major axis of the ellipse being contained in a plane which forms an acute angle with the handles of the mallet, substantially as described.

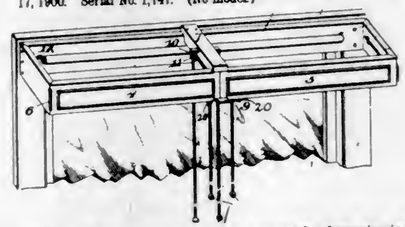
3. A croquet-golf mallet, the head of which has a driving-face, said face being contained in a plane which cuts substantially at right angles a line drawn longitudinally through the mallet-head and a lofting-face which is contained in a plane which cuts such a line at an acute angle, the face being inclined upwardly and rearwardly, substantially as described.

4. A croquet-golf mallet, the head of which has two operating-faces, one of said faces being substantially vertical when the mallet is held in playing position and the other being inclined upwardly and rearwardly, substantially as described.

5. A croquet-golf mallet, the head of which is formed from a cylindrical block having a driving-face which is substantially circular in outline and an elliptical lofting-face which is inclined upwardly and rearwardly, the lofting-face being so arranged that a plane passed through the major axis of the ellipse forms an acute angle with the handle of the mallet, substantially as described.

6. A croquet-golf mallet, the head of which is formed from a cylindrical block having a driving-face which is substantially circular in outline and an elliptical lofting-face which is inclined upwardly and rearwardly, the lofting-face being so arranged that a plane passed through the major axis of the ellipse forms an acute angle with the handle of the mallet, and a strengthening-band surrounding the end of the mallet having the lofting-face, substantially as described.

653,484. CURTAIN-FIXTURE. RICHARD MCCULLOUGH, Pittsburg, Pa., assignor of one-third to Fred McCullough, same place. Filed Jan. 17, 1900. Serial No. 1,747. (No model.)



Claim.—1. The combination with a rectangular frame having its front formed in a pair of hinged sections and provided with a supporting-brace, of a curtain-rod connected to each of said sections, means for opening said sections, means for closing said sections, and a spring adapted to retain said sections in a closed position, substantially as described.

2. In a curtain-fixture, the combination of a rectangular frame provided with a pair of hinged sections, a curtain-rod connected to each of said sections, means connected to the sections for opening the same and means connected to said sections for closing the same, and a sprieg suitably retaining the sections in position when closed, substantially as described.

3. In a curtain-fixture, the combination of a rectangular frame having its front formed in a pair of hinged sections, a supporting-brace suitably connected to said frame and provided with a downwardly-extending hanger-arm, a spring connected to said arm and adapted to retain said hinged sections in a closed position, a cord connected to each of said sections for opening the same, and a cord connected to each of said sections and said brace for closing said sections, substantially as described.

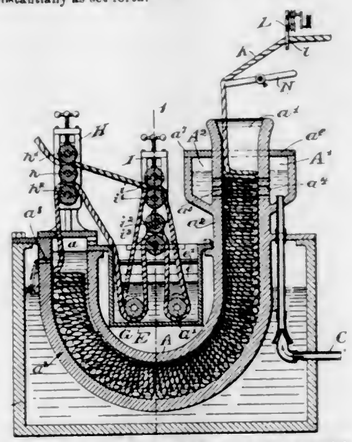
653,485. APPARATUS FOR DYEING. ISAAC E. PALMER, Middletown, Conn. Filed June 12, 1896. Serial No. 595,376. (No model.)

Claim.—1. An apparatus for treating cloth and other materials, comprising a casing having a bend therein and means for maintaining a flow of liquid through the bend for floating the material being treated through the bend by gravity, substantially as set forth.

2. An apparatus for treating cloth and other materials, comprising a receptacle for the liquid, a casing having a bend therein and communicating with the receptacle at points on opposite sides of the bend and means for maintaining a flow of liquid through the casing for floating the material through the bend, substantially as set forth.

3. An apparatus for treating cloth and other materials, comprising a receptacle for the liquid, a casing having a bend therein and communicating with the receptacle at points on the opposite sides of the bend, means for maintaining a flow of liquid through the casing for floating the material through the bend and means within the casing for maintaining the liquid passing through the casing at a predetermined temperature, substantially as set forth.

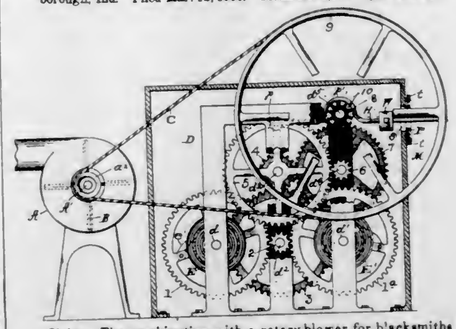
4. An apparatus for treating cloth and other materials, comprising a casing consisting of a longer and a shorter upright and a bend connecting the two uprights, a receptacle for the liquid partially inclosing the casing, the said longer upright being provided with an opening for the admission of the liquid, and the shorter upright having an outlet-opening to said receptacle at a point below the inlet-opening in the longer upright and means for feeding the liquid into the casing through the inlet-opening in the longer upright whereby the liquid floats the material being treated through the bend by gravity, substantially as set forth.



5. In an apparatus for treating cloth and other materials the combination with a casing having a bend therein, and means for floating the material being treated through the bend, of a washing apparatus arranged in position to receive the material from the casing after it has been floated through the bend, substantially as set forth.

6. In an apparatus for treating cloth and other materials, the combination with a casing having a bend therein, and means for floating the material being treated through the bend, of a washing apparatus for receiving the material from the casing, the said washing apparatus consisting of a tub having an inlet in one end and an outlet in its opposite end, partitions extending across the tub to form a series of spaces therein and rollers extending lengthwise through the tub below the tops of said partitions, substantially as set forth.

653,486. BLACKSMITH'S BLOWER. JOHN W. ROBINSON, Pittsborough, Ind. Filed Mar. 12, 1900. Serial No. 8,306. (No model.)



Claim.—The combination with a rotary blower for blacksmiths forges having a pulley on the shaft carrying the blower-fans, of a motor comprising a pair of shafts each having a loosely-mounted wheel, springs connecting the wheels to the shafts said wheels having pawl-and-ratchet mechanism a shaft having a fly-wheel, a belt connecting this fly-wheel with the pulley on the blower, said fly-wheel shaft being connected by a train of cogged wheels with the shafts carrying springs, a friction-wheel on the same shaft as the fly-wheel, a brake-bar pivotally secured at one of its ends and having a curved portion to contact under certain conditions with the friction-wheel, a casing surrounding the motor mechanism having a slot in its wall through which the bar is projected, a sliding plate working in guides on the outside of the casing and having a slot through which the brake-bar

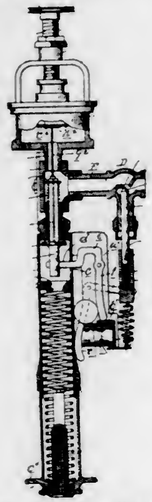
is projected, said slot having notches to receive the bar and hold it and set-screws to hold the adjustment which may be given to said sliding plate thereby, as and for the purposes specified.

653,487. FLEXIBLE METALLIC TUBING. CHARLES RUDOLPH, Paris, France. Filed Feb. 8, 1900. Serial No. 4,478. (No model.)



Claim.—In flexible metallic tubes formed by winding in a spiral manner a corrugated (profiled) metallic band: the combination with the outer edges such as *b* and *c* of the corrugated band of other edges such as *b'* and *c'* bent back on themselves in order to protect the former edges against oxidation and give more rigidity to the tube substantially as described.

653,488. COIN-CONTROLLED VENDING-MACHINE. ROBERT P. SCHILLING, Berkley, Va. Filed Feb. 19, 1900. Serial No. 5,808. (No model.)



Claim.—1. In a coin-controlled vending-machine, the combination of the reservoir provided with an inlet and an outlet port, a valve for each port, a controlling device for the outlet-valve, a reciprocative discharge-pipe for and communicating with the reservoir, a coin-chute adapted to deliver a coin into operative relation with the controlling device and discharge-pipe and operative mechanism intermediate the inlet-valve and said discharge-pipe, the parts being so arranged and connected as to be capable of operation substantially in the manner set forth.

2. In a coin-controlled vending-machine, the combination of the reservoir provided with an inlet-port normally open and an outlet-port normally closed, a valve for each port, a controlling device for the outlet-valve, a reciprocative discharge-spout for and communicating with the reservoir, a coin-chute adapted to deliver the coin into operative relation with the controlling device and into the path of the reciprocative spout, and means controlled by the spout for operating the inlet-valve, the parts being so arranged that upon a partial reciprocation of the spout the valves will be set to close the supply and open the discharge, and upon the completion of the reciprocation of the spout the positions of the valves will be reversed.

3. In a coin-controlled vending-machine, the combination of the reservoir provided with an inlet-port normally open and an outlet-port normally closed, a valve for each port, a controlling device for the outlet-valve, a reciprocative discharge-spout for and communicating with the reservoir, a coin-chute adapted to deliver the coin into operative relation with the controlling device and into the path of the reciprocative spout, means controlled by the spout for operating the inlet-valve, the parts being so arranged and connected that upon the movement of the spout in one direction the valves will be set to close the supply and open the discharge, and means for automatically reciprocating the spout to reset the valves in their initial position.

4. In a coin-controlled vending-machine, the combination with a reservoir provided with an inlet-port normally open and an outlet-port normally closed, a valve for each port, a discharge-spout for and communicating with the reservoir, a reciprocative section on the spout, a lever controlling the outlet-valve, a coin-chute adapted to deliver a coin against said lever and into the path of the spout-section and a controlling-lever for the inlet-valve extending into the path of and adapted to be operated by said spout-section.

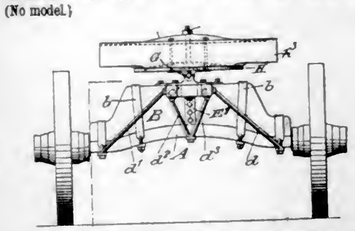
5. In a coin-controlled liquid-vending machine, the combination with the reservoir provided with an inlet-port normally open and an outlet-port normally closed, a valve for each port, a coin-chute leading to the coin-actuating mechanism, a movable support for the coin upon which the latter is adapted to be delivered from the chute, a coin-chamber beneath the support, the coin-actuating mechanism adapted upon the insertion of the coin to control the movement of the valves, an operating device controlling the operation of the coin-actuating mechanism adapted upon movement in one direction to reverse the normal positions of the valves, and means for automatically returning the operating device to reset the valves in their initial position and to deposit the coin within the coin-chamber.

6. In a coin-controlled vending-machine, the combination with a reservoir provided with an inlet-port normally opened and an outlet-port normally closed, a valve for each port, a reciprocative discharge-spout for and communicating with the reservoir, an actuating mechanism for the valves adapted upon the insertion of the coin to be controlled by the spout, a movable support for the coin, a coin-chamber beneath the support, a coin-chute for delivering the coin upon the support, and actuating mechanism for the support intermediate the latter and the spout and adapted to be operated by said spout to deposit the coin within the coin-chamber.

7. In a coin-controlled apparatus, the combination with the receptacle provided with an inlet-port normally open, and an outlet-port normally closed, a valve for each port, a piston fitted within the receptacle, a hollow stem for the piston constituting an air-inlet for the receptacle, a spring-actuating valve for the stem, an operative connection between said spring-actuated valve and the valve in the inlet-port, an actuating mechanism for the valves controlling the ports, an operating device controlling, upon the insertion of the coin, the operation of the valve-actuating mechanism, said operating device being adapted when actuated to reverse the normal positions of the valves, and means for automatically actuating the operating device after its initial movement has been effected to reset the valves in their normal positions.

8. In a coin-controlled apparatus, the combination with the receptacle provided with an inlet-port normally open and an outlet-port normally closed, a valve for each port, a piston fitted within the receptacle, a threaded hollow stem swiveled to the piston and communicating with the interior of the receptacle, a threaded bearing engaging the stem, a spring-actuated valve for said stem, means for preventing the rotary movement of the stem independent of the spring-actuated valve, a connecting device secured to the valve in the outlet-port and having a threaded engagement with the stem-valve, an actuating mechanism for the valves controlling the ports, an operating device controlling, upon the insertion of the coin, the operation of the valve-actuating mechanism, said operating device being adapted when actuated to reverse the normal positions of the valves, and means for automatically actuating the operating device after its initial movement has been effected to reset the valves in their normal positions.

653,489. RUNNING-GEAR FOR VEHICLES. MARTIN L. SEN DERLING, Jersey City, N. J. Filed Oct. 28, 1899. Serial No. 735,071. (No model.)

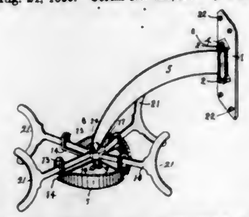


Claim.—1. The combination with the axle and bed-piece thereon, of a tongue-piece let into the middle portion of the bed-piece substantially flush with its top, a star-plate located at the crossing of the tongue and bed-piece and serving to combine the parts together, the said star-plate being provided with a pair of ears for receiving the head of the king-bolt, bearing-shoes supported on the said tongue-piece in front of and to the rear of the said star-plate to form the lower section of the fifth-wheel, a fifth-wheel section comprising a hub and annular rim and a king-bolt hinged in said star-plate and extending through the hub of the upper section of the fifth-wheel, substantially as set forth.

2. The combination with the axle and bed thereon, of the tongue-piece extending across the middle point of the bed, braces extending from the front and rear portions of the tongue-piece toward the axle, bearing-shoes supported on the tongue-piece to the front and rear of the bed-piece and having a laterally-tilting movement, a king-bolt hinged to the tongue-piece at the crossing of the tongue-piece and bed-piece to tilt laterally and an upper fifth-wheel section arranged to bear upon the tilting shoes and to receive the king-bolt at its center, substantially as set forth.

3. The combination with the tongue-piece and a suitable support therefor, of the star-plate engaged therewith and constructed to form a bearing for the head of the king-bolt, an upper fifth-wheel section and a king-bolt bearing on the said star-plate and engaged with the upper fifth-wheel section, substantially as set forth.

653,490. CLOTHES-LINE PULLEY. HENRY W. TEAL, St. Louis, Mo. Filed Aug. 21, 1899. Serial No. 727,930. (No model.)



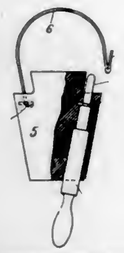
Claim.—1. The combination of a plurality of pivoted arms, a frame, means for supporting the inner ends of said arms, means for automatically tilting said arms vertically during their rotation, and an arm by which said frame is supported, substantially as specified.

2. A clothes-line pulley, comprising the combination of a plurality of arms radiating from the center, means for supporting said arms, a circularly-bent guide-frame arranged for tilting said arms while passing thereover, means for guiding said arms, and an arm for supporting said mechanism, substantially as specified.

3. The combination of a plurality of arms radiating from the center, a frame supporting said arms, a cap arranged over the end of each of said arms, a circular guide-frame arranged for tilting said arms, and an arm by which the same is suspended from a stationary object, substantially as specified.

4. The combination of an arm provided with a pin, a circular guide-frame fixed upon said pin, a skeleton frame mounted upon said pin and designed to rotate upon said guide-frame, arms having segments at their outer ends and lugged ends and connected to the said skeleton frame, and a cap located on said pin and mounted over the lugged ends of said arms, said guide-frame being provided with an inclined edge for the purpose of gradually tilting said arms while rotating, substantially as specified.

653,491. DEVICE FOR CASTING DOOR CHECKS OR SEALS. EDWARD L. TORSCH, Baltimore, Md. Filed Jan. 26, 1900. Serial No. 2,833. (No model.)



Claim.—The combination of a core consisting of three cylinders of different diameters, having the same axis, the end cylinder being the smallest, the intermediate one larger, and the size of a cavity desired, and the third one the largest, with a ring of hard material suitable to form the shoulder of a cavity, fitting upon, and surrounding the cylinder of the smallest diameter, and resting upon the shoulder of the second cylinder, and adapted when material is cast around the core to be retained by the material when the core is withdrawn, substantially as described.

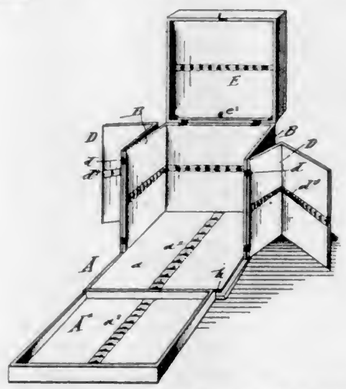
653,492. BETA-NAPHTHOQUINONE DYE AND PROCESS OF MAKING SAME. PAUL UHLMANN, Dresden, Germany, assignor to the Chemische Fabrik Von Heyden, Actien-Gesellschaft, Radebeul, Germany. Filed Mar. 5, 1900. Serial No. 7,268. (Specimens.)

Claim.—1. The within-described process of obtaining coloring-matters from substances containing beta-naphthoquinone, which consists in heating those bodies with sulfuric acid.

2. The within-described process of obtaining coloring-matters from substances containing beta-naphthoquinone, which consists in heating those bodies with sulfuric acid and boracic acid.

3. The new coloring-matter herein described obtained from beta-naphthoquinone, consisting of a paste of a reddish black to violet color, which is slightly soluble in water and which shows a blue-black color when added to a solution of bicarbonate, a greenish blue color when added to a solution of soda, a dark-green color when added to a solntion soda-lye, a blue-black color when added to concentrated sulfuric acid, the said coloring-matter dyeing unmordanted wool greenish black and brown, and dyeing chromated wool or fibers mordanted with aluminum, iron or tin in dark shades ranging to black.

653,493. SILVER OR CUTLERY CHEST. THEODORE G. WALPUSKI, New York, N. Y. Filed Jan. 18, 1900. Serial No. 1,864. (No model.)



Claim.—1. A chest for storing silver, cutlery or other articles, consisting of a bottom tray, a hinged and forwardly-swinging covering-tray for the bottom tray, a stationary rear wall, stationary side walls, hinged angular front doors formed of the remaining side and front portions, and a hinged cover, the different trays, and the interior surfaces of the chest-walls and cover being provided with means for supporting the articles, substantially as set forth.

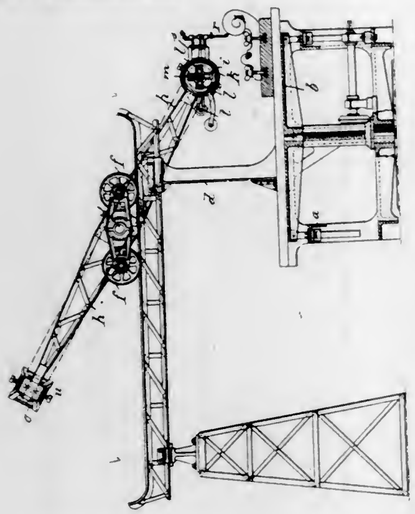
2. A chest for storing silver, cutlery or other articles, consisting of a bottom tray, a hinged and forwardly-swinging covering-tray for the bottom tray, a stationary rear wall, stationary side walls, hinged angular front doors, formed of the remaining side and front portions, a hinged cover, and detachable trays arranged in said cover, the different trays and the interior surfaces of the chest-walls being provided with means for supporting the articles, substantially as set forth.

653,494. SCULPTURE-COPYING MACHINE. ALEXANDER WENZEL, Berlin, Germany, assignor to the Plastik, Gesellschaft für Holz und Steinbildnerei mit Beschränkter Haftung, same place. Filed May 22, 1899. Serial No. 717,823. (No model.)

Claim.—1. A copying-machine for sculptural work, comprising a framework *a d* carrying a vertically-adjustable table *b* for the work, and a frame *h* mounted on the axis *g* of a carriage *f* running on rails above such framework, the front ends of said frame *h* carrying a shaft *m* turning axially and sliding laterally in roller-bearings *l*, and carrying tool-holders *s* and tools *r* and gearing *p, q, t* for driving said tools, a tie at the rear ends of the said frame *h* carrying a motor *o*, and means for transmitting its motion to the said tool carrier or shaft *n*, said motor and parts being arranged to counterbalance the weight of tool carrier or shaft *n* and parts, all substantially as and for the purposes hereinbefore set forth.

2. A copying-machine for sculptural work, comprising a framework *a d* carrying a vertically-adjustable table *b* for the work, and a frame *h* mounted on the axis *g* of a carriage *f* running on rails above such framework, and by means of center-points turning pivotally upon said axis *g*, the front ends of said frame *h* carrying a shaft *n* turning axially and sliding laterally in roller-bearings *l*, pivotally turning in

the said frame *h* by means of center-points, said shaft *n* carrying tool-holders *s* and tools *p* and gearing *p q l* for driving said tools, a tie at the rear ends of the said frame *h* pivotally jointed at each end by means of center-points, to said frame, and carrying a motor, and means for transmitting its motion to the said tool carrier or shaft *n*, said motor and parts being arranged to counterbalance the weight of the tool carrier or shaft *n* and parts, all subtantially as and for the purposes hereinbefore set forth



3. In a copying-machine for sculptural work, a frame traversing to and fro from back to front and capable of turning axially on a horizontal axis or fulcrum, in combination with a horizontal shaft, turning axially and sliding laterally in roller-bearings in the ends of said frame, and carrying tools and gearing for transmitting motion to said tools from a motor suitably mounted on said frame on its axis, all substantially as and for the purposes hereinbefore set forth.

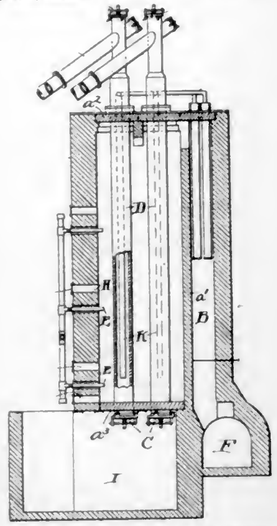
4. In a copying-machine for sculptural work, a frame traversing to and fro from back to front and capable of turning axially on a horizontal axis or fulcrum, and also pivotally about such axis, so as to be capable of being laterally or horizontally displaced, in combination with a shaft *n* turning axially and sliding laterally in roller-bearings, pivotally turning in the said frame by means of center-points, said shaft carrying tools and gearing for transmitting motion to said tools from a motor mounted on said frame or axis, all substantially as and for the purposes hereinbefore set forth.

5. In a copying-machine for sculptural work, a bearing i for the tool-carrier, comprising a ring *k* pivotally mounted between center-points and containing three or more rollers *l* between which the shaft of the tool-carrier can turn axially and slide laterally, all substantially as and for the purposes hereinbefore set forth.

653,495. GAS-GENERATING APPARATUS. ELLIOTT H. WHITLOCK and ARTHUR W. BURWELL, Cleveland, Ohio, assignors to the National Carbon Company, same place. Filed Oct. 29, 1898. Serial No. 694,886. (No model.)

Claim.—1. In a gas-generating apparatus, an inclosing furnace having vertical walls, gas-burners projecting through said vertical walls from different directions and at different elevations, combined with a vertical retort in said furnace with which said gas-burners cooperate and which extends out through the top and bottom of the furnace, removable covers closing the ends of said retort, and an outlet-pipe connected with said retort near its upper end, substantially as specified.

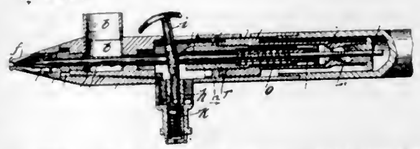
2. In a gas-generating apparatus, the combination of a vertical inclosing furnace having an interior vertical partition dividing, from the rest of the furnace, a diving-flue, there being an opening near the top of said partition connecting the top of the diving-flue with the top of the heating-chamber of the furnace, a main flue with which the lower end of said diving-flue is connected, gas-burners passing through the furnace at different elevations, a vertical retort in the furnace extending out through the top and bottom thereof, a vaporizing-chamber supported in the upper part of the diving-flue, a vertical pipe in said retort open at its lower end, a pipe connecting the upper end of the vaporizing-chamber with the upper end of the pipe in the retort, means for delivering a regulated supply of oil to said vaporizing-chamber, removable covers closing the ends of the retort, and an outlet-pipe for said retort connected thereto above the furnace, substantially as specified.



3. In a gas-generating apparatus, the combination of a furnace having a vertical wall and closed at its top and bottom and having an outlet-flue, a vertical retort in said furnace extending out through the top and bottom thereof, an outlet-pipe connected with the side of said retort above the furnace, a pair of removable covers, and means for holding them in engagement with the ends of the retort thereby removably closing those ends, and gas-burners extending through the vertical wall of the furnace at different elevations and coöperating with the sides of the retort, substantially as described.

4. In a gas-generating apparatus, the combination of a vertical inclosing furnace having a vertical partition dividing from the rest of the furnace a diving-flue, an opening near the top of the heating-chamber of the furnace into said diving-flue, a main flue with which the bottom of the diving-flue connects, said diving-flue being of less width than the heating-chamber, gas-burners on each side of the diving-flue extending through the vertical wall into the heating-chamber, gas-burners on the front side of the heating-chamber extending through the vertical wall, and vertical retorts in said furnace with the sides of which said gas-burners coöperate, substantially as described.

653,496. AIR-BRUSH. OLAUS G. WOLD, Chicago, Ill., assignor to Thayer & Chandler, same place. Filed May 6, 1899. Serial No. 715,823. (No model.)



Claim.—1. In an air-brush, the combination with a portion provided with a passage for conveying the pigment to the point of application, of a reservoir for the pigment having communication with said passage, the said reservoir being formed in separable sections, one of the sections being permanently secured to the air-brush and the other being removable from the said section, whereby the capacity of the reservoir may be readily adjusted by the use of one or more sections, substantially as described.

2. In an air-brush, the combination with a portion provided with a passage for conveying the pigment, of a needle inserted within the said passage for controlling the flow of the pigment, a lever for effecting the longitudinal movement of the needle, and a fixed sleeve surrounding the needle and at the ends snugly inclosing separated portions of the needle properly to aline the needle and guide the same in its longitudinal travel, substantially as described.

3. In an air-brush, the combination with a portion provided with a passage for conveying the pigment, of a needle inserted within the said passage for controlling the flow of the pigment, means for effecting the longitudinal movement of the needle, and a fixed sleeve surrounding the needle and at its ends snugly inclosing the needle properly to aline the needle and guide the same in its longitudinal travel, the intermediate portion of the bore of the said sleeve being enlarged to gather particles of the pigment that may be drawn back along the needle, substantially as described.

4. In an air-brush, the combination with a portion provided with a passage for conveying the liquid pigment to the point of application, of a needle for controlling the flow of the pigment, an air-passage for conveying air under pressure to effect the flow of the pigment, a valve for controlling the supply of air under pressure, a finger-lever for effecting the operation of the said valve by downward pressure thereon, and mechanism intervening between the said finger-lever and the needle for effecting, through the agency of said lever when moved lengthwise of the instrument, the operation of the said needle, the said mechanism normally being out of engagement with the finger-lever, the said lever being brought into engagement with the said mechanism when the needle is to be actuated, substantially as described.

5. In an air-brush, the combination with a portion provided with a passage for conveying liquid pigment, of a needle in the said passage for controlling the flow of the pigment, a finger-lever for moving the needle longitudinally, a sleeve *n* surrounding the needle, a second sleeve *s* having threaded engagement with the sleeve *n* and being thereby adjustable longitudinally of the same, the sleeve *s* being secured to the needle, while the sleeve *n* is adapted for engagement with the finger-lever, substantially as described.

6. In an air-brush, the combination with a portion provided with a passage for conveying liquid pigment, of a needle in the said passage for controlling the flow of the pigment, a finger-lever for moving the needle longitudinally, and a part *n* secured to the needle and adapted to be engaged directly by the finger-lever to effect the longitudinal movement of the needle, the said part *n* being adjustable longitudinally with respect to the needle and the said finger-lever, whereby the initial set of the needle may be adjusted and proper lost motion between the finger-lever and the part *n* provided for to prevent useless wear between these parts, substantially as described.

7. In an air-brush, the combination with a portion provided with a passage for conveying liquid pigment, of a needle in the said passage for controlling the flow of the pigment, a finger-lever for moving the needle longitudinally, a sleeve *n* surrounding the needle and adapted at one end to engage the finger-lever and united at the other end with the needle, and means for effecting the longitudinal adjustment of the sleeve *n* with relation to the needle and the finger-lever, substantially as described.

8. In an air-brush, the combination with a portion provided with a passage for conveying liquid pigment, of a needle in the said passage for controlling the flow of the pigment, a finger-lever for moving the needle longitudinally, a sleeve *n* surrounding the needle and adapted at one end to engage the finger-lever and united at the other end with the needle, means for effecting the longitudinal adjustment of the sleeve *n* with relation to the needle and the finger-lever, and means for preventing the rotation of the sleeve *n*, substantially as described.

9. In an air-brush, the combination with a portion provided with a passage for conveying liquid pigment, of a needle in the said passage for controlling the flow of the pigment, a finger-lever for moving the needle longitudinally, a sleeve *n* surrounding the needle and adapted for engagement at one end with the finger-lever, and a second sleeve *s* also surrounding the needle and secured thereto, the sleeve *s* having threaded engagement with the sleeve *n* and being adjustable upon the said sleeve to effect the desired initial set of the needle, substantially as described.

10. In an air-brush, the combination with a portion provided with a passage for conveying liquid pigment, of a needle in the said passage for controlling the flow of the pigment, a finger-lever for moving the needle longitudinally, a sleeve *n* surrounding the needle and adapted for engagement at one end with the finger-lever, a second sleeve *s* also surrounding the needle and secured thereto, the sleeve *s* having threaded engagement with the sleeve *n* and being adjustable upon the said sleeve to effect the desired initial set of the needle, and means for effecting the adjustment of the sleeve *n* longitudinally of the needle, substantially as described.

11. In an air-brush, the combination with a portion provided with a passage for conveying liquid pigment, of a needle in the said passage for controlling the flow of the pigment, a finger-lever for moving the needle longitudinally, a sleeve *n* surrounding the needle and adapted for engagement at one end with the finger-lever, and a second sleeve *s* also surrounding the needle and secured thereto, the sleeve *n* having threaded engagement with the sleeve *n* and being adjustable upon the said sleeve to effect the desired initial set of the needle, a slot or opening being provided in the casing of the brush to permit access to the sleeve *s* to effect its longitudinal adjustment, substantially as described.

12. In an air-brush, the combination with a needle for controlling the flow of the pigment, of a sleeve surrounding the needle and having a tapered seat, a plug having a bore for inclosing the needle, and means for forcing the said plug between the seat and the needle, substantially as described.

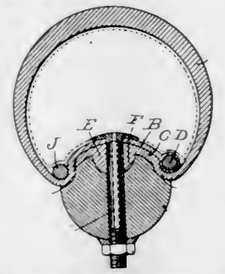
13. In an air-brush, the combination with a needle for controlling the flow of the pigment, of a sleeve surrounding the needle and having a tapered seat, a slotted plug having a bore for inclosing the needle, and means for forcing the said plug between the seat and the needle, substantially as described.

14. In an air-brush, the combination with a needle for controlling the flow of the pigment, of a sleeve surrounding the needle and having a tapered seat, a slotted plug having a bore for inclosing the needle, means for forcing the said plug between the seat and the needle, and a cap-screw for engaging the slotted plug and forcing the same into firm engagement with the said seat and needle, substantially as described.

15. In an air-brush, the combination with a sleeve or portion *d* having a passage for conveying the pigment, the said sleeve being provided with a tapered tip provided with an elongated tapered bore forming a continuation of the aforesaid passage, the said tip also having a tapered exterior surface, of a nozzle *f* having a tapered air-passage between the interior wall thereof and the said tip, the outer wall of the latter air-passage tapering at a more obtuse angle than the inner, the said nozzle being longitudinally adjustable, and a needle provided in the passage for conveying the pigment, a portion *e* supporting and inclosing the nozzle *f* and having threaded engagement upon its interior with said nozzle for effecting the longitudinal movement of the said needle, substantially as described.

16. In an air-brush, the combination with a sleeve or portion *d* having a passage for conveying the pigment, the said sleeve being provided with a tapered tip provided with a tapered bore forming a continuation of the aforesaid passage, the said tip also having a tapered exterior surface, of a nozzle *f* having a tapered air-passage between the interior wall thereof and the said tip, the outer wall of the latter air-passage tapering at a more obtuse angle than the inner wall, the said nozzle being longitudinally adjustable, a needle being provided in the passage for conveying the pigment and means for effecting the longitudinal movement of said needle, substantially as described.

653,497. PNEUMATIC TIRE. JOHN BAKER, Meacham, Ill. Filed Apr. 9, 1900. Serial No. 12,127. (No model.)



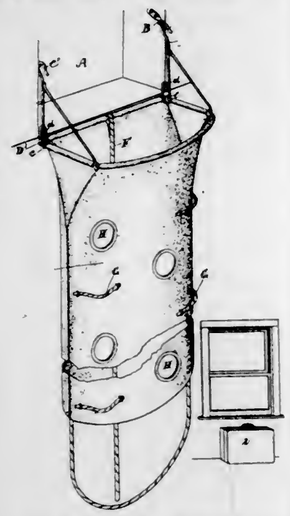
Claim.—1. In a tire, the combination with a rim provided with an outer convex face having a central annular and annular side grooves, of an open tube adapted to be mounted thereon, said tube comprising a tread portion and two annular flaps adapted to overlap each other on the rim, one of said flaps being provided with an annular shoulder adapted to fit within said central annular groove in said rim, and the other of said annular flaps being provided in its edge with an annular metal band adapted to compress a portion of said first-named flap into one of said side grooves in said rim, and a free annular band contained within said tire and adapted to engage and compress a portion of said last-named flap into said other side groove of said rim.

2. In a tire, the combination with a rim provided with an outer laterally-convex face having an annular middle groove, of a tire comprising a band the edge portions of which form overlapping flaps, one of said flaps being provided with an annular shoulder adapted to enter said groove in said rim, an annular metallic band mounted in the edge of said other flap and being of less diameter than the greatest diameter of said rim and adapted to engage and compress said first-named flap against said rim, and a free annular band of less

diameter than the greatest diameter of said rim within said tire adapted to engage and compress said last-named flap against said rim.

3. In a tire, the combination with a rim provided with an outer laterally-convex face having a central annular groove and annular side grooves, of a tire comprising an open tube the edge portions of which form overlapping flaps, one of said flaps being adapted to rest upon said rim and being provided with an annular shoulder adapted to fit said annular groove, devices carried by said other flap and adapted to engage and compress part of said first-named flap into one of said side grooves, and devices freely movable within said tire and adapted to be engaged thereby to compress a portion of said last-named flap into said other side groove when said tire is inflated.

658,498. FIRE-ESCAPE. FRANK N. BARNETT, Toronto, Canada. Filed Mar. 21, 1900. Serial No. 9,580. (No model.)



Claim.—1. In a fire-escape, the combination with a cylindrical casing, of a frame secured in the mouth thereof, having suspending-hooks, and supplemental frames E pivotally secured to the main frame, adapted to form in one position suspending devices and to be reversed to provide braces, substantially as described.

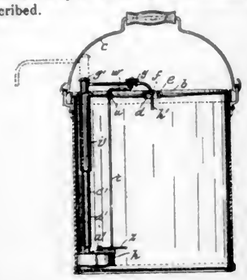
2. A fire-escape comprising the substantially-tubular casing, the substantially-rectangular frame at the top to which the upper edge of the casing is secured, the hinged braces swung on eyes on the sides of the frame and provided at their upper ends with hooks there being unobstructed holes extending through the tube as and for the purpose specified.

3. The combination with the casing and the upper substantially-rectangular frame and the braces hinged on the sides of the frame and hooks formed on the rear ends of the sides, the back cross-bar of the frame provided with eyes fitting over the hooks and the grappling-hooks provided with chains having the ends thereof fitting over the hooks of the frame, the said grappling-hooks being designed to grasp upon the inner side of the sill of the window as and for the purpose specified.

4. The combination with the casing and the substantially-rectangular frame the sides having the rear hooks, and the cross-bar fastened at the ends forward of such hooks and forming with the front portion of the frame means for connecting the casing, so as to leave the back portions thereof forward of the shanks of the hooks as and for the purpose specified.

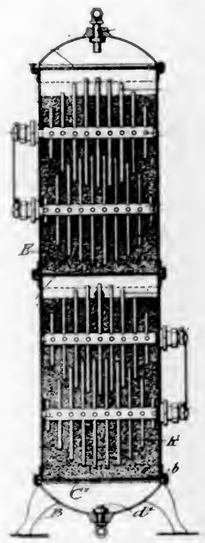
653,499. OIL-CAN. WESLEY BLANCHARD, Lewiston, Me. Filed Feb. 1, 1900. Serial No. 3,566. (No model.)

Claim.—1. The combination of a can or other similar container for liquids, a casing arranged in said can, said casing comprising two communicating chambers, a propeller arranged in one of said chambers, said chamber having an opening communicating with the can and disposed in the axial line of the propeller, means for rotating said propeller, and a discharge-pipe communicating with the other chamber and extending out of the can, said chambers having their port of communication arranged approximately in the line of centrifugal force of the propeller, and the propeller having its extremity or extremities bent reversely to the direction of rotation thereof, substantially as described.



2. The combination of a can or other similar container for liquids, a casing arranged in said can, said casing comprising two communicating chambers and one of said chambers having an opening in its bottom wall, affording communication with the can, a plate bridging said opening, another plate upon the top of said casing, a shaft journaled in said plates and extending through said chamber, a propeller in said chamber and carried by the shaft, a spindle journaled in the can and stepped in said last-named plate and having a crank, operative connection between said spindle and the shaft, and a discharge-pipe connected to the other chamber and extending out of the can, substantially as described.

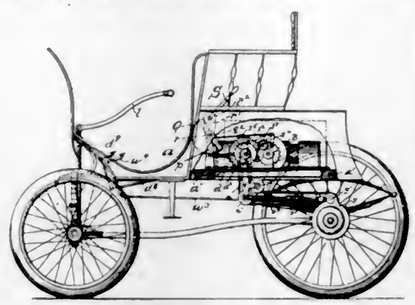
658,500. WATER-FILTER. SEATON M. BOYER, Allentown, Pa. Filed Feb. 28, 1900. Serial No. 6,793. (No model.)



Claim.—1. A water-filter, consisting of a tank provided with an inlet and outlet, means for reversing the flow of water through the inlet and outlet, screens contiguous to the inlet and outlet, a mass of filtering material confined between said screens, a pair of oscillatory shafts journaled in said tank, in bearings located between the screens, one shaft being located nearer one screen than the other, and said shafts being provided with radial agitator-arms, and means for oscillating said shafts, substantially as set forth.

2. A water-filter, consisting of a tank provided with an inlet and outlet, screens contiguous to the inlet and outlet, a mass of filtering material confined between said screens, oscillatory shafts journaled in said tank, in bearings located between the screens, one shaft being located nearer one screen than the other, and said shafts being provided with radial agitator-arms, levers applied to said shafts, and one of said levers having a handle, and a link connecting said levers, substantially as set forth.

653,501. MOTOR-VEHICLE. LOUIS S. CLARKE and WILLIAM MORGAN, Pittsburg, and JAMES G. HEASLET, Allegheny, Pa., assignors, by mesne assignments, to the Autocar Company, of Pennsylvania. Filed Jan. 31, 1899. Serial No. 703,968. (No model.)



Claim.—1. In a motor-vehicle, the combination with a motor, a shaft, a counter-shaft, and high and low gear connections between said shafts, of a motor-controlling device, means for setting the high or the low speed gear and operating said motor-controlling device simultaneously, an operating-lever and connections between the same and said gear-setting means embodying a lever and a controlling-guide for setting both gears by a one-way movement of the operating-lever, substantially as set forth.

2. In a motor-vehicle, the combination with a shaft, a counter-shaft, and high and low speed gear connections between said shafts, of a motor-controlling device, means for setting the high or the low speed gear and operating said motor-controlling device simultaneously, a single operating-lever and connections between said means and said operating-lever, embodying cam-and-lever mechanism for setting said gears and operating the motor-controlling device for all speeds by a one-way movement of the operating-lever, substantially as set forth.

3. In a motor-vehicle, a motor, a shaft, a counter-shaft, high and low gear connections between said shafts, a valve controlling the admission of explosive mixture to said motor, a device for changing the lead of the spark, a lever, and connections between said lever and said valve and a device for changing lead of spark, substantially as set forth.

4. In a motor-vehicle, a motor, a shaft, a counter-shaft, high and low speed gear connections between said shafts, clutch mechanism on said counter-shaft, a clutch-operating lever, a motor-controlling device, a lever, connections between said last-mentioned lever and motor-controlling device, and a movable governing member engaging said levers, and by its traverse in one direction serving to move said levers to give low gear and low motor, low gear and high motor, high gear and low motor, or high gear and high motor, and all intermediate speeds on each gear, substantially as set forth.

5. In a motor-vehicle, a motor, a shaft, a counter-shaft, high and low speed gear connections between said shafts, clutch mechanism on said counter-shaft, a clutch-operating lever, a motor-controlling device, a lever, connections between said last-mentioned lever and motor-controlling device, and a movable member having irregular-shaped guides adapted to engage projections on said levers, substantially as set forth.

6. In a motor-vehicle, a motor, a shaft, a counter-shaft, high and low speed gear connections between said shafts, clutch mechanism on said counter-shaft, a clutch-operating lever, a motor-controlling device, a lever, connections between said last-mentioned lever and said motor-controlling device, a rocker-frame having irregular-shaped guides therein adapted to engage projections on said levers, substantially as set forth.

7. In motor-vehicles, a motor, a shaft, a counter-shaft, high and low speed gear connections between said shafts, clutch mechanism on said counter-shaft, a clutch-operating lever, a motor-controlling device, a lever, connections between said last-mentioned lever and motor-controlling device, a semicylindrical rocker-frame having irregular-shaped guides therein adapted to engage projections on said levers, and a single operating-lever for moving said rocker-frame, substantially as set forth.

8. In motor-vehicles, a motor, a shaft, a counter-shaft, high and low speed gear connections between said shafts, clutch mechanism on said counter-shaft, a clutch-operating lever, a motor-controlling device, a lever, connections between said last-mentioned lever and motor-controlling device, a semicylindrical rocker-frame having irregular-shaped guides therein adapted to engage projections on said levers, a sprocket-wheel on the rocker-frame shaft, a chain connecting said sprocket-wheel, and an operating-lever connected to said last-mentioned sprocket, substantially as set forth.

9. In a motor-vehicle, a motor, a shaft, a counter-shaft, high and low speed gear connections between said shafts, clutch mechanism on said counter-shaft, a clutch-operating lever, a motor-controlling device, a lever, connections between said lever and the motor-controlling device, a rocker-frame having irregular-shaped guides therein adapted to engage projections on said levers, a friction-roller adapted to engage frictional faces on said shafts, and connections between said roller and said rocker-frame, whereby by the movement of said rocker-frame said roller is thrown into contact with said shafts, substantially as set forth.

10. In a motor-vehicle, a motor, a shaft, a counter-shaft, high and low speed gear connections between said shafts, clutch mechanism on said counter-shaft, a clutch-operating lever, a motor-controlling device, a lever, connections between said lever and the motor-controlling device, a rocker-frame having irregular-shaped guides therein adapted to engage projections on said levers, a friction-roller adapted to engage frictional faces on said shafts, a bell-crank connected to said roller, and a rod connected to said bell-crank, the opposite end of said rod having a slot therein engaging a stud on said rocker-frame, substantially as set forth.

11. In a motor-vehicle, a motor, a shaft, a counter-shaft, high and low speed gear connections between said shafts, clutch mechanism on said counter-shaft, a clutch-operating lever, a motor-controlling device, a lever, connections between said lever and the motor-controlling device, a rocker-frame having irregular-shaped guides therein adapted to engage projections on said levers, a friction-roller adapted to engage frictional faces on said shafts, a bell-crank connected to said roller, and a rod connected to said bell-crank the opposite end of said rod having a slot therein engaging a stud on said rocker-frame, a sprocket-wheel on the rocker-frame shaft, a chain connecting said sprocket-wheel with a second sprocket-wheel, and a lever adapted to turn said second sprocket-wheel, substantially as set forth.

12. In a motor-vehicle, a power-driven wheel, an endless belt, a second wheel adapted to drive the axle, said belt engaging said wheels, and a swinging take-up frame between said wheels with which said belt engages, substantially as set forth.

13. In a motor-vehicle, a power-driven sprocket-wheel, an endless chain, a second sprocket-wheel adapted to drive the axle, said chain engaging said sprocket-wheels, a swinging take-up frame between said sprocket-wheels, and rollers on said frame with which said chain engages, substantially as set forth.

14. In a motor-vehicle, a power-driven sprocket-wheel, an endless chain, a second sprocket-wheel adapted to drive the axle, said chain engaging said sprocket-wheels, a swinging arm suspended below said first-mentioned sprocket-wheel, a rod pivoted to said arm and to a point adjacent to said second-mentioned sprocket-wheel, and rollers on said swinging arm with which said chain engages, substantially as set forth.

15. In a motor-vehicle, a power-driven sprocket-wheel, an endless chain, a second sprocket-wheel adapted to drive the axle, said chain engaging said sprocket-wheels, a swinging arm suspended below said first-mentioned sprocket-wheel, a rod pivoted to said arm and to a point adjacent to said second-mentioned sprocket-wheel, said rod having a turnbuckle therein, and rollers on said swinging arm with which said chain engages, substantially as set forth.

16. In a motor-vehicle, the combination with a motor, a shaft, a counter-shaft, and high and low speed gear connections between said shafts, of a slidable sleeve on said counter-shaft, mechanism for moving said sleeve, an arm pivoted to said sleeve, a bell-crank on said counter-shaft having one end connected to said arm, and a clutch member movable longitudinally of the shaft by the engagement of the free end of the bell-crank therewith, substantially as set forth.

17. In a motor-vehicle, a motor, a shaft, a counter-shaft, high and low speed gear connections between said shafts, a slidable sleeve or said counter-shaft, mechanism for moving said sleeve, an arm pivoted to said sleeve, a bell-crank on said counter-shaft connected to said arm and having a roller at its free end and a friction-disk member of a clutch on said counter-shaft, with the outer face of which the roller on the end of said bell-crank engages, substantially as set forth.

18. In a motor-vehicle, a motor, a shaft, a counter-shaft, high and low speed gear connections between said shafts, a slidable sleeve on said counter-shaft, mechanism for moving said sleeve, an arm pivoted to said sleeve, a bell-crank on said counter-shaft connected to said arm, a friction-disk member of a clutch mounted on said counter-shaft, said disk having a beveled outer face with which the free end of the bell-crank engages, substantially as set forth.

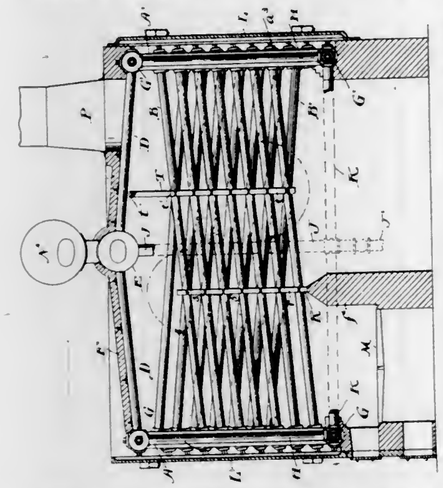
19. In a motor-vehicle, a motor, a shaft, a counter-shaft, high and low speed gear connections between said shafts, a slidable sleeve on said counter-shaft, mechanism for moving said sleeve, an arm pivoted to said sleeve, a bell-crank on said counter-shaft, connected to

said arm, a friction-disk of a clutch on said counter-shaft, said disk having a beveled face thereon and a roller on said bell-crank adapted to move in contact with said beveled face, substantially as set forth.

20. In a motor-vehicle, the combination with a motor, a shaft driven thereby, a chain driven by said shaft, and a second shaft driven by said chain, of a band-brake on said second chain-shaft, and compensating-gear mechanism between said second chain-shaft and the vehicle-axle, substantially as set forth.

653,502. TUBULAR BOILER. HERBERT F. COOK, Cleveland, Ohio.

Filed Sept. 13, 1899. Serial No. 730,336. (No model.)



Claim.—1. In a tubular boiler, the combination of two groups of vertical hollow headers set side by side to form the ends of the boiler, each header being connected at both its upper and lower ends with the header on each side of it, a plurality of substantially-vertical rows of inclined tubes which extend between the headers at one end of the boiler and those at the other end, and are connected with said headers, the tubes in each vertical row being oppositely inclined to those in the adjacent vertical row, a water-dome, and pipes connecting it with the upper ends of the headers at both ends of the boiler, and pipes connecting said dome with the lower ends of some of the headers at both ends of the boiler, substantially as specified.

2. In a tubular boiler, the combination of the group of headers A A′ which are connected at both their upper and lower ends and constitute one end of the boiler, the group of headers A′ which are similarly connected and constitute the other end of the boiler and the tubes B B′ which extend from one group of headers to the other and are connected with them, said tubes being arranged in vertical rows, of which the tubes in each row are inclined in opposite directions to the tubes in adjacent rows, with the water-dome, pipes connecting it with the headers at both ends of the boiler, pipes connecting said dome with the lower ends of the outside headers in each group, and the vertical pipes at the four corners of the boiler, and connected with the upper and lower ends of the four outside headers, substantially as specified.

3. In a tubular boiler, the combination of two hollow ends of the boiler, and tubes extending between and connected with said ends, and arranged in substantially-vertical rows, the tubes in one row being inclined oppositely to those in adjacent rows, a water-dome, pipes connecting it with the upper parts of both of the boiler ends, and return-pipes connecting it with the lower parts of said boiler ends, substantially as specified.

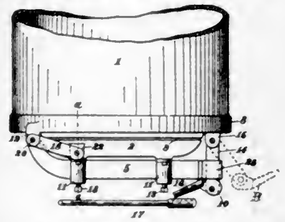
4. In a tubular boiler, the combination of a steam-dome, a water-dome communicating therewith, headers communicating with said water-dome, inclined heating-tubes carried between the headers, and vertical circulating-pipes leading from the water-dome and communicating with the lower ends of the headers, substantially as specified.

5. In a tubular boiler, the combination of a steam-dome, a water-dome, inclined pipes connecting the water-dome with the upper ends of vertical headers, each header carrying two vertical rows of oppositely-inclined heating-tubes, said headers communicating top and bottom with each other, and located close together to form solid walls, vertical circulating-pipes leading from the water-dome and communicating through horizontal pipes with the lower ends of the headers, substantially as specified.

6. In a tubular boiler, the combination of two groups of vertical hollow headers set side by side, the headers of each group being successively connected and communicating at both ends, and having closed openings at their backs, a plurality of substantially-vertical rows of inclined tubes which extend between the two groups of headers, and communicate therewith, the tubes in each vertical row being oppositely inclined to those in its adjacent rows, a steam-dome, a water-dome connected therewith, inclined pipes connecting said water-dome with the upper ends of the headers, vertical circulating-pipes leading from the water-dome, and horizontal pipes connecting them with the lower ends of the headers, substantially as specified.

7. In a boiler, the combination of a steam-dome, a water-dome communicating therewith, a set of heating-pipes, pipes leading from the upper part of said set to said water-dome, a furnace-casing inclosing the heating-pipes, and circulating-pipes leading downward from the water-dome outside of said casing and communicating to the lower part of said set of heating-pipes, substantially as specified.

653,503. DOOR FOR DIGESTERS. PATRICK F. DUNDON, San Francisco, Cal. Filed Mar. 30, 1900. Serial No. 10,836. (No model.)



Claim.—1. In a hermetically-closing door, a pressure-bar 5, curved at one end and slotted at the other, the curved end connected to the frame on which the door closes by a hinged connection, in combination with a link and cam pivoted to the frame and cooperating with said bar at the slotted end, and compression-screws 13, substantially as specified.

2. In a hermetically-closing door, the pressing-bars 5 pivoted to the door-frame and forming supporting-hinges for the door, the adjusting-screws 13 bearing upon the door and distributing the pressure thereon at four or more points, and the housings 11 to connect the door and the pressing-bars, combined and operating substantially as specified.

3. In a hermetically-closing door, pressing-bars to force the door upon its seat, bearing at four or more points thereon, forming also hinges for the door, and in combination therewith the radius-links 18 pivoted in the same axial line as the pressing-bars and holding the door in adjustment thereon, substantially as specified.

4. In a hermetically-closing door, the pressing-bars 5, provided with the adjusting-screws 13 to bear at four or more points on the door, forming also supporting-hinges for the same, the housings 11, links 18, and cams to force the pressure-bars against the door, combined and operating in the manner substantially as specified.

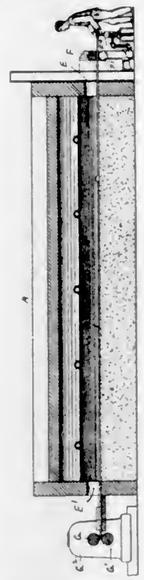
653,504. FURNACE. VICTOR E. EDWARDS, Worcester, Mass.

Filed Mar. 3, 1897. Serial No. 625,804. (No model.)

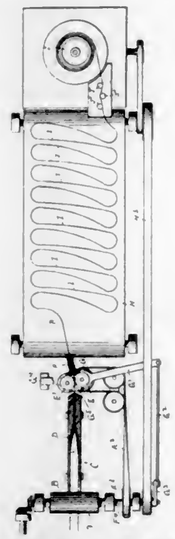
Claim.—1. The combination with a furnace having an opening at one end to receive a rod, or billet, and a pair of openings placed opposite each other at the opposite, or delivery end of the furnace, of means for mechanically pushing the rod, or billet, through said admission-opening, means for mechanically pushing the rod, or billet, sidewise from the admission to the delivery end of the furnace, a pair of withdrawing-rolls placed opposite one of the openings at the delivery end of the furnace and means operating through the opposite opening for mechanically pushing the rod or billet into engagement with said rolls by which the rod, or billet, is withdrawn from the furnace, substantially as described.

2. The combination with a furnace having an opening at one end for the admission of a rod, or billet, and a pair of openings placed opposite each other at the opposite or delivery end of the furnace, of means for pushing the rod or billet from the admission to the delivery end of the furnace, a pair of withdrawing-rolls placed opposite one of the openings at the delivery end of the furnace and adjacent thereto, guides by which the advancing end of the rod or billet is conducted from said opening into the bite of said rolls and means operating through the opposite opening for pushing the rod or billet into said rolls, substantially as described.

3. The combination with a furnace for heating rods or billets having a pair of openings in its side walls placed opposite each other and at the delivery end of the furnace, of a pair of rotating rolls placed opposite one of said openings, means operating through the opposite opening for pushing the rod or billet into the bite of said rolls, and means for guiding the advancing end of the rod or billet between the furnace and the rolls, substantially as described.



653,505. APPARATUS FOR HANDLING BAND-IRON. VICTOR E. EDWARDS, Worcester, Mass., assignor to the Morgan Construction Company, same place. Filed July 19, 1897. Serial No. 645,146. (No model.)



Claim.—1. The combination of a vibrating plate, a pair of feed-rolls carried by said plate having their axis of vibration coincident with the line of contact between said rolls, and an arm projecting from the side of said plate by which a strip of band-iron, fed by said rolls, is deposited in loops, substantially as described.

2. In an apparatus for handling band-iron the combination with a pair of reducing-rolls arranged to reduce a strip of band-iron with its edges lying in a horizontal plane of a vibrating arm by which the strip of band-iron is deposited in a series of loops, said arm having a slit or passage for the strip of band-iron by which the strip is maintained with its edges lyiug in a vertical plane, substantially as described.

3. In an apparatus for handling band-iron, the combination with a pair of reducing-rolls, of a twisting-guide, means for drawing the tail end of the strip out of said guide, a vibrating arm, and means for vibrating said arm by which the strip is deposited in loops lying transversely to its line of motion, substantially as described.

4. In an apparatus for handling band-iron, the combination with a pair of reducing-rolls of a vibrating arm by which the strip of band-iron is deposited in loops upon a movable apron, a movable apron, and means for moving said apron, substantially as described.

5. In an apparatus for handling band-iron, the combination with a pair of reducing-rolls, of a twisting-guide, means for drawing the tail end of the strip from said guide, a vibrating arm provided with a passage-way for the strip, means for vibrating said arm whereby the strip is deposited in loops, a moving apron to receive said loops and convey them from said vibrating arm, substantially as described.

6. In an apparatus for handling band-iron, the combination with a pair of reducing-rolls, of a twisting-guide, means for withdrawing the tail end of the strip of band-iron from said guide, a vibrating arm, a movable apron and a reeling mechanism, substantially as described.

7. In an apparatus for handling band-iron, the combination of a pair of reducing-rolls, a twisting-guide, a pair of feed-rolls having vertical axes adapted to move the strip of band-iron at the same speed that it is delivered from said reducing-rolls, means for actuating said feed-rolls and a vibrating arm, substantially as described.

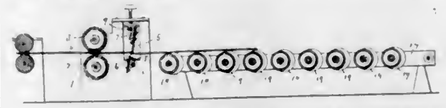
8. In an apparatus for handling band-iron, the combination of a reeling mechanism, an apron, means for actuating said apron, a vibrating arm by which a strip of band-iron is deposited in loops upon said apron, means for actuating said vibrating arm and means for feeding the strip of band-iron through said vibrating arm, substantially as described.

9. In an apparatus for handling band-iron the combination with a pair of reducing-rolls and a reeling mechanism of means for forming a series of loops between said rolls and said reeling mechanism and means for moving said loops toward said reeling mechanism, substantially as described.

10. In an apparatus for handling band-iron a pair of reducing-rolls by which the strip of band-iron is delivered with its edges lying in a horizontal plane, of a reeling mechanism, a moving apron, means for twisting the strip of band-iron to bring its edges into a vertical plane, a feeding mechanism, a vibrating arm by which the strip is deposited in loops and means for actuating said vibrating arm, substantially as described.

11. The combination of a vibrating plate, a pair of feed-rolls supported on said plate, means for rotating said feed-rolls, an arm projecting from the side of said plate having a narrow passage-way, said plate and arm being capable of a vibrating motion about an axis parallel with the axis of said feed-rolls and coincident with the line of contact between said rolls, substantially as described.

653,506. APPARATUS FOR CUTTING AND HANDLING BAND-IRON. VICTOR E. EDWARDS, Worcester, Mass., assignor to the Morgan Construction Company, same place. Filed Dec. 31, 1897. Serial No. 664,804. (No model.)



Claim.—1. The combination with a revolving shear-blade and means for rotating the same, of a cooperating revolving shear-blade, means for rotating the same at a different speed whereby the cutting edges of said shear-blades are made to cooperate at multiple revolutions, substantially as described.

2. The combination with a revolving shear-blade and means for rotating the same, of a cooperating revolving shear-blade, means for rotating the same at a different speed, and means for feeding a strip of band-iron between said blades, whereby said strip is severed at predetermined lengths, substantially as described.

3. The combination of a pair of revolving shear-blades having their cutting edges rotating in circular paths of different diameters, and means for rotating said blades at different speeds corresponding inversely to the diameters of their circular paths whereby the cutting edges of said shear-blades are caused to move at a uniform velocity, substantially as described.

4. The combination of a pair of revolving shear-blades having their cutting edges rotating in circular paths of different diameters, means for rotating said blades at different speeds corresponding inversely to the diameters of said circular paths, and means for feeding a strip of band-iron between said blades, substantially as described.

5. The combination of a pair of radially-adjustable, revolving shear-blades and means for rotating said blades at different speeds corresponding inversely to the radial distance of their cutting edges from their axes of rotation, substantially as described.

6. The combination of a pair of radially-adjustable, revolving shear-blades, means for feeding a strip of band-iron between said shear-blades and means for varying the speed of said shear-blades, whereby the velocity of the cutting edge of each of said shear-blades shall correspond with the velocity of the strip of band-iron, substantially as described.

7. The cutting mechanism comprising a pair of revolving shear-blades having differential radii and inversely-corresponding differential speeds, substantially as described.

8. The cutting mechanism comprising a pair of revolving shear-blades having differential radii and inversely-corresponding differential speeds and means for feeding a strip of band-iron between said blades at a speed corresponding to the velocity of the cutting edges of said blades, substantially as described.

9. The combination with a pair of revolving shear-blades of a conveyer comprising a series of rolls presenting supporting-surfaces in a single plane and having their axes at an oblique angle to the axes of said shear-blades, substantially as described.

10. The combination with a cutting mechanism, of a conveyer for removing the severed pieces of band-iron and comprising a series of revolving rolls arranged in a straight line upon which the severed pieces are supported, said rolls having their axes at an oblique angle to said straight line, whereby a lateral or sidewise movement is imparted to the severed pieces as they are moved endwise by the rotation of the rolls, substantially as described.

11. The conveying mechanism comprising a series of rolls presenting supporting-surfaces and arranged in a straight line and having their axes at an oblique angle to said straight line, whereby an endwise and sidewise movement is imparted to the severed pieces of band-iron, substantially as described.

12. The conveying mechanism comprising a series of rolls arranged in a straight line with their axes at an oblique angle to said straight line whereby an endwise and sidewise movement is imparted to the strips of band-iron, said rolls having their supporting-surfaces in an inclined plane, whereby the sidewise movement of the severed pieces is aided by gravity, substantially as described.

13. The combination of a series of revolving rolls for supporting the severed pieces arranged in a straight line with their axes placed at an oblique angle thereto, whereby an endwise and sidewise motion is imparted to the severed pieces and a stop-plate placed in the path of the severed pieces as they are moved endwise by said rolls, substantially as described.

14. The combination of a series of rolls upon which the severed pieces of band-iron are supported arranged in a straight line with their axes at an oblique angle thereto, whereby an endwise and sidewise motion is imparted to the severed pieces, and a stop-plate placed in the path of said pieces, said stop-plate being slightly inclined to the line of the sidewise movement of the severed pieces, whereby a slight endwise movement of the severed pieces is permitted consequent upon their continued endwise movement, substantially as described.

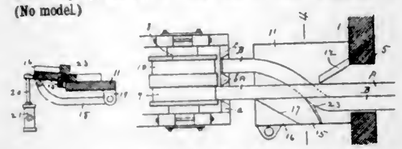
15. The combination of means for imparting an endwise and sidewise motion to the severed pieces of band-iron, means for evening the ends of the severed pieces, and a conveyer by which the severed strips are conveyed by a sidewise movement, substantially as described.

16. The combination of means for imparting an endwise motion to the severed pieces of band-iron at a gradually-reducing speed and a simultaneous sidewise motion and means for limiting the endwise motion of the severed pieces, substantially as described.

17. The combination with cutting mechanism of a series of rolls forming a conveyer upon which the severed pieces of band-iron are carried away from the cutting mechanism, said rolls having varying diameters, and means for moving the severed pieces sidewise upon sections of the conveying-rolls of less diameter, whereby the endwise motion of the severed pieces is reduced in speed, substantially as described.

18. The combination of a series of conical rolls, means for driving said rolls, whereby an endwise motion is imparted to the severed pieces of band-iron, means for moving the severed pieces toward the smaller ends of said rolls, whereby the endwise motion is reduced in speed, and a stop-plate arranged in the path of said severed pieces, whereby their endwise motion is limited, substantially as described.

653,507. FEEDING MECHANISM FOR ROLLING-MILLS. VICTOR E. EDWARDS, Worcester, Mass., assignor to the Morgan Construction Company, same place. Filed Dec. 27, 1898. Serial No. 700,423. (No model.)



Claim.—1. The combination with a pair of rolls, having two sets of grooves, or passes, in the same horizontal plane, of means for moving a billet by an endwise movement into engagement with said rolls, a fixed guide by which the advancing end of the billet is deflected horizontally to one side and brought into alinement with one of said passes, a movable guide by which the second billet is deflected horizontally in the opposite direction and brought into alinement with the other of said passes, substantially as described.

2. The combination with a pair of rolls having two sets of grooves, or passes, of means for moving a billet endwise into engagement with said rolls, means for guiding the advancing end of the billet into one of said passes, a vertically-moving guide adapted to be brought into the path of the second billet and deflect the same into the other of said passes and means for raising said movable guide, substantially as described.

3. The combination with a pair of rolls having two sets of grooves, or passes, of means for moving a billet endwise into engagement with said rolls, a table in front of said rolls, by which the billets are supported, in the plane of said passes, a fixed rib projecting from the upper surface of said table and adapted to push the billet sidewise and into alinement with one of said passes, a movable guide normally below the surface of said table, means for raising said movable guide above the surface of the table, whereby the second billet as it is pushed into contact with said movable guide is moved into alinement with the other of said passes, substantially as described.

4. The combination with a pair of rolls having two sets of grooves, or passes, of means for moving a billet endwise into engagement with said rolls, a table in front of said rolls and adapted to support the billet in the plane of said passes, means for guiding the billet into one of said passes, a plate lying normally in the plane of the table and in the path of the billet, means for raising said plate and thereby lifting the billet passing over it and means for guiding the succeeding billet into the other of said passes and beneath the billet passing over said plate, substantially as described.

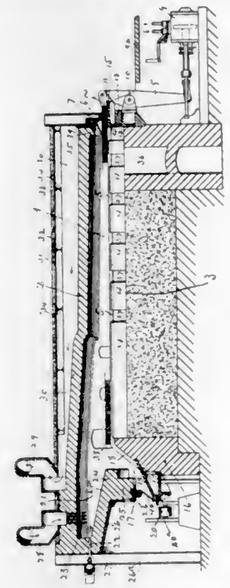
5. The combination with a pair of rolls having two sets of grooves, or passes, of means for moving a billet endwise into engagement with said rolls, of means, for guiding the billet into one of said passes, means for lifting the billet during its passage between the pair of rolls, and means for guiding a succeeding billet beneath the raised billet and into the other of said passes, substantially as described.

6. The combination with a pair of rolls having two sets of grooves or passes, of a pushing-bar adapted to engage the end of a billet, means for moving said bar endwise, whereby the billet is pushed by an endwise movement into engagement with said rolls, a table in front of said rolls and in the plane of said passes, guides for conducting the advancing end of the billet into one of said passes, a plate lying in the plane of said table and in the path of the advancing billet, an arm hinged at one end, and supporting said plate upon its free end, means for rocking said arm and raising said plate, whereby a billet passing over said plate is raised from said table, said plate having an oblique side arranged to be brought into the path of a succeeding billet by the raising of the plate, whereby the succeeding billet is conducted beneath the raised billet into the other of said passes, substantially as described.

653,508. FURNACE. VICTOR E. EDWARDS and JEROME R GEORGE, Worcester, Mass., assignors to the Morgan Construction Company, same place. Filed Sept. 13, 1899. Serial No. 730,290. (No model.)

Claim.—1. In a furnace for heating billets, the combination with a heating-chamber having an opening at one end for the admission of billets, of a track extending longitudinally through said chamber whereon the billets are supported, a transverse wall at the opposite end of the heating-chamber having a downwardly-inclined surface over which said track is continued forming an inclined section whereon the heated billets move out of the heating-chamber, an upper transverse wall above said inclined track, an opening above said upper transverse wall, for the admission of a current of gaseous fuel, and means for directing said current lengthwise of the heating-chamber, substantially as described.

2. In a furnace for heating billets, the combination, of a heating-chamber having an opening at one end for the admission of billets, a transverse wall at the opposite end, provided with a downwardly-inclined track-supporting surface, a track for the billets extending from the admission-opening lengthwise the heating-chamber and over said inclined surface, an upper transverse wall above said inclined track, arranged to support the inner end of a mixing-chamber, an elevated mixing-chamber communicating with said heating-chamber, and means for supporting the outer end of said mixing-chamber whereby an open space is provided in front of said inclined track and beneath said mixing-chamber, substantially as described.



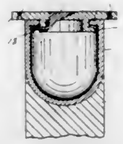
3. In a furnace for heating billets, the combination with a heating chamber, having an opening at one end for the admission of billets, a track extending lengthwise said chamber, a transverse end wall at the delivery end of the chamber having a downwardly-inclined surface leading out of the heating-chamber, a pushing mechanism by which the billets are pushed from the charging end of the heating-chamber upon said inclined surface whereby they are delivered from the furnace, a mixing-chamber for gaseous fuel having an opening into said heating-chamber, over said downwardly-inclined delivery-surface, means for directing the current of heated fuel lengthwise the heating-chamber, said mixing-chamber having a downwardly-inclined bottom by which the current of fuel is directed against the advancing end of a row of billets as they are moved through the heating-chamber by the pushing mechanism, substantially as described.

4. In a furnace for heating billets, the combination of a heating-chamber having an opening at one end for the admission of billets and an opening at the opposite end for the delivery of billets, a track lengthwise the heating-chamber and in alinement with said delivery-opening, a transverse wall above said delivery-opening, an elevated mixing-chamber for gaseous fuel, supported at its inner end by said transverse wall and overhanging the space in front of said delivery-opening and means for supporting the outer end of said mixing-chamber whereby an open space is provided in front of said delivery-opening and beneath said mixing-chamber, substantially as described.

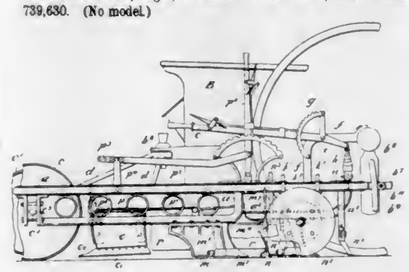
5. In a furnace for heating billets, the combination of a heating-chamber having an opening at one end for the admission of billets, a transverse wall at the opposite end of the chamber, a delivery-opening above said transverse wall, an upper transverse wall above said delivery-opening, a mixing-chamber for gaseous fuel supported at one end by said upper transverse wall, and posts supporting the outer end of said mixing-chamber, whereby an open space is provided in front of said delivery-opening and beneath said mixing-chamber, substantially as described.

653,509. CAST-METAL PILE. MAURICE GOLDBERGER, Fort Wayne, Ind., assignor to the Fort Wayne Smelting and Refining Works, same place. Filed Feb. 1, 1900. Serial No. 3,562. (No model.)

Claim.—In an opened-top foundation-pile the combination of a detachable cap having a pendent flange 13 provided with a suitable lug adapted to form an interlocking engagement with the top of the pile and also provided with a lateral slot adapted to receive the inner and lower end of a locking key, 15; and the locking-key 15.



653,510. APPARATUS FOR TRIMMING SIDES OF ROADS. ALEXANDER HOGG, Elgin, Scotland. Filed Dec. 8, 1899. Serial No. 739,630. (No model.)



Claim.—1. An apparatus for trimming and dressing the sides of roads, adapted to be drawn by a traction-engine and comprising a frame, wheels supporting the rear end of the frame, supporting devices on the front end of the frame adapted to connect with the rear part of the traction-engine, and to support the aforesaid frame while permitting vertical adjustment thereof relatively to the traction-engine, bracing means attached to the said frame and adapted to connect with the traction-engine to laterally support the frame, a paring-wheel carried by said frame, parallel cutting-shears arranged on said frame, a raking-shear arranged on said frame to the rear of said cutting-shears, and means for vertical adjustment of the frame.

2. In an apparatus for trimming and dressing the sides of roads, the combination with a traction-engine, of a frame, wheels supporting the rear end of the frame, supporting devices on the front end of the frame, adapted to connect with the rear part of the traction-engine, and to support the aforesaid frame while permitting vertical adjustment thereof relatively to the traction-engine, bracing means attached to the said frame and adapted to connect with the traction-engine to laterally support the frame, a paring-wheel carried by said frame, parallel cutting-shears arranged on said frame, a raking-shear arranged on said frame to the rear of said cutting-shears, and means for vertical adjustment of the frame.

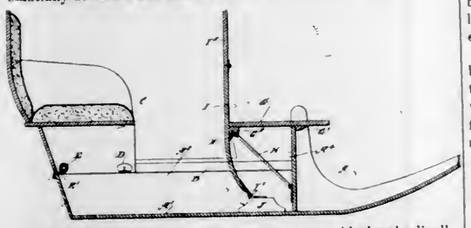
3. In an apparatus for trimming and dressing the sides of roads, the combination of a frame having carrying-wheels and traction means, a paring-wheel k, cutting-shears m and n, projecting-point extension-shear m^4, and raking-shear o carried by said frame, and adjustable supporting devices adapted to adjust the height of said frame.

4. In an apparatus for trimming and dressing the sides of roads, the combination with a traction-engine, of a frame, carrying-wheels for the rear end of said frame, a traction connection comprising a bar b^3, a roller carried by the aforesaid frame engaging with the said bar b^3 so as to cause the frame to be driven thereby while allowing vertical relative movement, an adjusting-lever e supported by the traction-engine and connected to the aforesaid frame, and hand-operated means for controlling the position of said lever e.

5. In an apparatus for trimming and dressing the sides of roads, the combination with a traction-engine, of a frame, carrying-wheels for the rear end of said frame, a traction connection comprising a bar b^3, a roller carried by the aforesaid frame engaging with said bar b^3 so as to cause the frame to be driven thereby while allowing vertical relative movement, cutting-shears m and n, raking-shear o, an adjusting-lever e supported by the traction-engine and connected to the aforesaid frame, an adjusting-lever p^3 connected to the shear o and hand-operated means for controlling the position of said levers e and p^3, substantially as described.

653,511. VEHICLE. CLARK C. HYATT, HARRY W. WATSON, WILLIAM WILDANGER, and CYRUS B. SANDERSON, Flint, Mich. Filed Oct. 31, 1899. Serial No. 735,366. (No model.)

Claim.—1. A vehicle-body having a fixed seat-leg, a seat adapted to rest at one end on said leg, a brace pivotally connecting the seat with the leg, and a back hinged to the body and arranged for removable connection with the end of the seat at the brace connection, substantially as shown and described.

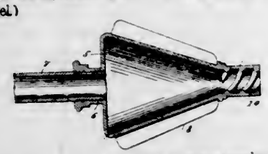


2. A vehicle-body, a main or rear seat movable longitudinally thereof, and a front knockdown seat comprising a seat proper adapted to rest with its forward end on a fixed part of the vehicle-body, a back hinged to the vehicle-body and movably connected with said seat, and a brace extending from the seat to the vehicle-body at or near the connection of the seat with said back, substantially as shown and described.

3. The combination of a fixed seat-leg, a seat adapted to rest at one edge portion on said leg, and a folding seat-back mounted adjacent to the seat-leg and having means for removably engaging the seat at the edge portion opposite the leg to support the seat.

4. The combination of a fixed seat-leg, a seat, a swinging brace hinged to the seat, the seat being capable of swinging over the seat-leg to bear one edge portion thereon, and a folding seat-back having means for removably engaging the seat at the edge portion opposite the seat-leg to support the seat.

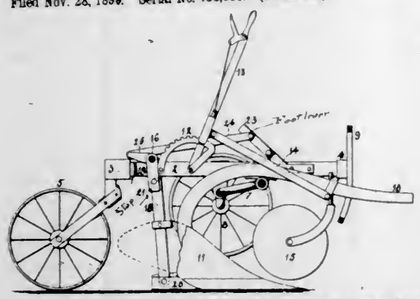
653,512. STEAM-JET TUBE OR FLUE CLEANER. WORTHINGTON H. INGERSOLL, Hamburg, N. J. Filed Jan. 8, 1900. Serial No. 726. (No model.)



Claim.—1. The combination with a steam-supply pipe and a coniform blower-head whereon the supply-pipe is secured at the larger end of said blower-head, of spaced flanges on the exterior of the blower-head, a discharge-nozzle on the smaller end of the blower-head, and a spiral-rib formation extending along the inner side of the nozzle, the nozzle having less area for steam-passage than the supply-pipe has, for the purpose specified.

2. A tube or flue cleaner, comprising a coniform hollow blower-head, an internally-threaded collar at the larger end of the blower-head to receive the end of a steam-blower pipe, the cylindrical jet-nozzle extending from the smaller end of the blower-head, and the spiral-rib formation on the inner surface of the nozzle, the discharging capacity of the nozzle being less than that of the steam-blower pipe, for the purpose set forth.

653,513. WHEELED PLOW. CHARLES E. JACKSON, Rockford, Ill. Filed Nov. 28, 1899. Serial No. 738,610. (No model.)

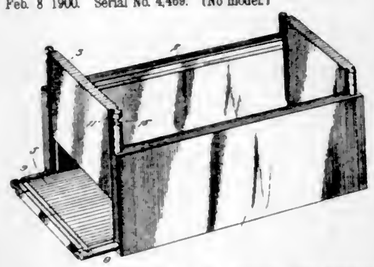


Claim.—1. In a wheeled plow, the combination of a main frame a plow-beam pivotally supported by the main frame, a plow supported by the beam and a lever exerting its force upon the beam in advance of the connection between the beam and main frame, and a lever exerting its force upon the beam in rear of the connection between the beam and main frame.

2. In a wheeled plow, the combination of a main frame, a plow-beam, a plow supported by the beam, a hand-lever for raising and lowering the point of the plow and a foot-lever for raising and lowering the heel of the plow.

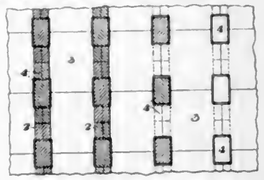
3. In a wheeled plow, the combination of a main frame, a plow-beam pivotally supported by the main frame, a plow supported by the beam, a hand-lever having a connection with the beam in advance of the connection between the beam and main frame, and a foot-lever having a connection with the plow in the rear of the connection between the beam and main frame.

653,514. BOX. JEAN H. KASSCHAU, New York, N. Y. Filed Feb. 8, 1900. Serial No. 4,469. (No model.)



Claim.—A box comprising side members, end members, a bottom member and a sliding cover, the end members, bottom member and the sliding cover having ribs substantially T-shaped in cross-section and having curved or convex outer faces, and the side members having channels in which the ribs are adapted to slide, the said end pieces being each provided at its lower edge with a tongue or projection adapted to engage channels formed in the bottom section near each end thereof, the inner end of the cover having a tongue or projection adapted to engage a channel extending across the corresponding end piece near its upper edge, substantially as shown and described.

653,515. HOT-BLAST STOVE. JULIAN KENNEDY, Pittsburg, Pa. Filed Apr. 4, 1900. Serial No. 11,465. (No model.)



Claim.—1. In checker-work, a brick having projections at its ends entering transverse openings in other bricks, each projection having a length greater than one-half the thickness of the brick which it engages, substantially as described.

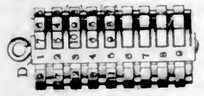
2. Checker-work having intersecting walls formed of bricks of similar thickness, each brick at the points of intersection of the walls having an interlocking projection at each end entering openings in the cross-wall, each projection having a length greater than one-half the thickness of the brick which it engages; substantially as described.

653,516. BEER-SIPHON. ARTHUR KLEINFELDT, New York, N. Y., assignor to Charles Ferrari, same place. Filed Aug. 19, 1899. Serial No. 727,754. (No model.)



Claim.—The combination, with a liquid vessel, of a carbonic-acid receiver provided with a neck secured into said liquid vessel, said neck having a longitudinal bore, a diaphragm-casing at the lower part of said receiver provided with an opening communicating with the atmosphere, a diaphragm supported by said casing, a valve located in the receiver, a stem connecting said valve through the opening or port in the bottom of the receiver with the diaphragm, a gas-supply channel connecting the space above the diaphragm with the liquid vessel, a spring-actuated escape-valve at the upper end of said bore, an outlet-channel located in the lower part of the diaphragm-casing, a siphon-tube, connected with the inner end of said outlet-channel, and a valved discharge-spout connected with the outer end of said outlet-channel, substantially as set forth.

653,517. GAME-COUNTER. LOUIS G. KURTZEBORN, St. Louis, Mo. Filed July 21, 1899. Serial No. 724,601. (No model.)



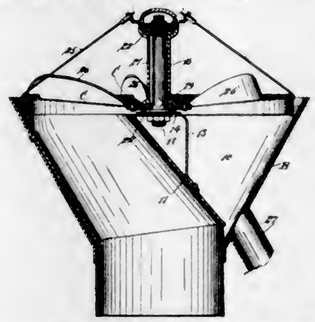
Claim.—1. In a game-counter, the combination with a plurality of indicating-wheels provided with numbers on their peripheries and arranged upon a common axis, of a frame carrying said indicating-wheels, said frame being arranged to expose the periphery of each of said wheels at diametrically-opposite points whereby said wheels may be grasped and rotated by the finger and thumb, and spring-detents carried by said frame for holding said indicating-wheels in the desired position.

2. In a game-counter, the combination with a plurality of indicating-wheels provided with numbers on their peripheries and arranged upon a common axis, of a frame carrying said wheels, said frame being arranged to expose each of said wheels at diametrically-opposite points whereby said wheels may be grasped and rotated by the finger and thumb, and spring-detents formed integral with said frame for retaining said wheels in the desired position.

3. In a game-counter, the combination with a plurality of indicating-wheels provided with numbers on their peripheries and arranged on a common axis, of a U-shaped frame carrying said wheels, said frame being arranged to expose more than half the periphery of each of said wheels whereby said wheels may be grasped and rotated by the finger and thumb, and spring-detents carried by said frame for retaining said wheels in the desired position.

4. In a game-counter, the combination with a plurality of indicating-wheels provided with numbers on their peripheries and arranged upon a common axis, of a ratchet-wheel secured to each of said indicating-wheels, a U-shaped frame carrying said indicating and ratchet wheels, said frame being arranged to expose more than half the periphery of each of the indicating-wheels whereby said wheels may be grasped and rotated by the finger and thumb, and spring-detents formed integral with said frame and engaging said ratchet-wheels.

653,518. SPARK-ARRESTER. STEPHEN S. MARTIN, Evergreen, Colo., assignor of one-half to John Wesley Martin, same place. Filed June 29, 1899. Serial No. 722,265. (No model.)



Claim.—1. A spark-arrester, comprising a conducting-flue having an angular upper end, a funnel-shaped casing into which the angular upper end of the conducting-flue projects and against the wall of which the said flue rests, the said casing extending above the top of the angular end of the conducting-flue, and having an outlet in its side at or near the lower end, a screen centrally mounted in the upper part of the casing to revolve therein and over the angular end of said conducting-flue and in close proximity thereto, and wings on the upper face of the screen, substantially as described.

2. A spark-arrester, comprising a conducting-flue having an angular upper end provided with a bracket at its end, a funnel-shaped casing surrounding the angular upper end of the conducting-flue and extending above the same, the said casing having an outlet in its side at or near the lower end, a screen mounted on the bracket of the angular upper end of the conducting-flue and revolving over the upper angular end of the conducting-flue and in close proximity to the same, and wings on the upper face of the screen, substantially as described.

3. A spark-arrester, comprising a conducting-flue having an inclined upper portion, the upper end of the outer wall of the flue being extended upward vertically, the said inclined end being provided with an external bracket, a funnel-shaped casing surrounding the inclined portion of the conducting-flue and secured thereto, the said casing being provided at its lower end with an outlet, a screen having a downwardly-extending marginal flange and mounted on the bracket to revolve over the upper end of the inclined portion of the conducting-flue and in close proximity thereto, and wings secured to the upper face of the screen, substantially as described.

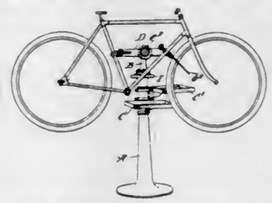
4. In a spark-arrester, the combination with a funnel-shaped casing having an inclined flue therein and provided with an outlet at or near its bottom, said flue extending nearly to the top of the casing, of an angular bracket secured to the upper end of the flue, a post mounted in the bracket, a sleeve surrounding the post, a screen secured to the lower end of the sleeve, and wings on the upper face of the screen, substantially as described.

5. In a spark-arrester, the combination with a funnel-shaped casing having an inclined flue therein and provided with an outlet at or near its bottom, of an angular bracket secured to the upper end of the flue, a post secured to the bracket, a sleeve mounted on the post and provided with a cap, a screen secured to the lower end of the sleeve, rods secured to the margin of the screen and to the cap of the sleeve, and wings on the upper surface of the screen, substantially as described.

6. A spark-arrester, comprising a funnel-shaped casing having an outlet at its lower end, an inclined flue in said casing, a post mounted in the upper part of the casing, said post being provided with cones at its ends, a sleeve fitting loosely on the post and having caps at its ends, balls between the caps of the sleeves and the cones of the post, a screen secured to the lower end of the sleeve, wings on the upper face of the screen, a cap secured to the upper end of the sleeve over the post, and rods secured to the said cap and to the margin of the screen, substantially as described.

7. In a spark-arrester, the combination with a casing, a flue in the casing, and a screen mounted to revolve in the casing over the top of the flue, of wings on the upper face of the screen, said wings having their inner ends pivoted and their outer ends adjustably secured to the margin of the screen, substantially as and for the purpose set forth.

653,519. BICYCLE-REPAIR JACK. MARSHALL A. MASTERS, Montrose, Colo. Filed Aug. 4, 1899. Serial No. 726,141. (No model.)



Claim.—1. A bicycle-repair jack, comprising a standard, an arm swiveled thereto and projecting horizontally, a cross-bar secured to the outer end of said arm by a fixed and a swinging pivot which are at right angles to each other, the fixed pivot being horizontal and supported transversely in the arm, pivot clamping or locking means, and bicycle-holding clamps upon the cross-bar, substantially as described.

2. A bicycle-repair jack, comprising a standard, an arm swiveled thereto and projecting horizontally, a cross-bar secured to the outer end of said arm by pivots permitting it to swing in a vertical plane coincident with the arm, and the other in planes perpendicular to said plane, pivot clamping or locking means, and bicycle-holding clamps upon the cross-bar adjustable in their various angles, substantially as described.

3. A bicycle-repair jack, comprising a standard, an arm mounted on the standard to swing in a horizontal plane, an adjustable pivot mounted on the free end of the arm to swing in a vertical plane, a cross-bar adjustably mounted on the pivot, and an adjustable clamp at each end of the cross-bar, substantially as described.

4. A bicycle-repair jack, comprising a standard, an arm mounted on the standard to swing in a horizontal plane, an adjustable pivot mounted on the end of the arm to swing in a vertical plane, a cross-bar adjustably mounted on the pivot, and a clamp on each end of the cross-bar, said clamps being adjustable toward and from each other and at different angles to the cross-bar, substantially as described.

5. A bicycle-repair jack, having a cross-bar provided with a hole in one end and a slot in the other, two clamps adapted to engage the wheel-frame, and securing-bolts passing through said clamps and respectively through the hole and slot of the cross-bar, whereby the clamps may be adjusted both in separation and in relative angle, substantially as described.

6. A bicycle-repair jack, having a cross-bar provided with a hole in one end and a slot in the other, two clamps adapted to engage the wheel-frame, and securing-bolts passing through said clamps and respectively through the hole and slot of the cross-bar, whereby the clamps may be adjusted both in separation and in relative angle, the bolts being held against turning in the cross-bar and the bolt-heads and clamps having one a notch and the other a pin engaging said notch and limiting the turning of the clamps on the bolts, substantially as described.

7. A bicycle repair jack, having a cross-bar provided with a hole in one end and a slot in the other, a double pivot-support therefor permitting adjustment in the plane of the bar and in a plane perpendicular to the bar, two clamps adapted to engage the wheel-frame, and securing-bolts passing through said clamps and respectively through the hole and slot of the cross-bar, whereby the clamps may be adjusted both in separation and in relative angle, substantially as described.

8. A clamp for holding a bicycle-frame, comprising a fixed arm having a tube-receiving cavity, an arm pivoted thereto and having a similar tube-receiving cavity, the pivoted arm having a slot therein extending from the pivot end outwardly and terminating short of the outer end of said arm, a nut-receiving ledge or boss at the outer end of said slot, a threaded rod pivoted to the fixed arm and passing through the slot in the swinging arm, and a nut on said rod adapted to bear upon said ledge or boss, substantially as described.

9. A clamp for holding a bicycle-frame, comprising a fixed arm having a tube-receiving cavity therein, a pivoted arm having a similar tube-receiving cavity, and a slot extending longitudinally thereof and having closed ends, a nut-receiving ledge or boss at the outer end of said slot having a nut-receiving cavity, a threaded rod pivoted at one end to the fixed arm and passing through the slot in the swinging arm, and a nut on said rod adapted to bear upon said ledge or boss and having a rounded or coned under surface adapted to enter the cavity in the boss, substantially as described.

10. A clamp for holding a bicycle-frame, comprising a fixed arm having a tube-receiving cavity, a pivoted and slotted arm having a similar tube-receiving cavity, a rod pivoted upon one arm and extending through the slot of the other arm, said rod having a hand wheel or nut screwing thereon, and a boss or ledge upon the other arm adapted to be engaged by said hand wheel or nut, substantially as described.

11. A bicycle-repair jack, having a cross-bar, a tube receiving clamp at each end thereof, and a fork pivoted upon one end of said bar and adapted to embrace the front wheel of a bicycle to prevent the bicycle-fork turning in its head, substantially as described.

12. A bicycle-repair jack, having a cross-bar, a tube-receiving clamp at each end thereof, a slotted extension of the cross-bar beyond the clamp at one end, a fork having a pivot passing through said slot and adapted to be swung thereon to embrace the rim of the bicycle-wheel when the bicycle is supported in the clamps, and a clamping wheel or nut screwing upon said pivot, substantially as described.

13. A bicycle-repair jack, comprising a bar having clamps thereon adapted to engage the bicycle-frame to hold it, a standard having a horizontally-projecting arm, a transverse horizontal pivot connecting the cross-bar to the end of said arm, whereby the cross-bar may be swung under or over said arm, and means for locking the cross-bar in its various positions, substantially as described.

14. A bicycle-repair jack, comprising a bar having clamps thereon adapted to engage the bicycle-frame to hold it, a standard having a horizontally-projecting arm, a head pivoted to the outer end of said arm by a transverse horizontal pivot, means for securing said head in various positions, a cross-bar support, a pivot carried by said head and perpendicular to its pivot-support, and means for clamping the cross-bar upon its pivot, substantially as described.

15. A bicycle-repair jack, comprising a bar having clamps thereon adapted to engage the bicycle-frame to hold it, a standard having a horizontally-projecting arm mounted to swing thereon upon a vertical pivot, means for clamping said pivot, a transverse horizontal pivot upon the outer end of said arm and connecting the cross-bar thereto, whereby the cross-bar may be swung over or under said arm, and means for locking the cross-bar in various positions, substantially as described.

16. A bicycle-repair jack, comprising a cross-bar having clamps thereon adapted to engage the bicycle-frame to hold it, a standard having a horizontally-projecting arm mounted to swing thereon upon a vertical pivot, means for clamping said arm in place, a head pivoted to the outer end of said arm by a transverse horizontal pivot, means for securing said head in various positions, a cross-bar-supporting pivot carried by said head and perpendicular to its pivot, and means for clamping the cross-bar upon its pivot, substantially as described.

17. A bicycle-repair jack, comprising a bar having clamps thereon adapted to engage the bicycle-frame to hold it, a standard having a horizontally-projecting arm provided with a vertically-disposed pivot ear or flange at its outer end provided with an axial pivot, and locking-holes disposed about its center, a head having ears embracing the ear upon the arm and turning upon its pivot, a locking bolt or pin in the head adapted to engage the holes in the ear, a cross-bar-supporting pivot carried by the head and perpendicularly to its pivot, and means for securing the cross-bar upon its pivot, substantially as described.

18. A bicycle-repair jack, comprising a bar having clamps thereon adapted to engage the bicycle-frame to hold it, a standard having a horizontally-projecting arm having a vertically-disposed pivot ear or flange at its outer end provided with an axial pivot and locking-holes disposed about its center, a head having ears embracing the ear upon the arm and turning upon its pivot, a locking bolt or pin in the head adapted to engage the holes in the ear, a cross-bar-supporting pivot carried by the head and perpendicularly to its pivot, a friction-clutch having one half thereof on the head and the other half on the cross-bar and surrounding the cross-bar-supporting pivot, and a clamping nut or wheel threaded upon the cross-bar-supporting pivot, whereby the friction-clutch may be secured when desired, substantially as described.

19. A bicycle-repair jack, comprising a bar having clamps thereon adapted to engage the bicycle-frame to hold it, a standard having a horizontally-projecting arm terminating in a vertically-disposed circular ear or flange having an axial hole and locking-holes in its periphery, a head having two ears embracing said flange and turning on said pivot, said head having a pivot-pin perpendicular to its supporting-pivot and provided with an axial hole adapted to receive a locking-pin, a spring-held locking-pin in said hole adapted to engage the holes in the periphery of the flange on the arm and having an external knob or handle, a friction-clutch surrounding the pivot-pin carried by the head, one half of the clutch being carried by the head and the other half by the cross-bar, and a clamping wheel or nut screwing upon the pivot-pin carried by the head and clamping the parts of the clutch together, substantially as described.

20. A bicycle-repair jack comprising a standard and a horizontal arm mounted to turn thereon upon a vertical pivot, the standard having a radial notch adapted to receive a locking block or pin, a spring-held block or pin in said recess, the arm having a bonnet or cap provided with an internally notched or recessed flange surrounding a part of the locking block or pin, and a wheel or ring mounted to turn upon the standard and having an inclined or cam surface adapted to engage a part of the locking block or pin to force it inward to release the arm when turned in one direction, substantially as described.

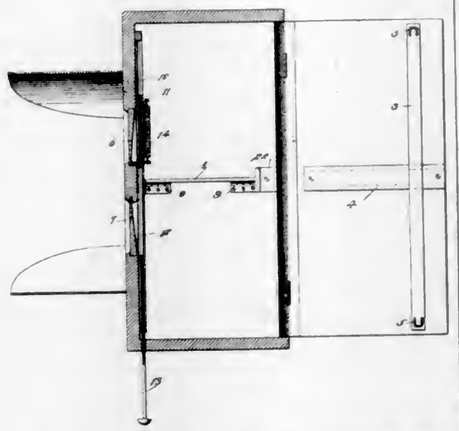
21. A bicycle-repair jack, comprising a standard, and a horizontal arm mounted to turn thereon in a horizontal plane and provided at its outer end with means for holding a bicycle, the standard having a spring-held locking-block and the arm a flange provided with notches engaged by said block to lock the arm, a wheel or ring journaled on the standard and having an internally-facing incline or cam surface adapted when the wheel is turned to engage the locking-block to press it inward and free the arm, said cam-incline terminating in notches adapted to receive the block, whereby the wheel is held from turning backward, substantially as described.

653,520. KINETOSCOPE ATTACHMENT FOR STEREOSCOPES. FRANK MONIOT and LOUIS GARCIN, New York, N. Y. Filed Aug. 19, 1899. Serial No. 727,805. (No model.)

Claim.—1. A stereoscope, comprising a box having lenses in its front wall, a frame mounted to swing on said front wall, a shutter mounted to slide in said frame and having an opening, and a separating-plate in the box, substantially as specified.

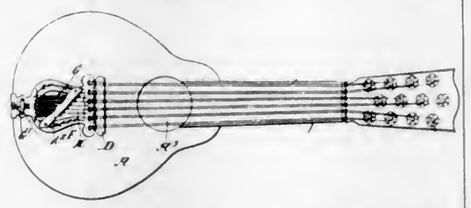
2. A stereoscope, comprising a box having lenses in its front wall, a frame mounted to swing on the inner side of said wall, a shutter mounted to slide in said frame and having an opening, and a swinging separating-plate in the box, substantially as specified.

3. A stereoscope comprising a box, lenses in the front wall of the box, a frame hinged at its top to the inner side of the front wall of the box and adapted to be swung upward, a shutter carried by said frame, and means for supporting the frame when the latter is swung upward, substantially as specified.



4. A stereoscope comprising a box provided with stereoscopic lenses, a shutter adapted to alternately open and close the view through the lenses, whereby the device may be employed for viewing animated pictures, the said shutter being mounted to swing whereby it is adapted to be moved out of position relative to the lenses, to change the device into an ordinary stereoscope, and means for holding the shutter in the latter position, substantially as set forth.

653,521. MUSICAL INSTRUMENT. MANUEL MONTOYA, New York, N. Y. Filed June 6, 1899. Serial No. 719,593. (No model.)



Claim.—1. A musical instrument, provided with a hollow body comprising a top and bottom, and a peripheral wall connecting said top and bottom, said peripheral wall consisting of an outer layer of celluloid and an inner layer of wood glued together, substantially as shown and described.

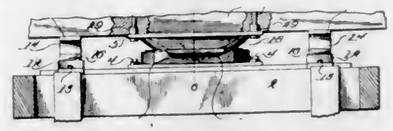
2. A musical instrument, provided with a hollow body comprising a top and bottom, a peripheral wall connecting them, a headpiece and a neckpiece at opposite sides of said peripheral wall, and braces connecting said headpiece and neckpiece and arranged out of contact with the walls of the body, said braces being arranged at opposite sides of the longitudinal axis of the instrument and reduced in thickness at their central portions, while at their ends they are extended upward and downward to approximately the height of the headpiece and neckpiece respectively, substantially as shown and described.

3. A musical instrument, provided with a tailpiece having at its front end a series of notches for the passage of strings, and at the rear of said notches a series of apertures with notches and projections between them, substantially as shown and described.

4. A musical instrument, comprising a body having a vibrating wall or resonator consisting of a layer of wood and a layer of celluloid glued together to vibrate in unison.

653,522. CAR-TRUCK BEARING. FRANK R. NORTHAM, Chicago, Ill., assignor to the Anglo-American Provision Company, same place. Filed Feb. 12, 1900. Serial No. 4,943. (No model.)

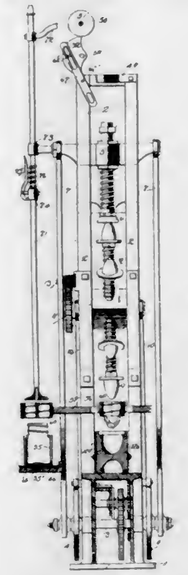
Claim.—1. The combination of a car-truck and car-body, with a center bearing-plate secured to each, one of said plates having a convex face and the other having an oppositely-formed depression for receiving the convex part, a removable concavo-convex plate fitting between said other plates, a socket-piece secured to the truck at each side of its center plate, and a pair of separable blocks seated in said socket-piece one above the other, the upper block being vertically movable in said socket-piece and supported in a raised position by said lower block, substantially as and for the purpose specified.



2. The combination of a car-truck and car-body, with a center bearing-plate secured to each, one of said plates having a convex face and the other having an oppositely-formed depression for receiving the convex part, a removable concavo-convex plate fitting between said other plates, and a pair of side bearings located on opposite sides of said center plates; each of said side bearings comprising a supporting member, a vertically-movable bearing-piece slidingly engaging said supporting member and means for fixing the relative vertical position of said bearing-piece and supporting member, substantially as and for the purpose specified.

3. The combination of a car-truck and car-body, with a center bearing-plate secured to each, one of said plates having a convex face and the other having an oppositely-formed depression for receiving the convex part, a removable concavo-convex plate fitting between said other plates, and being engaged by one of said bearing-plates against relative rotation, and a pair of side bearings located on opposite sides of said center plates; each of said side bearings comprising a supporting member, a vertically-movable bearing-piece slidingly engaging said supporting member, and means for fixing the relative vertical position of said bearing-piece and supporting member, substantially as and for the purpose specified.

653,523. MACHINE FOR MANUFACTURING GLASS ARTICLES. FRANK O'NEILL, Wallaceburg, Canada. Filed Sept. 29, 1899. Serial No. 732,017. (No model.)



Claim.—1. The combination of press and blow molds, a neck-mold carrier movable over said molds, and neck-molds permanently mounted on the carrier and adapted to be positioned thereby over the press and blow molds, substantially as shown and described.

2. The combination of an endless carrier, press and blow molds operative thereon, an endless neck-mold carrier movable over the first-mentioned carrier, and neck-molds permanently mounted on the neck-mold carrier and adapted to be positioned thereby over press and blow molds, substantially as shown and described.

3. The combination of an endless carrier, press and blow molds arranged thereon alternately and at equal distances apart, a second endless carrier above the first-mentioned carrier, neck-molds on said second carrier at intervals corresponding with the press and blow molds, two neck-molds being adapted to be positioned by their carrier over adjacent press and blow molds.

4. The combination of an intermittently-rotatable endless carrier, press and blow molds on the carrier, a second endless and intermittently-rotatable carrier, neck-molds on said second carrier at intervals corresponding with the press and blow molds, and mechanism for actuating said carriers to present, at each operation of the machine, a fresh neck-mold for pressing and fresh press and blow molds, substantially as shown and described.

5. The combination of a press-mold, a blow-mold, a sectional neck-mold, means for actuating the neck-mold to transfer a blank from the press-mold to a blow-mold, and mechanism acting automatically to open the neck-mold, substantially as shown and described.

6. The combination of a press-mold, a blow-mold, a sectional neck-mold, means for actuating the neck-mold to transfer a blank from the press-mold to the blow-mold, and automatically-acting mechanism for opening the neck-muld while in position over the blow-mold, substantially as shown and described.

7. The combination of press and blow molds, a carrier, sectional neck-molds on the carrier at intervals corresponding with the press and blow molds, mechanism for actuating the carrier to transfer a blank from a press-mold to a blow-mold and simultaneously to position a fresh neck-mold over a press-mold, and mechanism for opening the neck-molds while in position over the blow-molds, substantially as shown and described.

8. The combination of a press-mold, a blow-mold, intermittently-actuated pressing and blowing mechanisms operative simultaneously, an endless neck-mold carrier, a succession of neck-molds permanently mounted on the carrier, two of said neck-molds fitting over the press and blow molds, and intermittently-actuating mechanism for the carrier operative alternately with the simultaneous operation of the pressing and blowing mechanisms, substantially as shown and described.

9. The combination of an endless carrier, press and blow molds thereon, intermittently-actuated pressing and blowing mechanisms operative simultaneously in adjacent press and blow molds, means for transferring a pressed blank from a press-mold to a blow-mold, and actuating mechanism for the carrier, whereby fresh molds are positioned for each pressing and blowing operation, substantially as shown and described.

10. The combination of a carrier, press and blow molds thereon, sectional neck-molds, a carrier adapted to position two neck-molds over adjacent press and blow molds, mechanism for successively elevating, moving horizontally and lowering the neck-mold carrier, and means for opening the neck-mold having position over the blow-mold while the neck-mold carrier is in lowered position, substantially as shown and described.

11. The combination of the horizontal intermittently-rotatable carrier 14, press and blow molds thereon, carrier 57 above carrier 14 sectional neck-molds on carrier 57, two neck-molds registering with adjacent press and blow molds, means for opening the neck-mold registering with the blow-mold while carrier 57 is in lowered position, and mechanism for successively lifting, moving horizontally and lowering carrier 57, whereby a pressed blank is removed from a press-mold and deposited for completion in a blow-mold, substantially as shown and described.

12. The combination of carrier 14, press and blow molds thereon, carrier 57 above carrier 14, sectional neck-molds on carrier 57, two neck-molds registering with adjacent press and blow molds, means for opening the neck-mold registering with the blow-mold while carrier 57 is in lowered position, mechanism for successively elevating, moving horizontally and lowering carrier 57, and means for moving horisontally carrier 14 simultaneously with the horizontal movement of carrier 57, whereby fresh press-molds are advanced to operative position, substantially as shown and described.

13. The combination of carrier 57, sectional neck-molds thereon, a lever for each mold fulcrumed to the carrier and linked to the mold-sections, and a cam operatively engaging the levers for opening and closing the molds and for holding them in these positions, substantially as shown and described.

14. The combination of carrier 57, sectional neck-molds thereon, a lever for each mold fulcrumed to the carrier and linked to the mold-sections, a plate, a cam-groove in the plate, a portion of the groove being concentric with the said levers, and pins extending from the levers into the groove, substantially as shown and described.

15. The combination of intermittently-rotating shaft 56, oscillating shaft 49, carrier 57, sectional molds on the carrier, and mechanism operatively connecting shaft 49 and the molds for opening and closing them, substantially as shown and described.

16. The combination of intermittently-rotating shaft 56, oscillating shaft 49 within shaft 56, carrier 57 secured to shaft 56, molds on the carrier, and mechanism operatively connecting shaft 49 and the molds for opening and closing the latter, substantially as shown and described.

17. The combination of oscillating shaft 49, cam-plate 54 secured thereto, shaft 56 intermittently rotatable on shaft 49, mold-carrier 57 positioned on shaft 56 adjacent plate 54, and mechanism intermediate the molds and cam-plate, whereby the molds are opened and closed by the action of the cam, substantially as shown and described.

18. The combination of rotatable mold-carrier 57, plate 65 above and rotatable with the carrier and formed with a circular series of bolt-engaging points, mechanism for vertically reciprocating carrier 57 and plate 65, arm 69, means for oscillating the arm, and a bolt projecting from the arm and adapted, successively, to engage the bolt-engaging points of plate 65 for imparting thereto and to carrier 57 intermittent rotary movement, substantially as shown and described.

19. The combination of vertically-movable mold-carrier 57, oscillating arm 69, and mechanism operatively connecting the arm and mold-carrier when the latter is in raised position for imparting thereto intermittent rotary movement, substantially as shown and described

20. The combination of horizontally-vibrating arm 69, shaft 49 movable vertically with relation to the arm but adapted to vibrate therewith, shaft 56 revoluble on shaft 49, mold-carrier 57 on shaft 56, separable molds on the carrier, operative connection between shaft 49 and the molds for opening and closing the latter, and mechanism to vertically reciprocate both shafts for operatively connecting the mold-carrier and arm 69, whereby the carrier is intermittently rotated by one vibration of said arm and the reverse vibration operates to open and close the molds through the medium of shaft 49, substantially as shown and described.

21. The combination of shaft 49 provided at its lower end with cam-plate 54, shaft 56, mold-carrier 57 on shaft 56, sectional molds on the carrier and mechanism operatively connecting plate 54 and the molds for opening and closing the latter, rotatable cam 52, arm 69 splined to shaft 49 and through which said shaft is vertically movable, lever 67 adapted to oscillate arm 69 and be oscillated by cam 52, and mechanism operatively connecting the mold-carrier and arm 69 when shaft 49 is elevated by cam 52, substantially as shown and described.

22. The combination of rotatable mold-carrier 14, press and blow molds on the carrier, neck-molds and carrier 57 therefor adapted to position the neck-molds over adjacent press and blow molds, and a plunger and blow-pipe operative simultaneously in adjacent press and blow molds, substantially as shown and described.

23. The combination of a rotatable endless carrier, sectional molds on the carrier, a rack, and mechanism operatively connecting the rack and mold-sections for opening and closing them, substantially as shown and described.

24. The combination of a rotatable endless carrier, sectional molds on the carrier, a rack, gears 44 engaging the rack, cam-plates 41 rotatable with the gears, and levers 38 connected at their outer ends to the mold-sections and at their inner ends operatively engaging plates 41, substantially as shown and described.

25. The combination of a mold-carrier, shafts rotatable thereon carrying mold holding or encircling bands, and molds secured in said bands, substantially as shown and described.

26. The combination of a rotatable endless carrier, shafts 30 journaled on the carrier, press-molds carried by the shafts, an interrupted rack beneath the carrier, and gears 33 on shafts 30 adapted to engage the rack, each gear having a flat part slidable on the smooth portion of the rack for holding shafts 30 with the molds in upright position, substantially as shown and described.

27. The combination of a rotatable endless carrier, bearings 31 and 32 thereon, bearing 32 being adjustable radially on the carrier, screws 32' for adjusting said bearings, shafts journaled in the bearings, and molds at the outer ends of the shafts, substantially as shown and described.

28. The combination of a rotatable endless carrier, mold-supports arranged radially thereon, molds at the outer ends of the supports, and means for adjusting longitudinally the supports, substantially as shown and described.

29. The combination of a rotatable endless mold-carrier, an arm adapted to oscillate concentrically with the carrier, mechanism adapted to positively interlock the carrier and arm during the forward oscillations of the arm, and means for automatically releasing said interlocking mechanism at the end of the forward stroke of the arm, whereby the latter is free to return for a new hold, substantially as shown and described.

30. The combination of a rotatable endless mold-carrier, an arm adapted to oscillate concentrically therewith, a bolt on the arm adapted to engage the carrier during its forward reciprocation, and mechanism positioned at the end of the forward stroke of the arm for disengaging the bolt from the carrier, substantially as shown and described.

31. The combination of a rotatable endless mold-carrier, lugs depending from the carrier, an arm adapted to oscillate concentrically with the carrier, vertically-movable spring-actuated bolts 18 and 19 carried by the arm and adapted to embrace opposite sides of said lugs, bolt 18 being beveled to ride beneath the lugs, and an arm having position at the end of the forward stroke of said oscillating arm and adapted to engage and depress bolt 19 free from the carrier-lug, whereby the oscillating arm is free for its backward reciprocation, substantially as shown and described.

32. The combination of a rotatable endless mold-carrier, an oscillating arm adapted to impart intermittent rotary movement to the carrier, a latch for arresting the movement of the carrier and for holding it fixed, and a connection between the arm and latch, whereby the latch is released by the backward reciprocation of the arm, substantially as shown and described.

33. The combination of a rotatable endless mold-carrier, an oscillating arm adapted to intermittently rotate the carrier, vertically-tilting latch 25 adapted to automatically engage the carrier at given points and hold it against further movement, a spring for maintaining said engagement, and rod 27 connecting the oscillating arm and latch 25, the rod being slidable on the latch during the greater part of its movement, whereby the latch is actuated only momentarily by the rod, substantially as shown and described.

34. The combination of vertically-reciprocating pressing mechanism, crank mechanism operatively connected to the pressing mechanism for reciprocating it, an endless mold-carrier, rod 21 adapted to be reciprocated by said crank mechanism, and an operative connection between the rod and carrier for imparting to the latter intermittent rotary movement, substantially as shown and described.

35. The combination of vertically-reciprocating pressing mechanism, crank mechanism operatively connected to the pressing mechanism for reciprocating it, an endless mold-carrier, an oscillating ratchet adapted to engage the carrier and impart thereto intermittent rotary movement, and a rod connecting the ratchet and the said crank mechanism, whereby the ratchet is oscillated, substantially as shown and described.

36. The combination of a rotatable series of pressing-plungers, a gear rotatable therewith, and a rack adapted to engage the gear and impart thereto intermittent rotary movement, whereby the plungers are brought, successively, to operative position, substantially as shown and described.

37. The combination of a vertically reciprocating and revoluble series of pressing-plungers, a gear rotatable therewith, a slidable rack adapted to engage the gear when the latter is in raised position, and means for sliding the rack, whereby the plungers are brought, successively, to operative position, substantially as shown and described.

38. The combination of a vertically reciprocating and revoluble series of pressing plungers, a gear rotatable therewith, a slidable rack adapted to engage the gear when the latter is in raised position, mechanism for reciprocating the plungers, and an operative connection between said mechanism and the rack for sliding the latter, substantially as shown and described.

39. The combination of a vertically reciprocating and revoluble series of pressing-plungers, a gear rotatable therewith, a slidable rack adapted to engage the gear when the latter is in raised position, a horizontally-oscillating vertically-slotted pitman for reciprocating the plunger series, and a pin projecting from the rack and working in the pitman-slot, substantially as shown and described.

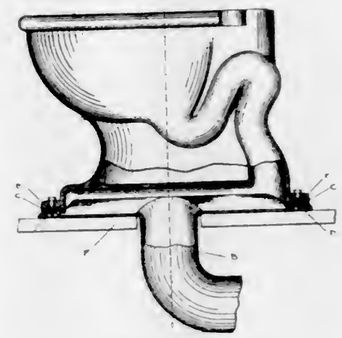
40. The combination of blowpipe 71 valved at 74, valve-operating lever 75 paralleling the pipe, vertically-movable pressing mechanism, and arm 73 movable therewith, said arm being adapted to move lever 75 for opening the valve, substantially as shown and described.

41. The combination of pressing mechanism, a blowpipe, mechanism for simultaneously reciprocating the same, arm 73 carried by the pressing mechanism and embracing the blowpipe, and spring 76 encircling the pipe and secured at its lower end thereto, arm 73 being adapted to compress the spring and exert the tension thereof on the pipe for holding the latter to operative position, substantially as shown and described.

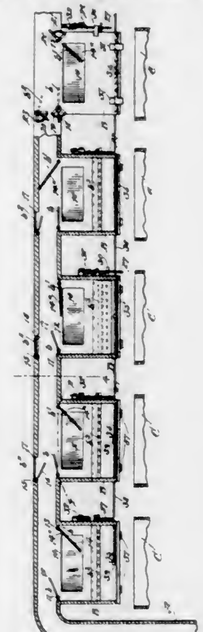
653,524. WATER-CLOSET. FRANK H. PARADICK, Denver, Colo. Filed July 1, 1899. Serial No. 722,563. (No model.)

Claim.—The combination of a water-closet bowl having a discharge-opening and an enlarged open-bottomed base communicating therewith, with a detachable floor-plate secured to the periphery of the bowl-base, and a soil-pipe attachable to said floor-plate at any point within the boundary of said open-bottomed base, and communicating with said open-bottomed base.

653,524.



653,525. COTTON-DISTRIBUTER. JOSEPH A. PARKER, Dripping Springs, Tex., assignor to himself and Pedernales Leinneweber, same place. Filed Sept. 13, 1899. Serial No. 730,365. (No model.)



Claim.—1. In a cotton-distributer, a main flue, receptacles connected with the main flue, and means for producing at will a driving or suction current, or a retarding-current, in the said flue.

2. In a cotton-distributer, a main flue, receptacles connected therewith, branches located at the delivery end of the said main flue, a blower connected with the said branches, each branch flue being provided with openings therein, and valves located in the said branch flue, arranged to close the flue above the openings therein and simultaneously uncover said openings, for the purpose set forth.

3. In a cotton-distributer, a main flue, a fan, branch flues connected with the main flue and with the fan, each branch flue being provided with openings for the admission or exit of air, valves for the said openings, and cooperating valves located above said openings, and means substantially as described, for simultaneously and oppositely operating the valves in the said branch flues, as set forth.

4. In a cotton-distributer, the combination, with a main flue and receiving-receptacles connected with said flue, said receptacles being provided with opposing adjustable grates located at the inlet and outlet ends of the receptacles at points where the receptacles connect

with the main flue, of supporting-grates arranged for dumping action and located within the said receptacles, means for operating the said supporting-grates, and devices for creating a suction in the main flue, all for introducing a retarding-current in said main flue, as set forth.

5. In a cotton-distributer, the combination, with a suction-flue and a series of receiving-receptacles connected with said flue, said receptacles being provided with automatically-operating bottom gates and with adjustable grates at its upper end portions, said grates being capable of entering either the main flue or the said receptacles of supporting-grates having dumping action and located between the bottom gates and upper adjustable grates, and a device for evening the cotton as delivered from the said receptacles, for the purpose set forth.

6. In a cotton-distributer, the combination with a suction-flue, of a receptacle connected with said flue, said receptacle being provided with opposing adjustable grates located at the inlet of the receptacle, the grate facing the outlet of the flue being adapted to be swung down into the receptacle to conduct the cotton into the same or swung up into the said flue to stop the passage of cotton therethrough and cause it to fall into the receptacle, substantially as and for the purpose set forth.

7. In a cotton-distributer, a suction-flue, a receptacle connected with the suction-flue and provided with opposing adjustable grates located at the inlet of said receptacle, one of said grates being adapted to elevate the cotton and the other grate to distribute the cotton to a central portion of the receptacle, supporting-grates pivoted near the lower portion of the receptacle, and means for operating the said supporting-grates, as and for the purpose specified.

8. In a cotton-distributer, a suction-flue, a receptacle connected with the suction-flue, and provided with opposing adjustable grates located at the inlet of the said receptacle, one of said grates being adapted to elevate the cotton and the other grate to distribute the cotton to the central portion of the receptacle, supporting-grates pivoted near the lower portion of the receptacle, means for operating said supporting-grates, and tension-controlled gates normally closing the bottom of the receptacle and adapted to be opened by the weight of the material delivered to the bottom portion of the said receptacle, for the purpose described.

9. A cotton-distributer, consisting of a suction-flue, a series of receptacles connected with said flue, each receptacle being provided with an elevating-grate at its receiving end and with a distributing-grate also at its receiving end, each receptacle being provided with supporting-grates located below the receiving and distributing grates, and lowering-grates pivoted in said flue above the elevating-grates, for the purpose set forth.

10. A cotton-distributer, consisting of a suction-flue, a series of receptacles connected with said flue, each receptacle being provided with an elevating-grate at its receiving end and with a distributing-grate also at its receiving end, each receptacle being further provided with supporting-grates located below the receiving and distributing grates, lowering-grates pivoted in said flue above the elevating-grates, means for adjusting the various grates from the exterior of the machine, and tension-controlled gates normally closing the bottoms of said receptacles, as described.

11. In a cotton-distributer, an air-flue, a receptacle connected with the flue, and a distributing-grate hinged at the upper portion of receptacle facing the outlet of the flue to swing down into the receptacle or up into the flue, substantially as described.

12. In a cotton-distributer, an air-flue, a receptacle connected with the flue, and a reticulated distributing grate hinged at the upper portion of the receptacle facing the outlet of the flue to swing up into the said flue or down into the receptacle, substantially as and for the purpose set forth.

13. In a cotton-distributer, an air-flue, a receptacle connected with the flue, a distributing-grate hinged to the upper portion of the receptacle facing the outlet of the flue, to swing down into the receptacle or up into the flue, and a screen on one face of the grate, substantially as described.

14. In a cotton-distributer, an air-flue, a receptacle connected with the flue, a supporting-grate in the receptacle, and a flexible covering for the grate and forming therewith an air-tight closure for the receptacle, substantially as described.

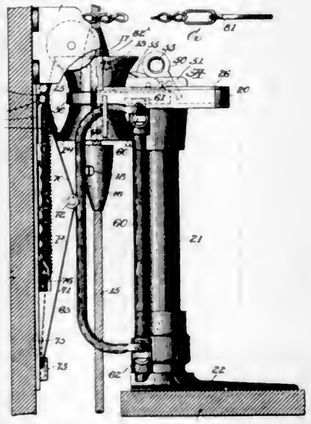
15. In a cotton-distributer, an air-flue, a receptacle connected with the flue, a supporting-grate in the receptacle and formed of two hinged sections, and strips of canvas or the like secured to the sides of the receptacle and extending over and down between the grate-sections, substantially as and for the purpose set forth.

16. In a cotton-distributer, an air-flue, a receptacle connected with the flue, automatically-closing gates for the bottom of the receptacle, a supporting-grate in the receptacle above the gates, and a flexible covering for the grate and forming therewith an air-tight closure for the receptacle, substantially as described.

17. In a cotton-distributer, an air-flue, a receptacle connected with the flue, a closure for the oottom of the receptacle, and a reciprocating leveler in the receptacle, substantially as described.

18. In a cotton-distributer, an air-flue, a receptacle connected with the flue, automatic closing gates for the bottom of the receptacle, a supporting-grate in the receptacle above the gates, a flexible covering for the grate and forming therewith an air-tight closure for the receptacle, and a reciprocating leveler in the receptacle between the gates and grate, substantially as described.

653,526. ELEVATOR-CAR. ALVAH T. RAMSDELL, Dover, N. H. Filed Oct. 7, 1899. Serial No. 732,868. (No model.)



Claim.—1. In an apparatus of the class specified, the combination with an elevator-car, and with a check-rope having projections, of an actuator on the car, adapted to engage either of said projections, and mechanism, including a manually-operable controlling device shiftably supported independently of the elevator-car for shifting said actuator into its working position, whereby it will engage one of said projections to stop the car.

2. In an apparatus of the class specified, an elevator-car, a check-rope, having a plurality of projections, an actuator carried by said car and shiftable into position to engage either of said projections, thereby to effect, through the check-rope, the stoppage of the car, said mechanism including the following instrumentalities: two members, one supported by the car and the other supported independently of said car, the last-named member being movable into position to operate its companion, and a hand-controlled device connected with and serving to govern the action of said independently-supported member.

3. In an apparatus of the class specified, an elevator-car, a check-rope having a plurality of projections, an actuator mounted on the car and movable into position to engage either of said projections, thereby to effect through the check-rope the stoppage of the car, and means, including a controlling device supported independently of the elevator-car, for throwing said actuator into working position, said controlling device constituting a guard for the elevator shaft or well.

4. In an apparatus of the class specified, an elevator-car, a check-rope, having a plurality of projections, an actuator for the latter, consisting of two jaws, means for holding said jaws open, and mechanism for closing said jaws, whereby they will be caused to engage one of said projections, and mechanism for closing said jaws either from the car or from a floor.

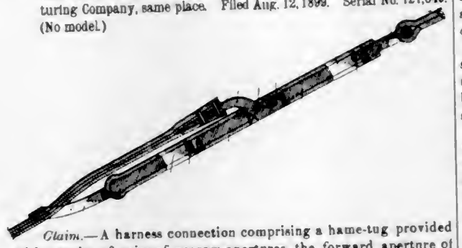
5. In an apparatus of the class specified, an elevator-car, an elevator-car-stopping device, an actuator for the latter, and independent mechanisms each operable to throw the actuator into working position, and one of said mechanisms including a manually-operable device supported independently of the elevator-car.

6. In an apparatus of the class specified, a car, a check-rope, having a plurality of projections, a shiftable actuator, and means operable either from the car or from the floor, to throw said actuator into working position to engage either one of the projections upon the check-rope.

7. In an apparatus of the class specified, an elevator-car, an elevator-car-stopping member, two jaws constituting an actuator and shiftable into working position to cooperate with said stopping device to stop the elevator-car, a spring adapted to engage the jaws, a lever for advancing said spring and a means for holding the jaws in their working position.

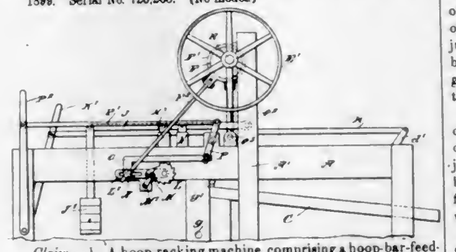
8. In an apparatus of the class specified, an elevator-car, an elevator-car-stopping device, an actuator, means including a lever for throwing the actuator into its working position, and a detent for holding the actuator in its advanced position, said detent being engageable by the lever to release the same.

653,527. TRACE-CONNECTOR. GEORGE W. RAY, Loudonville, Ohio, assignor, by direct and mesne assignments, to the Ray Manufacturing Company, same place. Filed Aug. 12, 1899. Serial No. 727,049. (No model.)



Claim.—A harness connection comprising a hame-tug provided with a series of pairs of narrow apertures, the forward aperture of each pair being smaller than the rear aperture and separated therefrom by a narrow cross-bar, and an attaching member carried by the tug and comprising a rear, backwardly and inwardly extending hook to engage in the rear aperture and a front, forwardly and outwardly extending secondary hood of a size to approximately fill the forward aperture to prevent forward displacement and adapted to engage the cross-bar to hold the attaching member from accidental outward disengagement from the hame-tug.

653,528. HOOP-RACKING MACHINE. CHARLES REED, Portland, Ind., assignor of one-half to John R. Reed, same place. Filed July 27, 1899. Serial No. 725,263. (No model.)



Claim.—1. A hoop-racking machine, comprising a hoop-bar-feeding mechanism, a fulcrum-block, means for adjusting the fulcrum-block vertically, a breaker, and means for reciprocating the breaker, substantially as described.

2. A hoop-racking machine, comprising a hoop-bar-feeding mechanism, a fulcrum-block, means for adjusting the fulcrum-block vertically, a pivoted breaker, means for swinging the free end and for adjusting the breaker toward and from the fulcrum-block, substantially as described.

3. A hoop-racking machine, comprising a breaker and means for moving it vertically to break or rack the hoop-bar, hoop-bar holding and presenting means, and a vertically-adjustable fulcrum-block, substantially as described.

4. A hoop-racking machine, comprising a breaker and means for moving it vertically to break or rack the hoop-bar, hoop-bar holding and presenting means, a vertically-adjustable fulcrum-block, and means for shifting the breaker toward or from the fulcrum-block, substantially as described.

5. A hoop-racking machine comprising a step-by-step feeding mechanism for the hoop-bar, means for varying the feed of said mechanism, a fulcrum-block, a breaker, and means for actuating the breaker, substantially as described.

6. A hoop-racking machine, comprising a hoop-bar-feeding mechanism, means for varying the feed of such mechanism, a fulcrum-block, a breaker pivoted at one end, means connected with the other or working end of said breaker for swinging the same, and means for adjusting the breaker toward and from the fulcrum-block, substantially as described.

7. A hoop-racking machine, comprising a breaker having an eccentric pivot-pin whereby it may be adjusted toward and from the fulcrum-block, means for swinging the breaker upon its pivot, a fulcrum-block mounted to move in vertical guides, an eccentric-pin supporting the fulcrum-block whereby it may be adjusted vertically, connections between the said eccentric-pins whereby they may be both turned at once, and hoop-bar presenting and holding mechanisms, substantially as described.

8. A hoop-racking machine, comprising a bed formed in two offset portions, a breaker movable vertically over the bed near the point of offset, and means for reciprocating said breaker, substantially as described.

9. A hoop-bar-racking machine, comprising a bed formed in two offset portions, a breaker movable vertically over one portion of the bed near the point of offset, means for reciprocating said breaker, and means for holding and feeding the hoop-bar located beyond the offset from the breaker, substantially as described.

10. A hoop-racking machine, comprising a bed formed in two offset portions, a breaker movable vertically over one portion of the bed near the point of offset, means for reciprocating said breaker, and a bar for engaging the upper side of the hoop-bar, substantially as described.

11. A hoop-racking machine, comprising a bed formed in two offset portions, a breaker movable vertically over the lower portion of the bed near the offset, means for reciprocating the breaker, an adjustable fulcrum-block at the offset end of the upper portion of the bed, and hoop-bar-feeding rollers in the upper portion of the bed, substantially as described.

12. A hoop-racking machine, comprising a bed formed in two offset portions, a breaker movable vertically over the lower portion of the bed near the offset, means for reciprocating the breaker, and means for adjusting the breaker toward and from the offset, substantially as described.

13. A hoop-racking machine, comprising a bed formed in two offset portions, a breaker movable vertically over the lower portion of the bed near the offset, a shaft having eccentric or crank connection with the breaker to reciprocate it vertically, an adjustable fulcrum-block at the offset end of the upper portion of the bed, hoop-bar-feeding rollers in the upper portion of the bed, a step-by-step feeding means for said rollers, and an eccentric on the shaft connected with said roller-feeding mechanism to operate it, substantially as described.

14. A hoop-carrying machine, comprising a bed formed in two offset portions, a breaker movable vertically over the lower portion of the bed near the offset, and for reciprocating the breaker, an adjustable fulcrum-block at the offset end of the upper portion of the bed, hoop-bar-feeding rollers in the upper portion of the bed, and side guides in the bed presenting the bar to the feeding-rollers, substantially as described

15. A hoop-racking machine, comprising a bed formed in two offset portions, a breaker movable vertically over the lower portion of the bed near the offset, means for reciprocating the breaker, an adjustable fulcrum-block at the offset end of the upper portion of the bed, hoop-bar-feeding rollers in the upper portion of the bed, and flanged guide-rollers engaging the bar adjacent the feed-rollers to prevent the bar from rocking or twisting, substantially as described.

16. A hoop-racking machine, comprising a bed formed in two offset portions, a breaker movable vertically over one portion of the bed near the point of offset, means for reciprocating said breaker, hoop-bar-feeding mechanisms and flanged guide-rollers engaging the hoop-bar near the offset to prevent rocking or twisting of the bar, substantially as described.

17. A hoop-racking machine, comprising a bed formed in two portions offset from each other, a breaker movable vertically over the lower portion of the bed near the offset, feed-rollers in the upper portion of the bed, a shaft having reciprocating connections with said breaker, a ratchet-wheel connected with one of the feed-rollers, an arm having a pawl engaging the ratchet-wheel, a rod having reciprocating connection with the shaft and a slidable connection with the pawl-arm, and a shifting-lever connected with said rod whereby the throw of the pawl-arm may be varied at will, substantially as described.

18. A hoop-racking machine, comprising a movable breaker, means for actuating the same, a fulcrum-block over which the hoop-bar passes to the breaker, and a bar located immediately above the fulcrum-block, and between which and the fulcrum-block the hoop-bar passes, substantially as described.

19. In a hoop-racking machine, a breaker pivoted at one end on an eccentric pivot whereby it may be adjusted, and a shaft having an eccentric or crank connection with the other end of the breaker to swing the same, substantially as described.

20. In a hoop-racking machine, a fulcrum-block, a breaker having an eccentric pivot-pin whereby it may be adjusted toward and from the fulcrum-block, and means for swinging the breaker upon its pivot, substantially as described.

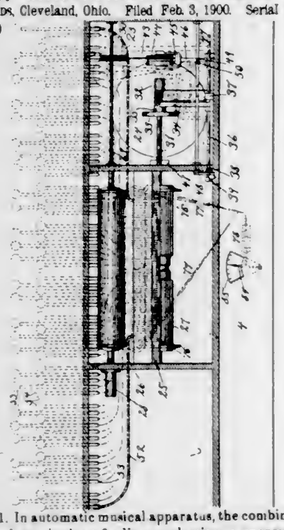
21. In a hoop-racking machine, a breaker, means for actuating the same, a step-by-step feeding mechanism for the hoop-bar and an eccentric connected with said feeding mechanism to operate it, substantially as described.

22. In a hoop-racking machine, a breaker, a fulcrum-block, adjusting devices for the breaker and fulcrum-block, and a connection

between the said adjusting devices whereby they may be actuated simultaneously.

23. In a hoop-racking machine, a breaker, means for actuating the same, upper and lower feeding-rollers for the hoop-bar, means connected with one of said rollers for giving a step-by-step movement to the hoop-bar, vertically-adjustable frames in which the upper rollers are mounted, and a lever to which said frames are pivotally secured the said lever being pivoted at one end and weighted at the other end, substantially as described.

658,529. AUTOMATIC PIANO OR ORGAN PLAYER. CHARLES W. RICHARDS, Cleveland, Ohio. Filed Feb. 3, 1900. Serial No. 3,772. (No model.)



Claim.—1. In automatic musical apparatus, the combination with a tracker-board, music-sheet-feeding mechanism, a pneumatic motor for operating the same, pneumatic tone-producing devices connected to the tracker-board, and a casing inclosing the tracker-board and motor, of means for supplying air under pressure into said inclosing casing, substantially as set forth.

2. In automatic musical apparatus, the combination with key-playing devices, pneumatics for operating the same, a tracker-board connected to control said pneumatics, music-sheet-feeding mechanism, a pneumatic motor for operating the same, and a casing inclosing the tracker-board and motor, of means for supplying air under pressure into said inclosing casing, substantially as set forth.

3. In automatic musical apparatus, the combination with a tracker-board, music-sheet-feeding mechanism, and a pneumatic motor for operating the same, of a casing inclosing said elements, means for supplying air under pressure into said casing to operate said elements, and a door in the casing arranged to provide access to the music-sheet-feeding mechanism and allowing the operating air-pressure to escape from within the casing when opened, substantially as set forth.

4. In automatic musical apparatus, the combination with a key-operating finger consisting of an elastic stem secured at one end and a head engaging the key, of a pneumatic having its movable member engaging the stem of said finger from above to depress it and the key, substantially as set forth.

5. In automatic musical apparatus, the combination with a key-operating finger having an elastic stem secured at one end and a head engaging the key of a pneumatically-operated plunger supported above the stem of the finger to depress the same and the key, substantially as set forth.

6. In automatic musical apparatus, the combination with a key-operating finger formed from rubber and having an elastic stem secured at its end and a head engaging the key, of a pneumatic having its movable member engaging said finger from above to depress the same, substantially as set forth.

7. In automatic musical apparatus, the combination with a key-operating finger, of means for longitudinally moving such finger to cause it to strike the key nearer to or farther from the end of the same, substantially as set forth.

8. In automatic musical apparatus, the combination with a key-operating finger and a pneumatic engaging the same to rock it, of means for changing the relative positions of the striking-point of the pneumatic upon the finger and the fulcrum of the same and for changing the striking-point of the finger upon the key, substantially as set forth.

9. In automatic musical apparatus, the combination with a key-operating finger and a pneumatic engaging the same to rock it, of means for longitudinally moving said finger to cause the pneumatic to engage the same at varying distances from its fulcrum, substantially as set forth.

10. In automatic musical apparatus, the combination with a key-operating finger having an elastic stem and a head engaging the key, and a pneumatic arranged above said finger to engage the same with its movable member, of a support for the end of the stem of the finger, and means for moving said support and finger longitudinally to the latter, substantially as set forth.

11. In automatic musical apparatus, the combination of a support arranged to slide in a horizontal plane, means for moving said support, a key-operating finger having an elastic stem secured in the support and a head engaging the key, and a pneumatic having its movable member engaging the stem of said finger to depress the same and the key, the force of depression being regulated by the relative adjusted distance of the striking-point of the pneumatic and the fulcrum of the finger, substantially as set forth.

12. In automatic musical apparatus, the combination of a series of pneumatics, a bar supported parallel to said series to slide in a horizontal plane and in a direction transverse to its length, a series of key-operating fingers having elastic stems secured in said bar to project beneath the movable members of the pneumatics and having heads engaging the keys, and a rod connected to the bar to slide the same, whereby the fingers may be adjusted to be engaged by the pneumatics at varying distances from their fulcra and to strike the keys at varying distances from the ends of the latter, substantially as set forth.

13. In automatic musical apparatus, the combination with a drive-pulley having means for rotating it and formed with a friction-face, of a take-up roll, a shaft connected to rotate said roll and diametrical to the pulley, a friction-disk sliding upon and revolving with the roll-shaft and in engagement with the friction-face, means for sliding the friction-disk and holding the same in radial adjustment to the drive-pulley, and a support at the side of said pulley and upon which the disk may be moved from off the pulley and be supported, substantially as set forth.

14. In automatic musical apparatus, the combination with a drive-pulley having a friction-face and means for rotating it, music-sheet-winding mechanism frictionally driven from said pulley, and a band-pulley upon the music-roll shaft, of a friction-disk having a band-pulley, a swinging arm supporting said disk, a handle and link connection for raising and lowering said arm, and a band around the pulleys of the music-roll and friction-disk, substantially as set forth.

15. In automatic musical apparatus, the combination with a supporting-casing, of an upper casing containing the key-operating mechanism and hinged at the front of the supporting-casing to swing upward and forward, substantially as set forth.

16. In automatic musical apparatus, the combination with a supporting-casing, of an upper casing containing the key-operating mechanism and hinged at the front of the supporting-casing to swing upward and forward, and means for adjusting the rear portion of the upper casing up or down according to the height of the keyboard of the instrument to be played upon, substantially as set forth.

17. In automatic musical apparatus, the combination with a supporting-casing, of an upper casing containing the operating mechanism and having an overhang upon its rear side and the key-operating devices arranged beneath said overhang, said casing being hinged at its lower forward corner to the supporting-casing, and means for adjustably raising and lowering the free side of said upper casing to adjust the overhang and key-operating devices to the height of the keyboard of the instrument to be played upon, substantially as set forth.

18. In automatic musical apparatus, the combination with a tracker-board having passages additional to the music-controlling passages, and a music-sheet having slots and perforations corresponding to said additional passages, of an index, a series of pneumatics having increasing lengths of movement and connected to the index to move the same and connected to the additional channels in the tracker-board to be controlled from the same, substantially as set forth.

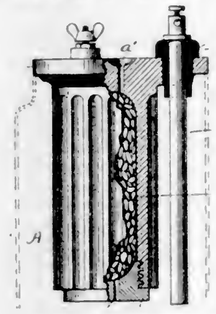
19. In automatic musical apparatus, the combination with a tracker-board having passages additional to the music-controlling passages, and a music-sheet having slots and perforations corresponding to said additional passages, of an index having a plate upon its pivot, a series of cylinders of increasing lengths, tube connection between each cylinder and a tracker-board passage, plungers in the cylinders and having bearing against the plate of the index, and a tension device exerting its tension in opposition to the plungers, substantially as set forth.

20. In automatic musical apparatus, the combination of a plunger-chamber, a plunger movable therein, a valve-chamber, a controlled live-air inlet opening into one end of said chamber, a channel extending from the plunger-chamber to the inlet end of the valve-chamber and having an exhaust-channel extending from it to the outer air through the middle of the valve-chamber, a plunger-valve in the valve-chamber and alternately opening and covering said channels, and a spring bearing against the valve to close the inlet and live-air channel, substantially as set forth.

21. In automatic musical apparatus, the combination of a plunger-chamber, a plunger movable therein, a valve-chamber, a controlled live-air inlet opening into one end of said chamber, a channel extending from the plunger-chamber to the inlet end of the valve-chamber and having an exhaust-channel extending from it to the outer air through the middle of the valve-chamber, a plunger-valve in the valve-chamber and alternately covering and uncovering said channels, a spring bearing against the valve to close the inlet and live-air channel, and a relief device admitting air behind the valve when the latter is forced back against the spring, substantially as set forth.

22. In automatic musical apparatus, the combination of a plunger-chamber, a plunger movable therein, a valve-chamber, a controlled live-air inlet opening into one end of said chamber, a channel extending from the plunger-chamber to the inlet end of the valve-chamber and having an exhaust-channel extending from it to the outer air through the middle of the valve-chamber, a plunger-valve in the valve-chamber and alternately covering and uncovering said channels, a spring bearing against the valve to close the inlet and live-air channel, and a relief channel and valve through the plunger-valve, said relief-valve having its stem projecting beyond the inner end of the plunger-valve to engage the end of the valve-chamber and open the relief-valve as the plunger-valve is forced back against the spring, substantially as set forth.

658,530. VOLTAIC CELL. CHARLES T. RICHMOND, Cleveland, Ohio, assignor to the National Carbon Company, same place. Filed Oct. 9, 1897. Serial No. 654,715. (No model.)



Claim.—In a voltaic cell, a porous cup having an open lower end, a closed top and an external annular flange at its upper end, all of said parts being integral, and a removable plug which screws into the lower end of said cup and thereby closes the same, and vent-holes in said closed top and said plug, substantially as specified.

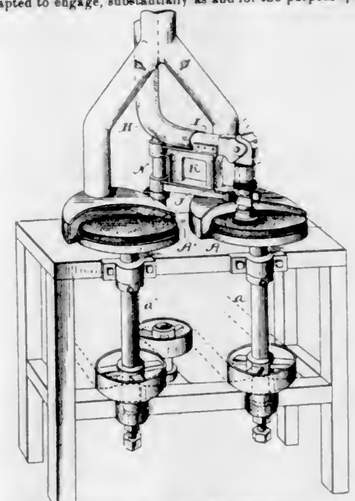
658,531. MACHINE FOR GRINDING CARBON DIAPHRAGMS. CHARLES T. RICHMOND and MAHLON M. ZELLERS, Cleveland, Ohio, assignors to the National Carbon Company, Trenton, N. J. Filed July 10, 1899. Serial No. 723,356. (No model.)

Claim.—1. The combination of a rotating grinding-wheel, a pneumatic holder having a head-tube and a mouth-tube telescoping therewith, and adapted to be moved longitudinally toward and from the grinding-wheel, substantially as and for the purpose specified.

2. The combination of a rotating grinding-wheel, a tubular holder having across its mouth a perforated plate, said tubular holder having an upper tube and a lower mouth-tube telescoping therewith, said tubes having annular shoulders and a spiral compression-spring lying between said shoulders, and normally keeping the perforated mouth-plate withdrawn from the said grinding-wheel, and means for exhausting the air from the tubular holder, substantially as and for the purpose specified.

3. The combination of a rotating grinding-wheel, a tubular holder movable longitudinally toward and from said wheel and having across the end adjacent to the wheel a perforated plate, and means for withdrawing air from said tubular holder through the other end thereof, said plate having a flange outside of the perforations, substantially as and for the purpose specified.

4. The combination of a rotating grinding-wheel, a tubular holder movable longitudinally toward and from said wheel and having across the end adjacent to the wheel a perforated plate, and means for withdrawing air from said tubular holder through the other end thereof, an adjustable stop-nut on said holder, and a stop-arm with which it is adapted to engage, substantially as and for the purpose specified



5. The combination of a rotary grinding-wheel, and a pneumatic holder adapted to be swung upon a horizontal axis, which holder has across the end adjacent to the grinding-wheel a perforated plate, and connections between the upper end of said holder and an air-exhausting device, substantially as and for the purpose specified.

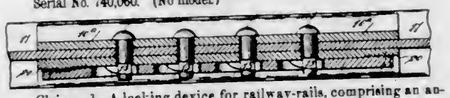
6. The combination of a grinding-wheel, with a tubular holder which is movable longitudinally and about a pivot and has at its free end a perforated plate, and connections between the air-exhausting device and the holder, substantially as and for the purpose specified.

7. The combination of a grinding-wheel, with a tubular holder which is movable longitudinally and about a pivot and has a perforated plate at its free end, with an air-exhausting device and means whereby the swinging of said holder in one direction connects said holder with said device, and the swinging of said holder in the other direction breaks said connection, substantially as and for the purpose specified.

8. The combination of a rotary grinding-wheel with a vertically-movable tube having a perforated plate across its free end, a hood which is connected over the other end of said tubular holder, a pipe I suitably connected with an air-exhausting device, a head secured thereto, said head and hood being pivoted together and having surfaces which engage with each other and establish a close communication between the hood and head when the holder is in a vertical position and which are disengaged to break said communication when said holder is swung about said pivot away from the vertical position, substantially as and for the purpose specified.

9. The combination of a plurality of rotating grinding-wheels, and a swinging frame, a pneumatic holder carried by said swinging frame and longitudinally movable toward the faces of the grinding-wheels, said grinding-wheels all lying within the radius of said swinging frame, whereby the swinging frame may bring the holder over any grinding-wheel, substantially as and for the purpose specified.

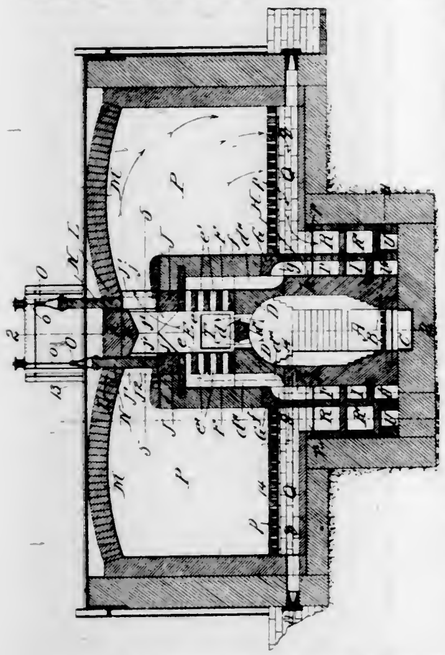
653,532. FASTENING FOR RAIL-JOINTS. ANNIE B. SCHIMMEL, Portland, Oreg., administratrix of Frederick W. Schimmel, deceased, assignor to Maurice S. Dean, Parkersburg, W. Va. Filed Dec. 12, 1899. Serial No. 740,060. (No model.)



Claim.—1. A locking device for railway-rails, comprising an angle-bar having two sets of teeth, and a locking-plate having means for engaging bolts and also having two sets of teeth, the teeth of the plate being so related to the teeth of the bar that when adjacent sets of teeth of the plate and bar are in mesh the other sets of teeth will be out of mesh, substantially as shown and described.

2. The combination, with a railway locking-plate constructed of metal, having its inner face at its extremities provided with a series of teeth or serrations, said plate being also provided with a series of longitudinal openings between its ends, each of which openings comprises an elongated section and a circular section, the outer surface of the plate adjacent to the elongated sections of the openings being downwardly beveled in direction of the circular sections, of bolts adapted to pass through the said openings and provided with alining recesses formed in opposite faces, and an angle-bar recessed to receive the bolts and provided with teeth adapted for engagement with the toothed surfaces of the locking-plate, all combined for operation substantially as and for the purpose specified.

653,533. FURNACE. FREDERICK R. SELLMAN, St. Louis, Mo. Filed Dec. 23, 1899. Serial No. 741,448. (No model.)



Claim.—1. The combination with a firing-chamber in which combustion of the fuel takes place slowly, of a mixing-chamber for receiving the combustible gases resulting from the decomposition of fuel in said firing-chamber, passages for admitting heated air to the mixing-chamber, and a combustion-chamber into which the heated air and combustible gases are directed in the burning state from the mixing-chamber; substantially as described.

2. The combination with a firing-chamber, for driving off volatile gases from the fuel, of a mixing-chamber for receiving said gases, intake-flues for supplying heated air to the mixing-chamber, a combustion-chamber into which the heated air and gases are discharged from the mixing-chamber, and an escape-flue for the products of combustion from the combustion-chamber, said escape-flue being arranged in juxtaposition to the intake-flue for the air supplied to the mixing-chamber; substantially as described.

3. The combination with a firing-chamber for containing a deep bed of fuel, of means for regulating and controlling the admission of air to support slow combustion therein, a mixing-chamber for receiving the products of combustion from the firing-chamber, and also the combustible gases resulting from the decomposition of fuel in said firing-chamber, intake-flues for supplying heated air to the mixing-chamber, a combustion-chamber for receiving the commingled air and gases from the mixing-chamber, which commingled air and gases are admitted to said combustion-chamber in a burning state at or near the top thereof; substantially as described.

4. The combination with a firing-chamber for containing a deep bed of fuel, of means for regulating and controlling the admission of air to support slow combustion therein, a mixing-chamber for receiving the products of combustion from the firing-chamber, and also the combustible gases resulting from the decomposition of fuel in said firing-chamber, intake-flues for supplying heated air to the mixing-chamber, a combustion-chamber for receiving the commingled air and gases from the mixing-chamber, which commingled air and gases are admitted to said combustion-chamber in a burning state at or near the top thereof, and escape-flues for the products of combustion leading from the lower portion of said combustion-chamber and alongside of the intake-flues; substantially as described.

5. The combination with a firing-chamber whose walls converge toward the bottom, said firing-chamber containing a deep bed of fuel, of means for controlling the supply of air to the lower portion of said firing-chamber for supporting slow combustion of the fuel therein, steaming-pans arranged in said firing-chamber, a mixing-chamber for receiving the volatile gases resulting from the decomposition of the green fuel in the firing-chamber, intake-flues for supplying heated air to the mixing-chamber, and a combustion-chamber connected to said mixing-chamber for receiving the air and gases therefrom in a burning state; substantially as described.

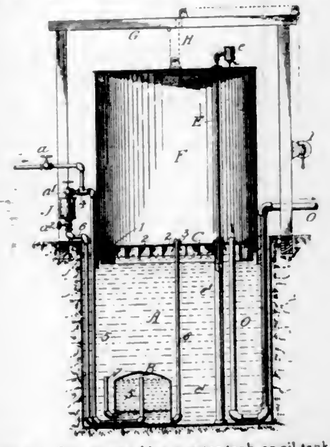
6. The combination with a firing-chamber for containing a deep bed of fuel, of means for supplying air thereto to support slow combustion of the fuel therein, a mixing-chamber arranged above the firing-chamber for receiving the combustible gases from said firing-chamber, combustion-chambers arranged on each side of the mixing-chamber, dampers between said mixing-chamber and said combustion-chambers, escape-flues for the products of combustion leading from the combustion-chambers, and intake-flues arranged intermediate said escape-flues and firing-chamber and intermediate said combustion-chamber and said mixing-chamber, for admitting heated air to said mixing-chamber; substantially as described.

7. The combination with a furnace, of a mixing-chamber for receiving gases generated in the furnace, means for supplying said mixing-chamber with heated air, a combustion-chamber into the upper portion of which said mixing-chamber discharges its products, a perforated floor for said combustion-chamber, parallel flues arranged under said floor, escape-flues R and R′ for conducting off the products of combustion, a flue S, and a damper between flue S and flue R′; substantially as described.

8. The combination with a furnace, of a mixing-chamber, a combustion-chamber, escape-flues leading from said combustion-chamber, an escape-flue leading from said mixing-chamber, and dampers for said escape-flue; substantially as described.

9. The combination with a furnace, of a mixing-chamber, combustion-chambers arranged on each side of said mixing-chamber, separate escape-flues leading from said ovens, an escape-flue leading from said mixing-chamber, all of said escape-flues discharging into an escape flue or conduit, and dampers for the separate escape-flues; substantially as described.

653,584. CARBURETER. JOSEPH E. SHEARER, Chico, Cal., assignor to John C. Burdon, same place, and John Glanville, Sacramento, Cal. Filed Nov. 11, 1899. Serial No. 736,609. (No model.)



Claim.—1. In a gas-machine, a water-tank, an oil-tank immersed therein and accessible to water from the water-tank, an oil-supply pipe entering the oil-tank, whereby oil is delivered under pressure to said oil-tank, a valve for cutting off the supply of oil, and a carbureter; whereby water is displaced from the oil-tank by the admission of oil under pressure; and whereby also, upon the cessation of the supply of oil, the back pressure of water forces oil from said oil-tank to a point above the water-level.

2. In a gas-machine, a water-tank, an oil-tank immersed therein, a carbureter floating upon the body of water, means for supplying oil to the oil-tank, means for elevating oil from the oil-tank to a point above the carbureter, a pipe from such point to the carbureter, and an air-inlet pipe to the carbureter.

3. In a gas-machine, a water-tank, a carbureter comprising a plate or disk having a superficial flange arranged to form an air-passage, the said disk floating upon the water in the water-tank so that the said flange dips into the water which forms the bottom of said air-passage, means for supplying oil to said passage above the water, and means for forcing air through said passage above the oil therein.

4. In a gas-machine, a water-tank, a carbureter comprising a disk having an air-chamber which makes said disk buoyant and maintains it above the water on which it floats, a flange on such disk dipping into the body of water and forming in connection with the water-surface an oil-space and an air-passage and means for supplying oil and air to said space or passage.

5. In a gas-machine and in combination a water-tank, an oil-tank immersed therein, a carbureter supported by the water in the tank, an opening into the oil-tank to admit water thereto, an oil-pipe to said oil-tank, a measuring vessel located at a higher level than the carbureter and communicating with said oil-pipe, a pipe from the measuring vessel to the carbureter, controlling-valves in said pipes, and means for admitting air to the carbureter.

6. In a gas-machine and in combination an open-topped water-tank, an inverted tank or bell partially immersed therein and vertically movable, an oil-tank completely immersed therein and accessible to water from the water-tank, a carbureter supported by the body of water, a passage for oil connecting the oil-tank and the carbureter, an air-pipe leading to the carbureter, and means for moving the said bell; whereby, through water-pressure, acting on the oil in the oil-tank, oil is supplied to the carbureter, and by the raising of the bell air is drawn into the carbureter, the raised bell also forming a gas-holder

7. In a gas-machine the combination with a tank containing a body of water, of a carbureter floating upon said body of water, an oil-tank immersed in said water below the carbureter, and connections between said oil-tank and carbureter.

8. In a gas-machine, a water-tank, a carbureter at the water-level in which oil is confined on the surface of the water, and a movable bell in the water-tank, having an air-inlet and a gas-outlet and communicating directly with the carbureter, whereby the ascent of the bell produces a vacuum or partial vacuum above the water-level and a storage-space for air drawn through the said carbureter.

9. In a gas-machine, a water-tank, an inverted tank or bell therein, a buoyant carbureter at the water-level, an air-inlet pipe connected to the carbureter, and a gas-outlet from the bell; the said bell being movable vertically, whereby when elevated it draws air through the carbureter, and when it descends forces gas through the gas-outlet.

10. In a gas-machine, a water-tank, a buoyant carbureter supported by the water therein, an inverted tank or bell partially immersed and vertically movable, an air-inlet pipe connected to the carbureter, a gas-outlet from the bell, and an automatic valve in the air-pipe, adapted to open to external pressure and to close to internal pressure; whereby air is drawn through the carbureter and into the bell by the elevation of said bell, and is forced through the gas-outlet by the descent of said bell.

11. In a gas-machine, the combination with a water-tank and with an oil-tank immersed therein and accessible to water, of a carbureter at the water-level, a measuring vessel above the water-level, an oil-supply pipe connected to the measuring vessel and to the oil-tank, and valves in said supply-pipe for controlling the movement of oil; whereby oil can be forced into said oil-tank and afterward elevated into said measuring vessel by water-pressure to afford a direct and limited supply for said carbureter.

12. In combination with a water-tank having a buoyant carbureter supported by the water therein, of an inverted open-bottomed tank partially immersed in the water, means for moving the same vertically whereby it forms a vacuum-chamber above the carbureter and communicating therewith, an air-inlet pipe communicating with the carbureter and an automatic valve in said pipe, adapted to open to the pressure of air entering, and to close to said back pressure from said vacuum-chamber.

13. In a gas-machine, the combination with a carbureter, of means for producing a combined vacuum-chamber and gas-holding chamber communicating with said carbureter, an air-inlet pipe, an automatic valve in said pipe opening to external air-pressure and closing to back pressure from the said chamber, and external means by which said valve can be operated by hand, substantially as and for the purpose set forth.

14. In a gas-machine, an open-topped water-tank, an inverted tank within the same and vertically movable, a stationary pipe within the water-tank, an air-inlet pipe carried by the inverted tank and entering the said stationary pipe, a carbureter in communication with the said stationary pipe, and means for moving said inverted tank.

653,585. GAS-REGULATOR. NATHANIEL SLEEMAN, New Haven, Conn., assignor to George S. Terry, trustee, New York, N. Y. Filed Oct. 24, 1899. Serial No. 734,631. (No model.)



Claim.—In a gas-regulator, the combination with a cylindrical cup-like sheet-metal regulator-body, formed at its upper end with a centrally-arranged valve-seat, and adapted at its lower end to be shoved into a burner-body for frictional retention therein; of a vertically-movable cylindrical sheet-metal cup-like regulator-float, setting over the upper portion of the said regulator-body; and a valve located within the said regulator-body, coacting with the valve-seat thereof, and formed with a stem extending upward through the said valve-seat and into the float to which it is attached, the said regulator-body and float being adapted in diameter to form an annular gas-passage between the regulator-body and the float, and between the float and the adjacent portion of the burner-body into which the regulator is introduced so as to permit the gas rising through the valve-seat into the float to flow downward over the regulator-body and under the lower edge of the float, and then upward over the outer face of the same into the burner-body, and the diameters of the said parts being also adapted to cause the float and the adjacent portion of the burner-body to guide the float in its vertical reciprocations, and prevent it from canting, substantially as set forth.

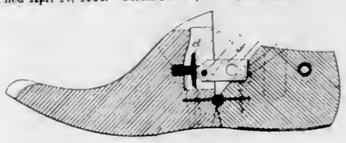
653,536. HAT-FASTENER. ELIZABETH S. SWANK, Wolcottville, Ind. Filed Apr. 18, 1899. Serial No. 713,463. (No model.)



Claim.—1. A hat-holder, comprising a frame having guideways, means for attaching said frame to a hat on the inside of the crown, an elastic extending loosely through said guideways, hair-pins secured at the ends of the elastic outside of the guideways, and a hook on said frame and adapted to be engaged by the middle portion of said elastic, as set forth.

2. In a hat-holder, the combination of a bowed frame having at each end a guide, the intermediate portion of the frame being out of alinement with the guides, an elastic, the end portions of which are passed through and are movable in the guides, hair-pins attached to the ends of the elastic to engage the hair of the wearer, and means attached to the bowed or intermediate portion of the frame, such means being capable of holding the intermediate portion of the elastic aside to place the elastic under tension.

653,537. SHOE-LAST. CHARLES C. TANNERY, New York, N. Y. Filed Apr. 17, 1900. Serial No. 13,223. (No model.)



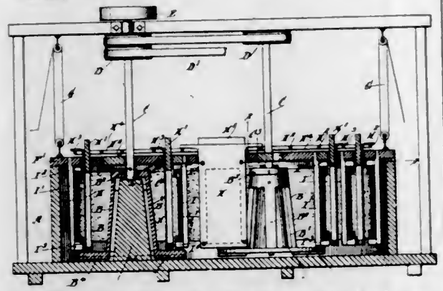
Claim.—1. A shoe-last, having hingedly-connected heel and toe sections, the toe-section being formed with a cavity in its rear face, a push-plate mounted in the cavity, a spring engaging the push-plate and tending to move it rearward, and a dog mounted on a constant pivot in the cavity of the toe-section and having a pointed free end engaged by the push-plate, such point being situated above the pin, whereby to throw the free end of the dog downward into engagement with the heel.

2. A shoe-last having heel and toe sections hingedly connected, a horizontally-movable push-plate carried on one of the sections, a spring actuating the push-plate and pressing it toward the other section, and a dog mounted pivotally on the section carrying the push-plate and having its free portion movable into engagement with the other section, the dog lying horizontally when in active position and

having a pointed end engaged by the push-plate and situated at one side of the pivot of the dog.

3. A shoe-last, having hingedly-connected heel and toe sections, the toe-section being formed with a cavity adjacent to the heel-section, and a heel-section having a cavity adjacent to the toe-section, a push-plate mounted in the cavity of the toe-section, a spring pressing the push-plate rearward, a dog having a pointed end engaged by the push-plate, and a pin carried in the toe-section, on which pin the dog is mounted, the pin being located below the pointed end of the dog, whereby the action of the push-plate throws the dog downward with its free end in the cavity in the heel-section, to removably hold the heel-section extended.

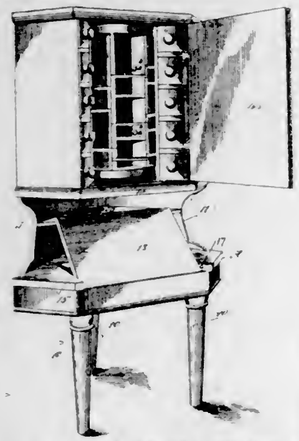
653,538. ELECTROLYTIC APPARATUS. NATHANIEL L. TURNER, Salmon City, Idaho. Filed June 7, 1899. Serial No. 719,661. (No model.)



Claim.—1. An electrolytical apparatus, comprising a tank, a carrier provided with depending arms, an electrode supported by said arms, turn-buttons secured to the arms and adapted to hold the electrode thereon, and an electrode of opposite polarity to the one first mentioned.

2. An electrolytical apparatus, comprising a tank, rotary agitators located therein eccentrically, a series of electrodes whose main portion is concentric with the tank while the portions adjacent to the agitators are curved concentrically with the axes of said agitators, and electrodes of opposite polarity to those first named.

653,539. CABINET. FREDERICK WADELL, Louisville, Ky. Filed Feb. 9, 1900. Serial No. 4,649. (No model.)



Claim.—1. In a cabinet, stationary receptacles, a receptacle mounted to revolve between the stationary receptacles and provided with an inner chamber and outer compartments, and a door for the inner chamber, having a concealed locking mechanism.

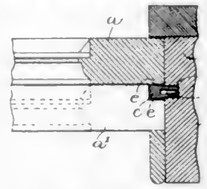
2. In a cabinet, stationary receptacles, a receptacle mounted to revolve between the stationary receptacles and provided with a central chamber, and a series of exterior compartments and having channels in its upper and bottom sections, the central chamber having a door slotted at its lower end and arranged to enter the channels in the upper and bottom portions of said revolving receptacle, and a check located in the lower channel into which the lower or slotted end of the door enters.

3. A receptacle having a channel in the top and in the bottom and a barrier in the bottom channel, and a door, the ends of which are adapted to enter the said channels, the bottom portion of the door being longitudinally slotted at a point between its inner and outer faces, as set forth.

4. In a cabinet, stationary receptacles divided into compartments and a receptacle mounted to revolve between the stationary receptacles, the revolving receptacle having exterior pockets and an inner chamber, a door for the said chamber, and means for holding the door in closed position in an invisible manner, as set forth.

5. In a cabinet, a box-base having an opening in its upper surface, exposing the interior of said base, opposite walls of which opening are provided with longitudinal grooves, blocks held to slide in said grooves, a cover for the opening, having connection with the said blocks, and a structure on the base against which the cover may engage to provide an inclined book-rest for the purpose set forth.

653,540. PARTING-BEAD FOR WINDOW-SASHES. WILLIAM G. ANDERSON, Brookline, Mass., assignor to Hannah E. Sargent, same place. Filed Nov. 20, 1899. Serial No. 737,598. (No model.)



Claim.—A parting-bead composed of a wooden strip having a longitudinal slot extending from the inner edge partly to the outer edge, said slot subdividing the inner portion of the bead into two elastic portions which are connected by the outer portion of the strip.

653,541. WRENCH. JOHN J. BARCLAY, Elizabeth, N. J., assignor to Milton Quay, same place. Filed Dec. 15, 1899. Serial No. 740,447 (No model.)



Claim.—1. A wrench comprising a shank having its sides transversely beveled in direction of each other, the shank being provided with a fixed jaw, a jaw mounted to slide on the shank to and from the fixed jaw and having an opening for receiving the shank, the opening being of similar cross-sectional shape but longer than the transverse depth of the shank, and a retarding device for the movable jaw.

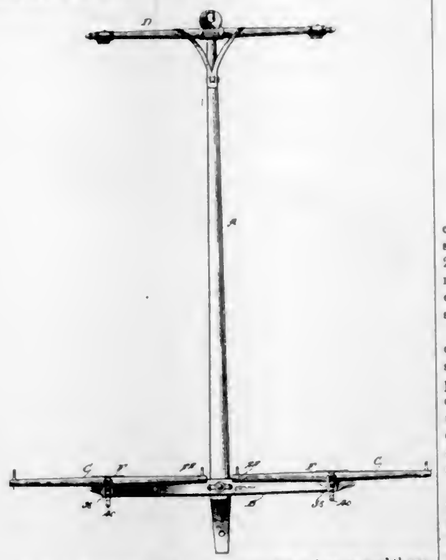
2. A wrench consisting of a shank having an essentially-triangular cross-sectional shape and a fixed jaw at one of its ends, a movable jaw mounted to slide on the shank, the opening in the movable jaw receiving the shank being of similar cross-sectional shape to the shank but of such length that the opening extends beyond the front of the contracted portion of the shank, and a spring attached to the back of the shank at one of its ends, which spring extends freely in the direction of the fixed jaw and through the back portion of the opening in the movable jaw, as described.

3. In a wrench, a shank having transversely-tapering sides and a fixed jaw at one end, and a spring controlled sliding jaw capable of free movement on the shank and of locking engagement with the shank when subjected to pressure by an article introduced between the two jaws, as set forth.

653,542. SINGLETREE-COUPLING. AMOS M. BARKER, Bloomington, Nebr. Filed Mar. 17, 1900. Serial No. 9,052. (No model.)

Claim.—1. A doubletree, singletrees pivoted on the doubletree, the singletrees having a hinged connection with the doubletree through their pivoted sections, links connected with said singletrees, and lock-levers engaging said links for locking the singletrees at an elevation above the doubletree.

2. A doubletree, interlocking wear-plates adapted to turn one upon the other, a pivot-pin passed through the said wear-plates, a hinge, a leaf of which is connected with the upper wear-plate, a singletree attached to the other leaf of the said hinge, and means for locking the singletree at an elevation above the doubletree, the lower wear-plate being secured to the doubletree.



3. The combination, with a doubletree, a wear-plate secured thereto, a pivot-pin passed through the doubletree and through the said wear-plate, and a lock-lever carried by the upper end of said pivot-pin, of an upper wear-plate mounted to turn upon the lower wear-plate and around the pivot-pin, a hinge, a leaf of which is secured to the upper wear-plate, a singletree secured to the other leaf of the hinge, and a link connected with said singletree and arranged to pass rearwardly from the same to an engagement with said lock-lever, as set forth.

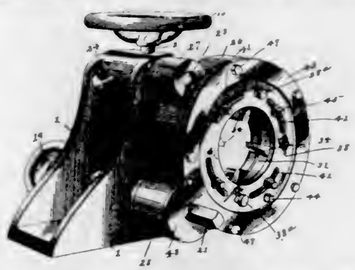
4. A doubletree, a singletree, a hinge having one leaf secured to the singletree, a pivot pin or bolt passed through the doubletree and through the other leaf of the hinge and projecting above the same, a locking-lever carried at the upper end of the pivot-pin, and a link carried by the singletree and adapted to be engaged by the lever to hold the singletree at an elevation above the doubletree.

5. The combination, with a doubletree, a singletree, a hinge having one leaf secured to the singletree and a pivot pin or bolt extending through the doubletree and through the other leaf of the hinge, the said leaf being arranged to turn on the doubletree, the said pivot pin or bolt having an enlarged upper portion forming shoulders above the said leaf of the hinge, of a link carried by the hinge-leaf secured to the singletree and adapted to extend over the upper end of the pivot-pin, and a lever pivoted to the upper portion of the pivot-pin and having a head provided with an undercut recess adapted to receive the free end of the link, substantially as described.

6. A singletree provided with hooks or clips at its ends said hooks or clips each comprising a body portion secured to the singletree, and two spaced members which extend upward from the body at opposite sides of the end of the singletree, the rear member of each clip or hook being longer than the forward member and having an upward and rearward inclination, while the forward members of the clips or hooks are given a slight forward and upward inclination for the purpose described.

653,543. THREAD-CUTTING MACHINE. ELLIS M. BURR, Champaign, Ill. Filed May 15, 1899. Serial No. 716,906. (No model.)

Claim.—1. In a thread-cutting mechanism, the combination with a pipe-clamping body, of a ring-frame adjustably supported therefrom, a ring-plate mounted in said ring-frame, radially-arranged threading-dies carried in said ring-plate, an adjusting-ring engaging projections of said dies and adapted to move the latter inward or outward, a sliding and rotating shaft connecting said clamping-body and frame-ring, said shaft having a threaded outer portion and a hand-nut thereon, a spring interposed between the nut and body and means on the shaft whereby the rotation of the latter produces a rotary movement of the die-carrying ring, substantially as specified.

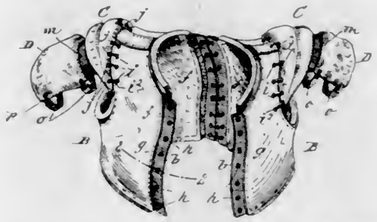


2. In a thread-cutting mechanism, the combination with a pipe-clamping body having adjustable clamping-dies, a shaft 14 having a sliding and rotary bearing in said clamping-body and a sliding pin 23 also supported in said clamping-body, of a ring-frame 26, and a rotatable die-carrying ring-plate in said frame, said ring-frame adapted to be disengaged from said pin 23 and to swing on said shaft 14, substantially as specified.

3 In a thread-cutting mechanism, the combination with a pipe-clamping body, a shaft having a sliding and rotary support therein, said shaft having a threaded portion 15, a hand-nut on said threaded portion, and a spring interposed between said nut and said body, the compression of which imparts to said shaft and nut a tendency to move outward, of a ring-frame journaled on said shaft, rotatable die-carrying rings in said ring-frame and a gear-ring connected therewith, and a pinion on said shaft 14 engaging the teeth of said gear-ring, substantially as specified.

4. In a thread-cutting mechanism, the combination with a pipe-clamping body, of a ring-frame supported adjacent thereto, a ring-plate rotatably mounted in said frame, threading-dies carried in said ring-plate, notches 49 formed at intervals in said ring-plate and adapted to receive the corners of a square die-plate and a ring 50 having a rotary adjustable connection with said ring-plate, said ring 50 also being provided at equidistant points with notches 52 therein, substantially as specified.

653,544. APPAREL-WAIST. JOE E. BURNS and ABE SCHEMEL, Springfield, Mass. Filed Apr. 6, 1900. Serial No. 11,857. (No model.)



Claim.—1. In a protective garment comprising the two side shells B B, each consisting of an outer rigid layer such as molded leather, or rawhide, and having an inner lining of felt, and each section having at its front and rear edges which are to be adjoined, the flattened tube of elastic webbing sewed to the section B and having inclosed therein the reinforcing-strip and provided through the reinforced portion with a series of eyeleted holes through which a uniting lacing-cord for the front and rear junctions of the two shells may be passed.

2. A protective garment consisting of the body-inclosing portions B B having at the top of the arm-scyes the flexibly-connected shoulder-top pads, C C, and the upper-arm pads D D flexibly connected to said pads C, and means for holding them closely about the portion of the arm for which they are provided.

3. A protective garment consisting of the body-inclosing portions having at the top of the arm-scye the flexibly-connected shoulder-top pads C C, and the upper-arm pads D D connected to said pads C by elastic webbing, and means for holding them in their partial encircling embrace about the upper portion of the arm.

4. In a protective garment, the half-shells B B having front and rear strips *b b* of webbing, reinforced, and eyelet-provided, and having at the arm-scyes, perforations *i i*, shoulder-top pads C C, provided with corresponding series of perforations, lacing-cords, connecting through said perforations the pads C with their half-shells, the pads

D D for the upper portions of the arms, having connection by the elastic webbings *m m* with the shoulder-top pads, and having the constructing-straps *o o*, all substantially as described and shown.

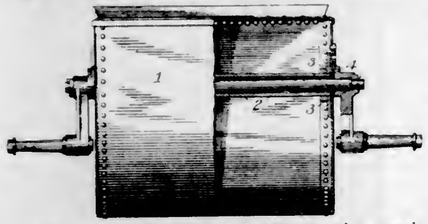
653,545. SIGN. OTTO CAESAR, New York, N. Y. Filed Jan. 30, 1900. Serial No. 3,306. (No model.)



Claim.—1. A sign-letter, comprising a letter proper, a rear covering of flexible material for the letter and extending beyond the edges thereof to form attaching-flanges for securing the letter to the sign-support and forming a border for the letter, and a shading-flange for said letter extending beyond the attaching-flanges at the desired points, substantially as described.

2. A sign-letter, comprising a letter, and a plurality of rear-coverings of flexible material superimposed one upon the other, the innermost covering extending beyond the edges of the letter to form attaching-flanges for securing the letter to the sign-support and forming a border for the same, the outermost covering having its flange extending beyond the flange of the innermost covering at certain portions of the letter, thereby forming a shading-flange for the letter substantially as set forth.

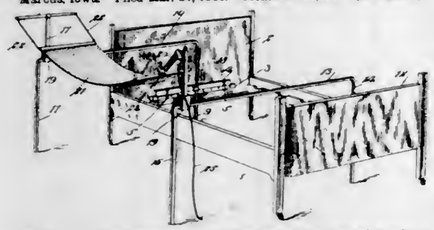
653,546. DUMPING-CART BODY. BENJAMIN W. CLARK, Washington D. C. Filed May 22, 1900. Serial No. 17,526. (No model.)



Claim.—1. A dumping-cart body involving a tank or vessel of metal plate, a tube extending across and through the sides of the body and nuts on the tube having flanges riveted to the side plates.

2. A dumping-cart body embracing the combination of a tank or vessel, a tube extending across and through the sides of the body having shoulders and nuts on the tube having flanges riveted to the side plates.

653,547. INVALID-BED ATTACHMENT. ANNA E. COUNTRYMAN, Marcus, Iowa. Filed Mar. 27, 1900. Serial No. 10,356. (No model.)

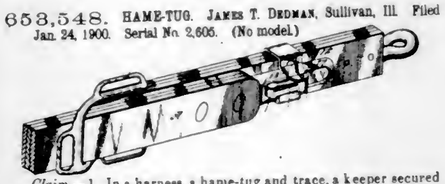


Claim.—1. The combination with a bed, of horizontal tracks or rails supported at the head and foot of the bed, standards movable on said rails, and a sling or hammock adapted for connection with the standards, substantially as specified.

2. The combination with a bedstead, of tracks or rails removably connected to the head and foot boards thereof, standards movable on said tracks or rails, rollers carried by the standards for engaging with the tracks or rails, a cross-bar on one of the standards, a sling or hammock adapted for connection with said cross-bar, and a rope or tackle connection between one end of said sling or hammock and the other standard, substantially as specified.

3. The combination with a bedstead, of strips secured to the head and foot boards thereof, bars removably connected to said strips, sockets connected to the bars, rails or tracks having legs passing through said sockets and also having legs at the outer ends for engaging with the floor upon which the bed is placed, standards movable on said tracks or rails, and a sling or hammock adapted for connection with the standards, substantially as specified.

653,548. HAME-TUG. JAMES T. DEDMAN, Sullivan, Ill. Filed Jan. 24, 1900. Serial No. 2,605. (No model.)



Claim.—1. In a harness, a hame-tug and trace, a keeper secured to the trace, provided with pins adapted to enter apertures in the hame-tug, the said keeper being provided with a shoulder at a point between its ends, a semicircular recess at one side of the shoulder and an elongated recess at the other side of the shoulder, a slide mounted to travel upon the hame-tug and upon the said keeper to an engagement with the shoulder thereof, and a lever carried by the said slide, the handle whereof is adapted to enter the elongated recess of the keeper, the said lever having a cam-section arranged to enter the semicircular recess in the keeper, as and for the purpose specified.

2. In a harness, the combination, with a trace and hame-tug, the hame-tug being provided with apertures, a keeper secured to the trace and adapted to extend over the hame-tug, the keeper being provided with pins capable of entering the apertures in the hame-tug, the said keeper having a reduced portion whose sides are inclined, a shoulder at the termination of the inclined portions of the sides, an elongated recess at one side of the said shoulder, and a semicircular recess at the opposing side of the shoulder, of a band held to slide upon the hame-tug, the said band having lugs inclined correspondingly to the inclination of the sides of the reduced portion of the keeper and adapted for engagement therewith, the lugs being also arranged to extend beyond the front face of the reduced portion of said keeper, and a lever provided with a cam-section, pivoted between the said lugs and arranged to enter the concaved recess in the keeper, and a handle-section adapted to enter the elongated recess in the keeper, for the purpose specified.

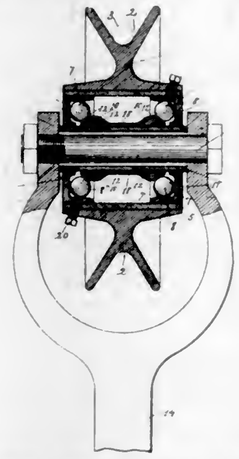
3. In a harness, a hame-tug provided with apertures, a trace provided with a keeper projecting from its end, said keeper being provided with a longitudinal recess in one face and on its other face with pins or spurs to enter the openings of the tug, a slide independent of the tug and keeper and fitted to slide thereon, and a cam-lever carried by the slide and engaging the keeper for locking the slide in position and the keeper to the tug, the handle portion of the cam-lever lying in the recess of the keeper when the parts are locked together, substantially as described.

4. In a harness, a hame-tug provided with apertures, a trace provided with a keeper having a longitudinal recess and a semicircular recess in one face and provided with spurs or pins projecting from the other face and entering the apertures of the tug, a slide independent of the tug and keeper and fitted to slide thereon, and a cam-lever pivoted to the slide and adapted to enter the semicircular recess of the keeper with its handle portion lying parallel with the keeper in the longitudinal recess thereof, substantially as described.

653,549. ELECTRIC TROLLEY. THOMAS DERRICK, Lansingburg, N. Y., assignor of three-fourths to Adam Derrick, George Vandercook and George A. Dicker, same place. Filed Jan. 27, 1900. Serial No. 3,020. (No model.)

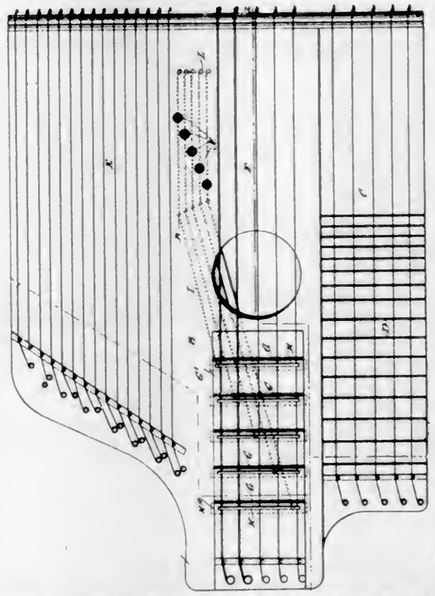
Claim.—1. In an electric trolley and in combination, a rim having a peripheral groove for the trolley-wire; a circular raceway secured to the rim; a tubular support surrounded by and concentric with the rim; a circular raceway secured to the support; a plurality of bearing balls or rolls interposed between the rim and support raceways respectively, and means for detachably securing the support to the trolley-pole, substantially as described.

2. A bearing for wheels comprising a tubular support having exterior bearing-surfaces, a wheel-rim having interior bearing-surfaces; a detachable locking-sleeve having thereon one of such bearing-surfaces and detachably secured to the rim or support, and means for detachably securing the tubular support to a frame without disturbing the bearing connections between the rim and support, substantially as described.



3. In an electric trolley the combination with a rim having a peripheral groove for the trolley-wire, of a pair of raceway-sleeves detachably secured to the rim interiorly; a tubular support inserted within the rim; raceway-sleeves secured upon the support exteriorly and coöperative with the rim-raceways; a plurality of bearing-balls interposed between the rim and support raceways respectively, whereby the support and balls are locked within the rim and the rim is revoluble about the support; and a clamping-bolt passing through the tubular support for detachably securing the support to the bifurcate arms of a trolley-pole, substantially as described.

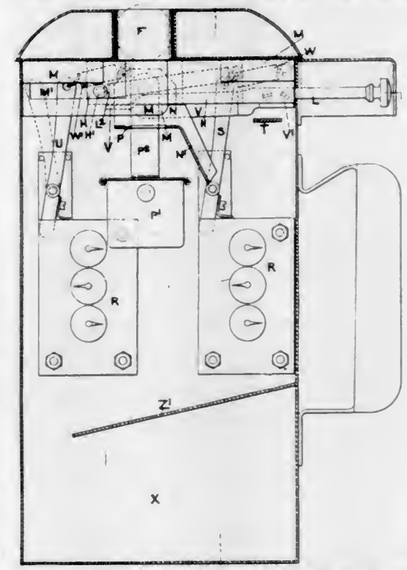
653,550. STRINGED MUSICAL INSTRUMENT. ERNST EULERT and ADOLF WALLENSTEIN, New York, N. Y. Filed Oct. 11, 1899. Serial No. 733,239. (No model.)



Claim.—1. In a stringed musical instrument, melody-strings, a group of accompaniment-strings extending over frets, a plurality of independent movable pitch-changing bars extending transversely over the accompaniment-strings, and arranged between adjacent frets, and individual means, substantially as described, to press each of the bars and move the same in engagement with the accompaniment-strings, to press them upon the corresponding fret, said means comprising vertically-slidable buttons, and a connection between the buttons and said pitch-changing bars, said buttons extending through and above the sounding-board, as set forth.

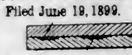
2. A musical instrument having frets, strings extending over them, movable pitch-changing bars arranged between the frets, buttons movable in the body of the instrument, a cord connecting each button with one of the pitch-changing bars, and a spring for throwing each of said bars into an inactive position.

653,551. FARE-BOX. WALTER EVANS and JOHN H. S. ASQUITH, Halifax, England. Filed Mar. 20, 1900. Serial No. 10,648. (No model.)



Claim.—The combination, with a closed box having a coin-slot in its upper part and guides below the slot, of a sliding bar arranged in the said guides and provided with a passage which registers with the said slot when the bar is pushed in, a spring forcing the said bar forward so that the said slot is normally closed at its bottom end by the bar, a plate arranged under the said bar and provided with a slot of smaller size than the said coin slot and passage, a separate receptacle for small coins under the slot of the said plate, a register provided with an operating-lever, and a tappet on the said bar which strikes the said operating-lever each time the bar is pushed in, the proper coin in the passage in the said bar being supported by the said plate until after the register has been operated and dropping into the said box when the said passage is moved rearwardly past the said plate, substantially as set forth.

653,552. BOOT OR SHOE SOLE PROTECTOR. JOHN FAULKNER, Scottdale, Pa. Filed June 19, 1899. Serial No. 721,179. (No model.)



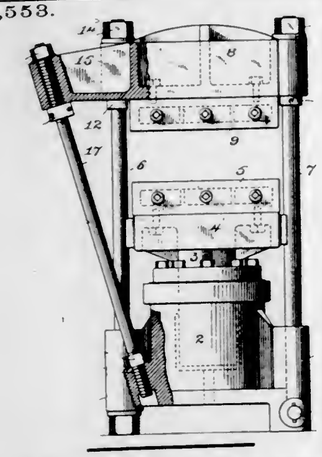
Claim.—In a shoe, the combination, with the soles, of wear-plates therebetween, each of said plates being plano-convex in cross-section and arranged with the curved surface embedded in the top of the lower sole and the flat face adjacent to the bottom of the upper sole, substantially as described.

653,553. ENDLESS-BELT PRESS. MYLES P. FILLINGHAM, Ansonia, Conn., assignor to the Farrel Foundry and Machine Company, same place. Filed Mar. 16, 1900. Serial No. 8,956. (No model.)

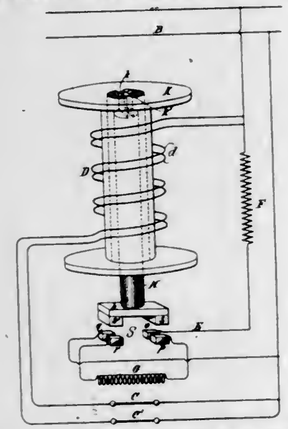
Claim.—1. In a press the combination with framework and fixed and detachable side rods, of means coacting with the fixed side rods to sustain the cross-head independently of the detachable side rods.

2. The combination with the framework and side rods of a press, of a cross-head having an extension upon the side having the fixed side rods and an oblique tie-rod between said extension and the framework, substantially as shown, for the purpose specified.

653,553.



653,554. CIRCUIT-CONTROLLER FOR INCANDESCENT LAMPS AND MAGNETIC GUIDE THEREFOR. MARSHALL W. HANKS, Pittsburg, Pa., assignor to George Westinghouse, same place. Filed Apr. 22, 1899. Renewed May 25, 1900. Serial No. 17,983. (No model.)



Claim.—1. In an electric-lighting system, a glower which is normally a non-conductor but is adapted to become a comparatively-good conductor under the influence of heat, an electric heater in proximity to the said glower, and a solenoid in circuit with the said glower, the said solenoid controlling both sides of the heater-circuit.

2. In an electric-lighting system a glower which is normally a non-conductor but is adapted to become a comparatively-good conductor under the influence of heat, an electric heater in proximity to the said glower, a solenoid in circuit with the said glower, and a double-pole switch in the heater-circuit, the core of the said solenoid being operatively connected with the said switch.

3. In an electric-lighting system a glower which is normally a non-conductor but is adapted to become a comparatively-good conductor under the influence of heat, an electric heater in proximity to the said glower, a solenoid in circuit with the said glower, a core for the said solenoid operatively connected with the circuit controller for the heater-circuit, and a magnetic device energized by the said solenoid and adapted to maintain the core in a predetermined angular position within the solenoid.

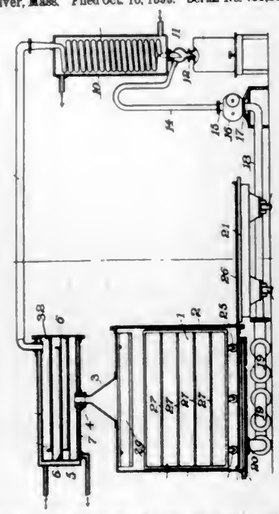
4. In an electric-lighting system wherein glowers of rare earths or mixtures thereof are the incandescent bodies, a number of such glowers, a heater in proximity thereto and a reactive coil and a double-pole switch in circuit therewith, in combination with a solenoid or other electromagnetic device operatively connected with the said switch, whereby the danger of a short circuit between the glowers and the heater is obviated.

5. In an electric-lighting system wherein glowers of rare earths or mixtures thereof constitute the incandescent bodies, a number of such glowers, a heater in proximity thereto supplied by a current of lower tension than that which operates the glowers, a switch in the heater-circuit, and a core or solenoid located in the glower-circuit, said switch operatively connected with and in combination with a fixed magnetic body having confronting polar projections directed toward the axis of the core, and corresponding polar faces upon the core.

6. The combination of a solenoid, a core longitudinally movable therein, stationary magnetic pole-pieces projecting toward the core energized by currents traversing the solenoid, and corresponding pole-faces carried by the core.

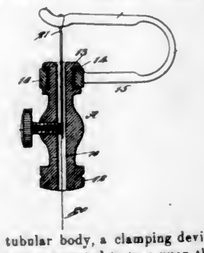
7. The combination of a solenoid, a core longitudinally movable therein, stationary magnetic pole-pieces projecting toward the core, and corresponding pole-faces carried by the core.

658,555. APPARATUS FOR RECOVERING SOLVENTS. WILLIAM R. HART and ADAM ASHWORTH, Manchester, England, assignors to the Solvents Recovery Company, same place, and James Marshall, Fall River, Mass. Filed Oct. 10, 1899. Serial No. 733,208. (No model.)



Claim.—In an apparatus for recovering the solvents from stiffened hat-bodies, a hat-body-drying chamber 1, in combination with a series of superposed trays or shelves arranged therein, a tapering outlet from the top of the said chamber, an inclined false roof or guard hung to the under side of the said top and extending under the said outlet where it is provided with an opening discharging into the same, a drying-chamber into which the said outlet discharges and a condenser communicating with the outlet of the said drying-chamber, substantially as set forth.

658,556. DEVICE FOR MAKING LOOPS IN WIRE. CHARLES R. HARTMANN, New York, N. Y. Filed Nov. 17, 1899. Serial No. 737,324. (No model.)



Claim.—1. A tubular body, a clamping device carried by the body, and a forming-arm mounted to turn upon the body, provided with a retaining-section for forming a loop of wire, which loop of wire is continued into the body for an engagement with the clamping device.

2. A device for making loops in wire, consisting of a tubular body, a clamping device carried by the body, and a forming-arm mounted to revolve upon the body, which arm is substantially yoke-shaped and is provided with a curved nose at the free end of its upper member.

3. A device for forming loops or eyes in wire, consisting of a tubular body, a clamping device entering a chamber in the body, and a forming-arm mounted to turn around the body, which forming-arm is substantially yoke-shaped and constructed of spring material, being formed with an upwardly-curved nose at the free end of its upper member, as described.

4. A device for forming loops or eyes in wire, comprising a tubular body, a set-screw passed through one side of the body into the interior thereof, and a yoke-shaped spring forming-arm having a sleeve mounted to turn upon the body, the said forming-arm comprising an upper and a lower member, a connecting member of less strength, and an upwardly-inclined nose, which nose is a continuation of the upper member of the forming-arm at its free end, as described.

653,557. RING-CUTTING TOOL. CHARLES H. JENKINS, Lebanon, N. H., assignor of one-half to Kendrick & Davis, same place. Filed Mar. 2, 1900. Serial No. 7,096. (No model.)



Claim.—1. In a ring-cutting tool, a rigid frame slotted longitudinally at one end to form guides, combined with a saw or cutter journaled in said frame between said guides, and means for rotating said saw or cutter, substantially as described.

2. In a ring-cutting tool, a rigid frame constructed of a single piece of metal slotted longitudinally at one end to form guides, combined with a saw or cutter journaled in said frame between said guides, and means for rotating said saw or cutter, substantially as described.

3. In a ring cutting tool, a rigid frame slotted longitudinally at one end to form guides, the said guides being cut away at their under sides, combined with a saw or cutter journaled in said frame between said guides, the said guides, with the exception of their cut-away portions, extending beyond the periphery of said saw or cutter, and means for rotating said saw or cutter, substantially as described.

4. In a ring-cutting tool, the combination with a rigid frame slotted longitudinally at one end to form guides, a saw or cutter journaled in said frame between said guides, and means to rotate said saw or cutter, of means secured to said frame for automatically forcing the ring into contact with the said saw or cutter, substantially as described.

5. In a ring-cutting tool, the combination with a rigid frame slotted longitudinally at one end to form guides, a saw or cutter journaled in said frame between said guides, and means to rotate said saw or cutter, of a guard pivoted to said frame and means for forcing said guard toward the saw or cutter, substantially as described.

6. In a ring-cutting tool, the combination with a rigid frame slotted longitudinally at one end to form guides, a saw or cutter journaled in said frame between said guides, and means for rotating said saw or cutter, of a U-shaped plate pivoted to said frame and terminating at one end in a guard adapted to overlap said guides, and a spring interposed between the other end of said plate and the frame for forcing said guard toward the saw or cutter, substantially as described.

7. In a ring-cutting tool, a rigid frame slotted longitudinally at one end to form guides, the said guides being cut away at their under sides, a saw or cutter journaled in said frame between said guides, the guides, with the exception of their cut-away portions, extending beyond the periphery of the saw or cutter, and means for rotating said saw or cutter, combined with a U-shaped plate pivoted to said frame and terminating at one end in a guard adapted to overlap said guides at their cut-away portions, and a spring interposed between the frame and the other end of said plate for forcing said guard toward the saw or cutter, substantially as described.

8. In a ring-cutting tool, a rigid frame slotted longitudinally at one end to form guides, concentric bearings in said guides, a shaft provided with circular portions A, A', adapted to engage said concentric bearings, and an angular portion A^2 between said circular portions coinciding with the space between said guides, a saw or cutter arranged upon the angular portion of said shaft and adapted to be rotated between and in close proximity to the sides of said guides, subtantially as described.

9. In a ring-cutting tool, a rigid frame slotted longitudinally to form guides, concentric bearings in said guides, a shaft provided with circular portions A, A', adapted to engage said concentric bearings, and an angular portion A^2 between said circular portions coinciding with the space between said guides, a saw or cutter arranged upon the angular portion of said shaft and adapted to be rotated between and in close proximity to the sides of said guides, the said shaft also extending beyond one of said guides and provided with an annular groove l, and a screw m arranged on said guide and adapted to engage and disengage said groove, whereby said shaft and saw may be detachably secured in said guides, substantially as described.

10. In a ring-cutting tool, a rigid frame slotted longitudinally at one end to form guides, a saw or cutter arranged between said guides, a crank for rotating said saw or cutter provided with a handle k constructed as a plate or disk pivoted to said crank and provided with concaved sides and a central opening or aperture, substantially as described.

11. In a ring-cutting device, the combination comprising guides a circular saw journaled in and revolvable between said guides, the inner surfaces of which are contiguous with the sides of the saw, and means for revolving said saw, and a guard.

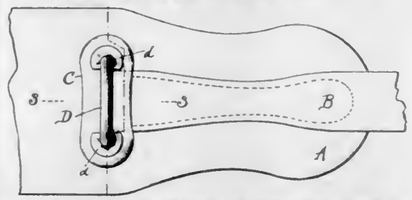
658,558. BEET-KNIFE. BJARNI J. JOHNSON and THORSTEIN PETERSON, Spanish Fork, Utah. Filed Dec. 2, 1899. Serial No. 739,004. (No model.)



Claim.—1. A new article of manufacture, a knife, the tip of the blade of which is provided with a straight tapered prong extending at right angles therefrom and in the same plane therewith.

2. A new article of manufacture, a knife, the tip of the blade of which is provided with a straight tapered prong extending at right angles to the blade, in front of the edge and in the same plane therewith.

658,559. HARNESS-SADDLE. CHARLES W. MILLER, Canton, Ohio, assignor to the Gilliam Manufacturing Company, same place. Filed Mar. 6, 1900. Serial No. 7,524. (No model.)



Claim.—1. In a harness-saddle, the combination of a skirt, and the billet stitched thereon, with a plate C, the ends of which are perforated and rest upon the skirt, and which has a recess in its under side in which the upper end of the billet is received, and a loop D resting on the plate C and held in place by a screw-threaded clamp extending from beneath the skirt through the skirt and through the plate C, substantially as described.

2. In a harness-saddle, the combination of a skirt, and the billet stitched thereon, with a plate C, the ends of which are perforated and rest upon the skirt, and which has a recess extending from one edge in its under side in which the upper end of the billet is received, the opposite edge of the plate being flat upon the skirt, and a loop D having rigid threaded ends which pass through the perforations in the plate and through the skirt, and have shoulders which rest upon the plate, and the nuts which screw onto said ends, substantially as described.

658,560. TAILOR'S MEASURE FOR TROUSERS. ARTHUR PAUL, Nashville, Tenn. Filed Aug. 10, 1899. Serial No. 726,778. (No model.)

Claim.—In a tailor's pants-measure, the combination with a curved plate provided with a lateral arm and a shoulder and a depending lug, of a strip pivotally secured to the lug, and a curved slide on the arm, the curves of the plate and the slide uniting at a point directly above the inner edge of the strip and said plate, slide and strip all being graduated from said common point, the arm being also graduated from the shoulder of the blade and being provided with teeth, and a spring-pressed pawl on the slide in position to engage with said teeth.

653,560.



653,561. REIN-GUARD. LAUREN M. SANBORN, Gardiner, Me. Filed May 1, 1900. Serial No. 15,085. (No model.)



Claim.—1. As an improved article of manufacture, a device for the purpose described comprising a body having a bottom wall, and side walls provided with notches, and a rein-holder having a curved shank adapted to clamp a strap against the botton wall of the body and also having lugs on said shank adapted to seat in the notches of the body, substantially as specified.

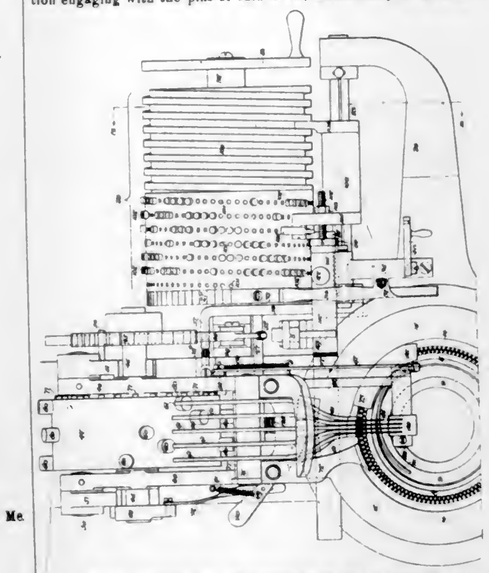
2. As an improved article of manufacture, the herein-described device comprising a body adapted to receive a strap and comprising a bottom wall and side walls provided with curvilinear notches extending downwardly from its upper edges and lengthwise of the body, and a hook having a curved shank adapted to clamp a strap against the bottom wall of the body and also having lateral lugs on said shank adapted to seat in the notches of the body, substantially as specified.

653,562. CIRCULAR-KNITTING MACHINE. ROBERT W. SCOTT, Philadelphia, LOUIS N. D. WILLIAMS, Ashbourne, and HARRY SWINGLEHURST, Jr., Philadelphia, Pa. Filed June 13, 1898. Serial No. 683,347. (No model.)

Claim.—1. A pattern-drum having at one end a threaded portion and at the other end and longitudinally beyond said threaded portion a portion with projecting pins disposed in a spiral course having a pitch similar to that of the threaded portion of the drum, substantially as specified.

2. The combination in a knitting-machine, of a secondary pattern-drum, its operating mechanism, a controller therefor, a primary pattern-drum having at one end a threaded portion and at the other end and longitudinally beyond the threaded portion a series of pins disposed in a spiral course corresponding as to pitch with the thread of the drum, means for rotating said primary pattern-drum, and a sleeve mounted so as to traverse parallel with the axis of said drum on a shaft connected to said controller, said sleeve having a portion for engaging with the thread of the drum, and another portion for engaging with the pins of the same, substantially as specified.

3. The combination in a knitting-machine, of a secondary pattern-drum, its operating mechanism, a controller therefor, a primary pattern-drum having at one end a threaded portion, and at the other end and longitudinally beyond the threaded portion, spirally-arranged pins corresponding as to pitch with the thread of the drum, means for rotating said primary pattern-drum, a rock-shaft parallel with the axis of the said drum and connected to the controller, and a sleeve splined on said shaft so that it can move longitudinally thereon but cannot turn independently thereof, said sleeve having a projection engaging with the threaded portion of the drum and another projection engaging with the pins of said drum, substantially as specified.



4. The combination of the pattern-drum and its pins, with means for rotating the drum, an arm to be acted on by said pins, said arm having a pivoted and spring-actuated pawl rigid against pressure in one direction but yielding to pressure in the opposite direction, substantially as specified.

5. The combination of a pattern-drum having projecting pins, means for rotating said drum, and pattern-drum-actuated mechanism having a pawl or finger with two contact-surfaces for the action of said pins, one of said contact-surfaces being closer to the axis of rotation of the drum than the other, substantially as specified.

6. The combination of a pattern-drum having projecting pins, means for rotating said drum, and pattern-drum-actuated mechanism having a pawl or finger with two contact-surfaces for being acted upon by said pins, one of said contact-surfaces being closer to the axis of rotation of the drum than the other and the two contact-surfaces being separated from each other by a portion substantially concentric with the axis of rotation of the drum, substantially as specified.

7. The combination of a pattern-drum having a ratchet-wheel thereon, a lever having a pawl for engagement with said ratchet-wheel, means for operating said lever, a retaining pawl or detent, a lever carrying the same and having a portion for operating the actuating-pawl so as to effect the simultaneous withdrawal of both pawls, and a pivoted catch-arm for retaining said detent-lever in the depressed position, substantially as specified.

8. The combination of the needles and needle-operating devices of a knitting-machine with yarn-guides movable into and out of yarn-feeding relation with the needles, movable blades for engaging the yarn from each of said feeding-guides and drawing it across the row of needles and means for operating said blades so as to cause their acting edges to swing from the outside to the inside of the row of needles, substantially as specified.

9. The combination of the needles and needle-operating devices of a knitting-machine, with yarn-guides movable into and out of yarn-feeding relation with the needles, and movable blades for engaging the yarns from said guides drawing the idle yarns away from the needles and the knitting-yarn into engagement with said needles and means for operating said blades so as to cause their acting edges to swing from the outside to the inside of the row of needles, substantially as specified.

10. The combination of the needles and needle-operating devices of a knitting-machine, with yarn-guides movable into and out of yarn-feeding relation with the needles, the movable yarn-engaging blades, and provision for simultaneously operating said blades and the yarn-guides, whereby, as the yarn-guides change position, the acting edges of the blades will swing from the outside to the inside of the row of needles substantially as specified.

11. The combination of the rotary needle-cylinder of a knitting-machine and its needles, with a segmental needle-guard of inverted-U shape forming a channel for the passage of the upper ends of the needles and having its outer wall inclined and presenting a beveled edge toward the approaching needles so as to serve as a latch-turner, substantially as specified.

12. The combination in a knitting-machine, of a rotating needle-cylinder structure, a cam-cylinder with draw-down cam, and mechanism for operating said draw-down cam, said mechanism having as elements a cam, on the rotating cylinder structure a bar movable into and out of the path of said cam, and means whereby the movement of said bar is imparted to the draw-down cam, substantially as specified.

13. The combination in a knitting-machine, of a rotating needle-cylinder structure, a cam-cylinder having a movable draw-down cam and mechanism for operating said draw-down cam, said mechanism having as elements a lift-cam and a push-out cam on said rotating needle-cylinder structure, and a bar movable into range of said lift-cam and pushed out of range of the same by the push-cam substantially as specified.

14. The combination in a knitting-machine, of a rotating needle-cylinder structure, a cam-cylinder having a movable draw-down cam and operating mechanism therefor, said mechanism having as elements a lift-cam and a push-out cam on said rotating needle-cylinder structure, a sliding bar movable into and out of range of said cams, and a retainer for holding said bar in the retracted position, substantially as specified.

15. The combination in a knitting-machine, of a rotating needle-cylinder, a cam structure having a movable stitch-controlling cam, a series of yarn-guides, provision for moving the same into and out of yarn-feeding relation with the needles, and mechanism for effecting two successive lengthening movements of said stitch-controlling cam, each during a partial turn of the needle-cylinder, one of said movements being simultaneous with the change in the position of the yarn-guides and the other preceding said change, substantially as specified.

16. The combination in a knitting-machine, of a rotating needle-cylinder, a cam structure having a movable stitch-controlling cam, a series of yarn-guides, provision for moving the same into and out of yarn-feeding relation with the needles, and mechanism for effecting lengthening movement of said stitch-controlling cam previous to the change in the position of the yarn-guides, substantially as specified.

17. The combination in a knitting-machine, of a rotating needle-cylinder, a cam structure having a movable stitch-controlling cam, a series of yarn-guides, provision for moving the same into and out of yarn-feeding relation with the needles, and mechanism for effecting three successive lengthening movements of the stitch-controlling cam each during a partial rotation of said needle-cylinder, the first of said movements preceding the change in the position of the yarn-guides, the second being simultaneous with said change, and the third following said change, substantially as specified.

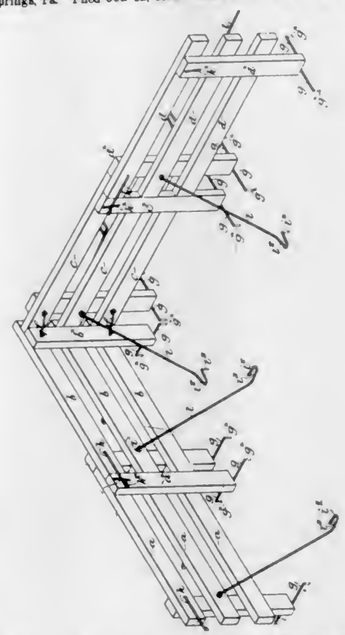
18. The combination in a knitting-machine, of the rotating needle-cylinder structure, cams thereon, a cam-cylinder having a movable draw-down cam, operating mechanism therefor having as one of its elements a bar movable into and out of range of the cams on the rotating needle-cylinder structure, a series of yarn-guides movable into and out of yarn-feeding relation with the needles, a pattern-drum for operating said yarn-guides, operating mechanism for said drum, a controller having retainers for holding out of action both of said drum-operating mechanism and the bar forming part of the operating mechanism for the draw-down cam, and means for moving said controller so as to release said parts, substantially as specified.

19. The combination in a knitting-machine, of the rotating needle-cylinder structure, cams thereon, a cam-cylinder having a movable draw-down cam, operating mechanism therefor having as one of its elements, a bar movable into and out of range of the cams on the rotating needle-cylinder structure, a series of yarn-guides movable into and out of yarn-feeding relation with the needles, a pattern-drum for operating said yarn-guides, operating mechanism for said drum, a controller having retainers for holding out of action both said drum-operating mechanism and the bar forming part of the operating mechanism for the draw-down cam, and means for imparting a two-stage movement to said controller, the first stage of the movement releasing the bar forming part of the draw-down-cam mechanism, and the second movement releasing the mechanism for operating the pattern-drum, substantially as specified.

20. The combination in a knitting-machine, of the needle-cylinder, its needles, and means for operating the same, a series of thread guides movable into and ont of thread-guiding relation with the needles, a swinging carrier for said thread-guides, and a swinging arm on said carrier adapted to engage with a projection on the fixed structure for retaining said carrier in inoperative position, substantially as specified.

21. The combination in a knitting-machine, of a needle-cylinder, its needles and means for operating the same, with a series of thread-guides movable into and out of thread-feeding relation with the needles, a swinging carrier for said thread-guides, a locking-bolt for securing the said carrier in its operative position, a swinging arm on the carrier for engagement with a projection on the fixed structure in order to retain the swinging carrier in its inoperative position, and a connection between said swinging arm and the locking-bolt, substantially as specified.

653,563. PORTABLE FENCE. ISAAC H. SHARMAN, Sinking Springs, Pa. Filed Oct. 12, 1899. Serial No. 733,392. (No model.)



Claim.—1. The combination in a portable fence, of panels, each composed of posts and rails, with pivoted latches and keepers for locking said panels together at the meeting-points, each keeper presenting a straight downwardly-contracted opening for the reception of the latch and each latch having a shouldered end for engaging with the keeper, whereby the panels will be drawn laterally together as the latch is moving downward, and will be held longitudinally when the latch is fully depressed, substantially as described.

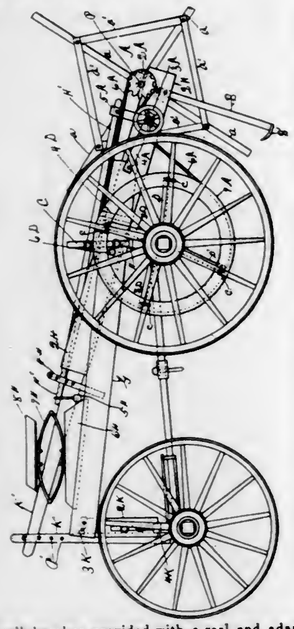
2. The combination, in a portable fence, of panels each consisting of posts and rails with diagonal braces extending laterally from said panels, and diagonal counterbraces hung to said diagonal braces and extending inwardly and downwardly therefrom to, and bearing upon, the ground at points between the bottoms of the posts and the bearings of the diagonal braces, substantially as specified.

653,564. STALK-BREAKER. DRURY P. SHAW, Mansfield, Tex. Filed Dec. 2, 1897. Serial No. 660,563. (No model.)

Claim.—1. In a stalk-breaker provided with a reel and a blade for breaking stalks; the combination with the running-gear of a wagon, means for driving said reel, means for holding said reel at various points of adjustment consisting of a frame mounted on said wagon and provided with a rock-shaft, a reel-frame mounted on said rock-shaft, a lever attached to said reel-frame and pivotally mounted on said rock-shaft, and means for holding said lever down whereby said reel and blade have freedom of movement for passing over obstructions.

2. A stalk-breaker consisting of a reel and a frame therefor, means for regulating and holding said frame at different adjustments, a blade and means for attaching the same rigidly to said frame, and

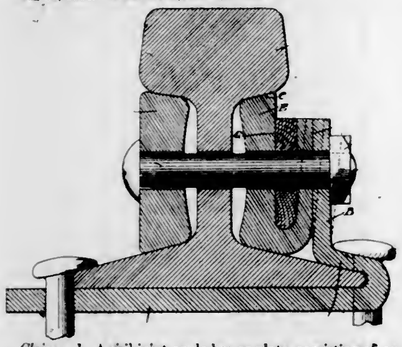
means for driving said reel, said blade being mounted just below said reel and having its forward edge curved upward thereby adapting the same to rise up and pass over obstructions.



3. In a stalk-breaker provided with a reel and adapted to be operated on the running-gear of a wagon; a frame mounted on said wagon and having a rock-shaft mounted therein, a reel-frame mounted in said frame and on said rock-shaft, a lever mounted on said rock-shaft and attached to said reel-frame, and means for holding the operating end of said lever at a fixed point so that it cannot rise upward but leaving the same free to move downward, said means consisting of an upright attached to the forward part of the wagon and a pin passing through said upright above the end of the lever, said upright having a plurality of holes therethrough for placing said pin at different adjustments.

4. In a stalk-breaker provided with a reel and a frame therefor adapted to be operated on the running-gear of a wagon; said frame being pivotally mounted, a frame for said reel-frame and means for mounting the forward end thereof on the forward part of the wagon at a position higher than the front wheels of the wagon whereby said wheels may pass under said frame in making short turns, and a lever for regulating and holding said reel-frame at different adjustments.

653,565. RAIL-JOINT. DANIEL O. WARD, Oak Park, Ill. Filed Jan. 26, 1900. Serial No. 2,879. (No model.)



Claim.—1. A rail-joint angle-bar or plate, consisting of an ordinary rigid supporting and splice bar or plate having a return-bend for the purposes specified.

2. A fish-plate, comprising a substantially-rigid plate having a relatively-thin spring-flange projecting therefrom, and a yielding filling between the flange and the plate.

3. A fish-plate, comprising a substantially-rigid plate having supporting upper and lower edges, and an integral relatively-thin spring-flange extending from the edge of the plate and bent back to form a substantially U-shaped seat between, substantially as described.

4. A fish-plate consisting of an integral piece of metal substantially U-shaped in cross-section having its free edges presented upward, in combination with a sole-plate or chair having a spring-flange positioned to engage the upper portion of the outer arm of the plate, and means for securing the parts in position.

5. The combination with a rail, of a chair, or sole-plate having a base portion extending below the rail and bent up and backward to form a clamp portion above the base of the rail and thence upward to form the spring or yielding portion, and in combination with a plate or bar interposed between the yielding portion and rail-web, and means for securing the parts together.

6. A rail-joint comprising the ends of two railroad-rails, a fish-plate or angle-bar, a chair, and means of securing the chair to the ties or underlying structure, in combination with the spring-arm fish-plate or angle-bar E, positioned between the vertical arm of the chair and the rail ends, and means of securing the parts together.

7. A rail-joint comprising a rail, a fish-plate or angle-bar positioned upon one side of the rail, a chair, and means for securing the chair to the ties, in combination with the resilient fish-plate or angle-bar E provided with the filler G, positioned between the vertical arm of the chair and the rail, and means for adjustably securing the parts together.

8. A rail-joint comprising a rail, a fish-plate or angle-bar D, a chair comprising a sole-plate or shoe *b*, having an upright arm provided with a curve at the juncture of the two, adapted to embrace a part of the rail flange or base, and having spike-notches *b*⁴ formed therein, and spikes H H, in combination with the U-shaped fish-plate E, positioned between the vertical arm of the chair and the rail, and bolts for securing the parts together.

9. A rail-joint comprising a rail, a fish-plate or angle-bar, a chair comprising a sole-plate or shoe *b*, and an upright arm provided with a curve at its juncture with the base of the rail adapted to embrace a part of the rail flange or base, and having spike-notches *b*⁴ formed therein, and spikes H H, in combination with the U-shaped fish-plate E, positioned between the vertical arm of the chair and the rail, a filler G, between the arms of the fish-plate E and bolts for securing the parts together.

10. A rail-joint, comprising the ends of two railroad-rails when placed in juxtaposition, in combination with a rigid supporting angle-bar or fish-plate on one side of the rail ends, a U or V shaped fish-plate or angle-bar E having one of its branches formed substantially rigid to constitute a support, a filler G, between the arms of the fish-plate or angle-bar E, on the opposite side of the rail ends, and bolts provided with nuts for securing the parts together.

11. A rail-joint, comprising the ends of two railroad-rails when placed in juxtaposition, in combination with a rigid supporting angle-bar or fish-plate D, on one side of the rail ends a U or V shaped fish-plate or angle-bar E having one of its branches formed substantially rigid to constitute a support, on the opposite side of the rail ends, and bolts provided with nuts for securing the parts together.

12. In a rail-joint, the combination with the adjacent ends of rails, of a fish-plate, a chair having an integral spring-flange extending above the plane of the rail-base, a substantially U-shaped spring member, located between the web of the rail and the chair extension, and means for securing the parts in position.

13. In a rail-joint, the combination with the adjacent ends of rails, of a chair having one of its edges turned up to form a spring-flange, a fish-plate between the flange and rail, a spring member located between the flange and fish-plate, and a yielding filling between the spring and fish-plate.

14. A fish-plate, consisting of a plate having its upper and lower edges inclined to fit the inclined under surface of the head, and the inclined upper surface of the base of the rail creating a wedging contact and a concaved rear or inner face, and an integral spring extension inclined directly back along the opposite face and spaced therefrom, throughout.

15. A rail-joint angle-bar or fish-plate, consisting of an ordinary bar or plate having a return-bend of a thickness less than that of the bar or plate for the purposes specified.

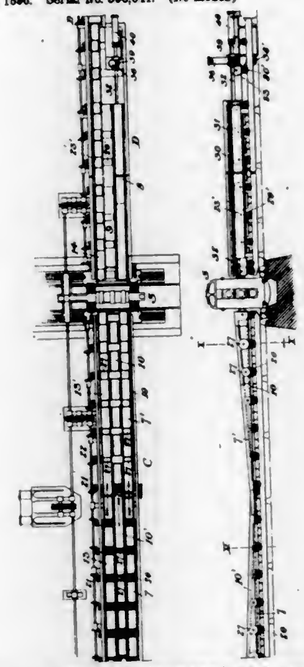
16. A fish-plate, consisting of a plate having its upper and lower edges inclined to fit the inclined under surface of the head, and the inclined upper surface of the base of the rail creating a wedging contact, and an integral spring extension inclined directly back along the opposite face and spaced therefrom throughout.

17. An angle splice-bar of the ordinary rigid type formed with a portion of its base upturned for the purposes specified.

18. In a rail-joint, the combination with adjacent ends of rails, of a sole-plate having a flange extending above the base of the rail, a fish or angle-bar plate having yielding return extension located between the same and the flange and securing-bolts, substantially as described.

19. In a rail-joint, the combination with adjacent ends of rails, of a sole-plate having a flange member extending up beyond the base of the rails, a fish or angle-bar plate member, a return-bend integral spring extension on one of the members, located between the same and the other member and bolts, substantially as described.

653,566. ROLLING-MILL. HENRY AIKEN, Pittsburg, Pa. Filed May 2, 1896. Serial No. 590,041. (No model.)



Claim.—1. A rolling-mill plant comprising stationary lines of feed mechanism set side by side, and three-high rolls at the opposite ends thereof, said lines of feed mechanism being inclined in opposite directions and set so as to extend respectively between the lower roll-pass at one end and the upper pass at the other end.

2. A rolling-mill plant comprising stationary lines of feed mechanism set side by side, and three-high rolls at the opposite ends thereof, said lines of feed mechanism being inclined in opposite directions and set so as to extend respectively between the lower roll-pass at one end and the upper pass at the other end, there being only a single set of rolls at each end of the lines, and the several passes being formed in said single set of rolls.

3. A rolling-mill plant, comprising sets of rolls arranged in tandem, *i. e.*, one in advance of the other and in the same line of feed, each roll of said sets having more than a single pass for the metal, and a feed-table between said sets of rolls in line with one or more but less than the whole number of passes, inclined from a lower pass of one set of rolls to a higher pass of the other set; substantially as described.

4. A rolling-mill plant comprising sets of rolls, set one in advance of the other, and a stationary inclined feed-table extending between a lower pass of one set of rolls and a higher level at the other set, means for shifting the metal laterally to a different level as it emerges from the rolls, and a second reversely-operating stationary line of feed mechanism, inclined in the opposite direction between the lower pass of one set of rolls and the upper pass of the next set.

5. A rolling-mill plant, comprising sets of rolls, set one in advance of the other, and a stationary inclined feed-table extending between a lower pass of one set of rolls and a higher level at the other set, means for shifting the metal laterally to a different level as it emerges from the rolls, a second reversely-operating stationary line of feed mechanism inclined in the opposite direction between the lower pass of one set of rolls and the upper pass of the next set, a second shifting device to transfer the metal again to a different level, and a third stationary line of feed mechanism also extending between the lower pass of the one set of rolls and the upper pass of the other set.

6. A rolling-mill plant, comprising sets of rolls, set one in advance of the other, and a stationary inclined feed-table extending in an upwardly-inclined direction from the lower pass of one set of rolls to the higher pass of the second set, a shifter set opposite to the last-named pass and adapted to shift the metal laterally to the level of the lower pass, and a second reversely-operating line of feed mechanism inclined in the opposite direction between said lower pass and the upper pass of the next set, said feed mechanism being adapted to convey the metal up the inclines.

7. A rolling-mill plant, comprising sets of rolls arranged in tandem, *i. e.*, one in advance of the other and in the same line of feed, each roll of said sets having more than a single pass for the metal, and a feed-table between said sets of rolls in line with one or more but less than the whole number of passes, extending from a lower pass of one set of rolls to a higher pass of the other set, said table being substantially horizontal at its receiving end and thence inclined upwardly; substantially as described.

8. A rolling-mill plant comprising two sets of three-high rolls, set one in advance of the other, and each having upper and lower roll-passes, stationary feed mechanism inclined in opposite directions and leading from the lower pass of one to the upper pass of the next, and means at the outer sides of the rolls for receiving the metal and transferring it laterally from the pass out of which it emerges to a pass at a different level.

9. A rolling-mill plant comprising stationary lines of feed mechanism arranged side by side, and rolls at the opposite ends thereof, said lines of feed mechanism being inclined in opposite directions between the rolls to carry the metal from one level to another.

10. A rolling-mill plant, comprising stationary lines of feed-rollers arranged side by side, and rolls at the opposite ends thereof, said lines of feed-rollers being inclined in opposite directions and set so as to extend respectively between the lower roll-pass at one end and the upper pass at the other end.

11. A rolling-mill plant comprising sets of rolls arranged in tandem, *i. e.*, one in advance of the other and in the same line of feed, and inclined feed-tables leading respectively in opposite directions from a lower pass of one set of rolls to a higher pass of the other set.

12. A rolling-mill plant comprising sets of rolls arranged in tandem, one in advance of the other and revolving in opposite directions, and feed mechanism extending between the rolls and adapted, respectively, to convey the metal from the lower pass of one set to the upper pass of the next set and vice versa.

13. In a rolling-mill, a rotatory shifter, comprising a receiving-plate, a flat lateral shelf or side plate extending at about a right angle to the receiving-plate, and mechanism for rotating the shifter on its longitudinal axis through an arc of about one hundred and twenty degrees, whereby the metal, on the rotation of the shifter, is first upturned against said shelf or side plate and is then discharged therefrom in inverted position to a lower level.

14. Feed-table apparatus comprising a lower line of feed mechanism, and a second line of feed mechanism consisting of a series of rollers extending in the same direction and driven frictionally from the mechanism of the lower line.

15. Feed-table apparatus for rolling-mills, comprising a series of rollers, and a second series of shorter rollers set parallel with the rollers of the first-named series at a different level and driven thereby in the opposite direction.

16. Feed-table apparatus comprising a lower table or line of feed mechanism, part of whose surface is exposed to carry the metal thereon, and a second line of feed mechanism consisting of frictionally-driven rollers, whose length is less than the width of the lower table.

17. Feed-table apparatus for rolling-mills, comprising a series of rollers, having a portion of their surfaces exposed to constitute one line of feed mechanism, and a second series of rollers set upon the same and of progressively-increasing diameters so as to constitute an inclined roller-surface.

18. Feed-table apparatus for rolling-mills, comprising a series of rollers having a portion of their surfaces exposed to constitute one line of feed mechanism, and a second series of rollers set upon the same and free to move vertically in their bearings into frictional contact therewith.

19. Feed-table apparatus for rolling-mills, comprising a series of rollers, and a second series of rollers parallel with the rollers of the first-named series, journaled on central shafts or axes removably set in side plates or supports, and bearing frictionally upon the first-named series of rollers.

20. The combination with rolls having upper and lower passes, of feed-table apparatus comprising at least three parallel lines of feed mechanism arranged in step fashion relatively to each other and in

different vertical planes, two of the lines extending to one of the roll-passes and the other line to the other roll-pass.

21. A rolling-mill, having a shifter adapted to receive the metal as it emerges from the rolls, transfer it laterally to feed mechanism at a different level and to reverse it in the transfer, and means for imparting an initial longitudinal motion to the shifter.

22. The metal-shifter, comprising a trough set on a rotary shaft, by which it is rotatory through a partial revolution, and means for moving the shaft lengthwise.

23. The metal-shifter, comprising a trough set on a rotary shaft, by which it is rotatory through a partial revolution, a pinion on the shaft, and a rack meshing therewith and connected with the plungers of two oppositely-directed cylinders, one of which is of less cross-section than the other and is adapted to maintain the trough in upright position.

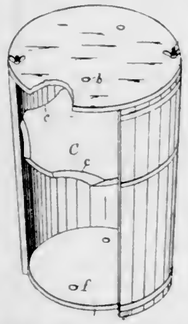
24. A shifter set opposite to the rolls from which it receives the metal, and means for moving the shifter lengthwise to withdraw the metal from the rolls.

25. A shifter set opposite to the rolls from which it receives the metal, means for moving the shifter lengthwise to withdraw the metal from the rolls, and means for tilting the shifter laterally.

26. A shifter, having a rotatory shaft, and a cylinder into which the shaft extends and by which it may be moved lengthwise.

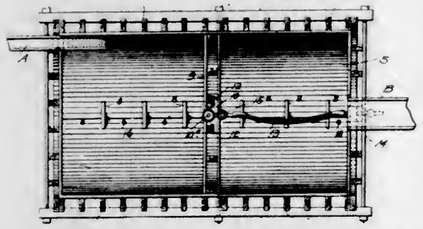
27. The combination with rolls having upper and lower passes, of feed-table apparatus comprising at least three lines of rollers arranged in step fashion relatively to each other and in different vertical planes, two of said lines extending to one of the roll-passes, and the other line to the other roll-pass, said feed-table apparatus being substantially open above the lines of rollers to permit removal of metal.

653,567. PACKAGE FOR SHIPPING LOBSTERS, &c. FRANK W. COLLINS, Rockland, Me. Filed Mar. 9, 1900. Serial No. 7,966. (No model.)



Claim.—The herein-described package for shipping lobsters, &c., consisting of a vessel flaring toward the top, a removable cover therefor and a diaphragm fitting the interior of said vessel and held in place by the inclined sides thereof, said diaphragm dividing the vessel into an upper and a lower chamber and having recesses formed in its edges to admit the drip and cold air to the lower chamber.

653,568. SIZER AND CLASSIFIER. JOSEPH O. DIMMICK, Denver, Colo. Filed Jan. 23, 1900. Serial No. 2,532. (No model.)



Claim.—1. A sizer or classifier comprising a tank substantially V-shaped in cross-section, a central transverse partition dividing said tank into communicating portions, a supply-conduit for delivering pulp into one end of said tank, a series of compartments at the bottom of said tank between its supply-conduit and said central partition, an outlet leading from each of said compartments, said partition having an opening therethrough the bottom of which is in substantially the same horizontal plane as the tops of said compartments, and an overflow-spout leading from the top of the tank at the end opposite the supply-conduit, substantially as set forth.

2. In a sizer or classifier, the combination of a substantially V-shaped tank, a central transverse partition dividing said tank into communicating portions, a plurality of compartments at the bottom of each of said communicating portions, the communication between said portions being effected through said central partition by an opening the bottom of which is in approximately the same horizontal plane as the tops of said compartments, outlets leading from said compartments, a supply-conduit for delivering pulp into said tank, and an overflow-spout leading from the top of the tank at the end opposite the said supply-conduit, substantially as described.

3. In a sizer or classifier, the combination of a tank, a central transverse partition dividing said tank into communicating portions, a plurality of compartments at the bottom of said portions, the communication between said portions being effected through said central partition by an opening the bottom of which is in the same horizontal plane as the tops of said compartments, and a vertically-sliding gate forming the top of said opening whereby its size may be regulated without varying the horizontal alinement of its bottom with the tops of the said compartments, substantially as described.

4. In a sizer or classifier, the combination of a tank, a central vertical partition dividing said tank into communicating portions, a pulp-supplying conduit and an overflow-spout communicating with the tank at opposite sides of the partition, said partition having an opening therethrough, and a discharge-pipe leading from the opening in said partition to the exterior of the tank, substantially as set forth.

5. In a sizer or classifier, the combination of a tank divided into two parts by a central vertical partition, a pulp-supplying conduit communicating with the tank on one side of said partition and an overflow-spout leading from the tank at the other side of the partition, said partition having an opening therethrough near its bottom, and a second opening above the first, and a pipe leading from said second opening to a point exterior to the tank, substantially as described.

6. In a sizer or classifier, the combination of a tank, a central partition therein, a pulp-supplying conduit, a spout for permitting an overflow from the end of the tank opposite said supplying-conduit, said partition having an opening through it, a gate cooperating with said opening, a pipe leading from a second opening in said partition to the exterior of the tank, and a series of outlets leading from the bottom of said tank, substantially as described.

7. In a sizer or classifier the combination of a tank, a central partition therein, a pulp-supplying conduit communicating therewith, a series of outlets at the bottom of said tank, said partition having an opening near its bottom and another near its center, and a pipe leading from said second opening to the exterior of the tank substantially as and for the purpose described.

8. In a sizer or classifier, a tank having a series of compartments in the bottom thereof, a transverse partition extending across said tank having a passage therethrough above the tops of the several compartments, a gate for regulating said passage and a conduit extending from an opening in said gate to the exterior of the tank, substantially as described.

9. A sizer or classifier, comprising a tank substantially V-shaped in cross-section, a series of compartments formed at the bottom of the tank, outlets leading from said compartments, valves for regulating said outlets, a central partition separating said tank into two divisions, a pulp-supplying conduit communicating with one division, a discharge-spout for the overflow from the second division, said partition having an opening, the bottom of which is in horizontal alinement with the tops of said series of compartments, substantially as described.

10. A sizer or classifier comprising a tank substantially V-shaped, a series of compartments at the bottom of said tank, outlets leading from said compartments, means for regulating the size of said outlets, a central partition extending across said tank, a pulp-supplying conduit communicating with one end of said tank, a discharge-spout located at the other end thereof, said partition having an opening therethrough, a gate for regulating the size of said opening, and a discharge-pipe connecting an opening in said gate with the exterior of the tank, substantially as and for the purposes specified.

653,569. BELT-DRESSING. LEONARD F. DUNCAN, Troy, Ohio. Filed Mar. 29, 1900. Serial No. 10,694. (No specimens.)

Claim.—The composition herein described, prepared as herein set forth from tallow, lard, sugar, salt, rosin and water, combined in the proportions stated, for the purpose specified

653,570. AIR-PUMP. GEORGE W. EDDY, Waterbury, Conn., assignor to The Scovill Manufacturing Company, same place. Filed May 8, 1899. Serial No. 715,992. (No model.)



Claim.—1. An air-pump, comprising essentially a pump barrel or cylinder, a cap for closing the lower end of the barrel or cylinder, having an exit-chamber, a stirrup rigidly attached to the exit-chamber of the cap, and a rigid pipe or tube rigidly projecting from said chamber at right angles to the stirrup and in line with the length of the foot of the operator when using the pump, and having a downwardly-extended spout or coupling, and an elastic washer in the end of said spout or coupling which is adapted to engage the valve-nipple of a tire or the inlet to any other object to be inflated, substantially as described.

2. The combination in an air-pump, of a pump barrel or cylinder, a cap for closing the lower end thereof, having an exit-chamber, a stirrup rigidly attached to the exit-chamber of the cap, and a rigid pipe or tube, rigidly projecting from said chamber at right angles to the stirrup and in line with the length of the foot of the operator when inserted in the stirrup, a spout extending downwardly from said tube and containing an elastic washer for engaging the object to be inflated, and a perforated screw-cap applied to said spout and adapted to permit ready access to and removal of said washer, substantially as described.

3. An air-pump, having a barrel or body, a cap for closing the discharge end thereof, a rigid tube projecting laterally from said cap, an application-spout for connection with an object to be inflated, a stirrup, and a rivet for uniting the cap and stirrup and with which the inner end of the tube engages, substantially as described.

4. The combination in an air-pump, of a pump barrel or cylinder, a cap applied to the end of said barrel or cylinder, a stirrup or foot-rest, a rivet passed transversely through the cap and stirrup and rigidly uniting them, a rigid laterally-projecting pipe or tube having its inner end rigidly connected with said rivet and its outer end provided with a downwardly-extended spout or coupling, and an elastic washer in the end of said spout or coupling adapted to engage the object to be inflated, substantially as described.

5. An air-pump, having a body, a cap, a stirrup applied to said cap, an air-discharge device comprising a rigid tube inserted in said cap, and a rivet passed through the stirrup ends and the cap and tube and rigidly uniting them, substantially as described.

6. An air-pump, having a stirrup provided with a foothold; the opposite edges of which are curved in different directions, substantially as described.

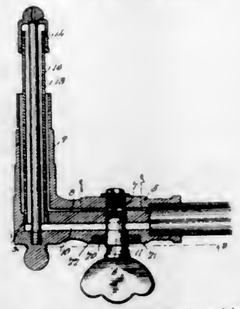
7. An air-pump, having a stirrup, the tread portion of which has one edge turned downwardly and the other edge turned upwardly, substantially as described.

8. An air-pump, having a laterally-projecting rigid air-discharge device adapted for direct connection to the object to be inflated, and a stirrup having one edge turned downwardly to prevent tipping over of the pump in that direction, substantially as described.

9. An air-pump, having a laterally-projecting rigid air-discharge device adapted for direct connection with the object to be inflated, and a stirrup having an attached foot-plate, one edge of which is turned down and the other turned up, substantially as described

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653,571. GAS-BURNER. JOHN P. FARMER, Portland, Oreg. Filed July 17, 1899. Serial No. 724,126. (No model.)



Claim.—1. In a gas-burner, the combination with a casing having a tubular extension, of a burner-tube arranged concentric with the extension and formed of thermostatic material, a valve-seat carried by the burner-tube, a valve for said seat, a gas-passage through the casing and communicating with the burner-tube, a separate gas-passage formed through the casing and communicating with the interspace between the burner-tube and the extension of the casing, a turning plug in the casing and having separate passages adapted to communicate with the passages of the casing, the passages of the plug lying at an angle to each other, whereby one of said passages may lie out of register with its casing-passage, while the other plug-passage is in register with its casing-passage, and a spring adapted for initial engagement by the burner-plug when the burner-tube passage is opened and to be compressed when the plug is moved to open the passage to the interspace, whereby said spring will permit the plug to lie with the burner-tube open and will return the plug to close the passage to the interspace when the plug is released.

2. In a gas-burner, the combination with a main burner and a pilot-burner having separate gas-passages leading thereto, of a turn-plug having passages adapted to register with their respective first-named passages, the passages of the plug lying at an angle to each other, whereby one of said plug-passages may lie out of register with its burner-passage while the other plug-passage is in register with its respective burner-passage, and whereby both plug-passages may communicate with the burner-passages simultaneously, and a spring adapted for initial engagement by the plug when one of its passages is in register with its burner-passage and to be compressed when the plug is rotated to cause communication of the plug-passages simultaneously with the burner-passages, whereby the plug will be returned to register one of the passages with its burner-passage and may lie in this position.

653,572. ELECTRIC-ARC LAMP. JOHN A. FLEMING, London, England. Filed Dec. 23, 1899. Serial No. 741,402. (No model.)

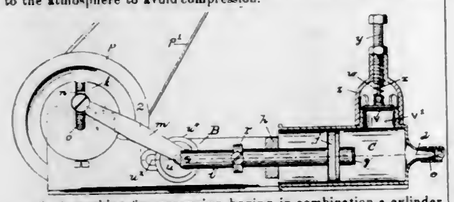


Claim.—An electric-arc lamp employing two carbons one of which is provided with two longitudinal bores separated from each other to leave an intermediate carbon-wall, and a core or rod of refractory material freely arranged in each of said bores and presenting themselves to the opposite carbon in such manner that the electric arc will be formed between said cores or rods and thus heat them to incandescence, substantially as described.

653,573. APPARATUS FOR MASSAGING BY VACUUM. HENRY F. GAREY, Baltimore, Md. Filed Nov. 21, 1899. Serial No. 737,735. (No model.)

Claim.—1. A machine for massaging having in combination a cylinder and piston to produce a vacuum or suction; a tube leading from the cylinder and having at its free end a cup adapted to be applied to some part of the human body; and a valve mechanism which, when the piston has nearly completed its stroke in the direction to create vacuum or suction, will suddenly admit air to break such vacuum or suction, as set forth.

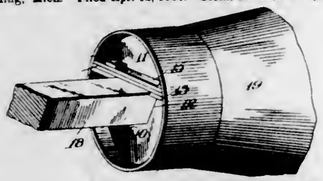
2. A machine for massaging having in combination a cylinder and piston to produce a vacuum or suction; a tube leading from the cylinder and having at its free end a cup adapted to be applied to some part of the human body; and valve mechanism which admits air to the cylinder to suddenly break the vacuum or suction, and which on the reverse stroke allows the air in the cylinder to escape to the atmosphere to avoid compression.



3. A machine for massaging having in combination a cylinder and piston to produce a vacuum or suction; a tube leading from the cylinder and having at its free end a cup adapted to be applied to some part of the human body: a valve carried by the piston and which is opened to break the vacuum when the piston has nearly completed its stroke in one direction; and a valve on the cylinder which opens when the piston moves in the opposite direction to allow air to escape to the atmosphere and avoid compression through the said tube and cup.

4. A machine for massaging having in combination a cylinder and piston to produce a vacuum or suction; a tube leading from the cylinder and having at its free end an oval cup with concave edges on the long sides and adapted to fit the eye; a valve which is opened to break the vacuum when the piston has nearly completed its stroke; and a valve which opens when the piston moves toward the said tube and cup to avoid compressing air.

653,574. MUD-GUARD FOR VEHICLES. DALMER C. GROVER, Reading, Mich. Filed Apr. 12, 1900. Serial No. 12,628. (No model.)



Claim.—1. A device of the class described, comprising two sections adapted to embrace an axle, one of said sections having a continuous clamping-flange which rests upon and projects beyond the edges of the axle, and means for fastening the two sections together, said means engaging the projecting portions of the clamping-flange, substantially as described.

2. A device of the class described, comprising two sections adapted to embrace an axle, one of said sections being provided with a clamping-flange adapted to rest against the axle and present a broad bearing-surface to the same, said flange being also provided with scraping means engaging the hub-band, and means for fastening the two sections together, substantially as described.

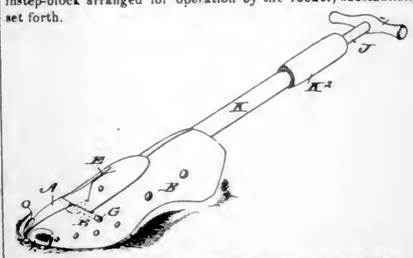
3. A device of the class described, comprising two sections adapted to embrace an axle, one of said sections having a continuous clamping-flange which rests upon the axle and projects beyond the same, forming a scraper for the hub-band, the other section being provided with fastening-ears, and fastening-bolts connecting said flange and ears, substantially as described

4. A device of the class described, comprising two sections adapted to embrace an axle, one of said sections having fastening-ears, the other having a continuous clamping-flange, a washer interposed between the flange and the ears, and coextensive with the former so as to bear against the axle, and bolts connecting the ears and flange, substantially as described.

653,575. BOOT-TREE. MARY J. HALL, Aspen, Colo., assignor of two-thirds to John Armitage Hall and Louis R. Fechtig, same place. Filed Dec. 6, 1899. Serial No. 739,393. (No model.)

Claim.—1. A tree comprising the body-section, the instep-block, the rocker pivoted between its ends and having an arm engaging said block and an arm for engagement by the operating device, and such device engaging said arm substantially as set forth.

2. In a tree, substantially as described, the combination of the body-sections, the screw-shaft provided with means for spreading such sections, the bearing-piece having a threaded bearing for said screw-shaft, the rocker supported on said bearing-piece and provided with an arm for operating the instep-block and with an arm for engagement by the screw-sleeve, the screw-sleeve and its bearing, and the instep-block arranged for operation by the rocker, substantially as set forth.



3. In a tree, the combination of the body-sections, the screw-shaft arranged to spread said sections, the instep-block, the bearing-piece having a threaded bearing for the screw-shaft, the rocker supported on the bearing-piece and arranged to operate the instep-block, and the screw-sleeve arranged to engage and operate the rocker, substantially as set forth.

4. A tree, comprising the sections, the leaf-hinge connecting the said sections, and the spring for closing said sections arranged adjacent to and held by the hinge which connects said sections, substantially as set forth.

5. The combination in a tree, of the body-sections the hinge connecting the rear ends of said sections, and the actuating-spring composed of a plate extending between the rear ends of the sections, substantially as set forth.

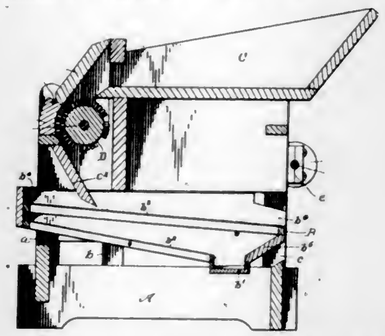
6. In a tree substantially as described, the combination of the body-sections provided in their inner faces with bearing-openings, the instep-block having at its front end a shaft whose ends fit and journal in said openings, and means for operating said instep-block, substantially as set forth.

7. A tree provided with the body-sections and means for operating the same and having said sections provided with the corrugated plates by which to prevent slipping, substantially as described.

8. The combination, in a tree, of the body-sections provided in their inner faces with openings for the bearing-pieces for the shaft and sleeve and for the pivot-shaft of the instep-block, the instep-block having its shaft held in the sections, the bearing-pieces for the shaft and sleeve having their trunnions held in their respective openings, the rocker supported on the bearing-piece for the screw-shaft and having means for operating the instep-block, the screw-shaft having means for spreading the body-sections, the spring for retracting said sections, and the threaded sleeve arranged to operate the rocker, substantially as shown and described.

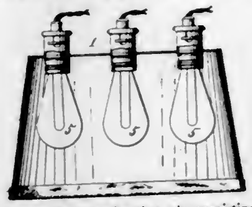
9. In a tree substantially as described the combination of the body-sections, the screw for spreading the same, the bearing-piece for such screw-shaft, the instep-block, the rocker having an opening for the said screw-shaft and openings fitting over the bearing-piece therefor, and means for operating such rocker substantially as set forth.

653,576. TOBACCO-GRANULATOR. ANDY B. HARRELL, Pilot Mountain, N. C. Filed July 20, 1897. Serial No. 645,274. (No model.)



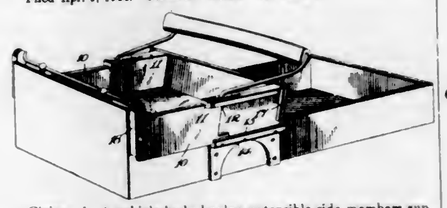
Claim.—In a tobacco-granulator, the combination with the frame, the shredder journaled in the sides thereof and the toothed concave member, a locking-groove formed in its upper edge, of a locking-rod C^3 having threads on one end, said rod extending from side to side of the frame and seated in the groove on the concave member, substantially as and for the purpose specified.

653,577. THERMO-ELECTRIC-LIGHT CUP. CLARENCE R. LA BIER, Terre Haute, Ind., assignor of one-half to Charles H. Hilton, same place. Filed Feb. 5, 1900. Serial No. 4,053. (No model.)



Claim.—A device for superheating air consisting of a cup or jacket, having a number of incandescent-electric-light bulbs inclosed therein, said cup or jacket having a curved flaring mouth and a flexible binding of non-conducting material surrounding said mouth, substantially as described.

653,578. VEHICLE-BODY. HARRY S. LEE, Tecumseh, Mich. Filed Apr. 9, 1900. Serial No. 12,192. (No model.)



Claim.—1. A vehicle-body having extensible side members supported upon the sides of the seat below the seat-arms, and adapted to be projected in advance of the seat, substantially as described.

2. A vehicle-body having extensible side wings slidably supported upon the sides of the seat below the seat-arms, and arranged to close the openings between the front edge of the seat and the dashboard, substantially as described.

3. In a vehicle-body, the combination with the side of the seat having oppositely-arranged parallel grooves, of an extensible side wing slidably mounted in said grooves and arranged to close the opening between the front of the seat and the dashboard, substantially as described.

4. In a vehicle-body, the combination with the side of the seat, of a horizontally-arranged arm having a groove in its under side, a horizontally arranged cleat fastened to the body substantially parallel to the arm and having a groove in its upper surface, an extensible wing slidably mounted in said grooves, and a guide-arm carried by said wing and arranged to engage the top edge of the vehicle-box, substantially as described.

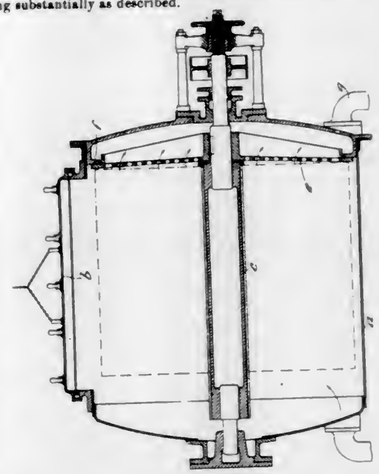
653,579. METHOD OF COLORING PHOTOGRAPHS. CHARLES A. LOWE, Bloomington, Ill. Filed Jan. 3, 1900. Serial No. 270. (Specimens.)



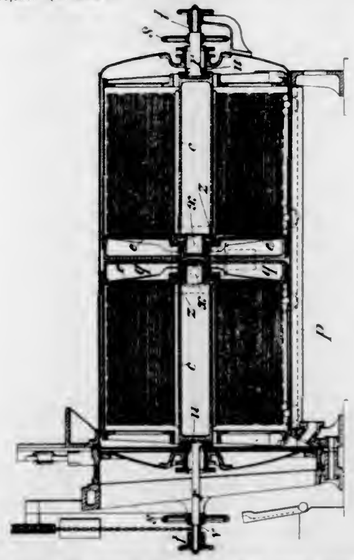
Claim.—The process of producing colored portraits which consists in taking a piece of transparent celluloid having a smooth and roughened surface, coating the roughened surface with a gelatin emulsion, then taking a solar print or photograph on said celluloid piece and developing it, then mounting the portrait in a stretcher and applying oil colors or paint of the required tints to the roughened surface, and then applying an opaque backing to said roughened side of the portrait, substantially as described.

653,580. APPARATUS FOR DYEING. WILLIAM MATHER, Manchester, England. Original application filed Aug. 28, 1899, Serial No. 728,783. Divided and this application filed Apr. 2, 1900. Serial No 11,164. (No model.)

Claim.—For treating webs of fabric with liquids, vapors or gases apparatus comprising a vessel divided by a perforated partition into two compartments, a mandrel carrying a roll of fabric mounted to revolve and slide longitudinally in this vessel, an opening on the upper part of the vessel provided with a tightly-closing door and pipes communicating with the two compartments, constructed and operating substantially as described.



653,581. APPARATUS FOR DYEING. WILLIAM MATHER, Manchester, England. Original application filed Aug. 28, 1899, Serial No. 728,783. Divided and this application filed Apr. 2, 1900. Serial No. 11,165. (No model.)



Claim.—For treating webs of fabric with liquids, vapors or gases, a closed chamber or keir adapted to receive trucks running on rails in the chamber, a pair of trucks each having bearings for a horizontal mandrel and an end chamber covered by a perforated plate and having a lateral opening, means for turning the mandrels and moving them lengthwise, pipes communicating with the interior of the keir and also with the end compartments of the trucks, substantially as described.

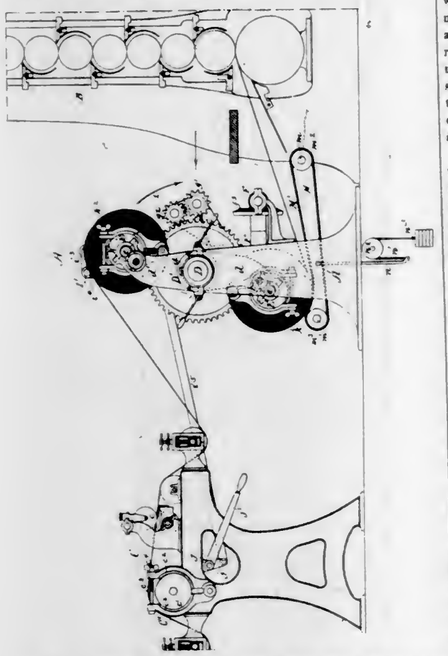
653,582. CLOTHES-SPRINKLER. FRANK W. MERRITT, New Brunswick, N. J. Filed Nov. 8, 1899. Serial No. 736,264. (No model.)

Claim.—1. A clothes-sprinkler, consisting of a cylindrical body composed of two sections, the upper section having a single central opening, and the lower section a series of perforations, the handle formed of a single piece bent centrally upon itself, and having its ends projecting through the side of one of the sections, said inwardly-projecting ends being curved upwardly to rest adjacent to the top of the section to which it is secured, substantially as described.



2. In a clothes-sprinkler, the combination with the cylindrical body of the handle formed of tubular material, the ends thereof projecting into the cylindrical body, said inwardly-projecting ends being bent to rest adjacent to the top of the body and to which it is secured, substantially as shown and described.

653,588. REEL FOR PAPER-MAKING MACHINES. JOHN W. MOORE and JOSEPH A. WHITE, Philadelphia, Pa. Filed Feb. 27, 1899. Serial No. 707,040. (No model.)



Claim.—1. The combination in a reel for paper-making machines, of supports, a carrier, a roll-shaft on the carrier, mechanism for driving the said roll-shaft, and mechanism for turning the carrier, with a feed-aprou having a portion of its surface in contact with the roll to feed the paper thereto, substantially as described.

2. The combination in a reel for paper-making machines, of the standards, a shaft, hubs on said shaft having two arms, a roll-shaft carried by each arm, mechanism for driving the said roll-shafts independently, mechanism for turning the main shaft so as to reverse the rolls, and a feed-apron having a portion of its surface in contact with the roll on which the paper is to be reeled, substantially as described.

3. The combination in a reel for paper-making machines, of the shaft on which the paper is to be reeled, means for turning said shaft, an endless feed-belt, a frame carrying said belt, with means for keeping a portion of the belt in contact with the paper as it is reeled upon the shaft, substantially as described.

4. The combination of a reel-carrier, reels thereon, means for turning the reel-carrier to reverse the position of the reels, drums on the reel-shafts on which the paper is to be wound, means for driving said reel-shafts, clutch mechanism for throwing either one or the other of the reels out of engagement with the main driving mechanism, and friction mechanism for driving the reels when thus disengaged whereby the paper may be unrolled therefrom, substantially as described.

5. The combination in a reel of the main shaft, the two hubs thereon having arms, two or more reel-shafts carried by the arms, mechanism for turning the main shaft and independent mechanism for turning the reels, a friction-wheel on each reel-shaft, pivoted friction-levers adapted to the wheels and independent mechanism for driving the reel-shafts to unwind the paper, substantially as described.

6. The combination of a main shaft, arms projecting from the main shaft, a reel-shaft mounted in said arms on which the paper is to be reeled, means for revolving said reel-shaft, an adjusting-screw adapted to one of the arms and projecting through a sleeve on the shaft so as to longitudinally adjust said shaft in its bearings, a friction-wheel on the shaft, friction-levers adapted to the wheel and loosely mounted on a stud projecting from the arm so that the friction mechanism will move with the shaft when it is adjusted, substantially as described.

7. The combination of the standards, a main shaft supported on said standards having two hubs, two or more arms projecting from each hub and carrying reels on which the paper is to be reeled, a driven shaft, a worm-shaft connected to said driven shaft, a worm-wheel on the main shaft with which the worm engages so that the main shaft can be turned slowly and locked in its adjusted position, a gear-wheel loose on the main shaft, short shafts in line with the reel-shafts, pinions thereon meshing with the loose gear-wheel on the main shaft, clutch mechanism between the short shafts and the reel-shafts, and independent means for driving said loose gear-wheel so that the speed of the reels will equal the speed of the paper delivered thereto whereby the even wrapping of the latter is facilitated, substantially as described.

8. The combination in a paper-reeling machine, of a main shaft, two or more reel-shafts carried by said main shaft, means for rotating the main shaft and independent means for rotating the reel-shafts, two pivoted arms, rollers thereon, a feed-belt mounted on the rollers and adapted to be traversed by frictional contact with the driven reel or the paper thereon and means for keeping said feed-belt in contact with the paper on the reel, substantially as described.

9. The combination of a stand of calendering-rolls, a reel for the paper, a feed belt or apron mounted between one of said rolls and the reel, a carrier for said belt pivoted at the frame of the calendering-rolls, and means for raising the opposite end of said carrier to keep the feed-belt in contact with the paper as it is reeled, substantially as described.

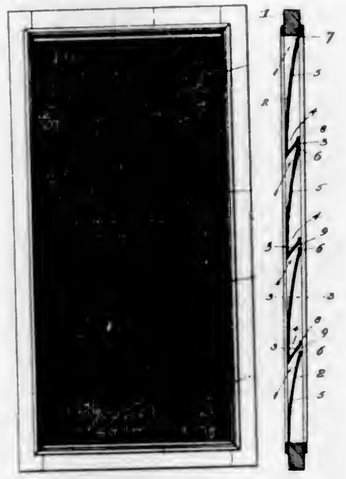
10. The combination in a reel, of a reel-shaft on which the paper is reeled, a friction-wheel on said reel-shaft, a lever, a driven shaft carried by said lever and having a friction-wheel engaging with the friction-wheel on the reel-shaft, with means for moving the said lever to throw the friction-wheel into and out of contact with the friction-wheel on the reel-shaft, substantially as described.

11. The combination of a main shaft, two reel-shafts carried thereby, means for turning the main shaft so as to shift the reel-shafts and independent means for driving the reel-shafts to wind the paper thereon, friction-wheels on each reel-shaft, a lever, a driving-shaft carried thereby, said shaft having a friction-wheel adapted to one of the reel friction-wheels, a slitting-machine through which the paper is carried from the reel, a rock-shaft on the said slitting-machine and having an operating-handle on one end, an arm on the opposite end, a rod connecting said arm with the arm of a lever carrying the friction-wheel so that said friction-wheel can be thrown into and out of gear, substantially as described.

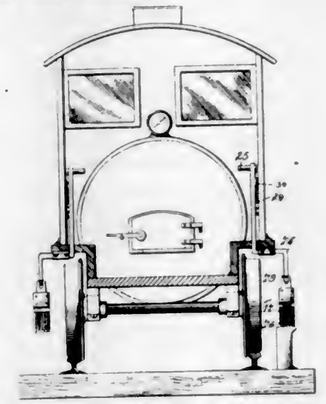
12. The combination in a reel for paper-making machines, of a standard, a rotary reel-frame having two arms, reels carried by said arms opposite each other, and gearing by which the reels are driven in the same direction, the reel on which the paper is being wrapped being below the center of the reel-frame so that when said frame is turned, the filled reel will be moved away from the paper-supply and the empty reel will take a position at a point below the center of the frame with the paper extending from the filled reel partially surrounding the surface of the empty reel so that it can be readily rolled upon the same after it has been separated from the paper carried by the full reel, substantially as described.

653,584. FLY-SCREEN. JOSEPH MUELLER, St. Louis, Mo. Filed July 3, 1899. Serial No. 722,743. (No model.)

Claim.—In a fly-screen, a rectangular frame, a plurality of horizontal rods 6 secured to the said frame near the outer side thereof, a plurality of horizontal rods 8 secured to the said frame in vertical alinement with the rods 6, a plurality of reticulated sections arranged in said frame, which sections at their upper ends are attached to the said rods 6, and which slope inwardly toward their bottom, whence they turn upwardly and outwardly forming V-shaped pockets the lower points of which are below the rod 6 of the next lower section and the upper ends of which are secured to the said rods 8, substantially as specified.



653,585. CONTACT-BRUSH. SAMUEL L. NEELY, Pierron, Ill., assignor of one-half to Henry F. Knebel, same place. Filed Oct. 23, 1899. Serial No. 734,519. (No model.)



Claim.—1. A contact-brush comprising a head including two elements, a plurality of wires clamped between the elements, connections between the wires, and elastic plates lying between the elements and the wires.

2. A contact-brush comprising two elements having recesses in their inner faces rubber plates disposed in the recesses, wires disposed between the plates, and electrical connections between the wires.

3. A contact-brush comprising a head including two elements having recessed inner faces, a plurality of wires disposed in the recess of one element and having their inner ends engaged with said elements, cross-wires disposed between the first-named wires and the element in the recess of which they lie, rubber plates lying at opposite sides of the first-named wires and in recesses in the elements, and an elastic plate clamped between the elements.

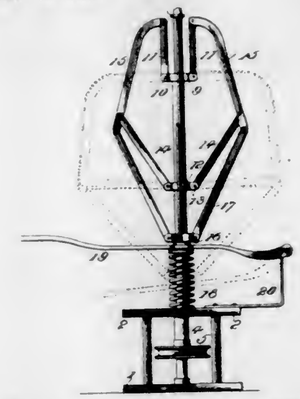
4. A contact-brush comprising a head including two elements, a plurality of wires having their rear ends engaged with one of the elements, cross-wires lying between the first-named wires and the elements with which they are engaged, and staples straddling the first-named wires and the cross-wires.

5. A contact-brush comprising a head including two elements having recessed inner faces, a plurality of wires disposed in the recesses of one element and having their inner ends engaged with said element, cross-wires disposed between the first-named wires and the element, in the recesses of which they lie, and means for holding the elements together.

6. A contact-brush comprising a head including two elements having recessed inner faces, a plurality of wires disposed in the recesses of one element and having their inner ends engaged with said element, cross-wires disposed between the first-named wires and the element in the recesses of which they lie, means for holding the elements together, and an elastic plate clamped between the elements.

7. A contact-brush comprising a head including two elements, a plurality of wires disposed between the elements, cross-wires in electrical contact with the first-named wires, and securing means passed over the cross-wires and the adjacent first-named wires and engaged with the elements of the head.

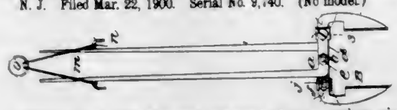
653,586. MACHINE FOR SPREADING BLOWN GLASSWARE. ASA G. NEVILLE, Wellsburg, W. Va. Filed Dec. 5, 1899. Serial No. 739,296. (No model.)



Claim.—1. In apparatus for shaping blown glassware, a vertical rotary shaft, spaced collars applied to said shaft, upwardly-convergent shapers having their upper ends incurved, upper links normally parallel and pivotally connecting the curved extremities of the shapers with the upper collar, lower links upwardly divergent and longer than the upper links and pivotally connecting the lower ends of the shapers with the lower collar, a runner coaxially disposed with reference to the said shaft, other upwardly-divergent links connecting said runner with the lower or divergent ends of the shapers, substantially as set forth.

2. In glass-finishing apparatus of the character described, a vertically-disposed shaft, spaced collars having adjustable connection with said shaft, means for securing said collars positively to the shaft in an adjusted position, shapers grouped about the shaft, links pivotally connecting, respectively, opposite ends of the shapers with the said spaced collars, a runner slidably mounted upon the shaft, links pivotally connecting the runner with the divergent ends of the shapers, a spring exerting a force against the runner to hold the parts in a normal position, means for imparting a rotary movement to the shaft, and a foot-lever for connection with the said runner, as and for the purpose set forth.

653,587. CRUCIBLE-TONGS. WILLIAM C. NEWELL, Jersey City, N. J. Filed Mar. 22, 1900. Serial No. 9,740. (No model.)



Claims.—1. A pair of tongs composed of two members pivotally united together, each member having two parts, a rein and an engaging portion, one of said parts having lateral flanges engaging the other part, and means for uniting both of said parts at the points of location of the flanges, substantially as set forth.

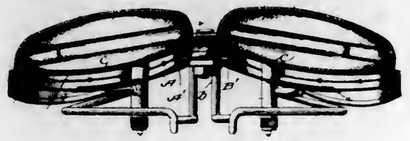
2. A pair of tongs composed of two reins pivotally united together, each rein having an angular portion formed with lateral flanges, prongs having arms fitted between said lateral flanges, and means for binding said arms against said angular portions, substantially as set forth.

3. A pair of tongs consisting of two reins pivotally united and having angular portions formed with upper and lower lateral flanges and slots intermediate of said flanges, prongs having angular arms located between said lateral flanges, and nutted bolts passed through

openings in said arms and the slots in said angular portions, substantially as set forth.

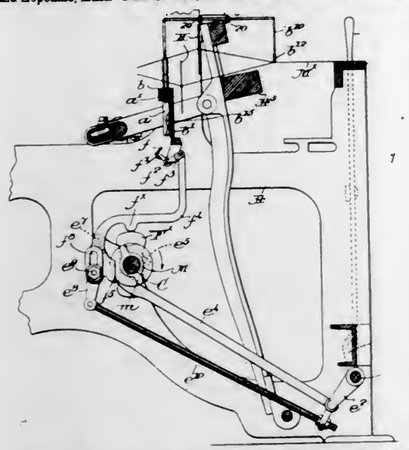
4. A pair of tongs composed of two reins having hooks thereon near their outer ends, and also having right-angular portions pivotally connected together, said angular portions having, on opposite sides, laterally-extended flanges, prongs having arms removably secured between said flanges, a clamp or coupling having links for engaging the hooks on said reins, and a ring for connecting said links, substantially as set forth.

653,588. BICYCLE-SADDLE. HATTIE M. NORMAN, Sandusky, Ohio; Mary N. Evans administratrix of said Hattie M. Norman, deceased. Filed Oct. 14, 1899. Serial No. 733,576. (No model.)



Claim.—In a bicycle-saddle of the character described, the combination of a base-plate provided with a depressed seat having a small opening therein, with a pad consisting of a plate or holder of the shape of the seat or depression and provided with an opening adapted to register with the opening in the plate, and having its edges turned to form downwardly-projecting flanges, said flanges being provided with suitable holes or openings, a leather topping lined with canvas and rigidly secured to said plate or holder on one side thereof and adapted to be laced to the other edge with suitable lacing, and an air-bag inclosed between the topping and the plate, and means substantially as described for removably holding said pad in position in the seat of the base-plate, as set forth.

658,589. THIN-PLACE DETECTOR FOR LOOMS. JOHN L. OSWALT, Spray, N. C., assignor to the Draper Company, Portland, Me., and Hopedale, Mass. Filed Feb. 27, 1900. Serial No. 6,667. (No model.)



Claim.—1. In a loom, stopping mechanism therefor, a series of warp-stop-motion detectors maintained inoperative by normal warp-threads, a thin-place detector, and means controlled thereby and operatively connected with the stopping mechanism to effect the operation thereof upon occurrence of a thin place in the cloth.

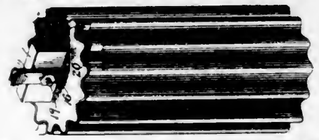
2. In a loom, stopping mechanism therefor, a series of warp-stop-motion drop-detectors maintained inoperative by normal warp-threads, a thin-place detector normally held inoperative by the filling at the fell of the cloth, and a drop member operatively connected therewith and located in the series of drop-detectors, to effect the operation of the stopping mechanism upon failure of the filling at the fell.

3. In a loom, stopping mechanism, including a vibrating feeler, and a series of drop members to coöperate with the feeler and effect the operation of the stopping mechanism, and means operatively connected with one of said members to normally maintain it inoperative by or through the presence of filling at the fell of the cloth, the other drop members being maintained inoperative by normal warp-threads, engagement of any of said drop members with the feeler effecting the operation of the stopping mechanism.

4. In a loom, stopping mechanism, means controlled by the warp-threads, and means controlled by or through the presence of the filling at the fell of the cloth, both of said means being adapted to cooperate with the stopping mechanism to effect the operation thereof by warp failure and absence of filling at the fell, respectively.

5. In a loom, a rock-shaft having attached arms, a thin-place detector depending from one arm to normally rest on the cloth adjacent the fell, a drop member depending from the other arm, and stopping mechanism for the loom, including a vibrating feeler, the detector descending upon occurrence of a thin place in the cloth and positioning the drop member to engage the feeler and thereby effect the operation of the stopping mechanism.

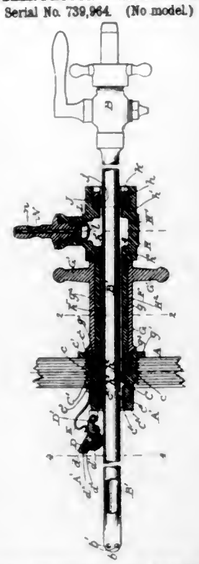
653,590. PRIMARY BATTERY. EDWARD R. POST, Newburg, N. Y. Filed Feb 5, 1900. Serial No 4,018. (No model.)



Claim.—1. In a dry battery, the combination of a positive zinc element in the form of a cylinder, constituting the outer shell or casing of the battery and provided with continuous longitudinal corrugations extending from end to end thereof, a bottom plate provided with a continuously-corrugated edge received by and snugly fitting the lower edge of the corrugated cylinder and braced thereby against buckling, a top filling packed within the upper end of the corrugated zinc cylinder and into the corrugations thereof, so as to be held and protected thereby, a negative or carbon element centered within the zinc shell, and a substantially-solid exciting material packed within the zinc shell or casing about the negative element, and into the corrugations of the positive element.

2. In a battery, the combination with the battery elements, one of which is of corrugated form, of a spring attached at one end to the corrugated element on the exterior thereof and having its free portion fitting and conforming to the shape of said element and normally sprung toward the same, substantially as described.

653,591. BEER-FAUCET. HENRY POUPART, Cohoes, N. Y. Filed Dec. 11, 1899. Serial No. 739,964. (No model.)

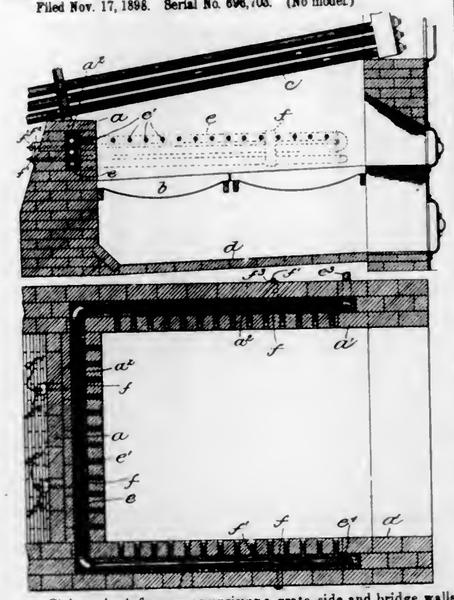


Claim.—1. The combination with metallic vessel-closing bush C, having its main body C' provided with external screw-threads c, notched flange c', an internal-screw-threaded chamber c^3, and having integral with its rear end the extension C^3 provided with the smooth bore c^4, of valve D provided on its inner side with the metal semi-spherical boss d' and gasket d^3, hinge D' and closing-spring E, whereby the inner end of the said extension shall be closed automatically while a screw-threaded plug is screwed into the said bush, and the valve D be opened when the draft-tube of a faucet is forced through said extension C^3 with its intake end into the chamber of the vessel said bush is inserted in, substantially as and for the purposes set forth.

2. The combination with the external-screw-threaded bush C provided with internal-screw-threaded chamber c^3 and having integral with it the chambered extension C^3 opening to the chamber of the vessel into which the said bush is screwed, end-closing valve D provided with metallic boss d' and gasket d^3, and hinge D', of the sectional coupling device F comprising the hollow bush-closing piece G having its screw-threaded stem g' screwing into the screw-threaded chamber c^3 of the bush and provided with means for revolving it in either direction, and the draft-tube-holding piece H having fixedly connected to the rear end of its body part H' the hollow spindle H^3 on which the hollow bush-closing piece freely revolves, the elastic ring-form compress J and screw-threaded compressor K screwed into the front end of body part H', of the tube-holding piece and against the said compress, and the draft-tube of a faucet, having its intake end extended back through said draft-tube-holding piece H to past the open end of the rear extension of the bush C and its forward end portion gripped by the said elastic compress, substantially as and for the purposes set forth.

3. The combination with external-screw-threaded bush C provided with internal-screw-threaded chambers c and smooth-chambered extension C^3 integral with said bush and communicating with the chamber of a liquid-holding vessel, and valve D provided with the metallic boss d', gasket d^3 and hinged to said extension, tubular spindle H^3, draft-tube-holding piece H' fixedly connected with the forward end of said tubular spindle and having in its outer end portion the screw-threaded chamber A, an air-inlet and an air-valve between the chamber the bore-chambers of the tubular spindle H^3 and extension C^3, of the bush, and the outside atmosphere, of the bush-closing piece G screwed to said bush and holding the draft-tube-holding piece H' connected with said bush, centrally-perforated elastic compress J and compressor K within the screw-threaded chamber A, and draft-tube B having an outside diameter smaller than the diameter of bore c^4 of extension C^3 of the bush and bore A^3 of spindle H^3, and having its forward end portion held by the grip of the said compress J, substantially as and for the purposes set forth.

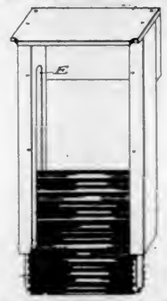
653,592. FURNACE. THOMAS E. PUDDINGTON, Somerville, Mass. Filed Nov. 17, 1898. Serial No. 696,703. (No model.)



Claim.—1. A furnace comprising a grate, side and bridge walls, a conduit or retort incorporated in said walls and extending in a series of continuous convolutions one above another along said side and bridge walls, whereby a mixture of oil and steam forced through said conduit becomes heated in each convolution and thoroughly converted into gas in its passage through said convolutions, and a series of outlets leading from the upper portion of said conduit through the side and bridge walls into the fire-chamber above the grate, whereby the ignited gas, issuing in jets of flame from the side and end of the furnace into the fire-chamber, becomes thoroughly intermixed with the unconsumed products of combustion of the fuel on the grate before they escape over the bridge-wall, and completes their combustion.

2. A furnace having a grate and walls, a pipe embedded longitudinally in said walls and constituting a retort, a series of separate and independent sleeves set or embedded transversely in said walls and terminating short of the inner surfaces thereof, and a series of nozzles fixed in the pipe and projecting into the sleeves, said nozzles being closely surrounded by the sleeves and protected thereby from the heat and flames of the furnace, substantially as described.

653,593. WASHBOARD. ROBERT C. RUSSELL, Hillman, Mich. Filed Aug. 15, 1899. Serial No. 727,345. (No model.)

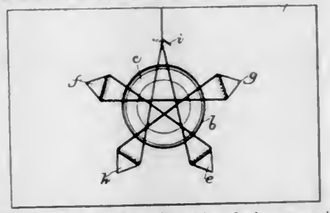


Claim.—1. A washboard, comprising a frame, a rubbing-strip in the form of an endless band, a sectional core therefor, and means for adjusting the position of said strip on said core, as and for the purpose set forth.

2. A washboard, comprising a frame, a rubbing-strip in the form of an endless band having corrugations thereon, a core for said strip having grooves in its opposite ends in which two of the indentations or depressions formed by said corrugations fit, and means for adjusting the position of said strip on said core, as and for the purpose set forth.

3. A washboard, comprising a frame having grooves in the side bars thereof, a rubbing-strip in the form of an endless band, a sectional core within said strip, the side edges of which fit within said grooves, means for adjusting the position of said strip on said core, and removable securing means for holding said core and strip in said frame, as and for the purpose set forth.

653,594. MAILING-CARD. ANDREW W. STEIGER, Boston, Mass. Filed Nov. 22, 1899. Serial No. 737,893. (No model.)



Claim.—1. In a mailing-card, a series of tabs arranged about an aperture in a card, combined with an interlacing of twine attached to the tabs, substantially as described.

2. In a mailing-card, opposed networks of twine secured to a card, and crossing an aperture so as to hold an article therein, substantially as described.

3. In a mailing-card, the combination with a card having an aperture, tabs and a retaining-nick, of a piece of twine secured in the nick about the tabs and interlaced across the aperture, on both sides of the card, substantially as described.

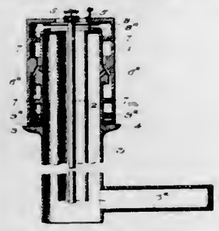
653,595. WOVEN FABRIC. WILLIAM M. STEVENSON, Indian Orchard, Mass., assignor to the Hodges Fiber Carpet Company, same place and Portland, Me. Filed Jan. 22, 1900. Serial No. 2,325. (No model.)

Claim.—1. A woven fabric in which sets of weft-threads are interwoven with sets of warp-threads to form a double ply, the warp-threads being shedded in pairs to bind the weft-threads, but the pairs on the face ply being split at intervals between the plies, and one warp-thread of a pair in the face ply being caused to engage with a weft-thread of the back ply and tie the two plies together, while the other warp-thread of the pair in the face ply prevents said weft-thread of the back ply from being drawn up between wefts of the face ply, substantially as specified.



2. A woven fabric in which sets of weft-threads are interwoven with sets of warp-threads to form a double ply, the warp-threads being shedded in pairs to bind the weft-threads, but the pairs on the face ply being split at intervals between the plies, and one warp-thread of a pair in the face ply being caused to engage with a weft-thread of the back ply and tie the two plies together, while the other warp-thread of the pair in the face ply prevents said weft-thread of the back ply from being drawn up between wefts of the face ply, the tying duty being performed first by a thread of one pair in the face ply, then by a thread of the next pair in said ply, then by the second thread of the first pair, and then by the second thread of the other pair so as to evenly distribute the ties, substantially as specified.

653,596. THROTTLE-VALVE. FREDERICK STRATTNER, Salisbury, Md. Filed Feb. 5, 1900. Serial No. 4,130. (No model.)



Claim.—1. A throttle-valve comprising a cylinder with an open lower end and an inner annular chambered pipe or "throttle-box," said cylinder and pipe having offsets and ports, respectively, and said ports being deflected or inclined and communicating with the interior of said pipe, and means adapted to actuate said cylinder, substantially as described.

2. A throttle-valve comprising a cylinder with an open lower end and having ports in its upper end or top, and offsets thereon and an inner annular chambered pipe having lateral ports, and means adapted to actuate said cylinder and move said offsets with relation to said ports, substantially as specified.

3. A throttle-valve comprising a cylinder with a lower open end and an inner annular chambered pipe having lateral ports, and said cylinder and pipe having contacting offsets or abutments, and means to actuate said cylinder, substantially as described.

4. A throttle-valve comprising a cylinder with a lower open end and an inner annular chambered pipe having ports, said cylinder and pipe having contacting offsets or abutments, and a central stem or rod fixed to said cylinder and depending through said pipe, substantially as set forth.

5. A throttle-valve comprising a cylinder, with a lower open end and ports in its upper end, an inner annular chambered pipe having lateral ports and a lateral or right-angled extension at its lower end, said cylinder and pipe having incline-faced contacting abutments or offsets, and means to actuate said cylinder, substantially as set forth.

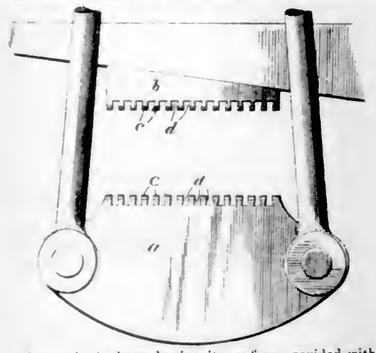
6. In a throttle-valve comprising a cylinder open at its lower end and having ports in its upper end, an inner annular chambered pipe having lateral ports deflected or inclined downward and an incline-faced abutment or offset, said cylinder also having an incline-faced abutment or offset adapted to contact with the aforesaid abutment or offset, and a central stem or rod depending from said cylinder, and extending through the central passage of said annular chambered pipe, substantially as specified.

7. A throttle-valve comprising a cylinder having a lower open end and ports in its upper end or top, and offsets at its upper and lower ends, an inner annular chambered pipe having a lateral or right-angled discharge extension, and lateral downward-inclined ports, said cylinder and pipe having incline-faced abutments or offsets, respectively, and means to actuate said cylinder, substantially as set forth.

8. A throttle-valve comprising a cylinder, with a lower open end and having ports in its top, a central stem or rod fixed to said cylinder, and an inner annular chambered pipe having lateral ports and incline-faced abutments or offsets, said cylinder also having incline-faced abutments or offsets adapted to contact with the aforesaid offsets, and a lateral or right-angled extension fixed to said annular chambered pipe at its lower end, and adapted to have connected thereto a delivery-pipe, substantially as specified.

9. A throttle-valve comprising a cylinder with a lower open end and having offsets upon its inside, and an annular chambered pipe having lateral ports and offsets adapted to contact with the aforesaid offsets, said cylinder and pipe also having ground steam-tight ring-joints between them, substantially as set forth.

653,597. COTTON-PRESS. BURCHARD THOENS, New Orleans, La. Filed Aug. 25, 1899. Serial No. 728,493. (No model.)



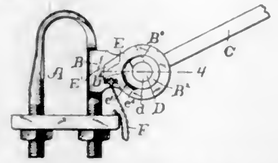
Claim.—1. A platen having its surface provided with a series of ribs having arched or convexed surfaces, extending transversely thereof; and corrugations on the surfaces of said ribs running longitudinally of the platen, substantially as described.

2. A platen having transverse undercut ribs upon the surfaces of which are corrugations which run longitudinally of the platen, substantially as described.

3. A platen having transverse arched or convexed ribs, the sides of which are undercut, and upon the arched or convexed surfaces of which are corrugations which run longitudinally of the platen; substantially as described.

653,598. THILL-COUPLING. JOHN WERTH, Chester, Va. Filed Apr. 2, 1898. Renewed June 14, 1900. Serial No. 20,379. (No model.)

Claim.—1. In a thill-coupling, the combination with an axle-clip having a pair of lugs thereon provided with openings therethrough; an annular ring surrounding the opening through one of said lugs upon its outer side; a cam-lug on said annular ring and a radial slot intersecting the lug having the annular ring thereon and also intersecting said annular ring; of a thill-iron having a cylindrical pin with laterally-projecting ends, formed integral therewith, adapted to be inserted through said slot and the opening connected therewith; and a disk having a circular opening therethrough adapted to fit over said annular ring, and provided with an internal cam-face adapted to engage behind said cam-lug and lock said disk upon said ring, substantially as described.



2. In a thill-coupling, the combination with perforated and slotted lug B, having an annular ring B^3 formed integral therewith concentric with the opening therethrough, and also intersected by the slot in said lug; of a cam-lug formed upon the periphery of said ring; and a disk having a circular opening therethrough adapted to fit over said ring, and a cam-face along a portion of said opening adapted to engage behind said cam-lug, substantially as described.

3. In a thill-coupling, the combination with the perforated and slotted lug B, having an annular ring B^3 formed integral therewith concentric with the opening therethrough, and also intersected by the slot in said lug; of a cam-lug formed on the periphery of said ring; a disk having a circular opening therethrough adapted to fit over said ring, and a cam-face along a portion of said opening adapted to engage behind said cam-lug, said disk being also provided with an enlargement tending to hold it in its locked position, substantially as described.

4. In a thill-coupling, the combination with the perforated and radially-slotted lug B, having an annular ring surrounding the opening therethrough upon its outer side and also intersected by said radial slot; a cam on the periphery of said ring; and an eccentric disk adapted to fit over said ring and lock with the said cam thereon, suostantially as described

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653,599. ENVELOP. JAMES WEST, St. Louis, Mo., assignor to the Samuel Cupples Envelope Company, same place. Filed Mar. 22, 1900. Serial No. 9,703. (No model.)

Claim.—1. An envelop comprising front and back portions, sealed together at one end, a top gummed flap, and a wide fold on the other end of the envelop, extending the width thereof, folded in between the front and back portions, one half of the same being gummed down while the other half is free to be pulled out.

2. An envelop having a front and back portion, closed at one end and having a gummed flap; the other end of said envelop being formed with a fold, one portion of which is adapted to be sealed to the back of the envelop and the other portion of which is folded against the front of the envelop and left free so that the contents can fit behind the same, substantially as described.

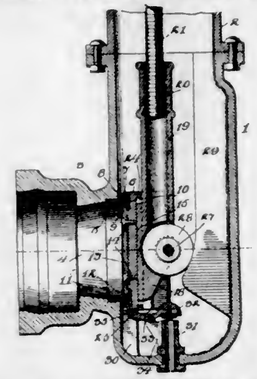
3. An envelop consisting of a front and back portion closed at one end and having a flap adapted to be sealed to the back portion; said envelop having a fold at the end thereof that is not closed, said fold having a portion adapted to be sealed down against the back portion of the envelop, substantially as described.

4. An envelop consisting of a front and back portion closed at one end and having a flap adapted to be sealed against the back portion, and having also a fold, one portion of which is sealed to the back of the envelop while the remaining portion is left free and folded against the front of the envelop; and a projection from the fold adapted to be sealed to the back of the envelop, substantially as set forth.

5. An envelop comprising a front and back portion secured together at one end, a top gummed flap, a wide fold on the other end of the envelop extending the width thereof, and a projection extending from the top of said fold, said fold having lines of perforations to permit part thereof to be turned ont to allow the removal of the contents of the envelop.

6. An envelop consisting of a front and back portion, with a flap on the front portion adapted to be sealed to the back portion, and a wide fold on one end of the envelop extending the width thereof, and the adjacent faces of which are left unattached, substantially as and for the purpose set forth

658,600. GATE-VALVE FOR HYDRANTS. EDGAR C. WILEY, Radford, Va., assignor of one-half to Henry E. McWane, Lynchburg, Va. Filed Mar. 8, 1900. Serial No. 7,866. (No model.)



Claim.—1. In a gate-valve of the class described, the casing provided with a seat, a sliding gate coöperating with said seat, a valve-stem having a carrying-head, and means for slidably interlocking the said head with the gate to hold the same to a limited independent play in the direction of movement of the stem, and means, independent of the connection between the head and the gate, for exerting a lateral wedging pressure upon the gate.

2. In a gate-valve of the class described, the valve-casing having a seat, the gate, and the valve-stem carrying a head having at one side a loose interlocking connection with the gate to permit of a relative independent play of the parts, and at its opposite side having a wedging-roller coöperating with the casing to exert a lateral pressure upon the gate.

3. In a gate-valve of the class described, the valve-casing having a seat, the gate, and the valve-stem carrying a head loosely interlocked with the gate and provided with a wedging-roller coöperating with the casing to exert a lateral pressure upon the gate.

4. In a gate-valve of the class described, the casing provided with a seat, and with opposite vertical side walls, the sliding gate having oppositely-arranged vertical guiding-flanges working at the inner side of the vertical side walls of the casing, a carrying-head having a loose interlocking engagement with the gate, between the guiding-flanges thereof, and means for exerting a lateral wedging pressure upon the gate, substantially as set forth.

5. In a gate-valve of the class described, the valve-casing having a seat, the sliding gate provided at the side opposite its closing face with a seat having opposite guiding-grooves, and upper and lower stops, a carrying-head loosely fitting in the seat of the gate and provided with sliding lips engaging the said grooves, said carrying-head having an independent play between said upper and lower stops, and means for exerting a lateral wedging pressure upon the gate, substantially as set forth.

6. In a gate-valve, the valve-casing having a seat, the gate, and a valve-stem having a loose interlocking connection with the gate to permit of a relative independent play of the parts, and at the side opposite the gate having a wedging-roller coöperating with the casing to exert a lateral pressure upon the gate, substantially as set forth.

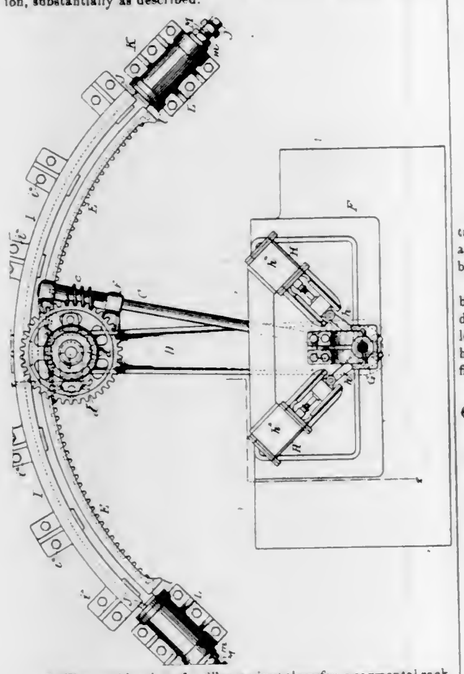
7. In a gate-valve of the class described, the casing having the seat and a wedging abutment, the sliding gate, and the valve-stem carrying the gate and having a limited play independent thereof, said stem also carrying a wedging-roller coöperating with the wedge-abutment, substantially as set forth.

8. In a gate-valve of the class described, the valve-casing having the seat, and opposite said seat being provided with a longitudinally-arranged wedge-abutment, the sliding gate, a valve-stem having a carrying-head loosely interlocking with the gate, and a wedging-roller supported at one side of said carrying-head and coöperating with the wedge-abutment, substantially as set forth.

653,601. TILLER STEERING-GEAR FOR VESSELS. WILLIAM C. WILLIAMSON and JOHN D. WILLIAMSON, Jr., Philadelphia, Pa., assignors to the Williamson Brothers Company, same place. Filed May 3, 1900. Serial No. 15,403. (No model.)

Claim.—1. The combination in a tiller steering-gear, of a tiller, a pivot therefor, a segmental rack, a pinion on the tiller engaging with the rack, and a stationary driving-engine the shaft of said engine being geared to the pinion, substantially as described.

2. The combination of a tiller, a pivot therefor, a pinion on said tiller, a rack engaged by the pinion, a driving engine or engines on the fixed foundation, the driving-shaft of the engine being in line with the tiller-pivot, with means for gearing said driving-shaft to the pinion, substantially as described.



3. The combination of a tiller, a pivot therefor, a segmental rack, a pinion on the tiller engaging with the rack, a driven shaft in line with the pivot, means for driving said shaft, a worm-shaft, bevel-gearing connecting the driven shaft to the worm-shaft, a worm on said worm-shaft, a shaft on which the pinion is secured, and a worm-wheel on said shaft meshing with the worm, substantially as described.

4. The combination of a pivoted tiller, a shaft and a pinion carried by the tiller, a segmental rack with which the pinion engages, a fixed engine having a crank-shaft in line with the pivot of the tiller and gearing by which the said crank-shaft is geared to the pinion shaft on the tiller, substantially as described.

5. The combination in a tiller steering-gear, of a tiller, a pinion on said tiller, means for driving the pinion, a segmental rack with which the pinion engages, with buffers controlling the lateral movement of the rack, substantially as and for the purpose set forth.

6. The combination of a tiller, a pinion carried by the tiller, means for driving the pinion, a segmental rack with which the pinion engages, guideways for said rack, with spring-buffers on each end of the rack but detached therefrom, whereby the rack will yield when under extreme pressure, substantially as described.

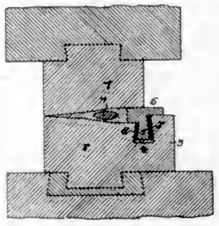
7. The combination of a tiller, a pinion carried by the tiller, means for driving the pinion, a rack with which the pinion engages, buffers for the rack, each buffer having a casing, a bearing-block within the casing, springs between the bearing-block and the casing, and means for limiting the outward movement of the bearing-block, substantially as described.

8. The combination of a tiller, a pinion on the tiller, a rack with which the pinion engages, means for driving the said pinion, a buffer for the tiller, said buffer having a casing, a bearing-block, a spring or springs back of the bearing-block, means for adjusting the tension of the springs, and means for adjusting the bearing-block, substantially as described.

653,602. AX-FORGING DIE. WILLIAM R. WOOD, Lewistown, Pa., assignor of one-half to Thomas S. Johnson, same place. Filed Oct. 16, 1899. Serial No. 733,805. (No model.)

Claim.—1. An ax-forging die-block having an open-ended matrix and a head-block closing said open end of the matrix and carried wholly by, but adjustable upon the die-block, so as to project more or less into said open end of the matrix, substantially as specified.

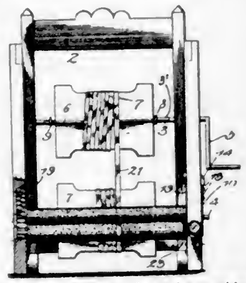
2. An ax-forging die block having an open-ended matrix, and a head-block closing said open end of the matrix, and carried wholly by, but detachable from the die-block, substantially as specified.



3. An ax-forging die-block having an open-ended matrix, and a transverse recess, a head-block closing said open end of the matrix and having a rib contained in said transverse recess and means whereby said rib is secured in the recess, substantially as specified.

4. An ax-forging die-block having an open-ended matrix, a head-block closing said open end of the matrix and carried wholly by the die-block, said head-block being movable so as to project more or less into said open end of the matrix, and adjusting devices for said head-block also carried wholly by the die-block, substantially as specified.

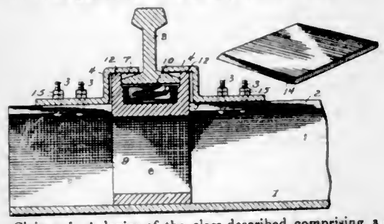
653,603. LACE OR EMBROIDERY MEASURING MACHINE. JAMES P. YOUNG, Coin, Iowa. Filed Apr. 10, 1899. Serial No. 712,466. (No model.)



Claim.—1. In a measuring-machine the combination with the machine-frame, of a winding-shaft journaled therein, a clamp on said shaft consisting of a rod having a laterally-projecting eye at one end encircling the shaft, and a relatively-slidable inelastic clamp-ring encircling the shaft and adapted to embrace the free end of the clamping-rod and fasten a bobbin to the shaft so as to rotate therewith, substantially as described.

2. In a measuring-machine, the combination with a stationary frame, of a rotary winding-shaft journaled therein, a bobbin-clamp in the form of a rod parallel to the shaft and having an angularly-disposed eye at one end encircling the shaft, a slidable inelastic ring on the shaft adapted to embrace the free end of the rod and bind a bobbin against the shaft, means for rotating the shaft, and a latch slidably mounted on the machine-frame and engaging a shoulder on the shaft to prevent endwise movement thereof, substantially as described.

653,604. METALLIC CROSS-TIE. JOHN Q. ADAMS, Manchester, Vt. Filed Mar. 17, 1900. Serial No. 9,093. (No model.)



Claim.—1. A device of the class described comprising a cross-tie, a chair supported by the cross-tie and extending above the same and provided at opposite sides with upwardly-extending flanges forming a rail-receiving recess, said chair being provided at the bottom of the recess with a socket, a cushion arranged within the socket and adapted to bear against the bottom of the rail, and rail-clamps engaging the chair and extending inward over the recess and adapted to engage the rail, substantially as described.

2. A device of the class described comprising a cross-tie constructed of a single sheet of metal and having the longitudinal edges thereof at the top, and rail-clamps spanning the edges of the metal of the cross-tie and connecting the same, whereby the cross-tie is retained in shape, substantially as described.

3. A device of the class described comprising a cross-tie constructed of a single sheet of metal and having the longitudinal edges thereof at the top, rail-clamps spanning the longitudinal edges, and fastening devices passing through the rail-clamps and through the top of the cross-tie and located at opposite sides of the said longitudinal edges, substantially as and for the purpose described.

4. A device of the class described comprising a hollow cross-tie composed of a bottom, sides and a top provided with an opening, a vertically-adjustable rail-chair supported upon the bottom of the cross-tie and extending upward through the opening to receive a rail, and means for elevating the chair independently of the cross-tie to level a rail, substantially as described.

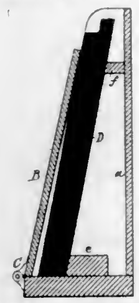
5. A device of the class described comprising a hollow cross-tie composed of a bottom, sides and a top with an opening, a rail-chair extending through the said opening and supported upon the bottom of the cross-tie and capable of vertical adjustment to project it to a greater or less extent above the said cross-tie, and a piece 13 interposed between the bottom of the cross-tie and the bottom of the chair and adapted to raise the latter independently of the cross-tie to level a rail, substantially as described.

6. A device of the class described comprising a hollow cross-tie composed of a bottom, sides, and a top with an opening, a rail-chair supported upon the bottom of the cross-tie and extending upward through the opening of the top, rail-clamps located at opposite sides of the chair and extending over the same and adapted to engage the rail, and elongated fastening devices securing the rail-clamps to the cross-tie, and adapted to be adjusted to permit the rail-chair to be raised, substantially as described.

7. A device of the class described comprising a hollow cross-tie composed of a bottom, sides, and a top with an opening, a chair supported upon the bottom of the cross-tie and extending upward through the opening of the top thereof and arranged to receive a rail, and clamps secured to the top of the cross-tie and engaging the chair and extending inward over the same to engage the rail at opposite sides thereof, substantially as described.

8. A device of the class described comprising a hollow cross-tie provided at the top with an opening, a rail-chair arranged upon the bottom of the cross-tie and extending upward through the opening of the top thereof, and provided within the cross-tie with an opening to permit the passage of water through the said cross-tie, means for adjusting the rail-chair independently of the cross-tie, and clamps mounted upon the top of the cross-tie and engaging the chair, substantially as described.

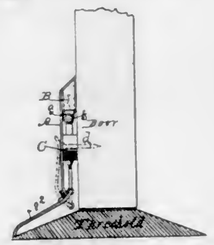
653,605. INDEX. WILLIAM E. ALEXANDER, Philadelphia, Pa., assignor of one-half to Joseph C. Dando, Jr., same place. Filed Dec. 8, 1899. Serial No. 739,704. (No model.)



Claim.—1. The combination in an index or directory, of a case, a cover hinged to the bottom of the case, an inclined rest at the back of the case, a series of cards mounted within the case confined between the cover-plate and the said rest, with the bottoms of said cards at a greater distance from the back of the case than the tops and the latter extending above the cover-plate and the rest, so that the upper portion of the cards can yield to pressure of the finger, substantially as described.

2. The combination of the case having tapered sides, a cover hinged to the base of the case, springs for closing the cover against the case, a block at the bottom of the case between which and the cover the cards are mounted, and a projecting rib at the back of the case against which the upper portion of the cards rest, the said cards extending above the hinged cover, substantially as described.

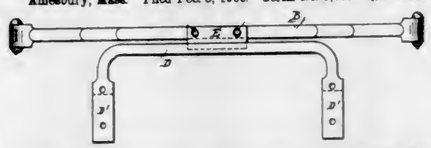
653,606. AUTOMATIC WEATHER-STRIP FOR DOORS. CHARLES A. ARMANTROUT, Seymour, Iowa. Filed May 14, 1900. Serial No. 16,582. (No model.)



Claim.—1. A weather-strip for doors comprising a metal plate having a strip of wood fixed to its inside face and top edge, wooden blocks fixed to its central portion at different points along its length, a strip of metal hinged to its lower edge to swing vertically and automatic mechanism mounted on the inside face of the metal plate and connected with the hinged plate to operate in the manner set forth for the purposes stated.

2. A weather-strip for doors consisting of a metal plate bent inward at its upper edge, a strip of wood fixed to the inside of its upper edge portion, blocks having central bores coinciding with perforations in the plate fixed to the inside face of the metal plate, a spring-actuated rod mounted in bearings fixed to the wooden strip and bent at its inner end, a bell-crank lever pivoted to the inside face of the metal plate and pivotally connected with the spring-actuated rod, a strip of sheet metal hinged to the lower edge of the metal plate and connected with the bell-crank lever by a metal strap pivoted thereto and hinged to the hinged strip of sheet metal, to operate in the manner set forth for the purposes stated.

653,607. BODY-HANGER FOR CARRIAGES. SAMUEL R. BAILEY, Amesbury, Mass. Filed Feb. 3, 1900. Serial No. 3,765. (No model.)



Claim.—In a body-hanger for carriages, the combination with the spring B, of a lip or flange E, secured thereto, and a body-loop D, having a transverse recess or cut-out portion *d*, formed therein intermediate its ends, the free end of said lip or flange fitting closely within the said recess or cut-out portion of the body-loop and welded or brazed therein, substantially as described.

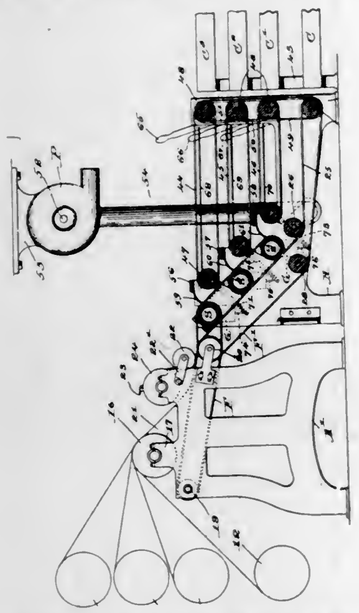
653,608. SHEET-SEPARATING MACHINE. HENRY G. BARR, Worcester, Mass., assignor to Theodore C. Bates, same place, and Charles M. Gage, Pepperell, Mass. Filed Dec. 1, 1899. Serial No. 738,780. (No model.)

Claim.—1. In a machine of the class specified, means for feeding a pile of sheets, a plurality of pneumatically-controlled devices adapted to successively remove the top sheet of said pile as the latter is fed along, and mechanism for taking the sheets from said pneumatically-controlled devices and for delivering them along different paths.

2. In a machine of the class specified, means for feeding a pile of sheets, a plurality of pneumatically-controlled devices adapted to successively remove the top sheet of said pile as the latter is fed along, mechanism for taking the sheets from said pneumatically-controlled devices and for delivering them along different paths, and a plurality of receptacles positioned to receive the respective sheets.

3. In a machine of the class specified, means for feeding and superimposing a plurality of webs of paper, means for cutting the webs into sheets, means for feeding the pile of sheets, a plurality of pneumatically-controlled devices adapted to successively remove the top sheet of the pile as the same is fed along, and mechanism for

taking the sheets from said pneumatically-controlled devices and for delivering them along different paths.



4. In a machine of the class specified, means for feeding a pile of sheets, a plurality of pneumatically-controlled devices adapted to successively remove the top sheet of said pile as the latter is fed along, means coöperative with each of said devices to positively detach the sheets therefrom, and conveyers located to receive the sheets as they are detached from said devices.

5. In a machine of the class specified, a feeder to supply a pile of sheets, a plurality of rollers contiguous to the feeder, the rollers being adapted to successively detach the topmost sheet from the pile, and mechanism for positively detaching the sheets from the rollers and for delivering them along different paths.

6. In a machine of the class specified, means for feeding a pile of sheets, a plurality of hollow, perforated rollers adapted to successively separate the topmost sheet from the pile as the same is fed thereby, mechanism for detaching the sheets from the rollers, and means to create suction in the respective rollers.

7. In a machine of the class specified, means for feeding a pile of sheets, a plurality of hollow, perforated rollers adapted to successively separate the topmost sheet from the pile as the same is fed thereby, mechanism for detaching the sheets from the rollers, means to create suction in the respective rollers, and means to cut off the air-supply to any one or more of the rollers.

8. In a machine of the class specified, means for feeding a plurality of sheets, sheet-separating devices acting successively on the sheets; and means for throwing one or more of the sheet-separating devices out of action.

9. In a machine of the class specified, means for feeding a pile of sheets, a plurality of hollow, perforated rollers adapted to successively remove the topmost sheet of the pile as the latter is fed along, an air-blast apparatus common to all of the rollers, gates controlling the supply of air to the rollers, and means for operating the gates.

10. In a machine of the class specified, a feeder, a plurality of rollers contiguous to the same, the face of one roller being imperforate and the other roller being hollow and perforate, and means for creating a suction in the hollow rollers.

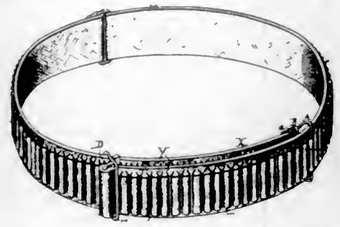
11. In a machine of the class specified, a feeder; means for presenting a plurality of sheets to the feeder; a second feeder adapted to receive the sheets from the first-mentioned feeder; one or more sheet-separators contiguous to the second feeder; a plurality of conveyers coöperative with the sheet-separators; and means adjacent each sheet-separator and serving to detach a sheet therefrom and to deliver it to the coöperating conveyer.

12. In a machine of the class specified, a plurality of webs of paper; a roll over which the superposed webs are adapted to travel; a guide for the leading end of the webs; a feeder in position to receive the webs from the roller and guide; cutting mechanism for severing the sheets of paper from the webs; a second feeder adapted to receive the sheets from the first feeder; and a plurality of sheet-separators situated at equidistant points along the second feeder.

13. In a machine of the class specified, means for feeding a plurality of sheets; sheet-separators; conveyers coöperative with the sheet-separators; means to receive the sheets from the conveyers; and plates contiguous to the sheet-separators and serving to detach the sheets therefrom and to guide the same to the proper conveyers.

14. In a machine of the class specified, means for feeding a pile of sheets, a plurality of conveyers, and mechanism for successively removing the top sheet of said pile as the latter is fed along and for delivering said sheets to said conveyers.

653,609. BELT. CHARLES F. BATT, New York, N. Y. Filed Oct. 24, 1899. Serial No. 734,673. (No model.)



Claim.—1. A cartridge-belt having at one end a tongue with laterally-projecting ears out of line with the axis of the tongue and a bar to bear against the other part of the belt in combination with a loop sliding upon the body of the belt to fit over a part of the said tongue and the end of the belt which carries it and to bear against the said ears.

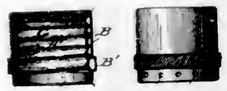
2. A cartridge-belt provided with a tongue having laterally-projecting ears out of line with the axis of the tongue and having a hook part between the ears to take into a pocket on the belt and a loop sliding on the body of the belt to lock the tongue, substantially as described.

3. A cartridge-belt having at one of its ends a swinging loop to pass over the other end of the belt and engage with the cartridge-pockets, in combination with a tongue to bind against the inner face of the belt, said tongue having bends *b* to bear against parts of the loop to prevent the tongue from swinging through the said loop.

4. A cartridge-belt having cartridge-pockets provided with friction-producing springs, and with smaller pockets at opposite ends of the cartridge-pockets to receive the ends of the springs to retain the latter in place within the cartridge-pockets.

5. A cartridge-belt provided with pockets for the reception of cartridges and made in two parts detachably connected with each other, one such connection being adapted to have the ends overlap, and each overlapping end carrying a means of engagement with the body of the belt, substantially as described.

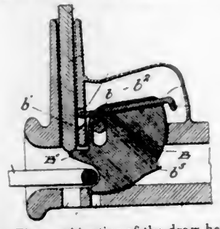
653,610. BOTTLE-CAP. ALFRED L. BERNARDIN, Evansville, Ind. Filed Feb. 8, 1900. Serial No. 4,474. (No model.)



Claim.—1. The bottle-cap herein described composed of the inner threaded shell having a top plate, the outer shell or casing fitting over and held to the threaded shell and having its lower edge turned inward embracing the lower edge of the inner shell, and the pad fitted within the inner shell up against the top plate thereof, the top plate and sides of the threaded shell being connected whereby no leakage will occur between the inner and outer shells and the sealing operation will be effected entirely within the inner shell substantially as set forth.

2. The herein-described bottle-cap consisting of the inner threaded shell or section made cup shape with a top plate and adapted to receive within it a packing-pad to fit up against said top plate and the outer or casing section fitted over said threaded section and adapted to present an unthreaded exterior said outer shell being held to, and from rotary or longitudinal movement upon the inner threaded shell substantially as set forth.

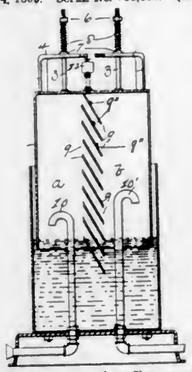
653,611. CAR-COUPLING. SAMUEL M. BROOKS, Lawnville, Tenn., assignor of nine-twentieths to J. M. Smith, J. W. Crowder, and J. B. Harvey, same place, William T. Gallaher, A. L. May, and L. N. Holloway, Roane county, and Camel Jones, Wheat, Tenn. Filed Oct. 19, 1899. Serial No. 734,121. (No model.)



Claim.—1. The combination of the draw-head, an eccentrically-mounted tumbler having a part projecting into the path of the coupling-pin and another part projecting into the path of the coupling-link, with a slide mounted on said tumbler and having a nose projecting into the path of the pin, when the latter is raised and the tumbler is in its rear position.

2. The combination with a coupling-link, of a longitudinally-channeled draw-head, a coupling-pin moving vertically across the channel in the draw-head and engaging in suitable bearings in the walls thereof, a tumbler mounted to swing in a vertical plane within the channel of the draw-head and having a lug normally projecting into the path of the pin and above the path of the link, and a downwardly-projecting portion normally lying in the path of the link and in a plane below that of the lug, and a slide in said tumbler in a plane above the lug thereon, said slide having a part projecting into the path of the pin when the tumbler is in a position to withdraw said lug from out of the path of the pin.

653,612. AIR PURIFIER AND MUFFLER. HARRY L. BROWN, Allegheny, Pa., assignor of one-half to William H. Thackeray, Pittsburg, Pa. Filed Apr. 4, 1899. Serial No. 711,657. (No model.)



Claim.—1. An air purifier and muffler, comprising a tank, adapted to contain water, an inclosed movable spring-supported inverted bell or cylinder, the lower end of which is sealed in the water in said tank, a series of plates subdividing said cylinder into two compartments and adapted to arrest and take up dust and detritus of any character that may be drawn into the first compartment with the air, whereby practically-pure air is applied from the second chamber or compartment to the engine, an air-inlet for one of said compartments, an air-outlet for the other compartment, and a suction device communicating with said outlet.

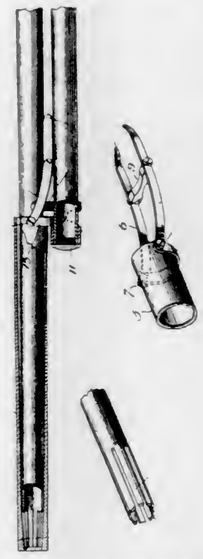
2. In an air purifier and muffler, the combination of a tank, a movable spring-supported inverted bell or cylinder therein, an air-inlet connecting said cylinder with the atmosphere, an air-outlet for said cylinder, a collector in said cylinder to arrest dust or other foreign substance passing therethrough, a tank adapted to supply hygroscopic fluid to the collector, and a suction device communicating with said outlet.

3. In an air purifier and muffler, the combination with a fluid-tank, of an inverted bell or cylinder movable therein, a dust-collector in said cylinder or bell, springs adapted to keep the bell normally raised, an air-inlet and an air-outlet entering said bell on opposite sides of the collector, and a suction device communicating with the air-outlet.

4. In an air purifier and muffler, the combination, with the fluid-tank, of an inverted bell or cylinder movable therein, a dust-collector in said cylinder or bell, an air-inlet entering said bell on one side of the collector, an air-outlet entering it on the opposite side of the collector and a suction device communicating with the air-outlet, a frame on the tank, rods on the bell or cylinder which pass through the frame and springs on said rods adapted to hold the bell raised.

5. In a device substantially as described, the combination of a suction device, a fluid-tank, an inverted bell or cylinder movable therein, means adapted to keep the bell normally raised, an air-inlet and an air-outlet, the said air-outlet communicating with said suction device.

653,618. CHOKE ATTACHMENT FOR GUN-BARRELS. JAMES C. BROYLES, Columbus, Miss. Filed Apr. 17, 1900. Serial No. 13,255. (No model.)



Claim.—1 The combination with a gun-barrel, having a plurality of incisions at the muzzle thereof, of a tapered sleeve slidable upon the muzzle, and an operating finger-piece extending rearwardly alongside of the barrel.

2. The combination with a gun-barrel having a plurality of longitudinal incisions at the muzzle thereof, of a tapered sleeve slidable upon the muzzle, and a pair of opposite jaws extending rearwardly from the sleeve, located at opposite sides of the barrel, and forming a finger-piece for adjusting the sleeve.

3. The combination with a gun-barrel, having an exteriorly-smooth muzzle, provided with a plurality of longitudinal incisions, of an interiorly-smooth sleeve, slidable upon the muzzle, and having a tapered bore, which decreases in diameter toward the outer end thereof.

4. The combination with a gun-barrel having a plurality of longitudinal incisions in the muzzle thereof, of a tapered sleeve slidable upon the muzzle, and an adjustable stop to limit the forward movement of the sleeve.

5. The combination with a gun-barrel having a plurality of longitudinal incisions in the muzzle thereof, of a tapered sleeve slidable upon the muzzle, and provided with a stop-shoulder, a support at one side of the barrel and a rotatable stop mounted upon the support and for engagement by the stop-shoulder.

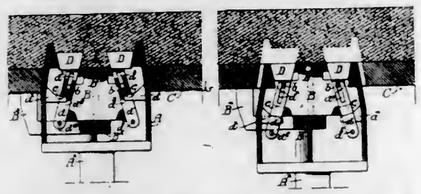
6. The combination with a gun-barrel having a plurality of longitudinal incisions in the muzzle thereof, of a tapered sleeve slidable upon the muzzle, and provided with a stop-shoulder, a support at one side of the barrel, and a cam-shaped ring or collar, which is rotatable upon the support, and has its cam edge located in the path of the stop-shoulder on the sleeve.

7. The combination with a shotgun, having a barrel which is provided with a plurality of longitudinal incisions in the muzzle thereof, and a longitudinal support spaced at one side of the barrel, of a tapered sleeve slidable upon the muzzle of the barrel, a pair of opposite jaws connected to the rear or inner end of the sleeve, and hav-

ing their opposite ends received between the support and the barrel a stop-shoulder provided upon the rear end of the sleeve, and a rotatable cam-shaped ring or collar mounted upon the support and having its cam-face located in the path of the stop-shoulder on the sleeve.

8. The combination with a gun-barrel having a plurality of longitudinal incisions in the muzzle thereof, and a longitudinal tubular magazine spaced at one side of the barrel, of a tapered sleeve slidable upon the muzzle, a pair of opposite jaws connected to the rear end of the sleeve and having their rear ends received within the space between the magazine and the barrel, an intermediate crossbar connecting the jaws and slidable between the magazine and the barrel, a stop-shoulder upon the rear end of the sleeve and located between the barrel and the magazine, and a collar or ring rotatable upon the outer end of the magazine and having its inner end inclined or beveled to form a cam edge located in the path of the stop-shoulder on the sleeve.

653,614. MOVABLE PATTERN FOR MOLDING. WILLIAM D. CADE, Philadelphia, Pa., assignor, by mesne assignments, to the Enterprise Manufacturing Company of Pennsylvania, same place. Filed Dec. 14, 1899. Serial No. 740,303. (No model.)



Claim.—1. The combination of a bed-plate having an opening, a fixed frame within the opening, an outer pattern movably mounted within the opening, means for raising and lowering the said pattern, the frame having inclined guides, pattern-blocks separate from the outer pattern arranged to slide on said guides, and means on the pattern in position to engage the blocks when the outer pattern is projected, whereby the pattern-blocks will also be projected, substantially as described.

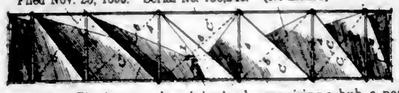
2. The combination of a bed-plate, an opening therein, a movable outer pattern within said opening, means for raising and lowering the pattern, a fixed frame within the pattern having inclined guideways, pattern-blocks separate from the outer pattern mounted so as to slide upon the inclined ways, said blocks having undercut heads, and means on the outer pattern in position to engage the pattern-blocks when the outer pattern is moved, whereby the pattern-blocks will also be moved to a limited extent, substantially as described.

3. The combination of a fixed bed-plate, an opening therein, a pattern conforming to said opening, means for raising and lowering the pattern, said pattern having an inclined inner surface at each side, a fixed frame mounted within the pattern and attached to the bed-plate, recesses in each side of the frame, said frame also having inclined guides, pattern-blocks arranged to slide on said guides and having undercut heads conforming to the guides and to the inclined inner surface of the pattern-lugs on the pattern engaging the blocks, so that they will be raised when the pattern is projected, substantially as described.

4. The combination of a bed-plate having an opening therein, a pattern conforming to said opening, means for raising and lowering the pattern, said pattern having an inclined inner surface at each side, a fixed frame within the pattern, said frame being secured to the bed-plate, notches in the opposite sides of the upper portion of the frame and inclined guides, pattern-blocks having undercut heads conforming to the inclined guides and to the bevel of the inner portion of the pattern, the arms of these blocks being slotted, pins on the frame passing through the slots, and lugs on the pattern engaging with the blocks, the lugs being so arranged that there will be a certain upward movement of the pattern before the pattern-blocks are raised, substantially as described.

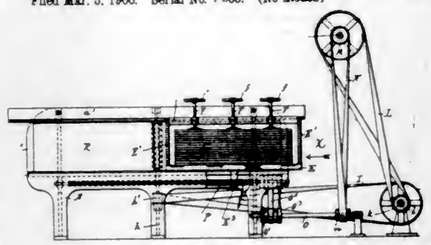
5. The combination of the fixed bed-plate having an opening therein, an outer pattern mounted within the opening, means for raising and lowering said pattern, a fixed frame within the pattern and secured to the fixed bed-plate and forming a continuation of the bed-plate, inclined guides on the frame, the upper portion of the said frame being recessed at each side, headed pattern-blocks mounted in the recesses and arranged to slide on the inclined guides, the arms of said pattern-blocks being slotted and having a bearing-face *e* and a pin d^4, lugs projecting from the inner side of the pattern and extending into the slot between the bearing-face and the pin, substantially as described.

653,615. AERIAL WHEEL. STEWART CAIRNCROSS, Grafton, N. D. Filed Nov. 25, 1899. Serial No. 738,240. (No model.)



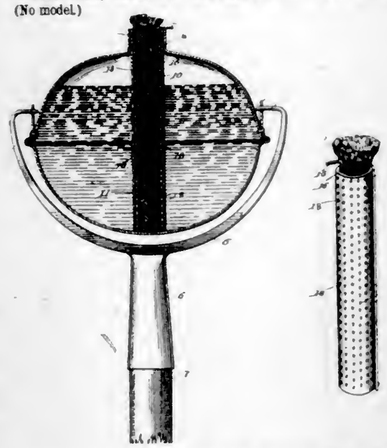
Claim.—The improved aerial wheel comprising a hub, a peripheral frame, wires extending radially between such parts and across the frame diagonally, and a series of sails composed of flexible material and attached to both the radial and diagonal portions of said wires, whereby they are held in the diagonal position, specified.

653,616. JOINER. DANIEL CEDERBERG, Leominster, Mass. Filed Mar. 3, 1900. Serial No. 7,205. (No model.)



Claim.—The herein-described joiner, consisting in combination, of a frame having a table provided with horizontal guides, standards rising above the table and provided with an overhanging arm having a guide thereon, a vertical cutting-knife journaled in the frame and with its operating-cutters above the table, a carrier provided with guideways in its top and bottom to cooperate with the guides on the table and the overhanging arm of the frame, clamping-screws arranged in the top of said carrier and adapted to clamp a series of boards in the carrier, and means for causing said carrier and the boards clamped therein to travel in front of the cutting-knife, substantially as described.

653,617. TORCH. WILLIAM W. CLIMENSON and WILLIAM D. WINGER, Honey Brook, Pa. Filed Sept. 20, 1899. Serial No. 731,114. (No model.)



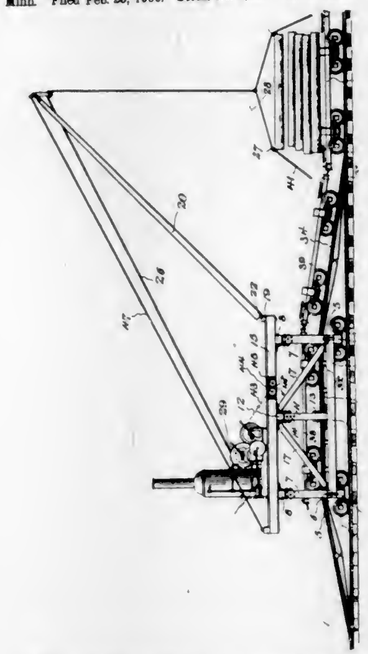
Claim.—1. In a device of the class described, the combination of a reservoir or receptacle provided at its top with an opening, a fixed wick-tube extending from the opening to the bottom of the reservoir or receptacle and provided with perforations, a removable wick-tube receiving the wick and provided with perforations, said removable wick-tube fitting snugly within the fixed wick-tube and extending upward from the bottom thereof, substantially as described.

2. In a device of the class described, the combination of a reservoir or receptacle, a fixed wick-tube mounted within the reservoir or receptacle and forming a well, and a removable wick-tube adapted to receive the wick and fitting snugly within and extending upward from the bottom of the fixed wick-tube and terminating short of the upper end of the well, and provided with a handle extending from

the opening of the reservoir or receptacle, substantially as and for the purpose described.

3. In a device of the class described, the combination of a reservoir or receptacle having an opening, a permanently-mounted wick-tube arranged within the reservoir or receptacle and forming a well, a removable wick-tube adapted to receive and carry the wick and fitting snugly within the permanently-mounted wick-tube and extending upward from the bottom of the same and terminating short of the upper end of the well, and a rod extending into the removable wick-tube and secured to the same and having its outer end extended outward at the top of the well and forming a handle or grip, substantially as described.

653,618. STEAM LOG-LOADER. LORENZO J. CODY, Duluth, Minn. Filed Feb. 23, 1900. Serial No. 6,247. (No model.)



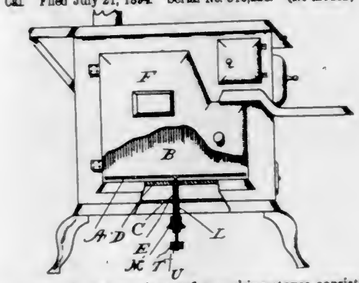
Claim.—1. A car-loading apparatus provided with a frame mounted upon trucks and comprising longitudinal and cross sills halved and lapped at their ends, metal bonds securing the lapped ends together, upright corner-beams mounted on the overlapped ends, upper end cross-beams on said uprights, longitudinal or side beams resting on said cross-beams and angle-brackets connecting the longitudinal sills and beams with the uprights and upper and lower end cross beams and sills, the upper beams being arranged to support an engine, substantially as and for the purpose set forth.

2. A car-loading apparatus provided with a frame mounted upon trucks and comprising longitudinal and cross sills halved and lapped at their ends, metal bonds securing the lapped ends together, upright corner-beams mounted on the overlapped ends, upper end cross-beams on said uprights, longitudinal or side beams resting on said cross-beams, intermediate uprights between the upper and lower longitudinal sills and beams, inclined braces between the upper ends of the intermediate uprights and the lower ends of the end uprights, and angle-brackets connecting the longitudinal sills and beams with the uprights and upper and lower end cross beams and sills, the upper beams being arranged to support an engine, substantially as and for the purpose set forth.

3. A car-loading apparatus provided with a framework comprising suitable truck-supporting sills and uprights, end and intermediate upper cross-beams on the uprights, side and intermediate upper longitudinal beams on said upper cross-beams, superposed end cross-beams on the upper longitudinal beams, upwardly-converging derrick-arms pivoted to one of the superposed end cross-beams, a pulley carried between the upper end of said arms, an engine and windlass on the frame, a cable from the windlass passing over the pulley, and guy-ropes connecting the outer upper ends of the derrick-arms with the opposite superposed end cross-beam, substantially as and for the purpose set forth.

4. A car-loading apparatus comprising lower truck-supported longitudinal beams, cross-ties thereon, longitudinal rails on said cross-ties, trussed rails pivoted at the ends of said longitudinal rails, suitably-supported upper longitudinal beams, an engine and windlass mounted thereon, parallel cross-rollers journaled in the longitudinal beams, and a cable from the windlass passing downward between said rollers, substantially as and for the purpose set forth.

653,619. STOVE ATTACHMENT. LEE A. DEVIN, Sacramento, Cal. Filed July 21, 1894. Serial No. 518,228. (No model.)



Claim.—1. An attachment for cooking-stoves consisting of the supplemental oven-bottom A, and shaft C secured to said supplemental bottom and projecting through the bottom of said stove, tube L encircling said shaft and projecting through and removably secured to the bottom of said stove, bevel gear-wheels M and N having bearings on projecting portions of said tube, and lever R pivoted to a projection on said tube, said lever being adapted to adjust the elevation of said supplemental bottom, substantially as shown and for the purpose set forth.

2. An attachment for cooking-stoves consisting of the supplemental oven-bottom A and shaft C secured to said supplemental bottom and projecting through the bottom of said stove, tube L encircling said shaft and formed with oppositely-disposed projecting legs P and Q, bevel gear-wheel M revolubly secured to the lower extremity of said tube, gear-wheel N revolubly secured to leg P and meshing with gear-wheel M, pin W projecting through wheel M and playing in a longitudinal groove in the lower extremity of said shaft, thimble U revolubly secured to the lower end of said shaft, lever R pivoted to leg Q and connected with and encircling thimble U, said lever being retained in any desired position by pawl Y which engages with teeth on leg P, said tube being adapted to engage with screw-threads in the bottom of the stove and project through the bottom of the oven, substantially as set forth.

653,620. GRAIN-SIEVE. WILLIAM DOUGHERTY, Fountain, Minn. Filed Apr. 17, 1899. Serial No. 713,308. (No model.)

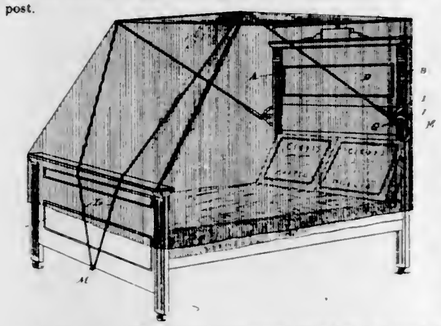


Claim.—1. In a screen, the combination with the main frame of a series of transversely-arranged screening-slats pivotally mounted to said frame at their lower edges, and adapted to lie one upon the other and two longitudinally-arranged side bars to which the slats are journaled at their upper edges, said side bars lying snugly against the inner sides of the main frame and having their inner sides chamfered and provided with notches 15 in their lower edges designed to engage the lower pivotal connections of the said slats only when the slats are lying one upon another for the purpose set forth.

2. In a screen, the combination with the main frame, of two longitudinally-arranged bars chamfered on their inner sides and having their outer sides fitting snugly against the inner sides of the main frame, of a series of metallic slats hinged to the longitudinal bars and the main frame, said slats having each two series of alternately-arranged slots, and an adjusting-lever connected to the main frame and to the longitudinal bars whereby the distance apart of the slats can be regulated, substantially as described.

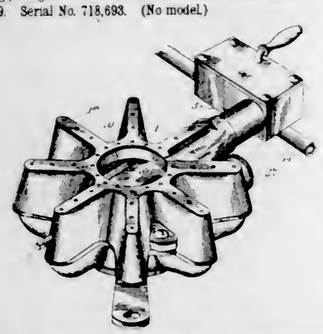
653,621. MOSQUITO-CANOPY FRAME. WILL J. DURHAM, Knoxville, Tenn., assignor to The United States Canopy Company, same place. Filed Mar. 7, 1898. Serial No. 708,160. (No model.)

Claim.—1. In a canopy frame or bracket adapted to rest against the side of the head-posts, provided with transversely-projecting angular arms to rest against the rear of the bed-posts, and a pivot-pin at the outer end of the bracket in combination with a supporting-arm for the canopy-frame pivoted thereon, having a curved inner end projecting beyond the pin, a spiral spring connected at one end with the curved projecting end of the supporting-arm and at the other end with the bracket, and means for attaching the bracket to the bed-post.



2. In a canopy-frame, the combination with a pair of brackets E provided with arms F at right angles thereto, laterally-projecting pins secured on said bracket, arms H pivotally secured on said pins, the rear ends of which project beyond the pins and are curved, terminating in hooks, spiral springs connected to the respective brackets and the hooks of the arms, arms secured to the arms H in front of the pivotal points thereof, and cords connected thereto for the purpose of holding the same against raising, substantially as described.

653,622. GAS-STOVE BURNER. JOHN P. FARMER, Portland Oreg., assignor of one-half to C. F. Adams, same place. Filed May 29 1899. Serial No. 718,693. (No model.)



Claim.—1. The combination with a thermostatic burner-shell, a gas-conveyer, and a controlling-valve operatively connected to the shell for actuation thereby, of a pilot-channel, a pilot-valve therefor, a supply-valve, and connections between all of said valves whereby they are operatively coupled.

2. The combination with a thermostatic burner-shell, a gas-conveyer, and a controlling-valve having its stem operatively connected with said shell for actuation by the expansion and contraction thereof, of a generating or pilot channel, a generating or pilot valve controlling said channel, and operating connections between said controlling-valve and the generating or pilot valve, substantially as specified.

3. The combination with a thermostatic burner-shell and a communicating gas-conveyer, of a controlling-valve for said gas-conveyer actuated by said shell, a generating or pilot valve controlling an independent gas-channel, and operating connections between said controlling-valve and the generating-valve whereby the latter is closed simultaneously with the opening of the former, substantially as specified.

4. The combination with a thermostatic burner-shell and a communicating gas-conveyer, of a generating or pilot valve controlling an independent gas-channel, a controlling-valve-stem extension actuated by said thermostatic burner-shell, and means between said stem extension and the generating or pilot valve, whereby the latter is operated by the former, substantially as specified.

5. The combination with a thermostatic burner-shell and a communicating gas-conveyer, of a generating or pilot valve controlling an independent gas-channel, a controlling-valve-stem extension, actuated by said thermostatic burner-shell, an adjustable stop carried by said stem extension, and means, operated upon by said stop for actuating the generating or pilot valve, substantially as specified.

6. The combination with a thermostatic burner-shell and a communicating gas-conveyer, of a generating or pilot valve controlling an independent gas-channel, a controlling-valve-stem extension actuated by said thermostatic burner-shell, a shifting arm operatively related to said generating or pilot valve, and means for causing said stem extension to operate the shifting arm, substantially as specified.

7. The combination with a thermostatic burner-shell and a communicating gas-conveyer, of a generating or pilot valve controlling an independent gas-channel, a controlling-valve-stem extension actuated by said thermostatic burner-shell, a shifting arm operatively related to the generating or pilot valve, an operating-arm operatively related to said shifting arm, and means for communicating motion from said stem extension to the operating-arm, substantially as specified.

8. The combination with a burner and a communicating gas-conveyer, of a generating or pilot-valve controlling an independent gas-channel, a controlling-valve-stem extension, a shifting-arm operatively related to the generating or pilot valve, an operating-arm operatively related to said shifting arm, and a stop on said stem extension for contact with the operating-arm to communicate closing motion to the generating or pilot valve, substantially as specified.

9. The combination with a burner and a communicating gas-conveyer, of a generating or pilot valve controlling an independent gas-channel, a controlling-valve-stem extension, a shifting arm operatively related to the generating or pilot valve, an operating-arm operatively related to said shifting arm, and an adjustable stop carried by said stem extension and consisting of a nut threaded thereon for contact with said operating-arm to communicate closing motion to the generating or pilot valve, substantially as specified.

10. The combination with a burner having a gas-conveyer, and a thermostatically-actuated controlling-valve for said conveyer, of a generating or pilot valve controlling an independent gas-channel, operating connections between the controlling-valve and the generating or pilot valve, for communicating closing motion to the former when the latter is opened, and a supply-valve provided with means for communicating opening motion to the generating or pilot valve, substantially as specified.

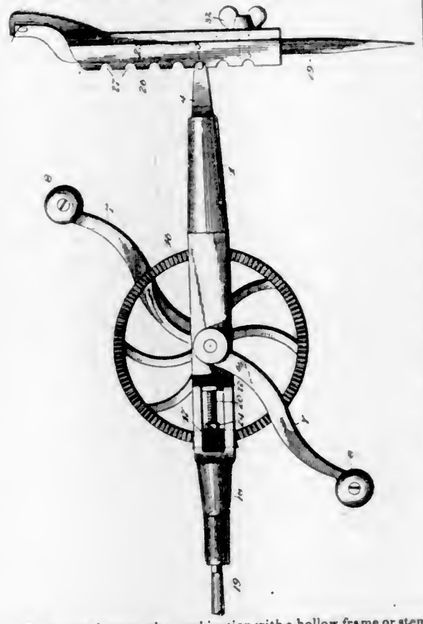
11. The combination with a burner having a gas-conveyer, a thermostatically-actuated controlling-valve for said conveyer, of a generating or pilot valve controlling an independent gas-channel, operating connections between the controlling-valve and the generating or pilot valve, for communicating closing motion to the latter when the former is opened, a supply-valve, and means for communicating opening motion to the generating or pilot valve from the supply-valve, as the latter is closed, substantially as specified.

12. The combination with a burner having a gas-conveyer, a thermostatically-actuated controlling-valve for said conveyer, of a generating or pilot valve controlling an independent gas-channel, operating connections between the controlling-valve and the generating or pilot valve, for communicating closing motion to the latter when the former is opened, a supply-valve, and cooperating projections on said generating and supply valves whereby opening motion is communicated to the former during the closing motion of the latter, substantially as specified.

13. The combination with a burner having a gas-conveyer, a thermostatically-actuated controlling-valve for said conveyer, of a generating or pilot valve controlling an independent gas-channel and having a winged rocker, a shifting arm operatively related to said rocker, means operated by the controlling-valve stem for actuating said shifting arm to close the generating or pilot valve, and a supply-valve having a projection for engagement with a wing or shoulder of said rocker to communicate opening motion to the generating or pilot valve, substantially as specified.

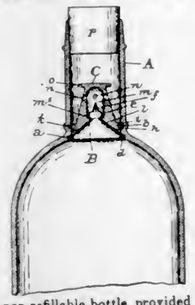
653,623. COAL-AUGER. JAMES H. HIGGINS, Whitwell, Tenn. Filed Sept. 21, 1899. Serial No. 731,245. (No model.)

Claim.—1. In a coal-auger, the combination with a frame or stem provided at its outer end with a pair of curved prongs each provided with an outwardly-extending lug, and its inner end formed with an angular extension, of a drive-shaft journaled in the said frame or stem, a crank secured to each end of the said shaft, a drive-wheel mounted upon said shaft, a shaft 20 journaled in the said angular extension, a pinion mounted on said shaft 20 and engaged by the said drive-wheel, a chuck connected to said shaft 20 and adapted to have secured thereto a drill or auger, a channel-bar provided with a series of notches adapted to be engaged by the said lugs of the curved prongs for supporting said stem or frame, and an adjustable dagger connected to said bar and adapted to permit the operation of the auger at different inclinations, substantially as described.



2. In a coal-auger, the combination with a hollow frame or stem, provided at its outer end with a pair of curved prongs each having an outwardly-extending lug, and its inner end formed with an angular extension, a pair of bearings suitably arranged in the said frame, a drive-shaft journaled in the said bearings, a crank secured to each end of the said shaft, a drive-wheel mounted upon said shaft, a bearing 22 arranged in the said angular extension, a shaft 20 journaled at its upper end in said bearing 22 and extending through the said angular extension, a pinion mounted on the said shaft 20 and adapted to be engaged by the said drive-wheel, a chuck connected to said shaft and having a drill or auger secured to its outer end, a channel-bar provided with a series of notches adapted to be engaged by the said lugs of the curved prongs for supporting said stem or frame, a dagger, and means for adjustably securing said dagger to said channel-bar to permit the operation of the auger at different inclinations, substantially as described.

653,624. NON-REFILLABLE BOTTLE. GEORGE S. LINTHICUM, Baltimore, Md., assignor of one-half to Charles W. Linthicum, same place. Filed May 28, 1900. Serial No. 18,189. (No model.)

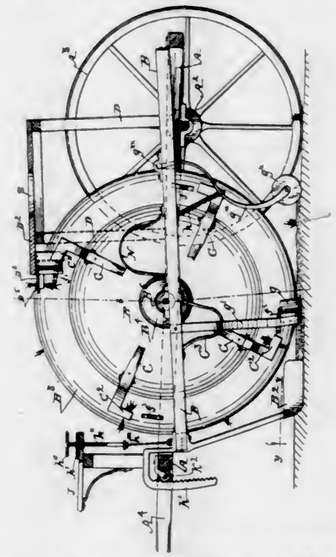


Claim.—1. A non-refillable bottle provided in its neck with an interior annular recess; an elastic conical valve having a base rim-flange held by its own elasticity in said annular recess and an apex provided with longitudinal slits; and a guard in the bottle-neck having a central tapering cavity whose walls fit closely in contact with said valve and terminating below the said apex, and provided with an outlet-chamber surrounding said apex, and with downwardly-inclined discharge-passages leading outwardly from said outlet-chamber.

2. A non-refillable bottle provided in its neck with an interior annular recess; an elastic conical valve having a base rim-flange held be its own elasticity in said annular recess, said valve also having a spherical bulb near its upper end and a tapered apex above said bulb having longitudinal slits extending from its tip and terminating at the said bulb; and a guard in the bottle-neck having a central tapering cavity whose walls closely contact with said valve and terminate at the lower side of said spherical bulb, an outlet-chamber surrounding said apex and spherical bulb and provided with a bottom flange which supports the bulb, and discharge-passages leading from said outlet-chamber.

3. A non-refillable bottle provided in its neck with two interior annular recesses *a*, *b*; an elastic conical valve having a base rim-flange held by its own elasticity in the annular recess *a*, said valve also having a bulb near its upper end and a tapered apex above said bulb having a plurality of longitudinal slits extending from its tip to the bulb; a guard in said bottle-neck having an annular base-flange formed with an annular recess *i* coinciding with the uppermost recess *b*—said guard also having a central tapering cavity whose walls fit closely in contact with said valve and terminate at the lower side of said bulb, an outlet-chamber surrounding said apex and bulb and having a contracted bottom flange which supports the bulb, discharge-passages leading outwardly in a downwardly-inclined direction from said outlet-chamber, and a baffle-plate above said discharge-passages; and a split ring in the recess *i* of the guard and expanded into the uppermost recess *b* in the neck.

653,625. PLANT-PLANTING MACHINE. JOHN MORGAN, Atlantic, Iowa, assignor of one-half to Edwin Whiteway, Chicago, Ill. Filed June 19, 1899. Serial No. 721,175. (No model.)



Claim.—1. In a plant-planting machine, a rectangular carriage-frame supported upon two mating traction-wheels, a fixed seat on the front provided with a screw-seat, an auxiliary frame hinged to the rear portion, a screw fitted in said screw-seat and connected with the front end of the auxiliary frame, to operate in the manner set forth for the purposes stated.

2. The carriage-frame A having a fixed seat J at its front end provided with a fixed screw-seat and mounted on an axle A^3 having fixed traction-wheels A^3 on its ends and the auxiliary frame B hinged to the rear end of the carriage-frame, a screw in said seat connected at its lower end with the auxiliary frame and means for adjustably connecting the front end of the auxiliary frame with the seat on the carriage-frame, arranged and combined for the purposes stated.

3. In a plant-planting machine, a carriage-frame, an auxiliary frame inside of the carriage-frame and pivotally connected with the rear portion thereof, means for rigidly and adjustably connecting the front of the auxiliary frame to the front of the carriage-frame con-

sisting of an arched frame fixed to the auxiliary frame and its free end portion curved and provided with teeth to serve as a rack to engage a pinion, a pinion in bearings fixed to the front carriage, and means for raising and lowering the auxiliary frame, arranged and combined to operate in the manner set forth for the purposes stated.

4. The carriage-frame A mounted on an axle having traction-wheels on its ends, the auxiliary frame hinged to the rear and center of the carriage, a driver's seat J on the front of the carriage-frame, a screw seated in the driver's seat and connected with the front end of the auxiliary frame, means for flexibly connecting the lower end of the screw with the front end of the auxiliary frame, and means for adjustably connecting the front end of the auxiliary frame with the front end of the carriage-frame, arranged and combined to operate in the manner set forth for the purposes stated.

5. In a plant-planting machine, a carriage-frame having an elevated platform or seat at its front end and center, a screw seated in said platform or seat to extend downward, an auxiliary frame pivotally connected with the rear portion of the carriage-frame and its front end flexibly connected with the lower end of said screw and means for rigidly and adjustably connecting the front end of the auxiliary frame with the front end of the carriage-frame arranged and combined to operate in the manner set forth for the purposes stated.

6. In a plant-planting machine, a carriage-frame having a rigidly-fixed pole at its front end and two mating traction-wheels at its parallel sides and rear portion, an auxiliary frame pivotally connected with the rear end of the carriage-frame and adjustably connected with the front end thereof, a furrow-opener fixed to the front of the auxiliary frame, mating furrow-closers fixed to the parallel sides of the auxiliary frame and a wheel adapted for carrying plants mounted in the auxiliary frame in rear of the furrow-closers and mating rollers carried by spring-actuated bearers adjustably connected with the auxiliary frame in rear of the plant-carrying wheel, arranged and combined to cooperate in the manner set forth for the purposes stated.

7. In a plant-planting machine, a carriage-frame, an auxiliary frame pivotally connected with the rear end of the carriage-frame and adjustably connected with the front end thereof, a furrow-opener fixed to the front of the auxiliary frame, mating furrow-closers fixed to the parallel sides of the auxiliary frame and a wheel adapted for carrying plants mounted in the auxiliary frame in rear of the furrow-closers, mating rollers carried by bearers adjustably connected with the auxiliary frame in rear of the plant-carrying wheel and a bench on rear end of the auxiliary frame and in rear of the plant-carrying wheel, arranged and combined to cooperate in the manner set forth for the purposes stated.

8. In a plant-planting machine, a carriage-frame A having a driver's seat J on its front end, an auxiliary frame B, having a hinged connection with the rear part of the carriage, a furrow-opener B^2 fixed to the front end of the auxiliary frame, furrow-closers *g* fixed to the auxiliary frame in rear of the furrow-openers, mating rollers *g''* carried by the auxiliary frame in rear of the furrow-closers, a wheel B^3 for carrying and setting plants in a furrow mounted in the auxiliary frame, a screw *h* connected by means of a chain with the front end of the auxiliary frame, arched racks K fixed to the front end of the auxiliary frame and pinions K^2 mounted on the front end of the carriage-frame, all arranged and combined to operate in the manner set forth for the purposes stated.

9. In a plant-planting machine, a carriage-frame, an auxiliary frame pivotally connected with the rear portion of the carriage-frame and adjustably connected with the front of the carriage-frame, a bench fixed on the top of the rear end of the auxiliary frame, a metal plate fixed to the under side and center of the front edge portion of the top of the bench, automatic plant-holding mechanism fixed to the under side of the said top and on the opposite sides of the said fixed plate and a wheel carrying automatic plant-holders adapted to clasp plants as they pass the said fixed plate successively, all arranged and combined to operate in the manner set forth for the purposes stated.

10. A support for plant-holding mechanism fixed to the under side of a bench on the rear end of an auxiliary frame having a hinged connection with the rear end of a carriage-frame and an adjustable connection with the front end of the carriage-frame, a rock-shaft mounted in said support, a plant-holding device fixed to the rock-shaft and extended forward through an opening in said support and means for operating the rock-shaft, all arranged in the manner set forth for the purposes stated.

11. In a plant-planting machine an auxiliary frame pivotally connected with the rear end of a carriage-frame, a bench fixed on the rear end of the auxiliary frame, a plate fixed to the bench to project forward, a support for automatic plant-holding mechanism fixed to the under side of the bench, a rock-shaft mounted in said support, a plant-holding device fixed to the rock-shaft and extended forward through an opening in said support, and a spring fixed to the inside face of the said support, a pin or projection on the rock-shaft to engage the spring, an arm on the rock-shaft, a cam carried by a plant-carrying wheel mounted in the auxiliary frame and adapted to engage the arm on the rock-shaft, all arranged in the manner set forth for the purposes stated.

12. In a plant-planting machine, an auxiliary frame hinged to the rear end of a carriage-frame, a bench D^3 fixed on uprights D on the rear end of the auxiliary frame, a plate D^5 fixed to the under side and center of the front of said bench, a support D^4 fixed to the under side of said bench in juxtaposition with the said fixed plate, a plant-holder D^6 fixed to a rock-shaft D^8 mounted in bearers fixed to said support, an arm *f* on said rock-shaft, a spring *f'''* fixed to the inside face of the support to come in contact with the end of a pin, a pin *f''''* fixed to the rock-shaft, and means for actuating the rock-shaft at intervals, all arranged and combined to operate in the manner set forth for the purposes stated.

13. In a plant-planting machine, an auxiliary frame hinged to the rear end of a carriage-frame, a bench D^3 fixed on uprights D on the rear end of the auxiliary frame, a plate D^5 fixed to the under side and center of the front of said bench, a support D^4 fixed to the under side of said bench in juxtaposition with the said fixed plate, a plant-holder D^6 fixed to a rock-shaft D^8 mounted in bearers fixed to said support, an arm *f* on said rock-shaft, a spring *f'''* fixed to the inside face of the support to come in contact with the end of a pin, a pin *f''''* fixed to the rock-shaft, a wheel having automatic clasps on its side faces for carrying plants mounted in the auxiliary frame, cams *f'* on the side faces of said wheel adapted to engage the arm of said rock-shaft, all arranged and combined to operate in the manner set forth for the purposes stated.

14. The curved spring-roller bearers *g'''* carrying the rollers *g'*, the rock-shaft *g''* and the coil-springs *h*, in combination with the auxiliary frame B, as shown and described for the purposes stated.

15. In a plant-planting machine, a plant-holding device D^6 fixed to a bench to project forward and downward, a bench D^3 fixed on top of a frame, a support D^4 fixed to the under side of the bench and automatic plant-holding mechanism mounted in said support, arranged and combined to operate in the manner set forth.

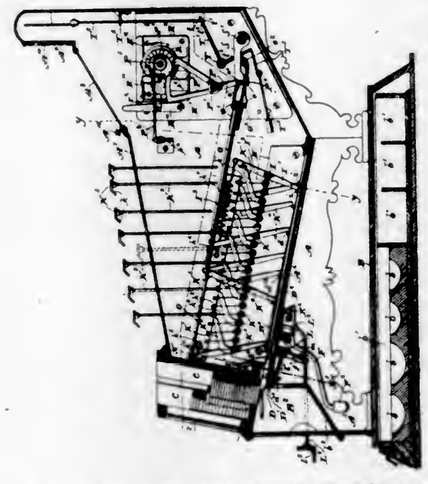
16. A plant-planting machine comprising a two-wheeled carriage, a driver's seat on the front of the frame, an auxiliary frame hinged to the rear portion of the carriage-frame, means for adjustably connecting the front end of the auxiliary frame with the carriage-frame, a furrow-opener fixed to the front end of the auxiliary frame, furrow-closers fixed to the auxiliary frame in rear of the furrow-openers, spring-bearers fixed to the auxiliary frame in rear of the furrow-closers to carry rollers, a plant-carrying wheel mounted in the auxiliary frame, plant holders pivoted to the wheel to clasp plants to the face of the wheel, cams fixed to the auxiliary frame to actuate the plant-holders on the wheel, means for transmitting motion from the carriage-axle to the plant-carrying wheel mounted in the auxiliary frame, a bench fixed on the rear end portion of the auxiliary frame, a plate fixed to the bench to project forward and downward from the front and center of the bench, supports for automatic mechanism fixed to the under side of the bench, a rock-shaft mounted in each of said supports and provided with an arm extending at right angles therefrom, plant-holders fixed to said rock-shafts and means for retaining the rock-shafts stationary at intervals during each revolution of the plant-carrying wheel, all arranged and combined to operate in the manner set forth for the purposes stated.

653,626. COMBINED CHANGE-MAKER, CASH REGISTER, AND INDICATOR. MICHAEL MCANENY, Denver, Colo., assignor to George R. Davis, Chicago, Ill. Filed Sept. 18, 1899. Serial No. 730,914. (No model.)

Claim.—1. In combination with a registering mechanism, adapted to register amounts of purchases of different values, a change-maker adapted to issue coins to make up different portions of a certain predetermined sum of money, having coin-feeding devices normally ready to feed out coins when moved in coin-feeding direction, and connections between the registering mechanism and the change-maker, whereby the operation of the registering mechanism, to register the amount of any purchase, causes the money-changer to issue a coin, or combination of coins, equal to the difference between the amount of the purchase and the predetermined sum of money, substantially as and for the purpose described.

2. In combination with an indicating mechanism to indicate the amounts of different purchases of different values, a change-maker adapted to issue coins to make up different portions of a certain predetermined sum of money, having coin-feeding devices normally ready to feed out coins when moved in coin-feeding direction, and connections between the change-maker and the indicating mechanism, whereby, as the latter is operated, to cause indications of the amount of any purchase, the money-changer will be caused to issue a coin or combination of coins equal in value to the difference between the value of the purchase indicated, and the predetermined sum of money, substantially as and for the purpose described.

3. In combination with a cash register and indicator, adapted to register and indicate the various amounts or values of different purchases made, a change-maker adapted to issue coins to make up different portions of a certain predetermined sum of money, having coin-feeding devices normally ready to feed out coins when moved in coin-feeding direction, and connections between such change-maker and the cash register and indicator, whereby, as the cash register and indicator is actuated, to cause registration and indication of the values of purchases made at different times, each time that a registration and indication of a purchase is made, the change-maker will be actuated to issue a coin, or combination of coins, equal in value to the difference between the price or value of the purchase being registered and indicated and the predetermined sum of money, substantially as and for the purpose described.



4. In combination with a register, adapted to register the amount or value of a purchase made, a source of supply of coins, each equal to the difference between the value of the purchase and a certain predetermined sum of money, and means for feeding out a coin at a time from the source of supply, actuated each time that the register is actuated to register the purchase, and normally ready to feed out a coin when moved in coin-feeding direction, substantially as and for the purpose described.

5. In combination with an indicating mechanism, adapted to indicate the amount or value of a purchase made, a source of supply of coins, each equal to the difference between the value of the purchase and a certain predetermined sum of money, and means for feeding out the coins, one at a time, from the source of supply, connected with the indicating mechanism, so as to be actuated to feed out a coin from the source of supply, each time that the indicator mechanism is operated, and normally ready to feed out a coin when moved in coin-feeding direction, substantially as and for the purpose described.

6. In combination with a register and indicator, arranged to register and indicate the amount or value of a purchase made, a source of supply of coins, each equal in value to the difference between the purchase made and a certain predetermined sum of money, and means for feeding out the coins one by one, connected with the registering and indicating mechanism, so as to be actuated therewith to feed out one of the coins, each time that the register and indicator are caused to register and indicate a new purchase, and normally ready to feed out a coin when moved in coin-feeding direction, substantially as and for the purpose described.

7. In combination with a register, to register the amount of a purchase made, two or more sources of supply of coins of such denominations, that single coins taken from the separate source of supply will, together, be equal in value to the difference between the amount of purchase which the register is adapted to register and a predetermined sum of money, feed devices for feeding coins singly from the separate sources of supply, normally ready to feed out coins when moved in coin-feeding direction, and connections between such devices and the register, whereby each time that the latter is actuated to cause registration of a purchase, the coin-feeding devices will also be actuated to feed out a combination of coins equal to the difference between the value of the purchase and the said predetermined sum of money, substantially as and for the purpose described.

8. In combination with an indicator, to indicate the value of a certain purchase, each time that it is operated, means for operating it, two or more sources of supply of coins of such denominations, that single coins taken from the separate sources of supply will, together, be equal in value to the difference between the amount of the purchase to be indicated and a certain predetermined sum of money, means for feeding out the coins singly from the separate sources of supply, normally ready to feed out coins when moved in coin-feeding direction, and connections between such means and the means for operating the indicator, whereby, as the latter is operated, the coin-feeding means will also be actuated to feed coins out from the sources of supply, substantially as and for the purpose described.

9. In combination with a cash register and indicator, for registering and indicating the amount of value of a purchase made, means for actuating the same to cause registration and indication of a purchase, two or more sources of supply of coins of such denominations, that single coins taken from the separate sources of supply will, together, be equal in value to the difference between the amount of the purchase being registered and indicated, and a certain predetermined sum of money, means for feeding out coins from the separate sources of supply, normally ready to feed out coins when moved in coin-feeding direction, and connections between the means for actuating the registering and indicating devices, and the coin-feeding means, whereby, as the registering and indicating devices are actuated to cause a registration and indication of the amount of a purchase, the coin-feeding means will be caused to act to feed out coins singly from the respective sources of supply, substantially as and for the purpose described.

10. In combination with a register, adapted to register the amount of a purchase made, means for causing actuation of such register, a source of supply of coins, each equal in value to the difference between the price or value of the purchase being registered and a certain predetermined sum of money, a feed device for feeding out such coins from the source of supply, normally ready to feed out a coin when moved in coin-feeding direction, connections between such device and the means for causing actuation of the register, whereby movement of the register-actuating means causes the coin-feeding device to be operated in a direction to feed out a coin from the source of supply, and means for throwing, at will, the coin-feeding device out of position, to engage and feed out a coin, as it is moved, substantially as and for the purpose described.

11. In combination with an indicating mechanism, to indicate the amount of a purchase made, means for operating such mechanism, a source of supply of coins, each equal in value to the difference between the amount of the purchase indicated, and a certain predetermined sum of money, a feed device to feed out the coins from the source of supply, having its coin-engaging part adapted to be moved into and out of position, to engage and feed out a coin, as the device is moved, means for normally moving such part into operative position, means for moving it, at will, out of such position, and connections between the feed device and the means for operating the indicator, whereby such means both operates the indicator and moves the coin-feeding device in a direction for feeding out a coin from the source of supply, substantially as and for the purpose described.

12. In combination with a cash register and indicator, for registering and indicating the amount of a purchase made, means for operating the same, to cause registration and indication of the amount of a purchase, a source of supply of coins, each equal in value to the difference between the purchase registered, and a certain predetermined sum of money, a coin-feeding device having a coin-engaging part made movable into and from a position to engage and feed out a coin from the source of supply, as the device is moved in the direction of the latter, means for normally moving such part into operative, coin-engaging position, means for moving it, at will, out of such position, and connections between the coin-feeding device and the means for operating the cash register and indicator, whereby, power applied to operate the register and indicator, causes the coin-feeding device to move in a direction for feeding out a coin from the source of supply, substantially as and for the purpose described.

13. In combination with a cash-register, adapted to register the amount of a purchase made, means for causing actuation of such register, a source of supply of coins, each equal in value to the difference between the price or value of the purchase registered, and a certain predetermined sum of money, a feed device, to feed out the coins from the source of supply, having its coin-engaging part adapted to be moved into and out of position, to engage and feed out a coin as the device is moved, a spring to hold such part normally in its operative position, means for moving it, at will, out of such position, and connections between the feed device and the means for operating the register, whereby such means both causes actuation of the register, and movement of the feeding device, in a direction to feed out a coin from the source of supply, each time that the register is actuated, substantially as and for the purpose described.

14. In combination with a cash-indicator mechanism, to indicate

the amount of a purchase made, and means for operating the same, a source of supply of coins, each equal in value to the difference between the amount of the purchase indicated, and a predetermined sum of money, a feed device for feeding out a coin from such source of supply, each time that the indicator mechanism is actuated to cause indication of a purchase, such feed device having a movable coin-engaging part, adapted to be moved into and out of operative position, to engage and feed out a coin from the source of supply, as the feed device is moved, a spring normally holding such part in operative position, means for moving that part, at will, out of operative position, and connections between the feed device and the means for actuating the indicator mechanism, whereby such device is caused to move in a coin-feeding direction, each time that the indicator mechanism is operated to indicate a sale, substantially as and for the purpose described.

15. In combination with a cash register and indicator, to register and indicate the amount or value of a purchase, and means for operating the same, a source of supply of coins, each equal in value to the difference between the amount of the purchase registered and indicated, and a predetermined sum of money, a feed device for feeding out the coins from the source of supply, connected with the means for actuating the registering and indicating devices, so as to be operated each time that they are operated to register and indicate a purchase, such feed device having its coin-engaging part made movable into and out of operative position to feed out a coin from the source of supply, as the device is moved, a spring holding such part normally in operative position, and means for moving such part, at will, out of operative position, so that, as the feed device is moved, no coin will be fed by it from the source of supply, substantially as and for the purpose described.

16. In combination with a cash-registering mechanism, a series of keys for actuating the same, adapted to cause the registering mechanism to register purchases of different values, a change-maker having a series of sources of supply of coins, and a series of feed devices to feed out coins from the different sources of supply, each device having a coin engaging and feeding part adapted to be moved into and out of operative position to feed out a coin from the respective source of supply as the device is moved, yielding means to hold such part normally in operative position, means for moving the coin-engaging parts, at will, out of operative position, and connections between the series of coin-feeding devices and the series of keys, whereby, as any key is operated to actuate the register mechanism to register a certain purchase, the coin-feeding device or devices, for issuing a coin or combination of coins equal to the difference between the value of the purchase registered, and a predetermined sum of money, will be actuated, substantially as and for the purpose described.

17. In combination with a cash-indicator mechanism, having a series of indicators to indicate purchases of different values, and a series of keys to actuate the different indicators, a change-maker having a series of sources of supply of coins, and feed devices for feeding out coins from the respective sources of supply, each having its coin-engaging part made movable toward and from its operative position, to engage and feed out a coin from the respective source of supply, as the feed device is moved, means for yieldingly holding such part of each device normally in operative position, connections between the separate keys and the coin-feeding devices, whereby, as any key is moved to actuate an indicator, one or more of the coin-feeding devices will be moved in a direction to feed from one or more of the sources of supply of coins one or more coins to make up the value of the difference between the purchase indicated and a predetermined sum of money, and means for depressing the coin-engaging parts of the feed devices, at will, to move them out of operative position, substantially as and for the purpose described.

18. In combination with a cash-register, to register purchases of different values, and an indicator, having a series of indicating devices to indicate the values of different purchases, a series of keys connected with the register and indicator, so as to cause purchases of different values to be registered and indicated, as the different keys are operated, a change-maker having a series of sources of supply of coins, and a coin-feeding device for each source of supply, having its coin-engaging part made movable into and out of operative position, to engage and feed out a coin as the respective feed device is moved and normally in operative position, means for moving, at will, each coin-engaging part out of operative position, and connections between the register and indicator actuating keys, and the coin-feeding devices, whereby, the movement of any key will cause the movement of a feed device, or combination of feed devices, in a direction for feeding a coin or combination of coins, amounting in value to the difference between the value of the purchase caused to be registered and indicated by the movement of the key, and a predetermined sum of money, substantially as and for the purpose described.

19. In combination with a series of sources of supply of coins, and a series of feed devices to feed coins out from such sources, means for throwing all of such devices out of operation, while allowing them to move, an extra source of supply of coins, a feed device therefor, and means for moving such device connected with the other feed devices, so as to be moved as any one of the latter is moved, and means for connecting and disconnecting the extra coin-feed device from its actuating means, at will, substantially as and for the purpose described.

20. In combination with a series of sources of supply of coins, and a series of coin-feeding devices, to feed out coins therefrom, a series of keys connected with these coin-feeding devices so as to cause them to feed out coins, and combinations of coins, equal in value to the difference between various purchases made and a predetermined sum of money, an extra source of supply of coins, a feed device for the same, operative connections between this feed device and the other feed devices for actuating the former device when any one of the latter devices is actuated, means for throwing such connections into and out of operation, at will, and means for throwing all of the other feed devices out of operation, to feed coins, while leaving them capable of being moved, when the extra coin-feeding device is in operation, substantially as and for the purpose described.

21. In combination with a series of sources of supply of coins, and a series of feed devices, to feed coins out from such sources, each having its coin-engaging part made movable into and out of operative position, to engage and feed out a coin from the respective source of supply, means for holding such parts normally up in operative position, and means for moving them all out of such position, at will, an extra source of supply of five-cent coins, a feed device for feeding out the coins from such source, a moving slide connected with the feed devices of the other sources of supply of coins, so as to be moved each time that one of the other feed devices is moved, and means, whereby the slide can be, at will, connected with the extra five-cent feeding device, to actuate the same, substantially as and for the purpose described.

22. In combination with a series of sources of supply of coins, a series of feeding-slides therefor, each having a coin-feeding dog pivoted on it, and normally held up in coin-engaging position by a spring, means for drawing down all of the dogs out of operation, at will, an extra source of supply of five-cent coins, a feeding device for feeding coins therefrom, a slide adapted to be connected with, and disconnected from, this feed device, connected with the other feed devices, so as to be moved each time that one of the latter is moved, and means for holding the slide normally, out of engagement with the extra five-cent feeding device, adapted to be moved to allow the slide to go into engagement with such feed device, substantially as and for the purpose described.

23. In a change-maker, in combination with a series of sources of supply of coins, and a series of feeding devices, to feed out coins from the respective sources of supply, such feed devices having their coin-engaging parts made movable into and from operative position to engage and feed out coins from the respective sources of supply, yielding means for holding said parts normally in operative position, means for moving them, all at will, out of such position, a series of movable parts to actuate the coin-feeding devices, which are connected with the feed devices, so that the movement of each part will cause the operation of one or more of the coin-feeding devices, to feed out a coin, or coins, to the value of some multiple of five cents, an extra source of supply of five-cent coins, a feed device therefor, a movable slide, means whereby such slide can be connected with, and disconnected from, the extra five-cent feed device, and connections between the slide and the other coin-feeding devices, whereby, as any one of the latter is moved by its connected, actuating part, the slide will be moved, substantially as and for the purpose described.

24. In combination with a series of sources of supply of coins, a series of slides, carrying dogs to engage and feed out coins from the respective sources of supply, yielding means for holding such dogs in operative position, to engage and feed out coins, as the slides are moved, means for drawing all of the dogs down out of such position, at will, an extra source of supply of five-cent coins, a feed-slide therefor, having a coin engaging and feeding part, and a shoulder, a supplemental slide, having a lug to engage the shoulder on the extra five-cent feed-slide, and itself connected with the other feed-slides, except the extra five-cent one, so that the movement of any of such other feed-slides, will move the supplemental slide, and means for holding the latter slide normally in position to have its lug disengaged from the shoulder, on the extra five-cent feeding-slide, adapted to be moved, to cause the supplemental slide to move, to bring its lug into engagement with the shoulder on the extra five-cent slide, substantially as and for the purpose described.

25. In combination with a series of sources of supply of coins, a series of feed-slides therefor, each having a movable, coin-engaging dog, springs to hold such dogs normally in operative position, to engage and feed out coins as the respective slides are moved, means for drawing down all of such dogs, at will, to take them out of operative position, a supplemental slide connected with each of the other slides, so as to be moved as any one of them is moved, and having a lug, an extra source of supply of five-cent coins, a feeding device therefor, having a shoulder to be engaged by the lug on the supplemental slide, and means for causing the supplemental slide to be moved into and out of position to bring its lug into engagement with such shoulder, substantially as and for the purpose described.

26. In combination with a register, adapted to register purchases of different values, in multiples of five cents, a series of actuating parts connected with such register, to cause it to register different multiples of five cents, as the different parts are moved, a change-maker having a series of sources of supply of coins, from which different coins and combinations of coins, equal to different multiples of five cents, can be fed out, a series of feeding devices, one for each source of supply, and each having a movable coin-engaging part, adapted to be moved into and from operative position, to engage and feed out a coin, means for holding such coin-engaging parts normally in operative position on the reepective feed devices, means for moving them, at will, out of such position, an extra source of supply of five-cent coins, a feed device, a supplemental slide, connected with the other feed devices, so as to move as any one of them is operated, and adapted to be coupled with, and uncoupled from, the extra five-cent feeding device, means for holding it normally uncoupled therefrom, and causing it to be coupled therewith, at will, and connections between the feeding devices of the sources of supply of coins, except the extra five-cent device, and the series of parts for actuating the register, whereby, the movement of each part, to cause the register to register an amount equal to a multiple of five cents, will cause a coin or combination of coins, to be issued by one or more of such feed devices, to equal in value the difference between the multiple of five cents registered and a predetermined sum of money, substantially as and for the purpose described.

27. In combination with an indicator, having a series of indicating devices, to indicate different amounts of cash, equal to different multiples of five cents, a series of movable parts, to cause actuation of the different indicating devices, a series of sources of supply of coins, a series of feed devices therefor, for feeding the coins out of the different sources of supply, each of such feeding devices having a movable, coin-engaging part, adapted to be moved into and out of operative position in the device, means for normally holding such part in operative position, means for moving all of the coin-engaging parts out of operative position, at will, connections between the respective parts for actuating the different indicating devices and the coin-feeding devices, whereby, the movement of any one of such indicator-actuating parts will cause a coin-feeding device, or combination of feeding devices, to issue a coin, or combination of coins, equal in value to the indication of the indicator moved, an extra source of supply of five-cent coins, a coin-feeding device therefor, a slide connected with the other coin-feeding devices, so as to move with any of them that may be moved, adapted to be coupled with, and uncoupled from, the extra five-cent feeding device, and means for causing it to be coupled with, and uncoupled from such device, at will, substantially as and for the purpose described.

28. In a combined cash-register and change-maker, in combination with a registering mechanism and change-making mechanism, normally in condition to make change upon being operated, means for throwing the latter mechanism out of operation, at will, without stopping the operation of the registering mechanism, substantially as and for the purpose described.

29. In a combined cash-indicator and change-maker, in combination with an indicating mechanism and change-making mechanism, normally in condition to make change upon being operated, means for throwing the change-making mechanism out of operation, at will, without stopping the operation of the indicating mechanism, substantially as and for the purpose described.

30. In a combined cash register and indicator and change-maker, in combination with the registering mechanism, the indicating mechanism, and the change-making mechanism, normally in position to, make change upon being operated, means for throwing the change-making mechanism out of operation, at will, without stopping the operation of the registering and indicating mechanisms, substantially as and for the purpose described.

31. In a combined cash-register and change-maker, in combination with the registering mechanism, and the change-making mechanism, normally in condition to make change upon being operated, a key, connections between such key and the two mechanisms, whereby a motion of the key actuates both, and means for throwing the change-making mechanism out of operation, at will, while leaving the registering mechanism capable of operation by the key, substantially as and for the purpose described.

32. In a combined cash-register and change-maker, in combination with the registering mechanism for registering the amounts of a purchase made, and the change-making mechanism, for issuing an amount of change equal to the difference between the amount of the purchase and a predetermined sum of money, normally in position to issue such change upon being operated, means for operating the two mechanisms, and means for throwing the change-making mechanism out of operation without stopping the operation of the registering mechanism, substantially as and for the purpose described.

33. In a combined cash-register and change-maker, in combination with the registering mechanism for registering purchases of different amounts, means for actuating such registering mechanism, a change-making mechanism, normally in position to act, for issuing different amounts of change, equal to the difference between the amounts of the purchases registered and a predetermined sum of money, connections between the change-making mechanism and the register-actuating means, whereby the movement of such means to actuate the register will also actuate the money-changing mechanism, and means for throwing the latter mechanism out of operation without stopping the operation of the registering mechanism, substantially as and for the purpose described.

34. In a combined cash-register and change-maker, in combination with the registering mechanism for registering purchases of different amounts, means for actuating such registering mechanism, a change-maker for issuing different amounts of change, equal to the difference between the different amounts of purchases registered and a predetermined sum of money, connections between the change-making mechanism and the register-actuating means, whereby movement of such means to actuate the register will also actuate the change-making mechanism, to cause it to, issue a coin or coins equal in value to the difference between the value of the purchase being registered and the predetermined sum of money, means for throwing the said change-making mechanism out of operation without stopping the operation of the registering mechanism, an extra source of supply of coins, a feed device to feed coins therefrom, connections between such feed devices and the means for actuating the registering mechanism and change-maker, and means for throwing such connections into operation to actuate the extra coin-feed device when the rest of the change-making mechanism is thrown out of operation, substantially as and for the purpose described.

35. In combination with a register to register purchases of different values, a series of keys connected with such register to actuate the same, a series of sources of supply of coins, a series of feed devices therefor, to feed out coins therefrom, having movable coin-engaging parts adapted to be moved into and out of operative position for engaging the coins, yielding means for holding them normally in operative position, means for moving them, at will, out of such position, and connections between the keys and feeding devices for actuating the latter, substantially as and for the purpose described.

36. In combination with an indicator, to indicate purchases of different values, a series of keys connected with the indicator to actuate the same, a series of sources of supply of coins, a series of feeding devices therefor for feeding out coins therefrom, each having a movable, coin-engaging part adapted to be moved into and out of operative position for engaging a coin, means for holding the coin-engaging parts normally up, in operative coin-engaging position, means for moving them out of such position, and connections between the keys and coin-feeding device for actuating the latter, substantially as and for the purpose described.

37. In combination with a register and indicator, to register and indicate purchases of different values, a series of keys connected with the register and indicator to actuate the same, a series of sources of supply of coins, a series of coin-feeding devices for feeding out coins from the different sources of supply, each having a movable, coin-engaging part adapted to be moved into and out of operative position for engaging a coin of its respective source of supply, means for holding such parts in operative position, means for moving them out of such position, and connections between the keys and coin-feeding devices for actuating the latter, substantially as and for the purpose described.

38. In combination with a rock-shaft, having arms, a series of sources of supply of coins, one for each of the arms on the shaft, a series of coin-feeding devices, one for each source of supply, each having a spring-elevated, pivoted, coin-engaging dog, connected with a slotted piece, into the slot of which one of the arms on the rock-shaft projects, two other sources of supply of coins, the two feed devices therefor carrying pivoted coin-engaging dogs, each having a spring to raise it into operative coin-engaging position, and a slotted piece connected with it, two sleeves journaled on the rock-shaft, each having an arm projecting into the slot of the piece connected with one of the last two mentioned coin-feeding dogs, an operating-arm on the rock-shaft, an arm on one of the sleeves engaging such arm, and an arm on the second sleeve engaged by the arm on the other sleeve, which engages the operating-arm on the rock-shaft, and means for moving the latter arm, to rock the shaft and sleeves, substantially as and for the purpose described.

39. In combination with a coin-holder, a movable feed device therefor, having pivoted upon it a coin-engaging dog, a spring for elevating such dog, a piece connected with the dog and having the shoulder to strike a part of the feed device and act as a limit to the

raising of the dog by the spring, and a slot, a rocker having a dog-depressing arm extending within such slot, and means for rocking the rocker, substantially as and for the purpose described.

40. In combination with a series of coin-holders, and a series of feeding devices therefor, each having a pivoted coin-engaging dog and a spring holding such dog normally in position for engaging and feeding out a coin from the respective coin-holder, a slotted piece connected with each dog, depressing-arms engaging the slots in such pieces, rocking means connected with such arms for depressing them, an operating-arm connected with such rocking means to actuate the same to cause the depressing-arms to draw the dogs down out of operative position, a key pivotally connected with the operating-arm, so as to swing it as the key is moved longitudinally, but to be capable of swinging on the arm as a fulcrum, an extra coin-holder, a coin-feeding device therefor having a part to engage and feed out a coin from the extra holder, a reciprocating slide for actuating the feed device, adapted to be coupled with and uncoupled from the device, by movement of part of the slide toward and from the feed device, and means for normally holding the slide uncoupled from the feed device, arranged in the path of an arm of the key so as to be engaged and moved thereby, to cause the slide to become coupled with the feed device as the key is rocked on its fulcrum, substantially as and for the purpose described.

41. In combination with a series of coin-holders, and a series of coin-feeding devices therefor, each having a movable coin-engaging part adapted to be moved into and out of operative position to engage and feed out a coin from the respective holder, yielding means for normally holding each of such parts in operative position, a rocking piece, connections between the latter and the movable coin-engaging parts on the feed devices, whereby such parts are drawn out of operative position by rocking of the rocking piece, an arm on such piece, a reciprocable and swinging key pivoted on such arm, but prevented from longitudinal movement through or with reference to such arm, a rock-shaft having an arm engaged by the key, so as to be rocked thereby, as the key is swung on its fulcrum on the arm of the rocking piece, a spring normally holding the rock-shaft against rocking, an extra coin-holder, a feed device for feeding out coins from the same, a shoulder on such device, a reciprocating slide carrying a lug to engage the shoulder on the feed device, when the slide is not raised, and a crank-arm on the rock-shaft engaging the slide and holding it normally raised when the shaft is not rocked by the key, substantially as and for the purpose described.

42. In combination with the dollar, fifty-cent, twenty-five-cent ten-cent and regular five-cent holders, feed-slides, one for each holder each having a spring-raised, pivoted coin-engaging dog on it, means for swinging the dogs of all the slides down out of operative position so that they will not engage and feed out any coins as the slides are moved, means for actuating the slides, an extra five-cent holder, a feeding device for the same having a part to engage and feed a coin out of the holder, and a shoulder, a slide connected with the feed-slides for the other holders so as to be moved as any one of them is moved, and having a lug to engage the shoulder on the extra five-cent feed-slide, when the slide carrying the lug is down, and means for normally holding up the lug-carrying end of the slide adapted to be depressed, at will, to cause the latter slide to be coupled with the extra five-cent feed-slide, substantially as and for the purpose described.

43. In combination with a series of holders for dollar, fifty-cent, twenty-five-cent, five-cent, and ten-cent coins, and feed devices therefor, for feeding coins out therefrom, cut-out devices to cut out of action all of such feed devices, a cut-out key connected with the cut-out devices for actuating the same, an extra holder for five-cent coins, a feed device to feed the coins out of such holder, means for normally holding the latter feed device out of action, adapted to be engaged and moved, at will, to throw the extra five-cent feed device into action, substantially as and for the purpose described.

44. In combination with a series of holders for coins of different denominations, and feed devices therefor to feed coins out therefrom, means for moving such devices, cut-out mechanism to cut all of such feed devices out of action, a cut-out key connected with such mechanism to actuate the same, an extra coin-holder, a feed device for feeding coins out of such holder, a movable part to actuate the device adapted to be coupled with and uncoupled from the feed device, means for holding such part normally uncoupled from the feed device, adapted to be moved by the cut-out key, to cause the moving part to be coupled with the feed device so as to actuate the same substantially as and for the purpose described.

45. In combination with a series of keys for causing registration of a series of purchases of different values, a cash-register actuated by such keys so that as any key is moved registration of the value of the purchase corresponding to that key will be caused, a change-maker having a series of coin-holders for holding dollar, fifty-cent, twenty-five-cent, five-cent and ten-cent coins, respectively, and movable feed devices for feeding coins from such holders, connections between the keys and such devices, whereby, as any key is moved, one or more of the feed devices will be actuated to feed out a coin or combination of coins equal in value to the difference between the amount of the purchase caused to be registered by the movement of the key and a predetermined sum of money, and a cut-out device to cut out of action the coin-feeding device, at will, for the fifty-cent coin-holder, substantially as and for the purpose described.

46. In combination with a series of keys for causing registration of purchases of different values, a cash-register connected therewith, so that the motion of any key will cause registration of a purchase corresponding to the key moved, a change-maker having a series of coin-holders for holding dollar, fifty-cent, twenty-five-cent, five-cent and ten-cent coins, respectively, a series of coin-feeding devices for feeding coins out from the holders, connections between the keys and the coin-feeding devices, whereby, as any key is moved, one or more of the coin-feeding devices will be actuated to feed out a coin or combination of coins equal in value to the difference between the amount or value of the purchase caused to be registered by the movement of the key, and a predetermined sum of money, and cut-out devices for cutting out of action, at will, the coin-feeding devices for the fifty-cent and twenty-five-cent coin-holders, so that they will not feed out coins from their respective holders, as they are actuated by the movement of any key or keys, substantially as and for the purpose described.

47. The combination of a series of keys for causing indication of a series of purchases of different values, a cash-indicator, having indicator mechanism actuated by such keys so that, as any key is moved, an indication of the value of the purchase corresponding to that key will be caused, a change-maker having a series of coin-holders, for holding dollar, fifty-cent, twenty-five-cent, five-cent, and ten-cent coins, respectively, movable feed devices for feeding coins from such holders, connections between the keys and such devices, whereby, as any key is moved, one or more of the feed devices will be actuated to feed out a coin or combination of coins equal in value to the difference between the amount of the purchase caused to be indicated by the movement of the key and a predetermined sum of money, and a cut-out device to cut out of action the coin-feeding device for the fifty-cent coin-holder, at will, substantially as and for the purpose described.

48. The combination of a series of keys for causing indication of purchases of different values, a cash-indicator connected therewith, so that the motion of any key will cause indication of a purchase corresponding to the key moved, a change-maker having a series of coin-holders for holding dollar, fifty-cent, twenty-five-cent, five-cent and ten-cent coins, respectively, a series of coin-feeding devices for feeding coins out from the holders, connections between the keys and the coin-feeding devices, whereby, as any key is moved, one or more of the coin-feeding devices will be actuated to feed out a coin or combination of coins equal in value to the difference between the amount or value of the purchase caused to be indicated by the movement of the key, and a predetermined sum of money, and cut-out devices for cutting out of action, at will, the coin-feeding devices for the fifty and twenty-five cent coin-holders, so that they will not feed out coins from their respective holders as they are actuated by the movement of any key or keys, substantially as and for the purpose described.

49. In a register in combination with a movable frame connected with the registering mechanism, so as to actuate it, a series of movable parts for actuating such frame having frame engaging and actuating abutments, standing at different distances from the frame, when the parts are unmoved, and a series of movable stops, one for each frame-actuating part and unconnected therewith, each adapted to move automatically into the path of a portion of the frame, to act as a limit to the movement of the same, when the respective frame-actuating part is moved in a direction to actuate the frame, substantially as and for the purpose described.

50. In a register, in combination with the registering devices and a moving frame for actuating the same having a transverse bar, a series of reciprocating rods having heads with bar-engaging abutments standing at different distances from the bar of the movable frame when the rods are not reciprocated, and also parts projecting beyond the rear side of the bar, movable stops to limit the movement of the bar of the movable frame, each supported above the path of the bar by a portion of the respective head on a rod, when such rod is in its normal unmoved position, and allowed to drop down into the path of the bar as the head is reciprocated to actuate the bar, substantially as and for the purpose described.

51. In a register, in combination with the registering devices and a moving frame for actuating the same having a transverse bar, a series of reciprocating rods having heads with bar-engaging abutments standing at different distances from the bar, when the heads are unmoved by reciprocation of the rods carrying them, each of such heads having a part exteeding under the bar and provided, at a point to the rear of such bar, with a raised portion, a series of movable stops to limit the movement of the bar of the movable frame, there being one stop for each head, and such stop being normally supported in elevated position by the raised portion of such head, and adapted to drop down into the path of the bar, to limit its movement, when the head has been moved toward the bar, substantially as and for the purpose described.

52. In a register, in combination with the registering devices and a moving frame for actuating the same having a transverse bar, a series of reciprocating rods having heads with bar-engaging abutments standing at different distances from the bar, when the rods and heads are unmoved, each of such heads having a part extending under the bar and provided, at a point to the rear of such bar, with a raised part, a series of movable stops, one for each head, to limit the movement of the bar, such stops being normally supported above the path of the bar by the raised parts of the respective heads, before such heads are moved, and adapted to drop into the path of the bar, as their respective heads are moved to actuate the bar, the bar engaging and stopping ends of such stops standing at different distances from the bar, substantially as and for the purpose described

53. In a register, in combination with the registering devices and a moving frame for actuating the same having a transverse bar, a series of reciprocating rods having heads with bar-engaging abutments standing at different distances from the bar, when the heads are in their normal unmoved positions, each of such heads having a depressed part passing under the bar and, beyond the rear of the bar, a raised part, a series of movable stops to limit the movement of the bar, one for each head, normally supported above the path of the bar by the raised rear parts of the respective heads, when such heads are unmoved, and adapted to drop into the path of the bar, when the portions of the heads supporting them are moved by the travel of the heads to carry their bar-engaging abutments toward the bar, the forward bar engaging parts of such stops being at different distances from the bar, when the latter is in its normal unmoved position, and the stops for these heads whose abutments are farthest from the bar, when the parts are in their normal unmoved positions, being nearest the rear side of the bar at that time, substantially as and for the purpose described.

54. In combination with a register having registering devices and a movable frame for actuating the same provided with a transverse bar, a series of reciprocating rods having heads provided with abutments to engage and actuate the bar, and portions extending under and beyond the bar provided with raised parts to the rear of the bar, movable stops for the bar supported by the raised parts of the heads, when the heads are unmoved, and dropping down into the path of the bar as the respective heads are moved to actuate the bar, a series of indicating devices, one for each of the heads on the reciprocating rods, having indicator-raising levers each of which has an actuating-arm in the path of the respective head, slotted to admit the passage of the movable stop corresponding to such head, substantially as and for the purpose described.

55. In a registering mechanism, in combination with a movable rack and means for moving it in one direction and allowing it to move back again, a register-wheel, a ratchet-wheel connected therewith, a pinion engaged by the rack, an arm moving with the pinion, a pawl on such arm engaging the ratchet-wheel so as to rotate it only as the pinion rotates back, after it has been turned by the rack, a spring, and a cord connected therewith and with a hub rotating with the pinion having a spiral track for the cord wound thereon, decreasing in diameter from the point where the cord is attached to the hub, substantially as and for the purpose described.

56. In combination with the rotary pinion and the movable rack meshing therewith to drive it in one direction, a ratchet-wheel having its teeth on its side toward the pinion, an arm rotating with the pinion and having pivoted to it on a pivot substantially parallel to a radius of the pinion, a spring-pressed pawl engaging the teeth on the ratchet-wheel so as to rotate the same only as the pinion turns back in a direction opposite to that in which the rack rotates it, yielding means for so turning the pinion, and a registering device connected with the ratchet-wheel, substantially as and for the purpose described.

57. In combination with the swinging segmental rack and a rock-shaft carrying the same, a rotary pinion meshing with the rack, means for moving the rack to rotate the pinion in one direction, means for rotating it in the other direction, an arm moving with the pinion, a ratchet-wheel, a pawl on the arm engaging such ratchet-wheel, so as to rotate it only as the pinion is turned in the direction opposite to that in which it is moved by the rack, a shaft rotating with the ratchet-wheel, a registering device, connections between the same and the shaft, a second ratchet-wheel rotating with such shaft, having its teeth turned to bring their abrupt sides facing in the direction in which such shaft is turned, an arm on the rock-shaft carrying the segmental rack, and a yielding brake-pawl thereon to engage the second ratchet-wheel as the segment-rack returns to its normal position after being actuated to turn the pinion, substantially as and for the purpose described.

58. In combination with the swinging segmental rack and the rock-shaft carrying the same, a rotary shaft, a pinion journaled so as to rotate thereon meshing with the rack, a ratchet-wheel fixed on such shaft, an arm rotating with the pinion, a pawl on such arm engaging the ratchet-wheel on the shaft, a second ratchet-wheel fixed on the shaft and having its teeth with their abrupt sides facing in a direction forward, with reference to the rotation of the other ratchet-wheel and the shaft, an arm on the rock-shaft which carries the segmental rack, having a socket and a slot, a stop-pawl to engage the second ratchet-wheel movably held in such socket, a spring in the socket for yieldingly supporting the stop-pawl, and a pin for limiting the motion of this pawl with reference to the arm carrying it projecting into the slot in the arm, substantially as and for the purpose described.

59. In combination with a graduated registering-disk carried on a rotating shaft, a second graduated disk carried by a shaft journaled on the disk and carrying a toothed wheel, a fixed support past which the first disk rotates to carry the second disk and toothed wheel past it, a lug on the fixed support to engage the toothed wheel to turn such wheel as it is carried past the fixed support by rotation of the first disk, a movable frame in which the shaft carrying the first disk is journaled, a shaft journaled on the fixed support, driving-gearing between such shaft and the one carrying the first disk adapted to be thrown into and out of mesh as the movable frame is moved to carry the first disk toward and from the fixed support carrying the projection for engaging and moving the toothed wheel, substantially as and for the purpose described.

60. In combination with a graduated registering-disk and means for rotating the same, a second graduated registering-disk carried by the first disk, so as to be capable of rotation thereon, a second wheel connected with the second registering-disk, and a projection on a suitable support, past which the first disk rotates, adapted to engage the toothed wheel connected with the second disk, so as to turn the same to the distance of one tooth, at each full rotation of the first disk, substantially as and for the purpose described.

61. In combination with a graduated registering-disk and means for rotating the same, a second graduated registering-disk attached to a shaft journaled in the first disk, a toothed wheel on the latter shaft and a projection on a stationary support past which the first disk rotates adapted to engage the teeth of the toothed wheel to rotate the latter through the distance of one tooth, at each full rotation of the first disk as such wheel, with the connected second registering-disk is carried by the projection by the rotation of the first disk, substantially as and for the purpose described.

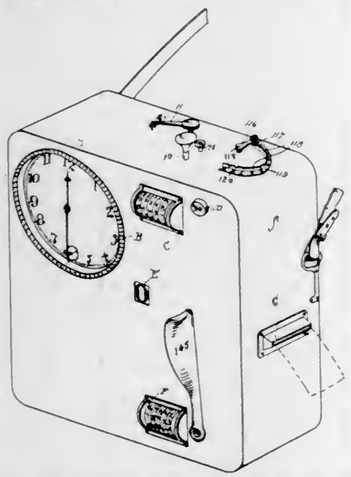
62. In a combined cash-register and change-maker, in combination with the registering mechanism for registering purchases of different values, a change-maker connected with such register, and adapted to issue coins and combinations of coins equal in value to the difference between any purchase registered and a certain predetermined sum of money, a source of supply of dollar-coins, a feed device for feeding out coins therefrom, means for moving such device, and connections between such means and the registering mechanism, whereby the latter is caused to register a dollar, each time that such means is moved to actuate the dollar-feeding device, substantially as and for the purpose described.

63. In a combined cash-register and change-maker, in combination with the change-making mechanism, adapted to issue different amounts of change to equal the difference between the different purchases to be registered and a predetermined sum of money, separate devices for causing the change-maker to issue such different amounts of change, a registering mechanism, connections between the change-maker-actuating devices and such mechanism, whereby the movement of any one of such devices causes registration of the amount of a purchase, as the change-maker is caused to issue an amount of change equal in value to the difference between such purchase and the predetermined sum of money, a source of supply of dollar-coins, a feed device to feed out coins therefrom, means for connecting such device with, and disconnecting it from the other feed devices of the change-maker, so that, at will, it can be made to operate as any one of such feed devices operates, means for moving the dollar-feed device, without moving the other feed devices and connections between such latter means and the registering mechanism, to cause the latter to register a dollar each time that such means actuates the dollar-feed device, substantially as and for the purpose described.

653,627. PRINTING AND REGISTERING MACHINE. WILFRED I. OHMER, JOSEPH N. KELLY, and WALLACE M. KELCH, Dayton, Ohio; said Kelly and Kelch assignors to said Ohmer. Filed Apr. 4, 1899. Serial No. 711,754. (No model.)

Claim.—1. In a ticket-printing and fare-registering machine, the combination with a suitable frame, of time-printing mechanism carried thereby, printing mechanism, for printing units and half-units, also carried thereby, means for indicating the time and specific fares,

means for pressing a ticket strip or roll into contact with said mechanisms, and means for engaging with said ticket-strip to feed said strip beneath said printing mechanisms and deliver the same from said frame, all substantially as shown and described.



2. In a ticket-printing and fare-registering machine, the combination with a suitable frame, of time-printing mechanism, printing mechanism for printing units and half-units, and dating mechanism mounted in said frame, clock mechanism for operating said time-printing mechanism, means for registering the fare, and mechanism for registering the number of tickets issued by said machine, means for feeding a ticket-strip to said printing mechanisms and delivering the same therefrom, and mechanism for pressing a ticket-strip into engagement with said printing mechanisms as it is fed beneath them, substantially as shown and described.

3. In a ticket-printing and fare-registering machine, the combination with a frame, of clock-operated time-printing mechanism, printing mechanism for printing both units and half-units, dating mechanism for printing the day of the month, mechanisms for registering the fare units and mechanism for registering the tickets issued, means for feeding a ticket-strip to said printing mechanism and delivering the same therefrom after being printed, and mechanism for pressing said paper strip into contact with said printing mechanisms, all substantially as shown and described.

4. In a ticket-printing and fare-registering machine, the combination with a frame, of time-printing mechanism mounted therein, fare-printing mechanism also mounted in said frame to print fare units and half-units, dating-printing mechanism for printing the month and the day of the month, also carried by said frame, clock mechanism for operating said time-printing mechanism, a plunger and a half-fare operating-rod adapted to operate said fare mechanism, means for registering the units of said fare mechanism, indicating means for indicating each specific fare, means for presenting a ticket roll or strip into printing position and delivering the same therefrom, mechanism for pressing said paper strip into printing contact with said printing mechanisms, all substantially as shown and described.

5. In a ticket-printing and fare-registering machine, the combination with a frame, of time-printing mechanism consisting of a minute-shaft, (as T) an hour-shaft (as Z) mounted on said minute-shaft, a pair of bevel-gears carried by said minute-shaft, (as S and V) a bevel-gear (as Y) carried by said hour-shaft, a double bevel-gear (as W) rotatably mounted adjacent to said shafts and having one of its gears larger than the other, said larger gear engaging with one of the bevel-gears V on said minute-shaft and said smaller bevel-gear engaging with the bevel-gear Y on said hour-shaft, time-operated means (as O) for engaging with and driving the second bevel-gear S on the minute-shaft, whereby all of said bevel-gears are rotated, and printing characters for indicating the hours and minutes carried by the hour and minute shafts respectively.

6. In a ticket-printing and fare-registering machine, the combination with a frame, of fare-printing mechanism carried thereby, a plunger also carried thereby, a detent carried by said plunger and adapted to operate the units-fare-printing mechanism, and a push-rod adapted to present half-fare units, printing position-registering mechanism also operated by said plunger and adapted to register the fare units, all substantially as shown and described.

7. In a ticket-printing and fare-registering machine, the combination with a frame, having a plunger mounted therein, a detent carried by said plunger and for engaging with a fare-printing wheel to rotate it to present the proper fare units into printing position, a pair of other detents also connected with said plunger, a specific-fare-indicator plate operated by one of said detents and fare-registering mechanism adapted to be engaged by the other of said detents, whereby each fare is presented into printing position, and such fare is indicated and registered, all substantially as shown and described.

8. In a ticket-printing and fare-registering machine, the combination with a frame having a fare-indicating wheel mounted therein, a half-fare-printing device also mounted therein, said half-fare-printing device consisting of a pivoted double bell-crank lever having half-fare characters mounted thereon, a push-rod pivotally connected with the other end of said lever, a detent adapted to engage with said rod for holding said rod in position to present and hold said half-fare-printing characters in position for printing, and means for releasing said detent, and other means for elevating said push-rod and thereby withdrawing said half-fare characters from printing position, all substantially as shown and described.

9. In a ticket-printing and fare-registering machine, the combination with a frame, of a specific-fare-printing device carried thereby, a half-unit-printing device also carried thereby, means for operating each of said devices for presenting their respective characters into printing position, detents for engaging with each of said devices for holding them in position, and a bell-crank lever adapted to release each of said pawls from engagement with its respective device, and means to operate said bell-crank lever every time a ticket is issued, and other means for returning said specific-fare-printing device to its normal or zero position, and other means for returning said half-fare-printing device out of printing position.

10. In a ticket-printing and fare-registering machine, the combination with a frame, of a plunger carried thereby, a pawl pivotally connected with said plunger, a specific-fare-indicating plate carrying a spring and a ratchet, said spring being connected at one end with said indicating-plate and at its other end with said ratchet, the latter of which is adapted to be operated by said pawl, a double pawl carried by said frame, one end of which is also adapted to engage with said ratchet to act as a stop therefor when the first of said pawls is released therefrom and the other end of said pivoted pawl adapted to engage with a helical wedge, a rocking shaft, a sleeve carried by said shaft, said sleeve carrying said wedge, means for rocking said sleeve and wedge to disengage said holding-pawl from said ratchet, and other means for causing said double pawl to engage with said ratchet when said helical wedge is moved sufficiently to permit of such engagement, all substantially as shown and described.

11. In a ticket-printing and fare-registering machine, the combination with a frame, of a specific-fare-indicating plate carried thereby and having notches on its periphery, a rock-shaft also carried by said frame structure, a rigidly-mounted detent thereon adapted to engage in the notches in said plate and having a lug extending therefrom, a sleeve having a helical wedge thereon and a lug extending therefrom also mounted on said rock-shaft, said lugs adapted to engage with each other, a pivoted lever also carried by said frame structure and adapted to engage at one end with said helical wedge and at its other end with a ratchet, a spring interposed between said ratchet and said specific indicating-plate, means for intermittently rotating said plate to indicate the fare units and other means for rocking said shaft whereby the helical wedge will disengage said lever from said ratchet-wheel, and a spring for normally returning said lever into engagement with said ratchet-wheel when the helical wedge will permit, all substantially as shown and described.

12. In a ticket-printing and fare-registering machine, the combination with a frame, of a fare-printing device carried thereby, a ratchet-wheel and a stop projecting from said device, a plunger also carried by said frame adapted to connect with said ratchet and operate it, fare-registering mechanism, and specific-fare-indicating mechanism, both of which are operated by said plunger, a stud carried by a bracket mounted in the path of the projection from the fare-printing device and adapted to limit the rotation of said fare-printing wheel in both directions and also adapted to limit the movement of the plunger whereby the specific-fare-indicating device and fare-registering device all remain inoperative, until after the machine is again operated, all substantially as shown and described.

13. In a ticket-printing and fare-registering machine, the combination with a frame, of a specific-fare-indicating plate having notches therein, a plunger adapted to connect with said plate to operate the same, a rock-shaft mounted in said frame and a detent secured thereto, a reciprocating platen, a step carried by said platen, operating means to reciprocate said platen whereby said step will cause said detent to engage with one of the notches in said indicating-plate, substantially as shown and described.

14. In a ticket-printing and fare-registering machine, the combination with a frame, of a main driving-shaft therein, a toothed segment mounted on said shaft, a bracket carried by said frame in which is mounted a notched press-plunger rod, said plunger-rod adapted to engage with said toothed segment whereby the press-rod is reciprocated, all substantially as shown and described.

15. In a ticket-printing and fare-registering machine, the combination with a frame, of a main reciprocating driving-shaft, a pair of toothed segments rigidly mounted thereon, a bracket carried by said frame, a notched press-bar mounted in said bracket and adapted to engage with one of said toothed segments to be reciprocated thereby, an inking-roll frame pivotally mounted in said frame structure, a pitman connected at one end with said inking-roll frame and at its other end with a crank toothed segment, a shaft also mounted in said frame and carrying a pair of toothed segments thereon one of which meshes with said crank toothed segment and the other of which meshes with the second toothed segment on the main reciprocating shaft and an inking-roll carried by said inking-roll frame and adapted to ink printing mechanism also mounted in said frame structure, all substantially as shown and described.

16. In a ticket-printing and fare-registering machine, the combination with a frame, of a main reciprocating driving-shaft mounted therein, three toothed segments carried thereby, a feed and delivering roll shaft engaging with one of said segments, a press-plunger engaging with another of said segments and an inking-roll mechanism engaging with the remaining segment, a double bell-crank lever pivoted in said frame, one end of which engages with said press-plunger and the other end of which carries a pivoted detent, ticket-registering mechanism carried by said frame and adapted to be engaged by said pivoted detent, and a hand-lever for rocking said main driving-shaft, thereby rotating said feed and delivery roll, operating said printing-roll and reciprocating said press-plunger and through it operating the ticket-registering device, all substantially as shown and described.

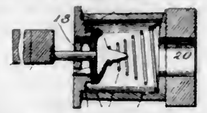
17. In a ticket-printing and fare-registering machine, the combination with a frame, of a main driving rock-shaft mounted thereon, a toothed segment rigidly connected with said shaft, a feed and delivery roll shaft mounted in said frame, a pinion loosely mounted on said shaft as also a feed and delivery roll, said pinion meshing with said toothed segment, a pawl pivotally connected with said feed and delivery roll, a projection extending from said pinion and adapted to engage with said pawl to drive the feed and delivery roll in one direction and pass beneath said pawl when being rotated in the opposite direction, a spring to normally hold said pawl upon said feed-roll and delivery-shaft, a stud or projection extending from the opposite end of said feed-roll and delivery-shaft, a double bell-crank lever pivoted to said frame structure and adapted to be rocked by said stud or projection, a pair of detents, one of which engages with a half-fare printing device and the other of which engages with a fare-printing device, adapted to be disconnected from said device by said bell-crank lever, and a toothed feed and delivery roll adapted to work in conjunction with the first feed and delivery roll, substantially as shown and described.

18. In a ticket-printing and fare-registering machine, the combination with a frame, of printing mechanism and time driving mechanism therefor mounted therein, fare-printing mechanism embodying a half-unit-fare-printing device, and means for operating said printing mechanism, other means for indicating the specific-fare units and other means for registering said units, dating mechanism also mounted therein, inking mechanism for inking said characters, a ticket strip or roll receptacle mounted therein and carrying a ticket strip or roll, a pair of feed and delivery rolls, one of which has an elastic surface and the other of which has a toothed surface adapted to engage said ticket strip or roll and feed the same beneath said printing mechanism, a driving rock-shaft, a hand-lever secured thereto by which said shaft is reciprocated, and toothed segments carried by said rock-shaft and so connected with the feed and delivery rolls that it will rotate them in one direction and a platen also operated by one of said segments and adapted to press said ticket-strip into contact with said printing mechanisms, an inking-roll also connected with still another of said toothed segments on said main rock-shaft and adapted to operate said printing mechanisms, and a station-indicating printing-roll, all substantially as shown and described.

19. In a ticket-printing and fare-registering machine, the combination with a casing, of a frame structure mounted therein carrying time-printing, specific-fare-printing, dating-printing, station-printing and half-fare-printing mechanisms therein, means for operating said time-printing, said specific-fare-prioting, said dating-printing, said station-printing and said half-fare-printing mechanisms respectively, and a time-indicating dial, a specific-fare indicating plate, ticket-registering mechanism and specific-fare-registering mechanism, means for locking the specific-fare-indicating plate, and a push-button for releasing said plate after each ticket issued, all substantially as shown and described

20. In a ticket-printing and fare-registering machine, the combination with a frame, of a double bell-crank lever pivoted therein, half-fare-printing characters mounted on one arm of said lever, a push-rod slidably mounted in said frame, means for connecting said push-rod with the other arm of said double bell-crank lever whereby there may be relative movement between them to compensate for the rocking and reciprocating movements of said lever and push-rod, respectively, a detent for holding said printing characters in printing position, and means for releasing said detent, and a spring for normally raising said push-rod and withdrawing said half-fare-printing characters from printing position, substantially as shown and described.

658,628. AUTOMATIC VALVE. WILLIAM H. PARTON, Syracuse, Nebr. Filed Feb. 20, 1900. Serial No. 5,967. (No model.)



Claim.—1. A valve of the character described, comprising a casing, a face-plate having a valve-seat, fastenings for clamping the casing and face-plate together and having bent end portions, a valve located in the casing and having a protruding stem, and a board having an eye at its butt-end making hinge connection with the bent portion of the aforementioned fastening and adapted to engage with the valve-stem, substantially as set forth.

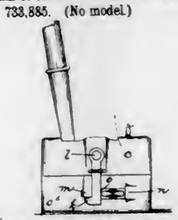
2. In combination, a casing, plates at opposite ends of the casing and formed with openings in communication therewith, bolts clamping the plates against the ends of the interposed casing and having the end portions adjacent to the outlet-opening bent, a valve located within the casing and having a protruding stem, and a board making hinge connection with the bent ends of the clamp-bolts and adapted to have its butt-end engage with the valve-stem, substantially as described.

3. In combination, a casing, a face-plate having an opening provided with a guide and having an annular flange in line with the opening and constituting a valve-seat and formed with a raised portion to enter the casing, means for securing the plate to the end of the casing, and a valve opening inwardly and having a stem passing through the guide of the said plate, substantially as set forth.

4. In combination, a valve casing having an inner flange at one end, a face-plate having a raised portion to enter the opposite end of the casing and having a central opening, an annular flange in line with the opening and forming a valve-seat, and a guide in said opening, means for clamping the face-plate against the end of the casing, a conical spring located in the casing and having its base portion seated against the inner flange, and an inwardly-opening valve having a stem passing through the guide of the face-plate and having a teat in line with the stem and entering the smaller end of the conical spring, substantially as set forth.

5. In combination, a valve-casing, a plate, bolts for clamping the plate against the casing and having bent end portions, an inwardly-opening valve having a protruding stem, a board, and hinged members having adjustable connection with the board and adapted to be loosely connected with the bent ends of the clamp-bolts, substantially as set forth.

653,629. DEVICE FOR CUTTING OFF THE FLOW OF WATER THROUGH FLEXIBLE PIPES. GEORGE SCHNEIDER, Baltimore, Md., assignor of one-half to Levin H. Burkhardt, same place. Filed Oct. 17, 1899. Serial No. 733,885. (No model.)

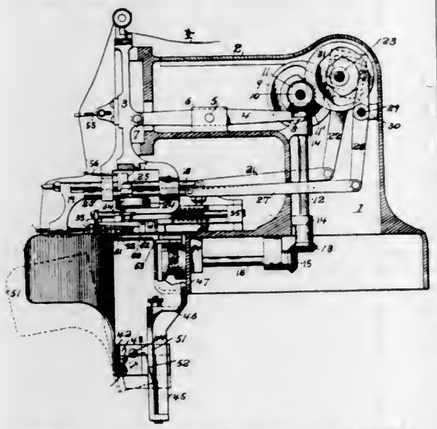


Claim.—1. The combination of a metal shell comprising two sections which are hinged together at their sides one upon the other, said sections provided in each end with an opening; a hook-latch on one section which engages a lug on the other section to secure the two sections when closed together; a cut-off arm pivoted within one of said sections and adapted to be swung into the other section; and a flange projecting from one end of the lower section to prevent the shell from tilting when the cut-off arm is operated.

2. The combination of a metal shell comprising an upper and lower section which are hinged together at their sides one upon the other, said sections provided in each end with an opening; a cut-off arm pivoted within said upper section and adapted to be swung into the lower section: a swinging hook-latch pivoted to said upper section and which projects down and takes under a lug, *m*, on the lower section; a second lug, *n*, on said lower section; a turn-button pivoted on said lower section between said two lugs and when shifted binding against both said swinging hook-latch and said lug, *n*, as and for the purpose set forth

653,630. GUIDE FOR BLINDSTITCHING SEWING-MACHINES.

ORVILLE R. VAN VECHTEN, New York, N. Y., assignor to the Economic Sewing Machine Company, same place. Original application filed Nov. 21, 1898, Serial No. 696,983. Divided and this application filed Apr. 28, 1899. Serial No. 714,790. (No model.)



Claim.—1. In a sewing-machine, the combination with the bed-plate, of a stitch-forming mechanism, a guide over which the work is folded and along which it is fed, and connections between the guide and the bed-plate whereby the guide is held from movement in the direction of travel of the work, said guide standing at an angle to the plane of the bed-plate and being arranged beyond the edge thereof so as to support the work clear of the plate and at an angle thereto, substantially as described

2. In a sewing-machine, the combination with the bed-plate, of a guide over which the work is folded and along which it is fed, and connections between the guide and the bed-plate whereby the guide is held from movement in the direction of travel of the work, said guide standing at an angle to the plane of the bed-plate and being arranged beyond the edge thereof so as to support the work clear of the plate and at an angle thereto, a stitch-forming mechanism acting across the folded edge of the work, and means for feeding the work along the guide, substantially as described.

3. In a sewing-machine, the combination with the bed-plate, of a guide over which the work is folded and along which it is fed, and connections between the guide and the bed-plate whereby the guide is held from movement in the direction of travel of the work, said guide standing at an angle to the plane of the bed-plate and being arranged beyond the edge thereof so as to support the work clear of the plate and at an angle thereto, a stitch-forming mechanism acting across the folded edge of the work, means for feeding the work along the guide, and means for permitting the guide to be moved away from the stitch-forming mechanism in order that the work may be placed in position thereon, substantially as described.

4. In a sewing-machine, the combination with the bed-plate, of a curved guide over which the work is folded and along which it is fed, and connections between the guide and the bed-plate whereby the guide is held from movement in the direction of travel of the work, the edge of the guide being contained in a plane which is parallel to plane of the bed-plate, a stitch-forming mechanism acting across the folded edge of the work, and means for feeding the work along the guide, substantially as described.

5. In a sewing-machine, the combination with the bed-plate, of a curved guide over which the work is folded, the edge of the guide being contained in a plane which is parallel to the plane of the bed-plate, a stitch-forming mechanism operating across the line of fold, means for feeding the work along the guide, and means for permitting the guide to be moved away from the stitch-forming mechanism in order that the work may be placed in position thereon, substantially as described.

6. In a sewing-machine, the combination with a curved guide over the edge of which the work is folded and along which it is fed, and connections between the guide and the bed-plate whereby the guide is held from movement in the direction of travel of the work, the curve of the guide being such that part of the folded work travels along the convex side of the guide and the other part of the folded work travels along the concave side of the guide, of a stitch-forming mechanism acting across the folded edge of the work, and means for feeding the work along the guide, substantially as described.

7. In a sewing-machine, the combination with a bed-plate, of a curved guide arranged beyond the edge of the plate and standing at an angle to the plane of the plate, said guide being curved away from the edge of the plate and connections between the guide and the bed-plate whereby the guide is held from movement in the direction of travel of the work, the construction of the guide being such that the work is folded over the edge of the guide and a part of it travels between the guide and the end of the plate, a stitch-forming mechanism acting across the folded edge of the work, and means for feeding the work along the guide, substantially as described.

8. In a sewing-machine, the combination with a guide over which the work is folded, of a stitch-forming mechanism operating across the folded edge of the work, means for feeding the work along the guide, means for permitting the guide to have a movement toward and away from the stitch-forming mechanism, and an adjustable stop for limiting the movement of the guide toward the stitch-forming mechanism, substantially as described.

9. In a guide for sewing-machines, the combination with a sliding block, of means whereby the block is guided in its movement, a second block pivoted to the first-named block, and a guide secured to the second block, substantially as described.

10. In a guide for sewing-machines, the combination with a sliding block, of suitable ways by which the block is guided in its movement, means for causing the block to move along the ways, an adjustable stop by which the movement of the block is limited, a second block pivoted to the first-named block, and a guide carried by the second block, substantially as described.

11. In a guide for sewing-machines, the combination with a sliding block, of means whereby the block is guided in its movement, a second block pivoted to the first-named block, and a curved guide secured to the second block, substantially as described.

12. In a guide for sewing-machines, the combination with a sliding block, of suitable ways by which the block is guided in its movement, means for causing the block to move along the ways, an adjustable stop by which the movement of the block is limited, a second block pivoted to the first-named block, and a curved guide carried by the second block, substantially as described.

13. In a sewing-machine, the combination with a bed-plate, of a stitch-forming mechanism located above the plate, ways located below the plate, a sliding block mounted in the ways, a guide, and connections securing the guide and the sliding block, substantially as described.

14. In a sewing-machine, the combination of a guide over which the edge of the work is folded, a stitch-forming mechanism operating across the line of fold, means for permitting the guide to move directly away and outwardly from the stitch-forming mechanism, and means for locking it in its outward position, substantially as described.

15. In a sewing-machine, the combination of a curved guide over which the edge of the work is folded, a stitch-forming mechanism operating across the line of fold, means for permitting the guide to move directly away and outwardly from the stitch-forming mechanism, and means for locking it in its outward position, substantially as described.

16. In a guide for sewing-machines, the combination with a pair of ways having chamfered wings thereon, of a sliding block moving in said ways, a second block pivoted to the first-named block, the contacting parts of one of the blocks being cut away so as to permit the second block to swing with respect to the first block, and the second block having flat sides which cooperate with the chamfered wings when the block has reached its limit of movement away from the stitch-forming mechanism and is swung outward, whereby the block is locked in position, and a guide secured to the second block, substantially as described.

17. In a guide for sewing-machines, the combination with a pair of ways having chamfered wings thereon, of a sliding block moving in said ways, a second block pivoted to the first-named block, the contacting parts of one of the blocks being cut away so as to permit the second block to swing with respect to the first block, and the second block having flat sides which cooperate with the chamfered wings when the block has reached its limit of movement away from the stitch-forming mechanism and is swung outward, whereby the block is locked in position, and a curved guide secured to the second block, substantially as described.

18. In a guide for sewing-machines, the combination with a block ways by which the block is guided in its movement, chamfered wings on the ways, a second block secured to the first block and constructed to have a pivotal motion thereon, said block having flat sides to engage the chamfered wings, and a guide mounted on the said block, whereby the guide may be adjusted along the ways and locked in its adjusted position, substantially as described.

653,631. FILTER BARREL OR TANK.

JAMES C. WALLACE, Colorado City, Colo. Filed Feb. 14, 1900. Serial No. 5,231. (No model.)

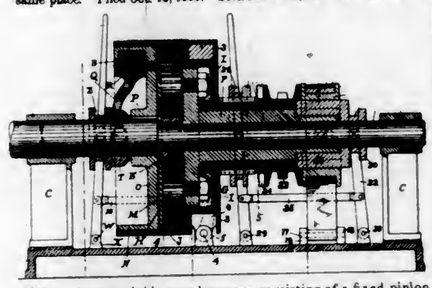


Claim.—1. In a filter barrel or tank a series of curved metal plates, perforated, held to the inside wall of said barrel by bolts through the opposite ends of said plates in such manner as to form a lunar space between the under surface of said plates and the bottom of said barrel; substantially as shown.

2. In a filter barrel or tank, a filtering device consisting of a series of curved metal plates, perforated, fastened to the inside wall or walls of said barrel or tank: a filter-cloth upon the upper surface of said plates, secured thereon by a series of imposed metal bars and filling-strips secured in position by bolts or other fastening devices to the wall or walls of said barrel or tank.

653,632. VARIABLE-SPEED GEARING.

GEORGE W. WALTENBAUGH, San Francisco, Cal., assignor of one-half to Joseph M. Ough, same place. Filed Oct. 13, 1899. Serial No. 733,509. (No model.)



Claim.—1. A variable-speed gearing consisting of a fixed pinion, on a rotary shaft, combined with a sleeve loosely mounted on said shaft and geared with said pinion, a barrel having an internal gear-wheel in mesh with the gear of said sleeve, means for positively connecting said barrel with said shaft so they will turn together, a loose wheel, and means for coupling said loose wheel to said sleeve, substantially as described.

2. A variable-speed gearing comprising a pinion keyed on a shaft that may run continuously in one direction, a sleeve loose on said shaft, geared with said pinion, a barrel provided with an internal gear-wheel meshing with the gear of said sleeve, means for connecting said barrel directly with said shaft and causing it to turn in the same direction, a loose wheel, and means for coupling said loose wheel to said barrel, substantially as described.

3. A fixed pinion on a rotary shaft, combined with a sleeve geared with said pinion and loosely mounted on said shaft, a barrel having an internal gear-wheel engaging the gear of said sleeve, means for rigidly connecting the rotary shaft with said barrel, a loose wheel, and means for coupling said loose wheel either to the sleeve or to the barrel, substantially as described.

4. The combination, with a rotary shaft, of a pinion fixed thereon, a sleeve loosely mounted on said shaft and carrying one or more spur-gears in mesh with said pinion, a barrel loosely mounted on said sleeve and having an internal gear-wheel meshing with said spur-gear or spur-gears, a clutch for coupling said barrel to the rotary shaft, a wheel loose on the sleeve next to the barrel thereon, and means for coupling said loose wheel either to the barrel or to the sleeve, substantially as described.

5. The combination, with a single driving-shaft that may turn continuously in one direction, of a loose sleeve and a loose barrel geared with each other and with said shaft, a loose wheel means for coupling said loose wheel with either the said sleeve or the said barrel, and means for positively connecting the shaft and barrel to cause them to turn together in the same direction, substantially as described.

6. The combination, with a single driving-shaft that may turn continuously in one direction, of a loose barrel and a loose sleeve geared with said shaft and with each other, a loose wheel, means for coupling said loose wheel with said sleeve, and means for holding said barrel stationary while the shaft is turning, substantially as described.

7. The combination, with a single driving-shaft that may turn continuously in one direction, of a loose sleeve and a loose barrel geared with each other and with said shaft, a loose wheel, means for coupling said loose wheel with said barrel, and means for holding said sleeve stationary while the shaft is turning, substantially as described.

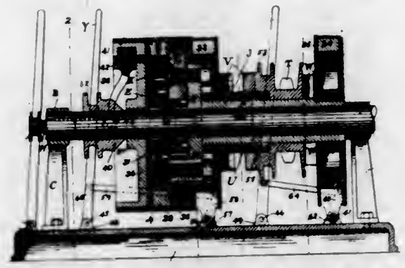
8. The combination, with a rotary shaft, of a pinion fixed thereon, a sleeve loosely mounted on said shaft and carrying one or more spur-gears in mesh with said pinion, a barrel loosely mounted on said sleeve and having an internal gear-wheel engaged by said spur-gear or spur-gears, a loose wheel, means for coupling said loose wheel with the sleeve, and a brake for holding the barrel with its internal gear-wheel stationary while the other gears and shaft are turning therein, substantially as described.

9. The combination, with a rotary shaft, of a fixed pinion thereon, a sleeve loosely mounted on said shaft and carrying one or more spur-gears in mesh with said pinion, a barrel loosely mounted on said sleeve and having an internal gear-wheel engaged by said spur-gear or spur-gears, a loose wheel, means for coupling said loose wheel with said barrel, and a brake for holding the sleeve stationary while the barrel and internal gear-wheel revolve around its spur-gear or spur-gears oppositely to the shaft and pinion, substantially as described.

10. A variable-speed gearing consisting of a fixed pinion on a single driving shaft that may run continuously in one direction, a sleeve loosely mounted on said shaft next to said pinion and carrying a set of spur-gears meshing with the same, a barrel loosely mounted on said sleeve and having an internal gear-wheel engaged by said spur-gears, a sprocket-wheel loosely mounted on said sleeve next to said barrel, a clutch adapted to couple the barrel with the driving-shaft, a brake applicable to the barrel, a brake applicable to the sleeve, and clutches for coupling the loose wheel with either the barrel or the sleeve, substantially as and for the several purposes described.

653,633. VARIABLE-SPEED GEARING.

GEORGE W. WALTENBAUGH, San Francisco, Cal., assignor of one-half to Joseph M. Ough, same place. Filed Jan. 29, 1900. Serial No. 3,225. (No model.)



Claim.—1. The combination with a single driving-shaft that may turn continuously in a chosen direction, of a loose sleeve and a loose barrel, gearing permanently connecting the sleeve and barrel with each other and detachably with said shaft, a loose wheel, means for rigidly connecting said loose wheel with the said sleeve, and means for positively connecting the shaft and barrel to cause them to turn together in the same direction, substantially as described.

2. The combination, with a single driving-shaft that may turn continuously in one direction, of a loose barrel and a loose sleeve, gearing permanently connecting the sleeve and barrel with each other and detachably with said shaft, a loose wheel, means for rigidly connecting said loose wheel with said sleeve, and means for holding said barrel stationary while the shaft is turning, substantially as described.

3. The combination, with a single driving-shaft that may turn continuously in a given direction, of a loose sleeve and a loose barrel, gearing permanently connecting the sleeve and barrel with each other and detachably with said shaft, a loose wheel, means for coupling said loose wheel with said barrel, and means for holding said sleeve stationary while the shaft is turning, substantially as described.

4. A variable-speed gearing consisting of a shaft, a detachable pinion on said shaft combined with a sleeve loosely mounted on said shaft, a gear carried by said sleeve and geared with said pinion, a barrel, an internal gear-wheel carried by said barrel and in mesh with the gear of said sleeve, means for positively connecting said barrel

with said shaft so they will turn together, a loose wheel, and means operating to turn said loose wheel with said sleeve, substantially as described.

5. The combination, with a rotary shaft, of a detachable pinion thereon, a sleeve loosely mounted on said shaft, one or more gears carried by said sleeve and in mesh with said pinion, a barrel loosely mounted on said sleeve, an internal gear-wheel carried by said barrel and engaged by said gear or gears, a loose wheel, means for rigidly connecting said loose wheel with the sleeve, and a brake for holding the barrel with its internal gear-wheel stationary while the other gears and shaft are turning therein, substantially as described.

6. The combination, with a rotary shaft, of a detachable pinion thereon, a sleeve loosely mounted on said shaft, one or more gears carried by said sleeve and in mesh with said pinion, a barrel loosely mounted on said sleeve, an internal gear-wheel carried by said barrel and engaged by said gear or gears, a loose wheel, means for coupling said loose wheel with said barrel, and a brake operating to hold the sleeve stationary while the barrel and internal gear-wheel revolve around its gear or gears oppositely to the shaft and pinion, substantially as described.

7. A variable-speed gearing consisting of a single driving-shaft that may run continuously in one direction, a detachable pinion thereon, a sleeve loosely mounted on said shaft next to said pinion, a set of gears carried by said sleeve and meshing with the same, a barrel loosely mounted on said sleeve, an internal gear-wheel carried by said barrel and engaged by said gears, a sprocket-wheel loosely mounted on said sleeve next to said barrel, a clutch adapted to couple the barrel with the driving-shaft, a brake applicable to the barrel, a brake applicable to the sleeve, and clutches for rigidly connecting the loose wheel with either the barrel or the sleeve, substantially as and for the purposes described.

8. A variable-speed gearing comprising a driving-shaft that may turn continuously in a single direction, two or more pinions loosely mounted thereon, means for rigidly securing either of said pinions to said shaft, a sleeve also loosely mounted on the shaft, gears carried by said sleeve and in mesh with said pinions, a barrel, internal gears carried by said barrel and engaging the gears of said sleeve, means for connecting said barrel directly with said shaft and causing it to turn in the same direction, a loose wheel, and means for rigidly securing said loose wheel to said sleeve, substantially as described.

9. The combination, with a rotary shaft, of two or more pinions loose thereon, a sleeve loosely mounted on said shaft, gears carried by said sleeve and in mesh with said pinions, a barrel, internal gears carried by said barrel and engaged by the gears of said sleeve, a loose wheel, means for fixing either one of said pinions to the shaft, means for rigidly connecting said loose wheel with the sleeve, and means for holding the barrel and its internal gears stationary while the sleeve is turning, substantially as described.

10. The combination, with a rotary shaft, of detachable pinions thereon, a sleeve loose on said shaft, gears carried by said sleeve and in mesh with said pinions, a barrel, internal gears carried by said barrel and engaged by the gears of said sleeve, a loose wheel, means for fixing one of the pinions to the shaft, means for coupling the loose wheel with the barrel, and means for holding the sleeve stationary while the barrel and its internal gears revolve around the gears of the sleeve oppositely to the shaft and fixed pinion, substantially as described.

11. A variable-speed gearing consisting of a single driving-shaft that may run continuously in a chosen direction, detachable pinions on said shaft, a sleeve loosely mounted on said shaft next to said pinions, gears carried by said sleeve and respectively in mesh with them, a barrel, internal gears carried by said barrel and respectively engaged with the gears of said sleeve and through them with the detachable pinions, a friction-drum secured to the sleeve, a loose wheel also mounted on the sleeve and laterally slidable thereon toward either the barrel or the friction-drum, a key operating to fix either one of the detachable pinions on the shaft, clutches on the barrel and drum respectively adapted to couple the same with said loose wheel, a brake applicable to the barrel, a brake applicable to the friction-drum, and suitable levers for actuating said key, clutches, and brakes, substantially as described.

12. The combination, with a driving-shaft that may turn continuously in one direction, of a pinion adapted to be revolved thereby, a sleeve loosely mounted on said shaft, a gear carried by said sleeve and geared with said pinion, an internal gear in mesh with the gear of said sleeve, a wheel loose on the sleeve, means for rigidly connecting the wheel with the sleeve, and means for rigidly connecting said internal gear and causing it to revolve with the driving-shaft substantially as described.

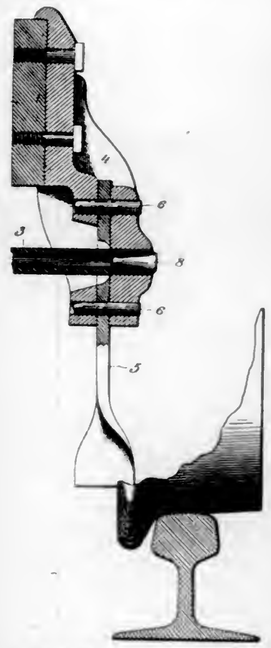
13. The combination, with a driving-shaft that may turn continuously in one direction, of a pinion revoluble therewith, a sleeve loose on said shaft, a gear carried by said sleeve and geared with said pinion, an internal gear engaged by the gear of said sleeve, a wheel loosely mounted on the sleeve and adapted to be revolved thereby, and means operating to hold said internal gear stationary while the driving-shaft is turning, substantially as described.

14. The combination, with a driving-shaft that may turn continuously in one direction, of a pinion adapted to be revolved thereby, a sleeve mounted loosely on said shaft, a gear carried by said sleeve and geared with said pinion, an internal gear engaging the gear of said sleeve, a wheel loose on the sleeve and means for rigidly connecting said sleeve so as to revolve with said internal gear, and means for holding the sleeve stationary while the shaft is turning, substantially as described.

15. The combination with a single driving-shaft, of a loose sleeve, gears carried by said sleeve, two pinions loosely mounted on said shaft each in gear with one of said gears on the sleeve, a barrel, gears carried by said barrel and geared with said gears on the sleeve, means for attaching either of said pinions to said shaft to rotate therewith means for transmitting motion from said sleeve, and means for holding the barrel, substantially as described.

16. The combination with a single driving-shaft, of a loose sleeve, gears carried by said sleeve, two pinions mounted on said shaft each in gear with one of said gears on the sleeve, a barrel, gears carried by said barrel and geared with said gears on the sleeve, means for attaching either of said pinions to the shaft to rotate therewith and detaching the other pinion from the shaft, and means for holding the barrel from rotation, substantially as described.

653,634. APPARATUS FOR AUTOMATICALLY APPLYING CAR-BRAKES. SILAS F. WOODWORTH, Clipper Gap, Cal. Filed Nov. 11, 1899. Serial No. 736,720. (No model.)

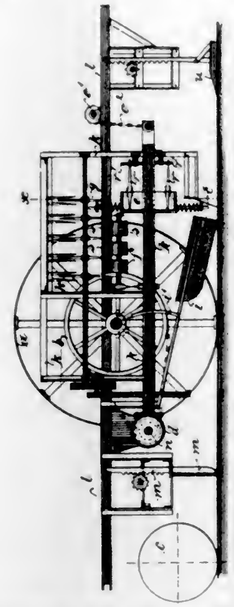


Claim.—1. In an apparatus for automatically applying car-brakes, the cutting device consisting of a fixed part 4 and movable part 5 arranged with relation to the rail and its substructure and adapted to sever the flexible tube substantially as shown for the purpose set forth.

2. In an apparatus for automatically applying car-brakes, the combination of the movable cutter the fixed part 4 and the flexible tube 3 all substantially as, and for the purpose specified and shown.

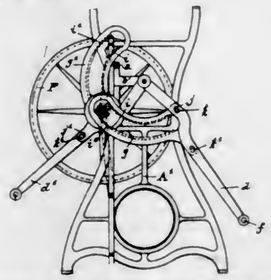
653,635. IMPLEMENT FOR PULLING UP POTATO-PLANTS. JAKOB ZIMMERMANN, Munich, Germany. Filed June 26, 1899. Serial No. 721,903. (No model.)

Claim.—1. An implement for pulling up potato-plants, comprising a suitable framework *l* mounted on wheels *a c* and carrying a device *m* to separate the plants, and an adjustable frame *k* on which is pivoted a device *i* to bend over the plants, said frame having mounted on it a wheel driven by means of suitable gearing from the main axle, provided with hooks *e'* and a spring device *q* and operating mechanism *r r'*; in combination with a transporter *f*, and cutting device consisting of rotary blades *g* cooperating with stationary blades *h*, and a raking device *t*, all substantially as described and for the purposes set forth.



2. In an implement for pulling up potato-plants, a wheel for seizing and raising the plants from the ground comprising a central part or case having radial hooked arms *e'* and bowed springs *q* pressed outward by spiral springs *p* and drawn inward by lever and roller device *r r'*, all arranged and operating substantially as set forth.

653,686. POWER-TRANSMITTING DEVICE. DAVID ASHMAN Baltimore, Md., assignor to Eagle Manufacturing Co. Filed Jan. 25, 1900. Serial No. 2,735. (No model.)

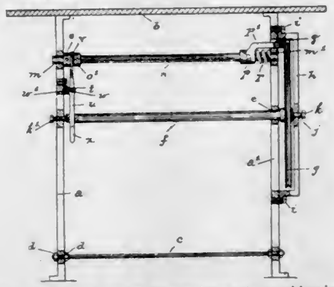


Claim.—1. In clutch mechanism for transmitting rotary power, the combination of a supporting-frame; a rotary shaft supported in said frame and carrying a drive-wheel; a cup-shaped friction-disk on said shaft between its ends; a cap, P, loose on said shaft and closing the cup-shaped disk and provided on one side with a cog by which it is driven and on the other side with a pin which projects into the said cup-disk; a clutch-pawl device which may be placed in reverse positions within said cup-shaped disk and be actuated by the said pin, whereby the position of the clutch-pawl may be reversed within the cup-disk and the shaft may be driven in one direction or the other.

2. In a friction-clutch for power-transmitting mechanism to rotate drive-wheels, the combination of a shaft carrying the drive-wheel; a disk having a circumferential wall, *k*, and which is secured to a shaft; a loose collar, *l*, having a lug, *m*, clutch-pawl, *n*, pivoted on said lug and at one end having a lip, *n'*, to impinge by frictional engagement the inner surface of the circumferential wall, a tongue, n^3, on the other; an L-shaped arm, *o*, pivoted to said pawl and forming a space between it and said tongue; a cap, P, loose on said shaft having a pin, *t*, which takes into the said space; and a spiral spring, *r*, connecting the said arm with the collar and serving to compress or grip the said pin, *t*, in the space.

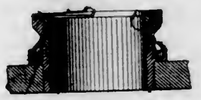
3. The herein-described reversible rotary mechanism consisting of the combination of a supporting-frame; a rotary shaft supported in said frame and carrying a drive-wheel; cup-shaped friction-disks on said shaft; reversible clutch-pawl mechanism within said cup-disks; a cap loose on said shaft and provided on one side with a cog and on the other side with a pin which engages the reversible pawl mechanism; and treadles swinging in said frame and each having two racks one of which to engage the cog on said loose cap to turn the the cap in one direction, and the other rack to engage said cog to turn the cap in the opposite direction when said clutch-pawl mechanism has been reversed in the cup-disk.

653,637. MACHINE-BRAKE. DAVID ASHMAN, Baltimore, Md., assignor to Eagle Manufacturing Co. Filed Jan. 25, 1900. Serial No. 2,736. (No model.)



Claim.—In a brake device for machines, the combination of the standards *a*, *a'*, formed with bearings *m*, *m'*, and one of said standards *a'* being also formed with a hole *q* separate from its bearing; a shaft supported in said standards; a drive or fly wheel carried thereon; a rod movable endwise through bearings in a direction parallel with said shaft; a sleeve surrounding and secured to the movable rod and formed with a brake-arm *p'* extending parallel with and spaced from said rod and projecting through the said separate hole *q* in the standard in proximity to the said drive or fly wheel; a spring coiled around the movable rod in the space between the latter and said brake-arm and interposed between said sleeve and the adjacent standard, and means for moving said rod and brake-arm.

653,638. SPINNING AND TWISTING FRAME. SIMEON BERARD, Fall River, Mass. Filed May 2, 1900. Serial No. 15,184. (No model.)



Claim.—1. In combination, the spindle, the ring having the yarn-guide pivotally mounted at the upper end thereof, and means to rotate the ring, said ring having the upwardly-extending shell serving to shield the yarn-guide and also to arrest the outward swing of the yarn-guide and the exterior cylindrical portion to enable the spinner to arrest the rotation of the ring by hand by pressing against said portion, substantially as described.

2. In combination, the holder having a shoulder at its upper end, the separate bearing-ring having the lip and also having a shoulder to make contact with that of the holder, the said holder and bearing-ring being threaded and secured together and the rotating ring revolving upon the exterior of the said bearing-ring supported vertically by said shoulder and provided with the yarn-guide, the said lip serving to prevent rising movement of the rotating ring substantially as described.

3. In combination, the holder having a shoulder, the separate bearing-ring having the lip and also having the shoulder to make contact with that of the holder, the said holder and bearing-ring being threaded and screwed together, and the rotating ring revolving upon the exterior of the said bearing-ring and provided with the yarn-guide, the said lip serving to prevent rising movement of the rotating ring, substantially as described.

4. In combination, the holder having the exterior channel for lubricant, the bearing-ring having the lip, and detachably applied to the holder and the rotating ring fitting and turning upon the exterior of the detachable bearing-ring, held from rising by the said lip, and having the skirt thereof arranged to overlap the outer shell of the said channel, substantially as described.

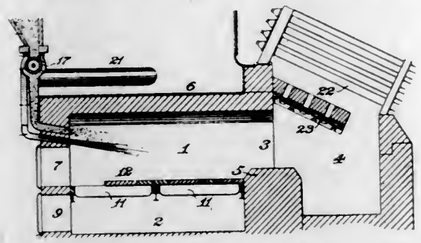
5. In combination, the holder having the exterior channel for lubricant, the wicking applied to the holder within said channel, the bearing-ring, the rotating ring surrounding and fitting said bearing-ring, and also covering said channel, and the wicking applied to the said bearing-ring adjacent the bearings thereon for the said rotating ring substantially as described.

6. In combination, the ring provided with a yarn-guide, means to rotate the ring, a sleeve, a spindle on which said sleeve is mounted with capacity to turn independently of the spindle, and a support in which said spindle is capable of turning, substantially as described.

7. In combination, the ring provided with a yarn-guide, means to rotate the ring, a sleeve, a spindle on which said sleeve is mounted with capacity to turn independently of the spindle, a drag device for said sleeve, and a support in which said spindle is capable of turning, substantially as described.

653,639. APPARATUS FOR BURNING PULVERIZED FUEL.

JOHN BOLE, Pittsburg, Pa., assignor of one-half to David R. W. Patterson, same place. Filed Sept. 21, 1899. Serial No. 731,148. (No model.)



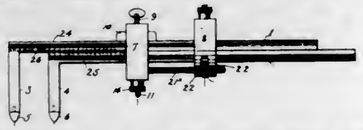
Claim.—1. In a furnace the combination of a combustion-chamber, means for feeding pulverized fuel thereto and means supplying an underlying and fuel-supporting blast of oxygen-bearing fluid into said combustion-chamber, said chamber being of such dimensions that combustion of the fuel is substantially completed before the blast is interrupted or deflected.

2. In a furnace the combination of a combustion-chamber, means causing a blast of oxygen-bearing fluid to traverse said chamber in an approximately-horizontal plane, means feeding pulverized fuel to said chamber in position to be supported above and by said blast, said chamber being of such dimensions that combustion of the fuel is substantially completed before the blast is interrupted or deflected with a main or final furnace-chamber and a passage leading from the combustion-chamber to the main or final chamber, whereby said pulverized fuel is consumed in the combustion-chamber and only the products of combustion are conducted to the main or final chamber.

3. In a furnace the combination of a combustion-chamber, means feeding pulverized fuel into said chamber in a broad thin stream or sheet, means feeding a blast of oxygen-bearing fluid into said chamber in a plane beneath and substantially parallel with said stream or sheet of fuel, whereby said fuel is supported upon an underlying blast of said fluid, a main or final furnace-chamber, a passage connecting said combustion and main chambers, the combustion-chamber being of such dimensions that combustion of the fuel is substantially completed before the blast reaches said connecting-passage.

653,640. COMBINATION MEASURING INSTRUMENT.

GEORGE H. BUTRICK, Worcester, Mass., assignor of one-half to James E. Connor same place. Filed Apr. 13, 1900. Serial No. 12,725. (No model.)



Claim.—1. The combination with the two bars arranged face to face, of two yokes embracing the same, a device carried by each yoke and each engaging one of the bars, and means independent of said devices for binding the bars together face to face in fixed relations.

2. In combination with the two bars disposed face to face, a yoke embracing said bars, a clamping device sustained by the yoke and adapted to bind the bars together in fixed relations, a second clamping device also sustained by the yoke and engaging one of the bars, a second yoke embracing said bars, and a clamping device sustained by this yoke and engaging the opposite bar.

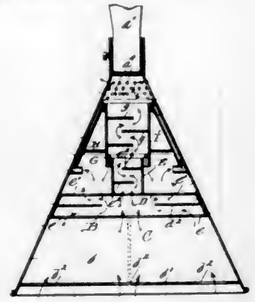
3. The combination with the two bars arranged face to face, of two yokes embracing the same, a clamping device mounted on each yoke and adapted each to engage one of the bars, means independent of said clamping devices for binding the bars together face to face in fixed relations, and an adjusting connection between the yokes.

4. In a measuring instrument the combination with the two bars each having longitudinal grooves in its opposite sides, of two yokes embracing said bars, a sliding bolt mounted in one yoke and provided on its end with a finger adapted to engage in the grooves in one of the bars, and a sliding bolt mounted in the other yoke and adapted to engage in the grooves in the other bar, whereby the said bars are reversible in the yokes side for side and end for end.

5. In combination with the two bars disposed face to face each provided in its sides with longitudinal grooves, two yokes embracing said bars, a clamping device on one of the yokes adapted to bind the bars firmly in fixed relations, and clamping-bolts sustained by the yokes and adapted each to engage in the grooves of one of the bars.

653,641. CLOTHES-POUNDER.

CHARLES L. COLE, Bushnell, Ill., assignor of one-half to William A. Stine, Peoria, Ill. Filed June 6, 1898. Serial No. 682,678. (No model.)



Claim.—1. In a clothes-pounder, the combination of an outer shell, a diaphragm engaging the inner wall of said shell, a wedge-shaped pocket depending from the diaphragm provided with a series of perforations in the bottom thereof, a partition carried at right angles to said pocket, the diaphragm, pocket and partition providing suitable compartments between them, of a vertically-arranged cylinder centrally disposed in said shell and above the diaphragm, said shell being provided with suitable air-vents in the upper end thereof, all substantially as and for the purpose set forth.

2. In an atmospheric washer or pounder, the combination with the truncated conical body, a diaphragm dividing said washer into distinct compartments, of a centrally-disposed cylinder or tubular passage arranged in the upper portion of said washer and surrounded by an air-tight compartment, said cylinder or tubular passage being provided with inwardly-projecting plates from opposite sides, all arranged substantially in the manner and for the purpose described.

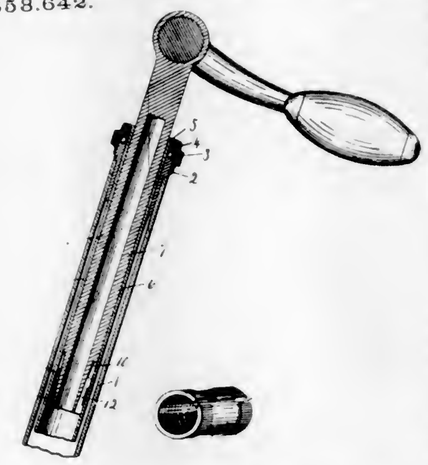
3. In a clothes-pounder, a conical shell, provided with a diaphragm dividing said shell, a compartment covering suitable perforations in said diaphragm and having extending up therefrom a cylindrical body with alternately-arranged plates overlapping each other from opposite sides, in combination with a pocket carried beneath the diaphragm and having converging sides, and of inlet-openings suitably arranged for the ingress and egress of water therein, all substantially as described and shown.

653,642. HANDLE-BAR.

ROBERT F. DARLING, Syracuse, N. Y.; Eva L. Darling, administratrix of said Robert F. Darling, deceased, assignor to the American Bicycle Company, Jersey City, N. J., and New York, N. Y. Filed Oct. 11, 1897. Serial No. 654,742. (No model.)

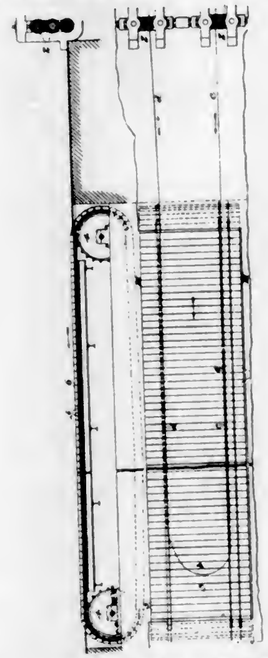
Claim.—In combination in a bicycle, the steering-post fitted to the main head, a handle-bar stem fitted to said steering-post and carrying the handle-bar at its upper end, said stem having its lower end tapered and outwardly threaded, a split sleeve internally threaded to fit said tapered end and of such diameter that its outer surface will frictionally engage with the interior of the steering-post so as to prevent its movement and permit its expansion and contraction when the handle-bar and stem are rotated.

653,642.



653,643. WIRE-ROD MILL.

HENRY ROBERTS, Pittsburg, Pa. Filed Feb. 13, 1900. Serial No. 5,048. (No model.)



Claim.—1. A wire-rod mill having an endless traveling guide set in front of a pair of rolls and adapted to laterally guide the outgoing branch of the metal loop formed by and between the rolls.

2. A wire-rod mill having an endless traveling guide set in front of a pair of rolls and adapted to receive from the rolls the outgoing branch of the metal loop formed by and between the rolls; substantially as described.

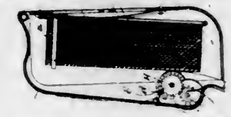
3. A wire-rod mill having a traveling floor set in front of a pair of rolls and adapted to receive both arms of the metal loop formed by and between the rolls; substantially as described.

4. A wire-rod mill having a traveling floor set in front of a pair of rolls and adapted to receive both arms of the metal loop formed by and between the rolls; said traveling floor being constituted of endless chains, cross-pieces, and guides set thereon; substantially as described.

5. A wire-rod mill having a traveling floor set in front of a pair of rolls and adapted to receive both arms of the metal loop formed by and between the rolls, a guide formed with an overhanging portion, and a groove; substantially as described.

653,644. TOILET-PAPER FIXTURE.

EDWARD R. WESTON, Dayton, Ohio. Filed Mar. 29, 1899. Serial No. 710,887. (No model.)



Claim.—In a toilet-fixture, a combination with the case and a plate-holder for the package of paper suspended therein, and friction feed-rollers mounted to leave a space between them on a shaft journaled horizontally within the case, of a thumb-nut mounted at the middle of the case at the lower end thereof between said rollers, with connecting-gears between said nut and feed-rollers, and slot in the case for the delivery of the sheets of paper, below said actuating mechanism, but in close proximity thereto, and a flat spring secured at one end to the rear of the case at its lower end, and bearing against said plate-holder near the upper end to keep said paper package in contact with the feed-roller, substantially as shown and described.

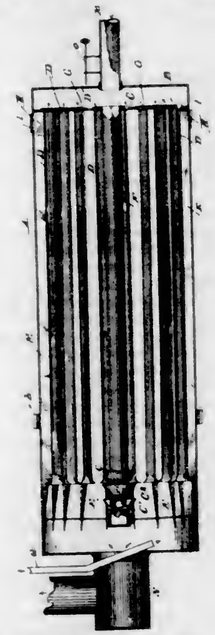
653,645. PROCESS OF TREATING DISTILLERY-SLOP.

ADOLPH WOOLNER, Jr., and CHRISTIAN ANDERSEN, Peoria, Ill. Filed July 27, 1899. Serial No. 725,243. (No specimens.)

Claim.—The process of manufacturing feed from distillery-slop, which consists in settling the slop, drawing off the thin portion, subjecting the settled portion to pressure to extract the thin liquid, combining the latter with the said drawn-off portion and evaporating the combined portions in a vacuum, mixing the residue with other settled portions then subjecting the same to pressure and drying the material from which the liquid is extracted.

653,646. ROTARY DRIER.

CHRISTIAN ANDERSEN and ADOLPH WOOLNER, Jr., Peoria, Ill. Filed July 15, 1899. Serial No. 723,906. (No model.)



Claim.—1. The combination with the cylinder A, having closed ends, a partition C near one end to form the recess D', pipes D open-

ing through said partition, and the central pipe F also opening therethrough, a series of openings G in the partition, the stationary pipe M opening into the recess D', and an outlet N at the opposite end of the cylinder, all arranged substantially as set forth.

2. In a rotary grain and feed drier, a revoluble cylinder forming the drier-body, a heat-receptacle secured thereto and adapted to revolve therewith, such receiver being partitioned off from the drier-body, a series of apertures through the dividing-partition for the passing of heat into such drier-body, a series of heat-conduits in the body adapted to open at one end into the heat-receiver and at the other into the far end of the drier, substantially as and for the purposes set forth.

3. In a hot-air grain and feed drier, a revoluble cylinder, a heat-receptacle secured thereto and separated therefrom by a dividing-wall, a series of horizontal pipes held at one end in the said dividing-wall and opening into the said heat-receptacle, said pipes opening at their other ends into the far end of the cylinder, whereby the heat is conveyed from said heat-receptacle to the remote end of the cylinder for the purposes set forth.

4. In a rotary grain and feed drier, a cylinder, forming the drier-body, a hood revolving therewith, an inlet-pipe adapted to supply heat to such hood, a series of conduits communicating with the hood for conducting heat to the farther end of the drier, openings in the wall of the hood for communicating with the interior of the near end of the cylinder and an exhaust-flue at one end of such cylinder for withdrawing vapor and creating draft all substantially as and for the purposes described.

5. In a rotary grain and feed drier the combination of a cylinder, forming the drier-body, a hood attached thereto and adapted to revolve therewith, an inlet-pipe communicating with the hood, an adjustable cold-air inlet in such pipe, a series of conduits communicating with the hood for supplying heat to the cylinder, partitions between the pipes and the walls of the cylinder to form heating-recesses substantially as described, a central heat-conduit acting in the same capacity as the said flues, a series of openings from said hood to the cylinder for passage of heat into the latter, an outlet communicating with the cylinder for drawing off the vapors and inducing a draft through the drier, a supply-pipe at one end of the drier for introducing grain to the drier and openings in the opposite end for the escape of the grain substantially as set forth and for the purposes described.

6. In a rotary grain and feed drier, the combination of a cylinder, forming the drier-body, a hood attached thereto and adapted to revolve therewith, an inlet-pipe communicating with the hood, an adjustable cold-air-inlet pipe communicating with the hood, an adjustable cold-air inlet in such pipe, a series of conduits communicating with the hood for supplying heat to the cylinder, partitions between the pipes and the wall of the cylinder to form heating-recesses substantially as described, a central heat-conduit acting in the same capacity as the said flues, a series of openings from said hood to the cylinder for passage of heat into the latter, an outlet communicating with the cylinder for drawing off the vapors and inducing a draft through the drier, a supply-pipe at one end of the drier for introducing grain to the drier, openings in the opposite end for the escape of the grain and lids or covers for the said openings adapted to open and close at the bottom of the drier for the purposes set forth and described.

7. In a rotary grain and feed drier a cylinder A, forming the drier-body, a head C located near one end to form a hood B at that end, flues D communicating with such hood for conducting heat to the cylinder, a pipe F also communicating with the hood for the same purpose, openings G in the head C for the passage of heat into the end of the cylinder adjacent to such hood, a hot-air conduit entering the said hood, an outlet-pipe N for withdrawing vapor from the cylinder, an inlet Q for supplying the grain, openings or exits for the grain and automatically-operated covers or lids therefor substantially as and for the purposes specified.

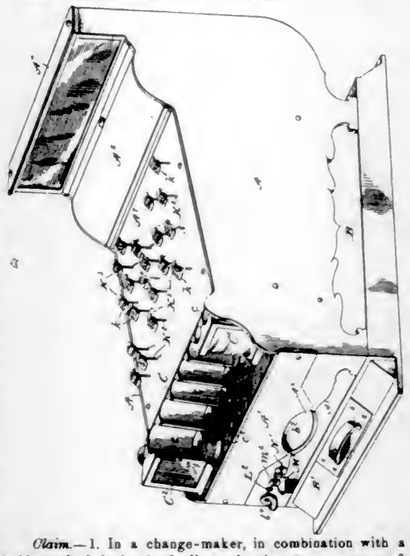
8. In a rotary hot-air grain and feed drier, a revoluble cylinder, a series of heat-conduits arranged concentric with the wall thereof and removed therefrom, and a partition filling the space between each of the said pipes and the said cylinder-wall to form a pocket for receiving and retaining grain to be dried.

9. In a rotary grain and feed drier, comprising a cylinder receiving the grain and feed at one end, of a series of discharge-openings at the extreme end of the drying-cylinder, opposite the receiving end, and an automatically opening and closing lid, or cover for each opening adapted to open at the lowest position and close when leaving that position, substantially as and for the purposes set forth.

10. In a rotary feed-drier a cylinder having a series of grain outlets or exits, covers or lids for the same and guides for keeping the lids closed until they reach the lowest position such lids adapted to be closed after opening and delivery as and for the purposes set forth.

11. In a hot-air grain and feed drier, a drier-chamber to which is secured a heat-receiver, or hood having conduits combined therewith, opening therefrom into the farther end of the drying-chamber and adapted to receive heat from a suitable furnace and distribute it to the said far end of such drying-chamber, and a series of openings in the inner wall of said hood for carrying heat to the inner adjacent portion of said drying-chamber substantially as set forth.

653,647. COMBINED CHANGE-MAKER, CASH-REGISTER, AND INDICATOR. MICHAEL MCANENY, Denver, Colo., assignor to Benjamin Davis, Chicago, Ill., administrator of George R. Davis, deceased. Filed Jan. 20, 1900. Serial No. 2,216. (No model.)



Claim.—1. In a change-maker, in combination with a coin-holder, a feed device for feeding coins therefrom, a cut-out for cutting such device out of action, and a lock to hold the cut-out in operation, adapted to be tripped to release the cut-out, substantially as and for the purpose described.

2. In a change-maker, in combination with a coin-holder, a feed device for feeding coins therefrom, having its coin-engaging part made movable into and out of operative position for engaging and feeding out a coin from the holder, as the feed device is moved, a cut-out to move such part out of operative position, and a lock to hold the cut-out in operation, adapted to be tripped to release the cut-out, substantially as and for the purpose described.

3. In a change-maker, in combination with a coin-holder, a feed device for feeding coins therefrom, a cut-out for cutting such device out of operation, as a coin-feeder, while allowing it to move, a lock to hold the cut-out in operation, and means for tripping such lock, substantially as and for the purpose described.

4. In a change-maker, in combination with a coin-holder, a feed device for feeding coins therefrom, having its coin-engaging part made movable into and out of operative position for engaging and feeding out a coin from the holder, as the feed device is moved, a cut-out to move such part out of operative position, a lock to hold the cut-out in operation, and means for tripping such cut-out, substantially as and for the purpose described.

5. In a change-maker, in combination with a coin-holder, a feed device for feeding coins therefrom, having its coin-engaging part made movable into and out of operative position for engaging and feeding out a coin, as the feed device is moved, such part being yieldingly supported in such operative position, a cut-out to move such part out of operative position, a lock to catch and hold the cut-out, when it has been moved to carry the movable coin-engaging part of the feed device out of operative position, and means for causing the lock to release the cut-out, substantially as and for the purpose described.

6. In a change-maker, in combination with a coin-holder, a feed device to feed coins therefrom, having its coin-engaging part made movable into and out of operative position for engaging and feeding a coin from the holder, as the feed device is moved, yieldingly supported in such operative position, a cut-out to move such part out of operative position, a yielding lock in the path of a part moving with the cut-out, adapted to lock the cut-out in position to hold the coin-engaging part of the feed device out of operative position, and means for tripping such lock, to cause it to release the cut-out, substantially as and for the purpose described.

7. In a change-maker, in combination with a coin-holder, a feed device to feed out coins therefrom, having a coin-engaging dog made movable on the feed device, so as to bring it into and out of operative position for engaging and feeding out a coin, as the feed device is moved, a spring supporting such part normally in its operative position, a cut-out connected with such part, so as to move the same out of operative position, a lock to engage and hold the cut-out from returning, when it has been moved to move the coin-engaging part of the feed device out of operative position, and means for moving such lock, to cause it to release the cut-out, substantially as and for the purpose described.

8. In a change-maker, in combination with a coin-holder, a feed device to feed coins therefrom, having a movable coin-engaging dog adapted to be moved into and out of operative position to engage and feed out a coin, a spring pressing the dog toward its operative position, a cut-out connected with the dog, so as to move it out of operation, a yielding lock in the path of a part moving with the cut-out, adapted to lock the cut-out, when it has been moved to carry the coin-engaging dog out of operative position, yielding means for returning the cut-out, when released by the lock, so that the dog can return to its operative, coin-engaging position, and means for tripping the lock, substantially as and for the purpose described.

9. In a change-maker, in combination with a coin-holder, a feed device for feeding coins therefrom, having a movable coin-engaging part made movable into and out of operative position to engage and feed out a coin, as the feed device is moved, yielding means to normally hold such part in its operative position, a cut-out connected with the part, so as to move it out of operative position, as the cut-out is moved, a swinging lock for the cut-out, yieldingly held in the path of a part moving with the cut-out, so as to yield to such part and then swing in behind it and lock it from return, means for tripping such lock, to cause it to release the engaged part of the cut-out, and means for returning the cut-out to allow the coin-engaging part of the feed device to be moved into operative position again, substantially as and for the purpose set forth

10. In a change-maker, in combination with a coin-holder, a feed device to feed coins therefrom, having a movable, coin-engaging part, adapted to be moved into and out of operative position to engage and feed out a coin as the feed device is moved, a rocking piece having an arm, connections between such arm and the movable, coin-engaging part of the feed device, whereby rocking of the piece carrying the arm in one direction will cause such movable part to be moved out of operative, coin-engaging position, means for rocking the piece, an automatic lock in the path of a part moving with the rocking piece, to engage such part to hold the rocking piece against return movement, and means for tripping such lock to cause it to release the engaged part of the rocking piece, substantially as and for the purpose described.

11. In a change-maker, in combination with a coin-holder, a feed device for the same having its coin engaging and feeding part made movable from and into operative position to engage and feed out a coin from the holder, a spring to hold such part in operative position, a slotted arm connected with such part, a rocker having an arm extending into the slot of the slotted arm, and a second arm, a lock in the form of a latch, yieldingly held in the path of this second arm, adapted to hold it from return, after movement of the rocker has carried it beyond the lock, means for rocking the rocker to carry its second arm to and past the lock, means for tripping the lock to cause it to release the arm of the rocker, and means for rocking the rocker back, after the release of its arm by the lock, substantially as and for the purpose described.

12. In a change-maker, in combination with a coin-holder, a feed device for feeding coins therefrom, having a movable coin-engaging part made movable into and out of operative position for engaging and feeding out a coin as the feed device is moved, a spring to hold such part normally in operative position, a slotted arm connected with such movable part a rocker having two arms, one extending into the slot of the slotted arm of the movable, coin-engaging part, a spring to rock the rocker in one direction, means for rocking it in the other direction, a swinging locking-piece in the path of the second arm on the rocker, a spring to hold such locking-piece up in the path of the rocker-arm and cause it to snap in behind the arm after the latter has passed by it, and means for tripping such piece to cause it to release the engaged rocker-arm, substantially as and for the purpose described.

13. In a change-maker, in combination with a coin-holder, a feed device to feed coins therefrom having a movable part for engaging and feeding out a coin, adapted to be moved into and out of operative position to engage and feed out a coin, as the feed device is moved, a cut-out connected with the movable part of the feed device so as to move it out of operative position, as the cut-out is moved in one direction, a lock to lock the cut-out from return when it has been so moved, and means moving with the feed device adapted to engage and move the cut-out lock to cause it to release the cut-out, when the feed device has been moved a certain distance, substantially as and for the purpose described.

14. In a change-maker, in combination with a coin-holder, a feed device to feed coins therefrom, having its coin-engaging part made movable into and out of operative position to feed out a coin, as the feed device is moved, a cut-out connected with such part, so as to move it out of operative, coin-engaging position, as the cut-out is moved in one direction, yielding means for moving the cut-out in the other direction, a cut-out lock yieldingly held in the path of a part moving with the cut-out, adapted to yield, as such part passes over it and then move in behind it to lock it from return, and means moving with the feed device adapted to trip the cut-out lock, to cause it to release the engaged part of the cut-out, substantially as and for the purpose described.

15. In a change-maker, in combination with two or more coin-holders, feed devices, one for each holder, to feed out coins therefrom, such feed devices having movable, coin-engaging parts, adapted to be moved into and out of operative position to engage and feed out coins, as the respective feed devices are moved, a cut-out connected with one of such coin-engaging parts, so as to move it out of operative position, as the cut-out is moved in one direction, yielding means for moving the cut-out in the other direction, an automatic lock to lock and hold the cut-out, when it has been moved to carry the coin-engaging part of the feed device with which it is connected out of operative, coin-engaging position, a swinging frame moving with the coin-feeding devices, as they are moved in the direction for feeding out coins from the respective holders, and a piece moved by such frame adapted to engage the cut-out lock and cause it to release the locked cut-out, substantially as and for the purpose described.

16. In a change-maker, in combination with a series of coin-holders, a series of feed devices to feed coins therefrom, having movable coin-engaging parts, adapted to be moved into and out of operative position to engage and feed out coins from the respective holders, as the feed devices carrying them are moved, yielding means to hold such parts normally in their operative positions, a rocker having several arms, connected, respectively, with several of the movable, coin-engaging parts of the feed devices so as to move such parts out of operative position, as the rocker is rocked in one direction, and a retaining-arm, one or more other rockers each having an arm connected with the movable coin-engaging part of one of the other feed devices, so as to move the same out of operative position, as the respective rocker is rocked in one direction, and a retaining-arm, means for rocking the rockers in a direction to move the connected, movable, coin-engaging parts of the feed devices out of operative position, yielding means for moving the separate rockers in the other direction, a swinging spring-pressed latch-plate in the path of the retaining-arms of the rockers, to lock them from return, when the rockers have been moved to draw the connected, movable, coin-engaging parts of the feed devices out of operative position, a swinging frame engaged and moved by the feed devices, so that as any one or more of such devices are moved, the frame will be moved, and means actuated by such frame to trip the latch-plate, to cause it to release the retaining-arm of any rocker engaged by it, substantially as and for the purpose described.

17. In a change-maker, in combination with a series of coin-holders adapted to hold dollar, fifty-cent, twenty-five-cent, ten-cent, and five-cent coins, feed devices for the respective holders, each having a movable coin-engaging part adapted to be moved into and out of operative position for feeding out coins as the feed devices are moved, yielding means for holding such parts normally up in operative position, a rocker having arms connected with the movable, coin-engaging parts of the feed devices for the dollar, five-cent, and ten-cent coin-holders, respectively, whereby, as the rocker is rocked in one direction, such coin-engaging parts will be drawn down out of operative, coin-engaging position, separate rockers for the fifty-cent and twenty-five-cent coin feeding devices, respectively, each having an arm and connections between such arm and the movable, coin-engaging part of the respective coin-feeding device, whereby as the rocker is rocked in one direction, such part will be drawn down out of operative position, a swinging latch-plate in the path of parts moving with the several rockers, yielding means for holding it in such path and causing it to move up behind the plate-engaging part of any moved rocker, as the latter is rocked to cause the movable coin-engaging part, or parts, connected with the arm or arms on such rocker, to be drawn down out of operative position, a swinging frame connected with the coin-feeding devices, so as to be moved by any one of them, as it is moved in a direction for feeding out a coin, and means moved by such frame for engaging and moving the latch-plate, to cause it to release the engaged part of any rocker, after the moved feed device has traveled a certain distance, substantially as and for the purpose described.

18. In a change-maker, in combination with a series of coin-holders, a series of coin-feeding devices, one for each holder, to feed coins therefrom, each feeding device having a movable, coin-engaging part adapted to be moved into and out of operative position to engage and feed out a coin as the feeding device is moved, means for yieldingly holding such part up in operative position, a rocker, connections between the latter and several of the movable, coin-engaging devices, whereby as the rocker is rocked in one direction the connected, removable, coin-engaging parts will be drawn down out of operative position, means for rocking the rocker back again, an automatic lock to engage a part moving with the rocker to lock the latter from return, when it has been rocked to draw down the connected, coin-engaging parts of the coin-feeding devices, two other rockers, connections between each of them and the movable, coin-engaging part, on one of the remaining coin-holders, for drawing such part out of operative, coin-engaging position, when these rockers are rocked in one direction, means for rocking them in the other direction, and connections between these two rockers and the first rocker, whereby, as the latter is rocked, to draw down the coin-engaging parts of the feed devices with which such rocker is connected, the other two rockers will be rocked in the same direction, substantially as and for the purpose described.

19. In a change-maker, in combination with one or more coin-holders, a coin-feeding device for each holder, having a movable, coin-engaging part adapted to be moved into and out of operative position, for engaging and feeding out a coin, a rocking cut-out having an arm for the movable coin-engaging part of each coin-feeding device, and a second arm, whereby it is to be operated, connections between the former arm and the movable coin-engaging part, whereby the latter is drawn down out of operative position, when the rocker is rocked in one direction, a reciprocating and swinging key pivoted to the operating-arm of the rocker and extending beyond the same, a locking device in the path of a part swinging with the rocker, to lock the rocker against return, after it has been rocked to draw down the coin-engaging movable parts of the devices with which it is connected, means for tripping such locking device, a rock-shaft having an arm engaged by the key beyond the rocker arm to which such key is pivoted, and a spring-latch to engage and hold the end of the key, when the latter has been pushed in to rock the rocker and then swung on its fulcrum on the rocker arm, substantially as and for the purpose specified.

20. In a change-maker, in combination with two coin-holders, feed devices for feeding coins therefrom, each having a movable, coin-engaging part adapted to be held up in operative coin-engaging position by a spring, a rocker having two arms, connections between one of such arms and the movable coin-engaging part of one of the coin-feeding devices, whereby as the rocker is rocked in one direction such movable part will be drawn down out of operative position, so that it will not engage a coin as the feeding device carrying it is moved, a supplemental moving part adapted to be moved into and out of engagement with the other feed device, means for normally holding the supplemental moving part out of engagement with the latter feed device, and allowing it to move into engagement therewith, consisting of a rock-shaft having two crank-arms, one of which has a part adapted to engage and raise the supplemental feed-device-moving part, and a spring to rock such shaft, a key pivoted upon the second arm of the rocker and having a part to engage the second crank-arm on the rock-shaft, an automatic lock to engage and lock against return a part moving with the rocker when the latter has been rocked to draw out of operation the movable coin-feeding part of the feed device with which such rocker is connected, a spring-catch to catch and hold the end of the key when the latter has been moved to rock the rocker, and then swung on its pivot on the rocker-arm, and means for tripping the rocker-lock, substantially as and for the purpose described.

21. In a register, in combination with a movable rack and means for moving the same, a rotary shaft, a pinion loosely journaled on the same, meshing with the rack, a spring connected directly with the pinion and with a support fixed with relation to the pinion, an arm carried by the pinion, a pawl on such arm, a ratchet-wheel rotating with the shaft, and engaged by the pawl, so that the pawl will rotate such wheel as the pinion is revolved by the spring, substantially as and for the purpose described.

22. In a register, in combination with the shaft for driving a registering device, a pinion loosely journaled on the shaft, and carrying an arm, a spring surrounding the shaft, having one end connected with the pinion, and its other end secured to a suitable support, a moving rack to mesh with the pinion, so as to rotate the same against the stress of the spring, a ratchet-wheel fixed on the shaft, and a pawl on the pinion-arm, engaging the ratchet-wheel, the pawl and ratchet-wheel being so constructed, that the pawl engages the abrupt sides of the ratchet-teeth, to rotate the wheel, only as the pinion is turned back by the spring, after being rotated by the rack, substantially as and for the purpose set forth.

23. In a register, in combination with the shaft for driving a registering device, a pinion loosely journaled on the shaft, an arm swinging with the pinion, a spring connected with the pinion, and with a suitable support, so that its stress acts to rotate the pinion, means for rotating the pinion against the stress of the spring, a ratchet-wheel fixed on the shaft, having its teeth turned with their abrupt sides facing in a direction opposite to that of the rotation of the pinion, under stress of the spring, and a pawl on the arm, which travels with the pinion, engaging the teeth of the ratchet-wheel, to turn the wheel and shaft, as the spring rotates the pinion, substantially as and for the purpose described.

24. In a register, in combination with a register-device-actuating shaft, a pinion loosely mounted thereon, an arm traveling with the pinion, a pawl on the arm, a ratchet-wheel fixed on the shaft and engaged by the pawl, a spring around the shaft, connected with the pinion, a sleeve with which the spring is also connected, a clamp holding such sleeve, supported independently of the shaft and adapted to be loosened, to allow turning of the sleeve, to adjust the stress of the spring on the pinion, to rotate the latter, and means for rotating the pinion against the stress of the spring, substantially as and for the purpose set forth.

25. In a register, in combination with a rotary shaft, for actuating a registering device, a pinion loosely journaled on such shaft, a ratchet-wheel rotating with the shaft, an arm rotating with the pinion, a spring-pressed pawl on the arm, engaging the ratchet-wheel, a swinging frame carrying a segment-rack meshing with the pinion, means for swinging such frame, a spring around the shaft, connected with the pinion, a sleeve to which the spring is also attached, a clamp for such sleeve, supported on a suitable bracket independent of the shaft, and means for tightening up and loosening such clamp, whereby, upon loosening the clamp, the sleeve may be rotated therein, to regulate the stress of the spring upon the pinion, and a tightening up of the clamp will fix the sleeve as rotatively adjusted, substantially as and for the purpose described.

26. In a register, in combination with a rotary shaft for actuating a registering device, a pinion journaled on such shaft, a movable rack, meshing with such pinion, a ratchet-wheel rotating with the shaft, an arm revolving with the pinion, a pawl on such arm engaging the ratchet-wheel, so as to turn the wheel and shaft as the pinion rotates in one direction, spring means connected with the pinion for rotating it in that direction, means for moving the rack to turn the pinion in the other direction, against the stress of its spring, a rocking frame, connections between the latter and the rack-actuating means, whereby the rocking frame is rocked, as the rack is moved to rotate the pinion, means for returning such frame, after it has been so moved, a toothed wheel fixed on the shaft, a pivoted pawl to engage such wheel to hold it, and consequently the shaft, from rotation, a rod connected with and operated by the rocking frame, carrying an abutment to engage an arm of the pawl, to move the latter away from the toothed wheel, and a spring, the stress of which acts upon the pawl-arm in a direction to swing the pawl into engagement with the toothed wheel, substantially as and for the purpose set forth.

27. In a register, in combination with a shaft for actuating a registering device, a pinion journaled on such shaft, an arm rotating with the pinion, a movable rack meshing with the pinion, means for moving such rack in one direction, a ratchet-wheel fixed on the shaft, a pawl on the arm, rotating with the pinion, such pawl and ratchet-wheel being so constructed that the pawl rides over the inclined sides of the ratchet-wheel teeth, as the rack is moved, in the described direction, to rotate the pinion, a rocking frame, connections between the latter and the means for moving the rack, a toothed wheel fixed on the shaft, a pawl to engage the same, a rod connected with and actuated by the frame, an abutment on such rod to engage the latter pawl and move it out of engagement with the toothed wheel, and a spring carried by the rod exerting its stress on the pawl to move the latter into engagement with the toothed wheel, as the rod is moved by the rocking frame, to move its abutment away from the pawl, substantially as and for the purpose described.

28. In a register, in combination with a shaft for driving a registering device, a pinion journaled thereon, a movable rack meshing with the pinion, an arm rotating with the pinion, a ratchet-wheel turning with the shaft, a pawl on the arm, rotating with the pinion, and engaging the ratchet-wheel on the shaft, the ratchet-wheel and pawl being so constructed that the pawl rides over the inclined sides of the ratchet-teeth, as the pinion is rotated by the rack, means for rotating the pinion in the other direction, means for moving the rack, a swinging frame, connections between the same and the rack-actuating means, whereby the frame is moved, as the rack acts to rotate the pinion, a toothed wheel fixed on the shaft, a pawl to lock such wheel from rotation, having an arm with an opening in it, a rod passing through such opening and having a nut engaging one side of the pawl-arm in a direction to move the pawl out of engagement with its toothed wheel, and a spring on the rod exerting its stress upon the pawl-arm, in a direction to force the pawl toward the toothed wheel, so that the rocking of the frame, as the pinion-rotating rack is moved to rotate the pinion, will cause the pawl to engage the toothed wheel, so as to hold it and the shaft from rotation until after the rotation of the pinion by the rack has been completed, substantially as and for the purpose described.

29. In a register, in combination with a rotary shaft, for actuating a registering device, a pinion journaled on such shaft, a movable rack meshing with and driving the pinion, an arm traveling with the pinion, a pawl on such arm, a ratchet-wheel fixed on the shaft, the ratchet-wheel and pawl being so arranged that as the pinion is rotated by the rack the pawl rides over the inclined sides of the ratchet-teeth, means for rotating the pinion in the other direction, to cause the pawl to positively engage and rotate the ratchet-wheel, means for moving the rack to rotate the pinion, a toothed wheel fixed on the shaft, a stop-pawl to engage the same and lock the shaft from turning, and connections between such stop-pawl and the rack-actuating means whereby the stop-pawl is held in engagement with the toothed wheel until after the rack-actuating means has completed its full rack-moving throw, substantially as and for the purpose described.

30. In a register, in combination with a shaft, for actuating a registering device, a toothed wheel fixed on such shaft, a rotary pinion, a rack meshing therewith, a moving part to actuate the rack in one direction, means for rotating the pinion back, after the rack has turned it in one direction, connections between the pinion and shaft for rotating the latter as the pinion turns back, a pawl to engage the toothed wheel on the shaft and lock it from turning, and means actuated by the rack-moving part to hold such pawl in engagement with the toothed wheel, until the rack-actuating part completes its full movement in a direction to actuate the rack, substantially as and for the purpose described.

31. In a register, in combination with a shaft for actuating a registering device, a toothed wheel fixed on such shaft, a locking-pawl to engage the wheel and lock it from turning, a rocking frame, a movable part connected with such frame so as to actuate the same, a rod, also connected with the frame, an abutment on the rod, engaging the locking pawl, so as to swing it out of engagement with the wheel on the shaft, and a spring on the rod acting to move the pawl in a direction to cause it to lock the wheel, until the part actuating the rocking frame has completed its movement in one direction, substantially as and for the purpose described.

32. In combination with the shaft and the toothed locking-wheel thereon, a rocking frame, a rod connected therewith, a pawl to engage such wheel, an abutment on the rod to move the pawl away from the wheel, and a spring carried by the rod exerting its stress upon the pawl, in a direction to cause the latter to move toward the wheel, substantially as and for the purpose described.

33. In combination with a shaft and a toothed locking-wheel thereon, the wheel-engaging pawl, a rod having a threaded portion, a nut screwed thereon to engage the pawl, a spring on the rod, the pressure of which is exerted on the side of the pawl opposite to the nut, a second nut screwed on the rod to form an abutment for the outer end of the spring, and means for actuating the rod, substantially as and for the purpose described.

34. In a register, in combination with one or more movable parts for actuating the register mechanism, a rocking frame, connections between the latter and the register-actuating part, or parts, whereby the frame is rocked, as any such part is moved, a shaft of the register mechanism, a toothed wheel thereon, a locking-pawl for the same, and connections between the pawl and the rocking frame, whereby as the latter is moved by the motion of one of the actuating parts the pawl will be held in engagement with the wheel, until after the part has completed its throw in one direction, substantially as and for the purpose described.

35. In a register, in combination with one or more movable parts for actuating the register mechanism, a rocking frame, moved by any moved register-actuating part, a shaft of the register having a toothed locking-wheel fixed thereon, a pawl to engage such wheel and lock it from rotation, a rod connected with the rocking frame, an abutment on the rod to engage and move the pawl away from the toothed wheel as the rocking frame returns, after it has been moved by the motion of one of the register-actuating parts, and a spring carried by the rod and exerting its pressure upon the pawl in a direction to hold it in engagement with the toothed wheel, substantially as and for the purpose described.

36. In a register, in combination with one or more movable, register-actuating parts, a rocking frame, connections between the latter and each registering part, whereby the movement of such part causes the frame to rock, full-motion mechanism connected with such frame, to insure a certain extent of travel under power from any moved actuating part, before the frame can return, a shaft of the register, a toothed locking-wheel on such register, a locking-pawl for such wheel, and connections between the pawl and the rocking frame, whereby the pawl is moved into engagement with the wheel as the frame is moved by one of the register-actuating parts, and is held in such engagement until the frame has completed its movement in one direction, substantially as and for the purpose described.

37. In a register, in combination with one or more movable, register-actuating parts, a rocking frame, connections between the latter and each register-actuating part, whereby the rocking frame is moved, as such part is moved in one direction, full-motion mechanism, to insure always the same amount of motion of the frame in one direction, before it can return, a shaft of the register, a toothed, locking-wheel fixed thereon, a locking-pawl to engage and lock the wheel from rotation, a rod connected with the rocking frame, having a spring adapted to swing the pawl into engagement with the toothed wheel as the frame is moved in one direction, and an abutment to engage and trip the pawl, out of engagement with the wheel, as the frame rocks back again, substantially as and for the purpose described.

38. In combination with a series of rock-shafts, each having a locking-arm, means for rocking such shafts, a toothed rock-shaft, having a tooth for each rock-shaft arm adapted to be brought down into the path of the respective locking-arms on any unmoved rock-shaft, by rocking of the toothed shaft, a movable frame, connections between such frame and the toothed shaft, whereby the latter shaft is normally held rocked to keep its teeth above and out of the path of the rock-shaft arms, means for normally holding the frame in position to so hold the toothed shaft, and connections between the rock-shafts, carrying the locking-arms and the frame, whereby the movement of any one of such shafts moves the frame, substantially as and for the purpose described.

39. In combination with a series of rock-shafts, having locking-arms, means for rocking the shafts, a movable frame, connections between this frame and the rock-shafts, whereby the rocking of any shaft causes the frame to be moved, yielding means to return the frame, after it has been so moved, a locking-shaft having teeth, one for each rock-shaft-locking arm, adapted to be brought into the path of the respective rock-shaft arms, by rocking of the shaft carrying the teeth, connections between such shaft and the movable frame, whereby when such frame is unmoved the rock-shaft carrying the teeth will be held with its teeth above the paths of the locking-arms on the rock-shafts, and when the frame has been moved by the rocking of a rock-shaft the locking-shaft will be rocked to carry its teeth down in front of the locking-arms on the unmoved rock-shafts, to lock them from moving, substantially as and for the purpose described.

40. In combination with a series of rock-shafts, having locking-arms, means for rocking such shafts, a rocking toothed shaft extending across, above the series of rock-shaft arms, and having its teeth arranged so that, by rocking of their shaft, they will be brought down in front of the ends of the rocking arms on the rock-shafts, when such arms and shafts are in their normal positions, means for holding the toothed shaft rocked so as to hold its arm-locking teeth normally out of the paths of the arms on the other rock-shafts, and means whereby the movement of any arm-carrying rock-shaft moves the toothed shaft-holding means, to allow such shaft to rock, to lower its teeth into the paths of the unmoved rock-shaft arms, substantially as and for the purpose described.

41. In combination with a series of rock-shafts carrying arms, a toothed rock-shaft provided with a series of arm-locking teeth, one for each rock-shaft arm, yielding means tending to rock the toothed shaft to carry its teeth down into the paths of the rock-shaft arms, a movable frame, connections between the frame and the toothed shaft, whereby the latter is held normally rocked to raise its teeth above the rock-shaft arms, yielding means for holding the frame against movement, and connections between the frame and the arm-carrying rock-shafts, whereby the movement of any of the rock-shafts moves the frame, substantially as and for the purpose described.

42. In combination with a series of rock-shafts carrying arms, means for rocking the shafts, the toothed locking-shaft having a tooth for each rock-shaft arm, adapted to be brought down into the path of the respective arm, to lock the same, when such arm has not been moved by the rocking of its shaft, a swinging frame having an arm, an arm on the toothed shaft, a link on the latter arm having an abutment to be engaged by the arm on the swinging frame, yielding means tending to hold the frame so as to sustain the toothed shaft in position, with its teeth above the arms in the other rock-shafts, and means whereby the rocking of any one of the latter shafts moves the swinging frame, substantially as and for the purpose described.

43. In combination with a series of rock-shafts, having arms, means for locking any unmoved rock-shaft, which consists in a toothed rock-shaft, having a series of teeth, one for each rock-shaft arm, adapted to be brought down in front of and up above the rock-shaft arms, by rocking of the shaft, carrying the teeth, in one way and the other, substantially as and for the purpose described.

44. In combination with a series of rock-shafts having arms means for locking any unmoved rock-shaft, which consists in a toothed rock-shaft having a series of teeth, one for each rock-shaft arm,

adapted to be brought down in front of and up above the rock-shaft arms, by rocking of the shaft carrying the teeth, in one way and the other, a movable frame, connections between each arm-carrying rock-shaft and such frame, whereby the movement of any of such rock-shafts causes movement of the frame, connections between the frame and the rocking device, for causing the latter to move, and a full-stroke device connected with the frame, whereby a full movement of the frame in one direction is insured before it can return, substantially as and for the purpose described.

45. In a register, in combination with one or more movable, register-mechanism-actuating parts, a shaft of the register having a toothed locking-wheel fixed thereon, a locking-pawl to engage such wheel, and lock the same and the shaft from rotation, a movable frame, connections between the latter and the mechanism-actuating part or parts, whereby the frame is moved, as any of such parts is moved, full-motion mechanism connected with the frame to always insure the same amount of movement of the frame in the direction in which one of the mechanism-actuating parts would move it, before the frame can return, means for returning the frame, and connections between the locking-pawl and such frame, whereby the pawl is moved into engagement with the toothed wheel, as the frame is moved by the motion of any one of the actuating parts, and is held in such engagement, until after the frame has completed its movement in the direction in which it has started, substantially as and for the purpose described.

46. In a register, in combination with a part to be moved and a second part to engage and move the same, a yielding device moving with the second part, and adapted to engage and move the first part, before the second part does, substantially as and for the purpose described.

47. In a register, in combination with a movable, operative part, for causing actuation of the registering device, a moving, actuating-piece to engage and move such operative part, and a yieldingly-held device, moved so as to engage and move the operative part of the register, before the moving, actuating-piece does, substantially as and for the purpose described.

48. In a register, in combination with a movable, operative part for causing actuation of the registering device, a moving, actuating-piece to engage and actuate such operative part of the register, and yielding means carried by such piece to engage and move the movable, operative part of the register, before the actuating-piece does, substantially as and for the purpose described.

49. In a register, in combination with a movable, operative part for causing actuation of the registering device, a moving, actuating-piece to engage and actuate such part, means for limiting the movement of the latter, and yielding means moving with the moving, actuating-piece to engage and move the operative part of the register before the moving actuating-piece does, substantially as and for the purpose described.

50. In a register, in combination with a movable, operative part for causing actuation of the registering device, a moving, actuating-piece to engage and actuate such part, carrying a yielding spring device to engage and move the movable, operative part of the register before the moving, actuating-piece does, and a stop adapted to engage the movable, operative part of the register, and limit its movement, substantially as and for the purpose described.

51. In a register, in combination with a movable part to be moved in actuating the register, an actuating part to engage and actuate the former part, a yieldingly-held device carried by the actuating part to engage and move the movable part of the register, before the actuating part does, and a movable stop adapted to move into the path of, and stop the movable, actuating part of the register, substantially as and for the purpose described.

52. In a register, in combination with a movable frame connected with the registering mechanism, to actuate the same, a moving piece for actuating such frame, having an abutment to engage a part of the frame, and carrying a spring-pressed part, to engage the frame, before the abutment does, as the piece is moved toward the frame, substantially as and for the purpose described.

53. In a register, in combination with a movable frame, connected with the registering mechanism, so as to actuate the same, a series of movable pieces for actuating such frame, each having a head provided with an abutment, to engage and move the frame, and also a spring-pressed part, adapted to engage the frame, before the abutment on that head does, as the head is moved toward the frame, substantially as and for the purpose described.

54. In a register, in combination with a movable frame connected with the registering mechanism, so as to actuate the same, a series of reciprocating rods, each carrying a head with an abutment to engage and move the frame, a spring-pressed block held normally by its spring, so that its front end will be in advance of the abutment on the respective head, and will engage the bar before the abutment does, as the head is moved toward the frame, substantially as and for the purpose described.

55. In a register, in combination with a movable frame connected with the registering mechanism, so as to actuate the same, and having a transverse bar, a series of reciprocating rods, having heads with abutments to engage and move the bar of the frame, and portions projecting by such bar, a series of movable stops for the bar of the frame, one for each head, normally supported in raised position by raised parts of the respective heads, when such heads have not been moved toward the bar of the frame, and adapted to drop into the path of such bar, as the heads are moved toward the frame to actuate the same, and movable blocks on the heads for engaging the frame-bar yieldingly held in advance of the abutments on the respective heads, so as to engage the frame-bar before such abutments, as the respective heads are moved in a direction to actuate the frame, substantially as and for the purpose described.

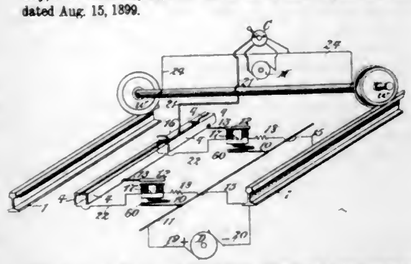
56. In a combined change-maker and register, in combination with the change-making mechanism, the registering mechanism, and means for actuating both mechanisms, a cut-out to throw the change-making mechanism out of operation, while leaving the registering mechanism free to act, and a lock to lock the cut-out in operation, substantially as and for the purpose described.

57. In a combined change-maker and register, means for actuating the register, and change-making devices, means for throwing the change-making mechanism out of operation, while allowing the registering mechanism to operate, a locking device to lock such latter means, and means for automatically tripping the locking device, substantially as and for the purpose described.

58. In a combined change-maker and indicator, means for actuating the indicating and change-making devices, means for throwing the change-making mechanism out of operation, while allowing the indicating mechanism to operate, a locking device, to lock such latter means in operative position, and means for automatically tripping the locking device, substantially as and for the purpose described.

REISSUES.

11,840. CONTACT SYSTEM FOR ELECTRIC RAILWAYS. WILLIAM GRUNOW, Jr., Bridgeport, Conn., assignor, by direct and mesne assignments, to the McElroy-Grunow Electric Railway System, Jersey City, N. J. Filed May 29, 1900. Serial No. 18,449. Original No. 631,073, dated Aug. 15, 1899.



Claim.—1. A free or independent contacting electromagnetic terminal, in combination with means carried thereby for effecting the preliminary excitation or magnetization thereof.

2. A free or independent contacting electromagnet the core of which constitutes the terminal of a feeder-circuit, in combination with means carried thereby for effecting the preliminary excitation or magnetization thereof.

3. A free or independent contacting electromagnet provided with a coil included in a shunt-circuit.

4. A free or independent contacting electromagnetic terminal included in a shunt-circuit and adapted to be actuated in one direction by a current flowing through said shunt and in the other direction by gravitation.

5. A free or independent contacting electromagnet provided with a magnetizing-coil carried thereby, in combination with a resistance included in a shunt-circuit between the working conductors and a track or service rail.

6. A contacting device or terminal for an electric circuit embodying an electromagnet included in a shunt between one or more working conductors and a track or service rail.

7. A free or independent contacting electromagnet operatively connected with circuit connections of which it constitutes a terminal; in combination with means carried thereby for effecting the preliminary excitation or magnetization thereof; sectional working conductors; an armature electrically connected with one member of the latter and additional means for aiding the first-named means in maintaining the electromagnet in contact with said armature.

8. A contact system embodying twin working conductors and a contacting electromagnet forming the terminal of a branch feeder; in combination with an energizing-coil carried thereby and connected with one member of the working conductor and a track or service rail.

9. A contact system embodying twin sectional working conductors; an armature connected with one member thereof; a contacting electromagnet having circuit connections therewith, a coil connected with the other member of said conductors and a track or service rail.

10. A contact system embodying twin working conductors; an armature connected with one member thereof; a contacting electromagnet having circuit connections therewith, and a coil connected with the other member of said conductors; together with a resistance connected in circuit with said coil and with a track or service rail, all being so arranged as to cause said electromagnet to be lifted into contact with the armature when the energizing-circuit is closed.

11. A contact system embodying sectional working conductors; an armature connected with one member thereof; a contacting electromagnet having circuit connections therewith; a coil upon said electromagnet connected with the other member of said working conductor and with the track or service rail and a current-collector or trolley-shoe carried by the vehicle, said current-collector being adapted to bridge or span the working conductors and to close the circuit through the coil in such manner as to lift the electromagnet into contact with the armature and close the supply-circuit through the other member of the working conductors.

12. A contacting device embodying a contacting bipolar electromagnet, the cores of which are provided with a coil connected with a working conductor and a track or service rail.

13. A contact system provided with a switch-box or receptacle having a guide pin or rod; a contacting electromagnet mounted freely or independently thereon; together with means carried by said electromagnet for effecting the preliminary excitation or magnetization thereof.

14. A contact system provided with a switch-box or receptacle and a contacting electromagnet movably mounted therein, said electromagnet having a coil connected with a working conductor and a track or service rail in such manner as to lift said contacting electromagnet into contact with the inner surface of the switch-box or receptacle.

15. A contact system provided with a switch-box or receptacle and an electromagnet movably mounted therein, said electromagnet having circuit connections with a source of current-supply and provided with a coil adapted to lift it into contact with the inner surface of said receptacle and to close the source of current-supply thereto.

16. A contact system provided with a switch-box or receptacle; a contacting electromagnet movably mounted therein and having circuit connections with a source of current-supply, said electromagnet being provided with a coil connected in circuit with a resistance adapted to reduce the current sufficiently to energize the electromagnet and close the source of current-supply to the switch-box or receptacle.

17. A contact system provided with a switch-box or receptacle; an electromagnet movably mounted therein, said electromagnet having a coil for effecting the preliminary excitation or magnetization thereof and flexible connections between it and the source of current-supply adapted to afford to the magnet a free and independent movement under the influence of the energizing-current and gravity respectively.

18. A contact system provided with a switch-box or receptacle having connections with a source of current-supply; an electromagnet movably mounted therein and having a coil for effecting the preliminary excitation or magnetization thereof; a connector or clamp attached to said circuit connections and flexible connections between said clamp and the electromagnet whereby the latter is capable of free and independent movement within the switch-box or receptacle.

19. A contact system provided with a switch-box or receptacle having circuit connections with an electromagnet movably mounted therein, said electromagnet being provided with a coil for effecting the preliminary excitation or magnetization thereof; in combination with a resistance in circuit with the magnet; a connector or clamp for uniting the circuit connections to the current-feeder or main; together with flexible bands or conductors attached to said connector or clamp and the electromagnet, the arrangement being such as to permit of the free or independent movement of the electromagnet.

20. A contact system embodying twin working conductors; a switch-box or contact-receptacle bonded to one member thereof; an electromagnet movably mounted within said switch-box or receptacle and having an energizing-coil connected with the other member of said twin conductors; together with a track or service rail and flexible conductors connecting said electromagnet and a source of current-supply, whereby said electromagnet may be lifted into contact with said receptacle when the circuit is closed through said energizing-coil and the bonded member of the working conductor is included in circuit.

21. An electromagnet provided with an energizing-coil and circuit connections, said electromagnet having a contact-plate provided with "tongue-and-grooved" connections therewith.

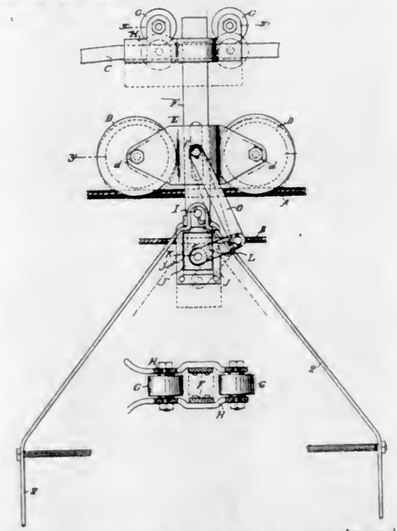
22. An electromagnet provided with an energizing-coil and circuit connections; a cleat carrying a contact-plate secured upon said electromagnet by bending the ends of the flanges around the corners of the enlarged ends thereof.

23. A contact system provided with a switch-box or receptacle; an electromagnet movably mounted therein and having an energizing-coil and circuit connections; together with a contact-plate frictionally connected with said electromagnet, the arrangement being such as to overcome the effect of residual magnetism during the operation of the device.

24. A free or independent contacting electromagnetic terminal provided with means carried thereby for effecting the preliminary excitation or magnetization thereof; in combination with means for overcoming the effect of residual magnetism during the operation thereof.

25. An electromagnet having an energizing-coil; a connector or arm 59 attached to said electromagnet; a connector or clamp having circuit connections with flexible bands or conductors, the connector-arm and the clamp, in such manner as to convey the current to said electromagnet.

11,841. TRAVELING-CABLE GRIP. EDWARD I. PARSONS, San Francisco, Cal. Filed June 5, 1900. Serial No. 19,197. Original No. 642,255, dated Jan. 30, 1900.



Claim.—1. In a suspended rope or cable tramway, the combination with the framework and the supporting-trolleys, of a slidable hanger guided by said framework, a fixed gripping-jaw carried by said hanger, a movable jaw carrying a screw-threaded nut, a screw journaled and turnable through said nut, a rocker-arm connected with the screw-shaft and connections between said rocker-arm and the framework, and a traction-cable adapted to be locked between said jaws.

2. In a suspended rope or cable tramway, trolleys journaled in a framework adapted to travel upon the cable, a sliding body guided by said framework, a stationary jaw fixed to said sliding body, a jaw guided and movable transversely with relation to the stationary jaw, a screw-shaft journaled and turnable through the stationary jaw having a screw-threaded portion fitting corresponding threads in the movable jaw a rocker-arm fixed to the screw-shaft, a rod or link connecting said rocker-arm with the framework, whereby the movement of the sliding body relative to the supporting-trolley acts to turn the screw, and close or separate the gripping-jaws.

3. The combination with a framework of the rolling mechanism of a carrier and a sliding body guided by said framework and supporting the trolley, of a transversely-movable and guided gripping-jaw having interior screw-threads, a correspondingly-threaded screw-shaft passing through said jaw and turnably journaled in suitable

supports, a rocker-arm fixed to said screw-shaft and a link connecting said rocker-arm with the framework, and a stationary gripping-jaw with relation to which the movable jaw is advanced or retracted and a traction-cable adapted to be locked between said jaws or released therefrom by the movement of the gripping-jaw.

4. The combination with the framework and supporting-trolleys and a cable upon which they travel, of a transversely-movable screw-actuated gripping mechanism, a traction-cable to which the apparatus is locked by said gripping mechanism, other wheels or trolleys fixed to the upper end of a body slidable with relation to the supporting-trolley framework, and a rail upon which said wheels are supported to remove the weight from the main cable and allow the grips to automatically unclose.

5. The combination in a suspended cable or rope railway, of a main stationary cable, trolleys journaled in a framework and adapted to travel thereon, rails intermittently fixed above said cable, a hanger slidable and guided with relation to the main trolley-carrying framework, said hanger having wheels journaled thereon and adapted to travel upon the fixed rails, and raise the load from the main cable, a traveling cable situated below the main cable, a stationary and transversely-movable gripping-jaw between which the traveling cable is gripped, a screw turnable through the movable jaw, to advance it toward or retract it from the stationary jaw, a rocker-arm upon the end of the screw-shaft and a rod connecting the said rocker-arm with the framework whereby the jaws are closed to grip the cable when the load is carried upon the trolleys of the main cable, and released and separate when the load is carried upon the fixed upper rails.

6. The combination in a suspended rope or cable tramway, of a traveling or traction cable, a main supporting-cable situated above the traveling cable, rails fixed intermittently at stopping stations and above the main supporting-cable, a framework with trolley-wheels journaled therein adapted to travel upon the main cable, a hanger guided and slidable with relation to said framework having rollers journaled at the upper end adapted to be received upon the upper fixed rails and transfer the weight of the load thereto from the main supporting-cable, a stationary and movable gripping-jaw carried by the hanger, a screw-threaded shaft fitting corresponding threads in the movable jaw, a rocker-arm fixed to said screw-shaft and a connecting-rod between said rocker-arm and the framework whereby the screw is actuated to close the jaws upon the traveling cable when the weight is carried upon the main supporting-cable and to separate the jaws and to release the gripped rope when the weight is transferred to the fixed rails.

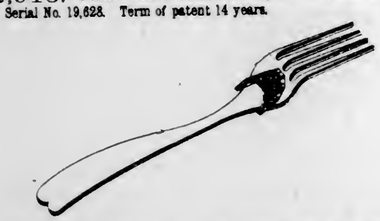
DESIGNS.

32,912. BADGE OR SIMILAR ARTICLE. JAMES H. STOCKHAM, Des Moines, Iowa. Filed June 2, 1900. Serial No. 18,905. Term of patent 7 years.



Claim.—The design for a badge or similar article, substantially as herein shown and described.

32,913. FORK. OTTO C. GRAF, Pittsburg, Pa. Filed June 8, 1900. Serial No. 19,628. Term of patent 14 years.



Claim.—The design for a fork, substantially as herein shown and described.

32,914. SPOON OR FORK HANDLE. FRED HABERSACK, Sag Harbor, N. Y., assignor to The Fahys Watch-Case Company, New York, N. Y. Filed June 15, 1900. Serial No. 20,484. Term of patent 3½ years.



Claim.—The design for a spoon or fork handle, substantially as shown and described.

32,915. HANDLE FOR SPOONS, FORKS, OR SIMILAR ARTICLES. WILLIAM C. CODMAN, Providence, R. I., assignor to the Gorham Manufacturing Company, same place. Filed May 15, 1900. Serial No. 16,831. Term of patent 14 years.



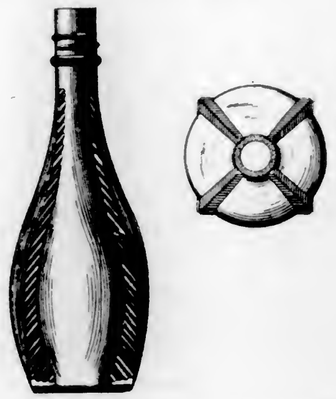
Claim.—The design for the handle of a spoon, fork or similar article herein shown and described.

32,916. VESSEL-CAP. PHILIP LINDEMEYR, Baltimore, Md., assignor to the American Stopper Company, New York, N. Y. Filed June 6, 1900. Serial No. 19,334. Term of patent 7 years.



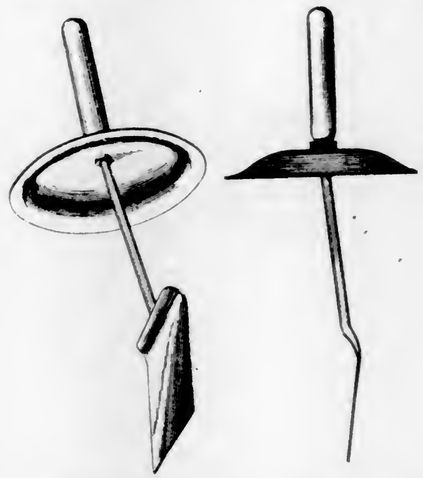
Claim.—The design for a vessel-cap, as herein shown and described.

32,917. BOTTLE. HENRY J. HEINZ, Pittsburg, Pa. Filed May 10, 1900. Serial No. 16,236. Term of patent 14 years.



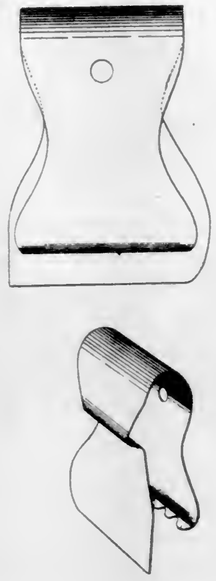
Claim.—The design for a bottle, as herein shown and described.

32,918. CAKE-TURNER OR SIMILAR ARTICLE. AMANDA C. ERICSON, Victoria, Ill. Filed Jan. 23, 1900. Serial No. 2,544. Term of patent 14 years.



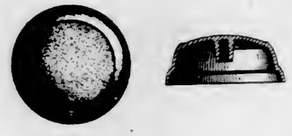
Claim.—The design for a cake-turner or similar article, substantially as herein shown and described.

32,919. CLEANER FOR KITCHEN UTENSILS. WALTER J. TURSULL, New Orleans, La. Filed June 14, 1900. Serial No. 20,372. Term of patent 7 years.



Claim.—The design for a cleaner for kitchen utensils, herein shown and described.

32,920. GONG. ALBERT BOYD HUNN, Bristol, Conn., assignor to the New Departure Bell Company, same place. Filed June 2, 1900. Serial No. 18,909. Term of patent 7 years.



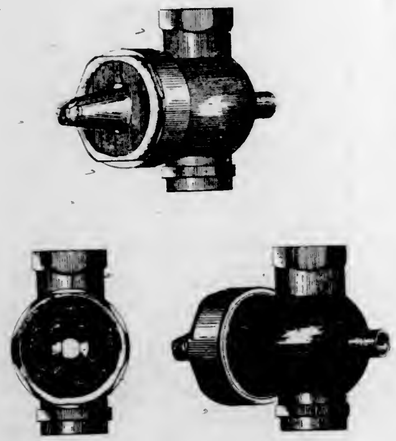
Claim.—The design for a gong, substantially as shown and described.

32,921. PADLOCK-CASE. HENRY R. TOWNE, New York, N. Y., assignor to The Yale & Towne Manufacturing Company, Stamford, Conn. Filed June 4, 1900. Serial No. 19,076. Term of patent 7 years.



Claim.—The design for a padlock-case herein shown and described.

32,922. VALVE-CASING. JOHN KELLY, Chicago, Ill. Filed Mar. 23, 1900. Serial No. 9,967. Term of patent 14 years.



Claim.—The design for a valve-casing, as herein shown and described.

32,923. WATER-TANK CASING. GEORGE BECKING, Chattanooga, Tenn. Filed June 16, 1900. Serial No. 20,602. Term of patent 3½ years.



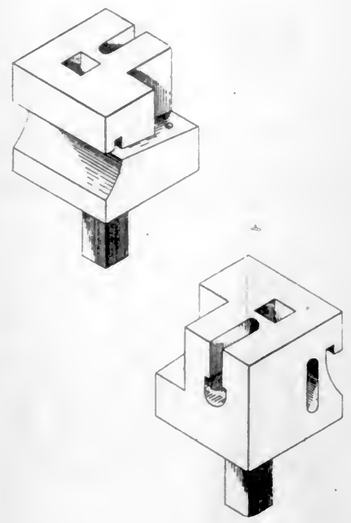
Claim.—The design for a water-tank casing as shown and described.

32,924. SCREW. HERBERT E. KEELER, New York, N. Y. Filed June 12, 1900. Serial No. 20,081. Term of patent 3½ years.



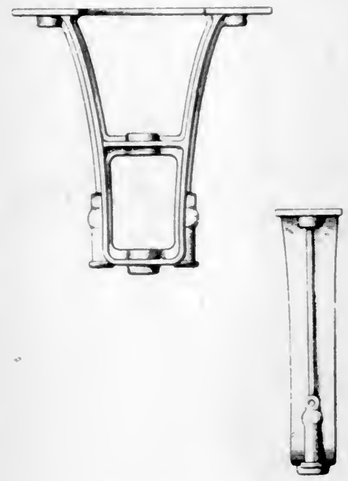
Claim.—The design for a screw, as herein shown and described.

32,925. TIRE-SETTING DEVICE. JOHN F. MALONE, Bement, Ill. Filed May 28, 1900. Serial No. 18,330. Term of patent 7 years.



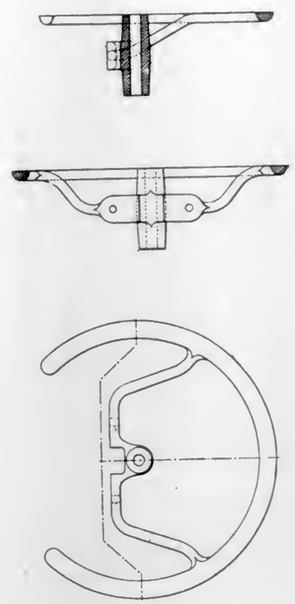
Claim.—The design for a tire-setting device, as herein shown and described.

32,926. DROP-HANGER FOR JOURNAL-BOXES. ANTONIO C. PESSANO, Philadelphia, Pa., assignor to the George V. Cresson Company, same place. Filed Mar 19, 1900. Serial No. 9,339. Term of patent 14 years.



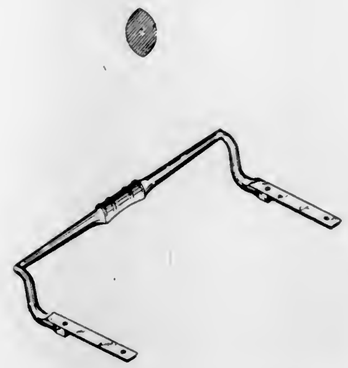
Claim.—The design for a drop-hanger for journal-boxes substantially as described and as shown in the accompanying drawings.

32,927. LOWER FIFTH-WHEEL. HENRY C. SWAN, Oshkosh, Wis. Filed May 12, 1900. Serial No. 16,521. Term of patent 14 years.



Claim.—The design for a lower fifth-wheel herein shown and described.

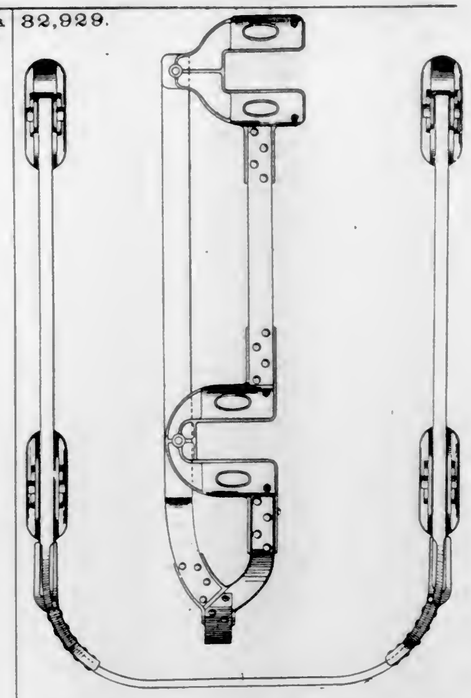
32,928. BODY-HANGER FOR VEHICLES. HENRY C. SWAN, Oshkosh, Wis. Filed Mar. 12, 1900. Serial No. 8,416. Term of patent 14 years.



Claim.—The design for a body-hanger for vehicles substantially as shown and described.

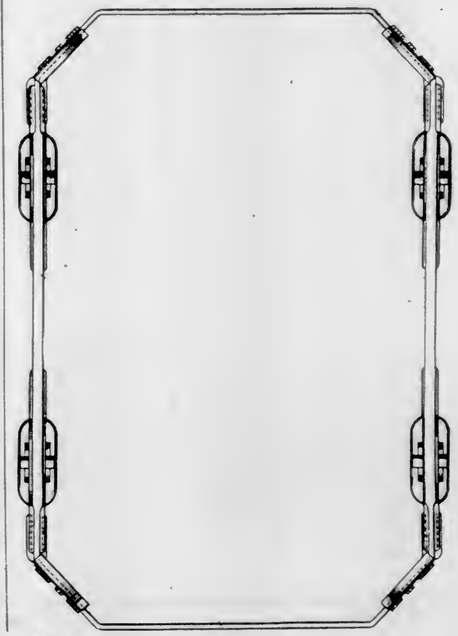
32,929. CAR-TRUCK FRAME. EDMUND A. CURTIS, Chicago, Ill. Filed June 7, 1900. Serial No. 19,474. Term of patent 14 years.

32,929.



Claim.—The design for a car-truck frame substantially as shown and described.

32,930. CAR-TRUCK FRAME. EDMUND A. CURTIS, Chicago, Ill. Filed June 7, 1900. Serial No. 19,475. Term of patent 14 years.

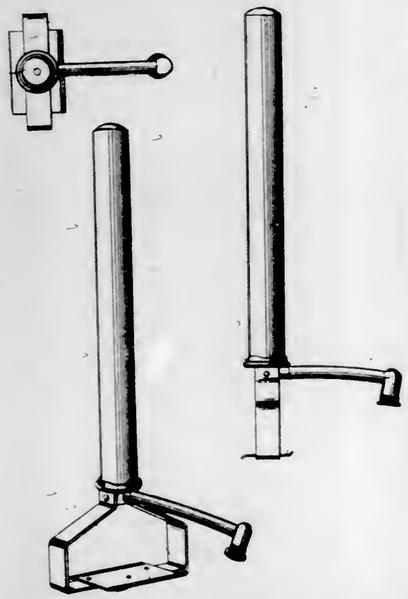


32,980.



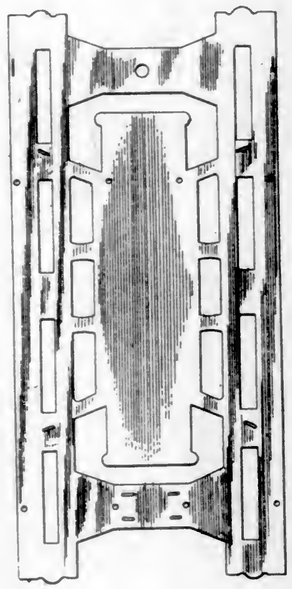
Claim.—The design for a car-truck frame substantially as shown and described.

32,981. AIR-PUMP BODY. GEORGE W. EDDY, Waterbury, Conn., assignor to The Scovill Manufacturing Company, same place. Filed Jan. 6, 1900. Serial No. 625. Term of patent 7 years.



Claim.—The design of an air-pump body, substantially as herein shown and described.

32,982. BODY-BLANK FOR TOY HOOK-AND-LADDER TRUCKS. HARRY THAYER KINGSBURY, Keene, N. H. Filed June 14, 1900. Serial No. 20,366. Term of patent 14 years.



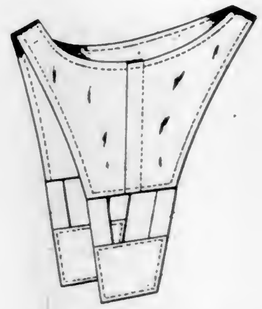
Claim.—The design for a body-blank for toy hook-and-ladder trucks; substantially as shown and described.

32,983. PUZZLE-BOARD. RICHARD FEIGL, Chicago, Ill. Filed May 7, 1900. Serial No. 15,847. Term of patent 3½ years.



Claim.—The design for a puzzle-board substantially as herein shown and described.

32,984. SUPPORTER FOR INFANTS' DIAPERS. MARY R. FOX, Baltimore, Md. Filed Apr. 14, 1900. Serial No. 12,943. Term of patent 14 years.



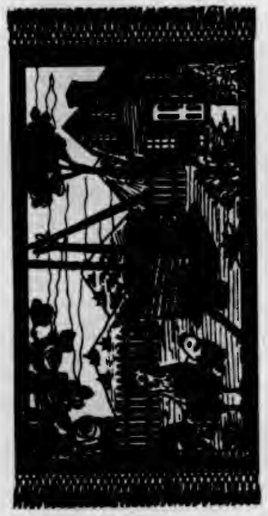
Claim.—The design for a supporter for infants' diapers herein described and shown.

32,985. TRIMMING. ISIDOR C. BANDMAN, New York, N. Y. Filed June 9, 1900. Serial No. 19,781. Term of patent 3½ years.



Claim.—The design for a trimming substantially as shown and described.

32,986. RUG. WILLIAM K. SMITH, Philadelphia, Pa. Filed June 6, 1900. Serial No. 19,331. Term of patent 7 years.



Claim.—The design for a rug, as herein shown and described.

32,987. DECORATIVE FRIEZE. FRANZ HANSHAMMER, Concord, N. H., assignor to Frederick Beck, New York, N. Y. Filed Apr. 14, 1900. Serial No. 12,944. Term of patent 3½ years.



Claim.—The design for a decorative frieze, as herein shown and described.

32,988. DECORATIVE FRIEZE. FRANZ HANSHAMMER, Concord, N. H., assignor to Frederick Beck, New York, N. Y. Filed Apr. 14, 1900. Serial No. 12,945. Term of patent 3½ years.



Claim.—The design for a decorative frieze, as herein shown and described.

32,939. DECORATIVE FRIEZE. FRANZ HAMMERMEIER, Concord, N. H., assignor to Frederick Beck, New York, N. Y. Filed Apr. 14, 1900. Serial No. 12,946. Term of patent 3½ years.



Claim.—The design for a decorative frieze, as herein shown and described.

32,940. DECORATIVE FRIEZE. FRANZ HAMMERMEIER, Concord, N. H., assignor to Frederick Beck, New York, N. Y. Filed Apr. 14, 1900. Serial No. 12,947. Term of patent 3½ years.



Claim.—The design for a decorative frieze as herein shown and described.

TRADE-MARKS

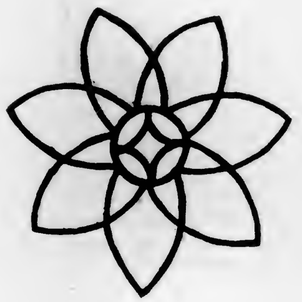
REGISTERED JULY 10, 1900.

34,853. COTTON FLANNELS. HERMANN NORDEN, New York, N. Y. Filed June 15, 1900.



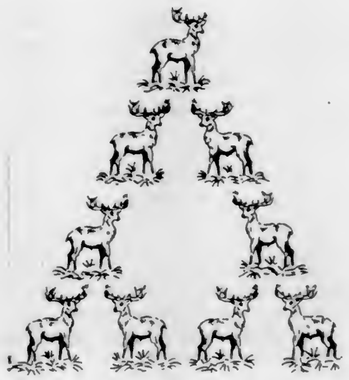
Essential feature.—The representation of a fruit-vase containing fruit, a Chinese inscription written across the front of the same, and a fly-brush at the foot thereof. Used since February 26, 1900.

34,854. COTTON FLANNELS. HERMANN NORDEN, New York, N. Y. Filed June 15, 1900.



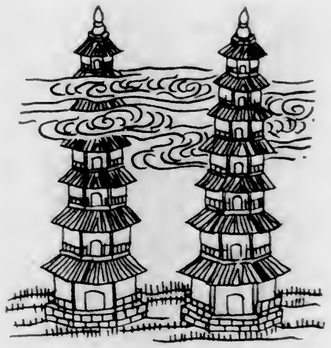
Essential feature.—The representation of a seven-pointed star with the form of a "cash" in its center. Used since January 24, 1900

34,855. COTTON FLANNELS. HERMANN NORDEN, New York, N. Y. Filed June 15, 1900.



Essential feature.—The representation of a group of stags arranged in the form of a pyramid or triangle. Used since March 16, 1900.

34,856. COTTON FLANNELS. HERMANN NORDEN, New York, N. Y. Filed June 15, 1900.



Essential feature.—A representation of two Chinese towers or pagodas. Used since March 12, 1900.

84,857. COTTON FLANNELS. HERMANN NORDEN, New York, N. Y. Filed June 15, 1900.



Essential feature.—The representation of a Chinese seal, the branches of a plum-tree, and imaginary animals resembling bats. Used since January 26, 1900.

84,858. SHOES. SHABOOD & CROOKS, St. Paul, Minn. Filed Apr. 13, 1900.

Essential feature.—The word-symbol "R. E-Z." Used since June 29, 1899.

84,859. LEATHER BOOTS AND SHOES. CYGOLF SHOE COMPANY, Brockton and Boston, Mass., and New York, N. Y. Filed June 9, 1900.

Cygolf

Essential feature.—The word "CYGOLF." Used since July, 1897.

84,860. MEN'S, BOYS', YOUTHS', AND LITTLE GENTS' BOOTS AND SHOES. THE EXCELSIOR SHOE COMPANY, Portsmouth, Ohio. Filed May 28, 1900.



Essential feature.—The words "ARMORED CRUISER" and the representation of an armored cruiser. Used since July 1, 1899.

84,861. BLACKINGS, DRESSINGS, AND POLISHES FOR BOOTS AND SHOES. GEORGE LYMAN SNOW, Boston, Mass. Filed June 6, 1900.

VELVET

Essential feature.—The word "VELVET." Used since March 10, 1900.

84,862. WHEAT-FLOUR. R. T. DAVIS MILL AND MANUFACTURING COMPANY, St. Joseph, Mo. Filed June 15, 1900.

GRAN-DEE

Essential feature.—The compound word "GRAN-DEE." Used since October, 1898.

84,863. GRANULATED SUGAR. MICHIGAN SUGAR COMPANY, Bay City and Essexville, Mich. Filed May 25, 1900.

PIONEER

Essential feature.—The word "PIONEER." Used since May 16, 1900.

84,864. CERTAIN NAMED FOOD PREPARATIONS. MERRELL-SOULE COMPANY, Syracuse, N. Y. Filed May 10, 1900.



Essential feature.—The representation of a jack-o'-lantern. Used since October 15, 1898.

84,865. CERTAIN NAMED GROCERIES. ALBERT STEINFELD, Tucson, Ariz. Filed June 6, 1900.

NOPAL

Essential feature.—The word "NOPAL." Used since February 1, 1900.

84,866. CANNED MEATS, FISH, FRUITS, AND VEGETABLES. CATTON, BELL & CO., San Francisco, Cal. Filed June 11, 1900.

Plymouth Rock

Essential feature.—The words "PLYMOUTH ROCK." Used since April 14, 1900.

84,867. CANNED, CURED, AND FRESH FISH. CHARLES ROBIN COLLAS & COMPANY, LIMITED, Paspebiac, Canada. Filed Aug. 26, 1899.

C·R·C

Essential feature.—The letters "C. R. C." Used since 1766.

84,868. HORSE-RADISH. ELIZABETH H. EICHTMIER, New York, N. Y. Filed Jan. 28, 1899.



Essential feature.—The letters "I S H" and the representation of a horse. Used since April 15, 1830.

84,869. COFFEE EXTRACT. HERMANN ESCHWEGE, Forest Hill, England. Filed Apr. 2, 1900.

CAFOLIN

Essential feature.—The word "CAFOLIN." Used since February 27, 1900.

84,870. MIXED TEAS. SAMUEL ZECHSWITZ, New York, N. Y. Filed May 26, 1900.



Essential feature.—A likeness of Christopher Columbus and the letters "S. Z." Used since November 1, 1895.

84,871. BEER. THE PREFERBEER CO., New York, N. Y. Filed June 1, 1900.

Preferbeer

Essential feature.—The word "PREFERBEER." Used since April 25, 1900.

84,872. WOOD FUEL. ABBOT AUGUSTUS LOW, New York, N. Y. Filed June 6, 1900.



Essential feature.—The representation of a horseshoe. Used since May 8, 1900.

84,873. CERTAIN NAMED TOILET PREPARATIONS. HOWARD H. BUSH, New York, N. Y. Filed June 4, 1900.

NANIEF

Essential feature.—The word "NANIEF." Used since May 15, 1900.

84,874. EYE-WASH. WILLIAM C. LEHMANN, New York, N. Y. Filed June 12, 1900.

EYETONAL

Essential feature.—The word "EYETONAL." Used since November 1, 1898.

84,875. PREPARATION FOR TREATING THE HAIR AND THE SCALP. AUGUSTUS F. DUPREY, Napa, Cal. Filed June 6, 1900.

MERTOL

Essential feature.—The word "MERTOL." Used since October 1, 1899.

84,876. PHOSPHORIZED ELIXIR OF STRYCHNIA COMPOUND. CHARLES H. WHITMAN, Omaha, Nebr. Filed May 26, 1900.

OZOTONE

Essential feature.—The word "OZOTONE." Used since January, 1898.

84,877. CERTAIN NAMED PROPRIETARY MEDICINES. MARTIN H. SMITH COMPANY, New York, N. Y. Filed May 25, 1900.

ERGOAPIOL

Essential feature.—The word "ERGOAPIOL." Used since April 15, 1899.

84,878. MEDICAL AND PHARMACEUTICAL PREPARATIONS FOR VETERINARY PURPOSES. ROBERT GROPPLER, Berlin, Germany. Filed May 15, 1900.

Lysoform

Essential feature.—The word "LYSOFORM." Used since May 9, 1899.

84,879. STICKY FLY-PAPER. FREDERICK W. LIPPS, Baltimore, Md. Filed May 26, 1900.



Essential feature.—The word "FLYON," the pictorial representation of a sheet of fly-paper with two flies costumed as male and female in the attitude of dancing a cake-walk, and the words, "I'M STUCK ON YOU." Used since March 5, 1900.

84,880. CERTAIN NAMED CHEMICAL PRODUCTS AND FERTILIZERS. WILHELMSBURGER CHEMISCHE FABRIK, Hamburg, Germany. Filed June 4, 1900.



Essential feature.—The representation of a huntsman holding a wild bull in an erect attitude. Used since 1875.

84,881. CERTAIN NAMED CHEMICAL PRODUCTS AND FERTILIZERS. WILHELMSBURGER CHEMISCHE FABRIK, Hamburg, Germany. Filed June 4, 1900.



Essential feature.—The representation of an archer and the initials "W. G." Used since 1899.

84,882. BRONZE POWDER AND BRONZE LIQUID. THE FIRM OF GEORGE BENDA, New York, N. Y. Filed Apr. 25, 1900.





FRAMOULGOLD

Essential feature.—The word "FRAMOULGOLD" and the representation of a frame, oriental design, and a molding. Used since March 1, 1900.

84,883. PLASTIC COMPOSITION. M. M. RHODES & SONS COMPANY, Taunton, Mass. Filed June 11, 1900.

Rodite

Essential feature.—The word "RODITE." Used since January 1899.

84,884. CERTAIN NAMED ARTICLES FOR MURAL DECORATION. EMILE VICTOR CANIS, Paris, France. Filed Nov. 1, 1898.

HOME DECOR

Essential feature.—The words "HOME DECOR." Used since April 25, 1896.

84,885. TRACING-CLOTH. THE WINTERBOTTOM BOOK CLOTH COMPANY, LIMITED, Manchester, England. Filed Dec. 5, 1899.



Essential feature.—The representation of two shields, the left-hand shield bearing the device of three escallops and surmounted with a horse's head, the right-hand shield bearing on the lower half a cross and on the upper half a grating and surmounted by an eagle. Used since November 26, 1891.

84,886. PHOTOGRAPHIC PAPER. PLATINUM PHOTOGRAPHIC PAPER COMPANY, St. Paul, Minn. Filed June 7, 1900.

KADEX

Essential feature.—The word "KADEX" in large capital letters. Used since April 18, 1900.

84,887. WRITING-PAPER AND ENVELOPS. EATON-HURLBUT PAPER COMPANY, Pittsfield, Mass. Filed June 2, 1900.

ROOKWOOD

Essential feature.—The word "ROOKWOOD." Used since May, 1900.

84,888. PRINTING AND LITHOGRAPHIC INK. THE FUCHS & LANG MANUFACTURING COMPANY, New York, N. Y. Filed June 8, 1900.

TANG JIN

Essential feature.—The words "TANG JIN." Used since May 7, 1900.

84,889. ICE-CREAM FREEZERS AND CABINETS. CORDLEY & HAYES, New York, N. Y. Filed June 4, 1900.

XXTH CENTURY

Essential feature.—The words "XXTH CENTURY." Used since May 1, 1900.

84,890. GRAMOPHONES. EMILE BERLINER, Washington, D. C. Filed May 26, 1900.



Essential feature.—The picture of a dog listening to a sound-reproducing machine. Used since May 24, 1900.

84,891. BURIAL-CASKETS AND CASES THEREFOR. JOSEPH S. WATERMAN & SONS, Boston, Mass. Filed June 15, 1900.



Essential feature.—The letter "W" within a circular border. Used since November 19, 1897.

84,892. KNIFE-SECTIONS FOR MOWERS, REAPERS, AND BINDERS. THE JOHNSTON HARVESTER COMPANY, Batavia, N. Y. Filed Dec. 26, 1899.



Essential feature.—A triangular figure having the letters "J H Co" arranged at the corners of said figure. Used since June, 1899.

84,898. STONES AND WHEELS OF ABRASIVE MATERIAL. NORTON EMERY WHEEL COMPANY, Worcester, Mass. Filed June 4, 1900.

TIGER

Essential feature.—The word "TIGER." Used since June 1, 1900.

84,894. AUTOMOBILES. AMERICAN BICYCLE COMPANY, New York, N. Y. Filed June 1, 1900.

Waverley

Essential feature.—The word "WAVERLEY." Used since May, 1899.

PHOTO-LITHO. THE NORRIS PETERS CO. WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

WOODWARD *v.* NEWTON.

Decided September 28, 1899.

INTERFERENCE—PRIORITY—SECOND APPLICATION—LACHES.

W. filed an application on April 13, 1896, which was put in interference on April 20, 1897, with an application of N. filed February 16, 1897. W. actually reduced the invention to practice three months after the filing date of N. That interference was dissolved on October 18, 1897, by the Assistant Commissioner, reversing the action of the Examiner refusing to dissolve. W. then filed an amendment and a new interference was declared, which was also dissolved by the Assistant Commissioner on June 1, 1898, reversing the Examiner. W. then filed a new application on June 18, 1898, and the present interference was declared. *Held* that under this state of facts, leaving out of consideration W.'s actual reduction to practice and relying upon his constructive reduction, as indicated by the second application, he cannot be charged with laches in reducing the invention to practice, and priority is awarded to him.

APPEAL from Examiners-in-Chief.

KNITTING-MACHINE NEEDLE.

Application of Stephen Woodward filed June 13, 1898, No. 683,262. Application of Elmer E. Newton filed February 16, 1897, No. 623,735.

Messrs. Crosby & Gregory for Woodward.

Mr. William H. Finckel for Newton.

DUELL, *Commissioner:*

This is an appeal from the decision of the Examiners-in-Chief awarding priority of invention to Newton on the following issue:

1. A knitting-machine needle of the class described, having a collar applied to its heel between the limbs of the heel and embracing such limbs.

2. A knitting-machine needle of the class described, having a collar attached to its heel and between the limbs of the heel, and bent about such heel in the form of an S.

Both the Examiner of Interferences and the Examiners-in-Chief have found that Woodward was the first to conceive and disclose the invention in issue. The Examiner of Interferences says:

From the testimony of this witness (Thurston) and Woodward himself there is no doubt that Woodward conceived and disclosed the construction here involved and sought to patent it as early as the date of filing his application No. 587,282, viz., April 13, 1896. This application, as finally prepared and filed, did not specifically show or describe the present issue, and went to patent with claims that did not cover it.

The Examiners-in-Chief say:

The testimony of Woodward, Thurston, and Mayo all consistently points to the conclusion that Woodward never had any other idea than that the ends of the wire were to meet the portion of the wire that passed through the needle.

After a careful examination of the testimony I concur in their finding. It follows, therefore, or, as stated in the words of the Examiner of Interferences—

Woodward, then, is entitled to prevail, if he connects the date of conception and disclosure with the exercise of reasonable diligence in reducing his invention to practice.

The Examiner of Interferences and the Examiners-in-Chief after a review of the evidence have found that Woodward was not diligent in his reduction to practice and that as Newton was the first to reduce to practice, though last to conceive and disclose, he is entitled to an award of priority. With this conclusion I cannot agree. Fortunately there is no dispute as to the facts upon which their conclusion is based, and therefore the question presented is whether the facts are sufficient to warrant the finding that Woodward, the first inventor, has by negligence forfeited his right to the patent.

We are taught by the Court of Appeals of the District of Columbia, which exercises an appellate jurisdiction over the decisions of this Office in interference proceedings, that—

this question of diligence cannot be determined by any general rule applicable to all cases. It necessarily depends upon the special circumstances of each case as it arises. (*McCormick v. Cleal*, 83 O. G., 1514, 1516.)

The special circumstances of the present case are briefly stated as follows: On April 13, 1896, Woodward filed an application, Serial No. 587,282, for patent for an improvement in knitting-machine needles which was rejected by the Examiner; but while this application was still pending it was on April 20, 1897, put in interference by the Examiner with an application of Newton which was filed February 16, 1897, the same Newton application which is involved in the present interference. The issue of that interference was the same as the first count of the issue of the present interference and was said to involve two claims of Newton, the first of which is the first count of the present issue and the second of which is, with the exception of the term "S or" preceding the figure "8," the same as the second count of the present interference.

Woodward's claim involved in the original interference was as follows:

In a knitting-machine needle, the combination with the shank thereof having a perforation, of a wire passing through said perforation, the ends of the latter being bent in opposite directions around their respective shank portions, whereby said shank may be strengthened and the wire may be held permanently in place.

Newton moved to dissolve the interference upon the ground that there was no interference in fact, claiming that Woodward did not and could not make the claims made by Newton or any that would dominate those claims. A hearing was had before the Examiner, who denied the motion, and

from his decision an appeal was taken to the Commissioner. The appeal was heard by the Assistant Commissioner, who on October 18, 1897, reversed the Examiner and directed that the interference be dissolved. Thereupon Woodward's attorney filed an amendment introducing a claim in the precise words of the issue of the dissolved interference, and a new interference was declared with the following issue:

A knitting-machine needle of the class described, having a collar or thickening member applied to its heel between the limbs of the heel, and embracing such limbs.

Newton moved to dissolve the interference upon the ground that there was no interference in fact. The Examiner denied the motion, and from his decision refusing to dissolve the interference an appeal was taken to the Commissioner. The appeal was heard by the Assistant Commissioner, who on June 1, 1898, reversed the Examiner and directed that the interference be dissolved.

Within ten days after this decision Woodward executed a new application, which was filed on June 13, 1898, Serial No. 683,268. In this application appear two claims which are substantially the counts of the issue, and an interference was thereupon declared between Newton's application involved in the former interference and Woodward's present application. Upon this state of facts was predicated a finding of lack of diligence.

It may be here said that Woodward actually reduced this invention to practice on or about May 26, 1897, which was about three months after Newton constructively reduced the invention to practice by filing his application. It also appears that Woodward was a poor man and had to borrow the money with which to file his first application. Upon this point the Examiner of Interferences says:

Woodward, having on file an application which he supposed protected him in the present invention, was in no haste in regard to the matter or in any hurry to have a patent issue. He was a poor man and could not manufacture the needle himself on any commercial scale. He seems to have hoped that by protecting his invention he would be able to obtain permanent employment by assigning his invention to parties who would put it on the market.

After the Office finally decided that Woodward's 1896 application did not contain the present issue, he filed without unnecessary delay the application here involved.

The position taken by the tribunals whose concurrent decisions I am constrained to reverse is that Woodward is bound by the advice of his attorney and that the belief of Woodward and his attorney that the first application contained the invention in dispute is not a valid excuse for his delay in either actually or constructively reducing the invention to practice.

As to an actual reduction to practice it appears that Woodward reduced the invention to practice about three months after Newton reduced it to practice by filing an application for patent. Meanwhile Woodward had an application for patent on file which he honestly believed protected the invention in controversy. His position is a much stronger one than was that of McCormick. (*McCormick* v. *Cleal*, *supra*.)

Leaving out of consideration Woodward's actual reduction to practice and relying upon his constructive reduction by filing his present application, I am clearly of the opinion that his delay is fully excused. In coming to this conclusion I admit the general proposition stated by the lower tribunals that an applicant is bound by the acts of his attorney and that his own mistaken notions as to what invention a prior patent or application for patent covers cannot of themselves excuse an unreasonable delay in reducing an invention to practice. In my opinion, however, "there are other important considerations that tend to excuse delay." It must not be forgotten that it was this Office that put Woodward's original application into the original interference, which the Examiner refused to dissolve and which was only dissolved on appeal to the Commissioner. It was this Office which permitted the amendment to the original Woodward application and declared the second interference, which was dissolved only on appeal to the Commissioner. That interference was not dissolved until June 1, 1898. How can laches be fairly predicated on such a state of facts? Woodward diligently prosecuted his application for a patent for the invention in controversy. It comes with poor grace for this Office now to say that he was not diligent. Until the decision of the Assistant Commissioner rendered June 1, 1898, Woodward was fully justified by the position of the Office in prosecuting the invention of the issue in his original application. Suppose Woodward had filed a new application pending the old interference proceeding. To be consistent the Examiner would have been obliged to hold that he was attempting to prosecute the same invention in two different applications and would have so notified him. Woodward's delay in filing the second application is justified by the facts disclosed by the record:

The mere fact of delay does not, therefore, operate to deprive the inventor of his legal rights. Before he can be punished it must be shown that he has been guilty of a wrong—that he has caused the delay. (*U. S.* v. *American Bell Telephone Co. et al.*, 79 O. G., 1352.)

Woodward had a right to rely upon the decision of the Examiner until it was reversed by the Commissioner.

Fowler had a right to rely on such practice in force at the time, and his failure to make a motion for dissolution was therefore not a waiver of his right to be heard on the question. He cannot be deprived of his rights merely by a change in the method of procedure in this Office. (*Fowler* v. *Dodge*, 82 O. G., 1687.)

It may be urged that the delay was not caused solely by the Office. It was caused solely by the Office at least up to October 18, 1897, when the first interference was dissolved. After that the delay was caused jointly by the Office and the applicant. This possibly might be fatal were it a question in which the public was a party; but in the present case, where both parties are applicants and the Office is in a position to rectify any mistake to which it was a party, it should not hesitate to so do.

Whenever it is found that the rights of a party to an interference or the rights of any party before this Office have been prejudiced by an error of any tribunal of the Office, all tribunals of this Office should coöperate to remedy the error with as little delay or formality as is consistent with a due regard to the proper keeping of the records. (*Hunter* v. *Wightman*, 81 O. G., 1788.)

Woodward's original application did not become a patent until after the present application was filed, and he was certainly guilty of no laches between June 1 and 13, 1898.

Upon all the facts disclosed by the record and for the reasons given I am of the opinion that Woodward is entitled to an award of priority, and the decision of the Examiners-in-Chief is therefore reversed.

JONES *v.* LARTER.

Decided June 1, 1900.

1. INTERFERENCE—BAR TO THE GRANT OF A PATENT—PRIORITY—RULE 126.

Where the Examiners-in-Chief in their decision on priority call attention to the fact under Rule 126 that one party is not entitled to make the claims by reason of a prior patent granted to him, but the record shows him to be the first inventor, *Held* that the interference should not be dissolved without deciding priority, since to do so would be to allow a patent to the other party who is not the first inventor.

2. SAME—SAME—QUESTION OF DISSOLVING INTERFERENCE.

Where a party raises the question of a bar to the grant of his opponent's claims for the first time at final hearing and the alleged bar does not affect his own claims, *Held* that the interference will not be dissolved, but the Examiner directed to act on the question of a bar after the limit of appeal from the decision on priority has expired.

3. TWO PATENTS TO THE SAME INVENTOR FOR THE SAME INVENTION.

Where an application covering a certain device is pending when another application is filed by the same party covering improvements on it and six months after a patent issues on the first application broad claims which could have been made therein and differ only in scope from those actually made are inserted in the second application, *Held* that the claims cannot be properly allowed, since to allow them would be, in effect, to grant a reissue with broader claims and at the same time extend the term of the patent.

4. SAME—COPENDING APPLICATIONS—BROAD AND NARROW CLAIMS.

It has been held that where broad claims are made in the case first filed and while that case is held up in the Office through no fault of the applicant a patent on specific improvements is granted a patent subsequently granted on the first case is valid; but the decisions to that effect do not apply and were not intended to apply to a case where the broad claims were not only made in the second application filed, but made therein long after the patent had issued on the first application.

5. SAME—SAME—FAILURE TO CLAIM—DEDICATION TO THE PUBLIC.

The presumption of a dedication to the public is raised by a disclosure of matter in a patent without a claim to it, and while this presumption may under certain circumstances be overcome by having a copending application claiming it, it is not overcome by an application which does not and was not intended to claim it, merely because the claims are inserted therein long after the patent on the other case issues.

APPEAL from Examiners-in-Chief.

BUTTON OR STUD.

Application of William H. Jones filed January 19, 1899, No. 702,751. Application of Halsey M. Larter filed September 10, 1898, No. 690,673.

Mr. F. C. Fraentzel, *Mr. Charles C. Gill*, and *Mr. William G. Henderson* for Jones.

Messrs. Drake & Co. for Larter.

CHAMBERLIN, *Assistant Commissioner:*

This is an appeal by Jones from the decision of the Examiners-in-Chief affirming the decision of the Examiner of Interferences awarding priority of invention to Larter upon the following issue:

1. The improved stud or button herein described, comprising a head, a shank attached to said head bent at right angles to form a post and barrel, said barrel being open at the right angle where it connects with the post and at its opposite end and at the latter being provided with a spring-bearing, a tubular plunger projecting out from said opening at the angle and at its projecting end being closed to form an interior spring-bearing, said tubular plunger having a knob or finger-piece whereby it may be drawn into the barrel at the angle, and a spring arranged in said projecting part of the plunger and extending from the interior spring-bearing of the barrel, substantially as set forth.

2. The improved button comprising a head, a shank attached to said head and bent at a point back from said head and forming a post and barrel, the latter of which lies perpendicular to the said post, the said barrel forming a part of a rear cross-head and providing a receptacle for the hollow or tubular plunger, which receptacle is open at the angle or bend in the shank and at the projecting end thereof, the said projecting end of the barrel having an end bearing for a spring, said hollow or tubular plunger being adapted to slide in said barrel and normally projecting out from the opening at the bend in the shank, to complete the cross-head, said plunger having a knob or finger-piece lying at the outside of the open projecting end of the barrel, the said plunger both where it lies within the barrel and out from the bend-opening, being chambered to receive a spring and within its end normally projecting out from the bend-opening having a bearing, for the spring, said spring extending through the chamber within the plunger from said bearing to the end bearing at the projecting end of the barrel, whereby a long spring is employed and an ample length of movement of the plunger and a greater projection of the same normally out from the bend in the shank is obtained, substantially as set forth.

The only purpose in taking this appeal was to have the question of a bar to the grant of a patent to Larter considered, since Jones does not contend that on the record the decision on the question of priority alone could have been different from what it was. As far as that record goes Larter is clearly the first inventor.

In their decision the Examiners-in-Chief called attention, under Rule 126, to the fact that in their opinion a prior patent, No. 616,057, granted to Larter constitutes a bar to the grant to him on his present application of a patent including the claims of the issue. In the argument on behalf of Jones it was contended that the question of priority should not be passed upon on this appeal, but that the decisions of the lower tribunals on that question should be set aside on the ground that no proper interference was before them by reason of the fact that Larter had no right to make the claims of the issue.

If Jones had wished to prevent a decision on the question of priority, he should have made a motion to dissolve at the proper time on the ground that Larter had no right to make the claims. Having failed to do this and having let the case go to final hearing on the question of priority before raising the question, he cannot now be permitted to avoid the effect of the decision against him. The effect of setting aside the decision on priority, as requested by Jones, would be to either grant him a patent on the invention of which, according to the record, he was not the first inventor or to permit him to again contest the question of priority of invention with Larter, provided Larter has the right to and does make the claims in some other application. This would clearly not be proper. Even if Larter has no right to make the claims, as contended, there was no such irregularity in the declaration or conduct of this interference as would preclude a proper decision on the question of priority. Larter's right to make the claims does not affect in any manner that question. Interferences are, under the statute, instituted to determine the question of priority of invention, and after an interference has proceeded as far as this one has it should be decided unless there are circumstances which make it impossible to prop-

erly decide the question. As stated in *Steward* v. *Ellis* v. *Lee* v. *Howe*, (49 O. G., 1983:)

The conclusion of the whole matter is that the first duty of the Commissioner is to ascertain who is the original and first inventor of the improvement claimed by the several parties now in interference, after which his duty is equally clear to refuse a patent to the prevailing party if he is not entitled to receive it.

The decisions of the lower tribunals on the question of priority will therefore not be set aside, but being correct will be affirmed.

It is necessary, however, to also consider the question of Larter's right to make the claims in his present application, which has been called to my attention by the Examiners-in-Chief. Larter's application, No. 668,929, on which his patent above referred to issued, was filed on February 3, 1898, and was allowed on October 22, 1898. That application admittedly disclosed and the patent now discloses fully the structure set forth in the claims of the present interference, and those claims could properly have been made in that case. They cover exactly the same device as the claims in the patent and differ therefrom only in scope. After the final fee had been paid on that patent the attorneys for Larter filed a communication in the case stating that they had by mistake accepted too limited claims and that since it was too late then to amend the case they intended after the patent issued to apply for a reissue with a claim of substantially the same scope as the claims of the present issue. On September 10, 1898, prior to the allowance of the patented case, the present application of Larter's was filed, stating that it was for an improvement on the class of buttons shown in the applicant's prior case, No. 668,929. It contained no claims broad enough to cover the device shown in that prior application and was clearly intended merely to cover improvements on that device. It was not until June 3, 1899, nearly six months after the other case had become a patent, that the claims now in issue were inserted in this case, and they were then inserted, as stated by counsel for Larter, upon the suggestion of the Primary Examiner. It would seem that these claims covering the same thing as the claims in the prior patent and differing therefrom only in scope cannot properly be allowed in this case. To do so would be to allow two patents to the same party covering the same invention. As stated in *ex parte Edison*, (54 O. G., 263:)

An invention embodied in a given structure and restrictedly claimed does not become a different invention when claimed more broadly or generically.

The Supreme Court said in *James* v. *Campbell*, (21 O. G., 337:)

It is hardly necessary to remark that the patentee could not include in a subsequent patent any invention embraced or described in a prior one granted to himself any more than he could an invention embraced or described in a prior patent granted to a third person. Indeed, not so well: because he might get a patent for an invention before patented to a third person in this country if he could show that he was the first and original inventor, and if he should have an interference declared.

In *Miller* v. *Brass Co.* (21 O. G., 201) it is said:

The claims of a specific device or combination and an omission to claim other devices or combinations apparent on the face of the patent are in law a dedication to the public of that which is not claimed. It is a declaration that that which is not claimed is either not the patentee's invention, or, if his, he dedicates it to the public.

In *Mahn* v. *Harwood* (30 O. G., 657) it is said:

The taking out of a patent which has, as the law requires it to have, a specific claim is notice to all the world of the most public and solemn kind that all those parts of the art, machine, or manufacture set out and described in the specification, and not embraced in such specific claim, are not claimed by the patentee, at least, not claimed in and by that patent. * * * So far as that patent is concerned, the claim actually made operates in law as a disclaimer of what is not claimed.

Larter argues that since in this case both applications were pending in the Office at the same time it is proper to grant both patents, although some of the claims in the later case differ from claims in the other only in scope, and in support of this contention cites the following decisions: *Thomson-Houston Co.* v. *Elmira Railway Co.*, (74 O. G., 144;) *Thomson-Houston Co.* v. *Winchester Co.*, (73 O. G., 2155;) *Thomson-Houston Co.* v. *Ohio Brass Co.*, (80 O. G., 654,) and *Electrical Accumulator Co.* v. *Brush Electric Co.*, (61 O. G., 886.)

These decisions and all others on the same line that have been cited have reference to cases in which the broad claims were made in the case first filed, and while that case was held up in the Office without fault of the applicant another case covering specific improvements on the original device went to patent. They do not apply and were not intended to apply to a case like the present, where the broad claims were not only made in the second application filed, but made therein long after the patent had issued on the first application. This is indicated by the statement of Judge Townsend in *Thomson-Houston Co.* v. *Winchester Co.* that—

whatever may be the rule as to cases where the application for the generic patent was filed subsequent to the application for the specific patent I do not think the patentee should be deprived of his broad patent where the application for such patent was made first and was delayed in the Patent Office through no fault of the inventor.

The presumption of dedication to the public by disclosure in a patent may, it is true, under certain circumstances be overcome by having a concurrently-pending application claiming it; but I know of no authority for holding that it is overcome by an application which does not and was not intended to claim it, merely because the claims are inserted therein long after the patent on the other case issues.

In the present case Larter could have made the claims of the issue at any time in his original case, and his failure to do so was, according to his own statement, due merely to a mistake as to his right to such claims. This was clearly a case where the claims could only be properly made by reissue, if at all, and this was the view that Larter took of the matter. He apparently did not think of inserting them in this case until six months after his patent issued and inserted them then only upon the suggestion of the Examiner. It was an error on the part of the Examiner to make the suggestion, since to grant the claims in this case would be, in effect, to grant a reissue of Larter's prior patent with broader claims and at the same time extend its term. (*Ex parte Edison*, cited above.) The question whether he is entitled to a reissue is not up for consideration; but it is held that if he is now entitled to the claims at all it is only by reissue.

The Examiner is directed to act upon the question of Larter's right to the claims in accordance with the views above stated after the limit of appeal from this decision has expired.

The decision of the Examiners-in-Chief awarding priority of invention to Larter is affirmed.

Patents No. 653,648 to 654,119.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 92—No. 3. TUESDAY, JULY 17, 1900. PRICE—$5 per year.

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Changes in Classification.

(ORDER No 1,302.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 11, 1900.

The following change in classifications of inventions is hereby directed, to take effect this day:

In Division V, class 84, Music, establish a new subclass as follows:

152. Self-playing instruments—
Multiple-sheet—
Self-setting.

C. H. DUELL,
Commissioner.

Registration of American and Spanish Patents in Cuba.

HEADQUARTERS DIVISION OF CUBA,
Havana, May 26, 1900.

The Military Governor of Cuba, upon the recommendation of the Secretary of Agriculture, Commerce, and Industries, directs the publication of the following order:

I. Notice is hereby given to all persons in legal possession of Letters Patent registered in Madrid, Spain, and extended to the Island of Cuba to exhibit the duplicates of models, plans, and specifications of their patents or an authenticated copy of the same, together with a certificate that they are in force in Spain, in accordance with section 5 of the Royal Decree of May 14, 1880, within six months from the date of this order, in order to protect them from pending infringements.

II. American patents already forwarded for registration and those that may hereafter be forwarded will at once be entered in the special register in the office of the Secretary of Agriculture, Commerce, and Industries conditionally, reserving the decision in regard to the definite inscription or absolute rejection of such as are determined to be infringements in accordance with the proofs obtained within the period of six months, as provided in paragraph I of this order, upon the expiration of which period the inscription will be made in full, leaving to the parties concerned after that date the right of settling their differences before courts of justice.

J. B. HICKEY,
Assistant Adjutant-General.

Revival of Abandoned Applications.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 13, 1900.

Notice is hereby given that petitions for the revival of abandoned applications will not be docketed for hearing. A full showing of the reasons for reviving an application must be filed with the petition for revival, and the case will be disposed of on such showing without oral argument.

C. H. DUELL,
Commissioner.

CERTIFICATES OF REGISTRATION ISSUED JULY 17, 1900.

Labels.

7,699.—Title: "ROYAL'S SODA." (For Bicarbide of Soda.) *R. T. Royal & Co.*, Louisville, Ky. Application filed June 25, 1900.

7,700.—Title: "PUROO." (For a Washing Compound.) *Oliver W. Gollings*, Chicago, Ill. Application filed June 11, 1900.

7,701.—Title: "PALETTE." (For Canned Tomatoes.) *The Badger Canning Company*, Oshkosh, Wis. Application filed June 11, 1900.

7,702.—Title: "BANKER'S BEST." (For Cigars.) *John A. Crabb*, Eminence, Ky. Application filed June 18, 1900.

7,703.—Title: "THE REPUBLIC." (For Cigars.) *G. W. Bower & Co.*, Olney, Ill. Application filed May 28, 1900.

7,704.—Title: "CONSTELLATION PURE RYE WHISKEY." (For Whiskey.) *G. F. Coshland*, New York, N. Y. Application filed June 21, 1900.

7,705.—Title: "EUREKA EYE WATER." (For Eye-Water.) *Meier G. Lowenstein*, Arkville, N. Y. Application filed June 20, 1900.

7,706.—Title: "SALVATION SALVE FOR SORES." (For a Salve.) *Sigmund Muhlhauser*, Cleveland, Ohio. Application filed June 23, 1900.

7,707.—Title: "DIGESTIVE JUICES OF THE FOWL FOR DYSPEPSIA." (For a Medicine.) *D. J. Arnold* and *C. D. Cannon*, Omaha, Nebr. Application filed June 8, 1900.

7,708.—Title: "RED JACKET MINERAL WATER." (For Mineral Water.) *H. W. Knight & Son*, Seneca Falls, N. Y. Application filed June 4, 1900.

7,709.—Title: "LLOYD FIREWORKS." (For Fireworks.) *Thomas Lloyd*, New York, N. Y. Application filed June 18, 1900.

7,710.—Title: "EDISON CONCERT RECORD." (For Boxes Containing Phonograph-Records.) *National Phonograph Company*, New York, N. Y. Application filed May 1, 1900.

Print.

242.—Title: "BIG HORN CHIEF CIGAR." (For Cigars.) *F. W. Loudenber*, Chattanooga, Tenn. Application filed January 23, 1900.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business July 10, 1900

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears—Under one month.			
106	II. Farm Stock, Products, etc.	July 5	July 5	70
217	XXXIII. *Designs, †Trade-Marks, ‡Labels and Prints, Optics.	July 2	July 7	21
38	XXXV. Advertising, Baggage, Buckles, Buttons, and Clasps, Packing and Storing Vessels, etc.	July 2	July 5	46
260	VIII. Furniture, Beds, Store Furniture, etc.	June 25	July 5	125
111	XXXII. Bottles and Jars, Carbonating Beverages, Refrigeration, Shipping and Storing Vessels, etc.	June 22	June 28	164
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	June 18	June 28	148
261	XXXVI. Weighing and Measuring Devices, Driers, and Drafting.	June 16	June 30	68
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	June 5	June 21	114
268	X. Carriages and Wagons.	June 13	June 28	85
158	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	June 13	June 26	68
105	XI. Boots and Shoes, Harness, Hose and Belting, and Leather-Working Machinery.	June 13	June 25	133
39	XXXI. Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	June 12	June 30	98
95	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	Juue 12	June 28	102
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	June 12	June 28	86
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	June 11	June 30	107
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	June 11	June 30	128
255	XII. Mechanical Engineering, Store-Service, etc.	June 11	June 29	144
123	XXIV. Sewing-Machines, Apparel, and Toilet.	June 11	June 28	165
246	I. Tillage and Fences	June 11	June 28	113
103	XIX. Stoves and Furnaces	June 11	June 28	185
80	IV. Civil Engineering, Fire-Proof Buildings, Bridges, Water Distribution, etc.	June 11	June 28	117
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	June 11	June 28	139
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	June 11	June 27	135
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	June 11	June 25	172
98	XXI. Textiles, etc	June 11	June 23	126
248	XVIII. Steam-Engineering, etc	June 11	June 21	180
	Between one and two months.			
240	VII. Velocipedes, Games, and Toys.	June 8	June 23	186
120	IX. Hydraulics, Fire-Extinguishers, etc.	June 7	June 25	119
221	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	June 5	June 23	96
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	June 5	June 18	191
215	XVII. Printing, Type-Writing Machines, and Linotyping.	June 4	June 18	145
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	June 4	June 8	215
85	XXVIII. Pneumatics, Air and Gas Engines, etc.	June 4	June 4	235
128	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	June 2	June 20	100
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	June 1	June 1	247
	Between two and three months.			
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	May 7	June 18	184

Total number of applications awaiting action.....4,752

Applications Under Examination—Continued.

Under one month.			
*Designs	July 5	July 5	63
†Trade-Marks	July 6	July 5	29
‡Labels and Prints	July 10	July 10	....

ISSUE OF JULY 17, 1900.

Patents	472—	No. 653,648 to No. 654,119, inclusive.
Designs	36—	No. 32,941 to No. 32,976, inclusive.
Trade-Marks	31—	No. 34,895 to No. 34,925, inclusive.
Labels	12—	No. 7,699 to No. 7,710, inclusive.
Prints	1—	No. 242.
Reissues	1—	No. 11,842.
Total issue	553	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	....	....	Nevada	....	....
Arizona	....	....	New Hampshire	2	....
Arkansas	3	....	New Jersey	21	4
California	18	4	New Mexico Territ'y	....	....
Colorado	3	....	New York	64	8
Connecticut	16	....	North Carolina	1	....
Delaware	....	1	North Dakota	1	....
District of Columbia	3	....	Ohio	31	5
Florida	3	....	Oklahoma Territ'y	1	....
Georgia	7	....	Oregon	1	....
Hawaii	1	....	Pennsylvania	68	....
Idaho	1	....	Rhode Island	16	....
Illinois	40	4	South Carolina	....	1
Indian Territory	....	....	South Dakota	1	....
Indiana	10	....	Tennessee	3	1
Iowa	9	1	Texas	8	....
Kansas	7	....	Utah	....	....
Kentucky	4	2	Vermont	2	....
Louisiana	1	....	Virginia	4	....
Maine	3	....	Washington	4	....
Maryland	3	2	West Virginia	1	....
Massachusetts	23	6	Wisconsin	8	1
Michigan	20	1	Wyoming	....	....
Minnesota	8	....	U. S. Army	....	....
Mississippi	3	....	U. S. Navy	....	....
Missouri	17	....			
Montana	1	....	Total to citizens of the United States	446	43
Nebraska	5	2			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	....	....	Italy	....	....
Australia	....	....	Japan	....	....
Austria-Hungary	1	....	Mexico	2	....
Barbadoes	....	....	Netherlands	2	....
Belgium	....	....	New South Wales	....	....
Bermuda	....	....	New Zealand	....	....
Brazil	....	....	Norway	1	....
Canada	1	....	Queensland	....	....
Chile	....	....	Roumania	....	....
China	1	....	Russia	2	....
Costa Rica	....	....	Scotland	1	....
Cuba	....	....	South Australia	....	....
Denmark	....	....	South African Republic	....	....
Egypt	....	....	Spain	....	1
England	13	....	Sweden	1	....
Finland	....	....	Switzerland	3	....
France	5	....	Tasmania	....	....
Germany	28	....	Victoria	1	....
Guatemala	....	....			
Haiti	....	....	Total to citizens of foreign countries	62	1
India	....	....			
Ireland	....	....			

PATENTS

GRANTED JULY 17, 1900.

653,648. WASHBOARD. ROBERT E. BAILEY, Wylie, Tex. Filed Dec. 2, 1899. Serial No. 739,021. (No model.)



Claim.—1. A washboard comprising a frame having a space or recess at its front and provided at the bottom thereof with a transverse drain-opening, a series of longitudinal coiled springs arranged within the recess or space and having their lower ends extended rearward into the drain-opening and dividing the same into a series of separate passages and the longitudinal rods passing through each of the coiled springs and located at the back of the coils and adapted to retain the said lower ends in the drain-opening, substantially as described.

2. A washboard comprising side pieces, a back connecting the side pieces, the lower cross-bar 4 spaced from the lower end of the back to form a transverse drain-opening, the intermediate cross-bar 5 connecting the side pieces near the top of the washboard, the longitudinal spiral springs interposed between the said cross-pieces and having their lower terminals extended into the drain-opening and interposed between the bottom cross-piece 4 and the lower end of the back, the rods extending through the coiled springs and through the cross-pieces 4 and 5, and the transverse cleats arranged at the upper face of the cross-piece 5 and the lower face of the cross-piece 4 and having the ends of the rods abutting against them, substantially as described.

3. A washboard comprising a frame having a space or recess at its front, a series of longitudinal expansion-springs arranged within the recess or space under compression, and having their end coils abutting against the frame, and the longitudinal rods passing through each of the coiled springs, securing the same in the space or recess and preventing them from bowing outward, said rods having their terminals extended through the adjacent portions of the frame, substantially as described.

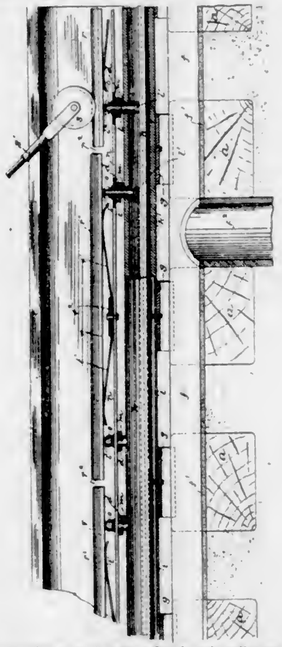
653,649. UNDERGROUND SYSTEM OF ELECTRIC RAILWAYS. CHARLES A. BALPH, Pittsburg, Pa. Filed Sept. 14, 1897. Serial No. 651,574. (No model.)

Claim.—1. In an underground system for electric railways, the combination with a suitable conduit, of a plurality of yielding sectional conductors, a main conductor electrically charged, a casing completely inclosing said main conductor, a tube entering said casing, a plunger on said sectional conductor, and within said tube, said plunger and said tube being severally provided with circumferential grooves, and a collapsible hood surrounding the upper end of said tube and plunger and engaging said grooves, substantially as set forth.

2. In an underground system for electric railways, the combination with a suitable conduit, of a plurality of yielding sectional conductors, a main conductor electrically charged, a casing completely inclosing said main conductor, a tube entering said casing, a plunger on said sectional conductor and within said tube, a flexible hood, the lower end of said hood being immovably secured around the upper end of said tube, and the upper end of said hood being immovably secured around said plunger, substantially as set forth.

3. In an underground system for electric railways the combination with a suitable conduit, of a plurality of yielding sectional conductors, a main conductor electrically charged, a casing completely inclosing said main conductor, a tube entering said casing, having a neck at the upper end thereof, a plunger on said sectional conductor within said tube, a flexible hood, the lower end of said hood being secured around the neck of said tube, and the upper end of said hood engaging a groove in said plunger, substantially as set forth.

4. In an underground system for electric railways, the combination with a suitable conduit, of a support, springs on said support projecting longitudinally in opposite directions, a sectional conductor, said springs bearing against said conductor at each side of the mid-point thereof, projections at each end of said conductor, and a main conductor electrically charged, with which said projections form contact, substantially as set forth.



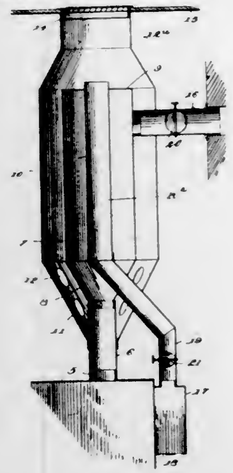
5. In an underground system for electric railways, the combination with a suitable conduit, of a main conductor, a casing completely inclosing said conductor and located in said conduit, reciprocating plungers adapted to enter said casing and make contact with said conductor, sectional conductors from which said plungers depend, and longitudinally-disposed plate-springs for supporting said sectional conductors, substantially as set forth.

658,650. HEATING-DRUM. CHESTER M. BATES and HORACE C. LUTZ, Wilkes-Barré, Pa. Filed June 12, 1899. Serial No. 720,215. (No model.)

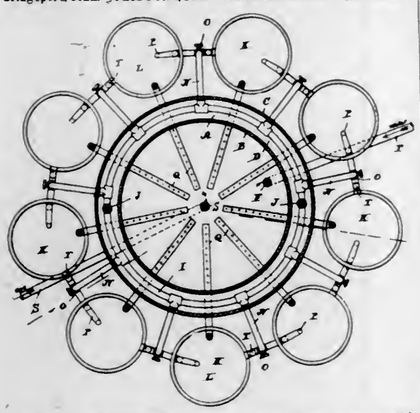
Claim.—1. The combination, with an air-drum provided with a perforated conical lower end and an open upper end, of a stovepipe entering the lower conical end of the air-drum, a smoke-drum within the air-drum and having a conical lower end engaging the upper end of the stovepipe, the upper end of the smoke-drum being closed, and a smoke-pipe leading out of the side of the smoke-drum and through the side of the air-drum, substantially as described.

2. The combination with an air-drum provided with a perforated conical lower end and an open upper end, of a stovepipe entering the lower conical end of the air-drum, a smoke-drum within the air-drum having conical lower end engaging the upper end of the stovepipe, the upper end of the smoke-pipe being closed, an air-box adapted to be secured to the back of the stove and provided with openings in

its bottom, an air-pipe leading from the air-box through the conical lower ends of the air-drum and smoke-drum, a pipe, in extension of the last-named pipe, connected thereto, leading up through the smoke-drum and through its closed top and discharging into the air-drum, substantially as described.



653,651. ACETYLENE-GAS MACHINE. WILLIAM J. BAULIEU, Bridgeport, Conn. Filed Feb. 4, 1899. Serial No. 704,514. (No model.)



Claim.—1. An acetylene-gas machine comprising an expansible tank provided with a water seal, a water-supply pipe, means to automatically regulate said supply by the movement of the reservoir, a drain-pipe leading from said water seal, a series of generators adjacent to said reservoir, connections from said drain-pipe to the generators, pipes connecting each generator to the adjacent ones, a valve located at the intersection of pipe connections aforesaid and by means of which the water-supply is regulated.

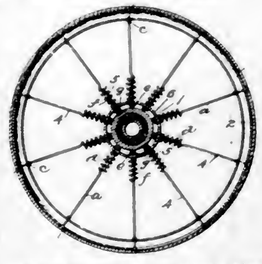
2. An acetylene-gas machine comprising an expansible tank provided with a water seal, a water-supply pipe for said seal, means to automatically regulate said supply, a series of generators adjacent to said reservoir, water-pipes extending from the tank to the generators, an overflow-pipe from the adjoining generator to said water-pipe, a valve at the intersection of said pipes, a gas-pipe leading from the generators to the reservoir, substantially as described.

3. The combination with an expansible gas-reservoir, of a series of generators therefor, a water seal for said reservoir, connections from said seal to the generators for automatically feeding water thereto, pipes to permit the overflow from one of said generators to pass into the adjoining generator, valves for cutting out one or more of said series, means to automatically regulate the supply of water to said generators by the amount of gas contained in the reservoir, substantially as described.

4. The combination with a suitable reservoir, of a series of generators therefor, means for automatically feeding water from said reservoir to the generator, pipes for permitting an overflow from one generator to another, valves included in said pipes whereby any number of said generators can be by-passed, a gas-pipe from each of said generators to the reservoir, a wash in said reservoir into which said gas is discharged.

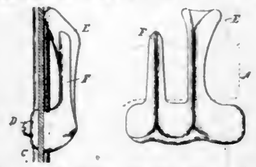
5. A gas-machine of the class described, the same comprising an expansible reservoir, a water seal for said reservoir, a water-supply for said seal, a valve in said supply automatically operated by the movement of the dome of the reservoir, a series of generators separately connected with the water seal of the reservoir, a valve to regulate the flow through said connections, gas-pipes from said generators to the reservoir and a water wash covering the discharge of said pipes, substantially as described.

653,652. VEHICLE-WHEEL. CHARLES BIGELOW, Delta, Colo. Filed Jan. 4, 1900. Serial No. 332. (No model.)



Claim.—The combination with the hub of a wheel: of spokes the inner ends of which are connected by integral cross-bars and are provided with coil-springs, guide-rods which project through the spring-coils and have their inner ends connected together by cross-pieces, a band surrounding said hub and the cross-pieces of the guide-rods and springs, caps for preventing the band slipping off the hub, a rim to which the outer ends of the spokes are attached, and a tire secured to said rim, substantially as and for the purpose set forth.

653,658. REIN-HOLDER. MATHIAS BOHNERT, San Diego, Cal. Filed Sept. 22, 1899. Serial No. 731,345. (No model.)



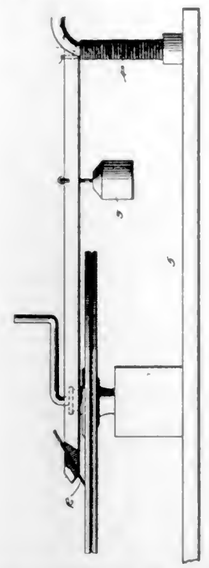
Claim.—In a rein-holder, the combination with the inner laterally-extended base portion provided with the upwardly-projected integral greater prong E and the upwardly-projected integral lesser prong F and having screw-point seats in its inner face near its opposite ends and a concave recess in its inner face intermediate its ends; of the clamp having screw-holes near its ends and the securing-screws D D for connecting the base portion and the clamp to the dashboard of a vehicle; substantially as specified.

653,654. DEVICE FOR REPRODUCING SOUNDS. JOSEPH N. BROWN, Muskegon, Mich. Filed Apr. 22, 1897. Serial No. 633,340. (No model.)

Claim.—1. A sound-reproducing device, consisting of a vibratory member secured near one end thereof to a resilient post or support comprising a coil-spring, and provided near its other end with a point or projection adapted to travel over the sound-writings of a phonogram.

2. A sound-reproducing device, consisting of a vibratory member secured near one end thereof to an upwardly-extending finger at the upper end of a resilient post or support, said post or support consisting of a coil-spring, and a point or projection adapted to travel over the sound-writings of a phonogram.

3. A sound-reproducing device, consisting of a vibratory member secured near one end thereof to a resilient post or support, said post or support consisting of a coil-spring having an upwardly-extending finger situated to one side thereof and upon which said vibratory member is mounted, and a point or projection near the other end of said vibratory member adapted to travel over the sound-writings of a phonogram.



4. In a sound-reproducing device, the combination of a single vibratory bar of resonant material as contradistinguished from a sound-transmitting device, a point or projection at one extremity thereof adapted to travel over the sound-writings of a phonogram, a support consisting of a coiled upright spring mounted at one end on a base and having its other end deflected and rigidly attached to said bar, and an ear-tube inserted in and leading from the upper end of the coil.

5. In a sound-reproducing device, the combination of a single vibratory bar of resonant material constituting in itself a sound-reproducing device, a point or projection at one extremity thereof adapted to travel over the sound-writings of a phonogram, a support consisting of a spring mounted at one end on a base and having its other end rigidly attached to said bar, and an ear-tube.

6. In a sound-reproducing device, the combination of a single solid rod or bar of wood provided near its outer end with a point or projection adapted to travel over the sound-writings of a phonogram, said rod or bar constituting in itself alone a sound-reproducing device as contradistinguished from a sound-transmitting device, and a metal spring rigidly connected with the other end of this rod or bar so as to support it but permit lateral and vertical movements of the end carrying said point, substantially as described.

7. In a sound-reproducing device, the combination of a single solid resonant rod or bar of wood provided at one end with a point or projection adapted to travel over the sound-writings of a phonogram, said rod or bar constituting in itself alone a sound-reproducing device as contradistinguished from a sound-transmitting device, and a support resilient within its body and rigidly attached at its extremities to a fixed base and to the rod or bar at the end of the latter remote from said point or projection, substantially as described.

653,655. BUTTON OR STUD. JAMES CAMPBELL, Providence, R. I., assignor to O. C. Devereux & Co., same place. Filed Apr. 17, 1900. Serial No. 13,231. (No model.)



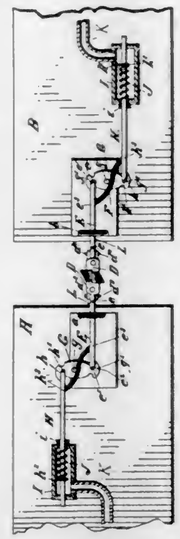
Claim.—A stud or button having a tubular post provided with an angular bend forming a tubular guideway for a sliding shoe, an aperture formed in the outer wall of the bend, a tubular sliding shoe fitted into the tubular guideway, said shoe having a headed pin in one end thereof and a central enlarged spring portion which engages the aperture in the outer wall of the post to hold the shoe extended at right angles to the post, substantially as described.

653,656. SHIRT STUD OR BUTTON. JAMES CAMPBELL, Providence, R. I., assignor to O. C. Devereux & Co., same place. Filed Apr 17, 1900. Serial No. 13,232. (No model.)



Claim.—The herein-described button, comprising a button-head, a post extending therefrom and provided with a groove near its end, and an enlargement, a tubular hinged and sliding shoe provided with a slot of equal width from one end of the tube to the center thereof, the edges of the slot engaging the groove in the post, one end of said tubular shoe having a headed pin fitted therein, the opposite end being rounded up to prevent withdrawal of said post and to form a stop therefor and presenting a practically-continuous, smooth surface for insertion into the eyelet-hole, and a spring having a central recess secured in the tubular shoe at the inner end of the slot therein to hold the enlargement at the end of the post centrally in the shoe, substantially as described.

653,657. AUTOMATIC AIR-BRAKE COUPLING. LEWIS C. CARY, El Paso, Tex., assignor of one-half to Julia Caldwell, same place. Filed May 3, 1898. Serial No. 679,571. (No model.)



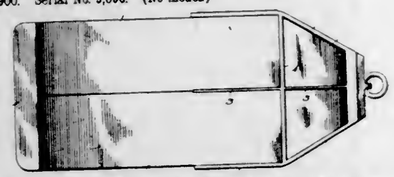
Claim.—1. An automatic air-brake-coupling head, comprising a hollow body portion, a flared coupling-guide and engaging extension, formed with a port leading to an air-passage in the body of the coupling-head, in combination with a rearwardly-extending stem or bar suitably supported beneath the car-body, a spring-actuated bar also supported beneath the car-body, a link pivotally connected with the rearwardly-extending bar and with the spring-actuated bar, a pivotal connection of the link with the car-body between said connections with the aforesaid bars, and suitable connections between the passage in the coupling-heads and a source of compressed-air supply.

2. Automatic air-couplers for cars comprising correspondingly-shaped flaring guides, oppositely-arranged engaging extensions, opposite the flaring guides, said engaging extensions having central interior apertures capable of registration, when the heads are locked together, air-passages leading from said apertures to the rear ends of said heads, rearwardly-extending bars pivotally connected with the rear ends of said heads, depending loops on the bottoms of the cars supporting said bars and heads, compensators centrally pivoted to the bottoms of the cars, corresponding ends of which are pivotally secured to the rear ends of said bars, second rods having their forward ends pivotally connected to the other ends of said compensators, and tension devices connecting said second bars to the car-body and operating to force them forwardly, and air-pipe connections between said head portions and air-brake apparatus carried by said car, substantially as described.

3. Automatic air-couplers comprising a flaring half-bell-shaped guide portion correspondingly arranged on the head of each coupler, an engaging extension opposite each flaring portion, said pieces hav-

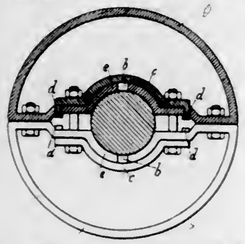
ing air-passages extending from the interior faces to the rear end of the heads thereof, said openings on said faces capable of registration when said heads are locked together, hollow bars pivotally connected to the rear ends of said heads and forming a continuous air-passage in connection with said heads, compensators centrally pivoted to the bottoms of the cars, and having corresponding ends pivotally connected with the rear ends of said bars, said rods being supported in depending brackets on the car-bottoms, second hollow bars having their forward ends pivotally connected to the other ends of the compensators, their rear ends passing into cylinders on the car-bottoms, springs secured to said bars within said cylinders and pressing against the forward ends thereof to normally force said second bars rearwardly, flexible pipes connecting said rods, near their pivotal connections with said compensators, and valves in the first bars near said heads for shutting off the air, substantially as described and set forth.

653,658. DRAG. FRANK W. CHICKERING, Hardwick, Vt., assignor of one-half to James F. Stratton, same place. Filed Mar. 17, 1900. Serial No. 9,096. (No model.)



Claim.—In a drag, the combination, with an upwardly-curved head, the rear portion of which is provided with countersunk angular perforations and the upper surface of the head is provided with a flange extending around the edges except at the rear, and the central portion is provided with two intersecting flanges one of which extends longitudinally of the head and the other one is transversely thereof, a ring at the forward end of the head, two planks having their ends fitting between the central and side flanges and to the rear of the transverse flange, bolts through the head and the planks, the heads of which are angular and tapered and a cross-bar secured to the tops of the planks at their rear ends, substantially as described.

653,659. BELT-PULLEY. RUDOLF CHILLINGWORTH, Nuremberg, Germany. Filed Jan. 31, 1899. Serial No. 704,058. (No model.)



Claim.—1. A pulley formed in halves, each of which has a hub portion provided with a space *b* extending along it, and a brace extending across the slot in each hub portion and connected with the portions of the hub-section on opposite sides of the slot, substantially as described.

2. In combination, with the pulley having the hub with the space *b* extending along it, a brace *c* fitted to said hub and having projections engaging openings in the hub-section of the pulley, substantially as described.

3. In combination, the pulley-halves having their hub portions each provided with a space *b*, the braces *c* fitted to the hub parts and having projections engaging openings in the pulley-hub section and means for securing the parts together, substantially as described.

653,660. COMBINED COTTON AND CORN PLANTER. EUGENE M. COLE, Carthage, N. C. Filed Feb. 14, 1900. Serial No. 5,165. (No model.)

Claim.—1. In combination with a hopper having a discharge-opening, a revoluble seed-plate having a series of radial openings successively registering with said discharge-openings, adjustable plates in said openings and having studs or pins on their upper sides, and a revoluble and vertically-movable adjusting-plate on said seed-plate and adjustable plates, and having a continuous spiral groove in its lower side to engage the studs or pins on the adjustable plates, and openings, communicating with said groove, to receive said studs or pins when the said plate is lowered, substantially as described.



2. The combination, in a planter, of a hopper, a draft-beam, plates 15 connecting the rear end of the draft-beam with the hopper, a furrow-opener secured between said plates, an operating-shaft journaled in the hopper and traction-wheels for rotating said shaft, substantially as described.

3. The combination of the seed-bowl, the plates secured thereto, the draft-beam and furrow-opener secured between the front portion of said plates, at the upper and lower sides thereof, the latter and the seed-bowl forming the frame of a planter, substantially as described.

4. The combination of a hopper, the forward-extending plates secured thereto, the beam and furrow-opener secured between said plates, said furrow-opener being vertically adjustable, substantially as described.

5. In a planter, the combination of the plate 15 having bearing-faces 23, the furrow-opener secured between said plates and the scraper-wings secured to said furrow-opener and said plates and bearing against the bearing-faces of the latter, substantially as described.

6. In a planter, the combination of a draft-beam, plates 15 and handle-bars, said draft-beam, plates and handle-bars being secured together, a hopper secured to said plates and having a seed-planting mechanism and operating-wheels therefor adapted to engage the ground, connections between the hopper and the handle-bars to support the rear side of the hopper, and a furrow-opener secured to said plates 15, substantially as described.

7. In a planter, the combination with a seed-bowl, plates 15 secured thereto, a furrow-opener secured to said plates and the coverer-arms attached to said plates and extended rearward from said seed-bowl, substantially as described.

8. The plates 15 in combination with the furrow-opener adjustably secured between them and the scraper-wings attached to said furrow-opener and bearing on said plates, substantially as described.

9. In a planter a hopper, a planting mechanism therein, operating-wheels on a shaft journaled on the hopper, plates 15 attached to said hopper, a furrow-opener secured between said plates, scraper-wings in advance of said operating-wheels and attached to said furrow-opener, and a coverer, having its supporting-arms attached to said plates 15, all combined and adapted to operate, substantially as described.

10. In combination with a seed-bowl, the plates 15 having the rear extension adapted to fit said seed-bowl and to be bolted thereto, said plates being further provided with bearing-faces 23, a furrow-opener adapted to be secured between said plates and scraper-wings attached to said furrow-opener and bearing against the bearing-faces, 23, substantially as described.

11. The combination with the plates 15 of the adjustable furrow-opener between said plates, said furrow-opener and said plates having corresponding adjusting-notches on their opposing sides, substantially as described.

12. In combination with a hopper having a discharge-opening, a revoluble seed-plate having a series of radial openings successively registering with said discharge-openings, adjustable plates in said openings and a revoluble adjusting-plate having a continuous spiral groove engaging studs or pins with which said adjustable plates are provided, substantially as described.

653,661. ROPE-FASTENING. CHARLES A. CONGER, Oakland, Cal., assignor to Conger & MacInnes, New Britain, Conn. Filed Sept. 19, 1898. Serial No. 691,306. (No model.)

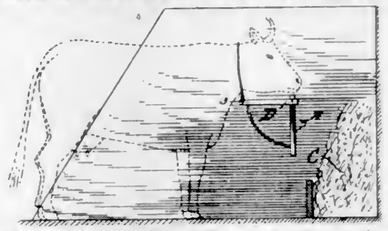


Claim.—1. A rope grip or fastener comprising a body portion having its ends apertured and arranged at an angle to the body portion, an overhanging hook intermediate the apertured ends, said hook springing from one side of the body and standing across the same at an acute angle, and a rope-engaging projection on each side of said hook, substantially as described.

2. The herein-described rope-fastening composed of the body A, rings or collars a^2 at an angle to the body, curved horns a^4 on the side of the collars adapted to form the crotches a^5 and the laterally-turned hook on the side of the body having an angular recess under the beak; substantially as described.

3. A rope-fastening consisting of an oblong plate having an aperture in each end standing at an angle to the intermediate body portion of the plate, an overhanging hook at the middle of the body portion springing from one side thereof and standing across the body at an acute angle, and horns on the side of the body extending outwardly therefrom and in an opposite direction to the overhanging hook, substantially as described.

653,662. MEANS FOR SECURING CATTLE. CYRUS F. CREAMER, Glenden, Me. Filed Nov. 4, 1899. Serial No. 735,821. (No model.)



Claim.—1. In combination, the arm pivoted at or near the forward part of the stall and arranged to swing rearward in a vertical plane from a vertical to a horizontal position, and a guide adjacent to the free end of said arm, substantially as described.

2. In a hitching attachment for stalls and the like, a frame comprising two bars secured together at an angle to each other, a guide connecting the free ends of said bars and an arm pivoted to said frame at the angle thereof and guided by said guide, substantially as described.

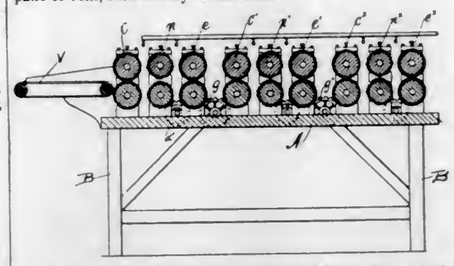
3. In combination, the frame comprising the bars A and B secured together at an angle, a curved guide-rod connecting the free ends of said bars, an arm pivoted to said frame, and an eye carried by said bar and engaging said guide, substantially as described.

4. In combination, the frame comprising the bars A and B united at an angle, a curved rod extending between the free ends of said bars and offset therefrom, and a swinging arm pivoted to said frame and having an eye engaging said rod, substantially as described.

653,663. MACHINE FOR CLEANING AND BREAKING FLAX. THACHER R. C. CROWELL, Fargo, N. D., assignor to the National Flax Fiber Company, Boston, Mass. Filed Aug. 21, 1899. Serial No. 727,899. (No model.)

Claim.—1. In a flax breaking and cleaning machine the combination of two or more sets of rolls, each set consisting of a pair of feed-rolls, a pair of brush-rolls, and a pair of rolls covered with felt and chamois-skin or like material, substantially as described.

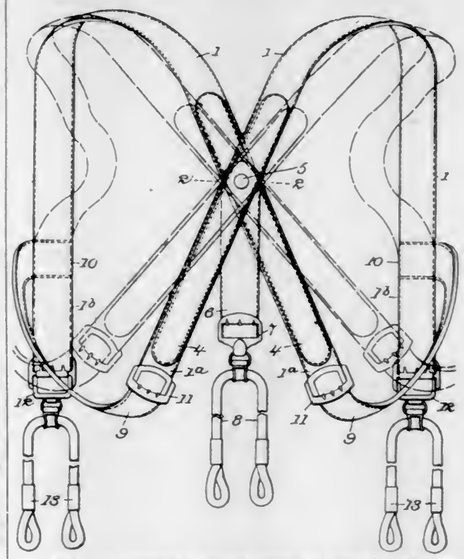
2. In a flax breaking and cleaning machine the combination of two or more sets of rolls, each set consisting of a pair of feed-rolls, a pair of brush-rolls, and a pair of rolls covered with felt and chamois-skin or like material, with means for moistening the flax between the pairs of rolls, substantially as described.



3. In a machine for breaking and cleaning flax, the combination of two or more sets of rolls, each set consisting of a pair of feed-rolls, a pair of brush-rolls and a pair of cleaning-rolls, the brush-rolls of each succeeding set being made with finer brushes than the brush-roll of the preceding set, substantially as described.

4. In a flax breaking and cleaning machine, the combination of two or more sets of rolls, each set consisting of a pair of feed-rolls, a pair of brush-rolls and a pair of rolls covered with felt, chamois-skin or like material, the rolls of each pair being geared together, an intermediate gear connecting the second and third pair of each set, and an intermediate gear connecting the last pair of rolls of each set with the first pair of the next set, substantially as described.

653,664. COMBINED SUSPENDERS AND SHOULDER-BRACE. GEORGE J. DE GARMO, New York, N. Y. Filed Jan. 12, 1899. Serial No. 701,983. (No model.)

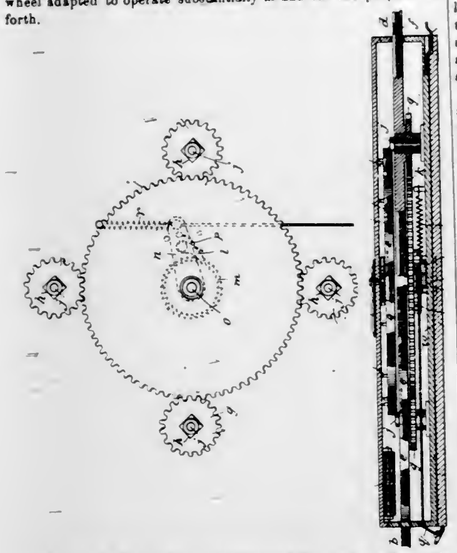


Claim.—In a combined shoulder-brace and suspenders the combination of the crossed back strap 1 having pockets at the point of intersection for reception of springs, the springs 3 inserted in said pockets, the rivet 5 passing through the crossed straps 1 and through the crossed springs 3, the back strap 6 depending from the connecting-rivet 5 of the shoulder-straps, button-tabs 8 connected to said pendent back strap, side straps 9 connecting the front portion 1^b, of one shoulder-strap to the rear extremity 1^c of the other shoulder-strap and button-tabs 13, 13 attached to the front ends 1^b of the respective shoulder-straps, as herein shown and described.

653,665. DUPLICATE-WHIST APPARATUS. THOMAS C. DE LEON, Washington, D. C. Filed Apr. 16, 1900. Serial No. 13,069. (No model.)

Claim.—1. A duplicate-whist apparatus hereinbefore described, consisting of four revoluble disks mounted on standards as shown,

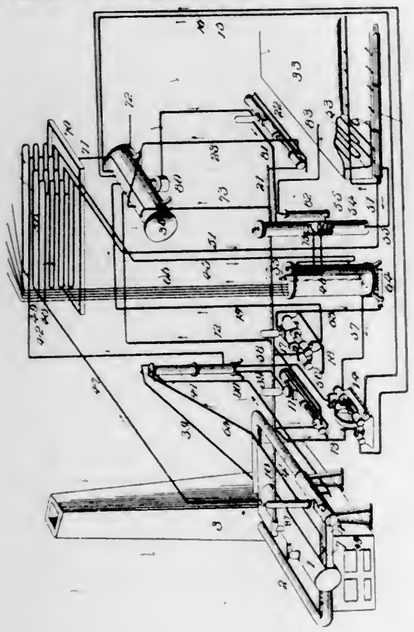
and overlapping but not interfering with one another and provided with cog-wheels at the lower end of the pivots with a master cog-wheel adapted to operate substantially as and for the purpose set forth.



2. In a duplicate-whist apparatus or table a series of four disks having receptacles for twelve hands of cards, means for retaining said hands in position, means for rotating the disks a quarter-revolution and means for holding the disks in proper place.

3. A duplicate-whist apparatus as hereinbefore described, a series of four disks provided with cog-wheels, a master cog-wheel for turning the same and an indicator adapted to operate substantially as and for the purposes set forth.

653,666. ICE-MAKING PLANT. ABRAM ELLIS, Augusta, Ga. Filed Jan. 18, 1900. Serial No. 1,830. (No model.)

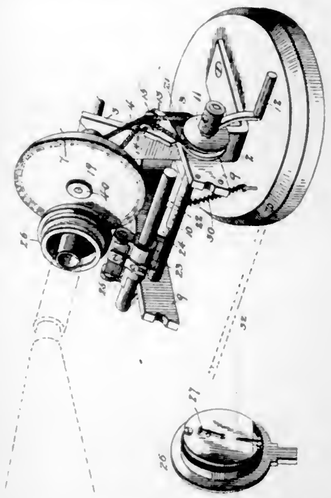


Claim.—1. In an ice-making plant, the combination of a steam-boiler provided with usual furnace and heat-flue, an ammonia expansion-tank through which the products of combustion may pass after leaving the boiler, a liquid and a vapor passage from said expansion-tank, pumps operated by steam from the boiler by which the ammonia is propelled in its circuits, and a feed-water heater in which the ammonia acts to heat the water for the boiler, substantially as described.

2. In an ice-making plant, the combination of a boiler-furnace, steam-boiler, and ammonia-expander, the heat-flue from the boiler passing directly to the expander, an ammonia-circulation pump driven by steam from the boiler, and freezing apparatus substantially as described, whereby the ammonia heating is effected by direct dry heat from the furnace, but its propulsion is caused by steam from the boiler.

3. In an ice-making plant, a steam-boiler, pumps connected to and driven by steam from the boiler, a condenser to which all the steam-exhausts lead, and a passage whereby the condensed water is conveyed to the freezing-tank, an ammonia-circulating pipe controlled by one of the pumps leading through the freezing-tank, an ammonia-expander heated by dry heat from the boiler heating-flue, and connections from the freezing-tank whereby the ammonia is returned to said expander, all combined substantially as described.

653,667. GRAPHOPHONE. ARTHUR C. FERGUSON, New York, N. Y. Filed Oct. 9, 1899. Serial No. 733,057. (No model.)

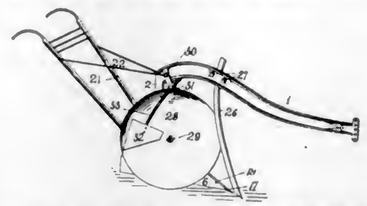


Claim.—1. In a machine for recording and reproducing sound, the combination of a permanent rotary disk or support recessed at the edge on its upper surface, a removable disk thereon having a metal-foil covering with folded-over edge received by said recess, a traveler or nut, a vibrating diaphragm and movable point moved along by said traveler, and means for operating the parts, substantially as described.

2. In a machine for recording and reproducing sound, the combination with a suitable base and standard thereon, of a semicircular yoke or frame secured to the standard with the branches thereof projecting forwardly of the machine, a screw-shaft journaled in said branches, and a guide-bar parallel therewith, a sleeve attached to the upper portion of the standard, a shaft passing through said sleeve and provided with a permanent rotary disk through the center of which the end of the shaft projects, a removable disk on said rotary disk, the same having a covering of indentible material, a block on the guide-bar, a traveler or nut moving on the screw-shaft and attached to the block, a vibrating diaphragm and movable point moved along by said traveler, and means for operating the parts, substantially as described.

3. The removable or detachable disk having a central rectangular opening adapting it for immovably fitting a support therefor, the said disk having a covering of metal foil folded around the edge of the same so as not to present any edge of the foil at the edge of the disk, and so as to form a raised flange on the inner or rear surface of said disk, substantially as shown and for the purpose described.

653,668. PLOW. EDWARD FOWLER, Cedar Grove, Ga., assignor of one-half to Thomas B. Simmons and Jessey L. Simmons, same place. Filed Nov. 15, 1899. Serial No. 737,086. (No model.)

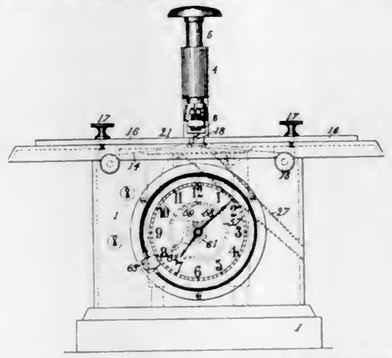


Claim.—1. In a plow of the character described, the combination with a beam, an integral vertically-depending standard having a series of bolt-openings, a journal-bearing vertically adjustable, secured to said standard, a cutting-disk journaled in said bearing, of a landside, two series of bolt-openings in the same, and a brace provided with a series of bolt-holes in one end, and a single hole in the other, said brace extending from the forward part of the landside to the standard and said landside being adjustable on the standard.

2. In a plow of the character described, the combination with the plow-beam having a depending standard, of a landside having two series of bolt-openings, and a brace, one end of which is provided with a series of bolt-openings; the forward end of said brace being secured in the desired hole of one of the series of bolt-openings in the landside, while the other end is secured to the standard; said landside being connected to the standard by bolts passing through the other series of bolt-openings.

3. In a plow of the character described, the combination with the plow-beam having a depending straight vertical standard provided with a series of bolt-openings, a plate having a journal-bearing adjustably secured to said standard, a cutting-disk mounted in said journal-bearing at an angle to the standard, and a scraper for said disk; of a landside adjustably secured to the bottom of the said standard, a lug extending from one side of the point of said landside, provided with an upwardly-extending flange, a reversible and adjustable point secured on said lug, an adjustable brace extending from the forward end of the landside and connected to the standard of the beam, and a colter connected to said beam immediately in front of the said disk.

653,669. TIME-STAMP. PETER G. GIROUD, Newark, N. J., and JAMES S. MACCOY and WILLIAM B. STAMBAUGH, New York, N. Y.; said Giroud and Stambaugh assignors to said MacCoy. Filed Aug. 5, 1899. Serial No. 726,249. (No model.)



Claim.—1. The combination in a time-stamp of a stop for locating the time-card, said stop consisting of an offset in a straight edge, and a punch or cutter registering therewith, substantially as and for the purposes described.

2. In a die, the combination of a plunger provided with a forked arm, a punch having a stem movable within said forked arm, stops at each end of said punch-stem for engaging said forked arm, and a fixed guiding device for the lower part of said punch, substantially as and for the purposes described.

3. In a time-stamp, the combination of an alining device for the time-card, an offset in said alining device, and a cutting-die adapted to register at said offsets, substantially as and for the purposes described.

4. In a time-stamp, the combination, with the type-moving mechanism and a locking-pawl therefor, of an actuating-pawl engaging and operating the locking-pawl and type-moving mechanism during its forward stroke, said actuating-pawl having a slotted connection with its driving-lever, substantially as and for the purposes described.

5. In a time-stamp, the combination of a driving-lever operatively connected with the shaft of the minute-wheel, and having at its free end a slot arranged obliquely to the length of the lever, and an actuating pawl or lever for the hour-wheel, said actuating-lever being attached at one end to said driving-lever by a pin working in said slot and having its forward end suitably supported, and maintained in position by a depressing-spring, substantially as and for the purposes described.

6. In a time-stamp, the combination of a series of wheels each representing a unit of the date, a cam operated by the shaft of each lower unite-wheel for transmitting, through a series of levers, intermittent motion to each higher unite-wheel, roller-bearings between said cam and said lever systems, pin-and-slot joints between the actuating-lever and the driving-lever of said lever systems, and means for rigidly supporting and yieldingly depressing the forward ends of said actuating-levers, substantially as and for the purposes described.

7 The combination, in an intermittent speed mechanism, of a driving-lever having an oblique slot in its outer or driving end, and an actuating-lever, suitably supported by a bar at its forward end and connected to said driving-lever by a pin working within said slot, substantially as and for the purposes described.

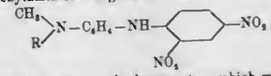
8. The combination, in an intermittent speed mechanism, of a driving-lever having an oblique slot in its outer or driving end and an actuating-lever having its forward end mounted upon a supporting cross-piece and having its rear end connected to said driving-lever by a pin working within said slot, substantially as and for the purposes described.

9. In a time-stamp, the combination of a series of actuating-levers pivoted to a series of driving-levers and all lying in the same plane, the forward ends of said actuating-levers playing in slots in a single cross-piece, and a series of depressing-springs for the said forward ends, said springs being all mounted upon said cross-piece, substantially as described.

10. The combination in a recording system, of a suitable guide for the card which is to be stamped therein, an offset or abutment in said guide, and a punch or cutter registering with said offset, and a platen-carrying plunger in operative connection with said punch or cutter, substantially as and for the purposes described.

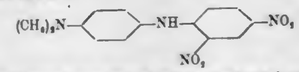
653,670. OLIVE COTTON-DYE AND PROCESS OF MAKING SAME. ERNST GOEBEL, Elberfeld, Germany, assignor to the Farbenfabriken of Elberfeld Company, of New York. Filed Oct. 31, 1899. Serial No. 735,409. (Specimens.)

Claim.—1. The process for producing new dyestuffs which process consists in first mixing at about from 90° to 100° centigrade an alkaline sulfid-carrying compound with a methylized derivative of amidodinitrophenylamin of the general formula:



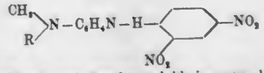
in which formula R means a hydrogen atom which may be replaced by a methylic group, and secondly heating the resulting mixture at elevated temperatures, substantially as hereinbefore described.

2. The process for producing a new dyestuff, which process consists in first mixing at about from 90° to 100° centigrade an alkaline sulfid-carrying compound with dimethylparaamidodinitrodiphenylamin of the formula:



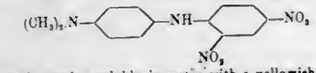
and secondly heating the resulting mixture at elevated temperatures, substantially as hereinbefore described.

3. As new articles of manufacture the new dyestuffs obtained from methylized derivatives of amidodinitrodiphenylamin of the general formula



which dyestuffs are dark powders soluble in water, being dissolved by a ten-per-cent. ammonia liquor with an olive color, dyeing unmordanted cotton in hot baths containing sodium sulfid and common salt from greenish olive, to olive and brownish-olive shades, substantially as hereinbefore described.

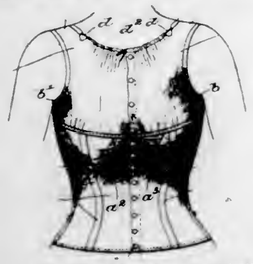
4. As a new article of manufacture the new dyestuff obtained from dimethylparaamidodinitrodiphenylamin of the formula



being a dark powder, soluble in water with a yellowish-olive color, in a dilute sodium-sulfid solution, a dilute sodium-carbonate solution and in a ten-per-cent. ammonia liquor with an olive color, being dissolved by a dilute soda-lye with a green color, dyeing unmordanted cotton in hot baths containing sodium sulfid and common salt intense and fast olive shades substantially as hereinbefore described

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653,671. WAIST. CAROLINE F. GOODALE, Waltham, Mass. Filed June 30, 1899. Serial No. 721,197. (No model.)



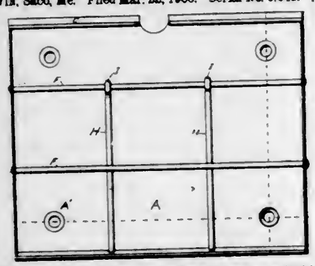
Claim.—1. A waist composed of a body encircling portion the upper edge of which terminates at the lower edges of the shoulder-blades, independent wings connected at their outer ends to the body of the waist and leading above and below the shoulders, and means adjustably uniting the inner sides of the wings to each other.

2. In a waist, a body portion having the upper edge of its back terminating near the lower edges of the shoulder-blades, and wings leading over the shoulders and also connected into the side pieces of the back and free at their lower edges, and one of which overlaps the other; combined with suitable fastenings to control the degree of overlapping of the wings, substantially as described.

3. In a waist, a body portion to encircle the body, the upper edge of the body portion terminating near the lower edges of the shoulder-blades, freely and independently movable wings leading over the shoulders and connected at the sides to said body portion, said wings being free at their lower and inner edges, and adapted to overlap the shoulder-blades, and means for adjustably uniting said wings to each other.

4. In a waist, a body portion to encircle the body, the upper edge of the body portion terminating near the lower edges of the shoulder-blades, freely and independently movable wings leading over the shoulders and connected at the sides to said body portion, said wings being free at their lower and inner edges, and adapted to overlap the shoulder-blades, means for adjustably uniting said wings to each other, and bust-covering portions connected with the front of the body portion at or below the bust-line, the upper edges of said bust-covering portions being controlled by a drawing-string.

653,672. CARD-HOLDER FOR FREIGHT-CARS. ALPHONSO M. GOODWIN, Saco, Me. Filed Mar. 22, 1900. Serial No. 9,648. (No model.)



Claim.—1. In a card-holder for freight-cars, a suitable base having turned-up side, top and bottom walls, a lattice-work supported by said side and bottom walls, said lattice-work being open at the top for the insertion of the card and a portion of the top wall cut away to facilitate the removal of the card.

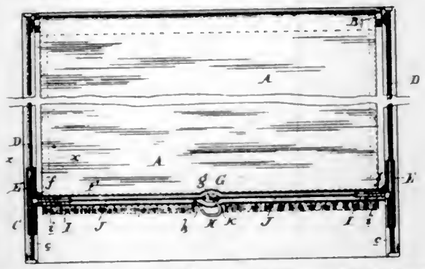
2. In a card-holder for freight-cars, a suitable base, top, bottom and side walls and a lattice-work supported by the side and bottom walls above the base and below the plane of the edges of said walls.

3. In a card-holder for freight-cars, a suitable base having turned-up top, bottom and side walls, a lattice-work supported in the side and bottom walls, countersunk screw-holes forming supports for the holder against the wall of the car and adapted to receive the attaching-screws, the heads of the screws resting in said countersunk openings and being below the surface of the back of the holder.

4. In a card-holder for freight-cars, a suitable base, turned-up top, bottom and side walls, the top and bottom walls being inclined outwardly and downwardly and a lattice-work supported in the side and bottom walls only, thereby leaving an open space at the top between the lattice-work and back of the holder for the insertion of the card.

5. In a card-holder for freight-cars, a suitable base having top, bottom and side walls and a lattice-work consisting of vertical bars having one end supported in the bottom wall and loops in the other end and transverse bars supported at each end in the side walls, one of said transverse bars passing through the loops in the vertical bars.

653,673. CURTAIN-FIXTURE. HENRY S. HALE, Philadelphia, Pa. Filed Mar. 12, 1900. Serial No. 8,271. (No model.)



Claim.—1. In a curtain-fixture, the combination of a spring-actuated curtain, with a transverse frame attached to the lower end of the curtain, friction-clamps carried on each end of the frame and operating with a part fixed to the window-frame so as to hold the curtain in all positions, a movable metallic handle carried by the curtain hinged to the lower part of the transverse frame and having an operating end at or near the middle of and below the said transverse frame movable vertically and adapted to release the clamp by either an upward or downward movement, and mechanical connection shielded within the transverse frame for connecting the friction-clamps with the handle.

2. In a curtain-fixture, the combination of a spring-actuated curtain, with a transverse frame attached to the lower end of the curtain, friction-clamps carried on each end of the frame and operating with a part fixed to the window-frame, and movable operating parts carried by the curtain at or near the middle of the transverse frame and adapted to release the clamp by either a positive upward or downward movement and consisting of a pivoted plate connected upon the opposite sides of its pivot with the respective clamps and a pivoted handle portion hinged at one end to the lower part of the transverse frame and having its other end jointed with the pivoted plate, and connections between the pivoted plate and the clamps.

3. In a curtain-fixture, the combination of a spring-actuated curtain, with a transverse frame attached to the lower end of the curtain, clamps carried on each end of the frame, a fixed upright guide attached to each side of the window-frame, suitable guide-heads jointed to each end of the transverse frame and adapted to move upon the upright guides, a movable handle or operating part carried by the curtain at or near the middle of the transverse frame and adapted to release the clamp by either an upward or downward movement, and connections between the handle and the clamps.

4. In a curtain-fixture, the combination of a spring-actuated curtain, with a transverse frame attached to the lower end of the curtain, clamps carried on each end of the frame, an upright guide attached to each side of the window-frame, suitable guides for the ends of the transverse frame and the upright guide-heads jointed to the ends of said transverse frame, and a movable handle or operating part carried by the curtain at or near the middle of the transverse frame and adapted to release the clamp by either an upward or a downward movement.

5. In a curtain-fixture, the combination of the curtain with a transverse frame secured at its lower or free end, oppositely-moving spring-actuated clamps carried on the ends of the transverse frame, a movable handle of solid material arranged below the transverse frame and connected thereto by jointed connections so as to be movable vertically, and means leading from the handle to the clamps and adapted to withdraw them against the action of their springs by an upward or downward movement of the handle while maintaining the handle wholly below the lower end of the curtain.

6. In a curtain-fixture, the combination of a spring-actuated roller and curtain, with upright guide-rods D, D, tubular guides E, E sleeved upon said rods, a frame F carried in the lower end of the curtain and connected to the tubular guides, reciprocating clamps I, I, pressing upon the rods, springs *i*, *i*, for actuating the clamps, a pivoted plate G carried in the frame and having a handle to oscillate it in either direction, and connecting-rods J, J attached to the clamps and united to the pivoted plate on diametrically-opposite sides of the pivot of the plate and in alinement with the clamps whereby an oscillation of the pivoted plate in either direction will withdraw the clamps against the action of their spring.

7. In a curtain-fixture, the combination of the curtain with clamps located at each side of the curtain and adapted to clamp the curtain in any adjusted position, of a movable operating metal structure or handle extending for a substantial distance along and below the lower edge of the curtain and hinged thereto so as to be movable vertically to and from the lower part of the curtain, and connections between said operating metal structure or handle at the middle of the curtain and the clamps for operating them.

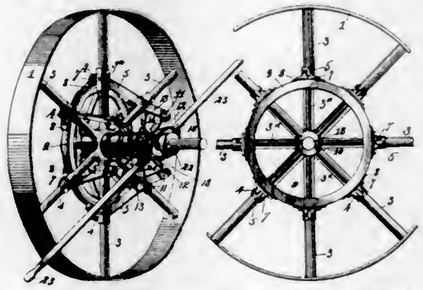
8. In a curtain-fixture, the combination of the curtain with clamps located at each side of the curtain and adapted to clamp the curtain in any adjusted position, of two movable operating metallic handles extending for a substantial distance in opposite directions along the lower edge of the curtain and hinged thereto at their outer ends, and connections between the adjacent ends of the metallic handle and the clamps.

653,674. DEHYDRATING AND MOTHPROOFING COMPOSITION. GEORGE R. HARRISON, Honolulu, Hawaii, assignor to Jas. L. Ewin, Washington, D. C. Filed Dec. 5, 1899. Serial No. 739,241. (No specimens.)

Claim.—1. A moisture-absorbing paste comprising calcium chloride, charcoal and rosin mixed with alcohol.

2. A dehydrating and mothproofing compound consisting of calcium chloride, charcoal, sulphur and rosin, mixed with alcohol, substantially as hereinbefore specified.

653,675. FRICTION-CLUTCH PULLEY. HALVOR O. HEM, Kansas City, Kans. Filed Sept. 28, 1899. Serial No. 731,890. (No model.)

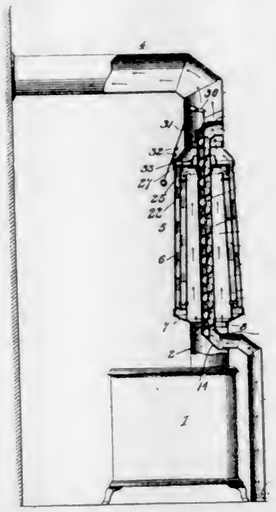


Claim.—In a friction clutch mechanism, the combination of a shaft, a pulley journaled thereon, and provided with spokes having apertures 3*, a clutch-wheel rigid on the shaft, consisting of a hub 10, a V-shaped rim inward of the vertical plane of the hub, and oblique spokes connecting the hub and the rim, a lever extending through each spoke-aperture and pivoted therein, a V-shaped shoe pivotally suspended from the short end of the lever and adapted to engage the clutch-wheel rim, a sliding sleeve 16 upon the shaft, bolts pivoted to said sleeve and said levers, turnbuckles connecting said bolts, a collar 17 journaled in sleeve 16, a link pivoted to collar 17, and a lever pivotally connecting said link and adapted to shift collar 17 and sleeve 16 longitudinally on the shaft, substantially as described.

653,676. HEATING-DRUM. JAMES W. HILLIKER, Traverse City, Mich. Filed Dec. 15, 1899. Serial No. 740,434. (No model.)

Claim.—1. The combination with a drum, of a centrally-arranged cold-air flue, and a double-walled flue arranged within the drum and surrounding the cold-air flue to form the inner and outer flues, said double walls forming between themselves an intermediate flue which communicates at its opposite ends with the inner and outer flues.

2. The combination with a heating-drum having inner and outer flues, of a double-walled downdraft-flue arranged within the drum and having its flue-passage communicating at its upper and lower ends, respectively, with the inner and outer flues, and means for adjusting said downdraft-flue.



3. The combination with a drum, of an inner cold-air flue, a double-walled flue within the drum and surrounding the cold-air flue to form therewith the inner and outer flues, said double walls forming between themselves an intermediate flue which communicates at its opposite ends with the inner and outer flues, and means for adjusting the double-walled flue vertically to seat and unseat the same within the drum.

4. The combination with a heating-drum, of a double-walled flue arranged within the drum and forming therein the inner and outer updraft-flues, said double walls forming between themselves an intermediate downdraft-flue which communicates at its opposite ends with the inner and outer flues, respectively, a seat on the drum for the lower end of one wall of said downdraft-flue, another fixed seat within the drum for the upper end of the other wall of said flue, and means for adjusting the flue to and from the seats and thereby establishing a direct or indirect draft through the structure.

5. The combination with a heating-drum, of a centrally-arranged cold-air duct extending lengthwise therethrough and fixed with relation to the drum, connected flue-shells surrounding the air-duct and interposed between the latter and the outer wall of the drum, said connected shells forming between themselves an intermediate return-flue, and means for adjusting the shells, substantially as described.

6. The combination with a heating-drum, of a centrally-arranged cold-air duct mounted fixedly therein, a stationary spiral deflector arranged within said duct, and the adjustable flue-shells surrounding the cold-air duct and forming between themselves an intermediate down-flue which communicates at its opposite ends with up-flues around the cold-air duct and the drum-shell, substantially as specified.

7. A heating-drum comprising a tapering shell, and a return-flue having connected tapering shells forming between themselves a flue-passage and said flue arranged concentric in the drum-shell to form therein the inner and outer flues with which the flue-passage of the double-shelled flue communicates at opposite ends, and means for adjusting the return-flue bodily in the drum-shell to establish a direct or indirect draft therethrough.

8. The combination of a drum having a seat at its lower part, a cold-air flue, another seat on said flue, a double-walled return-flue surrounding the cold-air flue and having its respective walls adapted to the seats, and means for adjusting the return-flue bodily within the drum, substantially as described.

9. The combination of a drum, a cold-air flue therein, a conical seat on the cold-air flue, a double-walled return-flue provided at one end with a crown-plate fitted slidably to the conical seat, and means for adjusting the return-flue bodily within the drum, substantially as described.

10. In a heating-drum, a double-walled return-flue having the inner wall extended at one end beyond the companion wall, and a crown-plate fixed to the last-named wall, combined with a drum-shell, a central flue, a guide fixed on said central flue and provided

with a seat on which the crown-plate is adapted to rest, and means for adjusting the return-flue.

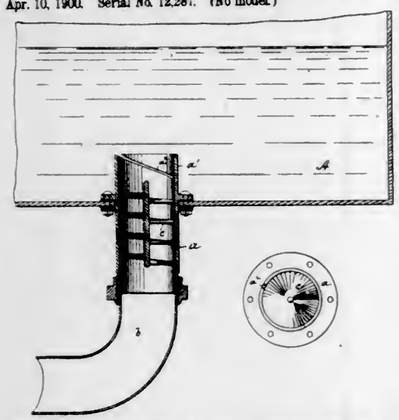
11. The combination with a heating-drum, of a central flue extending therethrough, a seat on the flue, a double-walled return-flue arranged within the drum and surrounding the central flue, a crown-plate fast with one wall of the return-flue and adapted to the seat on the central flue, a bail spanning the central flue and connected to the double-walled flue, a lever connected to the bail, and an adjusting device for the lever, substantially as described.

12. The combination with a heating-drum, of a central cold-air flue, and a conicocylindrical flue surrounding the cold-air flue and arranged within said drum, the inner and outer walls of said flue being concentric and forming between themselves a return-flue passage, substantially as and for the purpose specified.

13. The combination with a heating-drum, of an interiorly-arranged double-walled flue, the inner wall of said flue extending below the outer wall, and the outer wall extending above the inner wall, a crown-plate at the top of the outer wall, and a ledge on which said crown-plate rests.

14. The combination with a heating-drum having a conical bottom forming a flue-seat, of an interiorly-arranged adjustable double-walled flue, the inner wall of which extends below the outer wall and rests on said seat, the outer wall of said flue extending above the inner wall, a crown-plate at the top of the onter wall, and a ledge on which said crown-plate is adapted to seat itself, substantially as specified.

653,677. PIPE-NOZZLE. FRANK IBERT, New York, N. Y. Filed Apr. 10, 1900. Serial No. 12,287. (No model.)



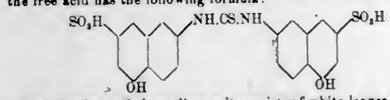
Claim.—1. A pipe-nozzle composed of a tubular shell and a convolute web within said shell, the discharge end of the shell projecting beyond the convolute web and being provided with a lateral discharge-slot, substantially as specified.

2. The combination of a tank with a tubular nozzle opening into the same below the water-line, a convolute web within the nozzle, and a steam-pipe to which the nozzle is coupled, substantially as specified.

653,678. THIO-UREA COMPOUND AND PROCESS OF MAKING SAME. ADOLF ISRAEL and RICHARD KOTHE, Elberfeld, Germany, assignors to the Farbenfabriken of Elberfeld Company, of New York. Filed Apr. 2, 1900. Serial No. 11,240. (No specimens.)

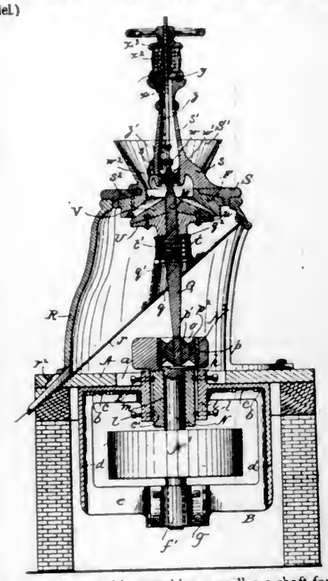
Claim.—1. The process for producing a new thio-urea derivative of amidonaphthol sulfonic acid by first dissolving a mixture of beta$_1$-amido-alpha$_1$-naphthol-beta$_4$-sulfonic acid and sodium carbonate in water, secondly heating the solution thus obtained with carbon bisulfid, sulfur and alcohol and finally isolating the resulting thio-urea derivative, substantially as hereinbefore described.

2. As a new article of manufacture the thio-urea derivative of beta$_1$-amido-alpha$_1$-naphthol-beta$_4$-sulfonic acid which in the form of the free acid has the following formula:



and in the form of the sodium salt consists of white leaves being capable of combining with one and likewise with two molecules of diazo compounds, being readily soluble in cold, very readily soluble in hot water, and which on boiling with the twenty-fold quantity of hydrochloric acid of twenty per cent. dissolves and after some time beta$_1$-amido-alpha$_1$-naphthol-beta$_4$-sulfonic acid is regenerated and precipitates, substantially as hereinbefore described.

653,679. MACHINE FOR CRUSHING ORES, &c. SMITH W. KIMBLE, New York, N. Y. Filed Feb. 21, 1899. Serial No. 706,397. (No model.)



Claim.—1. In a crushing-machine, a muller, a shaft for the muller, a mortar coöperating with the muller, a yielding support for the shaft, and means for actuating the shaft to impart a movement of nutation to the muller.

2. In a crushing-machine, a muller, a shaft for the muller, an inverted mortar overhanging and coöperating with the muller, a yielding support for the shaft, and means for actuating the shaft to impart a movement of nutation to the muller.

3. In a crushing-machine, a muller, a shaft for the muller fulcrumed at its upper end so as to be capable of movement in a longitudinal direction, but fixed against movement in a lateral direction, an inverted mortar overhanging and coöperating with the muller, a yielding support for the shaft, and means for actuating the lower end of the shaft to impart a movement of nutation to the muller.

4. In a crushing-machine, a muller the crushing-face of which is of comparatively-slight convexity, an overhanging inverted mortar whose crushing-face is of somewhat-greater concavity, the intermediate space between said crushing-faces diminishing in width as it recedes from the center, a muller-shaft yieldingly supported from above and fulcrumed at its upper end, and means at the lower end of said shaft for imparting a movement of nutation thereto.

5. In a crushing-machine, an inverted muller whose acting face is approximately that of a cone of low pitch, an inverted mortar overhanging and coöperating with the muller, the crushing-face of the mortar being also of low pitch, a shaft for the muller, a yielding support for the shaft, and means for actuating the shaft to impart a movement of nutation to the muller.

6. In a crushing-machine, an inverted muller whose acting face is approximately that of a cone of low pitch, an inverted mortar overhanging and coöperating with the muller, the crushing-face of the mortar being of greater pitch than that of the muller, a shaft for the muller, a yielding support for the shaft, and means for actuating the shaft to impart a movement of nutation to the muller.

7. The combination with an inverted muller whose acting face is approximately that of a cone of low pitch, and an overhanging inverted mortar whose acting face is of a somewhat-greater angle, of a muller-shaft yieldingly supported from above, and a shaft having a head with a seat eccentrically located thereon for actuating said muller-shaft.

8. In a crushing-machine, the combination of a muller-shaft having a yielding support and a positive fulcrum at its upper end, an inverted muller thereon whose acting face slopes at an angle of about thirty degrees, an overhanging inverted mortar whose acting face is at a slightly-greater angle than that of the muller, and means for imparting a movement of nutation to said shaft, substantially as described.

9. In a crushing-machine, the hub rising from the hopper, the yielding support carried thereby, the muller-shaft upheld by said support and having a positive fulcrum at its upper end, and the inverted muller fast on the upper portion of said shaft, in combination with an overhanging inverted mortar, and means for imparting a movement of nutation to said shaft, substantially as described.

653,680. FUMIGATING DEVICE. CHARLES T. KINGZETT, London, England. Filed Jan. 11, 1900. Serial No. 1,115. (No model.)



Claim.—1. A fumigator and disinfector comprising a sulfur candle, a water-holder in juxtaposition thereto so that watery vapors may be driven off by the heat absorbed from the hot body of surfur, and a receptacle for another vaporizable fumigating material contiguous to the sulfur candle so that heat absorbed from the hot body of sulfur may vaporize such material, all three of these elements being so combined and related that the several vapors are commingled.

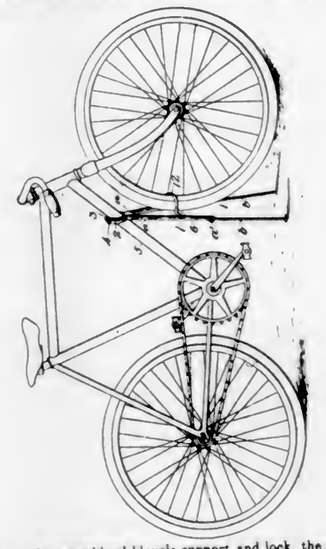
2. A fumigator and disinfector comprising a sulfur candle, a receptacle embedded in the body thereof for another material, and a water-jacket surrounding the sulfur candle.

3. A fumigator and disinfector comprising a sulfur candle, a receiver for another substance disposed within the mass of sulfur, a layer of protecting material between said holder and the surrounding sulfur and a water-jacket surrounding the sulfur candle.

4. A fumigator and disinfector comprising a sulfur candle, a receiver for another substance disposed within the mass of sulfur, a layer of protecting material between said holder and the surrounding sulfur, a water-jacket surrounding the sulfur candle, and a vapor-discharging tube or hollow arm extending from said holder and discharging adjacent to the water-space.

5. The new article of manufacture herein described being a fumigator and disinfector comprising a sulfur candle, a receiver adapted to contain a charge of formaldehyde located contiguous to the sulfur candle so as to be heated by the heat absorbed therefrom, and a surrounding water-jacket.

653,681. COMBINED BICYCLE PROP AND LOCK. ROBERT G. LEE, Augusta, Wis. Filed Nov. 23, 1899. Serial No. 738,078. (No model.)



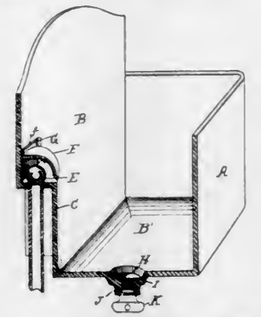
Claim.—1. In a combined bicycle support and lock, the combination with two legs hinged together at their upper ends and provided with clamping-jaws below their pivotal point which are closed and opened by the movement of the legs toward and away from each other; of a locking-bar permanently connected to one of said legs and having a locking connection with the other leg to hold the legs spread apart and prevent rotation of the wheel through which it is adapted to pass, substantially as and for the purpose set forth.

2. In a combined bicycle support and lock, the combination with two legs hinged together at their upper ends and provided with integral clamping-jaws formed at the upper ends of the legs below their pivotal point; of a locking-bar pivoted to one leg and provided with a bail and having a locked connection with the other leg, substantially as and for the purpose set forth.

3. In a combined bicycle support and lock, the combination with two legs pivoted together at their upper ends and provided with integral clamping-jaws formed at the upper ends of the legs below their pivotal point; of a locking-bar pivoted to one of said legs and provided with a locking-head, a spring-actuated bolt carried by the other leg and adapted to engage the locking-head of said locking-bar, substantially as and for the purpose set forth.

4. In a combined bicycle support and lock the combination with two legs hinged together and provided with clamping-jaws to embrace one of the bicycle-frame tubes; of a locking-bar to extend through and prevent the rotation of one of the wheels of the bicycle, each of said legs consisting of two parts, the end of one part of which is provided with a socket and a horizontally-disposed slot, and one end of the other part of which is adapted to fit in said socket and is provided with a vertically-disposed slot, and a pivot inserted through said slots whereby a slip-joint connection is produced, substantially as and for the purpose set forth.

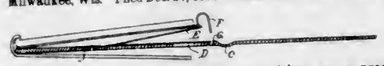
653,682. SANITARY WASHABLE BUCKET FOR STOCK. OWEN J. LITTLE and CLARENCE T. VAN SICKLE, Deckertown, N. J. Filed Dec. 21, 1899. Serial No. 741,096. (No model.)



Claim.—1. In an improved sanitary stock-watering bucket, the combination of an inlet-pipe traversing a recess in the back of said bucket, an automatic valve closing the inlet-pipe, an adjustable cover for said pipe and valve, the cover having saw-teeth on its lower edge, and a sediment-box recessed in the bottom of the bucket, as and for the purposes set forth.

2. In a watering-bucket for stock, the combination of a back plate having a recess for receiving the inlet-pipe, an inlet-pipe closed by an automatic valve, and an adjustable cover having a serrated bottom, substantially as set forth.

653,683. TABLET AND FILE HOLDER. HUGO LOEWENBACH, Milwaukee, Wis. Filed Dec. 27, 1898. Serial No. 700,369. (No model.)



Claim.—1. A tablet and file holder, comprising a cover provided with an aperture or opening therein; a plate secured to the inner face of said cover and projecting over said opening, and adapted to yield elastically under pressure applied through the opening; and catches secured to said plate, adapted to engage, and serve as a binder for, the contents of the holder.

2. A tablet and file holder, comprising a cover provided with an aperture or opening therein; and catches elastically secured to the inner face of said cover, adapted to be actuated by pressure applied through said opening in the cover, said catches being adapted to engage, and serve as a binder for, the contents of the holder.

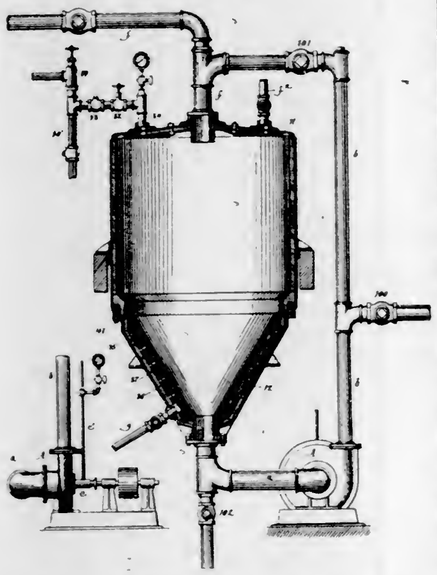
3. A tablet and file holder comprising a cover; a plate yield-

ingly secured to one of the faces thereof, and looped catches rigidly secured to said plate, with their free ends projecting over the edge.

4. A tablet and file holder, comprising a pair of covers secured together by a flexible binding or back; a flat plate normally parallel with, and yieldingly secured to, one of the covers; looped catches rigidly secured to said plate, with their free ends projecting over the edge

5. A tablet and file holder, comprising a pair of covers secured together by a flexible binding or back a flat plate normally parallel with, and yieldingly secured to, one of the covers; looped catches rigidly secured to said plate with their free ends projecting over the edge and adapted to register with perforations or recesses in the cover.

653,684. METALLURGICAL FILTER. FREDERIC H. LONG, Chicago, Ill., assignor to Ross J. Beatty, trustee, Muncie, Ind. Filed Nov 6, 1899. Serial No. 736,008 (No model.)



Claim.—1. The combination with the closed vessel having a filter-septum and an outlet-port for the filtrate beyond such septum, of the wash-water pipe connected in hydrostatic column with said vessel and suitable means for establishing a forced circulation of the vessel contents, substantially as described.

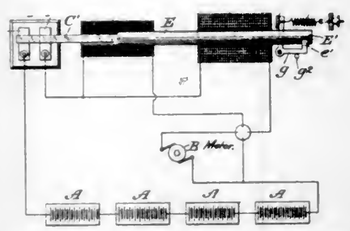
2. The combination with the closed vessel having a filter-septum and a regulated outlet-port for the filtrate beyond such septum, of the wash-water pipe connected in hydrostatic column with said vessel and the external centrifugal pump joined at its separate sides in closed union with the opposite ends of the vessel, substantially as described.

3. The combination with the closed vessel having a filter-septum and a regulated outlet-port for the filtrate beyond such septum, of the wash-water pipe connected in hydrostatic column with said vessel and the external centrifugal pump joined at its separate sides in closed union with the opposite ends of the vessel; the journal-box for said pump-axle being furnished with a water-column pipe to counterbalance the hydrostatic pressure at the vessel, substantially as described.

653,685. ELECTRIC CUT-OUT. HIRAM P. MAXIM, Hartford, Conn., assignor, by mesne assignments, to the Columbia and Electric Vehicle Company, Jersey City, N. J. Filed Jan. 20, 1899. Serial No. 702,811 (No model.)

Claim.—1. The combination with a storage-battery circuit, of a cut-out in said circuit, comprising a device operated by the amperage of the battery, and a device operated by the potential of the battery, said devices coacting to open the circuit upon a fall of the potential below a predetermined minimum while the amperage is normal.

2. The combination with a storage-battery circuit, of a cut-out in said circuit comprising an electromagnetic device operated by a decrease in potential of the battery to permit the opening of the circuit and an electromagnetic device operated by the amperage of the battery to open the circuit when permitted by the first-named device.



3. The combination with a storage-battery circuit, of a cut-out in said circuit comprising an electromagnetic device operated by a decrease in potential of the battery to permit the opening of the circuit and an electromagnetic device operated by the amperage under abnormal conditions to prevent the opening of the circuit.

4. The combination with a storage-battery circuit, of a cut-out in said circuit comprising an electromagnetic device tending to open said circuit, the operation of said device being determined by the amperage of the current passing through the same and an electromagnetic controller acting in opposition to said device, the operation of said controller being determined by the potential of the current passing through the same, whereby the circuit is opened when such potential falls below the normal.

5. The combination with a storage-battery circuit, of a cut-out in said circuit comprising an electromagnetic device operated by the amperage of the battery and tending to open said circuit, a lock operated by said device to prevent the opening of said circuit, and an electromagnetic controller acting in opposition to said device, the operation of said controller being determined by the potential of the current passing through the same.

6. The combination with a storage-battery circuit, of a cut-out in said circuit comprising two solenoids acting simultaneously in opposition, one of said solenoids being coarse-wound and tending to open said circuit and the other of said solenoids being fine-wound and tending to keep said circuit closed but permitting the other solenoid to open said circuit when the potential of the current falls.

7. The combination with a storage-battery circuit, of a cut-out in said circuit comprising two solenoids acting simultaneously in opposition upon said cut-out, one of said solenoids being coarse-wound and tending to open said circuit and the other of said solenoids being fine-wound and tending to keep said circuit closed but permitting the other solenoid to open said circuit when the potential of the current falls, and means operated by the amperage of the battery under abnormal conditions to prevent the opening of the circuit.

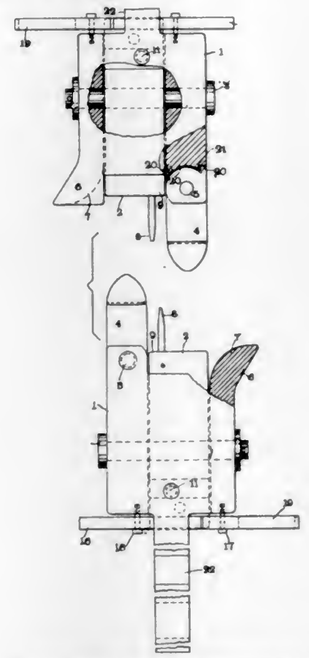
653,686. CAR-COUPLING. CHARLES MEHRING, Charlottesville, Va. Filed June 3, 1899. Serial No. 719,258. (No model.)

Claim.—1. A car-coupler, consisting of the combination of a pair of jaws on one draw-head engaged with a pair of jaws on the other draw-head, and means always governed by a force applied at a point upon either draw-head, adapted to unlock both pairs of jaws from each other.

2. In a car-coupler, the combination with a suitable draw-bar, of a jaw pivoted in the draw-bar to swing vertically and a jaw pivoted to said draw-bar to swing laterally, said vertically-swinging jaw being adapted to be engaged by a laterally-swinging jaw on another draw-bar, and the said laterally-swinging jaw being adapted to be engaged by a vertically-swinging jaw on the latter draw-bar, and means carried upon each vertically-swinging jaw adapted to actuate the other vertically-swinging jaw.

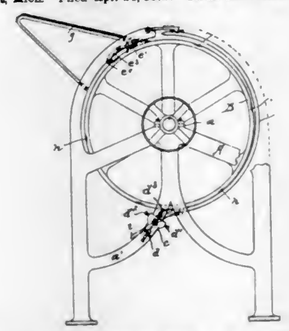
3. In a car-coupler, the combination with a suitable draw-bar, of a jaw pivoted in the draw-bar to swing vertically and a jaw pivoted in said draw-bar to swing laterally, said vertically-swinging jaw being adapted to be engaged by a laterally-swinging jaw on another draw-bar, and the said laterally-swinging jaw being adapted to be engaged by a vertically-swinging jaw on the latter draw-bar, and means carried upon each vertically-swinging jaw adapted to actuate the other vertically-swinging jaw, said means consisting of a tongue on each vertically-swinging jaw bearing against a lug provided on the other vertically-swinging jaw.

4. A car-coupler consisting of the combination of a pair of jaws on one draw-head engaged with a pair of jaws upon the other draw-head, and means governed by a force applied at a single point adapted to unlock both pairs of jaws from each other, said means consisting of mechanism for turning one of the jaws in each draw-bar out of engagement with the corresponding jaw of the other draw-bar, and a device carried upon said actuated jaws for also turning the jaws out of engagement with one another.



5. A car-coupler, consisting of the combination of a pair of jaws on one draw-head engaged with a pair of jaws on the other draw-head, means carried upon one jaw of each pair adapted to separate the jaws of both pairs, and a device upon each draw-head adapted to actuate said means.

653,687. PILL-MAKING MACHINE. WALTER MIDDLEDITCH, Detroit, Mich. Filed Apr. 21, 1899. Serial No. 713,937. (No model.)

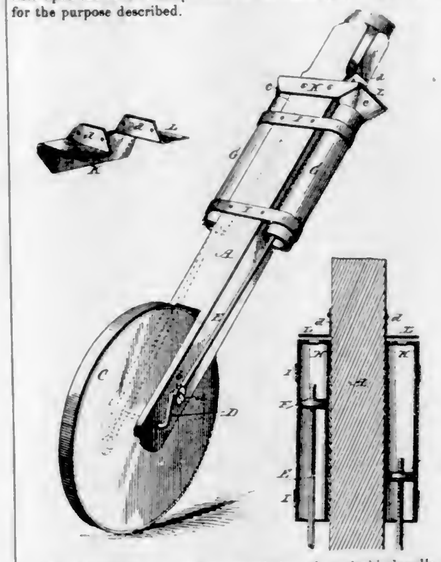


Claim.—1. In a pill-making machine, in combination with a grooved cylinder and a grooved concave, means for adjusting the delivery of the concave with respect to the cylinder, means for adjusting the receiving end of the concave with respect to the cylinder, a feed-table provided with a stop, a lifting-lever arranged to lift a roll of pill mass over the stop, substantially as described.

2. In a pill-making machine, in combination with a grooved cylinder provided with notches *n*, in its periphery, and a grooved concave, a feed-table provided with a stop, a lifting-lever provided with a wheel adapted to enter said notches and thereby to lift a roll of pill mass over the stop, substantially as described.

653,688. SOUNDING WHEELED TOY. MANVILLE L. MOODY, Phillipsburg, Mont. Filed Mar. 24, 1900. Serial No. 10,002. (No model.)

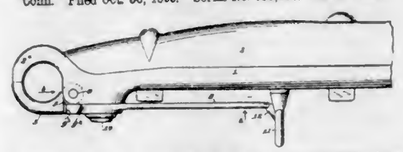
Claim.—1. A sounding wheeled toy, consisting of a suitable handle terminating in a bifurcated body, a wheel and crank-axle therefor connecting with the body, suitable cylinders detachably connected to the sides of said body and provided with reeds, and piston-rods connecting with the crank ends of the axle, and piston-heads adjustable upon the rods to adapt them to the reeds, substantially as and for the purpose described.



2. A sounding wheeled toy, consisting of a suitable handle terminating in a bifurcated body, a wheel and crank-axle connecting therewith, suitable cylinders connected to the body and provided with reeds, screw-threaded piston-rods connecting with the crank ends of the axle, and piston-heads engaging the screw-threaded ends of the rods, whereby the heads are capable of adjustment thereon to adapt them to the reeds, substantially as and for the purpose specified.

3. A sounding wheeled toy, consisting of a suitable handle terminating in a bifurcated body, a wheel and crank-axle therefor connecting with the body, cylinders provided with reeds and connected to the sides of the body, flanged protecting-caps for the reeds, piston-rods connecting with the crank ends of the axle, and piston-heads adjustable on said rods to adapt them to the reeds, substantially as and for the purpose specified.

653,689. THILL-COUPLING. WILLIAM M. MORTON, New Haven, Conn. Filed Oct. 30, 1899. Serial No. 735,160. (No model.)



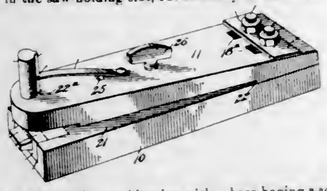
Claim.—In a thill-coupling, of the character described, consisting, in combination with a hinged eye-section, having a semicircular seat formed therein, of a swinging locking-lever pivotally supported on the thill-iron, a cam-face on the end of the head portion of said lever adapted to engage with said seat to close said eye-section and hold it firmly in place, means substantially as shown for securing the handle portion of said lever when the hinged eye-section is closed all substantially as described and for the purpose set forth.

653,690. SAW-SET. CHARLEY MCDONNER, Wausaukee, Wis. Filed Feb. 24, 1900. Serial No. 6,367. (No model.)

Claim.—1. In a saw-set, the combination with a base having a die, of an inflexible supporting bracket rigidly mounted upon the base and having a cut-away portion on its under side which forms a saw-holding slot, a setting-punch coacting with the base-die, and means for clamping a saw in the saw-holding slot, substantially as described.

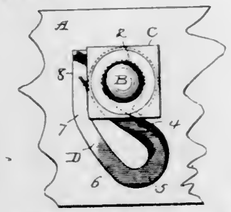
2. In a saw-set, the combination with a base having a die, of an inflexible supporting-bracket rigidly mounted upon the base and hav-

ing a cut-away portion on its under side which forms a saw-holding slot, a setting-punch carried by the supporting-bracket and coacting with the base-die, and means also carried by the bracket for clamping a saw in the saw-holding slot, substantially as described.



3. In a saw-set, the combination with a base having a socket, of a die detachably secured in said socket, a supporting-bracket having a cut-away portion on its under side forming a saw-holding slot, said supporting-bracket being adjustably secured to the base, a spring-supported sliding setting-punch carried by the supporting-bracket and coacting with the base-die, and a set-screw arranged upon the supporting-bracket and adapted to clamp a saw-blade placed between the base and the supporting-bracket, substantially as described.

653,691. NUT-LOCK. OLOF A. NORLUND, Cedar Run, Pa., assignor of one-half to George A. Gamble, same place. Filed Mar. 1, 1900. Serial No. 6,999. (No model.)

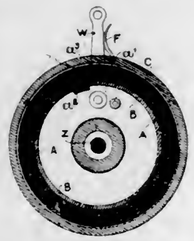


Claim.—1. A nut-lock, compriaing a strip or rod bent at one end to partially surround a bolt, one end of said looped portion provided on its under face with a cutting edge and bent to form a spring-arm normally out of the plane of said looped portion and in the path of a nut.

2. A nut-lock, comprising a strip of spring metal angular in cross-section and bent at one end into circular form, one end of said circular portion having a quarter-twist to form a cutting inner edge, and bent to form a spring-loop having its free end projecting beyond the circular portion to engage the side of a nut or head of a bolt, said loop being constructed to permit its free member to be sprung outwardly by the nut or head of the bolt when unscrewed.

3. A nut-lock consisting of a strip of spring metal bent into circular form at one end and having its remaining portion bent to form an elongated loop having a flat outer face and an inner cutting edge, the free end of said elongated loop bent outwardly out of the plane of the circular portion so as to be engaged by a nut or head of a bolt passing through said circular portion.

653,692. BRAKE. EDWARD C. F. OTTO and EDWARD C. F. OTTO, Jr., Honor Oak, England. Filed Feb. 24, 1900. Serial No. 6,425. (No model.)

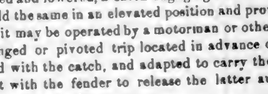


Claim.—1. In a brake, the combination with a road-wheel, and a brake-drum revolving with it; of a non-revoluble supporting-drum mounted concentric with the brake-drum, an operating-lever pivoted to the supporting-drum, and a linked chain-band arranged in the space between the said drums and having its ends connected to the said lever and supporting-drum respectively, substantially as set forth.

2. In a brake, the combination, with a brake drum, of a second drum mounted concentrically with the brake-drum and adapted to support the strap or band when it is out of action with the brake-drum, and a linked chain band formed of a series of metallic links pivoted together and having their operative faces curved to the same radius as the operative face of the drum with which the strap or band engages, as set forth.

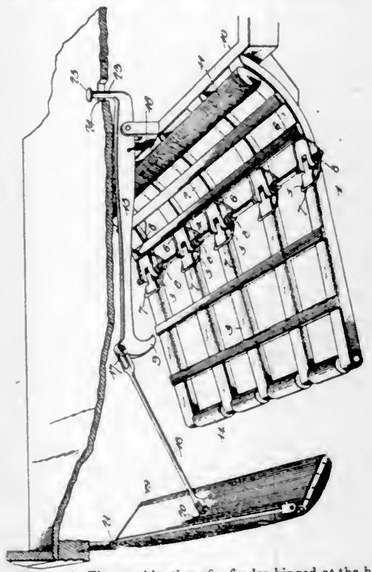
3. In a brake the combination with a brake-drum, of a second drum mounted concentrically with the brake-drum and adapted to support the band when it is out of action with the brake-drum, and a linked chain band formed of a series of metallic links pivoted together so that their ends abut against one another, each link being of the same width and having its operative face curved to the same radius as the operative face of the drum with which the strap or band engages, as set forth.

653,693. DOOR-KNOB ROSE. WILLIAM E. PARKER, New Britain, Conn., assignor to the Russell & Erwin Manufacturing Company, same place. Filed Mar. 3, 1900. Serial No. 7,164. (No model.)



Claim.—The combination of the struck-up sheet-metal rose-plate having an elevated plate-like middle portion that forms a hollow back, with the rose-center on the front of the said plate, and the supporting-ring on the rear thereof for supporting the middle portion of the said sheet-metal rose-plate against the endwise pressure of the knob-shank, substantially as described.

653,694. CAR-FENDER. GUSTAVUS B. QUARRIER, Los Angeles, Cal. Filed Apr. 5, 1900. Serial No. 11,786. (No model.)



Claim.—1. The combination of a fender hinged at the back and capable of being raised and lowered, a setting device detachably engaging the front edge of the fender for holding the same in an elevated position, said setting device being adapted to be thrown downward by the operator or motorman, and a tripping device arranged in advance of the fender and connected with the setting device and adapted to release the fender automatically, substantially as described.

2. The combination of a fender hinged at the back and adapted to be raised and lowered, a catch engaging the front edge of the fender to hold the same in an elevated position and provided with means whereby it may be operated by a motorman or other person on a car, and a hinged or pivoted trip located in advance of the fender and connected with the catch, and adapted to carry the same out of engagement with the fender to release the latter automatically, substantially as described.

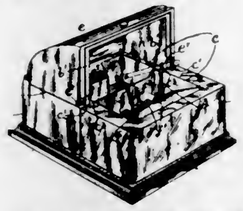
3. The combination of a fender adapted to be raised and lowered, a catch engaging the front edge of the fender to hold the same in an elevated position and adapted to be released by a motorman or other person on a car, a hinged trip suspended in advance of the fender, and a rod connecting the trip and the catch, substantially as described.

4. The combination of a fender adapted to be raised and lowered, a catch consisting of a lever fulcrumed between its ends and provided at its front or outer end with a head for engaging the fender, said lever being provided at the opposite side of its fulcrum with an arm or member arranged to be engaged by the foot of a motorman, and a movable trip located in advance of the fender and connected with the catch, substantially as described.

5. The combination of a fender composed of inner and outer sections, the outer section being hinged and adapted to swing upward and downward, a catch arranged to engage the outer end of the outer section of the fender to hold the same in an elevated position, means for operating the catch from a car, and a trip located in advance of the fender and connected with the catch and adapted to release the said fender automatically, substantially as described.

6. A fender comprising inner and outer sections, a pintle-rod hinging the outer section to the inner section, said sections being provided with longitudinal members having registering perforations for the reception of the pintle-rod, and the springs arranged at intervals across the fender and disposed at each of the longitudinal members and composed of coils disposed on the pintle-rod at opposite sides of the longitudinal members, the front loop engaging the outer section and the inner portions engaging the inner section, substantially as described.

653,695. MUCILAGE-STAND. EDWARD S. RAFF, Canton, Ohio. Filed Apr 9, 1900. Serial No. 12,156. (No model.)



Claim.—1. A mucilage-stand provided with a suitably-supported upright upwardly-removable partition arranged transversely of the chamber between the forward and rear walls of the chamber, which partition is cut away at its lower edge so as to establish open relation between the forward and rear portions of the chamber, and a brush-rack formed upon the upper edge of the said partition, substantially as and for the purpose set forth.

2. A mucilage-stand having the following: a mucilage-receiving chamber having two upright slideways formed in the opposite side walls, respectively, of the said chamber between the forward and rear walls of the chamber, a sliding partition engaging the said slideways and removable upwardly from the said chamber, which partition has its lower end cut away as required to establish open relation between the forward and rear portions of the chamber, and a brush-rack formed upon the said partition.

3. A mucilage-stand having the following: a mucilage-receiving chamber, a suitably-supported upright partition arranged transversely of the chamber between the forward and rear walls of the chamber and having its lower portion cut away as required to establish open relation between the forward and rear portions of the chamber, a brush-rack formed upon the said partition, and the rear wall of the aforesaid chamber, directly rearward of the rack-forming portion of the partition, being provided with an alcove, substantially as and for the purpose set forth.

4. A mucilage-stand having the following: a mucilage-receiving chamber having the top of its forward wall sloping downwardly and rearwardly to the said chamber; two upright slideways formed in the opposite side walls, respectively, of the said chamber between the forward and rear walls of the chamber, a sliding partition engaging the said slideways and removable upwardly from the said chamber, which partition has its lower portion cut away, as required, to establish open relation between the forward and rear portions of the chamber, and a brush-rack formed upon one end of the said partition.

5. A mucilage-stand having the following: a mucilage-receiving chamber, an upright removable partition arranged transversely of the chamber between the forward and rear walls of the chamber and having its lower portion cut away as required to establish open relation between the forward and rear portions of the chamber, a brush-rack formed upon one end of the said partition, and the rear wall of the aforesaid chamber, directly rearward of the rack-forming portion of the partition, being provided with an alcove c^4, substantially as and for the purpose set forth.

6. A mucilage-stand having the following: a mucilage-receiving chamber having the top of its forward wall sloping downwardly and rearwardly to the said chamber; two upright slideways formed in the opposite side walls, respectively, of the said chamber between the forward and rear walls of the chamber; a sliding partition engaging the said slideways and removable upwardly from the said chamber, which partition has its lower portion cut away as required to establish open relation between the forward and rear portions of the chamber; a brush-rack formed upon one end of the said partition, and an alcove formed in the rear wall of the chamber rearward of the rack-forming portion of the aforesaid partition, substantially as and for the purpose set forth.

7. A mucilage-stand having a base, a mucilage-receiving receptacle removably mounted upon the base, a hood rigid with the base and arranged to cover the rear portion of the receptacle and a movable cover for covering or closing the portion of the receptacle that is not covered by the stationary hood.

8. A mucilage-stand comprising a base, a mucilage-receiving receptacle removably mounted upon the base, a hood rigid with the base and extending above and over and around the rear portion of the receptacle, and covering the said portion of the receptacle, and a movable cover for covering the remaining portion of the said receptacle.

9. A mucilage-stand comprising a base, a mucilage-receiving receptacle removably mounted upon the base, a hood surrounding the rear portion of and extending above and over and covering the rear portion of the receptacle at the sides and rear, a removable cover for covering or closing the remaining portion of the receptacle, at the sides and front, which last-mentioned cover is supported in such a manner from the stationary hood as to render it, the removable cover, capable of being turned over the stationary hood, or over the receptacle's portion not covered by the stationary hood, according as the movable cover is actuated in the one or the other of its two positions, and shoulders formed upon the stationary hood and arranged to support the movable cover in the latter's open position.

10. A mucilage-stand comprising a base, a receptacle removably mounted upon the base, a stationary hood extending above and over the rear portion of the receptacle and covering the receptacle at the rear and sides, and a movable cover pivoted horizontally and transversely of the stand to the sides of the stationary hood at or near the top of the receptacle, and the relative configuration of the two hoods being such, that the movable cover is capable of being swung over the stationary hood, and is swung over the stationary hood or closed down over the forward portion of the receptacle according as the said movable cover is swung in the one direction or the other.

11. A mucilage-stand comprising a base, a mucilage-receiving receptacle upon the base, a stationary hood extending above and over the rear portion of the receptacle and covering the receptacle at the sides and rear, a movable cover for covering or closing the remaining or forward portion of the receptacle, which last-mentioned cover is supported in such a manner from the stationary hood as to render it, the movable cover, capable of being actuated over the stationary hood, or over the receptacle's portion not covered by the stationary hood, according as the movable cover is moved in the one or the other direction, and two shoulders formed upon and extending up and down opposite sides, respectively, of the receptacle and overlapping the forward edges of the sides of the stationary hood.

653,696. INCANDESCENT ELEMENT. CHARLES G. RICHARDSON, New York, N. Y., assignor of one-half to Dillwyn Wistar, Philadelphia, Pa. Filed July 17, 1899. Serial No. 724,332. (No specimens.)

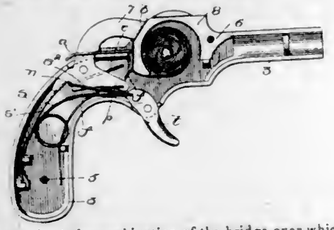


Claim.—An element for incandescent gas-lighting consisting of a roll of combustible impregnated fabric tight-wound around a tube also of combustible material, substantially as described.

653,697. TOY PISTOL. HOMER W. RIGHTMYER, Rowlesburg, W. Va. Filed Mar. 30, 1900. Serial No. 10,781. (No model.)

Claim.—1. In a toy pistol, the combination of the bridge over which the fulminate-strip is advanced, the hammer, the strip-feeder connected to the hammer, the trigger, and the spring *s*, the latter being secured at one end in the handle and connected with the trigger, said spring having also a return-bend forming a hook to engage the cocking-notch of the hammer.

2. In a toy pistol, the combination of the bridge over which the fulminate-strip is advanced, the hammer, the strip-feeder connected to the hammer, the trigger, and the spring *s*, the latter being at one end in the handle and connected with the trigger, said spring having also a return-bend forming a hook to engage the cocking-notch of the hammer, and a forward extension *e*, to hold the strip and prevent retrograde movement when the hammer falls.

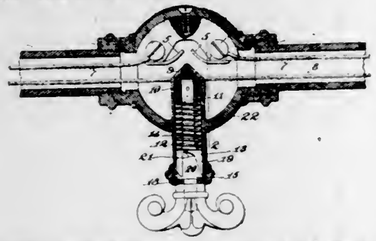


3. In a toy pistol, the combination of the bridge over which the fulminate-strip is advanced, the hammer having the projection *p*, and the spring *f* attached to the projection *p*, and having its rear end bearing in the handle-case, and its front end extended to form a strip-feeder *f'*.

4. In a toy pistol, the combination of the bridge over which the fulminate-strip is advanced, a strip-feeder *f'* connected to the hammer below and forward of its pivot, and a slide *a* connected to the hammer above its pivot to form a cut-off and prevent the refuse from entering the case.

5. In a toy pistol, the combination of the frame, the hammer, the trigger, the strip-feeder, and the cover-plate 8, pivoted to the frame at 6, and having the bridge *b* over which the fulminate-strip is fed, said plate being recessed on its under side to form a magazine to hold the roll of fulminate.

653,698. ELECTRIC SWITCH. JAMES T. ROBB, New York, N. Y., assignor to the Mitchell Vance Company, same place. Filed Jan. 31, 1900. Serial No. 3,418. (No model.)



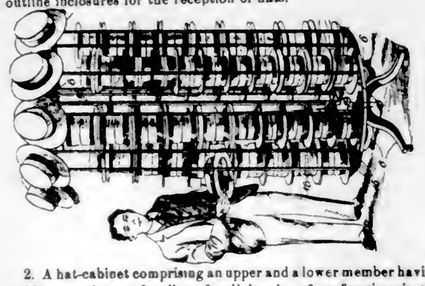
Claim.—1. An improved switch, comprising a frame, a pair of stationary contacts, a sleeve or boss, a shank movable longitudinally therein, a movable contact carried by said shank, a head connected to said shank and having a pair of cam-teeth, means for preventing rotation of said head, a spring surrounding the shank and engaging said head, a rotating head having a pair of cam-teeth, engaging the other cam-teeth, and a key for turning the rotating head, substantially as set forth.

2. An improved switch, comprising a frame, a pair of stationary contacts, a sleeve or boss, a shank movable longitudinally therein, a movable contact carried by said shank, a head connected to said shank and having a pair of cam-teeth, means for preventing rotation of said head, a spring surrounding the shank and engaging said head, a rotating head having a pair of cam-teeth, engaging the other cam-teeth, and a key for turning the rotating head, one set of said teeth being notched for engagement with the other teeth, substantially as set forth.

3. The combination with the circular inclosing frame of a bracket arm switch, said frame carrying a stationary shoulder at one side and a collar at its diametrically-opposite side, of a two-part spherical shell inclosing said frame with the split extending longitudinally of the frame, said shell being held in position between said shoulder and collar, substantially as set forth.

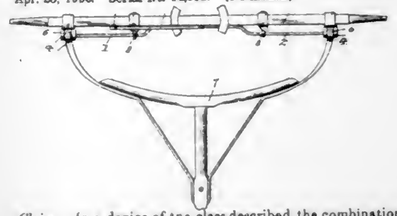
653,699. HAT-CABINET. LOWELL M. ROBINSON, Celina, Ohio. Filed Dec. 22, 1899. Serial No. 741,287. (No model.)

Claim.—1. A hat-cabinet comprising an upper and a lower member, a plurality of series of perforations in one of the members disposed in cooperating groups, a plurality of series of recesses in the other member in alinement with their respective perforations, and rods removably engaged with certain of the perforations and recesses to outline inclosures for the reception of hats.



2. A hat-cabinet comprising an upper and a lower member having a rigid connection, a plurality of radial series of perforations in the upper member, a plurality of series of recesses in the lower member corresponding to the perforations and alining therewith respectively, rods removably engaged with certain of the perforations and recesses, additional series of perforations adjacent the periphery of the upper member, corresponding series of recesses in the lower member adjacent the periphery thereof, and additional rods engaging certain of the last-named perforations and recesses.

653,700. HORSE-DETACHER. JOHN ROSE, Volney, Iowa. Filed Apr. 25, 1900. Serial No. 14,352. (No model.)

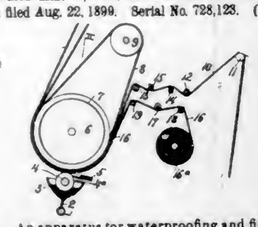


Claim.—In a device of the class described, the combination with an axle, of the outer axle-clips having perforated ears, the inner axle-clips provided with guides, the longitudinally-reciprocating locking-rods passing through the guides and having their outer ends arranged in the perforated ears, said rods being provided with reversely-arranged approximately L-shaped arms extending upward and downward, and the operating-lever consisting of the upright central portion pivoted between its ends and connected above and below the pivotal point with the L-shaped arms, and the outer portion having its inner end arched to clear the adjacent inner end of the adjacent rod and having its outer end bent upward and adapted to be swung upward to withdraw the rods, the weight of the lever operating to hold the rods in their engaging position, substantially as described.

653,701. PROCESS OF WATERPROOFING AND FINISHING TEXTILE MATERIAL. JOSEF RUDOLF, Gera, Germany. Filed Mar. 26, 1898. Serial No. 675,283. (No specimens.)

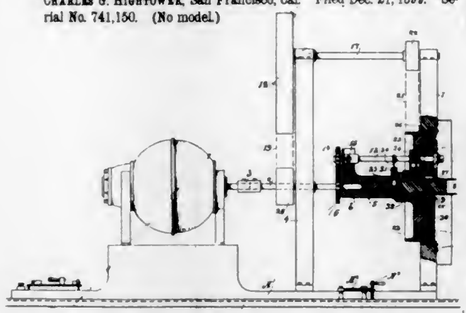
Claim.—The improved process for waterproofing and finishing textile materials, which consists in reducing the waterproofing material to a molten condition, next making an emulsion of the same in hot water, and then applying the said emulsion while maintained at a high temperature, to the material to be waterproofed.

653,702. APPARATUS FOR WATERPROOFING AND FINISHING TEXTILE MATERIAL. JOSEF RUDOLF, Gera, Germany. Original application filed Mar. 26, 1898, Serial No. 675,283. Divided and this application filed Aug. 22, 1899. Serial No. 728,123. (No model.)



Claim.—An apparatus for waterproofing and finishing textile material while permitting the material to remain porous, comprising a heating device, a trough located over the heating device, for containing the emulsion to be heated and applied, an engraved feed-roller dipping into the heated emulsion, a trimming-knife for removing the surplus emulsion from the engraved feed-roller, a cold pressure-roller having a padding providing a cushion for the fabric, a tension device through which the fabric is drawn on its passage between the engraved feed-roller and the pressure-roller, a tension device through which a thin protecting-strip is drawn on its passage between the fabric and the pressure-roller, an idle roller and an endless cloth band working over the idle roller and between the padding of the pressure-roller and the protecting-strip: substantially as described.

653,703. TUBE GRINDER AND FACER. JOHN T. SCOTT and CHARLES G. HIGHTOWER, San Francisco, Cal. Filed Dec. 21, 1899. Serial No. 741,150. (No model.)



Claim.—1. In a tube grinder and polisher, the combination with the rotating head, a socket therein for reception of the end of the tube an end cutter in said socket, a buffer-wheel carried by said head, and of means for imparting rotary motion to the head and driving the buffer-wheel at a higher speed than its carrying-head.

2. In a tube grinder and polisher, the combination with the head, of means for rotating the same, an end cutter, a spring-pressed vertically-movable buffer-wheel carried by the head, means for holding the buffer out of operative position while the end cutter is operating, and of means for rotating the buffer-wheel in an opposite direction and at a higher speed than that at which the head is rotated.

3. In a tube grinding and polishing machine, the combination with the rotatable head having a tube-receiving socket therein, a mandrel within said socket, means for imparting rotary motion to the head, a vertically-movable buffer-wheel carried by the head, and of means by which the said buffer-wheel is driven in an opposite direction and at a higher speed than the carrying-head.

4. In a tube grinding and polishing machine, the combination with the circular head having a tube-receiving socket therein, a cutter secured therein, means for imparting rotation to the head, a vertically-movable buffer-wheel carried by the head, means for driving said buffer-wheel at a higher speed than the head, and of devices for automatically raising and lowering the buffer-wheel.

5. In a tube grinding and polishing machine, the combination with a circular head having a tube-receiving socket therein, of a cutter secured within the socket, means for imparting rotation to the head, of a vertically-movable buffer-wheel, means for driving the buffer-wheel at a higher speed than the head, of a tension-spring for holding said wheel down, and of air-actuated devices by means of which the buffer-wheel is raised.

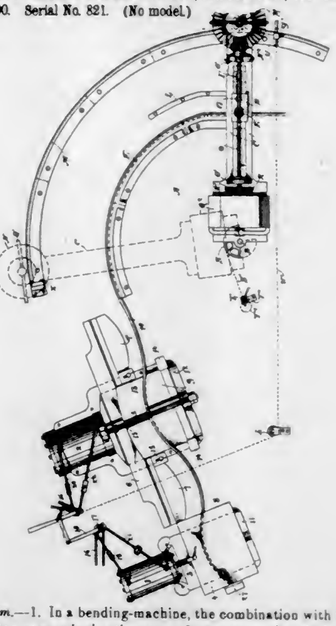
6. In a tube grinding and polishing machine, the combination with the bed-plate, of a slide mounted thereon, a head supported upon said slide, a tube-receiving socket in said head, means for imparting rotation to the head, a vertically-movable buffer-wheel carried by the head, means for driving the buffer-wheel at a higher speed than the head, spring by means of which the buffer-wheel is held pressed down, air-actuated devices for raising the said wheel, a pipe-holder, and of means for moving the slide toward and from the holder.

7. In a tube grinding and polishing machine, the combination with the rotating head having a tube-socket therein, a cutter secured within said socket, means for imparting rotary motion to the head, a buffer-wheel carried by said head, of a swiveled shaft upon which the buffer-wheel is secured, devices by which motion is imparted to said shaft for rotating the buffer-wheel at a higher speed than the head, a spring by means of which the buffer-wheel is held downward, air-actuated devices for raising the buffer-wheel, and of air connection through the head to said devices.

8. In a tube grinding and polishing machine, the combination with the rotating head, having a tube-receiving socket therein, a cutter secured within said socket, means for imparting rotation to the head, a spring-pressed buffer-wheel carried by the head, means for driving the buffer-wheel at a higher speed than the head, an air-groove in the periphery of the head, a passage-way forming communication between said groove and the tube-receiving socket, means for supplying air under pressure to the peripheral groove of the head, air-actuated devices for raising the buffer-wheel, and of connection between said devices and the passage-way through the head

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653,704. METAL-BENDING MACHINE. JOHN T. SCOTT, CHARLES G. HIGHTOWER, and FRANK E. NEITZEL, San Francisco, Cal. Filed Jan. 9, 1900. Serial No. 821. (No model.)



Claim.—1. In a bending-machine, the combination with the bed-plates of an arm swinging thereon, a former secured to the bed-plate, a forming-roller carried by the swinging arm, said roller coacting with the former, a curved rack attached to the bed-plate, of a drive-shaft working upon the swinging arm, a pinion carried by said shaft engaging a gear loosely mounted upon a shaft extending through the swinging arm, a spur-gear attached to the lower end of the vertical shaft and engaging the rack, of a friction secured to the said shaft, and of means for automatically placing the friction in or out of frictional engagement with the gear driven by the drive-shaft.

2. In a bending-machine, the combination with the swinging arm, of the drive-shaft working thereon, a forming-roller adjustably secured to the swinging arm, a former with which the said roller coacts during the operation of bending, a shaft extending vertically through the swinging arm, a gear attached to the lower end thereof, a rack with which said gear meshes, and of means by which the vertical shaft is placed in and out of operation with the drive-shaft.

3. In a bending-machine, the combination with the swinging arm, of a forming-roller carried thereby, of a former with which it coacts during the operation of bending, a device by which the forming-roller is held in lock position against outward movement and of mechanism for imparting travel to the swinging arm.

4. In a bending-machine, the combination with the swinging arm, of a shaft extending vertically through the outer end thereof, a gear secured to the lower end thereof, a curved rack with which the gear engages, drive mechanism carried by the swinging arm, and of means by which the vertical shaft is placed in or out of locked engagement with the drive mechanism.

5. In a bending-machine, the combination with the bed-plate, of a swinging arm secured thereon, a forming-roller carried by the swinging arm, a former with which the forming-roller coacts attached to the bed-plate, of devices for moving the forming-roller toward or from the former during the travel of the swinging arm, and of mechanism for throwing the swinging arm back and forth.

6. In a bending-machine, the combination with the bed-plate, of a former attached thereto, a swinging arm secured to the bed-plate, of means for imparting travel thereto, a forming-roller adjustably secured to the swinging arm, said roller coacting with the former, a swinging lock-arm for holding the roller against outward movement, and of devices for automatically releasing the lock-arm so as to permit of the forming-roller adjusting itself to irregularities of the former.

7. In a bending-machine, the combination with the swinging arm, of a shaft extending through the outer end thereof, a gear secured to the lower end thereof, a rack with which said gear engages, a gear loosely mounted upon said shaft above the swinging arm, drive mechanism mounted upon the swinging arm, a pinion carried thereby which intermeshes with the gear loosely mounted upon the vertical shaft, and of means by which said gear is placed in or out of locked engagement with the vertical shaft.

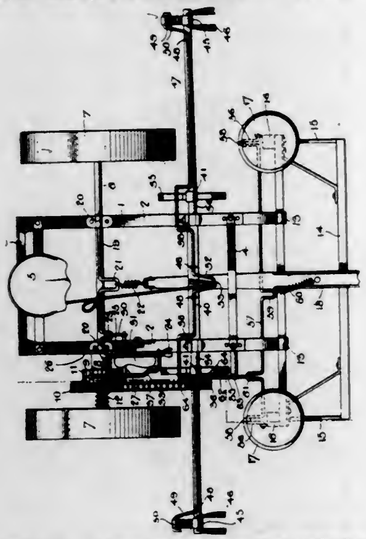
8. In a bending-machine, the combination with the swinging arm, of the drive-shaft thereon, the shaft M^3 extending through the outer end portion of the swinging arm, a gear loosely working thereon and driven from the drive-shaft, a clutch or friction slidably secured upon the shaft and which frictionally engages the gear, and of means by which the friction is placed in and out of frictional engagement with the gear.

9. In a bending-machine, the combination with the swinging arm, of a forming-roller carried thereby, a former with which said roller coacts during the operation of bending, devices for holding the roller in position, the drive-shaft working upon the swinging arm, the shaft M^3 extending through the outer portion of the swinging arm, a gear secured to the lower end of the said shaft, a rack with which the gear intermeshes, the gear loosely working upon the shaft above the swinging arm and driven by the drive-shaft, a conical hub upwardly extending from the gear, a friction or clutch slidable upon the shaft, and of means by which the friction or clutch is placed in or out of frictional engagement with the driven gear.

10. In a bending-machine, the combination with the bed-plate, of a swinging arm secured thereto, devices for locking said arm at the end of its outward stroke, of means by which the swinging arm is automatically returned to its normal position upon being unlocked, of a forming-roller carried by the swinging arm, a former attached to the bed-plate and with which the forming-roller coacts, and of mechanism for imparting an outward swing or travel to the swinging arm.

11. In a bending-machine and in combination with the described bending mechanism, of the hydraulic press, of the formers carried by the piston thereof, and of adjustable stops for limiting the movement of the movable formers.

653,705. CHECK-ROW CORN-PLANTER. LEWIS L. SCOTT, Glasford, Ill. Filed Apr. 9, 1900. Serial No. 12,205. (No model.)



Claim.—1. In a check-row corn-planter, the combination with a vertically-movable marker-bar, pivoted markers thereon depending therefrom, and springs to normally sustain said pivoted markers in operative position in combination with means to operate said vertically-movable marker-bar, substantially as described.

2. In a check-row corn-planter, a vertically-movable marker-bar having depending markers at its ends, in combination with scrapers for said markers and means to operate said scrapers, substantially as described.

3. In a check-row corn-planter, a vertically-movable marker-bar having depending markers, in combination with scrapers for said markers, a rock-shaft connected to said markers, and means whereby said rock-shaft may be actuated, for the purpose set forth, substantially as described.

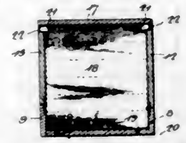
4. In a check-row corn-planter, the combination of a main frame supported on an axle, a master-wheel on said axle, a clutch to lock and unlock said master-wheel, a planter-frame flexibly connected to the front end of the main frame, a draft-tongue attached to said planter-frame and extending rearward therefrom, a rock-shaft on the main frame, having arms 21, 23, a spring connection between the rear end of the draft-tongue and the arm 21, a cam-lever to operate the clutch, and a link connecting said cam-lever to arm 23, all constructed and adapted to operate, substantially as described.

5. In a check-row corn-planter, the combination of the vertically-movable marker-bar having the depending markers, a shaft having cams to impart vertical movement to the marker-bar, an axle-shaft, a master-wheel on said shaft, clutched thereto and adapted to rotate in one direction independently thereof, connections between said master-wheel and the shaft having the cams, whereby the latter are rotated, and means to manually rotate said master-wheel independently of the axle-shaft, for the purpose set forth, substantially as described.

6. In a check-row corn-planter, the combination of a marker, a revoluble cam-wheel to actuate the marker, said wheel having tappets, a seed-dropping mechanism, and a lever actuated by the tappets of the cam-wheel and connected to said seed-dropping mechanism, substantially as described.

7. In a check-row corn-planter, the combination with a vertically movable marker-bar, guides therefor, springs bearing downward on said marker-bar, buffer-springs to arrest the descent of the marker-bar, and means to actuate said marker-bar, substantially as described

653,706. EGG-CRATE. GUY H. SHORT, Stillwell, Ill. Filed Aug. 15, 1899. Serial No. 727,310. (No model.)



Claim.—The herein-described egg-crate comprising the bottom 5 having secured thereto the end sills 6 and 7, and the side sills 8 and 9, the sill 8 being wider than the end sills by a distance equal to the thickness of the ends 10 and 11 of the crate, the said ends hinged and turning inward upon the sills 6 and 7, respectively, so that they will lie horizontal, with their upper surfaces flush with the upper edge of the sill 8, and the sill 9 projecting above the sill 8 to a distance equal to the combined thickness of the sides 12 and 13 so as to fold inwardly and lie horizontally thereon, the removable transverse vertical partition 18 being provided with the turn-buttons 21 and dowel-pins 19 to engage suitable opposing openings, the end hooks 14 engaging the outer faces of sides 12 and 13 and the cover 17, all constructed and arranged substantially as shown and described, for the purposes specified.

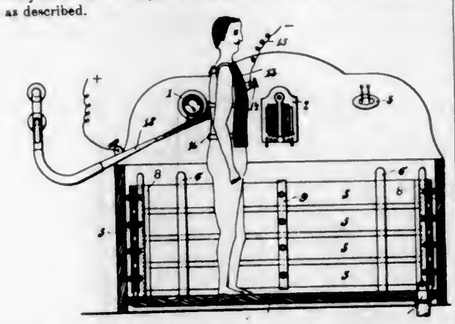
653,707. METAL BARREL-HOOP. FRANKLIN B. SHUSTER, New Haven, Conn. Filed June 8, 1899. Serial No. 719,777. (No model.)



Claim.—The herein-described improved barrel-hoop consisting of a hoop constructed of round wire and having a series of retaining-spurs formed integral with body portion of said wire so that, when the hoop is forced down the inclined surface of a barrel, it will impart a torsional strain on said round wire hoop and thus tend to throw the said spurs outward, and when the hoop has reached its resting-place, such stored-up tension will react and force said spurs into the barrel-staves, for the purpose set forth.

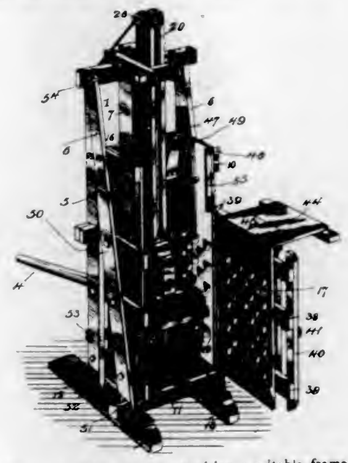
653,708. HYDRO-ELECTROTHERAPEUTIC APPARATUS. JOHANN J. STANGER, Ulm, Germany. Filed Apr. 29, 1899. Serial No. 715,004. (No model.)

Claim.—1. In an electrotherapeutical device for curative purposes, an evaporating apparatus provided with roses adapted to serve as electrodes, and two tubes connecting the roses with the apparatus whereby the steam-jets pouring out transfer electricity to the human body and that the body forms a conductor in the steam, substantially as described.



2. In an electrotherapeutical device for curative purposes, an evaporating apparatus, a nozzle therefor forming a cylindrical electrode 31, a rod 33 therein forming a second electrode whereby the rose, which exhausts steam transfers electricity to the human body, while the body forms a conducting-link in the steam-jet.

653,709. BALING-PRESS. JOHN J. STOPPLE, Goliad, Tex. Filed Dec. 20, 1899. Serial No. 741,040. (No model.)



Claim.—1. A baling-press comprising a suitable frame, a box mounted thereon having a hinged front, a charging-door pivoted to the top of the hinged front, a plunger moving in the said box, means for holding the plunger in its upper position, and means for releasing the said plunger automatically, by closing the charging-door, substantially as described.

2. A baling-press comprising a suitable frame, a box mounted thereon having a pivoted front, a charging-door hinged to the upper end thereof, a brace on the front adapted to support the hinged door in a horizontal position, whereby the same will form a platform when charging the press, a latch for holding the hinged front closed, a plunger moving in the box, means for supporting the plunger in its upper position, and means for automatically dropping the same by closing the charging-door, substantially as described.

3. A baling-press comprising a suitable frame, a box mounted therein, a hinged front upon the said box, a hinged side and standard mounted on the frame, the said standard being hinged at the top and the bottom of the press-frame so that the whole side of the press swings, a catch secured to the hinged side and a latch mounted on the hinged front for engaging the said catch, the structure being such that when the hinged front is closed, both the front and the side will be locked in their closed positions and when the latch is closed, both the front and the side may be opened to discharge the baled material, substantially as described.

4. A baling-press comprising a suitable frame, a box mounted thereon, a charging-door on the front of the box, a plunger moving in said box, a cable secured to the said plunger and passing over a pulley, whereby the plunger may be raised to its uppermost position, a latch for supporting the plunger in its upper position, means for automatically releasing the said latch, said means being operated by closing the charging-door, and means for applying power to the plunger for pressing the material to be baled, substantially as described.

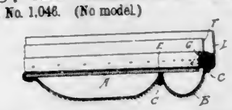
5. A baling-press comprising a suitable frame, a box mounted therein, a plunger moving in the said box, a rack secured to the said plunger, a rope secured to one end of the said plunger and passing over a pulley, the other end of the said rope passing through suitable guiding-eyes and secured to the top of the plunger, whereby all slack in the rope will be taken up no matter what the position of the plunger, and a lever carrying a pawl for engaging the said rack, whereby power may be applied to the plunger for compressing the material to be baled, substantially as described.

6. A baling-press comprising a suitable frame, a box mounted thereon, a plunger moving in the said box, a pivoted latch mounted at the upper end of the said box and adapted to engage the plunger for supporting the same in its upper position, a pivoted charging-door on the front of the box, a rod secured to the said latch and adapted to be struck by the charging-door when closed for automatically releasing the plunger from the latch and permitting the same to drop, and means for raising the said plunger again, substantially as described.

7. A baling-press comprising a suitable frame, a baling-box mounted therein, a plunger moving in said box, a pivoted lever mounted upon the back of the frame, a hooked pawl operated by the said lever, a rack upon the plunger-rod adapted to be engaged by the hooked end of the said pawl so as to pull the plunger-rod downwardly when the lever is depressed, and a spring for holding the pawl normally in engagement with the said rack, substantially as described.

8. A baling-press comprising a suitable frame, a box mounted therein, a plunger moving in the said box, a rack upon the said plunger, a power-lever mounted upon the rear of the frame, said lever having a bent portion at its pivoted end, a pawl adjustably pivoted at the lower end of the said lever, a pin secured to the upper end of the pawl, an inclined plate adapted to engage the said pin and lift the pawl out of engagement with the rack when the lever is in its upper position, a spring also adapted to engage the said pin for holding the pawl normally in engagement with the rack, the structure being such that when the lever is uppermost, the pawl will not engage the rack but when the lever is pulled downwardly, the pawl will engage the rack and apply force to the plunger, as the lever descends with increasing power, substantially as described.

653,710. SEAT. THOMAS SWAN, Flint, Mich. Filed Jan. 11, 1900. Serial No. 1,046. (No model.)



Claim.—1. In a seat, the combination of a basic plate, a flexible strip E attached to the edge thereof, a strip G, substantially at right angles to the basic plate, attached to the flexible strip E, substantially as and for the purpose specified.

2. In a seat, the combination of a basic plate, a flexible strip attached to the side thereof, an elastic strip G, attached to said flexible strip and substantially at right angles to said plate, a welt and finishing-covering attached to said strip G, in the manner and substantially as and for the purpose specified.

3. As a new article of manufacture, a seat consisting of the combination of a thin basic plate, flexible elastic strips attached thereto by a flexible strip forming a hinge, said flexible strip, and an outer covering attached to said strip, substantially as and for the purpose specified.

653,711. CLOCK. SAMUEL P. THRASHER, New Haven, Conn. Filed Oct. 19, 1896. Serial No. 609,293. (No model.)

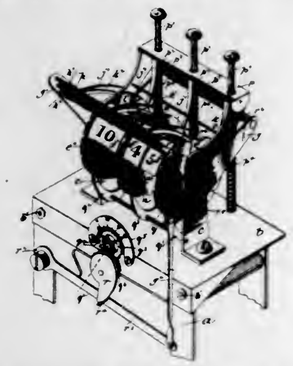
Claim.—1. In a time-indicating device, in combination, a tilting yoke, a movable time-indicator, a ratchet c' connected therewith, count-pawl l', shaft h^3, pawl k^3, a second movable time-indicator, a ratchet c^3 connected therewith, spring j' carried by said yoke and engaging the stationary check-bar o, substantially as and for the purposes described.

2. In a time-indicating device, provided with ratchets and spools carrying figures for indicating time, carrying-pawls with springs secured thereto and check-bar o adapted to engage said springs, substantially as and for the purposes described.

3. In a time-indicating device, provided with ratchets for rotating spools carrying figures for indicating the time of day, a check-bar o in combination with springs j' j', of the carrying-pawls, substantially as and for the purposes described.

4. In a time-indicating device in combination a rotating drum

carrying time-numerals, a movable ratchet attached to said drum, a pawl engaging said ratchet to move the same to a predetermined position, and a curved spring carried by said pawl and adapted to slidingly engage a relatively-stationary part to check said drum and ratchet in their movement and hold the same in said predetermined position.



5. In a time-indicating device in combination a movable time-indicator, a movable ratchet for actuating the same, a reciprocating pawl-carrier, a pawl carried thereby and engaging said ratchet to move the same to a predetermined position, a relatively-stationary portion, and a spring carried by said reciprocating pawl-carrier and adapted to slidingly engage said stationary portion to gradually check the movement of said pawl-carrier.

6. In a time-indicating device in combination, a movable time-indicator, a movable ratchet for actuating the same, a reciprocating pawl-carrier, a pawl carried thereby and engaging said ratchet to move the same to a predetermined position, a relatively-stationary portion, and a spring carried by said reciprocating pawl-carrier and adapted to slidingly engage said stationary portion to gradually check the movement of said pawl-carrier, said spring being normally out of engagement with said stationary portion.

7. In a time-indicating device in combination, a movable time-indicator, a movable ratchet for actuating the same, a reciprocating pawl-carrier, a pawl carried thereby and engaging said ratchet to move the same to a predetermined position, a weight to move said pawl-carrier, a relatively-stationary portion, and a spring carried by said reciprocating pawl-carrier and adapted to slidingly engage said stationary portion to gradually check the movement of said pawl-carrier.

8. In a time-indicating device in combination, a clock-face having an opening therein, a single stationary and curved seconds-scale showing through and of substantially the same length as that of said opening, a plurality of seconds-hands fixed with relation to each other and spaced apart the length of said scale, said hands being located so as to move behind said face and in front of said scale, and means to move the same successively over said scale.

9. In a time-indicating device in combination, a plurality of drums having time-numerals on the faces thereof, a clock through the face of which the numerals on said drums show successively, a ratchet for each of said drums, a tilting yoke, a pair of rock-rods carried by said yoke, each of the same having a pawl said pawls adapted to engage said ratchets, and a device attached to one of said rods to keep the pawl for the other ratchet out of engagement with the ratchet on said other drum.

10. In a time-indicating device in combination, a plurality of drums having time-numerals on the faces thereof, a clock through the face of which the numerals on said drums show successively, a ratchet fixed to each of said drums, a tilting yoke, a pair of rock-rods carried by said yoke each of the same having a pawl said pawls adapted to engage said ratchets, and a device attached to one of said rods to keep the pawl for the other ratchet out of engagement with the ratchet on said other drum, and a curved spring carried by said yoke adapted to come into contact with the stationary part to check the movement of said yoke.

653,712. CLOCK. SAMUEL P. THRASHER, New Haven, Conn. Filed Mar. 6, 1897. Serial No. 626,216. (No model.)

Claim.—1. In a time-indicating device, in combination with the stop-arm 3, a vertically-disposed rod 1 having said arm 3 secured thereto and being provided with means for oscillating the same at will to prevent the device from striking, substantially as and for the purposes described.

2. In a time-indicating device, in combination with the vertical rod 1, provided with the stop-arm 3, an oscillating lever 4, slot 7 and recesses therein, when constructed and operated substantially as and for the purposes described.



3. In a time-indicating device, in combination with a releasing-dog *s*, a vertical rod 8 having its upper end adapted to engage the dog in striking the clock and being provided at its lower end with the forward-extending arm 10 whereby the same may be operated from the front of the clock, substantially as and for the purposes described.

4. In a time-indicating device, in combination with the vertical rod 8 and projecting arm 10, the slot 12 arranged and adapted to hold the forward end and limit the motion thereof in its upward and downward direction, substantially as and for the purposes described.

5. In a time-indicating device, the vertical rods 8 and 1 provided with means respectively at their upper ends for engaging the upward-extending arm *r* and each provided at its lower end with a lever, as 4 and 10, extending to the front of the time-movement, substantially as and for the purposes described.

6. In a time-indicating device, the detachable plate 6 secured to the bottom of the movement and provided with the horizontal and recessed slot 7 and the vertical slot 12, when used in the manner and for the purposes described.

7. In a time-indicating device in combination, a rotating drum carrying time-numerals, striking mechanism, a count-wheel for said striking mechanism for regulating the number of strokes, a shaft connected with said striking mechanism and rotated thereby, a wheel on said shaft having an inclined locking notch therein, a two-armed lever one of said arms engaging the inclined face of said locking-notch, the other of said arms being of a greater length than said first arm and adapted to fall by its own weight and release said other arm from said locking-notch, a catch to engage the end of said longer arm and hold said shorter arm in engagement with said locking-notch, and means on said drum to release said catch, said two-armed lever being adapted to rotate on its pivot and release said striking mechanism independently of the rotation of said drum.

8. In a time-indicating device in combination, a rotatable drum carrying time-numerals on its face, striking mechanism having a rotatable wheel, a two-armed lever *r*, *q*, engaging a stop on said wheel to hold said striking mechanism from operation, a count-wheel *u* for regulating the number of strokes, said arm *r* being longer than said arm *q* and extending substantially vertically to a point near said drum, a catch for engaging the end of said arm and a projection from said catch adapted to be engaged by a part on said drum to release said catch, said lever being adapted to rotate on its pivot when released from said catch and operate said striking mechanism independently of the movement of said drum.

9. In a time-indicating device in combination, a rotating drum carrying time-numerals, striking mechanism operative independently of the movement of said drum, a count-wheel *u* for regulating the number of strokes, a wheel rotated by the operation of said striking mechanism said wheel having an inclined-faced locking-notch *o*, a two-armed pivoted lever one of the arms of which engages said notch to hold said striking mechanism and the other arm of which is longer than said first arm and extends substantially vertically to a point near said drum, said longer arm adapted to fall by its own weight when released and move said shorter arm out of said notch, a detent *s* to engage the upper end of said longer arm and a projection *v* from said detent engaged by another projection on said drum to release said detent, an arm *t* engaging said count-wheel *u* and moved by the movement of said lever out of engagement with said wheel.

10. In a time-indicating device in combination a clock-face having a semicircular opening therein, a single stationary and curved seconds-scale showing therethrough in a half-circle of substantially the same length as said opening, the lower edge of said opening being substantially horizontal, and a pair of oppositely-pointing seconds-hands located so as to move behind said clock-face but in front of said scale and fixed on a seconds-shaft, and means to intermittently rotate said seconds-shaft to move each of said seconds-hands successively over the full length of said scale.

11. In a time-indicating device in combination, a movable time-indicator, a ratchet connected with the same, a pawl to engage said ratchet, a reciprocating carrier for said pawl, means to move said carrier in one direction until said pawl engages said ratchet and to release said carrier, and a weight unattached to said carrier but connected therewith and adapted to fall and move said carrier-pawl and time-indicator in the opposite direction.

12. In a time-indicating device in combination, a movable time-indicator, a ratchet connected with the same, a pawl to engage said ratchet, a reciprocating carrier for said pawl, a pivoted lever connected with said carrier, a clock-movement and means controlled by said clock-movement to move said lever downward and release said carrier, a weight connected with said lever and adapted to fall and return said lever and thereby move said carrier-pawl and time-indicator in the opposite direction.

13. In a time-indicating device in combination, a rotatable numeral-carrying time-indicator, a ratchet connected with the same, a pawl to engage said ratchet and a reciprocating carrier for said pawl a pivoted lever having two arms one of which is connected with said carrier to reciprocate the same and the other of which carries a weight, a clock-movement and a cam operated thereby and connected with said lever to tilt the same thereby raising said weight and moving said carrier in one direction until said pawl engages said ratchet, said cam adapted to then release the same thereby allowing said weight to fall and return said lever, carrier, and time-indicator in the opposite direction.

658,718. ELECTRIC CLOCK. SAMUEL P. THRASHER, New Haven, Conn. Filed Jan. 14, 1899. Serial No. 702,155. (No model.)



Claim.—1. In combination, a swinging pendulum, a weight, and a portion moved longitudinally of said pendulum by the fall of said weight and adapted to contact with said pendulum to transmit the force of the fall of said weight to the side of said pendulum with a gradually-increasing effect, a separable catch to hold said weight from falling during the normal swings of said pendulum, and means operated by said pendulum to automatically separate the parts of said catch and release said weight when the length of the arc of vibration of said pendulum diminishes to a certain point.

2. In combination, a swinging pendulum, a weight, an arm moved upward against said pendulum by the fall of said weight to transmit an impulse in the direction of the length of said pendulum and adapted to contact with said pendulum to transmit the force of the fall of said weight to the side of said pendulum, a separable catch to hold said weight, and means operated by said pendulum to automatically separate the parts of said catch and release said weight when the length of the arc of vibration of said pendulum diminishes to a certain point.

3 In combination a swinging pendulum, a weight, an arm moved upward, by the fall of said weight, against said pendulum to transmit an impulse in a direction of the length of said pendulum and adapted to continue in contact with said pendulum as said pendulum moves away to transmit the force of the fall of said weight to the side of said pendulum, a separable catch to hold said weight, and means operated by said pendulum to automatically separate the parts of said catch and release said weight when the length of the arc of vibration of said pendulum diminishes to a certain point.

4. In combination a swinging pendulum, a pivoted arm carrying a weight, means to hold said arm and weight above the pivot of said arm and in a position approaching the vertical, a portion moved against the side of said pendulum by the fall of said weight to give an impulse thereto and means operated by said pendulum to automatically release said weight as the length of the arc of vibration of said pendulum decreases to a certain point and allow said arm to fall toward a horizontal position, thereby transmitting the gradually-increasing effect of the fall of said weight to said pendulum.

5. In combination, a swinging pendulum, a pivoted arm carrying a weight, means to hold said arm and weight above the pivot of said arm and in a position approaching the vertical, a second arm moved against the bottom and then gradually against the side of said pendulum by the fall of said weight to give an impulse thereto, and means operated by the said pendulum to automatically release said weight as the length of the arc of vibration of said pendulum decreases to a certain point and allow said weighted arm to fall toward a horizontal position, thereby transmitting a gradually-increasing effect of the fall of said weight to said pendulum.

6. In combination, a swinging pendulum, a weight, means to transmit the force of the fall of said weight against said pendulum, first in the direction of its length and then gradually against the side thereof, means to hold said weight and means operated by said pendulum to automatically release said weight and allow the same to expend its force against said pendulum as the length of the arc of vibration of said pendulum decreases to a certain point.

7. In combination a swinging pendulum, a weight, means to transmit the force of the fall of said weight against said pendulum first in the direction of its length and then gradually against the side thereof during the swinging of said pendulum in one direction, means to hold said weight, and means operated by said pendulum to automatically release said weight and allow the same to expend its force against said pendulum as the length of the arc of vibration of said pendulum decreases to a certain point.

8. In combination, a swinging pendulum, a weight carried by an arm, and a second arm moved by the fall of said weight to transmit the force of the fall of said weight against said pendulum first in the direction of its length and then gradually against the side thereof, a separable catch to hold said weight, and means carried by said pendulum to separate said catch and release said weight and allow the same to expend its force against said pendulum as the length of the arc of vibration of said pendulum decreases to a certain point.

9. In combination, a swinging pendulum, a weight adapted to fall and transmit the force thereof to the side of said pendulum, a normally-open electric circuit, an electromagnet in said circuit, means to hold said weight from falling during the normal swings of said pendulum and adapted to be automatically released by said pendulum when the length of the arc of vibration thereof decreases to a certain point, and means operated by the movement of said weight to close said circuit and energize said magnet and thereby raise said weight.

10. In combination, a swinging pendulum, a weight adapted to fall and transmit the force thereof to the side of said pendulum, a normally-open electric circuit, an electromagnet in said circuit, means to hold said weight from falling and adapted to be automatically released by said pendulum when the length of the arc of vibration thereof decreases to a certain point, a lever moved by the fall of said

weight, a cam moved by said magnet when energized and adapted to tilt said lever and decrease the effect of said cam through said lever as the effect of said magnet upon said cam increases, and means operated by the movement of said weight to close said circuit and energize said magnet and thereby raise said weight.

11. In combination, a swinging pendulum, a weight adapted to fall and transmit the force thereof to the side of said pendulum; a normally-open electric circuit, an electromagnet in said circuit, said magnet having a pivoted armature, said armature having a cam-face, a catch to hold said weight from falling and adapted to be automatically released by said pendulum when the length of the arc of vibration thereof decreases to a certain point, a pivoted lever to return said weight, said cam-face on said arm resting against said lever at a point on the same and adapted to move said lever and shift the point of contact therewith toward the pivot of said lever as the same continues to move to decrease the effect of said armature upon said weight as the effect of said magnet upon said armature increases.

12. In a time-indicating device in combination, a movable time-indicator, a ratchet connected with the same, a pawl to engage said ratchet, a weight pivoted and adapted to automatically exert a decreasing force to move said pawl in one direction thereby moving said time-indicator, said weight having a cam-face, a spring to engage said cam-face to add its force to the effect of said weight and decrease said force after the time-indicator starts to move, and means to retract said pawl and raise said weight for another operation.

13. In a time-indicating device in combination, a movable time-indicator, a ratchet connected with the same, a pawl to engage said ratchet, a weight pivoted and adapted to automatically exert a decreasing force to move said pawl in one direction thereby moving said time-indicator, said weight having a cam-face, a spring to engage said cam-face to add its force to the effect of said weight and decrease said force after the time-indicator starts to move, and a magnet to retract said pawl and raise said weight for another operation.

14. In a time-indicating device in combination, a movable time-indicator having a ratchet, a spring-actuated pawl having a slot therein engaging the said ratchet to prevent the rotation of said time-indicator in either direction, an electric circuit, a magnet in said circuit, a pivoted armature for said magnet carrying at one end a projection adapted to raise said pawl out of engagement with said ratchet, and automatic means to close said circuit and energize said magnet and move said time-indicator.

15. In combination, a movable time-indicator, means to intermittently rotate the same, a ratchet-stop on said indicator embracing a depression having a projection at one side thereof, a spring-pawl having an aperture therein adapted to drop over said projection and enter said depression thereby locking said indicator from movement in either direction, and means to automatically release said pawl from engagement therewith.

16. In a time-indicating device in combination, a swinging pendulum, a weight adapted to fall and transmit some of its power to the side of said pendulum, automatic means operated by said pendulum to release said weight when the arc of vibration of said pendulum decreases to a certain point, a normally-open electric circuit, a magnet in said circuit, a normally-open switch including a movable portion having a stop thereon and a part moved by the fall of said weight to strike said stop and move said arm and close said circuit thereby energizing said magnet and drawing said weight back to its normal position.

17. In a time-indicating device in combination, a pivoted rotating drum provided with a series of stop-notches, a relatively-stationary stop adapted to engage said notches successively, a fine-toothed ratchet-wheel connected with said drum to move the same, the number of teeth on said ratchet-wheel being greatly in excess of the number of stop-notches on said drum.

18. A drum provided with a series of stop-notches l'', l'' and a slotted locking-pawl l' adapted to engage with said notches.

19. In a time-indicating device in combination, a rotating drum provided with a ratchet-wheel, a pawl connected therewith, an electric circuit, an electromagnet in said circuit, means to close the circuit through said magnet to move said armature in one direction, and a weight raised by the movement of said armature said weight being connected with said pawl and adapted to fall and move said pawl in an opposite direction, said weight having a cam-face, and a leaf-spring pressing upon said cam-face.

20. In a time-indicating device in combination, a rotating drum, actuating mechanism therefor, a pivoted weight p, and a checking and recoil spring q, substantially as described.

21. In combination, a swinging pendulum, means to give an impulse thereto, and a portion moved longitudinally of said pendulum by said impelling means and adapted to contact with said pendulum to transmit the force of the impulse to the side of said pendulum with a gradually-increasing effect, a separable catch to hold said impelling means from operating against said pendulum during the normal swings of said pendulum, and means operated by said pendulum to automatically separate the parts of said catch and allow said impelling means to operate when the length of the arc of vibration of said pendulum diminishes to a certain point.

22. In a time-indicating device in combination, a pivoted weight p, a magnet, an armature for said magnet and a spring q carried by said armature and resting against said weight, substantially as described.

23. In combination, an electric circuit, an electromagnet in said circuit, an armature n, a movable time-indicator, a ratchet-wheel l to move the same, a carrying-pawl m and a stop y^2.

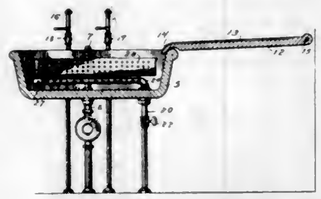
24. In a time-indicating device in combination, a movable time-indicator provided with locking-notches l'', l'', a slotted pawl l' and a releasing-arm r secured to the armature of an electromagnet.

25. In a time-indicating device in combination, an electric circuit, a switch, and an electromagnet in said circuit, a movable armature for said magnet, a pivoted lever, a connection from said armature contacting with said lever at a distance from its pivot, one of said contacting parts having a cam-face, means to automatically close said switch and circuit and energize said magnet, thereby moving said armature, connection and lever and shifting the point of contact with said lever toward the pivot thereof as the influence of said magnet on said armature increases, a rotating time-indicator carrying time-numerals thereon, a ratchet connected with same, a reciprocating pawl-carrier, a pawl carried thereby and adapted to engage said ratchet, means to retract said carrier, and a connection between said carrier and lever whereby said shifting of the point of contact on said lever decreases the effect which said lever has on said carrier.

26. In a time-indicating device in combination, a plurality of independently-rotatable numeral-carrying time-indicators, a clock-movement, a normally-open electric circuit, a motor in said circuit adapted to be connected with one of said rotatable time-indicators to move the latter, a switch moved by said clock-movement at regular intervals to close said circuit thereby energizing said motor and moving a part of said motor, said part of said motor being at that time unconnected with said time-indicator, and means operated by the further motion of said clock-movement to connect said part of said motor with said time-indicator to rotate the latter.

27. In a time-indicating device in combination, a plurality of independently-rotatable numeral-carrying drums, a clock-movement, a normally-open electric circuit, a motor in said circuit adapted to be connected with one of said rotatable drums to move the latter, a switch moved by said clock-movement at regular intervals to close said circuit thereby energizing said motor and moving a part of said motor, said part of said motor being at that time unconnected with said drum, and means operated by the further motion of said clock-movement to connect said part of said motor with said drum to rotate the latter.

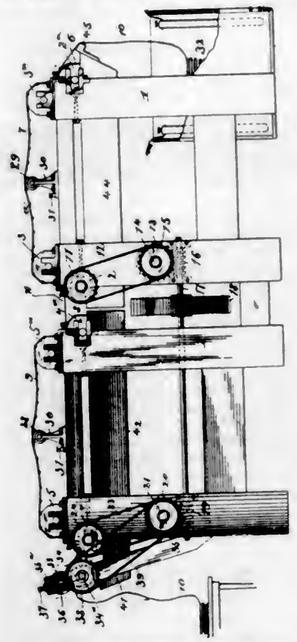
658,714. STERILIZING-SINK. LILLY W. THURMAN, Harrisburg, Pa. Filed Jan. 27, 1900. Serial No. 3,006. (No model.)



Claim.—1. The combination with a sink having water-supply and drain pipes, of steam-supply pipes leading thereinto through the bottom thereof, parallel steam-discharge pipes within the sink and connected with the supply-pipes at one end and connected to each other at their opposite ends, said discharge-pipes lying in a common horizontal plane and having radial discharge-openings, a support for the mutually-connected ends of the discharge-pipes, and a foraminous receptacle disposed upon and supported by the discharge-pipes to hold the articles to be treated in the discharged steam.

2. A sterilizing-sink adapted to hold water and having steam-supply pipes leading thereinto, parallel discharge-pipes within the sink and connected with the supply-pipes at one end and mutually connected at their opposite ends, said discharge-pipes having perforations, a support for the mutually-connected ends of the pipes, separate means for regulating the flow of steam through the supply-pipes, and a foraminous receptacle disposed upon and supported by the discharge-pipes for holding the articles to be treated.

658,715. APPARATUS FOR ELECTRICALLY TREATING FABRICS FOR WATERPROOFING OR OTHER PURPOSES. JEAN T. VAN GESTEL, New York, N. Y. Filed Nov. 1, 1898. Serial No. 695,181. (No model.)



Claim.—1. An apparatus, for electrically treating fabric to render it waterproof, consisting of a source of electric current, a bath provided with suitable electrodes, two frames or sections each provided with endless, traveling, conducting belts, the electrodes of the bath and the conducting-belts being arranged in parallel circuits or branches and each of said branches being provided with a graduated resistance substantially as and for the purpose set forth.

2. An apparatus, for electrically treating fabric to render it waterproof, consisting of a source of electric current, a bath provided with suitable electrodes, two frames or sections each provided with endless, traveling, conducting belts, the electrodes of bath and conducting-belts being arranged in parallel circuits or branches, and a pole-changing switch for reversing the current through said conducting-belts, substantially as and for the purpose set forth.

3. In an electrical waterproofing and shrinking apparatus the combination of a frame, a pair of coacting endless bands or aprons, one of which is composed of an oxidizable metal and the other being an electric conductor, means for supporting and operating said bands, a tank or receptacle to form a bath for the goods to be treated, and means for directing an electric current through said bath and through said bands when a moistened fabric is between them, substantially as described.

4. In an electrical waterproofing and shrinking apparatus the combination of a frame, a pair of coacting endless bands or aprons, one of which is composed of an oxidizable metal and the other being an electric conductor, means for supporting and operating said bands, one or more metal plates carried by said frame upon which one of said bands can slide, means for directing electric current through said plate or plates and the band in contact therewith, and means for completing the circuit through the other band, substantially as described.

5. In an electrical waterproofing and shrinking apparatus the combination of a frame, a pair of coacting endless bands or aprons, one of which is composed of an oxidizable metal and the other being an electric conductor, means for supporting and operating said bands, one or more metal plates upon which one of said bands can slide, a contact carried by said frame in electrical circuit with the other band, and means for directing current through said bands, plate and contact, substantially as described.

6. In an electrical waterproofing and shrinking apparatus the combination of a frame, a pair of coacting endless bands or aprons, one of which is composed of an oxidizable metal and the other being an electric conductor, means for supporting and operating said bands, one or more metal plates upon which one of said bands can slide, a metal roller carried by said frame to make electrical contact with the other band, and means for directing current through said bands, plate and roller, substantially as described.

7. In an electrical waterproofing and shrinking apparatus the combination of a frame, a pair of coacting endless bands or aprons, one of which is composed of an oxidizable metal and the other being an electric conductor, means for supporting and operating said bands, a plurality of metal plates carried by said frame in rectangular arrangement upon which one of said bands can slide and make electrical contact, a contact engaging the other band, and means for directing electric current through said plates, the bands and said contact, substantially as described.

8. In an electrical waterproofing and shrinking apparatus the combination of a frame, a pair of coacting endless bands or aprons, one of which is composed of an oxidizable metal and the other being an electric conductor, means for supporting and operating said bands a tank or receptacle for water into which one of said bands extends and through which it travels, and means for directing an electric current through said bands, substantially as described.

9. In an electrical waterproofing and shrinking apparatus the combination of a frame, a pair of coacting endless bands or aprons, one of which is composed of an oxidizable metal and the other being an electric conductor, means for supporting and operating said bands, a second pair of endless bands composed of similar materials, the oxidizable band of one pair being diagonally opposite the similar band of the other pair, means for supporting and operating the second-mentioned pair of bands, and means for directing electric current alternately through the pairs of bands, whereby fabric will be similarly treated on both sides in its passage through the apparatus, substantially as described.

10. In an electrical waterproofing and shrinking apparatus the combination of a frame, a pair of endless bands, means for supporting and operating them, one of said bands being of an oxidizable metal, means for directing electric current through said bands, a pair of squeezing-rollers to receive fabric from said bands, means for supporting and operating said rollers, a receptacle beneath one of said bands adapted to contain water to wash the band, a receptacle beneath said rollers, and a passage-way between said receptacles, substantially as described.

11. In an electrical waterproofing and shrinking apparatus the combination of a frame, two pairs of opposed bands, drums arranged in pairs and carrying said bands, means for directing electric current through each pair of bands, a sprocket-wheel connected with a drum of each pair of bands, a shaft carrying two worms, worm-wheels meshing therewith, sprocket connected with said wheels, chains connecting said sprocket-wheels with the sprocket-wheels of said drums, a pair of squeezing-rollers, a sprocket connected with one roller, a sprocket connected with one worm-wheel, and a chain connecting said sprocket with the sprocket of the roller, substantially as described.

12. In an electrical waterproofing and shrinking apparatus, the combination of a frame, drums supported thereby, endless bands, forming anodes and cathodes, supported on said drums, line-wires connected with a source of electricity, circuits, arranged in multiple arc, between said line-wires and passing through said endless bands, a rheostat and switch in each of said circuits and means for reversing the direction of the current on said line-wire, substantially as described.

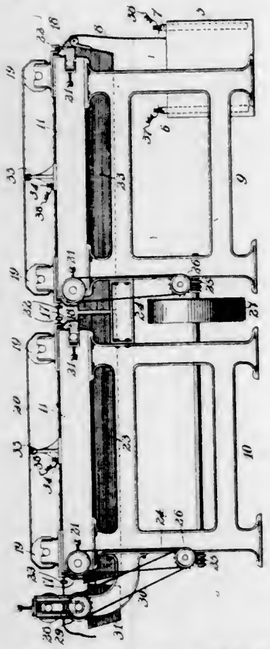
13. In an electrical waterproofing and shrinking apparatus, the combination of a tank, a frame, drums journaled in said frame, endless bands forming anodes and cathodes mounted on said drums, means for driving said drums, line-wires connected with a source of electricity, circuits, arranged in multiple arc, between said line-wires and passing through said bands and tank, a rheostat and switch in each of said circuits and means for reversing the direction of the current on the line-wires, substantially as described.

14. In an electrical waterproofing and shrinking apparatus, the combination of a frame, drums mounted on said frame, sets of endless bands, forming anodes and cathodes, mounted on said drums, metal plates on which one endless band of each set rests, line-wires connected with a source of electricity, circuits, arranged in multiple arc, between said line-wires and passing through said plates and bands, a rheostat and switch in each of said circuits and means for reversing the direction of the current on said line-wires, substantially as described.

658,716. PROCESS OF WATERPROOFING FABRICS. JEAN T. VAN GESTEL, New York, N. Y. Filed May 3, 1899. Serial No. 715,469. (No specimens.)

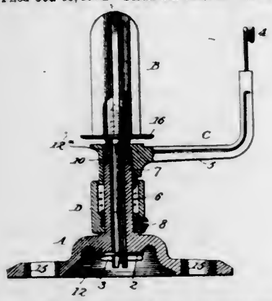
Claim.—1. The process of waterproofing fabric consisting in thoroughly impregnating in a bath a fabric with a soluble metallic salt capable of yielding an insoluble oxid upon electrolysis and then placing the wet fabric between non-oxidizable electrodes and passing an electric current through it, thereby producing from said salt an in-

soluble oxid in the interstices of the fabric, whereby the fabric is rendered waterproof.



2. The process of waterproofing fabric and fixing the dye therein, which consists in impregnating the fabric with metallic salt or salts, capable of yielding an insoluble oxid upon electrolysis by placing said fabric in a solution of said salt or salts and passing an electric current through the solution, and then removing the fabric from the solution and passing an electric current through the fabric.

653,717. TENSION FOR SEWING-MACHINES. SIMON W. WARDWELL, Jr., Boston, Mass., assignor to Joseph R. Leeson, same place. Filed Oct. 15, 1894. Serial No. 525,946. (No model.)



Claim.—1. The combination with a bobbin-holder, of a disk connected therewith, a bearing for said disk, a support for said bearing, means for carrying the disk to and from said bearing, and a thread-guide and spring connected with said means to shift the same from a normally-contacting position to an extent proportioned to the draft upon the thread, substantially as described.

2. The combination of a bobbin-holder, a discular bearing connected therewith, a stand having a fixed bearing-face for said discular bearing, of means for shifting the position of said discular bearing, and a spring and a thread-guide connected with said means, the parts arranged to insure a maximum frictional pressure when the tension on the thread is relaxed, substantially as described.

3. The combination of the holder, rod and disk, a stand having a bearing for said disk, means for elevating and depressing the rod and disk, and a thread-guide and a spring connected with said means, substantially as described.

4. The stand having a bearing 12, a bobbin-holder, a rod extending from said holder through the stand, a disk carried by said rod parallel to said bearing 12, a cam turning upon the stand and carrying said rod, a spring connected with the cam and stand, and a thread-guide connected to said cam, substantially as described.

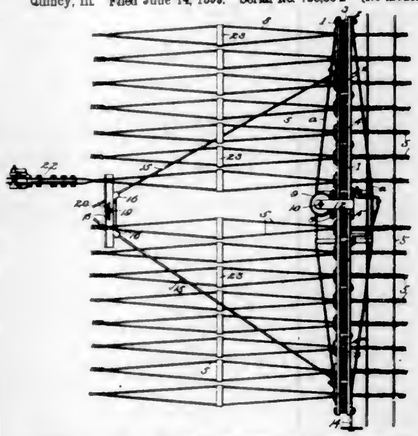
653,718. COP. SIMON W. WARDWELL, Jr., Providence, R. I. Filed Apr. 7, 1900. Serial No. 12,004. (No model.)



Claim.—1. A composite shuttle-cop consisting of a plurality of separate sections of continuous thread wound upon and supported by a single tube or holder, the core of the outer section at the delivery end of the cop connected with the outer layer of the succeeding section, and each section consisting of succeeding concentric layers each composed of crossed helices of thread, substantially as set forth.

2. A thread-package for use in loom-shuttles, comprising a tube or holder and a continuous thread wound in successive sections on and permanently supported by said holder, and each consisting of successive layers, each layer composed of crossed helices extending from end to end of its section and each parallel and close to the adjacent helices lying in the same direction, the thread at the core of the section at the delivery end of the cop connecting with that of the outer layer of the succeeding section, whereby the thread is delivered from the outside of each section and from the sections successively, substantially as set forth.

653,719. WIRE-FENCE MACHINE. GEORGE P. A. WEISENBORN, Quincy, Ill. Filed June 14, 1899. Serial No. 720,534. (No model.)



Claim.—1. In a wire-fence machine, the combination with the twister-head 4′ formed with the radial lug 4^{18} and the longitudinal lugs 4^{19} 4^{19}, of the bevel-gear 8, formed with recess 8′ and adapted to be secured to said head, substantially as shown and described.

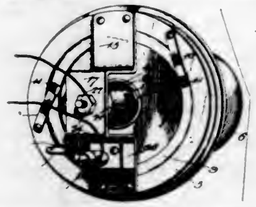
2. In a wire-fence machine, the combination with the parallel plates, the truss-braces and the bolts connecting the contiguous ends of said plates and braces, of the twister-heads journaled in said plates and means for rotating said heads, substantially as shown and described.

653,720. PENCIL-SHARPENER. ISAAC N. WEITZEL, Rochester, N. Y. Filed Feb. 28, 1900. Serial No. 6,856. (No model.)



Claim.—As an improved article of manufacture a pocket pencil-sharpener, consisting of a case closed at one end by a cap projecting beyond the periphery of the case and roughened, the opposite end of the said case being interiorly threaded, and a cutter-body conical in form of less length than said case and having a cutting-blade and a cylindrical exteriorly-threaded portion near its outer end engaging the interior threads of the case, and having a flange projecting beyond the periphery of said case and roughened, all substantially as herein shown and described.

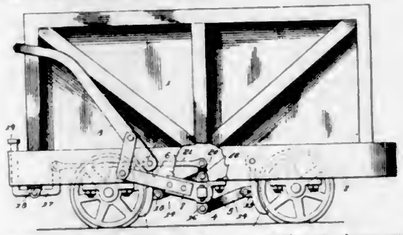
653,721. TELEPHONE-TRANSMITTER. JAMES L. WEST, Omaha, Nebr. Filed Mar. 8, 1900. Serial No. 7,896. (No model.)



Claim.—1. In a telephone-transmitter, the combination with a supporting-plate having a diaphragm mounted thereon, of an electrode movable with the diaphragm, a box held adjacent to the diaphragm, an electrode in the box, granular conductive material in the box and in contact with the electrodes, openings in the sides of the box having transparent closures, a cap for the box having an opening in which the first electrode operates, and an insulating-ring bridging the interspace between the first electrode and the sides of the box to prevent egress of the granular conductive material.

2. In a telephone-transmitter, the combination with a supporting-plate having a diaphragm mounted thereon, of an electrode movable with the diaphragm, a plate disposed diametrically of the supporting-plate, a box mounted on the last-named plate, an electrode in the box in operative relation to the first electrode, openings in the side of the box, a transparent lining for the box covering the openings, a cap for the box having an opening in which the first electrode operates, an insulating-ring clamped between the box and its cap, said ring closely encircling the first electrode to prevent egress between it and the box and a filling of granular conductive material for the box.

653,722. CAR-BRAKE. HOPKINS J. WILLIAMS and RACHEL MORGAN, administratrix of William Morgan, Nanticoke, Pa. Filed Mar. 16, 1900. Serial No. 8,905. (No model.)



Claim.—In a car-brake, the combination, with a wheel-supported car, of a shaft journaled transversely across the bottom thereof between the wheels, each end of which projects beyond the sides of the car and the intermediate portion is provided with two pairs of oppositely-extending arms and with a single arm, a bail-shaped lever pivotally secured to the sides of the car, the central portion of which extends beyond one end of the car, two arms secured to the ends of the shaft, a link for connecting the end of each arm with the bail-shaped lever adjacent to its pivotal point, brake-shoes suspended from the car, links for connecting the ends of the pairs of arms with the respective shoes, a substantially U-shaped foot-lever pivotally secured to the under side of the end of the car, the outer end of which projects beyond the end of the car under the bail-shaped lever, and a rod secured to the inner end of the foot-lever and to the single arm on the shaft.

653,723. PUMP FOR AUTOMATICALLY INFLATING PNEUMATIC TIRES. DANIEL WILLIAMSON, Sunbury, Pa. Filed May 17, 1900. Serial No. 17,019. (No model.)



Claim.—The combination with the frame of a vehicle, of a wheel journaled thereto and provided with a pneumatic tire, a pump carried by said wheel for inflating the tire, said pump being provided with a spring-actuated pump-rod the upper end of which is offset and is formed with a fork to engage the journal of the wheel and be guided thereby in its movement, a cross-head secured to the forked end of the pump-rod, and a cam-bracket adjustably secured to the frame of the vehicle and adapted to be moved in the path of movement of the cross-head, substantially as set forth.

653,724. FENCE-JOINING TOOL. JONATHAN F. WOOD, Clarksville, Tenn. Filed Mar. 23, 1900. Serial No. 9,951. (No model.)



Claim.—1. A tool for constructing wire fences and the like composed of line-wires or horizontal strands connected at intervals by stay-wires bent around the line-wires so as to form loops at the points of connection; the said tool comprising two members pivoted together intermediate their ends, each provided with a handle and a jaw on opposite sides of the pivot; one of said handles having an angular extension forming a handle arranged at an angle to the main portion thereof, and said jaws having registering grooves or recesses in their confronting faces adapted to embrace the line-wires, and a hook on one of the jaws adapted to engage the stay-wire and bend the same around the line-wire when the tool is rotated, and means for holding the jaws together, substantially as described.

2. A tool for constructing wire fences and for similar purposes, comprising two members pivoted together to provide a pair of jaws and handles on opposite sides of the pivot adapted to be brought together; said jaws having registering grooves or recesses in their confronting faces adapted to embrace a line-wire or strand so as to be rotatively supported thereon, and a simple hook-like projection on one of said jaws adapted to engage a stay-wire and bend the same around the line-wire forming a loop in the stay when the tool is revolved around the line-wire, substantially as described.

3. A tool for constructing wire fences composed of line-wires or horizontal strands connected at intervals by stay-wires bent around the line-wires so as to form loops at the points of connection; said tool consisting of two members pivoted together intermediate their ends, each having a series of recesses or notches therein concentric with said pivot and having shearing or cutting edges; the notches on opposite portions being adapted to register only when the jaws are open or separated, and grooves in the confronting faces of said jaws adapted to register when the latter are closed; one of the jaws having a hook thereon beyond the plane of the registering grooves therein extending at an angle to said grooves, substantially as described.

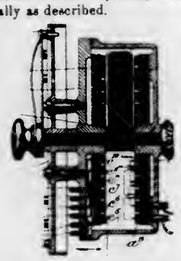
4. A tool for constructing wire fences and the like composed of line-wires or horizontal strands connected at intervals by stay-wires bent around the line-wires so as to form loops at the points of connection; said tool comprising two members each having a jaw and a handle and pivotally connected together intermediate their ends, said jaws having registering grooves in their confronting faces, and a simple hook or prong extending from one of said jaws at an angle to the grooves; one of said handles having an angular extension arranged at substantially right angles to the main portion; whereby the jaws of the tool are adapted to embrace a line wire and be rotated thereon while the hook is in engagement with one of the stay-wires for forming loops in the latter and bending it around the line-wire, substantially as described.

653,725. ELECTRIC MOTOR. DANIEL C. WOODWARD, Hartford, Conn. Filed Sept. 6, 1898. Serial No. 690,253. (No model.)

Claim.—1. An electric shunt-wound motor having a plurality of series of resistances interposed in the field-circuit, and means for placing said resistances successively in said circuit, substantially as described.

2. An electric motor, having its armature-windings and its field-windings independently connected to the source of current-supply, the armature being wound with a plurality of circuits, means for placing said circuits in series upon starting the motor, a resistance

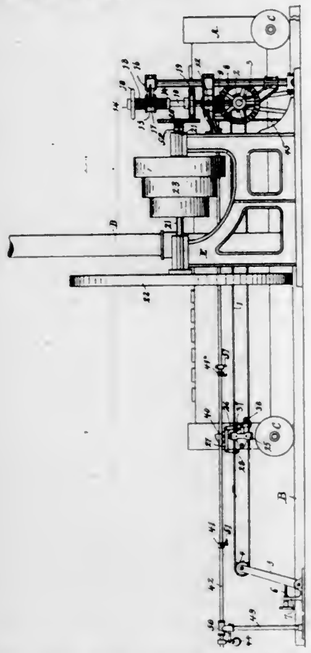
device, said resistance device being automatically placed in said series circuit upon starting the motor, means for thereafter cutting out said resistance device, and means for putting said armature-windings in parallel, substantially as described.



3. In a shunt-wound motor, an armature having a plurality of circuit-windings, field-windings, means to place said armature-windings at times in series and at other times in parallel, and a plurality of series of resistances interposed in the field-circuit, one of said series being greater than the other, the latter being introduced into the field-circuit when the said armature-windings are in series, and the former of said series being placed in the field-circuit when the said armature-windings are in parallel, substantially as described.

4 In a shunt-wound motor, an armature having a plurality of circuit-windings, field-windings, means to place said armature-windings at times in series and at other times in parallel, and at other times cutting out one of them, and a plurality of series of resistances interposed in the field-circuit, one of said series being introduced into the field-circuit when the said armature-windings are in series, and the other of said series of resistances being introduced into the field-circuit when the armature-windings are in parallel, and said resistances being cut out from the field-windings when one of said armature-windings is cut out, substantially as described.

653,726. MEANS FOR OPERATING ABRADING OR POLISHING MACHINES. CHARLES S. YARNELL, Minneapolis, Minn., assignor to the Moore Carving Machine Company, same place. Filed Feb. 3, 1900. Serial No. 4,436. (No model.)



Claim.—1. In a machine of the class described, a reciprocable material-holding table, a traveling endless chain, a bolt slidable endwise in bearings fixed on the table adapted to be shifted into engagement severally with the reversely-running lines of the chain, a bell-crank lever articulating with the bolt adapted to throw the bolt, and a tumble-bob adapted after lost motion to engage the bell-crank and throw the bolt.

2. In a machine of the class described, a reciprocable material-holding table, a traveling endless chain, a bolt slidable endwise in fixed bearings on the table adapted to be shifted into engagement severally with the reversely-running lines of the chain, a bell-crank lever articulating with the bolt adapted to throw the bolt, a tumble-bob adapted after lost motion to engage the bell-crank and throw the bolt, and adjustable stops in the path of a pin on the tumble-bob adapted as the table advances to engage the tumble-bob and throw it over its center.

3. The combination with a reciprocable material-holding table, of an adjacent horizontally-disposed traveling endless chain, a shiftable dog on the table adapted to engage severally the reversely-traveling lines of the chain, a bell-crank adapted to shift the dog, a rock-shaft 28 mounted on the table, a crank thereon, and a link connecting the shaft-crank to an arm of the bell-crank, and a swinging foot-lever connected to and adapted to oscillate the rock-shaft.

4. The combination with a reciprocable material-holding table, of an adjacent horizontally-disposed traveling endless chain, a shiftable dog on the table adapted to engage severally the reversely-traveling lines of the chain or to be thrown out of engagement with the chain, a bell-crank adapted to shift the dog, a rock-shaft 28 mounted on the table, a crank-arm on the shaft, and a link connecting the shaft crank-arm to an arm of the bell-crank, a swinging foot-lever connected to and adapted to oscillate the rock-shaft, and a weight-controlled latch on the foot-lever adapted to lock the foot-lever in medial position and hold the dog in corresponding medial position out of engagement with said chain.

5. In a machine of the class described, a reciprocable material-holding table, a traveling endless chain, a bolt slidable endwise in bearings fixed on the table adapted to be shifted into engagement severally with the reversely-running lines of the chain, a bell-crank lever articulating with the bolt adapted to throw the bolt, a tumble-bob adapted after lost motion to engage the bell-crank and throw the bolt, a rock-shaft 42 parallel with and adjacent to the path of travel of the table, stops on the rock-shaft adapted to engage and throw over the tumble-bob, and means for oscillating the rock-shaft.

6. In a machine of the class described, the combination with a reciprocable material-holding table and a traveling endless chain to which the table is adapted to be clutched and by which it is reciprocated, of a shaft on which the chain runs and by which it is driven, an intermediate shaft 10 geared to the chain-driving shaft, a main driving-shaft 21 and a speed-pulley whereby the reciprocation or feed of the table may be varied.

7. In a machine of the class described, the combination with a reciprocable material-holding table, and a traveling endless chain to which the table is adapted to be clutched and by which it is reciprocated, of a shaft on which the chain runs and by which it is driven, an intermediate shaft 10, a pinion splined on the intermediate shaft and supported and rotatable in a non-revoluble frame-support and meshing with the chain-shaft, and a driving-shaft geared adjustably to the intermediate shaft.

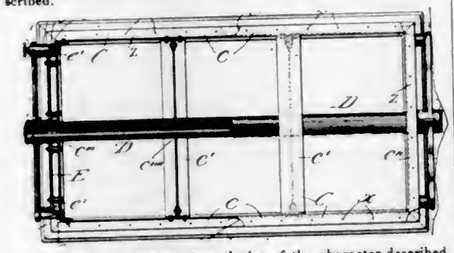
8. In a machine of the class described, the combination with a traveling endless table-reciprocating chain, of a chain-driving shaft, an intermediate shaft, a pinion splined thereon and meshing with the chain-driving shaft a main driving-shaft, a disk, a wheel on the intermediate shaft gearing frictionally with the disk on the main shaft, and means for shifting the intermediate shaft to change the contact of the wheel thereon on the disk nearer to or farther from the axis of the disk.

9. In a machine of the class described, the combination with a main driving-shaft and a disk, of an intermediate shaft, a pinion splined thereon, a wheel contacting frictionally with the disk on the main driving-shaft, an exteriorly-screw-threaded sleeve-box in which the intermediate shaft has a bearing between collars fixed thereon, and a nut supported on the frame in which the sleeve-box is supported adjustably.

658,727. COMBINED POOL AND BILLIARD TABLE. JOSEPH ZENTNER, St. Louis, Mo., assignor of one-half to Oliver J. Funsch, same place. Filed July 24, 1899. Serial No. 724,928. (No model.)

Claim.—1. The combination with suitable standards, of a metallic frame, a tube secured in said frame, the ends of said tube finding bearings in said standards, a nut on at least one end of said tube for coöperating with the standards to lock the frame in its adjusted positions, a pool-table secured to one side of the frame, and a billiard-table secured to the other side of said frame; substantially as described.

2. The combination with standards, of a rectangular frame formed of commercially-rolled metal of channel or I beam cross-section, a tube secured in said frame, the ends of which project beyond the frame and serve as trunnions for coöperating with the standards, castings secured to two of the parallel members of said rectangular frame, means arranged on at least one projecting end of the tube for preventing the rotation of said frame by clamping the same to a standard, and conical openings formed in said castings designed to register with conical openings formed in said standards, and a conical plug for coöperating with said registering openings for holding the table or tables and their carried parts in a horizontal position; substantially as described.

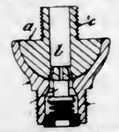


3. In a locking means for a device of the character described, the same consisting of a suitable standard or support, of a rotatory element mounted therein, said standard or support being provided with a conical bore, and said rotatory element being provided with a conical bore, which last-mentioned conical bore, when said rotatory element is in a given position, is in axial alinement with the conical bore of said standard or support, said rotatory element being also formed with a screw-threaded hole, which screw-threaded hole is in axial alinement with the conical bore formed in said element, a conical plug for coöperating with the conical bore formed in the standard or support, and the conical bore of the rotary element, and a screw-threaded portion formed on one end of said conical plug for engaging the screw-threaded hole in said rotatory element; substantially as and for the purpose specified.

4. In a combined pool and billiard table, the combination of supporting-standards, a reversible metallic frame journaled on said standards, and constructed with U side and end beams, transverse I-beam braces secured to the side U-beams, a tubular shaft passing through the end and brace beams and constituting the journals for the frame, a casting E secured to one end U-beam between its parallel flanges, and a conical locking-plug adapted to enter alined conical openings in one standard and said casting, substantially as described.

5. In a game apparatus, the combination with suitable standards, of a frame journaled therein, said frame composed of commercially-rolled beams joined by suitable connection-plates and also including commercially-rolled strengthening-beams intermediate the end beams and secured to the side beams by suitable connection-plates, a continuous tubular shaft which passes through alining openings in the end and strengthening-beams, the ends of said shaft being received in said standards and forming a pivotal support for said frame, a billiard-table secured to one side of said frame, a pool-table secured to the other side of said frame, cushioning-strips interposed between the beds of said tables and the frame, and means for locking said frame in either of its two positions; substantially as described.

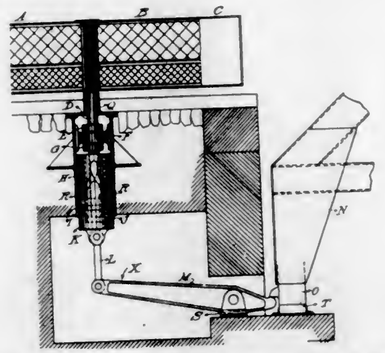
658,728. CUP-AND-BALL JOINT. EDMUND D. BURKITT, London, England. Filed Jan. 31, 1899. Serial No. 704,014. (No model.)



Claim.—In joints of the class herein described in combination, a cup in connection with the gas supply a spring-valve carried in said cup and having a projection into the interior, a ball having perforations and in connection with the outlet, said ball and outlet branch or parts being of sufficient weight to depress the spring-valve aforesaid and allow of the passage of the gas to the outlet or point of consumption, said cup and ball being adapted to fit one another sufficiently tight for the prevention of the escape of gas, substantially as described and illustrated herein and for the purpose set forth.

658,729. GATE FOR DRAWBRIDGES. JOHN P. COWING, Cleveland, Ohio. Filed Jan. 8, 1900. Serial No. 687. (No model.)

Claim.—1. A bridge-gate comprising parts A and B; a shaft D carrying the gates; a movable cylinder K containing spiral grooves R; a connecting-lever L, and a pivoted lever M, with mechaniem operating in conjunction with the opening and closing of a drawbridge, to impart a rotary motion to the said shaft D before the opening movement of the bridge which will cause said gates to close across the roadway of the bridge, and to impart a rotary motion to said shaft D after the closing movement of the bridge is completed, which will cause the gates to open the roadway of the bridge, substantially as shown and described.



2. In a drawbridge-gate the combination of a shaft D, mounted to turn in fixed bearings E, F, G: a gate carried by said shaft; a movable cylinder K containing spiral grooves; friction-rollers projecting from lower end of shaft D; a pivoted lever M; a connection between lever M and movable cylinder K and arranged to be operated from the mechanism of a swing-bridge to automatically operate the said lever prior to the opening movement and after the closing movement thereof is completed, substantially as shown and described.

3. In a drawbridge-gate, the combination of a shaft carrying gates, mounted to turn in bearings E, F, G, and having at its lower end rollers revolving on trunnions and rolling in spiral grooves R, in moving cylinder K, which imparts a rotary motion to the shaft when the cylinder K is moved up or down, and to close or open the gates, substantially as shown and described.

4. In a drawbridge-gate, the combination of a shaft mounted to turn in fixed bearings, a gate carried by said shaft; a movable cylinder provided with a spiral groove to receive a projection at the lower end of said shaft; a lever having one end extending into and under the path of a movable part O of a drawbridge mechanism and a link connecting the other end of the lever with said moving cylinder, substantially as shown and described.

5. A bridge-gate, comprising a gate having a shaft mounted to turn in fixed bearings, and having at its lower end friction-rollers journaled on projections from said shaft; a moving cylinder having a spiral groove which imparts a rotary motion to the said shaft, and a fixed cylinder H, with keyways to receive keys P, which causes the moving cylinder to slide in the fixed cylinder without rotating.

6. A bridge-gate, comprising a gate having a shaft mounted to turn in fixed bearing F having an upper portion E fastened to the shaft and a lower portion G fastened to the shaft and each provided with ball-races between which are interposed antifriction-balls journaled on projections from said shaft; a moving cylinder having a spiral groove which imparts a rotary motion to the said shaft, and a fixed cylinder H with keyways to receive keys P which causes the moving cylinder to slide in the fixed cylinder without rotating.

658,730. TELEPHONE-TRANSMITTER ARM. JAMES F. CRAVEN Pittsburg, Pa. Filed Mar. 22, 1900. Serial No. 9,741. (No model.)

Claim.—1. A transmitter-arm comprising two conducting members lying side by side and having their meeting faces conforming to each other to form a single arm, means for uniting said members and suitable insulation between the meeting faces of said members.

2. A transmitter-arm comprising two conductor members connected directly to and insulated from each other, and a non-conducting disk secured to and uniting the outer ends of said members.

3. A transmitter-arm comprising two shell-like conducting members connected directly to and insulated from each other, thereby forming a hollow transmitter-arm.

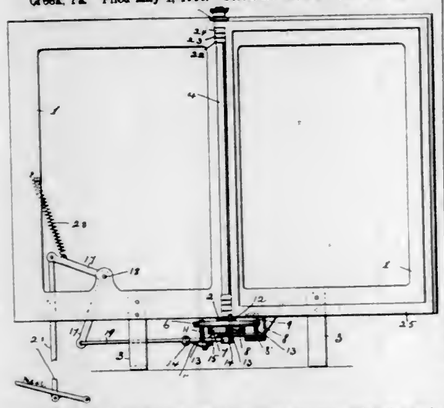
4. A transmitter-arm comprising two shell-like conducting members having their meeting edges conforming to each other to form a single hollow arm, means for uniting said members and suitable insulation between the meeting edges of said members.

5. A transmitter-arm comprising two conducting members connected directly to and insulated from each other, and an insulated supporting-plate connected to one of said members.



6. A transmitter-arm comprising two conducting members connected directly to and insulated from each other and a metal supporting-plate connected to and insulated from one of said members

653,731. MUSIC-LEAF TURNER. STEWART CUNNINGHAM, Turtle Creek, Pa. Filed May 1, 1900. Serial No. 15,043. (No model.)



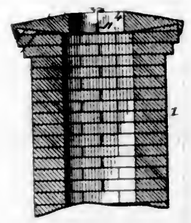
Claim.—In a music-leaf turner, the combination with the main frame having an upright rod arranged at its center with leaf-turning frames loosely mounted thereon, of the disk and ratchet fixed to the lower end of said rod, the spring-actuated pins carried by said disk, the openings formed within the lower edge of said leaf-turning frames to engage the tops of said pins, the plate fixed to the lower edge of said main frame to engage the lower ends of said pins, a lever loosely secured to the end of said rod beneath the ratchet-wheel, a spring-actuated pawl carried by said lever to engage the teeth of said ratchet-wheel, a bell-crank pivotally secured to said main frame, a rod connecting the one end of said bell-crank with the pawl-lever, a rod connecting the other end of said crank with a foot-pedal, and a spring 20 connected to the pedal-rod end of said crank and the frame, all arranged and combined to operate as shown and set forth.

653,732. FLUE OR CHIMNEY CAP. FREDRICK FICKENSCHER, Lock Haven, Pa. Filed Apr. 21, 1900. Serial No. 13,750. (No model.)

Claim.—1. The combination with a flue or chimney, of an open cap therefor, provided with flanges at its sides which embrace the sides of the chimney and having its bottom inclined upwardly from the center of the cap, and mortar or cement interposed between the inclined bottom and the top of the chimney.

2. A chimney or flue cap comprising sections placed end to end in continuation of each other and at their meeting edges provided with a connection consisting of a rib on one section and a flange on the other section which takes over and locks with the rib, thereby locking the sections together against relative displacement.

3. A chimney or flue cap comprising sections, each of which has an inclined top and flanges at its sides which embrace the sides of the chimney and also provided with a cut-out portion at its center, said sections being placed together, end to end, in continuation of each other and one of which is provided with ribs on its top and on opposite sides of the cut-out portion and the other section having flanges arranged similarly to the ribs and taking over and locking therewith, whereby the sections are held together and their joint protected from moisture.



653,788. LEAD-PENCIL. PAUL A. HAGY, Reading, Pa. Filed Feb. 7, 1900. Serial No. 4,313. (No model.)



Claim.—1. An improved lead-pencil, comprising a body made up of sections relatively slidable with respect to each other and having a bore, a lead or graphite strip slidable in said bore and unsecured to the body-sections, and means for operating said lead in an advancing movement by the sliding movement of one of said body-sections with relation to the lead.

2. An improved lead-pencil, comprising the body made up of sections relatively slidable with respect to each other and having a bore, a lead or graphite strip slidably operating in said bore, and means contained within the bore in rear of said lead or graphite and operating to advance the latter, said means having an operative connection with the slidable body-sections.

3. An improved pencil, comprising a body made up of sections relatively slidable with respect to each other and having a bore, a lead or graphite strip slidably mounted in said bore, and means carried by one of said sliding body-sections and projecting therefrom into engagement with the lead.

4. An improved lead-pencil comprising a body made up of sections relatively slidable with respect to each other and having a bore, a lead or a graphite strip slidable in said bore, and unsecured to the body-sections, means for operating said lead in advancing movement by the sliding movement of one of said body-sections with relation to the lead, and means for retaining the lead in advanced position independent of the return movement of said slidable body member.

5. In a lead-pencil of the class described, a body formed of bi-sections slidably mounted and connected by a dovetail joint the baseline of which intersects the bore for the lead or graphite; and means whereby the lead or graphite may be moved by said slidable sections.

6. In a lead-pencil of the class described, a body formed of bi-sections having a relative sliding movement with respect to each other and connected by a longitudinal dovetail joint, each of said sections having a semi groove or bore whereby the bore for the lead or graphite is formed and the base of said dovetail connection intersects a transverse plane comprised within said bore, and means whereby the lead or graphite may be moved by said slidable sections, substantially as and for the purpose set forth.

7. An improved lead-pencil, comprising a body formed of sections relatively slidable with respect to each other and having a bore, a lead or graphite strip mounted in said bore, and means intervening the two slidable sections and adapted to alternately engage said slidable body-sections and carry said lead in its advancing movement.

8. An improved lead-pencil, comprising a body formed of sections relatively slidable with respect to each other and having a bore, a lead slidably mounted within said bore, means contained within said bore and adapted to be operated by said sliding body-sections to advance the lead, and means for guiding said advancing means in its operative travel within the bore.

9. An improved lead-pencil, comprising a body formed of sections relatively slidable with respect to each other and having a bore, a lead or strip of graphite slidably mounted in said bore, said sections having longitudinal guide-grooves on their interiors and intersecting said bore, and a device operating in said bore in an advancing movement by action of said sliding body members and projecting within said grooves and guided thereby.

10. An improved lead-pencil, comprising a body formed of sections relatively slidable with respect to each other and having a bore, a lead or graphite strip slidably mounted in said bore, and a spring device arranged within the bore and alternately engaging said slidable body-sections in a series of steps for the advancement of the lead.

11. An improved lead-pencil, comprising a body formed of sections relatively slidable with respect to each other, a lead or graphite strip inclosed by said sections and operatively slidable within the same, and independent means bearing against said lead and engaging the sliding sections in a series of steps corresponding to the successive sliding movement of said sections.

12. An improved lead-pencil, comprising a body formed of sections relatively slidable and reciprocating with respect to each other and having a bore, a lead or graphite strip having a slidable operative movement within said bore, and a device bearing against the lead and having divergent engaging means adapted to engage the reciprocating body-sections on their advancing stroke and to release the same on their return stroke.

13. An improved pencil, comprising a body formed of sections relatively slidable with respect to each other and having a bore, a lead or graphite strip slidably mounted in said bore and a spring-clip mounted in said bore in rear of the lead and having divergent arms adapted to alternately engage the slidable body-sections, substantially as and for the purpose set forth.

14. An improved pencil, comprising a body formed of sections relatively slidable with respect to each other and having a bore and guideways, a lead or graphite strip slidably mounted in said bore, a spring-clip having arms adapted to engage said sliding sections in their advancing sliding movement, and entering said guideways.

15. An improved pencil, comprising a body made up of sections relatively slidable with respect to each other and having a bore, a lead or graphite strip slidably mounted in said bore, said sections being provided with guide-grooves which intersect said bore, and a spring-clip arranged in the bore and rearwardly of the lead and having arms adapted to engage the body-sections and received by and guided in said grooves.

16. An improved pencil, comprising a body made up of sections relatively slidable and reciprocating with respect to each other and having a bore, a lead or graphite strip slidably mounted in said bore, means for advancing said lead in the outward movement of the reciprocating body-section, and means for limiting the return stroke of said reciprocating body-section with respect to the normal relative position of said body-section.

17. An improved lead-pencil, comprising a body formed of bi-sections relatively slidable with respect to each other and having a bore, the upper body-section having a reciprocating movement, a lead or graphite strip slidably mounted in said bore, means carried in the bore and operated on the advancing stroke of said reciprocating body-section to advance the lead, and means carried by the under section to limit the return stroke of said reciprocating body-section at its normal position.

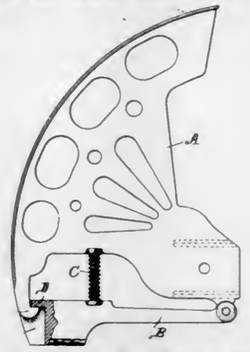
18. An improved lead-pencil, comprising a body formed of sections relatively slidable with respect to each other and having a bore, a lead or graphite strip slidably mounted within said bore, means for advancing the lead by the sliding action of the body-section, and means carried by said body-section for conjointly closing said bore and limiting the return stroke of the sliding body-section.

19. An improved pencil, comprising a body formed of sections slidable with respect to each other and having a bore, a lead or graphite strip slidably mounted in said bore, means contained within the bore and operated by the slidable body-section in its advancing movement to advance the lead, and means carried by the body-section for partially closing and partially cleaning the bore during the sliding movement, substantially as shown and described.

20. In a pencil of the class described, a body formed of longitudinal bisections slidably mounted with respect to each other and having a bore, and means for retaining said relatively-sliding body-sections in connection during their sliding movement, in combination with a lead or graphite strip slidably mounted in said bore and normally retained by frictional pressure between said body-sections by action of the connection means, and means for advancing said lead against its frictional resistance by the sliding action of the body-sections.

21. As an improved article of manufacture, a lead-pencil having its body formed of longitudinal bisections relatively slidable with respect to each other and forming conjointly a longitudinal bore, the front end of said body being pointed or tapered, a lead or graphite strip slidably mounted within said bore, means contained within the bore and bearing against the lead strip, means for engaging and moving said latter means by the advance movement of the sliding body-sections.

653,734. FEEDER FOR PRESSES. WATSON M. HOLMES, Boston, Mass., assignor to the Planters Compress Company, of West Virginia. Filed Aug. 24, 1899. Serial No. 728,286. (No model.)



Claim.—1. In a machine for compressing fibrous material, a feeder having an under section pivoted to it at one end and a spring interposed between said section and feeder whereby the former is permitted to yield in an upward direction toward said feeder: substantially as and for the purpose set forth.

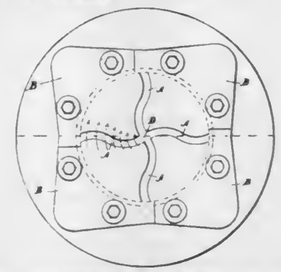
2. In a machine for compressing fibrous material, a feeder having an under section pivoted to it and a spring interposed between the free end of said section and the feeder whereby said feeder may be yieldingly advanced to its work: substantially as and for the purpose set forth.

3. In a machine of the class described for compressing fibrous material, a feed-plate having a length corresponding approximately to the length of the slot in which the material is to be fed, and having a lower section pivoted thereto at one end and otherwise free to move upward toward the main body of the feed-plate and a spring interposed between said section and feed-plate whereby the latter may be yieldingly advanced to its work: substantially as and for the purpose set forth.

4. In a machine for compressing fibrous material, a feeder having a foot pivoted at one end thereto and guided thereon at its other end, with an interposed spring; substantially as and for the purpose set forth.

5. In a machine for compressing fibrous material, a feeder having a foot movable with reference thereto, an interposed spring, a guideway, and a stop to limit the downward movement of the foot; substantially as and for the purpose set forth.

653,785. APPARATUS FOR COMPRESSING FIBROUS OR OTHER MATERIAL. WATSON M. HOLMES, Hoosick Falls, N. Y., assignor to the Planters Compress Company, Boston, Mass. Filed Mar. 8, 1900. Serial No. 7,775. (No model.)



Claim.—1. In a machine of the class described, a chamber, a head-plate or cap for one end thereof, said head-plate or cap provided with one or more slots, said slots extending to the center of the head-plate and being reversely curved in the direction of the length thereof from the center of the head-plate outwardly, and said chamber and cap adapted to be relatively rotated, as and for the purpose set forth.

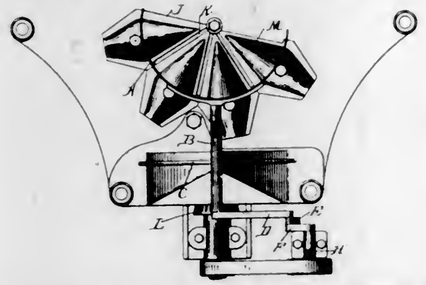
2. In a machine of the class described, a chamber, a head-plate for one end thereof, said chamber and head-plate adapted to be relatively rotated, said head-plate made in sections offset edge to edge from each other to form reversely-curved slots or openings therebetween, said slots extending to the center of the head-plate, as and for the purpose set forth.

3. In a machine of the class described, a head-plate or cap having feed-slots, said slots extending to the center of the head-plate and opening into each other at their inner ends, as and for the purpose set forth.

4. In a machine of the class described, a head-plate composed of sections, said sections being offset-edge to edge to form slots or openings therebetween, said slots extending to the center of the head-plate and opening into each other at their inner ends, as and for the purpose set forth.

5. In a machine of the class described, a head-plate having feed-slots extending to the center thereof, said slots being reversely curved in the direction of the length thereof from the center of the head-plate outward, and communicating with each other at their inner ends, as and for the purpose set forth.

653,736. **FEEDING DEVICE FOR PRESSES.** SIDNEY HORSLEY, Hoosick Falls, N. Y., assignor to the Planters Compress Company, Boston, Mass. Filed Sept. 5, 1899. Serial No. 729,431. (No model.)



Claim.—1. In a press employing an open-ended chamber or holder, a slotted head-plate for one end of said chamber or holder, and means for relatively moving these parts, in combination with a basket or hopper arranged centrally over the head-plate and provided with trunnions, bearings in which said trunnions are received, and means for rocking said trunnions in their bearings, whereby said chamber or basket is agitated, as and for the purpose set forth.

2. In a press employing an open-ended chamber or holder, a slotted head-plate for one end of said chamber or holder, and means for relatively rotating these parts, in combination with supporting-standards carried by said head-plate, having bearings formed therein, a basket or hopper having trunnions, said trunnions adapted to be received in said bearings, and means for rocking said trunnions in their bearings, whereby said basket or hopper is rocked, as and for the purpose set forth.

3. In a press employing an open-ended chamber or holder, a slotted head-plate for one end of said chamber or holder, and means for relatively rotating these parts, in combination with standards carried by said head-plate, bearings formed in said standards, a basket or hopper having trunnions adapted to be received in said bearings, a crank-arm connected to one of said trunnions, a shaft suitably journaled and having a crank-arm, a pitman connecting said crank-arms, the connection of said pitman to one of said crank-arms being adjustable, and means for rotating said shaft, as and for the purpose set forth.

653,737. **FILTER.** OMAR H. JEWELL, Chicago, Ill. Filed Jan. 29, 1900. Serial No. 3,150. (No model.)

Claim.—1. In a filter, the combination of a filter-tank, a filtered-water chamber below said tank and communicating therewith, an external chamber around the upper part of said tank and communicating therewith, the lowermost portion of said external chamber being above said filtered-water chamber, and means for supplying unfiltered water to said external chamber, substantially as described.

2. In a filter, the combination of a filter-tank, a bottom therefor, a false bottom above said bottom and forming therewith a filtered-water chamber, strainers in said false bottom, a jacket around the upper portion of said filter-tank forming therewith an external chamber, the lowermost portion of said jacket being above said false bottom, and means for supplying unfiltered water to the filter-tank, substantially as described.

3. In a filter, the combination of a filter-tank, and a conduit extending around said tank and having a plurality of openings at separate points for supplying water to said tank, substantially as described.

4. In a filter, the combination of a filter-tank, a conduit extending around said tank and having a plurality of openings at separate points for supplying water to said tank, and a water-supply pipe connected with said conduit, the openings in said conduit farthest from the water-inlet being arranged to provide a greater area for the passage of water from said conduit to said tank than those nearer said inlet, substantially as described.

5. In a filter, the combination of a filter-tank, and a conduit extending around said tank and having a plurality of openings at separate points for supplying water to said tank, said openings being arranged to provide a gradually-increasing area for the passage of water to said tank, substantially as described.

6. In a filter, the combination of a filter-tank, a granular filter-bed therein, a system of strainers covering the bottom of said filter-tank, an external chamber around said tank and communicating therewith above the filter-bed and around the outer margin thereof, and means for supplying water to said external chamber at a plurality of points around the filter-tank, substantially as described.

7. In a filter, the combination of a filter-tank, a granular filter-bed therein, a system of strainers covering the bottom of said filter-tank, an external chamber around said tank and communicating therewith above the filter-bed and around the outer margin thereof, and means for supplying water to said external chamber in substantially-equal volume at a plurality of points around said filter-tank, substantially as described.

8. In a filter, the combination of a filter-tank, an external chamber around said tank and communicating therewith above the filter-bed, means for supplying water to said external chamber, and means for imparting a circulatory movement to the water in said chamber, substantially as described.

9. In a filter, the combination of a filter-tank, a conduit extending around said tank and having a plurality of openings at separate points for supplying water to said tank, and means for discharging water from said conduit tangentially, substantially as described.

10. In a filter, the combination of a filter-tank, an external chamber around said tank and communicating therewith above the filter-bed, a conduit below said external chamber and communicating therewith, and means for supplying water to said external chamber through said conduit, substantially as described.

11. In a filter, the combination of a filter-tank adapted to contain a granular filter-bed, means for admitting water to said tank above the filter-bed, and agitating devices for agitating the outer portion of the filter material, said outer agitating devices being rotatable about the center of the tank and other agitating means for agitating the central portion of the filter-bed, substantially as described.

12. In a filter, the combination of a filter-tank adapted to contain a granular filter-bed, means for admitting water to the filter-tank above the filter-bed, means for conducting filtered water from said filter-tank below the filter-bed, means for reversing the flow of water through said filter-bed, independently-operable agitating devices adapted to agitate the outer and inner portions of the filter-bed respectively, said outer agitating devices being rotatable about the center of the tank, and means for operating said agitating devices independently of each other, substantially as described.

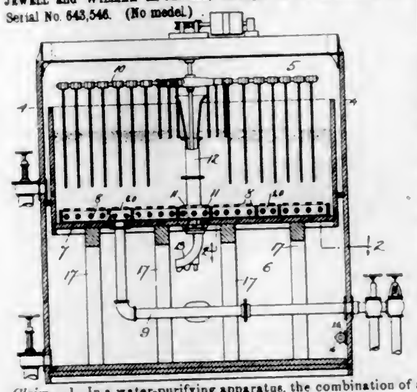
13. In a filter, the combination of a filter-tank adapted to contain a granular filter-bed, means for admitting water to the filter-tank above the filter-bed, means for conducting filtered water from said filter-tank below the filter-bed, means for reversing the flow of water through said filter-bed, independently-operable agitating devices adapted to agitate the outer and inner portions of the filter-bed respectively, and means for operating said agitating devices independently of each other, the inner agitating device being vertically adjustable, substantially as described.

14. In a filter, the combination of a filter-tank, an annular track, agitating devices supported upon said track and adapted to rotate thereon, an independently-mounted agitating device, and means for rotating said agitating devices, substantially as described.

15. In a filter, the combination of a filter-tank, an annular track, agitating devices supported on said track and adapted to rotate thereon, means for rotating said agitating devices, and an independently-operable agitating device at the center of said tank, substantially as described.

16. In a filter, the combination of a filter-tank, an annular track, agitating devices supported on said track and adapted to rotate thereon, means for rotating said agitating devices, and an independently-operable agitating device at the center of said tank, said central agitating device being vertically adjustable, substantially as described.

653,738. **APPARATUS FOR PURIFYING WATER.** OMAR H. JEWELL and WILLIAM M. JEWELL, Chicago, Ill. Filed July 6, 1897. Serial No. 643,546. (No model.)



Claim.—1. In a water-purifying apparatus, the combination of a settling-chamber, an inlet through which water is introduced tangentially thereinto, and one or more posts in said chamber, as and for the purpose set forth.

2. In a water-purifying apparatus, the combination with a filter of a settling-chamber adapted to receive the water before filtration means for conducting water to be filtered from said settling-chamber to the filter and means for imparting a circulatory motion to the water in the lower part of the settling-chamber, substantially as described.

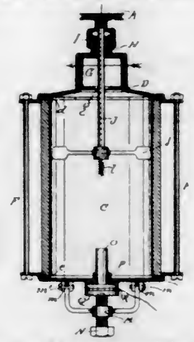
3. In a water-purifying apparatus, the combination with a filter of a settling-chamber adapted to receive the water before filtration, means for conducting water to be filtered from said settling-chamber to the filter, an inlet-pipe arranged to discharge the inflowing water into the lower part of the settling chamber in a substantially-tangential direction, and stationary devices in said settling-chamber for establishing auxiliary currents therein, substantially as described.

4. In a water-purifying apparatus, the combination with a filtering-tank, containing a filter-bed, of a settling-chamber arranged below the filter-bed, a pipe 12 having a flaring upper end extended above the filter-bed and a nozzle upon its lower end extending into the settling-chamber, and means for injecting water tangentially into the lower part of the settling-chamber, substantially as described.

5. In a water-purifying apparatus, the combination of a filter-tank, a settling-chamber arranged below said tank, means for conducting water from said settling-chamber to said filter-tank above the filter-bed, means for injecting water into the lower part of said settling-chamber to establish a circulatory current therein, and means within said settling-chamber for establishing auxiliary currents therein, as and for the purposes set forth.

653,739. **PROCESS OF PURIFYING WATER.** WILLIAM M. JEWELL, Chicago, Ill. Filed May 15, 1891. Serial No. 392,917. (No specimens.)

Claim.—1. A process of purifying water consisting in continuously decomposing a solution of a suitable salt by electrolysis in a separate chamber, in the presence of a substance capable of reacting with one or more of the separated constituents of the electrolyte to ultimately form a substantially-insoluble coagulant, introducing the coagulant as formed into the water to be purified and filtering the water in the presence of said coagulant, substantially as described.



2. A process of purifying water consisting in continuously forming ferrous hydrate by electrolysis of a solution of a suitable salt in a separate chamber, introducing it as formed into the water to be purified, and then filtering the water, substantially as described.

3. A process of purifying water which consists in continuously producing an insoluble flocculent reagent by electrolysis of a solution of a suitable salt in a separate chamber, then introducing such reagent as formed into the impure water, and then filtering the water, substantially as described.

4. A process of purifying water which consists in continuously decomposing a solution of a suitable salt by electrolysis in a separate chamber in the presence of a substance capable of combining with certain of the separated constituents of the electrolyte, thereby producing soluble compounds which react upon each other to form a substantially-insoluble purifying reagent and a soluble salt, introducing such reagent as formed into the water to be purified, and then filtering the water, substantially as described.

5. The process of purifying liquids, which consists in continuously forming ferrous hydrate, in a separate chamber, by electrically decomposing a solution of sodium chlorid in the presence of an Iron anode, afterward introducing the ferrous hydrate as formed into the liquid to be purified, and filtering said liquid, substantially as described

6. The process of purifying water, which consists in continuously forming a suitable purifying reagent by electrolyzing a solution of a suitable salt in which is immersed an anode composed of a substance adapted to combine with one or more of the constituents separated by the electrolytical decomposition, forming a new chemical combination from the soluble salts thus obtained, which combination constitutes an insoluble purifying reagent, afterward introducing the reagent as formed into the water to be purified, and then filtering the liquid, substantially as described.

653,740. **METHOD OF PURIFYING WATER.** WILLIAM M. JEWELL, Chicago, Ill. Filed June 29, 1898. Serial No. 684,769. (No specimens.)

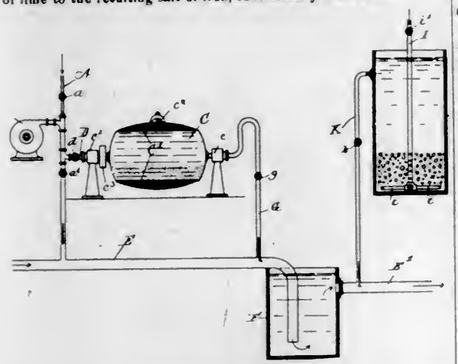
Claim.—1. The method of producing coagulation which consists in generating carbonic-acid gas, conducting it into water, subjecting iron to the action of the carbonic-acid gas and water and then converting the resulting product to a hydrate, substantially as described.

2. The method of producing coagulation which consists in generating carbonic-acid gas, conducting it into water, subjecting iron to the action of the carbonic-acid gas and water and afterward introducing the solution of the salt so produced into the water to be treated, substantially as described

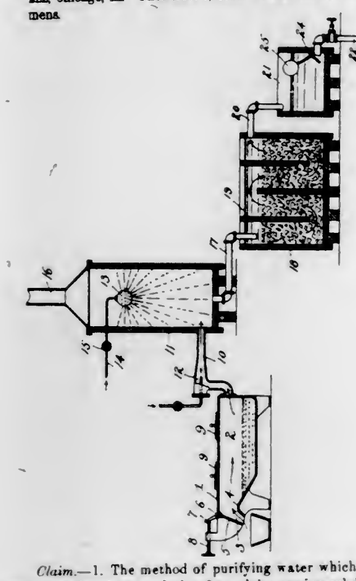
3. The method of producing coagulation which consists in generating carbonic-acid gas, conducting it into water, subjecting iron to the action of the carbonic-acid gas and water, introducing the solution of the salt so produced into the water to be treated and adding a precipitating agent to the solution of the salt, substantially as described.

4. The method of producing coagulation which consists in generating carbonic-acid gas, conducting it into water, subjecting iron to the action of the carbonic-acid gas and water, and adding a suitable alkaline reagent to the resulting salt of iron, substantially as described.

5. The method of producing coagulation which consists in generating carbonic-acid gas, conducting it into water, subjecting iron to the action of the carbonic-acid gas and water, and adding hydrate of lime to the resulting salt of iron, substantially as described.



653,741. METHOD OF PURIFYING WATER. WILLIAM M. JEWELL, Chicago, Ill. Filed Nov. 7, 1898. Serial No. 695,709. (No specimens.



Claim.—1. The method of purifying water which consists in introducing thereinto a solution formed by passing sulphurous acid in solution over iron, and removing the coagulated impurities, substantially as described.

2. The method of purifying water consisting in generating a suitable anhydride gas, combining the gas with water, passing the acid so formed over iron, subjecting the resulting metallic-salt solution to the action of a suitable precipitant to form a substantially water-insoluble flocculent precipitate, treating the water to be purified with such precipitate, and then separating the coagulated matter from the water, substantially as described.

3. A continuous process for the purification of water, consisting of the following steps, generating sulphurous oxide, combining the oxide with water, passing the sulphurous acid so formed over iron, introducing the metallic-salt solution thereby formed into the water to be purified, and separating the coagulated impurities from the water, substantially as described.

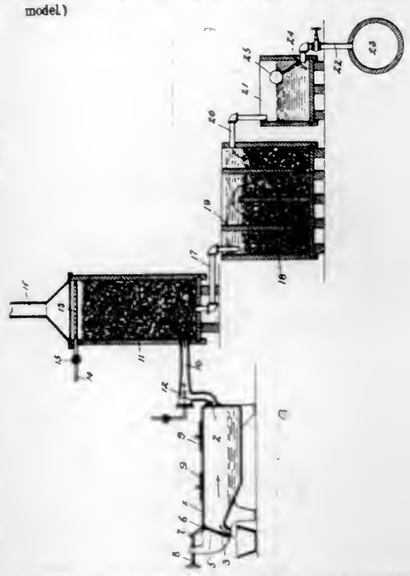
4. The method of producing coagulation of impurities in water, which consists in generating a suitable anhydride gas, conducting it into water, subjecting iron to the action of the resulting acid, treating the salt thereby produced with a suitable precipitant, and separating the water from the resulting precipitate, substantially as described.

5. The method of producing coagulation of impurities in water, which consists in generating a suitable anhydride gas, conducting it into water, subjecting iron to the action of the resulting acid, and introducing the salt solution so produced into the water to be treated, substantially as described.

6. The method of purifying water, which consists in generating a suitable anhydride gas, conducting it into water, subjecting iron to the action of the resulting acid, introducing the salt solution so produced into the water to be treated, adding a suitable precipitant thereto, and separating the water from the resulting precipitate, substantially as described.

7. The method of purifying water consisting in generating sulphurous oxide, passing the oxide into water, subjecting iron to the action of the sulphurous acid thereby formed, oxidizing the resulting solution, subjecting it to the action of a suitable precipitant and separating the water from the resulting precipitate, substantially as described.

653,742. APPARATUS FOR PURIFYING WATER. WILLIAM M. JEWELL, Chicago, Ill. Filed Dec. 19, 1898. Serial No. 699,682. (No model.)



Claim.—1. In an apparatus for purifying water, the combination of a gas-generator, a tank adapted to contain iron, means for introducing water into said iron-holding tank, means for conducting the gas generated into said tank, and means for conducting the metal-salt solution formed in said iron-holding tank to the water to be purified, substantially as described.

2. The combination of a sulfurous-oxid generator, a tank adapted to contain iron, a pipe adapted to conduct water to said iron-holding tank, means for conducting sulfurous oxid to the water which flows through said tank, a water-main, and means for conducting the solution from said iron-holding tank to said water-main, substantially as described.

3 The combination of a sulfurous-oxid generator, a tank adapted to contain iron, a pipe adapted to conduct water to said iron-holding tank, means for conducting sulfurous oxid to the water which flows through said tank, an outlet-pipe for said iron-holding tank, a receiving-tank adapted to receive the metal-salt solution from said outlet-pipe, a water-main, and means for conducting the reagent from said receiving-tank to said main, substantially as described.

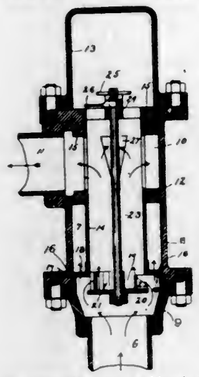
4. In an apparatus for purifying water, the combination of a gas-generator, an iron-holding tank, means for supplying water to said tank, means for conducting gas from said generator into the water which is supplied to said tank, means for containing the water to be purified and means for conducting the liquid from said iron-holding tank to the water to be purified, substantially as described.

5. In an apparatus for purifying water, the combination of a sulfurous-oxid generator, an iron-holding tank, means for supplying water to said tank, means for conducting sulfurous oxid from said generator into the water which is supplied to said tank, a conduit for containing the water to be purified, and means for conducting the liquid from said iron-holding tank to the water to be purified, substantially as described.

6. In an apparatus for purifying water, the combination of a sulfurous-oxid generator, a tank adapted to contain iron, means for introducing water into said metal-holding tank, means for conducting the sulfurous oxid to said tank, and means for conducting the metal-salt solution formed in said metal-holding tank to the water to be purified, substantially as described.

7. The combination with a sulfurous-oxid generator, and a tank adapted to contain iron, of a pipe adapted to conduct water to said metal-holding tank, means for conducting sulfurous oxid to the water which flows through said tank, an outlet-pipe from said metal-holding tank, a receiving-tank adapted to receive the metal-salt solution from said outlet-pipe, a water-main, a pipe adapted to conduct the metal-salt solution from said receiving-tank to said water-main, and a float-valve in said receiving-tank, substantially as described.

653,743. CONTROLLER. WILLIAM M. JEWELL, Chicago, Ill. Filed Jan. 9, 1899. Serial No. 701,599. (No model.)



Claim.—1. In a controller, the combination of a conduit, a movable outlet-pipe communicating therewith, one or more ports for the discharge of fluid from said outlet-pipe, means operated by the movement of said pipe for varying the area of said ports, and means between said ports and said conduit operated by the pressure of the fluid in the conduit for moving said pipe, substantially as described.

2. In a controller, the combination of a conduit, a longitudinally-movable outlet-pipe communicating therewith, one or more ports for the discharge of fluid from said outlet-pipe, means operated by the longitudinal movement of said pipe for varying the area of said ports, and means between said ports and said conduit operated by the pressure of the fluid in the conduit for moving said pipe longitudinally substantially as described.

3. In a controller, the combination of a conduit, a longitudinally-movable outlet-pipe communicating therewith, a head carried by said pipe, one or more passages for permitting fluid from said conduit to pass by said head into said pipe, one or more ports for the discharge of fluid from said pipe, and means for varying the area of said ports by the longitudinal movement of said pipe, substantially as described.

4. In a controller, the combination of a conduit, a longitudinally-movable outlet-pipe communicating therewith said pipe being movable by the pressure of the fluid in the conduit, one or more tapered ports for the discharge of the fluid entering said outlet-pipe from the conduit, and means controlled by the longitudinal movement of said outlet-pipe for varying the area of said ports inversely as compared with the pressure of the fluid in the conduit, substantially as described.

5. In a controller, the combination of a conduit, a movable outlet-pipe communicating therewith, one or more ports for the discharge of fluid from said outlet-pipe, means for varying the area of said ports by the movement of said pipe, means operated by the pressure of the fluid in the conduit for moving said pipe, and means for varying the area of the passage from said conduit to said outlet-pipe, substantially as described.

6. In a controller, the combination of a conduit, an outlet-pipe adapted to reciprocate, said pipe having segmental blocks 19 at its lower end and a head 20 fitted against the lower edges of said blocks, a rod 23, and one or more ports for the discharge of water from said pipe, substantially as described.

7. In a controller, the combination of a conduit, an outlet-pipe adapted to reciprocate, said pipe having segmental blocks 19 at its lower end and a head 20 fitted against the lower edges of said blocks, said head having blocks 21, a rod 23, and one or more ports for the discharge of water from said pipe, substantially as described.

8. The combination of a conduit, a casing 8 having a chamber 7, a discharge-pipe 14 in said casing, said pipe having a flange 16, said flange having passages 18, one or more ports in said pipe 14, a head 20 carried by said pipe 14, and one or more passages 22 at the lower portion of said pipe, substantially as described.

9. In a controller, the combination of a conduit, a movable outlet-pipe communicating therewith, said pipe being movable by the pressure of the fluid in the conduit, one or more ports for the discharge of the fluid entering said outlet-pipe from the conduit, and means controlled by the movement of said outlet-pipe for varying the area of said ports inversely as compared with the pressure of the fluid in the conduit, substantially as described.

10. In a controller, the combination of a conduit, a longitudinally-movable outlet-pipe communicating therewith, one or more ports for the discharge of fluid from said outlet-pipe, means operated by the pressure of the fluid for moving said pipe longitudinally, and means operated by the fluid for cushioning said outlet-pipe, substantially as described.

11. In a controller, the combination of a conduit, a movable outlet-pipe communicating therewith, one or more ports for the discharge of fluid from said outlet-pipe, means operated by the pressure of the fluid for varying the area of said port or ports, and means for varying the flow through said outlet-pipe independently of the pressure of the fluid, substantially as described.

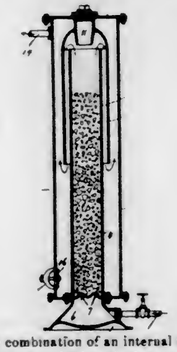
12. In a controller, the combination of a conduit, a longitudinally-movable outlet-pipe communicating therewith, a head carried by said pipe adjacent to said conduit, and one or more passages for permitting fluid from said conduit to pass by said head into said pipe, substantially as described.

13. In a controller, the combination of a conduit, a longitudinally-movable outlet-pipe, said outlet-pipe having a head at or near its lower end, one or more ports for permitting fluid to flow from said conduit into said outlet-pipe, and one or more ports above said head for the discharge of the fluid from said outlet-pipe, substantially as described.

14. In a controller, the combination of a conduit, an outlet-pipe through which the fluid from the conduit passes, one or more ports for the discharge from said outlet-pipe of the fluid entering it from said conduit, and means operated by variation of the pressure of the fluid in the conduit for varying the area of said ports inversely as compared with the pressure of the fluid in the conduit, substantially as described.

15. In a controller, the combination of a conduit, a longitudinally-movable outlet-pipe communicating therewith, one or more ports for the discharge of fluid from said outlet-pipe, means operated by the pressure of the fluid for moving said pipe longitudinally, and means operated by the fluid passing through the conduit for cushioning said outlet-pipe, substantially as described.

653,744. APPARATUS FOR PURIFYING WATER. WILLIAM M. JEWELL, Chicago, Ill. Filed May 25, 1899. Serial No. 718,206. (No model.)

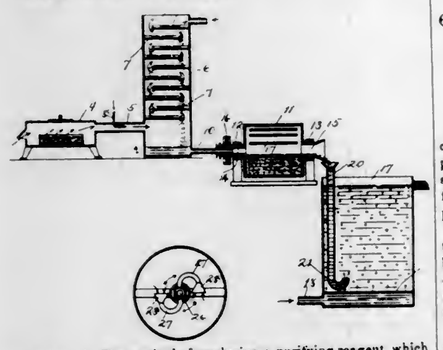


Claim.—1. The combination of an internal tank, a bed of comminuted iron therein, means for introducing water into said internal tank below said bed, an external tank inclosing said internal tank, said internal tank being arranged to discharge the water passing through said bed into said external tank, and an outlet from said external tank near the top thereof, substantially as described.

2. In an apparatus for supplying a coagulating reagent to liquids, the combination of a tank open at the top, and a bed of comminuted iron therein, means for introducing water into said tank below said

bed, an external tank inclosing said iron-holding tank, an outlet from said external tank near the top, and a hood extending down over the top of said iron-holding tank, substantially as described.

653,745. METHOD OF MAKING REAGENTS FOR PURIFYING WATER. WILLIAM M. JEWELL, Chicago, Ill. Filed Aug. 17, 1899. Serial No. 727,543. (No specimens.)



Claim.—1. The method of producing a purifying reagent, which consists in subjecting water to the action of sulphurous-acid gas, passing the solution so formed over iron, and converting the resulting solution into ferric sulphate by oxidation, substantially as described.

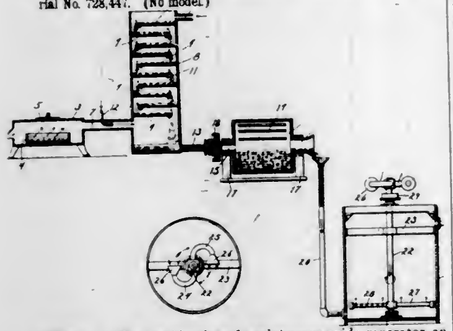
2. The method of producing a purifying reagent which consists in bringing sulphurous-acid gas in water into contact with iron, and subjecting the resulting solution of the metallic salt to the action of free oxygen, substantially as described.

3. The method of forming ferric sulphate which consists in aerating a solution obtained by bringing sulphurous-acid gas in water into contact with iron, substantially as described.

4. The method of forming feeric sulphate, which consists in generating sulphurous-acid gas, conducting it into water, passing the resulting sulphurous acid over iron, and oxidizing the solution thereby produced by subjecting it to the action of oxygen, substantially as described

5. The method of forming ferric sulphate, which consists in introducing free oxygen into a solution of ferrous bisulphite, substantially as described.

653,746. APPARATUS FOR PRODUCING PURIFYING REAGENTS. WILLIAM M. JEWELL, Chicago, Ill. Filed Aug. 25, 1899. Serial No. 728,447. (No model.)



Claim.—1. The combination of a sulphurous-oxide generator, an iron-holding receptacle, means for supplying water to said receptacle, means for conducting the sulphurous oxide from the generator to the water supplied to said receptacle, and means for aerating the resulting liquid, substantially as described.

2. The combination of a tank, a gas-pipe adapted to rotate therein said pipe having perforations for the passage of gas into said tank, and a pipe arranged at an angle to said gas-pipe and having an opening at its outer end, said opening being radially arranged so that by rotating said gas-pipe gas may be forced into said tank, substantially as described.

3. The combination of a tank, a pipe 22 therein, said pipe being adapted to rotate and having a pipe 24 at its outer end, and one or more perforations in said pipe 22 for discharging gas into said tank, substantially as described.

4. The combination of a tank, a pipe 22 adapted to rotate therein, means for supplying gas to said pipe 22, and a discharge-pipe in said tank arranged radially with reference to said pipe 22 and having perforations which discharge the gas in a direction opposite to that in which the pipe 22 rotates, substantially as described.

653,747. GARMENT-SUPPORTER. JOSEPH D. LEWIS, St. Paul, Minn. Filed Dec. 8, 1899. Serial No. 739,632. (No model.)



Claim.—1. In a garment-supporter of the class described, the combination of a skeleton frame, and a flat bar-lever pivotally supported therein, one end of said bar cooperating with the frame to serve as a gripping-jaw, said bar automatically interlocking with the frame to hold the jaw in gripping position, the bar, when in locking position, lying in the plane of the frame.

2. A garment-supporter of the class described, comprising a skeleton frame, and a flat bar pivotally supported therein, one end of said bar cooperating with the frame to constitute gripping-jaws, said bar engaging the frame with spring-pressure to hold the jaws in locking position, the bar, when in locking position, lying in the plane of the frame.

3. A garment-supporter of the class described, comprising a skeleton frame and a bar-lever pivotally supported therein, one end of the bar cooperating with the frame to constitute a gripping-jaw, said bar automatically interlocking with the frame to hold the jaw in gripping position, and being adapted to be turned upon its pivot to throw the jaw outward in either direction.

4. A garment-supporter of the class described, comprising a skeleton frame and a bar-lever pivotally supported therein, the bar at one end cooperating with the frame to constitute a gripping-jaw and at the other end automatically interlocking the frame to hold the jaw in gripping position, and being adapted to be turned on its pivot to throw the jaw outward in either direction.

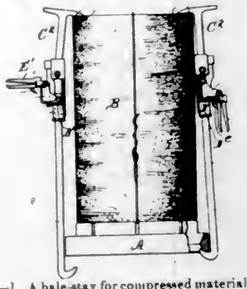
5. A garment-supporter of the class described, comprising a skeleton frame and a flat bar pivotally supported therein said bar being provided at one end with a jaw cooperating with the frame to serve as a grip the other end of said bar being adapted to engage the sides of the frame and be held in locking connection therewith.

6. A garment-supporter of the class described, consisting of a skeleton frame and a bar pivotally supported therein, said members forming jaws adapted to engage the garment, the bar interlocking with the frame by means of a projection on one member and a recess in the other, operated by the resiliency of one of said members.

7. A garment-supporter, consisting of jaws formed by a lever pivoted in a frame, said frame being adapted by means of recesses therein to interlock with the lever, and by means of an eye to be suspended from a band.

8. A garment-supporter consisting of a bar-lever pivoted in a frame, said members forming jaws adapted to engage the garment, and an interlocking device formed by a concavity in one member and a convexity in the other, operated by the resiliency of one of the members.

653,748. BALE-STAY. GEORGE A. LOWRY and WATSON M. HOLMES, Boston, Mass., assignors to the Planters Compress Company, of West Virginia. Filed Aug. 19, 1899. Serial No. 727,761. (No model.)



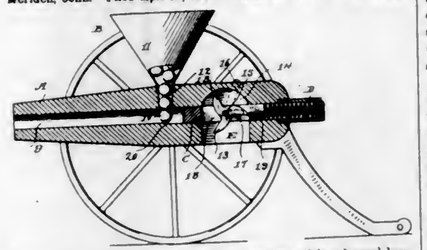
Claim.—1. A bale-stay for compressed material, composed of two parts, and a bell-crank-shaped lever pivoted to one of such parts, and having a movable fulcrum; substantially as and for the purpose set forth.

2. A bale-stay for compressed material, composed of a plurality of parts, a coupling-piece for inclosing the proximate ends of such parts, a bell-crank lever pivoted to one of the parts, and a way on the coupling-piece upon which such lever may be rocked and moved; substantially as and for the purpose set forth.

3. A stay for compressed material, composed of two arms or members, a coupling-piece for inclosing and guiding the proximate ends of such arms or members, and having a track or camway upon its exterior surface, and a bell-crank-lever cam pivoted to one end of a member of the stay and adapted to rock and slide upon the track or way; substantially as and for the purpose set forth.

4. A stay for compressed material, comprising a plurality of members, a coupling-piece serving to inclose and guide the proximate ends of such members, and which is provided with a track or camway upon its exterior surface, and a hook formed on the said coupling, in combination with a bell-crank-lever cam pivoted to one end of the movable member and adapted to rock and slide on the track or camway, and a pivoted latch to lock the cam in position; substantially as and for the purpose set forth.

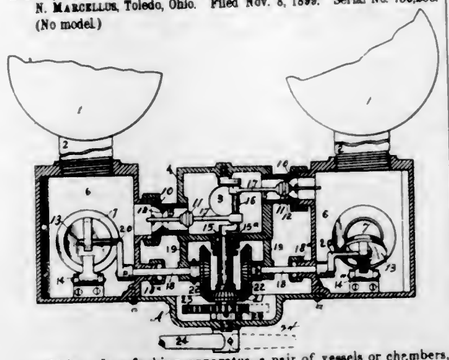
653,749. TOY RAPID-FIRE CANNON. WILLIAM R. MACKAY, Meriden, Conn. Filed Apr. 19, 1900. Serial No. 13,461. (No model.)



Claim.—1. In a toy cannon the combination with a barrel having a bore and a hopper for ammunition having a passage communicating with the bore, of a plunger having a slot 17 and an abutment 19, a shaft passing through said slot, a retracting and releasing wheel carried by said shaft and having arms adapted to engage the abutment and a spring acting to force the plunger forward.

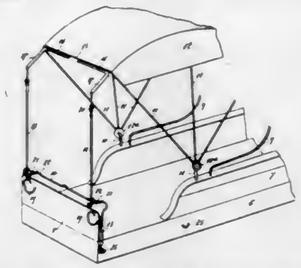
2. In a toy cannon the combination with a barrel having a bore and a recess 14 and a hopper for ammunition having a passage communicating with the bore, of a plunger having slots 17 and 18 and an abutment 19, a shaft passing through slot 17, a retracting and releasing wheel carried by said shaft and lying in recess 14 and slot 18 and having arms adapted to engage the abutment and a spring acting to force the plunger forward.

653,750. WATER-CLOSET-FLUSHING APPARATUS. CHARLES N. MARCELLUS, Toledo, Ohio. Filed Nov. 8, 1899. Serial No. 736,238. (No model.)



Claim.—In a flushing apparatus, a pair of vessels or chambers, a water-supply connected with each of said vessels, a pair of inlet-valves to control the water-supply to said vessels, a flushing-conduit connected with each of said vessels, a pair of outlet-valves to control the discharge of water from said vessels into said conduit, a shaft, a crank thereon, connections between said valves and said crank, and connections between said outlet-valves and said shaft, whereby, by the rotation of said shaft, all of said valves are actuated simultaneously.

653,751. STORM-CURTAIN FOR VEHICLES. BERNARD S. D. S. MARTIN, McPherson, Kans. Filed Oct. 17, 1899. Serial No. 733,874. (No model.)



Claim.—1. The herein-described storm-curtain frame or support consisting of members which are pivotally connected with a carriage-top and may be swung forwardly or rearwardly of the carriage into extended or operative position, and also retracted into folded or inoperative position, and devices which operate in connection with the supports of said carriage-top and with the forward portion of the carriage for securing said storm curtain frame or support members in said positions, substantially as shown and described.

2. The herein-described storm-curtain support or frame, consisting of an arm adapted to be pivotally connected with the front portion of a carriage-top or other support, and provided with a pivotally-connected depending rod having at its lower end devices for engaging with a suitable part of the carriage structure in extended or operative and also in retracted or inoperative positions, substantially as shown and described.

3. The herein-described storm-curtain support or frame, comprising a pair of bowed rods pivotally connected with the front of a carriage-top, each of said bowed rods being provided at its outer end with a pivotally-connected rod provided at its lower end with devices for engaging the dash-rod or other part of a carriage structure and also for engaging the support of said carriage-top or other portion of said carriage, substantially as shown and described.

4. A carriage provided with a carriage-top having supporting-arms, and with a dash-rod, a pair of bowed arms connected with the forward portion of said carriage-top, rods pivotally connected with the forward ends of said bowed arms and provided with clamps for engaging the supporting-arms of said storm-curtain, and also provided with clamping devices for engaging said dash-rod, substantially as shown and described.

5. A carriage-body provided with side rods and supports arranged forwardly thereof, carriage-top supporting arms pivotally connected with said supports and provided with a foldable carriage-top, devices for clamping said supporting-arms in adjusted position, said carriage-body being also provided with a dash-rod forwardly of said carriage-top supports, a pair of bowed arms pivotally connected with the forward portion of said carriage-top, a rod pivotally connected with the outer end of each of said bowed arms and provided with a clamp by means of which it may be connected with one of the supporting-arms of said carriage-top, the lower end of each of said pivoted rods being provided with a clamping device adapted to engage said dash-rod and also to engage one of the side rods of said carriage, and with a C-shaped hook adapted to engage one of the supports of said carriage-top-supporting arms, substantially as shown and described.

653,752. COLUMN OR POLE. MICHAEL H. MCINERNEY, McKeesport, Pa., assignor of two-thirds to James Nelson Long, same place. Filed Nov. 6, 1899. Serial No. 735,893. (No model.)

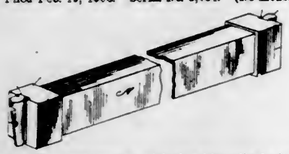


Claim.—1. A column or pole comprising an outer shell, and a frame within the shell comprising angle-irons extending vertically within the shell on opposite sides thereof, and secured to the shell, and independent, transversely-disposed cross-bars connected at their ends to the angle-irons.

2. A column or pole comprising an outer shell, and a frame within the shell comprising angle-irons extending vertically within the shell on opposite sides thereof and secured to the shell, and independent inclined cross-bars having their ends secured to the angle-irons and crossed over each other at their centers and there connected together.

3. A column or pole comprising an outer shell, and inner skeleton frames arranged substantially at right angles to each other and having angular connections at their ends secured to the sides of the shell on the inside face thereof and at their centers connected to each other.

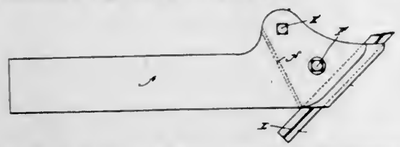
653,753. REVERSIBLE RAIL FOR BEDSTEADS. WILLIAM R. MCLAIN, Chicago, Ill., assignor of one-half to Thomas E. O'Brien, same place. Filed Feb. 19, 1900. Serial No. 5,751. (No model.)



Claim.—1. The combination with the side rail of a bedstead provided with square end faces and a threaded hole in each end face of reversible dovetail connecting-pieces provided with a bolt-hole, said connecting-pieces respectively abutting upon the square end faces of the rail, one of the abutting surfaces being provided with a recess and the other with a companion piece entering the recess, and a screw-bolt for each connecting-piece adapted to pass through the bolt-hole therein and engage the threaded hole in the end of the rail as specified.

2. The side rail of a bedstead provided with a recess in each of its end faces and a threaded hole in the bottom of the recess, in combination with dovetail connecting pieces, provided with a base portion adapted to fit the recess in reversed positions, and an unthreaded hole through the dovetail and base portions and counterbore in the dovetail part, and a screw-bolt having a slotted head adapted to fit the counterbore and a point adapted to engage the threaded hole in the rail as specified.

653,754. TOOL-HOLDER. JOSEPH M. NORMAND, Springfield, Ohio, assignor of one-half to George W. Reichard, same place. Filed Nov. 11, 1899. Serial No. 736,612. (No model.)



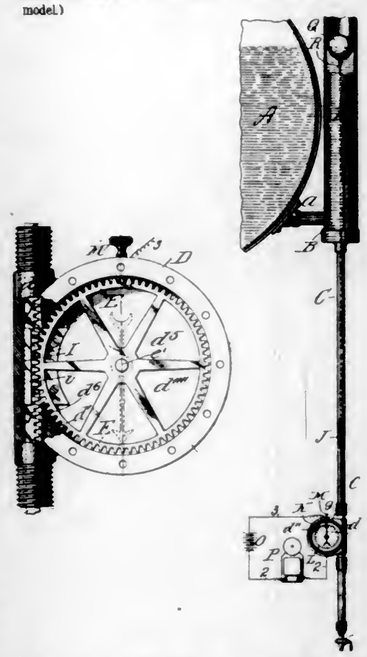
Claim.—1. In a tool-holder, the combination with a holder proper having a raised portion near its forward end and having its forward edge beveled upward and outward and also having a serrated V-shaped groove adjacent to said forward beveled edge, of a clamping-plate having a V-shaped groove therein to match the groove in said holder proper and also having its inner end substantially conforming to the shape of said raised portion, a binding-screw for binding the clamping-plate to said holder proper and a set-screw adapted to screw through said binding-plate against said raised portion, substantially as shown and described.

2. In a tool-holder, the combination with a holder proper with its forward edge beveled upward and outward and having a serrated groove therein adjacent to its forward edge, a cutting-tool serrated along one edge and adapted to fit within said groove and match said serrations, a binding-plate having a groove therein and adapted to fit over said cutting-tool and extend therefrom in substantially a right angle, a binding-screw and a set-screw in a line also substantially at right angles to said cutting-tool, said binding-screw to bind the holder proper and clamp upon the cutting-tool and said set-screw acting to additionally cause said clamping-plate to impinge upon said cutting-tool, substantially as shown and described.

3. In a tool-holder, the combination with a holder proper with its forward edge beveled upward and outward and having a raised portion near its forward upper edge, said holder proper having a groove adjacent to said forward edge and parallel thereto, a clamping-plate adapted to conform to the shape of said forward edge of the holder proper and also having a groove therein parallel to its forward edge, a clamping-screw for clamping said parts together, and a set-screw adapted to screw into said holder proper through said raised portion and impinge against said clamping-plate, and a cutting-tool adapted to fit in said grooves and to be clamped therein, substantially as shown and described.

4. In a tool-holder, the combination with a holder proper having a straight continuous lower edge and having a raised portion near its forward upper edge, and also having an offset near its forward end in one side thereof, said offset being substantially V-shaped, the rear wall of said offset sloping downward and forward, the thinned portion (resulting from the provision of the V-shaped offset) having a V-shaped groove therein extending downward and rearward, a clamping-plate having a V-shaped groove therein matching the groove in said holder proper, said clamping-plate fitting within said offset and matching said raised portion, a clamping-screw adapted to extend through said holder proper and into said clamping-plate, a cutting-tool fitting within said grooves and substantially embraced by said clamping-plate and holder proper, all substantially as shown and described.

658,755. WATER GAGE AND INDICATOR. FREDERICK PHILIPPI, St. Louis, Mo. Filed Dec. 30, 1899. Serial No. 742,108. (No model.)



Claim.—1. In combination with a reservoir containing a liquid, of a float arranged therein, a rack-bar connected to said float and movable therewith, a gear in mesh with said rack-bar and capable of making a complete revolution, a housing for inclosing said parts, a spindle on which said gear is mounted, said spindle extending outside of the housing, an indicating-hand mounted on the outer end of said spindle and forming one terminal of an electric circuit, a single contact-point in the path of said indicating-hand, said contact-point being the other terminal of an electric circuit, whereby, when the level of the liquid in the reservoir rises and falls, the float causes the gear-wheel to rotate in one direction or the other, and the indicating-hand carried thereby contacts with the single fixed contact-point at the "high-water" mark, and when the level of the liquid falls, the gear is rotated reversely to make a complete revolution, the indicating-hand engages the same single contact to complete the electric circuit when the "low-water" level is reached, and a signal in said circuit which is operated when the indicating-hand completes the circuit through the single stationary contact at both the "high" and "low" water levels; substantially as described.

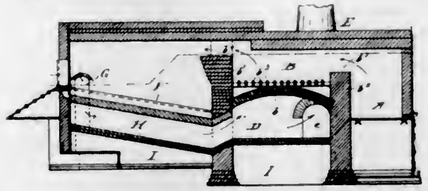
2. In combination with a suitable casing having a bore d' formed therein, of a rack-bar arranged in said bore, said casing being also provided with a recess d''' which opens into said bore d', a spur-gear arranged in said recess, and in mesh with said rack-bar, a cap-piece for covering said recess, a guide for said rack-bar, an arbor for said spur-gear, a journal for said arbor, means for packing said arbor to prevent liquid from passing between said arbor and its journal, and an index-finger or hand arranged on said arbor and outside of the recess in which said spur-gear is arranged; substantially as described.

3. In combination with a suitable casing having a bore d' formed therein, of a rack-bar arranged in said bore, said casing being also

provided with a recess d'''' which opens into said bore d', a spur-gear arranged in said recess, and in mesh with said rack-bar, a cap-piece for covering said recess, a guide for said rack-bar, an arbor for said spur-gear, a journal for said arbor, means for packing said arbor to prevent liquid from passing between said arbor and its journal, said casing being also provided with a recess d''' arranged in the opposite side of the casing to that in which the first-mentioned recess d'''' is formed, a ring of insulation material arranged in said recess d''', a metallic ring arranged on said insulation-ring, said metallic ring being provided with a plurality of perforations, a leaf-spring which is secured to said metallic rings through the instrumentality of a pin or screw which is designed to enter one of the plurality of perforations, an electric conductor connected to said metallic ring, an index-finger or hand arranged on the arbor of said spur-gear, and an electric conductor connected to said hand or index-finger; substantially as and for the purpose specified.

4. In combination with a casing formed with two axially-disposed recesses d''' and d'''' which are separated from each other by a web or partition d^5, said casing being also provided with a bore d' arranged at an angle to the axis of said recesses d''' and d'''', and communicating with the latter, of a rack-bar arranged in the bore d', a spur-gear arranged in the recess d'''', and in mesh with said rack-bar, an arbor for said spur-gear, said arbor being journaled in, and caused to project beyond the web or partition d^5, and into the recess d''', a cap-piece for covering the recess d'''', means for packing the arbor of said spur-gear in order that liquid may not pass between said arbor and its journal, a hand or index-finger arranged on said arbor and located within the recess d''', a ring of insulation material arranged in said recess d''', a metallic ring arranged on said insulation-ring, a metallic device arranged on said metallic ring, and projecting therefrom, and designed to be touched by the longer end of the index-finger, means for adjusting said metallic device on said metallic ring, an electric conductor secured to said metallic ring, and a metallic conductor secured to the casing; substantially as and for the purpose specified.

653,756. PAIR AND SHEET FURNACE. JEREMIAH E. REEVER, Canal Dover, Ohio. Filed Nov. 20, 1899. Serial No. 737,639. (No model.)



Claim.—The combination in a reheating-furnace, of a fire-chamber, an elevated pair-chamber communicating therewith, an elevated sheet-chamber directly communicating with the pair-chamber, the floor of the sheet-heating chamber downwardly inclined toward and terminating adjacent to the pair-heating chamber, a return-flue underneath and parallel to the floors of the sheet and pair chambers, and of a width equal thereto, and communicating with a stack at the side of the pair-chamber, substantially as described and for the purpose set forth.

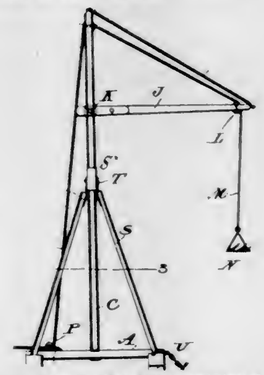
653,757. BALING-PRESS. THOMAS E. SIKES, Dodge County, and SIMEON R. SIKES, Helena, Ga. Filed Oct. 24, 1899. Serial No. 734,672. (No model.)

Claim.—1. In a baling-press, the combination with the baling-box, its plunger and plunger-rod, the plunger-rod being mounted so as to move laterally and having a projection extending beyond and parallel with its end, of a vibrating lever connected with the plunger-rod, and a centrally-pivoted rotatable lever located in relation to said lever and plunger-rod that in its rotation its ends will successively engage a part of the vibrating lever to retract the plunger-rod, then engage the projection of the plunger-rod to move the rod laterally, and then engage the end of the rod to move it longitudinally, substantially as described.

2. In a baling-press, the combination with the baling-box, its plunger and plunger-rod, the plunger-rod being mounted so as to move laterally and having a projection extending beyond and parallel with its end, of a vibrating lever having a projection, a link or rod connected at one end to said lever and at its opposite end to the plunger-rod, and a centrally-pivoted rotatable lever located in relation to said lever and the plunger-rod that in its rotation its ends will successively engage the projection of the vibrating lever to move said lever outwardly and retract the plunger-rod, then engage the projection of the plunger-rod to move the rod laterally, and then engage the end of the plunger-rod to move it longitudinally, substantially as described.



653,758. HAY-STACKING DEVICE. LEVI STUBBLEFIELD, Echo, Oreg., assignor of one-half to Austin Gale, same place. Filed Mar. 20, 1900. Serial No. 9,396. (No model.)



Claim.—1. A hay-stacking device consisting of a frame, a trunnion journaled in the sides of said frame, a standard having a plate on its lower end with a depending stud journaled in said trunnion, a band encircling said standard having braces hinged thereto and lower ends adapted to rest on said frame, a boom having its inner end vertically adjustable on said standard, and a hoisting-cable passing over pulleys journaled in said boom and standard, as set forth.

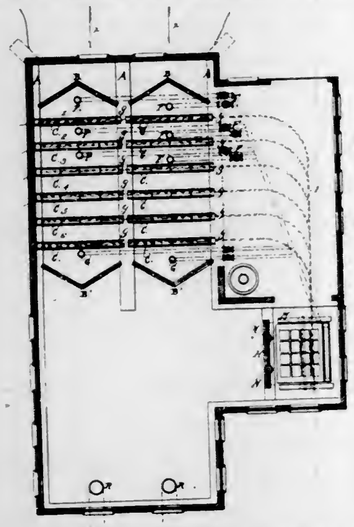
2. A hay-stacking device consisting of a frame, a trunnion journaled therein, a standard having a plate on its lower end with a depending stud journaled in said trunnion and having a clamping-nut on its lower end, a band encircling said standard having braces hinged thereto and lower ends adapted to rest on said frame, a boom having its inner end vertically adjustable on said standard and a hoisting-cable passing over pulleys journaled in said boom and standard substantially as specified.

3. A hay-stacking device consisting of a frame, a trunnion jour-

naled therein, a standard having a plate on its lower end with a depending stud journaled in said trunnion and a band encircling the standard and having braces hinged thereto and lower ends adapted to rest on said frame, a boom having its inner end vertically adjustable on said standard, a hoisting-cable passed over pulleys journaled in the boom and standard, anchors and means for tightening said anchors and tilting the standard, as and for the purpose specified.

4. The hay-stacking device described, consisting of a base, a standard revolubly mounted thereon, a cross-shaft mounted to rock in the base and carrying the standard, ball-bearings for the standard, braces hinged to the ring through which the standard revolves, anchors and means for tightening said anchors and tilting the standard, substantially as and for the purpose specified.

653,759. GRANULAR BED FILTER. ROBERT T. WEAVER, New York, N. Y. Filed Mar. 9 1900. Serial No. 8,064. (No model.)



Claim.—1. A filter plant comprising an intake and a reservoir for filtered water separated by a filtering-basin, similar to a canal-lock, having inlet and outlet gates at its respective ends, and filters arranged in series within such basin.

2. A filter plant comprising an intake and a reservoir for filtered water separated by a filtering-basin, similar to a canal-lock, having inlet and outlet gates, filters in the form of porous walls arranged at intervals and at right angles to its length within such basin, and means for draining said basin.

3. A filter plant comprising an intake and a reservoir for filtered water separated by a filtering-basin, similar to a canal-lock, having inlet and outlet gates, and vertically-removable filters in the form of porous walls arranged in series within such basin.

4. A filter plant comprising an intake and a reservoir for filtered water separated by a filtering-basin, similar to a canal-lock, having inlet and outlet gates, filters held by their lateral edges in vertical grooves within such basin, and overhead devices for raising and lowering and conveying such filters.

5. A filter plant comprising an intake and a reservoir for filtered water separated by a filtering-basin, similar to a canal-lock, having inlet and outlet gates, and thin granular-bed filters, each of a single stratum, arranged in series within such basin, and removable therefrom.

6. A filter plant comprising an intake and a reservoir for filtered water separated by a filtering-basin, thin granular-bed filters within said basin provided with means for tightening and loosening the inclosed filtering material, overhead devices for raising and lowering and conveying such filters, and a washing-cradle upon which the filters may be placed by said overhead devices.

7. A filter plant comprising an intake and a reservoir for filtered water separated by a filtering-basin, removable granular-bed filters arranged in series within such basin and provided with means for breaking up the filtering material when the filter is rocked or shaken, and a washing-cradle adapted to receive the removed filters and to rock or shake the same.

8. A filter plant comprising an intake and a reservoir for filtered water separated by a filtering-basin, removable filters arranged in series within such basin, a sluiceway leading from said reservoir for washing the filters, and means for transferring the filters from basin to sluice.

9. A filter plant comprising an intake and a reservoir for filtered water separated by a filtering-basin, removable filters arranged in series within such basin, a sluiceway provided with a washing-cradle adapted to receive the removed filters, and means for transferring the filters from basin to cradle.

10. A filter plant comprising an intake and a reservoir for filtered water separated by a filtering-basin, removable granular-bed filters provided with means for loosening the filtering material after the filters are removed from the basin, and a sluiceway for washing the removed filters.

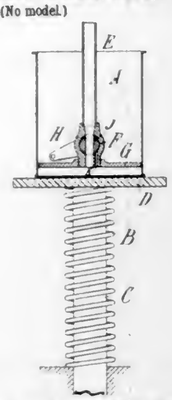
11. A filter plant comprising an intake and a reservoir for filtered water separated by a filtering-basin, removable granular-bed filters provided with means for loosening the filtering material after the filters are removed from the basin, and a sluiceway provided with a filter-washing cradle adapted to receive the removed filters and to rock or shake the same.

12. In a filter plant, a granular-bed filter adapted to be rocked or shaken in washing it, and comprising a pair of screen-supporting frames held together by stay-bolts provided with sleeves having fins to break up the filtering material when the filter is in motion.

13. In a filter plant, a granular-bed filter adapted to be rocked or shaken in washing it, and comprising a pair of screen-supporting frames, means for tightening or loosening the filtering material between said frames, and means for breaking up said filtering material when the filter is in motion.

14. In a filter plant, a granular-bed filter adapted to be rocked or shaken in washing it, and comprising a pair of screen-supporting frames, a single stratum of filtering material between said frames, and means for tightening and loosening said filtering material comprising a movable cover at one edge, cam-levers acting upon said cover, and means for locking said levers when the filtering material is tightened for the filtering operation, substantially as hereinbefore specified.

653,760. MEANS FOR PACKING SEMIFLUID SUBSTANCES. CHRISTIAN WERGÖRNSEN, Christiania, Norway. Filed Mar. 31, 1900. Serial No. 10,959. (No model.)

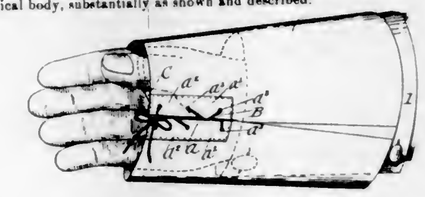


Claim.—1. In an apparatus for filling semifluid substances in boxes or vessels the combination with a pipe for carrying the substance to the box of a plate, having the same form as the cross-section of the box to be filled and means serving to shut off the said pipe, said means being carried by the plate.

2. An apparatus for filling semifluid substances in boxes or vessels comprising the following instrumentalities, viz: a plate having the same form as the cross-section of the box, another plate, stays connecting these two plates rigidly together, said plates being the first named provided with a hole or passage, the last named with a similar hole to which a pipe may be connected, and a tube mounted between the said plates and carried by an axle by means of which the said tube may be carried in or out of correspondence with the said holes, the tube being at its upper end provided with a disk serving as valve for the hole in the upper plate.

653,761. APPAREL-SLEEVE PROTECTOR. THOMAS H. WILSON, Plainfield N. J. Filed Jan. 25, 1899. Renewed Jan. 11, 1900. Serial No. 1,143. (No model.)

Claim.—A cuff-guard comprising a cylindrical body provided with an adjustable portion at its outer end, formed by the slit *a*, dividing said outer end into two adjacent parts, a lacing extending part of the length of said body at its outer end and connecting said adjacent parts at the slit, whereby the outer end of the guard may be adjusted tightly around the hand of the wearer without contracting the inner main portion of the body, thus leaving the latter normally spread to conveniently receive the shirt-cuff, reinforcing-strips at said slit and the loop secured to said strips within the outer slitted end of the guard and adapted to engage the thumb, and the longitudinal strengthening-ribs secured within the unslitted portion of said cylindrical body, substantially as shown and described.



653,762. COOLING-BOARD. CHARLES E. WISDOM, Sterling, Ill. Filed Feb. 27, 1899. Serial No. 707,014. (No model.)

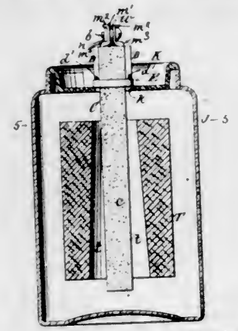


Claim.—1. A portable cooling-board comprising a series of slats, hinge connections between said slats comprising links having their pivotal points at approximately the lower ends thereof to permit the slats to fold downwardly, and abutting edges on both ends of the links intermediate their pivotal points and the plane of the lower edges of the slats, constituting an extended bearing in addition to the abutments of the slats themselves, to prevent the said slats folding in an upward direction, substantially as described.

2. A portable cooling-board comprising a series of slats, hinge connections between said slats comprising links having their pivotal points at approximately the lower ends of the links to permit the slats to fold downwardly, abutting edges on both ends of the links above their pivotal points to prevent the slats folding in an upward direction, and end supports for the board adapted to be turned to lie parallel with the slats when the board is to be folded, substantially as described.

3. A portable cooling-board comprising a series of slats, hinge connections therebetween permitting the same to fold only in a downward direction, supporting-legs hinged to the board and adapted to be turned to lie parallel with the slats when the board is to be folded, and a truss movably connected to the board comprising a flexible cable suitably fastened at its ends and brace-rods therefor also adapted to be turned into a position parallel with the slats when the board is to be folded, substantially as described.

653,763. ELECTROGALVANIC BATTERY. HORATIO J. BREWER, New York, N. Y. Filed July 7, 1899. Serial No. 723,055. (No model.)



Claim.—1. In a galvanic battery, the combination with the carbon electrode of the two metallic strips *m*, *m*, countersunk in part into the carbon, and the bolt *b*, and nut *n*, for clamping a conductor between the projecting ends of said metallic strips *m*, *m*, substantially as set forth.

2. In a galvanic battery, the combination with the carbon electrode, of the metallic strips *m*, *m*, countersunk in part into the carbon and formed with the projecting clamps *m'*, *m'*, having their ends m^3, m^3, bent outward laterally and the bolt *b*, and nut *n*, for clamping a conductor between the said projecting clamps *m'*, *m'*, of the said metallic strips *m*, *m*, substantially as set forth.

3. In a galvanic battery, the combination with the carbon electrode, of the metallic strips *m*, *m*, countersunk in part into the carbon, and formed with the shoulders m^3, m^3, and projecting clamps *m'*, *m'*, and the bolt *b*, and nut *n*, for securing the conductor between the said projecting clamps, substantially in the manner and for the purpose described.

4. In a galvanic battery, the combination with the carbon electrode formed with the recesses *r*, *r*, of the metallic strips *m*, *m*, countersunk in part into the carbon, the bolt *b*, and nut *n*, for clamping a conductor between the projecting ends of said metallic strips *m*, *m*, the cheek-pieces D, D, of insulating material fitting in part within the recesses *r*, *r*, in the carbon, and projecting beyond the latter to form shoulders *d'*, *d'*, the bolt *b'*, and nut *n'* for securing the cheek-pieces to the carbon, the cover K, formed with the opening *k*, for the carbon, and a collar E fitting between the shoulders *d'*, *d'*, and the top of the cover K, for the purpose and substantially in the manner described.

5. In a galvanic battery, the combination with the carbon electrode of a metallic strip *m*, countersunk in part into the carbon, a bolt *b*, and nut *n*, for clamping a conductor to said metallic strip, cheek-pieces D, D, of non-conducting material secured to the carbon by a bolt *b'*, and nut *n'*, and projecting beyond the carbon to form shoulders *d'*, *d'*, the cover K, formed with the opening *k*, and a collar E fitting between said shoulders *d'*, *d'*, and the top of the cover K, for the purpose and substantially in the manner set forth.

6. In a galvanic battery the combination with the carbon electrode of the metallic strips *m*, *m*, countersunk in part in the recesses *r*, *r*, in the carbon, the bolt *b*, and nut *n*, for clamping a conductor between the projecting ends of said metallic strips *m*, *m*, the cheek-pieces D, D, formed of non-conducting material with sockets *d*, *d*, said cheek-pieces fitting into the recess *r*, *r*, in the carbon and projecting beyond the same to form shoulders *d'*, *d'*, the bolt *b'*, and nut *n'*, fitting in the sockets *d*, *d*, and securing the cheek-pieces and metallic strips to the carbon, the cover K, formed with the opening *k*, and the collar E, fitting between said shoulders *d'*, *d'*, and the top of the cover, substantially as and for the purpose described.

653,764. ELECTROGALVANIC BATTERY. HORATIO J. BREWER, New York, N. Y. Filed July 7, 1899. Serial No. 723,056. (No model.)



Claim.—1. In a galvanic battery, an electronegative element consisting of a carbon electrode having a flat bearing surface in the form of an oblique plane converging upward with relation to a vertical line, passing through the body of the electrode, a slab of conglomerate material formed with a flat surface supported on said oblique bearing-surface on the carbon electrode, and a band surrounding the said electrode and the said slab and binding them together, whereby the weight of the slab is utilized, in conjunction with the oblique bearing-surface on the electrode to keep the band taut, for the purpose and substantially in the manner described.

2. In a galvanic battery, an electronegative element consisting of a carbon electrode having a flat bearing-surface in the form of an oblique plane converging upward with relation to a vertical line, passing through the body of the electrode, a slab of conglomerate material formed with a flat surface supported on said oblique bearing-surface on the carbon electrode, and a flexible band binding the said

electrode and the said slab together, whereby the weight of the slab is utilized, in conjunction with the oblique bearing-surface on the electrode, to keep the band taut, for the purpose and substantially in the manner set forth.

3. In a galvanic battery, an electronegative element consisting of a carbon electrode having bearing-surfaces in the form of oblique planes converging upward, slabs of conglomerate material formed with flat surfaces for contact with said oblique bearing-surfaces on the carbon electrode, and a flexible band binding the said electrode and slabs together, whereby the weight of the slabs is utilized, in conjunction with the oblique bearing-surfaces of the electrode, to keep the band taut, for the purpose and substantially in the manner set forth.

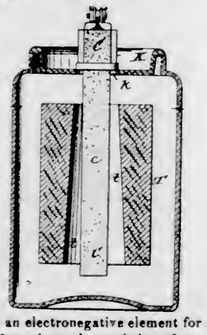
4. In a galvanic battery, an electronegative element consisting of a carbon electrode having flat bearing-surfaces in a common oblique plane converging upward with relation to a vertical line, passing through the body of the electrode, said carbon electrode being formed with a depression between said oblique bearing-surfaces for the circulation of fluid between the electrode and conglomerate material applied thereto, a slab of conglomerate material resting against said oblique bearing-surfaces, and a surrounding band binding the said electrode and slab of conglomerate together in such manner that the weight of the slab is utilized, in conjunction with the oblique bearing-surfaces, to keep the band taut, for the purpose and substantially as set forth.

5. In a galvanic battery, an electronegative element consisting of an inverted-wedge-shaped carbon electrode *N*, formed with oblique bearing-surfaces *n'*, *n'*, converging upward toward the central vertical plane of the electrode, slabs D, D, of conglomerate material, and surrounding bands B, B, binding the slabs D, D, to the electrode *N*, whereby the weight of the slabs is utilized, in conjunction with the oblique bearing-surfaces *n'*, *n'*, to keep the bands B, B, taut, for the purpose and substantially in the manner set forth.

6. In a galvanic battery an electronegative element consisting of a carbon electrode having a flat bearing-surface in the form of an oblique plane converging upward with relation to a vertical line, passing through the body of the electrode, a slab of conglomerate material formed upon its inner side with a flat surface for contact with said oblique bearing-surface on the electrode, and on its outer side with a shoulder, and a surrounding band fitting under said shoulder and binding the said electrode and slabs of conglomerate together, whereby the weight of the slab is utilized, in conjunction with the oblique bearing-surface on the electrode, to keep the band taut, substantially as and for the purpose described.

7. In a galvanic battery, an electronegative element consisting of a carbon electrode N, formed with oblique bearing-surfaces *n'*, *n'*, converging upward toward the central vertical plane of the electrode, slabs D, D, of conglomerate material formed with shoulders *d'*, *d'*, and surrounding bands B, B, fitting under said shoulders *d'*, *d'*, and binding the slabs D, D, to the electrode N, whereby the weight of the slabs D, D, is utilized, in conjunction with the oblique bearing-surfaces *n'*, *n'*, to keep the bands B, B, taut, substantially as and for the purpose set forth.

653,765. ELECTROGALVANIC BATTERY. HORATIO J. BREWER, New York, N. Y. Original application filed July 7, 1899, Serial No. 723,055. Divided and this application filed Nov. 15, 1899. Serial No. 737,076. (No model.)



Claim.—1. In an electronegative element for galvanic batteries the combination of an electrode consisting of an elongated vertical plate of carbon the longitudinal edges of which converge from the bottom upward to form an inverted wedge, and a tubiform mass of depolarizing material formed with an internal passage of greater area in cross-section than the area in cross-section of the carbon plate but of less diameter than the width of the lower portion of said plate, whereby the tubiform conglomerate is suspended upon the longitudinal edges of said carbon plate, and longitudinal passages extending the whole length of the conglomerate are formed between the sides of said carbon plate and the opposed internal surface of conglomerate, so as to afford unobstructed circulation vertically between the said sides of the carbon plate and said opposed surfaces of conglomerate, substantially as set forth.

2. In an electronegative element for galvanic batteries the combination of an electrode consisting of an elongated vertical plate of carbon the longitudinal edges of which converge from the bottom upward to form an inverted wedge, and a cylindrical mass of depolarizing material formed with an internal conical passage of greater area in cross-section than the area in cross-section of the carbon plate but of less diameter than the width of the lower portion of the carbon plate, whereby the cylinder of conglomerate is suspended upon the longitudinal edges of said carbon plate, and longitudinal passages extending the whole length of the cylinder are formed between the sides of the carbon plate and the opposed internal surfaces of conglomerate, so as to afford unobstructed circulation vertically between the said sides of the carbon plate and said opposed surfaces of conglomerate, substantially as set forth.

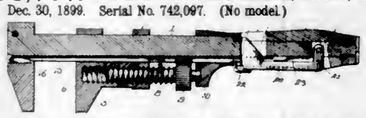
653,766. PHOTOGRAPHIC-PRINT WASHER. HENRY BURKE and DAVID JAMES, Chicago, Ill. Filed Oct. 18, 1899. Serial No. 734,011. (No model.)



Claim.—1. In a print-washer, the combination with a spherical receptacle having a hole in its wall near its top, of a single structure comprising outlet and inlet spouts, the inlet-spout extending across one end of the outlet-spout, said single structure secured on the spherical structure with the inlet-spout projecting downwardly through the hole in the wall thereof and the outlet-spout communicating with said hole.

2. In a print-washer, the combination with a receptacle having a curved inner wall and an opening in said wall near the upper end of the receptacle, of a combined inlet and outlet device secured to the outside of the receptacle and consisting of two tubes disposed at an angle to each other, one of said tubes communicating with the opening in the wall of the receptacle and the other tube extending across said opening and arranged to discharge in a direction toward a point on said curved inner wall below the opening in the receptacle.

653,767. WRENCH. WILLIAM A. EMERSON, Sorrento, Fla. Filed Dec. 30, 1899. Serial No. 742,097. (No model.)

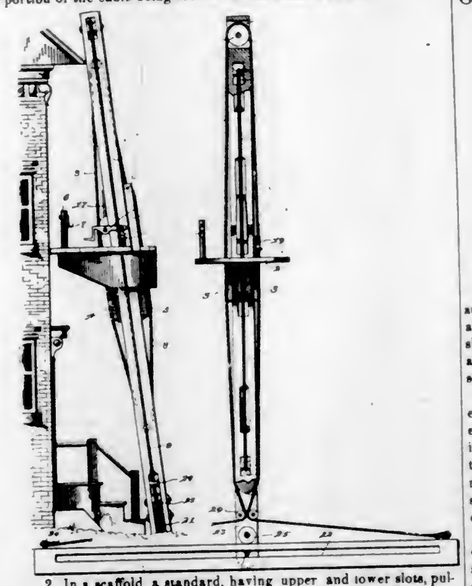


Claim.—1. A wrench comprising a bar, formed with a longitudinal groove on its inner side; a jaw pivotally secured to said bar; a slidable jaw on the bar, a lever pivotally secured at one end to the bar and having a dog or projection at its opposite end; a strap secured at one end to the pivoted jaw, and slotted at its opposite end to be engaged by said dog.

2. A wrench comprising a bar formed with a longitudinal groove on its inner side; a jaw pivotally secured to the outer end of said bar; a slidable jaw on said bar; a lever pivotally secured to the handle end of the bar and provided with a dog; a strap connection between said pivoted jaw and lever; and a catch for locking the lever.

653,768. SCAFFOLD. JOHN C. FORRAKER, Joplin, Mo. Filed Mar. 29, 1900. Serial No. 10,671. (No model.)

Claim.—1. A scaffold, comprising a standard, having upper and lower slots, pulleys mounted therein, a platform formed by opposite sills embracing the standard, a floor supported upon the sills, front and rear uprights secured between the sills, the upper end of one of the uprights being bifurcated, and provided with a transverse bar, and an endless cable passing through the slots and over the pulleys and through openings in the floor of the platform, an intermediate portion of the cable being secured to the transverse bar.



2. In a scaffold, a standard, having upper and lower slots, pulleys mounted therein, a rack upon one side of the standard, a platform slidable upon the standard, and having opposite uprights embracing the standard and bifurcated in their upper ends, a transverse bar extending across the bifurcation of one of the uprights, an endless cable passing through the slots and over the pulleys, and also connected to the bar, a hook mounted within the bifurcation of the other upright, and a trip-lever mounted upon said other upright and operatively connected to the hook.

3. In a scaffold, a base, having a longitudinal slot, a standard, having a bifurcation to slidably receive the base, a guide slidable within the slot, a wheel to travel upon the base, and means for moving the standard longitudinally in opposite directions across the base.

4. In a scaffold, a base, a standard movable longitudinally in opposite directions across the base, a platform carried by the standard, and opposite operating devices carried by the standard, and connected to the respective opposite ends of the base.

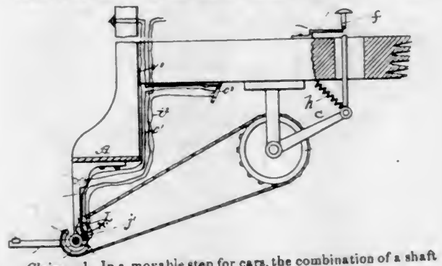
5. In a scaffold, a base, a standard mounted to slide thereon, a platform carried by the standard, pulleys mounted upon the standard, and a cable passing over the pulleys, and having its opposite ends connected to the respective ends of the base.

6. In a scaffold, a base-beam, a standard, having a bifurcation in its lower end to slidably receive the beam, a wheel mounted within the bifurcation and to travel upon the beam, opposite pulleys mounted within the bifurcation, a pulley mounted near the upper end of the standard, a cable passing over the upper pulley, between the lower opposite pulleys, and having its opposite ends connected to the respective opposite ends of the beam, and a platform carried by the standard.

7. In a scaffold, a base-beam, a standard, having a lower bifurcation to slidably receive the beam, a wheel mounted within the bifurcation and to travel upon the beam, opposite pulleys mounted within the bifurcation, a slot at the upper end of the standard, a pulley mounted therein, a cable, having its opposite ends connected to the respective ends of the beam, and its intermediate portion passed over the respective pulleys, a vertically-movable platform, having a supporting device for adjustable engagement with the standard, a trip-lever connected to the supporting device, upper and lower pulleys mounted within slots in the standard, and an endless cable passing over said pulleys and also connected to the platform for raising and lowering the latter.

8. In a scaffold, a base, a standard slidable longitudinally thereof, pulleys mounted upon the standard, a cable passing over the pulleys, and having its opposite ends connected to the respective opposite ends of the base, a platform slidable vertically upon the standard, upper and lower pulleys mounted upon the standard, an endless cable passing over said upper and lower pulleys, and also connected to the platform, and a supporting device for adjustable engagement with the standard.

653,769. CAR-STEP. SAMUEL B. FULLER, Pawtucket, R. I. Filed Sept. 13, 1897. Renewed June 14, 1900. Serial No. 20,382. (No model.)



Claim.—1. In a movable step for cars, the combination of a shaft suspended in brackets attached to the permanent step or footboard, a series of steps one for each seat of the car, movably held on said shaft, means for turning said shaft and raising the steps, up vertically, and means for holding them up, out of the way, substantially as described.

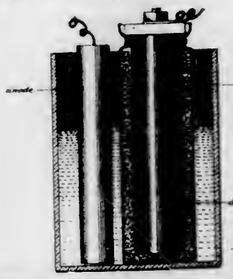
2. In a movable car-step, the combination of a shaft held in brackets attached to the upper step or footboard, a series of steps one to each seat of the car movably held on said shaft, with means for turning the shaft to raise the steps, consisting of a sprocket-wheel fast on the end of the shaft, a sprocket-wheel having an arm on one side connected with a foot-rod, a bracket attached to the car-platform and supporting the second sprocket-wheel, and a chain arranged to run on said sprocket-wheels, substantially as described.

3. In a movable car-step, the combination of a shaft held in brackets fast on the upper step or footboard, a series of steps one for each seat on the car, movably held on said shaft, means for turning the shaft to raise the steps, means for holding the steps up, consisting of a bolt for each step held to slide freely in the bracket, and means for withdrawing the bolts to release the steps for use, substantially as described.

4. In a movable car-step, the combination of a shaft held in brackets fast on the upper step or footboard, a series of steps one for each seat on the car, movably held on said shaft, means for turning the shaft to raise the steps, means for holding the steps up, consisting of a bolt for each step held to slide freely in the bracket, electromagnets placed back of each bolt wires connected with the motor-wires to energize said magnets, push-buttons located in various parts of the car to close the electric circuit in said wire and energize said magnets to operate the bolts, substantially as described.

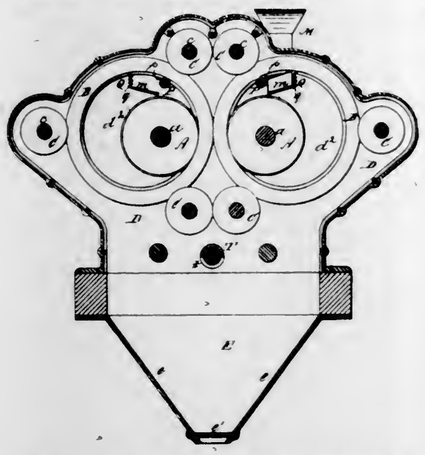
5. In a system of movable steps for cars the combination of a shaft supported in brackets attached to the permanent step or footboard, a series of steps one for each seat on the car movably held on said shaft, means for turning said shaft and raising the steps up out of the way, and means for ringing an alarm-bell by a step when down and until it is raised, substantially as described.

653,770. GALVANIC BATTERY. ALBRECHT HEIL, Frankfort-on-the-Main, Germany, assignor to Columbus Electricitäts-Gesellschaft, mit Beschränkter Haftung, Ludwigshafen, Germany. Filed Apr. 9, 1900. Serial No. 12,237. (No model.)



Claim.—A cell having an anode, a cathode, and a depolarizing agent consisting of calomel and carbon mixed with an electrically-indifferent body capable of absorbing hydrochloric acid, said mixture surrounding the cathode, substantially as described.

653,771. STONE OR ORE CRUSHER. ALBURTIS C. HILLINGER, Killawog, N. Y., assignor to Calvin Amory Stevens, New York, N. Y. Filed Sept. 11, 1895. Serial No. 562,151. (No model.)



Claim.—1. In a stone and ore crusher, the combination of two revoluble attrition-rings mounted on guide-rolls and in peripheral contact with each other, and opposed internal crushing-rolls in said attrition-rings, the journals of the opposed crushing-rolls being supported in bearings which are connected with springs which tend constantly to force the peripheries of the rolls into contact with the interior surfaces of the rings, substantially in the manner and for the purpose described.

2. A stone and ore crusher comprising revoluble rings in peripheral contact with each other, crushing-rolls in interior frictional contact with the said rings, rocker-arms carrying the shafts for the said crushing-rolls, and guide-rolls carrying the said rings, substantially as shown and described.

3. A stone and ore crusher comprising revoluble rings in peripheral contact with each other, crushing-rolls in interior frictional contact with the said rings, rocker-arms carrying the shafts for the said crushing-rolls, and springs pressing on said rocker-arms to regulate the frictional contact between the rolls and rings, substantially as shown and described.

4. A stone and ore crusher, comprising two rings in peripheral contact with each other, guide-rolls for supporting the said rings, crushing-rolls in interior peripheral contact with the said rings, rocker-arms carrying the shafts of the said crusher-rolls, and springs pressing on the free ends of the said rocker-arms to move the said crushing-rolls toward each other to regulate the frictional contact with the rings, substantially as shown and described.

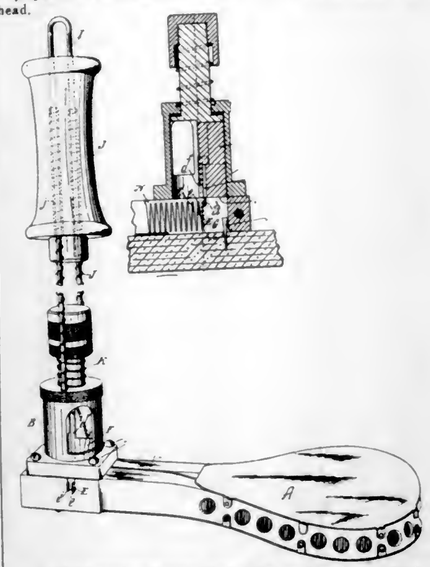
5. A stone and ore crusher, comprising two rings in peripheral contact with each other, guide-rolls for supporting the said rings, crushing-rolls in interior peripheral contact with the said rings, rocker-arms, carrying the shafts of the said crushing-rolls, springs pressing on the free ends of the said rocker-arms to move the said crushing-rolls toward each other to regulate their frictional contact with the rings, and fixed rods carrying the said springs, the said rods being provided with means for regulating the tension of the said springs, substantially as shown and described.

6. A stone and ore crusher, comprising rings in peripheral contact with each other, guide-rolls for supporting the said rings, crushing-rolls in interior peripheral contact with the said rings, pulleys on the shafts of the said crushing-rolls and on the shaft of one of the said guide-rollers, and a driving-belt passing over the said pulleys in such manner as to rotate the crushing-rolls and move the same toward each other, substantially as shown and described.

7. In a pulverizer, two revoluble crushing-rings in peripheral contact with each other; a crushing-roll within each ring adapted to press upon the ring below the contact-point of the two rings; yielding bearings to said crushing-roll shafts; springs adapted to force said rolls toward said rings and rollers to support and guide said rings, substantially as described.

653,772. NAIL OR TACK DRIVER. GEORGE W. HOBBS, Los Angeles, Cal., assignor of one-half to Albert J. Partridge, same place. Filed Oct. 14, 1898. Serial No. 693,528. (No model.)

Claim.—1. In a continuous-nailing device, the combination set forth of the head of the device: guideways provided in such head, and independent drop-gages working in such guideways and adapted to project from such head, or to be retracted and chambered in the head.



2. In a continuous-nailing device, the combination set forth of the nail-punch; the guide secured to the punch-box; the coiled spring encircling the guide; and the hammer or plunger working upon the guide to strike the nail-punch and provided with the chamber to receive the coiled spring.

3. In a continuous-nailing device, the combination set forth of the nail-punch; the punch-box; the guide comprising two parallel members fixed to the punch-box and projecting upwardly therefrom; a coiled spring encircling each member of the guide; and a hammer or plunger working upon the guide to strike the punch.

4. In a continuous-nailing machine, the combination set forth of the punch-box; the punch-stock arranged to reciprocate in the punch-box; the punch provided with a nail severing and setting shoulder arranged at such a distance above the bottom of the punch as to only partially drive the nail by the time the bottom of the punch engages with the face of the article to be nailed; and the head of the nailing device, provided with a slot to receive the punch and to form a raceway for the partially-driven nail.

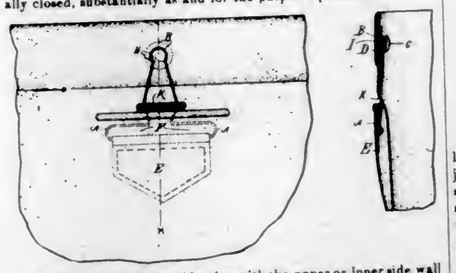
5. A continuous-nailing device of the character set forth comprising a head provided with a slot to receive and chamber the head of a partially-driven nail; a punch-stock provided with a cam-slot; a punch secured to the punch-stock and working in the slot of the head and provided on its front edge with a cutting and setting shoulder arranged at such a distance above the bottom of the punch that a nail severed by such shoulder will be only partially driven when the bottom of the punch is in engagement with the face of the article to be nailed; a cut-off provided with a tongue to enter between the first nail and the succeeding nail of a nail-strip; and a pivoted lever for operating the cut-off, provided at its top with an antifriction-roller working in the cam-slot in the punch-stock.

6. In a nailing device, the punch set forth comprising two members secured together at substantially right angles with each other with a stop-receiving slot between them, one of the members being provided with a nail severing and setting shoulder at the edge of the slot and above the bottom of the punch.

7. In a nailing device, the combination of the head of the device provided with the raceway; the stop arranged across the raceway; the switch being a lateral extension of the raceway; and the punch comprising two members secured together at substantially right angles with each other to operate in the raceway and switch and provided with the slot to straddle the stop.

653,773. FASTENING DEVICE FOR POCKETS. ROMAINE C. HOLDREDGE, Janesville, Wis. Filed Dec. 4, 1899. Serial No. 739,074. (No model.)

Claim.—1. In a pocket for garments, the combination with the outer wall or side thereof; of a clasp having a single central detachable fastening-loop and two lateral side loops arranged at right angles to said central loop, said central loop being adapted to temporarily engage a button or stud at the upper inner side of the pocket, said lateral loops being permanently secured, throughout their entire lengths, to the lower outer edge of the pocket, whereby the outer side of the pocket is supported throughout the entire length of said lateral side loops, and the entire mouth of the pocket more effectually closed, substantially as and for the purpose specified.



2. In a pocket, the combination with the upper or inner side wall thereof; of a stud provided in its base with a series of eyelets by which the same may be sewed to the garment; and a fastening-clasp, consisting of a single central loop adapted to be temporarily engaged upon said stud and two lateral side loops, arranged at right angles to said central loop, permanently secured throughout their entire lengths to the upper edge of the opposite wall or side of said pocket, whereby the entire upper edge of the outer wall of the pocket is supported and retained against the inner side, and both sides of the pocket more securely locked together, all substantially as and for the purpose specified.

653,774. TIRE-SETTER. JOHANN C. H. KUHL, Cronberg, Germany. Filed Sept. 18, 1899. Serial No. 730,935. (No model.)



Claim.—1. In a machine for fixing tires upon wheels, the combination of a support for the wheel, a series of concentrically-acting jaws, a rotary casing having an inner conical screw-threaded surface, rollers having flanges adapted to engage with the threads of the casing and connections between the rollers and jaws, substantially as described.

2. In a machine for fixing tires upon wheels, the combination of a support for the wheel, a series of concentrically-acting stepped jaws, a rotary casing having an inner conical screw-threaded surface, rollers having flanges adapted to engage with the threads of the casing and connections between the rollers and jaws, substantially as described.

3. In a machine for fixing tires upon wheels, the combination of a support for the wheel, a series of concentrically-acting jaws, a rotary and vertically-moving casing having an inner conical screw-threaded surface and a toothed outer surface, bevel-rollers having flanges adapted to engage with the threads of the casing, connections between the rollers and jaws, and means engaging the toothed surface of the casing for rotating the same, substantially as described.

653,775. APPARATUS FOR REMOVING AND APPLYING VARIOUS DEVICES. ELLIS H. MARSHALL, Fort Madison, Iowa. Filed July 20, 1899. Serial No. 724,526. (No model.)

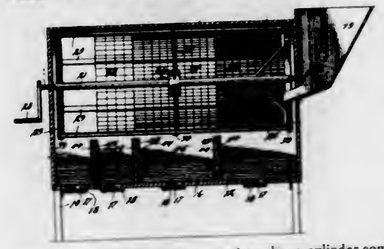


Claim.—A device of the character set forth, comprising a tubular holder slitted longitudinally for a portion of its length to provide jaws, one of said jaws being flared, the said holder also having a screw-threaded stem at the extremity opposite the jaws, a sleeve slidingly mounted on the holder and provided with a cross-head at the extremity thereof farthest from the jaws of the latter, a presser-head removably attached to the stem of the holder, and a compound volute spring interposed between said cross-head and the presser-head and surrounding the stem of the holder, whereby the sleeve will be restored to normal position around the jaws of the latter when released.

653,776. SIZING COMPOSITION. THOMAS P. MILLIGAN, Elizabeth, N. J. Filed Dec. 3, 1898. Serial No. 698,212. (No specimens.)

Claim.—A composition of matter comprising as ingredients thereof, powdered resin, soda-ash or equivalent alkali, and starch or an equivalent substance, mixed and combined together in a dry state, substantially as described.

653,777. GRAIN-SEPARATOR. ELAM E. MCLIN, Fairfield, Ill. Filed Nov. 8, 1899. Serial No. 736,262. (No model.)



Claim.—1. In a grain separator and grader, a cylinder comprising a skeleton frame, a series of interchangeable coverings each having a series of flexibly-connected slats and one or more screens attached thereto, each covering arranged to circumscribe the skeleton frame, and a series of annular divided clamps embracing the slats of the covering and provided with a separable fastening, for the purpose described, substantially as set forth.

2. In a grain separator and grader, a cylinder-covering comprising a series of parallel slats, flexible connectors attached to said slats, and a screen fabric fastened to the slats and bendable with said flexible connections around the screen-frame, substantially as described.

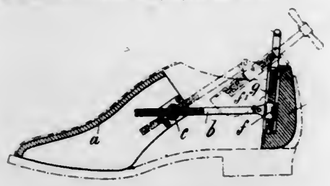
3. In a grain separator and grader, a revoluble cylinder comprising a shaft, a solid head attached to the shaft, an annular or ring-like head provided with braces to be fastened to the shaft, a spider fast with the shaft between said heads, a cylinder-covering having a series of connected slats and one or more screens bent around the heads and spider for the slats to lie opposite the arms of the latter, and a series of annular clamps embracing the slats of the covering opposite the heads and the spider, for the purpose described, substantially as set forth.

653,778. SHOE OR BOOT STRETCHER. FRIEDRICH G. PABST, Hamburg, Germany. Filed Mar. 30, 1900. Serial No. 10,804. (No model.)

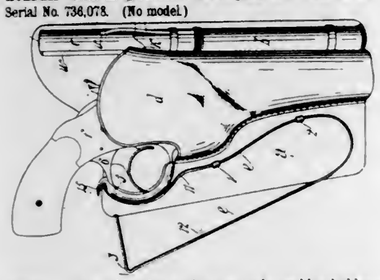
Claim.—1. A last comprising a fore part or toe-piece, a nut journaled thereto, a screw-rod *b* working in said nut, a heel-piece, a screw-rod *g* mounted to revolve in said heel-piece and a nut on screw-rod *g* articulated to screw-rod *b*, for the purpose set forth.

2. A last comprising a shell-like fore part or toe-piece *a*, a nut

mounted to revolve in the rear end of said shell, a screw-rod *b* working in said nut, a heel-piece *d*, the screw-rod *g* mounted to revolve in said heel-piece, and the nut *f* on said rod, said nut articulated to the rear end of screw-rod *b* for the purpose set forth.



653,779. **COMBINATION POCKET-GUN AND CARTRIDGE-HOLDER.** Ross M. G. PHILLIPS, Los Angeles, Cal. Filed Nov. 6, 1899. Serial No. 736,073. (No model.)



Claim.—1. A combination pocket-gun and cartridge-holder comprising a pocket piece or plate provided at one side with a spring-containing cartridge-tube having pivoted at the top a spring-pressed cap; a gun-holding pocket fastened to the plate and resting against the tube; and a wire spring fastened to the plate and extending upward and bent to form a catch to catch under the rim of the pocket of a garment and the other end of said spring being provided with a catch to catch over a projecting part of the gun to hold it in the gun-pocket.

2. The combination of a plate with a gun-pocket on one side thereof; a bent wire spring fastened to the plate and having one limb terminating on one side of the plate and provided with a catch to catch upon a projecting part of the gun and the other limb of the spring being bent at its upper portion near the top of the plate to catch under the rim of the pocket of a garment and terminating in a handle on the other side of the plate.

3. The combination of a plate provided on one side with a gun-pocket; a catch connected with the plate to catch on a projecting part of the gun; and a wire fastened to the plate and extending up to near the top of said plate and there being bent to form a catch to catch under the rim of the pocket of a garment and being thence extended partially across the back of the plate and bent to form a handle for operating the spring to release the catch.

4. In a combination pocket-gun and cartridge-holder, a cartridge-tube containing a spring for throwing the cartridges out of the tube and provided with a cap pivoted to the tube below the top thereof and conformed to the tube and provided at its upper end with a cover to fit over the tube in the path of the topmost cartridge; and a spring extending along the tube to press upon the cap to hold it in its closed position.

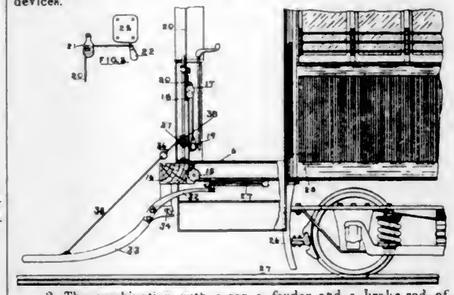
5. In a combination pocket-gun and cartridge-holder, a cartridge-tube containing a spring for throwing the cartridges out of the tube and provided with a cap pivoted to the tube below the top thereof and conformed to the tube and provided at its upper end with a slightly-concave cover to fit over the tube and to receive and slightly chamber the upper end of the topmost inclosed cartridge.

6. The combination with a gun-pocket, of a spring-pressed ogee-shaped trigger-guard pocket to fit over and chamber the trigger-guard of the gun to hold it in the gun-pocket.

7. The combination with a gun-pocket, of a trigger-guard pocket; and a spring arranged to throw the trigger-guard pocket inward to chamber the trigger-guard and to press the gun against the opposite wall of the gun-pocket.

653,780. **EMERGENCY-BRAKE-SETTING MECHANISM.** WILLIAM H. SAUVAGE, Denver, Colo., assignor, by direct and mesne assignments, of two-thirds to Charles C. Welch and Henry Newton Wood, same place. Filed Sept. 12, 1899. Serial No. 730,276. (No model.)

Claim.—1. The combination with a car, its fender and a brake-rod, of spring-actuated brake-applying mechanism connected with the brake-rod, means for locking said mechanism in a predetermined position, and a suitable connection between the locking means and the fender, whereby the dropping of the latter releases the brake-setting devices.



2. The combination with a car, a fender and a brake-rod, of means for operating the brake-rod, means for locking said brake-rod-operating means in a predetermined position, and a suitable connection between the fender and said locking means whereby the dropping of the fender releases the brake-operating devices.

3. The combination with a car, a fender, and a brake-rod, of a spring-actuated lever connected with the brake-rod, means for locking said lever in the operative position, and a suitable connection between the locking means and the fender, whereby the dropping of the fender releases the lever.

4. The combination with a car, a fender, brake mechanism and a sand-box, of a spring-actuated lever connected with the sand-box and the brake mechanism, means for locking said lever in the operative position, and a suitable connection between the fender and the locking means whereby the dropping of the fender releases the lever.

5. The combination with a car, a fender, and an electric switch mounted on the car, of a spring-actuated lever, a connection between the lever and the switch, means for locking the lever in the operative position, and a connection between the locking means and the fender whereby the dropping of the fender releases the lever.

6. The combination with a car, a fender, and a sand-box, of a spring-actuated lever, a connection between the lever and the sand-box, means for locking the lever in the operative position, and a connection between the locking means and the fender, whereby the dropping of the fender releases the lever.

7. The combination with a car, a fender, brake mechanism, a sand-receptacle and an electric switch, of a spring-actuated locking-lever, a connection between the lever, the brake mechanism, the sand-receptacle and the switch, means for locking the lever in the operative position and a connection between the locking means and the fender whereby the dropping of the fender releases the lever.

8. The combination with a car, a fender and a brake-rod, of a spring-actuated lever connected with the brake-rod, means for locking said lever in the operative position, a suitable connection between the locking means and the fender whereby the dropping of the fender releases the lever, and suitable means for resetting the lever.

9. The combination with a car, a fender and brake mechanism, of a spring-actuated trigger-lever fulcrumed on the car and connected with the brake mechanism, a rocking ratchet-bar also mounted on the car to lock the lever in the position to place the spring under tension and a suitable connection between the fender and the bar, whereby the dropping of the fender releases the lever by employing a partial rotation of the bar.

10. The combination with a car, its fender and brake mechanism, of a locking-bar provided with two parts occupying different planes, and provided with oppositely-disposed ratchet-teeth, a spring-actuated trigger-lever fulcrumed on the car and arranged to alternately engage the two sets of ratchet-teeth, and a suitable connection between the fender and the ratchet-bar whereby the movement of the fender turns the bar and disengages its teeth from the lever.

11. The combination with a car, its fender and suitable appliances for stopping the car, of a spring-actuated lever connected with said appliances, means for locking the lever in a predetermined position and a suitable connection between the fender and the locking means whereby the dropping of the fender releases the lever permitting the latter to operate the car-stopping appliances.

12. The combination with a car, its fender and suitable emergency-stop appliances, of a spring-actuated lever connected with said appliances, a rocking ratchet-bar for locking the lever in a predetermined position, and a suitable connection between the ratchet-bar and the fender whereby the dropping of the fender turns the bar and releases the lever.

13. The combination with a car, its fender and suitable emergency-stop devices, of a spring-actuated trigger-lever connected with said devices, a rocking ratchet-bar arranged to lock the lever in the desired position, an arm connected with said bar and an arm attached to the fender and engaging said arm of the ratchet-bar, whereby the movement of the fender rocks the bar and releases the lever.

14. The combination with a car, its fender and suitable emergency-stop devices, of a spring-actuated lever connected with said devices, a ratchet-bar having two parts occupying different planes and provided with oppositely-disposed teeth adapted to engage the lever, an arm attached to the bar, an arm attached to the fender and provided with a forked extremity engaging said ratchet-bar arm, whereby the movement of the fedder rocks the ratchet-bar and releases the lever.

15. The combination with a car, and emergency-stop devices mounted thereon, of a spring-actuated trigger-lever connected with said devices, a rocking ratchet-bar for locking the said lever in the desired position, and suitable means for rocking the bar and releasing the lever.

16. The combination with a car and suitable emergency-stop devices, of a spring-actuated lever connected with said devices, means for locking the lever in a predetermined position, means for releasing the lever, allowing the latter to operate the said devices and means for resetting the lever, comprising a cord or cable connected with the lever at one extremity, its opposite extremity being provided with a depending stirrup.

17. The combination with a car, a fender and brake mechanism adapted to engage the wheels of the car, of spring-actuated brake-setting devices connected with said brake mechanism, means for locking said brake-setting devices in a predetermined position, and a suitable connection between the locking means and the fender whereby the dropping of the latter releases the brake-setting devices.

653,781. **BRICK, TILE, OR PIPE MOLDING MACHINE.** CARL SCHLICKEYSEN, Rixdorf, Germany. Filed Mar. 17, 1900. Serial No. 9,091. (No model.)

Claim.—1. In a brick, tile, and pipe molding machine, and in combination a casing, a hopper arranged at one end thereof, a shaft extending longitudinally of the casing, screw feeding and pressing blades disposed along said shaft, and molds arranged axially and laterally of the shaft opening into said casing, substantially as described.

2. In combination, a casing, a shaft, a hopper, molds disposed axially and laterally of the shaft, screw propelling-blades carried by the shaft and cutting and pressing blades secured to the casing and extending toward the shaft in between the propelling-blades, substantially as described.

653,782. **PERFORATING DEVICE FOR EMBROIDERING-MACHINES.** MORRIS SCHOENFELD, Rorschach, Switzerland. Filed July 11, 1899. Serial No. 723,496. (No model.)

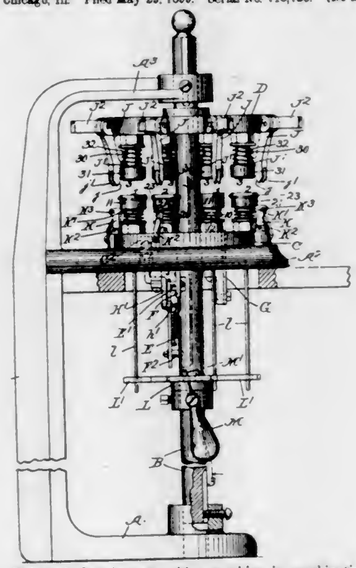


Claim.—1. In an embroidering-machine, the combination with a reciprocating needle and a perforator of increasing diameter from its point to its heel arranged to reciprocate with its longitudinal face parallel with and in close proximity to the path of said needle and means for reciprocating the perforator, for the purpose set forth.

2. In an embroidering-machine, the combination with a needle and a perforator of increasing diameter from its point to its heel and grooved longitudinally from or approximately from point to heel, said perforator arranged to reciprocate with its longitudinal face parallel with and proximate to the path of the needle and means for reciprocating the perforator, for the purpose set forth.

3. In an embroidering machine, the combination with a needle and a comparatively-long perforator of increasing diameter from its point to its heel, said perforator arranged to reciprocate with its longitudinal face parallel with and proximate to the path of the needle; of mechanism for varying the amplitude of the reciprocations of said perforator independently of the needle, for the purpose set forth.

653,783. **PRESS FOR MAKING BUTTONS.** EUGENE W. SILSBY, Chicago, Ill. Filed May 29, 1899. Serial No. 718,720. (No model.)



Claim.—1. In a button-making machine in combination; a reciprocating die-carrying head and a pivoted die-carrier, the actuating-stem of the former being extended through the pivotal support of the latter; the dies on the carrier in which the buttons are completed ready for discharge; thrust-rods depending from such dies respectively, and an arm on the actuating-stem arranged to encounter the thrust-rods to eject the buttons from the dies when the head rises.

2. In a button-making machine in combination; a reciprocating die-carrying head and a pivoted die-carrier, the actuating-stem of the former being extended through the pivotal support of the latter; dies on the carrier in which the buttons are completed ready for discharge; thrust-rods depending from such dies adapted to eject the buttons upward, and the recessed or notched arm L' horizontally pivoted on the actuating-stem and the pendulous lever M, also pivoted to the stem and engaging the arm, substantially as and for the purpose set forth.

3. In a button-making machine in combination; a reciprocating die-carrying head and a pivoted die-carrier, the actuating-stem of the former being extended through the pivotal support of the latter; a plurality of similar compound dies carried by the head, each comprising two elements, one of which is adapted to yield longitudinally with respect to the other; a lock to cause them to operate as rigid; switch devices associated with certain of the dies on the carrier, arranged to release such lock when a die having the same descends toward a die having a switch.

4. In a button-making machine in combination; a reciprocating die-carrying head and a pivoted die-carrier, the actuating-stem of the former being extended through the pivotal support of the latter, the compound die on the carrier having a lock to secure its two elements to cause them to operate as rigid, the dies on the head having each a switch adapted to encounter said devices for locking the carrier-die, and to unlock the same after partial cooperation of the two dies.

5. In a button-making machine in combination with a reciprocating head and a plurality of similar dies carried thereby, each comprising two elements, one of which is adapted to yield with respect to the other; a lock to prevent such yielding; a carrier having a plurality of dies arranged in consecutive order transverse to the path

of reciprocation of the head and comprising dies of two sorts, a die in which the buttons are finished ready for discharge being located between each of the two dies of the other sort; a switching device associated with each such finishing-die adapted to be encountered by the same when the die having such lock descends.

6. In a button-making machine, in combination with a reciprocating head and a plurality of similar compound dies carried thereby, each of said compound dies comprising two elements, one of which is adapted to yield longitudinally with respect to the other; a lock to prevent such yielding and cause the two elements to operate as it rigid; a carrier having a plurality of dies arranged in successive order transverse to the path of reciprocation of the head, and comprising a clenching-die between each two other dies, and means for moving such carrier in such transverse direction, and halting the same with its dies registered with the opposed dies respectively of the reciprocating head; and a switch device associated with each clenching-die of the carrier adapted to be encountered by said lock when the opposed coöperating die descends to disengage said lock; no two consecutive dies on the carrier being thus provided, and no two consecutive dies being without such provision.

7. In a button-making machine, in combination with a reciprocating head having a plurality of compound dies, each comprising two elements one of which is adapted to yield longitudinally with respect to the other: a locking device associated with each of said dies, adapted to lock the two elements so that they shall operate as one; and a carrier oscillating transversely to the path of reciprocation of the head, and having a plurality of dies arranged successively in the path of oscillation, and adapted to register with the dies of the head at the limits of such oscillating movement; each alternate die on said carrier having associated with it a switching device adapted to be encountered by the locking device to disengage the same when the head descends.

8. In a button-making machine in combination with a reciprocating head and a plurality of dies carried thereby, a carrier having movement transverse to the path of reciprocation of the head, and a plurality of compound dies thereon adapted to coöperate with the dies of the head: said compound dies each comprising two elements one of which is adapted to yield longitudinally with respect to the other and provided with a spring to hold it yieldingly protruded; each alternate one of said compound dies having a locking device adapted to lock said two parts, and cause them to operate as one; each of the reciprocating dies having a switch device constructed and arranged to encounter said locking device as the head descends and disengage it after a partial coöperation of the opposed dies.

9. In a button-making machine in combination with a reciprocating head and a plurality of dies carried thereby; a carrier arranged to move transversely to the path of reciprocation of the head, and means for giving it alternating movements in opposite directions; a plurality of compound dies carried thereby, and arranged to register with the dies of the head at the limits of said opposite movements; said compound dies comprising each two elements, one of which is adapted to move longitudinally with respect to the other, and a spring to hold such element toward the opposed die; each alternate one of said compound dies having a device adapted to lock the two elements together to cause them to operate as one, and each of the dies on the reciprocating head having a switch which engages said locking devices to unlock said elements after partial coöperation of the opposed dies.

10. In a button-making machine in combination with a reciprocating head and a plurality of compound dies carried thereby, comprising each two elements one of which is adapted to move longitudinally with respect to the other: and a locking device for each die adapted to prevent such longitudinal movement, and cause the two elements to operate as one; a carrier and a plurality of dies thereon, and means for moving the carrier to carry the dies in a path transverse to the path of reciprocation of the head, and to halt the carrier at positions at which the dies of the reciprocating head are registered with dies on the carrier, each alternate one of the dies on the carrier comprising two elements one of which is adapted to move longitudinally with respect to the other, and a spring to yieldingly resist such movement in one direction; a locking device adapted to prevent the movement of said elements against the spring, a switch device associated with each alternate die to engage the locking device of the reciprocating dies and disengage the same when they respectively advance in registration with said alternate die, said locking device of the upper dies being arranged to encounter the locking device of the lower alternate die and disengage the same after the said locking device of the upper die has been disengaged by said switch.

11. In a button-making machine in combination with a reciprocating head having a plurality of dies, a carrier having movement transverse to the reciprocating movement of the head, and a plurality of dies carried thereby; each alternate die on said carrier being a clenching-die adapted to complete the formation of the button, and having a button-ejecting thrust-rod protruding at the lower end, an oscillating element having two lodgments or steps adapted to encounter the lower end of the thrust-rod, and protrude between said lodgments; said oscillating element being constructed and arranged to rest normally in position to present one or the other of said steps in line with the rod.

12. In a button-making machine in combination with a base or table, a head having a stem reciprocating through the table, a carrier supported on the table and pivoted about the stem, a plurality of dies or holders on the head, and a plurality of dies on the carrier adapted to register with those on the head, a mechanism by which the reciprocation of the stem and head gives movement to the carrier about its pivot to shift the registration of the dies thereon with those on the head at each reciprocation of the latter.

13. In a button-making machine in combination with a base or table, a head above the base having a stem extending through the base and adapted to be reciprocated therein, a carrier mounted on the base and pivoted about the bearings of the reciprocating stem therein, a plurality of dies or holders on the head, and a plurality of dies on the carrier adapted to register with those of the head, means for reciprocating the stem and head, and mechanism by which each such reciprocation rotates the carrier a step equal to the distance between the centers of consecutive dies thereon, to shift the registration of such dies with those of the head; certain of the dies on the carrier having a button-ejecting device comprising a thrust-rod protruding below the die, a radially-armed spider or notched disk mounted on the stem below the table and free to oscillate thereabout, a weighted pendulum pivoted on the stem and loosely engaging the spider or disk; the notches in such disk being so situated that the thrust-rods overhang the disk adjacent to said notches when the pendulum hangs at rest, and the circumferential extent of the notches being each less than the movement of the thrust-rods at each step movement of the carrier.

14. In a button-making machine in combination, a reciprocating die-carrying head, and a pivotally-supported die-carrier adapted to move about its pivot in a direction transverse to the reciprocation of the head; a table which supports the carrier about this pivot, the actuating-stem of the reciprocating head penetrating the table and carrier at the pivot of the latter, and mechanical connection by which the reciprocation of the head and stem gives the carrier movement about this pivot.

15. In a button-making machine an assembling-die having its mouth or aperture slightly less than the diameter of the disk to be lodged therein, and slightly enlarged in diameter back of the mouth to accommodate the disk.

16. In a button-making machine in combination with a holder in which the button elements are assembled and the plunger coöperating therewith, a clenching-die comprising two elements, one of which is adapted to yield with respect to the other, a spring to resist such yielding, a locking device to positively prevent such yielding, and an unlocking device which is operated any time with the approach of the plunger toward the clenching-die.

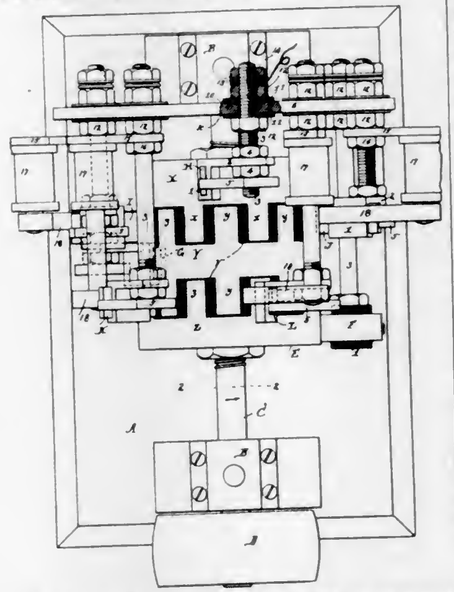
653,784. SYSTEM OF ELECTRICAL DISTRIBUTION. CHARLES DE W. ANDERSON, Chicago, Ill. Filed Apr. 10, 1899. Serial No. 712,415. (No model.)

Claim.—1. A commutator having in combination two cyclic groups of contacts, an electrical connection with alternate contacts of one group, an electrical connection with alternate contacts of the other group, an electrical connection with the remaining contacts of both groups, and a plurality of brushes for each group contacting with dissimilar contacts, substantially as described.

2. A commutator having two cyclic groups of contacts, alternate contacts of one group being electrically connected and having a common brush-terminal, alternate contacts of the other group being electrically connected and having a common brush-terminal, and the remaining contacts of both groups being electrically connected and having a common brush-terminal, brushes contacting with said terminals, and a plurality of brushes for each group of contacts, contacting with dissimilar contacts, substantially as set forth.

3. In a device for converting electrical currents, the combination with a commutator having two cyclic groups of contacts, of a circuit completed through the commutator, each of the two sides of said circuit, upon opposite sides of the commutator, having terminals electrically connected with dissimilar contacts of one group, and a second circuit completed through the commutator, each of the two sides of said circuit, upon opposite sides of the commutator, having terminals electrically connected with dissimilar contacts of the other group, substantially as set forth.

4. In a device for converting electrical currents, the combination with a commutator having two cyclic groups of contacts, of a circuit completed through the commutator one side of said circuit having a terminal in continuous electrical connection with alternate contacts of one group, and a terminal having continuous electrical connection with the remaining alternate contacts of said group, and the other side of said circuit having terminals in electrical connection with alternate contacts of said group, and a second circuit having a terminal in continuous electrical connection with alternate contacts of the other group and a terminal having continuous electrical connection with the remaining alternate contacts of said group, and the other side of said second circuit having terminals in electrical connection with dissimilar contacts of said group, substantially as set forth.



5. In a device for converting electrical currents, the combination with a commutator having two cyclic groups of contacts, of two circuits completed through the commutator, said circuits including a wire having terminals electrically connected with alternate contacts of one group, means for producing an alternating current in said wire, a second wire having terminals electrically connected with alternate contacts of the other group, and means for producing an alternating current in said second wire, substantially as set forth.

6. In a device for converting electrical currents, the combination with a commutator having two cyclic groups of contacts, of a three-wire system completed through the commutator, said system having a positive wire electrically connected with alternate contacts of one group, a negative wire electrically connected with alternate contacts of the other group, a neutral wire electrically connected with the remaining alternate contacts of both groups, and electrical connections with the commutator through which the circuits are completed, substantially as set forth.

7. In a device for converting electrical currents, the combination with a commutator having two cyclic groups of contacts, of a three-wire system completed through the commutator, said system having a positive wire electrically connected with alternate contacts of one group, a negative wire electrically connected with alternate contacts of the other group, a neutral wire electrically connected with the remaining alternate contacts of both groups, and two wires carrying alternating currents, one having its terminals electrically connected with dissimilar contacts of one group and the other having its terminals electrically connected with dissimilar contacts of the other group, substantially as set forth.

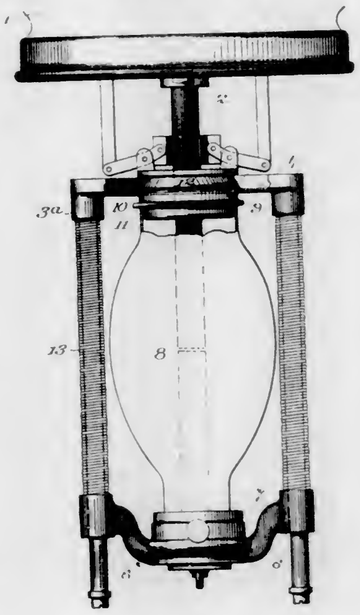
8. In a device for converting electrical currents, the combination with a commutator having two cyclic groups of contacts, of a three-wire system completed through the commutator, said system having a positive wire electrically connected with alternate contacts of one group, a negative wire electrically connected with alternate contacts of the other group, a neutral wire electrically connected with the remaining alternate contacts of both groups, a wire having its terminals electrically connected with dissimilar contacts of one group, a wire having its terminals electrically connected with dissimilar contacts of the other group, and means for supplying the two wires last aforesaid with alternating currents, substantially as set forth.

9. In a device for converting a continuous electrical current of a two-wire circuit into a continuous electrical current for a three-wire circuit, the combination of means for changing the primary continuous current into two separate alternating currents, and means for changing these two separate alternating currents into direct currents for a three-wire system, substantially as set forth.

10. In a device for converting electrical currents and supplying a continuous current to a three-wire system, the combination of a commutator having two cyclic groups of contacts, the positive wire of the three-wire system having its terminal electrically connected with alternate contacts of one group, the negative wire having its terminal electrically connected with alternate contacts of the other group, and the neutral wire having its terminal electrically connected with the remaining contacts of both groups, two transformers, means for supplying their primary coils with an alternating current, means for electrically connecting the secondary coil of one transformer with dissimilar contacts of one group, means for connecting the terminals of the secondary coil of the other transformer with dissimilar contacts of the other group, and means for alternately reversing the contacts with the secondary coils, substantially as set forth.

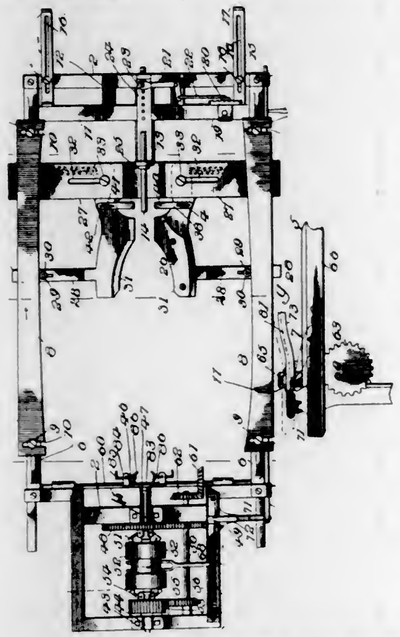
11. In a device for converting a continuous electrical current of a two-wire circuit into a continuous electrical current for a three-wire system, the combination of a commutator having two cyclic groups of contacts, the positive wire of the three-wire system having its terminal electrically connected with alternate contacts of one group, the negative wire having its terminal electrically connected with alternate contacts of the other group, and the neutral wire having its terminals electrically connected with alternate contacts of both groups, a second communtator having a cyclic group of contacts, a primary circuit supplied with a direct current, having one of its terminals connected with alternate contacts of said group, and its other terminal connected with the remaining contacts of said group, a circuit having its terminals electrically connected with dissimilar contacts of said group, means for alternately reversing these contacts, whereby the direct current is changed into an alternating current, transformers having their primary coils arranged in multiple in this alternating-current circuit, means for electrically connecting the terminals of the secondary coil of one transformer with dissimilar contacts of one of the two groups first aforesaid, means for electrically connecting the terminals of the secondary coil of the other transformer with dissimilar contacts of the other of said groups, and means for alternately reversing the contacts with the secondary coils of the transformers, all of the reversals aforesaid being simultaneous, substantially as set forth.

653,785. ELECTRIC-ARC LAMP. SIGMUND BERGMANN, New York, N. Y., assignor to the General Incandescent Arc Light Company, of New York. Filed Mar. 18, 1899. Serial No. 709,610. (No model.)



Claim.—In an electric-arc lamp, the combination with an arc-inclosing globe, of a gas-cap, an annular plate provided with an independent seat for the gas-cap made of thin metal, rods depending from said plate, a yoke for supporting said globe, and an elastic-tension device interposed between said plate and said yoke.

653,786. LATHE FOR TURNING IRREGULAR FORMS. MONTGOMERY G. BLUE, Lockington, Ohio. Filed May 25, 1899. Serial No. 718,171. (No model.)



Claim.—1. In a machine of the character set forth, the combination, with a frame having longitudinal guides and longitudinally-extending templets, of a reciprocating cutter-head mounted in said guides, a transverse tail-beam also mounted in said guides to slide longitudinally of the frame, a stock slidable longitudinally of the frame in guides in the tail-beam and carrying a series of pins at the rear end thereof, plates projecting rearwardly from the beam and having handholds whereby the beam may be adjusted from the rear of the frame in the frame-guides, a bell-crank lever having one arm thereof bifurcated to form an open slot to engage either one of the pins on the stock, an operating-lever, and a link or analogous connection between the operating-lever and other arm of the bell-crank lever.

2. In a machine of the character described, the combination of a frame, templets applied to opposite sides of and extending longitudinally of the frame, a cutter-head reciprocating longitudinally between the templets, a pair of bit-heads pivoted to the cutter-head so as to be movable toward and from each other in a horizontal plane and laterally of the frame and having members traversing the templets, and springs acting upon the bit-heads to force the same apart and hold said members in engagement with the templets.

3. In a machine of the character described, the combination of a frame having longitudinal guideways, templets applied to the frame above said guideways, a reciprocating cutter-head movable in the guideways, a pair of opposing bit-heads pivotally connected to the cutter-head so as to be movable toward and from each other and having arms entering the guideways and carrying rollers traversing the templets, and springs acting on the arms of the bit-heads to force said heads outwardly and hold the rollers in engagement with the templets.

4. In a machine of the character described, the combination of a frame, a templet applied to and extending longitudinally of the frame, a longitudinal reciprocating cutter-head extending lengthwise transversely of the frame and provided with a longitudinal slot, a bit-head pivotally mounted in said slot to swing laterally of the frame and carrying a roller traversing the templet, a spring arranged in said slot and acting on the bit-head to force it outwardly and hold the roller thereof in engagement with the templet, and means for varying the tension of said spring.

5. In a machine of the character described, the combination of a frame, a templet applied thereto, a reciprocating cutter-head, and a bit-head pivotally connected to the cutter-head and controlled in its lateral movement by the templet, said bit-head having straight rear finishing portions and flaring forward ends, cutters secured thereto and similarly constructed, and guides applied to the bit-head in rear of said finishing portions.

6. In a machine of the character described, the combination of a head-spindle, a cutting mechanism, actuating mechanism for reciprocating the cutting mechanism and including a shaft, independent sets of gearing between the head-spindle and the said shaft for rotating the latter in reverse directions, one of said sets of gearing being loosely mounted upon the head-spindle and the other having a ratchet-and-pawl connection therewith, a driver loosely mounted upon the head-spindle and adapted to be moved into clutched engagement with either of said sets of gearing, a shipper-bar for operating the driver, an operating-rod for actuating the shipper-bar, and means forming part of both the operating-rod and cutting mechanism for locating said rod and holding the driver out of action or in clutched engagement with the gearing for operating the head-spindle and actuating the feed mechanism to advance the cutting mechanism.

7. In a machine of the character described, the combination of a spindle, of gear elements loosely mounted upon the spindle and spaced apart, a ratchet and pawl between one of the gear elements and the spindle, a driver mounted to slide and to turn loosely upon the spindle, independent clutches for throwing the driver into engagement with one or the other of the said gear elements, a shaft, connections between said shaft and the aforementioned gear elements for causing one of said elements to rotate the shaft in the reverse direction from the other, a cutting mechanism, a feeding mechanism for reciprocating the cutting mechanism and actuated from the aforesaid shaft, a spring-actuated shipper-bar operatively connected with the driver and normally tending to hold the said driver in clutched engagement with the gear element loosely mounted upon the said spindle and opposite the gear element having the pawl-and-ratchet engagement therewith, and a rod operatively connected with the shipper-bar and having an inclined portion projecting across the path of a portion of the cutting mechanism.

8. In a machine of the character described, the combination of a spindle, cutting mechanism, feeding mechanism for reciprocating the cutting mechanism, actuating mechanism comprising two independent sets of gearing and a driver adapted to be clutched with either set of gearing for moving the feeding mechanism in reverse directions, a shipper-rod for moving the driver and spring-controlled to return the same to its normal position, a keeper having a pin, and a rod sliding through the keeper and connected at its front end with the shipper-bar and provided adjacent thereto with notches to engage said pin, at its rear end with a stop to abut against a part of the cutting mechanism and between said parts with an inclined surface to be engaged by another part of the cutting mechanism.

9. In a machine of the class described, the combination with the frame provided with a longitudinal guideway, a templet applied to the frame, a reciprocating cutter-head, of a bit-head pivotally-connected with the cutter-head and having an outwardly-extending arm entering the said guideway and forming a support for the free end of the bit-head, and a pin or stub-arm projecting from the said outwardly-extending arm and bearing against the directing edge of the templet to control the movements of the bit-head, substantially as set forth

10. In combination, in a machine of the character set forth, side longitudinal guideways, a reciprocating cutter-head directed in its movements by the said guideways, templets located adjacent to the guideways and disposed parallel with the line of travel of the cutter-head, bit-heads loosely connected at one end with the cutter-head and having outwardly-extending arms at their free ends to enter the aforesaid guideways and support the bit-heads at their free ends, and pins or stub arms projecting from the said outwardly-extending arms of the bit-heads and adapted to bear against the directing edges of the templets to control the lateral movements of the bit-heads, as and for the purpose set forth.

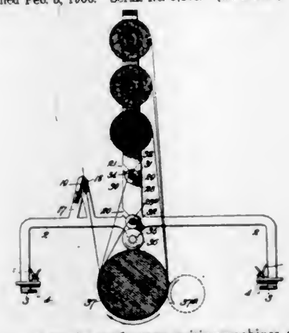
11. In a machine of the class described, the combination of a head-spindle, reciprocating cutting mechanism, actuating mechanism for imparting a reciprocating movement to the cutting mechanism and including a shaft, independent sets of gearing connecting the said shaft with the head-spindle and adapted to rotate the shaft in reverse directions, one of the said sets of gearing having a ratchet-and-pawl connection with the head-spindle, a driver loosely mounted, clutches between the said driver and the said sets of gearing, and means for shifting the driver to throw either set of gearing into active operation according to the required direction of rotation of the aforementioned shaft, substantially as and for the purpose set forth.

12. In combination, a head-spindle, a cutting mechanism, actuating mechanism for reciprocating the cutting mechanism and including a shaft, independent sets of gearing connecting the head-spindle with the said shaft for rotating the latter in reverse directions, one of the said sets of gearing being loosely mounted upon the head-spindle and the other having a ratchet-and-pawl connection therewith, a driver loosely mounted upon the head-spindle and movable longitudinally thereon, clutches between the driver and the said sets of gearing, and means for throwing the driver into clutched engagement with one or the other of the aforesaid sets of gearing, substantially as and for the purpose set forth.

13. In combination, a spindle, gear elements loosely mounted upon the spindle and spaced apart, a ratchet and pawl between one of the gear elements and the spindle, a driver mounted to slide and to turn loosely upon the spindle, independent clutches for throwing the driver into engagement with one or the other of the said gear elements, a shaft, connections between said shaft and the aforementioned gear elements, a cutting mechanism, a feeding mechanism for reciprocating the cutting mechanism and actuated from the aforesaid shaft, a spring-actuated shipper-bar operatively connected with the driver and normally tending to hold the said driver in clutched engagement with the gear element loosely mounted upon the said spindle and opposite the gear element having the ratchet-and-pawl connection with the spindle, a rod operatively connected with the shipper-bar and having an inclined portion projecting across the path of a portion of the cutting mechanism, and locking means for securing the operating-rod when the shipper-bar is moved against its controlling-spring, substantially as and for the purpose set forth.

14. In combination, a spindle, a cutting mechanism, a feeding mechanism, actuating mechanism for the feeding mechanism including a shaft, independent gearing between the said shaft and the spindle and having loose connection with the latter, a ratchet-and-pawl connection included in the other set of gearing, a driver adapted to be brought into clutched engagement with either set of gearing for rotating the shaft in reverse directions, a spring-actuated shipper-bar normally tending to hold the driver in clutched engagement with the gearing for returning the cutting mechanism to a starting position, an operating-rod having an inclined portion normally projecting in the path of a portion of the cutting mechanism, means for securing the operating-rod when the latter is moved to throw the driver into an intermediate position or into clutched engagement with the gearing for operating the spindle, and feeding mechanism to advance the cutting mechanism, and a stop applied to the operating-rod and projecting in the path of the cutting mechanism for throwing the machine out of gear when the cutting mechanism has reached a normal position after being operated, substantially as described.

653,787. TYPE-WRITER ATTACHMENT. HUGH B. BRADY, Cobb, Okla. Filed Feb. 3, 1900. Serial No. 3,811. (No model.)



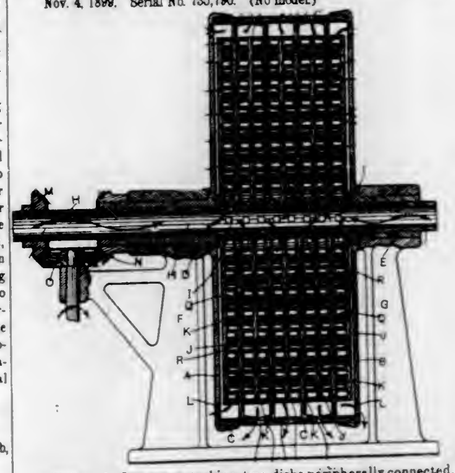
Claim.—1. An attachment for type-writing machines, comprising a frame detachably mounted on the platen-frame of the machine, paper-feed rolls journaled in the attachment-frame, winding-rolls journaled in the attachment-frame and adapted to receive the paper from the paper-feed rolls after it has passed under the platen, and geared together, friction-disks journaled on the attachment-frame and engaging the platen and a winding-roll shaft, and means to prevent back rotation of said friction-disks, substantially as described.

2. An attachment for type-writing machines, comprising a frame detachably mounted on the platen-frame of the machine, paper-feed rolls journaled in the attachment-frame, winding-rolls journaled in the attachment-frame and adapted to receive the paper from the paper-feed rolls after it has passed under the platen and geared together, friction-disks journaled on the attachment-frame and engaging the platen and a winding-roll shaft, means to prevent back rotation of said friction-disks, and means to throw said winding-rolls out of gear, substantially as described.

3. In an attachment for type-writing machines, the combination of a pair of winding-roll shafts, a wheel mounted upon one of the said winding-roll shafts, a wheel journaled upon the other and connected to the first-named wheel, and provided with a clutch-face, a spring-actuated sliding clutch member mounted on the second winding-roll shaft and adapted to engage and impart movement to said clutch-face wheel, a lever to throw said clutches out of gear, and means to maintain them in such relation against the resistance of the spring-actuated clutch, substantially as described.

4. An attachment for type-writing machines, comprising a frame having foot-plates to bear against the platen-frame of the machine, and a vertical series of teeth, clamp-plates slidingly mounted on the frame to move toward or from said foot-plates, and adapted to bear against the platen-frame at the opposite side from said foot-plates, dogs pivoted to said clamp-plates, and springs carried by the plates and adapted to hold the dogs in or out of engagement with certain teeth of the frame, substantially as described.

653,788. STEAM-TURBINE. JOHN F. BRADY, Chicago, Ill. Filed Nov. 4, 1899. Serial No. 735,790. (No model.)



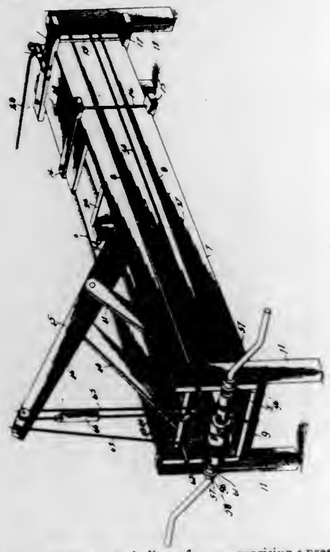
Claim.—1. In a steam-turbine, two disks peripherally connected, and each mounted apart upon a hollow journal so as to form an interspace, one or more disks each having an axial hole therethrough, and peripherally attached within the interspace to the peripheral connection of the two first-named disks, a revoluble shaft mounted axially through the journals of the first-named disks, and through the axial holes in the second-named disks, disks firmly mounted on the shaft within the interspace and disposed between the first and second named disks, passage-ways leading into the interspace between the shaft-disks from a source of steam-supply, and means attached to the shaft-disks and to the second-named disks, whereby one set of disks is revolved in an opposite direction to the other by virtue of the action of steam, substantially as stated.

2. In a steam-turbine, two disks peripherally connected, and each mounted apart upon a separate hollow journal so as to form an interspace, one or more disks each having an axial hole therethrough, and peripherally attached within the interspace to the peripheral connection of the two first-named disks, a revoluble shaft mounted axially through the journals of the first-named disks, and through the axial holes in the second-named disks, disks firmly mounted on the shaft within the interspace, and close to the first-named disks, and at both sides of the second-named disks, passage-ways for steam leading into the interspace from the hollow shaft only between the shaft-disks, a series of circles of expansion-chambers having tangential eduction passage-ways leading outwardly all in a similar relative direction, and attached to the second-named disks, and a series of circles of expansion-chambers having tangential eduction passage-ways leading outwardly all in a similar relative direction, but opposite to that of the passage-way leading out of the first-named circles of expansion-chambers, and attached to the shaft-disks, the circles of expansion-chambers of one disk disposed to revolve between or in substantially the same plane as the circles of expansion-chambers of the opposite disks,

and each in an opposite direction to the other, by virtue of the action of steam, substantially as stated.

3. In a steam-turbine, a revolubly-mounted series of separated rings of steam expansion-chambers opening against the flow of steam, in combination with another revolubly-mounted series of separated rings of steam expansion-chambers opening against the flow of steam and disposed between and adjacent to the first-named chambers, a series of passage-ways for steam leading out of the first-named chambers at an angle to their movement, and into the open sides of the second-named chambers, and a series of passage-ways for steam leading out of the second-named chambers at an angle to their movement and into the open sides of the first-named chambers, but in a relatively-opposite direction to the passage-ways leading out of the first-named chambers, for the purpose stated.

653,789. HAY-PRESS. SILAS M. BRAGG, Gurdon, Ark. Filed Jan. 23, 1900. Serial No. 2,491. (No model.)

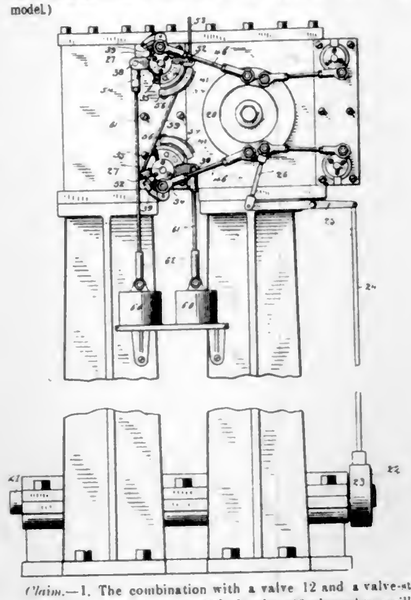


Claim.—1. A hay-press including a frame comprising a press-box, uprights at the discharge end of the box, cross-braces lying against the rear faces of the uprights and adapted to receive a gate-retaining bolt, additional uprights connected with the frame at the forward end thereof, tie-rods engaged with the uprights at each side of the box, said rods being continued beyond the forward uprights and provided with bearings, a shaft journaled in the bearings, a plunger in the box, a toggle-lever comprising links pivoted to the plunger and to the frame, one of the links extending beyond its pivotal connection with the other link, a pulley mounted upon the free end of the extended link, a rope engaged with the frame and with the shaft and passed over the pulley and adapted to be wound about the shaft, a second rope connected with the plunger and passed around the shaft, said second rope having its free end slidably engaged with the free end of the extended toggle-link and having a weight at its extremity.

2. A hay-press comprising a frame including a press-box, a plunger, a toggle-lever comprising links pivoted to the plunger and to the frame, one of said links extending beyond its pivotal connection with the other link, a shaft mounted in the frame, a pulley mounted in the free end of the extended toggle-link, a rope engaged with the frame and shaft and passed over said pulley and adapted to be wound upon the shaft, a second rope connected with the plunger and passed around the shaft, said rope having its free end slidably engaged with the free end of the extended toggle-link, and having a weight at its free extremity.

3. A hay-press comprising a frame including a press-box, a plunger mounted in the frame for cooperation with the box, said plunger comprising side pieces having upwardly-projecting forward ends having face-boards attached thereto and said plunger having guide-pins for engagement with the sides of the frame and having notches cut in the upper edges of the side pieces and in the rear of the upwardly-extending ends and forming pivot-bearings at different points of the length of the plunger, a toggle-lever comprising a link pivoted to the frame and a second link having a shaft adapted to be interchangeable with the pivot-bearings of the plunger, and means for operating the toggle-lever to reciprocate the plunger.

653,790. VALVE-GEAR FOR STEAM-ENGINES. WILLIAM H. CROOK, Ansonia, Conn. Filed May 26, 1899. Serial No. 718,411. (No model.)



Claim.—1. The combination with a valve 12 and a valve-stem carrying a valve-operating plate 35, of a plate 42 adapted to oscillate on the valve stem and carrying a hook adapted to engage the valve-operating plate, and a slide 55 adapted to be engaged by the valve-operating plate when the valve is fully closed.

2. The combination with a valve 12 and a valve-stem carrying a valve-operating plate 35, of a plate 42 adapted to oscillate on the valve-stem and having a cam 43 and carrying a pivoted hook adapted to engage the valve-operating plate, bracket 56 and a slide 55 adapted to reciprocate in a slot in said bracket and to be engaged by the valve-operating plate when the valve is fully closed, said slide having a surface 58 adapted to be engaged by cam 43 whereby the slide is disengaged from the valve-operating plate.

3. The combination with a valve 12, a valve-stem carrying a valve-operating plate 35 and the swing-plate, of plate 42 adapted to oscillate on the valve-stem and carrying a hook adapted to engage the valve-operating plate, and a cam 43, slide 55 adapted to engage the valve-operating plate and having a surface adapted to be engaged by the cam and a rod connecting plate 42 and the swing-plate.

4. The combination with a valve 12 and a valve-stem carrying a valve-operating plate 35 having a slot 41, of a plate 42 adapted to oscillate on the valve-stem, said plate having a cam 43, a pin 44 adapted to engage the slot and a hook adapted to engage the valve-operating plate, and a slide 55 adapted to be engaged by the valve-operating plate when the valve is fully closed and to be disengaged by the cam the next oscillation of the plate.

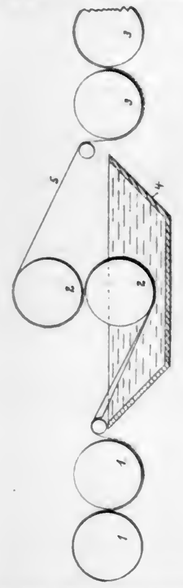
5. The combination with a valve 12 and a valve-stem carrying a valve-operating plate 35 having a slot 41 and shoulders 39 and 40, of a plate 42 adapted to oscillate on the valve-stem, said plate having a cam 43, a pin 44 adapted to engage the slot and a pivoted hook adapted to engage shoulder 39 and a slide 55 adapted to be engaged by shoulder 40 when the valve is fully closed and to be disengaged by cam 43.

6. The combination with a valve-operating plate having shoulders 39 and 40 and a slot 41, of oscillating plate 42 having a cam 43, a pin adapted to engage slot 41 for the purpose set forth and a pivoted hook adapted to engage shoulder 39, a slide 55 adapted to be engaged by shoulder 40 when the valve is in the open position and to be disengaged by the cam, means for disengaging the hook from shoulder 39 and a dash-pot connected with the valve-operating plate for closing the valve.

7. The combination with a valve-operating plate having shoulders 39 and 40 and a slot 41, of oscillating plate 42 having a cam 43 a pin adapted to engage the slot and a pivoted hook adapted to engage shoulder 39, a slide 55 adapted to be engaged by shoulder 40 and to be disengaged by the cam, means for disengaging the hook from shoulder 39 and a dash-pot comprising a plunger, a cylinder 62 and a rod connected to the valve-operating plate and having a head 63 within the cylinder, the valve being moved to the open position by the engagement of the hook with the valve-operating plate and said movement being stopped by the engagement of the valve-operating plate with the slide and said valve after the disengagement of the hook being closed by the dash-pot and the valve-operating plate returned to position to be again engaged by the hook by the engagement of the pin with the slot, head 63 moving downward freely in cylinder 62.

8. The combination with a valve 12, a valve-stem carrying a valve-operating plate 35 and the swing-plate, of plate 42 adapted to oscillate on the valve-stem and carrying a hook adapted to engage the valve-operating plate and a cam 43, bracket 56, slide 55 adapted to reciprocate in a slot in said bracket and a spring adapted to hold said slide in engagement with cam 43 and the edge of plate 42.

653,791. MANUFACTURE OF SUBSURFACE-DRYING PAPER OR OTHER FABRICS. SAMUEL CRUMP, Poughkeepsie, N. Y. Filed Apr. 21, 1900. Serial No. 13,746. (No specimens.)



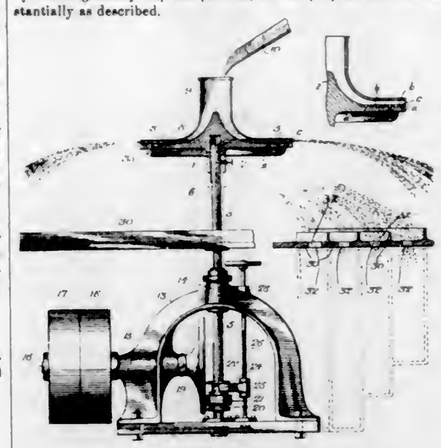
Claim.—1. As a new article of manufacture a fabric or material to be printed upon, said fabric or material containing upon its surface a drier to receive the printed matter and effect the subsurface drying of same; substantially as set forth.

2. As a new article of manufacture, a fabric or material to be printed upon, said fabric or material containing upon its surface a salt or compound of manganese to receive the printed matter and effect the subsurface drying of the same; substantially as set forth.

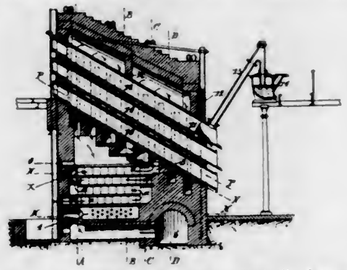
3. The process hereinbefore described, which consists in saturating the surface of the material to be printed upon with a drier in aqueous solution, and then drying the same; substantially as set forth.

653,792. CENTRIFUGAL ORE-SEPARATOR. ARTHUR DASCONAGUERRE, Mexico, Mexico. Filed Dec. 22, 1897. Serial No. 663,005. (No model.)

Claim.—A centrifugal ore separator and concentrator, comprising the revolving working surface, having the central deflecting portion 2, and the plane outer portion 3, in which are sunken tangentially-disposed grooves *a*, thereby forming plane "lands" *b* on said outer portion between said grooves; and the hood, having the inlet, and disposed in proximity to said working surface, but out of contact therewith, and conforming in its proximate side, substantially to the profile of said working surface, and thereby forming a centrifugal air passage *c* above the walls of the grooves for the blast of air induced by the tangentially-disposed grooves, for the purpose set forth, substantially as described.



653,793. REGENERATIVE GAS-FURNACE. EUGÈNE DERVAL, Paris, France. Filed May 9, 1899. Serial No. 716,138. (No model.)



Claim.—1. In a regenerative gas-furnace for inclined gas-retorts, the combination of a gas-producer, placed directly below one of the retorts of the furnace, said gas-producer being provided with a charging-opening placed at the level of the retort-charging floor, and at the side opposite that at which the coke is taken from the retorts, a combustion-chamber 5 placed behind the gas-generator, and a wall N separating the combustion-chamber and gas-producer, said wall being provided at its upper part with one or more openings *o* which allow the gas to pass into the combustion-chamber so as to heat strongly the lowest extremity of the retorts, substantially as described.

2. In a regenerative furnace, the combination with the inclined retorts, the recuperators, the gas-producer and the combustion-chamber 5, arranged below the lower ends of the inclined retorts and behind the gas-producer and separated from the gas-producer by the wall N having holes o and a wall M reaching to the arch of the furnaces and separating the working body of the furnaces, so as to compel the flames to pass between the supporting-walls of the retorts and to change direction four times before arriving at the recuperators, substantially as described.

3. In a regenerative gas-furnace having inclined retorts, the combination with the gas-generator, the combustion-chamber 5 and the separating-wall, a hot-air inlet 8 admitting air below the lateral retorts from the bottom and near the middle of the course of all the flames, so as to burn the excess of gas contained by them and thus to bring the highest end of the retorts to a sufficient temperature.

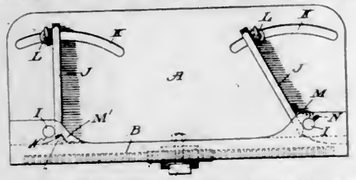
4. In a regenerative gas-furnace having inclined retorts, the combination with the gas-producer, the combustion-chamber 5, the separating-wall M and the second air-admission port, of a small hot-air inlet, the air coming in by the front wall of the gas-producer at each side of the charging-mouth, for the purpose of increasing the temperature of the gas which is above the layer of fuel in the gas-generator.

5. In a regenerative gas-furnace for inclined gas-retorts, the combination of a cement mantle or covering, in which the flanges of the retort-heads are sunk, together with horizontal iron braces, also sunk

in the cement mantle, for the purpose of preventing the retorts from sliding forward.

6. In a regenerative gas-furnace for inclined retorts, the combination of a hydraulic main or condenser placed before the body of the furnace with inclined pipes connecting said main with the retort-heads, substantially as described.

653,794. WOOD-TRIMMING MACHINE. PETER DOSCH, Mount Vernon, N. Y. Filed Oct. 21, 1899. Serial No. 734,315. (No model.)



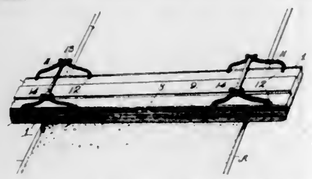
Claim.—1. The combination of a table, a cross-bar supported above the table by posts having concentric surfaces against which the gages can rest, a knife-carriage, means to move the carriage, and flat plate-like gages supported near the path of the carriage by resting against the said concentric surfaces on the posts, for the purposes set forth.

2. The combination of a table, a cross-bar supported above the table by posts having concentric surfaces against which the gages can rest, a knife-carriage, flat plate-like gages supported near the path of the carriage by resting against the said concentric surfaces on the posts, and means to hug the forward ends of the gages to the posts at all times, for the purposes set forth.

3. The combination of a table, a cross-bar supported above the table by posts having concentric surfaces against which the gages can rest, a knife-carriage, means to move the carriage, flat plate-like gages supported near the path of the carriage by resting against the said concentric surfaces on the posts, means to hug the forward ends of the gages to the posts at all times, slots in the base-plate and thumb-screws on the gages which fit the slots so as to determine the front and rear position of the gages, for the purposes set forth.

4. The combination of a table, a cross-bar supported above the table by posts having concentric surfaces against which the gages can rest, a knife-carriage, means to move the carriage, flat plate-like gages supported near the path of the carriage by resting against the said concentric surfaces on the posts, slots in the base-plate, and thumb-screws on the gages which fit the slots so as to determine the front and rear position of the gages, for the purposes set forth.

653,795. TOOL FOR MAKING ARTIFICIAL-STONE WALKS. GEORGE ECKE, Lawrence, Kans. Filed Apr. 5, 1900. Serial No. 11,600. (No model.)



Claim.—1. In a tool for making artificial-stone walks, the combination of a plate for leveling or smoothing the surface of the material being operated upon, and a float vertically adjustable with relation to said plate and adapted to bring the surface of said material to its true plane before being smoothed or finished, substantially as described.

2. In a tool for making artificial-stone walks, a pair of plates to be used at will for leveling or smoothing the material being operated upon, and a float arranged between said plates and adapted to be vertically adjusted, substantially as described.

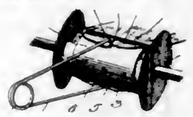
3. A tool for making artificial-stone walks, comprising a pair of plates to be used at will for leveling or smoothing the material being operated upon, tie-bolts connecting the same, and a float provided with elongated slots through which said tie-bolts extend, and adapted to be clamped by said bolts at the desired point of adjustment, substantially as described.

4. A tool for making artificial-stone walks, comprising a pair of angle-irons, blocks of softer material filling the reëntrant angles of the angle-irons, a float of suitable material fitting between said filling-blocks and the angle-irons, and provided with vertical elongated openings, and tie-bolts extending through said angle-irons, filling-blocks and slots of the float to clamp the latter at the desired point of adjustment, substantially as described.

5. A tool for making artificial-stone walks, comprising a pair of parallel angle-irons, having their ends curving upward or rounded, filling-blocks for the reëntrant angles of said angle-irons, a float fitting between said blocks and angle-irons and having its end curved upward or rounded to correspond with the curve of the angle-irons, and means to clamp said float reliably in position, substantially as described.

6. A tool for making artificial-stone walks, comprising a pair of parallel angle-irons, having their ends curving upward or rounded, filling-blocks for the reëntrant angles of said angle-irons, a float fitting between said blocks and angle-irons and having its end curved upward or rounded to correspond with the curve of the angle-irons, means to clamp said float reliably in position, and a handle for each end of the tool, substantially as described.

653,796. TYPE-WRITER-RIBBON CLAMP. SAMUEL F. ETTINGER, Little Rock, Ark., assignor of thirty-three fiftieths to H. S. Dukes and J. A. Williams, same place. Filed Jan. 29, 1900. Serial No. 3,212. (No model.)



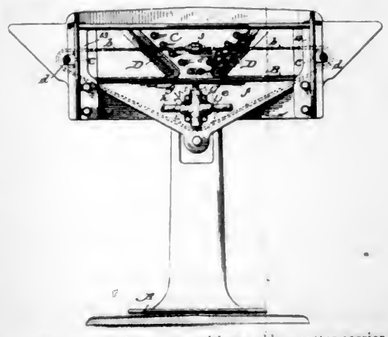
Claim.—1. A type-writer-ribbon clamp, comprising a semicylindrical body portion having backwardly-folded reinforcing-lips at its end edges, said lips extending partly around and conforming substantially to the contour of the body portion, whereby a reinforcement for the gripping portions of the clamp is provided, and said clamp has an unobstructed exterior to permit the winding of the ribbon thereon, substantially as described.

2. A type-writer-ribbon clamp comprising a semitubular body portion, the ends of which are bent backwardly forming lips, said lips being provided with engaging openings, for a detaching device substantially as described.

3. A type-writer-ribbon clamp comprising a semitubular body portion and backwardly-turned lips, said lips being each provided with an engaging opening and having a guiding-depression extending from the edge of the lip to the opening for a detaching device, substantially as described.

4. As an article of manufacture, a type-writer-ribbon holder comprising a circular spring-clamp having openings therein and guiding-recesses leading to said openings for coöperation with a detaching device, substantially as described.

653,797. TRIMMING-MACHINE. WILLIAM R. FOX, Grand Rapids, Mich., assignor to the Fox Machine Company, same place. Filed Sept. 25, 1897. Serial No. 653,053. (No model.)



Claim.—1. A trimmer comprising a table, a cutter-carrier a chain connected with said carrier, sprockets supporting the chain at the ends of the frame a driving-sprocket engaging said chain below the level of the table and an idler-sprocket engaging the opposite side of said chain to prevent its being displaced, substantially as described.

2. A trimmer comprising a table, a carrier having cutters, a bushing rotatably mounted in a boss or projection on said carrier, driving and supporting sprockets, a driving-chain passing over said sprockets, and right and left screws connected with the ends of the chain and engaging corresponding threads in the bushing, substantially as described.

3. A trimmer comprising the horizontal table, the cutter-carrier moving thereon, the driving-sprocket beneath the table, the supporting-sprockets at the ends thereof, the chain passing over said sprockets and connected with the carrier, and the vertical shield depending from the table to protect the chain and sprocket beneath the table, substantially as described.

4. A trimmer comprising a table, a carrier moving thereon having cutters, a chain, operating and supporting sprockets for supporting and operating said chain, and hollow shields at each end inclosing the chain and end sprockets and adapted to receive the knives at the end of their movement in either direction, substantially as described.

653,798. TUBULAR RIVET. WILLIAM R. FOX, Grand Rapids, Mich., assignor to the Fox Machine Company, same place. Original application filed Feb. 23, 1898, Serial No. 671,323. Divided and this application filed June 20, 1898. Serial No. 683,958. (No model.)



Claim.—A tubular rivet composed of a rolled shouldered blank having a thicker central portion and thinner edges, said blank being formed in tubular shape, with the shouldered surface outward, substantially as described.

653,799. SEAL-LOCK. BERNARD J. GIEBEL and WILLIAM A. PARK, Fremont, Ohio. Filed Mar. 4, 1899. Renewed Mar. 8, 1900. Serial No. 7,928. (No model.)



Claim.—In a seal-lock, the combination of a casing embodying a front plate having an apertnre therein, an auxiliary plate located back of said front plate and having a keyhole which registers with the said aperture, a recess between the two said plates, a fragile seal contained within the said recess, and having the end portion projecting from said recess, and the supplementary casing having the flange or extension which laps over the edge of the front wall of the main casing and covers the projecting end portion of the seal, substantially as shown and described.

653,800. APPAREL SHIRT-COLLAR SUPPORTER. EDWARD R. GOULD, Spokane, Wash. Filed Apr. 24, 1900. Serial No. 14,186. (No model.)



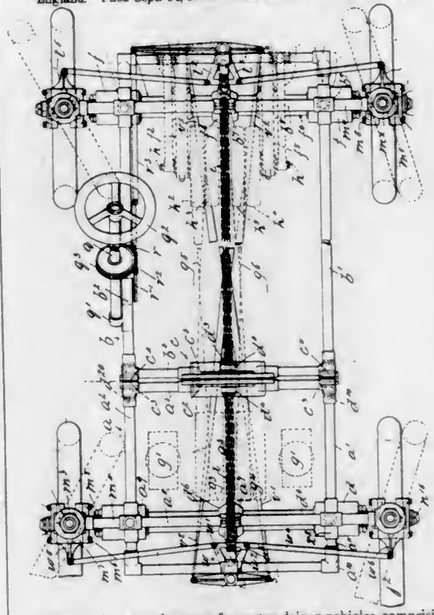
Claim.—1. An adjustable collar-stiffener, composed of connected overlapping sections of stiff flexible material adapted to slide the one upon the other, substantially as described.

2. A longitudinally-adjustable collar-stiffener, consisting of overlapping portions of stiff flexible material having rivet-and-slot connections and adapted to slide the one upon the other, substantially as described.

3. A longitudinally-adjustable collar-stiffener, composed of two portions of stiff flexible material connected together by a longitudinal flexible joint and adapted to lie respectively against the turn-over portion of the collar and its neckband, the portion which lies against the turn-over portion of the collar being provided at its ends with extension-pieces slidably connected with the main portion, substantially as described.

4. The combination with a shirt-collar, of a longitudinally-adjustable stiffener composed of connected overlapping sections of stiff flexible material adapted to slide the one upon the other, and means for securing the stiffener to the inner side of the collar, substantially as described.

653,801. MOTOR-DRIVEN VEHICLE. ROBERT F. HALL, Moseley, England. Filed Sept. 14, 1899. Serial No. 730,482. (No model.)



Claim.—1. A running-gear for motor-driven vehicles, comprising two separate rectangular frames centrally swiveled together at their adjacent ends so as to turn about a horizontal axis, and endwise-yielding connections connecting the adjacent ends of said frames together, whereby said frames are free to turn independently of one another about a horizontal axis and also move longitudinally away from and toward each other, substantially as described.

2. In a motor-driven vehicle, the combination with two separate frames flexibly connected and centrally swiveled together at their adjacent ends, a front and rear axle, respectively carried by said frames, and ground-wheels carried by said axles, of a motor carried by the forward frame, differential gearing connecting said motor with the rear axle, and gearing connecting the rear axle to the front axle to cause said axles to rotate in unison, and steering mechanism arranged to turn all four of the driving-wheels about their vertical axes simultaneously, substantially as described.

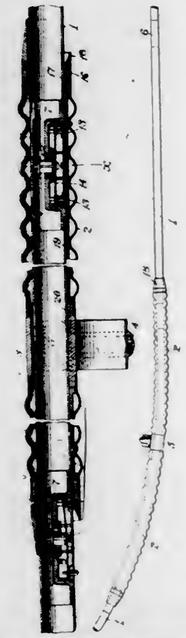
3. In a motor propelled vehicle, the combination with two separate frames flexibly connected and centrally swiveled together at their adjacent ends, of a front and rear axle respectively carried by said frames, ground-wheels carried by said axles, a motor carried by the forward frame, differential gearing connecting said motor with the rear axle, gearing connecting the rear axle to the front axle to cause the said axles to rotate in unison, and steering mechanism arranged to simultaneously turn the front and rear wheels laterally at opposite angles, said steering mechanism being constructed and arranged to turn the front and rear wheels on the side toward which the vehicle is turned at a more acute angle than the front and rear wheels on the other side, substantially as described and for the purpose specified.

4. In motor-driven vehicles in which the framing, or the under-

framing is made in two separate or detachable and transversely or cross divided parts, coupling or securing together the said parts by a swiveling and yielding joint, consisting of a pair of end bearing-plates or their equivalent respectively fitted to the opposed ends of the two parts of the frame and having curved coincident gaps through which bolts are passed, with or without rubber or elastic washers strung upon their opposite ends, substantially as and for the purpose herein described.

5. In motor-driven vehicles in which wheels are utilized for both driving and steering, the construction of the wheel-hubs, with inner and outer bearings suspended from the sides of the steering-forks and with centrally-located universal or swiveling joint connections between them and the driven or "live" axles, substantially as herein described and set forth.

653,802. MEANS FOR TRANSMITTING FLUID UNDER PRESSURE. WILLIAM S. HALSEY, Pittsburg, Pa., assignor to the Pneumatic Crane Company, same place. Filed Mar. 29, 1899. Serial No. 711,033. (No model.)



Claim.—1. The combination, with a supply-pipe, or reservoir, of means for discharging fluid from the supply-pipe at intervals in its length, and a movable flexible receiver surrounding and adapted to move along the pipe, or reservoir, and to open communication between the pipe, or reservoir, and the receiver by such movement.

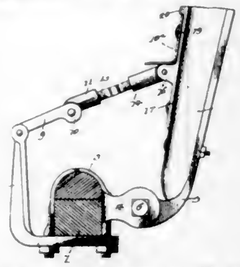
2. The combination, with a curved supply-pipe, or reservoir, of means for discharging fluid therefrom at intervals in its length, and a longitudinally-flexible receiver adapted to move along and conform in curvature to the curved portion or portions of the pipe and to receive the fluid discharged therefrom while maintaining a fluid-tight connection therewith.

3. The combination, with a supply-pipe, or reservoir, of discharge-passages at intervals in the pipe, valves controlling the discharge-passages, flexible levers in operative relation therewith, and tappets for moving the levers so as to open the valves.

4. The combination, with a supply-pipe, or reservoir, of discharge-passages at intervals in the pipe, valves controlling the discharge-passages, flexible levers in operative relation therewith, tappets engaging the levers, and a receiver surrounding the pipe and adapted to move along it and to open the valves by moving the tappets.

653,803. SHAFT SUPPORT. HARRY HARDEN, London, Ohio, assignor of one-half to John Carter and Missouri Carter, same place. Filed Apr. 14, 1900. Serial No. 12,879. (No model.)

Claim.—1. In a thill-support, the combination with an axle, and a thill, of a support, which is pivotally connected at opposite ends to the axle and the thill respectively, and comprises pivotally-jointed links, and a substantially L-shaped spring secured to the thill and bearing against the pivotal connection between the latter and the support, to prevent accidental breaking of the connection.

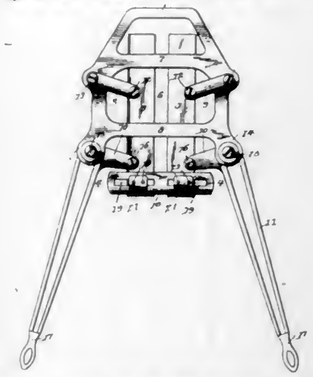


2. In a thill-support, the combination with an axle, and a thill, of opposite sleeves, which are pivotally connected to the axle and the thill, respectively, and also are provided with oppositely-disposed internal screw-threads, and a pin or rod, having its respective ends oppositely screw-threaded and fitting the respective sleeves, to adjust the length of the connection between the axle and the thill.

3. In a thill-support, the combination with an axle, and a thill, of a support, comprising a link pivoted to the axle and arranged to swing transversely across the upper side and to the front and rear sides thereof, and a second link, having one end pivoted to the free end of the first-mentioned link, and its opposite end pivotally connected to the upper side of the thill, both links being extended in longitudinal alinement transversely across the axle, in the normal operative position of the thill, and folded longitudinally upon each other in rear of the axle, in the elevated position of the thill.

4. A thill-support, comprising a substantially L-shaped arm for connection with an axle, and having its upper end forked, a link having one end pivoted in the fork of the arm, and its opposite end provided with a fork, an internally-screw-threaded sleeve having its outer end pivoted within the fork of the link, a turn-screw having one end fitted in the sleeve, an internally-screw-threaded sleeve fitted to the opposite end of the turn-screw, and an attaching-plate for application to a thill, and also having a pivotal connection with the outer end of the latter sleeve.

653,804. DEHORNING-KNIFE. HARRY HARDEN, London, Ohio, assignor of one-half to John Carter and Missouri Carter, same place. Filed Apr. 14, 1900. Serial No. 12,880. (No model.)



Claim.—1. A device of the class described comprising a frame provided with an opening, a pair of parallel blades mounted on the frame at opposite sides of the opening, and means for moving the blades longitudinally and laterally simultaneously, substantially as described.

2. A device of the class described comprising a frame provided with a central opening, a pair of parallel blades located at opposite sides of the opening of the frame and adapted to move longitudinally and laterally simultaneously, links connected with the frame and with the blades, and means for actuating the blades, substantially as described.

3. A device of the class described comprising a frame provided with an opening, a pair of parallel blades adapted to move longitudinally and transversely of the frame, links connecting the blades with the frame, and a pair of levers fulcrumed on the frame and connected with and adapted to actuate the blades, the portions of the levers connecting the frame and the blades being arranged parallel with the links, substantially as described.

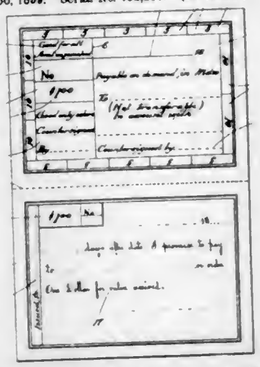
4. A device of the class described comprising a frame, a pair of blades capable of moving longitudinally and laterally of the frame simultaneously, links connecting the outer portion of the blades with the frame, and a pair of bell-crank levers forming handles and fulcrumed on the frame and connected with the inner portions of the blades, substantially as described.

5. A device of the class described comprising a frame provided with an opening, parallel blades located at opposite sides of the opening and arranged to move laterally and longitudinally simultaneously, means for actuating the blades, and a device connecting the blades and arranged independently of the frame and the actuating mechanism and adapted to cause the blades to be advanced uniformly, substantially as described.

6. A device of the class described comprising a frame, parallel blades adapted to move longitudinally and laterally of the frame, means for actuating the blades, and a connecting and guiding piece slidably secured to the blades whereby the latter are retained in parallelism and are caused to be advanced uniformly, substantially as described.

7. A device of the class described comprising a frame, parallel blades adapted to move longitudinally and laterally of the frame, a transversely-disposed slotted connecting-piece arranged on the blades, and flanged plates mounted on the blades and engaging the connecting-piece and having webs or flanges arranged in the slots thereof, substantially as described.

653,805. TRADING-TICKET. EARLE G. HARRELL, Jennings, Fla. Filed Sept. 30, 1899. Serial No. 732,235. (No model.)

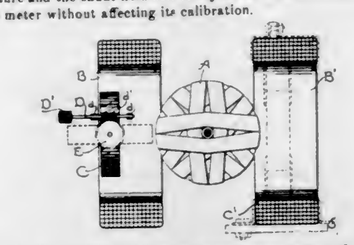


Claim.—In a trading-ticket, the combination with a guarantee member or strip having a promissory note on its obverse side and an authorization on the reverse side to pay the party named in the note the amount for which the ticket is drawn, of a trading-ticket member, primarily connected to the guarantee member and separable from the latter, and having on its obverse side matter indicating a fixed purchasing value, a surrounding disposition of numerals representing fractional values and adapted to be canceled by punching, and an inclosed space for the names of parties in account with each other, and on the reverse side said trading-ticket having a tabulated form for dates, articles purchased, and prices paid therefor to inseparably combine the debit and credit account on one member, the spaces containing the numerals on the obverse side being irregular with relation to the tabulated form on the reverse side to avoid total mutilation of the matter on the said reverse side.

653,806. ELECTRIC METER. CARYL D. HASKINS, Newton, Mass., assignor to the General Electric Company, of New York. Filed May 8, 1899. Serial No. 715,911. (No model.)

Claim.—1. In an electric-motor meter, the combination with the load field-coils and the armature in shunt across the mains, of a starting-coil also in shunt, and means for adjusting the relative position of the armature and starting-coil to vary the friction compensation.

2. In an electric-motor meter, the combination with the armature, the series field-coils, and the shunt starting-coil in series with the armature, of means for adjusting the relative position of the armature and the shunt field-coil to adjust the friction compensation of the meter without affecting its calibration.



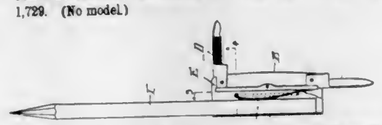
3. The combination with an electric-motor meter, of a rotatable starting-coil, and means for adjusting the angle at which the coil is presented to the armature.

4. The combination with a motor-meter, of a starting-coil, mounted in bearings secured by clamps upon the series field-coils, and means for rotating the starting-coil.

5. The combination with a rotatable starting-coil in a motor-meter, of gearing by which the coil may be adjusted to any desired angular position with reference to the armature.

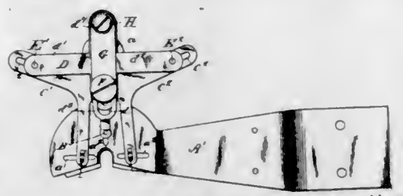
6. The combination with a motor-meter, of a starting-coil, in addition to the ordinary motor elements, and means for varying the effect of the starting-coil independent of variation in its absolute magneto-motive force.

653,807. COMBINED PENCIL-HOLDER AND PENKNIFE. ANDREW HOFSTETTER, Philadelphia, Pa. Filed Jan. 17, 1900. Serial No. 1,729. (No model.)



Claim.—In a device of the character described, a metallic plate bent on itself to form a socket, a pin formed from a single piece of wire strung through apertures in the metal plate holding the said plate, one end of said wire being formed into a hook and the other end shaped into a securing-pin adapted to engage the hook; a spring between the sections of the plate having one end bent around the wire; said spring being curved to bear against an object to be placed in the socket.

653,808. BUTTON-CLAMP FOR SEWING-MACHINES. JAMES T. HOGAN, Jersey City, N. J., assignor to the National Machine Company, of New York. Filed Nov. 8, 1899. Serial No. 736,226. (No model.)



Claim.—1. In a clamp for holding buttons, the combination of plates between which a buttom may be held, adjusting devices projecting through slots in one of the plates and movable independently of said plates, and means for simultaneously shifting said adjusting devices from and toward each other, substantially as specified.

2. In a clamp for holding buttons, the combination of plates between which a button may be held, adjusting devices consisting of pins, projecting through slots in one of the plates and movable independently of said plates, and means for simultaneously shifting said adjusting devices, substantially as specified.

3. In a clamp for holding buttons, the combination of plates between which a button may be held, adjusting devices projecting through slots in one of the plates and movable independently of said plates, and means, comprising a bodily-moving piece connected with one of the adjusting devices, and levers connected with other adjusting devices, for the purpose of centering a button, substantially as specified.

4. In a clamp for holding buttons, the combination of plates between which a button may be held, adjusting devices projecting

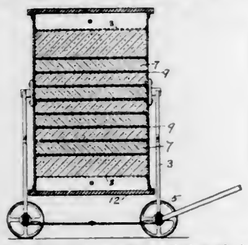
through slots in one of the plates and movable independently of said plates, a bodily-moving piece connected with one of the adjusting devices, and two levers connected to the other adjusting device and oscillated by means of said bodily-moving piece, substantially as specified.

5. In a clamp for holding buttons, the combination of plates between which a button may be held, adjusting devices projecting through slots in one of the plates and movable independently of said plates, a bodily-moving piece connected with one of the adjusting devices, two levers connected to the other adjusting device and oscillated by means of said bodily-moving piece, and means for securing the bodily-moving piece in different positions, substantially as specified.

6. In a clamp for holding buttons, the combination of two plates arranged one above the other, and the upper provided with a number of slots, adjusting devices projecting through said slots and movable independently of said plates, a bodily-moving piece connected with one of the adjusting devices and having a sliding connection with one of the plates for holding a button, a screw for clamping said bodily-moving piece in position, elbow-levers fulcrumed by said screw to one of the said plates, and having slotted connections with the bodily-moving piece, substantially as specified.

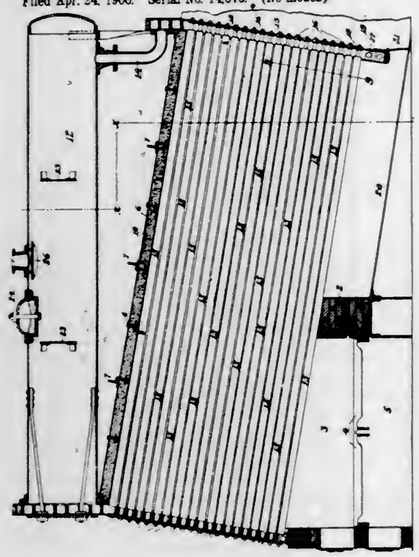
7. In a clamp for holding buttons, the combination of plates between which a button may be held, one of said plates being adjustable toward and from the other, adjusting devices projecting through one of said plates toward the other plate, and means for supporting the adjusting devices made flexible so as to be capable of movement toward and from the adjacent one of the two said plates.

653,809. FILTERING MATERIAL. NICHOLAS JACOBSOHN, St. Petersburg, Russia. Filed Feb. 28, 1899. Serial No. 707,163. (No specimens.



Claim.—A filter cake or material consisting of charcoal, sand and magnesite or Portland cement.

653,810. STEAM-BOILER. EDWARD KENDALL, Cambridge, Mass. Filed Apr. 24, 1900. Serial No. 14,076. (No model.)



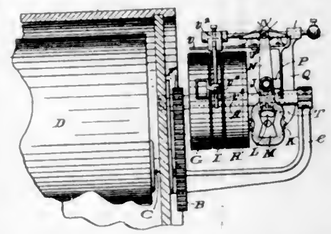
Claim.—1. In a water-tube steam-boiler the combination of a shell or casing having its top inclined downward toward its rear and having a water-leg at its front and rear ends; a series of inclined water-tubes arranged in vertical and horizontal rows, set in tube-sheets forming the inner walls of said water-legs; a corresponding series of openings in the outer walls of said water-legs having diameters at least equal to the exterior diameters of said water-tubes, and in axial line with said water-tubes; a series of removable screw-plugs closing said openings; a horizontal cylindrical drum located above said shell or casing and communicating at its front end with the front water-leg; and a pipe connecting the interior of the rear end of said drum with the interior of the rear water-leg.

2. The combination, in a steam-boiler of a shell or casing made rectangular in cross-section and inclined downward toward its rear end and provided with a water-leg at its front, and at its rear end; a series of inclined water-tubes arranged in vertical and horizontal rows, and set in tube-sheets which form the inner walls of said water-legs; a corresponding series of openings in the outer walls of each water-leg, having diameters at least equal to the exterior diameters of said water-tubes and in axial line therewith; a series of screw-plug caps closing said openings; a series of fire-tubes firmly set in the inner and outer walls of said rear water-leg, and extending only from the inner face of the inner wall to the outer face of the outer wall of said rear water-leg; said fire-tubes being arranged in vertical and horizontal rows alternating with the vertical and horizontal rows of said water tubes.

3. The combination in a steam-boiler, of a metallic shell or casing the crown-sheet of which is inclined downward toward its rear end and having water-legs at its front and rear ends, both side walls of each of which have formed therein a series of openings arranged in vertical and horizontal rows and in axial line with each other; a corresponding series of inclined water-tubes set in the inner walls of said water-legs; a corresponding series of removable screw-plugs closing the openings in the outer wall of each water-leg; a series of short fire-tubes extending only through the rear water-leg and firmly set in the inner and outer walls thereof, and arranged in rows alternating with the vertical and horizontal rows of said water-tubes; a passage beneath said rear water-leg; and a damper constructed and arranged to close or open said passage.

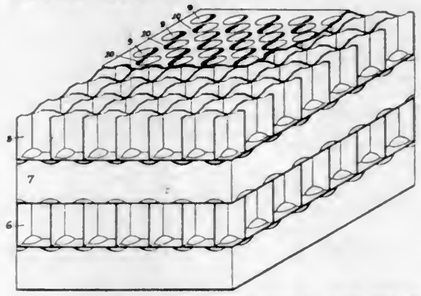
4. The combination in a steam-boiler of a shell or casing the crown-sheet of which is inclined downward toward its rear end, and having water-legs at its front and rear ends both side walls of which legs have formed therein a series of openings or perforations arranged in vertical and horizontal rows, and in axial line with each other; a corresponding series of inclined water-tubes set in the openings in the inner or tube sheets of said water-legs; a cylindrical drum arranged in a horizontal position above said casing, with its axis coinciding approximately to the normal water-line of the boiler; and a plurality of baffle-plates extending transversely across said drum but of less height than the diameter of said drum, as shown.

653,811. REVERSING MECHANISM. JOHN KERKHOFF, Cincinnati, Ohio. Filed Feb. 28, 1900. Serial No. 6,792. (No model.)



Claim.—The combination in a washing-machine reversing mechanism, of two loose pulleys, and one tight pulley, one of the loose pulleys having a worm attached to the outer end of its hub, which meshes with a worm-gear, the worm-gear having a cam projecting from one side that works in an opening at the lower end of a vertical arm, the vertical arm being pivoted at its center to a bracket, the upper end of the vertical arm having a pin projecting in from the top to engage with a slot which is in the lower side of a dog, the dog being secured to a rod, this rod having attached to it at one end a head, this head having a belt shifter projecting laterally and downward from it, each end of the belt-shifter being provided with belt-loops to engage belts, a weight secured at the opposite end of the above-named rod, a pinion on the same shaft with the tight and loose pulleys, this pinion meshing with a gear that is secured to the cylinder of the washer, substantially as described.

653,812. EGG-CASE. CHARLES E. LA FLEUR, Baltimore, Md., assignor to George A. Horner and Arthur L. Horner, same place. Filed Jan. 9, 1900. Serial No. 814. (No model.)



Claim.—1. In an egg-case, the combination of a filler comprising a series of cells, with a flat having a series of depressions corresponding in number and position with the cells of the filler, and so arranged as to register with the axes of the cells.

2. In an egg-case, the combination of a series of fillers each composed of a series of cells, adjacent fillers being so arranged as to lap cells centrally with those above and below it, a series of flats adapted to be interposed between the fillers, and provided with a series of alternate depressions and elevations arranged to register with the cells above and below so that each cell will have a concave top and bottom on the inside.

3. In an egg-case, the combination of a series of strips of board of which the filler is made, suitably scored and notched, so that when secured together the filler will be provided upon its surface with a series of notches in the intervening walls between cells, and a flat provided with a series of depressions corresponding in number and position to the notches of the filler, and which will register therewith.

4. In an egg-case, the combination of a filler comprising a series of cells, with a flat having a series of elevations corresponding in number and position with the cells of the filler, and so arranged as to register with the axes of the cells.

5. In an egg-case, the combination of a series of fillers, each composed of a series of cells, the cells of each filler lapping centrally the cells of adjacent fillers, in combination of a series of flats having alternate elevations and depressions, registering with cells above and below it, the egg-space of each cell protruding into the adjacent filler and between the egg-spaces thereof.

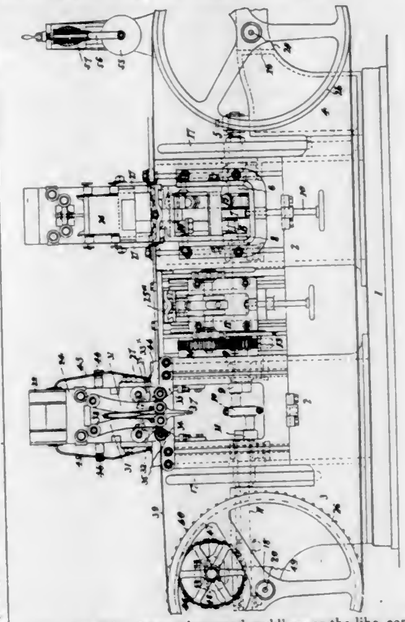
653,813. CARVING-MACHINE. HENRY MARLES, London, England, assignor to the Marles Carved Moulding Company, Philadelphia, Pa. Filed Jan. 10, 1900. Serial No. 1,007. (No model.)

Claim.—1. A machine for carving wood moldings or the like, consisting of a framing having a plurality of brackets angularly adjustable thereon in a more or less upright position, and a plurality of corresponding brackets angularly adjustable in a more or less horizontal position, said brackets being provided with guides, slides adapted to work along said guides, a tool-holding device adjustable on each slide, means for reciprocating said slides, an endless steel feed-belt provided with upwardly-projecting sharpened teeth for entering the under side of a molding, and elastic means for holding down the molding onto said belt, substantially as described.

2. The combination with a vertically-reciprocated slide of two pendent bars, a tool-carrying link jointed to the lower end of each, a lever jointed to the other end of said link and having its fulcrum on the machine-framing, the tool on each link serving to carve one-half of an egg-oval substantially as set forth.

3. In a machine for carving wood moldings or the like, a feeding device for the moldings, consisting of an endless steel belt provided with perforations and having outwardly-projecting sharpened teeth for entering the under side of a molding, two spindles provided with pulleys around which said belt is passed, one of said pulleys having its periphery provided with projections to enter the perforations of said belt for actuating the same, means for adjusting the tension of the belt, and elastic means for holding down the molding onto said belt, substantially as described.

4. In a machine for carving wood moldings and the like, the combination with a plurality of brackets angularly adjustable in a more or less upright position, and a plurality of corresponding brackets angularly adjustable in a more or less horizontal position, said upright brackets and said horizontal brackets being arranged in rows and provided with guides, slides adapted to work along said guides, and a tool-holding device adjustable on each slide, of a driving-shaft made in four parts and provided with adjustable cranks, means for adjusting said cranks angularly to each other, and connecting-rods provided with length adjustment and adapted for reciprocating the slides from said driving-shaft, substantially as described.



5. A machine for carving wood moldings or the like, consisting of a framing, a plurality of brackets angularly adjustable thereon in a more or less upright position, a plurality of corresponding brackets angularly adjustable thereon in a more or less horizontal position, each of said brackets being provided with guides, tool-carrying slides adapted to work along said guides, a driving-shaft provided with cranks, connecting-rods for reciprocating the tool-carrying slidee from the cranks of said shaft, an endless steel feed-belt provided with perforations and having outwardly-projecting sharpened teeth for entering the under side of a molding, elastic means for holding down the molding onto said belt, pulleys around which the feed-belt is passed, one of said pulleys being provided with projections to enter the perforations of the feed-belt, and means for imparting intermittent progressive motion to said feed-belt, substantially as described.

653,814. DEVICE FOR SUPPORTING THE HANDS OF PIANO-PLAYERS. WILHELM J. MENNES, Amsterdam, Netherlands. Filed Feb. 20, 1900. Serial No. 5,957. (No model.)



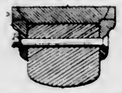
Claim.—1. In a hand-supporting device for pianoforte-players the combination of a hook shaped to embrace the side of the hand near the joint of the little finger, a band adapted to be secured around the forearm, and an elastic band detachably connected at one end to the aforesaid hook and arranged to be wound around the forearm and adjustably secured at its other end to the said band secured around the forearm, substantially as described, and for the purpose specified.

2. In a hand-supporting device for pianoforte-players, the combination of a hook shaped to embrace the side of the hand above the joint of the little finger, a band adapted to be secured around the forearm, and an elastic band detachably connected at one end to the said hook and arranged to be passed over the back of the hand, under the wrist, and then over the back of the forearm attached to the band secured around the forearm, substantially as described, and for the purpose specified.

3. In a hand-supporting device for pianoforte-players, the combination of an arched hook shaped to embrace the side of the hand

above the joint of the little finger and carrying a pad *h*, an elastic band adapted to be secured around the forearm, another elastic band detachably connected at one end to the said hook and arranged to be passed over the back of the hand between the wrist-joint and the joint of the little finger and under the wrist and then over the back of the forearm, said band being attached by a clip to the band secured around the forearm, substantially as described, and for the purpose specified.

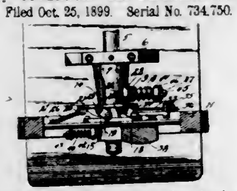
653,815. VEHICLE-TIRE. ALLEN L. MILLER, Chicago, Ill., assignor of two-thirds to Nicholas Blaha and Henry F. Ericksen, same place. Filed Feb. 8, 1900. Serial No. 4,563. (No model.)



Claim.—1. The combination with a felly, of a tire thereon, of a width greater than the width of the felly, rings at the sides of the felly for supporting the overhanging portions of the tire, and bolts passing through the rings and felly, substantially as described.

2. The combination with a felly, of a tire thereon of a width greater than that of the felly, and having shoulders formed on its inner face, of rings at the sides of the felly, extending beyond the same and engaging the shoulders, and bolts passing through the rings and felly for securing the rings in place, substantially as described.

653,816. GOVERNOR. GROVE E. MILLER and CAREY W. MILLER, Ada, Ohio. Filed Oct. 25, 1899. Serial No. 734,750. (No model.)

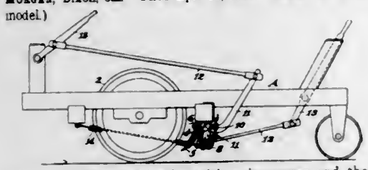


Claim.—1. The combination with a fly-wheel and a valve-operating lever, of a plate fixed to the wheel, a second plate, links pivoted to the plates whereby the second plate may have a swinging movement toward and away from the first plate, a shaft mounted in the wheel, a lever at one end of the shaft provided with a weight, a spring connected with the lever for holding it yieldably, a second lever fixed to the shaft, and a rod connecting the second lever with the second plate.

2. The combination with a fly-wheel, and a valve-operating lever, of a plate fixed to the wheel, a second plate connected with the first plate through the medium of the links, whereby the second plate may swing toward and away from the first plate and into and out of engagement with the valve-operating lever, a shaft mounted in the wheel, a lever fixed to one end of the shaft and provided with a weight, a rod pivoted to the lever, a spring connecting the rod with the wheel and adapted to hold the lever yieldably, a second lever fixed to the shaft, and a rod connected with the second plate and adjustably connected with the second lever.

3. The combination with a fly-wheel and a valve-operating lever, of a plate mounted upon the wheel, a second plate having link connections with the first plate, a bell-crank lever mounted upon the wheel, connections between one end of the bell-crank lever and the second plate to move said plate upon its links longitudinally and outwardly in the direction of the operating-lever, a weight upon the opposite end of the bell-crank lever for moving the lever under the influence of centrifugal force, and means for returning the plate when the force is diminished.

653,817. SAFETY-LOCK FOR HARVESTERS. MILFORD G. MORGAN, Dixon, Cal. Filed Apr. 16, 1900. Serial No. 13,055. (No model.)



Claim.—1. The combination with a harvester and the like of shoes, guides and latches by which said shoes are normally retained in the guides, means by which the latches may be disengaged to allow the shoes to slide out by the guides, and slide beneath the wheels of the machine, and chains connecting the shoes with the frame whereby they are retained in position so that the machine is supported directly upon them.

2. The combination with a harvester or the like of shoes connected with a portion of the framework by chains and adapted when the chains are extended to lie beneath and support the wheels of the machine, curved guides fixed to the frame in front of the wheels so as to receive the shoes, latches carried upon supporting-shafts or the like and adapted to engage and hold the shoes normally in the guides, and levers connecting therewith by which the latches may be disengaged to allow the shoes to pass beneath the wheels.

653,818. FOUNTAIN-PEN. GEORGE S. PARKER, Janesville, Wis. Filed Apr. 9, 1900. Serial No. 12,204. (No model.)

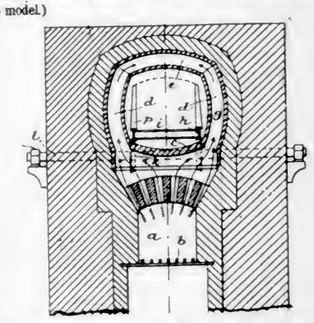


Claim.—1. In combination with a fountain-penholder, of a tubular pen-cap having the bore at and contiguous to its open end of a greater diameter than the external diameter of the portion of the holder receiving the same, and means for binding the cap upon the holder without contact of its open end with the latter.

2. In combination with a fountain-penholder, of a tubular cap having the bore at and contiguous to its open end of a greater diameter than the external diameter of the portion of the holder receiving the same and having no contact with the latter, and also provided with an interior engaging portion disposed at a point intermediate its ends and constituting the sole retaining means for the cap.

3. In combination with a fountain-penholder having a tapered end portion, of a cap having the bore at and contiguous to its open end of a greater diameter than the external diameter of the portion of the holder receiving the same and also provided with an interior inclined seat or shoulder disposed at an intermediate point between the ends of the cap and adapted to have a binding engagement with the tapered end portion of the holder to constitute the sole retaining means for the cap without contact of the open end of the latter with the holder.

653,819. MUFFLE FURNACE OR OVEN. LOUIS H. W. REGOUT, Maestricht, Netherlands. Filed Nov. 9, 1899. Serial No. 736,412. (No model.)



Claim.—1. An annular muffle-furnace comprising an annular rotatory support with means for rotating the same, a heating-chamber at one portion of the annular muffle-furnace arranged below the support, a muffle above the heating-chamber, a preliminary-heating section of the furnace and a cooling-section, substantially as set forth.

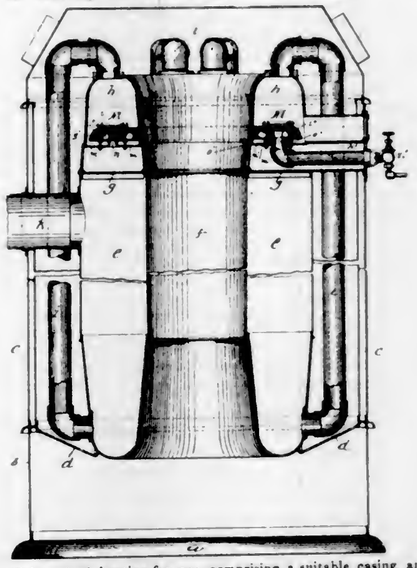
2. In an annular muffle-furnace, an annular rotatory support comprising a pair of rails connected at intervals by cross-ties, a series of wheels upon which said rails are supported and a floor laid upon said rails on which the articles to be baked are placed, and means for rotating the annular support substantially as set forth.

3. In an annular muffle-furnace of the kind described, the combination with the heating-chamber of the stationary supporting-wheels having axles located outside said chamber, the bearings to said axles being arranged on the outside walls of the muffle-furnace, substantially as described.

4. An annular muffle-furnace with continuous working and direct base-firing characterized by the arrangement of an annular rotatory support, on which the articles to be treated are placed, said support comprising a pair of annular rails united by cross-ties and provided with a suitable floor, the rails being supported on rollers arranged at intervals on both sides of the furnace and in such manner that the heating-gases produced underneath the muffle and passing around the muffle do not touch the support and the rollers, and means for rotating the traveling support so that the articles to be heated pass successively through the preliminary-heating space, then through the muffle and then through the cooling-space of the furnace, substantially as described.

5. In an annular muffle-furnace, a heating-chamber *a* a muffle *c*, a rotatory annular bottom support, rails *h*, supporting-wheels *k*, combustion-gas passages *d* and *t*, substantially as described.

653,820. HOT-AIR FURNACE. JOHN P. SCHAFFER, Pittsburg, Pa. Filed Aug. 31, 1898. Serial No. 689,944. (No model.)



Claim.—1. A heating-furnace, comprising a suitable casing, an inclosed annular shell, closed at its top and bottom and having a partition near its upper end forming a combustion-chamber above and a heating-chamber below the same, an annular burner located in the combustion-chamber, pipes leading from the upper portion of the combustion-chamber to the lower portion of the heating-chamber and an escape-flue leading from the heating-chamber adjacent to the partition, substantially as set forth.

2. A heating-furnace, comprising a suitable casing, a double-tube shell forming an annular space between adjacent walls, a partition dividing said space into a short combustion-chamber above and a long, supplemental heating-chamber below the same, a burner located in said combustion-chamber, pipes leading from the upper portion of said combustion-chamber to the lower portion of the heating-chamber and an escape-flue at the upper end of the heating-chamber, substantially as set forth.

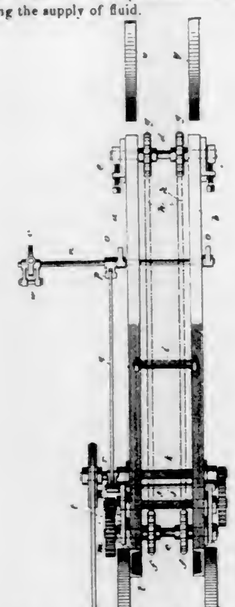
3. A heating-furnace comprising a casing, an inclosed annular shell divided near its upper end by a partition into a combustion-chamber and a heating-chamber and forming an inner and an outer air-circulating chamber, a plurality of pipes extending from the top of the combustion-chamber through the outer air-chamber to the bottom of the heating-chamber, a burner in the combustion-chamber and an escape-flue at the upper end of the heating-chamber, substantially as set forth.

653,821. APPARATUS FOR WASHING BARRELS. GUSTAV SCHOCK, New York, N. Y. Filed Nov. 2, 1899. Serial No. 735,581. (No model.)

Claim.—1. In a barrel handling and washing apparatus, the combination of a barrel-transporting apparatus, a fluid-supply pipe adapted to communicate with the barrel on the transporting apparatus and automatic means operated by the movement of the barrel-transporting apparatus for opening and closing the supply to the fluid-supply pipe.

2. In a barrel washing and handling apparatus, the combination of a barrel-transporting apparatus, a fluid-supply pipe adapted to enter the barrel and a valve for controlling the admission of fluid to the said supply-pipe and operated by the movement of a barrel-transporting apparatus.

3. In a barrel washing and handling apparatus, the combination of a barrel-transporting mechanism, a trip or detector-bar, means for supplying the barrel with fluid and means for automatically admitting and shutting off the flow of fluid to the said fluid-supply means and a connection between the trip or detector-bar and the said means for controlling the supply of fluid.



4. In a barrel handling and washing apparatus, the combination of barrel-transporting mechanism, a fluid-supply conduit adapted to deliver fluid to the barrel, means for controlling the flow of fluid to the said fluid-supply conduit and a trip or detector-bar operated by the movement of the barrel-transporting mechanism for controlling the means for controlling the supply of fluid to the barrel.

5. In a barrel handling and washing apparatus, the combination of a pair of sprocket-chains for transporting a barrel, a supply-pipe for bringing a supply of fluid to the said barrel, a valve for controlling the flow of fluid to the supply-pipe and means for controlling the said valve.

6. In a barrel handling and washing apparatus, the combination of a barrel-transporting apparatus, means for bringing a supply of fluid to the barrel carried by the transporting apparatus, a fluid-supply-governing means and means for controlling the fluid-supply comprised in part by a plurality of trips or detector-bars situated at different points of the apparatus and a connection intervening between the said trips or detector-bars, whereby one will be effective, when operated, to restore the other to its initial position and they will be reciprocally effective to restore each other to their initial position.

7. In a barrel washing and handling apparatus, the combination of barrel-transporting mechanism, a plurality of detector-bars or trips located at different points along the line of travel of the barrel, a fluid-supply for the barrel and automatic means for governing the said fluid-supply by the movement of the detector-bars or trips.

8. In a barrel washing and handling apparatus, the combination of barrel-transporting mechanism, means for admitting a supply of steam or water to the said barrel and means for controlling the steam and water supply by the movement of the barrel-transporting mechanism.

9. In a barrel washing and handling apparatus, the combination of a barrel-transporting mechanism with means for supplying the said barrel with fluid, hand-operated apparatus for starting the flow of fluid to the barrel and automatic means for shutting off the supply of fluid to the barrel.

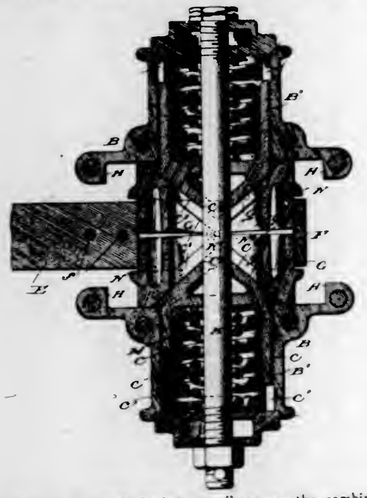
10. In a barrel washing and handling apparatus, the combination of a barrel-transporting mechanism with means for supplying the said barrel with fluid, hand-operated apparatus for starting the flow of fluid to the barrel, automatic means for shutting off the supply of fluid to the barrel and means for operating the said automatic means by the movement of the barrel-transporting mechanism.

11. In a barrel washing and handling apparatus, the combination of a barrel-transporting mechanism with means for supplying the said barrel with fluid, hand-operated apparatus for starting the flow of

fluid to the barrel, automatic means for shutting off the supply of fluid to the barrel and a trip or detector-bar in the path of the barrel for shutting off the supply of fluid to the said barrels.

12. In a barrel handling and washing apparatus, the combination of a barrel-transporting mechanism and means for supplying steam and water to the barrel and automatic means for shutting off the supply of steam and water

653,822. DRAFT-RIGGING FOR RAILWAY-CARS. HENRY H. SESSIONS, Chicago, Ill., assignor to the Standard Coupler Company, New York, N. Y. Filed Apr. 19, 1900. Serial No. 13,521. (No model.)



Claim.—1. In a draft-rigging for railway-cars the combination with a draw-bar, wedge-blocks having working faces inclined in opposite directions to the line of draft and connected to move in both directions in unison with said draft-bar, of oppositely-located transversely-movable wedge-blocks having working faces corresponding to the working faces of the wedge-blocks moving with the draft-bar, and adapted to coöperate therewith on opposite sides and independent springs for said transversely-movable wedge-blocks for moving them toward each other; substantially as described.

2. In a draft-rigging the combination with a draft-bar, wedge-blocks having working faces inclined in opposite directions to the line of draft and mounted to move in unison with said draft-bar in both directions, transversely-movable wedge-blocks having correspondingly-inclined working faces, springs for advancing said transversely-movable wedge-blocks and a through-bolt passing centrally through all of said wedge-blocks for confining the springs; substantially as described.

3. In a draft-rigging the combination with a draft-bar, wedge-blocks having operative faces inclined oppositely to each other on each side of the line of draft, transversely-movable wedge-blocks having correspondingly-inclined operative faces, springs for advancing said transversely-movable wedge-blocks and a through-bolt arranged transversely of the line of draft for confining the springs and holding the transversely-movable wedge-blocks in operative position; substantially as described.

4. In a draft-rigging the combination with a housing having means for attachment to the car-frame and transversely-extending guides, of a draft-bar, wedge-blocks mounted to move in unison with said draft-bar and having oppositely-inclined working faces on each side of the line of draft, transversely-movable wedge-blocks mounted in said transverse guides and having correspondingly-inclined working faces, independently-removable caps for the outer ends of the transverse guides and springs interposed between said caps and transversely-movable wedge-blocks; substantially as described.

5. In a draft-rigging the combination with a housing having transversely-extending guides, transversely-movable wedge-blocks supported in said guides, caps on the outer sides of said transversely-movable wedge-blocks, springs interposed between said caps and wedge-blocks and a through-bolt passing through said caps and wedge-blocks for retaining the parts in their operative positions, of a draft-bar and wedge-faces moving in unison therewith for coöperating with the transversely-movable wedge-blocks; substantially as described.

6. In a draft-rigging the combination with the housing having transversely-extending guides and a central longitudinally-extending channel-way for the draft-bar with stops at opposite ends of said channel-way, of transversely-movable wedge-blocks mounted in said guides, springs for advancing said wedge-blocks toward each other, a draft-bar, wedge-blocks moving in both directions in unison with said draft-bar and having oppositely-inclined operative faces on each side of the line of draft for coöperating with the transversely-movable wedge-blocks and stop-surfaces adapted to coöperate with the stops on the housing for limiting the longitudinal movement of the draft-bar; substantially as described.

7. In a draft-rigging for railway-cars, the combination with a housing formed of a single casting having transversely-extending guides and a central channel-way with stop projections in said channel-way, of transversely-movable wedge-blocks mounted in said guides and having friction-bearings therein and springs for advancing said wedge-blocks, of a draft-bar having wedge-blocks connected for moving in unison therewith in both directions and provided with working faces inclined in opposite directions on both sides of the line of draft and stop-surfaces adapted to contact with the stop-surfaces in said channel-way for limiting the movement of the draft-bar; substantially as described.

8. In a draft-rigging for railway-cars the combination with the draft-bar, wedge-blocks moving in unison therewith in both directions and having working faces inclined in opposite directions on each side of the line of draft, of transversely-movable wedge-blocks, springs for advancing said wedge-blocks and guides for said wedge-blocks having frictional bearing-surfaces for retarding the transverse movement of the wedge-blocks; substantially as described.

9. In a draft-rigging, the combination with a longitudinally-movable draft-bar and transversely-movable blocks moved transversely by the longitudinal movement of said draft-bar, of fixed guides for said transversely-movable blocks having friction-surfaces for retarding such movement and springs for advancing the blocks; substantially as described.

10. In a draft-rigging for railway-cars the combination with the draft-bar having wedge-blocks connected therewith for unitary movement in both directions and oppositely-inclined working faces on said wedge-blocks, said inclined working faces meeting at a central point, of transversely-movable wedge-blocks having oppositely-inclined working faces extending from the side approximately to a central point whereby the tendency to tilt said transversely-movable wedge-blocks by the longitudinal movement of the draft-bar is reduced, and springs for advancing the transversely-movable wedge-blocks to resist the longitudinal movement of the draft-bar; substantially as described.

11. In a draft-rigging the combination with the housing having the transversely-extending guides with the substantially-plane guiding-surfaces on front and rear sides, of a longitudinally-movable draft-bar, wedge-blocks movable in unison therewith and having oppositely-inclined working faces, transversely-movable wedge-blocks coöperating with the longitudinally-movable wedge-blocks and having oppositely-located plane friction-surfaces at front and rear for coöperating with the plane surfaces in the guides and springs for advancing the transversely-movable wedge-blocks; substantially as described.

12. In a draft-rigging the combination with the longitudinally-movable draft-bar, the wedge-block mounted to move in unison therewith and having centrally-arranged elongated opening, of a transversely-movable wedge-block, a spring for advancing said wedge-block and a through-bolt for compressing said spring passing through said elongated opening in the longitudinally-movable wedge-block; substantially as described.

13. In a draft-rigging for railway-cars the combination with a draft-bar, a yoke carried by said draft-bar, independent wedge-blocks mounted in said yoke on opposite sides of its longitudinal center and having recesses therein with oppositely-inclined wedging-surfaces, of transversely-movable spring-pressed wedge-blocks having projecting oppositely-inclined surfaces coöperating with the corresponding surfaces of the wedge-blocks mounted in the yoke; substantially as described.

14. In a draft-rigging the combination with the draft-bar, the yoke connected therewith, oppositely-arranged wedge-blocks mounted in said yoke and each having a projecting bearing-point for coöperation with the bearing-point on the other block for permitting of a limited rocking movement in the yoke of oppositely-arranged transversely-movable wedge-blocks and springs for advancing the same; substantially as described.

15. In a draft-rigging the combination with an integral housing having a central channel-way for the draft-bar, transversely-extending guides and a series of vertically-extending apertures for the supporting-bolts whereby the housing may be applied to car-frames of different builds, transversely-movable wedge-blocks in said guides and springs for advancing said wedge-blocks, of a longitudinally-movable draft-bar mounted in said channel-way and wedge-blocks moving in unison with said draft-bar for coöperating with the transversely-movable wedge-blocks; substantially as described.

16. In a draft-rigging for railway-cars the comonation with an integral housing having a central draft-bar channel-way and transversely-extending gnides as described, of transversely-movable wedge-blocks mounted in said guides and having inclined wedging-faces at front and rear projecting into said channel-way with substantially-horizontal top and bottom faces, of a longitudinally-movable draft-bar, wedge-blocks connected with said draft-bar and having webs overlying the substantially-horizontal surfaces of the transversely-movable wedge-blocks, whereby the rear end of the draft-bar is held against vertical movement; substantially as described.

17. In a draft-rigging the combination with the housing having the transversely-extending guides and the draft-bar having the wedge-blocks connected therewith, of the transversely-movable wedge-blocks coöperating with the wedge-blocks moving with the draft-bar, springs for advancing said transversely-movable wedge-blocks, reversible caps for the ends of the guides beneath which the springs are confined, said caps having projections on one side for reducing the size of the spring-box when turned inwardly; substantially as described.

18. A wedge-block for draft-rigging of railway-cars having a projection at one side for entering the draft-bar yoke, a shoulder N and a recess at the opposite side having plane oppositely-inclined wedge-surfaces; substantially as described.

19. A wedge-block for draft-rigging of railway-cars having a projection at one side for entering the yoke of a draft-bar, a shoulder N, a recess in the opposite side having plane inclined wedging-surfaces at front and rear and a web at top and bottom of said recess; substantially as described.

20. A transversely-movable wedge-block for draft-rigging of railway-cars having a substantially-cylindrical outwardly-extending portion constituting a spring-box and an inwardly-extending projection having oppositely-inclined plane wedging-surfaces with substantially-horizontal top and bottom surfaces; substantially as described.

653,823. COMBUSTION-CRUCIBLE. PORTER W. SHIMER, Easton, Pa. Filed July 3, 1899. Serial No. 722,642. (No model.)

Claim.—1. A crucible-stopper provided with means for the circulation through it of a cooling medium and with means for circulating air or the like through the crucible, substantially as described.

2. Hollow crucible-stopper 2 provided with inlet and outlet tubes 8 9 for a cooling medium and with means, including inlet and outlet tubes 13 15 passing through the stopper, for circulating air or the like through the crucible, substantially as described.

3. The combination with a crucible, of a stopper therefor and an elastic gasket between the two, said stopper being provided with means for the circulation through it of a cooling medium and with means communicating with the crucible for the circulation of air or the like through the latter, substantially as described.

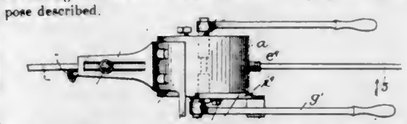
4. The combination with a crucible, of a stopper therefor, a gasket of elastic material between the two, said stopper being provided with means for the circulation through it of a cooling medium, and a wick of fibrous material leading from a source of supply of cooling medium and passing around the crucible, substantially as described.

5. The combination with crucible 1, of stopper 2 closing the mouth of the crucible and bearing inlet and outlet tubes 8, 9, for the circulation of a cooling medium through the stopper, gasket 6 between the stopper and crucible, trough 10 for containing a cooling medium, and wick 12 leading therefrom and passing around the crucible, substantially as described.

6. The combination with crucible 1, of stopper 2 closing the mouth of the crucible and bearing inlet and outlet tubes 8, 9, for the circulation of a cooling medium through the stopper, and inlet and outlet tubes 13, 15, for the circulation of air or the like through the crucible, and gasket 10 between the stopper and crucible, substantially as described.

653,824. SAW-SWAGE. EDWIN G. SHORTRIDGE, SAMUEL J. MYERS, and WATSON D. IRVIN, Kokomo, Ind. Filed Jan. 20, 1900. Serial No. 2,182. (No model.)

Claim.—1. In a saw-swage, the combination of a body slotted to receive the saw-tooth operated on, an anvil, and swaging-die within the body, the bracket rigid with the body and extending laterally therefrom, an adjustable vertical gage carried by said bracket to rest on a saw-tooth adjacent to the tooth being operated on, said bracket having the arm extending downwardly from its outer end and the horizontal adjustable stop arranged transversely of the arm to bear against the side of the saw, substantially as and for the purpose described.



2. In a saw-swage, the combination of the body slotted to receive the saw, an anvil and a rotary swaging-die carried by the body, a horizontal bracket rigid with the body and extending laterally therefrom and provided with the rigid arm depending beside the saw, a set-screw adjustable horizontally through said arm to bear against the side face of the saw at a distance from said body, for the purpose substantially as described.

3. In a saw-swage, the combination of a body formed to receive the saw-tooth, an anvil therein, a rotary die provided with the swinging lever arranged at one end of said body, the bracket secured to the body and extending horizontally therefrom and provided with a projection A, extending beyond the end of the body and forming a stop for said lever, the onter end of said bracket provided with a depending arm arranged to extend down beside the saw, a set-screw adjustable through said arm to engage the side face of the saw, and a gage carried by the bracket and arranged to rest on a tooth adjacent to the body, substantially as described.

4. In a saw-swage, the combination of a block or body having a rounded top face and a slot to receive the saw, an anvil in the body, a rotary die therein provided with an operating-lever arranged at one end of the body, a stop limiting the upward swing of said lever, an adjustable plate arranged flat against said end of the body and having a projection at its lower end limiting the downward swing of the lever, said plate having the segmental slot therethrough and the lateral top flange fitting over the top face of the body and conforming thereto in curvature, and the clamping bolt passing through said slot into the end of the body, substantially as described.

5. In a saw-swage, the combination of a block having a slot to receive the saw, said block formed with an inclined face at the top wall of the slot and a depending rigid portion at one end of the slot, the elongated wedge longitudinally movable in said slot having the inclined top side resting against said inclined face of the block, and the approximately-horizontal flat under face, an adjusting-screw passing through said depending portion of the block for moving said wedge to move the same longitudinally in either direction, the reversible anvil having the plurality of flat working faces arranged with a flat upper face bearing against and longitudinally movable along said under face of the wedge, means to adjust said anvil longitudinally of said wedge, a clamping-screw passing through the end of the block into engagement with a side face of the anvil to hold the same in the slot, and a swaging-die coöperating with the bottom face of said anvil, substantially as described.

6. In a saw-swage, the combination of a body-block having a slot to receive the saw, the body at the top of the slot, formed with an incline longitudinal of the slot, the longitudinally-movable wedge seated against said incline and having the flat under face parallel with the line of longitudinal movement of the wedge, an adjusting-screw for adjusting the wedge, a reversible anvil seated against said flat under face of the wedge and provided with means for moving the same longitudinally of said under face of the wedge, and a coöperating die, substantially as described

7. In a saw-swage, the combination of a body-block having a saw-receiving slot, a longitudinally-movable wedge seated against the block at the top of the slot, an adjusting-screw for moving said wedge longitudinally, a reversible anvil having the plurality of flat working faces, said anvil seated against and adjustable longitudinally along said wedge, a longitudinally and vertically movable holding-block fitting the rear portion of the edge of the anvil, a screw for moving said block and the anvil longitudinally of said wedge, and a screw for clamping the anvil in the body-block, substantially as described.

8. In a saw-swage, the combination of a body having a saw-receiving slot, an adjustable removable anvil seated in said slot and provided with clamping means, a longitudinally-adjustable screw passing through said body from the rear into said slot, a backing for said anvil loosely confined to said screw and moved longitudinally by the same and provided with an incline, whereby longitudinal movement of said backing determines the vertical position of said anvil, a block fitting and vertically and longitudinally movable with the

anvil, and an adjusting-screw for moving said block and anvil longitudinally, substantially as described.

9. In a saw-swage, the combination of the body having a saw-receiving slot and saw-tooth-swaging means comprising an adjustable anvil, a block behind and removably fitting said anvil, and movable vertically and longitudinally therewith, an adjustable screw in the body for moving said block to adjust the anvil longitudinally of the saw-tooth, and means to adjust the anvil and block vertically, substantially as described.

10. In a saw-swage, the combination of a body formed to straddle a saw and provided with clamping means and saw-tooth-swaging devices comprising a reversible adjustable anvil, a movable block abutting against the same, said anvil having angularly-arranged working faces and said block having an angular depression to receive the anvil, and formed with a rear T-shaped slot, and the adjusting-screw having a head working loosely in said slot, substantially as described.

11. In a saw-swage, the combination of the body-block having the slot to receive the saw, the adjustable reversible flat anvil therein having the plurality of similar flat edge working faces forming obtuse angles with each other, as described, a clamping-screw passing through an end of the body-block into engagement with a side face of said anvil, a wedge and screw for adjusting the anvil vertically, a holding-block fitting an angle of the anvil, a screw for adjusting said block and anvil longitudinally in the slot, and a rotary die coöperating with the anvil, substantially as described.

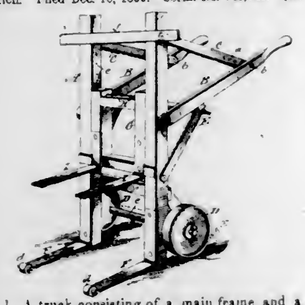
12. In a saw-swage of the character described, the combination of an anvil, a rotary mandrel having a longitudinal hole and a slot opening into said hole, the freely-rotating swaging-roller in said hole and spanning said slot to coöperate with the anvil, the balls g^4, g^4, located at the ends of the roller and holding the same against endwise play and receiving the end thrust, and permitting free rotation thereof, adjusting-screw g^3, and the mandrel-operating lever, substantially as described.

653,825. COIN-HOLDER. CLARENCE L. SLEDGE, Kyle, Tex. Filed Jan. 30, 1900. Serial No. 3,375. (No model.)



Claim.—A coin-holder comprising opposite heads and completely-open wire frames, the opposite end portions of the latter being pivotally connected to opposite extremities of each head, the distance between the wire frames and the wires of the latter being less than the diameter of the coins the holder is designed to contain, and the heads and frames collapsible to bring the said heads in approximately the same horizontal plane.

653,826. TRUCK. JONATHAN H. SOULE and NICHOLAS F. OBECK, Owosso, Mich. Filed Dec. 18, 1899. Serial No. 740,745. (No model.)



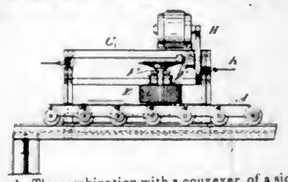
Claim.—1. A truck consisting of a main frame and a slidable and adjustable supplemental frame, lever-arms extending substantially at right angles to the frames and connected to each frame at the outer ends thereof, and a cross-bar upon the main frame extending laterally beyond the sides thereof to form a support, substantially as and for the purpose set forth.

2. A truck consisting of a suitable frame, lever-arms provided with rollers upon the end of the frame, and suitable handles for lifting the truck-frame, substantially as and for the purpose described.

3. A truck consisting of a suitable frame, a supplemental frame removably and adjustably connected to the truck-frame, and lever-arms upon the ends of the two frames, and adjustable handle-bars connected to the truck-frame, substantially as and for the purpose set forth.

4. A truck consisting of a suitable frame having a cross-bar connected thereto and projecting beyond the sides of the frame, a supplemental frame adjustable on the truck-frame, lever-arms upon the ends of the two frames, and a suitable brake to act upon the truck-wheels, substantially as and for the purpose specified.

653,827. SWITCH FOR ENDLESS CONVEYERS. MAXIMILIAN M. SUPPES, Elyria, Ohio. Filed May 14, 1900. Serial No. 16,611. (No model.)



Claim.—1. The combination with a conveyer, of a side-discharge switch therefor, consisting of a drum or roller situated in the path of movement of objects carried by the conveyer, and means for rotating said drum or roller.

2. The combination with an endless traveling conveyer, of a side-discharge switch therefor, consisting of a drum or roller above and adjacent to said conveyer, and means for rotating said drum or roller in a manner to cause it to discharge objects on the conveyer coming in contact therewith to either side of said conveyer.

3. The combination with an endless traveling conveyer, of a side-discharge switch therefor, comprising a drum or roller above and adjacent to said conveyer, and means for rotating the same at a speed greater than that of the conveyer.

4. The combination with an endless traveling conveyer, of a side-discharging device or switch therefor, comprising a cylindric drum journaled above and adjacent to the conveyer, and means for rotating said drum in either direction.

5. The combination with an endless traveling conveyer, of a car or carriage spanning the same and movable longitudinally thereof, a drum or roller on said car or carriage over and adjacent to the carrying-surface of the conveyer, and means for rotating said drum or roller.

6. The combination with an endless traveling conveyer, of a car or carriage spanning the same and movable longitudinally thereof, a drum or roller journaled on said car or carriage adjacent to the carrying-surface of the conveyer, and a motor mounted on the car or carriage and geared to the shaft of said drum or roller.

7. The combination with an endless conveyer, of a car or carriage spanning the same and movable longitudinally thereof, a drum or roller journaled on said carriage adjacent to the carrying-surface of the conveyer, means for rotating said drum or roller, and laterally arranged and inclined plates secured to the car or carriage at the sides of the conveyer.

8. The combination with an endless conveyer, of a cylindrical drum or roller journaled vertically over and adjacent to the carrying-surface of the conveyer, said drum or roller being of greater diameter than the width of the conveyer, and means for rotating the same.

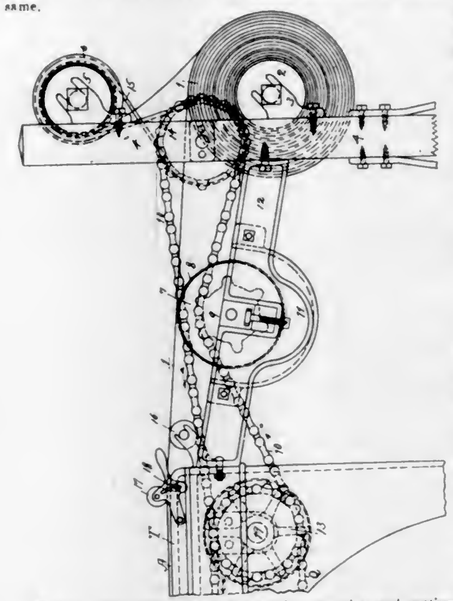
9. The combination with an endless conveyer, of a cylindrical drum or roller journaled vertically above and adjacent to the carrying-surface of the conveyer, said drum or roller having a diameter greater than the width of the conveyer, and means for rotating said drum or roller at a speed greater than that of the conveyer.

10. The combination with an endless conveyer, of a rotating switch above and adjacent to the carrying-surface of the conveyer, and arranged to effect a side discharge of objects carried by the conveyer.

11. The combination with an endless conveyer, of a rotating switch above and adjacent to the carrying-surface of the conveyer, and arranged to effect a side discharge of objects carried by the conveyer, together with means for moving said switch longitudinally of the conveyer.

653,828. MACHINE FOR CUTTING SHEETS OF UNVULCANIZED RUBBER. ARTHUR SWEENEY, Providence, R. I. Filed Apr. 15, 1899. Serial No. 713,139. (No model.)

Claim.—1. In a sheet-cutting machine the combination of a cutter, a cutting-surface opposed thereto, the cutter and opposed cutting-surface movable relatively to each other in the line of cut, and having a progressive rolling contact whereby the cutting pressure between the cutter and the opposed cutting-surface is substantially normal to the line of cut at the traveling point of contact and means for drawing and holding a sheet of material to be cut between the cutter and the opposed cutting-surface and a trough above said cutter provided with a strip of felt or other suitable material depending into contact with said cutter and adapted to moisten the edge of the same.



2. In a sheet-cutting machine a work supporting and cutting surface, circular cutting-knives adapted to roll upon said surface and having a progressive rolling contact with said surface whereby the cutting pressure between the knives and said surface is substantially normal at the traveling point of contact, means for producing a relative motion between said surface and knives, means for drawing and holding a sheet of material to be cut between the knives and the opposed work supporting and cutting surface, and means for withdrawing the cutter from said supporting and cutting surface and a trough above said knives provided with a strip of felt or other suitable material depending into contact with the blades of said knives and adapted to moisten the same.

3. In a sheet-cutting machine, a work supporting and cutting table, a reciprocating cutter-carriage, a cutter supported and carried thereby, the cutter consisting of a plurality of circular rolling knives having a progressive rolling contact with the work-supporting table whereby the cutting pressure exerted between the cutter and the work-supporting table is substantially normal at the point of contact, means for reciprocally moving the cutter-carriage across the work-supporting table, means for withdrawing the cutter from the work-supporting table, means for drawing and holding a sheet of material to be cut between the cutter and the opposed work-supporting table, and a trough provided with a strip of depending felt or other suitable material adapted to moisten the blades of said knives.

4. In a machine for cutting sheet-rubber, a cutting and work-supporting table, a reciprocating cutter-carriage supporting and carrying a cutter consisting of a plurality of circular rolling knives adapted to roll upon said table and having a progressive rolling contact with said table, whereby the cutting pressure exerted between the knives and the table is substantially normal at the point of contact, a trough provided with a strip of depending felt adapted to moisten said knives; means for reciprocally operating said carriage across the table, means for elevating the cutter from the table, means for drawing out the sheet of rubber to be cut upon the table and holding it in place.

5. In a machine for cutting sheet-rubber, a cutting and work-supporting table, a reciprocating cutter-carriage supporting and carrying a cutter consisting of a plurality of circular rolling knives adapted to roll upon said table and having a progressive rolling contact with said table, whereby the cutting pressure exerted between the knives and the table is substantially normal at the point of contact, means for producing a relative motion between said surface and knives, means for drawing and holding a sheet of material to be cut between the knives and the opposed cutting-surface and a trough above said cutter provided with a strip of felt or other suitable material depending into contact with said cutter and adapted to moisten the edge of the same, means for reciprocally operating said carriage across the table, means for elevating the cutter from the table, means for drawing out the sheet of rubber to be cut upon the table and holding it in place and a weight suspended from said carriage and adapted to urge the cutters into cutting contact with the table.

6. In a machine for cutting sheet-rubber, a cutting and work-supporting table, a circular cutter adapted to roll upon said table and supported by a bearing-frame, a carriage upon which said bearing-frame is journaled, and adjustment-screws adapted to raise and lower one end of said frame with relation to said carriage, and a trough mounted on said frame above said cutter, provided with a slit through which depends a strip of felt or other suitable material into contact with said cutter.

653,829. LEATHER. BRUNO TRENCKMANN, Berlin, Germany. Filed Nov. 10, 1899. Serial No. 736,531. (Specimens.)

Claim.—1. As an article of manufacture, leather made from the outer peritoneal intestinal coating, substantially as described.

2. As an article of manufacture the mineral-tanned outer peritoneal membrane of the cæcum or blind gut, substantially as described.

3. As an article of manufacture, the mineral-tanned outer peritoneal membrane of the bovine blind gut, substantially as described.

653,830. MANUFACTURE OF LEATHER. BRUNO TRENCKMANN, Berlin, Germany. Filed June 22, 1900. Serial No. 21,231. (Specimens.)

Claim.—1. The process of making leather which consists in first immersing the intestinal coating set forth, in a dilute sulfurous-acid bath until it has swelled and become white, then into a soap-bath and finally in a mineral tanning-bath.

2. In the process of making leather from the intestinal coating or membrane set forth, the process which consists in first submitting the membrane to the action of a permanganate-of-potassium bath, then to the action of a bath of dilute sulfurous-acid bath.

3. In the process of making leather from the intestinal coating or membrane as set forth, the process which consists in first submitting the rinsed membrane to the action of a permanganate-of-potassium bath, then to the action of a dilute sulfurous-acid bath until it has swelled and become white and then to the action of a soap-bath.

4. The process of making leather from the intestinal coating or membrane as set forth, which consists in first cleansing the membrane to free it of fatty and foreign matters, and finally introducing it into a mineral tanning-bath.

5. The process of making leather from the intestinal coating or membrane as set forth, which consists in first cleansing the membrane to free it of fatty and foreign matters then immersing it in a soap-bath, and finally into a mineral tanning-bath.

6. The process of making leather from the intestinal coating or membrane as set forth, which consists in first immersing the rinsed membrane in a warm dilute bath of permanganate of potash, then in a warm dilute sulfurous-acid bath, then in a warm soap-bath, and finally treating it with a mineral tanning-bath, which is added gradually to that containing the membranes.

7. The process of making leather from the intestinal coating or membrane as set forth, which consists in first submitting the membrane to a cleansing, bleaching and swelling bath, then treating it with a warm soap-bath, and then treating it with a warm mineral tanning-bath which is gradually strengthened.

8. The process of making leather from the intestinal coating or membrane as set forth, which consists in first rinsing the membrane and then immersing it in a warm dilute permanganate-of-potassium bath, then whitening and swelling it by immersing it in a warm dilute sulfurous-acid bath, then treating it with a warm soap-bath and then placing the membrane into a bath of warm water and then adding to the same gradually a chromic-acid solution.

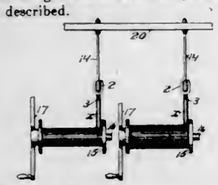
9. The process of making leather from the intestinal coating or membrane as set forth, which consists in first rinsing the membrane and then immersing it in a warm dilute permanganate-of-potassium bath, then whitening and swelling it by immersing it in a warm dilute sulfurous-acid bath, then treating it with a warm soap-bath, then placing the membrane into a bath of warm water, adding to the same gradually a chromic-acid solution, and finally immersing the membrane in a bath composed of yolk of egg, glycerin and water.

10. The process of making leather which consists in treating the peritoneal intestinal membrane or coating as set forth with a tanning-bath.

653,831. WINDING APPARATUS. EUGENE TYMESON and REUBEN BORLAND, Yonkers, N. Y., assignors to the Alexander Smith & Sons Carpet Company, same place. Original application filed May 26, 1897, Serial No. 638,216. Divided and this application filed Aug. 2, 1898. Serial No. 687,497. (No model.)

Claim.—1. The combination in winding apparatus, of a plurality of reels, means for supporting and rotating a spool to receive the

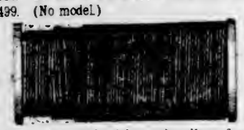
strands of yarn or similar material from the reels, and means for guiding the strands from the several reels to cause them to be wound on the spools spirally and separated from each other such a distance as to prevent interlocking of the fibers of tuft-yarn or similar material, substantially as described.



2. The combination in winding apparatus, of a plurality of reels, means for supporting and rotating a spool to receive the strands of yarn or similar material from the reels, and means for guiding the strands of yarn or similar material from the several reels to cause them to be wound on the spool spirally and side by side throughout the same layer but separated longitudinally of the spools such a distance as to prevent interlocking of the fibers of tuft-yarn or similar material, substantially as described.

3. The combination in winding apparatus, of a series of reels, a series of spools supporting and rotating devices, and traverse-eyes for guiding strands of yarn or similar material from a plurality of reels to the same spool and to maintain said strands separated as they are wound onto the spool side by side such a distance as to prevent interlocking of the fibers of tuft-yarn or similar material, substantially as described.

653,832. SPOOLED YARN. EUGENE TYMESON and REUBEN BORLAND, Yonkers, N. Y., assignors to the Alexander Smith & Sons Carpet Company, same place. Original application filed May 26, 1897, Serial No. 638,216. Divided and this application filed Aug. 2, 1898. Serial No. 687,499. (No model.)

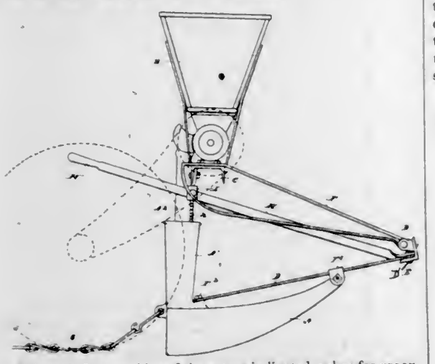


Claim.—1. A spool wound with a plurality of strands of tuft-yarn or similar material, the strands being wound side by side in successive layers on the spool but separated from each other such a distance as to prevent interlocking of the fibers, substantially as described.

2. A spool wound with a plurality of strands of tuft-yarn or similar material of different shades matched to blend to a single shade, the strands being wound side by side in the same layer of yarn but separated from each other such a distance as to prevent interlocking of the fibers, substantially as described.

3. A tuft-yarn spool wound with two ends of yarn of different shades matched double to blend to a desired shade, the ends being wound spirally and side by side throughout the same layer of yarn but separated from each other such a distance as to prevent interlocking of the fibers, substantially as described.

653,833. SEEDER. ALPHONSO V. WILBUR, Stockton, Cal. Filed Oct. 23, 1899. Serial No. 734,582. (No model.)



Claim.—1. In a machine of the nature indicated, a shoe for grooving the ground, a beam supported upon the machine and having a substantially-vertical wall, a spring secured to said shoe and having its outer end squared and abutting against said beam-wall, and means for securing said spring to said beam; substantially as described.

2. In a machine of the nature indicated, a shoe for grooving the ground, an angle-beam supported upon the machine and having substantially vertical and horizontal walls, a spring secured to said shoe and having its outer end squared and abutting against the said vertical beam-wall, said spring resting upon the said horizontal beam-wall, and means for securing the spring to the beam; substantially as described.

3. In a machine of the nature indicated, a shoe for grooving the ground, a spring supported upon the machine-frame at a point removed from the shoe and connected to the shoe near the rear thereof, and connection between the forward portion of the shoe and the spring intermediate the spring ends; substantially as described.

4. In a machine of the nature indicated, a carrying-beam, a brace-bar secured thereto, said bar having a portion resting upon said beam and having one end extending forwardly and its other end extending downwardly and then passing forwardly to a point at which it joins said first-mentioned forwardly-extending portion, a shoe for grooving the ground, and a bar secured to said shoe and also to said forward end of the brace-bar, whereby said shoe is supported from said brace-bar; substantially as described.

5. In a machine of the nature indicated, a carrying-beam, a brace-bar secured thereto, said bar having a portion resting upon said beam and having one end extending forwardly and its other end extending downwardly and then passing forwardly to a point at which it joins said first-mentioned forwardly-extending portion, said brace-bar having an eye formed between the two forwardly-extending portions, a shoe for grooving the ground, a bar secured to said shoe, and a pivot member in the eye in the brace-rod and connected to the said bar secured to the shoe, whereby the shoe is pivotally supported from the brace-bar; substantially as described.

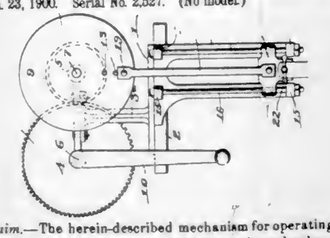
6. In a seeder provided with a suitable feeding mechanism for delivering the desired quantity of seed into the grooves formed by the shoes for grooving the ground; arms extended forward from the carrying-beam of the seeder; a cross-bar having a vertical flange, and pivotally attached to the forward end of the said arms; flat-square-ended springs attached to said cross-bar with the square end against the vertical flange to hold the springs in line; the said shoes for grooving the ground suitably attached to the rear end of the said springs; a lever attached to the said cross-bar to rotate the same; and a suitable locking device to hold the lever in position; substantially as described.

7. In a machine of the nature indicated, an operating-lever, a detent having teeth upon one side thereof, and a member embracing both the lever and detent and having movement transverse to the detent, said member having parts adapted to engage the teeth of the detent and thus lock the lever in position; substantially as described.

8. In a machine of the nature indicated, an operating-lever, a detent having teeth upon one side thereof, a member embracing both the lever and detent and having movement transverse to the detent, said member having parts adapted to engage the teeth of the detent and thus lock the lever in position, and means for yieldingly holding the said parts in engagement with said teeth; substantially as described.

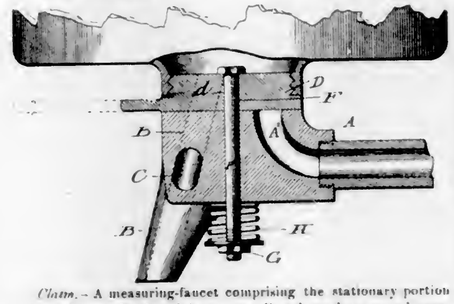
9. In a machine of the nature indicated, an operating-lever, a detent having teeth upon one side thereof, a hollow extension having slots in its walls through which slots said detent passes, an open-sided box upon the extension adjacent the detent through which box the said lever extends, the full sides of said box being adapted to engage the teeth upon the detent, and a spring in said hollow extension and having bearing against said detent and the extension to normally hold the said box in engagement with the said teeth; substantially as described.

653,834. CHURN. ALSON G. WINSLOW, Memphis, Tenn. Filed Jan. 23, 1900. Serial No. 2,527. (No model.)



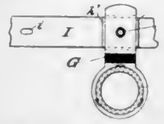
Claim.—The herein-described mechanism for operating a churn-dasher, consisting of a horizontal bed-plate adapted to be removably attached to a suitable support and provided with a standard formed integral with and rising from the bed-plate at a right angle thereto, an integral extension depending from the front of the bed-plate at a right angle thereto and provided on its face with two pairs of oppositely-disposed apertured lugs, a pair of parallel guide-rods supported by said lugs, two parallel shafts arranged in the same horizontal plane and journaled in bearings carried by the said standard, intermeshing gears fixed to the rear ends of said shafts, a disk fixed to the forward end of the shaft located above the guide-rods, a crank on the forward end of the opposite shaft, a cross-head freely movable on the guide-rods, a pitman loosely connecting said disk and cross-head, and means for attaching a dasher-staff to the cross-head, substantially as described.

653,835. SELF-MEASURING FAUCET. JOHN W. ALLISON and WILLIAM H. BAUER, Sylvia, Kans. Filed Apr. 19, 1900. Serial No. 13,535. (No model.)



Claim.—A measuring-faucet comprising the stationary portion having a flattened end, and ducts extending through same and opening through the face of said flattened portion, a turning plug having a flattened portion, and duct leading through same, a curved recess in the flattened face of said plug, a central aperture formed through the plug and spigot, a threaded bolt passed through said central apertures which are in registration, a nut on said bolt, a spring interposed between said nut and the under face of the spigot, and the stops for limiting the rotary movement of the turning plug, as set forth.

653,836. ATTACHMENT FOR WOOL-SPINNING FRAMES. AMARIAH AVERY, Manchester, N. H. Filed Oct. 10, 1899. Serial No. 733,126. (No model.)

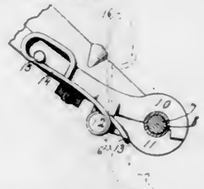


Claim.—1. In a spinning-machine, the combination with a series of spindles, and a ring-rail adjacent to and parallel with said series, the rail having openings opposite the spindles; of a ring for each spindle, an arm supporting each ring and resting upon the rail at substantially right angles thereto, this arm having an opening elongated in the direction of its length, a clamping-bolt engaging such opening and one in the rail, a block between the arm and the rail pierced with a perforation through which the bolt also passes, and upturned flanges on two opposite sides of the block standing astride the arm, as and for the purpose set forth.

2. In a spinning-machine, the combination with a series of spindles, and a ring-rail adjacent to and parallel with said series, the rail having openings opposite the spindles elongated in the direction of its length; of a ring for each spindle, an arm supporting each ring and resting upon the rail at substantially right angles thereto, this arm having an opening, a clamping-bolt engaging such opening and one in the rail, a block between the arm and the rail pierced with a perforation through which the bolt also passes, and downturned flanges on the two opposite sides of the block standing astride the rail, as and for the purpose set forth.

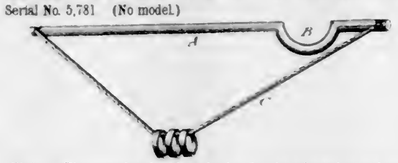
3. In a spinning-machine, the combination with a series of spindles, and a ring-rail adjacent to and parallel with said series, the rail having openings opposite the spindles; of a ring for each spindle, an arm supporting each ring and resting upon the rail at substantially right angles thereto, this arm having an opening, a clamping-bolt engaging such opening and one in the rail, a block between the arm and the rail pierced with a perforation through which the bolt also passes, upturned flanges on two opposite sides of the block standing astride the arm, and downturned flanges on the remaining two opposite sides of the block standing astride the rail, as and for the purpose set forth.

653,837. THILL-COUPLING. GEORGE P. BRASLEY, Maysville, Ky., assignor of one-third to John A. Reed, same place. Filed May 9, 1900 Serial No. 16,074. (No model.)



Claim.—In thill and pole couplings, a coupling-body having a hook-shaped bearing with an opening at one side; a door pivoted to the body to close the said opening; a spring hung as a lever to bear upon the door and pivoted to the coupling-body, and catches upon the said body to engage the lever ends of the said spring, substantially as described

653,838. DEVICE FOR EDUCATING AND TRAINING THE EYE AND HAND. LÉON G. BELOUD, Stockton, Cal. Filed Feb. 19, 1900. Serial No. 5,781. (No model.)



Claim.—The combination, in a device for the education and training of the eye and the hand, of a rigid portion whose extremities are on a straight line passing through its center, and having a curve or bend at a point proximate to one of its extremities with a longer flexible portion permanently fastened to each end of said rigid portion, this semirigid body carrying a number of non-detachable rings which can be made to slide easily from the flexible to the rigid portion of said body when held in a suitable position and vice versa, all portions of this device being capable of assuming different positions relatively to one another although being inseparable, as herein shown and described.

653,839. IRONING-BOARD. WILLIAM O. BOWMAN, Fairfield, Cal., assignor, by direct and mesne assignments, to the Universal Ironing Board Company, San Francisco, Cal. Filed Apr. 2, 1900. Serial No. 11,040. (No model.)



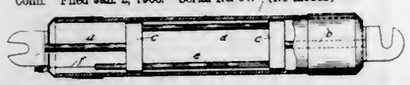
Claim.—In an ironing-board, the combination with the standard having notches in its upper and lower edges, of the ironing-board having a longitudinal slot or recess in its inner end, and having a cleat secured on its under side across the board at the inner end of said slot, said cleat resting in the notch in the upper edge of the standard and being centrally recessed to fit snugly around the standard, said board having also cleats secured on its upper surface in line with each other on opposite sides of the slot, the inner ends of said latter cleats being in position to abut against the sides of the standard extending above the board, substantially as described.

653,840. JAR-CLOSURE. GEORGE H. BRABROOK, Taunton, Mass., assignor to the Reed & Barton Corporation, same place. Filed Apr. 24, 1899. Serial No. 714,189. (No model.)

Claim.—A jar-closure, consisting of a cover formed with a depending annular flange wider than its height and having an oval recess formed in the flange provided with a contracted annular opening at its inner end, and an oval-shaped gasket seated in the recess with its inner portion protruding therefrom, substantially as shown and described.

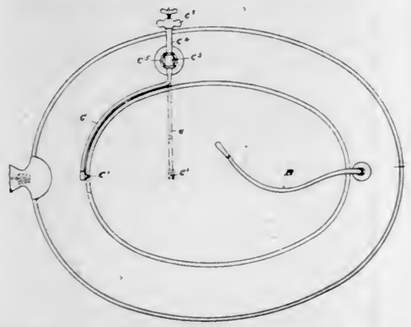


653,841. ELECTRIC FUSE. THOMAS H. BRADY, New Britain, Conn. Filed Jan. 2, 1900. Serial No. 67. (No model.)



Claim.—In an electric fuse, the combination of the conductors adapted to form part of an electric circuit, the fusible metal interposed between such conductors, the case inclosing the fusible metal, and the spring connected, under tension, to the fusible metal and extending exteriorly of the case, all substantially as described and for the purposes set forth.

653,842. FOUNTAIN-SYRINGE. ALBERT J. BROWN, Oakland, Cal. Filed July 10, 1899. Serial No. 723,416. (No model.)



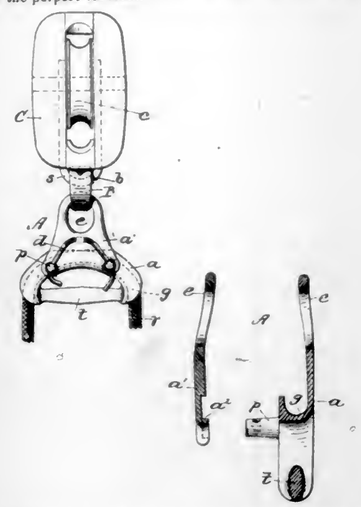
Claim.—1. A bidet comprising a water-bag having a central aperture and provided with an outlet-opening, a curved tube of substantially-rigid material having a straight portion journaled upon the bag, said tube being provided with a channel adapted to register with said outlet-opening, the said curved tube lying between the outer edge of the bag and the edge of the central aperture whereby it can be projected in line with said central aperture, and a handle upon said tube extending beyond the side of the bag whereby the tube can be swung in its journal; substantially as described.

2. A bidet comprising a water-bag having a central aperture and provided with an outlet-opening, a curved tube of substantially-rigid material having a straight portion journaled upon the bag, said tube being provided with a channel adapted to register with said outlet, the said curved tube lying between the outer edge of the bag and the edge of the central apertnre whereby it can be projected in line with said central aperture, and a valve for the channel in said tube, said valve extending beyond the edge of the bag; substantially as described.

3. A bidet comprising a water-bag having a central aperture and provided with an outlet-opening, a curved tube of substantially-rigid material having a straight portion journaled upon the bag, said tube being provided with a channel adapted to register with said outlet-opening, the said curved tube lying between the outer edge of the bag and the edge of the aperture whereby it can be projected in line with said aperture, a handle upon said tube extending beyond the side of the bag whereby the tube can be swung in its journal, and a valve for the channel in the tube, said valve extending through the said handle whereby it can be grasped by the operator; substantially as described.

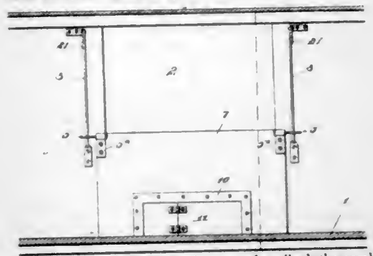
653,843. BRIDLE ATTACHMENT OR MOUSING-HOOK. EDWARD J. F. COLEMAN, Barrington, R. I. Filed Nov. 23, 1899. Serial No. 738,006. (No model.)

Claim.—1. As an improved article of manufacture, a separable bridle attachment or mousing-hook having the principal or grooved member thereof provided with an integral handle uniting the two lateral ends, thereby both strengthening the hook and forming the handle, for the purpose set forth.



2. The combination with a separable bridle attachment or mousing-hook and a pulley-block, of the link B interposed between and uniting said parts, the link member having inturned open ends *b* whereby the link is adapted to be passed through the eye of the hook without welding, substantially as described.

653,844. GRAIN-DOOR. JOSEPH E. LISBY, Nebraska City, Nebr., assignor of one-half to Joseph Laubach, same place. Filed Feb. 2, 1900. Serial No. 3,739. (No model.)



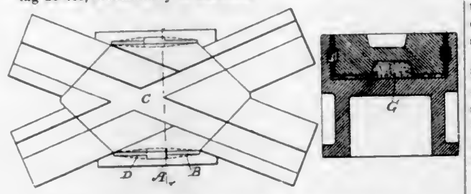
Claim.—In a device of the character described, the combination with the walls of a structure; of guide-rods secured thereto, plates slidably mounted thereon, brackets secured to opposite sides of a door and forming bearings for the plates, hooks pivoted to the rods and adapted to engage the plates, whereby the door may be suspended, said door having an opening therein, plates secured to the edges of the opening and forming grooves, a gate formed of hinged sections and adapted to engage said grooves, a plate secured to one of the sections, means for locking said plate to the opposite section, and brackets upon the door above the gate.

653,845. RAILWAY-TRACK STRUCTURE. HENRY O'SHEA, Johnstown, Pa., assignor to the Lorain Steel Company, of Pennsylvania. Filed Nov. 7, 1899. Serial No. 736,134. (No model.)

Claim.—1. A removable plate for railway-track structures, formed of hardened metal, and having wheel-grooves or flangeways formed in both its upper and lower faces, whereby it may be reversed and used either side up, substantially as described.

2. In a railway-track structure, the combination with the body portion of the structure having a recess or pocket formed therein, of a hardened plate removably seated in said recess or pocket, and formed with wheel-grooves in both upper and lower faces whereby said plate may be reversed, substantially as described.

3. In a railway-track structure, the combination with a body portion having a pocket or recess therein, of a hardened plate removably secured in said pocket or recess and formed with wheel-grooves in both upper and lower faces, said plate being symmetrical with respect to its longitudinal axis, said plate also having at an edge thereof and equidistant from its upper and lower faces a seat for a fastening device, substantially as described.



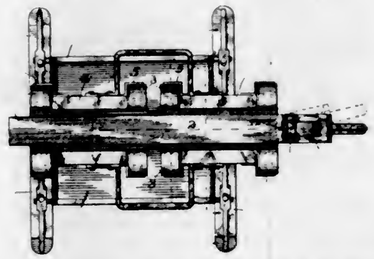
4. In a railway-track structure, the combination with a body portion having a pocket or recess therein, of a hardened plate seated in said pocket or recess and formed with wheel-grooves in both upper and lower faces arranged to aline with the wheel-bearing members of the structure, and soft retaining material between said plate and the walls of said pocket or recess, said material also entering the grooves in the under side of the plate, said plate and the walls of said pocket or recess having seats for securing-wedges, the seat of the plate being equidistant from its upper and lower faces.

5. In a railway-track structure, the combination with the body portion of the structure formed with a pocket or recess, of the symmetrical plate removably seated in said pocket or recess, and having wheel grooves and guards at both its upper and lower surface, the grooves on the under side of said plate also forming seats for a retaining material.

6. In a railway-track structure, the combination with the body portion formed with a pocket having a recess in its side wall, of a reversible plate seated in the said pocket, and having at its edge a wedge-seat opposite the said recess and equidistant from the upper and lower surfaces of the plate.

7. In a railway-track structure, the combination with the body of the structure having a pocket therein, formed with a recess in its side wall, of a plate reversibly seated in said pocket and having an edge projection extending into the said recess, said projection being equidistant from the upper and lower surfaces of the said plate.

653,846. MACHINE FOR SHAPING FABRICS. THOMAS H. PARRY and JOSEPH MCCLINTOCK, Indianapolis, Ind., assignors to the Parry Manufacturing Company, same place. Filed Feb. 5, 1900. Serial No. 4,123. (No model.)



Claim.—1. The combination of a plate formed at its edges to receive and hold removable strips, and clamping-bars adapted to fold over onto the edges of said plate and having their faces at points opposite the edges of the plate also formed to receive and hold removable strips, whereby, in forming fabrics, the edges thereof may be folded over and held between said removable strips and together with said strips removed from the machine.

2. The combination of a plate formed to receive removable strips, clamping-bars adapted to be folded over onto said plate and also formed to receive corresponding removable strips, said clamping-bars being divided in the center leaving spaces whereby fastenings for holding said removable strips together may be inserted, and handles bridging said spaces whereby the bars are held and caused to move together notwithstanding such separation.

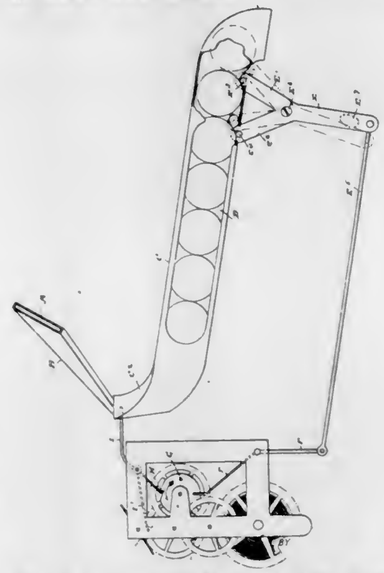
3. The combination of a plate, curved arms extending out from the sides of said plate, and clamping-bars mounted and moving on said curved arms, said parts being arranged as shown, and the axis of rotation of the bars being at the extreme corners of the plate, substantially as set forth.

4. The combination of a plate, side clamps adapted to be folded over onto said plate and fold the edges of a fabric laid thereon, and an end block also adapted to be folded onto the end of said plate and fold the end of the fabric, the structure whereon said end block is mounted being secured in place by a vertical pivot and adapted to be moved horizontally on said pivot whereby different angles of ends may be secured by means of the same machine, substantially as set forth.

5. The combination of a stationary base or plate having grooves in its edges, movable folding or clamping bars adapted to be folded over onto said plate and having corresponding grooves, removable strips adapted to be laid in said grooves alongside the fabric to be formed, and means for securing said strips to said fabric while in the machine whereby the fabric and strips are secured and held together and removed from the machine in assembled condition.

6. The combination of a plate to receive the fabric to be formed, curved arms extending outwardly and up around from the base of said plate, clamping-bars fitted within the inner sides of said curved arms and provided with fingers which embrace the same, whereby said clamping-bars are adapted to travel around said curved arms and over upon said plate and thereby fold and clamp the fabric placed thereon.

653,847. COIN-EXHIBITOR FOR COIN-CONTROLLED MECHANISM. JAMES M. RICKETTS, San José, Cal., assignor to the Postage Advertising Machine Company, San Francisco, Cal. Filed Dec. 11, 1899. Serial No. 739,991. (No model.)

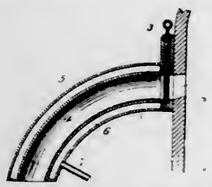


Claim.—1. In a coin-controlled mechanism, a driven wheel having a projection thereon, mechanism adapted to be operated by the passage of a coin for permitting intermittent rotation of said wheel, a coin-receptacle to receive a coin after it has operated upon the said wheel-controlling mechanism, said receptacle having a portion through which two or more coins are exposed to view, a pivoted lever having one end in the path of movement of the said projection on the driven wheel, a link upon the other end of said lever, and two detents upon said link, adapted to engage respectively the first and second coins in the said receptacle, the second detent being out of engagement with the said second coin when the first detent engages the said first coin, said detents being adapted to operate in unison whereby when the first detent releases the said first coin the second detent engages the said second coin; substantially as described.

2. In a coin-controlled mechanism, a driven wheel having a projection thereon, a coin-chute, a lever having one end in the path of the travel of the coin through said chute and its other end adapted to engage and lock said wheel except when the lever is under the influence of the coin, a coin-receptacle to receive the coin after it has operated upon said lever, said receptacle having a portion through which two or more coins are exposed to view, a pivoted lever having

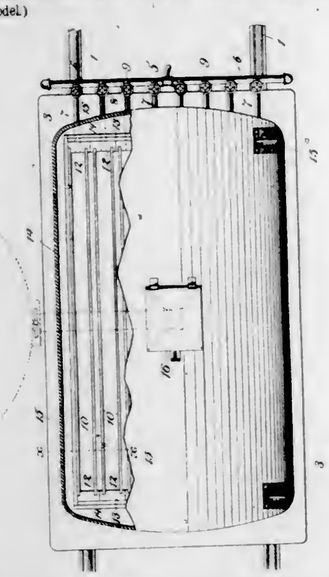
one end in the path of movement of the said projection on the driven wheel, a link upon the other end of said lever, and two detents upon said link, adapted to engage respectively the first and second coins in the said receptacle, the second detent being out of engagement with the said second coin when the first detent engages the said first coin, said detents being adapted to operate in unison whereby when the first detent releases the said first coin the second detent engages the said second coin; substantially as described.

653,848. CONDUIT FOR MOLTEN GLASS. JOSEPH W. SHEPPARD, New York, N. Y. Filed Oct. 13, 1899. Serial No. 733,466. (No model.)



Claim.—The combination with a source of supply of molten glass, of an exit-orifice from said source of supply located below the top thereof; means at said orifice for controlling the escape of molten glass; a double-walled conduit leading from said orifice and controlling device, and means for generating heat within the space between the walls of the conduit throughout its entire length.

653,849. DEVICE FOR CASTING SHEET-GLASS. JOSEPH W. SHEPPARD, New York, N. Y. Filed Oct. 13, 1899. Serial No. 733,467. (No model.)



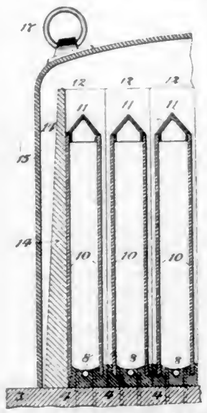
Claim.—1. A built-up, separable mold for casting sheet-glass consisting of two parallel plates of polished metal; divided end and bottom pieces with which said plates engage, and means for applying heat to the mold in combination with an enveloping hood or cover, substantially as shown and described.

2. In a device of the character herein specified, a built-up, separable mold for casting sheet-glass in which are comprised two parallel plates forming the side walls of the mold; grooved, divided bottom and end pieces with which said plates separably engage; and means for applying heat to the said plates, in combination with a support upon which said mold is assembled and secured.

3. In a device of the character herein specified, a group or series of molds in which are comprised a plurality of parallel plates forming the sides of the molds; divided end and bottom pieces with which said plates engage; sloping caps arranged to fit over each pair of plates between the molding-spaces and below the tops of the end pieces, in combination with means for applying heat to the molds, substantially as shown and described.

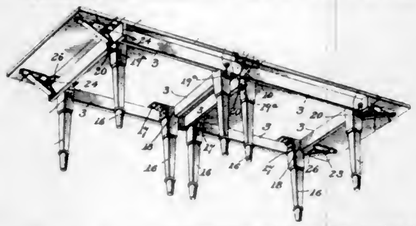
4. A group or series of separable molds; means for securing said molds together; means for heating said molds, and regulating the temperature thereof; a hood or cover for enveloping said molds, and a supporting truck or platform, the whole combined and arranged substantially as shown and described.

653,850. DEVICE FOR CASTING WIRE-GLASS. JOSEPH W. SHEPPARD, New York, N. Y. Filed Oct. 13, 1899. Serial No. 733,468. (No model.)



Claim.—A device for casting sheet wire-glass in which are comprised a mold formed of two vertical, parallel plates of metal, and centrally-divided end and bottom pieces with which said plates removably engage, in combination with means for centrally stretching and holding a sheet of wire fabric between the vertical plates from the exterior of the mold, and means for applying heat to the mold, the whole arranged substantially as shown and described.

653,851. FOLDING TABLE. ADAM T. SMITH, Danville, Va., assignor of three-fourths to William C. Sykes and Eli P. Smith, North Danville, Va. Filed Oct. 20, 1899. Serial No. 734,202. (No model.)



Claim.—1. A table comprising a top and hinged legs having their hinges located to dispose the legs at right angles when folded and to bring the free end of each leg behind, and in cooperative relation to, the extremity of the hinged end of the next adjacent leg when the legs are folded.

2. A table comprising a top and four hinged legs having their hinges located to dispose the legs at right angles when folded and to bring the free end of each leg behind, and in contact with, the extremity of the hinged end of the next adjacent leg when said legs are folded.

3. A folding table comprising a top, frame-strips and a plurality of legs, means foldably connecting the legs to the table-top, said means being located at the side of the legs opposite that adjacent frame-strip which is disposed transverse to the leg when folded, whereby when the legs are folded their free ends will be located between a frame-strip and the upper end of an adjacent leg.

4. In a folding table, the combination with a top and a frame comprising a number of frame-strips, of a set of four hinged legs, each leg being recessed for engagement with the frame, a keeper on the outer face of the frame in operative relation to each leg when the latter is in its unfolded position, the hinge of each leg being located parallel with a frame-strip and at the side of the leg opposite said strip whereby when the legs are folded the free end of each leg will be retained between the upper end of another leg and the adjacent frame-strip.

5. A folding table comprising the hinged and separable sections designed to be folded one upon the other each section having a top, a frame comprising strips, and a set of four legs, a hinge connecting each leg to the table-top, said hinge being located parallel with a frame-strip, and at the side of the leg opposite said strip, whereby when the legs of each section are folded they will lie against the under side of the table-top within the frame and with the free end of each leg retained between the upper end of another leg and the adjacent frame-strip.

6. In a table, the combination with separable sections having the independent abutting tops grooved in their contiguous edges of a locking-strip engaging at its opposite edges with the grooved contiguous edges of the tops of said sections and confining the latter in alined relation, said strip being withdrawable endwise from the side of the table, substantially as described.

7. In a foldable table, the combination of the separable sections each having a top, the adjacent edges of said tops of the table-sections having registering grooves, and a locking-strip slidable endwise into and out of engagement with the grooved edges of the tops of said sections one end of said locking-strip being provided with an exposed handpiece, substantially as described.

8. In a foldable table, the combination of the separable sections each having a frame and a top, the frames of the sections being separably hinged and the tops being provided with coincident grooves in their contiguous edges, and a locking-strip insertible endwise in said grooved edges of the tops and withdrawable from one side of the table and without disturbing the hinge-joints between the frames, substantially as described.

9. In a foldable table, the combination of the table-tops arranged to abut at their contiguous edges and provided in said abutting edges with coincident grooves, and a locking-strip engaging at its opposite edge portions with the grooved edges of the tops, said strip being insertible and withdrawable by an endwise movement to be entirely disconnected from the table, substantially as described.

10. In a foldable table, the combination of the separate sections each having a frame, the separate hinges each having the leaves thereof secured to the frames of the respective table-sections and each hinge provided with a headed pintle connecting the leaves thereof, and stops pivoted to a table-frame and engaging the headed pintles to confine the latter in place, substantially as described.

11. A sectional table comprising abutting sections having oppositely-arranged grooves in their meeting edges and provided with openings, in combination with a removable locking-strip inserted lengthwise within said grooves, and provided with openings and pins inserted through the openings in the table-sections and said locking-strip, substantially as and for the purpose specified.

653,852. NUT. CHARLES H. SMITH, Owatonna, Minn., assignor of two-thirds to Ross M. Vickers, same place, and Charles Rystrom, Rockford, Ill. Filed Apr. 11, 1900. Serial No. 12,404. (No model.)



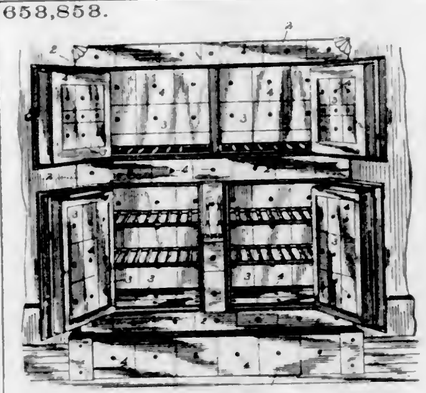
Claim.—1. A nut composed of a series of coils of spring material having a threaded opening, the threads of which lie in the same plane with and exceed in diameter the threads of a coöperating bolt when the coils have been sprung into a position to be placed upon said bolt, but when released thereon are adapted to exert pressure against the threads of the bolt.

2. A nut composed of a series of coils of spring material having a threaded opening, the threads of which lie in the same plane with and exceed in diameter the threads of a coöperating bolt when the coils have been sprung into a position to be placed upon said bolt, but when released thereon are adapted to exert lengthwise pressure against and also contract upon the threads of the bolt.

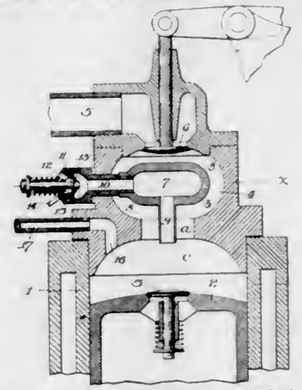
653,853. TILE REFRIGERATOR. HARRY C. TANNER, Richmond, Ind. Filed Feb. 15, 1900. Serial No. 5,289. (No model.)

Claim.—The combination, in a refrigerator, of a framework, 1, the several outer and inner tiles, 2 and 3, each having a countersunk perforation in its center adapted to receive the screws, 4, and said screws, which, when the parts are assembled, are driven into said perforations in the center of each tile so that the heads do not extend above the surfaces of said tile, all substantially as shown and described and for the purposes set forth.

653,858.



653,854. OIL-ENGINE. VIGGO V. TORBENSEN, Westville, N. J., assignor, by mesne assignments, to the Manhattan Oil Motor Company, Newark, N. J. Filed Aug. 19, 1898. Serial No. 688,982. (No model.)



Claim.—1. In an engine of the class recited, the combination with the cylinder and piston, of a combustion-chamber, a vaporizer therein having a discharge-tube, a feed-passage for said vaporizer, and a suitable exhaust in axial alinement with the cylinder, the vaporizer being arranged between the exhaust and the engine-cylinder and in the direct path of the escaping products of combustion, whereby the latter are adapted to heat the vaporizer for maintaining the same at the required temperature.

2. In an engine of the class recited, the combination with the cylinder and piston, of a combustion-chamber, a vaporizer therein comprising a hollow body supported out of contact with the top and side walls of said chamber, and having a discharge-tube, a feed-passage for said vaporizer, and a suitable exhaust arranged in axial alinement with the cylinder, the vaporizer being arranged between the exhaust and the engine-cylinder and in the direct path of the escaping products of combustion, whereby the latter are adapted to heat the vaporizer for maintaining the same at the required temperature.

3. In an engine of the class recited, the combination with the cylinder and piston, of a combustion-chamber having a contracted portion, a vaporizer supported in said chamber and provided with a discharge-tube which depends through said contracted portion, a feed-passage for said vaporizer, and a suitable exhaust arranged in axial alinement with the cylinder, the vaporizer being arranged between the exhaust and the engine-cylinder and in the direct path of the escaping products of combustion, whereby the latter are adapted to heat the vaporizer for maintaining the same at the required temperature.

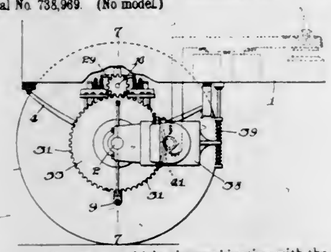
4. In an engine of the class recited, the combination with the cylinder and piston, of a combustion-chamber having therein a contracted portion which divides the chamber into two communicating spaces, a vaporizer supported in the upper space and provided with a discharge-tube depending into the lower space, a feed-passage for said vaporizer, and a suitable exhaust arranged in axial alinement with the

cylinder, the vaporizer being arranged between the exhaust and the engine-cylinder and in the direct path of the escaping products of combustion, whereby the latter are adapted to heat the vaporizer for maintaining the same at the required temperature.

5. In an engine of the class recited, the combination with the cylinder and piston, of a combustion-chamber, a vaporizer supported therein, an oil and air supply pipe therefor, a valve for said pipe, an ignition-tube, and an exhaust arranged in axial alinement with the cylinder, the vaporizer being arranged between the exhaust and the engine-cylinder and in the direct path of the escaping products of combustion, whereby the latter are adapted to heat the vaporizer for maintaining the same at the required temperature.

6. In an engine of the class recited, the combination with the cylinder and piston, of a combustion-chamber having upper and lower communicating spaces, a vaporizer supported in the upper space, an oil and air supply pipe for said vaporizer, a valve for said pipe, an ignition-tube, and an exhaust arranged in axial alinement with the cylinder, the vaporizer being arranged between the exhaust and the engine-cylinder and in the direct path of the escaping products of combustion, whereby the latter are adapted to heat the vaporizer for maintaining the same at the required temperature.

653,855. MOTOR-VEHICLE. VIGGO V. TORBENSEN, Bloomfield, N. J., assignor to George T. Harris, Philadelphia, Pa. Filed Dec. 2, 1899. Serial No. 738,969. (No model.)



Claim.—1. In a motor-vehicle, the combination with the driving-axle, of an engine mounted thereon including a supporting-frame, two series of cylinders whereof one series is disposed on one side of the axle and the other series directly opposite thereto on the other side of the axle, the pistons in said cylinders, a driving-shaft, operative connections between the same and said pistons, and operative connections between said shaft and the axle, substantially as described.

2. In a motor-vehicle, the combination with the driving-axle, of an engine mounted thereon including a supporting-frame, two series of cylinders whereof one series is disposed on one side of the axle and the other series directly opposite thereto on the other side of the axle, the pistons in said cylinder, a driving-shaft, operative connections between the same and said pistons, and differential-speed gearing between said shaft and the axle, substantially as described.

3. In a motor-vehicle, the combination with the driving-axle, of an internal-combustion engine thereon including a supporting-frame, four cylinders arranged in pairs whereof one pair is disposed on one side of the axle and the other pair directly opposite thereto on the other side of the axle, the pistons in said cylinders, a common walking-beam mounted on the frame, operative connections between said beam and the pistons, a driving-shaft, operative connections between the same and the walking-beam, and gearing between said driving-shaft and the axle, substantially as described.

4. In a motor-vehicle, the combination with the driving-axle, of an internal-combustion engine of the character described mounted thereon, said engine including a supporting-frame, two series of cylinders whereof one series is disposed on one side of the axle and the other series directly opposite thereto on the other side of the axle, a vaporizer, feed-pipes leading therefrom to the respective cylinders, inlet-valves for controlling the communication between said pipes and cylinders, valved exhaust-ports in the respective cylinders, ignition means for said cylinders, the pistons, a driving-shaft, operative connections between the same and the pistons, and means for relatively operating the valves of the exhaust-ports, together with gearing between said driving-shaft and the axle, substantially as described.

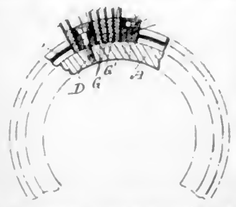
5. In a motor-vehicle, the combination with the driving-axle, of an engine and an electromotor supported on said axle, differential-speed gearing between said engine and the driving-axle, and a gear on the armature-shaft coacting with said speed-gearing, substantially as described.

6. In a motor-vehicle, the combination with the driving-axle, of an engine supported on said axle, a driving-shaft operatively connected with and driven by said engine, differential-speed gearing between said shaft and axle, an electric motor, a source of electric supply therefor, and gearing between said motor and the gearing first named, substantially as described.

7. In a motor-vehicle, the combination with the driving-axle, of an engine, a driving-shaft operatively connected with and driven by said engine, pinions fast on said shaft, coacting spur-wheels on the axle, said pinions and spur-wheels being of relatively-different diameters as described, means whereby said spur-wheels may be rendered fast or loose on the axle, an electric motor, a pinion on the armature-shaft thereof geared to the high-speed spur-wheel on the axle, and a source of electric supply for said motor, substantially as described.

8. In a motor-vehicle, the combination with the driving-axle, and its spring-supported boxes, of an engine of the character described whereof the frame is supported on said axle, a brace-bar secured to said frame and to the boxes, a driving-shaft impelled by said engine, differential gearing between said shaft and the axle, an electric motor one end of which is hung on the axle and the other end is flexibly suspended from the vehicle-body, a pinion on the armature-shaft of the motor geared with said differential gearing, a source of electric energy on the vehicle electrically connected with the motor, and current-controlling means, substantially as described.

653,856. PAPER-STOCK-REFINING ENGINE. MARTIN P. VAN RYZIN, Appleton, Wis. Filed Apr. 16, 1900. Serial No. 13,029. (No model.)



Claim.—1. The core of a paper-stock-refining engine provided with annularly-recessed bands at intervals of its length, ribs arranged longitudinally of said core between bands thereon, knives having notched ends fitting the band-recesses, and spacers confining the knives in series between core-ribs.

2. The core of a paper-stock-refining engine provided with annular bands at intervals of its length recessed to form flanges, ribs arranged longitudinally of said core between bands thereon, knives having notched ends fitting under and over flanges resulting from recessing of said bands, and spacers locking the knives in series between core ribs.

3. The core of a paper-stock-refining engine provided with annularly-recessed bands at intervals of its length, outwardly-channeled ribs arranged longitudinally of said core between bands thereon, screws connecting the ribs and core, the heads of the screws being within rib-channels, fillers for said rib-channels, knives having notched ends engaging the bands between ribs on said core, and spacers locking the knives in series between core-ribs.

4. The core of a paper-stock-refining engine, bands shrunk on the core at intervals of its length and annularly recessed adjacent to said core, ribs on the aforesaid core longitudinally of the same between bands thereon, knives notched at their ends to engage the recessed bands, and spacers locking the knives in series between core-ribs.

653,857. ELECTRICAL CONTROLLER. EDGAR H. WISE, Johnstown, Pa. Filed Jan. 19, 1900. Serial No. 2,058. (No model.)

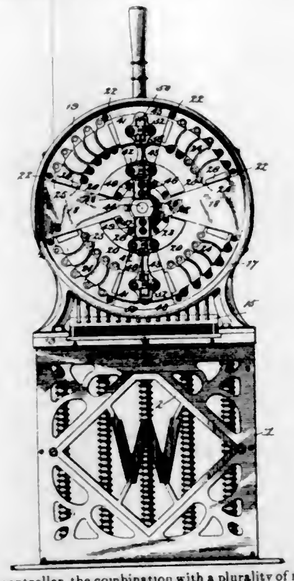
Claim.—1. A resistance-pile composed of two electrically-independent coils, each coil having its terminals separate from those of the other coil and arranged for connection in series or in multiple with the terminals of the other coil.

2. A resistance-pile composed of two electrically-independent coils wound on the same core and insulated from each other, each coil having its terminals separate from those of the other coil and arranged for connection in series or in multiple with the terminals of the other coil.

3. A resistance-pile composed of two electrically-independent coils wound one around the other in concentric relation to each other, each coil having its terminals separate from those of the other coil and arranged for connection in series or in multiple with the terminals of the other coil.

4. In a controller, a resistance-pile composed of successive layers of mechanically and electrically independent spirals of wire and interposed insulating material therefor, each spiral having its own terminals independent of the terminals of the other spiral.

5. In a controller, a resistance-pile composed of two independent coils insulated from each other, and means for bridging or cross-connecting said coils to throw them in multiple.



6. In a controller, the combination with a plurality of resistances, and switch-contacts, of a connection-board having connectors for electrically connecting the terminals of the resistances to the terminals of the switch-contacts, whereby different arrangements of the resistances relatively to the switch-contacts can be had.

7. In a controller, the combination with a plurality of resistances, and switch-contacts, of a connection-board for the terminals of the resistances and the terminals of the switch-contacts, comprising connectors for the respective corresponding terminals, and inlets and outlets on the board for the mains.

8. In a controller, the combination with a wiring-board, of resistances having their terminals normally connected in series on the board, but arranged for cross-connection to throw the resistance in multiple.

9. In a controller, the combination with a wiring-board, of a row of resistance-piles, each composed of two independent resistances, said wiring-board having connectors for connecting in series one coil of each pile with one coil of the other piles, whereby two sets of series resistances are provided, and said connectors being adapted for cross-connection or bridging to throw the coils in multiple.

10. In a controller, contacts for the switch-lever, which are arranged in removable and interchangeable groups.

11. In a controller, contacts for the switch-lever which are arranged in removable and interchangeable groups, each having its contacts independently removable.

12. In a controller, the combination with a frame, of groups of contacts for the switch-lever which are removable and interchangeable, and located in separated arrangement on the frame, with the end contacts of each group provided with material of low-sparking qualities.

13. In a controller, the combination with a frame of spider formation, of panels removably secured to the frame in the spaces between the arms of the spider, and a group of contacts on each panel

14. In a controller, the combination with a frame of spider formation, of panels removably secured to the frame in the spaces between the arms of the spider, a group of contacts detachably secured to each panel and low sparking material provided on the end contacts of each group whereby said panels are rendered interchangeable.

15. In a controller, the combination with a frame of spider formation, of panels removably secured to the frame in the spaces between the arms of the spider, a group of contacts secured to each panel, contacts on said panels for the mains, and insulating material secured to the spider-arms and bridging the gap between the groups of contacts on the panels.

16. In a controller, the combination with a contact having oppositely-located ears, of a piece of material approximately square in general cross-sectional outline and of low-sparking quality capable of being reversed and fitted and removably held between the ears, and movable devices for removably connecting said piece to the ears.

17. In a controller, a switch-lever having a brush-box a brush slidable in said box, a clip on the brush, bolts projecting from the clip and passing freely through ears on the box, and springs encircling said bolts and bearing on the ears

18. In a controller, a switch-lever having a plurality of brush-boxes, brushes slidable in the respective boxes, clips on the respective brushes, adjustable bolts projecting from the respective clips which pass freely through the ears on the boxes, coil-springs encircling said bolts and bearing on the ears and the heads of the bolts, connectors on the respective clips, and an electrical connection between said connectors permitting the brushes to have free independent movement.

19. In a controller, an operating mechanism comprising the combination of a rocker, a second independently-pivoted rocker of greater length than the first, operating means for said second rocker, and links connecting the two rockers on opposite sides of the fulcra, said links being pivoted loosely to one of the rockers.

20. In a controller, an operating mechanism comprising the combination of a rocker, a second independently-pivoted rocker, operating means for said second rocker, links connecting the two rockers together, and an abutment against which the links strike after a predetermined movement has been had.

21. In a controller, an operating mechanism comprising the combination of a rocker, a second independently-pivoted rocker, operating means for said second rocker, links pivoted to the respective rockers on opposite sides of their fulcra and having extended ends, and an abutment against which the extended ends strike after a predetermined movement has been had.

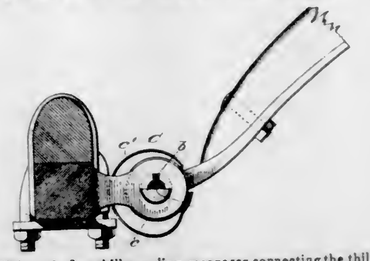
22. In a controller, the combination with a switch-lever and its shaft, of a rocker secured thereon which has a hub, a second independently-pivoted rocker, operating means for said second rocker, links pivoted to the respective rockers on opposite sides of their fulcra and having their ends extended in position to abut the hub of the first-named rocker when the switch-lever is at the proper limit of its movement.

23. In a controller, the combination with groups of contacts and a double switch-lever pivoted so that its ends will travel over the respective groups, of a rocker secured to the switch-lever, a second rocker, operating means for said second rocker, links connecting the respective rockers together, and an abutment for preventing further movement of the links when the extremities of the switch-lever are at the end contacts of the groups aforesaid.

24. In a controller, the combination with groups of contacts and a double switch-lever pivoted at its center so that its ends will travel over the respective groups of contacts, of a rocker secured to the switch-lever and having a hub, a second independently-pivoted rocker, means for operating said second rocker, and links connecting the two rockers on opposite sides of their fulcra and provided with extended ends adapted to abut the hub of the second rocker when the extremities of the switch-lever are on the end contacts of the groups aforesaid.

25. In a reversing controller, the combination with a double switch-lever, four groups of contacts for the lever, and field and main contacts for the lever, of cross-connections between the contact-groups on the opposite sides of the lever, armature-outlets from the end contacts of the groups, and a set of series-connected resistances for each pair of groups of contacts, the independent resistances of which are connected to the respective contacts of the groups.

653,858. THILL-COUPLING. GEORGE M. WRIGHT, Winneconne, Wis. Filed Nov. 15, 1898. Serial No. 737,083. (No model.)

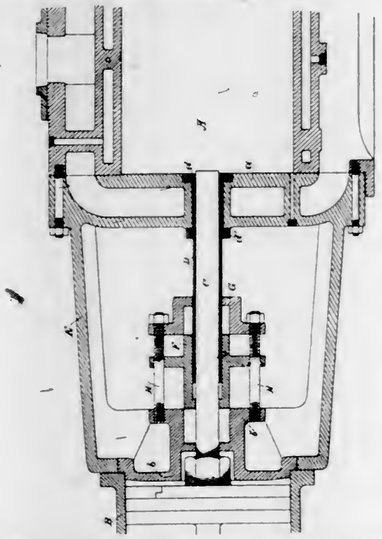


Claim.—1. In a thill-coupling, means for connecting the thill-iron and axle-clip in swinging or fixed engagement with each other, of a spring which is retained in fixed engagement with the eye of the thill-iron and is concentric therewith, said spring having a portion through which the shank of the thill-iron projects, a part of said spring being eccentric with the thill-eye to engage the clip rear of said eye, the configuration of the parts being such that the greatest force will be exerted by the eccentric portion of the spring when the thill-iron is

lowered and the least when it is raised, whereby, the position of the connecting and supporting means may be readily shifted.

2. An antirattling-spring for thill-couplings comprising a circular portion which is partially cut away or shaped to provide a space in which the shank of the thill-iron may be inserted and a portion which is eccentric with said circular portion, substantially as shown.

653,859. PACKING FOR AIR-COMPRESSOR OR OTHER TANDEM CYLINDERS. MILTON BULKLEY, Oakland, Cal. Filed Jan. 15, 1900. Serial No. 1,448. (No model.)



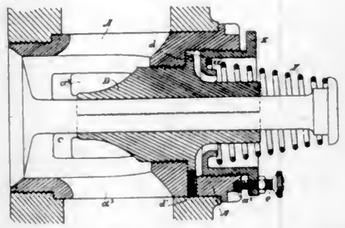
Claim.—1. A packing for air-compressor and other tandem cylinders, having a common piston-rod, said packing consisting of a sleeve fitted upon said piston-rod, and secured in the head of one cylinder, a packing-seat in the head of the other cylinder, and through which the piston-rod passes into said cylinder, a packing-cap fitted upon the sleeve, a double gland fitted upon the end of the sleeve between the seat and cap, and adapted to enter both, and means for setting up the cap, to bind the double gland between it and the seat, and compress their respective packings.

2. A packing for an air-compressor having the cylinder of its driving-engine tandem with its own cylinder, and a piston-rod common to both cylinders, said packing consisting of a sleeve fitted upon said piston-rod, and secured in the head of the air-compressor cylinder, a packing-seat in the head of the engine-cylinder, and through which the piston-rod passes into said cylinder, a packing-cap fitted upon the sleeve, a double gland fitted upon the free end of the sleeve between the seat and cap, and adapted to enter both, and means for setting up the cap, to bind the double gland between it and the seat, and compress their respective packings.

3. A packing for air-compressor and other tandem cylinders, having a common piston-rod, said packing consisting of a sleeve fitted upon said piston-rod, and secured in the head of one cylinder, a packing-seat in the head of the other cylinder, and through which the piston-rod passes into said cylinder, said packing-seat terminating short of the free end of the sleeve, a packing-cap fitted upon the sleeve, a double gland fitted upon the end of the sleeve between the seat and cap, and adapted to enter both, and to be withdrawn from the former in the space between the seat and sleeve end, whereby packing may be placed in said seat, and means for setting up the cap, to bind the double gland between it and the seat, and compress their respective packings.

4. A packing for air-compressor and other tandem cylinders, having a common piston-rod, said packing consisting of a sleeve fitted upon said piston-rod, and secured in the head of one cylinder, a packing-seat in the head of the other cylinder, and through which the piston-rod passes into said cylinder, a packing-cap fitted upon the sleeve, a double gland fitted upon the end of the sleeve between the seat and cap, and adapted to enter both, and bolts seated in the packing-seat and packing-cap and passing through the intervening double gland for setting the cap up to the seat, to bind the double gland between them, and compress their respective packings.

653,860. PUPPET-VALVE FOR AIR-COMPRESSORS. MILTON BULKLEY, Oakland, Cal. Filed Jan. 15, 1900. Serial No. 1,449. (No model.)



Claim.—1. In combination with a valve, having a stem and a stem-head, a holder, adapted, at its inner end, to be screwed into the cylinder-head, and having said end formed as a seat for the valve, a nut seated in the outer end of the holder, and a spring seated between said nut and stem-head of the valve, for regulatably controlling said valve.

2. In combination with a valve, having a stem and a stem-head, a holder, adapted, at its inner end, to be screwed into the cylinder-head, and having said end formed as a seat for the valve, a nut seated in the outer end of the holder, a spring seated between said nut and stem-head of the valve, for regulatably controlling said valve, and means on the nut, engaging the holder, for fixing the nut where adjusted.

3. In combination with a valve, having its stem and its stem-head made in one piece therewith, a holder adapted at its inner end to be screwed into the cylinder-head and having said end formed as a seat for the valve, a divided or sectional guide fitted within the holder and embracing the valve-stem, a spring in the outer end of the holder and operating against the head of the valve-stem for controlling the valve, and means for regulating the tension of the spring.

4. In combination with a valve, having its stem and its stem-head made in one piece therewith, a holder for seating and carrying the valve, a divided or sectional guide fitted within the holder, and embracing the valve-stem, a spring acting against the head of the valve-stem, to control the valve, and a nut screwed into the holder, and acting against the spring, to regulate its tension.

5. In combination with a valve, having its stem and its stem-head made in one piece therewith, a holder for seating and carrying the valve, a divided or sectional guide fitted within the holder, and embracing the valve-stem, a spring acting against the head of the valve-stem, to control the valve, a nut screwed into the holder and acting against the spring to regulate its tension and means on the nut engaging the holder, for fixing the nut where adjusted.

6. In combination with a valve, having its stem and its stem-head made in one piece therewith, a holder for seating and carrying the valve, and adapted to be fitted, at its inner end, to its bearing, a divided or sectional guide fitted within the holder, and embracing the valve-stem, a set-screw for holding the guide in place, and seated in the holder, at a point where the bearing to which said holder is fitted will cover it, and a spring for controlling the valve.

7. In combination with a valve, having its stem and its stem-head made in one piece therewith, a holder for seating and carrying the valve, and adapted to be fitted, at its inner end, to its bearing, a divided or sectional guide fitted within the holder, and embracing the valve-stem, a set-screw for holding the guide in place, and seated in the holder, at a point where the bearing to which said holder is fitted will cover it, a spring acting against the head of the valve-stem, to control the valve, and a nut screwed into the holder, and acting against the spring, to regulate its tension.

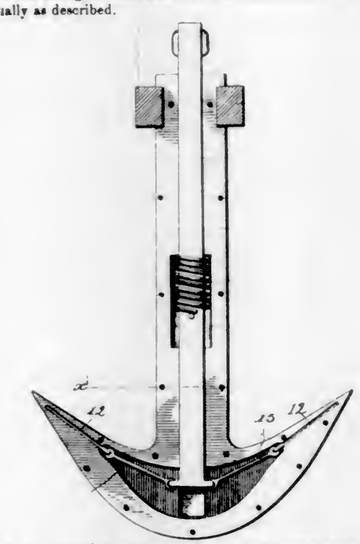
8. In combination with a valve, having its stem and its stem-head made in one piece therewith, a holder for seating and carrying the valve, and adapted to be fitted, at its inner end, to its bearing, a divided or sectional guide fitted within the holder, and embracing the valve-stem, a set-screw for holding the guide in place, and seated in the holder, at a point where the bearing to which said holder is fitted will cover it, a spring acting against the head of the valve-stem, to control the valve, a nut screwed into the holder, and acting against the spring, to regulate its tension, and a set-screw in said nut, adapted to engage the holder, to fix the nut where adjusted.

653,861. SHIP'S ANCHOR. JOHN CALLOW, New Kamilchi, Wash. Filed May 5, 1899. Serial No. 715,751. (No model.)

Claim.—1. In a device of the character described, a casing provided with flukes, supplementary flukes carried thereby, and means for spreading the supplementary flukes, substantially as described.

2. In a device of the character described, a casing having flukes

supplementary flukes carried thereby, and a spring-pressed bar slidable in the casing and connected with the supplementary flukes, substantially as described.

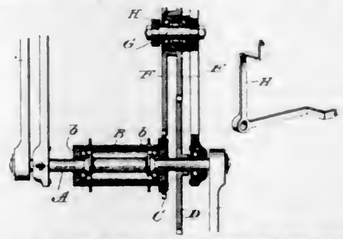


3. In a device of the character described, a casing provided with flukes, supplementary flukes carried thereby, a spring-pressed bar slidable in the casing and connected with the supplementary flukes, and means for locking the bar in its several positions, substantially as described.

4. In a device of the character described, a casing provided with flukes, supplementary flukes carried thereby, a spring-pressed bar slidable in the casing and connected to the supplementary flukes, a spring-pressed pawl pivoted in the casing, a rack-bar carried by the sliding bar and adapted to be engaged by the pawl, and means for operating the pawl, substantially as described.

5. In a device of the character described, a casing having flukes, supplementary flukes pivoted in slots therein, a bar slidably mounted in the casing, means connecting the lower end of the bar with the supplementary flukes, a cable-ring at the upper end of the bar, a spiral spring surrounding the bar and housed in the casing so as to give the bar a normal downward pressure, a rack-bar carried by the sliding bar, a pawl pivoted in the casing to engage the rack-bar, and a stem pivoted to the pawl, substantially as described.

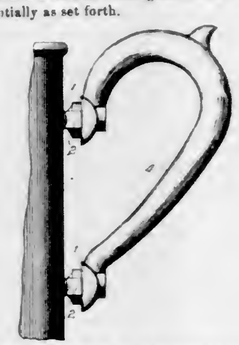
653,862. DRIVING-GEAR FOR BICYCLES. HORACE G. CLARK, Grinnell, Iowa. Filed Jan. 16, 1900. Serial No. 1,650. (No model.)



Claim.—In a rear-driven bicycle, a crank-and-gear propulsion mechanism which includes a reverting train mounted on a driving-axle and upon a stub-shaft attached to one of the forks of the mast-post of the frame, in combination with an angle-brace having an eye for engagement with the inner end of the stub-shaft, each member of the brace being bent at right angles and again at right angles for attachment to the forks of the mast-post and reach of the frame, substantially as shown.

653,863. ATTACHING HANDLES TO VESSELS. WILLIAM A. DUNLAP, Pittsburg, Pa. Filed June 29, 1899. Serial No. 722,233. (No model.)

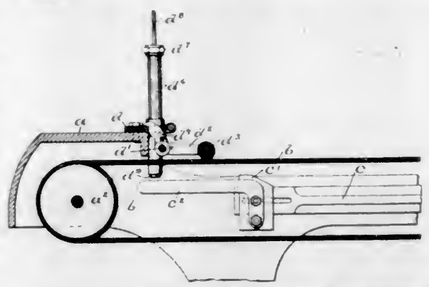
Claim.—1. As a means for securing handles to coffee-pots, the combination of a bolt, an ear radially slotted for the reception of the stem of the bolt and means for holding the bolt in engagement with the ear, substantially as set forth.



2. As a means for securing handles to coffee-pots, &c., the combination of a bolt, and an ear having a socket or recess for the reception of the head of the bolt and having a slot of a width less than the diameter of the head of the bolt and extending into the slot or recess, substantially as set forth.

3. The combination of a coffee-pot, radially-slotted ears secured to the pot with the slots opening in opposite directions, a handle and bolts having their stems projecting through the slots and engaging the handles, substantially as set forth.

653,864. MULE-SPINNING MACHINE. WILLIAM H. GOLDSMITH, Central Falls, R. I. Filed Nov. 6, 1899. Serial No. 735,887. (No model.)



Claim.—1 In a spinning-mule, the combination between the quadrant-pinion and the change lever, of an extension on the change-lever, a spring-pressed plunger over the extension, a rock-shaft, a stop on the rock-shaft for supporting the plunger, and a roller pivoted in brackets extending from the rock-shaft and bearing on the quadrant-band, whereby, on the breaking of the band, the weight of the roller turns the rock-shaft to release the plunger, as described.

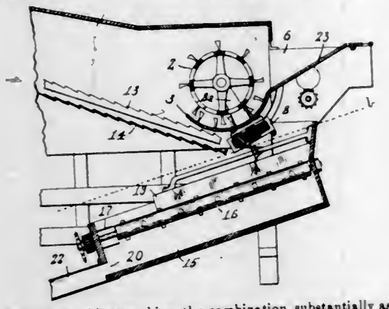
2. In a spinning-mule, the combination with the quadrant-band and the extension c^3 secured to one end of the change-lever, of the rock-shaft d', the brackets d^3 d^3 secured to the rock-shaft, the roller d^3 journaled in the brackets, the collar d^4 on the rock-shaft, the stop d^5 on the collar, the case d^6 supported in the plate d secured to the frame a, the cap d^7 on the case, the notched plunger d^9, the spiral spring d^{10}, and the rod d^8 secured to the plunger, whereby the plunger may be drawn upward to compress the spiral spring, normally locked and held in the locked position until the quadrant-band breaks, as described

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653,865. THRESHING-MACHINE. THADDEUS H. GORDON, GEO. W. GORDON, and CHARLES E. HALL, New Castle, Ind., assignors, by mesne assignments, to T. H. Gordon, George Gordon, F. M. Teeguarden, Joseph B. Himes, and Thomas L. Campbell, same place. Filed Jan. 20, 1900. Serial No. 2,091. (No model.)

Claim.—1. In a threshing-machine, the combination, substantially as set forth, of a beating-cylinder, a concave therefor, a pair of removable snapping-rolls disposed at the entrance to the space between the cylinder and the concave, a corn-feeding device removably disposed in front of said snapping-rolls at sufficient distance therefrom to provide a downward discharge-passage for ears of corn between the snapping-rolls and the corn-feeding device, a series of strip-

ping-rolls disposed below the snapping-rolls and adapted to receive the ears of corn falling through said discharge-passage, and a removable throat-piece forming a forward prolongation of the concave and adapted to suppress the downward discharge to the stripping-rolls.



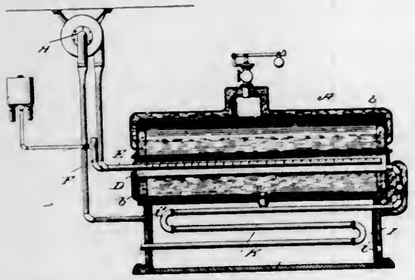
2. In a threshing-machine, the combination, substantially as set forth, of a beating-cylinder, a concave therefor, a pair of snapping-rolls disposed at the entrance to the space between the cylinder and the concave, a corn-feeding device disposed in front of said snapping-rolls at sufficient distance therefrom to provide a downward discharge-passage for ears of corn between the snapping-rolls and the corn-feeding device, a series of stripping-rolls disposed below the snapping-rolls and adapted to receive the ears of corn falling through said discharge-passage, a stacker-fan at the tail of the machine, a conveyer extending rearwardly from the cylinder and concave to the stacker-fan, a curb surrounding said stripper-rolls and having an outlet in its rear wall, and a pipe extending from said curb-outlet to the stacker-fan.

653,866. POCKET-ATOMIZER. SOLOMON HEIMAN, Little Falls, N. Y. Filed Nov. 20, 1899. Serial No. 737,614. (No model.)



Claim.—In an atomizer, a compressible body having an exteriorly-threaded neck, an interiorly-threaded cap for the neck, a delivery-tube having an upper contracted end portion which is rigidly secured to the central portion of the cap and extending through the top thereof, said delivery being provided with a slit or opening forming an air-duct adjacent to its upper end portion, combined with a pivoted cover on top of the cap, said cover being adapted to alternately cover and expose the contracted end portion of the delivery-tube, substantially as described.

653,867. HEATING APPARATUS. EDWARD C. INDERLIED and CHARLES B. RUMSEY, Binghamton, N. Y.; said Rumsey assignor to said Inderlied. Filed Apr. 25, 1900. Serial No. 14,324. (No model.)



Claim.—1. The combination of a combustion-chamber having an egress-opening, two perforated fuel-pipes, closed at one end, situated in the combustion-chamber and extending its length, said combustion-chamber being of such cross-sectional area as to provide but a limited space surrounding the fuel-pipes, so that the fuel elements issuing from the pipes and the products of combustion are forced to move longitudinally thereof toward the egress-opening, means for introducing gas to one of said pipes and means for introducing air to the other of said pipes.

2. The combination of a combustion-chamber provided with an egress-opening and perforated gas and air pipes situated in the chamber and extending its length, said combustion-chamber being of such cross-sectional area as to provide but a limited space surrounding the fuel-pipes, so that the fuel elements issuing from said pipes and the products of combustion are forced to move longitudinally thereof toward the egress-opening, the air and gas being introduced to the combustion-chamber under pressure.

3. The combination of a combustion-chamber provided with an egress-opening, perforated gas and air pipes situated within the combustion-chamber and extending longitudinally its length, said combustion-chamber being of such cross-sectional area as to provide but a limited space surrounding the fuel-pipes, so that the fuel elements issuing from said pipes and the products of combustion are forced to move longitudinally thereof toward the egress-opening, the perforations in said pipes being so arranged that the jets issuing from one pipe will cross those issuing from the other.

4. The combination of a chamber to contain the matter to be heated, a combustion-chamber arranged therein and completely surrounded by the said matter, said combustion-chamber being provided with an exit-opening, perforated gas and air pipes, closed at one end, situated within the combustion-chamber and extending longitudinally its length, the said combustion-chamber being of such cross-sectional area as to provide but a limited space surrounding the gas and air pipes, so that the fuel elements issuing from said pipes and the products of combustion are forced to move longitudinally thereof toward the egress-opening, and means for supplying gas and air respectively to said pipes.

5. The combination of a chamber to contain the matter to be heated, a combustion-chamber so arranged therein as to be completely surrounded by the said matter, said combustion-chamber being provided with an exit-opening, perforated gas and air pipes situated within the combustion-chamber and extending longitudinally thereof, said pipes being closed at one end and having perforations along their sides, said perforations being so arranged that the jets issuing from one will cross those of the other, the said combustion-chamber being of such cross-sectional area as to provide but a limited space surrounding the gas and air pipes, so that the fuel elements issuing from said pipes and the products of combustion are forced to move longitudinally thereof toward the egress-opening, and means for supplying gas and air respectively to said pipes.

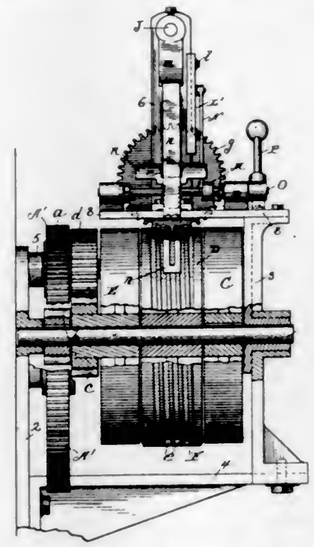
6. The combination of a chamber to contain the matter to be heated, a combustion-chamber so arranged therein as to be completely surrounded by the said matter, the combustion-chamber being provided with an exit-opening, perforated gas and air pipes situated within the combustion-chamber and extending longitudinally its length, the pipes being closed at one end, the said combustion-chamber being of such cross-sectional area as to provide but a limited space surrounding the gas and air pipes, so that the fuel elements issuing from said pipes and the products of combustion are forced to move longitudinally thereof toward the egress-opening, means for supplying gas and air respectively to said pipes under pressure.

7. The combination of a chamber to contain the matter to be heated, a combustion-chamber so arranged therein as to be completely surrounded by the said matter, the combustion-chamber being provided with an exit-opening, perforated gas and air pipes situated within the combustion-chamber and extending longitudinally its length, the pipes being closed at one end, the said combustion-chamber being of such cross-sectional area as to provide but a limited space surrounding the gas and air pipes, so that the fuel elements issuing from said pipes and the products of combustion are forced to move longitudinally thereof toward the egress-opening, means for supplying gas and air respectively to said pipes, and means for heating the air supplied.

8. The combination of a chamber to contain the matter to be heated, a combustion-chamber so arranged therein as to be completely surrounded by the said matter, the combustion-chamber being provided with an exit-opening, perforated gas and air pipes situated within the combustion-chamber and extending along the length thereof, the said combustion-chamber being of such cross-sectional area as to provide but a limited space surrounding the fuel-pipes, so that the fuel elements issuing from said pipes and the products of combustion are forced to move longitudinally in the direction of the egress-opening, means for introducing gas to one of said pipes and means for introducing heated air to the other of said pipes.

9. The combination of a combustion-chamber having an egress-opening, two perforated fuel-pipes, closed at one end, situated within the combustion-chamber and extending its length, said combustion-chamber being of such cross-sectional area as to provide but a limited space surrounding said pipes, so that the fuel elements issuing from the pipes and the products of combustion are forced to move longitudinally thereof toward the egress-opening, an air-heating chamber, means for conveying the products of combustion through said air-chamber, means for introducing gas to one of said pipes, and means for introducing heated air from said air-heating chamber to the other of said pipes.

653,868. BELT-SHIFTER. ERNST G. JENNER, Chicago, Ill. Filed Dec. 8, 1899. Serial No. 739,692. (No model.)



Claim.—1. The combination with a shaft, three pulleys, placed side by side thereon, the outer one only of which is fast to said shaft and the central one of which is provided with a suitable circumferential worm and means for imparting the motion of said shaft and the outer loose pulley to a reciprocal rotary shaft, of a rocking shaft, and means actuated by said central pulley for rocking said shaft, a shifting-arm on the end of said rock shaft, and a belt movable from side to side by said shifting-arm.

2. The combination in a belt-shifting device with a shaft, three pulleys, the central and one outer one of which are loose on said shaft and the other outer one fast thereon, of a rocking shaft, means actuated by the central pulley for rocking said rocking shaft, a shifting-arm on the end of the same and a belt shifted by said arm.

3. The combination in a belt-shifting device with a shaft, three pulleys, the central and one outer one of which are loose on said shaft and the other outer one fast thereon, of a rocking shaft, means actuated by the central pulley for rocking the rocking shaft, a shifting-arm secured to the same, and a belt of such width as to always engage said central pulley and which is shifted by said arm.

4. The combination in a belt-shifting device, with a shaft, three pulleys the central and one outer one of which are loose on said shaft and the other outer one fast thereon, and the central one of which is provided with a peripheral worm, of a worm-gear actuated by the worm of the central pulley, a rocking shaft, means for converting the rotary motion of said gear to an oscillatory movement and imparting the same to said rock-shaft, a shifting-arm connected to said rock-shaft, and a single belt engaging said pulleys and shifted by said arm.

5. The combination in a belt-shifting device, with a shaft, three pulleys thereon the central and one outer one of which are loose on said shaft and the other outer one fast thereon, and the central one of which is provided with a circumferential worm, of a worm-gear engaged by said central pulley, a rock-shaft actuated by said worm-gear a shifting-arm connected to said rock-shaft and a single belt engaging said pulleys and shifted by said arm.

6. The combination in a belt-shifting device, with a shaft, three pulleys thereon the central and one outer one of which are loose on said shaft and the other outer one of which is fast thereto, and a single belt of such width that it always engages said central pulley, of belt-shifting devices, and means actuated by said central pulley for operating said shifting devices.

7. The combination in a belt-shifting device, with a shaft, and three pulleys, thereon, the central one of which is loose and has a peripheral worm, of a worm-gear engaging said central pulley.

8. The combination in a belt-shifting device, with a shaft, three pulleys thereon, the central one of which is loose and is provided with a peripheral worm, of a worm-gear engaged by said central pulley, a cam on the same shaft thereon, a rocking frame actuated by said cam, a rock-shaft, a crank-block thereon engaged by said rocking frame, and a shifting-arm on the end of said rock-shaft.

9. The combination in a belt-shifting device, with a shaft, a nest of three pulleys thereon the central one of which is loose and is provided with a peripheral worm, of a worm-gear engaged by said central pulley, a cam on the same shaft thereon, a rocking frame actuated by said cam, a rock-shaft, a crank-block thereon rocking with said shaft but having an independent reciprocal movement of its own whereby it can be disengaged from said rocking frame, and a shifting-arm secured to said rock-shaft.

10. In a belt-shifting device a rock-shaft, and a belt-shifting arm secured thereto, in combination with a crank-block on said shaft which rocks therewith but has an independent reciprocal movement, means for actuating said rock-shaft through the medium of said crank-block, and devices for moving said crank-block longitudinally out of engagement with the shaft-actuating devices.

11. In a belt-shifting device, a rock-shaft, and a belt-shifting arm secured thereto in combination with a crank-block on said shaft which rocks therewith but has an independent reciprocal movement, a rocking frame having a recess in the end of its upper arm which is engaged by said crank-block, and devices for moving said crank-block longitudinally out of engagement with said rocking frame.

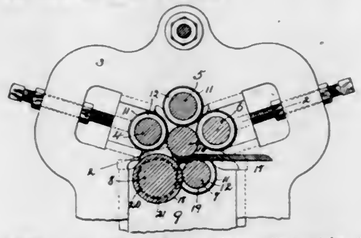
12. In a belt-shifting device, a rock-shaft, and a belt-shifting arm secured thereto, in combination with a crank-block adapted to rock with said shaft but having a reciprocal movement transverse thereto and provided with downwardly-projecting lugs and a horizontal pin extended through the same, a rocking frame having a recess or notch in the end of its upper arm into which the said pin is adapted to enter and devices for actuating said rocking frame and means for reciprocating said crank-block ont of engagement with said rocking frame.

13. In a belt-shifting device a nest of three pulleys, a shifting rock-shaft, and a belt-shifting arm secured thereto, in combination with a crank-block, and means for actuating said shaft through the medium of said crank-block, an arm, a link, a head connected to said arm by said link, a rock-shaft and means conuected to said shaft which when said shaft is moved toward the front engages and confines said shifting-arm in a vertical position and simultaneously causes said crank-block to become disengaged from its actuating mechanism.

14. In belt-shifting device, a nest of three pulleys, a belt-shifting arm, and a rock-shaft to which said arm is secured, in combination with a crank-block a shoe having a recess in its edge to receive said shifting-arm, a rock-shaft to which said shoe is secured and means connecting said rock-shaft and crank-block whereby said crank-block is moved transversely on said shaft when said shoe is moved forward to engage said shifting-arm.

15. In a belt-shifting device, a nest of three pulleys, a belt-shifting arm, and a rock-shaft to which said belt-shifting arm is secured, in combination with a crank-block secured to said rock-shaft but having an independent transverse movement thereon and means for actuating said shaft through the medium of said crank-block, a shoe having a recess in its edge adapted to engage said belt-shifting arm, a rock-shaft from which said shoe projects a weighted arm secured to said rock-shaft, a crank-arm, a link, and a reciprocal head connected to said crank-arm by said link and adapted to engage said crank-block as and for the purpose set forth.

653,869. ROLLS FOR WELDING COUPLING-BLANKS. GEORGE W. LA VOO and THOMAS J. BRAY, Pittsburg, Pa., assignors to the National Tube Company, same place and New York, N. Y. Filed Oct. 31, 1899. Serial No. 735,362. (No model.)



Claim.—1. In a mill for forming rings or like articles, the combination of a central mandrel and a cluster of rolls around the same,

the roll for giving the initial bend to the blank having its working face traveling at greater surface speed than the working faces of the other rolls of the cluster, substantially as set forth.

2. In a mill for forming rings or like articles, the combination of a central mandrel and a cluster of rolls around the same, the roll for giving the initial bend to the blank being of greater diameter than the other rolls of the cluster, substantially as set forth.

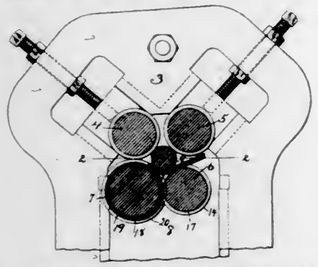
3. In a mill for forming rings or like articles, the combination of a central mandrel and a cluster of rolls around the same, one of said rolls having flanges at the ends thereof and the adjoining roll having annular depressions within which such flanges fit so as to bring the working faces of the two rolls close to each other, substantially as set forth.

4. In a mill for forming rings or like articles, the combination of a central mandrel and a cluster of rolls around the same, one of said rolls having flanges at the ends of its working face and the adjoining roll having a working face traveling at a greater surface speed than that of said flanged roll and having annular depressions to receive the flanges of said roll, whereby such working faces are brought close to each other, substantially as set forth.

5. In a mill for forming rings or like articles, the combination of a central mandrel, and a cluster of rolls around the same, the several rolls of the cluster except one having flanges extending out and bearing on the central mandrel, while the other roll has annular depressions to receive the flanges of one of said rolls, so that the two working faces are brought close to each other.

6. In a mill for forming rings or like articles, the combination of a central mandrel, and a cluster of rolls around the same, one of said rolls having end flanges extending out and bearing on the central mandrel, and annular projecting lips between its working faces, and the adjoining roll having annular depressions to receive such end flanges and said intermediate projecting lips, substantially as set forth.

653,870. ROLLS FOR WELDING COUPLING-BLANKS. GEORGE W. LA VOO and THOMAS J. BRAY, Pittsburg, Pa., assignors to the National Tube Company, same place and New York, N. Y. Filed Oct. 31, 1899. Serial No. 735,363. (No model.)



Claim.—1. In a mill for forming rings or like articles, the combination of a central mandrel and a cluster of rolls around the same, one of said rolls having annular depressions to receive the flanges of the adjoining roll, to bring the working faces of the rolls close to each other, and having beyond said depression annular flanges extending out to and bearing on the mandrel, substantially as set forth.

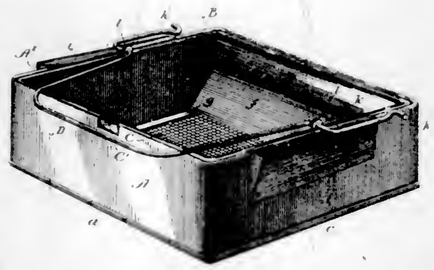
2. In a mill for forming rings or like articles, the combination of a central mandrel and a cluster of rolls around the same, one of said rolls having annular depressions to receive the flanges of the adjoining roll, to bring the working faces of the rolls close to each other, and having beyond said depressions annular flanges extending out to and bearing on the mandrel, and the other roll having depressions to receive such outer annular flanges.

653,871. COMBINED ASH PAN AND SIFTER. EMIL LUNDQUIST, Chicago, Ill. Filed Apr. 5, 1900. Serial No. 11,569. (No model.)

Claim.—1. In a combined ash pan and sifter, the combination of a lower receptacle having a door at its base, an upper receptacle telescoping into the lower receptacle, a handle on the upper receptacle, and a sliding screen in the base of the upper receptacle provided with an operating-handle, substantially as described.

2. In a combined ash pan and sifter, the combination of a lower receptacle having a door at its base, an upper hopper-shaped receptacle telescoping into the lower receptacle, a handle on the upper receptacle, and a sliding screen in the base of the upper receptacle provided with an operating-handle, substantially as described.

3. In a combined ash pan and sifter, the combination of a lower receptacle having a door at its base, an upper receptacle telescoping into the lower receptacle and inseparably connected therewith, a handle on the upper receptacle, and a sliding screen in the base of the upper receptacle provided with an operating-handle, substantially as described.



4. In a combined ash pan and sifter, the combination of a lower receptacle having a door at its base, shoulders *i* on the lower receptacle, an upper receptacle telescoping into the lower receptacle, a sliding screen in the base of the upper receptacle provided with an operating-handle, and a handle D having shoulders *k* pivotally connected with the upper receptacle, and ends *k'* to slide upon the shoulders *i* and raise the upper receptacle, substantially as described.

5. In a combined ash pan and sifter, the combination of a lower receptacle having a door at its base, an upper receptacle telescoping into the lower receptacle, a handle on the upper receptacle, and a sliding screen in the base of the upper receptacle provided with an operating-handle C' hinged thereto to extend outward when the upper receptacle is raised and to fold into the lower receptacle when the receptacles are telescoped, substantially as described.

6. The combination of the receptacle A having the door A', inwardly-extending beaded edges *d* and shoulders *i*, the hopper-shaped receptacle B, having the beaded lower edges *e*, sliding screen C having the handle C', and handle D having the shoulders *i* and ends *k'*, all constructed to operate as and for the purpose set forth.

653,872. PROCESS OF ORNAMENTING WOOD. DAVID LYNN, Athens, Pa. Filed Jan. 30, 1899. Serial No. 703,914. (No specimens.)

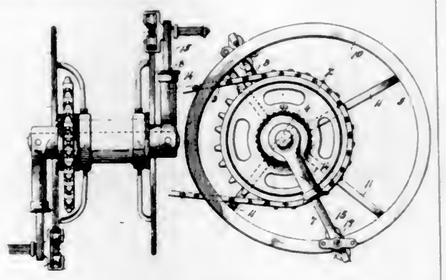


Claim.—1. The herein-described process of ornamenting wood-surfaces, which consists in applying to the dressed surface of the wood a stopping-coat according to a desired design, which stopping-coat enters the body of the wood to a certain extent, but also protrudes above the surface thereof, then coating the entire surface of the wood with a material such as a wood-filler, and then dressing off the surface to remove the protuberances where the stopping-coat is applied, leaving the latter exposed, substantially as set forth.

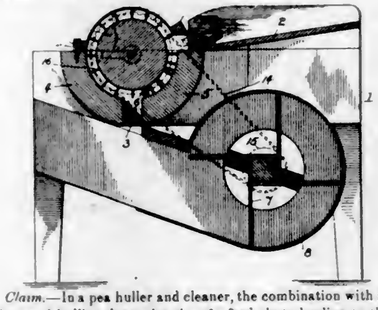
2. The herein-described process of ornamenting wood-surfaces, which consists in applying to the dressed surface of the wood a stopping-coat according to a desired design, which stopping-coat enters the body of the wood to a certain extent, but also protrudes above the surface thereof, then coating the entire surface of the wood with a material such as a wood-filler, then dressing the surface with an abrading substance to remove the protuberances where the stopping-coat is applied, exposing the latter, and finishing the surface with varnish in a usual manner, substantially as set forth.

653,873. PROPELLING-GEAR. JAMES A. MALONE, Grayson, Ky., assignor of one-half to W. D. Malone, same place. Filed Aug. 24, 1897. Serial No. 649,337. (No model.)

Claim.—In a foot-propelled vehicle, the combination with a driving-shaft an extensible crank comprising telescopically-associated sections, and a guide-rim arranged eccentrically to the driving-shaft and inwardly offset from the plane of movement of the crank, of a pedal-pin carried by the crank and projecting on opposite sides thereof, a pedal journaled on the outer end of the pedal-pin, and a yoke or pedal-head swiveled on the inner end of the pedal-pin and comprising relatively-fixed reversely-facing open loops, relatively-fixed spindles crossing said loops, and grooved rollers journaled on said spindles, and running upon and against the inner and outer edges of the guide-rim, whereby the outer section of the crank is laterally braced in both directions, substantially as set forth.



653,874. PEA HULLER AND CLEANER. EDMOND D. MORRIS, Nashville, Ga. Filed Oct. 12, 1899. Serial No. 733,370. (No model.)



Claim.—In a pea huller and cleaner, the combination with a hulling-box and hulling-drum therein, of a feed-chute leading to the box and having its side boards provided with squared shoulders at their ends next the box, a cover for the drum and box having a mouth or opening to receive the peas from the chute and provided with shoulders which abut the shoulders on the side boards, fastenings at the shoulders of the side boards which have projecting portions entering holes in the cover, and another fastening consisting of a removable screw for holding the cover in position and in engagement with the fastenings aforesaid.

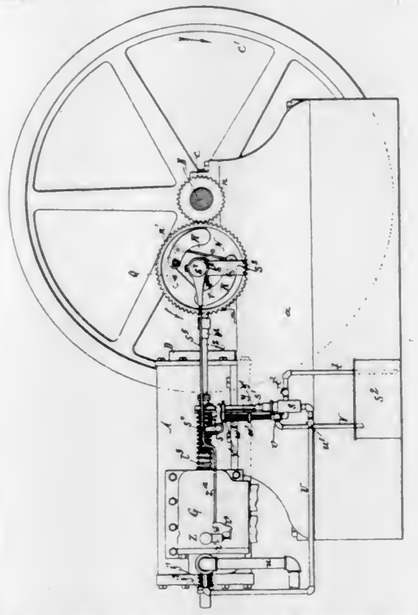
653,875. PROCESS OF MANUFACTURING HOMOGENEOUS MIXTURES FOR FILAMENTS OF INCANDESCENT ELECTRIC LAMPS. KARL OCHS, Berlin, Germany. Filed Oct. 21, 1898. Serial No. 694,169. (No specimens.)

Claim.—The process of manufacturing homogeneous glowers for lamp-conductors of the second class designed to burn in the open air, which consists in producing a homogeneous solution of mixtures of metallic salts thereupon precipitating the corresponding oxids of the metallic salts from the salt solution thereby producing a homogeneous mixture of oxids and thereupon forming said precipitated oxids into a paste with a suitable binder and producing glowers therefrom.

653,876. GAS-ENGINE. FRED C. OLIN, Buffalo, N. Y., assignor to the Olin Gas Engine Company, same place. Filed Oct. 2, 1899. Serial No. 732,331. (No model.)

Claim.—1. In a gas-engine, the combination with the exhaust-valve and the governor-wheel provided with a cam whereby the exhaust-valve is opened, of a movable latch mounted on a stationary support and adapted to hold the exhaust-valve in an open position, a trip-cam mounted on the governor-wheel, and a governor mechanism mounted on the governor-wheel and adapted to shift the trip-cam so that the same retracts the latch and permits the exhaust-valve to close or clears the latch and permits the same to hold the exhaust-valve open, substantially as set forth.

2. In a gas-engine, the combination with the exhaust-valve provided with a reciprocating slide and the governor-wheel provided with a cam which moves said slide for opening the exhaust-valve, of a transversely-movable latch guided in a stationary support, a spring whereby said latch is shifted into engagement with said slide, and a trip-cam mounted on the governor-wheel and adapted to be shifted by the governor mechanism so as to disengage the latch from said slide and permit the exhaust-valve to close or to clear said latch and permit the same to hold the exhaust-valve open, substantially as set forth



3. In a gas-engine, the combination with the exhaust-valve, the reciprocating slide connected with said valve and provided with a rearwardly-facing shoulder and with a bearing-face on its inner side, and the governor-wheel provided with a cam which moves the slide for opening the valve, of a transversely-reciprocating latch guided in a stationary support and adapted to engage with said shoulder of the slide for holding the exhaust-valve open and with the side face of said slide when the exhaust-valve is closed, a spring whereby the latch is moved forwardly into engagement with said shoulder and which is interposed between a shoulder on the latch, and its support, and a trip-cam which is pivoted on the governor-wheel and which is shifted by the governor-weight and spring so as to disengage the latch from said slide and permit the exhaust-valve to close or to clear said latch and permit the same to hold the exhaust-valve open, substantially as set forth.

4. In a gas-engine, the combination with a liquid-fuel supply, and a feed-pump, of a supply-pipe connecting the fuel-supply with the pump, a delivery-pipe connected with the pump, a return-pipe connecting the pump with the feed-supply and provided with a regulating-valve, and means whereby said regulating-valve is controlled and which is operated by the actuating mechanism of the pump, substantially as set forth.

5. In a gas-engine, the combination with the liquid-fuel tank, the feed-pump and the mechanism whereby the pump is actuated, of a supply-pipe connecting the tank with the barrel of the pump and provided with an inwardly-opening check-valve, a delivery-pipe connected with said barrel and provided with an outwardly-opening check-valve, a return-pipe connecting said barrel with said tank and provided with an outwardly-opening check-valve, and means whereby the check-valve in the return-pipe is controlled by the actuating mechanism of the pump, substantially as set forth.

6. In a gas-engine, the combination with the liquid-fuel-supply tank, the feed-pump, and the mechanism for actuating the pump, of a pipe connecting the tank with the barrel of the pump and provided with an inwardly-opening check-valve, a delivery-pipe connected with said barrel and provided with an outwardly-opening check-valve, a return-pipe connecting said barrel with said tank and provided with an outwardly-opening check-valve which offers less resistance to the escape of the liquid from said barrel than the check-valve in the delivery-pipe, and means whereby the check-valve in the return-pipe is controlled by the actuating mechanism of the pump, substantially as set forth.

7. In a gas-engine, the combination with the liquid-fluid-supply tank and the feed-pump, of a supply-pipe connecting said tank with the barrel of the pump and provided with an inwardly-opening check-

valve, a delivery-pipe connected with said barrel and provided with an outwardly-opening check-valve, a return-pipe connecting said barrel with said tank and provided with an outwardly-opening check-valve which offers less resistance to the escape of the liquid from said barrel than the check-valve in the delivery-pipe, a presser-rod adapted to bear against the check-valve in the return-pipe, a spring whereby the presser-rod is raised, and means whereby the presser-rod is depressed at the same time as the plunger of the pump, substantially as set forth.

8. In a gas-engine, the combination with the liquid-fuel-supply tank and the feed-pump, of a supply-pipe connecting said tank with the barrel of the pump and provided with an inwardly-opening check-valve, a delivery-pipe connected with said barrel and provided with an outwardly-opening check-valve, a return-pipe connecting said barrel with said tank and provided with an outwardly-opening check-valve which offers less resistance to the escape of the liquid from said barrel than the check-valve in the delivery-pipe, a presser-rod adapted to bear against the check-valve in the return-pipe, a light spring whereby the presser-rod is raised, a heavy spring bearing against a shoulder on the presser-rod, and a presser-arm adapted to compress the heavy spring, substantially as set forth.

9. In a gas-engine, the combination with the liquid-fuel-supply tank and the feed-pump, of a supply-pipe connecting said tank with the barrel of the pump and provided with an inwardly-opening check-valve, a delivery-pipe connected with said barrel and provided with an outwardly-opening check-valve, a return-pipe connecting said barrel with said tank and provided with an outwardly-opening check-valve which offers less resistance to the escape of the liquid from said barrel than the check-valve in the delivery-pipe, a presser-rod adapted to bear against the check-valve in the return-pipe, a light spring whereby the presser-rod is raised, a heavy spring bearing with one end against a shoulder on the presser-rod, a follower having a loose connection with the presser-rod and bearing against the opposite end of the heavy spring, a presser-arm arranged on the plunger-rod of the pump, and a screw arranged in said arm and bearing against said follower, substantially as set forth.

10. In a gas-engine, the combination with the barrel and plunger of the fuel-feed pump, of a collar or shoulder arranged on the rod of the plunger, a rock-arm bearing with one side against said collar or shoulder, and a spring connected with said plunger-rod and bearing against the opposite side of said rock-arm, substantially as set forth.

11. In a gas-engine, the combination with the barrel and plunger of the fuel-feed pump, of a collar or shoulder arranged on the rod of the plunger, a rock-arm bearing with one side against said collar or shoulder, and a bow-spring pivoted at its upper end to said plunger-rod and engaging with its lower end in a notch in the upper side of the rock-arm, substantially as set forth.

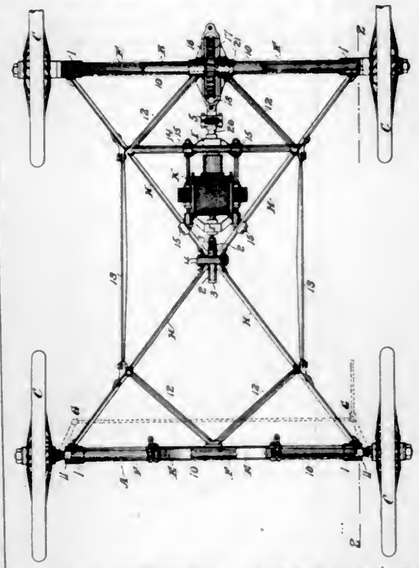
12. In a gas-engine, the combination with the exhaust-valve, the governor controlling the exhaust-valve, the fuel-supply and the feed device, of a pipe connecting the feed device with the fuel-supply, a delivery-pipe connected with the feed device, a return-pipe connecting the feed device and the fuel-supply, and means whereby the passage of fuel through the return-pipe is controlled by the position of the exhaust-valve, substantially as set forth.

13. In a gas-engine, the combination with the exhaust-valve, the liquid-fuel-supply tank and the feed-pump, of a supply-pipe connecting said tank with the barrel of the pump and provided with an inwardly-opening check-valve, a delivery-pipe connected with said barrel and provided with an outwardly-opening check-valve, a return-pipe connecting said barrel with said tank and provided with an outwardly-opening check-valve, a presser-rod adapted to bear against the check-valve in the return-pipe, and a stop connected with the exhaust-valve and adapted to engage with said presser-rod and prevent the same from bearing against the valve in the return-pipe, substantially as set forth.

14. In a gas-engine, the combination with the exhaust-valve, the liquid-fuel-supply tank and the feed-pump, of a supply-pipe connecting said tank with the barrel of the pump and provided with an inwardly-opening check-valve, a delivery-pipe connected with said barrel and provided with an outwardly-opening check-valve, a return-pipe connecting said barrel with said tank and provided with an outwardly-opening check-valve which offers less resistance to the escape of the liquid from said barrel than the check-valve in the delivery-pipe, a presser-rod adapted to bear against the check-valve in the return-pipe, a spring whereby the presser-rod is raised, a spring interposed between a shoulder on the presser-rod and a follower arranged loosely on the presser-rod, a presser-arm bearing against said follower, a stop adapted to move into and out of the path of a shoulder on the presser-rod, and a rock-arm carrying said stop and connected with the exhaust-valve, substantially as set forth.

15. In a gas-engine, the combination with the exhaust-valve, the fuel-supply and the feed device, of a pipe connecting the feed device with the fuel-supply, a delivery-pipe connected with the feed device, a return-pipe connecting the feed device with the fuel-supply and provided with a fuel-valve, a reciprocating presser-rod adapted to bear against said fuel-valve and provided with a collar or shoulder, and a movable stop adapted to bear against said collar or shoulder and flexibly connected with said exhaust-valve, substantially as set forth.

653,877. MOTOR-CARRIAGE. FRANK A. PERRET, New York, N. Y., assignor to the Perret Storage Battery Company, same place. Filed Jan. 25, 1900. Serial No. 2,739. (No model.)



Claim.—1. The combination with front and rear carriage-axles, of two V-frames converging from points near the ends of the axles and united between the axles and at the apexes of the frames by a joint permitting vertical rotation of the frames independently of each other, and brace-bars between the side bars of said V-frames and the axles, substantially as described.

2. The combination with front and rear carriage-axles, of two V-frames converging from points near the ends of the axles and united between the axles and at the apexes of the frames by a joint permitting vertical rotation of the frames independently of each other, and bars connecting said V-frames on opposite sides and permitting the vertical rotation of the V-frames independently of each other, substantially as described.

3. The combination with front and rear carriage-axles, of two V-frames converging from points near the ends of the axles and united between the axles and at the apexes of the frames by a joint permitting vertical rotation of the frames independently of each other, brace-bars between the side bars of said V-frames and the axles, and bars connecting said V-frames on opposite sides and permitting the vertical rotation of the V-frames independently of each other, substantially as described.

4. The combination with the axles A, B, of the V-frames H, H, connected at their apexes by a joint permitting vertical rotation of the frames independently of each other, brace-bars 12 between the axles and the side bars of said frames, and bars 13 connecting the side bars of said frames on opposite sides and constructed to yield under torsional strain to permit the vertical rotation of the V-frames independently of each other, substantially as described.

5. The combination with front and rear axles A, B, of the V-frames H, H, connected at their apexes by a joint permitting vertical rotation of the frames independently of each other, cross-bar 14 connecting the side bars of the rear frame H, a motor carried by said cross-bar and the side bars of the rear frame H, brace-bars 12 between the side bars of the rear frame H and the axle B, and a driving connection between said motor and the rear axle between the brace-bars 12, substantially as described.

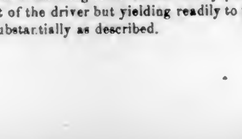
6. The combination with front and rear axles A, B, of the V-frames H connected at their apexes by a joint permitting vertical rotation of the frames independently of each other, cross-bar 14 connecting the side bars of the rear frame H, a motor carried by said cross-bar and the side bars of the rear frame H, brace-bars 12 between the side bars of the rear frame H and the axle B, driving-shaft 21 in the tubular rear axle, a worm-gear on the driving-shaft between the brace-bars 12, and a worm-shaft in line with the motor-shaft and driven directly therefrom for driving said worm-gear, substantially as described.

7. The combination with front and rear carriage-axles, of two V-frames converging from points near the ends of the axles, and each having at its apex a sleeve 2 extending inwardly from the apex of the frame, and bolt 3 in said sleeves securing the frames together with the ends of the frames abutting, substantially as described.

8. The combination with front and rear carriage-axles, of two V-frames converging from points near the ends of the axles, and each having at its apex a sleeve 2 extending inwardly from the apex of the frame, vertical bearing-plates 4 at the abutting ends of the frames, and bolt 3 in said sleeve securing the frames together, substantially as described.

9. The combination with front and rear carriage-axles, of two V-frames converging from points near the ends of the axles and abutting at their apexes, vertical bearing-plates 4 at the abutting ends of the frames, and means for securing the frames together and permitting vertical rotation of the frames and plates 4 independently of each other, substantially as described.

653,878. HEATING ATTACHMENT. BENJAMIN M. PEVEY, Worcester, Mass. Filed June 19, 1899. Serial No. 721,008. (No model.)



Claim.—1. As an article of manufacture, a heating attachment comprising two wire arms or sections, one of said sections having a footpiece for bearing against the wall, an end extending therefrom to engage a socket in the wall, and a hook at its outer end, and the second piece of wire forming a supporting-link for pivotally connecting an intermediate point of the first wire piece to a point on the wall above the socket into which the end of said wire piece fits, whereby said heating attachment may hang closely to the wall when not in use, substantially as described.

2. In a device of the class described the combination of a wire arm 10, having a hook 11, a loop 12, forming a footpiece for bearing against the wall with an end 13 extending from the footpiece 12 to detachably engage a socket in the wall, and a wire supporting-brace pivotally connecting a loop or eye 15 formed in the wire 10 intermediate of its ends with a fixture or eye in the wall whereby the device may hang down out of the way when not in use, substantially as described.

3. The combination of a bracket or support having a hook at its outer end, and a wire holder for curling-tongs having an eye or loop 20 for engaging the end of the hook, and bends or knees 21 having a socket for holding the same from turning thereon, substantially as described.

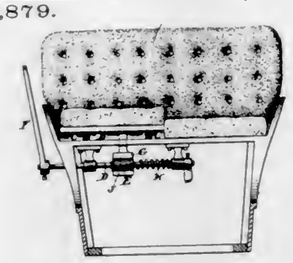
4. The combination of a bracket or support comprising a wire arm having a hook 11 at its outer end, and a wire holder for curling-tongs comprising a downwardly-extending wire socket 19 having an eye 20 for engaging the end of the hook 11, elbows or knees 21 forming a socket for preventing the same from turning, said wire 19 having a socket or loop 22 at its lower end, the end of the wire being bent back and forming a spring-catch 23 for detachably engaging the bent-out section of a holder for curling-tongs consisting of a piece of wire bent to form sockets 24 and 26 near its opposite ends for supporting a pair of curling-tongs in a substantially-horizontal position, substantially as described.

653,879. MOTOR-VEHICLE. LUCIUS J. PHELPS, Melrose, Mass. Filed May 19, 1900. Serial No. 17,304. (No model.)

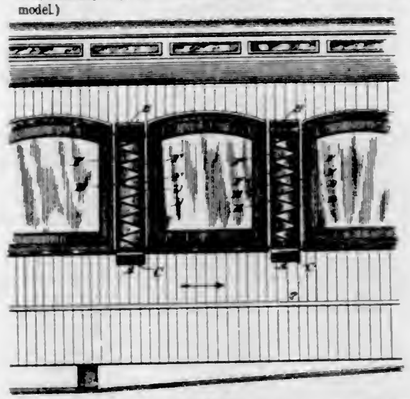
Claim.—1. In a motor-vehicle a spring attached to the power-controlling lever adapted to throw off the power, and a brake operated by the weight of the driver to hold said lever at rest in any position when the driver is on his seat substantially as described.

2. In a motor-vehicle a spring on the power-controlling lever adapted to throw off the power, a positive lock on said lever which normally locks it in the off position, adapted to be unlocked by the weight of the driver when he takes his seat, and a friction-brake on said lever, set by the weight of the driver sufficiently strong to hold the power-controlling lever at rest in any position without effort on the part of the driver but yielding readily to pressure applied to the lever, substantially as described.

653,879.



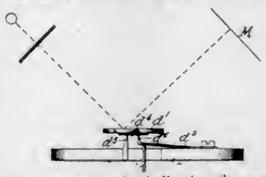
653,880. DUST-GUARD FOR CAR-WINDOWS. DAVID E. PHILLIPS, Mahanoy City, Pa. Filed Nov. 16, 1899. Serial No. 737,256. (No model.)



Claim.—1. A dust and air deflector for cars consisting of a panel adapted to extend between two car-windows, and having on its outer side a series of transversely-arranged deflectors, said deflectors being alternately inclined and tapered in opposite directions, and having their apexes located at the sides of the panel adjacent to the windows, and a guard extending outwardly between the adjacent deflectors, substantially as described.

2. A dust and air deflector for cars consisting of a panel adapted to extend between two car-windows, and having on its outer side a series of transversely-arranged deflectors, said deflectors being alternately inclined and tapered in opposite directions, a saw-kerf or slot between the adjacent deflectors and a guard arranged in said kerf and projecting outwardly to approximately the same distance as the points of the deflectors.

653,881. MIRROR-INDICATOR FOR AMPLIFYING MOVEMENTS OF BODIES. ANTON POLLAK, Buda-Pesth, Austria-Hungary. Original application filed Feb. 17, 1899, Serial No. 705,771. Divided and this application filed Dec. 18, 1899. Serial No. 740,638. (No model.)



Claim.—1. A mirror device for indicating the movements of a body, comprising a mirror, points upon which it may oscillate, and means for generating a magnetic field adapted to hold it magnetically against such points.

2. A mirror device for indicating the movements of a body, comprising a mirror, supporting-points upon which it may oscillate, a point moved by said body, and magnetic means for holding the mirror against such points.

3. A mirror device for indicating the movements of a body, comprising a magnetizable plate carrying a mirror, relatively-movable supporting-points, and a magnet adapted to attract said plate against

said points, whereby the mirror is oscillated by relative movements of said points.

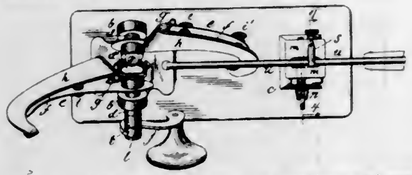
4. A mirror device for indicating the movements of a body, comprising a magnet, carrying a projecting point, and a mirror held upon such point by magnetic attraction.

5. A mirror device for indicating the movements of a body, comprising a magnet, a projecting point fixed at one pole thereof, a spring fixed to the other pole thereof, and carrying a projecting point, and a mirror held upon such points by attraction of said magnet.

6. The combination with a vibrating diaphragm, of a mirror, supporting-points upon which it may oscillate, a connection between said mirror and diaphragm, and means for generating a magnetic field to hold the mirror against said points by magnetic attraction.

7. The combination with a vibrating diaphragm, of a mirror, a magnetizable plate carrying it, a magnet having projecting points forming a pivotal support for said plate, a spring having a point engaging said plate, the plate being held against said points by the attraction of said magnet, and a rod connecting the diaphragm with said spring, communicating the vibrations of the diaphragm to the point of said spring to oscillate the mirror.

653,882. SHARPENING-MACHINE. FERDINAND A. REICHARDT, Elizabeth, N. J. Filed Jan. 12, 1900. Serial No. 1,176. (No model.)



Claim.—1. In a sharpening-machine, the combination of arms arranged to rotate in two circular planes at an angle to each other and intersecting at a line below their axes, said arms having abrading or polishing surfaces on their opposed faces; means for rotating the arms; and means for holding a blade, at or about the intersection of the two circular planes and in the paths of the rotating arms.

2. In a sharpening-machine, the combination of arms arranged to rotate in two circular planes at an angle to each other; spring-acting abrading or polishing surfaces carried by the arms; means for rotating the arms; and means for holding a blade in the paths of the rotating arms.

3. In a sharpening-machine, the combination of arms arranged to rotate in circular planes; curvilinear abrading or polishing surfaces carried by the arms, formed to sweep along a straight line within their circular planes of rotation from the outer to the inner parts of said circular planes, and having their inner ends formed to pass away from the edge at the end of a blade located on said straight line before leaving the back of the blade at said end; means for holding the blade; and means for rotating the arms.

4. In a sharpening-machine, the combination of arms arranged to rotate in circular planes; curvilinear abrading or polishing surfaces carried by spring connections from the arms, formed to sweep along a straight line within their circular planes of rotation from the outer to the inner parts of said circular planes, and having their inner ends formed to pass away from the edge of a blade located on said straight line before leaving the back of the blade; and means for rotating the arms, comprising a crank-handle connected to the driving-shaft of the arms by means of a spring-clutch, whereby said arms cannot be rotated backwardly by the handle.

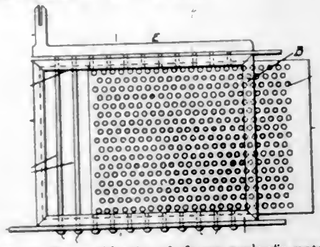
5. In a sharpening-machine, the combination of two shafts fitted to rotate in bearings with their axes inclined and rotatively connected together at their inner ends, an arm or arms carried by each of the shafts; abrading or polishing surfaces on the inner or opposing faces of the arms; and means for holding a blade in the paths of rotation of the arms so that their abrading or polishing surfaces will alternately rub along the two sides of the blade.

6. In a sharpening-machine, the combination of arms arranged to rotate in circular planes; curvilinear abrading or polishing surfaces carried by the arms; two clamping-jaws and provisions for moving them simultaneously to and from a central line, whereby blades of different sizes are centrally held in the paths of rotation of the abrading or polishing surfaces; and an adjustable clamping device for pressing down and holding the blades in the clamping-jaws.

7. In a sharpening-machine, the combination of arms arranged to rotate in circular planes; curvilinear abrading or polishing surfaces carried by the arms; two clamping-jaws and provisions for moving them simultaneously to and from a central line, whereby blades of different sizes are centrally held in the paths of rotation of the abrading or polishing surfaces; a clamping-arm adapted to be placed over the opening of the jaws and away therefrom, and connected to a conical head; and a screw arranged to bear against and act on the conical head so as to draw the clamping-arm toward the opening of the jaws.

8. In a sharpening-machine, the combination of two shafts fitted to rotate in bearings with their axes inclined and rotatively connected together at their inner ends; an arm or arms carried by each of the shafts; abrading or polishing surfaces on the inner or opposing faces of the arms; and means for holding a blade in the paths of rotation of the arms, so that their abrading or polishing surfaces will alternately rub along the two sides of the blade, comprising parallel-moving clamping-jaws, and an arm fitted to move laterally toward and from the opening of the clamping-jaws and having a conical head; and a screw arranged to bear against and act on the conical head to draw the arm toward the opening of the clamping-jaws.

653,883. SECONDARY BATTERY. ARVID REUTERDAHL, Providence, R. I., assignor, by direct and mesne assignments, of two-thirds to Leonard H. Campbell and George F. Weston, same place. Filed Feb. 12, 1900. Serial No. 4,868. (No model.)



Claim.—1. The combination of a frame, made of a material which is a non-conductor of electricity, having perforations through two opposite parts thereof at corresponding intervals and in alinement, respectively, and one of its parts provided with two parallel, longitudinal slots, and an opposite part provided with two parallel, longitudinal grooves, an electrode having parallel cross-bars extending angularly therefrom, which are adapted to pass through the said perforations of the frame, two thin, perforated holding-plates, made of a material which is a non-conductor of electricity, and adapted to pass through said slots, and to be seated in said grooves, and a mass of active material surrounding the said cross-bars and filling the space between said perforated holding-plates and the inside edges of said frame, and capable of electrolytic action, when in contact with a suitable electrolyte, substantially as described.

2. The combination of a frame having perforations through two opposite parts thereof at corresponding intervals and in alinement, respectively, and one of its parts provided with two parallel, longitudinal slots, and an opposite part provided with two parallel, longitudinal grooves, an electrode having parallel cross-bars extending angularly therefrom, which are adapted to pass through the said perforations of the frame, two thin, perforated holding-plates adapted to pass through said slots and to be seated in said grooves, and a mass of active material surrounding the said cross-bars and filling the space between said perforated holding-plates and the inside edges of said frame, and capable of electrolytic action, when in contact with a suitable electrolyte, substantially as described.

3. The combination of a frame, made of a material which is a non-conductor of electricity, having perforations through two opposite parts thereof at corresponding intervals and in alinement, respectively, and one of its parts provided with two parallel, longitudinal slots, and an opposite part provided with two parallel, longitudinal grooves, an electrode having parallel cross-bars extending angularly therefrom, which are adapted to pass through the said perforations of the frame and to be clenched or headed at their ends, respectively, two thin, perforated holding-plates, made of a material which is a non-conductor of electricity, and adapted to pass through said slots, and to be seated in said grooves, and a mass of active material surrounding the said cross-bars and filling the space between said perforated holding-plates and the inside edge of said frame, and capable of electrolytic action, when in contact with a suitable electrolyte, substantially as specified.

4. The combination of a rectangular frame, made of a material, which is a non-conductor of electricity, having perforations through two opposite sides thereof at corresponding intervals and in alinement, respectively, and having one side thereof provided with two parallel, longitudinal slots, and the opposite side provided with two parallel, longitudinal grooves, a strip of a material, which is not a conductor of electricity, having perforations registering with those of the frame and placed in contact with one outer edge of the frame, a strip of a material, which is not a conductor of electricity, having perforations registering with those of the frame and placed in contact with the outer edge of the opposite side of the frame, an electrode having parallel cross-bars extending angularly therefrom, which are adapted to pass through all said perforations of the frame and the strips and to be clenched or headed at their ends, respectively, two thin perforated holding-plates, made of a material which is a non-conductor of electricity, and adapted to pass through said slots, and to be seated in said grooves, and a mass of active material surrounding the said cross-bars and filling the space between said holding-plates and the inside edges of said frame, and capable of electrolytic action, when in contact with a suitable electrolyte, substantially as shown.

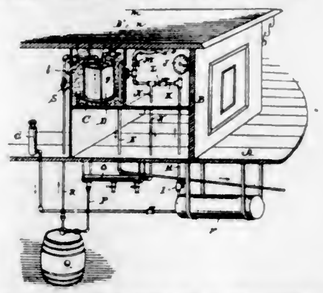
5. In a receptacle for the active material of a storage battery, the combination of a case comprising a frame provided with suitable grooves and slots and two oppositely-arranged, flexible side pieces, provided with perforations and secured to said frame, in the grooves and slots thereof, all made of a material or materials not capable of conducting electricity, and an electrode, having bars projecting therefrom, which extend into said case between said flexible and perforated side pieces, substantially as set forth.

6. In a receptacle for the active material of a storage battery, the combination of a case comprising a frame provided with suitable grooves and slots and two oppositely-arranged, flexible side pieces, provided with perforations, all said parts being made of a material or materials not capable of conducting electricity, means adapted to secure said side pieces to the frame in the grooves and slots thereof and to permit them to be detached therefrom, and an electrode, having bars projecting therefrom which extend into said case between said flexible and perforated side pieces, substantially as shown.

7. In a storage battery, the combination of a plurality of composite plates, each comprising a frame having holding-apertures and perforations through it and two oppositely-arranged flexible side pieces provided with perforations, an electrode having bars projecting therefrom which extend through the perforations of the frame, a number of perforated washers interposed between said composite plates, respectively, a rod screw-threaded at both ends, which rod passes through the holding-apertures of said frames and of said washers and nuts engaging the screw-threaded ends, respectively, of said rod and bearing against the outer surfaces, respectively, of the two outermost plates of the series, substantially as specified.

8. In a storage battery, the combination of a jar, a plurality of composite plates, each comprising a frame having holding-apertures and perforations through it and two oppositely-arranged flexible side pieces, provided with perforations, an electrode having bars projecting therefrom which extend through the perforations of the frame, a number of perforated washers interposed between said composite plates, respectively, a rod screw-threaded at both ends, which rod passes through the holding-apertures of said frames and of said washers, nuts engaging said rod and bearing against the outer surfaces, respectively, of the two outermost plates of the series and adjusting-nuts engaging with the ends of said rod and bearing against the inner surfaces of said jar, substantially as described

653,884. FLUID-COOLER. HENRY J. RICHARD and WALTER D LENNOX, Danbury, Conn., assignors of one-third to Charles W. Murphy, same place. Filed Sept. 11, 1899. Serial No. 730,066. (No model.)



Claim.—1. In a cooling apparatus, the combination with a cooling-box, of a jar, inlet and outlet pipes with downwardly-deflected ends interior of said jar and both terminating adjacent to its bottom, means for returning the fluids from said cooling-jar back through the inlet-pipe into the barrel, as, and for the purpose specified.

2. In a device of the class described, the combination with cooling-box having an overflow B, of a jar and support, supply-pipe R, a coupling and internal downward-extended detachable pipe *j* whereby the liquid is delivered against the bottom of said jar, outlet-pipe *k* having spigot as shown, a coupling and internal-extended pipe for said outlet, and having its opening adjacent to the bottom, relief-pipe *m* provided with cock *n*, and means whereby the fluid can be returned from the jar to the keg, substantially as shown and described.

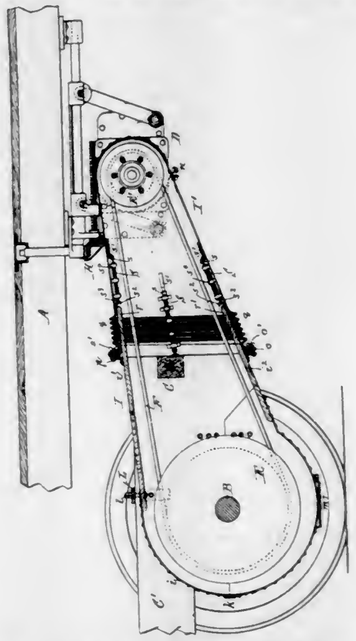
3. In a cooling apparatus, the combination with a cooling-box, of a cooler adapted to be surrounded upon both the inner and outer sides with ice, a supply-pipe leading through the cover to the bottom of said cooler, a relief-pipe entering the top of the cooler whereby the air or excess gases may be released, and means for returning the liquor from said cooler back into the barrel.

4. A liquor-cooling apparatus, comprising an ice-box, an oval jar located therein and having a central opening therethrough, means for detachably closing said jar, an inlet-pipe to the jar having an interior downward-extended pipe disposed adjacent to the bottom, a cock to govern said inlet, an outlet-pipe from said jar leading up from the bottom and a spigot as shown, a relief-pipe and cock with a flexible pipe for attachment, means for emptying said jar back through the source of supply to the keg, substantially as described.

5. The combination in a fluid-cooling apparatus, of a jar comprising an annular receptacle having an inner and outer exposed surface, rings with suitable packings to inclose said jar, bolts for clamping said rings in place, inlet and outlet pipes through the cover and disposed near the bottom of said jar, means for returning the fluid from said jar back through the supply-pipe, substantially as shown and described.

6. A fluid-cooling apparatus, comprising a hollow, oval, cylindrical body, and caps inclosing said body, a vertical separating wall *c* within one side of said body, an outlet-pipe leading from the bottom of said body and situated at the opposite side of said wall from the inlet-pipe, and a connection for attachment with the pressure-cylinder for returning the fluid from the cooler through the inlet-pipe, substantially as described.

653,885. CASING FOR ELECTRIC CAR-LIGHTING APPARATUS. WILLARD F. RICHARDS, Buffalo, N. Y., assignor to Charles M. Gould, New York, N. Y. Filed Apr. 4, 1900. Serial No. 11,493. (No model.)



Claim.—1. A tight casing for the dynamo driving mechanism of electric car-lighting apparatus inclosing the driving part on the car-axle, the driven part on the dynamo and the connecting part and having between its end portions an extensible and flexible portion which is tightly connected with the adjacent portions of the casing and which permits the latter to lengthen and contract and to bend laterally in accommodating itself to the variations in the relative position of the dynamo and car-axle, substantially as set forth.

2. A casing for the dynamo driving mechanism of electric car-lighting apparatus, composed of front and rear sections mounted on the car-truck and the dyname, respectively, one of said sections being secured to the opposing section and provided with bellows folds or plaits, substantially as set forth.

3. A casing for the dynamo driving mechanism of electric car-lighting apparatus composed of front and rear sections mounted on the car-truck and the dynamo, respectively, one of said sections being secured to the opposing section and provided with bellows folds, and springs arranged to contract said folds, substantially as set forth.

4. A casing for the dynamo driving mechanism of electric car-lighting apparatus, composed of front and rear sections mounted on the car-truck and the dynamo, respectively, said sections being detachably secured together at their adjoining ends and one of said sections being provided with plaits or bellows folds, and contracting-springs for said folds secured at one end to one of said sections and having their opposite ends detachably connected with the other section, substantially as set forth.

5. A casing for the dynamo driving mechanism of electric car-lighting apparatus, composed of a front section mounted on the car-truck, and a flexible rear section mounted on the dynamo and provided at its front end with a clamping-frame and adjacent to said frame with bellows folds, and clamping devices for securing said frame to the adjacent end of the front section, substantially as set forth.

6. A casing for the dynamo driving mechanism of electric car-lighting apparatus composed of a rigid front section having its front portion supported on the car-truck, and a rear section of flexible material having a closed rear portion which is supported on the dynamo, said flexible section being secured at its front end to said rigid section and provided with bellows folds, substantially as set forth.

7. A casing for the dynamo driving mechanism of electric car-lighting apparatus composed of front and rear sections mounted on the car-truck and the dynamo, respectively, one of said sections being secured at its inner end to the other section and provided adjacent to its inner end with plaits or bellows folds, and the opposing section being provided with an extension or extensions which enter the plaited section and support its plaits or folds, substantially as set forth.

8. A casing for the dynamo driving mechanism of electric car-lighting apparatus, composed of a rear section mounted on the dynamo, and a front section mounted on the car-truck and having an extensible connection with the rear section and provided with a removable lower portion or section for affording access to the interior of the casing, substantially as set forth.

9. A casing for the dynamo driving mechanism of electric car-lighting apparatus, provided with vertical slots for the passage of a car-axle, pockets surrounding said openings, and vertical shields or washers mounted on said axle and sliding in said pockets, substantially as set forth.

653,886. NEEDLE. LOTTIE A. ROBERTS, San Francisco, Cal. Filed Sept. 9, 1897. Serial No. 651,121. (No model.)



Claim.—1. A needle comprising a shank having an eye therein, one wall and a portion of the base of which eye is formed by a spring-tongue extending downwardly at one side of and part way across the base of the eye and separated normally from the opposite wall by an interspace, said tongue being adapted for movement throughout its length to close and open said interspace, an eye extension below the tongue and communicating with the eye proper through said interspace, an upwardly-directed opening leading from the eye extension, and a spring-guard for said opening forming a continuation of one wall thereof and extending upwardly in the direction of the spring-tongue and beyond said tongue, and normally in engagement with the spring-tongue continuously and with the shank of the needle, whereby there will be a mutual yielding of the tongue and guard at their normally-engaging points.

2. A needle of the class described, having a laterally-accessible eye of which one wall consists of an inwardly-yielding downwardly-extending tongue, and also having a thread-passage communicating with said eye and provided with an outer yielding wall, consisting of a guard which springs from the body portion of the needle at one side of said eye, and adjacent to the free lower end of said tongue, whereby the tongue is adapted to yield inwardly during the passage of a thread between the same and the adjacent butt-end of the guard, substantially as specified.

3. A needle of the class described, having a thread-eye, proper, of which one wall consists of an inwardly-yielding tongue having a free lower end and terminating in a head or enlargement which partly closes said eye at its lower end, and also having an eye extension below said head or enlargement of the inwardly-yielding tongue, and communicating with the eye, proper, by a throat, and also having a thread-passage, communicating with the eye extension and closed at its outer side by an outwardly-yielding guard, extending upwardly from a point at one side of the eye and adjacent to the free end of the tongue, substantially as specified.

4. A needle of the class described, having a thread-eye, proper, of which one wall consists of an inwardly-yielding tongue having a free lower end and terminating in a head or enlargement which partly closes said eye at its lower end, and also having an eye extension below said head or enlargement of the inwardly-yielding tongue, and communicating with the eye, proper, by a throat, located contiguous to one side wall of the eye, proper, the upper side of the head or enlargement of the tongue being concaved to form a thread-seat, and also having a thread-passage, communicating with the eye extension and closed at its outer side by an outwardly-yielding guard, extending upwardly from a point at one side of the eye and adjacent to the free end of the tongue, substantially as specified.

5. The herein-described sewing-machine needle, having a thread-eye comprising an upper portion or eye, proper, having an inwardly-yielding side wall consisting of a downwardly-extending tongue 9, terminating in a head or enlargement by which the lower end of said eye, proper, is partly closed, and a lower portion or eye extension, of a width greater than the eye, proper, and also having a thread-passage communicating with the eye extension, and closed at its outer side by a laterally-yielding guard, extending upwardly from that side of the eye adjacent to the said tongue, and bearing against the outer side of the tongue, and also, throughout its length, against that wall of the thread-passage which is formed by the adjacent side surface of the body portion of the needle, substantially as specified.

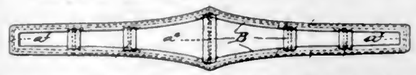
653,887. METAL-COATED FIBROUS MATERIAL. JAMES H. ROBERTSON, New York, N. Y., assignor, by direct and mesne assignments, to the Metal Fabric Company, same place. Filed May 1, 1899. Serial No. 715,233. (Specimens.)

Claim.—1. As a new article of manufacture, carbonized material bearing a pattern or configuration, and having an electrically-deposited continuous metallic coating directly applied thereto and covering and conforming to the said pattern or configuration of the carbonized material, substantially as described.

2. As a new article of manufacture, a carbonized textile fabric having interstices or openings, and having an electrically-deposited continuous metallic coating directly applied to the carbonized threads, reproducing the interstices or openings of the carbonized fibers in the coating, substantially as described.

3. As a new article of manufacture, a carbonized knitted, knotted or woven fabric, having an electrically-deposited continuous metallic coating directly applied thereto, substantially as described.

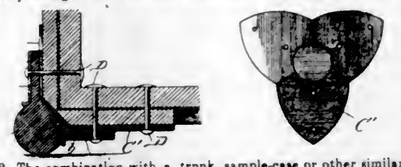
653,888. APPAREL-BELT. JOSEPH T. ROBIN, New York, N. Y. Filed Mar. 23, 1900. Serial No. 9,822. (No model.)



Claim.—A resilient frame, for use in making belts, which is wider at its middle portion than at its ends, consisting of longitudinal pieces, straight end and brace pieces connecting the longitudinal pieces, and a covering for each brace and end piece and each longitudinal piece.

653,889. TRUNK. BENJAMIN F. RUBEL, Chicago, Ill. Filed Sept. 29, 1897. Serial No. 653,447. (No model.)

Claim.—1. In a corner-protecting device, the combination of a yielding cushion having a central ball-shaped top or bearing-face and a wedge-shaped base formed by outwardly-extending wings or projections, an inner rigid plate having a central bearing-face and fitting against the face of the base of the yielding cushion, and an outer rigid plate having projecting ends crowding into the dividing-line between the top and base of the cushion and fitting over the extended wings increasing the elastic or resilient quality of the ball-shaped top, and means for firmly securing the rigid plates in place and holding the yielding cushion between them, substantially as described



2. The combination with a trunk, sample-case or other similar article, of a yielding cushion having a central ball-shaped top or bearing-face and a wedge-shaped base formed by outwardly-extending wings or projections, an inner metallic plate having a central bearing and fitting against the face of the base of the yielding cushion, an outer metallic plate having projecting ends crowding into the dividing-line between the top and the base and fitting over the extending wings increasing the elastic or resilient quality of the ball-shaped top, and bolts or rivets securing the metallic plates to the corner to which the device is applied and firmly securing the yielding cushion in place, substantially as described.

653,890. MAGAZINE-HAMMER. ARTHUR W. SAVAGE, Utica, N. Y., assignor to the Magazine Hammer Company, same place. Filed Apr. 27, 1899. Serial No. 714,680. (No model.)



Claim.—1. The combination with a hammer-head, handle and tack-magazine, of a tack-moving mechanism consisting of the slide 8 at the side of the head having a catch shoulder or projection, the lever 11 pivoted in the handle, engaging with the slide and having the slot 13, and the pull-bar 15 having a pin engaging in said slot 13, and a shoulder engaging with said catch-shoulder, substantially as set forth.

2. The combination with a double-pole magnetic hammer, of a magazine and tack-feeding mechanism arranged to deliver tacks onto the face of the hammer with the tack-heads partially upon each pole of the magnet, substantially as set forth.

3. The combination with a hammer of the horseshoe-magnet, the poles of which provide a driving-face and a tack guiding and feeding mechanism arranged to move the tacks with their heads substantially in the plane between the branches of the magnet whereby the tacks as they approach the face come within the influence of both poles and are delivered upon the face on each pole, substantially as set forth.

4. The combination with a magnetic hammer-head of a magazine arranged to deliver tacks adjacent to the face with the plane of the tack-head substantially at right angles with the plane of the hammer-face and a reciprocating feeding-slide movable lengthwise of the head and having a shoulder arranged to engage the body of the tack and movable substantially in a straight line to carry the shoulder from the side of the magazine-mouth more remote from the hammer-face to a point in advance of the face, substantially as set forth.

5. The combination with a magnetic hammer-head of a magazine having its mouth or delivery-opening at the side of the head adjacent to the face and formed to deliver tacks adjacent to the face, the tacks at the delivery end being in a plane substantially at right angles with the head, a tack-feeder operating along the side of the head across the delivery end of the magazine to a point beyond the face of the head, substantially as set forth.

6. The combination with a magnetic hammer-head having an angular corner as between the side and face of the head, a magazine with its mouth or delivery-opening at the side of the head adjacent to said angular corner and arranged to deliver tacks at its mouth extending substantially at right angles with the hammer-head, and the tack-moving mechanism having a shoulder adapted to engage and move the tack from the mouth of the magazine and swing it onto the face of the head around said angular corner, substantially as set forth.

7. The combination with a magnetic hammer-head of a magazine having its discharge end or mouth adjacent to the face of the hammer-head, the feeding-slide 8 having the shoulder 10 operating across the mouth of the magazine to a point beyond the face of the hammer-head, the tack-holder 22 arranged to close the discharge end of the magazine and means for operating the slide and tack-holder, substantially as set forth.

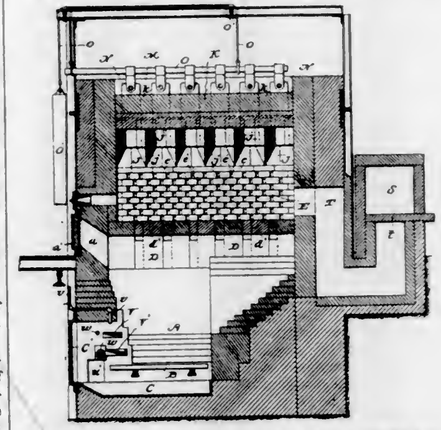
8. In a hammer, the combination of a handle, a hammer-head, a tack-magazine, a movable tack feeder operating in a plane parallel with the head and the sliding operating-bar arranged in the handle and adapted to engage said tack-feeder and secure the same against its own momentum, substantially as set forth.

9. In a magazine magnetic tack-hammer the combination of a magnetic head, a magazine terminating adjacent to the face of the head and to an angular corner between the side and face of the head and arranged to hold tacks adjacent to the face with the tack-heads in a plane substantially at right angles with that of the face, and a tack-feeding mechanism having a shoulder adapted to operate from the discharge end of the magazine to a point beyond the face whereby the tacks are forced from the mouth of the magazine around the angular corner onto the face, and mechanism for operating said tack feeding device, substantially as set forth.

10. The combination with a magnetic tack-hammer and its magazine, of a feeding-slide 8 having a stud or shoulder 19, the lever 11 engaging with the slide and pivoted in the handle and having an inclined slotted opening, the slide or pull-bar 15 having a projection engaging in said slotted opening and a shoulder engaging with said shoulder 19 on the slide 8, substantially as set forth.

11. The combination with a magnetic hammer of the magazine, the slide 8 operating across the mouth of the magazine and having a recess adapted to receive a tack at the end of the magazine, and a tack-holder 22 having a recess also adapted to receive a tack at the end of the magazine, and means for operating the slide and the tack-holder, substantially as set forth.

653,891. FURNACE FOR KILNS. FREDERICK R. SELLMAN, St. Louis, Mo. Original application filed Dec. 23, 1899, Serial No. 741,428. Divided and this application filed May 15, 1900. Serial No. 16,781. (No model.)



Claim.—1. In a furnace the combination with walls which converge toward the lower portion, of grate-bars arranged in said lower portion, vaporizing-pans arranged in the lower front portion of said furnace, a supply-pipe for furnishing liquid to said pans, means for admitting air to support slow combustion in said furnace, and a charging-door in the upper portion of the furnace through which fuel is fed; substantially as described.

2. The combination with the walls of a furnace, of oppositely-placed tiles forming a top therefor, said tiles being recessed or cut away to provide passages for the gases escaping from said furnace; substantially as described.

3. The combination with the side walls of a furnace, of oppositely-placed tiles arranged thereon to form an arched top for said furnace, the inner edges of said tiles being recessed or cut away to provide passages for the gases escaping from said furnace, and a key-stone or wedge arranged between said tiles; substantially as described.

4. The combination with a furnace, of a mixing-chamber for receiving gases generated in said furnace, said mixing-chamber being formed in part by walls composed of fire-brick with spaces between and breaking joints with each other, through which spaces heated air is introduced into the mixing-chamber; substantially as described.

5. The combination with a furnace, of a mixing-chamber for re-

ceiving gases generated in the furnace, the walls of said mixing-chamber being provided with openings through which heated air passes into said mixing-chamber, and oppositely-placed tiles arranged in the upper portion of said mixing-chamber, said tiles being provided with inwardly-extending deflecting projections; substantially as described.

6. The combination with a furnace, of a mixing-chamber for receiving gases generated in the furnace, the walls of said mixing-chamber being provided with openings through which heated air passes into said mixing-chamber, oppositely-placed tiles arranged in the upper portion of said mixing-chamber, said tiles being provided with inwardly-extending deflecting projections, and tiles J′ arranged above said last-mentioned tiles and provided with triangular-shaped projections in vertical alinement with said deflecting projections; substantially as described.

7. The combination with a furnace, of a mixing-chamber for receiving gases generated in the furnace, the walls of said mixing-chamber being provided with openings through which heated air passes into said mixing-chamber, oppositely-placed tiles arranged in the upper portion of said mixing-chamber, said tiles being provided with inwardly-extending deflecting projections, tiles J′ arranged above said last-mentioned tiles and provided with triangular-shaped projections in vertical alinement with said deflecting projections, and a lintel supported by said triangular-shaped projections and forming the roof of said mixing-chamber; substantially as described.

8. The combination with the walls of a mixing-chamber, of tiles arranged thereon and provided with inwardly-extending deflecting projections, and a plurality of dampers guided in ways formed in said tiles; substantially as described.

9. The combination with the walls of a mixing-chamber, of tiles arranged thereon and provided with inwardly-extending deflecting projections, a plurality of dampers guided in ways formed in said tiles, a rod to which said dampers are connected, sheaves or pulleys supported above said rod, a counterbalancing-weight, and a flexible connection between said way and rod, said connection passing over said sheaves or pulleys; substantially as described.

10. The combination with a mixing-chamber, of tiles J arranged along the side walls thereof, said tiles being provided with inwardly-extending deflecting projections j, tiles J′ arranged above the tiles J and provided with triangular-shaped projections j', and a guiding-lip j'', a lintel K supported by the projections j', and tiles L supported by the tiles J′; substantially as described.

11. The combination with the furnace A, of the tiles D forming the top thereof, said tiles being provided with recesses d'' in their backs, of tiles G formed with recesses g registering with said recesses d'', intake-passages I I′, a passage H for receiving the air from the passage I′ through a series of small openings A connecting said two passages, the passages g leading from the passage H and the registering passages d'' discharging into a space F, a mixing-chamber arranged above the furnace A, and having its side wall formed of fire-brick with spaces between which connect the space F with the mixing-chamber E; substantially as described.

653,892. COUNTER-SKIVING MACHINE. WILLIAM C. STEWART, Lynn, Mass., assignor to Alexander Stewart, Jr., same place. Filed Dec. 13, 1899. Serial No. 740,171. (No model.)

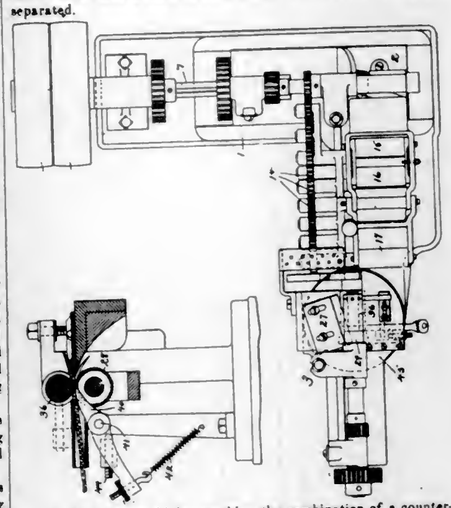
Claim.—1. In a counter-skiving machine, the combination of two skiving mechanisms adapted to successively operate upon the counter, a pair of feeding-rolls adapted to receive the counter from one of said mechanisms, a second pair of feeding-rolls adapted to introduce the counter to the other mechanism, a pair of intermediate feeding-rolls, and means to throw said intermediate rolls into and out of operation.

2. In a counter-skiving machine, the combination of a pair of feed-rolls adapted to advance the counter, and means controlled by the advancing end of the counter after said end has passed from between the rolls, for separating said rolls.

3. In a counter-skiving machine, the combination of a counter-skiving mechanism, a pair of normally-operative feed-rolls adapted to introduce the counter to said mechanism, and means actuated by the presence of a counter in said mechanism for separating said rolls.

4. In a counter-skiving machine, the combination of a counter-skiving mechanism including a knife and a pair of separable feed-rolls adapted to feed the counter against said knife, a pair of separable feed-rolls adapted to introduce the counter to the first said feed-rolls, and means actuated by the separation of the first said rolls for separating the second said rolls.

5. In a counter-skiving machine, the combination of a counter-skiving mechanism including a knife and a pair of feed-rolls adapted to force the counter against said knife, a movable bearing journaling one of said rolls, a pair of feed-rolls adapted to introduce the counter to the first said rolls and consisting of a driven roll and a presser-roll, the latter journaled in a movable bearing, and a lever interposed between the said movable bearings and adapted to cause the separation of the second said feed-rolls when the first said feed-rolls are separated.



6. In a counter-skiving machine, the combination of a counter-skiving mechanism including a knife and a pair of separable feed-rolls, a second pair of separable feed-rolls adapted to introduce the counter to the first said rolls, mechanism interposed between the first said rolls and the second said rolls, whereby the separation of the former causes the separation of the latter, and means for automatically throwing said interposed mechanism out of action while the first said rolls are still separated, and thereby permitting the return of the first said rolls to operative relation.

7. In a counter-skiving machine, the combination of a counter-skiving mechanism having a skiving-knife, and feeding means to feed the counter against said knife, and a pair of guide-rolls angularly disposed with relation to the skiving mechanism and adapted to introduce the counter to said feeding means, one of said rolls being beveled, with its larger end remote from the skiving mechanism.

8. In a counter-skiving machine, the combination of a skiving-knife, and mechanism to feed the counter against said knife, said mechanism including means for retarding one portion of the counter and simultaneously advancing another portion thereof.

9. In a counter-skiving machine, the combination of a skiving-knife, and mechanism to feed the counter against said knife, said mechanism including feed-rolls adapted to grasp and advance one edge of the counter, and a friction-producing device located in substantial alinement with said rolls and adapted to retard an adjacent portion of the counter.

10. In a counter-skiving machine, the combination of a skiving-knife, and mechanism to feed the counter against said knife, said mechanism including a pair of feed-rolls adapted to grasp and advance one edge of the counter, a loosely-journaled roll adapted to press against the counter at a point laterally adjacent to said feed-rolls, and a removable stop adapted when in place to prevent the rotation of said loosely-journaled roll.

11. In a counter-skiving machine, the combination of a skiving-knife, and mechanism to feed the counter against said knife, said mechanism including a pair of feed-rolls adapted to grasp and advance one edge of the counter, a friction-producing member adapted to press against the counter at a point laterally adjacent to the feed-rolls, and means to move said member into and out of operative position.

12. In a counter-skiving machine, the combination of a skiving-knife, and mechanism to feed the counter against said knife, said mechanism including a pair of feed-rolls adapted to grasp and advance one edge of the counter, a loosely-mounted roll adapted to press against the counter at a point laterally adjacent to one of said feed-rolls, and a friction-producing device operating between the last said roll and the loosely-mounted roll, and movable into and out of position to engage the counter.

13. In a counter-skiving machine, the combination of a skiving-knife, and mechanism to feed the counter against said knife, said mechanism including a pair of feed-rolls adapted to grasp and advance one edge of the counter, a pair of loosely-mounted rolls adapted to press against the counter at a point laterally adjacent to said feed-rolls, a friction-producing device operating between one of said feed-rolls and the corresponding loosely-mounted roll and movable into and out of position to engage the counter, and a removable stop adapted when in place to prevent the rotation of the opposed loosely-mounted roll.

14. In a counter-skiving machine, the combination of a skiving-knife, means to simultaneously exert a feeding and retarding action on different portions of the counter, and a guide for the edge of the counter.

15. In a counter-skiving machine, the combination of a skiving-knife, a guide for the edge of the counter, a retarding device adapted to engage and retard the counter, and feed-rolls for feeding the counter, located between said retarding device and said guide.

16. In a counter-skiving machine, the combination of a skiving-knife, a pair of feed-rolls to feed the counter against said knife, a guide for the curved edge of the counter, and means to hold said edge of the counter against the guide and to cause said counter to pursue a curved path, in passing between said rolls and against the knife, the said guide having its inner end curved inwardly toward the rolls, as set forth.

17. In a counter-skiving machine, the combination of a skiving mechanism, including a skiving-knife, means to feed the counter against said knife, an ejector or kicker adapted to eject the counter from the mechanism, and means to bring said ejector into operation as the counter becomes released from said feeding means.

18. In a counter-skiving machine, the combination of a skiving mechanism, a reciprocatory kicker adapted to eject the counter from said mechanism, and means causing said counter to pursue a curved path around said kicker.

19. In a counter-skiving machine, the combination of a skiving mechanism, a reciprocatory kicker adapted to eject the counter from said mechanism, and means controllable by the counter for actuating said kicker.

20. In a counter-skiving machine, the combination of a skiving mechanism including a pair of rolls adapted to feed the counter, one of said rolls being movable toward and from the other and having a driving extension or trunnion, a pivotal segment adapted to be oscillated by said driving extension when the feed-rolls are separated by a counter, and released when the counter passes from between the rolls, a spring adapted to return said segment upon its release, and a kicker attached to said segment and adapted to eject the counter from the skiving mechanism.

21. In a counter-skiving machine, the combination of a skiving mechanism including a skiving-knife, a pair of separable feed-rolls adapted to force the counter against said knife, a second pair of separable feed-rolls adapted to introduce the counter to said skiving mechanism, a connection between the first said feed-rolls and the second said feed-rolls, whereby the separation of the former causes the separation of the latter, and a kicker adapted to eject the skived counter from said mechanism and having a driving member included in said connection.

22. In a counter-skiving machine, the combination of a skiving mechanism, means causing the counter to pursue a path curved in the plane of the counter, in passing through said mechanism, and an abutment or guide adapted to engage and guide the counter as it leaves said skiving mechanism.

23. In a counter-skiving machine, the combination of a skiving mechanism, means causing the counter to pursue a path curved in the plane of the counter in passing through said mechanism, and guides for engaging both the curved and straight edges of the counter as it passes through said mechanism.

24. In a counter-skiving machine, the combination of a skiving mechanism, means causing the counter to pursue a path curved in the plane of the counter in passing through said mechanism, guides for engaging both the curved and straight edges of the counter as it passes through said mechanism, and means to adjust the straight-edge guide laterally, or parallel to the plane of the counter.

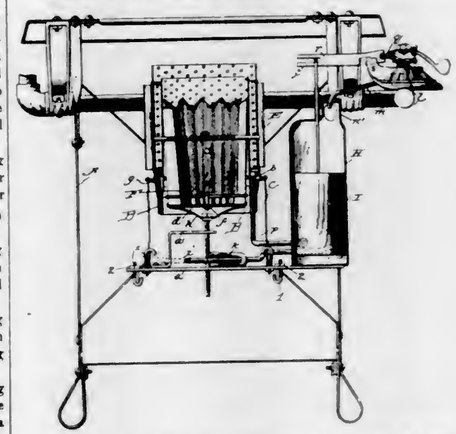
25. In a counter-skiving machine, the combination of two skiving mechanisms adapted to operate successively on the counter, and means to adjust one of said mechanisms angularly with respect to the other, in parallel relation to the path of the counter.

26. In a counter-skiving machine, the combination of a skiver adapted to skive one edge of the counter, a second skiver adapted to skive another edge of the counter, mechanism for advancing the counter from the first skiver to the second skiver, and means for adjusting the second skiver angularly with respect to the said mechanism, in parallel relation to the path of the counter.

27. In a counter-skiving machine, the combination of a skiving mechanism including a knife and feeding means to force the counter against said knife, a pair of feed-rolls adapted to introduce the counter to said skiving mechanism, and provisions for adjusting said skiving mechanism with respect to said feed-rolls angularly, in parallel relation to the path of the counter.

28. In a counter-skiving machine, the combination of a skiving mechanism, a feeding device adapted to introduce the counter to said mechanism, provisions for adjusting the skiving mechanism angularly with respect to the feeding device in the plane of the counter, and means controllable by the presence of a counter in the skiving mechanism for throwing the feeding device into and out of operative condition, said means including a compensating connection between the skiving mechanism and the feeding device.

658,893. OIL-BURNER. WILLIAM H. WILDER, Gardner, Mass. Filed Apr. 19, 1897. Serial No. 632,858. (No model.)



Claim.—1. In an oil-burner, a combustion-chamber, an oil-holder constructed to be drained or emptied and adapted to maintain a column of oil as a liquid-base for vaporization and an oil-supply.

2. In an oil-burner, a combustion-chamber, an oil-holder constructed to be drained or emptied, said holder having a depth greater than its width to maintain a column of oil as a liquid-base for vaporization, and an oil-supply substantially as described.

3. In an oil-burner, an oil-holder having a depth greater than its width, an oil-supply and means for causing the oil to fill the burner for ignition, to lower it for normal burning, to maintain a body of oil therein while the stove is burning, and for draining to extinguish, substantially as described.

4. In an oil-burner, an oil-holder, an initial-lighting medium therein and an oil-supply with means for causing the oil to flood the holder to submerge wholly or partially the lighting medium for igniting purposes and to lower the oil for normal burning while maintaining the feed of oil.

5. In an oil-burner, an oil-holder and an oil-supply with means for causing the oil to flood the holder for igniting purposes while maintaining the feed of oil.

6. In a burner, a combustion-space having perforated walls and a channeled outer shield therefor, adapted to admit the air to the space in vertical columns.

7. In a burner, a combustion-space having perforated walls and an inner channeled shield adapted to admit air to the space in vertical columns, substantially as described.

8. In a burner, a combustion-space having perforated walls, an inner shield forming an air-space and having a series of channels, said channels being closed at the upper end, substantially as described.

9. In a burner, a combustion-space having perforated walls and an inner shield therefor, said shield being closed at its upper end and at its center, substantially as described.

10. In a burner, a combustion-space having perforated walls and a channeled or corrugated inner shield closed at its upper end and having a closed center, substantially as described.

11. In combination, inner and outer perforated combustion-tubes, a corrugated or channeled outer shield and a corrugated inner shield, said shields adapted to supply air to the combustion-space in a series of vertical columns, the inner shield being closed at its upper end and having a closed center, substantially as described.

12. In combination with a fuel-holder, combustion-tubes having perforated walls supported thereby and an inner shield for the combustion-space extending below the bottom of the combustion-tubes and channeled to receive and direct the air to the inner tube, said shield being closed at its upper end, substantially as described.

13. In combination with perforated combustion-tubes, a corrugated outer shield encircling the outer tube, a corrugated shield within the inner tube having the corrugations closed at the upper end and open at the lower end below the level of the combustion-

tubes, said inner shield having a closed bottom, substantially as described.

14. In combination with a liquid-fuel holder having an annular space for the fuel and an inner and outer shoulder on each side of the channel with an open central portion, a combustion-chamber comprising perforated tubes, the said tubes being adapted at their lower ends to rest upon the shoulders of the holder and a corrugated shield for the inner combustion-tube, the lower end of said shield passing through the open center of the holder, substantially as described.

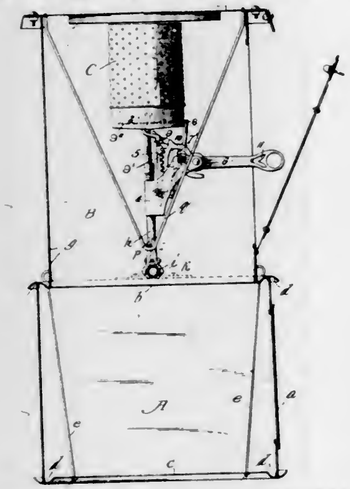
15. In a burner, a liquid-fuel holder, a drain-chamber, a displacer within the drain-chamber, an oil-supply leading to the drain-chamber, a valve controlling the supply and a connection between the valve and displacer for operating the two simultaneously, substantially as described.

16. In combination with a burner, a reservoir, a valve for controlling the supply of oil therefrom and a holder or auxiliary reservoir between the valve and the burner with means for supplying the burner from said holder while maintaining the feed, substantially as described.

17. In combination with a burner, an oil-supply, and an oil-chamber interposed between the burner and main supply, and means for supplying the burner quickly from the interposed chamber without interfering with the regular feed and for draining the burner into said interposed chamber, substantially as described.

18. In a burner, an oil-holder in combination with an oil-supply, a valve controlling this supply and an auxiliary oil-chamber interposed between the valve and burner, with means for automatically flooding or draining the burner by the operation of the valve and at the same time allowing or cutting off the regular feed from the main reservoir, substantially as described.

653,894. OIL-STOVE. WILLIAM H. WILDER, Gardner, Mass. Filed Apr. 18, 1899. Serial No. 713,494. (No model.)



Claim.—1. In an oil-stove, a base-plate and pipe-line supported thereon, burners carried by the pipe-line, a cabinet covering said burners and resting upon the base-plate and a bail pivoted to the cabinet and adapted to engage a hook carried by the base-plate, substantially as described.

2. In an oil-stove, a burner, a cabinet inclosing the burner, a door to the cabinet having a slot, an operating-lever for the burner extending through said slot, said lever having pivoted connection with its support so as to be capable of turning out of line with the slot, substantially as described.

3. In an oil-stove, a pipe-line, a base-plate supporting the same, straps holding the pipe in place, the strap at one end being extended upwardly and an oil-chamber supported by said straps, substantially as described.

4. In an oil-stove, a base-plate, a pipe-line secured thereto, a hook secured to the pipe-line, a cabinet, a pivoted bail secured to the cabinet and having its looped end engaging the hook removably, substantially as described.

5. In an oil-stove, an oil-chamber and a reservoir removably supported therein, said reservoir provided with a filling-opening in the bottom thereof and having a ball pivoted thereto below its center whereby upon the removal of the reservoir it will swing into reversed position with the filling-opening uppermost, substantially as described.

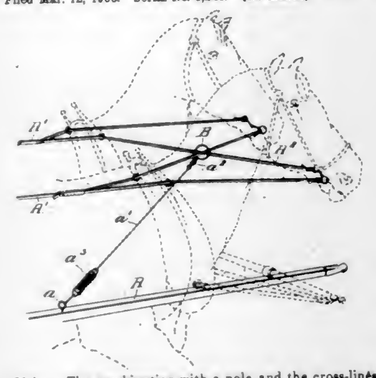
6. In an oil-stove, a movable burner, having a combustion-tube and means for operating said burner comprising a lever, and a combined indicator and tilter for the combustion-tube for igniting purposes, substantially as described.

653,895. COLLAR-BUTTON. FREDERICK A. BALLOU, Providence, R. I. Filed Jan. 29, 1900. Serial No. 3,090. (No model.)



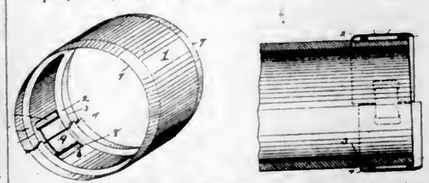
Claim.—An improved collar-button, consisting of the head or ball A of base metal, having an inclosing gold plate or covering *b*, and the post C, composed of an inner plate of base metal and an outer gold plate or covering; said head or ball A being provided with the counterbore *d* for the reception of the flaring end *n* of the post C which is held therein by the overlapping edges *m* of the covering *b* of the head A, substantially as specified.

653,896. REIN-HOLDER. RICHARD BARNES, Lauder, Canada. Filed Mar. 12, 1900. Serial No. 8,248. (No model.)



Claim.—The combination with a pole, and the cross-lines of the driving-reins, of a chain connected loosely at one end to the pole and having a snap-hook at its other end, an extensible spring attached at its respective ends to two of the chain-links and normally tending to shorten the chain by forming a permanent allowance of slack within said spring, and a divided ring loosely engaged with the snap-hook and fitted loosely on the cross-lines at the point of intersection thereof, said spring tending normally to draw the chain, ring and cross-lines in a backward direction and also permitting the crossed lines to have a limited forward movement within the extensible capacity of the spring, substantially as described.

653,897. THREAD-PROTECTOR. MILDRED BLAKEY, Rome, Ohio, assignor to the National Tube Company, New York, N. Y., and McKeesport, Pa. Filed Jan. 23, 1900. Serial No. 2,478. (No model.)

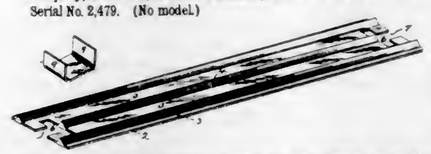


Claim.—1. A thread-protector formed of a thin, integral, wrought-metal band having two or more ribs extending inwardly at intervals from its inner face of greater height than the threads to be engaged, the upper edges of said ribs being V-shaped so as to form screw-threads.

2. A thread-protector formed of a thin, integral, wrought-metal band having two or more V-shaped ribs extending inwardly at intervals from the inner face of greater height than the threads to be engaged, the upper edges of said ribs forming screw-threads.

3. A thread-protector formed of a thin, integral, wrought-metal band having two or more ribs extending inwardly from its inner face, the upper edges of the ribs being V-shaped, and the edge portions of the body beyond said ribs bent inwardly to form inclines.

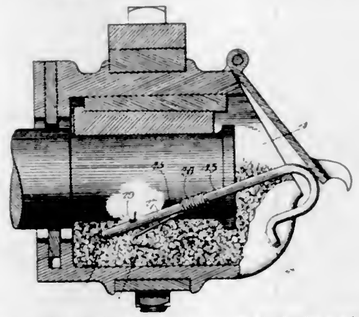
653,898. THREAD-PROTECTOR. MILDRED BLAKEY, Rome, Ohio, and GEORGE G. BLAKEY, Pittsburg, Pa., assignors to the National Tube Company, New York, N. Y., and McKeesport, Pa. Filed Jan. 23, 1900. Serial No. 2,479. (No model.)



Claim.—1. A thread-protector formed of a thin, integral, wrought-metal band, having a rib extending inwardly about midway of the band of greater height than the threads to be engaged, said band having T-shaped slots formed at the ends removing parts of such rib, and a connecting device engaging with the T-shaped slots in the ends of the band.

2. A thread-protector formed of a thin, integral, wrought-metal band, having a rib extending inwardly about midway of the band of greater height than the threads to be engaged, said band having T-shaped slots formed at the ends removing parts of such rib, and a U-shaped clip fitting in said slots and having its ends bent down to connect the ends of the band.

653,899. HOT-BOX COOLER. ERNEST B. BOGGESS and GEORGE D. HUTCHISON, Fort Madison, Iowa. Filed Nov. 6, 1899. Serial No. 736,017. (No model.)



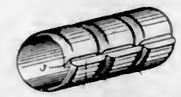
Claim.—1. In a device of the character set forth, the combination with a water-supply, and a siphon member placed in said supply, of a flexible pipe or tube connected to said siphon member, a feeder having a crook at one end attached to the opposite extremity of the flexible pipe or tube, and a straight member in a plane at a right angle to the direction of the said pipe or tube and provided with a closed end and a single opening in the body at a distance from the said closed end to give a sidewise water-feed, the said member being adapted for disposition adjacent the journal of the car-axle, and means on the said flexible pipe or tube for compressing the latter and stopping the flow of water therethrough.

2. In a device of the character set forth, the combination with a flexible tube or pipe having means at one end for automatically supplying the same with water of a feeder having a crook at one end for attachment to the tube or pipe and an opposite closed end, and also having a single outlet-opening in the body thereof at a distance from the closed end to give egress to the water in a plane at right angles to the direction of the feeder, the body of the feeder being in a plane at a right angle to the pipe or tube, and the crook of the feeder serving to hold the latter in connected relation to the car-axle box.

3. In a device of the character set forth, the combination of a pipe or tube having automatically-operating water-supplying means at one end, and a feeder at the opposite end of said pipe or tube, said feeder having its free extremity closed and provided with a single opening in the body thereof at a distance from the said closed extremity to thereby discharge the water in a plane at right angles to the direction of the feeder, the body of the feeder at the point where the opening therein is located being recessed and also formed with oppositely-extending concaved seats for the close application of the feeder to the car-axle journal and to prevent clogging of the opening

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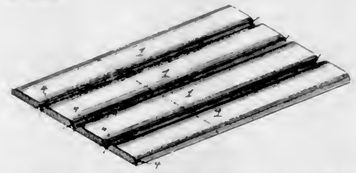
653,900. METHOD OF FORMING WELDED RINGS. THOMAS J. BRAY, Pittsburg, Pa., assignor to the National Tube Company, same place and New York, N. Y. Filed Oct. 14, 1899. Serial No. 733,547. (No model.)



Claim.—1. The method of forming welded rings, or like articles, consisting in rolling a bar so as to form a series of thick portions each corresponding in width to the length of one of the rings to be formed and connected by thin webs, cutting the same transversely into blanks, and bending the blanks and welding them at one operation into ring form, substantially as set forth.

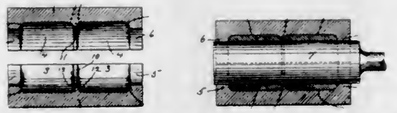
2. The method of forming welded rings, or like articles, consisting in rolling a bar so as to form a series of thick portions each corresponding in width to the length of one of the rings to be formed and connected by thin webs, cutting the same transversely into lengths and bending the blanks, and welding them into ring form and separating them into several rings at one operation, substantially as set forth.

653,901. BAR FOR FORMING WELDED RINGS. THOMAS J. BRAY, Pittsburg, Pa., assignor to the National Tube Company, same place and New York, N. Y. Filed Oct. 14, 1899. Serial No. 733,548. (No model.)



Claim.—A wrought-metal bar for forming pipe-couplings and like welded rings, having a width equal to the length of two or more such rings and composed of two or more thick bar portions, each corresponding in width to the length of a finished ring to be formed, such bar portions being connected by thin web portions corresponding approximately in thickness to the depth of thread to be cut in the finished ring, substantially as set forth.

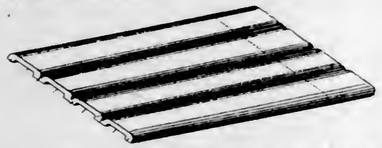
653,902. APPARATUS FOR FORMING WELDED RINGS. THOMAS J. BRAY, Pittsburg, Pa., assignor to the National Tube Company, same place and New York, N. Y. Filed Oct. 14, 1899. Serial No. 733,549. (No model.)



Claim.—1. In apparatus for welding and shaping rings or like articles, the combination of a mandrel corresponding in diameter to the interior of the ring to be formed, and hammer-dies having two or more concave working faces each corresponding in shape to one of the rings to be formed, inwardly-projecting flanges or collars at the ends of each die adapted to contact with the mandrel and confine the blank, and inwardly-projecting ribs intermediate the working faces of the dies adapted to shape the end faces of the rings.

2. In an apparatus for welding and shaping rings, or like articles, the combination of a mandrel corresponding in diameter to the interior of the ring to be formed and hammer-dies having two or more concave working faces, each corresponding in shape to one of the rings to be formed, inwardly-projecting flanges or collars at the ends of each die and inwardly-projecting ribs intermediate the working faces of the dies adapted to shape the end faces of the rings, said ribs being of such height as to leave a web between the rings of substantially the thickness of the depth of screw-threads.

653,908. METHOD OF FORMING WROUGHT-METAL BANDS. THOMAS J. BRAY, Pittsburg, Pa., assignor to the National Tube Company, New York, N. Y., and McKeesport, Pa. Filed Jan. 18, 1900. Serial No. 1,853. (No model.)



Claim.—1. The improvement in the art of making thread-protectors and like bands, which consists in forming blanks having longitudinal ribs on one face, bending said blank into tubular form with the ribs on the inner face and welding the meeting ends of the ribs.

2. The improvement in the art of making a blank having a plurality of longitudinal recesses separated by ribs on one side, bending said blank into tubular form with the ribs on the inner face, and welding the meeting ends of the ribs and shaping the ends of several rings by forming depressions opposite to said ribs.

3. The improvement in the art of making thread-protectors, which consists in forming a blank having a plurality of longitudinal recesses separated by ribs on one side, bending said blank into tubular form with the ribs on the inner face, and welding the meeting ends of the ribs and shaping the ends of several rings by forming depressions opposite to said ribs, stripping the blank from the mandrel and subsequently threading the same and thereby separating the bands from each other.

4. The improvement in the art of making thread-protectors, which consists in forming a blank having a plurality of longitudinal recesses separated by ribs on one side and grooves on the other side opposite said ribs, bending said blank into tubular form with the ribs on the inner faces and welding the meeting ends of the ribs and shaping the ends of several bands by rolling in the grooves on the opposite faces.

5. The improvement in the art of making thread-protectors, which consists in forming a blank having longitudinal ribs on one face, bending said blank into tubular form with the ribs on the inner face, and then welding the meeting ends of the ribs or thick portions only

653,904. WROUGHT-METAL BAND. THOMAS J. BRAY, Pittsburg, Pa., assignor to the National Tube Company, New York, N. Y., and McKeesport, Pa. Filed Jan. 18, 1900. Serial No. 1,854. (No model.)



Claim.—1. An annular thread-protector or like band having a relatively-thin body portion and a thick rib portion, the ends of the thick rib portion being welded together.

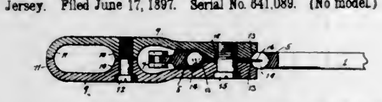
2. An annular thread-protector or like band having a relatively-thin body portion and a thick rib portion, the ends of the thick rib portion being welded together, and the ends of the thin body portion being unwelded.

3. An annular thread-protector or like band having a relatively-thin body portion and thick inwardly-projecting rib portion, the ends of the rib portion being welded together.

4. An annular thread-protector or like band having a relatively-thin body portion and thick inwardly-projecting rib portion, the ends of the rib portion being welded together, and the inwardly-projecting rib portion having a threaded face.

5. An annular thread-protector or like band having a relatively-thin body portion and thick inwardly-projecting rib portions at each end of the body portion, the ends of the rib portions being welded together.

653,905. TYPE-WRITING MACHINE. ALEXANDER T. BROWN, Syracuse, N. Y., assignor to the Union Typewriter Company, of New Jersey. Filed June 17, 1897. Serial No. 641,089. (No model.)



Claim.—1. A type-bar for a ball-bearing joint having at one end the type and at the other end an eye which is provided with a single interior annular ball-bearing groove.

2. In a type-writing machine, the combination of a type-bar having an eye and provided interiorly with a ball-bearing groove, a type-bar hanger or bracket having lateral bosses extending within said eye and forming ball-bearing surfaces, a set of antifriction-balls, and an adjusting device for said bearings extending through said bosses.

3. In a type-writing machine, the combination of a type-bar having an eye and an interior ball-bearing surface, a hanger having side arms provided with oppositely-arranged tapering bosses extending within said eye, a set of antifriction-balls, and an adjusting device.

4. In a type-writing machine, the combination of a type-bar having an eye formed with an interior ball-bearing surface, a hanger having side arms provided each with a tapering boss extending within said eye, a set of antifriction-balls, and an adjusting-screw.

5. In a type-writing-machine, the combination of a type-bar having an eye and an interior ball-bearing surface, a hanger composed of two side arms or members secured together between their ends and provided each at its forward end with a boss constructed to form a ball-bearing surface, a set of antifriction-balls, and an adjusting device.

6. In a type-writing machine, the combination of a type-bar having an eye and an interior bearing-surface, a type-bar hanger comprising two arms or members 9 9 having lugs 10 10, a device passing through said lugs and securing said arms or members together, a boss constructed to form a ball-bearing surface arranged at the forward end of each of said arms or members, a set of antifriction-balls, and an adjusting device.

7. In a type-writing machine, the combination of a type-bar having an eye and an interior ball-bearing surface, a hanger comprising the arms 9 9, the abutting lugs 10 10, and the end extensions 11 11, the transverse securing device as 12, the conical bosses as 13, the set of antifriction-balls, and an adjusting device as 15 passing through said bosses.

8. In a type-writing machine, the combination in a type-bar ball-bearing joint, of a type-bar having ball-bearing surfaces, a hanger having ball-bearing surfaces, all of said surfaces being concentric with the axis of the type-bar joint, a set of antifriction-balls arranged between said ball-bearing surfaces, and means for holding said balls apart or in fixed relation to one another.

9. In a type-writing machine, in a type-bar ball-bearing joint, the combination of a type-bar having ball-bearing surfaces, a hanger having ball-bearing surfaces, all of said surfaces being concentric with the axis of the type-bar joint, a set of antifriction-balls arranged between said ball-bearing surfaces, and a circular notched disk or plate for holding said balls apart.

10. In a type-writing machine, the combination of a type-bar having an eye and a ball-bearing surface therein, a hanger having bosses extending into said eye, a set of antifriction-balls between said bearings, a notched disk arranged between said bosses, and an adjusting device passing through said bosses and said disk.

11. A hanger for a type-bar, consisting of the two side bars, having lugs 10, 10, curved extensions 11, 11, transverse connection 12, bosses 13, 13, and adjusting-screw 15 passing through said bosses.

12. In a type-writing machine, the combination of a fixed annular race, a bar, a type arranged at one end of the bar, and a series of balls arranged in a single row at the other end of the bar and running in the annular race, for pivotally supporting the bar and for alining the type.

13. In a type-writing machine, the combination of a stationary adjustable annular race, a bar, a type arranged at one end of the bar, and a series of balls arranged in a single row at the other end of the bar and running in the adjustable annular race, for pivotally supporting the bar and for alining the type.

14. In a type-writing machine, the combination of a hanger and a type-bar, one of which is provided with relatively-adjustable cones, and the other of which is provided with ball-bearing surfaces to cooperate with the cones, means for supporting the hanger upon the frame of the machine, means for rigidly holding the cones against separation during the movement of the type-bar, and bearing-balls disposed between said cones and said ball-bearing surfaces.

15. In a type-writing machine, the combination of a hanger and a type-bar, one of which is provided with a pair of cones, and the other of which is provided with ball-bearing surfaces to cooperate with the cones, means for supporting the hanger upon the frame of the machine, a screw for effecting the relative adjustment of the cones and for rigidly holding them against separation during the movement of the type-bar, and bearing-balls disposed between said cones and said ball-bearing surfaces.

16. In a type-writing machine, the combination of a hanger and a type-bar, one of which is provided with a pair of cones, and the other of which is provided with ball-bearing surfaces to cooperate with the cones, means for supporting the hanger upon the frame of the machine, a screw passing through the cones for effecting their relative adjustment and for rigidly holding them against separation during the movement of the type-bar, and bearing-balls disposed between said cones and said ball-bearing surfaces.

17. In a type-writing machine, the combination of a cone, means for supporting the cone upon the frame of the machine, an adjacent companion cone, means for rigidly holding the cones against separation, a type-bar provided with adjacent ball-bearing surfaces to cooperate with the cones, and a single row of bearing-balls disposed between said cones and said type-bar ball-bearing surfaces.

18. In a type-writing machine, the combination of a hanger and a type-bar, one of which is provided with a pair of adjacent cones, and the other of which is provided with adjacent ball-bearing surfaces to cooperate with the cones, means for supporting the hanger upon the frame of the machine, a screw passing through the cones for effecting their relative adjustment and for rigidly holding them against separation during the movement of the type-bar, and a single row of bearing-balls disposed between said cones and said ball-bearing surfaces.

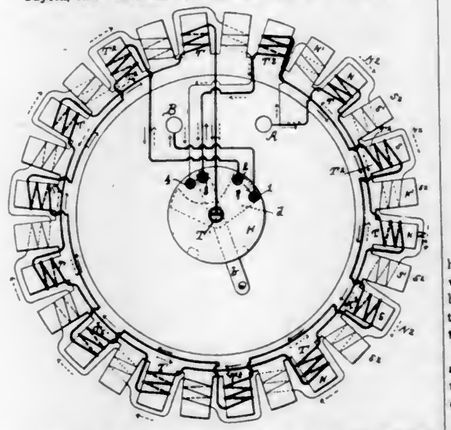
19. In a type-writing machine, the combination of a hanger provided with a pair of adjacent cones, a type-bar provided with adjacent ball-bearing surfaces to cooperate with the cones, means for supporting the hanger upon the frame of the machine, a screw arranged upon the hanger and passing through the cones for effecting their relative adjustment and for rigidly holding them against separation during the movement of the type-bar, and a single row of bearing-balls disposed between said cones and said ball-bearing surfaces.

20. In a type-writing machine, the combination of a type-bar, a forked hanger, circularly-disposed balls arranged at the hanger for pivotally supporting the bar and for alining the type, and a tie-bolt or screw for the forks arranged at the pivotal axis.

21. In a type-writing machine, the combination of a hanger comprising side bars or members having conical bearings at their ends, means for securing said side bars or members together, a type-bar having conical bearings opposite to said hanger-bearings, circularly-disposed antifriction-balls arranged at said bearings, and a tie-bolt or screw for the side bars or members arranged at the pivotal axis.

22. In a type-writing machine, the combination of a fixed annular race, a bar, a type arranged at one end of the bar, a series of balls arranged in a single row at the other end of the bar and running in the annular race, for pivotally supporting the bar and for alining the type, and means for holding said balls apart or in fixed relation to one another.

653,906. ALTERNATING-CURRENT MOTOR. EDGAR W. BROWN, Dayton, Ohio. Filed Jan. 29, 1900. Serial No. 3,176. (No model.)



Claim.—1. In an alternating-current motor, the combination with a field-core having polar projections, of main coils connected in two separate sections and placed on every alternate polar projection, and starting-coils on every polar projection between each two of the polar projections having the main coils, the starting-coils being wound so that the current will pass through every alternate coil in the opposite direction, substantially as described.

2. In an alternating-current motor, the combination with an armature, of a field-core provided with polar projections, main coils connected in two separate sections and placed on every alternate polar projection, and starting-coils on every polar projection between each two of the polar projections having the main coils, substantially as described.

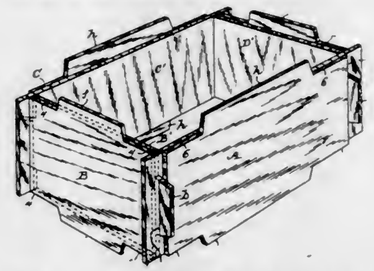
3. In an alternating-current motor, the combination with a field-core having polar projections, of main coils connected in two separate sections and placed on every alternate polar projection so that the current will pass through said sections in series, starting-coils on every polar projection between each two of the polar projections having the main coils, a switch, contact-points by means of which said switch is adapted to complete the circuits which start the motor at which time current passes through the starting-coils, also through one section of the main coils in one direction, and the other section of the main coils in an opposite direction.

4. In an alternating-current motor, the combination with a field-core having polar projections, of main coils connected in two separate sections and placed on every alternate polar projection, so that the current will pass through said sections in series, starting-coils on every polar projection between each two of the polar projections having the main coils, a switch, contact-points by means of which said switch is adapted to complete the circuits, and to subsequently break the starting-circuit and reverse the current in one section of the other circuit, thus doubling the number of magnetic poles.

5. In an alternating-current motor, the combination with a laminated field-core having polar projections, of main coils in two sections and placed upon every alternate polar projection, starting-coils placed upon every polar projection not occupied by the main coils, the winding of the starting-coil on one polar projection being reversed from that of the next polar projection occupied by the starting-coil, one terminal of one section of the main coils and one terminal of the circuit formed by the starting-coils being connected to binding-post A, the other terminal of said section of the main coils being connected to the switch-lever *b*, the other terminal of the starting-coils being connected to binding-post B through the switch, and the other section of said main coils terminating at contact-points 2 and 3 and making connection with binding-post B through contact-plate *d*, substantially as shown and described.

6. In an alternating-current motor, the combination with an armature provided with short-circuited conductors, of a field-magnet core provided with polar projections, main coils wound on every alternate polar projection of said field-magnet core, said main coils connected in two separate sections and starting-coils, substantially as shown and described.

653,907. KNOCKDOWN BOX. AUGUST DUDEK, Indianapolis, Ind. Filed Mar. 23, 1900. Serial No. 9,834. (No model.)



Claim.—1. A box including a bottom and a top or walls each having a slot therethrough near each edge thereof, sides and ends or walls each having portions thereof extending through the slots in the bottom and having also portions extending through the slots in the top, and strips secured to the bottom and strips secured to the top at the sides of the slots.

2. A box including sides or walls each having slots therethrough at two edges thereof, ends or walls each having portions thereof extending through the slots, strips secured to the sides and also to the ends adjacent to the slots, a bottom, and a top.

3. A box composed of two counterpart sides provided each with a slot therethrough near each of two opposite edges thereof, two counterpart ends each having portions at two opposite edges thereof cut away and having the remaining edge portions extending through the slots in the sides, a bottom, and a top.

4. A box composed of two counterpart sides having each a slot therethrough near each of two opposite edges thereof and having projecting portions at the remaining two edges thereof, two counterpart ends each having portions extending through the slots in the sides and having also portions extending from two remaining edges thereof, a bottom having slots therethrough receiving portions of the sides and ends, a top having slots therethrough receiving other portions of the sides and ends, and strips attached at the sides of the slots.

5. A box composed of a bottom and a top identical in plan hav-

ing each a slot near each edge thereof, two sides identical in plan having each a slot therethrough at two opposite edges thereof, two ends identical in plan each having portions at the edges thereof cut away and the remaining portions of such edges extending through the slots in the bottom and top and sides, portions of said sides also extending through slots in the bottom and in the top, and strips secured at the sides of such slots.

6. A box comprising two counterpart sides each of which is composed of a part having a slot therethrough at two opposite ends thereof, and a part extending from one to the other of the slots and having portions greater in width than the other part, said parts being secured together; two counterpart ends having portions extending through such slots; a bottom, a top, and strips at the sides of such slots.

7. A box comprising two counterpart sides each of which is composed of a rectangular part having slots therein, and a part having portions greater in width than the rectangular part, said parts being secured together; two counterpart ends having portions extending through such slots; a bottom and a top each composed of a rectangular part having a slot therethrough near each of two ends thereof, and a rectangular part having slots therethrough extending along two edges of said other part, said two parts being secured together, and portions of said sides and said ends extending through said slots; and strips secured at the sides of said slots to the contiguous portions of said parts.

8. A box comprising two counterpart sides each of which is composed of a rectangular part, and a part having portions of two edges cut away and leaving portions thereof extending considerably over the edges of the companion part, said two parts being secured together; two ends; a bottom and a top each of which is composed of two rectangular parts having each two slots therethrough, said extending portions of said sides and portions of the ends extending through said slots; and strips situate at the sides of said slots and secured to the contiguous parts.

9. In a knockdown box, the combination of the bottom and the top, each composed of the two rectangular parts having each the slot cut therethrough at two opposite edges thereof and secured together so that there shall be a slot at each of the four egdes of said bottom and said top; the sides composed each of the two parts, one of which is rectangular and having the slot therethrough at each end thereof, and the other of which is secured to the companion part and extends from one to the other of said slots and transversely beyond the edges of said companion part and through slots in said bottom and said top; the ends each composed of two parts secured together and having the portions extending through said slots; and the strips secured adjacent to said slots, substantially as set forth.

10. In a knockdown box, the combination of the sides, each comprising a part having the slot therethrough and a part abutting at one side of said slot; the ends each comprising a part having the portion extending through said slot and a part abutting against said part having the slot therethrough; the bottom; the top; and the strip situate adjacent to said slot and secured to the contiguous parts, substantially as set forth.

11. In a knockdown box, the combination of the bottom and the top, each composed of two rectangular parts, each having slots therethrough situate at edges of the companion part; the sides and the ends, each having the main portions of the edges thereof extending through said slots, and the strip situate adjacent said slots and secured to the contiguous parts, substantially as set forth.

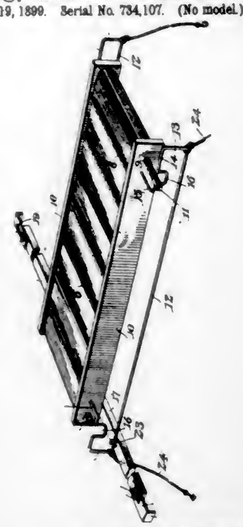
12. In a knockdown box, the combination of the inner parts of the sides having the slots through the ends thereof, the inner parts of the ends having the portions extending through said slots, the top and the bottom having the slots therethrough, the outer parts of the sides having the portions extending through said slots in said bottom and said top, the outer parts of the ends having the portions thereof extending through said slots in said bottom and said top, and the strips situate at the sides of said slots, substantially as set forth.

13. In a knockdown box, the combination of the bottom and the top, each constructed as described of two parts, one part of which is rectangular and having two slots therethrough, and the other part of which is also rectangular and extending between said two slots of the companion part and having two slots uncovered by the companion part, said two parts being secured together with the grains crossing, and the slots being cut longitudinally with the grain; the sides and the ends adapted to extend through slots; and the strips at the sides of said slots, substantially as set forth.

14. In a knockdown box, the combination of the bottom and the top having the slots therethrough; the sides, each constructed as described of two parts, one part of which is rectangular and having the slots therethrough, and the other part of which has portions thereof extending through the slots in the bottom and top, said two parts being secured together with the grain crossing; and the ends having portions thereof extending through said slots in said sides and also portions extending through said slots in said bottom and said top; and the strips, substantially as set forth.

653,908. CAR-LOADER. CHARLES H. GALE, Elm Creek, Nebr.

Filed Oct. 19, 1899. Serial No. 734,107. (No model.)



Claim.—1. A car-loader comprising an endless conveyer for carrying the material from the center of the car to the end thereof, a transverse conveyer-support carried by the car structure, and means shiftably connecting the conveyer to the transverse support to permit said conveyer to be shifted to either end of the car without disconnection from said transverse support.

2. A car-loader comprising an endwise-shiftable conveyer for carrying the material from the center of the car to one end or the other thereof, and a transverse conveyer-supporting device connected to the car structure above the floor, said conveyer being shiftable upon the supporting device to positions wholly at opposite sides thereof.

3. A car-loader comprising an endwise conveyer for carrying the material to either end of the car from the center thereof, a transverse supporting-bar detachably connected to the car structure above the floor at the center of the car and shiftably supporting the conveyer to permit it to be shifted without detachment from the bar to positions wholly at one side of the bar, and means for operating the conveyer in reverse directions when in its opposite positions.

4. In a car-loader, the combination with a supporting member, and means for detachably connecting said member to the car structure at a point above the floor, of a conveyer carried by the member and shiftable endwise upon the member to occupy a position wholly at either side of the member, and means for supporting the outer end of the conveyer.

5. In a car-loader, the combination with a supporting-bar, and means carried by said bar for effecting its detachable connection to the car structure above the floor, of a conveyer endwise shiftable upon the bar to occupy positions wholly at opposite sides of the bar, and means for detachably connecting actuating mechanism to the conveyer, whereby said loader is readily detachable from the car and from its operating mechanism.

6. In a car-loader, the combination with a transverse supporting-bar, of a longitudinally-shiftable frame, runners carried by the frame and slidably fitted to said supporting-bar, and a conveyer carried by the conveyer-frame, the slidable connection of the runners to the bar permitting the frame to be shifted to positions wholly at opposite sides of the bar without disconnecting the frame from the bar.

7. In a car-loader, the combination with a support, and means for connecting said support to the car structure, of a shiftable conveyer-frame carried by the support and endwise shiftable thereon to occupy positions wholly at opposite sides thereof, and means for suspending the end of the conveyer-frame, opposite the support, from the car structure at a point above the floor, and a conveyer carried by the conveyer-frame.

8. In a car-loader, an endless-belt carrier having shafts at opposite ends, and a supporting-bar to which the carrier is attached and upon which it is adapted to slide, in combination with a driving-shaft coupled to one of the carrier-shafts and adapted to be disconnected therefrom and coupled directly to the shaft at the other end of the carrier, substantially as described.

9. In a car-loader, the combination with a supporting-bar provided with eyes, of a longitudinally-shiftable carrier having longitudinal guides or runners passing through said eyes, substantially as described.

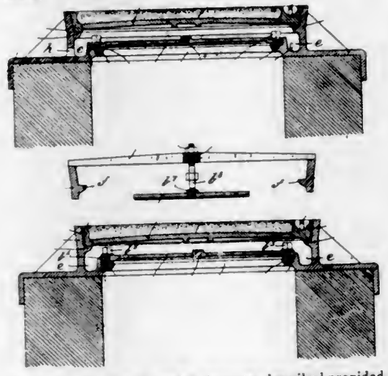
10. In a car-loader, the combination with a longitudinally-shiftable endwise conveyer, of a transverse supporting-bar therefor, and terminal clips longitudinally adjustable upon said bar, substantially as and for the purpose specified.

11. In a car-loader, the combination with a longitudinally-shiftable carrier, of a supporting-bar therefor, and longitudinally-slotted terminal clips on said bar adjustably connected thereto, and having bent extremities, substantially as and for the purpose specified.

12. In a car-loader, the combination with a supporting-bar provided with eyes, of a longitudinally-shiftable carrier having guides or runners extending longitudinally thereof and passing through said eyes, and devices at the ends of the carrier for suspending the latter from an overhead support, substantially as described.

653,909. MANHOLE-COVER. THOMAS P. GREGER, Philadelphia, Pa., assignor to the Greger Manufacturing Company, Camden, N. J.

Filed Apr. 17, 1899. Renewed Dec. 14, 1899. Serial No. 740,310. (No model.)



Claim.—1. A manhole of the character described provided with a plate having a concentric upwardly-projecting rim and wall, a ledge formed on said rim, an inner solid cover adapted to be secured to said ledge, a socket formed in the upper surface of said cover, a bolt adapted to be secured in said socket, a bar adapted to rest on said wall and to receive said bolt, means for securing said bar to said bolt, and a concrete-filled outer cover adapted to be seated in said wall, substantially as and for the purposes described.

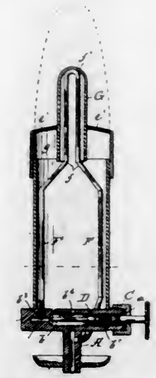
2. A manhole of the character described provided with a plate having a concentric upwardly-projecting rim and wall, a ledge formed on said rim, an inner solid cover adapted to be secured to said ledge, a socket formed in the upper surface of said cover and a bolt adapted to be secured in said socket, a bar adapted to rest on said wall and to receive said bolt, means for securing said bar to said bolt, and a concrete-filled outer cover gasketed to said wall and said cover provided with hand lifting devices, substantially as shown and described.

3. A manhole of the character described provided with an internal cover having a threaded socket, a bolt adapted to be removably secured therein and a transverse bar adapted to be secured to said bolt to thereby form a means for removing said cover, and a concrete-filled removable cover detachably applied to the wall of said cover and resting on a ledge thereof and said cover provided with lifting devices, substantially as shown and described.

653,910. INCANDESCENT VAPOR-BURNER. ALEXANDER S. GREENWOOD, Chicago, Ill. Filed Oct. 31, 1899. Serial No. 735,392. (No model.)

Claim.—1. In a burner of the character described, a gas-generating tube bent upon itself for a portion of its length, said portion lying within the flame of the lamp, and movable means for protecting said portion from direct contact with said flame, substantially as set forth.

2. In a burner of the character described, a gas-generating tube bent upon itself for a portion of its length, said portion lying within the flame of the lamp, a protector for said portion of tube, and means for regulating the area of surface of said protector in contact with said flame, substantially as described.



3. In a burner of the character described, a gas-generating tube having a portion within the flame of the lamp, a hood or dome entirely surrounding said portion of tube, and adapted to protect it from direct contact with the flame, substantially as set forth.

4. In a burner of the character described, a gas-generating tube having a portion within the flame, and a hood or dome loosely fitting over said portion of tube, and adapted to protect the latter from direct contact with the flame, substantially as set forth.

5. In a burner of the character described, a gas-generating tube having a portion within the flame, a hood or dome surrounding said portion of tube, and a burner proper slidably arranged on said hood, substantially as set forth.

6. In a burner of the character described, a tube connected with a liquid-supply, a chambered and valved cylinder secured to said tube, a gas-generating tube or pipe having one end communicating with said first-named tube, and its other end communicating with the chamber of said cylinder and having a portion located within the flame, and means for protecting said portion of tube from direct contact with the flame, substantially as described.

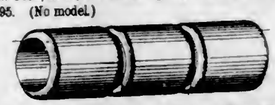
7. In a burner of the character described, a tube connected with a liquid-supply, a chambered and valved cylinder secured to said tube, a gas-generating tube or pipe having one end communicating with said first-named tube and its other end communicating with the chamber of said cylinder, and having a portion within the flame, means of protecting said portion of tube from direct contact with the flame, and a burner proper slidably arranged on said protecting means, substantially in the manner and for the purpose set forth.

8. In a burner of the character described, a liquid-supply tube, a shell forming a gas and air mixing chamber, a gas-generating tube having one end communicating with said supply-tube and its other end communicating with the gas and air mixing chamber, said generating-tube having a portion of its length within the flame, and means of protecting said portion of tube from contact with the flame, substantially as set forth.

9. In a burner of the character described, the combination with a tube connected with a liquid-supply, a chambered cylinder secured to said tube, a valve fitting said cylinder, a fluid-conducting and gas-generating tube having one end communicating with said first-named tube and its other end communicating with the chamber of the cylinder, a shell surrounding a portion of said generating-tube, a burner slidingly fitted to said shell, and a dome fitting over a portion of the generating-tube, substantially as set forth.

653,911. METHOD OF FORMING RINGS AND COUPLINGS. DAVID HEGGIE, McKeesport, Pa., assignor to the National Tube Company, New York, N. Y., and Pittsburg, Pa.

Filed Oct. 14, 1899. Serial No. 733,595. (No model.)



Claim.—1. The method of forming rings or like articles, consisting in heating a bar of width corresponding to the length of two or more rings, and at one operation welding the same into tubular form and shaping the bodies of several rings therefrom.

2. The method of forming rings or like articles, consisting in heating a bar of width corresponding to the length of two or more rings, and at one operation welding the same into tubular form and shaping the bodies of several rings therefrom, and forming thin web connections between the several rings.

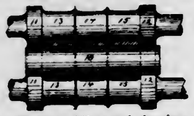
3. The method of forming rings or like articles, consisting in heating a bar of width corresponding to the length of two or more rings, and at one operation welding the same into tubular form and shaping the bodies of several rings therefrom and forming thin web connections between the several rings, and subsequently threading the blank so produced and thereby cutting away the web portions and separating the several rings, substantially as set forth.

653,912. COUPLING AND RING. DAVID HEGGIE, McKeesport, Pa., assignor to the National Tube Company, New York, N. Y., and Pittsburg, Pa. Filed Oct. 14, 1899. Serial No. 733,596. (No model.)



Claim.—As a new article of manufacture, a wrought-metal tubular blank for forming pipe-couplings or like rings having threaded inner faces composed of two or more thick body portions connected by thin web portions corresponding substantially in thickness to the depth of the threads to be formed in the rings, substantially as set forth.

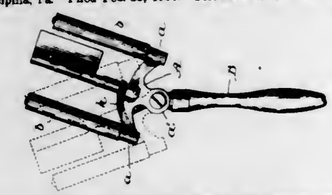
653,913. APPARATUS FOR FORMING PIPE-COUPLINGS OR SIMILAR ARTICLES. DAVID HEGGIE, McKeesport, Pa., assignor to the National Tube Company, New York, N. Y., and Pittsburg, Pa. Filed Oct. 14, 1899. Serial No. 733,597. (No model.)



Claim.—1. In a mill for welding and shaping a plurality of pipe-couplings or like articles at a single operation, the combination of a plain-faced central mandrel corresponding in diameter to the interior of the blank and adapted to support the same, and a cluster of rolls around the mandrel, such rolls having flanges at each end adapted to contact with the mandrel and confine the blank, and also having two or more working faces, each corresponding to a finished coupling, and annular projections intermediate the working faces for finishing the end faces of the couplings.

2. In a mill for welding and shaping a plurality of couplings, or like articles, at a single operation, the combination of a plain-faced central mandrel corresponding in diameter to the interior of the blank and adapted to support the same, and a cluster of rolls around the mandrel, such rolls having flanges at each end, and also having two or more working faces, each corresponding to a finished coupling, and annular projections intermediate the working faces for finishing the end faces of the couplings, said annular projections being of such height as to leave a web between the couplings of substantially the thickness of the depth of screw-threads.

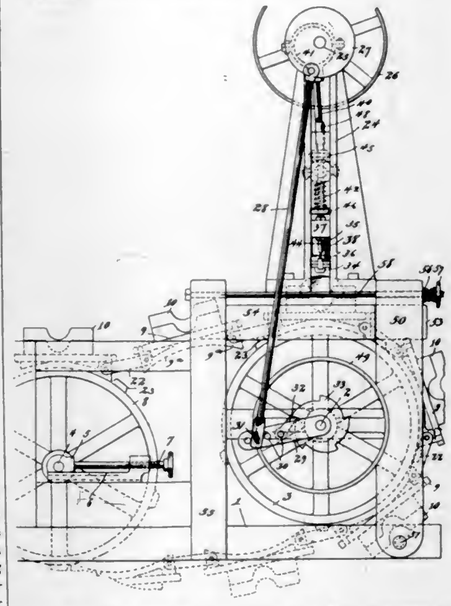
653,914. RAZOR-STROPPING DEVICE. HERMAN HERDER, Philadelphia, Pa. Filed Feb. 23, 1900. Serial No. 6,148. (No model.)



Claim.—1. In a razor-stropping device, the combination with a frame carrying a pair of supporting-arms, adapted to rest upon a razor-strap, of a rotatable blade-holder centrally mounted in said frame and provided with peripheral cog-gearing and an extension end or spindle journaled in said frame, a handle pivotally connected with said supporting-frame and carrying a sector end provided with rack-gearing meshing with the annular gearing on the rotatable blade-holder, and with means to limit the arc of rotation relatively, of the supporting-frame and the pivotally-connected handle; substantially as described.

2. In a razor-stropping device the combination with the supporting-frame A carrying a pair of fixed arms *a*, *a* of a rotatable blade-holder carrying annular cog-gearing and having a spindle end *c* journaled in the frame, a handle B pivotally mounted in the cross-bar of the frame A and provided with a sector H having cog-gearing *h*, and slotted at *s* to receive a pin *t* mounted on the supporting-frame of the device; substantially as described.

653,915. MACHINE FOR BRANDING HAMS, &c. ROBERT D. KENYON, Chicago, Ill. Filed Aug. 8, 1899. Serial No. 726,505. (No model.)



Claim.—1. A machine for branding hams, &c., comprising an endless chain of carriers, means for imparting thereto an intermittent motion, a branding-die movable toward and from said carriers, mechanism for yieldingly reciprocating said die, and a rigid abutment for successively supporting the carriers against the action of the die, substantially as described.

2. A machine for branding hams, &c., comprising an endless chain of carriers, means for imparting thereto an intermittent motion, a cross-head provided with a branding-die, a second cross-head with which said first cross-head is loosely connected, means for imparting a reciprocating movement to said second cross-head, springs interposed between said cross-heads, and a rigid abutment for successively supporting the carriers against action of the die, substantially as described.

3. In a machine for branding hams, &c., the combination, with an endless chain of carriers, of intermittently-movable wheels around which said carriers pass, one of said wheels constituting a rigid or non-yielding abutment for successively supporting the carriers, a reciprocating branding-die located above said wheel, and mechanism for yieldingly pressing said die toward a carrier as it rests upon said wheel, and for retracting said die, substantially as described.

4. In a machine of the character described, the combination, with an endless chain of carriers, of means for imparting thereto an intermittent motion, two loosely-connected cross-heads, the one carrying a branding-die, means for imparting to the other reciprocating motion, springs interposed between said cross-heads, means for adjusting the action of said springs, and a rigid abutment for successively supporting the carriers against the action of the branding-die, substantially as described.

5. In a machine of the character described, the combination, with suitable means for presenting the articles to be branded, of a lower cross-head provided with a branding-die and its heater and parallel air and gas pipes arising therefrom and flexibly connected with their sources of supply, a second cross-head connected with the actuating mechanism and through which said pipes pass loosely, adjustable abutments on said pipes above and below the upper cross-head, and springs surrounding said pipes between said upper cross-head and the lower abutments, substantially as described.

6. In a machine of the character described, a series of carriers each comprising a base-plate and a saddle or holder pivotally adjustable thereon, substantially as described.

7. In a machine of the character described, a series of carriers each comprising a base-plate and a saddle or holder radially adjustable thereon, substantially as described.

8. In a machine of the character described, a series of carriers each comprising a base-plate and a saddle or holder adjustable thereon both pivotally and radially, substantially as described.

9. In a machine of the character described, a carrier provided with a holder having a recess to receive the body of the ham and a notch extending therefrom to the margin of the holder to receive the hock of the ham, substantially as described.

10. In a machine of the character described, a carrier comprising a holder or saddle having a body portion recessed to receive the body of the ham, and a raised shoulder notched to receive the hock of the ham and hold the same in an elevated position, substantially as described.

11. In a machine of the character described, a carrier comprising a base-plate and a saddle or holder adjustable thereon and provided with a recess to receive the body of the ham, a notch communicating therewith and extending to the margin of the holder to receive the hock of the ham when the body thereof is to be branded, and a raised shoulder to receive the hock of the ham when this latter is to be branded, substantially as described.

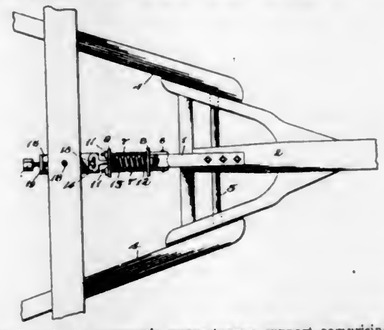
653,916. VALVE-GEAR FOR ENGINES. EDUARD KÖNIG, Aschersleben, Germany. Filed Apr. 26, 1900. Serial No. 14,221. (No model.)



Claim.—1. In a valve-gear with compulsory actuation of the valves, the combination with the valve and the valve-rod, of a lever forming a slotted link and being connected to said rod, a guide-piece adapted to be moved along in the slot of said link, a lever carrying said guide-piece, and means for operating said lever, for the purpose as described.

2. In a valve-gear with compulsory actuation of the valves, the combination with the valve and the valve-rod, of a lever having a curved slot and being connected to said rod, a guide-roll adapted to be moved along in said curved slot, a lever carrying said guide-roll, a rod connected to said lever and adapted to oscillate the same, and means for operating said rod, substantially and for the purpose as described.

653,917. WAGON-TONGUE SUPPORT. JOHN C. LAMBERT, Tonica, Ill. Filed Dec. 9, 1899. Serial No. 739,838. (No model.)



Claim.—1. An automatic wagon-tongue support comprising a holder designed to be mounted on a tongue, a spring-pressed slide having one end engaging the holder, a guide receiving the slide, and an adjustable plate designed to be mounted on the running-gear in rear of the tongue and hingedly connected with the said support, substantially as described.

2. An automatic wagon-tongue support comprising a holder designed to be mounted on a tongue, a spring-pressed slide engaging the holder, a supporting device receiving the slide, a plate designed to be mounted on the running-gear in rear of the tongue, and hingedly connected with the said supporting device, and an adjusting device mounted on the rear portion of the plate, substantially as described.

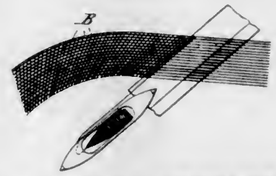
3. An automatic wagon-tongue support comprising a holder, side rods connected at their upper ends with and engaging the holder, front and rear plates mounted on the side rods and connecting the same, the rear plate being engaged by the said rod, a central rod connected with the front plate, a spring disposed on the central rod and interposed between the plates, and an adjusting device designed to be mounted on the running-gear in rear of the tongue and connected with the central rod, substantially as described.

4. An automatic wagon-tongue support comprising a holder, a pair of side rods, a roller arranged within the holder and mounted between the front ends of the side rods, the front and rear plates connecting the side rods, the rear plate being engaged by the same, a central rod connected with the front plate and provided at its rear end with an eye, a spring disposed on the rod and interposed between the front and rear plates, an adjustable plate provided at its front end with a hook to engage the eye, and an adjusting device arranged at the rear end of such plate, substantially as described.

5. An automatic tongue-support comprising a holder designed to be mounted on a tongue, an adjustable plate designed to be arranged on the running-gear in rear of the tongue, the reversely-arranged rods connected respectively with the holder and with the adjustable plate and hinged to the latter, and a spring for cushioning the rods, substantially as described.

6. An automatic tongue-support comprising a holder designed to be mounted on a tongue and having a guideway, a plate designed to be mounted on the running-gear in rear of the tongue, an antifriction-roller arranged in the guideway of the holder, a cushioning-spring, and the reversely-arranged rods connected at their inner end with the spring, and at their outer ends, respectively, with the antifriction-roller and with the plate, substantially as described.

653,918. FLAT-WOVEN TUBULAR FABRIC. ALBERT DE LASKI, Trenton, N. J. Filed July 20, 1899. Serial No. 724,477. (No specimens.)



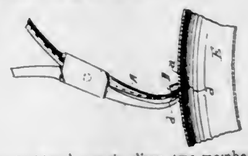
Claim.—In a tire, a plurality of woven-fabric tubes each of which comprises warp-threads of different diameters and inclined or diagonal weft-threads, said tubes being arranged one within the other, and the weft-threads of one tube crossing the weft-threads of the adjacent tube.

653,919. WOVEN TUBULAR FABRIC. ALBERT DE LASKI, Trenton, N. J. Filed July 20, 1899. Serial No. 724,478. (No specimens.)



Claim.—The combination of a plurality of woven-fabric tubes, each having warp-threads and weft-threads which are inclined or diagonal to the warp-threads, said tubes being arranged one within the other, and the weft-threads of one tube crossing the weft-threads of the adjacent tube.

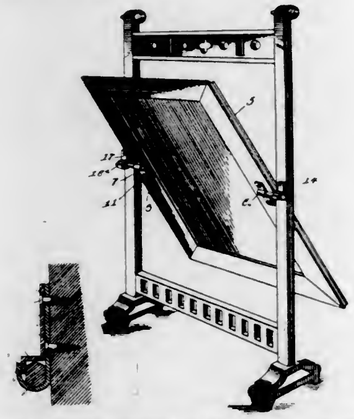
653,920. PLIERS. FRED B. PARKS, Grand Rapids, Mich. Filed Apr. 13, 1899. Serial No. 712,951. (No model.)



Claim.—In bicycle-repair pliers, two members pivoted together at the point of crossing, a handle integral with, and projecting back from each member, a long slim tapering jaw integral with and pro-

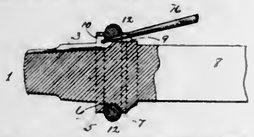
jecting forward from each member both of said jaws formed upon a uniform curve in the same direction, from the member to the point of the jaw so that the concave surface of one fits over the convex surface of the other and the end of the inner jaw projecting beyond the end of the outer jaw, substantially as and for the purpose set forth.

653,921. SEPARABLE FRICTION-HANGER. JERYMIAH B. REDMOND and LYNNLY C. ADAMS, Vicksburg, Miss. Filed Sept. 25, 1899. Serial No. 731,646. (No model.)



Claim.—In a friction-hinge the combination with the pintle thereof, the sides of which are parallel a short distance, of a hanger having a seat in which the end of the pintle is adapted to rest and a pivoted locking member adapted to engage one of the sides of the pintle to prevent its turning, substantially as described.

653,922. LUBRICATING DEVICE FOR AXLES. JOHN SEITER, East Palestine, Ohio, assignor of one-fourth to William H. Helman, same place. Filed Apr. 25, 1900. Serial No. 14,291. (No model.)



Claim.—The herein-described lubricating device for axles and other journals, consisting of the journal 1, provided with the oil-grooves extending in the direction of its length, and about the same, the annular groove 6, the opening 10 leading to the oil-grooves 3, and the recess 9 arranged opposite, in a manner that will permit the pointed nozzle of an oil-can to be introduced beneath a soft-rubber washer 12 in said annular groove 6, and the box having oil-grooves, substantially as and for the purpose described.

653,923. CORN-PLANTER. LEWIS E. WATERMAN, Moline, Ill., assignor to the Deere & Mansur Company, same place. Filed Nov. 18, 1899. Serial No. 737,505. (No model.)

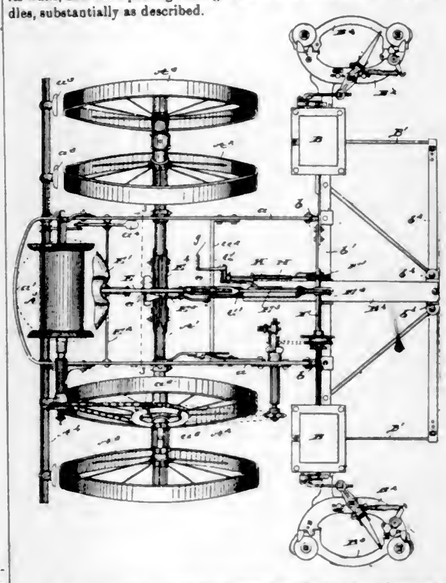
Claim.—1. In a rocking axle of the nature described, the combination of the bent wheel-spindles and a rigid yoke directly and removably uniting the inner ends of said spindles together, substantially as described.

2. In a rocking axle of the nature described, the combination of the bent wheel-spindles, a split-sleeve connection directly and rigidly uniting the inner ends of said spindles together, and hangers or clips rigidly attached to spindles and pivotally connected to frame, substantially as described.

3. In a rocking axle of the nature described, the combination of the bent wheel-spindles and the reversely-bent clamp rigidly uniting the inner ends of said spindles, substantially as described.

4. In a rocking axle of the nature described, the combination of the bent wheel-spindles, the reversely-bent sleeve embracing and connecting the inner ends of said spindles, and means for clamping the parts together, substantially as described.

5. In a rocking axle of the nature described, the combination of the bent wheel-spindles, the split-sleeve connection embracing and directly uniting the inner ends of the spindles and having a slot through its walls, and bolts passing through said slot and the ends of the spindles, substantially as described.



6. In a rocking axle of the nature described, the combination of the bent wheel-spindles having bolt-holes through their inner ends, the split-sleeve connection embracing and directly and rigidly uniting the inner ends of the spindles, and having a slot coinciding with said bolt-holes, and bolts passing through said slots and holes, substantially as described.

7. In a rocking axle of the nature described, the combination of the bent wheel-spindles, the reversely-bent split sleeve embracing and connecting the inner ends of said spindles and having a plurality of holes through its walls, and bolts passing through said holes and the inclosed ends of the spindles, substantially as described.

8. In a rocking axle of the nature described, the combination of the bent wheel-spindles having bolt-holes through their inner ends, the reversely-bent split sleeve receiving and directly connecting said inner ends and having longitudinal series of holes coinciding with said bolt-holes, and bolts passing through said holes and detachably clamping the parts together, substantially as described.

9. In a machine of the nature described, the combination with an axle comprising bent wheel-spindles rigidly coupled together at their inner ends, of hangers rigidly attached to spindles and independently pivoted to the side bars of the frame, a lever rigid with one of said hangers, and means for locking said lever in any desired position, substantially as described.

10. The combination with the axle comprising bent wheel-spindles rigidly coupled together at their inner ends, of butting rings or sleeves for the inner wheels, rigidly and detachably affixed to said spindles, hangers independently pivoted to overhead frame, a lever rigid with one of said hangers, whereby the axle may be rocked, and a rack upon the frame into which said lever latches, substantially as described.

11. The combination with the back frame, of the hangers independently pivoted thereto, the lever rigidly affixed to one of said hangers, and the rack into which it latches, the butting sleeves rigidly carried by said hangers, the bent spindles rigidly and removably borne by said sleeves, the reversely-bent split coupling-sleeve receiving the inner ends of said spindles, and the bolts uniting said sleeve and spindles, substantially as described.

12. The combination with the rocking axle having bent spindles and dipped at its center, of the foot-lever for lifting the forward frame, pivoted in advance of said axle and overlying the dip therein, substantially as described.

13. The combination with the rocking axle having bent spindles and dipped at its center, of the hand-controlled lifting-lever for the forward frame, pivoted in advance of the axle, and the treadle cooperating with said hand-lever and projecting rearwardly over the dip in said axle, substantially as described.

14. The combination with the rocking axle having bent spindles and dipped at its center, of the seat-standard rising from a transverse frame-bar in advance of the axle, the seat carried thereby in rear of the axle, the hand-controlled lifting-lever pivoted to the base of the seat-standard, and the treadle cooperating with said hand-lever and projecting rearwardly over the dip in said axle, substantially as described.

15. The combination with the hand-controlled lifting-lever and its locking device, of the foot-lever rigid with said hand-lever and the pivoted foot-latch operatively connected with said locking device, substantially as described.

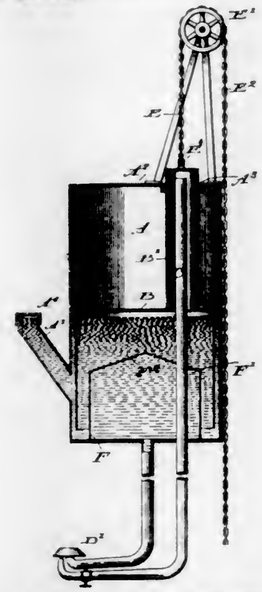
16. The combination with the hand-controlled lifting-lever and its hand-latch and rack, of the foot-lever rigid therewith and having a laterally-extended tread, and the foot-latch pivoted to said foot-lever, extending above the tread thereof and link-connected with said hand-latch, substantially as described.

17. The combination with the operating-shaft, of an engagement-wheel fixed thereon, a rack or pawl bar for intermittently rotating said wheel, a foot-lever for moving said bar in one direction, and a retracting-spring for returning it in the opposite direction, substantially as described.

18. The combination with the operating-shaft, of a lantern-wheel fixed thereon, a single-toothed rack or pawl bar for engagement with the rungs thereof, a bell-crank foot-lever for operating said pawl-bar in one direction, a retracting-spring for returning it in the opposite direction, and a stop on the lever to limit the return by contact with said bar, substantially as described.

19. The combination with the operating-shaft, of a lantern-wheel fixed thereon, the two-pronged rack or pawl bar, the upper prong of which rides upon the cheeks of the wheel and has an engaging tooth and the lower prong serving as a keeper, and the retracting-spring, substantially as described.

653,924. PREHEATING MEANS FOR VAPOR-BURNERS. WILLIAM W. WILSON and JOHN W. WILSON, Dallas, Tex., assignors of one-fourth to Michael Coerver, same place. Filed Oct. 31, 1899. Serial No. 735,420. (No model.)

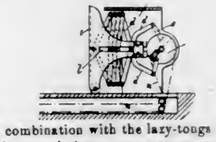


Claim.—1. The combination with a liquid-reservoir, of a dome adapted to be reciprocated therein, a filling device communicating with said reservoir at a point below the top thereof, whereby the reservoir can only be filled to a predetermined proportion of its capacity, a chamber beneath said dome having openings in its top and communicating with a vapor-burner, means for raising said dome, and a pipe communicating with the heating-burner and with said dome; substantially as specified.

2. The combination with a liquid-reservoir, of a dome adapted to be reciprocated therein, a filling device communicating with said reservoir at a point below the top thereof, whereby the reservoir can only be filled to a predetermined proportion of its capacity, a vertical closed extension from said dome passing through the top of said reservoir, a bearing-wheel supported above said reservoir, a flexible connection with said extension extending over said wheel and to a point below the reservoir, a chamber beneath said dome having walls parallel with those of the reservoir and an inclined perforated top, a feed-pipe communicating with said chamber and with a vapor-burner, and a feed-pipe extending within said extension and to a heating-burner; substantially as specified.

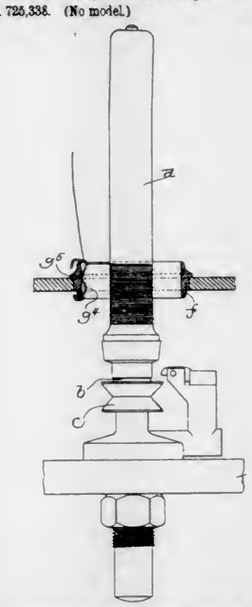
3. The combination with a reservoir, of a dome therein having a vertical extension projecting through the top of said reservoir, means for raising said dome and extension, a chamber beneath said dome having walls parallel with said reservoir and an inclined perforated top, a feed-pipe leading from said chamber to a vapor-burner, and a feed-pipe extending from said extension to a heating-burner; substantially as specified.

653,925. GATE FOR RAILWAYS. ANDREAS K. H. BRÜGGMANN, Lubeck, Germany. Filed Mar. 24, 1899. Serial No. 710,386. (No model.)



Claim.—The combination with the lazy-tongs having lateral extensions from their central pivots, means at one end of the tongs for spreading the tongs, and a guiding-plate secured to the outer end of the tongs, said plate having a horizontal slot adapted to receive said lateral projections, substantially as described.

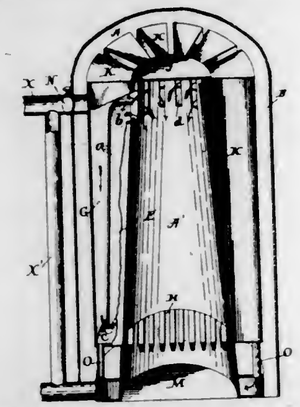
653,926. TRAVELER FOR TWISTING OR DOUBLING MACHINES. JOHN W. COOK, Manchester, England. Filed July 27, 1899. Serial No. 725,338. (No model.)



Claim.—A traveler of the character described, having an outward curve or bend adjacent to the lower loop or hook, and having a projection above said outward curve to bear against the inner surface of the ring, substantially as and for the purpose described, the said lower loop or hook being formed to fit the lower flange of the ring to guide the traveler around the ring without rocking.

653,927. HOT-AIR FURNACE. ALONZO W. CRAM, Haverhill, Mass., assignor to Abby F. Cram, same place. Filed Oct. 10, 1899. Serial No. 733,143. (No model.)

Claim.—1. A furnace consisting of a plurality of separate vertically-arranged chambers the inner walls of which constitute a fire pot or chamber, said chambers divided into two vertical flues having separate communications at their upper ends with the fire-pot and communicating with each other at their lower ends, substantially as described.



2. A furnace comprising a plurality of radially-arranged separate vertical sections the inner walls of which constitute a fire pot or chamber, the upper ends of the sections having openings in communication with the upper end of the fire-pot, and each section provided with a vertically-arranged partition having its upper end turned inward to constitute two separate flues in each chamber having separate communications with the upper end of the fire-pot, the lower end of the partitions being above the lower end of the sections forming a passage-way establishing communication between the lower end of the two separate flues, and a communication between the sections and the chimney, substantially as described.

3. A furnace comprising a plurality of vertically and radially arranged sections, said sections being of a triangular truncated shape in cross-section and the truncated ends of the sections forming the walls of a fire-pot, the upper ends of the sections provided with an opening having communication with the upper end of the fire-pot, each section having a vertically-arranged partition with its upper end turned horizontally and dividing the openings in the sections into two separate passage-ways, and the lower ends of the partitions stopping at a point above the lower end of the sections constituting a passage-way forming communication between the lower ends of the flues formed by said partition, the lower end of the sections having a chimney communication, substantially as described.

4. A furnace comprising a plurality of vertical radially-arranged separate chambers, the inner walls of which constitute a fire-pot, the upper ends of the chambers having openings communicating with the upper end of the fire-pot, each chamber having a vertically-arranged partition dividing the sections into two separate flues, the lower ends of the partitions stopping at a point above the lower ends of the sections to form a communicating passage-way and the upper ends of the partitions turned inward to form separate passage-ways and communication respectively with the upper end of said flues, a horizontal section at the lower end of the said vertical sections, and communications between the lower ends of the vertical sections and the horizontal section, and the horizontal section provided with a chimney communication, substantially as described.

5. A furnace comprising a plurality of vertically and radially arranged separate sections, the inner walls of which constitute a fire pot or chamber, the upper ends of the sections having openings in communication with the upper end of the fire-pot, vertically-arranged partitions dividing the sections into separate vertical flues having communication with each other at their lower ends, and having separate communications at their upper ends with the upper end of the fire-pot, a pipe X having communication at one end with one of said vertical sections, a vertical pipe having communication with the said pipe X and also with the lower end of the vertical sections, and a damper situated in the pipe X between the upper end of the vertical pipe and the chamber, substantially as described.

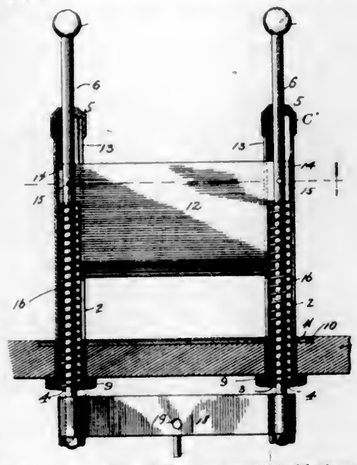
6. A furnace comprising a fire pot or chamber, flues arranged therearound in pairs, the inner flue of each pair constituting the inner wall of the fire pot or chamber, the upper ends of the flues having separate communications with the fire-pot and the lower ends of the flues communicating with each other, substantially as described.

7. A furnace comprising a fire-pot, flues vertically arranged therearound in pairs, one flue of each pair being adjacent the fire pot and the other flue of each pair being removed therefrom, said flues having separate communications with the upper end of the fire pot or chamber, and the lower ends of the said flues having communication with each other, substantially as described.

8. A furnace comprising a fire pot or chamber, flues vertically arranged therearound in pairs, the inner flues of the said pairs being adjacent the fire-pot and the other flues of the pairs being removed therefrom, the upper ends of the said flues having separate communications with the upper end of the fire pot or chamber, the lower ends of the flues being in communication with each other, and a communication common to the lower ends of the flues and the chimney, substantially as described.

9. A furnace comprising a plurality of radially-arranged separate vertical chambers the inner walls of which constitute a fire pot or chamber, each chamber divided into two vertically-arranged flues having separate communications at their upper ends with the upper ends of the fire pot or chamber, the lower ends of the flues being in communication with each other, and a comparatively-restricted communication between the lower ends of all of the flues and the chimney, substantially as described.

653,928. TOBACCO-CUTTING MACHINE. GEORGE A. DIXON and JOHN W. HOWARD, Galena, Kans. Filed May 8, 1899. Serial No. 716,061. (No model.)



Claim.—1. In a tobacco-knife, a base provided with a base proper, said base proper comprising a steel plate and a covering of soft metal disposed above said plate; suitable apertures provided in said base and plate; tubular supporting-posts threaded at their upper and lower ends, the latter fitting said apertures, said posts being slotted upon their inner sides and provided with retaining-nuts 9, in combination with knife-carrying rods 6 mounted in said posts; a knife connected to each of said rods and extending through said slots; a spring surrounding said rods and designed to hold said knife normally upward; a threaded cap fitting the upper threaded end of said posts and having an aperture designed to loosely receive one of said rods; a cross-head disposed beneath said base and connected to the downwardly-extending ends of said rods, and a controlling-rod attached to said cross-head and designed to be operated by the foot, all combined in the manner specified and for the purpose set forth.

2. In a tobacco-cutting machine, tubular posts or supports having reduced threaded lower ends; a base having its surface covered with a hard and soft metal plate provided with apertures designed to receive said reduced ends; retaining-nuts fitting the downwardly-extending ends of said posts and adapted to secure the posts firmly in position; inwardly-directed flanges formed upon the lower ends of said posts, whereby apertures 4 will be provided; rods fitting said apertures and extending upward through said posts; a knife connected to said rods and extending through suitable slots provided in the inner side of said posts; a cross-head attached to the lower ends of said rods and means to draw said head downward and additional means to normally hold said knife in an elevated position, all combined as specified and for the purpose set forth.

3. In a tobacco-cutting machine, a supporting-base provided with a hard and soft metal plate embedded in the surface thereof; tubular standards or posts 2 having slots upon their inner sides adapted to fit

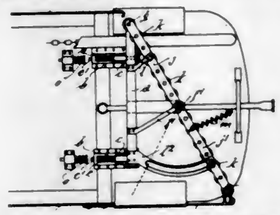
suitable apertures provided in said base and metallic plates; nuts adapted to hold said posts in their operative position; rods extending entirely through said posts; a knife passing through said slots and connected to said posts; a spiral spring disposed within each of said posts and around said rods and designed to hold the knife in a normally-elevated position, and a cross-head connected to the lower ends of said rods and having a depending rod secured thereto designed to coöperate with the foot of the operator, all combined in the manner specified and for the purpose set forth.

4. In a tobacco-cutting machine, tubular standards having slightly-reduced lower ends; a base-plate having a soft and hard metal reinforcement provided with apertures designed to receive the reduced ends of said standards; an anchoring-nut designed to hold said standards in an adjusted position; knife-carrying rods passing entirely through said posts; a knife connected to said rods and designed to pass loosely through slots provided in said posts; springs adapted to hold said knife in a normally elevated position; a cross-head attached to the lower ends of said rods and a foot-controlled rod connected to said cross-head and extending downward to a point where it may be conveniently engaged by the foot of the operator, all combined in the manner specified and for the purpose set forth.

653,929. HOLDER FOR SHOE-TOPS. CUSHING C. HARLOW Brockton, Mass., assignor to Charles S. Pierce, same place. Filed Jan. 28, 1899. Renewed Nov. 2, 1899. Serial No. 735,633. (No model.)

Claim.—The holder for shoe-tops above described made up of a piece of wire bent near its middle to form a staple, with one leg curved to conform to the upper front portion of a last and forming the inner leg of the article, and the outer leg bent near its outer end toward the inner leg.

653,930. FENDER FOR TRAMWAY OR LIKE VEHICLES. JOHANN VON HOLT, Hamburg, Germany. Filed Oct. 30, 1899. Serial No. 735,195. (No model.)



Claim.—1. In a fender, the combination with a suitable support, of a frame carrying rollers, having one portion rigid and its other portion hinged, substantially in the manner described.

2. In a fender, the combination of a yieldingly-supported bar, a frame carrying rollers, having one portion rigid and its other portion hinged, substantially in the manner described.

3. In a fender, the combination of a bar yieldingly supported at right angles with the longitudinal axis of a car or vehicle, a frame set obliquely to said axis and having one part rigidly secured to said bar and its other part hinged to said rigid part, said hinged part provided with guides and a spring, as described.

653,931. EYEGLASSES OR SPECTACLES. GEORGE LOWRIE, Newark, N. J. Filed Apr. 7, 1900. Serial No. 11,936. (No model.)



Claim.—1. In an eyeglass or spectacles, the combination with the eye-wire, of a reinforcing-piece for the end pieces, said reinforcing-piece being inclined to the opposite edges of the wire at the ends of said piece in opposite directions, substantially as set forth.

2. In an eyeglass or spectacles, the combination with the eye-wire, of a reinforcing-piece, providing a seat for the end piece and at its end away from said seat having the edges beveled or inclined to the longitudinal center line of the eye-wire, substantially as set forth.

653,932. MARKING BREAD. HENRY D. MENTZEL and JOHN REISER, Baltimore, Md., assignors to the Elkridge Manufacturing Company, same place. Filed July 28, 1899. Serial No. 725,348. (No model.)



Claim.—1. The method of marking bread which consists in placing upon the upper surface of an unbaked loaf, a loose plate that is heavy enough to remain in place and light enough not to sink into the loaf below the desired position, then baking such loaf with such plate in position and, lastly, removing said plate, substantially as and for the purpose described.

2. The method employed for marking a loaf of bread, which consists in applying to the upper surface of the unbaked loaf, a loose plate having a shape adapted to produce the desired mark, then baking such bread with such plate in position and, lastly, removing the said plate, whereby the appearance of a portion of the loaf under the plate is made different from the rest of the plate, substantially as and for the purpose described.

653,933. ELECTRODE FOR ELECTROLYZING APPARATUS. RENÉ MORITZ, Lille, France. Filed Nov. 29, 1899. Serial No. 738,657. (No model.)



Claim.—1. The combination, with a carrier-plate provided with a supply-channel and a discharge-channel, each extending entirely across said plate, and a plurality of grooves extending from one of said channels to the other, of an electrode applied to said carrier-plate between said channels, substantially as set forth.

2. The combination, with a carrier-plate provided with a supply-channel and a discharge-channel, each extending entirely across said plate, of an electrode consisting of a plurality of members applied to said plate and extending longitudinally from one of said channels to the other, substantially as set forth.

3. The combination of a carrier-plate provided with a rim, a supply-channel at its lower and a discharge-channel at its upper part, each extending across said plate, grooves extending from one to the other of the channels, an inlet-opening at one side of the plate communicating through the rim, with the discharge-channel, and an outlet-opening at the opposite side of the plate communicating through the rim with the discharge-channel, and an electrode applied to said plate between said channels, substantially as set forth.

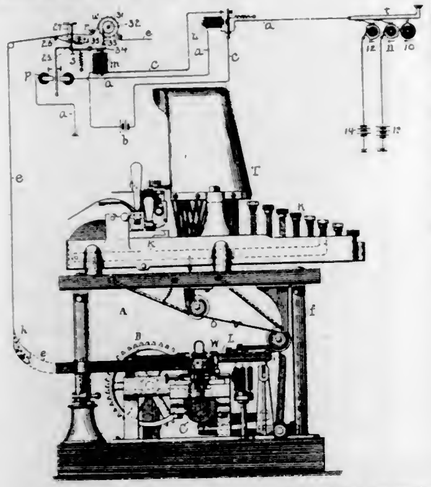
4. An electrolytic cell, composed of an anode, a cathode, carrier-plates for each, each plate having a lower supply-channel and an upper discharge-channel, a porous diaphragm interposed between said electrodes, means for clamping the carrier-plates together so as to form a cell, an inlet-opening for the anode in the lower part of its carrier-plate, an inlet-opening for the cathode at the lower part of its plate, at the opposite side of the cell from the anode inlet-opening, and outlet-openings for the anode and cathode at the upper part of their plates, at the sides opposite their inlet-openings respectively, substantially as set forth.

653,934. PAGE-PRINTING TELEGRAPH. DONALD MURRAY, New York, N. Y., assignor to the Postal Telegraph-Cable Company, same place. Filed Nov. 28, 1899. Serial No. 738,552. (No model.)

Claim.—1. The combination of a single main telegraph-line connecting separated stations, a suitable circuit-changing transmitter in said line at one station, a movable medium as a paper tape or strip, at a second station, means for advancing said medium step by step, a device to perforate said medium with a series of successive holes arranged in a single right line, a main-line relay controlling the step-by-step mechanism through the medium of a local circuit and a polarized magnet in the main line controlling the perforating device.

2. The combination of a single main telegraph-line connecting separated stations, a suitable circuit-changing transmitter at one station, a movable medium, as a paper tape, at a second station, an electromagnet for starting and stopping the advance movement of said medium; a punch to perforate said medium with a series of succes-

sive holes arranged in a single right line and a polarized magnet for controlling the action of said punch.



3 The combination of a single main telegraph-line connecting separated stations, a pole-changing transmitter in said line at one station, a movable controlling medium at a second station, a punch arranged to perforate said medium with a series of successive holes in a single right line, means for advancing said medium step by step, controlled by an electromagnet, a relay in the main line, a local circuit therefor containing the first-named electromagnet, and a polarized relay in the main line controlling the operation of the punch substantially as described.

4. The combination of a single main telegraph-line connecting separated stations, a pole-changing transmitter in said line at one station, a movable medium, as a paper tape, at the second station, a punch for perforating holes in said tape in a single right line, means for starting and stopping the advance of said movable medium and for controlling the action of the punch, a type-writing machine having a series of independently-movable keys, an actuating device therefor including a series of parallel, reciprocating, notched bars controlled by the perforated tape, and a motor for said actuating device.

5. In a page-printing telegraph the combination of a type-writing machine having a series of independently-movable keys, an actuating device therefor including a series of parallel, notched bars, and a controlling-tape having a series of holes arranged in irregular succession in a single right line, a suitable motor for operating said actuating device, an electromagnetic punch at the receiving-station for perforating said tape, a circuit-changing transmitter at the distant station and a single main telegraph-line connecting the transmitting and receiving stations.

6. The combination of a type-writing or other type machine having a series of independently-movable keys, an actuating device therefor including a series of parallel, reciprocating, notched bars, a controlling medium for said actuating device consisting of a paper tape or strip having a series of holes or perforations arranged in a single right line in predetermined succession and extent, a motor to drive said actuating device and an electromagnetic perforating device for said controlling medium.

7. A tape or strip for controlling a type-writing or other type-machine, said tape being divided into a series of equal, successive, longitudinal sections, each section representing a letter or character, which is divided into perforated or non-perforated subsections of equal number and length, the perforations being arranged in a single, right line; the relative location of one or more perforations in any section determining the letter or character; combined with means for advancing said tape step by step the extent of a section at each step.

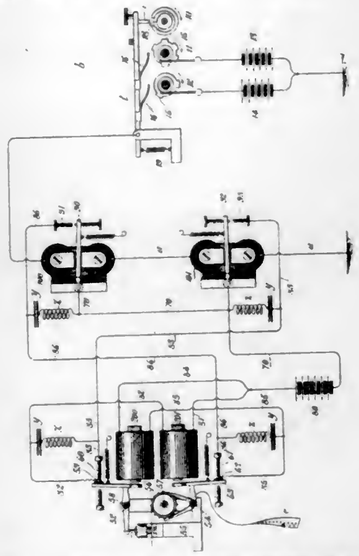
8. The combination of a recording instrument having a series of independently-movable character-levers, an electromagnetic perforating instrument and a tape or strip of suitable material passing through the perforating and recording instruments in succession, means for advancing said tape the extent of a section at a time through the recording instrument and the extent of a subdivision of a section at a time through the perforating instrument.

9. A tape or strip and a recording apparatus operating to advance said tape section by section combined with a device for advancing said tape in a series of uniform subdivisions of such section, a punch for perforating said tape and an electromagnet in the main line to control said punch.

10. In a perforator the combination of a reciprocating punch, an electromagnetic actuator therefor located in the main telegraph-line, means for mechanically connecting and disconnecting the punch and actuator and an electromagnet controlling said means having its coils in said main line.

11. The combination of a single main telegraph-line connecting separated stations, a pole-changing transmitter in said line at one station, a movable medium as a paper tape at a second station, a punch for perforating holes in said tape in a single right line, an electromagnetic device for operating said punch and advancing the paper step by step, a local circuit for said electromagnet with a neutral magnet and a polarized magnet in the main line cooperating to control said electromagnetic device and perforator.

653,935. PAGE-PRINTING TELEGRAPH. DONALD MURRAY, New York, N. Y., assignor to the Postal Telegraph-Cable Company, same place. Filed Feb. 7, 1900. Serial No. 4,311. (No model.)



Claim.—1. The combination of a main telegraph-line and a pole-changing transmitter at one station with an electromagnetic perforator, including a reciprocating punch and a paper-feeding device, at a second station, a polarized main-line electromagnet controlling the paper-feed, and a polarized main-line electromagnet controlling the punch, both said magnets having their coils in said main line.

2. The combination of a main telegraph-line, a transmitter having means for throwing upon the line current impulses of either polarity and uniform intermittent impulses of one polarity, a perforating device located at a second station including a punch and a paper feeding or spacing mechanism, an electromagnet in the main line controlling said paper-feeding mechanism responsive to impulses of one polarity and an electromagnet in the main line controlling said punch responsive to current impulses of opposite polarity.

3. The combination with a perforating device including a reciprocating punch, and a step-by-step mechanism for advancing the tape, of an electromagnet for operating the punch, an electromagnet controlling the step-by-step mechanism, a local circuit for one of said magnets, a main-line relay responsive to current impulses of one polarity having its break-points in said local circuit, a local circuit for the other magnet and a main-line relay responsive to current impulses of opposite polarity having its break-points in said local circuit.

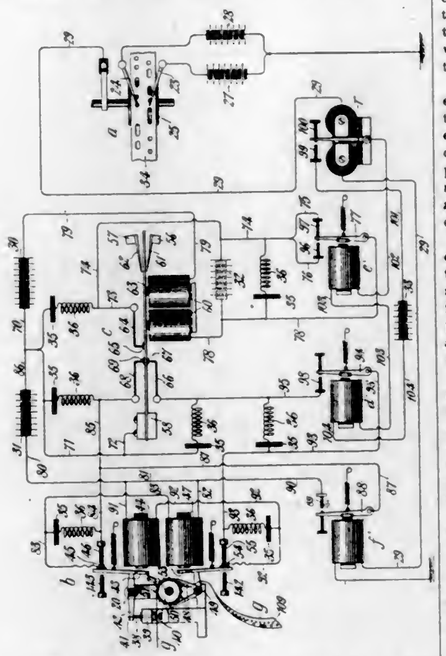
4. In a perforator, the combination of a reciprocating punch, a step-by-step mechanism for advancing the tape, an electromagnet controlling the punch, an electromagnet controlling the step-by-step mechanism, a local circuit for each magnet, an independent circuit-breaker in each circuit and a second circuit-breaker in one of said circuits controlled by said electromagnet in the other of said circuits.

5. In a perforator the combination of a reciprocating punch and a step-by-step mechanism for advancing the tape, with two electro-magnets controlling the punch and step-by-step mechanism respectively, an electric circuit for each magnet and two circuit-breakers, one in each circuit, the circuit-breaker in one circuit being controlled by the electromagnet in the other circuit.

6. The combination of a reciprocating punch, means for advancing the record medium step by step, two electromagnets operating the punching and spacing mechanism respectively, a local circuit for each magnet and two main-line relays operating circuit-breakers in the local circuits, respectively.

7. The combination of a punch, a spacing device, a magnet operating the punch, a magnet operating the spacing device, a local circuit for each magnet, a circuit-breaker for each magnet, electrical connections between the circuit of one magnet and the circuit-breaker controlled by the other magnet and two polarized relays operating break-points in each local circuit, respectively.

653,936. PAGE-PRINTING TELEGRAPH. DONALD MURRAY, New York, N. Y., assignor to the Postal Telegraph-Cable Company, same place. Filed Feb. 27, 1900. Serial No. 6,656. (No model.)



Claim.—1. The combination of a main telegraph-line, an automatic transmitter at one station, an electromagnetic perforator at a second station, said perforator including a spacing-magnet and a punching-magnet, a local circuit for each of said magnets, an automatic circuit-breaker operating to make and break said circuits alternately and a main-line relay operating break-points in said punching-magnet circuit.

2. The combination of a main telegraph-line, an automatic transmitter at one station, an electromagnetic perforator at a second station, said perforator including a spacing-magnet and a punching-magnet, a local circuit for each of said magnets, an automatic circuit-breaker operating to make and break said circuits alternately, an electromagnet in a local circuit controlling break-points in the punching-magnet circuit, and a main-line relay controlling break-points in said last-named local circuit.

3. The combination of a main telegraph-line, an automatic transmitter in said line at one station, an electromagnetic perforator at a second station, said perforator including a spacing-magnet and a punching-magnet, a local circuit for each of said magnets, an automatic circuit-breaker controlled by a local circuit to make and break the punching and spacing circuits alternately and a main-line relay operating break-points in the circuit of the automatic circuit-breaker.

4. The combination of a main telegraph-line, an automatic transmitter in said line at one station, an electromagnetic perforator at a second station, said perforator including a spacing-magnet and a punching-magnet, local circuits for each of said magnets, an automatic circuit-breaker controlled by a local circuit to make and break the punching and spacing circuits alternately, an electromagnet operating break-points in the local circuit controlling the automatic circuit-breaker, a local circuit for said magnet and a main-line relay controlling break-points in the last-named local circuit.

5. The combination of an electromagnetic perforator including a spacing-magnet, a punching-magnet, local circuits, one for each of said magnets, an automatic circuit-breaker in a local circuit operating to make and break the punching and spacing circuits alternately, a magnet controlling break-points in said punching-circuit, a magnet controlling break-points in the local circuit operating the automatic circuit-breaker, an automatic transmitter at a distant station directing upon the main line a series of current variations of unit duration or undivided multiples thereof, and means whereby said current variations control the two last-named electromagnets.

6. In a printing-telegraph the combination with a main line of an electromagnetic step-by-step recording apparatus, a local controlling-circuit therefor, a uniformly-operating circuit-breaker in said circuit, a magnet, circuit and break-points to operate said circuit-breaker, a circuit-breaker in the last-named circuit consisting of a pair of contact-points electrically connected together and a complementary contact, and an electromagnet to control said circuit-breaker connected with an automatic transmitter at the distant station throwing upon the main line a series of current variations.

7. In a printing-telegraph the combination with a main line of an electromagnetic step-by-step recording apparatus, a local circuit therefor, an automatic circuit-breaker in said circuit, means for operating said circuit-breaker at a uniform rate including a local motor-controlling circuit, a circuit-breaker in said circuit consisting of a pair of contacts electrically united and a complementary contact, a relay in the main line controlling break-points in said local circuit and an automatic transmitting device throwing upon the line a series of current variations.

8. In a printing-telegraph the combination with a main line of an electromagnetic step-by-step recording apparatus, a local circuit therefor, an automatic circuit-breaker in said circuit, a magnet operating said circuit-breaker, a separate motor-controlling circuit therefor, a circuit-breaker in the motor-controlling circuit consisting of a pair of contacts electrically united and a complementary contact, and an automatic transmitter throwing upon the line a series of current variations.

9. In a printing-telegraph the combination of an electromagnetic step-by-step recording apparatus, a local controlling-circuit therefor, a vibrating-reed circuit-breaker in said circuit, a motor-magnet and circuit for said reed, a circuit-breaker in the reed motor-magnet circuit consisting of a pair of contacts electrically united and a complementary contact, and an automatic transmitting device directing upon the main line a series of current variations of unit duration or multiples thereof.

10. In a printing-telegraph the combination of an electromagnetic step-by-step recording apparatus consisting of a punching-magnet, a spacing-magnet, local circuits, one for each of said magnets, a vibrating-reed circuit-breaker, a motor-magnet, circuit and break-point for operating said reed, a second circuit-breaker in said circuit consisting of a pair of contacts electrically united and a complementary contact, and an automatic transmitting device directing upon the main line a series of current variations.

11. In a printing-telegraph the combination with a main line of an electromagnetic step-by-step recording apparatus, a local controlling-circuit therefor, a vibrating-reed circuit-breaker in said circuit, a motor-magnet for said reed, a circuit in which said magnet is included with a circuit-breaker operated by said reed, resilient limiting-stops fixed upon opposite sides of said reed, a second circuit-breaker in said motor-magnet circuit consisting of a pair of contacts electrically united and a complementary contact, and an automatic transmitting device directing upon the line a series of current variations.

12. In a printing-telegraph the combination with a main line of an electromagnetic spacing and recording device, local-circuit connections therefor, an automatic circuit-breaker in said circuit, an automatic transmitter at the distant station directing upon the line a series of current variations, a relay in the main line controlling break-points in the circuit of said recording device and means for stopping the operation of said spacing device upon cessation of main-line variations.

13. In a printing-telegraph the combination with a main line of electromagnetic spacing and recording devices, a local circuit for each such device, an automatic circuit-breaker in said spacing-circuit, an automatic transmitter directing upon the main line a series of current variations, a main-line relay controlling break-points in the local recording-circuit responsive to said current variations and a main-line relay controlling break-points in a branch of the local spacing-circuit responsive to a cessation of said current variations.

14. In an electromagnetic punching device or perforator, two

pairs of electromagnets fixed one above the other in parallel planes, a transverse arbor for each magnet to which its armature is fixed, said arbors extending across the poles of the magnets and to one side thereof, a star-wheel and a motor-driven ratchet-wheel on a shaft or spindle controlled by holding-pawls fixed to one of said arbors at one extremity thereof, an actuating-bar for the punch fixed to the second arbor at its corresponding extremity in the line of movement of the paper and a reciprocating punch:

15. In an electromagnetic perforator the combination of a magnet, an arbor to which an armature is fixed, a reciprocating punch an actuating-arm therefor fixed to said arbor and an elastic connection between said punch and arm.

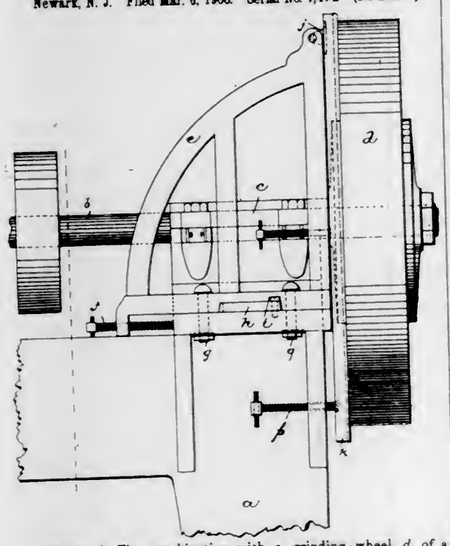
16. An automatic circuit-breaker consisting of a vibrating reed, a motor-magnet and circuit therefor, a circuit-breaker in said circuit, operated by said reed, and resilient limiting-stops having means for rapidly compounding resistance to impact fixed in position upon opposite sides of said reed.

17. The combination of an electromagnetic perforator, a local circuit therefor, an automatic circuit-breaker in said circuit and means for controlling the action of said circuit-breaker.

18. The combination of a suitable recording instrument, a local controlling-circuit therefor, an automatic circuit-breaker in said circuit, a main circuit, an automatic transmitter in said circuit dividing the current into unit impulses and multiples thereof and means whereby the impulses in the first circuit are controlled by the variations in the main circuit.

19. The combination of a suitable step-by-step recording instrument, a local controlling-circuit therefor, an automatic circuit-breaker producing uniform current variations in said circuit, a main line, an automatic transmitter in said line producing therein unit current variations and multiples thereof and means whereby any current variation in the main line renders effective corresponding current variations in said local circuit.

653,937. SCALE-GRINDING MACHINE. JOHN R. O'CONNOR, Newark, N. J. Filed Mar. 6, 1900. Serial No. 7,474. (No model.)



Claim.—1. The combination with a grinding-wheel, *d*, of a grooved scale holder or guide *k*, arranged at one side of the said wheel opposite the flat side of said wheel, the groove of which extends vertically downward across the said flat side of said grinding-wheel, the grooved holder being adapted to hold the scales in grinding position while the said scales gravitate across the flat grinding-surfaces of the wheel, substantially as set forth.

2. The combination with the wheel, of a grooved scale-holder, lying opposite the flat side of the wheel and extending across the flat face of said wheel, and open at the top to receive the scales and at the bottom to permit an exit of the same, substantially as set forth.

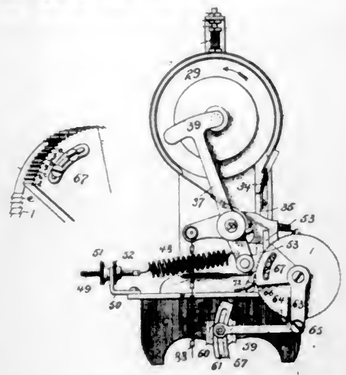
3. The combination with the wheel, of a grooved scale-holder, the inner wall of which is inclined to the plane of the side of said wheel, the groove of said holder being open at top and bottom, substantially as set forth.

4. The combination with the wheel, of a grooved scale-holder, the inner wall of the groove of which is inclined, the holder being pivoted to a suitable support at the top and adjustably fastened at the bottom, substantially as set forth.

5. The combination with the frame, table or bed having a grinding-wheel, of the bracket or support *e*, and grooved guide or holder *k* pivoted to said support at the top and adjustably held at the bottom, substantially as set forth.

6. The combination with the frame, table, or bed having the grinding-wheel, of an adjustable support and an adjustable and grooved guide lying at one side of the said wheel, substantially as set forth.

653,938. STOP-MOTION DEVICE FOR SEWING-MACHINES. WILLIAM N. PARKER, New York, N. Y. Original application filed Sept. 12, 1898, Serial No. 690,777. Divided and this application filed Oct. 10, 1899. Serial No. 733,226. (No model.)



Claim.—1. In combination in a buttonhole-sewing machine having a rotating part, a stop-motion comprising a friction-strap, means adapted to yieldingly hold the said friction-strap in a position to engage the rotating part, a yielding device adapted to automatically bring the said strap into engagement with the said rotating part, and means adapted to automatically trip the said device into action.

2. In combination in a buttonhole-sewing machine having mechanism comprising a wheel, a stop-motion device comprising a strap encircling said wheel, yielding elastic means for holding said strap in an operative position around the wheel, and means adapted to trip the stop-motion device into action and thereby close the strap into engagement with the said wheel.

3. In a buttonhole-sewing machine, a shaft, a wheel attached to said shaft, a friction-strap adapted to engage the said wheel, an adjustable bracket attached to the machine, one end of the strap attached to said adjustable bracket, a lever, the other end of the strap attached to said lever, and means for operating the lever so as to draw on the strap in the direction of the rotation of the wheel and thereby bring the strap into engagement with the same.

4. In a buttonhole-sewing machine, a shaft, a wheel attached to said shaft, a friction-strap adapted to clutch said wheel, a plurality of springs attached to a stationary part of the machine and to which one end of the said strap is attached, a lever to which the other end of the said strap is attached, and means for operating the said lever to close the strap into engagement with the said wheel.

5. In a buttonhole-sewing machine, a shaft, a wheel attached to said shaft, a friction-strap adapted to engage the said wheel, a plurality of springs attached to a stationary part of the machine, a lever, a plate adjustably attached to said lever, a connection between one end of the aforesaid strap and the plurality of springs, a connection between the other end of said strap and the said plate, and means for operating the lever so as to bring the strap into engagement with the aforesaid wheel.

6. In a buttonhole-sewing machine, a shaft, a wheel attached to said shaft, a stop-motion comprising a friction-strap adapted to engage the said wheel, one end of the strap yieldingly attached to a stationary part of the machine, a lever, the other end of the strap attached to said lever, and a spring adapted to operate the lever and thereby close the strap into engagement with the aforesaid wheel.

7. In a buttonhole-sewing machine, a shaft, a wheel attached to said shaft, a stop-motion comprising a friction-strap adapted to engage the said wheel, one end of the strap yieldingly attached to a stationary part of the machine, the other end to a lever, a spring adapted to operate the said lever, and means adapted to adjust the tension of the said spring.

8. The combination in a buttonhole-sewing machine having a stop-motion device adapted to be tripped into action, of a tripping-piece pivoted on a wheel, said piece adapted to yieldingly engage the stop-motion device and trip the same into action, and means for rotating the said wheel.

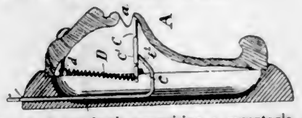
9. The combination in a buttonhole-sewing machine, of a stop-motion device, means for tripping the stop-motion comprising an intermittently-rotating wheel having a slot formed therein, a lever pivoted on the said wheel adapted to engage the stop-motion device, and a spring located in the aforesaid slot, one end of which is attached to the wheel and the other end to the lever.

10. In a buttonhole-sewing machine, the combination of a stop-motion device, a ratchet-wheel having a gap in the teeth thereof, a segment on which teeth are formed adapted to close the gap in the teeth of the ratchet-wheel, means for rotating the ratchet-wheel, and means intermediate the ratchet-wheel and the stop-motion device whereby the latter is tripped into action through the movements of the former.

11. In a buttonhole-sewing machine, the combination of a stop motion device, means for tripping the said stop-motion into action comprising a ratchet-wheel, a pawl and adjustable means for actuating the same, means in combination with the teeth of the ratchet-wheel and the pawl, whereby the stop-motion is tripped into action at the same point in the movement of the stroke of the pawl under different adjustments in the extent of the stroke of the same.

12. In a buttonhole-sewing machine, a stop-motion, means for tripping the stop-motion into action comprising a ratchet-wheel having a gap formed in the teeth thereof, means for adjustably closing the said gap, a lever and means for vibrating the same, a pawl-lever, a pawl adapted to engage the ratchet-wheel carried by the said pawl-lever, and an adjustable connection between the lever and the pawl-lever, whereby the forward movement of the pawl commences at the same point under different adjustments of the stroke of the pawl-lever.

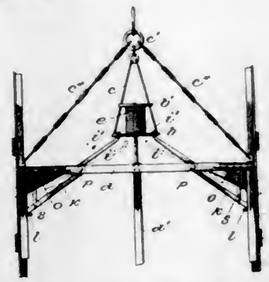
653,939. TOY BANK. HENRY SCHLOKER, New York, N. Y. Filed Feb 27, 1900. Serial No. 6,724. (No model.)



Claim.—1. A toy bank comprising a receptacle, an entrance thereto, and a pivoted coin-support thereat, together with a suspending member having means for tripping said support to turn the coin into the receptacle.

2. The representation of a grotesque human face arranged as a toy bank, the mouth being open, the tongue tensionally held as a coin-support, and the beard forming an operating-catch, together with a suspending member passed loosely into the bank and arranged to trip the coin-support by the application of pressure upon the operating-catch.

653,940. CLUTCH MECHANISM FOR MINE CAGES OR LIFTS. RICHARD SCHULZ, Herne, Germany. Filed Jan. 16, 1900. Serial No. 1,618. (No model.)

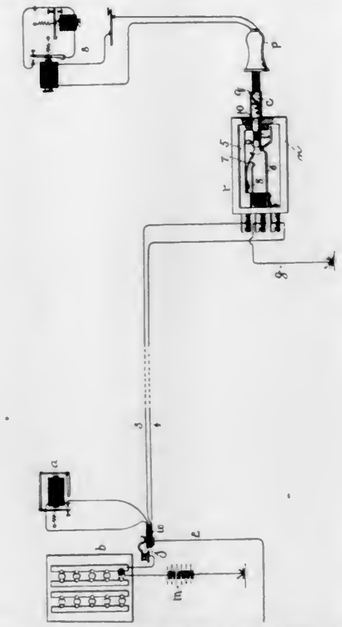


Claim.—1. The combination, with a cage or lift of the corner-pockets, the hinged flaps beneath the corner-pockets, the buffers located in the corner-pockets, and the clutch-levers pivoted to the cage or lift, and having lower arms adapted to bear upwardly against the hinged flaps.

2. The combination, with a cage or lift of the central pockets, the hinged flaps beneath the central pockets, the buffers located in the central pockets, and the clutch-levers pivoted to the cage or lift having lower arms and an angular cross-bar adapted to bear upwardly against the hinged flaps.

3. The combination, with a cage or lift of the corner-pockets, the hinged flaps beneath the corner-pockets, the buffers located in the corner-pockets, the central pockets, the hinged flaps beneath the central pockets, the buffers located in the central pockets and the clutch-levers pivoted to the cage or lift having lower arms adapted to bear against the flaps of the corner-pockets, and an angular cross-bar adapted to bear upwardly against the hinged flaps.

653,941. TELEGRAPH SWITCHING APPARATUS. JOHN F. SKIRROW, East Orange, N. J. Filed Jan. 5, 1900. Serial No. 424. (No model.)



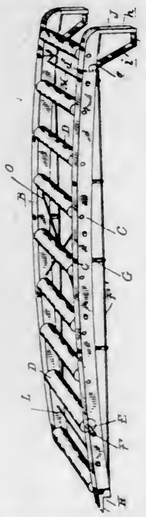
Claim.—1. A main telegraph-line, a main station, a loop connected in said line at the main station extending to a substation, a multiple-contact spring-jack at the substation having its first and second contact-points connected to the two sides of the loop, respectively, and its third and fourth points connected to one side of said loop and the ground, respectively; in combination with a jack-plug having two contacts forming the respective terminals of suitable telegraphic apparatus, said plug being capable of taking three separate contact positions; first, registering with the first and second jack-contacts, connecting the instrument into the loop; second, registering with the first and fourth jack-contacts, connecting the instrument into the first grounded side of the loop; and third, registering with the second and fourth jack-contacts, connecting the instrument into the second grounded side of the loop.

2. The combination of a main telegraph-circuit, a main station, a loop in said line at the main station extending to a substation, an electromagnet at the main station irresponsive to normal current impulses, connected to the main line between said loop and main battery, a jack-plug having a pair of contacts forming terminals of suitable telegraphic apparatus at the substation, a spring-jack therefor having a pair of separable contact-points forming, respectively, the terminals of the loop, and a pair of separated contacts connected to one side of said loop and a ground-return, respectively, said separated contacts being located in close proximity whereby a plug-contact in passing from one registering pair of jack-contacts to the other connects the ground-contact and loop-contact together to short-circuit and operate the magnet at the main station.

653,942. BAGGAGE-LOADER. FRANK J. WILLIS and FLYNN A. GRIFFITH, Onondaga, Mich. Filed Apr. 11, 1900. Serial No. 12,422. (No model.)

Claim.—1. A baggage-loader, comprising two curved and sep-

arated side members, a series of spaced rollers intermediate and journaled within said members, each roller having its cylindrical portion extending beyond the convex sides of the members, truss-rods connecting the ends of each side member, and struts between each truss-rod and the concave side of its member, substantially as described.

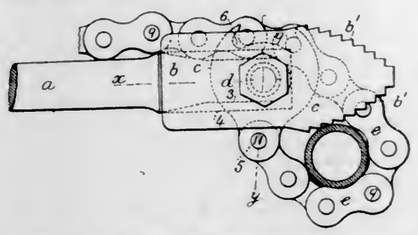


2. A baggage-loader, comprising two curved and separated side members, a series of spaced rollers intermediate the members, each roller extending beyond the convex side of the members, and foot-brackets upon the members at one end of the loader, each composed of a depending vertical member and an inclined brace member.

3. A baggage-loader, comprising two curved and separated side members, a series of spaced rollers between and journaled within said members, each roller having its cylindrical portion extending beyond the convex sides of the members, struts for each member extending from the concave side of the members, bolts extending through the struts and secured to the members, said bolts being provided with heads having lateral openings formed therein, and a truss-rod connecting the ends of the member and extending through the openings in the bolt-heads.

4. A baggage-loader, comprising two curved and separated side members, a series of spaced rollers intermediate and journaled within said members, each roller having its cylindrical portion extending beyond the convex sides of the members, and a truss-rod connecting the ends of each side member, substantially as described.

653,943. CHAIN WRENCH. GEORGE W. BUFFORD, New York, N. Y., assignor to the I. H. Williams & Company, same place. Filed Jan. 11, 1900. Serial No. 1,045. (No model.)



Claim.—1. In a chain wrench, the combination with a handle lever, jaws and bolt for connecting the jaws to the handle-lever, of plates pivoted to the handle-lever and having pivots at one side and notches at the opposite side, a chain connected to the pivots of the plates and adapted to engage the notches of the plates, substantially as and for the purposes set forth.

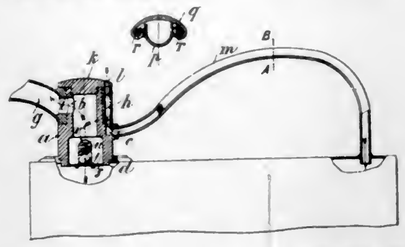
2. In a chain wrench, the combination with the jaws having serrated edges and a pivot-bolt for securing the same, of a handle-lever forked at one end between the jaws and through which forked ends the pivot-bolt passes, plates between the forked ends of the handle-lever and through which the pivot-bolt passes, said plates having pivots at one side and edge notches at the opposite side, a chain connected to the said plates at their pivots and the links of which chain are adapted to be connected to the said plates at the notches, substantially as and for the purposes set forth.

3. In a chain wrench, a handle-lever enlarged at one end and provided with portions 2 3 and 4 at the forked end, the central portion 3 being the widest in one direction and the narrowest in the opposite direction, jaws *b* having serrated edges and notched on their inner faces and adapted to set against the outer forked ends of the handle-lever, and a bolt passing through the jaws and through the forked ends of the handle-lever to connect the parts together, plates *c c'* pivoted to the said bolt between the forked ends of the handle-lever and having pivots at one side and edge notches at the other side, a chain between the notched plates and connected to the same at the pivots and having projecting pin-rivets connecting the parts thereof together, the ends of which pins are adapted to be received in the edge notches of the said plates in use, substantially as in the manner and for the purposes set forth.

4. In a chain wrench a handle-lever enlarged at one end and provided with portions 2 3 and 4 at the forked ends, the central portion 3 being widest in one direction and the narrowest in the opposite direction, jaws *b* having serrated edges and notched on their inner faces and adapted to set against the outer forked ends of the handle-lever, plates *c c'* received between the forked ends of the handle-lever having pivots at one side and edge notches at the other side, bolts passing from opposite directions through the jaws and outer forked portions of the handle-lever and through the plates with their ends coming closely adjacent in the center portion of the forked end of the handle-lever, said bolts having threaded portions in the respective forked ends of the handle-lever, and a chain between the plates connected thereto at the pivot, the links of which chain are adapted to be received in or engaged by the edge notches of the plates in use, substantially as and for the purposes set forth.

5. In a chain wrench a handle-lever enlarged at one end and provided with portions 2 3 and 4 at the forked ends, the central portion 3 being the widest in one direction and the narrowest in the opposite direction, jaws *b* having serrated edges and notched on their inner faces and adapted to set against the outer forked ends of the handle-lever, plates *c c'* received between the forked ends of the handle-lever having pivots at one side and edge notches at the other side, bolts passing from opposite directions through the jaws and outer forked portions of the handle-lever and through the plates with their ends coming closely adjacent in the center portion of the forked end of the handle-lever, each of said bolts having a stepped portion between which is a shoulder with smooth portions adjacent to the head of the bolt and to the shoulder and threaded portions adjacent to the shoulder and the end of the bolt, the threaded portions coming in all of the forked ends of the handle-lever, and a chain between the plates connected thereto at the pivot, the links of which chain are adapted to be received in or engaged by the edge notches of the plates in use, substantially as and for the purposes set forth.

653,944. OIL OR OTHER VESSEL AND RECEPTACLE. LOUIS E. BULTEL, Varenne St. Hilaire, France. Filed Jan. 18, 1900. Serial No. 1,872. (No model.)



Claim.—A tap for oil and other vessels, comprising a tubular body provided with a lateral orifice and a screw-thread at its upper end, a rotatable sleeve journaled on the orificed portion of said tubular body, and provided with a spout, said sleeve having, at one side, a longitudinal passage, a screw-cap provided with a perforation at one side, said cap being screwed onto the threaded upper end of the tubular body, and said perforation being adapted to be set in line with the said passage in the sleeve, and a hollow air-conducting handle for connection at one end with the interior of the vessel and at the other end adapted to communicate with the said passage in the sleeve through a bore or hole in the tubular body, substantially as set forth.

653,945. COMMUTATOR-SEGMENT. JAMES BURKE, New York N. Y. Filed Jan. 27, 1899. Serial No. 703,583. (No model.)



Claim.—1. In a commutator, the combination of counterpart segments having straight surfaces, suitable insulation, and securing devices, the segments being interlocked against radial displacement.

2. In a commutator, the combination of a plurality of segments, each of said segments having a recess on one side and a projection on the other side, and means for clamping said segments together, substantially as described.

3. In a commutator, the combination of a plurality of segments, one or more of said segments having a recess upon one side thereof, and means carried by an adjacent segment engaging with the recess and preventing radial movement of the segments with respect to each other, substantially as described.

4. In a commutator, the combination of a plurality of segments, one of said segments having a recess on one side thereof, a projection carried by an adjacent segment and adapted to fit in said recess, and means for clamping said segments together, substantially as described.

5. In a commutator, the combination of a plurality of segments, means carried by said segments for preventing movement of the segments relative to each other in a radial direction, and means for clamping said segments together, substantially as described.

6. In a commutator, the combination of a plurality of segments, means, substantially as described, for preventing radial displacement of the segments with respect to each other, and means for clamping the segments together.

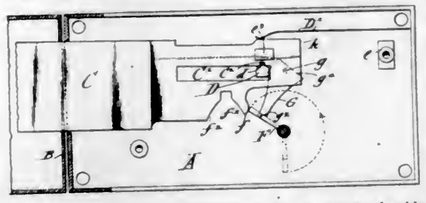
7 In a commutator the combination of a plurality of segments having straight surfaces adapted to be held together, and means for interlocking the adjacent segments with each other whereby relative movement of the same is prevented, substantially as described.

8. In a commutator, the combination of a plurality of segments and insulating material between the adjacent segments, said segments having irregular surfaces adapted to impinge against the adjacent insulating material, substantially as set forth.

9. As a new article of manufacture, a commutator-segment having distorted sides arranged to prevent radial displacement.

10. As a new article of manufacture, a commutator-segment having straight surfaces having distorted sides arranged to interlock similar sides upon other segments.

653,946. DOOR-LOCK. THOMAS COLLETTI and JOHN COLASANTI, New York, N. Y. Filed May 19, 1900. Serial No. 17,267. (No model.)



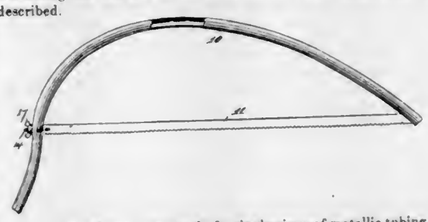
Claim.—In a lock, the combination of the case, a fixed guide-stud, an edgewise-movable longitudinally-slotted bolt guided on said stud and provided with means for interlocking with said stud, a spring acting edgewise on said bolt to insure its interlocking with said stud, and a floating push-piece pivoted on the bolt and adapted, by the proper operation of the key, to shift and release the bolt from the stud and to finally retract the bolt, substantially as set forth.

653,947. SAW. HENRY F. CONDON, De Kalb, Ill. Filed Nov. 7, 1898. Serial No. 695,743. (No model.)

Claim.—1. A saw-frame, composed of a single piece of metallic tubing or pipe bent as described and having slots to receive the ends of the saw-blade and an aperture to receive a straining-bolt, substantially as described.

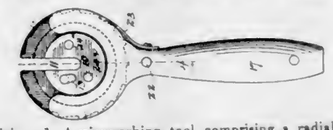
2. A saw-frame, composed of a single piece of metallic tubing or pipe bent as described and having slots to receive the ends of the saw and an aperture for the straining-bolt, in combination with a saw-blade, means for connecting the front end of said blade with the front end of the frame, and a straining-bolt adapted to be connected to the rear end of the blade, extending through the aperture in the frame and provided externally thereof with a straining-nut, substantially as described.

3. The combination, with a saw-frame composed of metallic tubing or pipe having a slot extending upward from its forward end and an inward projection, of a saw-blade adapted to enter said slot and provided with a pin to engage said projection, and means for connecting the rear end of the blade to the frame, substantially as described.



4. A saw-frame, composed of a single piece of metallic tubing or pipe bent as described, having a slot extending upward from its front end and an internal projection, and a second slot and aperture near its rear end, in combination with a saw-blade having an aperture near its front end, a pin in said aperture, and a second aperture near its rear end, and a straining-bolt provided with a hooked forward end to engage the saw-blade, extending through the aperture in the frame and provided at its rear threaded end with a straining-nut which bears against the frame, substantially as described.

653,948. WIREWORKING-TOOL. HENRY F. CONDON, De Kalb, Ill. Filed Nov. 21, 1898. Serial No. 697,041. (No model.)

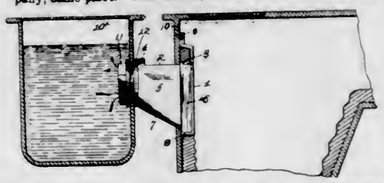


Claim.—1. A wireworking-tool, comprising a radially-slotted coiling-disk provided with a series of ratchet-teeth and having on one of its faces an eccentric coiling-pin and having connected to its other face a holding-disk adapted to be grasped by the hand of the operator, in combination with a handle having a bearing inclosing the greater portion of the margin of the coiling-disk, the coiling-pin and holding-disk lying outward beyond the handle on opposite sides thereof and said handle being provided with a pawl to engage the ratchet-teeth of the coiling-disk, substantially as described.

2. A wireworking-tool, comprising a radially-slotted coiling-disk having an eccentric coiling-pin and peripheral ratchet-teeth, the body of said disk being stepped or rabbeted as described, and a two-part handle portion having terminal yokes correspondingly stepped or rabbeted extending around the marginal portions of the faces of the disk for more than one-half of its circumference, whereby the working face and ratchet-teeth of the disk are left exposed and the slot thereof accessible, said handle portion being provided with a spring-pawl to engage the ratchet-teeth, substantially as described.

3. A wireworking-tool, comprising a radially-slotted coiling-disk having an eccentric coiling-pin on one face and peripheral ratchet-teeth, the body of said disk being stepped or rabbeted, a two-part handle divided on a plane at right angles to the axis of rotation of the disk and having terminal yokes stepped or rabbeted to conform to the body of the disk and extending around the marginal portions of the faces of the same for more than one-half of its circumference, said handle portion being provided with a pawl to engage the ratchet-teeth, and a holding device secured to the other face of the disk, substantially as described.

653,949. WATER-BACK FOR RANGES OR STOVES. WALTER L. CULVER, St. Louis, Mo., assignor to the Wrought Iron Range Company, same place. Filed Feb. 5, 1900. Serial No. 4,098. (No model.)



Claim.—1. The herein-described water-back, comprising a casting having a base or end, a horizontal unobstructed top, vertical sides,

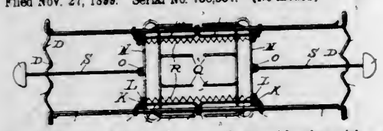
a bottom inclined downwardly in the direction of the heat-absorbing surface, and a tubular projection integral with the said sides, top and bottom, the said tubular projection being in horizontal alinement with the said top, substantially as specified.

2. The herein-described water-back, comprising a casting having a base or end, a horizontal unobstructed top, vertical sides, a bottom inclined downwardly in the direction of the heat-absorbing surface, flanges integral with the said sides, top and bottom for holding the said base a suitable distance from the side of the range, a tubular projection integral with the said sides, top and bottom in horizontal alinement with the top and devoid of internal projections, and a means for connecting the said tubular projection with the water receptacle, substantially as specified.

3. As an article of manufacture, a water-back for ranges provided with suitable flanges for attaching it to the range, a screw-threaded nipple for attaching the water-tank to the water-back, said water-back having a bottom wall inclined downwardly in the direction of the heat-absorbing surface, a smooth and unobstructed interior surface at its top, substantially as specified.

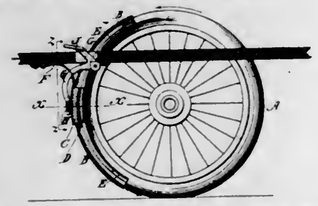
4. As an article of manufacture, a water-back for ranges provided with a base or end having integrally formed therewith suitable flanges for attachment to the range, a top wall projecting horizontally and at right angles to said fire-surface wall and having its interior surface smooth and unobstructed, the lower wall projecting upward at an acute angle from said base or end, and a screw-threaded nipple formed integral with said walls, substantially as specified.

653,950. HAT-FASTENER. HENRY DE TAMBLE, Aurora, Ill. Filed Nov. 27, 1899. Serial No. 736,337. (No model.)



Claim.—In a lady's hat-fastener, the combination with a telescopically-adjustable frame consisting of two U-shaped wires having their free ends in parallel contact, and adapted to be secured at their webs to opposite sides of the crown of a hat, of two relatively-movable combs each carrying two parallel wires raised above said combs and each provided at its ends with loops adapted to receive said free ends of said U-shaped wires and hold same in relative position, said loops in said wires forming guides in which free ends of said U-shaped wires are movable, and the latter likewise forming guides upon which said looped wires are longitudinally movable, springs interposed between said combs to hold same normally at the inner limits of their movement, and cords secured at one end to said combs and adapted to pass through the sides of the crown for moving said combs against the action of said springs.

653,951. VEHICLE-BRAKE. DAVID D. ELDER, Philadelphia, Pa. Filed Apr. 28, 1900. Serial No. 14,662. (No model.)



Claim.—1. A vehicle-brake consisting of a shoe adapted to encircle a portion of a wheel of the vehicle, a sleeve adapted to freely engage with said shoe, means for advancing said sleeve and shoe toward the wheel, whereby the shoe frictionally contacts with the wheel and is carried down upon the roadway, and means for releasing said shoe, whereby it may be returned to its first position and held inoperative.

2. In a vehicle-brake, a brake-shoe, a sleeve freely embracing the same, a treadle adapted to be pressed against said sleeve for advancing the shoe against the wheel, and a spring connected with said sleeve for returning the same and consequently the shoe from the wheel.

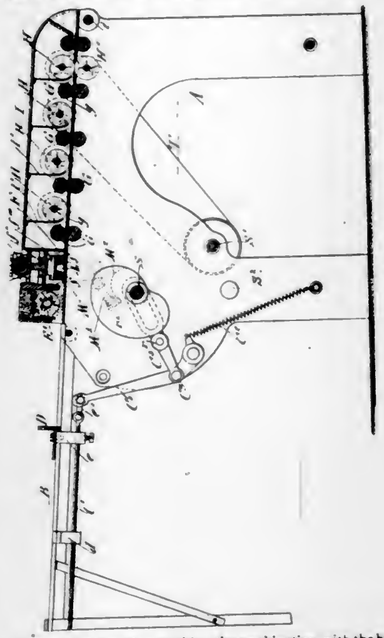
3. In a vehicle-brake, a shoe primarily free from a wheel of the vehicle, a sleeve engaging said shoe by a slip-joint, and means for forcing said sleeve toward the wheel, placing the shoe in frictional contact with the latter, whereby the shoe follows the wheel.

4. In a vehicle-brake, a shoe primarily held free from a wheel of the vehicle, a sleeve engaging said shoe by a slip-joint, and means for forcing said sleeve from the wheel, holding the shoe practically disengaged from the latter.

5. In a vehicle-brake, a shoe adapted to engage with a wheel of the vehicle and follow the same, and a sleeve embracing said shoe for holding the shoe in inoperative position, said shoe and sleeve being connected by a slip-joint and held together by a projecting rim and lip on the respective parts.

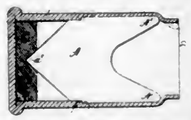
6. A shoe adapted to freely engage a portion of a vehicle-wheel, a piece coupled by a slip-joint with said shoe, means controlling said piece for holding said shoe from the wheel, and means for forcing said sleeve and shoe toward the wheel and placing the shoe in frictional contact with the latter, causing its descent by and with said wheel, and when the motion of the wheel is subsequently reversed, the automatic return of said shoe to its first position.

653,952. BRONZING-MACHINE. ALBERT J. FORD, New York, N. Y., assignor to the Fuchs & Lang Manufacturing Company, same place. Filed Nov. 7, 1899. Serial No. 736,093. (No model.)



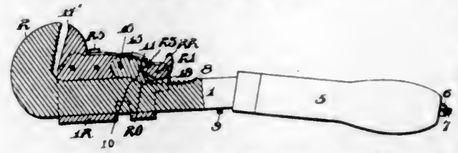
Claim.—In a bronzing-machine, the combination, with the bronze-hopper and distributing-roller below the same, of means for feeding the sheet or plate forward, a rubbing-brush adjacent to said distributing-roller, a frame for supporting said brush, means for imparting a gyratory motion to said brush, said means comprising vertical shafts journaled in said frame, and provided with eccentric portions journaled in bearings of the brush-back, a transverse shaft journaled in bearings of said frame, bevel-gearing connecting the transverse and vertical shafts, means for rotating said transverse shaft, and dusting means beyond the rubbing-brush, substantially as set forth.

653,953. PRIMER FOR CARTRIDGES. JOHN GARDNER, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Jan. 2, 1900. Serial No. 19. (No model.)



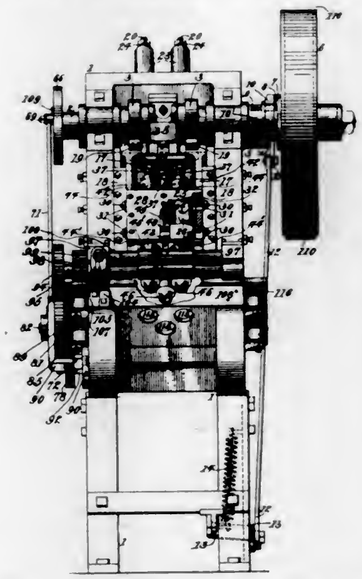
Claim.—A primer having its sheet-metal cap formed with an annular locating-shoulder, and provided with a rigid, flat, sheet-metal anvil the edges of which bear upon the inner faces of the cap, and which is reduced in width for the formation upon its opposite edges of locating-shoulders adapted to be seated upon the said shoulder of the cap, whereby the anvil is not only supported against sidewise deflection throughout its length, but is brought to a predetermined position with respect to the cap and with respect to the fulminate contained in the head thereof, the said primer being adapted to be inserted bodily into a pocket formed for its reception in the head of a cartridge-shell, and the fire produced by the ignition of the fulminate passing out of the cap on opposite sides of the anvil.

658,954. WRENCH. DANIEL S. GARMAN, Johnstown, Pa. Filed Mar. 20, 1900. Serial No. 9,388. (No model.)



Claim.—The shank having a body portion of two different diameters and terminating at the free end of the larger diameter in a rigid outer jaw, said shank being provided on its smaller diameter with a series of teeth, said smaller portion terminating on the upper face of the shank in an inclined shoulder 10, combined with a reciprocating yoke mounted on said shank, a lug carried by the shank to limit the rearward movement of said yoke, an inner jaw carried by the yoke and provided with an inclined engaging face, a clamping-block pivotally mounted in said yoke and engaging the rear end of said inner jaw, said clamping-block having an enlarged recess 18 and notch 19 in its rear end with a part of its lower face inclined to engage the shoulder 10, a lever 22 pivotally mounted in said yoke and engaging in the recess 18 of the block, and a bearing-spring secured to said inner jaw and engaging the upper face of said block, substantially as described.

658,955. TRIPLE-DIE PRESS. WILLIAM J. GORDON, Philadelphia, Pa. Filed Jan. 4, 1900. Serial No. 328. (No model.)



Claim.—1. In a die-press, a slide, punches actuated thereby, a crank-shaft, plungers movable in said punches and actuated by said crank-shaft, a guide for directing and supporting the material to be punched, feeding devices located in front of and behind said punches, and means for adjusting one set of said feeding devices.

2. In a die-press, a slide, means for reciprocating the latter, punches movable in unison with said slide, plungers located within said punches, means for actuating said plungers at the proper intervals, a guide, feeding-rolls located in front of and behind said punches, means for adjusting one set of said feeding-rolls and means for permitting the material to be fed automatically.

3. In a die-press, a plurality of punches and plungers, means for actuating the same, feeding-rolls located in the front of and behind said punches, means for adjusting one set of said feeding-rolls, and means for imparting to said feeding-rolls an intermittent movement.

4. In a die-press, the combination of a crank-shaft having cam-faces thereon, a slide actuated by said cam-faces, tension devices for holding said slide in position, punches movable in unison with said slide, a yoke carrying plungers located within said punches, a pitman connecting said yoke to said crank-shaft, a guide for the material to be punched and means for regulating the feeding of said material to said punches.

5. In a die-press, a crank-shaft having cams thereon, a disk carried by said shaft, and having a slot therein, a wrist-pin provided with a pointer and adjustable in said slot, a connection from said wrist-pin to a train of gearing, means for imparting an intermittent motion to said gearing, a plurality of punches, plungers therefor, means for actuating said punches and plungers, and rollers located in front of and behind said punches, said rollers being actuated intermittently by said gearing, in combination with means for adjusting one set of said rollers.

6. In a die-press, a plurality of punches located in triangular arrangement relative to each other, sleeves to which said punches are secured, means for moving said sleeves toward or away from each other, means for adjusting said punches, plungers for said punches and means for operating said punches and plungers.

7. In a die-press, the combination of punches, plungers therefor, means for reciprocating each of the latter, feed-rollers located in the rear and front of said punches, means for adjusting the rotation of said feed-rollers whereby the latter may cause the proper length of metal to be fed to the punches in a given time, and means for enabling one set of said rollers to be moved toward or away from said punches.

8. In a die-press, the combination of punches, plungers therefor, feed-rollers for said punches located in front of and behind the latter, dies adapted to aline with said punches, and means for enabling one pair of feed-rollers to be moved nearer to or farther from said dies according to requirements.

9. In a die-press, a guide, a plurality of punches, plungers therefor, means for reciprocating said punches and plungers, a slide, an adjustable bolt movable in unison with said slide, means operated by said bolt whereby the sheet to be punched is retained in said guide, and prevented from reaching said feed-rollers until the proper time, and means for automatically releasing said sheet and permitting the latter to reach the feed-rollers.

10. In a die-press, the combination of punches and plungers movable therein, a guide wherein the material to be punched is supported, posts supported on said guide, a rock-shaft mounted in said posts, tension devices for said rock-shaft, a finger projecting from said rock-shaft, means for rocking said finger and shaft at the proper intervals, other fingers adapted to project toward said slide and serve as stops for the material to be punched and means for automatically operating said fingers.

11. In a die-press, the combination of a crank-shaft, having cams thereon, a cross-head having rollers mounted therein and adapted to contact with said cams, rods connected with said cross-head, lugs through which said rods pass, tension devices bearing on said lugs for retaining said cross-head always in the proper position relative to said cams, a plurality of punches, fastening devices common to said punches and cross-head, a yoke carrying plungers movable in said punches, a pitman common to said yoke and crank-shaft, and dies for supporting the material to be punched.

12. In a die-press, the combination of punches and plungers therefor, means for actuating said punches and plungers, a guide consisting of parallel guide-rails, means for permitting said rails to be adjusted toward and away from each other, cross-bars for said guide, ways in the latter for supporting and directing the sheet of metal to be punched, a stripping-plate attached to said guide and provided with openings through which said punches pass, posts carried by said guide and having a rock-shaft adjustably supported therein, tension devices for said rock-shaft, fingers carried by the latter and adapted to control the passage of the material toward the punches, and means for operating said fingers.

13. The combination of a slide, punches adjustably mounted therein, means for securing said punches in position, a plurality of plungers movable in said punches, means for adjusting the distance of said plungers toward and away from each other, a guide, means for adjusting the width of said guide, feeding devices located in the front of and behind said punches, and means for adjusting the position of said feeding devices.

14. In a die-press, punches, plungers therefor, dies in alinement therewith, means for adjusting the distance between said punches and plungers, washers carried by said punches and having slots therein,

nuts for holding said punches in position, a cross-head, a cap therefor, pins projecting from said cross-head and engaging said slots, whereby said washers are prevented from turning when said nuts are tightened, and means for actuating said plungers and punches.

15. In a die-press, a crank-shaft, punches and plungers actuated thereby, a slotted disk carried by said shaft, a wrist-pin adjustably secured in said slot, and carrying a pointer, a scale adjacent the latter, dies in alinement with said punches and plungers, a set of feed-rolls in the front and rear of said punches, a train of gearing, clutch mechanism for intermittently operating said gearing, and means for adjusting the distance between the front feed-rolls and said dies.

16. In a die-press, a set of punches, and plungers therefor, each adjustably arranged in triangular order, dies for said punches having an inwardly-projecting rim adapted to coact with said plungers, a set of feed-rolls, located in front of and behind said dies, and means for adjusting the distance of the front feed-rolls from said dies.

17. In a die-press, a set of punches, plungers therefor, each adjustably arranged in angular order, dies for said punches, adjusting-plates for said punches, feed-rolls located in the front of and behind said dies, and means for adjusting the distance of the front feed-rolls relative to said dies.

18. In a die-press, a slide, means for reciprocating the latter, punches movable in unison with said slide, plungers located within said punches, means for actuating said plungers at the proper intervals, a guide, a stripper-plate thereon, dies suitably supported, feeding-rolls located in front of and behind said dies and means for adjusting the front feed-rolls toward and away from said dies.

19. In a die-press, a plurality of punches and plungers, dies for said punches, adjusting-plates of different sizes for said punches, having openings therein for the fastening devices, and means for operating said punches and plungers.

20. In a die-press, a plurality of punches and plungers, dies for said punches, removable adjusting-plates of different sizes for said punches, said plates having openings therein for the fastening devices, means for operating said punches and plungers, dies for said punches, feed-rollers in front of and behind said dies and means for moving the front feed-rollers toward or away from said dies.

21. In a die-press, a plurality of punches and plungers, means for actuating the same, feeding-rolls located in front of and behind said punches, a train of gearing for actuating said rollers, an arm adjacent to a member of said gearing, a pinion carried by said arm, a check-pawl engaging said pinion, a link connected to said arm and means for reciprocating said link.

22. In a die-press, a plurality of punches and plungers, means for actuating the same, feeding-rolls located in front of and behind said punches, a train of gearing for actuating said rolls, an arm adjacent to a member of said gearing, a pinion carried by said arm, a plurality of spring-pressed pawls suitably supported and engaging said pinion, a link connected to said arm and means for actuating said link.

23. In a die-press, a plurality of sleeves, punches secured thereto, said sleeves being arranged in triangular order, plungers in said sleeves, dies alining with said punches and plungers, said dies being arranged in triangular order whereby waste of the material punched is reduced to a minimum and the output of the press increased, feeding devices for said dies, and means for actuating said punches and plungers.

24. In a die-press, a plurality of sleeves, punches carried thereby, adjusting-nuts for said sleeves and punches, a slide in which said sleeves are adjustably secured, plungers movable in said sleeves, a guide for the material to be punched, dies for said punches and plungers and adjustable feed-rollers for said press.

25. In a die-press, a plurality of punches, plungers therefor, dies, feed-rollers, a guide, means for retaining the sheet to be punched in said guide, means for preventing said sheet from reaching said feed-rollers until the proper time, and means for automatically releasing said sheet and permitting the latter to reach said feed-rollers.

26. In a die-press, dies arranged in triangular order, plungers and punches alining with said dies, a guide having adjustable guide-rails, and cross-bars for said rails.

27. In a die-press, three dies arranged in triangular order, punches and plungers alining with said dies, and means for actuating said punches and plungers.

28 In a die-press dies arranged in triangular order, punches and plungers alining with said dies, means for actuating said punches and plungers, feed-rolls located in front of and behind said dies, and means for adjusting one set of said feed-rolls.

29. In a die-press, a set of three dies arranged in triangular order, punches and plungers alining with said dies, means for actuating said punches and plungers, a guide, feed-rollers, located in front of and behind said dies, and means for adjusting one set of said feed-rollers.

30. In a die-press, dies arranged in triangular order, plungers and punches alining with said dies, guides having adjustable guide-rails, cross bars for said rails, means for retaining the sheet to be punched in said guide, means for preventing said sheet from reaching the punches until the proper time, and means for automatically releasing said sheet and permitting the latter to reach said punches.

31. In a die-press, a punch, a plunger therefor, a die, a guide for the sheet to be punched, means for retaining the sheet to be punched in said guide, means for preventing said sheet from reaching said punch until the proper time, and means for automatically releasing said sheet and permitting the latter to reach said punch.

32. In a die-press, a plurality of punches arranged in triangular order, plungers therefor, dies also arranged in triangular order, feed-rollers located in front of and behind said dies, a guide, adjustable guide-rails therefor, means for retaining a sheet to be punched in said guide, means for preventing said sheet from reaching said feed-rollers until the proper time, means for automatically releasing said sheet and permitting the latter to reach said feed-rollers, and means for adjusting one set of said feed-rollers.

33. In a die-press, dies arranged in triangular order, punches and plungers alining with said dies, means for actuating said punches and plungers, feed-rollers located in front of and behind said dies, and means for moving one set of feed-rollers toward or away from said dies.

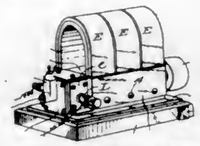
34. In a die-press, three dies arranged in triangular order, punches and plungers alining with said dies, means for adjusting said dies, punches and plungers relative to each other, and means for actuating said punches and plungers.

35. In a die-press, three dies arranged in triangular order, punches and plungers alining with said dies, means for adjusting said dies, punches and plungers relative to each other, and for maintaining them in the same angular relation, and means for actuating said punches and plungers.

653,956. PROCESS OF MAKING FOODS FROM BLOOD. JAMES W. C. HAMILTON, Liverpool, England, assignor of two-thirds to the Bergl Australia, Limited, Sydney, New South Wales. Filed May 15, 1899. Serial No. 716,898. (No specimens.)

Claim.—The process of manufacturing food from blood which consists in taking the whole blood, as it flows from the animal, adding about one per cent. of salt and exposing it to heat and pressure in a closed vessel at a temperature of about 340° Fahrenheit, for a sufficient period to preserve it permanently against coagulation, as herein described.

653,957. MAGNETO-ELECTRIC GENERATOR FOR GAS-ENGINE IGNITERS. GARRETT W. HENRICKS, Indianapolis, Ind., assignor to the Henricks Novelty Company, same place. Filed Apr. 30, 1900. Serial No. 14,907. (No model.)



Claim.—1. A low-voltage electric generator for gas-engine igniters, including a rotative armature and a commutator mounted on a shaft, a pair of opposing pole-pieces having a greater length than the length of the armature, a pulley secured to the armature-shaft, a magnet attached to the pole-pieces and extending beyond the ends of the armature, and commutator-brushes engaging the commutator between the pole-pieces.

2. A low-voltage generator for gas-engine igniters, including an armature and a commutator mounted on a rotative shaft, a pulley secured to the shaft, a pair of opposing pole-pieces extending over the commutator and to and beyond the end of the armature opposite the commutator, a magnet attached to the pole-pieces and extending beyond the ends of the armature, a head secured to and connecting each pair of ends of the pole-pieces and supporting the armature-shaft, and commutator-brushes engaging the commutator between the pole-pieces.

3. A low-voltage electric generator for gas-engine igniters, including a base, a supplemental plate pivoted to the base, a spring acting against the supplemental plate, a pair of pole-pieces mounted upon the supplemental plate, a pair of heads binding the pole-pieces and having journal-housings, a rotative shaft mounted in the journal-housings, an armature and a commutator attached to the rotative shaft between the pole-pieces, a magnet attached to the pole-pieces, and commutator-brushes engaging the commutator between the pole-pieces.

4. A low-voltage electric generator including a rotating armature and a commutator, a pair of opposing pole-pieces having each an aperture near one end registering with the commutator, said pole-pieces having poles extending in length over and beyond the combined length of the armature and the commutator; a magnet covering the armature and extending beyond the ends thereof; and commutator-brushes projecting through the apertures in the pole-pieces.

5. A low-voltage electric generator including an armature and a commutator mounted on a shaft, a pair of pole-pieces having a greater length than the combined length of the armature and the commutator, a head secured to and connecting each pair of ends of the pole-pieces and rotatively supporting the armature-shaft, a magnet covering the armature and extending beyond the ends thereof, and commutator-brushes provided with compensating-springs having tension-adjusters.

6. A low-voltage electric generator comprising a base, a supplemental plate pivoted at one end to the base and free to move laterally at its opposite end, a spring acting against the movable end of the supplemental plate, a pair of pole-pieces mounted upon the supplemental plate, a magnet attached to the pole-pieces, and an armature and a commutator mounted within the pole-pieces.

7. The combination, with a gas-engine having a rotative wheel and having also igniters or sparking-electrodes, of a low-voltage electric generator including a fixed base, a supplemental plate pivoted to the base, pole-pieces mounted upon the supplemental plate, a pair of heads attached to the ends of the pole-pieces, journal-housings supported by the heads, a rotative shaft mounted in the journal-housings, an armature and a commutator attached to the rotative shaft, a pulley secured to the rotative shaft and having its periphery in contact with the periphery of the rotative wheel of the engine, a spring suitably supported and acting so as to force the pulley against the rotative wheel and compensate for inaccuracies of the periphery thereof when rotating, a magnet, poles attached to the pole-pieces, brushes engaging the commutator between the pole-pieces, and conducting-wires connecting the brushes with the sparking-electrodes.

8. In a magneto-electric generator, the combination with a rotating wheel of a gas-engine, of a base, a plate slidingly mounted upon the base, pole-pieces mounted on the plate, journal-housings mounted upon the pole-pieces, the armature-shaft in said housings, the pulley attached to the armature-shaft and having its periphery in contact with the periphery of the rotating wheel of the gas-engine, a spring suitably supported and acting to force the pulley against the engine-wheel and compensate for inaccuracies of the periphery of the engine-wheel, the armature, the magnet, the poles, the commutator, the brushes, and the conducting-wires.

9. In a magneto-electric generator, the combination of the gas-engine; the generator-base supported in proximity to the gas-engine; the pole-pieces supported by the generator-base and having outwardly-turned base-flanges and the lateral apertures; the heads attached to the pole-pieces and having the journal-housings; the armature and the commutator having the shaft journaled in said bonsings and mounted between said heads; the pulley on the shaft and driven by the gas-engine; the magnet attached to said pole-pieces and in contact with said base-flanges, said magnet extending from one pair of ends of said pole-pieces to near the opposite pair of ends thereof and over and exceeding the length of the armature; the brushes projecting through the apertures in said pole-pieces, the brush-springs, the tension-screws, and the circuit-wires connecting the brushes electrically with the electrodes of the gas-eogine, substantially as set forth.

10. In a magneto-electric generator, the combination with the gas-engine having the igniters or sparking-electrodes and the rotating wheel; of the generator-base supported in proximity to the rotating wheel of said engine, the spring mounted in said base; the supplemental plate pivoted at one end thereof to said base at the end opposite said spring; the traveling head attached to said plate and bearing against said spring; the pole-pieces having the flanged bases and secured to said plate; the magnet consisting of the separate sections resting upon said flanged bases and secured to said pole-pieces; the binding-plates for said magnet-sections; the heads secured to said pole-pieces and having the journal-housings; the armature-shaft journaled in said housings; the armature mounted within said pole-pieces and said heads; the pulley on said shaft and in contact with the rotating wheel of said engine; the brushes; the brush-holders, and the circuit-wires connected to the brush-holders and to the igniters of said engine; substantially as set forth.

11. In a magneto-electric generator, the combination of the base; the pole-pieces bored to true radii and connected by heads rigidly attached thereto; the armature-shaft mounted in said heads; the armature-core having the longitudinal slots therein; the opposing poles attached to the pole-pieces; said poles being set apart a distance equal to the transverse width of one of said slots; the armature-windings arranged within the influence of the said poles, said poles extending beyond the end windings of the armature whereby eddy-currents are avoided; the commutator within the influence of the poles; the compound laminated magnet attached to said pole-pieces and having the binding-plates attached thereto; the brush-holders; the brushes; and the conducting-wires; substantially as set forth

12. In a magneto-electric generator, the combination of the base; the pole-pieces each consisting of an oblong bar having an outer plane face from the bottom of which a flange extends laterally and an inner face concave in transverse section terminating in the poles, one end of each of said pole-pieces having the aperture therein; the heads attached to the ends of said pole-pieces whereby the concave faces are maintained in parallel alinement; the armature mounted in said heads and turned true to a diameter nearly as great as the distance between the opposing concave faces of said pole-pieces; the magnet attached to said pole-pieces and bearing against the flanges thereof, said magnet extending beyond either end of said armature; the commutator in the range of said pole-pieces; the brush-holders extending through the apertures in said pole-pieces and having each the coiled spring therein and the adjusting-screw; the brushes in said holders; and the conducting-wires attached to said holders; substantially as shown and described.

13. The combination, with a gas-engine having igniters or sparking-electrodes, of a low-voltage electric generator for igniting explosive charges and comprising a base, a pair of pole-pieces, a pair of heads attached to the ends of the pole-pieces and having journal-housings, a rotative shaft mounted in the housings, an armature and a commutator attached to the rotative shaft and within direct influence of the poles of the pole-pieces, a magnet attached to the pole-pieces and extending beyond the ends of the armature, n pulley attached to the rotative shaft having operative connection with the gas-engine, brushes engaging the commutator between the pole-pieces, and conducting-wires connecting the brushes with the sparking-electrodes.

14. In a magneto-electric generator, the combination of the gas-engine, the generator-base supported in proximity to the gas-engine; the pole-pieces mounted on said base; the heads attached to the pole-pieces and having the journal-housings; the rotative shaft mounted in said housings; the pulley attached to said shaft and operatively connected with the gas-engine; the armature and the commutator attached to said shaft; the magnet attached to said pole-pieces and extending from one pair of ends of said pole-pieces to near the opposite pair of ends thereof, and exceeding the length of the armature; the brushes engaging said commutator between said pole-pieces; the brush-springs; and the circuit-wires connecting said brushes with the gas-engine, substantially as set forth.

15. In a magneto-electric generator, the combination of the base: the pole-pieces, each comprising an oblong bar having an inner face bored to a true segment of a circle; the heads attached to the ends of said pole-pieces whereby the inner faces thereof are maintained in parallel alinement; the armature mounted in said heads and turned true to a diameter nearly as great as the distance between the opposing inner faces of said pole-pieces; the magnet attached to said pole-pieces, and extending beyond either end of said armature; the commutator in the range of said pole-pieces; the brush-holders; the brushes engaging said commutator; and the commutator-springs, substantially as set forth.

16. In a magneto-electric generator, the combination of the base, the pole-pieces, the magnet, the heads attached to the pole-pieces, the armature, the commutator, the insulating-plates secured to the pole-pieces adjacent to one of said heads, the brush-holders secured to said plates, the brushes and the brush-springs in said holders, and the wires connected to said holders, substantially as set forth.

653,958. CONVERTIBLE OPEN AND CLOSED CAR. FREDRICK HOFFER, Cohoes, N. Y., assignor of one-half to Henry Trost, same place. Filed Apr. 10, 1900. Serial No. 12,325. (No model.)

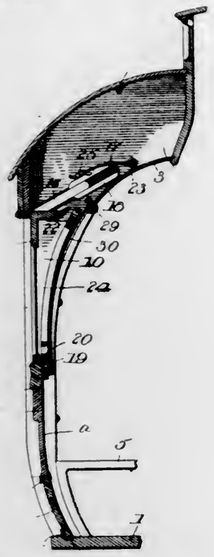
Claim.—1. In a convertible open and closed car, the combination with the posts or uprights, of a two-part panel having its sections hinged together so that when in its lowered position the lower section will stand at an angle to its upper section, substantially as described.

2. In a convertible open and closed car, the combination with the posts or uprights, of a two-part panel having its sections hinged together so that when in its lowered position the lower section will stand at an angle to the upper section, and a lip or flange connected to one section and covering the joint between the sections, substantially as described.

3. In a convertible open and closed car, the combination with the posts or uprights, of a sliding sash, and means for guiding the sash to an inclined position between the ceiling and the roof, said means comprising a sliding and a pivoted member one of said members being connected to the sash and the other to a suitable support between the ceiling and the roof, substantially as described.

4 In a convertible open and closed car, the combination with the posts or uprights, of a sliding sash and means for guiding the sash to an inclined position between the ceiling and the roof, said means comprising a member pivoted to a suitable support between the ceil-

ing and roof and another member pivotally connected with the sash, said two members having a sliding connection one with the other, substantially as described.



5. In a convertible open and closed car, the combination with the posts or uprights, of a sliding sash, means for guiding the sash to an inclined position between the ceiling and the roof, and a spring for exerting an upward pull on the sash, substantially as described.

6. In a convertible open and closed car, the combination with the posts or uprights, of a sliding sash, means for guiding the sash in an inclined position between the ceiling and the roof, said means comprising a member pivoted to a suitable support between the ceiling and the roof and another member pivotally connected with the sash, said two members having a sliding connection one with the other, and a spring for exerting an upward pull on the sash, substantially as described.

7. In a convertible open and closed car, the combination with the posts or uprights, of a sliding sash, and means for guiding the sash to an inclined position between the ceiling and the roof, said means comprising collapsible members pivotally connected with the sash and with a suitable support, substantially as described.

8. In a convertible open and closed car, the combination with the posts or uprights, of the sliding two-part panel having its parts hinged together, an abutment in the space between the ceiling and the roof for the upper end of the panel to bear against when between the ceiling and the roof, and means for locking said panel in said space, substantially as described.

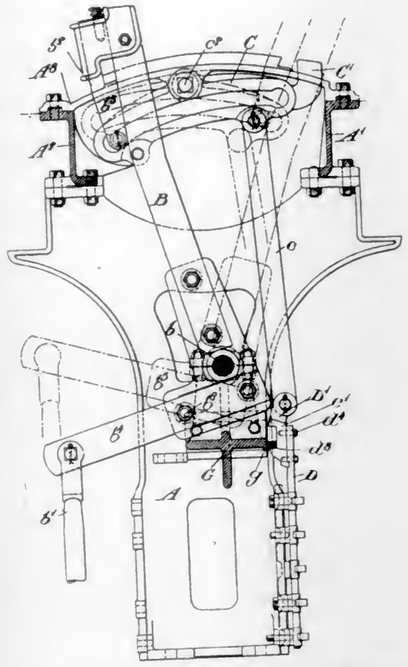
9. In a convertible open and closed car, the combination with the posts or uprights, of a two-part panel having its sections hinged together so that one part may stand at an angle to the other, a sliding sash, means for gulding the sash to an inclined position between the ceiling and the roof, said means comprising two collapsible members one of which is pivotally connected with the sash and the other pivoted to a suitable support, and means for securing the sash and the two-part panel in an inclined position between the ceiling and the roof of the car, substantially as described.

653,959. SWITCH AND SIGNAL INTERLOCKING MECHANISM. HENRY JOHNSON, Arlington, N. J., assignor to the Standard Railroad Signal Company, same place. Filed Apr. 15, 1898. Serial No. 677,704. (No model.)

Claim.—1. The combination with the tappet and means for operating it, of a stop independent of the tappet-operating mechanism for determining the movement of the tappet in either of two opposite directions, substantially as set forth.

2. The combination with the tappet, the sector-bar and the link connecting the bar with the tappet, of an eccentric-pin forming a connection between the link and tappet and means for holding the eccentric-pin in various rotary adjustments, substantially as set forth.

3. The combination with the segments arranged in pairs and means for removably connecting the segments to their supports, of the sector-bars or rockers each carried by one member of a pair of segments for the removal of the segment and the rocker carried thereby, substantially as set forth.



4. In combination, a tappet, means for operating it, connecting-bars arranged in different vertical planes and means for connecting one or more of the bars in one plane with one or more of the bars in another plane, substantially as set forth.

5. The combination with a group of tappets, of a plurality of series of connecting-bars in different vertical planes and under the control of the individual tappets to lock and release other tappets of the group, substantially as set forth.

6. The combination with a group of tappets and connecting-bars the latter arranged in different vertical series, of auxiliary operating tappets and dogs arranged in different vertical series and under the control of the first-mentioned tappet to connect and operate different bars of the said series, substantially as set forth.

7. The combination with the reciprocating tappets and the sliding connecting-bars the latter arranged in different vertical series, of a plate provided with vertical guideways for the tappets and with horizontal guideways for the locking dogs and bars, the horizontal guideways for the locking dogs and bars being located upon opposite sides of the guideways for the tappets, substantially as set forth.

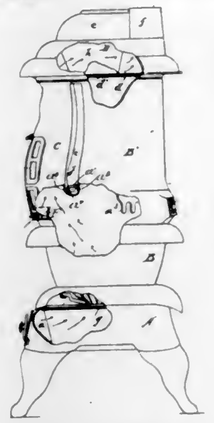
8. The combination with the standard or upright for supporting a group of levers, of a pedestal for receiving the foot of the standard or upright, adjusting-screws for varying the plane of the upright with respect to the plane of the pedestal and means for binding the upright to the pedestal in its various adjustments, substantially as set forth.

653,960. STOVE. WILLIAM J. KEEP, Detroit, Mich. Filed Apr. 18, 1899. Serial No. 713,444. (No model.)

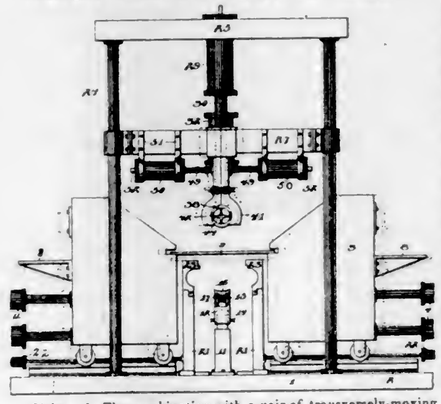
Claim.—1. In a stove of the kind described, in combination with a vertical magazine, and a vertical flame-chamber, a bridge-wall uniting a wall of the magazine, and a wall of the flame-flue, the support a', and the sliding arch-pieces b', substantially as described.

2. In a stove of the kind described, a fire-flue C, having its rear wall extending transversely above the fire-pot and provided at its lower edge with a rearwardly-extending flange a^4, a magazine B', located back of said fire-flue, C, and having its front wall extending transversely above the fire-pot and provided at its lower edge with a forwardly-extending flange a^3, and one or more pieces adapted to rest upon the flanges a^4, and a^3, to form the bridge-wall, substantially as described.

3. In a stove of the kind described, a fire-flue C, having its rear wall extending transversely above the fire-pot, a magazine B', located back of the fire-flue C, and having its front wall extending transversely above the fire-pot, and a plurality of pieces adapted to close the space between the lower edges of the rear wall of the fire-flue and the front wall of the magazine, said pieces being joined together toward the center by a substantially-tight joint adapted to permit longitudinal expansion and contraction of said pieces, substantially as shown and described



653,961. PIPE-WELDING MACHINE. WILLIAM KLINEFELTER, Pittsburg, Pa. Filed Jan. 3, 1900. Serial No. 212. (No model.)



Claim.—1. The combination with a pair of transversely-moving furnaces adapted to support a steel plate and a die or bed plate arranged between the same, of a vertically-operating mandrel adapted to engage said plate and form the same into a tube or cylinder, a pair of formers arranged between said furnaces and engaging said tube when operated upon by said mandrel, and means for welding the meeting edges of said tube or cylinder together, substantially as described.

2. In a tube-mill, a die or bed plate, a furnace arranged at each side thereof and supporting the welding edges of a cold-steel plate, a vertically-operating mandrel, a pair of transversely-operating formers, said formers and mandrel adapted to engage said plate and form the same into a tube or cylinder, a vertically-operating press for welding the meeting edges of said tube or cylinder together, and means for removing said tube or cylinder from the mandrel, substantially as described.

3. In a tube-mill, a base, a supporting-frame mounted thereon, a vertically-operating mandrel connected thereto, a vertically-operating press connected to said frame, a pair of transversely-operating formers mounted upon said base, a die or bed plate arranged between said formers, means for supporting the said die or bed plate, and a furnace arranged at one side of each of the said formers and adapted to support the welding edges of the steel plate which is operated upon by the said mandrel, formers, and press, for forming the same into a tube or cylinder, substantially as described.

4. In a tube-mill, the base, a supporting-frame mounted thereon, a vertically-operating mandrel connected thereto, a vertically-operating press connected to said frame, a pair of transversely-operating formers mounted upon said base, a die or bed plate arranged between said formers, means for supporting the said die or bed plate, a furnace arranged at one side of each of the said formers and adapted to support and heat the edges of a steel plate which is operated upon by said mandrel, said formers, and said press, for forming the same into a tube or cylinder, and means suitably arranged upon said base for removing said tube or cylinder from the mandrel, substantially as described.

5. In a tube-mill, a suitably-supported mandrel consisting of two separable members adapted to form a plate into a tube or cylinder, means for spreading said mandrel, and means connected to the mandrel for vertically operating the same, combined with formers adapted to engage the plate in connection with the mandrel, and means for operating said formers.

6. In a tube-mill, a mandrel consisting of two members and carrying means for spreading the same and adapted to form a plate into a tube or cylinder, a pair of hangers arranged in said mill and adapted to support said mandrel, means connected to said hangers for vertically operating said mandrel, and means connected to one of said hangers for moving the same from the said mandrel to permit of the removal of the tube or cylinder after the same has been formed, substantially as herein shown and described.

7. In a tube-mill, a mandrel consisting of two members and carrying means for spreading the same and adapted to form a plate into a tube or cylinder, a pair of hangers arranged in said mill and adapted to support said mandrel, means connected to said hangers for vertically operating said mandrel, a pair of transversely-operating formers adapted to engage said plate in connection with said mandrel, and a vertically-operating press adapted to weld the meeting edges of said tube or cylinder after the same has been formed by the mandrel and formers, substantially as herein shown and described.

8. In a tube-mill, a mandrel consisting of two members and carrying means for spreading the same and adapted to form a plate into a tube or cylinder, a pair of hangers arranged in said mill and adapted to support said mandrel, means connected to said hangers for vertically operating said mandrel, a pair of transversely-operating formers adapted to engage said plate when the latter is operated upon by said mandrel, a vertically-operating press adapted to weld the meeting edges of said tube or cylinder after the same has been formed by the mandrel and formers, and means for removing said tube or cylinder from said mandrel, substantially as herein shown and described.

9. In a tube-mill, a pair of transversely-moving furnaces adapted to support a steel plate and provided with a suitable blast for heating the edges of said plate to permit of the welding of the same together, a vertically-operating mandrel, a pair of transversely-operating formers, said mandrel and said formers adapted to engage said plate to form the same into a tube or cylinder, and means for welding the heated edges of the said plate when brought together, substantially as described.

10. In a tube-mill, a pair of transversely-moving furnaces adapted to support a steel plate and provided with a suitable blast for heating the edges of said plate to permit of the welding of the same together, a vertically-operating mandrel, a pair of transversely-operating formers, said mandrel and said formers adapted to engage said plate to form the same into a tube or cylinder, a vertically-operating press for welding the heated edges of the said plate when brought together, and means arranged in said mill for removing the said tube or cylinder from the mandrel, substantially as herein shown and described.

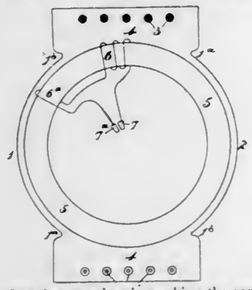
653,962. INCANDESCENT-LAMP SOCKET. FREDERIC H. MANCHESTER and IRVING E. BROWN, Providence, R. I. Filed May 9, 1900. Serial No. 16,045. (No model.)



Claim.—In an incandescent-lamp socket, the combination with the upper part of a two-part insulating-block having passages in its edges for the circuit-wires, a groove for the insertion of the key-stem, a groove for the circuit-controlling spring, and a terminal in the upper part of the last-named groove, of the lower part of the insulating-block, a U-shaped spring, a slotted bracket forming the bearings

for the stem of the circuit-controlling key, and a screw securing the bracket and one arm of the U-shaped spring to the lower insulating-block, the head of the screw forming the contact-terminal engaging with the lamp, as described.

653,963. DYNAMO-ELECTRIC MACHINE. WILLIAM M. MORDEY, London, England. Filed Oct. 25, 1898. Serial No. 694,516. (No model.)



Claim.—1. In a dynamo-electric machine, the combination with a field-magnet, of a slotted armature having each element of its winding divided into unequal portions.

2. In a dynamo-electric machine, the combination with a field-magnet, of a slotted armature-core provided with a winding comprising elements each of which is divided into unequal portions splayed or spaced apart.

3. In a dynamo-electric machine, the combination with a field-magnet and a commutator, of a slotted drum-armature provided with a winding each of the elements of which is composed of two or more connected chords one of which extends across the face of one of the field-magnet poles and another across the face of such pole and the gap between such pole and the next adjacent field-magnet pole.

4. In a dynamo-electric machine, the combination with a field-magnet and a commutator, of a slotted drum-armature provided with a winding each of the elements of which is composed of two or more chords arranged at an angle to each other and of different lengths, the longer one being approximately equal in length to a line extending from center to center of adjacent field-magnet poles.

5. In a dynamo-electric machine, the combination with a field-magnet and a commutator, of a drum-armature provided with a winding comprising elements each of which is connected at its ends to segments of said commutator and is composed of chords of different angle, substantially as described for the purpose set forth.

6. In a dynamo-electric machine, the combination with a field-magnet and a commutator, of a slotted armature-core provided with a winding comprising elements each of which is divided into separate portions spaced apart, one or each of said portions being distributed over two or more slots in said armature, substantially as described.

7. In a dynamo-electric machine, the combination with a field-magnet and a commutator, of a slotted armature-core provided with a winding comprising elements each of which is divided into separate portions spaced apart and distributed over three or more slots in said armature, substantially as described.

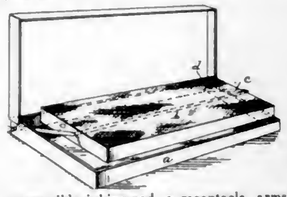
8. In a dynamo-electric machine, the combination with a field-magnet and a commutator, of a drum-armature having a winding each of the elements of which is composed of four portions two of which are near together and the other two are splayed or spaced apart to an extent approximately equal to the distance between adjacent magnetic poles, substantially as described for the purpose specified.

9. In a dynamo-electric machine, the combination of a field-magnet, a commutator, and a slotted drum-armature having a winding each of the elements of which is composed of a short chord and a long chord approximating to a diameter of the armature-core, substantially as herein described for the purpose specified.

10. In a dynamo-electric machine, the combination of a field-magnet, a commutator, and a slotted drum-armature having a winding each of the elements of which is composed of four, or a multiple of four, connected bars some of which are arranged separately in adjacent slots in the armature and the remainder are arranged in other and separate slots spaced at a distance apart, substantially as described.

653,964. REVERSIBLE INKING-PAD. HENRY H. NORRINGTON, West Bay City, Mich. Filed June 6, 1899. Serial No 719,533. (No model.)

Claim.—1. In a reversible inking-pad, a receptacle, arms connected at their outer ends to the receptacle, and a reversible inking-pad pivoted between the inner ends of the arms, whereby the inking-pad has a permanent and fixed engagement with the receptacle, substantially as shown.



2. In a reversible inking-pad, a receptacle, arms loosely connected to the receptacle at its corners, and reversible inking-pads pivoted between the outer ends of the arms, whereby the inking-pads have a permanent and fixed engagement with the receptacle, substantially as described.

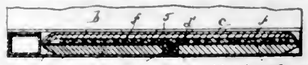
3. The combination with a receptacle, of a series of reversible inking-pads having a permanent and fixed engagement therewith, substantially as set forth.

4. In a reversible inking-pad, a receptacle, arms connected at their outer ends to the receptacle, and a reversible inking-pad pivotally engaged upon said arms.

5. In a reversible inking-pad, the combination of a receptacle, a reversible inking-pad, and arms having a jointed connection with the pad at the longitudinal center thereof, said arms also having a jointed connection with the receptacle toward one of the marginal edges of the receptacle at opposite corners thereof, whereby said arms may be folded down adjacent to the extremities of the receptacle when the pad is in normal position therewithin.

6. In a reversible inking-pad, the combination of a receptacle, a reversible inking-pad, and arms having a jointed connection with the extremities of the pad at the longitudinal center thereof, said arms extending in the same direction from the longitudinal center of the pad to an adjacent marginal edge of the receptacle and having a jointed connection with the marginal edges of the receptacle at opposite corners thereof, whereby said arms may be folded down adjacent to the extremities of the receptacle when the pad is in normal position therewithin.

653,965. INKING-PAD. HENRY H. NORRINGTON, West Bay City, Mich. Filed Jan. 19, 1900. Serial No. 1,988. (No model.)



Claim.—1. In an inking-pad, the combination of a receptacle, a plate channeled on its under surface and formed with an opening therein communicating with said channel, a pad above said plate, absorbent material having a portion thereof projecting through the opening of the plate to feed the ink to the pad, and means to feed the ink into said channel.

2. In an inking-pad, the combination of a receptacle, a plate formed with an opening therein, a pad above said plate, absorbent material to feed ink through said opening to said pad, an ink-well opening into said receptacle, and means to control the feed of said ink-well, said plate provided with a channel on its under surface through which ink may be conducted from the ink-well to the opening in said plate.

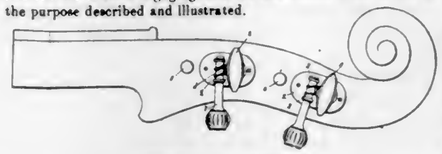
3. In an inking-pad, the combination of a receptacle, a plate formed with an opening therethrough within the receptacle, absorbent material extending beneath said plate, and an ink-well to feed ink to said absorbent material, a sliding cover for said ink-well, said cover provided with a depending flange to close said communication when the cover is in open position.

4. In an inking-pad, the combination of a receptacle, a plate, a pad located upon the plate, absorbent material extending beneath said plate to feed ink to said pad, an ink-well communicable with the receptacle underneath the plate, and a sliding cover for said ink-well, said cover formed with a depending flange to close communication of the well with the receptacle when the cover is in open position.

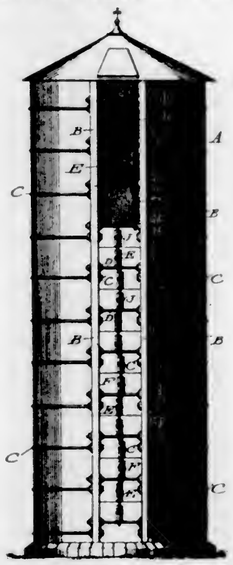
5. In an inking-pad, the combination of a receptacle, an ink-wel to feed ink to said receptacle, and a sliding cover for said ink-well, said cover provided with a depending flange to close communication between the ink-well and the receptacle when the cover is in open position.

653,966. TUNING-PEG FOR STRINGED INSTRUMENTS. FRANZ PALIWETZ, Moscow, Russia. Filed Feb 6, 1900. Serial No. 4,296. (No model.)

Claim.—The combination with a violin and with plates perforated to correspond to perforations in the neck of the said violin, of a tube-piece carrying a slotted collar in or on its center and having a notched end, of a tuning-peg loose in said collar catch-pins on the tuning-peg and of a worm-shaft engaging with the said slotted collar as and for the purpose described and illustrated.



653,967. SILO OR TANK. ENOS F. SCHLICHTER, Philadelphia, Pa. Filed Nov. 10, 1899. Serial No. 736,515. (No model.)



Claim.—1. In a silo or tank having a doorway provided interiorly with inwardly-facing abutting faces, door-sections provided with outwardly-facing abutting faces adapted to contact with said abutting faces of the doorway, and wedging devices mounted upon the outer faces of the door-sections and upon the outside of the silo or tank to hold the door-section in position in said doorway with said abutting faces in contact, and drawing the door-section outwardly and to hold said abutting faces in contact under pressure the members of the wedging devices mounted upon the silo or tank being situated between the sides of the said doorway.

2. In a silo or tank having a doorway, the upright guide-rods supported in front thereof, door-sections, and wedging devices mounted upon said door-sections and upon said guide-rods for holding the former in the desired position.

3. In a silo or tank having a doorway provided with upright guide-rods, sliding plates mounted upon said guide-rods and door-sections provided with stationary inclined members that are engaged by said sliding plates.

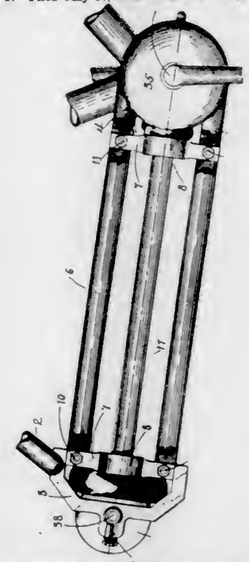
4. In a silo or tank having a doorway, cross-bars extending across the same, upright guide-rods slidingly mounted upon said cross-bars, door-sections adapted to fit said doorway, and wedging devices mounted upon said door-sections and upon said guide-rods for holding the former in the desired position.

5. In a silo or tank having a continuous doorway, a plurality of cross-bars extending across the same, upright guide-rods slidingly mounted upon said cross-bars, door-sections fitting interiorly within said doorway and provided with wedges, and plates carried by said guide-rods and engaging said wedges.

6. In a silo or tank having an upright doorway provided interiorly at its sides with inwardly-facing abutting faces, said abutting faces converging toward the outside of the silo or tank, a plurality of door-sections adapted to close said doorway, the sides of said door-sections being provided with outwardly-facing abutting faces converging toward the outside of the silo or tank, the upper and lower ends of said door-sections fitting the ends of adjacent door-sections, and means mounted upon the silo or tank and upon said door-sections for holding the latter in the doorway with the abutting faces in contact, said means being adapted to draw the door-sections outwardly and to hold said abutting faces in contact under pressure.

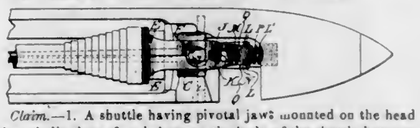
7. In a silo or tank having an upright doorway, sills or posts at the sides thereof, hoops connected at one end with one of said sills or posts and extending away from said doorway and around the silo or tank to the other sill or post, the other ends of said hoops being connected with said other sill or post, whereby said hoops extend around the silo or tank except across said doorway, and cross-bars extending across said doorway and connected at their ends with said sills or posts.

653,968. CHAINLESS BICYCLE. FREDRICK C. SCHOENTHAL, Buffalo, N. Y. Filed July 17, 1899. Serial No. 724,209. (No model.)



Claim.—A chainless bicycle having a frame provided on one side with a lower horizontal stay-tube, a driven gear-wheel having a shaft, a crank-hanger connected at one side to the forward end of the horizontal stay-tube and provided with rearwardly-extending lugs on the opposite side, a D-shaped plate arranged at the rear of the frame on the said opposite side and having a horizontal slot for the reception of the driven-wheel shaft, a support composed of two parallel tubes and transverse cross-bars detachably secured to each other and to the D-shaped plate and rearwardly-extending lugs of the crank-hanger at their rear and forward ends respectively, by bolts passing through the rearwardly-extending lugs, the D-shaped plate and the ends of the tubes and cross-bars, a connecting-rod journaled in the cross-bars, a gear-wheel at each end of the connecting-rod, a crank-shaft journaled in the crank-hanger and having a gear-wheel meshing with the gear-wheel at one end of the connecting-rod and a gear on the driven wheel meshing with the gear-wheel at the opposite end of said connecting-rod.

653,969. LOOM-SHUTTLE. JAMES C. SERGESON, Philadelphia, Pa. Filed Mar. 30, 1900. Serial No. 10,744. (No model.)



Claim.—1. A shuttle having pivotal jaws mounted on the head of the spindle thereof and shoes on the body of the shuttle between which the heel ends of said jaws are adapted to ride, and a spring bearing outwardly against said heel ends, whereby when the spindle is raised said jaws automatically leave the bobbin on said spindle and when said spindle is lowered, said jaws automatically close on said bobbin.

2. A shuttle having pivotal jaws on the head of the spindle thereof and shoes between whose inner faces the heel ends of the jaws are adapted to ride, whereby, when the spindle is raised, the jaws are automatically disengaged from the bobbin.

3. A shuttle having laterally-movable jaws pivoted on the head of the spindle thereof and adapted to embrace a bobbin, and a spring bearing laterally against the heel ends of said jaws, whereby when the spindle is lowered, said jaws automatically engage said bobbin and retain their hold thereon.

4. A shuttle having pivotal jaws on the head of the spindle thereof and shoes on whose sides the head ends of the jaws are adapted to ride, whereby when the spindle is raised, the jaws are automatically disengaged from the bobbin, and springs bearing laterally against said heel ends, whereby when the spindle is lowered, said jaws automatically close upon said bobbin.

5. In a shuttle, a spindle, a head carrying the same, laterally-movable jaws pivoted on said head, a spring bearing laterally against the heel ends of said jaws, shoes mounted on said head and adapted to engage said heel ends when the spindle is raised, and a spring on the shuttle engaging said shoes and serving to hold the shoes on the head, and retain the spindle either in open or closed position.

6. In a shuttle, a spindle, a head carrying the same, jaws mounted on said head adapted to engage a bobbin on said spindle, and a spring bearing against the heel ends of said jaws to close the latter, said heel ends having depending ears and said head having recesses which freely receive said ears.

653,970. ELECTRIC-RAILROAD TRACK. EKKO SOLLMANN, Hoboken, N. J., assignor to the Geo. Borgfeldt & Company, New York, N. Y. Filed Apr. 24, 1900. Serial No. 14,106. (No model.)

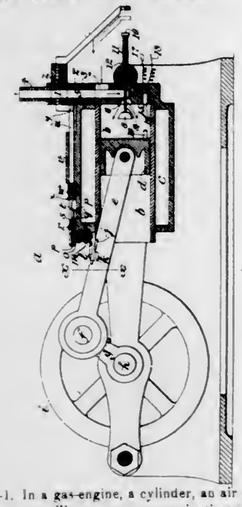


Claim.—1. As a new and useful article of manufacture a railroad-track consisting of rails bent up of sheet metal, having hollow treads and inwardly-projecting teats or lugs, and a double-pointed pin adapted to enter the said treads to form good electrical and mechanical connections.

2. As a new and useful article of manufacture a railroad-rail bent up of sheet metal having a hollow tread and the inwardly-projecting teats or lugs *c* substantially as described.

3. A rail-joint comprised of abutting hollow sheet-metal railroad-rails having inwardly-projecting teats or lugs and the pin *d* entering the hollow portions of the abutting rails and making contact with the teats.

653,971. GASOLENE-ENGINE. FRANK J. SPROEHNLE, Philadelphia, Pa., assignor of one-half to Edward D. Chaninel, same place. Filed Oct. 21, 1899. Serial No. 734,304. (No model.)



Claim.—1. In a gas-engine, a cylinder, an air and gas inlet and exhaust valve controlling a port communicating with said cylinder and with an air and fuel supply, an inlet-valve controlling said fuel-supply and adapted to actuate said air and gas inlet and exhaust valve, and means for operating said inlet-valve.

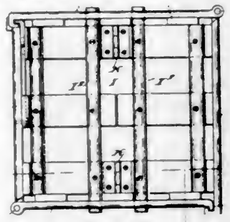
2. In a gas-engine, a cylinder, an air and gas inlet and exhaust valve controlling a port leading to said cylinder, a passage leading to said port, an inlet-valve controlling said passage, an arm attached to said inlet-valve and adapted to actuate said air and gas inlet and exhaust valve, and means for operating said inlet-valve.

3. In a gas-engine, a cylinder, an air and gas inlet and exhaust valve controlling a port leading to said cylinder, a passage leading to said port, an inlet-valve controlling said passage, an arm attached to said inlet-valve and adapted to actuate said air and gas inlet and exhaust valve, and means for operating said inlet-valve, the latter being actuated by the connecting-rod of the engine.

4. In a gas-engine, a cylinder, a piston therein having a connecting-rod attached thereto, a tripping member *l* having a portion *k* adapted to be hit by a dog *j* carried by said connecting-rod, a portion *o* carried by said dog, and adapted to contact with the ends *p* of the lever *q*, the latter having the raised portion *s*, a rod *u* adapted to contact therewith, a spring *w* holding said rod in position, an inlet-valve plug *z* actuated by said rod and having a port therethrough, a passage 5 controlled by said inlet-valve, a port 7 serving as an inlet and exhaust port, an air and gas inlet and exhaust port 6, a spring-actuated air and gas valve 8 controlling the latter, and an arm extending from said inlet-valve plug and adapted to actuate said air and gas inlet and exhaust valve.

5. In a gas-engine, a cylinder, an inlet-valve, a passage 5 controlled thereby, a port 6 leading to said cylinder, an air and gas inlet and exhaust spring-actuated valve controlling said port, an arm 13 on said inlet-valve for actuating said air and gas inlet and exhaust valve, and means actuated by the connecting-rod for actuating said inlet-valve.

653,972. COLLAPSIBLE SHIPPING-CRATE. ZACHARY T. STOCKER, Everett, Wash. Filed Nov. 21, 1899. Serial No. 737,743. (No model.)

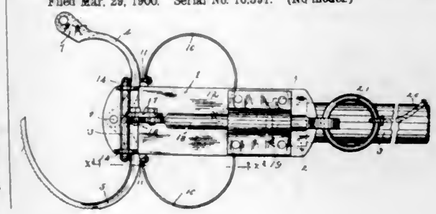


Claim.—1. A collapsible box, comprising a front, a rear side having a hooked lower end, a bottom hinged to said front and having a hooked rear end arranged for sidewise engagement with the hooked end of the rear side, a cover or top hinged to said rear side and having a hooked forward end, ends hinged to said front and rear side and made in sections hinged together, and pivoted catches attached to the front and arranged for sidewise engagement with the hooked forward end of the cover, as shown and described.

2. A collapsible box, comprising a front, a rear side, a bottom hinged to said front and having a sidewise hook connection with said rear side, a cover or top hinged to the rear side, spring-pressed catches pivoted on said front, and adapted to swing sidewise into engagement with keepers on said top and ends hinged to said front and rear side and each made in sections hinged together each of said sections being formed with a vertical post arranged for engagement with the top and bottom, as described.

3. A collapsible box, comprising a front, a rear side, a bottom hinged to said front and having a sidewise hook connection with said rear side, a cover or top hinged to the said rear side, spring-pressed catches pivoted on said front, and adapted to swing into engagement with keepers on said top, and ends hinged to said front and said rear side, and each made in sections hinged together, substantially as shown and described.

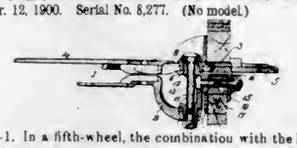
653,978. HOG-CATCHER. DANIEL SVENSON, Twin Valley, Minn. Filed Mar. 29, 1900. Serial No. 10,591. (No model.)



Claim.—1. A device adapted for use in catching hogs or other animals, comprising a head, a pair of spring-pressed jaws pivoted thereto, a pawl-and-ratchet device for locking said jaws closed, and a trip-latch for holding said jaws open, comprising a rock-shaft having projections engageable with said jaws, and a toggle-lever connection to said rock-shaft adapted to be set in such proximity to a dead-center that it will be frictionally held until tripped, substantially as described.

2. The combination with the head 1, of the spring-pressed jaws 4, 5, pivoted at 6 and provided, respectively, with the pawl 8 and ratchet-teeth 9, the rock-shaft 13 having the ends 15 engaging said jaws, and having also the arm 16, the sliding plunger 18 connected to said arm 16 by a link 17, the said parts operating substantially as described, and a connection to said plunger for tripping the same from a distant point, substantially as described.

653,974. FIFTH-WHEEL. HENRY C. SWAN, Oshkosh, Wis. Filed Mar. 12, 1900. Serial No. 8,277. (No model.)



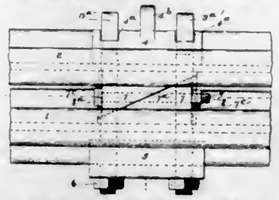
Claim.—1. In a fifth-wheel, the combination with the lower circle and an axle-plate having a bearing on said lower circle, of a pivot-bolt passing through said parts, said pivot-bolt being in front of and intermediate with the ends of the king-bolt, substantially as described.

2. In a fifth-wheel, the combination with a lower circle provided with a sleeve forming part of the king-bolt socket and with rounded bearings, of an axle-plate, and a pivot-bolt passing through said sleeve and axle-plate to hold said axle-plate in engagement with said bearings, said pivot-bolt being arranged in front of and intermediate the ends of the king-bolt, substantially as described.

3. In a fifth-wheel, the combination with a lower circle provided with a sleeve, having its rear portion cut away, and two bearings, one of said bearings being formed integral with the sleeve, of a tilting axle-plate, and a pivot-bolt engaging through said axle-plate and a perforation formed in the sleeve to hold the axle-plate in engagement with the bearings, said pivot-bolt being arranged intermediate of the ends of the king-bolt and out of contact therewith, substantially as described.

4. In a fifth-wheel, the combination of an upper circle provided with a perforation, a lower circle provided with a sleeve, a guard-stay provided with a perforation in its forward end, and a king-bolt passing through said sleeve and perforations, the rear wall of said sleeve being cut away, and its front wall being provided with a recess, of a tilting axle-plate rigidly secured to the axle, and a pivot-bolt seating in said recess and passing through said axle-plate to hold same in engagement with said bearings, said pivot-bolt being arranged in front of the king-bolt, and independent thereof, substantially as described.

653,975. GUARD-RAIL FASTENER. DAVID F. VAUGHAN, Haddonfield, N. J. Filed Mar. 13, 1900. Serial No. 8,460. (No model.)



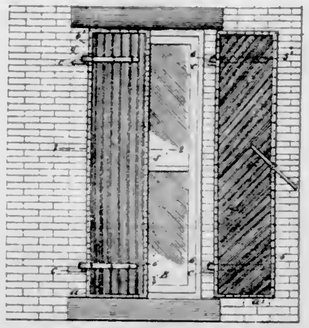
Claim.—1. In a guard-rail fastener of the class recited, the combination with the guard-rail and main rail of the block adapted to bear against the side of one of said rails and having the sockets therein the screw-threaded bolts extending under and against said rails and having hooks entered into said sockets, the block, 5, adapted to engage the foot of the other of said rails, and having holes therein, through which said bolts pass, the nuts on the ends of said bolts, together with the adjustable filling-piece between the said rails, substantially as and for the purpose set forth.

2. In a guard-rail fastener of the class recited, the combination with the guard-rail and main rail of the adjustable interposed filling-piece, the block fitted to the side of one of said rails and having the limb extending under and against the bottom of said rails, the block engaging the foot of one of said rails, and the bolts having hooks engaging said first-mentioned block and extending beneath the rails, and having screw-threaded ends extending through holes in the last-mentioned block, together with the nuts on said threaded ends, substantially as and for the purpose set forth.

3. In a guard rail fastener of the class recited, the adjustable filling-piece, consisting of the combination of the two blocks having juxtaposed inclined sides, and the longitudinal elongated slots therethrough, the adjustable bolt extending through said slots and having the angular head and nut thereon, and the offsets on the ends of said blocks, adjacent to said head and nut respectively, substantially as and for the purpose set forth.

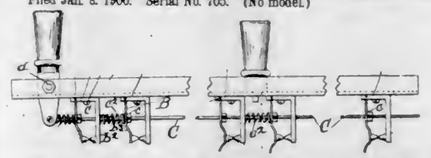
4. In a guard-rail fastener of the class recited, the combination of the guard-rail and main rail, of the bolts extending under said rails and having the hooked ends adapted to engage the side of the guard-rail, the block adapted to engage the foot of the main rail, and having holes through which the bolts extend, and the filling-piece consisting of the two blocks having inclined contacting sides, and having the elongated slots, the adjustable bolt extending through said slots, and one of said blocks having the lugs extending on opposite sides of one of said first-mentioned bolts, substantially as and for the purpose set forth.

653,976. FIREPROOF SHUTTER. EMILE F. VERDEL and FELIX L. SAINO, Memphis, Tenn. Filed July 28, 1899. Serial No. 725,382. (No model.)



Claim.—A metal shutter comprising two spaced corrugated metal plates, the corrugations of one plate being disposed at an angle to those of the other, a fireproof lining located between the plates and in contact therewith at intervals only, so as to leave on each side of the lining, in the corrugations of the plates, air spaces or channels running in different directions, and means for fastening the plates together.

653,977. LAUNDRY-RACK. SILAS B. WATERS, Cincinnati, Ohio. Filed Jan. 8, 1900. Serial No. 705. (No model.)



Claim.—1. In a drying-rack the combination of a bar, rigid jaws secured to the bar, an inwardly-projecting stud upon each of said jaws, movable stud-bearing jaws pivoted to the bar so that the stud upon each movable jaw contacts the stud upon the fixed jaw opposite, springs for holding the jaws together, a sliding rod and means for coupling the movable jaws to the sliding rod, whereby the jaws may all be opened simultaneously.

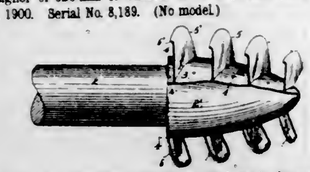
2. In a drying-rack the combination of a bar, angle-pieces one arm of each of which is secured to the bar and the other arm of which projects down to form the rigid jaw of a gripping device, movable jaws, studs upon the rigid and upon the movable jaws contacting with each other, springs to hold the movable jaws closed against the rigid jaws, an actuating-rod, and means for coupling the movable jaws to the rod, substantially as and for the purpose set forth.

653,978. MEANS FOR DISJOINTING PIPES. JAMES P. WIGAL, Henderson, Ky., assignor of three-fourths to Charles E. Sugg, Samuel S. Wathen, and Robert E. Cheaney, same place. Filed Apr. 14, 1900. Serial No. 12,836. (No model.)

Claim.—The herein-described method for disjointing pipes and the like, consisting in subjecting the soft-metal ring in the joint to the action of a running stream of molten metal, to cause the soft-metal ring to melt and run with the said running stream of molten metal, as set forth.



653,979. SCREW-PROPELLER. JOHN B. ALTMAN, St. Louis, Mo., assignor of one-half to Charles W. Trefny, same place. Filed Mar. 10, 1900. Serial No. 8,189. (No model.)



Claim.—1. A screw-propeller comprising a body portion substantially of the form of half a prolate ellipsoid, and blades of substantially-uniform width disposed about said body portion, and having their outer edges following the contour of the surface of the body portion, the said outer edges being provided with forwardly-deflected flanges, substantially as set forth

2. A screw-propeller comprising a shaft, a terminal head for said shaft, a shell passed over said head, and being substantially of the form of a section of a prolate ellipsoid, and blades disposed about said shell and having their outer edges following the contour of said shell, substantially as set forth.

3. A screw-propeller comprising a body portion of the form of a section of a prolate ellipsoid, two sets of blades of substantially-uniform width disposed about the periphery of the body portion, the front cutting edges of the blades being disposed in diametrically-opposite directions, and the blades thence encircling the body portion in such manner that the wrap of one blade on one side of the body portion intersects the direction in which the corresponding wrap of the other blade is disposed on the opposite side of the body portion, the rear ends of the wraps terminating at the base of the body portion at points diametrically opposite one another, and forwardly-deflected flanges formed along the outer edges of the blades, substantially as set forth.

4. A screw-propeller comprising a body portion of the form of a section of a prolate ellipsoid, two sets of blades disposed about the periphery thereof, the front cutting edges of the blades being disposed in diametrically-opposite directions at the apex of the ellipsoid, the blades thence encircling the body portion in such manner that the wrap of one blade on one side of the body portion intersects the direction in which the corresponding wrap of the other blade is disposed on the opposite side of said body portion, the rear ends of the blades terminating at the base of the body portion at points diametrically opposite to one another, and forwardly-deflected flanges formed along the outer edges of the blades, substantially as set forth.

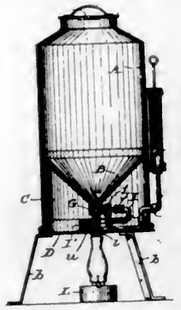
5. A screw-propeller comprising a body portion substantially of the form of a prolate ellipsoid, blades disposed about said body portion, and forwardly-deflected flanges formed along the outer edges of the blades, substantially as set forth.

653,980. CREAM-SEPARATOR. AARON D. BAIRD and OTTO SCHELLERT, Indianapolis, Ind. Filed Apr. 10, 1900. Serial No. 12,302. (No model.)

Claim.—1. A cream-separator including a vessel provided with a cock or valve attached to the bottom thereof and having a passage-way or duct communicating with the vessel and the atmosphere, and having also a lateral duct communicating with the first-described duct; a self-acting valve connected to the cock in communication with the lateral duct; and means whereby communication may be opened between the self-acting valve and the vessel, or between the self-acting valve and the atmosphere, or between the vessel and the atmosphere.

2. A cream-separator including a separating vessel, a three-way cock attached to the bottom of the vessel and having a cap removably attached to one of the ducts thereof, a check-valve connected to another one of the ducts of said cock, a coiled pipe-duct connected to said check-valve and extending about the duct of said cock having the cap thereon, a base, and legs attached to the base.

3. A cream-separator including a separating vessel having a chamber below the bottom thereof, a three-way cock attached to the bottom of said vessel and situate in said chamber, a removable cap on said cock and situate below said chamber, a check-valve situate in said chamber and connected with said cock, a pipe-duct connected to said check-valve and coiled about said cock within said chamber, a pump connected with said pipe-duct, a base supporting said vessel and having an aperture coinciding with the circle described by said coil, and legs attached to said base.

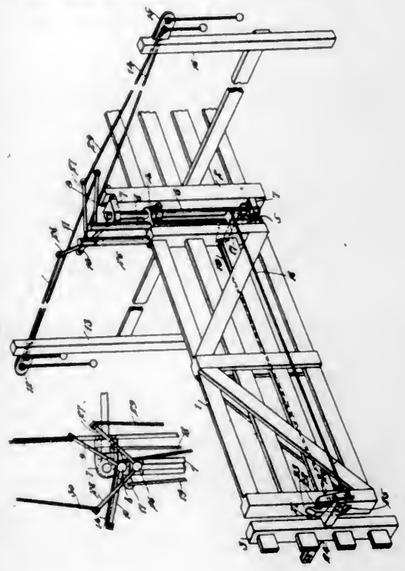


4. In a cream-separator, the combination with the milk-retaining vessel having the funnel-shaped bottom and the chamber below such bottom, of the cock attached to such bottom and situate within such chamber, said cock having a vertical duct therethrough and a lateral duct communicating with the vertical duct; the pipe-duct detachably connected with said lateral duct, the self-acting valve connected with said pipe-duct, and the pump connected with said valve, substantially as set forth.

5. In a cream-separator, the combination of the separating vessel, the cock attached to the bottom of the vessel, the check-valve connected to said cock, the coiled pipe-duct attached to the check-valve, the base below said coiled pipe-duct, and a support for the base.

6. In a cream-separator, the combination of the separating vessel having the chamber below the bottom thereof, and provided with the aperture in the wall forming the chamber; the cock, the check-valve and the removable union between the cock and the check-valve situate in said chamber within range of said aperture; and the pipe-duct connected to said check-valve; substantially as set forth.

653,981. GATE. TOBIAS BEARD, Columbiana, Ohio. Filed Nov. 6, 1899. Serial No. 735,985. (No model.)



Claim.—1. The combination with a gate, of a pivot-bar upon which the gate is mounted to swing, an opening-bar, arms on said opening-bar, ropes or cables extended from the arms on said opening-bar, a cross-head on said bar, levers pivoted on the forward end of the gate, draw-rods connecting said levers to the cross-head, and spring-latches adapted to be operated by the levers, substantially as specified.

2. The combination with a gate, of a pivot-bar, brackets attached to the gate and mounted to swing on the pivot-bar, an opening-bar mounted to rotate in said brackets, arms on the upper portion of said opening-bar, ropes or cables attached to said arms and extended in opposite directions, a cross-head on the lower portion of the opening-bar, levers pivoted to the forward portion of the gate at opposite sides, draw-rods extended from said levers to the cross-head, and holding-springs attached to the forward gate-post and adapted to be operated by said levers, substantially as specified.

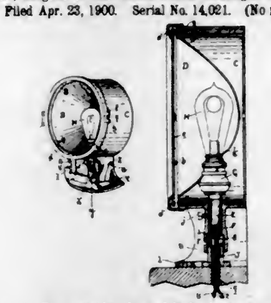
3. The combination with a gate and front and rear gate-posts, of a pivot-bar mounted in brackets extended from the rear gate-post, hangers attached to the gate and mounted to swing on said pivot-bar, an opening-bar mounted to rotate in said hangers, means for rotating said opening-bar, a cross-head attached to the opening-bar levers pivoted to the forward end of the gate, draw-rods connecting said levers to the cross-head, a cross-bar attached to the front gate-post, and holding-springs mounted on said cross-bar for engaging with a lug on the front end of the gate and adapted to be operated by the levers, substantially as specified.

4. The combination with a gate, of a pivot-bar on which the gate is mounted to swing, an opening-bar mounted to rotate relatively to the gate, arms extended in opposite directions from the upper end of said bar, ropes or cables extending from said arms, brackets through which said ropes or cables pass, latch devices operated by a rotating movement of the opening-bar, the said opening-bar, upon a further operation, operating to open the gate, and a closing mechanism independent of the opening mechanism, substantially as specified.

5. The combination with a gate, of a pivot-bar on which the gate is mounted to swing, an opening-bar, a latch mechanism operated by said opening-bar, arms extended in opposite directions from the upper end of the bar, ropes or cables extending from said arms, a rod on the rear post of the gate, arms on said rod, and ropes or cables extended from the arms, substantially as specified.

6. The combination with a gate, of a pivot-bar on which the gate is mounted to swing, an opening-bar, means for rotating the opening-bar, levers adjustably connected to the forward end of the gate, and connections between said levers and the opening-bar, substantially as specified.

653,982. ELECTRIC HEADLIGHT. JAMES W. G. BECKER, Kansas City, Mo., assignor to the United States Headlight Company, Buffalo, N. Y. Filed Apr. 23, 1900. Serial No. 14,021. (No model.)

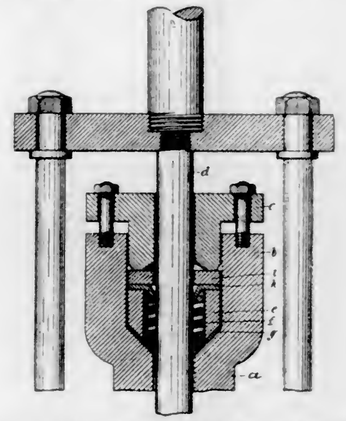


Claim.—1. The combination with the bumper of an electrically propelled railway-car having a dashboard extending upwardly therefrom, of a headlight-case, a stand therefor adapted to be secured to the bumper, a hollow sleeve communicating with the interior of the case and extending to the bottom of the stand, a vertically-movable socket-holder within said sleeve, and means for securing said stand to said bumper, substantially as shown and described.

2. The combination with the bumper of an electrically-propelled railway-car having a dashboard extending upwardly therefrom, of a headlight-case, a stand therefor adapted to be secured to the bumper, a hollow sleeve communicating with the interior of the case and extending to the bottom of the stand, a vertically-movable hollow socket-holder within said sleeve, a lamp-socket carried by said socket-holder, conducting-wires leading from said lamp-socket through said socket-holder and said sleeve to a source of electric supply, and means for securing said stand to said bumper, substantially as shown and described.

3. The combination with the bumper of an electrically-propelled railway-car having a dashboard extending upwardly therefrom, of a headlight-case, a stand upon which it is mounted adapted to be secured to the bumper, a hollow sleeve communicating with the interior of the case and extending downwardly from the bottom thereof, a vertically-movable socket-holder within said sleeve, a lamp-socket carried by said socket-holder, a protector or guard secured to the bumper and extending upwardly therefrom into said sleeve, conducting-wires connected with said socket and extending through said socket-holder and said protector or guard to a source of electric supply, and means for securing said stand to said bumper, substantially as shown and described.

653,983. PACKING. WILBERT BLACK, New Orleans, La. Filed Mar. 17, 1900. Serial No. 9,058. (No model.)



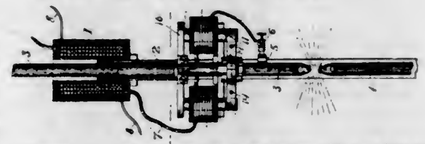
Claim.—1. A packing, comprising a thimble adapted to sit in the packing-box, an expansive spring held in the thimble, a crimp mounted on the upper end of the thimble and turned into the same, the crimp surrounding the rod or plunger and being engaged by the spring, and a ring bearing against the crimp to hold it against the thimble.

2. A packing, comprising a flexible crimp surrounding the rod or plunger, means for holding the outer portion of the crimp, the inner portion being turned longitudinally of the rod to bear against the same and a spring pressing against the said inner portion of the crimp to engage it with the rod or plunger.

3. A packing, comprising a thimble adapted to sit in the packing-box and to bear on the bottom thereof, an expansive spring inclosed by the thimble, a crimp placed on the upper end of the thimble and surrounding the rod or plunger to pack the same, the crimp being turned into the thimble and engaged by the spring, and a ring bearing against the crimp to hold it engaged with the rod.

4. A packing, comprising a thimble adapted to sit in the packing-box, an expansive spring inclosed by the thimble, a crimp set on the upper end of the thimble and engaging the rod or plunger, the spring serving to engage the crimp, and a ring bearing against the crimp to hold it on the thimble.

653,984. ELECTRIC-ARC LAMP. HENRY G. CARLETON, New York, N. Y., assignor to the Carleton Electric Company, same place. Filed Nov. 7, 1899. Serial No. 736,175. (No model.)



Claim.—1. In an arc-lamp, the combination with a carbon-controller, of a solenoid for automatically varying the position of the controller, means for securing the carbon to the controller, and electrically-controlled operating devices for said means, said devices being separate from and always in circuit with the solenoid, substantially as described.

2. In an arc-lamp, the combination with a carbon-controller, of a solenoid for automatically varying the position of the controller, a clutch for securing the carbon to the controller, and electrically-op-

erated means for operating the clutch, said means being separate from and always in circuit with the solenoid, substantially as described.

3. In an arc-lamp, the combination with a carbon-controller, of a solenoid for varying the position of the controller, means carried by the controller for securing the carbon thereto, and an electromagnet for operating said securing means, said electromagnet being always in circuit with the solenoid, substantially as described.

4. In an arc-lamp, the combination with a carbon-controller, of a solenoid for varying the position of the controller, a clutch mechanism mounted on the controller, and an electromagnet for operating the clutch, said electromagnet being always in circuit with the solenoid, substantially as described.

5. In an arc-lamp, the combination with a carbon-controller, of a solenoid for varying the position of the controller, means for securing the carbon to the controller, and operating devices for said securing means, said operating devices including an electromagnet, the coils of which are stationary and the pole-pieces of which are movable, substantially as described.

6. In an arc-lamp, the combination with a carbon-controller, of a solenoid for varying the position of the controller, means for securing the carbon to the controller, and operating devices for said securing means, said operating devices including an electromagnet, the coils of which are stationary and the pole-pieces of which are movable, the magnet being in circuit with the solenoid, substantially as described.

7. In an arc-lamp, the combination with a carbon-controller, of a solenoid for varying the position of the controller, a clutch mechanism carried by the controller, and an electromagnet for operating the clutch mechanism, the coils of the magnet being stationary and the pole-pieces of the magnet moving with the controller, substantially as described.

8. In an arc-lamp, the combination with a carbon-controller, of a solenoid for varying the position of the controller, a clutch mechanism carried by the controller, and an electromagnet for operating the clutch mechanism, the coils of the magnet being stationary and the pole-pieces of the magnet being carried by the controller, substantially as described.

9. In an arc-lamp, the combination with a carbon-controller, of a solenoid for varying the position of the controller, a clutch mechanism carried by the controller, and an electromagnet for operating the clutch mechanism, the coils of the magnet being stationary and the pole-pieces of the magnet being carried by the controller, and said magnet being in circuit with the solenoid, substantially as described.

10. In an arc-lamp, the combination with a controller, of a solenoid for varying the position of the controller, clutch members moving with the controller, said members having extensions which form an armature, and an electromagnet separate from the solenoid for operating the extensions, substantially as described.

11. In an arc-lamp, the combination with a controller, of a solenoid for varying the position of the controller, clutch members carried by the controller, said members having extensions which form an armature, a pair of stationary magnet-coils, and a pair of movable pole-pieces carried by the controller, said pole-pieces working through the stationary magnet-coils and serving to operate the armature extensions, substantially as described.

12. In an arc-lamp, the combination with a carbon-controller, of a solenoid for varying the position of the controller, a pair of pivoted jaws carried by the controller, said jaws having extensions forming an armature, a spring connecting the extensions and operating to open the jaws, and an electromagnet for operating the extensions, substantially as described.

13. In an arc-lamp, the combination with a carbon-controller, of a solenoid for varying the position of the controller, a pair of pivoted jaws carried by the controller, said jaws having extensions forming an armature, a spring connecting the extensions and operating to open the jaws, a pair of stationary magnet-coils, a pair of pole-pieces working through the coils and operating when they attract the armature to close the jaws, and means for energizing the magnet, substantially as described.

14. In an arc-lamp, the combination with a carbon-controller, of a solenoid for varying the position of the controller, a pair of pivoted jaws carried by the controller, said jaws having extensions forming an armature, a spring connecting the extensions and operating to open the jaws, an electromagnet operating to attract the armature extensions to close the jaws, and means for energizing the magnet, the magnet being in circuit with the solenoid, substantially as described.

15. In an arc-lamp, the combination with a carbon-controller, of a solenoid for varying the position of the controller, a pair of pivoted jaws carried by the controller, said jaws having extensions forming an armature, a spring connecting the extensions and operating to open the jaws, a pair of stationary magnet-coils, a pair of pole-pieces working through the coils and operating when they attract the armature to close the jaws, and means for energizing the magnet, the magnet being in circuit with the solenoid, substantially as described.

16. The combination with a movable part, of a clutch device carried by said part, stationary magnet-coils, movable pole-pieces working through the coils and serving to operate the clutch device, and means for energizing the magnet, substantially as described.

17. The combination with a movable part, of means for moving it, a pair of clutch members, an electromagnet separate from the means for moving the movable part, said magnet serving to actuate both the clutch members, and means for energizing the magnet, substantially as described.

18. The combination with a movable part, of a pair of clutch members, a pair of pole-pieces moving with the movable part and serving to operate the clutch members, a pair of stationary magnet-coils through which the pole-pieces work, and means for energizing the magnet, substantially as described.

19. The combination with a movable part, of means for moving it, a pair of pivoted clutch members carried by the part, an electromagnet separate from the means for moving the part, said magnet operating to turn the clutch members on their pivots to operate them, and means for energizing the magnet, substantially as described.

20. The combination with a movable part, of a pair of pivoted clutch members carried by the part, a pair of pole-pieces serving to operate said clutch members, said pole-pieces moving with the movable part, a pair of stationary magnet-coils through which the pole-pieces work, and means for energizing the magnet, substantially as described.

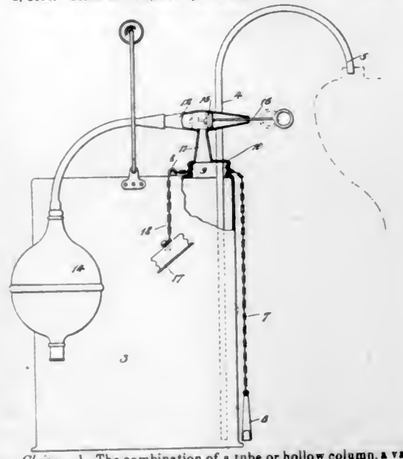
21. The combination with a movable part, of means for moving it, a pair of pivoted clutch-jaws, said jaws having extensions which form an armature, an electromagnet separate from the moving means, the pole-pieces of said magnet being arranged to attract the armature and close the clutch-jaws, and means for energizing the magnet, substantially as described.

22. The combination with a movable part, of a pair of pivoted clutch-jaws carried by the part, said jaws having extensions which form an armature, a pair of pole-pieces secured to the movable part and serving to operate the clutch-jaws, a pair of stationary magnet-coils through which the pole-pieces work, and means for energizing the magnet, substantially as described.

23. The combination with a movable part, of a pair of stationary magnet-coils, a pair of pole-pieces moving with the movable part, said pole-pieces having flattened sides, a pair of pivoted clutch members having extensions by which they are operated, said extensions constituting an armature for the pole-pieces, and means for energizing the magnet, substantially as described.

24. The combination with a movable part, of means for moving it, a pair of pivoted clutch members having extensions which form an armature, an electromagnet separate from the moving means, the pole-pieces of said magnet having flattened sides, and means for energizing the magnet, substantially as described.

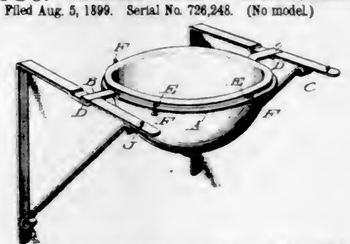
653,985. ATTACHMENT FOR OIL-CONTAINERS. WILLIAM L. CLAYTON and NEWTON R. PERSINGER, Central City, Nebr. Filed Sept. 2, 1899. Serial No. 729,346. (No model.)



Claim.—1. The combination of a tube or hollow column, a valve-chamber of approximately double-conical form, the valve-chamber being mounted on the tube and communicating with the same at the middle of the valve-chamber, air-pressure devices in connection with one end of the valve-chamber, the other end of the valve chamber being open to the atmosphere, and a valve mounted in the valve chamber and reciprocal across the mouth of the tube or hollow column, the valve seating in each end of the valve-chamber to throw the hollow column or tube alternately in communication with the air-pressure devices and with the atmosphere.

2. The combination with a tube or hollow column, of a valve-chamber mounted thereon and communicating therewith at its middle, one end of the valve-chamber being open to the atmosphere, air-pressure devices communicating with the other end of the valve-chamber, and a valve mounted to reciprocate in the valve-chamber and movable over the mouth of the tube or hollow column, the valve seating in either end of the valve-chamber and serving to alternately place the tube in communication with the air-pressure devices and with the atmosphere.

653,986. WASHSTAND. GEORGE W. CONDERMAN, Philadelphia, Pa. Filed Aug. 5, 1899. Serial No. 726,248. (No model.)

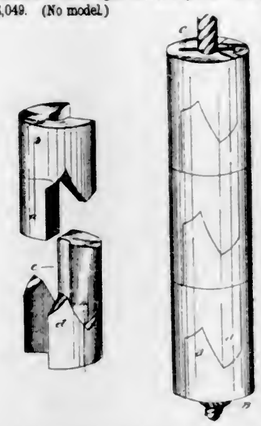


Claim.—1. In a washstand, a basin with a circumferential flange, a ring within which said basin is received and on which said flange is rested, tongues projecting laterally from said ring, and brackets with longitudinally-extending recesses on the upper limbs thereof, said tongues being seated in said recesses and adapted to slide therein for purposes of adjustment in the direction to and from the ends of said bracket.

2. In a washstand, a basin-carrying ring having a tongue projecting laterally therefrom, a bracket with a longitudinally-extending recess in the upper limb thereof, said tongue being freely seated in said recess and adapted to slide therein for purposes of adjustment in the direction to and from the ends of said bracket, and a screw on said ring adapted to bear against the flange of the basin.

3. In a washstand, a basin-carrying ring having a tongue projecting laterally therefrom, a bracket with a longitudinally-extending recess in the upper limb thereof, said tongue being freely seated in said recess and adapted to slide therein for purposes of adjustment in the direction to and from the ends of said bracket, and a screw on said ring adapted to bear against the flange of the basin, said tongue having an upwardly-extending elbow thereon.

653,987. WEIGHT. EUGENE S. CRULL, Davenport, Iowa, assignor to The Adjustable Sash Weight Co., same place. Filed Mar. 9, 1900. Serial No. 8,049. (No model.)



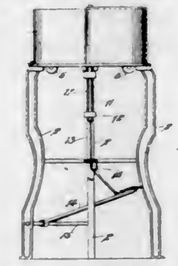
Claim.—1. A weight formed of two duplicate sections, each of which comprises a body with a main branch thereon, the main branch of one section being adapted to fit into an opening in the body of the other section, and the sections also having interengaging branches flanking the main branches.

2. A weight formed of two duplicate sections, each of which comprises a body portion with an open portion, and a branch, the branches respectively fitting in the open portions of the bodies, each section also comprising beveled flanking branches which interengage to sustain one section on the other, and the sections having grooves which match to form a passage extending through the weight.

3. A weight for sash-cords and the like, the weight being formed in two duplicate sections, each having a body with an opening in the side thereof, a main branch extending from the body, the main branches respectively lying in the said openings, and each weight-section also having one or more flanking or sub branches which interengage to sustain one section on the other.

4. A weight for sash-cords and the like, the weight being formed in two duplicate sections, each section comprising a body with an opening in the side thereof, a main branch on each weight-section, the branches respectively lying in the open portions of the bodies of the weight-sections, and interengaging means formed on the weight-sections for sustaining one on the other.

653,988. CHEESE-CUTTER. WALTER G. DOTY, Middletown, Ohio. Filed Oct. 4, 1899. Serial No. 732,521. (No model.)



Claim.—1. A cheese-cutter, comprising a rotary platform, a cutter, an arm mounted to rotate under the platform, a stop mounted to swing on the arm, and a position-indicator for the arm, substantially as specified.

2. A cheese-cutter, comprising a platform, a longitudinally-slotted tube extended through the center of the platform and on which it may rotate, a longitudinally-slotted tube extended upward at the edge of the platform, a frame guided in said tube, a cutter carried by the frame, and a stop-carrying arm mounted to swing on the center tube under the platform, substantially as specified.

3. A cheese-cutter, comprising a table, a platform mounted to rotate on said table, a cutter movable vertically with relation to the platform, an arm mounted for rotary motion underneath the platform, a stop mounted to swing on said arm, a pointer carried by the arm, and a graduated plate over which the pointer is movable, substantially as specified.

653,989. DISINFECTING-BLOCK. SAMUEL EDEN, New York, N. Y. Filed Jan. 15, 1900. Serial No. 1,459. (No specimens.)

Claim.—1. As a new article of manufacture, a disinfectant in solid form and composed of bichloride of mercury, disinfecting-oils, talcum and Portland cement, in about the proportions specified.

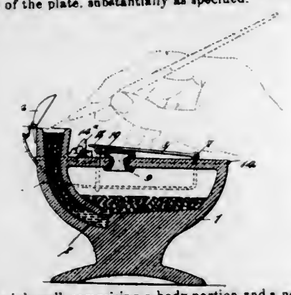
2. As a new article of manufacture, a disinfectant in solid form, and composed of bichloride of mercury, eucalyptus, thyme, cinnamon, talcum and cement, in about the proportions specified.

653,990. INK-WELL. OWEN V. FARRELL, Deposit, N. Y. Filed Dec. 7, 1899. Serial No. 739,529. (No model.)

Claim.—1. An ink-well, comprising a body portion and a neck portion, a bulb of flexible material arranged in an opening in the top of the body portion, a cover for the neck portion, a frame removably arranged on the well and having connection with an arm extended from the cover, and a plate having swinging connection with said frame and engaging with the bulb, a downward movement of said plate operating to compress the bulb and also to open the cover of the neck portion, substantially as specified.

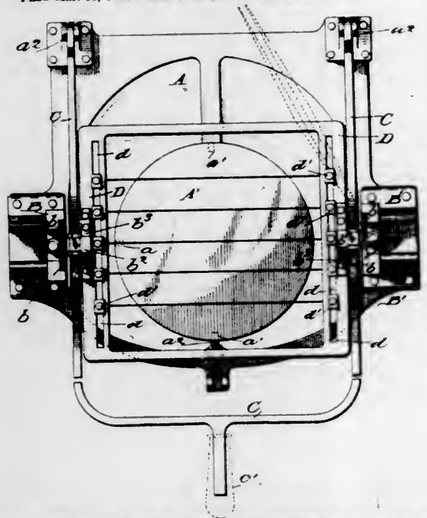
2. An ink-well, comprising a body portion and a neck portion, the bottom of the body portion being inclined downward to the neck portion, a bulb of flexible material arranged in an opening in the top of the body portion, a cover for the neck portion, a frame removably arranged on the well and having connection with an arm extended from the cover, a plate having swinging connection with said frame

and engaging with the bulb, and a stop for limiting the downward movement of the plate, substantially as specified.



3. An ink-well, comprising a body portion and a neck portion, a cover for the neck portion, a frame removably mounted on the well and connected with an arm extended from the cover, a bulb of flexible material arranged in an opening in the top of the well, a plate pivoted to the frame and engaging with said bulb, a stop-bar extended over the well, and a locking device on said bar for engaging with the plate, substantially as specified.

653,991. BUTTER-CUTTER. GEORGE B. FERRY, Cleveland, Ohio. Filed Mar. 15, 1900. Serial No. 8,771. (No model.)



Claim.—1. In a butter-cutter, the combination with two guiding-supports, of a butter-receiving table located between them, a movable cutter and guides, controlled by said supports, means for operating said cutter vertically in said guides, and a horizontally-vibrating cutter pivoted to one of said supports, substantially as described.

2. In a butter-cutter, the base, the guiding-standards, the bifurcated lever, the cutter-frame D and means connected therewith for engaging the guides of the standards, substantially as described.

3. A cutter-frame having two opposite side bars provided with slots through said bars from front to rear, wire-securing devices located in said slots and clamping means for securing them to the frame-bars, said wire-securing devices extending beyond said bars at one side of the frame and cutter-wires secured to said wire-securing devices at one side of the frame, whereby one or more of the cutter-wires can be removed without removing its securing devices, substantially as described.

4. A cutter-frame having side bars provided with slots extending from the forward face of the frame to the rear face thereof, cutter-securing devices consisting of a bolt having a grooved head, a perforation at the bottom of said groove and a squared projection extending beyond the head, said devices being secured in the said slots with the heads projecting from the forward side of the frame-bars, and cutter-wires secured to the heads of said securing devices, substantially as described.

5. A wire cutter-securing device consisting of a screw or bolt having a grooved head, perforated at the bottom of said groove, and a squared projection extending beyond said head whereby the wires can be extended across the frame outside of the same and be prevented from slipping off of said head, substantially as described.

6. The combination with the frame having the slotted sides the grooves on one face of the same and the cutter-securing devices having the perforated head, said head adapted to fit the grooves of the frame to bring the wires in close relation with one side of the frame, substantially as described.

7. In a butter-cutter, the combination with the vertically-operating cutter-frame and the guiding devices therefor, of the bifurcated operating-lever and the yokes for connecting the bifurcated parts of the said lever with said frame, substantially as described.

8. The combination with the operating-lever and a movable part operated thereby, of the yoke for connecting the two, the same consisting of the two side pieces, the roller interposed between them, the pivoted securing-flaps and the locking devices for said flaps, substantially as described.

9. In a butter-cutter, the combination with the vertically-operating cutter-frame and the guiding devices therefor, of the lever for actuating said cutter-frame, and the hook connected to said lever to engage said frame for removing said frame from its guiding devices, substantially as described.

653,992. COUNTING-BOARD. CARL J. R. FLECK, Hamburg, Germany. Filed Feb. 8, 1900. Serial No. 4,552. (No model.)



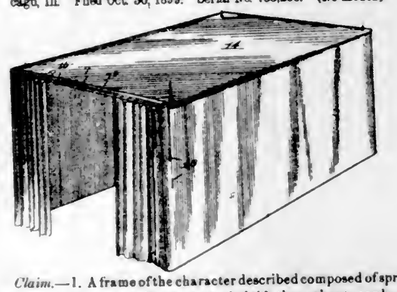
Claim.—1. A folding table or counter comprising a suitable support, a table-top composed of two leaves pivoted to the support and geared together to fold and unfold, said leaves having encompassing flanges on three sides projecting upwardly and downwardly, and a downwardly-projecting flange at their meeting edges, the lateral upwardly-projecting flanges being rounded at their meeting edges to provide clearance in folding, substantially as and for the purpose set forth.

2. A folding table or counter comprising a support having a vertical aperture, and a table-top composed of two leaves geared together and pivoted to fold into and close the aperture, substantially as set forth.

3. A folding table or counter, comprising a suitable support having a vertical aperture, a table-top composed of two leaves geared together and pivoted to fold in and close said aperture, and a locking device locking the leaves when folded, for the purpose set forth.

4. A folding table or counter, comprising a support having a vertical aperture, a framing fitted in said aperture, a table-top comprising two leaves geared together and pivoted to said framing to fold into and close the same, said leaves having upwardly and downwardly projecting flanges encompassing three of their sides, and a downwardly-projecting flange along their meeting edges, the lateral upwardly-projecting flanges being rounded at their meeting edges to provide clearance for folding, substantially as and for the purpose set forth.

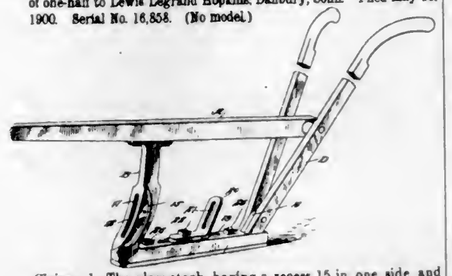
653,993. SUPPORTING-FRAME FOR VEHICLE-COVERS. GEO. C. FORRY, St. Louis, Mo., assignor of one-half to Robert M. Rogers, Chicago, Ill. Filed Oct. 30, 1899. Serial No. 735,233. (No model.)



Claim.—1. A frame of the character described composed of spring-wire bent into rectangular shape and rigid throughout, cords connected to a ring centrally located within said frame, said ring, said cords extending outwardly in diverging directions from said ring and connected at their outer ends to said frame, whereby the elasticity of the spring-wire of the frame causes a tension to be exerted upon said cords to hold the frame in alinement throughout its extent.

2. A resilient supporting-frame comprising a pair of metallic rods bent into rectangular form with eyes or loops at the corners and intermediate of the corners, and providing mating sections, the inner eyes or loops of the sections being overlapped, bolts extending through the inner eyes or loops and nuts whereby the sections are detachably secured together, and tension-cords joined to the eyes or loops and connected together at a central location within the frame; substantially as described.

653,994. PLOW. JAMES A. FREEMAN, Belleview, Fla., assignor of one-half to Lewis Legrand Hopkins, Danbury, Conn. Filed May 16, 1900. Serial No. 16,858. (No model.)



Claim.—1. The plow-stock having a recess 15 in one side and provided with transverse bolt-holes which open in the said recess, whereby said stock is adapted for attachment of a gutter, as shown and described.

2. The combination, with the plow stock or frame having a horizontal portion which is slotted lengthwise, of the standard 20 which is obtuse-angled and provided with a lengthwise slot in its elevated portion, and means for attaching the horizontal portion of said standard to the stock, adjustably, as shown and described.

3. In a plow, the combination, with a stock having a longitudinal slot therein extending from the front to the rear, and a recess in one side of the slotted portion of the stock, of a landside having a removable bottom section, the landside being attached to the bottom portion of the stock, and said landside having also an inverted-T-shaped longitudinal slot produced therein, a standard adapted to receive a sweep or a like device, and a bolt adapted to secure the standard to the landside, the head of which bolt is located in the wider portion of the slot in the said landside, for the purpose set forth.

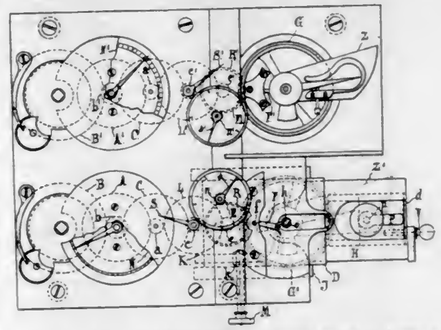
4. In a plow, the combination, with a beam, a stock secured to the beam, the stock having its front face curved and a slot produced therein extending to the rear, the said stock having also a recess in one side extending to its front surface, of a landside attached to the said stock, the landside having an inverted-T-shaped slot therein, a standard having a foot-section mounted for movement on the landside, the upright portion of the standard having a longitudinal slot therein, a bolt passed through the foot of the standard, the head of which bolt is within the wider portion of the said T-slot, and handles attached to the rear portion of the landside and to the said standard, as described.

653,995. GARMENT-POCKET. HYMAN GARFINKEL, St. Louis, Mo. Filed Apr. 3, 1899. Serial No. 711,628. (No model.)



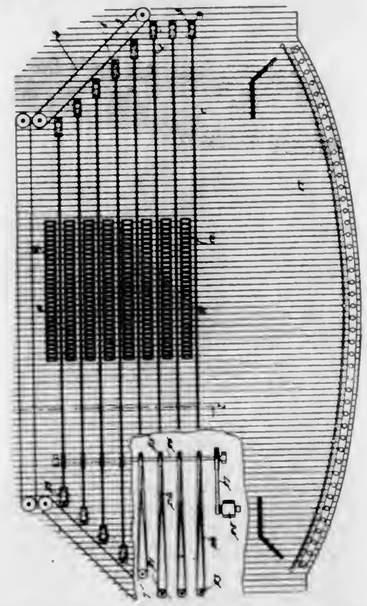
Claim.—A garment-pocket having an outer flap passed inwardly through the pocket-opening and turned upwardly, a strip of fabric 7, a pocket-facing 8 secured to said fabric, there being a slit 10 through the said fabric and facing through which the upper end of the outer flap is adapted to be passed, said fabric and facing bent downwardly and secured to the garment by stitching, said fabric and facing folded together and secured to the garment below the pocket-opening, stitches passed through the fabric, pocket-facing, flap and garment at the ends of the slit and pocket-opening and at right angles thereto for the purpose of preventing said pocket from tearing, substantially as specified.

653,996. WATCH-BALANCE TESTER. LUCIEN GRIBEL, La Chaux-de-Fonds, Switzerland. Filed June 12, 1899. Serial No. 720,256. (No model.)



Claim.—In a watch-balance-testing device having a frame or support carrying two trains of gearing and a testing-balance operated by one of said gearing, a block D having a sliding connection with said frame adjacent to the other train, a piece H pivotally connected with said block, an arm P having a clamp for holding the balance-bridge and balance to be tested, and a sliding connection between said arm and piece H, substantially as described.

653,997. THEATRICAL APPLIANCE. CLAUDE L. HAGEN, New York, N. Y. Filed Feb. 23, 1900. Serial No. 6,274. (No model.)



Claim.—1. In a stage-racing-scene appliance, the combination with racing-machines on the floor of the stage, such racing-machines comprising endless belts or carriers and with a vertical traveling scenic canopy at the rear of the stage, of a number of vertical and relatively-narrow belts extending transversely of the stage, over the floor thereof and situated between the respective racing-machines, such belts representing the ground of the scene produced, and means for driving the belts.

2. In a stage-racing-scene appliance, the combination with a number of racing-machines placed on the floor of the stage and comprising endless belts or carriers, of a series of vertically-disposed, relatively-narrow belts placed between the respective racing-machines and extended transversely of the stage, such belts representing the ground of the scene produced, and means for driving said belts

3. In a stage-scene appliance, the combination with the stage of which the scene is produced, of a number of relatively-narrow belts placed edgewise on the stage and having gradually-increasing heights, the belts being arranged with spaces between them for the reception of other elements of the scene and the belts representing the ground of the scene produced, and gearing for contiuously driving said belts at different speed, whereby to maintain the proper perspective effect as described.

4. In a stage appliance, the combination of a housing adapted to be placed on the stage, a pulley mounted therein, a box placed in the floor of the stage below the housing, a coupling-sleeve fastened to the axis of the pulley and mounted to turn in the box, and a shaft below the floor of the stage and projected into the box and engaged with the coupling-sleeve, to impart movement to the pulley.

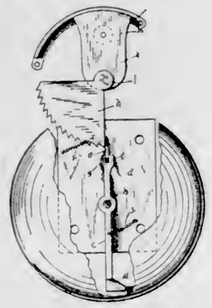
653,998. CORN-SHIELD. CHARLES B. HATFIELD, New York, N. Y. Filed Mar. 7, 1900. Serial No. 7,644. (No model.)



Claim.—1. A corn or bunion shield comprising a rubber cushioning-protector and an elastic retaining band or ring, the cushioning-protector being formed of an annulus having a groove formed in its upper surface surrounding the central opening, and a cover extending over the central opening and the groove, forming a recess on the under side of the protector, and a closed air-chamber around the recess, substantially as described.

2. A corn or bunion shield comprising a rubber cushioning-protector and an elastic retaining band or ring, the cushioning-protector having a central recess upon its under side and a closed air-chamber surrounding said recess, and a removable medicated fibrous pad in said recess, substantially as described.

653,999. COMBINED DOOR-BELL AND BURGLAR-ALARM. HAROLD A. HIGBER, Leeds Point, N. J. Filed Sept. 18, 1899. Serial No. 730,831. (No model.)

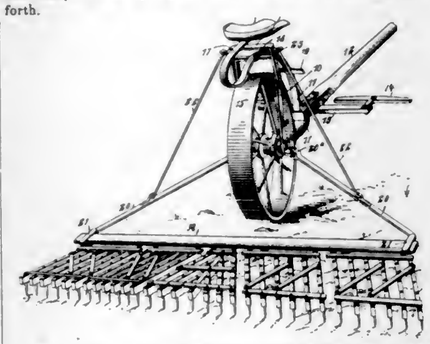


Claim.—A combined door-bell and burglar-alarm comprising a base-plate adapted to be secured to the inner face of a door, a spindle projecting from said base-plate, a gong mounted on the spindle, a clapper pivoted to the spindle, a second spindle adapted to be passed through the door to which the base-plate is secured and adjacent thereto, a notched segment secured to one end of the spindle and in engagement with one end of the clapper, a lever secured to the opposite end of the second-named spindle whereby the latter may be rocked, and a guide secured to the outer face of the door to receive the lever.

654,000. SULKY ATTACHMENT FOR HARROWS. LEON D. HOWARD, Marston, S. D. Filed Apr. 23, 1900. Serial No. 13,917. (No model.)

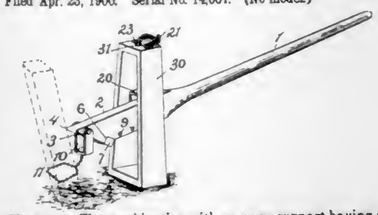
Claim.—1. A sulky attachment for harrows, consisting of a frame a single supporting-wheel, a pole or tongue connected with the frame, connecting-rods pivotally attached to the frame at its sides, and clamps pivotally attached to the connecting-rods and adapted for attachment to the draft-bar of the machine.

2. A sulky attachment for harrows and the like, consisting of a frame, a single wheel journaled in the said frame, a tongue connected with the frame, a seat supported above the said wheel, and connecting-rods pivotally attached to the lower side portions of the frame, and clamps carried by the said connecting-rods, for the purpose set forth.



3. A sulky attachment for harrows and the like, consisting of a frame, a yoke pivoted to the frame, a seat secured to the frame over the yoke, a wheel journaled in the lower portion of the frame, a pole or tongue connected with the said frame, connecting-rods pivotally attached at one of their ends to the lower side portion of the frame, clamps pivoted to the opposite ends of the connecting-rods, and braces pivotally connecting said connecting-rods with the said pivoted yoke, for the purpose set forth.

654,001. POST-EXTRACTOR. WILLIAM L. HULL, Alpha, Minn. Filed Apr. 23, 1900. Serial No. 14,007. (No model.)

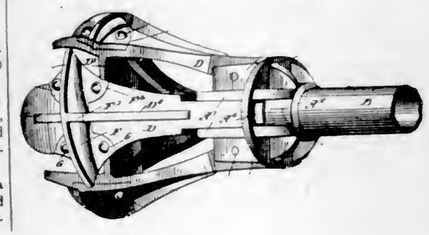


Claim.—1. The combination with an open support having a hole in its top bar; of a bar passing through the support for carrying the load at one end and having a handle at the other, a clevis pivoted to the bar, a chain swiveled to this clevis and leading loosely through said hole in the support, and a pin at the remote end of the chain passing through a link thereof just above the support, substantially as described.

2. The combination with a support, a chain pendent therefrom, a clevis connected with the chain, and a bar to which the clevis is pivotally attached; of a second clevis pivoted to the bar near the first, a chain swiveled to this clevis, and a hook at the other end of the chain, as and for the purpose set forth.

3. The combination with a bar provided with the usual fulcrum-point and nose, and having a series of holes passing through it near that edge which has the fulcrum and a single hole near its other edge and adjacent its nose; of two clevises passed astride the bar from different edges, one pivoted in one of said series the other in the single hole, and independent chains leading from the bends of said clevises, one to the load and the other to an overhead support, as and for the purpose set forth.

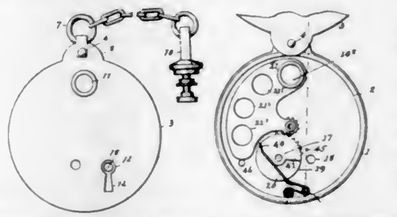
654,002. BOILER-TUBE SCRAPER. WORTHINGTON H. INGERSOLL, Hamburg, N. J. Filed Jan. 31, 1900. Serial No. 3,428. (No model.)



Claim.—1. A boiler-tube scraper, comprising a shank having a transverse disk, a tapering core in advance of the disk, lugs extending lengthwise of the core in advance of the disk, ribs extending rearwardly from the disk in longitudinal alinement with the said lugs, the disk being apertured between the ribs and the lugs, and having a beveled front surface, scraping-arms pivoted between the lugs and having heels adapted to engage the beveled surface of the disk, interrupted longitudinal central ribs on the outer surfaces of said arms, blades secured to the arms between the sections of said ribs and provided with central ribs registering with those of the arms, and springs engaging said arms and the tapered core.

2. A boiler-tube scraper, comprising a shank, arms movably connected therewith, and blades secured to said arms and each provided with a transverse cutting edge, and also with four attaching-lugs, two in front of the cutting edge and two in the rear thereof, these lugs and blades being countersunk in the outer surface of the arms, and fastening devices, such as screws, passing through said lugs and into the arms.

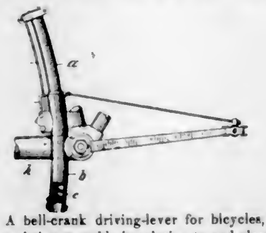
654,003. LOCK. RUDOLPH JENTZEN and CARL HÖGE, Altona, Germany. Filed May 15, 1899. Serial No. 716,820. (No model.)



Claim.—1. In a safety mechanism for locks, the combination with a casing having plates 2 and 3, of a shaft centrally mounted in one of said plates, a plurality of segments mounted on said shaft and each provided with a toothed extension and having a series of openings therein, one of said openings in one of the segments being of less diameter than the other openings, the pin 10 adapted to engage said openings and means engaging the toothed extensions of said segments whereby the latter may be operated.

2. In a mechanism of the character described, the combination with the casing, a central shaft in said casing, a series of segments mounted on said shaft and having toothed extensions, a pin 17 in the casing, a series of toothed segments loosely mounted on said pin, and adapted to engage the extensions aforesaid, disks between said last-named segments, springs for operating the latter secured to the casing, a key-slot in one of the plates, a key-pintle, and suitable stop for the key, fixed in the case, substantially as set forth.

654,004. DRIVING MEANS FOR BICYCLES. FRANS J. E. JOHANSSON, Stockholm, Sweden. Filed Apr. 14, 1900. Serial No. 12,908. (No model.)

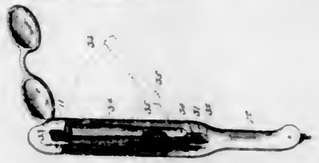


Claim.—1. A bell-crank driving-lever for bicycles, comprising legs *a*, *b*, the leg *a* being movable in relation to and along the leg *b*, a driving connection leading from the movable leg and a spring for pressing the leg *a* outwardly in relation to the leg *b*, said spring being arranged to yield under excessive pressure on the treadle whereby the length of the lever-arm *a* will be adjusted automatically.

2. In combination with a bell-crank-lever treadle having the two-part leg, one part of which slides in relation to and along the other, a toothed bar secured to the movable part, a latch *e* fixed to the fixed part and having a projection adapted to strike the frame of the machine in a certain position of the lever by which the latch *n* be disengaged from the toothed bar, substantially as described.

654,005. EYEGLASS-HOLDER. CARL F. KABISCH, New York N. Y. Filed Mar. 5, 1900. Serial No. 7,310. (No model.)

Claim.—1. An eyeglass-holder, consisting of a body having an interior chamber, an eyeglass-frame pivoted in the said chamber, a slide in the chamber, a link pivotally connected with the slide and with the pivotal portion of the eyeglass-frame, and means for operating the said slide, as described.



2. An eyeglass-holder, consisting of a body having an interior chamber, an eyeglass-frame pivoted in the said chamber, a yoke having guided sliding movement in said chamber, a link connecting the yoke with the pivotal portion of the eyeglass-frame, and means for operating the said yoke from the exterior of the body, as set forth.

3. An eyeglass-holder, consisting of a body having an interior chamber, an eyeglass-frame pivoted in the said chamber at a point near the upper end of said chamber, the said chamber being provided with stops limiting the upward and inward movement of the said frame, a yoke mounted to slide in the body and extending beyond the outer face thereof, and a link connecting the upper end of the yoke with the pivotal portion of the said eyeglass-frame, as specified.

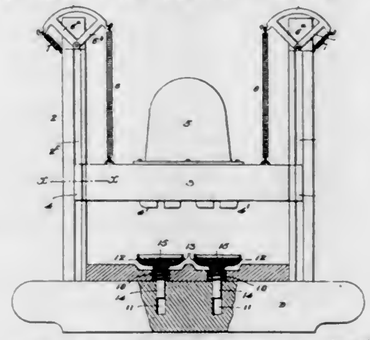
4. An eyeglass-holder, consisting of a body having an interior chamber and a slot in one side, an eyeglass-frame pivoted in the said chamber, means for limiting the outward and inward movement of the said frame, a slide in the said body, and having its lower end projecting out through the said slot and provided with a button, and a link connection between the yoke and the pivotal portion of the eyeglass-frame, as set forth.

5. In an eyeglass-holder, a body having an interior chamber, an eyeglass-frame pivoted in the said chamber, means for limiting the outward and inward movement of the eyeglass-frame, a yoke having a link connection with the pivotal portion of the eyeglass-frame, which yoke is located within the chamber and receives the eyeglass-frame between its members when the frame is carried within the said chamber, guides for the yoke, and means for imparting end movement to the yoke at a point outside of the said body.

6. In an eyeglass-holder, the combination with a chambered body, of an eyeglass-frame pivoted in the chamber of the body, a slide in the body and having its lower end extending out beyond the same, a link connecting the slide with the eyeglass-frame, and a friction-lock for said slide, substantially as described.

7. In an eyeglass-holder, the combination with a chambered and slotted body, and an eyeglass-frame pivoted therein, of a yoke having guided sliding movement in the body, the lower end of the yoke projecting out through the slot of the body and provided with a button, and an angular link connecting the yoke with the pivotal portion of the eyeglass-frame, substantially as described.

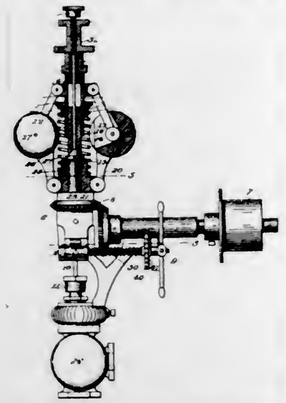
654,006. METAL-CAP EXPANDER. JULES C. KELLER, Pottsville, Pa. Filed Apr. 12, 1900. Serial No. 12,555. (No model.)



Claim.—In a "crown" or crimped cap expander, adapted to be applied to and operated by a bottle-capping machine, the combination of a base having formed therein the female members of expanding-dies, spring-controlled ejectors for removing the expanded caps from said female members, the vertical guide-standards provided with vertical guideways or grooves, a spring-controlled plunger carrying the male members of the expanding-dies and provided with an impact-

head, bell-crank levers mounted in the upper ends of said standards, springs connecting one end of said bell-crank levers with the vertical standards, and springs connecting the other ends of said bell-crank levers with the aforesaid plunger, substantially as set forth.

654,007. STEAM-ENGINE GOVERNOR. JAMES E. KIMBLE, Vicksburg, Mich. Filed Feb. 21, 1899. Serial No. 706,402. (No model.)



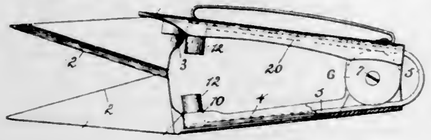
Claim.—1. The combination of the upright spindle, the lower revoluble collar, the revoluble, vertically-movable governor-cap, a spiral spring on said spindle between the governor-cap and collar; solid spherical governor-balls having the lower integral arms pivoted to said revoluble collar, said governor-balls having the interior recessed openings beginning at one side of the interior center and extending therefrom, laterally upward obliquely, and obliquely laterally downward to the periphery toward the spring, thus opening this entire side and a portion of the top, said opening flaring both ways laterally at the edges next to the spring, and the arms pivoted at the upper end to the governor-cap, and pivoted at the lower end in the recessed opening at the interior center of the governor-balls, substantially as set forth.

2. The combination of the spindle, the governor-cap and its integral sleeve revoluble on the spindle, the valve-stem connected to said governor-cap, the revoluble lower sleeve and its integral base, a spiral spring having its ends surrounding the sleeves, and an adjusting-nut screw-threaded on a sleeve and vertically adjustable thereon, the body of said nut being surrounded by one end of the spring, and said nut also being provided with the flange resting on the end of said spring and pressing equally upon all portions of its end when compressing the spring by a movement of the nut, substantially as set forth.

3. In a fly-governor, the combination of a spindle, the governor-cap, a valve-stem within said spindle; the screw-threaded plug provided with a wrench-seat and screwed into the governor-cap; the stock provided with a thumb-wheel and having a pendent portion loose in said plug and attached thereto in a swiveled manner; and a stop-screw for the valve-stem adjustably screwed into the swiveled stock, substantially as set forth.

4. In a speeder for engine-governors, the combination of the revoluble and laterally-movable hand-wheel attached to one end of the speeder-spring, said hand-wheel having a series of well-separated, open notches around its periphery, to facilitate gripping it with the hand; and a projection extending laterally from a portion of the speeder-frame to which it is attached, in position for the notches of the hand-wheel to pass onto and off from the projection sidewise, when the hand-wheel is moved in either lateral direction, substantially as set forth

654,008. SHEEP-SHEARS. CHARLES C. KIRKLAND, Burlington, Mich. Filed Apr. 4, 1900. Serial No. 11,473. (No model.)

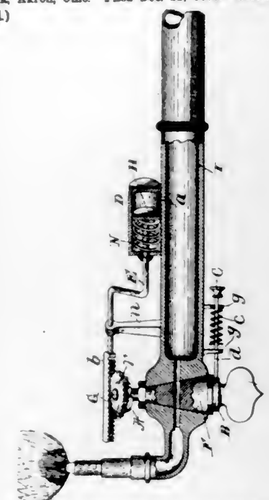


Claim.—1. In animal-shears, the combination with the two members each comprising a blade and a semitubular handle with its groove standing inward and open at its rear end, and stops removably attached to said handles near the blades; of eyes on said handles adapted to lie face to face and to project each into the groove of the other handle, a pivot between their centers, and a V-shaped spring whose arms extend removably into the open ends of the handles and lie against said stops and whose bend stands in rear of the pivot, substantially as described.

2. In animal-shears, the combination with the two members each comprising a blade and a semitubular handle with its groove standing inward: of a pair of inturned lips at the inner edge of each handle near its blade, stops having side grooves adapted to be engaged by said lips, a pivotal connection between the rear ends of the handles, and a V-shaped spring whose arms stand within the handles normally against the stops, as and for the purpose set forth.

3. In animal-shears, the combination with the two members each comprising a blade and a semitubular handle with its groove standing inward and open at its rear end; of a pair of inturned lips at the inner edge of each handle near its blade, a stop having side grooves adapted to be engaged by said lips, a pivotal connection between the rear ends of the handles, and a V-shaped spring whose arms enter said open rear ends of the grooves in the handles and whose bend connects its arms in rear of the pivot, as and for the purpose set forth.

654,009. AUTOMATIC CUT-OFF. FRANK KITTINGER and FRANK MOTTINGER, Akron, Ohio. Filed Dec. 22, 1899. Serial No. 741,331. (No model.)



Claim.—1. An automatic cut-off comprising a supply-pipe, a chamber having communication with the supply-pipe, a piston within the chamber, the valve having at one end a gear-wheel having a limited independent movement in respect thereto, and an operative connection between the piston and the said gear-wheel, substantially as described.

2. An automatic cut-off comprising a pressure-supply pipe, a valve therefor, a pressure-actuated member in operative relation with the supply-pipe, an operative connection between the pressure-actuated member and the valve, and an automatic locking device for locking the said valve closed, substantially as described.

3. An automatic cut-off comprising a pressure-supply pipe, a pressure-actuated member in operative relation therewith, a valve for the supply-pipe, an operative connection between the valve and the pressure actuated member, the valve having a locking-notch, and an automatic locking member adapted to coact with the locking-notch for holding the valve closed, substantially as described.

4. An automatic cut-off comprising a pressure-supply pipe, a valve therefor, a pressure-actuated member in operative relation with the supply-pipe, an operative connection between the pressure-actuated member and one end of the said valve, and an automatic locking member engaging the opposite end of the said valve, substantially as described.

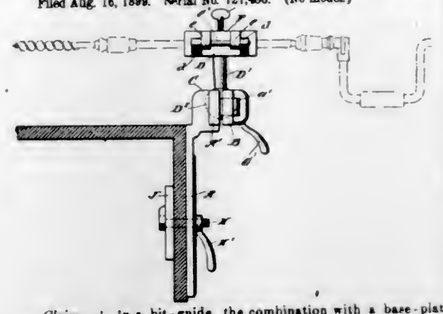
5. An automatic cut-off comprising a pressure-supply pipe, a pressure-actuated member in operative relation therewith, a valve for the pipe, the valve having at one end a disk with a peripheral slot.

an oscillating operative member connected with and movable independent of the valve, said operating member having a projection movable in the slot of the disk, and a connection between the pressure-actuated member, and the valve-operating member substantially as described.

6. An automatic cut-off, comprising a pressure-supply pipe, a valve therein, a chamber or cylinder having communication with the said pressure-supply pipe, a piston within the chamber, a spring adapted to force the piston against the said pressure, the valve having at one end a gear-wheel having a limited movement independent of the valve, the piston having a piston-rod provided with a rack-bar engaging said gear-wheel and an automatic holding and locking device attached to the opposite end of the valve, substantially as described.

7. An automatic cut-off comprising a pressure-supply pipe, a valve therein, a chamber in communication with the said supply-pipe and carrying a piston which is operatively connected to the valve, a disk carried by the lower end of said valve and having a number of ratchet-teeth thereon and a locking-notch, and a spring-pressed catch engaging said ratchet-teeth and adapted to enter the said notch whereby the valve can be held in the desired position against the pressure or securely locked, substantially as described.

654,010. BIT-GUIDE. FREDERICK A. LAMBERG, Hot Springs, Ark. Filed Aug. 16, 1899. Serial No. 727,433. (No model.)



Claim.—1. In a bit-guide, the combination with a base-plate adapted to be secured to a bench or other support and provided with a spherical socket, of a two-part block having registering recesses forming a bit receiver and holder, one of the parts of the receiver and holder being provided with a stem terminating in a ball fitting in the socket of the base-plate, substantially as described.

2. In a bit-guide, the combination with a base-plate adapted to be secured to a support and provided with a spherical socket, of a bit-guide, consisting of a stem terminating in a ball fitting in the socket of the base-plate and provided with a head having a semicircular groove in one face, and a plate having a semicircular groove in one face registering with the groove of the head, the head and plate being provided with apertured ears to receive pins, by which the parts are secured together, substantially as described.

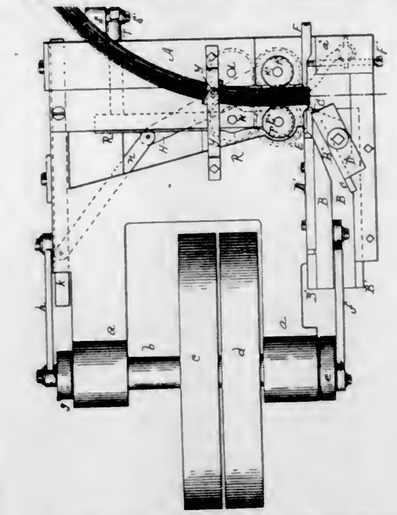
3. A bit-guide, comprising a base-plate adapted to be secured to a bench or other support and provided with a two-part spherical socket, one of which parts is provided with a scale, and a two-part bit receiver and holder, one of the parts of the receiver and holder being provided with a stem terminating in a ball fitting in the socket of the base-plate and provided with a reference-mark, substantially as described.

4. A bit-guide, comprising a base-plate adapted to be secured to a bench or other support, a two-part bit receiver and holder, one of the said parts being provided with a stem, and a ball-and-socket-joint connection between the stem of the bit receiver and holder and the base-plate, the members of the ball-and-socket joint having scales thereon for indicating their relative angular positions, substantially as described.

654,011. MACHINE FOR MAKING SHOE-PEGS. JOHN LEWIS, Brownville, Me., and GEORGE E. M. LEWIS, Lewiston, Canada. Filed Apr. 28, 1900. Serial No. 14,694. (No model.)

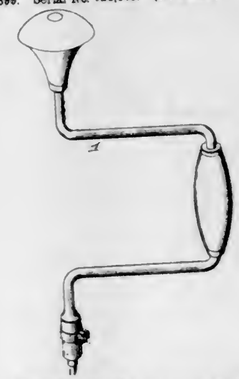
Claim.—1. In a machine for making shoe-pegs, the frame; a sliding knife-carriage supported by the frame; mechanism for reciprocating the carriage horizontally; two knives supported by said carriage and set one in advance of the other, said knives being bent in toward each other at their upper ends at obtuse angles and having their upright portions on vertical planes which are at a distance apart which is equal to the width of the peg to be cut; and mechanism for feeding the peg-wood across the paths of the knives at right angles therewith, substantially as described.

2. In a machine for making shoe-pegs, the frame; a sliding knife-carriage supported by the frame; mechanism for reciprocating said carriage horizontally; the vertically-set knife C placed diagonally on the table and having its upper portion C' bent inward or toward the path of the other knife; the knife E set vertically and longitudinally on the table and with its upper portion E' bent inward or toward the path of the other knife, said knife E, E' being shorter than the knife C so that its upper end intersects or extends toward a point in the bent portion of said knife C which is some distance below the top, the knife C being in advance of the knife E, and the main portions of said knives being on parallel vertical planes at a distance apart equal to the width of the peg to be cut; and mechanism for feeding the peg-wood across the paths of the knives, substantially as set forth.



3. In a machine for making shoe-pegs, the sliding knife-carriage; the knives C, E supported by said carriage; mechanism for reciprocating the carriage; the feed-rolls K, P having notched or serrated peripheries; the gears K' and P' on said rolls; the gears L' and N' mounted in the frame and connecting said gears K' and P'; a ratchet mechanism connected with the gear K' and means for actuating the same whereby the feed-rolls are rotated sufficiently to advance the peg-wood to the extent of the width of one peg; yielding mechanism for holding the feed-rolls against the opposite sides of the bunch of peg-wood or peg-wood waste which is being fed into the machine; and spring mechanism bearing on the upper side of the peg-wood, substantially as described.

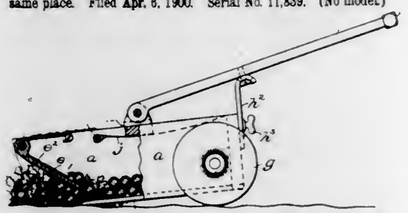
654,012. BIT-BRACE. ROBERT LEWIS, Chihuahua, Mexico. Filed Aug. 4, 1899. Serial No. 726,073. (No model.)



Claim.—A bit-brace having a bit-socket formed with a longitudinal groove in its interior wall and with an annular groove in its

exterior wall, of a locking-collar mounted in said annular groove and flush with the external wall of the bit-socket; said collar being provided with parallel ears and a set-screw for clamping them together and with a vertical groove adapted to register with the groove aforesaid and being formed with a recess in its upper edge, a pin fixed to the bit-socket to be engaged by the end walls of said recess, and a bit, the shank of which fits snugly within said bit-socket and is provided with a transverse pin to be engaged by said collar, substantially as and for the purpose set forth.

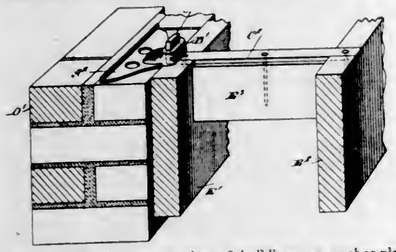
654,013. CRANBERRY-GATHERER. DANIEL LUMBERT, Centreville, Mass., assignor to William S. Lumbert and Harrie F. Lumbert, same place. Filed Apr. 6, 1900. Serial No. 11,839. (No model.)



Claim.—1. A machine of the character described comprising in its construction a frame with side pieces and an end piece, a series of picker-rods extending forward from the lower portion of the latter and terminating on a line in rear of the foremost portions of the side pieces, and a stripper-plate pivoted to the said foremost portions of the side pieces at the upper parts thereof and extending rearwardly toward the front ends of the picker-rods, said plate being spring-pressed against stops so that normally its acting edge stands just forward of the ends of the picker-rods ready to be pressed backward by the vines while the picker-rods pass through the same under the berries, substantially as described.

2. A machine of the character described comprising in its construction a frame with side pieces and an end piece, a series of picker-rods extending forward from the lower portion of the latter and terminating on a line in rear of the foremost portions of the side pieces, and a stripper-plate pivoted to the said foremost portions of the side pieces at the upper parts thereof and extending rearwardly toward the front ends of the picker-rods, said plate being spring-pressed against stops so that normally its acting edge stands just forward of the ends of the picker-rods ready to be pressed backward by the vines while the picker-rods pass through the same under the berries, together with wheels at the rear of the frame elevating the same from the ground, and a handle by which to propel the machine, substantially as described.

654,014. ANCHOR-IRON. WALTER R. MADISON, Springfield, Mass. Filed Mar. 20, 1900. Serial No. 9,400. (No model.)



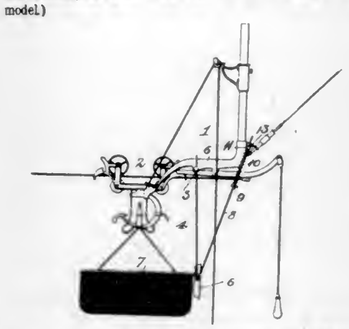
Claim.—1. In the construction of buildings, an anchor-plate adapted to be set in a wall, and provided with an eye, and a joist provided on its top between the ends, with an upwardly-extending hook arranged to engage said eye.

2. In the construction of buildings, a joist having downwardly-facing hooks at its ends, and an upwardly-facing hook on its top between its ends, and anchor-plates adapted to be set in the walls, and provided with eyes to receive said hooks.

3. In the construction of buildings, a joist having on its top a transversely-disposed joist-bar with an upwardly-extending hook at its end, and an anchor-plate adapted to be set in a wall and having an eye to receive said hook.

4. In the construction of buildings, a joist having at its ends longitudinally-disposed joist-bars with downwardly-extending hooks, and on its top, between its ends, a transversely-disposed joist-bar with an upwardly-extending hook, and anchors adapted to be set in the walls and provided with eyes to receive said hooks.

654,015. PARCEL-CARRIER ATTACHMENT. CHARLES J. MILLER, Minneapolis, Minn. Filed Apr. 12, 1900. Serial No. 12,548. (No model.)



Claim.—1. In a parcel-carrier attachment, the combination with the station-frame, of a bumper or buffer plate; the front connecting-rods; the rear connecting-rods; and a cross-head on the upper ends of said rear connecting-rods, substantially as specified.

2. In a parcel-carrier attachment, the combination with a station-frame, of a bumper or buffer located below the station-frame and connected therewith by flexible rods, and connected with a supporting cross-head supported by the station-frame by flexible rods provided with encircling springs, substantially as specified.

3. In a parcel-carrier attachment, a yielding suspending device pendent from the station-frame, a movable buffer or bumper carried thereby to receive the impact of the carrier, and means for limiting the movement of said parts and restoring same to their normal position, substantially as set forth.

4. In a parcel-carrier attachment, the combination with the station-frame and basket or carrier, of a bumper or buffer pendent from the station-frame and yieldingly supported in position to come in contact with the basket or carrier and whereby said basket or carrier is stopped and its impetus and impact taken up, substantially as set forth.

5. A parcel-carrier attachment, comprising a suspending device to hang pendent from the station-frame, a bumper or buffer carried thereby to receive the direct impact and impetus of the basket or carrier, and means in connection with said bumper or buffer whereby the impetus and impact of said basket or carrier are taken up and oscillation thereof prevented, substantially as set forth.

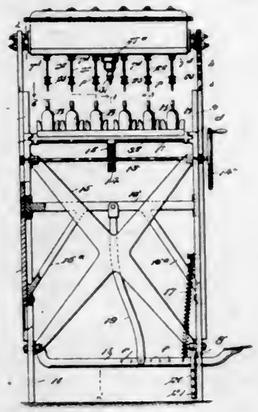
6. A parcel-carrier attachment, comprising one or more front flexible connecting-rods pendent from the station-frame, a bumper or buffer plate carried thereby to receive the direct impact of the basket or carrier, one or more yielding rear connecting-rods also pendent from the station-frame, and one or more springs cooperating with said rear connecting-rods, substantially as set forth.

7. A parcel-carrier attachment, comprising suspending means, a bumper or buffer plate pivoted thereto to receive the direct impact of the basket or carrier, and spring-pressed means cooperating with said plate whereby the impetus and impact of the basket or carrier are taken up and oscillation thereof prevented, substantially as set forth.

654,016. BOTTLE-FILLING MACHINE. SAMUEL C. MILLER, Louisville, Ky. Filed Dec. 1, 1899. Serial No. 738,888. (No model.)

Claim.—1. In a bottle-filling machine, the combination with a bottle-support, of a vertically-slidable filling-tank above the support, sliding and spring-pressed filling-tubes having their lower ends projecting out through the bottom of the tank and their upper ends extending into the upper part of the tank and means in the upper part of the tank for supporting and guiding the upper ends of the tubes, said tubes each being provided with an inlet-opening which is normally below the inner surface of the bottom of the tank, substantially as described.

2. In a bottle-filling machine, the combination with a bottle-support, of a vertically-slidable filling-tank above the support, sliding and spring-pressed filling-tubes having their lower ends projecting out through the bottom of the tank and their upper ends extending into the upper part of the tank and having guided movement therein, each of the tubes being provided with an inlet-opening which is normally below the inner surface of the bottom of the tank, and an air-vent pipe in each filling-tube, said vent-pipe opening out through the filling-tube near the upper and lower ends thereof, substantially as described.



3. In a bottle-filling machine, the combination with a bottle-support, of a vertically-slidable tank above the support, having openings in its bottom and annular recesses around said openings, sliding and spring-pressed filling-tubes having their lower ends projecting through the openings in the bottom of the tank and their upper ends extending into the upper part of the tank and having guided movement therein, each tube being provided with an inlet-opening and with a valve above said inlet-opening adapted to be seated in the recess of the bottom of the tank, and an air-vent pipe in each filling-tube, said air-vent pipe opening out through the filling-tube near the upper and lower ends thereof, substantially as described.

4. In a bottle-filling machine, the combination with a horizontally-movable bottle-support, of a vertically-slidable filling-tank above the support, a series of sliding and spring-pressed filling-tubes having their lower ends projecting out through the bottom of the tank and their upper ends extending into the upper part of the tank and having guided movement therein, each of the tubes being provided with an inlet-opening and a valve above the inlet-opening, and an air-vent pipe in each filling-tube, said vent-pipe opening out through the tube near the upper and lower ends thereof, substantially as described.

5. In a bottle-filling machine, the combination of a tank, a spring-actuated support for the tank, a frame whereon the support is adapted to reciprocate, means to depress the tank by foot-pressure, a series of spaced filling-tubes depending through the tank and held to slide therein at the upper and lower sides of said tank, and each having a contracted escape-aperture in its lower end, a sealing-cap at the upper end of each tube, an inlet-orifice in each filling-tube located near the inner surface of the bottom wall of the tank, an annular valve on each tube adapted to close the inlet-orifice therein when the tube is depressed, a spring on each tube pressing the tube and the valve thereon downwardly, and an air-escape pipe extending interiorly from near the lower end of each filling-tube to near the top thereof and tapping the side of said tube, the air-inlet for the lower end of the pipe being above the outlet of the filling-tube.

6. In a bottle-filling machine, the tank-filling device, comprising the liquid-supply pipe, the valve-chamber on one end of said supply-pipe covering an opening in the tank, the cylindrical hollow valve therein, having two circumferential valve-seats thereon, the valve-rod extended from the top of the valve up loosely through a guide-bar, and the float held on the valve-rod within the tank.

7. In a bottle-filling machine, the combination with a tank provided with a cup-like depression in its cover, having communication with the tank, of a sliding and spring-pressed filling-tube having its lower end projecting through the bottom of the tank and its upper end projecting into the cup-like depression of the tank, and an air-vent pipe in the filling-tube and having its upper end opening out through the tube in the cup-like depression and its lower end opening out through the pipe near the lower end thereof, substantially as described.

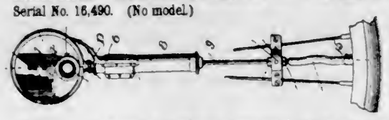
8. In a bottle-filling machine, the combination with a tank provided with a cup-like depression in its cover, communicating with the tank, of a filling-tube having its upper end projecting through the bottom of the said depression and its lower end projecting out through the bottom of the tank, and a spring surrounding the tube between the bottom of the said depression and a collar on said tube, substantially as described.

9. In a bottle-filling machine, the combination with a tank having a cup-like depression in its cover, communicating with the tank, and provided with an opening in its bottom, and an annular recess around said opening, of a filling-tube having its upper end projecting into the cup-like depression and its lower end projecting out through the opening in the bottom of the tank, said tube being provided with an inlet-opening and with a valve above said opening, and a spring surrounding the filling-tube between the bottom of the depression and a collar on the tube, substantially as described.

10. A bottle-filling machine, comprising a supporting-frame, a horizontally-movable bottle-support mounted in the frame, a vertically-slidable filling-tank mounted in the frame above the support, a float-valve for automatically controlling the supply of liquid to the tank, a series of sliding and spring-pressed filling-tubes having their upper ends extending into the upper part of the tank above the level of the liquid, and their lower ends projecting out through the bottom of the tank, and air-vent pipes in the filling-tubes and opening out through the same near the ends thereof, substantially as described.

11. In a bottle-filling machine, the combination with a tank, and filling-tubes having their upper ends projecting up into the upper part of the tank, and their lower ends projecting out through the bottom of the tank, of an air-vent pipe for each tube, said pipes being arranged in the tubes and having their end opening out through the side of the tube near the upper and lower ends thereof, substantially as and for the purpose set forth.

654,017. MEANS FOR AUTOMATICALLY INFLATING PNEUMATIC TIRES. JOHN A. MILLS, Gainesville, Tex. Filed May 12, 1900. Serial No. 16,490. (No model.)



Claim.—1. In means for inflating pneumatic tires, an eccentric, a yoke fitted to the eccentric and having offset portions adjustably connected and side portions embracing opposite sides of the peripheral portion of the said eccentric, one of the offset portions being bent back upon itself and secured to the body of the yoke and a pump in coöperative relation with the said eccentric and yoke and adapted to be actuated thereby, substantially as and for the purpose set forth.

2. In a pneumatic-tired wheel and means for inflating the tire thereof, an eccentric and yoke in coöperative relation, a pump adapted to be actuated by means of the said eccentric and yoke, one of the parts being secured to the said yoke, a clamp secured to the spokes of the wheel, and a head receiving the other part of the pump and journaled to the clamp so as to oscillate in unison with the oscillatory movements of the pump when the latter is in active operation, substantially as specified.

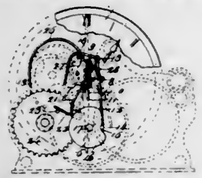
3. In a pneumatic-tired wheel and inflating means therefor, an eccentric and yoke in coöperative relation, a pump having one of its parts connected with the said yoke, a clamp comprising companion members having their intermediate portions oppositely deflected to form a space, and an oscillatory head located in said space and having trunnions mounted in the offset portions of the clamp members, said head having the other part of the aforementioned pump fitted thereto, substantially as set forth.

4. In means for inflating pneumatic tires, a pump, an eccentric and yoke disposed for coöperative relation in actuating the said pump, a stop projected from the said eccentric and comprising fork members of unequal length, and a restraining device adapted to clear the short fork member of the stop and to enter the crotch formed between the fork members by a longitudinal movement and lock the eccentric against movement in either direction, substantially as specified.

5. The herein-described means to be applied to a pneumatic-tired wheel for inflating the same, said means consisting of an eccentric, a yoke having offset terminals and side portions to embrace the sides of the peripheral portion of the eccentric, means for adjustably connecting the offset terminals of the yoke, a bracket secured to an end portion of the yoke, a cuff attached to the bracket, a pump having its cylinder held by the said cuff, a clamp comprising companion members having their middle portions oppositely deflected, a head located in the space formed by the offset portions of the clamp members and provided with trunnions mounted in the said offset portions of the clamp, said head receiving the piston-rod, collars applied to the piston-rod and embracing opposite ends of the oscillatory head, and means for preventing rotation of the eccentric when the pump is in operation, substantially as set forth.

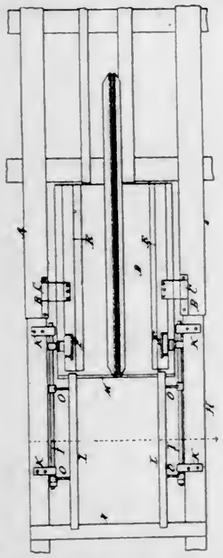
654,018. GRAPHOPHONE DRIVE MECHANISM. OMA E. PAYNE, St. Louis, Mo. Filed June 14, 1899. Serial No. 720,589. (No model.)

Claim.—1. A clock having a minute-hand shaft extending through the works and outside the rear thereof, a short arm carried by said shaft upon its extension, combined with a phonograph having suitable gearing, a cam operated by said gearing, a shaft, an arm secured to said shaft and operated upon by the cam, a rod also secured to said shaft, and an intermediate means for causing the short arm to operate the last-mentioned arm to set the phonograph in operation.



2. A clock, comprising a phonograph, suitable gearing forming a part of the latter, a cam operated by said gearing, and provided with a depression, a shaft, an arm secured to the latter, and coöperating with said cam, a rod also secured to said shaft, a pin carried by the gearing of the phonograph, and coöperating with the lower end of said rod, a minute-shaft, a short arm forming a part of the same, and suitable mechanism with which the said short arm coöperates for releasing the gearing of the phonograph, whereby the latter is intermittingly operated, as and for the purpose described.

654,019. COAL-DUMPING APPARATUS. JOHN M. PHILLIPS and JOHN J. FLEMING, Pittsburg, Pa., assignors to said John M. Phillips. Filed Aug. 29, 1899. Serial No. 728,903. (No model.)



Claim.—1. In an apparatus for dumping the contents of cars the combination with a tilting platform or tipple of crossover-rails and mechanism operated by the tilting platform for moving said crossover-rails laterally throughout their entire lengths while the rails are maintained parallel substantially as described.

2. In a dumping apparatus the combination with a tilting track-section of crossover-rails, rock-shafts to which said rails are secured and mechanism substantially as described for rocking said shafts and moving the crossover-rails laterally out of alinement with the rails of the tilting track-section when the latter is tilted substantially as described.

3. In a dumping apparatus the combination with a tilting platform or track-section of crossover-rails, rock-shafts to which said crossover-rails are attached and curved sectors projecting from said rock-shafts and adapted to contact with the tilting track-section or platform and turn the rock-shafts substantially as described.

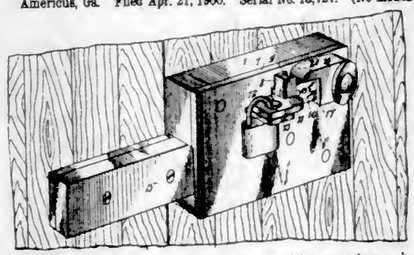
4. In a dumping apparatus, the combination with a tilting track-section, having rollers on each side of crossover-rails, rock-shafts having lateral arms to which said rails are attached, curved sectors attached to said rock-shafts and arranged to contact with the rollers on the tilting track-section when the latter is tilted, substantially as described.

654,020. ADJUSTABLE ECCENTRIC OR GEAR. IRVING E. QUIST, Atwater, Minn. Filed May 10, 1900. Serial No. 16,164. (No model.)



Claim.—The combination with the part 1, which may be in the form of a gear, eccentric, or cam and which is provided with a radial slot formed with notches, of a shaft extending through said slot and a clamp on said shaft provided with wings or fins to engage said notches, and means for clamping said wings or fins in said notches, substantially as set forth.

654,021. SEAL-LOCK. CHARLES A. RASCO and JOHN T. TAYLOR Americus, Ga. Filed Apr. 21, 1900. Serial No. 13,727. (No model.)



Claim.—1. A seal-lock for a car, comprising a casing, a hook-latch mounted to swing in the casing, a hook-bar designed to be attached to the car-door and adapted to be engaged by the hook-latch, an arm extended outward from the hook-latch through a slot in the casing, a lug on said arm having a recess to receive one end of a seal, a keeper-block mounted to rotate on the casing and having a recess to receive the other end of said seal, and means for preventing a rotary movement of said block while engaging with the seal, substantially as specified.

2. A seal-lock, comprising a casing, a hook-latch mounted to swing therein, a part carried by a car-door for engaging with said latch, an arm extended outward from the latch through a slot in the casing, a lug extended upward from said arm and having a recess to receive an end of a seal, means for locking the latch in its closed position, a keeper-block mounted to rotate on the casing and having a recess to receive an end of the seal, and a spring-pressed lug carried by said block and adapted to engage in a recess formed in the outer surface of the casing, substantially as specified.

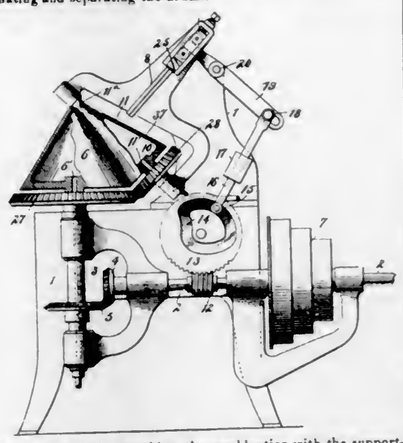
3. A seal-lock, comprising a casing, a hook-latch mounted to swing in the casing, a device adapted to be attached to a car-door for engaging with the hook-latch, an arm extended from said hook-latch through a slot in the front plate of the casing, a recessed lug extended upward from said arm, a perforated lug extended horizontally from the arm, a perforated lug on the front plate of the casing for registering with the lug on the arm, a keeper-block mounted to rotate on the front plate of the casing and having a recess to receive an end of a seal and also having a forward projection to engage upon the upper edge of the seal, and means for locking said block from upward motion when engaged by the seal, substantially as specified.

4. In a seal-lock, a casing, a hook-latch mounted to swing in the casing and adapted to engage a part carried by the sliding door of a car, a recessed lug carried by said latch, a recessed keeper-block mounted to rotate on the casing, and a glass seal adapted to engage with its ends in the recesses of the lug and block, substantially as specified.

654,022. HAT-PINNING MACHINE. HENRY ROBINSON, New York, N. Y., assignor of one-half to Henry Berg, Orange Valley, N. J. Filed Oct. 12, 1899. Serial No. 733,371. (No model.)

Claim.—1. In a hat pinning or stiffening machine, the combination with the supporting-drum for holding the hat-body, of a pressure-drum, means for rotating the supporting-drum, and means, mechanically connected to such rotating means, for automatically approximating and separating the drums.

2. In a hat-pinning machine, the combination with the supporting-drum for holding the hat-body, of a pressure-drum, means for rotating both of said drums at the same peripheral speed, and means, mechanically connected to such rotating means, for automatically approximating and separating the drums.

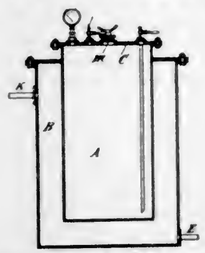


3. In a hat-pinning machine, the combination with the supporting-drum for carrying the hat, of a pressure-drum, movable to and from the supporting-drum, gears on the respective drums which engage when the drums are approached to one another, a driving-shaft, gearing connecting said shaft with the supporting-drum, a cam connected to and driven by the said shaft and means operated by said cam to move the pressure-drum toward and away from the supporting-drum.

4. The combination with the hat-body-supporting drum, the pressure-drum, movable to and from the supporting-drum, and means for rotating said drums, of means for the supply of stiffening material to the hat-body, a cock controlling such supply, and cam mechanism connected to the drum-rotating means, to the pressure-drum and to the said cock for causing the pressure-drum to approach and separate from the supporting-drum, and simultaneously admit and cut off the supply of stiffening material.

5. In a pinning-machine the combination of the supporting-drum for holding the hat-body, the pressure-drum, and means for causing said drums to approach one another, one of said drums being provided with a yielding covering.

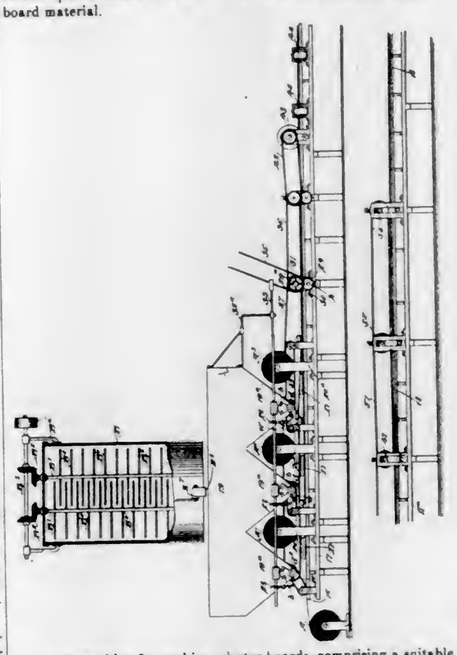
654,023. PROCESS OF PURIFYING GLYCERIN. EMILE A. ROCH, Paris, France. Filed Dec. 23, 1897. Serial No. 663,236. (No specimens.)



Claim.—The herein-described process of concentrating and purifying glycerin, which consists in adding an acid to the glycerin capable of precipitating the metallic bases therein, next heating the acidulated glycerin in a steam-tight vessel up to a temperature 320° Fahrenheit while submitting it to an injection of steam at the same temperature whereby the separated fatty acids are volatilized, substantially as described.

654,024. MACHINE FOR MAKING FIREPROOF COVERINGS FOR WALLS OR CEILINGS. PATRICK RYAN, New York, N. Y. Filed Jan. 29, 1900. Serial No. 3,216. (No model.)

Claim.—1. A machine for making plaster-boards, comprising means to feed paper sheets on a level support, a sheet-perforating device, a device to coat a plurality of said paper sheets with a fireproof mixture, a compressing device, an edge-trimming device, and means to cut a plaster-board from an end portion of the completed plaster-board material.



2. A machine for making plaster-boards, comprising a suitable support, a means to feed a plurality of paper sheets thereon, a perforating device for each paper sheet, a device adapted to evenly coat a plurality of the paper sheets with a fireproof mixture, a compressing device adapted to consolidate the plaster-board material after it is coated, an edge-trimming device, an edge-scalloping device, and a device adapted to cut a completed plaster-board from the main portion of such plaster-board material.

3. A machine for making fireproof plaster-boards, comprising a frame, a table thereon, a plurality of holder-compartments for liquid coating, held above the table near one end thereof, means to control the discharge of liquid coating material from each compartment upon a paper sheet drawn below it, a device to evenly spread the coating on each sheet, a paper-feeding device adapted to compress the coated paper sheets together, an edge-trimming device, an edge-scalloping device, and means to cut a completed plaster-board from the main portion of such plaster-board material, these several devices being arranged on the frame to operate successively.

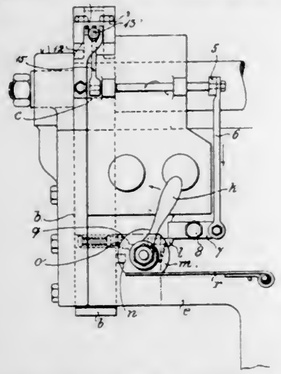
4. A machine for making fireproof plaster-boards, comprising a frame, a table thereon, a plurality of holder-compartments for coating material held above the table near one end thereof, means to control the discharge of coating from each compartment, means to support a plurality of paper sheets on the frame for their extension over each other on the table, a perforator device for each paper sheet, a device to evenly spread the coating material upon the paper sheets, a paper-compressing device that is also a paper-feeder, an edge-trimming device, an edge-scalloping device, a transverse perforator adapted to form rows of holes defining the length of a plaster-board, and a cutting device following the transverse perforator and cutting through the centers of the row of holes formed by the perforator.

654,025. PUNCHING-MACHINE. ANDREAS SCHARFL, Munich, Germany. Filed Apr. 6, 1900. Serial No. 11,882. (No model.)

Claim.—1. The combination in a machine of the character described, of a punch-holder, means for reciprocating the punch-holder, means for causing the punch-holder to engage the reciprocating means, and means arranged to both disengage the punch-holder from the reciprocating means and then advance the punch-holder.

2. The combination in a machine of the character described, of a punch-holder, means for reciprocating the punch-holder, means for causing the punch-holder to engage the reciprocating means, means arranged to both disengage the punch-holder from the reciprocating means and then advance the punch-holder, said latter means also

adapted upon a reverse movement to raise the punch-holder to the position for engaging with the said reciprocating means.



3. The combination in a machine of the character described, with a punch-holder and an actuating-eccentric, of means for causing the punch-holder to engage the eccentric, and means arranged to both disengage said members and then advance the punch-holder.

4. The combination in a machine of the character described, with a punch-holder and an actuating-eccentric, of means for causing the punch-holder to engage the eccentric, and means arranged to both disengage said members and then advance the punch-holder, said latter means also adapted upon a reverse movement to return the punch-holder to a position for engaging with the eccentric.

5. The combination in a machine of the character described, with an actuating-eccentric and a punch-holder, of means for automatically causing the eccentric to be engaged by the punch-holder when the latter is in the upper position, and means arranged to both disengage said members and then advance the punch-holder.

6. The combination in a machine of the character described, with an actuating-eccentric and a punch-holder, of means for automatically causing the eccentric to be engaged by the punch-holder when the latter is in the upper position, and means arranged to both disengage said members and then force the punch-holder downwardly, said latter means also adapted upon a reverse movement to raise the punch-holder to the position for engagement with the eccentric.

7. The combination in a machine of the character described, of a punch-holder, means for reciprocating the punch-holder, means for disengaging said reciprocating means from the punch-holder, a shaft mounted in the frame of the machine, an operating-handle secured to said shaft, a disk secured to said shaft, a spring-pin mounted on said disk, a lever for operating said disengaging means, said lever having its free extremity arranged to be moved by the said spring-pin, a lug connected with said shaft, and a lug on the punch-holder disposed in the path of movement of said lug, the lugs being so arranged that on a further movement of said shaft after the spring-pin has operated said disengaging means, they will contact and advance the punch-holder.

8. The combination in a machine of the character described, of a punch-holder, means for reciprocating the punch-holder, means for disengaging said reciprocating means, an operating-handle secured to said shaft, a disk secured to said shaft, a spring-pin mounted on said disk, a lever for operating said disengaging means, said lever having its free extremity arranged to be moved by said spring-pin, a lug connected with said shaft, a lug on the punch-holder disposed in the path of movement of said lug, the lugs being so arranged that on a further movement of said shaft after the spring-pin has operated the said disengaging means, they will contact and advance the punch-holder, said disk having a flat portion on its periphery, a spring secured to the frame of the machine and bearing on said disk, said spring being so arranged as to engage said flat portion of the disk and retain the disk in its disengaging position.

9. The combination in a machine of the character described, of a punch-holder, means for reciprocating the punch-holder, means for disengaging said reciprocating means from the punch-holder, a shaft mounted in the frame of the machine, an operating-handle secured to said shaft, a disk secured to said shaft, a spring-pin mounted on said disk, a lever for operating said disengaging means, said lever having its free extremity arranged to be moved by said spring-pin, a lug connected with said shaft, a lug on the punch-holder disposed in the path of movement of said lug, the lugs being so arranged that on a further movement of said shaft after the spring-pin has operated said disengaging means, they will contact and advance the punch-holder, a spring-pin on the punch-holder disposed in the path of movement of the said lug connected with the shaft, said latter spring-pin being so arranged that it will retreat to allow the said latter lug to advance without moving the punch-holder, but will engage the lug and raise the punch-holder on the reverse movement of the disk.

10. The combination in a machine of the character described, of an eccentric, a punch-holder reciprocating in a guideway in the frame, and having an aperture therein in which said eccentric is arranged to rotate freely, a slide reciprocating in a channel in the punch-holder that is longitudinal thereto, said slide being arranged to enter said aperture and contract it longitudinally to cause said eccentric to make direct contact with the walls of the aperture and reciprocate the punch-holder, and means for securing said slide in said contracting position.

11. The combination in a machine of the character described, of an eccentric, a punch-holder reciprocating in a guideway in the frame and having an aperture therein in which said eccentric is arranged to rotate freely, a slide reciprocating in a channel in the punch-holder that is longitudinal thereto, said slide being arranged to enter said aperture and contract it longitudinally to cause said eccentric to make direct contact with the walls of the aperture and reciprocate the punch-holder, and means for automatically securing said slide when in said contracting position.

12. The combination in a machine of the character described, of an eccentric, a punch-holder reciprocating in a guideway in the frame and having an aperture therein in which said eccentric is arranged to rotate freely, a slide reciprocating in another aperture in the punch-holder and arranged to enter said former aperture and contract it longitudinally to cause said eccentric to contact with the walls of the aperture and reciprocate the punch-holder, said slide having a cavity in its side, a pin sliding in the punch-holder and arranged to enter said cavity and retain the slide in said position for causing the operation of the punch-holder, a spring secured to the punch-holder and tending to force the slide into said contracting position.

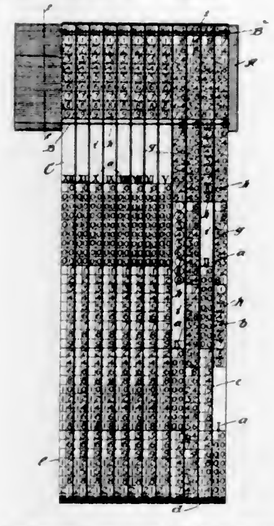
13. The combination in a machine of the character described, of an eccentric, a punch-holder reciprocating in a guideway in the frame and having an aperture therein in which said eccentric is arranged to rotate freely, a slide reciprocating in another aperture in the punch-holder and arranged to enter said former aperture and contract it longitudinally to cause said eccentric to contact with the walls of said former aperture and reciprocate the punch-holder, said slide having a cavity in its side, a pin sliding in the punch-holder and arranged to enter said cavity and retain the slide in said position for causing the operation of the punch-holder, a spring engaging said pin for retaining it in said contracting position, and means for moving said pin to release said slide.

14. The combination in a machine of the character described, of an eccentric, a punch-holder reciprocating in a guideway in the frame and having an aperture therein in which said eccentric is arranged to rotate freely, a slide reciprocating in another aperture in the punch-holder and arranged to enter said former aperture and contract it longitudinally to cause said eccentric to contact with the walls of said former aperture and reciprocate the punch-holder, said slide having a cavity in its side, a pin sliding in the punch-holder and arranged to enter said cavity and retain the slide in said position for causing the operation of the punch-holder, a spring secured to the punch-holder and tending to force the slide into the said contracting position, a rock-shaft mounted on the frame, said pin having an aperture in its free extremity, an arm on said rock-shaft having its free extremity engaging said pin by the walls of its said aperture, another arm on said rock-shaft, a lever pivoted to the frame, a rod connecting said latter lever with said second arm on the rock-shaft, and means for moving said lever to cause said pin to release said slide.

15. The combination in a machine of the character described, of an eccentric, a punch-holder reciprocating in a guideway in the frame and having an aperture therein in which said eccentric is arranged to rotate freely, a slide reciprocating in another aperture in the punch-holder and arranged to enter said former aperture and contract it longitudinally to cause said eccentric to contact with the walls of said former aperture and reciprocate the punch-holder, said slide having a cavity in its side, a pin sliding in the punch-holder and arranged to enter said cavity and retain the slide in said position for causing the operation of the punch-holder, a spring secured to the punch-holder and tending to force the slide into the said contracting position, a rock-shaft mounted on the frame, said pin having an aperture in its free extremity, an arm on said rock-shaft having its free extremity engaging said pin by the walls of its said aperture, another arm on said rock-shaft, a lever pivoted to the frame, a rod connecting said latter lever with said second arm on the rock-shaft, a shaft mounted in the frame of the machine, an operating-handle secured to said shaft, a disk secured to said shaft, a spring-pin mounted on said disk and arranged to move said lever, a lug connected with said shaft, and a lug on the punch-holder disposed in the path of movement of said lug, the lugs being so arranged that on a further movement of said shaft after the spring-pin has operated said disengaging means, they will contact and force the punch-holder downwardly.

654,026. CALCULATOR. CHOW LING SHANG, Macao, China.

Filed Jan. 29, 1900. Serial No. 3,215. (No model.)



Claim.—1. A calculator, comprising a base or support, and a series of independent strips movable side by side on said support and each bearing numerals arranged in groups, one group of each strip being formed by the multiples of "1" (from "1" to "9") another by the multiples of "2," a third by the multiples of "3," &c.

2. A calculator, comprising a flat base or support, a guide secured thereto, and a series of strips passing through said guide and arranged side by side, each of said strips bearing numerals arranged in groups, one group containing the numbers from "1" to "9," in their regular sequence, the next group the multiples of "2," from "2" to "18," the one following, those of "3," from "3" to "27," &c., the strips, adjacent to the said guide, being adapted to lie on the said flat base so that a portion of each strip, containing a whole group of numerals, will be flat so as to plainly expose to view, at one and the same time, an entire group of numerals on each strip.

3. A calculator, comprising a base or support, and a series of independent strips movable side by side on said support and having their lower portions loosely depending from said support, so that said portions can be wrapped around the support, each strip bearing numerals arranged in groups, one group of each strip being formed by the multiples of "1" (from "1" to "9"), another by the multiples of "2," a third by the multiples of "3," &c.

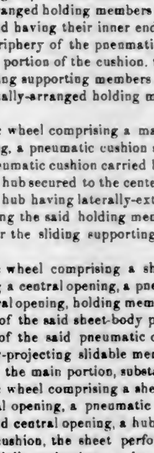
4. A calculator, comprising a flat base or support, a guide secured thereto, and a series of strips passing through said guide and arranged side by side, each of said strips being divided longitudinally into columns and transversely into groups, one group containing the numbers from "1" to "9," in their regular sequence, the next group the multiples of "2," from "2" to "18," the one following, those of "3," from "3" to "27," &c., the strips, adjacent to the said guide, being adapted to lie on the said flat base so that a portion of each strip, containing a whole group of numerals, will be flat so as to plainly expose to view, at one and the same time, an entire group of numerals on each strip.

654,027. PNEUMATIC WHEEL. JOSHUA SKELLABARGER, Rockford, Ohio, assignor of one-fourth to John W. Smith, same place.

Filed June 7, 1900. Serial No. 19,414. (No model.)

Claim.—1. A wheel comprising a main or body portion, having a central opening, a pneumatic cushion secured within said opening, a hub secured to the center of the said cushion, the ends of the hub provided with inwardly-curved and radially-projecting arms having their outer ends engaging opposite sides of the main or body portion of the wheel for supporting the hub at right angles thereto, substantially as described.

2. A wheel comprising a main or body portion having a central opening, a pneumatic cushion situated within the said opening, a hub secured to the center of the said cushion, the ends of the hub provided with radially and inwardly extending arms, and bands connecting the ends of the arms, the said bands engaging opposite sides of the main or body portion of the wheel for supporting the hub at right angles thereto, substantially as described.



3. A pneumatic wheel comprising a main or body portion having a central opening, a pneumatic cushion secured within the said opening, the said cushion having an annular hollow inflatable portion and solid inwardly and outwardly extending annular portions, holding members carried by the main portion of the wheel and interlocking the solid outwardly-extending portion of the wheel, a hub secured to the inwardly-extending solid portion of the cushion, and the ends of the hub having laterally-extending portions slidably engaging the main portion of the wheel, substantially as described.

4. A pneumatic wheel comprising a main or body portion having a central opening, a pneumatic cushion situated within the said opening, the cushion having a solid central and outer or peripheral portion, metallic bands secured to opposite sides of the solid peripheral portion, holding members carried by the body portion of the wheel and having their ends extending inward and lapping over the said bands, the overlapping ends of the arms and bands having interlocking members, a hub secured to the center of the said cushion, the ends of the hub having laterally-extending supporting members loosely and slidably engaging the said holding members of the main or body portion of the wheel, substantially as described.

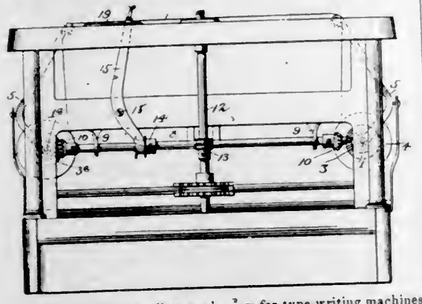
5. A pneumatic wheel comprising a main or body portion having a central opening, a pneumatic cushion situated within the said opening, radially-arranged holding members carried by the main portion of the wheel and having their inner ends overlapping and interlocking with the periphery of the pneumatic cushion, and a hub secured to the central portion of the cushion, the ends of the hub having laterally-extending supporting members loosely and slidably engaging the said radially-arranged holding members, substantially as described.

6. A pneumatic wheel comprising a main or body portion having a central opening, a pneumatic cushion situated therein, holding members for the pneumatic cushion carried by the main or body portion of the wheel, a hub secured to the center of the pneumatic cushion, the ends of the hub having laterally-extending supporting members slidably engaging the said holding members, the holding members having stops for the sliding supporting members, substantially as described.

7. A pneumatic wheel comprising a sheet perforated main or body portion having a central opening, a pneumatic cushion situated within the said central opening, holding members projecting inwardly from opposite sides of the said sheet-body portion and interlocking with opposite sides of the said pneumatic cushion, the ends of the hub having laterally-projecting slidable members engaging the said holding members of the main portion, substantially as described.

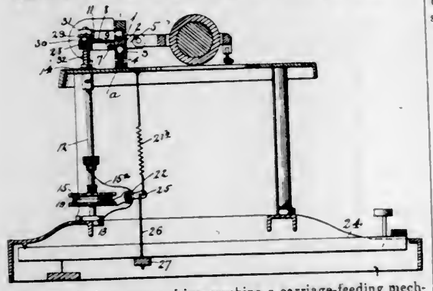
8. A pneumatic wheel comprising a sheet perforated main portion having a central opening, a pneumatic cushion situated and secured within the said central opening, a hub connected to the center of the pneumatic cushion, the sheet perforated portion having a transversely and radially projecting opening, and the pneumatic cushion having a nipple extending within the said opening, substantially as described.

654,028. RIBBON-FEEDING MECHANISM FOR TYPE-WRITING MACHINES. ELMER S. SHIMER, Milton, Pa. Filed Apr. 20, 1900. Serial No. 13,618. (No model.)



Claim.—A ribbon-feeding mechanism for type-writing machines comprising the ribbon-spool shafts having bevel-gears on the rear ends, the transversely-sliding shaft provided with a centrally-located spur-wheel thereon, the vertically-journaled spacing-shaft having a worm thereon in mesh with the spur-wheel, the lever for shifting the sliding shaft to run the ribbon from one spool to the other, and a rack for the free end of said lever having three recesses for the different positions of said lever, substantially as described.

654,029. SPACING-ESCAPEMENT AND CARRIAGE-FEEDING MECHANISM FOR TYPE-WRITING MACHINES. ELMER S. SHIMER, Milton, Pa. Filed Apr. 20, 1900. Serial No. 13,619. (No model.)



Claim.—1. In a type-writing machine, a carriage-feeding mechanism consisting of a vertical spacing-shaft and means to rotate it intermittently, a pinion loosely mounted on said shaft, a ratchet-face on the pinion, a ratchet with which it engages, a rack in mesh with the pinion, and a plate secured to and projecting over the rack for disengaging the ratchet to shift the carriage, substantially as described.

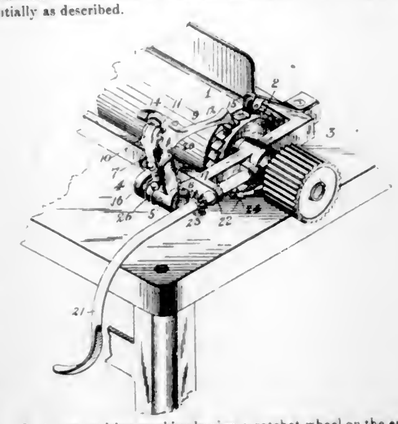
2. In a type-writing machine, a vertical spacing-shaft having escapement-wheels thereon, adapted to be actuated by a rock-shaft controlled by the key-bars, a pinion on the spacing-shaft, said pinion carrying a ratchet-face and having a groove formed between the ratchet-face and pinion, a rack meshing with the pinion, a plate secured to and projecting over the rack, said plate sliding in the groove, and means for depressing the plate to disengage the ratchet to permit the carriage to be shifted.

3. A carriage-feeding mechanism for type-writing machines, consisting of a rack, a pinion in mesh with said rack and loosely journaled on a vertical spacing-shaft, a ratchet carried by the pinion, a spring for holding the ratchet in engagement, and a plate secured to said rack and projecting beyond the teeth thereof for depressing the pinion to release the ratchet to permit the carriage to be shifted, substantially as described.

654,030. LINE-SPACING MECHANISM FOR TYPE-WRITING MACHINES. ELMER S SHIMER, Milton, Pa. Filed Apr. 20, 1900. Serial No. 13,620. (No model.)

Claim.—1. In a type-writing machine, the line-spacing mechanism consisting of a ratchet-wheel on the end of the platen-roll, a spring-pawl mounted on a sleeve having cog-teeth at one end, and a rocking rod carrying a pinion in mesh with the teeth on the sleeve, substantially as described.

2. In a type-writing machine, the line-spacing and carriage-shifting mechanism comprising a ratchet-wheel on the end of the platen-roll, a pawl pivoted upon a pawl-carrier, said pawl-carrier being pivoted to the carriage-frame, a rocking rod journaled in the carriage-frame and provided with a pinion, cog-teeth on the pawl-carrier in mesh with the pinion, said rocking rod being extended outward and downward to form a hand-lever to space and return the carriage, substantially as described.



3. A type-writing machine having a ratchet-wheel on the end of the platen-roll, a pawl pivoted to a carriage journaled in the frame, cog-teeth on the carrier, and a rocking rod having a pinion thereon which engages the cog-teeth on the pawl-carrier, said rocking rod being journaled at right angles to the pawl-carrier and designed to be moved laterally to effect the line-spacing and to shift the carriage, substantially as described.

654,031. TOBACCO-HOLDER. WILLARD P. SMITH, New York, N. Y. Filed Apr. 3, 1900. Serial No. 11,342. (No model.)



Claim.—A tobacco-holder, comprising a casing open at both of its ends, a removable cover for each of said ends, and a disk or plunger movable in the casing, the said disk or plunger having a peripheral flange extended in the direction of movement of the plunger for discharging tobacco, the edge of said flange serving as a scraper for the interior of the casing, substantially as specified.

654,032. BRUSH. ANSON L. SONN, Lansingburg, N. Y. Filed Nov. 27, 1899. Serial No. 738,274. (No model.)



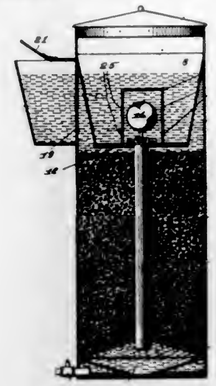
Claim.—A brush consisting of a brush-body having a recess formed in its bristle-receiving face, the bristles and a pad of cement which fastens the bristles, filling the said recess and the cement extending as a thin veneer from the recess at the sides and end thereof to the outer edge of the brush-body, substantially as and for the purpose set forth.

654,033. WATER-FILTER. ELIJAH F. STEWART, St. Louis, Mo., assignor to the Simmons Hardware Company, same place. Filed May 18, 1900. Serial No. 17,083. (No model.)

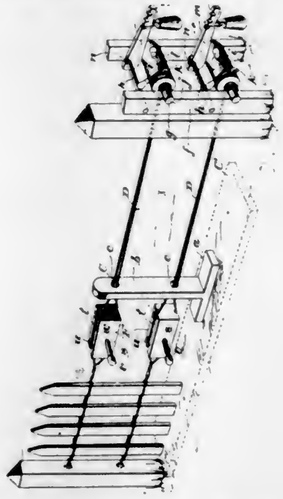
Claim.—1. An automatic regulator for water-filters comprising an apertured valve-housing, a float, and a grooved valve carried by said float adapted to contact with said valve-housing, substantially as described.

2. In a device of the character described, the combination of a tank, a pipe leading therefrom, an apertured valve-housing seated in said pipe and provided with a valve-seat, a float located in said tank, and a grooved valve carried by said float adapted to contact with the valve-seat of said housing, substantially as described.

3. In a device of the character described, the combination of the shell containing a chamber at its upper end, a tank located in said chamber, a body of filtering material located beneath said chamber, a pipe leading from said tank through said filtering material, an apertured valve-housing located in the upper end of said pipe, and having a valve-seat, a float arranged in said tank, and a grooved valve carried by said float adapted to contact with said valve-seat, substantially as described.



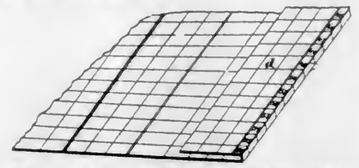
654,034. TENSION MECHANISM FOR FENCE-BUILDING APPARATUS. JOHN SUTLIFF, Sr., Mount Airy, Mo. Filed Mar. 8, 1900. Serial No. 7,901. (No model.)



Claim.—1. In a wire-and-picket-fence-building apparatus, a tension mechanism made up of a frame having uprights and cross-bars, rollers having gudgeons and also having hand-grasps and means for connecting wires to their peripheries, levers arranged above and bearing on the peripheries of the rollers and having notches receiving the cross-bars of the frame and also having notches at intervals in their upper edges adjacent to their forward ends, and weights hung from the forward portions of the levers, substantially as specified.

2. A wire-and-picket-fence-building apparatus having a tension mechanism comprising a frame having uprights and a cross-bar, a roller having gudgeons, and also having hand-grasps and means for connecting wires to its periphery, a lever arranged above and bearing on the periphery of the roller and having a notch receiving the cross-bar of the frame and also having a plurality of notches in its upper edge adjacent to its forward end, and a weight having a loop seated in one of the forward notches of the lever, substantially as specified.

654,035. ACCOUNT-BOOK. WALTER THOMSON, Albany, N. Y., assignor to George C. Hawley, same place. Filed Jan. 16, 1900. Serial No. 1,621. (No model.)



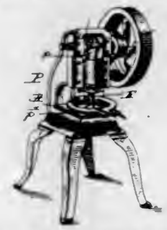
Claim.—1. An account-book of the character, substantially as described, having leaves provided with margins arranged to fold back, each margin united to its leaf by a double hinge, substantially as described.

2. An account-book, having its leaves formed with parallel separated creases extending vertically throughout the width thereof forming margins adapted to fold back and receive thereunder the ends of the leaves between the page transferred from and the page transferred to, substantially as described.

3. An account-book having several series of accounts, each series occupying a double page and progressing from left to right thereon, the entire series of accounts occupying several consecutive double pages, and being correspondingly duplicated throughout the book, each double page ruled to form working spaces or columns, and having a title-column near the right-hand margin of the right-hand page, each leaf having an end margin creased to fold back and receive thereunder the margins of the intervening pages, substantially as described, each margin having a working column on one side, each page and the working column of its margin formed with horizontal spaces to receive the titles and figures relating thereto, and each such space provided with identifying characters arranged adjacent to said title-column, said working column of each margin correspondingly provided with such identifying characters, whereby when a margin is turned back for transferring, the identifying characters thereof will be disclosed adjacent to the title-column and identifying characters of the page being transferred from, for the purpose stated, substantially as described.

4. An account-book, substantially as described, made up of full-sized leaves and having double pages ruled to receive a set of accounts so that the accounts progress from left to right across the double page, adjacent double pages ruled to receive different sets of accounts, and successive sets of double pages throughout the book formed to receive said sets of accounts, whereby a fixed number of pages intervenes between the pages throughout the book on which the same set of account titles or names is duplicated, each leaf having a margin united thereto by a double hinge so as to fold back and form and constitute a pocket receiving and resting flatly on the margins of all the leaves interrening between the two leaves carrying the same set of account-titles, for the purpose described.

654,036. APPARATUS FOR MAKING UP WHEELS. ALBERT A. TISDALE, Leominster, Mass., assignor to the Whitney Reed Chair Company, same place. Filed Dec. 13, 1897. Serial No. 661,627. (No model.)



Claim.—1. In an apparatus for making up tension-wheels, a support for the wheel parts, and means adjacent said support to engage the wheel at its periphery to cause simultaneous inward radial movement respectively of the several spokes and adjacent rim portions, to position said spokes for attachment to the hub, and means to place said spokes under tension and at the same time effect said attachment, substantially as described.

2. In an apparatus for making up tension-wheels; a support for the wheel parts; two shaper devices presenting inwardly-shaping surfaces approximately semicircular respectively and presenting rim-engaging portions with intervening cut-away spaces; and means to bring said shaper devices into radial engagement with said wheel parts.

3. In an apparatus for making up tension-wheels of the type having a rim, spokes, and a hub provided with an attaching portion adapted to be traversed by said spokes; a support for said wheel parts; and setting means adapted to engage said spokes immediately adjacent said attaching portion to cause engagement of the former with the latter to determine the position of said spokes relatively to said hub, substantially as described.

4. In an apparatus for making up tension-wheels, a die having a head, the face whereof is provided with swaging-grooves and a spoke-engaging rib, substantially as described.

5. The combination in apparatus for making up wheels, of a support to receive the assembled wheel parts, means to engage said wheel parts and place the several spokes under tension and simultaneously set the same in adjusted position, and actuating means for said setting means, substantially as described.

6. The combination in apparatus for making up wheels, of a bed or support to receive the wheel parts in assembled position, means to adjust said wheel parts relatively to each other to insure the existence of tension in the wheel after the setting operation, means to set simultaneously the several spokes in adjusted position, and actuating means for said setting means, substantially as described.

7. The combination in apparatus for making up wheels under tension, of means to receive the wheel parts and present the same in position adjusted relatively to each other for the setting operation, means adapted to engage said wheel parts and at a single stroke to set the said parts to form a tension-wheel, and actuating means for said setting means.

8. The combination in apparatus for making up wheels, of a bed or support for the assembled wheel parts, a setting-tool arranged to move at right angles to said support to engage the spokes and set the same in adjusted position on the hub, and means to actuate said tool.

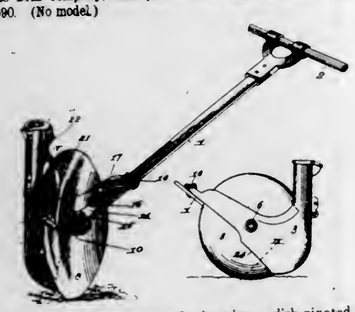
9. In an apparatus of the class described, a support for the wheel parts; and a plurality of shaper devices adjacent said support, two of said devices being rotatable respectively about pivots situated near one end of each and free to be drawn toward each other at their other ends, said shaper devices being so proportioned that when said pivotally-movable devices are thus approached toward each other, said shaper devices will be brought respectively into radial engagement with said wheel parts on all sides of the latter; and an actuating device comprising a draw-rod connecting and to draw said shaper devices together, and a cam-lever to operate said draw-rod.

10. In an apparatus of the class described; a support A for the wheel parts; shaper devices E, E', E², having projections *e* and intervening spaces *e'*; said support and shaper devices coöperating with each other and with said wheel parts in the manner and for the purpose substantially as set forth.

11. In an apparatus for making up tension-wheels, a die having setting means adapted to engage the spokes, exert a drawing action thereon and set the same in adjusted position on the hub.

12. The combination in apparatus for making up wheels under tension, of means to receive the wheel parts and present the same in position adjusted relatively to each other for the setting operation, and means adapted to engage the respective spokes directly and simultaneously to place said spokes under tension and set said parts at a single stroke to form a tension-wheel.

654,037. DISK ATTACHMENT FOR GRAIN-DRILLS. STEPHEN R. TOLSON and ANDREW SCHOPP, Belleville, Ill., assignors to the Sucker State Drill Company, same place. Filed Mar. 29, 1900. Serial No. 10,590. (No model.)



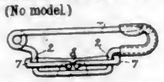
Claim.—1. The combination of a drag-bar, a disk pivoted to the bar, a shoe to which the disk is journaled, and an arm on the shoe and which is adjustably connected to said bar, substantially as set forth.

2. The combination of a drag-bar, a disk, a box inclosing the journal of the disk and provided with a lug that is pivoted to the bar and has a bolt connection therewith, and a shoe to which the disk is journaled and which is provided with an arm having a slot-and-bolt connection with said bar, substantially as set forth.

3. The combination of a drag-bar, a shoe having an arm adjustably connected to said bar, a journal connected to said shoe, a disk having a hub fitting over said journal and a box inclosing said hub and having an arm that is pivoted to said bar and has also a slot-and-bolt connection therewith, substantially as set forth.

4. The combination of a disk, a shoe to which the disk is journaled, and a scraper adapted to bear against the disk and having an arm that is connected to said shoe by a bolt-and-slot connection; said arm having a concavo-convex bearing against the shoe, substantially as and for the purpose set forth.

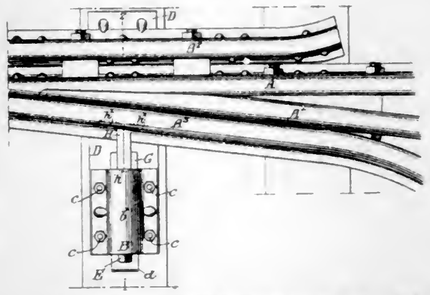
654,038. STRAP-HOLDER FOR SAFETY-PINS. JAMES V. WASHBURNE, Waterbury, Conn. Filed Aug. 3, 1898. Renewed Dec. 11, 1899. Serial No. 740,016. (No model.)



Claim.—1. In a buckle, safety-pin or supporter having a frame with substantially-parallel sides and a connecting-bar, a slide extending around and embracing the parallel-sided frame and sliding thereon and having an oblong opening which transversely is narrower than the thickness of the connecting-bar of the frame, the slide being adapted to be sprung over the frame and to have the strap passed around one of the members of the slide so that the tension on the strap acts to pull the slide in a plane parallel to the plane of the frame and draw the slide toward the cross-bar of the frame so as to cause the slide and the cross-bar of the frame to coact in gripping the strap, substantially as set forth.

2. In a buckle safety-pin or supporter having a frame with substantially-parallel sides and a connecting-bar, of an oblong wire slide adapted to extend around and embrace the parallel-sided frame and slide thereon and having the ends of the wire turned outward and having an oblong opening which transversely is narrower than the thickness of the connecting-bar of the frame, the slide being adapted to be sprung over the frame and to have the strap passed around one member and over its outward-turned ends so that the tension on the strap acts to pull the slide toward the cross-bar and in a plane parallel to the frame so as to cause the slide and cross-bar and the said ends to coact in gripping and holding the strap, substantially as set forth.

654,039. SPRING-BOX FOR FROGS, SWITCHES, &c. WILLIAM WHARTON, Jr., Philadelphia, Pa., assignor to The William Wharton, Jr., & Company, Incorporated, same place. Filed May 31, 1900. Serial No. 18,576. (No model.)



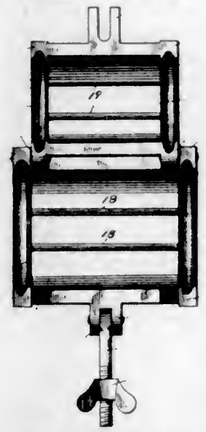
Claim.—1. The combination in a spring-box for frogs, switches, &c., of a base-plate and a plate bent to form the top, the rear and the sides of a box, and means for securing the said box to the plate, substantially as described.

2. The combination in a spring-box for frogs, switches, &c., of a base-plate, and a plate bent to form the top, the two sides with their flanges and the rear of the box, said base-plate having a vertical lip at the rear overlapping the rear plate of the box, substantially as described.

3. The combination in a spring-box for frogs, switches, &c., of a base-plate secured to the fixed rails, a movable rail adapted to slide on the base-plate, a spring-box bent up from sheet metal so as to form the top, the sides and the rear of the box, the rear portion having a flange, a lip on the base-plate overlapping the said flange, a spring within the box, and a projection on the movable rail to bear against the spring, substantially as described.

4. The combination of a base-plate having an overlapping lip at its rear end, and a spring-box made of sheet metal having its rear end formed by bending down the metal from the blank, a flange being formed on the rear end of the box and extending under the lip on the base-plate, substantially as described.

654,040. CLAMP FOR PATCHING OR COUPLING HOSE. ALEXANDER G. WILKINS, Meadville, Pa., assignor of one-half to Andy L. Dunbar, same place. Filed Apr. 18, 1900. Serial No. 13,366. (No model.)



Claim.—1. A clamp for hose or flexible pipe comprising separate sections having inwardly-projecting annular end flanges and longitudinal flanges of similar depth connecting said end flanges, and means for clamping the sections together and pressing said annular and end flanges into the hose or piping, whereby a leak therein may be stopped, substantially as described.

2. A clamp for mending piping, comprising sections having end flanges, the said flanges projecting so as to lap each other, pins or bolts passed through the lapping ends so as to pivotally secure the sections together, grooves formed upon the inner surfaces of the said end flanges forming gripping-ribs, the free ends of said flanges also lapping, and means for drawing the free edges of the sections together consisting of a clamping-bolt, and means upon the sections for engaging the same.

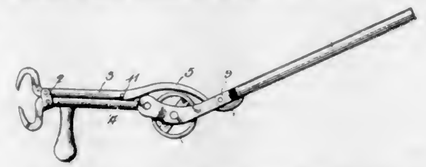
3. A clamp for mending hose-pipes, comprising sections having end flanges, pivot-pins securing the said flanges together, grooves formed upon the inner faces of the flanges for producing gripping-ribs, longitudinal gripping-ribs arranged internally of the said sections and extending from one end flange to the other, a bolt for clamping the parts together, a rubber cloth for further stopping a break or aperture in a hose-pipe the said cloth being arranged with its meeting or lapping edges located between the longitudinally-arranged gripping-ribs, the construction being such that the gripping-ribs of the clamp-sections will hold the rubber cloth tightly upon the hose.

4. A clamp for coupling the ends of broken hose-pipes, comprising segmental sections hinged together at one edge and lapping at the other edges, a bolt for drawing the free edges together, a thimble adapted to be inserted in the hose ends, said thimble having peripheral ribs, internal ribs arranged in the clamp-sections adapted to fit over the ribs in the pipe-thimble, the construction being such that when the clamp is secured in place it will grip the hose upon the thimble and securely join the parts together without danger of leakage, substantially as described.

654,041. HOOF-CLIPPER. HENRY WOLFF, Groveland, N. Y. Filed Dec. 14, 1899. Serial No. 740,371. (No model.)

Claim.—1. A hoof-clipper comprising the pivoted clipping-jaws formed with shanks, one of said shanks being longer than the other, a lever pivoted to the shorter shank and provided with a wheel which is adapted to engage the longer shank and force the jaws together by the elevation of the lever, substantially as and for the purpose set forth.

2. A hoof-clipper comprising the pivoted jaws provided with shanks, one of which is longer than the other and is formed with a curved offset, a lever pivoted to the shorter shank and having a wheel adapted to engage the offset of the longer shank, and a handle fixed to the shorter shank, substantially as and for the purpose set forth.



3. A hoof-clipper comprising the pivoted cutting-jaws provided with shanks, one of which is longer than the other and is formed with a curved offset and a hook, a bifurcated lever pivoted to the shorter shank and straddling the hook end of the other shank and formed with a stop-roller, a wheel journaled between the bifurcated members of said lever and adapted to engage the aforesaid curved offset of said shank, and a fixed handle secured to the shorter shank, substantially as and for the purpose set forth.

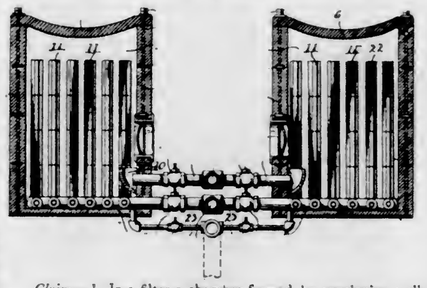
654,042. METHOD OF FASTENING METALLIC PARTS TOGETHER. JOHN A. YOUNG, Southbridge, Mass., assignor to the American Optical Company, same place. Filed Jan. 10, 1900. Serial No. 942. (No model.)



Claim.—1. The method of fastening together metallic pieces, one of which is provided with a pin projecting into the other piece, which consists in fitting a piece of solder onto the pin, heading over the pin to hold the solder washer in place and secure the parts together, so that a plurality of sets of such pieces may be handled at the same time, and then melting the solder, substantially as described.

2. The method of fastening together metallic pieces, one of which is provided with a pin projecting through the other piece, which consists in fitting a solder washer onto the pin, heading over the pin to hold the solder washer in place and secure the parts together, so that a plurality of such pieces may be handled at the same time, applying a soldering fluid or flux, melting the solder washer, and then removing the projecting end of the pin and the surplus solder, substantially as described.

654,043. FILTER. JOHN F. ZIEGLER, Toledo, Ohio. Filed Apr. 5, 1899. Serial No. 711,771. (No model.)



Claim.—1. In a filter a chamber formed by enveloping walls, a feed-pipe leading thereto, filter-shafts secured therein one above the other, said filter-shafts having orifices in the ends thereof connecting with passages having a common outlet to an exit-pipe leading from the filter-chamber, substantially as set forth.

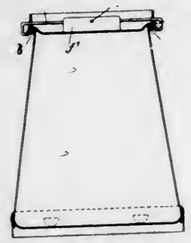
2. In a filter a chamber composed of enveloping walls, a feed-pipe leading thereto and an exit-pipe leading therefrom, filtering-shafts secured one above the other and to the walls of the filter-chamber, said shafts having an arched interior contour, and orifices on the ends thereof leading to passages having a common outlet to the exit-pipe leading from the filter-chamber, substantially as set forth.

3. In a filter a plurality of filter-shafts having longitudinal arched passages therethrough built up in the form of a pile, whereby there are formed longitudinal parallel passages and an arched covering for the ends of the passages into which the several passages empty, the whole being secured together by cementation, substantially as described.

4. In a filter a chamber composed of enveloping walls, feed-pipe leading thereto and exit-pipe leading therefrom, filter-shafts secured one above the other and to the walls of the filter-chamber, said shafts having an arched interior contour and a flattened outer contour, a plurality of these columns of filtering-shafts in close proximity to each other arranged in each chamber thereby giving a great filtering capacity substantially as described.

5. In a filter, filter-cells built up of masonry having embodied in the walls thereof metal plates to strengthen the same, upright rods arranged so as to extend through the metal plates and the masonry, a metal plate in the form of an inverted arch adapted to act as a closure for the cell and to be secured to the upright rods substantially as described

654,044. CLOSURE FOR MILK OR OTHER CANS. MICHAELIS ALEXANDER, Konitz, Germany. Filed Apr. 6, 1900. Serial No. 11,851. (No model.)

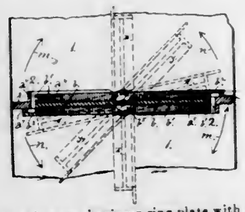


Claim.—1. The combination of a can having an upper horizontal flange and a ring of soft metal let into the same, a cover having a downwardly-extending ridge to fit onto the soft-metal ring, an inclined under surface to the said can-flange and a series of horizontally-movable hooks mounted in the cover and means for pressing their free shanks against the said inclined under surface of the flange to produce a wedging action substantially as described.

2. The combination of a can having an upper horizontal flange with a conical under surface, a cover having a downwardly-extending annular ridge, an annular ring of soft metal let into the upper surface of the said can-flange into which said ridge fits, a series of radially-extensible hooks on the said cover having their free ends adapted to grip under the conical surface of the said flange, said hooks having upwardly-turned rear ends, a rotary disk mounted in the said cover having a series of eccentrically-arranged slots into which the ends of the said hooks fit and means for retaining the said disk in a position in which the hooks are tightened onto the can-flange substantially as described.

3. The combination of a can having a horizontal upper flange with an annular ring of soft metal let into the same, a cover having a downwardly-extending ridge to engage said soft-metal ring, a series of hooks radially guided in said cover and adapted to engage under the said can-flange, a housing on the said cover into which the shanks of the said hooks extend, a rotary disk in said housing having a series of eccentrically-arranged slots into which the upturned ends of said hook-shanks engage, a spring mounted in the bottom of said housing and having an upwardly-turned end to contact with the under surface of the said disk, a series of depressions in the under side of the said disk and openings in the said disk above the said spring to enable the same to be depressed to disengage the disk substantially as described.

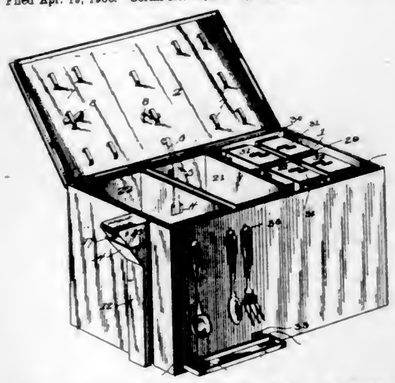
654,045. HEAT OR DRAFT REGULATING DAMPER. OLIVER N. ANDERSON, Lancaster, Pa. Filed Mar. 14, 1899. Serial No. 708,985. (No model.)



Claim.—1. In a damper, having a ring-plate with perpendicular walls extending half-way around and arranged on the opposite faces, one in each half, along the inner edge of its central opening, a damper-plate pivoted at diametrically-opposite points to said ring-plate, and having a flat central body surrounded by a perpendicular wall centrally secured to the periphery thereof with oppositely-disposed flange-plates, one in each half, extending from pivot-point to pivot-point and projecting outwardly from the adjacent edge of said perpendicular wall, and each flange-plate overlapping the adjacent inner edge of the ring-plate, with means provided, such as a turn-button secured to the outer end of a pivot-spindle, to rotate said damper-plate, substantially as described and for the purpose hereinbefore set forth.

2. A damper comprising: a ring-plate, adapted to be rotatably mounted in a stove pipe or flue; tubular trunnions, each having one end rigidly secured at diametrically-opposite points into the outer edge of said ring-plate, and journaled in bearings through the body of said pipe or flue; oppositely-disposed perpendicular walls, one in each half, extending from pivot to pivot, and arranged about the inner edge of the ring-plate; a turn-button, secured to the outer end of one of said trunnions to rotate the ring-plate; a damper-plate, rotatably mounted in the central opening of said ring-plate; pivot-spindles, each having one end rigidly secured at diametrically-opposite points in the outer edge of the damper-plate and journaled through the axial bores of said tubular trunnions; a turn-button secured to the outer end of one of said pivot-spindles to rotate the damper-plate; said damper-plate comprising the flat central body *b*, the peripheral ring-wall *b'*, the outwardly-projecting flange-plates b^3 b^3, and the side projections or end lugs b^4 b^4, arranged and combined as shown: all substantially as described and for the purpose hereinbefore set forth.

654,046. STEAM-COOKER. ANNA M. ARTHURS, Pittsburg, Pa. Filed Apr. 19, 1900. Serial No. 13,486. (No model.)



Claim.—1. The combination with the shell 1, of the hinged lid 2 provided with a series of fixed cleats 7 7 and a series of independent hooks 8 8 removably secured in said cleats, substantially as shown and described.

2. The combination with the shell 1 and the hinged lid 2 provided with a series of cleats 7 7, of the independent food-boxes 29 29 and their removable covers 31 31 provided with the clip-fingers 32 adapted to engage said cleats 7 7, substantially as shown and described.

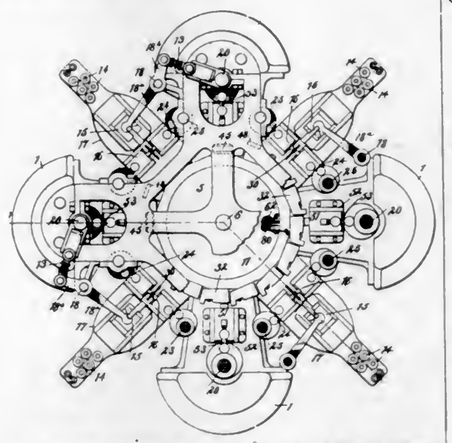
654,047. NAIL-MACHINE. JAMES ATKINS, Montclair, N. J. Filed Jan. 23, 1900. Serial No. 2,418. (No model.)

Claim.—1. In a nail-machine, the combination with a rotary nail-blank-transferring device, of a plurality of heading devices arranged symmetrically around said rotary transferring device and adapted to simultaneously head a plurality of nail-blanks while held in said transferring device, and to act in opposite directions relatively to said transferring device so as to balance the pressure thereon.

2. In a nail-machine, the combination with a rotary nail-blank-transferring device, of a plurality of heading devices arranged symmetrically around said rotary transferring device and adapted to simultaneously head a plurality of nail-blanks while held by said transferring device, and to act in opposite directions relatively to said transferring device so as to balance the pressure thereon, and means for intermittently moving the said transferring device.

3. In a nail-machine, the combination with a rotatively-movable table, and a plurality of clamps carried thereby, of a plurality of sets of nail-blank feeding and heading devices moving radially with respect to said table, and means for operating said heading devices simultaneously, for simultaneously heading a plurality of nails while held by said clamps, said feeding and heading devices being symmetrically arranged with reference to the said movable table.

4. In a nail-machine, the combination with a rotatively-movable table, and a plurality of clamps carried thereby, of a plurality of sets of nail-blank feeding and heading devices moving radially with respect to said table, and means for operating said heading devices simultaneously, for simultaneously heading a plurality of nails while held by said clamps, said feeding and heading devices being symmetrically arranged with reference to the said movable table, and means for intermittently moving the said table.



5. In a nail-machine, the combination with nail feeding and cutting mechanisms and with a nail-heading mechanism of a rotatively-movable transfer-table, adapted to receive the nail-blanks from the nail-feeding mechanism and to carry the nail-blanks to the heading mechanism, and carrying a clamp for the nail-blanks, an ejecting device for ejecting the nail-blanks from said clamp after heading, means for imparting an intermittent rotary movement to the said table, means actuated by such movement of the table to release the clamps, and means actuated by the movement of the table to operate the ejecting device.

6. A circular revoluble series of nail-blank clamps in combination with two or more heading devices whose movements are in line radial to the clamp-circle, and which are equidistant from each other and which act on the blanks simultaneously, so that the pressure exerted by each is balanced by another or others, and thus the clamp-table shaft or other support is released from the strain due to the thrust of the headers.

7. A series of cutting, pointing and feeding devices alternating with an equal number of heading devices, and all arranged at uniform intervals about a circular system of nail-blank clamps, their axes being radial to the clamp-circle.

8. The combination with two or more sets of nail cutting, feeding and heading devices, of a table carrying clamps adapted to receive nail-blanks from the feeding and cutting devices, and to transfer such blanks to the heading devices, means for intermittently rotating said table and twisting devices carried by said table and adapted to twist the nail-blanks while held by the clamps.

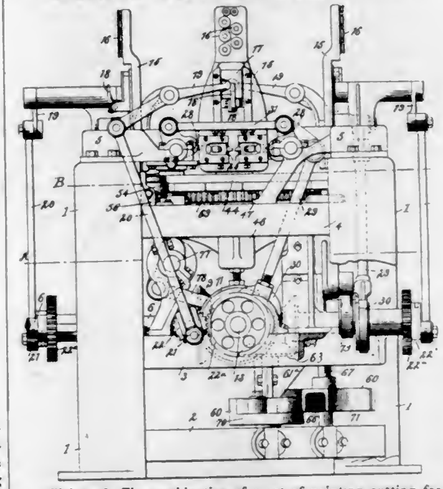
9. The combination with two or more sets of nail cutting, feeding and heading devices, of a table carrying clamps adapted to receive nail-blanks from the feeding and cutting devices, and to transfer such blanks to the heading devices, means for intermittently rotating said table, twisting devices carried by said table and adapted to twist the nail-blanks while held by the clamps, and means actuated by the movement of the table to operate the twisting device.

10. The combination with a nail cutting and feeding device, and a heading device, of a transfer device carrying a clamp adapted to receive the nail-blank from the cutting and feeding device and to transfer it to the heading device, and a twisting device carried by said transfer device and adapted to twist the nail-blank while held by said clamp.

11. A nail-making machine comprising a frame, a central operating-shaft, a plurality of sets of nail cutting, feeding and heading devices operated from said shaft, and a rotary transfer-table supported by bearings in said frame, independent of the central operating-shaft and concentric therewith, and carrying clamps adapted to transfer the nail-blanks from the cutting and feeding devices to the heading devices.

12. An approximately-circular table or clamp-carrier, revolving in an approximately-horizontal plane carrying a series of nail-blanks on or adjacent to its periphery, in combination with two or more sets of cutting, feeding, guiding and heading devices, placed at uniform intervals about the circular clamp series, and an equal number of nail-discharging devices adjusted to operate alternately with said cutting, feeding and heading devices, devices for effecting the opening and closing of the clamps, and means for operating the various devices aforesaid.

654,048. NAIL-MACHINE. JAMES ATKINS, Montclair, N. J. Filed Jan. 23, 1900. Serial No. 2,419. (No model.)



Claim.—1. The combination of a set of pointing, cutting, feeding and heading devices, together with an intermittently-traveling die-clamp for holding nail-blanks, and adapted to receive the nail-blank from the feed-guide, carry it in front of the heading device, to hold it in fixed position, as heading-dies, during the heading operation, and after the head is made, carry the nail to the position for its discharge, and means for intermittently operating the said traveling clamp.

2. The combination of a set of pointing, cutting, feeding and heading devices, together with a series of intermittently-traveling die-clamps for holding nail-blanks, each die-clamp being adapted as it is placed opposite the feed-guide, to receive a pointed nail-blank and subsequently carry said blank in front of the heading device, to hold it in fixed position, as heading-dies, during the heading operation and then carry the nail to the position for its discharge, and means for operating said feeding, pointing and cutting devices, in sequence, substantially as and for the purposes set forth.

3. The combination with a rotary transfer-table carrying die-clamps adapted to receive and transfer nail-blank clamps, of a plurality of sets of cutting, feeding and heading devices arranged around said transfer-table, said feeding and heading devices being arranged to move parallel to the axis of the transfer-table and the said heading devices being arranged symmetrically with respect to said transfer-table and provided with means for operating them intermittently, so as to prevent or neutralize the strains tending to bend or deflect the transfer-table on its axis.

4. The combination of two or more sets of feeding, pointing, cutting, guiding and heading devices with a rotary transfer-table mounted centrally with regard to said sets of devices, and carrying a series of traveling nail-blank clamps, each clamp in the series being adapted to receive a nail-blank from each one of the series of feeding-guides and carry it successively to the positions for heading and for discharge in due sequence, and means for operating the several devices

5. The combination of two or more sets of feeding, pointing, cutting, guiding and heading devices with a series of traveling nail-blank clamps, each clamp in the series being adapted to receive a nail-blank from each one of the series of feeding-guides and carry it successively to the positions for heading and for discharge in due sequence, and means for operating the several devices.

6. The combination of a plurality of sets of pointing cutting, feeding, guiding and heading devices, with a movable system of nail-blank clamps, coöperating successively with the several sets of devices, each of such sets being adapted to point a wire, cut off a blank, and feed and guide a blank to a clamp opposite the guide, and subsequently to upset a head on the blank, during each cycle of the movement, each device

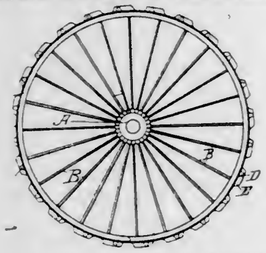
in a combination acting simultaneously with the corresponding devices in the other combinations.

7. The combination with a series of nail-blank-feeding devices a series of heading devices of a series of clamps for holding nail-blanks and nails, arranged to move consecutively in front of the series of nail-blank-feeding devices to receive the nail-blanks therefrom and in front of the series of nail-blank-heading devices to enable the blanks so presented by the clamps to be headed by the heading devices and in front of devices for discharging the nails from the clamps.

8. The combination of a plurality of cutting and pointing devices placed at uniform intervals, each of such devices consisting of two cutting and pointing dies and die-carriers adapted to move at right angles to the axis of the wire, mechanism comprising a crank or eccentric and a toggle-joint for operating each die so arranged that each die makes two cutting movements during each revolution of the crank or eccentric, together with means for guiding the carrier and adjusting the die, and a series of clamps arranged in coöperative relation with the said cutting and pointing devices and adapted to receive the cut nail-blanks therefrom.

9. The combination with a movable series of nail-blank clamps, of a plurality of heading devices placed at uniform intervals, in front of the series of nail-blank clamps, each of such heading devices consisting of a heading-die and die-carrier whose motion is in a line transverse to the direction of travel of the clamps, mechanism for actuating each die comprising a crank or eccentric and a toggle-joint so arranged that the die will make two heading movements during each revolution of the crank or eccentric.

654,049. METAL RIM FOR WHEELS. JOSEPH W. BETTENDORF, Davenport, Iowa. Filed Dec. 1, 1899. Serial No. 738,885. (No model.)



Claim.—1. A sheet-metal rim for wheels having ridges projecting from its tread or periphery that are stamped out of the same and are made homogeneous therewith, and which is provided with a series of stamped countersunk spoke-openings, each of which has an annular marginal seat around it, in combination with metal spokes which are provided with circumferential flanges near their outer ends that bear against the inner edges of said spoke-openings, and heads that are seated on said annular marginal seats, as set forth.

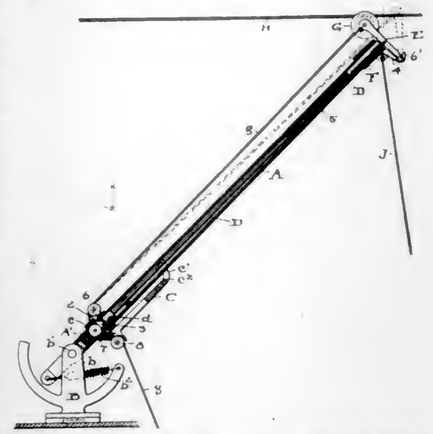
2. A sheet-metal rim for wheels, having a series of transverse ridges and a series of intersecting longitudinal ridges projecting from its tread or periphery that are stamped out of the same and are made homogeneous therewith, which has its side edges flanged inward the axis of the wheel and is provided with a series of stamped countersunk spoke-openings, each of which has an annular marginal seat around it, in combination with metal spokes which are provided with circumferential flanges near their outer ends that bear against the inner edges of said spoke-openings and heads that are seated on said annular marginal seats, as set forth.

654,050. TROLLEY-POLE. CHARLES A. BROWN, Lorain, Ohio, assignor of one-half to Albert V. Hageman, same place. Filed Aug. 22, 1899. Serial No. 728,144. (No model.)

Claim.—1. A trolley-pole and supporting mechanism by which it is adapted to drop down out of reach of the guy-wires, means to release the pole connected directly with the trolley-wheel and comprising a rod lengthwise in the pole and an arm pivoted across the end of the pole carrying the trolley-wheel on the opposite side from its pivot, substantially as described.

2. A pivoted trolley-pole support, the pole pivoted between its ends on said support, mechanism to lock the pole in working position, the trolley-wheel-supporting arm at right angles to the pole, a rod controlled by said arm to disengage the pole and separate cords for the pole and said arm, substantially as described.

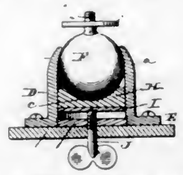
3. The trolley-pole and a pivoted support on which it is pivoted near its lower end, a locking-rod centrally through the pole to hold the pole in working position on its support, an arm pivoted at one end at one side of the pole and carrying the wheel on the other side, and a cord to control said arm engaged over the pole-support, substantially as described.



4. The trolley-pole and the supporting mechanism therefor, a pivoted arm for the trolley-wheel adapted to swing across the upper end of the pole, a sliding spring-pressed rod engaged by said arm and adapted to lock the pole on its support, a cord connected with said arm and a cord connected with the upper end of the pole, substantially as described.

5. The pole-support pivoted between its ends and a dog fixed thereon, in combination with the pole pivoted on said support and a spring-pressed locking-bolt therein to engage said dog and having its upper end exposed in the upper end of the pole, an arm pivoted at one extremity on one side of the end of the pole and carrying the trolley-wheel on the other side and a cord connected with the free end of said arm and extending over the support for the pole at the base thereof, substantially as described.

654,051. TRIPOD. ROBERT P. BROWN and AUGUST SCHAUSTEN, Washington, D. C. Filed Dec. 26, 1899. Serial No. 741,646. (No model.)



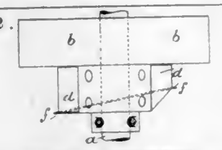
Claim.—1. A universally-adjustable tripod-head comprising a ball member bearing a screw-stud for mounting a camera, a socket for containing the ball member, a removable closure for the lower end of the socket member, and a binding-screw in threaded relation with said closure operating upon the ball member for maintaining a predetermined adjustment thereof, substantially as described.

2. A universally-adjustable tripod-head comprising a ball member bearing a screw-stud for mounting a camera, a cylindrical socket converging at one end and flanged at its opposite for containing the ball member, a screw-closure for the lower end of the socket member, a binding-screw in threaded relation with said closure, and a friction-shoe interposed between said screw and ball for maintaining a predetermined adjustment of the latter, substantially as described.

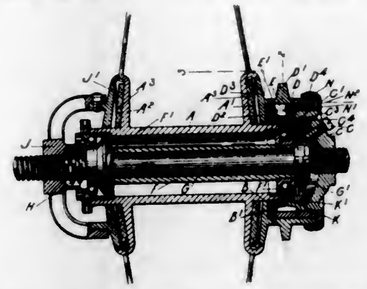
654,052. APPARATUS FOR PUTTING ON PULLEY-BELTS. HAROLD CLIFF and TRAVIS BURTON, Oldham, England. Filed Feb. 13, 1900. Serial No. 5,095. (No model.)

Claim.—The improved apparatus for putting on the driving-strap of a revolving pulley, consisting of a segmental guide of the same radius as the pulley and mounted to turn upon the shaft close to the pulley and provided with an inclined projecting flange which, as the said segmental pulley or guide is rotated, acts against the edge of the driving-strap and puts it onto the driving-pulley, substantially as hereinbefore described.

654,052.



654,053. BACK-PEDALING BRAKE. ARTHUR CUTHBERT, Cannes, France. Filed Jan. 21, 1899. Serial No. 703,005. (No model.)



Claim.—1. In a cycle driving-gear and brake mechanism, the combination with an internally-slotted longitudinally-movable sprocket-ring, a brake-surface carried by said sprocket, a coöperating brake-surface carried by the wheel-hub, a rotating and a fixed flange, bodies movable in the slots of the sprocket-ring, whereby as said bodies are brought in contact with the fixed or rotating flange the sprocket-wheel will be moved in or out, and act as a clutch or brake; substantially as described.

2. In a cycle driving-gear and brake mechanism, the combination with the sprocket-ring having the flange on its inner side, the liner secured to said sprocket-ring provided with a series of helical grooves, the movable and fixed rings, inclosed by said sprocket-ring, said rings provided with flanges so positioned as to leave an annular groove between them, and rollers or equivalents engaging with both grooves; substantially as and for the purpose set forth.

3. In a cycle driving-gear and brake mechanism, the combination with the sprocket-wheel having the flange on its inner side movable longitudinally the liner fast to said wheel, and having the series of inclined grooves, the fixed and rotating rings, having the annular groove between them and the rollers lying in the inclined grooves and extending down into the annular grooves, substantially as described.

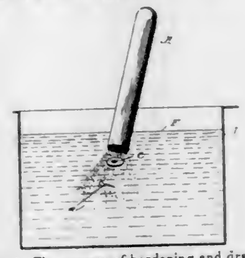
4. In a cycle driving-gear and brake mechanism the combination of a fixed wheel-axle, a wheel-hub mounted rotatably thereon, a flange B B′ secured on the wheel-hub, a fixed flange C C′ juxtaposed to the flange B B′, an internally-slotted sprocket-ring D D^4 free to rotate and move laterally relatively to the flanges B B′ and C C′, movable bodies arranged within the slots of the sprocket-ring and between the flanges B B′ and C C′, a brake-ring secured to the sprocket-ring and juxtaposed to a brake-surface and a stop to limit the lateral movement of the sprocket ring as set forth.

5. In a cycle driving-gear and brake mechanism the combination of a fixed wheel-axle, a wheel-hub mounted rotatably thereon, a flange B B′ secured on the wheel-hub, a fixed flange C C′ juxtaposed to the flange B B′, an internally-slotted sprocket-ring D D^4 free to rotate and move laterally relatively to the flanges B B′ and C C′, movable bodies arranged within the slots of the sprocket-ring and between the flanges B B′ and C C′, a brake-ring D^3 and a flange D^3 secured to the sprocket-ring and a brake-surface arranged on the hub of the cycle-wheel as set forth.

6. In a cycle driving-gear and brake mechanism the combination of a fixed wheel-axle, a sleeve free to move longitudinally thereon a device whereby the sleeve is always urged in one direction upon the axle a wheel-hub mounted rotatably on the sleeve, a brake-surface provided at each end of the hub, a flange B B′ secured on one end of the hub, a fixed flange C C′ juxtaposed to the flange B B′, an internally-slotted sprocket-ring D D^4 free to rotate and move laterally relatively to the flanges B B′ and C C′ movable bodies arranged within the slots of the sprocket-ring and between the flanges B B′ and C C′ a brake-ring D^3 and flange D^3 secured to the sprocket-ring and juxtaposed to the brake-surface at that end of the hub, and a fixed brake-ring arranged to coöperate with the brake-surface at the opposite end of the hub as set forth.

7. In a cycle driving-gear and brake mechanism, the combination with the fixed wheel-axle, the sleeve free to move longitudinally thereon, the wheel-hub rotatably mounted on the sleeve, the brake-surface provided at each end of the hub, the cones carried by said sleeve, the shoulder on the axle, the spring for pressing the cone against said shoulder, the fixed brake-ring, the longitudinally-movable sprocket-ring, the brake-surface carried by said sprocket, and mechanism for moving said sprocket longitudinally whereby its brake-surface comes in contact with the coöperating brake-surface on the wheel-hub, and the hub with its wheel moved longitudinally on its axle, until the brake-surface on the opposite side of the hub is brought in contact with the fixed brake-ring: substantially as described.

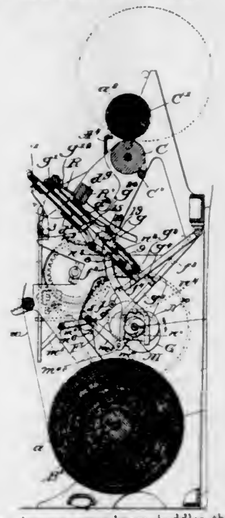
654,054. PROCESS OF HARDENING AND DRAW-TEMPERING STEEL. GUSTAVE DELAY, Le Locle, Switzerland. Filed Nov. 17, 1899. Serial No. 737,355. (No specimens.)



Claim.—1. The process of hardening and draw-tempering steel, consisting in heating the same while mingled with charcoal-dust and protected from the air, introducing the same while heated and without exposure to the air into a mineral-oil bath, and then removing from the oil-bath and drawing the temper of the steel by heating the steel while covered by a paste of charcoal-dust and mineral oil, cooling, removing the steel from the paste and then washing in petroleum or benzin, substantially as described.

2. The process of hardening and draw-tempering steel consisting in inclosing the steel pieces in a long tube together with charcoal-dust, heating the same while in the tube, placing the end of the tube in a path of mineral oil, throwing the pieces from the end of the tube into said oil-bath, removing the pieces from the oil-bath and drawing the temper of the pieces by heating them inside of a paste formed of charcoal-dust and mineral oil, removing the pieces from the paste after being cooled and washing the pieces, substantially as described.

654,055. UPRIGHT LOOM. GEORGE O. DRAPER, Hopedale, Mass., assignor to the Draper Company, same place and Portland, Me. Filed Sept. 30, 1897. Serial No. 653,539. (No model.)



Claim.—In a loom, a warp-beam, heddles through which the warp-threads pass, harness-frames to reciprocate the heddles, pivoted

treadles, actuating-cams therefor, and direct connections between the treadles and harness-frames, to reciprocate them, the warp-beam and pivots of the treadles being located at opposite sides of the harness-frames, substantially as described.

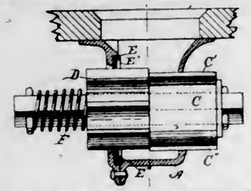
654,056. BOTTLE ATTACHMENT. THOMAS J. DUFFY, Boston, Mass., assignor to Florence E. Smalley, Chelsea, Mass. Filed Feb. 23, 1899. Serial No. 706,602. (No model.)



Claim.—1. A handle attachment for bottles, jars, &c., consisting of a metallic band completely embracing the neck and having its ends permanently connected and a flat metallic strip bent to form a loop-like handle rigidly attached at both of its ends to said band, substantially as described.

2. A handle attachment for bottles, jars, &c., consisting of a metallic band embracing the neck, and a flat strip bent to form a loop-like handle attached along one of its sides to the band by a soldered joint, substantially as described.

654,057. GRAIN-DRILL. CHARLES I. FOWLE, Dowagiac, Mich., assignor to the Dowagiac Manufacturing Company, same place. Filed Oct. 12, 1899. Serial No. 733,444. (No model.)



Claim.—1. In a force-feed, the combination of a seed-cup; a fluted force-feed seed wheel or roller; a rosette-washer supported in one side of the cup, fitting said seed wheel or roller, the said washer having its outer edge inwardly turned and provided with lugs opposite the flutes of the seed-wheel, all coacting for the purpose specified.

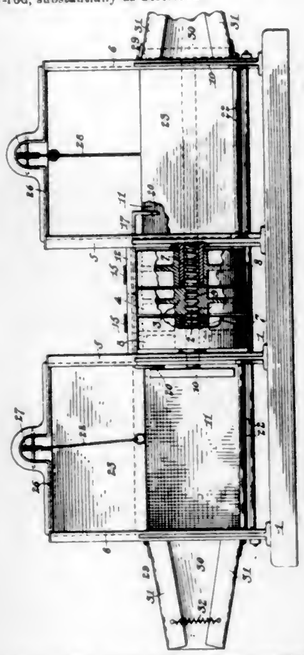
2. In a force-feed the combination of a seed-cup; a force-feed seed wheel or roller; a washer supported in one side of the cup fitting said seed wheel or roller, the said washer having its outer edge inwardly turned, and provided with lugs to agitate and carry the seed forward, for the purpose specified.

3. In a force-feed, the combination of a feed wheel or roller; a washer fitted to the same, having an inwardly-turned rim, with lugs thereon to assist in agitating and discharging, as specified.

4. In a force-feed; the combination of a feed wheel or roller; a washer fitted to the same, with laterally-extending lugs at the periphery only and tapering toward the center to assist in agitating and discharging, as specified.

654,058. OIL-CAKE-SACKING MACHINE. AUGUST FREDRICKSON, Meridian, Miss. Filed Feb. 3, 1900. Serial No. 3,852. (No model.)

Claim.—1. In a machine for packing cakes in bags, the combination of a frame comprising vertical brackets or standards, a reciprocating screw-rod having bearings in two of said brackets, platens carried by the said rod and extending into chambers formed at each end of the machine, a pulley mounted upon the screw-rod outside the said chambers, bearings formed upon the standards upon each side of the said pulley, the said bearings having inner and outer bearing-surfaces, the inner ones receiving the screw-rod, and pulleys mounted upon the outer bearing-surfaces and arranged upon either side of the rod-actuating pulley, and means mounted above the said pulleys for shifting operating-belting, the said means being located between the platens so as to be alternately struck by the same upon the reciprocation of the screw-rod, substantially as described



2. A machine for packing cakes in bags, comprising standards, inwardly-extending bearings on two of the said standards having inner and outer bearing-surfaces, a reciprocating screw-rod adapted to move longitudinally upon the inner bearing-surfaces, loose pulleys mounted upon the outer bearing-surfaces, an internal screw-threaded pulley mounted upon the screw-rod and engaging the threads thereof, the said pulley being held against movement longitudinally with the rod by the abutting ends of the said bearings, platens carried by the ends of the reciprocating rod, a belt-shifting mechanism mounted upon the standards comprising a single rod or bar moving in a suitable bearing, depending end portions formed on the said bar and projecting between the platens upon the ends of the rod, the said bar being sufficiently short so that the platens will only engage the depending portions when they approach the inner extremities of their movement, and means carried by the said bar for engaging straight and cross belts upon the loose pulleys, whereby one or the other may be moved automatically upon the actuating-pulley for reciprocating the screw-rod.

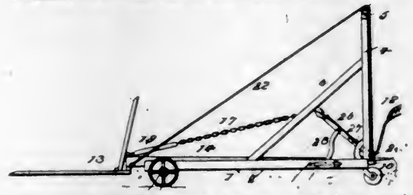
3. A machine for placing cakes in bags or sacks comprising a framing formed with inner and outer brackets, a reciprocating screw, carrying plungers mounted in the inner brackets, means for reciprocating the said screw and plungers, charging-chambers formed at each end of the machine adapted to inclose the said plungers, a series of rollers forming the floors of the said chambers, the said floors being slightly inclined, whereby upon placing a charge of cakes upon the inner face of the said floors, it will move by gravity in front of the plunger, substantially as described.

4. A machine for packing cakes into bags comprising a suitable frame, a reciprocating screw carrying plunger-heads mounted therein, means for reciprocating the said screw, one or more charging-boxes formed in the said frame having floors formed of a series of rollers, a sliding partition forming one side of each of the said charging-chambers, whereby upon placing a charge of cakes upon the said floor it will first rest against the partition and when the partition is raised the cake will move by gravity in front of the plunger, substantially as described.

5. A machine for packing oil-cakes in sacks comprising a suitable framing, a reciprocating screw-rod mounted therein having plungers secured thereto, one or more charging-chambers formed in the said framing provided with a suitable back, rollers forming a floor for the charging-chambers, a sliding partition mounted in front of each chamber, a rope and pulley for raising the said partition, and means for directing the cake from the charging-chamber into the sack or bag, substantially as described.

6. A machine for packing oil-cakes in sacks comprising a suitable framing, a reciprocating screw-rod mounted therein having platens secured thereto, charging-chambers formed in said frame, a roller-floor for receiving a charge of cakes, said floor projecting forwardly from the chamber, an end plate on the framing to facilitate the even piling of the cakes, and means for permitting the cakes to move into the chambers to be forced into sacks, substantially as described.

654,059. HAY RAKE AND STACKER. ANDREW H. GRAVES, Pleasanton, Iowa. Filed Mar. 16, 1900. Serial No. 9,007. (No model.)



Claim.—1. In a hay rake and stacker, a supporting-frame, a rake, arms secured to the rake, means for supporting the front ends of the said arms, connections having longitudinally-spaced pivotal connection with, respectively, the frame and the arms, and means carried by the frame for depressing the rear ends of the arms, as and for the purpose set forth.

2. In a hay rake and stacker, a supporting-frame, a rake, arms having the rake attached thereto, means for supporting the front ends of the said arms, swinging pivotal connections between the arms and frame and having oppositely-projecting bearings journaled, respectively, to the said arms and frame, and means applied to the frame to depress the rear ends of the said arms to effect an elevation of the rake, substantially as set forth.

3. In a hay rake and stacker of the character described, the combination of a wheeled frame, elevatable rake mechanism, pulleys arranged at the top and bottom of the rear of the frame, cables passed over said pulleys and laterally out from the frame and having draft devices applied thereto, a seat at the rear portion of the frame, and mechanism for raising and lowering the rake from said seat.

4. In a hay rake and stacker of the character described, a frame, a rake having pivotal connections therewith, stays having connection with the rake and frame for limiting the upward movement of said rake mechanism, and springs coacting with the stays to effect a cushioning action and partial retraction of the rake mechanism.

5. In a hay rake or stacker of the character described, a frame, a rake having pivotal connections therewith, stays having connection with the rake and frame for limiting the upward movement of said rake mechanism, springs coacting with the stays to cushion and partially retract the rake mechanism, and means for varying the tension of said springs, substantially as set forth.

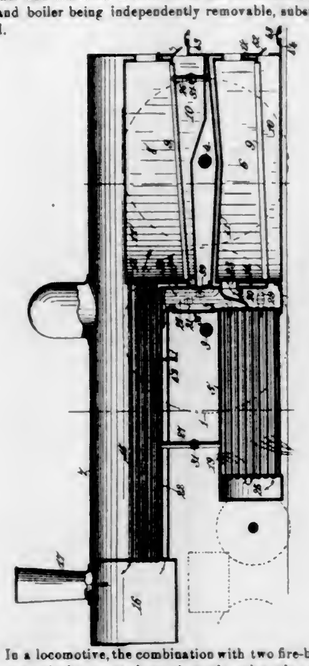
654,060. LOCOMOTIVE. WILLIAM W. GREGG, Elmira, N. Y. Filed Nov. 24, 1899. Serial No. 738,206. (No model.)

Claim.—1. In a locomotive, the combination with two separate fire-boxes disposed one above the other, of two separate boilers also disposed one above the other, the upper fire-box communicating with the upper boiler and the lower fire-box with the lower boiler, substantially as described.

2. In a locomotive, the combination with two separate fire-boxes disposed one above the other, of two separate boilers also disposed one above the other, the combustion-chambers of the fire-boxes having no communication one with the other, the upper fire-box communicating with the upper boiler and the lower fire-box with the lower boiler, and a smoke-chamber disposed at the forward end of the locomotive and arranged to receive the smoke and gases from the respective fire-boxes after they have passed through the boilers and before they enter the stack, substantially as described.

3. In a locomotive, the combination with two separate fire-boxes arranged one above the other, of two separate boilers also arranged one above the other, the upper fire-box communicating with the upper boiler and the lower fire-box with the lower boiler, said lower fire-box and boiler being removable, substantially as described.

4. In a locomotive, the combination with two separate fire-boxes arranged one above the other, of two separate boilers also arranged one above the other, the upper fire-box communicating with the upper boiler and the lower fire-box with the lower boiler, said lower fire-box and boiler being independently removable, substantially as described.



5. In a locomotive, the combination with two fire-boxes and two boilers respectively arranged one above the other, the upper fire-box communicating with the upper boiler and the lower fire-box with the lower boiler, of front and rear drivers the axles of which are respectively arranged between the boilers and fire-boxes, the lower boiler and fire-box being removable to permit the removal of the front and rear drivers and their axles, substantially as described.

6. In a locomotive, the combination with two fire-boxes and two boilers respectively arranged one above the other, the upper fire-box communicating with the upper boiler and the lower fire-box with the lower boiler, the lower fire-box and boiler being removable, of pipe connections detachably connecting the water-spaces of the lower fire-box to the water-spaces of the upper fire-box and the lower boiler to the upper boiler, substantially as described.

7. In a locomotive, the combination with two fire-boxes and two boilers respectively arranged one above the other, the upper fire-box communicating with the upper boiler and the lower fire-box with the lower boiler, the lower fire-box and boiler being removable, of pipe connections detachably connecting the water-spaces of the lower fire-box to the water-spaces of the upper fire-box and the lower boiler to the upper boiler, and the water-spaces of the lower fire-box to both boilers, substantially as described.

8. In a locomotive, the combination with two fire-boxes and two boilers respectively arranged one above the other and the lower fire-box and boiler being removable, the upper boiler being provided with straightway tubes communicating directly with the upper fire-box, and the lower boiler being provided with straightway and return tubes, of a detachable combustion-chamber interposed between the lower fire-box and boiler and communicating at its upper end with a detachable upwardly-extending flue, a smoke-box, a passage extending along the lower outside portion of the upper boiler and connecting said vertical flue and smoke-box, a detachable deflector disposed in the combustion-chamber and operating to direct the gases and products of combustion from the lower fire-box into the straightway tubes in the lower boiler, and a combustion-chamber connecting the straightway and return tubes in the lower boiler, substantially as described.

9. In a locomotive, the combination with two boilers and two fire-boxes respectively arranged one above the other, the lower fire-box and boiler being removable, of two platforms disposed one above the other at the rear of the fire-boxes, two corresponding firing-platforms disposed one above the other, and aprons connecting said platforms, substantially as described.

10. In a locomotive, the combination with two fire-boxes and two boilers respectively arranged one above the other and the lower fire-

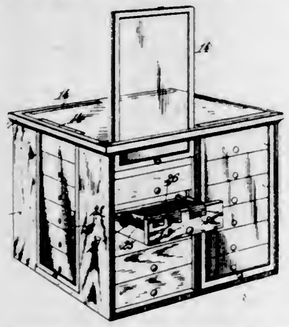
box and boiler being removable, of two separate inclosed ash-pits, one to each of said fire-boxes, each ash-pit being provided with a draft-door through which air is admitted to the fire-box, said draft-doors being independently adjustable at any desired angle so as to regulate the admission of air to said fire-boxes, substantially as described.

654,061. FOLDING CRATE. EMMA L. GREGORY, Kosciusko, Miss. Filed Mar. 2, 1900. Serial No. 7,094. (No model.)



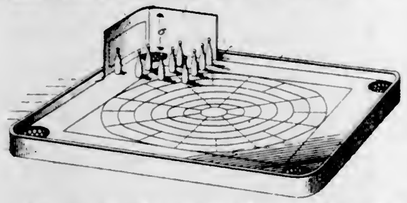
Claim.—In a folding poultry-crate, the combination with a bottom, having a feed or water receptacle fixed centrally to the upper side thereof, of opposite side sections hinged to fold inwardly upon the upper side of the bottom and terminating short of the receptacle when the crate is folded, the upper faces of certain of the side sections being above the upper edge of the receptacle, and a removable top or cover to connect the side sections in the opposite positions thereof and to cover and protect the receptacle.

654,062. REVOLUBLE RIBBON-CABINET. GEORGE W. HADDOX, Winchester, Va. Filed Mar. 9, 1900. Serial No. 8,043. (No model.)



Claim.—A ribbon-cabinet having a series of drawers slidably mounted therein, each of said drawers comprising a rectangular frame having one of its sides provided with an aperture and its opposite side edge recessed and having an aperture leading from said recess, and a spool-holder comprising a rod having a straight end adapted to be inserted in the first of said apertures and a bent end adapted to be inserted in the second, substantially as described.

654,063. BACK-STOP FOR GAME-BOARDS. HENRY L. HASKELL, Ludington, Mich., assignor to the Ludington Novelty Company, same place. Filed Jan. 30, 1900. Serial No. 3,341. (No model.)



Claim.—1. A back-stop comprising two separable parts, the parts having corresponding flexible locking-joints.

2. A back-stop comprising two separable parts, the parts having corresponding locking parts, and an erasable score-surface.

3. A flexible back-stop comprising jointed sections, one of the sections bearing an erasable surface

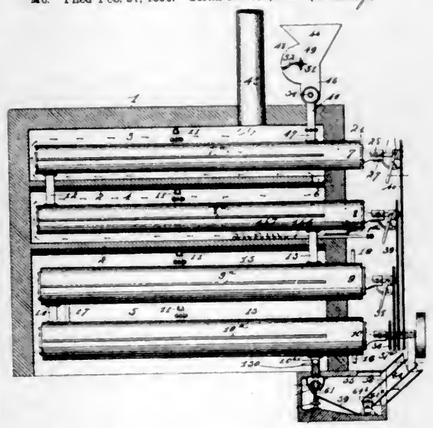
654,064. BLUE MONOAZO DYE. PAUL JULIUS, Ludwigshafen, Germany, assignor to the Badische Anilin and Soda Fabrik, same place. Filed Apr. 3, 1900. Serial No. 11,359. (No specimens.)

Claim.—As a new product the monoazo dyestuff from nitroamidophenol-sulfoacid ($NO_2:OH:NH_2:SO_3H=1.2.3.5$) and 1.5.7 amidonaphtol-sulfoacid, which can be obtained by diazotizing the specified nitro-amido-phenol-sulfoacid and combining the diazo compound with 1.5.7 amido-naphtol-sulfoacid in alkaline solution and is a dark powder, soluble in water with a blue-violet color, changing on the addition of hydrochloric acid to a light red, and which dyes unmordanted wool blue shades, which on treatment with potassium-bichromate solution becomes greener and blacker substantially as described

654,065. BLUE-VIOLET MONOAZO DYE. PAUL JULIUS, Ludwigshafen, Germany, assignor to the Badische Anilin and Soda Fabrik, same place. Filed Apr. 3, 1900. Serial No. 11,360. (No specimens.)

Claim.—As a new product the monoazo dyestuff from nitro-amido-phenol-sulfoacid ($NO_2:OH:NH_2:SO_3H=1:2:3:5$) and 2.8.6 amido-naphthol-sulfoacid which can be obtained by diazotizing the specified nitro-amido-phenol-sulfoacid and combining the diazo compound with 2.8.6 amido-naphthol-sulfoacid in alkaline solution and which is a dark powder soluble in water with a blue-violet color, changing to yellow red on the addition of hydrochloric acid, which dies unmordanted wool blue-violet shades which turn to deep black on treatment with potassium-bichromate solution, substantially as described

654,066. RETORT-FURNACE. ROBERT E. LAUCK, Kansas City, Mo. Filed Feb. 27, 1899. Serial No. 707,071. (No model.)



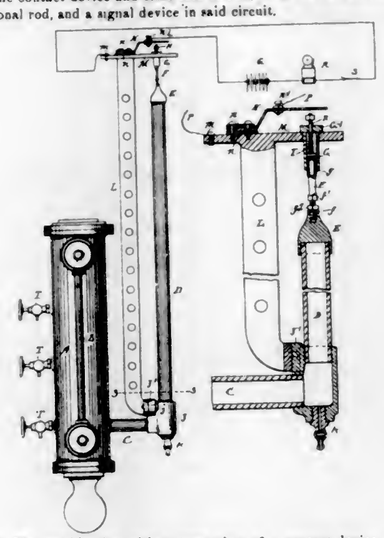
Claim.—1. In a retort-furnace, a retort having its front end projecting through the furnace-wall, and comprising a casing having an inlet-port near one end and an outlet-port at the other, and provided with an internal comb, a perforated partition at the front end of the comb and furnace, a non-conductor of heat filling the casing forward of the partition, and a shaft journaled in the casing and extending through the partition, and provided with a skeleton spiral conveyer, the teeth of which pass between those of the comb, substantially as described.

2. In a retort-furnace, a retort having its front end projecting through the furnace-wall, and comprising a casing, having an inlet-port near the front end of the furnace, and an outlet-port at its rear end, and provided with an internal bearing-socket at its rear end and a bearing-head provided with a stuffing-box at its front end, and provided also with an internal stationary comb, a partition 21 forward of the inlet-port, a non-conductor of heat filling the casing forward of the partition, a shaft extending through the partition and journaled in the bearing-head, and at its rear end in the bearing-socket, and provided with a skeleton spiral conveyer, the teeth of which pass between those of the comb, and means to rotate said shaft, substantially as described.

654,067. ELECTRIC LOW-WATER ALARM. FREDERICK LEADBEATER, Detroit, Mich. Filed Apr. 2, 1900. Serial No. 11,064. (No model.)

Claim.—1. In an electric low-water alarm, the combination with a steam-pipe, of a contact device, a support for said contact device, a sleeve carried by the upper end of said support, an electrical circuit connected with said contact device, an expansible tube communicating at its lower end with said steam-pipe, a rod supported upon the upper end of said tube, an additional spring-actuated rod above the first-named rod movable in said sleeve by the expansion of said tube and projecting therethrough to contact with said contact device to close the circuit, and a signal device in said circuit.

2. In an electric low-water alarm, the combination with a steam-pipe, of a contact device, a support for the contact device, an electrical circuit connected with the contact device, an expansible tube communicating at its lower end with the steam-pipe, a sleeve carried by said support at the upper end thereof, a rod connected at its lower end with the upper end of said expansible tube and movable at its upper end in said sleeve, an additional rod movable in said sleeve by the expansion of the tube and projecting therethrough to contact with the contact device and close said circuit, means to retract said additional rod, and a signal device in said circuit.

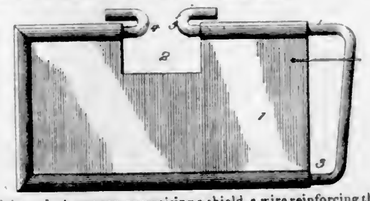


3. The combination with a steam-pipe, of a contact device, an electrical circuit connected with the contact device, an expansible tube communicating at its lower end with the steam-pipe, a cap at the upper end of said tube, a rod having an adjustable connection with said cap, an additional rod above the first-named rod movable with the expansion of the expansible tube to contact with the contact device to close said circuit, means to retract said additional rod, and a signal device in said circuit.

4. In an electric low-water alarm, the combination of a steam-pipe, an expansible tube communicating therewith, a standard supported upon said pipe provided with a bracket at its upper end, a sleeve carried by said bracket, a rod carried by the expansible tube having a movable engagement with said sleeve, a spring-actuated rod movable within the sleeve with the expansion of said tube, a contact device carried by said standard, an electrical circuit in connection with said standard and with said contact device, and a signal device in said circuit, said circuit being closed by the expansion of said tube to actuate the signal device.

5. In an electric low-water alarm, a steam-pipe, an expansible tube, a pipe-fitting connecting said tube into said steam-pipe provided with an attaching-flange, a standard supported upon said flange, a contact device carried by said standard, a sleeve carried by said standard, and means engaged in said sleeve and with said tube to form electrical contact with the contact device when the tube is expanded to close the electrical circuit, and a signal device in said circuit

654,068. STOCK-WEANER. HIRAM R. LOOBY, Loraine, Tex. Filed Dec. 2, 1899. Serial No. 738,988. (No model.)



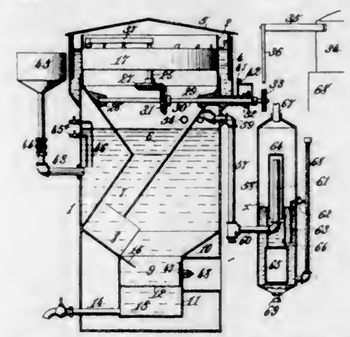
Claim.—1. A weaner, comprising a shield, a wire reinforcing three edges of the shield and having a terminal adapted to press against one side of the septum narium, an arm spaced from the fourth edge of the shield and having its horizontal portion slidably fitted to a longitudinal edge portion thereof and reinforcing it and terminating in a point to press against the opposite side of the septum narium, and a clamping device between the arm and shield to hold the weaner in place and the septum narium clamped between the gripping-terminals of the wire and arm, substantially as described.

2. A weaner, comprising a shield having an edge portion cut away to receive the septum narium, a wire applied to three edges of the shield and having an end projecting into the said cut-away part, an arm spaced from the fourth edge of the shield and connected with the said wire and movably fitted to the upper longitudinal edge of the shield at one side of the cut-away part and extending into the latter, and a clamp device between the shield and arm, substantially as described.

3. A weaner, comprising a shield having an edge portion cut away to receive the septum narium, and having three edges formed into a roll, a wire fitted in the rolled edges of the shield and having an end projecting into the cut-away part thereof and blunted, an arm spaced from the fourth edge and having its horizontal portion slidably fitted in the roll at the top edge of the shield and to one side of the cut-away portion, the projecting end being blunted, and a wire or analogous device connecting the arm with the shield, substantially as specified.

4. A weaner, comprising a shield having an edge portion cut away to receive the septum narium, a wire spun into three edges of the shield and having its ends extending into the cut-away part, a portion of the wire being spaced from the fourth edge of the shield and an end portion being movable, and a clamp device connecting the shield with the movable part of the wire, substantially as specified.

654,069. ACETYLENE-GAS GENERATOR. EDWARD S. MARTINDALE, Warren, Pa., assignor to the Kinnear Manufacturing Company, Limited, same place. Filed Feb. 28, 1899. Serial No. 707,179. (No model.)



Claim.—1. In an acetylene-gas generator, the combination with the generating-chamber, of a carbid-container supported above the same, comprising a circular stationary frame having a series of buckets circularly arranged and pivotally and rotatably mounted therein on axes substantially radial of the said frame, and rotary means operating to successively engage said buckets to rotate them in turn on their pivots and cause them to discharge their contents into the generating-chamber, substantially as described.

2. In an acetylene-gas generator, the combination with a gas-holder having a movable bell, of a generating-chamber, a carbid-container supported above the same comprising a circular stationary frame having a series of buckets circularly arranged and pivotally and rotatably mounted therein on axes substantially radial of the said frame, and rotary means operated by said bell to successively engage said buckets to rotate them in turn on their pivots and cause them to discharge their contents into the generating-chamber, substantially as described.

3. In an acetylene-gas generator, the combination with the generating-chamber, of a carbid-container supported above the same comprising a stationary frame having a series of buckets circularly arranged and pivotally and rotatably mounted therein, a rotary shaft having an arm traveling in a circular path above said buckets, and means carried by said arm to successively engage said buckets to revolve them in turn on their pivots and cause them to discharge their contents into the generating-chamber, substantially as described.

4. In an acetylene-gas generator, the combination with the generating-chamber, of a carbid-container supported above the same comprising a stationary frame having a series of buckets pivotally mounted

therein, a hook on each of said buckets, an upright shaft supported in said frame having at its lower end a bevel-gear, a horizontal shaft having a bevel-gear meshing with that of the upright shaft, an arm mounted at one end on the opposite end of said upright shaft, a curved arm pivotally mounted on the free end of said arm and having a hook adapted to successively engage the hooks of said buckets, and means for revolving said horizontal shaft, substantially as described.

5. In an acetylene-gas generator, the combination with a gas-holder having a movable bell, of a generating-chamber, a carbid-container supported above the same conprising a stationary frame having a series of buckets pivotally mounted therein, a hook on each of said buckets, an upright shaft supported in said frame having at its lower end a bevel-gear, a horizontal shaft having a bevel-gear meshing with that of the upright shaft, an arm mounted at one end on the opposite end of said upright shaft, a curved arm pivotally mounted on the free end of said arm and having a hook adapted to successively engage the hooks of said buckets, and means operated by said bell for revolving said horizontal shaft, substantially as described.

6. In an acetylene-gas generator, the combination with a gas-holder having a movable bell, of a generating-chamber, a carbid-container supported above the same comprising a stationary frame having a series of buckets pivotally mounted therein, a hook on each of said buckets, an upright shaft supported in said frame having at its lower end a bevel-gear, a horizontal shaft having a bevel-gear meshing with that of the upright shaft and having one end projecting beyond the generator and provided with a ratchet-wheel, an arm mounted at one end on the opposite end of said upright shaft, a curved arm pivotally mounted on the free end of said arm and having a hook adapted to successively engage the hooks of said buckets, a pawl carried by said bell and engaging the teeth of said ratchet at a given point in the fall of said bell whereby to turn said horizontal shaft in one direction and through the mechanism described to successively dump said buckets, a dial having a series of numbers circularly arranged thereon and corresponding with the number of said buckets, and an indicator carried by said horizontal shaft and turning therewith in operative relation with said dial, substantially as described.

7. In an acetylene-gas generator, the combination with a cylinder supporting a generating-chamber in its lower portion, of a funnel secured in the upper end of said cylinder in a manner to securely close the same and having a spout extending down toward said generating-chamber, said funnel communicating at its upper end with a closed compartment, a carbid-container supported in said closed compartment, means for discharging carbid therefrom into said funnel, and a safety device comprising an upright vessel having water therein, a discharge-pipe leading from the top of said vessel and a pipe leading from said closed compartment and having within said vessel a depending end submerged in the water thereof, the combination operating as described.

8. The combination with a generator and a gas-holder, of a liquid-seal device comprising an upright vessel having water therein, a pipe affording communication between said generator and said vessel and having within the latter an upright extension, a drum loosely inclosing said upright pipe and having a lower open end constantly submerged in the water of said vessel, a float rigidly supported from said drum and normally held by the weight thereof submerged in the water, and a pipe leading from the upper part of said vessel to said gas-holder, substantially as described.

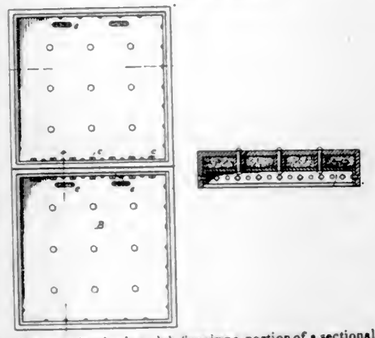
9. The combination with a generator and a gas-holder, of a liquid-seal device comprising an upright vessel having water therein, a pipe affording communication between said generator and said vessel and having within the latter an upright extension, a drum loosely inclosing said upright pipe and having a lower open end constantly submerged in the water of said vessel, a float rigidly supported from said drum, and normally held by the weight thereof submerged in the water, means for limiting the movements of said drum, and a pipe leading from the upper part of said vessel to said gas-holder, substantially as described.

654,070. SIDE PLATE FOR STEAM-BOILERS. EDWARD J. MOORE, Philadelphia, Pa. Filed Sept. 21, 1898. Serial No. 691,491. (No model.)

Claim.—1. The combination in a steam-boiler, of a casing made up of a series of hollow sections containing non-conducting material, each section being flanged, and an inclosing plate resting against the flanged portion of the sections forming an air-space, substantially as described.

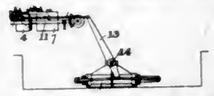
2. The combination in a sectional casing for steam-boilers, of a series of composite slabs forming said casing, each of said slabs comprising a deep-flanged plate and a shallow-flanged plate, said shallow-flanged plate resting within the deep-flanged plate and forming with the latter a chamber for non-conducting material, the flanges of the two plates being secured together, substantially as described.

3. The combination in a slab forming a portion of a sectional casing for steam-boilers, of the flanged plate A, and a flanged plate B resting within the flanges of the plate A, the flanges of each plate having a series of holes adapted to register with each other, the plates being secured together by rivets passing through alternate holes in the flanges of the plates, and the slabs or sections formed by said plates being secured together by bolts passing through the series of holes between the rivets, substantially as described.



4. The combination in a slab forming a portion of a sectional casing for steam-boilers, of the two flanged plates spaced apart, and provision for securing the flanges of said plates together, one of said plates having apertures through which non-conducting material may be entered to fill the space between said plates, substantially as described.

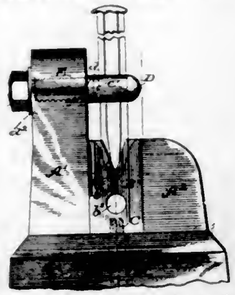
654,071. ROLLING FLANGED SECTIONS. THOMAS MORRISON, Braddock, Pa., assignor, by mesne assignments, to Julian Kennedy, Pittsburg, Pa. Filed May 23, 1900. Serial No. 17,679. (No model.)



Claim.—1. The method of rolling elongated shapes of metal having head and flange portions, which consists in passing the same through initial shaping-rolls, allowing a regulated interval of time to elapse during which all parts of the metal become reduced in temperature, and then giving the metal a working pass at such reduced temperature through finishing-rolls and imparting therein a greater reduction to the head than to the flange; substantially as described.

2. The method of rolling elongated shapes of metal having head and flange portions, which consists in passing a number of such shapes of metal consecutively through initial shaping-rolls, placing them side by side on a cooling-table, allowing them to remain cooling a uniform regulated interval of time, during which all parts of the metal become reduced in temperature, and then passing them consecutively through the finishing-rolls without impairing the continuity of operation of the latter; substantially as described.

654,072. DRILL-TOOL SHAPER. LOUIS F. NELL, Denver, Colo., assignor of one-half to William M. Watkins, same place. Filed May 5, 1900. Serial No. 15,607. (No model.)



Claim.—1. A shaper for drill-tools, &c., consisting of a single die-block having in its upper portion a tapering groove or channel and a discharge-throat for the scale, &c., opening into the apex of said tapering channel substantially as and for the purpose described.

2. A shaper for drill-tools, &c., consisting of a single die-block having in its upper surface a tapering groove or channel, a discharge-throat for the scale, &c., opening into the apex of said tapering channel, and rests or supports for the drill-tool substantially as described.

3. A shaper for drill-tools, &c., consisting of a single die-block having in its upper portion a tapering groove or channel with a throat opening downwardly from the apex of the same, and an enlarged receiving-chamber at the lower end of the throat substantially as and for the purpose described.

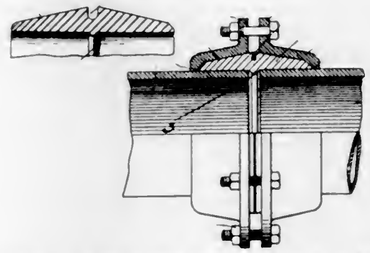
4. A shaper for drill-tools, &c., consisting of a base having two lugs at its upper end of different heights, a die-block secured between the lugs and having shaping-surfaces, and rest pins or supports fixed to the more elevated lug and projecting across and above the die-block substantially as described.

5. A shaper for drill-tools, &c., consisting of a die-block, a base having a lug extending above the die-block and provided with a horizontal slot, and two "rest-pins" arranged in the said slot and made adjustable toward each other as described.

6. A shaper for drill-tools, &c., consisting of a die-block, a base having a lug extending above the die-block and provided with a horizontal slot, two "rest-pins" arranged in the said slot and made adjustable toward each other, and an adjustable back bearing between the "rest-pins" for the tool being operated on substantially as described.

7. The combination of the base A having lugs A' A^2, a detachable die-block between them, and screw-bolt C tapped into the die-block from the under side of the base substantially as shown and described.

654,073. PIPE-COUPLING. JACOB M. OLINGER, Springfield, Ohio. Filed Oct. 25, 1899. Serial No. 734,716. (No model.)



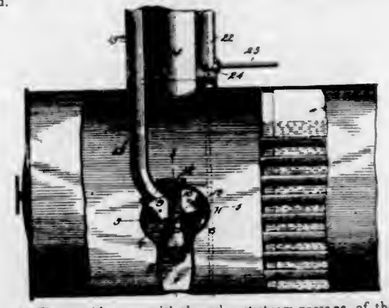
Claim.—1. A pipe-coupling consisting of a rubber packing-ring or jacket having an interior annular rib and an exterior circumferential groove, said rib and groove being in the same plane centrally of the jacket, and two coupling-clamps surrounding the jacket and designed to compress the jacket both peripherally and longitudinally of the pipe when drawn together by the coupling-bolts, and to obviate crimping or buckling of the jacket, substantially as described.

2. A pipe-coupling comprising a flexible rubber packing-ring or jacket having a thickened central portion and tapering outer edges, an annular central interior rib and a circumferential exterior central groove, a pair of flanged clamps surrounding said jacket, said clamps having an interior surface which substantially conforms to the outer surface of the jacket, the ends of the clamps fitting the pipe-sections to hold the jacket between them, and coupling-bolts passing through the flanges, substantially as described.

654,074. LOCOMOTIVE-EXHAUST AND MEANS FOR REGULATING DRAFT. WILLIAM H. PRENDERGAST, Savannah, Ga., assignor of one-half to Theo. D. Kline, same place. Filed Dec. 18, 1899. Serial No. 740,701. (No model.)

Claim.—1. The combination with the smoke-box, exhaust-steam passage communicating with the latter, and an independent passage or outlet for exhaust-steam, of two rocking valves applied respectively to such passages, shafts upon which said valves are mounted, spur-gears keyed upon said shafts, an intermediate gear meshing therewith, and lever mechanism for operating such intermediate gear, substantially as shown and described, whereby the oscillation of the intermediate gear effects the opening and closing of the two valves alternately and oppositely, as specified.

2. The combination, with the main exhaust-passage and the supplemental side exhaust-passage, of two valves 9 and 10, adapted for the respective passages, and means for operating said valves together, but successively, one valve being constructed and arranged as specified to fully open before the other closes, as and for the purpose specified.



3. The combination with the exhaust-steam passage, of the sector-shape rocking valve having a lengthwise recess or socket, a rock-shaft on which said valve is mounted loosely, and a lever-arm keyed on the rock-shaft, and adapted to move freely in the valve-socket, its outer end being so connected with the valve that the latter remains at rest while the rock-shaft rotates a part of a revolution, as shown and described, for the purpose specified.

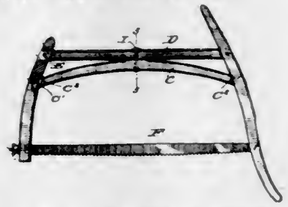
4. The combination with the main and supplemental exhaust-passages, of two rocking valves for opening and closing said passages, openings 26 in the sides of the main passage, and spaces behind said valves for receiving steam for the purpose of balancing the valves, as shown and described.

5. The combination with the exhaust-steam passage, of a valve for closing the same, said valve having an arc slot, and a lever-arm having a cross rod or pin working in said slot, and a rock-shaft to which said lever-arm is secured, substantially as shown and described, whereby, when the shaft is rotated, the lever-arm is moved in advance of the valve, as specified.

6. The combination with the smoke-box and a steam-exhaust passage, also an independent steam-exhaust, of two valves arranged to close the respective passages and adapted to rock as specified, one of said valves being rigidly connected with its rock-shaft and the other valve having a supplemental means of attachment to its rock-shaft, whereby it is allowed a "dwell" while the first-named valve is moving into or out of the closing position, as specified.

7. The combination with a locomotive smoke-stack, of an auxiliary exhaust-passage 22, a pipe for conducting the exhaust of electric-light engines thereto and a pipe for conducting off the water of condensation from said passage, substantially as shown and described.

654,075. SAW. CHARLES T. REDFIELD, Glenhaven, N. Y. Filed Apr. 18, 1900. Serial No. 13,326. (No model.)

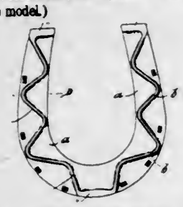


Claim.—1. The saw herein described consisting of the handle-bar, the front bar, the arch engaged at its ends with said handle-bar and front bar and arched upwardly between its ends, the brace-bar made straight from end to end and extended over the arch-bar and in contact therewith at its middle, means securing the ends of the brace-bar positively to the bars of the frame, the pin extending vertically through the arch at the crown thereof and through the brace-bar and securing such parts rigidly together at their middles, the saw-blade connecting the opposite frame-bars and means for straining or tightening said saw-blade substantially as set forth.

2. A saw comprising the opposite frame-bars, the arch-bar extended between and engaged at its ends with said frame-bars and curved upwardly from end to end, the continuous brace-bar overlying the arch-bar, made straight from end to end and rigid at its center with the arch-bar at the crown of the latter, means for securing the brace-bar positively to the frame-bars at the ends of the brace-bar, the saw-blade, and means for straining or tightening the same, all substantially as described whereby the longitudinal tension exerted on the saw-blade operates longitudinally on the straight brace-bar to

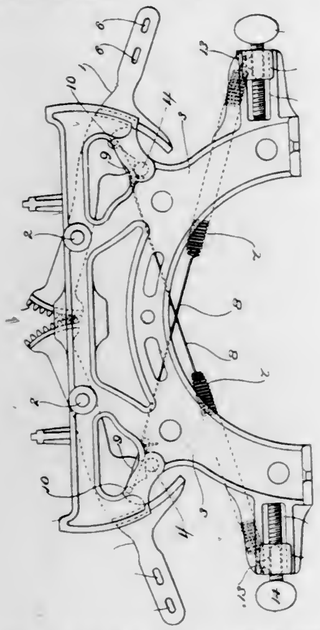
hold the arch-bar from moving up between the frame-bars and increases the rigidity of the saw substantially as and for the purposes set forth.

654,076. HORSESHOE. WILHELM SCHULTE, Berlin, Germany, assignor to Bruno Wesselmann, same place. Filed Nov 2, 1899. Serial No. 735,604. (No model.)



Claim.—A ribbed horseshoe having the hoof or attaching plate *a* having ribs *b* of zigzag or serpentine form extended continuously from one edge to the other of the plate, so as to insure resistance to slipping in all directions, and to prevent bending or breaking of the rib and secure a continuous reinforcement for the plate, substantially as described.

654,077. HARNESS-FRAME-OPERATING DEVICE FOR LOOMS. GEORGE W. STAFFORD, Providence, R. I., assignor to the Crompton & Knowles Loom Works, Worcester, Mass. Filed June 23, 1898. Serial No. 684,233. (No model.)



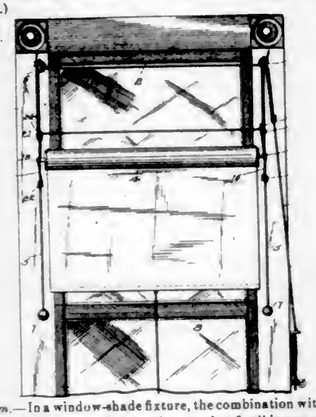
Claim.—1. The spring-jack comprising levers for connection with the harness-frames of a loom, springs operatively connected with the said levers, and an inclined or obliquely-disposed support for the said springs, substantially as described.

2. The spring-jack comprising levers for connection with the harness-frames of a loom, springs operatively connected with the said levers, a girth with which said springs are connected, and means to adjust the said girth into the desired inclined or oblique position, substantially as described.

3. The spring-jack comprising levers operatively connected together in pairs at their meeting ends, oppositely-located inclined or obliquely-disposed girths or bars, two sets of springs respectively applied to the respective girths or bars, and connections, as 8, 8, extending alternately in opposite directions from the respective sets of springs to levers at the opposite ends of the spring-jack, substantially as described.

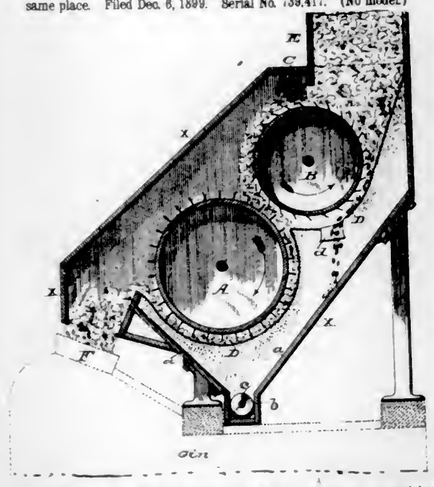
4. The spring-jack comprising levers operatively connected together in pairs at their meeting ends, oppositely-located angularly-disposed girths or bars, means to adjust the position or angle of the said girths or bars, two sets of springs respectively applied to the respective girths or bars, and connections, as 8, 8, extending alternately in opposite directions from the respective sets of springs to levers at the opposite end of the spring-jack, substantially as described.

654,078. WINDOW-SHADE HANGER. HENRY H. STRATTON, San Francisco, Cal. Filed Oct. 18, 1899. Serial No. 734,015. (No model.)



Claim.—In a window-shade fixture, the combination with a shade-roller, having opposite roller-brackets, and a flexible suspending device for the latter, of flexible guides for the brackets, and fastenings for the guides, each upper fastening comprising a head having an attaching shank at one end, an eye at the opposite end thereof, and a longitudinal rib extending between the shank and the eye, and provided with a notch, the flexible guides being wrapped upon the respective heads and engaged with the notches thereof, and the flexible suspending device passing loosely through the eyes, and supported thereby

654,079. SEED-COTTON CLEANER AND FEEDER. VANDEN H. TALTON, Columbus, Ga., assignor to the F. H. Lummus Sons Company, same place. Filed Dec. 6, 1899. Serial No. 739,417. (No model.)

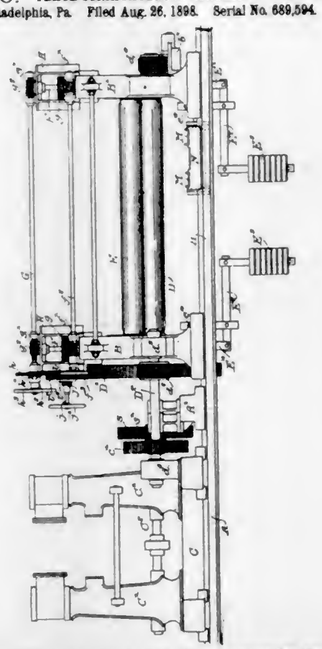


Claim.—1. The improved cotton cleaner and feeder, comprising the casing X, the toothed, intermittently-rotating cylinder B, and the toothed cylinder A, which is arranged parallel to the former, and rotated continuously and at a higher rate of speed, and a screen arranged behind the two cylinders and extending above the upper one and provided with the opening *d* directly beneath such upper cylinder, to operate substantially as shown and described.

2. The improved cotton cleaner and feeder, comprising a toothed, intermittently-rotating cylinder B, and a toothed continuously-rotating cylinder A, arranged parallel and in due proximity to each other, the two cylinders rotating in opposite directions and the first-named one having teeth arranged tangentially, and a screen arranged behind both cylinders and extending above the upper cylinder, substantially as shown and described.

3. The improved cotton cleaner and feeder, comprising an intermittently-rotating cylinder B having teeth arranged tangentially, a second cylinder A which is continuously rotated in a direction opposite the first-named cylinder, the two being arranged in proximity, the continuously-rotating roller C, having lengthwise flanges, and arranged adjacent to the upper or feeder cylinder, and a screen located behind said cylinders and curved conformably thereto, substantially as shown and described.

654,080. PLATE-STRAIGHTENING MACHINE. DAVID TOWNSEND, Philadelphia, Pa. Filed Aug. 26, 1898. Serial No. 689,594. (No model.)



Claim.—1. The combination in a plate-straightening machine, of housings, boxes mounted in said housings, a series of upper and lower straightening-rolls mounted in the boxes, means for driving the lower set of rolls, means for adjusting each of the upper rolls, and independent counterbalance mechanism for each end of each upper roll, substantially as set forth.

2. The combination in a plate-straightening machine, of housings, two rows of boxes in each of said housings, a series of rolls mounted in the lower boxes, means for driving said rolls, a series of rolls mounted in the boxes above the spaces between the lower rolls, and counterbalance mechanism for each end of each upper roll, substantially as set forth.

3. The combination in a plate-straightening machine, of the housing, the upper and lower rolls, screws for adjusting the upper rolls, gears on the screws meshing one with another so that when one screw is turned the series will be turned, a worm-wheel on an extension of one of the screws, a shaft having a worm meshing with the worm-wheel, a gear-wheel loose on the shaft, and clutching mechanism by which the wheel can be secured to the shaft, a wheel meshing with said gear-wheel and having a clutch-face, another gear-wheel also having a clutch-face adapted to engage the clutch-face of the intermediate gear, said gear-wheel being driven from the main driving-wheel of the machine, substantially as described.

4. The combination of the upper and lower rolls, a screw for adjusting one of the upper rolls, means for turning said screw, a nut mounted within the housing and through which the screw passes, mechanism for turning said nut, and adjustable means for holding the nut from turning in the housing, substantially as described.

5. The combination in a plate-straightening machine, of the housing, a series of lower rolls and a series of upper rolls above the spaces between the lower rolls, bushings for the lower rolls, vertical channels between the bushings of the lower rolls for the passage of counterbalance mechanism for the upper rolls, and water-spaces surrounding the bushings of the lower rolls and communicating with the channels, substantially as described.

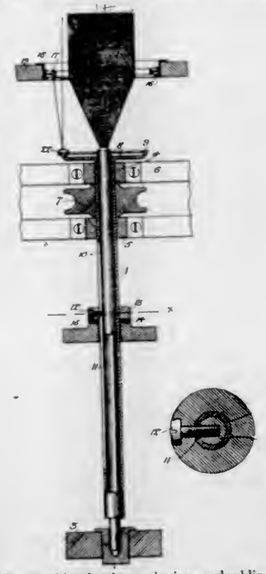
6. The combination of a driven wheel having a clutch-face, a gear-wheel also having a clutch-face, means for moving one wheel toward or from the other, an operating-shaft, a gear-wheel loose on said shaft and meshing with the clutch gear-wheel, with means for connecting the said wheel to the operating-shaft, substantially as described.

7. The combination in a plate-straightening machine, of the two housings, a series of upper and lower straightening-rolls, means for driving the lower rolls, counterbalance mechanism for each end of each upper roll, nuts in the housings, screws passing through the nuts and adapted to adjust the upper rolls, a frame mounted on each of the housings, a cross-shaft adapted to bearings in each frame and geared to the screw-shaft, a gear-wheel on said cross-shaft, a stud projecting from one of the frames, a pinion meshing with the gear-wheel, a driven gear-wheel also on the stud, and friction mechanism between the driven gear-wheel and the pinion, substantially as described.

8. The combination in a plate-straightening machine, of the two housings, the upper and lower series of rolls mounted in the housings, a large gear-wheel mounted on the journal of one of the lower rolls, the other rolls being geared to said driven roll, screws for adjusting the upper rolls, a cross-shaft extending from one housing to the other and geared to the screws, a gear-wheel meshing with the large gear-wheel of the lower roll, a pinion, clutch mechanism between the gear-wheel and the pinion, a gear-wheel on the cross-shaft meshing with the pinion, and a hand-wheel on the cross-shaft, substantially as described.

9. The combination in a plate-straightening machine, of housings, two sets of bearings in each housing, a series of upper rolls mounted in one set of bearings, and a series of lower rolls mounted in the other set, a large gear-wheel mounted on the journal of one of the lower rolls, the other rolls of the lower set being geared to the said driven roll, counterbalance mechanism for the upper rolls, screws for adjusting the upper rolls, a shaft extending from one housing to the other and geared to the several screws, a gear-wheel meshing with the larger gear-wheel of the lower roll, and connected to the transverse shaft, substantially as described.

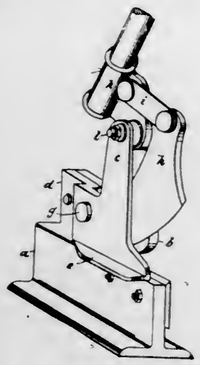
654,081. SPINNING-MACHINE. PAUL WALLACK, Philadelphia, Pa. Filed Aug. 25, 1898. Serial No. 689,486. (No model.)



Claim.—The combination in a spinning or doubling machine, of a vertically-reciprocated spindle, a sleeve rotating with said spindle

and having a live-ring adjacent to the nose of a cop which is being wound upon the spindle, a traveler on said live-ring, a dead-ring occupying a fixed vertical relation to said live-ring, a traveler on said dead-ring cooperating with that on the live-ring, and means for rotating the spindle and the sleeve, substantially as specified.

654,082. METAL-SHEARING MACHINE. BRUNO WESSELMANN, Berlin, Germany. Filed Feb. 10, 1900. Serial No. 4,817. (No model.)



Claim.—1. In a metal-shearing machine, the combination with the base-frame *a*, of the parallel trunnion-supporting brackets *b*, *c*, rising therefrom and separated from each other to provide a space for the shearing-blade, and a lateral extension *e*, on the lower edge of the bracket *c*, substantially as and for the purpose specified.

2. In a sheet-metal-shearing machine, the combination with the base-frame *a*, of the parallel trunnion-supporting brackets *b*, *c*, rising therefrom and separated from each other to provide a space for the shearing-blade, a lateral extension *e*, on the lower edge of the bracket *c*, trunnions *g* and *l*, passing through the said supporting-brackets, one of said trunnions being located above the other, a shearing-blade *h*, connected at one end to the lower trunnion, an operating-lever *k*, connected to the upper trunnion, and a link *i* connecting said lever and blade, substantially as described.

654,083. MOTOR MECHANISM FOR MILLS. CHARLES J. WESTON, Philadelphia, Pa. Filed Nov. 1, 1899. Serial No. 735,502. (No model.)

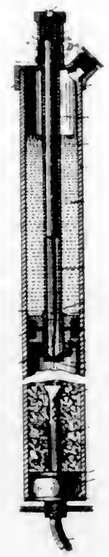


Claim.—The combination with the fly-wheel of a coffee-mill, of a clamp secured thereto and consisting of a ring and a disk bolted together, the disk being formed with an annular shoulder and with a pinion and a stud-bearing, a frame having bearing-apertures to engage the annular shoulder and the stud-bearing, a gear-wheel journaled in said frame, and a crank for rotating the gear-wheel, substantially as and for the purpose set forth.

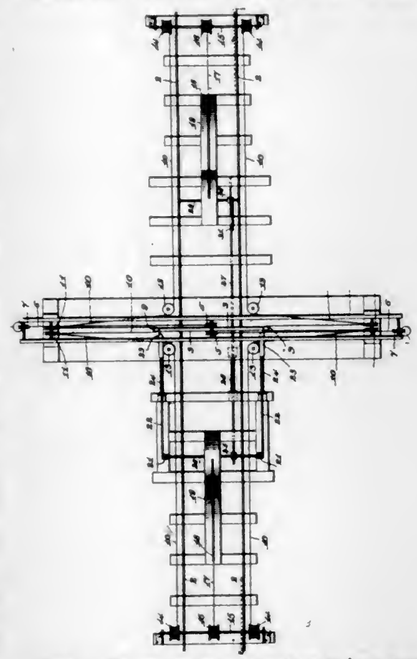
654,084. ACETYLENE-GAS GENERATOR. FRANCIS WINDHAM and ERNEST FRY, London, England; said Fry assignor to said Windham. Filed Feb. 14, 1898. Serial No. 670,270. (No model.)

Claim.—An acetylene-gas generator comprising a closed casing of substantially-uniform interior diameter, a removable, hermetic diaphragm dividing the casing into two chambers one of which is a gas-generating chamber and the other a water-chamber, a removable hermetic closure for the outer end of the gas-chamber, a cap loosely fitting the outer end of the water-chamber, a tube extending through said diaphragm and provided with a valve-seat, a spring-pressed valve for controlling communication between the two chambers through the tube, means to actuate the valve in opposition to the normal action of the spring, and a gas-delivery pipe leading from the gas-chamber, substantially as set forth.

654,084.



654,085. AUTOMATIC RAILWAY-GATE. CHARLEY H. YOUNG, Wilkeson, Wash. Filed July 13, 1899. Serial No. 723,651. (No model.)



Claim.—1. The combination with two gates or doors movable toward and from each other transversely of a railway-track, and counterweights for normally keeping the same closed, of a single cable for each gate or door adapted to be automatically operated by a passing train from either side to open said gates or doors, independent means for automatically retaining said gates or doors open during the passage of the train therebetween, and means operated by said train for automatically releasing said gates or doors after the train has passed therebetween, thus permitting their return to the closed position through the said counterweights.

2. The combination with two gates or doors movable toward and from each other transversely of a railway-track, and counterweights for normally keeping the same closed, of a cable running from each of said gates or doors to sheaves on shafts located transversely of the track to each side of said gates or doors, projections longitudinally movable between the track-rails adapted to be engaged and moved by the train as it approaches the gates or doors from either direction, and cables connecting said projections with sheaves on the said shafts and so arranged that the movement of said projections will rotate said shafts, wind the gate or door cables thereon, and automatically move said gates or doors apart.

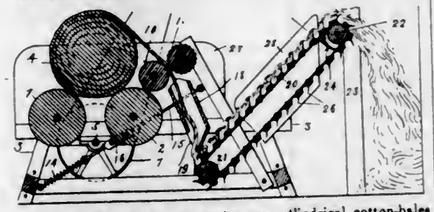
3. The combination with two gates or doors movable toward and from each other transversely of a railway-track, counterweights for normally keeping the same closed, a projection longitudinally movable between the track-rails adapted to be engaged and moved by a plunger on the train as it approaches the gates or doors, and connections between said projection and the gates or doors whereby the movement of the former will separate the latter, of means for disengaging said plunger and projection when the gates or doors are opened.

4. The combination with two gates or doors movable toward and from each other transversely of a railway-track, counterweights for normally keeping the same closed, a projection longitudinally movable between the track-rails adapted to be engaged and moved by a plunger on the train as it approaches the gates or doors, and connections between said projection and the gates or doors whereby the movement of the former will separate the latter, of a slotted guideway in which said plunger moves having an uprising rounded portion at its end nearest the gates or doors over which the plunger will ride to disengage it from said projection when the latter has been moved sufficiently to open the gates or doors.

5. The combination with two gates or doors movable toward and from each other transversely of a railway-track, counterweights for normally keeping the same closed, and means operated by an approaching train for automatically opening the same, of locking-bolts adapted to automatically engage said gates or doors when opened to retain them in this position, and means operated by the train after its passage between said gates or doors for retracting said locking-bolts and permitting the gates or doors to be returned to their closed position.

6. The combination with two gates or doors movable toward and from each other transversely of a railway-track, counterweights for normally keeping the same closed, and means operated by an approaching train for automatically opening the same, of locking-bolts adapted to automatically engage said gates or doors when opened to retain them in this position, shafts extending transversely of the track, trips on said shafts operated by the train in its passage to rotate said shafts, and connections between said shafts and the locking-bolts whereby the rotation of the shaft on the departure side only of the train will retract said bolts and permit the gates or doors to be returned to their closed position.

654,086. MACHINE FOR UNWINDING CYLINDRICAL COTTON-BALES. LOUIS A. AUMANN, Chicopee, Mass. Filed Dec. 7, 1899. Serial No. 739,562. (No model.)



Claim.—1. Unwinding mechanism for cylindrical cotton-bales comprising bale-supporting rolls adapted to rotate in unison in the same direction, drawing-rolls supported in proximity to said first-named rolls, said drawing-rolls having a greater circumferential speed than said supporting-rolls, an apron adapted to receive the cotton-lap from said drawing-rolls, and movable at a speed in excess of the speed of delivery of said drawing-rolls, and means for supporting said cotton-lap in proximity to, and against the action of, said apron, substantially as described.

2. Unwinding mechanism for cylindrical cotton-bales, comprising bale-supporting rolls adapted to rotate in unison for unwinding a bale, drawing-rolls having a greater circumferential speed than said first-named rolls and comprising one roll supported fixedly on the machine and one yieldingly held against said fixed roll; an upwardly-inclined apron having teeth on its outer surface and movable at a speed in excess of the speed of delivery of the drawing-rolls, a support for the cotton in proximity to the lower end of the apron, whereby the cotton is held against the moving apron, substantially as described.

3. In a machine for unwinding cylindrical cotton-bales, a pair of rolls for supporting and rotating a bale, a second pair of rolls between which the unwound lap of cotton passes, a movable apron having teeth thereon adapted to disintegrate said cotton and convey it away from the machine, means for supporting the cotton against the action of the apron and for feeding the cotton to the latter at a slower rate of speed than that attained by the apron, substantially as described.

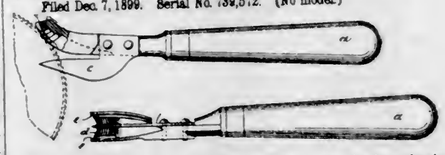
654,087. BLUE-GREEN OXAZIN DYE. BRUNO BEYER, Ludwigshafen, Germany, and FRIEDRICH SCHAAR-ROSENBERG, Manchester, England, assignors to the Badische Anilin und Soda Fabrik, Ludwigshafen, Germany. Filed Apr. 23, 1900. Serial No. 14,018. (No specimens.)

Claim.—As a new dyestuff the new blue-green coloring-matter, which can be obtained by heating a solution of a specified nitroso-alkyl-meta-amido-phenol in the presence of a reducing agent and which in the form of its sodium salt is a dark powder soluble in water with a blue to blue-violet color, the said solution on addition of hydrochloric acid turning brilliant green and which dyes on chrome mordants giving blue-green shades substantially as described.

654,088. PROCESS OF CONVERTING WHITE LEAD INTO OIL PASTE. GUSTAV BISCHOF, London, England. Filed Mar. 26, 1900. Serial No. 10,268. (No specimens.)

Claim.—The herein-described process of converting white lead into oil-paste, the said process consisting of the following steps of operation upon the crude material: filter-pressing and washing, pugging about one-third part of the white lead with about two-thirds of the oil, running off separated water, pugging in the remainder of the white lead and oil, drying by a current of hot air directed over the surface of the material while it is pugged.

654,089. CAN-OPENER. WILLIAM G. BROWNE, Kingston, N. Y. Filed Dec. 7, 1899. Serial No. 739,572. (No model.)

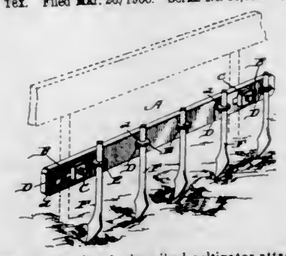


Claim.—1. A can-opener comprising a cutter and a lever having its fulcrum provided with oppositely-located rims having offsets *e* forming guards or channels substantially as described.

2. A can-opener comprising a cutter and a lever having its fulcrum provided with oppositely-located rims having offsets *e* forming guards or channels and the cutter located centrally to the fulcrum or between the guards substantially as described.

3. A can-opener comprising a cutter and a lever having an offset rim forming a guard or channel at its fulcrum substantially as described.

654,090. CULTIVATOR ATTACHMENT. HENRY T. CROSBY, Coleman, Tex. Filed Mar. 26, 1900. Serial No. 10,184. (No model.)

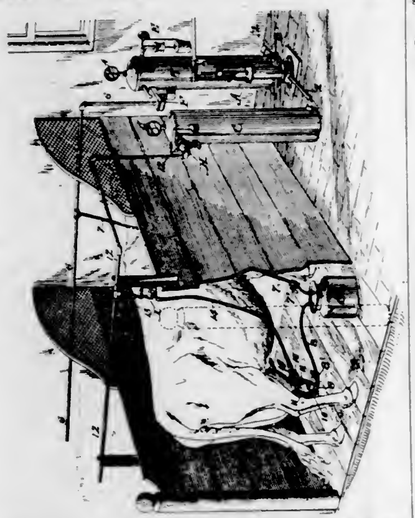


Claim.—1. The herein-described cultivator attachment consisting of a bar A having elongated slots B adapted to receive fastening means whereby it may be attached to a cultivator, and also having a plurality of apertures adapted to receive fastening means for plows or harrow-teeth, as and for the purpose set forth.

2. The herein-described cultivator attachment, consisting of a bar A having longitudinally-extending slots B in which are inserted

eyebolts C adapted to receive the foot-pieces or standards of a cultivator, said bar being further provided with a plurality of apertures D through which are inserted eyebolts E adapted to receive the shanks of harrow-teeth F, the said apertures being countersunk on one side to such a depth that the shanks of the teeth will abut tightly against the side of the bar when the eyebolts E are screwed up, as and for the purpose set forth.

654,091. COW-MILKING MACHINE. MODESTUS J. CUSHMAN, Waterloo, Iowa. Filed Nov. 27, 1896. Serial No. 613,648. (No model.)



Claim.—1. In a cow-milking machine, the combination with teat-cups, pipes and tubes leading thereto, a vacuum-producing apparatus and an air-compression apparatus, of an automatic regulator composed of an expansible air-box having a movable portion or side which closes the outlet-pipe when the tension of the vacuum reaches a predetermined point, and a weight pendent from such movable side, to add resistance of the latter foreclosure on said pipe, as shown and described.

2. An automatic vacuum-regulator composed of an expansible air box, having a movable portion which is adapted to seat upon and close the air-outlet pipe connected with said air-box, and a means for resisting such closure, as shown and described.

3. In a cow-milking machine, the combination with the teat-cups, milk-receiver, systems of pipes and tubes, and a vacuum and compression apparatus, of an automatic low-vacuum alarm, composed of an expansible weighted air-holder, an alarm proper, and a device connecting the latter with the air-holder, as shown and described.

4. The pulsator for use as specified; composed of an air-cylinder, having a compressed-air inlet and outlet as specified, a piston held normally depressed in said cylinder, a compressed-air-cut-off mechanism which is connected with and operated by such piston, substantially as shown and described.

5. The improved pulsator composed of a compressed-air cylinder, having an air inlet and outlet, a piston adapted to reciprocate in said cylinder, means for holding the piston normally depressed, an adjacent piston or slide and air-passages which are controlled by such piston, and means for connecting the pistons and causing one to operate the other for opening or closing the air-passage, as shown and described.

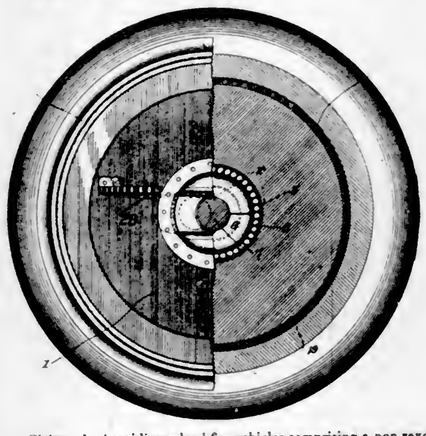
6. The improved pulsator composed of a main air-cylinder having a base air inlet and outlet, a piston therefor, and a spring for holding it normally depressed, the adjacent piston-cylinders one having an air-inlet, and air-cut-off pistous slidable therein, tubular connection between the two cylinders and a lever connection between the several pistons, whereby the movement of the main piston causes like movement of the others, substantially as shown and described.

7. The combination, with a pulsator proper, and a tube forming part of the air-compression system, of a tubular connecting-piece adapted to form an air-tight detachable connection with said tube and having a valve which is normally seated and provided with a stem extending in a guide, and a fixed abutment or diaphragm arranged in said tube, in proximity to the valve, so that the valve-stem is in contact with it, when the tubular parts are connected, as shown and described.

8. A teat-cup composed of an outer rigid tube and a flexible inner one joined to a compressible ring having a groove in its upper side, and a series of perforations extending down from such groove and opening on the under side of the ring within the flexible tube, as shown and described.

9. A teat-cup composed of a rigid outer tube, a flexible inner tube, a ring fitted on the rigid tube, and having an inwardly-projecting portion provided with a series of perforations opening on the under side within said flexible tube which is joined to the ring as specified.

654,092. WHEEL. JOHN W. EISENBUTH, New York, N. Y., assignor, by mesne assignments, to Mamie G. Read, same place. Filed Jan. 9, 1900. Serial No. 853. (No model.)



Claim.—1. A guiding-wheel for vehicles comprising a non-revoluble web portion, a revoluble rim portion, a central hub-bearing, a spherical journal for engaging the said bearing, and means for turning the said web portion upon the said bearing, substantially as described.

2. A guiding-wheel for vehicles comprising a revoluble rim portion, a non-revoluble web portion, a central bearing portion, a spherical journal engaging the said bearing, antifriction means interposed between the hub and spherical bearings, and a means for turning the web portion upon the said bearing for directing the wheel, substantially as described.

3. A guiding-wheel for vehicles comprising a rim and web portion, a central bearing having a series of grooves forming ball-races, a spherical journal engaging the said bearing, balls mounted in the said races for reducing friction between the parts, and a means for turning the said wheel upon the said journal, substantially as described.

4. A journal-bearing for guiding-wheels comprising a central hub-bearing on the wheel, a spherical journal secured to the axle of a running-gear, the said spherical journal being divided, and a means for securing the divided journal upon the end of an axle, substantially as described.

5. A journal-bearing for guiding-wheels comprising a hub-bearing formed on the wheel, a spherical divided journal on the axle of a vehicle, the said spherical journal being provided with an internally-arranged annular groove adapted to engage an annular flange upon the shaft of the running-gear, keys interposed between the spherical journal and the axle whereby the parts of the divided journal may be separated to take up wear in the parts and means for holding the keys in place, substantially as described.

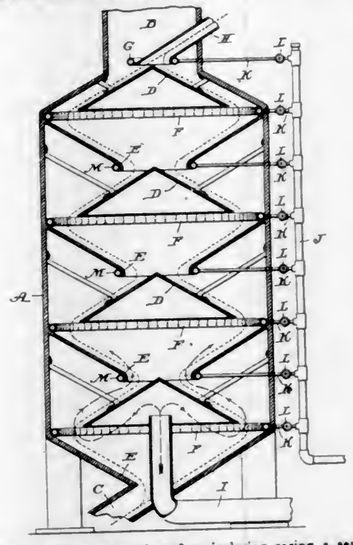
6. A journal-bearing for guiding-wheels comprising a hub-bearing on the said wheel, a spherical journal secured to the axle of a running-gear, keys interposed between the axle and the divided parts of the spherical journal, nuts on the end of the axle for holding the keys in position, dust-proof cases screwed to the hub of the wheel and inclosing the journal whereby the bearings may be entirely inclosed, the said cases having a slot for accommodating the said axle, and a flexible slide for inclosing the said slot, substantially as described.

7. A guiding-wheel for vehicles comprising a central non-revoluble web portion, a revoluble rim portion opposing, bearing-surfaces formed upon the adjacent edges of the web and rim portions, antifriction-bearings interposed between the same comprising rings, means for connecting the rings, and rollers spaced apart in the said rings, substantially as described.

8. A guiding-wheel for motor-vehicles comprising a non-revoluble web portion and a revoluble rim portion, bearing-surfaces formed upon the adjacent edges of the said web and rim, antifriction means interposed between the said bearing-surfaces comprising rings, bars connecting the said rings and forming a series of spaces between them, rollers mounted in said spaces and antifriction-balls mounted in the rings and bars, and engaging the rollers for holding them in the proper position without friction, substantially as described.

9. A guiding-wheel for vehicles comprising a non-revoluble web portion and revoluble rim portion, a journal-bearing comprising a hub-bearing and a spherical journal, and a yoke rigidly secured to the said web portion whereby the web portion may be turned upon the spherical journal to direct the wheel, substantially as described.

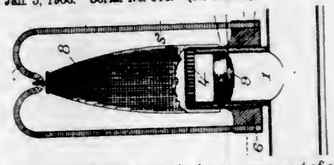
654,098. DRYING AND COOLING MACHINE. GEORGE S. EMERICK, Philadelphia, Pa. Filed Sept. 29, 1899. Renewed June 16, 1900. Serial No. 20,541. (No model.)



Claim.—1. The combination of an inclosing casing, a series of truncated-cone-shaped partitions alternating with a series of conical deflectors placed concentrically therewith, the pipe I for circulating air through said casing, the perforated pipes G, F and M for supplying water to said partitions and deflectors and the supply-pipe J, pipes K and valves L for supplying water to said perforated pipes, substantially as described.

2. The combination in an inclosing casing, of a series of conical deflectors alternating with a series of truncated-cone-shaped partitions, the latter furnished with perforated pipe at their outer and inner peripheries, substantially as described.

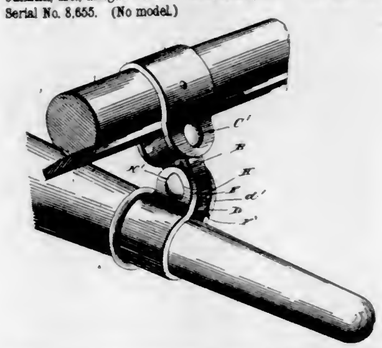
654,094. INCANDESCENT-MANTLE SUPPORT. ARTHUR KITSON, Philadelphia, Pa., assignor to the Kitson Hydrocarbon Heating and Incandescent Lighting Company, same place and Charleston, W. Va. Filed Jan. 5, 1900. Serial No. 518. (No model.)



Claim.—1. The combination of the burner composed of an inner thimble, and the outer cap therefor, the sleeve of compressible material between the two and the mantle-support mounted in the cap.

2. The combination of the burner composed of an inner thimble and an outer cap inclosing the thimble, the sleeve of compressible material between the two and the mantle-support mounted in the cap and wrapped throughout its entire length with non-heat-conducting material, together with the perforated diaphragm mounted in the upper portion of the cap.

654,095. NECK-YOKE ATTACHMENT. WILLIAM M. MANUEL, Gallatin, Mo., assignor to P. P. Cline, same place. Filed Mar. 14, 1900. Serial No. 8,655. (No model.)

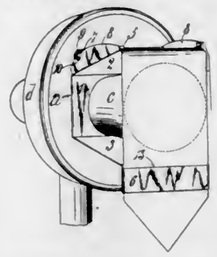


Claim.—1. A neck-yoke center comprising, in combination with the neck-yoke, a pivoted member connected thereto, a spring-actuated grip-block pivoted to the latter, and a pole-tip-engaging strap having pivotal connection with said member, as set forth.

2. A neck-yoke attachment comprising in combination with the neck-yoke, the member pivoted thereto, the latter having a recess at its free end, a grip-block having a rib which is pivoted in said recess, and a spring or cushion bearing against said block, and a pole-tip strap pivoted to said member, as set forth.

3. A neck-yoke attachment, comprising in combination with the neck-yoke, strap secured thereto, the member having a pivotal pin to which the ends of said straps are pivoted, the pole-tip strap pivoted to said member, the grip-block having a rib on its rear face which rib is seated in a recess in the free end of said member, and pivoted at its lower end to a pin carried by the walls of the recessed end of the member, the outer face of said grip-block being concaved, ribbed and tapered, as shown and described and for the purpose set forth.

654,096. HYGIENIC APPLIANCE FOR SOUND-TRANSMITTER MOUTHPIECES. THOMAS R. OWEN, Los Angeles, Cal. Filed Jan. 30, 1900. Serial No. 3,378. (No model.)



Claim.—1. A hygienic appliance for sound-transmitter mouthpieces comprising a flexible strip and means for holding the strip and guiding it across the mouth of the mouthpiece.

2. A hygienic appliance for sound-transmitter mouthpieces comprising a roller; a strip mounted on the roller; means for holding the roller; and means for guiding and holding the strip across the mouth of the mouthpiece

3. A hygienic appliance for sound-transmitter mouthpieces comprising a holder to be attached to the mouthpiece and provided with bearings for a roller and with means for guiding a flexible strip across the mouth of the mouthpiece; a roller having its axle mounted in the bearings; and a strip of flexible material wound on the roller and passing through the guides.

4. A hygienic appliance for sound-transmitter mouthpieces comprising a member adapted to be fastened to the mouthpiece rearwardly of the front thereof and provided with arms to extend to near the front of the mouthpiece at opposite sides thereof, and provided

with guides to hold a strip of flexible material; a holder for a roll of flexible material rearward of the front of the strip-holder; and a strip of flexible material wound in a roll carried by the roll-holder and the free end passed through the strip-guides to extend in front of the mouthpiece.

5. The combination with a sound-transmitter mouthpiece, of two guides arranged on opposite sides of the front of the mouthpiece to hold a strip of flexible material across the mouthpiece; means for holding such strip and to feed the same across the mouthpiece; and such strip in the holder and extending across the mouthpiece.

6. In a device for holding a strip of paper or other flexible material across a sound-transmitter mouthpiece; a frame composed of a sheet bent to form an attaching member, two forwardly-projecting arms provided at their outer ends with guides for holding the strip, and the upper arm being provided with two upwardly-bent ears notched to receive the axle of a roller.

7. The combination with a sound-transmitter mouthpiece, of a holder with guides located at the open end of the mouthpiece; and a flexible strip to run in the guides and in front of the mouthpiece substantially as set forth.

8. The combination of a roll-holder adapted for fastening to a sound-transmitter mouthpiece; means for holding a strip of paper across the mouth of the mouthpiece; a roller journaled in the roll-holder; a strip of paper or other flexible material wound on the roll and passed through the strip-holder; and a brake to press against the rolled strip to regulate the feed.

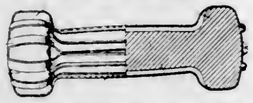
9. The combination with a sound-transmitter mouthpiece, of a paper-holder at one side of the mouthpiece and a cutter at the other side of the mouthpiece substantially as set forth.

10. The holder for sound-transmitter mouthpieces composed of a sheet comprising a rear member; two forwardly-projecting arms; a downwardly-extending cutting member extending downward from one of the arms; lugs extending upward from the other arm; and a hole through the rear member to allow the insertion of the screw-threaded portion of the mouthpiece for the purpose of fastening the holder in position with relation to the mouthpiece substantially as set forth.

11. The strip-holder for sound-transmitter mouthpieces comprising a sheet provided near one end with a slit and near the middle with a hole to receive the threaded portion of the sound-transmitter mouthpiece and being bent to form a central attaching member, two forwardly-projecting arms, and a cutting member substantially as and for the purpose set forth.

12. A strip-holder for sound-transmitter mouthpieces comprising a sheet provided with rearwardly-bent stiffening-wings, an attaching member, two arms projecting forward from said member to receive the mouthpiece between them, one of said arms being bent to form a cutting member and provided at the bend with a slit opening into the way formed between the bent wings and the sheet, and the other arm being bent to form a guide for guiding a flexible strip into the slit.

654,097. DUMB-BELL. EUGEN SANDOW, London, England. Filed Mar. 5, 1900. Serial No. 7,395. (No model.)



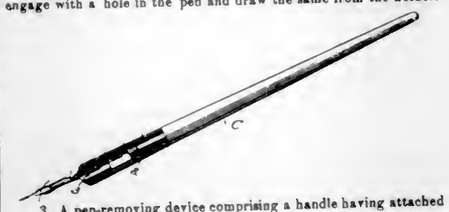
Claim.—1. The combination with a solid dumb-bell of ordinary construction, of a compressible handle consisting of a series of springs disposed around the handle and having the ends bent around the end of the dumb-bell, and a disk secured to the end of said dumb-bell and engaging the ends of the springs to hold them in place, substantially as described.

2. The combination with a solid dumb-bell of ordinary construction, of a compressible handle consisting of a series of springs disposed around the handle of the dumb-bell and having the ends bent around the end of the dumb-bell, a disk secured to the end of the dumb-bell and engaging the ends of the springs to hold them in place, and springs interposed between the periphery of the end of the dumb-bell and the handle-springs, substantially as described.

654,098. COMBINED PENHOLDER AND EXTRACTOR. THOMAS M. SMITH, Baltimore, Md. Filed Jan. 20, 1900. Serial No. 2,195. (No model.)

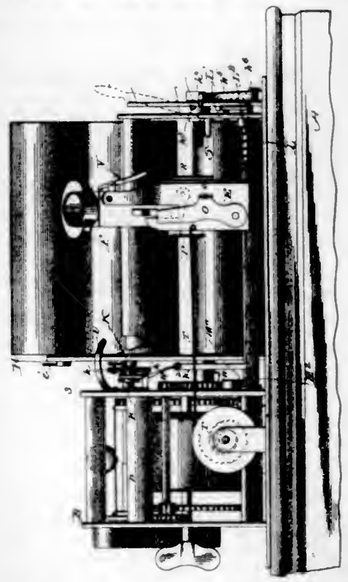
Claim.—1. A penholder comprising a pen-holding part, and a handle removable therefrom, said handle having on the end which is inserted in the pen-holding part, a rigid pen-removing extension, adapted, when the handle is detached, to engage with, and draw the pen from its holding part.

2. A penholder comprising a pen-holding part and a handle removable therefrom, said handle having upon the end which is inserted in the holding part, a point adapted, when the handle is removed, to engage with a hole in the pen and draw the same from the holder.



3. A pen-removing device comprising a handle having attached to one end a bayonet-shaped removing projection, substantially as described.

654,099. SOUND-REPRODUCING INSTRUMENT. PETER S. BATES, York, Pa., assignor of one-half to Edwin W. Loucks, same place. Filed Oct. 10, 1899. Serial No. 733,159. (No model.)



Claim.—1. In a sound-reproducing instrument, the combination with a record-cylinder support, a motor for driving said support, a reproducer-carriage driven by the motor, a reproducer pivotally mounted on the reproducer-carriage, and means for automatically returning said carriage to its initial position when disengaged from the motor, of a trip mechanism carried by the carriage and independent of the motor controlling the engagement of the carriage and motor and for elevating the reproducer, a throw-out mechanism with which the trip is brought into engagement by the movement of the carriage for rendering said trip operative to release the carriage and raise the reproducer when the carriage reaches the extreme of its movement and a motor-controlled elevator for moving said trip in the opposite direction as the carriage reaches its initial or starting position; substantially as described.

2. In a sound-reproducing instrument, the combination with a record-cylinder carrier, a reciprocating reproducer-carriage, motor mechanism for moving said carriage in opposite directions and a reversing mechanism for reversing the movement of the carriage at opposite extremes of its travel, of an elevating mechanism for the reproducer operative upon the return movement of the carriage and a fixed incline for receiving and supporting the reproducer when released from said elevating mechanism and off of which the reproducer rides as it advances from its starting position; substantially as described.

3. In a sound-reproducing instrument, the combination with a record-cylinder support, a reciprocatory reproducer-carriage, a motor for driving said record-cylinder support and carriage, means for disengaging the carriage from said motor during the return movement of the carriage, and a reproducer pivotally mounted on the carriage, and automatically elevated by the disengagement of the carriage, and motor, of a fixed incline or support upon which said reproducer rests when at the starting-point whereby upon the reengagement of the motor-carriage the reproducer will be allowed to ride down off of the said incline or support and gradually engage or contact with the record-cylinder; substantially as described.

4. In a sound-reproducing instrument, the combination with a record-cylinder-support carrier, having a multiplicity of supports therein, a reciprocatory reproducer-carriage, motor mechanism for rotating said supports, for moving the carrier intermittingly and reciprocating the carriage, of a reproducer pivotally mounted on the carriage, mechanism controlled by the carriage for coupling the motor and carrier, whereby the carrier is advanced as the carriage reaches the extreme of its movement, the elevator for lifting the reproducer and means for operating said elevator before the carriage reaches the extreme of its movement, whereby the said reproducer is held out of contact with the record-cylinder during the shifting of the carrier; substantially as described.

5. In a sound-reproducing instrument, the combination with a record-cylinder-support carrier, having a multiplicity of supports thereon, each independently rotatable, a reproducer-carriage and a motor mechanism for advancing the carrier, rotating the cylinder-supports in succession as they are advanced into position and reciprocating the carriage with reversing mechanism controlled by the carriage for reversing its direction of movement as it nears each extreme of its travel, of a reproducer pivotally mounted on the carriage, an elevator cooperating with the reproducer as the carriage reaches the extreme of its movement and means for holding said reproducer elevated during the return movement of the carriage; substantially as described.

6. In a sound-reproducing instrument, the combination with a motor and a reproducer-carriage, driven thereby, of a record-cylinder-support carrier, a series of record-cylinder supports journaled therein and adapted to be brought successively into alinement with a motor drive-shaft and a clutch controlled by the carriage for connecting said motor drive-shaft and the cylinder-support in alinement therewith; substantially as described.

7. In a sound-reproducing instrument, the combination with a record-cylinder-carrier support, a series of cylinder-carriers journaled thereon, and having projecting shafts, a lock for holding said carrier in position, and a motor mechanism having a motor drive-shaft for rotating each of said cylinder-carriers in succession and connections between said motor-carrier for moving the latter intermittently, of a reproducer-carriage driven by the motor mechanism, a clutch interposed between the motor drive-shaft and cylinder-carrier in alinement therewith, a controlling mechanism for said clutch operated by the reproducer-carriage, a controlling mechanism for the carrier and a controlling mechanism for the lock for said carrier, both operated by said carriage; substantially as described.

8. In a sound-reproducing instrument, the combination with a record-cylinder-support carrier journaled on a central shaft and having a series of peripheral cylinder-carriers journaled therein with their shafts projecting at one end, a motor having a motor drive-shaft with which said supports are adapted to be brought into alinement, a clutch carried by said motor drive-shaft and adapted to engage the cylinder-shafts, and a reciprocatory reproducer-carriage driven by said motor, of a train of gearing interposed between the motor and cylinder-support carrier, with means controlled by the reproducer-carriage, for throwing the said train of gearing into or out of action for advancing the carrier or permitting the same to remain stationary, and connections between said clutch and said gear-train-controlling mechanism, whereby said clutch is moved into operative position or out of operative position in unison therewith: substantially as described.

9. In a sound-reproducing instrument, the combination with a motor, a reciprocatory reproducer-carriage driven thereby and a rotary record-cylinder-support carrier, carriers journaled thereon and means for coupling any one of said supports with the motor for rotating the supports, of a drive-pawl for rotating the carrier, a rack-bar connected with said pawl, a gearing driven by the motor and with which said rack-bar is adapted to engage and a shaft controlled by the carriage for moving said rack-bar into mesh with the gear; substantially as described.

10. In a sound-reproducing instrument, the combination with a motor, a reciprocatory reproducer-carriage, driven thereby and a record-cylinder-support carrier having a series of independent record-cylinder supports journaled therein and adapted to be rotated by the motor, of a carrier drive-pawl, a rack-bar connected therewith, a gear-wheel driven by the motor, a longitudinally-movable shaft having a projection extending into the path of the carriage, and an incline on said shaft for moving the rack-bar into mesh with its drive-gear; substantially as described.

11. In a sound-reproducing instrument, the combination with a motor, a reciprocatory reproducer-carriage driven thereby, a record-cylinder-support carrier having a series of independent cylinder-supports journaled therein and a clutch for coupling any one of said supports with the motor, of a carrier drive-pawl, a rack-bar connected therewith, a gear-wheel driven by the motor for moving said rack-bar, a longitudinally-movable shaft having a projection extending into the path of the carrier for moving the shaft longitudinally, an incline on said shaft for moving the rack-bar into mesh with its drive-gear and connections between said shaft and clutch whereby when the shaft is moved longitudinally by the carriage, the connection between the motor and cylinder-support will be broken and the connection between the carrier and motor will be established for bringing a new cylinder into position; substantially as described.

12. In a sound-reproducing instrument, the combination with a record-cylinder support, a motor for rotating said support, and a reciprocatory carriage adapted to be driven by the motor in one direction, with a return-motor for said carriage, of a reproducer pivotally mounted on the carriage, a trip for raising and lowering said reproducer and engaging the carriage and motor, a spring for holding said trip normally in position to elevate the reproducer and disconnect the motor and carriage, a pivoted retainer for holding the trip in its opposite position of adjustment and a projection lying in the path of said retainer and coöperating therewith to release the trip therefrom as the carriage reaches the extreme of its movement; substantially as described.

13. In a sound-reproducing instrument, the combination of the following instrumentalities, to wit, a reproducing mechanism, a series of record-cylinder supports, a rotary carrier on which said supports are mounted, a motor mechanism, connections between said motor mechanism and carrier and between the motor and one of said cylinders both controlled by the reproducing mechanism, and a lock for said carrrier released by the reproducing mechanism in advance of the disengagement of the motor and record-cylinder support and in advance of the engagement of the motor and carrier; substantially as described.

14. In a sound-reproducing instrument, the combination of the following instrumentalities, to wit, a series of record-cylinder supports, a rotary carrier, in which said supports are journaled, a motor mechanism for advancing the carrier intermittingly and for rotating the supports in succession, a reproducer-carriage and reproducer driven by the motor, a return-motor mechanism for said carriage, carrier-controlling mechanism interposed in the path of the carriage near the outer extreme of its movement and tripping mechanism for breaking the connection between the carriage and advancing motor subsequent to the operation of the carrier-operating devices, whereby in the forward movement of the reproducer-carriage, the record-support carrier will be first advanced and the reproducer-carriage subsequently returned to normal position; substantially as described.

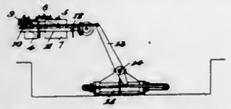
15. In a sound-reproducing instrument, the combination with a motor and a record-cylinder carrier, having a series of cylinders thereon and adapted to be intermittingly rotated to present the cylinders successively, of a reproducer-carriage and reproducer, mechanism controlling the connections between the motor and carrier for moving the latter, said mechanism having projections extending into the path of and adapted to be operated by the carriage, and a trip for releasing the carriage from the motor to permit of its return to initial position, of a throw-out device for releasing said trip before the carriage reaches the projections on the carrier-controlling mechanism, whereby when desired the same record may be reproduced over and over; substantially as described.

16. In a sound-reproducing instrument, the combination of the following instrumentalities, to wit, a rotary carrier, a series of record-cylinder supports journaled thereon, a motor mechanism, a reciprocatory carriage, a lock for holding the carrier having a projection extending into the path of the carriage, a trip for disconnecting the carriage and motor adapted to be operated by said projection, and a movable member interposed between said projection and trip-releasing devices and an incline for moving said movable member whereby the lock will be first released by the engagement of said projection with said movable member and when said member is displaced by the incline said projection will cooperate with the trip mechanism to release the carriage from the motor and permit it to return to initial position; substantially as described.

654,100. APPARATUS FOR ROLLING FLANGED SECTIONS. THOMAS MORRISON, Braddock, Pa., assignor, by mesne assignments, to Julian Kennedy, Pittsburg, Pa. Filed May 23, 1900. Serial No. 17,680. (No model.)

Claim.—1. Apparatus for rolling elongated flanged shapes of metal, comprising with the preliminary rolls, a conveying-table, a cooling-table to which the metal is delivered therefrom, means for pushing a series of metal pieces laterally on said cooling-table, a sec-

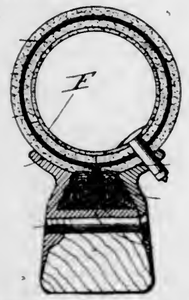
ond conveying-table at the side of the cooling-table, to which the metal is delivered by the pusher from the cooling-table, and finishing-rolls to which the metal passes from the second conveying-table, the arrangement being such that the metal may be given a temperature suitable for a fine-grained structure on the cooling-table, and then delivered immediately to the finishing-rolls; substantially as described.



2. Apparatus for rolling elongated flanged shapes of metal, comprising preliminary rolls, finishing-rolls, an intermediate open cooling-table, and means for moving the metal laterally on the cooling-table, the arrangement being such that the metal may be given a temperature suitable for a fine-grained structure on the cooling-table, and then delivered immediately to the finishing-rolls; substantially as described.

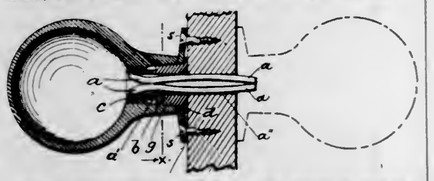
3. In apparatus for rolling elongated flanged shapes of metal, preliminary rolls, finishing-rolls, a conveying-table, an intermediate open cooling-table comprising stationary bars extending upwardly from the surface of the conveying-table, and a pusher adapted to push the metal pieces on said bars, the arrangement being such that the metal may be given a temperature suitable for a fine-grained structure on the cooling-table, and then delivered immediately to the finishing-rolls; substantially as described.

654,101. PNEUMATIC-TIRED WHEEL. ELTON W. MCCASLIN, Chicago, Ill., assignor to the Morgan & Wright, same place. Filed June 6, 1900. Serial No. 19,249. (No model.)



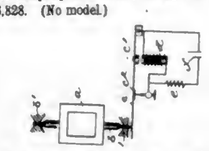
Claim.—A pneumatic-tired wheel-rim, comprising a longitudinally-divided rim forming clamping members and provided with tie and clamping bolts, and adapted when assembled to form an annular dovetail or inwardly and laterally flaring channel with annular transversely concaved or recessed tire-seats respectively at opposite sides of such channel, and a pneumatic tire comprising an inner inflatable air-tube and an outer longitudinally-divided casing seated upon the seats at opposite sides of the rim-channel and having a substantially non-extensible, longitudinally split or divided dovetail or laterally flaring base-rib essentially composed of fabric molded and compacted into said form and having portions of its fabric material extending into and anchored to the casing, said longitudinally-divided rib being fitted and clamped within the dovetail or inwardly-flaring channel of the rim.

654,102. KNOB ATTACHMENT. RUDOLPH H. MCHARDY, Providence, R. I. Filed Dec. 21, 1899. Serial No. 741,196. (No model.)



Claim.—In combination with a door-knob having an interiorly threaded and tapered neck, of a spindle consisting of two parallel members rectangular in cross-section with slightly-diverging extremities, a threaded split internally-tapered sleeve provided with a flange surrounding said spindle and adapted to bear upon said members when the threaded neck is engaged by the sleeve, and a collar engaging said flange to hold the sleeve in position against the door.

654,103. ATTACHMENT FOR INSTRUMENTS OF PRECISION. CARL O. F. SCHROTTKE, Berlin, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed May 15, 1899. Serial No. 716,828. (No model.)



Claim.—1. In apparatus of the class described the combination, with a shaft carrying an oscillating or rotating part, of bearings between which said shaft is mounted to have a slight end play therein, and means for causing the longitudinal vibratory movement of the shaft whereby the sensitiveness of the instrument is increased, substantially as described.

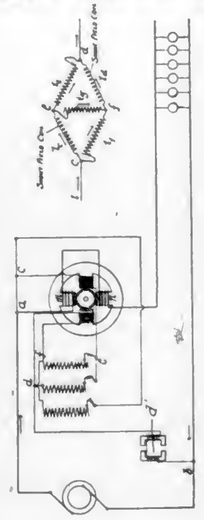
2. In an electrical measuring instrument, the combination with a shaft carrying a rotating or oscillating part, of a supporting end bearing therefor wherein the same is movable, and means for causing the relative movement of the shaft and bearing other than the usual rotation of said shaft within its bearing whereby the sensitiveness of the instrument is increased, substantially as described.

3. In an apparatus of the class described, the combination with a shaft whereon is mounted a rotating, or oscillating part, of bearings between which said shaft is rotatably mounted to have a slight end play, an electromagnet, a spring or part *c* actuated by the electromagnet, and engaging the said shaft, and means for causing variation of the attractive force of said electromagnet whereby longitudinal movement is imparted to the shaft, substantially as described.

4. In apparatus of the class described, the combination with a shaft *b* of a spring or part *c* engaging and partially supporting the end of said shaft, an electromagnet *d*, a coacting armature *c'* connected with part *c* and means for causing variation in the attractive force of said electromagnet whereby longitudinal movement is imparted to shaft *b*, substantially as described.

5. In an electrical measuring instrument, the combination with a shaft *b* carrying the rotatable armature, of a bearing *b'* wherein the said shaft is mounted, an electromagnet, and a vibrating spring or part actuated by said electromagnet and supporting the said shaft, adapted to cause a slight continuous relative movement of the shaft and bearing, whereby the sensitiveness of the instrument is increased, substantially as described.

654,104. MEASURING INSTRUMENT. KARL O. F. SCHROTTKE, Berlin, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Sept. 2, 1899. Serial No. 729,325. (No model.)



Claim.—1. In an alternating-current motor, the combination with a field-winding therefor, of a Wheatstone-bridge circuit for adjusting the phase of the magnetism due to said field-winding, said winding constituting a lateral portion of the Wheatstone bridge, substantially as described.

2. The combination with the conductors of an alternating-current circuit, of a motor having field-windings, one of the field-windings being adapted for inclusion in bridge of said conductors, and a Wheatstone-bridge circuit also included in the said bridge, the latter field-winding forming a lateral portion of the Wheatstone-bridge circuit, substantially as described.

3. The combination with a source of alternating current in circuit with translating devices, of a motor having series and shunt windings supplied with current from said source of alternating current, and a Wheatstone-bridge circuit, two of whose sides are made of the shunt-field winding of the said motor, the remaining sides being made up of adjusting resistances, an adjusting resistance being included in the diagonal conductor of the Wheatstone-bridge circuit, substantially as described.

4. The combination with the supply-conductors of an alternating-current circuit, of a motor measuring instrument having field-windings for receiving current therefrom to create fields proportional to the current and pressure, and a Wheatstone-bridge circuit included in circuit with the pressure-field for adjusting the phase of the magnetism due thereto, the pressure-field winding forming a lateral portion of the Wheatstone bridge, substantially as described.

5. In an alternating-current-measuring instrument, the combination with a series winding, of a shunt-winding divided into two coils, the outer terminals of the coils being connected with main terminals adapted for connection with the mains of the system, adjusting resistances having terminals connected with the remaining or inner terminals of the shunt-coils, the remaining terminals of the adjusting resistances having connection with the aforesaid main terminals, and an additional adjusting resistance connecting the inner terminals of the shunt-coils and the aforesaid adjusting resistances, substantially as described.

6. The combination with the supply-conductor of an alternating-current circuit, of a motor measuring instrument having field-windings for receiving current therefrom to create fields proportional to the current and pressure, a Wheatstone-bridge circuit included in circuit with the pressure-field for adjusting the phase of the magnetism due thereto, the pressure-field winding forming a lateral portion of the Wheatstone bridge, and inductance *d'* included in circuit with the pressure-field winding to reduce the current flowing therethrough, substantially as described.

7. The combination with a source of alternating current, of a measuring instrument having current and pressure field windings adapted to receive current therefrom, a Wheatstone-bridge circuit included in circuit with the pressure-winding, the latter winding being subdivided and included in opposite sides of the Wheatstone bridge, the remaining two sides of the Wheatstone bridge and the diagonal thereof including adjusting resistances, substantially as described.

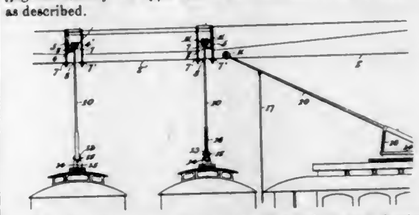
8. The combination with a source of alternating current, of a measuring instrument having current and pressure field windings adapted to receive current therefrom, a Wheatstone-bridge circuit included in circuit with the pressure-winding, the latter winding being subdivided and included in opposite sides of the Wheatstone bridge, the remaining two sides of the Wheatstone bridge and the diagonal thereof including adjusting resistances, and inductance included in circuit with the pressure-winding to reduce the current flowing therethrough, substantially as described.

9. In an alternating-current-measuring instrument, the combination with a series winding, of a shunt-winding divided into two coils, the outer terminals of the coils being connected with main terminals adapted for connection with the mains of the system, adjusting resistances having terminals connected with the remaining or inner terminals of the shunt-coils, the remaining terminals of the adjusting resistances having connection with the aforesaid main terminals, an additional adjusting resistance connecting the inner terminals of the shunt-coils and the aforesaid adjusting resistances, and inductance included in circuit with the shunt-winding to reduce the flow of current therethrough, substantially as described.

10. In an alternating-current motor, the combination with a winding therefor, of a Wheatstone-bridge circuit for adjusting the phase of the magnetism, said winding constituting a lateral portion of the Wheatstone bridge, substantially as described.

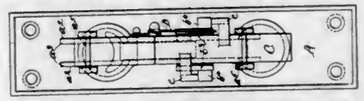
654,105. ELECTRIC-RAILWAY APPLIANCE. DANIEL E. SHOOP, Turtle Creek, Pa., assignor of one-half to John F. Baxter, Pittsburg, Pa. Filed Dec. 9, 1899. Serial No. 739,788. (No model.)

Claim.—1. The combination with an overhead electric system having its conducting-wires supported from beneath, of a trolley mechanism comprising a pole having at the free end thereof two trolley-wheels having a common center of rotation, adapted to engage alternately the upper side of the conductor-wire; substantially as described.



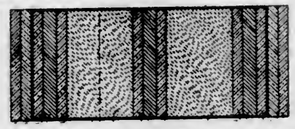
2. The combination of an overhead electric system, having its conducting-wires supported from beneath, of a trolley mechanism, and comprising a pole having at the free end thereof, and located at one side, a trolley-wheel adapted to engage the upper side of the conductor during the travel of the car in one direction, and a second trolley-wheel opposite thereto adapted to engage the upper side of said conductor during travel of the car in the opposite direction, said trolley-wheels having a common center of rotation; substantially as described.

654,106. DOOR-BOLT. WILLIAM T. ADAMS, Reading, Pa. Filed Apr. 21, 1900. Serial No. 13,747. (No model.)



Claim.—The combination with the case comprising a plate having a longitudinal slot for the lever and longitudinal ribs or plates at the rear forming the side walls of a lever-recess, of a lever located in said recess and having trunnions pivotally mounted in said ribs and provided on their laterally-projecting ends at the rear of said plate with a bolt-operating arm or arms lying parallel with and at the outer side of said ribs, and a sliding plate at the rear of said ribs arranged in engagement with said operating arm or arms substantially as set forth.

654,107. BUFFER FOR HIGH-EXPLOSIVE PROJECTILES. THOMAS R. R. ASHTON, Middle Brighton, Victoria. Filed Feb. 28, 1899. Serial No. 707,169. (No model.)



Claim.—1. A buffer for the purpose described, consisting of a flexible case containing a plurality of partitions forming separate compartments and a mass of elastic granular material in each of said compartments.

2. A buffer for the purpose described, consisting of a flexible case, containing elastic granular material, and disks at the opposite ends of said case, the said disks being arranged in pairs on opposite sides of the material of said case.

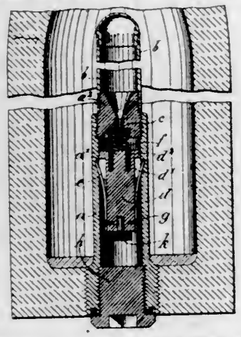
3. A buffer for the purpose described, consisting of a flexible case, disks of yielding material therein dividing said case into a plurality of compartments, and a mass of elastic granular material in each of said compartments.

4. A buffer for the purpose described, consisting of a flexible case, disks of cork, with interposed disks of felt, dividing said case into a plurality of compartments, a mass of compressed granulated cork in each of said compartments, disks of cork with interposed disks of felt at the ends of said case on the inside thereof, and cork disks at the ends of said case on the outside thereof.

654,108. PERCUSSION-FUSE FOR PROJECTILES. THOMAS R. R. ASHTON, London, England. Filed Sept. 25, 1899. Serial No. 731,626. (No model.)

Claim.—1. A fuse, comprising a hollow body having a shoulder thereon, a piston movable in said body, a compressible detent secured to said piston adapted to engage said shoulder for preventing the forward movement of said piston, and a movable sleeve between said piston and said hollow body actuated by a shock at the rear of the fuse for compressing and thereby releasing said detent, as and for the purpose set forth.

2. A fuse comprising a hollow body having a shoulder thereon, a piston movable in said body, a spring-actuated detent on said piston adapted to engage said shoulder for preventing the forward movement of said piston, and a movable sleeve between said piston and said hollow body, actuated by a shock at the rear of the fuse, to release said detent and maintain it in released position.



3. A fuse comprising a hollow body having a shoulder thereon, a piston movable in said body, a leaf-spring on said piston extending forwardly and outwardly therefrom and normally engaging said shoulder for preventing the forward movement of said piston, and means actuated by a shock at the rear of the fuse, for compressing said spring and holding it out of engagement with said shoulder.

4. A fuse comprising a hollow body having an annular shoulder thereon, a plug at the rear end of said body, a piston movable in said body, leaf-springs secured to said piston, extending forwardly and outwardly therefrom and normally engaging said shoulder, a sleeve surrounding the rear end of said piston, normally engaging said plug, and adapted, when said pieton is moved rearwardly, to compress said springs and hold them out of engagement with said shoulder, and a washer of soft compressible material on the rear end of said piston for preventing the rebound of the latter when it strikes against said plug.

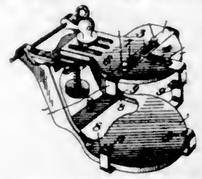
5. A percussion-fuse comprising in its construction a tubular fuse-body fixed at one end to the extremity of the shell, extending axially into the interior of the same and provided with an internal shoulder, the outer end of the fuse-body being provided with a screw-plug and the inner end with a plug carrying a tubular primer communicating with the interior of the fuse through a narrow duct; a piston movable in the interior of the fuse-body and fitting into the same with its head, while the rear part is reduced in diameter and carries in its circumference a set of leaf-springs, each of which is fixed at its rear end in a recess of the piston and adapted to project over the same and engage the shoulder in said fuse-body with its front end; a perforated nipple projecting axially into the space formed between the face of the sliding piston and the plug at the inner end of the fuse-body, a helical spring adapted to hold the piston away from the plug at the inner end of the fuse-body, and a movable sleeve fitting into the fuse-body and over the rear part of the piston, the whole being adapted to operate substantially as described.

6. In a percussion-fuse, the combination of a fuse-body *a* having a shoulder *a'*, an axially-perforated plug a^2 and a tubular extension *b*, with an end plug *h*, a movable piston *d* provided with leaf-springs *e* adapted to engage said shoulder a movable sleeve *g*, nipple *c*, and a helical spring *f*, substantially as described.

7. A percussion-fuse comprising in its construction a tubular fuse-body fixed at one end to the extremity of the shell and extending axially into the interior of the same, the outer end of the fuse being provided with a screw-plug, the inner end with a similar plug carrying a tubular primer communicating with the interior of the fuse through a narrow duct, and the inside of the cylindrical walls having an annular recess; a piston movable in the interior of the fuse-body and fitting into the same with its head, while the rear part is reduced in diameter and carries in its circumference a set of leaf-springs, each of which is fixed at its rear end in a recess of the piston and adapted to project with its front end into the annular recess of the fuse-body; a perforated nipple projecting axially into the space formed between the face of the sliding piston and the plug at the inner end of the fuse-body; a spring adapted to hold the piston away from the plug at the inner end of the fuse-body; and a movable sleeve fitting into the fuse-body and over the rear part of the piston, the whole being adapted to operate substantially as described.

8. In a percussion-fuse, the combination of a fuse-body *a* having an axially-perforated plug a^2, a tubular extension *b*, and a recess *a'*, with an end plug *h*, a movable piston *d* provided with leaf-springs *e* and a movable sleeve *g*, nipple *c* and a helical spring *f*, substantially as described.

654,109. DENTAL ARTICULATOR. HERMAN BACKSTROM, Montpelier, Idaho. Filed May 7, 1900. Serial No. 15,853. (No model.)

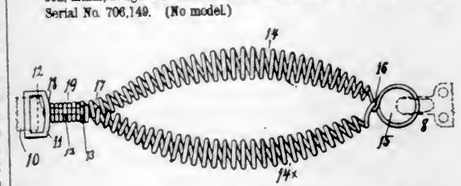


Claim.—1. In a dental articulator, the combination with a jaw-frame thereof, of three clamps for holding the plaster model to said frame, two of said clamps being disposed substantially diametrically opposite to each other and the third clamp being disposed substantially at right angles to the other two clamps, said clamps being adjustable independently of each other.

2. In a dental articulator, the combination with a jaw-frame thereof, of clamps for holding the plaster model to said frame which are provided with slotted shanks slidable against the frame, and clamp-screws having shanks which pass through said slotted shanks of the clamps, said screws serving to secure the clamps to the frame after they have been adjusted.

3. In a dental articulator, the combination with a jaw-frame thereof, which is provided with a transverse groove and a longitudinal groove disposed substantially at right angles to the transverse groove and a longitudinal groove, of substantially L-shaped clamps having slotted shanks slidable in the grooves, two of said clamps having their shanks in the transverse groove at opposite ends thereof, and all of said clamps having their bases projecting outwardly from the jaw-frame in position to engage the dental model, and clamping-screws having shanks which pass through the slots of the shanks of the clamps and heads which are adapted to bear against the said shanks whereby the clamps are locked to the jaw-frame.

654,110. CHECKREIN ATTACHMENT. GEORGE E. COREY, Madison, Minn., assignor to Abbie E. Corey, same place. Filed Feb. 20, 1899. Serial No. 706,140. (No model.)



Claim.—1. As an improved article of manufacture, the herein-described attachment for checkreins, comprising a spiral spring bent at its middle so as to double upon itself, and at the bend having the loop or eye 15 with the twist 16; the ends of the spring being brought together and secured to a swiveling ring adapted to be secured to the rear end of the checkrein, substantially as and for the purposes set forth.

2. As an improved article of manufacture, the herein-described attachment for checkreins, consisting of a spiral spring bent in the middle so as to double upon itself, and having its bend formed into a loop adapted to be placed on the checkrein-hook on the saddle of the harness, and a swivel-eye secured to a journal formed of the gathered ends of the doubled spring, said eye being adapted to receive and have fastened to it the rear end of the checkrein, substantially as set forth.

3. As an improved article of manufacture, a checkrein attachment comprising a single coil-spring bent in the middle to fold upon itself, and having its bend twisted as at 16 and formed into the loop 15 adapted to be placed on the checkrein-hook on the saddle of the harness, the ends of the spring being brought together, reduced in diameter and placed with the coils alternately between the coils of each other and brought to a common center for some distance to form a journal, and a swivel-eye having a headed stem revolubly secured in said journal for securing the checkrein to.

654,111. SEALING DEVICE. GEORGE W. GOMBER, Conyngham, Pa., assignor to Harry Gomber, same place. Filed July 14, 1898. Serial No. 685,948. (No model.)

Claim.—1. A jar provided with a threaded neck designed to receive the lid and having an annularly-inclined recess for receiving the gasket, and a continuous rib located at the upper edge of said recess and below the threads upon the neck, said rib being continuous entirely around the neck of the jar and designed to prevent the upward movement of the gasket, as described and for the purpose set forth.

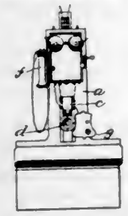


2. A jar or the like, provided with a threaded neck, an annular rib adjacent to said neck and extending continuously around the neck of the jar and an inclined seat located below said rib whereby the rubber gasket fitting thereon will be prevented by said rib from having an upward movement, as described and for the purpose set forth.

3. As an improvement in jars or the like, a sealing device consisting of an inclined seat designed to receive a yielding gasket, a continuous horizontally-disposed rib extending entirely around the neck of the jar at a point thereon adjoining the upper edge of said inclined seat, a threaded neck formed upon the jar adjacent to said seat and rib, in combination with a threaded cap designed to engage the threads upon the jar and having a depending flange designed to rest upon the gasket carried by said seat, as specified and for the purpose set forth.

4. As a new article of manufacture, a jar provided with a threaded neck, an inclined gasket-seat below the threaded neck, and with gasket-retaining means, separate from the threads of the neck and extending around the same, between the threaded neck and the seat, as and for the purpose set forth.

654,112. TELEPHONE-CALL REGISTER. WILLIAM GRAY, Hartford, Conn. Filed Sept. 17, 1898. Serial No. 691,173. (No model.)



Claim.—1. In combination in a registering device, a pair of registers, one a primary, for indicating the successive calls, the other a main register for recording the total number of calls, a barrel of a lock provided with means adapted to rotate the spindle of one of said registers, and means for operating the other of said registers by a step-by-step movement during the rotation of the spindle of the first-named register.

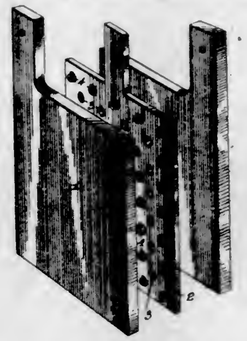
2. In combination in a registering device, a barrel of a lock adapted to receive and be operated by a key, a pair of registers mounted in operative relation to said lock-barrel the spindle of one of said registers being rotated upon rotation of the key and lock-barrel, the other register adapted to be intermittently operated during the rotation of the spindle of the first-named register and an alarm whose striker lies in the path of movement of the register-operating mechanism and is adapted to be tripped after a register has been moved.

3. In combination with the transmitting part of a telephone apparatus, an alarm so mounted as to have metallic connection with the transmitter, a registering device comprising a pair of registers each having dials, one register adapted to show a record of the calls in the higher orders of figures, the other adapted to show and record the intermediate calls, a key-operated mechanism for operating both of the registers, and mechanism for sounding the alarm, adapted to be engaged by the register-operating mechanism.

654,113. BATTERY-ELECTRODE. GUSTAVUS HEIDEL, St. Louis, Mo., assignor to the Globe Electric Company, same place. Filed Oct. 2, 1899. Serial No. 732,272. (No model.)

Claim.—1. An electrode for batteries provided with openings extending transversely therethrough, and non-active hollow resilient plugs located in said openings.

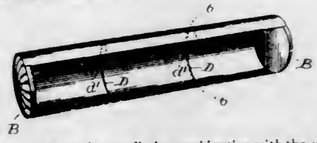
2. In combination, an electrode provided with openings tapering inwardly from its sides to a common center and extending transversely therethrough, of a hollow non-active plug secured in and projecting from said openings beyond the sides of the electrode.



3. An electrode for batteries, provided with openings beveled to a common center and extending transversely therethrough, and tubular spacing-plugs of rubber secured in and projecting from said openings beyond the sides of the electrode.

4. In combination, an electrode provided with openings tapering inwardly from its sides to a common center and extending transversely therethrough, of a hollow resilient non-active plug, open at each end, secured in and projecting from said openings, beyond the sides of the electrode.

654,114. BOLSTER-ROLL. JOHN R. JONES, Chicago, Ill., assignor of one-half to Benjamin F. Smith, same place. Filed Feb 19, 1900. Serial No. 5,693. (No model.)



Claim.—1. In a bolster-roll, the combination with the end pieces, B, having notches, *b*, *b'*, of the middle portion made up of the longitudinal strips, *a*, the outer side pieces, A, A', and flexible devices connecting the side pieces and strips, the notches and the side pieces being so proportioned that the outside edges of the side pieces may be sunk into the end pieces, flush with the periphery thereof; substantially as described.

2. In a bolster-roll, the combination with the end pieces, B, of the flexible longitudinal portion made up of a series of slats and flexible strips connecting them, sockets in the marginal slats and a resilient brace fitted to the interior of the longitudinal portion and having its ends seated in said socket; substantially as described.

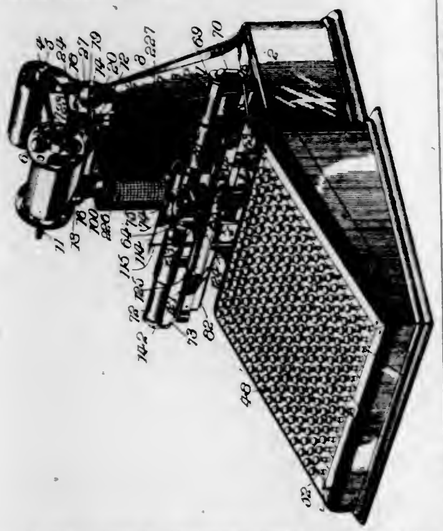
3. In a bolster-roll, the combination with approximately-circular end pieces, of longitudinal strips secured upon said end pieces, sockets in the side strips, resilient braces adapted to distend said longitudinal strips and having their ends resting in the sockets and staples, *d'*, adapted to secure said braces upon the longitudinal strips and against lateral sway; substantially as described.

654,115. MACHINE FOR PERFORATING STRIPS. TOLBERT LANSTON, Washington, D. C. Filed June 27, 1899. Serial No. 722,062. (No model.)

Claim.—1. The combination with a series of character-designating punches and a corresponding series of motors for operating said punches, of a series of finger-pieces arranged in horizontal rows and vertical columns, each finger-piece being located at the intersection of a row and a column, connections controlled by the finger-pieces in each row for operating a punch-motor and connections controlled by the finger-pieces in each column for operating a punch-motor, whereby, upon operating any one finger-piece, a motor corresponding to the column in which that finger-piece is located is operated, and a motor corresponding to the row in which that finger-piece is located is also operated, to produce an indication corresponding to that finger-piece alone; substantially as described.

2. The combination with a series of character-designating punches and a corresponding series of motors for operating said punches, of a series of fluid-pressure mains arranged in horizontal rows and in vertical columns, each row and each column controlling

an independent punch-motor, of a series of finger-pieces located at the intersection of said rows and columns for controlling the application of the energizing power through said mains to the motors, whereby upon the operation of any finger-piece, a motor and punch corresponding to the row, and a separate motor and punch corresponding to the column in which said finger-piece is located will be operated; substantially as described.



3. The combination with a series of punches for designating characters, pressure-operated pistons and cylinders constituting motors for operating said punches, and a pressure-supply, of two series of mains or ducts, each of the ducts controlling a separate punch-motor, and finger-pieces, each controlling the admission of pressure to one of the ducts of each of the series, whereby, upon the operation of any finger-piece, two punches will be operated; substantially as described.

4. The combination with a series of character-designating punches, a series of motors corresponding thereto and comprising cylinders and pistons for operating said punches and a pressure-supply, of a keyboard having two systems of ducts, each duct communicating with a cylinder, and valved finger-pieces, each controlling the admission of pressure to one of the ducts of each system, whereby upon the operation of any one finger-piece, two punches will be operated; substantially as described.

5. The combination with a series of character-designating punches, a series of motors, one for each punch and comprising a piston and cylinder and a pressure-supply chamber, of a series of ducts arranged in columns and a second series of ducts arranged in rows transverse of the columns, each duct communicating with a cylinder, of a series of finger-pieces located at the intersection of the rows and columns of ducts and each provided with a valve for opening communication between the pressure-supply chamber and one of the ducts in each of the systems, whereby two punches are operated; substantially as described.

6. In a character-designating machine, the combination with a series of character-designating punches and a series of pressure-operated motors, one for each punch, of a pressure-supply chamber, two series of ducts arranged in proximity to each other above said chamber, each duct of each system communicating with a punch-motor, and a series of valved finger-pieces extending down into the pressure-chamber and controlling the admission of pressure from said chamber to the ducts; substantially as described.

7. In a character-designating apparatus, the combination with the character-designating punches, and the pressure-operated motors, one for each of said punches, of the keyboard formed by a series of bars secured side by side and having rearwardly-extending channels or ducts formed therein and independent transverse channels or ducts also formed therein, each of said channels or ducts communicating with a punch-motor and a series of valved finger-pieces mounted in said bars for controlling the admission of pressure to said ducts; substantially as described.

8. In a character-designating apparatus, the combination with a designating mechanism comprising punches and pressure-operated motors for said punches, of a keyboard for controlling the admission or pressure to said motors formed by a series of bars secured side by side with channels or ducts formed in the meeting faces of said bars and transverse registering apertures in said bars constituting ducts or channels, each of said ducts or channels communicating with a motor, and vertically-movable finger-pieces mounted in said bars for controlling the admission of pressure to said channels; substantially as described.

9. In a character-designating apparatus, the combination with the designating mechanism and motors for operating the same, of a keyboard embodying a pressure-supply chamber, a series of channels for communicating pressure to the motors of the designating mechanism, valved finger-pieces working vertically into said pressure-chamber for opening communication between the pressure-chamber and passages, and transverse rods for holding said valved finger-pieces in alinement; substantially as described.

10. In a character-designating apparatus, the combination with the designating mechanism and motors for operating the same, of a keyboard embodying a pressure-supply chamber, a series of channels for communicating pressure to the motors, of the designating mechanism, valved finger-pieces having their lower ends slotted and transverse rods located in said slots for holding the finger-pieces in alinement; substantially as described.

11. The combination with the punches for designating characters, the pivoted levers with which said punches are connected and the motor-cylinders and pistons connected with said levers, of the pressure-chamber, the ducts or passages communicating with the motor-cylinders and the finger-pieces for opening communication between the pressure-chamber and the motor-cylinders; substantially as described.

12. In a designating apparatus, the combination with the punches, the pivoted operating-levers with which said punches are connected, the cylinder-block having the cylinders formed therein and the pistons working in said cylinders and connected with the punch-operating levers for operating the same, of the pressure-supply ducts communicating with said cylinders, a pressure-supply, and finger-pieces for controlling the admission of pressure to said ducts and cylinders; substantially as described.

13. In a designating apparatus, the combination with the character-designating mechanism, and the motors therefor, comprising cylinders and pistons, with exhaust-vents for permitting the escape of pressure from the cylinders, of a pressure-supply, ducts for supplying pressure to said cylinders and valved finger-pieces for controlling the admission of pressure to said ducts and cylinders; substantially as described.

14. In a designating apparatus, the combination with designating mechanism, of motors for operating said designating mechanism, comprising vented cylinders and pistons working therein, of a pressure-supply, ducts for supplying pressure to said cylinders and finger-pieces controlling the admission of pressure to said ducts and cylinders; substantially as described.

15. In a designating apparatus, the combination with designating mechanism, and motors for operating said designating mechanism, comprising constantly-vented cylinders and pistons working therein, of a pressure-supply, ducts for supplying pressure to said cylinders and a series of finger-pieces for admitting pressure to each of said ducts, whereby the finger-pieces control only the admission of pressure to said motor-cylinders and not the exhaust therefrom; substantially as described.

16. The combination with a paper-feed, a paper-feed-motor-designating mechanism having motors for operating the same, and finger-pieces controlling said motors, of a controlling mechanism for the paper feed motor operated by the motors for the designating mechanism; substantially as described.

17. The combination with the paper-feed mechanism and motor for operating the same, of designating-punches, the motors for operating said punches, the finger-pieces controlling said motors and the paper-feed-motor-controlling mechanism operated by the punch-motors; substantially as described.

18. In a character-designating mechanism the combination with the paper-feed mechanism, a motor-piston and cylinder therefor, and a valve controlling the admission of pressure to said motor-cylinder, of a series of designating-punches, a corresponding series of motors for operating said punches, finger-pieces for controlling the admission of pressure to said motors and a paper-feed-motor-valve-operating mechanism controlled by the punch-operating motors; substantially as described.

19. In a character-designating machine, the combination with a paper-feed mechanism, and a series of punches for making the character designations, of operating-levers for said punches and motors for said operating-levers, finger-pieces controlling said motors and a paper-feed motor controlled by the punch-operating levers; substantially as described.

20. The combination in a designating apparatus, with a paper-feed mechanism, a series of punches, a series of punch-operating levers, a series of motors for operating said levers, and finger-pieces controlling said motors, of a paper-feed motor, and a controlling mechanism for said paper-feed motor embodying a rocking frame having a bar extending across the punch-operating levers adapted to be operated by movement of any one or more of said levers; substantially as described.

21. In a character-designating apparatus, the combination with the character-designating punches, the operating-levers therefor, motors for operating said levers and the finger-pieces controlling said motors, of the rocking frame overlying said levers and the spring-pressed pin coöperating with said frame for returning the levers to normal position; substantially as described.

22. In a paper-feeding mechanism, the combination with a feed-shaft and a winding-roll driven therefrom with gears interposed between said shaft and winding-roll and embodying a friction connection for permitting said roll and shaft to have differential movements in accordance with the quantity of paper on the winding-roll, of a driving mechanism for said feed-shaft having a ratchet-wheel, a reciprocating pawl-carrier for moving said wheel intermittently, a motor for reciprocating said pawl-carrier and a locking-pawl for limiting the forward movement of the ratchet-wheel having an extension for coöperation with the pawl-carrier to throw said locking-pawl into operative position; substantially as described.

23. In a paper-feed the combination with the paper-feeding shaft, the winding-roll, gear-wheels interposed between said feed-shaft and winding-roll, friction-disks for connecting the gear-train with the winding-roll and the adjustable spring tension for regulating the friction of the disks, of a driving mechanism for the feed-shaft comprising a reciprocating pawl-carrier and a pawl and ratchet-wheel on the feed-shaft; substantially as described.

24. In a designating apparatus, the combination with the character-designating mechanism, and finger-pieces controlling the same, and an indicating mechanism for indicating the body widths of the characters designated, embodying a driven part adapted to advance in accordance with the body widths of the characters designated and to move reversely in resetting, of motors for moving the said driven part in opposite directions, one of said motors acting during the resetting period and a finger-piece for controlling said motors; substantially as described.

25. In a measuring mechanism for a designating-machine such as described, the combination with a units-wheel with means for controlling its advance movement in accordance with the body widths of the characters designated, of a motor for advancing said wheel, a motor for resetting the parts and a finger-piece controlling the application of power to said motors respectively; substantially as described.

26. In a character-measuring mechanism for a character-designating machine, such as described, the combination with a units-wheel, with means for limiting its forward movement in accordance with the body widths of the characters designated, of a motor-rack for advancing said units-wheel, motors for moving said rack in opposite directions and a finger-piece for controlling the application of power to said motors, whereby the units-wheel may be advanced during the indicating period and returned to normal position at the completion of a line of designations; substantially as described.

27. In a character-measuring mechanism for a designating-machine, such as described, the combination with a units-wheel with means for controlling the forward movement of the units-wheel in accordance with the body widths of the characters designated and a motor-rack for moving said units-wheel, of oppositely-arranged pressure-motors for moving said rack and units-wheel, a pressure-supply, ducts leading from said pressure-supply to the motors and a finger-piece controlling the admission of pressure to said ducts; substantially as described.

28. In a designating apparatus, the combination with the designating mechanism, the operating-levers, the motors for moving said levers and the finger-pieces controlling said motors, of a units-wheel, a motor for advancing said units-wheel, a units-rack movable into and out of engagement with said units-wheel, a series of stops connected with the operating-levers for arresting the movement of the units-rack and units-wheel and projections on said stops for moving the units-rack into and out of engagement with the units-wheel; substantially as described.

29. In a designating apparatus, the combination with the designating mechanism, a series of operating-levers, the series of motors and the finger-pieces controlling said motors, of the units-wheel, the motor controlling said units-wheel, a finger-piece controlling said motor, a units-rack, a units-rack carrier, a series of stops for limiting the movement of the units-rack and projections on said stops for cooperating with the units-rack carrier to move the units-rack into and out of mesh with the units-wheel.

30. In a designating apparatus, the combination with the designating mechanism, the series of operating-levers, the series of motors for said levers, the finger-pieces controlling said motors, the units-wheel, the units-wheel motor and the finger-piece controlling said motor, of a units-rack, a units-rack carrier, a series of stops for limiting the movement of the units-rack connected with the operating-levers and an elastic take-up interposed between the stops and units-rack carrier; substantially as described.

31. In a designating apparatus, the combination with the series of punches for making the character designations, the series of levers with which said punches are connected, the series of motors for operating said levers and finger-pieces controlling said motors, of the units-wheel, the units-wheel motor, the finger-pieces controlling said units-wheel motor, the units-rack, the units-rack carrier, the series of stops for limiting the movement of the units-rack and the spring-pressed wing interposed between the stops and units-rack carrier; substantially as described.

32. In a designating apparatus, the combination with the punches for making character designations, the series of operating-levers for said punches, the series of motors for said levers, the finger-pieces controlling said motors, the units-wheel, the units-wheel motor and the finger-piece controlling said motor, of the units-rack, the pivoted units-rack carrier, the series of stops connected with the operating-levers for limiting the movement of the units-rack, the projections on said stops and the spring-pressed wing pivoted on the units-rack carrier and coöperating with said projections for moving the units-rack into mesh with the units-wheel; substantially as described.

33. In a character-designating apparatus, the combination with the designating mechanism, finger-pieces controlling the same, the units-wheel and the units-wheel motor, of the units-rack, the units-rack carrier, a series of stops for limiting the movement of the units-rack, the wing pivoted on said units-rack carrier and coöperating with the stops to move the rack into mesh with the units-wheel, the spring connected with said wing and the adjustable stop for limiting the movement of the wing; substantially as described.

34. In a designating apparatus, the combination with the designating mechanism, the finger-pieces controlling the same, the units-wheel, the motor for said units-wheel, and the series of stops controlled by the designating mechanism, of the units-rack, the units-rack carrier movable toward and from the units-wheel, the locking-dog for the units-wheel operated by the units-rack carrier and mechanism interposed between the units-rack carrier and stops whereby the units-rack carrier is operated and in turn operates the locking-dog; substantially as described.

35. In a designating apparatus, the combination with the designating mechanism, finger-pieces controlling the same, the units-wheel with means for advancing the same during the designating period and for resetting the same, of a units-rack, units-rack carrier, stops for limiting the movement of the units-rack and for operating the units-rack carrier, a locking-dog for the units-wheel, a push-rod connected with said dog, a loose connection between said push-rod and units-rack carrier, and a resetting mechanism for operating said push-rod to release the dog from engagement with the wheel independently of the movement of the units-rack carrier; substantially as described.

36. In an apparatus such as described, the combination of the following elements, to wit, a series of keys for designating characters of unvarying width; a key for designating characters or spaces variable as to width; a series of keys representing different degrees of variation for the variable characters or spaces; a movable chart containing a plurality of rows or sets of characters, the latter having reference to keys of the characters representing variation in width of the variable characters and spaces; an indicator or pointer; mechanism controlled by the keys for the unvarying and variable width characters or spaces for shifting the position of the chart, with respect to the indicator, from one character to another in a set or row; and mechanism controlled by the key for variable-width characters or spaces for shifting the position of the indicator with relation to the chart from one row or series of characters to another; whereby the operation of the key for denoting characters or spaces of variable width will effect a transfer of the indicator from one set or series of charted characters to another; substantially as described.

37. In an apparatus such as described, the combination with the designating mechanism, embodying character-designating keys, one of which designates characters the body width of which is adapted to be varied for justification, of an indicating mechanism embodying a chart having sets or rows of characters referring to different numbers of characters in a line the body widths of which are adapted to be varied and the characters in each set or row of which have reference to the normal body width of the characters designated, and a pointer or indicator for registering with said characters on the chart, said chart being movable in one direction with respect to the pointer and the pointer being movable in a direction transverse to the movement of the chart, the movement of the chart being controlled by all of the character-designating keys causing registration with characters in a row or set, and the movement of the pointer be-

ing controlled by the key for designating characters whose body width is to be varied for causing registration with different sets or rows of charted characters.

38. The combination in an apparatus such as described, embodying character-designating keys, one of which designates justification characters adapted to have their body widths varied, a units-wheel controlled by the designating-keys, and a chart or dial controlled by the units-wheel, of a pointer for registering with said chart and connections between said pointer and the justification-character-designating key independent of the units-wheel, whereby said chart will be controlled by the designating-keys to register units of body width of the characters designated and the pointer will be controlled by the justification-character-designating key to register the number of such characters designated; substantially as described.

39. In a keyboard, the combination of the following elements, to wit, designating-keys for designating characters having constant but different body widths, a designating-key for designating characters or spaces having variable body width, a units-wheel controlled by the designating-keys and having an angular movement proportioned to the normal body width of the characters designated, a movable chart controlled by said units-wheel and an indicator or pointer for registering with said chart controlled by the key for designating characters or spaces having variable body width; substantially as described.

40. In an apparatus, such as described, for designating characters in the record strip or ribbon, the combination of the following elements, to wit, keys for designating characters having constant body widths, a key for designating characters or spaces having a variable body width, keys for designating justification, a units-wheel controlled in its advance movement by said character and space designating keys in accordance with the widths of the characters designated, a chart movable in unison with said units-wheel and having sets of characters the number of sets corresponding to the number of possible operations in any one line of the key for designating characters having variable body widths, a justification-indicator for registering with the characters on the chart and connections between said indicator and the mechanism for designating characters having variable body width; substantially as described.

41. In a character-designating apparatus, the combination with the key-controlled-designating mechanism, of an indicating mechanism embodying an indicating chart or dial, a motor for operating said indicating mechanism, and a mechanism controlled by the keys for controlling the indicating mechanism and its motor; substantially as described.

42. In a character-designating apparatus, the combination with the designating mechanism and keys controlling the same, of indicating mechanism embodying two elements, one of which operates throughout the entire line of indications and the other of which operates only during a final and predetermined portion of said line of indications, and a motor for driving the last-named element controlled by the movement of the first-mentioned element; substantially as described.

43. In a character-designating apparatus, the combination with the character-designating mechanism and finger-pieces controlling the same, of an indicating mechanism embodying a chart and a motor for operating said indicating mechanism, a units-wheel, a motor for advancing the units-wheel in accordance with the body widths of the characters indicated, and connections between said motor and the chart-motor for operating the latter throughout a final and predetermined portion of the line of designations; substantially as described.

44. In a character-designating apparatus, the combination with the designating mechanism and finger-pieces controlling the same, of an indicating mechanism, a normally-inactive secondary motor for said indicating mechanism, a motor-rack and normally-active motor for advancing said rack and connections between the normally-active and normally-inactive motors for rendering the latter active at a predetermined point in the movement of the former.

45. In an indicating apparatus, the combination with the indicating mechanism, finger-pieces controlling the same, the motor-rack controlled by the indicating mechanism to advance in accordance with the body widths of the characters designated, the pressure-motor for advancing said rack and a pressure-supply for said motor, of a justification-indicator, a motor for operating said justification-indicator, connections between said justification-indicator and rack, and connections between the justification-indicator motor and rack-motor, whereby at a predetermined point in the movement of the latter, pressure will be admitted to the justification-indicator motor to render the same operative; substantially as set forth.

46. In a character-designating apparatus, the combination with the character-indicating mechanism, and finger-pieces controlling the same, of the justification motor-rack controlled in its advance movement by the character-indicating mechanism, a motor-cylinder and piston for advancing said rack, a pressure-supply for said cylinder, a justification-indicator controlled by said motor-rack, a pressure-motor for advancing the justification-indicator, comprising a piston and cylinder and connections between said cylinders; whereby upon the advance of the motor-rack and its piston to a predetermined point, pressure will be admitted to the justification-motor cylinder for relieving the motor-rack from the labor of advancing the justification-indicator; substantially as described.

47. In a character-designating apparatus, the combination with the designating mechanism and finger-pieces controlling the same, the units-wheel controlled in its advance by the character-designating mechanism, the motor-rack and motor for advancing the units-wheel and the justification-indicator, of a supplemental rack mounted on the motor-rack and adapted to operate the justification-indicator at a predetermined point in the travel of the motor-rack; substantially as described.

48. In a character-designating apparatus, the combination with the designating mechanism, and finger-pieces controlling the same, the units-wheel controlled in its advance by the character-designating mechanism, the motor-rack and motor for advancing the units-wheel and the justification-indicator, of a supplemental rack movably mounted on the motor-rack and adapted to operate the justification-indicator at a predetermined point in the travel of the motor-rack; substantially as described.

49. In a character-designating apparatus, the combination with the designating mechanism, and finger-pieces controlling the same, the units-wheel controlled in its advance by the character-designating mechanism, the motor-rack and motor for advancing the units-wheel and the justification-indicator, of a yielding supplemental rack movably mounted on the motor-rack and adapted to operate the justification-indicator at a predetermined point in the travel of the motor-rack; substantially as described.

50. In a character-designating apparatus, the combination with the designating mechanism, finger-pieces controlling the same, a motor-rack, the units-wheel operated thereby, and controlled in its movement by the character-designating mechanism and the indicating mechanism embodying a shaft having a pinion thereon, of a supplemental rack yieldingly mounted on the motor-rack and adapted to mesh with the pinion on the indicating mechanism at a predetermined point in the travel of the motor-rack, and stops connected with said pinion and supplemental rack, respectively, for initiating the movement of the pinion and insuring the correct engagement of the supplemental rack and pinion; substantially as described.

51. In a character-designating apparatus, the combination with the character-designating mechanism and finger-pieces controlling said mechanism, the units-wheel, the motor-rack for driving said units-wheel, the motor and resetting cylinders and pistons for said rack, a pressure-supply and ducts leading from said motor and resetting cylinders to said pressure-supply, of a rock-shaft, valves controlled by said rock-shaft and interposed in the said ducts and operating to simultaneously open communication between one of said cylinders and the pressure-supply and close communication between the opposite of said cylinders and the pressure-supply, and a finger-piece controlling said rock-shaft; substantially as described.

52. In a character-designating apparatus, the combination with the character-designating mechanism and finger-pieces controlling the same, the units wheel and rack for operating the same, the motor for advancing the units-wheel and the indicator controlled by the units-wheel, of a resetting mechanism comprising a motor-cylinder, piston, and pressure-supply, a duct leading from said cylinder to the pressure-supply, a valve interposed in said duct, and a finger-piece controlling said valve; substantially as described.

53. In a character-designating apparatus, the combination with the character-designating mechanism and finger-pieces, controlling the same, the motor for advancing the units-wheel, and the indicator controlled by the units-wheel, of a resetting mechanism comprising a motor-cylinder piston and pressure-supply, a duct leading from said cylinder to the pressure-supply, a valve interposed in said duct, a finger-piece controlling said valve, and the throttling-valve located in said duct and operating to permit a free egress of pressure from said cylinder, but adapted to retard the ingress of pressure to said cylinder; substantially as described.

54. In a character-designating apparatus, the combination with the designating mechanism, the justification-indicating mechanism, a resetting mechanism and a rock-shaft controlling the resetting of the justification-indicating mechanism, of a motor for operating said rock-shaft and a finger-piece controlling said motor; substantially as described.

55. In a character-designating apparatus, the combination with the character-designating mechanism and finger-pieces controlling the same, the indicating mechanism embodying a movable chart or dial and a movable pointer or indicator for registering therewith, the motors for the chart or dial, a pawl-and-ratchet mechanism for operating the pointer, a rock-shaft controlling said motor, a projection on said rock-shaft for releasing the pawls on the pointer-operating mechanism, and a finger-piece controlling said rock-shaft; substantially as described.

56. In a character-designating apparatus, the combination with the indicating mechanism, for registering the body widths of the characters designated actuating mechanism therefor with pressure-motors for advancing and resetting said indicating mechanism, of a spring-pressed rock-shaft controlling the admission of pressure to said motors, a pressure-motor for actuating said rock-shaft against the tension of its spring, and a finger-piece controlling said rock-shaft and motor; substantially as described.

57. In a character-designating apparatus, the combination with the indicating mechanism embodying a chart having horizontal rows of indications thereon, motors for operating said indicating mechanism with means for controlling the same in accordance with the body widths of the characters designated, and a vertically-movable pointer for registering with the indications on said chart adapted to be moved vertically in accordance with the number of variable body characters designated, of a rock-shaft controlling the admission of pressure to the indicating-mechanism motor and a projection on said rock-shaft to reset the mechanism; substantially as described.

58. An indicating mechanism for character-designating apparatus, embodying a charted cylinder with mechanism interposed between said charted cylinder and the designating mechanism for rotating the same in accordance with the body widths of the characters designated and a pointer for registering with the indications on said cylinders; substantially as described.

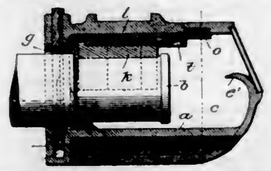
59. An indicating mechanism for use in a character-designating apparatus, adapted to designate characters having different but constant body widths and also characters having variable body widths, said indicating mechanism embodying a charted cylinder, a units-wheel controlling said cylinder and adapted to advance in accordance with the body widths of the characters designated, and a motor for impelling said units-wheel, of a pointer controlled by the designating mechanism for characters of variable body widths for registering with the indications on the charted cylinder; substantially as described.

60. In an indicating mechanism for character-designating apparatus, the combination with a units-wheel controlled in its advance in accordance with the body widths of the characters designated, a pinion connected with said units-wheel and a motor-impelled rack geared with the upper side of said units-wheel, of a second shaft having a pinion thereon located above the rack, a supplemental rack carried by the second rack for meshing with the last-mentioned pinion and an indicating mechanism controlled by said second shaft; substantially as described.

61. In an indicating mechanism for a character-designating apparatus, such as described, the combination with a motor-impelled rack, of a units-wheel having a pinion connected therewith and gearing with the under side of said rack, and an indicating mechanism having a pinion connected therewith gearing with the upper side of said rack; substantially as described.

62. In a designating apparatus such as described, the combination with the units-wheel and a member, such as the units-rack, movable in two directions, the one for engagement or disengagement with the units-wheel and the other for advancing with the units-wheel, of a series of intercepters or stops movable into the path traversed by said units-rack when advancing in unison with the units-wheel, and provided with shoulders for effecting the engagement of said member or units-rack with the units-wheel; substantially as described.

654,116. JOURNAL-BOX. GEORGE W. LEWIS and LE ROY C. GODWIN, Portsmouth, Va., assignors of one-third to Camillus A. Nash, Norfolk, Va. Filed Sept. 8, 1899. Serial No. 729,838. (No model.)



Claim.—1. A journal-box, having a lugless top, and also having its floor constructed with a longitudinal ridge, the apex of which is longitudinally coaxial with the journal, and forming oil-pockets on both sides, and the rear wall of the box having a substantially-circular opening instead of the usual elliptical opening so as to raise the rear wall of the box a sufficient height to form with the front wall the ends of the said oil-pockets, combined with a bearing-piece fitted loosely to the said lugless top of the box above the journal, and a removable gib fitted transversely of the box in side openings therein and in a seat in the inner side of the top of the box, in front of the bearing-piece, and adapted to permit the ready removal of the latter, substantially as described.

2. A journal-box, having its floor formed as an inverted V with its apex coaxial with the journal, and its rear walls sloped upward rearwardly and laterally to the axle-opening in the rear wall of the box, the said rear wall having a substantially-circular opening for the axle and the front wall of the box extending above the apex of the floor, the said floor forming oil-pockets between its apex and the side, rear and front walls of the box, combined with a readily-removable bearing-piece, and a removable gib arranged transversely in the box in front of the said bearing-piece, substantially as described.

3. A journal-box, having its floor formed as an inverted V with its apex longitudinally coaxial with the journal, an inwardly-curved front wall, and a rear wall whose inner surface is curved upwardly from the floor to about midway of the axle-opening in the box, substantially as described.

4. A journal-box, having its floor formed as an inverted V with its apex coaxial with the journal, and its rear walls sloped upward rearwardly and laterally to the axle-opening in the rear wall of the box, the said rear wall having a substantially-circular opening for the axle and the front wall of the box extending above the apex of the floor, the said floor forming oil-pockets between its apex and the side, rear and front walls of the box, substantially as described.

5. A journal-box, having a transverse gib-seat in the inner face of its top, openings in the side walls alined with said seat, and a gib adapted to be inserted in the seat through either of the side wall openings, with its leading end projecting through the opposite side opening to receive an outside retaining device, combined with a bearing medium which is removably retained in the box by said gib, substantially as described.

654,117. COAL-BUCKET. HENRY R. MADDOCKS, Duncansville, Pa. Filed Nov. 29, 1899. Serial No. 738,722. (No model.)



Claim.—1. A coal-bod provided with sides and a partition formed of a single piece of sheet metal, the free end of the partition being secured to the side, and the free end of the strip forming the sides secured at the angle of the sides and partition, and an oil box or can secured in the angle of the sides and partition, substantially as described.

2. The combination coal-hod herein described comprising a strip of metal bent to form the sides A and partition B, one free end being secured at A′ to the sides and the other at B′ to the angle of the sides and partition, a flange K on the upper edge of the partition, a flap L hinged to said flange, and a piece of metal bent to form side G, bottom H, end I and turned-up flange J secured to the partition under the flange K and flap L and to the sides A, the partition and sides forming one side and end of, and thus completing a box or can with hinged lid, substantially as described

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654,118. PROCESS OF COATING MEATS. JOHN MITCHELL, Ayr, Scotland, assignor to the Anglo-American Provision Company, Chicago, Ill. Filed Dec. 12, 1898. Serial No. 699,095. (No specimens.)

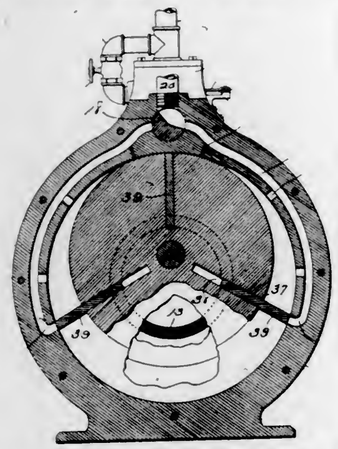
Claim.—1. The herein-described process of preserving hog products, and the like, which consists in enveloping the product first in a skin of thin material, and then in a fabric cover; preparing a preservative compound by mixing together gelatine and alum solution in substantially-equal parts; and finally treating the fabric cover with the preservative compound thus prepared.

2. The herein-described process of preserving hog products and the like, which consists in enveloping the product first in tissue-paper treated to make it moisture-proof, and then in a fabric cover, preparing a solution of alum in the proportions of from two to three parts of alum to about twenty-eight parts of water by weight, mixing this alum solution with an approximately-equal amount of gelatine when both are in a heated condition, and treating the fabric cover with the mixture thus made, substantially as described.

3. A protective and preservative covering for hams and the like, having a layer of absorbent material treated with a previously-prepared preservative compound consisting essentially of a mixture of gelatine and a solution of alum.

4. A protective and preservative covering for hams and the like, consisting of an inner skin of treated tissue-paper and an outer envelop of fabric treated with a preservative compound consisting essentially of a mixture of about equal parts of gelatine and alum solution, substantially as described.

654,119. ROTARY ENGINE. JAMES A. PORTER, Nevada, Iowa. Filed June 12, 1899. Serial No. 720,168. (No model.)



Claim.—1. In a rotary engine, the combination of a cylinder, a hub rotatably mounted within the cylinder, sliding pistons in the hub, steam-passages for admitting steam to and exhausting steam from the cylinder at proper points, two valves mounted in the cylinder, the one connected with the inflow and the other with the exhaust pipe, means for operating the said valves in unison to move in opposite directions to reverse the engine, a slide-valve connected with the engine above the aforesaid valves, a pipe leading from the indnction-pipe to the engine at a point above the said slide-valve and means for automatically operating it to cut off at a certain predetermined point, substantially as and for the purposes stated.

2. A rotary engine, comprising in combination, a cylinder 10, cylinder-heads 11 fixed thereto and having grooves 13 therein, a shaft 12 eccentrically mounted within the engine and having a wheel 33 fixed thereto provided with a cam-groove 34, a hub 37 fixed to the said shaft, a series of pistons 39 slidingly mounted in said hub, rollers 40 connected with the said pistons to operate within the grooves 13, steam-passages 15 and openings 16 and 17 leading therefrom to the interior of the cylinder, valves 18 at the top of the engine, and means for reversing same, a steam-chamber at the top of the engine, an inflow-pipe leading thereto, a slide-valve mounted in said steam-chamber, a stem connected with said slide-valve, and a lever pivoted to a suitable support and connected at one end to the said stem and having its other end inserted in the cam-groove 34, a pipe connected with the inflow-pipe and extending around the said valve, a cut-off valve in said pipe and an exhaust-pipe 25, all arranged and combined substantially in the manner set forth and for the purposes stated.

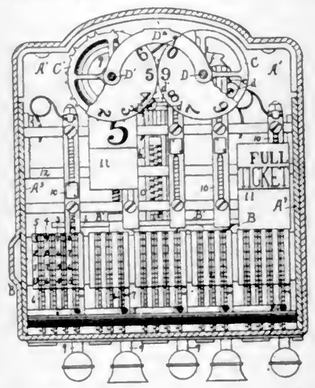
REISSUES.

11,842. FARE-REGISTER. JOHN F. OHMER and HIRAM TYLER, Dayton, Ohio; said Tyler assignor to said Ohmer. Filed Aug. 12, 1899. Serial No. 726,996. Original No. 582,366, dated May 11, 1897.

Claim.—1. In a fare-register, the combination with trip-indicator wheels, and a slotted lever mounted adjacent to one of said wheels, of a continuous slide extending across the machine, and provided with guide extensions, to one of which the said lever is connected, a series of sliding rods, each one of which is adapted to actuate in a similar manner, the said continuous slide, and ratchet mechanism interposed between the said lever, and one of the indicator-wheels, substantially as described.

2. In a fare-register, the combination with trip-indicator wheels, of a vertically-movable slide extending across the machine, a lever having a fulcrum on the arbor of one of said indicator-wheels and actuated by the movement of said slide, ratchet mechanism actuated by said lever for advancing said indicator-wheels, a series of sliding rods having transverse slots, and each one of which is adapted to similarly actuate said vertically-movable slide, a sheave provided with a pin for each of said sliding rods, and means for rotating said sheaves, substantially as and for the purposes specified.

3. In a machine for registering and indicating fares on street-railway cars, the combination with trip-indicator wheels, of a transverse sliding bar having guide extensions, an angular lever having one end slotted and loosely connected to one of said guide extensions, and the other end fulcrumed on the arbor of one of said indicator-wheels, a pawl pivoted to said lever, a trip-indicator wheel rotated by said pawl, a series of sliding rods any one of which may actuate said transverse sliding bar, and means for actuating said sliding rods.



4. In a machine for registering and indicating fares in street-cars, the combination of a vertically-movable sliding bar lying across the machine, a series of sliding rods any one of which may actuate said sliding bar, each of said rods being provided with a transverse slot, a lever having one end provided with an oblong slot and loosely connected to an extension from said sliding bar, a pawl carried on said lever, an indicator-wheel having a ratchet-wheel with which said pawl engages, and a series of sheaves each of which is provided with a pin adapted to actuate a sliding rod, substantially as described.

5. In a fare-register, the combination with a system of total-adding register-wheels, and a system of indicator-tablets to indicate each character of fare, of a transverse sliding bar lying across the machine and having guide extensions, a lever having one end slotted and loosely connected to one of said guide extensions, trip-indicator wheels actuated by ratchet mechanism interposed between them and said lever, and a series of sliding rods, the downward movement of any one of which simultaneously actuates said total-adding register-wheels, a respective indicator-tablet, and the trip-indicator wheels.

6. In a fare and trip register, the combination with a series of total-adding register-wheels, a system of fare-indicators, and a transverse oscillating bar for controlling the positions of said fare-indicators, of a sliding bar having guide extensions, a slotted lever mounted on one of said guide extensions, a ratchet-pawl carried on said lever, a system of trip-indicator wheels actuated by said pawl, and a series of sliding rods, the downward movement of any one of which will cause a simultaneous registration of a fare; a visible indication of the character of said fare, whether a full or half fare; and a visible indication of the number of fares on each trip, substantially as shown and described.

7. In a fare-register, the combination with trip-indicator wheels, and a series of independently-sliding rods mounted below said wheels, of a vertically-movable slide extending across the machine, and provided with upwardly-projecting guide extensions, a lever having its fulcrum on the arbor of one of said indicator-wheels and a sliding connection with one of said guide extensions, ratchet mechanism actuated by said lever to advance said indicator-wheels, and means for independently actuating said sliding rods, substantially as and for the purposes specified.

8. In a fare-register, the combination with trip-indicator wheels, of a vertically-movable slide lying across the machine and provided with guide extensions, a lever having a fulcrum on the arbor of one of said trip-indicator wheels and one end slidingly connected with one of said guide extensions, ratchet mechanism actuated by said lever to rotate said indicator-wheels, a series of vertically-sliding rods each one of which is adapted to actuate said sliding bar, and each of which is provided with a transverse slot, a series of sheaves provided with pins that project into said transverse slots, and means for rotating said sheaves whereby said sliding rods are elevated, substantially as and for the purposes specified.

9. A series of independent fare-indicators, a trip-register, independent operating devices for each of such fare-indicators, and mechanism for actuating such trip-register and arranged to be engaged by each of such fare-indicator-operating devices.

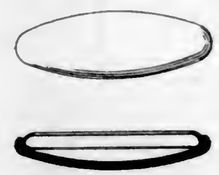
10. A series of independent fare-indicators, for each fare-indicator a corresponding fare-register, an independent operating device for each fare-indicator and its corresponding register, a trip-register, and mechanism for actuating such trip-register and arranged to be engaged by each of such independent operating devices.

11. A series of independent fare-indicators visible to all the occupants of the car, a trip-register, independent operating devices for each of such independent fare-indicators, and mechanism for actuating such trip-register and arranged to be engaged by each of such fare-indicator-operating devices.

12. A series of independent fare-indicators visible to all the occupants of the car, for each fare-indicator a corresponding fare-register, an independent operating device for each fare-indicator and its corresponding register, a trip-register, and mechanism for actuating such trip-register and arranged to be engaged by each of such independent operating devices.

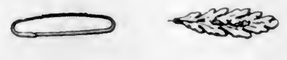
DESIGNS.

32,941. BADGE-BAR. WILLIAM HORNICK, Jr., Newark, N. J. Filed Apr. 27, 1900. Serial No. 14,636. Term of patent 7 years.



Claim.—The design for a badge-bar as herein shown and described.

32,942. ORNAMENTAL PIN. ALVA F. WARREN, Providence, R. I. Filed May 31, 1900. Serial No. 18,671. Term of patent 7 years.



Claim.—The design for an ornamental pin, as herein shown and described.

32,943. BELT-BUCKLE. LOUIS RITTER and JACOB RITTER, New York, N. Y. Filed June 22, 1900. Serial No. 21,241. Term of patent 3½ years.



Claim.—The design for a belt-buckle, as shown and described.

32,944. NOSE-BRIDGE FOR SPECTACLE-FRAMES. FREDERICK A. STEVENS, Providence, R. I. Filed June 20, 1900. Serial No. 21,019. Term of patent 7 years.



Claim.—The design for the nose-bridge of a spectacle-frame herein shown and described

32,945. NERVE-BROACH. MATHEW M. KERR, Detroit, Mich., assignor to the American Specialty Company, same place. Filed June 7, 1900. Serial No. 19,471. Term of patent 14 years.



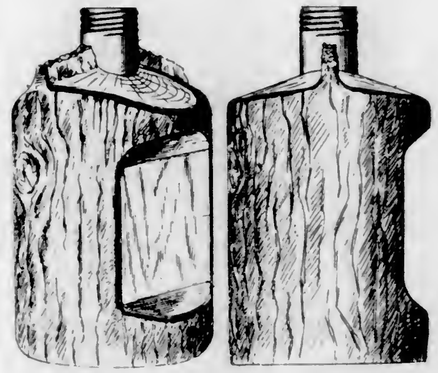
Claim.—The design for a nerve-broach, substantially as herein shown and described.

32,946. HANDLE FOR BUTTON-HOOKS, &c. FRANK J. DIACONT, Providence, R. I., assignor to the Waite, Thresher Company, same place. Filed June 19, 1900. Serial No. 20,901. Term of patent 3½ years.



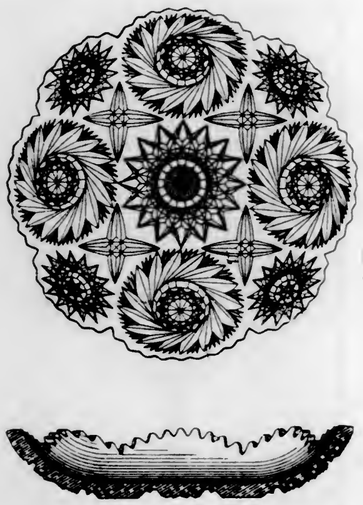
Claim.—The design for the handle of a button-hook or similar article, as herein shown and described.

32,947. BOTTLE OR SIMILAR ARTICLE. RICHMON E. FRENCH, Medina, Ohio. Filed June 9, 1900. Serial No. 19,778. Term of patent 14 years.



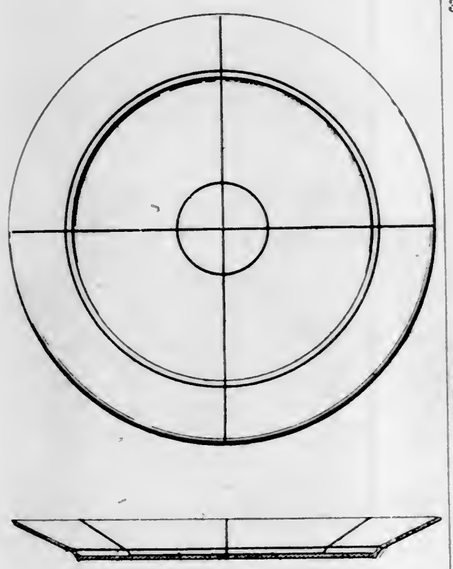
Claim.—The design for a bottle or similar article substantially as shown and described

32,948. GLASS VESSEL OR SIMILAR ARTICLE. WILLIAM H. SHARLEY, Chicago, Ill., assignor to the Pitkin & Brooks, same place. Filed Nov. 24, 1899. Serial No. 738,231. Term of patent 7 years.



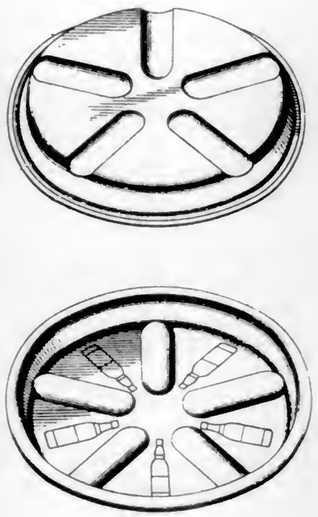
Claim.—The design for a glass vessel or similar article substantially as shown and described.

32,949. PLATE. THOMAS R. WIERING, New Castle, Pa. Filed Mar. 29, 1900. Serial No. 10,707. Term of patent 3½ years.



Claim.—The design for a plate as herein shown and described.

32,950. GLASS-HOLDING TRAY. BEN B. STROPE, Coshocton, Ohio, assignor to the Standard Advertising Company, same place. Filed June 18, 1900. Serial No. 20,769. Term of patent 3½ years.



Claim.—The design for a glass-holding tray herein shown and described.

32,951. DIAL-FRAME. HERBERT S. MILLS, Chicago, Ill. Filed June 7, 1900. Serial No. 19,470. Term of patent 14 years.



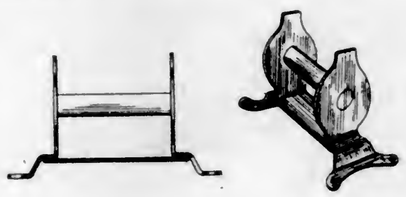
Claim.—The design for a dial-frame as herein shown and described.

32,952. FINGER-HAMMER FOR MUSICAL INSTRUMENTS. WILLIAM H. PRIDE, Springfield, Ill. Filed Mar. 14, 1900. Serial No. 8,679. Term of patent 7 years.



Claim.—The design for a finger-hammer for musical instruments, substantially as herein shown and described.

32,953. FRAME FOR TELEPHONE-CALLS. JOSEPH A. WILLIAMS, Cleveland, Ohio, assignor to the Williams Electric Company, same place. Filed Aug. 21, 1899. Serial No. 728,014. Term of patent 7 years.



Claim.—The design for the frame of a telephone-call, substantially as shown and described.

32,954. BRACE FOR PLATFORM-SCALES. WILLIS H. SARGENT, St. Johnsbury, Vt., assignor to the E. & T. Fairbanks & Company, same place. Filed June 14, 1900. Serial No. 20,369. Term of patent 14 years.



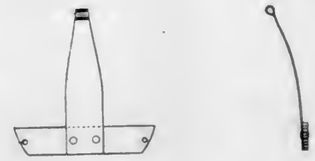
Claim.—The design for a brace for platform-scales; substantially as shown and described.

32,955. GAS-FLAME SPREADER. HENRY IEVERS, New York, N. Y. Filed June 21, 1900. Serial No. 21,113. Term of patent 7 years.



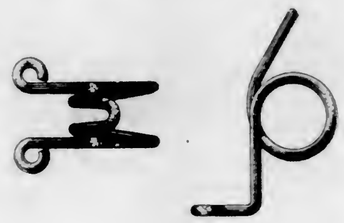
Claim.—The design for a gas-flame spreader as herein shown and described.

32,956. LATCH-PIECE FOR SNAP-HOOKS. CARL R. HORNE, Williamsburg, Kans. Filed June 8, 1900. Serial No. 19,630. Term of patent 14 years.



Claim.—The design for a latch-piece for snap-hooks, as herein shown and described.

32,957. HOLDING-SPRING. EDWIN C. LEWIS, Ionia, Mich. Filed May 4, 1900. Serial No. 15,468. Term of patent 14 years.



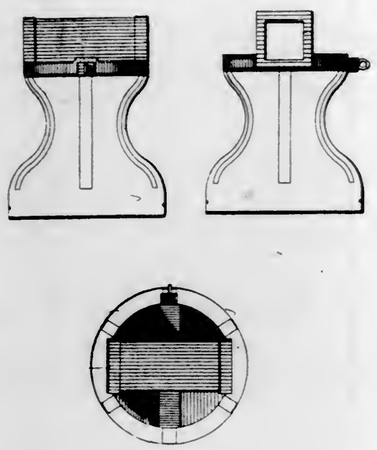
Claim.—The design for a holding-spring, substantially as shown and described.

32,958. SPIKE. SAMUEL GRAHAM, Lebeck, Mo. Filed May 26, 1900. Serial No. 18,165. Term of patent 14 years.



Claim.—The design for a spike, substantially as herein shown and described.

32,959. CAPSTAN. FRANK S. MANTON, Providence, R. I. Filed June 9, 1900. Serial No. 19,783. Term of patent 14 years.



Claim.—The design for a capstan as herein shown and described.

32,960. GASKET. JOHN S. NARRY, Lafayette, Ind. Filed June 5, 1900. Serial No. 19,179. Term of patent 14 years.



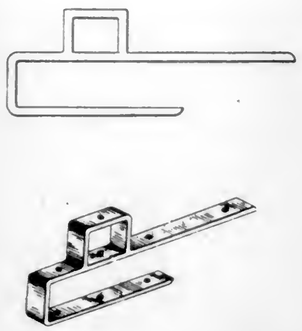
Claim.—The design for a gasket, as herein shown and described.

32,961. SPRING FOR THILL OR SHAFT COUPLINGS. ALBERT L. GRANT, Philadelphia, Pa. Filed Mar. 31, 1900. Serial No. 11,024. Term of patent 7 years.



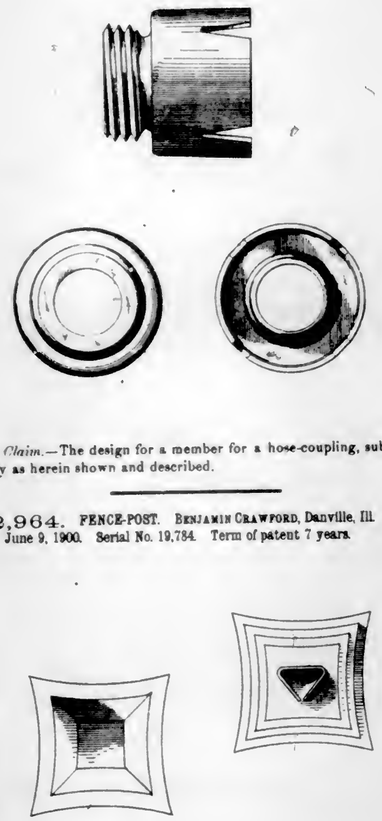
Claim.—The design for a spring for a thill or shaft coupling, substantially as herein shown and described.

32,962. NECK-YOKE BRACKET. JOHN T. KENNEDY, Carl, Kans. Filed June 16, 1900. Serial No. 20,600. Term of patent 14 years.



Claim.—The design for a neck-yoke bracket, substantially as herein shown and described.

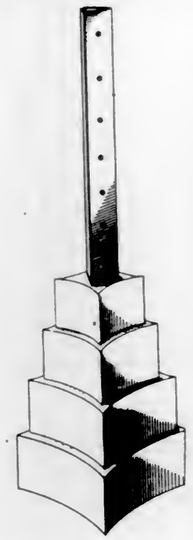
32,963. MEMBER FOR HOSE-COUPLINGS. MARK S. LEVERING, Philadelphia, Pa., assignor to the Standard Hose Mender and Pipe Coupler Company, Camden, N. J. Filed June 2, 1900. Serial No. 18,899. Term of patent 14 years.



Claim.—The design for a member for a hose-coupling, substantially as herein shown and described.

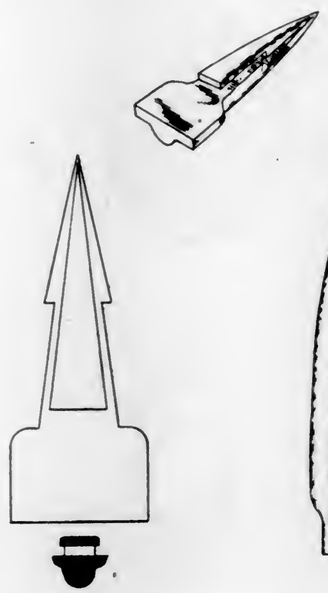
32,964. FENCE-POST. BENJAMIN CRAWFORD, Danville, Ill. Filed June 9, 1900. Serial No. 19,784. Term of patent 7 years.

32,964.



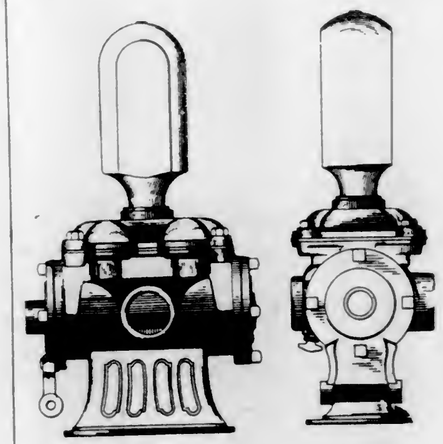
Claim.—The design for a fence-post, substantially as shown and described.

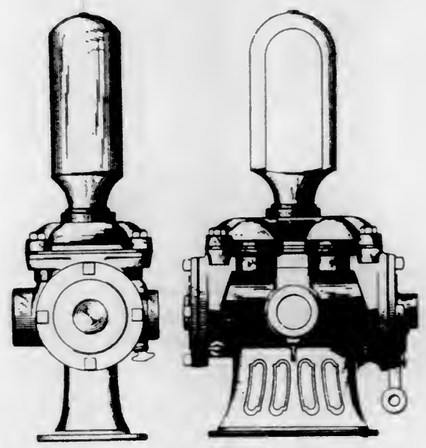
32,965. GUARD-FINGER FOR HARVESTERS. PIUS L. SHEPLER, Toledo, Ohio, assignor of one-fifth to Corydon W. Munson, same place. Filed June 19, 1900. Serial No. 20,904. Term of patent 14 years.

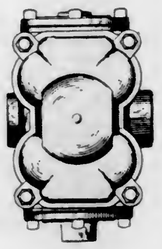


Claim.—The design for a guard-finger for harvesters, substantially as shown and described.

32,966. PUMP-BODY. PHILIP A. MYERS, Ashland, Ohio, assignor to F. E. Myers & Bro., same place. Filed June 6, 1900. Serial No. 19,328. Term of patent 14 years.

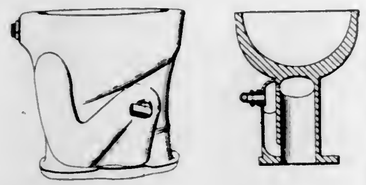






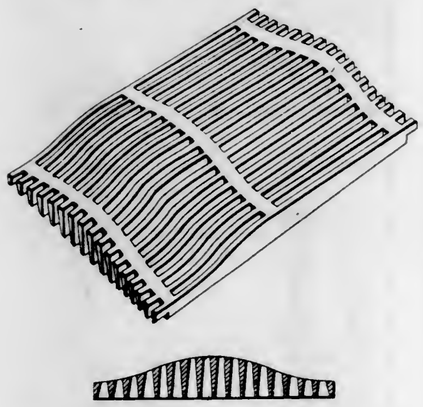
Claim.—The design for a pump-body as herein shown and described.

32,967. CLOSET-BOWL. JOHN F. COTTER, Kansas City, Mo. Filed May 12, 1900. Serial No. 16,518. Term of patent 14 years.



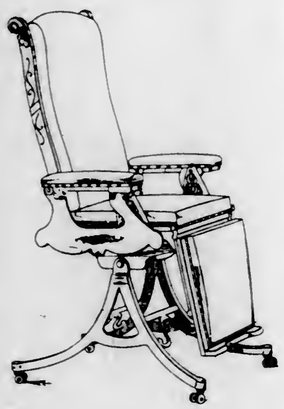
Claim.—The design for a closet-bowl, as herein shown and described.

32,968. GRATE. GEORGE W. FAIR, Primrose, Pa. Filed June 11, 1900. Serial No. 19,960. Term of patent 7 years.



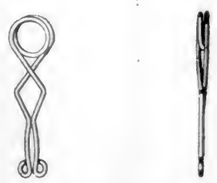
Claim.—The design for a grate, substantially as herein shown and described.

32,969. CHAIR. BENJAMIN D. MINER, Indianapolis, Ind. Filed June 2, 1900. Serial No. 18,907. Term of patent 7 years.



Claim.—The design for a chair, as herein shown and described.

32,970. CLOTHES-PIN. WILLIAM H. ZORN, Harrisburg, Nebr. Filed May 24, 1900. Serial No. 17,888. Term of patent 7 years.



Claim.—The design for a clothes-pin, herein shown and described.

32,971. WHIP-TOP. CHARLES W. SMITH, Detroit, Mich. Filed May 23, 1900. Serial No. 17,761. Term of patent 7 years.



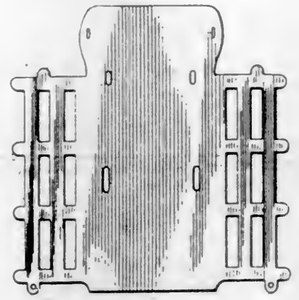
Claim.—The design for a whip-top as herein shown and described.

32,972. TOY BANK. HENRY SCHLOERB, New York, N. Y. Filed Feb. 27, 1900. Serial No. 6,753. Term of patent 7 years.



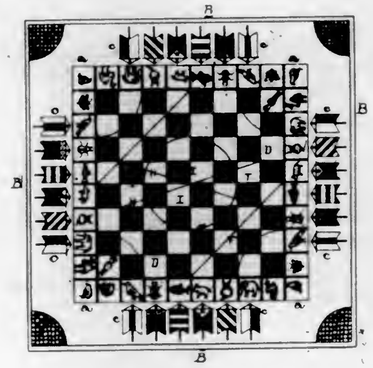
Claim.—The design for a toy bank as herein shown and described.

32,973. BODY-BLANK FOR TOY WAGONS. HARRY THAYER KINGSBURY, Keene, N. H. Filed June 14, 1900. Serial No. 20,367. Term of patent 14 years.



Claim.—The design for a body-blank for toy wagons; substantially as shown and described.

32,974. GAME-BOARD. PAUL J. NEITZEL, South Bend, Ind. Filed June 13, 1900. Serial No. 20,213. Term of patent 7 years.



Claim.—The design for a game-board substantially as shown and described.

32,975. SKIRT OR GARMENT PROTECTOR. GEORGE S. HENSEL, Philadelphia, Pa., assignor to the Hensel, Colladay Company, of Pennsylvania. Filed June 18, 1900. Serial No. 20,771. Term of patent 14 years.



Claim.—The design for a skirt or garment protector substantially as shown and described.

32,976. CARPET-BORDER. LOUIS H. BROWN, Worcester, Mass., assignor to Matthew J. Whittall, same place. Filed June 4, 1900. Serial No. 19,080. Term of patent 3½ years.



Claim.—The design for carpet-border substantially as shown and described.

TRADE-MARKS

REGISTERED JULY 17, 1900.

34,895. HATS AND BONNETS OF ALL KINDS. JOAQUIN COLL REGÁS, Mataro, Barcelona, Spain. Filed Dec. 7, 1899.



Essential feature.—The representation of a shield with devices thereon, surmounted by a crown, together with the figures of a male and female. Used since May, 1899.

34,896. WOVEN SILK FABRICS AND RIBBONS. ASTORIA SILK WORKS, New York, N. Y. Filed June 11, 1898.



Essential feature.—The representation of a circular receptacle provided with an armored rim floating in a vapory ground and the letters "A S W" intertwined in monogrammic form. Used since April 15, 1898.

34,897. COTTON DRESS GOODS. OTIS COMPANY, Palmer and Ware, Mass. Filed June 19, 1900.

GRENADETTE

Essential feature.—The word "GRENADETTE." Used since May 15, 1900.

34,898. COTTON DRESS GOODS. OTIS COMPANY, Palmer and Ware, Mass. Filed June 19, 1900.

GLOSSENE

Essential feature.—The word "GLOSSENE." Used since May 15, 1900.

34,899. COTTON DRESS GOODS. OTIS COMPANY, Palmer and Ware, Mass. Filed June 19, 1900.

TWILLARD

Essential feature.—The word "TWILLARD." Used since May 15, 1900.

34,900. SHEETINGS AND DRILLS. ORR COTTON MILLS, Anderson, S. C. Filed May 10, 1900.



Essential feature.—The representation of a running wolf. Used since May 2, 1900.

34,901. CERTAIN NAMED ART-METAL GOODS. BIPPART & Co., Newark, N. J. Filed June 15, 1900.



Essential feature.—The representation of a torch. Used since June 7, 1900.

34,902. CANNED TOMATOES. WELLS, HERRING & Co., Townsend, Del. Filed May 31, 1900.

BOSS

Essential feature.—The word "BOSS." Used since 1886.

34,908. CANNED FRESH-WATER FISH. THE BUCKEYE FISH COMPANY, Cleveland, Ohio. Filed Aug. 2, 1899.

BUCKEYE

Essential feature.—The word "BUCKEYE" and the pictorial representation of a fish swimming in water. Used since May 1, 1899.

34,904. CANNED FISH. ALASKA PACKERS' ASSOCIATION, San Francisco, Cal. Filed June 6, 1900.

BUTTERFLY

Essential feature.—The word "BUTTERFLY." Used since May 10, 1900.

34,905. CANNED FISH. ALASKA PACKERS' ASSOCIATION, San Francisco, Cal. Filed June 6, 1900.

REDOUT

Essential feature.—The word "REDOUT." Used since July 1, 1897.

34,906. CANNED FISH. ALASKA PACKERS' ASSOCIATION, San Francisco, Cal. Filed June 6, 1900.

WIGWAM

Essential feature.—The word "WIGWAM." Used since July 1, 1889.

34,907. BREAKFAST-BACON. CHARLES H. LANG, Baltimore, Md. Filed June 6, 1900.



Essential feature.—The representation of a miniature mountain composed of wrapped or jacketed packages piled vertically one layer above the other with horizontal layers on the top. Used since January, 1887.

34,908. CERTAIN NAMED CONFECTIONERY. THE GEORGE CLOSE COMPANY, Cambridge, Mass. Filed June 7, 1900.



Essential feature.—The words "SEA FOAM" and a beach and sea view, all printed in green colors. Used since June, 1899.

34,909. ROASTED COFFEE. THE OHIO COFFEE AND SPICE COMPANY, Columbus, Ohio. Filed June 7, 1900.

34,909.



Essential feature.—Two triangles of the same color, placed one above the other and apex to apex, with a rosette covering the apices of the triangles, the triangles and rosette and background upon which they are placed being of contrasting colors. Used since July 5, 1897.

34,910. WHISKY. HENRY M. WALKER, Baltimore, Md. Filed Apr. 13, 1900.



Essential feature.—The representation of a castle. Used since December, 1898.

34,911. SOAP. CHARLES W. T. DAVIES, New York, N. Y. Filed June 19, 1900.



Essential feature.—The letters "C. O. D." arranged as the representation of a face. Used since June 1, 1900.

34,912. SNUFF. AMERICAN SNUFF COMPANY, Jersey City, N. J., and New York, N. Y. Filed June 14, 1900.

U

Essential feature.—The representation of a horseshoe. Used since April 20, 1900.

34,918. COAL. JOHN Z. EVANS, Avery, Iowa. Filed June 2, 1900.

SMOKY HOLLOW

Essential feature.—The words "SMOKY HOLLOW." Used since October, 3, 1883.

34,914. DENTIFRICE. CHARLES WRIGHT CHEMICAL COMPANY, Detroit, Mich. Filed June 19, 1900.

DENTOMYRH

Essential feature.—The arbitrary word "DENTOMYRH." Used since May 20, 1900.

84,915. INTERNAL REMEDY FOR CATARRH. SMITH BROS. Fresno, Cal. Filed June 4, 1900.



Essential feature.—A representation of two photographs, the letters "S B," and the signature of "GEO. H. SMITH." Used since April 2, 1900.

84,916. TRUSSES. WILLIAM S. RICE, Adams, N. Y. Filed June 13, 1900.

ELECTRUS

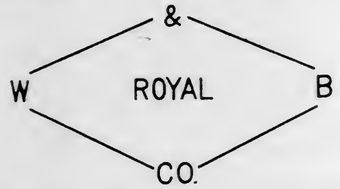
Essential feature.—The word "ELECTRUS." Used since May 10, 1899

84,917. FINISHED OR DRESSED LEATHER. CORONA KID COMPANY, Boston, Mass. Filed June 19, 1900.

CORONA

Essential feature.—The word "CORONA." Used since August, 1899.

84,918. RUBBER PACKING. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed June 16, 1900.



Essential feature.—The word "ROYAL" inclosed within a diamond, with the letters, character, and abbreviation "W. & B. Co." at the corners thereof. Used since January 1, 1900.

84,919. HOSE. NEW JERSEY CAR SPRING AND RUBBER COMPANY, Jersey City, N. J. Filed June 20, 1900.

TUEBOR

Essential feature.—The word "TUEBOR." Used since May 19, 1900.

84,920. BINDING-TWINE. MCCORMICK HARVESTING MACHINE COMPANY, Chicago, Ill. Filed Nov. 3, 1899.



Essential feature.—A diamond-shaped figure bearing the representation of a ball of twine. Used since October 14, 1899.

84,921. MINERAL POLISH. WILLIAM W. RANEY, Fullerton, Nebr. Filed Jan. 12, 1900.



Essential feature.—A circular tablet or plate having a plain central surface, a beaded flange or rim, and an ornamental ring extending from the edge of the tablet. Used since July 1, 1899.

84,922. CERTAIN NAMED BELLS. FRANK MOSSBERG CO., Attleborough, Mass. Filed June 8, 1900.

CUCK-OO

Essential feature.—The compound word "CUCK-OO." Used since January 25, 1899.

84,923. METAL TYPE. AMERICAN TYPE FOUNDERS COMPANY, Jersey City, N. J.; Boston, Mass.; New York, N. Y.; Philadelphia, Pa., and Chicago, Ill. Filed Apr. 30, 1900.

POST

Essential feature.—The word "POST." Used since April 21, 1900.

84,924. BEER-DISPENSING APPARATUS. JACOB J. MAYER, Cleveland, Ohio. Filed Mar. 9, 1900.

GLOBE

Essential feature.—The word "GLOBE." Used since August 1, 1899.

84,925. HEATING-STOVES. TORRENCE F. MARTIN, Carmi, Ill. Filed June 6, 1900.

THE WINNER

Essential feature.—The term "THE WINNER." Used since March 1, 1898.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

DARNELL *v.* GRANT.

Decided June 12, 1900.

1. INTERFERENCE — PRIORITY — REDUCTION TO PRACTICE — DILIGENCE.

Where it is admitted that G. actually reduced the invention to practice in June, 1897, and he is entitled to constructive reduction to practice by filing his application in August, 1897, he is entitled to the decision on priority, even if it be conceded that D. had a conception of the invention prior to that time, since D. has not shown an actual reduction to practice at any time or diligence up to the time when he filed his application a year later.

2. SAME—REDUCTION TO PRACTICE—ADMISSION OF OPPOSING COUNSEL.

Where G. testifies to the construction and successful use of certain machines embodying the invention in June and July, 1897, and in order to shorten the matter of taking testimony counsel for the opposing party admitted on the record that the machines were made and used substantially at the time and in the manner testified, *Held* that G. is entitled to the date of June or July for a reduction to practice of the invention.

3. SAME—SAME—EXPERIMENTAL MODEL.

Where D. testifies on direct examination that he worked on a full-sized machine from 1896 to 1898 and completed it and successfully operated it in July, 1898, but on cross-examination admits that the machine was far from being complete and operative, and that it had only been used as an illustration and was nothing more than an experimental model, *Held* that it cannot be received as a reduction to practice.

4. SAME—DECISION OF THE COMMISSIONER OF PATENTS AFFIRMED.

Where D. may have been the first to conceive the invention, but G. was the first by a year to reduce it to practice and D did not show diligence during his delay, *Held* that the decision of the Commissioner of Patents in favor of G. was correct and will be affirmed.

Mr. V. H. Lockwood for the appellant.

Mr. Paul A. Staley and *Messrs. Church & Church* for the appellee.

ALVEY, *J.:*

This is an appeal from the Patent Office in a matter of interference determined there by the Commissioner of Patents. The interference is between two applications for patents in relation to a rubber-tire-setting machine; the first application being made by Arthur W. Grant, and the second by Calvin F. Darnell, and priority of invention being awarded to Grant, Darnell has appealed.

The application of Grant, the first that was filed, was presented in the Patent Office on the 14th day of August, 1897, and that of Darnell was filed July 8, 1898. The question in the case is one of fact merely, as between the two applicants, which of them is entitled to priority of invention?

In the preliminary statement of Grant he avers that he conceived the invention involved in the issues of the interference in the spring of 1896, but that in the spring of 1897, during the early part of May, he took up the matter of the invention and made sketches thereof, and explained it to others, and began the making of patterns for a full-sized operative machine, and which machine was completed on or about the middle of June, 1897, and immediately thereafter was put into successful operation at the factory of the Rubber-Tire Wheel Company, in Springfield, Ohio, and the operation of which machine was entirely successful, and a complete reduction to practice of said invention as contained in each of the counts of the declaration of interference.

In the preliminary statement of Darnell, he avers that he conceived the invention set forth in the declaration of interference on or about November, 1895; that on or about December of that year, he made drawings of the invention; that in April of 1896, or between the first of January of that year and April, he first explained his invention to others; that he made the first model showing such invention in April, 1896, and made a full-sized wooden model of the machine in December, 1896; that he was working on a full-sized iron working model of said machine throughout the year 1897, and completed said working model in June, 1898, and in July, 1898, the machine was successfully operated at his shop in Indianapolis, and that he has continued to use it since from time to time.

The issues of interference are framed in six counts.

1. The combination with a stationary clamping device, and an auxiliary clamping device adjacent thereto, said stationary clamping device being provided with an auxiliary opening or openings adjacent to the clamping portions, said auxiliary clamping device being movable in relation to the stationary clamp, and means for holding said auxiliary clamping device in a fixed position, substantially as specified.

2. The combination with a stationary clamp having band-holding jaws and auxiliary openings, as described, a holding device on one side of said jaws, and a movable clamping and tightening device on the opposite side of said jaws, the jaws of said tightening device being adapted to be brought into line or substantially so with the band-holding jaws of the stationary clamp, substantially as and for the purposes specified.

3. In a device for putting on rubber tires, clamping-jaws having reduced portions to extend into the tire-retaining rim and notched holding-faces to engage the tire-retaining band or bands, said band-holding devices being adapted to be moved so as to vary the distance between same, and means for positively holding said band-holding device in a proper relative position for joining the ends of the retaining band or bands while the tire is in the channel or tire-holding rim, substantially as and for the purposes specified.

4. In a machine such as described, band-holding jaws having the notched holding-faces and intermediate holding plate or tongue, means for varying the distance between said band-holding jaws and retaining the same in the proper position for uniting the ends of said bands, substantially as specified.

5. The combination with a wheel-support band-holding devices, a laterally-movable head for supporting of said band holding devices and a tension device having pivotally-mounted clamps or band-holding devices, substantially as specified.

6. The combination with a supporting-bed having two sets of band-holding devices consisting of clamping-jaws as described, and a tension device arranged adjacent to said band-holding devices, and means on said tension device for clamping the band or bands so as to draw the same across the line of one of said band-holding devices, substantially as and for the purposes specified.

There was testimony taken by both parties, in support of their preliminary statements, and the case was apparently carefully considered by the different tribunals of the Patent Office, and they all fully concurred in holding that Grant was entitled to priority of invention. It is very clear that Grant is not only entitled to the benefit of a constructive reduction to practice from the time of the filing of his application, that is, from August 14, 1897, nearly a year before the application of Darnell was filed, but he is entitled to the benefit of actual reduction to practice of the invention from about the middle of June or the first of July, 1897. This is virtually conceded by Darnell; for at the taking of the evidence the counsel for Darnell admitted and agreed that—

in view of the testimony already given, and in order to shorten the matter of taking these depositions, he will admit that Exhibit C was made about the middle of June, 1897, and Exhibit D about the middle of July, 1897, both substantially at the time Mr. Grant has testified, and that the machines, and each of them, were operated and used substantially as Mr. Grant has testified.

This admission was signed by the counsel for Darnell.

In view of this admission, even if be conceded that Darnell was first to conceive the invention, the only question that is presented on this appeal is, whether he has used and exercised reasonable diligence in perfecting and reducing to actual practice the invention prior to the time of filing his application.

The tribunals of the Patent Office, while conceding that Darnell may have been or was the first to conceive the invention, yet they conclude that he never reduced such conception to actual practical operation prior to the time of the filing of his application—nearly a year after the application of Grant had been filed; and for this conclusion we think the evidence of the case affords sufficient warrant. It is true, for the purpose of showing actual reduction to practice in the latter part of 1896, and during the year 1897, he relies upon his own testimony, in which he says he had made a full-sized model or machine, and which he had in his shop. In answer to question No. 34, on direct examination, he says:

It is at my shop, 1410 North Illinois street. I made it in the latter part of '96, and worked on it during the year 1897. A full-sized machine. And Mr. Staley, Grant's attorney seen the machine in my shop, and I still worked on the machine up to June, 1898, and completed the same in July and operated the same successfully.

But on cross-examination he admitted that the machine or model made by him was very far from being complete or operative, as defined in the issues of interference, and that it had only been used as an illustration, and was nothing more than an experimental model. Mr. Staley, the attorney of Grant, referred to in the testimony of Darnell, was examined as a witness, and he says he never saw the machine or model referred to by Darnell in his answer to question 34, though he did see another or a different model.

If, however, we put the most favorable construction on the testimony of Darnell, as to the identity of the machine or model, and the time when it was made, still, the onus being upon him, he is not relieved of the difficulty of overcoming the conceded facts of both the actual and constructive reduction to practice by Grant, who was in the Office seeking a patent for the invention nearly a year before the application of Darnell was filed, and the latter does not attempt to furnish any reasonable account for the delay.

As was very correctly said by the Commissioner of Patents:

Considering the evidence as presented, it clearly appears that Darnell, though the first to conceive the invention, did not reduce it to practice until he filed his application, which was about eleven months after Grant's application was filed. Darnell does not account for his delay, and therefore Grant, who was the first to reduce the invention to practical operation, though later to conceive and disclose it, is entitled to an award of priority.

The burden of proof is upon Darnell, the appellant, and he has failed to overcome it as against the claim of Grant. It follows therefore that the decision of the Commissioner must be affirmed; and this opinion, and the proceedings on this appeal be certified to the Commissioner of Patents, as directed by the statute.

Revision of Classification.

(ORDER No. 1,361.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 6, 1900.

The following changes in the classification of inventions are hereby directed, to take effect this day:

In Division XXIII, class 234, Recorders, abolish subclass 11, Hand-stamps, recorders, manual, and transfer the patents composing the same to Division V, class 11, Bookbinding, subclass 22, Writing-tablets, continuous.

In Division XXIII, class 234, Recorders, abolish subclasses 1, Hand-stamps, settable-type carrier, and 3, Hand-stamps, settable-type carrier, inking attachments, and in lieu thereof establish in Division XVII, class 101, Printing, subclasses 159, Hand-stamps, settable-type carrier, and 160, Hand-stamps, settable-type carrier, inking attachments.

In Division XXIII, class 58, Horology, abolish the following subclasses:

99. Time-recorders—	Time-recorders—
100. Watchmen's—	Workmen's—
101. Electric—	107. Disk,
102. Receivers,	108. Drum,
103. Receivers and transmitters,	109. Electric,
104. Portable,	110. Key,
105. Workmen's—	111. Tag.
106. Autograph,	193. Time-checks— Check-receivers.

Also, abolish all the remaining subclasses in class 231, Recorders, and establish the following subclasses in lieu thereof:

CLASS 234.—RECORDERS.

7. Anemometer.
8. Cartographic.
6. Combined readings.
2. Combined recorders and registers—
Fare—
3. Individual-record,
4. Total-record,
5. Speed.
9. Fare.
10. Float.
11. Heat.
1. Miscellaneous.
12. Passenger—
13. Gate,
14. Seat,
15. Step.
16. Power.
17. Pressure—
18. Air-brake,
Gage—
19. Disk,
20. Drum.
26. Ship's course.
27. Signal.
28. Specific gravity.
29. Speed—
Shaft—
30. Continuous-record—
31. Governor-controlled,
32. Uniform-amplitude,
33. Intermittent-record.
21. Steam-engine indicators—
22. Bourdon type,
23. Drum,
24. Engine connections,
25. Indicator-cylinder.
36. Time—
Watchmen's—
37. Miscellaneous.
Stationary-record—
38. Time-operated marker,
Time—
Watchmen's—
Time-operated record—
39. Multiple-key,
40. Single-key,
Workmen's—
42. Check-receivers.
Individual card—
43. Time-impression,
Intermittently-movable record—
Time-printing wheel—
44. Autographic,
45. Check-operated,
Individual-record—
46. Single-impression,
47. Printing-key—
48. Operating-lever,
41. Miscellaneous,
Time-operated record—
49. Autographic,
Individual-record—
50. Single-impression—
51. Printing-key,
52. Tag-operated marker.
53. Wage-computers.
Time-stamps—
Dial—
54. Movable-dial.
55. Movable-platen,
Drum—
56. Movable-drum,
57. Movable-platen,
34. Volume—
35. Meter-readings.

C. H. DUELL,
Commissioner.

CLASS 234.—RECORDERS.

DEFINITIONS.

Class.

234. RECORDERS. Mechanical devices for making a permanent record of the movements of machines or instruments whose motions are desired to be recorded and preserved: also, all mechanically-operated watchmen's and workmen's time-recorders, and also stamps for impressing or printing time where the printing-surface is actuated by time mechanism.

(Note.—Electrically-operated watchmen's, workmen's, and other recorders wherein the character of the recording is immaterial, but the invention resides in electric connections, circuit-breakers, etc., are classified in class 177, ELECTRIC SIGNALING. Devices connected or attached to weighing-machines for printing or impressing upon a card or paper the weight of the article weighed are classified in class 73, MEASURING INSTRUMENTS, BALANCES, RECORDING.)

Subclasses.

7. ANEMOMETER. Devices for recording the force or the direction of the wind.

8. CARTOGRAPHIC. Devices for recording the irregularities of the surface of the ground or the bed of a river or other body of water.

6. COMBINED READINGS. Patents for recording movements of two or more different characters, as pressure and speed, etc.

2. COMBINED RECORDERS AND REGISTERS. The miscellaneous subclass of patents wherein both a record and a registration are made.

3. COMBINED RECORDERS AND REGISTERS, FARE, INDIVIDUAL-RECORD. Patents combining a fare-register and a fare-recorder, a record being made of each individual fare.

4. COMBINED RECORDERS AND REGISTERS, FARE, TOTAL-RECORD. Patents combining a fare-register and a fare-recorder, a record being taken at the end of a trip or at any desired time of the total number of fares taken up to that time.

5. COMBINED RECORDERS AND REGISTERS, SPEED. Devices for recording the speed of a moving part and also an indicator for showing the speed at any particular time.

9. FARE. Devices for recording the number of fares taken in a car or other conveyance.

(Note.—Search also Combined recorders and registers, fare, individual-record, and Combined recorders and registers, fare, total-record, in this class.)

10. FLOAT. Devices for recording the variations in the level of water or other liquid, the marker being connected to a float resting upon the surface of the liquid.

(Note.—Search also subclass Specific gravity in this class.)

11. HEAT. Devices for recording the temperature—as, for example, recording thermometers or pyrometers.

1. MISCELLANEOUS. This subclass contains all recording devices that cannot properly be classified elsewhere.

12. PASSENGER. Devices, not classifiable in other subclasses of this group, for recording the number of persons or objects whose movements are desired to be recorded.

13. PASSENGER, GATE. Devices for recording the number of persons passing through a gate or turnstile.

14. PASSENGER, SEAT. Devices for recording the length of time a car or carriage seat has been occupied.

15. PASSENGER, STEP. Devices for recording the number of persons passing over a step, the step being movable and actuating the marker when depressed.

16. POWER. Devices for recording power—as, for example, recording-dynamometers.

17. PRESSURE. Pressure-recording devices not classifiable in other subclasses of this group.

18. PRESSURE, AIR-BRAKE. Devices for recording the pressure used in applying air-brakes to a train.

19. PRESSURE, GAGE, DISK. Recording-pressure gages where the record is made upon a rotating disk.

20. PRESSURE, GAGE, DRUM. Recording-pressure gages where the record is made upon a rotating drum or upon a strip of paper passing from one drum to another.

26. SHIP'S COURSE. Devices for making a continuous record of the course of a moving ship, such as recording-compasses, etc.

27. SIGNAL. Devices for recording the time or duration of steam-whistles or other signals.

28. SPECIFIC GRAVITY. Devices for recording the varying specific gravity of a liquid, as determined by a hydrometer or other instrument.

29. SPEED. Devices for recording the speed of any moving object except rotating shafts.

30. SPEED, SHAFT, CONTINUOUS-RECORD. Devices, not classifiable in Speed, shaft, continuous-record, governor-controlled, and Speed, shaft, continuous-record, uniform-amplitude, for making a continuous unbroken record of the speed of a rotating shaft.

31. SPEED, SHAFT, CONTINUOUS-RECORD, GOVERNOR-CONTROLLED. Devices controlled by a governor for making a continuous unbroken record of the speed of a rotating shaft.

32. SPEED, SHAFT, CONTINUOUS-RECORD, UNIFORM-AMPLITUDE. Devices for making a continuous unbroken record of the speed of a moving shaft, the marker being moved back and forth always the same distance.

33. SPEED, SHAFT, INTERMITTENT-RECORD. Devices for recording the speed of a rotating shaft, the record comprising a series of marks or punctures.

21. STEAM-ENGINE INDICATORS. Patents upon the construction of the entire indicator; also, patents for parts of the indicator not classifiable elsewhere.

22. STEAM-ENGINE INDICATORS, BOURDON TYPE. Steam-engine indicators where a Bourdon tube is employed instead of the ordinary steam-cylinder.

23. STEAM-ENGINE INDICATORS, DRUM. Patents upon the construction of the reciprocating drum carrying the paper and also for the connection with said drum of the operating-cord.

24. STEAM-ENGINE INDICATORS, ENGINE CONNECTIONS. Connections between the steam-engine or any of its parts and the indicator whereby the latter is operated or is secured in place.

25. STEAM-ENGINE INDICATORS, INDICATOR-CYLINDER. Patents on the construction of the indicator-cylinder, including also any pencil holding or operating devices.

36. TIME. Devices for recording the time of two or more successive movements of an object past the same point; also, devices for recording the absolute time at which a certain operation takes place; also, devices, such as chronographs, for recording very small intervals of time.

37. TIME, WATCHMEN'S, MISCELLANEOUS. Watchmen's time recorders not classified elsewhere.

38. TIME, WATCHMEN'S, STATIONARY-RECORD, TIME-OPERATED MARKER. Recorders having a stationary record-surface, usually graduated in divisions of time, over the surface of which passes a time-operated marker which is forced into contact with the record-surface by the watchman as he makes his round.

39. TIME, WATCHMEN'S, TIME-OPERATED RECORD, MULTIPLE-KEY. Recorders carried by the watchman on his round, each recorder comprising a time-operated record-surface and a marking device which is forced into contact with the record-surface by a key secured at the station, each station having its individual key.

40. TIME, WATCHMEN'S, TIME-OPERATED RECORD, SINGLE-KEY. Watchmen's time-recorders located at the several stations, each recorder comprising a time-operated record-surface upon which a mark or impression is made either through an aperture in the casing by a marker connected to the recorder or carried by the watchman or by means of a marker permanently affixed to the recorder and operated by means of a cord, lever, or key.

42. TIME, WORKMEN'S, CHECK-RECEIVERS. Machines having a number of compartments corresponding to divisions of time and in which a check deposited by the workman is automatically directed to the proper compartment.

43. TIME, WORKMEN'S, INDIVIDUAL-CARD, TIME-IMPRESSION. Machines for printing upon workmen's identification-cards inserted therein, the time of their insertion.
(Note.—Search also subclasses Time-stamps, dial, movable-dial, and movable-platen, and Time-stamps, drum, movable-drum, and movable-platen, in this class.)

44. TIME, WORKMEN'S, INTERMITTENTLY-MOVABLE RECORD, TIME-PRINTING WHEEL, AUTOGRAPHIC. Machines having a strip of paper upon which the workman writes his name, after which he operates a lever or moves some part of the machine which causes the time to be printed in line with the name and also moves the paper for the next workman.
(Note.—Search also subclass Time, workmen's, time-operated record, autographic, this class.)

45. TIME, WORKMEN'S, INTERMITTENTLY-MOVABLE RECORD, TIME-PRINTING WHEEL, CHECK-OPERATED. Machines where a check bearing the workman's designation is dropped into a chute, the check falling to a position in line with time-printing wheels and in its passage causing the operation of a printing-platen which imprints the workman's number and time upon a strip of paper which during the operation is moved to expose a fresh surface on the printing-line.

46. TIME, WORKMEN'S, INTERMITTENTLY-MOVABLE RECORD, TIME-PRINTING WHEEL, INDIVIDUAL-RECORD, SINGLE-IMPRESSION. Machines where a record is made by a set of time-printing wheels upon a record-sheet, there being a single operating-lever which by its operation first causes the record-sheet to move to place into printing position that portion corresponding to the workman's number and then causes the engagement of the printing-wheels therewith.

47. TIME, WORKMEN'S, INTERMITTENTLY-MOVABLE RECORD, TIME-PRINTING WHEEL, PRINTING-KEY. Machines wherein the workman inserts and turns a key bearing his individual designation, which key coöperates with time-printing wheels and in its operation causes the movement of a printing-platen and also advances the record-strip.

48. TIME, WORKMEN'S, INTERMITTENTLY-MOVABLE RECORD, TIME-PRINTING WHEEL, PRINTING-KEY, OPERATING-LEVER. Patents similar to those in subclass 47 in this class, except that instead of turning the key the key is inserted and a separate lever operated to cause the movements of the parts.

41. TIME, WORKMEN'S, MISCELLANEOUS. Workmen's time-recorders not classified elsewhere.

49. TIME, WORKMEN'S, TIME-OPERATED RECORD, AUTOGRAPHIC. Devices having a record-sheet moved by a time-train, the sheet having the time printed on its margin, either in and by the machine or before being placed therein, the workman writing his name upon an exposed portion of the paper.
(Note.—Search also Time, workmen's, intermittently-movable record, time-printing wheel, autographic, this class.)

50. TIME, WORKMEN'S, TIME-OPERATED RECORD, INDIVIDUAL-RECORD, SINGLE-IMPRESSION. Machines having a time-operated record-sheet with a separate place for the record of each workman, there being but a single key for all the workmen.

51. TIME, WORKMEN'S, TIME-OPERATED RECORD, INDIVIDUAL-RECORD, SINGLE IMPRESSION, PRINTING-KEY. Machines having a time-operated record-sheet with a separate place thereon for each workman's designation, each workman having an individual key.

52. TIME, WORKMEN'S, TIME-OPERATED RECORD, INDIVIDUAL-RECORD, TAG-OPERATED MARKER. Machines where an individual record is made, either by a continuous mark while the workman is employed or by single marks made at the beginning and end of work, the marker being operated by means of a tag hung on a hook or other part of the machine.

53. TIME, WORKMEN'S, WAGE-COMPUTERS. Devices for making a continuous record during the time the workman is employed, the recording-surface being graduated to indicate time employed or amount of wages due for such time, or both, so that the record will show at any time the amount due the workman.
(Note.—Search also Time, workmen's, time-operated record, individual-record, tag-operated marker, in this class.)

54. TIME-STAMPS, DIAL, MOVABLE-DIAL. Time-stamps having the time indications on the face of dials or disks and in which when operated the dials are forced against a stationary platen.

55. TIME-STAMPS, DIAL, MOVABLE-PLATEN. Time-stamps having the time indications on the face of dials or disks and in which when operated the platen is forced against the dials.

56. TIME-STAMP, DRUM, MOVABLE-DRUM. Time-stamps having the time indications on the periphery of drums or wheels and in which when operated the drums are forced against a stationary platen.

57. TIME-STAMPS, DRUM, MOVABLE-PLATEN. Time-stamps having the time indications on the periphery of drums or wheels and in which when operated the platen is forced against the drums.

34. VOLUME. Devices for continuously recording the volume of water or other fluid passing through a certain space.

35. VOLUME, METER-READING. Devices whereby the reading of a gas or other meter may be transferred to a card.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 92—No. 4. TUESDAY, JULY 24, 1900. PRICE—$5 per year.

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Revival of Abandoned Applications.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 13, 1900.

Notice is hereby given that petitions for the revival of abandoned applications will not be docketed for hearing. A full showing of the reasons for reviving an application must be filed with the petition for revival, and the case will be disposed of on such showing without oral argument.

C. H. DUELL,
Commissioner.

Registration of American and Spanish Patents in Cuba.

HEADQUARTERS DIVISION OF CUBA,
Havana, May 26, 1900.

The Military Governor of Cuba, upon the recommendation of the Secretary of Agriculture, Commerce, and Industries, directs the publication of the following order:

I. Notice is hereby given to all persons in legal possession of Letters Patent registered in Madrid, Spain, and extended to the Island of Cuba to exhibit the duplicates of models, plans, and specifications of their patents or an authenticated copy of the same, together with a certificate that they are in force in Spain, accordance with section 5 of the Royal Decree of May 14, 1880, within six months from the date of this order, in order to protect them from pending infringements.

II. American patents already forwarded for registration and those that may hereafter be forwarded will at once be entered in the special register in the office of the Secretary of Agriculture, Commerce, and Industries conditionally, reserving the decision in regard to the definite inscription or absolute rejection of such as are determined to be infringements in accordance with the proofs obtained within the period of six months, as provided in paragraph I of this order, upon the expiration of which period the inscription will be made in full, leaving to the parties concerned after that date the right of settling their differences before courts of justice.

J. B. HICKEY,
Assistant Adjutant-General.

The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. Terms: To subscribers within the United States, Canada, and Mexico, $5 per annum; to foreign subscribers, $10; single copies, 10 cents; if mailed to foreign countries 10 cents additional for postage; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. *Payment in advance.* No subscription will be received for less than three months. All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

CERTIFICATES OF REGISTRATION ISSUED JULY 24, 1900.

Labels.

7,711.—Title: "WARRANTED PURE HOMESPUN MACHINE TWIST." (For Thread.) *Moeller & Littauer*, New York, N. Y. Application filed June 22, 1900.

7,712.—Title: "PROTEUS." (For Cartons for Shoes.) *B. Rosenberg & Sons*, New Orleans, La. Application filed June 29, 1900.

7,713.—Title: "A TRIP TO PARIS AND EXPOSITION GAME." (For Game Apparatus.) *McLoughlin Brothers*, New York, N. Y. Application filed June 20, 1900.

7,714.—Title: "GAME OF MANILA." (For a Game.) *McLoughlin Brothers*, New York, N. Y. Application filed June 27, 1900.

7,715.—Title: "GAME OF STARS AND STRIPES ON RED, WHITE AND BLUE." (For a Game.) *McLoughlin Brothers*, New York, N. Y. Application filed June 27, 1900.

7,716.—Title: "ARNICA TOOTH POWDER." (For Tooth-Powder.) *Mesmin Chemical Co.*, Detroit, Mich. Application filed June 19, 1900.

7,717.—Title: "ARNICA TOOTH PASTE." (For Tooth-Paste.) *Mesmin Chemical Co.*, Detroit, Mich. Application filed June 19, 1900.

7,718.—Title: "DR. TALLEY'S WONDERFUL DISCOVERY LIVE ANIMAL HOOF CATARRH CURE." (For a Medicine.) *E. Talley*, Clinton, Iowa. Application filed June 27, 1900.

Prints.

243.—Title: "LOCOMOBILE SERIES BICYCLE PLAYING CARDS." (For Playing-Cards.) *The United States Playing Card Company*, Cincinnati, Ohio. Application filed June 30, 1900.

244.—Title: "JACKS ON SQUARE." (For Cigars.) *Havana American Company*, New York, N. Y. Application filed June 13, 1900.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business July 17, 1900.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		New.	Amended.	
	In arrears—Under one month.			
38	XXXV. Advertising, Baggage, Buckles, Buttons, and Clasps, Packing and Storing Vessels, etc.	July 11	July 12	70
106	II. Farm Stock, Products, etc.	July 11	July 11	69
217	XXXIII. *DESIGNS, †TRADE-MARKS, ‡LABELS AND PRINTS, Optics.	July 6	July 11	45
250	VIII. Furniture, Beds, Store Furniture, etc.	July 2	July 12	133
111	XXXII. Bottles and Jars, Carbonating Beverages, Refrigeration, Shipping and Storing Vessels, etc.	June 29	July 3	191
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	June 27	June 27	100
261	XXXVI. Weighing and Measuring Devices, Driers, and Drafting.	June 25	July 9	61
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	June 25	June 27	155
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	June 21	July 3	182
122	XXIV. Sewing-Machines, Apparel, and Toilet.	June 21	July 3	154
89	XXXI. Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	June 20	July 6	110
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	June 20	July 3	85
105	XI. Boots and Shoes, Harness, Hose and Belting, and Leather-Working Machinery.	June 20	June 30	163
120	IX. Hydraulics, Fire-Extinguishers, etc.	June 20	June 25	139
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	June 19	July 6	153
80	IV. Civil Engineering, Fire-Proof Buildings, Bridges, Water Distribution, etc.	June 19	July 5	144
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	June 19	July 3	160
221	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	June 19	July 3	93
102	XIX. Stoves and Furnaces	June 19	June 30	210
240	VII. Velocipedes, Games, and Toys.	June 19	June 27	216
253	X. Carriages and Wagons.	June 18	July 11	123
256	XII. Mechanical Engineering, Store-Service, etc.	June 18	July 5	137
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	June 18	July 3	122
246	I. Tillage and Fences	June 18	June 30	127
93	XXI. Textiles, etc.	June 18	June 28	116
248	XVIII. Steam-Engineering, etc.	June 18	June 23	218
	Between one and two months.			
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	June 16	June 30	112
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	June 14	July 5	126
85	XXVIII. Pneumatics, Air and Gas Engines, etc.	June 13	June 14	223
95	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	June 12	June 28	130
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	June 11	June 26	214
215	XVII. Printing, Type-Writing Machines, and Linotyping.	June 11	June 18	162
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	June 8	June 30	99
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	June 7	June 8	282
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	June 4	June 9	221
	Between two and three months.			
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	May 16	June 20	182
	Total number of applications awaiting action			5,230

Applications Under Examination—Continued.

Under one month.			
*Designs	July 12	July 12	61
†Trade-Marks	July 6	July 6	84
‡Labels and Prints	July 17	July 16	3

ISSUE OF JULY 24, 1900.

Patents	462—No. 654,120 to No. 654,581,	inclusive.
Designs	38—No. 32,977 to No. 33,014,	inclusive.
Trade-Marks	38—No. 34,926 to No. 34,963,	inclusive.
Labels	8—No. 7,711 to No. 7,718,	inclusive.
Prints	2—No. 243 to No. 244,	inclusive.
Reissues	None.	
Total issue	548	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	2	----	Nevada	----	----
Arizona	----	----	New Hampshire	2	----
Arkansas	3	----	New Jersey	27	1
California	21	3	New Mexico Territ'y	----	----
Colorado	2	----	New York	60	17
Connecticut	14	----	North Carolina	----	----
Delaware	1	----	North Dakota	1	----
District of Columbia	3	----	Ohio	34	4
Florida	2	----	Oklahoma Territ'y	2	----
Georgia	2	----	Oregon	1	----
Hawaii	----	----	Pennsylvania	44	3
Idaho	----	----	Rhode Island	2	----
Illinois	46	1	South Carolina	1	----
Indian Territory	----	----	South Dakota	----	----
Indiana	18	1	Tennessee	3	----
Iowa	8	1	Texas	6	----
Kansas	10	----	Utah	----	----
Kentucky	4	----	Vermont	1	----
Louisiana	4	1	Virginia	4	1
Maine	4	----	Washington	1	----
Maryland	12	----	West Virginia	1	----
Massachusetts	23	3	Wisconsin	8	1
Michigan	16	4	Wyoming	----	----
Minnesota	14	----	U. S. Army	----	----
Mississippi	1	----	U. S. Navy	----	----
Missouri	15	2	Total to citizens of the United States	432	41
Montana	1	1			
Nebraska	8	----			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	----	----	Italy	----	----
Australia	----	----	Japan	----	----
Austria-Hungary	1	----	Mexico	----	----
Barbadoes	----	----	Netherlands	----	----
Belgium	2	----	New South Wales	2	----
Bermuda	----	----	New Zealand	1	----
Brazil	----	----	Norway	----	----
Canada	10	----	Queensland	----	----
Chile	----	----	Roumania	----	----
China	----	----	Russia	----	----
Costa Rica	----	----	Scotland	3	----
Cuba	----	----	South Australia	----	----
Denmark	----	----	South African Republic	1	----
Egypt	----	----	Spain	----	----
England	20	3	Sweden	----	----
Finland	----	----	Switzerland	----	----
France	5	----	Tasmania	2	----
Germany	19	1	Victoria	1	----
Guatemala	----	----	Total to citizens of foreign countries	68	4
Haiti	----	----			
India	----	----			
Ireland	1	----			

PATENTS

GRANTED JULY 24, 1900.

654,120. ALKYLOXYCHLOROPURIN AND METHOD OF PREPARING SAME. FRITZ ACH, Mannheim, Germany, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Original application filed Feb. 18, 1898, Serial No. 670,847. Divided and this application filed July 22, 1899. Serial No. 724,838. (No specimens.)

Claim.—1. The process which consists in submitting 3-alkyl-chloro-xanthin to the action of an alkylizing agent.

2. The process which consists in heating 3-methyl-chloro-xanthin with potash-lye and alcohol, together with ethyl-iodid.

3. The process which consists in dissolving 3-methyl-chloro-xanthin in potash-lye and alcohol, adding ethyl-iodid and boiling in a reflux cooler, all in the proportions and under the conditions substantially as stated.

4. The process which consists in subjecting 3-methyl-1-7-diethyl-2-6-dioxy-8-chloro-purin to the action of a reducing agent.

5. The process which consists in heating 3-methyl-1-7-diethyl-8-chloro-xanthin together with hydriodic acid and phosphonium-iodid

6. The process which consists in the following steps: heating 3-methyl-1-7-diethyl-8-chloro-xanthin together with fuming hydriodic acid in the proportions and temperature given; continuing the heating on a boiling-water bath and adding phosphonium-iodid until a clear solution is formed, then evaporating this solution to dryness, taking up the crystalline residue with water and supersaturating with alkali; then extracting with a suitable vehicle and evaporating the extract and, finally recrystallizing the colorless residue.

7. The process which consists in submitting 3-alkyl-chloro-xanthin to an alkylizing agent and then acting upon the resultant trialkyl-dioxy-chloro-purin with a reducing agent.

8. The process which consists in heating 3-methyl-chloro-xanthin with potash-lye and alcohol together with ethyl-iodid and then treating the resultant product with hydriodic acid and phosphonium-iodid.

9. As a new chemical compound, 3-methyl-1-7-diethyl-2-6-dioxy-purin, having the formula above given, which is soluble in water, alcohol, chloroform, ether and concentrated hydrochloric or sulfuric acid, which is precipitated from an aqueous solution as a colorless oil by strong alkaline lyes, which crystallizes in the form of vitreous, colorless prisms and melts at about 127°, centigrade.

654,121. PROCESS OF MAKING ALKYL-URIC ACID. FRITZ ACH, Mannheim, Germany, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Filed Oct. 28, 1899. Serial No. 735,087. (No specimens.)

Claim.—1. The process of preparing a methyl-uric acid or its alkyl derivative which consists in subjecting a uric acid to the action of a reducing agent in the presence of free formic aldehyde.

2. The process which consists in submitting uric acid proper to the action of a reducing agent in the presence of formic aldehyde.

3. The process which consists in adding to a uric acid together with a mineral acid free formic aldehyde and tin.

4. The process which consists in adding to a uric acid together with hydrochloric acid a solution of free formic aldehyde and tin.

5. The process which consists in adding a solution of formic aldehyde and hydrochloric acid to uric acid and tin and maintaining the whole at a low temperature and then raising the temperature.

6. The process which consists in adding together uric acid, hydrochloric acid and a solution of formic aldehyde and tin and maintaining the whole at a low temperature, then raising the temperature and maintaining the whole at such temperature and finally diluting the whole and allowing the same to cool.

7. The process which consists in preparing a solution of formic aldehyde in saturated hydrochloric acid, adding to the same uric acid and tin and maintaining the whole at a low temperature while stirring, then heating to an elevated temperature and maintaining at such temperature and finally diluting the whole and allowing to cool, substantially as described.

654,122. DICHLORO-OXYPURIN AND PROCESS OF MAKING SAME. LORENZ ACH and FRITZ ACH, Mannheim, Germany, assignors to C. F. Boehringer & Soehne, Waldhof, Germany. Filed June 14, 1897. Serial No. 640,762. (Specimens.)

Claim.—1. The process which consists in acting upon a compound containing the acid radical of uric acid proper with an oxy-halogen compound of phosphorus.

2. The process which consists in acting upon a urate with an oxy-halogen compound of phosphorus.

3. The process which consists in acting upon a urate with oxy-chlorid of phosphorus.

4. The process which consists in acting upon an acid urate with oxy-chlorid of phosphorus.

5. The process which consists in heating acid urate with phosphorus-oxy-chlorid in the proportions and in the manner substantially as specified.

6. The process which consists in heating acid urate of potassium with phosphorus-oxy-chlorid in the proportions and in the manner substantially as specified, then distilling off the excess of oxy-chlorid and washing the residue.

7. The process which consists in heating dry acid urate of potassium with phosphorus-oxy-chlorid in the proportions and in the manner substantially as specified, then distilling off the excess of oxy-chlorid and washing the residue and purifying the same.

8. As a new compound dichlor-oxy-purin having the formula hereinbefore given, which forms a dibasic acid attacked only with difficulty by nitric acid, which is soluble only with difficulty in water and alcohol, from the latter of which it crystallizes in small needles which are decomposed at a temperature over 300°, centigrade, and which forms a permanent silver salt remaining unchanged in an ammoniacal solution.

654,123. FORMIC ALDEHYDE COMPOUND OF URIC ACID AND PROCESS OF MAKING SAME. FRITZ ACH and LORENZ ACH, Mannheim, Germany, assignors to C. F. Boehringer & Soehne, Waldhof, Germany. Filed Apr. 21, 1898. Serial No. 678,331. (Specimens.)

Claim.—1. The process which consists in causing formic aldehyde to act upon a uric acid combined with an alkali.

2. The process which consists in causing formic aldehyde to act upon a solution of an alkyl-uric acid.

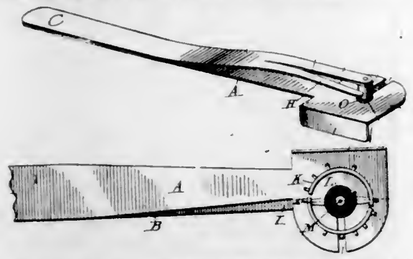
3. The process which consists in dissolving uric acid proper in water and caustic potash and warming, then cooling to room temperature, and adding a concentrated solution of formic aldehyde, the proportions all being substantially as described.

4. The process which consists in dissolving uric acid proper in water and caustic potash in the proportions given, and warming gently, then cooling to room temperature and then adding a concentrated solution of formic aldehyde in the proportions given, then after the lapse of several hours acidulating the solution, and treating with charcoal, and allowing the liquor to stand.

5. As a new chemical compound an oxymethylene-uric acid having the formula hereinbefore stated, which does not melt but decomposes when heated to the higher temperatures stated, which has an acid reaction and is soluble in water and in alkalies, crystallizes in the form of colorless prisms, which yields up formic aldehyde on boiling with water, dilute alkalies and mineral acids and which gives the murexid test with nitric acid or chlorin water.

6. As a new chemical compound, oxymethylene-uric acid, having the formula given above, which is an acid having no melting-point but, when heated above 320°, centigrade, assumes a dark color and decomposes without effervescence, is soluble in water on boiling and in dilute alkalies, gives a strong murexid reaction with nitric acid or chlorin water; crystallizes in colorless prisms, and on protracted boiling with water yields up formic aldehyde.

654,124. ROLLER-JEWEL SETTER. CHARLES J. ADAMS, Milton, Fla. Filed Apr. 23, 1900. Serial No. 13,913. (No model.)



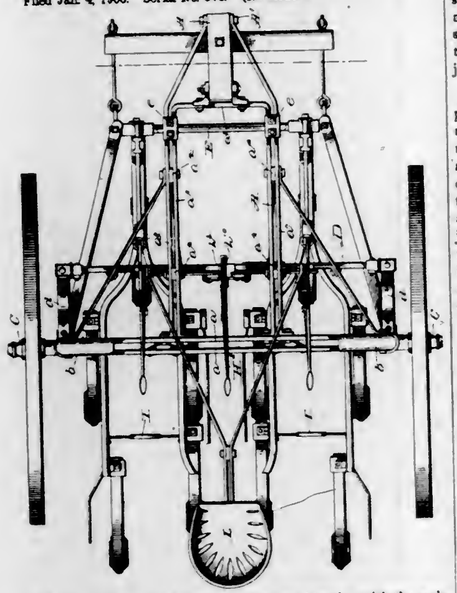
Claim.—1. A roller-jewel setter comprising an upper arm and a lower arm; said upper arm having at its free end a hollow cap; and said lower arm having a slotted plate; in substance as set forth.

2. A roller-jewel setter comprising an upper arm and a lower arm; said upper arm having two branches, one of them being of spring metal and the other provided with a hollow cap; and the lower arm having a slotted plate; in substance as set forth.

3. A roller-jewel setter having two arms; one of the said arms provided with a slotted plate, and the other arm having means for inclosing the projecting end of the balance-staff and covering the top surface of the roller, with the exception of that part occupied by and adjacent the roller-jewel.

4. A roller-jewel setter comprising a slotted arm, A, having flange, F; and an arm, B, having two branches, H and I, the branch, I, being provided with a hollow cap: the ends of the arms being united to form a handle.

654,125. PIVOT-AXLE CULTIVATOR. WILLIAM L. BEALL, Albion, Mich., assignor to the Gale Manufacturing Company, same place. Filed Jan. 4, 1900. Serial No. 373. (No model.)



Claim.—1. In a wheel-cultivator, the combination with the main frame, of pivoted axles connected therewith and carrying the supporting-wheels, a connecting-bar connecting said axles for joint movement, the steering-levers for said axles adapted to be operated by the feet of the operator cultivator-sections pivoted for independent lateral movement, a stirrup on each section adapted to be engaged by the foot of the operator, adjusting mechanism operatively connected with said sections for adjusting them toward or from each other, means for locking the axles rigidly with respect to the main frame and means for disconnecting said adjusting mechanism from the cultivator-sections to enable them to be steered by the operator's feet, substantially as described.

2. In a wheel-cultivator, the combination with the main frame, of pivoted axles connected therewith and carrying the supporting-wheels, a connecting-bar connecting said axles for joint movement, the steering-levers for said axles adapted to be operated by the feet of the operator, independent cultivator-sections adapted to move laterally, a stirrup on each section adapted to be engaged by the foot of the operator, adjusting mechanism detachably secured to said connecting-bar and operatively connected with the cultivator-sections for moving them closer together or farther apart, means for locking the axles with respect to the main frame whereby said adjusting mechanism can be disconnected from the cultivator-sections and removed from the connecting-bar to allow the cultivator-sections to be steered by the feet of the operator, substantially as described.

3. In a cultivator, the combination with the main frame, the pivoted axles carrying the supporting-wheels, steering-levers for said axles and a connecting-bar for securing the joint movement of said axles, two independent laterally-movable cultivator-sections, an adjusting mechanism carried by said connecting-bar and comprising vertical rods pivoted to said connecting-bar and having an engagement with the cultivator-sections, a vertically-movable slide carried by said connecting-bar, links connecting said slide and said vertical rod, means for locking said slide and said links in rigid relation, a hand-lever operatively connected with said slide and means for locking said lever in its adjusted position, substantially as described.

4. In a pivot-axle cultivator the combination with the main frame provided with a horizontal pivot, of a part pivotally connected to said pivot, a cultivator-section pivoted to said part by a vertical pivot to permit the lateral movement of said section, mechanism for adjusting the said cultivator-section laterally and mechanism connected to said pivoted part for adjusting the cultivator-section vertically, whereby the lateral movement of the cultivator-section will not affect its vertical adjustment, substantially as described.

5. In a pivot-axle cultivator, the combination with the main frame provided with a horizontal pivot, of a sleeve mounted on said pivot, a cultivator-section pivoted to said sleeve by a vertical pivot to permit the lateral movement of said section, mechanism for adjusting said section laterally, an elevating-lever secured to said sleeve and mechanism secured to the main frame and operatively connected with said lever whereby the said section may be adjusted vertically and the lateral movement of said section will not affect its vertical adjustment, substantially as described.

6. In a pivot-axle cultivator, the combination with the main frame provided with horizontal pivots, of pivoted axles connected with the main frame and carrying the supporting-wheels, a connecting-bar connecting said axles for joint movement, steering-levers for said axles adapted to be operated by the feet of the operator, a sleeve on each of the said horizontal pivots of the main frame, an independent cultivator-section pivoted to each of said sleeves by a vertical pivot and adjusting mechanism operatively connected with said sections for adjusting them toward or from each other, an independent adjusting mechanism operatively connected to each of said sleeves for adjusting the cultivator-sections vertically, whereby the lateral movement of said cultivator-sections will not affect their vertical adjustment, substantially as described.

7. In a pivot-axle cultivator, the combination with the main frame provided with horizontal pivots, of pivoted axles connected with the main frame and carrying the supporting-wheels, a connecting-bar connecting said axles for joint movement, steering-levers for said axles adapted to be operated by the feet of the operator, a sleeve on each of said horizontal pivots of the main frame, an independent cultivator-section pivoted to each of said sleeves by a vertical pivot and adjusting mechanism operatively connected with said sections for adjusting them toward or from each other, an elevating and depressing lever operatively connected to each of said sleeves, a hand-lever for each of said elevating and depressing levers, secured to the main frame and connections between each of said hand-levers and its respective elevating and depressing lever, substantially as described.

8. In a pivot-axle cultivator, the combination with the main frame provided with horizontal pivots, of pivoted axles connected with the main frame and carrying the supporting-wheels, a connecting-bar connecting said axles for joint movement, steering-levers for said axles adapted to be operated by the feet of the operator, a sleeve on each of the said horizontal pivots of the main frame, an independent cultivator-section pivoted to each of said sleeves by a vertical pivot and adjusting mechanism operatively connected with said sections for adjusting them toward or from each other, an elevating and depressing lever operatively connected to each of said sleeves, a hand-lever for each of said elevating and depressing levers, secured to the main frame, an elevating and depressing rod secured to each of said levers and having a sliding engagement with its respective elevating and depressing lever and a spring interposed between each of said rods and the upper sides of its elevating and depressing lever, substantially as described.

9. In a cultivator, the combination with the main frame, of a cultivator-section pivotally connected to the main frame at its forward end by a connection permitting the vertical movement of said section, an elevating and depressing lever operatively connected with said section, a hand-lever connected to said main frame, an elevating and depressing rod connected to said hand-lever and operatively connected to said elevating and depressing lever for elevating the same and a spring interposed between said rod and the elevating and depressing lever and engaging the upper side of said lever, substantially as described.

10. In a cultivator, the combination with the main frame, of a cultivator-section having a pivotal connection with the main frame to permit the vertical movement of the cultivator-section, an elevating and depressing lever operatively connected with said section and provided at its rear end with a sleeve, a lever pivotally connected to the main frame, an elevating and depressing rod connected to said lever and having its lower end engaging said sleeve on the elevating and depressing lever, said rod being provided with a projection below said sleeve to permit the lifting of the elevating and depressing lever and a spring having one end engaging the upper side of the elevating and depressing lever and the other end engaging a part connected with said rod, substantially as described.

11. In a cultivator, the combination with the main frame, provided with a horizontal pivot, a sleeve mounted on said pivot and provided with a vertical hinge-piece, a cultivator-section pivoted to said hinge-piece by a vertical pivot, an elevating and depressing lever operatively connected with said sleeve to raise and lower the cultivator-section without interfering with its lateral movement, an operating-lever pivoted to the main frame above said elevating and depressing lever, a rod connected to said operating-lever and connected to said elevating and depressing lever by a connection permitting said rod to move downwardly with respect to said lever and a spring interposed between the said rod and said elevating and depressing lever and adapted to exert a downward pressure upon said lever, substantially as described.

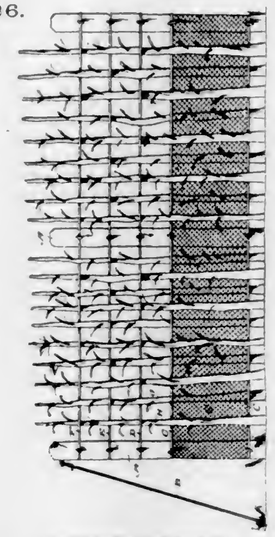
12. In a cultivator, the combination with the main frame, provided with pivoted wheel-supporting axles, of a steering-lever for each of said axles and a footpiece provided with a sleeve engaging said lever and means for securing said sleeve to said lever, whereby said footpiece can be adjusted longitudinally or around said lever, substantially as described.

13. In a cultivator, the combination with the main frame provided at each side thereof with a vertical pivot or standard, of a pivot-casting at each side of the machine having a socket to engage one of said standards, and a sleeve to engage an axle, an axle engaging said sleeve, means for adjustably securing said axle in said sleeve and a steering-lever adjustably secured to said casting, substantially as described.

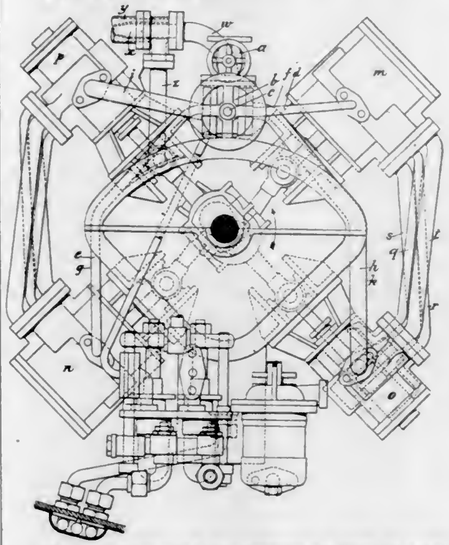
14. In a cultivator, the combination with the main frame of the tongue pivotally connected thereto, a pair of guide-plates secured to the frame at a distance from said pivot and provided with slots concentric with said pivot, clamping-plates for engaging the outer faces of said guide-plates and a clamping-bolt extending through said clamping-plates, guide-plates and tongue and engaging the slots of said guide-plates, substantially as described.

15. In a cultivator, the combination with the main frame of the tongue pivotally connected thereto, a pair of guide-plates secured to the frame at a distance from said pivot and provided with slots concentric with said pivot, said guide-plates having their outer faces serrated, clamping-plates provided with serrated inner faces to engage the outer serrated faces of the guide-plates and a clamping-bolt extending through said clamping-plates, guide-plates and tongue and engaging the slots in said guide-plates, substantially as described.

654,126.



654,127. HIGH-SPEED ENGINE. TORBEN C. BILLETOF, Newcastle-upon-Tyne, England, assignor of two-thirds to Henry Burnett Watson and John Stanley Watson, same place. Filed Oct. 31, 1899. Serial No. 735,388. (No model.)



Claim.— 1. A controlling-valve consisting of a piston rod or stalk e which can be reciprocated within the valve-body having a side passage *v*, or passages, to start, stop or reverse an engine, and carries pistons in series, as 40, 41 and 42, 43 or the equivalent arranged to cover or uncover ports, as *d*, *e*, *f*, *g*, *h*, *i*, *k*, *l*, such valve to be used in combination with the cylinders of a fluid-pressure engine of the type in which one cylinder and its piston as *m*, 48, act as valve to another cylinder, as *o*, by reason of the said piston having ports 46, 47, 49, 50 and reciprocating over ports, *d*, *f*, *r*, *q* arranged in the cylinder, such piston allowing the admission of fluid to and exhaustion of fluid from, another cylinder, as *o*, which acts in like manner as valve to the one or to another cylinder of the engine for compound or multiple-expansion working such cylinders having their pistons connected to the crank-shaft in such a manner as to give the necessary angle of advance to each piston acting as valve to another cylinder, the whole substantially as described and as illustrated.

654,126. HEDGE FENCE. ELI BEGHTEL, Huntington, Ind. Filed Feb. 23, 1900. Serial No. 6,232. (No model.)

Claim.—1. A hedge fence, consisting of two rows of trees arranged alternately; posts located in line with one of the rows; and a series of parallel fence-wires stretched along the posts in the space between the rows, the two lower wires carrying a netting, and the upper wires passing alternately in and outside of the trees' stems in the manner shown and described.

2. A hedge fence consisting of the hedge trees, two lower parallel strands of wire carrying a netting located in the space between the trees, a series of fence or supporting wires above the lower wires and interwoven with the trees so that each other tree is passed upon the opposite sides of successive wires, and also on the opposite side from its neighboring trees.

2. A controlling-valve consisting of a piston rod or stalk *c*, which can be reciprocated within the valve-body having a side passage or passages to start, stop or reverse an engine and carries pistons in series, or the equivalent, arranged to cover or uncover ports; such valve to be used in combination with the cylinders of a fluid-pressure engine of the type in which each piston carries a tail-rod, or the equivalent, which operates valves in duplicate to control another cylinder; the engine being arranged for compound working and having its pistons connected to the crank-shaft in such a manner as to give the necessary angle of advance to each piston having a tail-rod or its equivalent and valves to control another cylinder, the whole substantially as described and as illustrated.

3. A fluid-pressure engine having two cylinders, as *m*, *o*, with their pistons connected to one common crank-center, the axes of the cylinders being placed at or about right angles to each other and the pistons provided with ports as 46, 47, 49, 50 and arranged to reciprocate within cylinders having ports as *d*, *f*, for the supply or exhaust of the fluid, and ports *q*, *r*, leading to the adjacent cylinder, each of such cylinders and its piston being arranged to act as valve to the adjacent cylinder, the angle of advance of each piston acting as valve to the other cylinder being provided by the disposition of the cylinders in relation to the crank-shaft, the engine being used either with or without the interposition of a controlling valve, such as *b*, and arranged for the fluid to pass from one cylinder to the other for compound working, the whole substantially as described and as illustrated.

4. A fluid-pressure engine having cylinders placed radially and opposite to each other as *m*, *n*, *o*, *p* and having their pistons connected in pairs as *m*, *o*, and *n*, *p*, to crank-pins arranged at one hundred and eighty degrees to each other, such pistons being of the same or approximately the same weight for balancing the moving parts and provided with ports, such as 46, 47, 49 50 and arranged to reciprocate within cylinders having ports such as *d*, *f*, for the supply or exhaust of fluid and ports, such as *q*, *r*, leading to the adjacent cylinder of the pair connected to the same crank-center, each of such cylinders and its piston being arranged to act as valve to the adjacent cylinder of the pair, the angle of advance of the piston acting as valve to the adjacent cylinder being provided by the disposition of the cylinders in relation to the crank-shaft, such engine being used either with or without the interposition of a controlling-valve, such as *b*, and arranged for the fluid to pass from one cylinder to the other for compound working, the whole substantially as described and as illustrated.

5. A fluid-pressure engine having cylinders placed radially and opposite to each other, as 1, 2, 3, 4, and having their pistons connected in pairs, as 1, 3 and 2, 4 to crank-pins arranged at one hundred and eighty degrees to each other, such pistons being of the same or approximately the same weight for balancing the moving parts and provided with ports such as 46, 47, 49, 50 and arranged to reciprocate within cylinders having ports, such as *d*, *f*, for the supply or exhaust of steam or other fluid, and ports, such as *q*, *r*, leading to the adjacent cylinder of the pair connected to the same crank-center, each of such cylinders and its piston being arranged to act as valve to the adjacent cylinder of the pair, the angle of advance of the piston acting as valve to the adjacent cylinder being provided by the disposition of the cylinders in relation to the crank-shaft, such engine being arranged for triple-expansion working by reason of the fluid being passed successively through the cylinders, as in the order 1, 2 and concurrently 3, 4, and further such engine being used either with or without the interposition of a controlling-valve, such as *b*, the whole substantially as described and as illustrated.

6. A fluid-pressure engine having six cylinders placed radially and opposite to each other, as 13, 14, 15, 16, 17, 18, and having their pistons connected alternately as 13, 15, 17, and 14, 16, 18 to two crank-pins arranged at one hundred and eighty degrees to each other, such pistons being of the same or approximately the same weight for balancing the moving parts, and provided with ports, such as 46, 47, 49, 50 and arranged to reciprocate within cylinders having ports, such as *d*, *f*, for supply or exhaust of fluid and ports, such as *q*, *r*, leading to the next adjacent cylinder, each of such cylinders and its piston being arranged to act as valve to the adjacent cylinder, the angle of advance of the piston acting as valve to the adjacent cylinder being provided by the disposition of the cylinders in relation to the crank-shaft, such engine being arranged for triple-expansion working with cut-off before the end of the stroke the fluid being passed and expanded successively through the cylinders, as in the order 13 and concurrently 14, 17 and again concurrently 15, 16, 18, and further such engine being used either with or without the interposition of a controlling-valve, such as *b*, the whole substantially as described and as illustrated.

7. A fluid-pressure engine having cylinders side by side in pairs, as 33, 34, and having their pistons connected to crank-centers arranged at ninety degrees to each other, such pistons being provided with ports, such as 46, 47, 49, 50, and arranged to reciprocate within cylinders having ports, such as *d*, *f*, for the supply or exhaust of fluid and ports, such as *q*, *r*, leading to the adjacent cylinder, each of such cylinders and its piston being arranged to act as valve to the adjacent cylinder, the angle of advance of each piston acting as valve to the adjacent cylinder being provided by the pistons being connected to crank-centers arranged at ninety degrees to each other, such engine being arranged for compound working by reason of the fluid being passed from one cylinder to the adjacent cylinder, and further such engine being used either with or without the interposition of a controlling-valve, such as *b*, the whole substantially as described and as illustrated.

8. A fluid-pressure engine having cylinders side by side in pairs, as 33, 34, each pair being opposed by a similar pair, as 35, 36, and each pair having its pistons connected to crank-centers at ninety degrees to each other; and the crank-centers being further so disposed that each piston is connected to a crank-center placed at one hundred and eighty degrees to the crank-center of the opposing piston, such opposing pistons, as 33, 35, being of the same or approximately the same weight for the purpose of balancing the moving parts; and such pistons being further provided with ports, as 46, 47, 49, 50, and arranged to reciprocate within cylinders having ports, such as *d*, *f*, for the supply or exhaust of fluid and ports, such as *q*, *r*, leading to the adjacent cylinder of the pair, each of such cylinders and its piston being arranged to act as valve to the adjacent cylinder, the angle of advance of the piston acting as valve to the adjacent cylinder being provided by the pistons being connected to the crank-centers arranged at ninety degrees to each other; such engine being arranged for compound working by reason of the fluid being passed from one cylinder to the adjacent cylinder of the pair, as 33 to 34; and further such engine being used either with or without the interposition of a controlling-valve, such as *b*, the whole substantially as described and as illustrated.

9. A fluid-pressure engine having two cylinders with their pistons connected to one common crank-center, the axes of the cylinders being placed at or about right angles to each other and the pistons provided with tail-rods operating valves in duplicate, as 59, 60, having ports, as 51, 54, 52, 55, and arranged to reciprocate over valve-faces having ports, as *h*, *k*, for the supply or exhaust of the fluid, and ports, as *s*, *t*, leading to the adjacent cylinder, each of such cylinders with its tail-rod and valves being arranged to act as valve to the adjacent cylinder, the angle of advance of each piston with its tail-rod and valves being provided by the disposition of the cylinders in relation to the crank-shaft, the engine being used either with or without the interposition of a controlling-valve, such as *b*, and arranged for the fluid to pass from one cylinder to the other for compound working, the whole substantially as described and as illustrated.

10. A fluid-pressure engine having cylinders placed radially and opposite to each other, as *m*, *n*, *o*, *p*, and having their pistons connected in pairs, as *m*, *o*, and *n*, *p*, to crank-pins arranged at one hundred and eighty degrees to each other, such pistons being of the same or approximately the same weight for balancing the moving parts and provided with tail-rods arranged to operate valves in duplicate, as 59, 60, having ports, as 51, 54, 52, 55, and arranged to reciprocate over valve-faces having ports, as *h*, *k*, for the supply or exhaust of the fluid, and ports, as *s*, *t*, leading to the adjacent cylinder of the pair connected to the same crank-center, each of such cylinders with its tail-rod and valves being arranged to act as valve to the adjacent cylinder of the pair, the angle of advance of each piston with its tail-rod and valves being provided by the disposition of the cylinders in relation to the crank-shaft, the engine being used either with or without the interposition of a controlling-valve, such as *b*, and arranged for the fluid to pass from one cylinder to the other for compound working, the whole substantially as described and as illustrated.

11. A fluid-pressure engine having cylinders placed radially and opposite to each other, as 1, 2, 3, 4, and having their pistons connected in pairs, as 1, 3, and 2, 4, to crank-pins arranged at one hundred and eighty degrees to each other, such pistons being of the same or approximately the same weight for balancing the moving parts and provided with tail-rods arranged to operate valves in duplicate, as 59, 60, having ports, as 51, 54, 52, 55, arranged to reciprocate over valve-faces having ports, as *h*, *k*, for the supply or exhaust of the fluid, and ports, as *s*, *t*, leading to the adjacent cylinder of the pair connected to the same crank-center, each of such cylinders and its tail-rod and valves being arranged to act as valve to the adjacent cylinder of the pair, the angle of advance of each piston with its tail-rod and valves being provided by the disposition of the cylinders in relation to the crank-shaft, such engine being arranged for triple-expansion working by reason of the fluid being passed successively through the cylinders, as in the order 1, 2, and concurrently 3, 4, and further such engine being used either with or without the interposition of the controlling-valve, such as *b*, the whole substantially as described and as illustrated.

12. A fluid-pressure engine having six cylinders placed radially and opposite to each other, as 13, 14, 15, 16, 17, 18, and having their pistons connected alternately, as 13, 15, 17, and 14, 16, 18, to two crank-pins arranged at one hundred and eighty degrees to each other such pistons being of the same or approximately the same weight for balancing the moving parts, and provided with tail-rods arranged to operate valves in duplicate, as 59, 60, having ports, as 51, 54, 52, 55, arranged to reciprocate over valve-faces having ports, as *h*, *k*, for the supply or exhaust of the fluid, and ports, as *s*, *t*, leading to the adjacent cylinder, each of such cylinders and its tail-rod and valves being arranged to act as valve to the adjacent cylinder, the angle of advance of each piston with its tail-rod and valves being provided by the disposition of the cylinders in relation to the crank-shaft, such engine being arranged for triple-expansion working with cut-off before the end of the stroke, the fluid being passed and expanded successively through the cylinders, as in the order 13, and concurrently 14, 17, and again concurrently 15, 16, 18: and further such engine being used either with or without the interposition of a controlling-valve, such as *b*, the whole substantially as described and as illustrated.

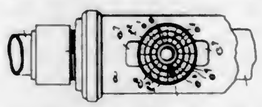
13. A fluid-pressure engine having cylinders side by side in pairs, as 33, 34, and having their pistons connected to crank-centers arranged at ninety degrees to each other, such pistons being provided with tail-rods operating valves in duplicate, as 59, 60, having ports, as 51, 54, 52, 55, and arranged to reciprocate over valve-faces having ports, as *h*, *k*, for the supply or exhaust of the fluid, and ports, as *s*, *t*, leading to the adjacent cylinder, each of such cylinders with its tail-rod and valves being arranged to act as valve to the adjacent cylinder, the angle of advance of each piston with its tail-rod and valves being provided by the pistons being connected to crank-centers arranged at ninety degrees to each other, such engine being arranged for compound working by reason of the fluid being passed from one cylinder to the adjacent cylinder, and further such engine being used either with or without the interposition of a controlling-valve, such as *b*, the whole substantially as described and as illustrated.

14. A fluid-pressure engine having cylinders side by side in pairs, as 33, 34, each pair being opposed by a similar pair, as 35, 36, and each pair having its piston connected to crank-centers at ninety degrees to each other; and the crank-centers being further so disposed that each piston is connected to a crank-center placed at one hundred and eighty degrees to the crank-center of the opposing piston, such opposing piston, as 33, 35, being of the same or approximately the same weight for the purpose of balancing the moving parts; and such pistons being further provided with tail-rods operating valves in duplicate, as 59, 60, having ports, as 51, 54, 52, 55, and arranged to reciprocate over valve-faces having ports, as *h*, *k*, for the supply or exhaust of fluid, and ports, as *s*, *t*, leading to the adjacent cylinder, each of such cylinders with its tail-rod and valves being arranged to act as valve to the adjacent cylinder, the angle of advance of each piston with its tail-rod and valves being provided by the pistons being connected to crank-centers arranged at ninety degrees to each other, such engine being arranged for compound working by reason of the fluid being passed from one cylinder to the adjacent cylinder; and further such engine being used either with or without the interposition of a controlling-valve, such as *b*, the whole substantially as described and as illustrated.

15. The use, in combination with the closed-in crank-chamber of an engine in which one cylinder and its piston act as valve to an adjacent cylinder for compound working, of a fan, exhauster or the equivalent, driven direct from the main shaft of the engine and having its suction in communication with the closed-in crank-chamber, such crank-chamber having ventilation-openings, the whole substantially as described and as illustrated.

16. The use, in combination with the closed-in crank-chamber of an engine in which the pistons are provided with tail-rods operating valves in duplicate which control an adjacent cylinder for compound working, of a fan, exhauster or the equivalent, driven direct from the main shaft of the engine and having its suction in communication with the closed-in crank-chamber, such crank-chamber having ventilation-openings, the whole substantially as described and illustrated.

654,128. BICYCLE-LOCK. JAMES C. BIORKEN, Newark, N. J. Filed Sept. 28, 1899. Serial No. 731,907. (No model.)



Claim.—1. A bicycle-lock, adapted to be attached to the head of the vehicle and lock with the fork-tube, consisting, essentially, of a casing, a lock mechanism arranged in said casing, a bolt or pin slidingly arranged in said casing, an arm extending at a right angle, or approximately so, from said bolt or pin, a slotted sleeve in which said bolt or pin is slidably arranged, a fixed disk in said casing, having a pair of circular slots or openings, a concentrically-arranged disk and ring, both having holes or perforations, said disk and ring being movably placed on the lower side of said fixed disk, a concentrically-arranged disk and ring movably placed on the upper side of said fixed disk, a stud or post connected with each upper disk and upper ring, the upper end of each stud or post forming a finger-piece and the lower portions of said studs or posts, each extending through one of the circular slots or openings in said fixed disk and into a hole or perforation in the lower disk and ring, for moving the latter disk and ring by the movement of the upper disk and ring, all of said disks and rings being arranged concentric with the said sleeve around the bolt or pin, and each disk or ring having a radially-arranged opening or slot in which, when said slots are arranged in corresponding positions, said arm on said bolt or pin is movably arranged, substantially as and for the purposes set forth.

2. A bicycle-lock, adapted to be attached to the head of the vehicle and lock with the fork-tube, consisting, essentially, of a casing, a lock mechanism arranged in said casing, a bolt or pin slidably arranged in said casing, an arm extending at a right angle, or approximately so, from said bolt or pin, a back disk *e* provided with a slot or opening e^4, a pair of concentric rings *f* and *i*, and means connected with said rings for securing them upon said disk *e*, and a series of disks and rings arranged concentric with the central axis of said bolt or pin, and each disk and ring having a radially-arranged opening or slot, in which, when said slots are arranged in corresponding positions, said arm on said bolt or pin is movably arranged, substantially as and for the purposes set forth.

3. A bicycle-lock, adapted to be attached to the head of the vehicle and lock with the fork-tube, consisting, essentially, of a casing, a bolt or pin slidably arranged in said casing, an arm extending at a right angle, or approximately so, from said bolt or pin, a slotted sleeve in which said bolt or pin is slidably arranged, a back disk *e* provided with a slot or opening e^4, a pair of concentric rings *f* and *i*, and means connected with said rings for securing them upon said disk *e*, a fixed disk in said ring *i*, a concentrically-arranged disk and ring movably placed on the lower side of said fixed disk, a concentrically-arranged disk and ring movably placed on the upper side of said fixed disk, means connecting the upper disk and ring, with said lower disk and ring, for moving the latter disk and ring by the movement of the upper disk and ring, all of said disks and rings being arranged concentric with the said sleeve around the bolt or pin, and each disk and ring having a radially-arranged opening or slot, in which, when said slots are arranged in corresponding positions, said arm on said bolt or pin is movably arranged, substantially as and for the purposes set forth.

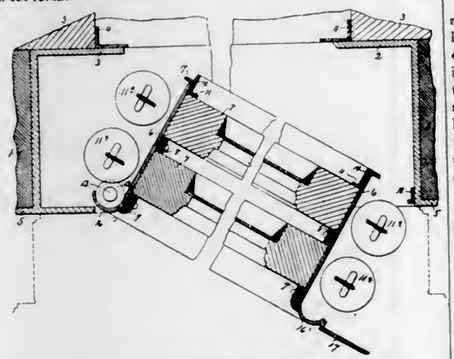
4. A bicycle-lock, adapted to be attached to the head of the vehicle and lock with the fork-tube, consisting, essentially, of a casing, a bolt or pin slidably arranged in said casing, an arm extending at a right angle, or approximately so, from said bolt or pin, a slotted sleeve in which said bolt or pin is slidably arranged, a back disk *e* provided with a slot or opening e^4, a pair of concentric rings *f* and *i*, and means connected with said rings for securing them upon said disk *e*, a fixed disk in said ring *i*, having a pair of circular slots or openings, a concentrically-arranged disk and ring, both having holes or perforations, said disk and ring being movably placed on the lower side of said fixed disk, a concentrically-arranged disk and ring movably placed on the upper side of said fixed disk, a stud or post connected with each upper disk and upper ring, the upper end of each stud or post forming a finger-piece and the lower portions of said studs or posts, each extending through one of the circular slots or openings in said fixed disk and into a hole or perforation in the lower disk and ring, for moving the latter disk and ring by the movement of the upper disk and ring, all of said disks and rings being arranged concentric with the said sleeve around the bolt or pin, and each disk or ring having a radially-arranged opening or slot in which, when said slots are arranged in corresponding positions, said arm on said bolt or pin is movably arranged, substantially as and for the purposes set forth.

5. In a bicycle-lock, the combination, with a casing, of a disk *e* having a central opening, and radially-arranged lug or tongue e^3, a sleeve *h*, having a groove into which said tongue e^3 extends, having holding tongues or lugs h^3 on said sleeve *h* in holding engagement with said disk *e*, and having a slot h^5, a pin or bolt slidably arranged in said sleeve, an arm on said pin or bolt projecting at a right angle therefrom, or approximately so, through said slot h^5 into the casing, and a permutation-lock mechanism in said casing, substantially as and for the purposes set forth.

654,129. WINDOW-FRAME. DAVID R. BROWN, New Haven, Conn. Filed Apr. 25, 1900. Serial No. 14,214. (No model.)

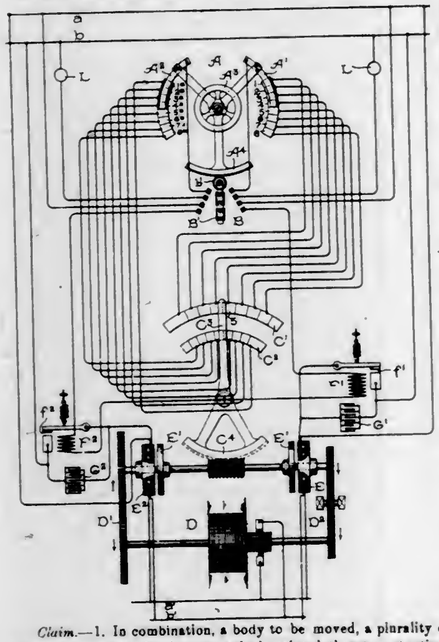
Claim.—1. In a device of the character described, the combination with a hollow casing open at both its front and rear sides and

adapted to be embedded in the wall of a building; of a window-frame provided with projecting ears and having an inclined bottom portion; and means, as studs passing through the said ears and into the said casing, for forming a pivotal connection between the said window-frame and casing; all constructed and operating substantially as set forth.



2. In a device of the character described, the combination with the casing 2, of the swinging window-frame 6, having the window-sashes 7 7 movable therein, and means, as the studs 12 and 14, for movably securing the said frame within the said casing, substantially as described.

654,130. ELECTRIC STEERING-GEAR. HAROLD W. BUCK, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Mar. 20, 1899. Serial No. 709,762. (No model.)



Claim.—1. In combination, a body to be moved, a plurality of oppositely-rotating clutches operatively related thereto, actuating-coils for throwing said clutches into operation, means for positively demagnetizing the magnetic clutches as soon as the circuit of the actuating-coil is interrupted, a circuit-interrupting switch operatively related to the body to be moved, and means for closing a circuit through said interrupting-switch to either of said actuating-coils.

2. In combination, a body to be moved, a plurality of oppositely-rotating clutches operatively related thereto, actuating-coils for throwing said clutches into operation, a controlling-switch having a series of contacts, a circuit-interrupting switch having a series of contacts, electrical connections between the corresponding contacts of the controlling and circuit-interrupting switches, means for closing a circuit to either of the clutch-actuating coils through the contacts of said controlling and circuit-interrupting switches, and means actuated by the body to be moved for opening said circuit at the circuit-interrupting switch.

3. In combination, a body to be moved, a plurality of oppositely-revolving magnetic clutches operatively related thereto, a controlling-switch, comprising numerous contact-points, for determining the extent of movement of said body, a circuit-interrupting switch having contact-points electrically connected with the contact-points of the controlling-switch, means whereby a movement of the controlling-switch to one side or the other closes a circuit through said controlling and said interrupting switches to the energizing-coil of one or the other of said magnetic clutches, and means whereby a corresponding movement of the body to be moved opens said circuit at the circuit-interrupting switch.

4. An electric steering apparatus comprising a constantly-running motor, a counter-shaft connected by a worm-gear to the rudder, clutches operated in opposite directions by the motor, electromagnetic means for actuating said clutches, a circuit-interrupting switch, having a series of contacts, controlled by the rudder, and means located at a desired point for closing a circuit to a plurality of the contacts of said circuit-interrupting switch, and, through said switch, to one or the other of said electromagnetic clutch-actuating means.

5. An electric steering apparatus comprising a constantly-running motor, clutches rotated in opposite directions by said motor, a controlling-switch at a desired point, an operating-handle therefor determining by its position the extent of movement of the rudder, a circuit-interrupting switch controlled by the rudder and electrically connected to the controlling-switch, means for closing a circuit through said switches to energize one or the other of said clutches, and means for breaking the circuit through said switches when the rudder reaches the determined position.

6. An electric steering-gear, comprising a constantly-running motor, electromagnetic clutches geared to the motor and run thereby in opposite directions, a reversing or direction switch for connecting to the line either clutch at will, a controlling-switch determining by its position, the extent of movement of the rudder, and a circuit-interrupting switch controlled by the rudder and electrically connected to the controlling-switch for breaking the circuit of the connected clutch when the rudder reaches the position determined by the position of the controlling-switch.

7. In an electric steering-gear, a controlling-switch comprising a set of contacts on either side of the central position of the wheel and two switching-contacts operated by said wheel, a circuit-interrupting switch comprising two sets of contacts adjacent to the rudder and switching-contacts operated by said rudder, connections joining each contact in each of the sets at the rudder to a corresponding contact in one of the sets at the wheel, rudder-operating means, two electromagnetic devices for connecting the rudder-operating means to the rudder, and a switch operated by the first movement of the wheel for supplying current to actuate one or the other of said electromagnetic connecting devices through the contacts of the said controlling and circuit-interrupting switches.

8. The combination with a controlling-handle, of a switch, having a series of operative positions, connected to said handle, a single constantly-operated source of power, a body to be controlled, a switch, having a corresponding series of operative positions, connected to said body and electrically connected to the switch at the controlling-handle, and means in circuit with said switches for operatively connecting the source of power to the body to be controlled.

9. In a device for transmitting motion, a constantly-rotating motor, controlling and controlled parts, clutches rotated in opposite directions by the motor, mechanism operated by the clutches for driving the controlled part in either direction, means at the controlling part for closing a circuit to actuate one or the other of said clutches, said means determining by its position the extent of movement of the controlled part, and means at the controlled part for breaking said circuit when the said part has reached a position corresponding to the position of the controlling part.

10. In an electric steering-gear or similar device, the combination with the rudder-operating shaft and the electromagnetic clutches oppositely geared to a single motor, of a switch operated by the wheel for closing a circuit to actuate either of said clutches, said switch determining by its position, the extent of movement of the rudder-operating shaft, and a switch operated by the rudder for interrupting said circuit when the rudder reaches a position corresponding to the position of the switch operated by the wheel.

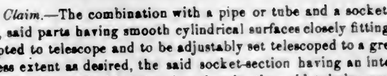
11. In an electric steering-gear, the combination with a shaft operating with the rudder and connected to a constantly-rotating motor by oppositely-driven electromagnetically-operated clutches, of relays for completing the circuit of the clutches, a switch, for connecting in either relay, operated by the wheel and determining by its position the extent of movement of the rudder-operating shaft, and means actuated by the movement of the rudder for opening the relay-circuit when the rudder assumes a position corresponding to the position of the switch operated by the wheel.

12. In an electric steering-gear, the combination of a constantly-rotating motor, electromagnetically-operated clutches driven in opposite directions by the motor, a rudder-operating shaft, relay-switches for completing the circuits of the clutches as may be desired, a switch operated by the wheel to close a circuit for actuating either relay in accordance with the direction of movement of the wheel, the said switch determining by its position the extent of movement of the rudder-operating shaft, and a switch operated by the rudder for interrupting the relay-actuating circuit when the rudder assumes a position corresponding to the position of the switch operated by the wheel.

13. In combination, a body to be moved, a motive device for moving said body, means for connecting said motive device to said body to be moved, a source of current-supply, an electrically-actuated device for controlling the operation of said connecting means, a controlling-switch for determining the extent of movement of the body to be moved, a circuit-interrupting switch operatively connected to said body, and circuits connecting said electrically-actuated device to said source through the contacts of said controlling and circuit-interrupting switches.

14. In a device for transmitting motion, a controlling wheel or handle, a direction or reversing switch operated thereby, a switch comprising two sets of contacts in operative relation to the controlling-handle, a controlled body, a switch comprising two sets of contacts in operative relation to the controlled body, electric circuits joining individual contacts of the two pairs of sets, two oppositely-rotating magnetic clutches for operating the controlled body, and electrical connections such that the direction or reversing switch connects one or the other of said clutches into circuit through the circuits joining one of the sets of contacts at the wheel and at the controlled body.

654,131. PIPE-COUPLING. JAMES BURKE, Minneapolis, Minn. Filed Sept. 1, 1899. Serial No. 729,151. (No model.)



Claim.—The combination with a pipe or tube and a socket-section, said parts having smooth cylindrical surfaces closely fitting and adapted to telescope and to be adjustably set telescoped to a greater or less extent as desired, the said socket-section having an internal ring of solder embedded therein, whereby the said tubular sections to be connected may be telescoped to the desired positions and thereafter soldered by the application of heat, substantially as described.

654,132. SPRAYER ATTACHMENT FOR HOSE. WALTER C. BUSS, Michigan City, Ind. Filed Nov. 11, 1899. Serial No. 736,650. (No model.)

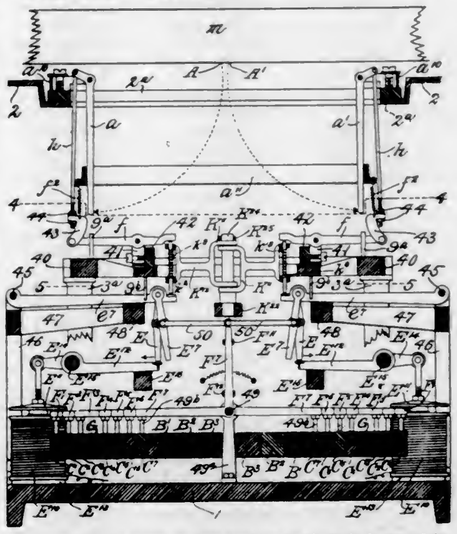


Claim.—1. A lawn-sprinkler comprising a support, substantially U-shaped clasps formed integral therewith of a ring integral with the outer end of the support and a screen or wire-cloth secured across said ring, substantially as described.

2. A lawn-sprinkler, comprising a support having a straight portion and a forward downwardly-deflected portion clasps integral with the straight portion of same, a perforated diaphragm secured at its periphery to the outer end of the deflected portion, substantially as described.

3. A lawn-sprinkler comprising a single piece of wire bent to form a ring, then twisted upon itself, to form a support, then bent outwardly and upwardly, then back upon itself to form a clasp, then twisted upon itself a short distance, then bent outwardly upwardly and back upon itself then twisted upon itself for a short distance, and a wire net or screen secured across said ring, the outer end of said support being deflected downward, substantially as described.

654,133. TYPE-WRITING MACHINE. THADDEUS CAHILL, Washington, D. C., assignor to James R. Lambie, E. Hilton Jackson, George Frederick Cahill, and Arthur T. Cahill, trustees. Filed Feb. 1, 1898. Serial No. 668,737. (No model.)



Claim.—1. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing-center, of a selecting device for selecting the different type-bars of said alphabet; said selecting device including an oscillating segmental pin-carrier, with movement-transmitting pins mounted in and supported by said carrier to move longitudinally independently of each other, and to move as a set with said pin-carrier.

2. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing-center, of a selecting device for selecting the different type-bars of said alphabet; said selecting device including an oscillating segmental pin-carrier, with movement-transmitting pins mounted in and supported by said carrier to move longitudinally independently of each other, and to move as a set with said pin-carrier; and one or more keys, for positioning said pin-carriers.

3. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing-center of a selecting device for selecting the different type-bars of said alphabet; said selecting device including an oscillating segmental pin-carrier, with movement-transmitting pins mounted in and supported by said carrier to move longitudinally independently of each other, and to move as a set with said pin-carrier; a key, acting to position said pin-carrier; and a stop, whereby the movement of said pin-carrier under the action of said key, is arrested.

4. In a type-writing machine, the combination with type-bars striking to a common printing-center, of a type-bar-selecting device, including an oscillating segmental pin-carrier, with movement-transmitting pins mounted in and supported by said carrier, to move longitudinally independently of each other, and to move as a set with the pin-carrier aforesaid.

5. In a type-writing machine, the combination with type-bars striking to a common printing-center, of a type-bar-selecting device, including an oscillating segmental pin-carrier, with movement-transmitting pins mounted in and supported by said carrier, to move longitudinally independently of each other, and to move as a set with the pin-carrier aforesaid; and returning-springs in said carrier, whereby said pins are held in their normal positions.

6. In a type-bar-selecting device for a type-writing machine, (*a*) an oscillating segmental pin-carrier, with movement-transmitting pins mounted in said carrier to move longitudinally independently of each other, and to move as a set with said carrier; (*b*) a plurality of keys, whereby said carrier is oscillated into different positions; and (*c*) stop mechanism for said carrier; said stop mechanism being controlled by one or more of the keys aforesaid.

7. In a type-bar-selecting device for use in a type-writing machine, an oscillating segmental pin-carrier, with movement-transmitting pins mounted in said carrier to move longitudinally independently of each other, and to move bodily as a set with the pin-carrier aforesaid; returning-springs in said carrier, whereby said pins are held in their normal positions; a plurality of keys whereby said carrier is oscillated into different positions; and stop mechanism for said carrier; said stop mechanism being controlled by one or more of the keys aforesaid.

8. In a type-bar-selecting device for a type-writing machine and in combination, (*a*) an oscillating segmental pin-carrier, with movement-transmitting pins mounted therein and supported thereby, to move longitudinally independently of each other, and to move as a set with said pin-carrier; (*b*) a key for oscillating said pin-carrier; (*c*) a bell-crank, actuated by said key, and serving to transmit movement to said pin-carrier; and (*d*) a stop for arresting said pin-carrier when thus moved by the key.

9. In a type-bar-selecting device for a type-writing machine and in combination, (*a*) an oscillating segmental pin-carrier, with movement-transmitting pins mounted therein, to move longitudinally independently of each other, and to move as a set with said pin-carrier; (*b*) a plurality of keys for oscillating said pin-carrier into different positions as required; (*c*) a bell-crank actuated by said keys and connected with said pin-carrier; and (*d*) means for arresting said pin-carrier, including a movable stop controlled by one of the keys aforesaid.

10. In a type-bar-selecting device for a type-writing machine and in combination, (*a*) an oscillating segmental pin-carrier, with movement-transmitting pins mounted therein, to move longitudinally independently of each other, and to move as a set with said pin-carrier; (*b*) a plurality of keys for oscillating said pin-carrier into different positions as required; (*c*) means for arresting said pin-carrier, including a movable stop and a connection between one of the keys aforesaid and said stop, whereby said stop is controlled; and (*c*) a fixed stop against which the pin-carrier abuts when moved its maximum distance by one of the keys aforesaid.

11. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing-center, of a selecting device for selecting the different type-bars of said alphabet; said selecting device including, (*a*) a set of controlling members; (*b*) a set of controlling members more numerous than the controlling members aforesaid; (*c*) an oscillating segmental pin-carrier, with movement-transmitting pins mounted therein and supported thereby, to move longitudinally independently of each other, and to move as a set with said carrier; said pins moving bodily intermediate the controlled members before mentioned and the controlled members before mentioned, in order to bring the different controlled members operated by a controlling member into operative relation therewith, each as required; each of the movement-transmitting pins aforesaid serving to transmit movement from one of said controlling members to the controlled members aforesaid corresponding thereto, each as required.

12. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing center, of selecting devices for selecting the different type-bars of said alphabet; said selecting devices including, (*a*) a set of controlling members; (*b*) a set of controlled members more numerous than the controlling members aforesaid; (*c*) an oscillating segmental pin-carrier, with movement-transmitting pins mounted therein and supported thereby, to move longitudinally independently of each other, and to move as a set with said carrier; said pins moving bodily intermediate the controlling members before mentioned, and the controlled members before mentioned, corresponding thereto; and (*d*) key mechanism whereby said segmental pin-carrier is oscillated or shifted to different positions as required, to connect the different controlling members aforesaid with the different controlled members operated by them, each as required.

13. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing-center, of a selecting device for selecting the different type-bars of said alphabet; said selecting device including, (*a*) levers corresponding to the type-bars aforesaid, a lever for each type-bar; (*b*) means whereby said levers are connected, each with the type-bar to which it corresponds; (*c*) an oscillating segmental pin-carrier; (*d*) movement-transmitting pins fewer in number than the letters of the alphabet, mounted in and supported by said carrier, to move longitudinally therein independently of one another, to act upon the type-bar-corresponding levers aforesaid to give movement to said levers and the type-bars connected therewith, each as required; (*e*) means whereby the carrier aforesaid is oscillated to bring its different pins aforesaid into operative relation with the different type-bar-corresponding levers upon which they act; (*f*) members each controlling one of the pins aforesaid in its different positions, and serving by giving movement to said pin to give movement to the different type-bar-corresponding levers upon which said pin acts, each as required.

14. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing-center, of a selecting device for selecting the different type-bars of said alphabet; said selecting device including, (*a*) levers correspondjng to the type-bars aforesaid, a lever for each type-bar; (*b*) means whereby said levers are connected each with the type-bar to which it corresponds; (*c*) an oscillating segmental pin-carrier; (*d*) movement-transmitting pins fewer in number than the letters of the alphabet, mounted in said carrier, to move longitudinally therein independently of one another; to act upon the type-bar-corresponding levers aforesaid to give movement to said levers and the type-bars connected therewith, each as required; (*e*) means whereby the carrier aforesaid is oscillated to bring its different pins aforesaid into operative relation with the different type-bar-corresponding levers upon which they act; (*f*) members each controlling one of the pins aforesaid in its various positions, and serving by giving movement to said pin to give movement to the different type-bar-corresponding levers upon which said pin acts, each as required; (*g*) keys corresponding to the controlling members aforesaid; (*h*) motor mechanism, controlled by said keys, for actuating said controlling members; and (*i*) one or more other keys for positioning said pin-carrier.

15. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing-center, of a selecting device for selecting the different type-bars of said alphabet; said selecting device including, (*a*) levers corresponding to the type-bars aforesaid, a lever for each type-bar; (*b*) means whereby said levers are connected, each with the type-bar to which it corresponds; (*c*) an oscillating segmental pin-carrier; (*d*) movement-transmitting pins fewer in number than the letters of the alphabet, mounted in said carrier, to move longitudinally therein independently of one another, to act upon the type-bar-corresponding levers aforesaid to give movement to said levers and the type-bars connected therewith, each as required; (*e*) segment-furnished levers, each controlling one of the pins aforesaid in its various positions, and serving to give movement to said pins, thereby to give movement to the different type-bar-corresponding levers upon which said pin acts, each as required.

16. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing-center, of a selecting device for selecting the different type-bars of said alphabet; said selecting device including, (*a*) a set of levers corresponding respectively to and connected respectively with the type-bars aforesaid; said type-bar-corresponding levers being disposed arc fashion; (*b*) group-controlling members fewer in number than the letters of the alphabet, each serving to control a plurality of the type-bar-corresponding levers aforesaid; (*c*) movement-transmitting members, equal in number to the group-controlling members aforesaid; each of said movement-transmitting members serving to connect the corresponding group-controlling member with the different type-bar-corresponding levers to which it gives movement, each as required; and (*d*) means acting upon the movement-transmitting members aforesaid as a set, to bring each of the group-controlling members aforesaid into operative relation with the different type-bar-corresponding levers controlled thereby each as required.

17. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing-center, of selecting devices for selecting the different type-bars of said alphabet; said selecting devices including, (*a*) a set of levers corresponding respectively to and connected respectively with the type-bars aforesaid; said type-bar-corresponding levers being disposed arc fashion; (*b*) group-controlling members fewer in number than the letters of the alphabet, each serving to control a plurality of the type-bar-corresponding levers aforesaid; (*c*) movement-transmitting members, equal in number to the group-controlling members aforesaid; each of said movement-transmitting members serving to connect the corresponding group-controlling member with the different type-bar-corresponding levers to which it gives movement, each as required; (*d*) a shifter for said movement-transmitting members, acting upon said movement-transmitting members as a set; (*e*) a plurality of keys, for positioning said shifter; (*f*) stop mechanism controlled by one or more of said keys for arresting said shifter and the movement-transmitting members connected therewith.

18. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing-center, of a selecting device for selecting the different type-bars of said alphabet; said selecting device including, (*a*) a set of levers corresponding respectively to and connected respectively with the type-bars aforesaid; said type-bar-corresponding levers being disposed arc fashion; (*b*) group-controlling members fewer in number than the letters of the alphabet, each serving to control a plurality of the type-bar-corresponding levers aforesaid; (*c*) movement-transmitting members, equal in number to the group-controlling members aforesaid, each of said movement-transmitting members serving to connect the corresponding group-controlling member with the different type-bar-corresponding levers to which it gives movement, each as required; (*d*) keys, and motor mechanism controlled thereby, whereby the different group-controlling members aforesaid are caused to act, each as required; (*e*) a shifter for said movement-transmitting members, acting upon said movement-transmitting members as a set; and (*f*) one or more keys controlling said shifter.

19. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing-center, of a selecting device for selecting the different type-bars of said alphabet; said selecting device including, (*a*) a set of levers corresponding respectively to and connected respectively with the type-bars aforesaid; said type-bar-corresponding levers being disposed arc fashion; (*b*) group-controlling members fewer in numbers than the letters of the alphabet, each serving to control a plurality of the type-bar-corresponding levers aforesaid; (*c*) movement-transmitting members, equal in number to the group-controlling members aforesaid; each of said movement-transmitting members serving to connect the corresponding group-controlling member with the different type-bar-corresponding levers to which it gives movement, each as required; (*d*) a frame for communicating movement to the different group controlling members aforesaid each as required; (*e*) a motor device for actuating said frame; (*f*) keys, acting to connect the different group-controlling members aforesaid, each as required, with the frame aforesaid, and to bring the motor device aforesaid into action, to impel said frame; (*g*) a shifter for said movement-transmitting members, acting upon said movement-transmitting members as a set; and (*h*) one or more keys for positioning said shifter.

20. In a type-bar-selecting device for a type-writing machine, and in combination therein with a plurality of groups of type-bars, striking to a common printing-center, (*a*) a set of levers corresponding respectively to and connected respectively with the type-bars aforesaid; (*b*) group-controlling members, each serving to control a plurality of the type-bars and type-bar-corresponding levers aforesaid; (*c*) movement-transmitting pins equal in number to the number of group-controlling members aforesaid; said pins each acting to transmit movement from one of the group-controlling members aforesaid to the different type-bar-corresponding levers controlled by said group-controlling member, each as required; (*d*) an oscillating segmental pin-carrier, wherein said pins are mounted and whereby said pins are supported, to move longitudinally independently of each other, and to move bodily as a set intermediate the group-controlling members aforesaid and the type-bar-corresponding levers aforesaid.

21. In a type-bar-selecting device for a type-writing machine, and in combination therein with a plurality of groups of type-bars, striking to a common printing-center, (*a*) a set of levers corresponding respectively to and connected respectively with the type-bars aforesaid; (*b*) group-controlling members, each serving to control a plurality of the type-bars and type-bar-corresponding levers aforesaid; (*c*) movement-transmitting pins equal in number to the number of group-controlling members aforesaid; said pins each acting to transmit movement from one of the group-controlling members, aforesaid, to the different type-bar-corresponding levers controlled by said group-controlling member, each as required; (*d*) an oscillating segmental pin-carrier, wherein said pins are mounted to move longitudinally independently of each other, and to move bodily as a set intermediate the group-controlling members aforesaid and the type-bar-corresponding levers aforesaid; (*e*) a plurality of keys for positioning said pin-carrier; and (*f*) stop mechanism, controlled by one or more of said keys, for arresting said pin-carrier in the position required.

22. In a type-bar-selecting device for a type-writing machine, and in combination therein with a plurality of groups of type-bars, striking to a common printing-center, (*a*) a set of levers corresponding respectively to and connected respectively with the type-bars aforesaid; (*b*) group-controlling members, each serving to control a plurality of the type-bars and type-bar-corresponding levers aforesaid; (*c*) movement-transmitting pins, equal in number to the number of group-controlling members aforesaid; said pins each acting to transmit movement from one of the group-controlling members aforesaid to the different type-bar-corresponding levers controlled by said group-controlling member, each as required; (*d*) an oscillating segmental pin-carrier, wherein said pins are mounted to move longitudinally independently of each other, and to move bodily as a set intermediate the group-controlling members aforesaid and the type-bar-corresponding levers aforesaid; (*e*) keys, and motor mechanism controlled thereby whereby the different group-controlling members aforesaid are caused to act each as required; and (*f*) one or more other keys for positioning the pin-carrier aforesaid.

23. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing-center of a selecting device for selecting the different type-bars of the same alphabet, each as required; said selecting device including, (*a*) a set of levers radially or tangentially disposed, corresponding respectively to and connected respectively with the type-bars aforesaid; (*b*) group-controlling levers, fewer in number than the type-bars aforesaid, each serving to control a plurality of the type-bars aforesaid, corresponding respectively to different letters of the alphabet; (*c*) movement-transmitters, intermediate said group-controlling levers and the radially-disposed type-bar-corresponding levers aforesaid; and (*d*) a shifter for the movement-transmitting members aforesaid, whereby the different group-controlling levers aforesaid are connected each as required, with the different type-bar-corresponding levers of the group controlled by said group-controlling lever.

24. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing-center, of a selecting device for selecting the different type-bars of said alphabet, each as required; said selecting device including, (*a*) a set of levers radially or tangentially disposed, corresponding respectively to and connected respectively with the type-bars aforesaid; (*b*) group-controlling levers each serving to control a plurality of the type-bars aforesaid; (*c*) movement-transmitters, intermediate said group-controlling levers and the radially-disposed type-bar-corresponding levers aforesaid; (*d*) a shifter for the movement-transmitting members aforesaid, whereby the different group-controlling levers aforesaid are connected each as required, with the different type-bar-corresponding levers of the group controlled by said group-controlling lever; (*e*) keys, and motor mechanism controlled thereby whereby the different group-controlling levers aforesaid are caused to act each as required; and (*f*) one or more other keys for positioning the shifter aforesaid.

25. In a type-writing machine, and in combination, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a set of levers radially or tangentially disposed, corresponding respectively to and connected respectively with the type-bars aforesaid; (*c*) group-controlling levers, each arranged to control a plurality of the type-bars aforesaid; (*d*) movement-transmitting pins intermediate said group-controlling levers and the type-bar-corresponding levers aforesaid, a movement-transmitting pin for each group-controlling lever; and (*e*) an oscillating segmental pin-carrier wherein said pins are mounted to move longitudinally independently of each other, and to move bodily as a set intermediate the group-controlling levers aforesaid and the type-bar-corresponding levers aforesaid.

26. In a type-writing machine, and in combination, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a set of levers radially or tangentially disposed, corresponding respectively to and connected respectively with the type-bars aforesaid; (*c*) group-controlling levers, each arranged to control a plurality of the type-bars aforesaid; (*d*) movement-transmitting pins intermediate said group-controlling levers and the type-bar-corresponding levers aforesaid, a movement-transmitting pin for each group-controlling lever; (*e*) an oscillating segmental pin-carrier wherein said pins are mounted to move longitudinally independently of each other, and to move bodily as a set intermediate the group-controlling levers aforesaid and the type-bar-corresponding levers aforesaid; (*f*) keys, and means controlled thereby whereby the different group-controlling levers aforesaid are caused to act, each as required, for the impelling of a type-bar; and (*g*) one or more other keys for positioning the pin-carrier aforesaid.

27. In a type-writing machine, in which the letters of the alphabet are controlled by means of keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars striking to a common printing-center, of a selecting device for selecting the different type-bars of said alphabet each as required, said selecting device including (*a*) the levers *f*, *f*; (*b*) connections intermediate said levers and said type-bars; (*c*) group-controlling levers; (*d*) suitable movement-transmitters equal in number to the group-controlling levers aforesaid, disposed intermediate said group-controlling levers and the levers *f*, *f*, to communicate movement from the group-controlling levers aforesaid to the levers *f*, *f*, aforesaid; and (*e*) means whereby said movement-transmitters are shifted as a set, to bring

the different group-controlling levers aforesaid each into operative relation with the different levers *f*, *f*, controlled by it, as required.

28. In a type-writing machine, and in combination, (*a*) a plurality of type-bars; (*b*) levers *f*, *f*; (*c*) connections intermediate said levers *f*, *f*, and said type-bars; (*d*) group-controlling levers; (*e*) movement-transmitting pins, equal in number to the number of group-controlling levers aforesaid, a pin for each group-controlling lever; and (*f*) an oscillating segmental pin-carrier, wherein said pins are mounted to move longitudinally independently of one another, and to move bodily as a set intermediate the group-controlling levers aforesaid and the levers *f*, *f*, aforesaid.

29. In a type-writing machine, and in combination therein, with a plurality of groups of type-bars striking to a common printing-center, a type-bar-selecting device, including a set of group-controlling levers, said levers being disposed parallel or nearly parallel with each other, and having their ends segment-shaped to form an arc.

30. In a type-bar-selecting device, the combination with segment-furnished group-controlling levers, of an oscillating segmental pin-carrier with movement-transmitting pins mounted therein, to move longitudinally independently of each other, a pin for each of the group-controlling levers aforesaid, and returning-springs for said pins.

31. In a type-writing machine, and in combination, (*a*) a plurality of groups of type-bars; (*b*) a motor-frame; (*c*) group-controlling levers furnished with segments; (*d*) a series of shiftable movement-transmitters, whereon said segments act; and (*e*) keys, and means controlled thereby, whereby the different group-controlling levers aforesaid are connected, each as required, with the motor-frame aforesaid, to receive movement therefrom.

32. In a type-writing machine, and in combination therein with a plurality of groups of type-bars striking to a common printing-center, a type-bar-selecting mechanism, including, (*a*) a type-bar-impelling frame; (*b*) group-controlling levers, each corresponding to a different one of the groups of type-bars aforesaid; (*c*) arms, pivoted on said group-controlling levers to receive movement from the type-bar-impelling frame aforesaid; (*d*) bell-cranks having their vertical arms connected with the pivoted arms before mentioned, and having their horizontal arms of varying lengths; and (*e*) key-levers for actuating said bell-cranks, thereby to connect the group-controlling levers aforesaid with the type-bar-impelling frame aforesaid, each as required.

33. In a type-writing machine, and in combination therein with a plurality of groups of type-bars striking to a common printing-center, a type-bar-selecting mechanism, including, (*a*) a type-bar-impelling frame; (*b*) group-controlling levers, each corresponding to a different one of the groups of type-bars aforesaid; (*c*) arms, pivoted on said group-controlling levers to receive movement from the type-bar-impelling frame aforesaid; (*d*) bell-cranks, having their vertical arms connected with the pivoted arms before mentioned, and having their horizontal arms of varying lengths; (*e*) key-levers for actuating said bell-cranks, thereby to connect the group-controlling levers aforesaid with the type-bar-impelling frame aforesaid, each as required; (*f*) a motor device, for actuating the type-bar-impelling frame aforesaid; and (*g*) means controlled by the key-levers aforesaid, and serving when said key-levers are depressed, to bring said motor device into action, so that it impels the frame aforesaid.

34. In a type-writing machine, in which the letters of the alphabet are controlled by operating upon keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars of a selecting device therefor, including, (*a*) radially-disposed levers corresponding to and connected respectively with the type-bars aforesaid; (*b*) group-controlling levers for controlling different groups of the type-bars aforesaid; (*c*) movement-transmitting pins, one for each group-controlling lever, for connecting said group-controlling levers with the different type-bar-corresponding levers operated thereby, each as required; (*d*) a carrier for said pins, wherein said pins are mounted to move longitudinally independently of each other, and to move as a set with said carrier; (*e*) a motor-frame; (*f*) arms pivoted to the group-controlling levers aforesaid, to receive movement from said motor-frame; said arms being normally free from said motor-frame; (*g*) bell-cranks, having their vertical arms connected with the arms before mentioned as pivoted to the group-controlling levers aforesaid; and (*h*) keys for actuating said bell-cranks.

35. In a type-writing machine, the combination with a plurality of groups of type-bars arranged so that they strike to a common printing-center, of type-bar-controlling mechanism, including, (*a*) radially-disposed levers corresponding to and connected respectively with the type-bars aforesaid; (*b*) group-controlling levers for controlling different groups of the type-bars aforesaid; (*c*) movement-transmitting pins, one for each group-controlling lever, for connecting said group-controlling lever with the different type-bar-corresponding levers operated thereby, each as required; (*d*) a carrier for said pins, wherein said pins are mounted to move longitudinally independently of each other, and to move as a set with said carrier; (*e*) a motor-frame; (*f*) arms pivoted to the group-controlling levers aforesaid, to receive movement from said motor-frame; said arms being normally free from said motor-frame; (*g*) bell-cranks, having their vertical arms connected with the arms before mentioned as pivoted to the group-controlling levers aforesaid; (*h*) keys for actuating said bell-cranks; (*i*) a motor, controlled by the keys aforesaid, for actuating the frame aforesaid; and (*k*) one or more other key for positioning the carrier aforesaid.

36. In a type-writing machine, in which the letters of the alphabet are controlled by operating upon keys fewer in number than the letters of the alphabet, the combination with an alphabet of type-bars of a selecting device therefor, including, (*a*) radially-disposed levers corresponding to and connected respectively with the type-bars aforesaid; (*b*) group-controlling levers for controlling different groups of said type-bars; (*c*) movement-transmitting pins, one for each group-controlling lever, for connecting said group-controlling levers with the different type-bar-corresponding levers operated thereby, each as required; (*d*) a carrier for said pins, wherein said pins are mounted to move longitudinally independently of each other, and to move as a set with said carrier; (*e*) a motor-frame; (*f*) arms pivoted to the group-controlling levers aforesaid, to receive movement from said motor-frame; said arms being normally free from said motor-frame; (*g*) bell-cranks, having their vertical arms connected with the arms before mentioned as pivoted to the group-controlling levers aforesaid; (*h*) keys for actuating said bell-cranks; (*i*) an electromagnet for controlling the motor-frame aforesaid; (*k*) a circuit-closing frame for said electromagnet, operated by the keys aforesaid; and (*l*) one or more other keys for positioning the carrier aforesaid.

37. In a type-writing machine constructed to afford facility to the operator to make the letters in pairs simultaneously, and in combination, (*a*) two alphabets of type-bars arranged on opposite sides of the printing center or centers; (*b*) radially-disposed levers, *f*, *f*, corresponding to said type-bars; and (*c*) links whereby each of said levers is connected with the corresponding type-bar.

38. In a type-writing machine constructed to afford facility to the operator to make the letters in pairs simultaneously, and in combination, (*a*) two sets of type-bars arranged on opposite sides of the printing center or centers; (*b*) two sets of radially-disposed levers, corresponding to said type-bars; (*c*) a set of keys, and motor mechanism controlled thereby, for operating one of the sets of type-bars aforesaid; and (*d*) other keys, and motor mechanism controlled thereby, for operating the other one of the sets of type-bars aforesaid.

39. In a type-writing machine and in combination, (*a*) two sets of type-bars; (*b*) two sets of levers, corresponding respectively to and connected respectively with the type-bars aforesaid; the two sets of type-bar-corresponding levers aforesaid being each disposed arc fashion; (*c*) two sets of group-controlling members disposed on opposite sides of the printing-center; each of said group-controlling members acting to control a different group of the type-bars aforesaid; (*d*) a set of movement-transmitters intermediate one of the sets of group-controlling members aforesaid and the corresponding set of type-bar-corresponding levers; (*e*) another set of movement-transmitters intermediate the other set of group-controlling members aforesaid and the set of type-bar-corresponding levers controlled by them; and (*f*) two shifting devices, one acting to control one of the sets of movement-transmitters above mentioned, and the other acting to control the other set of movement-transmitters aforesaid.

40. In a type-writing machine and in combination, (*a*) two sets of type-bars; (*b*) two sets of levers, corresponding respectively to and connected respectively with the type-bars aforesaid; the two sets of type-bar-corresponding levers aforesaid being each disposed arc fashion; (*c*) two sets of group-controlling members disposed on opposite sides of the printing-center; each of said group-controlling members acting to control a different group of the type-bars aforesaid; (*d*) a set of movement-transmitters intermediate one of the sets of group-controlling members aforesaid, and the corresponding set of type-bar-corresponding levers; (*e*) another set of movement-transmitters intermediate the other set of group-controlling members aforesaid and the set of type-bar-corresponding levers controlled by them; (*f*) two shifting devices, one acting to control one of the sets of movement-transmitters above mentioned, and the other acting to control the other set of movement-transmitters aforesaid; (*g*) keys controlling the group-controlling members aforesaid; and (*h*) other keys, acting to position the movement-transmitters aforesaid, independently of each other.

41. In a type-writing machine and in combination, (*a*) two sets of type-bars; (*b*) two sets of levers, corresponding respectively to and connected respectively with the type-bars aforesaid; the two sets of type-bar-corresponding levers aforesaid being each disposed arc fashion; (*c*) two sets of group-controlling members disposed on opposite sides of the printing-center; each of said group-controlling members acting to control a different group of the type-bars aforesaid; (*d*) a set of movement-transmitters intermediate one of the sets of group-controlling members aforesaid and the corresponding set of type-bar-corresponding levers; (*e*) another set of movement-transmitters intermediate the other set of group-controlling members aforesaid and the set of type-bar-corresponding levers controlled by them; (*f*) two shifting devices, one acting to control one of the sets of movement-transmitters above mentioned, and the other acting to control the other set of movement-transmitters aforesaid; (*g*) bell-cranks, having their vertical arms connected with the arms before mentioned as pivoted to the group-controlling levers aforesaid; (*h*) keys for actuating said bell-cranks; (*i*) an electromagnet for controlling the motor-frame aforesaid; (*k*) a circuit-closing frame for said electromagnet, operated by the keys aforesaid; and (*l*) one or more other keys for positioning the carrier aforesaid.

42. In a type-writing machine, and in combination, (*a*) two sets of type-bars; (*b*) two sets of radially or tangentially disposed levers *f*, *f*, &c., connected each with a different one of the type-bars aforesaid; (*c*) two sets of group-controlling members, one set of group-controlling members serving for one set of type-bars and the other set of group-controlling members serving for the other set of type-bars; each group-controlling member serving for a different group of type-bars; (*d*) two sets of movement-transmitters, to wit, one set of movement-transmitters intermediate one of the sets of group-controlling members aforesaid and the group of radially-disposed levers *f*, *f*, controlled by such controlling members; and another set of movement-transmitters intermediate the other set of group-controlling members aforesaid, and the group of radially-disposed levers *f*, *f*, controlled respectively by them, and (*e*) means whereby the two sets of movement-transmitters aforesaid are positioned as required, each set independently of the other.

43. In a type-writing machine, and in combination, (*a*) two sets of type-bars; (*b*) two sets of radially or tangentially disposed levers *f*, *f*, &c., connected each with a different one of the type-bars aforesaid; (*c*) two sets of group-controlling members, one set of group-controlling members serving for one set of type-bars and the other set of group-controlling members serving for the other set of type-bars; each group-controlling member serving for a different group of type-bars; and (*d*) two sets of movement-transmitting pins, a pin for each group-controlling member; and (*e*) independently-shiftable oscillating segmental carriers, wherein said pins are mounted, to move longitudinally independently of one another.

44. In a type-writing machine, and in combination, (*a*) two sets of type-bars; (*b*) two sets of radially or tangentially disposed levers *f*, *f*, &c., connected each with a different one of the type-bars aforesaid; (*c*) two sets of group-controlling members, one set of group-controlling members serving for one set of type-bars and the other set of group-controlling members serving for the other set of type-bars; each group-controlling member serving for a different group of type-bars; (*d*) two sets of movement-transmitters, to wit, one set of movement-transmitters intermediate one of the sets of group-controlling members aforesaid and the groups of radially-disposed levers *f*, *f*, controlled by such controlling members; and another set of movement-transmitters intermediate the other set of group-controlling members aforesaid, and the groups of radially-disposed levers *f*, *f*, controlled respectively by them, (*e*) means whereby the two sets of movement-transmitters aforesaid are shifted as required, each set independently of the other; (*f*) keys, acting to position said carriers, and (*g*) other keys and means controlled thereby for actuating the group-controlling members of the two sets aforesaid, each as required.

45. In a type-writing machine constructed to afford facility to the operator to make the letters in pairs simultaneously, (*a*) two sets of type-bars; (*b*) a set of segment-furnished group-controlling levers, for each set of type-bars, said levers being fewer in number than the type-bars; (*c*) shiftable connections between one of the sets of group-controlling levers aforesaid and the corresponding type-bars; and (*d*) connections between the group-controlling levers of the other set aforesaid and the type-bars controlled thereby, said connections being shiftable independently of the other shiftable connections aforesaid.

46. In a type-writing machine constructed to afford facility to the operator to make the letters in pairs simultaneously, type-bar-selecting mechanism, including two sets of segment-furnished group-controlling levers; and two oscillating pin-carriers, each carrier having a pin to oscillate over the corresponding one of the segments aforesaid, so that in whatever position it may be it is subject to be acted on by said segment.

47. In a type-writing machine constructed to afford facility to the operator to make the letters in pairs simultaneously, type-bar-selecting mechanism, including two sets of segment-furnished group-controlling levers; two oscillating pin-carriers, each carrier having a pin to oscillate over the corresponding one of the segments aforesaid, so that in whatever position it may be, it is subject to be acted on by said segment; and type-bars and the type-bar-corresponding levers *f*, *f*, connected therewith.

48. In a selecting mechanism for a duplex type-writing machine, two oscillating pin-carriers, each carrying a plurality of movement-transmitting pins, movable longitudinally independently of each other, and moving bodily as a set with the pin-carrier: each of said pin-carriers occupying a segment of a circle, and each being oscillatable independently of the other.

49. In a type-writing machine constructed to afford facility to the operator to make letters in pairs simultaneously, the combination with two sets of type-bars, of a type-bar-selecting mechanism, including, (*a*) two sets of group-controlling levers disposed on opposite sides of the printing-center or centers; (*b*) vibratory frames on opposite sides of the printing-center, one frame for actuating the group-controlling levers of the one set, and the other frame actuating the group-controlling levers of the other set; (*c*) movement-receiving arms pivoted to said group-controlling levers, to receive movement from the corresponding vibratory frames; (*d*) two sets of bell-cranks; (*e*) links, connecting said bell-cranks with the movement-receiving arms pivoted to the corresponding group-controlling levers; and (*f*) keys, for actuating said bell-cranks.

50. In a type-writing machine constructed to afford facility to the operator to make letters in pairs simultaneously, the combination with two sets of type-bars, of a type-bar-selecting mechanism, including, (*a*) two sets of group-controlling levers disposed on opposite sides of the printing center or centers; (*b*) vibratory frames on opposite sides of the printing-center, one frame for actuating the group-controlling levers of the one set, and the other frame actuating the group-controlling levers of the other set; (*c*) movement-receiving arms pivoted to said group-controlling levers, to receive movement from the corresponding vibratory frames; (*d*) two sets of bell-cranks; (*e*) links, connecting said bell-cranks with the movement-receiving arms and the corresponding group-controlling levers; (*f*) keys, for actuating said bell-cranks; (*g*) two electromagnets, one serving to actuate one of the vibratory frames aforesaid, and the other to actuate the other of the vibratory frames aforesaid; and (*h*) a circuit-closing frame for each magnet, actuated by the corresponding keys.

51. In a type-writing machine constructed to afford facility to the operator to make letters in pairs simultaneously, and in combination, (*a*) two sets of type-bars, disposed on opposite sides of the printing center or centers; (*b*) two sets of type-bar-corresponding levers each connected with the corresponding type-bars; (*c*) two sets of group-controlling levers disposed on opposite sides of the printing-center; (*d*) shifting connections, intermediate each set of group-controlling levers and the type-bar-corresponding levers operated thereby; the shifting connections of the one set being shiftable independently of the shifting connections of the other set; (*e*) type-bar-impelling frames on opposite sides of the printing-center, one frame for actuating the group-controlling levers of the one set, and the other frame for actuating the group-controlling levers of the other set; (*f*) movement-receiving arms pivoted to the group-controlling levers aforesaid, to receive movement from the type-bar-impelling frames aforesaid; (*g*) two sets of bell-cranks; (*h*) links, connecting said bell-cranks with the movement-receiving arms of the corresponding group-controlling levers, for bringing said movement-receiving arms into operative relation with the corresponding type-bar-impelling frames to receive movement therefrom; (*i*) keys, for actuating said bell-cranks; and (*k*) other keys, controlling the shifting connections aforesaid.

52. In a type-writing machine constructed to afford facility to the operator to make letters in pairs simultaneously, and in combination, (*a*) two sets of type-bars, disposed on opposite sides of the printing center or centers; (*b*) two sets of type-bar-corresponding levers each connected with the corresponding type-bar; (*c*) two sets of group-controlling levers disposed on opposite sides of the printing-center; (*d*) shifting connections, intermediate each set of group-controlling levers and the type-bar-corresponding levers operated thereby; the shifting connections of the one set being shiftable independently of the shifting connections of the other set; (*e*) type-bar-impelling frames on opposite sides of the printing-center, one frame for actuating the group-controlling levers of the one set, and the other frame for actuating the group-controlling levers of the other set; (*f*) movement-receiving arms pivoted to the group-controlling levers aforesaid, to receive movement from the type-bar-impelling frames aforesaid; (*g*) two sets of bell-cranks; (*h*) links, connecting said bell-cranks with the movement-receiving arms of the corresponding group-controlling levers, for bringing said movement-receiving arms into operative relation with the corresponding type-bar-impelling frames to receive movement therefrom; (*i*) keys, for actuating said bell-cranks; (*k*) other keys, controlling the shifting connections aforesaid; (*l*) two electromagnets for actuating the type-bar-impelling frames aforesaid; and (*m*) a circuit-controlling frame, for each electromagnet, actuated by the corresponding key.

53. In a character-selecting device, the combination with a shifting device and a motor, of a controlling device for said motor; said controlling device being connected with the shifting device aforesaid, and acting by its initial movement to prevent the motor device aforesaid from operating, and acting by a continuance of the same movement to permit said motor device to operate, whereby premature op-

erating of said motor device, while the shifting is taking place, is prevented.

54. In a character-selecting device for a keyboard printing instrumentality, the combination with a shifting device, a motor, and a motor-controlling device, of a key giving movement both to said shifting device and said motor-controlling device; said motor-controlling device acting to prevent the premature operating of the motor aforesaid while the shifting is taking place.

55. In a character-selecting device for a keyboard printing instrumentality, the combination with a shifting device, a motor, and a motor-controlling device, of a key giving movement both to said shifting device and said motor-controlling device; said motor-controlling device operatiag, when actuated by the depressing of the key aforesaid, first to prevent power from being supplied to the motor aforesaid, and then operating to permit the supply of power to said motor, whereby premature operating of said motor, while the shifting is taking place, is prevented.

56. In a character-selecting mechanism for a keyboard printing instrumentality, the combination with a shifting device and an electromagnet, of a circuit-controlling device for said electromagnet, and means whereby said shifting device and said circuit-controlling device are simultaneously actuated, said circuit-controlling device normally closing a break in the circuit of the electromagnet aforesaid, and operating by its initial movement to open such break in the circuit of said magnet, and by a continuance of the same movement to close said break in the circuit of said magnet, whereby premature operating of said magnet while the shifting is taking place, is prevented.

57. In a character-selecting device for a keyboard printing instrumentality, the combination with a shifting device, an electromagnet and a circuit-controller, of a key, giving movement to said shifting device and said circuit-controller, said circuit-controller acting to prevent the magnet aforesaid from operating, while the shifting is taking place.

58. In a character-selecting device for a keyboard printing instrumentality, the combination with a shift-key and a motor device, of a motor-controlling device receiving movement from said shift-key and acting, by its initial movement when said key is depressed, to prevent the motor device aforesaid from operating, but acting, by a continuance of the same movement, to permit said motor to operate, whereby premature operating of the motor device aforesaid, while the shifting is taking place, is prevented.

59. In a keyboard printing instrumentality, and in combination, type-controlling devices corresponding to the letters of the alphabet, keys fewer in number than the letters of the alphabet, and selecting mechanism controlled by said keys, acting singly and in different combinations, for operating the different type-controlling devices aforesaid, each as required; said selecting mechanism including, (*a*) a shifting device; (*b*) a motor device; and (*c*) a motor-controlling device connected with the shifting device aforesaid, and operating, when a plurality of the keys aforesaid, one of them operating the shifting device aforesaid, are depressed simultaneously for the selecting of a letter corresponding to the combination of keys thus simultaneously depressed, to prevent the premature acting of the motor device aforesaid while the shifting is taking place.

60. A character-selecting device for a keyboard printing instrumentality, constructed to afford facility to the operator to produce or select the letters of the alphabet, each as required, by operating upon keys fewer in number than the letters of the alphabet, said device including, in combination with the keys aforesaid, (*a*) a shifting device; (*b*) a motor; (*c*) a motor-controlling device, operated by one or more of the keys aforesaid, and serving by its initial movement when one of the keys controlling it is depressed, to prevent the motor device aforesaid from operating, but acting, by its further movement, to cause or permit said motor device to operate, whereby premature operating of said motor device, while the shifting is taking place, is prevented.

61. In a character-selecting device for a keyboard printing instrumentality, the combination, of (*a*) a shifting device; (*b*) a shift-key, giving movement to said shifting device; (*c*) an electromagnet; and (*d*) a circuit-controlling device receiving movement from the shift-key aforesaid, and acting by its initial movement when said shift-key is depressed, to open a break in the circuit of the magnet aforesaid, but operating by a continuance of the same movement, to close the break in said circuit, whereby premature operating of the electromagnet aforesaid, while the shifting is taking place, is prevented.

62. In a keyboard printing instrumentality, and in combination, type-controlling devices corresponding to the letters of the alphabet; keys, fewer in number than the letters of the alphabet, one or more of said keys being a shift-key; and selecting mechanism controlled by said shift-key or shift-keys, acting conjointly with the other keys aforesaid, said selecting mechanism including, (*a*) a shifting device, receiving movement from one or more of the shift-keys aforesaid; (*b*) an electromagnet, and (*c*) a circuit-controlling device, also receiving movement from one or more of the shift-keys aforesaid, and whereby premature operating of the motor device aforesaid, while the shifting is taking place, is prevented.

63. In a character-selecting device, and in combination, (*a*) a plurality of groups of character-corresponding devices; (*b*) group-controlling members, each serving to control one of the groups of character-corresponding devices aforesaid; (*c*) shifting mechanism, whereby the different character-corresponding devices operated by one of the group-controlling members aforesaid are brought into operative relation with said group-controlling members, each as required; (*d*) keys, and motor mechanism controlled thereby, for operating the group-controlling members aforesaid; and (*e*) means connected with the shifting mechanism aforesaid, and operating to prevent the premature actuating of a group-controlling member by the motor mechanism aforesaid, while the shifting is taking place.

64 In a character-selecting device, and in combination, (*a*) a plurality of groups of character-corresponding devices; (*b*) group-controlling members, each serving to control one of the groups of character-corresponding devices aforesaid; (*c*) shifting mechanism, whereby the different character-corresponding devices operated by one of the group-controlling members aforesaid are brought into operative relation with said group-controlling members, each as required; (*d*) keys, and motor mechanism controlled thereby, for operating the group-controlling members aforesaid; (*e*) one or more keys controlling the shifting mechanism aforesaid; and (*f*) means operated by one or more of the keys last mentioned, said means acting to prevent the premature actuating of the group-controlling members aforesaid, while the shifting mechanism aforesaid is operating.

65. In a character-selecting device, and in combination, (*a*) a plurality of groups of character-corresponding devices; (*b*) group-controlling members, each serving to control one of the groups of character-corresponding devices aforesaid; (*c*) shifting mechanism, whereby the different character-corresponding devices operated by one of the group-controlling members aforesaid are brought into operative relation with said group-controlling members, each as required; (*d*) electromagnetic motor mechanism for actuating the group-controlling devices aforesaid, each as required; and (*e*) a circuit-controlling device for said electromagnetic motor mechanism, operating to prevent premature circuit-closing while the shifting mechanism aforesaid is operating.

66. In a character-selecting device, and in combination, (*a*) a plurality of groups of character-corresponding devices; (*b*) group-controlling members, each serving to control one of the groups of character-corresponding devices aforesaid; (*c*) shifting mechanism, whereby the different character-corresponding devices operated by one of the group-controlling members aforesaid are brought into operative relation with said group-controlling members, each as required; (*d*) keys, and electromagnetic motor mechanism controlled thereby for operating the group-controlling members aforesaid each as required; (*e*) one or more keys controlling the shifting mechanism aforesaid; and (*f*) means operated by one or more of the keys last mentioned, acting to prevent premature circuit-closing while the shifting is taking place.

67. In a type-writing machine, the combination with type-bars striking to a common printing-center and suitable motor mechanism for impelling said type-bars, each as required, of (*a*) a shifting mechanism; and (*b*) a motor-controlling device, connected with said shifting mechanism and operating by its initial movement to prevent the motor mechanism aforesaid from acting to impel a type-bar, but operating, by a continuation of the same movement, to permit said motor to act to impel a type-bar.

68. In a type-writing machine and in combination, (*a*) type-bars striking to a common printing-center; (*b*) keys and suitable motor mechanism controlled thereby for actuating said type-bars, each as required; (*c*) a shifting device; (*d*) a motor-controlling device; and (*e*) one or more keys at the keyboard for giving movement to said shifting device and said motor-controlling device: said motor-controlling device operating to prevent the premature impelling of a type-bar by the motor mechanism aforesaid, while the shifting is taking place.

69. In a type-writing machine, and in combination, (*a*) a key; (*b*) type-selecting means, positioned by said key; (*c*) an electromagnet, and (*d*) a circuit-controlling device operated by said key; said circuit-controlling device normally closing a break in the circuit of the electromagnet aforesaid, and serving, when actuated by the key aforesaid, first, to open said break in the circuit, and then, as the key aforesaid approaches the limit of its movement, to close said break, whereby the electromagnet aforesaid is prevented from acting prematurely, while the positioning of the type-selecting means aforesaid is taking place.

70. In a type-writing machine, the combination with the set of type-bars, an electromagnetic type-bar-impelling mechanism and a shifting mechanism, of a circuit-controlling device coacting with said shifting mechanism; said circuit-controlling device normally closing a break in the circuit and operating by its initial movement to open said break, and serving by a continuance of the same movement to close said break, thereby preventing the electromagnetic type-bar-impelling mechanism aforesaid from operating prematurely while the shifting is taking place.

71. In a type-writing machine and in combination; (*a*) type-bars striking to a common printing-center; (*b*) keys and electromagnetic mechanism controlled thereby, for actuating said type-bars; (*c*) a shifting device whereby different type-bars are brought into operative relation with the electromagnetic mechanism aforesaid, to receive movement therefrom, each as required; (*d*) a circuit-controlling device; and (*e*) a key, giving movement to the shifting device aforesaid and the circuit-controlling device aforesaid; said circuit-controlling device acting to prevent the electromagnetic mechanism aforesaid from operating prematurely while the shifting is taking place.

72. In a type-bar-selecting device, the combination, with a plurality of type-bars striking to a common printing-center and a motor for impelling all said type-bars, each as required, of (*a*) a shiftable connection intermediate said motor device and said type-bars; (*b*) a key giving movement to said shiftable connection; (*c*) a motor-controlling device, also receiving movement from said key and operating to prevent the premature actuating of a type-bar by the motor aforesaid while the shiftable connection aforesaid is being positioned.

73. In a type-bar-selecting device, the combination with a plurality of type-bars striking to a common printing-center and an electromagnet for impelling all said type-bars, each as required, of a shiftable connection intermediate said electromagnet and said type-bars; and a circuit-controlling device mechanically connected with said shiftable connection, said circuit-controlling device normally closing a break in the circuit of the electromagnet aforesaid and operating by its initial movement to open said break in said circuit, but operating by a continuance of the same movement to close said break, whereby premature acting of the magnet aforesaid, while the shiftable connection aforesaid is being positioned, is prevented.

74. In a type-bar-selecting device, the combination with a plurality of type-bars striking to a common printing-center and an electromagnet for impelling all said type-bars, each type-bar as required, of (*a*) a shiftable connection intermediate said electromagnet and said type-bars; (*b*) a key, giving movement to said shiftable connection; and (*c*) a motor-controlling device, also receiving movement from said key and serving to prevent premature action of the magnet aforesaid while the shiftable connection aforesaid is being positioned.

75. In a type-bar-selecting device, the combination with a plurality of type-bars striking to a common printing-center and an electromagnet for impelling all said type-bars, each type-bar as required, of (*a*) a shiftable connection intermediate said electromagnet and said type-bars; (*b*) one or more keys for positioning said shiftable connection; and (*c*) a circuit-controlling device operated by one or more of said keys; said circuit-controlling device normally closing a break in the circuit of the magnet aforesaid and serving, when actuated by one of the keys aforesaid, first to open said break in said circuit, and then, as said key and said shiftable connection impelled thereby, approach the limit of their movement, to close said break in said circuit, whereby the electromagnet aforesaid is prevented from acting prematurely while the shiftable connection aforesaid is being positioned.

76. In a type-writing machine, the combination with type-bars striking to a common printing-center, of a type-bar-selecting device, including; (*a*) a pin-carrier; (*b*) one or more keys for positioning said pin-carrier; (*c*) a type-bar-impelling motor; and, (*d*) a controlling device for said motor operated by one or more of the keys aforesaid, and serving to prevent the premature acting of said motor to impel a type-bar, while the pin-carrier aforesaid is being shifted.

77. In a type-writing machine, the combination with type-bars striking to a common printing-center, of a type-bar-selecting device, including; (*a*) a pin-carrier; (*b*) one or more keys for positioning said pin-carrier; (*c*) a type-bar-impelling electromagnet; and (*d*) a circuit-controlling device for said electromagnet, operated by one or more of the keys aforesaid, and serving to prevent the premature closing of the circuit of the magnet aforesaid, while the pin-carrier aforesaid is being shifted.

78. In a type-writing machine, and in combination, (*a*) a plurality of groups of type-bars, striking to a common printing-center; (*b*) group-controlling members, each serving to control a different one of the groups of type-bars aforesaid; (*c*) shifting mechanism, whereby the different type-bars aforesaid, controlled by one of the group-controlling members aforesaid, are brought into operative relation with said group-controlling members, each as required; (*d*) keys, and motor mechanism controlled thereby, for operating the group-controlling members aforesaid, each as required; and (*e*) means connected with the shifting mechanism aforesaid, operating to prevent the premature actuating of a group-controlling member, while the shifting is taking place.

79. In a type-writing machine, and in combination, (*a*) a plurality of groups of type-bars, striking to a common printing-center; (*b*) group-controlling members, each serving to control a different one of the groups of type-bars aforesaid; (*c*) shifting mechanism, whereby the different type-bars aforesaid, controlled by one of the group-controlling members aforesaid, are brought into operative relation with said group-controlling members, each as required; (*d*) keys, and motor mechanism controlled thereby, for operating the group-controlling members aforesaid, each as required; (*e*) one or more keys controlling the shifting mechanism aforesaid; and (*f*) means operated by one or more of the keys last mentioned for preventing the premature actuating of the group-controlling members aforesaid, while the shifting is taking place.

80. In a type-writing machine, and in combination, (*a*) a plurality of groups of type-bars, striking to a common printing-center; (*b*) group-controlling members, each serving to control a different one of the groups of type-bars aforesaid; (*c*) shifting mechanism, whereby the different type-bars aforesaid, are brought into operative relation with said group-controlling members, each as required; (*d*) electromagnetic motor mechanism for actuating the group-controlling members aforesaid, each as required; and (*e*) circuit-controlling means for said electromagnetic motor mechanism, operating to prevent the premature actuating of a group-controlling member by the electromagnetic motor mechanism aforesaid, while the shifting mechanism aforesaid is operating.

81. In a type-writing machine, and in combination, (*a*) a plurality of groups of type-bars, striking to a common printing-center; (*b*) group-controlling members, each serving to control a different one of the groups of type-bars aforesaid; (*c*) shifting mechanism, whereby the different type-bars aforesaid, controlled by one of the group-controlling members aforesaid, are brought into operative relation with said group-controlling members, each as required; (*d*) keys and electromagnetic mechanism controlled thereby for operating the group-controlling members aforesaid, each as required; (*e*) one or more keys controlling the shifting mechanism aforesaid; and (*f*) a circuit-controlling device operated by one or more of the keys last mentioned, and serving to prevent the premature actuating of the group-controlling members aforesaid, while the shifting mechanism aforesaid is acting.

82. In a type-writing machine, and in combination, (*a*) type-bars striking to a common printing-center; (*b*) type-bar-corresponding levers, each connected with and corresponding to one of the type-bars aforesaid; (*c*) group-controlling members each serving to control a different group of the type-bars aforesaid; (*d*) shiftable connections intermediate said group-controlling members and the type-bar-corresponding levers aforesaid, whereby the different type-bar-corresponding levers aforesaid of a group, are brought into operative relation, each as required, with the corresponding group-controlling member; (*e*) motor mechanism for actuating the group-controlling members aforesaid, each as required; and (*f*) means connected with the shiftable connections aforesaid, operating to prevent the premature actuating of the group-controlling members aforesaid by the motor mechanism aforesaid, while the shiftable connections aforesaid are being positioned.

83. In a type-writing machine, and in combination, (*a*) type-bars striking to a common printing-center; (*b*) type-bar-corresponding levers, each connected with and corresponding to one of the type-bars aforesaid; (*c*) group-controlling members each serving to control a different group of the type-bars aforesaid; (*d*) shiftable connections intermediate said group-controlling members and the type-bar-corresponding levers aforesaid, whereby the different type-bar-corresponding levers aforesaid of a group, are brought into operative relation, each as required with the corresponding group-controlling member; (*e*) keys, and motor mechanism controlled thereby, for actuating the group-controlling members aforesaid, each as required; (*f*) one or more keys for positioning the shiftable connections aforesaid; and (*g*) means operated by one or more of the keys last mentioned, serving to prevent the premature actuating of the group-controlling members aforesaid by the motor mechanism aforesaid, while the shiftable connections aforesaid are being positioned.

84. In a type-writing machine, and in combination, (*a*) type-bars, striking to a common printing-center; (*b*) type-bar-corresponding levers, each connected with and corresponding to one of the type-bars aforesaid; (*c*) group-controlling members, each serving to control a different group of the type-bars aforesaid; (*d*) shiftable connections intermediate said group-controlling members and the type-bar-corresponding levers aforesaid, whereby the different type-bar-corresponding levers aforesaid of a group, are brought into operative relation, each as required, with the corresponding group-controlling member; (*e*) a frame for giving movement to the different group-controlling mem-

bers aforesaid; (*f*) keys, and means controlled thereby, whereby said group-controlling members are connected, each as required, with said frame; (*g*) a motor for actuating said frame; (*h*) one or more keys for positioning the shiftable connections aforesaid; and (*i*) means, operated by one or more of the keys last mentioned, and acting to prevent premature impelling of the frame aforesaid, by the motor aforesaid, while the shiftable connections aforesaid are being positioned.

85. In a type-writing machine, and in combination, (*a*) type-bars striking to a common printing-center; (*b*) type-bar-corresponding levers, each connected with and corresponding to one of the type-bars aforesaid; (*c*) group-controlling levers, each serving to actuate a different group of the type-bars aforesaid; (*d*) movement-transmitting pins, one for each group-controlling lever, and a carrier, wherein said pins are mounted to move longitudinally independently of each other, and to move as a set with said carrier intermediate the group-controlling levers aforesaid and the type-bar-corresponding levers aforesaid, whereby the different type-bar-corresponding levers of a group are brought into operative relation, each as required, with the group-controlling levers controlling such group; (*e*) a frame for giving movement to the different group-controlling levers aforesaid; (*f*) keys, and means controlled thereby, whereby said group-controlling levers are connected, each as required, with said frame; (*g*) a motor for actuating said frame; (*h*) one or more keys for positioning the pin-carrier aforesaid; and (*i*) means operated by one or more of said keys, acting to prevent the premature impelling of the frame aforesaid by the motor aforesaid, while the pin-carrier is being positioned.

86. In a type-writing machine, and in combination, (*a*) type-bars, striking to a common printing-center; (*b*) type-bar corresponding levers, each connected with and corresponding to one of the type-bars aforesaid; (*c*) group-controlling members, each serving to control a different group of the type-bars aforesaid; (*d*) shiftable connections intermediate said group-controlling members and the type-bar corresponding levers aforesaid, whereby the different type-bar-corresponding levers aforesaid of a group, are brought into operative relation, each as required, with the corresponding group-controlling member; (*e*) a frame for giving movement to the different group-controlling members aforesaid; (*f*) keys and means controlled thereby whereby said group-controlling members are connected, each as required, with said frame; (*g*) an electromagnet for actuating said frame; (*h*) one or more keys for positioning the shiftable connections aforesaid; and (*i*) a circuit-controlling means, operated by one or more of the keys last mentioned, and acting to prevent the premature impelling of the frame aforesaid by the magnet aforesaid, while the shiftable connections aforesaid are being positioned.

87. In a type-writing machine, and in combination, (*a*) type-bars striking to a common printing-center; (*b*) type-bar-corresponding levers, each connected with and corresponding to one of the type-bars aforesaid; (*c*) group-controlling levers, each serving to actuate a different group of the type-bars aforesaid; (*d*) movement-transmitting pins, one for each group-controlling lever, and a carrier, wherein said pins are mounted to move longitudinally independently of each other, and to move as a set with said carrier intermediate the group-controlling levers aforesaid and the type-bar-corresponding levers aforesaid, whereby the different type-bar-corresponding levers of the group are brought into operative relation, each as required, with the group-controlling levers controlling such group; (*e*) a motor-frame for giving movement to the different group-controlling levers aforesaid; (*f*) keys, and means controlled thereby whereby said group-controlling levers are connected, each as required, with said motor-frame; (*g*) an electromagnet for actuating said frame; (*h*) one or more keys for positioning the pin-carrier aforesaid; and (*i*) circuit-controlling means operated by one or more of said keys, acting to prevent the premature impelling of the motor-frame aforesaid, by the magnet aforesaid, while the pin-carrier aforesaid is being positioned.

88. In a character-selecting device for a keyboard printing instrumentality, in which the letters of the alphabet are selected, as required, by operating upon keys fewer in number than the letters of the alphabet, and in combination, (*a*) a shifting device; (*b*) a plurality of keys for positioning said shifting device; and (*c*) stopping mechanism, controlled by one or more of the keys aforesaid, whereby said shifting device is arrested.

89. In a character-selecting device for a keyboard printing instrumentality, in which the letters of the alphabet are selected as required by operating upon keys fewer in number than the letters in the alphabet, and in combination, (*a*) a shifting device; (*b*) a plurality of keys for positioning said shifting device; (*c*) a fixed stop for arresting said shifting device at its extreme position; and (*d*) a movable stop, controlled by one or more of the keys aforesaid, for arresting said shifting device in a position intermediate its normal position and the extreme position aforesaid.

90. In a character-selecting device for a keyboard printing instrumentality, and in combination, (*a*) a plurality of groups of character-corresponding devices; (*b*) group-controlling devices, each serving to control a different group of the character-corresponding devices aforesaid; (*c*) shiftable connections intermediate said group-controlling devices and said character-corresponding devices; (*d*) a plurality of keys at the keyboard for positioning said shiftable connections; and (*e*) stopping means, controlled by one or more of the keys aforesaid, for arresting said shiftable connections in the positions required.

91. In a character-selecting device for a keyboard printing instrumentality, and in combination, (*a*) a plurality of groups of character-corresponding devices; (*b*) group-controlling members, each serving to control a different group of the character-corresponding devices aforesaid; (*c*) keys, and motor mechanism controlled thereby, whereby said group-controlling members are actuated, each as required; (*d*) shiftable connections intermediate said group-controlling members and said character-corresponding devices; (*e*) a plurality of keys at the keyboard for positioning said shiftable connections; (*f*) stopping means, controlled by one or more of the keys aforesaid, for arresting said shiftable connections in the positions required.

92. In a character-selecting device for a keyboard printing instrumentality, and in combination, (*a*) a plurality of groups of character-corresponding devices; (*b*) group-controlling members, each serving to control a different group of the character-corresponding devices aforesaid; (*c*) movement-transmitting pins—a pin for each group-controlling member—intermediate the group-controlling members aforesaid and the character-corresponding devices controlled thereby; (*d*) a carrier, wherein said pins are mounted to move longitudinally independently of each other, and to move as a set, intermediate the group-controlling members aforesaid and the character-corresponding devices aforesaid, to bring said group-controlling members into operative relation with the different character-corresponding devices controlled respectively by them; (*e*) a plurality of keys at the keyboard for positioning said pin-carrier; and (*f*) stopping means, controlled by one or more of the keys aforesaid, for arresting said pin-carrier in the position required.

93. In a character-selecting device for a keyboard printing instrumentality, and in combination, (*a*) a plurality of groups of character-corresponding devices; (*b*) group-controlling members, each serving to control a different group of the character-corresponding devices aforesaid; (*c*) keys, and motor mechanism controlled thereby, whereby said group-controlling members are actuated, each as required; (*d*) movement-transmitting pins—a pin for each group-controlling member—intermediate the group-controlling members aforesaid and the character-corresponding devices controlled thereby; (*e*) a carrier, wherein said pins are mounted to move longitudinally independently of each other, and to move as a set, intermediate the group-controlling members aforesaid and the character-corresponding devices aforesaid, to bring said group-controlling members into operative relation with the different character-corresponding devices controlled respectively by them; (*f*) a plurality of keys at the keyboard for positioning said pin-carrier; and (*g*) stopping means, controlled by one or more of the keys aforesaid, for arresting said pin-carrier in the position required.

94. In a type-writing machine, and in combination therein with type-bars, striking to a common printing-center, a type-bar-selecting device, including, (*a*) a shifter; (*b*) a plurality of keys, for positioning said shifter; and (*c*) stopping means, controlled by one or more of the keys aforesaid, whereby the shifter aforesaid is arrested in the position required.

95. In a type-writing machine, and in combination therein with type-bars, striking to a common printing-center, a type-bar-selecting device, including, (*a*) a shifter; (*b*) a plurality of keys, for positioning said shifter; (*c*) a fixed stop for arresting said shifter in its extreme position; and (*d*) a movable stop, controlled by one or more of the keys aforesaid, for arresting said shifter in a position intermediate its normal position and the extreme position aforesaid.

96. In a type-writing machine, and in combination, (*a*) a plurality of groups of type-bars, striking to a common printing-center; (*b*) group-controlling devices, each serving to control a different group of the type-bars aforesaid; (*c*) shiftable connections intermediate said group-controlling devices and the type-bars aforesaid; (*d*) a plurality of keys for positioning said shiftable connections; and (*e*) stopping means, controlled by one or more of the keys aforesaid, for arresting said shiftable connections in the positions required.

97. In a type-writing machine, and in combination, (*a*) a plurality of groups of type-bars, striking to a common printing-center; (*b*) type-bar-corresponding levers each connected with the corresponding type-bar; (*c*) group-controlling devices each serving to control a different group of the type-bars aforesaid; (*d*) movement-transmitting pins—a pin for each of the group-controlling devices aforesaid—intermediate the group-controlling devices aforesaid and the type-bar-corresponding levers aforesaid; (*e*) a carrier, wherein said pins are mounted to move longitudinally independently of each other and to move as a set intermediate the group-controlling devices aforesaid and the type-bar-corresponding levers aforesaid; (*f*) a plurality of keys for positioning said carrier; and (*g*) stopping means, controlled by one or more of the keys aforesaid, for arresting said pin-carrier in the position required.

98. In a type-bar-selecting device, the combination with a plurality of type-bars, striking to a common printing-center, and a motor for impelling all said type-bars each as required, of (*a*) a shiftable connection, intermediate said motor and said type-bars; (*b*) a plurality of keys for positioning said shiftable connection; and (*c*) stopping means, controlled by one or more of the keys aforesaid, for arresting said shiftable connection in the position required.

99. In a type-bar-selecting device, the combination with a plurality of type-bars, striking to a common printing-center, and a motor for impelling all said type-bars, each as required, of (*a*) a shiftable connection, intermediate said motor and said type-bars; (*b*) a plurality of keys for positioning said shiftable connection; (*c*) a fixed stop, for arresting said shiftable connection in its extreme position; and (*d*) a movable stop, controlled by one or more of the keys aforesaid, for arresting said shiftable connection in a position intermediate its normal position and the extreme position aforesaid.

100. In a type-writing machine, and in combination, (*a*) a plurality of groups of type-bars, striking to a common printing-center; (*b*) group-controlling members, each serving to control a different group of the type-bars aforesaid; (*c*) keys, and motor mechanism controlled thereby, whereby said group-controlling members are actuated, each as required; (*d*) shiftable connections, intermediate said group-controlling members, and the type-bars aforesaid; (*e*) a plurality of keys, for positioning said shiftable connections; and (*f*) stopping means, controlled by one or more of the keys aforesaid, for arresting the shiftable connections aforesaid in the positions required.

101. In a type-writing machine, and in combination, (*a*) a plurality of groups of type-bars, striking to a common printing-center; (*b*) type-bar-corresponding levers, each connected with the corresponding type-bar; (*c*) group-controlling members, each serving to control a different group of the type-bars aforesaid; (*d*) keys, and motor mechanism controlled thereby, whereby said group-controlling members are actuated, each as required; (*e*) movement-transmitting pins—a pin for each group-controlling member—intermediate the group-controlling members and the type-bar-corresponding levers aforesaid; (*f*) a carrier, wherein said pins are mounted to move longitudinally independently of each other, and to move as a set intermediate the group-controlling members aforesaid and the type-bar-corresponding levers aforesaid; (*g*) a plurality of keys for positioning said carrier; and (*h*) stopping means, controlled by one or more of the keys aforesaid, for arresting said carrier in the position required.

102. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) an electromagnet for impelling the same; (*c*) a key, at the keyboard, acting, when depressed, to close the circuit of the electromagnet aforesaid; (*d*) a circuit-controller, in the circuit of the electromagnet aforesaid, normally closing a break in said circuit; said electromagnet acting, as it impels the type-bar aforesaid, upon the circuit-controller aforesaid to break the circuit of said electromagnet, thereby to permit the type-bar aforesaid and the electromagnet aforesaid, to return toward their normal positions in advance of the release of the key aforesaid; and (*e*) means, acting to keep the circuit of said electromagnet open, after said magnet has returned toward its normal position, and while the key aforesaid is depressed.

103. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) an electromagnet for impelling the same; (*c*) a key, at the keyboard, acting, when depressed, to close the circuit of the electromagnet aforesaid; (*d*) a circuit-controller, in the circuit of the electromagnet aforesaid, normally closing a break in said circuit, said electromagnet acting, as it impels the type bar aforesaid, upon the circuit controller aforesaid to break the circuit of said electromagnet, thereby to permit the type-bar aforesaid and the electromagnet aforesaid, to return toward their normal positions in advance of the release of the key aforesaid; and (*e*) a detent device, for the circuit-controller aforesaid, including an electromagnet, in a circuit distinct from that of the type-bar-impelling electromagnet aforesaid, said detent device acting to keep the circuit of the type-bar-impelling electromagnet aforesaid open after said maguet has returned toward its normal position, and while the key aforesaid is depressed.

104. In a type-writing machine and in combination, (*a*) a type-bar: (*b*) an electromagnet for impelling the same; (*c*) a key, at the keyboard, acting, when depressed, to close the circuit of the electromagnet aforesaid; (*d*) a circuit-controller, in the circuit of the electromagnet aforesaid, normally closing a break in said circuit; said electromagnet acting, as it impels the type-bar aforesaid, upon the circuit-controller aforesaid to break the circuit of said electromagnet, thereby to permit the type-bar aforesaid and the electromagnet aforesaid, to return toward their normal positions in advance of the release of the key aforesaid; and (*e*) a detent-electromagnet, for the circuit-controller aforesaid, said detent-electromagnet being in a circuit controlled by the key aforesaid, and which is uninterruptedly closed so long as said key is depressed.

105. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) an electromagnet for impelling the same; (*c*) a key, at the keyboard, acting, when depressed, to close the circuit of the electromagnet aforesaid; (*d*) a circuit-controlling lever, in the circuit of the electromagnet aforesaid, normally closing a break in said circuit; the electromagnet aforesaid acting, as it impels the type-bar aforesaid, upon said circuit-controlling lever, to break the circuit of said electromagnet, thereby to permit the type-bar aforesaid and the electromagnet aforesaid, to return toward their normal positions in advance of the release of the key aforesaid; and (*e*) a detent-electromagnet, controlled by the key aforesaid, and serving to attract the circuit-controlling lever aforesaid or an armature connected there with, thereby to keep the circuit of the type-bar-impelling magnet aforesaid open after said magnet has returned toward its normal position, and while the aforesaid key is held down.

106. In a type-writing machine, and in combination, (*a*) a plurality of groups of type-bars; (*b*) group-controlling members, each serving to give movement to a different group of the type-bars aforesaid; (*c*) means, intermediate said group-controlling members and said type-bars, whereby each group-controlling member is made to act upon the different type-bars of the group controlled by it, each type-bar as required; (*d*) a motor device for actuating said group-controlling members; (*e*) a motor-controlling device, operated by said motor device, whereby the type-bar-impelling action of the motor aforesaid is stopped, and the group-controlling member and type-bar operated by said motor left free to return toward their normal positions.

107. In a type-writing machine, and in combination, (*a*) a plurality of groups of type-bars; (*b*) group-controlling members, each serving to give movement to a different group of the type-bars aforesaid; (*c*) means, intermediate said group-controlling members and said type-bars, whereby each group-controlling member is made to act upon the different type-bars of the group controlled by it, each type-bar as required; (*d*) a vibratory frame; (*e*) keys, and means controlled thereby, whereby the different group-controlling members aforesaid are brought into operative relation, each as required, with the frame aforesaid, to receive movement therefrom; (*f*) an electromagnet, controlled by said keys, for actuating said frame; and (*g*) a circuit-controller, operated by the magnet aforesaid, and acting to cut off current from said electromagnet, thereby to permit the return of the frame aforesaid toward its normal position, releasing the type-bar in advance of the release of the key depressed.

108. In a type-writing machine, and in combination, (*a*) a plurality of groups of type-bars; (*b*) group-controlling members, each serving to give movement to a different group of the type-bars aforesaid; (*c*) means, intermediate said group-controlling members and said type-bars, whereby each group-controlling member is made to act upon the different type-bars of the group controlled by it, each type-bar as required; (*d*) a vibratory frame; (*e*) keys, and means controlled thereby, whereby the different group-controlling members aforesaid are brought into operative relation, each as required, with the frame aforesaid, to receive movement therefrom; (*f*) an electromagnet, controlled by said keys, for actuating said frame; (*g*) a circuit-controller, operated by the magnet aforesaid, and acting to cut off current from said electromagnet, thereby to permit the return of the frame aforesaid toward its normal position, releasing the type-bar in advance of the release of the key depressed; and (*h*) another electromagnet, in a circuit distinct from that of the type-bar-impelling electromagnet aforesaid, acting as a detent for the circuit-controller aforesaid.

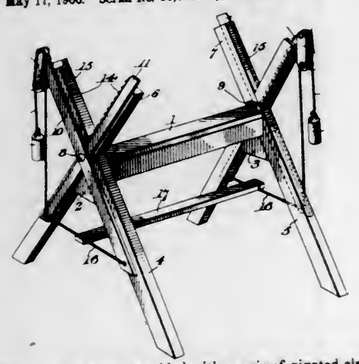
109. In a type-writing machine, and in combination, (*a*) a plurality of groups of type-bars; (*b*) type-bar-corresponding levers, each connected with the corresponding type-bar; (*c*) group-controlling members, each serving to give movement to a different group of the type bars aforesaid; (*d*) movement-transmitting pins—a pin for each group-controlling member—intermediate the group-controlling members aforesaid and the type-bar-corresponding levers aforesaid; (*e*) a carrier, wherein said pins are mounted, to move longitudinally independently of each other, and to move as a set with said carrier intermediate the group-controlling members aforesaid and the type-bar-corresponding levers aforesaid, to bring each group-controlling member into operative relation with the different type-bar-corresponding levers controlled by said group-controlling member, each type-bar-corresponding lever as required; (*f*) a motor device, for actuating the group-controlling members aforesaid; (*g*) keys, and means controlled thereby, whereby the different group-controlling members aforesaid are brought into operative relation, each as required, with the motor device aforesaid, and whereby said motor device is brought into action, to give movement to the group-controlling member thus in operative relation with it; (*h*) one or more keys, for positioning the pin-carrier aforesaid; and (*i*) means, operated by the motor device aforesaid, for stopping said motor device, thereby to permit the return of the group-controlling member and type-bar actuated by it toward their normal positions in advance of the release of the key depressed.

110. In a type-writing machine, and in combination, (*a*) a plu-

rality of groups of type-bars; (*b*) type-bar-corresponding levers, each connected with the corresponding type-bar; (*c*) group-controlling members, each serving to give movement to a different group of the type-bars aforesaid; (*d*) movement-transmitting pins—a pin for each group controlling member—intermediate the group-controlling members aforesaid and the type-bar-corresponding levers aforesaid; (*e*) a carrier, wherein said pins are mounted, to move longitudinally independently of each other, and to move as a set with said carrier intermediate the group-controlling members aforesaid and the type-bar-corresponding levers aforesaid, to bring each group-controlling member into operative relation with the different type-bar-corresponding levers controlled by said group-controlling member, each type-bar-corresponding lever as required; (*f*) a vibratory frame, normally stationary; (*g*) keys, and means controlled thereby, whereby the different group-controlling members aforesaid are brought into operative relation, each as required, with the vibratory frame aforesaid, to receive movement therefrom; (*h*) an electromagnet, controlled by the keys aforesaid for actuating said frame; (*i*) one or more keys, for positioning the pin-carrier aforesaid; (*k*) a circuit-controller, operated by the electromagnet aforesaid, and acting to cut off the current from said magnet, thereby to permit the return of the frame aforesaid and the type-bar actuated thereby, toward their normal positions, in advance of the release of the key depressed.

111. In a type-writing machine, and in combination, (*a*) a plurality of groups of type-bars; (*b*) type-bar-corresponding levers, each connected with the corresponding type-bar; (*c*) group-controlling members, each serving to give movement to a different group of the type-bars aforesaid; (*d*) movement-transmitting pins—a pin for each group-controlling member—intermediate the group-controlling members aforesaid and the type-bar-corresponding levers aforesaid; (*e*) a carrier, wherein said pins are mounted, to move longitudinally independently of each other, and to move as a set with said carrier intermediate the group-controlling members aforesaid and the type-bar-corresponding levers aforesaid, to bring each group-controlling member into operative relation with the different type-bar-corresponding levers controlled by said group-controlling member, each type-bar-corresponding lever as required; (*f*) a vibratory frame, normally stationary; (*g*) keys, and means controlled thereby, whereby the different group-controlling members aforesaid are brought into operative relation, each as required, with the vibratory frame aforesaid, to receive movement therefrom; (*h*) an electromagnet, controlled by the keys aforesaid for actuating said frame; (*i*) one or more keys, for positioning the pin-carrier aforesaid; (*k*) a circuit-controller, operated by the electromagnet aforesaid, and acting to cut off the current from said magnet, thereby to permit the return of the frame aforesaid and the type-bar actuated thereby, toward their normal positions, in advance of the release of the key depressed; and (*l*) another electromagnet, in a circuit distinct from that of the type-bar-impelling electromagnet aforesaid, acting as a detent for the circuit-controller aforesaid.

654,134. SAWBUCK. ABNER G. CLARK, Fort Recovery, Ohio. Filed May 17, 1900. Serial No. 16,991. (No model.)



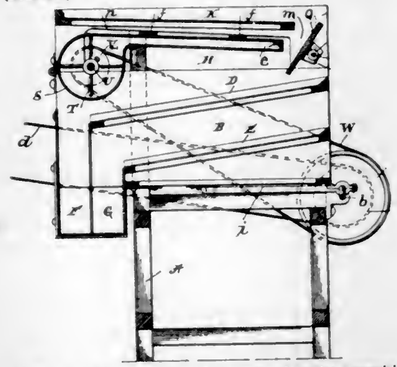
Claim.—1. A sawbuck provided with a pair of pivoted clamping-levers, a treadle arranged to move said levers into their clamping positions, a flexible piece connecting contiguous ends of said levers, and the weight carried by said flexible piece to normally urge said levers to their retracted positions.

2. A sawbuck provided with a pair of clamping-levers having a common fulcrum, a flexible connector extending between the lower ends of said levers, a treadle supported by said connector and designed by its depression to swing the levers to their clamping positions, a weight-cable connected to the lower end of one of said levers and having a loose connection with the upper end of the other lever, and a weight carried by said weight-cable and exerting a constant tendency to separate the levers.

3. A sawbuck provided with a pair of clamping-levers mounted on a common fulcrum, a treadle operatively connected with said levers to urge them together, a pulley-block extending at an angle from the upper end of one of the levers, a pulley mounted in the outer end of said pulley-block, a cable connected to the lower end of the other lever and passed over the pulley, and a weight carried by said cable and exerting a constant tendency to separate the levers.

4. A sawbuck comprising a pair of clamping-levers fulcrumed beyond each end of the buck, a flexible connector extending between the lower ends of each pair of levers, a treadle supported at its opposite ends upon said flexible connectors, a pulley-block pivoted to the upper ends of one lever of each pair, said blocks being arranged at opposite sides of the buck, a pulley mounted in the lower end of each pulley-block, a weight-cable connected to the lower end of the lever associated with the lever carrying the pulley-block, said cable being passed over the adjacent pulley, and a weight suspended from the end of each weight-cable, whereby the depression of the treadle effects the closing of both pairs of clamping-levers, each pair of which levers is retracted under the influence of its weight upon release of the treadle.

654,135. COMBINED RAISIN CLEANER AND GRADER. CHAS. J. CLARKE, Kingsburg, Cal. Filed Apr. 6, 1899. Serial No. 711,979. (No model.)



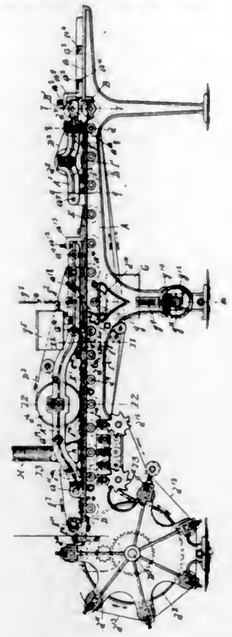
Claim.—1. An improved raisin cleaner and grader comprising a sieve-box, a spreader-frame hinged at one end to the top of the sieve-box, a deflector pivotally situated at the opposite end of the spreader-frame below the spreader-board, standards projecting from the sieve-box and having vertical slots near their upper ends, a clamping-bolt passing through the slots in the standards, the spreader-frame and the deflector and a nut for clamping the same together, substantially as described.

2. An improved raisin cleaner and grader comprising a sieve-box, a spreader-frame hinged at one end to one end of the sieve-box, a deflector at the other end of the spreader-frame below the spreader-board and a member common to and adjustably securing both the deflector and the spreader-frame to the sieve-box, substantially as described.

3. An improved raisin grader and cleaner comprising a supporting-frame, a reciprocating sieve-box situated therein, and having one end projecting beyond one end of said supporting-frame, a spreader situated at and closing the upper side of said sieve-box, a deflector situated outside of but near one end of the spreader, inclined sieves carried by said box and situated below the spreader, a shaft journaled to the supporting-frame and passing through the projecting end of the sieve-box, a fan mounted on said shaft within the sieve-box beyond the supporting-frame between the sieves and the spreader, a housing surrounding the fan and having a spout extending to the end of the spreader and means for rotating the fan and reciprocating the sieve-box, substantially as described.

4. An improved raisin grader and cleaner comprising a supporting-frame, a reciprocating sieve-box including a spreader-frame said sieve-box extending beyond the supporting-frame at one end, one of said frames having a horizontally-elongated cut-away portion, a fan-housing within the sieve-box beyond the supporting-frame and having a spout extending to the end of the spreader and supported by horizontal strips attached to the supporting-frame, a fan within the casing and means for rotating the fan and reciprocating the sieve-box, substantially as described.

654,136. PAPER-BOX MACHINE. ARTHUR B. COWLES, Rochester, N. Y., assignor, by direct and mesne assignments, to The Rochester Folding Box Company, same place, and Wm. Henry Maule, Philadelphia, Pa. Filed Apr. 20, 1897. Serial No. 632,906. (No model.)



Claim.—1. In combination, a roller provided with a knife, a support for the articles fed to the roller, a pair of guide-rails or gages leading to the roller, one of the guide-rails or gages having arms projecting laterally from its outer face, bearings mounted upon the support for receiving the arms, springs encircling the arms for automatically forcing the guide-rail or gage provided with said arms toward the other guide-rail or gage, and a second roller supported by the guide-rails or gages in proximity to the first roller, substantially as and for purpose set forth.

2. In combination, a roller provided with a knife, a pair of guide-rails or gages leading to the roller, one of the guide-rails or gages being automatically adjustable toward and away from the other, and a second roller supported by the guide-rails or gages in proximity to the first roller, substantially as and for the purpose specified.

3. In combination, a main frame, a pair of rollers, one of which is provided with a knife for engaging the articles fed to the rollers, a movable frame having one end flexibly connected to the main frame and its opposite end provided with a bearing for one of the rollers, a feed supported by the movable frame for feeding the articles engaged by said knife, and an adjuster for varying the position of the movable frame and forcing the feed and the roller supported by the movable frame toward the articles fed to said roller, substantially as and for the purpose specified.

4. In combination, a pair of rollers, one or which is provided with a knife for engaging the articles fed to the rollers, a main frame having a support arranged at one side of the rollers for supporting the blanks or other articles to be fed thereto, a pair of guide-rails or gages mounted on the support, one of the guide-rails or gages being adjustable toward and away from the other, an additional roller supported by the guide-rails or gages in proximity to the pair of rollers, a movable frame extending beyond the opposite side of said pair of rollers and having one extremity flexibly connected to the main frame and its opposite extremity provided with a bearing for one of said pair of rollers, and an adjuster for varying the position of the movable frame and forcing the roller supported thereby toward the articles fed to said roller, substantially as and for the purpose set forth.

5. In combination, a pair of rollers, one of which is provided with a knife for engaging the articles fed to the rollers, a main frame having a support arranged at one side of the rollers for supporting the articles to be fed thereto, a pair of guide-rails or gages mounted on the support, one of the guide-rails or gages being adjustable toward and away from the other, an additional roller supported by the guide-rails or gages in proximity to the pair of rollers, a movable frame extending beyond the opposite side of said pair of rollers and having one extremity flexibly connected to the main frame and its opposite extremity provided with a bearing for one of said pair of rollers, a feed secured to the movable frame for feeding the articles engaged by said pair of rollers, and an adjuster for varying the position of the movable frame and forcing the roller supported thereby toward the articles fed to said roller, substantially as and for the purpose described.

6. In combination, a pair of rollers, one of which is provided with a knife, a main frame having a support arranged at one side of the rollers for supporting the articles to be fed thereto, a movable frame extending beyond the opposite side of the rollers and having one extremity flexibly connected to the main frame and its opposite extremity provided with a bearing for one of the rollers, and a feed secured to the movable frame for feeding the articles engaged by said knife, substantially as and for the purpose described.

7. In combination, a pair of rollers, one of which is provided with a knife, a main frame having a support arranged at one side of the rollers for supporting the articles to be fed thereto, a movable frame extending beyond the opposite side of the rollers and having one extremity flexibly connected to the main frame and its opposite extremity provided with a bearing for one of the rollers, a feed secured to the movable frame for feeding the articles engaged by said knife, and an adjuster for varying the position of the movable frame and forcing the roller supported thereby toward the articles fed to said roller, substantially as and for the purpose set forth.

8. In combination, a pair of rollers, one of which is provided with a knife, a main frame, a movable frame flexibly connected to the main frame and provided with a bearing for one of the rollers, a feed secured to the movable frame for feeding the articles fed to the rollers, an adjuster for varying the position of the movable frame and forcing the feed and the roller supported by the movable frame toward the articles fed to the rollers, and means for bending said articles during the engagement of the feed therewith, substantially as and for the purpose specified.

9. In combination, a pair of rollers, one of which is provided with a knife, a main frame having a support for the articles fed to the rollers, a movable frame having one extremity flexibly connected to the main frame and its opposite extremity provided with a bearing for one of the rollers, a feed secured to the movable frame for feeding said articles, an adjuster for varying the position of the movable frame and forcing the feed and the roller supported by the movable frame toward the articles fed to the rollers, and means arranged beneath the movable frame for bending said articles, substantially as and for the purpose set forth.

10. In combination, a pair of rollers, one of which is provided with a knife, a main frame having a support arranged at one side of the rollers for supporting the articles to be fed thereto, a movable frame extending beyond the opposite side of the rollers and having one extremity flexibly connected to the main frame and its opposite extremity provided with a bearing for one of the rollers, an adjuster for varying the position of the movable frame and forcing the roller supported thereby toward the other roller, a feed secured to the movable frame for feeding the articles fed to the rollers, and means arranged in proximity to the feed for bending said articles, substantially as and for the purpose described.

11. In combination, a roller provided with a knife, a main frame having a support for the articles fed to the roller, a movable frame connected to the main frame, a feed secured to the movable frame for engaging corresponding faces of said articles, an adjuster for varying the position of the movable frame and forcing the feed into its operative position, a second feed for engaging the opposite faces of the articles fed to the roller, and additional rollers supported adjacent to the feeds for engaging and bending said articles when engaged by the former feeds, substantially as and for the purpose specified.

12. In combination, a pair of rollers, one of which is provided with a knife, a frame having a support arranged at one side of the rollers for supporting the articles to be fed thereto, a movable frame extending beyond the opposite side of the rollers and having one extremity flexibly connected to the main frame and its opposite extremity provided with a bearing for one of the rollers, a feed secured to the movable frame for engaging corresponding faces of said articles, an adjuster for varying the position of the movable frame and forcing said feed and the roller supported by the movable frame toward the articles fed to the rollers, a second feed for engaging the opposite faces of the articles fed to the rollers, and additional rollers supported adjacent to the feeds for bending the articles fed to the former rollers, substantially as and for the purpose described.

13. In combination, a main frame, a pair of rollers, one of which is provided with a knife, a movable frame connected to the main frame and provided with a bearing for one of the rollers, a former secured to the movable frame, a feed for feeding the blanks or other articles,

and means for bending said blanks or other articles upon the former, substantially as and for the purpose specified.

14. In combination, a main frame, a pair of rollers one of which is provided with a knife, a movable frame connected to the main frame and provided with a bearing for one of the rollers a feed secured to the movable frame for feeding the blanks or other articles fed to the rollers, a former secured to the movable frame, and means for bending said blanks or other articles upon the former, substantially as and for the purpose set forth.

15. In combination, a pair of rollers, one of which is provided with a knife, a main frame having a support arranged at one side of the rollers for supporting the blanks or other articles to be fed thereto, a movable frame extending beyond the opposite side of the rollers and having one extremity flexibly connected to the main frame and its opposite extremity provided with a bearing for one of the rollers, a feed secured to the movable frame for engaging the articles fed to the rollers, an adjuster for varying the position of the movable frame and forcing said feed and the roller supported by the movable frame toward the articles fed to the rollers, a former for engaging the blanks or other articles after their passage between the rollers, a portion of said former being provided with diverging edges, and means for bending the blanks or other articles upon the former in advance of its diverging edges, substantially as and for the purpose specified.

16. In combination, a main frame, a feed for engaging corresponding faces of the blanks or other articles, a former for engaging the opposite faces of the blanks or other articles, means for supporting one end of the former, a movable frame flexibly connected to the main frame and connected to the opposite end of the former, and an adjuster for varying the position of the movable frame, substantially as and for the purpose set forth.

17. In combination, a pair of rollers, one of which is provided with a knife, a main frame having a support arranged at one side of the rollers, for supporting the blanks or other articles to be fed thereto, a movable frame extending beyond the opposite side of the rollers and having one extremity flexibly connected to the main frame and its opposite extremity provided with a bearing for one of the rollers, an adjuster for varying the position of the movable frame and forcing the roller supported thereby toward the other roller, a feed for engaging corresponding faces of the blanks or other articles, a former for engaging the opposite faces of the blanks or other articles, said former having its advance end connected to the movable frame, and means for supporting the opposite end of the former, substantially as and for the purpose described.

18. In combination, a main frame, a feed for engaging the blanks or other articles, a former, movable frames arranged one in advance of the other and having corresponding ends flexibly connected to the main frame and their opposite ends connected to the extremities of the former, and means for bending said blanks or other articles upon the former, substantially as and for the purpose specified.

19. In combination, a main frame, a pair of rollers, one of which is provided with a knife, a movable frame flexibly connected to the main frame and provided with a bearing for one of the rollers, a feed secured to the movable frame for feeding the blanks or other articles, an adjuster for varying the position of the movable frame and forcing the feed and the roller supported by the movable frame toward the articles fed to the rollers, a former for engaging the blanks or other articles, a portion of said former being provided with diverging edges, and a series of rollers arranged one in front of the other in advance of the diverging edges of the former for bending said blanks or other articles upon the former, said rollers being provided with engaging faces disposed at different angles to the adjacent longitudinal edges of the former, substantially as and for the purpose set forth.

20. In combination, a feed for the blanks or other articles, a former for engaging the blanks or other articles, said former being provided with a lengthwise slot and having one of its outer side edges formed with an outwardly-extending portion for forcing outwardly parts of the blank or other articles, a second feed consisting of an endless belt movable within the lengthwise slot of the former for feeding the blanks or other articles, and a series of rollers arranged adjacent to said one of the outer side edges of the former in advance of the outwardly-extending portion thereof and having engaging faces disposed at different angles to said outer side edge for bending the blanks or other articles upon the former, some of said rollers being arranged at the rear of the second feed, substantially as and for the purpose described.

21. In combination, a pair of rollers, one of which is provided with a knife, a main frame, a movable frame connected to the main frame and provided with a bearing for one of the rollers, a former for engaging the blanks or other articles, said former being provided with a lengthwise slot, a feed supported by the movable frame and movable within the lengthwise slot of the former for feeding the blanks or other articles, an adjuster for varying the position of the movable frame and forcing the feed and the roller supported by the movable frame toward the blanks or other articles, and a series of rollers arranged at opposite sides of the former and having engaging faces disposed at different angles to the adjacent longitudinal edges of the former for bending the blanks or other articles upon the former, substantially as and for the purpose specified.

22. In combination, a main frame, a feed for the blanks or other articles, a movable frame secured to the main frame, a former for engaging the blanks or other articles, said former being secured to the movable frame and provided with a lengthwise slot and having its outer side edges formed with diverging portions for forcing parts of the blanks or other articles outwardly from each other, a second feed supported by the movable frame and movable within the lengthwise slot of the former for feeding the blanks or other articles, means for varying the position of the movable frame, and a series of rollers arranged at opposite sides of the former in advance of the diverging portions of its outer side edges and having engaging faces disposed at different angles to the adjacent longitudinal edges of the former for bending the blanks or other articles upon the former, substantially as and for the purpose set forth.

23. In combination, a feed for the blanks or other articles, a former for engaging the blanks or other articles, a portion of said former being provided with diverging edges, a series of rollers for bending said blanks or other articles upon the former in advance of its diverging edges, and supports for the rollers having yielding arms or portions connected to said rollers, substantially as and for the purpose specified

24. In combination, a feed for the blanks or other articles, a former for engaging the blanks or other articles, said former being provided with a lengthwise slot and diverging edges, a second feed movable within the lengthwise slot of the former in advance of its diverging edges for feeding the blanks or other articles, and a series of rollers arranged at opposite sides of the former in advance of its diverging edges and provided with engaging faces disposed at different angles to the adjacent longitudinal edges of the former for bending said blanks or other articles upon the former, some of said rollers being arranged at the rear of the second feed, substantially as and for the purpose specified.

25. In combination, a former for engaging the blanks or other articles, said former consisting of lengthwise bars or divisions having their outer side edges formed with diverging portions, for forcing parts of the blanks or other articles outwardly from each other and having their inner side portions provided with longitudinal cut-outs, one of said bars or divisions being adjustable toward and away from the other bar or division, a feed movable in said cut-outs for engaging the blanks or other articles, and means for bending said blanks or other articles upon the former in advance of the diverging portions of its outer side edges, substantially as and for the purpose set forth.

26. In combination, a feed for the blanks or other articles, a former for engaging the blanks or divisions having their outer side edges formed with diverging portions for forcing parts of the blanks or other articles outwardly from each other and having their inner side portions formed with longitudinal cut-outs, one of said bars or divisions being adjustable toward and away from the other bar or division, a second feed movable within the longitudinal cut-outs of the bars or divisions of the former, and rollers arranged at opposite sides of the former in advance of its diverging edges and provided with engaging faces disposed at different angles to the adjacent longitudinal edges of the former for bending said blanks or other articles upon the former in advance of the diverging portions of its outer side edges, substantially as and for the purpose described.

27. In combination, a main frame, a feed for the blanks or other articles, a movable frame supported by the main frame, means for varying the position of the movable frame, a former consisting of separated substantially-parallel lengthwise bars or divisions having their front ends secured to the movable frame and provided with longitudinal cut-outs in their inner side portions, one of the bars or divisions being adjustable laterally toward and away from the other bar or division, a tie-piece having its opposite ends secured to the rear ends of said bars or divisions, a second feed movable within the longitudinal cut-outs of the bars or divisions, and means for bending the blanks or other articles upon the former, substantially as and for the purpose specified.

28. In combination, a feed for the blanks or other articles, a former consisting of separated substantially-parallel lengthwise bars or divisions one of which is adjustable toward and away from the other, a tie-piece having its opposite ends secured to the bars or divisions for holding the same in their adjusted position, the top faces of the bars or divisions being inclined upwardly from their outer side edges, and a series of rollers arranged one in front of the other for bending the blanks or other articles upon the former, said rollers being provided with engaging faces disposed at gradually-decreasing angles to the top faces of the bars or divisions of the former, substantially as and for the purpose set forth.

29. In combination, a feed for the blanks or other articles, a former, a belt arranged at one side of the former for elevating the adjacent portions of the blanks or other articles, and rollers arranged at the rear of the belt for bending the elevated portion of the blanks or other articles upon the former, substantially as and for the purpose described.

30. In combination, a feed for the blanks or other articles, a former, belts arranged at opposite sides of the former for elevating the sides of the blanks or other articles, and rollers arranged one in front of the other at opposite sides of the former and at the rear of the belts for bending the blanks, said rollers being provided with engaging faces disposed at gradually-decreasing angles to the upper face of the former, substantially as and for the purpose specified.

31. In combination, a feed for the blanks or other articles, a pair of formers supported one in advance of the other and having longitudinal engaging edges arranged out of alinement with each other, and means for bending the blanks or other articles upon the formers, substantially as and for the purpose set forth.

32. In combination, a feed for the blanks or other articles, means for bending longitudinal portions of the blanks or other articles at angles to adjacent parts thereof, a feed for applying glue to said blanks or other articles, and means for folding longitudinal portions of the blanks or other articles upon adjacent parts thereof and upon the surfaces to which the glue is applied, the longitudinal portions folded by the second means being formed of different width than the longitudinal portions bent by the first means, substantially as and for the purpose described.

33. In combination, a feed for the blanks or other articles, formers arranged one in advance of the other for engaging the blanks or other articles, said formers having their adjacent ends separated, a feed interposed between the adjacent ends of the formers for applying glue to the blanks, and means for bending the blanks or other articles upon the formers, substantially as and for the purpose specified.

34. In combination, a feed for the blanks or other articles, a former for engaging said blanks or other articles, a portion of the former being provided with diverging edges, a series of rollers arranged one in front of the other in advance of the diverging edges of the former for bending said blanks or other articles upon the former, said rollers being provided with engaging faces disposed at different angles to the adjacent edges of the former, a second former arranged at the rear of the first former, and means for bending said blanks or other articles upon the second former, substantially as and for the purpose set forth.

35. In combination, a feed for the blanks or other articles, a former for engaging said blanks or other articles, a portion of the former being provided with diverging edges, a series of rollers arranged one in front of the other in advance of the diverging edges of the former for bending said blanks or other articles upon the former, said rollers being provided with engaging faces disposed at different angles to the adjacent edges of the former, a second former arranged at the rear of the first former and consisting of separated substantially-parallel bars or divisions one of which is adjustable laterally toward and away from the other, and a series of rollers arranged one in front of the other for bending said blanks or other articles upon the second folder, said rollers being provided with engaging faces disposed at gradually-decreasing angles to the adjacent edges of the second former, substantially as and for the purpose described.

36. In combination, a feed for the blanks or other articles, a former for engaging said blanks or other articles, rollers for bending the blanks or other articles upon the former, a second former supported at the rear of the first former and having an engaging edge arranged out of alinement with an engaging edge of the first former, and rollers for bending the blanks or other articles upon the second former, substantially as and for the purpose set forth.

37. In combination, a main frame, a movable frame secured to the main frame, a feed for applying glue to the blanks or other articles, and a blower detachably secured to the movable frame for cooling the glue applied to said blanks or other articles, substantially as and for the purpose set forth.

38. In combination, a feed for the blanks or other articles, a pair of formers supported one in advance of the other and having longitudinal engaging edges arranged out of alinement with each other, a feed for applying glue to the blanks or other articles, a blower for cooling the glue applied to the blanks or other articles, and means for bending said blanks or other articles upon the former, substantially as and for the purpose specified.

39. In combination, a main frame, a feed for the blanks or other articles, means for lapping portions of the blanks or other articles upon additional portions of said blanks or other articles, a movable frame flexibly connected to the main frame, an adjuster for varying the position of the movable frame, a presser-piece for forcing together the lapped surfaces of the blanks or other articles, said presser-piece consisting of an endless belt having a portion of its advance end supported by the movable frame and inclined toward the feed, and rollers at the opposite ends of the inclined portion of the advance end of the presser-piece, substantially as and for the purpose set forth.

40. In combination, a feed for the blanks or other articles, a pair of formers supported one in advance of the other and having longitudinal engaging edges arranged out of alinement with each other, means for bending the blanks or other articles upon the formers, a presser-piece for engaging the blanks or other articles, said presser-piece consisting of an endless belt having its advance end supported above the rear former and the lower portion of said advance end inclined toward the feed, and rollers at the opposite ends of the inclined portion of the advance end of the presser-piece, substantially as and for the purpose set forth.

41. In combination, a main frame, a feed for the blanks or other articles, a movable frame connected to the main frame, a former supported by the movable frame for engaging the blanks or other articles, means for bending the blanks or other articles upon the former, a presser-piece for engaging the blanks or other articles, said presser-piece consisting of an endless belt having its advance end supported by the movable frame and a portion of said advance end inclined toward the feed, and rollers at the opposite ends of the inclined portion of the advance end of the presser-piece, substantially as and for the purpose described.

42. In combination, a main frame, a feed for the blanks or other articles, a former for engaging the blanks or other articles, said former being provided with a lengthwise slot, a movable frame connected to the main frame, a feed supported by the movable frame and movable within the lengthwise slot of the former for feeding the blanks or other articles, means for bending the blanks or other articles upon the former, a presser-piece for engaging the blanks or other articles, said presser-piece consisting of an endless belt having its advance end supported above the former and the lower portion of said advance end inclined toward the feed, and rollers at the opposite ends of the inclined portion of the advance end of the presser-piece, substantially as and for the purpose specified.

43. In combination, a feed for the blanks or other articles, a pair of formers supported one in advance of the other and having longitudinal engaging edges arranged out of alinement with each other, means for bending the blanks or other articles upon the formers, a presser-piece for engaging the blanks or other articles, said presser-piece consisting of an endless belt having its advance end supported adjacent to the rear former and a portion of said advance end inclined toward the feed, and rollers at the opposite ends of the inclined portion of the advance end of the presser-piece, substantially as and for the purpose set forth.

44. In combination, a feed for the blanks or other articles, a pair of formers supported one in advance of the other and having longitudinal engaging edges arranged out of alinement with each other, means for bending the blanks or other articles upon the formers, a presser-piece for engaging the blanks or other articles, said presser-piece consisting of an endless belt having its advance end supported above the rear former and the lower portion of said advance end inclined toward the feed, rollers at the opposite ends of the inclined portion of the advance end of the presser-piece, and a second presser-piece arranged at the rear of the first presser-piece, substantially as and for the purpose described.

45. In combination, a feed for the blanks or other articles, a pair of formers supported one in advance of the other and having longitudinal engaging edges arranged out of alinement with each other, means for bending the blanks or other articles upon the formers, and means for squeezing said blanks or other articles, substantially as and for the purpose specified.

46. In combination, a drum, means for conducting the blanks or other articles to and from the drum, means for folding the blanks or other articles before their passage to the drum, and means for intermittently squeezing said blanks or other articles after their passage beyond the drum, substantially as and for the purpose specified.

47. In combination, a feed for the blanks or other articles, a pair of formers supported one in advance of the other and having longitudinal engaging edges arranged out of alinement with each other, means for bending the blanks or other articles upon the formers, and a series of presser-rollers arranged one in advance of the other, substantially as and for the purpose set forth.

48. In combination, a drum, means for feeding the blanks or other articles to and from the drum, a pair of formers supported one in advance of the other, means for bending the blanks or other articles upon the formers, presser-rollers extending crosswise of the drum and arranged at intervals at the rear of the formers and in proximity to the drum, and means for squeezing said blanks or other articles after their passage beyond the drum, substantially as and for the purpose described.

49. In combination, a drum, means for feeding the blanks or other articles to and from the drum, presser-rollers arranged at intervals crosswise of the drum and in proximity to said drum, and means

for intermittently squeezing said blanks or other articles after their passage beyond the drum, substantially as and for the purpose set forth.

50. In combination, a feed for the blanks or other articles, means for lapping portions of the blanks or other articles upon additional portions of said blanks or other articles, a presser-piece for forcing together the lapped surfaces of the blanks or other articles, said presser-piece consisting of an endless belt having a portion of its advance end inclined rearwardly toward said feed, rollers at the opposite ends of the inclined portion of the advance end of the presser-piece, a drum at the rear of the inclined portion of the advance end of the presser-piece, and means for holding the blanks or other articles in engagement with the drum, substantially as and for the purpose described.

51. In combination, a drum, means for feeding the blanks or other articles to and from the drum, a feed for applying glue to the blanks or other articles, a blower arranged in proximity to the drum for cooling the glue applied to the blanks or other articles, and means for intermittently squeezing said blanks or other articles, substantially as and for the purpose specified.

52. In combination, a feed for the blanks or other articles, a feed for applying glue to the blanks or other articles, means for folding said blanks or other articles, and means for intermittently squeezing said blanks or other articles, substantially as and for the purpose set forth.

53. In combination, a drum, means for conducting the blanks or other articles to and from the drum, means for folding the blanks or other articles, and means for intermittently squeezing said blanks or other articles, substantially as and for the purpose described.

54. In combination, a drum, a feed for conducting the blanks or other articles to and from the drum, a feed for applying glue to the blanks or other articles, a blower for cooling the glue applied to the blanks or other articles, presser-rollers arranged at intervals crosswise of the drum and in proximity to said drum, and means for intermittently squeezing said blanks or other articles, substantially as and for the purpose specified.

55. In combination, a feed for the blanks or other articles, a pair of formers supported one in advance of the other and having longitudinal engaging edges arranged out of alinement with each other, means for bending the blanks or other articles upon the formers, and means for intermittently squeezing said blanks or other articles, substantially as and for the purpose specified.

56. In combination, a feed for the blanks or other articles, a pair of formers supported one in advance of the other and having longitudinal engaging edges arranged out of alinement with each other, means for bending the blanks or other articles upon the formers, a presser-piece for engaging the blanks or other articles, said presser-piece consisting of an endless belt having its advance end supported adjacent to the rear former, and a portion of its advance end inclined toward the feed, rollers at the opposite ends of the inclined portion of the advance end of the presser-piece, and means for intermittently squeezing said blanks or other articles, substantially as and for the purpose set forth.

654,137. BALING-PRESS. PETER K. DEDERICK, Loudonville, N. Y. Filed May 6, 1898. Serial No. 679,918. (No model.)

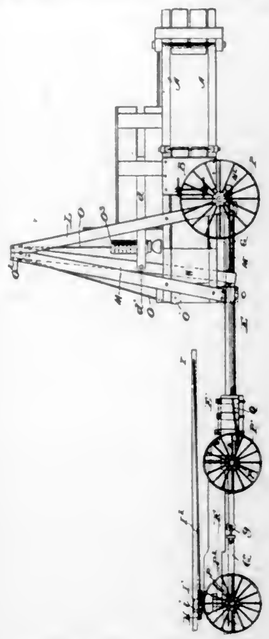
Claim.—1. In a baling-press the combination with the press-case, an upwardly-extending frame connected therewith, and a traverser working in said press-case, of sway-bars pivotally supported at their upper ends on said upwardly-extending frame and connected with the traverser for operating the same, a slide-staff mounted in fixed bearings to reciprocate longitudinally, connections between said slide-staff and sway-bars below the connection between the sway-bars and traverser and a power mechanism for reciprocating the slide-staff; substantially as described.

2. In a baling-press, the combination with the press-case, vertical frame connected therewith, sway-bars pivotally-supported in said vertical frame and traverser connected with said sway-bars, of a reciprocatory slide-staff, a power mechanism for reciprocating said staff longitudinally and links connecting said sway-bars and slide-staff below the connection between the sway-bar and traverser; substantially as described.

3. In a baling-press the combination with the press-case, vertical frame connected therewith, sway-bars pivotally supported in said vertical frame and traverser connected with said sway-bars, of a reciprocatory slide-staff, a power mechanism for reciprocating said slide-staff longitudinally, a cross-head on said slide-staff and links connecting said sway-bars and cross-head; substantially as described.

4. In a baling-press, the combination with the press-case and a pipe connection rigidly connected therewith, of a power-frame jointed to the forward end of said pipe connection; substantially as described.

5. In a baling-press, the combination with the press-case and a pipe connection rigidly connected therewith, of a power-frame at the forward end of said pipe connection and a universal joint connecting said power-frame and pipe connection; substantially as described.



6. In a baling-press the combination with the power-frame having carrying-wheels at its front and rear ends, of a press-frame jointed to the rear end of said power-frame and also having a pair of carrying-wheels, and a power-transmitting mechanism having a joint which may be brought into subetantial registry with the joint between the power and press frames; substantially as described.

7. In a baling-press, the combination with the press-case having a vertically-arranged frame connected therewith and the sway-bars journaled at their upper ends in said frame, of a reciprocatory traverser pivotally connected with said sway-bars, means for reciprocating the sway-bars and traverser and a vertically-movable weight connected with the traverser for returning the same to its retracted position; substantially as described.

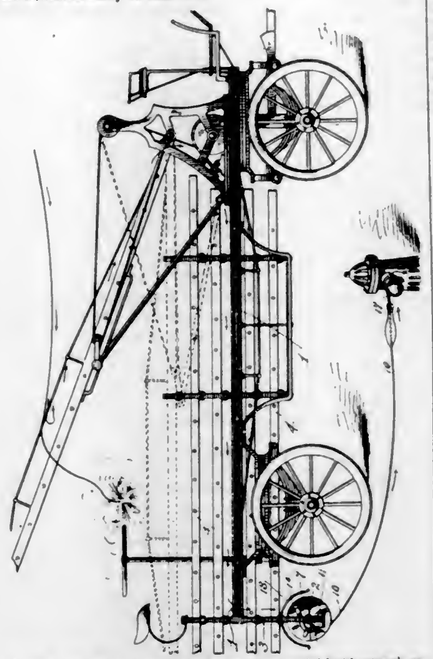
8. In a baling-press, the combination with the press-case, the upwardly-extending frame carried thereby, the sway-bars pivotally mounted in said frame and a power mechanism for reciprocating said sway-bars, of a traverser working in the press-case and connected with the sway-bars and a condenser located above the said press-case and also connected with said sway-bars; substantially as described.

9. In a baling-press, the combination with the press-case, the condensing-hopper above the said case and the upwardly-extending frame carried by the case, of the sway-bars pivotally mounted at their upper ends in said frame with means for reciprocating said sway-bars and a condensing-slide and traverser working in said hopper and press-case respectively, and each connected with said sway-bars and operating to compress the charges in opposite directions; substantially as described.

10. In a baling-press, the combination with the press-case, traverser and means for reciprocating the traverser, of an alarm-bell carried by the press-case, a striker adapted to contact with said bell, a resilient carrier for said striker supported by the press-case, a projection on said carrier intermediate its ends projecting within the press-case and a follower having a recess into which said projection will pass to cause the striker to engage the bell; substantially as described.

654,138. ELECTRIC-CURRENT-GROUNDING DEVICE FOR FIRE-EXTINGUISHING APPARATUS. WILLIAM A. DENNETT, Springfield, Mass. Filed Mar. 14, 1900. Serial No. 8,656. (No model.)

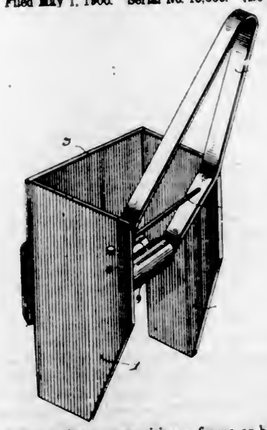
Claim.—1. The combination with the truck-frame of an aerial ladder or analogous vehicle, of a metallic connection, one end of which is in electrical connection with the said frame, and the other end of which is adapted to be placed in electrical connection with the earth, substantially as described.



2. The combination with the frame of an aerial-ladder truck or analogous apparatus, of an extensible metallic connection between said frame and the ground consisting of a wire cable, and a reel on which it is carried, attached to said truck; one end of said cable being in electrical connection with the frame, and the opposite end thereof in connection with the earth, substantially as described.

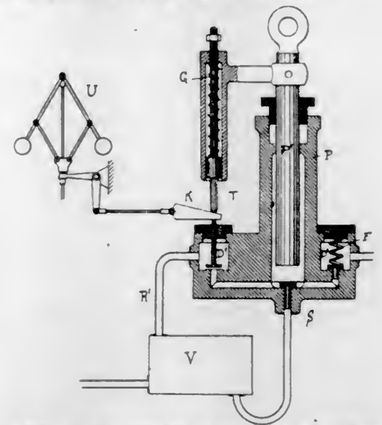
3. The combination with an aerial-ladder-truck frame or analogous apparatus, of an extensible metallic connection between said frame and the ground consisting of a reel supported on said frame, an insulated wire cable carried on said reel, one end of which cable is in electrical connection with the frame through the reel, and the opposite end in electrical connection with the earth, and a suitable switch between the ends of the cable, whereby an electric circuit established therethrough may be broken, substantially as described.

654,139. MOP-WRINGER. MELVILLE L. DE WITT, Sprague's Mill, Me. Filed May 1, 1900. Serial No. 15,086. (No model.)



Claim.—A mop-wringer, comprising a frame or housing having opposite sides formed by flat plates, a back plate secured to the rear edges of the sides and terminating short of the lower ends thereof, opposite cleats secured to the outer side of the back, projecting below the lower edge thereof, and located opposite the respective sides, a fixed roller mounted between the sides and located adjacent to the lower edge of the back, a transverse rod connecting the sides and located above the fixed roller and adjacent to the front edges of the sides, a yoke-shaped lever fulcrumed intermediate of its ends upon the transverse rod, and a roller journaled between the opposite ends of the lever and working in front of the fixed roller.

654,140. APPARATUS FOR REGULATING FUEL-SUPPLY OF INTERNAL-COMBUSTION ENGINES. RUDOLF DIESEL, Munich, Germany, assignor to the Diesel Motor Company of America, of New York. Filed Sept. 10, 1898. Serial No. 690,692. (No model.)



Claim.—1. In an apparatus for supplying a variable quantity of fuel to a combustion-motor, the combination with the fuel supply, of fuel-forcing means communicating therewith, and supplying at each working stroke of the motor an excess of fuel under a pressure less than the back pressure of the motor, means to allow part of this fuel to return to the fuel-supply under this lower pressure, and means to shut off the return flow and cause the remainder to be forced to the motor under a higher pressure, substantially as and for the purpose specified.

2. In an apparatus for supplying a variable quantity of fuel to a combustion-motor, the combination with the fuel-supply, of a pump operated by the motor, the pump-chamber being provided with a suction-valve, a return-valve and a fuel-feed valve; the return-valve normally opening at a lower pressure than the feed-valve, and means for closing or throttling the return-valve at a part of the stroke regulated by the governor of the motor, or by hand, substantially as and for the purpose specified.

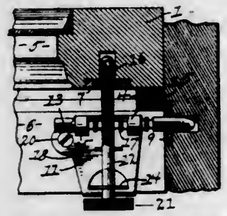
3. In an apparatus for supplying a variable quantity of fuel to a combustion-motor, the combination with the fuel-supply, of a pump operated by the motor; the pump-chamber being provided with a suction-valve, a return-valve and a fuel-feed valve; the return-valve normally opening at a lower pressure than the feed-valve, a spring-rod connected to the pump-rod and adapted to close the return-valve, a speed-governor of suitable construction, and connections substantially as described for varying the time and duration of the closing or throttling of the return-valve through the action of the governor, substantially as and for the purpose specified.

4. In an apparatus for supplying a variable quantity of liquid fuel to a combustion-motor, the combination with the fuel-supply, of a pump operated by the motor; a suction-valve connected to the pump-chamber; a ventilating return-valve D' located above and connected to the top of the pump-chamber, a chamber above said valve with a ventilating-opening at the top and a return connection R' from beneath the top to the fuel-supply; a feed-valve D^2, the lower face of which, when closed, is at or below the top of the pump-chamber; the return-valve normally opening at a lower pressure than the feed-valve, and means substantially as described for closing or throttling the feed-valve at a part of the stroke regulated by the governor, or by hand, substantially as and for the purpose specified.

654,141. SASH-LOCK. HENRY E. DORER, Toledo, Ohio. Filed Mar. 14, 1900. Serial No. 8,572. (No model.)

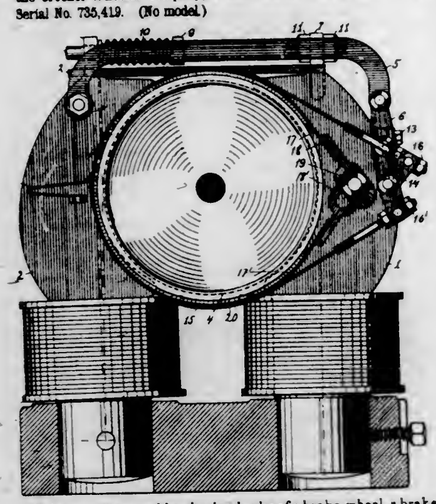
Claim.—1. In a sash-lock, the base constructed of sheet metal,

having the upwardly-turned ears forming bearings for a sliding bolt, and circular members forming bearings for a bolt extending in transverse direction to the sliding bolt; a sliding bolt formed with longitudinal grooves, adapted to enter recesses in the sash, and a bolt arranged transverse in direction to the sliding bolt, and formed with annular grooves constituting a rack, to be engaged by the sliding bolt, substantially as set forth.



2. In a sash-lock, the base formed with guides for a sliding bolt, and with guides for a bolt extending in transverse direction to the sliding bolt, a sliding bolt formed with longitudinal grooves and adapted to enter recesses in the sash, and a bolt formed with annular grooves, adapted to be actuated by rotating the sliding bolt, and a pin inserted transversely in the sliding bolt to prevent its withdrawal from the base, substantially as set forth.

654,142. BRAKE. GANO S. DUNN, East Orange, N. J., assignor to the Crocker-Wheeler Company, of New Jersey. Filed Oct. 31, 1899. Serial No. 735,419. (No model.)



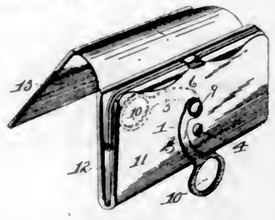
Claim.—1. The combination in a brake of a brake-wheel, a brake-strap to be applied thereto, means for anchoring the strap at either end and means for applying it by a pull at the other end actuated by the brake-wheel for adjusting the strap to determine which end shall be anchored and which end shall be pulled, so that its braking effect shall be independent of the direction of revolution of the brake-wheel, substantially as described.

2. The combination in a brake of a brake-wheel, a brake-strap to be applied thereto, an equalizing-lever to which the ends of the brake-strap are attached, means for anchoring the strap at either end and means for applying it at the other end by a pull through the equalizing-lever actuated by the brake-wheel for adjusting the strap to determine which end shall be anchored and which end shall be pulled, so that its braking effect shall be independent of the direction of revolution of the brake-wheel, substantially as described.

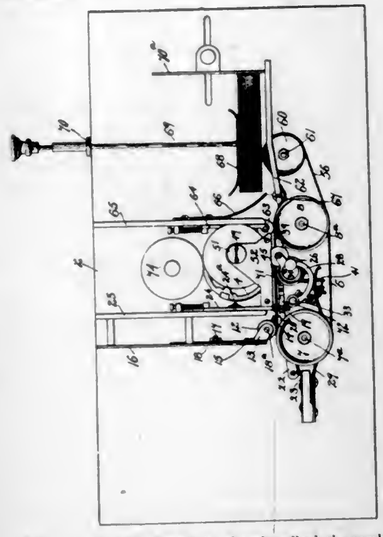
3. A brake-strap provided with two branches at each end, one branch at each end being provided with a stirrup, substantially as described.

654,143. SAFETY ATTACHMENT FOR POCKET-BOOKS. WILLIAM BEE, Philadelphia, Pa. Filed Feb. 17, 1900. Serial No. 5,666. (No model.)

Claim.—A pocket-book provided with a safety attachment, comprising a bar pivotally secured upon one of the inner folds of the pocket-book, and having movement upon the pivot, to allow of moving the attachment radially to fold the same within the pocket-book, and to project the outer end beyond the frame of the pocket-book, said attachment having an orifice at its outer end.



654,144. STAMP-CANCELING AND POSTMARKING MACHINE. SAMUEL J. EVANS, Roanoke, Va. Filed June 15, 1899. Serial No. 720,647. (No model.)



Claim.—1. In a machine of the class described, the combination with the main feeding-belt and the rollers carrying the same having stationary bearings in the frame of the machine, of a rotary die head or wheel, and an impression member located intermediately of said rollers, independent thereof, and normally held away from said die, and means for moving said member toward and away from said die at predetermined times, substantially as specified.

2. In a machine of the class described, the combination of the main feeding-belt, and means operating in connection therewith to feed the letters through the machine, of a rotary die head or wheel located out of the plane of said belt, an impression member also located out of the plane of said belt out of contact therewith, and normally held away from said die, and unlocked from its actuating mechanism, means for locking said member to its actuating mechanism by pressure of the letter, and means for subsequently moving said member toward said die, substantially as specified.

3. In a machine of the character described, the combination of a rotary die, an impression member normally held away therefrom, and unlocked from its actuating mechanism, a combined letter-stop and locking-key for locking said member to its actuating mechanism, and means for subsequently moving said member toward said die, and for moving said stop out of the path of the letter, substantially as specified.

4. In a machine of the class described, the combination of a rotary die, an impression member movable toward and away from the die and normally held away from the die and unlocked from its actuating mechanism, a letter-timing stop and locking-key, means in conjunction with said key for locking the said member to its actuating mechanism, and cam-operated mechanism for actuating said member when locked and for moving said stop out of the path of the letter, substantially as specified.

5. In a machine of the class described, the combination of a rotary die, a cam rotating in unison therewith and having a relative arrangement thereto, an impression member movable toward and away from the die and normally held away from the die and unlocked from its actuating mechanism, and a combined letter-stop and key for timing the passage of the letter to the die and for effecting, under the pressure of the letter, a lock between said member and its actuating devices, and means operated by said cam for actuating said member when locked, and for moving the letter-stop out of the path of the letter substantially as specified.

6. In a machine of the class described, the combination of a rotary die, a swinging or oscillating impression member, normally held away from the die and unlocked from its actuating mechanism, a combined letter-timing stop and locking-key whereby the passage of the letter to the die is timed and a lock is effected between the said member and its actuating mechanism, and a cam arranged relatively to the die and controlling the locking and releasing of the said stop and key and also actuating said member to move it toward the die, substantially as specified.

7. In a machine of the class described, the combination of a rotary die, a swinging or oscillating impression member normally held away from the die and unlocked from its actuating mechanism, a letter-timing stop and locking device, normally lying across the path of the letter, and actuated by the letter to lock the said member to its actuating mechanism, means whereby such lock can be effected only when the die is in a predetermined position, and means for actuating said impression member when locked thereto, substantially as specified.

8. In a machine of the class described, the combination of a rotary die, a cam arranged relatively thereto and rotating in unison therewith, an impression member normally held away from said die, and pivoted to swing toward and away from the same, actuating mechanism for said impression member normally disconnected therefrom, a combined letter-timing stop and locking-lever arranged to stop the letter and under the pressure thereof to be moved to position to form a locking engagement with the actuating mechanism, and a cam forming part of the said actuating mechanism and controlling the operation of said stop and locking-lever, substantially as specified.

9. In a machine of the class described, a rotary die, a cam arranged relatively thereto to rotate in unison therewith, an impression member, a pivoted spring-pressed arm in which said member is eccentrically pivoted, an eccentric carried by said member, a combined letter-timing stop and locking-key pivoted to said eccentric, a slotted shell loosely mounted on said eccentric, an arm connected to said eccentric and carrying a wheel which is in rolling contact with said cam and means whereby said stop and locking-key is caused to lock said eccentric and shell together under the combined action of the letter and the cam, substantially as specified.

10. In a machine of the class described, a rotary die, a cam arranged relatively thereto to rotate in unison therewith, an impression member pivoted eccentrically to swing toward and away from the said die, an eccentric carried by said member, a combined letter-timing stop and locking-key pivoted to said eccentric, and a slotted shell loosely mounted on said eccentric and having an arm in contact with said cam, said eccentric having means whereby it is locked to the shell by the said key under the combined action of the letter and cam, substantially as specified.

11. In a machine of the class described, the combination of a rotary die, an impression member, a spring-pressed arm in which said member is eccentrically pivoted, an eccentric carried by the said member, a shell loosely mounted to have a limited rotary movement on said eccentric, springs for holding said shell and eccentric in normal positions, a combined letter-timing stop and locking-key pivoted in said eccentric and having one of its arms arranged normally across the path of the letter and its other arm arranged to act as a clutch to lock the shell and eccentric together when the first-named arm is pressed by a letter—a spring connected to said key, and a controlling and actuating cam arranged relatively to the die and rotating in unison therewith, said cam contacting with an arm of said shell and operating in conjunction with the letter to control the operation of the said stop and locking device, substantially as specified.

12. In a machine of the class described, the combination of a rotary die, a cam arranged relatively thereto and rotating in unison therewith, an impression member, a spring-pressed adjustable arm in which said impression member is eccentrically pivoted, an eccentric portion carried by the said impression member, a slotted shell loosely mounted on said eccentric portion, a combined letter-timing stop and locking-key pivoted in said eccentric and having the arms a, a' arranged substantially as described to form respectively a lock for the said eccentric and shell, and a stop for the letter, a spring arranged to act upon said key in opposition to the letter, independent springs for returning said shell and eccentric to normal positions after operation, and a wheel or roller carried by the said shell and engaged by the said cam whereby the operation of the said key under pressure of a letter is controlled substantially as specified.

13. In a machine, of the class described, the combination of a rotary die, an impression member pivoted to swing toward and away from the said die and normally held away from the same and unlocked from its actuating devices, a combined letter-stop and key for arresting the passage of the letter to the machine, and for effecting a lock between the impression member and its actuating devices, a controlling and actuating cam controlling the operation of said stop and key and a spring acting upon said impression member in opposition to the action of said cam, substantially as specified.

14. In a machine of the class described, the combination with a friction feeding-belt, of an adjustable spring-plate, a separating-block of frictional material carried by said plate, and a guard-strip extending along said block and moving therewith, substantially as specified.

15. In a machine of the class described, a feeding-belt having a series of perforations or apertures therein, communicating upon both sides of said belt with the atmosphere, rollers for pressing the letter to said belt, and means for driving said belt at a high rate of speed, substantially as specified.

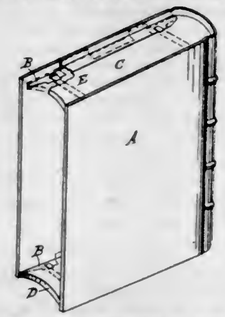
16. In a machine of the class described, the combination with the die and impression members, of the friction stacking-belt driven at a higher rate of speed than said members, the roller driven by said belt and having its periphery projected into the path of the letter, the laterally-movable stacking-plate opposite said roller and belt, and the guard-finger intermediate the said roller and the said members for the purpose of preventing a succeeding letter from attempting to stack behind a preceding one, substantially as specified.

17. In a machine of the class described, the combination of a letter-feeding belt, a frictional separating device opposite to the receiving portion of said belt, guiding-rollers in advance of said separating device, a constantly-driven rotary die, an impression member pivoted to move toward and away from the die and normally held away from the same and unlocked from its actuating devices, a combined letter-timing stop and locking-key for arresting the letter and locking the impression member to its actuating devices, a cam for controlling the operation of the said key under the pressure of the letter, means for driving said cam in unison with the die, and guiding, delivering and stacking devices in advance of the die, substantially as specified.

18. In a machine of the class described, the combination of a rotary die, a cam arranged relatively thereto and rotating in unison therewith, an impression member normally held away from said die and unlocked from its actuating devices, a combined letter-timing stop and locking-key actuated by the pressure of a letter and controlled in its operation by the said cam, devices operated by said cam when the impression member is locked to said devices for moving the same to the die, a feed-belt and guiding devices for feeding the letters to the die, said belt being driven at a lower rate of speed than the die, and a delivering and stacking belt driven at a higher rate of speed than the die, substantially as specified.

19. In a machine of the class described, the combination with a rotary die, an impression member movable toward and away from the die, a combined letter-timing stop and clutch for said impression member, a cam placed relatively to the die and which actuates said impression member to move it to the die and also controls the operation of said stop and clutch under the pressure of a letter, and intermediate gear connections between the die-driving shaft and said cam whereby the cam and die are rotated in unison, substantially as specified.

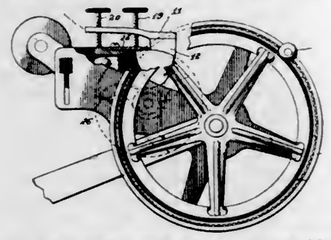
654,145. MAGAZINE-BINDER. THEODORE B. FISHER, Delavan, Ill. Filed Oct. 31, 1899. Serial No. 735,435. (No model.)



Claim.—A file or case for magazines and other publications, consisting of the case A with rigid back and sides, open front and end

pieces C D, and strips B E, the latter being connected by a hook-and slot joint as shown and described.

654,146. SHARPENER FOR LAWN-MOWERS. JAMES H. FREY, Findlay, Ohio. Filed Nov. 2, 1899. Serial No. 735,601. (No model.)



Claim.—1. A grinding device for lawn-mowers comprising a carrier-plate, a soft-metal jacket or holder provided with integral tenons having interlocking connection with said carrier-plate, and an abrasive block confined within said jacket and adapted to wear uniformly therewith, substantially as described.

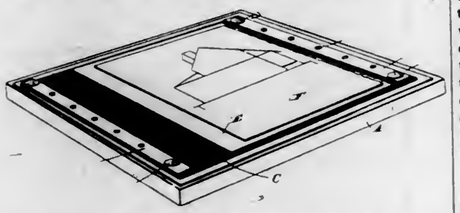
2. A grinding device for lawn-mowers comprising a carrier-plate, a jacket or holder provided with integral tenons having interlocking connection with said carrier-plate, an abrasive block confined within said jacket or holder, and adjusting-screws mounted in said carrier-plate in a plane in rear of the line of union of the jacket with said plate, substantially as described.

3. A grinding device for lawn-mowers comprising a carrier-plate provided with mortises, a soft-metal jacket or holder having dovetailed tongues fitted in said mortises and united thereby detachably to said carrier-plate, an abrasive block confined within said jacket and adapted to wear uniformly therewith, and a series of adjusting-screws mounted in said carrier-plate in a plane in rear of the line of union of said jacket with said plate, substantially as described.

4. In a sharpening device for lawn-mowers, a driving device applicable to the traction-wheel of the mower and having a hand-grasp arranged at one side of said driving device, substantially as described.

5. In a grinding device for lawn-mowers, an expansible band arranged to circumscribe a mower-wheel and provided with a holding-spur and with a hand-grasp, substantially as described.

654,147. MANIFOLDING DEVICE. JAKE FRIEDLANDER, Fargo N. D. Filed Mar. 15, 1900. Serial No. 8,823. (No model.)

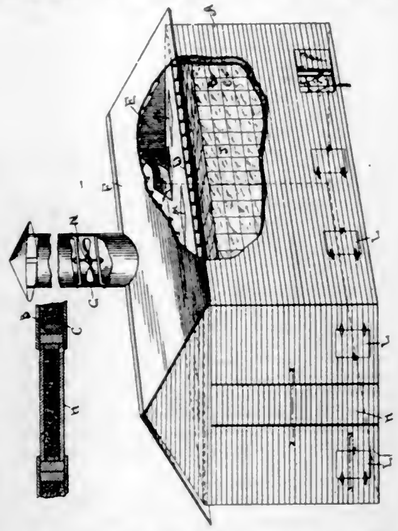


Claim.—1. The combination of a suitable base such as a drawing-board, and a sheet of paper or other suitable material, a sheet of material having carbon on both of its sides and also having perforated metallic strips at its ends, a sheet of transparent material, and a sheet of paper or other material superposed in the order named on said base and fastened thereto by thumb-tacks extending through the apertures in the metallic strips, whereby when a pointed instrument is moved under pressure over the outer sheet a positive copy is produced on the inner sheet of material, and a negative copy on the sheet of transparent material, substantially as specified.

2. As an improved article of manufacture, the copy device described comprising a sheet of flexible material having carbon on both of its sides, and thin metallic strips permaneutly connected to the opposite ends of the said strip of material and each having apertures at intervals in its length, substantially as specified.

654,148. ICE-HOUSE. OSSIAN GUTHRIE, Chicago, Ill. Filed June 5, 1899. Serial No. 719,410. (No model.)

Claim.—1. In an ice-house for storing ice, and having one or more rooms, a ceiling arranged to extend over such room or rooms, and a roof, and the usual doors and entrance-ways, a flue or chimney arranged to communicate with the space between the ceiling and room, a series of auxiliary openings through the walls of said house, said openings located adjacent to the base thereof, and opening direct communication between the outer air and the interior of said rooms at the base, and auxiliary openings in said ceiling, whereby the outer air admitted to the rooms at the base thereof circulates through the mass of stored ice, through the auxiliary openings in the ceiling, into the space in the roof, and out through the chimney, thereby reducing the temperatore of the entire mass of stored ice to that of the outer atmosphere, and means for closing said auxiliary openings in said walls and ceiling, as and for the purpose set forth.



2. In an ice-house for storing ice, and having one or more rooms, a ceiling for said rooms, a roof, and the usual entrance or door ways adapted to be permanently closed when the room or rooms are filled with ice, a flue or chimney arranged to communicate with the space between said ceiling and roof, a series of auxiliary openings through the walls of said house, said openings located adjacent to the base thereof and opening direct communication between the outer air and the interior of said rooms, auxiliary openings through said ceiling, whereby when said auxiliary openings in the walls and ceiling are opened, atmospheric air is admitted to said rooms at points adjacent to the base thereof, and circulates through the mass of stored ice, through the openings in the ceiling into the space in said roof, and out through said chimney, thereby reducing the temperature of the entire mass of stored ice to the atmosphere of the outer air, means for closing said auxiliary openings, and means for creating an artificial draft through said chimney, as and for the purpose set forth.

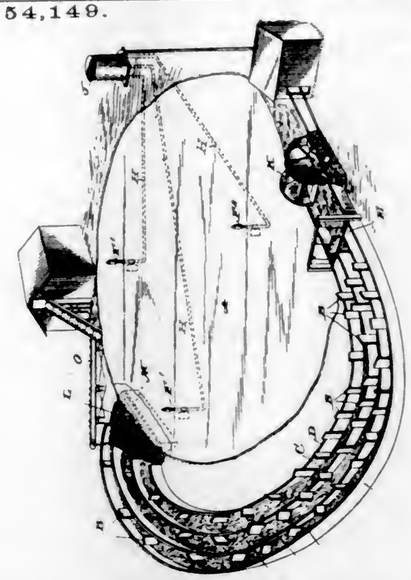
654,149. PROCESS OF FACILITATING FORMATION OF ICE. OSSIAN GUTHRIE, Chicago, Ill. Filed Dec. 23, 1899. Serial No. 741,490. (No specimens.)

Claim.—1. The method of facilitating and accelerating the formation of ice which consists in withdrawing a portion of the water from the body of the water in which the ice is being formed, and into which has been liberated the latent heat of the water which has previously passed into ice, then reducing the temperature of such withdrawn water, and finally returning the same at a reduced temperature to the main body of water as and for the purpose set forth.

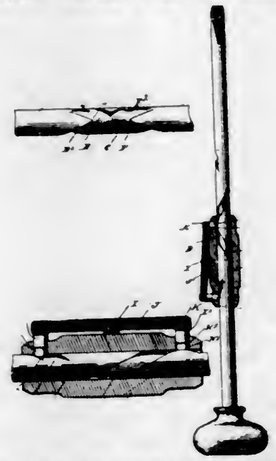
2. The method of facilitating and accelerating the formation of ice in ponds or lakes which consists of withdrawing a portion of the water from the pond or lake during the formation of ice, then spreading out such withdrawn water in a thin sheet or layer, and subjecting the same to cooling agencies whereby its temperature is reduced and finally returning such withdrawn water at the reduced temperature to the pond or lake as and for the purpose set forth.

3. The method of facilitating and accelerating the formation of ice in ponds or lakes, which consists in withdrawing a portion of the water from such pond or lake during the formation of ice, then reducing the temperature thereof and finally returning the same at a reduced temperature to the pond or lake in a thin sheet over the surface thereof as and for the purpose set forth.

654,149.



654,150. TOOL-HANDLE. JOSEPH HANNA and EDWARD J. JEDLICKA, Chicago, Ill. Filed Sept. 18, 1899. Serial No. 730,878. (No model.)

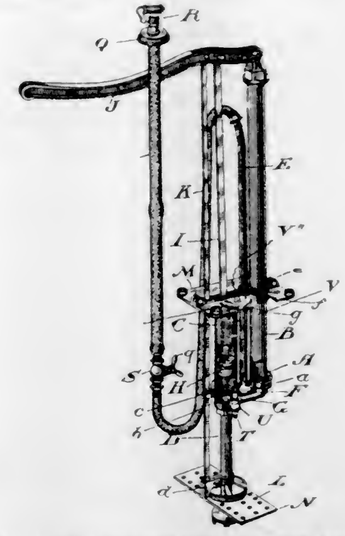


Claim.—1. In a rotatable tool, the combination with a spindle provided with two reversely-arranged spiral grooves, each end of each of which is formed with a short reversely-arranged groove, the short grooves and the portions of the main grooves adjacent thereto being each provided with an inclined bottom, said spiral grooves being united at their adjacent ends and each making a complete circle of the spindle, of a swiveled head at one end of the spindle and a tool at the other, a reciprocatory sleeve on the spindle, each end of which is provided with an inwardly-projecting pin, and means for reversely moving said pins in unison into or out of said grooves.

2. In a rotatable tool, the combination with a spirally-grooved spindle, of a swiveled head at one end and a tool at the other, a reciprocatory sleeve thereon, each end of which is perforated radially to its bore, a pin in each perforation, the inner end of which is provided with a roller and a ball, and a lever pivotally mounted on the sleeve and having its ends connected with said pins.

654,151. SPRAY-PUMP. WILLIAM H. HEARD, London, Canada. Filed July 27, 1899. Serial No. 725,256. (No model.)

Claim.—1. In a pump, a base-casting having two passages formed therein, in combination with a plunger-tube and suction-tube connecting with one passage, an air-chamber and a discharge-pipe connecting with the other passage; a valve between the two passages; a valve between the first-mentioned passage and the opening of the suction-pipe; and a pipe communicating with the said passage, substantially as and for the purpose specified.



2. In a pump, a base-casting having two passages formed therein, in combination with a plunger-tube and suction-tube connecting with one passage; an air-chamber and a discharge-pipe connecting with the other passage; a valve between the two passages; a valve between the first-mentioned passage and the opening of the suction-pipe; a pipe communicating with the said passage; and a regulating-valve in the said pipe, substantially as and for the purpose specified.

3. A pump provided with a suction-tube and a valve closing the said tube thereof, in combination with a tube opening into the pump above the said valve; and a regulating-valve in the said tube, substantially as and for the purpose specified.

4. In a pump, a base-casting; two lugs formed thereon; a suction-tube and an air-chamber connected thereto, in combination with a pump-handle pivoted upon the air-chamber; an agitator sleeved upon the said suction-pipe; and a rod connected to the said agitator, pivoted to the said handle and passing between the aforesaid lugs, substantially as and for the purpose specified.

5. In a pump, a valve-cage made removable and having a seat in its lower portion, in combination with a plug closing and opening in the top of the cage, and provided with a seat similar to the aforesaid seat, and a ball between said seats free to move in all directions, substantially as and for the purpose specified.

6. In a pump, a base-casting having two passages formed therein, in combination with a plunger-tube and suction-tube connecting with one passage; an air-chamber and a discharge-pipe connecting with the other passage; a valve between the two passages; and a valve between the first-mentioned passage and the opening of the suction-pipe, each valve comprising a cage screwed into a suitable opening and having an opening in its lower portion closed by a valve, and a screw-plug closing an openiug in the top of the cage, substantially as and for the purpose specified.

7. In a pump, the suction-tube D, in combination with the strainer N; provided with the ribs *i*, wire-gauze *h*, lugs *j* and bent wire *k*, substantially as and for the purpose specified.

8. In a pump, the suction-tube D, in combination with the strainer N, provided with wire-gauze *h*, lugs *j*, and bent wire *k*, substantially as and for the purpose specified.

9. In a pump, an agitator sleeved upon the suction-tube and partly split, in combination with an agitator-rod having its end inserted between the parts; and a clamping-bolt adapted to clamp the parts together, substantially as and for the purpose specified.

10. In a pump and in combination with the discharge-pipe thereof, a valve normally held closed by spring-pressure, in combination with a cam pivoted to the end of the spindle and bearing against the

end of the valve-mounting, and two lever-handles connected to the said cam, substantially as and for the purpose specified.

11. In a pump, a drip-cap having a sleeve thereon, in combination with a metal tube secured within the sleeve and a bamboo tube surrounding the metal tube and having its end inserted in a recess in the drip-cap, substantially as and for the purpose specified.

12. In a pump, a metal tube and a nozzle, in combination with a drip-cap flared downward and outward and secured in position at or about the junction of the two, substantially as and for the purpose specified.

13. In a pump, a nozzle and a tube to which the said nozzle is secured, in combination with a drip-cap having a sleeve thereon within which the said tube is secured, substantially as and for the purpose specified.

14. In a pump, a plunger comprising two parts longitudinally movable upon one another and so shaped as to form between them an external recess, in combination with spring-mechanism tending to draw the parts of the plunger together, substantially as and for the purpose specified.

15. In a pump, a plunger comprising two parts longitudinally movable upon one another and so shaped as to form between them an external recess with beveled sides in combination with spring mechanism tending to draw the parts of the plunger together, substantially as and for the purpose specified.

16. In a pump, a plunger comprising two parts made longitudinally movable upon one another and so shaped as to form between them an external recess with beveled sides, in combination with a spindle rigidly connected to one part of the plunger and extending through a shouldered hole formed in the other part; a nut upon the end of the spindle, and a spring upon the spindle between the nut and the shoulder within the said hole, substantially as and for the purpose specified.

17. In a pump the combination of the following elements comprising a plunger, the part d' having the sleeve g formed thereon and provided with shoulders i' and j'; the part d'' recessed to receive the sleeve g'; the nut shaped to engage the shoulder, and the spring engaging the nut and the shoulder, each part of the plunger being so shaped as to form between them an external recess for packing, substantially as and for the purpose specified.

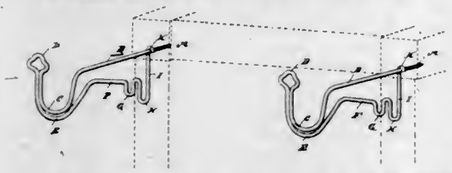
18. A pump provided with a suction-tube and a valve closing the said tube thereof, in combination with a tube opening into the pump above the said valve; and a regulating-valve in the said tube, comprising a valve-seat, a ball fitting said seat, a cage containing the said ball, a spring-actuated plug movable within the said cage and adapted to restrain the lift of the ball and means for vertically adjusting the said plug, substantially as and for the purpose specified.

19. A pump provided with a suction-tube and a valve closing the said tube thereof, in combination with a tube opening into the pump above the said valve; and a regulating-valve in said tube, comprising a valve-seat, a valve fitting said seat, a cage containing the said valve, a plug movable within the said cage and adapted to restrain the lift of the ball, and means for vertically adjusting the said plug, substantially as and for the purpose specified.

20. In a pump, the combination of a pipe entering the pump above the lower valve thereof and a valve located in the said pipe comprising a valve-seat; a valve fitting said seat, a cage containing the said valve, a plug movable within the said cage and adapted to restrain the lift of the valve and means for vertically adjusting the said plug, substantially as and for the purpose specified.

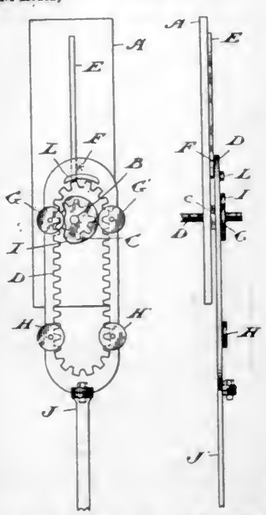
21. The combination with a pump having a valve adapted to close the inlet-pipe and a valve closing the outlet through which liquid is forced to the discharge, of a pipe communicating with the interior of the pump between said valves and a regulating-valve adapted to control the admission of liquid through the said pipe.

654,152. CURTAIN-FIXTURE BRACKET. GUS HELLIGENSTEIN, New Bremen, Ohio. Filed July 3, 1899. Serial No. 722,713. (No model.)



Claim.—A substantially-triangular curtain-fixture bracket formed from a single piece of wire, one end of which is formed into a loop and the other end into a screw-point and projecting through the loop, and the intermediate portion is formed into a base, an arm and a brace, the outer ends of the arm and the brace being joined together in an expanded head at right angles thereto and each being bent into a depending curve, the curve of the brace being lower than and partially under the curve of the arm, and the lower end of the brace being doubled upon itself vertically to form vertical notches.

654,153. MECHANICAL MOVEMENT. CHARLES H. HEROD and JOHN B. DETWILER, Brantford, Canada. Filed Mar. 9, 1900. Serial No. 8,013. (No model.)



Claim.—1. In a device of the class described, a suitably-journaled shaft; and a gear-pinion secured thereto in combination with a continuous double internal rack with which the said pinion meshes and which is connected to the part to be reciprocated; a stationary guide; a projection on the rack adapted to engage opposite sides of the guide so as to hold either side of the rack in mesh with the pinion, a cam secured to said pinion and a flange coacting therewith, substantially as and for the purpose specified.

2. In a device of the class described, a suitably-journaled shaft; and a gear-pinion secured thereto in combination with a continuous double internal rack with which the said pinion meshes and which is connected to the part to be reciprocated; a stationary guide; a projection on the rack adapted to engage opposite sides of the guide so as to hold either side of the rack in mesh with the pinion, the guide being so proportioned in length that the projection on the rack when the apparatus is in operation travels around each end substantially in contact therewith, a cam secured to said pinion and a flange coacting therewith, substantially as and for the purpose specified.

3. In a device of the class described, a suitably-journaled shaft; and a gear-pinion secured thereto in combination with a continuous double internal rack the number of teeth in which is some multiple of the number of the teeth in the pinion meshing therewith; a roller located on the rack near one end; a cam secured to the pinion, the cam being so shaped and proportioned that the engagement of the roller by the cam will throw the rack from one side to the other while the pinion is passing around from one side of the rack to the other; a stationary guide; and a projection on the rack adapted to engage opposite sides of the guide so as to hold either side of the rack in mesh with the pinion, substantially as and for the purpose specified.

4. In a device of the class described, a suitably-journaled shaft; and a gear-pinion secured thereto in combination with a continuous double internal rack the number of teeth in which is some multiple of the number of teeth in the pinion meshing therewith; a pair of rollers located on the rack at opposite sides thereof near one end; a cam secured to the pinion, the cam and rollers being so set and proportioned that the cam while continuously in contact with each roller will throw the rack from one side to the other while the pinion is passing around from one side of the rack to the other; a stationary guide; and a projection on the rack adapted to engage opposite sides of the guide so as to hold either side of the rack in mesh with the pinion, substantially as and for the purpose specified.

5. In a device of the class described, a suitably-journaled shaft; and a gear-pinion secured thereto in combination with a continuous double internal rack the number of teeth in which is some multiple of the number of teeth in the pinion meshing therewith; a roller located on the rack near the upper end; a cam secured to the pinion; the cam being so shaped and proportioned that the engagement of the roller by the cam will throw the rack from one side to the other while the pinion is passing around from one side of the rack to the other; a stationary guide and a projection on the rack adapted to engage opposite sides of the guide so as to hold either side of the rack in mesh with the pinion; and a curved flange at the upper end with which the cam engages to take the strain while the pinion is passing around the upper end of the rack, substantially as and for the purpose specified.

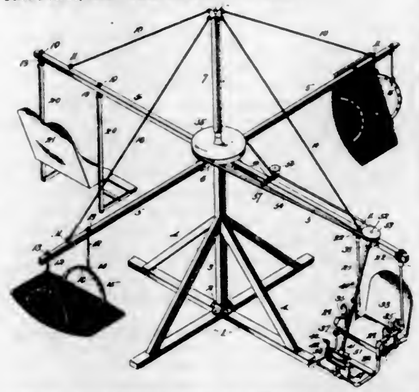
6. In a device of the class described, a suitably-journaled shaft; and a gear-pinion secured thereto in combination with a continuous double internal rack the number of teeth in which is some multiple of the number of teeth in the pinion meshing therewith; a pair of rollers located on the rack at opposite sides thereof near the upper end; a cam secured to the pinion, the cam and rollers being so set and proportioned that the cam while continuously in contact with each roller will throw the rack from one side to the other while the pinion is passing around from one side of the rack to the other; a stationary guide; a projection on the rack adapted to engage opposite sides of the guide so as to hold either side of the rack in mesh with the pinion; and a curved flange at the upper end with which the cam engages to take the strain while the pinion is passing around the upper end of the rack, substantially as and for the purpose specified.

7. In a device of the class described, the combination of the journaled driving-shaft B; the pinion C, the rack D having the number of its teeth a multiple of the number of teeth in the pinion; the projection F; the guide E with the opposite sides of which the projection F may engage; the two pairs of rollers G G′ and H H′ located near opposite ends of the rack; and the cam I secured to the pinion C, the parts being proportioned and located substantially as described and illustrated.

8. In a device of the class described, the combination of the journaled driving-shaft B; the pinion C; the rack D having the number of its teeth a multiple of the number of the teeth in the pinion; the projection F; the guide E with the opposite sides of which the projection F may engage; the two pairs of rollers G G′ and H H′ located near opposite ends of the rack; the cam I secured to the pinion C; and the curved flange L at the upper end of the rack the parts being proportioned and located substantially as described and illustrated.

9. In a device of the class described, a suitably-journaled shaft; and a gear-pinion secured thereto in combination with a continuous double internal rack the number of teeth in which is some multiple of the number of the teeth in the pinion meshing therewith; a cam secured to the pinion; and a curved flange at the upper end with which the cam engages to take the strain while the pinion is passing around the upper end of the rack; a stationary guide; and a projection on the rack adapted to engage opposite sides of the guide so as to hold either side of the rack in mesh with the pinion, substantially as and for the purpose specified.

654,154. MERRY-GO-ROUND. JOHN W. HILE, Kansas City, Kans. Filed Feb. 10, 1900. Serial No. 4,731. (No model.)



Claim.—1. In a merry-go-round, the combination with a rotatable frame, of a frame depending rigidly therefrom, and embodying substantially-horizontal arms, and substantially-vertical arms, driving mechanism carried by said depending frame and geared to the rotatable frame, pedals for operating said driving mechanism, and a chair or carriage provided with vertical hooks engaging said substantially-horizontal arms, and horizontal hooks for engagement with said substantially-vertical arms, substantially as described.

2. In a merry-go-round the combination with a rotatable frame, of a frame depending therefrom and embodying parallel approximately-horizontal side arms, and a chair provided with substantially-vertical side bars, each provided with a plurality of hooks occupying different vertical planes, and adapted to engage said side arms, substantially as described.

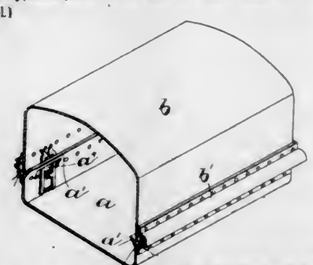
3. In a merry-go-round, the combination with a rotatable frame, of a frame depending therefrom and embodying parallel approximately-horizontal side arms, angle-arms coupled to and depending from the front ends of said side arms, and a chair provided with substantially-vertical side bars having hooks engaging said side arms and adjustable forwardly until the most advanced hooks abut against said couplings, and with forwardly-projecting bars hooked to the upright portions of said angle-arms, substantially as described.

4. In a merry-go-round, the combination with a rotatable frame, of a frame depending therefrom and embodying parallel approximately-horizontal side arms, angle-arms coupled to and depending from the front ends of said side arms, and a chair provided with substantially-vertical side bars, having hooks engaging said side arms and adjustable forwardly until the most advanced hooks abut against said couplings, and provided with forwardly-projecting bars having a plurality of hooks one set or the other of which is adapted to engage the upright portions of said angle-arms, substantially as described.

5. In a merry-go-round, the combination of a rotatable chair or carriage-carrying frame, a frame rigidly carried by and depending from said rotatable frame, a bearing-frame secured to the lower front end of said rigid frame, a bearing secured to the rotatable frame above said bearing-frame, an inclined tube rigidly connecting said bearing and bearing-frame, a shaft extending through said tube and journaled in said bearing and bearing-frame, and provided at its upper end with a wheel, and at its lower end within the bearing-frame with a bevel gear-wheel, a pedal crank-shaft journaled in said bearing-frame, a bevel gear-pinion mounted thereon and meshing with said bevel gear-wheel, a wheel mounted rigidly with its axis coinciding with that of the rotatable frame, and a traveling belt connecting said wheel with the wheel upon the upper end of the shaft extending through the inclined tube, substantially as and for the purpose described.

6. In a merry-go-round, the combination with a rotatable frame, chairs or carriages suspended therefrom, a frame rigidly carried by and depending from said rotatable frame, and embodying substantially-horizontal side arms, a foot-bar below and forward of the side arms, a chair adjustable upon said side arms toward or from said foot-bar, a bearing-frame secured to the lower front end of said rigid frame, a bearing secured to the rotatable frame above said bearing-frame, an inclined tube rigidly connecting said bearing and bearing-frame, a shaft extending through said tube and journaled in said bearing and bearing-frame, and provided at its upper end with a wheel, and at its lower end within the bearing-frame with a bevel gear-wheel, a pedal crank-shaft journaled in said bearing-frame, a bevel gear-pinion mounted thereon and meshing with said bevel gear-wheel, a wheel mounted rigidly with its axis coinciding with that of the rotatable frame, and a traveling belt connecting said wheel with the wheel upon the upper end of the shaft extending through the inclined tube, substantially as described.

654,155. GRAVE-VAULT. CHARLES H. HISER and EDGAR N. LUPFER, Springfield, Ohio, assignors to the Springfield Metallic Casket Company, same place. Filed Nov. 23, 1899. Serial No. 738,236. (No model.)

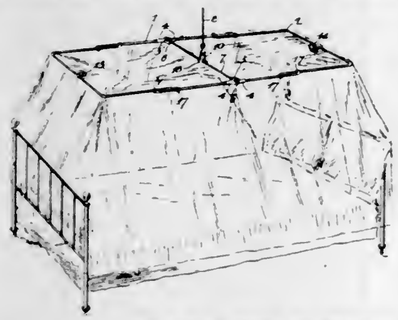


Claim.—1. In a grave-vault such as described, a base, an upward inwardly-inclined flange formed by extending the sides of the base, a series of openings in said flange, in combination with the top or cover and locking devices extending through said openings, said flange and the locking devices extending through said openings form-

ing a double guide longitudinally and laterally for said cover, substantially as and for the purpose specified.

2. In a grave-vault such as described, a base, an upward inwardly-inclined flange formed by extending the sides of the base, a series of openings in said flange, an upward outwardly-extending flange fixed to the upper portion of the sides of the base forming with said upward inwardly-inclined flange a groove as described, in combination with the top or cover the lower edge of said cover resting on said upward inwardly-inclined flange, a downward outwardly-extending flange having a shoulder therein, fixed to the lower portion of the sides of said cover, said shoulder being above the lower edge of said cover and resting on said upward outwardly-extending flange, said interengaging flanges being adapted to form a closed cement-channel, parallel bars with hook-shaped ends, pivoted together in pairs and to the sides of the base and extending through the openings in said upward inwardly-inclined flange, a spring to press the hook-shaped ends together, beveled lugs or projections fixed to the sides of the cover to engage said hook-shaped ends of the bars to lock the parts of the vault together, said upward inwardly-inclined flange and the bars of the locking device extending through the openings therein forming a double guide longitudinally and laterally to seat the cover on the base, substantially as described.

654,156. CANOPY FRAME OR SUPPORT. JACOB T. JOHNSON, Knoxville, Tenn. Filed Sept. 15, 1899. Serial No. 730,603. (No model.)



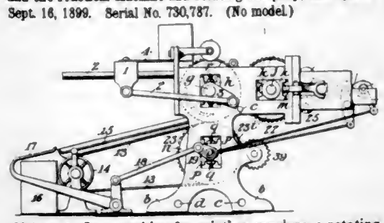
Claim.—1. In a canopy frame or support, the combination of foldable sections adapted to be suspended in a horizontal position exclusively from a point above the same and having hinge connections at their inner terminals which permit the sections to fold upwardly and prevent movement thereof below a horizontal plane when open, the hinge connections having stops for engagement with each other, a transversely-extending rod projecting across the width of the sections and disposed in the same plane as the latter, the opposite extremities of the said rod serving as pintles for pivotally connecting the hinge-sections, the said rod being in central position relatively to the sections, and the sections normally extended from the rod in a longitudinal direction an equal distance, and a suspending device attached to the central portion of the rod and adapted to be secured to a point above the said rod, whereby the under part of the frame or support is clear of holding devices.

2. In a canopy frame or support, the combination of foldable sections, hinge members attached to said sections and having abutting projections to prevent the downward extent of the sections below a horizontal plane, and a transversely-extending rod of a length equal to the width of the sections and having the extremities passing through the hinge members and serving as pintles therefor, the entire canopy or frame being suspended by means of the said rod through the medium of a suspending device attached thereto.

3. In a canopy frame or support, the combination of foldable sections, hinge members attached to the inner contiguous terminals of said sections and having abutting projections to prevent the downward extent of the sections below a horizontal plane, and a transversely-extending rod having the extremities passed through the hinge members and serving as pintles therefor, the said extremities of the rod being provided with shoulders to prevent sliding movement and also provide a brace against the hinge members, the rod also affording means for attaching a suspending device.

4. In a canopy frame or support, the combination of foldable sections pivotally connected to each other, one section carrying a hook and the other a loop to receive said hook, and a transversely-extending rod having the extremities thereof projecting through and serving as pintles for the pivoting devices of said sections and also affording means for attaching a suspending device.

654,157. PRINTING-PRESS FOR PRINTING ENVELOPS. WILLIAM G. JOHNSTON, Woodbury, N. J., assignor to Robert Schenck Clymer and the Practical Machine and Printing Company, same place. Filed Sept. 16, 1899. Serial No. 730,787. (No model.)



Claim.—1. In a machine for printing envelops, a rotating printing-form, and means for inking the same, an impression-cylinder opposed to the printing-form, gripping-jaws rotating with the impression-cylinder, means of closing and opening said jaws, a roller pressed toward said cylinder in combination with reciprocating fingers adapted to engage in the crease of an envelop-flap and force the envelop between the cylinder and roller and within the grasp of the gripping-jaws as and for the purpose set forth.

2. In a machine for printing envelops a casing adapted to receive a pile of envelops, provided with slots at the lower end upon the sides, and one or more reciprocating fingers, arranged to enter the slots at one side of the casing, and engage the flap of the lowest envelop therein, and expel such envelop through the opposite slot, and an impression-cylinder provided with gripping-jaws, and a roller pressed toward said cylinder arranged to grasp the envelop from the fingers, as and for the purpose set forth.

3. In a machine for printing envelops an impression-cylinder provided with gripping-jaws, a roller pressed toward the cylinder arranged to grasp the envelop, a case adapted to contain a pile of envelops, reciprocating fingers moving transversely through the base of said case, and adapted to engage in the flap of the lowest envelop in said case, and expel the same into the grasp of gripping-jaws, means of closing and opening said jaws to grasp and release the envelop in combination with a curved guide arranged to direct the envelop around the impression-cylinder, and a cylinder and endless cords thereon, arranged to convey the envelop to a fly and case for receiving the same substantially as set forth.

4. In a device for feeding envelops to printing-machines, an impression-cylinder, gripping-jaws thereon, and means of opening and closing the same, and a roller pressed toward said cylinder, a pair of lateral guides, and one or more reciprocating fingers, arranged to engage in the crease of an envelop-flap, and force the envelop between said guides in definite position of register between said guides and between said cylinder and roller, within the grasp of said jaws, upon the impression-cylinder as and for the purpose set forth.

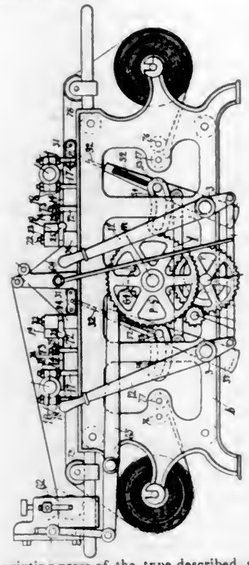
654,158. PRINTING-PRESS. WILLIAM G. JOHNSTON, Woodbury, N. J., assignor to Robert Schenck Clymer and the Practical Machine and Printing Company, same place. Filed Sept. 16, 1899. Serial No. 730,788. (No model.)

Claim.—1. In a printing-press for simultaneously printing more than one sheet or web in definite relation with each other, a press-frame, a series of type-beds rigidly connected with each other, a series of platens superposed upon the frame over said type-beds, means of simultaneously reciprocating said beds toward the platens, and means for separately adjusting each platen in relation to the opposed type-bed, in combination with a pivotal attachment of one side of each platen to the press-frame and a cross-bar and cranks and connecting-links for releasing and engaging the opposite side of each platen from the frame, without change of the adjustment of the platen relatively to the opposed type-bed as and for the purpose set forth.

2. In a multiple bed-and-platen printing-press, two or more toggles and a reciprocating link attached to the central pivot of said toggles, a roller on said link and a cam to operate said roller and straighten said toggles, in combination with a second cam and a second roller attached to said link to flex said toggles substantially as set forth.

3. In a printing-press of the type described, the combination of a plurality of rigidly-connected type-beds, toggles connected therewith, and platens, arranged in line to print upon one or more webs simultaneously, inking-cylinders located intermediately and at the ends of said type-beds, and platens in combination with reciprocating levers, roller-bearings pivotally attached to said levers, and rollers arranged to alternately ink the printing-form and rest upon the inking-cylinders, and a guiding mechanism arranged to direct the pivots of said roller-bearings in right lines, as and for the purpose set forth.

4. In a printing-press of the type described, having a plurality of beds and platens arranged to print simultaneously, a perforating-die and a stripper, and punches therefor located between the platens and type-beds, and means of reciprocating the punches during the printing operation as set forth.



5. In a printing-press of the type described, a frame, bolts attached to said frame, and platens having open-ended slots therein, embracing said bolts, and nuts upon said bolts arranged to adjust and hold said platens, in combination with oblong washers on said bolts, adapted to turn in one position to hold said platens down against the force of impression, and in the other to pass through said slots, without changing the adjustment of said nuts, substantially as set forth.

654,159. PAPER VESSEL. WILL M. KINNARD, Dayton, Ohio, assignor to the Kinnard Manufacturing Company, same place. Filed Feb. 13, 1899. Serial No. 705,407. (No model.)

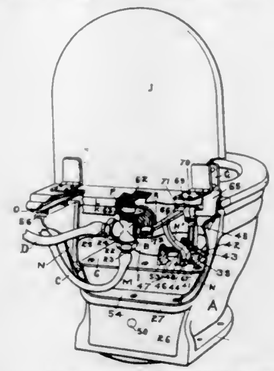


Claim.—1. A paper vessel or lid circular in horizontal cross-section, whose upright walls are made of ordinary sheet-paper, provided with a bottom having a downwardly-extending flange, adjacent to and parallel with the lower portion of the walls, the lower edges of said walls and of said flange being spun inwardly together upon themselves under pressure to form a relatively thick and heavy base and stiffening-head.

2. A paper vessel or lid whose upright wall or walls are made of ordinary sheet-paper provided with an inner bottom having a downwardly-extending flange adjacent to and parallel with the lower portion of the wall, the edges of said flange and the wall being spun together upon themselves to form a base and stiffening-bead and lock the two together in combination with an outer bottom consisting of a disk inserted within the space formed by the bead.

654,160. WATER-CLOSET. JOHN KIRBY, Jr., Dayton, Ohio, assignor to the Dayton Manufacturing Company, same place. Filed July 26, 1899. Serial No. 725,186. (No model.)

Claim.—1. In a water-closet, a hopper, a seat or lid mounted above the same, a support at the rear of said hopper and to which support said seat or lid is hinged, a valve-casing located below said support and having a rotatable valve-plug fitted therein, said valve-plug having a shaft at one end thereof which extends through and beyond said casing, in combination with an actuating device for said valve-plug consisting of a bracket permanently secured to said seat or lid, and a valve-operating arm in pivotal connection with said bracket and in loose engagement with said shaft, whereby the seat or lid may be raised to a substantially-vertical position, and whereby the operation of raising the same to or lowering it from said position will rotate said valve-plug, substantially as set forth.



2. In a water-closet, a hopper, a seat or lid mounted above the same, a support at the rear of said hopper and to which support said seat or lid is hinged, a valve-casing secured to the under side of said support and having a rotatable valve-plug fitted therein, said valve-plug having a shaft at one end thereof which extends through and beyond said casing, in combination with an actuating device for said valve-plug consisting of a bracket permanently secured to said seat or lid, and a valve-operating arm in pivotal connection with said bracket and in loose engagement with said shaft, whereby the seat or lid may be raised to a substantially-vertical position, and whereby the operation of raising the same to or lowering it from said position will rotate said valve-plug, substantially as set forth.

3. In a water-closet, the combination with a hopper and a seat or lid mounted above it, of a casing, a valve therein, a rotatable shaft operatively connected to said valve, and an actuating device for said shaft pivotally connected to said seat or lid and having a sliding engagement with said shaft, substantially as set forth.

4. In a water-closet, the combination of a hopper having an inner bowl open at its lower end and a dumping service-pan adapted to close said lower end of said bowl, a seat or lid mounted above said hopper, a support at the rear thereof and to which support said seat or lid is hinged, a valve located below said support, a bracket secured to said seat or lid and having a shaft extending at right angles thereto, an actuating device for said valve pivotally connected to said shaft, and means connected to said bracket for operating said service-pan, whereby said valve and said service-pan are operated by movement of said bracket caused by the raising or lowering of said seat or lid, substantially as set forth.

5. In a water-closet, the combination of a hopper having an inner bowl open at its lower end and a dumping service-pan adapted to close said lower end of said bowl, a seat or lid mounted above said hopper, a support at the rear thereof and to which support said seat or lid is hinged, a valve located below said support, a bracket secured to said seat or lid and provided with a shaft extending at right angles thereto an actuating device for said valve pivotally mounted on said shaft, and means mounted on said shaft for operating said service-pan, whereby said valve and said service-pan are operated by movement of said shaft caused by the raising or lowering of said seat or lid, substantially as set forth.

6. In a water-closet, the combination of a main supply-tank, a measuring-tank, a hopper having a flushing-inlet and an inner bowl open at its lower end, a dumping service-pan adapted to close said lower end of said bowl, a seat or lid mounted above said hopper, a support to which said seat or lid is hinged at the rear of said hopper, a valve-casing located below said support and having openings and a rotatable inner hollow valve-plug provided with ports adapted to register with said openings, the said valve-casing being connected with said flushing-inlet and with said main supply and measuring tanks, a bracket secured to said seat or lid and having a shaft extending at right angles thereto, an actuating device for said valve-plug pivotally connected to said shaft, and means connected to said bracket for operating said service-pan, whereby said valve-plug and said service-pan are operated by movement of said bracket caused by the raising or lowering of said seat or lid, thereby opening and

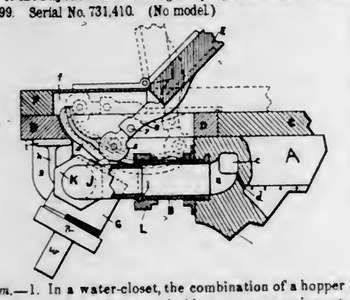
closing communication between said supply and measuring tanks and said flushing-inlet alternately, thus allowing water to pass from the supply-tank into and through said hollow of said plug to the measuring-tank and from the said latter tank through the hollow of said plug into said flushing-inlet, substantially as set forth.

7. In a water-closet, the combination of a main supply-tank, a measuring-tank, a hopper having a flushing-inlet and an inner bowl open at its lower end, a dumping service-pan adapted to close said lower end of said bowl, a seat mounted above said hopper, a support to which said seat is hinged at the rear of said hopper, a valve-casing located below said support and having openings and a rotatable inner hollow valve-plug provided with ports adapted to register with said openings, the said valve-casing being connected with said flushing-inlet and with the main supply and measuring tanks, a lid hinged above said seat to a suitable support at the rear of said hopper, a bracket secured to said seat or lid and having a shaft extending at right angles thereto, an actuating device for said valve pivotally connected to said bracket, and means connected to said shaft for operating said service-pan, whereby said valve and said service-pan are operated by movement of said bracket caused by the raising or lowering of said seat or lid, thereby establishing communication between said supply and measuring tanks and said flushing-inlet alternately, thus allowing water to pass from the supply-tank into and through the hollow of said plug to the measuring-tank and from the said latter tank through the hollow of said plug into said flushing-inlet, and whereby the contents of the measuring-tank will be emptied into the closet to flush the same and the measuring-tank will be refilled, substantially as set forth.

8. In a water-closet, a hopper, a seat or lid hinged above the same, a valve-casing having provisions for connections with a main supply-tank a measuring-tank and said hopper, and having openings therein, a rotatable hollow valve-plug closed at one end and open at the other and having ports adapted to register with said openings in said casing alternately, whereby when one of said ports is in register with one of said openings communication will be established between said main supply and measuring tank connections through the center of said hollow plug, and when the other of said ports is in register with the other of said openings said communication will be closed and communication opened between said measuring-tank and said hopper connections through said center of said hollow plug, in combination with a bracket attached to said seat or lid and having a shaft extending at right angles thereto, and a valve-operating arm in pivotal connection with said shaft and having engagement with said valve-plug, whereby said seat or lid may be raised to a substantially-vertical position and the operation of raising the same to or lowering it from said position will rotate said valve-plug, substantially as set forth.

9. In a water-closet, a hopper, a seat or lid mounted above the same, a support at the rear of said hopper and to which support said seat or lid is hinged, a valve located below said support, a measuring-tank adapted to be filled with water from a main supply-tank and to discharge its contents into said hopper by the operation of said valve an air-valve located above the water-line in said measuring-tank, a float adapted to close said valve, and a casing within which said float is contained, in combination with a bracket attached to said seat or lid and having a shaft extending at right angles thereto, and a valve-operating arm in pivotal connection with said shaft and having engagement with said valve, whereby said seat or lid may be raised to a substantially-vertical position and the operation of raising the same to or lowering it from said position will operate said valve, substantially as set forth.

654,161. WATER-CLOSET. JOHN KIRBY, Jr., Dayton, Ohio, assignor to the Dayton Manufacturing Company, same place. Filed Sept. 23, 1899. Serial No. 731,410. (No model.)



Claim.—1. In a water-closet, the combination of a hopper and a seat or lid hinged above it to a suitable support, a spring-retracted valve located below said support and having a projecting stem, an arm or head at the outer end of said stem, a horizontally-disposed arm secured to the under side of said seat or lid and projecting rearwardly therefrom, and a device movably connected to said arm and adapted to operatively engage said arm or head and open said valve when said seat or lid is moved in one direction and to move out of operative engagement with said arm or head when said seat or lid is moved in an opposite direction, substantially as set forth.

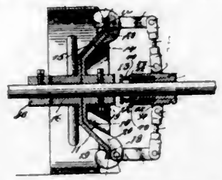
2. In a water-closet, the combination of a hopper and a seat or lid hinged above it to a suitable support, a spring-retracted valve secured to said support on the under side thereof and having a projecting stem, an arm or head at the outer end of said stem, a horizontally-disposed arm secured to the under side of said seat or lid and projecting rearwardly therefrom, and a device movably connected to said arm and adapted to operatively engage said arm or head and open said valve when said seat or lid is moved in one direction and to move out of operative engagement with said arm or head when said seat or lid is moved in an opposite direction, substantially as set forth.

3. In a water-closet, the combination of a hopper and a seat or lid hinged above it to a suitable support, a valve-casing carried by said support and having a valve-seat therein, a spring-retracted valve adapted to close against said valve-seat and having a stem projecting through said casing, a cross-arm at the outer end of said stem, a horizontally-disposed arm rigidly secured to the under side of said seat or lid and extending rearwardly therefrom, and a device movably connected to said arm and adapted to traverse said cross-arm and to coact therewith to open said valve by movement of said seat or lid in one direction and to move out of operative engagement therewith when said seat or lid is moved in an opposite direction, substantially as set forth.

4. In a water-closet, the combination of a hopper and a seat or lid hinged above it to a suitable support, a valve-casing secured to the under side of said support and having inlet and outlet chambers and connections, a valve-seat arranged within said casing, a spring-retracted valve adapted to close against said seat and having a stem projecting through said casing, a cross-arm attached to said stem at the outer end thereof, a horizontally-disposed arm attached to said seat or lid and extending rearwardly therefrom, and a device movably connected to said arm and adapted to operatively engage said cross-arm and thereby open said valve by movement of said seat or lid in one direction and to move out of engagement therewith when the same is moved in an opposite direction, substantially as set forth.

5. In a water-closet, the combination of a hopper and a seat or lid hinged above it to a suitable support, and a valve-casing located below said support and having a bracket by which it is secured thereto, means whereby the said casing is connected to the hopper, a spring-retracted valve arranged within said casing, a horizontally-disposed arm secured to said seat or lid and extending rearwardly therefrom, and a device movably connected to said arm and adapted to operatively engage with and open said valve by movement of said seat or lid in one direction and to move out of operative engagement therewith when the same is moved in an opposite direction, substantially as set forth.

654,162. FRICTION-CLUTCH. FREDERICK L. KUHN, Fitchburg, Mass. Filed Nov. 7, 1899. Serial No. 736,159. (No model.)



Claim.—1. In a friction-clutch, the combination of driving and driven members, one having a flange extended beyond the engaging faces of said members, levers in operative relation to both faces of the flange on one clutch member and adapted to positively engage both faces and move said flanged member in either direction, and means for actuating said levers, substantially as described.

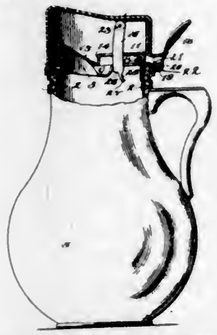
2. In a friction-clutch the combination of driving and driven members, one having a flange protruding beyond the friction-faces of said members, a series of levers hung on one member and each provided with an offset arm which spans the flange on the other member, and means for adjusting said levers to positively engage said flange alternately on opposite sides and move the flanged member in either direction, substantially as described.

3. In a friction-clutch, the combination of a conical male member, a conical female member provided with a flange which projects beyond the friction-surfaces of said members, levers fulcrumed on the male member for the heels thereof to engage with one face of the flange and provided with offset arms adapted to bind against the other face of the flange, and means for shifting the positions of said levers, for the purpose described, substantially as set forth.

4. In a friction-clutch, the combination of a conical male member, a conical female member provided with a radial flange protruding beyond the friction-surfaces of said members, levers fulcrumed on the male member for their heels to engage with one face of the flange and having offset arms which are presented to the other face of the flange, a slidable collar, and sectional links operatively connecting the collar and levers, each link having its members coupled adjustably by an intermediate screw, substantially as described.

5. In a friction-clutch, the combination with a member having an exterior friction-surface, of a second member having a reëntrant friction-surface in which the first-named surface is disposed, the second member having also a flange which projects radially beyond the first-named member, levers mounted upon the second member and adapted for movement to engage the flange alternately on opposite sides to move the second member into and out of engagement with the first member, a slidable collar, links connecting the collar and levers for operating the latter, and springs connected with the levers and the first-named elements to hold the levers yieldably in a predetermined position.

654,163. PITCHER. ELMER G. LANTZ, Marion, Ind. Filed Feb. 28, 1900. Serial No. 6,810. (No model.)



Claim.—1. A device of the class described comprising a receptacle, a lid or cover hinged to the receptacle, a lip or spout carried by the receptacle and located within the lid or cover, a cut-off hingedly connected with the receptacle and closing against the lip or spout and provided with a slot, and a connecting bar or piece secured to the lid or cover and extending through the slot of the cut-off and provided with means for engaging the lower face of the latter, substantially as described.

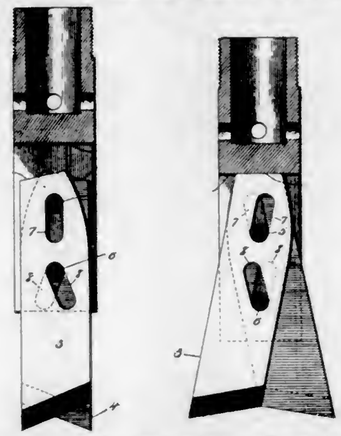
2. A device of the class described comprising a receptacle, a hinged lid or cover, a hinged cut-off carried by the receptacle and located within the plane of the lid or cover and provided with a slot, and a connecting-piece pivoted to the lid or cover and extending through the slot of the cut-off and provided with a shoulder, said connecting-piece being adapted to swing backward and forward by gravity, to engage its shoulder with the cut-off and disengage it therefrom, substantially as described.

3. A device of the class described comprising a receptacle, a lid or cover hinged to the same, a cut-off hingedly connected with the receptacle and provided with a slot, and a connecting-piece carried by the lid or cover and extending through the slot of the cut-off and having a stop for engaging the lower face of the cut-off, substantially as described.

4. A device of the class described comprising a collar or band designed to be arranged on the neck of a pitcher and provided with an inwardly-extending annular flange and having a lip or spout at the inner edge of the front portion thereof, said flange being inclined rearward at each side of the device and provided at the ends of the lip or spout with grooves or depressions forming rear shoulders 7 to check the rearward flow of the drip and prevent the same from flowing on the rear portion of the annular flange, and a cover, substantially as described.

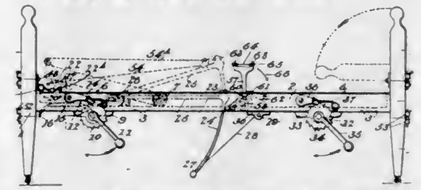
5. A device of the class described comprising a receptacle having a lip or spout, a hinged lid or cover, a hinged cut-off, angularly bent between its ends and forming a shoulder at its upper face to stop the backward flow of a liquid, and a connecting piece pivoted to the lid or cover and located in rear of the said shoulder and adapted to engage the cut-off, substantially as described.

654,164. EXPANSION-DRILL. HENRY J. LAWRENCE, Elmore, Minn. Filed Oct. 12, 1899. Serial No. 733,402. (No model.)



Claim.—An expansion-drill comprising a drill-stock slotted vertically at its lower end, in combination with overlapping expansible cutters formed with vertical elongated slots and oppositely-inclined elongated slots, and having their upper ends oppositely inclined: and securing-rivets one of which extends through the vertical slots of the cutters and the other through the oppositely-inclined slots thereof.

654,165. INVALID'S BED. FELIX M. LEPORE, Denver, Colo. Filed Nov. 6, 1899. Serial No. 736,029. (No model.)



Claim.—1. The combination with the posts, the side rails and the tilting frame, of a roller journaled to the head of said frame and a sheet or blanket attached to said roller, a sheet-supporting frame pivotally secured to the sides of said tilting frame, means for unrolling said sheet and securing its loose end to the said frame, and means including a drum and a ratchet-and-pawl holding device for raising and locking said sheet-supporting frame in any desired position above said side rails, substantially as described.

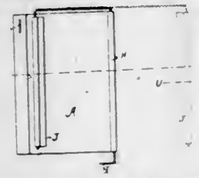
2. The combination with the posts and the side rails of the tilting frame, the shaft, the arms secured to said shaft, the ratchet-and-pawl holding device and the crank for holding said frame, with the roller journaled to the end of the tilting frame, the sheet secured to the said roller, the hooks secured to the free end of said sheet and the sheet-supporting frame arranged to swing at one end above said side rails, eyes in the free ends of said frame adapted to receive the hooks of said sheet and means for raising and lowering said frame including the shaft, the drum mounted on said shaft, the ropes connecting said frame to said drum, the crank and the ratchet-and-pawl locking device, substantially as described.

3. The combination with the posts, the side rails, the cross-slats and the tilting frame, of a common spring-actuated, rotating curtain-roller mounted on the head end of said tilting frame, a sheet or blanket secured at one end to said roller and adapted to be unrolled and spread over a portion of the head end of the bed and adapted to support the body portion of invalids, an aperture in said sheet near its lower end, a vertically-swinging supporting-frame arranged and adapted to support the free end of said sheets and means including winding and locking mechanism for raising and locking said sheet in adjusted positions above said side rails and said tilting frame, substantially as described.

4. The combination of the posts, the side rails and the tilting frame, of the arms pivoted at one end to the opposite sides of said frame, and having at their opposite ends downward-curved portions and at their lower ends a cross connecting-rod, eye-rings at their upper ends, a winding-drum rotatably mounted adjacent to said arms,

ropes secured at one end to said cross-rod and at their opposite end to said drum, a shaft supporting said drum, a ratchet-wheel secured to said shaft, a spring-controlled pawl arranged to engage and lock said ratchet-wheel, a pin for raising said pawl out of engagement with said ratchet-wheel and a crank for winding said drum, substantially as described.

654,166. MANIFOLD SALES-BOOK. CYRILLE LEVEQUE, Toronto, Canada. Filed Feb. 17, 1900. Serial No. 5,628. (No model.)



Claim.—The combination of the board A containing the channel B, the hook F, with the frame H provided with the wrapper or tube J, substantially as described.

654,167. BLACK AZO DYE AND PROCESS OF MAKING SAME. IVAN LEVINSTEIN and CARL MENSCHING, Manchester, England, assignors to the Levinstein, Limited, same place. Filed Jan. 17, 1900. Serial No. 1,763. (No specimens.)

Claim.—1. The process for the production of a black azo coloring-matter for dyeing wool, which consists in diazotizing acetyl-para-amidobenzene-azo-amido-alpha-naphthalene, combining the diazotized product in an alkaline solution with naphthol disulfonic acid R, and in splitting off the acetyl group by saponification, substantially as set forth.

2. As a new article of manufacture, the new black azo coloring-matter which is derived from diazotized acetyl-para-amidobenzene-azo-amido-alpha-naphthalene and naphthol disulfonic acid R, is a black powder soluble in water with a reddish-blue-black shade, in concentrated sulfuric acid with a dull-greenish color which changes to red on dilution with water, is very slightly soluble in alcohol with a reddish-brown color, and which, in an acid or in a neutral saline bath, dyes wool a deep black.

654,168. BLACK AZO DYE AND PROCESS OF MAKING SAME. IVAN LEVINSTEIN and CARL MENSCHING, Manchester, England, assignors to the Levinstein, Limited, same place. Filed Jan. 17, 1900. Serial No. 1,764. (No specimens.)

Claim.—1. The process for the production of a black azo coloring-matter which consists in diazotizing acetyl-para-amidobenzene-azo-amido-alpha-naphthalene, combining the product in an alkaline solution with Schaeffer's naphthol sulfonic acid, and in splitting off the acetyl group by saponification, substantially as set forth.

2. As a new article of manufacture, the new black azo coloring-matter which is derived from diazotized acetyl-para-amidobenzene-azo-amido-alpha-naphthalene and Schaeffer's naphthol sulfonic acid, is a black powder soluble in water with a reddish-brown shade, in concentrated sulfuric acid with a dull greenish color changing to reddish-brown on dilution with water, is soluble in alcohol with a violet color, and which, in an acid or in a neutral saline bath, dyes wool a deep black.

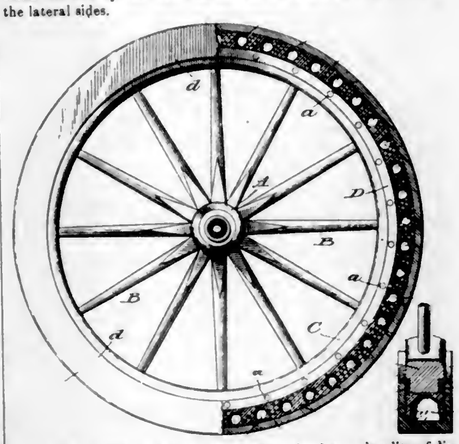
654,169. WHEEL. PAUL H. MACNEIL, Washington, D. C. Filed Mar. 13, 1900. Serial No. 8,450. (No model.)

Claim.—1. In a wheel a confined elastic zone member, having a plurality of disconnected air-cells within and longitudinally of its body each provided with an opening in one of the walls thereof, in combination with an inflexible non-elastic confining outer member.

2. In a wheel an elastic zone member, having a plurality of disconnected air-cells within and longitudinally of its body each provided with an opening in one of the walls thereof, the whole inclosed on all sides closely by inflexible non-elastic housing members.

3. In a wheel an elastic zone member, having a plurality of disconnected air-cells within and longitudinally of its body each having an opening in one of the walls thereof, inclosed by the felly on one side and by an inflexible non-elastic-tire shoe on the opposite or tread side and by the inflexible non-elastic flanges of the latter on the lateral sides.

4. In a wheel an elastic zone member, having a plurality of disconnected air-cells within and longitudinally of its body each having an opening in one of the walls thereof, inclosed by the felly-band on one side and by an inflexible non-elastic-tire shoe on the opposite or tread side and by the inflexible non-elastic flanges of the latter on the lateral sides.

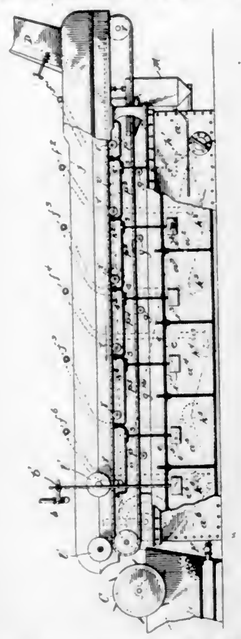


5. In a wheel an elastic zone member, having a plurality of disconnected air-cells within and longitudinally of its body each having an opening in one of the walls thereof, inclosed by an inflexible non-elastic channeled felly band or tire on the felly side, by an inflexible non-elastic shoe or tire on the outer or radial side and by the inflexible non-elastic flanges of the felly-band on the lateral sides.

6. In a wheel an elastic zone member, having a plurality of disconnected air-cells within and longitudinally of its body, said cells having an opening in one of the walls or sides thereof, inclosed by a non-elastic member or felly on the felly side and by a two-part channeled shoe or tire on the opposite or tread side, said two-part shoe, having flanges to inclose said elastic member on the lateral sides and provided with a groove in each half with suitable packing material inserted therein, held in place by bolts

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654,170. WOOL-WASHING MACHINE. GEORGES MALARD, Tourcoing, France. Filed July 31, 1899. Serial No. 725,705. (No model.)



Claim.—1. In a machine for washing wool, the combination with a main tank divided into compartments, of an endless carrier-belt arranged to travel over said tank, means for raising liquid from each compartment and spraying it upon said belt, collectors under the upper portion of said belt to receive the liquid, a valve in the bottom of each collector controlling the discharge of liquid therefrom, and a float in each compartment arranged to operate said valve.

2. In a machine for washing wool, the combination with a main tank divided into compartments, of an endless belt traveling over said tank, a pipe supplying water to the compartment at one end of the tank, pumps for transferring water from one compartment to the next, and a settling-tank at the opposite end of the tank from the water-pipe.

3. In a machine for washing wool, the combination with a main tank, of a settling-tank, a conduit conveying the overflow from the settling-tank to the main tank, a hydrometric float in said settling-tank, and a valve in said conduit connected with said float.

4. In a machine for washing wool, the combination with a settling-tank having a partition extending nearly to its bottom, of a strainer at the top of one of the thus-formed compartments, a hydrometric float in the other compartment, a conduit receiving the overflow from said second compartment, a gate-valve in said conduit connected with said float, and a second settling-tank into which the liquid flows when the valve is closed.

5. In a machine for washing wool, the combination with the main tank, of a settling-tank, automatic means for directing the overflow from the settling-tank through one or the other of two outlets, and a second settling-tank connected with one of said outlets.

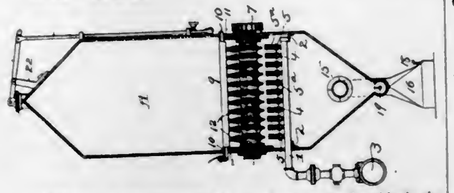
6. In a machine for washing wool, the combination with the main tank, of two settling-tanks, and automatic means for directing the overflow from the first settling-tank either to the main tank or to the other settling-tank in accordance with the density of the liquid.

7. In a machine for washing wool, the combination with a main tank, of a settling-tank M', having the partition N', the filter w, a pipe leading from the bottom of the tank M' to the main tank, a valve in said pipe, and connections between said valve and the stopping and starting mechanism of the machine.

8. In a machine for washing wool, the combination with an endless carrier-belt, of an inclined feed-chute, having one side hinged at its upper end, and provided with side flanges overlapping the adjacent sides of the chute.

9. In a machine for washing wool, an endless carrier-belt composed of links provided with openings through the body portion, and having lugs along each edge, said lugs being beveled off along their upper sides.

654,171. LAMPBLACK-MACHINE. JOHN L. MANN, Burrows, Pa., assignor of three-fourths to C. H. Helm, Kane, and N. B. Bubb and A. D. Hermance, Williamsport, Pa. Filed Dec. 1, 1899. Serial No. 738,895. (No model.)



Claim.—1. In an apparatus for manufacturing carbon-black, the combination of a corrugated roller, means for exposing said roller to a flame and means for scraping said roller.

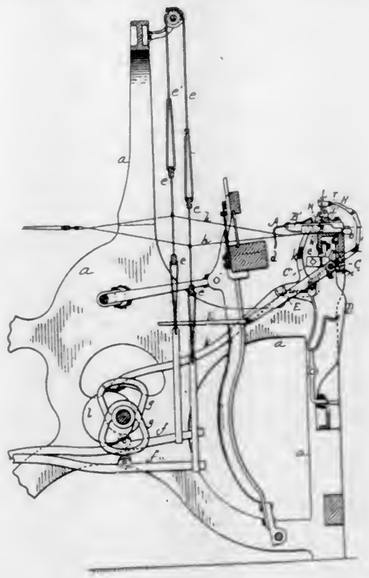
2. In an apparatus for making carbon-black, the combination with a roller having a series of circumferential ridges, of a burner disposed under each ridge and a brush disposed over each ridge.

3. In an apparatus for manufacturing carbon-black, the combination with a circumferentially-corrugated roller, of a series of burners disposed below said roller, a perforated mantle between each burner and said corrugated roller, and brushes over the roller for removing the carbon-black therefrom.

4. In an apparatus for manufacturing carbon-black, the combination with a roller, burners under the roller, a rod disposed above the roller and mounted to rock, brushes carried by said rod and bearing against the roller, and a weighted arm projecting from said rod and tending to cause it to turn or rock on its bearings and press the brushes against the roller.

654,172. HARNESS STOP-MOTION FOR LOOMS. GEORGE MATHIEU, Fall River, Mass. Filed Apr. 3, 1900. Serial No. 11,323. (No model.)

Claim.—In a harness stop-motion for looms, the weft-fork lever *k* and its operating mechanism; the weft-fork; the sliding portion B' of the weft-fork box or frame; the engaging segment or dog N extending from a rock-shaft mounted on said portion B'; the lever L rigid on said rock-shaft; the shaft or frame C mounted in the frame of the machine; the bars E extending from said shaft; springs disposed around the shaft or frame C and adapted to hold said bars normally with their rear ends under the harness; the lever F rigidly secured at one end to the frame or shaft C and extending up therefrom as described; and the link H connecting the upper ends of said arm F and lever L, whereby the segment or dog N is held normally raised and dropped when the breakage of a strap causes the harness to fall upon the arms E, down into engagement with the upper end of the weft-fork lever, substantially as described.



654,178. SHOULDER-BRACE. EDGAR C. MENDENHALL, Mendenhall, Ark. Filed Mar. 15, 1900. Serial No. 8,782. (No model.)

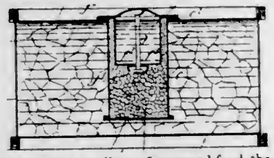


Claim.—1. In a brace of the character set forth, the combination of shoulder and limb attaching devices, an intermediate support having an outstanding bridge-bar, and resilient brace-wires connected to said shoulder and limb attaching devices and to the bridge-bar.

2. In a brace of the character set forth, the combination of shoulder and limb attaching devices a waist-belt, an intermediate support attached to the waist-belt and having an outstanding bridge-bar with seats formed therein, resilient and brace wires connected to said shoulder and limb attaching devices and the bridge-bar, the said wires be-

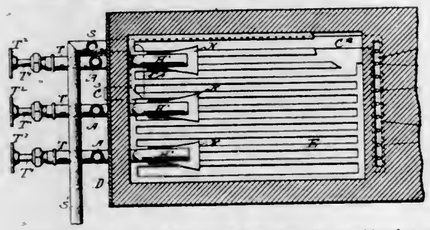
ing crossed above the plane of the bridge-bar and wound around the latter at the points where the seats are formed.

654,174. HEATING APPLIANCE FOR CANNED FOOD. ERNST MURMANN and AUGUST OPAWSKI, Vienna, Austria-Hungary. Filed Jan. 5, 1899. Serial No. 701,287. (No model.)



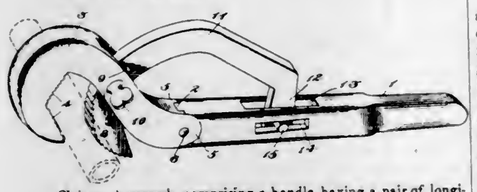
Claim.—In a heating appliance for canned food, the combination with the can of a sheet-metal receptacle tightly inserted into a hole of the sides of the can and extending within the hollow of the can nearly to the opposite side, a cross-partition dividing the hollow space of the receptacle into an inner and an outer chamber and being provided with a hole, a headed pin having its head so soldered to the inner surface of the partition that it closes the hole of the partition, and its stem extending into the outer chamber, a bellied-out sheet-metal cover tightly closing the outer chamber and bearing against the free end of the pin, quicklime filling either chamber, water filling the other chamber, and a water-transferrer added to the contents of either chamber, substantially as described and for the purposes set forth.

654,175. FURNACE. DANIEL S. MCGREGOR and SAMUEL B. LOCKLIN, Boston, Mass.; John S. Bamford administrator of said McGregor, deceased. Filed Aug. 24, 1898. Serial No. 689,413. (No model.)



Claim.—In a furnace of the class described, the combination of a commingling-chamber, a nozzle communicating therewith and arranged to discharge into the combustion-chamber above the fuel, gas and air conduits communicating with the commingling-chamber, a steam-jet arranged to induce currents of air and gas through said air and gas conduits, and means for delivering commingled air and steam across the path of the products of combustion at the rear of the fuel-chamber, substantially as and for the purpose set forth.

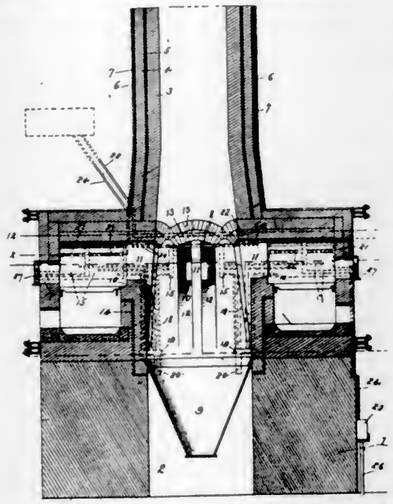
654,176. PIPE-WRENCH. OREN H. MCNELLY, JOEL F. JANNEY, and HUGH MCNELLY, Richland Centre, Wis. Filed Mar. 15, 1900. Serial No. 8,769. (No model.)



Claim.—A wrench, comprising a handle, having a pair of longitudinal intersecting slots, a hooked jaw pivotally or hingedly connected to one end of the handle, and provided with a longitudinal slot, and a second jaw pivoted within the slot of the first-mentioned jaw, and also provided with a rearwardly-extending bowed shank, having an inwardly-directed arm at its rear end and slidably received within one of the slots in the handle, said arm having opposite lateral projections slidably confined within the other slot of the handle.

654,177. STRUCTURE FOR CALCINING STONE. JOSEPH E. PATTERSON, Wilkes-Barré, Pa. Filed Feb. 26, 1898. Serial No. 671,830. (No model.)

Claim.—1. In a kiln, the combination of a barrel enlarging downward toward its lower end with a furnace having its discharge-flue entering said barrel at a point above its lower end, thereby converting the part of the barrel below the flue into the upper part of the cooling-chamber, said upper part of the cooling-chamber enlarging downward and being provided with a recess running downward from said flue and having its back wall approximately vertical so that the recess will taper into the inner face of the upper part of the cooling-chamber at or near the lower end of the barrel, and a part below adapted to serve as the lower part of the cooling-chamber.



2. In a lime-kiln, a stack or barrel having a cooling-chamber at its lower end, a furnace having a grate and connected to the stack, air-ducts communicating with the space below the cooling-chamber and carried up in the wall of the cooling-chamber, one of these air-ducts being extended outward into each of the opposite side walls of the furnace, an air-chamber formed in each side wall of the furnace and connected to the adjacent one of said air-ducts, said air-chambers having openings leading into the combustion-chamber of the furnace above the grate therein and also into the atmosphere, these latter openings being valved, substantially as described.

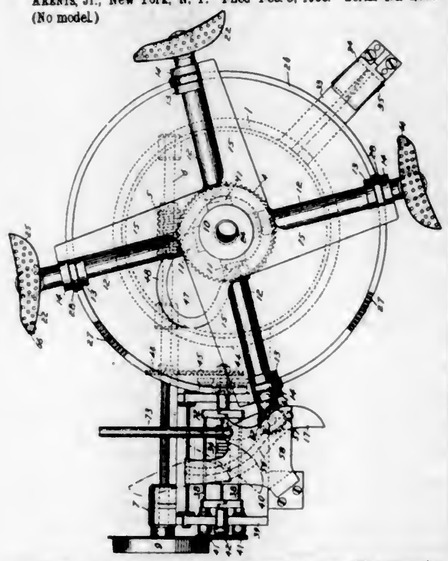
3. In a lime-kiln, the combination of a stack, a series of furnaces radiating therefrom, and connected thereto by flues, liquid-carrying pipes 24, arranged in four groups, embedded in the masonry of the furnaces and stack, one group extending across above the flue of each furnace and the groups crossing each other at points between the furnaces, means for supplying liquid to these pipes and maintaining a continuous flow of liquid therethrough, regulating-cocks on the terminals of said pipes, and a lock-box inclosing the terminals of each group of pipes and provided with a sight-opening and a drain-pipe, as and for the purposes set forth.

4. In a lime or other kiln, the combination of a central stack, a series of furnaces having grates and arranged around the same and connected thereto by flues, an air-chamber in the side wall of each furnace and connected with the interior of the furnace above the grate-bars, several groups of air pipes or flues in the walls of the stack below the entrance of the furnace-flues thereto, these pipes or flues being arranged at substantially-equidistant points around the stack and opening at their lower ends into the outside atmosphere and at their upper ends into the aforesaid chambers in the furnace-walls, a substantially-equal number of pipes connecting with the respective chambers, whereby the supply of air to the furnaces will be substantially uniform, as and for the purposes set forth.

5. In a lime or other kiln, the combination of a stack and a series of furnaces arranged around the same and connected thereto above its lower end by flues, air-chambers in the side walls of each furnace, these air-chambers opening into the combustion-chambers of the furnaces, groups of air-pipes in the wall of the stack below the furnace-flues, these groups being equal in number to the furnaces and arranged around the same at equidistant points, the pipes of each group separating at their upper ends, some leading to one of the air-chambers in the side walls of one furnace and the remainder leading to the air-chamber in the adjacent side wall of the adjacent furnace, and the lower ends of said pipes being connected to the atmosphere, and a second series of groups of air-flues in the stack-wall below the flues, these groups being arranged alternately with the first-mentioned groups and extending from points under the grate-bars of the respective furnaces to the atmosphere, as and for the purposes set forth.

6. In a lime or other kiln, the combination of a stack, a series of furnaces radiating therefrom and connected thereto by flues, recesses 25 being formed in the tops of the furnaces where they connect to each other and the stack, a series of groups of cooling-pipes embedded in the wall of the stack these groups crossing each other within said recesses and crossing the flues leading from the furnaces into the stack, substantially as set forth.

654,178. CIGAR-MACHINE. RUFUS L. PATTERSON and GEORGE ARENTS, Jr., New York, N. Y. Filed Feb. 5, 1900. Serial No. 4,030. (No model.)



Claim.—1. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means operating substantially throughout the length of the support for holding the wrapper thereon, and means for producing a relative approaching movement between the wrapping mechanism and the wrapper-support, said movement continuing during the wrapping operation, substantially as described.

2. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, and means for producing a relative approaching movement between the wrapping mechanism and the wrapper-support, said movement continuing during the wrapping operation, substantially as described.

3. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means operating substantially throughout the length of the support for holding the wrapper thereon, and means for giving the wrapper-support an approaching movement with respect to the wrapping mechanism, said movement continuing during the wrapping operation, substantially as described.

4. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, and means for giving the wrapper-support an approaching movement with respect to the wrapping mechanism, said movement continuing during the wrapping operation, substantially as described.

5. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for cutting a wrapper from a leaf of tobacco while on the support, and means for producing a relative movement between the support and the wrapping mechanism which is the resultant of an approaching movement and a traversing movement, substantially as described.

6. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for cutting a wrapper from a leaf of tobacco while on the support and means for producing a relative movement between the support and the wrapping mechanism which is the resultant of an approaching movement and a traversing movement, substantially as described.

7. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for cutting a wrapper from a leaf of tobacco while on the support, and means for producing a relative movement between the support and the wrapping mechanism which is the resultant of an approaching movement, a traversing movement and an angular movement, substantially as described.

8. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for cutting a wrapper from a leaf of tobacco while on the support, and means for producing a relative movement between the support and the wrapping mechanism, which is the resultant of an approaching movement, a traversing movement and an angular movement, substantially as described.

9. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for cutting a wrapper from a leaf of tobacco while on the support, and means for giving the support an approaching movement and a traversing movement with respect to the wrapping mechanism, substantially as described.

10. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for cutting a wrapper from a leaf of tobacco while on the support, and means for giving the support an approaching movement and a traversing movement with respect to the wrapping mechanism, substantially as described.

11. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for cutting a wrapper from a leaf of tobacco while on the support, and means for giving the support a movement which is the resultant of an approaching movement, a traversing movement, and an angular movement, substantially as described.

12. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for cutting a wrapper from a leaf of tobacco while on the support, and means for giving the support a movement which is the resultant of an approaching movement, a traversing movement, and an angular movement, substantially as described.

13. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, and means for giving the supports a continuous movement whereby they successively deliver their wrappers to the wrapping mechanism, substantially as described.

14. The combination with a wrapping mechanism, of a plurality of suction wrapper-supports, and means for giving the supports a continuous movement whereby they successively deliver their wrappers to the wrapping mechanism, substantially as described.

15. The combination with a rotating shaft, of a plurality of wrapper-supports, a wrapping mechanism, and means for continuously rotating the shaft to cause the supports to successively deliver their wrappers to the wrapping mechanism, substantially as described.

16. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a sheet of material is held on each support, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for giving the supports a rotating movement to successively deliver the wrappers to the wrapping mechanism, substantially as described.

17. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a sheet of material on each support, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for giving the supports a rotating movement to successively deliver the wrappers to the wrapping mechanism, substantially as described.

18. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a sheet of material is held on each support, cutting devices operating to cut a wrapper from the sheet of material while on the support, means for reversing the position of the supports after the cutting operation, and means for causing the supports to successively deliver the wrappers to the wrapping mechanism, substantially as described.

19. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a sheet of material on each support, cutting devices operating to cut a wrapper from the sheet of material while on the support, means for reversing the position of the supports after the cutting operation, and means for causing the supports to successively deliver the wrappers to the wrapping mechanism, substantially as described.

20. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means for causing said supports to rotate in a substantially-horizontal plane, means whereby a sheet of material is held on each support, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for causing the supports to successively deliver the wrappers to the wrapping mechanism, substantially as described.

21. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means for causing said supports to rotate in a

substantially-horizontal plane, suction mechanism for holding a sheet of material on each support, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for causing the supports to successively deliver the wrappers to the wrapping mechanism, substantially as described.

22. The combination with a plurality of wrapper-supports, of means for causing said supports to rotate in a substantially-horizontal plane, means for maintaining each support for a part of its period of rotation with its operative face uppermost, means whereby a sheet of material is held on each support, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for reversing the position of each support in order to enable it to deliver its wrapper, substantially as described.

23. The combination with a plurality of wrapper-supports, of means for causing said supports to rotate in a substantially-horizontal plane, means for maintaining each support for a part of its period of rotation with its operative face uppermost, suction mechanism for holding a sheet of material on each support, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for reversing the position of each support in order to enable it to deliver its wrapper, substantially as described.

24. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means for causing said supports to rotate in a substantially-horizontal plane, means for maintaining each support for a part of its period of rotation with its operative face uppermost, means whereby a sheet of material is held on each support, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for reversing the position of each support in order to enable it to deliver its wrapper to the wrapping mechaniem, substantially as described.

25. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means for causing said supports to rotate in a substantially-horizontal plane, means for maintaining each support for a part of its period of rotation with its operative face uppermost, suction mechanism for holding a sheet of material on each support, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for reversing the position of each support in order to enable it to deliver its wrapper to the wrapping mechanism, substantially as described.

26. The combination with a plurality of wrapper-supports, of means whereby a wrapper is held on each support, means for maintaining the supports in one position in order that the wrappers may be placed thereon, and means for reversing the position of the supports in order that the wrappers may be delivered, substantially as described.

27. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each support, means for maintaining the supports in one position in order that the wrappers may be placed thereon, and means for reversing the position of the supports in order that the wrappers may be delivered to the wrapping mechanism, substantially as described.

28. The combination with a plurality of wrapper-supports, of suction mechanism for holding a wrapper on each support, means for maintaining the supports in one position in order that the wrappers may be placed thereon, and means for reversing the position of the supports in order that the wrappers may be delivered, substantially as described.

29. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each support, means for maintaining the supports in one position in order that the wrappers may be placed thereon, and means for reversing the position of the supports in order that the wrappers may be delivered to the wrapping mechanism, substantially as described.

30. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, means for reversing the position of the supports, and means for producing a relative approaching movement between the supports and the wrapping mechanism, substantially as described.

31. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, means for reversing the position of the supports, and means for producing a relative angular movement between the supports and the wrapping mechanism, substantially as described.

32. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, means for reversing the position of the supports, and means for producing a relative approaching movement between the supports and the wrapping mechanism, substantially as described.

33. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, means for reversing the position of the supports, and means for producing a relative angular movement between the supports and the wrapping mechanism, substantially as described.

34. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each support, means for reversing the position of the supports, and means whereby a movement is effected between the supports and the wrapping mechanism which is the resultant of an approaching movement, a traversing movement, and an angular movement, substantially as described.

35. The combination with a wrapping mechanism, of a plurality of suction wrapper-supports, means for reversing the position of the supports, and means whereby a movement is effected between the supports and the wrapping mechanism which is the resultant of an approaching movement, a traversing movement and an angular movement, substantially as described.

36. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each support, means for reversing the position of the supports, and means for giving a movement to the supports with respect to the wrapping mechanism which is the resultant of an approaching movement, a traversing movement and an angular movement of the supports, substantially as described.

37. The combination with a wrapping mechanism, of a plurality of suction wrapper-supports, means for reversing the position of the supports, and means for giving a movement to the supports with respect to the wrapping mechanism which is the resultant of an approaching movement, a traversing movement and an angular movement of the supports, substantially as described.

38. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to deliver wrappers to the wrapping mechanism, means whereby a wrapper is held on each support, means for giving the supports an approaching movement with respect to the wrapping mechanism, and means for producing a relative angular movement between the supports and the wrapping mechanism, substantially as described.

39. The combination with a wrapping mechanism, of a plurality of suction wrapper-supports operating to deliver wrappers to the wrapping mechanism, means for giving the supports an approaching movement with respect to the wrapping mechanism, and means for producing a relative angular movement between the supports and the wrapping mechanism, substantially as described.

40. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to deliver wrappers to the wrapping mechanism, means whereby a wrapper is held on each support, means for giving the supports an approaching movement with respect to the wrapping mechanism, and means for producing a relative traversing movement between the wrapping mechanism and the supports, substantially as described.

41. The combination with a wrapping mechanism, of a plurality of suction wrapper-supports operating to deliver wrappers to the wrapping mechanism, means for giving the supports an approaching movement with respect to the wrapping mechanism, and means for producing a relative traversing movement between the wrapping mechanism and the supports, substantially as described.

42. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, and means for producing a relative movement between the supports and the wrapping mechanism which movement is the resultant of an approaching movement, a traversing movement, and an angular movement, substantially as described.

43. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, and means for producing a relative movement between the supports and the wrapping mechanism, which movement is the resultant of an approaching movement, a traversing movement, and an angular movement, substantially as described.

44. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, means whereby a wrapper is held on each of the supports, and means for giving the wrapper-supports an approaching movement with respect to the wrapping mechanism during the wrapping operation, substantially as described.

45. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, suction mechanism for holding a wrapper on each of the supports, and means for giving the wrapper-supports an approaching movement with respect to the wrapping mechanism during the wrapping operation, substantially as described.

46. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, means whereby a wrapper is held on each of the supports, and means for giving the wrapper-supports a traversing movement with respect to the wrapping mechanism, substantially as described.

47. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, suction mechanism for holding a wrapper on each of the supports, and means for giving the wrapper-supports a traversing movement with respect to the wrapping mechanism, substantially as described.

48. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, means whereby a wrapper is held on each of the supports, and means for giving the wrapper-supports an angular movement with respect to the wrapper mechanism, substantially as described.

49. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, suction mechanism for holding a wrapper on each of the supports, and means for giving the wrapper-supports an angular movement with respect to the wrapping mechanism, substantially as described.

50. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, and means for giving the wrapper-supports an approaching movement and an angular movement with respect to the wrapping mechanism, substantially as described.

51. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, and means for giving the wrapper-supports an approaching movement and an angular movement with respect to the wrapping mechanism, substantially as described.

52. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, and means for giving the wrapper-supports a movement with respect to the wrapping mechanism which is the resultant of an approaching movement, an angular movement and a traversing movement, substantially as described.

53. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, and means for giving the wrapper-supports a movement with respect to the wrapping mechanism which is the resultant of an approaching movement, an angular movement and a traversing movement, substantially as described.

54. The combination with a wrapping mechanism, of a plurality of rotating wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, means whereby a sheet of material is held on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while it is held on the support, and means for producing a relative approaching movement during the wrapping operation between the supports and the wrapping mechanism, substantially as described.

55. The combination with a wrapping mechanism, of a plurality of rotating wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, suction mechanism for holding a sheet of material on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while it is held on the support, and means for producing a relative approaching movement during the wrapping operation between the supports and the wrapping mechanism, substantially as described.

56. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, means whereby a sheet of material is held on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while it is held on the support, and means for producing a relative angular movement between the supports and the wrapping mechanism, substantially as described.

57. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, suction mechanism for holding a sheet of material on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while it is held on the support, and means for producing a relative angular movement between the supports and the wrapping mechanism, substantially as described.

58. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a sheet of material is held on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while it is held on the support, and means for producing a relative movement between the supports and the wrapping mechanism which movement is the resultant of an approaching movement, a traversing movement and an angular movement, substantially as described.

59. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a sheet of material on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for producing a relative movement between the supports and the wrapping mechanism which movement is the resultant of an approaching movement, a traversing movement and an angular movement, substantially as described.

60. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, means whereby a sheet of material is held on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for giving the wrapper-supports an approaching movement with respect to the wrapping mechanism during the wrapping operation, substantially as described.

61. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, suction mechanism for holding a sheet of material on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for giving the wrapper-supports an approaching movement during the wrapping operation with respect to the wrapping mechanism, substantially as described.

62. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, means whereby a sheet of material is held on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for giving the wrapper-supports an angular movement with respect to the wrapping mechanism, substantially as described.

63. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to successively deliver wrappers to the wrapping mechanism, suction mechanism for holding a sheet of material on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for giving the wrapper-supports an angular movement with respect to the wrapping mechanism, substantially as described.

64. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a sheet of material is held on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for giving the wrapper-supports an approaching movement and an angular movement with respect to the wrapping mechanism, substantially as described.

65. The combination with a wrapping mechaoism, of a plurality of wrapper-supports, suction mechanism for holding a sheet of material on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for giving the wrapper-supports an approaching movement and an angular movement with respect to the wrapping mechanism, substantially as described.

66. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a sheet of material is held on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for giving the wrapper-supports a movement with respect to the wrapping mechanism which is the resultant of an approaching movement, a traversing movement and an angular movement of the supports, substantially as described.

67. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a sheet of material on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while on the support, and means for giving the wrapper-supports a movement with respect to the wrapping mechanism which is the resultant of an approaching movemeet, a traversing movement and an angular movement of the supports, substantially as described.

68. The combination with a plurality of wrapper-supports, of means whereby a wrapper is held on each of the supports, and means for reversing the position of each of the supports after a wrapper has been placed thereon, substantially as described.

69. The combination with a plurality of wrapper supports, of suction mechanism for holding a wrapper on each of the supports, and means for reversing the position of each of the supports after a wrapper has been placed thereon, substantially as described.

70. The combination with a plurality of rotating wrapper-supports, of means whereby a wrapper is held on each of the supports, and means for reversing the position of each of the supports after a wrapper has been placed thereon, substantially as described.

71. The combination with a plurality of rotating wrapper-supports, of suction mechanism for holding a wrapper on each of the supports, and means for reversing the position of each of the supports after a wrapper has been placed thereon, substantially as described.

72. The combination with a wrapping mechanism, of a shaft, a plurality of wrapper-supports operated by the shaft, means for rotating the shaft to cause the supports to approach the wrapping mechanism, and means for producing between the wrapping mechanism and the supports a movement which is the resultant of the ap-

proaching movement produced by rotating the shaft, a traversing movement and an angular movement, substantially as described

73. The combination with a wrapping mechanism, of a shaft, a plurality of wrapper-supports operated by the shaft, means for rotating the shaft to cause the supports to approach the wrapping mechanism, and means for giving the supports a movement with respect to the wrapping mechanism as they successively deliver the wrappers thereto which is the resultant of the approaching movement produced by rotating the shaft, a traversing movement and an angular movement, substantially as described.

74. The combination with a rotating shaft, of a plurality of suction wrapper-supports carried by the shaft, a wrapping mechanism, and means for rotating the shaft to cause the supports to successively deliver the wrappers to the wrapping mechanism, substantially as described.

75. The combination with a wrapping mechanism, of a shaft, a plurality of suction wrapper-supports operated by the shaft, means for rotating the shaft to cause the supports to approach the wrapping mechanism, and means for producing between the wrapping mechanism and the supports a movement which is the resultant of the approaching movement produced by rotating the shaft, a traversing movement and an angular movement, substantially as described.

76. The combination with a wrapping mechanism, of a shaft, a plurality of suction wrapper-supports operated by the shaft, means for rotating the shaft to cause the supports to approach the wrapping mechanism, and means for giving the supports a movement with respect to the wrapping mechanism as they successively deliver the wrappers thereto which is the resultant of the approaching movement produced by rotating the shaft, a traversing movement and an angular movement, substantially as described.

77. In a wrapper-support embodying two chambers, a perforated plate inclosing the chambers and an exhaust mechanism; substantially as described.

78. In a suction-support, the combination with a suction-pipe, of two chambers, and means for connecting one of the chambers to and disconnecting it from the suction-pipe, substantially as described.

79. In a suction-support, the combination with a suction-pipe and a blast-pipe, of two chambers, means whereby both chambers may be placed in connection with the suction-pipe, and means whereby one of the chambers may be placed in connection with the blast-pipe, substantially as described.

80. In a suction-support, the combination with a suction-pipe and a blast-pipe, of two chambers, means whereby both chambers may be placed in connection with the suction-pipe, and means whereby one of the chambers may be simultaneously disconnected from the suction-pipe and connected to the blast-pipe, substantially as described.

81. In a suction-support, the combination with a suction-pipe and a blast-pipe, of a suitable base, two chambers, an opening through the base which connects both chambers to the suction-pipe, an opening through which one of the chambers may be connected with the blast-pipe, and a two-way valve operating to open one of the openings and close the other, substantially as described.

82. The combination with a moving support including two chambers, of a suction-pipe, connections between said pipe and both the chambers, a blast-pipe, means whereby said blast-pipe may be connected to one of the chambers, a controlling device for the blast and suction pipe connections to said chamber, and means lying in the path of movement of the support for operating said controlling device, substantially as described.

83. The combination with a wrapping mechanism, of a carrier, a plurality of pivoted suction-supports, a blast-pipe connected with each of the supports and moving therewith, means for rotating the carrier, a projection in the path of rotation of the support, a valve for controlling the blast-pipe of each of the supports, and means whereby said projection is caused to rotate the valve to open the connection with the blast-pipe, substantially as described.

84. The combination with a wrapping mechanism, of a suction-support for the wrapper including two chambers, a suction-pipe, connections between said pipe and both the chambers, a blast-pipe, means whereby said pipe may be connected to one of the chambers, a controlling device for the blast and suction connections to said chambers, and means located in position to operate the controlling device as the support comes into position to deliver its wrapper to the wrapping mechanism to close the connections to the suction-pipe and open the connections to the blast-pipe, whereby a portion of the wrapper is forced down into the wrapping mechanism by the action of the blast, substantially as described.

85. The combination with a plurality of hollow arms, of a suction-pipe communicating with each of the arms, a suction wrapper-support carried on each of the arms, and means for changing the position of the wrapper-supports on the arms, substantially as described.

86. The combination with a plurality of hollow arms, of a suction-pipe communicating with each of the arms, a suction wrapper-support carried on each of the arms, and means for giving each of the wrapper-supports a rotating movement about its arm, substantially as described.

87. The combination with a plurality of hollow arms, of means whereby said arms are caused to rotate about a common center, a suction-pipe communicating with each of the arms, a suction wrapper-support carried by each of the arms, and means for giving each of the wrapper-supports a rotating movement about its arm, substantially as described.

88. The combination with a plurality of hollow arms, of means for causing the arms to rotate about a common center, a suction-pipe communicating with each of the arms, a wrapper-support carried by each of the arms, and a wrapping mechanism to which the supports deliver the wrappers, substantially as described.

89. The combination with a plurality of arms, a wrapper-support carried by each arm, means whereby a wrapper is held on each support, and means for moving each support about its arm from one plane into another, substantially as described.

90. The combination with a plurality of hollow arms, of a suction-pipe connecting with each of the arms, a suction wrapper-support carried by each arm, and means for moving each support about its arm from one plane into another, substantially as described.

91. The combination with a wrapping mechanism, of a plurality of arms, a wrapper-support carried by each of the arms, means whereby a wrapper is held on each of the supports, means for moving the arms to cause each support to deliver its wrapper to the wrapping mechanism, and means for causing each support to move about its arm from one plane into another, substantially as described.

92. The combination with a wrapping mechanism, of a plurality of hollow arms, a suction-pipe connecting with each of the arms, a suction-support mounted on each of the arms, means for causing the arms to rotate about a common center to deliver the wrappers to the wrapping mechanism, and means for causing each support to move about its arm from one plane into another, substantially as described.

93. The combination with a plurality of moving arms, of a wrapper-support carried by each arm, means whereby a wrapper is held on each support, means for maintaining each wrapper-support in either of two horizontal planes, and devices located in the path of travel of the arms for shifting the supports from one plane to the other, substantially as described.

94. The combination with a wrapping mechanism, of a plurality of moving arms, a wrapper-support carried by each arm, means whereby a wrapper is held on each support, means for maintaining each support in either of two horizontal planes, and means located in the path of travel of the arms for shifting the supports from one plane to the other, substantially as described.

95. The combination with a plurality of arms, of a suction wrapper-support carried by each arm, means for maintaining each wrapper-support in either of two horizontal planes, and means located in the path of travel of the arm for shifting the supports from one plane to the other, substantially as described.

96. The combination with a wrapping mechanism, of a plurality of arms, a suction wrapper-support carried by each arm, means for maintaining each wrapper-support in either of two horizontal planes, and means located in the path of travel of the arms for shifting the supports from one plane to the other, substantially as described.

97. The combination with a support, of suction mechanism for holding thin sheet material on the support, and a device independent of the support to which the material is delivered, said device operating to draw the material from the support against the force exerted by the suction mechanism, substantially as described.

98. The combination with a wrapping mechanism, of a support for a wrapper cooperating with said wrapping mechanism, and a suction mechanism operating to hold the wrapper on the support, said wrapping mechanism operating to draw the wrapper from the support against the force exerted by the suction mechanism, substantially as described.

99. In a cigar-machine, the combination with a wrapping mechanism, of a support for a wrapper operating to deliver it to the wrapping mechanism, means for retaining the wrapper on the support, means for producing a relative approaching movement between the support and the wrapping mechanism during the wrapping operation, whereby the support is enabled to deliver the wrapper to the wrapping mechanism, said wrapping mechanism operating to draw the wrapper from the support against the force of the retaining means, and means for varying the relative position of the support and the wrapping mechanism during the wrapping operation, whereby the angle at which the wrapper is delivered to the wrapping mechanism will be varied, substantially as described.

100. In a cigar-machine, the combination with a wrapping mechanism, of a support for the wrapper, said support operating to deliver the wrapper to the wrapping mechanism, means for retaining a wrapper in a stretched condition on the support, and means for giving the support an approaching movement with respect to the wrapping mechanism during the wrapping operation, substantially as described.

101. In a cigar-machine, the combination with a wrapping mechanism, of a support for the wrapper, said support operating to deliver the wrapper to the wrapping mechanism, means for retaining the wrapper in a stretched condition on the support, and means for giving the support a movement with respect to the wrapping mechanism which is the resultant of an approaching movement, a traversing movement and an angular movement, substantially as described.

102. The combination with a wrapping mechanism of a wrapper-support, means for giving it a combined approaching and traversing movement, and means for retaining the wrapper thereon in a stretched condition, substantially as described.

103. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, and means for producing a relative movement between the wrapping mechanism and the support during the wrapping operation, substantially as described.

104. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for retaining a wrapper on the support, said wrapping mechanism operating to draw the wrapper from the support against the force of the retaining means, and means for producing a relative movement between the wrapping mechanism and the support during the wrapping operation, substantially as described.

105. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, a suction mechanism operating to hold the wrapper on the support, and means for producing a relative movement between the wrapping mechanism and the support during the wrapping operation, substantially as described.

106. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, and means for producing a relative movement between the wrapping mechanism and the support, which movement is the resultant of an approaching movement and a traversing movement, substantially as described.

107. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, retaining devices for holding a wrapper on the support, the wrapping mechanism operating to draw the wrapper from the support against the force of the retaining devices, and means for producing a relative movement between the wrapping mechanism and the support, which movement is the resultant of a traversing movement and an approaching movement, substantially as described.

108. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, suction mechanism for holding a wrapper on the support, the wrapping mechanism operating to draw the wrapper from the support against the force of the suction mechanism, and means for producing a relative movement between the wrapping mechanism and the support, which movement is the resultant of a traversing movement and an approaching movement, substantially as described.

109. The combination with a wrapping mechanism, of a wrapper-support, means for producing a relative approaching movement between these parts to enable the wrapper to be delivered to the wrapping mechanism, and means for also producing a relative movement between these parts which is the resultant of a traversing movement and an angular movement, substantially as described.

110. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for producing a relative movement between these parts which is the resultant of an approaching movement, a traversing movement, and an angular movement, substantially as described

111. The combination with a wrapping mechanism, of a wrapper-support, means for producing a relative approaching movement between these parts to enable the wrapper to be delivered to the wrapping mechanism, and means for also producing a relative movement between these parts which is the resultant of the approaching movement, a traversing movement and an angular movement, substantially as described.

112. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for producing a relative approaching movement between these parts to enable the wrapper to be delivered to the wrapping mechanism, and means for also producing a relative movement between these parts which is the resultant of the approaching movement, a traversing movement and an angular movement, substantially as described.

113. The combination with a wrapping mechanism, of a wrapper-support, retaining devices for holding the wrapper on the support, the wrapping mechanism operating to draw the wrapper from the support against the force of the retaining devices, means for producing a relative approaching movement between these parts to enable the wrapper to be delivered to the wrapping mechanism, and means for also producing a relative movement between these parts which is the resultant of a traversing movement and an angular movement, substantially as described.

114. The combination with a wrapping mechanism, of a wrapper-support, a suction mechanism for holding the wrapper on the support, the wrapping mechanism operating to draw the wrapper from the support against the force of the suction mechanism, means for producing a relative approaching movement between these parts to enable the wrapper to be delivered to the wrapping mechanism, and means for also producing a relative movement between these parts which is the resultant of a traversing movement and an angular movement, substantially as described.

115. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, suction mechanism for holding the wrapper on the support, the wrapping mechanism operating to draw the wrapper from the support against the force of the suction mechanism, means for producing a relative approaching movement between these parts to enable the wrapper to be delivered to the wrapping mechanism, and means for also producing a relative movement between these parts which is the resultant of a traversing movement and an angular movement, substantially as described.

116. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, retaining devices for holding a wrapper on the support, the wrapping mechanism operating to draw the wrapper from the support against the force of the retaining devices, and means for giving these parts a movement which is the resultant of an approaching movement, a traversing movement, and an angular movement, substantially as described.

117. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, suction mechanism for holding a wrapper on the support, the wrapping mechanism operating to draw the wrapper from the support against the force of the suction mechanism, means for producing a relative approaching movement between these parts to enable the wrapper to be delivered to the wrapping mechanism, and means for also producing a movement which is the resultant of the approaching movement, a traversing movement, and an angular movement, substantially as described.

118. The combination with a wrapping mechanism, of a wrapper-support, and means for causing the support to move across the wrapping mechanism as it delivers a wrapper thereto, substantially as described.

119. The comoination with a wrapping mechanism, of a wrapper-support, and means for causing said support to simultaneously move across and along the wrapping mechanism as it delivers a wrapper thereto, substantially as described.

120. The combination with a wrapping mechanism, of a wrapper-support, means for causing said support to simultaneously move across and along the wrapping mechanism and at the same time to change its angular position with respect thereto, substantially as described.

121. The combination with a wrapping mechanism, of a wrapper-support, said support and wrapping mechanism lying in different planes during the wrapping operation, and means for producing a relative movement between these parts which is the resultant of a traversing movement and an angular movement, substantially as described.

122. The combination with a wrapping mechanism, of a wrapper-support, said support and wrapping mechanism lying in different planes during the wrapping operation, a suction mechanism for holding the wrapper on the support, the wrapping mechanism operating to draw the wrapper from the support against the force of the suction mechanism, and means for producing a relative movement between these parts which is the resultant of a traversing movement and an angular movement, substantially as described.

123. The combination with a wrapping mechanism, of a wrapper-support, means for causing said support to move across and along the wrapping mechanism, and means for causing said support and the wrapping mechanism to change their angular position with respect to each other as the support moves, substantially as described.

124. The combination with a wrapping mechanism, of a wrapper-support, means for causing said support to move across the wrapping mechanism, means for producing a relative traversing movement of the two parts with relation to each other as the support moves across the wrapping mechanism, and means for at the same time causing the parts to change their angular relation with respect to each other, substantially as described.

125. The combination with a wrapping mechanism, of a wrapper-support, a suction mechanism for holding a wrapper on the sup-

port, means for causing the support to move across the wrapping mechanism as it delivers a wrapper thereto, means for producing a relative traversing movement of the two parts with relation to each other as the support moves across the wrapping mechanism, and means for at the same time causing the parts to change their angular relation with respect to each other, substantially as described.

126. The combination with a pivoted support, of a suction mechanism operating to hold material thereon in a stretched condition, and means for turning the support on its pivot from one plane to another, substantially as described.

127. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for retaining a wrapper on the support, means whereby the wrapping mechanism and the support are so positioned that the support can deliver the wrapper to the wrapping mechanism, and means for varying the relative position of the support and the wrapping mechanism during the wrapping operation, substantially as described.

128. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support located in a plane above the wrapping mechanism, means for retaining a wrapper on the support, means for moving the support into a position over the wrapping mechanism, and means for varying the relative position of the support and the wrapping mechanism during the wrapping operation, substantially as described.

129. In a cigar-machine, the combination with a wrapping mechanism, of a perforated support, suction mechanism coacting therewith and operating to hold a wrapper against the support, means for positioning the support and wrapping mechanism so that the support can deliver the wrapper to the wrapping mechanism, and means for maintaining the suction during the wrapping operation, substantially as described.

130. In a cigar-machine, the combination with a wrapping mechanism, of a perforated support, suction mechanism coacting therewith and operating to hold a wrapper against the support, means for moving the support into position to deliver a wrapper to the wrapping mechanism, and means for maintaining the suction during the wrapping operation, substantially as described.

131. The combination with a wrapping mechanism, of a support lying in a plane which does not intersect the wrapping mechanism, means for retaining a wrapper on the support, means for positioning the support and wrapping mechanism so that the support can deliver the wrapper to the wrapping mechanism, and means for positively inserting a part of the wrapper into the wrapping mechanism while the remainder of the wrapper is held on the support, substantially as described.

132. The combination with a wrapping mechanism, of a wrapper-support located in a plane which does not intersect the wrapping mechanism, a suction mechanism for holding a wrapper on the support, and means for positively inserting one end of the wrapper into the wrapping mechanism while the remainder of the wrapper is held on the support by the suction mechanism, substantially as described.

133. The combination with a wrapping mechanism, of a wrapper-support, a suction mechanism for holding a wrapper in position on the support, and a blast mechanism for positively inserting one end of the wrapper into the wrapping mechanism while the remainder of the wrapper is held on the support by the suction mechanism, substantially as described.

134. The combination with a wrapping mechanism, of a wrapper-support located in a plane which does not intersect the wrapping mechanism, a suction mechanism for holding a wrapper on the support, means for positively inserting one end of the wrapper into the wrapping mechanism while the remainder of the wrapper is held on the support by the suction mechanism, and means for producing a relative movement between the wrapping mechanism and the support as the wrapper is wrapped around the article to be wrapped, substantially as described.

135. The combination with a wrapping mechanism, of a wrapper-support, a suction mechanism for holding a wrapper in position on the support, a blast mechanism for positively inserting one end of the wrapper into the wrapping mechanism while the remainder of the wrapper is held on the support by the suction mechanism, and means for producing a relative movement between the wrapping mechanism and the support as the wrapper is wrapped around the article to be wrapped, substantially as described.

136. The combination with a wrapping mechanism, of a wrapper-support, a suction mechanism operating to hold a wrapper on the support, means for maintaining the suction during the wrapping operation, and means for positively inserting one end of the wrapper into the wrapping mechanism, substantially as described.

137. The combination with a wrapping mechanism, of a support, a suction mechanism operating to hold a wrapper on the support, means for maintaining the suction during the wrapping operation, and a blast device for positively inserting one end of the wrapper into the wrapping mechanism, substantially as described.

138. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for positioning the support above the wrapping mechanism, and means for successively varying the relative positions of the wrapping mechanism and the support so that the wrapper will be advanced along the bunch as it is wound thereon, substantially as described.

139. The combination with a wrapping mechanism, of a wrapper-support, means for positioning the wrapper-support above the wrapping mechanism, and means for moving the support over the wrapping mechanism as the wrapping operation proceeds, substantially as described.

140. The combination with a wrapping mechanism, of a support, a suction mechanism operating to hold a wrapper on the support, and means for varying the relative position of the support and the wrapping mechanism so as to cause the wrapper to be advanced along the bunch as the wrapping operation proceeds, substantially as described.

141. The combination with a wrapping mechanism, of a wrapper-support a suction mechanism coacting therewith and operating to hold a wrapper thereon, means for positioning the support over the wrapping mechanism, and means for varying the relative position of the support and the wrapping mechanism so as to cause the wrapper to be advanced along the bunch as the wrapping operation proceeds, substantially as described.

142. The combination with a wrapping mechanism, of a pivoted wrapper-support, a suction mechanism coacting therewith and operating to hold a wrapper thereon, means for maintaining the suction during the wrapping operation, and means for moving the support with respect to the wrapping mechanism so as to vary the angle at which the wrapper is presented to the wrapping mechanism, substantially as described.

143. The combination with a wrapping mechanism, of an arm, a support moved by the arm in a plane which does not intersect the wrapping mechanism, a suction mechanism coacting with the support and operating to hold the wrapper thereon, means for moving the arm, and means for moving the support with respect to the arm, whereby the wrapper is fed along the bunch during the wrapping operation, substantially as described.

144. The combination with a wrapping mechanism, of a movable arm, a support carried thereby, a suction mechanism coacting with the support, means for moving the arm toward the wrapping mechanism, and means for producing a relative movement between the support and the wrapping mechanism whereby the angle at which the wrapper is presented to the wrapping mechanism is varied during the wrapping operation, substantially as described.

145. The combination with a plurality of arms, of a plurality of wrapper-supports, one for each arm, means whereby a wrapper is held on each support, and gearing by which the supports are reversed in position, substantially as described.

146. The combination with a plurality of arms, of a plurality of suction wrapper-supports, one for each arm, and gearing by which the supports are reversed in position, substantially as described.

147. The combination with a wrapping mechanism, of a plurality of arms, a plurality of wrapper-supports, one for each arm, means whereby a wrapper is held on each support, and gearing by which the supports are reversed in position, substantially as described.

148. The combination with a wrapping mechanism, of a plurality of arms, a plurality of suction wrapper-supports, one for each arm, and gearing by which the supports are reversed in position, substantially as described.

149. The combination with a plurality of arms, of a plurality of wrapper-supports, one for each arm, means whereby a sheet of material is held on each of said supports, cutting devices operating to cut a wrapper from the sheet of material held on each support, and gearing by which the supports are reversed in position, substantially as described.

150. The combination with a plurality of arms, of a plurality of suction wrapper-supports, one for each arm, cutting devices operating to cut a wrapper from a sheet of material held on each support, and gearing by which the supports are reversed in position, substantially as described.

151. The combination with a wrapping mechanism, of a plurality of arms, a plurality of wrapper-supports, one for each arm, means whereby a sheet of material is held on each support, cutting devices operating to cut a wrapper from the sheet of material held on each support, and gearing by which the supports are reversed in position, substantially as described.

152. The combination with a wrapping mechanism, of a plurality of arms, a plurality of suction wrapper-supports, one for each arm, cutting devices operating to cut a wrapper from a sheet of material held on each support, and gearing by which the supports are reversed in position, substantially as described.

153. The combination with a frame, of a shaft mounted therein, means for rotating the shaft, a plurality of arms carried by the shaft, a plurality of suction-supports, one for each arm, a toothed rim mounted on the frame, a mutilated gear for each arm, and suitable connections whereby the rotation of said gear reverses the position of the suction-supports, substantially as described.

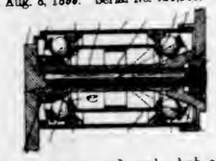
154. The combination with a frame, of a shaft mounted therein, means for rotating the shaft, a plurality of arms carried by the shaft, a suction-support carried by each of the arms, means whereby each of the supports is given a movement toward and away from the axis of the shaft, means for reversing the position of the supports and a device outside the normal path of movement of the supports to which they deliver, substantially as described.

155. The combination with a wrapping mechanism, of a carrier, a plurality of wrapper-supports mounted therein, means for rotating the carrier, and means for giving each of the wrapper-supports a movement toward and away from the axis of rotation of the carrier, substantially as described.

156. The combination with a wrapping mechanism, of a carrier, a plurality of pivoted wrapper-supports, means for rotating the carrier, means for moving the supports toward and away from the axis of rotation of the carrier, and means for turning the supports on their pivots, substantially as described.

157. The combination with a wrapping mechanism, of a carrier, a plurality of pivoted suction wrapper-supports, means for rotating the carrier, means for moving the supports toward and away from the axis of rotation of the carrier, and means for turning the supports on their pivots, substantially as described.

654,179. ROLLER-BEARING. ARCHIBALD W. PONTON, Ottawa, Canada. Filed Aug. 8, 1899. Serial No. 726,563. (No model.)



Claim.—1. In a bearing, an axle and a hub or casing, opposed cups and cones forming races in combination with a retainer located in each race between said axle and the hub or casing; and a plurality of rollers for each race, each provided with an axle or gudgeons, the retainer being provided with radial grooves to receive each of the said axles or gudgeons, the said grooves being extended down to a suitable point to give each axle or gudgeon a bearing on an axial line substantially identical with the axis on which contact with the cup and cone tends to rotate the roller substantially as and for the purpose specified.

2. In a bearing, an axle and a hub or casing, opposed cups and cones forming races in combination with a retainer located in each race between said axle and the hub or casing; a plurality of rollers for each race, each provided with an axle or gudgeons, the retainer being provided with radial grooves to receive each of the said axles or gudgeons the said grooves being extended down to a suitable point to give each axle or gudgeon a bearing on an axial line substantially identical with the axis on which contact with the cup and cone tends to rotate the roller; and a sleeve rigidly connecting the retainers substantially as and for the purpose specified.

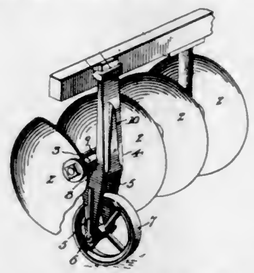
3. In a bearing, an axle, a cone at each end of said axle; and a casing or hub, cups opposed to the said cones to form races, the cup and cone at each end being the frustums of cones having a common apex in the axis of the axle, in combination with a set of rollers for each race; a retainer located in each race in which each roller is journaled by means of a suitable axle or gudgeons so that it is held out of contact with the retainer and so that its axial line intersects the common apex of the cones of which the cup and cone of the said race are frustums; and a sleeve connecting the said retainers substantially as and for the purpose specified.

4. In a bearing a retainer comprising a sleeve with openings therein for rollers; an external flange formed thereon at one side of the openings; and an internal flange at the other side of the said openings, in combination with a series of rollers each provided with an axle or gudgeons independently journaled in the said external and internal flanges, substantially as and for the purpose specified.

5. In a bearing a retainer comprising a sleeve with openings therein for the rollers; an external flange formed thereon at one side of the openings; and an internal flange at the other side of the said openings in combination with a series of rollers each provided with an axle or gudgeons, grooves being cut in the said flanges down to a point desired for the bearings for the said axle or gudgeons substantially as and for the purpose specified.

6. In a bearing a retainer comprising a sleeve with openings therein for the rollers, an external flange formed thereon at one side of the openings, and an internal flange at the other side of the said openings, in combination with a series of rollers each provided with an axle or gudgeons with rounded ends grooves being cut in the said flanges down to suitable bearings the axle ends or gudgeons being sufficiently long to prevent the rollers touching the flanges, substantially as and for the purpose specified.

654,180 HARROW-TRUCK. CHARLES R. RABER, Stuart, Iowa. Filed May 9, 1900. Serial No. 16,088. (No model.)



Claim.—1. A detachable truck for farm implements comprising a jack-block having a truck-wheel at one end, an extended clamping-shank at its opposite end, and an intermediate rest for the reception of an element of the implement to be transported, the connection of the jack-block to the implement at an intermediate point and at its end serving to rigidly retain the truck on the implement while permitting of its ready detachment therefrom.

2. A detachable truck for farm implements comprising a jack-block provided with a wheel at one end and having an upwardly-opening rest or socket defined between a vertical flange extending across the front of the block and a vertically-extended shank.

3. The combination with a farm implement, and an adjustable clamp carried by one of its frame-bars, of a detachable transporting-truck compring a jack-block supported upon a truck-wheel located below the block, said block being provided with a concave upwardly-opening rest or socket defined between a vertical transverse flange located at the front of the block, and an upwardly-extended clamp-shank, said socket being engaged by an element of the implement and the upper end of the shank being engaged by the clamp carried by the implement-frame, whereby the truck is connected at one end to the implement-frame and is provided with a second connection with said frame at a point intermediate of the clamp and wheel by the engagement of the socket with an element of the implement.

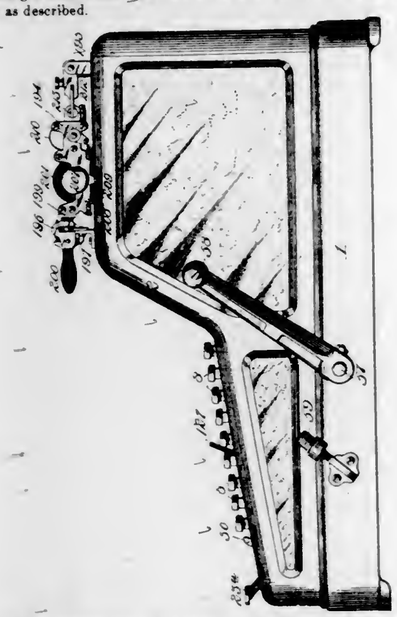
4. The combination with a harrow comprising disks, a transverse disk-shaft, and a frame, of a transporting-truck comprising a jack-block having parallel bearing-brackets depending from its side edges, a transverse upwardly-opening rest or socket engaged by the shaft of the harrow and defined between a vertical transverse flange located at the front of the block and a heavy upwardly-extended clamp-shank located at the rear of the block, and an angular clamp having one end in engagement with the rear face of the shank and having its opposite end screw-threaded and passed through the harrow-frame at one side of the shank, a handle-nut screwed upon the threaded extremity of the clamp, and a truck-wheel mounted between the bearing-brackets and designed to movably support the harrow.

654,181. CALCULATING-MACHINE. FRANK C. RISSCHER, St. Louis, Mo., assignor to the Universal Accountant Machine Company, same place. Filed Apr. 2, 1900. Serial No. 11,125. (No model.)

Claim.—1. The combination with a series of depressible keys, of means for holding said keys in a depressed position, whereby they act as stops, a slide-bar common to said series of keys and provided with lateral projections designed to cooperate with the stops set up by the different keys in their depressed position, a rack pivoted to said slide-bar, an adding-wheel designed to mesh with said rack, an operating-handle, friction devices interposed between said operating-handle and said slide-bar, whereby said slide-bar is moved forwardly by friction until arrested by one of the depressed keys, and means for throwing the rack into engagement with the adding-wheel after the slide-bar has completed its forward movement; substantially as described.

2. The combination with a series of adding-wheels, of a series of independently-movable keys for each wheel, a separate stop designed to be set up by each key, a slide-bar common to said series of keys

and provided with lateral projections coöperating with the stops set up by the keys, a rack pivoted to said slide-bar, an operating-handle, friction devices interposed between said operating-handle and said slide-bar, whereby, said slide-bar is moved forwardly by friction until arrested by one of the key-stops, means connected with the operating-handle for throwing the rack into engagement with the adding-wheel after the slide-bar has completed its forward movement, the friction devices operated by the handle restoring the slide-bar and rotating its meshed adding-wheel, and means for throwing the rack on the slide-bar out of engagement with the adding-wheel when the operating-handle reaches the limit of its return movement; substantially as described.



3. The combination with a series of independently-movable keys whose shanks are staggered, the heads of said keys being in alinement, of lateral projections extending from the key-shanks, a pivoted wing in the path of said projections, a locking-plate which is held in a retracted position by said wing, and means on said plate for locking a depressed key in its lowered position, and the rest of the keys of that series in their elevated position; substantially as described.

4. The combination with a series of independently-movable keys whose shanks are notched, of lateral projections extending from said shanks, a latch-plate in the path of said projections, a sliding locking-plate held in a retracted position by the latch-plate, and a spring whose ends are connected to said latch-plate and sliding locking-plate, respectively; substantially as described.

5. The combination with a series of independently-movable keys whose shanks are staggered and provided with notches, of lateral projections on said key-shanks, a pivoted wing in the path of said projections, a locking-plate which is controlled by said pivoted wing, said locking-plate being provided with shoulders on each side for coöperating with staggered key-shanks, and means for forcing the locking-plate forward whenever the pivoted wing is depressed; substantially as described.

6. The combination with a series of keys, of projections arranged on the shanks thereof, a pivoted wing in the path of said projections, a sliding locking-plate, a stop on said locking-plate coöperating with the projections on the pivoted wing, and a spring whose ends are connected to said pivoted wing and to the locking-plate, respectively; substantially as described.

7. The combination with a series of independently-movable keys designed to set up stops, of means coöperating with said keys for locking the depressed key in its lowermost position, and the remaining keys of that series in their elevated position, and a spring common to a plurality of keys of that series for restoring the depressed key to its elevated position after said key has been released by the locking-plate; substantially as described.

8. The combination with a series of independently-movable keys, of means for locking the depressed key of the series in its lowered position, and the remaining keys of that series in their elevated position, a slide-bar provided with projections, one of which coöperates with the depressed key, and a lock for said slide-bar, said lock coöperating with the key-lock in such manner as to release the slide-bar upon the depression of any key in the series; substantially as described.

9. The combination with a series of independently-movable keys whose shanks are staggered, said keys, when depressed, forming stops, of a slide-bar provided with projections for coöperating with the key-stops, alternate projections on the slide-bar extending in opposite directions; substantially as described.

10. The combination with a series of staggered key-stops, of a slide-bar occupying a medial line with respect to said series of staggered key-stops, projections on said slide-bar, alternate projections extending in opposite directions, and means for moving said slide-bar longitudinally whereby one of its carried projections will coöperate with one of the key-stops; substantially as described.

11. The combination with a staggered series of key-stops, of a slide-bar traveling in a medial line between said stops, projections on said slide-bar for cooperating with the key-stops, each projection on the slide-bar individually coöperating with its respective key-stop, and means for moving said slide-bar longitudinally, whereby its projections coöperate with their respective key-stops; substantially as described.

12. The combination with several series of keys, of a slide-bar common to each series of key-stops on said slide-bars for coöperating with the shanks of the depressed keys, latches or locks for said slide-bars, mechanism which is operated by any key of a series for locking said key in its depressed position, and the remaining keys of that series in an elevated position, said mechanism also releasing the slide-bar common to the series wherein the key is operated, and means for imparting longitudinal motion to the slide-bar after its release; substantially as described.

13. The combination with several series of keys, of slide-bars common to each series of keys, stops on the slide-bars for coöperating with the shank of a depressed key in the series to which said slide-bar is common, mechanism which is thrown into action by the depression of a key in a series to lock said key in its depressed position, and the remaining keys of that series in an elevated position, said mechanism releasing the slide-bar common to that series of keys, friction devices in engagement with the slide-bars for moving the same forward until one of the stops thereof contacts with its respective key-shank, and means for moving said friction devices a predetermined distance irrespective of the arrest of the driven slide-bar short of the limit of movement of the friction devices; substantially as described.

14. The combination with a keyboard comprising series of independently-movable keys, of a sliding plate common to each series of keys, levers in the paths of said sliding plates, latch-pins operated by the several levers, and slide-bars coöperating with said latch-pins; substantially as described.

15. The combination with a keyboard comprising series of independently-movable keys, of sliding plates common to the several series of keys, bell-crank levers having one member in the path of a sliding plate, latch-pins coöperating with the other member of said bell-crank levers, and slide-bars which are released whenever the latch-pins are raised; substantially as described.

16. The combination with a keyboard comprising series of independently-movable keys, of locking-plates common to the several series of keys and which are designed to move forward whenever a key in a series to which the plate is common is depressed, bell-crank levers 44 having one member in the path of movement of a plate, a latch-pin 42 formed with an opening for receiving the other member of said bell-crank lever, a bar 43 in which said latch-pins operate, and slide-bars 32 having shoulders 41 for coöperating with the latch-pins, said slide-bars being guided in their movements by the bar 43; substantially as described.

17. In a calculating-machine, the combination with a keyboard comprising series of independently-movable keys, of locking-plates common to the several series of keys for locking a depressed key in its lowered position, and the remaining keys in an elevated position, slide-bars which are movable independently of said locking-plates, and a handle connected to said bars for operating the same, and devices operated by the handle for restoring all of the locking-plates to effect the release of the depressed keys; substantially as described.

18. In a calculating-machine, the combination with a series of independently-movable keys, of locking-plates common to the several series of keys for locking any depressed key of a series in its lowered position, and the remaining keys of that series in an elevated position, a pivoted frame against which the locking-plates abut in their forward movement, and a lever for operating said frame and effecting a manual restoration of the locking-plates to release all of the depressed keys; substantially as described.

19. In a calculating-machine, the combination with a keyboard comprising series of independently-movable keys, of locking plates common to the several series of keys for locking the depressed key in its lowered position, and the remaining keys in an elevated position, a series of latch-pins coöperating with the locking-plates, slide-bars provided with projections for coöperating with stops set up by the different keys, a handle for moving said slide-bars forwardly until they are arrested by the key-stops, adding-wheels, means for connecting the adding-wheels with the slide-bars after said bars have been arrested, a rearward movement of the handle restoring the slide-bars and rotating their connected adding-wheels, and mechanism connected with the handle for restoring the locking-plates and releasing the keys only when the handle has started on its rearward movement; substantially as described.

20. The combination with a keyboard for setting up stops, in which keyboard are included sliding plates for holding the operated keys in a depressed position, of slide-bars coöperating with the key-stops, adding-wheels, which are connected with the slide-bars when said bars are arrested in their forward movement by the key-stops, latch-pins coöperating with the slide-bars and with the locking-plates, springs for holding said latch-pins in position against the slide-bars, a bar common to all of the locking-plates, and mechanism operated by the handle for actuating said bar to restore the locking-plates and release the keys, said mechanism also relieving the latch-pins of restraint so that they are in position to coöperate with their respective slide-bars; substantially as described.

21. The combination with a keyboard for setting up stops, in which keyboard are included sliding plates for locking operated keys in a depressed position, of levers in the path of movement of said locking-plates, latch-pins operated by said levers, a rocking frame for coöperating with the sliding plates, a cam-shaft coöperating with the rocking frame, a tappet on the end of said cam-shaft, an operating-handle, and means connected to said handle and coöperating with said tappet for rocking the frame when said handle is moving in one direction; substantially as described.

22. The combination with a keyboard, in which are included sliding locking-plates, of a rocking frame for coöperating with said plates, a cam-shaft for rocking said frame, a tappet mounted on said cam-shaft, a sliding rod provided with a lateral projection for coöperating with said tappet, and an operating-handle for moving said sliding rod; substantially as described.

23. The combination with a keyboard, in which are included locking-plates, of an operating-handle, mechanism operated by said handle for restoring said locking-plates, and means for rendering the restoring mechanism operated by the handle, inoperative; substantially as described.

24. The combination with a keyboard, in which are included locking-plates, of a rocking frame for restoring said plates, an operating-handle, mechanism actuated by said handle for rocking said frame to restore the plates, and devices under control of the operator for rendering the handle-operated mechanism, inoperative; substantially as described.

25. The combination with a keyboard, in which are included sliding locking-plates, of a rocking frame for restoring said plates, a cam-shaft for rocking said frame, a tappet on said cam-shaft, an operating-handle, devices operated by said handle for engaging said tappet and rocking the cam-shaft in one direction, and a manually-operable device for engaging the tappet and throwing it out of the path of the handle-operated mechanism; substantially as described.

26. The combination with a keyboard in which are included sliding plates, of a rocking frame for restoring said plates, a cam-shaft for rocking said frame, a tappet loosely mounted on said shaft and locked against independent rotation in one direction, an operating-handle, a slide-bar provided with a lateral projection for coöperating with the tappet and rocking the cam-shaft in one direction, and a repeating-key for coöperating with said tappet and idly rotating the same on the cam-shaft to throw said tappet out of the path of movement of the handle of the operated mechanism; substantially as described.

27. The combination with a series of independently-movable slide-bars, of latches or detaining devices coöperating therewith, a bar common to all of said detaining devices, a lever for operating said bar, and an operating-lever 127 for actuating said last-mentioned lever; substantially as described.

28. The combination with a series of sliding bars, of detents therefor, a bar common to all of said detents, a lever 127, a rocking arm connected with said lever, and connections between said rocking arm and said bar for simultaneously operating said detents; substantially as described.

29. The combination with sliding bars, of detents therefor, a frame carrying a bar designed to simultaneously engage said detents, a lever for operating said frame, a rocking arm with which said lever coöperates, means for rocking said arm, and a spring for holding the frame and lever in position; substantially as described.

30. The combination with sliding bars, of rock-arms connected therewith, and friction devices for moving said rock-arms and their connected sliding bars.

31. The combination with sliding bars, of rock-arms connected therewith, and friction devices for moving said rock-arms and their connected sliding bars, said friction devices comprising spring-pressed balls engaging said rock-arms; substantially as described.

32. The combination with sliding bars, of a driving-shaft, arms loosely mounted on said shaft, and having a slot-and-pin connection with said bars, and fixed arms on said driving-shaft carrying spring-pressed balls for coöperating with the loosely-mounted bar-arms; substantially as described.

33. The combination with sliding bars, of a shaft, arms 49 loosely mounted on said shaft and connected to said bars, rock-arms fixedly mounted upon said shaft, and carrying spring-pressed balls in their outer ends for coöperating with the arms 49, said arms 49 being provided with recesses or openings in the paths of the spring-pressed balls; substantially as described.

34. The combination with sliding bars, of a shaft 50, means for rocking said shaft, arms 49 loosely mounted upon said shaft and having slot-and-pin connections with said sliding bars, said arms being also provided with track extensions, rocking arms 52 fixedly mounted on said shaft, and spring-pressed balls mounted in the ends of said arms 52, and coöperating with the arms 49, said arms 49 being recessed in the paths of the balls to afford seats or sockets therefor; substantially as described.

35. The combination with the main driving-shaft 57, of a handle for operating said shaft, a rock-arm on said shaft, a slide-bar having a link connection with said rock-arm, a rack on said sliding bar, a segment in mesh with said rack, a shaft which is rocked by said segment, and a dash-pot whose plunger is vibrated by said last-mentioned rock-shaft; substantially as described.

36. The combination with a rock-shaft, of a notched disk 75 mounted thereon, oppositely-extending lateral projections on said disk, a double-ended pawl coöperating with the notches in said disk, and tappets conjoined to said pawl and coöperating with the projections on the disk to throw one or the other end of said pawl into engagement with the disk; substantially as described.

37. The combination with sliding bars, of pivoted racks carried thereby, adding-wheels, a rocking frame for throwing said racks into and out of engagement with said adding-wheels, an operating-handle and frictional devices between said handle and racks for frictionally driving said racks in a forward direction, said handle rocking the frame to throw said racks into engagement with the adding-wheels, and returning said racks to rotate said adding-wheels; substantially as described.

38. The combination with sliding bars, of racks pivotally connected therewith, a rocking frame for carrying the free ends of said racks, an arm 109 for rocking said frame, adding-wheels, and an operating-handle for rocking the arm 109 and said frame and throwing the free ends of the pivoted racks into and out of engagement with the adding-wheels; substantially as described.

39. The combination with sliding-bars, of pivoted racks connected therewith, said racks being slotted at their free ends, a rocking frame provided with a cross-bar passing through the slots in the free ends of the pivoted racks, an arm 109 for rocking the frame, and an operating-handle for rocking said arm 109 to raise and lower the free ends of the racks; substantially as described.

40. The combination with sliding bars, of racks pivotally connected therewith and having their free ends slotted, adding-wheels with which said racks are designed to mesh, a rocking frame carrying a member which passes through the slots in the pivoted racks, an arm 109 for rocking said frame, locking-dogs for the adding-wheels, and means on said rocking frame for coöperating with said dogs to unlock or release the adding-wheels whenever the racks are thrown into engagement therewith; substantially as described.

41. The combination with sliding bars, of slotted racks pivotally connected therewith, a rocking frame having a member which passes through the slots in said racks, an arm 109 for rocking said frame, adding-wheels with which the racks are thrown into and out of engagement when the rocking frame is actuated, transferring devices for actuating the next adjacent adding-wheels of higher order, and a centering device actuated by said rocking frame, and coöperating with the transferring devices; substantially as described.

42. The combination with slide-bars, of racks pivotally connected therewith, a rocking frame for raising and lowering the free ends of said racks, an arm 109 for rocking said frame, adding-wheels, transferring devices coöperating with said adding-wheels to impart motion to the next adjacent adding-wheel of higher order, an operating-handle for restoring the slide-bars and their carried racks to rotate the adding-wheels, and mechanism positively operated by the operating-handle previous to its restoring movement for actuating the transferring devices; substantially as described.

43. The combination with sliding bars, of pivoted racks carried thereby, adding-wheels, a rocking frame for throwing said racks into and out of engagement with said adding-wheels, transferring devices which are tripped by the adding-wheels, key-stops for arresting the forward movement of the sliding bars, frictional devices moving said sliding bars forwardly, an operating-handle for actuating said frictional devices, and mechanism for restoring the tripped transferring devices, said mechanism comprising a shaft, on which is arranged a series of projections in spiral order; substantially as described.

44. The combination with adding-wheels and means for operating the same, of transferring devices which are tripped by said adding-wheels, a shaft provided with projections arranged in spiral order for restoring the tripped transferring devices, and so actuating the next adjacent adding-wheel of higher order, a pinion loosely mounted on said shaft, a pawl carried by said pinion, a ratchet-wheel fixedly mounted on the shaft with which said pawl coöperates, a segment in mesh with the pinion, an operating-handle, and a cam driven by said operating-handle for rocking the segment, whereby said shaft is positively driven only when the handle is moving in a forward direction; substantially as described.

45. The combination with transferring devices, of a shaft provided with projections for actuating the same, a pinion loosely mounted on said shaft, a ratchet-wheel fixedly mounted on the shaft, a pawl carried by the pinion and coöperating with said ratchet-wheel, and a friction-brake conjoined to the pinion, and bearing upon said shaft; substantially as described.

46. The combination with transferring devices, of a shaft provided with projections for actuating the same, ratchet-wheels fixed on said shaft, a stationarily-mounted pawl for coöperating with one of said ratchet-wheels to prevent the return movement of the shaft, a pinion loosely mounted on said shaft, a driving-pawl conjoined to said pinion for coöperating with the other of said ratchet-wheels, means for rotating said pinion in opposite directions, and a friction-brake carried by the pinion, and embracing said shaft; substantially as described.

47. The combination with vertically-immovable slide-bars, of racks pivoted to said slide-bars, adding-wheels, a rocking frame for throwing said racks into and out of engagement with said adding-wheels, and means for operating said rocking frame, said means comprising a rock-arm provided with a cam-groove, with which groove coöperates a roller on said rocking frame; substantially as described

48. The combination with adding-wheels, of pivoted racks coöperating therewith, and a rocking frame moving said racks into and out of engagement with the adding-wheels, a cam for moving said frame, a slotted quadrant, and connections between said quadrant and cam; substantially as described.

49. The combination with adding-wheels, of pivoted racks, a frame for throwing said racks into and out of engagement with said adding-wheels, a cam for moving said frame, a friction device coöperating with said cam, an arm 110 connected to said cam, and provided with a finger 111, and a quadrant provided with stops for coöperating with said finger to move the cam in opposite directions; substantially as described.

50. The combination with adding-wheels, of vertically-immovable slide-bars, pivoted racks carried by slide-bars, a rocking frame for throwing said racks into and out of engagement with said adding-wheels, a cam for moving said rocking frame, a lever 129 for operating said cam, and a handle 127 coöperating with said lever; substantially as described.

51. The combination with adding-wheels, of pivoted racks, a rocking frame for throwing said racks into and out of engagement with said adding-wheels, an operating-handle, connections between said operating-handle and said rocking frame for actuating the latter, and manually-operable devices for throwing the racks into and out of engagement with the adding-wheels, said manually-operable devices, when moved to a position to throw the racks into engagement with the adding-wheels, rendering inoperative the connections between the rocking frame and the operating-handle; substantially as described.

52. The combination with adding-wheels, of racks for driving the same, an operating-handle, connections between said operating-handle and racks whereby the racks are thrown into and out of engagement with the adding-wheels and motion imparted thereto for rotating said wheels, and manually-operable devices for rendering inoperative the connections between the racks and the adding-wheels with respect to said connections throwing the racks into and out of engagement with the adding-wheels, said manually-operable devices, however, not interfering with the motion communicated by the operating-handle to move the racks to rotate the wheels; substantially as described.

53. The combination with adding-wheels provided with pins, of stops, which yield when the wheels are rotated in one direction, but which arrest the wheels when rotated in an opposite direction, slide-bars, racks pivoted to said slide-bars, key-stops for said slide-bars, an operating-handle, connections between said handle and said bars for moving the same forward until arrested by said key-stops, connections operated by the handle for throwing the racks into engagement with the adding-wheels, restoring the bars, rotating the adding-wheels, and disengaging the racks from the adding-wheels when the handle reaches its rearmost position, and manually-operable devices for throwing the racks into engagement with the adding-wheels when the handle is in its rearmost position, whereby when said handle is moved forward the adding-wheels are rotated reversely until arrested by their stops, and when said manually-operable devices are returned to their normal position, the adding-wheels are at zero, and the machine cleared; substantially as described.

54. The combination with adding-wheels provided with pins, of stops, which yield when the wheels are rotated in one direction, but which arrest the wheels when rotated in an opposite direction, slide-bars, racks pivoted to said slide-bars, key-stops for said slide-bars, an operating-handle, connections between said handle and said bars for moving the same forward until arrested by said key-stops, connections operated by the handle for throwing the racks into engagement with the adding-wheels, restoring the bars, rotating the adding-wheels, and disengaging the racks from the adding-wheels when the handle reaches its rearmost position, manually-operable devices for throwing the racks into engagement with the adding-wheels when the handle is in its rearmost position, whereby when said handle is moved forward the adding-wheels are rotated reversely until arrested by their stops, and when said handle is returned, the adding-wheels and racks are returned to their normal position, and stops on the sliding bars for determining the movement thereof and of the adding-wheels when said bars are returned to their normal position; substantially as described.

55. The combination with adding-wheels, of sliding bars, slotted racks pivoted to said bars, a rocking frame carrying a cross member which passes through the slots in said racks, a projection 116 on said frame for releasing or unlocking the adding-wheels when the racks are thrown into engagement therewith, a rock-arm 109 provided with a cam for rocking said frame, a quadrant, an arm 110 provided with a projection for coöperating with said quadrant to move the arm 109, a lever 129 provided with a slot, through which passes a pin on the arm 109 for rocking said arm, and a handle or lever 127 for rocking the lever 129; substantially as described.

56. The combination with adding-wheels, of pivoted racks, a rocking frame for throwing said racks into and out of engagement with the adding-wheels, an arm 109 provided with a cam-groove for rocking said frame, a slotted quadrant 106 provided with stops 107 and 108, an arm 110 pivoted on the arm 109 and provided with a finger for coöperating with the quadrant-stops, a lever 129 for rocking the arm 109, a handle for moving the lever 129, and means for elevating the arm 110 out of engagement with the quadrant whenever the arm is operated; substantially as described.

57. The combination with a keyboard for setting up stops in different positions, of slide-bars for operating with said stops, means for rectilinearly moving said bars to a position of rest against the stops, type-carrying frames rigidly secured to said bars, and independently-movable type carried by said frames, substantially as described.

58. The combination with a keyboard for setting up stops in different positions, of slide-bars for operating with said stops, means for rectilinearly moving said bars to a position of rest against the stops, type-carrying frames rigidly secured to said bars, independently-movable type carried by said frames, and independently-movable type-hammers for operating with said type, substantially as described.

59. The combination with a keyboard for setting up stops in different positions, of slide-bars coöperating with said stops, means for moving said bars to a position of rest against said stops, type-carrying frames secured to said bars, independently-movable type arranged in said frames, independently-movable type-hammers coöperating with the type, pawls which are operated upon the movement of any of the type-frames to initially release the type-hammer common to that frame, and means for automatically releasing the type-hammers coöperating with type in frames of lower order, irrespective of whether said frames are actuated; substantially as described.

60. The combination with a keyboard for setting up stops in different positions, of slide-bars coöperating with said stops, type-frames movable with the slide-bars, independently-movable type carried by said frames, and spring-fingers, one of said fingers coöperating with a plurality of type in a frame which coöperate with the type in the printing-line; substantially as described.

61. The combination with a keyboard for setting up stops in different positions, of slide-bars which are arrested by said stops, type-frames movable with said key-bars, a series of independently-movable type arranged in each frame, and a single spring-finger coöperating with all of a series of type in a frame; substantially as described.

62. The combination with a keyboard for setting up different stops, of slide-bars carrying type-frames, a series of independently-movable type arranged in said frames, said type being formed with shoulders or lateral projections on their lower ends, and stationary spring fingers which coöperate with said shoulders to return the actuated type to their normal position; substantially as described.

63. The combination with a keyboard for setting up stops, of slide-bars coöperating with said stops, type-frames carried by said slide-bars, a series of independently-movable type in each frame, lateral extensions at the lower ends of the type, a spring-finger for each series of type which is designed to ride over said extensions when the frame is moved, and type-hammers for driving the type in the printing-line against the resistance of said spring-fingers; substantially as described.

64. The combination with a keyboard for setting up stops, of sliding bars coöperating with said stops, type-frames carried by said sliding bars, independently-movable type arranged in said frame, independently-movable type-hammers for coöperating with said type, a pawl coöperating with each type-hammer, a track extension on each pawl which coöperates with a projection on each type-frame, an operating-handle, and means connected with said operating-handle to trip all of the released type-hammers; substantially as described.

65. The combination with a keyboard for setting up stops, of sliding bars coöperating with said stops, a series of type carried by said sliding bars, independently-movable type-hammers coöperating with said type, independently-movable pawls 150 coöperating with the type-hammers and with the sliding bars, whereby, whenever a sliding bar is actuated, its respective pawl is operated to release the type-hammer, pawls 157 coöperating with said type-hammers, an operating-handle, and connections between said operating-handle and said pawls 157, whereby, the type-hammers are fully released or tripped after the sliding bars and their carried type have completed their movement; substantially as described.

66. The combination with a keyboard for setting up stops, of sliding bars coöperating with said stops, independently-movable type carried by said bars, type-hammers for driving said type to make a printing impression, pawls 150 for locking the type-hammers in a retracted position, track extensions on said pawls, means on said sliding bars for coöperating with said track extensions to move the pawls whenever the sliding bars are moved, means on said pawls for actuating the next adjacent pawl of lower order, irrespective of whether its coöperating slide-bar is moved or not, pawls 157 for sustaining the type-hammers in a retracted position after said type-hammers have been released by the pawls 150, an operating-handle, and connections between said operating-handle and said pawls 150 to operate the latter when the handle reaches a certain position; substantially as described.

67. The combination with a keyboard for setting up stops, of slide-bars coöperating with said stops, type carried by said slide-bars, type-hammers coöperating with said type, pawls for sustaining and releasing said type-hammers, means on the slide-bars for operating said pawls, an operating-handle, handle-operated pawls for tripping the type-hammers when the handle is in a certain position, centering-racks carried by the sliding bars, a centering-bar coöperating with said racks, and connections between said centering-bar and the mechanism for operating the pawls 157, whereby said bar is thrown into an operative position before the pawls 157 are operated; substantially as described.

68. The combination with a keyboard for setting up stops, of sliding bars coöperating with said stops, type carried by said sliding bars, type-hammers coöperating with said type, centering-racks 166 carried by said sliding bars, a rocking frame, a centering-bar carried by said rocking frame for coöperating with said centering-racks, an operating-handle, and connections operated by said handle for releasing the type-hammers, said connections also rocking the frame carrying the centering-bar; substantially as described.

69. The combination with a series of independently-movable type-frames, of independently-movable type carried by said frames, independently-operable type-hammers coöperating with the type, two pawls for each of said type-hammers, one of said pawls being operated by the type-frame to initially release the type-hammer, and the other of said pawls being operated by connections from the operating-handle to finally release or trip the type-hammer, in order that said hammer may deliver an impacting blow against the type, a rocking frame carrying a cross-bar for coöperating with said last-mentioned pawls, said cross-bar also restoring the type-hammers to their normal position and setting the same for another operation, and an operating-handle for rocking said frame; substantially as described.

70. The combination with a movable type-frame carrying independently-movable type, of a type-hammer coöperating with said type, a pawl for holding the type-hammer in its retracted position, said pawl being operated whenever the type-frame is moved to release the type-hammer, a pawl for holding the type-hammer in its retracted position when so released, and a bar for operating said last-mentioned pawls to release the type-hammer, said bar also coöperating with the type-hammer to reset the same against the resistance of its driving-spring; substantially as described.

71. In a ribbon-feed, the combination with two spools on which the ribbon is wound, of ratchet-wheels on the shafts of said spools, pawls for said ratchet-wheels, and means which is operative when the full spool is held against further movement by the tension of the ribbon for disengaging the pawl coöperating with the ratchet of the full spool, and to engage a pawl with the ratchet of the empty spool; substantially as described.

72. In a ribbon-feed, the combination with spools to which the ends of an inking-ribbon are secured, of ratchets on the ends of the shafts of said spools, a sliding plate carrying two pawls designed to laterally engage said ratchets, means for vibrating said plate to cause the engaged pawl to rotate its ratchet and consequently wind the ribbon on its conjoined spool, and mechanism which is thrown into action when the wound spool is held against further movement by the tension or pull of the ribbon from the unwound spool, to disengage the pawl from the ratchet of the full spool, and engage the other pawl with the ratchet of the empty spool; substantially as described.

73. In a ribbon-feed, the combination with two spools on which an inking-ribbon is designed to be wound, of ratchets secured to the shafts of said spools, a vibrating frame-plate, a rotary element mounted on said frame-plate, two pawls mounted on said rotary element and designed to laterally engage the spool-ratchets, means for holding one or the other of said pawls in a position where it will properly coöperate with and drive its respective ratchet, and means for reversing the action of said pawls when the wound spool is held against further movement by unusual tension being placed upon the ribbon; substantially as described.

74. The combination with a ribbon, of feeding devices therefor, means for reversing the action of the feeding devices, and mechanism in the form of a vibrating plate carrying a plurality of pawls for automatically shifting the reversing means when the wound spool is held against further movement by unusual tension being placed upon the ribbon; substantially as described.

75. The combination with a platen and type, of means for feeding a sheet between the same, a printing-ribbon interposed between the type and sheet, and automatically-actuated devices for causing the ribbon to be fed first in one direction and then in the opposite direction, the reversal in the feed of the ribbon being accomplished when the wound spool is held against further movement by an unusual tension or pull being exerted upon the ribbon; substantially as described.

76. The combination with a series of type and a platen, of means for feeding a sheet of paper between the same, a printing-ribbon interposed between the type and sheet, automatically-actuated devices for causing the ribbon to be fed first in one direction and then in the opposite direction, said mechanism comprising a vibrating frame, a plurality of pawls carried by said frame, and devices which are operative when the wound spool is held against further movement by an unusual tension placed upon the ribbon for causing the pawls to alternately engage and drive their respective ribbon-winding mechanisms; substantially as described.

77. The combination with a ribbon, of spools to which the ends of said ribbon are secured, ratchets on the shafts of said spools, a vibrating plate, a rotary element mounted on said plate, two pawls carried by said rotary element, and designed to alternately engage their respective ratchets, said rotary element being actuated when the wound spool is held against further movement by an unusual tension placed upon the ribbon, and a centering device coöperating with said rotary element to hold it in the position in which it is placed after coöperation with the ratchet of the wound spool; substantially as described.

78. The combination with two spools, of a ribbon having its ends connected thereto, ratchets conjoined to said spools, a vibrating plate 175, a rotary element 176 mounted upon said plate, a spring-pressed centering-pawl 177 coöperating with said rotary element, pawls 179 and 180 mounted upon said rotary element and designed to alternately drive their respective ratchets, springs for holding said pawls in an operative position, and projections on said rotary element for coöperating with the pawls carried thereby, whereby when either end of the ribbon is placed under unusual tension, said rotary element is actuated to release the disengaged pawl and throw it into an operative position, to reverse the direction in which the ribbon is wound; substantially as described.

79. The combination with a ribbon, of feeding devices therefor, means for reversing the action of the feeding devices, mechanism for automatically shifting the reversing means under unusual tension upon the ribbon, and a yielding driver for said feeding devices; substantially as described.

80. The combination with a ribbon, of pawl-and-ratchet mechanisms affording feeding devices therefor, yielding means for operating said feeding devices, means for reversing the action of the feed-

ing devices, and mechanism for automatically shifting the reversing means under unusual tension upon either end of the ribbon; substantially as described.

81. The combination with a ribbon, of feeding devices therefor in the form of pawl-and-ratchet mechanisms, which are alternately thrown into operative position to feed the ribbon in opposite directions, a vibrating plate upon which the pawls of said feeding mechanisms are mounted, a rock-shaft for vibrating said plate, a rock-arm loosely mounted upon said shaft, said rock-arm being locked against movement in one direction, and moving in the opposite direction against the tension of a spring, and means connected to said rock-arm for vibrating the same, substantially as described.

82 In a calculating-machine, the combination with two or more series of independent vertically-movable type, of means for bringing any one type of a series into position to print side by side with those of other series, a platen adapted to support a sheet of paper above said type and to be moved laterally across the top of the casing of the machine and set in different positions opposite the type, a hinged carriage in which said platen is mounted, devices for locking the platen and its carriage in any position in which it is set, means for intermittently moving the platen to feed the paper, whereby parallel columns may be printed upon the paper, and independently-movable type-hammers for the vertically-movable type; substantially as described.

83. In a machine of the character described, the combination with the printing-types and operating mechanism therefor, of an arm which is vibrated by said mechanism after each printing action, a laterally-adjustable carriage, a platen arranged in said carriage, a rocking frame carrying a rod cooperating with the vibrating arm in the different adjusted positions of the carriage, a ratchet-wheel conjoined to said platen, a pawl cooperating with said ratchet-wheel, and means for driving said pawl from said rocking frame; substantially as described.

84. The combination with a hinged carriage, of a platen-roller mounted therein, means for driving said platen-roller step by step, a track for supporting the free end of said carriage, means on the carriage for cooperating with the track for locking said carriage in different laterally-adjusted positions, a pivoted frame carrying a track 213, on which the rear end of the carriage is slidingly and pivotally mounted, and means for vertically adjusting said frame; substantially as described.

85. The combination with a hinged carriage, of a platen mounted therein, a track-roller arranged in the front end of the carriage, a notched track with which said roller cooperates, a latch-pin cooperating with the notches in the track, and a handle on said latch-pin by which said carriage may be lifted: substantially as described.

86. The combination with a pivoted track 213, of a carriage slidingly and pivotally mounted on said track, a platen arranged in said carriage, means for locking said carriage and its platen in laterally-adjusted positions, a support for the free end of the carriage, and means for adjusting the height of the track 213; substantially as described.

87. The combination with a pivoted track 213, of means for adjusting the height of same, a carriage slidingly and pivotally mounted on said track, a notched rail for supporting the free end of the carriage, a platen mounted in the carriage, and means on said carriage for cooperating with the notches in the rail to lock said carriage in different laterally-adjusted positions; substantially as described.

88. The combination with a pivoted carriage-section, of a bracket secured to said section for supporting a roll of paper, a carriage pivoted to said section, and a platen-roller mounted in said carriage, said carriage and its platen-roller being laterally adjustable relative to said pivoted section; substantially as described.

89. The combination with printing-type, of a platen-roller, oppositely-arranged ratchet-wheels conjoined thereto, pawls for said ratchet-wheels, one of which is a driving-pawl, and means for operating the other of said pawls from the driving-pawl to render said other pawl inoperative whenever the driving-pawl moves to a position to drive its ratchet, said other pawl moving in position to limit the movement imparted by the driving-pawl to the ratchet; substantially as described.

90. The combination with a platen, of oppositely-disposed ratchet-wheels conjoined thereto, a driving-pawl cooperating with one of said ratchet-wheels, and a stop-pawl cooperating with the other of said ratchet-wheels for determining the extent of motion imparted by the driving-pawl; substantially as described.

91. The combination with a platen, of oppositely-arranged ratchet-wheels conjoined thereto, a driving-pawl cooperating with one of the ratchet-wheels, a stop-pawl which is lifted by said driving-pawl in its initial movement to release its ratchet-wheel so as to permit the driving-pawl to operate its respective ratchet-wheel, said auxiliary pawl being released after the driving-pawl is in a driving position to arrest or limit the movement imparted by the driving-pawl, substantially as described.

92. The combination with a platen, of oppositely-arranged ratchet-wheels 202 and 202^a, a driving-pawl 203 cooperating with the ratchet-wheel 202, an auxiliary or stop pawl 203^a cooperating with the pawl 203 and the ratchet-wheel 202^a, and means for throwing the stop-pawl out of engagement with its respective ratchet-wheel whenever the driving-pawl is turned out of engagement with its ratchet-wheel; substantially as described.

93. The combination with printing-type, of an inking-ribbon normally in printing-line of said type, an inking-ribbon of different color in juxtaposition to the printing-line, means for shifting the positions of said ribbons and a spring for returning said ribbons to their normal position; substantially as described.

94. The combination with printing-type, of a ribbon which normally occupies a position across the printing-line of said type, a ribbon of different color arranged parallel with said first-mentioned ribbon, feeding devices common to both ribbons, a shifting mechanism for positively transposing said ribbons and a spring for returning said ribbons to their normal positions; substantially as described.

95. The combination with twin spools, one of which carries a ribbon of one color normally in printing-line, and the other of which carries a ribbon of a different color normally out of printing-line, of feeding mechanism for said spools, means for positively effecting the transposition of said ribbons, and a spring cooperating with said transposing mechanism for returning the ribbons to their normal positions whenever said spring is free to act; substantially as described.

96. In a calculating-machine, the combination with a recording mechanism, in which are included inking-ribbons of different colors, one of said ribbons normally occupying a position opposite the printing-line, of a total key or lever, mechanism connected to said total key or lever for positively moving said ribbons in one direction for effecting the transposition thereof, and a spring connected to said mechanism for restoring the ribbons to their normal position when the transposing mechanism is released by the total-key; substantially as described.

97. In a calculating-machine, the combination with adding and recording mechanisms, of a total key or lever cooperating therewith, an operating-handle for driving said recording and adding mechanisms, inking-ribbons of different colors which are included in the recording mechanism, and mechanism connected to and operated by the total key or lever, whereby, when said lever is moved to one position and the handle operated to cause the recording mechanism to print a total, the ribbons are transposed, and the total is printed in a color different from the items of which it is composed; substantially as described.

98. In a calculating-machine, the combination with adding and recording mechanisms, of an operating-handle for driving said mechanisms, a total-key, connections for printing the total of the sum in the adding mechanism through the instrumentality of the recording mechanism, and means for printing such a total in a color different from that of the items of which it is composed.

99. The combination with printing-type, of an inking-ribbon normally in the printing-line thereof, an inking-ribbon of different color in juxtaposition to said first-mentioned ribbon, and mechanism for transposing said ribbons, said mechanism comprising levers 127, 129, and 222, a rock-shaft provided with rock-arms having link connections with the spools upon which the ribbons are wound, and a link 221 connected with the lever 222, for rocking said shaft; substantially as described.

100. In a calculating-machine, the combination with a series of independently-movable printing-type, of an inking-ribbon normally in position across the printing-line of said type, an inking-ribbon of different color in juxtaposition to said first-mentioned ribbon, means for feeding said ribbons, a lever 127 arranged externally the machine, and connections between said lever and said ribbons, said connections comprising a lever 129, a lever 222 having one end resting upon the lever 129, a spring 223 for holding the end of lever 222 against lever 129, a rock-shaft, and a link connection between lever 222 and said rock-shaft; substantially as described.

101. The combination with twin ribbon-spools, of different-colored ribbons wound thereon, shafts upon which said spools are slidingly mounted, feeding mechanism for said ribbons, shifting mechanism for sliding the spools along their respective shafts and transposing said ribbons, and means within reach of the operator for positively actuating said shifting mechanism in one direction only; substantially as described.

102 The combination with a plurality of ribbon-spools containing different-colored ribbons, of frames containing said spools, shafts upon which said spools and frames are slidingly mounted, a rock-shaft carrying arms connected by links to said frames, means under control of the operator for positively rocking said shaft in one direction for transposing said ribbons and a spring for returning said rock-shaft and its parts to their normal positions; substantially as described.

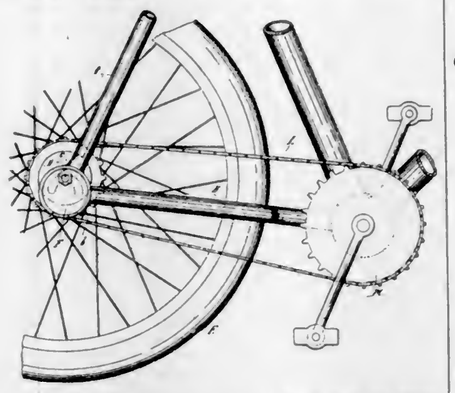
103. The combination with sliding frames, of ribbon-spools carried thereby, guide-rollers for the ribbons mounted in said frames, different-colored ribbons wound on said spools, guide-rods 215 for said frames, said guide-rods also forming spindles for the guide-rollers, and means under the control of the operator for sliding said frames to transpose said ribbons; substantially as described.

104. The combination with sliding frames, of suitable guide-rods therefor, ribbon-spools carried by said frames, guide-rollers for the ribbons mounted in said frames, rock-arms mounted on a suitable shaft connected by links to said frames, a total-key, and connections between said total-key and said rock-shaft, whereby, when said total-key is in different positions, said ribbons are transposed; substantially as described.

105. The combination with a series of independently-movable type, of a plurality of inking-ribbons, means for shifting said ribbons so that one or another will occupy a position across the printing-line, feeding devices common to all of said ribbons, means for reversing the action of the feeding devices, and mechanism for automatically shifting the reversing means when either of the wound spools is held against further movement by unusual tension being placed upon its respective ribbon; substantially as described.

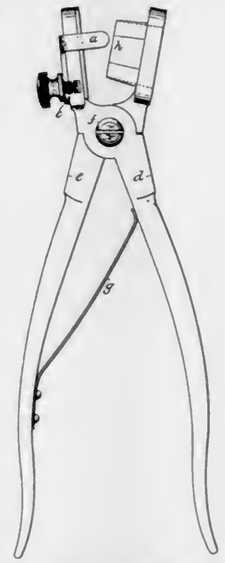
654,182. CHAIN-ADJUSTER AND HUB FOR BICYCLES.

HENRY RUPSOR, New York, N. Y. Filed Nov. 13, 1899. Serial No. 736,724. (No model.)



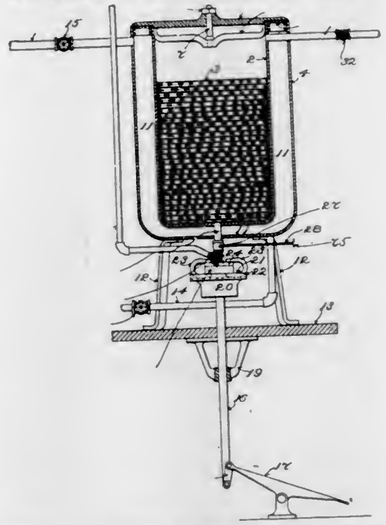
Claim.—In a chain-adjuster and hub for bicycles and similar vehicles, the combination with devices for connecting the rear stays and horizontal rods of the frame, and which are provided with curved slots therein, and outwardly-projecting annular flanges; of an axle mounted in said slots and provided with a longitudinal groove therein; frictional inclosing disks mounted within said annular flanges and apertured to receive the axle therethrough, and provided with projecting lugs to enter the slot in said axle, whereby the said lugs turn therewith: said axle being provided with a head at one end which frictionally engages one of the disks, and being screw-threaded at the opposite end, and provided with a polygonal washer having a projecting lug which enters the groove of the axle, and frictionally engages the adjacent disk; and a nut mounted upon said axle to hold the parts in frictional engagement.

654,183.



654,184. BRUSH-MACHINE.

HERMAN M. SCHWARTZ, Northampton, Mass., assignor to the Florence Manufacturing Company, same place. Filed Nov. 16, 1899. Serial No. 737,150. (No model.)



Claim.—1. A machine for making bristle-blocks for brushes, having a receptacle for plastic composition, a suitably-controlled outlet therefrom through which said composition may pass, molding devices having holes to receive bristles, a closed cavity into which the inner ends of the bristles project, and an opening leading to said cavity, and means for supporting the molding devices in position with the said opening in registration with the said outlet, substantially as set forth.

2. A machine for making bristle-blocks for brushes, having a receptacle for plastic composition, means for heating the same, an outlet therefrom and means for heating said outlet, molding devices having holes to receive bristles, a closed cavity into which the inner ends of the bristles project, and an opening leading to said cavity, and an adjustable support for said molding devices whereby the latter may be supported and moved to bring the opening therein into and out of registration with the said outlet, substantially as set forth.

654,188. PUNCH.

LOUIS A. SAYRE, Madison, N. J. Filed Jan. 6, 1900. Serial No. 590. (No model.)

Claim.—1. A punch, adapted for use as an implement for marking cattle; comprising the member *e*, carrying perforating-tube *h*; the member *d*, having its jaw faced with pad of soft material, and provided with a gage *a*, held adjustably thereon by means of thumb-screw *b*; said gage projecting upward, parallel with the sides of tube *h*; substantially as shown, and for the purposes described.

2. The combination in a perforating-punch of the members *e*, and *d*, the spring *g*, the pivot *f*, the jaw padded upon its face with soft material and the thumb-screw *b*; with the longitudinally-adjustable gage *a*, substantially as shown and described, and for the purposes set forth.

3. A machine for making bristle-blocks for brushes, having a jacketed receptacle for plastic composition, means for supplying steam to said jacketed receptacle to heat the composition, an outlet from said receptacle having a shut-off valve therein, means for heating said outlet, molding devices having holes to receive bristles, a closed cavity into which the inner ends of the bristles project, and an opening leading to said cavity, and a vertically-movable support whereby the said opening may be moved into and out of registration with the said outlet, substantially as described.

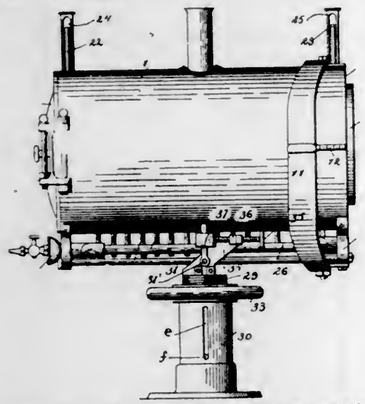
4. A machine for making bristle-blocks for brushes, comprising molding devices having holes to receive bristles, a closed cavity into which the inner ends of the bristles project, and an opening through which composition may flow into the cavity, a receptacle in which composition is maintained in a relatively-elevated position to produce pressure of the same within the molding devices, means for applying heat to maintain said composition in a plastic condition, and an outlet through which the composition may pass from the receptacle into the molding devices, substantially as described.

5. A machine for making bristle-blocks for brushes, comprising molding devices having holes to receive bristles, a closed cavity into which the inner ends of the bristles project, and an opening through which composition may flow into the cavity, a receptacle in which composition is maintained in a relatively-elevated position to produce pressure of the same within the molding devices, means for applying heat to maintain said composition in a plastic condition, an outlet through which the composition may pass from the receptacle into the molding devices, and means to produce pressure upon the composition within the receptacle and thereby increase its pressure within the molding devices, substantially as described.

6. A machine for making bristle-blocks for brushes, comprising molding devices having holes to receive bristles, a closed cavity into which the inner ends of the bristles project, and an opening through which composition may flow into the cavity, a receptacle in which composition is maintained in a relatively-elevated position to produce pressure of the same within the molding devices, means for applying heat to maintain said composition in a plastic condition, an outlet through which the composition may pass from the receptacle into the molding devices, and means to introduce air under pressure into the receptacle to produce pressure upon the composition within the latter and thereby increase its pressure within the molding devices, substantially as described.

7. A machine for making bristle-blocks for brushes, having a receptacle for plastic composition, means of heating the contents of said receptacle to maintain the same in a highly-plastic condition, an outlet from the said receptacle having a valve to control the flow therefrom a bristle-block die, and a support to hold said die in position beneath the said outlet to receive the plastic material as it flows therefrom, to fill the cavity of the said die, substantially as described.

654,185. METHOD OF THERAPEUTICAL TREATMENT OF PARTS OF THE HUMAN BODY AND APPARATUS THEREFOR. AUSTIN V. M. SPRAGUE, New York, N. Y. Filed Feb. 13, 1897. Serial No. 623,935. (No specimens.)

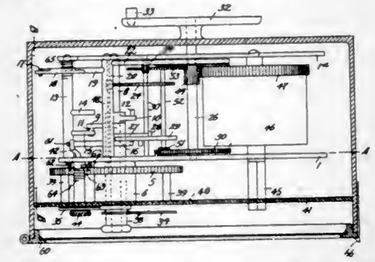


Claim.—1. The method of treating a part or parts of the human body which consists in subjecting the same to the action of a current of dry air, the temperature of which is above the boiling-point of water, and maintaining said current so as to carry off the moisture from said part or parts, substantially as set forth.

2. The method of treating a part or parts of the human body which consists in subjecting the same to the action of a continuous current of dry air, the temperature of which is above the boiling-point of water, and maintaining said current so as to continuously carry off the moisture from said part or parts as rapidly as it is generated, substantially as set forth.

3. The method of treating a part or parts of the human body, which consists in subjecting the same to the action of moving increments of dry air, the temperature of which is above the boiling-point of water, so as to heat said part or parts, and remove the moisture therefrom, substantially as set forth.

654,186. TIME VALVE-OPERATING MECHANISM. ANDREW STENHOUSE and EDWIN A. WHITEHEAD, Broken Hill, New South Wales. Filed Sept. 2, 1899. Serial No. 729,387. (No model.)



Claim.—1. In apparatus for operating a valve, in combination, motor mechanism, arbor 8 having suitable bearings, a hollow arbor 7 having arm 9 for actuating the motor mechanism, a toothed wheel 5 mounted on the hollow arbor and actuated from clock-gear, a rotatable dial 40 attached to said wheel, a pointer 35 on the hollow arbor 7, a pointer 34 on arbor 8, a nut 38 for releasing and screwing up the said parts so that they will all rotate together, a motor-train having a shaft 26, crank 32, and T-lever 55 operated by said crank.

2. In apparatus for operating a valve in combination an arbor 8 having suitable bearings, a hollow arbor 7 having arm 9 for actuating motor mechanism, a toothed wheel 5 mounted on the hollow arbor and actuated from clock-gear, a rotatable dial 40 attached to said wheel, a pointer 35 on the hollow arbor 7 and a pointer 34 on the arbor 8, a nut 38 for releasing and screwing up the said parts so that they will all rotate together, an arm 10 on the arbor 8, the said arms 9 and 10 being approximately in line always with their pointers and arranged during their rotation to actuate mechanism to set the motor going at the predetermined times as indicated by their pointers and the disk or crank 32 and actuating devices operated by said disk or crank substantially as set forth.

3. In apparatus for operating a valve in combination an arbor 8, having bearings in frame, a hollow arbor 7 having arm 9 for actuating motor mechanism, a toothed wheel 5 mounted on the hollow arbor and actuated from clock-gear, a rotatable dial 40 attached to said wheel, a pointer 35 on the hollow arbor 7 and a pointer 34 on the arbor 8, a nut 38 for releasing and screwing up the said parts so that they will all rotate together, an arm 10 on the arbor 8, the said arms 9 and 10 being approximately in line always with their pointers and arranged during their rotation to actuate mechanism to set the motor going at the predetermined times, a spindle 13 having rods 14, 15 to engage with arms 9, 10 and a hooked rod 16, a disk 29 having a pin 31 to engage with said hooked rod, the spindle 13 being connected by rods and a slotted link to rocking shaft 20 which latter carries arm 27 having a hook to engage with pin 28 on the disk 29 and an arm 22 to engage with disk 25 mounted on arbor 26 from which a valve is actuated substantially as set forth.

4. In apparatus for actuating a valve in combination a motor mechanism, rotatable crank-spindle 42 having pin 63, limiting-stops 62 for pin set on frame of apparatus and a spring 64 to return the crank-spindle after operation, a pin 61 mounted on spindle 13 and arranged to engage with the said crank-spindle whereby said spindle 13 and parts connected with it may be moved independently of the motor mechanism, a spring 65 for maintaining a pressure of pin 61 against crank-spindle, substantially as set forth.

5. In apparatus for actuating a valve in combination a disk as 25 mounted on a spindle 26, means of actuating disk and spindle at predetermined times, a disk 32 on spindle 26 having pin 33, a slotted T-lever 55 rocked by said disk, and actuating devices operated by the T-lever; substantially as set forth.

6. In an apparatus for operating a valve the combination of a driven spindle 3, pinion 4 thereon, a large toothed wheel 5 which is revolved by wheel 4 once in twenty-four hours, hollow arbor 7 on which wheel 5 is loosely mounted, arbor 8 passing through arbor 7, arm 9 carried by arbor 7, arm 10 carried by arbor 8, pins 11, 12 projecting at right angles from arms 9, 10, spindle 13, rods 14, 15 projecting from spindle 13 in the path of pins 11, 12, respectively, hooked rod 16 and arm 17 projecting from spindle 13, shaft 20, link 18 and arm 19, between shaft 20 and arm 17, a notched disk 25, shaft 26 therefor, arm 22 extending from shaft 20 and adapted to engage and be disengaged from the notch, arm 27 also projecting from shaft 20, a pin on disk 29 in position to be engaged by arm 27, pin 31 on the opposite side of disk 29 from pin 28 and in the path of rod 16 when the latter is raised, a crank on shaft 26, and means for conveying motion from the crank to the apparatus to be operated, first in one direction and then in the opposite direction.

7. In an apparatus for operating a valve the combination of a driven spindle 3, pinion 4 thereon, a large toothed wheel 5 which is revolved by wheel 4 once in twenty-four hours, hollow arbor 7 on which wheel 5 is loosely mounted, arbor 8 passing through arbor 7, arm 9 carried by arbor 7, arm 10 carried by arbor 8, pins 11, 12 projecting at right angles from arms 9, 10, spindle 13, rods 14, 15 projecting from spindle 13 in the path of pins 11, 12, respectively, hooked rod 16 and arm 17 projecting from spindle 13, shaft 20, link 18 and arm 19, between shaft 20 and arm 17, a notched disk 25, shaft 26 therefor, arm 22 extending from shaft 20 and adapted to engage and be disengaged from the notch, arm 27 also projecting from shaft 20, a pin on disk 29 in position to be engaged by arm 27, pin 31 on the opposite side of disk 29 from pin 28 and in the path of rod 16 when the latter is raised, a crank on shaft 26, and means consisting of the lever 55 pivoted at 56 having an arm 32 with a slot 58 engaged by pin 33, and cords 59 for conveying motion from the crank to the apparatus to be operated, first in one direction and then in the opposite direction.

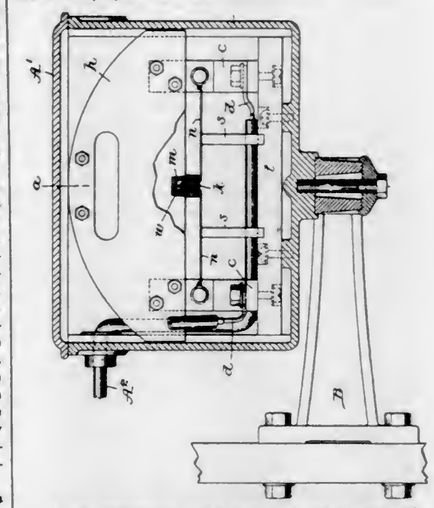
8. In an apparatus for operating a valve the combination of a driven spindle 3, pinion 4 thereon, a large toothed wheel 5 which is revolved by wheel 4 once in twenty-four hours, hollow arbor 7 on which wheel 5 is loosely mounted, arbor 8 passing through arbor 7, arm 9 carried by arbor 7, arm 10 carried by arbor 8, pins 11, 12 projecting at right angles from arms 9, 10, spindle 13, rods 14, 15 projecting from spindle 13 in the path of pins 11, 12, respectively, hooked rod 16 and arms 17 projecting from spindle 13, shaft 20, link 18 and arm 19, between shaft 20 and arm 17, a notched disk 25, shaft 26 therefor, arm 22 extending from shaft 20 and adapted to engage and be disengaged from the notch, arm 27 also projecting from shaft 20, a disk 29, a pin on disk 29 in position to be engaged by arm 27, pin 31 on the opposite side of disk 29 from pin 28 and in the path of rod 16 when the latter is raised, a crank on shaft 26, and means for conveying motion from the crank to the apparatus to be operated, first in one direction and then in the opposite direction, pointer 35 adjustably secured to the hollow shaft, pointer 34 adjustably secured to shaft 8, indicator-dial 40 secured to wheel 5 so as to be rotated thereby, a spindle and crank 42, pin 61 on spindle 13 adapted to be engaged by said crank, pin 63 on the crank-spindle, limiting-pins 62 for the crank-spindle, a spring tending to hold the crank against said pin 61, and a returning-spring for spindle 13.

9. The combination of dial 40, adjustable pointers 34, 35, arbor 7, wheel 5 loose thereon, means for driving wheel 5, means for connecting said dial and wheel to rotate together, arbor 8, arms 9, 10, on arbors 7, 8, pins 11, 12 projecting from arms 9, 10, said arms moving with the pointers one revolution in twenty-four hours, the alarm-train, spindle 13, arms 15, 16, 17, 61 thereon, and means operated by said arms to release and then to stop the train after a short movement, as set forth.

10. The combination of dial 40, adjustable pointers 34, 35, arbor 7, wheel 5 loose thereon, means for driving wheel 5, means for connecting said dial and wheel to rotate together, arbor 8, arms 9, 10, on arbors 7, 8, pins 11, 12 projecting from arms 9, 10, said arms moving with the pointers one revolution in twenty-four hours, the alarm-train, spindle 13, arms 15, 16, 17, 61 thereon, link 18 having a slot 21, a pin on arm 17 engaging the slot, arm 19, spindle 20, arms 22, 27 adapted to engage and to be disengaged from wheels of the train, as set forth.

654,187. ELECTRICAL SAFETY-FUSE. ARTHUR L. STEVENS, New York, N. Y., assignor to the Pennsylvania Manufacturing, Light and Power Company, of New Jersey. Filed Aug. 16, 1899. Serial No. 727,465. (No model.)

Claim.—1. The combination with a containing vessel, having means for the insulated entrance therein of a pair of conducting-wires, terminal blocks in said vessel connecting the conducting-wires and the opposite ends of an electrical safety-fuse wire, a volume of oil maintained in said vessel to submerge the terminals and the greater portion of the fuse-wire, a fuse-block *m* recessed to form a chamber, a pair of insulating clamping-blocks *h h* supporting the same, and a perforated wedge partly filling the recess in the fuse-block, said recessed block and wedge operating to maintain a section of the fuse-wire insulated and free from the surrounding oil; substantially as and for the purposes set forth.

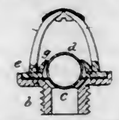


2. The combination with a suitable containing vessel, of terminal blocks, a pair of insulated conducting-wires leading thereto, a safety-fuse wire, a volume of oil submerging said terminals and the greater portion of said safety-fuse, and an insulating medium surrounding a section of said safety-fuse and maintained free from contact with the oil; substantially as described.

3. The combination with a suitable containing vessel, of terminal blocks for a pair of conducting-wires and an electrical safety-fuse wire, of a recessed block containing an air-chamber, a section of the fuse being held within said air-chamber, means adapted to seal the opening to said chamber while permitting the fuse-wire to pass out of the same and a volume of oil within said containing vessel submerging the conducting-terminals and all of the safety-fuse except the portion thereof within said air-chamber; substantially as and for the purposes set forth.

4. In combination, the box or vessel A, having hinged lid A', terminal blocks therein, insulated conducting-wires leading to said blocks, and a safety-fuse wire between the latter, a closed chamber in which a section of said fuse-wire is contained, a volume of oil submerging said conducting-wires and safety-fuse except the portion of the latter within the closed chamber, means to support said vessel A, and means to clamp and support said closed chamber within the containing vessel; substantially as described.

654,188. AUTOMATIC SPRINKLER. WILLIAM H. STRATTON, Hartford, Conn. Filed Feb. 4, 1897. Serial No. 621,953. (No model.)



Claim.—1. In combination in a sprinkler, a body part having a fluid-way, an annular spring-plate located with its central opening registering with the fluid-way, a cap having a central opening registering with the opening in the fluid-way, and a frangible stopple adapted to contain a bursting charge and seated against said spring-plate, closing the opening in the fluid-way and also closing the opening in the cap and having a part projecting through said opening.

2. In combination in a sprinkler, a body part having a fluid-way, an annular spring-plate located with its central opening registering with the fluid-way, a cap having a central opening forming a seat for a stopple and inclosing said stopple and spring-plate, and a frangible stopple inclosed as to its greater portion within the cap and closing the opening through the spring-plate and cap, and means for securing the cap to the sprinkler-body.

3. In combination in a sprinkler, a body part having a fluid-way, an annular spring-plate having its central opening registering with the fluid-way, a cap having a central opening forming a seat for a stopple and inclosing said stopple and spring-plate, and a frangible

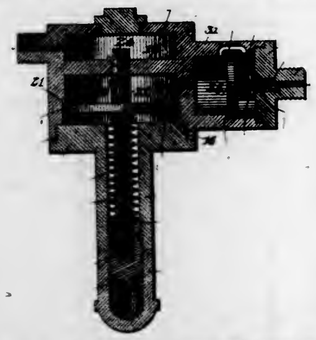
stopple inclosed as to its greater part by said cap and closing the opening through the spring-plate and through the cap and containing a bursting charge sealed therein and adapted to be exploded by heat applied without and about the stopple, and means for securing the cap to the sprinkler-body.

4. In combination in a sprinkler, a body part having a fluid-way, an annular spring-plate with the opening therethrough registering with the fluid-way, a cap having a central opening forming a seat for a stopple inclosed as to its greater part within said cap and closing the fluid-way through the cap and spring-plate and containing a bursting charge sealed within the stopple and sensitive to changes of temperature without and about the stopple, the body part and cap being coated with a material not sensitive to corrosion.

5. In combination in a sprinkler, a body part having a fluid-way, an annular spring-plate secured to the face of the body part, a cap having a central opening registering with the fluid-way in the body part and provided with a covering or coating of non-corrosive material as to its outer surface and to a point beyond the stopple-seat therein, and a frangible stopple seated against the cap and the spring-plate and with a part projecting into the opening in the cap.

6. In combination in a sprinkler, a body part having a fluid-way, a cap secured to the face of the body part and having an opening registering with the fluid-way therein and having a coating of non-corrosive material on its outer surface and extending to a point within the cap beyond that part on which a frangible stopple rests, an annular spring-plate secured between the cap and the body part and projecting within the cap, and a frangible stopple resting against the cap and against the plate and with a part projecting into the opening in the cap.

654,189. AIR-BRAKE ATTACHMENT. CHARLES E. TENCH, Abbeville, S. C. Filed Sept. 29, 1899. Serial No. 732,099. (No model.)



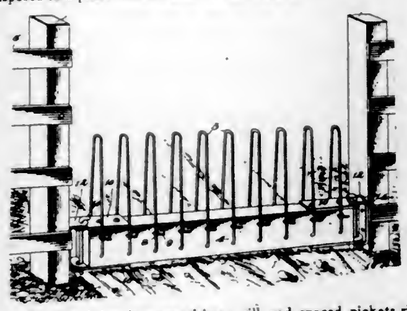
Claim.—1. A recharging-valve comprising a casing adapted for communication with a train-pipe and an auxiliary reservoir, said casing comprising two valve-chambers, a valve-seat in one of the valve-chambers, a valve comprising a stem having an operating-diaphragm, said valve lying in operative relation with the seat to engage the latter in opposite directions, a passage leading from the second valve-chamber to the first valve-chamber to communicate with the latter at a point between said valve-seat and the operating-diaphragm, and a valve in the second chamber adapted for movement under the influence of auxiliary-reservoir pressure against the train-pipe pressure to close communication between the casing and the train-pipe.

2. A recharging-valve comprising a casing including two valve-chambers, means for connecting one of the valve-chambers with the auxiliary reservoir, means for connecting the second chamber with the train-pipe, a spring-pressed valve in the second chamber adapted to stand normally open and to close under the influence of auxiliary-reservoir pressure and against the train-pipe pressure, a valve-seat, a valve comprising s stem and adapted for movement in opposite directions to engage the seat and close communication between its chamber and the auxiliary reservoir, a diaphragm upon the valve-stem, and a passage connecting the chambers and communicating with the first chamber between the diaphragm and the valve-seat.

654,190. STOCK-BARRIER. THOMAS THOMPSON, Jewell, Iowa. Filed Dec. 7, 1899. Serial No. 739,564. (No model.)

Claim.—1. In a stock-barrier, the combination with opposite posts, of a sill, having its opposite ends detachably hinged to the respective posts, to swing laterally in opposite directions, and spaced pickets or obstructions rising from the sill, and providing unobstructed passages between adjacent pickets.

2. A stock-barrier, comprising a sill, and spaced pickets rising therefrom, each picket being of inverted substantially U shape, and disposed in a plane transverse to that of the sill.

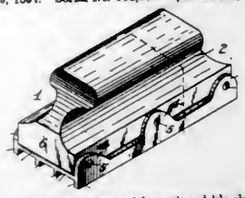


3. A stock-barrier, comprising a sill, and spaced pickets rising therefrom, each picket being of inverted substantially U shape, and disposed in a plane transverse to that of the sill, the opposite sides of each picket embracing the sill, and the ends thereof being formed into opposite inwardly-directed fastenings entering the sill.

4. A stock-barrier, comprising a sill, spaced pickets rising therefrom, each picket being of inverted substantially U shape, and disposed in a plane transverse to that of the sill, the opposite sides of each picket embracing the sill, and the ends thereof being formed into opposite inwardly-directed fastenings to enter the sill, and staples connecting the respective sides of the pickets to the sill, and located above the inwardly-directed fastenings.

5. In a barrier for gateways, the combination with opposite posts, of a barrier located therebetween, substantially U-shaped brackets fixed to the respective posts, and having their opposite arms provided with vertically-alined perforations, upper and lower plates projecting at opposite ends of the barrier, and provided with vertically-alined elongated slots, the adjacent plates being received between the arms of the respective brackets, and pivot-pins extending through the corresponding slots and perforations.

654,191. HAND-STAMP. MATTHEW TINKER, Baltimore, Md. Filed Dec. 9, 1897. Serial No. 661,257. (No model.)

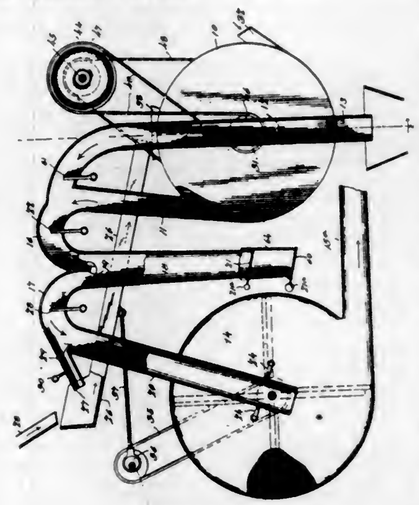


Claim.—A hand-stamp comprising a head-block forming a hand-grasp and having a flat under face, a thin elastic pad or sheet on the flat under face, a type-holding plate formed with side ears between which the head-block is secured and having integral vertically-depending side flanges provided with a plurality of comparatively-small longitudinal serrations in their inner faces lying in the same vertical plane and an intermediate integral vertically-depending flange having longitudinal serrations on both sides, also lying in the same vertical plane and types between the flanges having serrations on the ends to engage the serrations in the flanges of the type-holding plate, substantially as set forth.

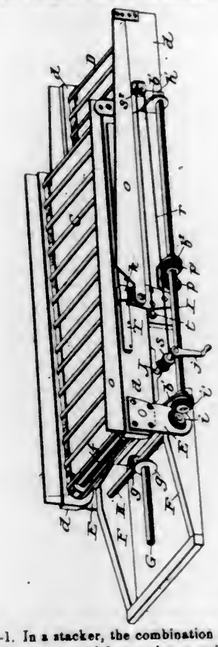
654,192. GRAIN-SCOURER. JOHN L. TOLIVER, Cortner, Tenn. Filed Nov. 17, 1899. Serial No. 737,348. (No model.)

Claim.—1. In a grain scourer and cleaner, the casing 10 having the air-inlet opening on one side, the wind-trunk 11 leading from the opposite side thereof, the auxiliary wind-trunk 12, connected to wind-trunk 11 and having its intake communicating with the discharge end of the casing, a fan-casing, a wind-trunk leading therefrom to the wind-trunk 11 and having a depending discharge-leg 18, a baffle being formed at the upper end thereof in said wind-trunk, and the same also having the suction-spout 27, in combination with the riddle 26 and the scouring and cleaning mechanism in the casing 10, substantially as described.

2. The inner scouring-cylinder comprising the shaft, the spiders thereon having the rims, the rubbing-blades pivotally connected to the rims of the spiders and having the inwardly-extending arm portions notched to receive the rims of the spiders, and the springs attached to the said rims and bearing outward against said rubbing-blades, substantially as described.



654,198. STRAW-STACKER. FRED TORBECK, Gatch, Ill. Filed May 2, 1900. Serial No. 15,257. (No model.)



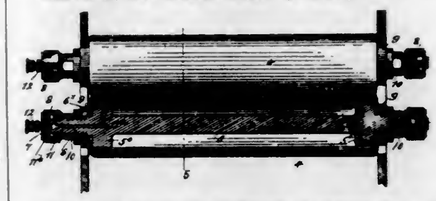
Claim.—1. In a stacker, the combination of a main apron-carrying frame, a supplemental frame also carrying an apron and connected to the main frame so as to be adjustable longitudinally thereof, a line-shaft journaled in bearings on and extending lengthwise the main frame, and a pinion carried by the supplemental frame and geared to the apron-driving roller thereof, said pinion being adapted to slide on the shaft as the supplemental frame is adjusted so as to drive its apron in any position of adjustment.

2. In a stacker, the combination of a main apron-carrying frame, track-rails on the sides thereof, an underlying supplemental frame also carrying an apron and supported by hangers engaging the track-rails, a line-shaft journaled in bearings on and extending lengthwise the main frame, a pinion sliding on said shaft and geared to the apron-driving roller of the supplemental frame, and mechanism for adjusting said frame longitudinally of the main frame.

3. In a stacker, the combination of a main apron-carrying frame, a drive-shaft concentric with which the frame is pivotally connected to the thresher, and by means of which the apron of said frame is driven, a supplemental frame also carrying an apron and adjustable longitudinally of the main frame, a line-shaft journaled in bearings on and extending lengthwise the main frame and geared to the drive-shaft, and a pinion carried by the supplemental frame and sliding on the line-shaft and geared to the apron-driving roller of said supplemental frame.

4. In a stacker, the combination of a main apron-carrying frame, track-rails on the sides thereof, an underlying supplemental frame also carrying an apron and supported by hangers engaging the track-rails, a winding-shaft journaled on the main frame and having its ropes or cords connected with the supplemental frame so as to adjust the same longitudinally of the main frame, a line-shaft journaled in bearings on and extending the length of the main frame, and a pinion sliding on said shaft and carried by the supplemental frame, said pinion being geared to the apron-driving roller of said frame.

654,194. WRINGER-ROLL. WILLIAM H. TWOHY, Helena, Mont. Filed Oct. 31, 1899. Serial No. 735,408. (No model.)



Claim.—1. A wringer-roll, comprising in combination; a core having annular enlargements that form end bearings, the ends of the core terminating in extensions; a flexible covering, the ends of which lap over the end bearings of the core; supplemental hub members loosely fitting over the extensions of the core and adapted to press the ends of the flexible covering against the aforesaid end bearings; means for clamping the said hub members tightly against the said end bearings, and means for expanding the flexible covering and holding it taut, as specified.

2. A wringer-roll, comprising a core having end bearing-hubs; threaded portions and smooth end journals, one of the ends of the core having an inflating-inlet discharging through the core into the interior of the roll; a flexible covering having its ends arranged to be clamped over tightly against the aforesaid bearing-hubs of the core; supplemental hub members for holding the said covering ends against the aforesaid hubs; clamp-nuts engaging the threaded portions of the core and hub members; and a coil-spring surrounding the core, said spring forming a fixed bearing for the flexible covering as specified.

3. A wringer-roll, comprising in combination; a central core having enlarged end bearings, and screw-threaded portions extending outwardly from said bearings; the supplemental hubs 9 loosely fitted over each screw-threaded portion of the core and held to bear against the outer face of the end bearings of the core, said supplemental hubs forming journals for the hub; the external body formed of a flexible material, the ends of which are held clamped against the end bearings of the core by the supplemental hub members 9; the clamp-nuts 10, for holding the hubs 9 against the end bearings of the core, and means for expanding the flexible body and holding it taut, all being arranged substantially as shown and described.

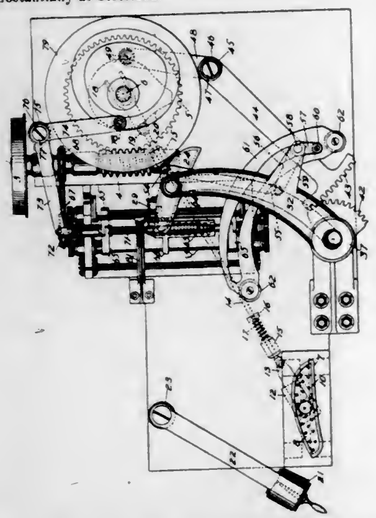
654,195. CIGAR-MACHINE. OLUF TYBERG, New York, N. Y., assignor to Rufus L. Patterson and George Arents, Jr., same place. Filed Feb. 5, 1900. Serial No. 4,073. (No model.)

Claim.—1. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, and means for giving the wrapping mechanism a traversing movement with respect to the support, substantially as described.

2. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support located above the wrapping mechanism, and means for giving the wrapping mechanism a traversing movement with respect to the support, substantially as described.

3. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, and means for giving the

wrapping mechanism a traversing movement with respect to the support, substantially as described.



4. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper lying in a plane which does not intersect the wrapping mechanism, and means for giving the wrapping mechanism a traversing movement with respect to the support, substantially as described.

5. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, and means for giving both the support and the wrapping mechanism coöperating movements in order to wind the wrapper upon the cigar, substantially as described.

6. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, and means for giving both the support and the wrapping mechanism coöperating movements in order to wind the wrapper upon the cigar, substantially as described.

7. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, and means for producing a relative movement between the support and the wrapping mechanism which is the resultant of an approaching movement, an angular movement, and a traversing movement, this resultant movement being produced by moving both the wrapping mechanism and the support, substantially as described.

8. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for giving the support a movement which is the resultant of an approaching movement and an angular movement, and means for giving the wrapping mechanism a traversing movement, substantially as described.

9. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for giving the support a movement which is the resultant of an approaching movement and an angular movement, and means for giving the wrapping mechanism a traversing movement, substantially as described.

10. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for moving the support over the wrapping mechanism and at the same time giving it an angular movement with respect thereto, and means for giving the wrapper mechanism a traversing movement, substantially as described.

11. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper lying in a plane which does not intersect the wrapping mechanism, means for giving the support a movement which is the resultant of an approaching movement and an angular movement, and means for giving the wrapping mechanism a traversing movement, substantially as described.

12. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for moving the support over the wrapping mechanism and at the same time giving it an angular movement with respect thereto, and means for giving the wrapping mechanism a traversing movement, substantially as described.

13. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for giving the support an approaching movement with respect to the wrapping mechanism during the wrapping operation, and means for giving the wrapping mechanism a traversing movement during the wrapping operation, substantially as described.

14. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper which during the wrapping operation is positioned in a plane which does not intersect the wrapping mechanism, and means for traversing the wrapping mechanism with respect to the wrapper-support during the wrapping operation, substantially as described.

15. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for positioning the wrapper-support over the wrapping mechanism, and means for giving the wrapping mechanism a traversing movement with respect to the support, substantially as described.

16. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for positioning the wrapper-support over the wrapping mechanism, and means for giving the wrapping mechanism a traversing movement with respect to the support, substantially as described.

17. In a cigar-machine, the combination with a wrapping mechanism, of an arm, a wrapper-support carried on the arm, means for swinging the arm with respect to the wrapping mechanism, and means for traversing the wrapping mechanism with respect to the arm during the wrapping operation, substantially as described.

18. In a cigar-machine, the combination with a wrapping mechanism, of an arm, a wrapper-support carried on the arm, means for swinging the arm with respect to the wrapping mechanism, means for moving the support with respect to the arm, and means for traversing the wrapping mechanism with respect to the support, substantially as described.

19. In a cigar-machine, the combination with a wrapping mechanism, of an arm, a suction-support for the wrapper carried on the arm, means for swinging the arm with respect to the wrapping mechanism, and means for traversing the wrapping mechanism with respect to the arm during the wrapping operation, substantially as described.

20. In a cigar-machine, the combination with a wrapping mechanism, of an arm, a suction-support for the wrapper carried on the arm, means for swinging the arm with respect to the wrapping mechanism, means for moving the support with respect to the arm, and means for traversing the wrapping mechanism with respect to the support, substantially as described.

21. In a cigar-machine, the combination with a wrapping mechanism, of an arm, a wrapper-support carried on the arm, means for swinging the arm in a plane which does not intersect the wrapping mechanism, and means for traversing the wrapping mechanism with respect to the arm during the wrapping operation, substantially as described.

22. In a cigar-machine, the combination with a wrapping mechanism, of an arm, a wrapper-support carried on the arm, means for swinging the arm in a plane which does not intersect the wrapping mechanism, means for moving the support with respect to the arm, and means for traversing the wrapping mechanism with respect to the support, substantially as described.

23. In a cigar-machine, the combination with a wrapping mechanism, of an arm, a suction-support for the wrapper carried on the arm, means for swinging the arm in a plane which does not intersect the wrapping mechanism, and means for traversing the wrapping mechanism with respect to the arm during the wrapping operation, substantially as described.

24. In a cigar-machine, the combination with a wrapping mechanism, of an arm, a suction-support for the wrapper carried on the arm, means for swinging the arm in a plane which does not intersect the wrapping mechanism, means for moving the support with respect to the arm, and means for traversing the wrapping mechanism with respect to the support, substantially as described.

25. In a cigar-machine, the combination with a wrapping mechanism, of an arm, a wrapper-support pivoted thereon, a lever pivoted on the arm, a cam for operating the lever, a link connection between the arm and the support, means for swinging the arm on a center, whereby the support is given a movement which is the resultant of the movement of the arm about its center and the movement of the support about its center, and means for traversing the wrapping mechanism with respect to the support, substantially as described.

26. In a cigar-machine, the combination with a wrapping mechanism, of an arm, a suction-support for the wrapper pivoted thereon, a lever pivoted on the arm, a cam for operating the lever, a link connection between the arm and the support, means for swinging the arm on a center, whereby the support is given a movement which is the resultant of the movement of the arm about its center and the movement of the support about its center, and means for traversing

the wrapping mechanism with respect to the support, substantially as described.

27. The combination with a wrapper-support, the operating-face of which has a movable section, of means for moving said section, and means for retaining the wrapper on the support, substantially as described.

28. The combination with a wrapper-support, the operating-face of which has a movable section, of means for moving said section, and a suction mechanism for retaining the wrapper on the support, substantially as described.

29. The combination with a wrapper-support including a suction-chamber, of a perforated plate closing said chamber, said plate having a movable section, and means for moving said section, substantially as described.

30. The combination with a wrapper-support including a suction-chamber, of a perforated plate closing said chamber, said plate having a movable section, means for moving said section, and means for maintaining the suction in the support after the section is moved, substantially as described.

31. The combination with a wrapper-support including a suction-chamber, of a perforated plate closing said chamber, said plate having a pivoted section, and means for moving said section, substantially as described.

32. The combination with a wrapper-support including a suction-chamber, of a perforated plate closing said chamber, said plate having a pivoted section, means for moving the section, and means for maintaining the suction in the suction-chamber during the movement of the section, substantially as described.

33. The combination with a wrapper-support including a suction-chamber, of a perforated plate closing said chamber, said plate having a pivoted section, means for moving said section, and means carried by said section for maintaining the suction in the suction-chamber during the movement of the section, substantially as described.

34. The combination with a wrapper-support including a suction-chamber, of a perforated plate closing said chamber, a short shaft journaled in the sides of the chamber, a movable section carried by said shaft, said section having a projection which closes the chamber when the section is moved, an arm for rocking the shaft, and means for moving the arm, substantially as described.

35. In a cigar-machine, the combination with a wrapping mechanism, of an arm, a suction wrapper-support pivoted in the arm, a stationary cam, a lever carried by the arm and engaging the cam, a link connection between the lever and the suction-support, means for swinging the arm, and means for imparting a traversing movement to the wrapping mechanism, substantially as described.

36. In a cigar-machine, the combination with a suitable bed, of a cutting mechanism located on the bed, a suction device coacting with the cutting mechanism, a wrapping mechanism located on the bed, a swinging arm located on the bed, a wrapper-support pivoted in the arm, a cam and suitable connections for turning the wrapper-support on its pivot, a vertical cam-shaft located on the bed, a series of cams mounted on the shaft, and suitable connections between said cams and the suction mechanism, the swinging arm and the wrapping mechanism, whereby the said cams control the suction mechanism, move the swinging arm, and impart a traversing movement to the wrapping mechanism, substantially as described.

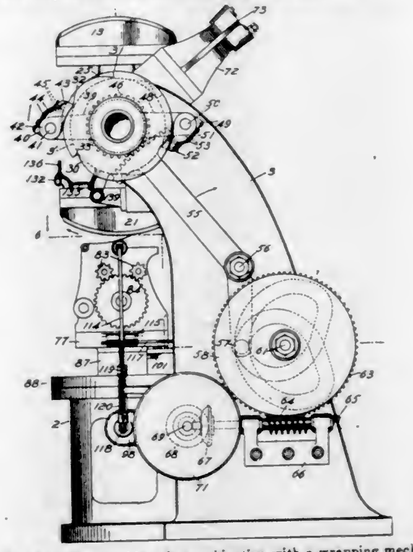
37. In a cigar-machine, the combination with two pairs of intermeshing jaws, of supporting rods on which said jaws are pivoted, operating-rods for the jaws, said supporting and operating rods being longer than the jaws, and means for sliding the jaws along the supporting and operating rods, substantially as described.

38. In a cigar-machine, the combination with two pairs of intermeshing jaws, of supporting-rods on which the jaws are pivoted, operating-rods for the jaws, said supporting and operating rods being longer than the jaws, a lever, connections between the lever and the jaws, and means for operating the lever, whereby the jaws are given a lengthwise movement on the supporting and operating rods, substantially as described.

39. In a cigar-machine, the combination with two pairs of intermeshing jaws, of supporting-rods on which the jaws are pivoted, operating-rods for the jaws, said supporting and operating rods being longer than the jaws, an operating-lever, a connecting-rod and a grooved block mounted on one of the jaws to which said rod is connected at one end, and means for connecting the other end of the rod with the operating-lever, substantially as described.

654,196. CIGAR-MACHINE. OLOF TYBERG, New York, N. Y., assignor to Rufus L. Patterson and George Arents, Jr., same place. Filed Feb. 5, 1900. Serial No. 4,074. (No model.)

Claim.—1. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for cutting a wrapper from a leaf of tobacco while on the support, means for giving the support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism a traversing movement with respect to the support, substantially as described.



2. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for cutting a wrapper from a leaf of tobacco while on the support, means for giving the support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism a traversing movement with respect to the support, substantially as described.

3. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for cutting a wrapper from a leaf of tobacco while on the support, means for giving the support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the support, substantially as described.

4. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for cutting a wrapper from a leaf of tobacco while on the support, means for giving the support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the support, substantially as described.

5. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for cutting a wrapper from a leaf of tobacco while on the support, means for giving the support an approaching movement with respect to the wrapping mechanism, means for giving the wrapping mechanism a traversing and an angular movement with respect to the support, substantially as described.

6. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for cutting a wrapper from a leaf of tobacco while on the support, means for giving the support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism a traversing and an angular movement with respect to the support, substantially as described.

7. The combination with a wrapping mechanism, of means for presenting a wrapper thereto, and means for giving the wrapping mechanism a traversing and an angular movement with respect to the wrapper-presenting means during the wrapping operation, substantially as described.

8. In a cigar-machine, the combination with a wrapper-support, of a wrapping mechanism, means for producing a relative approaching movement between the support and the wrapping mechanism, and means for giving the wrapping mechanism a traversing and an angular movement with respect to the support, substantially as described.

9. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for retaining a wrapper thereon in a stretched condition, means for producing a relative approaching movement between the support and the wrapping mechanism, and means for giving the wrapping mechanism a traversing and an angular movement with respect to the support, substantially as described.

10. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for producing a

relative approaching movement between the support and the wrapping mechanism, and means for giving the wrapping mechanism a traversing and an angular movement with respect to the support, substantially as described.

11. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for giving the support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism a traversing and an angular movement with respect to the support, substantially as described.

12. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support having means for retaining a wrapper thereon in a stretched condition, means for giving the support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism a traversing and an angular movement with respect to the support, substantially as described.

13. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for giving the support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism a traversing and an angular movement with respect to the support, substantially as described.

14. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for giving said support an approaching movement in a path which does not intersect the wrapping mechanism, and means for giving the wrapping mechanism a traversing and an angular movement with respect to the support, substantially as described.

15. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support having means for retaining a wrapper thereon in a stretched condition, means for giving the support an approaching movement in a path which does not intersect the wrapping mechanism, and means for giving the wrapping mechanism a traversing and an angular movement with respect to the support, substantially as described.

16. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for giving the support an approaching movement in a path which does not intersect the wrapping mechanism, and means for giving the wrapping mechanism a traversing and an angular movement with respect to the support, substantially as described.

17. The combination with a plurality of wrapper-supports, of means for moving the supports simultaneously in a given path, and means for moving each support independently in the same path, substantially as described.

18. The combination with a plurality of wrapper-supports, of means for moving the supports simultaneously in a given path, means for moving each support independently in the same path, and suction mechanism coöperating with each support to hold a wrapper thereagainst, substantially as described.

19. The combination with a plurality of supports, of means for moving the supports simultaneously in a given path, means for moving each support independently in the same path, means for retaining a leaf of tobacco on each support, and means coöperating with each support to cut a wrapper from the leaf of tobacco during the movement of the support, substantially as described.

20. The combination with a plurality of supports, of means for moving the supports simultaneously in a given path, means for moving each support independently in the same path, suction mechanism coöperating with each support to hold a leaf of tobacco thereagainst, and means coöperating with each support to cut a wrapper from the leaf of tobacco during the movement of the support, substantially as described.

21. The combination with a wrapping mechanism, of a pair of sleeves rotating about a common center, a wrapper-support carried by each sleeve, means for rotating the sleeves simultaneously about the center, and means for rotating each sleeve independently about the center, substantially as described.

22. The combination with a pair of sleeves rotating about a common center, of a wrapper-support carried by each sleeve, means for rotating the sleeves simultaneously about the center, means for rotating each sleeve independently about the center, and a cutting mechanism in the path of movement of the supports, substantially as described.

23. The combination with a pair of sleeves rotating about a common center, of a suction wrapper-support carried by each sleeve, means for rotating the sleeves simultaneously about the center, means for rotating each sleeve independently about the center, and a cutting mechanism in the path of movement of the supports, substantially as described.

24. The combination with a wrapping mechanism, of a pair of sleeves rotating about a common center, a suction-support for the wrapper carried by each sleeve, means for rotating the sleeves simultaneously about the center, and means for rotating each sleeve independently about the center, substantially as described.

25. The combination with a wrapping mechanism, of a pair of sleeves rotating about a common center, a wrapper-support carried by each sleeve, means for rotating the sleeves simultaneously about the center, means for rotating each sleeve independently about the center, and cutting devices in the path of movement of the supports, substantially as described.

26. The combination with a wrapping mechanism, of a pair of sleeves rotating about a common center, a suction-support for the wrapper carried by each sleeve, means for rotating the sleeves simultaneously about the center, means for rotating each sleeve independently about the center, and cutting devices in the path of movement of the supports, substantially as described.

27. The combination with a wrapping mechanism, of a pair of rotating sleeves, a suction-support for the wrapper carried by each sleeve, a knife on each support, means for rotating the sleeves simultaneously about a common center, means for rotating each sleeve independently about the center, and a coöperating cutting device lying in the path of movement of the supports, substantially as described.

28. The combination with a wrapping mechanism, of a pair of rotating sleeves, a bent hollow arm connected to each sleeve, a knife carried by each arm, a suction-plate located in the space bounded by each knife, means for moving the sleeves simultaneously about a common center, means for moving each sleeve independently about the center, and a coöperating cutting device lying in the path of movement of the knives, substantially as described.

29. In a suction-support, the combination with a suction-pipe and a blast-pipe, of two chambers, connections between both of the chambers and the suction-pipe, means whereby a connection may be established between one of the chambers and the blast-pipe, said means including a movable funnel, and means operated by the movement of the funnel for closing the connection of said chamber to the suction-pipe and opening its connection to the blast-pipe, substantially as described.

30. The combination with a wrapping mechanism, of a suction-support for the wrapper including two chambers, a suction-pipe, connections between said pipe and both the chambers, a blast-pipe, means including a spring-controlled movable funnel for connecting the blast-pipe to one of the chambers, a two-way valve controlled by the funnel, said funnel being normally in such position that the valve closes the blast-pipe connections and opens the suction-pipe connections, and means located in the path of movement of the support for moving the funnel and operating the valve to close the suction-pipe connections and open the blast-pipe connections, substantially as described.

31. In a cigar-machine, the combination with a pair of wrapper-supports, of a pair of rotary disks, means for alternately rotating each of the disks independently, and means for simultaneously rotating the disks, said simultaneous movement of the disks occurring between the independent rotating movement of the disks, substantially as described.

32. In a cigar-machine the combination with a pair of wrapper-supports, of a pair of rotary notched disks, two pawl mechanisms, means for operating one of the pawl mechanisms to rotate both disks simultaneously, and means for operating the other pawl mechanism to operate the disks alternately, substantially as described.

33. In a cigar-machine the combination with a pair of wrapper-supports, of a pair of rotary notched disks, two pairs of pawls, means for operating one pair of pawls to rotate the disks simultaneously, and means for operating the other pair of pawls to rotate the disks alternately, substantially as described.

34. In a cigar-machine, the combination with a pair of rotary sleeves, of a wrapper-support carried by each sleeve, a notched disk secured to each sleeve, two pawl mechanisms, means for operating one pawl mechanism to rotate the disks simultaneously, and means for operating the other pawl mechanism to rotate the disks alternately, the simultaneous rotating movement of the disks occurring between the independent movements of the disks, substantially as described.

35. In a cigar-machine, the combination with a pair of rotary sleeves, of a wrapper-support carried by each sleeve, a notched disk secured to each sleeve, two pawl-carriers, pawls mounted on the carriers, means for operating the carriers so that the pawls on the carriers come into operation successively, the notches on the disks being so arranged with reference to each other and the pawls that a movement of one of the pawl-carriers operates the disks simultaneously and a movement of the other pawl-carrier operates the disks alternately, and means for operating the pawl-carriers, substantially as described.

36. In a cigar-machine the combination with a pair of wrapper-supports, of a pair of notched rotary disks, each disk being provided with three notches in one-half its circumference, the notches being arranged sixty degrees apart, a pair of pawl-carriers, pawls carried by the carriers, and traveling on the circumference of the disks, and means for giving each of the pawl-carriers a stroke of one hundred and twenty degrees, the disks being so arranged with relation to each other that at the end of each stroke of one hundred and twenty degrees an end notch of the notches on one disk registers with an end notch of the notches on the other disk and the remainder of the notches are out of register, substantially as described.

37. In a cigar-machine, the combination with a pair of rotary sleeves, of a wrapper-support mounted on each sleeve, a notched disk connected to each sleeve, two pawl-carriers, pawls on said carriers, and suitable operating means therefor, the pawls and carriers being arranged so that the pawls act on the disks in succession and the notches on the disks being so arranged that the pawls will first simultaneously operate the disks and then operate one of the disks, substantially as described.

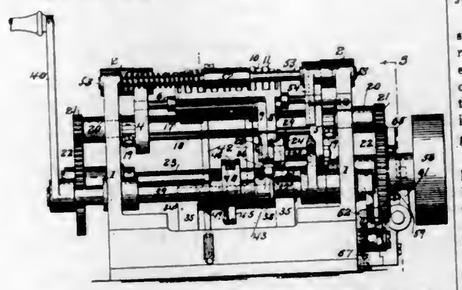
38. The combination with a wrapping mechanism, of two wrapper-supports, means for causing one of the wrapper-supports to feed its wrapper to the wrapping mechanism, and means for holding the other support stationary during this feeding operation, substantially as described.

39. The combination with a wrapping mechanism, of two rotating wrapper-supports, suction devices for holding the wrappers on the supports, means for causing one of the wrapper-supports to feed its wrapper to the wrapping mechanism, and means for holding the other support stationary during this feeding operation, substantially as described.

40. The combination with a wrapping mechanism, of two rotating suction-supports for the wrapper-carrying knives, means for rotating each support so as to cause it to feed its wrapper to the wrapping mechanism, means for holding the other support stationary during the feeding operation of the other, and means in the path of the supports coöperating with the knives for cutting a wrapper from a leaf of tobacco held on each of the supports, substantially as described.

41. In a cigar-machine, the combination with a wrapping mechanism, of means for presenting a wrapper thereto, means for turning said wrapping mechanism about a center to give it an angular movement, means for giving it a traversing movement, said means including a bell-crank lever pivoted to the frame of the wrapping mechanism, an elongated plate mounted in the machine, and means for moving the plate, substantially as described.

654,197. CIGAR-MACHINE. OLUF TYBERG, New York, N. Y., assignor to Rufus L. Patterson and George Arents, Jr., same place. Filed Feb. 5, 1900. Serial No. 4,075. (No model.)



Claim.—1. In a cigar-rolling machine, the combination with a pair of pivoted manipulator-jaws, of means for swinging said jaws on teeir pivot about a common center, means for opening said jaws, said means including a pair of levers each having a single leg or extension, which extensions are provided with cam-faces on their inner sides, a rotating part coöperating therewith, and means for closing the jaws, substantially as described.

2. In a cigar-rolling machine, the combination with two pairs of pivoted manipulator-jaws, said jaws with their pivots being mounted to swing about a common center, a pair of rotating rods for swinging said jaws and their pivots about the said center, a pair of levers for operating each pair of jaws, each of said levers having a single leg or extension, the said legs or extensions being arranged on opposite sides of the operating-rods, whereby rotation of the operating-rods not only swings the jaws about a common center but also rocks them on their pivots in one direction, and means for rocking them in the opposite direction, substantially as described.

3. In a cigar-rolling machine, the combination with a pair of pivoted manipulator-jaws, said jaws being mounted to swing about a common center, a pair of levers for controlling the jaws, a rotating rod operating on the levers, and a spring connecting the levers, substantially as described.

4. In a cigar-rolling machine, the combination with a frame, of two pairs of guides pivotally mounted therein, two pivot-rods carried by the guides, a set of manipulator-jaws mounted on each pivot-rod, a rotating rod for swinging the guides on their pivots, levers extending from each set of jaws and arranged on opposite sides of the rod, and spring connections between the levers, substantially as described.

5. In a cigar-rolling machine, the combination with a frame, of two pairs of guides pivotally mounted therein, two pivot-rods carried by the guides, a set of manipulator-jaws mounted on each pivot-rod, rotating rods for swinging the guides on their pivots, levers extending from each set of jaws and arranged on opposite sides of each rod, said levers having cam-faces on their inner sides, and spring connections between the levers, substantially as described.

6. In a cigar-rolling machine, the combination with a pair of pivotally-mounted manipulator-jaws having lever extensions, of means for swinging said jaws and their pivot about a common center and for opening the jaws, devices independent of the swinging and opening means for also opening the jaws, and means for closing the jaws, substantially as described.

7. In a cigar-rolling machine, the combination with a pair of pivotally-mounted manipulator-jaws having lever extensions, of means for swinging said jaws and their pivot about a common center and for opening the jaws, devices independent of the swinging and opening means for also opening the jaws, and means for yieldingly closing the jaws, substantially as described.

8. In a cigar-rolling machine, the combination with a pair of pivoted manipulator-jaws, of means for swinging said jaws and their pivot about a common center and for opening the jaws, a toggle mechanism for also opening the jaws, and a spring for closing the jaws, substantially as described.

9. In a cigar-rolling machine, the combination with a pair of pivoted manipulator-jaws having lever extensions, of means for opening the jaws, means for closing the jaws, and an independent mechanism for also opening the jaws, substantially as described.

10. In a cigar-rolling machine, the combination with a pair of pivoted manipulator-jaws having lever extensions, of means for opening the jaws, means for yieldingly closing the jaws, and an independent mechanism for also opening the jaws, substantially as described.

11. In a cigar-rolling machine, the combination with a pair of pivoted manipulator-jaws, means for swinging the jaws and their pivot about a common center, said means consisting of a rotating operating-rod, levers connected to the jaws and arranged on opposite sides of the operating-rod, a spring for closing the jaws, and means acting independently of the operating-rod for opening the jaws substantially as described.

12. In a cigar-rolling machine, the combination with a pair of swinging guides, of a pivot-rod carried by said guides, an operating-rod working in slots in the guides, a pair of manipulator-jaws mounted on the pivot-rod, levers connected to said jaws and located on opposite sides of the operating-rod, said levers having cam-faces on their inner sides, a spring connected to the levers, a toggle mechanism also connected to the levers, and an operating device for the toggle mechanism, substantially as described.

13. In a cigar-rolling machine, the combination with a pair of pivoted manipulator-levers, of means for swinging the levers and their pivot about a common center and for opening the levers, means for closing the levers, a pair of links connected to the levers and forming a toggle mechanism, and a striker-arm for operating the toggle mechanism, substantially as described.

14. In a cigar-rolling machine, the combination with a pair of pivoted manipulator-levers, of means for swinging the levers and their pivot about a common center and for opening the levers, means for yieldingly closing the levers, a pair of links connected to the levers and forming a toggle mechanism, and a striker-arm for operating the toggle mechanism, substantially as described.

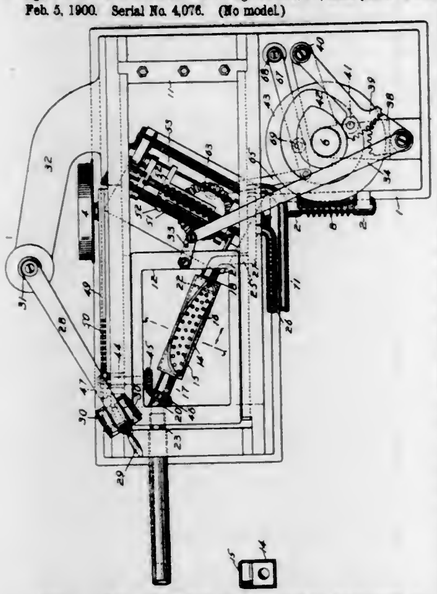
15. In a cigar-rolling machine, the combination with a pair of pivoted levers, means for swinging the levers and their pivot about a common center and for opening the levers, means for closing the levers, a toggle mechanism for also opening the levers, a striker-arm for operating the toggle mechanism, and a second arm for operating the striker-arm, substantially as described.

16. In a cigar-rolling machine, the combination with two pairs of pivoted guides, of pivot-rods carried by said guides, pairs of manipulator-jaws mounted on the pivot-rods, levers for operating the jaws, a rotating operating-rod for each pair of jaws, the levers for the jaws being arranged on opposite sides of the rods, cam-faces on the inner sides of said levers, springs connecting the levers, a toggle mechanism connected to the levers of one pair of jaws, means for stopping the machine so that one pair of jaws will be open and the other closed, and a mechanism independent of the operating-rods for opening the closed pair of jaws, substantially as described.

17. In a cigar-rolling machine, the combination with two pairs of pivoted guides, of pivot-rods carried by said guides, pairs of manipulator-jaws mounted on the pivot-rods, levers for operating the

jaws, a rotating operating-rod for each pair of jaws, the levers for the jaws being arranged on opposite sides of the rods, cam-faces on the inner sides of said levers, springs connecting the levers, a toggle mechanism connected to the levers and one pair of jaws, means for stopping the machine so that one pair of jaws will be open and the other closed, a toggle mechanism for opening the closed pair of jaws, and means for operating the toggle mechanism, substantially as described.

654,198. CIGAR-MACHINE. OLUF TYBERG, New York, N. Y., assignor to Rufus L. Patterson and George Arenta, Jr., same place. Filed Feb. 5, 1900. Serial No. 4,076. (No model.)



Claim.—1. The combination with a wrapping mechanism, of a wrapper-support, means whereby a sheet of thin material is held thereon, cutting devices coöperating with the support to cut a wrapper from the sheet of thin material while on the support, and means for producing a right-line movement between the support and the wrapping mechanism during the wrapping operation, substantially as described.

2. The combination with a wrapping mechanism, of a wrapper-support, means whereby a sheet of thin material is held thereon, cutting devices coöperating with the support to cut a wrapper from the sheet of thin material while on the support, means for reversing the position of the support between the cutting and feeding operations, and means for producing a right-line movement between the support and the wrapping mechanism during the wrapping operation, substantially as described.

3. The combination with a wrapping mechanism, of a suction wrapper-support, cutting devices coöperating with the support to cut a wrapper from a sheet of thin material while on the support, and means for producing a right-line movement between the support and the wrapping mechanism during the wrapping operation, substantially as described.

4. The combination with a wrapping mechanism, of a suction wrapper-support, cutting devices coöperating with the support to cut a wrapper from a sheet of thin material while on the support, means for reversing the position of the support between the cutting and feeding operations, and means for producing a right-line movement between the support and the wrapping mechanism during the wrapping operation, substantially as described.

5. The combination with a wrapping mechanism, of a wrapper-support, means whereby a sheet of thin material is held thereon, cutting devices coöperating with the support to cut a wrapper from the sheet of thin material while on the support, and means for giving the wrapper-support a right-line movement with respect to the wrapping mechanism during the wrapping operation, substantially as described.

6. The combination with a wrapping mechanism, of a wrapper-support, means whereby a sheet of thin material is held thereon, cutting devices coöperating with the support to cut a wrapper from the sheet of thin material while on the support, means for reversing the position of the support between the cutting and feeding operations, and means for giving the wrapper-support a right-line movement with respect to the wrapping mechanism during the wrapping operation, substantially as described.

7. The combination with a wrapping mechanism, of a suction wrapper-support, cutting devices coöperating with the support to cut a wrapper from a sheet of thin material while on the support, and means for giving the wrapper-support a right-line movement with respect to the wrapping mechanism during the wrapping operation, substantially as described.

8. The combination with a wrapping mechanism, of a suction wrapper-support, cutting devices coöperating with the support to cut a wrapper from a sheet of thin material while on the support, means for reversing the position of the support between the cutting and feeding operations, and means for giving the wrapper-support a right-line movement with respect to the wrapping mechanism during the wrapping operation, substantially as described.

9. The combination with a wrapping mechanism, of a wrapper-support, means whereby a wrapper is held on the support, and means for moving the support toward the wrapping mechanism in a right line during the wrapping operation, substantially as described.

10. The combination with a wrapping mechanism, of a wrapper-support, means whereby a wrapper is held on the support, and means for giving the wrapper-support a right-line movement toward the wrapping mechanism during the wrapping operation, said movement taking place in a plane which does not intersect the wrapping mechanism, substantially as described.

11. The combination with a wrapping mechanism, of a wrapper-support, means whereby a wrapper is held on the support, and means for giving the wrapper-support a right-line movement over the wrapping mechanism during the wrapping operation, substantially as described.

12. The combination with a wrapping mechanism, of a wrapper-support, means whereby a wrapper is held on the support, and means for producing a right-line movement between the support and the wrapping mechanism during the wrapping operation, substantially as described.

13. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means whereby a wrapper is held on the support, and means for producing a right-line movement between the support and the wrapping mechanism during the wrapping operation, substantially as described.

14. The combination with a wrapping mechanism, of a suction wrapper-support, and means for moving the support toward the wrapping mechanism in a right line during the wrapping operation, substantially as described.

15. The combination with a wrapping mechanism, of a suction wrapper-support, and means for giving the wrapper-support a right-line movement toward the wrapping mechanism during the wrapping operation, said movement taking place in a plane which does not intersect the wrapping mechanism, substantially as described.

16. The combination with a wrapping mechanism, of a suction wrapper-support, and means for giving the wrapper-support a right-line movement over the wrapping mechanism during the wrapping operation, substantially as described.

17. The combination with a wrapping mechanism, of a suction wrapper-support, and means for producing a right-line movement between the support and the wrapping mechanism during the wrapping operation, substantially as described.

18. The combination with a wrapping mechanism, of a suction wrapper-support lying in a plane which does not intersect the wrapping mechanism, and means for producing a right-line movement between the support and the wrapping mechanism during the wrapping operation, substantially as described.

19. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means whereby a wrapper is held on the support, and means for producing a movement between the wrapper-support and the wrapping mechanism which is the resultant of a movement in a straight line and an angular movement, substantially as described.

20. The combination with a wrapping mechanism, of a suction wrapper-support lying in a plane which does not intersect the wrapping mechanism, and means for producing a movement between the wrapper-support and the wrapping mechanism which is the resultant of a movement in a straight line and an angular movement, substantially as described.

21. The combination with a wrapping mechanism, of a wrapper-support, means whereby a wrapper is held on the support, and means for producing a movement between these parts during the wrapping operation which is the resultant of an angular movement of one of the parts and a right-line-approaching movement of the other part, substantially as described.

22. The combination with a wrapping mechanism, of a wrapper-support, means whereby a wrapper is held on the support, means for giving the wrapper-support an approaching movement in a right line, and means for giving the wrapping mechanism an angular movement, substantially as described.

23. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means whereby a wrapper is held on said support, means for giving the wrapper-support a right-line movement, and means for giving the wrapping mechanism an angular movement, substantially as described.

24. The combination with a wrapping mechanism, of a suction wrapper-support, and means for producing a movement between these parts during the wrapping operation which is the resultant of an angular movement of one of the parts and a right-line-approaching movement of the other part, substantially as described.

25. The combination with a wrapping mechanism, of a suction wrapper-support, means for giving the wrapper-support an approaching movement in a right line, and means for giving the wrapping mechanism an angular movement, substantially as described.

26. The combination with a wrapping mechanism, of a suction wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for giving the wrapper-support a right-line movement, and means for giving the wrapping mechanism an angular movement, substantially as described.

27. The combination with a suction-support, of cutting devices coöperating therewith to cut a sheet of material while on the support, means for giving the support a right-line movement, and means for reversing the position of the support, substantially as described.

28. The combination with a wrapping mechanism, of a wrapper-support, means whereby a wrapper is held thereon, and means for giving the wrapper-support a right-line movement with respect to the wrapping mechanism, the support being arranged at an angle to its line of movement which is other than a right angle, substantially as described.

29. The combination with a wrapping mechanism, of a wrapper-support, means whereby a wrapper is held thereon, means for giving the support a right-line movement, the support being arranged at an angle to its line of movement which is other than a right angle, and means for giving the wrapping mechanism an angular movement during the wrapping operation, substantially as described.

30. The combination with a wrapping mechanism, of a suction wrapper-support, and means for giving the wrapper-support a right-line movement with respect to the wrapping mechanism, the support being arranged at an angle to its line of movement which is other than a right angle, substantially as described.

31. The combination with a wrapping mechanism, of a suction wrapper-support, means for giving the support a right-line movement, the support being arranged at an angle to its line of movement which is other than a right angle, and means for giving the wrapping mechanism an angular movement during the wrapping operation, substantially as described.

32. The combination with a wrapping mechanism, of a wrapper-support, means whereby a sheet of thin material is held thereon, cutting devices coöperating with the support to cut a wrapper from the sheet of thin material while on the support, means for reversing the position of the support and for locking it in either of its two positions, and means for giving it a right-line movement with respect to the wrapping mechanism, substantially as described.

33. The combination with a wrapping mechanism, of a suction wrapper-support, cutting devices coöperating with the support to cut a wrapper from a sheet of thin material while on the support, means for reversing the position of the support and for locking it in either of its two positions, and means for giving it a right-line movement with respect to the wrapping mechanism, substantially as described.

34. The combination with a wrapping mechanism, of a wrapper-support, means whereby a sheet of thin material is held thereon, cutting devices coöperating with the support to cut a wrapper from the sheet of thin material while on the support, means for reversing the position of the support and for locking it in either of its two positions, means for giving it a right-line movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement, substantially as described.

35. The combination with a wrapping mechanism, of a suction wrapper-support, cutting devices coöperating with the support to cut a wrapper from a sheet of thin material held on the support, means for reversing the position of the support and for locking it in either of its two positions, means for giving it a right-line movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement, substantially as described.

36. The combination with a frame, of ways mounted therein, a wrapping mechanism, a carrier, means for reciprocating the carrier along the ways, a wrapper-support arranged diagonally of the carrier, and means whereby a wrapper is held on the support, substantially as described.

37. The combination with a frame, of ways mounted therein, a wrapping mechanism, a carrier, means for reciprocating the carrier along the ways, and a suction wrapper-support arranged diagonally of the carrier, substantially as described.

38. The combination with a frame, of ways mounted therein, a wrapping mechanism, a carrier, a wrapper-support mounted in the carrier, means whereby a wrapper is held on the support, means for reciprocating the carrier, and means for giving the wrapping mechanism an angular movement, substantially as described.

39. The combination with a frame, of ways mounted therein, a wrapping mechanism, means for reciprocating the carrier along the ways, a wrapper-support arranged diagonally of the carrier, means whereby a wrapper is held on the support, and means for giving the wrapping mechanism an angular movement, substantially as described.

40. The combination with a frame, of ways mounted therein, a wrapping mechanism, a carrier, a suction wrapper-support mounted in the carrier, means for reciprocating the carrier, and means for giving the wrapping mechanism an angular movement, substantially as described.

41. The combination with a frame, of ways mounted therein, a wrapping mechanism, means for reciprocating the carrier along the ways, a suction wrapper-support arranged diagonally of the carrier, and means for giving the wrapping mechanism an angular movement, substantially as described.

42. The combination with a frame, of ways mounted therein, a carrier reciprocating in the ways, a wrapping mechanism, a suction-support mounted in the carrier, means for reciprocating the carrier, and means for reversing the position of the support, substantially as described.

43. The combination with a frame, of ways mounted therein, a wrapping mechanism, a carrier, means for reciprocating the carrier along the ways, a suction-support mounted in the carrier, cutting devices coöperating with the support, and means for reversing the position of the support, substantially as described.

44. The combination with a frame, of ways mounted therein, a wrapping mechanism, a carrier, means for reciprocating the carrier along the ways, a suction-support mounted in the carrier, cutting devices coöperating with the support, means for reversing the position of the support, and means for locking the support in either position, substantially as described.

45. The combination with a frame, of ways mounted therein, a wrapping mechanism, a carrier, means for reciprocating the carrier along the ways, a suction-support mounted in the carrier, cutting devices coöperating with the support, a shaft moving with the carrier, gearing between said shaft and the suction-support, a mutilated gear carried by the shaft, and a bar having a toothed portion lying in position to be engaged by the mutilated gear, substantially as described.

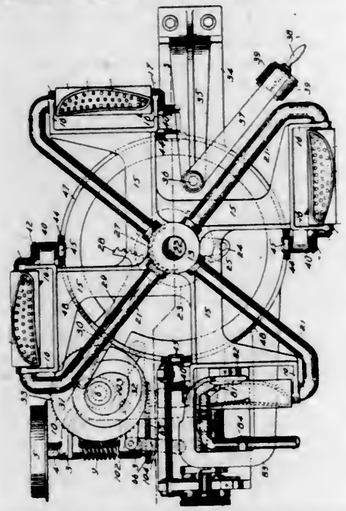
46. The combination with a frame, of ways mounted therein, a wrapping mechanism, a carrier, means for reciprocating the carrier along the ways, a suction-support arranged diagonally of the carrier, cutting devices coöperating with the support, a shaft moving with the carrier, gearing between the shaft and the suction-support, a mutilated gear carried by the shaft, a bar having toothed and plain portions with which the mutilated gear engages, and means for giving the wrapping mechanism an angular movement, substantially as described.

47. The combination with a frame, of ways mounted therein, a wrapping mechanism, a carrier, means for reciprocating the carrier along the ways, a suction-pipe connected to and moving with the carrier, and a stationary pipe with which said pipe is connected, substantially as described.

48. The combination with a frame, of ways mounted therein, a wrapping mechanism, a carrier, means for reciprocating the carrier along the ways, a suction-support mounted in the carrier and consisting of two chambers, a suction-pipe connected with the carrier and communicating with one of the chambers, a suction-box and a blast-pipe lying along the path of travel of the carrier and with which the other chamber successively communicates, substantially as described.

49. The combination with a frame, of ways mounted therein, a wrapping mechanism, a carrier, means for reciprocating the carrier along the ways, a suction-support arranged diagonally of the carrier and having hollow bearings through which the suction acts, said suction-support consisting of two chambers, a suction-pipe connecting with one of the chambers, a suction-box and a blast-pipe arranged along the path of travel of the carrier with which the other chamber of the suction-support successively communicates, cutting devices coöperating with the support, means for reversing the position of the support, and means for giving the wrapping mechanism an angular movement, substantially as described.

654,199. CIGAR-MACHINE. OLUF TYBERG, New York, N. Y., assignor to Rufus L. Patterson and George Arents, Jr., same place. Filed Feb. 5, 1900. Serial No. 4,077. (No model.)



Claim.—1. The combination with a wrapping mechanism and a wrapper-support of means whereby the wrapper is held thereon, means for giving the support an approaching and a traversing movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement, said movements occurring during the wrapping operation, substantially as described.

2. The combination with a wrapping mechanism and a suction wrapper-support of means for giving the support an approaching and a traversing movement, and means for giving the wrapping mechanism an angular movement, said movements occurring during the wrapping operation, substantially as described.

3. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each support, means whereby each of the supports is given an approaching and a traversing movement during the wrapping operation, and means for giving the wrapping mechanism an angular movement, substantially as described.

4. The combination with a wrapping mechanism, of a plurality of suction wrapper-supports, means whereby each of the supports is given an approaching and a traversing movement during the wrapping operation, and means for giving the wrapping mechanism an angular movement, substantially as described.

5. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a sheet of material is held on each support, cutting devices operating to cut a wrapper from the sheet of material while on the support, means whereby each of the supports is given an approaching and a traversing movement during the wrapping operation, and means for giving the wrapping mechanism an angular movement, substantially as described.

6. The combination with a wrapping mechanism, of a plurality of suction wrapper-supports, cutting devices operating to cut a wrapper from a sheet of material while held on each support, means whereby each of the supports is given an approaching and a traversing movement during the wrapping operation, and means for giving the wrapping mechanism an angular movement, substantially as described.

7. The combination with a plurality of arms, of means whereby each arm is caused to carry a suction wrapper-support, a plurality of pipes independent of the arms, one connected with each support, and means for reversing the position of the supports, substantially as described.

8. The combination with an arm, of means for moving it, a wrapper-support revolubly mounted with respect thereto, the axis of rotation of the support lying in the general direction of the path of movement of the arm, substantially as described.

9. The combination with an arm, of means for moving it, a suction wrapper-support revolubly mounted with respect thereto, the axis of rotation of the support lying in the general direction of the path of movement of the arm, substantially as described.

10. The combination with an arm mounted to move about a center, of a wrapper-support revolubly mounted with respect thereto, the axis of rotation of the support lying in the general directon of the path of movement of the arm, substantially as described.

11. The combination with an arm mounted to move about a center, of a suction wrapper-support revolubly mounted with respect thereto, the axis of rotation of the support lying in the general direction of the path of movement of the arm, substantially as described.

12. The combination with a wrapping mechanism, of an arm mounted to move in a plane which does not intersect the wrapping mechanism, and a suction wrapper-support revolubly mounted with respect to the arm, the axis of rotation of the support lying in the general direction of the path of movement of the arm, substantially as described.

13. The combination with a wrapping mechanism, of an arm mounted to move about a center in a plane which does not intersect the wrapping mechanism, and a suction wrapper-support revolubly mounted with respect to the arm, the axis of rotation of the support lying in the general direction of the path of movement of the arm, substantially as described.

14. The combination with a wrapping mechanism, of a wrapper-support operating to deliver a wrapper thereto, said support at the time of delivering the wrapper lying in a plane which does not intersect the wrapping mechanism, means for producing a relative approaching movement between the wrapping mechanism and the support, and means for giving the support a rotating movement about an axis which extends in the general direction of the line of the approaching movement, substantially as described.

15. The combination with a wrapping mechanism, of a suction wrapper-support operating to deliver a wrapper thereto, said support at the time of delivering the wrapper lying in a plane which does not intersect the wrapping mechanism, means for producing a relative approaching movement between the wrapping mechanism and the support, and means for giving the support a rotating movement about an axis which extends in the general direction of the line of the approaching movement, substantially as described.

16. The combination with a wrapping mechanism, of a wrapper-support operating to deliver a wrapper thereto, said support at the time of delivering the wrapper lying in a plane which does not intersect the wrapping mechanism, means for producing a relative approaching movement between the wrapping mechanism and the support, means for giving the support a rotating movement about an axis which extends in the general direction of the line of the approaching movement, and means for giving the wrapping mechanism an angular movement, substantially as described.

17. The combination with a wrapping mechanism, of a suction wrapper-support operating to deliver a wrapper thereto, said support at the time of delivering the wrapper lying in a plane which does not intersect the wrapping mechanism, means for producing a relative approaching movement between the wrapping mechanism and the support, means for giving the support a rotating movement about an axis which extends in the general direction of the line of the approaching movement, and means for giving the wrapping mechanism an angular movement, substantially as described.

18. The combination with a frame, of a shaft mounted therein, means for rotating the shaft, a plurality of arms carried by the shaft, a slide mounted in each of the arms, means for moving the slides, a suction wrapper-support carried by each slide, and means for reversing the position of the supports, substantially as described.

19. The combination with a frame, of a wrapping mechanism, a shaft supported in the frame, means for rotating the shaft, arms carried by the shaft, a slide mounted in each of the arms, means for moving the slides, a suction-support carried by each of the slides, and means for reversing the position of the supports, substantially as described.

20. The combination with a frame, of a wrapping mechanism, a shaft mounted in the frame, means for rotating the shaft, a plurality of arms carried by the shaft, a slide mounted in each of the arms, means for moving the slides, a suction wrapper-support carried by each of the slides, cutting devices coöperating with each of the supports to cut a wrapper from a sheet of material held on each support, and means for reversing the position of the supports, substantially as described.

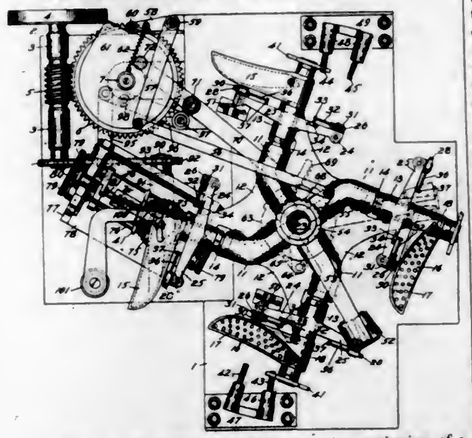
21. The combination with a frame, of a wrapping mechanism, a shaft supported in the frame, means for rotating the shaft, arms carried by the shaft, a slide mounted in each of the arms, means for moving the slides, a suction-support carried by each of the slides, means for reversing the position of the supports, and means for giving the wrapping mechanism an angular movement, substantially as described.

22. The combination with a frame, of a wrapping mechanism, a shaft mounted in the frame, means for rotating the shaft, a plurality of arms carried by the shaft, a slide mounted in each of the arms, means for moving the slides, a suction wrapper-support carried by each of the slides, cutting devices coöperating with each of the supports to cut a wrapper from a sheet of material held on each support, means for reversing the position of the supports, and means for giving the wrapping mechanism an angular movement, substantially as described.

23. The combination with a frame, of a shaft mounted therein, means for rotating the shaft, a plurality of arms connected to the shaft, a slide carried by each of the arms, means for moving the slides, a suction wrapper-support carried by each of the slides, a mutilated gear carried by each of the arms, a toothed ring mounted in the frame, gearing between the mutilated gear and the suction wrapper-supports, a wrapping mechanism, and means for giving the wrapping mechanism an angular movement, substantially as described.

24. The combination with a frame, of a shaft mounted therein, means for rotating the shaft, a plurality of arms connected to the shaft, a slide carried by each of the arms, means for moving the slides, a suction wrapper-support carried by each of the slides, cutting devices coöperating with each of the supports to cut a wrapper from a sheet of material held on each support, a mutilated gear carried by each of the arms, a toothed ring mounted in the frame, gearing between the mutilated gear and each of the suction wrapper-supports, a wrapping mechanism, and means for giving the wrapping mechanism an angular movement, substantially as described.

654,200. CIGAR-MACHINE. OLUF TYBERG, New York, N. Y., assignor to Rufus L. Patterson and George Arents, Jr., same place. Filed Feb. 5, 1900. Serial No. 4,078. (No model.)



Claim.—1. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, means for giving the supports a rotating approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement, substantially as described.

2. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, means for giving the supports a rotating approaching movement with respect to the wrapping mechanism, means for reversing the position of each support after a wrapper has been placed thereon, and means for giving the wrapping mechanism an angular movement, substantially as described.

3. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a sheet of material is held on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while it is held on the support, means for reversing the position of the supports, means for giving the supports a rotating approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the supports, substantially as described.

4. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, means for giving the supports a rotating approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement, substantially as described.

5. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, means for giving the supports a rotating approaching movement with respect to the wrapping mechanism, means for reversing the position of the supports after a wrapper has been placed thereon, and means for giving the wrapping mechanism an angular movement, substantially as described.

6. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a sheet of material on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while it is held on the support, means for reversing the position of the supports, means for giving the supports a rotating approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the supports, substantially as described.

7. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, and means for producing a relative approaching movement between the supports and the wrapping mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, substantially as described.

8. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, means for producing a relative approaching movement between the supports and the wrapping mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, and means for giving the wrapping mechanism an angular movement, substantially as described.

9. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, and means for producing a relative approaching movement between the supports and the wrapping mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, substantially as described.

10. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, means for producing a relative approaching movement between the supports and the wrapping mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, and means for giving the wrapping mechanism an angular movement, substantially as described.

11. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, and means for causing the wrapper-supports to execute an approaching movement with respect to the wrapping mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, substantially as described.

12. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, means for causing the wrapper-supports to execute an approaching movement with respect to the wrapping mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, and means for giving the wrapping mechanism an angular movement, substantially as described.

13. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, and means for causing the wrapper-supports to execute an approaching movement with respect to the wrapping mechanism, the supports and the wrapping mechanism being so ar-

ranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, substantially as described.

14. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, means for causing the wrapper-supports to execute an approaching movement with respect to the wrapping mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mech anism at the end of said operation, and means for giving the wrapping mechanism an angular movement, substantially as described.

15. The combination with a carrier-arm, of means for moving said arm, a wrapper-support mounted on the arm, means whereby a wrapper is held on the support, means for maintaining the support in either of two positions with respect to the arm, a tumbler-block connected with the support, and means located in the path of travel of the arms and coöperating with the tumbler-block to shift the wrapper-support from one position to the other, substantially as described.

16. The combination with a wrapping mechanism, of a carrier-arm, means for moving said arm, a suction wrapper-support mounted on the arm, means for maintaining the support in either of two positions with respect to the arm, a tumbler-block connected with the support, means located in the path of travel of the arms and coöperating with the tumbler-block to shift the wrapper-support from one position to the other, and means for giving the wrapping mechanism an angular movement, substantially as described.

17. The combination with a carrier-arm, of means for moving said arm, a wrapper-snpport carried by the arm, means whereby a wrapper is held on the support, latch devices operating to hold the support in either of two positions with respect to the arm, releasing devices located in the path of travel of the arm for operating on the latch devices, a tumbler-block connected with the support, and means also located in the path of travel of the arm for operating on the tumbler-block and shifting the support from one position to the other, substantially as described.

18. The combination with a wrapping mechanism, of a carrier-arm, means for moving said arm, a suction wrapper-support carried by the arm, latch devices operating to hold the support in either of two positions with respect to the arm, releasing devices located in the path of travel of the arm for operating on the latch devices, a tumbler-block connected with the support, means also located in the path of travel of the arm for operating on the tumbler-block and shifting the support from one position to the other, and means for giving the wrapping mechanism an angular movement, substantially as described.

19. The combination with a wrapping mechanism, of a carrier-arm, means for moving said arm, a suction wrapper-support carried by the arm, said support being so arranged with respect to the wrapping mechanism that the end of the support which carries the tuck end of the wrapper is in alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation and the other end of the support being in alinement with the other end of the wrapping mechanism at the end of the operation, latch devices operating to hold the support in either of two positions with respect to the arm, releasing devices located in the path of travel of the arm for operating on the latch devices, a tumbler-block connected with the support, means also located in the path of travel of the arm for operating on the tumbler-block and shifting the support from one position to the other, and means for giving the wrapping mechanism an angular movement, substantially as described.

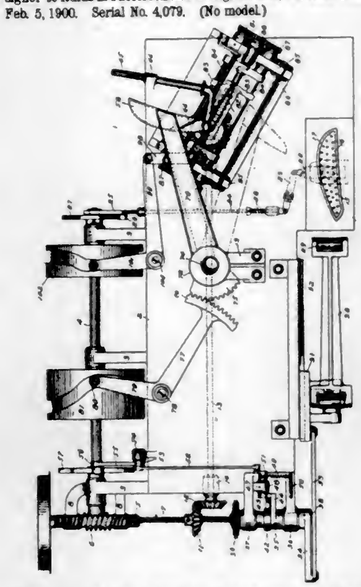
20. The combination with a wrapper-support, the operating-face of which has a movable section, of a spring-rod for moving the section, and means for actuating the rod, substantially as described.

21. The combination with a wrapper-support, the operating-face of which is formed by a perforated plate, said plate having a movable section, of a spring-rod for moving the section, and means for actuating the rod, substantially as described.

22. The combination with a wrapping mechanism, of a carrier-arm, a wrapper-support mounted on the arm, the operating-face of said support having a movable section, a spring-rod for moving the section, means for moving the arm, and a cam located near the wrapping mechanism with which the spring-rod comes in contact and by which it is actuated to move the movable section, substantially as described.

23. The combination with a wrapping mechanism, of a plurality of carrier-arms, means for moving said arms, a suction wrapper-support carried by each of the arms, latch devices operating to hold the supports in either of two positions with respect to the arms, pins located in the path of travel of the arms for releasing each of the latch devices, a tumbler-block connected with each support, and pins also located in the path of travel of the arms for operating on the tumbler-blocks and shifting the supports from one position to the other, substantially as described.

654,201. CIGAR-MACHINE. OLUF TYBERG, New York, N. Y., assignor to Rufus L. Patterson and George Arenta, Jr., same place. Filed Feb. 5, 1900. Serial No. 4,079. (No model.)



Claim.—1. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the support during the wrapping operation, substantially as described.

2. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying above the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support during the wrapping operation, substantially as described.

3. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for producing a relative approaching movement between the wrapper-support and the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the support during the wrapping operation, substantially as described.

4. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper support lying above the wrapping mechanism, means for producing a relative approaching movement between the wrapper-support and the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the support during the wrapping operation, substantially as described.

5. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for giving the wrapper-support a movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support during the wrapping operation, substantially as described.

6. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for giving the wrapper-support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support during the wrapping operation, substantially as described.

7. In a cigar-machine, the combination witl a wrapping mechanism, of a wrapper-support lying above the wrapping mechanism, means for giving the wrapper-support a movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support during the wrapping operation, substantially as described.

8. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying above the wrapping mechanism, means for giving the wrapper-support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support during the wrapping operation, substantially as described.

9. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, and means for giving the wrapping mechanism an angular movement with respect to the support during the wrapping operation, substantially as described.

10. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper lying in a plane which does not intersect the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the support during the wrapping operation, substantially as described.

11. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper lying above the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support during the wrapping operation, substantially as described.

12. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper lying in a plane which does not intersect the wrapping mechanism, means for producing a relative approaching movement between the support and the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the support during the wrapping operation, substantially as described.

13. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper lying above the wrapping mechanism, means for producing a relative approaching movement between the support and the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the support during the wrapping operation, substantially as described.

14. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for giving the wrapper-support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support during the wrapping operatiou, substantially as described.

15. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper lying in a plane which does not intersect the wrapping mechanism, means for giving the wrapper-support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support during the wrapping operation, substantially as described.

16. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper lying above the wrapping mechanism, means for giving the wrapper-support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support during the wrapping operation, substantially as described.

17. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for giving one of said parts an angular movement, and means for giving the other of said parts an approaching movement during the wrapping operation, substantially as described.

18. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for giving one of said parts an angular movement, and means for giving the other of said parts an approaching movement during the wrapping operation, substantially as described.

19. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, and means for giving the wrapper-support a movement with respect to the wrapping mechanism, the movement being such that one end of the wrapper-support is in alinement with one end of the wrapping mechanism at the beginning of the wrapping operation, and the other end of the wrapper-support is in alinement with the other end of the wrapping mechanism at the completion of the wrapping operation, substantially as described.

20. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper located above the wrapping mechanism, and means for giving the wrapper-support a movement with respect to the wrapping mechanism, the movement being such that one end of the wrapper-support is in alinement with one end of the wrapping mechanism at the beginning of the wrapping operation, and the other end of the wrapper-support is in alinement with the other end of the wrapping mechanism at the completion of the wrapping operation, substantially as described.

21. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for giving the wrapper-support a movement with respect to the wrapping mechanism, the movement being such that one end of the wrapper-support is in alinement with one end of the wrapping mechanism at the beginning of the wrapping operation, and the other end of the wrapper-support is in alinement with the other end of the wrapping mechanism at the completion of the wrapping operation, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support, substantially as described..

22. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper located above the wrapping mechanism, means for giving the wrapper-support a movement with respect to the wrapping mechanism, the movement being such that one end of the wrapper-support is in alinement with one end of the wrapping mechanism at the beginning of the wrapping operation, and the other end of the wrapper-support is in alinement with the other end of the wrapping mechanism at the completion of the wrapping operation, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support, substantially as described.

23. In a cigar-machine, the combination with a wrapping mechanism mounted to turn about a center, of an arm swinging in a plane which does not intersect the wrapping mechanism and carrying a wrapper-support, means for turning the arm about its center, and means for turning the wrapping mechanism about its center, substantially as described.

24. In a cigar-machine, the combination with a wrapping mechanism mounted to turn about a center, of an arm swinging in a plane which does not intersect the wrapping mechanism and having a wrapper-support rigidly fixed thereto, means for turning the arm about its center, and means for turning the wrapping mechanism about its center, substantially as described.

25. In a cigar-machine, the combination with a wrapping mechanism mounted to turn about a center, of an arm over the wrapping mechanism and having a wrapper-support rigidly fixed thereto, means for turning the arm about its center, and means for turning the wrapping mechanism about its center, substantially as described.

26. In a cigar-machine, the combination with a wrapping mechanism mounted to turn about a center, of an arm carrying a suction-support for the wrapper, means for swinging the arm about a center, and means for turning the wrapping mechanism about its center, substantially as described.

27. In a cigar-machine, the combination with a wrapping mechanism mounted to turn about a center, of an arm carrying a suction-support for the wrapper rigidly fixed thereto, means for swinging the arm about a center, and means for turning the wrapping mechanism about its center, substantially as described.

28. In a cigar-machine, the combination with a wrapping mechanism mounted to turn about a center, of an arm swinging about a center, a wrapper-support rigidly fixed thereto and standing at an angle to the arm which is other than a right angle, means for swinging the arm, and means for turning the wrapping mechanism about its center, substantially as described.

29. In a cigar-machine, the combination with a wrapping mechanism mounted to turn about a center, of an arm swinging about a center, a suction-support for the wrapper rigidly fixed thereto and standing at an angle to the arm which is other than a right angle, means for swinging the arm, and means for turning the wrapping mechanism about its center, substantially as described.

30. The combination with a wrapping mechanism mounted to swing about a center, of a shaft passing through said center, driving connections between the shaft and the wrapping mechanism, means for driving the shaft, and means for moving the wrapping mechanism, substantially as described.

31. The combination with a wrapping mechanism mounted to turn about a center, of a driving-shaft, an intermediate shaft passing through the center about which the wrapping mechanism turns, driving connections between the two shafts, driving connections between the wrapping mechanism and the intermediate shaft, and means for turning the wrapping mechanism abont its center, substantially as described.

32. In a cigar-machine, the combination with a pivotally-mounted wrapping mechanism, of a pivotally-mounted arm carrying a suction-support for the wrapper, a suction cutting-bed, suction-controlling devices for the bed, means coöperating with the bed to cut a wrapper, and operating mechanism for the suction-controlling devices for the cutting-bed, for swinging the arm about its center, and for

swinging the wrapping mechanism about its center, substantially as described.

33. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, and means for producing a relative approaching movement between the support and the wrapping mechanism, the support being so arranged with respect to the wrapping mechanism that at the beginning of the wrapping operation that end of the support which carries the tuck end of the wrapper will be in substantially-vertical alinement with that end of the wrapping mechanism which operates upon the tuck end of the bunch and at the end of the wrapping operation the other end of the support will be in substantially-vertical alinement with the other end of the wrapping mechanism, substantially as described.

34. In a cigar-machine, the combination with a wrapping mechanism, of a suction wrapper-support, and means for producing a relative approaching movement between the support and the wrapping mechanism, the support being so arranged with respect to the wrapping mechanism that at the beginning of the wrapping operation that end of the support which carries the tuck end of the wrapper will be in substantially-vertical alinement with that end of the wrapping mechanism which operates upon the tuck end of the bunch and at the end of the wrapping operation the other end of the support will be in substantially-vertical alinement with the other end of the wrapping mechanism, substantially as described.

35. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for producing a relative approaching movement between the support and the wrapping mechanism, the support being so arranged with respect to the wrapping mechanism that at the beginning of the wrapping operation that end of the support which carries the tuck end of the wrapper will be in substantially-vertical alinement with that end of the wrapping mechanism which operates upon the tuck end of the bunch and at the end of the wrapping operation the other end of the support will be in substantially-vertical alinement with the other end of the wrapping mechanism, and means for giving the wrapping mechanism an angular movement, substantially as described.

36. In a cigar-machine, the combination with a wrapping mechanism, of a suction wrapper-support, means for producing a relative approaching movement between the support and the wrapping mechanism, the support being so arranged with respect to the wrapping mechanism that at the beginning of the wrapping operation that end of the support which carries the tuck end of the wrapper will be in substantially-vertical alinement with that end of the wrapping mechanism which operates upon the tuck end of the bunch and at the end of the wrapping operation the other end of the support will be in substantially-vertical alinement with the other end of the wrapping mechanism, and means for giving the wrapping mechanism an angular movement, substantially as described.

37. In a cigar-machine, the combination with a swinging arm carrying a wrapper-support rigidly fixed thereto, so that its ends travel in parallel arcs, of a wrapping mechanism, and means for giving the wrapping mechanism an angular movement, the movement of the two being such that one end of the wrapper-support and one end of the wrapping mechanism are in substantially-vertical alinement at the beginning of the wrapping operation and the other end of the support and the other end of the wrapping mechanism are in substantially-vertical alinement at the end of said operation, substantially as described.

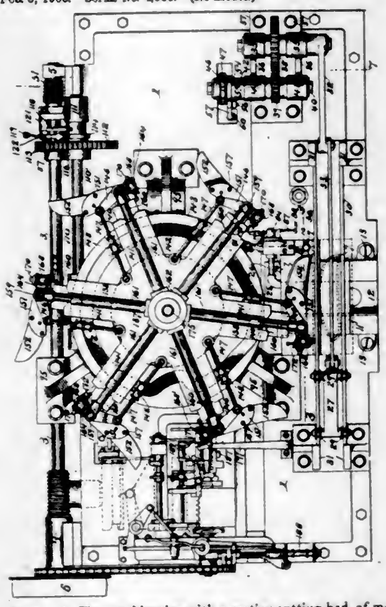
38. In a cigar-machine, the combination with a wrapping mechanism, of an arm, means for swinging the arm in a plane which does not intersect the wrapping mechanism, a wrapper-support fixed to the arm in such a position that its ends travel in parallel arcs, and means for giving the wrapping mechanism an angular movement, the movement of the two being such that one end of the wrapper-support and one end of the wrapping mechanism are in substantially-vertical alinement at the beginning of the wrapping operation and the other end of the support and the other end of the wrapping mechanism are in substantially-vertical alinement at the end of said operation, substantially as described.

39. In a cigar-machine, the combination with a vertical shaft, of a wrapping mechanism mounted to swing about the shaft as a center, gear connections between said shaft and the driving-shaft of the cigar-machine, and means for driving the vertical shaft, substantially as described.

40. In a cigar-machine, the combination with a vertical shaft of a wrapping mechanism mounted to swing about the shaft as a center, a cam and suitable connections for swinging the wrapping mechanism, gear connections between said vertical shaft and the driving-shaft of the cigar-machine, and means for driving the vertical shaft, substantially as described.

41. In a cigar-machine, the combination with a pivotally-mounted wrapping mechanism, of an arm, means for swinging the arm with respect to the wrapping mechanism, a suction wrapper-support rigidly fixed to the arm in such position that its ends travel in parallel arcs, a shaft, a cam on said shaft, connections between the cam and the arm, whereby the cam is caused to swing the arm, a second cam on the shaft, and connections between said second cam and the wrapping mechanism, whereby said cam is caused to turn said wrapping mechanism on its pivot, and means for driving the wrapping mechanism in any of its positions, substantially as described.

654,202. CIGAR-MACHINE. OLUF TYBERG, New York, N. Y., assignor to Rufus L. Patterson and George Arenta, Jr., same place. Filed Feb. 5, 1900. Serial No. 4,080. (No model.)



Claim.—1. The combination with a suction cutting-bed, of means for giving it a horizontal reciprocation between the cutting and delivery points, and means for vertically reciprocating the bed from its normal position into a position to deliver a wrapper, substantially as described.

2. The combination with a suction cutting-bed, of means for giving it a horizontal reciprocation between the cutting and delivery points, and means for vertically reciprocating the bed to move it into a position to deliver a wrapper and simultaneously cutting off the suction therefrom, substantially as described.

3. The combination with a wrapping mechanism, of a moving wrapper-support operating to deliver a wrapper to the wrapping mechanism, a cutting-bed, means coöperating with the cutting-bed for cutting a wrapper, and means for reciprocating the cutting-bed toward and away from the path of travel of the wrapper-support, substantially as described.

4. The combination with a wrapping mechanism, of a moving wrapper-support operating to deliver a wrapper to the wrapping mechanism, a cutting-bed, means coöperating with the cutting-bed for cutting a wrapper, means for moving the cutting-bed toward the path of movement of the support, means for moving it toward and away from the support, and means for moving it away from the path of movement of the support, substantially as described.

5. The combination with a wrapping mechanism, of a moving suction wrapper-support operating to deliver a wrapper to the wrapping mechanism, a suction cutting-bed, means coöperating with the cutting-bed for cutting a wrapper, and means for reciprocating the cutting-bed toward and away from the path of travel of the wrapper-support, substantially as described.

6. The combination with a wrapping mechanism, of a moving suction wrapper-support operating to deliver a wrapper to the wrapping mechanism, a suction cutting-bed, means coöperating with the cutting-bed for cutting a wrapper, means for moving the cutting-bed toward the path of movement of the support, means for moving it toward and away from the support, and means for moving it away from the path of movement of the support, substantially as described.

7. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to feed wrappers to the wrapping mechanism, a cutting-bed, means coöperating with the cutting-bed for cutting a wrapper, and means for moving the bed toward and away from the path of movement of the supports, substantially as described.

8. The combination with a wrapping mechanism, of a plurality of wrapper-supports operating to feed wrappers to the wrapping mechanism, a cutting-bed, means coöperating with the cutting-bed for cutting a wrapper, means for moving the cutting-bed toward the path of movement of the supports, means for moving it toward and away from the supports, and means for moving it away from the path of movement of the supports, substantially as described.

9. The combination with a wrapping mechanism, of a plurality of suction wrapper-supports operating to feed wrappers to the wrapping mechanism, a suction cutting-bed, means coöperating with the cutting-bed for cutting a wrapper, and means for moving the cutting-bed toward and away from the path of movement of the supports substantially as described.

10. The combination with a wrapping mechanism, of a plurality of suction wrapper-supports operating to feed wrappers to the wrapping mechanism, a suction cutting-bed, means coöperating with the cutting-bed for cutting a wrapper, means for moving the cutting-bed toward the path of movement of the supports, means for moving it toward and away from the supports, and means for moving it away from the path of movement of the supports, substantially as described.

11. The combination with a wrapping mechanism, of a plurality of suction wrapper-supports operating to deliver wrappers to the wrapping mechanism, a suction cutting-bed, means coöperating with the cutting-bed for cutting a wrapper, means for moving the cutting-bed toward the path of movement of the suction-supports, means for moving it toward the supports, means for cutting off the suction as it is moved toward the supports, means for moving it away from the supports, and means for moving it away from the path of movement of the supports, substantially as described.

12. The combination with a wrapper-cutting knife, of a base upon which said knife is supported, a suction cutting-bed inclosed by the knife, means for reciprocating the base, bed and knife, means for reciprocating the bed from its normal position into a position to deliver a wrapper, said movement being at an angle to the movement of the base, bed and knife, and means for cutting off the suction from the bed, substantially as described.

13. The combination with a wrapper-cutting knife, of a base upon which said knife is supported, a suction cutting-bed inclosed by the knife, a suction-pipe leading to said bed, a cam-operated lever for reciprocating the base, bed and knife, a second cam-operated lever for reciprocating the bed at an angle to the reciprocation of the base, bed and knife, and means operated by said second lever for controlling the suction-pipe leading to the cutting-bed, substantially as described.

14. The combination with a wrapper-cutting knife, of a suction cutting-bed inclosed by the knife, a suction-pipe leading to said bed, a spring-operated valve for controlling the pipe, a latch for holding the valve in inoperative position, a lever for reciprocating the bed with respect to the knife, a lever for releasing the latch, and connections between the two levers, substantially as described.

15. The combination with a knife, of a base on which it is supported, means for reciprocating the base, a suction cutting-bed inclosed by the knife, a suction-pipe leading to said bed, a valve moving with the base, a lever in the path of movement of the valve means thrown into operation by the lever for closing the valve, a lever and suitable connections for moving the bed with respect to the knife, and connections between the two levers, substantially as described.

16. The combination with a plurality of arms, of means whereby each arm is caused to carry a suction wrapper-support, and a plurality of pipes independent of the arms, one connecting with each of the supports, substantially as described.

17. The combination with a wrapping mechanism, of a cutting-bed, means coöperating therewith to cut a wrapper, a plurality of wrapper-supports, means for transferring a wrapper from the cutting-bed to each of the supports, and means for causing each of the supports to deliver its wrapper to the wrapping mechanism, substantially as described.

18. The combination with a wrapping mechanism, of a suction cutting-bed, means coöperating with the bed to cut a wrapper, a plurality of suction wrapper-supports, means for transferring a wrapper from the cutting-bed to each of the supports, and means for causing each of the supports to deliver its wrapper to the wrapping mechanism, substantially as described.

19. The combination with a wrapping mechanism, of a cutting-bed, means coöperating therewith to cut a wrapper, a plurality of wrapper-supports, means for transferring a wrapper from the cutting-bed to each of the supports, and means for producing an approaching movement between each of the supports and the wrapping mechanism as it delivers its wrapper to the wrapping mechanism, substantially as described.

20. The combination with a wrapping mechanism, of a cutting-bed, means coöperating therewith to cut a wrapper, a plurality of wrapper-supports, means for transferring a wrapper from the cutting-bed to each of the supports, and means for producing a traversing movement between each of the supports and the wrapping mechanism as it delivers its wrapper to the wrapping mechanism, substantially as described.

21. The combination with a wrapping mechanism, of a cutting-bed, means coöperating therewith to cut a wrapper, a plurality of wrapper-supports, means for transferring a wrapper from the cutting-bed to each of the supports, and means for producing an angular movement between each of the supports and the wrapping mechanism as it delivers its wrapper to the wrapping mechanism, substantially as described.

22. The combination with a wrapping mechanism, of a cutting-bed, means coöperating therewith to cut a wrapper, a plurality of wrapper-supports, means for transferring a wrapper from the cutting-bed to each of the supports, and means for producing a movement between each of the supports and the wrapping mechanism as it delivers its wrapper to the wrapping mechanism which is the resultant of an approaching movement, a traversing movement and an angular movement, substantially as described.

23. The combination with a carrier provided with a plurality of guides, of a plurality of slides mounted in the guides, a plurality of wrapper-supports mounted on the slides, a stationary cam, means for rotating the carrier, and means whereby a stationary cam causes a movement of the slides toward and away from the center of rotation of the carrier, substantially as described.

24. The combination with a wrapping mechanism, of a carrier provided with a plurality of guides, a plurality of slides mounted in the guides, a plurality of suction wrapper-supports mounted on the slides, a stationary cam, means for rotating the carrier, and means whereby the stationary cam causes a movement of the slides toward and away from the center of rotation of the carrier, substantially as described.

25. The combination with a carrier provided with a plurality of guides, of a plurality of slides mounted in the guides, a plurality of pivoted wrapper-supports carried by the slides, means for rotating the carrier, a cam for causing the slides to move toward and from the center of rotation of the carrier, and a radius-bar connected to the carrier and the supports and operating to turn the supports on their pivots as the slides are moved by the cam, substantially as described.

26. The combination with a wrapping mechanism, of a carrier provided with a plurality of guides, a plurality of slides mounted in the guides, a plurality of pivoted suction wrapper-supports carried by the slides, means for rotating the carrier, a cam for causing the slides to move toward and from the center of rotation of the carrier, and a radius-bar connected to the carrier and the supports and operating to turn the supports on their pivots as the slides are moved by the cam, substantially as described.

27. The combination with a wrapping mechanism of a wrapper-support, means for producing a relative movement between the wrapping mechanism and the support during the wrapping operation, and a radius-bar for controlling the movement, substantially as described.

28. The combination with a wrapping mechanism, of a rotating carrier, a wrapper-support mounted thereon, means for moving the wrapper-support toward and away from the axis of the carrier during its rotating movement, and a radius-bar connected to the support and the carrier, substantially as described.

29. The combination with a shaft, of a carrier mounted thereon, a plurality of suction-supports, a valve-chamber with which all the suction-supports are connected, a valve in the chamber, and means for operating the valve so that the suction will operate on two of the supports, substantially as described.

30. The combination with a wrapping mechanism, of a cutting-bed, a carrier, a plurality of suction-supports, means for rotating the carrier so as to cause the supports to pass in succession over the cutting-bed and the wrapping mechanism, the construction being so arranged that when one of the supports is over the cutting-bed another is over the wrapping mechanism, and means for cutting off the suction from all the supports, except the two which are coöperating with the wrapping mechanism and the bed, substantially as described.

31. The combination with a wrapping mechanism, of a cutting-bed, a carrier, a plurality of suction-supports, a valve-chamber with which all the suction-supports are connected, a valve in the chamber, said valve being constructed so as to communicate with two of the suction-chambers simultaneously, a cam, and suitable connections for operating the valve, substantially as described.

32. The combination with a wrapping mechanism, of a carrier, a plurality of pivoted suction wrapper-supports, each of said supports being divided into two chambers, a suction-pipe connected to one of the chambers, a pipe connected to the other chamber, a valve-casing

connecting the two pipes, a blast-pipe also connected to the valve-casing, a valve in the casing, means for rotating the carrier, and means in the path of rotation of the carrier for operating the valve to close the connection with the suction-pipe and open the connection with the blast-pipe, substantially as described.

33. The combination with a wrapping mechanism, of a wrapper-support operating to present a wrapper to the wrapping mechanism, a carrier to which the wrapper-support is connected, and means for imparting a variable rotation to the carrier so that the movement of the support varies according to the part of the cigar-bunch being wrapped, substantially as described.

34. The combination with a wrapping mechanism, of a shaft, a carrier mounted on the shaft, a wrapper-support, a driving-wheel for the shaft, a rocking connection between the driving-wheel and the shaft, a cam for operating the connection, said cam and connection operating to vary the rotation of the shaft with respect to that of the driving-wheel, substantially as described.

35. The combination with a wrapping mechanism, of a shaft, a carrier mounted on the shaft, a wrapper-support, an arm extending from the shaft, a driving-wheel, a short shaft journaled in the wheel, said shaft having an arm which engages the arm extending from the shaft, an arm extending from the other end of the short shaft, and a cam with which said arm engages, said cam being arranged to rock the short shaft and thus vary the rotation of the carrier-shaft with respect to the driving-wheel, substantially as described.

36. The combination with a shaft, of a driving-wheel therefor, an arm extending from the shaft, a cam, a short shaft journaled in the driving-wheel and having an arm which engages the arm extending from the first-named shaft and another arm which engages the cam, the cam being arranged to rock the short shaft and thus vary the rotation of the first-named shaft with respect to the driving-wheel, substantially as described.

37. The combination with a wrapping mechanism, of a wrapper-support, means for producing an approaching movement between the wrapping mechanism and the support, and means for varying the rate of said movement, substantially as described.

38. The combination with a wrapping mechanism, of a wrapper-support, means for giving the support an approaching movement with respect to the wrapping mechanism, and means for varying the rate of said movement.

39. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for causing the support to deliver the wrapper to the wrapping mechanism by a movement which is the resultant of an approaching movement, an angular movement and a traversing movement, and means for varying the rate at which the wrapper-support moves with respect to the wrapping mechanism according to the part of the cigar-bunch being wrapped, substantially as described.

40. The combination with a wrapping mechanism, of a suction wrapper-support having a perforated operating-face, means for causing the wrapper-support to deliver its wrapper to the wrapping mechanism, and means for successively closing the perforations in the support as the wrapper is removed therefrom, substantially as described.

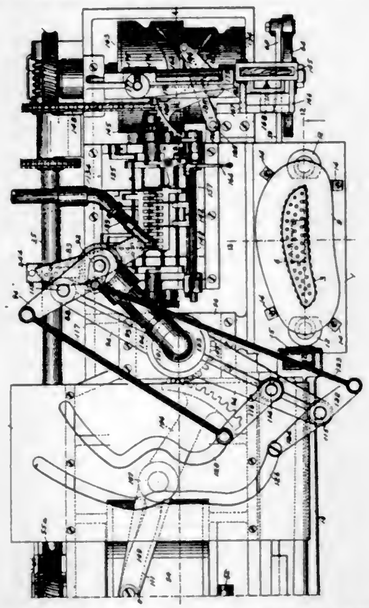
41. The combination with a wrapping mechanism, of a suction wrapper-support having a perforated operating-face, means for moving the wrapper-support so as to cause it to deliver its wrapper to the wrapping mechanism, and a plate lying in the path of the wrapper-support and operating to close the perforations in the face of the support as the support delivers its wrapper to the wrapping mechanism, substantially as described.

654,203. CIGAR-MACHINE. OLUF TYBERG, New York, N. Y., assignor to Rufus L. Patterson and George Arents, Jr., same place. Filed Feb. 5, 1900. Serial No. 4,061. (No model.)

Claim.—1. In a cutting mechanism, the combination with a cutting-bed carrying a knife, of a device coöperating with the knife to produce a cut, means for producing a relative reciprocating movement between the coöperating cutting device and the bed, and means whereby the coöperating cutting device is caused to coöperate with one part of the knife on the forward stroke of the reciprocation and with the remainder of the knife during the return stroke, substantially as described.

2. In a cutting mechanism, the combination with a cutting-bed carrying a knife, of a device coöperating with the knife to produce a cut, means for reciprocating the coöperating cutting device over the knife, and means whereby the coöperating cutting device is caused to coöperate with one part of the knife on the forward stroke of the reciprocation and with the remainder of the knife during the return stroke, substantially as described.

3. The combination with a cutting-bed carrying a knife, of a roller coöperating therewith, mechanism for reciprocating the roller over the knife, and means whereby the roller is caused to coöperate with a part of the knife during one part of the reciprocation and with the remainder of the knife during the remainder of the reciprocation, substantially as described.



4. The combination with a cutting-bed carrying a knife, of a device coöperating with the knife to produce a cut, means for producing a relative reciprocating movement between the coöperating device and the knife, and means for holding said device at an angle to one part of the knife during one part of the reciprocation and at an angle to another part of the knife during the remainder of the reciprocation, substantially as described.

5. The combination with a cutting-bed carrying a knife, of a roller coöperating therewith, means for producing a relative reciprocation between the roller and the knife, and means for holding the roller at an angle to one part of the knife during a part of the reciprocation and at an angle to another part of the knife during the remainder of the reciprocation, substantially as described.

6. The combination with a cutting-bed carrying a knife, of a roller coöperating therewith, means for reciprocating the roller over the knife, and means for holding the roller at an angle to one part of the knife during a part of the reciprocation and at an angle to another part of the knife during the remainder of the reciprocation, substantially as described.

7. In a cutting mechanism, the combination with a cutting-bed having a knife, of a reciprocating carriage, a coöperating cutting device mounted in the carriage and caused to move over the knife by the movement of the carriage, means for shifting the position of the cutting device to coöperate with one part of the knife during a part of the movement of the carriage and with the remainder of the knife during the remainder of the movement of the carriage, substantially as described.

8. In a cutting mechanism, the combination with a cutting-bed having a knife, of a reciprocating carriage, a roller mounted therein which is caused to move over the knife by the movement of the carriage, means for shifting the position of the roller with respect to its carriage so as to cause the roller to coöperate with one part of the knife during the movement of the carriage in one direction, and with the remainder of the knife during the movement of the carriage in the other direction, substantially as described.

9. In a cutting mechanism, the combination with a cutting-bed having a knife, of a carriage reciprocating with respect thereto, an arm mounted in the carriage, a roller mounted in the arm, a pivoted support to which the arm is pivoted, and means for turning the support on its pivot during the reciprocation of the carriage and thereby varying the angle at which the roller acts upon the different parts of the knife, substantially as described.

10. In a cutting mechanism, the combination with a cutting-bed having a knife, of a reciprocating carriage, an arm mounted in the carriage, a roller mounted in the arm, a pivoted support to which the arm is pivoted, and a cam for controlling the position of the pivoted support and thereby varying the angle at which the roller acts upon different parts of the knife, substantially as described.

11. In a cutting mechanism, the combination with a cutting-bed having a knife, of a reciprocating carriage, a roller mounted in the carriage, a cam also mounted in the carriage, connections betwen the cam and the roller, and means for shifting the position of the cam during the reciprocation of the carriage and thereby shifting the angle at which the roller coöperates with different parts of the knife, substantially as described.

12. In a cutting mechanism, the combination with a cutting-bed having a knife, of a reciprocating carriage, an arm mounted in the carriage, a roller mounted in the arm, a pivoted support to which the arm is pivoted, said support having an extension, a movable cam engaged by the extension and operating to control the position of the pivoted support, and means for shifting the position of the cam and thereby the position of the support at the end of each stroke of the carriage, whereby the roller is caused to coöperate with one part of the knife at one angle during a part of the reciprocation of the carriage, and with another part of the knife at a different angle during the remainder of the reciprocation, substantially as described.

13. In a cutting mechanism, the combination with a cutting-bed having a knife, of a reciprocating carriage, a coöperating cutting device mounted in the carriage, a shifting cam moving with the carriage, means operating to shift the position of the cam during the reciprocation of the carriage, and connections between the coöperating cutting device and the cam whereby the angle of said device to the knife is changed during the reciprocation of the carriage, substantially as described.

14. In a cutting mechanism, the combination with a cutting-bed having a knife, of a reciprocating carriage, a roller mounted in the carriage, a shifting cam also mounted in the carriage, and a stop located along the path of travel of the carriage and operating to shift the position of the cam, and connections between the roller and the cam, substantially as described.

15. The combination with a cutting-bed having a knife, of a carriage reciprocating with respect thereto, an arm carried by the carriage, a pivoted bearing-piece to which the arm is pivoted, an extension from said bearing-piece, a cam-plate with which the extension engages, suitable ways connected to the carriage in which the cam-plate is mounted, stops located along the line of travel of the carriage and operating to shift the position of the cam-plate, and a roller mounted in the arm and coöperating with the knife, the cam-plate operating to hold the roller at one angle to one part of the knife during one stroke of the carriage and at another angle to the rest of the knife during the remainder of the movement of the carriage, substantially as described.

16. The combination with a cutting-bed having a knife, of a carriage reciprocating with respect thereto, a coöperating cutting device mounted in the carriage, mechanism for reciprocating the carriage, a constantly-running mechanism for driving the carriage-reciprocating mechanism, and means for automatically connecting the carriage-reciprocating mechanism to and disconnecting it from the constantly-running mechanism, substantially as described.

17. The combination with a power-shaft, of a wheel constantly driven thereby, a second wheel driven from the first-named wheel, a crank mechanism, means for automatically connecting the crank mechanism to and disconnecting it from the second wheel, a reciprocating carriage driven by the crank mechanism, a cutting-bed carrying a knife, and a coöperating cutting device mounted in the carriage, substantially as described.

18. The combination with a bed, of a suction device coöperating therewith to hold a sheet of material thereagainst, a support, a continuously-operating suction mechanism coöperating with the support, means for producing a relative movement between the bed and the support, and means for cutting off the suction from the bed, substantially as described.

19. The combination with a bed, of a suction device coöperating therewith to hold a sheet of material thereagainst, a support, a continuously-operating suction mechanism coöperating with the support, means for producing a relative positioning movement between the bed and the support, means for producing a relative delivery movement between the bed and the support, and means for cutting off the suction from the bed, substantially as described.

20. The combination with a bed, of a suction device coöperating therewith to hold a sheet of material thereagainst, a support, continuously-operating suction mechanism coöperating with the support, means for moving the support into position over the bed, means for moving the bed to deliver the material to the support, and means for cutting off the suction from the bed, substantially as described.

21. In a cutting mechanism, the combination with a knife of a perforated plate lying inside the knife, suitable means coöperating with the knife to effect the cut, means for removing the perforated plate to deliver the cut material, a suction mechanism coöperating with the perforated plate to hold the material thereon, and means whereby the suction mechanism is retained in operation during the delivery movement of the plate.

22. In a cutting mechanism, the combination with a knife of a perforated plate lying inside the knife, means located outside the knife for holding the material outside the line of cut, suitable means coöperating with the knife to effect the cut, means for moving the perforated plate to deliver the cut material, a suction mechanism coöperating with the perforated plate to hold the material thereon and means whereby said suction mechanism is caused to act during the delivery movement; substantially as described.

23. In a cutting mechanism, the combination with the cutting-bed consisting of two perforated plates one lying within the line of cut and the other outside the line of cut, of a knife interposed between the two plates, means operating in connection with the knife to cut the material, means for moving the plate which is within the line of cut to deliver the cut material, suction mechanism operating in connection with the plates to hold the material thereon, and means whereby said suction mechanism continues to operate during the delivery movement; substantially as described.

24. The combination with a movable arm and means for moving it, of a carrier pivoted thereon, a wrapper-support pivoted in the carrier, means for swinging the carrier upon its pivot, whereby it is given an angular movement with respect to the arm, and means for turning the wrapper-support on its pivot, substantially as described.

25. The combination with a swinging arm and means for swinging it on its pivot, of a carrier pivoted thereon, a wrapper-support pivoted in the carrier, means for swinging the carrier upon its pivot, whereby it is given an angular movement with respect to the arm, and means for turning the wrapper-support on its pivot, substantially as described.

26. The combination with a wrapping mechanism, of a wrapper-support located above the wrapping mechanism, means for securing and holding a wrapper to the support with the one thereof depending from the support, and means for producing a relative movement between the support and the wrapping mechanism as the wrapper is wound on the article to be wrapped, substantially as described.

27. The combination with a wrapping mechanism, of a wrapper-support located above the wrapping mechanism, a suction mechanism for securing and holding a wrapper on the support with one end thereof depending from the support, and means for producing a relative movement between the support and the wrapping mechanism as the wrapper is wound on the article to be wrapped, substantially as described.

28. A wrapper-support embodying a suction-chamber operating to hold part of the wrapper only, and means for creating suction in the chamber, substantially as described.

29. The combination with a wrapping mechanism, of a wrapper-support embodying a suction-chamber which operates to hold a part of the wrapper only, and means for creating suction in said chamber and maintaining it during the wrapping operation, substantially as described.

30. The combination with a wrapper-support embodying two unconnected chambers, of a suction mechanism, substantially as described.

31. The combination with a wrapper-support embodying two unconnected chambers, of a suction mechanism operating in connection with one of the chambers, and a blast mechanism operating in connection with the other chamber, substantially as described.

32. The combination with a wrapping mechanism, of a suction wrapper-support embodying two unconnected chambers, a suction mechanism operating in connection with one of the chambers, and a blast device operating in connection with the other chamber to positively insert part of the wrapper into the wrapping mechanism, substantially as described.

33. The combination with a wrapping mechanism, of a suction wrapper-support embodying two unconnected chambers, means for creating a suction in one of the chambers and maintaining it during the wrapping operation, and a blast device operating in connection with the other chamber to positively insert part of the wrapper into the wrapping mechanism, substantially as described.

34. The combination with a movable pipe, of a suction-support carried thereby and embodying two unconnected chambers, a suction mechanism operating through the pipe to create a suction in one of the chambers, and a blast mechanism located in the path of travel of the support and operating in connection with the other chamber, substantially as described.

35. The combination with a movable pipe, of a suction-support carried thereby and including two unconnected chambers, a suction mechanism operating through the pipe to create a suction in one of the chambers, a pipe connected to the other chamber and having a spring-section, and a blast-pipe located in the path of travel of the suction-support with which the pipe having the spring-section engages, substantially as described.

36. In a cigar-machine, the combination with a wrapping mech-

anism, of a support moving over the wrapping mechanism, a suction mechanism coacting with the support to hold a wrapper thereon in a stretched condition, means for causing one end of the wrapper to depend from the support into a position where it may be seized by the wrapping mechanism, and means for maintaining the suction during the wrapping operation, substantially as described.

37. The combination with a wrapping mechanism, of a wrapper-support, and retaining devices coacting with the support and operating to hold part of the wrapper thereon, another part of the wrapper being free to be seized by the wrapping mechanism, the wrapper being drawn from the wrapper-support by the wrapping mechanism against the force of the retaining devices, substantially as described.

38. The combination with a wrapping mechanism, of a wrapper-support, a suction mechanism coacting with the support and operating to hold a part of a wrapper thereon, another part of the wrapper being free to be seized by the wrapping mechanism, and means for maintaining the suction on the wrapper during the wrapping operation, substantially as described.

39. The combination with a wrapping mechanism, of a movable arm, a carrier pivoted in the arm, a support pivoted in the carrier, a suction mechanism coacting with the support, means for moving the arm toward the wrapping mechanism, and means for turning the support on its pivot and the carrier on its pivot as the wrapper is delivered to the wrapping mechanism, substantially as described.

40. The combination with a wrapping mechanism, of an arm swinging about a center, a carrier pivoted in the arm, a wrapper-support pivoted in the carrier, a suction-pipe connected to the wrapper-support and moving therewith, means for swinging the arm toward the wrapping mechanism, a suction-pipe, a telescopic connection between said pipe and the pipe leading to the support, means for swinging the arm on its pivot and for swinging the carrier on its pivot and the support on its pivot as the wrapper is delivered to the wrapping mechanism, substantially as described.

41. The combination with a swinging arm, of a carrier pivoted in said arm, a cam operated arm to which said carrier is connected, a support pivoted in the carrier, a cam-operated arm to which said support is connected, a suction mechanism coacting with the support and operating to hold a wrapper thereagainst, and means for operating the swinging arm and simultaneously causing the cam-operated arms to swing the carrier and the support, substantially as described.

42. The combination with a pivoted arm, of a carrier pivoted therein, said carrier having an extension, a support pivoted in the carrier, said support having an arm connected thereto, a suction mechanism coacting with the support and operating to hold a wrapper thereagainst, a slotted cam-plate, arms on the pivoted arm and operated by the slotted cam-plate, and connections between one of said arms and the extension and the other of said arms and the arm extending from the support, substantially as described.

43. The combination with a wrapping mechanism, of a movable arm, a carrier movably mounted thereon, a wrapper-support mounted in the carrier, means for moving the arm, means for moving the carrier with respect to the arm as the wrapper is delivered to the wrapping mechanism, and means for moving the support, whereby a wrapper is fed to the wrapping mechanism, substantially as described.

44. The combination with a wrapping mechanism, of a movable arm, a carrier movably mounted thereon, a wrapper-support mounted in the carrier, suitable cams, and means whereby said cams are caused to move the carrier with respect to the arm as the wrapper is delivered to the wrapping mechanism and move the support with respect to the carrier, substantially as described.

45. The combination with a wrapping mechanism, of a suction wrapper-support, pasting devices located below the path of traverse of the wrapper and support, and means for moving the support whereby the wrapper is brought into contact with the pasting device during the movement of the support and as the paste is applied thereto

46. The combination with a wrapping mechanism, of a wrapper-support, means for supplying wrappers thereto, means for producing a relative approaching movement between the wrapper-support and the wrapping mechanism, and means for producing a relative angular movement between the support and the wrapping mechanism as the wrapper is delivered, substantially as described.

47. The combination with a wrapping mechanism, of a suction wrapper-support, means for supplying wrappers thereto, means for producing a relative approaching movement between the wrapper-support and the wrapping mechanism, and means for producing a relative angular movement between the support and the wrapping mechanism as the wrapper is delivered, substantially as described.

48. The combination with a wrapping mechanism, of a wrapper-support, means for supplying wrappers thereto, means for producing a relative approaching movement and a relative traversing movement between the support and the wrapping mechanism as the wrapper is delivered, substantially as described.

49. The combination with a wrapping mechanism, of a suction wrapper-support, means for supplying wrappers thereto, and means for producing a relative approaching movement and a relative traversing movement between the support and the wrapping mechanism as a wrapper is delivered, substantially as described.

50. The combination with a wrapping mechanism, of a wrapper-support, means for supplying wrappers thereto, and means for producing a movement between the support and the wrapping mechanism as a wrapper is delivered which is the resultant of an approaching movement, a traversing movement and an angular movement, substantially as described.

51. The combination with a wrapping mechanism, of a suction wrapper-support, means for supplying wrappers thereto, and means for producing a movement between the support and the wrapping mechanism as a wrapper is delivered which is the resultant of an approaching movement, a traversing movement and an angular movement, substantially as described.

52. The combination with a wrapping mechanism, of a suction wrapper-support, means for supplying wrappers thereto, and means for giving the wrapper-support an approaching movement and an angular movement with respect to the wrapping mechanism as it delivers a wrapper thereto, substantially as described.

53. The combination with a wrapping mechanism, of a suction wrapper-support, means for supplying wrappers thereto, and means for giving the wrapper-support an approaching movement and a traversing movement with respect to the wrapping mechanism as it delivers a wrapper thereto, substantially as described.

54. The combination with a wrapping mechanism, of a suction wrapper-support, means for supplying wrappers thereto, and means for giving the wrapper-support a movement with respect to the wrapping mechanism as it delivers a wrapper thereto which is the resultant of an approaching movement, a traversing movement and an angular movement, substantially as described.

55. The combination with a cutting-bed, of a wrapping mechanism, a wrapper-support operating to take a wrapper from the cutting-bed and deliver it to the wrapping mechanism, and means for retaining the wrapper on the support, said retaining means operating on a part of the wrapper after another part has been delivered to the wrapping mechanism, whereby the wrapper is wound under tenison on the article to be wrapped, substantially as described.

56. The combination with a cutting-bed, of a wrapping mechanism, a wrapper-support operating to take a wrapper from the cutting-bed and deliver it to the wrapping mechanism, a suction mechanism for retaining the wrapper on the support, and means for maintaining the suction during the wrapping operation, substantially as described.

57. The combination with a cutting-bed, of a wrapping mechanism, a wrapper-support for taking the wrapper from the cutting-bed and delivering it to the wrapping mechanism, a suction mechanism operating to hold a part of the wrapper on the support, the remainder of the wrapper being free to be seized by the wrapping mechanism, and means for maintaining the suction during the wrapping operation, substantially as described.

58. The combination with a wrapping mechanism, of a bunch-holder, means for moving the holder into position over the wrapping mechanism, and means for reversing the holder to deliver a bunch to the wrapping mechanism, substantially as described.

59. The combination with a wrapping mechanism, of a bunch-holder having two sets of retaining devices, means for producing a relative movement between the wrapping mechanism and the bunch-holder whereby the two are positioned so that the bunch can be delivered to the wrapping mechanism, means whereby the cigar is transferred from the wrapping mechanism to one set of retaining devices, and means whereby the bunch is transferred from the other set of retaining devices to the wrapping mechanism, substantially as described.

60. The combination with a wrapping mechanism, of a bunch-holder having two sets of retaining devices, means for moving the bunch-holder into position over the wrapping mechanism, means for transferring the wrapped cigar from the wrapping mechanism to one set of retaining devices, and means for delivering a bunch to the wrapping mechanism from the other set of retaining devices, substantially as described.

61. The combination with a wrapping mechanism, of a rotating bunch-holder having two sets of retaining devices, means for producing a relative movement between the wrapping mechanism and the holder, whereby the two are positioned so that a bunch may be delivered from the holder to the wrapping mechanism, means whereby a wrapped cigar is transferred from the wrapping mechanism to one set of retaining devices, and means whereby a bunch is delivered from the other set of retaining devices to the wrapping mechanism, substantially as described.

62. The combination with a wrapping mechanism, of a rotating bunch-holder having two sets of retaining devices, means for moving the holder into delivery position with respect to the wrapping mechanism, means for transferring a wrapped cigar from the wrapping mechanism to one set of retaining devices, and means for rotating the holder and depositing a bunch in the wrapping mechanism from the other set of retaining devices, substantially as described.

63. The combination with a wrapping mechanism, of a rotating bunch-holder having two sets of retaining devices, means for moving the holder into delivery position with respect to the wrapping mechanism, means for operating the retaining devices, means for transferring a cigar from the wrapping mechanism into one set of retaining devices, means for rotating the bunch-holder, and means for again opening the retaining devices to deposit a bunch in the wrapping mechanism, substantially as described.

64. The combination with a wrapping mechanism, of a bunch-receptacle, a bunch-holder moving between the wrapping mechanism and the receptacle, means operated by the movement of the holder for causing the bunch-receptacle to deliver a bunch to the holder, and means for operating the holder to deliver the bunch from the holder to the wrapping mechanism, substantially as described.

65. The combination with a wrapping mechanism, of a bunch-receptacle, a bunch-holder having two sets of retaining devices, means for delivering a bunch from the bunch-receptacle into one set of retaining devices, means for moving the holder from the bunch-receptacle into delivery position with respect to the wrapping mechanism, means for transferring a wrapped cigar from the wrapping mechanism to the other set of retaining devices, and means for operating the holder so as to deliver the bunch to the wrapping mechanism, substantially as described.

66. The combination with a wrapping mechanism, of a bunch-receptacle, a rotating bunch-holder having an upper and lower set of retaining devices, means for moving the holder from the bunch-receptacle to the wrapping mechanism, means for opening the retaining devices, means for transferring a wrapped cigar from the wrapping mechanism to one set of retaining devices, means for rotating the holder, and means for again opening the retaining devices to permit the bunch to be delivered to the wrapping mechanism, substantially as described

67. The combination with a wrapping mechanism, of a bunch-receptacle, a bunch-holder having two sets of retaining devices thereon, means located near the bunch-receptacle for opening the retaining devices to receive a bunch therefrom, means for moving the holder from the bunch-receptacle to the wrapping mechanism, means located near the wrapping mechanism for opening the retaining devices, means for transferring a wrapped cigar from the wrapping mechanism to the retaining devices, and means for operating the holder so as to deliver the bunch held by the other set of retaining devices to the wrapping mechanism, substantially as described.

68. The combination with a wrapping mechanism, of a bunch receptacle, a rotating bunch-holder having two sets of bunch-retaining devices, means for moving the holder from the bunch-receptacle to the wrapping mechanism, means located near the bunch-receptacle for opening the retaining devices so that one set may receive a bunch, means located near the wrapping mechanism for opening the retaining devices, means for transferring a cigar from the wrapping mechanism to one set of retaining devices, means for rotating the bunch-holder so as to bring the other set of retaining devices into delivery position, and means for opening the retaining devices to deliver the bunch to the wrapping mechanism, substantially as described.

69. The combination with a shaft, of means for swinging said shaft about a center, a bunch-holder mounted on the shaft, and means for rotating the shaft to reverse the position of the bunch-holder, substantially as described.

70. The combination with a shaft, of a pair of sleeves thereon, retaining devices carried by the sleeves, means for rotating the sleeves on the shaft in order to open and close the retaining devices, means for swinging the shaft about a center, and means for rotating the shaft and the sleeves, substantially as described.

71. In a bunch-holder, the combination with a pair of rotatable sleeves, having suitable retaining devices, of means for rotating the sleeves with relation to each other to open and close the retaining devices, substantially as described.

72. The combination with a wrapping mechanism, of a pair of rotatable sleeves having bunch-retaining devices, means for rotating the sleeves to open and close the bunch-retaining devices, and means for moving the sleeves into delivery position with respect to the wrapping mechanism, substantially as described.

73. The combination with a wrapping mechanism, of a pair of sleeves, bunch-retaining devices mounted on the sleeves, means for rotating the sleeves with respect to each other to open and close the retaining devices, means for moving the sleeves into position near the wrapping mechanism, and means for rotating the sleeves, substantially as described.

74. In a bunch-holder, the combination with a support, of bunch-retaining devices carried thereby, means for opening and closing the retaining devices, and an intermediate centering device mounted on the support and located between the retaining devices, substantially as described.

75. In a bunch-holder, the combination with a support, of a pair of sleeves, bunch-retaining devices carried by the sleeves, means for moving the sleeves to open and close the retaining devices, and an intermediate centering-yoke mounted on the support and located between the retaining devices, substantially as described.

76. In a bunch-holder, the combination with a support, of a pair of superposed rotatable slotted sleeves mounted thereon, bunch-retaining devices carried by the sleeves, and an intermediate centering-yoke, the stem of which passes through the slots and into the support, whereby said centering-yoke not only serves as a centering device but also limits the movement of the sleeves, substantially as described.

77. In a bunch-holder, the combination with an internal support, of a pair of rotatable sleeves mounted thereon, bunch-retaining devices carried by the sleeves, a pin connected to each of the sleeves, whereby the sleeves may be rotated to open the retaining devices by separating the pins, substantially as described.

78. The combination with an arm, of means for turning it about a center, a shaft journaled in ears on said arm, a pinion on the shaft, a rack for moving the pinion, a pair of rotatable sleeves mounted on the shaft, bunch-retaining devices mounted on the sleeves, and means for rotating the sleeves to open and close the bunch-retaining devices, substantially as described.

79. The combination with a hub having a central perforation, of an arm connected thereto, a shaft journaled in ears in the arm, a pinion on the shaft, a rack-rod moving through the central perforation of the hub and engaging the pinion, a pair of rotating sleeves mounted on the shaft, bunch-retaining devices carried by the sleeves, means for rotating the sleeves to open and close the bunch-retaining devices, and means for reciprocating the rack-rod, substantially as described.

80. The combination with a movable bunch-holder having projections, of means by which said projections are opened and closed, a lever in the path of the opening means, and means for rocking the lever so as to cause it to engage between and separate the opening means, substantially as described.

81. The combination with a wrapping mechanism, of an opening and closing device by which the wrapped cigars are taken, means for opening said device, and a displacing mechanism for transferring the cigars from the wrapping mechanism to the device, substantially as described.

82. The combination with a wrapping mechanism, of a holder having retaining devices thereon, means for rotating the holder means for opening and closing the retaining devices on the holder and displacing mechanism for transferring the cigars from the wrapping mechanism into the retaining devices, substantially as described

83. The combination with a wrapping mechanism, of a holder having opening and closing retaining devices thereon, a shaft located near the wrapping mechanism, devices for opening and closing the retaining devices, displacing-arms secured on the shaft, and means mounted on the shaft for operating the opening and closing devices and also for rocking the shaft carrying the displacing-arms, substantially as described.

84. The combination with a wrapping mechanism, of a holder having a plurality of sets of opening and closing retainers, a shaft, displacing means operated by the shaft, devices for opening and closing the retainers, means for operating said opening and closing devices, means for operating the holder to bring different sets of retainers into operative position, and means carried by the shaft constructed to operate the displacing means and the opening and closing devices simultaneously and to operate the opening and closing devices without operating the displacing means, substantially as described.

85. The combination with a wrapping mechanism, of a bunch-holder having a plurality of bunch-retainers thereon, means for operating the holder so as to open one set of retainers, displacing-arms operating in connection with the wrapping mechanism to place a cigar in one set of retainers, means for operating the holder so as to bring another set of retainers in position, and means for opening said retainers, substantially as described.

86. The combination with a bunch-holder having a plurality of sets of retainers thereon and movable to present said sets to the wrapping mechanism, of an opening device, a cam for operating said device, displacing means, and means whereby the cam and displacing means may be operated together, said means being also constructed to operate said devices separately, substantially as described.

87. The combination with a wrapping mechanism, of a bunch-holder having a plurality of sets of retainers thereon, means for opening and closing the retainers, a shaft, displacing-arms carried by the shaft, means also carried by the shaft for operating the opening and closing means, a swinging lever mounted on the shaft, means carried

by the lever for operating both the shaft and the operating means, and means for giving said swinging lever different amounts of movement, whereby on one stroke it will operate both the operating means and the displacing means and on the other stroke will operate only the operating means, substantially as described.

88. The combination with a wrapping mechanism, of a bunch-holder having two sets of retainers, means for operating the holder so as to present first one set of retainers to the wrapping mechanism and then the other set, a lever for opening the retainers, a shaft, displacing-arms secured thereto, a cam on the shaft for operating the opening-lever, said cam having a notched collar, a pawl-carrying lever mounted on the shaft and carrying a pawl which engages the collar, a stop for operating the pawl of the pawl-carrying lever, and means for giving the pawl-carrying lever different amounts of throw, substantially as described.

89. The combination with a wrapping mechanism, of a bunch-holder having retainers for both a completed cigar and a bunch, means for producing a relative movement between the bunch-holder and the wrapping mechanism and means whereby the holder is caused to deliver a bunch to the wrapping mechanism and to receive a wrapped cigar therefrom, substantially as described.

90. The combination with a wrapping mechanism, of a bunch-holder having retainers for both a completed cigar and a bunch, means for moving the bunch-holder between the wrapping mechanism and the delivery-point, means whereby the holder receives a completed cigar from the wrapping mechanism and delivers a bunch thereto, and means whereby the holder delivers the completed cigar at the delivery-point, substantially as described.

91. The combination with a wrapping mechanism, of a bunch-holder having retainers for both a bunch and a completed cigar, means for moving the bunch-carrier into position to receive the completed cigar, means for operating it to deliver the bunch to the wrapping mechanism, and means for moving it away from the wrapping mechanism, substantially as described.

92. The combination with a wrapping mechanism, of a bunch-carrier having opening and closing retainers, means for operating said retainers, starting and stopping mechanism for the wrapping mechanism, a power-driven mechanism, and means whereby said mechanism operates both the starting and stopping mechanism for the wrapping mechanism and the operating means for the retainers, substantially as described.

93. The combination with a wrapping mechanism having starting and stopping devices, of a bunch-holder having opening and closing retainers, means for producing a relative movement between the holder and the wrapping mechanism, a shaft, an arm on the shaft for operating the opening and closing retainers, a cam on the shaft for operating the starting and stopping devices, and means for operating the shaft, substantially as described.

94. The combination with a wrapping mechanism having starting and stopping devices, of a bunch-holder having opening and closing retainers, means for moving the holder into a position near the wrapping mechanism, a shaft, an arm on the shaft for operating the opening and closing retainers, a cam on the shaft for operating the starting and stopping devices, and means for operating the shaft, substantially as described.

95. The combination with a wrapping mechanism, of starting and stopping devices therefor, a bunch-holder having opening and closing retainers, means for operating said retainers, and means for successively operating the opening and closing devices for the retainers and the starting and stopping devices for the wrapping mechanism, substantially as described.

96. In a cigar-machine, the combination with a wrapping mechanism, of a cutting-bed, means cooperating therewith to cut a wrapper, means for transferring the wrapper from the cutting-bed to the wrapping mechanism, a bunch-holder, means for moving the bunch-holder toward and away from the wrapping mechanism, means for operating the bunch-holder so as to cause it both to receive a completed cigar from the wrapping mechanism and to deliver a bunch to the wrapping mechanism, devices for transferring the completed cigar from the wrapping mechanism to the bunch-holder, means for starting and stopping the wrapping mechanism, a constantly-driven power-shaft, and connections from the power-shaft to the several mechanisms whereby the same are operated, substantially as described.

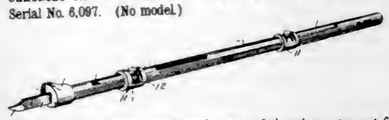
97. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for delivering a wrapper to said support, means for retaining the wrapper on the support, means for producing a relative movement between the wrapping mechanism and the support so as to enable the support to deliver the wrapper to the wrapping mechanism, starting and stopping mechanism for the wrapping mechanism, a bunch-holder, means whereby the bunch-holder is caused to receive a completed cigar from the wrapping mechanism and to deliver a bunch to it, and operating devices, substantially as described.

98. In a cigar-machine, the combination with a suction cutting-bed having a movable section, a suction-support, means whereby the suction-support is caused to take a wrapper from the cutting-bed, a wrapping mechanism, means producing a relative movement between the support and the wrapping mechanism so as to enable the support to deliver the wrapper to the wrapping mechanism, a bunch-holder having retaining devices for a bunch and a completed cigar, and suitable operating mechanism, substantially as described.

99. In a cigar-machine, the combination with a suction cutting-bed having a movable section, of a suction support, means for constantly maintaining suction in the support, means whereby the suction-support is caused to take the wrapper from the cutting-bed, a wrapping mechanism, means for producing a relative movement between the support and the wrapping mechanism so as to enable the support to deliver the wrapper to the wrapping mechanism, a bunch-holder having retaining devices for a bunch and a completed cigar and suitable operating mechanism, substantially as described.

654,204. ADJUSTABLE HOLDER FOR STATIONERS' TOOLS.

CHAUNCEY M. VAN EVERY, Jr., Bronson, Mich. Filed Feb. 21, 1900. Serial No. 6,097. (No model.)



Claim.—1. In a combined implement of the character set forth, the combination of a tubular body having a longitudinal slot therein, a sliding plug in said body carrying an implement and provided with a headed stud extending through said slot, and a sleeve circumferentially rotatable on said body and having a slot to receive the stud and also constructed with a cam enlargement to engage the head of the stud.

2. In a combined implement of the character set forth, the combination of a tubular body having a longitudinal slot therein, a plug slidingly mounted in said body provided with a stationary implement and having a headed stud projecting through the slot, and a sleeve on the body having a circumferential rotation and constructed with a slot through which the stud extends and a cam enlargement at one side to engage the head of the stud.

3. In a combined implement of the character set forth, the combination with a tubular body, of a knife or cutter, slidingly mounted therein and having a sharp free end, and a guide fixed on the end of the body for bearing against the end of an envelop, and through which the knife or cutter is projectable.

4. In a combined implement of the character set forth, the combination with a tubular body, of a knife or cutter slidable in and projectable from the body, and a guide on the one extremity of the body to coact with the knife or cutter to form an envelop-opener.

5. A device of the character set forth comprising a tubular body having a head on one end with an opening therethrough and also provided with a fixed guide, a pointed device slidingly mounted in the body and movable through the head, and means for securing the pointed device in different projected lengths from the said head.

6. A device of the character set forth comprising a body having an adjustable pointed device therein, and a guiding device coacting with said pointed device to form an envelop-opener having a rib or flange at one side with a bevel edge in operative relation to an adjacent inclined face.

654,205. WEATHERPROOF WINDOW.

FRANK VOIGTMANN and SILAS H. POMEROY, Chicago, Ill. Filed Feb. 5, 1900. Serial No. 4,100. (No model.)



Claim.—1. In a transom-window the herein-described weather-proof joint between the sash and the casing, consisting of the projecting flange on the one and the turned-over flange on the other, into which said projecting flange sets; all substantially as shown and described.

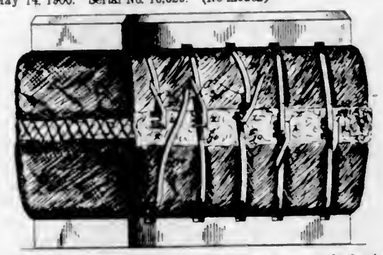
2. In a transom-window the herein-described weatherproof joint, consisting of the combination of the sash C, having the projecting flange G on its upper portion and the turned-over flange J on its lower portion, the casing A having the turned-over flange H above the point of suspension of the transom and having the projecting flange I below the point of suspension; all substantially as shown and described.

3. In a transom-window the herein-described weather-strip for closing the joint at the point of suspension, consisting of the strip D hinged to the casing above the point of suspension, and extending down over the opening between the sash and the casing; all substantially as shown and described.

4. In a transom-window the herein-described weather-strip for closing the joint, at the point of suspension consisting of the strip D, having the hinge E by which it swings upon the casing, the spring F, by which it is held closely down over the joint between the sash and the casing; all substantially as shown and described.

654,206. BALE-TIE.

MILLARD F. WALKER, Flatonia, Tex. Filed May 14, 1900. Serial No. 16,629. (No model.)

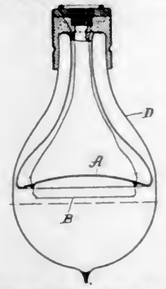


Claim.—1. A bale-tie consisting of a lever composed of a head located at one end of the lever and provided at one end with the laterally-extending arms 4 and 5 spaced apart, said head being also provided at its inner end with the enlarged arm 7 spaced from the arm 5 and provided with an aperture to receive the attached end of a band or other flexible connection, and a shank extending from one side of the head, substantially as described.

2. A bale-tie consisting of a lever composed of a head provided with laterally-extending arms forming apertures or openings and projecting from one side of the head, and the diagonally-disposed shank extending laterally from the inner end of the head and having its inner end located at the side of the same from which the said arms project, the outer end of the shank being arranged in the same plane as the outer ends of the arms, substantially as described.

654,207. INCANDESCENT LAMP.

SAMUEL D. WASHBURN, Boston, and CLARENCE H. TINKHAM, Cambridge, Mass. Filed June 25, 1898. Serial No. 684,456. (No model.)



Claim.—The improved incandescent lamp above described comprising an exhausted bulb; a disk-shaped mirror exteoding across but separate from the bulb; a glass tube with its onter end sealed in the neck of the bulb supporting the mirror; and leading-in wires extending through the glass tube and the mirror and connected to the filament.

654,208. INCANDESCENT ELECTRIC LAMP.

SAMUEL D. WASHBURN, Boston, and CLARENCE H. TINKHAM, Cambridge, Mass. Filed Jan. 23, 1899. Serial No. 703,064. (No model.)

Claim.—1. In an incandescent electric lamp in combination, a bulb; a tube of glass closed at its inner end and sealed to the bulb; leading-in wires sealed in the tube; a mirror; and a wire one end of which is fast to the tube and the other end to the mirror, substantially as described.

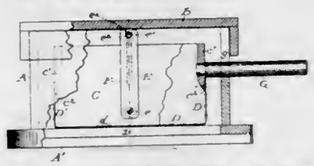
2. In an incandescent electric lamp in combination a bulb; a tube closed at one end and sealed to the bulb; a mirror crosswise of the bulb; a wire one end of which is fast to the tube and the other end to the mirror; a filament in the form of a helix the axis of the helical filament being substantially parallel with the surface of the mirror; and leading-in wires sealed in the tube and passing through the mirror and insulated therefrom to the terminals of the helical filament.



3. In combination, the bulb; the tube of glass closed at its inner end and sealed to the bulb; the mirror; the wire fast at one end to the mirror and at the other end to the tube; the helical filament, and the leading-in wires sealed in the tube and connected to the terminals of the helical filament.

654,209. ASH-SIFTER.

ALMON WEIDMAN, Albany, N. Y. Filed Dec. 3, 1898. Serial No. 698,221. (No model.)



Claim.—1. The combination with a housing-box and a reciprocating sifting-box within the former, and hangers pivoted by their lower ends to the sides of the sifting-box, of the bail-handle F, having integral with it pivots $e' e'$, from which said hangers are oscillated, and bearings $e^2 e^2$ provided in the upper margins of the side pieces of the housing-box and receiving the extensions of said pivots $e' e'$, substantially as set forth.

2. The combination with the housing-box A, reciprocating sifting-box C, and sifting-web D forming the bottom and portions of the ends of said sifting-box, of a bail-handle having integral with it pivots $e' e'$, hangers E E pivoted by their lower ends to the side pieces of said sifting-box, and having their upper ends oscillating on said pivots $e' e'$, bearings $e^2 e^2$ provided in the side pieces of the housing-box and receiving the extended portions of said pivots $e' e'$, and the handle G secured to said sifting-box and guided by a slot provided in an end of said housing-box, substantially as set forth.

654,210. GATE.

WILLIAM R. WHITE, Bloomington, Ill. Filed Aug. 24, 1899. Serial No. 728,350. (No model.)

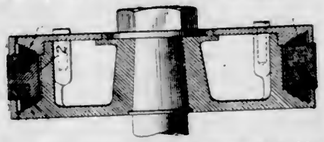


Claim.—1. The combination of two gate-operating levers, and a rod pivotally attached to one lever and mounted on the other so as to slide longitudinally thereon.

2. The combination of two gate-operating levers, one of which is provided with a longitudinally-extending hole at one end, and a rod pivotally attached to the other lever and extending into said hole to slide longitudinally therein, substantially as set forth.

654,211. PISTON-PACKING.

JOHN T. WILSON, Jersey Shore, Pa. Filed Nov. 9, 1899. Serial No. 736,302. (No model.)



Claim.—1. The combination with a piston, of a packing-ring, and a wedge-ring said rings being arranged in parallel planes and adja-

cent within a groove formed in the circumference of the piston, and each of said rings having a lap-joint, and said lap-joints being located in different arcs of the circumference of the piston, whereby steam is normally excluded from the under side of the packing-ring, the said wedge-ring being adapted to receive steam-pressure upon its circumferential surface; substantially as set forth.

2. The combination with a piston, of a packing-ring, and a wedge-ring; the said rings being arranged side by side in parallel planes within a groove made in the circumference of the piston and so disposed as to form a tight joint and exclude steam from the under side of the packing-ring but admit it to the top of the wedge-ring; in substance as set forth.

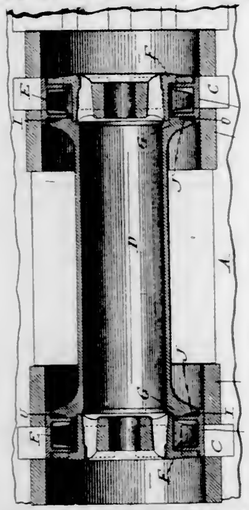
3. The combination with a piston, of a packing-ring, and a wedge-ring; said rings being arranged in parallel planes within a groove formed in the circumference of a piston and so united as to normally exclude steam from the under side of the packing-ring, but admit it to the wedge-ring, and the said packing-ring adapted to be held rigid or solid by the wedge-ring when steam is on, and to automatically adjust itself to the cylinder when steam is shut off; in substance as set forth.

4. The combination with a piston, of a packing-ring, and a wedge-ring; the said wedge-ring being located between a packing-ring and the wall of a groove, and both rings so relatively disposed as to normally exclude steam from the under side of the packing-ring.

5. The combination with a piston, of a packing-ring, and a wedge-ring arranged side by side in parallel planes within a groove formed in the circumference of the piston; the said packing-ring having a lap-joint comprising the free ends of the ring, the plate 9, and the tongue 11; in substance as set forth.

6. The combination with a piston, of a packing-ring, and a wedge-ring arranged in parallel planes within a groove formed in the circumference of the piston; the said wedge ring comprising the two parts 15 and 15′ united to form a composite ring; in substance as set forth.

654,212. PISTON-VALVE FOR ENGINES. JOHN T. WILSON, Jersey Shore, Pa. Filed Nov. 9, 1899. Serial No. 736,303. (No model.)



Claim.—1. A piston-valve having packing-rings and wedge-rings located in grooves at the ends of the valve and so disposed that steam is normally excluded from the under sides of the packing-rings; each of the said wedge-rings adapted, when subjected to steam-pressure, to force a packing-ring against a wall of the groove in which it is located; in substance as set forth.

2. A piston-valve having grooves at the ends, and a packing-ring and a wedge-ring located in each groove, and so combined as to prevent the admission of steam to the under surface of the packing-ring; in substance as set forth.

3. A piston-valve having grooves at the ends and a packing-ring and a wedge-ring located in each groove, and so combined as to normally prevent the admission of steam to the under side of the packing-ring; said piston being provided with passages for the discharge to the exhaust sides of the piston of any live steam which may by accident gain access to the under side of the packing-rings; in substance as set forth.

4. The combination with a piston-valve having grooves, of packing-rings having lap-joints, and wedge-rings having lap-joints; a packing-ring and a wedge-ring being located in each groove; in substance as set forth.

5. The combination with a piston-valve having grooves, of packing-rings having lap-joints, and wedge-rings having lap-joints; a packing-ring and a wedge-ring being located in each groove and the said lap-joints being located in different positions within the circumference of the groove; in substance as set forth.

6. The combination with a piston-valve, of a packing-ring and a wedge-ring both located side by side in a groove, the wedge-ring adapted to receive the pressure of steam upon its outer circumferential surface and to force the packing-ring against a wall of the groove in substance as set forth.

7. The combination with a piston or piston-valve, of a packing-ring and a wedge-ring located side by side in a groove; said wedge-ring having a lap-joint and both rings so arranged as to exclude steam from the under side of the packing-ring; in substance as set forth.

8. The combination with a piston-valve, of a packing-ring and a wedge-ring located side by side in a groove; said packing-ring having a lap-joint and both rings so arranged as to exclude steam from the under side of the packing-ring; in substance as set forth.

9. The combination with a piston-valve, of a packing-ring and a wedge-ring; said packing-ring having free ends and provided with a top plate, a bottom plate, and a tongue; in substance as set forth.

10. The combination with a piston-valve, of a packing-ring and a wedge-ring; said packing-ring having free ends united by a lap-joint and a plate provided with a beveled edge; in substance as set forth.

11. The combination with a piston-valve, of a packing-ring having a lap-joint and a wedge-ring; the said wedge-ring being so located relative to the packing-ring that it will cover the joint between the plate, L, and the packing-ring; in substance as set forth.

12. The combination with a piston-valve having grooves at the ends and inner and outer walls, of packing-rings and wedge-rings; the sides of two of the walls being cut away or beveled to form seats for the wedge-ring; in substance as set forth.

13. The combination with a piston or piston-valve, of a packing-ring and a wedge-ring; the said rings being so disposed that, when steam is on, it will be excluded from the under side of the packing-ring, but press upon the wedge-ring; in substance as set forth.

14. The combination with a piston or piston-valve, of a packing-ring and a wedge-ring, the said rings being so disposed that, when steam is on, the wedge-ring will be forced against the packing-ring and hold it rigid against a wall of the piston; in substance as set forth.

15. The combination with a piston-valve, of a packing-ring having a lap-joint, and a wedge-ring having a lap-joint, the parts being so combined that, when steam is on, the wedge-ring will bind or clamp the packing-ring and hold it rigid and that, when steam is shut off, the packing-ring can automatically adjust itself to take up wear; in substance as set forth.

16. The combination with a piston-valve, of a packing-ring, and a wedge-ring; the body of the packing-ring, between the wall and the wedge-ring being slightly tapered; whereby when a wide packing-ring is used and subjected to high pressure from the cylinder at the close of the steam cut-off the said ring cannot collapse; in substance as set forth.

17. The combination with an engine-cylinder having a port or ports, of a piston-valve having packing-rings and wedge-rings, steam being excluded from the under side of the packing-rings, and the wedge-rings holding the said packing-rings rigid; whereby the friction between the surfaces of the packing-rings and the cylinder will be rendered substantially constant at all points in the traverse of the valve both opposite and each side of the port or ports.

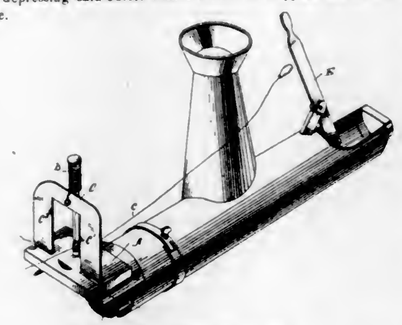
654,213. PIPE-CUTTING DEVICE. JOHN W. WILSON, Shaner, Okla. Filed Mar. 8, 1900. Serial No. 7,904. (No model.)

Claim.—1. In a pipe forming and laying device the combination of a cutter and a suitable support therefor, means for depressing the cutter, means for elevating the cutter above the pipe, and means for forming the pipe.

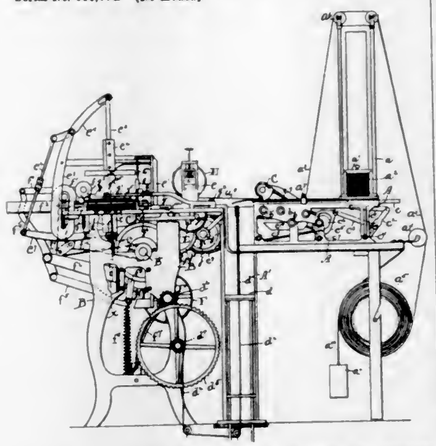
2. In a pipe forming and laying device the combination of a base-block and standard thereon, a cutter supported by said standard, means for depressing the cutter, a spring reacting between the standard and cutter to elevate the same, and means for forming the pipe.

3. In a pipe forming and laying device the combination of a base-block and standard thereon, a cutter, a spring connecting the standard and cutter and normally holding said cutter in elevated position, a cord secured to the cutter adapted to depress the same against the tension of the spring, and means for forming the pipe.

4. In a pipe forming and laying device the combination of a base-block, a U-shaped cutter supported thereon above the line of pipe, a spring normally holding said cutter in elevated position and means for depressing said cutter with its blades on opposite sides of the pipe.



654,214. MACHINE FOR ADDRESSING AND WRAPPING ARTICLES. LINCAN C. WING, New York, N. Y. Filed Aug. 17, 1898. Serial No. 688,774. (No model.)



Claim.—1. In a machine for wrapping newspapers, &c., the combination of a platen and a plunger between which the wrapper and newspaper are held with a portion projecting, the plunger and the platen having a vertical movement relative to each other and to the machine, a ledge across which the projecting edge of the newspaper is drawn to form a right-angled fold, fingers adapted to enter and hold the paper at the angle and a horizontally-sliding ram for folding the newspaper over said fingers.

2. In a machine for wrapping newspapers, &c., the combination of a platen and a plunger between which the wrapper and paper are held with a portion projecting, the plunger and the platen having a vertical movement relative to each other and to the machine, a ledge across which the projecting edge of the paper is drawn to form a right-angled fold, spring-actuated fingers adapted to enter and hold the paper at the angle and a horizontally-sliding ram for folding the newspaper over said fingers.

3. In a machine for wrapping newspapers, &c., the combination of a platen and a plunger between which the wrapper and paper are held with a portion projecting, the plunger and the platen having a vertical movement relative to each other and to the machine, a ledge across which the projecting edge of the newspaper is drawn to form a right-angled fold, a vertical spindle journaled in the machine adjacent to the said ledge, a retaining-finger on the upper end of said spindle, a torsional spring tending to swing said finger into the angle of said fold, a horizontally-sliding ram for folding the newspaper over said finger and means for releasing said finger from said fold when the same is completed.

4. In a machine for wrapping newspapers, &c., the combination of a platen and a plunger between which the wrapper and the paper are held with a portion projecting, the plunger and the platen having a vertical movement relative to each other and to the machine, a ledge across which the projecting portion of the newspaper is drawn to form a right-angled fold, a vertical spindle journaled in the machine adjacent to the said ledge, a retaining-finger on the upper end of said spindle, a torsional spring tending to swing said finger into the angle of said fold, a horizontally-sliding ram for folding the newspaper over said finger, a stop for holding said finger away from the vertical path of the paper, releasing mechanism for releasing said finger when said right-angled fold is made and means for withdrawing said finger from said fold when the fold is completed.

5. In a machine for wrapping newspapers, &c., the combination of a platen and a plunger between which the wrapper and the newspaper are held with a portion projecting, the plunger and the platen having a vertical movement relative to each other and to the machine, a ledge across which the projecting portion of the newspaper is drawn to form a right-angled fold, a vertical spindle journaled in the machine adjacent to the said ledge, a retaining-finger on the upper end of said spindle, a torsional spring tending to swing said finger into the angle of said fold, a horizontally-sliding ram for folding the newspaper over said finger, a stop for holding said finger away from the vertical path of the paper, a sliding tripper above said finger for returning it to its normal position when lifted by the platen.

6. In a machine for wrapping newspapers, &c., the combination of a platen and a plunger between which the wrapper and the paper are held with a portion projecting, said plunger and platen having a vertical movement relative to each other and to the machine, and both having a downward movement in an opening formed in the bed of the machine for forming a right-angled fold in the newspaper, a vertical spindle journaled adjacent to the side of the platen having a torsional spring tending to swing said finger into the angle of said fold and on top of said platen which forms a stop to retain said finger in its normal position and a sliding tripper-bolt above said finger for returning it to its normal position when it is lifted by the platen.

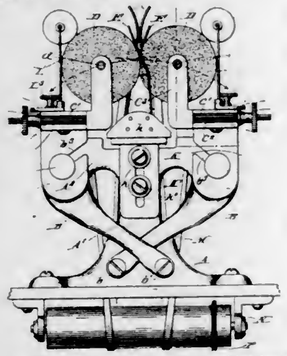
7. In a machine for wrapping papers the combination of a vertically-movable platen and plunger adapted to hold the paper and wrapper between them with a portion projecting, an opening in the bed of the machine in which said platen and plunger travel and across the edge of which the projecting edge of the paper draws to form a right-angled fold, retaining-fingers for holding the fold in place, a sliding ram for completing the single fold, clamps for holding down the folded paper on the platen at a point between the ends and means for folding the paper over said clamp to form thed ouble fold.

8. In a machine for wrapping papers, &c., the combination of a vertically-movable platen and plunger adapted to hold the paper and wrapper between them with a portion projecting, an opening in the bed of the machine in which said platen and plunger travel and across the edge of which the projecting edge of the paper draws to form a right-angled fold, retaining-fingers for holding the fold in place, a sliding ram for completing the single fold, clamps for holding down the folded paper on the platen at a point between the ends and a sliding ram adapted to catch the edge of the folded newspaper as the platen descends and to fold it over said clamps to complete the double fold.

9. In a machine for wrapping newspapers the combination of a vertically-movable platen and plunger adapted to hold the paper and the wrapper between them with a portion projecting, a paste-roll for pasting the edge of the wrapper, an opening in the bed of the machine in which said platen and plunger travel and across the edge of which the projecting edge of the paper draws to form a right-angled fold, retaining-fingers for holding the fold in place, a sliding ram for completing the single fold, clamps for holding down the folded paper on the platen at a point between the ends, a sliding ram adapted to catch the edge of the folded newspaper as the platen descends and to fold it over said clamps to complete the double fold, a follower for forcing the folded newspaper from beneath said sliding ram and a roller under which the folded paper passes for pressing down the pasted edge of the wrapper.

10. In a machine for wrapping newspapers, &c., the combination of a platen mounted in a vertical opening in the bed of the machine, feed-rolls for feeding the web of wrapping-paper onto said platen with a projecting edge, a paste-roll for pasting said projecting edge, a knife for cutting off the wrappers from said web, a follower for feeding the newspapers onto said platen above the wrapper with a projecting portion, a plunger adapted to descend and clamp the wrapper and newspaper on the platen and then descend with said platen through said vertical opening whereby a right-angled fold is formed and finally to rise leaving the newspaper on the platen, fingers adapted to catch and hold the right-angled fold before the plunger rises, an upper sliding ram for completing the single fold, clamps for holding the newspapers centrally against the platen, a lower sliding ram for catching and turning the edge of the paper over said clamps as the platen descends, means for swinging said fingers back to their normal position, a follower for forcing the folded newspaper from beneath said lower sliding ram, rolls beneath which said folded newspaper passes to press down the pasted edge of the wrapper.

654,215. SHARPENING-MACHINE. MARY L. WORDEN, Denver, Colo., administratrix of Charles A. Worden, deceased. Filed Dec. 18, 1899. Serial No. 740,841. (No model.)



Claim.—1. In a sharpening-machine, the combination with grinding-wheels and adjustable supports therefor; of a blade-holding device consisting of two sets of spring-actuated pivoted jaws mounted between the said adjustable supports, and adapted to hold the blade in an upright position, substantially as described.

2. In a sharpening-machine the combination with grinding wheels and adjustable supports for the same; of a blade-holding device consisting of a pair of spring-actuated flat metal jaws; and a pair of pivoted jaws mounted near the first pair of jaws, substantially as described.

3. In a sharpening-machine, the combination with grinding-wheels and adjustable supports for the same; of a blade-holding device consisting of a pair of flat metal pivoted jaws one of said jaws having an aperture to receive one of said grinding-wheels and a pair of pivoted jaws mounted near the first pair of jaws, substantially as described.

4. In a sharpening-machine, the combination with grinding-wheels and adjustable supports therefor; of a blade-holding device consisting of a pair of upright pivoted jaws curved near their upper ends to engage the blade, one of said jaws having an aperture to receive one of said grinding-wheels; and a pair of pivoted jaws mounted close to the aforesaid jaws and adapted to engage the back of the blade being ground; the said blade-holding device being mounted between the said adjustable supports, substantially as described.

5. In a sharpening-machine, the combination of a base; supports adjustably secured to said base; grinding-wheels carried by said adjustable supports; a supporting-plate mounted between said adjustable supports; a pair of upright jaws, one of said jaws being provided with an aperture to receive one of said grinding-wheels; rods journaled in the lower ends of said jaws and in the ends of said supporting-plate; lugs carried by the lower ends of said jaws and adapted to engage each other and to hold the upper ends of said jaws together; a second pair of jaws mounted close to the first pair; rods journaled in the lower ends of said jaws and in the ends of said plate; luge carried by the lower ends of said jaws, adapted to engage each other and to hold the upper ends of the said jaws together, substantially as described.

6. In a sharpening-machine of the character described the combination with a base; of upwardly-extending arms pivoted thereto; means for securing said arms in different angular positions; uprights carried by said arms and integral therewith; shafts journaled in said uprights; grinding-wheels mounted on said shafts; pulleys mounted on said shafts; means for transmitting motion to the shafts carrying the pulleys and grinding-wheels; and a blade-holding device adapted to hold the blade to be ground between the said grinding-wheels, substantially as described.

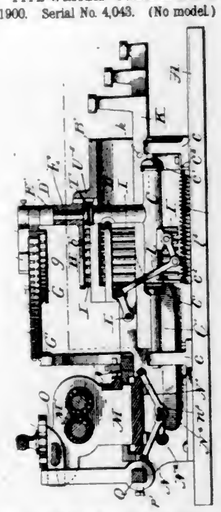
7. In a sharpening-machine, the combination with a base of arms adjustably secured thereto; uprights carried by said arms; shafts journaled in said uprights, grinding-wheels mounted on said shafts; pulleys mounted on said shafts; means for transmitting motion to the pulleys; and a blade-holding device consisting of upright pivoted jaws for holding the blade between the said grinding-wheels, substantially as described.

8. In a sharpening-machine, the combination with a base of upwardly-extending arms crossed near their lower ends and pivotally secured to said base; uprights carried by said arms and made integral therewith, slots in said uprights, adjusting-screws adapted to pass through said slots and secure said uprights to said base, shafts journaled in said uprights, grinding-wheels mounted fast on said shafts, pulleys mounted fast on said shafts and means for imparting motion to said pulleys; of a plate integral with said base, supporting a blade-holding device, consisting of a pair of upright pivoted jaws, adapted to engage the blade and hold the same in a vertical position, one of said jaws being composed of two members separated at their upper ends to admit of the passage of one of said grinding-wheels and the other jaw being composed of a single member mounted to one side of the grinding-wheels; lugs carried by the lower ends of said jaws, adapted to engage each other and impart similar movements to the opposite jaw; a spring connected to said jaws to hold their upper ends together; rods journaled in the lower ends of said jaws and rods journaled in the end of said supporting-plate; a second pair of pivoted jaws mounted near said first jaws, and each jaw composed of two upright members joined at their tops and adapted to hold the back of the blade being ground; lugs carried by the lower ends of said second pair of jaws and adapted to engage each other and impart similar movements to the opposite jaw; a spring connecting said second jaws having a tendency to hold their upper ends together; rods journaled in the lower ends of said jaws and rods journaled in the end of said supporting-plate, substantially as described.

654,216. METHOD OF MAKING SHEET-ASPHALT PAVEMENTS. JOSEPH H. AMIES, Philadelphia, Pa. Filed Sept. 15, 1899. Serial No. 730,625. (No specimens.)

Claim.—That improvement in the art of making pavements which consists in taking fibers and coating them with an elastic waterproof material, and during the process of laying the pavement, mixing the coated fibers with asphalt and sand in about the proportions specified, and then laying the pavement in a single sheet.

654,217. TYPE-WRITER. FRANK H. ARMSTRONG, Auburn, N. Y. Filed Feb. 5, 1900. Serial No. 4,043. (No model.)



Claim.—1. In a type-writer, the combination with a longitudinally-reciprocating carriage and a printing-segment pivotally mounted thereon, of a location-arm pivotally mounted on said carriage and operatively connected with said segment, a series of vertically-movable location-pins located adjacent to the travel of said location-arm but out of contact therewith, a series of key-levers operatively connected with said pins for moving them into position to engage the location-arm and operative connections between said levers and the carriage for moving it into printing position whereby the type-segment will be revolved during the movement of the carriage into printing position to bring the desired character in position to print, substantially as described.

2. In a type-writer, the combination with a longitudinally-reciprocating carriage, means for holding said carriage normally at one extreme of its reciprocation, a type-segment pivotally mounted on said carriage, and location-arms extending laterally in opposite sides of said carriage, pivotally mounted on said carriage and operatively connected with said segment, of a series of location-pins adjacent to but not in contact with said location-arms, a series of key-levers operatively connected with said pins to move them into position to engage said location-arms, operative connections between said levers and said carriage for moving it into printing position whereby said segment will be rotated during the movement of the carriage into printing position, to bring the desired character into position to print, substantially as described.

3. In a type-writer, the combination with the longitudinally-reciprocating carriage, a printing-segment pivotally mounted thereon, a location-arm pivotally mounted on said carriage, operatively connected with said segment and provided with a longitudinal slot, of a series of vertically-movable location-pins mounted in line with said slot in the location-arms, a series of key-levers operatively connected with said pins for moving them into engagement with said slot and operative connections between said levers and said carriage for moving the carriage into printing position, substantially as described.

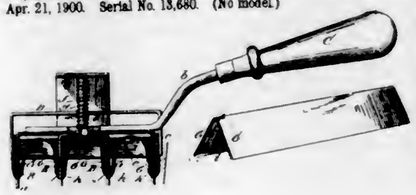
4. In a type-writer, the combination with the longitudinally-movable carriage, a printing-segment pivotally mounted therein, and laterally-extending location-arms pivotally mounted on said carriage operatively connected with said segment, and provided with longitudinal slotted portions, of a series of vertically-movable location-pins mounted in line with the slotted portions of said location-arms but out of contact therewith, a series of key-levers each of which is connected operatively with one of said pins to move it into engagement with the slotted portion of its adjacent location-arm, mechanism for imparting longitudinal movement to said carriage to move it into printing position including a transverse bar in the path of and a short distance from each of said key-levers whereby when a key-lever is depressed its connected location-pin will be moved into engagement with one of said location-arms before the longitudinal movement of the carriage is effected, substantially as described.

5. In a type-writer, the combination with the longitudinally-movable carriage, a printing-segment pivotally mounted thereon, a locking-segment connected with said printing-segment and provided with a series of locking-notches corresponding with characters on said printing-segments, and location-arms pivotally mounted on said carriage, operatively connected with said printing-segment, a series of location-pins adapted to engage said location-arms, a series of key-levers connected with said pins for moving them into position to engage said location-arms, connections between said levers and the said carriage for moving the carriage and said printing-segment into printing position and a locking projection adapted to engage one of the notches in said locking-segment, substantially as described.

6. In a type-writer, the combination with a longitudinally-reciprocating carriage and a printing-segment pivotally mounted thereon, of a location-arm pivotally mounted on said carriage and operatively connected with said segment, a series of vertically-movable location-pins located adjacent to the travel of said location-arms but out of contact therewith, a series of key-levers operatively connected with said pins for moving them into position to engage the location-arm and operative connections between said levers and the carriage for moving it into printing position whereby the type-segment will be revolved during the movement of the carriage into printing position, to bring the desired character in position to print, means for returning the said carriage from its printing position to normal position and devices for centering the segment upon its pivotal connection, substantially as described.

7. In a type-writer, the combination with a longitudinally-reciprocating carriage, means for holding said carriage normally at one extreme of its reciprocation, a type-segment pivotally mounted on said carriage, and location-arms extending laterally in opposite sides of said carriage, pivotally mounted on said carriage and operatively connected with said segment, of a series of location-pins adjacent to but not in contact with said location-arms, a series of key-levers operatively connected with said pins to move them into position to engage said location-arms, operative connections between said levers and said carriage for moving it into printing position whereby said segment will be rotated during the movement of the carriage into printing position, to bring the desired character into position to print, a part connected with said segment provided with a V-shaped notch, and a V-shaped stationary projection for engaging said V-shaped notch to center said segment upon its pivotal connection, substantially as described.

654,218. CURRYCOMB. GEORGE D. BELDIN, Marengo, Ill. Filed Apr. 21, 1900. Serial No. 13,680. (No model.)

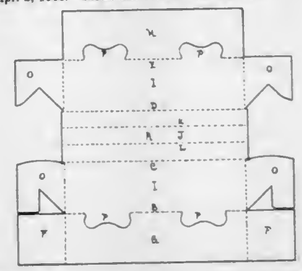


Claim.—1. A currycomb provided with a plurality of knife-blades having sharp cutting edges to cut and liberate the tangled hair from between the toothed plates, said plates being relatively movable thereto, substantially as and for the purpose set forth.

2. A currycomb having a plurality of toothed plates and a plurality of parallel knife-blades having sharp cutting edges to cut and release the tangled hair from between the toothed plates, said plates being movable with relation to the blades, substantially as and for the purpose specified.

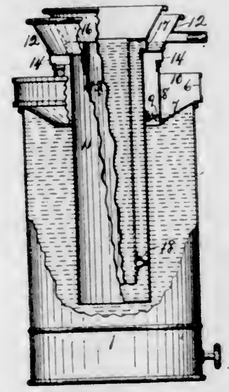
3. A currycomb provided with a suitable frame, a plurality of knife-blades connected thereto, suitable toothed plates movable relative to the knife-blades and a suitable spring located between the frame and back of the comb, substantially as and for the purpose described.

654,219. PAPER BOX. WILLIAM BENDER, Jr., Belleville, Ill. Filed Apr. 2, 1900. Serial No. 11,084. (No model.)



Claim.—A blank from which a box or body is to be formed, and which is provided with the two bottom folds G, H, the side folds I, and the central portion J, which forms the top, and which is provided with the end pieces F, the four locking-pieces O, and the projecting parts P which form the supports for the body or car after it is formed, substantially as set forth.

654,220. MILK-COOLER. DAVID BOTHWELL, Hannibal, N. Y., assignor to Maria A. Bothwell, same place. Filed Oct. 6, 1899. Serial No. 732,790. (No model.)



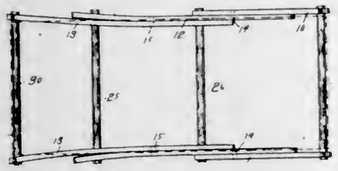
Claim.—1. A milk-cooler comprising a body having an outlet, and a cylinder open at both ends suspended therein, said cylinder being provided with an opening for the purposes set forth.

2. A milk-cooler, comprising a can, provided with a cover having an annular trough, perforations at the bottom of said trough, and a cooling device suspended in said can, and against which the milk is adapted to come in contact, as it passes through said perforations.

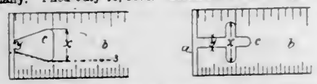
654,221. COMBINED FOLDING CAMP CHAIR AND STOOL. FRANÇOIS X. BRODEUR, Lynn, Mass. Filed Mar. 19, 1900. Serial No. 9,146. (No model.)

Claim.—A knockdown chair comprising two sections B, C, respectively composed of three members corresponding members in the two sections being arranged in parallelism the first and second of said members in each section being pivotally connected a deter-

mined distance from corresponding ends and the second and third of said members being pivotally connected a determined distance from their opposite ends; registering keyholes in the corresponding arms respectively of the second and third members of said sections; notches in the ends of said members; key-rods fitted to be inserted in said keyholes whereby corresponding arms of corresponding members of said sections may be detachably connected; and a flexible seat provided with winding rods fitted to be entered and held against rotation in the notches of corresponding arms of corresponding members of said sections whereby said sections may be detachably connected substantially as described.



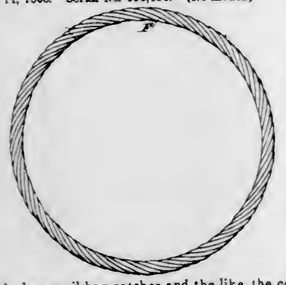
654,222. CAP FOR MEASURING-SCALES. HANS BUBE, Hanover, Germany. Filed July 19, 1898. Serial No. 686,378. (No model.)



Claim.—1. A scale having a protecting-cap bent into U-section embracing the end of the scale and provided with fastening-lugs on opposite sides sunk into the material of the scale and interlocking with the same so as to prevent displacement in any direction, said lugs projecting in the same plane with the opposite surfaces of, and flush with, the scale, whereby said cap may be secured to the scale without rivets or other independent fastening means, substantially as described.

2. A scale having a protecting-cap bent into U-section embracing the end of the scale but of such breadth as not to surpass the smallest division of the scale, and provided with fastening-lugs on opposite sides sunk into the material of the scale and interlocking with the same so as to prevent displacement in any direction, said lugs projecting in the same plane with the opposite surfaces of, and flush with, the scale, whereby the said cap may be secured to the scale without rivets or other independent fastening means, substantially as described.

654,223. MAIL-BAG CATCHER. ALFRED D. CARNAGY, Trenton, N. J., assignor to the John A. Roebling's Sons Company, same place. Filed Nov. 11, 1898. Serial No. 696,150. (No model.)



Claim.—1. In a mail-bag catcher and the like, the combination of devices for supporting a mail-bag or the like in position for its receipt by or delivery from a moving car and for catching said mail-bag when received by or delivered from the moving car, and an elastic metal catch-ring by which the bag is caught and held on its receipt or delivery, said catch-ring being adapted to yield under the tension of transferring the mail-bag, substantially as described.

2. In a mail-bag catcher and the like, the combination of devices for supporting a mail-bag or the like in position for its receipt by or delivery from a moving car and for catching said mail-bag when received by or delivered from the moving car, and a wire rope or cable catch-ring by which the bag is caught and held on its receipt or delivery, said catch-ring being adapted to yield under the tension of transferring the mail-bag, substantially as described.

3. The combination with a mail-bag catch-arm for catching and holding a mail-bag in transfer between a moving car and mail-station, of a wire rope or cable catch-ring by which the bag is caught and held by the catch-arm, substantially as described.

4. An elastic catch-ring for mail-bags and the like made of metal and adapted to yield under the tension of transferring the mail-bag, substantially as described.

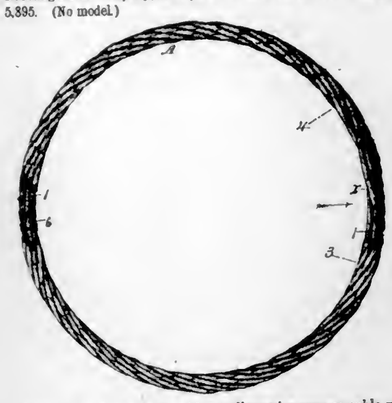
5. An elastic mail-bag catch-ring formed of wire rope or cable, substantially as described.

654,224. ENDLESS WIRE ROPE OR CABLE. ALFRED CARNAGY, Trenton, N. J., assignor to the John A. Roebling's Sons Company, same place. Filed Nov. 11, 1898. Serial No. 696,151. (No model.)



Claim.—An endless wire rope or cable formed of a single strand and having a multiple-strand outer layer formed of successive spiral windings of the single strand, each of said successive windings extending throughout the length of the wire rope or cable, and said wire rope or cable having its core formed by the ends of the strand, substantially as described.

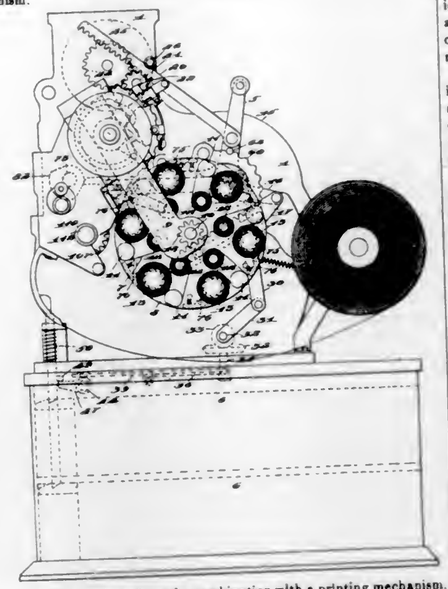
654,225. METHOD OF MAKING ENDLESS WIRE ROPES OR CABLES. ALFRED D. CARNAGY, Trenton, N. J., assignor to the John A. Roebling's Sons Company, same place. Filed Feb. 20, 1900. Serial No. 5,895. (No model.)



Claim.—The method of making endless wire rope or cable which consists in making a form of the article desired having strands of the same size and number as those of the rope or cable to be formed and substituting for each of the outer form-strands in succession a winding of the strand from which the wire rope or cable is to be made and finally substituting for the core-strand of the form the opposite ends of the strand which has been substituted for the outer form-strands, substantially as described.

654,226. CASH-REGISTER. THOMAS CARROLL, Dayton, Ohio, assignor to the National Cash Register Company, Jersey City, N. J. Filed Oct. 9, 1899. Serial No. 733,067. (No model.)

Claim.—1. In a cash-register the combination with a printing mechanism, of a platen-carrier bearing independent record strips, and means for adjusting said platen-carrier to bring any desired one of the platens and strips into coöperative relation with the printing mechanism.



2. In a cash-register the combination with a printing mechanism, of a carriage bearing a series of independent record-strip devices and means for adjusting said carriage to bring any desired one of said devices into coöperative relation with the printing mechanism.

3. In a cash-register the combination with a printing mechanism, of a carriage bearing a series of independent record-strips, and means for simultaneously moving all of said strips to bring any one into coöperative relation with the printing mechanism.

4. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, means for setting any one of said devices to coöperate with the printing mechanism, and a special printing-segment connected to the setting means and arranged to be set thereby.

5. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, means for setting any one of the said devices to coöperate with the printing mechanism, and a special indicator connected to said setting means to be set thereby.

6. In a cash-register the combination with a printing mechanism, of a rotary carriage bearing a series of record-strip devices, a pinion mounted on said carriage, a pivoted selecting-lever and a rack connected to said lever and engaging said pinion.

7. In a cash-register the combination with a printing mechanism, of a carriage bearing a series of platens and record-strip-feeding devices, means for adjusting the carriage and means for moving it to and from the printing mechanism.

8. In a cash-register the combination with a printing mechanism, of a series of record-strip devices, a lever for adjusting any one of said devices to coöperative relation with the printing mechanism, and a locking device for the machine controlled by the said lever.

9. In a cash-register the combination with a printing mechanism, of a carriage bearing a series of record-strips, a lever for adjusting any one of said strips into coöperative relation with the printing mechanism, and locking means for preventing operation of the machine until said lever has been moved.

10. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, mounted on a movable frame, a series of cash-drawers, a drawer-releasing mechanism, and a lever for both moving the frame and setting the drawer-releasing mechanism.

11. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, a lever for setting any one of said devices to coöperate with the printing mechanism, and an alining and locking lever connected to the movable parts of the machine and engaging the setting-lever.

12. In a cash-register the combination with a printing mechanism, of a frame or carriage bearing a series of platens and a series of supply and feeding rollers for independent record-strips, and means for adjusting the frame to bring any one of the platens into coöperative relation with the printing mechanism.

13. In a cash-register the combination with a printing mechanism, of a frame carrying a series of independent detail record devices, a lever for moving said frame to bring any one of said devices into coöperative relation with the printing mechanism and a lock for the machine controlled by said lever.

14. In a cash-register the combination with a printing mechanism, of a frame carrying a series of independent record-strip devices, means for adjusting the frame to bring any one of said devices into coöperative relation with the printing mechanism and an alining device for said frame arranged to be operated independently of the said adjusting means.

15. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, means for adjusting said devices to bring any one into coöperative relation with the printing mechanism, and alining devices for alining the record-strip devices.

16. In a cash-register the combination with a printing mechanism, of a series of independent detail record devices, means for adjusting said devices to bring any one into coöperative relation with the printing mechanism, and devices movable independently of the adjusting means for alining the detail record devices.

17. In a cash-register the combination with a printing mechanism, of a series of cash-drawers, latches for said drawers, operating mechanism for said latches, a series of independent detail record devices, and a single selecting means for adjusting the latch-operating mechanism and the record devices.

18. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, a series of cash-drawers, latches for said drawers, latch-operating mechanism, a lever for setting both the record devices and the latch mechanism and a common means for operating said latch mechanism and the record devices.

19. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, a special indicator, a special printing-segment, multiple cash-drawers, latch mechanisms for said drawers and a common means for setting the strip devices, the indicator, the special printing-segment and the drawer-latch mechanism.

20. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, adjusting means for bringing any one of said devices into coöperative relation with the printing mechanism, and means connected to the movable parts of the machine for feeding the record-strip device after it has been adjusted to operative position.

21. In a cash-register the combination with a series of cash-drawers, of independent latches for said drawers, a longitudinally-movable rock-shaft carrying arms for operating said latches, a pivoted lever for moving the shaft longitudinally, a second lever having a flexible spring connection with said first-mentioned lever, and means for adjusting said second lever according to the drawer to be operated.

22. In a cash-register the combination with a series of cash-drawers, of independent latches for the same, a longitudinally-movable rock-shaft having arms for operating said latches, a lever for moving said shaft longitudinally, a second lever having a flexible connection with the first-mentioned lever, and a setting device connected to said second lever for operating the same.

23. In a cash-register the combination with a printing mechanism, of a frame carrying a series of independent record-strip devices and a series of alining devices, means for setting any one of said record-strip devices for coöperation with the printing mechanism, and an alining-lever connected to the movable parts of the machine and coöperating with the alining devices of said frame.

24. In a cash-register the combination with a printing mechanism, of a frame carrying a series of independent record-strip devices and a series of blocks having alining grooves, means for moving the frame to bring any one of the record-strip devices into coöperative relation with the printing mechanism, and a pivoted lever connected to the movable parts of the machine and carrying a pin which enters the grooves of the alining-blocks when the machine is operated.

25. In a cash-register the combination with a printing mechanism, of a frame carrying a series of record-strip devices comprising feeding-rollers, means for adjusting the frame to bring any one of said devices to operative position, a slide, and a pawl mounted on said slide and arranged to be moved to feed the record-strip which is in operative position with respect to the printing mechanism.

26. In a cash-register the combination with a printing mechanism, of a frame carrying a series of independent record-strip devices and a series of alining blocks, means for adjusting the frame to bring any one of the record-strip devices into operative position, a pivoted lever having a projection arranged to engage said blocks, and a cam and connections for operating said lever.

27. In a cash-register the combination with a printing mechanism, of a rotary frame carrying a series of record-strip devices, a pinion on said frame, a pivoted lever, a rack-bar connected to said lever and meshing with said pinion and a pivoted alining and locking lever engaging and coöperating with the first-mentioned lever.

28. In a cash-register the combination with a printing mechanism, of check-strip-feeding rollers, means for moving one of said rollers toward and away from the other, a slide connected to said means, a second slide coöperating with the first-mentioned slide, keys arranged to give said second slide an initial independent movement, means connected to the movable parts of the machine for giving said second slide its final movement and devices connecting the slides whereby this latter movement is transmitted to the first-mentioned slide.

29. In a cash-register the combination with a printing mechanism, of check-strip-feeding devices arranged to be thrown into and out of operative position, a series of special keys and a slide device controlling the feeding devices and arranged to be set by the special keys.

30. In a cash-register the combination with a printing mechanism, of check-strip-feeding devices arranged to be thrown into and out of operative position, a series of special keys, a slide device for adjusting the feeding devices arranged to be set by the keys and means connected to the movable parts of the machine for operating said slide device.

31. In a cash-register the combination with a printing mechanism, of check-strip-feeding devices arranged to be thrown into and out of operative position, a series of special keys, a slide device for adjusting the feeding devices arranged to be set by the special keys, and a lever adapted to be operated by the movable parts of the machine and having a cam portion for operating said slide device.

32. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, means for setting any one of said devices for coöperation with the printing mechanism, and devices for locking said setting means after the operation of the machine has commenced.

33. In a cash-register the combination with a printing mechanism, of a frame carrying a series of independent record-strip devices, a lever for setting said frame, and means for locking said lever after the registering movement of the machine has commenced.

34. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, a setting-lever for said devices, a locking-lever for said setting-lever, a rock-shaft for operating said locking-lever, a locking-arm on said shaft and a notched disk coöperating with said locking-arm.

35. In a cash-register the combination with a printing mechanism, of a carriage bearing a series of independent record-strip devices, independent feeding means for said strip devices, and mechanism for adjusting said carriage to bring any desired one of said devices into coöperative relation with the printing mechanism.

36. In a cash-register the combination with a printing mechanism, of a carriage bearing a series of independent record-strip devices, independent feeding means for said strip devices, a common operating mechanism for actuating any one of said feeding means, and mechanism for adjusting said carriage to bring the desired record-strip devices into coöperative relation with the printing mechanism.

37. In a cash-register, the combination with a printing mechanism, of a rotary carriage bearing a series of independent record-strip devices, and means for rotating said carriage to bring any desired one of the record-strip devices into coöperative relation with the printing mechanism.

38. In a cash-register the combination with a printing mechanism, of a rotary carriage bearing a series of independent record-strip devices and a single lever and connections for rotating said carriage to bring any desired one of the record-strip devices into coöperative relation with the printing mechanism.

39. In a cash-register the combination with a printing mechanism, of a carriage bearing a series of platens and a series of independent record-strip devices, and adjusting means for actuating said carriage to bring the proper platen and record-strip device into coöperative relation with the printing mechanism, and means for bringing the platen and printing mechanism together.

40. In a cash-register the combination with a printing mechanism, of a carriage bearing a series of independent record-strip devices, means for adjusting said carriage to bring any desired one of said devices into coöperative relation with the printing mechanism, and means for bringing the printing mechanism and record-strip devices together.

41. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, independent feeding means for the respective devices, and means for adjusting any one of said devices into coöperative relation with the printing mechanism.

42. In a cash-register the combination with a printing mechanism, of a series of record-strip devices, means for adjusting any one of said devices into coöperative relation with the printing mechanism, and a locking device for the machine controlled by the said adjusting means.

43. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, a series of cash-compartments, independent devices for said compartments for locking the same, and means for bringing any one of the record devices into coöperative relation with the printing mechanism and setting the corresponding compartment-locking device for operation.

44. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, a series of cash-compartments, independent devices for said compartments for locking the same, means for bringing any one of the record devices into coöperative relation with the printing mechanism and setting the corresponding compartment-locking device for operation and mechanism controlled by the regular movement of the machine for operating the locking device which has been set.

45. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, a series of cash-drawers having independent locks and means for bringing any one of the record devices into coöperative relation with the printing mechanism and setting the corresponding drawer-lock for operation.

46. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, a series of cash-drawers, a drawer-releasing mechanism and means for adjusting the desired record-strip device to operative position and setting the drawer-releasing mechanism.

47. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, means for setting any one of said devices to coöperate with the printing mechanism, and an alining mechanism connected to the movable parts of the machine and engaging said setting means.

48. In a cash-register, the combination with a printing mechanism, of a series of independent record-strip devices, a lever for setting any one of said devices to coöperate with the printing mechanism and an alining device connected to the movable parts of the machine and engaging the setting-lever.

49. In a cash-register the combination with a printing mechanism of a series of independent record-strip devices, means for setting any one of said devices to coöperate with the printing mechanism, and mechanism for locking said means against movement during the operation of the machine.

50. In a cash-register the combination with a printing mechanism, of a series of platens and a series of supply and feeding rollers for independent record-strips and means for adjusting any one of the platens and its companion rollers into coöperative relation with the printing mechanism.

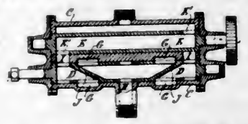
51. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, means for adjusting said devices to bring any desired one into coöperative relation with the printing mechanism and a lock for the machine controlled by said adjusting means.

52. In a cash-register the combination with a printing mechanism, of a series of independent record-strip devices, a lever for adjusting any one of said devices into coöperative relation with the printing mechanism, and alining devices for said record-strip devices arranged to be operated independently of the adjusting-lever.

53. In a cash-register, the combination with a printing mechanism, of a series of independent record-strip devices, a series of cash-drawers, independent latches for the same, a latch-operating device common to all of the latches and adjusting means for setting any one of the record-strip devices for operation and simultaneously setting the latch-operating device.

54. In a cash-register the combination with a printing mechanism, of a frame carrying a series of independent record-strip devices and a series of alining-blocks, means for adjusting the frame to bring any one of the record-strip devices into operative position, and means connected to the movable parts of the machine and coöperating with the alining-blocks.

654,227. VALVE FOR ROTARY ENGINES. DAVID CARTER, Stirchley, England. Filed Mar. 6, 1900. Serial No. 7,604. (No model.)

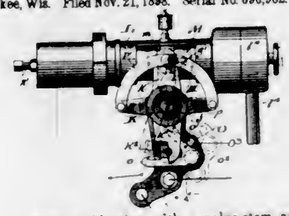


Claim.—1. In valve mechanism for supplying steam alternately to the two divisions of a double rotary engine, the combination of a steam-chest, a valve seat in the form of a segment of a circle within the steam-chest, a port formed through the valve-seat near each end thereof, one of which leads to the interior of one division of the engine, and the other of which leads to the other division thereof, a revolving hollow cylindrical valve fitting to the segmental valve-seat and having a steam-space in the steam-chest on its opposite side, an admission-port opening into the interior of the valve formed in its circumferential face near each end, which can be brought opposite to the corresponding port in the valve-seat, the admission-port at one end of the valve being on the opposite side of the cylinder to the admission-port at the other end thereof, and a cylindrical, rotatable reversing-valve interposed between the above-described steam-admission valve and the two divisions of the engine for directing the steam in either direction to the two divisions of the engine.

2. In a double rotary engine, each of the two divisions of which has two passages leading to it, one for admission of steam and the other for exhaust, the combination of the steam-chest, the valve-seat within it in the form of a segment of a cylinder, the hollow revolving cylindrical valve fitting to the seat, the ports on opposite sides of this cylindrical valve near its ends, the two steam-ports in the valve-seat one near each end, the hollow cylindrical reversing-valve behind the seat of the admission-valve, ports in the sides thereof registering with the ports in the valve-seat, a central exhaust-outlet, a pair of ports on each side of the outlet registering with the passages the members of each pair being on opposite sides of the hollow reversing-valve and inclined divisions across the interior of the valve separating the members of each pair.

3. In valve mechanism for supplying steam alternately to the two divisions of a double rotary engine, the combination of a steam-chest, a valve-seat in the form of a segment of a circle within the steam-chest, an outlet-port formed through the valve-seat near each end, one leading to the interior of one division of the engine, and the other to the other, a revolving cylindrical valve fitting to and rotating in the seat and having formed in it an interior longitudinal passage, and ports in its circumferential face at each end communicating with the interior longitudinal passage, such ports being on opposite sides of the valve, in combination with a cylindrical hollow rotatable exhaust and reversing valve interposed between the above-described steam-valve and the two divisions of the engine, and having ports and passages for directing the steam in either direction to the two divisions, and also ports and a passage for correspondingly discharging the exhaust-steam, substantially as set forth.

654,228. VALVE-GEAR FOR ENGINES. NIELS A. CHRISTENSEN, Milwaukee, Wis. Filed Nov. 21, 1898. Serial No. 696,962. (No model.)



Claim.—1. The combination with a valve-stem and a bonnet through which said stem projects, of an arm fixed upon said stem, a cylinder mounted upon and supported by said bonnet transversely to the valve-stem, a plunger fitted in said cylinder and connected with said stem, and means constantly tending to move said plunger into and hold it in position for closing the valve, substantially as and for the purposes set forth.

2. The combination with a valve-stem and a bonnet, of an arm fixed upon said stem, a cylinder mounted upon and supported by said bonnet transversely to said stem and capable of angular adjustment on said bonnet about said valve-stem, a plunger fitted to work in said cylinder and connected with said stem, and means tending to move said plunger into and to hold it in position for closing the valve, substantially as and for the purposes set forth.

3. The combination with a valve-stem and a bonnet having a cylindrical extension through which said stem projects, of a valve-operating arm fixed upon the projecting end of said stem and having a recessed hub fitted over and adapted to turn on the cylindrical end of said bonnet, whereby the stem is relieved of lateral strain, substantially as and for the purposes set forth.

4. The combination with a valve-stem and a bonnet having a cylindrical extension and a flange or shoulder, of a cylinder having a plate in a plane parallel with its axis fitted upon the cylindrical extension against said flange or shoulder and adjustably attached thereto, a valve-stem passing axially through the extension of said bonnet and provided with an arm fixed thereon, and a plunger fitted in said cylinder and connected with said arm, substantially as and for the purposes set forth.

5. The combination with a valve-stem having an arm fixed thereon and a bonnet through which said stem projects, of a cylinder mounted upon and supported by said bonnet transversely to the valve-stem and having a side opening, a plunger fitted in said cylinder and having a transverse recess in one side next to the side opening in the cylinder, and a pivot-block fitted to slide in said recess and engaged by a pin on said arm, substantially as and for the purposes set forth.

6. The combination with a valve-stem provided with an arm fixed thereon and a bonnet through which said stem projects, of a cylinder mounted on said bonnet transversely to the valve-stem and having a side opening, a port in one end and a lateral port near the same end both communicating with the atmosphere, a manually-adjustable valve for regulating the area of opening through the port in the end of said cylinder, a plunger fitted in said cylinder and connected through the side opening therein with the arm on the valve-stem, and means tending to move and hold said plunger toward the ported end of said cylinder, substantially as and for the purposes set forth.

7. The combination with a valve-stem provided with an arm, of a cylinder arranged transversely to and in close proximity with said valve-stem and provided at one end with a head having a chamber communicating with the cylinder through a port and through one or more lateral openings with a passage leading to the atmosphere, said cylinder having near its ported head one or more lateral openings which also communicate with said passage; a valve for adjusting the port-opening in said cylinder-head, having its stem threaded in the outer wall of said head and provided with a hand-wheel which has a circular series of recesses in the back adapted to be engaged by a spring-pin held in a socket in the cylinder-head parallel with the stem of said regulating-valve; a plunger fitted in said cylinder and connected on one side with the arm on the valve-stem through an opening in one side of said cylinder; and means tending to move and hold said plunger toward the ported end of said cylinder, substantially as and for the purposes set forth.

8. The combination with a valve stem provided with an arm, of a cylinder arranged transversely to and in proximity with said valve-stem and provided at one end with an adjustable muffled air-cushion comprising a head formed with a chamber which communicates with the cylinder through a port and has a recessed flange or extension fitting over the end of said cylinder and forming therewith an annular passage communicating with the interior of the cylinder through a number of lateral openings therein; a manually-adjustable valve controlling the port between said cylinder and the chamber in its head; a cap or cover forming an annular passage around said head in communication with the chamber and annular passage therein and having a connection leading to the atmosphere; and a plunger fitted in said cylinder and connected with the arm on said valve-stem, substantially as and for the purposes set forth.

9. The combination with a valve-stem and a bonnet through which it projects, of a valve-closing arm or lever fixed upon said stem, a valve-opening arm or lever mounted and fitted to turn on said bonnet and provided with a latch-hook pivoted thereto and adapted to be engaged with a latch-block on the valve-closing arm; a cut-off cam mounted and fitted to turn on said bonnet and an arch attached to said cam by arms and connected with the governor, substantially as and for the purposes set forth.

10. The combination with a valve-stem and a bonnet having a cylindrical extension through which said stem projects; a cylinder mounted on said bonnet transversely to said stem; a plunger fitted in said cylinder; a lever fixed upon the projecting end of the valve-stem and having one arm connected with one side of said plunger and another arm provided with a latch-block; an arm or lever loosely mounted on said bonnet, connected with the eccentric and provided with a latch-hook adapted to be engaged with said latch-block; and a cut-off cam having a governor connection and adapted to disengage said hook from said latch-block, substantially as and for the purposes set forth.

11. The combination with a valve-stem provided with a lever fixed thereon, of a cylinder arranged transversely to said valve-stem; a plunger fitted in said cylinder and connected on one side with said lever; an independently-movable lever-arm fulcrumed concentrically with the valve-stem; a latch pivoted to said lever-arm and adapted to be engaged with the lever on the valve-stem; and a cut-off cam having a governor connection and adapted to disengage said hook from said lever, substantially as and for the purposes set forth.

12. The combination with a rocking valve-stem and a bonnet through which said stem projects, of a lever fixed upon said stem; a cylinder arranged transversely to said valve-stem; a plunger fitted in said cylinder and connected at one side with said lever; a lever-arm loosely mounted on said bonnet and provided with a latch-hook which is adapted to be engaged with the lever on the valve-stem for opening the valve; and a cam also loosely mounted on said bonnet between said lever and arm and provided with an offset arch passing outside of said lever and serving for the attachment of the governor connection, substantially as and for the purposes set forth.

13. The combination with an oscillating valve-stem and a bonnet through which it projects, of a cylinder mounted upon said bonnet transversely to the valve-stem and capable of angular adjustment about the axis of the valve-stem; a plunger fitted in said cylinder; a lever fixed upon said valve-stem and connected with said plunger; a lever-arm mounted loosely upon said bonnet and provided with a pivoted latch-hook adapted to engage with said lever for opening the valve; and a cam also loosely mounted upon said bonnet between said lever and arm and having a governor connection for disengaging the hook from said lever; substantially as and for the purposes set forth.

14. The combination with an oscillating valve-stem and a bonnet through which it projects, of a cylinder mounted upon said bonnet transversely to said stem; a plunger fitted in said cylinder; a lever fixed upon the valve-stem and connected with said plunger; a valve-opening arm loosely mounted on said bonnet and provided with a latch-hook pivoted thereto; a cam also loosely mounted on said bonnet between said lever and arm and provided with an arch passing outside of said lever concentric with the valve-stem; and a spring holding said hook in position for engagement with said cam; substantially as and for the purposes set forth.

15. The combination with an oscillating valve-stem and a bonnet having a cylindrical extension through which said stem loosely passes, of a cylinder mounted upon said bonnet transversely to said valve-stem and capable of angular adjustment about the valve-stem as an axis; a plunger fitted in said cylinder; a lever fixed upon the projecting end of said valve-stem, having a bearing upon the bonnet and connected on one side of said stem with said plunger and provided on the opposite side of the valve-stem with a latch-block; a lever-arm loosely mounted upon said bonnet and provided with a latch-hook pivoted thereto and adapted to engage with the latch-block of said lever for opening the valve; a cam loosely mounted upon said bonnet between said lever and arm and provided with an offset curved bar, passing outside of said lever concentric with the valve-stem, for the attachment of the governor connection; and a spring tending to hold said latch-hook in position for engagement with said cam; substantially as and for the purposes set forth.

16. The combination with the steam-valves of an engine, of cylinders arranged transversely to and in proximity with the valve-stems; plungers fitted in said cylinders for closing said valves; levers fixed on the valve-stems and connected with said plungers; independently-movable arms fulcrumed concentrically with said levers, provided with latch-hooks for engaging said levers and opening the valves and having direct connection with the eccentric; and cams connected with the governor for disengaging said hooks from said levers, substantially as and for the purposes set forth.

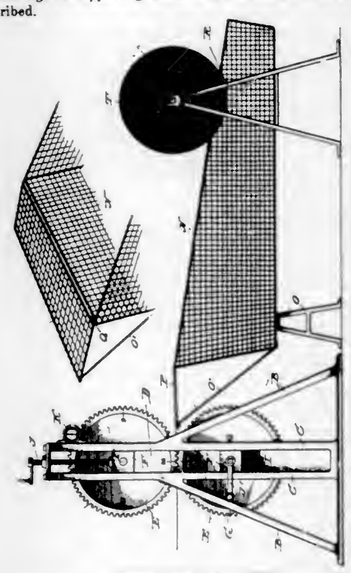
17. The combination with the steam and exhaust valves of an engine, of cylinders arranged transversely to and in proximity with the steam-valve stems; plungers fitted to work in said cylinders; levers fixed upon the steam-valve stems and connected with said plungers for closing said valves; independently-movable arms fulcrumed concentrically with said levers and provided with pivoted latch-hooks which are adapted to engage with said levers for opening the steam-valves; cams connected with the governor for disengaging said hooks from said levers; arms fixed on the exhaust-valve stems and connected by rods with the valve-opening arms of the steam-valve gear; and a rod connecting said valve-opening arms, one of which is directly connected with the eccentric-rod; substantially as and for the purposes set forth.

18. The combination with the steam-valves, eccentric and eccentric-rod, of valve-closing levers fixed on the stems of said valves; independently-movable arms provided with latch-hooks for engaging said levers and opening the valves, said arms being directly connected with each other by a rod and one of them being directly connected with the eccentric-rod, and cams connected with the governor for disengaging said hooks from said levers, substantially as and for the purposes set forth.

19. The combination with the steam and exhaust valves and an eccentric and eccentric-rod for operating the same, of valve-closing levers fixed upon the steam-valve stems; independently-movable arms provided with latch-hooks for opening the steam-valves by engagement with said levers; cams connected with the governor for disengaging said hooks from said levers; arms mounted on the exhaust-valve stems and connected by rods with the valve-opening arms of the steam-valves; and a rod connecting said valve-opening arms, one of which is directly connected with the eccentric-rod, substantially as and for the purposes set forth.

654,229. CLOTH-MEASURING MACHINE. THOMAS J. CLOUD, Killeen, Tex. Filed July 7, 1897. Serial No. 643,727. (No model.)

Claim.—In a cloth-measurer, the combination, with two rollers, of a receptacle, the forward end of which is inclined relatively to the rollers, an apron secured at its ends only to the top of the front of the receptacle and forming a space therebetween, and extending horizontally therefrom nearly to the contacting points of the rollers, and a support at the opposite end of the receptacle provided with journal-bearings for supporting the cloth to be measured, substantially as described.



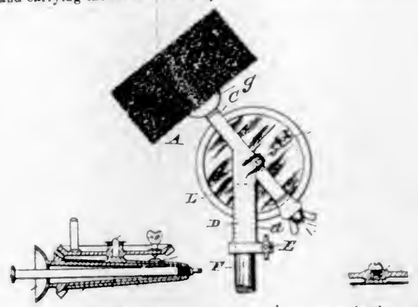
654,230. NON-REFILLABLE BOTTLE. CHARLES J. COOKE, Carterton, New Zealand. Filed Oct. 4, 1899. Serial No. 732,475. (No model.)



Claim.—A non-refillable bottle having its neck provided with two internal shoulders, a disk supported on the lower shoulder, a trap suspended from said disk composed of a U-shaped body having a longer leg extending up through the disk and a shorter leg terminating underneath the disk, serrations on the ends of said legs, a tube passing through said disk, extending to the lower part of the bottle and rising above the mouth thereof, and provided with a weakened portion just above said disk, and a perforated disk adapted to rest on the upper shoulder in the bottle-neck.

654,231. ROTARY MOP-HEAD. WILLIAM DABB, Croydon, Victoria. Filed July 21, 1899. Serial No. 724,847. (No model.)

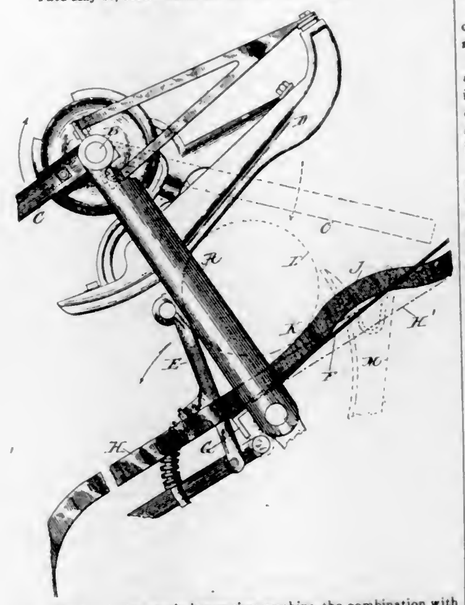
Claim.—1. A mop for household and other purposes, comprising a sleeve, a bearing in which said sleeve is rotatable, hand-operated gear for driving said sleeve, and a spindle passing through said sleeve and carrying the head of the mop.



2. In a mop for household and other purposes, having a rotatable head, the combination with a tapering sleeve, of a bearing in which said sleeve is rotatable, a hand-wheel carrying a bevel-gear, a spindle for carrying the mop-head, and a bevel-pinion on the end of the sleeve nearest said mop-head and meshing with the gear on the hand-wheel.

3. In a mop, the combination with a bearing, of a sleeve rotatable therein, a spindle passing through said sleeve, a hand-wheel for actuating the sleeve and spindle, and a set-screw in the wheel adapted to bear against the side of said bearing to lock said wheel and prevent the mop-head from turning.

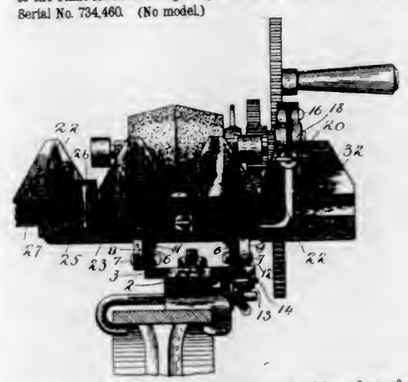
654,232. DECK FOR GRAIN-BINDERS. SAMUEL K. DENNIS, Chicago, Ill., assignor to the Plano Manufacturing Company, same place. Filed May 26, 1898. Serial No. 681,784. (No model.)



Claim.—1. In a grain-harvesting machine, the combination with the breastplate, the presser-arm, and the discharge-arm, of a deck having the bundle-supporting arms formed with a portion thereof projecting above the surface of the deck at a point just in rear of where the gavel is held while being bound, substantially as and for the purpose described.

2. In a grain-harvesting machine, the combination with the breastplate, the presser-arm, and the discharge-arm, of a deck having the bundle-supporting arms formed with a portion thereof projecting above the surface of the deck at a point just in rear of where the gavel is held while being bound, and sloping downward from said projecting portion on the arc of a circle of which the journal of the discharge-arm is the center, substantially as shown and described.

654,233. GRINDER. SAMUEL K. DENNIS, Chicago, Ill., assignor to the Plano Manufacturing Company, same place. Filed Oct. 23, 1899. Serial No. 734,460. (No model.)



Claim.—1. In a grinder, a sickle-holder comprising a frame for the sickle and a clamp pivoted to and having a movement independent of, such frame and extending over the sickle and clamping it from above.

2. In a grinder, a sickle-holder comprising a frame, a standard or upward projection therefrom against which the sickle is clamped, and a clamp mounted on such standard to move on such standard in a plane at right angles to the sickle and adapted to clamp the sickle from above.

3. In a grinder, a sickle-holder comprising a frame, a standard or upward projection therefrom, and a clamp pivotally mounted on such standard and adapted when moved in one direction on its pivot to clamp the sickle from above.

4. In a grinder, a sickle-holder comprising a frame a standard or upward projection therefrom, and a clamp substantially U-shaped and inverted which is pivotally mounted on such standard.

5. In a grinder, a sickle-holder comprising a frame, a standard or upward projection therefrom, a clamp substantially U-shaped but inverted which is pivotally mounted on such standard with one arm on the sickle side of the standard and the other arm on the opposite side, and means for drawing and holding the first-named arm inward toward the frame and against the sickle to clamp it.

6. In a grinder, a sickle-holder comprising a frame, a standard or upward projection therefrom against one side of which the sickle is to be clamped, a clamp substantially U-shaped but inverted which is pivotally mounted on such standard with one arm 19 on the sickle side of the standard and the other arm 18 on the opposite side, and a set-screw passing through arm 18 and adapted to press against the standard to draw the end of arm 19 inward toward the frame.

7. In a grinder, a sickle-holder comprising a frame, a standard or upward projection therefrom against one side of which the sickle is to be clamped, a substantially U-shaped but inverted clamp pivotally mounted on such standard with one arm 19 on the sickle side of the standard and the other arm 18 on the opposite side, and a set-screw passing through arm 18 and adapted to press against the standard, the end of arm 19 pressing against the sickle at a point below the line of pressure from the set-screw.

8. In a grinder, a sickle-holder comprising a frame to receive the sickle, a substantially U-shaped inverted clamp pivoted thereon and adapted to extend over and press the sickle against the frame with one of its arms, and means whereby the clamp may be moved to bring said one of the arms against the sickle.

9. In a grinder, a sickle-holder comprising a frame to receive the sickle, a substantially U-shaped inverted clamp pivoted thereon and adapted to extend over and press the sickle against the frame with the innermost one of its arms and means interposed between the outermost arm and the frame for exerting a pressure therebetween to move such latter arm outward, the lower end of such innermost arm contacting the sickle below the plane of said pressure.

10. In a grinder, a sickle-holder comprising a frame to receive the sickle, a clamp at one end of such frame, upwardly-projecting fingers near the other end of the frame and positioned on either side of the sickle when in the frame and an adjustable stop or abutment on the frame substantially midway of said fingers and clamp.

11. In a grinder, a sickle-holder comprising a frame to receive the sickle, a clamp at one end of such frame, projecting fingers near the other end of the frame and positioned on either side of the sickle when in the frame, and a stop or abutment on the frame substantially midway of said fingers and clamp and comprising a plug having a flange projecting toward the sickle, said plug being received in an

enlarged substantially-vertical opening in the frame, and means for holding the plug in adjusted position both vertically and longitudinally.

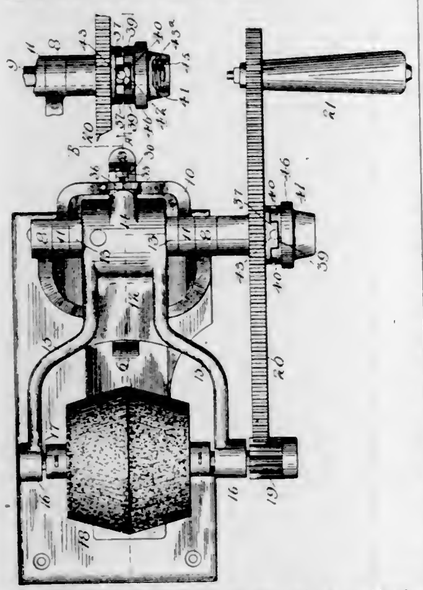
12. In a grinder, a sickle-holder comprising a frame to receive the sickle, a clamp at one end thereof, a stop or abutment substantially midway of the frame and at the front thereof, comprising a plug movable vertically in a hole in such frame and having a flange projecting toward the sickle and a set-screw in the frame and entering said hole to press against and hold said plug in adjusted position.

13. In a grinder, a sickle-holder comprising a frame to receive the sickle, a clamp at one end of such frame and an adjustable stop or abutment on the frame substantially midway thereof.

14. In a grinder, a sickle-holder comprising a frame to receive the sickle, a projection 15 therefrom having a contact-face 21 against which the sickle-sections bear, a substantially U-shaped inverted clamp pivotally mounted on such projection and having the end of its innermost arm contacting the sickle below said face and a set-screw passing through the other arm and impinging against the projection on substantially the plane of said face.

15. In a grinder, a sickle-holder comprising a frame to receive the sickle, an arm or projection 15 therefrom having its lower portion cut away to accommodate the sickle-bar and forming a contact-face 21, and a clamp mounted on said projection and having a curved arm adapted to press against the sickle on a plane below such contact-face.

654,234. GRINDING-MACHINE. SAMUEL K. DENNIS, Chicago, Ill., assignor to the Plano Manufacturing Company, same place. Filed Jan. 22, 1900. Serial No. 2,258. (No model.)



Claim.—1. In a device of the class described, the combination with the stationary frame having the shaft with the worm-gear thereon journaled therein, of a cam-disk mounted to rotate in said frame and having teeth on its periphery coöperating with said worm-gear, and a swinging frame pivotally mounted in said stationary frame and coöperating with said cam-disk so that as the shaft is rotated the swinging frame will be slowly reciprocated.

2. In a device of the class described, the combination with the stationary frame having the shaft with the worm-gear thereon journaled therein, of an auxiliary frame pivoted on said shaft and adjustable to vary its position relative to the main frame, a cam-disk mounted to rotate in said auxiliary frame and having teeth on its periphery coöperating with said worm-gear, and a swinging frame pivotally mounted in said stationary frame and coöperating with said cam-disk so that as the shaft is rotated the swinging frame will be slowly reciprocated.

3. In a device of the class described, the combination with the stationary frame having the shaft with the worm-gear thereon journaled therein, of a cam-disk mounted to rotate in said frame and having teeth on its periphery coöperating with said worm-gear, a swinging frame pivotally mounted in said stationary frame and coöperating with said cam-disk so that as the shaft is rotated the swinging frame will be slowly reciprocated, a grinding-wheel journaled in said swinging frame, and means for rotating it and said shaft.

4. In a device of the class described, the combination with the stationary frame having the shaft with the worm-gear thereon journaled therein, of a cam-disk mounted to rotate in said frame and having teeth on its periphery coöperating with said worm-gear, a swinging frame pivotally mounted in said stationary frame and coöperating with said cam-disk so that as the shaft is rotated the swinging frame will be slowly reciprocated, a grinding-wheel journaled in said swinging frame, and means for rotating it and said shaft, said means comprising a gear-pinion on the grinding-wheel shaft, a driving-wheel mounted on the main shaft and having gear-teeth meshing with said pinion.

5. In a device of the class described, the combination with the stationary frame having the shaft with the worm-gear thereon journaled therein, of a cam-disk mounted to rotate in said frame and having teeth on its periphery coöperating with said worm-gear, a swinging frame pivotally mounted in said stationary frame and coöperating with said cam-disk so that as the shaft is rotated the swinging frame will be slowly reciprocated, a grinding-wheel journaled in said swinging frame, and means for rotating it and said shaft comprising a gear-pinion on the grinding-wheel shaft, a driving-wheel loosely mounted on the main shaft and having gear-teeth meshing with said pinion, and clutch mechanism between said driving-wheel and said main shaft.

6. In a device of the class described, the combination with the stationary frame having the shaft with the worm-gear thereon journaled therein, of an auxiliary frame pivoted on said shaft and adjustable to vary its position relative to the stationary frame, a cam-disk mounted to rotate in said auxiliary frame and having teeth on its periphery coöperating with said worm-gear, a swinging frame pivotally mounted in said stationary frame and coöperating with said cam-disk so that as the shaft is rotated the swinging frame will be slowly reciprocated, a grinding-wheel journaled in said swinging frame, and means for rotating it and said shaft.

7. In a device of the class described, the combination with the stationary frame having the shaft with the worm-gear thereon journaled therein, of a disk mounted to rotate in said frame and provided with teeth on its periphery coöperating with said worm-gear and supplemental cam flanges projecting from its opposite faces, and a swinging frame pivotally mounted in said stationary frame and having a pair of fingers coöperating with said cam-flanges so that as the shaft is rotated the swinging frame will be slowly reciprocated.

8. In a device of the class described, the combination with the stationary frame having the shaft with the worm-gear thereon journaled therein, of a disk mounted to rotate in said frame and provided with teeth on its periphery coöperating with said worm-gear and supplemental cam-flanges projecting from its opposite faces, and a swinging frame pivotally mounted in said stationary frame and having a pair of fingers coöperating with said cam-flanges so that as the shaft is rotated the swinging frame will be slowly reciprocated, one of said fingers having an adjustable bearing formed by a set-screw passing therethrough and having its end arranged to coöperate with the adjacent cam-flange.

9. In a device of the class described, the combination with the stationary frame having a driving-shaft journaled therein, of an auxiliary frame supported thereby, a swinging frame pivotally mounted therein, connections between said shaft and the swinging frame whereby the rotation of said shaft causes the swinging of the frame, the place of vibration being controlled by the position of the auxiliary frame, and spring-catch connections between the main and auxiliary frames to rigidly connect them in any desired position of adjustment.

10. In a device of the class described, the combination with the stationary frame having a driving-shaft journaled therein, of an auxiliary frame supported thereby, a swinging frame pivotally mounted therein, connections between said shaft and the swinging frame whereby the rotation of said shaft causes the swinging of the frame, the place of vibration being controlled by the position of the auxiliary frame, and spring-catch connections between the main and auxiliary frames to rigidly connect them in any desired position of adjnstment, said connections comprising a stiff leaf-spring supported by the stationary frame and located adjacent said auxiliary frame at its free end and provided with two or more apertures therein, and a lug on said auxiliary frame adapted to enter said apertures.

11. In a device of the class described, the combination of a stationary frame having a driving-shaft journaled in the standards thereof, with a yoke-shaped auxiliary frame pivotally mounted in said standards between the standards of the main frame, a swinging frame also mounted on said shaft between the bearings of the auxiliary frame, and connections between said shaft and said swinging frame to cause the reciprocation of the swinging frame as the shaft is rotated.

12. In a device of the class described, the combination of the stationary frame having a driving-shaft journaled in the standards thereof, a driving-wheel mounted on said shaft and provided with gear-teeth on or adjacent to its periphery, with a yoke-shaped auxiliary frame pivotally mounted in said standards between the standards of the main frame, a swinging frame also mounted on said shaft between the bearings of the auxiliary frame, a grinding-wheel journaled in the outer end of the swinging frame upon a shaft provided with a pinion meshing with said gear-teeth, and connections between said driving-shaft and said swinging frame to cause the reciprocation of the frame as the shaft is rotated.

13. In a device of the class described, the combination of the stationary frame having a driving-shaft journaled therein, with a swinging frame having a grinding-wheel journaled therein pivotally mounted thereon, connections between said driving-shaft and the swinging frame for reciprocating said swinging frame as the shaft is rotated, a driving-wheel loosely mounted on said shaft, driving connections between said wheel and the grinding-wheel, and clutch connections between said shaft and wheel whereby the shaft can be rotated with the wheel when desired.

14. In a device of the class described, the combination of the stationary frame having a driving-shaft journaled therein, with a swinging frame having a grinding-wheel journaled therein pivotally mounted thereon, connections between said driving-shaft and the swinging frame for reciprocating said swinging frame as the shaft is rotated, a driving-wheel loosely mounted on said shaft, driving connections between said wheel and the grinding-wheel, and clutch connections between said shaft and wheel whereby the shaft can be rotated with the wheel when desired, said connections comprising the pin on the shaft, projections on the driving-wheel, and a sliding sleeve having notches adapted to coöperate with the pin on the shaft and the projections on the driving-wheel to connect the sleeve to the shaft and to the wheel.

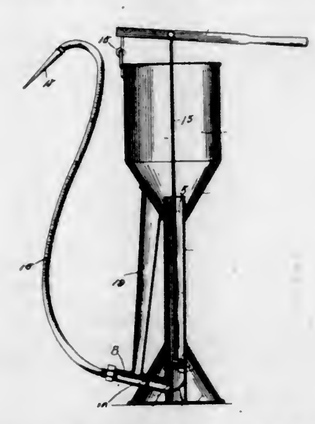
15. In a device of the class described, the combination of the stationary frame having a driving-shaft journaled therein, with a swinging frame having a grinding-wheel journaled therein pivotally mounted thereon, connections between said driving-shaft and the swinging frame for reciprocating said swinging frame as the shaft is rotated, a driving-wheel loosely mounted on said shaft, driving connections between said wheel and the grinding-wheel, and clutch connections between said shaft and wheel whereby the shaft can be rotated with the wheel when desired, said connections comprising the pin 43 on the shaft, the projections 37 on the driving-wheel having their inner ends beyond the outer end of the pin 43, and a sliding sleeve in the outer end of the shaft having the notches 39 adapted to coöperate with the pin 43 and the projections 37.

16. In a device of the class described, the combination of the stationary frame having a driving-shaft journaled therein, with a swinging frame having a grinding-wheel journaled therein pivotally mounted thereon, connections between said driving-shaft and the swinging frame for reciprocating said swinging frame as the shaft is rotated, a driving-wheel loosely mounted on said shaft, driving connections between said wheel and the grinding-wheel, and clutch connections between said shaft and wheel whereby the shaft can be rotated with the wheel when desired, said connections comprising the pin 43 on the shaft, the projections 37 on the driving-wheel having their inner ends beyond the outer end of the pin 43, and the sleeve mounted on the outer end of the shaft and having the notches 39 adapted to coöperate with the pin 43 and the projections 37 and the recesses 42 coöperating with the pin 43.

17. In a device of the class described, the combination of the stationary frame having a driving-shaft journaled therein, with a swinging frame having a grinding-wheel journaled therein pivotally mounted thereon, connections between said driving-shaft and the swinging frame for reciprocating said swinging frame as the shaft is rotated, a driving-wheel loosely mounted on said shaft, driving connections between said wheel and the grinding-wheel, and clutch connections between said shaft and wheel whereby the shaft can be rotated with the wheel when desired, said connections comprising a pin on the shaft, projections on the driving-wheel, a sliding sleeve having notches at its inner end adapted to coöperate with the pin on the shaft and the projections on the driving-wheel to connect the sleeve to the shaft and the wheel, and a spring to hold said sleeve yieldingly in contact with the pin on the shaft and the projections on the wheel.

18. In a device of the class described, the combination of the stationary frame having a driving-shaft journaled therein, with a swinging frame having a grinding-wheel journaled therein pivotally mounted thereon, connections between said driving-shaft and the swinging frame for reciprocating said swinging frame as the shaft is rotated, a driving-wheel loosely mounted on said shaft, driving connections between said wheel and the grinding-wheel, and clutch connections between said shaft and wheel whereby the shaft can be rotated with the wheel when desired, said connections comprising the pin 43 on the shaft, the projections 37 on the driving-wheel having their inner ends beyond the outer end of the pin 43, the sliding sleeve mounted on the outer end of the shaft and having the notches 39 coöperating with the pin 43 and the projection 37 and the recesses 42 coöperating with the pin 43, and a spring interposed between the end of said shaft and the sleeve to hold the latter yieldingly in contact with the pin on the shaft and the projections on the wheel.

654,285. SPRAYING-PUMP. WILLIAM E. DOW, Littleton, N. H. Filed Nov. 16, 1899. Serial No. 737,192. (No model.)



Claim.—1. In a spraying-pump, the combination with a reservoir and a base, of a stem therebetween, the top of the stem projecting through the bottom of the reservoir and perforated, and the bottom being provided with a discharge-opening, a curved false bottom in the stem below said opening a valved plunger in the stem, a discharge-pipe leading from the opening at the bottom of the stem and a flexible hose secured to the end of said pipe, the outer end of which is adapted to be provided with an attachment.

2. In a spraying-pump, the combination with a reservoir the bottom of which is funnel-shaped, of a conical base, a perforated cylindrical stem projecting through the bottom of the reservoir at one end, and through the apex of the base at the other, the end within the base being secured to the bottom thereof and provided with an opening adjacent thereto, a curved false bottom secured within the stem below said opening, a valved plunger within the stem, an exhaust-pipe leading from the opening in the lower end of the stem, an air-chamber communicating with the pipe, and a flexible hose secured to the pipe the free end of which is adapted to be provided with interchangeable attachments.

3. In a spraying-pump, the combination with a reservoir of a stem leading from the bottom thereof, and provided with an exhaust-opening, a valved plunger within the stem, a conical base secured at its bottom and apex to the end of the stem, an air-chamber secured to the bottom of the reservoir, a discharge-pipe secured at its inner end to the stem around said exhaust-opening, at its intermediate portion to the wall of the base and at its outer end to the air-chamber, and a flexible hose secured to the pipe, the free end of which is adapted to be provided with interchangeable attachments.

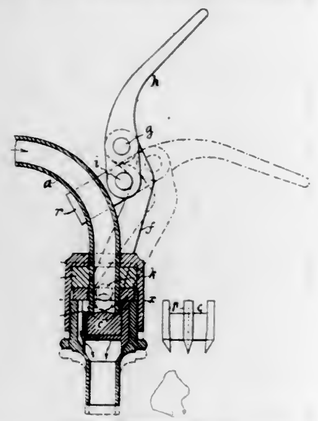
4. In a spraying-pump, the combination with a reservoir provided with open handles, of a lever pivotally secured to one side of the reservoir, a stem projecting from the bottom of the reservoir a valved plunger in the stem, a rod connected with the plunger and the lever, a base at the bottom of the stem, a discharge-pipe leading from the bottom of the stem and a flexible hose secured to the pipe, the free end of which is adapted to project through one of the handles of the reservoir and to be provided with an attachment.

654,286. VALVE. JOHANNES DRECKMANN, Cassel, Germany. Filed Jan. 16, 1900. Serial No. 1,624. (No model.)

Claim.—1. In a new and improved valve for pipes the combination of a valve-chamber, a forked pitman engaging the same, a hand-lever pivoted on said pipe and engaging the upper end of said pitman, an adjustable cap secured to the lower end of said chamber and a valve-plate therein and adapted to coact with the end of said pipe serving as a valve-seat, substantially as described.

2. In a new and improved valve for pipes, the combination of a

lever pivotally mounted on said pipe a valve-chamber surrounding said pipe and adapted to be reciprocally moved thereon by said lever, an adjustable cap engaging the lower end of said chamber, and suitable packing within said chamber and about said pipe and adapted to be regulated by the adjustment of said cap, substantially as described.

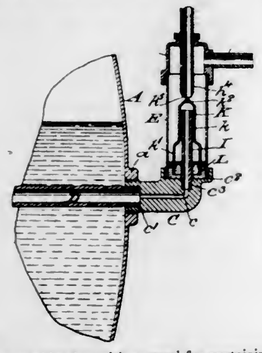


654,237. LACING-HOOK FOR SHOES. HARRISON H. EATON, Cleveland, Ohio. Filed Aug. 9, 1899. Serial No. 726,648. (No model.)



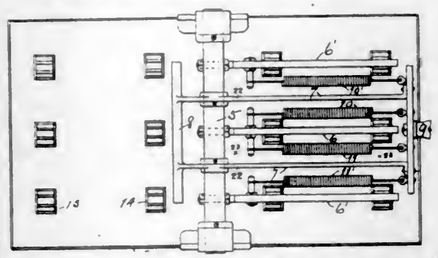
Claim.—A lacing-hook struck up from a single piece of wire and having a tubular shank, a collar about the top of the shank and a hook having its base centrally of the collar and closing the top of said shank and extending outward in compound curvature to a position wholly outside the collar in its main portion, substantially as described.

654,238. AUTOMATIC GAS-REGULATOR. ARTHUR H. ELLIOTT, New Rochelle, N. Y. Filed Sept. 7, 1898. Serial No. 690,421. (No model.)



Claim.—The combination with a vessel for containing a fluid to be heated, of a tubular supporting-piece fixed to the vessel-wall, an air-reservoir extending from the said supporting-piece into the interior of the vessel, an upright casing fixed liquid-tight to the exterior of the supporting-piece, an upright pipe fixed to the outer end of the supporting-piece within the upright casing and forming an extension of the passage-way through the supporting-piece, a hollow valve closed at its upper end and open at its lower end and surrounding the upright pipe within the casing, a body of liquid located in the bottom of the casing around the upright pipe and forming a seal between the interior of the valve and the interior of the casing, a pipe for admitting gas to the interior of the casing, a vertically-adjustable gas-exit pipe extending into the interior of the casing toward the closed end of said hollow valve and a burner in position to supply heat to said vessel and connected with said gas-exit pipe, substantially as set forth.

654,239. ELECTRIC SWITCH. WILLIAM ELY, Providence, R. I. Filed May 24, 1897. Serial No. 637,883. (No model.)



Claim.—1. In an electric switch having a base, a rotatable shaft arranged parallel with said base, and circuit-terminals arranged at opposite sides of said shaft, the combination with said parts of a connecting member carried on one side of said shaft, an actuating member loosely mounted upon said shaft for movement independent of the connecting member, and provided with parallel arms at opposite sides of said connecting member, and with a cross member and handle at its outer end, and a cross member at its inner end which latter is adapted to forcibly impart the initial releasing movement to the said contact member from its frictional contact with the circuit-terminals, and springs connecting said connecting member and the actuating member, substantially as set forth.

2. In an electric switch having a base, a rotatable shaft arranged parallel with said base, and circuit-terminals arranged at opposite sides of said shaft, the combination with said parts of a connecting member carried on one side of said shaft, and provided with lugs or pins 18 and 19, an actuating member loosely mounted upon said shaft for movement independent of said connecting member and provided with parallel arms at opposite sides of said connecting member, and with a cross-bar and handle 9 at its outer end, and with a cross-bar 8 at its inner end adapted to forcibly impart the initial releasing movement to the said connecting member from its frictional contact with the circuit-terminals, the springs 10 and 11 connecting said connecting member and actuating member, and spring-controlled catches 16 and 17 adapted to releasably engage said lugs or pins 18 and 19 to thereby lock said connecting member in its engagement with the circuit-terminals, and also to serve as aids in the accumulation of energy in said springs 10 and 11.

3. In a electric switch having a base, a rotatable shaft arranged parallel with said base, and circuit terminals arranged at opposite sides of said shaft, the combination with said parts of a connecting member carried on one side of said shaft, an actuating member loosely mounted upon said shaft for movement without reference to the movement of the connecting member, and provided with the cross-bars forming a slot-opening, extending on opposite sides of said shaft, through which the connecting member may pass in its rapid independent movement from one set of circuit-terminals to the opposite set, the innermost one of said cross-bars being adapted on the rotation of said actuating member to forcibly impart the initial releasing movement to the connecting member from its frictional contact with the circuit-terminals, and the springs connecting said actuating member and connecting member and adapted to transfer with rapid uninterrupted movement said connecting member from one set of circuit-terminals to the opposite set.

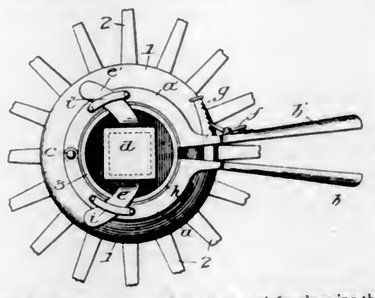
4. In an electric switch having a base, a rotatable shaft, and corresponding sets of circuit-terminals arranged at opposite sides of said shaft, the combination with said parts of an actuating member loosely mounted on said shaft, a plurality of connecting members carried on one side of said shaft for movement independent of the said actuating member, the said actuating member being provided with a slot-opening extending on both sides of said shaft, and at its inner end with a cross bar or member adapted on the rotation of said actuating member to forcibly impart the initial releasing movement to the several connecting members from their frictional contact with the circuit-terminals, one of the connecting members being arranged to pass through the slot-opening of the actuating member and the others to pass at each side of said actuating member, and the springs connecting said actuating and the several connecting members and adapted to cause the rapid transfer of said connecting members from one set of circuit terminals to the opposite set.

5. In an electric switch having a base, a rotatable shaft, and corresponding sets of circuit-terminals arranged at opposite sides of said shaft, the combination with said parts of an actuating member loosely mounted upon said shaft and provided at its inner end with a cross bar or member adapted upon the rotation of said actuating member to impart the initial releasing movement to the connecting members from their frictional contact with the circuit-terminals, a plurality of connecting members carried upon one side of said shaft and arranged at opposite sides of said actuating member, and the springs connecting the actuating member with the connecting members, whereby the strain or tension on said actuating member is balanced, and the said springs are adapted to cause the rapid uninterrupted transfer of said connecting members from one set of circuit-terminals to the opposite side.

6. In an electric switch having a base, a rotatable shaft, and corresponding sets of circuit-terminals arranged at opposite sides of said shaft, the combination with said parts of an actuating member loosely mounted upon said shaft, a plurality of connecting members carried on one side of said shaft and arranged at opposite sides of said actuating member for movement without reference to the movement of the latter, and springs connecting said connecting members with said actuating member and so arranged as to cause the rapid independent transfer of said connecting members from one set of circuit-terminals to the opposite set.

7. In an electric switch having a base, a rotatable shaft, and corresponding sets of circuit-terminals arranged at opposite sides of said shaft, the combination with said parts of an actuating member loosely mounted on said shaft, a connecting member carried on one side of said shaft for movement without reference to the movement of said actuating member, said actuating member being provided with arms arranged at opposite sides of said connecting member and connected at their outer ends thereby forming in conjunction with said shaft a slot-opening through which said connecting member may pass independently from one set of circuit-terminals to the opposite set, and springs connecting said connecting member with said actuating member and so arranged as to cause the rapid independent transfer of said connecting member, in either direction, through the slot-opening of the actuating member from one set of circuit-terminals to the opposite set.

654,240. WHEEL AND AXLE-NUT WRENCH. DELBERT J. ESTES, Opdyke, Ill., assignor to Lettie Lora Estes, same place. Filed Apr. 3, 1900. Serial No. 11,407. (No model.)



Claim.—1. The combination of the jaws *a*, *a'*, for clamping the wheel-hub, pivoted together at *c*, and provided with the handles *b*, *b'*, respectively, and the socket *d* for receiving the axle-nut, the socket having the arms *e*, *e'*, slidingly connected with the jaws.

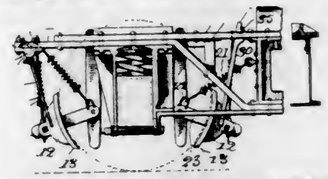
2. The combination of the jaws, *a*, *a'*, for clamping the wheel-hub, pivoted together at *c*, and provided with the handles *b*, *b'*, respectively, and a releasable locking device, the socket *d* for receiving the nut, the socket having the arms *e*, *e'*, and the keepers *i*, *i'*, on the jaws through which the arms of the socket are free to slide.

3. The combination of the curved jaws, *a*, *a'*, for clamping at *c*, and provided with the handles *b*, *b'*, respectively, a releasable locking device consisting of the notched bar *g*, on the handle *b* and the spring-latch *f* on the handle *b'*, the socket *d* for receiving the axle-nut, said socket having the curved arms *e*, *e'*, and the keepers *i*, *i'*, on the jaws through which the arms of the socket slide.

654,241. CAR-BRAKE. JOHN S. FRANCIS, Bloomington, Ill. Filed May 18, 1899. Serial No. 717,314. (No model.)

Claim.—1. The combination, in a car-brake, of a support for the brake-beam pivotally mounted on the truck-frame, brake-hangers rigidly connected to said support, and safety-rods connecting the support and brake-beam, whereby lateral motion of the brake-beam is prevented.

2. In a car-brake, the combination of a rocker cross-bar, a brake-beam, brake-hangers rigidly secured to said cross-bar, brake-heads, and yielding safety-rods connecting said cross-bar and brake-beam.



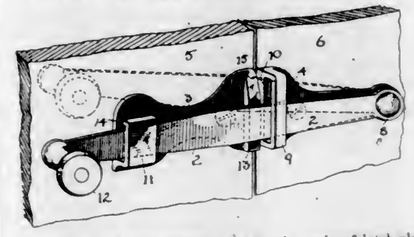
3. The combination, in a car-brake of a rocker cross-bar, a brake-beam, brake-hangers connecting said cross-bar and brake-beam, brake-heads carried by said brake-hangers, and elastic safety-rods connecting the brake-beam and cross-bar.

4. The combination, in a car-brake, of a rocker cross-bar, a brake-beam, brake-hangers for supporting said brake-beam from said cross-bar, and means connecting the said brake-beam and cross-bar adapted to yieldingly support said brake-beam when the brake is released.

5. The combination, in a car-brake, of a cross-bar pivotally mounted on the truck-frame, brake-hangers secured to said cross-bar, a brake-beam carried by said hangers, and means for yieldingly suspending said brake-beam from said cross-bar when the brake is released.

6. The combination, with a car-truck frame, of supports for the brake-beam pivotally mounted on said frame, brake-hangers carried by said supports, a brake-beam, and yieldable safety-rods connecting said supports and brake-beam.

654,242. DOOR-LATCH. WILLIAM H. GARLOCK, Cleveland, Ohio. Filed May 8, 1900. Serial No. 15,955. (No model.)



Claim.—1. In door-latches, a latch and a pair of latch-plates, one of said plates having at its outer end a loop to confine the latch and a rib against which the latch bears, and the other plate having at its inner end a catch for the latch and a downwardly-deepening rib on its face engaged by the latch when closed, substantially as described.

2. The combination of a set of doors closing together, and latch members therefor comprising a base-plate for one door having a latch-loop and rib at its outer end, and a base-plate for the other door having a catch at one end and a locking-rib at the other end, a spring-latch extending through the loop of the first-named plate and engaging the catch on the other plate and pressing against both said ribs as a fulcrum to close the doors at their meeting edges, substantially as described.

3. The combination of the doors and the plates mounted thereon, a flat spring-latch pivoted on the inner end of one of said plates and a catch therefor on the inner end of the other plate, said plates having each a rib over which said latch is bent between its ends, and backing-ledges against which the doors are pressed by said latch mechanism, substantially as described.

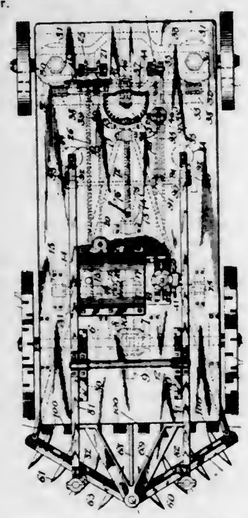
4. In door-latches, a latch member having a rib across its face at one end and a catch for a latch at the other end, in combination with a spring-latch bent across said rib and engaged behind said catch, substantially as described.

5. In door-latch mechanism, a set of plates in combination with a spring-latch pivoted at the inner end of one plate and a catch therefor on the inner end of the other plate, and ribs on said plates between said pivot and said catch and standing out from the face of the plates, whereby when the latch is engaged over said catch at its free end it is bent across both said ribs, substantially as described.

654,243. MOTOR-DRIVEN PLOW. RICHARD J. GATLING, New York, N. Y. Filed Sept. 15, 1899. Serial No. 730,552. (No model.)

Claim.—1. In an agricultural implement, the combination, with

a frame or body, of a plurality of carriers supported thereby; one or more soil-working disks supported by each of said carriers; means for raising and lowering each of said carriers and comprising a shiftable member; and rotatable means for raising and lowering said shiftable member.



2. In an agricultural implement, the combination, with a frame or body, of a gang of disk-shaped soil-working devices comprising two sets; a carrier for each of said sets; a pair of beams pivotally mounted on said body; and means for raising and lowering said beams thereby to raise and lower the soil-working devices.

3. In an agricultural implement, the combination, with a frame or body, of a plurality of carriers supported thereby; one or more soil-working disks supported by each of said carriers; shiftable means connected with said carriers; a weight in position to control the working of said disks; and means for raising and lowering said shiftable means thereby to raise and lower said disks.

4. In an agricultural implement, the combination, with a frame or body, of a plurality of carriers connected with said body; one or more soil-working disks supported by each of said carriers; a connector secured to each of said carriers; and means for shifting said connectors and thereby the disks into various positions relatively to the path of the body.

5. In an agricultural implement, the combination, with a frame or body, of a gang of disk-shaped soil-working devices supported by said body and comprising two sets; a single means for adjusting the two sets of devices into various positions relative to the path of the vehicle; and a single means for raising and lowering all of said sets of devices together out of and into their working positions respectively and independently of said frame or body.

6. The combination, with a vehicle-body and its running-gear, of a motor carried by the vehicle, for imparting motion thereto; a pair of carriers supported by said vehicle; a set of disk-shaped soil-working devices mounted on each of said carriers; a pair of connectors jointed to said carriers and shiftably secured to said body; and means for shifting said connectors, and thereby the working devices, into various positions relatively to the path of the vehicle.

7. The combination, with a vehicle-body and its running-gear, of a motor carried by the vehicle, for imparting motion thereto; a gang of soil-working devices comprising two sets; a pair of carriers supported on the vehicle, for carrying said working devices; means for adjusting the carriers, and thereby the working devices, into various positions relatively to the path of the vehicle, and comprising a pair of connectors having an interiorly-threaded sleeve; a worm-shaft in engagement with said sleeve; and means for rotating said worm-shaft.

8. In an agricultural implement, the combination, with a frame or body, of one or more sets of soil-working disks supported thereby; means for raising and lowering each of said sets of soil-working disks and comprising a pivotally-supported member; means for shifting said member; and means for adjusting each of said sets of soil-working disks into various positions relatively to the path of the body.

9. The combination, with a motor-driven vehicle, of a plurality of soil-working disks supported by said vehicle for shiftable movement into and out of their working positions, and for movement into various positions relative to the path of the vehicle; connectors in operative connection with said soil-working disks; means for operating said connectors to control the movement of said disks; and pivotally-supported horizontally-located means for raising and lowering said disks.

10. The combination, with a vehicle-body and with its running-gear, of a motor carried by the vehicle, for imparting motion thereto; one or more sets of disk-shaped soil-working devices supported by the vehicle; and counterbalanced means connected with said soil-working devices; means including gear mechanism for raising and lowering said devices.

11. The combination, with a vehicle-body and its running-gear, of a motor supported by the vehicle, for imparting motion thereto; a rod carried by said body; a pair of carriers shiftably mounted on said rod; a set of soil-working devices supported by each of said carriers; and means for raising and lowering said carriers and thereby the working devices.

12. The combination, with a vehicle-body and its running-gear, of a motor supported by said vehicle, for imparting motion thereto; a carrier supported by said body; a set of soil-working devices mounted on said carrier; and means for raising and lowering said carrier and comprising a shiftable member, a crank-shaft in operative connection therewith, and means for operating said crank-shaft to raise and lower said shiftable member and thereby the working devices.

13. The combination, with a vehicle-body and its running-gear, of a motor supported by said vehicle for imparting motion to said running-gear; a carrier supported by said body; a set of soil-working devices mounted on said carrier; a beam pivotally supported on said body and connected to said carrier; a changeable weight supported by said beam; and means for raising and lowering said beam and thereby the working devices.

14. The combination, with a vehicle-body and its running-gear, of a motor supported by said vehicle, for imparting motion thereto; a gang of disk-shaped soil-working devices comprising two sets thereof; a carrier for each of said sets; a pair of beams pivotally mounted on said body; and means for raising and lowering said beams, thereby to raise and lower the soil-working devices.

15. The combination, with a vehicle-body and its running-gear, of a motor supported by said vehicle, for imparting motion thereto; a gang of soil-working devices comprising two sets; a carrier for each set of devices; a pair of beams pivotally supported on said body; a pair of connectors each having a rotary connection with one of said carriers and a universal connection with one of said beams; and means for shifting said beams thereby to raise and lower the carriers.

16. The combination, with a vehicle-body and its running-gear, of a motor supported by said vehicle, for imparting motion thereto; a gang of disk-shaped soil-working devices comprising two sets, a carrier for each set of devices, a pair of beams pivotally supported on said body; a pair of connectors each having a rotary connection with one of said carriers and a universal connection with one of said beams; a crank-shaft supported on said body and having connection with said beams; and means for operating said crank-shaft thereby to shift the beams and raise and lower said soil-working devices.

17. The combination of a vehicle-body; running-gear therefor; a motor carried by said vehicle and in operative connection with said running-gear; a gang of disk-shaped soil-working devices comprising two sets, means for supporting said devices and comprising a rod supported by said body, and a pair of carriers adjustable on said rod; means for raising and lowering said carriers and comprising a shiftable member; and a connector having a universal connection with said shiftable member and a rotary joint with said carriers.

18. The combination, with a vehicle-body and its running-gear, of a motor supported by said vehicle, for imparting motion thereto; a gang of disk plows comprising two sets; a shiftable carrier for each set of said disks; a pair of beams pivotally supported on said body; a pair of connectors each having a rotary connection with one of said carriers and a universal connection with one of said beams; a weight supported by said beam; a crank-shaft supported on said body and having connection with said beams; a bevel-gear mounted on said shaft; and means for operating said shaft and comprising gear mechanism and a crank.

19. In a motor-driven agricultural implement, the combination, with a vehicle comprising a body or frame, and running-gear supporting the same, of a motor carried by the vehicle for imparting motion to said implement; a gang of disk-shaped soil-working devices supported by said body and comprising two sets; a single means for adjusting the two sets of devices into various positions relative to the path of the vehicle; and a single means for raising and lowering all of said sets of devices together out of and into their working positions, respectively and independently of the vehicle frame or body.

20. The combination, with a vehicle-body and its running-gear, of a motor carried by the vehicle, for imparting motion thereto; two sets of soil-working devices; a carrier for each set; means for raising and lowering said carriers and including gear mechanism; and means for adjusting said carriers into various positions relatively to the path of the vehicle and including gear mechanism, and one of said gear mechanisms comprising a worm and means for operating the same.

21. The combination, with a vehicle-body and its running-gear, of a motor carried by the vehicle, for imparting motion thereto; two sets of disk-shaped soil-working devices; a carrier for each of said sets; means for raising and lowering each of said carriers and comprising a pivotally-supported beam and means for shifting said beam; and means for adjusting said carriers into various positions relatively to the path of the vehicle.

22. The combination, with a vehicle-body and its running-gear, of a motor carried by the vehicle, for imparting motion thereto. two sets of oppositely-disposed disk-shaped soil-working devices; a carrier for each of said sets; means for raising and lowering each of said carriers and comprising a pivotally-supported beam and means for shifting said beam; means for adjusting the carriers into various positions relatively to the path of the vehicle and comprising a pair of connectors; and means for shifting said connectors simultaneously.

23. The combination of a mechanically-driven vehicle provided with one or more sets of soil-working disks; means for raising and lowering each of said sets of soil-working disks and comprising a pivotally-supported member, and means for shifting said member; and means for adjusting each of said sets of soil-working disks into various positions relatively to the path of the vehicle.

24. The combination of a mechanically-driven vehicle provided with one or more sets of soil-working disks; means for raising and lowering each of said sets of soil-working disks and comprising a pivotally-supported member and means for shifting said member; and means for adjusting each of said sets of soil-working disks into various positions relatively to the path of the vehicle, and comprising a shiftable member, and means for shifting said member.

25. The combination of a mechanically-driven vehicle; a plurality of carriers connected with said vehicle; one or more soil-working disks supported by each of said carriers; a connector secured to each of said carriers; and means for shifting said connectors, and thereby the disks, into various positions relatively to the path of the vehicle.

26. The combination of a mechanically-driven vehicle; a plurality of carriers supported thereby; one or more soil-working disks supported by each of said carriers; means for raising and lowering each of said carriers, and comprising a shiftable member; and gearing for actuating said shiftable member.

27. The combination of a mechanically-driven vehicle; a plurality of carriers supported thereby; one or more soil-working disks supported by each of said carriers; means for raising and lowering each of said carriers, and comprising a shiftable member; and rotary means for raising and lowering said shiftable member.

28. The combination, with a mechanically-driven vehicle, of a plurality of carriers supported thereby; one or more soil-working disks supported by each of said carriers; a shiftable member connected with said carriers, a weight in position to control the working of said disks; and means for raising and lowering said shiftable member thereby to raise and lower said disks.

29. In an agricultural implement, the combination, with a frame or body, of one or more sets of soil-working disks having pivotal connection with said body, and also having a sliding movement on the pivot of such connection: means for raising and lowering said disks; and means for adjusting said disks into various positions.

30. The combination of a mechanically-driven vehicle; one or more sets of soil-working disks carried by said vehicle; one or more weights in connection with said soil-working devices; means for raising and lowering said disks, and comprising a horizontally-located shiftable member; and rotary means for raising and lowering said member and thereby the disks.

31. The combination of a mechanically-driven vehicle; one or more sets of soil-working devices carried by said vehicle; one or more weights in connection with said soil-working devices; and means including gear mechanism for adjusting said disks into various positions relatively to the path of the vehicle.

32. The combination of a mechanically-driven vehicle; one or more sets of soil-working disks; one or more weights in connection with said soil-working disks; means including gear mechanism for raising and lowering said disks; and means including gear mechanism for adjusting said disks into various positions relatively to the path of the vehicle.

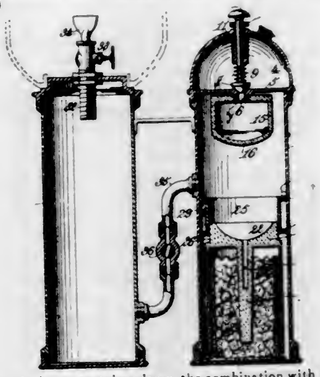
33. The combination of a mechanically-driven vehicle provided with one or more sets of soil-working disks; means for adjusting said disks into various positions relatively to the path of the vehicle; means for raising and lowering said disks and including a shiftable member; and a linkage connection between said shiftable member and said disks and operative to permit the adjustment of said disks into various positions

34. The combination, with a mechanically-driven vehicle, of one or more sets of soil-working disks having pivotal connection with the vehicle and also having a sliding movement on the pivot of such connection; means for raising and lowering said disks; and means for adjusting the same into various positions.

35. The combination, with a mechanically-driven vehicle including a frame or body, and running-gear supporting the same, of one or more sets of soil-working disks in connection with said vehicle, one or more horizontally-located, pivotally-supported members in connection with said disks; and means for shifting said horizontally-located member or members to raise and lower said disks out of and into their working positions, respectively and independently of said frame or body.

36. The combination, with a mechanically-driven vehicle, of one or more sets of soil-working disks in connection therewith; one or more horizontally-located beams pivotally supported intermediate the end or ends thereof and in connection with said disks; and means for raising and lowering said beam or beams.

654,244. ACETYLENE-GAS-GENERATING LAMP. DAVID GENESE, Baltimore, Md. Filed Sept. 9, 1899. Serial No. 729,988. (No model.)



Claim.—1. In an acetylene-lamp, the combination with the generating-chamber adapted to contain a body of carbid, of a water-supply for said chamber and an imperforate, porous cup for receiving the water from said supply and feeding it to the carbid and having a gas-tight connection with said supply, said cup being located between said water-supply and the generating-chamber and above and out of contact with the carbid of the latter, substantially as described.

2. In an acetylene-lamp, the combination with the generating-chamber adapted to contain a body of carbid, of a water-compartment having an outlet opening into said generating-chamber, and a hollow, imperforate, porous vessel having a rounded bottom for causing water to drop from the center thereof and communicating with and hermetically secured about said outlet, said cup being located between said water-supply and the generating-chamber and above and out of contact with the carbid of the latter, substantially as described.

3. In an acetylene-lamp, the combination with the generating-chamber of a cup for containing the carbid having a corrugated upper edge, and a porous cap telescoped over said cup and having a corrugated lower edge, substantially as described.

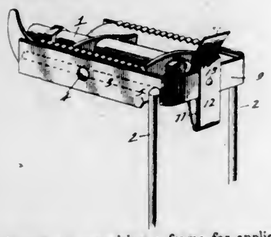
4. In an acetylene-lamp, the combination with the generating-chamber of a cup for containing the carbid and a porous cap telescoped over said cup and having its upper end thickened and provided with a recess and a guide for said thickened end, substantially as described.

5. In an acetylene-lamp, the combination with the generating-chamber of a cup for containing the carbid and a porous cap telescoped over said cup and having its upper end thickened and provided with a recess and a depending projection having a bore communicating with said recess and extending only part way through said projection, substantially as described.

654,245. BICYCLE ATTACHMENT. LUDWIG GLASSER, Olean, N. Y. Filed Mar. 31, 1900. Serial No. 10,967. (No model.)

Claim.—1. The combination with a bicycle-pedal, of a rock-shaft mounted thereon, a lateral support carried by the rock-shaft, means for holding the support in its normal inoperative position, and an outwardly-directed trip carried solely by the holding means and arranged for engagement by the foot of the rider.

2. The combination with a bicycle-pedal, of a rock-shaft mounted thereon, a lateral support carried by the shaft, a cam also provided upon the shaft, a spring arranged in frictional engagement with the cam to hold the support in its normal inoperative position, and an upwardly-directed trip projecting above the plane of the upper side of the pedal, carried solely by the spring, and arranged for engagement by the foot of the rider.



3. A bicycle-support, comprising a frame for application to a pedal, a rock-shaft mounted upon the frame, a lateral supporting-arm carried by the shaft, a cam provided upon the shaft, a bowed spring carried by the frame and in frictional engagement with the cam to support the arm in its normal inoperative position, and one end of the spring being free and projected above the frame to form a trip for engagement by the foot of a rider.

4. A bicycle-support, comprising a substantially U-shaped frame for application to a pedal, a lateral rock-shaft mounted adjacent to the inner side of the transverse end of the frame, a lateral supporting-arm carried by the shaft, an intermediate cam also formed upon the shaft, and a bowed spring having one end secured to the transverse end of the frame, its intermediate convex portion being located upon the inner side of the frame and in frictional engagement with the cam, and its opposite free end being projected outwardly beyond the frame and forming a trip for engagement by the foot of a rider.

5. The combination with a bicycle-pedal, having longitudinal bifurcations formed in the outer ends of the opposite sides thereof, of a substantially U-shaped frame embracing the opposite sides of the pedal, a transverse rock-shaft mounted upon the frame and received within the bifurcations of the pedal, a lateral supporting-arm carried by the shaft, means for holding the arm in its normally-inoperative position, and inwardly-directed lugs or projections formed upon the inner faces of the opposite sides of the frame and received within the outer open ends of the respective bifurcations.

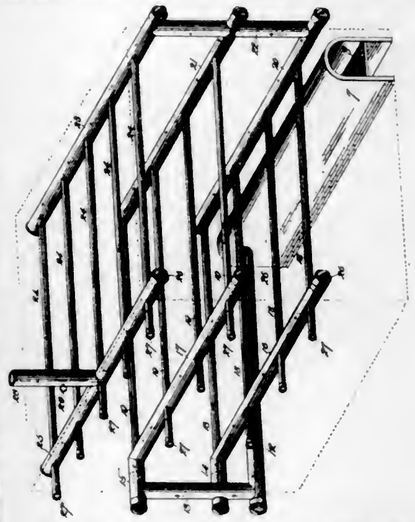
6. The combination with a bicycle-pedal, having longitudinal bifurcations formed in the outer ends of the opposite sides thereof, of a substantially U-shaped frame embracing the opposite sides of the pedal and connected thereto, each side of the frame being provided with a vertical notch or recess intersecting the adjacent bifurcation, a transverse rock-shaft mounted in the notches or recesses of the frame and also received within the bifurcations of the pedal, a lateral supporting-arm carried by the shaft, and means for holding the arm in its inoperative position.

7. A bicycle-support, comprising a substantially U-shaped frame for application to a bicycle-pedal, a rock-shaft mounted transversely of the frame and adjacent to the transverse end thereof, supporting-arms at opposite ends of the shaft, a cam provided intermediate of the shaft, a bowed spring carried by the transverse end of the frame and for frictional engagement with the cam, a lateral arm carried by the shaft, and a shoulder carried by the inner side of the transverse end of the frame and for engagement by the arm, in the operative position of the support.

8. The combination with a bicycle-pedal, having longitudinal slots or bifurcations formed in the outer ends of its opposite sides, of a substantially U-shaped frame embraciug the pedal, fastenings connecting the frame to the pedal, a substantially U-shaped support, of which the transverse portion forms a rock-shaft mounted in transverse notches formed in the opposite sides of the frame and adjacent to the transverse outer end thereof, said rock-shaft also extending through the slots in the sides of the pedal, opposite lugs provided upon the opposite inner sides of the frame and snugly received within the slots outwardly from the shaft, a cam provided at an intermediate portion of the latter, a bowed spring carried by the transverse end of the frame and in frictional engagement with the cam, the upper free portion of the spring projecting above the upper side of the pedal to form a trip, a lateral arm carried by the rock-shaft, and a stop-shoulder carried by the inner side of the outer end of the frame, and for engagement by the arm.

654,246. BAKER'S OVEN. WILLIAM GRIFFIN, Kansas City, Mo. Filed May 17, 1900. Serial No. 16,965. (No model.)

Claim.—1. A baker's oven, provided with a furnace-chamber, one or more superposed baking-compartments, a furnace located in the furnace-chamber, a flue extending forward from the furnace and projecting through the front wall of the oven, horizontal flues or headers extending transversely of and within the oven near the front and rear walls thereof and projecting at one end beyond the corresponding side of the oven, longitudinal flues connecting said cross flues or headers within the oven, a short flue projecting from the inner end of one of the front flues or headers through the front wall of the oven and connected to the projecting end of the flue connected to the furnace, a short flue connecting the projecting ends of the rear flues or headers, and a damper-controlled chimney extending through the top of the oven and connected at its lower end to the upper front cross flue or header, substantially as described.

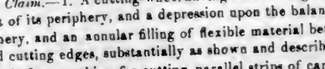


2. A baker's oven, provided with a furnace-chamber, one or more superposed baking-compartments, a furnace located in the furnace-chamber, a flue extending forward from the furnace and projecting through the front wall of the oven, horizontal flues or headers extending transversely of and within the oven near the front and rear walls thereof and projecting at one end beyond the corresponding side of the oven, longitudinal flues connecting said cross flues or headers within the oven, a short flue projecting from the inner end of one of the front flues or headers through the front wall of the oven and connected to the projecting end of the flue connected to the furnace, a short flue connecting the projecting ends of the rear flues or headers, a damper-controlled chimney extending through the top of the oven and connected at its lower end to the upper front cross flue or header, and clean-out caps closing the outer or projecting ends of the longitudinal flues and of the cross flues or headers, substantially as described.

3. A baker's oven, provided with a furnace-chamber, one or more superposed baking-compartments, a furnace located in the furnace-chamber, a flue extending forward from the furnace and projecting through the front wall of the oven, horizontal flues or headers extending transversely of and within the oven near the front and rear walls thereof and projecting at one end beyond the corresponding side of the oven, longitudinal flues connecting said cross flues or headers within the oven, and projecting forward from the front cross-flues through the front wall of the oven, a short flue projecting from the inner end of one of the front flues or headers through the front wall of the oven and connected to the projecting end of the flue connected to the furnace, a short flue connecting the projecting ends of the rear flues or headers, a damper-controlled chimney extending through the top of the oven, and connected at its lower end to the upper cross flue or header, and clean-out caps closing the outer or projectiug ends of the longitudinal flues and of the cross flues or headers, substantially as described.

654,247. BUTTON-FASTENER. GEORGE W. GWINN, Baltimore, Md., assignor to the Raymond Button Company of Baltimore City, of Maryland. Filed Oct. 17, 1899. Serial No. 733,884. (No model.)

Claim.—1. A button-fastener consisting of the legs, 2, formed with flat inner faces sheared at an angle to a vertical plane through the axis of the legs and perpendicular to the cross-bar, and round outer faces, said legs being set in a staggered position whereby the points are thrown out of line with each other.



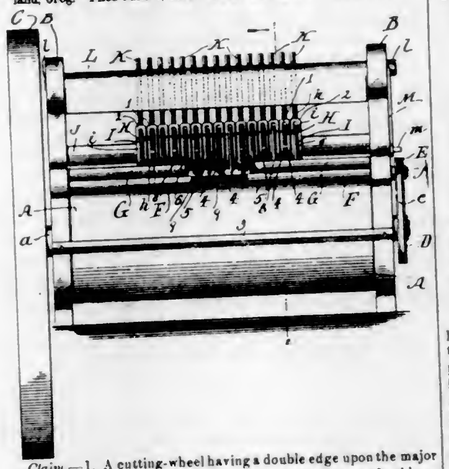
2. A button-fastener consisting of the legs, 2, formed with flat inner faces sheared at an angle to a vertical plane through the axis of the legs and perpendicular to the cross-bar, and round outer faces, said legs being set in a staggered position whereby the points are thrown out of line with each other; and a head, 4.

3. A button-fastener consisting of a cross-bar, 3; and legs, 2, formed with flat inner faces sheared at an angle to a vertical plane through the axis of the legs and perpendicular to the cross-bar, and round outer faces, the said legs projecting laterally from the cross-bar, 3, and incline in opposite directions from each other.

4. In a button-fastener the combination of the legs, 2, rounded on their outer faces and provided with flat inner faces sheared at an angle to a vertical plane through the axis of the legs and perpendicular to the cross-bar, the points of the legs being out of line; a disk, 5, having apertures, 6; and a cap, 8.

5. In a button-fastener the combination of the legs, 2, rounded on their outer faces and provided with flat inner faces sheared at an angle to a vertical plane through the axis of the legs and perpendicular to the cross-bar, said legs having a staggered position whereby the points are thrown out of line with each other; a disk, 5, having apertures 6; a cap, 8; and a fabric disk, 9.

654,248. PAPER-CUTTING MACHINE. FREDERICK HAGER, Portland, Oreg. Filed June 7, 1899. Serial No. 719,645. (No model.)



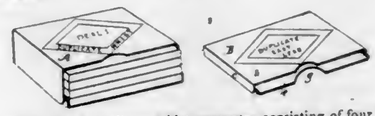
Claim.—1. A cutting-wheel having a double edge upon the major part of its periphery, and a depression upon the balance of said periphery, and an annular filling of flexible material between the two said cutting edges, substantially as shown and described.

2. In a machine for cutting parallel strips of cardboard a suitable framework, a rod J extending across the frame, a series of separate frames pivoted upon the rod, a plurality of single cutting-disks, a plurality of double cutting-disks journaled in said pivoted frames, and adjusting-screws by means of which the cutters are adjusted, combined with a pivoted bar L through which the screws are made to pass, and a swinging link M for preventing the bar L from rotating until the cutters are to be adjusted, substantially as specified.

3. In a machine for cutting parallel cardboard strips, a series of double-edged cutters which have a groove extending partly around its circumference, a strip of suitable material placed in said groove, and extending outwardly about flush with the cutting edges; each of the double-edged cutters being provided with a depression 5, substantially as set forth.

4. In a machine for cutting parallel strips of cardboard, a series of double-edged cutters, provided with depressions 5, a peripheral groove 7, and a strip 8 of flexible material placed in said groove, combined with a series of cutters having circumferential continuous cutting edges 6, a slotted cross-plate 10 provided with a series of openings 13, corresponding to the cutters, spring-actuated fingers 9 which press the severed fragments of stock downwardly, and a roll A which acts in connection with the cutters, substantially as specified.

654,249. DUPLICATE-WHIST APPARATUS. MARCUS C. HAMMOND, Savannah, Ga. Filed Mar. 1, 1900. Serial No. 7,015. (No model.)

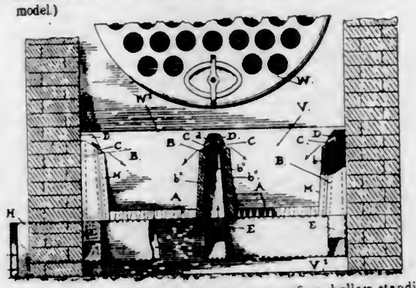


Claim.—1. A duplicate-whist apparatus consisting of four independent card-holders, each holder consisting of sheet material bent toward itself about half-way of its length to normally bring its ends toward each other, said ends having crescent notches therein, and the side edges of each holder bent to overlap each other, substantially as described.

2. A duplicate-whist apparatus consisting of four independent card-holders, each holder adapted to receive and clasp a fourth of a pack of cards and consisting of sheet metal bent and sprung toward itself about half-way of its length to normally bring its ends toward each other and the side edges of each holder bent to overlap each other, in combination with a holder adapted to receive the four independent card-holders and constructed similarly to, but wider than the four independent card-holders, substantially as described.

3. A duplicate-whist apparatus consisting of four independent card-holders, each holder having springy bent sides united at their inner ends and their outer ends adapted to approach each other, with overlapping sides, said holders having on one face the word "Original" and on the opposite face the word "Duplicate," substantially as described.

654,250. SMOKELESS COAL-BURNING FURNACE. ADAM HEBERER, Alameda, Cal. Filed Oct. 24, 1898. Serial No. 694,456. (No model.)



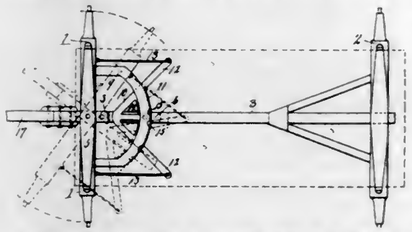
Claim.—1. In a boiler-furnace a grate-surface, hollow standing partitions extending from the front plate to the bridge-wall the entire depth of the furnace, said partitions being composed of cast-iron plates inclosing a central air-space open at the top and opening at the bottom into the air-spaces below the grate-surface, dovetailed ribs or projections on the outer faces of said plates, tiles of fireproof material fitted to said ribs and covering the metal plates, and a fixed cap covering the open top of the partition and having overhanging downwardly-slanting sides which stand clear of the top of the metal plates in combination, for operation as described.

2. In a boiler-furnace the combination with a grate-surface, of hollow standing partitions dividing the grate-surface longitudinally and for the entire depth with separate fuel-troughs, said partitions being composed of cast-metal plates inclosing an air-space which opens at the top into the fire-space, and at the bottom into the space below the grate-surface, detachable fireproof tiles covering the outer side of the metal plates, a cap partly closing the opening in the top of the partition and having downwardly-extending sides adapted to direct the escaping air in streams at an angle toward the grate-surface, and an air-box closing in the opening in the bottom of the partition and provided with a regulating-gate.

654,251. WAGON RUNNING-GEAR. JOHN J. HICKS, Little Rock, Ark., assignor of one-half to James Garabaldi, same place. Filed Dec. 1, 1899. Serial No. 738,874. (No model.)

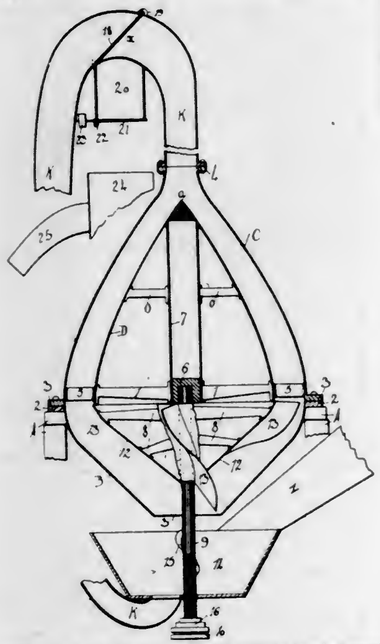
Claim.—1. The combination with the running-gear of a wagon, of a tongue-section attached to the forward axle and having an inwardly-extending end carrying a locking-plate, a bolster mounted upon the axle and having a circle-bar attached thereto, means for permitting said locking-plate to slide upon said circle-bar by the movement of the tongue and means for locking said plate to said circle-bar to prevent a movement of the axle independent of the tongue.

2. The combination with the running-gear of a wagon, of a tongue-section extending rearwardly from the front axle and adapted to swing with the movement of the axle, a bolster mounted upon the forward axle, a circle-bar attached to said bolster, a locking-plate carried on the inner end of said tongue-section, having means of engagement with said circle-bar and adapted to slide thereon and rods attached to the axle and to the outer ends of said locking-plate.



3. The combination with the running-gear of a wagon, the tongue-section pivoted on the forward axle and having a slight movement independent thereof, the inner end of said tongue-section carrying a locking-plate pivoted thereon and adapted to move therewith, a bolster upon the axle, a circle-bar attached to the bolster and lying upon said locking-plate, projections on said locking-plate engaging said circle-bar and connecting-rods uniting the extending ends of said locking-plate with the axle.

654,252. FORCE-BLAST ELEVATOR. ALONZO HUMBERGER, North Platte, Nebr. Filed Jan. 30, 1899. Serial No. 703,853. (No model.)



Claim.—1. The combination with a suitable housing provided with an intake and an exit opening, said housing decreasing in capacity toward said intake and exit openings, of a shaft positioned within said housing and extending beyond the same, a fan secured to said shaft within said housing adjacent to said intake-opening, and a duct continuing from said exit-opening.

2. The combination with a suitable housing decreasing in capacity toward opposite ends and having an intake-opening near one of said decreasing ends and an exit-opening at the remaining decreased end, of a shell within said housing near the exit end to provide an annular space of decreased capacity within said housing, a shaft entering said housing at the intake end, said shell supporting said shaft within said housing, a bearing external to said housing supporting said shaft, a fan forming a continuation of said shell and being secured to said shaft within said housing, a duct extending from said exit end, and an interrupter positioned within said duct.

3. The combination with a suitable housing decreasing in capacity toward opposite ends and having an intake-opening near one of said decreased ends and an exit-opening at the remaining decreased end, of a shell within said housing near the exit end to provide an annular space of decreased capacity within said housing, a shaft entering said housing at the intake end, said shell supporting said shaft within said housing, a bearing external to said housing supporting said shaft, a fan forming a continuation of said shell and being secured to said shaft within said housing, a duct extending from said exit end, and an interrupter positioned within said duct.

4. The combination with a suitable housing decreasing in capacity toward opposite ends and having an intake-opening near one of said decreased ends and an exit-opening at the remaining decreased end, of a shell within said housing near the exit end to provide an annular space of decreased capacity within said housing, a shaft entering said housing at the intake end, said shell supporting said shaft within said housing, a bearing external to said housing supporting said shaft, a fan forming a continuation of said shell and being secured to said shaft within said housing, a duct extending from said exit end, an interrupter positioned within said duct, and a hopper adjacent to said intake end.

5. The combination with a suitable housing decreasing in capacity toward opposite ends and having an intake-opening near one of said decreased ends and an exit-opening at the remaining decreased end, of a shell within said housing near the exit end to provide an annular space of decreased capacity within said housing, a shaft entering said housing at the intake end, said shell supporting said shaft within said housing, a bearing external to said housing supporting said shaft, a fan forming a continuation of said shell and being secured to said shaft within said housing, a duct extending from said exit end, an interrupter positioned within said duct, and a hopper adjacent to said intake end.

6. The combination with a suitable housing decreasing in capacity toward opposite ends and having an intake-opening near one of said decreased ends and an exit-opening at the remaining decreased end, of a shell within said housing near the exit end to provide an annular space of decreased capacity within said housing, a shaft entering said housing at the intake end, said shell supporting said shaft within said housing, a bearing external to said housing supporting said shaft, a fan forming a continuation of said shell and being secured to said shaft within said housing, a duct extending from said exit end, an interrupter positioned within said duct, a hopper adjacent to said intake end, and a receptacle continuous with said duct, said receptacle being positioned adjacent to said interrupter.

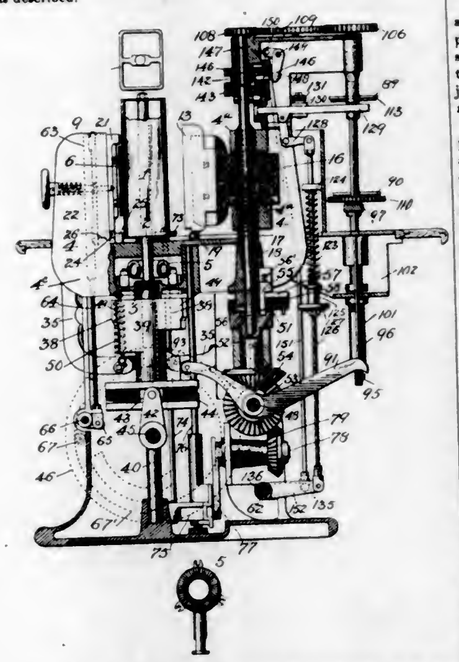
7. The combination with a suitable housing decreasing in capacity toward opposite ends, said housing having an intake and an exit opening at said ends, of a shell within said housing and terminating adjacent to said exit-point and approximately conforming to the shape of said intake-housing to provide an air-space of decreasing capacity toward the exit-opening, a bearing supported by said shell, an operating-shaft entering said housing through the intake-opening and working within said bearing, a fan secured to said shaft and positioned within said housing, a hopper adjacent to said intake-opening, a spiral within said hopper and secured to said shaft, a duct extending from the exit-opening and continuing and returning to enter said hopper below said intake-opening, an interrupter within said duct, and a chamber communicating with said interrupter.

654,253. MACHINE FOR MAKING CANS. HENRY C. HUNTER, Hamilton, Canada, assignor, by mesne assignments, to the Canister Manufacturing Company, Phillipsburg, Pa. Filed July 23, 1898. Serial No. 686,732. (No model.)

Claim.—1. In combination in a machine for forming can-bodies, the horn and a series of angular folders opposite the corners of the horn and operating toward and from the horn substantially along lines coinciding with the diagonals thereof and at angles of about forty-five degrees to the face of the body-blank, said angular folders acting to mold the body-blank at the corners of the horn and means for giving a successive action to the angular folders, substantially as described.

2. In combination in a machine for making cans from fibrous board, a hollow horn arranged as a chimney with heating means below the same, a series of angular folders arranged opposite the corners of the horn and operating along lines coincident with the diagonal of the horn and at angles of about forty-five degrees to the surface of the body-blank, said folders acting to mold the blank at the corners of the horn and means for operating the angular folders in succession, substantially as described.

3. In combination in a can-making machine, the horn, the clamp for holding the body-blank on the front face of the horn, and gages for supporting the ends of the body-blank at each side of the horn, and a series of angular folders arranged opposite the corners of the horn and operating along lines coincident with the diagonals of the horn and at angles of about forty-five degrees to the surface of the body-blank said folders reciprocating independently of each other and being arranged independent of the clamp and means for giving the angular folders their reciprocating movement in succession, substantially as described.



4. In combination, the horn, a movable presser device at one face of the horn, a seaming-hammer operating upon the opposite face of the horn, and a plurality of pairs of angular folders operating at angles of about forty-five degrees to the face of the body-blank and opposite the corners of the horn to mold the corners of the body-blank, and means for operating the angular folders in a proper succession, the presser operating at a point between the front folders and the hammer operating at a point between the rear folders substantially as described.

5. In combination, the horn, a series of angular folders operating substantially diagonally thereof opposite the corners, a presser device operating against one face of the horn and between the angular folders, a spring-clamp carried by said presser device, means for moving the presser toward and from the horn, a seaming-hammer operating upon the opposite face of the horn and between the angular folders with means for operating the said hammer, substantially as described.

6. In combination with a horn, the seaming-hammer, the presser having the upper bearing part and a bearing-block at the lower part of the horn, the intermediate spring-clamp for holding the body-blank to the face of the horn and the folders with operating means, substantially as described.

7. In combination, the hollow horn arranged as a chimney with a heating device below, the partition extending across the horn, the seaming-hammer on the one side of the horn, the presser on the other side of the horn, means for moving the seaming-hammer and presser in line with said partition and the folders operating at the intermediate parts of the horn with means for operating the same, substantially as described.

8. In combination, the horn, the folders arranged to operate successively in connection therewith and means for operating the same consisting of a wedge-block having radiating wings and operating-lever connections between said wedge-block and the folders, said lever connections being operated in succession by the wings of the wedge-block, substantially as described.

9. In combination, the horn, a series of folders operating in succession in connection therewith, the levers carrying the folders, and a reciprocating wedge-block having wings at different heights relative to the levers and operating the same in predetermined order, substantially as described.

10. In combination, the horn of substantially-rectangular shape, the folders operating at the corners of the horn, the levers for operating the folders, a reciprocating wedge-block for operating the levers in a predetermined order, said wedge-block having a cross-head and a crank having connection therewith, substantially as described.

11. In combination, the horn, the folding mechanism, a presser, a hammer operating upon the horn upon the opposite side from the presser and means for operating the presser consisting of a wedge-slide, a wedge-plate connected with the presser, means for operating the wedge-slide and a spring for returning the presser with an adjustable connection between said spring and the presser, substantially as described.

12. In combination, with the horn, a folding mechanism comprising folders, a presser for operating against one face of the horn, a seaming-hammer operating against the opposite face, means for operating the seaming-hammer and the presser, and a press-frame forming a resistance for the pressure of the seaming-hammer, substantially as described.

13. In combination, the horn, the folders, the seaming-hammer, a presser, means for operating the seaming-hammer and presser, and a press-frame comprising the base and upturned standards forming the bearings for the operating means for the seaming-hammer and presser, said press-frame resisting the pressure of the hammer and presser, substantially as described.

14. In combination, the horn, the press-frame having a base and upturned standards at opposite ends thereof, the king-bolt connected with the base of the press-frame for holding the horn, the cavity in the base of the press-frame, the heating device therein below the horn, the folders with means for operating the same, the seaming-hammer with means having bearings in one of the standards of the press-frame for operating the said seaming-hammer, the presser operating on the other side of the horn from the hammer and means having a bearing in the other standard of the press-frame for operating the presser, substantially as described.

15. In combination, the horn, the folding means, the seaming-hammer with means for operating the same, the press-frame having a base with upturned standards at its ends, the presser arranged in a cavity in one standard, means in said cavity for moving the presser toward the horn, a screw connected with the presser, a sleeve engaging the screw, and a spring arranged between the standard and a hand-wheel on the sleeve, substantially as described.

16. In combination, the horn, the folding mechanism comprising the folders, the levers carrying the same, the wedge-block for operating the levers, the crank and crank-shaft for operating the wedge-block, a gear-wheel 46 on the crank-shaft, means for operating the same, a seaming-hammer with operating means therefor, a presser and operating means therefor comprising the wedge-slide and a cam carried by the gear 46 with connections between the same and the wedge-slide, substantially as described.

17. In combination, the horn, the folding mechanism, and a seaming-hammer with means for reciprocating the same and giving it a wiping action on the seam consisting of an eccentric at the rear of the hammer connected therewith and a movable pivot near the front edge of the hammer, substantially as described.

18. In combination, the two pairs of chuck-disks for holding the two cans, the crimping-rollers acting simultaneously on the heads of the two cans, means for applying pressure to the crimping-rollers to force them against the can-heads and compensating means for the crimping-rollers, substantially as described.

19. In combination, two pairs of chuck-disks for holding two cans in different positions relatively to each other, crimping-rollers, means for applying pressure thereto to force them against the cans and a compensating device consisting of a lever pivoted intermediate of its length and connected at its ends with the crimping-rollers and connected also with the pressure-applying means whereby the roller at one can will be controlled through said lever from the roller at the other can and the pressure-applying means will not be affected by the reciprocation of the rollers in passing around the corners of the cans, substantially as described.

20. In combination, the two pairs of chuck-disks for the cans, the pairs of crimping-rollers one for each can, the oscillating blocks carrying the pairs of crimping-rollers to hold the rollers of each pair simultaneously against the cans, the carriages holding the blocks, the compensating lever connected with the carriages and a movable support to which the pressure-applying means is connected and upon which the compensating lever is adjustably pivoted, substantially as described.

21. In combination in a can-making machine, the horn, the folding mechanism comprising the folders, the reciprocating hammer, a sleeve, an eccentric for operating the hammer, a constantly-rotating shaft passing through the sleeve, a clutch between the sleeve and the constantly-rotating shaft with means for controlling the same, the

chucks for holding the cans for the crimping action, the crimping-rollers with operating means therefor, the gearing for rotating the chucks and a clutch between the said gearing and the constantly-rotating shaft with means for operating the clutch, substantially as described.

22. In combination, the horn, the folding mechanism comprising the folders, the reciprocating wedge-block for operating the same having connections thereto, the crimping mechanism including the chucks with means for rotating them and connections for retracting one chuck-disk from the other, said connections being controlled by the reciprocating wedge-block, substantially as described.

23. In combination, the horn, the folding mechanism comprising the folders with the wedge-block for operating the same, a seaming-hammer, a presser operating on the opposite side of the horn from the hammer, the crimping mechanism comprising the crimping-rollers and the chucks for holding the cans, means for rotating the chucks, a clutch for controlling the action of the seaming-hammer, a clutch for controlling the rotary means of the chucks and connections controlled by cams for operating the presser and for controlling the crimping-rollers, substantially as described.

24. In combination, the horn, the folding mechanism, and a stripper comprising a vertically-movable plate with means for operating the same consisting of a cross-head, a crank for operating the same, an automatically-controlled clutch mechanism for timing the operation of the crank to raise said stripper after the body has been molded, substantially as described.

25. In combination, the horn, the folders, the levers carrying the same, the reciprocating wedge-block, the crank and crank-shaft for moving the wedge-block, the gear-wheel 46 on the crank-shaft, the presser operating against one face of the former, means for operating the same controlled by a cam on the gear-wheel, a hammer, a sleeve having an eccentric for operating the same, a constantly-rotated shaft extending through the sleeve, a main shaft having gear connections with the gear 46 and with the constantly-operating vertical shaft, a clutch between the eccentric-sleeve and the vertical shaft, connections controlling said clutch and operated by a cam on the gear-wheel, the stripper, means for operating the same controlled by a clutch between the same and the main shaft, means for controlling the clutch operated by the cam on the gear-wheel, the chucks for holding the can for the crimping action, the gears for rotating the chucks, a clutch between the same and the constantly-operated shaft, means for controlling the clutch operated from a cam of the gear-wheel, a spring for setting the crimping-wheels to their work with means for relieving the spring-presser controlled by a cam on the gear-wheel, and connections for retracting one of the chuck-disks, said connections being operated by the wedge-block, substantially as described.

26. In combination, the vertical horn, the vertical angular folders, the vertical levers to which the folders are pivoted and the vertically-reciprocating wedge-block for spreading the lower ends of said levers, substantially as described.

27. In combination, the vertical horn, the vertical folders, the vertical levers pivoted intermediate of their length, means for operating the levers and the evener-links pivoted to the shoes of the folders and at points adjacent to the pivots of the vertical levers, substantially as described.

28. In combination with the horn and folders with operating means, the seaming-hammer, an eccentric for operating the hammer and a clutch for controlling the action of the eccentric with automatically-operating means for controlling the clutch to operate the hammer after the blank has been folded, substantially as described.

29. In combination, in a can-making machine, a horn, folding-arms, a seaming-hammer, and the yielding block or strip projecting from the rear face of the horn to afford a bearing for the last sections of the blank, substantially as described.

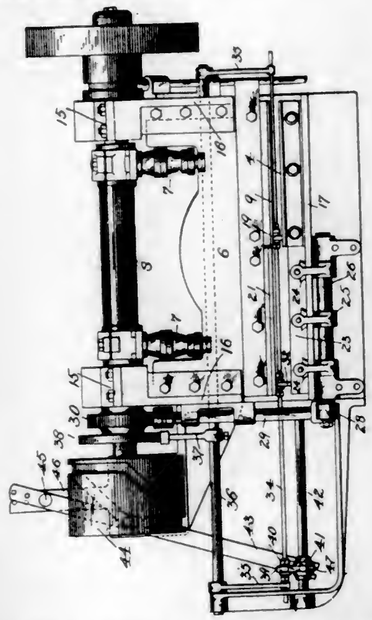
30. In combination, in a machine for forming can-bodies, a horn, and a plurality of pairs of folders disposed about the horn conforming to the shape thereof and operating parallel thereto, said folders acting at angles of about forty-five degrees to the body-blank to mold the same to the face of the horn and means for moving the folders in succession and maintaining their angular relation in said movement, substantially as described.

31. In combination, the horn, a clamp on one side, a seaming-hammer on the other side, and a plurality of pairs of folders disposed about the horn the members of said pairs being arranged at opposite points said opposite folders operating at angles of about forty-five degrees to the face of the blank in line with each other and at points intermediate of the clamp and hammer and means for operating the folders in succession to secure a molding effect on the blank.

32. In combination, two pair of chuck-disks, crimping-rollers acting simultaneously on the heads of the two cans, means for applying pressure, to the crimping-rollers to force them against the can-heads and compensating means for the crimping-rollers, said chuck-disks being of a form to hold cans of rectangular or like shape, substantially as described.

33. In combination in a machine for forming can-bodies, a horn and a plurality of folders disposed about the horn at different points, and operating parallel to the face thereof, means for moving the folders in proper succession and along straight lines passing through the horn whereby a molding effect on the blank is secured, said blank being presented by one folder to the molding action of the next and a hammer for securing together the meeting edges of the molded blank, substantially as described.

654,254. MACHINE FOR MAKING SEAMING-STRIPS. HENRY C. HUNTER, Hamilton, Canada, assignor, by mesne assignments, to the Canister Manufacturing Company, Phillipsburg, Pa. Filed July 23, 1898. Serial No. 686,733. (No model.)



Claim.—1. A machine for making seaming-strips comprising means for cutting the blanks from sheet metal and for forming it into channeled shape by one movement of said means in one direction and die mechanism for forming the completed strip from the channeled blank, said die mechanism comprising a plurality of dies arranged to form a base of double thickness with flanges projecting therefrom, substantially as described.

2. In combination, a mandrel adapted to form a blank, of a die mechanism adapted to receive the partially-formed strip from said mandrel and a cross-head carrying a cutting and forming plunger and a die and cooperating with the mandrel and die mechanism, whereby the blank is cut from the sheet, pressed into U shape and then pressed into final shape, substantially as described.

3. In combination a mandrel, a stationary cutter, a stop to hold the sheet material in the proper position in relation to the mandrel and cutter and a plunger having a cutting edge and a forming-recess to fit over the mandrel and operating in conjunction with the fixed cutter and mandrel to cut the blank from the sheet and for forming it into channeled shape in one movement of the plunger in one direction, substantially as described.

4. In combination, a machine for making seaming-strips, a fixed die, the movable side dies operating on each side of the same and conforming in shape thereto and a die operating in line with the fixed die and at a right angle to the side dies, substantially as described.

5. In combination, the fixed die having the inclined side or sides, the side dies having inclined end faces conforming thereto and having flat faces in the same plane and a die operating toward and from the upper edge of the fixed die at right angles to the side dies, with its face overlying the flat faces of the side dies, substantially as described.

6. In combination a projecting mandrel over which the blank is formed into channeled shape, a die arranged in line therewith, and also projecting means for feeding the channeled blanks from the projecting mandrel onto the projecting die and a plunger and a die operating in conjunction with the mandrel and fixed die respectively, substantially as described.

7. In combination, a mandrel, a die mechanism, a cross-head carrying a plunger and a die for operating simultaneously upon the mandrel and the die mechanism and means for feeding the partially-formed blank from the mandrel to the die mechanism, substantially as described.

8. In combination, a mandrel, an elongated die arranged in line therewith, means for forming the strip in connection with the mandrel and the die, a feeding device for feeding the partially-formed strip from the mandrel to the die and a second discharge device independent of the first for simultaneously moving the completed strip from the die, substantially as described.

9. In combination with the elongated mandrel, an elongated die mechanism and with the plunger and vertically-moving die, the feed and discharge fingers with means for giving the same a reciprocating movement both longitudinally and transversely in relation to the mandrel and die, substantially as described.

10. In combination the vertically-movable die, the cross-head carrying the same, the fixed die, the side dies operating in the same plane with the fixed die, the arms, a rock-shaft for moving the side dies, the pitman and cam for operating the rock-shafts and means for reciprocating the pitman, substantially as described.

11. In combination, the mandrel, a fixed die with the plunger, a vertically-moving die, the feed and discharge fingers, the rod 34 carrying the same, the oscillating levers carrying the rod and means for moving the rod longitudinally consisting of the sliding block having slotted connection with the rod and means for operating the sliding block, substantially as described.

12. In combination, the mandrel, the fixed cutter, the die mechanism comprising the fixed and movable side dies, the vertically-moving die, the cross-head carrying the same, the plunger carried by the cross-head, the feed-fingers, the rod 34 carrying the same, the crank-shaft connected with the cross-head, the rock-shaft and arms for operating the side dies, the cam on the crank-shaft, the pitman connection between the cam and the rock-shaft, the oscillating arms connected with the rod 34, the cam mechanism for oscillating the arms, said cam being on the crank-shaft, the sliding block for reciprocating the rod 34 and the lever with the cam on the crank-shaft for operating the sliding block, substantially as described.

13. In combination, the die, a mandrel and a die projecting in relation thereto and in alinement, a plunger having a forming-recess conforming to the mandrel so as to bend the blank upon each side of the same, a movable die cooperating with the projecting die and means for moving the blank from the mandrel over the projecting die with means cooperating with the projecting die and movable die for giving the blank its final shape.

14. A machine for making seaming-strips comprising means for cutting the blanks from sheet metal and for forming it into channeled shape by one movement of said means in one direction and die mechanism with means for transferring the channeled strip from the cutting and forming means to the die mechanism, substantially as described.

15. In combination, means for cutting the strip and giving it a channeled shape and die mechanism comprising reciprocating members arranged to form the strips with a base of doubled thickness and divergent flanges extending at an inclination thereto, substantially as described.

654,255. PACKING-CAN AND ART OF MAKING SAME. HENRY C. HUNTER, Hamilton, Canada, assignor, by mesne assignments, to the Canister Manufacturing Company, Phillipsburg, Pa. Filed July 23, 1898. Serial No. 686,734. (No model.)



Claim.—1. A head for cans having an unbroken raised flange around the plane surface of the head which is depressed in respect to the body of the can, said raised flange having a turned-over edge adapted to grip the edge of the can-body between itself and the outer face of the flange and having also a weakened line on the margin of said plane surface extending entirely around the margin and at a slight distance inwardly from the flange to leave a continuous ledge and a cover adapted to rest on the seat left next to the inner wall of the flange, substantially as described.

2. A head for cans having a raised flange around the plane surface of the head, said raised flange having a turned-over edge adapted to grip the edge of the can-body between itself and the flange and having also a weakened line extending continuously around the margin of said plane surface next to the inner wall of the flange, in combination with a fiber cover having a flange of depth greater than the depth of said raised flange, substantially as described.

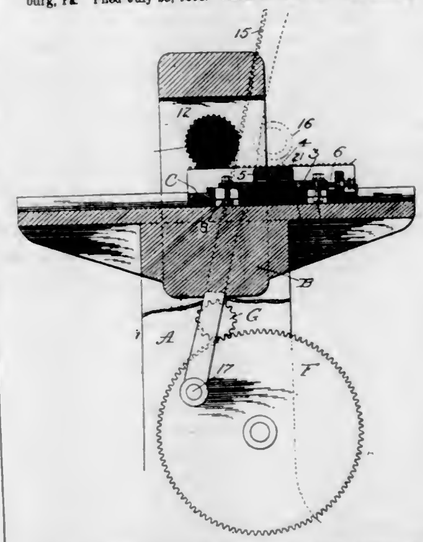
3. As an article of manufacture, a can-head having a raised flange around the depressed plane surface of the head, said raised flange having a turned-over edge adapted to be gripped upon the edge of the can-body and having also a weakened line on the margin of said plane surface, combined with a reversed bottom of the same shape and an inclosed fibrous cover having a flange of substantially twice the depth of the head-flange, said cover fitting in the space formed between the outer depressed surfaces of the head and bottom, substantially as described.

4. As an article of manufacture, a can-head having a flange extending around its plane surface forming a receiving-space, a bottom having a flange extending around its plane surface forming a receiving-space, and a cover for the can inclosed between the head and bottom of the can and fitting in the receiving-spaces of both, substantially as described.

5. As an article of manufacture, a can-head having a flange extending around its plane surface forming a receiving-space, said head having also a weakened line extending continuously around the plane surface at a slight distance inwardly from the flange to leave a continuous ledge or seat for a cover, a bottom having a flange extending around its plane surface forming a receiving-space and a cover for the can inclosed between the head and bottom of the can and fitting in the receiving-spaces of both, substantially as described.

6. A head for cans having a continuous raised flange and a weakened line extending continuously about the head at a slight distance inwardly from the continuous raised flange to leave a ledge when the weakened portion is broken in, said continuous flange and ledge serving to retain a cover in place, substantially as described.

654,256. ROLL-PRESS FOR FORMING WEAKENED LINES IN CAN-HEADS. HENRY C. HUNTER, Hamilton, Canada, assignor, by mesne assignments, to the Canister Manufacturing Company, Phillipsburg, Pa. Filed July 23, 1898. Serial No. 686,735. (No model.)



Claim.—1. In combination, a die having an edge adapted to form a groove, and a roller adapted to extend from side to side over the die edge to act with different portions thereof in succession, means for determining the interstitial space between the die edge and roller

and means for moving one part in relation to the other whereby the roller will act progressively across the die from one edge to the other, substantially as described.

2. In combination, a flat die adapted to receive and hold a can-cap and having a die edge, a roller to act with said die edge, means for determining the interstitial space between the die edge and roller, and means for moving one of said parts in relation to the other whereby the roller will act progressively across the die edge and from side to side of the die, substantially as described.

3. In combination, the roller turning in fixed bearings, the die having an edge, a movable carriage supporting the die, and means for reciprocating the carriage under the roller whereby the die will be carried under the roller to make the same act on different parts of the die transversely across its top, the said roller and die having a fixed limit in respect to the interstitial space between them, substantially as described.

4. In combination, the roller mounted in fixed bearings having cogs, a carriage, a rack-bar thereon engaging with the cogs, means for rotating the roller and a die mounted on the carriage, said carriage reciprocating under the roll to make the same act transversely across the top of the die from margin to margin substantially as described.

5. In combination with the roller having cogs, a die-carriage having a rack-bar engaging with the roller-cogs, a cog-wheel on the roller-shaft, and a rack-lever held in engagement therewith, said lever being operated by a wrist-pin, substantially as described.

6. In combination, in a machine for forming a weakened line in a can-head, a die having an edge adapted to form a groove and a roller having a fixed limit of action toward the die edge to maintain a uniform interstitial space, said roller acting progressively from margin to margin of the die edge and transversely across the top of the die, substantially as described.

7. In combination, a plain-faced roll, the lineally-moving carriage and the die of rectangular or like form set upon the carriage with one of its corners in advance to go under the roll first, the surface of the roll and the edge of the die having a fixed limit in relation to the space between them substantially as described.

8. In combination with the roll and die-carriage geared together, the rack-bar for turning the roll engaging a gear connected therewith, the wheel and crank-pin for reciprocating the rack, and the guide for the rack, said rack passing between the same and the gear-wheel and having a curved face, substantially as described.

9. In combination, the die having a cutting edge in one flat plane, and a roll having a fixed limit toward the die to maintain a uniform interstitial space, the plane of the die being tangential to the periphery of the roller and the movement of the parts being progressive from margin to margin of the can-head and transversely across the top of the die, substantially as described.

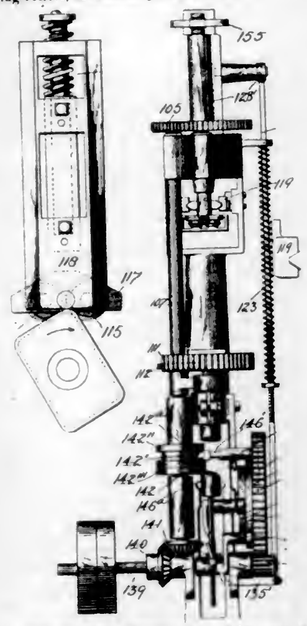
654,257. CAN-HEADING MACHINE. HENRY C. HUNTER, Hamilton, Canada, assignor, by mesne assignments, to the Canister Manufacturing Company, Phillipsburg, Pa. Filed July 23, 1898. Serial No. 686,736. (No model.)

Claim.—1. In combination in a machine for making cans of rectangular or like shape, means for holding such cans, a pair of crimping-rollers acting simultaneously upon the flange of the can-head, a swiveled block carrying the pair of crimping-rollers, and yielding means for forcing the swiveled block forward to make the rollers bear simultaneously upon the can-head whereby one roller will control the position of the other roller in passing around the corner, substantially as described.

2. In combination in a can-making machine, the crimping mechanism for the heads comprising a crimping-roller, a movable support therefor, and primary means for applying a predetermined yet yielding pressure to the roller consisting of a spring having a predetermined force and connected to the roller-support and positively-operating means acting upon said primary means for relieving the spring-pressure at the roller or for retracting the roller, substantially as described.

3. In combination in a machine for making cans, crimping mechanism comprising the pair of crimping-rollers acting simultaneously upon the can-head and one directly in rear of the other, a swiveled block carrying the pair of rollers, and primary means for forcing the swiveled block with the rollers forward with a predetermined yet yielding pressure consisting of a spring of predetermined force in connection with the swiveled block, substantially as described.

4. In combination in a machine for forming cans, a pair of crimping-rollers adjacent to each other and acting simultaneously upon the can-head, a swiveled block carrying the said rollers, a carriage in which the block is swiveled, a sliding bar to move in the carriage, a spring between said bar and the carriage and a primary means for setting the crimping-rollers against the can-head comprising the spring of predetermined force with connections between the same and the sliding bar, the said bar having a part thereon to form an unyielding contact with the carriage after the interposed spring has been compressed whereby the full force of the primary spring will be active on the carriage after the spring-pressure has been gradually applied to the crimping-rollers, substantially as described.



5. In combination in a machine for making cans, means for holding the can, a crimping-roller to act on the can-head, means for forcing the crimping-roller forward to its work, and means for compensating for the shape of the can, said compensating means being interposed between the said crimping-rollers and the pressure-applying means therefor to prevent the reciprocating movement of the crimping-roller toward and from the center of the can from being transmitted to or from affecting the pressure-applying means, substantially as described.

6. In combination in a machine for making cans, a crimping-roller, means for applying a pressure thereto and a compensating means in connection with the crimping-roller and pressure-applying means, said compensating means acting to prevent the reciprocating of the roller while passing around the can from affecting the pressure-applying means, substantially as described.

7. In combination in a machine for making cans, means for holding the cans, a crimping-roller to act on the can-head, means for applying pressure to the roller to set it to its work and a compensating lever having connection with the crimping-roller and with the pressure-applying means, and compensating controlling means for said lever, substantially as described.

8. In combination in a machine for making cans of rectangular or other shape, the crimping-roller to act on the can-head, means for applying the pressure to the roller, a compensating lever in connection with the said roller at one end, a device acting as a cam for the other end of the lever to keep the crimping-roller pressed against the can and a connection between the said lever and the pressure-applying means, substantially as described.

9. In combination in a machine for making cans, a crimping-roller to act on the can-head, the spring for applying pressure to the roller a compensating means consisting of a lever in connection at one end with the crimping-roller, the device having a cam action on the other end of the lever to keep the roller pressed against the can-head and a connection from the pressure-spring to the pivot of the compensating lever intermediate of its ends, substantially as described.

10. In combination in a machine for making cans, a pair of crimping-rollers, a swiveled block carrying the same, said rollers acting simultaneously upon the can-head, a spring for applying a predetermined pressure to the rollers, a compensating lever connected with the spring and having connection with the crimping-rollers and a cam device acting upon the end of the lever to compensate for the shape of the can, substantially as described.

11. In combination in a machine for making cans, the chuck for holding the can comprising the plate having an undercut shoulder and substantially-vertical faces 114 114', and a crimping-wheel having a crimping-face opposite the vertical face 114 and undercut shoulder and having a face 138 opposite the face 114, substantially as described.

12. In combination in a can-making machine, the chuck for holding the head having an undercut shoulder, and a substantially-vertical face forming a corner for receiving the flange of the head and a crimping-roller having reversely-inclined faces operating in conjunction with the chuck and yielding means to hold the roller to its work, substantially as described.

13. In combination in a machine for making cans, a crimping-roller, a movable support therefor, a spring for forcing the support with the roller toward the can-head to crimp the same and a cam and lever connections for relieving the pressure of the spring or retracting the crimping-roller, substantially as described.

14. In combination, the upper and lower chuck-disks, the spring for forcing the lower chuck upwardly with a determined pressure, a cam-lever adjustably connected with the lower chuck for retracting it, a crimping-roller, a spring having connection therewith for setting the roller to its work with a determined pressure, a cam-lever having connection with the said spring for relieving the crimping-roller from the pressure thereof, the gearing for rotating the chuck-disks, a clutch controlling said gearing, a cam and crescent operated thereby for controlling the clutch, the driving-shaft with connections to the clutch and a gear driven from the driving-shaft and carrying the cams, substantially as described.

15. In combination, the crimping-roller, the movable support therefor, the spring for applying a determined yet yielding pressure to the crimping-roller and the loose connection between the spring and the roller-support with a stop whereby the force of the spring will be applied at first gradually and then to the full extent when the stop is brought into action, substantially as described.

16. In combination, the chuck, the crimping-roller, a compensating lever, the shifting fulcrum and means for applying a pressure to the crimping-roller, said pressure acting through the said fulcrum, one end of the compensating lever being connected with the roller and the other end of the lever having a compensating action, substantially as described

17. In combination in a can-making machine, a crimping-roller with its support or block, means for applying a pressure thereto, and compensating means in connection with the crimping-roller and pressure-applying means, said compensating means serving to prevent variations in the action of the roller from affecting the pressure-applying means, substantially as described.

18. In combination in a can-making machine, a crimping-roller, a spring for applying pressure to the roller, a compensating lever in connection with the crimping-roller at one end, and a cam acting on the other end of the said lever, the said spring-pressure being applied to the pivot of the lever intermediate of its ends, substantially as described.

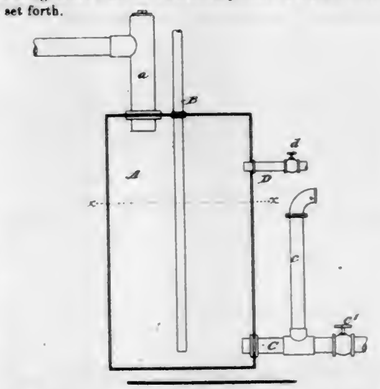
19. In combination, the two chucks, a primary means for forcing them together consisting of the spring, automatic positively-operating mechanism for retracting the chucks and allowing them to close at given intervals, crimping-rollers and means for advancing the same automatically, the action of the rollers being timed to correspond to the automatic action of the chucks, substantially as described.

20. In combination in a machine for making cans, a means for holding the can, a crimping-roller to act on the can-head, means for forcing the crimping-roller forward to its work, and means for compensating for the shape of the can comprising a movable part and automatically-operating means to control the same, said compensating means being interposed between the said crimping-rollers and the pressure-applying means therefor to prevent the reciprocating movement of the crimping-roller toward and from the center of the can from being transmitted to or from affecting the pressure-applying means, substantially as described.

21. In combination in a machine for making cans, a crimping-roller, means for applying a pressure thereto and a compensating means in connection with the crimping-roller and pressure-applying means, said compensating means comprising a movable part and automatically-operating means to control the same, said compensating means acting to prevent the reciprocating of the roller while passing around the can from affecting the pressure-applying means, substantially as described.

654,258. PROCESS OF SEPARATING WATER FROM EMULSIONS, &c. JOHN P. IHARY, New York, N. Y., assignor of one-half to Arthur H. Elliott, same place. Filed Feb. 5, 1897. Serial No. 622,115. (No specimens.)

Claim.—The process of separating water from mixtures, emulsions and compounds of oil or tar and water consisting in gradually passing the mixture, emulsion or compound to be treated, into a mass of the dehydrated oil or tar previously heated to a degree of heat in excess of that which would cause the separation of water as steam from a mass of hydrated oil or tar whereby the water is driven off from the inflowing stream of hydrated oil or tar immediately on its becoming mixed with the heated dehydrated material, substantially as set forth.



654,259. SLIDE-FASTENING FOR GRIPPERS AND GRIPPER EXTENSION-RODS. THOMAS G. JENKINS and JOHN E. WILLS, Wheeling, W. Va. Filed Sept. 5, 1899. Serial No. 729,555. (No model.)



Claim.—1. A slide-fastening for gripper and gripper extension-rods consisting of a bead extending along the entire length of the inner edge of each side gripper, a block or slide having a longitudinal groove in the edge thereof adapted to fit over said bead and slide thereon, a threaded hole extending through said block or slide at a right angle to said groove, and the extension-rods having their ends threaded and adapted to screw through the threaded holes of the blocks or slides and to impinge on the bead of the side grippers, substantially as and for the purposes set forth and described.

2. In a device of the character described, the side grippers, each having a bead or dovetail extending along the entire length thereof and on the inner side thereof, a block or slide adapted to fit over and slide along said bead or dovetail, and the extension-rods provided with threaded ends which pass through said blocks or slides and impinge on said beads or dovetails, substantially as and for the purposes set forth and described.

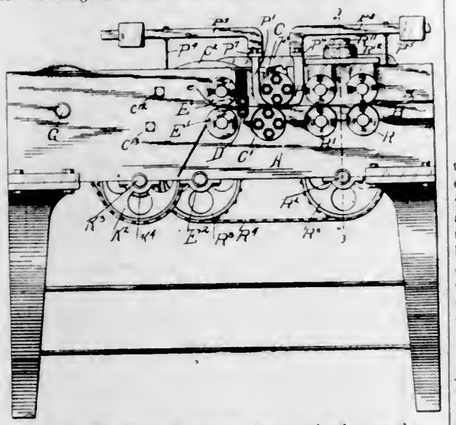
3. In a device of the character described, the combination with the side grippers and the slides or blocks, the former each having a bead or dovetail molding along its inner edge and the latter each having a longitudinal groove in its edge adapted to fit over and slide along said bead or dovetail, of the extension-rods provided with threaded ends which screw through the blocks or slides to engage and impinge upon the said bead or dovetail, substantially as and for the purposes set forth and described.

4. In combination, two side grippers each provided with a bead or dovetail molding, a block or slide constructed with a longitudinal groove in its edge which fits over the said bead or dovetail and adapted to be moved thereon, and the extension-rods having their ends threaded and passing through said block or slide so as to impinge upon the said molding when it is desired to secure the extension-rods in position, substantially as described.

654,260. MACHINE FOR MAKING TOOTHPICKS. EDGAR H. JOHNSON, Marion, Ind., assignor to the Johnson Manufacturing Company, of Indiana. Filed July 27, 1898. Serial No. 687,001. (No model.)

Claim.—1. The combination of a table, a positively-driven, rotary, vertically-adjustable corrugating cutter-head above the table, means to force a stock-strip beneath said cutter-head, presser-feet pivotally supported by the cutter-head shaft and acting beneath the cutter-head upon opposite sides thereof, and a second similar cutter-head projecting from below through the table and acting beneath one of said presser-feet.

2. The combination with the stock-feeding rollers, of the corrugating cutter-heads one slightly in advance of the other, a rotary transverse cutter parallel to the rollers and cutter-heads and at a short distance from the latter, means for continuously rotating the feed-rollers and cutter-heads, means for causing the cutter-heads to gradually approach and recede within the path of the stock at regular intervals corresponding to pick-length advances of the stock, and means for advancing the formed stock to the transverse cutter.



3. The combination of a corrugating cutter-head mounted upon a laterally-moving shaft, a presser-foot pivotally supported by said shaft and acting at one side of its vertical plane, and means to yieldingly urge the rotation of the presser-foot about the shaft, whereby the presser foot while moving bodily with the shaft may yet always press upon the work beneath the cutter.

4. The combination of a laterally-moving shaft carrying a rotary cutter-head, a presser-foot pivotally supported by said shaft and working at one side of its vertical plane, an arm connected to the presser-foot, a weight adjustable upon said arm and tending to swing the presser-foot to its work, and a stop limiting the swinging.

5. The combination of cutter-heads revolubly mounted in the free ends of arms pivotally fixed at their opposite ends and forming with the cutter-heads swinging members, longitudinally-movable bars having inclined surfaces, adjustable stops projecting from said members against said inclined surfaces, respectively, and eccentrics arranged to slide each of said bars back and forth at regular intervals.

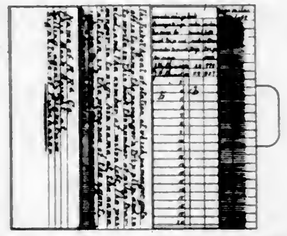
6. The combination with continuously-rotating, corrugating cutter-heads, of means for feeding flat stock-strips between the cutter-heads, and means for causing the cutter-heads to gradually approach and retreat while acting upon the strip: whereby the continuously-moving strip is formed into successive transverse sets of gradually and oppositely tapering picks

7. In a toothpick-machine the combination with means for constantly feeding a strip many times longer than a pick, of rotary corrugating cutters arranged to act continuously to form the strip longitudinally into parallel rods, means for causing the cutters to gradually approach and recede at regular intervals, within the path of the stock, whereby each rod is gradually varied in diameter and formed into a succession of picks connected end to end, and cut-off devices arranged to separate the advancing picks so formed.

8. The combination with mechanism to feed a stock-strip positively and continuously, of two rotary corrugating cutting-heads acting, one slightly in advance of the other, upon opposite sides of the strip, means for gradually moving the cutter-heads toward and away from each other and within the path of the strip to vary the amount cut therefrom, and a cut-off device arranged to sever transversely at proper intervals that portion of the strip left by the cutter-heads, said mechanism, means and device being positively timed each with reference to each of the others.

654,261. MILEAGE-BOOK AND CONDUCTOR'S CHECK. JOHN A. JONES, Cincinnati, Ohio. Filed July 25, 1898. Serial No. 686,782. (No model.)

Claim.—1. The combination of the sheet containing a passenger's receipt and a conductor's check upon the front of each of which are printed the names of stations and adjacent to the name of each of said stations the distances between it and each succeeding station, and upon the backs of which are printed similarly the names of said stations and figures arranged similarly to aforesaid figures to denote the fare between said stations, the mileage-book and the trip-slips to be used therewith, substantially as shown and described.



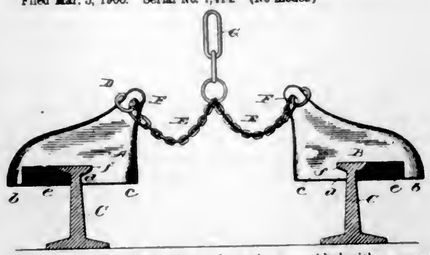
2. The sheet having on its face a central line about which it is to be folded, and two similar sets of names of stations arranged at equal distances on each side of said folding-line, adjacent to one of which sets are figures indicating the distances between said stations, and adjacent to the other set numbers indicating rates of fare between said stations arranged similarly to aforesaid figures, and the back of said sheet having the names of the stations opposite to those on the face and opposite the figures on the face indicating the distance between the stations, figures indicating the amount of fare between said stations, and opposite the figures on the face indicating the amount of fare between stations, figures indicating the distance between said stations, substantially as shown and described.

3. The mileage-book having space for passenger's signature adjacent to space for station-agent's computation of miles traveled and miles left, and a pocket for holding the trip-slip which is stamped by agent at both ends of trip, in combination with said trip-slip and the sheet containing the passenger's receipt and conductor's check, substantially as shown and described.

4. A mileage-book having leaves upon each of which is a column by punching a hole in which the conductor indicates the number of the trip, upon one side of the column an indicated space for the passenger's signature and upon the other side an indicated space for the computation of miles traveled and miles left, and a pocket to hold trip-slips, in combination with said trip-slips each containing a space for the stamp of the agent at the starting-point and an indicated space for the signature of the agent at the destination, substantially as shown and described.

5. A mileage-book having leaves on each of which is a column by punching a hole in which the conductor indicates the number of the trip, indicated spaces adjacent to said column for the passenger's signature and the computation of miles traveled and miles left, in combination with trip-slips each containing a space for the stamp, of the agent at the starting-point and an indicated space for the signature of the agent at the destination, substantially as shown and described.

654,262. TRAIN-ANCHOR. FRANK KREMER, Duluth, Minn. Filed Mar. 5, 1900. Serial No. 7,414. (No model.)



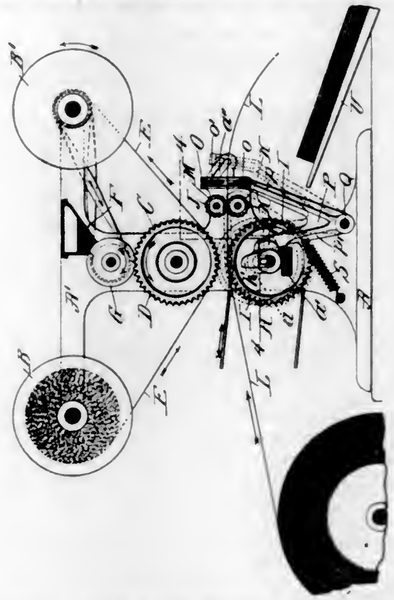
Claim.—1. A rail-gripping train-anchor, provided with a groove or opening of a width to pass over the flange of a rail, and having a flanged portion to pass the flange of the rail and bite the rail when the anchor is under strain; substantially as described.

2. A rail-gripping anchor provided with a groove or recess in its lower face to receive a rail-web, and flaring at opposite sides of its middle to allow it to be turned laterally on the web and flanges or projecting portions on the opposite walls of the groove or recess, at opposite sides of its middle to pass under the rail-web and grip opposite sides of the rail.

3. A rail-gripping anchor provided with a recess in its lower face of a size to pass over and off of a rail and shaped to grasp the web when turned laterally, and a nose or extension at the inner side of the anchor, and means for connecting the said nose or extension with a car.

4. An anchoring mechanism for cars, comprising a pair of rail-gripping anchors having inwardly-extending noses or extensions provided with means for connecting them with a car: the lower faces of the anchors being provided with recesses to receive a rail-web, and flanges to pass under the opposite sides of the rail-webs when the anchors are turned laterally by a pull on their noses.

654,268. ADDRESSING-MACHINE. EDWARD G. LEWIS, St. Louis, Mo. Filed Dec. 4, 1899. Serial No. 739,114. (No model.)



Claim.—1. In a device of the character described, the combination with a continuous mutilated film, of spools or reels on which the same is wound, means for causing the intermittent feed of said mutilated film, an inking-roller under which said film passes for forcing ink or like ingredients through the mutilations of said film onto a web of paper to be printed upon, and means for effecting the continuous feed of said web of paper through the machine; substantially as described.

2. In a device of the character described, the combination with a continuous mutilated film, of means for intermittently feeding said film, a web of paper, means for continuously feeding said web of paper through the machine, an inking-roller coöperating with the film for forcing ink or like ingredients through said mutilated film onto the web of paper, and mechanism for effecting contact of said web of paper with said film at intervals; substantially as described.

3. In a device of the character described, the combination with a frame, of reels mounted thereon, of an ink-roller, a mutilated film wound upon said reels and passing around one portion of said ink-roller, means for supplying ink to said ink-roller, means for intermittently feeding said mutilated film and its supporting-reels and its ink-roller, a web of paper, a platen-roller over which said web of paper passes, means for continuously feeding said web of paper, and means for forcing said platen roller against said ink-roller, in order to cause said web of paper to be pressed against said mutilated film to make an impression on the former; substantially as described.

4. In a device of the character described, the combination with an ink-roller, of a spur-gear arranged thereon, a mutilated film which passes around one side of said ink-roller, a reel upon which said mutilated film is wound, a platen-roller, a spur-gear arranged thereon, said platen-roller and its carried spur-gear being normally out of contact with said ink-roller and its carried spur-gear, means for constantly rotating said platen-roller, a web of paper which passes over said platen-roller, means for continually feeding said web of paper, a cam arranged on said platen-roller, and a stationary projection arranged in the path of said cam, whereby, when said cam is brought into contact with said projection, the platen-roller and its carried parts are caused to move toward the ink-roller and cause the paper web to be pressed against the mutilated film to effect an impression and simultaneously cause the spur-gear on said platen-roller to mesh with the spur-gear on the ink-roller and cause the latter to rotate until the cam on the platen-roller passes the stationary projection, after which said platen-roller will fall to its normal position and cause its carried spur-gear to be brought out of mesh with the spur-gear on the ink-roller and permit the latter to cease rotating; substantially as described.

5. In a device of the character described, the combination with a supporting-frame having slots formed therein, of a platen-roller provided with trunnions which pass through said slots, a cam arranged on said platen-roller, a stationary projection in the path of rotation of said cam, a mutilated film arranged above said platen-roller, an inking device arranged on one side of said mutilated film, a web of paper which passes over said platen-roller, a roller for continuously feeding said web of paper, a lever pivotally mounted on said supporting-frame, means carried by said lever for supporting knives, a cam arranged on said platen-roller for coöperating with, and rocking, said lever, and means for causing said knives to sever a sheet of paper from the web which passes in juxtaposition thereto; substantially as described.

6. The combination with a film having formed thereon mutilated characters, of a continuous web of paper, means for moving said continuous web constantly through the machine, devices for forcing ink or like ingredients through the mutilations of said film onto said continuous web, mechanism for intermittently feeding said mutilated film, and knife or shear blades for severing the continuous web into predetermined lengths; substantially as described.

7. The combination with the main frame of a machine of the character described, of a shaft carrying an ink-roller, a mutilated film passing under said roller, a vertically-movable platen over which passes a continuous strip of paper, means for constantly rotating said vertically-movable platen, mechanism for intermittently raising and lowering said platen into and out of contact with the inking-roller, a supporting-frame secured to the main framing of the machine, a lever pivoted to said frame, a knife-frame carried by said lever, a cam arranged on the shaft of the vertically-movable platen-roller for rocking said lever, stationary and movable knives arranged in said knife-frame, and projections on the movable knife extending into slots in said supporting-frame, for effecting the movement of said movable knife; substantially as described.

8. The combination with mechanism for constantly feeding a strip of paper to be printed upon, a printing-strip normally out of engagement with the strip of paper to be printed upon, inking devices coöperating with said strip, and mechanism for imparting an intermittent movement in the same direction as the movement of the strip to be printed upon and coincidently with the period of printing contact; substantially as described.

9. The combination with mechanism for constantly feeding a continuous strip of paper, of a printing device in the form of a continuous strip arranged in juxtaposition thereto, and means for moving said printing-strip only during the period of printing contact; substantially as described.

10. The combination with mechanism for constantly feeding a continuous strip of paper, of a printing device in the form of a perforated sheet or strip in juxtaposition to said first-mentioned strip, and means for engaging the feeding mechanism with the printing mechanism, whereby said printing devices are moved in the direction of the impression-receiving strip during such time as the printing device is in proper position to make an impression; substantially as described.

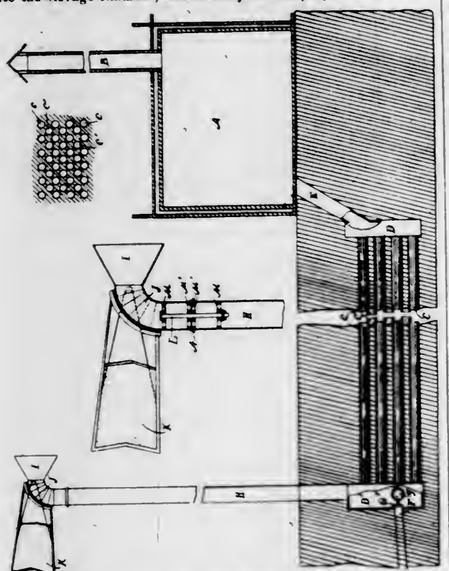
654,264. AIR-COOLING AND VENTILATING SYSTEM. OTTO F. LUEDER, Plymouth, and HUGO C. ALVES, Sheboygan Falls, Wis. Filed May 7, 1898. Serial No. 679,983. (No model.)

Claim.—1. The combination of a storage-chamber, such as the curing-room of a cheese-factory; a ventilating-stack adapted to permit the escape of air therefrom; subearth air-ducts in communication therewith; means for permitting the moisture of the soil to percolate through said ducts; and means for automatically directing the natural currents of the atmosphere through said ducts, whereby the air is reduced in temperature by intimate contact with the soil and by the evaporation of the moisture in the ducts, the humidity of the atmosphere being at the same time increased by such evaporation, substantially for the purpose set forth.

2. The combination with a storage-chamber, such as the curing-room of a cheese-factory; of means for permitting the escape of warm air therefrom; a series of permeable subearth air-ducts in communication therewith; and an elevated wind-collecting funnel in communication with said subearth air-ducts, at a point distant from said storage-chamber, substantially for the purpose set forth.

3. The combination with a storage-chamber, such as the curing-room of a cheese-factory; of means for permitting the escape of the warmer air therefrom; a subearth air-chamber in direct communi-

cation with the storage-chamber; a second air-chamber located at a distance from said first-mentioned chamber; permeable subearth air-ducts communicating between said chambers; and means for automatically directing external air through said chambers and ducts, into the storage-chamber, substantially for the purpose set forth.



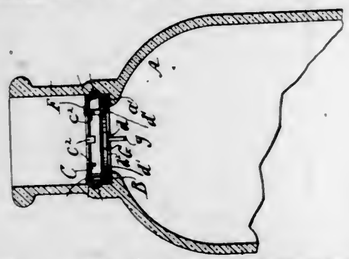
4. The combination with a storage-chamber, such as the curing-room of a cheese-factory; of a system of permeable subearth air ducts and chambers in communication therewith; a float-actuated valve normally closing the same; and means for exhausting the warmer air from the storage-chamber and automatically directing the currents of the exterior atmosphere through said subearth air ducts and chambers into the storage-chamber, whereby the air is moistened and modified in temperature, in passing through the ducts, substantially for the purpose set forth.

654,265. HAND FOR DISPLAY-FORMS. HUGH LYON, Lansing, Mich. Filed Mar. 3, 1899. Serial No. 706,269. (No model.)



Claim.—A hand for display-form having fingers made up of central cores of flexible material covered with strips of fabric or the like wound into rolls corresponding to the length of the phalanges; a suitable covering for the same, for the purpose specified.

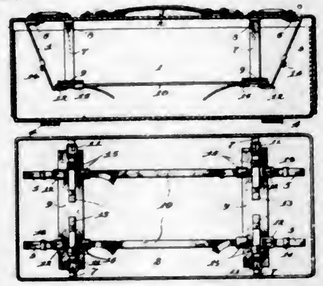
654,266. NON-REFILLABLE BOTTLE. HAROLD B. MASON, Peterborough, Canada. Filed Mar. 6, 1900. Serial No. 7,520. (No model.)



Claim.—1. In a non-refillable bottle, the combination of a bottle having a shoulder in the lower portion of its neck, with an elastic washer thereon, an annular groove above said shoulder, a disk with ports therein engaging said elastic washer, a valve normally closing the said ports, a sheet-metal ring located above the said disk, a split ring for fastening the device within the said groove of the bottle-neck, and clamps for connecting the parts to each other, substantially as shown and described.

2. As a bottle-closing device for engagement with a bottle-neck having a groove therein, the combination of a ring having a double set of projections extended downwardly therefrom, a disk with ports therein, a valve engaged over said ports, a split spring-metal ring, and clamps connecting the said parts together, substantially as shown and described.

654,267. ATTACHMENT FOR TRAVELING-BAGS. ADAM MIRDEN, Seattle, Wash. Filed June 5, 1900. Serial No. 19,170. (No model.)



Claim.—1. The combination with a telescopic case, of a clothes-supporting frame located within the cover thereof, pendent suspending-straps, having their upper ends secured to the cover, detachable connections between the straps and the frame, and hooks carried by the straps and arranged for engagement with the respective edges of the cover, when the straps have been disconnected from the frame.

2. The combination with a telescopic case, of a clothes-supporting frame located within the cover thereof, pendent suspending-straps having their upper ends secured to the cover, detachable connections between the straps and the frame, and hooks or clips, which are slidable longitudinally upon the respective straps, and arranged for engagement with the respective edges of the cover, when the straps are disconnected from the frame.

3. The combination with a telescopic case, of a clothes-supporting frame located within the cover thereof, opposite end straps and opposite side straps pendent from the cover, detachable connections between the straps and the frame, terminal hooks or clips for the free ends of the side straps, and longitudinally-slidable hooks or clips for the end straps, said hooks or clips being arranged for engagement with the respective edges of the cover, when the straps have been disconnected from the frame.

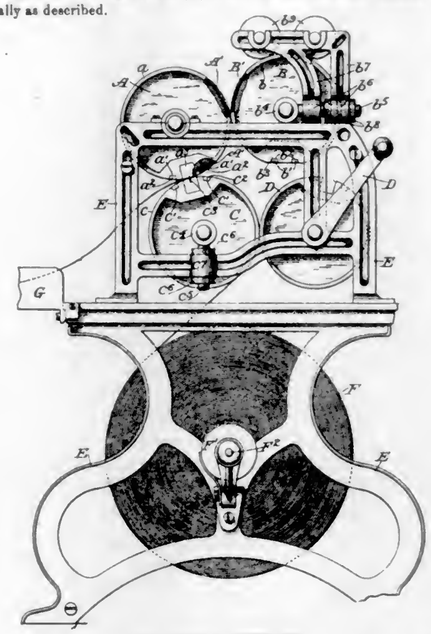
4. The combination with a telescopic case, of opposite end straps pendent from the under side of the top of the cover, opposite side straps also pendent from the cover, and a clothes-supporting frame, comprising opposite transverse end straps, having buckles at the opposite ends and upon the outer edges thereof, and longitudinal straps connecting the transverse end straps, the free ends of the pendent straps being engaged with the respective buckles.

5. A clothes-supporting attachment for traveling bags or cases, comprising a supporting-frame, formed by opposite transverse end straps, and opposite longitudinal connecting-straps therefor, buckles at the opposite ends of each end strap, and other transverse buckles at the outer edges of said straps, opposite pairs of end suspending-straps for adjustable connection with the adjacent transverse buckles, opposite pairs of side suspending-straps for adjustable connection with the adjacent end buckles, and fastenings for the upper ends of the respective suspending-straps.

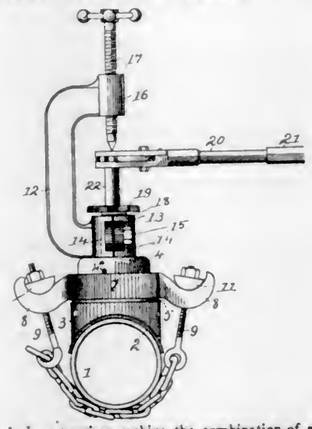
654,268. APPARATUS FOR PRINTING FROM EMBOSSED SHEETS. BERT MILLISON, New York, N. Y., assignor to the Associated Press, same place and Chicago, Ill. Filed Nov. 8, 1898. Serial No. 695,828. (No model.)

Claim.—An apparatus for printing from embossed sheets, comprising a frame, a printing-roll having means for securing the ends of the printing-sheet in place, and provided therebetween with a cutter-block a^1, an inking-roll, threaded studs mounted adjustably in the frame, and forming bearings for the inking-roll, a carrier-roll under the printing-roll having adjustable threaded studs forming its bearings, and provided with a cutting-blade to register with the block a^1, and with a flattened portion opposed to the block a^2, annular bearing-

surfaces between the said three rolls to protect the printing-sheets from injury, and a feed-roll under the inking-roll, and coacting with the roll C to feed the web of paper through the machine; substantially as described.



654,269. TAPPING-MACHINE. HENRY MUELLER, Decatur, Ill. Filed Jan. 20, 1900. Serial No. 2,219. (No model.)

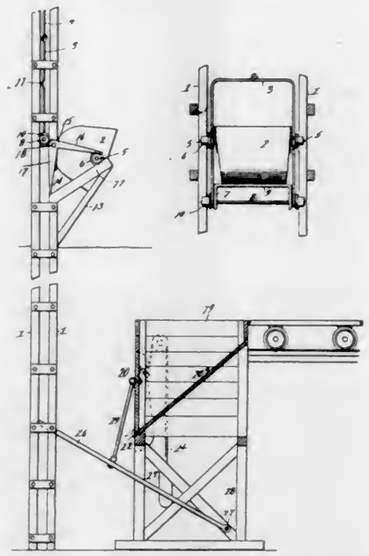


Claim.—1. In a tapping-machine the combination of a cap or shell adapted to be secured to a pipe and having a flangeless cylindrical neck that forms a tool-guide, a collar embracing the neck and rotatably adjustable thereon, means for clamping the collar to the neck and a gooseneck extension for the feed-screw rigid with the collar.

2. In a tapping-machine, the combination of a cap or shell adapted to be secured to a pipe and having a flangeless cylindrical neck that forms a tool-guide, a split collar embracing the neck, a bolt for clamping the split collar onto the neck and a gooseneck extension for the feed-screw rigid with the collar.

3. In a tapping-machine, the combination of a cap or shell adapted to be secured to a pipe, such cap having a flange on its lower end and a flangeless cylindrical bored neck on its upper end, a clamping-ring resting on the flange of the cap, a split collar clamped onto the neck and a gooseneck extension for the feed-screw rigid with the collar.

654,270. APPARATUS FOR LOADING OR UNLOADING MINE CAGES OR BUCKETS. JOHN F. MCKAY, Prosperity, Mo., assignor of one-half to John Raymond and Claud D. Raymond, Webb City, Mo. Filed Apr. 24, 1900. Serial No. 14,188. (No model.)



Claim.—1. In an apparatus of the class described, the combination of a vertical guide or way having a side track and provided thereat with an opening, a bucket or cage having upper and lower devices engaging the guide or way, and a pivoted switch mounted adjacent to the said side track and provided with arms, one of the arms being arranged normally across the guide or way to direct or switch the upper device of the bucket upon the side track, and the other arm being arranged to be engaged by the said upper device to close the switch and cause the lower device of the bucket to be carried upward to invert the bucket, substantially as described.

2. In an apparatus of the class described, the combination of the vertical guides or ways provided with inclined side tracks and having openings thereat, a pivoted switch having arms 16 and 17 arranged at an angle to each other, one of the arms being disposed normally across the adjacent guide or way, and the other arm being extended outward, and a bucket provided with upper and lower rollers or wheels, the upper wheels or rollers being adapted to be switched upon the side tracks and to engage the arm 16 to close the switch, substantially as described.

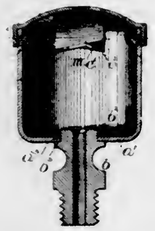
3. In an apparatus of the class described, the combination of vertical guides having side tracks, a pivoted switch, a bucket provided with upper journals, arms depending from the bottom of the bucket, a rod mounted on the arms and extended beyond the same to form journals, wheels or rollers mounted upon the said journals, and a bail connected with the said rod and provided at opposite sides with bends to clear the upper journals, substantially as described.

4. In an apparatus of the class described, the combination with a bucket, of a hopper having an inclined bottom and provided with a hinged gate adapted to form a chute, a weight connected with and adapted to hold the gate normally closed, a lever located beneath the gate and arranged in the path of the bucket and adapted to be depressed by the same, and a link connecting the lever with the gate, whereby the latter will be opened when the lever is depressed by the bucket, substantially as described.

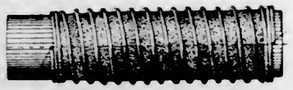
654,271. OIL-CUP. GEORGE A. MCKEIL, Jackson, Mich., assignor of one-half to the Withington & Cooley Manufacturing Company, same place. Filed Feb. 1, 1899. Serial No. 704,149. (No model.)

Claim.—In an oil-cup, the combination of the body having inwardly-projecting pins or studs on opposite side walls, a detachable cap or cover, and a bowed spring centrally secured to the cover and having end portions with upper surfaces oppositely inclined transversely of the spring for engagement with the under sides of said studs, respectively, the oppositely-inclined end portions having sock-

ets or indentations at their higher portions for the studs to engage, substantially as described.



654,272. METHOD OF MAKING PROJECTILES. GEORGE H. NEWELL, Grand Rapids, Mich. Filed Nov. 6, 1899. Serial No. 735,920. (No model.)



Claim.—1. The art of manufacturing projectiles for small-arms consisting of, providing a blank of soft metal and of suitable dimensions, placing thereon a casing having suitable lateral openings, said casing being at first substantially outside the plane of the blank and secured in place thereon, placing said blank and casing in a suitable mold or die, subjecting the same to pressure whereby the metal blank is caused to flow laterally through the openings of the casing and is reduced longitudinally, substantially as described.

2. The art of manufacturing projectiles for small-arms, consisting of providing a blank of soft metal of substantially-cylindrical form, winding a suitable wire spirally upon the outside of said blank and with open spaces between the coils of the wire securing the ends of the wire to the blank, and placing this blank and wire in a suitable mold or die and subjecting the same to pressure whereby the metal of the blank is caused to flow laterally outward between the coils of wire and partially inclose the same, and the blank longitudinally reduced, substantially as described.

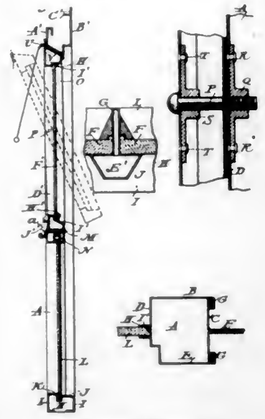
3. The art of manufacturing projectiles for small-arms, consisting of, providing a blank of soft metal, substantially cylindrical in form and of suitable dimensions, placing thereon a covering of porous and yielding material, placing outside the said covering a casing of harder and stronger material than that of the body and provided with openings securing the same in place on the blank, and finally subjecting said structure to pressure in a suitable mold, whereby the metal of the blank is caused to flow laterally outward through the openings in the casing, and assume the change of form, substantially as described.

4. The art of manufacturing projectiles for small-arms, consisting of, providing a blank of soft metal of substantially-cylindrical form, applying thereto a porous and yielding covering, winding a wire outside of said patch and at intervals thereon, and inserting the ends of the wire in said body, and subjecting said body, covering and wire to longitudinal pressure, in a suitable mold, whereby the metal of the blank flows outward between the coils, bringing the coils of the wire within the plane of the projecting portions of the covering, and securing each separate turn of wire in place within the body of the projectile, substantially as described.

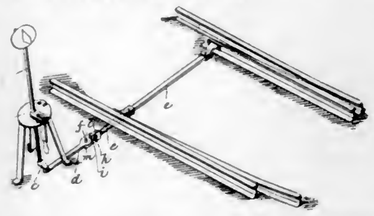
654,273. FIREPROOF WINDOW. AUGUST NIEDERMEYER, Milwaukee, Wis. Filed Jan. 26, 1900. Serial No. 2,848. (No model.)

Claim.—1. A fireproof window, consisting in the combination of hollow sheet-metal rectangular side pieces A, provided, at its sides, with vertical retaining-flanges F, and at its upper end with horizontal retaining-flanges B' and C'; hollow central sheet-metal cross-pieces H, M and A', said cross-pieces H and M being provided with retaining-recesses and bearings for the reception of the window-glass; a separate movable sash O pivotally supported at its respective sides to the sides of the window-frame; and a fusible or combustible attachment for holding said movable sash in its open position, substantially as and for the purpose specified.

2. In a fireproof window, the combination of a window-frame having hollow sheet-metal sides and end cross-pieces; a movable glass-supporting sash located in said frame; bolt-supporting flanged nuts Q rigidly secured to the sides of said window-frame; bolt-receiving flanged collars S rigidly secured to the sides of said window-sash; and pivotal sash-supporting bolts P, having their screw-threaded ends firmly fixed in said flanged nuts, and their opposite ends located in said flanged collars, and adapted to pivotally support said sash at its respective sides from said frame, all substantially as and for the purpose specified.



654,274. RAILWAY-SWITCH. MICHAEL O'DOWD, Chillicothe, Ill., assignor of one-half to William C. Nixon, Chicago, Ill. Filed Oct. 27, 1899. Serial No. 734,920. (No model.)



Claim.—1. The combination with the member for engaging the rails of a member for operating the same, pivotally connected therewith, one of said members being provided with a socket and the other with a nose which can enter the socket when it is swung into operative position, substantially as described.

2. The combination with the tie-bar, of a pitman pivotally connected therewith, the tie-bar being provided with a socket and the pitman being provided with a nose arranged to enter said socket, substantially as described.

654,275. LOCKING DEVICE FOR JAIL OR SIMILAR DOORS. PETER J. PAULY, Jr., St. Louis, Mo. Filed Apr. 13, 1900. Serial No. 12,765. (No model.)

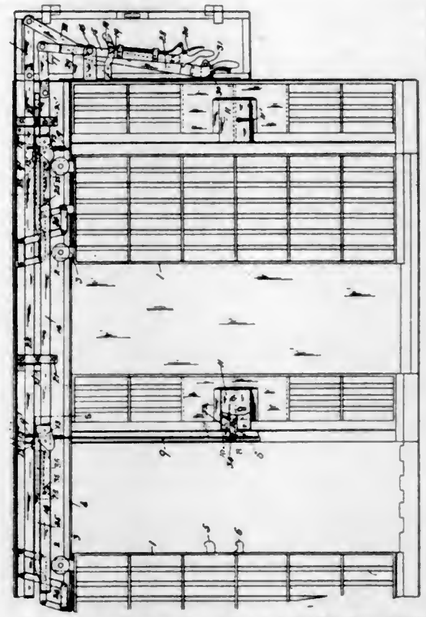
Claim.—1. In a door and locking device therefor, a suitable door, a locking-bar for the same, an additional lock positively engaging the door for the locked position of the locking-bar, and means for disengaging the locking-bar from the door and permitting the opening thereof through said lock, substantially as set forth.

2. In a door and locking device therefor, a sliding door, a locking-bar for the same, an additional lock positively engaging the door for the locked position of the locking-bar, and means for disengaging the locking-bar from said door and permitting the opening of the latter through the medium of the lock, substantially as set forth.

3. In a door and locking device therefor, a suitable sliding door, a locking-bar for the same, an additional lock for said door, means for imparting an initial movement to said locking-bar and disengaging the same from said door, the locking-bar being adapted to effect a release between the door and lock upon a further movement thereof in the same direction, substantially as set forth.

4. In a door and locking device therefor, a suitable sliding door, a locking-bar for the same, an additional lock for said door, means for imparting an initial movement to said locking-bar and disengaging the same from said door, the locking-bar being adapted to effect a release between the door and lock upon a further movement thereof in the same direction, and means for actuating the door when so released, substantially as set forth.

5. In a door and locking device therefor, a sliding door, a travel-bar normally disconnected from the same, a locking-bar for the door, an additional lock for the door, means for imparting an initial movement to the locking-bar and disengaging the same from the door, intermediate devices between the locking-bar and travel-bar for coupling the door to the travel-bar upon a further movement of the locking-bar in the same direction, the locking-bar by such additional movement being adapted to effect a release between the door and lock, and means for actuating the travel-bar and door thus coupled thereto, substantially as set forth.



6. In a door and locking device therefor, a sliding door, a locking-bar, and lock for same, a travel-bar, toggle-links connected at one end to the door, and having their opposite ends fixed, a coupling-bar pivoted at one end to the toggle-links and having its opposite end movably connected to the locking-bar, means for imparting an initial movement to the locking-bar and disengaging the same from the door, the said locking-bar being adapted upon further movement in the same direction to effect connection between the travel-bar and coupling-bar, and to effect a release between the door and lock, and means for actuating the travel-bar and operating the door thus coupled thereto, substantially as set forth.

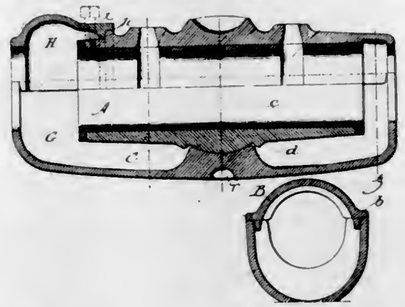
7. In a door and locking device therefor, a sliding door, a locking-bar for the same, a catch carried by the door and passing through a slit in the locking-bar, a lock having a latch adapted to engage a second catch carried by the door, a peg projecting from the locking bar, a pin carried by the latch, means for imparting an initial movement to the locking-bar and disengaging the same from the first-mentioned catch, the peg on the locking-bar being adapted to engage the pin on the latch and disengage the latter from the second-mentioned catch, thereby leaving the door fully released and free to be opened, substantially as set forth.

8. In a door and locking device therefor, a sliding door, a locking-bar for same, an additional lock for the door, a controlling-bar, a block carried by said bar having a succession of inclined surfaces, the block passing through a suitable recess or opening formed in the locking-bar whereby upon a partial movement of the controlling-bar in one direction, the locking-bar will ride along the first incline and be moved sufficiently to effect a disengagement between itself and the door, and upon further movement of the controlling-bar the locking-bar will ride along the second incline and be moved to its full extent, and means interposed between the locking-bar and the locking mechanism of the lock for effecting a release between the door and lock upon such final movement of the locking-bar, substantially as set forth.

9. In a door and locking device therefor, a sliding door, a travel-bar, toggle-links pivotally connected to the door and ceiling of the cell respectively, a locking-bar, a coupling-bar having one end pivotally secured to the toggle-links, and the opposite end passing freely through the locking-bar, the travel-bar, having a recess formed therein, a lug projecting from the coupling-bar and adapted to engage said recess for one extreme position of the locking-bar, an angle bar or plate carried by the cell in such position as to permit the lug secured to the coupling-bar to drop below the upper edge of either end of the angle-bar when the locking-bar is allowed to drop to its lowest or other extreme position, thereby additionally locking the door be the same fully closed or open, substantially as set forth.

10. In combination with a series of sliding doors, a locking-bar for each door, a travel-bar normally disconnected from said doors, a controlling-bar mounted parallel to the travel-bar, a series of blocks having inclined upper surfaces for the support of the locking-bars, the latter being raised or lowered according to the direction in which movement is imparted to the controlling-bar, a coupling-bar between each door and travel-bar adapted to effect connection between said travel-bar and door when the locking-bar is in its highest position, or when resting at the highest point of the upper incline of the block, means for actuating the travel-bar, and means for operating the controlling-bar and indicating the position of the blocks carried thereby and hence that of the locking-bars controlled by said blocks, substantially as set forth.

654,276. JOURNAL-BOX. ANTONIO C. PESSANO, Philadelphia, Pa., assignor to the George V. Cresson Company, of Pennsylvania. Filed Mar. 19, 1900. Serial No. 9,298. (No model.)



Claim.—1. In a journal-bearing, the combination with a split journal-box forming upper and lower sections of a casing completely surrounding the lower part of the journal-box and extended beyond it on the sides to directly support the upper part of the journal-box and at one end to form a cup or chamber, and a removable cap or cover fitting over and covering said cup or chamber and supported by the casing.

2. In a journal-bearing, the combination with a split journal-box forming upper and lower sections of a casing surrounding the lower section and directly and independently supporting each of the sections of the box and also extended beyond it at one end to form a cup or chamber, and a removable cap or cover fitting over and covering said cup or extended chamber.

3. In a journal-bearing, the combination with the journal-box formed of upper and lower parts, of a lower casing surrounding and supporting the lower part of the journal and also extended beyond it on the sides to directly support the upper part of the journal-box and at one end to form a cup or oil-containing chamber, and a removable cap or cover arched or enlarged upon the interior, and fitting over said cup or chamber and forming therewith an enlarged oil-containing compartment about the shafting beyond the journal.

4. In a journal-bearing, the combination with the journal-box A comprising the lower part C and upper part B of greater width and the surrounding lower casing D forming the lubricant-holder adjustably supporting the lower part C and fixedly supporting the upper part B of the box and having one end extended to form a cup or chamber beyond the journal, of the movable cap F having inwardly-extending side flanges *f* resting within the upper edges of the cup or chamber G to form a removable cover therefor.

5. In a journal-bearing, the combination with the journal-box, of the surrounding lower casing provided on its sides with bearing-lugs *k*.

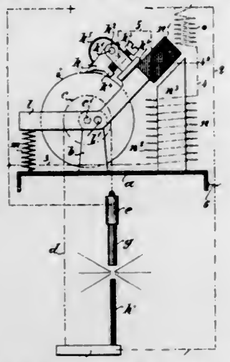
6. In a journal-bearing, the combination with a lower oil-containing casing surrounding the lower part of the journal-box, of a split journal-box comprising an upper and a lower portion each directly supported by the lower casing.

7. In a journal-bearing, the combination of an oil chamber or casing having a central socket-bearing on its inner part at the bottom and an upper bearing-surface about its rim, with a split journal-box the two parts of which fit together, the lower part being inclosed within the casing and having a lug fitting in the socket of said

casing and the upper part being wider than the lower part and formed with a flange fitting the upper rim of the casing.

8. In a journal-bearing, the combination of an oil chamber or casing having a central socket-bearing on its inner part at the bottom and an upper bearing-surface about its rim and also having a socket *r* in its bottom on the outside and lugs R on its sides for the clamping and adjusting screws, with a split journal-box the two parts of which fit together, the lower part being inclosed within the casing and having a lug fitting in the socket of said casing and the upper part being wider than the lower part and formed with a flange fitting the upper rim of the casing and also with a socket *a* for the clamping-screw.

654,277. ELECTRIC-ARC LAMP. HENRI PIEPER, Flis, Liege, Belgium. Filed Dec. 28, 1897. Serial No. 663,825. (No model.)



Claim.—1. In an electric-arc lamp, the combination with a movable upper carbon, a lower carbon, the circuit connections for the carbons, a coil for controlling the movable carbon, of a shunt for the regulating-current, a ratchet-wheel having finely-divided teeth, and connected with the movable carbon, a pawl controlled by the oppositely-acting forces of a spring and the said coil for releasing, feeding back and relocking the said ratchet-wheel, and means whereby the break of said shunt has the effect of modifying the force of said coil, substantially as and for the purposes hereinbefore set forth.

2. In an electric-arc lamp, the combination with a movable upper carbon, a lower carbon, circuit connections for the carbons, and a coil for controlling the movable carbon of a shunt for regulating the current, a ratchet-wheel having finely-divided teeth, and connected with the movable carbon, and a pawl mounted on the upwardly-inclined arm of a bent lever pivoted at its elbow controlled by the oppositely-acting forces of a spring and the said coil for releasing, feeding back and relocking the said ratchet-wheel, substantially as and for the purposes hereinbefore set forth.

654,278. ARMOR OR SHIELD FOR PNEUMATIC TIRES. WILLIAM E. PUGSLEY, Lincoln, Nebr. Filed Dec. 7, 1899. Serial No. 739,517. (No model.)



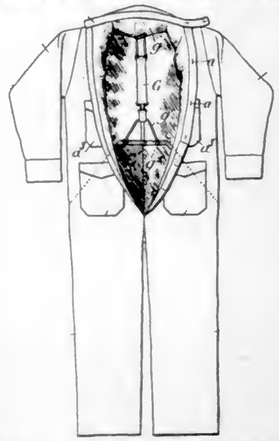
Claim.—1. An armor or shield for pneumatic tires, consisting of a casing elastic longitudioally and non-elastic laterally, and a packing of impenetrable material located within the casing.

2. An armor or shield for pneumatic tires, consisting of a casing elastic longitudinally and noo-elastic laterally, and a packing of impenetrable material located within the casing, and strips of elastic material interposed between the layers of packing.

3. An armor or shield for pneumatic tires, consisting of a casing elastic longitudinally and non-elastic laterally, and a packing of impenetrable material located within the casing, and strips of elastic material interposed between the layers of packing; said packing being stitched to the casing along its marginal edges.

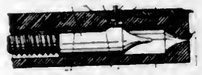
654,279. COMBINATION-OVERALLS. NATIN RAVICH, Chicago, Ill. Filed Apr. 4, 1898. Serial No. 676,448. (No model.)

Claim.—1. A garment comprising two integral halves composing the jacket portion and the front of the leg portion, each composed of one-half of the front and one-half of the back of the jacket portion, and a front leg portion, in combination with two rear leg portions each having at the waist-line an upward extension integral therewith, these parts being connected together substantially as set forth and forming at the waist-line a rear flap extending beneath the back of the jacket portion, said jacket portion reaching to a point below the waist-line and said flap being free or unattached between the outer upper points of juncture of the rear and front leg portions.



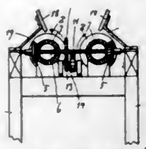
2. A garment comprising two integral halves composing the jacket portion and the front leg portion, each composed of one-half of the front and one-half of the back of the jacket portion, and a front leg portion, in combination with two rear leg portions each having at the waist-line an upward extension integral therewith, these parts being connected together, substantially as set forth, and forming at the waist-line a rear flap extending beneath the back of the jacket portion, said jacket portion reaching to a point below the waist-line and said flap being free or unattached between the outer upper points of juncture of the rear and front leg portions, and a suspender connecting the inside of the jacket portion with the said rear flap.

654,280. AUTOMATIC COCKING-INDICATOR. MORRIS P. RICHARDS, Utica, N. Y. Filed Dec. 31, 1898. Serial No. 700,805. (No model.)



Claim.—In a lever-action firearm, the combination of the reciprocating breech-bolt, the reciprocating firing-pin arranged longitudinally within and carried by said bolt, operating mechanisms, a frame into which said bolt is retired, said firing-pin provided with the longitudinal cam-faces, said bolt formed with a transverse opening from its exterior to the firing-pin, and the movable indicator carried by and moving with the bolt and located in said opening, said indicator at its inner end resting on said cam-faces of the firing-pin, whereby the indicator is withdrawn into the bolt when the bolt is retired into said frame, and the indicator is projected when the bolt is breeched and the firing-pin is cocked, substantially as described.

654,281. VEGETABLE OR FRUIT SEPARATOR. MORRIS P. RICHARDS, Utica, N. Y. Filed Apr. 17, 1899. Serial No. 713,256. (No model.)



Claim.—1. In a machine of the character described, the combination of a pair of cooperating approximately-parallel rolls, each roll gradually diminishing in diameter and having the spiral surface with the spiral edge or shoulder forming the sheer termination of said spiral surface, substantially as set forth, a pair of side boards supported above and near the vertical axial lines of the rolls, an endless link belt between and approximately parallel with the axes of the rolls, and mechanism for driving the movable parts, substantially as described.

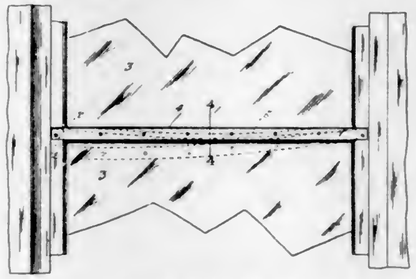
2. In a separator, the combination of a pair of rotating rolls, each roll gradually diminishing in diameter and formed with a spiral surface forming the corresponding spiral edge or shoulder facing only toward the delivery end of the roll, substantially as described, a pair of side boards supported longitudinally above the rolls, an endless link belt provided with cross-blocks and running longitudinally of and between the rolls, and actuating mechanism, substantially as described.

3. In a machine for assorting fruit and like articles, a pair of rotary cylinders gradually diminishing in the direction of their length, each cylinder having a spiral smooth surface formed with the corresponding spiral edge facing only toward the small end of the cylinder, as described, mechanism for adjusting the axial center of the rolls in relation to each other, a pair of side boards above and near the axial center of the rolls, an endless belt running parallel to the axis of the rolls between the same, and mechanism for driving the movable parts, combined substantially as set forth, for the purposes stated.

4. In a machine for assorting fruit and like articles, a pair of rotating cylinders, diminishing spirally in their diameter in the direction of their length, each cylinder having the spiral surface with the corresponding spiral-edged shoulder facing only toward the small end of the cylinder, substantially as set forth, mechanism for adjusting the cylinders with reference to their axial centers, side boards or hoppers supported above and near the axial center of the rolls, an endless link belt running between the axes of the rolls, and mechanism for driving the parts, combined, substantially as set forth for the purposes stated.

5. A separating-machine, substantially as described, comprising a rotating cylinder gradually diminishing in diameter from one end to the other and formed with the spiral surface from end to end having the corresponding spiral-edged shoulder facing only toward the small end of the cylinder and offering no obstruction to the advance of fruit along the cylinder, substantially as set forth.

654,282. TRUSS-BAR FOR MEETING-RAILS OF WINDOW-SASHES. PAUL C. SACHSE, St. Louis, Mo. Filed Apr. 19, 1900. Serial No. 13,458. (No model.)



Claim.—1. A truss-bar for window-sash rails comprising a cambered bar, adapted to be secured to the outer surface of the rail of either sash, and lips disposed at the ends of the convex edges of the bar for temporarily securing either end of the bar as the camber thereof is being straightened, substantially as set forth.

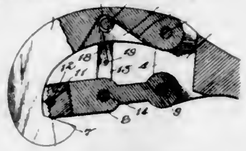
2. A truss-bar for window-sash rails comprising a flat bar cambered in a plane parallel to its faces, a groove formed on one face thereof following the general direction of the camber, and means for securing the same to the rail of a sash, substantially as set forth.

3. A truss-bar for window-sash rails comprising a flat bar cambered in a plane parallel to its faces, a groove formed on one face thereof following the general direction of the camber, and lips disposed at the ends of the convex edges of the bar and turned toward the face on which is disposed the aforesaid groove, the bar being provided with openings for the passage of securing-screws, substantially as set forth.

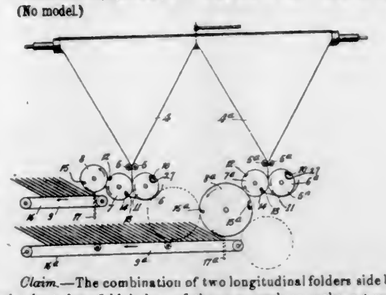
654,283. PIPE-WRENCH. ABRAHAM J. SAWIN, Springville, Cal. Filed Apr. 3, 1900. Serial No. 11,362. (No model.)

Claim.—1. A wrench, comprising a handle, a pair of jaws pivoted at their inner ends to the same end of the handle, and a yieldable spring connection for the jaws, said connection being located between the jaws and also between the pivotal connections and the free ends thereof.

2. A wrench, comprising a handle, a pair of jaws pivoted thereto, opposite links pivotally connecting the jaws, a transverse pin connecting the links and located between the jaws, and a spring, comprising a coil located in a socket formed in one of the jaws and embracing the adjacent pivotal connection of the links, and opposite arms respectively engaging a wall of the socket and the transverse pin, said spring normally forcing the jaws together.

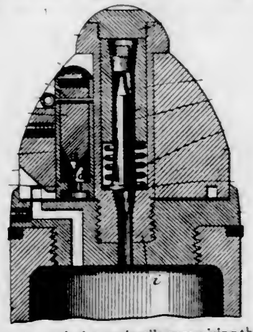


654,284. DELIVERY APPARATUS FOR PRINTING-MACHINES. WALTER SCOTT, Plainfield, N. J. Filed May 18, 1895. Serial No. 549,739. (No model.)



Claim.—The combination of two longitudinal folders side by side and adapted to fold halves of the same web or webs, a transverse cutting and folding mechanism for each longitudinal folder, two receivers one above another at the same side of the machine, and a delivery-cylinder between each transverse folder and its receiver, one of said delivery-cylinders having one set of sheet-retainers and the other having two such sets, substantially as described.

654,285. FUSE FOR EXPLOSIVE PROJECTILES. EMIL SCRIBA, Heilbronn, Germany. Filed Apr. 23, 1900. Serial No. 14,032. (No model.)

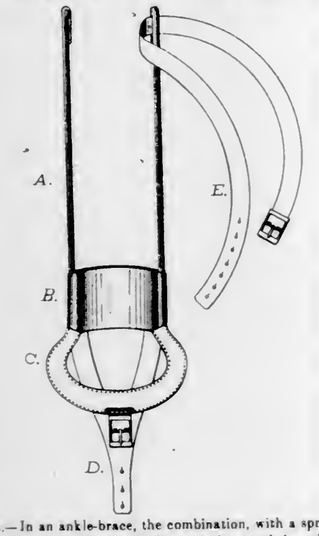


Claim.—1. An explosive projectile comprising the explosive shell, a priming-piece removably attached to the shell, said priming-piece having two parallel longitudinal bores, one centrally arranged and both having communication with the interior of the shell, a percussion firing-fuse in the central bore of the priming-piece, a time-fuse in said priming-piece, and a percussive firing device for the time-fuse in the other bore, each of said percussive firing devices being operative independently of the other, substantially as set forth.

2. An explosive projectile comprising the explosive shell, a priming-piece removably attached to the shell, a percussion firing device for the shell supported in a central longitudinal bore in the priming-piece, a time-fuse arranged concentrically of the percussion firing-fuse and independent thereof, a percussion firing device for the time-fuse supported in a bore in the priming-piece parallel with and to one side of central bore, each of said percussive firing devices being operative independently of the other and separately removable from the priming-piece, and a removable lock device to render the firing device for the time-fuse inoperative, substantially as set forth.

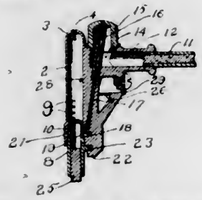
3. A percussion firing-fuse for an explosive projectile, comprising a casing i' secured to the projectile and communicating with the explosive charge therein, a cap closing the outer end of said casing and carrying a detonating pellet, a tubular weight within the casing, a triangular firing-needle having a perforated footpiece engaging the lower wall of said casing, said needle projecting into the tubular weight and being wider toward the foot portion than the interior diameter of said weight, and a spring interposed between the footpiece and the opposing end of the weight, substantially as and for the purpose set forth.

654,286. ANKLE-BRACE. WILLIAM A. SEARS, Mechanicsville, Iowa. Filed Jan. 5, 1900. Serial No. 440. (No model.)



Claim.—In an ankle-brace, the combination, with a spring-wire A formed with two upright parallel arms and an oval-shaped portion bent at an angle to the upright arms, of a pad B movably mounted on said arms, a pad C on the oval-shaped part of the wire, a bifurcated strap having its bifurcated part attached to the pad B, means for securing the free end of the strap to the oval part of the spring-wire, and means for attaching the free ends of the parallel arms to the limb of the wearer, substantially as described and for the purpose set forth.

654,287. VAPOR-BURNER. ROBERT SEEGER, St. Paul, Minn., assignor to R. C. James, Philadelphia, Pa. Filed June 9, 1896. Serial No. 594,854. (No model.)



Claim.—1. The combination, in a hydrocarbon-burner, of the burner-tube, a bracket formed thereon, a retort-chamber at the upper end of said bracket and opposite and near the burner-tip to be heated by the illuminating-flame, a duct leading downward from said chamber and communicating with the interior of said tube, the shelf 26 beneath said chamber, the flange 27 connecting said shelf with the bottom of said chamber, and the openings 28 provided in said burner-tube above said shelf and beneath said chamber, for the purpose set forth.

2. The combination, with the burner-tube, of the integral bracket formed thereon and having in its upper part the retort-chamber, a tube or duct extending from the upper part of said retort-chamber downwardly into communication with the lower part of said burner-tube, said burner-tube having air-inlet and gas-outlet openings, a shield inclosing the retort portion of the device, the integral floor 26 for said shield, and the integral bracket connecting the same with the lower part of the device, whereby the lower part thereof is also kept hot, substantially as described.

3. In a hydrocarbon-burner, a burner-tube having air-inlet holes and an open lower end, a removable plug fitting within said open end, a chamber 14 of greater diameter than said tube provided at one side thereof and into which the oil passes from a supply-tube, a straight-way duct 17 leading from said chamber to a point near the lower end of said tube, a dome provided above said chamber forming therewith a retort wherein the oil is vaporized and said dome being removable to permit said duct 17 to be cleaned and the sediment therein forced down and out through the lower end of said tube, substantially as described.

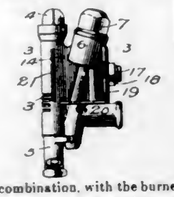
4. In a hydrocarbon-burner, the combination, with a burner-tube, of a bracket provided on one side of said tube, a retort-chamber provided in the upper part of said bracket and connected with the oil-supply, an inclined duct 17 leading from said chamber to a point near the lower end of said tube, a horizontal duct 18 connecting said duct 17 with said tube, and a hole 21 provided in the wall of said tube opposite and in line with said duct 18 whereby access may be had to the latter for cleansing purposes, substantially as described.

5. A hydrocarbon-burner, comprising a burner-tube having air-inlet holes and an open lower end, a removable plug fitting within said open end, a chamber 14 provided at one side of said tube and connected with an oil-supply pipe, a dome provided above said chamber and forming therewith a retort wherein the oil is vaporized, a duct 17 leading from said chamber to a point at or near the lower end of said tube, and a removable tube 16 in the upper end of said duct and concentric therewith and extending into the top of said dome, substantially as described.

6. The combination, in a hydrocarbon-burner, of the burner-tube, a tip provided therein, a retort provided on the side of said tube opposite and near said tip whereby said retort will be partially heated by the illuminating-flame, a duct leading from said chamber and communicating with the interior of said tube, a bracket provided on said tube beneath said retort, a space being provided between them, a shield inclosing said space and the lower walls of said retort, and openings 28 provided in said tube and leading into the space between said retort and said bracket, for the purpose specified.

7. The combination, in a hydrocarbon-burner, of the burner-tube, a tip, a retort-chamber provided on the side of said tube, a duct leading downward from said chamber and communicating with the interior of said tube, a shelf 26 provided on the side of said tube beneath said retort, a space being formed between them, a flange 27 connecting the outer edge of said shelf and the wall of said retort, a shield 29 inclosing the lower walls of said retort and the space between the same and said shelf, and openings 28 provided in said tube leading into the space between said retort and said shelf, substantially as described.

654,288. VAPOR-BURNER. ROBERT SEEGER, St. Paul, Minn., assignor to R. C. James, Philadelphia, Pa. Filed Feb. 8, 1897. Serial No. 622,539. (No model.)



Claim.—1. The combination, with the burner-tube, of the retort-chamber having its lower portion formed integrally therewith and connected thereto by the web 16, said chamber being opposite and near the burner-tip to be heated by the illuminating-flame, said tube being provided with the vertical flange 21 and said web being provided with a horizontal flange 20, the shield 19 extending around and partially inclosing said web and retort-chamber, and the jet-openings 14 provided in said burner-tube upon opposite sides of said web, for the purpose specified.

2. The combination, in a gasolene or hydrocarbon burner, of a burner-tube, with a supply-pipe connection, a duct forming a means of communication between said connection and said tube, a shield inclosing the said duct, a web or bracket upon the side of said tube and embracing said duct, said web dividing said shield into distinct compartments, and means for maintaining a heating-flame in each of said compartments, substantially as described and for the purpose specified.

3. In a gasolene or hydrocarbon burner, the combination with the burner-tube having a tip and an air-inlet, of a pipe connection, and a duct extending between the same and the lower part of the burner-tube, and wherein the hydrocarbon is subjected to a preliminary heating by an auxiliary flame from the burner-tube, a shield to protect said flame, and a bracket provided upon said tube and integral therewith, and having an integral stud 17 whereon said shield is secured, substantially as described.

4. A hydrocarbon-burner, comprising a burner-tube, an integral web provided on the side of said tube, a chamber in the upper part of said web and opposite and near the tip of said tube, whereby the flame will aid in heating said chamber, a duct leading from said chamber to the lower part of said tube, means for maintaining an independent flame to heat said web and form a retort of said chamber, an oil-supply connection provided in the lower part of said web and a duct leading from said connection to said chamber whereby the oil will be subjected to a preliminary heating before entering said chamber, substantially as described.

654,289. VAPOR-BURNER. ROBERT SEEGER, St. Paul, Minn., assignor to R. C. James, Philadelphia, Pa. Filed Nov. 6, 1897. Serial No. 657,618. (No model.)



Claim.—1. The combination, in a vapor-burner, of a burner-tube, with a tip, adjustable with respect thereto, of the vapor-retort in close proximity to said tip, and said tip being arranged to direct the flame upon or in proximity to said retort, as and for the purpose specified.

2. The combination, of the burner-tube, with the vapor-retort in proximity to the side and upper end of said tube, and the adjustable tip for said tube, whereby the flame may be directed against or in proximity to the said retort or diverted therefrom, substantially as described.

3. The combination, with the burner-tube, of a retort arranged near the upper end of said tube, an adjustable tip provided in said tube whereby the flame may be directed against or in proximity to said retort, a duct leading from said retort and communicating with the interior of said tube, an oil-inlet opening communicating with said retort and jet-openings provided in the walls of said tube beneath said retort, and whereby independent heating-flames may be formed, for the purpose specified.

4. The combination, in a vapor-burner, of the burner-tube and a tip, with a vapor-jet in the lower part of said burner-tube, an intermediate air opening or openings, means for supplying vapor to the lower part of said tube, and a cap or cup having a smooth interior surface to fit the smooth lower end of said tube and being therefore easily removable therefrom, and means for locking said cap upon said tube, substantially as described.

5. In a vapor-burner, the burner-tube having a tapered lower end and provided in its lower part with a jet-opening and an air-opening, in combination, with the tapered cap or cup fitting said tapered lower end of the tube and closing said lower end, said cap provided with an arm and a lug upon said tube wherewith said arm engages to secure the cap in place, substantially as described.

6. In a vapor-burner, the combination, of the burner-tube having the tapered lower end, with the tapered cap fitting said lower end, an arm upon said cap, a lug upon said tube, and said arm or lug having an inclined or wedge surface, as and for the purpose specified.

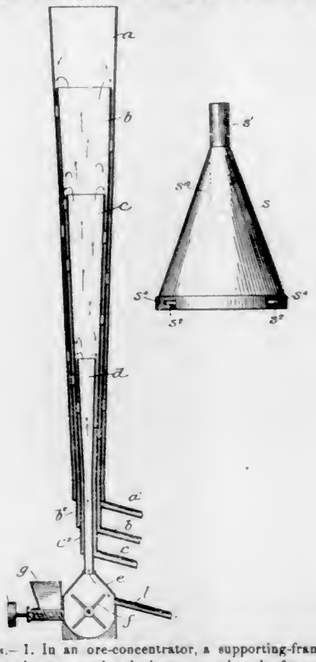
7. The combination, in a vapor-burner, of the burner-tube provided with jet and air openings and with a tip, with a cap or cup removably fitted upon the lower end of the burner-tube and closing said lower end, and an arm 24 provided on said cap to engage a lug upon said tube, substantially as described.

8. The combination, with a burner-tube, of an integral web thereon, a retort provided in the upper part of said web and near the upper end of said tube, an adjustable tip provided in said tube to permit the flame to be directed against or in proximity to said retort and diverted therefrom, a duct leading from said retort and communicating with the interior of said tube, an oil-inlet provided near the discharge end of said duct, a second duct leading from said inlet to said retort, and jet-openings provided in the walls of said tube beneath said retort whereby its lower walls and the walls of said ducts are kept hot, for the purpose specified.

9. The combination, of the burner-tube, with the integral web, the retort provided in the upper part of said web and having its lower portion integral therewith, the duct leading from the upper part of said retort downward through said web to the lower end of said burner-tube, means for heating said retort, and a removable cap or cup upon the lower end of said burner-tube, substantially as described.

10. The combination, with a burner-tube, of a retort arranged at one side and near the top thereof, a duct leading from said retort to a point near the lower part of said tube, an inlet-duct, a cross-duct leading from said inlet-duct and communicating with the lower part of said burner-tube and intersecting the duct leading from said retort, a plug normally closing said cross-duct, and means closing the lower end of said tube, substantially as described.

654,290. ORE-CONCENTRATOR. ALBERT H. STEBBINS, Little Rock, Ark. Filed Sept. 18, 1899. Serial No. 730,841. (No model.)



Claim.—1. In an ore-concentrator, a supporting-framework, a settling-chamber, supporting devices connecting the framework and settling-chamber, the latter comprising a plurality of similarly-shaped separate pipes, and having a gradually-increasing cross-sectional area from bottom to top, each pipe extending into and part way up its next exterior pipe and below the bottom thereof, an agitator directly below the settling-chamber and communicating with the central pipe of the series, means for feeding ores into said agitator, and devices for forcing a blast of air into and through said agitator to lift the entire mass of ores directly upward through the central pipe into the settling-chamber.

2. An ore-concentrator comprising a settling-chamber formed of a series of concentric pipes and having an increasing cross-sectional area from its bottom to its top, an agitator directly below and in communication with the central pipe of the series, means for feeding ores to said agitator, air-blast forcing means in communication with the agitator to lift the entire mass of ore with a gradually-reducing force directly upward through the central pipe of the series into said settling-chamber, and a reducer of frusto-conical form detachably connected to the top of the chamber.

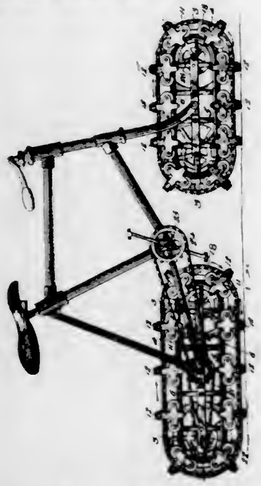
3. An ore-concentrator comprising a settling-chamber formed of a series of conical pipes concentrically arranged, and blocks secured to the outer surface of the interior pipes, and adapted to bear upon the inner surface of the next adjacent exterior pipe, said blocks being spaced apart.

4. An ore-concentrator comprising a settling-chamber formed of a series of separate conical pipes each pipe extending into and part way up its next exterior pipe, the central pipe of the series being extended below the bottoms of the other pipes of the series, an agitator below the central pipe and in direct communication therewith, means for feeding ores to the agitator and device for forcing a blast of air upward through the agitator and central pipe of the series to carry the mass of ore upward through the central pipe into the settling chamber and a supporting-framework for said concentrator.

5. An ore-concentrator comprising a settling-chamber formed of a series of conical pipes arranged one within the other, separating-blocks secured to the outer surfaces of the interior pipes and bearing upon the inner surfaces of the next adjacent exterior pipe to detachably support the interior pipes in position and means for forcing a blast of air upward into the settling-chamber.

6. An ore-concentrator comprising a settling-chamber formed of a series of relatively-long pipes concentrically arranged, the interior pipes extending into and part way up the exterior pipes and below the bottoms thereof, blocks interposed between the surfaces of adjacent pipes for spacing them apart, an agitator beneath the series of pipes, means for feeding ores to said agitator, and devices for forcing a blast of air through said agitator upward through the central pipe of the series into the settling-chamber.

654,291. TRACTION-WHEEL. HENRY T. SMITH, Ottawa, Kans. Filed Dec. 26, 1899. Serial No. 741,588. (No model.)



Claim.—1. In an ellipsoidal traction-wheel and in combination with the connected frame-bars each having a depending side rail terminating in upward curves connecting the ends of the bars, sprocket-wheels upon and between the ends of said bars and projecting beyond them, an endless chain upon the sprocket-wheels, tread-frames secured to and straddling the chain and carrying a track-wheel on each side thereof for travel on each side of the sprocket-wheels and under each track-rail the connection of the tread frames with the chain being between their tread ends and the track-wheels, and means for rotating the sprocket-wheels.

2. In an ellipsoidal traction-wheel and in combination with the connected frame-bars each having a depending track-rail on its outer side terminating in upward curves at their connection with the ends of the frame-bars, each rail having a flange extended as a bar and made continuous above the frame-bars, sprocket-wheels upon and between the ends of the said bars and projecting beyond them, an endless chain upon the sprocket-wheels, tread-frames secured to and straddling the chain and carrying a track-wheel on each side of the sprocket-wheels, in contact with each side rail and on the outer side of the continuous flange-bars, and means for rotating one of the sprocket-wheels.

3. In an ellipsoidal traction-wheel and in combination with the frame each having a depending rail on its outer side terminating in upward-curved ends connected to the ends of the frame-bars, sprocket-wheels mounted upon and between the ends of the frame-bars and projecting beyond them, an endless chain upon the sprocket-wheels, tread-frames secured to and straddling the chain and carrying a track-wheel on each side of the chain adapted to engage the track-rails, and flexible mud-guards secured to the outer sides of the chain between the tread-frames and means for rotating one of the sprocket-wheels.

4. In an ellipsoidal tractioo-wheel and in combination with the frame-bars each having a depending rail on its outer side terminating in upward-curved ends connected at the ends of the frame-bars, sprocket-wheels mounted upon and between the ends of the frame-bars and projecting beyond them, an endless chain upon the sprocket-wheels, and tread-frames secured to and straddling the chain, each straddling part having a track-wheel adapted to engage the sides of the track-rails and contracted at the chain connection for travel on each side of the sprocket-wheels and upon the rails, and means for rotating one of the sprocket-wheels.

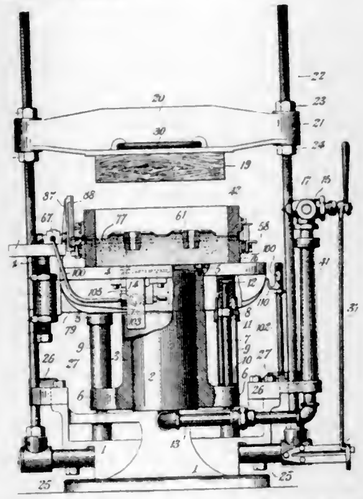
5. In an ellipsoidal traction-wheel and in combination with the connected frame-bars each having a depending track-rail terminating in upward curves at their connection with the ends of said bars and a vertical flange on its upper side, sprocket-wheels upon and between the ends of said bars and projecting beyond them, an endless chain upon the sprocket-wheels, tread-frames secured to and straddling the chain and carrying on each side thereof a track-wheel for travel upon the under side of each track-rail, and also having a roll arranged to travel against the vertical flange on the upper side of the rail, and means for rotating one of the sprocket-wheels.

6. In an ellipsoidal traction-wheel and in combination with the frame-bars each having a depending side rail terminating in upward curves connecting the ends of the bars, sprocket-wheels upon and between the ends of the bars and projecting beyond them, an endless chain upon the sprocket-wheels, treadle-frames secured to and straddling the chain and carrying a track-wheel on each side thereof for travel on each side of the sprocket-wheels and upon the under side of each track-rail, a shaft supported in the frame-bars between the sprocket-wheels, a pair of sprocket-gear upon said shaft, a chain connecting one of said sprocket-gear with a small sprocket-gear on the front driving sprocket-wheel shaft, a sprocket-gear treadle-power and a chain connecting it with the other sprocket-gear on the intermediate shaft whereby to rotate the front driving sprocket-wheel.

7. In an ellipsoidal traction-wheel and in combination with the frame-bars each having a depending side rail terminating in upward curves connecting the ends of the bars, sprocket-wheels upon and between the ends of said bars and projecting beyond them, an endless chain upon the sprocket-wheels, tread-frames secured to and straddling the chain and carrying a track-wheel one each side thereof, having a cushion at the tread end of each and connected to the chain below the track-wheels, and means for rotating the driving sprocket device.

8. In an ellipsoidal traction-wheel and in combination with a frame having depending rails on each side, propelling-wheels mounted upon and between the ends of the frame, and an endless chain or belt upon the wheels, of tread-frames having arms straddling the chain, each arm having a group of three rolls for travel upon the side rails, the chain secured to the tread-frame between its arms and between the rolls and the treading ends of said frames, substantially as described.

654,292. MOLDING MACHINERY. HARRIS TABOR, Elizabeth, and EDGAR H. MUMFORD, Plainfield, N. J., assignors to the Tabor Manufacturing Company, Elizabeth, N. J. Filed June 6, 1899. Serial No. 719,631. (No model.)



Claim.—1. The combination of a mold-frame, an undivided pattern, and an open frame to which said pattern is rigidly but discontinuously connected on the parting-line, said pattern-carrying frame being adapted to rest o i or be supported by said mold-frame, substantially as described.

2. The combination of a mold-frame, an undivided pattern, an open frame to which said pattern is rigidly but discontinuously connected on the parting-line, said pattern-carrying frame being adapted to rest on or be supported by said mold-frame, and guides for connecting the mold and the pattern-carrying frames to cause each to remain in parallelism with itself as the pattern is drawn, substantially as described.

3. The combination of a mold-frame, an undivided pattern, and an open frame adapted to rest on or be supported by said mold-frame and having one or more arms or bars rigidly connected to and supporting the said pattern discontinuously on the parting-line, substantially as described.

4. The combination of a mold-frame, V-shaped guide-bars thereon, an undivided pattern, an open frame adapted to rest on or be supported by said mold-frame and to which said pattern is rigidly connected discontinuously on the parting-line by arms or bars, and V-shaped guide-bars on said pattern-carrying frame and coacting with said mold-frame guide-bars, substantially as described.

5. The combination of mold-frames forming a complete flask, an undivided pattern, and an open frame having one or more bars to which said pattern is rigidly fast discontinuously on the parting-line, said second-named frame being partly within and partly without said flask, substantially as described.

6. The combination of a plurality of mold-frames forming a complete flask, an undivided pattern, an open frame having a bar or bars to which said pattern is rigidly fast discontinuously on the parting-line, said pattern-carrying frame being partly within and partly without said flask, and guide-bars on each of said frames coacting with each other to cause each frame to remain in parallelism with itself during the drawing of the pattern, substantially as described.

7. The combination of a mold-frame, an undivided pattern, a frame having a bar or bars to which said pattern is rigidly fast, a vibrator connected with said pattern-carrying frame, and guiding means for preventing lateral motion of translation of said pattern and its carrying-frame as the pattern is drawn and said vibrator is operated, substantially as described.

8. The combination of a plurality of mold-frames forming a complete flask, an undivided pattern, a frame having a bar or bars to which said pattern is rigidly connected, said pattern-carrying frame extending outside of said flask, a vibrator connected with said pattern-carrying frame, and guide-bars arranged to cause each frame to remain in parallelism with itself and to prevent lateral motion of translation of the pattern-carrying frame and pattern during the drawing of the pattern and the operation of the vibrator, substantially as described.

9. The combination of a mold-frame, a pattern, a pattern-carrier, a vibrator, and means for maintaining said carrier and pattern in parallelism with themselves and for preventing lateral motion of translation thereof during the drawing of the pattern and the operation of said vibrator, substantially as described.

10. The combination of a mold-frame, a pattern, a pattern-carrier, a vibrator connected to said carrier, and means for maintaining said carrier and pattern in parallelism with themselves as the pattern is drawn and for preventing lateral motion of translation of the carrier and pattern during the operation of the vibrator, substantially as described.

11. The combination of an open or half-mold frame, a pattern, a pattern-carrier, a vibrator connected with said carrier, and means for maintaining said carrier and pattern in parallelism with themselves as the pattern is drawn and for preventing lateral motion of translation of the carrier and the pattern during the operation of the vibrator, substantially as described.

12. The combination of an undivided pattern, a pattern-carrier rigidly connected with said pattern, said carrier being omitted at all points forming abutting-joint surfaces of the completed mold, a multiple-part mold-frame on or by which said pattern-carrier is supported, and a vibrator connected with said pattern-carrier, substantially as described.

13. The combination of an undivided pattern, a pattern-carrier rigidly connected with said pattern, said carrier being omitted at all points forming abutting-joint surfaces of the completed mold, a multiple-part mold-frame on or by which said carrier is supported, a vibrator connected with said carrier, and means for preventing lateral motion of translation of said carrier and pattern as the pattern is drawn and the vibrator operated, substantially as described.

14. The combination of a multiple-part mold-frame, a pattern-carrier extending to the outside of the mold-frame and there provided with an ear or lug, a vibrator having a vertically-movable member, and a pin-and-hole connection between said lug and member for detachably engaging them together, substantially as described.

15. The combination of a vibrating device provided with a vertical guide, a slide on said guide, a mold-frame, a pattern-carrier extending outside of said mold-frame adjacent to said slide, and means for connecting said slide and extension together.

16. The combination of a flat table, a piston and cylinder for raising and lowering the same, a mold-frame on said table, a rammer above the table, a vibrating device at one side of the table and provided with a vertical guide, a slide on said guide, a pattern in said mold-frame, a pattern-carrier extending outside of the mold-frame and adjacent to the slide, and means for connecting said slide and extension.

17. The combination of a flat table, a relatively-fixed rammer above the same, a vibrating device at one side of the table provided with a vertical guide and movable toward and from the center of the table, and a slide on said guide and provided with engaging means whereby the slide may be connected with a pattern, pattern-carrier, or plate.

18. In a molding-machine, the combination of a flat table, a cylinder and piston operating the same, a rammer above the table, a vibrating device at one side of the table and movable toward and from the center of the table and also swinging horizontally, a vertical guide connected with said vibrator, a slide on said guide, a mold-frame, a pattern within the mold-frame, a pattern-carrier extending outside the mold-frame, and means for connecting said extension and said slide together.

19. The combination of a mold-frame, a pattern therein, and a relatively-fixed vibrating device having an independently-movable member connected to and moving with said pattern as the pattern is drawn.

20. The combination of a mold-frame, a pattern therein, a relatively-fixed vibrator-engine having an independently-movable member, and a pattern-carrier connected with said member and moving the same as the pattern is drawn.

21. The combination of a mold-frame, a pattern therein, a pattern-carrier, guides for maintaining the pattern-carrier in parallelism with itself as the pattern is withdrawn from the mold, and a relatively-fixed vibrator device having an independently-movable member connected with said carrier.

22. The combination of a multiple-part mold-frame, a pattern within the same, a pattern-carrier extending outside the mold-frame, guides for maintaining the carrier and pattern in parallelism with themselves as the pattern is drawn, and a relatively-fixed vibrator-engine having an independently-movable member connected with and moved by said carrier during such drawing.

23. The combination of a multiple-part mold-frame, a pattern within the same, a pattern-carrier, guides for maintaining the mold parts, pattern and carrier each in parallelism with itself as the parts are separated in the drawing of the pattern, and a relatively-fixed vibrator-engine having a movable member connected to and moved by the pattern-carrier as the pattern is drawn.

24. The combination of a multiple-part mold-frame, a pattern within the same, a frame exterior to and supported by the mold and connected to and supporting the pattern, guides for keeping the mold parts, pattern and frame in parallelism each with itself during their separation in the drawing of the pattern, and a relatively-fixed vibrator-engine having an independently-movable part connected to and moved by said frame during the drawing of the pattern.

25. The combination of a mold-support, with a vibrator-engine adjacent the same and provided with means for detachably connecting it with a pattern or a carrier or support therefor.

26. The combination of a mold-support with a vibrating engine adjacent and movable independently relatively to the support and provided with means for connecting the engine detachably with a pattern or a carrier or support therefor.

27. The combination of a mold-support, a vibrating engine adjacent the same, means for varying the position of the engine relatively to the support, and means for connecting the engine with a pattern or a carrier or support therefor while the pattern is in place in the mold and is being drawn.

28. The combination of a mold-support, a vibrator-engine adjacent the same, means for varying the position of the engine relatively to the support in two directions in a plane parallel to the support, and a vertically-movable connector attached to the engine and adapted to coact with a pattern or a carrier or support therefor while the pattern is in place in the mold and is being drawn.

29. In a molding-machine, the combination of a table, a rammer, means for causing relative motion of the table and the rammer, a vibrator-engine attached to and movable in two directions parallel with the plane of the table, a guide rigidly connected with said engine and extending at right angles to the plane of the table, and a connector movable on said guide and adapted to coact with a pattern or a carrier or support therefor while the pattern is in place in the mold and is being drawn.

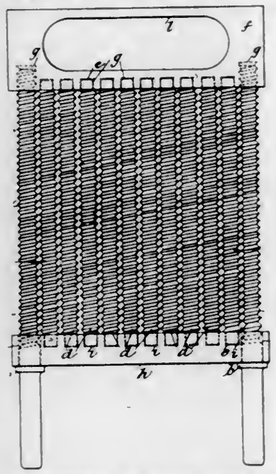
30. In a molding-machine, the combination of a table, a rammer, means for causing relative motion of the table and the rammer, a vibrator-engine attached to and adjustable in a direction at right angles to the plane of the table, a guide-bar connected to said engine

and extending at right angles to the plane of the table, and a connector movable on said guide and adapted to coact with a pattern or a carrier or support therefor while the pattern is in place in the mold and is being drawn.

31. In a molding-machine, the combination of a horizontal table, a rammer, one of said parts moving toward and from the other during ramming, a vibrator-engine attached to and adjustable vertically of the table and movable in or parallel to the plane of the table, a vertical guide connected to said engine, and a connector movable vertically on said guide and adapted to coact with a pattern, carrier or a support therefor while the pattern is in the mold and is being drawn.

32. In molding machinery, a vibrator-engine or agitator provided with a guide and a member slidable along said guide for connecting the engine with a pattern or carrier or support therefor.

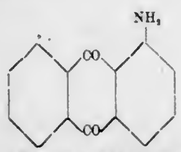
654,293. WASHBOARD. JOHN TAYLOR, Tomago, New South Wales. Filed Aug. 3, 1899. Serial No. 725,997. (No model.)



Claim.—In combination, the bottom board having openings through its ends, threaded side bars passing through said openings, stops for limiting the movement of said side bars, a top bar having threaded openings to receive said side bars, and intermediate bars, substantially as described.

654,294. BLUE ANTHRAQUINONE DYE AND METHOD OF MAKING SAME. OSKAR UNGER, Elberfeld, Germany, assignor to the Farbenfabriken of Elberfeld Company, of New York. Filed Jan. 2, 1900. Serial No. 155. (Specimens.)

Claim.—1. The process for producing new anthraquinone dyestuffs which process consists in first treating alphamonoamidoanthraquinone having the formula



with halogens, secondly heating the halogen derivatives thus obtained with an aromatic amine, and finally transforming the condensation products thus obtained into dyestuff sulfonic acids by the action of sulfonating agents, substantially as hereinbefore described.

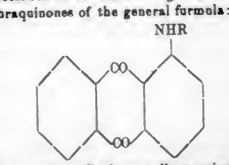
2. The process for producing a new anthraquinone dyestuff by first treating the alphamonoamidoanthraquinone with bromine, secondly heating the alphamonoamidoanthraquinone dibromide thus obtained with paratoluidine and finally transforming the resulting condensation product into a dyestuff sulfonic acid by the action of a mixture of sulfuric monohydrate and fuming sulfuric acid, substantially as hereinbefore described.

3. The herein-described new anthraquinone dyestuffs obtainable by sulfonating condensation products from the halogen derivatives of alphamonoamidoanthraquinone with aromatic amines, which dyestuffs, when dry and pulverized, are dark powders difficultly soluble in water with a blue color, and soluble in ammonia with a blue color, dyeing unmordanted and chrome-mordanted wool fast-blue shades, substantially as hereinbefore described.

4. The herein-described specific anthraquinone dyestuff obtainable by sulfonating the condensation product of alphamonoamidoanthraquinone dibromide with a paratoluidine, representing when dry and pulverized a dark powder dissolving with difficulty in water and alcohol, soluble in ammonia with a blue color and but slightly soluble in hydrochloric acid with a yellowish-red color, being dissolved by concentrated sulfuric acid (of 66° Baumé) yielding a blue solution the color of which changes into bluish red on the addition of a small quantity of ice while on adding a larger quantity of ice the solution turns blue a blue precipitate being separated therefrom, dyeing unmordanted and chrome-mordanted wool fast-blue shades, substantially as hereinbefore described.

654,295. GREEN ANTHRAQUINONE DYE AND METHOD OF MAKING SAME. OSKAR UNGER, Elberfeld, Germany, assignor to the Farbenfabriken of Elberfeld Company, of New York. Filed Jan. 2, 1900. Serial No. 156. (Specimens.)

Claim.—1. The process for producing new anthraquinone dyestuffs which process consists in first treating with halogens the alphylmonoamidoanthraquinones of the general formula:



R meaning an aromatic radical, secondly treating the halogen derivatives thus obtained with aromatic amines, and finally transforming the resulting condensation products into dyestuff sulfonic acids by the action of sulfonating agents, substantially as hereinbefore described.

2. The process for producing a new anthraquinone dyestuff by first treating the alphatoluidoanthraquinone with bromine, secondly heating the brominated product thus obtained with paratoluidine, and finally transforming the resulting condensation product into a dyestuff sulfonic acid by the action of a mixture of sulfuric monohydrate and fuming sulfuric acid, substantially as hereinbefore described.

3. The herein-described new anthraquinone dyestuffs obtainable by sulfonating condensation products from halogen derivatives of alphylalphamonoamidoanthraquinones and aromatic amines which dyestuffs, when dry and pulverized, are dark powders dissolving in water and in ammonia with a green color, dyeing unmordanted and chrome-mordanted wool fast-green shades, substantially as hereinbefore described.

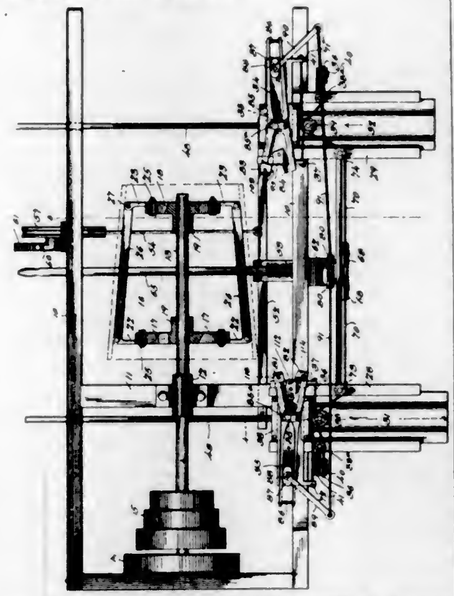
4. The herein-described specific anthraquinone dyestuff obtainable by sulfonating the condensation product of the brominated alphaparatoluidoanthraquinone with paratoluidine, representing, when dry and pulverized, a dark powder soluble in water with a bluish-green color, with difficulty in alcohol with a green color and being soluble in ammonia with a bluish-green color, being dissolved by concentrated sulfuric acid (of 66° Baumé) yielding a green solution the color of which does not change on the addition of a small quantity of ice, while on adding a larger quantity of ice a green precipitate is separated therefrom, dyeing unmordanted and chrome-mordanted wool fast-green shades, substantially as hereinbefore described.

654,296. WOODWORKING-MACHINE. LOUIS D. VOGEL, Omaha, Nebr. Filed Dec. 19, 1899. Serial No. 740,930. (No model.)

Claim.—1. The combination of a revoluble work-head, a pair of carriages movable at right angles to the axis of the work-head, connections to simultaneously move said carriages, cutter-heads on said carriages, movable toward and from each other, connections to simultaneously move said cutter-heads, a pair of pivoted jaws on each of said cutter-heads, the jaws of each of said pairs having work-engaging faces and howeling-knives and connections to simultaneously close the said pairs of jaws, substantially as described.

2. The comoination with a revoluble work-head, of transversely-movable carriages, connections between said carriages to move the latter simultaneously, said carriages being adjustable independently of each other on said connections, work-heads on said carriages, and movable toward and from each other, and connections to move said work-heads simultaneously, substantially as described.

3. In a woodworking-machine, the combination of a revoluble work-head, transversely-movable carriages having cutter-heads movable therewith, said cutter-heads being movable on said carriages toward and from each other and a carriage-adjusting mechanism for moving said carriages simultaneously, said adjusting mechanism having adjustable connection individually with said transversely-movable carriages, substantially as described.



4. In a woodworking-machine, the combination of a revoluble work-head, transversely-movable carriages, bars connected with said carriages, means for normally impelling the carriages in one direction, a lever for simultaneously moving said carriages against the action of the retracting devices, cutter-heads mounted on the carriages and movable toward and from the work-head and connections to simultaneously move said cutter-heads, substantially as described.

5. In a woodworking-machine, the combination of a revoluble work-head, transversely-movable carriages, slidable bars connected for simultaneous movement and connected adjustably and individually with said carriages, means for adjusting the slidable bars, cutter-heads mounted and movable on the carriages for presentation to the work-head, connections to simultaneously move said cutter-heads, pivoted jaws on said cutter-heads and having crozing and howeling knives and means to simultaneously operate said pivoted jaws, substantially as described.

6. In a woodworking-machine, the combination of a revoluble work-head, transversely-movable carriages, bars connected to said carriages, cutter-carriages movable longitudinally on the transversely-movable carriages, a sheave having a flexible connection with said bars, and a lever connected adjustably with the sheave and provided with a locking contrivance, substantially as described.

7. In a woodworking-machine, the combination of a work-head, transversely-movable carriages, cutter-carriages movable transversely on the transversely-movable carriages, bars connected with said carriages, retractors for the carriages, a revoluble element having a flexible connection with said bars, and a lever adjustably connected with the revoluble element and provided with a locking contrivance, substantially as described.

8. In a woodworking-machine, the combination of a work-head, transversely-movable carriages, means for simultaneously moving said carriages, cutter-carriages mounted in the first-named carriages and supporting cutter-heads, means for simultaneously moving said transversely-movable carriages, means for simultaneously moving said cutter-carriages and independent adjusting devices for the transversely-movable carriages, substantially as described.

9. In a woodworking-machine, the combination of a revoluble work-head, cutter-carriages supporting spaced cutter-heads, a lever carrying a sheave, and a cord attached to the carriages and fitted to the sheave, substantially as described.

10. In a woodworking-machine, the combination with a work-head, of transversely-movable carriages, cutter-carriages, on said transversely-movable carriages, normally-open cutter-heads on said cutter-carriages, and means for simultaneously closing the cutter-heads, substantially as described.

11. In a woodworking-machine, the combination with a work-head, of cutter-carriages, normally-open cutter-heads on said carriages, a lever, and connections from said lever to both cutter-heads for simultaneously closing the latter, substantially as described.

12. In a woodworking-machine, the combination with a work-head, and cutter-carriages, of a pair of spaced cutter-heads on said carriages and each having spring-controlled jaws, cams adapted to open the jaws, levers connected with the cams, a hand-lever, and connections between the hand-lever and said cam-levers, substantially as described.

13. In a woodworking-machine, a cutter-head consisting of a pair of jaws pivotally mounted on said cutter-head, one of said jaws having crozing and howeling knives, a spring connecting the jaws to normally close the same, and a cam adapted to spread the jaws against the action of the spring, substantially as described.

14. In a woodworking-machine, a work-head consisting of parallel members, a series of bars, and means connecting said bars with said parallel members, substantially as described.

15. In a woodworking-machine, a work-head consisting of disks provided with radial grooves, arms clamped individually in said grooves, and longitudinal bars pivoted to said arms, substantially as described.

16. In a woodworking-machine, an expansible work-head comprising a pair of disks, a series of longitudinal bars, two series of arms connected with said longitudinal bars, and means for clamping the arms of each series to one of the disks, substantially as described.

17. In a woodworking-machine, an expansible work-head comprising a pair of disks, two series of radially-disposed arms clamped individually to said disks, and a series of longitudinal bars connected pivotally with the arms and supported thereby beyond the circumference of the disks, substantially as described.

18. A cutter-head having an edge-trimming knife secured thereto, pivoted jaws to clamp the sides of the work, said jaws being adapted for the attachment of cutting-tools to operate on the sides of the work and having extended shanks or arms, a cam disposed between said shanks or arms and an operating-lever attached to said cam, substantially as described.

19. In a machine of the class described, the combination with a revoluble work-head of a transversely-movable carriage a longitudinally-movable carriage on said transversely-movable carriage, a cutter-head on said longitudinally-movable carriage, said cutter-head having an edge-trimming knife and a pair of pivoted jaws for engaging and operating on the sides of the work, substantially as described.

654,297. BADGE-BUTTON. BENJAMIN S. WHITEHEAD, Newark, N. J. Filed May 10, 1900. Serial No. 16,138. (No model.)



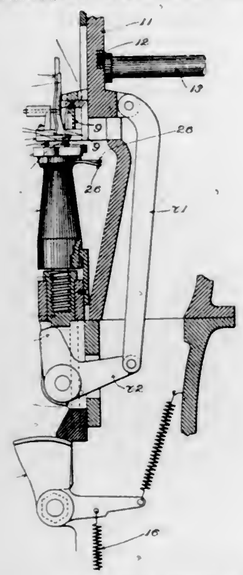
Claim.—1. The combination, in a badge-button, of a rearwardly-recessed shell, provided with an inturned holding-flange, a securing-wire, formed with a recurved spring body portion lying principally free from said holding-flange but adapted to be longitudinally compressed so as to permit its extremities to be sprung beneath said flange, said spring body portion being also provided with an intermediate outward bend or curve, and one end of said holding-wire being curved to correspond with the curve of the holding-flange and to lie out of contact with the spring body portion, and the other end of said holding-wire being pin-pointed and being bent outward and then backward transversely of the shell and parallel with the plane thereof, and lying normally in spring contact with said intermediate rearward bend or curve of the body portion, substantially as described and for the purposes set forth.

2. The combination, in a badge-button, of a rearwardly-recessed shell, provided with an inturned holding-flange, a securing wire formed with a recurved spring body portion lying principally free from said holding-flange but adapted to be longitudinally compressed so as to permit its extremities to be sprung beneath said flange, said spring body portion being also provided with an intermediate outward bend or curve, and one end of said holding-wire being curved to correspond with the curve of the holding-flange and to lie out of contact with the spring body portion, and the other end of said holding-wire being pin-pointed and being bent outward and then backward transversely of the shell and parallel with the plane thereof, and lying normally in spring contact with said intermediate rearward bend or curve of the body portion, and being adapted to be laterally deflected and sprung beneath the same, substantially as described and for the purposes set forth.

3. The combination, in a badge-button of a rearwardly-recessed shell, provided with an inturned holding-flange, a securing-wire pro-

vided with a longitudinally-compressible spring body portion embodying the curves F, G, H, I and the intermediate rearward bend J, one end of said wire being extended in a curve corresponding with that of the holding-flange, and the other end, E, being pin-pointed and extended outward and then backward, and lying normally in spring contact with the bend J, said spring body portion being adapted to be compressed longitudinally and to engage with its curves F and I beneath the holding-flange, substantially as and for the purposes set forth.

654,298. PROTECTOR-SETTING MACHINE FOR BOOTS OR SHOES. HENRY W. WINTER and BARTHOLOMEW J. CONLON, Lawrence, Mass. Filed Nov. 24, 1899. Serial No. 738,156. (No model.)



Claim.—1. In a protector-setting machine for boots and shoes, in combination, protector-driving devices, and the work-support having the slits corresponding in contour with that of a protector and receiving the entering edges of the protectors as the latter are driven home, the said slits inclosing the central posts adapted to support the leather at the centers of the protectors, substantially as described.

2. In a protector-setting machine, in combination, the work-support, the cushioned rear posts for contact with the rounded rear portion of the stock which is to receive protectors, and the side posts for contact with the edge of the stock at opposite sides thereof, substantially as described.

3. In a protector-setting machine, in combination, the work-support having the rear posts for contact with the rounded rear portion of the stock which is to receive protectors, the movable side posts for contact with the edge of the stock at opposite sides thereof, and means to effect transverse adjustment of the said side posts, whereby, by shifting the said side posts different sizes and shapes of stock may be accommodated, and the protectors may be driven at the required places around the periphery of the latter, substantially as described.

4. In a protector-setting machine, in combination, the work-support, the rear posts for contact with the curved rear portion of the stock which is to receive protectors, the oppositely-located side posts for making contact with the edge of the stock at opposite sides thereof, the movable arms on which the said side posts are mounted, and means of securing the said arms and side posts in the required positions of transverse adjustment, substantially as described.

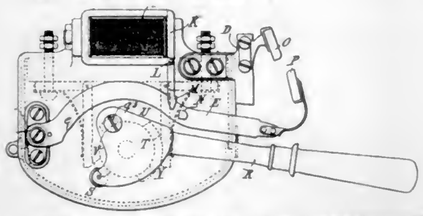
5. In a protector-setting machine, in combination, the work-support, the rear posts for contact with the curved rear portion of the stock which is to receive protectors, the oppositely-located side posts for making contact with the edge of the stock at opposite sides thereof, the movable arms on which the said side posts are mounted, means of securing the said arms and side posts in the required positions of transverse adjustment, and a spring acting to move one of the said arms and its side post inward with yielding force, substantially as described.

6. In a protector-setting machine, in combination, a work-support, the rear posts for making contact with the rounded rear portion of the stock which is to receive protectors, the oppositely-located side posts for making contact with the edge of the stock at opposite sides thereof, the arms on which the said posts are provided, the screw-threaded pivots for the said arms, and the lock-nuts applied to the said pivots, substantially as described.

7. In a protector-setting machine, in combination, a work-support, the rear posts for making contact with the rounded rear portion of the stock which is to receive protectors, the oppositely-located side posts for making contact with the edge of the stock at opposite sides thereof, the arms on which the said posts are provided, the screw-threaded pivots for the said arms, the lock-nuts applied to the said pivots, and the spring acting in connection with one of the said arms, substantially as described.

8. In a protector-setting machine, in combination, a work-support, the rear posts for making contact with the rounded rear portion of the stock which is to receive protectors, the oppositely-located side posts for making contact with the edge of the stock at opposite sides thereof, means to fix one of the side posts in position, and a spring operating in connection with the other side post with a tendency to carry it toward the first thereof, substantially as described.

654,299. STARTING MECHANISM FOR ALTERNATING-CURRENT MOTORS. JAMES J. WOOD, Fort Wayne, Ind. Filed Mar. 30, 1900. Serial No. 10,746. (No model.)



Claim.—1. In combination, a main switch, a commutator, a common lever for operating said switch and said commutator, means whereby the initial movement of the lever renders it operative to close the main switch, and the continued movement thereof closes said main switch, and means whereby a backward movement of the lever renders it inoperative to close the main switch until after it has been returned to its zero or off position.

2. In a motor-starting mechanism, the combination of a switch, a commutator, an operating-shaft therefor, a lever adapted to operate said shaft, a switch-operating member, means tending normally to hold said member in an inoperative position, and means for moving said member into an operative position by the forward movement of said lever.

3. In a motor-starting mechanism, the combination of a switch, a commutator, an operating-shaft therefor, a lever adapted to operate said shaft and to have a movement independent of said shaft, a switch-operating member adapted to be moved into operative position by said independent movement, means for connecting said lever to said shaft so as to prevent said independent movement, and means for withdrawing said connection in the original position of the parts so as to permit said independent movement.

4. In a motor-starting mechanism, the combination of a switch, a commutator, an operating-shaft therefor, a lever adapted to operate said shaft, a switch-operating member, means tending normally to hold said member in an inoperative position, and means whereby the forward movement of said lever first moves said member into an operative position and then causes said member to operate said switch.

5. In a motor-starting mechanism, the combination of a switch, a commutator, an operating-shaft therefor, a lever adapted to operate said shaft, a switch-operating member, means whereby an initial forward movement of said lever moves said member into operative position, means whereby the continued forward movement of said lever causes said member to operate said switch, and means for automatically returning said member and locking it in its inoperative position upon removal of the forward pressure on said lever.

6. In a motor-starting mechanism, the combination of a switch, a commutator, an operating-shaft therefor, a lever adapted to operate said shaft, a switch-operating member, means whereby an initial forward movement of said lever varies the distance of said member from the commutator-shaft, means whereby the continued forward movement of said lever moves said member to operate said switch, and means for automatically returning said member and locking it at its original distance from said shaft upon the removal of the forward pressure on said lever.

7. In a motor-starting mechanism, the combination of a switch, a commutator, an operating-shaft therefor, a switch-operating member, a lever connected eccentrically to said shaft and adapted to operate said shaft and said switch-operating member.

8. In a motor-starting mechanism, the combination of a switch, a commutator, an operating-shaft therefor, a lever mounted eccentrically on said shaft, a switch-operating member carried by said lever, means for connecting said lever to said shaft so that the initial movement of said lever is about its eccentric pivot and the continued forward movement of said lever turns said shaft.

9. In a motor-starting mechanism, the combination of a switch, a commutator, an operating-shaft therefor, a lever connected eccentrically to said shaft, a switch-operating member carried by said lever, means for permitting an initial movement of said lever about its eccentric pivot so as to vary the distance of said switch-operating member from the commutator-shaft, means for transmitting the continued movement of said lever to said shaft, and means for automatically returning said switch-operating member and locking it at its original distance from said shaft upon removal of the forward pressure on said lever.

10. In a motor-starting mechanism, the combination of a switch, a commutator, an operating-shaft therefor, a lever connected eccentrically to said shaft, a switch-operating member carried by said lever, flanges on said lever on either side of said shaft, whereby an initial independent movement of said lever on its eccentric pivot is permitted and the continued movement of said lever operates said shaft.

11. In a motor-starting mechanism, the combination of a switch, a commutator, an operating-shaft therefor, a lever connected eccentrically to said shaft, a switch-operating member carried by said lever, flanges on said lever on either side of said shaft whereby an initial movement of said lever on its eccentric pivot is permitted, and the continued movement of said lever operates said shaft, a pawl adapted to connect said lever to said shaft so as to prevent said initial movement, and means in the original position of the parts for holding said pawl out of action.

12. In a motor-starting mechanism, the combination of a switch, a commutator, an operating-shaft therefor, a lever pivoted eccentrically to said shaft, a cam on said lever adapted to operate said switch, means for permitting an initial movement of said lever about its eccentric pivot whereby the distance of said cam from said shaft is varied, and means for permitting a continued movement of said lever about said shaft whereby said cam operates said switch.

13. In a motor-starting mechanism, the combination of a switch, a commutator, a commutator-operating shaft, a lever pivoted eccentrically to said shaft, a cam on said lever adapted to operate said switch, means for permitting an initial movement of said lever about its eccentric pivot whereby the distance of said cam from said shaft is varied, means for permitting a continued movement of said lever about said shaft whereby said cam operates said switch, and means for automatically returning said cam and locking it at its original distance from said shaft upon removal of the forward pressure on said lever.

14. In a motor-starting mechanism, the combination of a switch, a commutator, an operating-shaft therefor, an arm Q on said shaft, a lever R pivoted on said arm near the outer end thereof, flanges U and V on said lever at either side of said arm separated a greater distance than the width of said arm and limiting the movement of said lever on said pivot, a pawl W on said lever, a stop q^4 on said arm, and a spring r pressing said lever into a position with its flange V against said arm and pressing said pawl inward toward its stop to hold said lever in said position.

15. In a motor-starting mechanism, the combination of a switch, a commutator, an operating-shaft therefor, an arm Q on said shaft, a lever R pivoted on said arm near the outer end thereof, flanges U and V on said lever at either side of said arm, separated a greater distance than the width of said arm and limiting the movement of said lever on said pivot, a pawl W on said lever, an arm w on said pawl, a stop q^4 on said shaft-arm Q, a spring r pressing said lever into a position with its flange V against said arm and pressing said pawl inward toward its stop to hold said lever in said position, a fixed stop X adapted to strike said pawl-arm w when said lever is retracted to its off position, and a flange V limiting the outward movement of said pawl and thereby limiting the backward movement of said lever.

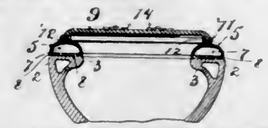
654,300. INFLATION-VALVE SUPPORT. HENRY W. ADAMS, Jr., Elgin, Ill., assignor to The Scovill Manufacturing Company, Waterbury, Conn. Filed Apr. 2, 1900. Serial No. 11,145. (No model.)

Claim.—1. A tube for supporting an inflation-valve in position, said tube being made independent of the inflation-valve and removably receiving said inflation-valve by the casing of the latter, and having a bushing inserted in its inner end and adapted to exclude foreign substances from the interior of the said tube during the process of vulcanizing the tube to an object, substantially as described.

2. A supporting-tube, for removably receiving an inflation-valve, made wholly independent of the said inflation-valve, having its inner end provided with a bushing, and a circumferential inwardly-projecting bead next adjacent to and limiting the inward projection of said bushing, substantially as described.



654,301. CLOSET-SEAT. EDWIN S. BARNES, New York, N. Y., assignor of one-half to Robert M. Byers, same place. Filed Oct. 19, 1899. Serial No. 734,052. (No model.)



Claim.—1. As an article of manufacture, an annular and hollow closet-seat, having an upper section of hard rubber, and an integrally-united base of soft rubber, substantially as and for the purposes set forth.

2. An article of the class described, comprising an annular and hollow upper section of hard rubber, interiorly channeled, transverse webs in the channel formed integrally with the upper section, and an integral base of soft rubber, substantially as and for the purposes set forth.

3. In an article of the class described, the combination with the hopper having a plane seat formed at its upper rim, with the hopper-seat comprising an upper annular and channeled section of self-supporting material, and a plane horizontal base of soft rubber seated upon the plane seat of the hopper-rim, substantially as described.

4. The combination in an article of the class described, of the hopper-rim comprising the rim 2, an inward extension 3, the hopper-seat comprising the hard-rubber crown-piece 5, transverse webs 7 and soft-rubber base 8 seated on the hopper-rim, substantially as described.

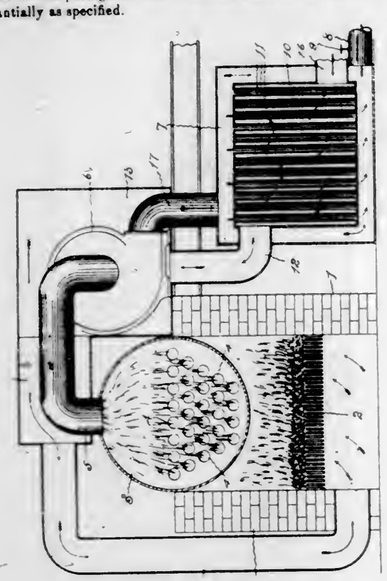
5. As an article of manufacture, the seat 4 comprising an annular hollow portion 6, with an integral rear extension 4^a, the base integrally united with the portion 6, the interior transverse webs integrally united with the portion 6, and the base 8, as and for the purposes specified.

654,302. HOT-DRAFT SYSTEM. ALFRED W. CASE, Highland Park, Conn. Filed Oct. 13, 1897. Serial No. 655,037. (No model.)

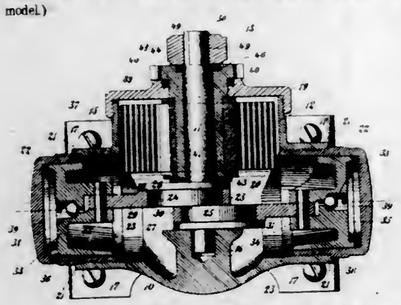
Claim.—1. In combination with the furnace of a steam-generator, a smoke-pipe leading from the furnace, a blower capable of generating air-pressure having its inlet connected with the smoke-pipe, a chamber with its inlet connected with the outlet of the pressure-blower, into which chamber the products of combustion are delivered under pressure by the blower, the outlet from said chamber being restricted, a chamber within the pressure-chamber, tubes extending through the inner chamber, a pipe connecting the outlet of the pressure-chamber with the smoke-stack, a duct for the passage of air for supporting combustion opening through the pressure-chamber into the chamber within, a pipe extending from the inner chamber to a chamber surrounding the pressure-blower, and a pipe extending from the blower-chamber to the furnace below the grate, substantially as specified.

2. In combination with the furnace of a steam-generator, a smoke-pipe leading from the furnace, a blower capable of generating air-pressure having its inlet connected with the smoke-pipe, a chamber with its inlet connected with the outlet of the pressure-blower, into which chamber the products of combustion are delivered under pressure by the blower, the outlet from said chamber being restricted, a pipe connecting the outlet of the pressure-chamber with the smoke-stack, and a duct for the passage of air for supporting combustion extending to the furnace below the grate, the duct, a portion of the dis-

tance being surrounded by and a portion of the distance surrounding sections of the passage for the outflowing products of combustion, substantially as specified.



654,303. COMBINED DOOR CHECK AND CLOSER. EDWARD CLIFF, Newark, N. J. Filed Dec. 20, 1899. Serial No. 740,953. (No model.)



Claim.—1. In a door check and closer, the main casing containing the spring, actuating-spindle, liquid chamber and cylinder, the piston within said cylinder and operatively connected with said spindle, the sleeve 41 upon said spindle and having a smooth bore conforming to the surfaces of said spindle, the sleeve 40 upon the exterior surfaces of said sleeve 41 and having a polygonal bore to conform with said exterior surfaces, and the closing-cap 19 receiving the sleeve 41 through it and engaging the upper edges of said sleeve 40, the said sleeve 40 carrying the spring, and said sleeves 40 and 41 extending substantially the full height of the spring-chamber, combined with the transmitting lever-arms upon the upper end of said spindle, the pawl carried by one of said arms, and the cog-wheel on the upper end of said sleeve 41 and engaged by said pawl; substantially as set forth.

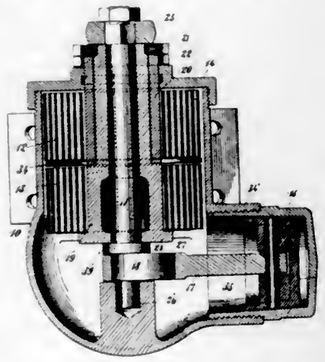
2. In a door check and closer, the main casing containing the spring and actuating-spindle and having the liquid-cylinders, said casing containing a seat to receive the lower end of said spindle, combined with pistons within said cylinders, the piston-rods pivotally connected with said pistons, the circular bands connected with said rods, the circular eccentrics on said spindle and within said bands for operating said pistons, and the disks above and below said eccentrics and extending laterally beyond said eccentrics to engage said bands; substantially as set forth.

3. In a door check and closer, the main casing containing the spring and actuating-spindle and having the liquid-cylinder, the elevated seat within said casing to receive the lower end of said spindle and being in line with said cylinder, a piston within said cylinder, the piston-rod pivotally connected with said piston, the circular band connected with said piston-rod, the circular eccentric on said spindle directly above said elevated seat and being within said band; substantially as set forth.

4. In a door check and closer, the main casing containing the spring, actuating-spindle, liquid chamber and cylinder, the piston within said cylinder and operatively connected with said spindle, and the lever-arm connected with the upper end of said spindle, combined with the sleeve 41 having the cog-wheel upon its upper end and encompassing said spindle, means engaging said lever-arm with said cog-wheel, and the sleeve 40 having a polygonal bore engaging and inclosing the outer corresponding surfaces of said sleeve 41, the said sleeve 40 being reversible upon said sleeve 41 and carrying the said spring, and the latter engaging a recess in said sleeve 40 and being adapted at its outer end to engage a recess in the wall of said main casing; substantially as set forth.

5. In a door check and closer, the main casing comprising the liquid chamber, cylinder, spring-chamber, upper closing-cap, said casing at the base edges of said spring-chamber having the shoulder to receive the outer edges of the spring, and said spring-chamber being extended downward into said liquid-chamber, combined with the elevated seat within said casing, the vertical spindle at its lower end entering said seat, the piston within said cylinder and operatively connected with said spindle, the spring, and the lever-arms connected with the upper end of said spindle; substantially as set forth.

654,304. DOOR CHECK AND CLOSER. EDWARD CLIFF, Newark, N. J. Filed Apr. 23, 1900. Serial No. 13,880. (No model.)



Claim.—1. The casing, the spindle, the lever thereon, and the pawls carried by said lever, combined with the independent sleeves on said spindle, the toothed wheels connected with said sleeves and adapted to be engaged by said pawls, and the reversely-coiled springs engaging said sleeves and casing; substantially as set forth.

2. The casing, the spindle, the lever thereon, the pawls carried by said lever, the independent sleeves on said spindle and engaged by said pawls, and the reversely-coiled springs engaging said sleeves and casing, combined with the checking-cylinder, and the piston therein operatively connected with said spindle; substantially as set forth.

3. In a door check and closer, the reversely-coiled springs both under tension, and means connected with said springs for their independent adjustment whereby the closing-spring may be given a greater tension than the checking-spring, combined with the pivotally-mounted lever-arm, and means for connecting both of said springs to said arm, one of said springs serving as a closing-spring and the other as a checking-spring for right-hand doors, and likewise but in the reverse order for left-hand doors; substantially as set forth.

4. In a door check and closer, the reversely-coiled springs both normally under tension and the tension of one of said springs being greater than the tension of the other spring, combined with the pivotally-mounted lever-arm connected with both of said springs, the spring having the greater tension serving as the closing-spring, and the other spring serving as the check to prevent the slamming of the door; substantially as set forth.

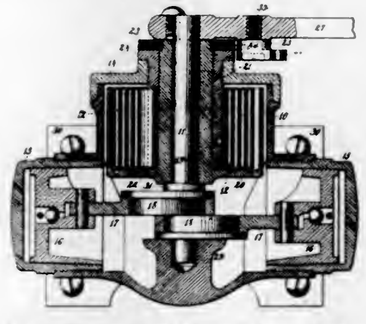
5. The casing, the spindle, and the lever thereon, combined with the independent sleeves on said spindle, the wheels 21, 22, connected with said sleeves, the reversely-coiled springs engaging said sleeves and casing, and means for connecting either of said wheels with said lever-arm to cause either of said springs to serve as the closing-spring; substantially as set forth.

6. The casing, the pivotally-mounted lever-arm, the spindle for said arm, and the reversely-coiled springs within said casing, combined with the wheels 21, 22, loose on said spindle and disposed upon the top of said casing and respectively connected with the said springs, and means for connecting either of said wheels with said lever-arm to cause either of said springs to serve as a closing-spring; substantially as set forth.

7. The casing, the pivotally-mounted lever-arm, the spindle receiving at its upper end the said arm, the reversely-coiled springs within said casing, the wheels 21, 22, loose on said spindle and disposed upon the top of said casing and respectively connected with the said springs, and means for connecting either of said wheels with said lever-arm to cause either of said springs to serve as a closing-spring, combined with the checking-cylinder, and the piston therein operatively connected with said spindle; substantially as set forth.

8. In a door check and closer, the oppositely-arranged springs normally under different tensions, and connections for increasing the tension of the closing-spring and decreasing the tension of the checking-spring during the opening of the door, and for gradually restoring the normal tension of the said springs during the closing of the door; substantially as set forth.

654,305. DOOR CLOSER AND CHECK. EDWARD CLIFF, Newark, N. J. Filed May 4, 1900. Serial No. 15,480. (No model.)



Claim.—1. In a door-closer, the pivotally-mounted lever-arm, the spindle for said arm, the casing, and the coiled spring within said casing, combined with the toothed wheels 23 and 24 disposed upon the top of said casing and loose upon said spindle and respectively connected with the opposite ends of said spring, pawl mechanism carried by the said lever-arm to engage one or the other of said wheels, and means for locking against rotation the one of said wheels not in engagement with said arm; substantially as set forth.

2. In a door-check and closer, the lever-arm, the casing, the coiled spring within said casing, and the actuating-spindle within said casing and spring and having fixed upon its upper end the said lever-arm, combined with the toothed wheels 23 and 24 loose upon the upper end of said spindle and respectively connected with the opposite ends of said spring, pawl mechanism carried by said lever-arm to engage one or the other of said wheels, means for locking against rotation the one of said wheels not in engagement with said arm, the checking-cylinder, the piston therein, and means operatively connecting said piston with the lower portion of said spindle; substantially as set forth.

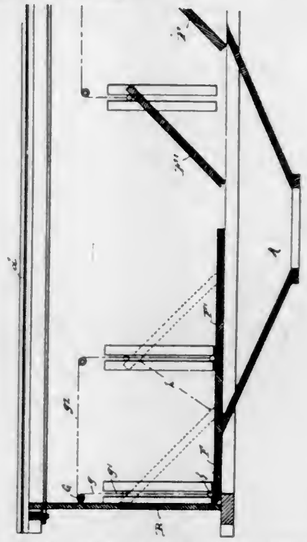
3. In a door-closer, the lever-arm, the spindle, the cup encircling said spindle, the sleeve passing within said cup, and the coiled spring within said cup and at one end engaging said cup and at its other end said sleeve, combined with the toothed wheels respectively connected with said cup and sleeve and adapted for engagement with said arm, and means for locking against rotation the one of said wheels not in engagement with said arm; substantially as set forth.

4. In a door-closer, the lever-arm, and the coiled spring, combined with the toothed wheels respectively connected with the ends of said spring, the pawl carried by the said lever-arm for engaging either of said wheels, and the pawl secured to the closer-casing for locking against rotation the one of said wheels not in engagement with said arm; substantially as set forth.

5. In a door-closer, the lever-arm, and the coiled spring, combined with the toothed wheels respectively connected with the ends of said spring, the pawl carried by the said lever-arm for engaging either of said wheels, and the pawl secured to the closer-casing for locking against rotation the one of said wheels not in engagement with said arm, said locking-pawl being detachable and having the hub so that when said pawl is reversed it may be freed from engagement with one of said wheels and be brought into engagement with the other of said wheels; substantially as set forth.

6. In a door-closer, the lever-arm, the spindle, the sleeve 19 thereon, the cup carried by said sleeve, the sleeve 21 on said sleeve 19, and the coiled spring within said cup and at one end connected with said cup and at the other end with said sleeve 19, combined with the wheels on the upper ends of said sleeves, means connecting one of said wheels with said lever-arm, and means for locking the other of said wheels against rotation; substantially as set forth.

654,306. COMBINATION FREIGHT-CAR. FRANKLIN O. COKEBOUR, Allentown, Pa., assignor of two-thirds to Charles G. Moll, South Bethlehem, and John Alfred Moll, Topton, Pa. Filed Apr. 21, 1900. Serial No. 13,751. (No model.)

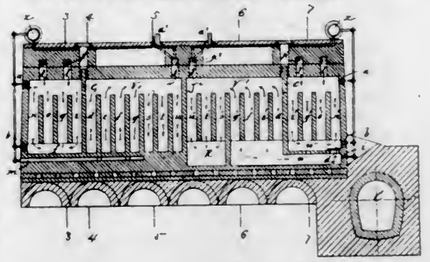


Claim.—1. In a combined general freight and hopper delivery car, a floor consisting of four adjustable sections arranged in pairs, and means for raising the two sections of each pair at the ends nearest the adjacent end of the car, to form separate floor-openings and inclines thereto for discharging into the hopper substantially as set forth.

2. In a combined general freight and hopper delivery car, a floor consisting of four adjustable sections arranged in pairs, and means for simultaneously raising the two sections of each pair at the ends nearest the adjacent end of the car, to form separate floor-openings and inclines thereto for discharging into the hopper substantially as set forth.

3. A car having a roof formed in two longitudinal sections parted midway of the width of the car, a running-board fixed to one of said sections and arranged to overlap the other when said sections are in normal position, and means for moving said sections laterally to open or close the same, substantially as set forth.

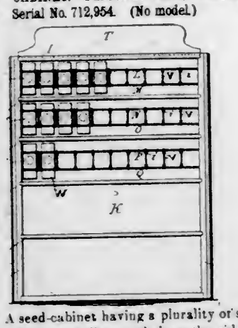
654,307. COKE-OVEN. EVENCE COPPÉE, Brussels, Belgium. Filed Sept. 25, 1899. Serial No. 731,606. (No model.)



Claim.—In combination, in a coke-oven, the oven-chamber, the openings *k* leading from the upper part thereof and at different points

along the oven, the series of chambers *p* with which the openings *k* connect, the openings *l*, *l*, near the front and rear of the oven leading from the end chambers *p* and the openings *j*, *j*, leading from the middle chambers *p*, said openings *l* and *j* leading to the flues, which comprise the vertical series of flues for the ascending and descending currents, said flues being distributed along the oven from front to rear and adapted to heat the front, rear and middle of the oven, the passages under the sole of the oven and with which the vertical flues connect, means for introducing gas into the lower passages so that the greatest heat may be generated in the lower parts of the oven, a series of exhaust-flues having dampers and communicating with the flues at the different parts along the oven, the dampers for the openings *k* and a condensing apparatus connected with the oven, substantially as described.

654,308. CABINET. FENTON D. CRAIG, Memphis, Tenn. Filed Apr. 13, 1899. Serial No. 712,954. (No model.)



Claim.—1. A seed-cabinet having a plurality of shelves, a series of compartments between adjacent shelves, the sides and front of said compartments being formed of wire supported entirely from the rear wall of the cabinet.

2. A seed-cabinet having a plurality of shelves, a series of compartments between adjacent shelves, the sides and front of said compartments being formed of wire supported entirely from the rear wall of the cabinet, and a spring-pressed plate in each compartment.

3. A seed-cabinet having a plurality of shelves, a series of compartments between adjacent shelves, rods extending horizontally of the cabinet and forming the front wall of said compartments, and wire frames extending rearwardly from said rods and connected to the rear wall of the cabinet, said frames forming the side walls of the compartments.

4. A seed-cabinet having a plurality of shelves, a series of compartments between adjacent shelves, the sides and front of said compartments being formed of wire supported entirely from the rear wall of the cabinet, a vertically-arranged plate in each compartment, and a spring secured to the rear wall of the cabinet and supporting said plate.

5. A seed-cabinet having a plurality of shelves, a series of compartments between adjacent shelves, horizontal rods extending the full width of the cabinet and forming the front of the series of horizontal compartments, and wire frames supporting said rods and connected to the rear wall of the cabinet, said frames forming the sides of the compartments.

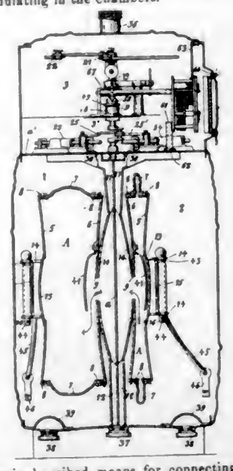
6. A seed-cabinet having a plurality of shelves, a series of compartments between adjacent shelves, horizontal rods extending the full width of the cabinet and forming the front of the series of horizontal compartments, and wire frames supporting said rods and connected to the rear wall of the cabinet, said frames forming the sides of the compartments, and a spring-pressed plate in each compartment entirely supported by the rear wall of the cabinet.

654,309. GAS-METER. ADAM EHRBALD, New York, N. Y. Filed Nov. 24, 1899. Serial No. 738,181. (No model.)

Claim.—1. The combination with a gas-meter comprising a hermetically-sealed casing divided into gas-tight compartments isolated from each other, piston-bellows operatively mounted in the compartments and connected with the mechanism actuating the registering device, an inlet and an outlet tube, channels connecting the inlet-tube, the compartments and the piston-bellows and channels connecting the piston-bellows and the compartments with the outlet-tube, of flexible guards secured to the inner disks of the piston-bellows and extending across the apertures thereof.

2. The combination with piston-bellows of a gas-meter provided with guide-wires, of lugs, for supporting the guide-wires, made of soft metal and split longitudinally through the bearing of the guide-wires.

3. The combination with piston-bellows of a gas-meter of convex disks secured to the partition-walls of the meter, having apertures in center provided with suitable flange for affixing thereto of the inner disk of the piston-bellows; the convex disks forming, conjointly with the partition-wall of the meter, chambers extending below the inlet-apertures of the piston-bellows; and of drip-tubes communicating with the chambers and provided with apertures for discharge of sediments accumulating in the chambers.



4. The herein-described means for connecting the flag to the outer disk of the piston-bellows consisting of a carriage-post having lugs wider apart than the width of the flag, a bore throughout the entire width of the flag, corresponding bores in the lugs of the carriage-post, a concave washer set between the flag and the carriage-post, a hinge-pin passed through the bores in the lugs of the carriage post and provided with a transverse bore on its lower end and a flanged head on its upper end and of a cross-pin set in the transverse bore of the hinge-pin.

5. The combination with the index-door of a gas-meter provided with a tubular fold, of two pivots bent approximately at right angles and having their short ends soldered in the casing of the meter and their longer ends inserted in the tubular fold of the door.

6. The combination with mechanism for transmitting the motions of the piston-bellows to a registering device and comprising a stuffing-box consisting of a box and a plug screwed therein, a crank-shaft journaled in the stuffing-box and driven by the pulsations of the piston-bellows, of a gas-meter, a worm-wheel set on the same shaft immediately above the stuffing-box and having a recess to admit the plug of the stuffing-box substantially as and for the purpose specified.

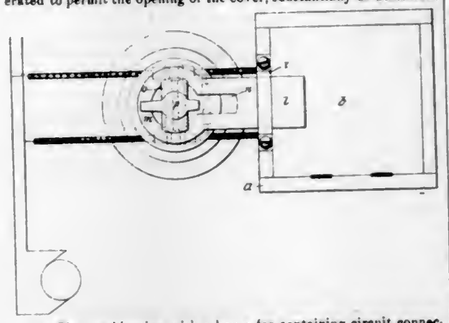
7. The combination with a gas-meter provided with mechanism for registering the quantity of gas passing through the meter set above the operating parts of the meter and driven by the apparatus conveying the gas into and from the meter, of means for fixing the mechanism removably in position, comprising studs affixed to the upper partition-wall, tubular legs secured to the frame of the registering mechanism and fitted on the studs, a flexible flange affixed to the frame and adjusted to engage with the flange of the face portion of the casing.

654,310. JUNCTION OR CONNECTION BOX. RUDOLF HUNDHAUSEN, Wilmersdorf, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Nov. 18, 1899. Serial No. 737,443. (No model.)

Claim.—1. The combination with a box containing supply-terminals and having a cover, of a switch for controlling the continuity of the main conductors, and interlocking means interposed between the switch and cover, controlled by the switch and adapted by co-operation with the switch to prevent the cover from being opened when the switch is closed, substantially as described

2. The combination with a box containing circuit connections and having a cover, of a circuit-closing switch for controlling the supply of current to connections in the box, and interlocking means interposed between the switch and cover, controlled by the switch and adapted by cooperation with the switch to prevent the cover from being opened when the switch is closed, substantially as described.

3. The combination with a box containing circuit connections and having a cover, of a circuit-closing switch for controlling the supply of current to connections in the box, interlocking means interposed between the switch and cover, jointly controlled by the switch and cover and adapted through the agency of the switch when closed to prevent the box from being opened, and through the agency of the cover when opened to prevent the switch from being closed, and means associated with the switch and interlocking means compelling the opening of the switch before the interlocking means can be operated to permit the opening of the cover, substantially as described.



4. The combination with a box *a* for containing circuit connections, of a swinging lid *b* therefor, a guard *c* carried by the lid, a switch for controlling the supply of current to the circuit connections within the box, a guard *f* associated therewith, said guard *f* being provided with a ring extension *m*, an elongated block, and a slot or recess *n* extending longitudinally of the guard *f* and communicating with the space inclosed by the ring *m*, substantially as described.

5. The combination with an inclosure provided with a cover, of a circuit-controlling switch and means cooperating with the switch and cover to prevent the latter from being opened with the switch in one position and permitting the cover to be opened with the switch in another position, substantially as described.

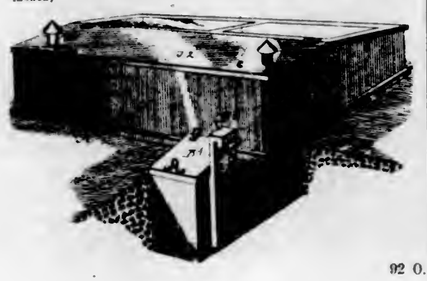
6. The combination with an inclosure provided with a cover, of a circuit-controlling switch and means cooperating with the switch and cover to prevent the switch from being closed with the cover in one position and permitting the switch to be closed with the cover in another position, substantially as described.

7. The combination with an inclosure provided with a cover, of a circuit-controlling switch and means cooperating with the switch and cover, to prevent the latter from being opened with the switch in one position, and to prevent the switch from being closed with the cover in an open position, substantially as described.

8. The combination with an inclosure containing circuit connections and provided with a swinging cover, of a guard carried by the cover, a switch for controlling the supply of current to the circuit connections within the inclosure, and a guard *f* coacting in one position with the aforesaid guard when the cover is opened to prevent the switch from closing circuit to said connections, and serving in another position to prevent the cover from being opened and permitting the switch to close said circuit, substantially as described.

9. The combination with an inclosure containing circuit connections and provided with a cover, of a guard carried by the cover, a switch for controlling the supply of current to the circuit connections within the inclosure, and a guard *f* coacting in one position with the aforesaid guard when the cover is opened to prevent the switch from closing circuit to said connections, and serving in another position to prevent the cover from being opened and permitting the switch to close said circuit, substantially as described.

654,311. CHICKEN-BROODER. FRANK S. JAQUITH, Des Moines, Iowa, assignor to John A. Getchell, Harriet E. Jaquith, and Mary G. Jaquith, same place. Filed Aug. 10, 1899. Serial No 726,798. (No model.)



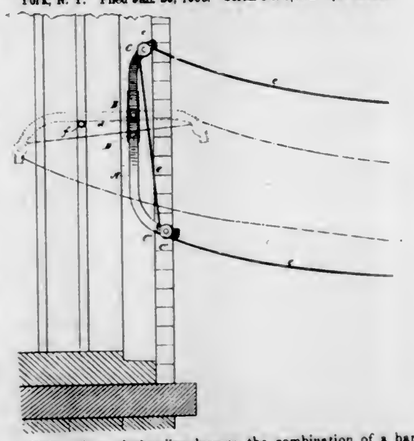
Claim.—1. In a chicken-brooder a base consisting of a rectangular movable frame having a floor fixed to its under side and a lamp-chamber fixed to the bottom of the board and a portion of said chamber extended outward laterally from the base and provided with a movable cover on the upper side for gaining access thereto and an air-conductor communicating with the lower part of the lamp-chamber and provided with an extension at its top opening downward to admit air to pass upward before it can descend through the conductor to the lamp-chamber, arranged and combined to operate in the manner set forth for the purposes stated.

2. In a chicken-brooder, a base composed of a frame having a passage-way for communicating with the heat-conductor of a lamp-chamber, floor-boards fixed to the frame and adapted to support a tank, a removable tank fitted within the frame and upon the floor, a heat-conductor fixed to the bottom of the tank and adapted to communicate with the passage in the frame at one end and with a lamp-chamber at its inner end and a removable lamp-chamber under the tank and a portion thereof extended beyond the tank and provided with a movable cover and a fixed air-conductor extending from the lower portion of the heater upward and its top opening downward, arranged and combined to operate in the manner set forth for the purposes stated.

3. In a chicken-brooder, a lamp-heater fixed to the bottom of a movable base to communicate with a heat-conductor fixed to the bottom of a tank and a portion of the heater extended from the tank and provided with a movable cover and an air-conductor having a top to open downward and communicating with the lower portion of the heater, in combination with a removable base and a removable flat-bottomed tank having a fixed heat-conductor extending from the lamp-heater to the end of the tank, as shown and described, for the purposes stated.

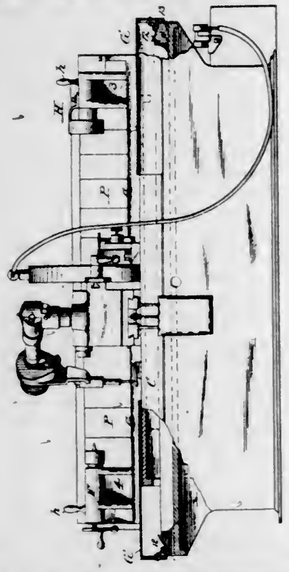
4. A chicken-brooder comprising a plurality of separable parts, to wit: a base composed of a frame having a passage for a heat-conductor, a heat-conductor in said passage and a floor fixed to the frame, a lamp-chamber fixed to the bottom of the base and an open-topped portion of the chamber extended outward from the frame and provided with a movable cover, an air-conveyer fixed to the lamp-chamber to communicate with the lower part thereof and opening downward at its top, a flat metal water-tank placed removably on top of the floor portion of the base, a hot-air conductor fixed to the bottom of the tank and one end communicating with the lamp-chamber and the other end with an air-passage extending through the frame of the base, a removable floor fitted on top of the tank and a removable wooden case or cover fitted on top of the frame and provided with a fixed top portion and a movable window-sash or hinged portion to serve as a roof and an opening in the wall for the passage of chickens, all arranged and combined to operate in the manner set forth for the purposes stated.

654,312. CLOTHES-LINE HANGER. HEYMANN KARGER, New York, N. Y. Filed Jan. 29, 1900. Serial No. 3,084. (No model.)



Claim.—In a clothes-line hanger the combination of a bar A having a greater-curved end C and a lesser-curved end C, such ends being provided with pulleys *c'*, *c* respectively, said bar being mounted on a pivot and being rounded off at *a*, its point of engagement therewith; and a pivot comprising a pintle *d'*, a shouldered arm D' a plate D and a nut *d*, all arranged to permit at the same time a rotation and oscillation of the bar, substantially as and for the purposes specified.

654,813. GRINDING-MACHINE. ABRAHAM B. LANDIS, Waynesborough, Pa. Filed May 19, 1900. Serial No. 17,313. (No model.)



Claim—1. In a grinding-machine, the combination, of the bed, the grinding mechanism, the head and foot stocks, a table formed with an open way on its rear side to receive and support said head and foot stocks, means for clamping said stocks in said way, and a water-guard consisting of plates extending at an angle from near the top of said table to its bottom and covering said way, substantially as set forth.

2. In a grinding-machine, the combination, of the bed, the grinding mechanism, the table for supporting the work-holding device which table extends to a point above the work and is formed with an open way on its side adjacent to said work, the work-holding devices mounted in said way, means for holding them in place, and a water-guard covering said way consisting of plates extending from top to bottom thereof, substantially as set forth.

3. In a grinding-machine, the combination, of the bed, the grinding mechanism, the table for head and foot stocks formed with an open way therefor on its rear side, said stocks mounted in said way, and a water-guard consisting of plates with their lower ends resting in a longitudinal groove in the base-plate of said table and their tops resting against the top of said table, substantially as set forth.

4. In a grinding-machine the combination, of the bed, the grinding mechanism, the work-supporting table formed with its front portion extending above the plane of the work and having an open way on its rear side for the head and foot stocks, said head and foot stocks mounted in said way to be adjusted, a clamping-bolt for holding each to its seat, and a spring interposed between a part on the bolt and a part on the stock, whereby when the nut on said bolt is loosened the stock will still be supported truly on its seat, substantially as set forth.

5. In a grinding-machine, the combination, of the bed, the grinding mechanism, the work-supporting table formed with its front portion extending above the line of work and having an open way on its rear side for the head and foot stocks, said head and foot mounted therein to be adjusted, the clamping-bolts for securing them in place, each of said clamping-bolts being provided with a head and each of said stocks being provided with a sleeve or socket to receive said bolt and with the end of which the head of said bolt engages, and a spring mounted in said sleeve or socket between its base and said bolt-head, substantially as described and for the purposes set forth.

6. In a grinding-machine, the combination of the bed, grinding mechanism, the carriage on which the same is mounted, and guards mounted over the ends of said carriage consisting of casings covering the carriage ways or guides and arranged to telescope with the ends of said carriage, substantially as set forth.

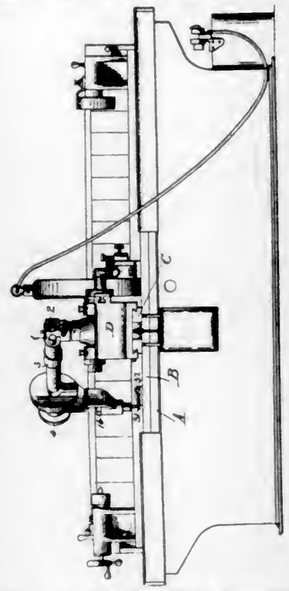
7. In a grinding-machine, the combination, of the bed, the grinding mechanism, the carriage for the same mounted in ways on said bed, and guards for said ways consisting of casings formed to telescope on the ends of said carriage and having closed outer ends carrying catches which are adapted to engage with a part on the bed and hold said guards stationary while the carriage is moving within the limits of the length of the bed but are adapted to be disengaged to permit said guard to move with the carriage when it passes said limit, substantially as set forth.

8. In a grinding-machine, the combination, of the bed, the carriage for carrying the grinding mechanism mounted in ways thereon, longitudinal ribs formed on said carriage, a casing formed to telescope on the ends of said carriage and mounted thereon supported by said ribs, and means for preventing the outer ends of said casing from passing inward over the ends of the carriage-ways, substantially as set forth.

9. In a grinding-machine, the combination, of the bed, the carriage for the grinding mechanism mounted on ways thereon, the guards each consisting of a casing adapted to telescope on one end of said carriage, its outer end being closed and extending down to below the top plane of the bed, a catch mounted on one part and adapted to engage with the other consisting of a spring bent to present a long angle to the engaging surface when the carriage travels inward and short angle when it travels outward, substantially as set forth.

10. In a grinding-machine, the combination, of the bed, the carriage, the grinding mechanism mounted thereon, the work-holding mechanism, the holding devices mounted in ways to be adjusted, guards covering said ways, and guards incasing the ends of the carriage and covering its ways, all substantially as set forth.

654,814. GRINDING-MACHINE. ABRAHAM B. LANDIS, Waynesborough, Pa. Filed May 24, 1900. Serial No. 17,866. (No model.)



Claim.—1. In a grinding-machine, the combination, of the bed, the carriage mounted to travel thereon, the grinding mechanism on said carriage, an automatic feed mechanism for said grinding mechanism, and an operating device for said feed mechanism consisting of a shoe adapted to travel with said carriage and having a cam which upon reversal of the travel operates to trip said feed mechanism through connecting devices, substantially as set forth.

2. In a grinding-machine, the combination, of the bed, the carriage, the grinding mechanism mounted on said carriage, the automatic feed mechanism for said grinding mechanism, and a part mounted in a way on the bed and connection with said carriage to travel therewith, which part is provided with a cam-face, and connecting devices running from said cam to the operating-wheel, whereby, when the carriage reverses said parts ride over said cam, and operate the wheel, substantially as set forth.

3. In a grinding-machine, the combination, of the bed, the carriage, the grinding mechanism on said carriage, the automatic feed mechanism for said grinding mechanism, which mechanism embodies a wheel with toothed or serrated periphery, a pawl for intermittingly operating said wheel, a plunger connected with said pawl, a lever

hinged to a part on the carriage with its outer end beneath the lower end of said plunger, a second plunger mounted in a socket in said carriage with its top beneath said lever, and its lower end engaging a shoe mounted to slide in a way in the bed, said shoe being formed with a cam-face over which the lower end of said plunger is adapted to ride when the carriage reverses, whereby said parts are operated, substantially as set forth.

4. In a grinding-machine, the combination, of the bed, the carriage, the grinding mechanism mounted thereon, mechanism for feeding the grinding-wheel to the work automatically, a cam for operating said feeding mechanism forming part of a shoe formed with tapered sides and mounted in a correspondingly-formed groove in the bed, said cam being located midway of a limited movement of the operating devices over said shoe, whereby, as the carriage reverses in movement, the pressure upon said cam will lock said shoe in the groove until the parts have passed and the mechanism been operated, substantially as set forth.

5. The combination in a grinding-machine, of the bed, the carriage, the grinding mechanism, the automatic feed mechanism, and a cam connected with said mechanism for operating it, said cam being connected with the bed and arranged to trip said mechanism as the carriage reverses, substantially as set forth.

6. The combination in an automatic feed mechanism for grinding-machines, of a cam adapted to travel with the carriage and engage with the bed at each reversal of said carriage, whereby the operating parts pass over it, and are operated, substantially as set forth.

7. In a grinding-machine, the combination, of the bed, the carriage, the grinding mechanism, the automatic feed mechanism embodying the wheel 7, the pawl for operating said wheel mounted on a reciprocating plunger, a collar adjustably mounted around the top of said plunger, whereby the position of the pawl in relation to the wheel when the parts are at rest may be regulated, the cam carried by the carriage and running in a way on the bed, the plunger operated thereby, and the connecting parts, substantially as set forth.

8. In a grinding-machine, the combination, of the bed, the carriage, the grinding mechanism, the automatic feed mechanism, the plunger carrying the pawl for operating said feed mechanism, the hinged lever on the carriage, the plunger mounted in a sleeve mounted in an elongated perforation in said carriage beneath said lever, the shoe with the cut-out portion in its top having a central cam-face on its bottom, and a suitable bearing-face on the lower end of said plunger to engage with said cut-out portion and ride over said cam, said shoe being mounted to slide in a way on the bed, substantially as set forth.

9. In a grinding-machine, the combination, of the bed, having a V-shaped longitudinal groove, a shoe correspondingly formed and mounted to slide therein, said shoe being formed with a cut-out place in its top with a double cam-face on its bottom, a plunger connected with the carriage and engaging in said cut-out place in said shoe and adapted to ride over said cam as the carriage reverses, forcing said shoe into close frictional contact with said V-shaped groove and operating said plunger, the grinding mechanism, the automatic feed mechanism, and connections between said feed mechanism and said plunger, whereby it is operated as the carriage reverses, substantially as set forth.

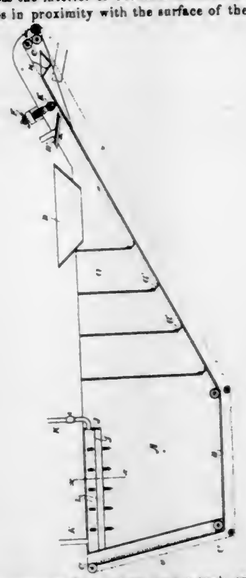
10. In a grinding-machine, the combination, of the bed, the carriage, the grinding mechanism, and the feeding mechanism embodying a shoe connected with the carriage mounted to slide in a way on the bed, said shoe being formed with a cam and a hooked formation on each side thereof, and a bearing part connected with the carriage and adapted to ride over said cam, and engage said hooks, substantially as set forth.

654,815. APPARATUS FOR WORKING ORES OF VALUABLE METALS. THOMAS E. LEECH, Bishop, Cal. Filed Sept. 26, 1899. Serial No. 731,755. (No model.)

Claim.—1. In an apparatus for the working of ores, a containing-tank having an endless traveling belt with directing-rollers by which one portion is caused to follow the interior along the line of the end, bottom and the front, and the other portion is returned to the point of beginning beneath and exterior to the tank, and a pressure-roller beneath which the upper part of the belt passes as it emerges from the tank.

2. In an apparatus for working ores, a containing-tank having an endless traveling belt, directing-rollers above the upper ends and beneath the bottom of the tank by which the belt is caused to follow the interior of the tank to the point of discharge, and is thence returned outside of the tank, a supply device by which material is delivered upon the belt at the front, and a pressure-roller extending across the upper part of the belt beneath which the pulp passes after being delivered upon the belt.

3. In an apparatus for working ores, a tank and an endless traveling belt with directing-rollers above the upper ends and beneath the bottom of the tank whereby one portion of the belt is caused to follow the interior outline of the ends and bottom of the tank and the other is returned exterior thereto, a supply device discharging upon the belt beyond the front end of the tank, a pressure-roller above the upper part of the belt and means for adjusting said roller, beneath which roller the belt passes after passing the supply device, and diaphragms extending across the interior of the tank at intervals with the flexible lower edges in proximity with the surface of the traveling belt.

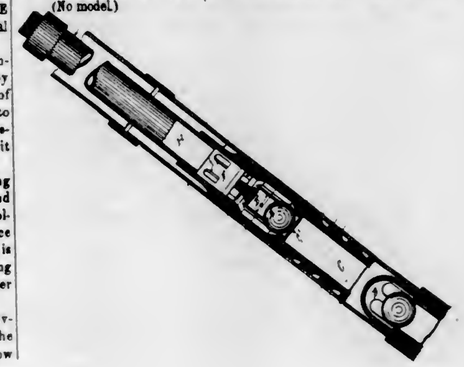


4. In an apparatus for working ores, a tank, an endless, guided, traveling belt, a supply device and pressure-roller at the exit end of the tank, a receiving directing-chute between the two parts of the belt beyond the end of the tank, and means located exterior to the end of the tank for cleansing the belt.

5. In an apparatus for working ores, a tank having an endless traveling belt and directing-rollers by which the belt is caused to travel in close proximity with the interior ends and bottom and is returned exterior to and beneath the bottom of the tank, means for supplying the material to be operated upon to the belt, an overflow and separating device consisting of a porous or filtered bottomed box with pipes through which a vacuum or pressure may be produced within the box, and transverse supports against which the filter or screen-surface is supported from opposite sides.

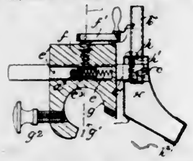
6. An apparatus for separating ores and slimes from associated liquid, consisting of a tank, an endless traveling belt movable along its bottom to receive the separated and deposited material and remove it from the tank, a pressure-roller located above the outwardly-traveling belt adjacent to the exit end of the tank, and an overflow for the discharge of the separated liquid at the opposite end of the tank.

654,816. OIL OR OTHER ARTESIAN WELL PUMP-VALVE. DANIEL L. LEWIS, Cygnet, Ohio. Filed Feb. 24, 1900. Serial No. 6,360. (No model.)



Claim.—In a pump plunger, the combination, with a lower tubular section having an imperforate side wall, a valve-seat at its lower part, and guides projecting laterally from the said side wall; of a valve slidable in the said guides, an upper tubular section provided with lateral delivery-passages and secured to the lower section, a disk clamped between the said sections and provided with openings and a stop which projects downward into the said lower section, and an air vessel having its lower end secured to the said upper section, substantially as set forth.

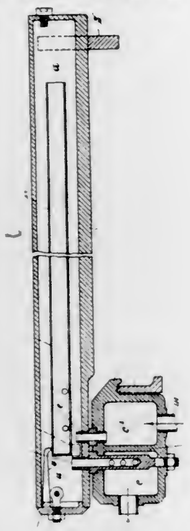
654,317. GRAPHOPHONE. THOMAS H. MACDONALD, Bridgeport, Conn., assignor to the American Graphophone Company, Washington, D. C. Filed Oct. 13, 1896. Serial No. 608,748. (No model.)



Claim.—1 In a graphophone, the combination with a shaving knife or cutter, of a receptacle for receiving chips or shavings removed from the record-cylinder by said knife or cutter, and a blow-tube leading into said receptacle, substantially as described.

2. A removable attachment for graphophones, consisting of a shaving knife or cutter, a closed receptacle having a discharge-opening therein, a cover for said opening, and a blow-tube leading to the interior of the receptacle, substantially as described.

654,318. FIRE-GRATE. JOHANN H. MEERTENS, Haspe, Germany. Filed Feb. 12, 1900. Serial No. 4,892. (No model.)



Claim.—1. A hollow grate-bar combined with an inclosed slotted tube, a flanged reservoir communicating with a grate-bar, and a rail engaged by the flanged reservoir, substantially as specified.

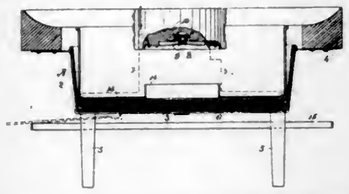
2. A hollow grate-bar combined with an inclosed slotted tube, a chambered and flanged reservoir communicating with the grate-bar, and a cover having a hook that engages the tube, substantially as specified.

654,319. PUSH-PIN. EDWIN MOORE, Newark, N. J. Filed July 24, 1899. Serial No. 724,981. (No model.)



Claim.—A push-pin comprising a body portion having a flange near the inner end thereof, said flange projecting laterally from and extending entirely about the same, and a pin extending longitudinally from the said body portion; substantially as described.

654,320. ELECTRIC HEATER. ROBERT R. MORISON, San Francisco, Cal. Filed Nov. 15, 1899. Serial No. 737,019. (No model.)



Claim.—1. An electrical heater comprising an open-center stand or support, a shallow pan within the opening of the stand or support, ribs by which said pan is suspended in the lower portion of said open center and out of direct contact with the stand, a second pan fitting within the first-named one, means interposed between the pans for electrically heating them, and means for controlling the electrical current.

2. The combination with a pan and means for heating the same, of an annular disk within and lying upon the bottom of said pan, and having a flanged opening which exposes a part of said bottom.

3. The combination with pans fitting one within the other and a heating medium between said pans, of a disk-shaped removable false bottom for the interior pan, having a flanged central opening exposing a portion of the bottom of the said pan and providing a restricted operating-surface.

4. The combination of a stand having legs or supports and a central opening, a pan suspended in said opening out of direct contact with the stand and a second pan interior to the first-named one, means interposed between the pans for electrically heating the pans and means for controlling the electrical current, and a support below the pans adapted to hold articles to be heated with their operative ends in contact with one of the pans.

654,321. VALVE FOR PUMPS. JAMES J. O'CROWLEY, Jersey City, N. J. Filed Jan. 25, 1900. Serial No. 2,747. (No model.)



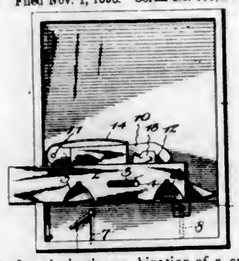
Claim.—1. A pump of the class described, provided with a base member embodying an inwardly-directed flange, a valve which is placed upon said flange, a supplemental member which is seated upon said base member, said base member and said supplemental member being each provided with a transverse web by and between which webs the central portion of said valve is immovably secured, whereby the sides of said valve are free to move operatively, substantially as shown and described.

2. A pump of the class described, provided with a base member embodying an inwardly-directed flange, a valve which is placed upon said flange, a supplemental member which is seated upon said base member, said base member and said supplemental member being each provided with a transverse web by and between which the central portion of said valve is immovably secured, whereby the sides of said valve are free to move operatively, and means for detachably securing together said transverse webs in position to retain said valve between the same, substantially as shown and described.

3. A pump of the class described, comprising a base member provided with an inwardly-directed flange and with a transverse web connected at its ends with said flange, a supplemental member which is seated upon said base member and provided with a transverse web corresponding with the first-named transverse web, a valve which is placed between said members and which is firmly secured centrally by and between said transverse webs, and means for securing said members in operative position, substantially as shown and described.

4. A pump of the class described, comprising a base member provided with an inwardly-directed flange and with a transverse web connected at its ends with said flange, a supplemental member which is seated upon said base member and provided with a transverse web corresponding with the first-named transverse web, a valve which is placed between said members and which is firmly secured centrally by and between said transverse webs, and means passing through said valve for securing said members in operative position, said means comprising screws or bolts passed through said transverse webs at the ends thereof, substantially as shown and described.

654,322. LOCK. ARCHIBALD PICKEN, Roanoke, Va., assignor of one-half to Charles F. Byrne, same place, and Samuel Nyburg, New York, N. Y. Filed Nov. 1, 1898. Serial No. 695,160. (No model.)



Claim.—1. In a lock, the combination of a casing having non-alined keyholes in its opposite sides, a bolt having spaced ward-notches, a rocking guard-lever fulcrumed at an intermediate point with its extremities arranged adjacent, respectively, to said keyholes, and upon the same side thereof, whereby the movement of the guard-lever by a key inserted through one keyhole causes the other arm of the guard-lever to traverse the keyhole in the opposite side of the casing, a bolt, and a yielding catch, actuated by said guard-lever and provided with means for engaging and securing the bolt in either of its adjusted positions, substantially as specified.

2. In a lock, the combination with a casing provided in its opposite walls with non-alined keyholes, a bolt mounted to slide in the casing and having a slot engaged with a fixed guide-pin arranged between the vertical planes of said keyholes, said bolt being further provided with spaced ward-notches, a guard-lever fulcrumed at an intermediate point upon the fixed guide-pin of the bolt and adapted at either end to traverse the adjacent keyhole when actuated by a key inserted through the other keyhole, and a yielding catch, actuated by the guard-lever and provided with a pin for engagement with spaced projections on the bolt, substantially as specified.

3. In a lock, the combination of a casing having non-alined keyholes in its opposite side plates, a bolt, locking devices for the bolt, and a guard-lever controlling said locking devices, and fulcrumed at an intermediate point to traverse one of said keyholes when operated by a key arranged in the other keyhole, whereby a key arranged in the second-named keyhole serves as a stop to limit the movement of the guard-lever and prevent the operative movement of a key arranged in the first-named keyhole, substantially as specified.

4. A lock having its casing provided in opposite sides with non-alined keyholes, in combination with a guard-lever mounted in the casing in the path of the operative movement of a key arranged in either keyhole, and adapted, when actuated by a key in one keyhole, to traverse the other keyhole, whereby a key arranged in the second-named keyhole forms a stop to limit the movement of the guard-lever and check the operative movement of a key in the first named keyhole, substantially as specified.

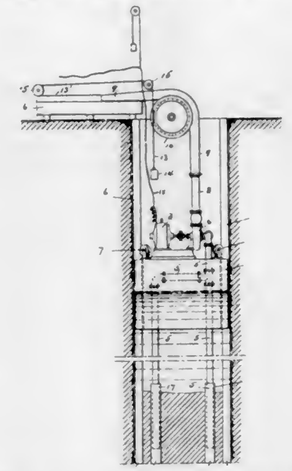
5. A lock having its casing provided with non-alined keyholes, a bolt having a plurality of key-notches accessible by keys arranged respectively in said keyholes, and an intermediately-fulcrumed guard-lever having its arms arranged respectively in the paths of keys arranged in said keyholes; whereby, when a key is arranged in one keyhole, said guard-lever is locked by the key-shank against movement by a key arranged in the other keyhole, substantially as specified.

6. A lock having its casing provided with non-alined keyholes, a bolt having a plurality of key-notches accessible by keys arranged respectively in said keyholes, and an intermediately-fulcrumed spring-actuated guard-lever having its arms arranged respectively in the paths of keys arranged in said keyholes; whereby when a key is arranged in one keyhole, said guard-lever is locked by the key-shank against movement by a key arranged in the other keyhole, substantially as specified.

654,323. PUMP. GOMER W. PRICE, San Francisco, Cal. Filed Mar. 15, 1900. Serial No. 8,712. (No model.)

Claim.—1. In a pumping plant, the combination with a suitable float; of a pump mounted on the upper surface of said float; and having a driving-shaft; a motor mounted on the said float and connected to the said shaft; suction-pipes connected to the said pump and depending from and supported by the said float; casings extended below the bottom of the well-body to receive the said suction-pipes; and an extensible delivery-pipe leading from said pump to above the surface of the ground; substantially as described.

2. In a pumping plant, the combination with a suitable float; of a pump mounted on the upper surface of said float; a motor mounted on the said float to drive the said pump; suction-pipes connected to the said pump and depending from and supported by the said float; casings extended below the bottom of the well-body to receive the said suction-pipes; an extensible delivery-pipe leading upward from the said pump; vertical guide-rails mounted in the well-body to guide the said float in its rise and fall; and suitable rollers mounted on the said float to engage the said rails; substantially as described.



3. In a pumping plant, the combination with a suitable float; of a pump mounted on the upper surface of said float; a motor mounted on the said float to drive the said pump; suction-pipes connected to the said pump and depending from and supported by the said float; casings extended below the bottom of the well-body to receive the said suction-pipes; a flexible delivery-pipe leading upward from the said pump; a suitable take-up mechanism for maintaining the delivery-pipe straight within the well; vertical guide-rails mounted on the well-body to guide the said float in its rise and fall; and suitable rollers mounted on the said float to engage the said rails; substantially as described.

654,324. BELL. HERBERT S. PULLMAN, Meriden, Conn. Filed Feb. 26, 1900. Serial No. 6,488. (No model.)

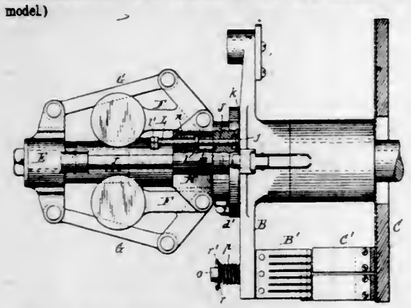


Claim.—1. A bell-base, bell-striking mechanism supported by the base and including a pinion, a hollow post supported on the base, a striker-lever pivoted to the base with one end having a segmental gear meshing with said pinion, a bell-crank lever pivoted on the post, a link connecting the bell-crank lever with the striker-lever, a plunger supported by the post and having an arm overlying an arm on the bell-crank lever and a gong secured to the post.

2. A bell-base, bell-striking mechanism supported by the base and including a single pinion, a hollow post supported on the base, a U-shaped lever with its branches lying on opposite sides of said post, one branch bearing a segmental gear meshing with said pinion, and the other branch forming a connection for a link, a bell-crank lever pivoted on the post, a link connecting the bell-crank lever with the U-shaped lever, a plunger supported by the post and having an arm overlying an arm on the bell-crank lever, and a gong secured to the post.

3. In combination with a base and a gong mounted thereon, a pivoted hammer, hammer-operating mechanism including a verge and an escapement-wheel, a fixed stud, a ratchet-wheel mounted to turn on the stud and having an elongated hub, the escapement-wheel mounted to turn on the hub, a pawl connecting the ratchet-wheel and the escapement-wheel, a pinion secured to the hub of the ratchet-wheel, a striker-lever in engagement with said pinion, and means for operating the striker-lever.

654,825. AUTOMATIC SWITCH FOR ELECTRIC CAR-LIGHTING APPARATUS. WILLARD F. RICHARDS, Buffalo, N. Y., assignor to Charles M. Gould, New York, N. Y. Filed Mar. 12, 1900. Serial No. 8,385. (No model.)



Claim.—1. The combination with the armature-shaft of a dynamo, of an oscillating switch-lever mounted on said shaft and capable of sliding lengthwise thereof, a centrifugal governor mounted on the dynamo-shaft and connected with said switch-lever, and a frictional checking device arranged to retard the oscillating movements of said switch-lever, substantially as set forth.

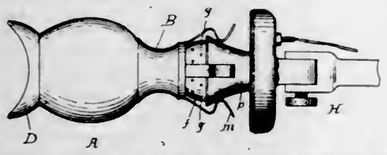
2. The combination with the armature-shaft of a dynamo, of a reversible switch-lever mounted on said shaft and capable of a combined sliding and oscillating movement, a friction-pin carried by said switch-lever and adapted to press against the same for checking its oscillating movement, and a yielding pressure-rod carried by the armature-shaft and arranged in line with said friction-pin, substantially as set forth.

3. The combination with the armature-shaft of a dynamo, of a carrying-sleeve mounted on said shaft and provided at its outer end with a collar or flange, a reversible switch-lever mounted on said sleeve, a longitudinal friction-pin guided in said collar and adapted to press against said switch-lever for checking its oscillating movement, a centrifugal governor having weighted levers and connected with said carrying-sleeve, a bracket carrying said weighted levers and secured to the armature-shaft, and provided with a longitudinal socket which is arranged in line with said friction-pin, a pressure-rod guided in said socket, and a spring surrounding said pressure-rod and resisting the outward movement thereof, substantially as set forth.

4. The combination with a contact-socket, of a switch-lever carrying a contact-plug which is adapted to enter said socket and which is provided with a rearwardly-extending stud capable of sliding in an opening of said lever, and a spring applied to said stud and tending to hold the plug against the lever, substantially as set forth.

5. The combination with a switch-lever, provided in its front side with a groove, of a swiveling contact-plug having its head seated in said groove and provided with a rearwardly-extending stud which is journaled in an opening of said lever, a stop-sleeve applied to said stud on the rear side of the switch-lever and permitting a limited sliding movement of the stud in its opening, and a spring surrounding the stud and said sleeve and resisting the forward movement of the stud, substantially as set forth.

654,826. VOICE-CONCEALING ATTACHMENT FOR TELEPHONES. HENRY P. ROBERTS, Boston, Mass., assignor to Everett D. Godfrey, Taunton, Mass. Filed Jan. 15, 1900. Serial No. 1,409. (No model.)



Claim.—1. A voice-concealing attachment for telephones comprising a body attachable to the transmitter-mouthpiece and containing two chambers of non-vibrant material opening into each other substantially in alinement and in alinement with said mouthpiece when the body is attached thereto.

2. A voice-concealing attachment for telephones, comprising the bulbs, A, *f*, of non-vibrant material, and a passage connecting said bulbs, one end of said passage being closed by a perforated sheet of non-vibrant material.

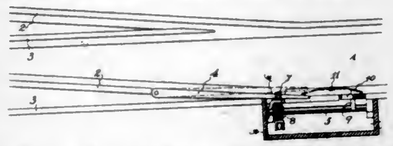
3. A voice-concealing attachment for telephones comprising the bulbs, A, *f*, of non-vibrant material, one end of said passage being closed by a perforated sheet of non-vibrant material; and devices for detachably securing said attachment to the mouthpiece of the telephone-transmitter.

4. In a device of the character described the connected bulbs of non-vibrant material in combination with the converging tube opening into said connection the perforate, non-vibrant sheet across said connection and sound-openings in the outer bulb, substantially as and for the purpose specified.

5. The bulb, A, and the perforated bulb, *f*, connected by tube, B; the directing-tube, *h*, having its ends closed by perforate sheets, *j*, i, and means for attaching the tube, B, to a telephone-transmitter.

6. The bulb, A, and the perforated bulb, *f*, connected by tube, B; the directing-tube, *h*, having its ends closed by perforate sheets, *j*, i, the converging cylinder, C, and means for attaching the tube, B, to a telephone-transmitter.

654,827. AUTOMATIC SWITCH. THEODORE S. SAVAGE, Oakland, Cal. Filed Apr. 19, 1900. Serial No. 13,438. (No model.)



Claim.—1. The combination in a railway having a main line and branch track, of a spring-pressed switch-point normally closed to cause cars to move upon one line of track, a rock-shaft, arms carried thereby, one of which is connected with the switch-point and the other with a pressure-plate which projects into the path of the car-wheels so as to be depressed thereby, and to throw the switch-point away from its contact with the track, and a spring by which said point is returned after the wheels have passed the pressure-plate.

2. The combination of a spring-pressed switch-point by which cars are diverted from the main line upon a divergent track, the rock-shaft having one arm connected with the switch-point, a pressure-plate in the path of the car-wheels connected with the other arm whereby the switch-point is thrown away from its normal position by the passage of car-wheels, and plates carried by the car, and means for depressing them so as to pass inside the switch-point, and prevent its returning whereby the cars are diverted upon the other line of track.

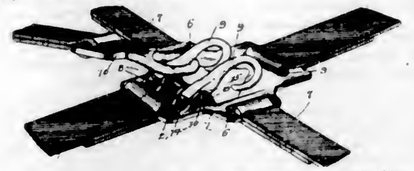
3. An automatic switching device consisting of a spring-pressed switch-point at the junction of two lines of track with the main line, a pressure-plate in the path of car-wheels approaching on the main line, a rock-shaft and connections actuated thereby by which the switch-point is moved away from its normal position, plates supported and vertically movable upon the car, a foot-pedal and connections intermediate between said pedal and the plates whereby they may be depressed to pass inside the switch-point after it has been moved away from its contact, and to retain it in such position while the car-wheels pass upon the other line of track.

4. An automatic switching device consisting of a spring-pressed switch-point, normally maintaining one or two meeting lines of track in connection with the main line, a pressure-plate in the main line, intermediate connections between it and the switch-point whereby the latter is momentarily forced away from its position by each wheel passing over it, plates supported and guided upon the car, and a foot-pedal with intermediate connections whereby the plates may be depressed to engage the switch-point after it has been forced away and retain it in this position until the car-wheels pass upon the other lines of track.

5. In an automatic car-switching device, and in combination with the four-wheeled turnable trucks upon which the car is mounted, vertically-movable yokes or carriers, and guides therefor, plates fixed to the lower ends of said carriers and adapted to pass between the switch-point and its normal point of contact, adjustable connections between the yokes at opposite ends of the car, transversely-slotted bars in which said connections are carried and by which the trucks are allowed to turn independently thereof, vertical slidable guides connected with the transverse bars, toggle-levers pivoted together and having the upper and lower ends connected respectively with the car and with the bars, a rod connecting the meeting joints of said levers, a foot-pedal and connections between said pedal and the rod whereby the latter may be reciprocated and the plates raised or depressed.

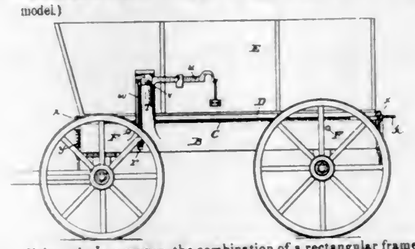
654,828. TRACE-SUPPORT. GEORGE SCHENCK, Le Roy, Kans. Filed Feb. 1, 1900. Serial No. 3,617. (No model.)

Claim.—1. A trace-support, comprising a frame, having a guide-plate, which is inclined inwardly and downwardly, and a spring-actuated hook, pivoted to the frame at a point above the plane of the guide-plate, the free extremity of the bill of the hook normally resting upon the inclined guide-plate.



2. A trace-support, comprising a frame, having upstanding bearing-ears located at the forward end thereof, an inwardly and downwardly inclined guide-plate located at the rear of the frame, and spring-actuated hooks, having their shanks pivoted to the bearing-ears and above the plane of the guide-plate, and the free extremities of the bills of the hooks normally resting upon the inclined guide-plate

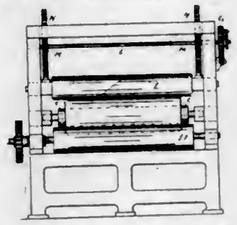
654,829. COMBINED SCALE AND WAGON. GEORGE SCHNEIDER, Baltimore, Md., assignor of two-thirds to Leon Ferrandini and Hese Greenbaum, same place. Filed Oct. 21, 1899. Serial No. 734,307. (No model.)



Claim.—1. In a wagon, the combination of a rectangular frame; scale mechanism and platform, C, within the frame; an elevator-platform, D, above the frame and provided on its lower side with four concave-faced plates; two cross-shafts having their ends in bearings in the sides of the frame and each shaft provided with two eccentric cams which project upward past the scale-platform and each cam bearing against one of the said concave-faced plates on the elevator-platform; a sector-wheel on each cross-shaft; and a longitudinal shaft, I, extending at right angles with respect to the two cross-shafts and provided with worms which engage the said sector-wheels.

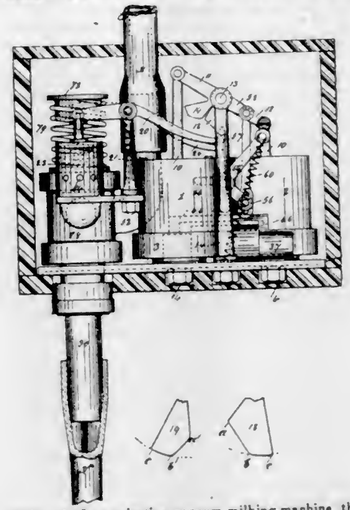
2. In a wagon, the combination of a rectangular frame; scale mechanism and platform, C, within the frame; an elevator-platform, D, above the frame cross-shafts having their ends in bearings in the sides of the frame and each shaft provided with two eccentric cams which project upward past the scale-platform and when turned one way support the elevator-platform and when turned the other way allow the elevator-platform to rest bodily on the scale-platform; a sector-wheel on each cross-shaft; a longitudinal shaft, I, extending at right angles with respect to the two cross-shafts and provided with worms which engage the said sector-wheels; and vertical screws connected with the rectangular frame and entering brackets on the said elevator-platform for staying the latter and holding it firmly on the cams while the wagon is traveling.

654,830. PROCESS OF FIXING THE FINISH ON COTTON PIECE GOODS. MILTON S. SHARP, Heckmondwike, England. Filed Dec. 30, 1899. Serial No. 742,123. (No specimens.)



Claim.—The fixing of the luster on cotton cloths by first obtaining the luster in any of the ordinary methods and afterward rolling the finished cloths together with a damped cloth under pressure, then subjecting them to calendering under heavy pressure and finally wrapping the combined calendered cloths in canvas and subjecting them to the action of dry steam within a closed vessel all substantially in the manner as hereinbefore described.

654,831. MILKING-MACHINE. ALEXANDER SHIELS, Glasgow, Scotland. Filed June 23, 1896. Serial No. 596,638. (No model.)



Claim.—1. In a pulsating vacuum milking-machine, the combination with means for creating a vacuum of a vacuum-motor for actuating the machine, consisting of the two cylinders, the pistons therein, the piston-rods extending therefrom, the rocking shaft, the cranks carried by the shaft and connected with the piston-rods, a piston-valve with its casing adapted to admit vacuum to the cylinders alternately and connections between the said valve and the oscillating shaft for operating the valve, substantially as described.

2. In a pulsating vacuum milking machine, the combination with means for creating a vacuum of a vacuum-motor for actuating the machine consisting of the two cylinders, the pistons therein, the piston-rods extending therefrom, the rocking shaft, the cranks carried by the shaft and connected to the piston-rods, a piston-valve with its casing adapted to admit vacuum to the cylinders alternately, and connections between the said valve and the oscillating shaft for operating the valve, said connections including a fork connected to the valve, and a kicker between the same and the oscillating shaft, substantially as described.

3. In a pulsating vacuum milking-machine, the combination with means for creating a vacuum of a vacuum-motor for actuating the machine, consisting of the two cylinders the pistons therein, the piston-rods extending therefrom, the rocking shaft, the cranks carried by the shaft and connected to the piston-rods, a piston-valve with its casing adapted to admit vacuum to the cylinders alternately, and connections between the said valve and the oscillating shaft for operating the valve, said connections including a fork connected to the valve and a kicker, operated from the oscillating shaft and having two arms arranged to alternately strike a tooth on the fork, substantially as described.

4. In a pulsating vacuum milking-machine the combination of a pulsating device, means for creating a vacuum, a vacuum-pipe connecting the same with the pulsating device, a vacuum-motor also connected with the vacuum-pipe, said motor comprising the two cylinders with their pistons, a piston-valve for alternately admitting vacuum to each of the cylinders, a fork connected with the valve for operating the same, the rocking shaft, connections between the same and the pistons of the cylinders, the connections between the rock-shaft and the pulsating device, and a kicker operated from the rocking shaft and contacting with the fork for operating the same, substantially as described.

5. In combination in a pulsating vacuum milking-machine, a pulsating device, means for creating a vacuum, a vacuum-pipe connecting the same with the pulsating device, a vacuum-motor also connected with the vacuum-pipe, said motor comprising the two cylinders with their pistons, a piston-valve for alternately admitting vacu-

um to each of the cylinders, a fork connected with the valve for operating the same, said fork having a tooth, the rocking shaft, connections between the same and pistons of the cylinders, the connection between the rock-shaft and the pulsating device, and a kicker operated from the rocking shaft, said kicker having two arms arranged to alternately strike the tooth on the fork, substantially as described.

6. In combination in a pulsating vacuum milking-machine, a pulsating device, means for creating a vacuum, a vacuum-pipe connecting the same with the pulsating device, a vacuum-motor also connected with the vacuum-pipe, said motor comprising the two cylinders with their pistons, a double piston-valve for alternately admitting vacuum to each of the cylinders, a tubular casing for said valve slotted at each end, a fork having ends projecting through the slots and acting on the valve and connections from the pistons of the cylinders to the pulsating device and to the fork for operating the same, substantially as described.

7. In combination in a pulsating vacuum milking-machine, a pulsating device, means for creating a vacuum, a vacuum-pipe connecting the same with the pulsating device, a vacuum-motor also connected with the supply-pipe, said motor comprising the two cylinders with their pistons, a piston-valve for alternately admitting vacuum to each of the cylinders, a fork connected with the valve for operating the same, said fork having a tooth, the rocking shaft, connections between the same and the pistons of the cylinders, the connections between the rock-shaft and the pulsating device, and a kicker operated from the rocking shaft, said kicker having two arms arranged to alternately strike the tooth on the fork with means for giving a sudden action to the kicker, substantially as described.

8. In combination in a pulsating vacuum milking-machine, a pulsating device, means for creating a vacuum, a vacuum-pipe connecting the same with the pulsating device, a vacuum-motor also connected with the vacuum-pipe, said motor comprising the two cylinders with their pistons, a piston-valve for alternately admitting vacuum to each of the cylinders, a fork connected with the valve for operating the same, said fork having a tooth, the rocking shaft, connections between the same and the pistons of the cylinders, the connection between the rock-shaft and the pulsating device, and a kicker operated from the rocking shaft, said kicker having two arms arranged to alternately strike the tooth on the fork, with means for giving a sudden action to the kicker comprising a lever connected to the kicker and a spring attached to the lever, substantially as described.

9. In combination in a pulsating vacuum milking-machine, a pulsating device, means for creating a vacuum, a vacuum-pipe connecting the same with the pulsating device, a vacuum-motor also connected with the vacuum-pipe, said motor comprising the two cylinders with their pistons, a piston-valve for alternately admitting vacuum to each of the cylinders, a fork connected with the valve for operating the same, said fork having a tooth, the rocking shaft, connections between the same and the pistons of the cylinders, the connection between the rock-shaft and the pulsating device, and a two-armed kicker with means for operating the same from the rock-shaft comprising a slotted link connected to the kicker and a crank on the oscillating shaft to which the link is connected, substantially as described.

10. In combination in a pulsating milking-machine the pulsating valve, means for creating a vacuum, the vacuum-pipe connecting the same with the pulsating valve, a vacuum-motor also connected to the vacuum-pipe, connections between the motor and the pulsating valve for opening the same, and the diaphragm connected with the pulsating valve, said diaphragm being exposed to the atmosphere to close the valve automatically, substantially as described.

11. In combination in a pulsating milking-machine, the pulsating valve, means for creating a vacuum, the vacuum-pipe connecting the same with the pulsating valve, a vacuum-motor also connected to the vacuum-pipe, connections between the motor and the pulsating valve for opening the same consisting of a rock-shaft, connections between the same and the motor, a cam on the rock-shaft and a lever connected with the pulsating valve and contacting with the cam, and the diaphragm connected with the pulsating valve exposed to the atmosphere and adapted to close the same, substantially as described.

12. In combination in a milking-machine, the vacuum-motor with a vacuum-supply connected therewith for operating the motor when the vacuum-pressure is let on, the rock-shaft operated by the motor, the air-admission valve normally held closed, a spring for holding the valve normally closed, a lever attached to the valve and means operated by the rock-shaft for opening the valve at certain times, substantially as described.

13. In combination in a milking-machine, the vacuum-motor, with a vacuum-supply connected therewith for operating the motor when the vacuum-pressure is let on, the rock-shaft operated by the motor, the air-admission valve, a spring for normally holding the air-admission valve closed, a lever attached to the valve and a cam fitted on the rock-shaft for operating the lever and opening the valve at certain times, substantially as described.

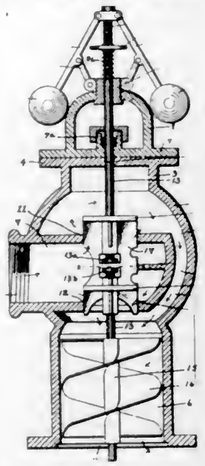
14. In combination in a milking-machine, the vacuum-motor, with a vacuum-supply connected therewith for operating the motor when the vacuum-pressure is let on, the rock-shaft operated by the motor, the vacuum-destroying valve, the air-admission valve located at the side thereof, the lever attached to the air-admission valve, and the cam on the shaft for operating the lever and opening the air-admission valve at certain times, substantially as described.

15. The vacuum-destroying valve consisting of the valve, the valve-spindle, the piston on the spindle, the diaphragm exposed on its outer side to the air, a casing for the valve and diaphragm, a screwed cap and a spring mounted on top of the casing and adjustable by means of said screwed cap fitted on the end of the valve-spindle, substantially as described.

16. In combination, the casing 27 with suitable pipe connections thereto, the valve 26 in the casing, the piston 66 on the valve-spindle within the casing, the diaphragm 67 on the spindle, the lever 24 connected with the valve-spindle, means for operating the lever and an adjustable spring 100 acting on the lever 24 substantially as and for the purpose set forth.

17. In combination in a vacuum pulsating machine, a vacuum-pump, a pulsating apparatus, a vacuum-motor, connections between the motor and pulsating apparatus for controlling the latter positively and conduits from both the vacuum-motor and the pulsating apparatus to the vacuum-pump, substantially as described.

654,332. SPEED-GOVERNOR. CHARLES F. SLEIGH, Nelsonville, Ohio. Filed Nov. 1, 1899. Serial No. 735,481. (No model.)



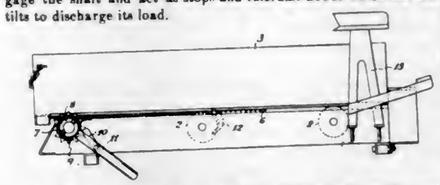
Claim.—1. In a speed-governor, the combination with a casing and a valve and governor controlling shaft rotatably mounted and vertically movable therein, of a propeller feathered on said shaft said propeller being arranged between the valve and engine and adapted to be subjected to the pressure of steam which passes said valve, substantially as set forth.

2. In a speed-governor, the combination with a casing and a valve-chamber therein having valve-openings, a rotary and vertically-movable governor-shaft having thereon ball-carrying arms and a valve on said shaft, a propeller-chamber below said valve-chamber between the valve and engine and a passage connecting the latter with the space above the valve-chamber, of a spiral propeller carried on said shaft within said propeller-chamber, substantially as set forth.

654,333. WAGON DUMPING-GEAR. PABLO VASQUEZ, Half Moon Bay, Cal. Filed May 2, 1900. Serial No. 15,213. (No model.)

Claim.—1. The combination in a vehicle of a bed having rollers journaled upon each side, a box adapted to rest and move upon said rollers, a shaft journaled across the rear of the bed having a pinion fixed thereto, and a lever by which the shaft may be turned, and a rack-bar upon the box with the teeth of which the pinion remains engaged when the bed is dumped.

2. The combination in a vehicle of a bed having antifrictional bearings, a box resting upon said bearings having a rack-bar fixed to its lower side, a shaft journaled across the rear of the bed having a pinion fixed thereon, the teeth of which are constantly engaged with those of the rack-bar, means for rotating the shaft and pinion to move the box rearwardly, hook-shaped lugs fixed to the box so as to engage the shaft and act as stops and fulcrums about which the box tilts to discharge its load.



3. The combination in a wagon of a bed having antifrictional bearings, a box supported and movable upon said bearings and having a rack-bar fixed to its lower side, a shaft journaled across the rear of the bed having a pinion fixed thereto, the teeth of which constantly engage those of the rack-bar, a ratchet-wheel fixed upon the outer end of the shaft, a lever loosely turnable with relation to the shaft and a pawl pivoted to the lever and adapted to engage the teeth of the ratchet to rotate the shaft and advance the box.

4. The combination in a wagon of a bed, a box resting thereon, a rack-bar fixed to the bed, a pinion fixed to a shaft journaled at the rear of the bed and constantly engaging the rack-bar, pawl-and-ratchet mechanism by which the shaft and pinion may be revolved to move the box, fulcrum-hooks to limit the rearward movement of the box about which it is tiltable, a stop to limit the movement of the box to the front and hooks by which the bed is removably attached to the running-gear.

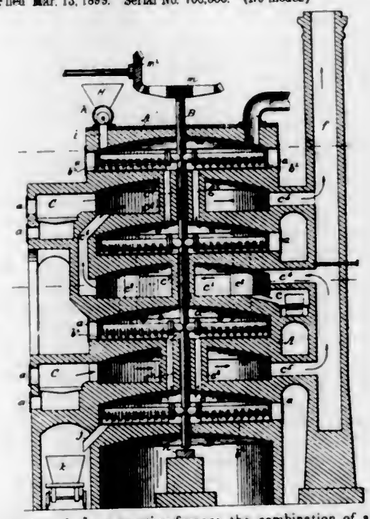
654,334. STUD OR BUTTON FOR GARMENT-SUPPORTERS. DE VER H. WARNER, Bridgeport, Conn., assignor to the Warner Brothers Company, same place. Filed Mar. 23, 1900. Serial No. 9,835. (No model.)



Claim.—1. In a stud or button the combination of a supporting-plate, a rivet and a sleeve through which said rivet is adapted to pass, said sleeve resting on said plate and having a rounded rim at its upper edge of greater diameter than the head of the rivet, substantially as described.

2. In a stud or button the combination of a supporting-plate, a rivet, a sleeve through which said rivet is adapted to pass, said sleeve resting on said plate and having a rounded rim at its upper edge of greater diameter than the head of the rivet, and a collar surrounding said sleeve but of less diameter than the rim thereof, substantially as described.

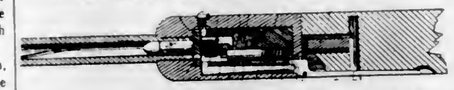
654,335. ROASTING-FURNACE. UTLEY WEDGE, Bayonne, N. J. Filed Mar. 13, 1899. Serial No. 708,806. (No model.)



Claim.—1. In a roasting-furnace the combination of a tier of roasting-chambers, furnace-chambers interposed in the series of roasting-chambers and not communicating therewith, but so communicating with each other that the combustion products of one furnace-chamber are conducted into another, passages connecting the roasting-chambers with each other, whereby the material in the roasting-chambers may be passed from chamber to chamber out of contact with any gases other than those generated therein, and stirring mechanism in each roasting-chamber, substantially as described.

2. In a turret-furnace the combination of a tier of roasting-chambers alternating with furnace-chambers which do not communicate therewith but which so communicate with each other that the combustion products of one furnace-chamber are conducted into another, an axial shaft extending through all the chambers and having stirring-arms in the roasting-chambers, passages connecting the roasting-chambers with each other but not communicating with the intervening furnace-chamber, and means for rotating said shaft, substantially as described.

654,336. FIREARM. JAMES C. WILKIN, Cedar Rapids, Iowa. Filed Mar. 13, 1900. Serial No. 8,487. (No model.)



Claim.—1. A rifle attachment for double shotguns, comprising a rifle-barrel attachable to the lower middle rib of said gun, a breech-block holder secured to the breech of the rifle-barrel, a breech-block hinged therein, a supplemental fore-end hinged to the breech-block holder, and means for attaching the same to the shotgun, substantially as described.

2. A rifle attachment for double shotguns, comprising a rifle-barrel, with means for attaching the same to the lower middle rib of the gun, a breech-block at the breech end of said barrel, a firing-pin therein, a lever and connected cocking mechanism adapted to engage said pin, and a sear also engaging said pin and adapted to be disengaged by a finger of the operator, substantially as described.

3. In a rifle attachment for shotguns, the combination with a rifle-barrel, of a breech-block holder, a breech-block hinged therein, a spring-actuated firing-pin mounted in the breech-block, a cocking-hook adapted to engage said firing-pin, a lever adapted to draw back said hook when moved out of normal position and to lock the breech-block when in normal position, and a pin-engaging sear adapted to be operated by the sportsman's finger, substantially as described.

4. In a rifle attachment for double shotguns, the combination with a rifle-barrel and breech-block holder, substantially as described, of a breech-block hinged in the holder, and provided with a longitudinal hole for a firing-pin, and lateral slots communicating therewith, a spring-actuated firing-pin having lateral studs mounted therein, a cocking-hook adapted to engage one of said studs, a lever to draw back said hook, and a finger-operated sear to engage the other lug of the firing-pin.

5. In a rifle attachment, the combination of the breech-block holder, a breech-block hinged therein, and having a longitudinal hole for the firing-pin and adjacent slots communicating with said hole, a spring-actuated firing-pin mounted in the breech-block, and having lateral lugs projecting into said slots, a finger-operated sear to engage one of said lugs, a cocking-hook to engage the other lug, a lever to retract the same, the breech-block holder having an internal groove coinciding with the slot in the breech-block, to take said cocking-hook, substantially as set forth.

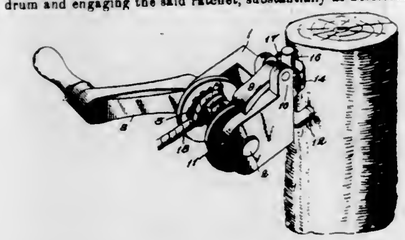
6. In a rifle attachment, the combination of a breech-block holder, a breech-block hinged therein, and having a longitudinally-slotted receptacle for the firing-pin, a firing-pin mounted therein, a cocking-hook adapted to engage the firing-pin, and projecting into said slot, and a transverse notch in the side of the breech-block to allow it to swing down past the inward projection of the cocking-hook, substantially as set forth

7. In a rifle attachment, the combination with the rifle-barrel, breech-block and holder, substantially as described, of a firing-pin mounted in the breech-block, means for retracting the same, a sear to engage said pin when in retracted or cocked position, and a push-pin near the forward end of the breech-block holder adapted to disengage the sear by the pressure of a finger.

654,337. CLOTHES-LINE TIGHTENER. SAMUEL P. YEATMAN, Beatrice, Nebr. Filed Nov. 3, 1899. Serial No. 735,709. (No model.)

Claim.—A device of the class described comprising a fastening device having a vertical pivot provided with a perforation, a bracket having a rearwardly-extending perforated ear receiving the pivot, a pin or key 17 arranged in the perforation of the pivot and retaining the bracket thereon, the vertical lugs 10 projecting from the back portion of the bracket and located adjacent to one side of the same,

the shaft journaled in suitable bearings of the bracket, a drum mounted on the shaft and provided at one end with peripheral notches forming a ratchet, a fastening device securing the drum to the shaft and adapted to fasten a clothes-line to the former, and the pawl 9 pivoted between the vertical ears and resting upon the adjacent end of the drum and engaging the said ratchet, substantially as described.



654,338. SUPPORTING-CLEAT. JOSHUA W. ATLEE, Riverton, N. J. Filed Dec. 14, 1899. Serial No. 740,290. (No model.)



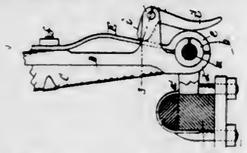
Claim.—1. A removable supporting-cleat comprising a supporting-base, a rectangular recess formed on one side of said base adapted to engage upon an angular flange, a perpendicularly-disposed arm formed with the base and forming an opposing wall of the recess and an inwardly-projecting boss formed on said arm adapted to enter an aperture formed in the cleat-support.

2. A supporting-cleat comprising a base portion having a bracket-arm formed on one side thereof, an angular recess formed on the opposite side of said base adapted to an angular flange, an arm running upward from one corner of the recess and inclined toward the front open end of said recess, the inner wall of said arm being in a plane at right angles to the supporting-base, said inner wall being parallel with the inner face of the bracket-arm and an inwardly-projecting boss formed on the upper inner face of said arm adapted to enter but not project through an opening formed in the angular flange, substantially as described.

3. A removable cleat comprising a base, *c*, having a bracket-arm, *c'*, formed on one side thereof, an angular recess, *f*, formed on the opposite side of the base, *c*, an arm, *e*, extending upwardly from one corner of the recess, *f*, inclined toward the front open end of same and having its inner wall in a plane at right angles to the plane of base, *c*, a boss *c'*, formed on the upper inner face of said arm, and webs or flanges formed on the under side of the base, *c*, for increasing the bearing-surface of the walls, f' and f^2, of the recess, substantially as described.

4. A supporting-cleat comprising a base portion and a perpendicularly-disposed bracket-arm formed on the outer end of said base portion, a perpendicularly-disposed inner arm formed on the inner end of said base portion, the face of said inner arm opposite the inner face of the bracket-arm being smooth and adapted to bear against the inner face of the angular flange upon which it is to be adjusted, an angular recess formed in said base portion at and within the plane of the inner face of said inner arm for the reception of the angular flange and an inwardly-projecting boss formed on the said inner arm about the upper end thereof said boss being of a length equal to the thickness of said angular flange, substantially as described.

654,339. THILL-COUPLING. CHRISTOPHER C. BRADLEY, Syracuse, N. Y. Filed Mar. 19, 1900. Serial No. 9,295. (No model.)



Claim.—1. The combination with the thill-iron provided at its lower end with a fixed jaw and above the same with standards projecting forwardly on both sides of the thill-iron, of a spring-arm which is arranged to play between said standards and which extends above and below the same and is secured at its upper end to the thill-iron, a movable jaw secured to the lower end of said spring-arm, and a clamping-lever pivoted between said standards in front of said spring-arm and adapted to bear against the latter, substantially as set forth.

2. The combination with the thill-iron provided at its lower end with a fixed jaw and standards formed on said thill-iron and projecting forwardly on both sides thereof, of a spring-arm arranged between said standards, carrying a movable jaw below the same and secured to the thill-iron at its upper end, a transverse pivot arranged in said standards in front of said spring-arm, and a clamping-lever mounted on said pivot and adapted to bear against said spring-arm, substantially as set forth.

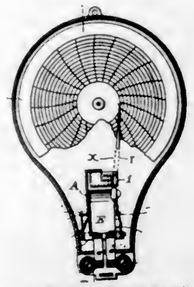
654,340. TROUSERS-HANGER. CHATTIN BRADWAY, Philadelphia, Pa. Filed Nov. 18, 1899. Serial No. 737,467. (No model.)



Claim.—1. A trousers-hanger consisting of strip metal, the ends bent oppositely forming three leaves, an enlargement at the point of bend, a rivet approximate said enlargement, a clamping-ring confined between said rivet and said enlargement, a hanging-hook pivotally secured to said strip metal, as and for the purpose specified.

2. A trousers-hanger of two strips of metal, the ends of each being bent oppositely forming three leaves, an enlargement at the points of bend forming a stop, a rivet approximate said enlargement adapted as another stop, a clamping-ring confined between said stops, the said strips similarly positioned, a hanging-hook pivotally secured between them as and for the purpose specified.

654,341. DAMPING DEVICE FOR RECORDING INSTRUMENTS. WILLIAM H. BRISTOL, Hoboken, N. J., and FRANKLIN B. BRISTOL, Naugatuck, Conn., assignors to The Bristol Company, Waterbury, Conn., and New York, N. Y. Filed May 24, 1900. Serial No. 17,821. (No model.)



Claim.—1. In an indicating or recording instrument, the combination with an operative part movable in parallel planes, of a damping device comprising a box horizontally placed and having a shelf therein, a dasher provided with one or more vanes placed between the shelf and the walls of the box to form narrow passages with the box and shelf, and a connection between the operative part and the dasher, substantially as described.

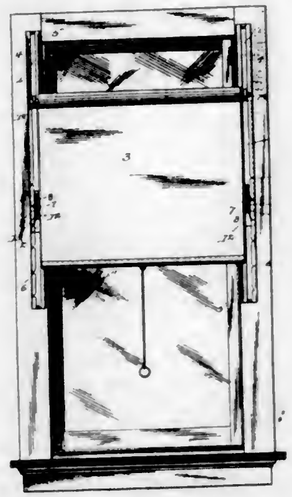
2. In an electrical indicating or recording instrument, the combination with a coil or solenoid, an armature arranged adjacent to the coil or solenoid and adapted to move in parallel planes, a box horizontally placed and having a shelf therein, a dasher provided with one or more vanes placed between the shelf and the walls of the box to form narrow passages with the box and shelf, and a connection between the armature and the dasher, substantially as described.

3. The damping device herein described consisting in a box horizontally placed and having a shelf therein, and a dasher provided with one or more vanes placed between the shelf and the walls of the box to form narrow passages with the box and shelf.

4. In an indicating or recording instrument, the combination with an operative part moving in parallel planes, of a damping device comprising a box horizontally placed and having a shelf therein, a dasher provided with one or more vanes placed between the shelf and the walls of the box to form narrow passages with the box and shelf, and a detachable connection between the operative part and the dasher, substantially as described.

5. The damping device herein described consisting in a box horizontally placed and having a shelf therein, forming with said box a chamber of varying vertical cross-section, and a dasher placed in said chamber and provided with one or more vanes forming passages with the box and shelf.

654,342. ADJUSTABLE WINDOW-SHADE FIXTURE. FRANK P. CASEY, Bloomington, Ill. Filed Feb. 27, 1900. Serial No. 6,705. (No model.)



Claim.—A device of the class described comprising a guide, a slide mounted in the guide, and a spring composed of two sides and extending from the guide and adapted to be grasped by the operator, one of the sides being fixed to the slide between the side edges thereof and the other side engaging the guide, said spring being adapted to be compressed without causing the slide to twist or bind in the guide, substantially as described.

654,343. LAMP. ROBERT M. DIXON, East Orange, N. J., assignor to The Safety Car Heating and Lighting Company, of New Jersey. Filed Sept. 8, 1897. Serial No. 650,963. (No model.)

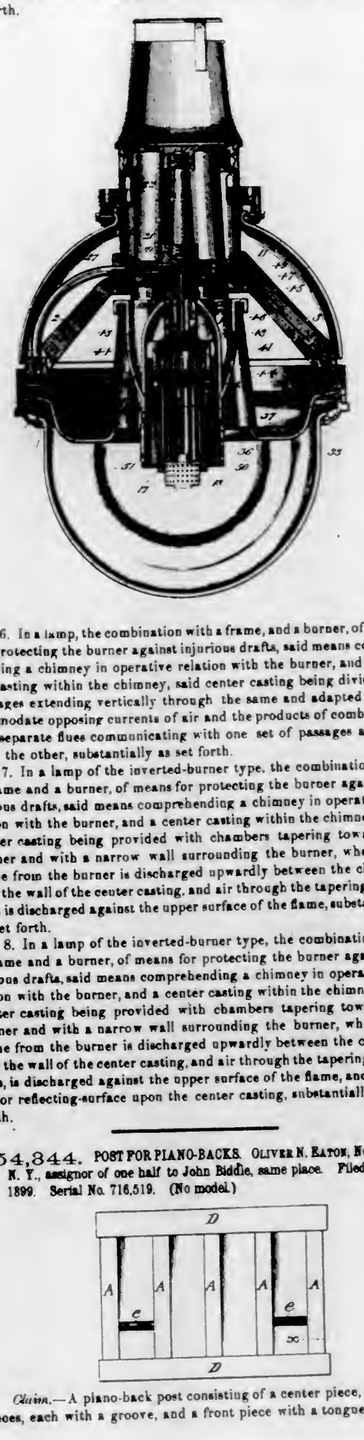
Claim.—1. In a lamp, the combination with a frame of open-work construction, and a burner, of means, surrounding the burner, for protecting it against injurious drafts, said means comprehending a chimney, in operative relation with the burner, said chimney being closed, except at the top and bottom, and means within the chimney for supplying air to the burner from above the chimney, substantially as set forth.

2. In a lamp, the combination with a frame of open-work construction and a burner, of means for protecting the burner against injurious drafts, said means comprehending a transparent dome above and a transparent bowl below the burner, and a transparent chimney within the dome and bowl, in operative relation with the burner, and means within the chimney of supplying air to the burner from above the chimney, substantially as set forth.

3. In a lamp of the inverted-burner type, the combination with a burner, and frame of open-work construction, of transparent inclosing members, a horizontal annular partition separating the said members, a transparent chimney surmounting the partition and means within the chimney for conveying air to the burner from above the same, substantially as set forth.

4. In a lamp of the inverted-burner type, the combination with its burner, of a member, closed, save at top and bottom, surmounting the burner, and provided throughout its longitudinal extent with means for the passage in opposite directions of air-currents and the currents of the products of combustion, whereby the regenerative action of the lamp is improved, substantially as set forth.

5. In a lamp, the combination with a frame, and a burner, of means for protecting the burner against injurious drafts, said means comprehending a chimney in operative relation with the burner, and a center casting within the chimney, adapted to separate incoming currents of air and outgoing products of combustion, substantially as set forth.



6. In a lamp, the combination with a frame, and a burner, of means for protecting the burner against injurious drafts, said means comprehending a chimney in operative relation with the burner, and a center casting within the chimney, said center casting being divided by passages extending vertically through the same and adapted to accommodate opposing currents of air and the products of combustion, and separate flues communicating with one set of passages and not with the other, substantially as set forth.

7. In a lamp of the inverted-burner type, the combination with a frame and a burner, of means for protecting the burner against injurious drafts, said means comprehending a chimney in operative relation with the burner, and a center casting within the chimney, said center casting being provided with chambers tapering toward the burner and with a narrow wall surrounding the burner, whereby a flame from the burner is discharged upwardly between the chimney and the wall of the center casting, and air through the tapering chambers is discharged against the upper surface of the flame, substantially as set forth.

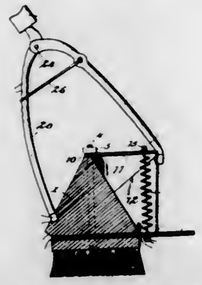
8. In a lamp of the inverted-burner type, the combination with a frame and a burner, of means for protecting the burner against injurious drafts, said means comprehending a chimney in operative relation with the burner, and a center casting within the chimney, said center casting being provided with chambers tapering toward the burner and with a narrow wall surrounding the burner, whereby a flame from the burner is discharged upwardly between the chimney and the wall of the center casting, and air through the tapering chambers, is discharged against the upper surface of the flame, and an exterior reflecting-surface upon the center casting, substantially as set forth.

654,344. POST FOR PIANO-BACKS. OLIVER N. EATON, New York, N. Y., assignor of one half to John Biddle, same place. Filed May 12, 1899. Serial No. 716,519. (No model.)

Claim.—A piano-back post consisting of a center piece, two side pieces, each with a groove, and a front piece with a tongue on each

side, all combined to form a single piece constructed in the manner and for the purpose substantially as specified.

654,845. COMBINED SCRUBBING-BRUSH AND MOP. WILEY P. ENIS, Booneville, Miss. Filed May 28, 1900. Serial No. 18,299. (No model.)



Claim.—1. A combined scrubbing-brush and mop, comprising a head, a handle therefor, a brush proper applied to the base of the head, a flexible wiping-plate fitted between the base of the head and the back of the brush and also projecting in advance thereof, an angular housing, having its lower edge resting upon the projecting portion of the wiping-plate and its opposite upper edge resting upon the top of the head, and removable fastenings passing through the back of the brush, the wiping-plate, the head and the upper end of the housing.

2. A combined scrubbing-brush and mop, comprising a head, a flexible wiping-plate secured to the base of the head and also projecting in advance thereof, an angular housing having its lower front edge resting upon the projecting portion of the wiping-plate, and its upper rear edge being secured to the head so as to form a receptacle, and one or more coiled springs located within the housing, and having its respective ends connected to the top of the housing and to the projecting portion of the wiping-plate.

3. A combined scrubbing-brush and mop, comprising a head having an upwardly and rearwardly inclined front face, and an opening passing through said front face, a brush applied to the base of the head, a flexible wiping-plate interposed between the base of the head and the back of the brush, and also having a front flange portion projecting in advance of the head, an angular housing having its lower front edge resting upon the projecting portion of the wiping-plate, and its upper rear edge resting upon the upper portion of the head, removable fastenings passing through the back of the brush, the wiping-plate, the head and the rear portion of the housing, a plurality of coiled springs, having their opposite ends formed into eyes, which project outwardly through perforations in the top of the housing and the projecting portion of the wiping-plate, and rods or wires passed through corresponding eyes of the springs, and bearing against the outer sides of the housing and the wiping-plate, respectively.

654,846. INSTRUMENT FOR DETERMINING AMPLITUDE OF VISION. FRANCIS M. GRAHAM, San José, Cal. Filed Oct. 5, 1899. Serial No. 732,734. (No model.)

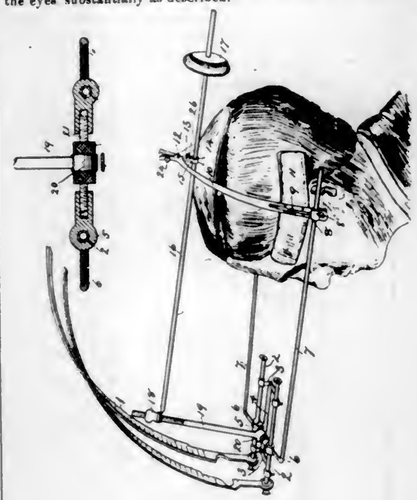
Claim.—1. In a device of the character described, the combination of a tube, means for adjustably supporting it on the head of a patient so as to be in the central or axial line of vision, and an arc pivotally mounted on the tube as an axis, substantially as described.

2. In a device of the character described, the combination of a graduated arm, an axis around which said arm swings, means for supporting said axis on the head of the patient, means for adjusting it to be in a line from the eye, and means for adjusting the distance from the eye of the pivotal point of the arm, substantially as described.

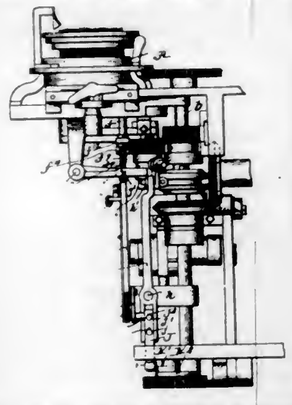
3. In a device of the character described, the combination of a central director or axis, means for securing it to the head of the patient, adjusting devices for bringing said director in a line with the eye, and means carried by said director, for determining the amplitude of vision, substantially as described.

4. In a device of the character described, the combination of directors, one for each eye, means for securing them upon the head of the patient, means for separating them to a distance equal to that between the eyes, adjusting devices for bringing said directors in line with the eye, and means carried by each director for determining the amplitude of vision of the corresponding eye, substantially as described.

5. In a device of the character described, the combination, with a graduated scale for ascertaining the amplitude of vision, of means for securing said scale to the head of the patient at a point behind the eyes substantially as described.



654,847. CIRCULAR-KNITTING MACHINE. HARRY A. HOUSEMAN, Philadelphia, Pa., assignor to the Standard Machine Company, of Pennsylvania. Filed May 19, 1900. Serial No. 17,209. (No model.)



Claim.—1. In a circular-knitting machine, the combination with the needles and operating-levers, provided with bifurcated ends for said needles, of a plate, extending below said levers having a notched pattern-plate attached thereto extending between the bifurcated ends of the levers, a superposed plate, extending above said levers, having a notched pattern-plate extending between the bifurcated ends of the levers, the notches in one pattern-plate corresponding to certain of the levers and the notches in the other pattern-plate corresponding to the other levers and means to move the superposed plate with its pattern-plate vertically.

2. In a circular-knitting machine of the character described, in combination with the needles and operating-levers, provided with bifurcated ends, for said needles, of a pair of superposed pattern-plates extending between the bifurcated ends of the levers, one only of the pattern-plates between the bifurcations of each lever having an orifice corresponding to the tail of said lever and means to move the superposed plate with its pattern-plate vertically.

3. In a circular-knitting machine, the combination with a needle and operating-lever for the said needle, of a plate upon which the end of said lever rests, a rod connected to said plate, a second lever upon which the rod rests, a third lever adapted in its movement in one direction to raise said second lever, a rotatable cam-disk provided with two cams at different parts thereof, said cams adapted to move the third lever in opposite directions, one of said cams extending beyond the other, said third lever being normally in alinement with the cam of greater extent, a pattern-chain, a lug upon said chain and intermediate mechanism between the third lever and the pattern-chain adapted when struck by the lug to move said lever into alinement with both cams.

4. In a circular-knitting machine, the combination with a needle and operating-lever for the said needle, of a plate upon which the end of said lever rests, a rod connected to said plate, a second lever upon which the rod rests, a third lever adapted in its movement in one direction to raise said second lever, a rotatable cam-disk provided with two cams at different parts thereof, said cams adapted to move the third lever in opposite directions, one of said cams extending beyond the other, said third lever being normally in alinement with the cam of greater extent, a pattern-chain, a lug upon said chain and intermediate mechanism between the third lever and the pattern-chain adapted when struck by the lug to move said lever into alinement with both cams, and means to lock said third lever in said position.

5. In a circular-knitting machine, the combination with a needle and operating-lever for the said needle, of a plate upon which the end of said lever rests, a rod connected to said plate, a second lever upon which the rod rests, a third lever adapted in its movement in one direction to raise said second lever, a rotatable cam-disk provided with two cams at different parts thereof, said cams adapted to move the third lever in opposite directions, one of said cams extending beyond the other, said third lever being normally in alinement with the cam of greater extent, a pattern-chain, a lug upon said chain and intermediate mechanism between the third lever and the pattern-chain adapted when struck by the lug to move said lever into alinement with both cams, means to lock said third lever in said position and a lug carried by said pattern-chain adapted to release said lock and allow the third lever to return to its initial position.

6. In a circular knitting machine, the combination with a needle and operating-lever for the said needle, of a plate upon which the end of said lever rests, a rod connected to said plate, a second lever upon which the rod rests, a third lever adapted in its movement in one direction to raise said second lever, a plate having a roller slidably secured in said third lever, a rotatable cam-disk provided with two cams at different parts thereof, said cams adapted to move the third lever in opposite directions, one of said cams extending beyond the other, said roller being normally in alinement with the cam of greater extent, a pattern-chain, a lug upon said chain and intermediate mechanism between the roller-plate and the pattern-chain adapted when struck by the lug to move said roller into alinement with both cams.

7. In a circular-knitting machine, the combination with a needle and operating-lever for the said needle, of a plate upon which the end of said lever rests, a rod connected to said plate, a second lever upon which the rod rests, a third lever adapted in its movement in one direction to raise said second lever, a plate having a roller slidably secured in said third lever, a rotatable cam-disk provided with two cams at different parts thereof, said cams adapted to move the third lever in opposite directions, one of said cams extending beyond the other, said roller being normally in alinement with the cam of greater extent, a pattern-chain, a lug upon said chain and intermediate mechanism between the roller-plate and the pattern-chain adapted when struck by the lug to move said roller into alinement with both cams, means to lock roller in said position.

8. In a circular-knitting machine, the combination with a needle and operating-lever for the said needle, of a plate upon which the end of said lever rests, a rod connected to said plate, a second lever upon which the rod rests, a third lever adapted in its movement in one direction to raise said second lever, a plate having a roller slidably secured in said third lever, a rotatable cam-disk provided with two cams at different parts thereof, said cams adapted to move the third lever in opposite directions, one of said cams extending beyond the other, said roller being normally in alinement with the cam of greater extent, a pattern-chain, a lug upon said chain and intermediate mechanism between the roller-plate and the pattern-chain adapted when struck by the lug to move said roller into alinement with both cams, means to lock roller in said position, and a lug carried by said pattern-chain adapted to release said lock and allow the roller to return to its initial position.

9. In a circular-knitting machine, the combination with a needle and operating-lever for the said needle, of a plate upon which the end of said lever rests, a rod connected to said plate, a second lever upon which the rod rests, a third lever adapted in its movement in one direction to raise said second lever, a rotatable cam-disk provided with two cams at different parts thereof, said cams adapted to move the third lever in opposite directions, one of said cams extending beyond the other said third lever being normally in alinement with the cam of greater extent, a bell-crank connected with said third lever, a spring acting upon said bell-crank to hold the third lever in its normal position, a pattern-chain, a lug upon said pattern-chain, the end of said bell-crank being in alinement with said lug and when struck by it moved against the spring to bring the third lever in alinement with both cams.

10. In a circular-knitting machine, the combination with a needle and operating-lever for the said needle, of a plate upon which the end of said needle rests, a rod connected to said plate, a second lever upon which the rod rests, a third lever adapted in its movement in one direction to raise said second lever, a rotatable cam-disk provided with two cams at different parts thereof, said cams adapted to move the third lever in opposite directions, one of said cams extending beyond the other, said third lever being normally in alinement with the cam of greater extent, a bell-crank connected with said third lever, a spring acting upon said bell-crank to hold the third lever in its normal position, a pattern-chain, a lug upon said pattern-chain, the end of said bell-crank being in alinement with said lug and when struck by it moved against the spring to bring the third lever in alinement with both cams, a locking-lever adapted to interlock with said bell-crank in said position.

11. In a circular-knitting machine, the combination with a needle and operating-lever for the said needle, of a plate upon which the end of said lever rests, a rod connected to said plate, a second lever upon which the rod rests, a third lever adapted in its movement in one direction to raise said second lever, a rotatable cam-disk provided with two cams at different parts thereof, said cams adapted to move the third lever in opposite directions, one of said cams extending beyond the other, said third lever being normally in alinement with the cam of greater extent, a bell-crank connected with said third lever, a spring acting upon said bell-crank to hold the third lever in its normal position, a pattern-chain, a lug upon said pattern-chain, the end of said bell-crank being in alinement with said lug and when struck by it moved against the spring to bring the third lever in alinement with both cams, a locking-lever adapted to interlock with said bell-crank in said position, and a lug carried by said pattern-chain adapted to release said locking-lever and allow the spring to act to return the bell-crank to its initial position.

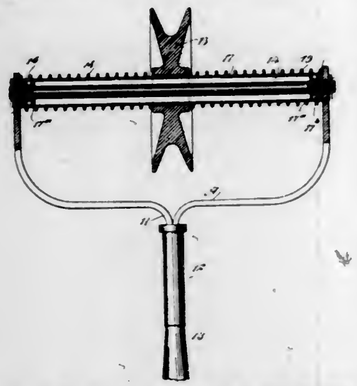
12. In a circular-knitting machine, the combination with a needle and operating-lever for the said needle, of a plate upon which the end of said needle rests, a rod connected to said plate, a second lever upon which the rod rests, a third lever adapted in its movement in one direction to raise said second lever, a plate having a roller slidably secured in said third lever, a rotatable cam-disk provided with two cams at different parts thereof, said cams adapted to move the third lever in opposite directions, one of said cams extending beyond the other, said roller being normally in alinement with the cam of greater extent, a bell-crank connected with said roller-plate, a spring acting upon said bell-crank to hold the roller-plate in its normal position, a pattern-chain, a lug upon said pattern-chain, the end of said bell-crank being in alinement with said lug and when struck by it moved against the spring to bring the roller in alinement with both cams.

13. In a circular-knitting machine, the combination with a needle, and operating-lever for the said needle, of a plate upon which the end of said lever rests, a rod connected to said plate, a second lever upon which the rod rests, a third lever adapted in its movement in one direction to raise said second lever, a plate having a roller slidably secured in said third lever, a rotatable cam-disk provided with two cams at different parts thereof, said cams adapted to move the third lever in opposite directions, one of said cams extending beyond the other, said roller being normally in alinement with the cam of greater extent, a bell-crank connected with said roller-plate, a spring acting upon said bell-crank to hold the roller-plate in its normal position, a pattern-chain, a lug upon said pattern-chain, the end of said bell-crank being in alinement with said lug and when struck by it moved against the spring to bring the roller in alinement with both cams, a locking-lever adapted to interlock with said bell-crank in said position.

14. In a circular-knitting machine, the combination with a needle, and operating-lever for the said needle, of a plate upon which the end of said lever rests, a rod connected to said plate, a second lever upon which the rod rests, a third lever adapted in its movement in one direction to raise said second lever, a plate having a roller slidably secured in said third lever, a rotatable cam-disk provided with two cams at different parts thereof, said cams adapted to move the third lever in opposite directions, one of said cams extending beyond the other, said roller being normally in alinement with the cam of greater extent, a bell-crank connected with said roller-plate, a spring acting upon said bell-crank to hold the roller-plate in its normal position, a pattern-chain, a lug upon said pattern-chain, the end of said bell-crank being in alinement with said lug and when struck by it moved against the spring to bring the roller in alinement with both cams, a locking-lever adapted to interlock with said bell-crank in said position, and a lug carried by said pattern-chain adapted to re-

lease said locking-lever and allow the spring to act to return the bell-crank to its initial position.

654,848. TROLLEY-HARP. EDWARD G. JOHNSON, Brigantine, N. J., assignor to the Edison-Johnson Electrical Manufacturing Company, of New York. Filed Feb. 16, 1900. Serial No. 5,473. (No model.)

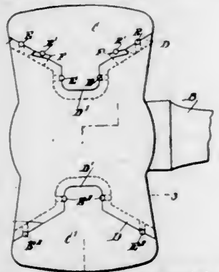


Claim.—1. The combination of the trolley-harp, the shaft journaled thereon, the trolley-wheel mounted to turn loosely on said shaft and also capable of sliding thereon, and springs bearing against opposite sides of the trolley-wheel and against fixed abutments.

2. The combination of the trolley-harp, the coiled springs bearing with their outer ends against the harp members, the trolley-wheel against which the inner ends of said springs abut, the fixed shaft extending centrally through the coiled springs and the trolley-wheel, and secured to the harp members, and the tubular shaft interposed between the fixed shaft on one hand and the trolley-wheel and springs on the other hand, the wheel being free to turn and slide on said tubular shaft.

3. The combination of the trolley-harp, the coiled springs bearing with their outer ends against the harp members, the trolley-wheel against which the inner ends of said springs abut, the fixed shaft extending centrally through the coiled springs and the trolley-wheel, and secured to the harp members, and the tubular shaft mounted upon ball-bearings upon the fixed shaft and interposed between the latter on one hand and the trolley-wheel and springs on the other hand, the wheel being free to turn and slide on said tubular shaft.

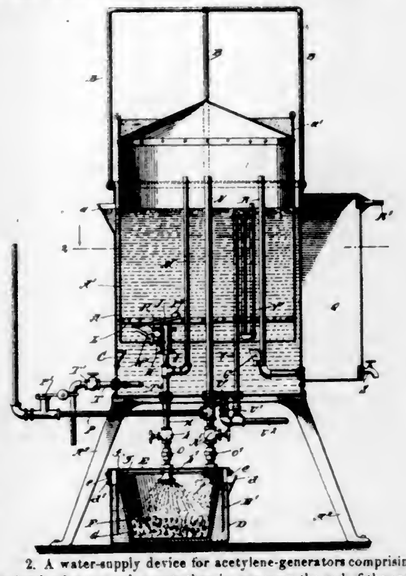
654,849. AX. STEVE T. JOHNSON, Trinidad, Cal. Filed Oct. 4, 1899. Serial No. 732,496. (No model.)



Claim.—An ax comprising a head provided with a V-shaped grooved edge or blade-seat, the outline of which is U-shaped at its central portion and divergent at the side portions from the central portion to the side edges of the head, a blade fitted to enter said seat, angular keys passing transversely between the edges of the V-shaped groove of the head and the blade at the divergent side portions of the blade-seat, and pins passing transversely between the edges of the blade and the said angular keys.

654,850. ACETYLENE-GAS-GENERATING APPARATUS. CHAS. W. METCALF, El Paso, Tex., assignor of one-half to John Irving McKenna, same place. Filed July 7, 1899. Serial No. 723,069. (No model.)

Claim.—1. An acetylene-generating apparatus comprising a gasometer having a rising-and-falling bell, a generating-chamber, a water-feed pipe extending from the tank of the gasometer to the generator and open at its upper end within the tank, two independently-pivoted valves for said pipe within the gasometer-tank and arranged in series or tandem, the upper valve for the open end of the pipe being normally closed and the lower valve normally open, the said gasometer-bell having an internal projecting portion adapted when the gasometer descends to engage the first valve to open it and by a continued descent to engage and move the other valve to close it, substantially as described.



2. A water-supply device for acetylene-generators comprising a casing having two valve-seats therein, one upon the end of the casing and the other inward therefrom and adapted to receive a gate-valve, two levers pivoted upon said casing, the outermost carrying a lift-valve which is normally closed, a gate-valve connected to the other lever and normally open, and operating means for said valves engaging first the lever of the outermost or lift valve to open it and then upon a sufficient continuation of movement in the same direction engaging the lever of the other or gate valve to close it, substantially as described.

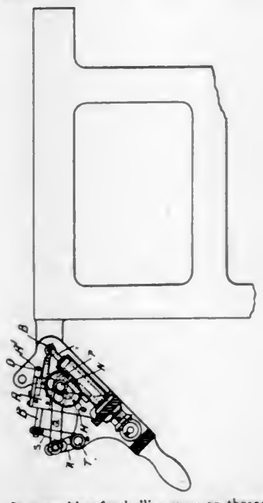
3. An acetylene-generating apparatus, comprising a gasometer having a rising-and-falling bell, a generating-chamber, a gas-conveying pipe leading from the generating-chamber to the gasometer, a feed-water pipe leading from the water-space of the gasometer-tank to the generating-chamber, the said pipe being provided at its upper open end with a valve-seat, a pivoted lever having a valve thereon adapted to engage the said valve-seat, the said valve being normally closed, a second valve for said pipe normally open and located below the first valve, means for successively operating the valves, and a pipe connected with said feed-pipe at a point below the said valves and extending upward within the gasometer above the water-level in the tank, substantially as described.

4. A water-supplying device for acetylene-generators, comprising a valve-casing having a valve-seat upon its outer end and a slide or gate valve seat inward from said end, a pivoted lever having a valve thereon adapted to engage the outer valve-seat, a slide or gate valve in the other valve-seat, a lever engaging said gate-valve, and a gasometer-bell having an internal flange adapted in its descent to engage said levers in succession to first open the outer valve and then to close the inner valve, substantially as described.

5. A water-supplying device for acetylene-generators, comprising a tank adapted to contain water, a generator, a feed-water pipe leading from said tank to the generator, a valve-casing on the end of said pipe within the tank, a valve-seat on the outer end of said casing, a pivoted lever having a valve thereon adapted to engage said seat, the said valve being normally closed, a slide or gate valve seat arranged in said casing, a slide or gate valve for said seat and normally open, a pivoted lever connected with said slide or gate valve, and a rising-and-falling gasometer-bell adapted in its descent to operate the lever of the first valve to open said valve and by a continued descent to operate the lever of the other valve to close said valve, substantially as described.

6. An acetylene-generating apparatus, comprising a generator, a gasometer supported above the generator and having a rising-and-falling bell, a water-supply pipe for the tank of the gasometer entering near the bottom thereof, a water-feed pipe connecting the gasometer-tank with the generator and extending upward within the gasometer-tank above the water-inlet thereof, a valve for controlling the admission of water to said pipe, means for automatically operating said valve, a gas-conveying pipe leading from the generator to the gasometer, the said pipe being provided with an overflow-pipe having a relief-valve, and cut-off valves in the water-feed and gas-conveying pipes between the generator and the gasometer, substantially as described.

654,851. MACHINE FOR BALLING YARN. WALTER MCGEE and DAVID MCGEE, Paisley, Scotland. Filed Feb. 14, 1900. Serial No. 5,153. (No model.)



Claim.—1. In a machine for balling yarn or thread the combination with a winding-spindle, a rod D, a needle E carried by rod D, and having an eye E', means for reciprocating rod D, cutter B, means for actuating the cutter to sever the yarn or thread, hook G between the cutter and the ball of yarn wound on the spindle, means for passing hook G through needle-eye E' and engaging the yarn, whereby the cut end of the yarn will be pulled through eye E', and will be drawn through the outer convolutions of the ball by the backward movement of the needle.

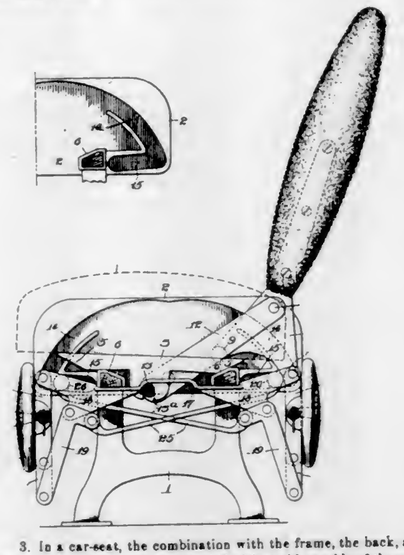
2. In a machine for balling yarn or thread the combination with the thread-cutting mechanism, of a hook secured to the cutter-bar, a cam-piece also secured thereon, a transverse sliding bar actuated by said cam-piece, and a needle adjustably secured to the sliding bar and having its eye directed toward the cutter-bar, and adapted to be entered by said hook, substantially as and for the purpose set forth.

3. In a machine for balling yarn or the like, the combination of thread-cutting mechanism, hook G movable with the cutting mechanism, cam-piece F with cam-slot therein, a transverse sliding bar actuated by the cam-piece, a needle secured to the sliding bar, said needle having an eye E' in the path of hook G, as specified.

654,852. CAR-SEAT. WILLIAM M. NORCROSS, Philadelphia, Pa. Filed May 6, 1899. Serial No. 715,803. (No model.)

Claim.—1. In a car-seat, the combination, with the frame and the back, of a depending arm on said back, a lever pivoted to said frame and having a fixed pivotal connection with the arm, a cam connection between said frame and arm, whereby as the back is swung upon the lever from side to side of the seat the back is guided and adjusted in respect to the seat by said pivotal and cam connections, and means whereby the back and its arm when swung to either side of the seat may be tilted rearwardly upon the lever independently of the cam connection.

2. In a car-seat, the combination, with the frame and the back, of a depending arm on said back, a lever pivoted to said frame and having a fixed pivotal connection with the arm, a cam connection between said frame and arm, whereby as the back is swung upon the lever from side to side of the seat the back is guided and adjusted in respect to the seat by said pivotal and cam connections, normally-retracted foot-rests at or adjacent the respective sides of the seat, and means whereby the said rests are alternately actuated by the adjustment of the back.



3. In a car-seat, the combination with the frame, the back, and means whereby the back may be shifted from side to side of the seat, of normally-retracted rests at or adjacent the respective sides of the seat, and means whereby the back when shifted to a certain angle at either side of the seat will not affect the positions of said rests, but when the back is tilted beyond such angle the forward rest will be projected.

4. In a car-seat, the combination with the frame, the back, and means whereby the back may be shifted from side to side of the seat, of normally-retracted rests at or adjacent the respective sides of the seat, lever mechanism connected with said rests, oppositely-disposed independently-movable push-bars connected with said mechanism, and means whereby said bars are alternately actuated by the adjustment of the back in a manner to project the forward rest and release the rearward rest.

5. In a car-seat, the combination with the frame, the tiltable back, and means for supporting and adjusting the latter, of a rest at or adjacent the front of said seat, a lever, operative connections between the same and the rest, a push-bar pivotally connected at its forward end with said lever, and loosely supported at its inner or rearward end so as to have free longitudinal movement within certain limits independently of the back, and means whereby said bar is advanced when the back is tilted beyond a certain angle.

6. In a car-seat, the combination with the frame, the tiltable back, and means for supporting and adjusting the latter, of a rest at or adjacent the front of said seat, a lever, a bar pivotally connected therewith and with said rest, a guide or link for said bar, and separable means intermediate the lever and the back adapted to abut against each other and project the said rest when the back is tilted, and to be separated when the back is moved in a reverse direction.

7. In a car-seat, the combination with the frame, the back, and means whereby it may be shifted from side to side of the seat, and in either position of adjustment tilted rearward, of rests, levers adjacent thereto, bar-and-link connections between the adjacent levers and rests, push-rods pivotally connected with the respective levers and extended toward opposite sides of the seat, and means whereby said bars are independently actuated by the adjustment of the back.

8. In a car-seat, the combination with the frame provided with a lateral cam, and with a guide communicating with said cam, of a seat-back, a depending arm thereon, means on said arm to coact with said cam and guide, a rest at or adjacent the front of the seat, and operative connections between said rest and the guide.

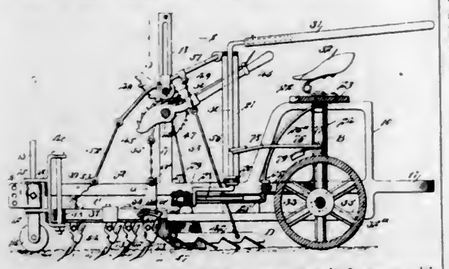
9. In a car-seat, the combination with the frame provided with lateral cams having guides leading therefrom respectively, of a seat-back, an arm thereon provided with two cam-engaging portions to coact with said cams and guides as described, rests at or adjacent

the respective sides of the seat, and operative connections between said rests and the guides respectively.

10. In a car-seat, the combination with the frame provided with two reverse-cams, the lower extremities of which communicate with inwardly-extending guideways, of a seat-back, a depending arm thereon provided with studs adapted to coact with said cams, and guideways, a lever pivoted to said frame and arm, crank-levers, a bridge or support therefor, oppositely-disposed rest-sections, supporting-bars therefor pivotally connected with said crank-levers, link connections for said bars, and oppositely-disposed push-bars connected with said crank-levers and operatively engaged with said guideways.

11. In a car-seat, the combination with the frame provided with two reverse-cams, the lower extremities of which communicate with inwardly-extending guideways, a seat-section, and an adjustable support therefor, of a back, a depending arm thereon provided with studs adapted to coact with said cams and guideways, a lever pivoted to said frame and arm and operatively connected with the seat-support, crank-levers, a bridge or support therefor, oppositely-disposed rest-sections, supporting-bars therefor pivotally connected with said crank-levers, link connections for said bars, and oppositely-extending push-bars connected with said crank-levers and with the said guideways.

654,353. CULTIVATOR. THOMAS OLDHAM, Leipsic, Ind. Filed Mar. 10, 1900. Serial No. 8,155. (No model.)



Claim.—1. In an agricultural implement, a main frame, a cultivator-frame, a drag and a roller carried by the main frame, the drag being between the roller and the cultivator-frame, and means for raising and lowering the drag and the cultivator-frame and for guiding the roller to the right or to the left, as described.

2. In an agricultural implement, a main frame wheel-supported at its forward end, a roller pivoted at the rear end of the frame, means for turning the said roller, a brake for the roller, a cultivator and drag carried by the main frame between its forward wheel-support and the roller, and means for simultaneously raising and lowering the drag and cultivator-frame, as described.

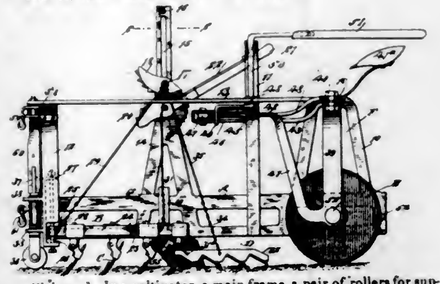
3. In an agricultural implement, a main frame, a supporting-wheel for the forward end of the main frame, an auxiliary frame pivotally attached to the rear portion of the main frame, a roller carried by the said auxiliary frame, a lever operated from the main frame and arranged to turn the auxiliary frame to the right or to the left, a cultivator-frame pivotally attached to the forward portion of the main frame and capable of vertical movement, a drag connected with the cultivator-frame, an adjusting-shaft connected with the drag and the cultivator-frame, and means for raising and lowering the said shaft.

4. In an agricultural implement, the combination, with a main frame, a supporting-wheel located at the forward portion of the main frame, the shaft of the wheel having an attached clevis, an auxiliary frame pivoted to the main frame at the rear, a lever connected with the auxiliary frame and adapted to move the same to the right or to the left, a roller-guide for the auxiliary frame, a shaft carried by the said auxiliary frame and having rollers adapted to travel on tracks formed on the main frame, and a roller arranged for engagement with the ground and carried by the said shaft, of uprights carried by the main frame, a shaft having vertical movement in the said uprights, an equalizing-bar supported by said shaft, toothed segments carried by the adjustable shaft, a shaft mounted to rotate below the adjustable shaft and having toothed segments adapted for engagement with those on the adjustable shaft, means for rocking the rotary shaft, a cultivator-frame pivotally and adjustably carried by the main frame, a drag also carried by the main frame, and connections between the cultivator-frame and drag and the equalizing-bar, and the cultivator-frame and the adjustable shaft, as specified.

5. In an agricultural implement, the combination, with a main frame, a supporting-wheel located at the forward portion of the main frame, the shaft of the wheel having an attached clevis, an auxiliary frame pivoted to the main frame at the rear, a lever connected with the auxiliary frame and adapted to move the same to the right or to the left, a roller-guide for the auxiliary frame, a shaft carried by the said auxiliary frame and having rollers adapted to travel on tracks formed on the main frame, and a roller arranged for engagement with the ground and carried by the said shaft, of uprights carried by the main frame, a shaft having vertical movement in the said uprights, an equalizing-bar supported by said shaft, toothed segments carried by the adjustable shaft, a shaft mounted to rotate below the adjustable shaft and having toothed segments adapted for engagement with those on the adjustable shaft, means for rocking the rotary shaft, a cultivator-frame pivotally and adjustably carried by the main frame, a drag also carried by the main frame, and connections between the cultivator-frame and drag and the equalizing-bar and the cultivator-frame and the adjustable shaft, guards in the form of runners pivotally attached to the side portions of the main frame and located where the drag and the cultivator-frame connect, and means for lifting the said guards when the adjustable shaft is raised and lowered, as described.

6. In an agricultural implement, the combination, with a beam, a clip secured to the said beam and a bolt carried by the said clip, of a receiving-plate mounted to rock on said bolt, said receiving-plate having a slotted head and a toothed recess in one side of the head, the said plate being likewise provided with means for receiving a shovel-shank or a harrow-tooth, a tubular bolt passed through the slot in the head portion of the receiving-plate and having a serrated surface for engagement with the toothed surface of the said head, a spring coiled around the pivot-bolt of the receiving-plate and having bearing at one end against a fixed support independent of the receiving-plate, the other end of the spring being passed through the bore in the tubular bolt, as and for the purpose set forth.

654,354. CULTIVATOR. THOMAS OLDHAM, Leipsic, Ind. Filed Mar. 12, 1900. Serial No. 8,391. (No model.)



Claim.—1. In a cultivator, a main frame, a pair of rollers for supporting the main frame at the rear, a pair of wheels for supporting the main frame at the front, cultivator-frames arranged in pairs and pivotally attached to the forward portion of the main frame, a pivoted supporting-frame for the rollers independent of the main frame, means for turning said supporting-frame, and an adjusting device for the cultivator-frames, as set forth.

2. In a cultivator, a main frame, wheel-supported at the front and roller supported at the rear, the rollers being in pairs, a pivoted frame independent of the main frame, and in which the said rollers are mounted, a shifting lever for the roller-carrying frame, cultivator-frames pivotally attached at the forward portion of the main frame, said cultivator-frames having vertical adjustment, an adjusting-shaft connected with the cultivator-frames, an adjusting mechanism for the said shaft substantially as described, and drags connected with the cultivator-frames and having connection with the adjusting-shaft, as set forth.

3. In a cultivator, a main frame open centrally at the front and at the rear, supporting-wheels at each side of the front opening in the frame, rollers at each side of the rear opening in the main frame, a pivoted supporting-frame for the said rollers, a steering-lever connected with the said roller-supporting frame, a cultivator-frame pivoted at each side of the center of the main frame at its forward portion and having vertical adjustment on said main frame, a drag connected with each of the cultivator-frames, a shaft having vertical movement, a support for the said shaft, toothed segments carried by the said shaft, and lifting-segments carried by a second and rotary shaft, means for turning the latter shaft, and connections between the vertically-movable shaft and the cultivator-frames and drags.

4. In a cultivator, the combination, with a frame provided with a front and a rear arch, supporting-wheels at each side of the forward arch, an equalizing-bar pivoted at the front portion of the frame and having downwardly-extending members pivoted to the frame, an auxiliary frame pivotally attached to the rear portion of the main frame.

rollers journaled at each side of the center of the auxiliary frame, guides for the said rollers, and a steering-lever arranged to turn the roller-supporting frame to the right or to the left, of cultivator-frames pivoted one at each side of the center of the main frame at the front, each cultivator-frame being capable of vertical adjustment, supports carried from the main frame, a shaft vertically adjustable in the said supports, a second shaft mounted to turn in the supports below the adjustable shaft, toothed segments carried by the adjustable shaft, meshing toothed segments carried by the rotating shaft, a lever whereby the rotating shaft is rocked and its segments are brought into lifting action, and a connection between the cultivator-frames and the adjustable shaft, as specified.

5. In a cultivator, the combination, with a frame provided with a front and with a rear arch, supporting-wheels at each side of the forward arch, an equalizing-bar pivoted at the front portion of the frame and having downwardly-extending members pivoted to the frame, an auxiliary frame pivotally attached to the rear portion of the main frame, rollers journaled at each side of the center of the auxiliary frame, guides for the said rollers, and a steering-lever arranged to turn the roller-supporting frame to the right or to the left, of cultivator-frames pivoted one at each side of the center of the main frame at the front, each cultivator-frame being capable of vertical adjustment, supports carried from the main frame, a shaft vertically adjustable in the said supports, a second shaft mounted to turn in the supports below the adjustable shaft, toothed segments carried by the adjustable shaft, meshing toothed segments carried by the rotating shaft, a lever whereby the rotating shaft is rocked and its segments are brought into lifting action, a connection between the cultivator-frames and the adjustable shaft, drags attached to the cultivator-frames and connected with the adjustable shaft, and guards or fenders pivoted to the main frame and likewise connected with the adjusting-shaft, as and for the purpose specified.

654,355. ELECTRIC GAS-LIGHTER. JOHN Y. PARKE, Philadelphia, Pa. Filed May 9, 1899. Serial No. 716,121. (No model.)



Claim.—1. In an electric gas-lighting device, the combination with a burner having a fixed electrode secured near its tip, of a movable electrode adapted to oscillate with the gas-valve as the said valve is turned, an arm secured to the movable electrode about midway of its length extending in the path of the burner-pipe, said arm being constructed and arranged so as to contact with the burner-pipe and to guide the movable electrode on the return movement in front of and out of electrical contact with the fixed electrode, substantially as described.

2. In an electric gas-lighting apparatus, an inwardly-projecting arm attached to the movable electrode constructed and arranged to come into physical contact with the burner-pipe upon the return movement of the movable electrode and to guide the movable electrode on such return movement in front of and out of electrical contact with the fixed electrode, said arm in connection with the movable electrode being arranged to yield on the forward sweep so as not on such movement to prevent electrical contact of the two electrodes, substantially as described.

3. In an electric gas-lighting apparatus, a fixed electrode secured near the burner-tip, a yielding electrode carried by the operating-lever, an arm secured to said yielding electrode intermediate of its length extending in the path of the burner-body adapted on its return movement to so contact with the burner-body as to guide the movable electrode away from the fixed electrode and arranged and constructed in the forward movement of the movable electrode as to yield when in contact with the burner-body so as not to prevent electrical contact of the two electrodes, substantially as described.

4. In an electric gas-lighting apparatus the combination with the burner having a fixed electrode secured near its tip, a one-way gas-valve, a movable electrode and operating-lever secured thereto and adapted to oscillate as the said gas-valve is turned on and off, an arm secured to the movable electrode about midway of its length extending in the path of the burner-pipe, said arm being constructed and arranged to guide the movable electrode by physical contact with the burner-body on the return movement out of electrical contact with the fixed electrode and adapted to yield in the forward sweep so as not to prevent electrical contact of the two electrodes upon said forward sweep, substantially as described.

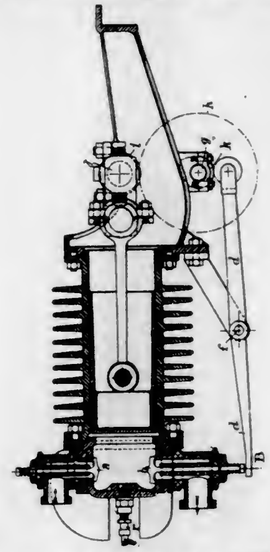
5. In an electric gas-lighting apparatus, the combination of the burner-body, a fixed electrode, an oscillating lever connected with the gas-valve for controlling the gas-supply, a movable electrode carried by said lever comprising a coiled section terminating in an upwardly-projecting straight finger, and an arm secured to the top of the coiled section disposed substantially horizontally constructed and arranged to make physical contact with the body of the burner on the return movement of the movable electrode to guide said electrode on such movement out of electrical contact with the fixed electrode and arranged to yield on the forward sweep so as not to prevent electrical contact of the two electrodes at that time, substantially as described.

6. In an electric gas-lighting apparatus, a movable electrode comprising a coiled spring terminating in an upwardly-projecting member for contacting with the fixed electrode and a transversely inwardly projecting member adapted to make physical contact with the burner-body on the return sweep to prevent electrical contact of the electrodes and constructed to yield on the forward sweep when in contact with the burner-body so as not to prevent electrical contact in such forward sweep, substantially as described.

7. In an electric gas-lighting device, the combination of the burner-body, a fixed electrode carried thereby, a movable electrode adapted to contact with the fixed electrode, and an operating-lever connected with the gas-valve having an arm, *d*, bent inwardly as at *d'*, and terminating in a substantially L-shaped extension, for the purpose specified.

8. In an electric gas-lighting apparatus, a movable electrode comprising a spring-arm terminating in an upwardly-projecting member for contacting with the fixed electrode, a movable oscillating arm connected with the gas-valve, said movable spring-electrode being mounted upon said oscillating arm, an inwardly-projecting arm secured to said spring-electrode about midway in its length transversely disposed thereto adapted to make physical contact with the burner-body on the return sweep to push the movable electrode away from the fixed electrode to prevent electrical contact of the electrodes and constructed to yield on the forward sweep when the said transverse arm is in contact with the burner-body so as not to prevent electrical contact of the electrodes in such forward sweep, substantially as described.

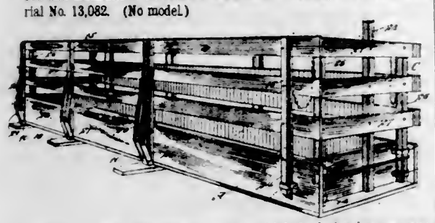
654,356. GAS OR PETROLEUM MOTOR. JEAN RAMBAUD, Lyons, France. Filed July 6, 1899. Serial No. 722,953. (No model.)



Claim.—In a gas or like engine, the combination with a pair of cylinders, a piston operating in each of the said cylinders, and each suitably connected to a crank arranged at an angle of one hundred and eighty degrees with respect to each other and alternately operating, a valve-casing secured to one end of each of the said cylinders, a drive-shaft connected to said cranks, a spring-actuated valve mounted in each of the said casings and adapted to admit external air to said cylinders, means connected to said drive-shaft adapted for operating the said valve, a valve-casing secured to one end of each of the said cylinders, a spring-actuated valve operating therein and adapted

to automatically admit an explosive charge to the said cylinders, a valve-casing secured to one end of each of the said cylinders, a spring-actuated valve arranged therein and adapted to permit of the discharge of the burned gases after the explosion of the said charge, means connected to said drive-shaft for operating said valve, and a suitable igniting mechanism arranged in each of the said cylinders, substantially as described.

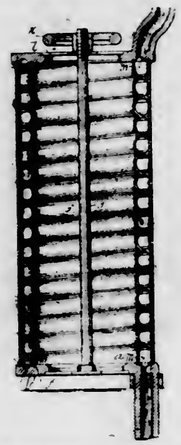
654,857. COMBINED HAY AND STOCK RACK. THOMAS A. RAPSON and HERBERT J. FURNESS, Filion, Mich. Filed Apr. 16, 1900. Serial No. 13,082. (No model.)



Claim.—1. The combination with a vehicle-body having recesses in the outer faces of its side portions, of side racks arranged to extend perpendicularly or at an angle relatively to the body, braces pivoted to the racks, and links pivoted to the racks and to a part supported by the body and adapted to engage their ends in said recesses, substantially as specified.

2. The combination, with a vehicle-body, the cross-sills whereof are provided with openings at their outer end portions, the outer faces of the side portions of the body having recesses therein above said openings, of side racks consisting of a series of beams arranged to extend either perpendicularly at the sides of the wagon-body or outward at an angle thereto, strips attached to the said beams, uprights arranged to enter the openings in the cross-sills, to which uprights are pivotally attached the inner ends of the said beams, clamps carried by the uprights, arranged for engagement with the upper edges of the sides of the wagon-body, braces pivotally attached to the beams of the rack, extending downwardly therefrom and adapted in one position of the rack to have bearing at their lower ends on the cross-sills of the vehicle-body, and links pivotally connecting the braces with the uprights, the links being of such length that they may extend beyond the uprights and enter the recesses in the sides of the wagon-body, as specified

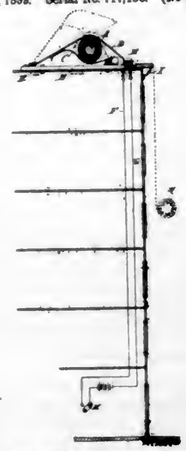
654,858. BEER-COOLER. OTTO RODERWALD, Chicago, Ill. Filed Apr. 21, 1900. Serial No. 13,692. (No model.)



Claim.—1. The combination with a pair of heads provided with annular channel and gaskets on each side thereof, an entrance-pipe to one and an exit to the other of said heads, of a spirally-grooved cylindrical shell inclosed by a smooth and close-fitting shell, each shell fitting upon a pair of said gaskets, a central rod and means thereon to compress said heads upon said cylinder ends, substantially as specified.

2. The combination with a pair of heads provided with central openings, an annular channel and gaskets on each side thereof, an entrance-pipe to one and an exit-pipe to the other of said heads, of a spirally-grooved cylindrical shell inclosed by a smooth and close-fitting shell, each shell fitting upon a pair of said gaskets, a central rod and means thereon to compress said heads upon said cylinder ends, substantially as specified.

654,859. FIRE-ESCAPE. EUGENE T. RYAN, New York, N. Y. Filed May 17, 1899. Serial No. 717,130. (No model.)



Claim.—1. The combination with a fixed support, of a flexible fire-escape secured at one end to said support and adapted to be folded or coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, releasable means for retaining it in its position of non-use, and a propelling-spring for initiating its movement to position for use, substantially as described.

2. The combination with a fixed support, of a flexible fire-escape secured at one end to said support and adapted to be folded or coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, electrically-controllable means for retaining it in its position of non-use, and a propelling-spring for initiating its movement to position for use, substantially as described.

3. A flexible fire-escape for attachment to the upper part of a building, adapted to be folded or coiled up and held in a position of non-use and when released to be automatically delivered into position for use, in combination with means comprising a lock of fusible metal for retaining it in its position of non-use, electrically controllable from a distant point for its release, substantially as described.

4. The combination with a fixed support, of a flexible fire-escape secured at one end to said support and adapted to be folded or coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, releasable means for retaining it in its position of non-use, and a spring-support for the folded or coiled fire-escape also adapted to initiate its movement to position for use, substantially as described.

5. The combination with a fixed support, of a flexible fire-escape secured at one end to said support and adapted to be folded or coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, electrically-controllable means for retaining it in its position of non-use, and a spring-support for the folded or coiled fire-escape also adapted to initiate its movement to position for use, substantially as described.

6. A flexible fire-escape for attachment to the upper part of a building, adapted to be folded or coiled up and held in a position of non-use and when released to be automatically delivered into position for use, in combination with means comprising a lock of fusible metal electrically controllable from a distant point for its release, and a spring for propelling it when released toward its position for use, substantially as described.

7. The combination with a fixed support of a flexible fire-escape secured at one end to said support and adapted to be folded or coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, a movable hood extending over the fire-escape and adapted when closed to retain it in its position of non-use, releasable means for retaining the hood in such position, and a spring for moving the hood from retaining position when thus released, substantially as described.

8. The combination with a fixed support, of a flexible fire-escape secured at one end to said support and adapted to be folded or coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, a movable hood extending over the fire-escape and adapted when closed to retain it in its position of non-use, electrically-controllable means for retaining the hood in such position, and a spring for moving the hood from retaining position when thus released, substantially as described.

9. A flexible fire-escape for attachment to the upper part of a building, adapted to be folded or coiled up and held in a position of non-use and when released to be automatically delivered into position for use, in combination with a movable hood extending over and adapted when closed to retain the fire-escape in its position of non-use, means comprising a lock of fusible metal for retaining the hood in such position, electrically controllable from a distant point for its release, and a spring for moving the hood from retaining position when thus released, substantially as described.

10. The combination with a fixed support, of a flexible fire-escape secured at one end to said support and adapted to be folded or coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, a rearwardly-movable hood extending over the fire-escape and adapted when closed to retain it in its position of non-use, releasable means for retaining the hood in such position, and a forwardly-moving spring put under tension by the hood and adapted to throw the latter open and to initiate the movement of the fire-escape, substantially as described.

11. The combination with a fixed support, of a flexible fire-escape secured at one end to said support and adapted to be folded or coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, a rearwardly-movable hood extending over the fire-escape and adapted when closed to retain it in its position of non-use, electrically-controllable means for retaining the hood in such position, and a forwardly-moving spring put under tension by the hood and adapted to throw the latter open and to initiate the movement of the fire-escape, substantially as described.

12. A flexible fire-escape for attachment to the upper part of a building, adapted to be folded or coiled up and held in a position of non-use and when released to be automatically delivered into position for use, in combination with a spring for propelling it toward the latter position, a movable hood extending over the fire-escape and spring and adapted when closed to retain the former in its position of non-use and the latter under tension, and means comprising a lock of fusible metal for retaining the hood in its closed position, electrically controllable from a distant point for its release, substantially as described.

13. A fire-escape apparatus comprising a suitable support, a flexible ladder A, fast at one end and coiled or folded upon itself at the other, forwardly-moving propelling-spring C, rearwardly-moving hinged hood D, and a lock engaging the cover, substantially as described.

14. A fire-escape apparatus comprising a suitable support, a flexible ladder A, propelling-spring C, hinged hood D, and a lock E of fusible metal for engaging the hood, substantially as described.

15. A fire-escape apparatus comprising a support, a flexible ladder A, fast at one end and coiled or folded upon itself at the other, a spring for propelling the ladder forward, a hinged hood D adapted to be thrown in the opposite direction by the propelling-spring, and a lock engaging the hood, substantially as described.

16. A fire-escape apparatus comprising a support, a flexible ladder A, a spring for propelling the ladder forward, a hinged hood D adapted to be thrown backward by the propelling-spring, and a lock E of fusible metal for engaging the hood, substantially as described.

17. In a building, the combination of a flexible fire-escape secured to the upper part thereof in rear of a cornice or the like and adapted to be folded or coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, a lock for retaining the fire-escape in its position of non-use, an electric circuit leading from a distant point controlling the lock, and means for propelling the fire-escape toward the cornice or the like.

18. In a building, the combination of a flexible fire-escape secured to the upper part thereof and adapted to be coiled or folded up thereon and held in a position of non-use and when released to be automatically delivered to position for use, an electric circuit leading to the lower part of the building, and a lock of fusible metal for retaining the fire-escape in its position of non-use, controlled by said circuit to release the fire-escape, substantially as described.

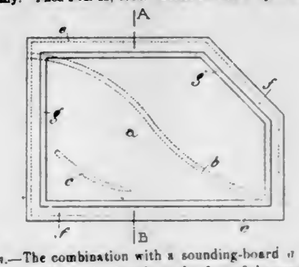
19. In a building, the combination of a flexible fire-escape secured at one end to the upper part thereof in rear of a cornice or the like and adapted to be folded or coiled up at its other end and held in position of non-use and when released to unfold or uncoil itself into position for use, a lock for retaining the fire-escape in its position of non-use, an electric circuit leading from a distant point controlling the lock, and a spring for propelling the fire-escape toward the cornice or the like.

20. In a building, the combination of a plurality of flexible fire-escapes secured to the upper part thereof and each adapted to be coiled or folded up thereon and held in position of non-use and when released to be automatically delivered to position for use, an electric circuit leading to the lower part of the building, and a lock of fusible metal for each fire-escape for retaining it in its position of non-use, the several locks being controlled by said circuit to simultaneously release the several fire-escapes, substantially as described.

21. In a building, the combination of a flexible fire-escape secured at one end to the upper part thereof in rear of a cornice or the like and adapted to be folded or coiled up at its other end and held in position of non-use and when released to unfold or uncoil itself into position for use, a lock for retaining the fire-escape in its position of non-use, an electric circuit leading from a distant point controlling the lock, a spring for propelling the fire-escape toward the cornice or the like, and a hood extending over the fire-escape and spring and retained in closed position by the lock and opened by said spring when released.

22. In a building, the combination of a flexible fire-escape secured to the upper part thereof and adapted to be coiled or folded up thereon and held in a position of non-use and when released to be automatically delivered to position for use, an electric circuit leading to the lower part of the building, a lock of fusible metal for retaining the fire-escape in its position of non-use, controlled by said circuit to release the fire escape, a propelling-spring for the fire-escape, and a hood extending over the fire-escape and spring and retained in closed position by said lock and opened by said spring when released, substantially as described.

654,860. SOUNDING-BOARD SUPPORT. EMIL SCHOFF, Berlin, Germany. Filed Feb. 12, 1900. Serial No. 4,934. (No model.)



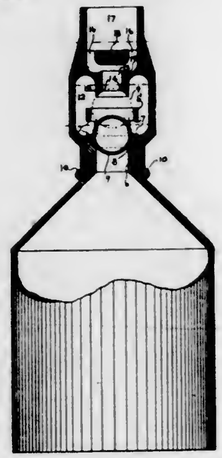
Claim.—The combination with a sounding-board *a* of a fillet *c* having one of its faces glued to the under face of the sounding-board at its edge, a hard-wood-plank frame *f* having the same shape exteriorly as the sounding-board glued at the outer edge of one of its faces to the under face of said fillet *c* and a fillet *g* glued to the under face of said plank frame *f* at the inner edge thereof.

654,861. NON-REFILLABLE BOTTLE. THEODORE P. SCHOTT, Chicago, Ill. Filed Sept. 11, 1899. Serial No. 730,075. (No model.)

Claim.—1. A non-refillable bottle comprising a body having a main neck, a supplemental neck rising from the main neck and having discharge-ports in its side walls, and the valve-seat in the main neck below said discharge-ports; the separately-formed barrel sealed to the base of the main neck, extending around and over the supplemental neck, leaving a chamber or space around and over said neck, and having depending neck above and free from the supplemental neck, and provided with a discharge-port of less diameter than the diameter of said supplemental neck; said barrel having a wall above and free from the depending neck, and of greater diameter than said discharge-port; and the hollow ball movable in said supplemental neck; all arranged so that liquid passing from the body of the bottle through the discharge-ports, will support said ball between and free from the seat and the depending neck, substantially as described.

2. A non-refillable bottle comprising a body having a main neck provided with a valve-seat, a ball-valve on said seat, a supplemental neck rising from the main neck and having ports in its sides and being open at its top, said supplemental neck being of an internal diameter adapting it to allow free movement of the ball-valve therein, and a barrel secured to the main neck and inclosing the supplemental neck and valve which has an internal chamber for the passage of the fluid, said barrel having an outlet-neck located above the open top

of the supplemental neck at a sufficient distance to permit free passage of the fluid but to prevent displacement of the ball-valve from the supplemental neck.



654,862. NECKTIE-FASTENER. PHILIP N. SCHUYLER, Bellevue, Ohio. Filed Nov. 29, 1899. Serial No. 738,708. (No model.)



Claim.—1. A necktie-fastener, comprising two back bars rigidly connected by a cross-bar which extends between them, a yoke opening upwardly and adapted to engage the collar-button, the side portions of the yoke being extended rearward to join with the respective back bars, and hooks located respectively at the sides of the yoke with their bills in proximity therewith, the shanks of the hooks being joined respectively to the back bars.

2. A necktie-fastener, comprising two back bars rigidly connected with each other, a yoke opening upward and located in front of the back bar, the side portions of the yoke being joined respectively to the back bars, and a hook located at one side of the yoke with its point in proximity therewith, the shank of the hook extending inward to the adjacent back bar and having connection therewith.

654,868. LOOM FOR WEAVING TUFTED PILE FABRICS. HALCYON SKINNER and FRANK H. CONNOLLY, Yonkers, N. Y. Filed Oct. 4, 1898. Serial No. 692,597. (No model.)

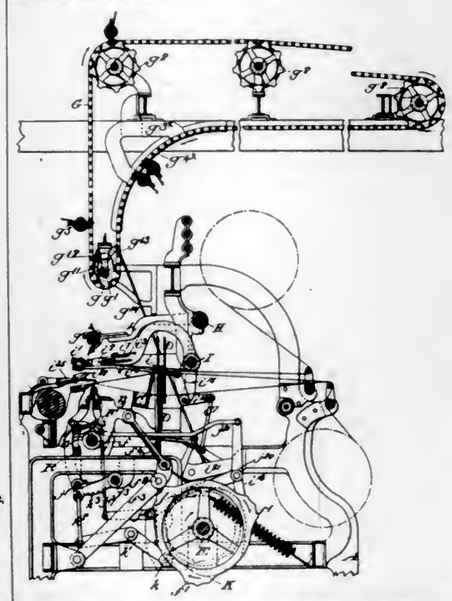
Claim.—1. In a loom for weaving tufted pile fabrics, a plurality of spool-carrying frames, a transferring mechanism and a plurality of spool-frame-carrying chains arranged to present a plurality of the frames in alinement for engagement by the said transferring mechanism, substantially as set forth.

2. In a loom for weaving tufted pile fabrics, a plurality of pairs of spool-frame-carrying chains, a plurality of rows of spool-carrying frames carried thereby, each row comprising a plurality of frames in alinement with each other, means for imparting a step-by-step movement to the chains and means for simultaneously removing a row of frames from the chains, substantially as set forth.

3. In a loom for weaving tufted pile fabrics, a plurality of pairs of spool-frame-carrying chains, a plurality of rows of spool-carrying frames carried thereby, each row comprising a plurality of frames in alinement with each other, means for imparting a step-by-step movement to the chains, means for simultaneously removing a row of frames from the chains, and transferring mechanism arranged to engage the frames as they are removed from the chains, substantially as set forth.

4. In a loom for weaving tufted fabric, a plurality of series of spool-carrying frames presenting rows of frames alined in a row substantially horizontal with the fell of the fabric, independent carrying means for each series of frames, and means to move said carrying means and maintain the alinement in row of said frames.

5. In a loom for weaving tufted fabric, a plurality of series of spool-carrying frames presenting rows of frames alined in a row substantially horizontal with the fell of the fabric, independent carrying means for each series of frames, means to move said carrying means and maintain the alinement in row of said frames, and means to simultaneously remove from and then return an alined row of frames to its own carrying means.



6. The combination with frame-carrying chains, of a spool-carrying frame comprising a cross-bar having bearings at its opposite ends for supporting a spool, and a second set of arms extended from the side of said bar and having their ends shaped to be connected with the said chains.

7. The combination with the frame-carrying chains, of a spool-carrying frame comprising a cross-bar having arms at its opposite ends for supporting the spool and a second set of arms arranged to partially embrace the spool and to be removably secured to the frame-carrying chains, substantially as set forth.

8. In a loom for weaving tufted pile fabric, carrying-chains, a series of spool-carrying frames comprising a cross-bar having bearings at its end to support a spool, and a second set of arms extended from said frame between the ends of and shaped to partially embrace the spool, said arms having devices to embrace said chains and maintain the arms in position on said chains when the latter are being moved.

9. In a loom for weaving tufted pile fabric, a plurality of spool-frames, independent carrying means for sustaining said frames in line, and keeping them in alinement at the point where they are to be taken from their carrying means, and transferring means a portion of which is adapted to engage the adjacent ends of two of said frames, when taking them from and restoring them again to said carrying means.

10. In a loom for weaving tufted pile fabric, carrying-chains, spool-carrying frames having suitable bearings to support a spool and having arms extended from the sides of said frame to enter links of the chains, and a suitable latch mounted upon said arms and adapted to engage the links of the chain.

11. In a loom for weaving tufted pile fabric, carrying-chains, spool-carrying frames having suitable bearings to support a spool and having arms extended from the sides of said frame to enter links of the chains, and a suitable latch mounted upon said arms and adapted to engage the links of the chain, and means at the proper times to automatically effect the disengagement of said latches for the removal of the arms of the spool-carrying frame from said chains.

12. The combination with the frame-carrying chains, of a spool-carrying frame having arms uprising therefrom, lugs on the arms in position to enter the chain-links, spring-actuated pawls carried by the arms in position to yieldingly hold the frame on the chains and means for releasing the pawls and thereby the frame comprising a rock-shaft having tripping-arms arranged to engage the pawls and means for operating the said shaft, substantially as set forth.

13. The combination with spool-frame-carrying chains, of a row of spool-frames having arms removably engaged with the said chains and transferring mechanism comprising a plurality of arms arranged to yieldingly engage the arms on the spool-frames for simultaneously raising and lowering all of the frames, substantially as set forth.

14. The combination with one set of spool-frame-carrying chains and the frames carried thereby, of sprockets arranged to engage the inner faces of the links and a curved guide arranged to engage the outer faces of the links without interfering with the spool-carrying frames, substantially as set forth.

15. In a loom, a plurality of pairs of spool-frame-carrying chains, spool-frames mounted in said chains, and actuating means for said chains; combined with curved guides having flanges on which the spool-frames hang and over which they travel in the lower run of the chains as the frames come into their operative position, said guides supporting said chains back of the point at which the frames are taken from said chains and between said point and at a point where the chains move in substantially a horizontal run.

16. In a loom, a plurality of pairs of spool-frame-carrying chains, a row of spool-frames in alinement and mounted on said chains, said spool-frames having arms provided with horizontal lips, and said arms being adapted to be engaged with said chains, and actuating means for said chains, combined with curved guides presenting flanges on which rest the lips of the arms connected with the spool-carrying frames at their contiguous ends, whereby the meeting ends of the alined spool-carrying frames are sustained in the lower run of the chain.

17. The combination with spool-frame-carrying chains and a rotary shaft having sprockets engaged with said chains, of means for imparting a step-by-step movement of the chains, comprising a ratchet-wheel fixed to the shaft, disks loosely mounted upon the shaft upon opposite sides of the ratchet-wheel, spring-actuated pawls carried by the disks, means for partially rotating the disks in opposite directions and means for causing one or the other of the said pawls to engage the ratchet-wheel for imparting to the ratchet-wheel and thereby the chain a movement forwardly or backwardly as desired, substantially as set forth.

18. The combination with spool-frame-carrying chains and a rotary shaft having sprockets engaged with said chains, of means for imparting a step-by-step movement to the chains comprising a ratchet-wheel fixed to the shaft, a disk loosely mounted on the shaft in proximity to the ratchet-wheel, a pawl carried by the disk in position to engage the ratchet-wheel, a drive-shaft, a cam thereon, a rocking lever operated by said cam, a connection between the lever and the disk for turning it in one direction and a retracting-spring engaging the disk tending to turn it in the opposite direction, substantially as set forth.

19. In a loom for weaving tufted pile fabrics, a cutting mechanism comprising a suitable support, a pair of side arms carried thereby, inner and outer cutting-blades mounted to move toward and away from each other in the said side arms, means for operating the blades and intermediate supporting-arms for the inner cutting-blade, substantially as set forth.

20. In a loom for weaving tufted pile fabrics, a cutting mechanism comprising a rock-shaft, a pair of side arms projecting therefrom, inner and outer cutting-blades mounted to move toward and away from each other between the said arms and intermediate supporting-arms carried by the loom-frame in position to support the outer cutting-blade at points intermediate its ends when the cutting mechanism is in position to cut, substantially as set forth.

21. In a loom for weaving tufted pile fabrics, a cutting mechanism comprising a rock-shaft, a pair of side arms projecting therefrom, inner and outer cutting-blades mounted to move toward and away from each other between the said arms, and intermediate adjustable supporting-arms carried by the loom-frame in position to support the outer cutting-blade intermediate its ends when the cutting mechanism is in position to cut, substantially as set forth.

22. In a loom for weaving tufted pile fabric, a series of alined spool-carrying frames each having a spool, independent carrying means for each of said alined spool-frames, transferring means adapted to engage and remove simultaneously from said carrying means a row of alined spools that their yarns may be put into the fabric, yarn-cutting means, actuating devices to move said cutting means toward the fabric to cut yarn and form tufts, the transferring means thereafter returning the spool-carrying frames to their carrying means, the actuating devices for the cutting means then returning the cutting means into its inoperative position.

23. In a loom for weaving tufted pile fabrics, a suitable spool-carrying mechanism, a transferring mechanism arranged to bring the spools down into proximity to the fabric above the warp, a cutting mechanism, nippers arranged normally below the warp, means for moving the nippers upwardly through the warp and cause them to grasp the tuft-threads, means for moving the transferring mechanism upwardly a distance sufficient to form the required length of tufts and means for operating the cutting mechanism to sever the tufts at the required point, substantially as set forth.

24. In a loom for weaving tufted pile fabric, a row of spool-carrying frames having spools alined parallel to the fell of the fabric, carrying means for said frames, means to actuate said carrying means, means to put said spools into their operative position with relation to the warp constituting the body of the fabric, nippers arranged normally below the warp, means for imparting to said nippers an upward movement, causing them to grasp the ends of the tuft-yarns, means for severing the tuft-yarns engaged by the nippers, means for lowering the nippers to draw the lower ends of the severed tuft lengths of tuft-yarn below the warp in the lower plane of the shed, means to cause the said nippers yet holding the lower ends of the tuft-yarns to rise through the warps, release the tufts, and then rise yet farther, the ends of the nippers acting against the ends of the tufts to straighten them, means to then retract the nippers and put them in a position below the warp preparatory to inserting a weft-thread in the shed.

25. In a loom for weaving tufted pile fabric, a row of spool-carrying frames having spools alined parallel to the fell of the fabric, means to sustain the carrying means for said spool-carrying frames, means to put the said spools into their operative position with relation to the warps constituting the body of the fabric, nippers arranged normally below the warp, means for imparting to said nippers an upward movement, causing them to grasp the ends of the tuft-yarns, means for severing the tuft-yarns engaged by the nippers to form tuft lengths, means for lowering the nippers to draw the lower ends of the tuft lengths below the warp in the lower plane of the shed, means to cause the said nippers yet holding the lower ends of the tuft-yarns to rise through the warps, release the tufts, and then rise yet farther, the ends of the nippers acting against the ends of the tufts to straighten them, means to then retract the nippers and put them in a position below the warp, and a comb having teeth to enter the spaces between the warps and act against the tufts after the nippers have released the same to draw said tufts snugly into position against previously-woven row of tufts preparatory to inserting a weft in the shed.

26. In a loom for weaving tufted pile fabric, a series of spool-carrying frames alined in a row parallel with the fell of the fabric, each frame having a spool, means to carry said spool-frames, means to take an alined series of spool-frames and spools from said carrying means and put the said spools and spool-frames in proximity to the fabric, a series of nippers, and means to actuate the same that the said nippers may rise from below upwardly between the warps, and engage the series of tuft-yarns, means to sever the tuft-yarns, the actuating means for the nippers then lowering the said nippers and drawing the series of tufts held by them into the fabric into position between the warps while a shot of filling is inserted, said nippers thereafter rising again through the warps, wrapping the tuft-yarns held by them about said weft and releasing the ends of the tuft-yarns at a point above the warps, said nippers continuing to rise after releasing the ends of said tuft-yarns then made into loops to straighten out the ends of the tufts, said nippers then retiring below the warps, leaving the tufts doubled around the weft and with both ends projecting upwardly.

27. In a loom of the class described, a plurality of series of spool-carrying frames presenting rows of frames alined in rows substantially horizontal to the fell of the fabric, independent carrying means for each series of frames, means to move said carrying means and maintain the alinement in row of said frames, means to simultaneously remove from and then return an alined row of frames to its own carrying means, and nippers composed of opposed notched plates presenting fingers and adapted to rise from below upwardly between the body-warp threads to engage the tuft-yarns, and means to clamp said nippers together at several points in the direction of the length of their carrying-bars to thereby close the nippers positively and firmly on the tuft-yarns throughout the length of the series of tuft-yarns presented from the alined spools.

28. In a loom of the class described, nippers composed of a series of teeth, bars to which said nippers are connected, a series of arms carrying said bars, a rock-shaft carrying said arms, and a second series of teeth, a bar carrying said second series of teeth, a rocker-lever carrying said bar and a series of depending arms connected with said rocker-lever, combined with a series of cams operating upon studs of said depending arms, and means to move said cams to force the second series of teeth toward the series of teeth first mentioned to grasp the tuft-yarn between them.

29. In a loom of the class described, a rock-shaft, a series of arms carried thereby, longitudinal bars mounted on said arms, and a series of teeth, as J, connected with said bars, a rocker-lever having a series of depending arms provided with studs, a bar carried by said rocker-lever and having a second series of teeth J', combined with a series of cams engaging the studs of said depending arms, means to move said cams to force the teeth J' toward the teeth J to grasp the tuft-yarns between them, and means to raise and lower said rock-shaft and swing the bar carrying the teeth J to and fro, whereby said nippers may rise and fall and also move to and fro between the warps forming the body of the fabric.

30. In a loom for weaving tufted pile fabrics, the combination with means for inserting the tufts into the fabric, of a comb, a rocking lever for imparting to the comb its forward and backward movements, a vertically-reciprocating bar for imparting the upward and downward movements to the comb, and means for operating the rocking lever and bar and means for disengaging the bar from the comb for permitting the comb to be swung away from the face of the fabric, when desired, substantially as set forth.

31. In a loom for weaving tufted pile fabric, a series of tuft-yarn frames each having a spool to carry a series of tuft-yarns, said frames and spools being alined in a row across the warp, and a pair of chains for each frame of the alined row, the chains of each pair being distanced one from the other less than the length of the spools carried by the frames.

32. A spool-carrying frame having a spool, a pair of chains separated for a distance less than the length of the spool, and arms extended from said frame and engaging said chains.

33. A spool-carrying frame having a spool, a pair of chains separated for a distance less than the length of the spool, and arms extended from said frame and engaging said chains, said arms having horizontally-extended lips, and a suitable guide on which said lips hang to sustain the frames in the lower run of the chain.

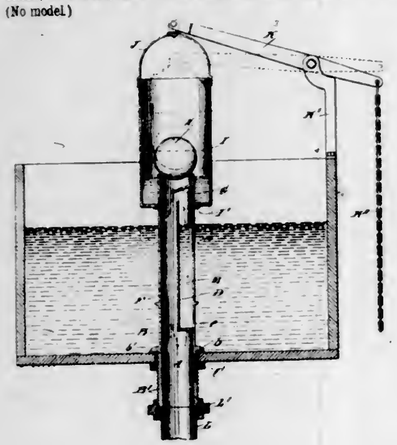
34. A plurality of pairs of spool-frame-carrying chains, a plurality of series of spool-carrying frames, one series for each pair of chains, the frames of said chains being alined transversely to said chains, a series of tuft-yarn guides spaced substantially uniformly along the edge of each alined row of frames, and spools carried by said frames, said spools being of substantially the length of the frames and supplying their yarns to said guides.

35. Spool-frame-carrying means, a plurality of series of spool-carrying frames the individual frames of each series of frames being in alinement with the frames of the other series, a series of spools in said frames, and a series of tuft-yarn guides extended along one edge of said alined frames, said guides covering a portion of each edge of each frame for a distance greater than the length of each spool of each frame, whereby the yarns led from a series of alined spools may be uniformly spaced for the production of one transverse line of tufts in the broad fabric to be made.

36. A series of pairs of chains, a series of frames carried by each pair of chains, each frame having a spool, the chains of each pair being separated one from its fellow for a distance less than the length of the spools of the frame, arms connected with the sides of said frames and crossing the axis of the spool between the heads of the spool, means to position said chains to aline in a row crossing the warp the spools of series of frames, and means to cause the said chains to be moved to place said alined rows of frames one after another in position to have their yarns utilized in the formation of a single row of properly-spaced tufts.

37. In a loom for weaving tuft pile fabric, means to cut tuft-yarns into tuft lengths, means to take said tuft lengths and bend them into loop form in the fabric, a comb, and actuating means therefor to cause said comb to descend and overlap both legs of a row of tuft-loops at that side of the row next the reed after the individual tuft-loops of a row have been set in place.

654,864. CISTERN-VALVE FOR WATER-CLOSETS. CHARLES SMITH, New York, N. Y. Filed Aug. 30, 1899. Serial No. 729,005. (No model.)



Claim.—1. A cistern-valve for water-closets, comprising a siphon-tube having its bend extending above the water-level of the cistern, said tube having an open-ended extension above the bend of the siphon and connected with the discharge-leg of the siphon, a ball-valve adapted to seat upon and close the end of said extension, and means for temporarily surrounding and immersing said extension in water, substantially as described.

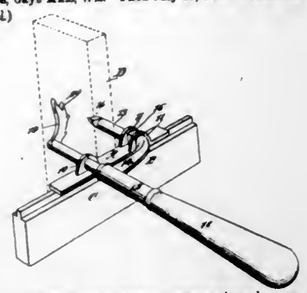
2. A cistern-valve for water-closets, comprising a siphon-tube having its bend extending above the water-level of the cistern, said tube having an upward open-ended extension connected with the discharge-leg of the siphon, a ball-valve adapted to seat upon and close the end of said extension, a cup surrounding and sliding upon the siphon-tube, and having a water-inlet opening of small area, and means by which the cup may be raised to float the ball and flood the siphon-tube, substantially as described.

3. A cistern-valve for water-closets, comprising a tube connected with a flushing-pipe and extending upward within the cistern above the water-level thereof, said tube having a central longitudinal partition connected at its lower end with one side of the tube and forming the suction-leg of a siphon, the tube having an inlet-opening into the lower end of the said suction-leg and communicating with the cistern, a transversely-extending partition in the upper portion of the tube and covering the upper end of the suction-leg, a valve adapted to close the upper end of the tube, and means for temporarily flooding the upper end of the tube and thereby raising the valve, substantially as described.

4. A cistern-valve for water-closets, comprising a tube connected with a flushing-pipe and extending upward within the cistern to above the water-level therein, said tube having a central longitudinal partition connected at its lower end with one side of the tube, and forming therewith the suction-leg of a siphon, the tube having an inlet-opening in the lower end of the said suction-leg and communicating with the cistern, a ball-valve adapted to close the upper end of the tube, and means for temporarily flooding the upper end of the tube and thereby raising the valve, substantially as described.

5. A cistern-valve for water-closets, comprising a tube connected with a flushing-pipe and extending upward within the cistern to above the water-level therein, the said tube having a central longitudinal partition connected at its lower end with one side of the tube and forming therewith the suction-leg of a siphon, the tube having an inlet-opening in the lower end of the said suction-leg and communicating with the cistern, a transversely-extending partition in the upper portion of the tube and covering the upper end of the suction-leg, a ball thereon adapted to close the upper end of the tube, a cup surrounding and sliding upon the tube, and means for elevating said cup to float the ball and flood the tube, substantially as described.

654,865. FLOORING-CLAMP. ARTHUR L. STOWELL and ARTHUR H. ROUNDS, Gays Mills, Wis. Filed July 29, 1899. Serial No. 726,513. (No model.)



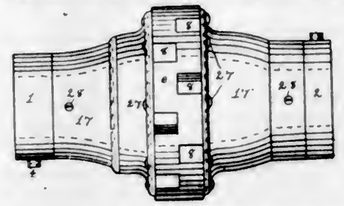
Claim.—1. A clamp, comprising a compressing-plate, an angular arm attached to said compressing-plate, one member of which angular arm is tubular, a spur attached to one member of said angular arm, a bar held to turn in the tubular portion of the angular arm, and a dog carried by said bar, the dog being opposite said spur and provided with teeth in the surface that faces the said spur, for the purpose described.

2. A compressing-plate, an angular body-arm secured rigidly to said compressing-plate, the inner member of said angular body-arm being tubular and the outer member provided with an inwardly and upwardly curved spur, a bar held to turn upon the compressing-plate and in the tubular portion of the body-arm, and a curved dog secured to the outer end of the said bar, the convexed face of which dog faces said spur and is toothed, for the purpose described.

3. A compressing-plate, an angular body-arm secured rigidly to said compressing-plate, the inner member of said angular body-arm being tubular and the outer member provided with an inwardly and upwardly curved spur, a bar held to turn upon the compressing-plate and in the tubular portion of the body-arm, a curved dog secured to the outer end of the said bar, the convexed face of which dog faces said spur, a handle for the said bar, and means for limiting the movement of the said bar, for the purpose set forth.

4. In a flooring-clamp, a compressing member, a stationary clamping member comprising an arm extending at right angles beyond one side of the compressing member, terminating in a spur, an intermediate section extending along the opposite side of the compressing member and a sleeve at an angle to the intermediate section, a bar held to turn in the sleeve-section of the clamping member, and a dog fastened to said bar, the working surface whereof faces the spur, as described.

654,866. HUB FOR VEHICLES. BENJAMIN F. SWEET, Fond du Lac, Wis. Filed May 19, 1900. Serial No. 17,201. (No model.)



Claim.—1. A vehicle-hub composed of the following elements, a central hub-section adapted to have a series of spokes arranged and projecting from its circumference and being provided with a centrally-arranged and threaded aperture, two tubular bolts, each having a head and a threaded inner end, the latter being adapted to be screwed into the aforesaid threaded aperture of the hub-section; said tubular bolts being adapted to be fitted for receiving and for revolving upon a vehicle-axle, and a thimble, or washer, mounted upon each of said bolts between their heads and the central hub-section, their dimensions lengthwise of the hub being adapted to compress the spokes when placed in position around said hub against their respective sockets therein, when the inner ends of said tubular bolts are screwed into said hub-section and are stopped from further entrance by each other, substantially as described.

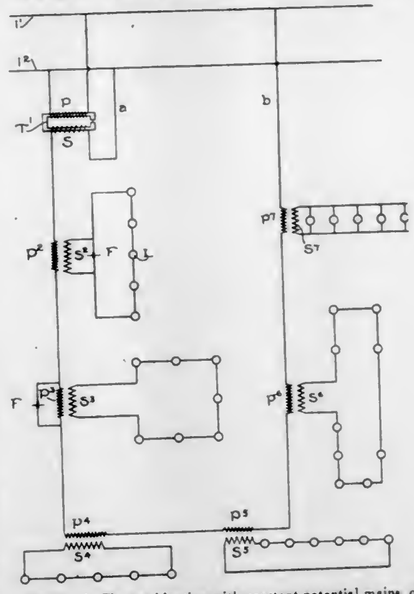
2. A vehicle-hub composed of the following elements, a central hub-section adapted to have a series of spokes arranged and projecting from its circumference and being provided with a centrally-arranged threaded aperture, two tubular bolts, each having a head and a threaded inner end, the latter being adapted to be screwed into the aforesaid threaded aperture of the hub-section, said tubular bolts each having an axle-box section separate from its bolt adapted for receiving and for revolving upon a vehicle-axle, a shoulder or stop in said tubular bolts for limiting the entrance of said axle-box sections, the inner ends of said axle-box sections being flush with the inner ends of their respective tubular bolts, a thimble or washer mounted upon each of said bolts between their heads and the central hub-section, their dimensions lengthwise of the hub being adapted to compress the spokes when placed in position around said hub, against their respective sockets therein, when the inner ends of said tubular bolts are screwed into said hub-section and are stopped from further entrance by each other, substantially as described.

3. In a central hub-section adapted to have a series of spokes arranged and projecting from its circumference and having a centrally arranged and threaded aperture, the combination of two tubular bolts, each having a head and a threaded inner end, the latter being adapted to be screwed into the aforesaid threaded aperture, of the hub-section, and a compressible washer arranged between the meeting ends of said tubular bolts, said bolts being adapted to be fitted for receiving and for revolving upon a vehicle-axle, substantially as described.

4. A vehicle-hub composed of the following elements, a central hub-section having the ends of the hub of said central hub-section extended beyond the ends of the body of said hub-section and being provided with a centrally-arranged and threaded apertere, a washer mounted upon each of said hub extensions, sockets for holding a series of spokes between each of said washers and the aforesaid central hub-section, two tubular bolts each having a head and a threaded inner end, the latter being adapted to be screwed into the centrally-arranged threaded aperture of said central hub-section, said tubular bolts being adapted to be fitted for receiving and for revolving upon a vehicle-axle, and a thimble or washer mounted upon each of said bolts between their heads and the central hub-section, their dimensions lengthwise of the hub being adapted to compress the spokes when placed in position around said hub, against their respective sockets therein, when the inner ends of said tubular bolts are screwed into said hub-section and are stopped from further entrance by each other, substantially as described.

5. A vehicle-hub composed of the following elements, a central hub-section adapted to have a series of spokes arranged and projecting from its circumference and being provided with a centrally-arranged and threaded aperture, two tubular bolts, each having a head and a threaded inner end, the latter being adapted to be screwed into the centrally-arranged threaded aperture of the hub-section, said tubular bolts being adapted to be fitted for receiving and for revolving upon a vehicle-axle, antifriction devices arranged near the outer ends of the bore of each of said tubular bolts, consisting of a series of uniform-shaped revoluble bodies whose axial line lengthwise of said tubular bolts is longer than the surface of said bodies coming in contact with the vehicle-axle, a seat formed within and near the outer end of each tubular bolt for retaining said antifriction devices, a thimble fitted for entering the bore at the inner end of each tubular bolt until stopped by a shoulder therein near said antifriction devices, the ends of said thimbles being of a form adjoining said antifriction devices corresponding therewith, and their ends at the inner ends of said tubular bolts being flush with the inner ends of said tubular bolts, and a thimble or washer mounted upon each of said tubular bolts between their heads and the central hub-section aforesaid, their lengths being adapted to compress the spokes against their sockets in the aforesaid central hub-section when the inner ends of said tubular bolts are screwed into the hub-section and are stopped from further entrance by each other, substantially as described.

654,867. SYSTEM OF DISTRIBUTION. ELIHU THOMSON, Swampscott, Mass., assignor to the General Electric Company, of New York. Original application filed Sept. 10, 1897, Serial No. 651,312. Divided and this application filed May 18, 1899. Serial No. 717,261. (No model.)



Claim.—1. The combination with constant-potential mains, of a circuit connected across the same and including in series therewith the secondary of a constant-current transformer the primary of which is also connected across the said mains.

2. The combination with constant-potential mains, of translating devices in a circuit across said mains, and a constant-current transformer with its secondary in said circuit and its primary connected across said mains.

3. The combination of a circuit fed from a source of constant electromotive force and a device in said circuit fed also from said source giving rise to an electromotive force which varies inversely with the current in the circuit.

4. The combination of a circuit fed from a source of constant electromotive force and a device in said circuit fed also from said source giving rise to an electromotive force which automatically varies inversely with the current in the circuit.

5. In a series system of distribution, the combination of a series circuit including therein a plurality of transformer-windings, and film cut-outs arranged in shunt to said windings.

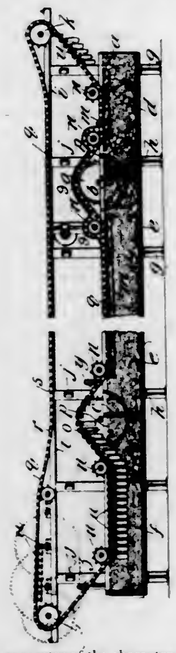
6. In a series system of distribution, the combination of a circuit including therein a plurality of translating devices, film cut-outs in shunt to said translating devices and means for causing a constant current to flow in said circuit.

654,868. FLAT-IRON HOLDER. REBECCA K. TROY, Cincinnati, Ohio. Filed Nov. 27, 1899. Serial No. 738,388. (No model.)



Claim.—The combination with an ironing-board of encompassing walls commencing at points approximately flush with the surface of the board and rising and falling away from the operator toward an apex where they reach their greatest height: and an inclined surface commencing approximately on a line connecting the starting-points of the walls and sloping away from the operator to form the bottom of a socket of which the encompassing walls are the sides, substantially as and for the purpose set forth.

654,869. APPARATUS FOR PASTEURIZING BEER. EDWARD WAGNER, St. Louis, Mo., assignor to the Model Bottling Machinery Company, same place. Filed June 30, 1899. Serial No. 722,439. (No model.)



Claim.—1. In an apparatus of the character described, the combination with the tank of an endless carrier, and bottle-supports pivotally mounted on said carrier, the pockets of which open toward the rear end of the machine, said supports coöperating with the necks of the bottles to suspend them, substantially as described.

2. In an apparatus of the character described, the combination with a tank of an endless carrier, individual bottle-supports carried by said carrier, said supports coöperating with the necks of the bottles to suspend them, whereby each support and its suspended bottle is capable of independent movement, substantially as described.

3. In an apparatus of the character described, the combination with a tank of an endless carrier dipping into said tank and independently-movable bottle-supports pivoted to said endless carrier, said bottle-supports coöperating with the necks of the bottles to suspend them, substantially as described.

4. In an apparatus of the character described, the combination with a tank of an endless carrier, comprising parallel chains and connecting-rods, and bottle-supports pivotally mounted on said rods for suspending the bottles by their necks, substantially as described.

5. In an apparatus of the character described, the combination with a tank of an endless carrier, comprising a pair of chains and connecting-rods, and independently-movable bottle-supports pivoted to said rods for suspending the bottles by their necks, substantially as described.

6. In an apparatus of the character described, the combination with a tank of an endless carrier, comprising a pair of chains and connecting-rods, means for driving said carrier, and bottle-supports pivotally mounted on said rods for suspending the bottles by their necks, the pockets in said supports opening only toward the rear end of the machine, substantially as described.

7. The combination with parallel chains, composed of links and spacing-blocks, of pivot-rods or pintles passing through the eyes of said links and spacing-blocks, and bottle-supports mounted on said rods or pintles and interposed between said chains, said bottle-supports receiving the necks of the bottles whereby said bottles are suspended and capable of independent movement, substantially as described.

8. The combination with parallel links and chains, composed of links and spacing-blocks, of pivot-rods or pintles passing through the eyes of said links and spacing-blocks, and a plurality of bottle-supports mounted on said rods or pintles, said bottle-supports being so arranged as to assist in spacing the chains, substantially as described.

9. The combination with parallel chains composed of links and spacing-blocks, of pintles common to both chains and passing through the eyes of said links and spacing-blocks, sleeves or washers on said pintles between the chains, and a plurality of bottle-supports mounted on the pintles between said chains, substantially as described.

10. The combination with parallel chains, composed of links and spacing-blocks, of pivot-rods or pintles passing through the eyes of said links and spacing-blocks, sleeves encircling said pintles for spacing said chains, and a plurality of bottle-supports mounted upon said pintles between said chains, substantially as described.

11. The combination with a tank, of sprockets arranged at each end thereof, idle sprockets arranged above the tank in pairs, some of which idle sprockets are of larger diameter than others, an endless carrier passing over and under said sprockets, bottle-supports pivotally mounted on said endless carrier for suspending the bottles by their necks, and partition-walls in the tank opposite the sprockets of larger diameter, substantially as described.

12. The combination with a tank having rails arranged therein and rails supported thereabove, sprockets at the ends of said rails, an endless carrier composed of parallel chains and connecting-rods coöperating with said rails and sprockets, and bottle-supports pivotally mounted on said rods for suspending the bottles by their necks, substantially as described.

13. The herein-described bottle-carrier comprising a rod or wire bent or formed with eyes or attaching devices, the ends thereof crossing each other to form an open-ended pocket with a contracted mouth, substantially as described.

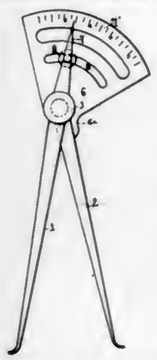
14. The combination with a tank of rails supported thereabove, sprockets mounted on said rails beyond the ends of the tank, sprockets mounted along the upper edges of the tank, an endless carrier composed of chains and connecting-rods which coöperate with said sprockets in such manner that the chains travel at an angle downwardly into and upwardly from the ends of the tank and follow a serpentine course or zigzag path between the ends of the tank, and bottle-carriers mounted on said connecting-rods, substantially as described.

15. The combination with a tank of an endless carrier, bottle-carriers pivotally mounted on said endless carrier adapted to coöperate with the necks of the bottles, rails supported above said tank extending beyond the ends thereof, sprocket-wheels mounted upon said rails beyond the ends of the tank, and sprocket-wheels mounted upon the upper edges of the tank at or near its end, so that said endless carrier will, in its course of travel, pass at an angle downwardly into the front end of the tank and upwardly and outwardly from the rear end of the tank, substantially as described.

16. The combination with a tank having sprockets mounted thereon, of sprockets supported above and beyond each end of the tank, and an endless carrier passing around all of the sprockets and thereby in its course of travel passing downwardly at an angle into the tank at the front end thereof and upwardly and outwardly at the rear end thereof, substantially as described.

654,870. CALIPERS. OTTO J. WARNER, Dayton, Ohio. Filed Mar. 19, 1900. Serial No. 9,158. (No model.)

Claim.—1. The herein-described calipers, consisting of long and short arms 1 and 2, having casings, a scale-plate 6 having a numerical scale thereon to indicate the diameters and to which the long arm may be moved and secured, a coil-spring inclosed within the casing formed by the arms 1 and 2, the said coil-spring having one end secured to the sleeve 6 and the other end secured to the casing of the short arm and by means of which said short arm is held normally away from the long arm, substantially as shown and described.



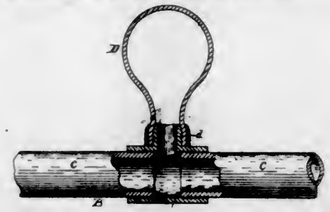
2. In an interior calipers, the combination of a scale-plate having a sleeve or hub thereon, arms 1 and 2 having casings 3 and 4 which inclose said sleeve, the said arm 1 being securable in various positions as indicated by the numerical scale on said scale-plate, a coil-spring inclosed within the casing formed by the arms 1 and 2, the said spring having one end attached to the sleeve on the scale-plate, and the other end of said spring attached to the casing projecting from arm 2, and a set-screw for maintaining one of said arms in a relative position with the scale-plate, substantially as described.

654,871. WINDOW-FASTENER. WILLIAM D. WATSON, Chicago, Ill. Filed June 16, 1900. Serial No. 20,547. (No model.)

Claim.—The combination with the window-casing 2 and the sash 1 pivotally mounted to swing therein upon a horizontal axis, of the fastener 6 pivoted to the top of the sash at 7 and provided with an outer contact end 11 arranged to project upwardly beside the casing and an inner locking end 12 arranged to project upwardly into the locking-socket 13 in the casing, and a pull-cord or the like applied to the fastener on the inner side of its pivot and depending vertically therefrom, whereby a downward pull upon the cord will release the fastener and open the window, substantially as described.

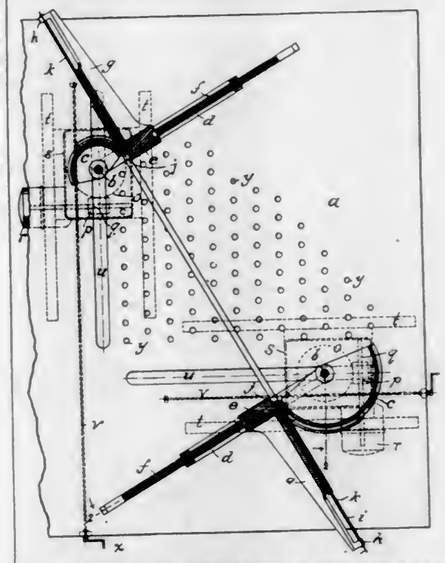
654,872. INDICATOR FOR PUMP-ACTIONS. JONATHAN B. WEST, Rochester, N. Y. Filed Sept. 28, 1899. Serial No. 731,947. (No model.)

Claim.—1. A pump and inlet-pipe therefor, in combination with a thimble on the pipe, and a bodily-contractile part independent of said pipe and held by the thimble and subjected to the pressure within the pipe, substantially as and for the purpose specified.



2. A pump and its pipe, combined with a thimble around said pipe, a bodily contractile and expansible part on said thimble, and means for holding said part in place, substantially as described.

654,873. TUBE-BENDING MACHINE. MALCOLM WILKINSON, Shelby, Ohio, assignor to the Shelby Steel Tube Company, Pittsburg, Pa. Filed Mar. 29, 1899. Serial No. 710,957. (No model.)



Claim.—1. In a tube-bending machine the combination of a bending-block grooved on its periphery, a radial arm or lever adapted to swing about the axis of the bending-block, a bending-die grooved on its face and carried by the radial arm, a rigid arm extending from the die, a mandrel supported by said arm with its bulb located between the die and the bending-block and the means for adjusting the die and the mandrel-supporting arm to and holding it at any position along the length of the radial arm.

2. In a tube-bending machine the combination of a bending-block grooved on its periphery and loosely mounted upon a pin or shaft, a radial arm or lever also mounted on the shaft, a bending-die grooved on its face and mounted on the radial arm, a rigid arm extending from the die and supporting a mandrel from its extremity with a screw passing through the end of the radial arm and connected to the bending-die and the mandrel-supporting arm to adjust and hold them in position on the radial arm.

3. In a tube-bending machine the combination of a bending-block grooved on its periphery, a bending-die correspondingly grooved on its face and adapted to swing around the periphery of the bending-block, a collapsible mandrel-bulb supported from and moving in unison with the bending-die with means for expanding the bulb laterally or toward the faces of the bending-block and the die.

4. In a tube-bending machine the combination of a bending-block grooved on its periphery, a bending-die correspondingly grooved on its face and adapted to swing around the bending-block, an arm

extending from the die and having a recessed lug at its extremity, a mandrel supported by said lug in a line tangential to the bending-block and composed of a split head or bulb having a tapering bore, a rod or bolt having a conical portion adapted to fit said bore and an adjusting-nut to bear against the outside of the recessed lug with a tubular shank fitting over the end of the mandrel-head and bearing against the inner face of the recessed lug.

5. In an expanding-mandrel, the split bulb head with springy sides and tapering bore, the tubular shank fitting upon the solid end of the head the mandrel rod or bolt having a head and a conical portion and provided at its other extremity with an adjusting-nut to push against the tubular shank and draw the conical portion of the rod into the bore of the mandrel-head and expand it after insertion into a tube.

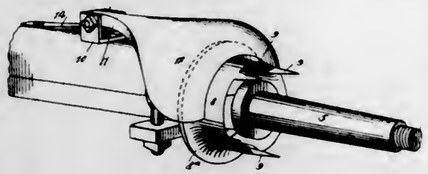
6. In a tube-bending machine the combination of a semicircular bending-block grooved on its periphery, and loosely mounted on a shaft, a radial arm or lever keyed to the shaft and carrying a bending-die grooved on its face and a mandrel-bulb lying between the die and bending-block and moving in unison with the die, with a power mechanism connected to the shaft and adapted to rotate it and the radial arm when and as desired.

7. In a tube-bending machine the combination of a plate or table slotted in its surface, guideways beneath the table paralleled to the slot, sliding blocks or casings mounted in said guideways, pins or shafts supported in suitable bearings in said casings and extending through the slot with tube-bending mechanisms substantially as described mounted on the upper ends of the pins above the surface of the table.

8. In a tube-bending machine the combination of a plate or table having a plurality of slots in its surface, a plurality of tube-bending mechanisms substantially as described operated above the table on pins or shafts which extend through the slots and are mounted in bearings in sliding casings supported in guideways below the table parallel to the slots, the respective guideways and slots lying at any desired angle to each other.

9. In a tube-bending machine the combination of a slotted plate or table, a movable casing supported in guideways below the slot, a vertical shaft mounted in bearings in the casing and projecting therefrom through the slot in the table, a worm-wheel keyed to the shaft and a worm engaging the wheel, a power-motor carried by the casing and driving said worm, with a tube-bending mechanism substantially as described mounted upon the upper end of the shaft above the table, with a feed-screw below the table engaging the casing to move it along its guideways and hold it in position, all arranged and operating substantially as described.

654,874. SAND-SHIELD FOR VEHICLE-AXLES. EDWIN H. WILSON, Globe Village, Mass. Filed Jan. 20, 1900. Serial No. 2,148. (No model.)



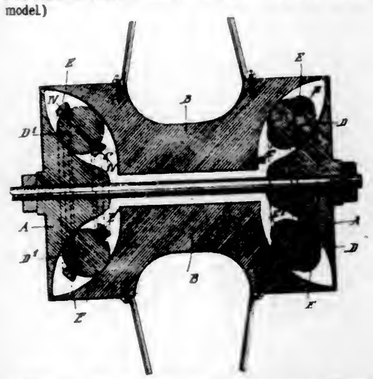
Claim.—1. The combination of an annulus adapted to be secured to the inner end of a vehicle-hub and to encircle the axle, a shield curved to lie over the upper portion of the annulus and provided with a shank extending inwardly from the annulus longitudinally of the axis, a bearing in which the shank is pivotally mounted, and a spring attached to the axle and engaged with the shank of the shield to sustain the shield yieldingly in position.

2. The combination of a sand-shield having a shank, a bearing in which the shank is pivotally mounted to move on the pivot toward and from the wheel-hub, and a spring extending longitudinally of the shank and bearing against the same to yieldingly sustain the shield in operative position.

3. The combination of an annulus adapted to be attached to the inner end of a vehicle-hub, a pivotally-mounted sand-shield lying over the annulus and movable on the pivot toward and from the annulus, and a spring bearing between the shield and the axle and actuating the sand-shield to sustain it yieldingly in position out of contact with the annulus.

4. The combination of a pivotally-mounted sand-shield arranged to move on its pivot toward and from the wheel-hub, and a spring bearing between the axle and the shield to yieldingly sustain the shield in operative position.

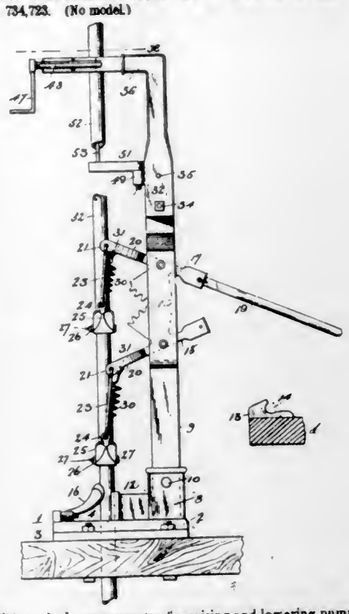
654,875. REGULATOR FOR BALL-BEARINGS. JOHN F. WILSON, Jetmore, Kans. Filed Oct. 10, 1899. Serial No. 733,156. (No model.)



Claim.—1. In a ball-bearing, a circular rotating frame within the raceway composed of two parallel rings secured together and inclosing between them the series of balls, said rings being seated on said balls coincident with the axis of rotation of said balls, substantially as set forth.

2. In a ball-bearing, a circular rotating frame within the raceway composed of two parallel flaring rings secured together and inclosing between them the series of balls, said rings being provided, on their opposed surfaces, with a series of conical protuberances, and each of said balls having two corresponding axial depressions to engage said protuberances and form pivotal seats for the rings upon said balls in line with the axis of rotation of said balls, substantially as set forth.

654,876. APPARATUS FOR RAISING OR LOWERING PUMP-PIPES. GEORGE ZINK, Shady Bower, Md. Filed Oct. 25, 1899. Serial No. 734,723. (No model.)



Claim.—1. In an apparatus for raising and lowering pump-pipes, the combination with the base, the post, the levers pivoted to said post, the intermeshing cog-segments, the curved arms at the inner ends of said levers, of the links pivotally connected therewith, the clamps to which said links are pivoted and the plates to which said clamps are pivoted, substantially as described.

2. In an apparatus for raising and lowering pump-pipes, the combination with the base, the post, the levers pivoted to said posts, the intermeshing cogged segments, and the curved arms at the inner ends of said levers, of the links pivotally connected with said arms, the clamps to which said links are pivoted, the coiled springs connected with said curved arms and clamps, and the vertically-movable plates to which said clamps are pivoted, substantially as described.

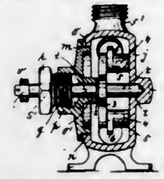
3. In an apparatus of the character described, the combination with the base, the post, the alternately-operating levers and the clamps and connections, of the standard pivotally connected with the upper end of the post, and the stationary and movable jaws connected there with, substantially as specified.

4. In an apparatus of the character described, the combination with the base, the post, the alternately-reciprocating clamps and means for operating the same, of the standard pivoted to said post, the stationary and movable jaws connected therewith and the swinging plate pivotally connected with said standard, substantially as specified.

5. In an apparatus of the character described, the combination with the base, the post, the alternately-reciprocating clamps and means for operating the same, of the standard pivotally connected with the said post, provided with a stationary jaw, the slotted plate hinged thereto, the movable jaw, the cross-head carrying the same, the screw connected with said cross-head, the pivoted catch and the lug with which said catch is adapted to engage, substantially as specified.

6. In an apparatus of the character described, the combination with the base, the post, the alternately-reciprocating clamps and means for operating the same, of the standard pivoted to said post, the swinging plate pivotally connected therewith, the slotted plate hinged to said standard, the stationary jaw carried by said standard, the movable jaw carried by said slotted plate, the cross-head and the screw, substantially as specified.

654,877. WATER-CLOSET VALVE. SYLVESTER J. ARBELL, Paterson, N. J. Filed May 9, 1900. Serial No. 16,010. (No model.)



Claim.—1. In a valve structure, the combination of a valve-casing having a supply-port, a discharge-port and a drain-port, and having its rear wall flat and its front wall provided with an internally-threaded aperture or opening, a disk or cover removably arranged in said aperture or opening, a shaft or spindle penetrating said disk and revolubly mounted therein and having its inner end journaled in the rear wall of the casing, an arm or lever in the casing and securely mounted on said shaft or spindle, a pin at or near each end of said arm and projecting rearwardly at right angles therefrom, a valve-stem revolubly mounted on each pin and spacing said arm or lever from said rear wall, a valve at the free end of each valve-stem and adapted to control its respective port, and means for oscillating the spindle or shaft, all said parts substantially as and for the purposes described.

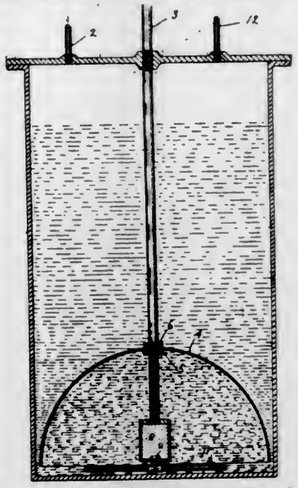
2. In a valve structure, the combination of a valve-casing having a supply-port, a discharge-port and a drain-port, and having its rear wall flat and its front wall provided with an internally-threaded aperture or opening, a disk or cover removably arranged in said aperture or opening, a shaft or spindle journaled in said disk or cover and also in the rear wall of the casing, an arm or lever in the casing and securely mounted on the shaft or spindle, a pin at or near each end of said arm and projecting at right angles toward the rear wall of the casing, a sleeve revolubly mounted on each pin and spacing said arm or lever from said rear wall of the casing, a valve-stem projecting from each sleeve, a valve at the free end of each valve-stem and adapted to control its respective port, and means for oscillating the spindle or shaft, substantially as and for the purposes described.

3. In a valve structure, the combination of a valve-casing having a supply-port, a discharge-port and a drain-port, and having its rear wall flat and its front wall provided with an internally-threaded aperture or opening, a disk or cover removably arranged in said aperture or opening, a shaft or spindle penetrating said disk and revolubly mounted therein and having its inner end journaled in the rear wall of the casing, an arm or lever in the casing and securely mounted on said shaft or spindle, a pin at or near each end of said arm and projecting rearwardly at right angles therefrom, a valve-stem revolubly mounted on each pin and spacing said arm or lever from the rear wall of the casing, a plug or valve carried by each valve-stem one side of the corresponding port and having its seating end of conical form, a tapering guiding-collar disposed on each valve-stem with its larger end adjacent the reduced or seating end of the valve or plug, the thickness of said collar merging off from that of the stem to approximately that of the adjacent end of the collar, and means for oscillating the shaft or spindle, all said parts substantially as and for the purposes described.

4. In a valve structure, the combination of a valve-casing having a supply-port, a discharge-port and a drain-port, and having its rear wall flat and its front wall provided with an internally-threaded aperture or opening, a disk or cover removably arranged in said aperture or opening and provided with an outwardly-extending internally-threaded sleeve, a bushing adjustably arranged in said sleeve, a shaft or spindle journaled in said bushing and disk and also in the rear wall of the casing, an arm or lever in the casing and securely mounted on said shaft or spindle, a pin at or near each end of said arm and projecting rearwardly at right angles therefrom, a valve-stem revolubly mounted on each pin and spacing said arm or lever from said rear wall of the casing, a valve at the free end of each valve-stem and adapted to control its respective port, and means for oscillating the spindle or shaft, all said parts substantially as and for the purposes described.

5. In a valve structure, the combination of a valve-casing having a supply-port, a discharge-port and a drain-port, and having its rear wall flat and its front wall provided with an internally-threaded aperture or opening, a disk or cover removably arranged in said aperture or opening and provided with an inwardly-extending sleeve, a shaft or spindle journaled in said sleeve and in the rear wall of the casing, an arm or lever in the casing and securely mounted on said shaft or spindle and bearing against the inwardly-extending sleeve of the disk or cover, a pin at or near each end of said arm or lever and projecting rearwardly at right angles therefrom, a valve-stem revolubly mounted on each pin and spacing said arm or lever from the rear wall of the casing, a valve at the free end of each valve-stem and adapted to control its respective port, and means for oscillating the spindle or shaft, all said parts substantially as and for the purposes described.

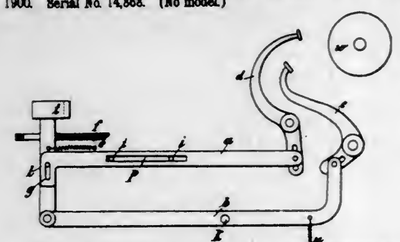
654,878. CARBURETER. DANIEL BARCKDALL, Indianapolis, Ind., assignor of two-thirds to Willis J. Woodward and Guilford A. Deitch, same place. Filed Jan. 12, 1899. Serial No. 701,988. (No model.)



Claim.—1. A gas-making apparatus including a hydrocarbon-tank, a main air-pipe extending into the tank, an S-shaped outlet-pipe so mounted centrally at the lower end of the main air-pipe as to be horizontally rotatable by the pressure of air and having a passage-way from such main air-pipe through it, and means for forcing air through said main air-pipe and the carbureter.

2. A gas-making apparatus including a tank, a main air-pipe centrally extending into said tank; an enlarged portion or chamber at the lower end of said pipe with its sides perforated, an S-shaped outlet-pipe so mounted in the bottom of the enlarged portion or chamber as to be horizontally rotatable and have a passage from said chamber through it, and a perforated spherical disk so secured to the main pipe as to surround and inclose the enlarged portion or chamber.

654,379. TYPE-WRITING MACHINE. HEINRICH BETTENDORF and JULIUS M. BIER, Frankfort-on-the-Main, Germany. Filed Apr. 30, 1900. Serial No. 14,868. (No model.)

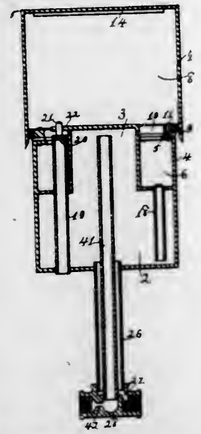


Claim.—1. A type-writing machine constructed substantially as herein described with finger-keys capable of both vertical and horizontal movement and two type-bar levers connected to each finger-key by a vertically-vibrating lever, and a horizontally-slidable bar respectively, whereby movement is imparted to one of said type-bars by vertical movement of the key and to the other type-bar by horizontal movement of the key as explained.

2. The combination of a finger-key *t*, capable of both vertical and horizontal movement, a pair of type-bar levers *c*, *d*, a vibrating lever *b*, pivoted at its respective ends to the finger-key *t*, and the type-bar lever *d*, and the slidable bar *a*, connected at its respective ends to the finger-key *t*, and the type-bar lever *d*; whereby the vertical movement of the finger-key imparts printing movement to the type-bar lever *c*, and the horizontal movement of the finger-key imparts printing movement to the type-bar lever *d*, substantially as described.

3. The combination of the finger-key *t*, capable of vertical and horizontal movement; two type-bar levers *c*, and *d*; the vibrating lever *b*, pivoted at one end to the finger-key *t*, and at its other end to the type-bar lever *c*; and the slidable bar *a*, coupled at one end to the type-bar lever *d*, and at the other, by a slot connection, to the finger-key *t*; whereby the vertical movement of the finger-key is permitted to impart printing movement to the type-bar lever *c*, while the bar *a* is at rest, or horizontal movement of the finger-key is enabled to actuate the slidable bar *a*, and type-bar lever *d*, as explained.

654,380. VAPOR-BURNING LAMP. WILLIAM F. BRADBURY and LEVI G. SMITH, Kansas City, Kans. Filed Nov. 3, 1899. Serial No. 735,696. (No model.)



Claim.—1. The combination with a vapor-burner of a bracket provided with suitable guides, an oil-reservoir provided with a vapor-storage chamber carried on said bracket, an air-chamber inverted and arranged to travel on said guides, and adapted to surround said reservoir, a valved air-supply tube for supplying air to said air-chamber, an air-tube communicating with said air-chamber and with the reservoir, a packing-ring secured upon the reservoir-casing and bearing upon said air-chamber casing and forming a seal to said air-chamber, and a vapor-pipe extending into said vapor-storage chamber and communicating with the burner; substantially as set forth.

2. In a vapor burning lamp the combination with a burner provided with a chimney and an incandescent mantle, and a mixing-tube having an air-supply opening, and communicating with the burner, of an oil-reservoir, a supply-pipe communicating with said reservoir; and a vaporizer arranged over the chimney and communicating with the said supply-pipe and consisting of a vaporizing-tube, a vaporizing-cell formed in said tube over and extending within the chimney, a thimble secured in said cell and forming a thin chamber within said cell surrounding said thimble, and a vapor-injector having a minute opening mounted in said tube in line with the air-opening in said mixing-chamber, and a valve for regulating the supply of liquid to the vaporizer; substantially as set forth.

3. In a vapor-burning lamp, a vaporizer consisting of a vaporizing-tube, a vaporizing-cell formed in said tube, a thimble closed at its inner end secured in said cell and forming a thin chamber within said cell surrounding said thimble, and a vapor-injector having a minute opening connected with said tube, substantially as set forth.

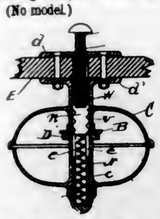
4. In a vapor-burning lamp the combination with a burner provided with a chimney and an incandescent mantle, a mixing-chamber having a suitable air-opening communicating with said burner and a vaporizer arranged to be heated from the burner and having a minute discharge-opening in line with said air-opening in the mixing-chamber, of a bracket provided with suitable guides, an oil-reservoir supported by said bracket and having a vapor-storage chamber therein, an air-chamber mounted over and arranged to surround said reservoir, lugs on said air-chamber casing arranged to engage and travel upon said guides on said bracket, a packing-ring mounted on said reservoir-casing and forming a seal to said air-chamber, a valved air-supply tube for supplying air to said air-chamber, an air-tube communicating with said air-chamber and with said reservoir, a supply-pipe communicating with said reservoir and with the vaporizer, a valve for regulating the supply through said supply-pipe, a vapor-pipe communicating with said vapor-storage chamber and with the mixing-chamber, and a valve for controlling such communication, substantially as set forth.

5. In a vapor-burning lamp having a supply-reservoir, a vapor-storage chamber formed in said reservoir, a bracket provided with vertical guides supporting said reservoir, an air-chamber mounted over and adapted to surround said reservoir, lugs on said air-chamber casing arranged to engage and travel upon said guides on said bracket, a packing-ring mounted on said reservoir-casing and arranged to form a seal to said air-chamber, a valved air-tube for supplying air to said air-chamber, an air-tube communicating with said air-chamber and said reservoir, a supply-pipe leading from said reservoir, and a vapor-pipe leading from said vapor-storage chamber, substantially as set forth.

6. In a vapor-burning lamp having a supply-reservoir, a vapor-storage chamber formed in the top of said reservoir, a casing formed by an extension of the sides of said reservoir, and forming a cup surrounding said vapor-storage chamber, and a tube communicating with said cup and with said reservoir, substantially as set forth.

7. In a vapor-burning lamp having a supply-reservoir, the combination with a vapor-storage chamber formed in the top of said reservoir, a casing formed by an extension of the sides of said reservoir, having an inturned rim, and forming a cup surrounding said vapor-storage chamber, and a tube communicating with said cup, and with the reservoir, of a bracket supporting said reservoir, and provided with vertical guides, an air-chamber mounted over and adapted to surround said reservoir, lugs on said air-chamber casing, arranged to engage and travel upon said guides on said bracket, a packing-ring mounted on said rim on said reservoir-casing arranged to form a seal to said air-chamber and means for admitting air into said air-chamber, substantially as set forth.

654,381. BELL. CARL A. BRINK, Attleborough, Mass., assignor to the Frank Moesberg Company, same place. Filed June 4, 1900. Serial No. 18,935. (No model.)



Claim.—1. In a bell the combination of two gongs having hubs on the inside, a tube connecting the gongs by passing through said hubs and having slots in its sides to connect the operating device with the ringing mechanism, substantially as described.

2. In a bell the combination of two gongs having hubs on their inner sides, a tube connecting the gongs by passing through said hubs, and having slots in its sides to connect the operating device with the ringing mechanism, a stationary plate fast on one of said hubs, a hammer pivoted on the stationary plate, a swinging plate pivoted on the stationary plate and having a notch in one end to receive a pin fast in the hammer, mechanism sliding in said tube to operate the swinging plate, substantially as described.

3. In a bell the combination of two gongs having hubs on their inner sides, a tube connecting the gongs by passing through said hubs, and having slots in its sides to connect the operating device with the ringing mechanism, a stationary plate fast on one of said hubs, a hammer pivoted on the stationary plate, a swinging plate pivoted on the stationary plate and having a notch in one end to receive a pin fast in the hammer, a plug to slide in the tube, a toothed plate carried by said plug to slide in the slots and operate the swinging plate, substantially as described.

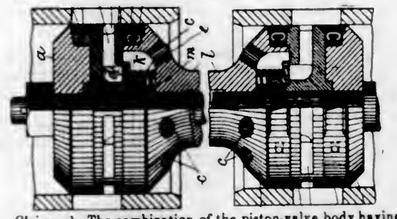
4. In a bell, the combination of a gong, a stationary plate fast to said gong, a hammer pivoted to said stationary plate, a swinging lever pivoted on said stationary plate connected to said hammer, with a sliding cam, and a spring actuated through the center of said gong, substantially as described.

5. In a bell, the combination of a gong, a stationary plate fast to said gong, a hammer pivoted to said stationary plate, a swinging plate pivoted on said stationary plate connected to said hammer, with vibrating mechanism actuated through the center of said gong, substantially as described.

6. In a bell, the combination of two gongs having hubs on their inner sides, said gongs being connected together by said hubs, a stationary plate fast to said hubs, a hammer pivoted to the onter end of said plate, a swinging plate also pivoted to said stationary plate and connected by an arm to said hammer, with a sliding cam and spring actuated through the center of said gong, substantially as described.

7. In a bell, the combination of two gongs, a tube connecting said gongs, a slot in the side of said tube through which to connect the actuating device with the ringing mechanism, means for actuating said ringing mechanism through the center of the gong, substantially as described.

654,882. PISTON-VALVE. WILLIAM BUCKLEY, Sheffield, England. Filed Sept. 1, 1899. Serial No. 729,223. (No model.)



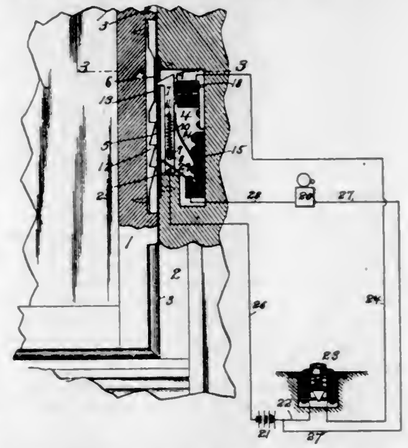
Claim.—1. The combination of the piston-valve body having an imperforate plate at one end, perforations in the other end, and inward passages leading from the periphery of the valve between the perforated and imperforate ends thereof, with a relief-valve controlling the communication of said passages with the said perforations, and a spring for pressing the relief-valve outwardly against the inner ends of said passages.

2. The combination of the piston-valve body having two spaced packing-rings, an imperforate plate at one end, perforations at the other end, radial passages leading to the periphery of the body between the two packing-rings thereof, with a relief-valve controlling the communication of said passages with said perforations, and a spring for pressing the relief-valve outwardly against the inner ends of said passages.

3. The combination of the piston-valve body having an imperforate plate at one end, perforations at the other end, and radial passages leading inwardly from the periphery of the valve between the perforated and imperforate ends thereof, a circularly-curved relief-valve movable radially outward against the inner ends of said radial passages and controlling their communication with the said perforations, and a spring surrounded by said relief-valve and arranged to press it outwardly.

4. The combination of the piston-valve having two spaced connected valve-bodies of analogous construction, each of said bodies having two spaced packing-rings, an imperforate plate at one end, perforations at the other end, radial passages leading to the periphery of the body between the two packing-rings thereof, with a relief-valve controlling the communication of said passages with said perforations, and a spring for pressing the relief-valve outwardly against the inner ends of said passages.

654,883. FASTENING DEVICE. HENRY G. CARLETON, New York, N. Y., assignor to the Carleton Electric Company, same place. Filed Feb. 3, 1900. Serial No. 3,793. (No model.)



Claim.—1. The combination with a slide, of ways in which it moves, a locking device located in the path of movement of the slide, and electrical means by which the action of the locking device is controlled, substantially as described.

2. The combination with a slide, of ways in which it moves, a locking device located along the path of movement of the slide, a magnet for controlling the action of the locking device, an alarm mechanism, and means whereby an attempt to move the slide when the locking device is in operative position will cause the alarm to sound, substantially as described.

3. The combination with a slide, of ways in which it moves, a movable locking member located along the path of movement of the slide, a magnet for controlling the operation of said locking member, a suitable circuit for the magnet, an alarm mechanism, a suitable circuit therefor, and means whereby a movement of the slide when the locking member is in operative position closes the circuit of the alarm mechanism, substantially as described.

4. The combination with a slide, of ways in which it moves, a movable locking member located along the path of movement of the slide, and a magnet for controlling the movement of the member, substantially as described.

5. The combination with a slide, of ways in which it moves, a normally-inoperative locking member located along the path of movement of the slide, means whereby a movement of the slide causes the locking member to be thrown into operative position, and a magnet for holding the locking member out of operative position, substantially as described.

6. The combination with a slide, of ways in which it moves, a normally-inoperative pivoted locking member located along the path of movement of the slide, means whereby a movement of the slide causes the locking member to be thrown into operative position, and a magnet for holding the locking member out of operative position, substantially as described.

7. The combination with a slide, of ways in which it moves, a normally-inoperative locking member located along the path of movement of the slide, a magnet for holding the locking member in inoperative position, an alarm mechanism, a suitable circuit therefor, and means controlled by the locking member for closing the circuit, substantially as described.

8. The combination with a slide, of ways in which it moves, a pivoted locking member located along the path of movement of the slide, said member having a sliding movement with respect to its pivot, means for controlling the pivotal movement of the locking member, an alarm mechanism, a circuit therefor, and means whereby the sliding movement of the locking member closes the circuit, substantially as described.

9. The combination with a slide, of ways in which it moves, a pivoted locking member located along the path of movement of the slide, said member having a sliding movement with respect to its pivot, a magnet for controlling the pivotal movement of the locking member, an alarm mechanism, a circuit therefor, and means whereby the sliding movement of the locking member closes the circuit, substantially as described.

10. The combination with a slide, of ways in which it moves, a

normally-inoperative pivoted locking member located along the path of movement of the slide, said member having a sliding movement with respect to its pivot, a magnet for controlling the pivotal movement of the locking member, an alarm mechanism, a circuit therefor, and means whereby the sliding movement of the locking member closes the circuit, substantially as described.

11. The combination with a slide, of ways in which it moves, a pivoted locking-hook located in one of the ways, means on the slide with which the hook engages, and a magnet for controlling the operation of the hook, substantially as described.

12. The combination with a slide, of ways in which it moves, a pivoted locking-hook located in one of the ways, means on the slide with which the hook engages, means also on the slide for normally holding the hook in such position that it does not engage the locking means, and a magnet for retaining the hook in its inoperative position, substantially as described.

13. The combination with a slide, of ways in which it moves, a pivoted locking-hook located along the path of movement of the slide, said hook being arranged to have a sliding movement on its pivot, coöperating means on the slide with which the hook engages and by which the hook is given its sliding movement when the slide is moved, means for normally holding the hook out of engagement with the coöperating means, a magnet for holding the hook in its inoperative position, an alarm mechanism, a suitable circuit therefor, and means whereby the sliding movement of the hook closes the said circuit substantially as described.

14. The combination with a slide, of ways in which it moves, a pivoted locking-hook located along the path of movement of the slide, a ratchet with which the hook may engage when the slide is moved, a cam-surface operating to turn the hook on its pivot into inoperative position, and a magnet for retaining the hook in inoperative position, substantially as described.

15. The combination with a slide, of ways in which it moves, a locking member, coöperating locking means on the slide with which the locking member may engage at a plurality of points, means for controlling the operation of the locking member, an alarm mechanism, a suitable circuit therefor, and means whereby a movement of the slide after the locking member is in engagement with the coöperating locking means at any point will cause the circuit to be closed through the alarm mechanism, substantially as described.

16. The combination with a slide, of ways in which it moves, a locking member, coöperating locking means on the slide with which the locking member may engage at a plurality of points, a magnet for controlling the operation of the locking member, an alarm mechanism, a suitable circuit therefor, and means controlled by the locking member whereby a movement of the slide after the locking member is in engagement with the coöperating locking means at any point will cause the circuit to be closed through the alarm mechanism, substantially as described.

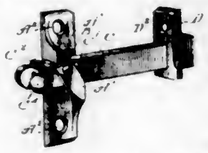
17. The combination with a slide, of ways in which it moves, a slotted locking member, a pivot for the member passing through the slot, a ratchet on the slide provided with a plurality of teeth, any one of which may be engaged by the locking member, a magnet for controlling the pivotal movement of the member, an alarm mechanism, and a suitable circuit therefor, one of the contacts of the circuit being carried by the locking member, whereby a movement of the slide after the locking member is engaged with the ratchet at any point will cause the circuit to be closed through the alarm mechanism, substantially as described.

18. The combination with a window-sash, of a ratchet carried thereby, ways in which the sash moves, one of said ways having a recess therein, a pivoted locking-hook disposed in the recess, said hook having a sliding movement on its pivot, means on the sash for holding the hook out of engagement with the ratchet, a magnet for holding the hook in its inoperative position, an alarm mechanism, a circuit therefor, a contact on the hook with which said circuit is connected, a second contact against which the first contact strikes when the hook is moved by the ratchet, a spring for returning the hook, substantially as described.

654,384. SASH-LOCK. AFTON CLIFFORD, Winnetka, Ill. Filed Mar. 26, 1900. Serial No. 10,185. (No model.)

Claim.—1. In a sash-lock, in combination, an attaching-plate having a standing loop; a locking-bolt having a pivotal and a sliding connection within said loop, which bolt is adapted to lie upon the top of the lower sash and to enter a keeper-opening in the upper sash; and a keeper-plate having a keeper-opening therein.

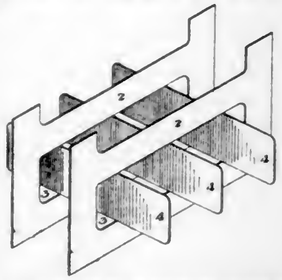
2. In a sash-lock, in combination, an attaching-plate having a diagonal standing loop; a locking-bolt having an elongated opening; a pivot for said bolt, extending through the elongated opening therein, and adapted to be supported on said loop and the attaching-plate; a keeper-plate having a keeper-opening for receiving said locking-bolt; and means for securing the attaching-plate to the window-casing.



3. In a sash-lock, in combination, a locking-bolt having an elongated opening therein; an attaching-plate having a pivot extending through the elongated opening in said bolt; a latch adapted to engage a notch in said bolt; a keeper-plate having a keeper-opening therein; and separate means for securing the attaching-plate to the window-casing, and the keeper-plate to one of the window-sash.

4. In a sash-lock, in combination, a locking-bolt having a longitudinally-elongated opening therein; an attaching-plate having a standing loop; a pivot on said attaching-plate extending through said elongated opening; a latch adapted to engage a notch in said bolt; a keeper-plate having a keeper-opening therein; and separate means for securing the attaching-plate to the window-casing, and the keeper-plate to one of the window-sash.

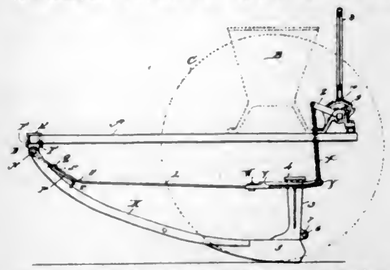
654,385. DEVICE FOR PACKING JARS, BOTTLES, &c. OTIS H. CLOUGH, Redkey, Ind. Filed May 13, 1900. Serial No. 17,133. (No model.)



Claim.—1. A packing device comprising parallel plates 2, 2, free at their ends and having longitudinal slots, and cross-pieces fitting in the slots, and of the same width as the slots; substantially as described.

2. A packing device comprising plates 2, 2, having longitudinal slots with cross-pieces fitting in said slots and constituted by strips removed from the plates 2 in forming the slots; substantially as described.

654,386. GRAIN-DRILL. CHARLES R. CRAIN, LOUIS C. EVANS, and HARRY E. DODSON, Springfield, Ohio, assignors to the P. P. Mast & Company, same place. Filed Feb. 2, 1900. Serial No. 3,684. (No model.)



Claim.—1. In a seeding-machine, the combination with a frame structure, of a furrow-opening device including a drag-bar, a pivotal connection between said drag-bar and said frame structure, a spring presser-bar pivotally connected with the frame structure, a fulcrum-bracket secured to said presser-bar and adapted to press upon said drag-bar consisting essentially of a lever and link connected to the presser-bar and means for varying the tension of the same bar upon the fulcrum-plate and thence upon the drag-bar.

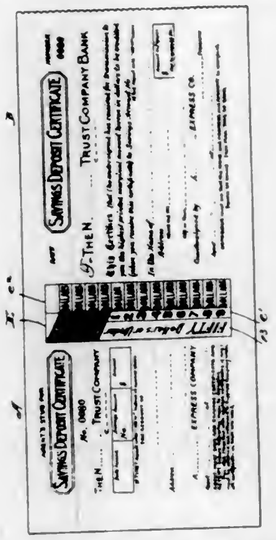
2. In a seeding-machine, the combination with a frame structure, of a furrow-opening device pivotally connected at its forward end to said frame structure, a spring presser-bar also pivotally connected to said frame and having a common pivotal center with the furrow-opening device, an adjustable bracket secured to said spring-bar and adapted to engage with said furrow-opening device, a yoke also secured to said spring-bar, a seed-conveyer engaging with said yoke and connected with said furrow-opening device, and lever mechanism to elevate said yoke as also said seed-conveyer and furrow-opening device, all substantially as shown and described.

3. In a seeding-machine, the combination with a frame structure, of a bracket having flanges adapted to fit about said frame structure, a clevis adapted to extend over said frame structure and through said bracket to hold said bracket rigidly in place, said bracket having cut-away spaces in its under side, a pair of drag-bars adapted to fit in two of said spaces, and a spring presser-bar also adapted to fit within one of said spaces between said drag-bars, substantially as shown and described.

4. In a seeding-machine, an adjustable fulcrum-bracket having an elongated opening therein near one end, and a transverse bar connected with said bracket near one of its ends.

5. In a seeding-machine, a movable fulcrum-bracket having a slot or opening therein near one end, of flanges or projections extending from one face of said bracket along its outer edges, and a transverse bar across the other end of said bracket, said bar having hook-like extensions at its ends, substantially as shown and described.

654,387. MULTIPLE CERTIFICATE, &c. RICHARD L. CRAMPTON, Chicago, Ill. Filed Jan. 13, 1900. Serial No. 1,303. (No model.)



Claim.—1. A blank form for vouchers and the like, comprising a stub portion, a voucher portion, a value or amount column interposed between the stub and voucher portions, arranged in a form capable of separation to indicate desired amounts, a third portion and contiguous to one of its margins a second value or amount column constructed similar to the first value or amount column and printed in such form that its parts register with the corresponding parts of the latter when folded back thereupon, whereby both stub and said third portion may be separated from the voucher portion by tearing or cutting through the superposed value-columns together and the divided columns will indicate the same amount on the portions to which they are respectively attached.

2. A blank form for vouchers and the like, comprising a stub portion, a voucher portion, a value or amount column interposed between the stub and voucher portions arranged in a form capable of separation to indicate desired amounts, a second stub portion having contiguous to one of its margins a second value or amount column printed in such form that its parts register with the corresponding parts of the first value or amount column when folded back upon the latter, whereby both stubs may be simultaneously separated from the voucher portion by tearing or cutting through the superposed value-columns and the divided columns will indicate the same amounts on the portions to which they are respectively attached.

3. A blank form for vouchers and the like, comprising a stub portion, a voucher portion, a value or amount column interposed between the stub and voucher portions arranged in a form capable of separation to indicate desired amounts, a second stub portion arranged at the end of the voucher portion remote from the first portion, a second value or amount column interposed between said second stub portion and the voucher portion, printed in such form that its parts register with the corresponding parts of the first value-column when folded back upon the latter, said voucher portion consisting of two complete parts adapted to be separated on a line extending transversely between its ends, whereby the voucher portions may be separated from both stub portions by a single tearing or cutting operation extending through the superposed amount-columns and said divided columns will indicate the same amount on both stubs and both voucher portions.

4. A blank form for vouchers and the like, comprising a stub portion a voucher portion, a value or amount column interposed between the stub and voucher portions arranged in a form capable of separation to indicate desired amounts, a second stub portion arranged at the end of the voucher portion remote from the first stub portion, a second value or amount column interposed between the second stub portion and voucher portion, printed in such form that its parts register with the corresponding parts of the first value or amount column when folded back upon the latter, said voucher portion consisting of two parts adapted to be separated on a line extending transversely between said stub ends, and the second stub portion being printed upon the reverse side with relation to the voucher portion and having the amount or value column thereof also reproduced on the reverse side in register with the amount-column upon its opposite side, whereby the voucher portions may be separated from both stub portions by a single tearing or cutting operation and the divided amount-columns will indicate the same amount on both stubs and both voucher portions.

5. A blank form for vouchers and the like, comprising a stub portion, a voucher portion, a value or amount column interposed between the stub and voucher portions, consisting of a series of groups of tens figures arranged in a column and a second series of units figures arranged in a second column offset with relation to the first column, whereby a desired amount may be indicated by separating the blank in a zigzag line, a third portion and a second value or amount column arranged contiguous to one of its margins and printed in such form that its parts register with the corresponding parts of the first value or amount column when folded back upon the latter, whereby both the stub and said third portions may be separated from the voucher portion by tearing through the superposed parts on a zigzag line extending through the value-columns and the divided columns will indicate the same amount on the portions to which they are respectively attached.

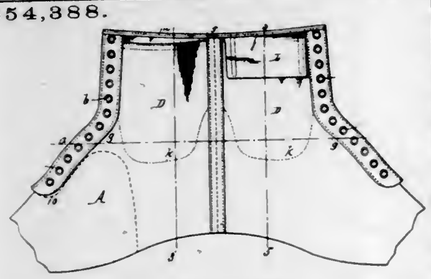
6. As a new article of manufacture, a book of blank forms for vouchers or the like, consisting of a series of blanks each comprising a stub portion, a voucher portion, a value or amount column interposed between the stub and voucher portions arranged in a form capable of separation to indicate desired amounts, a second stub portion and a second value or amount column interposed between the voucher and said second stub portion printed in such form that its parts register with the corresponding parts of the said first value or amount column when folded back upon the latter, the ends of the stubs of each blank being bound into book form and one of each pair being provided with a weakened line to facilitate its separation from the binding, substantially as described.

7. As a new article of manufacture, a book of blank forms for vouchers or the like, consisting of a series of blanks each comprising a stub portion, a voucher portion, a value or amount column interposed between the stub and voucher portions arranged in a form capable of separation to indicate desired amounts, a third portion and a second value or amount column interposed between said third portion and the voucher portion printed in such form that its parts register with the corresponding parts of the first-mentioned value-column when folded back upon the latter, these several blanks being bound into book form with their stub ends secured by the binding, substantially as described.

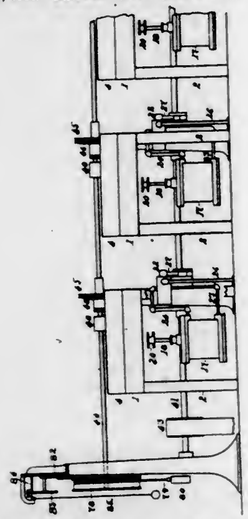
654,388. SHOE. FRANK DIENER, Niagara Falls, N. Y. Filed May 4, 1900. Serial No. 15,478. (No model.)

Claim.—The combination with the upper, of an interlining which is secured at its top edge to the top edge of the upper and which extends from the top edge of the upper downwardly along the front of the upper and along its heel-joint, and a lining which is arranged on the inner side of the interlining and which is unattached to the interlining at its top edge, to form the mouth of a pocket, and attached to the interlining at a suitable distance below its top edge to form the bottom of a pocket, substantially as set forth.

654,888.



654,389. SYSTEM FOR CONTROLLING SERIES OF VULCANIZERS. AUGUSTUS R. ELLIWOOD and FRANK A. SEIBERLING, Akron, Ohio, assignors to the Goodyear Tire and Rubber Company, same place. Filed Mar. 7, 1900. Serial No. 7,665. (No model.)



Claim.—1. A system of vulcanizing-presses arranged to be substantially controlled by a definite revolving agent, consisting of a series of presses or vulcanizers each separately acting, means for causing their several operations, and a power-shaft adapted to cause such operations substantially as described.

2. A system of vulcanizing-presses arranged to be controlled substantially by a definite controlling agent, consisting of means for the regular definite operation of said presses, means for furnishing power for such operation and vulcanizing-presses arranged to be controlled by said means, substantially as shown and described.

3. A system of vulcanizing-presses consisting of a series of independent vulcanizers all arranged to be operated separately, means for causing their several definite operations and means for furnishing power for such operation, substantially as shown and described.

4. A system of vulcanizers consisting of a series of independent presses, means for causing their definite determinate operations and means as a power-driven shaft, for furnishing power for such operation at stated intervals, substantially as shown and described.

5. A system of vulcanizing-presses consisting of a series of independently-operating presses, means as a shaft, whose revolution is definitely determined, for limiting the intervals of operation of said presses, means as a power-shaft for furnishing power for such operations, substantially as shown and described.

6. A system for the operation and control of a plurality of rubber-tire vulcanizers, consisting of a definite controlling agent to cause the systematic determinate operation of a number of vulcanizers, a shaft to furnish power therefor and means for communicating the power to said vulcanizers as determined by said agent, substantially as shown and described.

7. A system for the operation and control of a plurality of rubber vulcanizers, consisting of a definite controlling agent to cause the systematic determinate operation of said vulcanizers, consisting of a shaft adapted to revolve as directed by said agent, separate mechanism attached to said shaft arranged to operate separate vulcanizers, a shaft also connected with said mechanism arranged to operate and furnish power to said mechanism at intervals determined by said agent, substantially as shown and described.

8. A system for the operation and definite control of a plurality of vulcanizers consisting of a shaft whose regularity of revolution is definitely determined, mechanism attached to said shaft for the operation of each vulcanizer, a separate shaft connecting with each set of mechanism for operating independently each vulcanizer in the series at intervals predetermined, actuated by said first shaft, substantially as shown and described.

9. A system for the operation and control of a plurality of vulcanizers, consisting of an agent arranged to revolve a time-measuring shaft at a certain speed, a shaft driven by power, mechanism attached to each vulcanizer arranged to receive its operating impulse from the first-mentioned shaft, and its power from said second shaft, and adapted to operate its individual vulcanizer at definite intervals, independent of the others in said series, substantially as shown and described.

10. A system for the control of a plurality of vulcanizers consisting of means, as a clock, for revolving at a determinate speed a shaft driven by power, independent mechanism connected with each of said vulcanizers arranged to automatically place itself in operative connection with said clock-shaft and receive impulse therefrom, in combination with said power-shaft to open said vulcanizers at a definite interval after their closing, substantially as shown and described.

11. A system for the control and operation of a plurality of vulcanizers consisting of a controlling agent, arranged to revolve a shaft at a determined speed and a shaft arranged to furnish power for such operation and mechanism to automatically open said vulcanizers at intervals determined by said first shaft and means as a band-lever for causing the operation of said mechanism to close said vulcanizers, substantially as shown and described.

12. A system for the operation and control of a plurality of vulcanizers consisting of a series of vulcanizers, operating mechanism attached thereto, a time-measuring shaft connected with said mechanism to automatically open said vulcanizers, a power-shaft connected with said mechanism to furnish power for such operation, and means for causing the closing of said vulcanizers at the will of the operator, substantially as shown and described.

13. In a system for the operation and control of a plurality of vulcanizers, the combination of two shafts, one adapted to determinate the intervals of operation, the other to furnish power therefor, with mechanism attached to each vulcanizer and in operative connection with said shafts, arranged to automatically open said vulcanizers at predetermined intervals after the closing thereof by said mechanism at the impulse of the operator, substantially as shown and described.

14. A system for the operation and control of vulcanizing-presses for rubber tires, consisting of means for causing the opening of the several presses at definite intervals after the closing thereof, independently of each other and means and mechanism for causing the closing thereof as desired, substantially as shown and described.

15. A system for the control of a plurality of vulcanizers, consisting of means for causing the definite determinate opening of individual vulcanizers at a determined interval after the closing thereof, mechanism for arresting the supply of steam to said vulcanizers before the opening thereof, mechanism to close said vulcanizers and means for opening the supply of steam to said vulcanizers after said closing, substantially as shown and described.

16. In a system arranged to control and operate a series of vulcanizers, the combination with mechanism for the successive opening and closing of individual vulcanizers independent of each other, means for arresting the supply of steam to said vulcanizers before the opening thereof, and supplying steam to said vulcanizers after the closing thereof, of means for furnishing power for these successive operations, substantially as shown and described.

17. In a vulcanizing-press the combination with a fixed hollow case and a movable hollow case hinged thereto, of a cylinder connected with said fixed case having a piston and rod; means for introducing fluid under pressure to said cylinder to move said piston reciprocally, and a valve to control the entrance and exit of said fluid, of mechanism to connect said rod and movable case to cause the latter to open and close with the movement of said rod, substantially as shown and described.

18. In a vulcanizing-press the combination with a fixed hollow case and a movable hollow case hinged thereto, of a cylinder connected with said fixed case having a piston and rod, means for introducing a fluid under pressure to move said piston reciprocally, and a valve to control the entrance and exit of said fluid, of a pivoted lever connected with said piston-rod and movable case to open and close the latter by the movement of said piston, substantially as shown and described.

19. In a vulcanizing-press the combination with a fixed hollow case and a movable hollow case hinged thereto, of a cylinder connected with said fixed hollow case having a piston and rod, means for introducing a fluid under pressure to move said piston reciprocally and a valve to control the entrance and exit of said fluid, of a pivoted lever connected with said movable case and lever to open and close said movable case by the motion of said piston, substantially as shown and described.

20. In a vulcanizing-press the combination with a fixed hollow case and a movable hollow case hinged thereto, of a cylinder connected with said case having a piston and rod and means for causing said piston to move reciprocally, of levers connected with said piston-rod, clamps to bind said movable case and fixed case together, and intermediate connections to transmit power from said levers to said clamps, to cause them to operate, substantially as shown and described.

21. In a vulcanizing-press the combination with a fixed hollow case and a movable hollow case hinged thereto, of a cylinder connected with said fixed case having a piston and rod, and means for causing said piston to move reciprocally levers pivotally connected with said fixed case and piston-rod, clamp-arms pivotally connected with said fixed case and arranged to bind said movable case on the fixed case, and links connecting said levers and clamp-arms, substantially as shown and described.

22. In a vulcanizing-press the combination with a fixed hollow case and a movable hollow case hinged thereto, of a cylinder connected with said fixed case having a piston and rod, and means for introducing a fluid under pressure to cause said piston to move reciprocally, of clamp-arms pivotally connected with said fixed case and capable of a rocking and vertical motion, arranged to rock to and overhang said movable case, and levers pivotally connected with said fixed case and piston-rod, and connected with said clamp-arms by links, to rock said arms in position to overhang said movable case, and to draw them vertically to bind the same, substantially as shown and described.

23. In a vulcanizing-press, the combination with a fixed hollow case and a movable hollow case binged thereto, of a cylinder with said fixed case having a pistoo and rod, and means for introducing a fluid under pressure to cause said piston to move reciprocally, clamp-arms having pivots adapted to rest in inverted hooks on said fixed case and capable of a rocking and vertical motion, arranged to rock to and overhang said movable case and fall and rock away from said movable case, and levers pivotally connected with said fixed case and piston-rod, and connected with said clamp-arms by links, to swing said arms in position to overhang said movable case, to draw them vertically to bind the same, and to draw the lower ends inward to release them from said case and rock them outward substantially as shown and described.

24. In a vulcanizing-press the combination with a fixed hollow case and a movable case hinged thereto, of a cylinder connected with said fixed case having a piston and rod and means for introducing a fluid under pressure to cause said piston to move reciprocally, clamps having pivots adapted to rest in inverted hooks on said fixed case and capable of a rocking and vertical motion, arranged to rock and overhang said movable case, and to rise and rock away from it, levers pivotally connected with said fixed case and piston-rod and connected with said clamps by links and springs severally connecting each clamp and hook to cause said arms to rise, substantially as shown and described.

25. In a vulcanizing-press the combination with a fixed hollow case and movable hollow case hinged thereto, of a cylinder connected with said fixed case, having a piston and rod and means for introducing a fluid under pressure to cause said piston to move reciprocally, a pivoted lever connected with said piston-rod, a slotted link connected with said movable case and lever to open and close said movable case, clamps pivotally connected with said fixed case, capable of a rocking and a vertical motion, arranged to rock to and overhang said movable case, and bent levers pivotally connected with said fixed case and piston-rod, and connected with said clamps to swing said arms to said movable case, draw them upon it and rock away from it, substantially as shown and described.

26. In a vulcanizing apparatus the combination with a fixed hollow case and a movable case hinged thereto, of power-driven mechanism connected with said fixed case, levers connected with and arranged to be rocked by said mechanism, clamps to bind said cases together and intermediate connection to transmit power from said levers to said clamps to cause them to operate, substantially as shown and described.

27. In a vulcanizing apparatus, the combination with a fixed hollow case and a movable hollow case hinged thereto, a cylinder having a piston and rod, means for introducing a fluid under pressure to cause said piston to move reciprocally, a lever arranged to be actuated by said piston to open and close said movable case, of a rocking frame arranged by means of intermediate mechanism to control and regulate the entrance of fluid to said cylinder, and driving mechanism to operate said frame and regulate its action, substantially as shown and described.

28. In a vulcanizing-press the combination with a fixed hollow case and a movable hollow case hinged thereto, a cylinder having a piston and rod, a valve to cause said piston to move reciprocally, a lever arranged to be actuated by said piston to open and close said movable case, a valve to introduce live steam to said cases, of a rocking frame arranged by means of intermediate mechanism to control and regulate the entrance of fluid to said cylinder, and of steam to said cases, driving mechanism to operate said frame and a clock to regulate its action, substantially as shown and described.

29. In a vulcanizing-press the combination with a fixed and movable case, a cylinder having a piston and rod, a valve for introducing a fluid under pressure to cause said piston to move reciprocally, mechanism arranged to be actuated by said piston to move said movable case from the fixed cases, and a valve to introduce live steam to said case, of a rocking frame arranged by means of intermediate mechanism to control and regulate the entrance of fluid to said cylinder, separate rocking mechanism arranged to be operated by said frame to control the entrance and exit of steam from said cases, driving mechanism to operate said frame, and a clock to regulate its action, substantially as shown and described.

30. The combination with a vulcanizing-press having a fixed and a movable case, and a cylinder and piston arranged by intermediate connections to cause said movable case to separate from and meet said fixed case, locking mechanism for said cases adapted to be operated by said piston, means for introducing steam to said cases, and a fluid under pressure to cause said cylinder to operate said piston, and valves for controlling said fluid and steam, of mechanism for separately actuating said fluid and steam valves, and a device for adjusting said mechanism to perform their respective functions with reference to each other, substantially as shown and described.

31. The combination with a vulcanizing-press having a fixed and a movable case and a cylinder and piston arranged by intermediate connections to cause said movable case to approach and recede from said fixed case, locking mechanism for said cases adapted to be operated by said piston, means for introducing steam to said cases, and fluid under pressure to said cylinder to operate said piston, and valves for controlling said fluid and steam, of power-driven mechanism for operating said fluid and steam valves, and a clock to regulate the operation of said mechanism, substantially as shown and described.

32. The combination with a vulcanizing-press having a fixed and a movable case, and a cylinder and piston arranged by intermediate connections to cause said movable case to approach and recede from said fixed case, locking mechanism for said cases adapted to be operated by said piston, means for introducing live steam to said cases, and a fluid under pressure to said cylinder to operate said piston, and valves for controlling said fluid and steam, of power-driven mechanism for operating said fluid and steam valves, a device for adjusting said mechanisms to perform their respective functions with reference to each other, and a clock to regulate the operation of said mechanism, substantially as shown and described.

33. The combination with a vulcanizing-press having a fixed and a movable case, of mechanism to cause said movable case to meet and part from the fixed case, devices to operate said mechanism and a clock to control said devices, substantially shown and as described.

34. The combination in a vulcanizing apparatus having opening molds and a hydraulic cylinder to open and close said molds, with a valve to operate it, of a power-driven ratchet-wheel, a rocking frame connected with and arranged to open and close said valve, a wheel bearing a cam arranged to engage and rock said frame, a spring-pressed bolt in said cam-wheel arranged to engage said ratchet-wheel to cause said wheels to revolve together, a movable pawl to withdraw and release said bolt, and a handle to operate said pawl, substantially as shown and described.

35. The combination in a vulcanizing apparatus having opening molds with a valve to operate it, of a power-driven ratchet-wheel, a rocking frame connected with and arranged to open and close said valve, a wheel bearing a cam arranged to engage and rock said frame, a spring-pressed bolt on said cam-wheel arranged to engage said ratchet-wheel to cause said wheels to revolve together, a sliding bar having a beveled end to withdraw said bolt, and a clock-regulated wheel to withdraw said bar, substantially as shown and described.

36. The combination in a vulcanizing apparatus having opening molds and a hydraulic cylinder to open and close said molds with a valve to operate it, of a power-driven ratchet-wheel, a rocking frame connected with and arranged to open and close said valve, a wheel bearing a cam arranged to engage and rock said frame, a spring-pressed bolt, in said cam-wheel, arranged to engage said ratchet-wheel to cause said wheels to revolve together, a sliding bar having a beveled end to withdraw said bolt, a clock-regulated wheel, adjacent to said bar and an adjustable cam-wedge to revolve with said clock-regu-

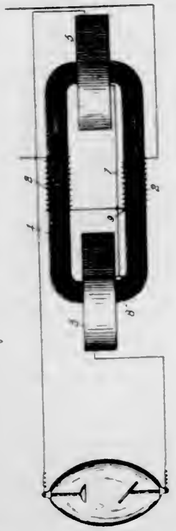
lated wheel, to engage and withdraw said bar, substantially as shown and described.

37. The combination in a vulcanizing apparatus having opening molds and a hydraulic cylinder to open and close said molds, with a valve to operate it, of a power-shaft, a ratchet-wheel on said shaft a rocking frame connected with and arranged to open and close said valve, a wheel bearing a cam-wedge to engage and rock said frame, a spring-pressed bolt in said cam-wheel arranged to engage said ratchet to cause said wheels to revolve together, a sliding bar having a beveled end to withdraw said bolt, a clock-regulated shaft bearing a time-wheel adjacent to said bar, an adjustable cam-wedge to revolve with said time-wheel to engage and withdraw said bar, a clutch to drive said time-wheel, a lever to operate said clutch and a grooved cam-wheel on said power-shaft to operate said clutch, substantially as shown and described.

38. The combination in a vulcanizing apparatus having opening, hollow, mold-holding cases, steam-pipes for heating said cases and a valve to control said steam-pipes, of a rocking bell-crank connected with and arranged to open and close said valve, a power-driven ratchet-wheel, a wheel bearing a cam arranged to engage and rock said bell-crank, and a spring-pressed bolt in said cam-wheel to engage said ratchet-wheel to cause said wheels to revolve together, substantially as shown and described.

39. The combination in a vulcanizing apparatus having opening, hollow, mold-holding cases, steam-pipes for heating said cases, and a valve to control said steam-pipes, of a rocking bell-crank lever connected by a hooked rod to the lever of said valve and arranged to open and close said valve, a power-driven ratchet-wheel, a wheel bearing a cam arranged to engage and rock said bell-crank lever, a spring-pressed bolt in said cam to cause said wheels to revolve together and a tripping-lever on said valve-lever to disengage said hooked rod, substantially as shown and described.

654,390. INDUCTION-COIL. REGINALD A. FESSENDEN, Allegheny, Pa. Filed Dec. 1, 1899. Serial No. 738,847. (No model.)



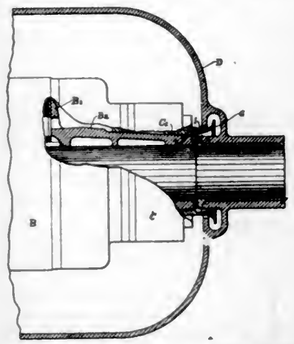
Claim.—1. An induction-coil having in combination a divided annular core, and primary and secondary coils surrounding the core and so arranged that at least a part of each coil surrounds the core on both sides of the gap between the ends of the core, substantially as set forth.

2. An induction-coil having in combination a divided annular core, a primary coil and a secondary coil, said coils surrounding the core in different planes at right angles to the axis of the core and so arranged that at least a part of each coil surrounds the core on both sides of the gap between the ends of the core, substantially as set forth.

3. An induction-coil, having in combination a divided annular core, primary coils surrounding core on opposite sides of the gap between the ends of the core and secondary coils arranged intermediate of the primary coils, substantially as set forth.

4. An induction-coil having in combination a sectional annular core, primary coils surrounding the core intermediate of the gaps at the ends of the sections and secondary coils inclosing the ends of the core-sections, substantially as set forth.

654,391. LOCKING DEVICE FOR ARMATURE OIL-GUARDS. ALFRED J. GAERING, Johnstown, Pa., assignor to the Lorain Steel Company, of Pennsylvania. Filed Dec. 28, 1899. Serial No. 741,412. (No model.)



Claim.—1. The herein-described locking device, consisting of an oblique pin having an extended arm forming a head therefor, and a perforation in said arm, substantially as described.

2. The combination of a sleeve member, and a member upon which said sleeve member is seated, said sleeve member having an oblique hole extending through it into its seating member, and a pin seated in said hole and having an extended arm which seats on said sleeve member and is secured thereto, substantially as described.

3. The combination of a sleeve member and a member upon which the sleeve member is seated, said sleeve member having an oblique hole extending through it into the seating member, a pin seated in said hole and having an extended arm or head which seats on the sleeve member, and means for securing said arm or head to the said sleeve member, substantially as described.

4. In a dynamo-electric machine, the combination with the armature having an overhanging portion, of an oil-guard extending underneath said overhanging portion, a pin extending obliquely through said guard into the armature member upon which the guard is seated, said pin having a head portion which extends beyond the said overhanging portion and which is secured to said sleeve, substantially as described.

654,392. RIBBON-HOLDER. LLOYD E. HAMILTON and JOHN W. MILLER, Hudson, Ind. Filed Nov. 25, 1899. Serial No. 738,342. (No model.)



Claim.—1. In a ribbon-holder, the combination of a body-section, and a bail for supporting the body-section, the body-section comprising a U-shaped clamp at the upper ends of the side arms of which spring-coils are formed to actuate the clamp, and the body-section also having arms projecting down from the coils and formed with hooks or pivots on which to mount the ribbon-bolt, and the bail having its ends coiled to form sleeves which respectively fit friction-tight on the said arms of the body-section below the coils at the side arms of the clamp, the said sleeves being slidably engaged with the arms, for the purpose specified.

2. A ribbon-holder, comprising a body-section, and a bail for supporting the body, the body-section having a U-shaped spring-clamp, and side arms on which the clamp is mounted, the arms extending down the sides of the bolt and having hooks or pivots on which the bolt is mounted, and the bail-section straddling the bolt and having its ends engaged with the respective side arms of the body-section to support the same from the side arms.

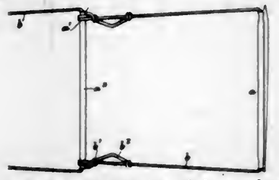
3. In a ribbon-holder, the combination of a body-section, and a bail for supporting the same, the body comprising a U-shaped spring-clamp and also side arms projecting down from the sides of the clamp and formed with hooks or pivots on which to mount the ribbon-bolt, and the bail having its ends coiled to form sleeves which respectively fit friction-tight on the said arms of the body-section below the clamp, the sleeves being slidable on the side arms of the body, for the purpose specified.

654,393. PROCESS OF TREATING SLUDGE IN WATER-PURIFYING. JAMES O. HANDY, Edgeworth, Pa., assignor to Pittsburg Testing Laboratory, Limited, Pittsburg, Pa. Filed Mar. 8, 1900. Serial No. 7,813. (No specimens.)

Claim.—1. As an improvement in the art of treating sludge obtained in the purification of water, the method herein described, which consists in impregnating the sludge with carbonic acid, whereby the carbonate of magnesia is rendered soluble, separating the solution so formed from the sludge, and then reburning or calcining the sludge, substantially as set forth.

2. As an improvement in the art of treating sludge obtained in the purification of water, the method herein described, which consists in impregnating the sludge with carbonic acid, whereby the carbonate of magnesia is rendered soluble, separating the solution so formed from the sludge, and finally precipitating the carbonate of magnesia in the solution and removing the water therefrom, substantially as set forth.

654,394. FOLDING OR FLEXIBLE LADDER. JAMES HARGREAVES, Widnes, England. Filed June 17, 1899. Serial No. 720,893. (No model.)



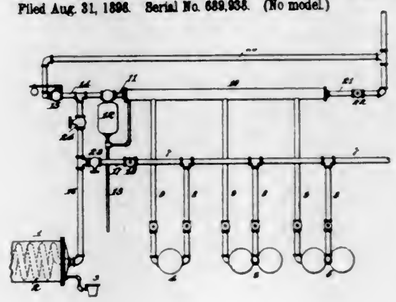
Claim.—1. A flexible ladder having tubular metal rungs, with compressed portions near their ends, and wires extending through the rungs, the end portions of each wire being twisted about the compressed portions of the next rung, substantially as described.

2. A flexible ladder having tubular rungs, with wires extending through the rungs, the ends of each wire being twisted about the next rung and about the side portions of the ladder, substantially as described.

3. A ladder having tubular rungs with compressed portions near their ends, wires threaded through the tubes, the end portions of each wire being twisted about the compressed portions of the next rung and then about the side portions of the wire, and having laterally-projecting parts, substantially as described

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654,395. ABSORPTION REFRIGERATING APPARATUS. NICOLAI H. HILLER, Carbonale, Pa., and HENRY TORRANCE, Jr., Tenafly, N. J. Filed Aug. 31, 1898. Serial No. 689,933. (No model.)



Claim.—1. In a refrigerating apparatus of the absorption type, the combination with a generator and a series of pumps used in connection with such apparatus, of an exhaust-chamber, connections between said chamber and the exhaust-ports of said pumps, and a pipe connecting said exhaust-chamber with the heating-coil of the generator, substantially as set forth.

2. In a refrigerating apparatus of the absorption type, the combination with a generator and a series of pumps used in connection with such apparatus, of an exhaust-chamber, connections between said chamber and the exhaust-ports of said pumps, a pipe connecting said exhaust-chamber with the heating-coil of the generator, and an oil-separator in said pipe, substantially as set forth.

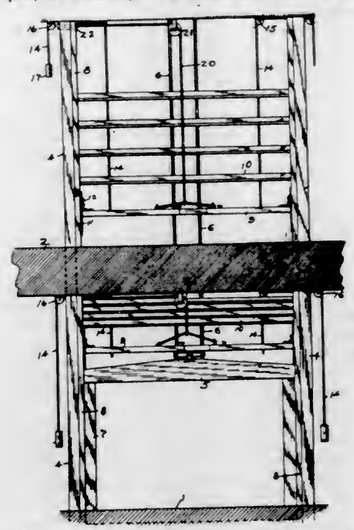
3. In a refrigerating apparatus of the absorption type, the combination with a generator and a series of pumps used in connection with such apparatus, of an exhaust-chamber, connections between said chamber and the exhaust-ports of said pumps, a pipe connecting said exhaust-chamber with the heating-coil of the generator, an oil-separator in said pipe, and a safety-valve also in said pipe, substantially as set forth.

4. In a refrigerating apparatus of the absorption type, the combination with a generator and a series of pumps used in connection with such apparatus, of an exhaust-chamber, connections between said chamber and the exhaust-ports of said pumps, a pipe connecting said exhaust-chamber with the heating-coil of the generator, an oil-separator in said pipe, a safety-valve also in said pipe, a stack, and a pipe connecting said exhaust-chamber with said stack, substantially as set forth.

5. In a refrigerating apparatus of the absorption type, the combination with a generator and a series of pumps used in connection with such apparatus, of an exhaust-chamber, connections between said chamber and the exhaust-ports of said pumps, a pipe connecting said exhaust-chamber with the heating-coil of the generator, an oil-separator in said pipe, a safety-valve also in said pipe, a stack, a pipe connecting said exhaust-chamber with said stack, and a pipe connecting the safety-valve with said stack, substantially as set forth.

6. In a refrigerating apparatus of the absorption type, the combination with a generator and a series of pumps used in connection with such apparatus, of an exhaust-chamber, connections between said chamber and the exhaust-ports of said pumps, a pipe connecting said exhaust-chamber with the heating-coil of the generator, a live-steam pipe for supplying said pumps connected to the coil of the generator, and a reducing-valve in said pipe, substantially as set forth.

654,396. ELEVATOR SAFETY-GATE. STEPHEN T. HITE, Indianapolis, Ind. Filed May 10, 1900. Serial No. 16,181. (No model.)



Claim.—1. An elevator safety-gate apparatus including a gate formed of transverse bars, a flexible connection between said bars, means for holding the bars of the gate apart in normal position for closing the elevator-shaft, and means actuated by the elevator-car for elevating the bottom bar.

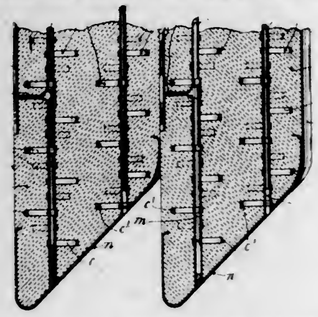
2. An elevator safety-gate apparatus including a gate formed of transverse bars, a flexible connection between said bars, a yielding

means for holding said bars apart, and means actuated by the elevator-car for elevating the bottom bar.

3. An elevator safety-gate apparatus including a gate formed of transverse bars, cables connecting said bars so that when taut the bars will be a suitable distance apart, pulleys over which said cables extend, weights suspended on the outer ends of said cables that are less than the total weight of the gate and greater than the weight of the bars above the bottom bar of the gate, and means actuated by the elevator-car for elevating the bottom bar.

4. An elevator safety-gate apparatus including a gate formed of transverse bars, a flexible connection between said bars, means for holding the bars of the gate apart in normal position for closing the elevator-shaft, a pair of opposing vertical guides for the ends of the bars of the gate, vertical reinforcing-bars secured at each end to the bottom bar of the gate and adapted to operate in said guides, and means actuated by the elevator-car for elevating the bottom bar.

654,897. CONCRETE PILE. OLAF HOFF and CHARLES F. HAGLIN, Minneapolis, Minn. Filed Apr. 13, 1900. Serial No. 12,706. (No model.)



Claim.—1. A concrete pile or column having a longitudinally-extended core and a plurality of radial binding-braces projecting from said core and embedded in the body of the pile, substantially as described.

2. A concrete pile or column having a longitudinally-extended core and a plurality of binding brackets or rods radiating from said core in different vertical planes, and embedded within the body of the pile, substantially as described.

3. A concrete pile or column having a longitudinally-extended core, and a plurality of brackets or braces arranged in different planes and partially encircling the said core with their prongs radiating therefrom, which core and brackets are embedded within said pile, substantially as described.

4. A concrete pile, having a hollow core serving as a jetting-tube, and a plurality of binding brackets or rods radiating from said core and embedded within the body of the pile, substantially as described.

5. A sheet-pile of concrete, having a longitudinally-extended jetting-pipe provided with a plurality of branches opening at one edge thereof, substantially as described.

6. A concrete pile, having a longitudinally-extended jetting-passage plugged at its lower end and provided with one or more lateral passages opening at the edge or side of the pile and through which water and cement may be injected, substantially as described.

7. A concrete pile, having a primary central core and a plurality of auxiliary cores embedded therein, surrounding said central cores, and radial binding-braces connecting the said primary and auxiliary cores, substantially as described.

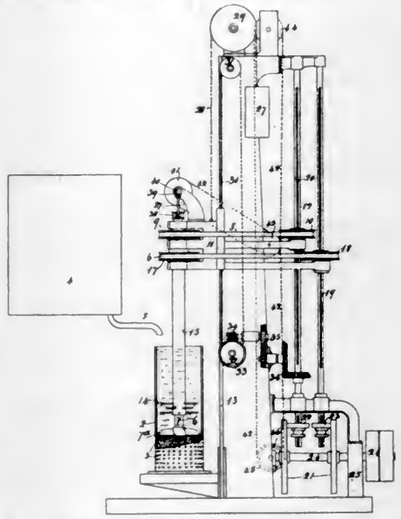
8. A concrete pile, having a primary, central core, and a plurality of auxiliary or surrounding cores, radial binding-braces connecting said primary and auxiliary cores, and tie brackets or rods connecting said auxiliary cores, substantially as described.

9. A concrete pile having one concave and one convex edge, which edges are engageable with the reversely-formed edges of adjacent piles for less than a semicircle, whereby said piles are alined and may be separated by transverse movements, substantially as described.

654,898. GUNCOTTON-PRESS. ERNEST HOLLINGS, Chorlton-cum-Hardy, England. Filed Apr. 15, 1899. Serial No. 713,108. (No model.)

Claim.—1. In apparatus for making blocks of guncotton, the combination with a mold, of a presser therein, mechanism for reciprocating the same, and mechanism for gradually raising the presser during the reciprocation thereof; substantially as described.

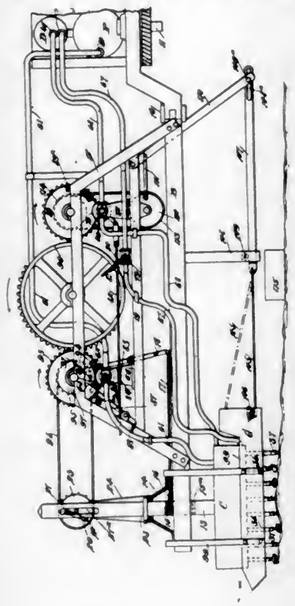
2. In apparatus for making blocks of guncotton, the combination with a mold, of a revolving presser, mechanism for reciprocating the same, and mechanism for gradually lifting the presser while it is rotated and reciprocated; substantially as described.



3. In apparatus for making blocks of guncotton the combination with a perforated mold of a revolving and reciprocating presser adapted to lay the fibers of guncotton into the mold, movable agitators adapted to prevent settlement of fibers and mechanism driving the agitators independently of the presser substantially as described.

4. In apparatus for making blocks of guncotton the combination with a perforated mold of a central perforated tube and a hollow revolving and reciprocating presser all adapted to make a hollow block of guncotton substantially as described.

654,899. DEVICE FOR GATHERING PRUNES. OLIVER S. HOOVER, Stanford University, and MORRIS T. HOOVER, Mount View, Cal. Filed Aug. 16, 1899. Serial No. 727,390. (No model.)



Claim.—1. In a device for gathering prunes and other fruits from the surface of the ground, a series of movable gatherers pneumatically controlled by alternately-applied compression and suction.

2. In a device for gathering prunes and other fruit from the surface of the ground, a series of movable gatherers pneumatically controlled by applied compression and suction, guides for the same, a mechanism for effecting a vacuum and a compression of air, conductors between the vacuum and compressing sections of said mechanism, and means for controlling the supply of compressed air and the suction.

3. In a device for gathering prunes and other fruit from the surface of the ground, a series of movable gatherers pneumatically controlled by alternately-applied compression and suction, guides for the gatherers, pneumatically-controlled valves loosely mounted in said gatherers, an air-compressing and vacuum mechanism, and a controlling mechanism between the compressing and the vacuum compartments of said pneumatic mechanism and the gatherers.

4. In a device for gathering prunes and other fruit from the surface of the ground, a series of movable gatherers pneumatically controlled by alternately-applied compression and suction, guides for the gatherers, pneumatically-controlled valves loosely mounted in said gatherers, an air-compressing and vacuum mechanism, tubular connections between the compressing and vacuum compartments of said mechanism, valves located in said connections, and means for closing one valve as another is opened.

5. In a device for gathering prunes and other fruit from the surface of the ground, guides for the tubes, and means, substantially as described, for pneumatically raising and lowering the tubes, attracting the fruit to said tubes and releasing the fruit therefrom.

6. In a device for gathering prunes and other fruit from the surface of the ground, a series of gathering-tubes, guides for the tubes, means, substantially as shown and described, for pneumatically raising and lowering the tubes, attracting the fruit to the tubes and releasing the fruit therefrom, and suction-controlling valves mounted to slide in said tubes, for the purpose specified.

7. A device for gathering prunes and other fruit from the surface of the ground, consisting of an adjustable gathering-head, devices for raising and lowering the said head and maintaining it in adjusted position, gathering-tubes having guided movement in said head, and means for pneumatically raising and lowering the gathering-tubes, attracting fruit to the tubes and releasing the fruit therefrom.

8. In a device for gathering prunes and other fruit, a series of gatherers, a screen mounted to reciprocate beneath the gatherers, guideways for the said screen, and a brush carried by said screen, the screen being adapted to receive the fruit from the gatherers and the brush to clean the fruit-receiving surfaces of the gatherers, as described.

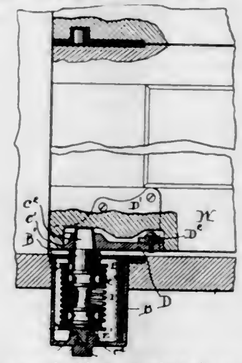
9. In a machine for gathering prunes and other fruit, a gathering-head provided with a series of gathering-tubes, and means for pneumatically attracting the fruit to said gatherers and releasing it therefrom, guides located at each side of the gathering-head, provided with upper and lower grooves in their inner surfaces, said grooves being connected at their ends, and a screen mounted to slide in the said grooves, for the purpose specified.

10. In a machine for gathering prunes and other fruit from the surface of the ground, the combination, with a gathering-head provided with a series of gathering-tubes, and means for pneumatically attracting fruit to said tubes and for discharging the fruit therefrom, of a guide located at each side of the gathering-head independent thereof, each guide being provided with an upper and a lower slideway, the slideways of each guide being connected at both ends, a gravity-latch located at one end connection of the said slideways, the other end connection extending beyond the plane of the upper slideway a screen held to travel in the said slideways, and a brush carried by the said screen, as described.

11. In a device for gathering prunes and other fruit from the surface of the ground, a gathering-head provided with a central chamber and an upper and a lower duct or channel, tubes extending through the body-chamber from one duct or channel to the other, tubular gatherers loosely mounted in the said guide-tubes and extending beyond the lower surface of the gathering-head, an air-compressing and vacuum mechanism, and a connection between the air-compressing compartment of said mechanism and the upper duct, connections between the vacuum-compartment of said mechanism and the upper and lower ducts or channels, the said connections being provided with valves, and devices for closing one valve as a second is opened, as described.

12. In a device for gathering prunes and other fruit from the surface of the ground, the combination, with a gathering-head provided with a central compartment, an upper and a lower duct, and guide-tubes extending from the upper to the lower duct through the central compartment and from the lower duct downward beyond the bottom of said head, of gathering-tubes loosely mounted to slide in said guide-tubes, each gathering-tube being provided with an aperture at its top, a flexibly-connected nozzle at its bottom and a piston connected with its upper end, the pistons being in close engagement with the inner faces of the tubes, extending within the body-chamber of the gathering-head, valves mounted to slide in said tubes, an air-compressing and vacuum-producing mechanism, a tubular connection between the compressing-compartment of said mechanism and the upper duct in the gathering-head, and independent tubular connections between the vacuum-chamber of said mechanism and the upper and lower ducts, and valves located in said tubes, the valve of one tube being adapted to be closed when the valve of another tube is opened, for the purpose described.

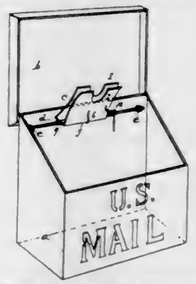
654,400. SPRING-HINGE. JOSEPH KERNE, Chicago, Ill. Filed Sept. 18, 1899. Serial No. 730,938. (No model.)



Claim.—1. A spring-hinge comprising the combination with a suitable casing or support, of a pintle journaled therein and provided with the upper and lower lugs, two sleeves loosely encircling said pintle and said lugs, and provided with inwardly-projecting offsets at their outer ends to engage said lugs, a coil-spring encircling the pintle and having its ends connected to the outer portions of said sleeves at points in substantially the horizontal plane of the sleeve-offsets and suitable means whereby each of said sleeves is held against movement in one direction while it is free to be moved in the opposite direction.

2. A spring-hinge comprising the combination with a suitable casing or support having a flattened wall, of a pintle journaled therein and provided with upper and lower lugs, two sleeves loosely encircling said pintle and provided with inwardly-extending offsets to engage said lugs and provided also with oppositely-disposed extensions that bear against the flattened face of the casing, and a coil-spring having its opposite ends connected to said pintle-sleeves.

654,401. MAIL-HOLDER FOR LETTER-BOXES. HENRY N. KING, Adrian, Mich. Filed Mar. 9, 1900. Serial No. 7,992. (No model.)



Claim.—1. The combination with a letter-box provided with a cover, of vertically-oscillatory spring-actuated jaws located within the box and projecting above the upper end of the box when the cover is in open position, said jaws arranged to be depressed within the box when the cover is closed, and means to restore said jaws from their depressed position when the cover is open.

2. The combination with a letter-box, of a horizontal spring-ac-

tuated rod having an oscillatory engagement therewith, and spring-actuated jaws engaged upon said rod to hold a package deposited between said jaws.

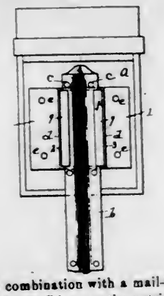
3. The combination with a letter-box, of a horizontal spring-actuated rod having an oscillatory engagement therebetween, and spring-actuated clamping-jaws engaged upon said rod to hold a package deposited between said jaws.

4. The combination with a letter-box provided with a cover at its upper end, of mail-holding spring-actuated oscillatory jaws located therewithin and projecting above the upper end of the box when the cover is in open position, said jaws arranged to be depressed within the box when the cover is closed, and to be released from depressed position when the cover is open.

5. The combination with a letter-box provided with a cover, of spring-actuated vertically-oscillatory clamping-jaws located therewithin to hold a package deposited between said jaws, said jaws projecting above the upper end of the box when the cover is in open position and arranged to be depressed within the box when the cover is closed, and to be released from depressed position when the cover is open.

6. The combination with a letter-box provided with a cover, an oscillatory spring-actuated rod engaged therewithin, vertically-oscillatory spring-actuated clamping-jaws engaged with said rod to hold a package deposited between said jaws, said jaws projecting above the upper end of the box when the cover is in open position, and arranged to be depressed within the box when the cover is closed, and to be released from depressed position when the cover is open.

654,402. FASTENER FOR ATTACHING MAIL-BOXES TO POSTS. HENRY N. KIRE, Adrian, Mich. Filed Mar. 13, 1900. Serial No. 8,435. (No model.)



Claim.—1. The combination with a mail-box, of a clamp-holder rigidly attached to the mail-box on the outside thereof, a clamping device to engage a post having an adjustable engagement with the clamp-holder, and a bolt passed through the side of the mail-box from within the box to adjust and secure the clamping device with the clamp-holder.

2. The combination with a mail-box, of an adjustable clamping device to engage a post, a clamp-holder open on its rear side secured to the box on the outside thereof to receive the clamping device, and a tightening device passed through the box from within to secure and adjust the clamping device with the clamp-holder and bind the post against adjacent portions of the clamp-holder.

3. A fastener for attaching mail-boxes to posts provided with a clamping device constructed with clamping-flanges to engage the post, a clamp-holder to receive the clamping device constructed with end webs or flanges to receive the adjacent portion of the post, and means to engage the clamping device with the clamp-holder.

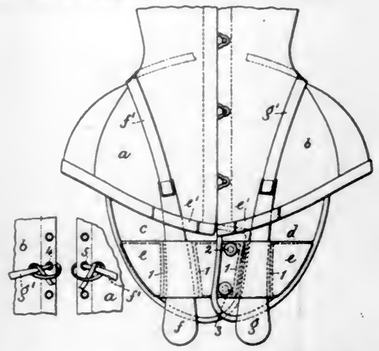
4. A fastener for attaching mail-boxes to posts provided with a clamping device open at its extremities to be slipped over the end of the post, a clamp-holder to receive the clamping device and the adjacent portion of the post, and means to engage the clamping device with the clamp-holder.

5. A fastener for attaching mail-boxes to posts provided with a clamp open at its extremities to engage a post, a clamp-holder secured to the box provided with side walls and end webs to receive the clamping device, and means to secure the clamping device within the clamp-holder.

6. A fastener for attaching mail-boxes to posts provided with a clamping device to engage the post, a clamp-holder to receive the clamping device, and means to engage the clamping device with the clamp-holder, said clamp-holder provided with end webs or flanges recessed to correspond to the form of the post.

654,403. APPAREL-CORSET. DANIEL KOPS, New York, N. Y. Filed Apr. 21, 1900. Serial No. 13,696. (No model.)

Claim.—1. The combination with the half portions of a corset, of a flap extension connected to and extending below the lower front edge of the corset, a guide-strap extending horizontally across the face of the same and connected thereto by lines of stitching which form pockets whereby supporting straps or tapes may be passed through the said pockets at either side of the vertical center of the corset and over the surface of the corset to a connection upon the respective halves of the corset, substantially as set forth.



2. The combination with the half portions of a corset, of flap extensions connected to and extending below the lower front portion of the corset, fastenings for connecting the said flap extensions together at their vertical edges, guide-straps extending horizontally across the face of the said extensions and connected thereto by lines of stitching which form pockets whereby supporting straps or tapes may be passed through the said pockets at either side of the vertical center of the corset and over the surface of the corset to a connection upon the respective halves thereof, substantially as set forth.

3. The combination with the half portions of a corset, of flap extensions connected to and extending below the lower front portion of the corset, fastenings for connecting the said flap extensions together at their vertical edges, guide-straps extending horizontally across the face of the said extensions and connected thereto by lines of stitching which form pockets, and straps or tapes passing through the said pockets at either side of the vertical center of the corset and over the surface and hips of the corset to independent connections upon the respective half portions of the corset, substantially as set forth.

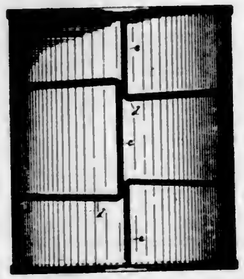
4. The combination with the half portions of a corset, of flap extensions connected at their upper edges to the lower edges at the front portion of the corset and having overlapping vertical edges and snap-fastenings for connecting the same together, guide-straps extending horizontally over the surfaces of said flap extensions and sewed thereto so as to form pockets, straps or tapes passing through the said pockets at either side of the vertical center of the corset and over the surface and hips of the corset to independent connections upon the respective half portions of the corset, substantially as set forth.

5. The combination with the half portions of a corset, of the flap extensions *c d* connected along their upper edges to the lower edges of the corset portions at the front of the corset and having overlapping vertical edges and snap-fastenings for connecting the said flap extensions together in a direction opposite to that of fastening the halves of the corset together at the stud-eyelets to prevent accidental unfastening, guide-straps placed horizontally upon the surfaces of said flap extensions and connected thereto by lines of stitching forming substantially-vertical pockets and straps or tapes passing through the said pockets at either side of the vertical center of the corset and over the surface and hips of the corset to independent connections upon the respective halves of the corset, substantially as set forth.

654,404. PRODUCTION OF MARBLED SURFACES UPON GLASS. DANIEL LAFFAN, Dublin, Ireland. Filed May 22, 1899. Serial No. 717,839. (No specimens.)

Claim.—The process for producing marbled surfaces on glass, which consists in first treating the surface of the glass so as to resist moisture and lessen its smoothness, then applying the various colors consecutively (the lightest shade being applied last) by throwing them on with a brush, sponge or the like, then applying a thin coating consisting of a mixture of white lead, terebene, and spirits of turpentine to bring all the colors vividly out, and finally when dry applying thick separate coatings of whiting and size, and of Brunswick black or gas-tar, substantially as described.

654,405. REINFORCING DEVICE FOR PACKING AND STORING VESSELS. GEORGE LAUTERBACK, Baltimore, Md. Filed Apr. 30, 1900. Serial No. 14,838. (No model.)



Claim.—1. A sheet-metal can provided on its interior with a reinforcing device extending around and exerting an outward pressure upon the sides of the can whereby to retain itself in place independent of fastening means.

2. The combination with a packing or storing vessel, of a reinforcing device arranged inside the vessel and provided with a middle portion and end portions extending longitudinally of the vessel and offset portions extending in a plane transverse to the length of the vessel.

3. The combination with a packing or storing vessel, of a reinforcing device arranged inside the vessel and formed with middle and end portions extending longitudinally of the vessel and against the sides of the same, and intermediate offset portions conforming to the cross-sectional shape of the vessel and bearing laterally against the sides thereof.

4. As a new article of manufacture, a reinforcing device for packing or storing vessels, consisting of a single piece of wire having a middle portion *c*, laterally-offset spring portions *d*, and oppositely-extending end portions *e*, as and for the purpose set forth.

5. The combination with a packing or storing vessel, of a reinforcing device arranged on the inside thereof and provided with a longitudinally-extending middle portion, offset spring portions, and oppositely-extending end portions adapted to abut against the middle portion.

6. The combination with a cylindric packing-can, of a reinforcing device inside the can and concentric and in contact with the cylindric walls thereof.

7. A packing-can for hermetically-sealed goods cylindric in shape and provided on its interior with a reinforcing-ring bearing against the cylindric wall of the can whereby the wall of the can will not be collapsed or dented.

654,406. FEED-ROLL FOR ROLLING-MILLS. DAVID D. LEWIS Lorain, Ohio. Filed Jan. 16, 1900. Serial No. 1,628. (No model.)



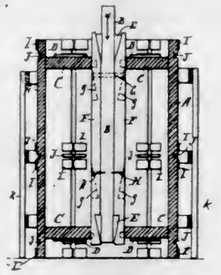
Claim.—1. The herein-described feed-roll for rolling-mills, having its surface provided with a number of narrow shallow circumferential grooves adapted to catch the corner of an ingot or other piece being rolled, and separated from each other by relatively-wide smooth-surfaced portions of substantially-uniform diameter.

2. In a rolling-mill, the combination with manipulators arranged to turn ingots or other pieces being rolled about their longitudinal axis, of one or more feed-rolls adjacent to said manipulators whose cylindrical surfaces are broken at intervals by shallow circumferential grooves adapted to catch and hold a corner of the ingot as the latter is moved by the manipulators.

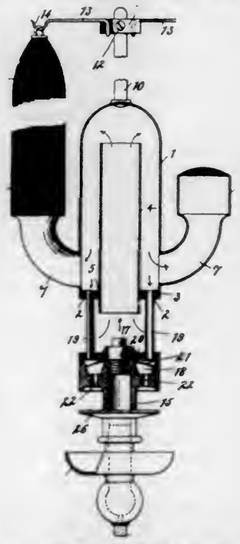
654,407. BARREL-SETTING-UP FORM. ALBERT C. LUYCKX, Detroit, Mich. Filed Aug. 21, 1899. Serial No. 727,865. (No model.)

Claim.—In the contrivance consisting of the center post B the wedges E the slides F the inclines *g* the slits *f* and the screws H for the purpose of expanding and contracting the barrel-setting-up form substantially as described.

654,407.



654,408. HYDROCARBON INCANDESCENT LAMP. ATHOL B. MACKLIN, New York, N. Y. Filed Mar. 9, 1900. Serial No. 7,988. (No model.)



Claim.—1. In a hydrocarbon-lamp, the combination of a vaporizing-chamber having a fluid-supply and a vapor-discharge nozzle, a mixing-chamber comprising an outer bell-shaped section supported upon the vaporizing-chamber with an air-supply space between them and an inner tubular section adjustably mounted within the outer bell-shaped section and capable of being adjusted toward and away from the vaporizing-chamber to regulate the size of the air-supply space, and burners communicating with the outer section of the mixing-chamber, substantially as set forth.

2. In a hydrocarbon-lamp, the combination of a vaporizing-chamber having a fluid-supply and a vapor-discharge nozzle, a vaporizer-heating burner supported upon and surrounding the vaporizing-chamber, a mixing-chamber comprising an outer bell-shaped section closed at the bottom by an annular plate such as 2 and an inner tubular section threaded into said annular plate and adjustably supported thereby within the outer section, the tubular supports mounted upon the vaporizing-chamber and supporting the mixing-chamber, said tubular supports affording communication between the mixing-chamber and the vaporizer-heating burner, and burners communicating with the mixing-chamber, said inner tubular section of the mixing-chamber being adjustable in its supporting-plate toward and away from the vaporizing-chamber, substantially as and for the purpose set forth.

654,409. BUNSEN BURNER. SIDNEY MASON, Philadelphia, Pa., assignor to the Welsbach Light Company, Gloucester City, N. J. Filed Oct. 16, 1896. Serial No. 609,118. (No model.)

Claim.—1. A Bunsen burner having its tube made in two parts with a space between them for the admission of air and having interposed between the base of the tube and the upper part thereof an elastic or yielding connection, through openings in which air is ad-

mitted and whereby the upper portion of the burner and the parts connected thereto are protected against injury from shocks or jars, substantially as described.



2. A Bunsen burner having its tube made in sections arranged one above the other with a space between the parts for the admission of air to the interior of the tube, and an elastic or yielding connection between the parts of the tube, the connection being of a form to permit the passage of air and gas to the point of combustion, substantially as described.

3. A Bunsen burner having its tube made in parts, and having a space between the parts for the admission of air, and a spring arranged to admit air through the convolutions thereof and connecting the parts of the tube, the spring being of a form to permit up-and-down and lateral movement of the upper part of the tube and of the parts connected thereto, substantially as described.

4. A Bunsen burner having its tube made in parts, and having a space between the parts, and a spiral spring connecting the parts of the tube and through the convolutions of which air is admitted, substantially as described.

5. A Bunsen burner having its tube made in parts, and having a space between the parts, and a spiral spring conical in general contour interposed between and connected to the different parts of the tube and arranged to admit air through its convolutions, substantially as described.

6. A Bunsen burner having its tube made in parts, and having a space between the parts, a spring connecting the parts of the tube, and an envelop surrounding the tube and having air-inlet openings, substantially as described.

654,410. APPARATUS FOR CONTROLLING ELECTRIC MOTORS. FRANK A. MERRICK and ERNEST W. STULL, Johnstown, Pa., assignors to the Lorain Steel Company, of Pennsylvania. Filed Nov. 22, 1899. Serial No. 737,879. (No model.)

Claim.—1. The combination with four electric motors, of two controller-drums, each of which has contacts and connections for changing one pair of said motors from series to parallel, said drums being electrically connected in series with each other.

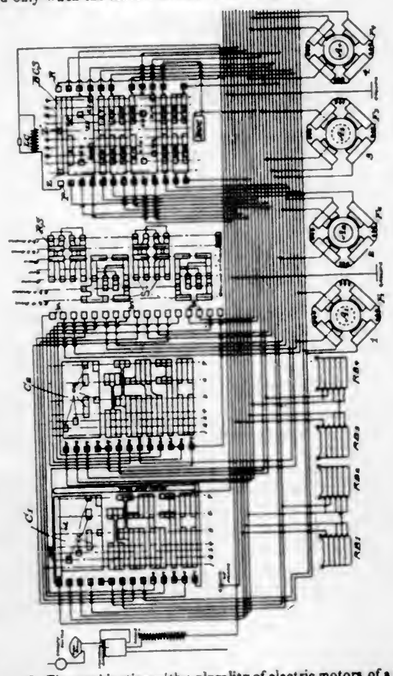
2. The combination with four electric motors, of two controller-drums, each of which has contacts and connections for changing one pair of said motors from series to parallel, said drums being electrically connected in series with each other, and gear connections between the shafts of said drums whereby they may be operated in unison.

3. The combination with four electric motors, of two controller-drums electrically connected in series, one with the other, and mechanically intergeared to rotate in unison, each of said drums having contacts and connections for connecting two motors in series, with either element of one motor in series with the corresponding element of the other motor, and the other elements in multiple, or with the two motors as a whole in parallel.

4. The combination with four electric motors, of two controller-drums mechanically connected to rotate in unison, and each having contacts, whereby two of the motors may be connected in series, or with their armatures in series and their fields in parallel, or with their fields in series and their armatures in parallel, or in parallel as a whole, and means for maintaining a series connection between the said drums in all positions thereof.

5. The combination with a plurality of electric motors, and a controller therefor, of a brake-controlling switch having contacts which control the connection of the motors and the said controller to line and which break such connection when the brake-controlling switch is moved from its off position.

6. The combination with a plurality of electric motors, of a brake-controlling switch, and an electromagnetic-locking device for said switch in circuit with the motors, whereby said switch can be actuated only when the motors are disconnected from line.



7. The combination with a plurality of electric motors, of a brake-controlling switch therefor, a magnet-coil in circuit with the motors, an armature having a pawl for locking engagement with the shaft of said switch, whereby the latter is released only when the circuit through the motors is broken.

8. The combination with a plurality of electric motors, of a brake-controlling switch connected with the motor-circuit, contacts on said switch which control the connection of the motors with the line-circuit and which break such connection when the switch is moved from its off positions, a magnet-coil also in the motor-circuit, and an armature-pawl controlled by said coil engaging the shaft of said switch, whereby the latter is released only when the circuit through the motors is broken.

9. The combination with four electric motors, and a pair of controller-drums for connecting said motors and their elements in different circuit relations, of a combined reversing and cut-out switch also in circuit with said motors, said switch having a grounded contact and means for establishing a direct connection between said contact and two of the motors in certain positions of said switch.

10. The combination with a plurality of electric motors, of an electric brake-controlling switch having contacts and connections whereby the motors may be placed in a closed circuit independently of line, with their armatures in multiple and their fields in series, and their armature connections reversed.

11. The combination with four electric motors, and artificial resistance for connection in circuit therewith, of a switch for connecting said motors in a closed circuit to run as generators, and having contacts and connections whereby the motors may be series connected in two pairs with the armatures of each pair in multiple and their fields in series, and other contacts for connecting in circuit more or less of the said resistance.

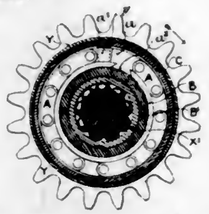
12. The combination with a plurality of electric motors, controlling-switch therefor, consisting of a rotating drum having therein duplicate sets of contacts, a set of brushes or fingers for each set of contacts, and the necessary electrical connections whereby as said drum is rotated, the motors are connected in a local circuit, to run as generators, part of the said circuit being effected through one set of contacts and fingers and another part through the other set of contacts and fingers.

13. A brake-controlling switch for four motors having fixed contact fingers or brushes, and a rotary drum having two duplicate groups of contacts, each of which groups is arranged to connect the field-coils of one pair of motors in series, two other duplicate groups, each of which is arranged to connect the armatures of one pair of said motors in multiple to run as generators, and two other duplicate groups to insert in and remove from the circuit an artificial resistance.

14. A brake-controlling switch for four motors having fixed contact fingers or brushes, and a rotary drum having two duplicate groups of contacts, each of which groups is arranged to connect the field-coils of one pair of motors in series, two other duplicate groups, each of which is arranged to connect the armatures of one pair of said motors in multiple to run as generators, and two other duplicate groups to insert in and remove from the circuit an artificial resistance, said groups being also divided into two duplicate sets, and the said brushes being arranged in two different sets, one set for each set of contacts.

15. A brake-controlling switch for four motors having fixed contact fingers or brushes, and a rotary drum having two duplicate groups of contacts, each of which groups is arranged to connect the field-coils of one pair of motors in series, two other duplicate groups each of which is arranged to connect the armatures of one pair of said motors in multiple to run as generators, and two other duplicate groups to insert in and remove from the circuit an artificial resistance, and other contacts for connecting the motors in circuit with the line when the switch is in off position.

654,411. BICYCLE-BRAKE. EDWARD C. F. OTTO and EDWARD C. F. OTTO, Jr., Honor Oak, England. Filed Feb. 24, 1900. Serial No. 6,424. (No model.)



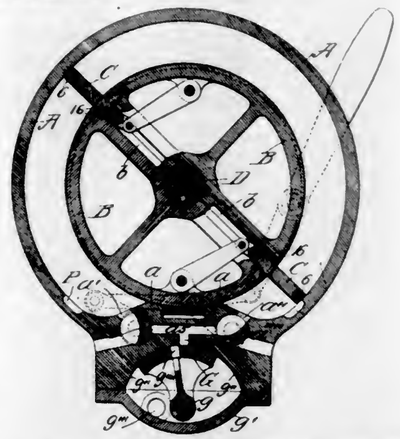
Claim.—1. In a brake for velocipedes, the combination, with a supporting-drum rigidly connected with the road-wheel, and a non-revoluble brake-drum arranged concentric with the supporting-drum; of a driving-wheel, and a chain-brake arranged in the space between the said drums and having its ends connected to the said driving-wheel and supporting-drum respectively, said chain being composed of pivoted links which are curved upon the side next to the brake-drum so as to form a continuous brake-surface of the same curvature as that of the brake-drum, substantially as set forth.

2. In a brake for velocipedes the combination with the hub of the driving-wheel, of a drum mounted concentrically thereon and adapted to support the operating strap or band when the brake is out of action, of a sprocket-wheel mounted loosely on the said drum, of a second drum mounted on the axle of the driving-wheel concentrically with the first drum and so attached to the frame of the machine that it cannot rotate, and of a strap or band formed of a series of links pivoted together so that their ends abut against one another each link having its operative face curved to the same radius as the operative face of the drum with which the strap or band engages when the brake is in action, the one end link of the said strap or band being connected to the drum fixed to the hub of the driving-wheel and the other end link to the sprocket-wheel, as and for the purpose set forth.

3. In a brake for velocipedes the combination with the hub of the driving-wheel, of a drum mounted concentrically thereon and adapted to support the operating strap or band when the brake is out of action, of a sprocket-wheel mounted loosely on the said drum, of a second drum mounted on the axle of the driving-wheel concentrically with the first drum and so attached to the frame of the machine that it cannot rotate, and of a strap or band formed of a series of links pivoted together so that their ends abut against one another each link being of the same width and having its operative face curved to the same radius as the operative face of the drum with which the strap or band engages when the brake is in action, the one end link of the said strap or band being connected to the drum fixed to the hub of the driving-wheel and the other end link to the sprocket-wheel, as and for the purpose set forth.

654,412. ROTARY ENGINE. JOHN W. PICKEL, Crystal City, Mo. Filed July 24, 1899. Serial No. 724,941. (No model.)

Claim.—1. The combination with a cylinder and its shouldered head, of a piston which extends beyond said shoulder in the head, peripheral packing in the piston coöperating with said shoulder in the cylinder-head, and packing in the cylinder-head which bears laterally against the piston; substantially as described.



2. The combination with a cylinder and cylinder-head, the latter being provided with a recess 3, of a piston arranged therein and carrying packing 7, on its periphery, said cylinder-head being provided with packing 14 to coöperate with the piston, a sliding piston-head mounted in the piston, and packing 13 and 15 coöperating with said piston-head; substantially as described.

3. In a rotary engine, the combination with a cylinder and its shouldered head, of a piston which extends beyond said shoulder said piston being of smaller diameter than the diameter of shoulder beyond which said piston extends, said piston also being of shorter length than the internal length of the cylinder and its shouldered heads, and packing rings or strips which are interposed between said cylinder and piston to coöperate with the latter and maintain the balance thereof; substantially as described.

4. In a rotary engine, the combination with a cylinder and piston, of piston-heads slidingly mounted in said piston, tracks arranged on one side only of the cylinder-rollers coöperating with said tracks, and means interposed between said rollers and said piston-heads for operating the latter; substantially as described.

5. The combination with a cylinder and a piston, of piston-heads movably carried by said piston, cam-tracks arranged on one side only of the cylinder, rollers coöperating with said cam-tracks, connections between said rollers and said piston-heads, and means for adjusting and regulating the movement received by the piston-heads from the rollers; substantially as described.

6. The combination with a cylinder and piston, of cam-tracks arranged on the cylinder, a lever mounted in the piston so as to rotate therewith, a rod mounted on said lever, a roller carried on the end of said rod for coöperating with said cam-tracks, means for adjusting the length of said rod, and a slidable piston-head which is operated by said lever; substantially as described.

7. The combination with a cylinder and its rotatable piston, of cam-tracks arranged on the cylinder, a rock-shaft mounted in the piston, a rod mounted in guides on the piston and connected to said rock-shaft, a roller mounted in the end of the rod for coöperating with said cam-tracks, a rock-arm extending from said rock-shaft, a slidable piston-head, and a link connection with said rock-arm and said piston-head; substantially as described.

8. The combination with a cylinder and its head of a piston, a cap-piece arranged on said heads the cylinder, cam-tracks arranged on said cap-piece and on said cylinder, rollers coöperating with said tracks, slidable piston-heads mounted in the piston, and connections between said rollers and said piston-heads for moving the latter; substantially as described.

9. In a rotary engine, the combination with a cylinder, cylinder-head, cap-piece, shaft, piston, and piston-heads, a cam-track formed on said cap-piece, a corresponding track formed on said cylinder-head, rollers which are arranged to coöperate with said tracks, rods upon which said rollers are mounted, means for adjusting the length of said rods, and levers or cranks to which the inner ends of said rods are connected, lugs which are formed on the piston to which said levers are pivotally connected, and means for independently operating the piston-heads from said levers; substantially as described.

10. The combination with a cylinder formed with an abutment, of a piston and a piston-head, and means extending partly outside the cylinder for positively withdrawing said piston-head to escape contact with said abutment; substantially as described.

11. In a rotary engine, the combination with a cylinder, its piston and piston-heads, said cylinder being provided with ports for admitting and exhausting motive fluid, of an automatic variable cut-off, an eccentric loosely mounted on the main shaft of the engine, means for permitting said eccentric to have lost motion relative to the shaft when the direction of rotation of the latter is reversed, an eccentric-rod for operating the cut-off valve, and a movable fulcrum for said rod; substantially as described.

12. In a rotary engine, the combination with a cylinder, its piston and piston-heads, said cylinder being provided with ports for admitting and exhausting motive fluid, of an automatic variable cut-off, an eccentric loosely mounted on the main shaft of the engine, means for permitting said eccentric to have lost motion relative to the shaft when the direction of rotation of the latter is reversed, an eccentric-rod for operating the cut-off valve, a movable fulcrum for said rod, and means for moving said fulcrum; substantially as described.

13. The combination with a cylinder, its piston and piston-head, of a cut-off valve, an eccentric driven by the main shaft of the engine, an eccentric-rod for vibrating said cut-off valve, and a movable fulcrum for said eccentric-rod; substantially as described.

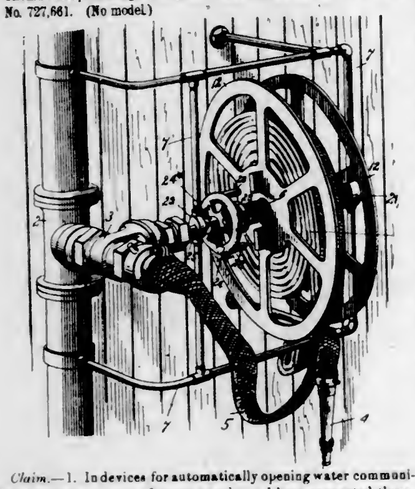
14. The combination with a cylinder, its piston and piston-head, of a cut-off valve, an eccentric driven by the main shaft of the engine, an eccentric-rod for vibrating said cut-off valve, a movable fulcrum for said eccentric-rod, means for permitting lost motion between the fulcrum and the eccentric-rod, when said fulcrum is in certain of its positions; substantially as described.

15. The combination with a cylinder, its piston and piston-head, of a cut-off valve, an eccentric driven by the main shaft of the engine, an eccentric-rod for vibrating said cut-off valve, said rod being provided with a slot, a yoke pivotally arranged in said slot, and a movable fulcrum for said rod which cooperates with said yoke; substantially as described.

16. The combination with a cylinder, its piston and piston-head, of a cut-off valve, an eccentric driven by the main shaft of the engine, an eccentric-rod for vibrating said cut-off valve, guideways arranged in juxtaposition to said rod, a block slidingly mounted in said ways, a yoke pivotally mounted on said eccentric-rod and a stud carried by said block and cooperating with said yoke to form a fulcrum therefor; substantially as described.

17. The combination with a cylinder, its piston and piston-head, of a cut-off valve, an eccentric driven by the main shaft of the engine, an eccentric-rod for vibrating said cut-off valve, a movable fulcrum for said eccentric-rod, and means for correcting the throw of the eccentric when the fulcrum is adjusted; substantially as described.

654,413. **MEANS FOR AUTOMATICALLY SUPPLYING WATER TO FIRE-HOSE FROM SUITABLE SOURCES.** FRANK R. POWERS, Chicopee Falls, Mass., assignor to Patrick J. Enright, same place, and Thomas Joseph Flanagan, Holyoke, Mass. Filed Aug. 18, 1899. Serial No. 727,661. (No model.)

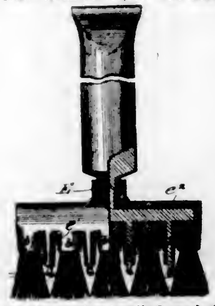


Claim.—1. In devices for automatically opening water communication between a source of water-supply, and hose connected therewith, while said hose is being laid for extinguishing a fire, comprising a valve connected with said source and with said hose, a hose-containing reel, a support for said reel, means intermediate of said reel and support whereby the rotation of the reel results in the movement of the same toward said valve, and means for temporarily interengaging said reel and the stem of said valve, when hose is drawn from the reel, substantially as set forth.

2. In a device of the class described, a non-rotatable shaft supported by one end on a suitable frame, a hose-reel supported on said shaft, a water-supply conduit, a discharge-valve connected in said conduit, a hand-wheel for the stem of said valve having arms thereon extending toward said reel, and a central sleeve rigidly connected by one end to said stem and rotatably connected to one end of said shaft, lugs on said reel for engagement with said arms, and means intermediate of said reel and shaft whereby the rotation of the reel effects the interengagement of said lugs and arms, substantially as described.

3. In a device of the class described, a centrally-located supporting-shaft having a catch-pin socket therein, a frame in which said shaft is supported in a fixed position, an outwardly-screw-threaded sleeve on said shaft for limited longitudinal movement therein having a slot in its upper side extending over said catch-socket, and means for maintaining said relative positions of slot and socket, a spring-actuated catch-pin for engagement of its lower end with said socket, the hose-reel having a protuberance on one side supported movably on said sleeve, and engaged by the screw-thread thereon, a spring-actuated catch-pin for the engagement of its lower end with said socket, and of its upper end with said reel protuberance suitably supported on said sleeve, and a spring acting to move said sleeve toward the valve-wheel of the device, combined and operating substantially as set forth.

654,414. **PASTE-BRUSH.** WILLIAM H. REDINGTON, Chicago, Ill. Filed Dec. 4, 1899. Serial No. 739,216. (No model.)



Claim.—1. In a flat brush, a handle formed of a collapsible tube, a head on the handle having an interior chamber with a delivery opening or openings leading therefrom, and a number of flat brushes secured in the head of the handle side by side adjacent to the opening or openings therein, whereby collapsing the handle supplies the contents thereof to the chamber for delivery to the brushes, substantially as described.

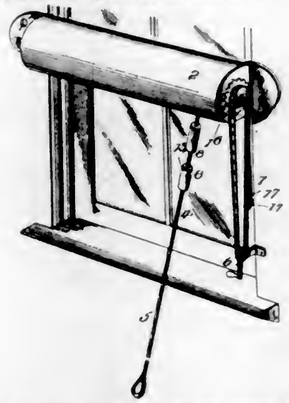
2. The combination in a flat brush of a number of smaller brushes, carried by a common head side by side in the same longitudinal plane, a series of clasps or sockets corresponding in number to the number of smaller brushes and forming as a whole the head, and made from soft metal to have the bristles of each smaller brush entered into a clasp or socket and held therein by flattening the clasp or socket to spread the bristles, and a discharge-tube between the adjacent smaller brushes for supplying mucilage or paste to the brush as a whole from the interior of the head, substantially as described.

3. The combination in a flat brush of a number of smaller brushes carried by a common head side by side in the same longitudinal plane, a common head, a chamber in the head, a series of clasps or sockets corresponding in number to the number of smaller brushes and formed with the head of soft metal, for each small brush and having its bristles entered into a clasp or socket and held therein by flattening the clasp or socket to spread the bristles, a discharge-tube between each pair of small brushes leading from the chamber of the head, and a collapsible tube containing mucilage or paste connected with the head for supplying mucilage or paste to the brush as a whole through the discharge-tubes, substantially as described.

654,415. **FIRE-ESCAPE.** MARY RINN, Chicago, Ill. Filed Nov. 6, 1899. Serial No. 735,983. (No model.)

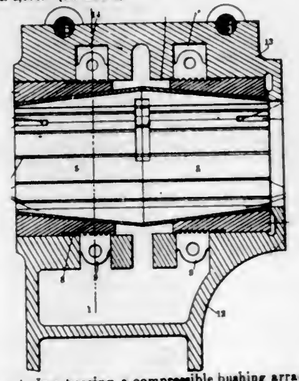
Claim.—1. The combination of the rope and a handle, said handle comprising a rotatable and a non-rotatable section.

2. The combination of the rope and handles each composed of an inner rotatable and an outer non-rotatable section and antifriction-balls bearing both on the rope and on the outer section.



3. The combination of the reel, the rope having its upper end wound on the reel, the handles wound on the reel with the rope end, a pawl whereby the reel is held with a part of the rope-carrying handles and whereby the handles may be successively released and the reel and rope with remaining handles held in reserve, elastic washers fixed to the handles and of less diameter than the rope and closely embracing the same to prevent slipping when the handles are released.

654,416. **BEARING.** ELMER E. RUEY, Indianapolis, Ind., assignor to the Chandler & Taylor Company, same place. Filed Jan. 11, 1900. Serial No. 1,096. (No model.)



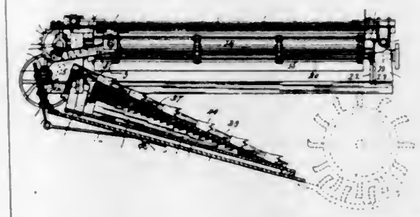
Claim.—1. In a bearing, a compressible bushing arranged to receive a shaft and tapered upon its periphery, a sleeve tapered internally and adapted to receive said bushing and having threads formed upon its periphery, a nut adapted to engage said threads, and means for preventing axial movement of said nut.

2. In a bearing, a cylindrical bushing tapered upon its periphery and adapted to receive a shaft, said bushing having a series of longitudinal grooves extending from the interior toward its periphery, an internally-tapered sleeve adapted to receive said bushing and having threads formed upon its periphery, a nut engaging said threads, and means for preventing axial movement of said nut.

3. In a bushing, a separable bushing tapered externally and provided with a series of longitudinal grooves extending from the interior toward its periphery, a separable sleeve tapered internally and mounted upon said bushing, means for holding the parts of said sleeve about the bushing, and means for causing a relative axial movement between said bushing and sleeve.

4. In a bearing, a separable bushing tapered externally and having a series of longitudinal grooves extending from the interior toward its periphery, an internally-tapered separable sleeve mounted upon said bushing and provided with a series of threads on its periphery, a separable nut adapted to engage said threads and provided with means for holding the parts thereof about the sleeve, and means for preventing an axial movement of said nut.

654,417. **FEEDER AND BAND-CUTTER FOR THRESHING-MACHINES.** JOHN M. SAILER, Janesville, Wis. Filed June 10, 1899. Serial No. 720,019. (No model.)



Claim.—1. In a feeder and band-cutter, the combination, of side carrying mechanism adapted to feed inwardly grain which is deposited thereon, cutting mechanism arranged a distance from the inner edge of the carrying mechanism, said cutting mechanism mounted on stationary supports, and means for adjusting the carrying mechanism closer to or farther away from the permanently-fixed cutting mechanism, whereby the width of the space between the opposed edges of the two mechanisms may be either increased or decreased.

2. In a feeder and band-cutter, the combination, of carrying mechanisms adapted to feed inwardly from opposite sides, cutting mechanism arranged in the space between the carrying mechanisms, said cutting mechanism mounted on suitable supports, and means for adjusting the carrying mechanisms, closer to or farther away from the permanently-fixed cutting mechanism, whereby the width of the space between the opposed edges of the cutting and carrying mechanisms may be either increased or decreased.

3. In a feeder and band-cutter, the combination, of carrying mechanisms adapted to feed inwardly from opposite sides, racks carried by said carrying mechanisms, toothed wheels engaging the racks, means for rotating the toothed wheels, whereby the carrying mechanisms are adjusted closer together or farther apart, and cutting mechanisms located in the space between the carrying mechanisms.

4. In a feeder and band-cutter, the combination, of cutting mechanism, an end frame provided with projecting bearings, rolls mounted in said frame, an endless apron passing around the rolls, a beveled gear carried by one of the rolls, rods passing through the bearings of the end frame, a shaft having a beveled gear slidingly mounted thereon and engaging the bevel-gear of the roll, means for rotating said shaft, and means for adjusting the end frame laterally.

5. In a feeder and band-cutter, the combination, of carrying mechanisms, angle-beams extending parallel therewith and at a distance therefrom, stationary cutting-blades secured to said angle-beams, other blades in contact with the first-mentioned blades, a T-beam to which said other blades are connected, the stem of said T-beam passing between the angle-beams, and means for reciprocating the T-beam.

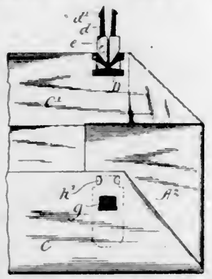
6. The combination, of a concave, a feed-board resting on the concave, a board hinged to the feed-board, means for suspending said hinged board, an arm pivotally connected to the hinged board, the pivot being out of line with the hinge of the board, and means for detachably locking the arm to the feed-board.

7. The combination, of a cylinder or drum, conveyers adapted for forcing the grain to the cylinder, means for reciprocating said conveyers in opposite directions, arms arranged respectively above the conveyers and provided with projecting fingers, and means for reciprocating said arms in opposite directions to each other and in opposite directions to the conveyers above which they are located.

8. The combination, of a cylinder or drum, a shaft provided with sets of cranks, the cranks of each set extending in opposite directions, conveyers for forcing the grain to the cylinder, said conveyers connected to opposite cranks of one of the sets of cranks, and arms arranged above the conveyers and provided with projecting fingers, said arms connected to the opposite cranks of the other set of cranks.

9. In a feeder and band-cutter, the combination, of a main shaft, means for driving the same, a shaft provided with sets of cranks, the cranks of each set extending in opposite directions, an upper shaft having a crank and also having a beveled pinion mounted thereon, a gearing between the several shafts, carrying mechanism, a bevel-gear for moving the carrying mechanism, said bevel-gear being in mesh with the beveled pinion, cutting mechanism consisting of a stationary and a movable blade, a connection between the movable blade and the crank of the upper shaft, a cylinder, conveyers for forcing the grain to the cylinder, said conveyers connected to opposite cranks of one of the sets of cranks, and arms arranged above the conveyers and provided with projecting fingers, said arms connected to opposite cranks of the other set of cranks.

654,418. SAFETY-ENVELOP. ERNST SIMON, Chicago, Ill. Filed Mar. 4, 1898. Renewed Jan. 2, 1900. Serial No. 162. (No model.)



Claim.—1. A safety-envelop provided with flaps on the rear portion extending inwardly between the front and rear portions, and flaps extending from the front portion over to and adapted to be sealed to the back portion to prevent the abstraction of articles from the inside, substantially as described.

2. A safety-envelop provided with end flaps arranged to be sealed together at the back and flaps extending from the lateral edge of the back portion inwardly between it and the front portion to form safety-flaps, and flaps extending from the lateral edges of the front portion adapted to be folded over and engage with the back portion, substantially as described.

3. As a means for sealing an envelop, the combination of a bifurcated spring-latch portion, a guard for a portion of the same adapted to be secured to one portion of an envelop and a locking-pocket portion adapted to receive the spring-latch and lock the same, substantially as described.

4. As a means for sealing an envelop, the combination of a bifurcated spring-latch portion, a guard for a portion of the same adapted to be secured to one portion of an envelop and a locking-pocket portion adapted to receive the spring-latch and lock the same, and a guard for the locking portion arranged to protect the spring-latch between it and the locking-pocket, substantially as described.

5. As a means for sealing an envelop, the combination of a bifurcated spring-latch portion, a guard surrounding a portion of the same by which the latch is secured to one portion of the envelop, a locking-pocket adapted to be secured to the other part of the envelop, receive the latch and be inserted partially within the guard of the latch, substantially as described.

6. An envelop-seal in which there is combined a bifurcated spring-latch, a guard surrounding a portion of the same adapted to secure the latch to the flap of an envelop, a locking-pocket adapted to be secured to the body portion of the envelop and having its free end adapted to be inserted within the latch-guard, a guard for the locking-pocket and latch adapted to be secured to the lock and prevent access to the spring, substantially as described.

7. An envelop in which there is combined a bifurcated spring-latch, a guard surrounding the same adapted to be secured to the flap of an envelop, a locking-pocket adapted to be secured to the body of the envelop and enter the latch-guard, and a guard for the locking-pocket adapted to be attached to the locking-pocket and secure the same to the body of the envelop, substantially as described.

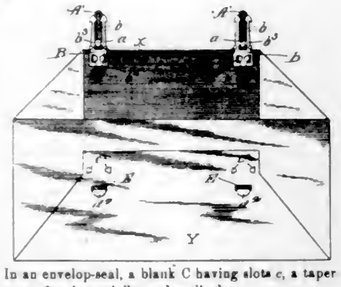
8. An envelop-seal in which there is combined a bifurcated latch provided with outwardly-extending hook portions, a guard for the same provided with two sets of wings or projections, one set to form a pocket and guard for a portion of the spring-latch and the other set to be passed through the flap of an envelop and secure the latch to the envelop, a locking-pocket provided with two sets of projecting wings or lugs, one set of which is adapted to form the pocket and engage with the spring-latch to prevent the unlocking of the envelop and enter partially into the latch-guard and the other set to form the permanent locking-lugs, a locking-guard provided with perforations through which the locking-lugs are passed for the purpose of securing the guard to the lug and having a set of wings or projections adapted to be passed through the body of the envelop for the purpose of securing the lock to the envelop, substantially as described.

654,419. SAFETY-ENVELOP. ERNST SIMON, Chicago, Ill. Filed Dec. 12, 1898. Renewed Jan. 2, 1900. Serial No. 163. (No model.)

Claim.—1. In an envelop-seal, a blank A having an end A′, and tongues *a* and *a′*, substantially as described.

2. In an envelop-seal, a blank B having barbed tongues b, an opening b', slots b^3 and a two-part bridge b^4, substantially as described.

3. In an envelop-seal, the combination of a blank A having an end A′ and tongues *a* and *a′*, and a blank B having barbed tongues b, an opening b', slots b^3 and a two-part bridge b^4, the tongue *a* being folded over the bridge b^4 and the tongues *a′* being passed through any material interposed between the blanks and through the slots b^3 and bent to one side, when the parts are assembled, substantially as described.



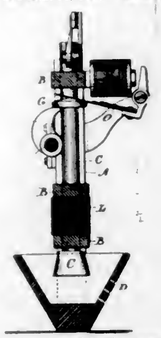
4. In an envelop-seal, a blank C having slots c, a taper opening c', and tangs c^3, substantially as described.

5. In an envelop-seal, a blank D having flanges d', a slot d^3, and tongues d^2, substantially as described.

6. In an envelop-seal, the combination of a blank C having slots c, a taper opening c' and tangs c^3 and a blank D having flanges d', a slot d^3, and tongues d^2, the flanges d' being passed through the slots c and the tongues d^2 through the opening c', and being bent to one side, when the parts are assembled, substantially as described.

7. In an envelop-seal, the combination of a flap portion comprising an outer piece A having an end A′ and an inner piece B having barbed tongues b and means for attaching the two parts together and to the envelop-flap, and an envelop portion comprising an outer part D having an opening d^3 and tongues d^2 and an inner part having a tapered opening c' with its smaller or pointed end toward the flap portion and means for attaching the parts together and to the envelop, whereby, in assembling the two portions to seal an envelop, the end A′ of the flap portion passes through the opening d^3 of the envelop portion and the barbed tongues b pass along the sides of the opening c' and the tongues d^2 which spread them apart until their barbs pass the ends of the tongues when the inner barbs spring in behind the ends of the tongues and prevent the withdrawal of the flap portion from the envelop portion, substantially as described

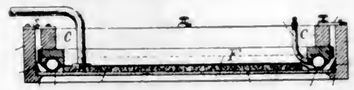
654,420. ORE-STAMP. DAVID M. SMYTH and JOSEPH E. SMYTH, Pasadena, Cal. Filed Mar. 31, 1898. Serial No. 675,855. (No model.)



Claim.—The combination with the stamp and a shaft and cam for raising the same, of an electromagnet, circuit connections and a switch actuated immediately before the cam separates from the stamp, for turning the current into the electromagnet, and a spring intervening between the electromagnet and the stamp and acted upon by the armature of the magnet for applying the power of the magnet through the leverage of the spring in accelerating the fall of the stamp, substantially as set forth.

654,421. PHOTOGRAPHIC-PRINTING FRAME. EDWARD G. SOLTMANN, New York, N. Y. Filed May 4, 1900. Serial No. 15,460. (No model.)

Claim.—1. In a sun-printing apparatus, the combination with the glass or transparent fabric and its supporting-frame, of a secondary frame adapted to be secured to the main frame, a continuous, flexible pneumatic tube extending around the bottom of said secondary frame, and an air-impervious flexible sheet secured to the secondary frame and extending beneath said tube; whereby the tube is caused to press the flexible sheet against the glass or transparent fabric to form an air-tight joint, substantially as described.

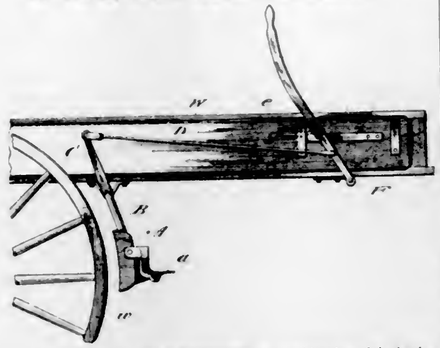


2. In a sun-printing apparatus, the combination with the glass or transparent fabric and its supporting-frame, of a secondary frame adapted to be secured to the main frame, a continuous, flexible pneumatic tube extending around the bottom of said secondary frame, an air-impervious flexible sheet secured to the secondary frame and extending beneath said tube; whereby the tube is caused to press the flexible sheet against the glass or transparent fabric to form an air-tight joint, and a porous, pliable sheet placed between the glass or transparent fabric and the impervious sheet, substantially as described.

3. In a sun-printing apparatus, the combination with the glass or transparent fabric and its supporting-frame, of a secondary frame hinged to the supporting-frame, means for locking the two frames together, a continuous, flexible pneumatic tube extending around the bottom of said secondary frame, an air-impervious flexible sheet secured to the secondary frame and extending beneath said tube; whereby the tube is caused to press the flexible sheet against the glass or transparent fabric to form an air-tight joint, and a porous, pliable sheet placed between the glass or transparent fabric and the impervious sheet, substantially as described.

4. In a sun-printing apparatus, the combination with the glass or transparent fabric and its supporting-frame, of a secondary frame hinged to the supporting-frame, means for locking the two frames together, a continuous, flexible pneumatic tube extending around the bottom of said secondary frame, an air-impervious flexible sheet secured to the secondary frame and extending beneath said tube; whereby the tube is caused to press the flexible sheet against the glass or transparent fabric to form an air-tight joint, a porous, pliable sheet placed between the glass or transparent fabric and the impervious sheet, flexible hinges connecting one side of said pliable sheet with the supporting-frame, and flaps secured to the opposite side of said frame and adapted to be secured to the adjacent side of the sheet, substantially as described.

654,422. WAGON-BRAKE. WILLIAM B. STOVER, South Bend, Ind. Filed May 23, 1900. Serial No. 17,716. (No model.)



Claim.—1. In a brake mechanism, the combination of the brake-operating lever provided with a tooth swinging on the arc of a circle; and a toothed sector curved on an arc of greater radius than the arc traversed by the tooth; said tooth being adapted to engage the teeth of the sector to lock the lever when the brake is applied, and said tooth swinging under the sector and engaging the under side thereof when the brake is released, to hold the brake in unlocked position.

2. In brake mechanism, the combination of the operating-lever having a tooth; with the curved sector having teeth with which the lever-tooth engages when the brake is applied, and with the under side of which the said tooth engages when the brake is released, whereby the brake is held in locked or unlocked position, substantially as described.

3. In a brake mechanism, the combination of the operating-lever having a tooth, and a curved sector having teeth with which the lever-tooth engages when the brake is applied, and with the under side of which the said tooth engages when the brake is released; with the brake mechanism operated by said lever, and a spring adapted to force the lever laterally toward the sector, substantially as described.

4. In a brake mechanism for wagons, the combination of the brake-operating lever provided with a tooth swinging on the arc of a circle, and a toothed sector curved on an arc of greater radius than the arc traversed by the tooth, said tooth being adapted to engage the teeth of the sector to lock the lever when the brake is applied and said tooth swinging under the sector and engaging the under side thereof when the brake is released, to hold the brake in unlocked position; with the brake mechanism actuated by said lever and the spring for forcing said lever outward against the sector.

5. In a wagon-brake, the combination of the brake-shoe, the rocking shaft carrying said shoe, the crank-arm on said shaft, the operating-lever, and the rod connecting said crank-arm to said lever, and a tooth on said lever; with the locking-sector curved on an arc of greater radius than the arc traversed by the lever on said tooth and the spring forcing said lever laterally outward against the sector, said tooth engaging the teeth of the sector to lock the lever when the brake is applied and said tooth swinging under the sector and engaging the under side thereof to lock the lever when the brake is released.

654,423. HANDLE-FASTENING. LEE STURGES, Elmhurst, Ill. Filed Apr. 4, 1900. Serial No. 11,421. (No model.)



Claim.—1. An improved fastening for sheet metal, comprising turned down lips in one part inserted through slots in the other part and forced up against the same by pressure sufficient to sink said lips into said other part and cause the latter to be forced up into the apertures formed by the turning down of the lips, said lips and said slots being arranged at an oblique angle to the line of strain on the fastening, whereby said lips will be prevented from unfolding to their original position under such strain, substantially as described.

2. An improved fastening for sheet metal, comprising turned-down lips in one part inserted through correspondingly-arranged slots in the other part and forced against the same, said lips and said slots being arranged at an oblique angle to the line of strain brought on said parts, whereby the lips will be prevented from unfolding under such strain.

3. The combination of a metal structure having oblique slots formed therein, with a metal handle provided at its ends with bendable lips arranged at oblique angles to the longitudinal center of the handle, said lips extending through the slots in the structure and being bent over and forced against the under surface of said structure to secure the handle in position, whereby a strain tending to separate the handle from the structure will cause a twisting strain on the lips.

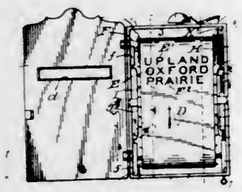
4. The combination of a metal structure having oblique slots formed therein, with a metal handle provided with integral bendable lips arranged at an oblique angle to the longitudinal center of the handle, openings of corresponding shape being formed in the handle adjacent the lips, said lips extending through the slots in the structure and being forced against the structure with sufficient pressure to force the metal thereof into the openings in the handle, whereby a strain on the handle tending to separate it from the structure will cause a twisting strain on the lips, substantially as described.

654,424. STATION-INDICATOR. SIMEON M. TINDER and CHARLES H. DILL, Danville, Ind. Filed Dec. 6, 1899. Serial No. 739,339. (No model.)

Claim.—1. A station-indicator including a driving-roller, a driving-shaft detachably connected to one end of the driving-roller, a ratchet-wheel secured to the driving-shaft, a pull-bar guided by the driving-shaft, and a yoke attached to the pull-bar and engaging the ratchet-wheel.

2. A station-indicator including a case, a continuous web, a driving-roller supporting the web, an idler-roller journaled in bearings at the bottom of the case, side guides for the web attached to the sides

of the case, and a slanting guide-plate extending between the side guides and attached thereto.



3. A station-indicator including a case, a driving-shaft mounted independently in a frame having two sides, a ratchet-wheel secured to the driving-shaft between the two sides of the frame, a driving-roller socketed to the driving-shaft, a pull-bar having a bifurcated end straddling the driving-shaft, a yoke secured to the pull-bar and engaging the ratchet-wheel, stops for limiting the longitudinal movement of said pull-bar, a spring coiled about said pull-bar, a guide-case for said pull-bar, and a web on said driving-roller.

4. The combination with a car, of the case attached to the interior of the car, the apertured door for the case, the driving-shaft frame having two side plates and attached to one side of the case, the journal-box attached to the opposite side of the case, the driving-shaft mounted in said frame, the driving-roller detachably connected at one end to said driving-shaft and journaled at its opposite end in said journal-box, the ratchet-wheel secured to said shaft between said frame sides, the bifurcated pull-bar, the yoke secured to said pull-bar and engaging said ratchet-wheel, the pawl attached to said frame and engaging said ratchet-wheel, the web, the lateral guides, the spring coiled about said pull-bar, the pull-bar case, and the stops for the pull-bar.

5. In a station-indicator, the combination of the case, the driving-shaft frame having the double plates, the driving-shaft journaled in said frame, the ratchet-wheel secured to said shaft between said double plates, the pull-bar having the four prongs at the upper end thereof and straddling said shaft and said wheel, the yoke secured to said pull-bar adjacent to said prongs and engaging said wheel, the pawl, the continuous web, the rods attached to said web, the driving-roller socketed to said shaft and having the notches for said rods and carrying said web, the idler-roller, the spring coiled about said pull-bar, and the stops, substantially as set forth.

6. In a station-indicator, the combination of the case, the door for the case, the driving-shaft, the frame having two side plates supporting the driving-roller, the ratchet-wheel secured to said shaft in said frame, the driving-roller detachably supported at one end by said shaft, the pull-bar having the slotted end, the yoke attached to said slotted end, the pawl, the coiled pull-bar spring, the web, the guide-plate slanting from near said door downwardly to near the back of the case, the idler-roller, and the side guide, substantially as set forth.

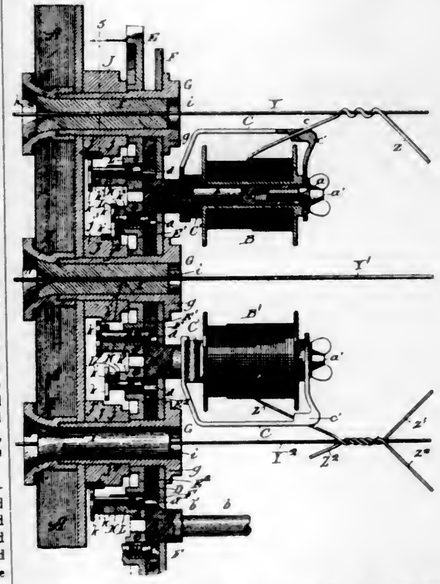
7. In a station-indicator, the combination of the case, the door having the sight-aperture, the driving-roller, the web mounted upon the driving-roller, the recesses in the driving-roller, the rods attached to the web and registering with and engaging the recesses in the driving-roller, the lateral guides for the web, the driving-shaft mounted independently and actuating the driving-roller, the ratchet-wheel secured to such driving-shaft, the pull-bar operating the ratchet-wheel, the stops for the pull-bar, the pull-bar spring, pull-bar stem, the handle on the pull-bar, the pawl engaging the rachet-wheel, and the gong operated by the pull-bar, substantially as set forth.

654,425. WIRE-FENCE MACHINE. HARRY WARD, Kokomo, Ind., assignor of one-half to John E. Frederick, same place. Filed Nov. 11, 1899. Serial No. 736,596. (No model.)

Claim.—1. In a wire-fence machine, the combination of a mesh-wire spool, a spindle carrying the spool, and a revoluble wire-carrier and guide-yoke mounted at both ends on the spindle and straddling the spool and revoluble on the spindle and around the spool by the unwinding of the wire and provided with an eye or passage for the wire in its outermost corner, substantially as described.

2. In a wire-fence machine, the combination of a wire-mesh spool, a spindle carrying the spool, a revoluble wire-carrier and guide-yoke mounted at both ends on the spindle and straddling the spool and revoluble on the spindle and around the spool by the unwinding of the wire, and a tension-controller between one arm of the guide-yoke and the spool, substantially as described.

3. In a wire-fence machine, the combination of a wire-mesh spool, a spindle on which the spool is mounted, a base-plate for the spindle, a pair of carrier-gears, and interlocking means on each gear, each interlocking means having its operation dependent only on the rotation of its own gear and each operating to engage or disengage the base-plate through and from the rotation of the gear at the completion of a given number of revolutions, for the plate to be automatically transferred from gear to gear and be carried by the gears alternately without reversing the rotation of the gears, substantially as described.



4. In a wire-fence machine, the combination of a wire-mesh spool, a spindle on which the spool is mounted, a base-plate for the spindle, a pair of carrier-gears, a pair of interlocking pins on each gear, each pin of the pair independently operating and having its operation dependent only on the rotation of its own gear and alternately advanced and receded to engage and disengage the base-plate and transfer the plate with the spindle and spool from one gear to the other, substantially as described.

5. In a wire-fence machine, the combination of a wire-mesh spool, a spindle on which the spool is mounted, a base-plate for the spindle, a pair of carrier-gears, a pair of slidable pins on each gear, each pin of the pair independently operating and having its operation dependent only on the rotation of its own gear and alternately advanced and receded to engage and disengage the base-plate and automatically transfer the base-plate with the spindle and spool from one gear to the other through the rotation of the gear, substantially as described.

6. In a wire-fence machine, the combination of a wire-mesh spool, a pair of carrier-gears having opposite rotation and having the spool located centrally between the bite of the gears, and interlocking means, each interlocking means independently operating and having its operation dependent only on the rotation of its own gear and each automatically operating to alternately engage and disengage the spool to and from one gear and transfer it to the other gear, thus imparting an opposite direction of twist to the wire without reversing the rotation of the gears, substantially as described.

7. In a wire-fence machine, the combination of a pair of carrier-gears having continuous rotation in opposite directions, a wire-mesh spool and independently and automatically operating means on each gear, each means having its operation dependent only on the rotation of its own gear, for the two means to cooperate and transfer the spool from gear to gear at the point of gear contact and have the spool alternately rotate in opposite directions for oppositely twisting the mesh-wires on the strand-wires without reversing the rotation of the gears, substantially as described.

8. In a wire-fence machine, the combination of a pair of carrier-gears having a continuous rotation in opposite directions, a pair of slidable pins on each gear, each pin of the pair independently operating and having its operation dependent only on the rotation of its own gear, a wire-mesh-spool spindle engaged and disengaged by the pins, and means for advancing and receding the pin independently and automatically through the rotation of the gears, substantially as described.

9. In a wire-fence machine, the combination of a pair of carrier-gears having a continuous rotation in opposite directions, a pair of slidable pins on each gear, a wire-mesh-spool spindle engaged and disengaged by the pins, a socket for each pin having a cam portion on its end face, a wheel for each pin provided with points and a projecting lug engaging the end face of the socket, and a stationary double track around which the wheels travel with the rotation of the gears for moving the slidable pins, substantially as described.

10. In a wire-fence machine, the combination of a carrier-gear, a socket on the gear having a cam portion on its end face, a slidable pin in the socket, a wheel having a series of points and provided with a projecting lug engaging the end face of the socket, a stationary track engaging the wheel with the rotation of the gear for giving the pin a partial rotation at the completion of a given number of revolutions of the gear, substantially as described.

11. In a wire-fence machine, the combination of a carrier-gear, two sockets on the gear, one socket having a longer projection than the other and each socket having a cam portion on its acting face, a slidable pin for each socket, each pin having a length proportioned to its socket, a wheel for each pin having a series of points and provided with a projecting lug engaging the end face of the socket, and a stationary head having a double track, one for each pointed wheel, engaging its wheel with the rotation of the gear for giving each pin a partial rotation at the completion of a given number of revolutions of the gear, substantially as described.

12. In a wire-fence machine, the combination of a carrier-gear, a socket on the gear having a cam portion on its end face, a slidable pin in the socket, a wheel having a series of points and provided with a projecting lug engaging the end face of the socket, and a stationary track having points engaging the points of the wheel and a recess between its points receiving a point of the wheel and giving the pin a partial rotation at the completion of a given number of revolutions of the gear, substantially as described.

13. In a wire-fence machine, the combination of a carrier-gear, a socket on the gear having a cam portion on its end face, a slidable pin in the socket, a spring for moving the pin in the socket, a wheel having a series of points and provided with a projecting lug engaging the end face of the socket, and a stationary track having points engaging the points of the wheel and a recess between the points receiving the points of the wheel in succession and giving the pin a partial revolution at the completion of a given number of revolutions of the gear, substantially as described.

14. In a wire-fence machine, the combination of a carrier-gear, a socket on the gear having a cam portion on its end face, a slidable pin in the socket, a coil-spring around the pin for moving it in the socket, and a wheel having a series of points and provided with a projecting lug engaging the end face of the socket for advancing and receding the pin in its socket, substantially as described.

15. In a wire-fence machine, the combination of a wire-mesh mechanism, a winding-drum for receding the wire-mesh mechanism and moving the fence-machine into a new position for another operation of said mechanism, a shaft carrying the winding-drum, a driving-gear for the winding-drum shaft, a main power-shaft, a compound driving-pinion on the power-shaft one gear of which meshes with the winding-drum-driving gear and the other gear of which meshes with a driving-gear of the wire-mesh mechanism for actuating both the wire-mesh mechanism and the winding-drum by one and the same motive power, substantially as described.

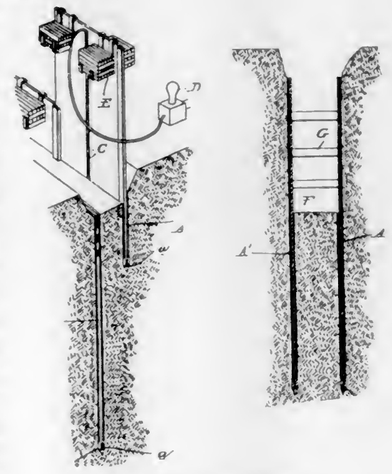
16. In a wire-fence machine, the combination of a wire-mesh mechanism, a winding-drum for receding the wire-mesh mechanism and moving the fence-machine into a new position for another operation of said mechanism, a shaft carrying the winding-drum, a main power-shaft, a driving-pinion on the power-shaft common to the winding-drum and wire-mesh mechanism, for revolving the drum and operating the mesh mechanism automatically, and a make-and-break connection between the winding-drum and its shaft connecting and operating the drum and shaft at the completion of an operation of the wire-mesh mechanism, substantially as described.

17. In a wire-fence machine, the combination of a rotatable shaft, an eccentric around the shaft, an arm fixed to and carried by the shaft, a plate loosely mounted on the eccentric and engaged by the shaft-arm, a winding-drum and stops on the winding-drum engaged by the plate on the eccentric and operating to intermittently rotate the drum and recede the mechanism, substantially as described.

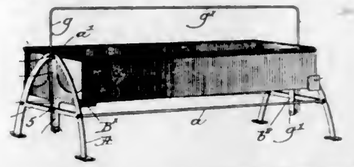
654,426. ART OF BUILDING SUBWAYS. WILLIAM DE H. WASHINGTON, New York, N. Y. Filed Mar. 23, 1899. Serial No. 710,202. (No model.)

Claim.—In a subway, the side walls, sheathing on both sides thereof and extending a considerable distance below the bottom thereof, to form in effect a dam below the walls.

654,426.



654,427. POULTRY-FEEDER. JOHN C. F. ATSATT, Mattapoisett, Mass. Filed Mar. 30, 1900. Serial No. 10,732. (No model.)



Claim.—1. In a poultry-feeder, a supporting-frame, a pan mounted therein to have a limited tipping movement, and a guard movable automatically by tipping of the pan toward the depressed edge thereof.

2. In a poultry-feeder, a supporting-frame, a pan mounted therein to have a limited tipping movement, and a guard extended above the pan from one to the other end and fulerumed on the ends of the frame, said guard being connected with the pan to be swung, by tipping movement of the latter, toward the depressed edge of the pan.

3. In a poultry-feeder, a supporting-frame, a pan having supporting-fulcra above its center of gravity, journaled in the frame, a swinging guard normally located centrally above the pan, and connections between the latter and the guard, to swing said guard toward the depressed side of the pan when the latter is tipped on its fulcra.

4. In a poultry-feeder, a frame having upturned ends, a tipping pan provided above its center of gravity with flattened journals to enter holes in the ends of the frame, a guard extended centrally above the pan and having downturned ends, fulcra for said ends on the frame, and arms depending below the pan and pivotally connected with the lower extremities of the downturned ends of the guard, to swing the latter toward the depressed side of the pan when the latter is tipped.

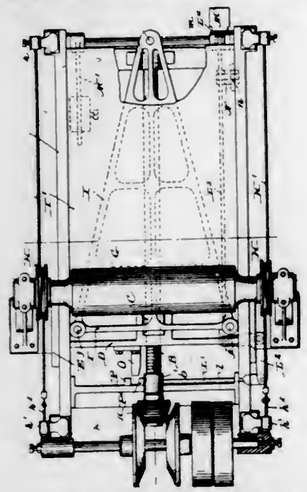
5. In a poultry-feeder, a rigid frame, a tipping pan provided with shifting fulcra above its center of gravity and supported by the frame, means to limit the tipping movement of the pan, and an overhead, swinging guard operatively connected with the pan, movable toward the depressed edge thereof when the pan is tipped.

654,428. IRONING-MACHINE. WILLIAM M. BARNES, Philadelphia, Pa. Filed Nov. 23, 1899. Serial No. 737,982. (No model.)

Claim.—1. In a finishing-machine, the combination, with the flat table and the supporting-frame therefor, of the finishing-roller, and a supporting-frame therefor, guides in the frame of the machine upon which said roller-frame is adapted to travel, and means for imparting to said roller a movement across, and in a plane parallel with the table, and a flexible driving means on the frame of the machine engaging said roller and imparting thereto a positive movement of rotation during the specified travel of the roller-supporting frame, substantially as described.

2. In a finishing-machine, the combination, with the flat table

and the supporting-frame therefor, of the finishing-roller, and a supporting-frame therefor, guides in the frame of the machine upon which said roller-frame is adapted to travel, and means for imparting to said roller a movement across, and in a plane parallel with the table, a sheave on the roller-shaft, and a cable secured at its ends to the machine and passing around said sheave, thereby imparting to the roller a positive movement of rotation during the specified travel of the roller-supporting frame, substantially as described.



3. In a finishing-machine, the combination, with the table-supporting frame, of the finishing-roller and a traveling supporting-frame therefor, mechanism for imparting to said roller-frame a movement in opposite directions, reversing mechanism for changing the direction of travel of said roller-frame, a device in connection with said reversing mechanism and adapted to be actuated by the roller-frame when the latter reaches its desired limit of travel in one direction, thereby actuating said reversing mechanism to reverse the direction of travel of the roller-frame, and complementary devices connected to the roller-frame and the actuating mechanism therefor adapted to engage each other when the roller-frame reaches its desired limit of travel in the other direction and adapted when engaged to render said actuating mechanism inoperative, substantially as described.

4. In a finishing-machine, the combination, with the table-supporting frame, of the finishing-roller and a traveling supporting-frame therefor, mechanism for imparting to said roller-frame a movement in opposite directions, manually-controlled reversing mechanism for changing the direction of travel of said roller-frame, a device in connection with said reversing mechanism and adapted to be actuated by the roller-frame when the latter reaches its desired limit of travel in one direction, thereby actuating said reversing mechanism to reverse the direction of travel of the roller-frame, and complementary devices connected to the roller-frame and the actuating mechanism therefor adapted to engage each other when the roller-frame reaches its desired limit of travel in the other direction and adapted when engaged to render said actuating mechanism inoperative, substantially as described

5. In a finishing-machine, the combination, with the table-supporting frame, of the finishing-roller and a traveling supporting-frame therefor, a screw-shaft, a nut on said roller-supporting frame engaging said shaft, a laterally-movable bearing for one end of said shaft, the driving-shaft, and gearing between said driving-shaft and screw-shaft adapted to be engaged to drive the shaft in one direction when the bearing is moved to one side and in the other direction when the bearing is moved to the other side, substantially as described.

6. In a finishing-machine, the combination, with the table-supporting frame, of the finishing-roller and a traveling supporting-frame therefor, a screw-shaft, a nut on said roller-supporting frame engaging said shaft, a laterally-movable bearing for one end of said shaft, the driving-shaft, and gearing between said driving-shaft and screw-shaft adapted to be engaged to drive the shaft in one direction when the bearing is moved to one side and in the other direction when the bearing is moved to the other side, and manually-controlled reversing mechanism for moving said bearing from one side to the other, substantially as described.

7. In a finishing-machine, the combination, with the table-supporting frame, of the finishing-roller and a traveling supporting-frame therefor, a screw-shaft, a nut on said roller-supporting frame engaging said shaft, a laterally-movable bearing for one end of said shaft, the driving-shaft and gearing between said driving-shaft and screw-shaft adapted to be engaged to drive the shaft in one direction when the bearing is moved to one side and in the other direction when the bearing is moved to the other side, reversing mechanism for moving said bearing from one side to the other, and a device in connection with said reversing mechanism and adapted to be actuated by the roller-frame when the latter reaches its desired limit of travel in one direction, thereby actuating said reversing mechanism to move said bearing from one side to the other, substantially as described.

8. In a finishing-machine, the combination, with the table-supporting frame, of the finishing-roller and a traveling supporting-frame therefor, a screw-shaft, a nut on said roller-supporting frame engaging said shaft, a laterally-movable bearing for one end of said shaft, the driving-shaft and gearing between said driving-shaft and screw-shaft adapted to be engaged to drive the shaft in one direction when the bearing is moved to one side and in the other direction when the bearing is moved to the other side, manually-controlled reversing mechanism for moving said bearing from one side to the other, and a device in connection with said reversing mechanism and adapted to be actuated by the roller-frame when the latter reaches its desired limit of travel in one direction thereby actuating said reversing mechanism to move said bearing from one side to the other, substantially as described.

9. In a finishing-machine, the combination, with the table-supporting frame, of the finishing-roller and a traveling supporting-frame therefor, a screw-shaft, a nut on said roller-supporting frame engaging said shaft, a laterally-movable bearing for one end of said shaft, the driving-shaft and gearing between said driving-shaft and screw-shaft adapted to be engaged to drive the shaft in one direction when the bearing is moved to one side and in the other direction when the bearing is moved to the other side, and complementary devices connected to the roller-frame and the screw-shaft respectively adapted to engage each other when the roller-frame reaches its desired limit of travel in one direction and adapted when engaged to move said screw-shaft to the center and throw said gears out of engagement, substantially as described.

10. In a finishing-machine, the combination, with the table-supporting frame, of the finishing-roller and a traveling supporting-frame therefor, a screw-shaft, a nut on said roller-supporting frame engaging said shaft, a laterally-movable bearing for one end of said shaft, the driving-shaft and gearing between said driving-shaft and screw-shaft adapted to be engaged to drive the shaft in one direction when the bearing is moved to one side and in the other direction when the bearing is moved to the other side, manually-controlled reversing mechanism for moving said bearing from one side to the other, a device in connection with said reversing mechanism and adapted to be actuated by the roller-frame when the latter reaches its desired limit of travel in one direction, thereby actuating said reversing mechanism to move said bearing from one side to the other, and complementary devices connected to the roller-frame and the screw-shaft respectively adapted to engage each other when the roller-frame reaches its desired limit of travel in the other direction and adapted when engaged to move said screw-shaft to the center and throw said gears out of engagement, substantially as described.

11. In a finishing-machine, the combination with the table-supporting frame, of the finishing-roller and a traveling supporting-frame therefor, a screw-shaft, a nut on said roller-supporting frame engaging said shaft, a laterally-movable bearing for one end of said shaft, a driving-shaft, beveled friction-gears thereon, a beveled friction-gear on said screw-shaft between the driving shaft gears, and adapted to engage one or the other of the driving-shaft gears by moving said bearing and shaft to one side or the other, and manually-controlled reversing mechanism connected with said bearing, substantially as described.

12. In a finishing-machine, the combination with the table-supporting frame, of the finishing-roller and a traveling supporting-frame therefor, a screw-shaft, a nut on said roller-supporting frame engaging said shaft, a laterally-movable bearing for one end of said shaft, a driving-shaft, beveled friction-gears thereon, a beveled friction-gear on said screw-shaft between the driving-shaft gears, and adapted to engage one or the other of the driving-shaft gears by moving said bearing and shaft to one side or the other, and manually-controlled reversing mechanism connected with said bearing, a device in connection with said reversing mechanism and adapted to be actuated by the roller-frame at its desired limit of travel in one direction, thereby actuating said reversing mechanism to move said screw-shaft gear out of engagement with one of said driving-shaft gears and into engagement with the other.

13. In a finishing-machine, the combination with the table-supporting frame, of the finishing-roller and a traveling supporting-frame therefor, a screw-shaft, a nut on said roller-supporting frame engaging said shaft, a laterally-movable bearing for one end of said shaft, a driving-shaft, beveled friction-gears on said driving-shaft, a beveled friction-gear on said screw-shaft between the driving-shaft gears, and adapted to engage one or the other of the driving-shaft gears by moving said bearing and shaft to one side or the other, and manually-controlled reversing mechanism connected with said bearing, and devices connected to said roller-frame and screw-shaft respectively adapted to engage each other at the desired limit of travel of the roller-frame in one direction, thereby moving said screw-shaft gear to its central position out of engagement with both of said driving-shaft gears.

14. In a finishing-machine, the combination with the table-supporting frame, of the finishing-roller and a traveling supporting-frame therefor, a screw-shaft, a nut on said roller-supporting frame engaging said shaft, a laterally-movable bearing for one end of said shaft, a driving-shaft, beveled friction-gears on said driving-shaft, a beveled friction-gear on said screw-shaft between the driving-shaft gears, and adapted to engage one or the other of the driving-shaft gears by moving said bearing and shaft to one side or the other, and manually-controlled reversing mechanism connected with said bearing, and a device in connection with said reversing mechanism and adapted to be actuated by the roller-frame at its desired limit of travel in one direction, thereby actuating said reversing mechanism to move said screw-shaft gear out of engagement with one of said driving-shaft gears and into engagement with the other, and devices connected to said roller-frame and screw-shaft respectively adapted to engage each other at the desired limit of travel of the roller-frame in the other direction, thereby moving said screw-shaft gear to its central position out of engagement with both of said driving-shaft gears.

15. In a finishing-machine, the combination with the table-supporting frame, of the finishing-roller, a supporting-frame therefor, guides for said roller-frame on the frame of the machine, a screw-shaft, a nut on said roller-supporting frame engaging said screw-shaft, a laterally-movable bearing for one end of said shaft, a driving-shaft, beveled friction-gears on said driving-shaft, a beveled friction-gear on said screw-shaft between the driving-gears and adapted to engage one or the other of the driving-shaft gears by moving said bearing and shaft to one side or the other, an intermediately-pivoted lever, upholding said bearing, a link connected thereto, a bell-crank connected to said link, a control-shaft, a lever connected thereto, a link connecting said lever and bell-crank, a treadle on said control-shaft and a weighted lever also on said control-shaft, and tending to uplift said treadle, substantially as described.

16. In a finishing-machine, the combination, with the table-supporting frame, of the finishing-roller, a supporting-frame therefor, guides for said roller-frame on the frame of the machine, a screw-shaft, a nut on said roller-supporting frame engaging said screw-shaft, a laterally-movable bearing for one end of said shaft, a driving-shaft, beveled friction-gears on said driving-shaft, a beveled friction-gear on said screw-shaft between the driving-gears and adapted to engage one or the other of the driving-shaft gears by moving said bearing and shaft to one side or the other, manually-controlled reversing mechanism connected to said bearing, a lever connected to said reversing mechanism at one end, pivoted intermediately, and in line of travel of the roller-frame, whereby said roller-frame engages said lever at the desired limit of travel in one direction and moves it to actuate said reversing mechanism, substantially as described.

17. In a finishing-machine, the combination with the table-supporting frame, of the finishing-roller, a supporting-frame therefor, guides for said roller-frame on the frame of the machine, a screw-shaft, a nut on said roller-supporting frame engaging said screw-shaft, a laterally-movable bearing for one end of said shaft, a driving-shaft, beveled friction-gears on said driving-shaft, a beveled friction-gear on said screw-shaft between the driving-gears and adapted to engage one or the other of the driving-shaft gears by moving said bearing and shaft to one side or the other, a pin carried by the roller-frame, a projection on the frame of the machine one side of which is in alinement with one side of said pin, and a projection on said bearing in proximity to the first-named projection and closer thereto, when the screw-shaft beveled gear is engaged with one of said driving-shaft beveled gears, than the width of the pin, whereby when the roller-frame reaches its desired limit of travel in one direction, said pin enters between said projections and forces said screw-shaft beveled gear out of engagement with the said driving-shaft beveled gear, substantially as described.

18. In a finishing-machine, the combination, with the screw-shaft supported on the frame of the machine, a nut engaging the screw-shaft, a cross-head containing said nut and extending across the machine, guides on the frame of the machine, a carriage on each side of the machine connected to said cross-head, said carriages being provided with rollers adapted to travel on said guides, brackets connected to said cross-head, a finishing-roller journaled in bearings on said brackets, a table-supporting frame on the frame of the machine extending substantially parallel with said guides, and means to rotate said screw-shaft in opposite directions, substantially as described.

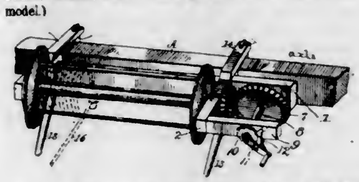
19. In a finishing-machine, the combination, with the screw-shaft supported on the frame of the machine, a nut engaging the screw-shaft, a cross-head containing said nut and extending across the machine, guides on the frame of the machine, a carriage on each side of the machine connected to said cross-head, said carriages being provided with rollers adapted to travel on said guides, brackets connected to said cross-head, a finishing-roller journaled in bearings on said brackets, a spring-supported table-supporting frame on the frame of the machine, means for adjusting the height of the table-frame and the tension of the springs, and means to rotate said screw-shaft in opposite directions, substantially as described.

20. In a finishing-machine, the combination with the finishing-roller, a traveling frame upholding said roller, means to move said frame in opposite directions in a horizontal plane, a triangular-shaped table-frame having two spring-supported corners at the sides and one end of the machine-frame, and a spring-supported corner at the other end of, and centrally between the sides of, said machine-frame, and means for adjusting the height of the table-frame and the tension of the springs, substantially as described.

21. In a finishing-machine, the combination, with the screw-shaft supported on the frame of the machine, a nut engaging the screw, a cross-head containing said nut and extending across the machine, guides on the frame of the machine, a carriage on each side of the machine connected to said cross-head, said carriages being provided with rollers adapted to travel on said guides, brackets connected to said cross-head, a finishing-roller journaled in bearings on said brackets, a triangular-shaped table-frame having two spring-supported corners at the sides and one end of the machine-frame, and a spring-supported corner at the other end of, and centrally between the sides of, said machine-frame, means for adjusting the height of the table-frame and the tension of the springs, and means to rotate said screw-shaft in opposite directions, substantially as described.

22. In a finishing-machine, the combination with the table-supporting frame, the finishing-roller, and a supporting-frame therefor, actuating mechanism for imparting to said roller-frame a movement in opposite directions, reversing mechanism connected with said actuating mechanism, for changing the direction of travel of the roller-frame, a treadle connected to the reversing mechanism which when depressed will move said reversing mechanism to cause the roller-frame to travel in one direction and which when raised will move said reversing mechanism to reverse the travel of the roller-frame, a device in connection with said reversing mechanism and adapted to be actuated by the roller-frame when the latter reaches its desired limit of travel in the first-named direction, thereby actuating said reversing mechanism to reverse the direction of travel of the roller-frame and raise said treadle, and complementary devices connected to the roller-frame and the actuating mechanism therefor adapted to engage each other when the roller-frame reaches its desired limit of travel in the other direction and adapted when engaged to render said actuating mechanism inoperative.

654,429. WINDLASS-WINDING ATTACHMENT. WILLIAM A. M. BARTZ, Grafton, Iowa. Filed Apr. 28, 1900. Serial No. 14,676. (No model.)

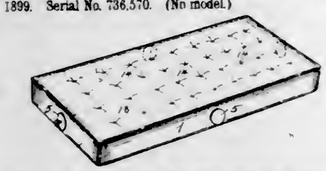


Claim.—1. The winding attachment consisting of a supporting-bar, arms fixed thereon having forked ends extending back of the bar and provided with slots, keys engaging the slots whereby to clamp the forked ends upon a carrier-bar, a cable-winding reel mounted in said arms in front of their supporting-bar, a bevel-gear fixed at one end of the reel, a crank-shaft at right angles to the reel mounted in the supporting-bar and in one of said reel-arms, a bevel-wheel on said crank-shaft engaging the reel-gear, a ratchet-wheel fixed on said crank-shaft, a crank-handle loose on said shaft and a weighted pawl pivoted on said crank for use as stated.

2 A winding-wheel attachment and in combination with the reel, a carrying-frame therefor consisting of the supporting-bar, arms fixed to and crossing said bar one end of each arm forked and slotted, and keys in said forked arms at one side of the supporting-bar whereby to clamp said frame upon a carrier-bar the said arms forming a mounting for the reel at the other side of said supporting-bar, a crank-shaft mounted in the frame at one end of and at right angles to the reel, a bevel-gear carried at one end of the reel, a bevel-gear on the crank-shaft engaging the reel-gear, a ratchet-wheel fixed on the crank-

shaft, a crank-handle loose thereon, a weighted pawl pivoted on the crank-handle and props loosely connected to the reel-bearing arms, for use as stated.

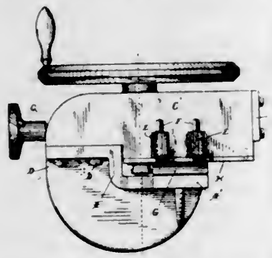
654,430. PNEUMATIC MATTRESS. JOSEPH A. BERGER, Chicago, Ill., assignor of one-half to Sandfrid Harnstrom, same place. Filed Nov. 11, 1899. Serial No. 736,570. (No model.)



Claim.—1. In a pneumatic mattress, a tufting-button comprising an inner cap, a ring or loop having shanks extending through said cap with barbs at their free ends, a perforated disk adapted to be engaged by said barbs at said perforation, and an outer cap covering said barbs and engaging said disk, substantially as described.

2. In a pneumatic mattress, a tufting-button comprising an inner cap, a ring or loop having shanks extending through said cap with barbs at their free ends, a perforated disk adapted to be engaged by said barbs at said perforation, and having the peripheral flanges 13 with the spaces 20 between their ends, and a cap 14 having projections 19 adapted to register with said spaces and to be engaged by the flanges 13 when said cap is turned, substantially as described.

654,431. MACHINE FOR PATCHING SAWS. ORRIN B. BOLTON, Grand Rapids, Mich. Filed Sept. 25, 1899. Serial No. 731,513. (No model.)



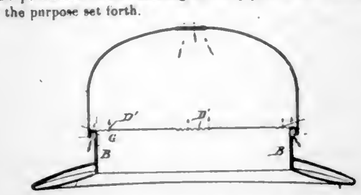
Claim.—1. The combination of a base and frame attached to each other, and forming the opposing jaws of a clamp adapted to be attached to a saw, ways in the frame parallel with the faces of the jaws, a carriage movable in said ways, a shaft journaled in the carriage with its axis vertical to the faces of the jaws, a conical cutter on one end of the shaft, a crank on the other end of the shaft, and a screw to adjust the carriage in the ways, substantially as described.

2. The combination of a base having a laterally-extended table forming one jaw of a saw-clamping vise, a frame secured to said base, ways in the frame parallel to the face of the table and opposite the same, lugs on said frame, movable members forming the opposite jaw of the vise, screws engaging said lugs and members, a carriage longitudinally movable in ways in said frame, a shaft journaled in said carriage, a conical cutter on one end of said shaft and a hand-wheel on the opposite end of the same, and an adjusting-screw engaging the carriage, substantially as described.

3. In combination, a base having laterally-extended portions forming one jaw of a vise, a frame secured to said base and having sides secured to each other at one end by a plate, lugs on said sides, movable members forming the other jaw of the vise, screws in said lugs entering recesses in said members, ribs on said sides, strips secured to the lower edge of said sides and projecting inward, a carriage, ribs on the same, a shaft journaled in the carriage, a conical cutter on one end of the shaft and a hand-wheel on the opposite end thereof, an arm on the carriage and having a lateral extension, a lug on the frame, an adjusting-screw passing through said lug and extension, and a collar and hand-wheel on the same engaging said lug, substantially as described.

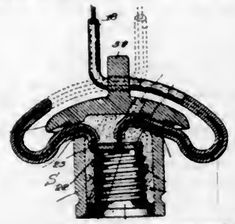
654,432. APPAREL-HAT. THOMAS BORROW, EDWIN WOOD, and WILLIAM HODGSON, Darlington, England. Filed Mar. 6, 1899. Serial No. 707,973. (No model.)

Claim.—1. A head-covering comprising a crown having an opening at the top, a body portion of smaller diameter than the crown, and a perforated web connecting the body portion and crown, as and for the purpose set forth.



2. A head-covering comprising a crown having an opening in its upper part, and a body portion integral with the crown and of smaller diameter, the material of which the covering is made being crimped inwardly from the crown to form a continuous connecting-web between the crown and body portion, which web is provided with a series of perforations and is covered by the crown, as and for the purpose set forth.

654,433. INCANDESCENT-LAMP SOCKET. WILLIAM B. BRAGDON, Cumberland Mills, Me., assignor to S. D. Warren & Co., Boston, Mass. Filed Oct. 31, 1899. Serial No. 735,398. (No model.)



Claim.—1. An incandescent-lamp socket consisting of a case provided with a hood, said case having openings in its walls below the hood, terminals in said case, electric conductors leading into the case through the openings, and each provided with continuous insulation from a point above the socket to a point within the case, and a projection upon the hood having openings to receive and separate said conductors.

2. An incandescent-lamp socket consisting of a case provided with a hood, the case having openings below the hood, and the hood having a filling-opening, terminals in the case, conductors passing through said openings below the hood and connected with the terminals, said conductors being insulated continuously from a point above the socket to a point within said case, and a filling of moisture-proof material in the case.

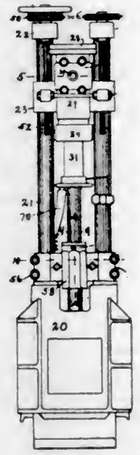
3. An incandescent-lamp socket consisting of a case provided with a hood, the hood having a projection upon the upper side thereof and a filling-opening, and the case having openings below the hood, terminals in the case, and two leading-in wires extending through the openings in said projection and also through the openings below the hood and connected with the terminals, said conductors being insulated continuously from a point above the socket to a point within the case.

4. An incandescent-lamp socket including a case having separated openings, a water-shedding hood located to protect said openings, terminals in the case, a projection upon the upper side of the hood having separated openings serving to hold the conductors out of contact, two conductors passing through said openings in the projection and through the openings in the case, and being connected to said terminals and said conductors having continuous insulation from a point above said projection to points inside of the case, and a filling of moisture-proof electro non-conducting material in the case and surrounding the conductors where they are united to the terminals.

5. An incandescent lamp including a case having openings and provided with a hood to shed condensates or other moisture before it can reach said openings, terminals in the case, conductors electrically connected with said terminals, said conductors being covered with continuous moisture-proof, insulating material from a point adjacent said terminals, to a point remote from the case and bent downwardly and outwardly before their entrance to the case to form moisture-shedding lobes, means upon the hood for positively holding said conductors out of contact, and moisture-proof insulating material within said body intermediate the terminals.

654,434. STEAM-ENGINE FOR ORE-STAMPS. JOHN J. BREWIS, Milwaukee, Wis. Filed June 22, 1898. Serial No. 684,123. (No model.)

Claim.—1. In a steam-stamp, a pair of vertical standards, a bracket mounted on each standard, a steam-cylinder supported on pivots between said brackets, bolts for clamping said cylinder securely between said brackets, screws for adjusting the vertical position of said brackets on said standards, and connections between said screws so as to cause them to turn together.



2. In combination with a steam-cylinder provided with a piston and a valve mechanism adapted to admit steam to said cylinder so as to cause vertical reciprocation of said piston, a pair of brackets and means for securely clamping said cylinder between them, a separate standard for each bracket, a screw supported on each standard and passing through each bracket for adjusting the position of the same, connections between the upper ends of said screws for causing them to turn together, and means for clamping said brackets to said standards.

3. A pair of cylindrical standards each of which is without screw-threads, a bracket on each standard adapted to slide freely thereon, an adjusting-screw for each bracket supported on the respective standards and parallel thereto, connections between the two screws for causing them to turn together, clamps for securing said brackets at any required adjustment on said standards, and a steam-cylinder supported by and clamped between said brackets.

4. A vertical steam-cylinder provided with trunnions, a pair of brackets in which said cylinder is pivoted, a tubular standard for each bracket, a screw supported adjacent to each standard for adjusting the vertical position of said brackets, and connections between said screws for causing them to turn together.

5. In combination with a steam-cylinder and a piston adapted to reciprocate therein, a pair of brackets in which said cylinder is pivoted and between which it is securely clamped, a tubular standard for each bracket, a screw supported on and adjacent to each standard for adjusting the vertical position of said brackets, connections between said screws for causing them to turn together, and means for clamping the brackets to said standards.

6. A piston provided with a stamp-head, a cylinder for said piston provided with trunnions by which it is supported, a pair of brackets each of which is provided with a socket for receiving one of the trunnions of said cylinder, a standard for each bracket and upon which it is vertically adjustable, a screw supported on and adjacent to each standard for adjusting the position of said brackets, and bolts for clamping said brackets to their respective standards.

7. In a steam-stamp provided with a vertically-reciprocating piston and a steam-cylinder therefor, a pair of brackets for supporting said cylinder and provided with means for clamping it securely between them, a pair of cylindrical standards passing through similarly-shaped openings in said brackets, a cap or collar secured to the upper end of each standard, a screw supported by each collar and engaging screw-threads in the brackets, and connections between said screws for causing them to turn together.

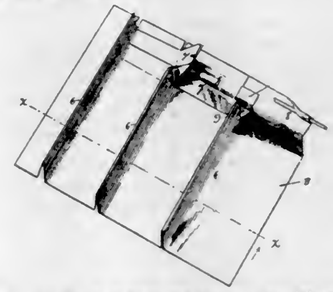
8. In a steam-stamp, a steam-cylinder, a pair of brackets adapted to engage opposite sides of said cylinder and provided with means for securely clamping it between them, a pair of cylindrical standards passing through circular openings in said brackets, a cap or collar secured to the upper end of each standard, a screw supported by each collar and engaging screw-threads in the brackets so as to raise and lower them, connections between said screws for causing them to move so as to raise and lower said brackets together, and bolts for clamping said brackets to their respective standards.

9. In a steam-stamp, a pair of cylindrical standards, a bracket mounted on each standard and provided with a clamping device for securing it at any desired position by frictional contact with the cylindrical surface of its standard, a screw supported upon and parallel with each standard and engaging screw-threads in the brackets upon their respective standards, means for causing said screws to turn together so as to raise and lower said brackets uniformly, and a steam-cylinder supported by and clamped between said brackets.

10. In a steam-stamp, a steam-cylinder, a pair of cylindrical standards, a bracket mounted upon each standard, bolts for clamping said brackets to their respective standards by causing them to grip the cylindrical surface thereof, and tie-rods for clamping said cylinder between said brackets.

11. In a steam-stamp, a steam-cylinder, a pair of cylindrical standards, a bracket mounted upon each standard, a screw independent of and supported by each standard for adjusting the vertical position of said brackets, bolts for clamping said brackets to their respective standards by frictional contact with the cylindrical surface thereof, and tie-rods for clamping said cylinder between said brackets.

654,435. COFFIN-CASE. LEWIS O. BROWN, Toledo, Ohio, assignor to the Brown Oil Can Company, same place. Filed June 2, 1900. Serial No. 18,820. (No model.)



Claim.—1. In a sheet-metal case, a sheet of metal, flanges at opposite margins of the sheet turned at a right angle to the plane of the sheet, a series of projecting cross crimps or folds extending from flange to flange, and a triangular flap or fold at each end of each of said cross-crimps, lying at an angle to the cross-crimps and against the flanges.

2. In a sheet-metal case, a sheet of metal, a series of cross crimps or folds in said sheet, a marginal flange for said sheet, which flange is formed by two right-angled bends, triangular flaps or folds in the cross-crimps between the two marginal bends and flat rectangular flaps or folds in the cross-crimps next to the margin of the sheet.

3. In a sheet-metal case, a sheet of metal, a series of cross-crimps in said sheet, the metal of which crimps is cut away at the margin of the sheet, a wire which is wrapped with the parts of the metal between the cut-away portions, a flange for said sheet at a right angle to the cross-crimps, and triangular flaps or folds in the cross-crimps at their intersection with the flange.

4. In a sheet-metal box or case, sheets of metal composing the sides and ends thereof, sheets of metal curved in horizontal section composing the corners of the case, and projecting vertical crimps or folds in the side pieces and end pieces interlocked with corresponding portions on said corner-pieces.

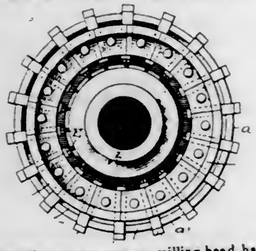
5. In a sheet-metal case, a corner-piece curved in transverse section, a curved flange at top and at bottom of said corner-piece having two right-angled bends, a crimp or fold extending from flange to flange, a triangular flap in said crimp between the two bends and a triangular flap 14 in said crimp next to the margin of the piece.

6. In a sheet-metal case, a lid, lateral folds or crimps extending between opposite margins of the lid, a flange for said lid having a return-bend whereby a marginal recess is formed in said lid for the reception of the top of the case, combined with triangular flaps or folds at each end of each of said cross-crimps formed by the intersection of said cross-crimps with said flange.

654,436. ROTARY MILLING-CUTTER. FRANK A. BURNHAM, Cleveland, Ohio, assignor to the Chandler & Price Company, same place. Filed Feb. 15, 1900. Serial No. 5,268. (No model.)

Claim.—1. A rotatable milling-head substantially concavo-convex in cross-section with radial seats on the inner side thereof for the

cutting-tools inclined to the axis of the head, and tools in said seats having abutments at the middle of the head, substantially as described.



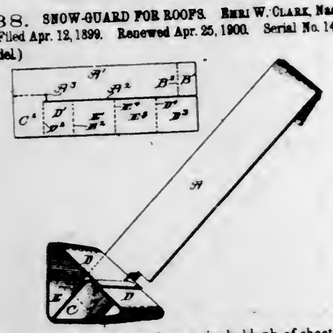
2. A substantially concavo-convex milling-head having a series of radial slots in its outer portion inclined to the axis of the head, and cutters in said slots having oppositely-beveled cutting ends, the outer bevel being parallel to the axis of the head and the inner bevel substantially at right angles to the outer bevel, substantially as described.

3. The cutter-head having radially-disposed and axially-inclined seats for tools, and tools in said seats having cutting edges across their extremities and adjustable abutments for the said tools to take the end thrust, and clamps to hold the tools in place, substantially as described.

654,437. METHOD OF EXTRACTING GOLD FROM CYANID SOLUTIONS CONTAINING THE PRECIOUS METALS. WILLIAM A. CALDECOTT, Johannesburg, South African Republic. Filed Jan. 31, 1898. Serial No. 668,866. (No specimens.)

Claim.—Means for extracting gold from cyanid solutions in depositing-cells, consisting in a mechanical mixture of zinc shavings and lead shavings.

654,438. SNOW-GUARD FOR ROOFS. EBEN W. CLARK, Nashua, N. H. Filed Apr. 12, 1899. Renewed Apr. 25, 1900. Serial No. 14,354. (No model.)



Claim.—A snow-guard made from a single blank of sheet metal and comprising a flat body portion having a downwardly-turned hook at one end and an upwardly-projecting guard-piece at the other end; said guard-piece being made up of an upright mid-piece, wings projecting sidewise therefrom, and sides extending obliquely and rearwardly from said wings.

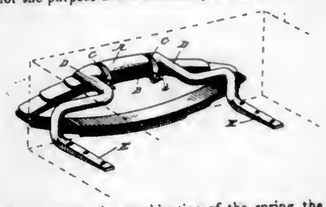
654,439. PROCESS OF CONVERTING STARCH INTO FERMENTABLE SUGAR. ALEXANDER CLASSEN, Aachen, Germany. Filed Jan. 29, 1900. Serial No. 3,203. (No specimens.)

Claim.—The process of converting starch into fermentable sugar which consists in heating the starch in a closed vessel at a temperature of 80° centigrade, with a solution of sulphurous acid, then subjecting the liquid thus obtained to the action of sulphuric acid and then heating this mixture of partially-converted starch, sulphurous acid and sulphuric acid, at a temperature of 110° to 120° centigrade, substantially as described.

654,440. BODY-LOOP FOR VEHICLES. GEORGE F. COLLMER, South Bend, Ind. Filed May 19, 1900. Serial No. 17,272. (No model.)

Claim.—1. The herein-described body-loop for vehicles, comprising a central flattened portion and divergent arms springing laterally from the ends of said central portion and having vertical shoulders at their junctions with said body portions, the vertical shoulders being beside the flattened side of the body portion.

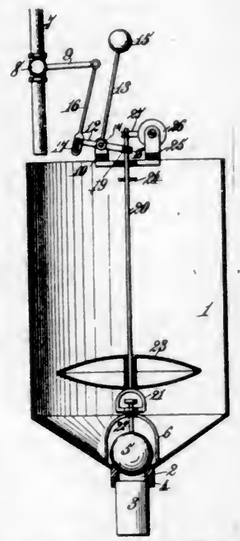
2. The herein-described body-loop having a central flattened portion and divergent arms springing laterally from the ends thereof having vertical shoulders at their junctions with said central portion, beside the flattened side thereof; with the spring upon which said flattened portion rests, and clips for fastening said body-loop to the spring, for the purpose and substantially as described.



3. In a vehicle, the combination of the spring, the body-loop having a central flattened portion supported on the spring and provided with transverse notches in its upper side; and the oppositely-extending arms springing from the ends of said central portion and having vertical shoulders on the under side at the junction of said arms with said body portion, said shoulders being adapted to bear against the upper leaves of the spring, substantially as described.

4. In a vehicle, the combination of the body, and the spring: with a body-loop having a central flattened portion provided with transverse notches in its upper side and supported on the spring, and oppositely-extending arms springing from the ends of said body portion and having vertical shoulders on their under sides at the junction of said arms with said body portion, said shoulders bearing against the upper leaves of the spring; and clips securing said loop to the spring, said clips engaging the said notches in the body-loop, for the purpose and substantially as described.

654,441. MACHINE FOR MEASURING LIQUIDS. WALTER H. COOK, New Orleans, La. Filed Apr. 7, 1900. Serial No. 11,990. (No model.)



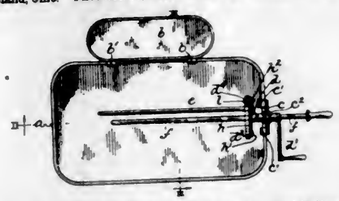
Claim.—1. A liquid-measuring apparatus, consisting of a fixed reservoir, an outlet-valve to open and close a discharge-port in the lower end of said reservoir, a pipe to supply fluid to the latter, a feed-valve in said pipe, a weighted lever having a loose link connection with a lever-arm on the stem of said feed-valve, a vertically-movable rod having one end loosely connected to the stem of the valve in the discharge-opening, and a float movable upon the vertically-movable rod, said rod having a cross-pin or stop fixed thereto, engaged by said float when nearing the limit of its upward movement, to effect the movement of said rod to open said outlet-valve, substantially as described.

2. In a liquid-measuring apparatus, the combination with a fixed reservoir, of an outlet-valve to open and close a discharge-port in the bottom of said reservoir, a pipe to supply liquid to the same, an inlet-valve in said pipe having a lever-arm on its stem, a vertically-movable rod having a yoke loosely connected to the stem of the outlet-valve to slide thereon, a lever-arm connected at one end to said rod and at the other end loosely connected to the lever-arm on the stem of the inlet-valve by a link, a weighted arm moving with said lever-arm over the pivotal point of support of the latter, and a float movable upon the vertically-movable rod between the yoke on its lower end and a stop near the upper end, substantially as described.

3. In a liquid-measuring apparatus, the combination with a fixed reservoir of an inlet pipe and valve, to supply liquid to the reservoir, a lever-arm having one end provided with a sliding link connection to an arm on the stem of the inlet-valve, a rod vertically movable in the reservoir and having a stop or cross-pin fixed thereto, near the upper end of said reservoir and connected to the other end of said lever-arm, an outlet-valve in the bottom of the reservoir its stem having a sliding connection with a yoke on said rod, a float movable on the latter with the rise and fall of liquid in said reservoir, and an arm rigid with the lever-arm and carrying a weight back and forth above the point of pivotal support of the latter, substantially as described.

4. In a liquid-measuring apparatus, the combination with a fixed reservoir, of an outlet-valve therein an inlet-pipe having an inlet-valve, a vertically-movable rod having a sliding connection to the stems of both valves and a cross-pin or stop fixed thereto, near the upper end of said reservoir, a float movable on the rod, a register having its index-lever connected to said rod, a lever-arm connected at one end to said rod and linked at its other end to an arm on the stem of the inlet-valve, and a weighted arm rigid with and carrying its weight back and forth above the pivotal support of the lever-arm, substantially as described.

654,442. WASHBOILER ATTACHMENT. SOPHIE E. DAVIS, Cleveland, Ohio. Filed Oct. 21, 1899. Serial No. 734,283. (No model.)



Claim.—1. A wash-wringing attachment for washboilers, comprising a bracket provided, at its upper end, with a box; a tubular and suitably-operated shaft having bearing within the said box; an endwise-shiftable stick or rod extending through and freely turnable within the shaft; a flange or arm formed upon the inner end of the shaft; a stick or rod having bearing within the said flange or arm and tiltable vertically and laterally, and means for preventing an inward tilting of the last-mentioned stick or rod toward the other rod or stick, substantially as and for the purpose set forth.

2. A wash-wringing attachment for washboilers, comprising a bracket provided with a box; a tubular or hollow shaft having bearing within the box and provided with means for rotating the shaft; an endwise-shiftable stick or rod extending through and freely rotatable within the hollow shaft; a flange or arm formed upon the inner end of the shaft and having a lateral slot; an endwise-shiftable stick or rod extending through and having bearing upon the inner wall of the said slot, which last-mentioned stick or rod is capable of being actuated into a position parallel with the first-mentioned stick or rod and is capable of being tilted vertically and laterally, and means for preventing an inward tilting of the tiltable stick or rod toward the other rod or stick, substantially as and for the purpose set forth.

3. A wash-wringing attachment for washboilers, comprising a bracket provided with a box; a tubular or hollow shaft having bearing within the box and provided with means for rotating the shaft; an endwise-shiftable stick or rod extending through and freely rotatable within the hollow shaft; a flange or arm formed upon the inner end of the shaft and having a lateral slot; an endwise-shiftable stick or rod extending through and having bearing within the said slot, which last-mentioned stick or rod is capable of being tilted vertically and laterally; a latch pivoted to the aforesaid flange or arm at one end of the slot and arranged to render it capable of being tilted over and upon the tiltable stick or rod, and means for locking the said latch in its operative position.

4. A wash-wringing attachment for washboilers, comprising a bracket provided with a box; a tubular or hollow shaft having bearing within the box and provided with means for rotating the shaft; an endwise-shiftable stick or rod extending through and freely rotatable within the hollow shaft; a flange or arm formed upon the inner end of the shaft and having a lateral slot and a pin-receiving hole; an endwise-shiftable stick or rod extending through and having bearing upon the inner wall of the said slot, which last-mentioned stick or rod is capable of being tilted vertically and laterally; a latch pivoted to the aforesaid flange or arm at one end of the slot and arranged to render it capable of being tilted transversely of the tiltable stick or rod, which latch has a hole formed in its free end and arranged to register with the pin-receiving hole of the latch-bearing flange or arm when the latch is in its operative position, and a pin for engaging the said holes, substantially as and for the purpose set forth.

5. A wash-wringing attachment for washboilers, comprising a bracket provided with a box; a tubular or hollow shaft having bearing within the box and provided with means for rotating the shaft; an endwise-shiftable stick or rod extending through and freely rotatable within the hollow shaft; a flange or arm formed upon the inner end of the shaft and having a lateral slot whose inner wall is provided with a recess d^3 extending transversely of the said wall; an endwise-shiftable stick or rod extending through and having bearing within the said slot, which last-mentioned stick or rod is capable of being tilted vertically and laterally; a latch pivoted to the aforesaid flange or arm and arranged to render it capable of being tilted transversely of the tiltable stick, which latch has a recess h^2 arranged to register with the aforesaid recess d^3 in the operative position of the latch, and means for securing the latch in its operative position, substantially as and for the purpose set forth.

6. A wash-wringing attachment for washboilers, comprising a bracket c having the hooks c' c' and the box c^2; the tubular or hollow shaft d provided with the arm or flange d^3 that has the lateral slot d^4; the stick or rod e extending through the said slot and capable of being shifted endwise and tilted vertically and laterally; means for preventing an inward tilting of the said stick or rod toward the other rod or stick, and an endwise-shiftable stick or rod extending through and freely turnable within the hollow shaft, all arranged and operating substantially as shown, for the purpose specified.

7. The combination with the washboiler: of a hollow shaft suitably supported from the boiler and extending over the chamber of the boiler; a stick or rod extending through and freely turnable within the said shaft; another stick or rod connected with the shaft and capable of being arranged longitudinally of and parallel, or approximately parallel, with the first-mentioned stick or rod and having such connection with the shaft as to render it capable of being tilted vertically and laterally, and means for preventing an inward tilting of the tiltable stick or rod toward the other rod or stick, substantially as and for the purpose set forth.

8. The combination with the washboiler; a hollow shaft suitably supported from the boiler and extending over the chamber of the boiler; an endwise-shiftable stick or rod extending through and freely turnable within the said shaft; another stick or rod connected with the shaft and capable of being arranged longitudinally of and parallel, or approximately parallel, with the first-mentioned stick or rod and having such connection with the shaft as to render it capable of being tilted vertically and laterally, and means for preventing an inward tilting of the tiltable stick or rod toward the other rod or stick: of a receptacle arranged outside of, and removably attached to, the boiler, and having such arrangement relative, to the tiltable rod or stick, that the latter is capable of being tilted over the said receptacle.

9. The combination with a washboiler: of a bracket removably attached to the boiler and provided with a box above the boiler, a tubular shaft having bearing in the said box and extending over the chamber of the boiler; an endwise-shiftable stick or rod extending through and freely turnable within the hollow shaft; a flange or arm formed upon and projecting laterally of the inner end of the shaft; another stick or rod having bearing within the said flange or arm and tiltable laterally and vertically, and capable of being arranged parallel or approximately parallel with the first-mentioned stick or rod, and means for preventing an inward tilting of the tiltable stick or rod toward the other rod or stick, substantially as and for the purpose set forth.

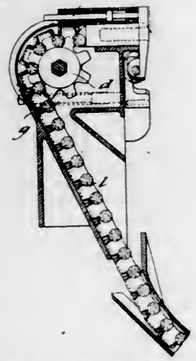
10. The combination with a washboiler: of a bracket removably attached to the boiler and provided with a box above the boiler; a tubular shaft having bearing in the said box and extending over the chamber of the boiler; an endwise-shiftable stick or rod extending through and freely turnable within the hollow shaft, and another stick or rod revoluble about the first-mentioned stick or rod and suitably supported from or connected with the aforesaid shaft, substantially as and for the purpose set forth.

11. A wash-wringing attachment for washboilers, comprising a bracket provided with a box; a tubular or hollow shaft having bearing within the said box and provided with means for rotating the shaft; an endwise-shiftable stick or rod extending through the said shaft, and another stick or rod revoluble around the first-mentioned rod or stick and suitably supported from or connected with the aforesaid shaft, substantially as and for the purpose set forth.

12. A wash-wringing attachment for washboilers, comprising a tubular or hollow shaft; a box affording bearing for the said shaft, and means for attaching the box to a washboiler; a stick or rod extending through and freely rotatable within the box, and another

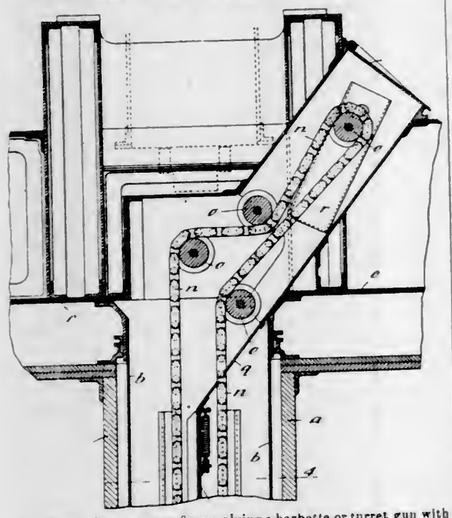
rod or stick revoluble around the first-mentioned stick or rod, substantially as and for the purpose set forth.

654,443. APPARATUS FOR RAMMING CHARGES OF TURRET OR BARBETTE GUNS. ARTHUR T. DAWSON, London, and JAMES HORNE, Barrow-in-Furness, England, assignors to the Vickers, Sons & Maxim, Limited, Sheffield, England. Filed Mar. 26, 1900. Serial No. 10,251. (No model.)



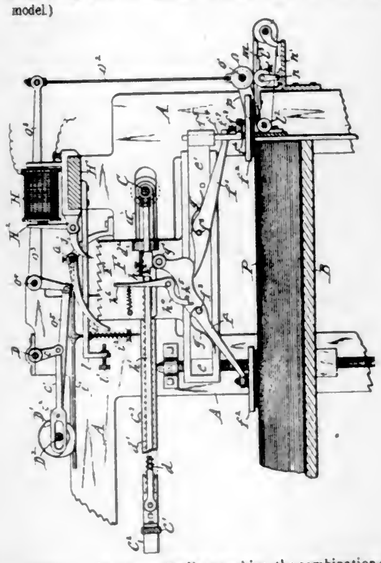
Claim.—Apparatus for ramming the charges of heavy turret or barbette guns, comprising a frame carrying a rammer-head having its stem connected to a chain, a sprocket-wheel engaging the chain and connected by bevel-gear to a hydraulic engine, a hydraulic spring-buffer for the rammer-head and a spring-bolt engaging the projectile-cage, said frame being adapted to be slid up and down by a screw worked by hand, substantially as and for the purpose set forth.

654,444. APPARATUS FOR SUPPLYING TURRET OR BARBETTE GUNS WITH EXPLOSIVE CHARGES. ARTHUR T. DAWSON, London, and JAMES HORNE, Barrow-in-Furness, England, assignors to the Vickers, Sons & Maxim, Limited, Sheffield, England. Filed Apr. 2, 1900. Serial No. 11,194. (No model.)



Claim.—In apparatus for supplying a barbette or turret gun with explosive charges, the combination with the turn-table on which the gun is mounted, of a hoist-trunk secured to said turn-table, extending down to the floor of the magazine and having an inclined extension at its upper end, a longitudinal partition in said trunk adjacent to said extension, the said partition providing in said trunk two passages, a normally-closed spring-actuated flap pivoted to said partition and extending over to and in line with the bottom wall of said extension for cutting off communication in one direction between said extension and one of said passages, rotary shafts mounted in the lower part of said trunk and means for operating the same, a pair of sprocket-wheels mounted on said shafts on opposite sides of said trunk, a pair of chains meshing with said sprocket-wheels, pulleys in the upper part of said trunk and in said extension around which said chains pass, and vessels for holding the explosive charges pivoted to said chains.

654,445. PAPER-FEEDING MACHINE. TALBOT C. DEXTER, Pearl River, N. Y. Filed June 12, 1896. Serial No. 595,373. (No model.)



Claim.—1. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable sheet-buckling mechanism for effecting a preliminary separation of the sheets, suitable sheet-advancing means for feeding the successive sheets from the pile, and a sheet-separator at the delivery end of the machine comprising a lower separator-bed and an upper feeding and separating member adapted to separate the top sheet from any chance underlying sheet, substantially as and for the purpose set forth.

2. A paper-feeding machine, comprising suitable sheet-buckling devices operating upon the pile to effect a preliminary separation of the top sheets, a sheet-separating bed at the delivery end of the machine, a feeding-pad operating upon the front portion of the sheet of paper over the aforesaid bed to separate the top sheet from any chance underlying sheet, and an auxiliary pad to the rear of said front pad and moving in unison therewith to promote the travel of the top sheet, substantially as set forth.

3. In a paper-feeding machine, the combination of a support for a pile of sheets, a sheet-buckling mechanism for effecting a preliminary separation of the sheets, two sets of sheet-advancing devices arranged transversely of the machine, means controlled by the sheet for throwing said sheet-advancing devices out of operation independently, and a separator at the delivery end of the machine comprising a sheet-separating bed and a separating and feeding pad, substantially as and for the purpose set forth.

4. In a machine for feeding sheets of paper from a pile, the combination of a support for a pile of sheets, suitable sheet-buckling mechanism for effecting a preliminary separation of the sheets, a separator at the delivery end of the machine comprising a sheet-separating bed and a separating-pad operating over the bed, and a resiliently-supported sheet-advancing instrument adapted to feed the sheets from the pile to the separator-bed, substantially as and for the purposes set forth.

5. A paper-feeding machine comprising suitable sheet-buckling devices for effecting a preliminary separation of the sheets, a sheet-separating bed at the delivery end of the machine, a feeding-carriage supporting a main feeding and separating pad in operative relation with said separating-bed, and an auxiliary frictional feeding instrument yieldingly supported upon the feeding-carriage to the rear of said main pad, means for moving the main pad and auxiliary instrument into operative relation with the pile simultaneously, and means for operating the feeder-carriage, substantially as set forth.

6. In a paper-feeding machine, the combination of sheet-buckling

mechanism operating upon the rear portion of the pile of paper to be fed, sheet-retarding beds at the delivery end of the machine, feeding-pads operated upon the top of the front portion of the aforesaid pile and over the retarding-beds to carry the top sheet onto the same, auxiliary feeding-pads operating upon the pile of paper at the rear of the aforesaid front pad to promote the travel of the sheet, and sheet-delivery mechanisms removing said advanced sheet from the retarding-bed, as set forth.

7. A paper-feeding machine comprising friction-pads disposed one back of the other with a space between them and movable in unison longitudinally and vertically to and from the plane of feeding, and a longitudinally-movable bed at the delivery end of the machine receiving the front pad over it and mechanism actuating said bed to move it slower than the forward motion of the pad to thereby separate the sheets in transit, as set forth.

8. In a paper-feeding machine, the combination of sheet-buckling devices over the rear end of the pile of paper, a plurality of sets of feeding-pads moving synchronously longitudinally and to and from the plane of feeding, the pads of each set being arranged one to the rear of another, sheet-separating beds at the delivery end of the machine receiving over them the sheet and the front pads of the aforesaid sets, and sheet-propellers receiving the advanced sheet and removing the same from the machine, as set forth.

9. In combination with a friction-pad advancing the top sheet from the pile, an endless belt disposed longitudinally at the delivery end of the machine and in position to receive the aforesaid pad over it, and a longitudinally-arched plate under the upper run of said belt to support the same correspondingly arched, as set forth and shown.

10. In combination with a friction-pad advancing the top sheet from the pile, an endless belt disposed longitudinally at the delivery end of the machine and in position to receive the aforesaid pad over it, a longitudinally-arched plate supporting the upper run of the belt correspondingly arched, and mechanism imparting to said belt a longitudinal movement slower than that of the pad, as set forth.

11. In a paper-feeding machine, the combination of a longitudinally-reciprocating carriage, a bracket mounted movable longitudinally on said carriage, a spring forcing said bracket forward, spring-pressed paper-feeding arms pivoted to said bracket and extending in opposite directions therefrom and in a line parallel with the line of feeding, friction-pads attached to the free ends of said arms, a longitudinal ratchet on the aforesaid bracket, a dog movable to and from engagement with said ratchet, a sheet-actuated device controlling the dog, and a tripper on the carriage thrown into operation by the arrest of the movement of the carriage and adapted to lift the paper-feeding arms out of engagement with the sheet, substantially as set forth.

12. In a paper-feeding machine, the combination of a longitudinally-reciprocating carriage, a bracket mounted movable longitudinally on said carriage, a spring forcing said bracket forward, spring-pressed paper-feeding arms pivoted to said bracket and extending in opposite directions therefrom and in a line parallel with the line of feeding friction-pads attached to the free ends of said arms, a longitudinal ratchet on the aforesaid bracket, a dog movable to and from engagement with said ratchet, a sheet-actuated device controlling the dog, a tripper on the carriage lifting the aforesaid paper-feeding arms during the movement of the carriage after the engagement of the dog, a latch retaining said arms in elevated position during the rearward movement of the carriage, and means for disengaging the latch, substantially as set forth.

13. In a paper-feeding machine, the combination of a longitudinally-reciprocating carriage, a bracket mounted movable longitudinally on said carriage, a spring forcing said bracket forward, spring-pressed paper-feeding arms pivoted to said bracket and extending in opposite directions therefrom and in a line parallel with the line of feeding, friction-pads attached to the free ends of said arms, a longitudinal ratchet on the aforesaid bracket, a dog movable to and from engagement with said ratchet, an electromagnet holding said dog out of engagement, a circuit-controller at the delivery end of the machine and actuated to break the circuit by the sheet in transit from the machine and thereby causing the aforesaid dog to engage the ratchet, a tripper on the carriage lifting the aforesaid paper-feeding arms during the movement of the carriage after the engagement of the aforesaid dog, a latch retaining said arms in their elevated position during the rearward movement of the carriage, and a rocking finger timed to throw the latch out of engagement at the rearmost position of the carriage, as set forth.

14. In a paper-feeding machine, the combination with a sheet separating bed at the delivery end of the machine, a carriage reciprocating toward and from said bed, a bracket mounted on said carriage, a bar connected to said carriage and adjustable longitudinally thereon, paper-feeding arms pivoted to said bar and provided at their free ends with friction-pads and traveling with the foremost of said pads over the separating-bed, and mechanisms moving the said arms toward and from the plane of feeding, respectively, at the extreme rear and front positions of the carriage, as set forth.

15. In combination with the paper-feeding pads advancing the top sheet from the pile, and a sheet-separating bed at the delivery end of the machine receiving the front pad over it, paper-supporting rollers at said end of the machine, drop-rollers over said supporting-rollers, a shaft carrying said drop-rollers, a gear-wheel journaled to the side of the machine, arms carrying said shaft at opposite sides of the machine and pivoted to swing in arcs concentric to the axis of the aforesaid gear-wheel, a pinion attached to the end of the roller-carrying shaft and meshing with said gear-wheel, and mechanism intermittently lifting the drop-rollers, as set forth.

16. In combination with the paper-feeding devices, a sheet-buckler consisting of a guide secured to the main frame of the machine and disposed in a line at right angles to the line of feeding, a slide riding on said guide, a paper-buckling finger pivoted to said slide, a lever pivoted to the slide and having two arms bearing alternately on the slide in the inward and outward movement of the latter, a buckling-finger lifter actuated during the outward movement of the slide and dropping said finger during the inward movement of the slide, a vertically-movable plate pivoted to the guide and having its free end immediately back of the buckling-finger to receive upon it the recoiling buckled portion of the sheet, a spring depressing said plate, and a lug on the slide releasing said plate from the pressure of the spring during the forward movement of said slide, as set forth.

17. In combination with the guide disposed at right angles to the line of feeding, a slide riding on said guide, a paper-buckling finger pivoted to the slide, a three-armed lever pivoted to the slide and having two of its arms extending, respectively, forward and rearward from the pivot and in lines parallel with the buckling-finger, said arms having a limited vertical play between their free ends and top of the slide, a rod attached to the forward arm to lift the buckling-finger with the lifting of said arm, a plate pivoted to the guide and having its free end over the paper back of the buckling-finger, a spring depressing said plate, a lug on the slide releasing the plate from the pressure of the spring during the forward movement of the slide, a pitman connected to the third arm of the aforesaid lever, and mechanism imparting reciprocating motion to said pitman, as set forth.

18. In combination with the slide and paper-buckling devices connected thereto, a rock-shaft having a plurality of arms projecting from it, a spring-actuated rod connected to one of said arms and turning the same in one direction, a pitman connected to another of said arms for turning the same in the opposite direction, a rotary cam, a roller on the pitman bearing on said cam, and a pitman connected to another of the aforesaid arms for transmitting motion to the slide, as set forth and shown.

19. In combination with the vertically-movable table, and screws and nuts for raising said table, gears on said screws, a shaft extending across the machine and having fastened to it gears meshing with the gears of the screws, a miter-gear on one end of said transverse shaft, a vertical shaft on the side of the main frame, a miter-gear on said shaft meshing with the corresponding gear on the transverse shaft, a ratchet-wheel attached to the vertical shaft, a longitudinally-movable bar at right angles to the vertical shaft, a pawl on said bar engaging the ratchet-wheel, a spring moving said bar in one direction, a longitudinally-reciprocating carriage, an arm on said carriage extending across the bar, a bell-crank pivoted to the bar, a pin on one arm of said bell-crank sliding vertically in the bar and to and from the path of the carriage-arm, a spring supporting said bell-crank arm, an armature attached to the other arm of said bell-crank, an electromagnet facing said armature, and a circuit maker and breaker actuated by the variations in the height of the pile of paper, as set forth.

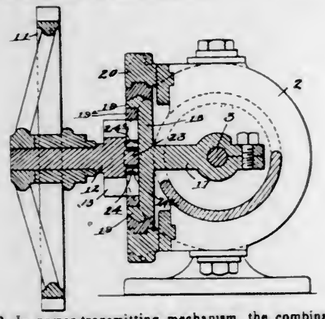
20. In a paper-feeding machine, the feeding devices proper, consisting of arms disposed in a line parallel with the line of feeding and moved back and forth on said line and falling and rising to and from the top of the pile of paper, and in said vertical movements slightly approaching and receding from each other, as set forth.

21. In combination with the sheet-buckling devices operating upon the rear portion of the pile of paper, a secondary sheet-buckling mechanism, consisting of feeding-pads rising and falling from and to the top of the pile of paper, and in said vertical movements, slightly approaching and receding from each other, and sheet-separating mechanisms at the delivery end of the machine, as set forth.

654,446. POWER-TRANSMITTING MECHANISM. PAUL S. DUREL, New Orleans, La., assignor of one-half to Payne & Joubert, same place. Filed Jan. 26, 1900. Serial No. 2,907. (No model.)

Claim.—1. In power-transmitting mechanism, the combination of a rotary shaft, a pinion thereon, a reciprocating shaft, a frame connected thereto having a substantially-elliptical guide-ring thereon, pins or projections on said frame within said ring, a pinion adapted

to engage said pins and to be guided around said frame by said ring and a gear-wheel secured to the pinion engaging said pins and meshing with the pinion on said rotary shaft.



2. In power-transmitting mechanism, the combination with a rotary drive-shaft and a pinion thereon, of an arm or bar pivoted to said shaft, a gear-wheel having bearings in the outer end of said arm and engaging said pinion, a pinion secured to said gear-wheel, a reciprocating driven shaft, a frame secured thereto having a substantially-elliptical guide-ring thereon, pins secured to said frame within said ring adapted to be engaged by the pinion on said gear-wheel, and means for maintaining said pinion in engagement with said pins.

3. In power-transmitting mechanism, the combination with a rotary drive-shaft and a pinion thereon, of an arm or bar loosely mounted on said shaft and having bearings in its outer or free end, a shaft extending through the bearings in said arm, a gear-wheel secured to one end of said shaft and meshing with said pinion, a pinion secured to the inner end of the gear-wheel shaft, a reciprocating driven shaft, a frame adjustably mounted thereon having a substantially-elliptical guide-ring thereon, pins secured to said frame within said ring adapted to be engaged by the pinion on said gear-wheel shaft, a plate connecting the outer ends of said pins and a roller upon the inner end of the gear-wheel shaft adapted to engage the inner wall of said ring.

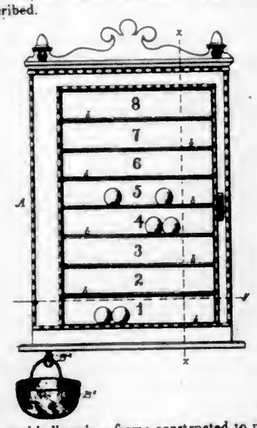
4. In power-transmitting mechanism, the combination with a rotary drive-shaft and a pinion thereon, of an arm or bar pivotally mounted on said shaft and having bearings in its outer end, a gear-wheel shaft loosely mounted in said bearings, a gear-wheel upon one end of said shaft meshing with the said pinion, a pinion upon the other end of said gear-wheel shaft, a reciprocating driven shaft, a frame adjustably secured thereto having a substantially-elliptical ring thereon, pins secured to said frame within said ring adapted to be engaged by the pinion on said gear-wheel shaft, a plate connecting the outer ends of said pins whose outer edges are substantially parallel with the inner walls of said ring and are adapted to lie within a recess or cut-away portion in said gear-wheel shaft, and a roller upon the inner end of the latter shaft adapted to engage the inner walls of said ring.

5. In power-transmitting mechanism, the combination with a rotary drive-shaft and a pinion thereon, of an arm or bar pivotally mounted on said shaft and having bearings in its outer end, springs engaging the opposite sides of said arm or bar for resisting the pivotal movement thereof, a gear-wheel shaft loosely mounted in said bearings, a gear-wheel upon one end of said shaft meshing with the said pinion, a pinion upon the other end of said gear-wheel shaft, a reciprocating driven shaft, a frame adjustably secured thereto having a substantially-elliptical ring thereon, pins secured to said frame within said ring adapted to be engaged by the pinion on said gear-wheel shaft, a plate connecting the outer ends of said pins whose outer edges are substantially parallel with the inner walls of said ring and are adapted to lie within a recess or cut-away portion in said gear-wheel shaft, and a roller upon the inner end of the latter shaft adapted to engage the inner walls of said ring.

654,447. POOL-BALL RACK. HERBERT G. EMERSON, Louisville Ky., assignor to Samuel F. Harlan, same place. Filed May 1, 1899. Renewed June 4, 1900. Serial No. 19,046. (No model.)

Claim.—1. A pool-ball rack, comprising a frame or case provided with guiding and collecting means for the balls, a series of shelves discharging into said guiding means when tilted, each of said shelves having a tenon at one end, a pivotally-mounted wire bracket supporting the other end of each shelf and arranged diagonally, and a vertically-movable lifting-bar for the shelves, having a series of diagonal mortises to receive said tenons, said mortises being of a size to permit the tenons to have play therein, substantially as described and for the purposes specified.

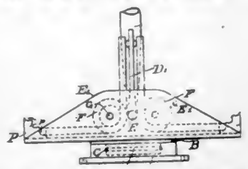
2. In a pool-ball rack, a frame constructed to provide a well or channel extending from its top to its bottom and having a discharge-opening from the bottom of said well or channel, and a series of shelves communicating with said well or channel and discharging into the same, in combination with a receptacle pivotally mounted beneath said discharge-opening, and a guide arranged between the discharge-opening and receptacle and operating to direct the balls to about the center of the receptacle, so as to prevent tilting of the latter, substantially as described.



3. In a pool-ball rack, a frame constructed to provide a well or channel extending from its top to its bottom and having a discharge-opening from the bottom of said well or channel, a receptacle placed below said discharge-opening, a guide attached to the bottom of the frame and operating to direct the balls to about the center of the receptacle, a mortised vertically-movable bar at one end of said frame and a series of shelves communicating with said well, each of said shelves being pivoted at its end next the well and having its other end provided with a tenon received by and having play in a mortise in said vertically-movable bar, substantially as described.

4. In a pool-ball rack, a frame constructed to provide a well or channel extending from its top to its bottom and having a discharge-opening from the bottom of said well or channel, a series of shelves communicating with said well or channel and discharging into the same, and means for tilting said shelves toward the well or channel, in combination with a hook secured to the bottom of said frame near the discharge-opening, a basket pivotally and removably suspended from said hook, and a guide to direct the balls from the discharge-opening to about the center of the basket.

654,448. TROLLEY-BASE. HENRY S. GOUGHNOUR, Johnstown, Pa., assignor to the Lorain Steel Company, of Pennsylvania. Filed Sept. 23, 1899. Serial No. 731,483. (No model.)

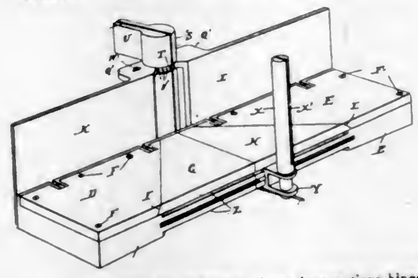


Claim.—1. In a trolley, the combination with a pivoted trolley arm or pole, and a member to which it is pivoted, of a torsion-spring having an arm extending from one end of its coil and bearing upwardly against the arm or pole, an arm extending from the opposite end of its coil and bearing downwardly against the said member, and an adjusting-wedge seated between the said member and the last-named arm.

2. In a trolley, the combination with a base member, and a pole pivoted thereto, of a torsion-spring having two coils wound from opposite ends about a common axis, arms extending from the inner ends of the said coils and bearing upwardly against the said pole, and a bail portion connecting the outer ends of said coils, together with an adjusting-wedge interposed between the said bail portion and the base member and provided with a series of grooves to seat an arm of said bail portion.

3. In a trolley the combination with a base member, and a pole pivoted thereto, of a torsion-spring having two coils wound from opposite ends about a common axis, arms extending from one end of the said coils, and bearing upwardly against the pole, a horizontally-extending bail portion connecting the other ends of the two coils, and an adjusting device upon which said bail portion has a downward bearing, substantially as described.

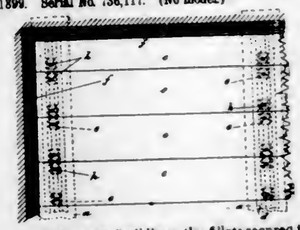
654,449. FOLDING AND ADJUSTABLE MITER-BOX. GUSTAVE GRUNWALD, Philadelphia, Pa. Filed May 2, 1900. Serial No. 15,284. (No model.)



Claim.—1. A miter-box consisting of two base-sections hinged together so as to be folded upon each other, two back sections hinged to the base-sections, a main guide-post journaled in the backs, means for locking said post in various adjustments, a secondary guide-post, a sliding block in which the last-named post is swiveled and means for connecting the main and secondary posts so as to cause them to turn in unison, as specified.

2. A miter-box consisting of two base-sections hinged together so as to be folded against each other, blocks D and E secured upon said sections, blocks G and H also secured upon the sections and adapted to be readily removed therefrom, backs hinged to the base-sections, a main guide-post journaled in the backs, guide-wings formed with the post, a spring-actuated bolt for locking the post in various adjustments, a block fitted to slide upon the front edges of the base-sections, a secondary guide-post swiveled within said block, and a rod secured to the lower end of the main post and freely sliding in the lower end of the secondary post, substantially as and for the purpose set forth.

654,450. FLOORING. FRANZ GUDE, Ragnit, Germany. Filed Nov. 7, 1899. Serial No. 736,117. (No model.)



Claim.—1. In floors for buildings, the fillets secured to the joists or beams and floor-boards provided with vertically-adjustable blocks or plugs on the under side thereof.

2. In floors for buildings the parallel fillets forming grooved spaces secured to the joists or beams, floor-planks having vertically-adjustable plugs or blocks secured to the under sides thereof.

3. In floors for buildings the fillets provided with converging faces forming grooved spaces fastened to the joists or beams, floor boards or planks provided with beveled blocks or plugs secured to the under sides thereof.

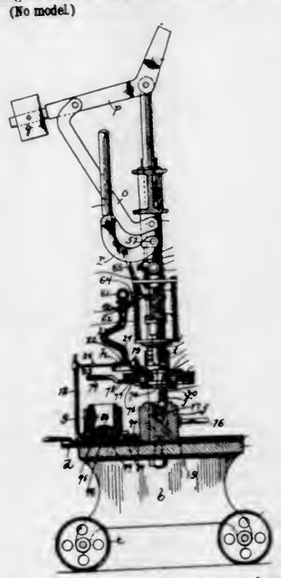
4. In floors for buildings, the fillets secured to the joists or beams, provided with upwardly-inclined faces forming grooved spaces, the boards or planks having adjustable blocks or plugs secured thereto, and provided with downwardly and outwardly flaring faces.

5. In floors for buildings, fillets arranged in parallel sets, each having upwardly-inclined faces forming grooved spaces, the planks or boards provided with blocks or plugs having downwardly and outwardly flaring faces, secured to the under side of said boards or planks.

6. In floors for buildings, the fillets forming grooved spaces secured to the joists or beams, planks or boards provided with adjustable plugs or blocks, having downwardly and outwardly flaring faces, adapted to slide in said grooved spaces and springs secured to the joists or beams.

7. The combination with means for securing boards in place as a floor while permitting their lateral adjustment, of means elastically pressing the boards edgewise and thus automatically closing gaps or spaces.

654,451. APPARATUS FOR FORMING HOLLOW GLASS ARTICLES. JONATHAN HALEY and HARRY H. BRIDGWATER, Akron, Ohio; said Haley assignor to said Bridgwater. Filed Dec. 28, 1899. Serial No. 741,548. (No model.)



Claim.—1. Apparatus of the character indicated, comprising a suitably-supported horizontally-arranged endwise-shiftable mold-carrier, a press-mold and a blow-mold mounted upon the said carrier independent of each other a suitable distance apart and in line longitudinally of the carrier, a suitably-operated neck-mold shiftable a suitable distance above the path of the said molds and arranged to be moved downwardly upon the press-mold or blow-mold according as the latter or the former is, by moving the mold-carrier in the direction and to the extent required, brought beneath the neck-mold, a vertically-movable plunger arranged in line with the neck-mold, and means for operating the plunger, substantially as set forth.

2. Apparatus of the character indicated, comprising a suitably-supported endwise-shiftable horizontally-arranged or approximately horizontally arranged mold-carrier, a blow-mold borne by the said carrier, a suitably-operated neck-mold shiftable up and down above the path of the blow-mold and arranged to be moved downwardly upon the blow-mold when the latter, by moving the aforesaid mold-carrier in the direction and to the extent required, is brought beneath and into registry with the neck-mold, a suitably-supported blow-plate shiftable into an operative position upon the neck-mold, and such an operative connection between the blow-plate and the aforesaid mold-carrier as will cause the blow-plate to be moved into or out of an operative position according as the blow-mold is moved in the direction and to the extent required to bring the blow-mold into or out of registry with the neck-mold, substantially as and for the purpose set forth.

3. Apparatus of the character indicated, comprising a suitably-supported horizontally-arranged slide, a blow-mold mounted upon the said slide, a suitably-operated neck-mold shiftable vertically above the path of the blow-mold and arranged to be moved downwardly upon the blow-mold when the latter, by moving the mold-bearing slide in the direction and to the extent required, is brought underneath and into registry with the neck-mold, a suitably-supported blow-plate shiftable into an operative position upon the neck-mold, and such an operative connection between the blow-plate and the aforesaid mold-bearing slide, as will cause the blow-plate to be moved into or out of an operative position according as the said slide is shifted in the direction and to the extent required to bring the blow-mold into or out of registry with the neck-mold, substantially as set forth.

4. In apparatus of the character indicated, the combination, with a horizontally-arranged slideway, a slide engaging the said slideway,

a blow-mold mounted upon the slide, and a neck-mold movable up and down above the path of the blow-mold, of the blow-plate upon the neck-mold, and mechanism whereby the blow-plate is actuated upon the neck-mold from an inoperative to an operative position, or vice versa, according as the mold-bearing slide is shifted to the extent required in the one direction or the other, substantially as set forth.

5. In apparatus of the character indicated, the combination with a suitably-supported horizontally-arranged or approximately horizontally arranged endwise-shiftable mold-carrier, a blow-mold borne by the said carrier, and a neck-mold movable up and down above the path of the blow-mold, of a blow-plate upon the neck-mold and supported so as to render it capable of being oscillated upon the neck-mold and rendered operative or inoperative according as it is oscillated in the one or the other direction, and mechanism whereby the blow-plate is oscillated upon the neck-mold from an inoperative to an operative position, or vice versa, according as the aforesaid mold-carrier is shifted, to the extent required, in the one direction or the other.

6. Apparatus of the character indicated, comprising a horizontally-arranged slide, a slideway for the slide, a suitably-operated neck-mold, a blow-plate movable upon the neck-mold and supported so as to render it capable of being oscillated upon the neck-mold and rendered operative or inoperative according as it is oscillated in the one or the other direction, and such an operative connection between the blow-plate and the aforesaid slide as will cause the blow-plate to be rendered operative or inoperative according as the slide is actuated to the required extent in the one direction or the other.

7. In apparatus of the character indicated, the combination, with a horizontally-arranged slide, a slideway for the slide, the vertically-movable neck-mold, a blow-plate swiveled to and upon the neck-mold, an upright post or stud supported from the aforesaid slide, a rod or bar journaled upon the said stud or post and extending over the blow-plate, and a box affording bearing for the said bar or rod and swiveled to the blow-plate, and the arrangement of parts being such that the blow-plate is swung into an operative position over the neck-mold or rendered inoperative according as the aforesaid slide is actuated endwise, to the extent required, in the one direction or the other.

8. The combination, with a horizontally-arranged slide, a slideway for the slide, and the vertically-shiftable neck-mold, of the blow-plate *h* mounted upon and swiveled to the neck-mold, as at 19, the upright stud or post 18 secured to the aforesaid slide, the rod or bar 23 journaled upon the said post or stud and having the shoulders 24 and 24, and the box 22 swiveled to the blow-plate, substantially as shown, for the purpose specified.

9. Apparatus of the character indicated, comprising a vertically-movable plunger, means for operating the plunger, a vertically-movable neck-mold arranged in line with the plunger, such an operative connection between the neck-mold and the plunger-operating means as will render the plunger and the neck-mold shiftable simultaneously but permit the plunger to lower independently of the neck-mold when the latter is in its lowermost and operative position, a horizontally-arranged slide underneath the path of the neck-mold and the plunger, a press-mold and a blow-mold mounted upon the said slide a suitable distance apart longitudinally of the slide and having such arrangement, relative to the neck-mold, that the press-mold or the blow-mold shall be brought into registry with the neck-mold upon actuating the aforesaid slide to the extent required in the one direction or the other, a blow-plate movable upon the neck-mold, and such an operative connection between the blow-plate and the aforesaid slide that the said plate is rendered operative or inoperative according as the blow-mold or the press-mold is brought into registry with the neck-mold, substantially as and for the purpose set forth.

10. Apparatus of the character indicated, comprising a suitably-supported horizontally-arranged slide, a blow-mold mounted upon the said slide, a suitably-operated neck-mold shiftable vertically above the path of the blow-mold and arranged to be moved downwardly upon the blow-mold when the latter, by moving the mold-bearing slide in the direction and to the extent required, is brought underneath and into registry with the neck-mold, a suitably-supported blow-plate shiftable into an operative position upon the neck-mold, such an operative connection between the blow-plate and the aforesaid mold-bearing slide as will cause the blow-plate to be moved into or out of an operative position according as the said slide is shifted in the direction and to the extent required to bring the blow-mold into or out of registry with the neck-mold, and means for bearing downwardly upon the blow-plate when the latter is in its operative position.

11. Apparatus of the character indicated, comprising a vertically-movable slide having a depending plunger and an upwardly-extending stem, slideways for the said slide, lever mechanism for operating the plunger-slide and operatively connected with the aforesaid stem, a neck-mold movable vertically and arranged below the aforesaid slide and in line with the plunger, such an operative connection between the neck-mold and the plunger-slide as will accommodate the lowering of the neck-mold with the said slide but permit the latter to move downwardly independently of the neck-mold when the latter is in its lower and operative position, a suitably-operated mold-bearing slide arranged below the path of the neck-mold, a press-mold and a blow-mold mounted upon the mold-bearing slide a suitable distance apart and capable, respectively, of registering with the neck-mold upon actuating the said slide to the extent and in the direction required, a blow-plate resting upon the neck-mold and having the air passage-way therethrough registering with the chamber of the neck-mold in the operative position of the blow-plate, means for actuating the blow-plate from an inoperative to an operative position, or vice versa, and means for causing the plunger to bear downwardly upon the blow plate in the latter's operative position.

12. In apparatus of the character indicated, the combination, with the neck-mold, a suitably-supported blow-plate shiftable into an operative position upon the neck-mold and having a passage-way extending therethrough and arranged to register with the neck-mold's chamber in the blow-plate's operative position, and mechanism for actuating the blow-plate from an inoperative to an operative position, or vice versa, of mechanism instrumental in holding the blow-plate down upon the neck-mold when the blow-mold is in an operative position, a passage-way for supplying fluid under pressure to the plow-plate's internal passage-way, a valve controlling the supply of fluid to the fluid-supply passage-way, and such an operative connection between the said valve and the aforesaid blow-plate-holding mechanism that the valve is opened or closed according as the blow-plate-holding mechanism is rendered operative or inoperative.

13. In apparatus of the character indicated, the combination, with the neck-mold, a suitably-supported blow-plate shiftable into an operative position upon the neck-mold and having an air passage-way extending thereto and arranged to register with the neck-mold's chamber in the blow-plate's operative position, and mechanism for actuating the blow-plate from an inoperative to an operative position, or vice versa, of mechanism instrumental in holding the blow-plate down upon the neck-mold when the blow-plate is in an operative position, an air-pressure-supply pipe, a flexible tube having one end thereof connected to and in open relation with the air passage-way of the blow-plate, a valve-casing interposed between the other end of the said tube and the air-supply pipe, the valve within the valve-casing, an operative connection between the said valve and the aforesaid blow-plate-holding mechanism, and the arrangement of parts being such that the valve is opened or closed according as the blow-plate-holding mechanism is rendered operative or inoperative.

14. Apparatus of the character indicated, comprising a vertically-movable plunger, mechanism for operating the plunger, the press-mold movable underneath the plunger, a vertically-movable neck-mold movable in line with the plunger and having the upper end of its chamber enlarged transversely, and the mold-ring embracing and movable with the plunger and having a limited vertical movement independently of the plunger, means acting to retain the said ring in its normal position, and the arrangement of parts being such that the aforesaid ring shall engage the upper enlarged end of the neck-mold's chamber during the operation of the plunger within the press-mold.

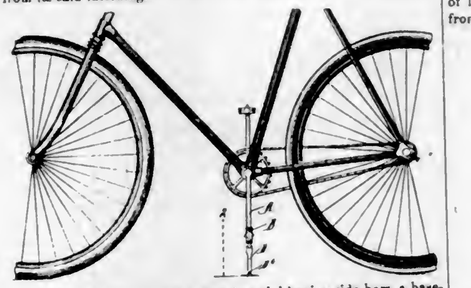
15. In apparatus of the character indicated, the combination, with a blow-mold having the surrounding wall of its chamber divided centrally into two upright sections, two horizontally-arranged base-forming parts bearing the different mold-sections, respectively, which base-sections are pivoted vertically to any suitable support in such a manner as to render them capable of being swung apart or toward each other, a horizontally arranged cam-plate arranged below the said base-sections and turnable in a horizontal plane, and such an operative connection between the plate and the base-sections as will move the latter apart or toward each other upon turning the plate in the one or the other direction.

654,452. BICYCLE-SUPPORT. ALFRED C. HAVEN, Lake Forest, Ill. Filed May 17, 1897. Serial No. 636,904. (No model.)

Claim.—1. In a bicycle-support, the pedal-crank, the pedal, a plate secured to the side of one of the pedal side bars, and a foldable supporting-arm attached to said plate at one end thereof, and foldable upon said side bar, substantially as described.

2. A bicycle-support comprising in combination with the pedal-crank and the pedal having side bars, a horizontal base-plate secured to one of the side bars, a supporting-arm pivoted at one end to one end of the base-plate and normally foldable thereon and means for detachably fastening the free end of the arm when so folded.

3. A bicycle-support comprising in combination with the pedal-crank and the pedal having side bars, a horizontal base-plate secured to one of the side bars, a supporting-arm pivoted at one end to one end of the base-plate and normally foldable thereon, means for detachably fastening the free end of the arm when so folded and a spring for thrusting the arm into operative position when detached from its said fastening.



4. The combination of a bicycle-pedal having side bars, a base-plate secured to one of said bars and having the ears C^3 and the shoulder C^4 at one end, a support having the ears D^3 and the shoulder D^4 cooperating with the ears C^3 and the shoulder C^4, a pivot-pin E bearing in said ears and by which the support is pivoted to the base-plate, and the spring E' interposed between said base-plate and support and tending to throw said support into operative position.

5. The combination of a bicycle-pedal having side bars, a base-plate separate from the pedal but adjustably secured to one of said side bars, a support pivoted to said base-plate and the catch F F' to engage said support and normally hold it positively in a position substantially parallel to said pedal.

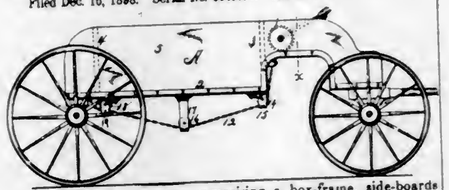
6. The combination of a bicycle-pedal, a base-plate separate from the pedal but secured thereto, said plate having ears C^3 and the shoulder C^4 at one end, a support having ears D^3 and the shoulder D^4 at one end and the foot D^2 and aperture D^4 at the other end, a pin E bearing in said ears and whereby the support is pivoted to the base-plate, the spring E' interposed between said base-plate and said support, and the spring-catch F F', all cooperating substantially as and for the purpose described.

7. In a bicycle-support, the combination of a pedal-crank, a pedal having a pedal pin or shaft and side pieces or foot-plates substantially parallel to said pin, a base-plate adjustable longitudinally upon one of said side pieces, and a supporting-arm pivotally connected to said plate.

8. In a bicycle-support, the combination of a pedal-crank, a pedal thereon, a member separate from but attached to the pedal-frame and parallel to the shaft of the pedal, and a spring-pressed supporting-arm pivotally connected to said member, said member being adjustable longitudinally on the pedal-frame.

9. In a bicycle-support, the combination of a pedal-crank, a pedal thereon having a pedal-shaft and two parallel side bars, a base-plate attached to one of the side bars, and a spring-pressed supporting-arm pivotally connected to said base-plate, said base-plate being adjustable longitudinally on its side bar.

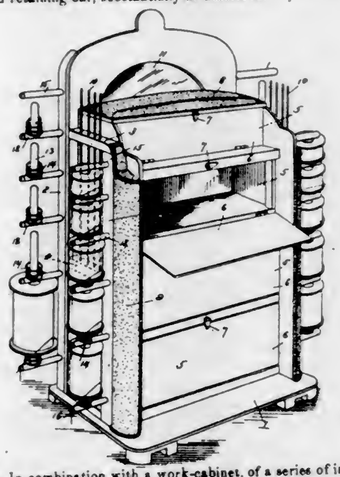
654,453. DUMP-WAGON. JOHN W. HAYWOOD, Syracuse, N. Y. Filed Dec. 16, 1898. Serial No. 699,417. (No model.)



Claim.—A dump-wagon comprising a box-frame, side-boards projecting below the frame, a dumping-bottom, a chain passing over pulleys at the forward end of said bottom, a central pulley in a different plane, whereby the chain forms a truss of which the dumping-bottom is the chord, the chain, the sides and the central pulley the apex, and means for winding the chain.

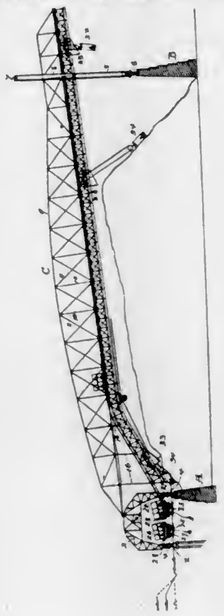
654,454. SPOOL-STAND. WILLARD P. HOUGHTON, Eastport, Me. Filed Apr. 7, 1900. Serial No. 12,013. (No model.)

Claim.—1. In combination with a support, of a series of independently-rotatable spool-supporting arms projecting horizontally therefrom and arranged in a vertical row one above the other, a spindle projecting vertically from each of said spool-supporting arms and extending near to the adjacent spool-supporting arm, whereby each of the spool-supporting arms forms a retaining-bar to hold the spool on the adjacent spindle and each of said arms may be independently rotated to move the free end of the spindle it carries out of line with the adjoining spool-supporting arm to release its spool from said retaining-bar, substantially as described.



2. In combination with a work-cabinet, of a series of independently-rotatable spool-supporting arms projecting horizontally therefrom and arranged in a vertical row one above the other, a spindle projecting vertically from each of said arms toward the next adjacent supporting-arm, and a spring carried by each supporting-arm and bearing on the spool to cause it to frictionally engage the adjacent spool-supporting arm to prevent a too-free rotation of the spool whereby each of the spool-supporting arms forms a retaining-bar to hold the spool on the adjacent spindle and each of said arms may be independently rotated to move the free end of the spindle it carries out of line with the adjoining spool-supporting arm to release its spool from said retaining-bar.

654,455. BRIDGE CONVEYER. GEORGE H. HULETT, Akron, Ohio, assignor of one-half to the Webster Camp & Lane Machine Company, same place. Filed Dec. 1, 1899. Serial No. 738,903. (No model.)



Claim.—1. A conveyer comprising a bridge, an inclined track on one end of said bridge terminating near a track running at right angles thereto, a transfer-car having a track thereon, a dumping-car on said track of the transfer-car, and a device operating automatically to aline the tracks on the transfer-car with the track on the bridge.

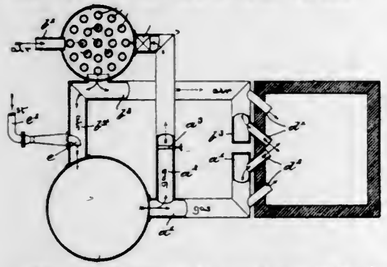
2. A conveyer comprising a bridge having an inclined portion, a series of tracks on said inclined portion, a single track to which the series of tracks lead, a track disposed at right angles to the bridge, transfer-cars on said last-mentioned track, dumping-cars on the transfer-cars, and means for causing the series of tracks on the bridge to aline with the wheels of the dumping-cars.

3. The combination with a bridge having an inclined end and a track thereon, of a track at right angles to the bridge, a transfer-car on said last-mentioned track, an inclined track disposed transversely on the transfer-car, a dumping-car mounted on said inclined track and means for causing the dumping-car to run into the track on the inclined end of the bridge.

4. The combination with a tower and a shear-leg, of a bridge supported near one end by the shear-leg, the other end of said bridge supported on the tower and having an inclined portion terminating in proximity to the base of the tower.

5. In a conveyer, the combination with rails spaced apart, of a bridge, means for movably supporting said bridge on said rails, a suitable height above the same, and a track on said bridge, one end of said track inclined at one end below the bridge and terminating near one of said rails.

654,456. GAS-PRODUCER. EBENEZER A. W. JEFFERIES, Detroit, Mich. Filed Nov. 8, 1899. Serial No. 736,222. (No model.)



Claim.—1. In an apparatus for utilizing producer-gas, the combination of a gas-producer, a continuous air-heating stove and a furnace, wherein gas from the producer and air from the stove are adapted to be commingled and burned, with an additional air-duct leading from the stove to the blast of the gas-producer, a steam-injector blower located in said last-mentioned air-duct and adapted to force the hot air and steam from said duct into said producer, and a divided outlet for gas from said producer, one branch of which leads to the furnace and the other branch to the air-heating stove, substantially as and for the purposes described.

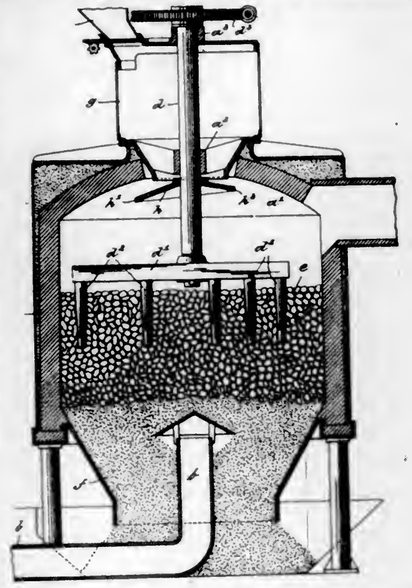
2. In an apparatus of the character described, a gas-producer, a continuous air-heating stove, means for forcing air through said stove to heat the same, a furnace, an air-duct adapted to convey hot air from the stove to the furnace, a gas-duct adapted to lead gas from the producer to the furnace, a second gas-duct adapted to supply the burner of the stove, a second air-duct leading from the stove to the blast of the gas-producer and a steam-injector blower located in the second air-duct and adapted to force the hot air in said duct and steam from the injector into the blast of said gas-producer, substantially as and for the purposes described.

654,457. GAS-PRODUCER. EBENEZER A. W. JEFFERIES, Detroit, Mich. Filed Nov. 8, 1899. Serial No. 736,223. (No model.)

Claim.—1. In a gas-producer constructed to contain a bed of fuel supported upon a bed of ash, a comb, comprising a cross-bar extending horizontally above the bed of fuel and a series of fingers depending from said bar and adapted to penetrate the bed of fuel and means for rotating said cross-bar and fingers, whereby said fingers are caused to traverse the fuel in a rotary direction, substantially as and for the purposes described.

2. In a gas-producer constructed to contain a bed of fuel supported upon a bed of ash, a vertically-arranged shaft traversing the dome or upper part of the producer, a cross-bar secured to said shaft and extending horizontally in the producer above the bed of fuel, a series of fingers depending from said cross-bar and adapted to penetrate the bed of fuel, and means for rotating said shaft and cross-bar, whereby the fingers are caused to traverse the fuel in a rotary direction, substantially as and for the purposes described.

3. In a gas-producer constructed to contain a bed of fuel supported upon a bed of ash, a vertically-arranged shaft traversing the upper portion of the producer, a fuel-distributing plate carried by said shaft, a cross-bar carried by said shaft and arranged horizontally below the distributing-plate and above the bed of fuel, a series of fingers depending from said cross-bar and adapted to penetrate the bed of fuel, and means for rotating said shaft, distributing-plate, cross-bar and fingers, substantially as and for the purposes described.



654,458. GAS LAMP OR BURNER. HENRY A. KENT, London, England. Filed May 23, 1899. Serial No. 717,963. (No model.)

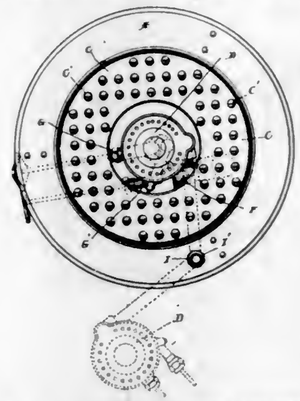


Claim.—1. A gas-burner having a pilot-burner and a main burner with passages leading to both burners, a spindle passing freely through the passage to the main burner, a hollow conical valve mounted on said spindle and acting as a cut-off valve to the main burner, and a projection on said spindle, and an independently-movable valve operated by said projection to close the passage to the pilot-burner when the spindle is moved by gas-pressure acting upon the conical valve to open the passage to the main burner, substantially as described.

2. The combination of a gas-tube, a passage for gas through said tube to the burner, a pilot-tube, a passage for gas from the gas-tube to the pilot-tube, a valve normally closing the gas-passage to the burner, a rod or spindle connected to said valve, a projection on said rod or spindle, and an independently-movable valve operated by said projection to close the passage to the pilot-tube when the main-burner valve is moved by pressure of the gas to admit gas to said burner.

3. A gas-burner having a pilot-light and a main burner with passages leading to said pilot-light and burner, a spindle having a projection thereon, a valve controlling the passage to the main burner and adapted to be moved through the medium of the pressure of gas, an independently-movable valve controlling the passage to the pilot-light and adapted to be moved by the projection on the spindle when the main-burner valve is moved to open the passage leading to the main burner, substantially as described.

654,459. VAPOR-BURNER. BERTRAND P. KENYON, Grand Rapids, Mich. Filed Nov. 13, 1899. Serial No. 736,749. (No model.)



Claim.—1. A vapor-burner consisting of a fixed outer burner having a central opening, a generator-burner movably supported within said opening and adapted to be moved outside the area of the outer burner, and means for conveying combustible vapor from the generator-burner to the fixed outer burner, substantially as described.

2. The combination of an outer burner having a central opening and an intake-pipe, a generator-burner movably supported beneath said opening and having an auxiliary needle-valve opposite said intake-pipe, and means for moving the generator-burner outside the area of the outer burner, substantially as described.

3. The combination of a fixed outer burner having a central opening, and an intake-pipe extending downward and inward, a supply-pipe extending vertically and thence horizontally beneath the outer burner, and rotative on its vertical axis, a generator-burner mounted on the movable end of the supply-pipe, and having an auxiliary needle-valve to supply vapor to the said intake-pipe, substantially as described.

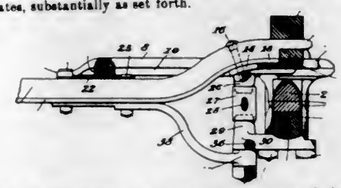
4. The combination of a bed-plate having a circular opening, an annular burner supported in said opening and having a downwardly-extended intake-pipe, a generator-burner movably supported beneath the opening of the outer burner on a supply-pipe extending horizontally from the stand-pipe of the generator-burner, and thence upward through the bed-plate and rotative therein, and an auxiliary needle-valve on the generator-burner to supply vapor to the intake-pipe, substantially as described.

5. The combination of an annular bed-plate, an annular burner in the opening of the bed-plate and having a flat top provided with tips, a distributing-chamber having a reduced portion and a downwardly and inwardly extended intake-pipe, a vertical supply-pipe rotative in the bed-plate and having a collar engaging the bed-plate, a horizontal extension of the supply-pipe beneath the annular burner, a generator-burner mounted on the horizontally-movable end of the supply-pipe, and an auxiliary valve on the generator-burner to supply the said intake-pipe with vapor, substantially as described.

654,460. FIFTH-WHEEL. ANDREW KIMBLE, Zanesville, Ohio. Filed Mar. 19, 1900. Serial No. 9,259. (No model.)

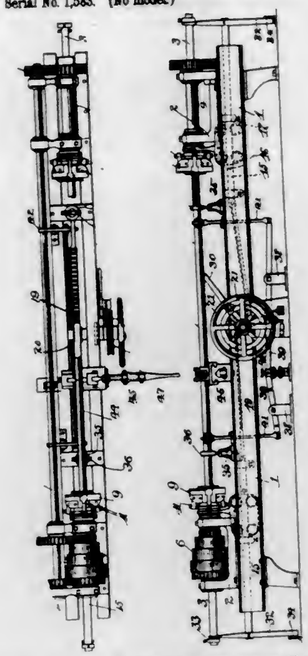
Claim.—1. In a fifth-wheel for vehicles, the combination of a head-block, a head-block plate secured thereto, an upper circle, an axle, a lower circle connected to the axle, a king-bolt located behind the axle and on which the lower circle turns, reaches bent up at their forward ends, lugs projected rearwardly from the head-block plate at opposite sides of the king-bolt, and bolts passed through the lugs and reaches for holding said parts together, substantially as set forth.

2. In a fifth-wheel for vehicles, the combination of a head-block, a head-block plate secured thereto, an upper circle, an axle, a lower circle having its forward ends rested on the axle, a king-bolt located behind the axle and on which the lower circle turns, bolts passed through the forward ends of the lower circle on opposite sides of the axle, tie-plates extended under the axle and through which said bolts pass, a central tie-plate having its rear end projected behind the axle and provided with a boss for the passage of the king-bolt, a clip on the axle and having arms passed through the central tie-plate, and brace-arms extended from opposite sides of the rear end of the central tie-plate and passed diagonally forward and laterally and having their outer ends integrally connected to the forward ends of the outer tie-plates, substantially as set forth.



3. In a fifth-wheel for vehicles, the combination of a head-block, an axle, upper and lower circles, the upper circle having projecting lugs at its rear part, a king-bolt on which the lower circle turns, reaches extended under the rear parts of the upper and lower circles and connected at their forward ends to the head-block, bolts passed through the lugs at the rear part of the upper circle and arranged to connect said upper circle to each of the reaches, and flat metal springs each having one end held beneath one of the lugs of the upper circle on the bolt which is passed through said lug and having its central portion bent upwardly into engagement with the under side of the lower circle, substantially as set forth.

654,461. PIPE-THREADING MACHINE. HENRY KOESTER, Chicago, Ill., assignor to the Crane Company, same place. Filed Jan. 15, 1900. Serial No. 1,583. (No model.)



Claim.—1. In a pipe-threading machine, the combination with a bed, a head-block thereon, a slidable driving-shaft carried by said head-block, a thread-cutting die carried by said shaft and mechanism for driving said shaft, of hand-operated mechanism for moving said die up to the end of the pipe, and hand-operated mechanism for starting the thread upon the pipe comprising a friction-wheel, a driv-

ing-pawl for said friction-wheel, a locking-pawl, and means whereby the motion imparted to said friction-wheel by said driving-pawl brings the locking-pawl into engagement to lock the friction-wheel against further motion, substantially as described.

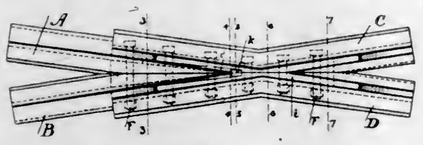
2. The combination with a pipe-threading machine, of mechanism for removing the threaded pipes therefrom comprising levers extending under the pipe and mechanism for elevating said levers to lift the pipe out of position in the machine and by bringing said levers to an inclined position, permitting the pipe to roll off the levers, substantially as described.

3. In a pipe-threading machine, the combination with a bed, a head-block thereon, a slidable driving-shaft carried by said head-block, a screw-cutting die carried by said shaft, and mechanism for driving said shaft, of hand-operated mechanism for moving said die up to the end of the pipe, and hand-operated mechanism separate from said first-mentioned hand-operated mechanism for starting the thread upon the pipe, substantially as described.

4. In a pipe-threading machine, the combination with a bed, a head-block thereon, a slidable driving-shaft carried by said head-block, a screw-cutting die carried by said shaft, and mechanism for driving said shaft, of hand-operated mechanism for moving said die up to the end of the pipe, and hand-operated mechanism separate from said first-mentioned hand-operated mechanism for starting the thread upon the pipe, and means whereby the motion imparted to the dies by said second hand-operated mechanism is automatically checked, substantially as described.

5. A pipe-threading machine comprising a bed, head-blocks thereon, slidable driving-shafts carried by said head-blocks, cutting-dies upon the inner ends of said shafts, mechanism for driving said shafts, hand-operated mechanism for moving said dies into contact with the ends of the pipe, a second set of mechanism for starting the thread upon the pipe separate from said hand-operated mechanism, and mechanism substantially as described, whereby said last-mentioned mechanism is locked in predetermined position to collapse the dies when the proper length of thread has been cut, substantially as set forth.

654,462. RAILWAY-FROG. CARL P. KRESS, Jr., Johnstown, Pa., assignor to The Lorain Steel Company, of Pennsylvania. Filed Dec. 28, 1899. Serial No. 741,818. (No model.)



Claim.—1. In a railway-frog, the combination with the girder-rails abutted to form the point of the frog, and cut away at their inner end portions at their outer sides, of the girder wing rails, having a portion of their heads removed at their inner sides on lines coinciding with the longitudinal center of the frog and abutting each other, and other portions cut obliquely to abut the cut-away faces of the head portions of the point-rails, and a central chock cast to said rails, substantially as described.

2. In a railway-frog, the combination with the two girder-rails abutted at their heads to form the point of the frog, of the two girder wing rails cut away at their inner sides on two different lines, whereby the floor of their flangeways or grooves abut each other at the central portion of the frog, and also abut the sides of the point-rails, together with a central chock cast to said rails, substantially as described.

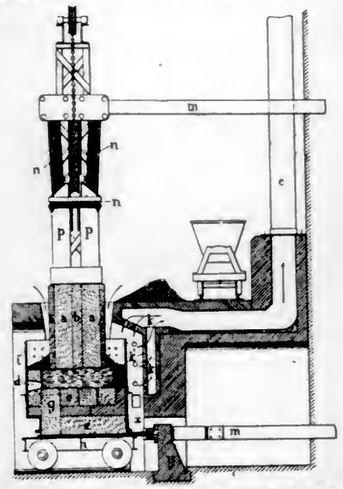
3. In a railway-frog, composed of girder-rails and a metal chock cast to said rails, the combination with the point-forming rails, of the wing rails the floors of whose flangeways are cut on two different lines offset from each other and forming at the offset a gate-opening to receive the chock-forming metal, substantially as described.

4. In a railway-frog, the combination with the point-rails cut away at their inner end portions at their outer sides, of the wing rails having the floors of their flangeways partially removed, and abutted at their central portions and at their guard-forming ends having said floors abutting the sides of the point-rails, a cast-metal chock uniting said point-rails, and removable bolts holding the wing rails to the chock, substantially as described.

5. In a railway-frog, the combination with the girder point-rails A and B, having portions of their heads removed at their outer sides, of the girder wing rails having the inner portions of their heads removed on a straight line from the points *d* to *d'*, and on an oblique line from the point *d'* to the guard-forming end of the rail, the cast-metal chock and the removable bolts for securing the wing rails to the said chock, substantially as described.

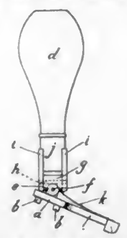
6. A railway-frog composed of girder-rails and a central metal chock cast to said rails, said rails having their head portions fitted and abutted to form the entire wear-surface of the frog, and the cast-metal chock filling the entire space between and underneath the abutted portions of said rails, substantially as described.

654,463. ELECTRIC FURNACE. HENRI LELEUX, Paris, France, assignor to La Compagnie Electrométallurgique des Procédés Gin & Leleux, same place. Filed July 7, 1899. Serial No. 723,117. (No model.)



Claim.—An electric furnace provided with a vertically-arranged electrode formed by one or more cores of carbon of high conductivity each core being surrounded by an agglomerated mass of carbon having a less high conductivity, each of these cores having its two inner faces provided with an elastic pad in order to provide a large surface of contact between the electrode and the plates connected to the lead, and said plates being secured against the pad by means of wedges and keys in order to obtain a permanent tightening whatever may be the temperature of the electrode.

654,464. HAND-STAMP. JOHN C. MACALESTER, Glasgow, Scotland. Filed Oct. 19, 1899. Serial No. 734,043. (No model.)



Claim.—1. In a hand-stamp the combination with the handle of a type-base movably jointed thereto and a tailpiece for the type-base, substantially as set forth.

2. In a hand-stamp the combination with the handle of a type-base jointed by means of a universal joint to the handle and of a tailpiece for the type-base, substantially as set forth.

3. In a hand-stamp the combination with the handle, of a type-base jointed by means of a universal joint to the handle, a tailpiece for the type-base, and means for causing the type-base and tailpiece to normally lie in an inclined position relatively with the handle, substantially as set forth.

4. In a hand-stamp the combination with the handle, of a type-base jointed by means of a universal joint to the handle, a tailpiece for the type-base, and a spring for depressing the tailpiece, substantially as set forth.

5. In a hand-stamp the combination with the handle, a ferrule, jaws on the ferrule, a block movably mounted in the jaws, a type-base movably secured to the block, a tailpiece for the type-base and a spring for depressing the tailpiece, substantially as set forth.

6. In a hand-stamp the combination with the handle, a ferrule, jaws on the ferrule, a block movably mounted in the jaws, a type-base movably secured to the block, a tailpiece for the type-base, a spring for depressing the tailpiece and feet on the tailpiece, substantially as set forth.

7. In a hand-stamp the combination with the handle, a ferrule, jaws at each side of the ferrule, a block fitted movably between the jaws, a pin passed through holes in the jaws and the block, a type-base, lugs on the type-base, a pin passed through holes in the lugs and the block, a tailpiece of T shape made one with the type-base, feet on the tailpiece and a spring for depressing the tailpiece, substantially as set forth.

8. In combination the handle *d*, the ferrule *j*, the jaws *i*, *i*, the block *g*, the type-base *a*, the lugs *e*, *e*, on the type-base, the joining-pins *h*, *f*, the tailpiece c, and the spring *k*, substantially as hereinbefore described and shown.

654,465. GARMENT-HOOK. FRED MACEY, Grand Rapids, Mich. Filed Dec. 19, 1898. Serial No. 699,741. (No model.)

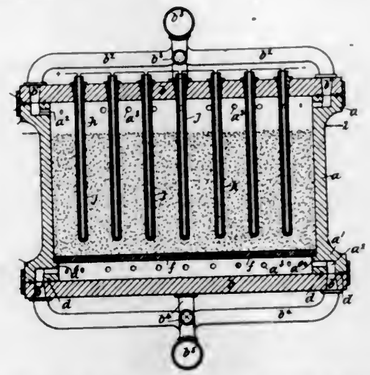


Claim.—1. A garment-hook comprising a bill, attaching-loops on opposite sides thereof, and a curved elastic tongue beneath the bill forming a hump which lies in line with the loops.

2. A garment-hook made in a single piece from wire, and comprising a bill, a pair of attaching-loops on opposite sides thereof, a third attaching-loop in line with said bill, and a curved elastic tongue formed by one terminal of the wire forming a hump which is located beneath said bill and in line with said pair of attaching-loops.

3. A garment-hook made in a single piece from wire, the said wire being bent at one end to form a side attaching-loop, extended from said loop and bent back upon itself to form a bill, bent laterally from said bill to form a second side attaching-loop, extended rearwardly and recurved to form an end attaching-loop, and extended from said end attaching-loop, terminating at a point beneath said bill, and curved at a point between said side attaching-loops to form an elastic retaining-tongue.

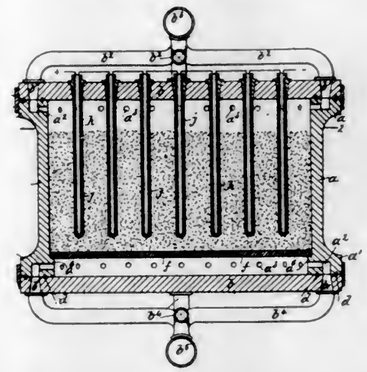
654,466. PROCESS OF MAKING CYANIDS. JAMES MACTEAR, London, England. Filed Sept. 16, 1899. Serial No. 730,701. (No specimens.)



Claim.—1. The production of ammonium cyanide by the decomposition of a gaseous mixture of ammonia and carbonic oxide in a chamber charged with wood-charcoal and heated internally and uniformly throughout by electrical resistances, as set forth.

2. The production of alkaline cyanides by the production of ammonium cyanide by the decomposition of a gaseous mixture of ammonia and carbonic oxide in a chamber charged with wood-charcoal and heated internally and uniformly throughout by electrical resistances, the conversion of the ammonium cyanide into the required alkaline cyanide by the action of a corresponding alkaline hydrate in solution in water or alcohol with liberation from the ammonium cyanide of the ammonia, and the obtainment of the required cyanide by the evaporation of the solution, as set forth.

654,467. FURNACE FOR HEATING AND TREATING GASEOUS MIXTURES. JAMES MACTEAR, London, England. Original application Filed Sept. 16, 1899, Serial No. 730,701. Divided and this application filed Oct. 4, 1899. Serial No. 732,510. (No model.)

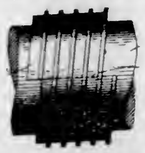


Claim.—1. An apparatus for decomposing gaseous mixtures, comprising a body having open ends, a flat cover and bottom fitting said ends, tubes of refractory material inserted through and depending from the cover and spaced equidistant from each other and from the sides of the body, said tubes having closed lower ends, electric resistances inside of said tubes, and pipes for supplying the gaseous mixture and drawing off the products of its treatment.

2. An apparatus for decomposing gaseous mixtures, comprising a body having flanged and perforated ends, a flat bottom and cover having corresponding perforations, a perforated diaphragm supported shortly above said bottom, a catalytic substance nearly filling the body above said diaphragm, pipes connecting with the perforations in the cover and bottom, tubes of refractory material depending from the cover into the catalytic substance and spaced equidistant from each other and from the sides of the body, and electric resistances within said tubes.

3. An apparatus for decomposing gaseous mixtures, comprising a body provided with removable cover and bottom, a catalytic substance contained in said body, refractory tubes depending into said substance, and electric resistances within said tubes.

654,468. SPINNING-RING. FRANK M. MARCY, Worcester, Mass., assignor of one-half to the Draper Company, Portland, Me., and Hopedale, Mass. Filed July 17, 1899. Serial No. 724,035. (No model.)



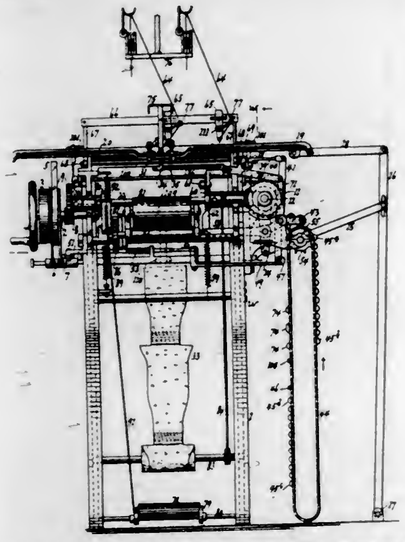
Claim.—1. As a new article of manufacture, a spinning-ring formed of a rolled metallic blank, with the grain or fiber of the metal lying in the direction of the length of the ring, and having the ends of the blank welded together, whereby the skin or hard surface of the blank is retained to present a hard, substantially-continuous wearing-surface.

2. As a new article of manufacture, a spinning-ring formed of drawn or rolled metal blank T-shaped in cross-section, having its ends welded together, whereby the hard smooth skin of the drawn blank is retained to present a substantially-continuous wearing-surface

654,469. KNITTING-MACHINE. ALFRED MARCH, New Brunswick, N. J. Filed Sept. 7, 1899. Serial No. 729,756. (No model.)

Claim.—1. A knitting-machine provided with needles and thread-guides, tracks 66 for the guides, downwardly-extended and pivoted or oscillatory arms for the tracks, an actuator located at the upper part of the guides so as not to come between the latter and the needles, a horizontal arm extended from one of the downwardly-extended arms and made to normally rest on the machine-frame, a slide made to pass under the horizontal arm for tilting the downwardly-extended

arms, and a lever and chain for actuating the slide, substantially as described.



2. A knitting-machine having a carriage, pivots on the carriage, needle-lifters on the pivots, tumbler-levers 31 made to swing freely or without spring-pressure, fingers for swinging the tumbler-levers, rock-shafts for the fingers, a fork having non-alined projections 39 for rocking the shafts, and a chain for actuating the fork to bring first one and then the other projection to its respective rock-shaft for alternately actuating the fingers and tumblers with their lifters, substantially as described.

3. A knitting-machine having a carriage, a pivot 27 mounted obliquely in the carriage, a needle-lifter made to swing but incapable of longitudinal or sliding motion on the pivot, a holding-spring 30 for the lifter, and a tumbler 31 made in form of a first-class lever and to swing freely or without spring-pressure, said tumbler being loose or disconnected from the lifter so that one arm of the tumbler can swing to and from contact with the lifter, and the other tumbler-arm being adapted to contact with a tumbler-actuator, substantially as described.

4. A knitting-machine having a carriage, a needle-lifter pivoted or swinging on the carriage but incapable of longitudinal or sliding motion thereon, a holding-spring for the lifter, a tumbler pivoted loosely so as to swing freely or without spring-pressure on the carriage, and a tumbler-actuating finger 34, said tumbler being loose or disconnected from the lifter and from the actuating-finger, substantially as described.

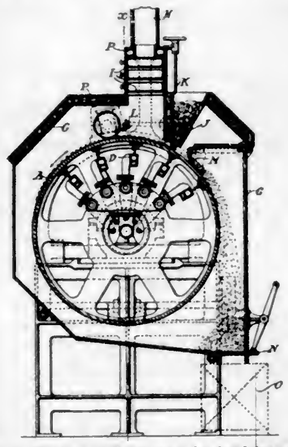
5. A knitting-machine provided with a needle-bed and needles, a carriage, a lifter, a tumbler projected beyond or laterally from the lifter, a finger 34, a rock-shaft placed parallel to the needle-bed and made to swing the finger to and from reach of the tumbler, a spring for normally holding the finger away from the tumbler, and a chain for rocking the shaft to move the finger to the tumbler, substantially as described.

6. A knitting-machine having a needle-bed, needles rectilinearly movable across the bed and having butts made to aline or be stopped by the bed, a carriage having lifters pivoted or swinging at an angle or incline to the needles, tumblers made to project outside the carriage, oscillating fingers 34 for actuating the tumblers, and a central cam-piece 21 and lateral cam-pieces on the carriage, and mechanism substantially as described for holding the center cam-piece so that it will not move or swing on the carriage, substantially as described.

7. A knitting-machine provided with needles, a carriage, a needle-lifter, arms 67 pivoted at their lower ends to the machine, yarn-guides at the upper ends of said arms, a stop-motion, a lever and link connection for the stop-motion, an actuator 75 made to rise from the carriage and bent over to engage the yarn-guides, and a chain made to actuate the lifter and stop-motion connection and to oscillate the arms 67 to shift one yarn-guide or the other to the actuator, substantially as described.

8. A knitting-machine having a needle-actuating carriage provided with cam-pieces made separate or independent of one another, an arm and slide 100 made to engage and shift one of the cam-pieces and being disconnected from the other cam-pieces, an actuating-arm for the slide, and a face or slide 104 for said last-named or actuating arm, substantially as described.

654,470. EVAPORATING APPARATUS. WILLIAM MATHER, Manchester, England. Filed July 10, 1899. Serial No. 723,314. (No model.)



Claim.—1. The improved apparatus for depriving solid or semi-solid substances of their contained moisture, consisting of a combined melting and feeding vessel adapted to melt and feed a regulated quantity of the liquid or semiliquid substance in the form of a film, a heated cylinder for receiving such film, a spreading-roller for distributing and compressing such film, a doctor working against such compressing-roll, and a stripping-doctor for removing the anhydrous material from the cylinder.

2. The improved apparatus for depriving solid or semisolid substances of their contained moisture, consisting of a combined melting and feeding vessel adapted to melt and feed a regulated quantity of the liquid or semiliquid substance in the form of a film, a heated cylinder for receiving such film, a spreading-roller for distributing and compressing such film, a doctor working against such compressing-roll, a stripping-doctor for removing the anhydrous material from the cylinder, and a surrounding casing, as and for the purpose described.

3. The improved apparatus for depriving solid or semisolid substances of their contained moisture, consisting of a combined melting and feeding vessel, means whereby the delivery end of such vessel is maintained at a temperature which will cause the solid or semi-solid substances to become or remain in a liquid condition, means for regulating the feed from such vessel direct to a cylinder, means for heating the cylinder, a spreading-roller for distributing and compressing the film delivered to it and a stripping-doctor for removing the anhydrous material from the cylinder and clear of the feeding vessel, substantially as set forth.

654,471. POWDER-GRAIN. HIRAM S. MAXIM, London, England, assignor to the Vickers, Sons & Maxim, Limited, same place. Filed June 26, 1899. Serial No. 721,915. (No specimens.)

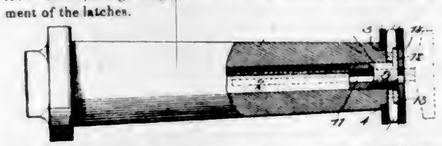


Claim.—A nitro-compound explosive composed of the described ingredients and formed into the shape of a block having concentric annular depressions in each face thereof with tapered cavities formed in the walls separating said depressions, the said cavities on one side of the block breaking joint with those on the other side, substantially as and for the purpose specified.

654,472. HUB-ATTACHING DEVICE. GEORGE A. MAYER, Homestead, Pa. Filed Feb. 3, 1900. Serial No. 3,877. (No model.)

Claim.—1. In a device of the class described, the combination with a spindle, of a nut thereon, and a rocker-tumbler rockably mounted on the spindle, having pivoted latches adapted for engaging and locking the nut.

2. In a device of the class described, the combination with a spindle, of a nut thereon, a rocker-tumbler rockably mounted on the spindle, latches pivoted to the rocker-tumbler adapted to engage and lock the nut, and guiding devices on the spindle for guiding the movement of the latches.



3. In a device of the class described, the combination with a spindle, of a nut thereon, a rocker-tumbler rockably mounted on the spindle, latches pivoted to the rocker-tumbler adapted to engage and lock the nut, and lugs on the spindle having cam-shoulders against which the latches wipe when the tumbler is turned, whereby said latches are guided into and out of engagement with the nut.

4. In a device of the class described, the combination with a spindle, of a nut thereon, a rocker-tumbler rockably mounted on the spindle and having arms, means carried by the arms for engaging and locking the nut, and lugs on the spindle constituting abutments for the arms to limit their movements in both directions.

5. In a device of the class described, the combination with a spindle, of a nut thereon, a rocker-tumbler on the spindle, latches pivoted to the rocker-tumbler and adapted to engage and lock the nut, and lugs on the spindle which constitute abutments for the rocker-tumbler to limit its movements in both directions and against which the latches wipe whereby they are guided in their movements.

6. In a device of the class described, the combination with a spindle, of a nut thereon having openings therein, a rocker-tumbler on the spindle, and latches pivoted to the rocker-tumbler which are adapted to enter the openings in the nut when the tumbler is rocked in one direction and to retract from said openings when it is rocked in the opposite direction.

7. In a device of the class described, the combination with a spindle, of a nut thereon having openings, a rocker-tumbler on the spindle having opposite arms, latches pivoted to the respective arms of the rocker-tumbler and adapted to enter the openings in the nut when the tumbler is rocked in one direction and to retract from them when it is rocked in the opposite direction, and oppositely-arranged lugs on the spindle which constitute limiting-abutments for the arms of the rocker-tumbler and between which said arms and the latches are adapted to play during their movements.

8. In a device of the class described, the combination with a hollow spindle having a reduced end, of a nut fitted over said reduced end and abutting the shoulder formed thereby, said nut having openings, a rocker-tumbler having a cylindrical barrel provided with a key-opening and fitted in the hollow or bore of the spindle and adapted to turn therein, said rocker-tumbler having opposite arms, latches pivoted to said arms, opposite lugs on the end of the spindle which constitute abutments for the limiting of the play of the arms aforesaid and said lugs having cam-shoulders against which the latches wipe, whereby they are guided into and out of the openings in the nut, and an apertured plate or washer secured to the outer faces of the lugs which retains the rocker-tumbler and latches in position.

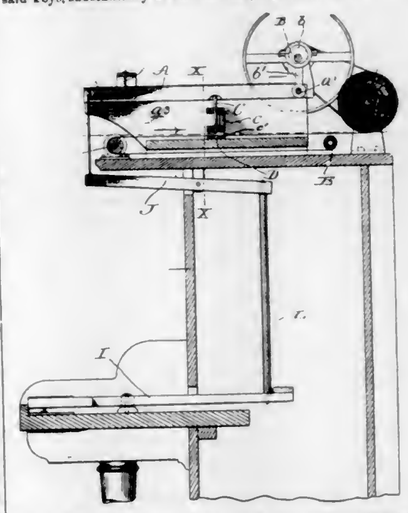
9. In a device of the class described, the combination with a spindle having projections thereon, of a nut having openings to receive said projections, whereby the nut is locked against turning on said spindle, said nut also being provided with latch-receiving openings, a rocker-tumbler on the spindle, and latches on said tumbler adapted for projection into the latch-receiving openings of the nut.

654,478. MUSIC RECORDER AND DUPLICATOR. PHILIP J. MEAHL, Chicago, Ill. Filed Oct. 13, 1899. Serial No. 733,495. (No model.)

Claim.—1. A device for recording musical compositions comprising a plurality of levers, punches connected with said levers, dies for said punches, means for effecting a constant vibration of said levers and thereby a constant reciprocation of said punches, a traveling sheet of paper arranged between the punches and dies, and means whereby one or more of said constantly-vibrating levers can be shifted for the purpose of permitting one or more of said constantly-reciprocating punches to perforate the paper.

2. The combination of a plurality of horizontally-arranged levers, punches depending from said levers, dies for said punches, a traveling sheet of paper arranged between said punches and dies, means for driving said paper, means for constantly vibrating said levers, and means for depressing the fulcrumed or pivoted ends of said levers for the purpose of causing the punches to perforate the paper.

3. The combination of a set of piano or similar keys, a plurality of levers, punches connected with said levers, dies for said punches, paper between the punches and dies, means for moving said paper, means for constantly vibrating said levers, the levers and paper being substantially parallel, and means whereby the fulcrumed or pivoted ends of said levers can be adjusted toward the paper by depressing said keys, substantially as and for the purpose set forth.



4. The combination of a set of dies, a stationary bar arranged immediately above said dies, a set of punches arranged to reciprocate through openings in said stationary bar, levers suitably connected with said punches, paper between said dies and punches, means for moving said paper, means for constantly vibrating said levers, and means whereby one or more of said levers can be depressed for the purpose of causing one or more of said punches to perforate the paper.

5. The combination of a keyboard and a relatively-narrow sheet of paper, a set of punches and coacting dies, means for constantly reciprocating said punches, a set of radiating levers, means for connecting the converging ends of said levers with said punches, and means for connecting the diverging ends of said levers with the keys of said keyboard, substantially as described.

6. In combination with a traveling sheet of paper, a set of punches and dies, a set of levers for reciprocating said punches, means for constantly vibrating said levers for the purpose of constantly reciprocating said punches, and means whereby one or more of said constantly-reciprocating punches can be caused to perforate the paper.

7. The combination of a set of levers having their free ends connected for simultaneous swing or vibration, punches connected with said levers, dies for said punches, paper between said punches and dies, means for moving the paper forward, a set of piano or organ keys or the like, means for constantly vibrating said levers and thereby constantly reciprocating said punches, the keys and levers being connected in such manner that a depression of one or more of the former will operate to shift the pivoted or fulcrumed ends of one or more of the latter, for the purpose set forth.

8. The combination of a set of punches and a set of vibratory levers, means for constantly vibrating said levers, means for connecting said levers with said punches, dies adapted to coact with said punches, and means for shifting the points of fulcrumage of said levers substantially as and for the purpose set forth.

9. The combination of a vibratory lever, a sheet of paper, means for constantly vibrating said lever, a punch reciprocated by said lever, a die for said punch, a piano-key or the like, suitable connection between said key and said lever whereby the depression of the former will change the fulcrumage of the latter to an extent to lower the plane of vibration of said punch, and means for driving the paper.

10. A device for recording musical compositions, comprising a set of constantly-vibrating levers having their ends provided with transverse slots through which extends a rod or wire, a set of reciprocating punches carried by said levers, coacting dies for said punches, a traveling sheet of paper arranged between said punches and said dies, a set of keys, and suitable connections between said keys and said levers whereby a depression of the former will shift the fulcral points of the latter to an extent to lower the plane of vibration of said punches.

11. The combination of a set of constantly swinging or vibrating levers, recording instrumentalities operated by said levers, a set of

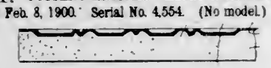
actuating instrumentalities, and connections between the latter and the said levers whereby the fulcral points of the same may be shifted to an extent to cause the recording instrumentalities to operate.

12. The combination of a set of levers, fulcrumed at their ends, pitmen for vibrating said levers, a row of punches arranged transversely to the line of feed and having their upper ends pivoted to the said levers, a set of piano or organ keys or the like power-transmitting connections between said keys and said levers whereby a depression of the former will operate to shift the fulcrum-points of the latter, means for driving the paper, and means for reciprocating said pitman so as to constantly vibrate the said levers.

13 The combination of a traveling sheet of paper, a set of constantly-reciprocating punches arranged in a row transversely to the line of feed and representing the notes of the chromatic scale, a set of manually-operated actuating instrumentalities corresponding in number to the said punches and having positive or mechanical power-transmitting connections with the latter whereby the plane of vibration of said punches may be collectively or independently lowered for the purpose of permitting them to penetrate the paper, means for driving the paper, and means for vibrating or reciprocating the punches.

14. The combination of a keyboard and a relatively-narrow sheet of paper, means for driving said paper, a set of recording instrumentalities arranged in a row transversely to the line of feed, a set of radiating levers, power-transmitting connections between the converging ends of said levers and said recording instrumentalities and power-transmitting connections between the diverging ends of said levers and the keys of said keyboard.

654,474. POTTERY ARTICLE. HENRY C. MERCER, Doylestown, Pa. Filed Feb. 8, 1900. Serial No. 4,554. (No model.)



Claim.—1. The pottery article described comprising a clay base provided with a design made up of raised and ground portions, a layer of slip arranged over the design, and a second layer of slip of different color from the first layer arranged over said first layer in the ground portion, alone, of the design, whereby the first layer is exposed on the raised portion of the design.

2. The pottery article described comprising a clay base provided with a design made up of raised and ground portions, a layer of hard, close-grain slip contrasting in color to the base and arranged over the design thereof, and a second layer of slip of different color from the first and of looser and more friable nature arranged over said first layer in the ground portion alone of the design, whereby the first layer is exposed on the raised portion of the design.

3. The pottery article described comprising a clay base provided with a design made up of raised and ground portions, a layer of slip contrasting in color to the base and covering the ground portion and partly covering the raised portion of the design thereof, and a second layer of slip of different color from the first layer arranged over the first layer in the ground portion alone of the design.

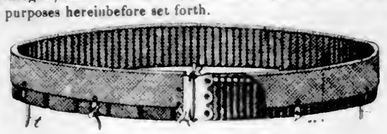
4. The pottery article described comprising a clay base provided with a design made up of raised and ground portions, a layer of hard, close-grain slip contrasting in color to the base covering the ground portion and partly covering the raised portion of the design thereof, and a second layer of slip of different color from the first and of looser and more friable nature arranged over said first layer in the ground portion alone of the design.

5. The pottery article described comprising a clay base provided with a face having a rough portion, a layer of slip contrasting in color to the base and covering the face thereof, and a second layer of slip, of different color from the first layer, arranged over said first layer in the depressions alone of the rough portion of the face, whereby the first layer is exposed on the protuberances of said rough portion.

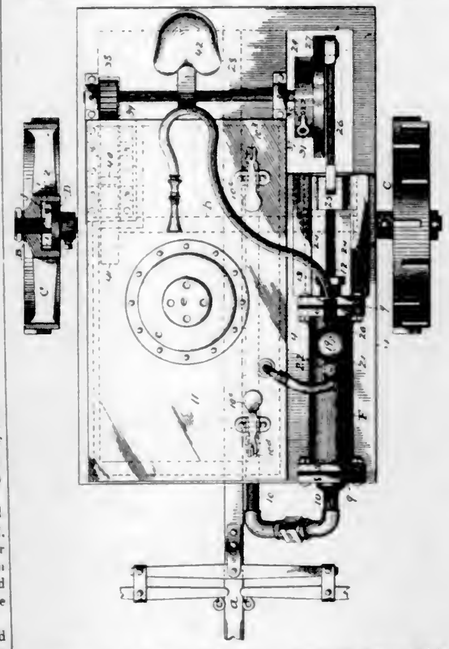
6. The pottery article described comprising a clay base provided with a design made up of raised and ground portions, one of which has again a rough or irregular face, a layer of slip contrasting in color to the base and arranged over the design, and a second layer of slip of different color from the first layer arranged over said first layer in the ground portion and the depressions of the rough or irregular portion, alone, of the design.

654,475. CARTRIDGE-BELT. ANSON MILLS, Washington, D. C., and THOMAS C. ORNDORFF, Worcester, Mass. Filed May 8, 1900. Serial No. 15,971. (No model.)

Claim.—A multiple-fabric cartridge-belt provided with cartridge-pockets formed by the plies and with an extension of the inner ply along one edge of the fabric forming a covering-flap adapted to be folded over and down upon the pockets, both pockets and flap being integral, and formed in one, with the body of the belt, as and for the purposes hereinbefore set forth.



654,476. SPRINKLING APPARATUS. ANDREW MOELLER, Fern Ridge, Mo. Filed Feb. 20, 1900. Serial No. 5,937. (No model.)

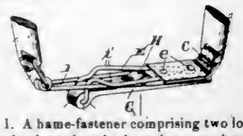


Claim.—1. In a sprinkling apparatus, the combination with a tank and a pump disposed in proximity thereto, of a pipe connected with said pump and disposed beneath the tank, tubes connecting the pipe with the front and rear ends of said tank, valves for said tubes, and means on said tank for operating said valves.

2. In a sprinkling apparatus, the combination with a vehicle, a tank thereon, a pump on said vehicle and means for operating the pump, of a pipe disposed beneath the tank and communicating with the pump, an outlet for said tank at the front and rear thereof communicating with said pipe, valves in said outlets normally closed, levers on top of said tank at the front and rear ends thereof, fulcrumed between their ends and rods connecting one end of said levers with the valve below the same.

3. In a sprinkling apparatus, the combination with a vehicle, of a tank having outlets in its bottom near its respective ends, a valve for each outlet, means for independently operating said valves, a pump connected with said pipe and means connected with said pump for distributing liquid.

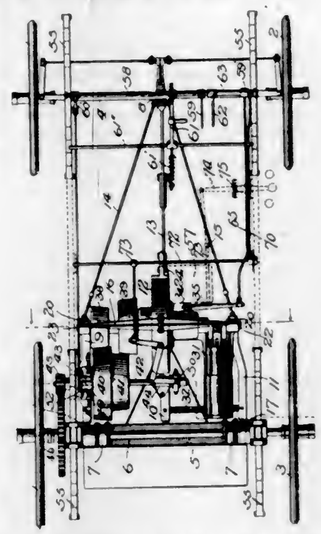
654,477. HAME-FASTENER. THOMAS J. MORRIS, Dorchester, Nebr. Filed Apr. 6, 1900. Serial No. 11,870. (No model.)



Claim.—1. A hame-fastener comprising two loops, one loop having its free end enlarged and adapted to pass between the stems of the other loop, a lever having one end pivoted to the enlarged end of the said loop and having at its inner side a hook adapted to engage the free end of the other loop, substantially as described.

2. A hame-fastener comprising the loops E and I, the loop E having a contracted portion near one end, its end turned outward from the contracted portion and enlarged, the loop I adapted to permit the outer enlarged outturned end of the loop E to pass therethrough, a lever G having one end pivotally connected to the outturned end of the loop E and having at its inner side a hook to engage the free end of the loop I, substantially as described.

654,478. MOTOR-CYCLE. JOHN H. MUNSON, Chicago, Ill. Filed May 16, 1898. Serial No. 680,793. (No model.)



Claim.—1. The combination, with the truck or running-gear, of the explosion-engine, the storage battery, the electric motor coupled with said engine, means for varying the speed of said motor and through the same governing the speed of said engine, the variable friction driving means, and a brake mechanism interposed between the same and the driving wheel or wheels of the vehicle, substantially as described.

2. The combination, with the truck, of the motor mechanism, the shifting shaft, the oppositely-coned pairs of friction-pulleys arranged thereon and in connection with said motor, a longitudinally-fixed driving-gear, means for shifting said shaft and the pulleys thereon, and a friction-brake in connection with said fixed gear, substantially as described.

3. The combination, with the forward and rear axles, of the trusses or bars 9, 10 and 11 extending from the rear axle, the motor and the engine, the frame thereof connecting the forward ends of said trusses, and a reach connecting said frame with the forward axle, substantially as described.

4. The combination, with the rear axle, of the truss 6 thereon, the trusses extending forward from said truss 6, the driving machinery, the frame thereof connecting the forward ends of said trusses, the wheel-support for the forward part of said frame, and the supporting tie-rods, substantially as described.

5. The combination, with the rear axle, of the truss 6, the field portion of the motor, the forwardly-extending trusses, and the transversely-extending trusses attached thereto and to the upper and lower parts of said field portion of the motor, substantially as described.

6. The combination, with the rear axle, of the forwardly-extending trusses 9, 10 and 11, the motor-shaft having bearings at the forward ends of said trusses, the motor, to the frame whereof said truss 10 is attached, the forward axle and the reach connecting the same to the forward part of said frame of the motor, substantially as described.

7. The combination, with the rear axle and the forward axle, of the trusses or bars extending from said rear axle, the motor arranged between said trusses, the transverse trusses rigidly connecting the motor and first-mentioned trusses, the reach extending from the frame of said motor to the forward axle, and the supporting and tie rods extending from the forward axle, substantially as described.

8. The combination, with the truck or running-gear, of the driving machinery, the body or box upon said truck, and independent of said driving machinery, and the controlling-levers, &c., independent of said body or box, substantially as described.

9. The combination, in a motor-vehicle, of the forward and rear axles of the truck, the truss 6 depending from suitable bearings upon the rear axle, the longitudinal trusses 9 and 11 having their rear ends adjustable in the depending web of said truss 6, the transverse trusses connecting the forward ends of said trusses 9 and 11, the motor having its frame secured between said transverse trusses and a reach and tie-rod extending to said forward axle, substantially as described.

10. The combination, in a motor-vehicle, of the truck, with the metallically-inclosed electric-motor dynamo arranged thereon and having a driving connection with said truck, the explosion-engine also arranged on said truck and inclosed, a suitable clutch 15 between said engine and motor-dynamo, and a casing inclosing said clutch, secured to said motor-dynamo and integral with said engine-frame, substantially as described.

11. The combination, in a motor-vehicle, with the forward and rear axles and the wheels thereon, of the reach between said axles comprising the forwardly-extending truss or trusses, the frame of the electric motor secured to said truss at the forward end thereof and the reach-bar having its rear end firmly secured to the forward side of said frame, and suitable ties or braces, substantially as described.

12. The combination, in a motor-vehicle, of the truck, with the driving-motor thereon, an intermediate driving-shaft driven by said motor and longitudinally movable for disengagement therefrom, the fixed shaft attached to said intermediate shaft to rotate therewith, the driving-pinion on said fixed shaft, the brake-wheel also on said shaft, the bearings of said fixed shaft, the bracket thereon, the brake-strap upon said wheel and the strap operating the crank arranged in said bracket, substantially as described.

13. The combination, in a motor-cycle, of the truck or running-gear, with the explosion-engine mounted thereon, a storage battery, and an electric motor geared to said truck permanently interposed between the running-gear and said engine and having its armature connected with said engine to serve at once as the fly-wheel thereof and as the armature of said motor, whereby the speed of the engine may be governed, substantially as described.

14. The combination, with the truck or running-gear, of the explosion-engine, the storage battery, the electric motor coupled with said engine, means for varying the speed of said motor and through the same governing the speed of said engine, and the variable friction-pulleys interposed between the shaft of said motor, and the wheel or wheels of the truck, substantially as described.

15. The combination, with the truck or running-gear, of the explosion-engine thereon, the dynamo-motor adapted to be connected to said engine and connected with said truck to drive the same, the storage battery upon said truck, the controller, the body or box upon said truck, and independent of said battery, motor or engine, and the levers, &c., arranged upon said truck independent of said body or box for controlling said battery, engine and motor-dynamo, substantially as described.

16. The combination, with the shafts 80 and 84, the single operating part to actuate the same simultaneously, the reversing-switch poles upon said shaft 80, stationary contacts to be engaged thereby, the controlling-switch poles or arms provided upon said shaft 84, and provided with heels or segments, fixed contacts wherewith the segments have rubbing contact, and the rows or tiers of circuit-changing contacts fixed to be engaged by said controller-switch poles or arms, substantially as described.

17. The combination, in a motor-vehicle, of the truck with the frame having spring-supports thereon, the driving-motor mounted on said truck near the rear axle thereof and geared thereto, and the storage battery suspended from said frame at a point back of, but near, the forward axle of said truck, substantially as described.

18. The combination, in a motor-vehicle, of the truck carrying the driving machinery with the spring-frame arranged upon said truck, the storage battery suspended from said frame, the body upon said frame, and independent of said battery, the cross rod or shaft 58 at the forward end of said frame and the operating and controlling levers upon said cross-rods, substantially as described.

19. The combination, in a motor-vehicle, with the truck, of the engine and the motor-dynamo thereon adapted to be connected and adapted separately or together to drive said truck, said motor-dynamo having independent field-windings respectively in series and multiple arrangement with its armature, a suitable switch for connecting either of said windings in circuit with said armature, a storage battery and means interposed between said battery and said motor-dynamo for electrically governing or controlling the same, substantially as described.

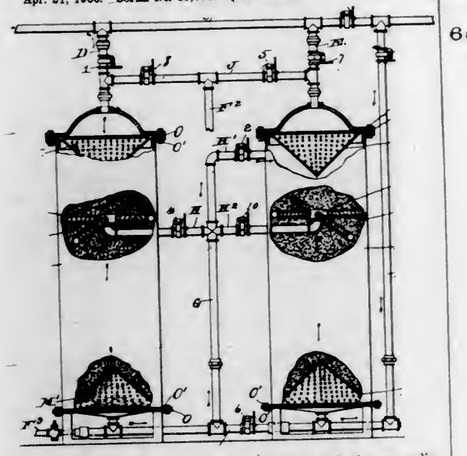
20. The combination, in a motor-vehicle, with the truck, of the engine and the motor-dynamo thereon adapted to be connected and adapted, separately or together, to drive said truck, said motor-dynamo having independent field-windings respectively in series and multiple arrangement with its armature, a suitable switch for con-

necting either of said windings in circuit with said armature, a storage battery, means interposed between said battery and said motor-dynamo for electrically governing or controlling the same and an automatic circuit-breaker included in the battery-circuit and operable upon the cessation of current in said circuit, substantially as described and for the purpose set forth.

21. The combination, in a motor-vehicle, with a truck, of the engine and the motor-dynamo thereon adapted to be connected and adapted, separately or together, to drive said truck, said motor-dynamo having independent field-windings respectively in series and multiple arrangement with its armature, a suitable switch for connecting either of said windings in circuit with said armature, a storage battery, means interposed between said battery and said motor-dynamo for electrically governing or controlling the same and a circuit-breaker having its magnet in the battery-circuit, the engine-igniter and the circuit thereof including a source of electricity and automatically opened by said breaker upon the cessation of current in said battery-circuit as and for the purpose specified.

22. The combination, in a motor-vehicle, of the truck, with the engine and the motor-dynamo on said truck, adapted to be used alone or together to drive said truck, and said engine adapted to drive said motor-dynamo, said motor-dynamo having independent motor and field windings, a storage battery, means interposed between said storage battery and said motor-dynamo for electrically governing or controlling the same, the igniter of said engine, the local circuit thereof, and automatic means for opening the circuits of said battery and said igniter upon the cessation of current in said battery-circuit, substantially as and for the purpose specified.

654,479. FILTER. ROBERT J. MCNALLY, Philadelphia, Pa. Filed Apr. 21, 1900. Serial No. 13,791. (No model.)

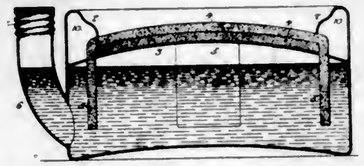


Claim.—In a duplex filter the combination with the two cylinders each provided with filtering material, of top and bottom detachable perforated cones in each cylinder, a main service and pipe distribution system provided with suitable stop-valves, a loosening and stirring device in each cylinder consisting of branch horizontal pipes perforated in their upper surface and extending through the body of the filtering material, a larger horizontal pipe to which said branches are connected, said larger pipe provided with a stop-valve, a vertical central pipe to which said horizontal pipe and its branches are connected, and the feed and main pressure-pipes and their valve-stops, whereby the filtering material in each or both of the cylinders may be loosened and stirred at the same time or independently, substantially as described.

654,480. MOISTENING-PAD. EDMUND C. MCVOY, Philadelphia, Pa. Filed Mar. 16, 1900. Serial No. 9,255. (No model.)

Claim.—1. The combination of the water vessel having a transverse bridge-plate, and an inturned lip or flange, with the moistening-pad consisting of a bulky mass of felt or like material, resting upon said bridge-plate and having its edges confined between the same and the lip or flange of the vessel, said pad also having depending tongues which pass through openings in the bridge-plate and into the water-chamber below, substantially as specified.

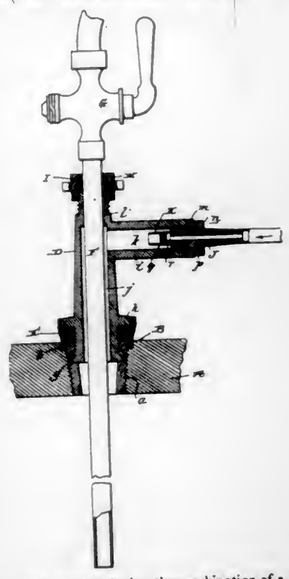
2. The combination of the water vessel having a transverse bridge-plate, an inturned top lip or flange with a moistening-pad consisting of two bulky masses of felt or like material disposed one above the other, and resting upon the bridge-plate and having their edges confined between the same and the inturned lip or flange, each of said absorbent pads having a depending tongue passing through an opening in the bridge-plate, and extending into the water-chamber below the same, substantially as specified.



3. A moistener consisting of a water vessel having a transverse bridge-plate and inturned top lip or flange, a projecting neck at one side having a closing-cap at the upper end, and a moistening-pad consisting of a bulky mass of felt or like material resting upon the bridge-plate, and having its edges confined between the same and the inturned lip or flange, said pad having tongues depending through openings in the bridge plate and into the water-chamber below the same, substantially as specified.

4. A moistener consisting of a water vessel, with transverse bridge-plate and inturned and depending top lid or flange forming an air-chamber around the top of the vessel, with the moistening-pad consisting of a bulky mass of felt or like material, resting upon the bridge-plate, having its edges confined between said plate and the inturned and depending flange, and tongues depending through openings in the bridge-plate into the water-chamber below the same, substantially as specified.

654,481. TAPPING DEVICE. HENRY NADORFF, Louisville, Ky. Filed Nov. 22, 1899. Serial No. 737,905. (No model.)

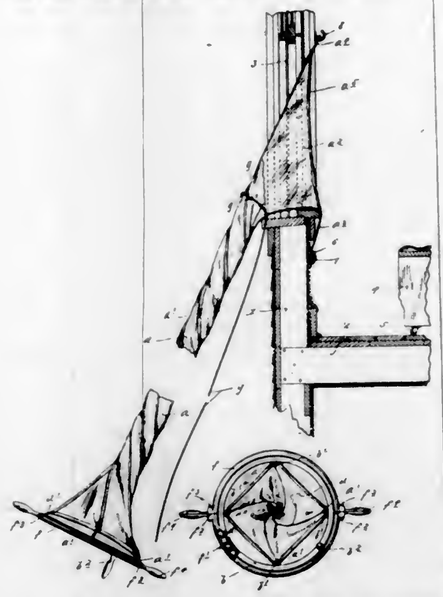


Claim.—1. In a tapping device, the combination of a sleeve-section having a lateral arm, a removable nipple screwed into the end of said arm and having the inner reduced and tapered portion *q* provided with a diametrical port communicating with its bore, and the removable sleeve K of rubber arranged on said reduced or tapered portion *q* of the nipple and extending beyond the inner end thereof, as and for the purpose set forth.

2. In the tapping device described, the combination of the bushing fixed in the bung-hole of a barrel and having the taper bore *c* in its inner portion adapted to hold a bung of cork or other suitable material, and also having the inwardly-directed flange at its outer end, provided in its inner edge with opposite grooves, and also provided at its inner side with oppositely-disposed inclined planes, the sleeve-section having lugs at its inner end adapted to pass through the grooves and engage the inclined planes of the bushing-flange, and

also having the integral exterior flange *h* adjacent to its inner end, the exterior threads at its outer end, the bore *l* in said outer end, the chamber *j* and the arm *i* communicating with said chamber, a removable nipple screwed into the end of said arm *i* and having the inner reduced and tapered portion *q* provided with a diametrical port communicating with its bore, the removable sleeve K of rubber arranged on said reduced or tapered portion *q* of the nipple and extending beyond the inner end thereof, the gasket surrounding the sleeve-section below the flange *h* thereof, the gland mounted on the outer threaded end of the sleeve-section and containing packing and the endwise-movable draft-tube extending through the sleeve-section and the gland thereon, substantially as and for the purpose set forth.

654,482. FIRE-ESCAPE. FREDRICK W. NEBELTHAU, Minneapolis, Minn. Filed July 3, 1899. Serial No. 722,652. (No model.)



Claim.—1. A fire-escape, comprising a flexible tube provided with means for securing its upper end to a building and with a rigid or inflexible twisting band or ring at the lower end of said tube, by means of which ring said tube may be twisted and through which ring the person making the descent may pass, substantially as described.

2. A fire-escape comprising a flexible tube provided with means for securing it to a building at its upper end and a twisting-ring at the lower end of said tube through which the person descending may pass, in combination with a supporting ring or band in which said twisting-ring is mounted, the said parts operating substantially as described.

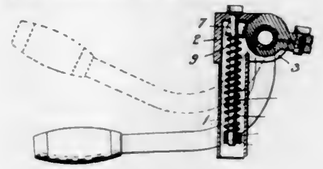
3. A fire-escape comprising a flexible tube provided with means for securing it to a building at its upper end and a twisting-ring at the lower end of said tube through which the person descending may pass, in combination with a supporting ring or band surrounding said twisting-ring and bearing-balls working in grooves formed respectively in said twisting and supporting rings, substantially as described.

4. A fire-escape comprising a flexible tube provided with means for securing its upper end to a building, and the twisting-ring *b* at the lower end of said tube, having the crank b^3, and the supporting-ring *f* mounted on said ring *b* by means of ball-bearings *f'*, substantially as described.

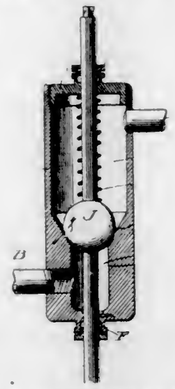
5. In a fire-escape, a flexible tube securable at its upper end to a building, in combination with the choke-rope applied near the receiving or upper end of said tube for contracting the same, substantially as and for the purposes set forth.

654,483. BICYCLE HANDLE-BAR. CHARLES W. NEFF, Cherokee, Iowa. Filed July 1, 1899. Serial No. 722,583. (No model.)

Claim.—The combination of a steering-post tube having a bearing for the handle-bar at its upper end, a block or collar seated between lugs on the bearing and provided with a binding-screw to hold the handle-bar in place, said block or collar having a bifurcated toe or projection extending into the bearing, a rod suspended from the bearing, extending downward into the tube out of contact therewith and having a spring surrounding it, a washer surrounding the rod and resting on top of the spring to form a seat for the bifurcated toe on opposite sides of the rod, the lower free end of said rod having a nut to support the lower end of the spring and to regulate the tension or resiliency thereof, substantially as described.

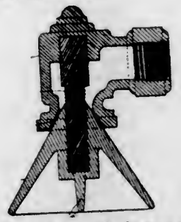


654,484. CHECK-VALVE. OSCAR NYGREN, Lake City, Minn. Filed Mar. 31, 1900. Serial No. 10,981. (No model.)



Claim.—A check-valve comprising a cylindrical casing provided with two cylindrical chambers of different diameters in line with each other, and a valve-seat connecting the adjacent ends of the walls of said chambers, in combination with a valve-stem projecting through the ends of the casing and centrally through said chambers, a valve rigid on said stem, a spring for normally seating the valve, and means, outside of the casing, for turning the valve-stem and valve and simultaneously pressing the valve into its seat, substantially as described.

654,485. SPRAYING ATTACHMENT FOR STEAM-BOILER FURNACES. HENRY E. PARSON, New York, N. Y. Filed Sept. 29, 1899. Serial No. 732,089. (No model.)



Claim.—1. The herein described spray-nozzle, consisting of an elbow-coupling, provided with a flaring mouth at one end, an axial screw-threaded spindle rigidly fixed inside the coupling and extending through said mouth, and a conical spray-spreading bell screwed onto the said spindle, substantially as set forth.

2. The herein-described spray-nozzle having a flaring mouth, in combination with a conical spray-spreading bell provided with a transverse grip-bar for turning it, and the smaller end of which bell is received by said mouth, while the larger end extends below the mouth, and means for connecting said bell adjustably with the nozzle, substantially as set forth.

654,486. LENS-POLISHER. OLE PEDERSON, Los Angeles, Cal., assignor of one-half to Timothy M. Raygoss, same place. Filed Dec. 20, 1899. Serial No. 740,998. (No model.)



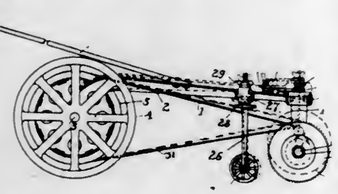
Claim.—1. In a lens-polisher, the combination of pivoted arms, suitable buttons, a polishing-pad secured to said buttons, orifices in the arms and pins resting in and fixed against turning in said orifices and means for securing the buttons to said pins, substantially as set forth.

2. In a lens-polisher, the combination of a central bar having polishing-pads secured thereto, side arms having pivotal connection with said central bar, and polishing-pads connected with said side arms corresponding in position to the pads on the central bar, substantially as set forth.

3. In a lens-polisher, the combination of a central bar having polishing-pads connected therewith, side arms pivoted to said central bar and polishing-pads having a self-adjustable connection with said side arms and corresponding in position to the pads on the central bar, substantially as set forth.

4. In a lens-polisher, the combination of a central bar having polishing-pads connected therewith, pins on said bar, side arms having ears pivoted to said pins, a spring interposed between the central bar and said arms and suitable polishing-pads on said side arms corresponding in position to the pads on said central bar, substantially as set forth.

654,487. SWEEPING-MACHINE. OLE PEDERSON, Los Angeles, Cal., assignor of one-half to Timothy M. Raygoss, same place. Filed Dec. 28, 1899. Serial No. 741,856. (No model.)



Claim.—1. In a sweeping-machine, the combination of a suitable frame, a drive-shaft journaled to the frame, drive-wheels mounted on the drive-shaft, a pulley loosely mounted on the drive-shaft, ratchet-teeth on the pulley, collars secured to the drive-shaft and having recesses, thrust-pins in said recesses, springs in the recesses for forcing the pins outwardly to engage the ratchet-teeth, a sweeping-brush pivoted to the frame and means for connecting the drive-pulley with the sweeping-brush for rotating the same, substantially as set forth.

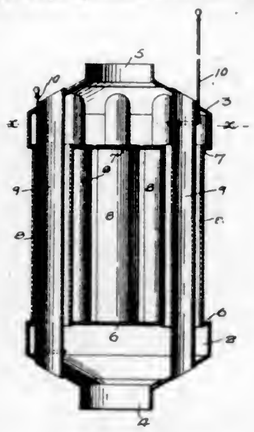
2. In a sweeping-machine, the combination of a suitable frame, a fork journaled to the frame, hubs on the lower ends of said fork, a shaft journaled in said hubs, collars on said shaft, sweeping-brushes having recesses adapted to fit over said hubs and the fork and abut against said collars and nuts on the ends of the shaft for forcing the brushes in contact with said collars, substantially as set forth.

3. In a sweeping-machine, the combination of a suitable frame, a fork pivoted to the frame, a shaft journaled to said fork, sweeping-brushes secured to the shaft, an adjustable standard secured to the frame, wheels on the lower ends of said standard and means for raising or lowering said standard in order to adjust the sweeping-brushes vertically, substantially as set forth.

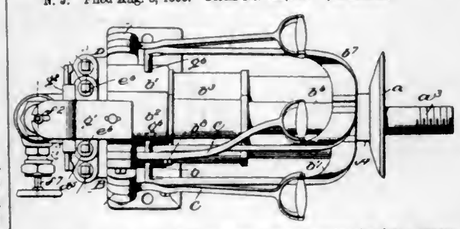
4. In a sweeping-machine, the combination of a suitable frame, a fork pivoted to the frame, a shaft journaled to the fork, sweeping-brushes on the shaft, a pulley secured to the shaft, a vertical adjustable rod connected with the fork, tension-pulleys on said rod, a driving-pulley, means for operating the driving-pulley and a flexible driving mechanism passing over the driving-pulley, the tension-pulleys and around the pulley on the shaft of the sweeping-brushes, substantially as set forth.

654,488. FLUE-CLEANER. BENGT PETERSON, Dassel, Minn. Filed Sept. 21, 1899. Serial No. 731,170. (No model.)

Claim.—A heating-drum, comprising heads 2 and 3 having, respectively, smoke inlet and outlet openings 4 and 5, the walls forming the outer ends of said heads being inclined toward their respective openings, a series of smoke-flues 8 connecting said heads, a series of air-flues 9 having open ends extending through said heads and provided one within each of said smoke-flues and concentric therewith and spaced from the walls of the same forming a series of annular smoke-passages between said heads, and a series of rods 10 provided one within each of said smoke-passages, the outer ends of said rods projecting through said heads and their inner ends being looped loosely around their respective air-flues, whereby when the rods are moved up and down the soot will be cleared from the walls of said smoke-passages and discharged over the inclined walls of said heads through the opening therein, substantially as described.



654,489. SODA-FOUNTAIN. WILLIAM RANSLEY, East Orange, N. J. Filed Aug. 8, 1899. Serial No. 726,564. (No model.)



Claim.—1. A soda-fountain comprising a casing having a syrup-reservoir, a plunger working therein, means for feeding syrup to said reservoir, an outlet-nozzle, a soda-water conduit leading to said nozzle, a valve controlling the same, a rock-lever having an angular member arranged to operate said valve, and an operating-lever for said plunger designed to periodically engage said rock-lever, substantially as set forth.

2. A soda-fountain comprising a casing having a series of syrup-reservoirs, plungers working therein, valve-chambers arranged to control the supply of syrup to said reservoirs, additional valve-chambers arranged to control the discharge of syrup from said reservoirs, check-valves working in all of said valve-chambers, a nozzle with which said latter valve-chambers communicate, means for feeding soda thereto, a valve for said nozzle, a rock-lever having an angular member arranged to operate the same, and operating-levers for said plungers designed to periodically engage said rock-lever, substantially as set forth.

3. A soda-fountain comprising a bracket having an integral tubular extension, a casing secured to said bracket and having a series of syrup-reservoirs, plungers working therein, a series of valve-chambers communicating with said reservoirs and having check-valves therein, syrup-pipes leading into said valve-chambers, a second series of valve-chambers also having check-valves working therein, outlet-passages leading from said reservoirs into said latter valve-chambers, discharge-passages leading from the latter, a soda-pipe passed through said tubular extension, and means for securing said tubular extension to the wall of an ice-box or the like, substantially as set forth.

4. A soda-fountain comprising a casing having a series of syrup-reservoirs, plungers working therein, a series of vertically-disposed valve-chambers having passage-ways leading from their upper portions into the tops of said reservoirs, syrup-pipes leading into the lower ends of said valve-chambers, a second series of vertically-disposed valve-chambers, outlet-passages leading from said reservoirs into the lower ends of said latter valve-chambers, an outlet-nozzle, discharge-passages leading from the upper portions of said valve-chambers to said outlet-nozzle, check-valves working in said valve-chambers, a soda-water conduit leading to said nozzle, a valve controlling the same, a rock-lever having an angular projection arranged to operate said valve, and means for reciprocating said plungers and periodically operating said rock-lever, substantially as set forth.

5. A soda-fountain comprising a casing having a series of syrup-reservoirs, plungers working therein means for supplying syrup to said reservoirs, a nozzle communicating with said syrup-reservoirs, a soda-water conduit leading to said nozzle, a valve controlling the same, a rock-lever having an angular member arranged to operate the same, and means for reciprocating said plungers and periodically operating said rock-lever, substantially as set forth.

6. A soda-fountain comprising a casing having a series of syrup-reservoirs, plungers working therein, a series of valve-chambers arranged to control the supply of syrup to said reservoirs a second series of valve-chambers arranged to control the discharge from said reservoirs, a nozzle communicating with said latter valve-chambers, a soda-water conduit leading to said nozzle, a valve controlling the same, a rock-lever having an angular projection arranged to operate the same, and means for reciprocating said plungers and periodically operating said rock-lever, substantially as set forth.

7. A soda-fountain comprising a casing having a series of syrup-reservoirs, plungers working therein, means for supplying syrup thereto, a nozzle communicating with said reservoirs, a soda-water conduit leading into said nozzle, a reciprocating valve for controlling said conduit, a spring-plate carried by said casing having one end in engagement with said valve, whereby the latter is normally held to its seat, and means for reciprocating said plungers and simultaneously raising the end of said spring-plate, substantially as set forth.

8. A soda-fountain comprising a casing having a series of syrup-reservoirs, plungers working therein, means for supplying syrup thereto, a nozzle communicating with said reservoirs, a soda-water conduit leading to said nozzle, a valve for controlling said conduit, a rock-lever having an angular projection designed to operate said valve, levers pivoted to said casing, connections between said levers and said plungers, and means for operating said levers whereby they will periodically rock said rock-lever, substantially as set forth.

9. A soda-fountain comprising a casing having a series of syrup-reservoirs, plungers working therein, means for supplying syrup thereto, a nozzle communicating with said reservoirs, a soda-water conduit leading into said nozzle, a valve for controlling said conduit having a vertical stem, a plate-spring supported by said casing and engaging said valve-stem, levers pivoted to said casing and connected to said plungers, and a rock-lever operated by said levers for raising the end of said spring, substantially as set forth.

10. A soda-fountain comprising a casing having a series of syrup-reservoirs, plungers working therein, means for supplying syrup thereto, a nozzle communicating with said reservoirs, a soda-water conduit leading into said nozzle, a valve for controlling said conduit, said valve having a vertical stem provided with an annular groove, a spring-plate supported by said casing and having a slotted end engaging the groove of said valve-stem, levers pivoted to said casing and connected with said plungers, and means operated by said levers for raising the slotted end of said spring, substantially as set forth.

11. A soda-fountain comprising a casing having a series of syrup-reservoirs, plungers working therein, means for supplying syrup thereto, a nozzle communicating with said reservoirs, a soda-water conduit leading into said nozzle, a valve for controlling said conduit having a vertical stem, a spring-plate engaging the same, a rock-lever in engagement with said spring-plate, hand-levers pivoted to said casing and designed to operate said rock-lever, and connections between said hand-levers and said plungers, substantially as set forth.

12. A soda-fountain comprising a casing having a series of syrup-reservoirs, plungers working therein, means for supplying syrup thereto, a nozzle communicatiog with said reservoirs, a soda-water conduit leading into said nozzle, a valve for controlling said conduit having a vertical stem, a spring-plate engaging the same, hand-levers pivoted to said casing and connected to said plungers, and a rock-lever normally engaging said spring-plate and having depending arms extended into the paths of said hand-levers, substantially as set forth.

13. A soda-fountain comprising a casing having a series of syrup-reservoirs, plungers working therein, means for supplying syrup thereto, a nozzle communicating with said reservoirs, a soda-water conduit leading into said nozzle, a valve for controlling said conduit having a vertical stem, a spring-plate secured to an overhanging portion of said casing and engaging said valve-stem, hand-levers pivoted to said casing and connected to said plungers, and a rock-lever pivotally supported by the overhanging portion of said casing, said rock-lever having an arm or member engaging said spring-plate, and depending arms or members extended into the paths of said hand-levers, substantially as set forth.

14. A soda-fountain comprising a casing having a series of syrup-reservoirs, plungers working therein, means for supplying syrup thereto, a nozzle communicating with said reservoirs, a soda-water conduit leading into said nozzle, a valve for controlling said conduit having a vertical stem, a spring-plate engaging the same, hand-levers pivoted to said casing, arms or pitmen connecting said hand-levers with said plungers, lugs on the forward ends of said arms or pitmen, and a rock-lever having an arm or member engaging said spring-plate, and depending arms or members arranged to be engaged by said lugs, substantially as set forth.

15. A soda-fountain comprising a bracket having an integral tubular extension, means for securing the same to the walls of an ice-box or the like, a casing supported by said bracket and having a series of cylindrical syrup-reservoirs provided with rearward cylindrical extensions, plungers working in said reservoirs, stems therefor projecting through said cylindrical extensions, levers pivoted to said casing, arms or pitmen connecting said levers and said stems, means for supplying syrup to said reservoirs, outlets leading from the latter, and a soda-pipe passed through said tubular extension, substantially as set forth.

16. A soda-fountain comprising a bracket or support having an integral tubular extension, means for securing said extension to the walls of an ice-box or the like, a casing supported by said bracket and having a delivery-nozzle, a soda-water pipe passed through said tubular extension and communicating with said nozzle, syrup-reservoirs, and means whereby syrup and soda-water are simultaneously delivered from said nozzle, substantially as set forth.

17. A soda-fountain comprising a bracket or support provided with an integral, screw-threaded tubular extension and an annular flange, a casing supported by said bracket having a delivery-nozzle, a soda-water pipe passed through said tubular extension and communicating with said nozzle, and means for controlling the flow of soda from said nozzle, substantially as set forth.

18. A soda-fountain comprising a casing having a series of syrup-reservoirs, plungers working therein, a series of valve-chambers arranged to control the supply of syrup to said reservoirs, a second series of valve-chambers arranged to control the discharge from said reservoirs, a discharge-nozzle, a soda-water conduit leading thereto, passages leading from said latter valve-chambers to said nozzle, a valve located in said nozzle, a spring-plate engaging the same, hand-levers pivoted to said casing, arms or pitmen connecting the same with said plungers, and a rock-lever pivoted to said casing, said rock-lever having an arm or member engaging said spring-plate, and depending arms or members designed to be engaged by said arms or pitmen, substantially as set forth.

654,490. SELF-LIGHTING CIGAR. GUSTAF L. REENSTIERNA, Boston, Mass., assignor of one-half to Henry R. Legate, same place, and Harry J. Hooper, Dover, N. H. Filed Nov. 14, 1899. Serial No. 736,929. (No model.)



Claim.—A cigar having a tip composed of a mixture of adhesive, combustible and fusible ingredients, and a frictional igniter, the fusible ingredient being incombustible, whereby when the tip is ignited the fusible ingredient forms an air-proof incandescent cap adapted to ignite the tobacco to which it adheres, and to exclude from the tobacco the fumes resulting from the combustion of the other ingredients and of the igniter.

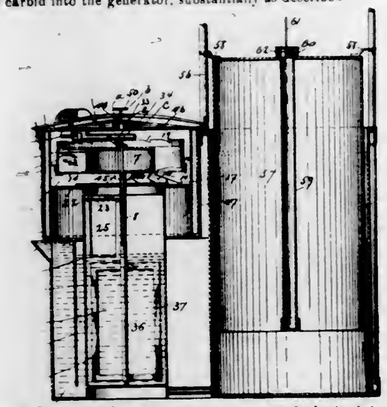
654,491. ACETYLENE-GAS GENERATOR. HARRIET R. ROBINSON, Milford Center, Ohio. Filed Nov. 16, 1899. Serial No. 737,159. (No model.)

Claim.—1. In an apparatus of the class described, a rotary cellular feed-wheel for containing carbid in its separate compartments, doors hinged to false partitions hung upon pivots within the cells, latches for holding the doors closed, a stop for operating the latches to open the doors, and pawl-and-ratchet mechanism for rotating the feed-wheel, step by step, in combination with a gasometer-bell and connections between said bell and ratchet mechanism to operate the latches to discharge the contents of the compartments singly into the generator by the movement of the bell, substantially as described.

2. The feed-wheel, consisting of a number of cells for containing carbid, and having hinged bottoms or doors, means for dropping the doors to discharge the contents of the cells into the generator, in combination with an idle cog-wheel located over the cells for assisting the discharge, substantially as described.

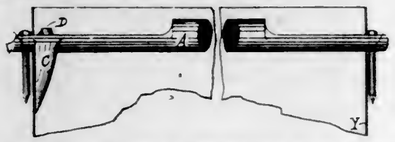
3. In an acetylene-gas machine, a rotary feed-wheel journaled above the generator, and consisting of a series of cells for containing carbid, partitions hinged within said cells, the bottoms or doors of said cells being hinged to the partitions, pivoted latches for holding

the doors closed, and means for tripping the latches to let the doors drop and to swing the partitions to form inclined slides to discharge the carbid into the generator, substantially as described



4. In an acetylene-gas machine, a rotary feed-wheel journaled above the generator, a series of cells in the feed-wheel, partitions hinged within the cells, doors pivoted to the partitions, pivoted latches for holding the doors up, means for tripping the latches to drop the doors and swing the partitions, and an idle cog above the discharge-opening for pushing the carbid out of the cells, substantially as described.

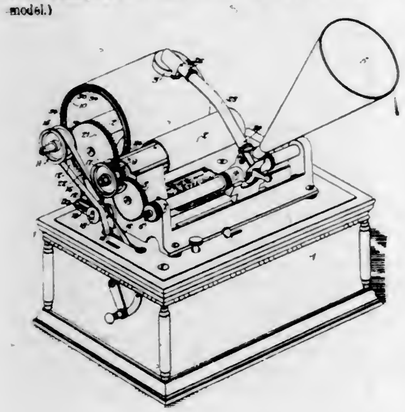
654,492. HANDLE FOR CONVERTING KEROSENE-TINS OR THE LIKE INTO BUCKETS. ERNEST S. ROSS, Hobart, Tasmania. Filed Apr. 12, 1900. Serial No. 12,613. (No model.)



Claim.—1. As an article of manufacture, a device for the purposes specified, consisting of a rod or body portion provided at one end with a perforation, and at its other end with a similar perforation, and a sharp tapered projection disposed transversely of said rod and integral therewith, substantially as described.

2. As an article of manufacture, a device for the purposes specified, consisting of a rod or body portion provided at one end with a perforation, and at its opposite end with a sharp tapered projection disposed transversely of said rod, and a cutting-blade projecting from said projection in a direction longitudinally of said rod, substantially as described.

654,498. ATTACHMENT FOR PHONOGRAPHS. HORACE SHEBLE, Philadelphia, Pa. Filed Dec. 11, 1899. Serial No. 739,941. (No model.)



Claim.—1. A phonograph or graphophone attachment consisting of a record-holder independent of the ordinary record-holder of the instrument, a bearing in which said supplementary record-holder is free to rotate, means for rotating it and provision for mounting the reproducer in proper relation to it, substantially as specified.

2. An attachment for phonographs or graphophones comprising a record-holder supplementary to the ordinary record-holder, means for rotating the same, and a detachable extension-tube interposed between the reproducer and the reproducer-carriage, substantially as specified.

3. A phonograph or graphophone attachment comprising a record-holder supplementary to the ordinary record-holder, a bearing therefor, means for rotating said supplementary record-holder, gearing connecting the shaft of the same with the feed-screw for the reproducer-carriage, and provision for mounting the reproducer in proper relation to said supplementary record-holder, substantially as specified.

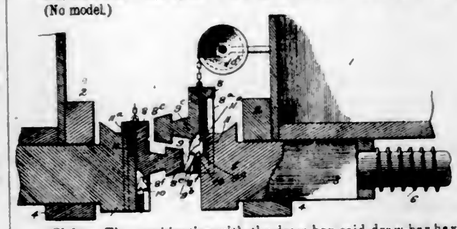
4. An attachment for phonographs or graphophones comprising a record-holder supplementary to the ordinary record-holder, a bearing therefor, a pulley on the shaft of said supplementary record-holder, an idler-pulley for the support of the driving-belt, a slotted bar carrying said idler-pulley and adjustable in order to slacken or tighten the belt, and provision for mounting the reproducer in proper relation to the supplementary record-holder, substantially as specified.

5. An attachment for phonographs or graphophones comprising a supplementary record-holder, means for mounting and rotating the same, and an extension-tube interposed between the reproducer and the reproducer-carriage, said tube having a pin at one end for engagement with the slotted reproducer-tube of the carriage, and slots at the other end for engagement with the pin of the reproducer, substantially as specified.

6. A record-holder for phonographs or graphophones, cylindrical throughout the greater portion of its length and adapted to fit the contracted end of the tapering bore of the record, said cylinder having at one end an outwardly-flaring portion or portions with gradual increase in diameter for engagement with the enlarged end of the tapering bore of the record whereby said record is rigidly supported at each end, substantially as specified.

7. A record-holder for phonographs or graphophones consisting of a cylinder adapted to fit the contracted end of the tapering bore of the record and having a series of bars flared outwardly at one end of the cylinder but having a rigid bearing upon the latter and adapted to fit the enlarged end of the tapering bore of the record, whereby said record is rigidly supported at each end, substantially as specified.

654,494. CAR-COUPLING. FRANK SHELDON and HARRY M. MILLIKEN, Cheboygan, Mich., assignors of one-third to John B. Stimpson, Mackinaw City, Mich. Filed Apr. 23, 1900. Serial No. 13,965. (No model.)

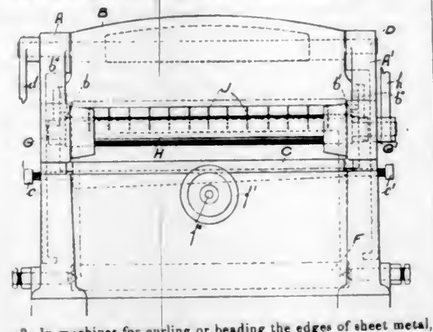


Claim.—The combination with the draw-bar, said draw-bar having a locking-socket in its front face, said socket having straight upper and lower locking-faces; of the vertically-slidable draw-head 8, said draw-head having a projected arrow-head coupling member and having a recess 8', in its lower end, a detent 9, pivotally mounted in the recess of the head 8, said detent having a head portion 9ª, provided with locking-face 9ᵇ, and a shank member 9ᶜ, said detent being so pivoted that its upper or head bar will gravitate into a locked engagement with the socket in the draw-bar when it moves into line therewith and its shank portion being adapted to project beyond the front face of the slidable draw-head when its head portion moves into a locking position, substantially as shown and for the purposes described.

654,495. MACHINE FOR CURLING OR BEADING EDGES OF METAL SHEETS OR PLATES. DANIEL SMITH, Wolverhampton, England. Filed Mar. 5, 1900. Serial No. 7,342. (No model.)

Claim.—1. The combination with a machine for curling or beading the edges of metal sheets, of a pair of toggle vise-plates pivoted between the side frames of the machine and opening and closing together on the rocking of a single lever, substantially as set forth.

2. In machines for curling or beading the edges of sheet metal, the combination consisting of toggle vise-plates B B' one of which has tooth-like projections b b' engaging corresponding recesses in the other, of the links b^4 connected with the toggle-plate B and abutting in recesses formed in the standards A A', substantially as set forth.



3. In machines for curling or heading the edges of sheet metal, the combination with the toggle vise-plates B B' engaging at their adjacent ends, of the eccentric shaft D and operating-lever d, substantially as set forth.

4. In machines for curling or beading the edges of sheet metal, having a pair of toggle vise-plates B B', the combination with the pivot-like end of one of the said vise-plates of the wedge-shaped abutment-piece C and set-screws c c', substantially as set forth.

5. In machines for curling or beading the edges of sheet metal, the combination with a sheet-holder of a reciprocating circular bar having a series of straight grooves of semicircular section extending through its length, substantially as set forth.

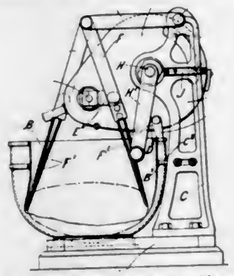
6. In machines for curling or beading the edges of sheet metal, the combination with a pivoted bracket F having the curling-tool mounted on its outer end, of the eccentric shaft H, operating-lever A, and connecting-links G G', substantially as set forth.

7. In machines for curling or beading the edges of sheet metal, the combination consisting of the pivoted bracket F having the curling-tool mounted on its outer end the eccentric shaft H, operating-lever A, connecting-links G G', and eyebolt f^2 having one end jointed to the said pivoted bracket F and its opposite end screwed through the wheel-nut f', substantially as set forth.

8. In machines for curling or beading the edges of sheet metal, the combination consisting of strips J independently pivoted at one end to the tool-carrying bracket F, and with the opposite ends supported in the toggle-plate B' through which they slide on the oscillation of the said bracket F, substantially as set forth.

9. In combination in a machine for curling or beading the edges of sheet-metal plates, a pair of toggle vise-plates with means for opening and closing the same, of a curling-bar with means for reciprocating the same toward and from said vise-plates, substantially as described.

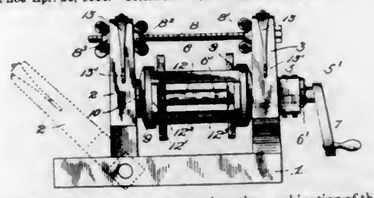
654,496. WHISKING OR BEATING MACHINE. JOSEPH STOREY, Bradford, England. Filed Nov. 21, 1899. Serial No. 737,814. (No model.)



Claim.—1. In a whisking or beating machine the combination of a support, a frame pivoted on the support, a shaft journaled in the frame, whisking-levers operatively connected to the shaft, guides or constraining devices whereby the upper ends of the whisking-levers are constrained to move endwise when the shaft is rotated, a second shaft forming the pivot about which the frame turns, and gear-wheels operatively connecting said shaft with the shaft which operates the whisking-levers substantially as set forth.

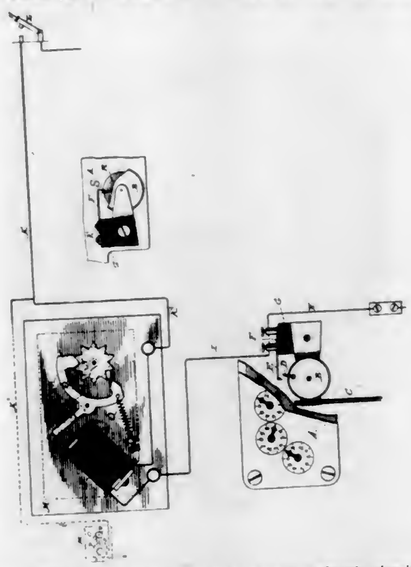
2. In a whisking or beating machine the combination of a support, a frame pivoted on the support, means for fixing the frame relatively to the support, a shaft journaled in the frame, cranks upon the shaft, whisking-levers connected approximately midway of their length to the cranks, links connecting the upper ends of the levers to the standard, a second shaft forming the pivot about which the frame turns, gear-wheels operatively connecting said shaft with the shaft which operates the whisking-levers, a removable vessel in which the whisking-levers work, and means for holding said vessel in position substantially as set forth.

654,497. WIRE-REEL. HENRY A. THOMAS, Laclede County, Mo. Filed Apr. 26, 1900. Serial No. 14,437. (No model.)



Claim.—In a wire reel and stretcher, the combination of the base, the rigid and the hinged supporting-standards, a reel-shaft journaled in said supporting-standards, clamping-heads splined upon said shaft for clamping between them a wire spool or reel, a friction-washer on said shaft between one of the clamping-heads and the hinged standard, a threaded tie-rod connecting the upper ends of the standards, adjusting-nuts for drawing the hinged standard toward the fixed standard causing a frictional contact between clamping-heads and said washer, thereby regulating the speed of the reel-shaft and giving tension to the wire, a ratchet-wheel mounted on said shaft and a locking-pawl adapted to engage said ratchet-wheel to lock said shaft against rotation, substantially as set forth.

654,498. ELECTRIC-METERING SYSTEM. FREDERIC E. TOWN, Glencarlyn, Va. Filed May 11, 1900. Serial No. 16,349. (No model.)



Claim.—1. The combination of a meter; an electric circuit; a make-and-break device for the circuit operated by said meter; an electrically-actuated recording device in said circuit; and means for closing and opening the circuit, whereby the recording device may be brought into or thrown out of operation, as desired.

2. In an electric-metering system, the combination of a meter arranged to operate and continuously record all the electric current or energy consumed; a second registering device; a circuit in which said second registering device is included; a make-and-break device for said circuit operated by the meter; and a switch for closing said

circuit, whereby a reading for the total consumption of current or energy may be had, and a separate and independent reading for a stated or determined period may also be secured.

3. In an electric-metering system, the combination of a series of meters arranged to operate and continuously record all of the electric current or energy consumed; a series of independent registering devices, one for each meter; a series of control-circuits in which said registering devices are included; make-and-break devices for said circuits operated by the meters; and means for closing and opening said circuits, and consequently throwing the registering devices, into and out of operation, as desired.

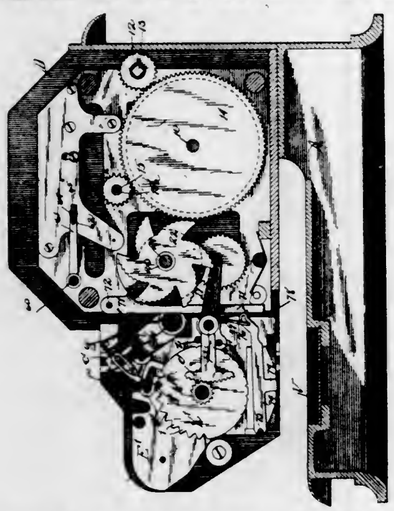
4. In an electric-metering system, the combination of a series of meters arranged to operate and continuously record all the electric current or energy consumed; two series of registering devices; a series of control-circuits in which said registering devices are included; make-and-break devices for said circuits operated by the meters; and means for throwing one or the other of said series of registering devices into circuit, substantially as and for the purpose described.

5. In an electric-metering system, the combination of a meter arranged to operate and continuously record all the electric current or energy consumed; two independent registering devices; control-circuits in which said registering devices are included; make-and-break devices for said circuits operated by the meter; and means for throwing one or the other of said registering devices into circuit, substantially as and for the purpose described.

6. In combination with an electric meter arranged to operate and continuously record all the electric current or energy consumed; a register; a circuit; a make-and-break device for said circuit operated by a moving member of the meter; an electrically-operated device included in the circuit for actuating the register; and a switch also included in the circuit.

7. In combination with an electric meter arranged to operate and continuously record all the electric energy or current consumed; a register; a circuit; a make-and-break device for said circuit operated by a moving member of the meter; an electromagnet included in the circuit; a pallet carrying an armature, said pallet being arranged to act upon and move a wheel carried by the register; and a switch included in the circuit.

654,499. TIME-STAMP. LINDSEY VAUGHN, JOHN G. BLESSING, and ALBERT TUERK, Chicago, Ill.; said Vaughn and Blessing assignors to said Tuerk. Filed June 12, 1899. Serial No. 720,235. (No model.)



Claim.—1. In a device of the kind described, the clock mechanism provided with means for regulating the movement of register-controlling levers, in combination with a movable frame, carrying registering-wheels K, K', &c., provided with pinions *k*, *k'*, &c., register-controlling levers L, L', &c., pivotally supported between their ends, and provided at one end with cog-racks *l*, *l'*, &c., meshing with the pinions *k*, *k'*, &c., and at the other end with means for coacting with the lever-controlling mechanism in the clock, and means for depressing the registering-frame at will.

2. In a device of the kind described, the clock mechanism provided with cams for regulating the movement of register-controlling levers, in combination with a movable frame carrying registering-wheels K, K', &c., provided with pinions *k*, *k'*, &c., and also register-controlling levers L, L', &c., provided at one end with teeth coacting with the pinions *k*, *k'*, &c., and at the other end with the cams in the clock mechanism, and means for depressing the registering mechanism at will.

3. In a device of the kind described, a clock mechanism provided with cams for regulating the movement of the register-controlling levers, in combination with a movable frame carrying registering-wheels thereon, provided with pinions *k*, *k'*, and also carrying register-controlling levers pivotally supported between their ends and provided at one end with means adapted to coact with the pinions *k*, *k'*, to set the registering-wheels and at the other end provided with means for coacting with the controlling-cams means for firmly holding the registering-wheels in alinement when set, and means for depressing the registering-wheels at will.

4. In a device of the kind described, a registering mechanism comprising a movable frame E E', pivoted arms G G, carried by the frame and each provided with the slot *g*, the registering-wheels K, K', &c., mounted on the shaft H, carried by arms G, G, the arm O, mounted on the shaft N for depressing arms G, G, and the alinement-bar P *p'*, having portions engaging in said slots *g*, *g*, the register-controlling levers L, L', &c., and the hand-lever M for operating shaft N, in combination with a clock mechanism provided with cams arranged to limit the movement of the free ends of the levers L, L', &c., substantially as described.

5. In a device of the kind described, registering mechanism comprising the plates E, E', vertically movable in guides, and normally retained at their upper limit, arms G, G, pivotally mounted on the shaft F carried by the plates E, E', the shaft H carried by arms G, G and carrying the registering-wheels K, K', &c., the levers L, L', &c., pivotally mounted on the shaft F, and adapted to control the setting of the registering-wheels, means for retaining the registering-wheels in alinement when set, and means for depressing the registering mechanism at will, in combination with the clock mechanism provided with cams to limit the movement of the levers L, L', &c., substantially as described.

6. In a device of the kind described, the registering mechanism comprising the vertically-movable plates E, E', carrying the shaft F, the arms G, G, pivotally mounted on said shaft, the shaft H carried by the arms G G and carrying the registering-wheels K, K', &c., levers L, L' pivotally mounted on the shaft F and coacting with the registering-wheels, the rods Z, Z', means for depressing the registering mechanism at will and means for retaining the registering-wheels in true alinement when so depressed, in combination with the clock mechanism provided with cam-wheels adapted to regulate the movement of the several levers L, L', substantially as described.

7. In a device of the kind described, the combination of the following elements: the registering mechanism consisting of the wheels K, K', &c., provided with pinions *k*, *k'*, &c., levers L, L', &c., provided with cog-racks adapted to coact with the pinions *k*, *k'*, &c., to set the registering-wheels, means for depressing the registering-wheels at will and holding them in alinement when so depressed, clock mechanism provided with a controlling-train whereby the clock remains inactive at regular intervals, and cams arranged to coact with the levers L, L', &c., to regulate their limit of movement, substantially as and for the purpose set forth.

8. In a device of the kind described, the registering mechanism comprising the wheels K, K', &c., provided with means for gently braking their rotation, levers L, L', &c., provided with teeth at one end adapted to coact with pinions secured to the registering-wheels to effect their setting and at the other end adapted to coact with regulating means in the clock mechanism, and means for depressing the registering-wheels at will, in combination with the clock mechanism provided with means for coacting with the free end of the levers L, L', &c., substantially as and for the purpose described.

9. In a device of the kind described, one or more of the registering-wheels K, K', &c., provided with a spring-brake consisting of the spring 90 constructed to frictionally contact with a part of the registering-wheel for that purpose, in combination with a plate 92 constructed to coöperate with said spring, substantially as described.

10. In a device of the kind described, a clock mechanism constructed to indicate the time upon its face in the usual manner and provided with cams 22, 23, 37, 38, 44, and 45 and connecting mechanism for regulating the movement of said cams, in combination with registering mechanism comprising a series of registering-wheels mounted in a vertically-movable frame, means for depressing the frame, and means operated by the frame, depressing means for rotating the registering-wheels and a series of levers L, L', &c., normally free from connection with the clock mechanism and arranged to control the rotation of the registering-wheel, but upon depressing the registering mechanism momentarily contacting with the several cams referred to, substantially as and for the purpose set forth.

11. In a machine of the kind described, the combination of registering devices, means for moving said devices to make the impression, mechanism operated by said means for positively setting said registering devices into proper relative position, register-controlling levers for said devices, a clock mechanism provided with controlling devices for said register-controlling levers, and a controlling-train for rendering the clock mechanism inactive at regular intervals, substantially as described.

12. In a machine of the kind described, a controlling-train for the purpose described, comprising a driven pinion 52, a gear 53 connected to said pinion by a spring, an escapement 54, 55 and 56 driven by said gear 53, an arm 61 oscillated by connections between the same and gear 53, an arm 63 connected to and movable with arm 61 and adapted to coact with a part to stop said pinion 52, substantially as described.

13. In a machine of the kind described, a clock mechanism provided with a minute-shaft, a sleeve thereon, a brake-wheel carried by said sleeve, a spring-pressed latch carried by the minute-shaft and engaging said brake-wheel, a cam 28 secured to the minute-shaft, a lever 31 operated by said cam, a latch carried by said lever, and a wheel 34 operated by said lever, substantially as and for the purpose set forth.

14. In a device of the kind described, the clock mechanism provided with the brake-wheel 29, secured to a sleeve mounted upon the minute-shaft 15, the latch 30 secured to and rotating with the minute-shaft, and the cam secured to the minute-shaft 28 provided with two shoulders as described, in combination with the lever 31, latch 33 carried thereby, wheel 34, operated by said latch, regulating the setting of one or more lever-setting devices, and lever 36 engaging said wheel 34, substantially as and for the purpose set forth.

15. In a device of the kind described, the clock mechanism provided with an interval-controlling train constructed to make a limited advance when one-half the interval has elapsed, and a cam 69 and connections with said train arranged to move and mark the partial advance and also the complete advance at the end of the interval, and the lever 71 constructed to coact with said cam-wheel, in combination with a lever 74 provided with a projection 79, indicating the one-half interval, and means for imparting the reciprocating action of the end of the lever 71, to the lever 74, to alternately raise and lower the same, substantially as and for the purpose set forth.

16. In a machine of the kind described, the combination with an interval-controlling train, of a cam, connections between the same and said train for permitting the movement of the cam intermittently, a lever 71 coacting with said cam causing the free end of the lever to oscillate, a lever 74 provided with an indicating portion 79, and means for imparting the movement of lever 71 to lever 74 comprising a shaft 77, and arms 76 and 78 connected thereto, substantially as described.

17. In a machine of the kind described, a clock mechanism provided with means for regulating the movement of register-controlling devices, in combination with registering devices controlled by said register-controlling devices, means for moving the registering devices to make the impression and mechanism positively operated by said means for positively setting said registering devices, substantially as described.

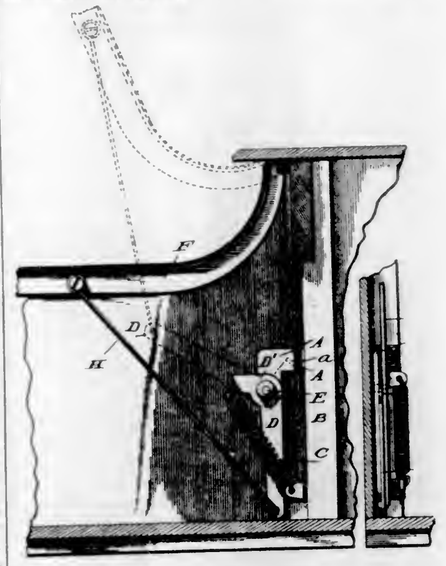
654,500. DETACHABLE RESERVOIR FOR PENS. EDWIN WALDEN, Lynn, Mass. Filed Oct. 23, 1899. Serial No. 734,438. (No model.)



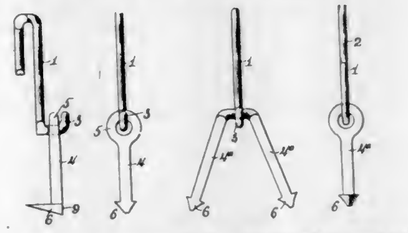
Claim.—The combination with a penholder and pen, of the detachable or independent reservoir having the curved shank portion fitting within the shank of the pen and inserted with the latter into the penholder, the said reservoir having also the waist or body portion 7 bridging the hollow of the corresponding portion of the pen, the shoulder 6, the vent, and the tapering nib 8 separated at its edges and tip by spaces from the corresponding portion of the pen, and inclining at its tip toward the latter, substantially as described.

654,501. ATTACHMENT FOR CARRIAGE-BOOTS. GEORGE T. WILSON, Moline, Ill. Filed June 18, 1900. Serial No. 20,763. (No model.)

Claim.—In combination with a carriage box and boot hinged thereto, a stationary angled strip of metal having angled ends and secured to the box, an angled strip of metal pivoted at its angled portion to said stationary strip above its middle portion, the two strips being disposed with their angled ends in opposite directions, a spring fastened at its lower end to an upturned end of the stationary strip, its upper end secured to the upper end of said pivoted strip, and the rod connected at one end to the latter, its other end to the boot, as shown and described.



654,502. ENGINE-TIE. GEORGE B. WILT, Gibsonburg, Ohio. Filed Dec. 11, 1899. Serial No. 739,966. (No model.)



Claim.—1. In combination with an engine or like object to be secured, the herein-described tie consisting of the upper and lower members swiveled together and provided respectively with the downwardly-projecting pin or spike 2 and the horizontally-projecting penetrating spur 6; substantially as herein explained.

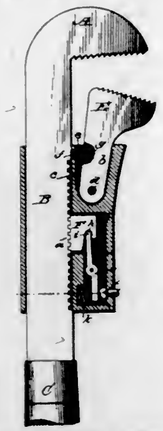
2. In combination with an engine or the like having a perforated bed-plate upon which said engine is mounted; the herein-described tie formed with two parts swiveled together and provided respectively with the longitudinally-projecting pin or spike 2 passed through the perforations in the bed-plate and into the bed, and the transversely-projecting spur 6 driven or otherwise introduced into the bed; substantially as and for the purposes set forth.

3. The herein-described tie for engines or the like, consisting of the upper member provided with a longitudinally-projecting pin or spike constructed to pass through the bed-plate of the object to be secured and into the bed, and the lower forked member swiveled to the upper member and carrying at its respective ends the penetrating spurs constructed to be driven into the bed; substantially as herein set forth.

654,503. PIPE-WRENCH. CHARLES O. WOODS, Owego, N. Y., assignor to Henry C. Ripley, same place. Filed Apr. 21, 1900. Serial No. 13,797. (No model.)

Claim.—1. A pipe-wrench, comprising a stationary jaw with shank having a plurality of straight teeth to form a rack-bar, a sleeve slidable thereon and formed with a socket and closed chamber at its respective ends, a spring-actuated movable jaw having its shank located in the socket and pivoted to the side walls thereof, and a clamping-block and pivoted lever connected together by a loose knuckle-

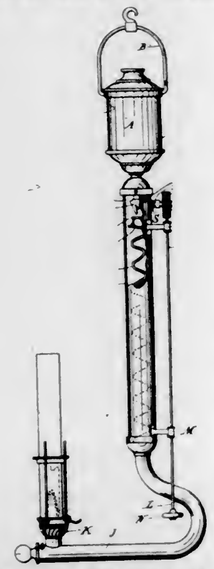
joint, and means for operating the lever, substantially as and for the purpose described.



2. A pipe-wrench, comprising a stationary jaw with shank, a sleeve slidable upon the shank, a spring-actuated movable jaw connected to the sleeve, said sleeve having a closed chamber, a clamping-block located therein, a pivoted lever connected to the block by a loose knuckle-joint, a spring connecting with the lever, and a push-button located within the chamber and having a shank extending through one of the side walls thereof, substantially as and for the purpose specified.

3. A pipe-wrench, comprising a stationary jaw having a shank with its inner face in the form of a rack-bar, a sleeve slidable upon the shank and carrying a spring-actuated movable jaw, said sleeve being formed with a closed chamber having a removable cap-plate, a clamping-block located in the chamber and adapted to engage the rack-bar of the shank, a pivoted and spring-actuated lever connecting with the block by a loose knuckle-joint and contained wholly within the chamber, and a push-button for operating the lever, substantially as and for the purpose described.

654,504. CARBURETING-LAMP. JOSEPH M. WOODS, Chicago, Ill. Filed Jan. 24, 1900. Serial No. 2,629. (No model.)



Claim.—1. The carbureter for gasolene-lamps, consisting of tube C, and a zigzag perforated disseminator arranged longitudinally in the tube, substantially as specified.

2. The carbureter for gasolene-lamps, consisting of tube C, and a zigzag perforated disseminator arranged longitudinally in the tube, and a button above the disseminator for breaking up the drops of gasolene as they fall, substantially as specified.

654,505. MORDANT-DYEING COLORING-MATTER. OSCAR BALLY, Ludwigshafen, Germany, assignor to the Badische Anilin and Soda Fabrik, same place. Filed Jan. 9, 1900. Serial No. 879. (Specimens.)

Claim.—1. The process for the manufacture of new mordant-dyeing coloring-matter fast to milling, by treating anthracene-blue coloring-matters with ammonia and a caustic alkali at a high temperature under pressure.

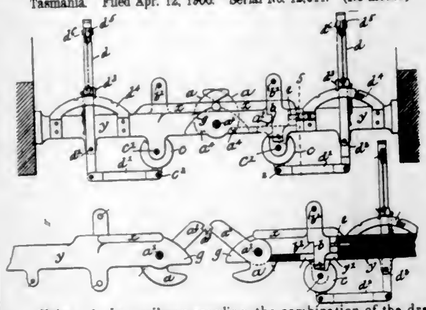
2. As a new article of manufacture the new blue mordant-dyeing coloring-matter which can be obtained by treating a greenish anthracene-blue dye with ammonia and a caustic alkali under pressure at a high temperature, and which yields greenish-blue shades on chrome-mordanted wool which are very fast to milling and which yields a yellow-red solution in concentrated sulfuric acid, all substantially as described.

654,506. DYE FROM ANTHRACENE-BLUE. OSCAR BALLY, Ludwigshafen, Germany, assignor to the Badische Anilin and Soda Fabrik, same place. Filed Jan. 9, 1900. Serial No. 880. (No specimens.)

Claim.—1. The process for the manufacture of new mordant-dyeing coloring-matter fast to milling by treating anthracene-blue coloring-matters with a caustic alkali at a high temperature.

2. As a new article of manufacture the new blue mordant-dyeing coloring-matter which can be obtained by treating a greenish anthracene-blue dye with a caustic alkali at a high temperature and which yields blue shades on chrome-mordanted wool which are very fast to milling and which gives a Bordeaux-red to violet solution in concentrated sulfuric acid, all substantially as described.

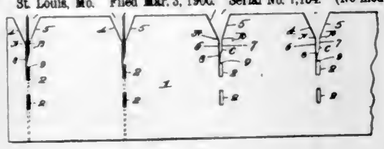
654,507. RAILWAY-CAR. ARNOLD G. BLACKWELL, Wynyard Tasmania. Filed Apr. 12, 1900. Serial No. 12,611. (No model.)



Claim.—1. In a railway-coupling, the combination of the draw-bar provided at one side with an eye; a hook pivoted in a slot in the end of said draw-bar, said hook having at its rear an elongated arm provided at its end with a recess; a locking-bar pivotally supported within said draw-bar, said locking-bar having a shoulder adapted to engage the recess upon said hook; a spring tending to hold said locking-bar in its forward position; and means for positively holding said locking-bar in engagement with said hook and withdrawing same from engagement, substantially as described.

2. In a railway-coupling, the combination of the draw-bar provided at one side with an eye; a hook pivoted in a slot in the end of said draw-bar, said hook having a rearward extension provided at its end with a recess; a locking-bar pivotally supported within said draw-bar, said locking-bar having a shoulder adapted to engage with the recess upon said hook; a spring tending to hold said bar in its forward position; a cam pivotally supported beneath said locking-bar, the free end of said locking-bar being adapted to engage with a recess in said cam; and means for operating said cam, substantially as described.

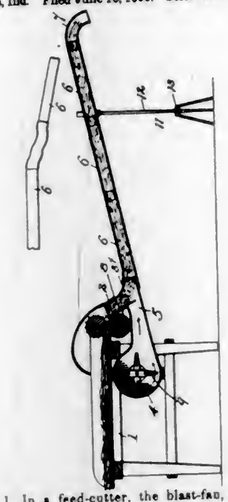
654,508. FILLER-FRAME FOR EGG-CASES. EMIL F. BOHN, St. Louis, Mo. Filed Mar. 3, 1900. Serial No. 7,154. (No model.)



Claim.—1. A blank for an egg-case filler comprising a crossing strip formed with a series of inner apertures, a series of outer apertures in line with the inner apertures, V-shaped entrance-notches, straight edges extending from one side of the entrance-notches to the outer apertures and the straight and oblique edges extending from the other side of the entrance-notches forming shoulders extending across the outer ends of the outer slots.

2. An egg-case filler comprising interlocking crossing strips, each formed with a series of inner apertures, a series of outer apertures in line with the inner apertures, V-shaped entrance-notches, straight edges extending from one side of the entrance-notches to the outer apertures and straight and oblique edges extending from the other side of the entrance-notches.

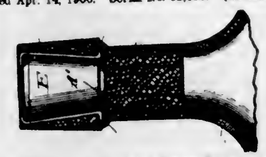
654,509. BLOWER FOR FEED-CUTTERS. FRANCIS M. BONHAM, Heltonville, Ind. Filed June 10, 1899. Serial No. 720,065. (No model.)



Claim.—1. In a feed-cutter, the blast-fan, the fan-casing, the rearwardly-extending discharge-passage at the lower portion of said casing, the feed-receiving passage extending upwardly from said discharge-passage, and forming a recess therewith and with the fan-casing in which the lower cutter-cylinder is journaled and inclosed, the driving connection between the lower cutter-cylinder and the fan-shaft, and the inclosure for the feed-receiving passage and the cutter-cylinders extending from the forward wall of said passage, substantially as specified.

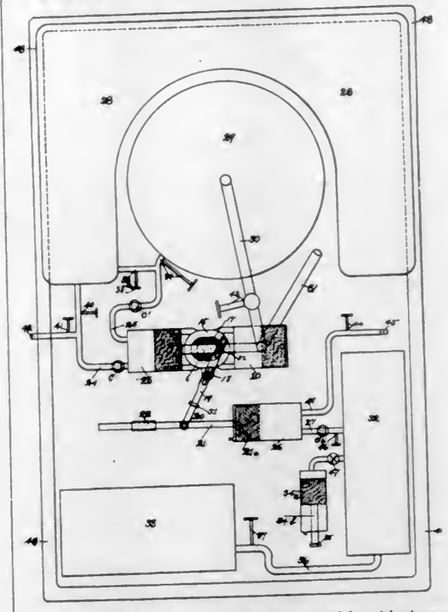
2. The herein-described attachment for feed-cutters, consisting of the blast-fan, the fan-casing, having the rearwardly-extending discharge-passage, the feed-receiving passage extending upwardly from said discharge-passage, and the partition in the plane of the rear wall of said feed-receiving passage and extending downwardly into the blast-discharge passage to facilitate propelling the cut feed through the conveyer-pipe without interfering with the free downward movement of the cut feed from said feed-receiving passage into the conveyer-pipe, substantially as specified.

654,510. NON-REFILLABLE BOTTLE. JAMES A. BONNER, Direct, Tex. Filed Apr. 14, 1900. Serial No. 12,859. (No model.)



Claim.—As an improved article of manufacture, a non-refillable bottle having a neck with an annular groove in its inner wall, the inner wall of the neck above said groove tapering upward and outward, a cap having a flange extending down over the neck to a location opposite said groove, a spring secured near its middle to the inner face of the cap, and having its arms bent within the cap, and the extreme ends of the arms bent at right angles and designed to engage said groove, substantially as shown and described.

654,511. WATER-FEEDING AND AIR-COMPRESSING MECHANISM FOR MOTOR-VEHICLES. WILLIAM R. BOWKER and FRANK P. SHERMAN, Waltham, Mass. Filed Nov. 24, 1899. Serial No. 738,216. (No model.)



Claim.—1. The combination, in a motor-vehicle, with the main steam-boiler and water-tank, of a steam feed-water pump deriving steam from said boiler, a discharge-pipe leading from the pump to the boiler, an inlet-pipe 24 connecting the pump with the tank, and provided with a valve 40, and a supply-pipe 42 connected to the said inlet-pipe 24 and provided with a valve 41; whereby by closing valve 40 and opening valve 41, water may be supplied direct to the boiler from pipe 42, or by closing valve 41 and opening valve 40, the boiler may be supplied from the tank; substantially as described.

2. The combination, in a motor-vehicle, with the main steam-boiler, and water-tank, of a steam feed-water pump deriving steam from the main boiler, a discharge-pipe 25 leading from the pump to the boiler, and provided with a valve 39, a short pipe 38 having a valve 38ª and connecting the tank with the pipe 25 between the pump and valve 39, an inlet-pipe 24 leading from the tank to the pump and provided with a valve 40, and a supply-pipe 42, having a valve 41, and connected to the pipe 24 between the valve 40 and the pump; whereby water may be fed to the boiler from the tank or the supply-pipe, or by closing valves 41, 39, and opening valves 40, 38, the water may be simply kept in circulation between the pump and tank; substantially as described.

3. In a motor-vehicle, the combination with a steam feed-water pump, of an air-compressing pump, a lever connecting the piston-rods of the two pumps and having a hinged section separably connected to one of said piston-rods; substantially as described.

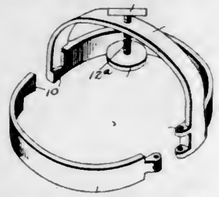
4. In a motor-vehicle, the combination with a steam feed-water pump, of an air-compressing pump operatively connected therewith, a compressed-air reservoir having a valved connection with the air-pump, and an auxiliary valved pipe leading from the air-pump; substantially as described.

5. In a motor-vehicle, the combination with a steam feed-water pump, of an air-compressing pump operatively connected therewith, a compressed-air cylinder having a valved connection with the air-pump, and also having a valved connection with a brake-cylinder; substantially as described.

654,512. CLOSURE FOR JARS, &c. ALDIN BRISEE, Westford, N. Y. Filed Nov. 10, 1899. Serial No. 736,451. (No model.)

Claim.—1. A closure for jars, &c., comprising two members, hingedly connected, one of said members carrying the connecting-bar, the two members being adapted, when closed, to form a complete encircling band the closing movement of which is limited by the contacting faces of the meeting ends of said members, said meet-

ing ends overlapping and being in turn overlapped by said connecting-bar; and means carried by said bar, for holding the jar-lid in position.



2. A closure for jars, &c., comprising two members, hingedly connected, one of said members carrying a connecting-bar, said members when closed, forming a complete encircling band, the meeting ends of said band having overlapping projecting portions adapted to cooperate, said projecting portions being in turn overlapped by said bar, the closing of said band being limited by the contacting faces of the meeting edges and their projecting portions; and means, carried by said bar, for holding the jar-lid in position.

3. The combination with a jar-body having a shoulder; of an encircling band formed in sections, hingedly connected, one of said sections carrying a connecting-bar adapted to overlap and hold said sections against movement, the closing movement being limited, whereby any tendency of the band to exert pressure against the side of the jar will be prevented.

4. A closure for jars, &c., comprising a plurality of members hingedly connected, the meeting ends of said members being provided with radially-projecting portions, said members when closed, forming a complete encircling band, the closing movement of which is limited by the contacting faces of said meeting ends; a connecting-bar, carried by one of said members, said bar having a slot to receive said projecting portions; and means for retaining said projecting portions in said slot.

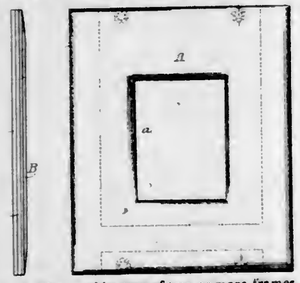
5. The combination with a jar-body having a shoulder; of an encircling band formed in sections, hingedly connected, said band carrying a connecting-bar provided with a slot and passage-way to said slot, said slot being adapted to receive the meeting ends of said band and retain said band in a closed position, the closing movement being limited.

654,513. BADGE-PIN. GEORGE H. BROOKS, Louisville, Ky. Filed May 26, 1900. Serial No. 18,059. (No model.)



Claim.—A combined badge-pin and backing comprising a pin formed with a semicircular base having a flat loop bent to project inwardly at its extreme end, and a backing-plate extending across the center of the button and having in its edge at one side a hole through which the pin passes and having at a diametrical point a sheet-metal tongue punched out of the back-plate for retaining the pin-point, the loop of the pin-base being extended through the slot formed by punching out the tongue and turned inwardly to the center of the backing-plate and clamped or set tightly against the same substantially as described.

654,514. PICTURE-FRAME. EUGENE CARRAINE, Philadelphia, Pa. Filed Jan. 27, 1900. Serial No. 2,979. (No model.)



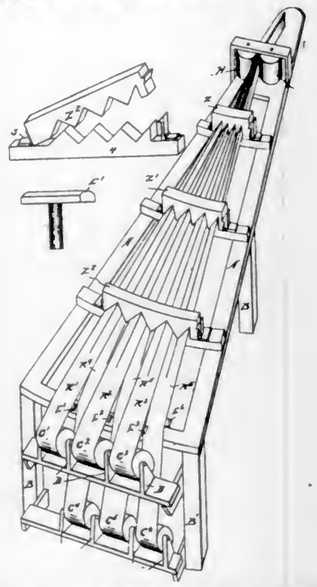
Claim.—1. The combination of two or more frames, each frame consisting of a backing, a facing having an opening therein to expose the picture, and a filling-piece shaped to form cavities between the facing and the backing, with means for attaching two or more frames together, said means being secured to the backing, substantially as described.

2. The combination of the backing, the facing having an opening to expose the picture, a filling-section between the backing and facing cut out to form spaces between the backing and facing, and holes in the opposite edges of the backing, so that two or more frames can be coupled together, substantially as described.

3. The combination of a backing, a facing cut out to expose the picture, a cut-out filling-piece between the facing and backing so as to form cavities between the facing and backing, eyelets near the opposite edges of the backing, substantially as described.

4. The combination of a backing, a facing cut out to expose a picture, a filling-piece with cavities at four sides, and openings in the backing in line with the cavities so that the series of frames can be strung together either in an upright or horizontal position, substantially as described.

654,515. PAPER-FOLDING MACHINE. EDWIN D. CASTERLINE, Detroit, Mich. Filed Sept. 19, 1899. Serial No. 730,983. (No model.)



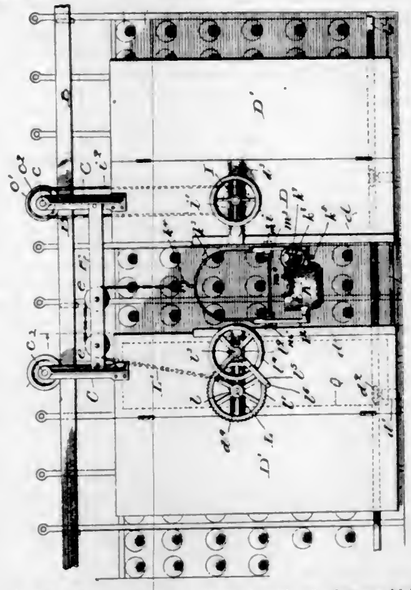
Claim.—1. In a paper-folding machine, the combination of means for holding rolls of paper ribbon, drawing-dies each of which consists of two serrated blocks with the serrations of the one block engaging in the serrations of the other block, but spaced therefrom sufficiently to allow the free passage of the paper ribbon through it, said dies being adapted to give to each ribbon a longitudinal fold and to infold the wings of each ribbon between the wings of the adjacent ribbons at each side of it, substantially as described.

2. In a machine for folding paper, the combination of means for holding rolls of paper ribbon, drawing-dies each of which consists of two serrated blocks with the teeth of one block engaging in the notches of the other, whereby the paper may be drawn through said dies and folded longitudinally, and the guides H between which the ribbons are finally compressed, substantially as described.

3. In a machine for folding ribbons of paper together with each ribbon folded lengthwise, and with the wings of each ribbon engaged between the wings of two adjacent ribbons, a trough or table, a folding mechanism at each end of said table provided with serrated folding-dies, whereby ribbons of paper folded lengthwise may be drawn from each folding mechanism, and the ribbon from one mechanism engaged with the ribbon from the opposite mechanism, substantially as described.

654,516. SHIELD FOR FURNACES. CHARLES S. CHAPMAN, Pittsburg, Kans., assignor to the Pittsburg Foundry and Machine Company, same place. Filed Apr. 15, 1899. Serial No. 713,166. (No model.)

Claim.—1. The combination with a furnace, of an upper and lower track arranged adjacent thereto, a furnace-shield provided with rollers engaging the upper track, and with inwardly-extending arms provided with rollers engaging the lower track, substantially as described.



2. The combination with a supporting-track, of a furnace-shield provided with rollers engaging said track, propelling mechanism carried by said shield, operative connections between said mechanism and one of said supporting-rollers for moving the shield along said track, substantially as described.

3. The combination with a supporting-track, of a furnace-shield provided with rollers engaging said track, a driving-shaft carried by said shield and provided with a hand-operated device and gearing connecting said shaft with one of said rollers, for propelling said shield along the track, substantially as described.

4. The combination with an upper supporting-track and a lower guide-rail having a vertical face of a furnace-shield provided with rollers engaging said supporting-track, and having at its lower end friction-rollers bearing against the vertical face of said guide-rail, the weight of the shield holding said friction-rolls in engagement with the guide-rail, substantially as described.

5. The combination with a supporting-track, of a furnace-shield provided with a vertically-arranged aperture therein, and having rollers engaging said track, a ladle carried by said shield located in said vertical aperture, and having guiding devices engaging the shield at each side of said aperture, and means for raising and lowering said ladle in said aperture, substantially as described.

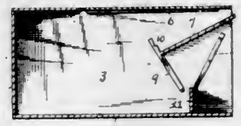
6. The combination with a supporting-track of a furnace-shield supported therefrom and movable longitudinally thereof said shield being provided with a central vertical aperture, a ladle carried by said shield and having guiding devices engaging the shield at each side of said aperture, mechanism for raising and lowering said ladle, and mechanism for moving said ladle transversely of the shield, substantially as described.

7. The combination with a supporting-track, of a furnace-shield supported therefrom and movable longitudinally thereof, said shield being provided with a central vertical aperture, a ladle carried by said shield and located in said aperture, arms pivotally connected with said ladle and provided with friction-rolls engaging guiding portions of said shield, operating-levers connected to said arms, for moving said ladle horizontally transversely of the shield, and mechanism for raising and lowering the ladle, substantially as described.

8. The combination with a supporting-track of a shield supported therefrom, and movable longitudinally thereof, said shield being provided with a central aperture, driving mechanism carried by said shield, for moving the same longitudinally along said track, and wings hinged to and forming continuations of said shield, substantially as described.

9. The combination with a supporting-track of a shield supported therefrom and movable longitudinally thereof, said shield being provided with a central vertical aperture and a guiding-groove at each side of said aperture, a ladle provided with guiding-rollers engaging said groove, and mechanism for raising and lowering said ladle, substantially as described.

654,517. NEST-BOX. MATTHIAS M. CREW, Cecil, N. J. Filed Mar. 6, 1900. Serial No. 7,611. (No model.)



Claim.—1. A nest-box having a swinging door confined against opening outward and constructed to conceal the interior of the box when closed and a latch for holding the door in open position, said door and latch mutually supporting each other when engaged and said door being in position to be lifted out of engagement with the latch by an entering hen, substantially as described.

2. A nest-box having a swinging door confined against opening outward and constructed to conceal the interior of the box when closed, a latch for holding the door in open position, and an immovable strip across the bottom of the box, beneath the door, said door being in position to be forced out of engagement with the latch by pressure of an entering hen against it and said strip being of such height that a hen will engage it if she attempts to enter the box when the door is closed.

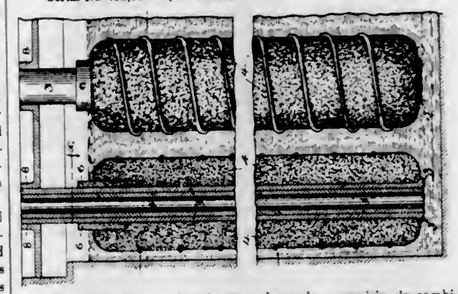
3. A nest-box having a swinging door confined against opening outward and constructed to conceal the interior of the box when closed, a latch for holding the door in open position, said door and latch mutually supporting each other when engaged and said door being in the path of an entering hen so as to be lifted out of engagement with the latch by her pressure, and an immovable strip extending across the bottom of the box, beneath said door, and being of such height that a hen will engage it if she attempts to enter the box when the door is closed.

4. A nest-box having an open front, an immovable strip across said front, a door pivoted at its upper end and confined against swinging outward, said door being constructed to conceal the interior of the box when closed and a latch pivoted at its lower end and having teeth at its upper end to engage the lower edge of the door, said door and latch inclining inwardly in opposite directions and mutually supporting each other when engaged, and said door being arranged in the path of a hen entering the box and operated by her pressure imposed directly thereon to disengage it from the latch, and said strip being of such height that a hen will engage it if she attempts to enter the box when the door is closed.

654,518. PROCESS OF CONVERTING CELLULOSE INTO SUGAR. ALEXANDER CLASSEN, Aachen, Germany. Filed Jan. 29, 1900. Serial No. 3,201. (No specimens.)

Claim.—The process for converting cellulose into sugar which consists in heating the cellulose in a closed vessel at a temperature of 120° to 145° centigrade with a solution containing sulphurous acid and sulphuric acid, substantially as described.

654,519. SECONDARY BATTERY. CLYDE J. COLEMAN, Chicago, Ill., assignor to Thomas J. Ryan, New York, N. Y. Filed Oct. 2, 1899. Serial No. 732,354. (No model.)

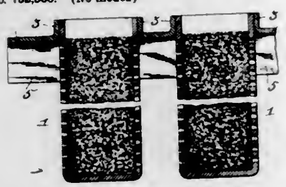


Claim.—1. A secondary-battery electrode, comprising in combination, a conducting-support, a coating of active material surrounding the same, and a collar formed of non-corrodible material surrounding said support, and arranged to project a distance into the active coating and a distance above the same, substantially as set forth.

2. A secondary-battery electrode, comprising in combination, a conducting-support, a coating of active material surrounding the same, and a collar formed of non-conducting and non-corrodible material surrounding said support and arranged to project a distance into the active coating and a distance above the same, substantially as set forth.

3. A secondary-battery electrode, comprising in combination a series of electrode-sections, each section comprising a tubular conducting-support, and a coating of active material surrounding the same, and a connecting-bar having a series of openings with thin vertically-extending necks around said openings receiving the upper ends of the tubular conducting-supports, and adapted to afford a convenient means for effecting a fused joint between the parts, substantially as set forth.

654,520. SECONDARY BATTERY. CLYDE J. COLEMAN, Chicago, Ill., assignor to Thomas J. Ryan, New York, N. Y. Filed Oct. 2, 1899. Serial No. 732,355. (No model.)



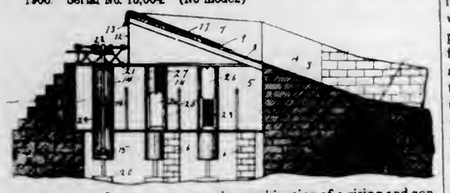
Claim.—1. In a secondary battery, the combination of a perforated conducting-casing for containing the active material, and a connecting strip or bar having an opening with a thin vertically-extending flange or neck around said opening receiving the upper end of such casing, and adapted to afford a convenient means for effecting a fused joint between the parts, substantially as set forth.

2. In a secondary battery, the combination of a series of perforated conducting-casings for containing the active material, and a connecting strip or bar, common to the series, and having an opening with a series of thin vertically-extending flanges or necks around said opening receiving the upper ends of such casings, and adapted to afford a convenient means for effecting a fused joint between the parts, substantially as set forth.

3. In a secondary battery, the combination of a perforated conducting-casing for containing the active material, and a connecting strip or bar having an opening with a horizontal plate portion, longitudinal side flanges, and a thin vertically-extending flange or neck around said opening receiving the upper end of such casing and adapted to afford a convenient means for effecting a fused joint between the parts, substantially as set forth.

4. In a secondary battery, the combination of a series of perforated conducting-casings for containing the active material, and a connecting strip or bar common to the series, and formed with a horizontal plate portion, longitudinal side flanges, and a series of thin vertically-extending flanges or necks receiving the upper ends of such casings, and adapted to afford a convenient means for effecting a fused joint between the parts, substantially as set forth.

654,521. WAVE-MOTOR. EUSEBE P. COUTURE, Gualala, Cal., assignor of one-half to Joseph F. Martinez, same place. Filed Apr. 30, 1900. Serial No. 15,004. (No model.)



Claim.—1. In a wave-motor, the combination of a rising and convergent path for the waves, a tank at the upper end of said path into which the waves enter, vertical chambers in said tank for the descent of the water therefrom, turbines at the bottom of said chambers, and means for transmitting the motion of said turbines to a distant point, substantially as described.

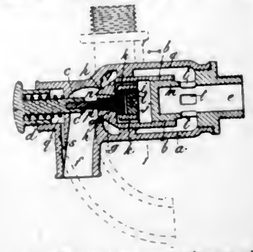
2. In a wave-motor, the combination of a rising and convergent path for the waves, a tank at the upper end thereof, means for varying the point of entrance into said tank, turbines located below said tank, and operated by the water escaping therefrom, and means for transmitting the motion of said turbines to a distant point, substantially as described.

3. In a wave-motor, the combination of a rising and convergent path for the waves, a tank at the upper end thereof, sliding shutters for varying the point of entrance into said tank, turbines located at the bottom of said tank, and adapted to be rotated by the waves escaping therefrom, vertical shafts rotated by said turbines, pulleys carried by said shafts, and ropes extending from said pulleys to a distant point to transmit power thereto, substantially as described.

4. In a wave-motor, the combination of a rising and convergent path for the waves, a tank at the upper end of said path, the bottom of said tank being suitably supported at a height from the ground so as to leave a space for water escaping therefrom, vertical chambers extending through said tank and below the same, and screens at the sides thereof through which the water flows into said chambers from the tank, turbines at the bottom of the said chambers, vertical shafts rotated by said turbines, and means for transmitting the power from said shafts to a distant point, substantially as described.

5. In a wave-motor, the combination of a rising and convergent path for the waves, a tank at the upper end of said path, the bottom of said tank being suitably supported at a height from the ground so as to leave a space for water escaping therefrom, vertical chambers extending through said tank and below the same, and gates vertically movable against the sides of said chambers to vary the amount of water admitted thereinto, substantially as described.

654,522. SELF-CLOSING TAP. LEONARD R COWEY, London, England. Filed May 7, 1900. Serial No. 15,747. (No model.)



Claim.—1. In a self-closing non-concussive tap, the combination of a sliding valve having a cavity at each end and passages through which said cavities communicate, of a fixed plug fitting the rear cavity and acting therewith like a dash-pot, of a sliding stem whose inner end is enlarged and enters the front cavity of the valve, and of a spring for normally maintaining the said stem in a position to close the aforesaid passages and to assist in keeping the valve against its seating substantially as described.

2. In a self-closing non-concussive tap, the combination of a sliding cylindrical valve having a cavity at each end and passages through which such cavities communicate, of a fixed plug fitting the rear cavity and acting therewith like a dash-pot, of a sliding stem whose inner end is enlarged to form a piston and enters the front cavity of the valve, and is adapted to engage with a shoulder on the interior of said front cavity, and of a spiral spring for normally maintaining said stem in a position with its piston closing the aforesaid passages and pressed against the aforesaid shoulder in the front cavity substantially as described.

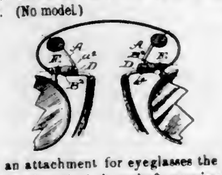
3. In a self-closing non-concussive tap, the combination of a sliding cylindrical valve having a cavity at each end and passages through which such cavities communicate, of a fixed plug formed with lateral passages for the inlet of the liquid to the body of the tap, said plug fitting the said rear cavity and acting therewith like a dash-pot, of a sliding stem having its inner end formed as a piston with a longitudinal passage leading from behind said piston to a point in front thereof for the escape of liquid from the front cavity when the piston and its stem are pushed inward, of conical packing on said piston to engage with a correspondingly-shaped shoulder at the front portion of said cavity, of a spiral spring located within a chamber at the front of the tap-casing and surrounding the portion of the stem passing through such chamber, of a head at the outer end of said stem, said head fitting said chamber and serving to compress the spiral spring when the stem is pushed inward and of means for enabling any liquid that may enter this chamber to escape substantially as described.

4. In a self-closing non-concussive tap, the combination of a sliding cylindrical valve having a cavity at each end separated by a transverse detachable partition and communicating with each other through passages formed in the wall of the valve, of the fixed plug fitting the rear cavity and acting therewith like a dash-pot, the diameter of said plug being less than the diameter of said rear cavity at the part thereof immediately behind the said partition, of the sliding stem and its piston and longitudinal passage, and of the spiral spring for acting in conjunction with said stem substantially as and for the purpose described.

5. In a self-closing non-concussive tap, the combination of a sliding cylindrical conical-headed valve of less diameter than the valve-casing and having a cavity at each end separated by a transverse detachable partition and communicating with each other through passages formed in the wall of the valve, of a fixed plug fitting the rear cavity, and acting therewith like a dash-pot the diameter of said plug being less than the diameter of said rear cavity at the part thereof immediately behind the said partition and also being less at the part immediately behind the rear end of the valve, of the sliding stem and its piston and longitudinal passage, and of the spiral spring for acting in conjunction with said stem substantially as and for the purpose specified.

6. In a self-closing non-concussive tap, the combination of a sliding cylindrical conical-headed valve, having a cavity at each end separated by a transverse detachable partition and communicating with each other through passages formed in the wall of the valve, of a surrounding casing inclosing said valve and of greater diameter so that the liquid surrounds the valve, of a fixed plug formed with lateral passages for the inlet of the liquid to the body of the tap, said plug fitting the said rear cavity and acting therewith like a dash-pot, of a sliding stem having its inner end formed as a conically-shaped piston with a longitudinal passage for the escape of liquid from the front cavity when the piston and its stem are pushed inward, of a conical packing on said piston to engage with a correspondingly-shaped shoulder at the front portion of said cavity, of a spiral spring located within a chamber at the front end of the tap-casing and surrounding the portion of the stem passing through said chamber, and of a head at the outer end of said stem, said head fitting said chamber and when pushed inward serving to compress the spiral spring, said chamber being formed with a passage for the escape of liquid therefrom, all substantially as and for the purpose specified.

654,523. EYEGLASSES. AUGUSTUS R. CRITZER, San Antonio, Tex., assignor to Critzer Brothers, same place. Filed Mar. 13, 1900. Serial No. 8,486. (No model.)



Claim.—1. In an attachment for eyeglasses the combination of the journal, the anchor-bar, the bolt or shaft securing said bar to said journal, and the spring acting upon said bar to secure the same in any desired position substantially as set forth.

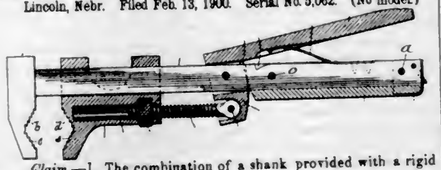
2. An attachment for eyeglasses comprising the bracket having a journal provided in its end with a notch, the anchor-bar having a spur to enter such notch, the bolt or shaft securing said bar to the journal, and the spring for actuating the anchor-bar to set its spur into engagement with the notch of the journal substantially as set forth.

3. An attachment for eyeglasses comprising the bracket having a journal, a shaft in said journal, and an anchor-bar on said shaft alongside said journal and having means by which to positively interlock with the journal substantially as set forth.

4. An attachment for eyeglasses comprising an anchor-bar arranged at one end to bear under the frontal bone above the eye and pivotally supported at its other end, a relatively-fixed portion adjacent to the anchor-bar and a spring acting upon said anchor-bar to press it against such fixed portion whereby to secure it in any desired adjustment.

5. An attachment for eyeglasses comprising the journal, the shaft in said journal, the spring on said shaft and the anchor-bar carried by the shaft substantially as set forth.

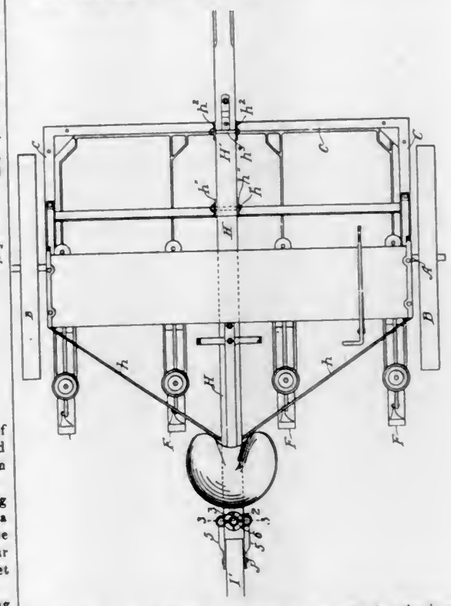
654,524. WRENCH. JOS. F. DESCHER and HENRY M. DESCHER, Lincoln, Nebr. Filed Feb. 13, 1900. Serial No. 5,062. (No model.)



Claim.—1. The combination of a shank provided with a rigid jaw, a movable jaw mounted on the shank and having a smooth central bore, a nut loosely carried by the movable jaw in the axial line of the said central bore, an operating-handle pivotally connected to the shank, and provided with an outwardly-extending arm having a recess, a screw pivotally connected to the outwardly-extending arm in the recess near the end thereof, passing through the nut and into the smooth central bore, and a ring pivoted to the shank and adapted to engage the end of the operating-handle.

2. The combination of a shank provided with a fixed jaw, a movable jaw mounted on the shank and having a smooth central bore, a nut loosely carried by the movable jaw, an operating-handle pivotally connected to the shank, and provided with an outwardly-extending arm, a screw pivotally connected to the said arm engaging the nut and extending into the smooth central bore, a spring interposed between the shank and operating-handle, the latter being channeled and the former provided with a recess, and a ring pivoted to the shank and adapted to engage the operating-handle, whereby the operating-handle and shank may be held completely closed to constitute the wrench-handle.

654,525. RIDING ATTACHMENT FOR SEED-DRILLS. THOMAS J. DORSEY and NEWELL MATHEWS, Los Angeles, Cal. Filed Apr. 10, 1899. Serial No. 712,514. (No model.)



Claim.—1. In a seed-drill, the combination with the wheel-carried seeder-supporting frame, of a rearward extension rigidly fastened to said frame; a wheel swiveled to the rear end of said extension; a vertical tongue guide and stop at the front of said frame; and a rigid tongue pivotally connected to the frame rearward of said guide and extending forward through said guide and being free to swing up and down in said frame.

2. In a seed-drill, the combination with the wheel-carried seeder-supporting frame extending in front of and to the rear of the seeder mechanism; of a centrally-arranged beam rigidly fastened to the frame and extending from the front of the frame in front of the axle of the wheels of said frame and projecting behind the frame and seeding devices; a seat being mounted on said beam; a vertical tongue guide and stop mounted on the front end of the beam; a rigid tongue pivoted to the beam rearward of said guide and extending through the guide and being free to move up and down in the guide; and a swivel-wheel at the rear of the beam to support the same, substantially as set forth.

3. A seed-drill comprising two frame-carrying wheels; the main frame mounted on said wheels and carrying the seeding mechanism; a beam fastened to said frame and arranged midway between said wheels and extending forward and rearward of the seeder mechanism; braces fastened to the rear portion of the beam and extending forward and laterally and fastened to said frame; a wheel swiveled to the rear end of said beam; an upwardly-extending bracket fastened to said beam in front of said seeder mechanism; a vertical

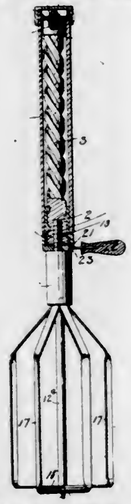
guide fastened to the beam in front of said bracket and in line therewith and provided at the top with a stop; and a rigid tongue pivoted in said bracket and extending forward through the guideway and playing freely in said guideway between the beam and said stop.

4. The combination with the wheel-carried seed-drill frame; of a beam fastened to said frame midway between the wheels and extending to the rear of the seeder mechanism and also extending forward to the front of the frame; a wheel swiveled to the rear end of the beam; braces fastened to the rear portion of the beam and extending forward and laterally and fastened to the frame; an upwardly-extending bracket embracing said beam in front of the seeder mechanism and rearward of the front end of the frame; an upwardly-extending guide embracing said beam at the front of the frame and provided at the top with a stop; and a rigid tongue lying above the beam and pivoted to the bracket and extending forward and playing freely within the guide between the beam and the stop.

5. A seed-drill provided with a centrally-arranged beam fastened to the frame of the drill and extending forward and rearward of the seeder mechanism; a swivel-wheel on the rear end of the beam; a tongue guide and stop fastened to and projecting upward from the front end of the beam; and a rigid tongue playing freely in said guide and pivotally connected with the beam rearward of the guide.

6. In a seed-drill, the combination with the rear extension, of a screw-threaded T under the rear end of said extension to support the same; a cylindrical stem screwed into the T and extending therefrom through the extension; means for securing the stem in the extension; elbows screwed into the opposite ends of the T, respectively, and projected downward; arms screwed into the elbows and perforated at their lower ends; a wheel c. braced between said arms; and an axle through the hub of the wheel and fastened in the perforations of said arms.

654,526. LIQUID-MIXER. ELMER T. DOWNING, Napa, Cal. Filed Dec. 28, 1899. Serial No. 741,359. (No model.)



Claim.—1. A liquid-mixer consisting of a spiral shaft, a sleeve fitted thereto, a cap fitting the top of the sleeve, a set-screw passing through the cap and through a slot in the sleeve, a recessed washer secured to the shaft, the recess in the washer and the slot in the sleeve arranged coincidently, and the set-screw adapted to lock the shaft and sleeve by turning the cap, substantially as described.

2. A liquid-mixer consisting of a spiral shaft, a sleeve surrounding it, a locking-cap at the top of the sleeve, a collar below the sleeve, and a detachable handle fitted to the collar, substantially as described.

654,527. ARTICULATING-PLATE. THEODORE F. DRISKILL, Corsicana, Tex. Filed Apr. 11, 1900. Serial No. 12,483. (No model.)

Claim.—1. An articulating-plate comprising upper and lower mold-cups, and means for yieldingly retaining the mold-cups in a manner to permit their approach under pressure, whereby said mold-cups are apable of limited relative movement under the clamping action of th patient's jaws.

2 An articulating-plate bent to form a pair of opposed mold-cups.

3. An articulating-plate bent back upon itself to form opposed, oppositely-disposed upper and lower mold-cups.



4. An articulating-plate bent back upon itself to form a pair of opposed mold-cups, said plate being composed of a plurality of longitudinal plate members capable of relative lateral movement.

5. An articulating-plate comprising relatively-movable members, means for yieldingly retaining said members in their adjusted positions, and yieldingly-related upper and lower mold-cups.

6. An articulating-plate comprising a pair of mold-cups composed of laterally-adjustable members, a member of each cup being integral with a member of the other cup.

7. An articulating-plate comprising an upper mold-cup and a lower mold-cup, means for connecting one end of the lower mold-cup to the contiguous end of the upper mold-cup in a manner to yieldingly retain said cups in spaced relation and to permit said mold-cups to approach each other under the pressure of the patient's jaws, and means for limiting such relative movement of the mold-cups.

8. An articulating-plate comprising longitudinal plate members, each of which is bent back upon itself to form one side of both a lower and an upper mold-cup, said members being overlapped at their opposite ends.

9. An articulating-plate comprising a pair of members detachably connected by a hinge connection and bent to form upper and lower mold-cups, means for limiting the relative lateral movement of the members, and means for opposing a frictional resistance to said relative movement.

10. An articulating-plate comprising laterally-adjustable members bent back upon themselves to form corresponding side sections of upper and lower mold-cups, said members being provided with terminal flanges in frictional contact and opposing yielding resistance to the separation of the members.

11. An articulating-plate comprising a pair of relatively, laterally-movable members pivotally connected at one end and bent to form upper and lower mold-cups, a flange at the free end of the lower mold-cup arranged to abut against the plate to limit the relative movement of the cups, and means for limiting the relative movement of the members.

12. An articulating-plate comprising a pair of members hinged at one end and bent to form upper and lower mold-cups, overlapping flanges extending from the free end of the lower mold-cup and designed to impinge against the upper member to limit the relative movement of the cups, one of said members being slotted, a compression-screw passed through said slot and screwed into the other member, and a resilient resistance interposed between the head of the screw and the contiguous face of the slotted member.

13. An articulating-plate comprising a pair of relatively-movable members, and resilient means for opposing frictional resistance to the movement of said members.

14. An articulating-plate bent back upon itself to form a plurality of mold-cups, and a flange or projection extending from one mold-cup and designed to abut against the plate.

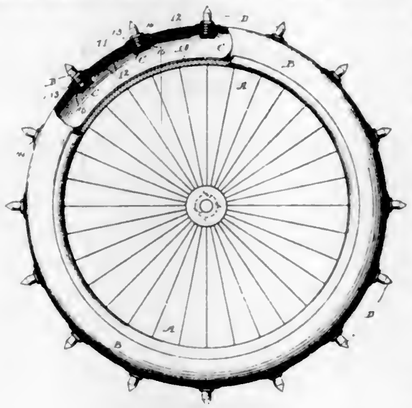
654,528. NON-SLIPPING PNEUMATIC TIRE. KANUTE A. ERLIND, Naugatuck, Conn. Filed Dec. 9, 1899. Serial No. 739,798. (No model.)

Claim.—1. The combination with the inner and outer layers of a pneumatic tire, of a threaded socket which passes through the outer layer but not through the inner layer, and inner and outer plates both of which are fixed to the socket, the outer layer of the tire being securely clamped between said plates.

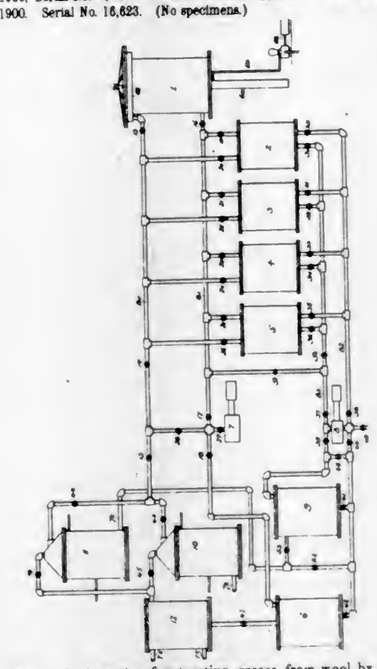
2. The combination with the inner and outer layers of a pneumatic tire, of plates 12 lying between said layers their ends being in proximity but not in contact, threaded sockets passing through the outer layer and plates 12 but not through the inner layer, and an outer plate between which and the inner plate the outer layer is securely clamped.

3. The combination with the inner and outer layers of a pneumatic tire, of plates 12 between said layers, threaded sockets which pass through the outer layer and plates 12, outer plates attached to the sockets between which and the inner plates the outer layer is clamped, and spurs having threaded shanks engaging the sockets and bases which rest against the outer plates.

4. The combination with the inner and outer layers of a pneumatic tire, of inner and outer plates, threaded sockets fixed to the outer plates and passing through the outer layer and the inner plates and interchangeable plugs and spurs threaded to engage the sockets.



654,529. PROCESS OF EXTRACTING GREASE FROM WOOL. WALTER ERBEN, Philadelphia, Pa. Original application filed Jan. 29, 1900, Serial No. 3,223. Divided and this application filed May 14, 1900. Serial No. 16,623. (No specimens.)



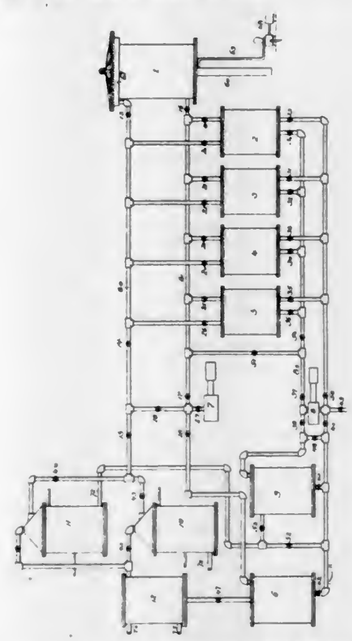
Claim.—1. A mode of extracting grease from wool by means of a solvent of the grease, said mode consisting in treating the wool in mass by first forcing or drawing the solvent through said mass of wool to extract the grease, then expressing surplus solvent from the wool by mechanical pressure, then relieving the wool from such pressure, then forcing or drawing a cleansing agent through the wool in order to remove the remaining traces of solvent therefrom, said operations being successively conducted in a single closed chamber, and then separating the solvent from the cleansing agent by distillation, substantially as specified.

2. A mode of extracting grease from wool by means of a solvent of the grease, said mode consisting in treating the wool in mass by first forcing or drawing the solvent through said mass of wool to extract the grease, then expressing surplus solvent from the wool by mechanical pressure, then relieving the wool from such pressure, then forcing or drawing a cleansing agent through the wool in order to remove the remaining traces of solvent therefrom, then expressing surplus cleansing agent from the wool by mechanical pressure, said operations being successively conducted in a single closed chamber, and then separating the solvent from the cleansing agent by distillation, substantially as specified.

3. The mode herein described of extracting grease from wool by means of liquid solvent, said mode consisting in first forcing or drawing the solvent through the mass of wool to extract the grease, then expressing surplus solvent from the wool by mechanical pressure, then relieving the wool from such pressure, then forcing or drawing water through the wool in order to remove the remaining traces of solvent therefrom, then expressing surplus water from the wool by mechanical pressure, said operations being successively conducted in the same vessel, and then separating the solvent from the wash-water by distillation, substantially as specified.

4. The mode herein described of extracting grease from wool by means of liquid solvent, said mode consisting in first forcing or drawing the solvent through the mass of wool to extract the grease, then expressing surplus solvent from the wool by mechanical pressure, then relieving the wool from such pressure, and then forcing or drawing water upwardly through the mass of wool so as to carry ahead of it, because of its lesser specific gravity, the solvent remaining in the wool, and then expressing surplus water from the wool by mechanical pressure, all of said operations being successively conducted in the same vessel, substantially as specified.

654,530. APPARATUS FOR EXTRACTING GREASE FROM WOOL. WALTER ERBEN, Philadelphia, Pa. Original application filed Apr. 26, 1898, Serial No. 678,874. Divided and this application filed May 14, 1900. Serial No. 16,624. (No model.)



Claim.—1. In apparatus for extracting grease from wool by means of liquid solvent, the combination of the extractor having fluid inlet and outlet, and a receiving-chamber at one end, a detachable cap having channels communicating with said chamber, a perforated plate covering said channels and forming a bearing for the wool, and a false bottom movable in the extractor and serving to compress the wool against said perforated plate, substantially as specified.

2. In apparatus for extracting grease from wool by means of liquid solvent, the combination of the extracting vessel with fluid inlet and outlet, a false bottom movable so as to compress the wool in the extractor, and a detachable cap having a perforated plate against which the wool is compressed, said plate being offset from the cover, substantially as specified.

3. In apparatus for extracting grease from wool by means of a liquid solvent, the combination of the extractor having an annular receiving-chamber at the top, a false bottom, a stem extending downward from the false bottom of the extractor so as to constitute a ram for the movement of the false bottom by fluid-pressure, and a cap with perforated plate and space above the same through which liquid can pass from the interior of the extractor into the annular receiving-chamber at the top of the same, substantially as specified.

4. The combination in apparatus for extracting grease from wool by means of liquid solvent, of an extractor, a solvent-tank, communication between the upper portion of said tank and the extractor, a water-reservoir, a pump, and connections so disposed that said pump can draw water from said reservoir and force it into the lower portion of the solvent-tank, substantially as specified.

5. The combination in apparatus for extracting grease from wool by means of liquid solvent, of an extractor, a solvent-tank, communication between said tank and the extractor, and provision for forcing water into the lower portion of the solvent-tank and into the extractor, substantially as specified.

6. The combination in apparatus for extracting grease from wool by means of liquid solvent, of an extractor, a solvent-tank, communication between said solvent-tank and the extractor, a false bottom in the extractor, a cylinder having a ram for operating the same, provision for forcing water into the lower portion of the solvent-tank, and means for forcing water into said ram-cylinder, substantially as specified.

7. The combination in apparatus for extracting grease from wool by means of liquid solvent, of the extractor, a solvent-tank, a communication between said solvent-tank and the extractor, a pump having an inlet communicating with a water vessel, and a discharge-pipe communicating with the lower portion of said solvent-tank, and provision whereby the water may be permitted to escape from the solvent-tank, substantially as specified.

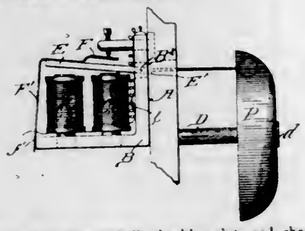
8. The combination in apparatus for extracting grease from wool by means of liquid solvent, of an extractor, a solvent-tank, communication between said solvent-tank and the extractor, a vacuum-pump communicating with the extractor, and a liquid-pump having a discharge-pipe communicating with the lower portion of said solvent-tank, substantially as specified.

9. The combination in apparatus for extracting grease from wool by means of liquid solvent, of an extractor, a solvent-distributing tank communicating with said extractor, a solvent-receiving tank communicating with the upper portion of said solvent-distributing tank, and provision for forcing water into the lower portion of said solvent-distributing tank, or withdrawing said water therefrom, substantially as specified.

10. The combination in apparatus for extracting grease from wool by means of liquid solvent, of an extractor, a solvent-distributing tank communicating with the inlet of said extractor, an outlet-pipe from the extractor communicating with a vaporizer, a condenser for receiving the vapor from said vaporizer, a solvent-receiving tank into which said condenser discharges, a connection between said solvent-receiving tank and the solvent-distributing tank, and provision for forcing water into or withdrawing it from the lower portion of said solvent-distributing tank, substantially as specified.

11. The combination in apparatus for extracting grease from wool by means of liquid solvent, of the extractor, a pump having a discharge-pipe communicating with the inlet of said extractor, a vaporizer communicating with the outlet of the extractor, a liquid-discharge pipe from said vaporizer, and connections whereby said liquid-discharge pipe may deliver either into the suction-pipe of the pump or into the reservoir from which said pump derives its supply, substantially as specified.

654,531. ELECTRIC BELL. CHARLES H. FURGASON, Binghamton, N. Y., assignor of one-half to Eric Peterson, same place. Filed Oct. 2, 1899. Serial No. 732,426. (No model.)



Claim.—1. In an electric bell, a backing-plate, an L-shaped frame having one arm secured to said plate and the other arm thereof extending at right angles to the face of said plate, magnets carried by the latter arm of said frame, an armature pivoted in an opening in the other arm under spring tension, a post extending in a plane substantially parallel with the armature and carrying a bell or gong, and a clapper carried by and forming an extension of the armature, substantially as described.

2. In an electric bell, an L-shaped frame, magnets carried by one arm thereof, an armature pivoted to the other arm, a spring carried by said armature and bearing against the end of the arm of the frame carrying the magnets, a bell or gong, and a clapper carried by said armature, substantially as described.

3. In combination, the L-shaped frame, the magnets carried by one arm thereof, the armature pivoted to the other arm, a contact-post also supported by said other arm, a spring secured to the free end of said armature having one end extended into line with said contact-post and its other end bent at right angles and bearing against the first-named arm of the frame, a bell or gong and a clapper carried by said armature and coacting therewith, substantially as described.

4. In combination, a backing-plate A, a frame secured thereto, the magnets carried by the frame, a contact-screw also carried by said frame, a clapper, an armature pivoted to the frame extending across the magnets to one side of the same, an extension of said armature to the rear of its pivot, said extension extending through said backing-plate and carrying the clapper and a gong located on the opposite side of the plate to the frame adapted to have the clapper strike the under side thereof, substantially as described.

654,532. TILE. FRANK FURNESS, Philadelphia, Pa., assignor of one-third to David H. Watts, same place. Filed Nov. 3, 1899. Serial No. 735,706. (No model.)



Claim.—1. The combination of two or more tiles, all the abutting edges of adjacent tiles overlapping each other so as to constitute a plurality of overlapping tiles and underlapping tiles held in place by said overlapping tiles, with means for rigidly fastening the overlapping tiles to the support, whereby the overlapping tiles constitute the means for holding the underlapping tiles in place, substantially as described.

2. The combination of two overlapping tiles, one tile overlapping the other, the overlapping tile having a projecting bolt extending through the support, and means for fastening the bolt to the support, substantially as described.

3. The combination of an elastic tile, a plate on the under side of said tile, and screws passing through said plate and into the body of the tile and securing said plate to said elastic tile, said plate having a securing device projecting therefrom for attaching the tile to the foundation, substantially as described.

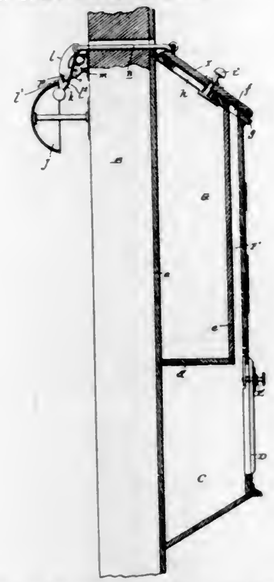
654,533. STOPPER-FASTENER. ALFRED GARNER, Mobile, Ala. Filed Dec. 11, 1899. Serial No. 739,958. (No model.)



Claim.—1. In a stopper-fastening, the combination with an enlargement around the mouth of the bottle or other vessel; of a cap having a closed end, spring-lugs formed of integral portions partially cut from the wall of said cap, converging inwardly toward the closed end of the cap, incisions leading from the open end of the cap between said spring-lugs creating a tendency to spread the open end of said cap and cause the spring-lugs to lock more securely beneath said enlargement upon forcing said cap upon the bottle-neck.

2. In a stopper-fastening, the combination with an enlargement around the mouth of the bottle or other vessel; of a cap having a closed end, spring-lugs formed of integral portions partially cut from the wall of the cap, each of said spring-lugs converging inwardly between the solid portion of the wall of the cap, incisions leading from the open end of the cap between said spring-lugs, creating a tendency to spread the open end of said cap and cause the spring-lugs to lock more securely beneath said enlargement upon forcing the cap upon the bottle-neck; and a second or protective cap having an annular flange around its open end, said second cap adapted to be forced over said main cap and the flange thereon to closely inclose the lower portion of said main cap, substantially as described.

654,534. MAIL-BOX. THOMAS GASKINS, Arcadia, Fla. Filed Dec. 1, 1899. Serial No. 738,908. (No model.)



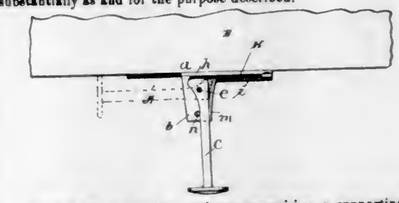
Claim.—1. The combination of a suitable support, a mail-box connected to the outer side of said support and having an opening in its top, and also having a hinged lid for closing said opening, a gong arranged at the inner side of the support, the spring-hammer *k* also connected to the inner side of the support, the trip *l* pivotally connected to a bracket on the inner side of the support and having the lateral V-shaped projection *l'* provided with the edges l^2 and *p* for engaging the spring-hammer, and a rod extending loosely through the support and connecting said trip and the hinged lid, substantially as specified.

2. The combination of a suitable support, a mail-box connected to the outer side of the said support and having at its lower end a compartment for letters provided with a door, and also having a chute arranged adjacent to its front wall and extending from its top to the letter-compartment, a compartment for packages, formed by the upper wall of the letter-compartment and the inner wall of the chute in conjunction with the back and side walls of the box, the top wall having an opening formed therein and communicating with the package-compartment, and a hinged lid for closing said opening and the upper end of the chute, a gong arranged at the inner side of the support, the spring-hammer *k* also connected to the inner side of the support, the trip *l* pivotally connected to a bracket on the inner side of the support and having the lateral V-shaped projection *l'* provided with the edges l^2 and *p* for engaging the spring-hammer, and a rod extending loosely through the support and connecting said trip and the hinged lid, all substantially as specified.

654,535. FOLDING CARRIAGE-STEP. JOHN E. GLOVER, Cloud Chief, Okla. Filed June 6, 1900. Serial No. 19,291. (No model.)

Claim.—1. A folding carriage-step comprising a horizontally-arranged supporting-plate having a depending arm, a step-arm intermediately and transversely pivotally connected to the outer side of the said depending arm, and a longitudinally-arranged spring having its inner free end adapted to rest against the upper side of the upper end of the said step-arm, to hold the same in either an upward or a downward position, substantially as described.

2. A folding carriage-step comprising an elongated horizontally-arranged supporting-plate having a longitudinally-elongated depression in its upper side and a depending arm, a step-arm intermediately pivoted to the said depending arm and having its upper end in a plane below the said longitudinal recess of the supporting-plate, and a longitudinally-arranged spring having one end attached at the outer end of the said longitudinally-arranged recess extending inward and having its free end resting upon the upper end of the said step-arm, substantially as and for the purpose described.



3. A folding step for carriages comprising a supporting-plate having downwardly-projecting jaws or arms, a step-arm having its upper end pivoted between the said arms, the inner step-arm being elongated downwardly to form a support for the step, and the said arm having its forward edge provided with a lateral flange for engaging the front edge of the said step, and a spring adapted to normally hold the step in a downward and upward position, substantially as described.

4. A folding carriage-step comprising a supporting-plate, the said plate having downwardly-extending parallel jaws, a step-arm having its upper end pivoted between the said arms, one of the said arms being widened and extending below the pivotal point and provided with an opening for the reception of a locking member, substantially as described.

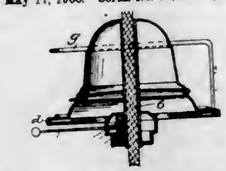
654,536. MAILING-CARD. CHARLES A. GRANT, Middleburg, Va. Filed June 4, 1900. Serial No. 18,977. (No model.)



Claim.—1. A mailing-card having a flap at one end adapted to be folded back upon the body portion of the card, and to have any suitable inscription written upon its under side, and provided with a sealing-flap adapted to be folded over upon the back of said flap and to be fastened thereto.

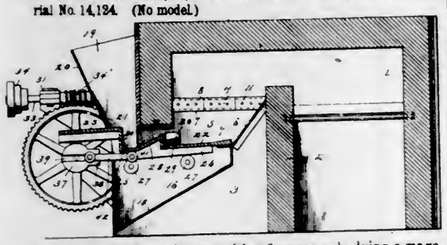
2. A mailing-card A, provided with a flap *d* at one end, adapted to be folded back upon the body portion of the card, and to have any suitable inscription written thereon, and a sealing-flap *b* projecting beyond the end of the card and adapted to be folded down upon the back of the flap *d* and secured thereto.

654,537. LAMP-BURNER. HARRY GREENWOOD, Barnesborough, Pa. Filed May 17, 1900. Serial No. 17,001. (No model.)



Claim.—The combination with a lamp-burner provided with an opening in its vertical wall and with a longitudinal slot in its wick-tube, the sides of said slot being bounded by parallel vertical projecting guide-flanges which extend from said wick-tube at angles thereto, of a claw-bar extending through said opening and provided with a shouldered head, said head being provided with teeth in position to engage the wick through the slot in the tube, and a coil-spring around the bar, one end of which engages with the wall of the burner and the other end engages with the shoulder of the head, substantially as and for the purpose set forth.

654,538. FUEL-FEEDING MECHANISM FOR FURNACES. ASA W. GRIFFITH, Wilmington, Del., assignor to the Luckett Smokeless Fuel Economizer Company, Baltimore, Md. Filed Apr. 24, 1900. Serial No. 14,124. (No model.)



Claim.—1. The combination with a furnace embodying a magazine and hopper, of a reciprocatory fuel-feeder, forming the bottom of the magazine and hopper, and automatic means for imparting motion to said feeder, substantially as described.

2. A furnace containing a magazine and hopper, in combination with a reciprocatory feeder operating within the magazine, and forming the bottom of the magazine and hopper, and power-driven mechanism for imparting reciprocatory movement to the feeder, substantially as described.

3. A furnace embodying a magazine and a fuel-hopper, in combination with a reciprocatory feeder forming the bottom of the hopper and magazine, means for driving said feeder, and means for varying the length of stroke of the feeder, substantially as described.

4. A furnace embodying a magazine and hopper, in combination with a reciprocatory feeder forming the bottom of the hopper and magazine, a ratchet tooth or rib on the fuel-receiving surface of the feeder, a stationary rib or bar above the feeder and adjacent to the entrance of the magazine, and means for imparting a reciprocatory movement to the feeder, substantially as described.

5. A furnace containing a magazine, and an exteriorly-arranged hopper, in combination with a horizontally-disposed reciprocating feeder forming the bottom of the hopper and magazine and provided with a fuel-receiving pocket on its upper side, a ratchet rib or tooth on the feeder, a stationary tooth or bar arranged above the feeder and at or near the entrance to the magazine and having an inclined upper surface, means for reciprocating said feeder, and means for adjusting the length of the stroke of the feeder, substantially as described.

6. A furnace containing a magazine, and an exteriorly-arranged hopper, in combination with a horizontally-disposed reciprocating feeder which constitutes the bottom of the hopper and magazine, antifriction-rollers on which the feeder rides, and means for imparting a reciprocatory movement to the feeder, substantially as described.

7. A furnace containing a magazine and an exteriorly-arranged hopper, in combination with a reciprocatory feeder moving in the bottom of the hopper and magazine, a rotary shaft, a disk thereon provided with a slot, an adjustable plate or bar mounted in said slot and carrying a crank-pin, and a link interposed between said crank-pin and the feeder, substantially as and for the purpose specified.

8. The combination with a furnace, of an internally-arranged magazine comprising upwardly-diverging side walls and rear wall, grates arranged at opposite sides and adjacent to the top of the magazine, a hopper arranged exteriorly of the furnace, and a reciprocatory feeder operating through the furnace-wall and forming the bottom of the hopper and magazine, substantially as specified.

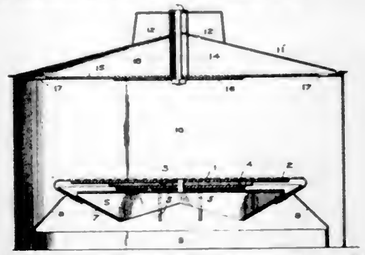
9. The combination with a furnace, of grates arranged at opposite sides of the fire-box, a magazine interposed between the grates and extending downward below the plane of the grates, a hopper, a reciprocatory feeder operating in and forming the bottom of the hopper and magazine, and a forwardly-declining chute arranged below the feeder and magazine, substantially as set forth.

10. The combination with a furnace, of side grates spaced apart and extending from the front wall to the bridge-wall, a magazine interposed between the side grates and extending downward from the plane thereof, a hopper, a feeder forming the bottom of the hopper and magazine, and tuyers interposed between the magazine and side grates, substantially as described.

11. The combination with a furnace, having side grates spaced apart therein, of a fuel-magazine interposed between the grates and extending downward therefrom and provided with bottom flanges, a forwardly-declining chute having flanges secured to the flanges of the magazine, a hopper, and a reciprocatory fuel-feeder forming the bottom of the magazine and hopper, substantially as specified.

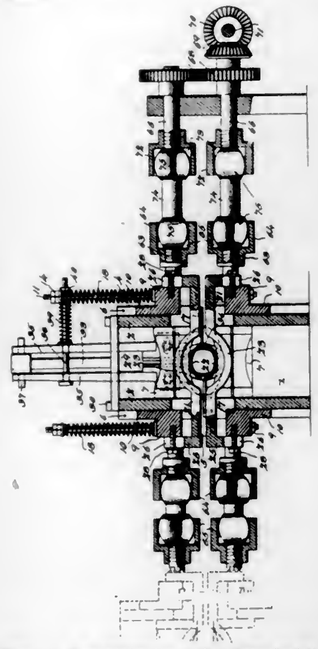
654,539. BAKE-OVEN FOR GAS OR GASOLENE STOVES. RYERSON W. HILLIKER, Kansas City, Kans. Filed Aug. 24, 1899. Serial No. 728,345. (No model.)

Claim.—1. The combination with a suitably-supported concave deflector-collar; of metal plates supported upon said collar, an asbestos sheet interposed between said metal plates, braces interposed between the lowermost metal plate and the concave collar and serving to deflect the products of combustion toward the outer edge of said collar, said metal plates, asbestos sheet and braces being riveted together, substantially as and for the purpose set forth.



2. The combination with a suitably-supported concave deflector-collar; of metal plates supported upon said collar, an asbestos sheet interposed between said metal plates, braces interposed between the lowermost metal plate and the concave collar and serving to deflect the products of combustion toward the outer edge of said collar, said metal plates, asbestos sheet and braces being riveted together, and a reticulated platform the edges of which are bent around the edges of the upper metallic plate and the concave collar, substantially as and for the purpose set forth.

654,540. MACHINE FOR CUTTING GREEN CORN FROM COBS. HENRY H. HOKE, Frederick, Md. Filed Jan. 13, 1900. Serial No. 1,361. (No model.)



Claim.—1. The combination, with a frame having the horizontal side flanges, of vertically-movable bearing-blocks above and below said flanges, feed-rollers having their journals mounted in said bearing-blocks, rods connecting said blocks in pairs and passing through openings in the said side flanges, and tension-springs on said rods, substantially as described.

2. The combination of the side plates, the vertically-movable bearing-blocks on said side plates, feed-rollers having their journals mounted in said bearing-blocks transversely-disposed yoke-bars connecting said bearing-blocks and having the outwardly-curved central portions, and the cutters secured on said yoke-bars, substantially as described.

3. The combination of the side plates, the vertically-movable bearing-blocks on said side plates, feed-rollers having their journals mounted in said bearing-blocks, transversely-disposed yoke-bars connecting said bearing-blocks and having the outwardly-curved central portions, the cutters secured on said yoke-bars, said yoke-bars having the slotted vertical arms at their ends, and adjusting-screws in said slots and engaging thread-openings in the bearing-blocks, substantially as described.

4. The combination of the side plates having the horizontal side flanges and vertical guides, vertically-movable bearing-blocks above and below said flanges and having vertical guide-flanges which operate in said vertical guides, feed-rollers having their journals mounted in said bearing-blocks, vertical rods connecting said blocks in pairs and in openings in the side flanges, and tension-springs on said rods, substantially as described.

5. In a machine for cutting green corn from the cob, the combination with vertically-movable bearing-blocks and feed-rollers mounted therein, of supporting stocks or yokes connecting said bearing-blocks and vertically adjustable thereon, said stocks or yokes being adapted for the attachment of cutting or scraping devices, for the purpose set forth, substantially as described.

654,541. ROD-PACKING. THOMAS H. HOLMES, Wilkes-Barré, Pa. Filed Feb. 14, 1898. Serial No. 670,211. (No model.)



Claim.—1. The combination in a packing-ring for piston-rods, of a series of inner sections adapted to encircle the rod, said inner sections being tapered toward the periphery of the ring, and a series of outer sections in the form of segments, each onter section adapted to rest against the faces of two of the inner sections, a lug extending from the center of each outer section toward the piston-rod, the ends of the inner sections being grooved to receive the lugs, with a spring encircling the ring and bearing upon the inner and outer sections, substantially as described.

2. The combination in a packing, of two or more rings, one ring divided into a series of sections having their joints on radial lines, the ends of each section being grooved, with a plate adapted to the grooves so as to make the joint between the sections steam-tight, each of said sections having a groove, with a spring mounted in said groove and bearing upon the plates as well as upon the sections, substantially as described.

3. The combination in a packing, of a casing of one or more sets of rings, each set consisting of two rings, one ring divided into a series of sections on radial lines, each section having grooved edges, with plates adapted to rest in the grooves the said ring having an annular groove, a spring therein tending to force the sections and the plates toward the rod, the other ring made up of three inner sections separated from each other on radial lines, and three outer sections separated from the inner sections on tangential lines, a lug on each outer section extending into grooves in the ends of the inner sections and adapted to rest against the rod, the said ring having an annular groove and a spring in said groove tending to force the sections upon the rod, substantially as described.

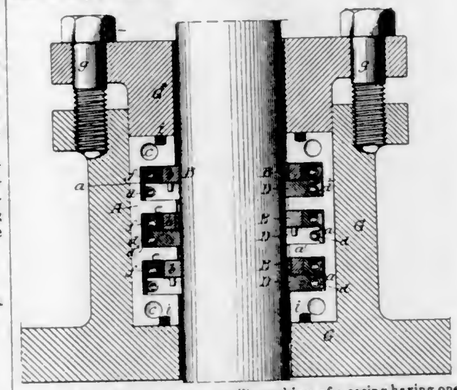
654,542. METALLIC PACKING. THOMAS H. HOLMES, Wilkes-Barré, Pa. Filed Aug. 28, 1899. Serial No. 728,747. (No model.)

Claim.—1. The combination in a metallic packing, of a casing made in two sections, means for securing the two sections together, and one or more ribbed plugs adapted to the casing and fitting partly in one section and partly in the other section, whereby the sections are held against longitudinal or lateral displacement, substantially as described.

2. The combination in a metallic packing, of a two-part casing, packing-rings adapted thereto, one or more screw-threaded plugs mounted in one section of the casing and adapted to screw-threaded cavities in the other section, substantially as described.

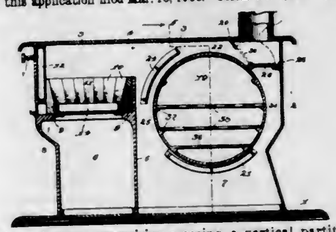
3. The combination in a metallic packing, of a casing made in two parts, having one or more cavities, packing-rings adapted to the cavities, transverse screws securing the two sections of the casing together, four screw-plugs adapted to screw-threaded holes in the ends of the casing, said holes being partially in one section and partially in the other, the center of each hole being on one side of the parting-line so that the screw-threaded plugs will be held by one section of the casing when they are parted, substantially as described.

4. The combination in a metallic packing, of a casing having one or more cavities therein, two rings in each cavity, said rings being made in three sections each, one ring being parted on radial lines and situated next to the steam-chamber, the other ring being parted on lines partly radial and partly tangential, whereby the steam from the chamber will gain access to the periphery of the second ring through the radial channels between the sections of the first ring, substantially as described.



5. The combination in a metallic packing, of a casing having one or more cavities therein, two rings in each cavity, said rings being made in three sections each, one ring being parted on radial lines and situated next to the steam-chamber, the other ring being parted on lines partly radial and partly tangential, and a soft-metal band extending around the periphery of the last-mentioned ring, whereby the steam from the chamber will gain access to the periphery of the band on the second ring through the radial channels between the sections of the first ring, substantially as described.

654,543. COOKING-STOVE. HIRAM Q. HOOD, Carthage, Mo. Original application filed Jan. 28, 1899, Serial No. 703,708. Divided and this application filed Mar. 10, 1900. Serial No. 8,197. (No model.)

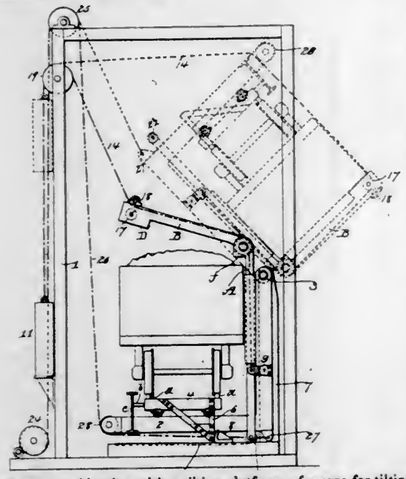


Claim.—A stove comprising a casing, a vertical partition-plate therein, extending from the bottom thereof to a point some distance below the top of the casing, said partition-plate dividing the interior of the casing into a combustion-chamber and an oven-chamber which communicate with each other above the partition-plate, an oven so disposed in the oven-chamber as to form flues over, around and under said oven and communicating directly with each other both at a point intermediate of the oven-chamber and combustion-chamber and at a point beyond the oven at the smoke-exit at the rear side of the stove, a damper located in the intersection of said flues and adapted to cut off either of them at will, whereby the draft from the combustion-chamber may be caused to pass either directly over or directly under the oven, and a shield located intermediate of the space in the oven-chamber which communicates with the combustion-chamber, said shield not obstructing or closing the said flues, substantially as described.

654,544. CAR-DUMPING MACHINE. GEORGE H. HULETT, Cleveland, Ohio, assignor of one-half to the Webster, Camp & Lane Machine Company, Akron, Ohio. Filed Apr. 19, 1898. Renewed June 4, 1900. Serial No. 20,526. (No model.)

Claim.—1. The combination with a fixed frame, a tilting platform and means for tilting the platform, of a laterally-movable car-platform having projections adapted to engage the fixed frame for holding the car-platform against movement in one direction and a spring for moving said car-platform in the one direction.

2. The combination with a fixed frame, a tilting platform, of a laterally-movable car-platform having projections adapted to engage the fixed frame for holding the platform against movement in one direction, springs for forcing said car-platform laterally in one direction and counterweighted chains for supporting the car-body against the platform when the latter is tilted.



3. The combination with a tilting platform, of means for tilting the platform, counterweighted chains constructed and adapted to embrace a car on the platform when the latter is tilted, and a rigid top clamp carried by the chains and adapted to engage the outer side edge of the top of the car.

4. The combination with a tilting platform, of means for tilting the platform, side clamps, counterweighted chains automatically operating said clamps for engaging the inner side of the car and top clamps carried by said side clamps and by the counterweighted chains.

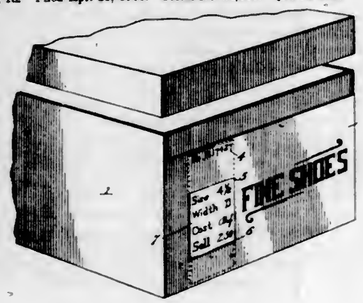
5. The combination with a tilting platform and means for tilting same, of gravity-clamps for engaging one side of the top of the car-body, top clamps carried at one end by the upper ends of the gravity-clamps, and counterweighted chains supporting the outer ends of said top clamps.

6. The combination with a tilting platform and means for tilting same, of a series of side clamps, a series of rigid top clamps pivoted to the side clamps and counterweighted chains engaging said top and side clamps for holding them against the top of the car when the latter is tilted.

7. The combination with a tilting platform and means for tilting same, of a series of jointed clamps for engaging the top edges of a car-body and counterweighted chains engaging said clamps and arranged to hold the clamps in contact with said top edges of the car-body when the latter is tilted.

8. The combination with a tilting platform and means for tilting same, of a series of vertical clamps adapted to rest normally on stationary seats, rollers on the lower ends of said clamps, top clamps pivoted to the upper ends of the vertical clamps, and counterweighted chains connected to said clamps, substantially as set forth.

654,545. **DUPLEX LABEL.** ALVA W. B. JOHNSON, Mount Vernon, Ill. Filed Apr. 23, 1900. Serial No. 14,000. (No model.)



Claim.—1. A duplex label for original packages comprising a fixed label bearing a key and characters significant to the contents of the package, and a separate stock-check having a key corresponding to the key upon the label and bearing a record likewise significant to the contents of the receptacle.

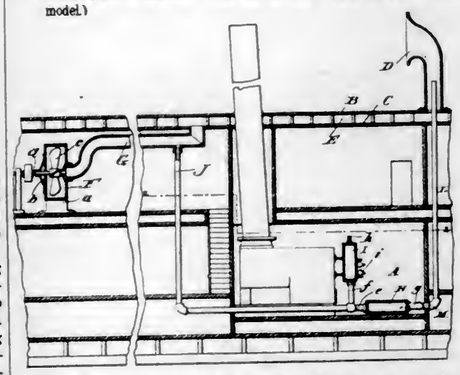
2. A duplex label comprising a main label having means for retaining a stock-check, and a separate stock check retained by said means.

3. A duplex label comprising a main label, and a separate stock-check detachably retained upon the face of said main label.

4. A duplex label comprising a main label having a pair of slits, and a separate stock-check having its opposite ends passed into said slits.

5. A duplex label for original packages comprising a fixed label bearing a key and characters significant to the contents of the package and applied to the outside of the package, and a stock-check having a key corresponding to the key upon the label and bearing a record likewise significant to the contents of the receptacle, the label and check being slidable one upon the other and interlocked, so that the characters on one are concealed by the other.

654,546. **COOLING APPARATUS FOR STEAMSHIPS.** WILLIAM N. KEEN, New Orleans, La. Filed Feb. 23, 1900. Serial No. 6,267. (No model.)



Claim.—1. An apparatus for cooling the furnace-room or stoke-hole of a steamship comprising a horizontally-disposed air tank or vessel located on the floor of the furnace-room or stoke-hole, a discharge-pipe leading from said tank to the open air, and a blower connected to said tank or vessel for forcing cool fresh air through the tank or vessel and the discharge-pipe leading therefrom, substantially as specified.

2. An apparatus for cooling the furnace-room or stoke-hole of a steamship, comprising a horizontally-disposed air tank or vessel located on the floor of the furnace-room or stoke-hole, a vertically-disposed air-tank arranged in front of the boiler in said room or stoke-hole and supported in a plane above the door of the furnace therein, a discharge-pipe leading from said tanks or vessels to the open air, and suitable means for forcing fresh cool air to and through said tanks or vessels, substantially as specified.

3. An apparatus for cooling the furnace-room or stoke-hole of a steamship, comprising a horizontally-disposed air tank or vessel located on the floor of the furnace-room or stoke-hole, a vertically-disposed air-tank arranged in front of the boiler in said room or stoke-hole and supported in a plane above the door of the furnace therein, a discharge-pipe leading from said tanks or vessels, a cowl receiving said discharge-pipe and communicating with the open air, and a blower connected with and adapted to force fresh cool air to and through the tanks or vessels, substantially as specified.

4. An apparatus for cooling the furnace-room or stoke-hole of a steamship, comprising a horizontally-disposed air tank or vessel located on the floor of the furnace-room or stoke-hole, a vertically-disposed air-tank arranged in front of the boiler in said room or stoke-hole and supported in a plane above the door of the furnace therein; said vertically-disposed tank or vessel having one or more vents and one or more discharge-cocks, a discharge-pipe leading from the tanks or vessels to the open air, and means for forcing fresh cool air to and through the tanks or vessels, substantially as specified.

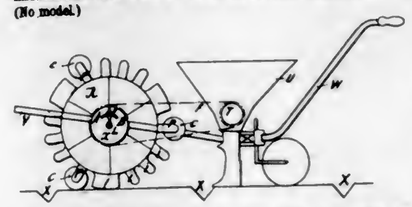
5. An apparatus for cooling the protective deck and furnace-room or stoke-hole of a war-ship, comprising a cowl communicating with the space between the protective deck and deck proper of the ship, an air vessel or tank arranged in the furnace-room or stoke-hole of the ship, a discharge-pipe leading from said air vessel or tank to the cowl, and suitable means for forcing fresh cool air to and through the space between the protective deck and deck proper of the ship and to and through the air tank or vessel, substantially as specified.

654,547. **UMBRELLA-SUPPORT.** HENRY H. KESSLER, Jr., Cleveland, Ohio. Filed Sept. 7, 1899. Serial No. 729,775. (No model.)



Claim.—The combination with a velocipede; of an umbrella-support comprising a curved tube fixedly connected to the frame of the velocipede and having exterior threads at its forward end, a similarly-curved rod slidable in the tube and adapted for the connection of an umbrella, and a clutch having an interiorly-threaded ring-section screwed on the forward end of the tube, exteriorly-threaded and tapered jaws pivotally connected to the ring-section and adapted to grip the rod, and a conical nut mounted on said jaws and engaging the threads thereof, substantially as specified.

654,548. **PLANTER-REGULATING ATTACHMENT.** ETIENNE LATHIERRE, Gayon, France. Filed May 9, 1899. Serial No. 716,129. (No model.)



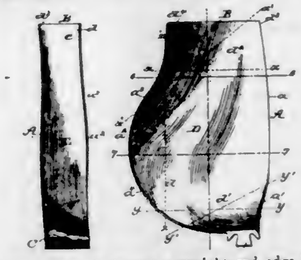
Claim.—1. The combination with the planter, of a wheel fitted in front of same, fingers arranged on the rim of said wheel, rollers fitted onto radial arms, and feet placed immediately behind the rollers, substantially as set forth.

2. In a machine of the class described, the combination, with a wheel journaled in front of a planter, of a sprocket-wheel mounted on the axle of said wheel, a circular slot provided in said sprocket-wheel, a needle keyed on the axle of the wheel, a screw-bolt connecting said sprocket-wheel with the axle of the main wheel, a transmission-chain extending around the sprocket-wheel and the wheel operating the seed-distributer of the planter, substantially as set forth.

654,549. **PROPELLER.** SYLVANUS C. LITTLEFIELD, Jr., Brunswick, Ga. Filed Dec. 12, 1899. Serial No. 740,056. (No model.)

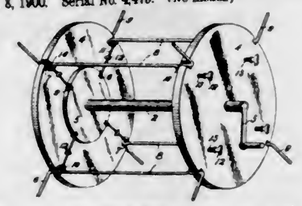
Claim.—1. A propeller-blade having a straight edge B and a face D formed with a convex, trough-like or outwardly-sweeping portion d^3 near the said end edge, the outwardly-sweeping portion being more pronounced at one side than the other, the said face D being also formed with a concave portion d merging into the portion d^3 and being deepest near the hub of the blade, as set forth.

2. A propeller-blade, provided with a straight end edge B, a slightly outwardly curved advance side edge a merging into an inwardly-curved portion a' at the hub portion of the blade, an opposite side edge a^3 curved inwardly from the end for a minor portion of its length and merging into a pronounced outward curve for the remainder of its length, and extending to the said hub portion, and a face D provided with a concave portion d merging into a backwardly-curved trough-like or sweeping portion d^3, as set forth.



3. A propeller-blade, having a straight end edge B, a slightly outwardly curved advance side edge a, an opposite side edge a^3 inwardly curved from the end for a minor portion of its length and outwardly curved for the remainder of its length to the hub portion of the blade, and a face D concave from the hub portion to a point near the end and backwardly turned from such point to the end, the concavity of such face being deepest near the hub portion, and the backwardly-turned portion of such blade being more pronounced at the side edge a^3 than at the side edge a, as set forth.

654,550. **WIRE-REEL.** JOHN H. LUDLOW, Franklin, Nebr. Filed Feb. 8, 1900. Serial No. 4,473. (No model.)

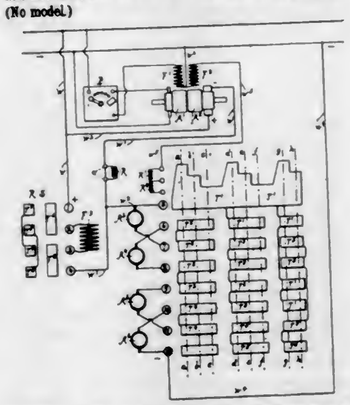


Claim.—1. A reel comprising the axle, the heads fixed to said axle, reel-bars, hooks connecting the reel-bars to the heads, and hooks for locking the first-named hooks, substantially as set forth.

2. A reel comprising the axle, the heads fixed to said axle, reel-bars, hooks connecting the reel-bars to the heads, and spring-actuated hooks for locking the first-named hooks, substantially as set forth.

3. The combination with the axle and the heads fixed thereto and provided with notches in their peripheries, of reel-bars fitted in said notches and provided with eyes, hooks carried by said heads and adapted to engage said eyes, and thumb-hooks carried by said heads and adapted to lock the first-named hooks in engagement with said eyes, substantially as set forth.

654,551. **MEANS FOR REGULATING ELECTRIC MOTORS.** ROBERT LUNDELL, New York, N. Y. Filed May 19, 1900. Serial No. 17,254. (No model.)



Claim.—1. The combination of a pair of current-mains of constant electromotive force, one or more motors having armature-cir-

cuits capable of being coupled in series parallel: a source of variable electromotive force adapted to vary the field strength and speed of said motor or motors independent of their armature-currents, with a controlling-switch having circuit connections between the current-mains, the motor or motors and the source of variable electromotive force.

2. One or more motors having armature circuits capable of being connected in series parallel; in combination with a source of variable electromotive force connected in shunt across the field-windings of said motor or motors for the purposes described.

3. One or more motors having armature-circuits capable of being connected in series parallel; in combination with a motor-generator connected to the field-windings of said motor or motors and adapted to vary the field strength thereof, independent of the armature-currents.

4. A motor-generator having its generator-armature connected in shunt with the field-windings of one or more motors; in combination with means for changing the electromotive force of the motor-generator for the purpose of varying the field strength and speed of said motor or motors.

5. The combination of one or more series-parallel motors with a motor-generator and one or more resistances for varying the current-supply from the generator side of the motor-generator to the motor or motors.

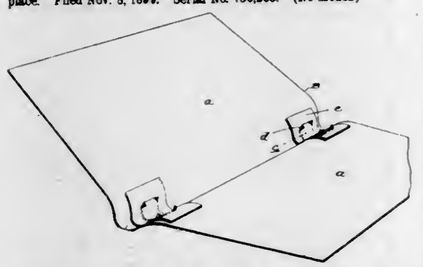
654,552. INFLATION-VALVE. MARION A. MORRIS, Waterbury, Conn., assignor to The Scovill Manufacturing Company, same place. Filed Apr. 2, 1900. Serial No. 11,147. (No model.)



Claim.—1. An inflation-valve, having a plunger provided with laterally-projecting wings whose perimeters are concentric throughout with the valve-chamber, and adapted to cooperate with the inner wall of the valve-casing to guide the plunger in its movements, substantially as described.

2. In an inflation-valve, a substantially frusto-conical plunger, having a metal cap constructed with laterally-projecting wings, the perimeters of which wings lie within circles of equal diameter, substantially as described.

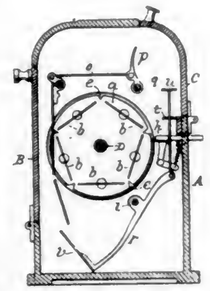
654,553. COVER AND BINDER. WILLIAM J. NICKERSON, New Orleans, La., assignor of one-half to Albert Sydney Henthorn, same place. Filed Nov. 8, 1899. Serial No. 736,265. (No model.)



Claim.—The herein-described cover and binder for pieces of music, magazines and the like, comprising the cover proper formed in one piece of flexible material, strips of muslin or other suitable flexible material connected to the inner side of the cover proper at the back and adjacent to the ends thereof, clips, formed of strips of pliable sheet metal, interposed between the flexible strips and the cover proper and secured in position by the former; said clips having angular barbs at their corners extending inwardly through the flexible strips, whereby they are held against displacement and are adapted to penetrate the leaves of the article to be bound and covered, substantially as specified.

654,554. CALCULATOR FOR EDUCATIONAL PURPOSES. WILLIAM SCHMIDT, Lowden, Iowa, assignor of one-half to August Nieting, same place. Filed Nov. 6, 1899. Serial No. 736,026. (No model.)

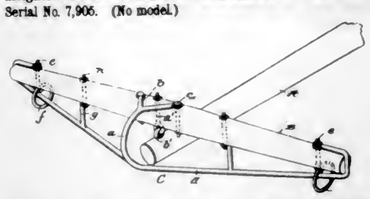
Claim.—1. The combination with a rotative shaft and a series of wings carried by said shaft and having indicating-marks thereon, of a series of leaves or covers hung in front of said wings, finger-pieces and rods forming bell-crank connections with said leaves whereby the latter may be raised and secured in an elevated position substantially as set forth and described.



2. The combination with a rotative shaft and a series of reversible wings carried by said shaft, of a recessed hand-wheel, fast on said shaft, another hand-wheel which is loose on said shaft and is provided with a stop *z* which extends into a recess in the first-mentioned hand-wheel, an indexed disk and a master-wheel, both of which are rigidly connected with the last-mentioned hand-wheel and have a limited rotatory movement therewith on said shaft, and gearing connecting said master-wheel with said wings whereby the said wings may be reversed by the rotative movement of said master-wheel.

3. The combination with a rotative shaft and a series of wings carried by said shaft, of a series of movable leaves each of which is adapted to cover certain indicating-marks on said wings, a series of levers which are pivotally mounted and have plates bearing indicating-marks secured to their forward ends, each of said levers being directly in rear of one of said leaves, so that by pressing a key connected with one of said levers, the latter may be raised to expose to view certain marks on the plate carried by said lever, in connection with certain marks on one of said wings, the leaf covering said marks on the wing being raised.

654,555. NECK-YOKE. CARL STERRETT, Manhattan, Kans., assignor of one-half to Andrew J. Dains, same place. Filed Mar. 8, 1900. Serial No. 7,906. (No model.)



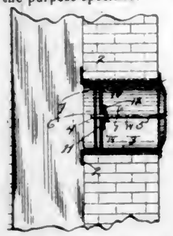
Claim.—1. A neck-yoke provided with a rein-guard comprising a bow connected to the neck-yoke adjacent to the middle thereof and extending forwardly and downwardly therefrom, and a longitudinal truss-bar extending upwardly from the lower end of the bow to the ends of the neck-yoke and connected to said neck-yoke, substantially as specified.

2. A neck-yoke provided with a rein-guard comprising a bow connected to the neck-yoke adjacent to the middle thereof and extending forwardly and downwardly therefrom, and a longitudinal truss-bar extending upwardly from the lower end of the bow up to and over the ends of the neck-yoke; said truss-bar being connected at its ends and at intermediate points of its length to the neck-yoke, substantially as specified.

3. The combination of a pole or tongue, a neck-yoke arranged above and loosely connected to the pole or tongue in rear of the forward end thereof, and a rein-guard formed in one piece and comprising a bow connected to the upper side of the neck-yoke and curved forwardly, downwardly and rearwardly to a point below the forward end of the pole or tongue, and the longitudinal truss-bar extending from the lower end of the bow up to and over the ends of the neck-yoke and having arms *g* at intermediate points of its length; the arms *g* and the ends of the said truss-bar being connected to the neck-yoke, substantially as specified.

654,556. FLUE-STOPPER. WILLIAM E. SYKES, Canal Dover, Ohio. Filed Apr. 13, 1900. Serial No. 12,713. (No model.)

Claim.—The combination of a holding-bar provided with inbent ends and a bayonet-slot located between the inbent ends, a connecting-bar detachably connected to the holding-bar and provided with webs and annular grooves, an asbestos disk provided with metal plates, a pivoted catch connected to one of the plates and adapted to engage one of the annular grooves in the connecting-bar, and the cap 9 located upon the connecting-bar and means for holding the cap, substantially as and for the purpose specified.



654,557. SECONDARY BATTERY. DONATO TOMMASI, Paris, France. Filed July 8, 1899. Serial No. 723,157. (No model.)

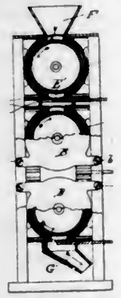


Claim.—1. An electrode for electric accumulators comprising a spirally-wound resilient metallic strip or support for the active material having the active material supported by and retained between the convolutions thereof, one end of said strip being freely movable, whereby the strip may accommodate itself to the expansions or contractions of the active material in charging and discharging, and means for supporting the coiled strip in a vessel in such a way as to permit it to expand and contract.

2. An electrode for electric accumulators comprising a spirally-wound elastic lead-containing strip covered with an electrical conducting material which is free from attack by the electrolyte and having the active material supported by and retained between the convolutions thereof, one end of said strip being freely movable, whereby the strip may accommodate itself to the expansions or contractions of the active material in charging and discharging.

3. An electrode for electric accumulators comprising a spirally-wound elastic metallic strip covered with a composition of collodion and platinum-black and having the active material supported by and retained between the convolutions thereof, one end of said strip being freely movable, whereby the strip may accommodate itself to the expansions or contractions of the active material in charging and discharging.

654,558. RICE-DECORTICATING MACHINE. ROSIA W. WELCH, Baltimore, Md., assignor of one-half to Edward A. Daugherty, same place. Filed Apr. 24, 1900. Serial No. 14,090. (No model.)



Claim.—In a machine for the purpose described, a framework, a series of decorticating-cylinders arranged one above the other in said framework, concaves partially surrounding and spaced from each cylinder and providing a passage from the top to the bottom of the machine, two horizontal partitions one above the other between each concave and the one next below and registering with the said passage, slides arranged to be moved across said passage between the partitions, and transverse strips extending between each set of spaced-apart partitions out of alinement with the passage whereby to form a chamber adapted to be filled with the grain.

654,559. GAS-COCK. ANDREW J. WIEGAND, Baltimore, Md., assignor to The Matchless Gas Igniting Company. Filed Oct. 16, 1899. Serial No. 733,804. (No model.)



Claim.—1. A gas-cock having a seat for the valve and provided with a slot elongated in the direction of length of the cock, and the valve fitted to said seat and provided with a handle projected through and movable in said elongated slot in the casing.

2. A gas-cock composed of the burner-section, the base-section, the valve fitted between said sections, and a connecting-sleeve inclosing such valve by which the sections may be adjusted toward each other, whereby to effect a clamping fit upon the valve.

3. A gas-cock composed of the burner-section, the base-section, the valve fitted between said sections and the casing-sleeve inclosing the valve, said sleeve being engaged with one of the sections and threaded into connection with the other section substantially as set forth.

4. A gas-cock composed of the burner-section having a main port and igniting-port, the base-section, the spherical valve fitted between the burner and base sections, and the casing-sleeve connecting the burner and base sections.

5. A gas-cock comprising the burner-section having a main port and an igniting-port, the base-section, the sleeve connecting the base and burner sections, and the valve having a port movable into register with one or the other of the ports in the burner-section whereby the valve may be adjusted to feed gas through either of such ports and at the same time shut off the other port.

6. A gas-cock comprising the burner-section having a tip, the base-section, the valve clamped between said sections and having a projecting handle, the casing-sleeve connecting the burner and base sections and having an opening through which the valve-handle projects, said valve being provided with a port and movable whereby said port may be registered with the main or igniting ports of the burner-section, and an igniting substance supported on the burner-section adjacent to the tip of the burner-section and in position to be impinged upon by the gas discharged from the igniting-port.

7. The gas-burner herein described composed of the burner-section having main and igniting ports and provided at its lower end with a lateral flange, the holder for the igniting substance by which the latter may be held above the discharge of the igniting-port, the base-section having external threads at its upper end, the valve fitted between the burner and base sections and having a projecting handle, the casing-sleeve having, at its upper end an inwardly-projecting flange resting upon the flange at the lower end of the burner-section and having its lower end threaded upon the base-section, said sleeve being provided with an opening for the passage of the handle of the valve, and a centering-screw projecting through the casing and into the valve substantially as set forth.

8. The combination in a gas-cock of the spherical valve having a handle, the seats for said valve, the casing having an opening through which the valve-handle projects and whose walls limit the movement of the valve and the spring-plate secured at one end to the valve-handle and bearing at its other end against the gas-cock substantially as set forth.

9. In a self-lighting gas-cock, the holder provided with a portion fitted on the support and with a tubular guard portion and having a partition between said portions perforated forming an opening fitted to receive the igniting substance, and the igniting substance fitted and held in said opening.

10. A self-lighting gas-cock having burner and base sections provided in their opposing faces with seats for a spherical valve, the spherical valve fitted to said seats and a sleeve connecting the base and burner sections.

11. In a self-lighting gas-burner, a holder for the igniting substance provided with a portion adapted to fit on the support and with a guard portion by which to protect the igniting substance and having the partition between said portions provided with an opening, and the igniting substance fitting and held in said opening.

12. In a self-lighting gas-burner, a holder for the igniting substance comprising a tubular portion adapted to fit on the support, and a tubular foraminous portion joined side by side to the first tube, the partition between said portions being provided with an opening, and the igniting substance fitting and held in said opening.

13. The combination of the cock, having main and igniting ports and provided with a valve-seat and with an opening elongated in the direction of length of the cock, the valve fitted to the valve-seat and having its port movable into register with either of the ports of the cock and provided with a handle projected through the said elongated slot, the igniting substance and a holder therefor by which it is secured in position to be attacked by the gas escaping from the igniting-port.

14. In a self-lighting gas-burner, the combination of the casing, the valve having a handle, the igniting substance and its support, and a spring-plate secured at one end to the valve-handle and bearing at its other end slidably against the casing whereby to automatically readjust the valve, substantially as set forth.

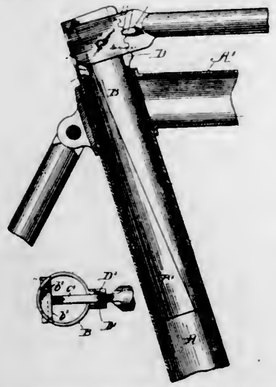
654,560. BICYCLE-CRANK. ANTONI ANDSIEWICZ, Chicago, Ill. Filed Feb. 24, 1899. Serial No. 706,706. (No model.)



Claim.—1. An improved longitudinally-adjustable pedal-crank consisting of two separate parts, the adjacent ends of each part provided with screw-threads, an internally-screw-threaded sleeve adapted to receive the screw-threaded ends of said separate parts, and independent locking members between said sleeve and said parts, whereby the two parts may be longitudinally adjusted and independently locked in respect to said sleeve, substantially as described.

2. An improved longitudinally-adjustable pedal-crank consisting of two separate and independent parts each having their adjacent ends screw-threaded, a screw-threaded sleeve adapted to receive the screw-threaded ends of said separate parts, and means for locking said separate parts against relative rotary movement in respect to said sleeve at any point throughout their range of travel in said sleeve, substantially as described.

654,561. SEAT-POST FOR BICYCLES. OSCAR W. BOND, Chicago Ill., assignor, by mesne assignments, to Thomas A. Banning, same place. Filed Oct. 16, 1899. Serial No. 733,766. (No model.)

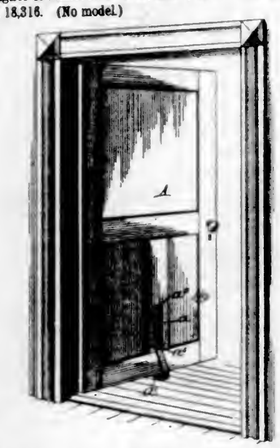


Claim.—1. In a seat-post for bicycles, the combination of an upwardly-tapering member, a downwardly-tapering member, a seat-supporting lever pivoted to the upwardly-tapering member and adjustably engaging directly with the downwardly-tapering member, substantially as described.

2. In a seat-post for bicycles, the combination of an upwardly-tapering member, a downwardly-tapering member, a seat-supporting lever pivotally secured to the upwardly-tapering member and having an engaging tooth or lug arranged thereon, and a toothed rack on the downwardly-tapering member arranged to be engaged by the tooth or lug of the seat-supporting lever, substantially as described.

3. In a seat-post for bicycles, the combination of an upwardly-tapering member, a downwardly-tapering member provided with an external rack having forwardly-projecting teeth, and a seat-supporting lever pivoted to the upwardly-tapering member and provided with a rearwardly-projecting tooth or lug arranged to engage the external forwardly-projecting teeth of the rack of the downwardly-tapering member, substantially as described.

654,562. DOOR-STOP. JOHN R. BOWLER, Sr., Santa Ana, Cal., assignor to Daniel H. Thomas, same place. Filed May 28, 1900. Serial No. 18,316. (No model.)

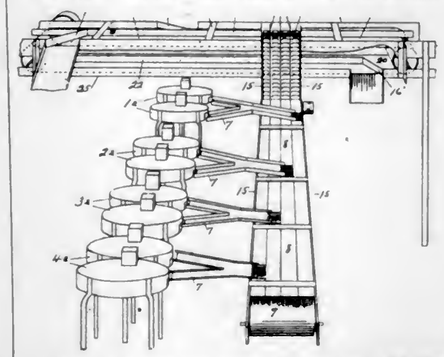


Claim.—1. A door-stop comprising a wedge and an elastic connection secured to the base thereof whereby it is adapted to be secured to the side of a door.

2. A door-stop comprising a wedge having its base portion beveled and an elastic connection secured to said beveled portion of the base and adapted to have its other end secured to the door.

3. A door having a stop secured thereto, said stop comprising a wedge, an elastic connection between the base of the wedge and the door, and a staple beneath which said elastic connection is passed.

654,563. PROCESS OF PRESERVING MEATS. FREDERICK W. BRIGHT, Kansas City, Kans., assignor to the Armour Packing Company, same place. Filed Apr. 14, 1900. Serial No. 12,788. (No specimens.)



Claim.—1. A continuous process for preserving and handling meats in metal packages, which consists in first hermetically sealing said packages in a vacuum, then processing said meats in a liquid which does not vaporize appreciably at a temperature of 240°, Fahrenheit, said liquid being maintained at approximately said temperature; then automatically washing said packages in a solution of sodium carbonate and hot water, then passing them through a body of hot water, then cooling them in cold water, and further cooling them in a stream or spray of cold water, substantially as set forth.

2. A process for preserving and handling meats in tin cans or cases, which consists in first hermetically sealing said cans in a vacuum, then processing said meats by passing them through a bath of No. 1 tallow having a temperature of 240°, more or less, Fahrenheit, said temperature being maintained by a volume of steam confined in pipes in said bath of tallow; next, in automatically removing the grease from said cans by passing them through three cleaning-baths in succession: the first being a strong solution of sodium carbonate in hot water, the next being a weaker solution of the same, and the last consisting of hot water only; finally, in automatically passing the cans so cleaned, through a body of cold water and then through a stream or spray of cold water, substantially as set forth.

654,564. SURGICAL-DRESSING PACKER. GUSTAV E. DARGATZ, Kansas City, Mo., assignor of one-half to A. S. McCleary, same place. Filed May 24, 1898. Renewed May 5, 1900. Serial No. 15,644. (No model.)



Claim.—1. A surgical-dressing packer, comprising a tube provided with an entrance hole or opening for the cord-dressing, and an opening a suitable distance from its front end, a curved spring fitted through the last-named opening into the front or curved end of the tube, a sliding sleeve upon the tube to cover said opening and said spring, and a reciprocatory plunger fitting in said tube and adapted to feed the cord-dressing through and discharge it from the front end of the tube, substantially as described.

2. A surgical-dressing packer, comprising a tube provided with an entrance hole or opening to receive a cord-dressing, and an opening a suitable distance from its front end, a spring fitting through the last-named opening into the tube, a sliding sleeve upon the tube to cover said opening and said spring, a thumb-guard at the rear end of the tube, and a reciprocatory plunger fitting in and adapted to feed the cord-dressing forwardly through and discharge it from the front end of the tube, substantially as described.

654,565. INFLATION-VALVE. JOHN H. GOSS, Waterbury, Conn., assignor to The Scovill Manufacturing Company, same place. Filed Apr. 18, 1900. Serial No. 13,362. (No model.)

Claim.—1. The combination with an inflation-valve and its casing, of a tube having its inner end drawn in and closed save for an air-passage, said tube adapted to receive the valve-casing and permit the ready removal thereof, substantially as described.

2. The combination with an inflation-valve and its casing, of a tube having an integral flanged inner end, provided with an air-passage, and screw-threaded internally to engage detachably the valve-casing, substantially as described.

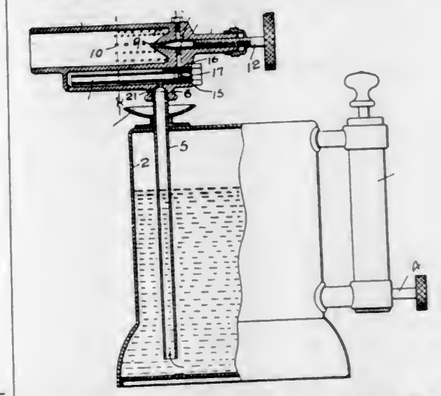
3. A tubular support or fastening for inflation-valves, provided with a pair of circumferential beads having opposite flat or shouldered surfaces, substantially as described.



4. A tubular support or fastening for inflation-valves, having external longitudinal ridges, substantially as described.

5. A support or fastening for inflation-valves, comprising a tube, its inner end closed integrally saving for an air-passage, its outer end socketed and internally screw-threaded, external circumferential beads, and external longitudinal ridges, substantially as described.

654,566. BLOWPIPE. EMIL GUSTAFSON, Chicago, Ill. Filed July 3, 1899. Serial No. 722,643. (No model.)



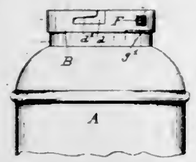
Claim.—1. In a burner for blowpipes, a retort-chamber formed integrally therewith and provided with an oil-inlet port, a plug having a hollow shank fitting within said chamber and provided with an annular groove in its exterior surface, a tube arranged within said chamber and having one end fitting within said hollow shank, a port provided in said shank and communicating with said groove and the interior of said chamber through said tube, and a duct communicating with said groove and the burner-tip, substantially as described.

2. The combination, with a burner, of an integral retort thereon, said retort having an oil-inlet port and an open end, a plug fitting said open end, said plug having a hollow shank provided with a port in its walls communicating with its interior, a duct communicating with said port and with the burner-tip, and a tube provided within said retort having one end fitting within said shank and its opposite inlet end being remote from said oil-inlet whereby the oil and vapor are forced to travel a considerable distance before entering the duct leading to said burner, substantially as described.

654,567. MILK-CAN LOCK. ROBERT J. W. HAMILL, Baltimore, Md., assignor of one-half to George W. Evans, same place. Filed Mar. 28, 1900. Serial No. 10,427. (No model.)

Claim.—1. The combination of a milk-can collar having circumferentially-extending grooves: a tube secured crosswise of the collar and having both ends open through to the outer sides of the collar; a locking-bolt movable endwise in said tube and one end normally projecting; and a cover which takes over the milk-can collar and having lugs to engage the said circumferentially-extending grooves

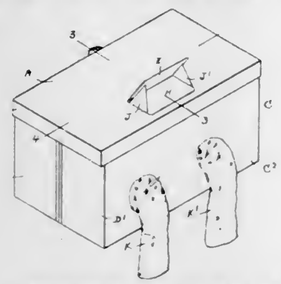
and provided with teeth or notches with which the said projecting bolt end engages.



2. The combination of a milk-can collar having circumferentially-extending grooves; a tube secured crosswise of the collar and having both ends open through to the outer sides of the collar; a locking-bolt movable endwise in said tube and having its front end beveled and its back end provided with means for retraction; a spring in the said tube to project the beveled end of the bolt at one end of the tube; and a cover which takes over the milk-can collar and having lugs to engage the said circumferentially-extending grooves and provided with teeth or notches with which the said beveled end of the bolt engages, and also provided with a slot to afford access of a suitable instrument to the back end of the bolt to effect its retraction.

3. The combination of a milk-can collar having circumferentially-extending grooves; a tube secured crosswise of the collar and having both ends open through to the outer sides of the collar; a sleeve in said tube made in two sections separate at the middle, the separation forming a space in the tube; a locking-bolt having two lugs, *k*, which are at said space—the bolt being movable in said sleeve and one end projecting; a spiral spring surrounding the bolt at the middle space and bearing against the lugs on the bolt and against the end of one sleeve-section; and a cover which takes over the milk-can collar and having lugs to engage the said circumferentially-extending grooves and provided with teeth or notches with which the said projecting bolt end engages.

654,568. PHOTOGRAPHIC DARK ROOM. WILLIAM H. HAYDEN, Worcester, Mass. Filed Dec. 3, 1899. Serial No. 739,589. (No model.)



Claim.—1. A portable dark room consisting of a collapsible body portion, a removable cover and a removable bottom provided with a flange adapted to enter said body portion and hold it extended, substantially as described.

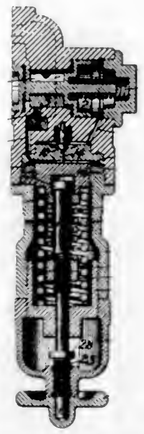
2. A portable dark room coosisting of a collapsible body, a removable bottom having a flange adapted to enter said body portion and hold it extended, angle-irons attached to said body portion and arranged to overlap the flange on the bottom, substantially as described.

3. A portable dark room consisting of a bottom portion provided with a flange adapted to enter the body portion, a collapsible body portion slightly longer when folded than the flanged bottom and adapted to rest thereon, with a storage-space in the bottom portion, and a cover having a flange adapted to inclose the folded body portion and the flange of the bottom portion, substantially as described.

4. A portable dark room consisting of a collapsible body portion, a bottom having a flange adapted to enter the body portion and hold it extended, a cover having a flange adapted to inclose the end of the body portion and a rib parallel with said flange adapted to bear against the inside of the body portion, substantially as described.

5. A portable dark room consisting of a body portion, comprising the sides and ends formed of leaves hinged together and to the ends of said sides, a bottom portion provided with a flange adapted to enter the body portion and hold it extended, a flanged cover adapted to inclose the end of the body portion, means for holding the body portion in contact with the flange of the bottom, said body portion and top having openings for the admission of non-actinic light, substantially as described.

654,569. FLUID-PRESSURE-REGULATING DEVICE. THOMAS J. HOGAN, Pittsburg, Pa., assignor to the Westinghouse Air Brake Company, same place. Filed May 8, 1900. Serial No. 15,975. (No model.)



Claim.—1. The combination, in a fluid-pressure-regulating device, of a movable abutment adapted to be operated by fluid under pressure, a spring opposing the action of the fluid under pressure on the abutment, and a supplemental spring adapted to be applied to increase the resistance to the action of the fluid under pressure, at any position of the movable abutment.

2. The combination, in a fluid-pressure-regulating device, of a movable abutment adapted to be operated by fluid under pressure, a spring opposing the action of the fluid under pressure on the abutment, and a supplemental spring adapted to be operatively engaged to resist the action of the fluid under pressure or to be quickly disengaged so as to offer no resistance to the action of the fluid under pressure.

3. The combination, in a fluid-pressure-regulating device, of a movable abutment adapted to be operated by fluid under pressure, a spring for opposing the action of the fluid under pressure on the abutment, a supplemental spring, and a lever or handle for putting the supplemental spring into or out of operative engagement with the abutment, whereby the resistance of one or both springs may be employed.

4. In a fluid-pressure-regulating device, a movable abutment adapted to be actuated by fluid under pressure, a spring permanently adjusted to resist the action of the fluid under pressure, and a supplemental spring adapted to be put into or out of operative engagement at any position of the abutment so as to vary the spring-pressure acting on the movable abutment.

5. The combination, in a fluid-pressure-regulating device, of a movable abutment adapted to be operated by fluid under pressure, a spring for opposing the action of fluid under pressure on the abutment, a supplemental spring, means for separately adjusting the springs, and a handle or lever for applying the supplemental spring so as to increase the resistance to movement of the abutment by the fluid under pressure.

6. The combination, in a fluid-pressure-regulating device, of a movable abutment exposed on one side to the action of fluid under pressure, a spring for overcoming a certain predetermined fluid-pressure on the abutment, a supplemental spring, means for separately adjusting the springs, and means for increasing the spring-pressure at any position of the abutment by the action of the supplemental spring, whereby the spring-pressure may be effective to overcome a greater fluid-pressure on the abutment.

7. In a fluid-pressure-regulating device, the combination, of a movable abutment adapted to be operated by fluid under pressure, a spring opposing the action of the fluid under pressure on the abutment, and a supplemental spring adapted to be operatively engaged at any position of the abutment to resist the action of the fluid under pressure.

8. In a fluid-pressure-regulating device, the combination, of a movable abutment adapted to be operated by fluid-pressure, a spring for opposing the action of the fluid under pressure, a supplemental spring for increasing the resistance to the fluid-pressure, a cam for throwing the supplemental spring into or out of action, and a handle or lever for operating the cam.

654,570. BAKING PREPARATION. PHILIP B. HUNT, Minneapolis, Minn. Filed June 11, 1900. Serial No. 19,848. (No specimens.)

Claim.—1. A baking powder or preparation containing an alkaline carbonate or bicarbonate in a coarse or granular condition, substantially as described.

2. A baking powder or preparation containing an alkaline carbonate or bicarbonate in coarse crystalline granules, admixed with an acidifying agent and a filler, substantially as described.

3. A baking powder or preparation composed of alkaline carbonate or bicarbonate, in a coarse crystalline condition, a phosphatic material and a diluent or filler, substantially as described.

4. A baking powder or preparation containing an alkaline carbonate or bicarbonate in coarse crystalline granules admixed with granular phosphatic material, substantially as described.

654,571. PHOSPHATE BAKING-POWDER. PHILIP B. HUNT, Minneapolis, Minn. Filed June 21, 1900. Serial No. 21,122. (No specimens.)

Claim.—1. A baking preparation containing phosphoric-acid material in the condition of its reduction to granular form from the form of commercial phosphate, and containing the fine phosphatic material produced in the process of reduction, substantially as described.

2. A baking preparation composed of phosphoric-acid material in coarse or granular condition containing the fine phosphoric material of original reduction in admixture with a carbonate or bicarbonate, substantially as described.

3. A baking preparation containing phosphoric-acid material, of three or more grades of pulverization in substantially the proportions described, substantially as described.

4. A baking preparation containing phosphoric-acid material, a suitable proportion thereof being finely pulverulent and a larger proportion thereof being in the condition of coarse particles or granules, substantially as described.

654,572. PHOSPHORIC-ACID BAKING-POWDER. PHILIP B. HUNT, Minneapolis, Minn. Filed June 21, 1900. Serial No. 21,123. (No specimens.)

Claim.—1. A phosphoric-acid baking powder or preparation containing an alkaline carbonate or bicarbonate in granular condition admixed with phosphatic material, also in granular condition, and essentially free from pulverulent phosphatic material.

2. A baking powder or preparation containing sodium carbonate or bicarbonate in coarse grains or granules, admixed with special or granular acid phosphate in a like condition and essentially free from purverulent phosphatic material.

3. A baking-powder comprising acid and alkaline materials in a condition of coarse grains or granules essentially free from pulverulent alkaline or acid materials, and a suitable pulverulent diluent or diluents.

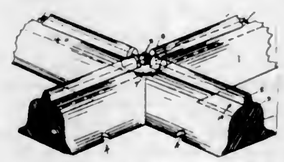
654,573. BAKING-POWDER. PHILIP B. HUNT, Minneapolis, Minn. Filed June 21, 1900. Serial No. 21,124. (No specimens.)

Claim.—1. The baking-powder comprising pulverulent phosphatic material admixed with granular alkaline material, and a suitable diluent.

2. The baking-powder comprising pulverulent phosphatic material admixed with sodium carbonate or bicarbonate in the condition of coarse grains or crystals, and a suitable diluent.

3. The baking powder comprising the pulverulent phosphatic and diluent materials admixed with sodium carbonate or bicarbonate in granular form, essentially free from pulverulent sodium carbonate or bicarbonate.

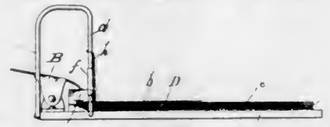
654,574. TROLLEY-TRACK FOR ELECTRIC RAILWAYS. VICTOR KOCH, Scranton, Pa. Filed Feb. 24, 1900. Serial No. 6,431. (No model.)



Claim.—1. In a trolley-track of the kind described a crossing constructed from a circular plate integrally made with projections thereon corresponding to the ends of the rails of the trolley-track, and adapted to be joined therewith for the purpose of completing the electrical circuit through the said track, substantially as specified.

2. In a crossing for a trolley-track a circular plate of conducting metal corresponding to the metal used in the track, the said plate containing in the center thereof a pyramidal projection 8 in line with both the crossing-tracks and opposite each of the sides of said pyramidal projection, projections 9, 9, &c., corresponding exactly to the ends of the rails of the trolley-track and adapted to be joined thereby to the ends of said rails and having spaces 13 between the said pyramidal projection, and the said projections 9, 9, for the purpose of accommodating the flanges of a trolley-wheel, substantially as specified.

654,575. CARBON-PAPER HOLDER. LEOPOLD RAUH, Dayton, Ohio. Filed Apr. 18, 1900. Serial No. 12,686. (No model.)



Claim.—1. The combination of a tablet-board and clip for holding packages of paper slips, a clamping device for the carbon material secured to said board, and means for sliding said device toward and away from the tablet, substantially as shown and described.

2. The combination of a tablet-board and clip for holding packages of paper slips, uprights secured to the tablet-board, and a clamping device for the carbon material mounted to slide vertically on said uprights, substantially as shown and described.

3. The combination of a tablet-board and clip for holding packages of paper slips, uprights secured to the tablet-board, a vertically-recessed plate with sleeves mounted to slide on said uprights, and means for securing the carbon material to said plate.

4. The combination of a tablet-board and clip for holding packages of paper slips, uprights secured to the tablet-board, a vertically recessed plate with sleeves mounted to slide on said uprights, and a slotted plate for the insertion of the carbon material, sliding in said recessed plate and frictionally secured to same, substantially as shown and described.

5. In a carbon-paper holder for tablet-boards, a frame hinged to the tablet-board along one end thereof, and carrying uprights at the ends of said frame and a clamping device for the carbon material, mounted to slide vertically on said uprights, substantially as shown and described.

654,576. ICE-MAKING APPARATUS. GEORGE H. ABRAMS, New York, N. Y. Filed Apr. 14, 1896. Serial No. 587,514. (No model.)

Claim.—1. In an ice-making apparatus, the combination with a closed refrigerating-chamber A', of a car G movable therein, and carrying a vertical series of jacketed pans, antifreezing means for simultaneously and slowly supplying water to the several pans to permit it to be frozen in layers, and a source of refrigerant-supply with detachable connections with the spaces of the pans said source of refrigerant-supply having an independent communication discharging broadcast into the chamber, substantially as herein specified.

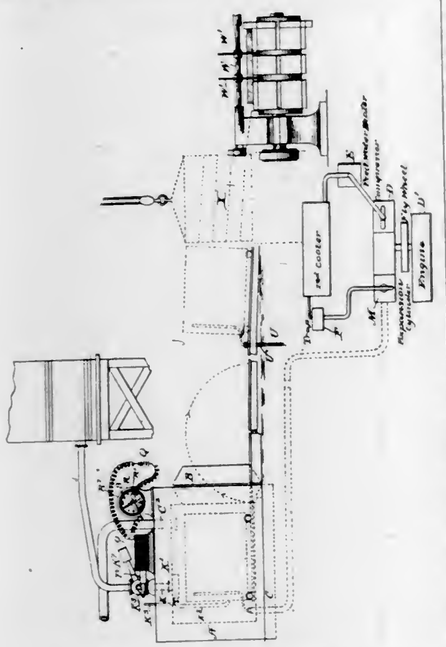
2. In ice-making apparatus, the combination with a closed refrigerating-chamber, of a car movable therein and carrying a plurality of pans arranged in vertical series and individually movable on guided wheels, detachable refrigerant connections with the pans, a distinct refrigerant-supply discharging broadcast into the room, means for tilting the pans, a suitably-protected water-supply pipe for the latter, and means for subjecting the pans to heat, all substantially as herein specified.

3. In ice-making apparatus, the combination with a refrigerating-chamber, of a car movable therein and carrying a plurality of pans individually movable on guide-wheels, and two sets of devices, as the hand-levers U and V, and the links connected thereto, arranged to allow all the pans to be inclined together or to be inclined a portion in one direction and a portion in another, so as to serve substantially as herein specified.

4. In ice-making apparatus, the combination with a refrigerating-chamber, of a car movable therein on supporting guide-wheels and carrying a plurality of pans individually movable on guide-wheels, and devices as the lever V, attached link secured to the pivotal pan-supports for tilting the pans, and means such as the recessed retaining-bar for holding the lever at determined points of the throw, substantially as herein specified.

5. In ice-making apparatus, the combination with a chamber having a supply for the refrigerating agent, of a portable ice-pan having one end closed by a removable flap and formed in two thicknesses of material to present a confined intermediate space and having a detachable connection with the refrigerant-supply, substantially as herein specified.

6. In ice-making apparatus, the combination with a chamber having a cold-air supply and discharge communicating with the upper and lower portions respectively thereof, of an ice-pan formed in two thicknesses of metal to present a confined intermediate space, and having a connection with the cold-air supply, and an opening discharging into the chamber, substantially as herein specified.



7. In ice-making apparatus, the combination with a closed chamber having a supply for the refrigerating agent, a series of pans each formed of two thicknesses of material to present a confined intermediate space, and a series of flexible pipes supplied by the refrigerant-supply and adapted to be detachably connected to the pans to supply the intermediate spaces thereof, a distinct refrigerant-supply discharging broadcast into the room together with a suitably-protected water-supply pipe for the pans and provisions for subjecting the latter to heat, substantially as herein specified.

8. In ice-making apparatus, the combination with a closed refrigerating-chamber, of a jacketed ice pan or pans therein, detachable refrigerant connections therewith for expanding air in the jacket-spacea thereof, together with a valve-controlled water-supply connecting with a pipe or pipes for delivering water to the pan or pans, antifreezing provisions for the pipe or pipes, thawing provisions for the pans, mechanism for intermittently operating the water-supply valve and a distinct supply of expanded air discharging broadcast into the room, substantially as herein specified.

9. In ice-making apparatus, the combination with a closed chamber having a refrigerant-supply, of an ice-pan having an open end and formed in two thicknesses of metal to present a confined intermediate space, connections for detachably establishing communication between the refrigerant supply and said space, thawing provisions for said pans, a door or flap for closing the open end of the pan, spring-catch devices for locking said door and means for tilting said pan, together with a distinct refrigerant-supply discharging broadcast into the room, substantially as herein specified.

10. In ice-making apparatus, the combination with a closed refrigerating-chamber, of a jacketed ice pan or pans therein, together with a valved water-supply connecting with a pipe or pipes for delivering water to the pan or pans, detachable refrigerant connections for the latter, antifreezing provisions for the pipe or pipes, thawing provisions for the pans, an armature connected to the valve and an electromagnet and connections for completing the magnetic circuit to move the armature and operate the valve, together with a compressed-air supply for the detachable pan connections and for independently discharging broadcast into the room, substantially as herein specified.

11. In ice-making apparatus, the combination with an ice-pan having an open end and comprising two thicknesses of metal forming a confined intermediate space, a nozzle or its equivalent connected with the outer thickness of metal, and a door or flap also containing an intermediate space, and having an opening arranged, when the door is adjusted, to register with an opening in the pan leading to its confined space, substantially as herein specified.

12. In ice-making apparatus, the combination with a closed refrigerating-chamber having an expanded air admission and discharge, of ice-pans therein, together with a water-supply therefor having pipe connections therewith, antifreezing provisions for said pipe connections, thawing provisions for the pans, an electrically-controlled valve for the water-supply, and a time mechanism provided with adjustable circuit-contacts to coöperate with the timepiece and periodically actuate the electrical valve-operating devices, substantially as herein specified.

13. In an ice-making apparatus, a closed chamber having an expanded air admission and discharge, a number of pans in said chamber, a general water-pipe controlled by a valve opened intermittently, and branches supplying the water intermittently therefrom to the several pans, a series of nicely-adjustable valves each controlling the flow into the several pans so as to make the quantity delivered practically equal at each opened period, and means for tilting said pans, and thawing provisions for the latter, all substantially as herein specified.

14. In ice-making apparatus, the combination with a closed refrigerating-chamber having an expanded air admission and discharge, of a vertical series of ice-pans therein, a valve-controlled water-supply pipe communicating with a horizontal pipe K′ in the upper part of said chamber, and having depending branches for feeding the pans, antifreezing provisions for said branches, thawing provisions for the pans, together with mechanism for periodically opening and closing the water-supply valve to determine the volume of water to be congealed, and means for tilting said pans, substantially as herein specified.

15. In an ice making and handling system, a refrigerating-chamber containing a car carrying a plurality of ice-pans of extended length and each having an intermediate space and nozzles or their equivalents, of provisions for inclining the pans, jacketed water-supply pipes intermittently controlled, a source of heat-supply adapted to connect with said nozzles to effect the release of the ice in blocks, and a cutting-saw and means for feeding the block to the saw together with a track way leading from the refrigerating-chamber to the cutting-saws, substantially as herein specified.

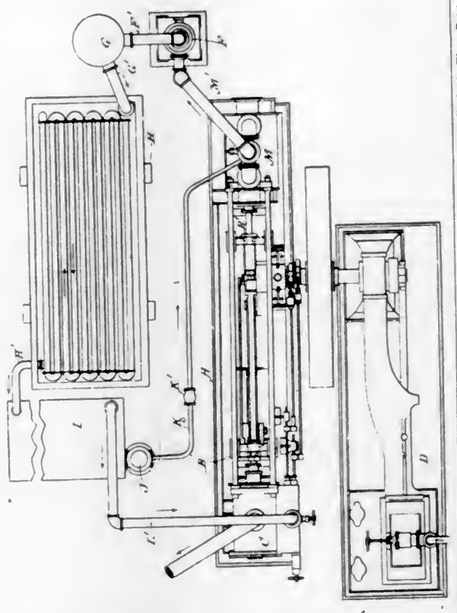
16. In ice-making apparatus, the combination with a refrigerating-chamber, of an ice pan or pans therein, a water-supply pipe therefor, and a jacket of material low in conductivity, together with a pipe associated with said water-pipe and connecting with a source of fluid of higher temperature so as to provide means for thawing out the pipe when necessary, all combined substantially as herein specified.

654,577. REFRIGERATING MACHINE. GEORGE H. ABRAMS, New York, N. Y. Filed May 9, 1896. Serial No. 590,805. (No model.)

Claim.—1. In air-compression systems for both heating and refrigerating, the combination with the alined compressing and expanding pistons in separate and relatively-detached cylinders and directly connected together, said cylinders having pipe K with expanded portions to constitute a valve-chamber with a spherical valve therein, of a prime motor connected therewith, a heat-exchanger and a condenser through both of which the tensely-compressed air is conveyed in successive instalments before delivery to the expansion-cylinder, a trap receiving the condensed water from the air, and a pipe leading therefrom and connecting with the compression-cylinder through a branch to deliver charges of fluid thereto at either end thereof, substantially as herein specified

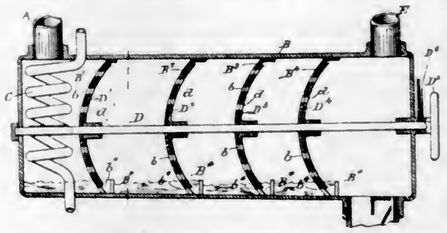
2. In air-compression systems for both heating and refrigerating, the combination with the alined compressing and expanding pistons in separate and relatively-detached cylinders and directly connected together, of a prime motor connected therewith, a heat-exchanger and a condenser through both of which the tensely-compressed air is conveyed in successive instalments before delivering to the expansion cylinder, a trap receiving the condensed water from the air, a pipe leading from such trap and connecting with the compressing-cylinder through branches leading to opposite ends thereof, said branches having an expanded portion to constitute a valve-chamber together with a freely-movable spherical valve adapted to seat itself to close either of said branches according to the movement of the piston, substantially as herein specified.

3. In air-compression systems for both heating and refrigerating, the combination with the alined compressing and expanding pistons in separate and relatively-detached cylinders and directly connected together, of a prime motor connected therewith, a heat-exchanger and a condenser through both of which the tensely-compressed air is conveyed in successive instalments before delivery to the expansion-cylinder, a trap receiving the condensed water from the air, a pipe leading therefrom adjacent to the water-line and connected with the compression-cylinder through branches leading to opposite ends thereof, said branches having an expanded portion to constitute a valve-chamber together with a freely-movable spherical valve adapted to seat itself to close either of said branches according to the movement of the piston, and a check-valve located in said water-pipe, substantially as herein specified.



4. In air-compression systems for both heating and refrigerating, the combination with the alined compressing and expanding pistons in separate and relatively-detached cylinders and directly connected together, said cylinders having a pipe K with expanded portions to constitute a valve-chamber with a spherical valve therein, of a prime motor connected therewith, a heat-exchanger, a condenser and chamber I in relatively-descending relation and to which all the tensely-compressed air is conveyed in successive instalments before delivery to the expansion-cylinder, a trap receiving the condensed water from the air, a pipe leading therefrom and connected to the compression-cylinder through branches leading to opposite ends thereof, together with a freely-movable spherical valve adapted to seat itself to close either of said branches according to the movement of the piston and a check-valve located in said water-pipe, substantially as herein specified.

654,578. REFRIGERATING APPARATUS. GEORGE H. ABRAMS, New York, N. Y. Filed June 27, 1896. Serial No. 597,167. (No model.)



Claim.—1. In refrigerating apparatus operated by the compression, cooling and subsequent expansion of air or other elastic fluid, means for extracting the water therefrom comprising the casing B having an inclined bottom in combination with a horizontal series of alternately-perforated partitions B′, B² dished to present a convexity in opposition to the fluid flow to withstand a considerable pressure, and arranged to receive the water and cause it to descend, by gravity to be separated from the air and flow along the inclined bottom, substantially as herein specified.

2. In refrigerating apparatus operated by the compression, cooling and subsequent expansion of air or other elastic fluid, means for extracting the water therefrom comprising the casing B with a series of perforated partitions B′ B², in combination with a series of correspondingly-perforated partitions in close relation thereto, a shaft and means for turning the same for changing the position of some of the partitions, and a suitable water-discharge, substantially as herein specified.

3. In refrigerating apparatus operated by the compression, cooling and subsequent expansion of air or other elastic fluid, means for extracting the water therefrom comprising the casing B with a series of perforated partitions B′, B², dished as shown, to withstand a considerable pressure, in combination with a series of correspondingly-perforated partitions D′ D², and means as the shaft D and hand-wheel D³ for changing the position of some of the partitions so as to be partially out of coincidence with the perforations in the partitions B′, B², and provisions for taking away the water thus separated, all substantially as herein specified.

4. In refrigerating apparatus operated by the compression, cooling and subsequent expansion of air or other elastic fluid, the casing B containing a series of perforated partitions B′ B² in the path of the fluid adapted to intercept moisture and having apertures *b*² at their lower edges to be sealed by the trapped water, the casing B also having a delivery-passage F leading downward therefrom, all arranged for joint operation substantially as herein specified.

5. In a refrigerating apparatus operated by the compression, cooling and subsequent expansion of air or other elastic fluid, means for extracting the water therefrom comprising the casing B, with a series of adjustable partitions dished to present each a convexity in opposition to the flow of compressed fluid and having alternately-disposed perforations *b*, a delivery-passage F leading downward therefrom, and a trap in such passage having a float connected to a double piston horizontally arranged and working easily in a cylinder communicating at its mid-length with an escape-passage so as to operate at any pressure under perfectly-balanced conditions, all substantially as herein specified.

6. In refrigerating apparatus operated by the compression, cooling and subsequent expansion of air or other elastic fluid, the combination of means for extracting the water therefrom comprising the casing B, with a series of partitions arranged in the path of the fluid and having alternately-disposed adjustable perforations arranged in the path of the fluid and dished to present each a convexity in opposition to the flow of compressed fluid, a delivery-passage F leading downward from the casing B, a trap in such passage and a valved pipe leading from such trap to convey moisture to the compressor, all arranged for joint operation, substantially as herein specified.

7. The combination with a moisture-separator having a series of dished disks each presenting a convexity in opposition to the compressed-fluid flow, of a chamber having a valved water-outlet controlled by a horizontally-movable and counterbalanced valve, and a steam-jacket surrounding said chamber to maintain the temperature notwithstanding the cold produced by the expansion of the air in the discharged water, substantially as herein specified.

8. In refrigerating apparatus operated by the compression, cooling and subsequent expansion of air or other elastic fluid, the combination of means for extracting the water therefrom comprising the casing B, with a series of perforated partitions arranged in the path of the fluid, a delivery-passage F leading downward therefrom, and a trap in such passage, a pipe leading from the base of the trap to convey moisture to the compressor, a branch pipe leading thereto from a high point of the trap, the cocks R², R², controlling each separately, and the cock R′ restraining the flow through both, all arranged for joint operation substantially as herein specified.

9. In refrigerating apparatus operated by the compression, cooling and subsequent expansion of air or other elastic fluid, the combination of means for extracting the water therefrom comprising the casing B, with a series of perforated partitions arranged in the path of the fluid, a delivery-passage F leading downward therefrom, a trap in such passage, a pipe leading from the base of the trap to convey moisture to the compressor, a branch pipe leading thereto from a high point of the trap, cocks R′, R², R², and the jackets P and W, with connections for supplying steam thereto, combined and arranged substantially as shown and adapted to avoid risk of freezing the apparatus, all substantially as herein specified.

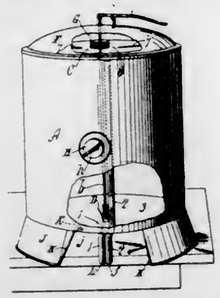
10. In an air-expansion refrigerating apparatus, a series of stationary and movable perforated partitions arranged in the path of the fluid and adapted to intercept dense particles therein, a shaft for adjusting the movable partitions and operating an indicating device showing the extent of such movement, substantially as herein specified.

654,579. DOOR-BOLT. AUGUST ERICSON, San Francisco, Cal. Filed Oct. 28, 1899. Serial No. 735,097. (No model.)



Claim.—A door-bolt consisting of a sliding plate, a bolt-rod leading from said plate and terminating in a bolt-head, a plate secured to the upper extremity of said rod and provided with an oblong slot, and a set-screw adjustably engaging said slot and said plate, substantially as set forth.

654,580. AUTOMATIC LAMP-FILLER AND MEASURING-CAN. HENRY H. VENABLE, Redondo, Cal. Filed Nov. 1, 1899. Serial No. 735,533. (No model.)



Claim.—1. The combination of a receptacle provided with an outlet and with an air-inlet; a valve for closing the outlet; and adjustable means connected with the valve for operating the same and being interposed between the external atmosphere and the chamber of the receptacle, whereby the same will be operated by the atmospheric pressure to close the valve when the air within the chamber is rarefied.

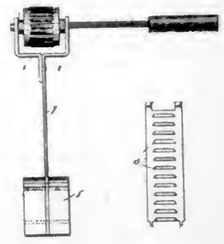
2. The combination of a receptacle provided with an outlet and with an air-inlet; a resilient diaphragm interposed between the chamber of the receptacle and the external air; and a valve connected with the diaphragm and arranged to close the outlet when the diaphragm is in its inward position.

3. The combination of a receptacle provided with an outlet and with an air-inlet, said air-inlet projecting outside the receptacle to be closed by the liquid rising in the vessel to be filled; a valve for closing the outlet; and adjustable means connected with the valve for operating the same and being interposed between the external atmosphere and the chamber of the receptacle, whereby the same will be operated by the atmospheric pressure to close the valve when the air-inlet is stopped and the air within the chamber is rarefied by the escape of the outflowing liquid.

4. The combination of a receptacle provided with an outlet and with an air-inlet; a resilient diaphragm interposed between the chamber of the receptacle and the external air; a valve connected with the diaphragm and arranged to close the outlet when the diaphragm is in its inward position; and a lever connected with the valve to open the same.

5. The combination of a receptacle provided with an outlet and with an air-inlet; a resiliant diaphragm interposed between the chamber of the receptacle and the external air; a valve connected with the diaphragm and arranged to close the outlet when the diaphragm is in its inward position; and a pneumatic valve-closer comprising two downward extensions of the liquid-outlet and the air-inlet; and a gage projection slidably mounted on said downward extensions to contact with the receiving vessel.

654,581. DEVICE FOR REMOVING CORNS. BERNHARD WAGNER, Rahway, N. J. Filed Jan. 24, 1900. Serial No. 2,591. (No model.)

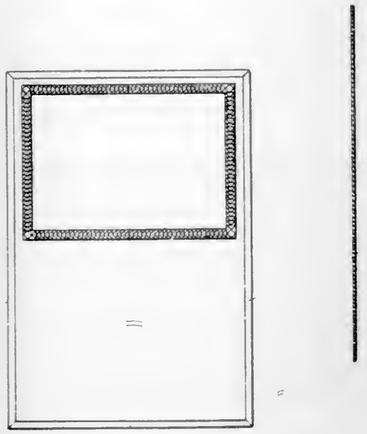


Claim.—1. A cutter for removing corns from the human foot provided with a revoluble toothed element, comprising a body portion and a peripheral metal strip secured thereto and provided with a plurality of integral teeth, said metal strip being provided at one end with an opening, and at the other with a projection which is passed therethrough and whereby said strip is secured to said body portion, substantially as shown and described.

2. A cutter of the class described, for removing corns from the human foot, comprising a base or bottom provided with a projecting support, a spindle journaled in said support and provided with a toothed element comprising a body portion, and a peripheral metal strip secured thereto and provided with a plurality of integral teeth, said metal strip being provided at one end with an opening and at the other end with a projection which is passed therethrough, and whereby said strip is secured to the body portion, said spindle being provided with an end piece by means of which it may be manipulated, substantially as shown and described.

DESIGNS.

32,977. ADVERTISING-APRON. ANDREW J. BROWN, Baltimore, Md. Filed June 2, 1900. Serial No. 18,900. Term of patent 3½ years.



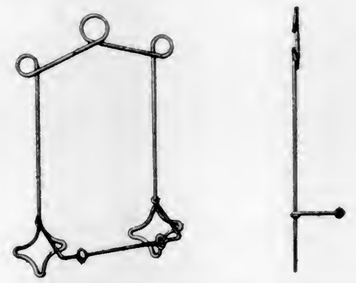
Claim.—The design for an advertising-apron as herein shown and described.

32,978. DISPLAY-FORM. WILLIAM E. KIMMELL, Seymour, Ind. Filed June 25, 1900. Serial No. 21,576. Term of patent 7 years.



Claim.—The design for a display-form, herein shown and described.

32,979. DISPLAY-STAND FOR CLOCKS. GEORGE LEHNER, Pittsburg, Pa. Filed June 12, 1900. Serial No. 20,104. Term of patent 7 years.



Claim.—The design for a display-stand for clocks, substantially as herein shown and described.

32,980. DISPLAY SHOW-CASE. JOSEPH G. HUTCHINSON, Attleborough, Mass. Filed Nov. 13, 1899. Serial No. 736,383. Term of patent 3½ years.



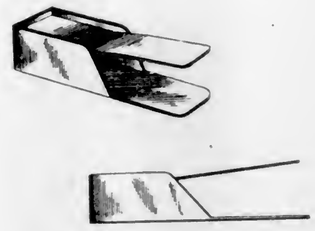
Claim.—The design for a display show-case as herein shown and described.

32,981. RECEPTACLE. FRANK F. HOLLAND, Portland, Me. Filed June 21, 1900. Serial No. 21,109. Term of patent 7 years.



Claim.—The design for the receptacle herein shown and described.

32,982. TOY. PETER L. JACKSON, Boonton, N. J. Filed June 7, 1900. Serial No. 19,473. Term of patent 7 years.



Claim.—The design for a toy, as herein shown and described

32,983. BADGE. CHARLES M. DAYTON, Bowling Green, Ky. Filed June 25, 1900. Serial No. 21,575. Term of patent 3½ years.



Claim.—The design for a badge, herein shown and described.

32,984. BADGE FRAME OR HOLDER. HENRY B. KEIPER, Lancaster, Pa., assignor to the Star Ball Retainer Company, same place and Jersey City, N. J. Filed June 26, 1900. Serial No. 21,691. Term of patent 14 years.



Claim.—The design for a badge frame or holder, substantially as shown and described.

32,985. NECKTIE-HOLDER. EPHRAIM MUSSELMAN, Celina, Ohio. Filed Mar. 17, 1900. Serial No. 9,119. Term of patent 14 years.



Claim.—The design for a necktie-holder herein shown and described.

32,986. HOOK. WILLIAM G. ROUSSEAUX, Baltimore, Md., assignor of one-half to Sam W. Pattison, William H. Gahan, and Lewis M. Sprague, same place. Filed May 23, 1900. Serial No. 17,763. Term of patent 14 years.



Claim.—The design for a hook substantially as herein shown and described.

32,987. HANDLE FOR BUTTON-HOOKS OR SIMILAR ARTICLES. FRANK J. DIACONT, Providence, R. I., assignor to the Waite, Thresher Company, same place. Filed June 15, 1900. Serial No. 20,466. Term of patent 3½ years.



Claim.—The design for the handle of a button-hook or similar article, as herein shown and described.

32,988. TYPE-WRITING-MACHINE-ERASER HOLDER. ABRAM LE GALLEZ, Albany, N. Y. Filed Oct. 27, 1899. Serial No. 735,001. Term of patent 7 years.

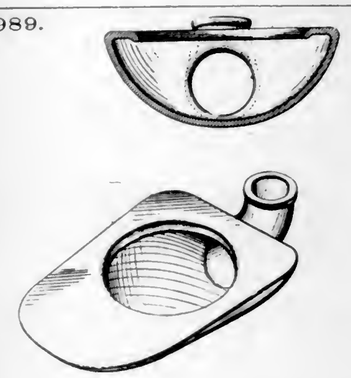


Claim.—The design for a type-writing-machine-eraser holder, as herein shown and described.

32,989. BED-PAN. MARY F. DEVENNIE, Philadelphia, Pa. Filed June 26, 1900. Serial No. 21,666. Term of patent 14 years.

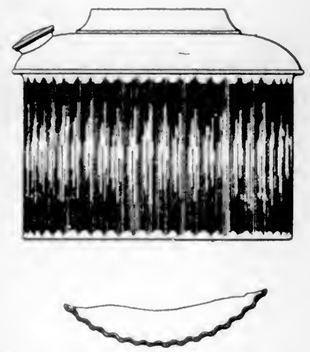


32,989.



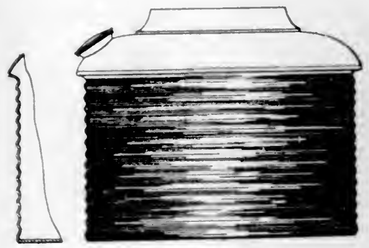
Claim.—The design for a bed-pan, as herein shown and described.

32,990. RESERVOIR OR OIL-POT FOR LAMPS. LEWIS J. ATWOOD, Waterbury, Conn., assignor to the Plume & Atwood Manufacturing Company, same place. Filed May 26, 1900. Serial No. 18,163. Term of patent 14 years.



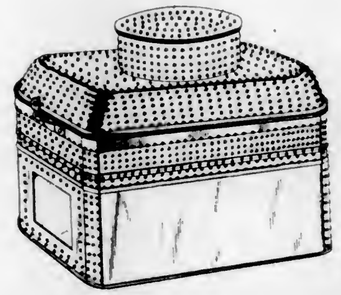
Claim.—The design for a reservoir or oil-pot for lamps, substantially as herein shown and described.

32,991. RESERVOIR OR OIL-POT FOR LAMPS. LEWIS J. ATWOOD, Waterbury, Conn., assignor to the Plume & Atwood Manufacturing Company, same place. Filed May 26, 1900. Serial No. 18,164. Term of patent 14 years.



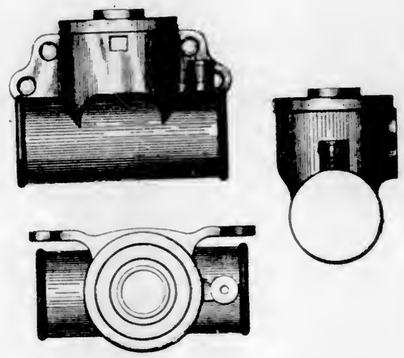
Claim.—The design for a reservoir or oil-pot for lamps, substantially as herein shown and described.

32,992. CAMPAIGN-LANTERN. CHARLES F. WALTERS, Prospect, N. Y. Filed June 7, 1900. Serial No. 19,468. Term of patent 3½ years.



Claim.—The design for a campaign-lantern, herein shown and described.

32,993. CASING FOR DOOR-CHECKS. WARREN H. TAYLOR, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, same place. Filed Apr. 6, 1900. Serial No. 11,903. Term of patent 14 years.



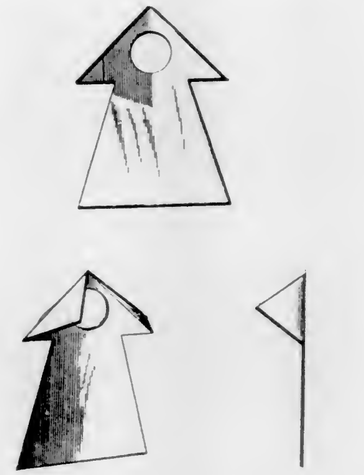
Claim.—The design for a casing for a door-check herein shown and described.

32,994. SASH-LOCK MEMBER. WILLIAM HENRY GREENE, Alexander City, Ala. Filed Feb. 16, 1900. Serial No. 5,540. Term of patent 14 years.



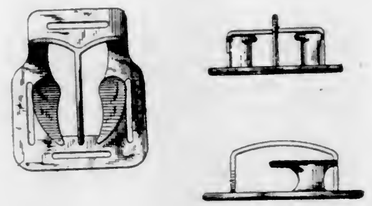
Claim.—The design for a sash-lock member herein shown and described.

32,995. NUT-LOCK WASHER. JESSE F. HALL, Grenola, Kans. Filed June 26, 1900. Serial No. 21,687. Term of patent 7 years.



Claim.—The design for a nut-lock washer, as herein shown and described.

32,996. TRACE-CARRIER. JAMES A. SUMNER and ZIGLER HORNSTINE, Louisville, Nebr. Filed Apr. 19, 1900. Serial No. 13,546. Term of patent 7 years.



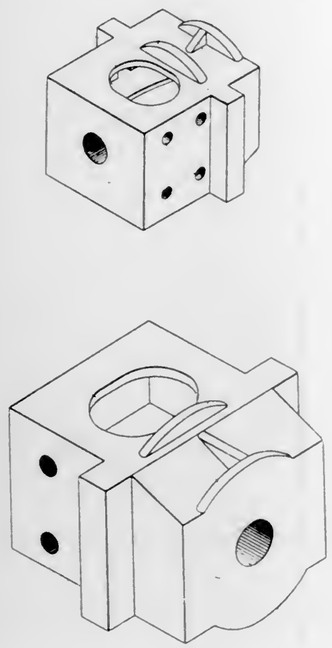
Claim.—The design for a trace-carrier, as herein shown and described.

32,997. HAME-HOOK. MAX LITTMANN, St. Louis, Mo. Filed June 11, 1900. Serial No. 19,961. Term of patent 7 years.



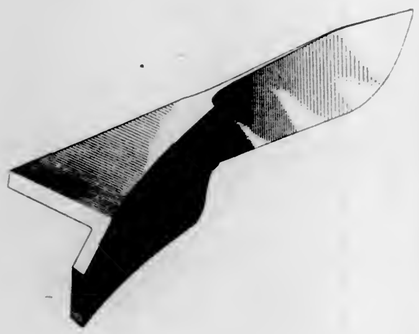
Claim.—The design for a hame-hook herein shown and described

32,998. DRAFT-LUG. LOUIS A. HOERR, St. Louis, Mo. Filed Apr. 9, 1900. Serial No. 12,250. Term of patent 14 years.



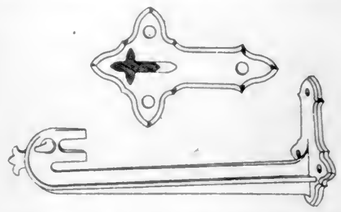
Claim.—The design for a draft-lug substantially as shown and described.

32,999. PLOWSHARE-BLADE. EDWARD H. SEARS, Collinsville, Conn. Filed Mar. 6, 1900. Serial No. 7,600. Term of patent 7 years.



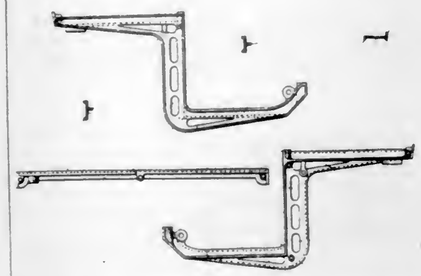
Claim.—The design for a plowshare-blade as herein shown and described.

33,000. SCALE-BEAM-STAND MEMBER. PERLEY F. HAZEN, St. Johnsbury, Vt., assignor to the E. & T. Fairbanks & Company, same place. Filed May 1, 1900. Serial No. 15,144. Term of patent 14 years.



Claim.—The design for a scale-beam-stand member; substantially as shown and described.

33,001. SIDE FRAME FOR VEHICLE-SEATS. EDWARD BEACH GALLAHER, New York, N. Y. Filed June 21, 1900. Serial No. 21,112. Term of patent 7 years.



Claim.—The design for the side frame of a vehicle-seat, herein shown and described.

33,002. RUNNING-GEAR FRAME FOR VEHICLES. FREDERIC C. BILLINGS, Hartford, Conn. Filed June 18, 1900. Serial No. 20,772. Term of patent 3½ years.



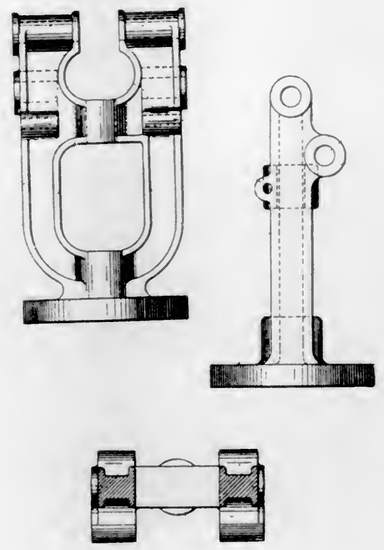
Claim.—The design for a running-gear frame for vehicles, substantially as shown and described.

33,003. AUTOMOBILE-FRAME. GEORGE T. TURNER, Philadelphia, Pa. Filed May 16, 1900. Serial No. 16,926. Term of patent 14 years.



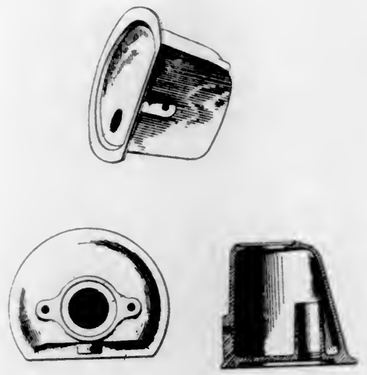
Claim.—The design for an automobile-frame herein shown and described.

33,004. STAMPING-MACHINE FRAME. WILLIAM KRAEMER, Chicago, Ill. Filed June 22, 1900. Serial No. 21,242. Term of patent 3½ years.



Claim.—The design for a frame for a stamping-machine, substantially as herein shown and described.

33,005. PUMP-BASE. ARTHUR E. HUNT, Nichols, N. Y., assignor of one-half to Robert C. Harris, same place. Filed June 8, 1900. Serial No. 19,629. Term of patent 7 years.



Claim.—The design for a pump-base, as herein shown and described.

33,006. WATER-HEATER CASE OR SHELL. JAMES GRAY, Allegheny, Pa. Filed Jan. 13, 1900. Serial No. 1,386. Term of patent 7 years.



Claim.—The design for a water-heater case or shell substantially as herein shown and described.

33,007. HEATING-STOVE. THOMAS R. KENNEDY, Rochester, N. Y., assignor to the Co-Operative Foundry Company, same place. Filed June 20, 1900. Serial No. 20,953. Term of patent 7 years.



Claim.—The design for a heating-stove as herein shown and described.

33,008. HEATING-STOVE. HERBERT W. BEATTIE, Quincy, Mass., assignor to the Sill Stove Works, Rochester, N. Y. Filed June 20, 1900. Serial No. 21,022. Term of patent 14 years.



Claim.—The design for a heating-stove, substantially as herein shown and described.

33,009. SNOW-GUARD FOR ROOFS. FRANKLIN MESSINGER and JOSEPH HENRY FULMER, Nazareth, Pa. Filed June 4, 1900. Serial No. 19,073. Term of patent 3½ years.



Claim.—The design for a snow-guard for roofs, herein shown and described.

33,010. WIND-WHEEL. THOMAS O. PERRY, Chicago, Ill. Filed June 4, 1900. Serial No. 19,083. Term of patent 14 years.



Claim.—The design for a wind-wheel, herein shown and described.

33,011. ORE-CONCENTRATING TABLE. WILLIS G. DODD, San Francisco, Cal. Filed June 22, 1900. Serial No. 21,244. Term of patent 14 years.



Claim.—The design for an ore-concentrating table, as herein shown and described.

33,012. FABRIC-TRIMMING. THEODORE SCHIEBE, New York, N. Y. Filed June 2, 1900. Serial No. 18,901. Term of patent 14 years.



Claim.—The design for a fabric-trimming herein shown and described.

33,013. PATTERN FOR SILK FABRIC. MOSES G. MIGEL, New York, N. Y. Filed June 16, 1900. Serial No. 20,603. Term of patent 3½ years.



Claim.—The design for a pattern for a silk fabric, substantially as herein shown and described.

33,014. WELT-STRIP. GEORGE D. CLAFF, Boston, Mass. Filed May 21, 1900. Serial No. 17,491. Term of patent 14 years.



Claim.—The design for a welt-strip, as herein shown and described.

TRADE-MARKS

REGISTERED JULY 24, 1900.

34,926. NEEDLES, PINS, BODKINS, AND CROCHET-HOOKS. William Hall & Company, Limited, Redditch, England. Filed Apr. 21, 1900.



Essential feature.—The representation of an elephant. Used since March 23, 1895.

34,927. CERTAIN NAMED UNDERWEAR. James H. Dunham & Co., New York, N. Y. Filed June 25, 1900.

LUCILLE

Essential feature.—The word "Lucille." Used since June 9, 1899.

34,928. INFANTS' SHIRTS. Robert J. Ford, Boston, Mass. Filed June 26, 1900.

BABIE BELL

Essential feature.—The words "Babie Bell." Used since June 1, 1900.

34,929. CORSETS. Kops Bros., New York, N. Y. Filed June 25, 1900.

R—STRAIT

Essential feature.—The hyphenated word "R-Strait." Used since June 1, 1900.

34,930. SHOES. The C. & E. Shoe Company, Columbus, Ohio. Filed June 25, 1900.

BUCKEYE

Essential feature.—The word "Buckeye." Used since May 1, 1900.

34,931. PREPARED RAWHIDE. New Process Raw Hide Company, Syracuse, N. Y. Filed May 31, 1900.



Essential feature.—The representation of a pair of wings associated with the initials "N. P. R. H." and abbreviation "Co." Used since June 12, 1899.

34,932. CERTAIN NAMED ARTISTIC PRODUCTIONS. Toonter Mann & Company, Incorporated, New York, N. Y. Filed Nov. 10, 1899.



Essential feature.—The representation of a figure or background simulating in outline that of an artist's palette and the representation of the bust-figure of a woman holding an artist's brush in one hand and a palette in the other hand, with the appearance of using the same, and flowers, represented conventionally, inclosed within the said outline. Used since November 8, 1899.

34,933. PHOTOGRAPH DEVELOPING AND PRINTING PAPER. The Artura Photo Paper Co., Columbus, Ohio. Filed June 23, 1900.

ARTURA

Essential feature.—The word "Artura." Used since March 1, 1900.

34,934. PAPER FOR INDUSTRIAL PURPOSES. Stony Brook Paper Co., South Hadley, Mass. Filed Mar. 1, 1900.

CIMMERIAN.

Essential feature.—The word "Cimmerian." Used since August 1, 1899.

34,935. BREAD-CRUMBS. Leonard A. Worcester, Lowell, Mass. Filed June 28, 1900.

ROYAL WORCESTER

Essential feature.—The words "Royal Worcester." Used since June 1, 1900.

34,936. CERTAIN NAMED PREPARED FOODS. Fred Fear, New York, N. Y. Filed Dec. 23, 1899.



Essential feature.—The representation of a hand holding a bottle in a partially-inverted position and the contents of the bottle falling upon salad contained in a dish. Used since December 1, 1895.

34,937. CAVIAR AND PRESERVED FISH. Hansen & Dieckmann, New York, N. Y. Filed June 26, 1900.



Essential feature.—The representation of a mounted Cossack. Used since December 1, 1899.

34,938. WHISKY. Laurence McCormick, Philadelphia, Pa. Filed June 29, 1900.



Essential feature.—The representation of a shield on the face of which are depicted a cross-shaped figure and four open books respectively located in the four divisions of the field formed by said figure. Used since June 7, 1900.

34,939. BRANDY. Crown Distilleries Company, San Francisco, Cal.; New York, N. Y., and Cincinnati, Ohio. Filed June 23, 1900.

C·D·C

Essential feature.—The letters "C. D. C." Used since November, 1899.

34,940. COCKTAILS. Crown Distilleries Company, San Francisco, Cal.; New York, N. Y., and Cincinnati, Ohio. Filed June 23, 1900.

CROWN

Essential feature.—The word "Crown." Used since August, 1893.

34,941. BEER. The American Brewing Company, St. Louis, Mo. Filed June 27, 1900.

LA CARMENCITA

Essential feature.—The words "La Carmencita." Used since March 1, 1897.

34,942. STOMACH-BITTERS. R. Klingholz & Co., Manitowoc Wis. Filed June 25, 1900.



Essential feature.—A shield-shaped design and the monogram of the letters, character, and abbreviation "R K & Co." Used since September 1, 1897.

84,948. PROPRIETARY MEDICINE FOR CERTAIN NAMED DISEASES. LOUISA COSBY, Quincy, Ill. Filed May 25, 1900.



Mrs Louisa Cosby

Essential feature.—A portrait of the registrant, with her facsimile-signature, "MRS. LOUISA COSBY." Used since September 1, 1899.

84,944. LINIMENT. WILLIAM J. HULL, Cambridge City, Ind. Filed Apr. 30, 1900.



Hoosier Boy

Essential feature.—The words "HOOSIER BOY" and the representation of a boy. Used since December 7, 1899.

84,945. CERTAIN NAMED MEDICINAL COMPOUND. FRANK G. FERRANTE, Union, Hudson County, N. J. Filed June 29, 1900.

ANTEDILUVIAN

Essential feature.—The word "ANTEDILUVIAN." Used since June 25, 1900.

84,946. OINTMENT. PARIS MEDICINE COMPANY, St. Louis, Mo. Filed June 15, 1900.

PAZO

Essential feature.—The name "PAZO." Used since October, 1898.

84,947. HAIR-TONIC. NEWBRO DRUG COMPANY, Butte, Mont. Filed June 12, 1900.



Essential feature.—The representation of healthy and diseased hair-roots. Used since July 15, 1899.

84,948. CHEWING-TOBACCO. RUCKER & WITTEN TOBACCO COMPANY, Martinsville, Va. Filed June 23, 1900.

LONGPOLE

Essential feature.—The words "LONG POLE." Used since April, 1897.

84,949. SOAP AND SOAP POWDERS. CHAUNCEY F. YORK, Warrior's Mark, Pa. Filed June 28, 1900.

MA-LE-NA

Essential feature.—The title "MALENA." Used since April 1, 1900.

84,950. ABRADANT. THE CARBORUNDUM COMPANY, Niagara Falls, N. Y. Filed June 20, 1900.

SiC

Essential feature.—The letters "SiC." Used since 1894.

84,951. CERTAIN NAMED POLISHING COMPOUND. THE FIRM OF A. ROSALOWSKY, Berlin, Germany. Filed May 14, 1900.

SYLBROL

Essential feature.—The word "SYLBROL." Used since October, 1899.

84,952. WOOD AND METAL POLISH. SAMUEL M. DAVIES, Albany, N. Y. Filed June 27, 1900.



Essential feature.—The representation of a crescent moon with an arrow across the same. Used since May 5, 1900.

84,953. BOILER-CLEANSING COMPOUNDS. JOHN MADDOCKS, Bradford, England, and New York, N. Y. Filed June 29, 1900.

VULITE

Essential feature.—The word "VULITE." Used since 1897.

84,954. REFINED PETROLEUM. JACOB C. D'ARCVEDO, New York, N. Y. Filed June 19, 1900.



Essential feature.—The representation of two hemispheres upon which fall the rays of light from a lamp above. Used since June 9, 1900.

84,955. INSULATING MATERIAL. CELLULAR INSULATING COMPANY, Cincinnati, Ohio. Filed June 29, 1900.

LITH

Essential feature.—The word "LITH." Used since April, 1898.

84,956. GOLF-CLUBS. JOHN D. DUNN, New York, N. Y. Filed Apr. 11, 1898.



Essential feature.—The representation of a lion rampant. Used since January 1, 1897.

84,957. CERTAIN PREPARED WOOD AND BOXES MADE THEREFROM. VENESTA, LIMITED, London, England. Filed June 21, 1900.

VENESTA

Essential feature.—The word "VENESTA." Used since July, 1898.

84,958. CERTAIN NAMED FURNITURE. ROY S. BARNHART, Grand Rapids, Mich. Filed June 11, 1900.

G R
M

Essential feature.—The letters "G. R. M." Used since May 1, 1900.

84,959. CERTAIN NAMED FURNITURE. ROY S. BARNHART, Grand Rapids, Mich. Filed June 11, 1900.



Essential feature.—The representation of a triangle. Used since MAY 1, 1900.

84,960. METALS. PAUL S. REEVES & SON, Philadelphia, Pa. Filed June 7, 1900.

TUBAL

Essential feature.—The word "TUBAL." Used since February, 1899.

84,961. PIPE-WRENCHES. THOMAS R. RYAN, San Francisco, Cal. Filed June 27, 1900.

ATLAS

Essential feature.—The word "ATLAS." Used since May 29, 1899.

84,962. CHAINS, CHAIN ACCESSORIES, AND FORGINGS. HENRY B. NEWHALL, New York, N. Y. Filed Apr. 19, 1900.



Essential feature.—The representation of a trident. Used since April 1, 1900.

84,963. FIRE-EXTINGUISHERS. HARRIS SAFETY COMPANY, New York, N. Y. Filed June 27, 1900.



Essential feature.—The compound word "PAN-AMERICAN." Used since May 1, 1900.

PHOTO-LITHO. WASHINGTON D.C. THE NORRIS PETERS CO.

REPORT OF THE COMMISSIONER OF PATENTS

FOR THE FISCAL YEAR 1899-1900.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 14, 1900.

SIR: Complying with the request contained in your letter of July 7, 1900, I beg to submit herewith the following report of the business of the United States Patent Office for the fiscal year ended June 30, 1900:

Applications and Caveats received.

Applications for letters patent	39,815
Applications for design patents	2,263
Applications for reissue patents	90
Applications for registration of trade-marks	2,103
Applications for registration of labels	872
Applications for registration of prints	127
Caveats	1,739
Total	47,009

Applications awaiting action.

Number of applications awaiting action on the part of the Office on July 1, 1900	3,564

Applications for Patents, including Reissues, Designs, Trade-Marks, Labels, and Prints.

June 30, 1891	43,616
June 30, 1892	43,544
June 30, 1893	43,589
June 30, 1894	39,206
June 30, 1895	41,014
June 30, 1896	45,645
June 30, 1897	47,747
June 30, 1898	44,216
June 30, 1899	40,320
June 30, 1900	45,270

Applications awaiting action on the part of the Office.

June 30, 1891	8,911
June 30, 1892	9,447
June 30, 1893	8,283
June 30, 1894	7,076
June 30, 1895	4,927
June 30, 1896	8,943
June 30, 1897	12,241
June 30, 1898	12,187
June 30, 1899	2,989
June 30, 1900	3,564

Patents granted and Trade-Marks, Labels, and Prints registered.

Letters patent granted (including reissues and designs)	26,540
Trade-marks registered	1,660
Labels registered	682
Prints registered	93
Total	28,975

Patents withheld and Patents expired.

Letters patent withheld for non-payment of final fees	4,052
Letters patent expired	19,988
Applications allowed awaiting payment of final fees	8,464

EXPENDITURES.

	Expended.	Estimated liabilities.	Total.
Salaries	$754,346 00		$754,346 00
Scientific library	1,020 98	$979 02	2,000 00
Transportation of publications to foreign countries			
Postage on foreign matter	2,388 28		2,388 28
Stationery	10,309 26		10,309 26
Furniture	1,589 09		1,589 09
Carpets	522 04		522 04

Expenditures—Continued.

	Expended.	Estimated liabilities.	Total.
Ice	347 79		347 79
Telephones	57 28		57 28
Washing towels	87 83		87 83
Sundries	8,039 61		8,039 61
Official Gazette, (illustrations,) paid contractor	54,902 40		54,902 40
Photolithographing, paid contractor	93,274 56	5,725 04	98,999 60
Blue-print work, paid contractor	3,429 59		3,429 59
Printing and Binding.			
Paid Public Printer, for producing the Official Gazette and indexes out of the appropriation for 1900	69,470 00	8,500 00	77,970 00
Printing specifications	207,233 86		207,233 86
Miscellaneous printing and binding	25,604 95		25,604 95
Total	1,222,623 52	15,204 06	1,247,827 58

RECEIPTS AND EXPENDITURES.

Receipts from all sources	$1,358,228 35
Expenditures (including total in all appropriations)	1,247,827 58
Surplus	110,400 77

Comparative statement.

	Receipts.	Expenditures.
June 30, 1891	$1,302,794 59	$1,145,502 90
June 30, 1892	1,268,727 35	1,114,134 23
June 30, 1893	1,288,809 07	1,111,444 22
June 30, 1894	1,188,523 18	1,053,962 38
June 30, 1895	1,195,557 07	1,038,166 08
June 30, 1896	1,307,060 30	1,097,368 85
June 30, 1897	1,343,779 44	1,088,478 16
June 30, 1898	1,253,948 44	1,092,449 83
June 30, 1899	1,209,554 88	1,148,663 48
June 30, 1900	1,358,228 35	1,247,827 58

Summarizing these tables, there were received in the last fiscal year 39,815 applications for mechanical patents, 2,263 applications for designs, 90 applications for reissues, 1,739 caveats, 2,103 applications for trade-marks, 872 applications for labels, and 127 applications for prints. There were 26,540 patents granted, including reissues and designs. 1,660 trade-marks, 682 labels, and 93 prints were registered. The number of patents that expired was 19,988. The number of allowed applications which were by operation of law forfeited for non-payment of the final fees was 4,052. The total receipts of the Office were $1,358,228.35. The total expenditures were $1,247,827.58, and the surplus of receipts over expenditures, being the amount turned into the Treasury, was $110,400.77.

THE WORK OF THE OFFICE.

The examination work of the Office is in about the same relative condition that it was at the close

of the fiscal year ending June 30, 1899. At that time every examiner had his new work within one month from date of filing and his amended work within fifteen days of date. At the close of the present fiscal year thirty out of the thirty-six examiners had their new work within one month from the date of filing. Of the remaining six, three overran that time but by one day. The amended work in nearly all of the divisions was being acted upon within fifteen days after filing. The number of applications awaiting action on the part of the Office on July 1, 1900, was between five and six hundred more than on the first of July, 1899, but the number of applications for patents, etc., received during the last fiscal year was five thousand greater than during the preceding year, and the number of amendments acted upon was also correspondingly greater.

This is an excellent showing and reflects credit upon the examining corps, when it is borne in mind that a greater number of examiners were detailed for classification work than during the preceding fiscal year.

The work of the clerical divisions has been kept well up to date and there is no reason why, with the small increase of clerical force given by Congress at the last session, the work of the clerical divisions should not be promptly and carefully done.

THE CLASSIFICATION DIVISION.

During the last month of the fiscal year it was found possible to give to this division much-needed room. This will enable a larger force to economically perform the valuable work now being done by the chief of the Classification Division and his carefully-selected corps. The work of this division during the past fiscal year has continued, and, while the amount accomplished is not, perhaps, as great as was hoped for, yet it is but fair to say that with the additional room and force much of the uncompleted work of the past year will be finished.

ROOM.

As yet this Bureau has derived little or no advantage from the removal of the General Land Office. The additional room which has been assigned under your direction to this Office is, I regret to say, inadequate for its needs. It demonstrates that the Patent Office building is too small to meet the needs of the Interior Department proper and this Office. As the building was originally planned and designed for the Patent Office and very largely paid for by money paid into the Treasury by the inventors of the country, it would seem as though the entire building should be applied to the uses of the Patent Office. This, however, does not seem to be feasible, and I therefore express the hope that at an early day a new building may be erected for the sole use of the Patent Office, and I bespeak your powerful influence with Congress to aid the passage of Senate Bill No. 1,159, which provides for the construction of a "fireproof building, for the use and accommodation of the Patent Office, including a Hall of Inventions." Legislation in this direction is favored by many societies and associations interested in the subject of invention and by hundreds of progressive manufacturers and inventors, who have addressed petitions to Congress in the matter. The surplus receipts of the United States Patent Office for the past ten fiscal years amount to more than two millions of dollars, while the total excess of such receipts covered into the Treasury amounts to over five millions of dollars. Aside from this, the United States owes a debt to inventors which it can never repay. A slight recognition of this debt, however, would be the erection of a building such as referred to, which might be considered in the nature of a monument. The necessity for some action on the part of Congress is pressing and should not be longer delayed.

THE SCIENTIFIC LIBRARY.

This library consists of over seventy thousand bound volumes, and a conservative estimate of its value is $200,000. It would, however, be impossible even with this amount, or with any sum, to replace the library should it be destroyed by fire. Many of the most valuable works contained in the library are out of print. Our books are not now safely stored, and while in this building it is impossible to wholly protect them from fire, yet much might be done in this line by the use of steel stacks, which are now in common use in every modern library building.

The library having outgrown its present quarters it is intended to change the location as soon as suitable rooms can be prepared. This, therefore, is the proper time for using ordinary precautions to insure the safety of our books. I therefore most urgently request that a sufficient sum may be appropriated for the purchase and erection of steel stacks which, from the provisional estimates I have obtained, would cost but a small sum more than the ordinary wood shelving now in use and which must be added to upon the removal of the library to its new quarters. It seems almost to be a crime to omit to provide such a simple and comparatively-inexpensive means for minimizing the danger from fire.

LEGISLATION.

In submitting my estimates for the present fiscal year my suggestions in the main were approved by you, with the result that many of them so approved were favorably acted upon by Congress. Your action in this matter was appreciated by the inventors and manufacturers of the country.

Something more in the line of readjustment of salaries and a reclassification of the clerical force of this Office is needed, and in submitting my estimates for the next fiscal year your attention will be called in detail to such matters.

Respectfully submitted.

C. H. DUELL,
Commissioner.

THE SECRETARY OF THE INTERIOR.

Revision of Classification.

(ORDER No. 1,864.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 19, 1900.

The following changes in classification of inventions are hereby directed, to take effect this day:

In Division XIII, class 82, change the title of the class to class 90, Gear-Cutting, Milling, and Planing, and abolish the following subclasses therein:

1. Centerers.
2. Cutters and cutter-holders.
7. Mandrels and work-holders.
13. Rests.

Turning—

15. Irregular forms,
16. Miscellaneous,
17. Tapers,
18. Wheels and axles.
19. Watchmakers' lathes.
20. Wrist-pin turners.

In Division XIII establish class 82, Turning, with the following subclasses and definitions:

CLASS 82.—TURNING.

11. Axial pattern—
12. Pivoted tool-rest,
13. Profiled cutter,
14. Templet-guide.
45. Centerers—
46. Cam-closing,
47. Coupled V-jaws,
48. Hollow-cone,
51. Indicators,
49. Pivoted-lever and cone,
50. Pivoted-link.
2. Lathes—
34. Attachments,
32. Beds,
6. Bench.
21. Carriage-feeds—
22. Apron mechanism—
23. Feed-nut controllers,
26. Change-gears,
27. Feed-screws and rods.
24. Slide-rests—
25. Multiple tool-support.
33. Centers.
9. Crank and crank-pin—
10. Oscillating work.
28. Head-stocks—
29. Speed-changing gear,
30. Spindles and bearings,

Lathes—

20. Hollow cutter-head,
3. Multiple,
4. Portable,
7. Pulley,
5. Screw-cutting,
31. Tail-stocks,
8. Wheel and axle.
1. Miscellaneous,
18. Pattern section—
19. Cam-controlled cutter.

Rests—

36. Tool—
37. Tool-posts,
35. Tool and work.
38. Work—
39. Center rests.

Tapers—

15. Offset work-axis.

Transversely-shifted cutter—

16. Gear-controlled,
17. Templet-controlled.
40. Work-drivers—
41. Lathe-dogs—
42. Cam-grip,
43. Mandrels—
44. Expansible.

WALTER H. CHAMBERLIN,
Acting Commissioner.

CLASS 82.—TURNING.

DEFINITIONS.

Class.

82. TURNING. This class includes machines and devices for producing articles of predetermined section, usually circular, by means of cutters brought into engagement with the exterior of a continuously-rotating work-piece or by means of cutters revolving circumferentially around and in engagement with that portion of the work-piece to be shaped. It contains mainly metal-working machines, but is not confined thereto, including all such mechanisms of the above-named structure and function as are not specifically classified elsewhere.

Subclasses.

11. AXIAL PATTERN. Machines for producing articles of circular cross-section and of varying axial section other than cylindrical or conical forms.

12. AXIAL PATTERN, PIVOTED TOOL-REST. Machines in which the axial outline is traced by a tool rotating about an axis at right angles to the axis of the work. It mainly comprises lathes for turning spheres, though in some cases the tool traces a curve convex toward the work-axis.

13. AXIAL PATTERN, PROFILED CUTTER. Machines for producing articles the axial section of which is predetermined by that of a formed cutter or series of juxtaposed cutters.

14. AXIAL PATTERN, TEMPLET-GUIDE. Machines in which the axial pattern is produced by a tool the transverse movements of which are controlled by a templet.

45. CENTERERS. Devices for determining the centers or axes of work-pieces preparatory to mounting them on lathe-centers or for bringing such axes into coincidence with the line joining the lathe-centers after the work-pieces have been placed in the lathe.

(Note.—Search should also be made in rests, work, center rests in this class, and in drilling-machines, center-drills in class 77, BORING AND DRILLING; in machine-chucks and tool-sockets in class 29, METAL-WORKING.)

46. CENTERERS, CAM-CLOSING. Those in which the centering-pieces are moved inward by cam-surfaces, usually of the scroll type.

47. CENTERERS, COUPLED V-JAWS. Devices in which the center of the work-piece is determined or indicated by jaws which approach the piece from opposite sides and have approximately V-shaped recessed ends between which the work-piece is held by the jaw-coupling means.

48. CENTERERS, HOLLOW-CONE. Devices in which the center-marking means is located coaxially with a hollow cone, which is placed over the end of the piece to be centered.

51. CENTERERS, INDICATORS. Devices for indicating the eccentricity of rotating work-pieces and in some cases measuring its amount.

49. CENTERERS, PIVOTED-LEVER AND CONE. Centerers in which a series of circumferentially-arranged pivoted levers are closed equally upon the piece to be centered by an axially-moving cone.

50. CENTERERS, PIVOTED-LINK. Devices in which a series of surrounding pivoted links are caused to move equally toward the axis of the device until they impinge upon the work-piece.

2. LATHES. Organized machines and devices for producing articles of regular section, usually circular, by means of work-supports and guided cutters, with mechanism for effecting a relative rotation between the cutters and the work; also, details of such machines.

34. LATHES, ATTACHMENTS. Miscellaneous devices secured to lathes for facilitating their manipulation, increasing their accuracy, etc.

32. LATHES, BEDS. Patents showing the structure of the frame and ways of the lathe.

6. LATHES, BENCH. Light lathes without legs, mainly designed for jeweler's and watchmaker's use.

21. LATHES, CARRIAGE-FEEDS. All details of lathes instrumental in giving the cutting-tool either longitudinal or transverse feed or in limiting such feeds.

22. LATHES, CARRIAGE-FEEDS, APRON MECHANISM. All gearing or feed-controlling mechanism attached to or covered by the apron secured to the lathe-carriage.

23. LATHES, CARRIAGE-FEEDS, APRON MECHANISM, FEED-NUT CONTROLLERS. Devices for closing the feed-nut upon the feed-screw or releasing it therefrom; also, for preventing the closing of the nut except in certain positions to insure "catching the thread" correctly with the tool in screw-threading.

26. LATHES, CARRIAGE-FEEDS, CHANGE-GEARS. Sets of gears and provisions for mounting and shifting them in order to change the speed of rotation of the feed-screw or other carriage-driving means, and consequently the rate of carriage-feed.

27. LATHES, CARRIAGE-FEEDS, FEED-SCREWS AND RODS. Mechanisms, usually in the form of rotating screws or splined rods, for transmitting motion from the head-stock or change-gears to the carriage to effect the necessary tool-feeds.

24. LATHES, CARRIAGE-FEEDS, SLIDE-RESTS. Tool-supporting devices, usually mounted upon the lathe-carriage and longitudinally movable with it, for giving to the tool an additional feed, ordinarily one transverse to the axis of the work.

25. LATHES, CARRIAGE-FEEDS, SLIDE-RESTS, MULTIPLE TOOL-SUPPORT. Devices like the preceding, but carrying a plurality of cutting-tools, usually located on opposite sides of the axis of the work.

33. LATHES, CENTERS. Devices secured in the head-stock or tail-stock to rotatably support the work.

9. LATHES, CRANK AND CRANK-PIN. Lathes particularly designed for rotating cranks and crank-disks concentrically to turn the main journals or eccentrically to turn the crank-pin, or machines with offset revolving tools for turning crank-pins held stationary, but eccentric with respect to the lathe-centers.

Note.—This subclass includes only fully-organized power-driven machines. Portable pin-turners, usually hand-driven and clamped to the work to be turned, are classified in Lathes, Portable.

10. LATHES, CRANK AND CRANK-PIN, OSCILLATING WORK. Machines mainly for turning cross-head pins designed to rotate through a portion of the circumference only of such work as the tool cannot pass entirely around.

28. LATHES, HEAD-STOCKS. Patents showing general features and miscellaneous improvements in devices for supporting one end of the work-piece and for rotating it.

29. LATHES, HEAD-STOCKS, SPEED-CHANGING GEAR. Devices for giving variable rotation to the chuck or face-plate for a given rotation of the cone-pulley; ordinarily, back-gears.

(Note.—This subclass includes only such devices as are specifically designed for lathes and not for general application.)

(Note.—Search should also be made in Drilling-Machines, back-gears, class 77, BORING AND DRILLING, and in appropriate subclasses of Gearing, class 74, MACHINE ELEMENTS.)

30. LATHES, HEAD-STOCKS, SPINDLES AND BEARINGS. The title sufficiently defines the subclass.

20. LATHES, HOLLOW CUTTER-HEAD. Machines having rotating or stationary cutter-heads for supporting the cutters radially with their cutting ends toward the axis of the work and means for effecting relative rotation and axial feed between cutters and work.
(Note.—Search should also be made in Rests, tool and work, in this class.)

3. LATHES, MULTIPLE. Machines for operating simultaneously on more than one piece of work. The operations are usually the same on each piece.

4. LATHES, PORTABLE. Devices, usually hand-driven, readily transported and attached to axles, crank-pins, commutators, and other parts to be turned or trued.

7. LATHES, PULLEY. Machines especially designed for rotating and facing pulleys. They generally include special driving means and means for crowning the pulley-face.

5. LATHES, SCREW-CUTTING. Organized machines of the "engine-lathe" type having feed mechanism adapted to vary the rate of tool travel to cut screws of various pitches.

31. LATHES, TAIL-STOCKS. Devices for securing and rotatably supporting the end of the work-piece remote from the head-stock or driving end of the lathe.

8. LATHES, WHEEL AND AXLE. Organized machines for turning heavy wheels and axles, usually those of railway rolling-stock.
(Note.—For devices for finishing or re-turning worn wagon-axles search should also be made in Lathes, portable, in this class.)

1. MISCELLANEOUS. Various devices, not organized lathes, and processes for producing articles of circular cross-section.

18. PATTERN-SECTION. Machines for producing articles of predetermined non-circular section, usually by giving the cutter a motion radial with respect to the rotating work in addition to its usual feed motion.

19. PATTERN-SECTION, CAM-CONTROLLED CUTTER. Machines in which the radially-reciprocating motion of the cutter is governed by a cam.

RESTS. Devices for securing or supporting the cutting-tool or the work, or both, during the turning operation.

36. RESTS, TOOL. Devices for supporting lathe-tools held in the hand or for clamping them and effecting their rectilinear vertical adjustment or angular adjustment in a vertical plane.

37. RESTS, TOOL, TOOL-POSTS. The immediate clamping means for securing the tool or cutter of a lathe. These devices include adjusting means only when the adjustment is effected by unclamping and reclamping the cutter itself.

35. RESTS, TOOL AND WORK. Devices for simultaneously supporting both the tool and the work upon which it operates.
(Note.—Search should also be made in Lathes, hollow cutter-head, in this class.)

38. RESTS, WORK. Miscellaneous devices for supporting work in a lathe; either the free end of a piece of stock or the side opposite the cutting-tool, to receive the thrust of the tool, or for other purposes.

39. RESTS, WORK, CENTER RESTS. Devices secured to the bed or ways of a lathe and provided with a bushing or with centering-jaws in axial alinement with the work supported between the centers, to prevent springing of the work from the thrust of the cutter.
(Note.—Search should also be made in Centerers, in this class.)

TAPERS. Machines for producing conical surfaces in which the elements of the cone are usually at a comparatively-small angle to the axis of the work.

15. TAPERS, OFFSET WORK-AXIS. Machines in which the axis of the rotating work is at a slight angle to the line of feed, the tool or work having a simple straight-line feed only.

16. TAPERS, TRANSVERSELY-SHIFTED CUTTER, GEAR-CONTROLLED. Machines in which a conical surface is generated by giving the cutting-tool a compound feed, one parallel to the axis of the work and the other at right angles thereto, the latter feed being governed by a gear-train.

17. TAPERS, TRANSVERSELY-SHIFTED CUTTER, TEMPLET-CONTROLLED. Machines like the last preceding, in which the transverse feed of the cutter is governed by a fixed templet and connections between said templet and cutter or cutter-support.

40. WORK-DRIVERS. Miscellaneous devices for transmitting the rotary motion of the lathe-spindle to the work held between the centers.
(Note.—Search should also be made in Machine-chucks and tool-sockets, in Class 29, METAL-WORKING.)

41. WORK-DRIVERS, LATHE-DOGS. Driving devices which grip the work to be rotated and have a spur or other driving-connection which loosely engages a slot or other rotating portion of the face-plate or spindle.

42. WORK-DRIVERS, LATHE-DOGS, CAM-GRIP. Dogs which have cam-surfaces engaging the work to be driven in such a manner that rotation in the working direction causes the cam to grip the work the more firmly.

43. WORK-DRIVERS, MANDRELS. Rotating devices placed between the centers of the lathe and driving hollow work-pieces by engaging their interior surfaces.

44. WORK-DRIVERS, MANDRELS, EXPANSIBLE. Mandrels having work-engaging pieces capable of radial adjustment to center the work and secure driving contact therewith.
(Note.—Search should also be made in such analogous structures as wagon-hubs, paper-reels, pipe-expanders, and soldering-clamps.)

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 92—No. 5. TUESDAY, JULY 31, 1900. PRICE—$5 per year.

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Revival of Abandoned Applications.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 13, 1900.

Notice is hereby given that petitions for the revival of abandoned applications will not be docketed for hearing. A full showing of the reasons for reviving an application must be filed with the petition for revival, and the case will be disposed of on such showing without oral argument.

C. H. DUELL,
Commissioner.

Attorneys' Use of Assignment Records.

It has been brought to my attention that certain attorneys and other persons have made use of the assignment records to obtain the addresses of persons having applications pending before this Office, in order to send them letters and circulars offering to secure foreign patents or to transact other business which it may be presumed the attorneys of record in such applications are competent and willing to do. Such use of the assignment records is not a proper or legitimate use. These records are not open to the public for any such purpose.

It is hereby ordered that any attorney or other person who is known to make such use of the assignment records of this Office will be denied access thereto.

Women Inventors.

The Patent Office has published and has for sale a volume containing a list of women inventors to whom patents have been granted by the United States from 1790 to July 1, 1888. 41 pages. Paper covers, 50 cents.

An Appendix to the above, covering the period from July 1, 1888, to October 1, 1892, has been published, and is now for sale. 18 pages. Paper covers, 25 cents.

Names of Applicants.

When the full first name of the applicant does not appear either in his signature or in the preamble to the specification, the Examiner will, in his first official letter, require an amendment supplying the omission, and he will not pass the application to issue until the omission has been supplied, unless an affidavit shall have been filed setting forth that the full first name of the applicant is the one originally given by him.

CERTIFICATES OF REGISTRATION ISSUED JULY 31, 1900.

Labels.

7,719.—Title: "GOLD BOND SHOES FOR MEN." (For Boots and Shoes.) *The J. B. Hunter Co.*, Zanesville, Ohio. Application filed June 25, 1900.

7,720.—Title: "MINNEKAHTA MINERAL WATER." (For Bottled Mineral Water.) *Hot Springs Bottling Works*, Hot Springs, S. D. Application filed June 25, 1900.

7,721.—Title: "EL GATO GRANDE." (For Cigars, Cigarettes, &c.) *Stephen L. Engel*, New York, N. Y. Application filed May 10, 1900.

7,722.—Title: "EUREKA WHOOPING COUGH REMEDY." (For Whooping-Cough Remedy.) *B. F. Spangler*, York, Pa. Application filed March 31, 1900.

7,723.—Title: "SAVOY HAIR-RESTORER." (For Hair-Restorer.) *Edward F. Smith*, Trenton, N. J. Application filed July 9, 1900.

Prints.

245.—Title: "NERVBREW." (For Carbonated Beverages.) *A. Schlueter & Co.*, Milwaukee, Wis. Application filed July 9, 1900.

246.—Title: "A RAZORLESS SHAVE." (For a Chemical Compound.) *The Shaving Cream Manufacturing Company*, Jersey City, N. J., and New York, N. Y. Application filed June 30, 1900.

247.—Title: "THE WHITE PASS AND YUKON ROUTE PLAYING CARDS." (For Playing-Cards.) *Samuel Mitchell Irwin*, Seattle, Wash. Application filed June 15, 1900.

248.—Title: "THE NATION'S CAPITAL WASHINGTON, D. C. SOUVENIR PLAYING CARDS." (For Playing-Cards.) *Waters Souvenir Company*, San Francisco, Cal. Application filed June 28, 1900.

249.—Title: "CUT NO. 10, NATIONAL PLATFORM COMPUTING SCALE." (For Computing-Scales.) *The National Computing Scale Company*, Cleveland, Ohio. Application filed June 25, 1900.

250.—Title: "CUT NO. 11, NATIONAL PLATFORM COMPUTING SCALE." (For Computing-Scales.) *The National Computing Scale Company*, Cleveland, Ohio. Application filed June 25, 1900.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business July 24, 1900.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. of applications awaiting action.
	In arrears—Under one month.			
217	XXXIII. *DESIGNS, †TRADE-MARKS, ‡LABELS AND PRINTS, Optics.	July 18	July 12	68
106	II. Farm Stock, Products, etc.	July 17	July 16	71
38	XXXV. Advertising, Baggage, Buckles, Buttons, and Clasps, Packing and Storing Vessels, etc.	July 16	July 18	71
250	VIII. Furniture, Beds, Store Furniture, etc.	July 9	July 19	120
111	XXXII. Bottles and Jars, Carbonating Beverages, Refrigeration, Shipping and Storing Vessels, etc.	July 6	July 10	197
261	XXXVI. Weighing and Measuring Devices, Driers, and Drafting.	July 3	July 12	69
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	July 2	July 9	90
246	I. Tillage and Fences	June 28	July 10	100
240	VII. Velocipedes, Games, and Toys.	June 28	July 5	227
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	June 27	July 12	87
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	June 27	July 11	163
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	June 27	July 10	219
105	XI. Boots and Shoes, Harness, Hose and Belting, and Leather-Working Machinery.	June 27	July 2	179
120	IX. Hydraulics, Fire-Extinguishers, etc.	June 27	June 20	155
39	XXXI. Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	June 25	July 13	120
122	XXIV. Sewing-Machines, Apparel, and Toilet.	June 25	July 11	161
253	X. Carriages and Wagons	June 25	July 11	133
255	XII. Mechanical Engineering, Store-Service, etc.	June 25	July 11	133
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	June 25	July 11	94
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	June 25	July 10	146
30	IV. Civil Engineering, Fire-Proof Buildings, Bridges, Water Distribution, etc.	June 25	July 10	176
238	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	June 25	July 9	110
98	XXI. Textiles, etc	June 25	July 9	101
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	June 25	July 5	189
102	XIX. Stoves and Furnaces	June 25	July 3	224
	Between one and two months.			
215	XVII. Printing, Type-Writing Machines, and Linotyping.	June 22	June 28	153
221	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	June 21	July 10	91
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	June 20	July 9	122
95	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	June 18	July 9	154
261	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	June 18	July 5	117
248	XVIII. Steam-Engineering, etc	June 18	June 23	246
35	XXVIII. Pneumatics, Air and Gas Engines, etc.	June 15	June 14	275
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	June 12	June 15	294
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	June 11	June 29	226
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	June 4	June 11	224
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	May 25	June 20	181
	Total number of applications awaiting action			5,481

Applications Under Examination—Continued.

Under one month.			
*Designs	July 18	July 21	28
†Trade-Marks	July 6	July 6	167
‡Labels and Prints	July 24	July 24	

ISSUE OF JULY 31, 1900.

Patents	594	No. 654,582 to No. 655,175, inclusive.
Designs	29	No. 33,015 to No. 33,043, inclusive.
Trade-Marks	35	No. 34,964 to No. 34,998, inclusive.
Labels	5	No. 7,719 to No. 7,723, inclusive.
Prints	6	No. 245 to No. 250, inclusive.
Reissues	1	No. 11,843
Total issue	670	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	4		Nevada	1	
Arizona	1		New Hampshire	1	
Arkansas	4		New Jersey	39	2
California	5	4	New Mexico Territ'y		
Colorado	7		New York	79	14
Connecticut	9		North Carolina	4	
Delaware			North Dakota		1
District of Columbia	5		Ohio	44	3
Florida	1		Oklahoma Territ'y	2	
Georgia	9	1	Oregon		
Hawaii			Pennsylvania	53	3
Idaho			Rhode Island	10	1
Illinois	62	2	South Carolina	2	
Indian Territory	1		South Dakota	2	1
Indiana	12	1	Tennessee	4	
Iowa	17		Texas	9	
Kansas	11		Utah	1	
Kentucky	3	1	Vermont	2	
Louisiana	2		Virginia	3	1
Maine	6		Washington	3	1
Maryland	7		West Virginia	4	
Massachusetts	46	1	Wisconsin	21	3
Michigan	23		Wyoming		
Minnesota	4	1	U. S. Army		
Mississippi	4		U. S. Navy		
Missouri	9	3			
Montana	2		Total to citizens of the United States	543	44
Nebraska	5				

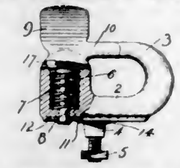
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina			Italy	1	
Australia			Japan	1	
Austria-Hungary	5		Java		
Barbadoes			Mexico		
Belgium	1		Netherlands	2	
Bermuda			New South Wales		
Brazil			New Zealand	1	
Canada	5		Queensland	1	
Chile			Roumania		
China			Russia	1	
Costa Rica			Scotland	3	
Cuba			South Australia		
Denmark			South African Republic		
Egypt			Spain		
England	26		Sweden	2	
Finland			Switzerland	2	
France	3	1	Tasmania		
Germany	24	1	Victoria	1	
Guatemala					
Haiti			Total to citizens of foreign countries	80	2
India					
Ireland	1				

PATENTS

GRANTED JULY 31, 1900.

654,582. CHECK-HOOK. LOUIS J. ANDERSEN, Decorah, Iowa. Filed Mar. 24, 1900. Serial No. 10,065. (No model.)



Claim.—1. The herein-described check-hook comprising a body portion; a hook-section 3, a thumb-piece having a finger designed to coöperate with the end of said hook and suitable means to hold said finger normally in engagement with said hook, in combination with a curved spring 14 secured to said body and having an aperture in each end, all combined substantially as specified and for the purpose set forth.

2. A check-hook having a tubular portion and a forwardly-extending hook-section; a thumb-piece having a stem extending through the body portion; a spring surrounding said stem; a finger carried by said thumb-piece and designed to coöperate with the end of said hook whereby through the action of said spring the said finger will be held normally in engagement with the end of said hook substantially as specified and for the purpose set forth.

3. The combination with a gig-saddle having a flexible body, of a check-hook comprising a body portion, a base having a spring secured thereto adapted to reinforce said flexible body, a hook-section 3, a thumb-piece having a finger designed to coöperate with said hook, and means to hold said finger normally in contact with the free end of said hook, as and for the purpose set forth.

4. The herein-described check-hook for harness, comprising a body-section; a spring-section 14; a base; a hook-section and an anchoring-stem in combination with a thumb-piece having a forwardly-extending finger, the free end of which is beveled to coöperate with the end of the said hook and a controlling-spring designed to actuate said thumb-piece and finger and hold the latter in such a position that said hook will be normally closed, all combining substantially as specified and for the purpose set forth.

654,583. MACHINE FOR WINDING AND INSULATING ELECTRIC COILS. JAMES C. ANDERSON, Jersey City, N. J. Filed Feb. 7, 1900. Serial No. 4,381. (No model.)

Claim.—1. In a machine for winding fibers, filaments or strands, the combination of a winding-spindle, means for feeding the fibers, filaments or strands thereon in layers to form a coil, and means for automatically inserting a sheet material between the layers of the coil, substantially as described.

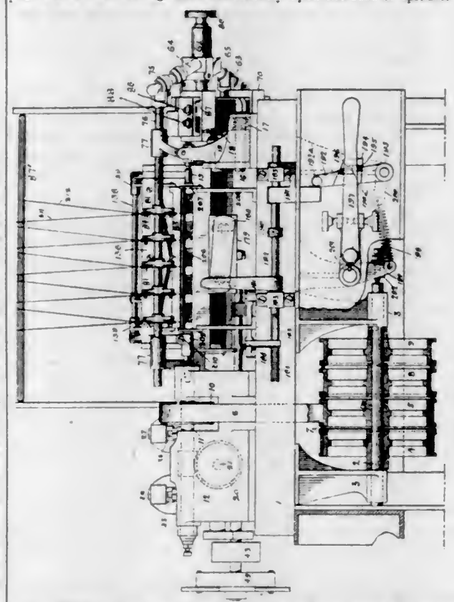
2. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a winding-spindle and means for automatically inserting sheet material at intervals in the coil, bobbin or helix, substantially as described.

3. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a winding-spindle, means for automatically inserting sheet material at intervals in the coil, and means for increasing the length of such sheets as the diameter of the coil increases.

4. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a continuously-rotating winding-spindle and means for inserting sheet material at intervals in the coil, bobbin or helix, substantially as described.

5. In a machine for winding fibers, filaments or strands, the combination of means for winding layer upon layer, means for inserting sheet material between the layers, and a device serving to reverse the direction of feed and insert the sheet, substantially as described.

6. The combination with a core or spindle, of means for automatically separating sheet material into pieces successively increasing in size, and winding them successively upon the core or spindle.



7. The combination with a core or spindle, of means for automatically separating sheet material into pieces successively increasing in size, delivery mechanism for feeding the separated pieces to the spindle, and means for shifting the delivery mechanism and spindle with respect to each other to compensate for the increasing diameter of the material on the spindle.

8. The combination with a winding-spindle, of means for winding a plurality of coils or bobbins of material thereon, and means for inserting sheets of material at intervals in said coils, each sheet being common to all the coils.

9. The combination with a continuously-rotating winding core or spindle, of means for winding a plurality of coils of material thereon, and means for inserting sheets of material at intervals in said coils, each sheet being common to all the coils.

10. In a machine for winding fibers, filaments or strands into coils or bobbins, the combination of a winding core or spindle, mechanism for injecting sheet material at intervals into the coils, and means for shifting the positions of the injecting mechanism and spindle or core with respect to each other, for the purpose set forth.

11. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a continuously-rotating winding spindle or core mechanism for injecting sheet material at intervals into the coils and means for shifting the positions of the injecting mechanism and spindle or core with respect to each other for the purpose set forth.

12. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a continuously-rotating winding spindle or core mechanism for injecting sheet material at intervals into the coils and means for shifting the positions of the injecting

mechanism and spindle or core with respect to each other for the purpose set forth, said means being operative during the formation of a layer of the fibers, filaments or strands.

13. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a winding-spindle and a carriage movable with respect to each other, means for winding the fibers, filaments or strands in layers, means for injecting sheet material into the coil and means for shifting the relative positions of the carriage and spindle during the formation of a layer.

14. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a stationary winding-spindle and a carriage movable with respect thereto, means for winding the fibers, filaments or strands in layers, means for injecting sheet material from the carriage into the coil at the termination of each layer and means for shifting the relative position of the carriage with respect to the spindle.

15. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a core or spindle and a carriage movable with respect to each other, feeding devices for sheet material carried by the carriage, an ejector for the sheet material also carried by the carriage and to which the feeding devices deliver the sheet material, and means whereby the ejector is operated at the end of each layer of the fibers, filaments or strands on the spindle.

16. In a machine for winding fibers, filaments or strands into coils, the combination of a winding-spindle, a carriage movable with respect thereto, feeding devices for a continuous strip of sheet material carried by the carriage, a knife for cutting the strip, an ejector adapted to act on the cut-off strip and also carried by the carriage and means for operating the ejector at the end of each layer of the strands on the spindle.

17. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a winding-spindle, movable guides directing the strands to the spindle, devices for feeding sheet material, an injector having a fixed throw for injecting the sheet material into the coils at intervals, and means whereby the devices for feeding the sheet material will vary the feed to correspond with the shifting of the position of the tangent-point of the strands upon the coil.

18. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a winding-spindle, guides directing the strands to the spindle, said guides having a motion tending to change the position of the tangent-point upon the coils, devices for feeding sheet material, an injector having a fixed throw for injecting the sheet material into the coils at intervals, a feed-controller actuated in unison with the said movement of the guides, whereby the feed of the sheet material will be altered to correspond with a changed position of the tangent-point on the coil.

19. In a machine for delivering sheet material to a winding-spindle, the combination of feeding devices for a strip of the sheet material, devices for severing the strip, means for holding the strip after it has been fed, and means for moving the severing devices backward upon the strip to the severing position.

20. In a winding-machine, the combination of a winding-spindle, feeding devices for a strip of sheet material, a severing device arranged to travel backward with reference to the direction of feed to its severing position, and means whereby the said backward travel is varied.

21. In a winding-machine, the combination of a winding-spindle, feeding devices for a continuous strip of sheet material, a knife arranged to travel backward with reference to the direction of feed to its cutting position, and means whereby the said backward travel is gradually increased in proportion to the increase in diameter of the material wound onto the spindle.

22. In a winding-machine, the combination of a winding-spindle, feeding devices for a continuous strip of sheet material, a knife-carrier arranged to travel backward with reference to the direction of feed, a reciprocating element for moving the carrier, a coupling one part of which is attached to the knife-carrier and the other part to said element, and means whereby the coupling will release the carrier at a different position on each stroke of the reciprocating element.

23. The combination of a winding-spindle and carriage movable with respect to each other, feeding devices for a continuous strip of sheet material, a knife-carrier adapted to carry a knife to its cutting position, a reciprocating element arranged to move the knife-carrier, a coupling adapted to connect the carrier and reciprocating element together, means for moving the spindle and carriage relatively to each other, and means whereby such relative movements will determine when the said coupling is released.

24. In a winding-machine, the combination of a winding-spindle, means for feeding a continuous strip thereto, two slides, one of which carries a knife, a coupling connecting the slides together, means for releasing the coupling at varying positions in the stroke of the slides, and means whereby the knife is actuated to cut the strip at the end of the movement of that slide in which the knife is not located, substantially as described.

25. In a winding-machine, the combination of a winding-spindle, means for feeding a continuous strip thereto, a knife for severing the strip after it is fed, said means for feeding consisting of two independent parts acting successively upon the strip and each part being adapted to gradually increase its feed, substantially as described.

26. In a winding-machine, the combination of a winding-spindle, means for feeding a continuous strip thereto, a knife for severing the strip after it is fed, said means for feeding consisting of two reciprocating slides, one of which is adapted to be moved by the other, a coupling adapted to connect and disconnect the slides, means actuated in accordance with the amount of feed required, for controlling said coupling, one of the slides carrying gripping devices for holding the strip during one movement of the slide and also independent feeding devices for moving the strip after the slide stops, substantially as described.

27. In a machine for winding strands and sheet material into coils, the combination of a reciprocating block, two levers each hinged at one end to said block and at the other respectively hinged to two reciprocating rods, one of which guides the strands and the other controls the feed of the sheet material, said levers being pivoted between their extremities.

28. In a machine for winding strands and sheet material into coils, the combination of a reciprocating block, two levers each hinged at one end to said block and at the other respectively hinged to two reciprocating rods, one of which guides the strands and the other controls the feed of the sheet material, said levers being pivoted between their extremities upon adjustable pivots, substantially as described.

29. In a machine for winding strands and sheet material into coils, the combination of a winding-spindle, a reciprocating block, two levers each hinged at one end to said block and at the other respectively hinged to two reciprocating rods, one of which guides the strands to the spindle to form layers and the other controls the feed of the sheet material toward the spindle, and an intermittently-rotating shaft whose motion reverses the direction of movement of the said first-mentioned reciprocating rod and simultaneously injects sheet material into the coil, substantially as described.

30. In a machine for winding sheet material into coils, the combination of a stationary winding-spindle, a pivoted carriage, a slide on said carriage whose motions effect the feeding of the sheet material, and means whereby the movement of the carriage on its pivot will vary the extent of feed caused by the slide.

31. In a machine for winding sheet material into coils, the combination of a stationary winding-spindle, a pivoted carriage, a slide on said carriage whose motions effect the feeding of the sheet material, a coupling through which the slide is dragged along, a crank carried by the slide and adapted to release said coupling, an incline over which the end of the crank moves when the slide moves, means for changing the relative position of the incline and slide when the carriage is moved on its pivot, to thereby obtain different releasing positions of the coupling, substantially as described.

32. In a winding-machine, the combination of an intermittently-rotating shaft, a reciprocating rod whose direction of movement is reversed by the rotation of said shaft, a strand-guide moved by said rod, a winding-spindle, and a device for injecting sheet material into the winding-coil, said device being operated by the intermittent rotations of the shaft, substantially as described.

33. In a winding-machine, the combination of a winding-spindle and a carriage movable with respect to each other, the carriage carrying devices for feeding sheet material to the winding-spindle, and means whereby the spindle and carriage are moved with respect to each other in proportion to the increase in size of the material on the spindle.

34. In a winding-machine, the combination of a reciprocating block, a reciprocating rod carrying guiding devices for the material to be wound, and a pivoted lever binged to the block and rod, substantially as described.

35. In a machine for winding material in the form of strands, fibers or filaments and sheets, the combination of means for winding the strands, fibers or filaments in layers, means for winding the sheet material at the end of each layer, and means for reversing the direction of traverse of the strands, fibers or filaments to superpose the layers.

36. In a winding and wrapping machine, the combination of a core or spindle means for winding fibers or filaments thereon in layers, means for applying sheet material to the surface of the layers, and a device for separating the sheet material into parts or pieces of respectively varying size.

37. The combination with a core or spindle, of means for automatically separating sheet material into parts or pieces and wrapping them successively upon said core or spindle.

38. The combination with a core or spindle, of means for automatically separating sheet material into parts or pieces, successively increasing in size, delivery mechanism for feeding the separated pieces to the core or spindle, and means for shifting the delivery mechanism and core with respect to each other, to compensate for the increasing diameter of the coil.

39. In a winding and wrapping machine, the combination of a core or spindle, means for winding and feeding fibers or filaments thereon at two or more zones simultaneously, and means for projecting the edge of a material in sheet form into the tangent-point between the fibers or filaments and the surface of the coil.

40. In a winding and wrapping machine, the combination of a core or spindle, means for winding and feeding fibers or filaments thereon at two or more zones simultaneously, means for projecting the edge of a material in sheet form into the grip of the fibers or filaments, and a device resting upon the surface of the coils and adapted to engage the sheet material.

41. In a winding and wrapping machine, the combination of a core or spindle, means for winding and feeding fibers or filaments thereon at two or more zones simultaneously, means for projecting the edge of a material in sheet form into the grip of the fibers or filaments, and a roller engaging the surface of the coils and sheet material.

42. The combination with a core or spindle, of means for winding a plurality of coils thereon and means for inserting sheet material at intervals in said coils, each sheet being common to all the coils.

43. The combination with a continuously-rotating winding core or spindle, of means for winding a plurality of coils thereon, and means for inserting sheet material at intervals in said coils, each sheet being common to all the coils.

44. In a machine for winding and wrapping fibers or filaments into coils, the combination of a winding core or spindle, mechanism for injecting sheet material at intervals into the coils, and means for changing the relative position of the injecting mechanism with respect to the coils for the purpose set forth.

45. In a machine for winding and wrapping fibers and filaments, the combination of a core or spindle, means for winding the fibers or filaments thereon, a source of supply of sheet material, feeding devices for advancing in such sheet material, and means for separating said material into parts or pieces and for feeding the same successively to the core or spindle.

46. In a winding-machine, the combination of a winding core or spindle, a rod or foundation carrying a plurality of guides for fibers, filaments or strands, said spindle and rod or foundation being bodily movable with respect to each other for the purpose of forming layers upon the spindle.

47. In a winding-machine, the combination of a winding core or spindle, a rod or foundation carrying guides for fibers, filaments or strands, said spindle and rod being bodily movable with respect to each other, a reciprocating block, a lever hinged to the block and to the said rod or foundation and itself pivotally mounted upon an adjustable support.

48. In a winding-machine, the combination of a source of power, guiding devices for the material to be wound, a reciprocating element connected with the guiding devices, a shaft adapted to reverse the movement of the reciprocating element, a spring and a friction-coupling connecting said shaft with the source of power, a stop preventing the rotation of said shaft, and means for removing the stop at intervals.

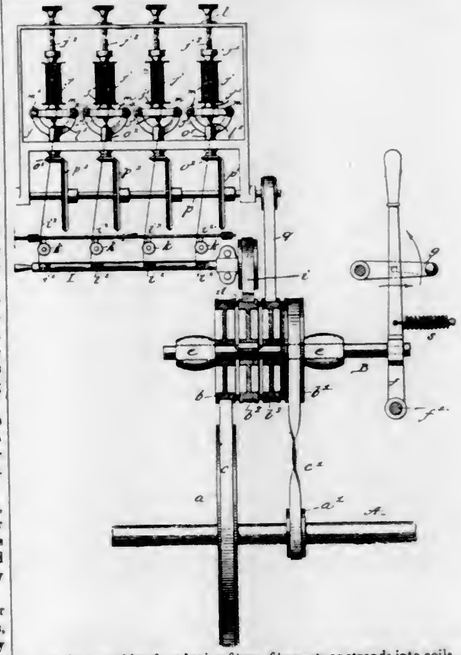
49. In a winding-machine, the combination of a source of power, guiding devices for the material to be wound, a reciprocating element connected with the guiding devices, a shaft adapted to reverse the movement of the reciprocating element, a spring interposed between the shaft and the source of power, a stop preventing the rotation of the shaft, means for removing the stop at intervals, and a load or retarding device applied to the shaft.

654,584. WINDING-MACHINE. JAMES C. ANDERSON, Jersey City, N. J. Filed Feb. 17, 1900. Serial No. 5,634. (No model.)

Claim.—1. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a winding-spindle, a plurality of spools upon which the fibers, filaments or strands are stored, means for conducting the fibers, filaments or strands from the spools to the spindle, means for rotating the spindle and spools backward, and a yielding connection between the respective spools and said rotating means, substantially as described.

2. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a winding-spindle, a plurality of spools upon which the fibers, filaments or strands are stored, means for conducting the fibers, filaments or strands from the spools to the spindle, means for rotating the spindle and spools backward, and an adjustable yielding connection between the respective spools and said rotating means, substantially as described.

3. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a winding-spindle, means for rotating it, a plurality of spools, means for directing the material stored thereon to the winding-spindle, a shaft, a yielding gearing between the shaft and each spool, and means for rotating said shaft, substantially as described



4. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a winding-spindle, means for rotating it, a plurality of spools, means for directing the material stored thereon to the winding-spindle, a shaft, a yielding gearing between the shaft and each spool, means for reversing the direction of rotation of the winding-spindle and rotating the shaft, substantially as described.

5. In a machine for winding fibers, filaments or strands into coils, bobbins or helices, the combination of a winding-spindle, means for rotating it, a plurality of spools, means for directing the material stored thereon to the winding-spindle, a shaft, a yielding gearing between the shaft and each spool, and means for simultaneously reversing the direction of rotation of the winding-spindle and rotating the shaft, substantially as described.

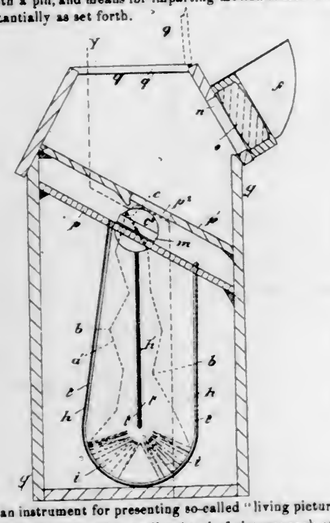
654,585. APPARATUS FOR PRESENTING LIVING PICTURES TO THE EYE. THOMAS ANSBORO, Glasgow, Scotland, assignor of one-half to John Fairie, same place. Filed Apr. 15, 1899. Serial No. 713,153. (No model.)

Claim.—1. In an apparatus for presenting so-called "living pictures" to the eye, the combination with an endless band composed of a series of pictures flexibly jointed to one another and such flexible joints arranged alternately on opposite sides of the band in order to render the endless band automatically foldable when moved at a high rate of speed, of means for giving an intermittent movement to the endless band whereby each picture is presented to the eye for a brief period while at rest, substantially as set forth.

2. In an apparatus for presenting so-called "living pictures" to the eye, the combination with an endless band composed of a series of pictures flexibly jointed to one another and such flexible joints arranged alternately on opposite sides of the band in order to render the endless band automatically foldable when moved at a high rate of speed, of a revolving plate around which the flexibly-jointed band passes, and means for imparting an intermittent movement to the plate, substantially as set forth.

3. In an apparatus for presenting so-called "living pictures" to the eye, the combination with an endless band composed of a series of pictures flexibly jointed to one another and such flexible joints arranged alternately on opposite sides of the band in order to render

the endless band automatically foldable when moved at a high rate of speed, of a revolving plate provided with projections and around which plate the flexibly-jointed band passes, an axle for the plate, a driving-wheel whose center is eccentric to the axle of the plate and provided with a pin, and means for imparting motion to said driving-wheel, substantially as set forth.



4. In an instrument for presenting so-called "living pictures" to the eye, the combination of an endless band of pictures each of which is jointed to its neighbor, a revolving plate around which the band passes, projections on the plate, adjustable pieces fitted on the projections, means for clamping the adjustable pieces in place, an axle for the plate, a driving-wheel whose center is eccentric of the axle of the plate, a pin on the driving-wheel and means for rotating the driving-wheel, substantially as set forth.

5. In an instrument for presenting so-called "living pictures" to the eye the combination of an endless band of pictures each of which is jointed to its neighbor, a revolving plate around which the band passes, projections on the plate, an axle for the plate, a driving-wheel whose center is eccentric of the axle of the plate, a pin on the driving-wheel, means for rotating the driving-wheel, a disk *v* on the axle of the plate and friction brake-springs secured to the plate and bearing against the disk, substantially as hereinbefore set forth.

6. In an instrument for presenting so-called "living pictures" to the eye, the combination of an endless band of pictures, means for flexibly jointing the pictures to each other so that they can fold up, a plate for revolving the band, means for actuating the plate, a guideway for the pictures having a central partition and a curved lower end, rails in the guideway and recesses or indents in the plate into which the upper ends of the rails project, substantially as hereinbefore set forth.

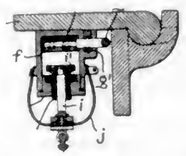
7. In an instrument for presenting so-called "living pictures" to the eye the combination of an endless band of pictures each of which is jointed to its neighbor, a revolving plate around which the band passes, projections on the plate, an axle for the plate an elliptical driving-wheel, a pin on the driving-wheel, a second elliptical wheel gearing with the first one and means for driving this second wheel, substantially as hereinbefore set forth.

8. The combination of the endless band *a*, the guideway *h* for the band, the revolvible plate *c*, the projections *j*, *j'*, on the plate, the axle *d* around which the plate revolves, the driving-gear, the pin *e* actuated by the driving-gear and the means for operating the gear, substantially as hereinbefore set forth.

9. An endless band consisting of a series of pictures jointed one to another in a flexible manner and with such joints arranged alternately on opposite sides of the band and coated with an elastic substance to impart to the band a tendency to fold automatically when moved at a high rate of speed, substantially as set forth.

654,586. CONDUIT ELECTRIC-RAILWAY SYSTEM. FRANK M. ASHLEY, New York, N. Y., assignor to the General Electric Company, of New York. Filed Feb. 26, 1898. Serial No. 671,796. (No model.)

Claim.—1. In an electric-railway system, the combination with a conduit, of a hinged cover therefor, sectional working conductors in said conduit, and means for establishing electrical connection between said conductors and the motor of the car when said cover is in its normal position over the conduit.



2. In an electric railway, the combination of a conduit, a hinged cover therefor, and a sectional working conductor carried by said cover, substantially as described.

3. In an electric railway, the combination of a conduit, a hinged cover therefor, a sectional working conductor supported by the cover, and a cut-out for said conductor.

4. In an electric railway, the combination of a conduit, a cover hinged thereto, a sectional working conductor attached to said cover, and a cut-out for said conductor which is automatically operated when the cover is swung on its hinge.

5. In an electric-railway system, the combination with a conduit, of a removable cover therefor, contact devices carried by said cover and operative only when the cover is in its closing position.

6. In an electric railway, the combination of a sectional conductor, a support therefor consisting of a cup provided with contact-points one of which is movable, and a flexible bulb surrounding one end of the cup, to which the movable contact-piece and the sectional conductor are attached substantially as described.

7. In an electric-railway system, the combination of a conduit, a movable cover therefor, a main conductor, a sectional conductor, the sections of said conductor being carried by said cover, a branch wire between the two conductors, a cut-out in said branch wire and means connected with the cover for operating said cut-out, substantially as described.

8. In an electric-railway system, the combination with a conduit, of a movable cover therefor, sectional working conductors supported by said cover and adapted to reciprocate independently thereof.

9. The combination with a conduit, of a movable cover therefor, contact devices carried by said cover and operative only when the cover is in the closing position, sectional working conductors carried by the said cover and adapted to have movement independent thereof to be connected with said contact devices.

10. The combination with a conduit, of a movable cover therefor, contacts carried by said cover and operative only when said cover is in its closing position, reciprocative working conductor-sections carried by said cover, a contact device carried by a car and adapted to engage with the said working sections and cause them to become electrically connected with said contacts.

11. The combination with a conduit, of a movable cover therefor, contacts supported by said cover, a line conductor connected with said contacts, and means for breaking said connection when the cover is moved.

12. The combination with a conduit, of a movable cover therefor, contacts carried by said cover, line conductors connected with said contacts, cut-outs in said connections, and means carried by said cover adapted to open said cut-outs when the cover is raised.

13. The combination with a conduit, of a movable cover therefor, a line conductor, contacts adapted to be connected therewith, a switch-piece normally pressed away from the terminals of said contacts and conductor, and a finger carried by said cover adapted to press said switch-piece against said terminals when the cover is in its closing position.

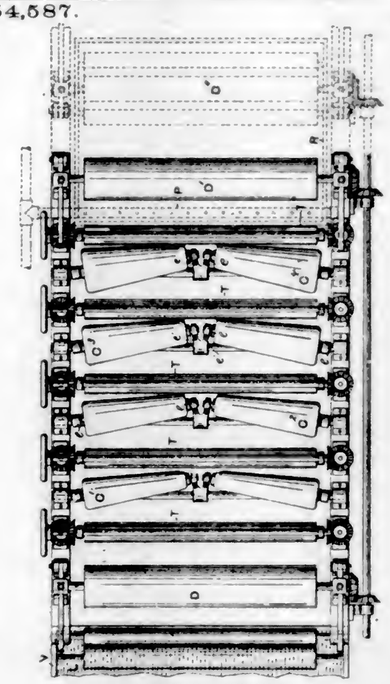
654,587. CLOTH-STRETCHING MACHINE. ARTHUR ASHWORTH, Bury, England. Filed Aug. 4, 1899. Serial No. 726,121. (No model.)

Claim.—1. In a cloth-stretching machine, the combination of a series of pairs of conical rollers of various diameters, in combination with a pair of drawing-rollers located at the end of the series, substantially as described.

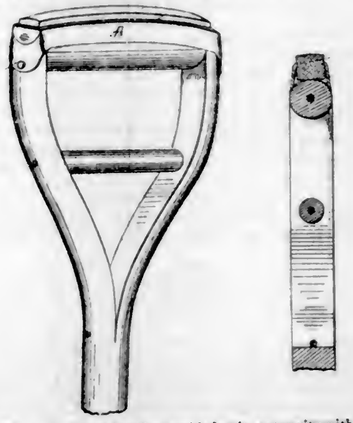
2. In a cloth-stretching machine the combination of a series of pairs of conical rollers of varying diameters, the approaching ends of the axes of each pair being arranged at an upwardly-inclined angle to each other, and a series of horizontal cylindrical tension-rollers intercalated between the pairs of conical rollers, for the purpose set forth.

3. In a cloth-stretching machine, the combination of a series of pairs of conical rollers of differing diameters and a pair of drawing-rollers at each end of the series, said pairs of drawing-rollers having different surface speeds, substantially as described.

654,587.



654,588. TOOL-HANDLE. HARRY R. ATWATER, Cleveland, Ohio, assignor to the Osborn Manufacturing Company, same place. Filed Dec. 11, 1899. Serial No. 739,872. (No model.)



Claim.—1. A tool-handle provided at its extremity with a metal clip having a central opening and a peen of rubber or similar material secured therein, substantially as set forth.

2. A tool-handle provided at its extremity with a metal clip having a central opening provided with sides converging to form jaws, and a peen of rubber or similar material secured in said opening by said jaws, substantially as set forth.

3. A tool-handle provided at its extremity with an inelastic metal clip having a central opening, and a peen of rubber or similar material secured therein, substantially as set forth.

4. The combination of a tool-handle, a metal clip provided with projecting lateral lugs secured to the sides of said handle and formed with an opening, and a peen of rubber or similar material secured in said opening, substantially as set forth.

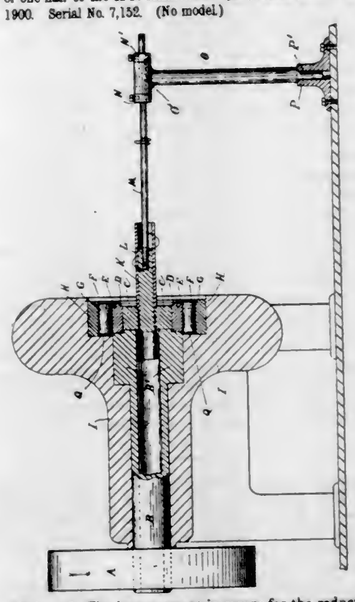
654,589. EXHAUST-TIP FOR LOCOMOTIVES. JOSHUA B. BARNES, Springfield, Ill. Filed July 21, 1899. Serial No. 724,643. (No model.)



Claim.—1. The combination of a tapered pipe forming a single upwardly-tapered chamber provided with two openings at its lower end for admitting steam into the chamber with a single opening at the upper small end, a single inverted-cone-shaped expander arranged entirely and rigidly within the mouth of the upper opening in the tapered pipe leaving an unobstructed vertical passage between the top rim of the expander and the inner wall of the pipe, arms extending from the expander to the inner wall of the pipe for holding the expander in a central position, a wall across the center of the lower end of the chamber dividing the lower portion of the chamber perpendicularly only, substantially as described.

2. The combination of a tapered pipe forming a single upwardly-tapered chamber provided with two openings at its lower end for admitting steam into the chamber with a single opening at the upper small end, a single inverted-cone-shaped expander arranged entirely and rigidly within the mouth of the upper opening in the tapered pipe leaving an unobstructed vertical passage between the top rim of the expander and the inner wall of the pipe, arms extending from the expander to the inner wall of the pipe for holding the expander in a central position, a wall across the center of the lower end of the chamber dividing the lower portion of the chamber perpendicularly only, a stud through the center of the expander screwed into the top of the perpendicular wall for holding the expander rigidly in place, substantially as described.

654,590. REDUCTION TO HOLLOW WIRE OF TUBULAR SHELLS OF GOLD. HENRY R. BAKER, Attleborough, Mass., assignor of one-half to the R. F. Simmons Company, same place. Filed Mar. 3, 1900. Serial No. 7,152. (No model.)



Claim.—1. The improvement in means for the reduction to hollow wire of tubular shells of gold or like metal, consisting in the combination with alternately-reciprocated beaters of a rotary reducing-machine substantially as described, of a rotatable arbor, for the support of said shells within said machine, said arbor provided with

a guide-rod journaled to rotate upon its axis in a suitable support at its attached end, said guide-rod and arbor adapted to be rotated by the rotary beaters of said machine, said guide-rod rigidly secured against longitudinal movement thereof by means of attachments secured thereto, and said arbor adapted to be secured by said attachments at any desired depth between said beaters, and thereby rigidly held against longitudinal movement within said machine during the reduction in thickness and longitudinal extension of said shells thereby, said tubular shells adapted to pass over said arbor while being reduced, the movements of said tubular shells controlled by the hand of the operator, said elongated shells adapted to pass out of said machine in tubular form and without internal support, substantially as described.

2. In combination with a rotary reducing-machine, having rotary beaters substantially as described, a fixed support in front of the machine, a vertical standard rising from said support, and rotatable on its axis therein, said standard provided with a horizontal journaled bearing at its upper end, together with a horizontal rod, carrying a shell-supporting arbor at its free end, within the jaws of said machine, said rod constructed to be rotated on its axis by means of said rotary beaters adjustable longitudinally in said bearing of said standard, and adapted to be secured against longitudinal movement during the operation thereof by suitable stops applied thereto, substantially as and for the purpose described.

3. In combination with a rotary reducing-machine, substantially as described, having rotating beaters, a hollow supporting-shaft and means for alternately compressing said beaters upon a central mass between the same, and releasing said mass, an arbor located between said beaters, said arbor held against longitudinal displacement, and adapted to receive around the same a hollow ingot or shell of gold or like metal, said arbor and said shell acted on and rotated by said beaters, and said shell, as it is reduced thereby adapted to be pushed gradually through said machine, thereby clearing said longitudinally-fixed arbor, and advancing in tubular form and without any core or internal support in contact with said shell, together with an adjustable support, outside said machine, for said arbor, substantially as described.

4. In combination with the rotary reducing-machine, substantially as described, a fixed support, P, a vertical standard, O, adapted to be rotated in said support, a transverse journal-bearing, O', in the upper part thereof, a horizontal rod and arbor, M, K, journaled rotatably in said bearing, said arbor, K, adjustably held between the beaters, C, C, of said machine, substantially as and for the purpose described.

5. In combination with the rotary reducing-machine, having rotary beaters substantially as described, the shell-supporting arbor, K, detachably secured between the beaters thereof, C, C, the longitudinally-adjustable horizontal rod, M, extended from said arbor out of the said machine, and adjustable means of support for said rod to hold the same against longitudinal displacement during the rotation thereof, said rod adapted to be rotated on its own axis in said support by said rotary beaters, substantially as described.

6. In combination with the rotary reducing-machine, I, having driving-pulley, A, hollow shaft, B, rotary beaters C, C, and followers D, D', and compressing-rolls, G, G, the shell-supporting arbor, K, interposed between said beaters, the rod, M, secured to said arbor, the journaled standard, O, said rod adapted to be rotated therein by said rotary beaters, and adjusting-clamps, N, N', to hold said arbor from longitudinal movement into the said machine during the rotation thereof, and adapted when released, to permit said arbor to be slid back from said machine, and afterward again replaced, without affecting its relative position therein, substantially as described.

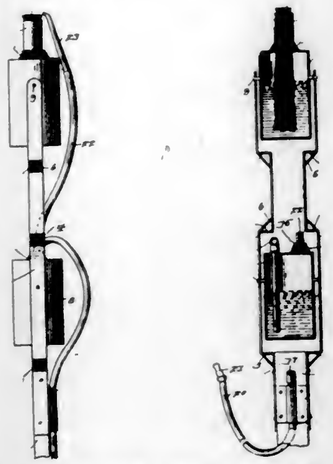
7. The improved means of reducing to hollow wire, tubular shells of gold or the like, consisting of the rotary reducing-machine, substantially as described, the rotatable arbor, K, rod, M, adjustments, N, N', journal-bearing, O', standard, O, said standard rotatable on its axis, and fixed support, P, having journal-bearing, P', for said standard, the whole constructed and adapted to be operated substantially as and for the purposes herein set forth.

654,591. INSECT-DESTROYER. WILLIAM J. BARBER, Honeoye Falls, N. Y. Filed May 28, 1900. Serial No. 18,297. (No model.)

Claim.—1. An insect-destroyer, comprising a handle, a swinging lamp or torch mounted thereon, a carbureter pivotally supported upon the handle, and a flexible connection between the carbureter and the lamp or torch.

2. An insect-destroyer, comprising a handle, a swinging lamp or torch mounted thereon, and provided with a nozzle discharging laterally across the wick of the lamp or torch, a swinging carbureter also mounted upon the handle, a flexible connection between the carbureter and the lamp or torch, a flexible tube connected to the carbureter, and a mouthpiece for the flexible tube.

3. An insect-destroyer, comprising a handle, a swinging lamp or torch mounted thereon, and provided with a nozzle discharging across the wick of the lamp or torch, a swinging carbureter, having a filling-opening, a screw-cap therefor, provided with a nipple, a flexible tube connecting the nipple to the nozzle, an internal tube within the carbureter and also projecting through the top thereof, a flexible tube connected to the outer end of the internal tube, and a mouthpiece for the flexible tube.



4. An insect-destroyer, comprising a handle, having a fork projecting longitudinally at one end thereof, a lamp or torch swung between the outer ends of the members of the fork, a carbureter also swung upon the fork and between the end of the handle and the lamp or torch, a nozzle carried by the lamp or torch and discharging across the wick thereof, and a flexible tube connecting the carbureter with the nozzle.

5. An insect-destroyer, comprising a handle, having a fork projecting longitudinally at one end thereof, a lamp or torch, having opposite pivot-pins received within corresponding perforations in the members of the fork and located adjacent to the outer ends thereof, a nozzle mounted upon the lamp or torch and discharging across the wick thereof, a carbureter located between the lamp and the adjacent end of the handle, and provided with opposite pivot-pins received within corresponding perforations in the fork members, a flexible tube connecting the carbureter with the nozzle, a longitudinally-disposed tube fixedly connected to the handle, a flexible tube between the rigid tube and the carbureter, and a flexible tube connected to the opposite end of the rigid tube and provided with a mouthpiece.

654,592. FILTERING APPARATUS. WILLIAM H. BARR, Bury, England. Filed Jan. 23, 1900. Serial No. 2,502. (No model.)

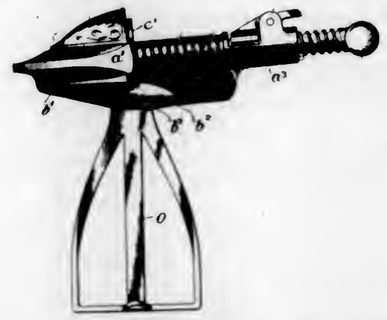


Claim.—1. A filter-bed consisting of an inner supporting and drainage tube, an outer perforated cylinder or tube, a space being left between the tubes for the free circulation of the fluid, the outer cylinder or tube being provided with a straining-jacket preferably of mercerized and unstretched cotton cambric, upon which is deposited a coating of filtering earth or media substantially as described and illustrated.

2. In a filtering apparatus, a casing, a plurality of filter-beds therein each comprising an inner supporting and draining tube and an outer perforated cylinder with a straining-jacket upon said cylinder composed of mercerized cotton having a coating of filtering-earth, and means for washing said filter-beds while in position, substantially as described.

654,593. LEMON-SQUEEZER. ALBERT BAUMGARTEN, Freeport, Ill. Filed Mar. 3, 1899. Serial No. 707,607. (No model.)

Claim.—In a lemon-squeezer, the combination of two members, one of which is threaded in the other and one of which is provided with a suitable cup and the other with an opposing cone, said cone having an external spiral groove or thread running in the direction opposite to the thread between the two members; substantially as described.



654,594. CHURN-DASHER. HIRAM L. BENJAMIN, Reynolds, Nebr., assignor of one-half to W. C. Parker, same place. Filed June 2, 1900. Serial No. 18,889. (No model.)



Claim.—1. A dasher comprising a base portion having upwardly-divergent openings, upwardly-convergent plates disposed opposite the said divergent openings, and a deflector located in a higher plane than the said plates and having its sides upwardly divergent, substantially as set forth.

2. A dasher, comprising a base portion having intermediate and side openings, pivoted wings for closing the side openings and adapted to swing downward at their inner edges, upwardly-convergent plates arranged at a right angle to the pivoted wings, and a deflector located in a higher plane than the convergent wings and parallel therewith and having its sides upwardly divergent, substantially as specified.

654,595. METHOD OF OPERATING DYNAMO-ELECTRIC MACHINES. ERNST J. BERG, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed May 26, 1900. Serial No. 18,034. (No model.)

Claim.—1. The method of adjusting the angular position of the rotating member of a synchronous dynamo-electric machine which consists in causing said member to slip until the desired angular position is secured and then checking any further slip.

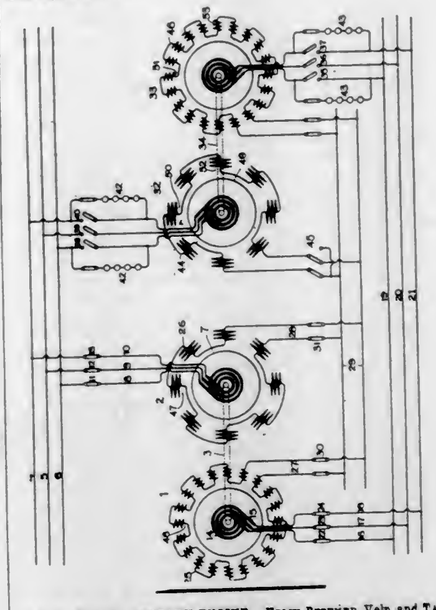
2. The method of connecting motor-generators in multiple with each other which consists in causing one set to slip from synchronism until both of its members come into synchronism at the same instant with the corresponding members of another motor-generator set, and then causing the motor-generators to run synchronously.

3. The method of causing the rotating member of a synchronous dynamo-electric machine to slip which consists in reversing its field

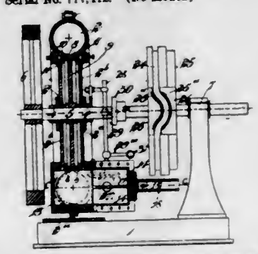
4. The method of causing the rotating member of a synchronous dynamo-electric machine to slip, which consists in reversing the direction of current through its field-windings.

5. The method of causing the rotating member of a synchronous dynamo-electric machine to slip, which consists in successively reversing its field.

654,595.



654,596. ROTARY ENGINE. FELIX BEZNER, Velp, and TAMMO J. BEZNER, Wageningen, Netherlands, assignors to themselves and Leonardus Arnoldus Van Schie, Rotterdam, Netherlands. Filed May 19, 1899. Serial No. 717,412. (No model.)



Claim.—1. A rotary engine comprising an annular motive-fluid chamber formed at its inner circumference with an annular opening, a piston fitting said chamber, a disk or wheel fixed to the engine-shaft and the peripheral portion of which extends through the annular opening and is connected to the piston, annular screw-threaded grooves in the opposite walls of said annular opening, screw-threaded packing-rings screwed into said grooves and bearing against the surface of said disk or wheel, a movable valve or door capable of being placed transversely across said motive-fluid chamber, and means for controlling the admission of motive fluid as set forth.

2. A rotary engine comprising an annular motive-fluid chamber formed with an annular opening and having in communication therewith a valve-chest, a movable valve or door which in one position forms a partition across the annular chamber, a lever coupled to said valve or door, and having a pin or projection, and a rotary disk or wheel having a peripheral cam-groove that engages with said pin or projection, a disk or wheel having its peripheral portion extending through said annular opening and connected to a piston fitting said chamber, annular screw-threaded grooves in the opposite walls of said annular opening, screw-threaded packing-rings screwed into said grooves and bearing against the surface of said disk or wheel, and means for controlling the admission of motive fluid as set forth.

3. In an engine of the type referred to, the combination of a movable valve or door which in one position serves as a partition across said annular chamber, a lever coupled to said valve or door and having a pin or projection, and a rotary disk or wheel formed with a peripheral cam-groove that engages with said pin or projection, the intermediate portion of said cam-groove having its sides formed of spring blades or plates as and for the purpose specified.

4. In an engine of the type referred to, the combination of a movable valve or door which in one position serves as a partition across said annular chamber, a lever coupled to said valve or door and having a pin or projection, and a rotary disk or wheel formed with a peripheral cam-groove that engages with said pin or projection, the laterally-curved portion of said cam-groove having its sides formed of spring blades or plates supported at intervals only as and for the purpose specified.

5. In a rotary engine of the type referred to, an annular motive-fluid chamber formed in two parts each formed with inwardly-extending webs having central apertures fitted with the bearings of the main engine-shaft, an annular opening at the inner periphery of said motive-fluid chamber, annular screw-threaded grooves in the opposite walls of said annular opening, and screw-threaded packing-rings screwed into said grooves as set forth.

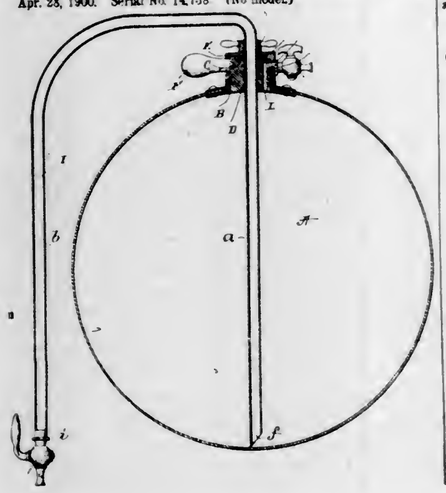
6. In a rotary engine of the type referred to, the combination of an annular motive-fluid chamber formed in two parts each formed with inwardly-extending webs having central apertures fitted with the bearings of the main engine-shaft, a disk or wheel keyed to the engine-shaft between said bearings and having its peripheral portion extending through an annular opening at the inner periphery of said motive-fluid chamber, annular screw-threaded grooves in the opposite walls of said annular opening, and screw-threaded packing-rings screwed into said grooves as set forth.

7. In a rotary engine of the type referred to, the combination of an annular motive-fluid chamber formed in two parts, each formed with inwardly-extending webs having central apertures fitted with the bearings of the main engine-shaft, a disk or wheel keyed to the engine-shaft between said bearings and having its peripheral portion extending through an annular opening at the inner circumference of the annular chamber, annular screw-threaded grooves in the opposite walls of said annular opening, screw-threaded packing-rings screwed into said grooves and bearing against the surface of said disk or wheel, and a motive-fluid admission-cock, the plug of which is closed by a spring acting on an arm connected to its spindle, but which plug is turned to admit motive fluid to the engine at the required times by means of a cam carried by the engine-shaft as set forth.

8. A rotary engine comprising an annular chamber 2 with annular opening 8, a piston 12 fitting said chamber and connected to a disk or wheel 9 fixed to the engine-shaft 5, a valve or door 16 having its spindle 17 fitted with a sliding head 19, a lever 20 with pin 22, a disk or wheel fixed to the engine-shaft and having a cam-groove 24 in which is located said pin 22, and means for controlling the admission of motive fluid, as set forth.

9. A rotary engine comprising an annular chamber 2 with annular opening 8, a piston 12 fitting said chamber and connected to a disk or wheel 9 fixed to the engine-shaft 5, a valve or door 16 having its spindle 17 fitted with a sliding head 19, a lever 20 with pin 22, a disk or wheel fixed to the engine-shaft and having a cam-groove 24 in which is located said pin 22, a cock 27 the spindle of whose plug 28 is provided with arms 29, 29ª, a cam 30 fixed to the engine-shaft, and a spring 31, as set forth.

654,597. SIPHON. CLYDE M. BRADY, Brunswick, Ga. Filed Apr. 28, 1900. Serial No. 14,738. (No model.)



Claim.—A siphon adapted to be hermetically attached to a cask or vessel comprising a bung having a siphon-pipe opening, a siphon-pipe passing through the said opening into the barrel and having its outer end below its inner end and provided with a valve, the said bung having an opening with its inner end in communication with the barrel independent of the said siphon-pipe, the outer end of the said opening having an independent air-outlet and pump-connection inlet in communication therewith, and a valve adapted to independently control the said passages by throwing either of them in communication with the interior of the cask or closing both of them against communication therewith, substantially as described.

654,598. SNAP-SEAL. EDWARD J. BROOKS, East Orange, N. J. Filed June 18, 1900. Serial No. 20,751. (No model.)



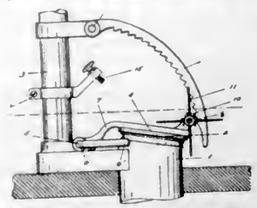
Claim.—1. An improved snap-seal comprising a flexible shackle of resilient wire having hook-shaped catches at both ends, and a disk-shaped seal part having a partly-tubular rim, rigid lips within said rim to coact with said catches, entrances for the shackle ends, and flattened portions contracting the spaces within said rim in communication with said entrances.

2. The combination, in a snap-seal, of a flexible shackle of resilient wire, and a disk-shaped seal part of sheet metal, united with each other at one shackle end, said shackle having at its other end a hook-shaped catch, and said seal part having a partly-tubular rim, an inturned rigid lip to coact with said catch, and an entrance thereto formed by the hole from which said lip is displaced.

3. The combination, in a snap-seal, of a flexible shackle of resilient wire and a disk-shaped seal part of sheet metal, united with each other at one shackle end, said shackle having at its other end a hook-shaped catch and a crimped shank portion, and said seal part having a partly-tubular rim, a rigid inturned lip to coact with said catch, an entrance admitting said catch and shank portion, and flattened portions contracting the space within said rim in communication with said entrance.

4. In a snap-seal, the combination of a one-part flexible shackle of resilient wire, having a hook-shaped catch and a crimped shank portion at each end, and a disk-shaped seal part of sheet metal, in one piece, having a partly-tubular rim, inturned rigid lips to coact with said catches, entrances between said lips which admit said catches and shanks, and flattened portions which contract the spaces within said rim in communication with said entrances, substantially as hereinbefore specified.

654,599. CLOSET-CISTERN. WILLIAM BUNTING, Jr., New York, N. Y. Filed Apr. 18, 1899. Serial No. 713,435. (No model.)



Claim.—1. A closet-cistern having a hinged flushing-valve carrying a rotatable shaft, a ratchet-wheel on said shaft, paddles carried by said shaft, a rack pivoted at one end, said rack being adapted and arranged to engage said ratchet-wheel at all positions of said valve.

2. A closet-cistern having a hinged flushing-valve carrying a rotatable shaft, a ratchet-wheel on said shaft, paddles carried by said shaft, a curved rack pivoted at one end, said rack being adapted and arranged to engage said ratchet-wheel at all positions of said valve.

3. A closet-cistern having a hinged flushing-valve carrying a rotatable shaft, a pinion secured to said shaft, paddles also secured to said shaft, and a movable rack resting on said pinion.

4. A closet-cistern having a hinged flushing-valve carrying a rotatable shaft, a pinion secured to said shaft, paddles also secured to said shaft, a movable rack resting on said pinion, and an adjustable stop for limiting the opening movement of said valve.

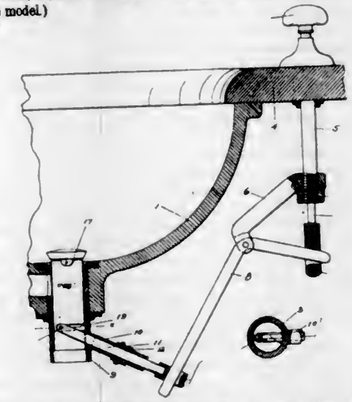
5 A closed water-closet tank having a constantly-open supply-pipe, a discharge-pipe, a hinged main valve closing said discharge-pipe, a passage through said valve, a hinged supplemental valve closing said passage, an operating device for lifting said valves from their seats, a finger connected to said supplemental valve and arranged in the path of said operating device so that the supplemental valve will be lifted in advance of said main valve, and a slow-closing device connected to said supplemental valve for holding the same open after the main valve is closed.

6. A water-closet tank having a main valve, a hinged arm connected thereto, a passage through said main valve, a supplemental valve for closing said passage, a hinged arm connected to said supplemental valve, a finger carried by said last-named arm which is adapted to engage said first-named arm when said supplemental valve is partially lifted, an operating device for engaging said finger, and a slow-closing device connected to said supplemental valve.

7. A water-closet tank having a flushing-valve, a shaft journaled thereon, a ratchet-wheel secured to said shaft, a pivoted rack for engaging said ratchet-wheel upon the closing movement of said valve, and paddles secured to said shaft for retarding the rotation thereof.

8. A water-closet tank having a flushing-valve, a rotatable shaft journaled thereon, a ratchet-wheel secured to said shaft, a movable rack which is adapted to engage said ratchet-wheel and rotate the same upon the downward movement of said valve, and a set of paddles secured to said shaft which are adapted to retard the rotation thereof.

654,600. WASTE-VALVE-OPERATING MEANS. WILLIAM BUNTING, Jr., New York, N. Y. Filed Apr. 18, 1899. Serial No. 713,436. (No model.)



Claim.—1. A water-receptacle having a waste-outlet, a waste-pipe connected thereto, a waste-stopper therefor, a stem secured to the under side of said stopper, said stem being flat and of substantially the same width as the internal diameter of the waste-pipe for a portion of its length, and having a laterally-arranged lower edge, a rod which passes downwardly into said waste-pipe, in a diagonal direction, a longitudinal slot in said rod, which is of substantially the same width as the thickness of the flattened portion of the stem and extends from the lower end of the rod upwardly, so that the sides of the slot will, in all positions of the rod, engage the sides of the stem throughout a portion of the length of the stem which is greater than the width of the sides of the slot, a bar which crosses said slot at or near its lower end and is adapted to engage said laterally-arranged edge, and means for reciprocating said rod so that said stopper will be simultaneously lifted and guided thereby.

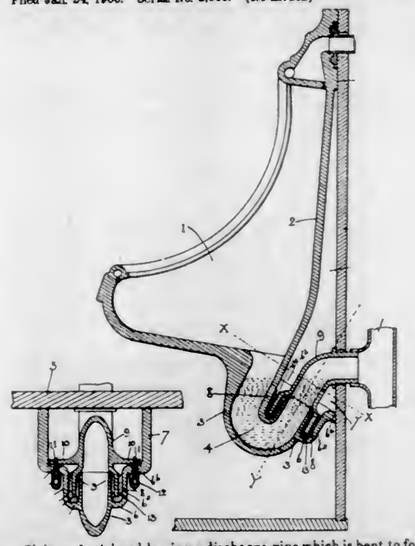
2. A water-receptacle having a waste-outlet, a waste-pipe connected thereto, a waste-stopper therefor, a stem secured to the under side of said stopper, said stem being flat, and of substantially the same width as the internal diameter of the waste-pipe, a slot cut in said stem which extends from one side of said stem to a point near the opposite side thereof, and having the upper side thereof substantially horizontal, an inclined rod which is bifurcated at its lower end, and which passes diagonally on each side of said stem and engages each side thereof, a pin in the end of said rod which is arranged to engage the upper side of the slot in said stem, and an operating-handle connected to said rod for drawing the same upwardly.

3. A water-receptacle having a waste-outlet, a waste-stopper therefor, a guiding-stem secured to the under side of said stopper, said stem being flat for a portion of its length, and having a laterally-arranged lower edge, a rod having a slot in the end thereof, a bar in the end of said rod which crosses said slot and is adapted to engage said lower edge, said flattened portion of said stem being fitted in said slot and the slotted end portion of said rod being arranged diagonally of said stem, and means for drawing said rod outwardly from said pipe, whereby said stem may be simultaneously lifted and guided.

4. A water-receptacle having a waste-outlet, a waste-pipe connected thereto, a waste-stopper therefor, a stem secured to the under side thereof, said stem being flat and of substantially the same width as said waste-pipe for a portion of its length and having a substantially-horizontal edge, an inclined rod which passes through said waste-pipe and has its lower end bifurcated and passing diagonally on each side of said stem and engages each side thereof, a pin in the extreme lower end of said rod which crosses the bifurcation thereof and which is arranged to engage said horizontal edge.

5. A water-receptacle having a waste-outlet, a waste-pipe connected thereto, a waste-stopper therefor, a stem secured to the under side of said stopper, said stem being flat, and of substantially the same width as the internal diameter of the waste-pipe for a portion of its length, an arm which extends laterally from one side of said stem for a portion of the width of said pipe, thereby forming a laterally-extending slot between said stem and said arm, an operating-rod which enters said pipe at a point adjacent the side of said stem from which said arm extends, said rod being provided with a bifurcated end which is arranged diagonally of said stem, and closely engages the opposite sides thereof, a bar in said rod which crosses said bifurcation and is adapted to engage the upper edge of said slot, and means for reciprocating said rod at an angle to said slot, whereby said stopper may be simultaneously lifted and guided and be locked against removal when it is lifted from its seat.

654,601. URINAL. WILLIAM BUNTING, Jr., Brookline, Mass. Filed Jan. 24, 1900. Serial No. 2,603. (No model.)



Claim.—1. A bowl having a discharge-pipe which is bent to form a trap therein, said trap being inclined rearwardly and extending upwardly beyond the bottom of the trap, a flange which extends outwardly from a point below the end of said discharge-pipe, and then upwardly, forming an annular cup around the end portion of said discharge-pipe, a flange which extends laterally from said upwardly-extending flange, all of said parts being formed integral, a wall-pipe having its lower end arranged in said annular cup and its opposite end connected to the soil-pipe, a suitable packing in said cup, lugs extending from said wall-pipe, bolts connected thereto which pass through said laterally-extending flange and nuts on the lower end of said bolts which engage the under side of said lateral flange and clamp said wall-pipe to the bowl.

2. A bowl having a discharge-pipe which is bent to form a trap therein, said pipe being inclined rearwardly and extending upwardly from the bottom of the trap, an annular cup formed around the end

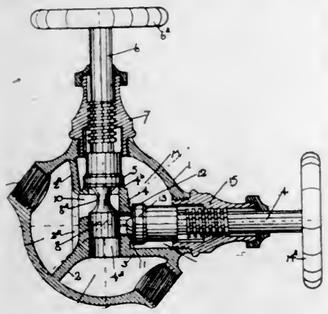
portion of said pipe, a laterally-extending flange formed integrally with said pipe, a wall-pipe which has its end located in said cup, both carried by said wall-pipe which pass through said laterally-extending flange, and nuts which engage the under side of said flange and secure the bowl to the wall-pipe.

3. A bowl having a discharge-pipe which is bent so as to form a trap, the discharge end of said pipe being inclined rearwardly and extending upwardly from the bottom of the trap, an annular cup formed around said discharge end of said pipe, a laterally-extending flange formed integrally with said pipe, ribs which project from the back of said bowl on each side of said pipe and are adapted to rest against the wall, said laterally-extending flange extending to the back of the bowl, to the wall, and to the said ribs on each side, an inclined wall-pipe which has its inner end located in said cup, a suitable packing in said cup, bolts which are connected to said wall-pipe and pass through said laterally-extending flange, and nuts which engage the lower end of said bolts.

4. A urinal having a discharge-pipe which extends upwardly from the bottom and is inclined rearwardly from the back thereof, two side walls which extend upwardly and rearwardly from the back of the urinal to the slab and are arranged on each side of said pipe, an inclined flange which extends laterally from said discharge pipe to said side walls, to the slab, and to the urinal-back, said pipe walls, and flange being all formed integral with the bowl, an inclined wall-pipe which is adapted to make a water and gas tight communication with the end of said discharge-pipe, bolts which are connected to said wall-pipe and pass through said flange, and nuts which are adapted to engage said bolts and the under side of said flange and clamp the bowl to the wall-pipe.

5. A urinal having a discharge-pipe which extends upwardly from the bottom and is inclined rearwardly from the back thereof, two side walls which extend upwardly and rearwardly from the back of the urinal to the slab, a flange which extends laterally from said discharge-pipe to said walls, to the slab, and to the urinal-back, said pipe, side walls, and flange being all formed integral with the bowl, an inclined wall-pipe which is adapted to make a water and gas tight connection with the end of said discharge-pipe, and means for connecting said wall-pipe to said discharge-pipe, said side walls and flange being arranged so as to completely inclose said wall-pipe, and being formed integrally with the bowl.

654,602. MIXING AND CONTROLLING VALVE FOR BATHING APPARATUS. WILLIAM BUNTING, Jr., Brookline, Mass. Filed Jan. 26, 1900. Serial No. 2,873. (No model.)



Claim.—1. A combined hot and cold water valve consisting of a casing having a hot, and a cold water chamber, and a mixing-chamber, a passage which terminates at one end in said hot-water chamber and at its opposite end in said mixing-chamber, a hot-water port and a cold-water port which connect the sides of said passage with the mixing and cold-water chambers, respectively, a valve which is adapted to close the mixing-chamber end of said passage, an extension carried by said valve which is adapted to close said passage beyond said hot-water port when said valve is closed, to close communication between the hot and cold water ports through said passage, and to permit a free passage from said cold-water port to said valve.

2. A combined hot and cold water valve consisting of a casing having a hot, and a cold water chamber and a mixing-chamber, a passage which terminates at one end in said mixing-chamber and at its opposite end in said hot-water chamber, a hot and a cold water port which connect the sides of said passage with said mixing and cold-water chambers, respectively, a valve which is adapted to close the mixing-chamber end of said passage, an extension carried by said valve which is located in said passage and is adapted to close the same between said hot-water port and its chamber, and between said hot and cold water ports and to permit a free connection between said cold-water port and valve, said extension extending beyond said hot-water port when the valve is closed so that it will not open communication between said hot-water chamber and its port until after the valve is partly opened.

3. A combined hot and cold water valve consisting of a casing having a hot, and a cold water chamber, and a mixing-chamber, a passage which terminates at one end in said mixing-chamber and at its opposite end in said hot-water chamber, a hot and a cold water port which connect the sides of said passage with said mixing and cold-water chambers, respectively, a valve which is adapted to close the mixing-chamber end of said passage, an extension carried by said valve which is located in said passage, said extension consisting of a plunger which closely fits said passage, and extends beyond said hot-water port on both sides thereof when the valve is closed, and of a stem of reduced size which connects said plunger with the face of said valve and permits a free flow from said cold-water port to said valve.

4. A combined hot and cold water valve consisting of a casing having a hot, and a cold water chamber, and a mixing-chamber, a passage which terminates at one end in said hot-water chamber and at its opposite end in said mixing-chamber, a hot-water port and a cold-water port which connect the sides of said passage with the mixing and cold-water chambers, respectively, a valve which is adapted to close the mixing-chamber end of said passage, an extension carried by said valve which is adapted to close said passage beyond said hot-water port when said valve is closed, to close communication between the hot and cold water ports through said passage, and to permit a free passage from said cold-water port to said valve, and a second valve in said mixing-chamber which is adapted to close said hot-water port.

5. A combined hot and cold water valve consisting of a casing having a hot, and a cold water, and a mixing chamber, a straight passage which connects said mixing and said hot-water chamber, a hot-water port, which connects said mixing-chamber and said passage which is arranged adjacent to the hot-water chamber end of said passage, a cold-water port which connects said cold-water chamber and said passage and is arranged adjacent to the mixing-chamber end of said passage, a valve-seat on the mixing-chamber end of said passage, a valve therefor, a piston which is connected to the face of said valve and fits closely in said passage, said piston extending beyond said hot-water port when said valve is seated, and constantly closing said passage between said ports in all positions of the latter, the extent to which said valve may be opened being sufficient to permit said piston to close said passage between said cold-water port and said valve-seat when the valve is fully open.

6. A valve-casing comprising two inlet-ports and an outlet-chamber to which both of said ports lead, a separate valve for each of said ports, said valves being arranged at an angle to each other, and a supplemental valve connected to one of said valves which is adapted to control the flow through both ports.

7. A valve-casing comprising two inlet-ports and an outlet-chamber into which both of said ports lead, a valve-seat at each port, a separate valve for each seat, said valves being arranged so that they operate in the same planes and at an angle to each other, and an extension carried by one of said valves which is adapted to control the flow through the other port.

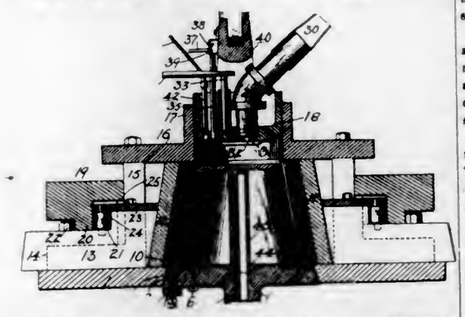
8. A valve-casing comprising two inlet-ports and an outlet-chamber into which both of said ports lead, a valve-seat at each port, a separate valve for each seat, said valves being arranged so that they operate at an angle to each other, and an extension carried by one of said valves which is adapted to control the flow through the other port.

9. A valve-casing comprising two inlet-ports and an outlet-chamber to which said ports lead, a separate valve for each of said ports, and a supplemental valve connected to and controlled by one of said valves which is adapted to control the flow through both ports.

10. A hot and cold water valve comprising a casing having a chamber, hot and cold water ports leading thereto, valves for controlling said ports, two discharge-ports from said chamber, which lead from opposite sides of said casing, a separate valve for closing each discharge-port, and a lever to which both of said valves are connected on opposite sides of the fulcrum thereof, whereby, when one of said valves is opened, the other will be closed.

11. A hot and cold water valve comprising a chamber, hot and cold water ports leading thereto, valves for controlling said ports, two discharge-ports which lead from said chamber, a separate valve for closing each discharge-port, and means connecting said valves which will cause one of them to be opened when the other is closed, whereby a constantly-open discharge port from said chamber is maintained.

654,603. APPARATUS FOR MAKING HOLLOW WARE FROM PULP. WILLIAM BURKE and WILLIAM H. THOMPSON, East Stroudsburg, Pa. Filed Nov. 20, 1899. Serial No. 737,623. (No model.)



Claim.—1. In combination, a table having an opening therein, a cap-plate above the table having an opening therein, a former and a plunger movable to and from operating position in the openings of the table and cap-plate respectively, and contacting with the walls thereof, pressing-jaws, moving between the table and the cap-plate, and a cam-plate surrounding the pressing-jaws and arranged in a plane intermediate of the table and the cap-plate with means for giving the cam a rotary movement about the pressing-jaws, the said former having a flat upper surface and the plunger having an opposing surface parallel therewith, substantially as described.

2. In combination, a table having an opening therein, a cap-plate above the table and having an opening, a plunger and a former movable in the opening of the cap-plate and table respectively, pressing-jaws movable between the table and plate, standards supporting the cap-plate from the table, and a cam-plate surrounding the pressing-jaws and held in position relative to said jaws by the standards with means for operating the cam-plate, said standards serving also as guides for the pressing-jaws, substantially as described.

3. In combination, a table having an opening, a former projecting through said opening above the table, a cap-plate above the table, pressing-jaws extending from the table to the cap-plate and movable between them, said jaws having stems extending substantially at right angles thereto over the surface of the table, standards extending from the table and a cam-ring overlying the radial stems of the jaws and held in position by the said standards, said standards serving also to guide the jaws in their movements, substantially as described.

4. In combination, a table, a cap-plate, each having an opening, a former and plunger movable therein, the standards extending from the table to the cap-plate, pressing-jaws movable between the table and plate and having stems extending substantially at right angles thereto and a cam-ring arranged in a plane between the table and the cap-plate and surrounding the pressing-jaws and standards and held in position by the latter, substantially as described.

5. In combination, with a former, pressing-jaws with means for operating them, a plunger, a supply-opening through the plunger and a rotary-disk cut-off valve for controlling the said opening, substantially as described.

6. In combination, a former, pressing-jaws, a plunger with means for moving said parts, a supply-opening extending through the plunger, a disk valve rotating against the lower face of the plunger and means for operating the valve, substantially as described.

7. In combination, a former, pressing-jaws, a plunger in the form of a shell, a coupling arranged within the shell and communicating with the supply-opening through the plunger, a disk valve to rotate over the opening against the lower face of the plunger, a shaft for said valve, a bearing for said shaft within said plunger and means for operating the shaft, substantially as described.

8. In combination, a plunger, pressing-jaws, a former and means for introducing air to destroy vacuum between the article formed and the movable parts, said means operating in rear of the pressing-surface to leave the same free from projecting parts, substantially as described.

9. In combination, a former, pressing-jaws, a plunger, means for operating said parts and an air-valve carried by the plunger for introducing air between the same and the article formed, said valve operating back from the pressing-face, substantially as described.

10. In combination, a former, pressing-jaws, a plunger, an air-tube leading to an air-port opening to the bottom of said plunger and a valve controlling said air-port, said valve being adapted to present a face flush with that of the plunger when in closed position and operating back from said flush face, substantially as described.

11. In combination, a former, pressing-jaws, a plunger, means for operating said parts, an air-port extending through the plunger and a vertical rod 36 for controlling the air-port, the end of said rod presenting a face flush with the bottom of said plunger when the valve is closed and operating back from said face in opening the port, substantially as described.

12. In combination, a table having the opening, a former movable therethrough, a cap-plate, pressing-jaws having radial stems arranged between the table and cap-plate, guides 14 on the table, standards 15 projecting up from said guides and shouldered at 25, and a cam-ring supported on the said shoulder and overlying the jaw-stems, substantially as described.

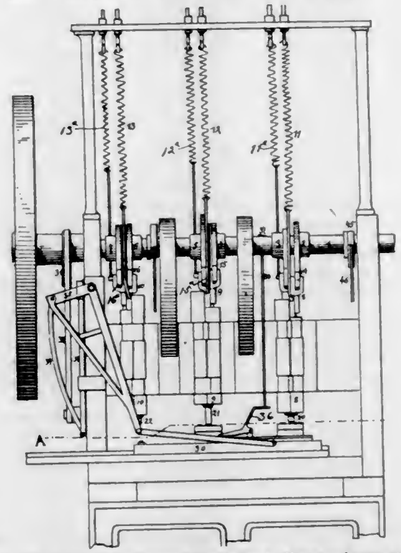
13. In combination, the former, means for pressing the material thereon, the counterbalance for the former and means for raising and lowering the former, the said counterbalance and said means being each connected with the stem of the former, substantially as described.

14. In combination, the former, pressing-jaws, a cam-ring for operating the jaws, means for operating the cam-ring consisting of the link, the worm-wheel and worm, the friction driving-wheels and the stop-motion consisting of the pivotal weighted shaft and the arm 96 having a beveled portion to operate the weight, substantially as described.

15. In combination, the form, the pressing-jaws, the cam-ring for operating them, a worm-shaft, the worm having a pitman connection with the cam-ring, the plunger and the driving connections between the worm-shaft and the plunger, substantially as described.

16. In combination, a former, and a press-jaw having the curved front face, the lateral wing with the tangential flat face, and the slanting face to bear on the tangential face of the adjacent jaw, said lateral wing with its tangential face and the slanting face forming parts of the jaw, substantially as described.

654,604. BUTTON-MACHINE. WALTHER CARON, Barmen, Germany. Filed Apr. 6, 1899. Serial No. 711,971. (No model.)



Claim.—1. In combination, the two sets of inner and outer stamps for simultaneously stamping the two parts of a button from separate strips of metal and perforating the same, the reciprocating slide for assembling said parts, and the third pair of inner and outer stamps for uniting said assembled parts, substantially as described.

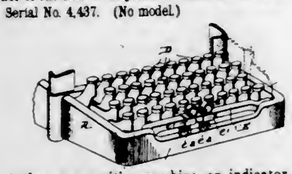
2. In combination, the two pairs of forming-stamps arranged to stamp the separate portions of a button from separate strips of metal, each of said stamps comprising a main forming-stamp and an inner perforating-stamp, a third set of inner and outer stamps for uniting the formed blanks, a shaft common to all said stamps and carrying cams for operating the same, and a carrier for receiving the blanks from the first two stamps and assembling and conveying them to the third stamp, substantially as described.

3. In combination, the forming and joining stamps with means for operating them, the reciprocating slide or carrier arranged to convey the blanks from one stamp to the other, a lever having an arm

adapted to retain the blanks against movement until the proper time, and means for operating said lever to release the blanks, substantially as described.

4. In a machine for making buttons from metal strips, the combination with the forming-stamps, of means for imparting to the strip a repeated transverse movement and an intermittent forward movement comprising a transversely-movable carrier, feed-rolls journaled therein, a gear-wheel connected with one of said feed-rolls and movable with the carriage, and a gear journaled in fixed bearings and meshing with said first-named gear, said second gear being of a length corresponding to the length of movement of the carriage substantially as described.

654,605. TYPE-WRITER. FRANK A. CHALMERS, Philadelphia, Pa., assignor of one-half to Benjamin S. Banks, same place. Filed Feb. 8, 1900. Serial No. 4,437. (No model.)



Claim.—1. In a type-writing machine, an indicator adapted to locate and maintain the hand or hands of the operator in a prearranged position with relation to the keyboard, and from lateral movement therefrom in both directions.

2. In a type-writing machine, an indicator having fixed relation with reference to the keyboard, and adapted to locate and maintain the hand or hands of the operator in a prearranged relation to the keyboard, and from lateral movement therefrom in both directions.

3. In a type-writing machine, an indicator located below the bank of keys, and adapted to lock the finger or thumb of the operator from substantial lateral movement in both directions.

4. In a type-writing machine, an indicator, located below the bank of keys, substantially central thereof and adapted to lock the finger or thumb of the operator from substantial lateral movement in both directions.

5. In a type-writing machine, indicators located below and substantially central of the bank of keys and adapted to lock the thumbs or fingers of the hands of the operator from substantial lateral movement in both directions.

6. In a type-writing machine, an indicator secured to the spacing-bar, said indicator being adapted to lock the finger or thumb of the operator from substantial lateral movement in both directions.

7. In a type-writing machine, a plurality of indicators secured to the spacing-bar, said indicators being adapted to lock the fingers or thumbs of the operator from substantial lateral movement in both directions.

8. In a type-writing machine, indicators secured to the spacing-bar, substantially central of said spacing-bar said indicators being adapted to lock the fingers or thumbs of the operator from substantial lateral movement in both directions.

9. In a type-writing machine, an indicator adapted to locate the hand or hands of the operator in a prearranged position with reference to the keyboard, laterally adjustably secured below the bank of keys.

10. In a type-writing machine, an indicator adapted to locate the hand or hands of the operator in a prearranged position with reference to the keyboard, laterally adjustably secured to the spacing-bar.

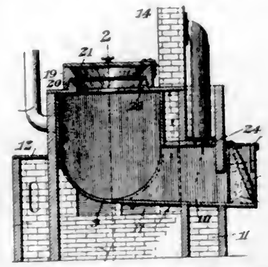
11. In a type-writing machine, an indicator adjustably secured below the bank of keys, said indicator having vertical portions between which the finger or thumb of the operator is adapted to be placed.

12. In a type-writing machine, an indicator adjustably secured to the spacing-bar having vertical portions between which the finger or thumb of the operator is adapted to be placed.

654,606. SANITARY RETORT. BYRON COBURN, Le Roy, N. Y. Filed Feb. 20, 1900. Serial No. 5,934. (No model.)

Claim.—1. A sanitary retort comprising a vault having a furnace and a chimney leading therefrom, a hopper situated within the vault for exposure to the heat and products of combustion of the furnace, a ventilating-flue connecting said hopper with the chimney, a spout leading from the hopper and having a strainer adjacent to its outlet, an absorptive filter in the spout beyond the strainer, and a sun-glass disposed to concentrate the sun's rays upon the filtering material, substantially as described.

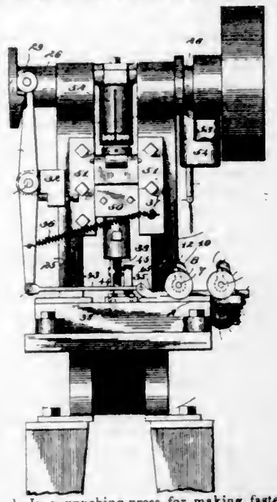
2. A sanitary retort comprising a vault, a hopper in the vault and having a drainage-spout inclined from the hopper and extended through the vault to expose one end thereof, a filtering stratum within the exposed portion of the spout, a sun-glass disposed to concentrate the sun's rays upon the filtering stratum, and a vent-flue leading from the spout adjacent the filtering stratum to convey the fumes therefrom.



3. A sanitary retort comprising a vault, a hopper therein, a drainage-spout inclined from the hopper and extended through the vault, a partition fitted within the open end of said spout, and a pane or sun-glass also fitted within the spout and arranged relative to the partition to form therebetween an intermediate filtering-chamber, substantially as described.

4. A sanitary retort comprising a vault having its top provided with a stool-flange, a furnace within said vault, a closed hopper within the vault contiguous to the furnace, a flanged seat fitted removably to the stool-flange, a chimney leading from the vault and communicating through the latter with the furnace-chamber, a spout for the hopper inclined therefrom, a sun-glass disposed to concentrate the sun's rays to the end of the spout, and a ventilating-flue connected with the spout adjacent the outer end thereof and with the chimney, substantially as described.

654,607. PUNCHING-PRESS. OLIVER COLBORNE, Chicago, Ill., assignor to the International Package Machine Company, same place. Filed Mar. 10, 1900. Serial No. 8,144. (No model.)



Claim.—1. In a punching-press for making fastening-strips of the class described, the combination of a supporting-frame, a driving-shaft journaled therein, a reciprocating plunger operated by said shaft and carrying a punch, an intermittent feeder operated by said shaft for forwarding said strips to the punch, a movable anvil coacting with said punch at the side of the path of the punch, and mechanism for withdrawing the anvil from said strip after each descent and withdrawal of the punch and before the succeeding feed of said strip, substantially as described.

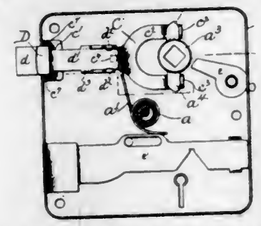
2. In a punching-press for making fastening-strips of the class described, the combination of a supporting-frame, a driving-shaft journaled therein, a reciprocating plunger operated by said shaft and carrying a punch, an intermittent feeder operated by said shaft for forwarding said strips to the punch, a movable anvil coacting with said punch, a cam on said plunger, and an arm controlling the movement of the anvil and operated by said cam, substantially as described.

3. In a punching-press for making fastening-strips of the class described, the combination of a supporting-frame, a driving-shaft journaled therein, a reciprocating plunger operated by said shaft and carrying a punch, an intermittent feeder operated by said shaft for forwarding said strips to the punch, an anvil coacting with said punch and pivoted to the frame under the path of said strip, a spring normally withdrawing the anvil from said path, a lever pivoted to the frame and to said anvil, and a cam on said plunger acting against the lever for urging the anvil toward said strip, substantially as described.

4. In a punching-press for making fastening-strips of the class described, the combination of a supporting-frame, a driving-shaft journaled therein, a reciprocating plunger operated by said shaft and carrying a punch, an intermittent feeder operated by said shaft for forwarding said strips to the punch, said feeder comprising a pair of feed-rolls journaled in the frame, a ratchet-wheel revolving with said feed-rolls, an oscillating toothed sector carrying a pawl engaging the ratchet-wheel, a rack slidable in the frame and meshing with said sector, a cam on said shaft, and an arm controlling the movement of the rack and operated by said cam; and a movable anvil coacting with said punch and feeder, substantially as described.

5. In a punching-press for making fastening-strips of the class described, the combination of a supporting-frame, a driving-shaft journaled therein, a reciprocating plunger operated by said shaft and carrying a punch, an intermittent feeder operated by said shaft for forwarding said strips to the punch, said feeder comprising a pair of feed-rolls journaled in the frame, a ratchet-wheel revolving with said feed-rolls, an oscillating toothed sector carrying a pawl engaging the ratchet-wheel, a rack slidable in the frame and meshing with said sector, a cam on said shaft, a lever pivoted to the frame and to said rack and having one end in contact with said cam for moving the rack forward, and a spring opposing the action of said cam; and a movable anvil coacting with said punch and feeder, substantially as described.

654,608. LOCK. ALEXANDER CRAMOND, Lyons, Iowa, assignor to D. J. Batcheider, same place. Filed Apr. 26, 1899. Serial No. 714,607. (No model.)



Claim.—1. In a reversible latch, a latch-slide provided with a pair of ears, and a latch-bolt provided with ears extending in pairs in opposite directions, to interlock with the ears of the slide in either position of the bolt.

2. The combination of a case, a latch-slide having a pair of ears and a latch-bolt having oppositely-extending pairs of ears, the ears of both members being equal in height to the inside width of the case.

3. The combination of a case, a latch slide composed of a shouldered shank, a head and a yoke having lugs, a barrel having means coöperating with the lugs on the yoke to retract the slide, of a latch-bolt having a head resting in a seat in the head of the slide and interlocking ears on the bolt and slide.

4. In a reversible latch for locks, a latch-slide having a shank and a head forming a shoulder on either side thereof and a shouldered shank, a latch-bolt having a head adapted to the head of the slide in either position of the bolt, and coacting means to interlock the slide and bolt.

5. In a reversible latch, a latch-slide having a shank and a head provided with lugs forming a seat, a latch-bolt having a head and a central shank forming a shoulder on either side of the head, whereby the head may be reversed in its seat, and interlocking means.

6. In a reversible latch, a latch-slide having a T-shaped head provided with a seat, and a latch-bolt composed of a shank and a head, the latter adapted to the seat of the slide in either of its positions and the former interlocking with the slide.

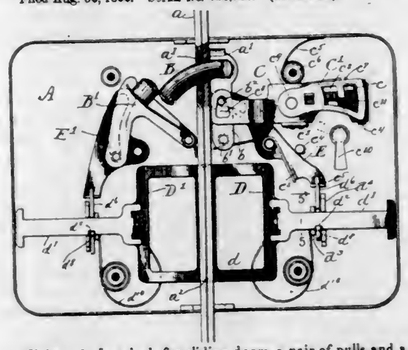
7. In a reversible latch, a latch-slide composed of a yoke, a shouldered shank, and a head, the latter being provided with a seat, a latch-bolt having a head and a central shank whereby the head may rest in the seat of the slide in either its right or left hand position, and interlocking means on the shanks.

8. In a reversible latch, a slide having a pair of angular ears, and a bolt having pairs of oppositely-disposed angular ears forming seats for the ears on the slide.

9. The combination of a case, a latch-slide having a lug, a spring resting on the slide and bearing against the lug, a latch-bolt superposed upon the slide, the tail of the bolt projecting over the lug, and interlocking means for the bolt and slide.

10. In a reversible latch, a latch-slide provided with ears and a latch-bolt provided with ears, the ears of one member being arranged in an opposite pair and the ears of the other member in opposite pairs forming seats for the first pair in either position of the parts.

654,609. SLIDING-DOOR LOCK. ALEXANDER CRAMOND, Lyons, Iowa, assignor to the United States Steel Lock Company, same place. Filed Aug. 30, 1899. Serial No. 728,966. (No model.)



Claim.—1. In a lock for sliding doors, a pair of pulls and a pair of push-pins for the pulls, the push-pin on one side being adapted to be projected into the recess of the other push-pin as a locking-bolt.

2. In a lock for sliding doors, a pair of pulls and a push-pin for each pull, the pin on one side adapted to be retracted to two positions, and the pin on the other side adapted to be retracted to one position and also to be projected into the recess of the first push-pin to lock the parts together.

3. In a sliding-door lock, a pull and a push-pin therefor on the key side thereof, means to project the push-pin beyond its normal position, combined with a pull and a push-pin therefor on the strike side, and means to permit the retraction of the latter push-pin beyond its normal position, whereby the two sides may be locked together.

4. In a sliding-door lock, a pair of push-pins and a pull controlled by each pin, lock mechanism adapted to throw the pin on the key side as a locking-bolt, and means on the strike side whereby the push-pin thereof may be forced back beyond its normal position by the locking-bolt.

5. In a sliding-door lock, a pair of pulls and a push-pin for each pull, means to project the pin on one side into the recess of the pin on the other side, release mechanism intermediate each pin and its pull, and means whereby the pulls may be slightly retracted within their respective cases when the parts are locked together.

6. In a sliding-door lock, a pull and a push-pin therefor on the key side thereof, means to operate the pin as a locking-bolt, in combination with a pull and a push-pin therefor on the strike side, controlling means for the latter pull, a lever engaging the controlling means and provided with a slot having an oblique portion, and a stud on the pin normally resting in said oblique portion and adapted to move the lever in its passage therefrom.

7. In a sliding-door lock, a pull and a push-pin therefor on the key side thereof, means to operate the pin as a locking-bolt, in combination with a pull and a push-pin therefor on the strike side, controlling means for the latter pull, a lever engaging the controlling means and provided with a slot having a cam and a cam end, and a stud on the pin adapted to move the lever in opposite direction by contact with said cam or cam end respectively.

8. In a sliding-door lock, the combination of a spring-pressed pull having a notched shank, a reciprocating lock-plate having a lug normally engaging the notch of the shank, a lever engaging the plate, and a push-pin engaging the lever.

9. In a sliding-door lock, a spring-pull having a notched shank, a lock-plate sliding in a suitable guideway and having a slotted end, a lever having an ear to engage the slot of the plate, and a push-pin for the lever.

10. In a sliding-door lock, a lock-case provided with projections on its inner face to form a guideway, a lock-plate adapted to slide in said guideway and having a locking-lug, a spring-pull having a slotted shank to receive the lug, and means to operate the plate.

11. In a sliding-door lock, a spring-pull having a notched shank, a sliding lock-plate having a lug to interlock with the slot of the

shank, a spring for the lock-plate, and means to operate the plate against the tension of the spring.

12. The combination with a locking-bolt and a spring-pull, a carrier to operate the bolt, a lever to control the pull, connections providing lost motion between said bolt and carrier when the bolt is retracted as a push-pin, and connections providing lost motion between said bolt and lever when the bolt is operated by the carrier.

13. The combination with the bolt and spring-pull of a sliding door lock, of means to lock the pull in its retracted position, and a lever, one of whose arms engages the locking means of the pull and the other engages the bolt, whereby pressure on the bolt when in its normal position releases the pull-locking means.

14. The combination with a pivoted locking-bolt having a stud, and a carrier having a recess of greater diameter than said stud adapted to be engaged thereby, of a spring-pull, means to retain the pull in normal position, and means actuated by the bolt to release the pull, whereby the pull is thrown without affecting the carrier.

15. The combination with a spring-pull and a pivoted bolt, of means to retain the pull, a release-lever actuated by the bolt, and a carrier loosely engaging the bolt, whereby the carrier throws and retracts the bolt, but permits the bolt to more independently to operate the release-lever.

16. The combination with a pivoted bolt having a stud on each face of its shank, a carrier loosely engaging one stud, and a lever loosely engaging the other stud, of a spring-pull, means to lock the pull in retracted position, but released by the lever, whereby the bolt is adapted to be operated by the carrier and to operate the locking means of the pull.

17. The combination with a pivoted bolt having a stud on each face of its shank, a carrier having a recess of greater diameter than said studs and engaging one of them, of a spring-pull having a notched shank, a sliding plate engaging said notch, and a lever, one of whose ends engages the sliding plate, the other being slotted to receive one of the studs of the shank.

18. The combination of a bolt having a stud on each face of its pivoted shank, a carrier loosely engaging one stud, a spring-pull, retaining means for the pull, and a spring-lever for the retaining means, one end of said lever loosely engaging the second stud of the shank.

19. The combination with a spring-pull, release mechanism therefor, of a push-pin adapted to operate the release mechanism at the beginning of its movement and then move independently thereof.

20. The combination with a spring-pull, and a pivoted push-pin, of means to retain the pull, and a lever adapted to operate the retaining means only at the initial movement of the push-pin.

21. The combination with a spring-pull and a pivoted push-pin having a stud, means to retain the pull in retracted position, a lever connected at one end with said retaining means and having a slot at its other end to receive the stud, the slot being irregular at one end whereby the body of the slot is caused to assume a position in the line of the travel of the stud at its initial movement.

22. The combination of a pivoted push-pin having a stud, a lever having a slot to receive the stud and provided with a cam normally resting against the stud, a spring-pull, and means to release the pull connected with said lever.

23. The combination with a push-pin and a spring-pull, of a locking-plate engaging the pull when retracted, a spring therefor, and means operated by the pin upon its return to normal position to cause the plate to engage the pull.

24. The combination of a spring-pull, a catch to retain the pull in its normal position, a lever controlling the catch and having a slot provided with a cam and a cam end, a spring push-pin having a stud adapted to contact with said cam when the pin is retracted and with said cam end when the pin is restored to its normal position.

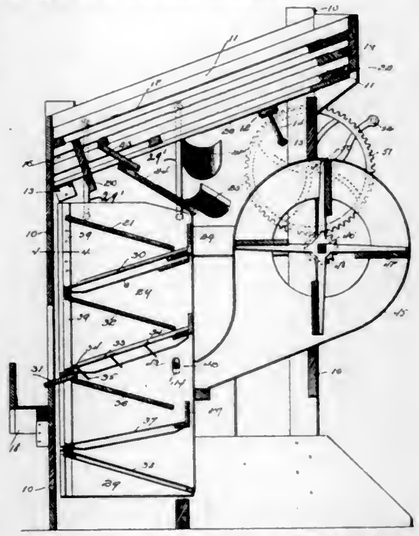
25. The combination of a spring-pull, a push-pin to release the pull, and means whereby the push-pin may be moved beyond its releasing position to uncover its recess.

26. The combination with a lock-case having a recess in its face-plate and a pivoted push-pin normally lying in said recess, of a spring-pull adapted to be thrown at the initial movement of the pin, and means whereby the pin may be further retracted by pressure of a locking-bolt entering its recess.

654,610. GRAIN CLEANER AND SEPARATOR. SAMUEL R. CULP, Webster City, Iowa. Filed June 17, 1897. Serial No. 641,188. (No model.)

Claim.—1. In a machine for separating mixtures of wheat and oats, the combination of three sieves upon which the mixture is successively treated, the third having openings intermediate in size between the first and second whereby a grade of mixed grains of substantially-uniform size is produced, a fourth sieve to which this grade is delivered, and a device for causing an air-current therethrough, substantially as described.

2. In a machine for separating mixtures of wheat and oats, the combination of three sieves upon which the mixture is successively treated, the third having openings intermediate in size between the first and second whereby a grade of mixed grains of substantially-uniform size is produced, a fourth sieve to which this grade is delivered, a device for causing an air-current therethrough, and means for agitating the sieves, substantially as described.



3. In a machine for separating mixtures of wheat and oats, the combination of three sieves upon which the mixture is successively treated, the third having openings intermediate in size between the first and second whereby a grade of mixed grains of substantially-uniform size is produced, a fourth sieve to which this grade is delivered, a device for causing an air-current therethrough, and means for adjusting the inclination of the last-named sieve, substantially as described.

4. In a machine for separating mixtures of wheat and oats, the combination of three sieves upon which the mixture is successively treated, the third having openings intermediate in size between the first and second whereby a grade of mixed grains of substantially-uniform size is produced, a fourth sieve to which this grade is delivered, a device for causing an air-current therethrough, and one or more transverse projections upon the upper surface of the last-named sieve, substantially as described.

5. In a machine for separating mixtures of wheat and oats, the combination of three sieves upon which the mixture is successively treated, the third having openings intermediate in size between the first and second whereby a grade of the mixed grains of substantially-uniform size is produced, a fourth sieve to which this grade is delivered, a device for causing an air-current therethrough, one or more transverse projections upon the upper surface of the last-named sieve, and deflectors below said projections, substantially as described.

6. In a grain-separator, the combination of a sieve delivering its tailings outside the machine, a second sieve receiving the material passing through the first, a third sieve having smaller openings than the first and larger than the second receiving the tailings from the latter, a fourth sieve to which the material passing through the third is delivered and a device for causing an air-current through this fourth sieve, substantially as described.

7. In a grain-separator, the combination of a sieve delivering its tailings outside the machine, a second receiving the material passing through the first, a third sieve having smaller openings than the first and larger than the second receiving the tailings from the latter, a fourth sieve to which the material passing through the third is delivered, a device for causing an air-current through this fourth sieve, and means for adjusting the inclination of the third and fourth sieves, substantially as described.

8. In a grain-separator, the combination of a sieve delivering its tailings outside the machine, a second sieve receiving the material passing through the first, a third sieve having smaller openings than the first and larger than the second receiving the tailings from the latter, and a fourth sieve to which the material passing through the second is delivered, which in turn discharges both grades produced outside the machine, substantially as described.

9. In a machine for separating mixtures of wheat and oats, the combination of a sieve over which the larger oat-berries pass while the remainder of the mixture falls through, a second sieve to which the latter portion is delivered which separates perfect grains from imperfect grains and impurities, the former tailing over upon a third sieve which removes a second grade of oats while the wheat and the smaller oats fall through upon a fourth sieve by which, in connection with a device for causing an air-current therethrough, the wheat and oats are separated one from the other, substantially as described.

10. A machine for separating wheat and oats, comprising in combination, a machine-frame, a shaft rotatably mounted therein, means for applying power to rotate said shaft, one or more sieves slidingly mounted in the top of the machine-frame, and having a mesh of a size to prevent the passage of perfect oats and permit grains of wheat to pass through, means for agitating said sieve or sieves from said shaft, one or more sieves mounted in the machine-frame beneath the point in the upper sieve where the wheat and small oats are discharged, a fan, means for operating it from said shaft to send a blast of air through said lower sieve or sieves to thereby separate the wheat and oats according to weight, substantially as set forth.

654,611. INITIATING DEVICE. EDMUND DE MOULIN and ULYSSES S. DE MOULIN, Greenville, Ill. Filed Feb. 20, 1900. Serial No. 5,940. (No model.)



Claim.—1. In a device of the class described, the combination with a movable paddle and means for moving it, of means for holding the paddle against movement, means for releasing the holding means, an electric circuit including the releasing means, and means controlled by the paddle for energizing said circuit.

2. A device of the class described comprising a pivoted paddle, springs connected with the paddle, means for holding the springs under tension, means comprising handles for releasing the springs to operate the paddle, an electric circuit including the handles, and means controlled by the paddle for energizing said circuit.

3. A device of the class described comprising a pivoted paddle, springs connected with the paddle, a follower connected with the paddle, a keeper, a latch-tongue upon the follower and adapted to engage the keeper and hold the paddle with the springs under tension, a releasing device, and handles connected with the releasing device.

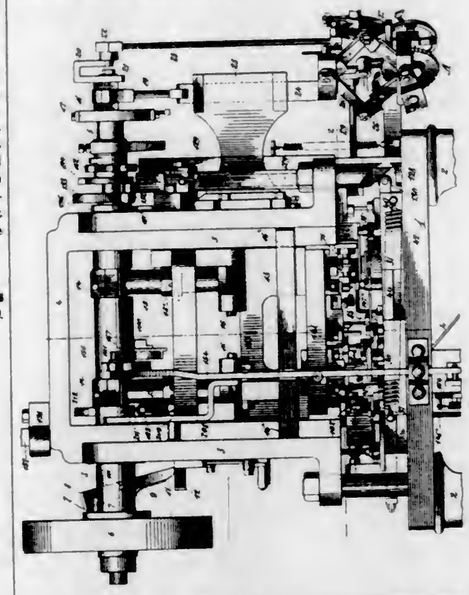
4. A device of the class described comprising a pivoted paddle, helical springs connected with the paddle, a follower connected with the paddle, a keeper, a latch-tongue mounted upon the follower and adapted to engage the keeper and hold the tongue with the springs under tension, a releasing-bar for engagement with the tongue to move it from the keeper, handles connected with the releasing-bar, a source of electricity, and connections between said source and the handles.

5. A device of the class described comprising a movable paddle, springs connected with the paddle for movement in one direction, a follower connected with the paddle, a latch-tongue carried by the follower, a keeper for engagement by the latch-tongue, means for moving the tongue from the keeper, handles connected with said moving means, and an induction-coil having a secondary winding connected with the handles.

654,612. METAL-WORKING MACHINE FOR MAKING TACKS, &c. JOHN DRAHER and FREDRICK MARGGRAFF, Waterbury, Conn., assignors, by mesne assignments, to the Shoe Hardware Company, same place. Filed Feb. 24, 1899. Serial No. 706,660. (No model.)

Claim.—1. In a metal-working machine, the combination of a blanking-punch and a fixed die therefor, a rotary transfer-plate, means for conveying a blank from the fixed blanking-die to said transfer-plate and an assembling-punch into the path of which the transfer-plate is adapted to convey a blank.

2. In a metal-working machine, the combination of a blanking-punch and a fixed die therefor, a rotary blank-receiving transfer-plate, means for intermittently rotating said plate, means for conveying a blank from the fixed blanking-die to said transfer-plate automatically and an automatically-operated assembling-punch into the path of which the transfer-plate is adapted to convey a blank.



3. In a metal-working machine, the combination of a rotary transfer-plate and a movable feed-plate having a series of blank-receiving apertures therein, said feed-plate being adapted to convey a blank to said transfer-plate.

4. In a metal-working machine, the combination of a rotary transfer-plate, means for feeding blanks thereto, a uniting or closing punch adapted to coöperate with said transfer-plate, and means independent of the transfer-plate for feeding blanks to the uniting-punch.

5. In a metal-working machine, the combination of a rotary transfer-plate, a movable feed-plate adapted to convey a blank to said transfer-plate, a uniting or closing punch adapted to coöperate with said transfer-plate and a second feed-plate adapted to convey a blank to said uniting-punch.

6. In a metal-working machine, the combination of a rotary transfer-plate, a rotary feed-plate having a series of blank-receiving apertures therein, said feed-plate being adapted to convey a blank to said transfer-plate, a uniting or closing punch adapted to coöperate with said transfer-plate and a second rotary feed-plate adapted to feed a blank to said uniting-punch.

7. In a metal-working machine, the combination of a rotary transfer-plate, a rotary feed-plate having a series of blank-receiving apertures therein, said feed-plate being adapted to convey a blank to said transfer-plate, means for forcing a blank from said feed-plate into the transfer-plate and a uniting or closing punch adapted to coöperate with said transfer-plate.

8. In a metal-working machine, the combination of a rotary transfer-plate, a rotary feed-plate having a series of blank-receiving apertures therein, said feed-plate being adapted to convey a blank to said transfer-plate, means for forcing a blank from said feed-plate into the transfer-plate, a uniting or closing punch adapted to coöperate with said transfer-plate and a second rotary feed-plate adapted to feed a blank to said uniting-punch whereby the two blanks arebrought together and united.

9. In a metal-working machine, the combination of a rotary transfer-plate, a feed-plate coöperating with said transfer-plate to deliver blanks thereto, a blanking punch and die coöperating with said feed-plate, a second feed-plate coöperating with the transfer-plate to receive a blank therefrom and an assembling punch and die coöperating with this last-named feed-plate.

10. In a metal-working machine, the combination of a rotary transfer-plate, a feed-plate coöperating with said transfer-plate to deliver blanks thereto, a punch and die coöperating with said feed-plate, a second feed-plate coöperating with said transfer-plate to receive a blank therefrom, a punch and die coöperating with this last-named feed-plate and a uniting punch and die which likewise coöp-

erate with the last-named feed-plate to unite the two blanks fed to said uniting punch and die by the feed-plates.

11. In a metal-working machine, the combination of a rotary transfer-plate, means for automatically and intermittently rotating said plate, a rotary feed-plate coöperating with said transfer-plate to deliver blanks thereto, means for automatically and intermittently rotating said transfer-plate, an automatically-operated punch and a die coöperating with said plate, a second rotary feed-plate coöperating with the transfer-plate to receive a blank therefrom, means for automatically and intermittently rotating said second-named feed-plate and an automatically-operated uniting-punch coöperating with this last-named feed-plate.

12. In a metal-working machine, the combination of a rotary transfer-plate, means for automatically and intermittently rotating said transfer-plate, a rotary feed-plate coöperating with said transfer-plate to deliver blanks thereto, means for automatically and intermittently rotating said transfer-plate, an automatically-operated punch and a die coöperating with said feed-plate, a second rotary feed-plate coöperating with the transfer-plate to receive a blank therefrom, means for automatically and intermittently rotating said second-named feed-plate, an automatically-operated punch and die coöperating with this last-named feed-plate and an automatically-operated uniting punch and die which likewise coöperate with the last-named feed-plate to unite the two blanks fed to said uniting punch and die by the feed-plates.

13. In a metal-working machine, the combination of a rotary blank-carrying transfer-plate, an overlapping blank-carrying feed-plate coöperating therewith and means for transferring a blank from one of said plates to the other without affecting the shape of the blank.

14. In a metal-working machine, the combination of an automatically-operated rotary blank-carrying transfer-plate, an automatically-operated overlapping blank-carrying rotary feed-plate coöperating therewith, a blanking punch and die coöperating with said feed-plate and means for automatically operating said punch and die, and means for transferring a blank from one of said plates to the other without affecting the shape of the blank.

15. In a metal-working machine, the combination of an automatically-operated rotary blank-carrying transfer-plate, two automatically-operated blank-carrying rotary feed-plates which overlap and coöperate with said transfer-plate, one to deliver a blank to and the other to receive a blank from said transfer-plate and an assembling-punch coöperating with one of the feed-plates.

16. In a metal-working machine, the combination of a rotary transfer-plate having a series of independently-movable blank-carrying devices and two blank-carrying feed-plates which coöperate with and overlap said transfer-plate, each of said feed-plates having a series of blank-receiving apertures, the apertures in one plate being adapted to deliver blanks to said transfer-plate while the apertures in the other plate are adapted to receive blanks therefrom.

17. In a metal-working machine, the combination of a rotary transfer-plate having a series of independently-movable blank-carrying devices, means for automatically and intermittently rotating said transfer-plate, two blank-carrying rotary feed-plates which coöperate with and overlap said transfer-plate, each of said feed-plates having a series of blank-receiving apertures, the apertures in one plate being adapted to deliver blanks to said transfer-plate while the apertures in the other feed-plate are adapted to receive blanks therefrom and means for automatically and intermittently rotating said feed-plate.

18. In a metal-working machine, the combination of a rotary transfer-plate having a series of blank-carrying devices, means for automatically and intermittently rotating said transfer-plate, two blank-carrying rotary feed-plates which coöperate with and overlap said transfer-plate, each of said feed-plates having a series of blank-receiving apertures, the apertures in one plate being adapted to deliver blanks to said transfer-plate while the apertures in the other plate are adapted to receive blanks therefrom, a blanking punch and die coöperating with each of said feed-plates, means for automatically operating each of said punches and means for automatically and intermittently rotating said feed-plates.

19. In a metal-working machine, the combination of a rotary transfer-plate having a series of blank-carrying devices, means for automatically and intermittently rotating said transfer-plate, two blank-carrying rotary feed-plates which coöperate with and overlap said transfer-plate, each of said feed-plates having a series of blank-receiving apertures, the apertures in one feed-plate being adapted to deliver blanks to said transfer-plate while the apertures in the other feed-plate are adapted to receive blanks therefrom, means for automatically and intermittently rotating said feed-plates, a blanking punch and die coöperating with each of said feed-plates, means for automatically operating each of said punches and a closing or uniting punch and die coöperating with said transfer-plate and with one of said feed-plates.

20. In a metal-working machine, the combination of a plurality of freely-movable rotary blank-carrying feed-plates, means for delivering blanks successively to said plates, automatic means for simultaneously and intermittently rotating said plates and means for automatically locking said plates against movement when the plates are out of action and for automatically releasing the locking means before the means for rotating said plates are brought into action.

21. In a metal-working machine, the combination of a transfer-plate having spring-pressed blank-receiving arms, means for moving said transfer-plate, a blank-carrying feed-plate coöperating with said transfer-plate to receive blanks therefrom, means for forming the blanks in said feed-plate and means for delivering the blanks from said transfer-plate to a blank-containing portion of the feed-plate.

22. In a metal-working machine, the combination of a transfer-plate having spring-pressed blank-receiving arms, means for moving said transfer-plate, a blank-carrying feed-plate coöperating with said transfer-plate and a punch coöperating with the feed-plate and adapted to unite the blanks carried thereby with those delivered from the transfer-plate.

23. In a metal-working machine, the combination of a rotary transfer-plate having spring-pressed blank-receiving arms, means for automatically and intermittently rotating said transfer-plate, a rotary blank-carrying feed-plate coöperating with said transfer-plate to receive blanks therefrom, means for automatically and intermittently rotating said transfer-plate and a uniting-punch coöperating with the feed-plate and adapted to unite the blanks carried thereby with those delivered from the transfer-plate.

24. In a metal-working machine, the combination of a transfer-plate having spring-pressed blank-receiving arms, means for moving said transfer-plate, a blank-carrying feed-plate coöperating with said transfer-plate, means for forming a blank in said feed-plate and means for delivering the formed blank from said feed-plate to said transfer-plate.

25. In a metal-working machine, the combination of a rotary transfer-plate having spring-pressed blank-receiving arms, means for automatically and intermittently rotating said transfer-plate, a rotary blank-carrying feed-plate coöperating with said transfer-plate, said feed-plate having a series of blank-receiving apertures therein, blanking and forming punches coöperating with the feed-plate, means for automatically and intermittently rotating said transfer-plate and automatically-operated means for delivering a blank from said feed-plate to said transfer-plate.

26. In a metal-working machine, the combination of a rotary transfer-plate having spring-pressed blank-receiving arms, means for automatically and intermittently rotating said transfer-plate, a rotary blank-carrying feed-plate coöperating with said transfer-plate and adapted to overlap the same, said feed-plate having a series of blank-receiving apertures therein, means for automatically and intermittently rotating said transfer-plate, blanking and forming punches and dies coöperating with said feed-plate, one of said punches being adapted to deliver a blank from said feed-plate to said transfer-plate.

27. In a metal-working machine, the combination of a rotary transfer-plate having spring-pressed blank-receiving arms, means for automatically separating said arms to receive and deliver the blanks carried thereby, means for automatically and intermittently rotating said transfer-plate, a rotary blank-carrying feed-plate coöperating with said transfer-plate and adapted to overlap the same, said feed-plate having a series of blank-receiving apertures therein which are adapted to be brought into register with receiving-arms of the transfer-plate, means for automatically and intermittently rotating said transfer-plate and automatically-operated means for delivering a blank from said feed-plate to said transfer-plate.

28. In a metal-working machine, the combination of a rotary transfer-plate having spring-pressed blank-receiving arms, means for automatically separating said arms to receive and deliver the blanks carried thereby, means for automatically and intermittently rotating said transfer-plate, a rotary blank-carrying feed-plate coöperating with said transfer-plate and adapted to overlap the same, means for automatically and intermittently rotating said transfer-plate, and an automatically-operated punch coöperating with said feed-plate and adapted to deliver a blank from said feed-plate to said transfer-plate.

29. In a metal-working machine, the combination of a transfer-plate having spring-pressed blank-receiving arms, means for moving said transfer-plate, a movable blank-carrying feed-plate coöperating with said transfer-plate to deliver blanks thereto, punches and dies coöperating with said feed-plate to blank and form the blanks therein, a second movable blank-carrying feed-plate coöperating with said transfer-plate to receive blanks therefrom, and means independent of the transfer-plate for feeding blanks to said second blank-carrying feed-plate.

30. In a metal-working machine, the combination of a transfer-plate having spring-pressed blank-receiving arms, means for moving said transfer-plate, a blank-carrying feed-plate coöperating with said transfer-plate to deliver blanks thereto, means for delivering blanks from said feed-plate to said transfer-plate, a second blank-carrying feed-plate coöperating with said transfer-plate to receive blanks therefrom, means for delivering a blank from said transfer-plate to said second blank-carrying feed-plate.

31. In a metal-working machine, the combination of a transfer-plate having spring-pressed blank-receiving arms, means for moving said transfer-plate, a blank-carrying feed-plate coöperating with said transfer-plate to deliver blanks thereto, a punch coöperating with said feed-plate and adapted to deliver blanks from said feed-plate to said transfer-plate, a second blank-carrying feed-plate coöperating with said transfer-plate to receive blanks therefrom, a uniting-punch coöperating with said second-named feed-plate and adapted to deliver a blank from said transfer-plate to said second-named feed-plate, means for moving said feed-plates and means independent of the transfer-plate for conveying blanks to said second feed-plate.

32. In a metal-working machine, the combination of a freely-rotatable transfer-plate having spring-pressed blank-receiving arms, means for automatically rotating said transfer-plate, a freely-rotatable blank-carrying feed-plate coöperating with said transfer-plate to deliver blanks thereto, a second freely-rotatable blank-carrying feed-plate coöperating with said transfer-plate to receive blanks therefrom, means for automatically rotating said feed-plates simultaneously with the rotation of the transfer-plate and means for automatically locking the transfer and feed plates after each movement thereof and for automatically releasing said locking means before the moving means operate to move said plates.

33. In a metal-working machine, the combination of a transfer-plate having a plurality of spring-pressed blank-receiving arms, means for automatically moving said transfer-plate, means for automatically separating said arms and an automatically-operated blank-support coöperating with said transfer-plate to support the blank when it is released by the blank-receiving arms.

34. In a metal-working machine, the combination of a transfer-plate having a plurality of spring-pressed blank-receiving arms, means for automatically moving said transfer-plate, means for automatically separating said arms, an automatically-operated punch and die coöperating with said transfer-plate and an automatically-operated blank-support coöperating with said transfer-plate and with said punch and die to support the blank when it is freed from the blank-receiving-arms.

35. In a metal-working machine, the combination of a transfer-plate having a plurality of spring-pressed blank-receiving arms, means for automatically separating said arms to receive and discharge the blank, means for automatically and intermittently moving said transfer-plate, an automatically-operated punch and die coöperating with said transfer-plate and an automatically-operated blank-support coöperating with said separating means and with said punch and die to support the blank when it is freed from the blank-receiving arms.

36. In a metal-working machine, the combination of a rotary transfer-plate having a plurality of spring-pressed blank-receiving arms, means for automatically separating said arms to receive and discharge the blanks, means for automatically and intermittently rotating said transfer-plate, an automatically and intermittently operated uniting punch and die coöperating with said transfer-plate and an automatically and intermittently operated blank-support coöperating with said transfer-plate and separating means and with the punch and die.

37. In a metal-working machine, the combination of a blank-carrying feed-plate, means for moving said feed-plate, a blanking punch and die adapted to blank directly into the feed-plate, a coöperating blank-carrying transfer-plate, means for moving said transfer-plate, means for delivering a blank to said transfer-plate from the feed-plate and means coöperating with said transfer-plate and feed-plate to automatically throw the machine out of action when the transfer-plate and feed-plate are not properly positioned with respect to each other and with respect to the blank-delivery means when the same is operated.

38. In a metal-working machine, the combination of a blank-carrying feed-plate, means for moving said feed-plate, a blank-carrying transfer-plate adapted to receive blanks from said feed-plate, means for moving said transfer-plate, a second feed-plate coöperating with and adapted to receive blanks from said transfer-plate, means for moving said transfer-plate and means coöperating with each of said plates for automatically throwing the machine out of action when any one of the plates is not properly positioned with relation to the others to accomplish the delivery of a blank from one to another of said plates.

39. The combination of a feed-plate having blank-receiving apertures therein, a cross-head carrying a punch which is adapted to coöperate with said blank-receiving apertures, a dummy punch adapted to enter the apertures in said feed-plate and means coöperating with said dummy punch for stopping the machine when an undue obstruction in an aperture of the feed-plate is interposed in the path of the dummy punch.

40. The combination of a main shaft, a feed-plate having blank-receiving apertures therein, a cross-head operated by said main shaft and carrying a punch which is adapted to coöperate with said blank-receiving apertures, a dummy punch carried by said cross-head and adapted to enter the apertures in said feed-plate and to sink to a predetermined depth therein and a fixed bed coöperating with said dummy punch to prevent a movement of the main shaft when the dummy punch is prevented from sinking to the predetermined depth within an aperture of the feed-plate.

41. The combination of a transfer-plate having blank-receiving apertures therein, a plurality of coöperating feed-plates having blank-receiving apertures which are adapted to register with the apertures in the transfer-plates, a cross-head carrying a plurality of blanking-punches, each of which is adapted to coöperate with the blank-receiving apertures in its respective feed-plate to directly blank therein, a dummy punch adapted to enter the apertures in one of said feed-plates and to sink to a predetermined depth therein, plungers carried upon a carrier and adapted to enter apertures in the feed-plates when the apertures therein are in register with the apertures in the transfer-plate and means controlled by said dummy punch and plungers to stop or throw the machine out of action when an obstruction is interposed in the path of the dummy punch or plungers within the apertures of its respective feed-plate or an obstruction is interposed in the path of the plungers.

42. The combination of a rotary transfer-plate having blank-receiving apertures therein, rotary feed-plates coöperating with said transfer-plate and having blank-receiving apertures which are adapted to register with the apertures in the transfer-plate, means for automatically and intermittently rotating said plates, a cross-head carrying a plurality of blanking-punches, each of which is adapted to coöperate with the blank-receiving apertures in its respective feed-plate, a dummy punch carried by said cross-head, said dummy punch being adapted to enter the apertures in one of said feed-plates and to stop the machine when more than one blank is contained in an aperture, a carrier, plungers carried upon said carrier and adapted to enter apertures in the feed-plates when the blank-receiving apertures therein are in register with the blank-receiving apertures in the feed-plate, a two-part clutch and an abutment connected to said plungers for operating the clutch to throw the machine out of action when an obstruction is interposed in the path of the plungers.

43. The combination of a punch and die, means for moving said punch and die toward each other, a spring for restoring said die to its normal position and an automatically-operated latch adapted to contact with said die and to force it to the normal position should the spring thereof become ineffective to operate it.

44. The combination of means for cutting tack-blanks, means for bending said blanks into the required form, means for cutting and forming head-blanks which are adapted to coöperate with said tack-blanks and mechanism for uniting said head and tack blanks to form a complete tack.

45. The combination of means for cutting tack-blanks, means for automatically and continuously bending said tack-blanks after they are cut, coöperating automatically-operated means for cutting and forming head-blanks which are adapted to coöperate with said tack-blanks, means for automatically assembling said tack and head blanks and mechanism for uniting said tack and head blanks to form a complete tack.

46. The combination of means for cutting cruciform tack-blanks, means for bending said cruciform blanks into U form, means for cutting and forming head-blanks which are adapted to coöperate with said tack-blanks and means for uniting said head and tack blanks to form a complete double-pointed tack.

47. The combination of means for cutting cruciform tack-blanks, means for automatically bending said cruciform blanks into U form, coöperating automatically-operated means for cutting and forming head-blanks which are adapted to coöperate with said tack-blanks, means for automatically assembling said blanks and means for uniting said head and tack blanks to form a complete double-pointed tack.

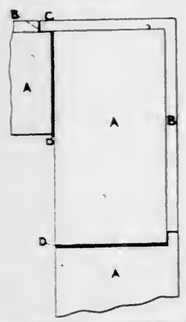
654,618. PROCESS OF MAKING PAINT. JOHANN EISCHER, Munich, Germany. Filed July 17, 1899. Serial No. 724,165. (No specimens.)

Claim.—1. A process for producing artists' colors which consists in melting dammar-resin and crystalline soda together, treating the mixture, after having been allowed to cool, with benzine so as to dissolve the soluble portion, and then filtering, mixing the resultant solution or filtrate with a solution of amber, drying-oil and spike-oil and paraffin, and adding the coloring substance in the manner and for the purpose substantially as described.

2. A process for producing artists' colors which consists in first

melting dammar-resin and crystalline soda together, allowing the mixture to cool and treating the same with benzine so as to dissolve the soluble portion, filtering the whole and adding to the filtrate a solution of amber, poppy-oil, spike-oil and paraffin, in the proportions about as specified, and finally adding to the result the coloring-matter in the manner and for the purpose substantially as described.

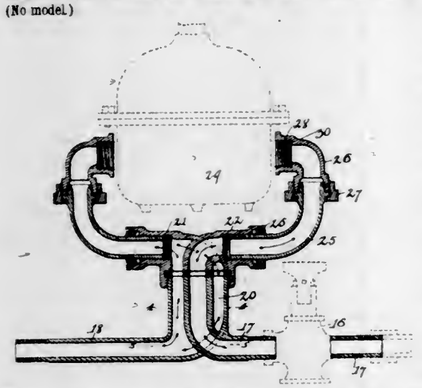
654,614. BUILDING-BLOCK. JOAH ELLIS, Cleckheaton, England assignor of one-half to John Clifford Sykes, same place. Filed Mar. 29, 1900. Serial No. 10,618. (No model.)



Claim.—1. The combination, with building-bricks having recesses B on two adjacent edges of their front faces and projecting flanges C on the remaining adjacent edges of their front faces, of corner-bricks each provided with two similar recesses B and one flange C on its front face, and one recess B and two flanges C on one of its ends, all the said flanges and recesses being a small fraction of the thickness of the bricks and fitting closely together, and binding material between the main portions of the bricks, substantially as set forth.

2. A series of angle-bricks having an exposed angle, each brick having recesses in two of the adjacent edges of the two faces containing the said angle and flanges on the other two adjacent edges of the said two faces, said flanges and recesses being a small fraction of the thickness of the bricks, and the two flanges of each brick fitting into the two recesses of the next adjacent brick, and binding material between the main portions of the bricks, substantially as set forth.

654,615. METER CONNECTION, METER AND STOP-COCK BOX. HARRY V. ESTILL, Moberly, Mo. Filed Apr. 14, 1900. Serial No. 12,850. (No model.)



Claim.—1. In combination with a meter-box and its cover, locking-levers pivoted to the cover and having beveled inner ends and a screw threaded through the top and engaging the levers.

2. In combination, a meter, elbows connected to the meter, said elbows having their ends remote from the meter and concaved internally, pipes joined to the elbows having their ends convexed, nuts for adjusting and binding the ends together, a meter connection comprising an upper and lower section having a central passage and an annular passage therearound, said upper section of the meter connection having legs to which the pipes are adjustably secured, and jam-nut for binding the pipes in their adjusted position.

3. In a connection for meter-casings, an upper telescopic section fitted over the stationary section and having external flanges with cam-surfaces, a ring approximately L-shaped in cross-section to receive the lower end of the telescopic section having inturned lugs riding on the cam-surfaces of the flanges and packing below the edge of the ring compressed by the action of the ring and edge of the telescopic section, and adapted to bear against the central section of the casing.

4. A meter-box comprising a base, having an annular flange at the top, a middle section having a flange corresponding to the flange of the base; said base and middle section being connected by bolts passing through the said flanges, a top telescopically fitted to the middle section and having an internal flange near the top, a cover resting on the flange, locking-levers pivoted to the cover and having beveled inner ends and a screw threaded through the top and engaging the levers.

5. In combination, a casing, a meter having nipples suitably placed, a supply-pipe and a service-pipe passing through the wall of the lower section of the casing, said supply and service pipes merging into a double coupling, said supply-pipe extending upward centrally of the coupling and the service-pipe being in communication with the annular space formed around the supply-pipe, legs formed on the upper portion of the coupling and adjustable curved pipes communicating between the nipples of the meter and the legs of the coupling.

6. In combination, a casing, a meter, a supply-pipe and a service-pipe passing through the wall of the lower section of the casing, said supply-pipe and service-pipe merging into a double coupling of two sections, said supply-pipe extending upward centrally of the lower section of the coupling and connecting with a corresponding pipe in the upper section, said pipe in the upper section being in communication with a leg of said upper section, said service-pipe being in communication with the annular space around the supply-pipe, said annular space being in communication with another leg of the upper section of the coupling, a connection between the legs of the coupling and the meter, and a gasket between the meeting ends of the sections of the couplings having holes therein corresponding with the outer and inner passages of the coupling.

7. In combination, a meter-box having an internal flange near the top, a cover resting on said flange, locking-levers pivoted to the cover adapted to engage the under surface of the internal flange of the meter-box and having beveled inner ends and a screw threaded through the cover engaging the levers.

8. In combination, a meter-box comprising a base, a middle section rigidly secured to the base, and a top section telescopically fitted to the middle section, said top section having its lower edge beveled and a flange having its upper edge inclined secured on its outer surface, a ring adapted to embrace the middle section, said ring being approximately L-shaped in cross-section and being provided with inwardly-projecting lugs adapted to engage and ride on the inclined edge of the flange of the top section of the meter-casing, a cover for said top section, locking-levers pivoted to the cover and having beveled inner ends, a screw threaded through the top and engaging the levers, a meter, a meter connection, said connection comprising an upper and lower section having a central passage and an annular passage therearound, said upper section having legs, elbows connected to the meter, said elbows having their ends remote from the meter and concaved internally, pipes joined to the elbows and having their opposite ends secured to the legs of the upper section of the coupling, nuts for adjusting and binding the ends together, and a curb-cock, all arranged in the meter-box as and for the purpose set forth.

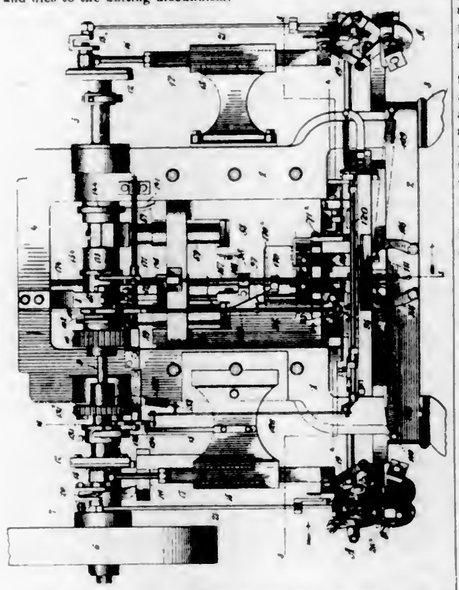
654,616. METAL-WORKING MACHINE. ALBERT D. FIELD, FREDRICK MARGGRAFF, and JOHN DRAHER, Waterbury, Conn., assignors, by direct and mesne assignments, to the Shoe Hardware Company, same place. Filed Feb. 24, 1899. Serial No. 706,656. (No model.)

Claim.—1. In a sheet-metal-buckle machine, the combination of a plurality of feed-plates each adapted to contain a plurality of blanks, a closing-punch for uniting the separate sheet-metal parts of a buckle and means for automatically conveying the said separate sheet-metal parts to the closing-punch.

2. In a machine of the character described, the combination of a plurality of feed-plates each adapted to contain a plurality of blanks, a closing punch and die for automatically uniting the separate sheet-metal parts of a buckle and means for automatically conveying the said separate sheet-metal parts to the automatically-operated closing punch and die.

3. In a machine of the character described, the combination of sheet-metal punches and dies for blanking and forming a sheet-metal part of a buckle, the face of each blanking-punch employed and the outline of the coöperating die conforming substantially to the outline of the buckle-section to be formed, mechanism for uniting the separate sheet-metal parts thereof and means for automatically conveying the said separate sheet-metal parts to the uniting mechanism.

4. In a machine of the character described, the combination of sheet-metal punches and dies for blanking and forming the separate sheet-metal parts of a buckle, the face of each blanking-punch employed and the outline of the coöperating die conforming substantially to the outline of the buckle-section to be formed, mechanism for uniting said sheet-metal parts and means for automatically conveying the sheet-metal parts from the blanking and forming punches and dies to the uniting mechanism.



5. In a machine of the character described, the combination of automatically-operated sheet-metal punches and dies for blanking and forming the separate sheet-metal parts of a buckle, the face of each blanking-punch employed and the outline of the coöperating die conforming substantially to the outline of the buckle-suction to be formed, automatically-operated mechanism for uniting said sheet-metal parts, means for automatically conveying the sheet-metal parts from the blanking and forming punches and dies to the uniting mechanism and means for automatically discharging the completed buckles from the machine.

6. In a machine of the character described, the combination of automatically-operated punches and dies for blanking and forming the separate sheet-metal parts of a buckle, the face of each blanking-punch employed and the outline of the coöperating die conforming substantially to the outline of the buckle-section to be formed, means for automatically conveying sheet metal to the blanking and forming mechanism, automatically operated mechanism for uniting the said sheet-metal parts, and means for automatically conveying the parts from the sheet-metal blanking and forming punches and dies to the uniting mechnism.

7. In a machine of the character described, the combination of a series of sheet-metal blanking and forming punches and dies for each part of the buckle the face of each blanking-punch employed and the outline of the coöperating die conforming substantially to the outline of the buckle-section to be formed, and mechanism for automatically conveying the sheet metal successively to the different punches and dies and means for automatically assembling said separate sheet-metal parts.

8. In a machine of the character described, the combination of a series of sheet-metal blanking and forming punches and dies for each part of the buckle, the face of each blanking-punch employed and the outline of the coöperating die conforming substantially to the outline of the buckle-section to be formed, a uniting punch and die for uniting the separate sheet-metal parts and mechanism for automatically conveying the sheet metal successively to the different sheet-metal blanking and forming punches and dies and to the uniting punch and die.

9. In a machine of the character described, the combination of a series of automatically-operated sheet-metal blanking and forming punches and dies for each part of the buckle, the face of each blanking-punch employed and the outline of the coöperating die conforming substantially to the outline of the buckle-section to be formed, an automatically-operated uniting punch and die for uniting the separate sheet-metal parts and mechanism for automatically conveying the sheet metal successively to the different blanking and forming punches and dies and to the uniting punch and die.

10. In a buckle-making machine, the combination of a movable feed-plate having a series of blank-receiving apertures therein, punches and dies coöperating with the apertures in the said feed-plates, means for moving the feed-plate to bring the apertures successively to the punches and dies, mechanism for uniting the separate parts of the buckle and means for conveying the parts from the movable feed-plate to the uniting mechanism.

11. In a buckle-making machine, the combination of a movable feed-plate having a series of blank-receiving apertures therein, punches and dies coöperating with the apertures in said feed-plate, means for automatically moving the feed-plate to bring the apertures successively to the punches and dies, means for automatically operating said punches when the apertures in the movable feed-plate are in register therewith, mechanism for automatically uniting the separate parts of the buckle and means for automatically conveying the parts from the movable feed-plate to the uniting mechanism.

12. The combination of a plurality of movable feed-plates having a series of blank-receiving apertures therein, punches and dies coöperating with the apertures in each feed-plate and means for conveying a blank from an aperture in one feed-plate to a position where said blank can be operated upon by a punch of another feed-plate.

13. The combination of a plurality of automatically-operated movable feed-plates having a series of blank-receiving apertures therein, punches and dies coöperating with the apertures in each feed-plate, mechanism for automatically operating said punches and means for automatically conveying a blank from an aperture in one feed-plate to a position where said blank can be automatically operated upon by a punch of another feed-plate.

14. The combination of a plurality of feed-plates movable in different planes and having a series of blank-receiving apertures therein, punches and dies coöperating with the apertures in each feed-plate and means for automatically conveying a blank from an aperture in one plate to a position where said blank can be operated upon by a punch of another feed-plate.

15. The combination of automatically-operated feed-plates movable in different planes and having a series of blank-receiving apertures therein, punches and dies coöperating with the apertures in each feed-plate, mechanism for automatically operating said punches and an automatically-operated slide adapted to receive a blank from an aperture in one feed-plate and to convey it into the path of a punch of another feed-plate.

16. The combination of a plurality of movable feed-plates having a series of blank-receiving apertures extending therethrough, a series of blanking and forming punches and dies coöperating with the apertures in each of said feed-plates, automatic means for simultaneously moving said feed-plates an equal extent and to bring the apertures of each of said plates successively to the punches and dies of said plate and mechanism for automatically and simultaneously operating all of the punches.

17. The combination of a plurality of movable feed-plates having a series of blank-receiving apertures therein, the plates being so arranged that an aperture in one plate will be brought into line with an aperture in another plate after each movement of the plates, a series of blanking and forming punches and dies coöperating with the apertures in each of said feed-plates, means for simultaneously moving said feed-plates an equal extent and to bring the apertures of each of said plates successively to all the punches and dies of said plate and mechanism for automatically transferring a blank from an aperture in one plate into the path of a punch of another plate.

18. In a metal-working machine, the combination of a plurality of rotary feed-plates, a plurality of punches coöperating with each of said feed-plates to form the parts therein, operating mechanism for simultaneously and intermittently transmitting a rotary movement to said feed-plates, mechanism for simultaneously automatically locking said feed-plates against movement when the blanks carried thereby are in register with their respective punches and means for automatically and simultaneously throwing the feed-plate-locking mechanisms of all the feed-plates out of the engaging position before the feed-plate-operating mechanism is brought into action.

19. The combination of a rotary feed-plate having a series of blank-receiving openings therein which conform to the shape of the initial blank, a trackway on which said plate rotates, a plurality of punches and dies coöperating with the blank-receiving openings in said plate one of said punches being a blanking-punch which is adapted to blank directly into the blank-receiving openings in the feed-plate and the punches and dies being arranged so that one of said parts operates in the trackway below the feed-plate while the other of said parts operates above the feed-plate and means for intermittently rotating said feed-plate to convey the cut blanks into the path of the successive punches and dies.

20. The combination of a rotary feed-plate having a series of blank-receiving openings therein, a trackway on which said plate rotates, a punch and die coöperating with the blank-receiving openings in the feed-plate and arranged so that one of said parts operates in the trackway below the feed-plate while the other of said parts operates above the feed-plate, means for intermittently rotating said feed-plate to convey blanks successively into the path of said punch and die and assembling mechanism for transferring the blank from said feed-plate and placing it in operative relation to another blank or section of the article to be produced.

21. The combination of a rotary feed-plate having a series of blank-receiving openings therein, a trackway on which said plate rotates, a punch and die coöperating with the blank-receiving openings in the feed-plate and arranged so that one of the said parts operates in the trackway below the feed-plate while the other of said parts operates above the feed-plate, means for intermittently rotating said feed-plate to convey blanks successively into the path of said punch and die, assembling mechanism for transferring the blank from said feed-plate and placing it in operative relation to another blank or section of the article to be produced and means for uniting the parts in the assembled position.

22. In a metal-working machine the combination of a plurality of feed-plates movable in different planes, a punch adapted to coöperate with each of said feed-plates, a movable transfer device operating in a plane intermediate of the planes in which the feed-plates move, said transfer device being adapted to convey a blank from one feed-plate into the path of the punch of another feed-plate and means for moving said transfer device.

23. In a metal-working machine the combination of a plurality of feed-plates movable in different planes, a punch adapted to coöperate with each of said feed-plates, a movable transfer device operating in a plane intermediate of the planes in which the feed-plates move, said transfer device being adapted to convey the blank from one feed-plate into the path of the punch of another feed-plate, a plunger adapted to force a blank from the first-named feed-plate to the transfer device and means for moving said transfer device.

24. The combination with a plurality of feed-plates movable in different planes, a punch adapted to coöperate with each of said feed-plates and a transfer device comprising a slide having spring-pressed clamping-jaws adapted to clamp the blank in place and operating in a plane intermediate of the planes in which the feed-plates move, said transfer device being adapted to convey a blank from one feed-plate into the path of the punch of another feed-plate.

25. The combination of a plurality of feed-plates movable in different planes, a punch adapted to coöperate with each of said feed-plates, a transfer device comprising a slide having spring-pressed clamping-jaws adapted to clamp the blank in place and operating in a plane intermediate of the planes in which the feed-plates move, said transfer device being adapted to convey a blank from one feed-plate into the path of the punch of another feed-plate and a plunger adapted to force a blank from the first-named feed-plate to the clamping-jaws of the transfer device.

26. The combination of a plurality of feed-plates movable in different planes, mechanism for automatically and intermittently moving said plates simultaneously, an automatically-operated punch adapted to coöperate with each of said feed-plates, a movable transfer device operating in a plane intermediate of the planes in which the feed-plates move, said transfer device being adapted to convey a blank from one feed plate into the path of the punch of another feed-plate, a plunger adapted to force a blank from the first-named feed-plate to the transfer device and means for automatically bringing the blank-receiving portion of said transfer device into register first with said plunger and with a blank in one plate and then with a blank in another plate and means for moving said transfer device.

27. In a machine of the character described, the combination of a transfer device comprising a slide carrying spring-pressed blank-receiving clamping-jaws, means for delivering a blank to said transfer mechanism, a uniting punch and die, means independent of the transfer device for feeding blanks to said punch and die and means for operating said transfer device to convey the blank therein into the path of the uniting punch and die so that the said blanks can be united.

28. In a machine of the character described, the combination of a transfer device comprising a slide carrying spring-pressed blank-receiving clamping-jaws, means for delivering a blank to said transfer mechanism, a uniting punch and die, means independent of the transfer device for feeding blanks to said punch and die and means for operating said transfer device and punch and die to assemble the separate blanks to be united by the uniting punch and die.

29. In a machine of the character described, the combination of an automatically-operated transfer device comprising a slide carrying spring-pressed blank-receiving clamping-jaws, automatically-operated means for delivering a blank to said transfer mechanism, a uniting punch and die, means for automatically operating the same, automatic means independent of the transfer device for feeding blanks to said punch and die and means for automatically operating said transfer device to convey the blank therein into the path of the uniting punch and die so that the said blanks can be united by the operation of said transfer device and of the punch and die.

30. In a machine of the character described, the combination of an automatically-operated transfer device comprising a slide carrying spring-pressed blank-receiving clamping-jaws, automatically-operated means for delivering a blank to said transfer mechanism, a uniting punch and die, means for automatically operating the same, automatic means independent of the transfer device for feeding blanks to said punch and die and means for automatically operating said transfer device and punch and die to assemble the separate blanks to be united by the uniting punch and die.

31. In a machine of the character described, the combination of a series of punches and dies, a feed-plate having a series of apertures therein which conform in outline to the outline of the initial blanking punch and die and which receive the blanks directly from the blanking-die, means for operating said feed-plate to convey the blanks therein to the operation of the successive punches and dies, means for automatically operating said punches and dies to form the blanks within the apertures in the feed-plate so that the blanks may be carried along with said feed-plate, a movable transfer device adapted to receive a blank from an aperture in the feed-plate and to move said blank into the path of an assembling-punch and means for operating said transfer device.

32. In a machine of the character described, the combination of a feed-plate, a trackway on which said feed-plate moves, a punch and die coöperating with the feed-plate, a spring-pressed follower coöperating with the punch and adapted to be forced down against the tension of the spring by said punch and means for maintaining the face of the follower flush with the trackway when the feed-plate is being operated.

33. In a machine of the character described, the combination of a rotary feed-plate having a series of blank-receiving apertures therein, a trackway on which said feed-plate moves, means for intermittently moving said feed-plate, a punch and die coöperating with the feed-plate, a spring-pressed follower adapted to move through the trackway and into an aperture in the feed-plate and to coöperate with the punch and automatically-operated means for maintaining the face of the follower flush with the trackway when the feed-plate is being operated.

34. In a machine of the character described, the combination of a blank-transfer device, a plunger for forcing the blank into said transfer device, a follower coöperating with said plunger to position the blank in the transfer device and means for maintaining the follower out of the path of the transfer device when the same is being operated.

35. In a machine of the character described, the combination of an automatically-operated blank-transfer device, an automatically-operated plunger for forcing the blank into said transfer device, a spring-pressed follower coöperating with said plunger to position the blank in the transfer device and automatically-operated means for maintaining the follower out of the path of the transfer device when the same is being operated.

36. In a machine of the character described, the combination of rotary feed-plates having blank-receiving apertures therein, trackways on which said plates intermittently rotate, a cross-head or gate carrying a series of punches to coöperate with each of said feed-plates, fixed and movable dies coöperating with said feed-plates and punches, means for intermittently rotating the feed-plates so as to bring the apertures in each of them successively into the path of the punches therefor and means for operating the movable dies when the feed-plates are retained against movement.

37. In a machine of the character described, the combination of rotary feed-plates having blank-receiving apertures therein, trackways on which said feed-plates intermittently rotate, a cross-head or gate carrying a series of punches to coöperate with each of said feed-plates, fixed and movable dies coöperating with said feed-plates and punches, means for intermittently rotating the feed-plates so as to bring the apertures in each of them successively into the path of the punches therefor, means for operating the movable dies when the feed-plates are retained against movement and means for transferring a blank from an aperture in one feed-plate into alinement with an aperture in another feed-plate.

38. In a machine of the character described, the combination of rotary feed-plates having blank-receiving apertures therein, trackways on which said feed-plates intermittently rotate, a cross-head or gate carrying a series of punches to coöperate with each of said feed-plates, fixed and movable dies coöperating with said feed-plates and punches, means for intermittently rotating the feed-plates so as to bring the apertures in each of them successively into the path of the punches therefor, means for operating the movable dies when the feed-plates are retained against movement, means for transferring a blank from one feed-plate into alinement with an aperture in another feed-plate and automatically-operated means for forcing a blank to said blank-transferring means from an aperture in a feed-plate.

39. In a machine of the character described, the combination of rotary feed-plates moving in different planes and having blank-receiving apertures therein, trackways on which said plates intermittently rotate, a cross-head or gate carrying a series of punches to coöperate with each of said feed-plates, fixed and movable dies coöperating with said feed-plates and punches, means for intermittently rotating the feed-plates so as to bring the apertures in each of them successively into the path of the punches therefor, means for operating the movable dies when the feed-plates are retained against movement and a transfer-slide moving in a plane intermediate of the planes of movement of said feed-plates for transferring a blank from an aperture in one feed-plate into alinement with the punch of another feed-plate.

40. In a machine of the character described, the combination of a feed-plate having a blank-receiving aperture therein, a trackway on which said feed-plate moves, a fixed die elevated above the level of the trackway and extending into the path of movement of the apertured portion of the feed-plate, an inclined way extending from the trackway to said fixed die and a punch coöperating with the die.

41. In a machine of the character described, the combination of a rotary feed-plate having a series of blank-receiving apertures therein and a continuous recess extending around the same, a trackway on which said feed-plate moves, a fixed die elevated above the level of the trackway and extending into said continuous recess and into the path of movement of the apertures in the feed-plate, an inclined way extending from the trackway to said fixed die and a punch coöperating with the die.

42. In a machine of the character described, the combination of a feed-plate having a blank-receiving aperture therein, a trackway on which said feed-plate moves, a die elevated above the level of the trackway and extending into the path of movement of the apertured portion of the feed-plate, an inclined way extending from the trackway to said die, a punch coöperating with the die and a second laterally-movable punch adapted to operate on the blank while it is on said die and after said blank has been operated upon by the said first-named punch.

43. The combination of a fixed die, a carrier for conveying a blank to said die, a punch for operating upon said blank while it is in said carrier and a second punch for operating upon said blank while it is in the carrier and after it has been operated upon by the said first-named punch.

44. The combination of a fixed die, a carrier for conveying a blank to said die, means for automatically operating said carrier, a punch for operating upon said blank while it is in the said carrier, means for automatically moving said punch, a second punch for operating upon said blank while it is in the carrier and after it has been operated upon by the said first-named punch and means for automatically operating said last-named punch in the manner stated.

654,617. TAMPING-ROLLER. JOHN W. FITZGERALD, Kern, Cal. Filed Sept. 20, 1899. Serial No. 731,110. (No model.)



Claim.—A road-roller provided with separate compression-shoes

654,618. ART OF UPHOLSTERY. ALFRED FRESCHL, Chicago, Ill. Filed Sept. 25, 1899. Serial No. 731,578. (No specimens.)



Claim.—1. As an improvement in the art of upholstery, the process of preparing the materials to be incorporated into a cushion, which consists in providing perforations in the backing and filling arranged in predetermined patterns, and marking the cover to correspond therewith.

2. As an improvement in the art of upholstery, the process of preparing the materials of the cushion, which consists in superposing the filling upon the backing, providing perforations simultaneously in both materials, and marking the cover to indicate its points of passage through said perforations.

3. As an improvement in the art of upholstery, the method of forming tufted cushions, which consists in providing perforations in the backing and filling arranged upon the same pattern, marking the cover to correspond therewith and forcing the same through said perforations by hand, and then anchoring or fastening the materials in place.

4. As an improvement in the art of upholstery, the method of forming tufted cushions which consists in correspondingly perforating the backing and filling and marking the cover, depressing the cover through the perforations, and then suitably anchoring the cover in place by passing fastening devices therethrough at its points of depression.

5. As an improvement in the art of upholstery, the method of forming tufted cushions, which consists in providing the filling and backing with registering perforations, marking the cover, depressing the cover through the registered perforations, and then wiring the cover at its points of depression.

6. As an improvement in the art of upholstering, the method of forming tufted cushions, which consists in similarly perforating the backing and filling, applying the cover, depressing the cover through the perforations of the filling and backing, and then securing the cover at its points of depression.

7. As an improvement in the art of upholstery, the method of forming tufted cushions, which consists in providing the filling and backing with corresponding perforations, applying and depressing the cover through the perforations, carrying the depressed portions of the cover below the rear of the backing, and passing a securing device therethrough.

8. As an improvement in the art of upholstery, the method of forming tufted cushions, which consists in providing perforations in the backing and filling arranged upon the same pattern, applying the cover, placing tuft-buttons having eyeleted shanks in position over the perforations, depressing the cover and buttons into the perforations, and anchoring the buttons in place.

9. As an improvement in the art of upholstery, the method of forming tufted cushions, which consists in positioning a suitably-perforated backing and a filling upon a frame, applying a cover by forcing the same at intervals through said perforations, and securing said cover in place.

654,619. DOOR-HANGER AND TRACK THEREFOR. JOHN C. GABEL, Jr., Onarga, Ill. Filed Oct. 25, 1899. Serial No. 734,775. (No model.)



Claim.—1. A suspension-track for doors, consisting of upper and lower spaced-apart members connected at the front, the lower member being provided with an upwardly-extending flange at its inner edge, and a partition in the lower member at one end thereof, said partition extending in an inclined direction from the front toward the flange, as described.

2. A suspension-track for sliding doors, comprising upper and lower members connected at the front, the lower member being provided with an upwardly-extending flange at its inner edge, which flange is of less depth vertically than the vertical space between the upper and lower members of the track, means for closing one end of the track, and an inclined plane located at the closed end of the track, extending from the front in direction of the flange of the lower member of said track, as described.

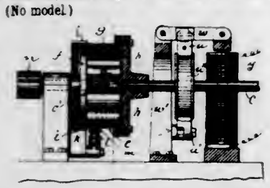
3. The combination, with a suspension-track, consisting of an upper member, a lower member of less width and provided with a flange at its inner edge, whereby a space intervenes between the said flange and the said upper member, and a front member connecting the upper and lower members, the said track being closed at one end, and a vertical partition located at the closed end of the track, extending from the front thereof in direction of the flange of the lower member of the track, of a door, hangers secured to the said door, said hangers having members arranged to enter the track at the space between the flange of its lower member and the upper member of the track, the entering member of the hanger nearest the said partition having a curvature in direction of the partition, and projections from the forward ends of each hanger, which projections are arranged for engagement with the bottom portion of said track, as described.

4. The combination of a suspension-track having two spaced-apart longitudinally-extending vertical members forming a guide-

way between them, a partition extending across said guideway at one end thereof in an inclined direction, and a door having hangers formed with horizontal members loosely fitted in said guideway, one of said hangers engaging said partition when the door is being closed, and being guided thereby to its seat, as set forth.

5. The combination of a suspension-track having an upper member arranged for attachment to a car or the like, a vertical front member and a lower member connected to said front member and having a longitudinal flange forming a guideway with said front member and spaced from the side of the car and said upper member, a partition extending in an inclined direction across said guideway, and a door having hangers secured thereto, said hangers being formed with horizontal members having projections at their free ends adapted to ride on the lower member, one of said hangers engaging with the partition when the door is closed, as set forth.

654,620. SPEED-REGULATOR AND BRAKE FOR CRANES. FRANK R. GARVER, Pittsburg, Pa. Filed Aug. 21, 1899. Serial No. 727,921. (No model.)



Claim.—1. The combination with suitable hoisting and lowering apparatus, of a power-driven shaft, a second shaft in alinement therewith, a cylinder loosely mounted on said shafts, clutch mechanism for connecting said shafts embodying a swinging brake-shoe carried by said second shaft within the cylinder, and means for preventing the rotation of said cylinder during the lowering operation, substantially as set forth.

2. The combination with suitable hoisting and lowering apparatus, of a power-driven shaft, a second shaft in alinement therewith, a cylinder loosely mounted on said shafts, clutch mechanism for connecting said shafts embodying a curvilinear swinging brake-shoe carried by said second shaft within the cylinder, and means for preventing the rotation of said cylinder during the lowering operation, substantially as set forth.

3. The combination with suitable hoisting and lowering apparatus, of a power-driven shaft, a second shaft in alinement therewith, a cylinder loosely mounted on said shafts, clutch mechanism for connecting said shafts embodying a disk carried by said second shaft within said cylinder and provided with a swinging brake-shoe, and means for preventing the rotation of said cylinder during the lowering operation, substantially as set forth.

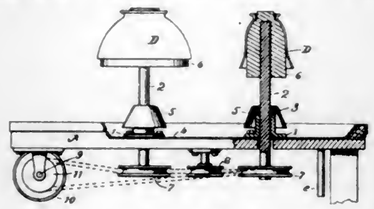
4. The combination with suitable hoisting and lowering apparatus, of a power-driven shaft, a second shaft in alinement therewith, a cylinder loosely mounted on said shafts, clutch mechanism for connecting said shafts embodying a disk carried by said second shaft within said cylinder and provided with a stud and a swinging brake-shoe on said stud, and means for preventing the rotation of said cylinder during the lowering operation, substantially as set forth.

5. The combination with suitable hoisting and lowering apparatus, of a power-driven shaft, a second shaft in alinement therewith, a cylinder loosely mounted on said shafts, a clutch member carried by said power-shaft within said cylinder, swinging curvilinear brake-shoes carried by said second shaft, said clutch member being arranged to move said brake-shoes into contact with the cylinder when the power-driven shaft is held stationary or rotated in opposition to the load, substantially as set forth.

6. The combination with suitable hoisting and lowering apparatus, of a power-driven shaft, a second shaft in alinement therewith, a cylinder loosely mounted on said shafts, clutch mechanism for connecting said shafts embodying one or more swinging brake-shoes carried by said second shaft and a clutch member carried by said power-driven shaft, and means for holding said cylinder stationary when lowering a load, said brake shoe or shoes being actuated by centrifugal action to control the movement of a descending load, substantially as set forth.

7. In a hoisting and lowering apparatus, the combination with two shafts arranged end to end, of a cylinder loosely mounted on the adjacent ends of said shafts, a swinging brake-shoe supported by one of said shafts adjacent to the inner periphery of the cylinder, a clutch member rigidly mounted on the other shaft in position to engage said brake-shoe and move it into engagement with the cylinder for hoisting, and means for holding the cylinder stationary for lowering a load, said brake-shoe being actuated by centrifugal force to control the movement of a descending load.

654,621. ROTARY ETCHING-MACHINE. MARSHALL W. GLEASON, New York, N. Y. Filed Mar. 31, 1899. Serial No. 711,201. (No model.)



Claim.—The herein-described machine for etching upon glass, the combination with a suitable supporting-table, of a plurality of upright spindles journaled in said table, and projecting above and below the same, pulleys carried upon the lower ends of said spindles, a band connected to said pulleys to revolve the same, a horizontal shaft mounted in bearings secured to the lower portion of the table, a pulley carried upon said shaft and adapted to transmit power to said spindles through the band, a collar surrounding each of said spindles, an inverted cup to protect said collar, and a chuck to support glassware carried upon the upper end of each spindle.

654,622. CUFF-BUTTON. JOSEPH GOLDSMITH, Jr., Providence, R. I. Filed Oct. 27, 1899. Serial No. 734,931. (No model.)



Claim.—In a cuff-button, the frame provided with two pairs of curved elastic arms of unequal length, and which arms have their inner edges provided with inwardly-turned pivots, and which have their inner edges adjoining the pivots beveled, the two pairs of arms being sufficiently elastic to have a slight inward and outward movement in relation to each other, combined with the disks or buttons pivoted between the ends of the arms, and which disks or buttons are provided with grooves in which the beveled edges of the arms are made to catch for the purpose of holding the buttons in position, substantially as set forth.

654,623. PIN-TICKET. ROBERT GORTON, Newton, Mass. Filed Nov. 30, 1897. Serial No. 660,251. (No model.)



Claim.—1. A pin-ticket, comprising a card and a bent flexible pointed finger attached to the card, normally inclined relatively to the under surface thereof, and adapted while so bent to be forced by hand into cloth and bent by hand therein to firmly attach the card to the goods.

2. A pin-ticket, comprising a card and a bent flexible pointed finger made of small wire attached to the card, normally inclined relatively to the under surface thereof and adapted while so bent to be forced by hand into the cloth and bent by hand therein to firmly attach the ticket to the goods.

3. A pin-ticket, comprising a card and a curved flexible pointed finger of small wire attached to the card, normally inclined relatively to the under surface thereof, and adapted while so bent to be forced by hand into cloth and bent by hand therein to firmly attach the ticket to the goods, said curved finger being provided with devices for preventing it from slipping relatively to the card.

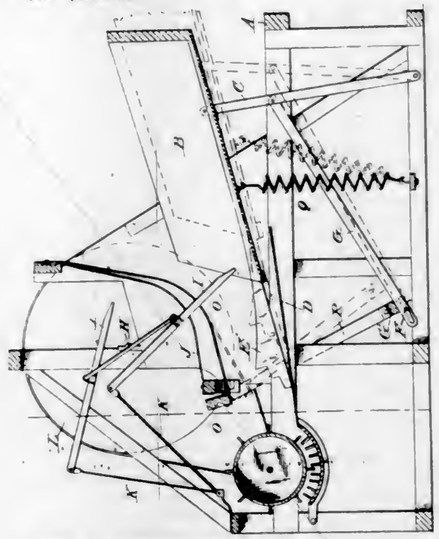
4. A pin-ticket comprising a card, a pointed curved or bent finger of small flexible wire attached to the card and normally inclined relatively to the under surface thereof, and another pointed finger attached to the opposite end of the card and normally inclined relatively to the under surface thereof, both of said fingers being while so bent adapted to be forced by hand into cloth and bent by hand therein to firmly attach the card to the goods.

5. A pin-ticket comprising a card, a bent flexible pointed finger attached to the card and adapted to be inserted into the cloth, and another relatively-short inclined finger attached to the opposite end of the card pointing toward the first-mentioned finger and adapted to enter the cloth in an opposite direction to that in which the first-mentioned finger entered.

6. A pin-ticket, comprising a card, a bent pointed finger of small flexible wire attached to the card and adapted to be inserted into cloth, said finger being provided with devices for preventing it from slipping relatively to the card, and another relatively short and stiff pointed finger or spur attached to the opposite end of the card, pointing toward the first-mentioned finger, and lying in a plane within the extremities of said first-mentioned finger.

7. A pin-ticket comprising a card, a bent flexible pointed finger attached to the card normally inclined relatively to the under surface thereof and adapted while so bent to be forced by hand into the cloth and bent by hand therein, and another relatively-short pointed finger, pointing toward the first-mentioned finger and adapted to enter the cloth in an opposite direction to that in which the first-mentioned finger entered.

654,624. FEEDER ATTACHMENT FOR CLOVER-HULLERS. ANDREW GROW, Queensville, Ind. Filed Mar. 20, 1900. Serial No. 9,391. (No model.)



Claim.—In a feeding attachment for clover-hullers, the combination of the feed-table or hopper B having bars E, bars C C pivotally connected with and supporting the same, crank-shaft F, links or bars G G connecting bars C C and the crank-arm of said shaft, a movable supplementary depressor-frame O, and links or bars P P connecting the same frame and crank-arm, all operating substantially as shown and described.

654,625. SIGNALING DEVICE. JOHN L. HALL, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed May 10, 1900. Serial No. 16,112. (No model.)

Claim.—1. A shutter for a search-light projector, or other signaling device composed of a plurality of sections of opaque heat-resisting material mounted to shift between the source of light and the mirror, and means operative from the outside of the regulating device to shift the sections, to cut off or permit reflection of the beam.

2. A search-light projector provided with a sectional shutter mounted within the drum, an operating-handle on the outside of the projector, and connections for shifting the shutter-sections to cut off or permit transmission of the beam from the reflector.

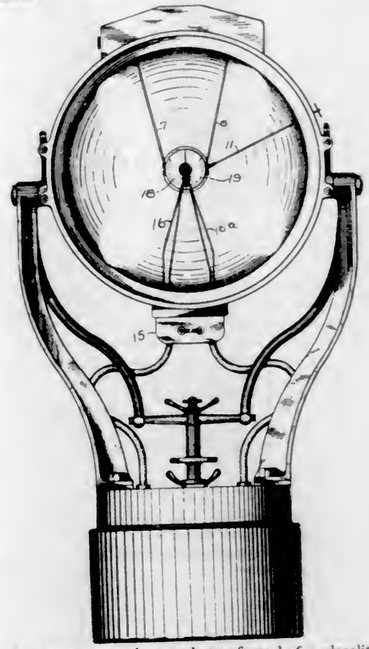
3. A signaling-shutter composed of pivoted semi-annular sections supported inside the casing and adapted to be closed to form an opaque wall between the arc and the mirror, and manual operating device outside the casing for rotating the sections to a position edgewise to the reflected beam.

4. A projector or lantern-shutter comprising two semi-annular sections mounted on arms pivoted in a support centrally of the reflected beam, and means for rotating the arms to close the sections between the arc and the mirror.

5. A projector or lantern-shutter comprising a plurality of sections of opaque material mounted on arms pivoted centrally of the beam, said arms being geared to a common operating-handle outside the drum.

6. A projector comprising a drum having arc-electrodes, a sectional shutter adapted to be closed between the arc and the mirror and an obturator in front of the arc.

7. A projector or lantern-shutter having within the casing a sectional shutter the parts of which are pivotally mounted, the several sections being closed forming a cone between the source of light and the mirror.



8. A projector or lantern-shutter formed of a plurality of corrugated sections of sheet metal adapted to fold or open between the source of light and the mirror.

654,626. FENCE-POST. WILLIE A. HAMNER, Fairlie, Tex. Filed Oct. 10, 1899. Serial No. 733,193. (No model.)



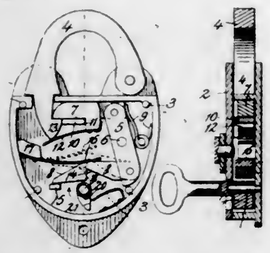
Claim. 1. A fence-post comprising a base portion having a socket in its upper end, a post proper adapted to rest on top of the base portion at one side of the socket, a semitubular fastening-plate having a flat side at its upper end and connecting the base portion and the post proper, the lower end of the fastening-plate being secured in the socket of the base portion, and having the post fastened against the flat side of the exposed upper portion, substantially as described.

2. A fence-post comprising a base portion having a socket in its upper end, a semitubular fastening-plate having its lower end bifurcated and fitting in the socket of the base portion, said fastening-plate being also provided with a spur projecting laterally from the flat side of its upper end, and a post proper fastened against the flat side of the fastening-plate and engaged by the projecting spur, substantially as described.

654,627. PADLOCK. BOYD HANDSCHUH, Wrightsville, Pa. Filed Jan. 22, 1900. Serial No. 2,371. (No model.)

Claim.—1. In a lock, the combination of the locking-bolt, the centrally-fulcrumed lever pivotally connected at one end to the bolt,

and the key-catch, pivoted to said lever at its lower end below its fulcrum and formed with a shoulder for the bit of the key to engage with to move the catch and lower end of the lever forward to retract the bolt, substantially as described.

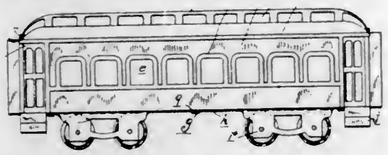


2. In a lock, the combination of the locking-bolt having a forwardly-extending spring for the nose of the shackle to engage with, a centrally-fulcrumed lever pivotally connected at one end to the bolt, the key-catch pivoted to said lever at its lower end below its fulcrum and formed with a shoulder for the bit of the key to engage with to move the catch and lower end of the lever forward to retract the bolt, and a spring acting on the key-catch to snap it upon the key-bit as the latter passes the shoulder, substantially as described.

3. In a lock, the combination with the shackle, the locking-bolt, the lever having the locking-bolt connected therewith, the key-catch connected with said lever and having an abutment for a part of the key to engage with, and a spring member located with relation to said key-catch to require the key to be moved in one direction and then in the opposite direction to actuate the key-catch in the operation of the locking-bolt, substantially as described.

4. In a padlock, the combination of the shackle, the locking-bolt having a spring connected thereto to engage the shackle, a lever with which said bolt is connected, a key-catch formed with a recess and pivotally connected with said lever, a spring acting on said key-catch, and a spring member located in relation to said key-catch to require the key to be moved in one direction to bring it into operative position and in the opposite direction to actuate the key-catch and permitting the key to pass the spring member after it has actuated the key-catch, substantially as described.

654,628. TOY CAR. FRANK H. HARRIS, Toledo, Ohio. Filed July 17, 1899. Serial No. 724,166. (No model.)



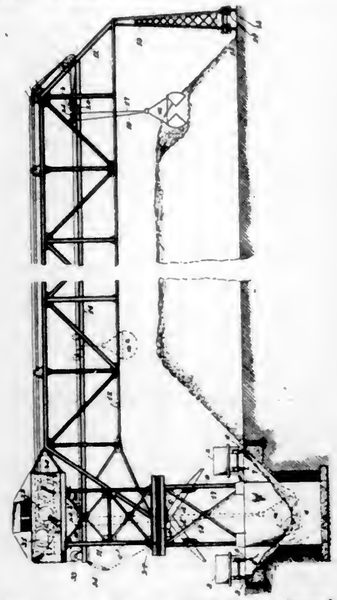
Claim.—1. A toy car comprising two sections one consisting of a roof portion and downwardly-projecting sides, and the other a floor portion, an upwardly-projecting end portion and door portions, bent at right angles to said end; and securing means for said sections comprising a hooked tongue on the one engaging with a slit in the other.

2. A toy car comprising two sheet-metal sections one forming the sides and roof and the other the floor and vestibules and securing means for said sections consisting of a series of downwardly-projecting tongues on said sides, a corresponding series of slitted ears projecting laterally from the floor with which said tongues are engaged and a tongue at the top of the vestibules engaging a slit in the end of the roof.

3. A toy car comprising two sheet-metal sections one forming the roof and sides, and the other the floor and vestibule, the latter comprising an end portion struck up from an extension of the floor, and door portions formed from lateral extensions of said portion bent at right angles thereto the joint between said sections when secured together being along the sides and top of said doors.

4. A toy car comprising two sheet-metal sections one forming the sides and roof and the other the floor and vestibule, the latter comprising an end portion struck up from an extension of the floor and door portions, formed from lateral extensions of said end portion bent at right angles thereto, a bead formed at the edge of said side and roof overlapping said door portion and a complementary bead formed at the corner between said end portion and door.

654,629. CONVEYING APPARATUS. WILLIAM J. HASKINS and THOMAS A. COFFIN, New York, N. Y. Filed Sept. 5, 1899. Serial No. 729,407. (No model.)



Claim.—1. In combination, a track 4, a pit 6, located in position to receive coal dumped from a car on said track, a tower above said pit and having a clear hoisting-opening above the pit, a pivotal support extending laterally from said tower, a trackway upon said support, a bucket-carriage upon said trackway, a bucket, and means whereby said bucket may be hoisted and lowered both within said tower and from said trackway, and means whereby said carriage may be propelled; substantially as described.

2. In a coal-storing apparatus, in combination, an oscillating tower 11 having a hoisting-opening within it, a pivotal support 12, connected with said tower, a trackway extending from substantially the center of oscillation of said tower out onto said support, a carriage on said trackway, a coal-bucket, a triple friction-drum engine upon said oscillating tower, a traction-rope connecting one drum with said carriage, and a hoisting-rope and closing-rope connecting said other drums, respectively, with said coal-bucket; substantially as described.

3. In a coal-storing apparatus, in combination, an oscillating tower 11 having an axial hoisting-opening extending through its base, a pivotal support 12, connected with said tower, a trackway extending from substantially the center of oscillation of said tower out onto said support, a carriage on said trackway, a coal-bucket, and means whereby said coal-bucket may be hoisted and lowered from said carriage substantially in the axis of oscillation of said tower, and also at other points on said trackway; substantially as described.

4. In a coal-conveying apparatus, in combination, a stationary tower 9, an oscillating tower 11, mounted thereon and having a central hoisting-opening, an interposed turn-table 10 having a corresponding hoisting-opening, a pivotal support 12 connected to swing with said oscillating tower as a pivot, a trackway on said pivotal support, extending above the opening through said turn-table, a hopper located within said turn-table, a spout cooperating with said bopper, a coal-bucket, and means whereby said bucket is operated to convey coal from the storage-heap beneath said pivotal support to said hopper; substantially as described.

5. In a device for handling and storing coal and similar materials, the combination with a tower mounted to turn upon a pivot and having a central hoisting and lowering opening, a receiving-bin beneath said opening and a carrier-support extending from said tower and movable with said tower as a pivot, of a hoisting and conveying apparatus mounted upon said tower and carrier-support, and adapted to take material from, and to deposit it within both the bin and the space covered by said support at will.

6. In a device for handling and storing coal and similar materials, the combination with a pivoted tower having an axial hoisting-opening, a radial track connected with said tower and movable upon a common pivot therewith, of a receiving-bin beneath said tower, and a hoisting and conveying apparatus comprising a carrier movable on said track, and a coal receiver and conveyer carried thereby and adapted to be lowered within the tower into said bin.

7. In a device for handling and storing coal and similar materials, the combination with a tower mounted to turn upon a pivot and having a clear central hoisting-opening therein, extending through its base, and a radial carriage-support adapted to swing with the tower, of a hoisting apparatus mounted upon said tower and radial carriage-support, and adapted to take or deliver material at will either through the axis of the tower or from beneath said carriage-support.

8. In a device for handling and storing coal and similar materials, the combination with a tower mounted to turn upon a pivot and having a clear central hoisting-opening therein, a radial arm adapted to swing with the tower and a traveling support for the outer end of said arm, of a hoisting and conveying apparatus mounted upon said tower and radial arm and adapted to take or deliver material at will, either through the axis of the tower or from beneath said arm.

9. In a device for handling and storing coal and similar materials, the combination with a tower mounted to turn upon a pivot and having a clear central hoisting-opening therein, a movable hopper and chute adapted to be placed centrally of said tower or to be removed to leave the opening free, a radial arm adapted to swing with the tower and a traveling support for the outer end of said arm, of a hoisting and conveying apparatus mounted upon said tower and radial arm and adapted to take or deliver material at will, either through the axis of the tower or from beneath said arm.

10. In a device for hoisting and storing coal and similar materials, the combination with a tower mounted to turn upon a pivot, and having a clear central hoisting-opening therein, a movable hopper and chute adapted to be placed centrally of said tower or to be removed to leave the hoisting-opening free, and a radial carrier support adapted to swing with the tower, of a hoisting and conveying apparatus mounted upon said tower and radial carrier-support.

11. In a device for handling and storing coal and similar materials, the combination with a tower mounted to turn upon a pivot and having a clear central hoisting-opening therein, a hopper hinged to the tower to swing across said hoisting-opening or to one side thereof, and a radial arm adapted to swing with the tower, of a hoisting and conveying apparatus mounted upon said tower and radial arm, and adapted to take or deliver material at will either through the axis of the tower or from beneath said arm.

12. In a device for handling and storing coal or similar materials, the combination with a pivoted tower having a central hoisting-opening therein, a hopper hinged to the tower to swing across said hoisting-opening or to one side thereof, chutes slidingly mounted and adapted to be brought beneath the hopper-discharge, or moved to one side to leave the hoisting-opening clear, and a radial arm adapted to swing with the tower, of a hoisting and conveying apparatus mounted upon said tower and radial arm and adapted to take or deliver material at will either through the axis of the tower or from beneath said arm.

13. In a device for handling and storing coal and similar materials, the combination with a tower composed of a fixed base-section and an upper section mounted to turn upon the base, and a radial carrier-support extending from the said upper section and swinging with it, a hopper carried by the upper section and having an axial discharge, and a chute carried by the fixed base and receiving the discharge from the hopper, of a hoisting and conveying apparatus mounted upon said upper tower-section and swinging carrier-support, and adapted to take material from points beneath said carrier-support and deliver it to said hopper.

14. In a device for handling and storing coal and similar materials, the combination with a tower composed of a fixed base-section and an upper section mounted to turn upon the base, and a radial carrier-support extending from the said upper section and swinging with it, a movable hopper carried by the upper section and having an axial discharge and adapted to be moved to leave a free hoisting-opening within the tower, and a chute carried by the fixed base and adapted to be moved to receive the discharge from the hopper, or to clear the hoisting-opening, of a hoisting and conveying apparatus mounted upon said upper tower-section and swinging carrier-support and adapted to take material from and deliver it to either the tower center or points beneath said carrier-support.

15. In a device for handling and storing coal and similar material, the combination of a tower comprising a fixed lower section and an upper section mounted to turn thereon, and each having a central bucket-hoisting opening extending to the bottom of the tower, a carrier-support connected with the upper tower-section and extending radially therefrom to swing over the storage-floor, a trackway extending along said carrier-support and over the center of the tower, a carrier on said trackway, a bucket suspended from said carriage, and operating mechanisms for said carriage and bucket mounted in the top of the pivoted tower-section.

16. In a device for handling and storing coal and similar materials, the combination of a tower comprising a fixed lower section and an upper section mounted to turn thereon, both sections having a clear central hoisting-opening, a receiving-bin within the tower-base, a carrier-support connected with the upper tower-section and extending radially therefrom to swing over the storage-floor, a trackway extending along said carrier-support and over the center of the tower, a carriage on said trackway, a bucket suspended from said carriage, and operating mechanisms for said carriage and bucket mounted in the top of the pivoted tower-section and movable chutes adapted to receive material discharged within the tower.

17. A hoisting and conveying apparatus, comprising a movable tower having a side extending carrier-support, and a central hoisting-opening extending through its base, a trackway upon said support and extending over the tower center, a hoisting and conveying device movable on said trackway, and actuating means therefor located in the tower above the trackway.

18. A hoisting and conveying apparatus, comprising a tower consisting of a fixed base-section and an upper section mounted to turn upon the base-section, both sections having a clear hoisting-opening within them, the upper or pivoted tower-section having a side extending carrier-support, a trackway upon said support and extending over the tower center, a hoisting and conveying device movable on said trackway and actuating means therefor located in the tower above the trackway.

19. A hoisting and conveying apparatus, comprising a movable tower having a side extending carrier-support, a trackway upon said support and extending over the tower center, a hoisting and conveying device movable on said trackway, actuating means therefor located in the tower above the trackway, a removable hopper and chute adapted in one position to receive the material discharged within the tower.

654,630. RADIOPHONY. HAMMOND V. HAYES and ERNEST R. CRAM, Cambridge, Mass., assignors to the American Bell Telephone Company, Boston, Mass. Filed June 7, 1897. Serial No. 639,635. (No model.)

Claim.—1. The combination with a radiophone-receiver, of an electrical circuit containing a source of electric current and a device for developing radiant energy under the action of said source, and means for producing characteristic alterations of said radiant energy, consisting of an auxiliary circuit associated with said first-named circuit and a transmitting apparatus contained therein and adapted to alter the current thereof and thereby correspondingly modify the current supplied in said first-named circuit to said device for developing radiant energy, substantially as described.

2. The combination with a radiophone-receiver, of a transmitting apparatus consisting of an electric circuit containing a generator or other source of electric current and a device for developing radiant energy under the action of said generator or other source of electric current, a shunt-circuit about said device for developing radiant energy, and a transmitting apparatus within said shunt-circuit for altering the amount of said radiant energy, substantially as described.

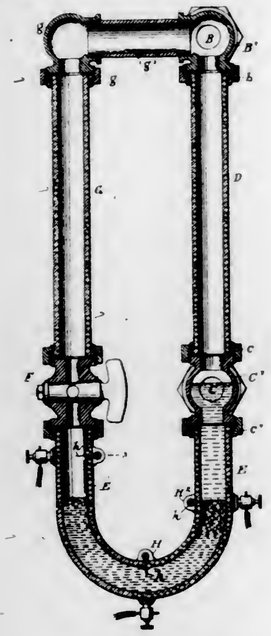
3. The combination with a radiophone-receiver of an electric circuit with a generator of electricity and an arc-light therein, a shunt to said circuit with a circuit-changing device therein, and a reflector adapted to direct rays of radiant energy developed in the said arc-light to the said radiophone-receiver, substantially as described.

654,631. HIGH OR LOW WATER ALARM FOR BOILERS. EUGENE D. HAYS, Philadelphia, Pa., assignor, by direct and mesne assignments, of two-thirds to John W. Griffenberg, Fred. De Witt Goodwin, and William C. Hays, same place. Filed Dec. 15, 1899. Serial No. 740,461. (No model.)

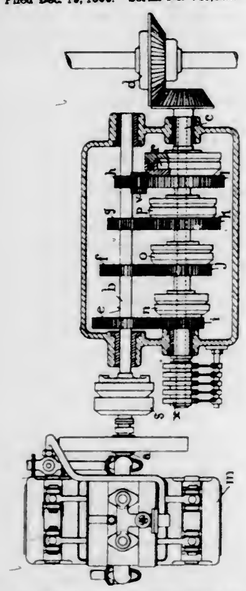
Claim.—1. The combination, in a high and low water alarm for boilers or tanks, of a vertical tube or gage-glass, a vertical tube extending parallel with said gage-glass and connected therewith at the top and bottom, a dependent curved connection having electrical termini inserted therein, electrical contacts, mercury in said curved connection to complete or break an electrical circuit between said termini thereby giving an alarm, and a stop-cock F having couplings thereon to receive the tubes, substantially as described.

2. The combination, in a high and low water alarm for boilers or tanks, of a vertical tube D, a tube G, a dependent curved tube having electrical termini inserted therein, mercury in said curved tube

to complete or break an electrical circuit, electrical contacts, binding-posts provided with bands for attaching the same, an electrical terminal H continuously in contact with the mercury, termini H' and H³ arranged so that the mercury may come in contact with either and complete an electrical circuit, a suitable electrical device for giving an alarm, a stop-cock F, fittings thereon to receive the tubes and fittings c and c' on the valve C substantially as described.

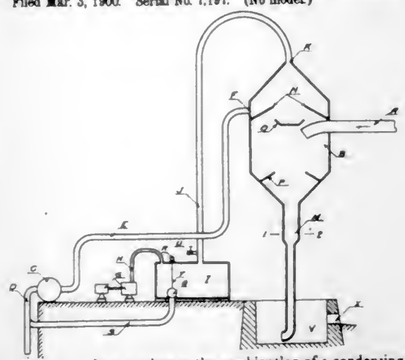


654,632. GEAR FOR MOTOR-CARS. JEAN J. HEILMANN, Paris, France. Filed Dec. 19, 1899. Serial No. 740,883. (No model.)



Claim.—An engaging and variable-speed gearing for motor-cars and the like, consisting of the combination of a shaft connected to the motor, a main magnetic clutch, a series of tooth-wheels of various diameters mounted rigidly on the said shaft, a second shaft, a series of tooth-wheels of corresponding sizes carried loosely upon the latter shaft which is adapted to drive the vehicle, a secondary magnetic clutch arranged to coact with each of the latter wheels so as to couple any one of said wheels to the shaft, and means for connecting any one of the secondary magnetic clutches in series with the main magnetic clutch and a source of electricity, substantially as described

654,633. CONDENSER. AXEL H. HELANDER, Philadelphia, Pa. Filed Mar. 3, 1900. Serial No. 7,197. (No model.)



Claim.—1. In a condenser, the combination of a condensing vessel, means for delivering the vapor to be condensed and the water for condensation to said condensing vessel, a connection between said condensing vessel and a vacuum-chamber within which chamber a vacuum is maintained by suitable means, a water-outlet opening or openings in said chamber through which water accumulated in said chamber passes out of said chamber, an air-inlet opening or openings in said chamber through which air is admitted into said chamber, a valve or valves controlling said water-outlet opening or openings and operated by the rise and fall of the water accumulated in said chamber and a valve or valves controlling said air-inlet opening or openings and operated by the rise and fall of the water accumulated in said chamber.

2. The combination of a condensing vessel, a vacuum-chamber connected therewith and an air-inlet to said vacuum-chamber automatically controlled by the level of the water in said vacuum-chamber.

3. The combination of a condensing vessel, a vacuum-chamber connected therewith and an air-inlet to said vacuum-chamber controlled by movement of a water-valve in said vacuum-chamber.

4. The combination of a condensing vessel, a vacuum-chamber connected therewith; an air-inlet to said vacuum-chamber controlled by the level of the water in said vacuum-chamber and a second air-inlet to said chamber from the atmosphere.

5. The combination of a condensing vessel, a water-pump connected with said vessel, a vacuum-chamber connected with said vessel, an air-pump connected with said vacuum-chamber and an automatically-operated air-inlet to said vacuum-chamber.

6. The combination of a condensing vessel, a water-pump connected with said vessel, a vacuum-chamber connected with said vessel, an air-pump connected with said vacuum-chamber and an air-inlet to said vacuum-chamber automatically operated by the level of the water in said chamber.

7. The combination of a condensing vessel, a water-pump connected with said vessel, a vacuum-chamber connected with said vessel, an air-pump connected with said vacuum-chamber and a water-outlet for said vacuum-chamber, a valve for said outlet which valve automatically controls the admission of air to the vacuum-chamber.

8. The combination of a condensing vessel, a vacuum-chamber connected therewith, a water-outlet for said vacuum-chamber, an air-inlet to said chamber, a valve for said air-inlet and a valve for said water-outlet, which valve by a progressive movement first opens the water-outlet and then the air-inlet.

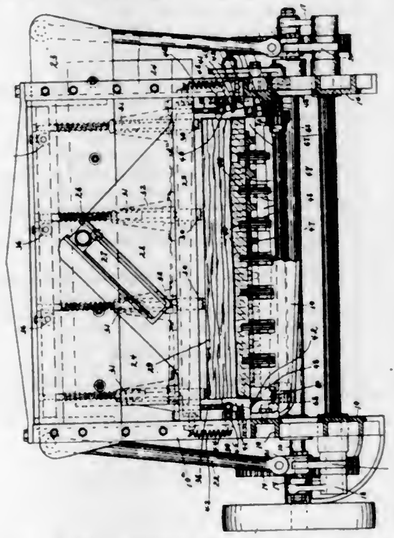
9. The combination of a condensing vessel, a vacuum-chamber connected therewith, a water-outlet to said vacuum-chamber, a valve for said outlet, a float in said chamber, an air-inlet to said vacuum-chamber, a valve for said inlet and connections from said float to both of said valves.

654,634. AUTOMATIC PUMP FOR PNEUMATIC-TIRED WHEELS. HENRY H. HENNING, Brisbane, Queensland. Filed Apr. 19, 1900. Serial No. 13,403. (No model.)

Claim.—A single-acting air-pump connected to the inlet-valve of the tire and having a safety-valve interposed, said pump articulated to a clip fitting over the rim, a spring interposed between the top of the pump-case and the end of piston-rod, end of rod provided with wheel carried in cheek hinged to rod and to a stay articulated to a clip fitting over the rim, a cam secured to the frame and having a track grooved for the reception of the wheel on end of piston-rod as herein described and illustrated in the accompanying drawings.



654,635. WOOD-CUTTING MACHINE. WILLIAM HINDLEY, Hoboken, N. J., and JOSEPH W. HARDING, New York, N. Y., assignors, by mesne assignments, to the Diamond Wood Company, of New Jersey. Filed Nov. 12, 1897. Serial No. 658,257. (No model.)



Claim.—1. The combination with the vertically and laterally movable knife, and the cross-head carrying the knife, of the hollow cross-bar, the rollers journaled on the cross-head and running in the cross-bar, and a series of independent spring-pressed dogs supported on the cross-bar and projecting slightly below the knife-edge to engage the stock, substantially as described.

2. The combination with the vertically and laterally moving cross-head and the knife secured thereto, of the hollow cross-bar, the rollers journaled on the cross-head and projecting into the cross-bar to support it, a series of spring-pressed rods supported vertically on the cross-bar, and independent dogs carried at the lower ends of the rods and projecting to a point adjacent to the knife-edge to engage the stock, substantially as described.

3. In a machine of the kind described the combination of the cross-head and knife vertically slidable in guideways, of means for imparting a lateral movement to the knife, and actuating means as follows, to wit: connecting-rods at opposite ends of the knife, said connecting-rods being pivoted at the top to the cross-head and at the bottom to a pair of cranks, the pivotal connection at one end of the rods being essentially a universal joint, and means for actuating the cranks, substantially as described.

4. The combination with the reciprocating knife of the oppositely-arranged spring-opened jaws at opposite ends of the knife-path, said jaws being adapted to engage the stock, and means as the spring-pressed arms 44 and rollers 40 for closing the aforesaid jaws, substantially as described.

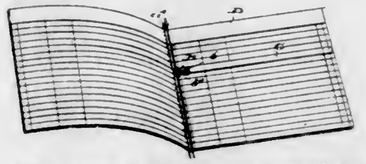
5. The combination with the vertically-movable knife, of oppositely-arranged jaws near the ends of the knife, said jaws being pivoted so as to swing inward to grasp the stock, spring-pressed arms to engage and normally close the jaws, and slide-rods moved in unison with the knife, said rods being slidably connected with the arms so that when near the end of the upstroke of the knife, the rods lift the arms and release the jaws, substantially as described.

6. The combination with the vertically-movable knife, the bed formed of parallel bars, and the intermittently-actuated carriage beneath the bed, of the feed-dogs mounted on the carriage, each dog having a spring-pressed shank held parallel with the bed of the machine, and a weighted tail to swing the dogs into operative position above the bed, substantially as described.

7. In a machine of the kind described, the combination with the feed-carriage having means for feeding it forward, of the ratchet-bar adjacent to the carriage, the pawl pivoted on the carriage to engage the ratchet-bar and prevent the return of the carriage, said pawl having a weight arranged to swing it normally out of engagement, and means as a ledge to engage the weight and hold the pawl in engagement with the ratchet-bar, substantially as described.

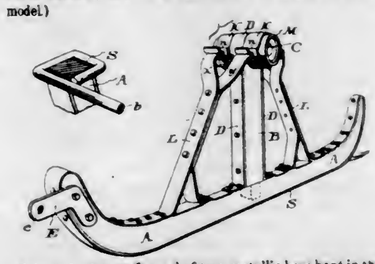
8. A machine of the kind described comprising a stationary longitudinally-slotted body, a vertically and laterally movable knife operating in a slideway above the body, a crank mechanism for operating the knife, a series of independent yielding dogs arranged to slide with the knife and projecting slightly below and adjacent to the edge thereof, jaws arranged near opposite ends of the knife-path and held normally open, means to close the jaws by the descent of the knife, said means being adapted to hold the jaws closed during a portion of the knife-stroke, a carriage movable beneath the bed, and a series of independent tilting dogs projecting upward from the carriage through the slots in the bed, substantially as described.

654,636. ADJUSTABLE HOLDER FOR COPY-SLIPS, &c. GEO. W. HOAGLEN, Chicago, Ill. Filed Oct. 12, 1899. Serial No. 733,410. (No model.)



Claim.—An adjustable copy-slip holder comprising a straight rigid rod provided with means for detachably clamping it to a book, a slidable slip-holder having at its inner end an elongated socket receiving and fitting closely said straight rigid rod, whereby the holder is held firm in its movements, in respect to the book when moved upon said rod, and provided at its outer end with a movable slip-clamp constructed to firmly and detachably hold a copy-slip, whereby the copy-slip when adjusted in alinement will remain so when the holder is moved upon the said rigid rod for adjusting the slip in respect to the book, substantially as described.

654,637. ATTACHABLE SLEIGH-RUNNER. JOHN E. HOBBS, North Berwick, Me. Filed Jan. 16, 1897. Serial No. 619,438. (No model.)



Claim.—1. A truss formed of two metallic bars bent in their middle in a pyramidal form, and riveted together for a space about mid-

way between their apex and free ends, which are bent in opposite directions to form feet, and their upper segments drawn apart, laterally, and curved downwardly, to form a rest for a spindle-support near each of the ends thereof, yokes passing over said spindle-support, secured by clips near each of their ends to the truss-bars, substantially as described.

2. In combination with attachable sleigh-runners, a connecting-rod consisting of a round bar of steel of suitable size, having its ends formed into loops adapted to fit over the noses of the opposite runners in each pair of runners, substantially as shown and described.

3. An attachable sleigh-runner having a hub mounted thereon, said hub supported by a standard rising vertically from the base-bar of said runner and having its lower end secured in said bar, the upper end of said standard cut away to receive said hub, a brace passing over said hub and down along the said standard and having its ends turned outward at an angle and secured to said base-bar, said brace being also rigidly secured to said standard, and braces from said base-bar to said standard from front and rear, substantially as shown and described.

4. An attachable sleigh-runner having a hub supported on a central vertical standard secured at its lower end in the base-bar of the runner, its upper end cut away to a depth to receive a hub, a U-shaped brace passing over said hub and secured to the sides of said standard and its lower ends turned out at an angle and secured to said base-bar, a duplex truss formed with supporting-feet secured to said base-bar at a distance on each side of said central standard and forked laterally at a point below and on each side of said hub and each arm formed thereby curved downwardly to provide a rest for said hub, yokes passing over said hub and secured at each of their ends to said arms at a point near said hub, substantially as shown and described.

5. In attachable front and rear sleigh-runners having spindle-supports mounted thereon, the combination with said runners, of connecting-rods to hold said runners at a fixed distance from each other, each of the rear pair of said runners provided with chains secured to the front leg of the duplex truss having the spindle-support mounted thereon, said chains provided with screw-buckles and joined to a single chain provided with means of attachment to the axle supported by the forward runners, each of the front pair of runners having secured to the central part of the spindle-support thereon, by means of loops, a chain provided at its forward end with means for attachment to a whiffletree, substantially as shown and described.

6. The combination in attachable sleigh-runners, of a chain secured to the front leg of the duplex truss forming a part of the hub-support of each of a pair of rear runners, said chains provided with screw-buckles and joined at their forward ends to a single draw-chain and said draw-chain movably secured to a horseshoe-shaped loop provided with means for attachment to the axle of a vehicle, substantially as shown and described.

7. In an attachable sleigh-runner a base-bar, a standard rising therefrom, a U-shaped brace embracing said standard and provided with a spindle-support, in combination with a duplex truss, substantially as shown and described.

8. The combination in an attachable sleigh-runner of base-bar, mortised for tenon of B, standard B, with tenon, brace D, duplex truss, check or draw chains, oscillating attachment, and brake or dog, R, substantially as described.

9. The combination in an attachable sleigh-runner of a hub, standard B, brace D, duplex truss, yokes, K, K, clips, check or draw chain, *g*, *g*, U-bolt and hook, connecting-rods, and brake, R, substantially as set forth.

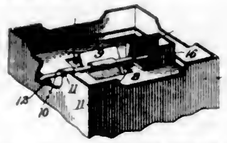
10. In combination with an attachable sleigh-runner, a long U-shaped shackle adapted to be secured by a bolt through its open ends to the base-bar of said runner, a link, or links secured to the closed end of said shackle and means for attaching said links to the whiffletree, substantially as shown and described.

11. In combination with an attachable sleigh-runner, a long U-shaped shackle adapted to be secured by a bolt through its open ends to the central standard of said runner, a link, or links secured to the closed end of said shackle and means for attaching said links to the whiffletree, substantially as shown and described.

12. In combination with an attachable sleigh-runner, a long U-shaped shackle adapted to be secured by a bolt through its open ends to the forward limb of the truss of said runner, a link, or links secured to the closed end of said shackle and means for attaching said links to the whiffletree, substantially as shown and described.

654,638. TOY SAFE. JAMES A. HORTON, New Castle, Pa. Filed Sept. 18, 1899. Serial No. 730,907. (No model.)

Claim.—1. A toy safe having a coin-receiving opening and a coin-removing opening in its outer wall, a plastic seal retained upon the wall of the safe, a door closing the coin-removing opening, and a locking member movable with the door and retained in fixed relation to the wall by the plastic seal, which latter thereby constitutes both a seal and a lock for the door.



2. A toy safe having a coin-removing opening in its outer wall, a door closing said opening, a locking element movable with the door, a plastic seal engaging and rigidly retaining said locking member, and means for retaining the plastic seal upon the wall of the safe to one side of the door.

3. A toy safe having a coin removing opening in its outer wall, a hinged door closing said opening, a locking member constituting an element of the hinge, and a seal affixed to the wall of the safe and retaining the locking member rigid with the wall.

4. A toy safe having a coin-removing opening in its outer wall, a tilting trap-door for said opening, a door-closing shaft upon which the door is mounted, said shaft having a rigid lateral projection, and a seal affixed to the wall of the safe and engaging the lateral projection to retain said projection rigid with the wall.

5. In a toy safe, the combination with an outer shell or casing, having a door-opening, of a hinged door therefor, inwardly-convergent flanges bounding the door-opening and extending therefrom, grooved guides attached to the inner walls of the safe, a glass panel fitted in said guides, and lying adjacent to the inner edges of said flanges, and cushioning-strips embracing the edges of said panel and interposed between said edges and the guides in which the edges are received, substantially as described.

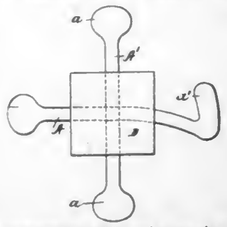
6. In a toy safe having an outlet-opening, a trap-door for closing said opening, a rock-shaft on which said door is mounted, a spring-controlled arm on said rock-shaft within the safe, a lateral projection or wing on said shaft, a receptacle in which said projection or wing is received, and a plug fitted in said receptacle for preventing movement of said projection or wing, substantially as described.

7. In a toy safe having an outlet-opening, a trap-door for closing said opening, a door-shaft, a lateral projection on said shaft, a receptacle in which said projection is received, and a plug or filling of soft material arranged in said receptacle, and adapted to be removed substantially in the manner as and for the purpose specified.

8. In a toy safe having an outlet-opening, a trap-door controlling said opening, a rock-shaft on which said door is mounted, a rectangular compartment, a rigid lateral wing or projection on said shaft and movable within said compartment and a seal-lock for preventing movement of said wing therein, substantially as and for the purpose specified.

9. A toy safe having an opening in its outer wall through which the coins may be removed, a trap-door for said opening, a door-closing shaft, and a seal separate from the door and engaging with the shaft for holding the parts fixed.

654,689. COMBINATION TABLE AND SEAT. ERNST HUBTHER, New York, N. Y. Filed Feb. 16, 1900. Serial No. 5,525. (No model.)



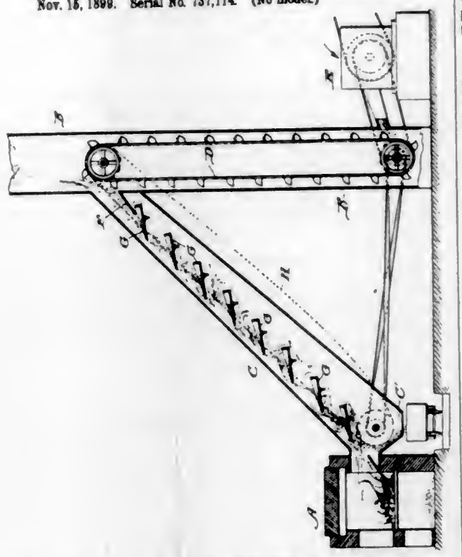
Claim.—1. A combination table and seats, the same consisting of two benches secured together transversely and a table carried thereby, substantially as described.

2. The combination of two benches secured together, a standard supported thereby, and a table carried upon said standard, substantially as described.

3. The combination of a table, a standard hinged thereto, two benches pivoted upon the lower end of said standard, means for clamping said benches in position, and hinged legs supporting said benches, substantially as described.

4. The combination of a standard, a table carried by the upper end thereof, and two supporting-benches pivoted on the lower end of said standard and providing seats, substantially as described.

654,640. CALCINING-FURNACE. GODFREY HUGHES, El Paso, Tex., assignor of one-half to James Alexander Halstead, same place. Filed Nov. 15, 1899. Serial No. 737,114. (No model.)



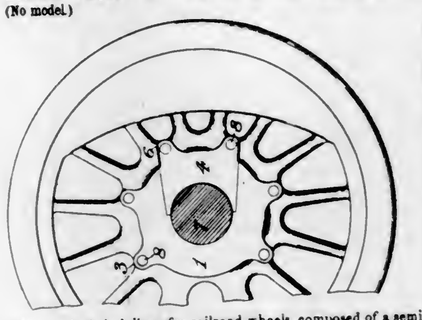
Claim.—1. In an apparatus substantially as described the combination of the chute having slots J, the dumping-plates pivoted and provided with stop projections extending through said slots, bearing-rollers K, and the chain having tripping projections engaging said bearing-rollers substantially as set forth.

2. A roasting apparatus substantially as described comprising the dumping-plates pivoted whereby they can drop at their discharge ends, a stop to limit the dropping movement of such ends, and means for lifting such ends of the plates and releasing them whereby they will drop and the jar resulting from the stopping of the plates will cause the roasted material to discharge.

3. In an apparatus substantially as described, the combination of the inclined series of dumping-plates arranged each to discharge to the next lower one, the chain having projections by which to engage bearings on said plates, and guides arranged opposite the bearings of the plates and adapted to support the chain while its tripping projections are in engagement with said bearings.

4. A roasting apparatus for roasting ore comprising the inclined series of dumping-plates pivotally supported whereby their discharge edges may be lifted and dropped, a stop to limit the dropping movement of the dumping-plates, and the chain provided with projections arranged to engage the plates and lift and release the discharge edges thereof whereby they will drop upon their stops and cause the roasted material to discharge substantially as set forth.

654,641. HUB-LINER FOR RAILROAD-WHEELS. FRANK T. HYNDMAN, Allegheny, Pa. Filed May 26, 1900. Serial No. 18,043. (No model.)

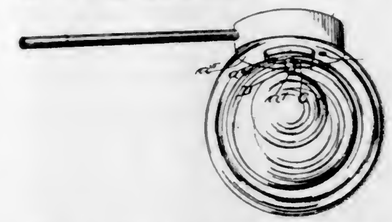


Claim.—1. A hub-liner for railroad-wheels, composed of a semicircularly-recessed body-plate, and a correspondingly-recessed filling-piece fitting in a radial opening in the body-plate.

2. A hub-liner for railroad-wheels, composed of a semicircularly-recessed body-plate, and a correspondingly-recessed filling-piece fitting in a radial opening in the body-plate, the body-plate and filling-piece being provided with peripheral lugs having conical openings for the reception of connecting-bolts.

3. The combination of a wheel-hub having peripheral bolt-lugs a sectional hub-liner fitting around the axle of the wheel, and composed of a body-plate and a filling-piece fitting in a radial opening therein, connecting-bolts having countersunk heads fitting in the sections of the hub-liner and passing through the lugs of the wheel-hub, and nuts securing said bolts to the wheel-hub.

654,642. SOAP-BUBBLE PIPE. JUSTIN C. JAMES, Chicago, Ill. Filed July 31, 1899. Serial No. 725,633. (No model.)



Claim.—1. A bubble-blower provided with a plurality of separate bubble-openings from which bubbles are successively blown and having also suitable adhering surface whereon a bubble blown from one opening can shift or spread laterally from the mouth of such opening until it covers or incloses the mouth of another opening from which a second bubble is then blown within the first.

2. A bubble-blower provided with a plurality of separate bubble-openings of different lengths from which bubbles are successively blown and having also suitable adhering surface whereon a bubble blown from one opening can shift or spread laterally from the mouth of such opening until it covers or incloses the mouth of another opening from which a second bubble is then blown within the first.

3. A bubble-blower comprising a body provided with a plurality of separate bubble-passages which extend laterally and open through one side of the said body, and the side of the body thus provided with said openings being also provided with suitable adhering surface whereon a bubble blown from one opening can shift or spread laterally from the mouth of such opening until it covers or incloses the mouth of another opening from which a second bubble is then blown within the first.

4. A bubble-blower comprising a body having a bore formed in continuation of the stem-passage and having also a plurality of separate bubble-blowing passages or ducts which extend laterally from said bore and open through one side of said body, the side of the body thus provided with said bubble-openings being also provided with suitable adhering surface whereon a bubble blown from one opening can shift or spread laterally from the mouth of such opening until it covers or incloses the mouth of another opening, substantially as and for the purpose set forth.

5. A soap-bubble pipe comprising a body portion having a transversely-arranged bore or passage connected with the stem-passage and provided with a plurality of bubble-blowing apertures relatively of different lengths, the longer of said apertures being formed with its outlet through a nipple at one side of the pipe-body, the next shorter aperture being formed through a boss or projecting portion around the base of the nipple, substantially as set forth.

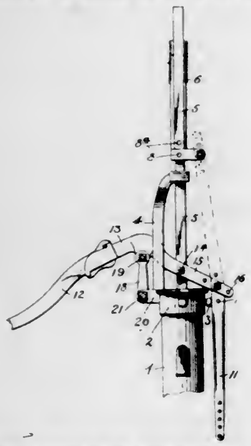
6. A soap-bubble pipe comprising a body having a passage connected with the stem-passage and provided with a couple of bubble-blowing apertures of different relative lengths, said pipe-body being formed with a centrally-arranged nipple through which the longest of said apertures opens and having a boss or projection formed at the base of said nipple and at one side of the shortest one of the said two apertures, substantially as described.

7. A soap-bubble pipe comprising a body provided with a suitable stem and having opposite flat surfaces, said body being bored transversely to provide a passage closed at one end and connected with the stem-passage, said body being also provided with apertures extending from said transversely-arranged passage to and through its opposite flattened sides.

654,643. PUMP-OPERATING DEVICE. HANS G. JOHNSON, Waukon, Iowa. Filed Apr. 17, 1900. Serial No. 13,225. (No model.)

Claim.—1. The herein-described series of levers for pumps comprising the union 6 having a socket and an extension 9, a pump-rod

cooperating with said socket, a fulcrum-link secured to the pump, a lever-section pivoted to said link, and a link 11 designed to connect said lever and said extension whereby the force of the windmill or other motive power may be applied indirectly to the pump-rod, all combined substantially as specified and for the purpose set forth.



2. In pumps, a union having a socket and an extension, and a link adapted to pivotally connect said extension and the pump-rod, in the manner specified and for the purpose set forth.

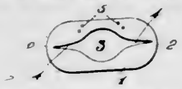
3. In pumps, a lever; a pump-rod; a detachable handle adapted to be secured to said lever, in combination with a socket carried by the rod of the windmill, said socket having a right-angled extension, and means to connect said socket directly to the pump-rod and a link 11 adapted to indirectly connect said extension and lever whereby an increased leverage will be applied to the pump-rod, all combined in the manner specified and for the purpose set forth.

4. In pump-operating devices, the herein-described union adapted to form the connecting-link between the pump-rod and the piston of the windmill consisting of an upright portion designed to be secured to said piston and further having an extension provided with a recess, and also having a vertically-disposed socket adapted to adjustably receive the pump-rod, substantially as specified and for the purpose set forth.

5. As an improvement in pump-operating devices, the herein-described series of levers comprising a union 7 having an extension; the lever-section 13 adapted to be connected to the pump-handle and suitably pivoted to the body of the pump, and further having a bifurcated end, in combination with a link-section 11 designed to connect said bifurcated end of said lever-section with said extension formed on said union, and a pump-rod adapted to fit between said bifurcated end, whereby the piston of the windmill may be connected directly to the pump-rod or connected indirectly thereto through said link-section, in the manner specified and for the purpose set forth.

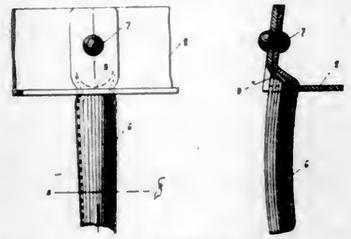
6. In pumps, a lever-section 13 having one end bifurcated and the opposite end provided with an opening 23 and a cross-bar 28, in combination with an operating-handle having an end provided with branches 25 and 26 adapted to fit said opening, said end also having upon its lower side a hook extension 27 adapted to engage said bar whereby the branches 25 and 26 respectively will rest upon the upper and lower side of said lever-section 13 and thereby hold the handle in union with said section until said hook is released from said bar as and for the purpose set forth.

654,644. GARMENT-SUPPORTER. HERBERT H. JONES, St. Louis, Mo., assignor to the Twentieth Century Manufacturing Company, same place. Filed Jan. 26, 1899. Serial No. 703,492. (No model.)



Claim.—A garment supporter, of metal, suitably bent to fit the limb of the wearer, and having an aperture 3 in its center which is elongated into a wedge-shaped opening 4 at each end, the point of each of said wedge-shaped openings extending outwardly from said aperture and a plurality of apertures in said supporter for securing the same to the garment, substantially as specified.

654,645. PITCHFORK. DAVID C. KELLER, Stockholm, Sweden. Filed Apr. 27, 1900. Serial No. 14,615. (No model.)



Claim.—An agricultural implement such as described comprising a head made of angle-iron, a plurality of tines U-shaped in cross-section and having a flat shank secured to the vertical member of the head, the horizontal member thereof provided with slotted portions through which the tines are slipped, said vertical member having lips turned into and forming a bearing for the upper end of said tines, substantially as and for the purposes set forth.

654,646. METHOD OF DISSOLVING RESINS. FRANZ G. KLEINSTEUBER, Berlin, Germany. Filed Nov. 9, 1899. Serial No. 736,403. (No specimens.)

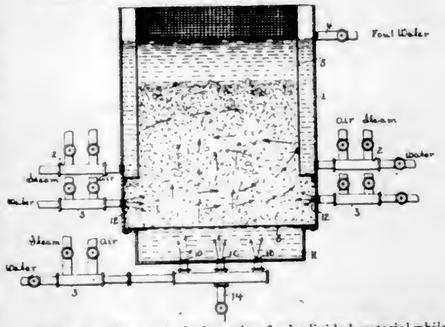
Claim.—1. The mode of dissolving resins, which consists in mixing with the resin solvent a suitable quantity of a compound consisting of a solution of dammar and tung or wood oil in benzole and oil of turpentine, and dissolving the resin therein, substantially as set forth.

2. The mode of dissolving resins, which consists in mixing with the resin solvent a suitable quantity of a compound consisting of a solution of dammar and tung or wood oil in benzole, oil of turpentine and oil of rosemary, and dissolving the resin therein, substantially as set forth.

3. The mode of dissolving resins, which consists in forming a solution thereof in the usual manner, mixing therewith a suitable quantity of a compound consisting of a solution of dammar and tung or wood oil in benzole and oil of turpentine, and heating the mixture to from 40° to 50° centigrade while stirring, substantially as set forth.

4. The mode of dissolving resins, which consists in forming a solution of such in the usual manner, mixing therewith a suitable quantity of a compound consisting of a solution of dammar and tung or wood oil in benzole and oil of turpentine, heating the mixture to from 40° to 50° centigrade while stirring and adding thereto a suitable quantity of oil of rosemary, substantially as set forth.

654,647. PROCESS OF WASHING FIBROUS MATERIALS. EUGENE KÖPPELMANN, New York, N. Y. Filed Nov. 11, 1899. Serial No. 736,632. (No specimens.)



Claim.—1. The method of treating finely-divided material while contained in a suitable vessel, which consists of a tangential application of air and water to said material, under sufficient pressure to cause the material to be violently and rapidly agitated.

2. The method of treating finely-divided material while contained in a suitable vessel, which consists of a tangential and perpendicular application to said material of water and air under such pressure as will cause the same to be violently and rapidly agitated.

3. The method of treating finely-divided material, while contained in a suitable vessel, which consists of a direct tangential and perpendicular application to said material of air and steam under such pressure as will cause said material to become violently and rapidly agitated.

4. The method of treating finely-divided material, which consists of a tangential and perpendicular application to said material, of air, water and steam under such pressure as will cause said material to become violently and rapidly agitated.

5. The method of cleaning finely-divided material, which consists of a continual application of air and water at a proper temperature, to said material under such pressure and in such a manner as will cause the material to be rapidly and violently agitated and disturbed, and the continual removal of dirty water until said material is properly cleaned, substantially as and for the purposes described.

654,648. APPARATUS FOR HACKLING AND DRAWING. EMIL KORNHUBER, Libau, Russia. Filed Jan. 18, 1899. Serial No. 702,566. (No model.)



Claim.—1. In combination, the drum having the needles disposed in rows with spaces between, an endless net running over the said drum and having bars *d* to fit in the spaces between the needles, means for keeping the net with the bars in proper position relatively to the drum, said means consisting of the sprocket-wheels on opposite sides of the drum and chains attached to each side of the net and a guide-roller adjacent to the drum over which the net runs, substantially as described.

2. In combination, the drum having the needles disposed in rows with spaces between an endless net running over the said drum and having bars *d* to fit in the spaces between the needles, means for keeping the net with the bars in proper position relatively to the drum, said means consisting of the sprocket-wheels on opposite sides of the drum and chains attached to each side of the net and a guide-roller adjacent to the drum over which the net runs and a gravity-roller *h* engaging the lower part of the net, substantially as described.

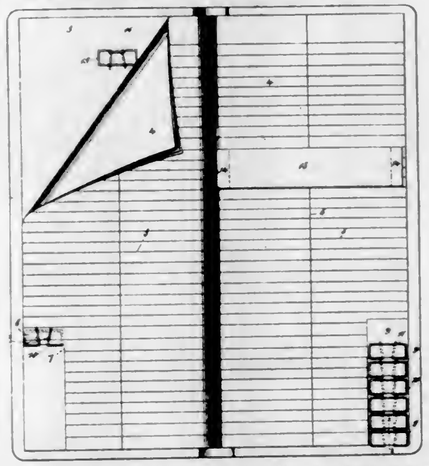
3. In combination, the drum having the needles disposed in rows with spaces between an endless net running over the said drum and having bars *d* to fit in the spaces between the needles, means for keeping the net with the bars in proper position relatively to the drum, said means consisting of the sprocket-wheels on opposite sides of the drum and chains attached to each side of the net and a guide-roller adjacent to the drum over which the net runs and roller *k* engaging the net, with means for giving the roller a speed greater than that of the net, substantially as described.

4. In apparatus for hackling, carding and drawing the combination of a drum, a guide-roller, an endless net and pairs of rollers between the drum and the guide-roller with means for giving the rollers of the pairs different speeds, substantially as described.

654,649. PROCESS OF MAKING ALLO CITRAL. WILHELM KRAUTH, Griesheim, Germany. Filed Nov. 23, 1899. Serial No. 738,091. (No specimens.)

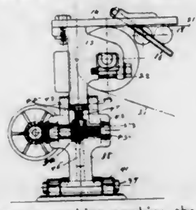
Claim.—A process for the preparation of allo citral by first converting methylhexylenketone into chloro octin then converting the latter by means of ethyl sodiomalonate into octinyl malonic acid diethylester, then saponifying this ester to obtain the free acid, and finally distilling a dry mixture of the barium salt of this octinyl malonic acid obtained by eliminating carbon dioxid from this aforesaid acid, with barium formate, substantially as described.

654,650. ACCOUNT-BOOK. PETER N. KROGMANN, New York, N. Y. Filed July 13, 1899. Serial No. 723,707. (No model.)



Claim.—An improved book, comprising a leaf, an index-card connected with the edge thereof, and means for detachably securing said index-card upon said leaf, comprising a single length of wire formed into a square frame-shaped portion between which, and the face of the leaf, said index-card is clamped, the ends of said single length of wire being passed divergently beneath said leaf and directly behind said frame-shaped portion, the construction of said frame-shaped portion and the relative arrangement thereof and of said index-card being such, that said frame-shaped portion impinges upon said card in the marginal portions thereof, whereby the legend of said card is readily and unimpairedly discernible therethrough.

654,651. PAPER-MAKING MACHINE. HERMAN L. KUTTER, Hamilton, Ohio, assignor of one-half to Frank C. Trowbridge. Filed July 13, 1899. Serial No. 723,735. (No model.)



Claim.—1. In a paper-making machine, the combination, with oscillatory standards, the upper end of each of which is formed into guides and slotted vertically and its intermediate portion is provided with horizontal and vertical recesses, a worm-wheel in the horizontal recess and a screw in the vertical recess, the upper end of the screw being provided with a transverse bar, the ends of which fit in the slots in the guides, means for moving the worm-wheels in unison, and a breast-roll frame supported on said transverse bars.

2. In a paper-making machine, the combination, with oscillatory standards, the bottom of each of which is provided with a journal-bearing and the upper end is formed into guides and slotted vertically and the intermediate portion is provided with horizontal and vertical recesses and with a laterally-projecting bar, a worm-wheel in the horizontal recess, a screw in the vertical recess the upper end of which is provided with a transverse bar, and a breast-roll frame on said bars.

3. In a paper-making machine, the combination, with oscillatory standards, each of which is provided with means for adjusting the

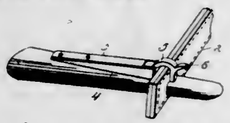
height of the breast-roll frame, of a breast-roll frame thereon, said frame being provided with overhanging brackets, the opening for each of which is downward, a bolt through the walls of said opening, and a breast-roll journaled in the brackets above said bolts.

654,652. **HAME-FASTENER.** FRANK H. LAKE and STEPHEN W. SIMS, Loyalton, Cal. Filed Mar. 6, 1900. Serial No. 7,567. (No model.)



Claim.—A hame-fastener, comprising a main part, having a longitudinal bifurcation or slot, the end wall of which is beveled outwardly, a cam-lever mounted within the opposite end of the bifurcation, a leaf-spring housed within the bifurcation, and having a beveled end to overlap the beveled end of the bifurcation, an intermediate removable fastening passing through the spring and the opposite walls of the bifurcation, the free end of the spring bearing against the cam portion of the lever, and an eye-plate for engagement with the lever.

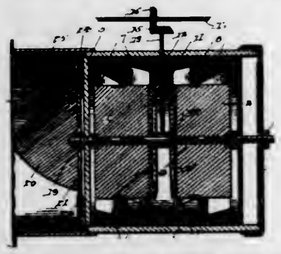
654,653. **TRACE-HOLDER.** GODFRIED LAUBE, Huron, S. D., assignor of one-half to O. T. Gregory, Paducah, Ky. Filed Apr. 28 1900. Serial No. 14,673. (No model.)



Claim.—1. In a device of the character described, the combination of a long hollow casing having the lower edge of its side serrated, and its upper surface inclined in a straight line, a hook pivoted in the outer end of the casing, an extension formed with said hook and having its under surface grooved, and a flat spring suitably secured in the casing and adapted to bear against the base of the hook.

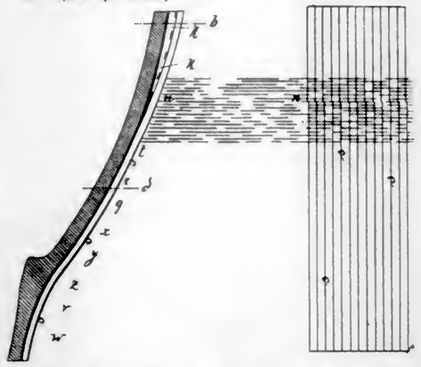
2. In a whiffletree, the combination of a long hollow casing having the lower edge of its sides serrated and a suitable hook pivoted therein, of a shank embedded in the end of the whiffletree, said shank having a T-shaped head, said head being in such relation to the hook as to allow the end of the hook to engage the shank at the junction of the head, as and for the purpose described.

654,654. **WATER-WHEEL.** HENRY T. LAWRENCE, Lyndon Station, Wis. Filed Mar. 20, 1900. Serial No. 9,441. (No model.)



Claim.—The combination of a cylindrical casing provided with a cylindrical extension or section 25, transverse bars mounted within the casing, a central longitudinal shaft supported by the said bars, water-wheels arranged within the casing on the said shaft and located between the transverse bars, the conical deflector disposed within the extension or section 25, and secured to the adjacent end of the central shaft, the circular frame arranged within the casing at the inner end of the extension or section 25 and provided with an inner disk to fit against the base of the conical deflector and having an annular series of blades and provided with an outer rim, gear-wheels mounted on the adjacent faces of the water-wheels, a transverse shaft extending through the casing and provided with inner and outer pinions, the inner pinion meshing with the said gear-wheels, and the exterior longitudinal shaft located at the outer end of the transverse shaft and provided with a pinion meshing with the outer pinion, substantially as described.

654,655. **MEANS FOR REDUCING SKIN-FRICTION OF SHIPS.** EDUARD LINDEMANN, Munich, Germany. Filed Sept. 5, 1899. Serial No. 729,526. (No model.)



Claim.—1. The combination with a side of a ship, of a series of plates secured transversely thereto, each plate extending rearwardly and contacting at its free edge with the adjacent rear plate, said contacting edges having apertures below the water-line, and means for supplying air to the spaces between the plates, substantially as described.

2. The combination with the side of a ship, of a series of plates secured transversely thereto, each plate extending rearwardly and contacting at its free edge with the adjacent rear plate, said contacting edges having apertures below the water-line, and means for supplying air from the bow of the ship to the spaces between the plates, substantially as described.

3. The combination with the side of a ship, of a series of plates secured transversely thereto, each plate extending rearwardly in a curve convex side upwardly, said plates contacting at their free edges with the adjacent rear plates and having apertures in proximity to said contacting edges and below the water-line, and means for supplying air to the spaces between the said plates, substantially as described.

4. The combination with the side of a ship, of a longitudinal partition extending from the side at a short distance below the waterline upwardly, a series of plates secured transversely to said partition and also to the side of the ship below said partition, each plate extending rearwardly and contacting at its free edge with the adjacent rear plate, said contacting edges having apertures below the waterline, said partition having apertures communicating with the spaces between said plates, and means for supplying air to the space between the partition and the side of the ship, substantially as described.

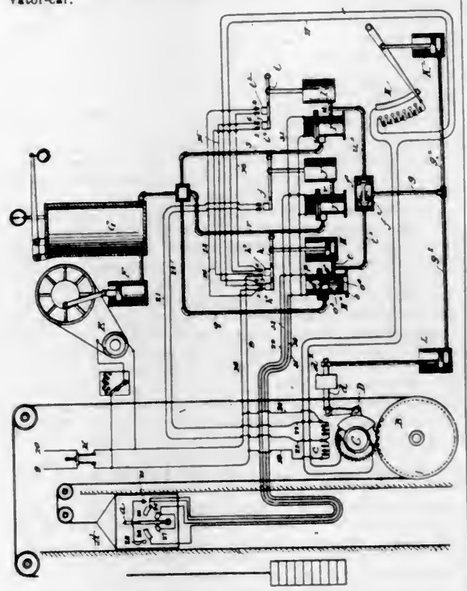
5. The combination with the side of a ship, of a longitudinal partition extending from the side at a short distance below the waterline upwardly, a series of plates secured transversely to said partition and also to the side of the ship below said partition, each plate extending rearwardly and contacting at its free edge with the adjacent rear plate, said contacting edges having apertures below the waterline, said partition having apertures communicating with the spaces between said plates and also having communication with the atmosphere at the bow of the ship, substantially as described.

6. The combination with the side of a ship, of a longitudinal partition diverging from the side of the ship on a line below the waterline upwardly, a series of plates secured transversely to said partition and also to the side of the ship below said partition, each plate extending rearwardly and contacting at its free edge with the adjacent rear plate, said contacting edges having apertures below the water-line, said partition having apertures communicating with the spaces between said plates, and means for supplying air to the space between the partition and the side of the ship, substantially as described.

654,656. **ELEVATOR-CONTROLLER.** NILS O. LINDSTROM and ALLAN COWPERTHWAIT, New York, N. Y., assignors to A. B. See Manufacturing Co. Filed Apr. 11, 1900. Serial No. 12,409. (No model.)

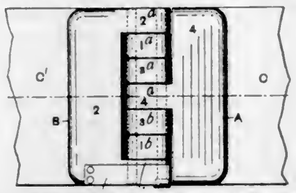
Claim.—1. The combination of an elevator-car, an actuating electric machine therefor, two controlling-switches for the respective directions of rotation of the actuating-machine, a fluid-pressure motor for each switch, a valve controlling each motor, a brake for the actuating-machine and a fluid-pressure motor operating said brake and means whereby, the operation of either of said valves will control the pressure in the motor operating the brake, substantially as described.

2. The combination of an elevator-car, an actuating electric machine, an electric switch for stopping and starting said machine, a fluid-pressure motor operating said switch a valve controlling said fluid-pressure motor, means for increasing the speed of said actuating-machine, another fluid-pressure motor controlling said means, a valve controlling the second fluid-pressure motor and means whereby first one and then both of said valves can be operated from the elevator-car.



3. The combination of an elevator-car, an electric actuating-machine therefor, two electric switches controlling the two directions of movement of said actuating-machine, two fluid-pressure motors operating said switches respectively, two valves controlling said motors, means for operating either of said valves from the elevator-car, a pipe leading from each of said fluid-pressure motors, a third fluid-pressure motor controlling the actuating-machine, a pipe connecting said third motor with each of the pipes leading from the other two motors and means whereby one of the pipes leading from the first two motors, car be automatically closed while the other is opened to the third fluid-pressure motor, substantially as described.

654,657. **BELT-FASTENER.** DICK LITTLEWOOD, Manchester, England. Filed June 2, 1899. Serial No. 719,066. (No model.)



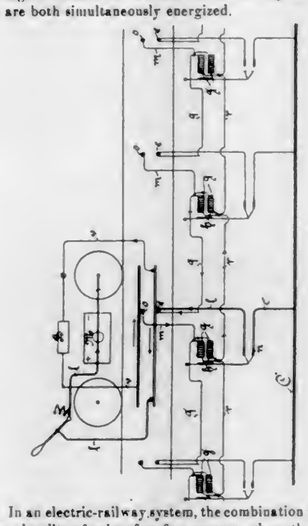
Claim.—1. A hinged belt-fastener consisting of two parts hinged together by a main pin, each part consisting of two parallel plates hinged together by a pin parallel with the main hinge-pin, substantially as hereinbefore described.

2. In a hinged belt-fastener, an integral part consisting of two plates provided with teeth on their contiguous surfaces and having lugs fitted with a pin by which the plates are hinged together, and holes through which the main hinge-pin of the fastener is passed, substantially as described.

3. A hinged belt-fastener having a main hinge-pin, and subsidiary coaxial hinge-pins parallel therewith, substantially as described.

654,658. **ELECTRIC RAILWAY.** GUSTAV A. LYNCKER, Munich, Germany. Filed Apr. 23, 1900. Serial No. 14,197. (No model.)

Claim.—1. In an electric railway, the combination with a plurality of surface contacts, and normally-open conductors for supplying current to said contacts, of electromagnets for each conductor, means operated by the electromagnets when energized for closing the respective conductors where normally open, a battery carried by the car, and connections between the battery, and the surface contacts and between the latter and the electromagnets, whereby the electromagnet beneath the car and the electromagnet in advance of the car are both simultaneously energized.



2. In an electric-railway system, the combination with a railway-track, a plurality of pairs of surface contacts along the track, a main feed-cable, a series of normally-open feed branches from said feed-cable, each branch connecting to one surface contact of each pair, a plurality of exciter-conductors each leading from the said surface contact of one pair to the corresponding opposite surface contact of the next forward pair, and a plurality of electromagnets each having one terminal connected to its corresponding exciter-conductor, of a return exciter-conductor connected to the other terminals of all the electromagnets, a car movable along the track, a motor mounted on the car and arranged to propel the same, a pair of shoes carried by the car and each arranged to contact simultaneously with its corresponding surface contacts, an exciter-battery on the car having its terminals connected to the two shoes, connections between the motor and the car-wheel and between the motor and that shoe which engages the surface contacts to which the feed branch is connected, means operated by the electromagnets when energized for closing the feed branches where normally open, and a source of electricity having its terminals connected to the main feed-cable and to track-rails.

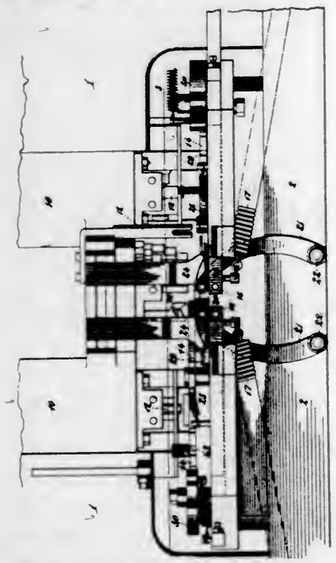
3. In an electric railway, the combination with an electromagnet, a pivoted armature-lever therefor, a roller on the armature-lever, a bar on which said roller travels, and a contact-post separated from the bar and arranged to contact with the roller, of a feed-conductor interrupted at the post and bar, an exciter-circuit in which the electromagnet is included, and means for energizing said exciter-circuit, whereby the roller is moved along the bar until it contacts with the post, thereby closing the gap in the feed-conductor.

4. In an electric railway the combination with an electromagnet, a pivoted armature-lever therefor, a roller on the armature-lever, a bar on which said roller travels, and a flexible contact-post separated from the bar and arranged to contact with the roller, of a feed-conductor interrupted at the post and bar, an exciter-circuit in which the electromagnet is included, and means for energizing said exciter-circuit, whereby the roller is moved along the bar until it contacts with the post, thereby closing the gap in the feed-conductor.

5. In an electric railway, the combination with a box, and an insulating-body in the bottom of the box and provided with a flange at the bottom, a cable led through the box above said flange, and a filling of insulating material in the space between the box and the insulating-body above the flange and around the cable.

654,659. **AUTOMATIC STOP MECHANISM FOR METAL-WORKING MACHINES.** FREDRICK MARGGRAFF, Waterbury, Conn., assignor, by mesne assignments, to the Shoe Hardware Company, same place. Filed Feb. 24, 1899. Serial No. 706,657. (No model.)

Claim.—1. The combination of a plurality of punches one of which is a blanking-punch, means for automatically feeding sheet metal to said blanking-punch and a feeding device adapted to receive the blanks directly from said blanking-punch and to feed the blanks to the successive punch, means for operating the punches and mechanism for automatically throwing the punch-operating mechanism out of operation when the blank-carrying portions of the feeding device are out of register with the punches.



2. The combination of a plurality of punches, a plurality of feeding devices, having a series of blank-carrying portions, which cooperate with the punches, means for operating the punches, means for automatically bringing the blank-carrying portions of the feeding devices successively to their respective punches, mechanism for automatically throwing the punch-operating mechanism out of operation when a blank-carrying portion of the feed device is out of register with the punch; and means for preventing the movement of one of the feed devices when another of said devices is maintained against movement.

3. The combination of a punch and a feeding device for feeding blanks to the punch, means for operating the punch, automatically-operated stop mechanism for throwing the punch-operating mechanism out of operation when a blank in the feeding device is out of register with the punch and hand-operated means for controlling the automatically-operated stop mechanism.

4. The combination of a plurality of punches, a plurality of feeding devices, each having a series of blank-receiving openings therein, means for operating the punches, means for automatically bringing the blank-receiving openings in the feeding devices successively to their respective punches, automatically-operated stop mechanism for throwing the punch-operating mechanism out of operation when an opening in a feeding device is maintained out of register with the punch; means for preventing the movement of one of the feed devices when another feed device is maintained against movement, and hand-operated means for controlling the automatically-operated stop mechanism.

5. The combination of a punch, a feeding device having a series of blank-receiving openings therein, means for automatically bringing said blank-receiving openings successively to the punch, means for operating the punch, a clutch carried by a movable part of the machine for controlling the punch-operating means, a finger adapted to be moved into the openings in the feeding device, intermediate mechanism between said finger and the clutch, mechanism for automatically moving said finger at each operation of the punch and for projecting an abutment on the intermediate mechanism into the path of a section of the clutch and means for permitting the intermediate mechanism to remain inactive when the finger is prevented from reaching the full extent of its downward stroke.

6. The combination of a punch, a feeding device having a series of blank-receiving openings therein, means for bringing said openings successively to the punch, means for operating the punch, a clutch carried by a movable part of the machine for throwing the punch-operating means out of operation, a finger adapted to be moved a predetermined depth into one of the openings in the feeding device at each operation of the punch if an opening is in register with the punch, intermediate mechanism between said finger and the clutch, mechanism for automatically moving said finger and for moving a portion of the intermediate mechanism into the path of a member of the clutch and means for permitting the intermediate mechanism to remain inactive when the finger is prevented from moving the predetermined distance into an opening in the feeding device and thereby causing the clutch to be automatically released to stop the machine.

7. The combination of a punch, a feeding device having a series of blank-receiving openings therein, means for operating the punch, mechanism for controlling the punch-operating means, an automatically-operated finger adapted to be moved to a predetermined distance into an opening in the feeding device at each operation of the punch and to automatically throw the punch-operating means out of operation, if the finger is prevented from moving the predetermined distance into the opening in the feeding device and hand-operated means for controlling said intermediate mechanism.

8. The combination of a plurality of punches, a plurality of dial-plates, each having a series of blank-receiving openings that are adapted to be successively fed to the respective punches, a main driving-shaft for communicating motion to said punches, power-transmitting means coöperating with said shaft, a clutch interposed between said shaft and the power-transmitting means and adapted to rotate with said shaft, an abutment adapted to be interposed in the path of a section of the clutch, when openings in the dial-plates are out of register with the punches of said dial-plates; means for automatically so interposing the abutment, during each revolution of the main shaft, means controlled by the dial-plate for automatically maintaining the abutment in the path of the clutch-section, to disconnect the clutch, and means for preventing the movement of one dial-plate when another dial-plate is maintained against movement.

9. The combination of a plurality of punches, one of which is a blanking-punch, means for automatically feeding sheet metal to said blanking-punch, a dial-plate having a series of blank-receiving openings that are adapted to be successively fed to the punch, a main driving-shaft for communicating motion to said punch, power-transmitting means coöperating with said shaft, a clutch interposed between said shaft and the power-transmitting means and adapted to rotate with said shaft, an abutment adapted to be interposed in the path of a section of the clutch, means for automatically so interposing the abutment during each revolution of the main shaft, hand-operated means for maintaining the abutment in the interposed position and means controlled by the dial-plate for automatically maintaining the abutment in the path of the clutch-section to disconnect the clutch.

10. The combination of a punch, a feeding device having a series of openings adapted to be successively fed to the punch, a main driving-shaft for communicating motion to said punch, power-transmitting means coöperating with said shaft, a clutch interposed between the main shaft and the power-transmitting means, a finger and operative connections coöperating therewith, said finger being adapted to enter an opening in the feeding device solely by the weight of the parts, means for positively withdrawing the finger from the said opening and intermediate mechanism between the finger and the clutch, whereby the clutch may be automatically disconnected when the finger is maintained out of an opening.

11. The combination of a punch, a feeding device having a series of blank-receiving openings that are adapted to be successively fed to the punch, a main driving-shaft for communicating motion to said punch, power-transmitting means coöperating with said shaft, a clutch interposed between the main shaft and the power-transmitting means and adapted to rotate with said shaft, a finger and operative connections coöperating therewith, said finger being adapted to enter an opening in the feeding device a predetermined distance by the weight of the parts, means for positively withdrawing the finger from said opening, a movable abutment, intermediate mechanism between the finger and said abutment whereby the abutment will be automatically moved into the path of a section of the clutch when the finger is prevented from moving the predetermined distance into the openings in feeding device.

12. The combination of a punch, a feeding device having a series of blank-receiving openings that are adapted to be successively fed to the punch, a main driving-shaft for communicating motion to said punch, power-transmitting means coöperating with said shaft, a clutch interposed between the main shaft and the power-transmitting means and adapted to rotate with said shaft, a finger and operative connections coöperating therewith, said finger being adapted to enter an opening in the feeding device by the weight of the parts, means for positively withdrawing the finger from said opening, a movable abutment, intermediate mechanism between the finger and said abutment, said abutment being disconnected from the intermediate mechanism whereby the abutment will be automatically moved into the path of a section of the clutch when the finger is prevented from moving the predetermined distance into an opening and hand-operated means for maintaining the abutment in such position.

13. The combination of a punch, a feeding device having a series of blank-receiving openings that are adapted to be successively fed to the punch, a main driving-shaft communicating motion to said punch, power-transmitting means coöperating with said shaft, a clutch interposed between the main shaft and the power-transmitting means, a rock-shaft, a finger carried thereby, which finger is adapted to enter an opening in the feeding device, a link which is freely movable in one direction connected to a rocking arm extending from said rock-shaft, means for positively moving said link in the opposite direction, an abutment adapted to be moved into the path of a section of the clutch, intermediate mechanism between said rock-shaft and abutment whereby when the finger is out of an opening in the feeding device the abutment will be in the path of the clutch-section.

14. The combination of a punch, a feeding device having a series of blank-receiving openings that are adapted to be successively fed to the punch, a main driving-shaft for communicating motion to said punch, power-transmitting means coöperating with said shaft, a clutch interposed between the main shaft and the power-transmitting means, a rock-shaft, a finger carried thereby, which finger is adapted to enter one of the blank-receiving openings in the feeding device, a link which is freely movable in one direction connected to a rocking arm extending from said rock-shaft, means for positively moving said link in the opposite direction, an abutment adapted to be moved into the path of a section of the clutch, intermediate mechanism between said rock-shaft and abutment and disconnected from said abutment and hand-operated means for maintaining said abutment in the path of the clutch whereby when the finger is out of a blank-receiving opening or the hand-operated mechanism is shifted, the abutment will be in the path of the clutch-section.

15. The combination of a plurality of independently-movable blank-apertured feeding devices, mechanism for operating said feeding devices, to bring apertures therein into alinement, and means for preventing the movement of said operating mechanism when one of said feeding devices is retained against movement.

16. The combination of a plurality of revoluble blank-feeding devices, mechanism for operating said feeding devices and means for jamming said operating mechanism to prevent a movement thereof when one of the feeding devices is retained against movement.

17. The combination of a punch, a plurality of revoluble blank-feeding devices therefor, mechanism for operating said feeding devices, means for preventing the movement of said operating mechanism when one of said feeding devices is retained against movement and mechanism coöperating with said feeding devices to stop the machine when a feeding device maintains a blank out of register with the punch.

18. The combination of a punch, a plurality of revoluble blank-feeding devices therefor, mechanism for operating said feeding devices, means for jamming said operating mechanism to prevent a movement thereof when one of said feeding devices is retained against movement and mechasism coöperating with said feeding devices to stop the machine when a feeding device maintains a blank out of register with the punch.

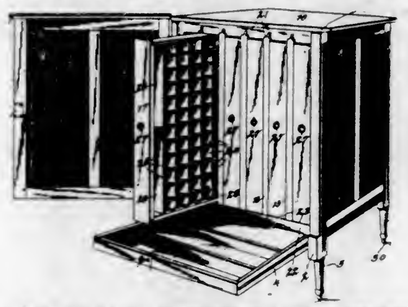
19. The combination of a plurality of movable blank-feeding plates, mechanism for operating said feeding-plates, toggle-links connected to said operating mechanism, a pin on said links and a grooved abutment in which said pin moves, whereby when one of said feeding devices is retained against movement, the operating mechanism will be prevented from moving.

20. The combination of a plurality of revoluble blank-feeding plates, mechanism for operating said feeding-plates, toggle-links connected to said operating mechanism, a pin on said links and a grooved abutment in which said pin moves, whereby when one of said feeding devices is retained against movement the pin will be jammed in the grooved abutment and the operating mechanism will be prevented from moving.

21. The combination of a punch, a plurality of revoluble blank-feeding plates therefor, mechanism for operating said feed-plates, toggle-links connected to said operating mechanism, a pin on said links, a grooved abutment in which said pin moves, whereby when one of said feeding devices is retained against movement the operating mechanism will be prevented from moving and mechanism coöperating with said feeding devices to stop the machine when a feeding device maintains a blank out of register with the punch.

654,660. POSTAL-EXAMINATION PRACTICE-CABINET. GEO H. MARKLINE, Meridian, Miss. Filed Apr. 3, 1900. Serial No. 11,380 (No model.)

Claim.—1. A cabinet having a series of removable pigeonhole-cases, adapted to be drawn out laterally therefrom, and vertical stops and guides to limit the lateral withdrawal of said cases and to permit of their being lifted vertically when withdrawn, entirely clear of the cabinet and thereby removed therefrom, substantially as described.

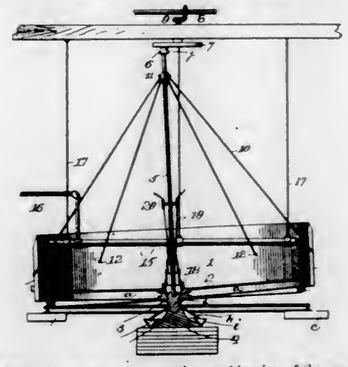


2. A cabinet having a series of vertical compartments, vertical guides and stop-strips at the front side of said cabinet between said compartments, said vertical stop-strips being in advance of the face of the cabinet, and a series of cases adapted to be placed in said compartments, said cases having the vertical stops at their rear, inner ends adapted to coact with the stop-strips at the front side of the cabinet when said cases are drawn out, whereby said cases may be supported by the cabinet when drawn out therefrom and are also adapted to be removed from the cabinet by lifting said cases vertically, substantially as described.

3. A cabinet having a series of vertical compartments open on one side, vertical stop and guide strips between the front sides of said compartments, said stop and guide strips having rabbets on their inner sides, which rabbets project beyond the face of the case and are open at the upper ends of said strips, and a series of cases in said compartments, said cases having the guide and stop projecting flanges at their rear inner sides, adapted to engage and travel in the rabbets of the vertical stop and guide strips, substantially as described.

4. A cabinet having a series of pigeonhole-cases adapted to be entirely withdrawn and removed therefrom or contained therein, a pair of said cases having removable partitions, whereby the pigeonholes therein may be widened, and one of said pair of cases having a removable back, said pair of cases being adapted to be secured together when removed from the cabinet, the one with the removable back on the face of the other, and with the widened pigeonholes of said respective cases registering with each other, whereby the said pair of cases when withdrawn and entirely removed from said cabinet may be united to increase the depth and width of the pigeonholes therein, substantially as described.

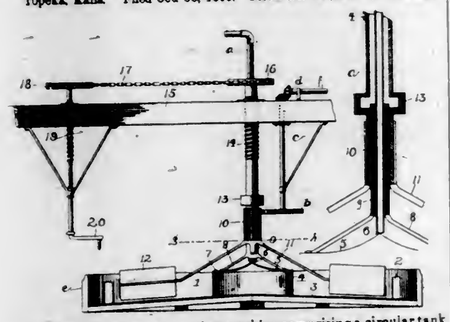
654,661. ORE-SEPARATOR. JOHN F. MITCHELL, Topeka, Kans. Filed Sept. 7, 1899. Serial No. 729,758. (No model.)



Claim.—In an ore-separator, the combination of the pan having a central support upon which it may have a free rocking movement, a shaft connected at its lower end to said support, a rotary disk to which the shaft is eccentrically connected at its upper end by a ball-and-socket joint, ropes connected at their lower ends to the pan and at their upper ends to the shaft, means to supply the material to the pan near its periphery, a telescopic discharge-tube in the center of

the pan surrounding said shaft, and operating-ropes connected to the inner section of said tube and running over pulleys on said shaft, substantially as set forth.

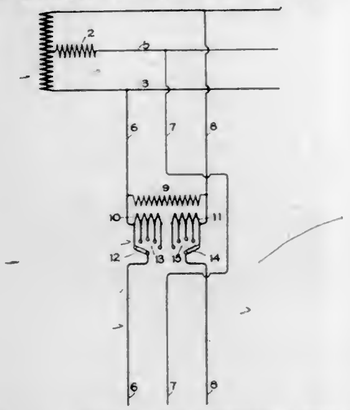
654,662. ORE-SEPARATING MACHINE. JOHN F. MITCHELL, Topeka, Kans. Filed Oct. 30, 1899. Serial No. 735,222. (No model.)



Claim.—1. An ore-separating machine comprising a circular tank with inclined bottom 3, a central cylinder 4, having a cone-shaped top 5 an axle 9 resting on braces 8 attached to it, a feed-pipe *a*, an elongated cogged hub 10, turning on the axle 9, and having arms 11 attached to and radiating from near its base, fans 12 attached near the outer extremity of the arms 11, a screw 14 attached to the top of the hub 10 by a swivel connection 13, a pulley-wheel 16 attached to the upper end of the screw 14, connected by an endless chain 17 or belt, to a pulley-wheel 18 supported by an upright screw 19, terminating, at its lower end, in the handle 20, or crank, substantially as shown, and for the purposes specified.

2. An ore-separating machine comprising a circular tank with vertical discharge-openings 2 in the sides 1, gates G which operate as vertically-adjustable closures for discharge-openings 2, an inclined bottom 3 to tank, a central cylinder 4, having a cone-shaped top 5, an axle 9 resting on braces 8 attached to it, a feed-pipe *a*, an elongated, cogged hub 10 turning on the axle 9, and having arms 11 attached to and radiating from near its base, fans 12 attached to the arms 11 near their outer extremities, a screw 14 attached to the top of the hub 10 by a swivel connection 13, a pulley-wheel 16 attached to the upper end of the screw 14, connected by an endless chain 17 or belt, to a pulley-wheel 18, supported by an upright screw 19, terminating, at its lower end, in the handle 20 or crank, a cog-wheel *b* connected with the hub 10 and attached to the lower end of the perpendicular shaft c which has a cog connection *d* with a horizontal shaft *f* supplying the power, all substantially as set forth.

654,663. ELECTRIC REGULATING DEVICE. WALTER S. MOODY, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed May 21, 1900. Serial No. 17,319. (No model.)



Claim.—1. A regulating device consisting of a single primary winding and a plurality of subdivided secondary windings in inductive relation to said primary winding.

2. The combination of two alternating-current mains, a primary winding connected across said mains, and two secondary windings in inductive relation to said primary winding, one of said secondary windings being arranged in series in one of said mains and the other secondary winding in series in the other main.

3. The combination of main conductors, a teaser-conductor upon which a phase-displaced electromotive force is maintained, and a regulating device consisting of coils in series with said main conductors and inductively related to a single primary circuit.

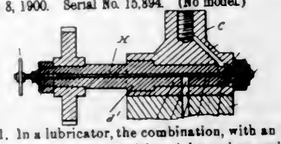
4. The combination of main conductors, a teaser-conductor upon which a phase-displaced electromotive force is maintained, and a regulating device consisting of coils in series with said main conductors and inductively related to a single primary circuit in shunt to said main conductors.

5. The combination of main conductors, a teaser-conductor upon which a phase-displaced electromotive force is maintained, and a regulating device consisting of adjustable coils in series with said main conductors and inductively related to a single primary circuit.

6. The combination with a monocyclic system of electric distribution, of regulating-windings for the main conductors, and a primary circuit in inductive relation to said regulating-windings.

7. The combination with a monocyclic system of electric distribution, of regulating-windings in series respectively with the main conductors, and a primary circuit in inductive relation to said regulating-windings.

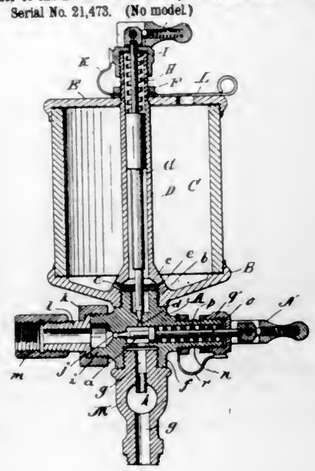
654,664. LUBRICATOR. THOMAS J. MORGAN, Kingston, Pa. Filed May 8, 1900. Serial No. 15,894. (No model.)



Claim.—1. In a lubricator, the combination, with an oil-cup, and a valve-casing under it provided with an inlet and an outlet arranged out of line with each other; of a valve journaled in the said casing and provided with a circumferential groove constantly communicating with the said inlet, a longitudinal passage, a lateral hole connecting the said passage and groove, and a lateral opening from said passage through the valve for communicating periodically with the said outlet; and driving mechanism operating the said valve so that the lubricant is discharged periodically, substantially as set forth.

2. In a lubricator, the combination, with an oil-cup, and a valve-casing under it provided with an inlet and an outlet arranged out of line with each other; of a cylindrical valve journaled in the casing and provided with shoulders at its ends which bear against the casing, said valve having also a circumferential groove constantly communicating with the said inlet, a longitudinal passage, a lateral hole connecting the said passage and groove, and a lateral opening from the said passage through the valve for communicating periodically with the said outlet; means for holding the said shoulders in oil-tight relation with the casing, and driving mechanism operating the said valve so that the oil is discharged periodically, substantially as set forth.

654,665. LUBRICATOR. SAMUEL L. MOYER, Cincinnati, Ohio, assignor to the Lunkenheimer Company, same place. Filed June 25, 1900. Serial No. 21,473. (No model.)



Claim.—1. In lubricator construction, a valve-chamber communicating with the bearing to be lubricated and having a sight-feed between the bearing and valve-chamber, an auxiliary oil-cup connected to said valve-chamber and provided with a valve-controlled aperture leading into said valve-chamber, a coupling for a source of oil-supply under pressure also leading into said valve-chamber through a valve-controlled aperture, and valve mechanism for said apertures, substantially as described.

2. In lubricator construction, the valve-casing A provided with a chamber *a*, a conduit from said chamber provided with a sight-feed between the latter and the bearing to be lubricated, an oil-cup carried by said valve-chamber and having a valve to control an opening from the oil-cup into the valve-chamber, a source of oil-supply under pressure also opening into said valve-chamber, and a valve for controlling the opening from said source of oil-supply under pressure to the valve-chamber, substantially as described.

3. The combination of the oil-cup C, the valve-casing A upon which the oil-cup is secured and provided with the chamber *a*, the aperture *d* from the oil-cup into the chamber *a* controlled by a valve whose stem extends through the oil-cup, the coupling extension *i* for the source of oil-supply under pressure having an aperture *j* into the chamber *a*, an exteriorly-operated valve for the aperture *j*, and the attaching-stem M secured to the under side of the valve-casing and provided with a central bore leading from the chamber *a* and having a sight-feed *h* therein, substantially as described.

654,666. GOLF-TEE. JAMES E. NEWTON, Fall River, Mass. Filed Feb. 1, 1900. Serial No. 3,627. (No model.)



Claim.—1. A golf-tee of frusto-conical form, an anchoring-weight having a broad base and centrally-apertured top, and a flexible connection attached to said tee and secured in the central aperture of said weight, substantially as specified.

2. A golf-tee of frusto-conical form, having a broad hollow base and a seat for the ball at the top, in combination with a frusto-conical weight, apertured at top, flanged at bottom, and connected with said tee by a flexible connection swiveled in said apertured top, substantially as specified.

654,667. PROCESS OF MAKING BORAX. JOHN L. NOVARINE, New York, N. Y. Filed Sept. 27, 1899. Serial No. 731,881. (No specimens.)

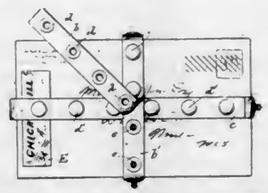
Claim.—1. The process herein described of manufacturing sodium borates, consisting of the following steps: first, reducing crude sodium sulfates at a high temperature, by means of a carbonaceous material, treating the resulting mixture of sodium compounds with water, subjecting a natural borate to the action of the solution thus obtained, then filtering or decanting it off and isolating the sodium borates therein contained through repeated crystallizations, substantially as set forth.

2. The process herein described of manufacturing borax and other sodium borates, which consists in subjecting natural borates to the action of an aqueous solution of sodium sulfid obtained by any known method, then filtering or decanting off the resulting solution and isolating the borax therein contained through repeated crystallizations, substantially as set forth.

3. The process herein described of manufacturing borax and other sodium borates which consists in subjecting natural borates to the action of an aqueous solution of sodium compounds containing sodium sulfid, filtering or decanting off the resulting solution, then isolating the borax therein contained by repeated crystallizations, substantially as set forth.

654,668. LETTER-HOLDER. FRANK PERGANDE, Milwaukee, Wis. Filed Aug. 14, 1899. Serial No. 727,114. (No model.)

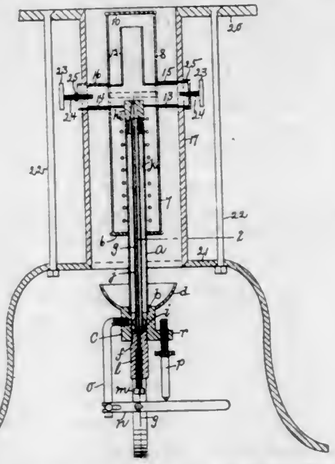
Claim.—1. A holder for a bundle of letters, or similar package consisting of two non-fracturable flexible and longitudinally-unyielding straps, crossed at right angles to each other, and secured together at that point, the opposed free ends of each strap being provided with series of interlocking devices for adjustable attachment, the locking devices on one end of each strap being equal in number to those on the other end of said strap, and located at equal distances apart, whereby when the two ends of each strap are brought together the said ends will be locked together in close contact throughout practically their entire length, and the said opposed ends of each strap will always lie in different planes, one above the other, and be capable of instant separation, without injury, and be then ready for reuse as required.



2. A holder for a bundle of letters or similar package, consisting of two flexible but longitudinally-unyielding straps centrally crossed and there united by a central rivet, leaving two opposed free ends of each strap, one of said ends of each strap being provided with a series of sockets placed at equal distances apart, and the other of said ends of each strap being provided with a series of balls, also placed at corresponding equal distances apart, and adapted for ready interlocking with said sockets, the free ends of each strap being of equal length, but the two straps themselves being of unequal length.

3. A holder for a bundle of letters, or similar package, consisting of two independent non-fracturable flexible and longitudinally-unyielding straps, crossed at right angles to each other and there united, so as to extend in different planes, together with series of interlockable devices, secured to said straps at equal distances apart, and extending between the central point of union of said straps and the free ends thereof, whereby said straps may be secured together throughout practically the entire length of their overlapping portions.

654,669. HYDROCARBON-BURNER. CHARLES PERILLAT, Boston, Mass. Filed Feb. 8, 1900. Serial No. 4,501. (No model.)



Claim.—1. In a burner of the class described, the combination with a vaporizing tube or chamber provided at its lower end with an oil-inlet and at its upper end with a substantially-small vapor-outlet, of a foraminous jacket or casing surrounding the upper portion of the said vaporizing tube or chamber, and means communicating with the vapor-outlet of the vaporizing-tube and with the said jacket to cause the vapor issuing from the vaporizing-tube to pass backward outside of said vaporizing-tube and into the foraminous jacket, and an air-supply pipe communicating with said means near the vapor-outlet for the vaporizing-chamber, substantially as described.

2. In a burner of the class described, the combination with a vaporizing tube or chamber provided at its lower end with an oil-inlet and at its upper end with a substantially-small vapor-outlet, of a foraminous jacket or casing surrounding a portion of the said vaporizing tube or chamber, and means to cause the vapor issuing from the vaporizing-chamber to pass backward outside of said vaporizing-chamber and into the foraminous jacket, and a casing surrounding said foraminous jacket and separated therefrom, substantially as described.

3. In a burner of the class described, the combination with a vaporizing tube or chamber, of a foraminous jacket or casing surrounding a portion of the said vaporizing tube or chamber, a mixing-

chamber located above and communicating with said foraminous jacket, and a mixing tube or pipe within said mixing-chamber and into which the vapor passes from the vaporizing-tube on its way to said mixing-chamber, substantially as described.

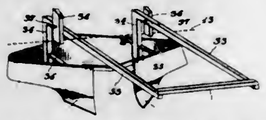
4. In a burner of the class described, the combination with a vaporizing tube or chamber, of a foraminous jacket or casing surrounding a portion of the said vaporizing tube or chamber, a mixing-chamber located above and communicating with said foraminous jacket, and a mixing tube or pipe within said mixing-chamber and into which the vapor passes from the vaporizing-tube on its way to said mixing-chamber, and an air-supply pipe communicating with the mixing tube or pipe within the mixing-chamber.

5. In a burner of the class described, the combination with a vaporizing tube or chamber provided at its lower end with an oil-inlet and at its upper end with a substantially-small vapor-outlet, of a jacket provided with a plurality of vapor-outlets in its side walls and up into which the upper end of the vaporizing-tube extends, means communicating with the discharge-orifice of the vaporizing-tube and with the said jacket to cause the vapor issuing from the vaporizing-tube to pass backward outside thereof, into the said jacket and out therefrom through the outlet-openings in its side walls, substantially as described.

6. In a burner of the class described, the combination with a fitting provided with an oil-inlet in its side, of a vaporizing-tube secured liquid-tight to said fitting above said inlet-opening, a screw-threaded hollow plug inserted into the bottom of said fitting, a tube secured liquid-tight to the upper end of said hollow plug and extended up into the said vaporizing-tube, a needle inserted through said hollow plug and the tube attached thereto and normally projecting beyond the upper end of the said tube, a hollow screw inserted into a threaded opening in the hollow plug and through which said needle projects, and means to which the lower end of said needle is secured, substantially as described.

7. In a burner of the class described, the combination with a fitting provided with an oil-inlet in its side, of a vaporizing-tube secured liquid-tight to said fitting above said inlet-opening, a screw-threaded hollow plug inserted into the bottom of said fitting, a tube secured liquid-tight to the upper end of said hollow plug and extended up into the said vaporizing-tube, a needle inserted through said hollow plug and the tube attached thereto and normally projecting beyond the upper end of the said tube, a hollow screw inserted into a threaded opening in the hollow plug and through which said needle projects, a pivoted lever to which said needle is secured at its lower end, and an adjustable screw or stop carried by the said fitting and cooperating with the said lever, substantially as described.

654,670. SNOW-PLOW. MEDERIC PERREAULT, St. Thomas de Joliette, Canada. Filed Apr. 7, 1900. Serial No. 11,946. (No model.)



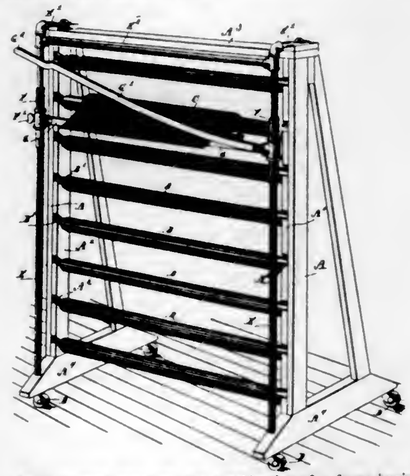
Claim.—1. In a snow-plow, the combination with a wheeled frame, of an approximately diamond-shaped scraper-frame arranged for its major axis to lie across the wheeled frame and having the entire rear section thereof adapted to serve as a scraping edge 28, the oppositely-inclined shovels carried by the inclined front members or parts of the scraper-frame, and means for suspending and tilting the scraper-frame to bring the rear edge 28 or the shovels into position for service, for the purpose described, substantially as set forth.

2. In a snow-plow, the combination of a scraper-frame having a scraper edge 28 at the rear thereof, the shovels 31, 32, attached to the oppositely-inclined members at the front of the scraper-frame and arranged to face in opposite directions and to travel close to the inner sides of the rails of a railway-track, means for suspending the frame on an axis between the shovels and the scraping edge, and means for tilting the scraper-frame, substantially as described.

3. In a snow-plow, the combination with a wheeled frame, of the pivoted hanger-bars having the depending arms and connected by a cross-bar, a scraper-frame provided at the rear with the scraper edge and at the front with the shovels and attached to the arms to be suspended thereby at a point between the scraper edge and the shovels, a lever fulcrumed independently of the hanger-bars and arranged to engage with the cross-bar thereof, and means for locking the lever in either of several adjusted positions, substantially as described.

654,671. SCREEN-WIRE RACK. GEORGE W. REYNOLDSON, Manson, Iowa. Filed May 19, 1900. Serial No. 17,306. (No model.)

Claim.—1. In a screen-wire rack, the combination of a pair of standards having bearing for a series of rolls therein, a series of screen-holding rolls mounted in said bearings, guides adjacent to said standards, a shear mounted movably on said guides, and means for securing the same in any desired position.



2. In a screen-wire rack, the combination of a frame having a pair of standards with roll-bearings therein, a series of rolls mounted in said bearings, a pair of parallel guide-rods adjacent to the standards, sleeves mounted on said guide-rods, with means for fastening them at any point, and a pair of shears connected to said sleeves.

3. The described rack for window-screen wire, comprising a frame having roll-holding standards, a connecting cross-bar and bases provided with casters, a pair of parallel guide-rods stepped in the bases at their lower ends and connected to the top of the frame by a right-angled arm, a connecting cross-rod, a pair of sleeves mounted to run on said guides, means for securing them at any desired point, and a shear secured to both sleeves, substantially as and for the purpose set forth.

654,672. BICYCLE-LOCK. HARRY T. RICH, Lynn, Mass. Filed Sept. 5, 1899. Serial No. 729,541. (No model.)



Claim.—A device of the class described comprising the lock 7 provided in its casing with an opening and designed to be arranged on one side of the rear fork of a bicycle-frame and having a clamp for engaging the same, the clamp 8 for engaging the other side of the rear fork, the block fixed to the clamp 8 and having projecting sides extending toward the lock, the locking-bar 12 pivoted at one end between the sides of the block and arranged to swing across the space between the rear forks, and provided at its other end with a lug extending into an opening of the lock-casing, and a spring mounted on the block and engaging the pivoted end of the locking-bar and holding the lug thereof in the casing of the lock, to provide a temporary locking device, said spring being also adapted to hold the locking-bar at one side of the fork to prevent it from swinging inward and engaging the spokes of the wheel, substantially as described.

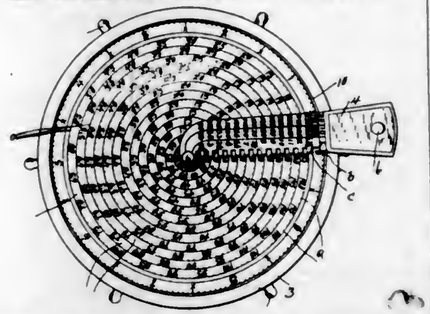
654,673. WHEEL FOR BICYCLES. WILLIAM RICHES, Jarvis-Brook, England. Filed Mar. 10, 1900. Serial No. 8,100. (No model.)



Claim.—1. A wheel of the class described, comprising a rim having its middle or central portion arched or concaved toward the hub or bearing and formed of the inner and outer metallic plates, said plates being converged at their outer ends and conjointly forming at said outer ends the concave seats adapted to receive and carry projecting tread-tires, whereby said bridge or span of the rim between the two outer tread-surfaces is strengthened against buckling, substantially as and for the purpose set forth.

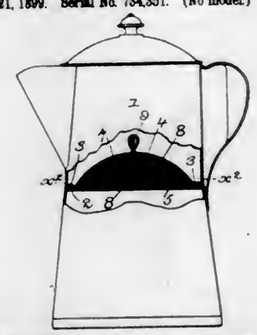
2. A wheel of the class described, comprising a rim having its middle or central portion concave toward the hub or bearing, and formed of the inner and outer metallic plates, said plates being converged at their end portions, and carrying conjointly at their end portions concave seats adapted to receive and carry the projecting tread-tires, whereby the bridge or span of the rim between the two outer tread-surfaces is strengthened against buckling, substantially as shown and described.

654,674. COMPUTING DEVICE. GEORGE M. RICKARD, Alliance, Ohio. Filed Mar. 15, 1899. Serial No. 709,195. (No model.)



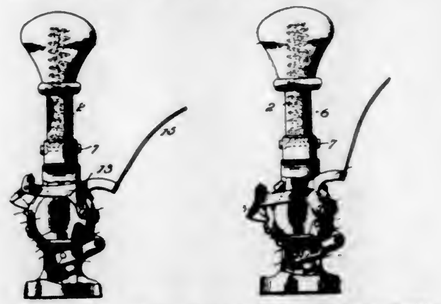
Claim.—As an improved article of manufacture, a computing device, consisting of the combination of a rotatable disk or dial, having upon its face concentric circles, the outer circle divided and the divisions numbered and the numbered divisions subdivided, the inner circles upon the dial provided with numbers representing cost and having the multiple of five, and a fixed indicator located over the dial, said indicator provided with a price-column, and amount-columns and the point *b* located over the periphery of the outer circle, and the teeth *c* located upon the cost side of the indicator and between the inner concentric circles, substantially as and for the purpose set forth.

654,675. COFFEE OR TEA POT. ELVINA ROOT, Coquille, Oreg. Filed Oct. 21, 1899. Serial No. 734,351. (No model.)



Claim.—The combination with the vessel 1, provided interiorly with the flange 2, having secured upon its upper side a series of undercut lugs 3, of a strainer, comprising a ring-base 5 cut away circumferentially to form clamp members 6, adapted to cooperate with and lock under the lugs 3, an approximately-hemispherical gauze body 7, upon the ring and a series of wire strands 8, securing the gauze by extending upward from the ring 2, over the gauze and terminating centrally of the latter in the form of a handle 9, as specified.

654,676. NUMBERING-MACHINE. WILLARD W. SAWYER, New York, N. Y., assignor to the Sawyer-Boss Manufacturing Company, same place. Filed May 8, 1900. Serial No. 15,938. (No model.)



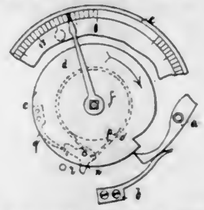
Claim.—1. The combination in a numbering-machine and with the inking-pad thereof, of a fork slidingly mounted in the main frame and carrying numbering and ratchet wheels, a frame pivotally connected with said fork and provided with an operating-lever near one end and pawls near the other end, and a push-rod projecting from said frame and coacting with said inking-pad and pushing the latter away from the type as the said lever is depressed.

2. The combination in a numbering-machine and with the inking-pad thereof, of a fork slidingly mounted in the main frame and carrying numbering and ratchet wheels, a frame pivotally connected with said fork and having an operating-lever near one end and carrying pawls near its other end, a push-rod projecting from said frame and coacting with said inking-pad, and a spring arranged to operate said lever in one direction.

3. The combination in a numbering-machine and with the inking-pad thereof, of a fork slidingly mounted in the main frame and carrying numbering and ratchet wheels, a frame pivotally connected with said fork and having an operating-lever and pawls for operating said numbering and ratchet wheels, a push-rod projecting from said frame and coacting with said inking-pad, and a spring slipped over said push-rod and arranged to operate said lever in one direction.

4. The combination in a numbering-machine and with the inking-pad thereof, of a fork slidingly mounted in the main frame and carrying numbering and ratchet wheels, a frame pivotally connected with said fork and having an operating-lever and pawls for engaging said ratchet-wheels, a seat or socket formed on said frame, a push-rod having a head engaging said seat or socket and its opposite end coacting with said inking-pad, and a spring slipped over said push-rod and arranged to hold said push-rod in position and also to operate the aforesaid lever in one direction.

654,677. ALARM-CLOCK. LUDWIG SCHIFF, Wilmersdorf, Germany. Filed Dec. 8, 1899. Serial No. 739,686. (No model.)

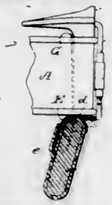


Claim.—1. In an alarm-clock having a detent-lever to arrest the alarm mechanism, and an operating-cam for the detent-lever, driven by the clock work, the combination of means for coupling the release-cam to the spindle driven by the clock work, and for automatically rendering the said coupling ineffective as soon as the alarm has been operated, the said cam being subsequently adjusted by hand in the manner and for the purpose substantially as described.

2. In an alarm-clock, the combination of a detent-lever for the alarm mechanism, a detent-lever-operating cam loosely mounted on

the hand-spindle of the clockwork, means for coupling the said cam to the spindle and for automatically releasing the said coupling as soon as the alarm has been set going, the said cam being connected to the hand of the clockwork-spindle by means of a friction-coupling, which will yield when the said cam is turned by hand in the manner and for the purpose substantially as described.

654,678. VIOLIN SHOULDER-REST. FRIEDRICH SCHMIDT, Milwaukee, Wis. Filed Apr. 16, 1900. Serial No. 13,080. (No model.)



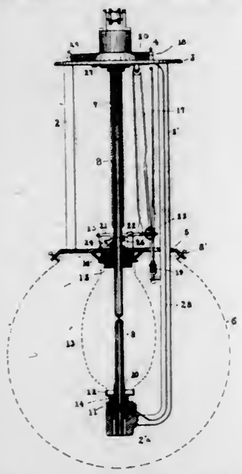
Claim.—1. A shoulder-rest attachable to a violin and consisting of a plate having a portion thereof in a straight line at an acute angle to the back of the instrument when in connection therewith, and its upper end bent rearward, together with a cushion having a forward side pocket in which the acute-angle portion of the plate has slip fit, said cushion coming snug under the rear upper bend of said plate when in place.

2. A violin shoulder-rest consisting of a plate having a curved upper end provided with a horizontal rearwardly-extending lip struck out therefrom, and a cushion having a side pocket for the plate, the upper portion of the cushion being within the plate-bend.

3. A shoulder-rest attachable to a violin and consisting of a plate having a straight portion that depends from the instrument at an acute angle to its back, a cushion having a plate-pocket, and a suspending-loop connected to the cushion.

4. A violin shoulder-rest consisting of a plate attachable to the instrument to extend from the back of same, and a cushion having the forward side thereof provided with a pocket for slip-fit engagement with the depending portion of the plate, said cushion being detachable from said plate so as not to interfere with placing said instrument in its case.

654,679. ELECTRIC-ARC LAMP. CARL SCHUSTER, Pittsburg, Pa., assignor to Pittsburgh Electrical and Machine Works, same place. Filed June 13, 1899. Serial No. 720,391. (No model.)



Claim.—1. In arc-lamps, the combination of an expansive strip forming a part of the circuit and continuously receiving the full force of the current, said strip being returned upon itself; a roller supporting the bend of said strip; a pivoted lever connected to one end of said strip; a pawl connected to the other end of said lever and engaging with a clutch on the upper carbon; and a weight adjustable on said lever serving to regulate the tension of the strip and to assist in regulating the feed of the carbon.

2. In an arc-lamp, the combination of an expansive strip to control the feed of the carbon said strip forming a part of the circuit and continuously receiving the full force of the current; a roller upon which said strip is carried in plural folds; and an adjustable weight by which the tension of the strip is controlled and regulated.

3. In an arc-lamp, the combination of an expansive strip adapted to be contracted and expanded by the passage through it of an electric current; a pivoted lever connected to one end of said strip; a pawl connected to the other end of said lever and engaging with a clutch on the upper carbon; and a weight adjustable on said lever serving to regulate the tension of the strip and to assist in regulating the feed of the carbon.

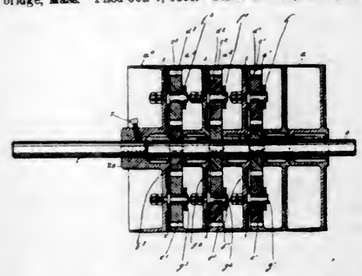
4. In arc-lamps the combination of side bars; a disk supported by said side bars; a flange or catch on the under side of said disk; a cap for the inner globe supported by said flange or catch; said inner globe; a second flange on the periphery of said disk and an outer globe supported from said second flange.

654,680. TREATMENT OF TOBACCO-LEAF. GEORGE W. SCOLLAY, New York, N. Y. Filed June 24, 1898. Serial No. 684,400. (No specimens.)

Claim.—1. The process of treating tobacco-leaves which consists in subjecting to crushing or abrasion the surfaces included within the outlines of any mark or design which it is desired to produce upon the leaf, and then subjecting a sufficient portion of the leaf to include said mark or design to a bleaching agent.

2. The process of treating tobacco-leaves which consists in subjecting to crushing or abrading the surfaces within the outlines of any mark or design it is desired to produce upon the leaf, subjecting a sufficient area of the leaf to include said mark to the action of a bleaching agent, washing said surfaces, and then applying an agent to quicken combustion.

654,681. DIFFERENTIAL PULLEY. CHARLES E. SCRIMGEOUR, Lewiston, Me., assignor of one-half to Wilberforce R. Hammond, Cambridge, Mass. Filed Oct. 7, 1899. Serial No. 732,895. (No model.)



Claim.—A pulley containing, in combination, a series of pulley sections a', a^2, &c., the peripheries of which form a substantially-continuous cylinder; a series of internal gears c', c^2, &c., carried by said pulley-sections; a shaft upon which said pulley-sections revolve; a series of fixed gears b', b^2, &c.; a series of planetary moving gears d', d^2, &c., meshing with said internal gears and fixed gears, and a series of studs whereon said planetary moving gears rotate; the stud carrying the planetary moving gear which meshes with each pulley-section being fixed to the next pulley-section of the series: substantially as described.

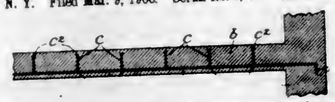
654,682. GAS-BURNER. HENRY E. SHAFFER, Rochester, N. Y. Filed Apr. 26, 1900. Serial No. 14,488. (No model.)



Claim.—1. An acetylene-gas burner provided with a discharge-passage, a small gas-aperture leading axially therein, and an air-passage leading into the discharge-passage having its outer end higher relative to the gas-aperture than its inner end, and discharging a stream of air upon the gas as it first issues into the discharge-passage.

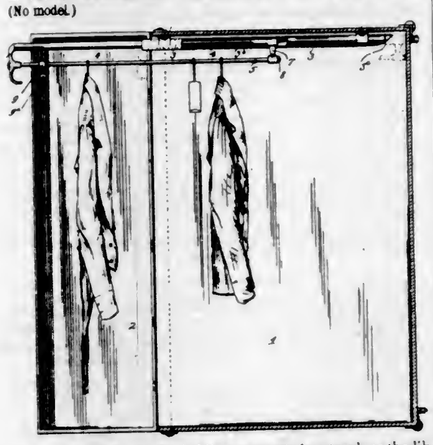
2. An acetylene-gas burner provided with a discharge-passage, a small gas-aperture leading axially therein, and air-passages in the walls around the discharge-passage having their outer ends higher relative to the gas-aperture than the inner ends and discharging streams of air upon the gas as it first issues into the discharge-passage

654,683. CONCRETE CONSTRUCTION. IRA A. SHALER, New York, N. Y. Filed Mar. 9, 1900. Serial No. 7,977. (No model.)



Claim.—In a concrete or other like construction, the combination with the concrete or other like body, of a metal skeleton embedded therein, said skeleton comprising main or longitudinal members and subordinate or cross members welded thereto at intervals, substantially as shown and described.

654,684. ATTACHMENT FOR TRUNKS OR THE LIKE. PAUL H. SMITH, Columbus, Ohio. Filed Mar. 26, 1900. Serial No. 10,266. (No model.)



Claim.—1. A device for holding garments in a trunk or the like comprising tube 3, a sliding part 4 in the tube 3, a rod 5 upon which garments can be hung connected to stand and slide longitudinally with respect to the part 4, substantially as described.

2. A device for holding garments in a trunk or the like comprising slotted tube 3, the slidable part 4 therein, the rod 5, the handle 6 connecting the outer ends of the part 4 and rod 5 and a bracket or hanger 7 connecting the inner ends of the said parts 4 and 5, substantially as described.

3. A device for holding garments in a trunk or the like comprising the slotted tube 3, the part 4 to slide and rotate therein, the rod 5, handle 6 connecting the outer ends of the parts 4 and 5, substantially as described.

4. A device for holding garments in a trunk or the like comprising tube 3, a part 4 sliding longitudinally in the tube 3, a rod 5 upon which garments can be hung connected to the part 4 and standing parallel thereto, and a collar or clamp 9 adjustable on the rod 5 independently of the tube 3, substantially as described.

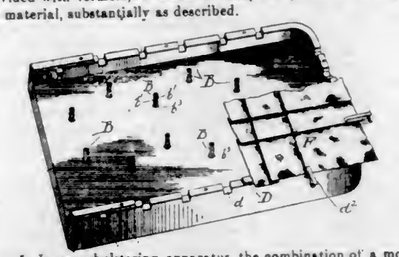
654,685. UPHOLSTERING APPARATUS. JOHN A. STAPLES, Newburg, N. Y., assignor to the Novelty Tufting Machine Company, Chicago, Ill. Filed Feb. 8, 1899. Serial No. 704,952. (No model.)

Claim.—1. In an upholstering apparatus, the combination of a mold or forming-board, with expansible button-holders seated in wells in the base of the mold, substantially as described.

2. In an upholstering apparatus, the combination of a mold or forming-board, having seats in its base, with expansible button-holders secured in said seats, one of said parts being of uniform diameter and the other being of greater diameter for a portion of its length substantially as set forth.

3. In an upholstering apparatus, a mold provided with formers and with seats corresponding with said formers to indicate the location of the plaits, and clamps adapted to said seats, substantially as described.

4. In an upholstering apparatus, the combination with a mold provided with formers, of means to clasp the plaits in the edge of the material, substantially as described.

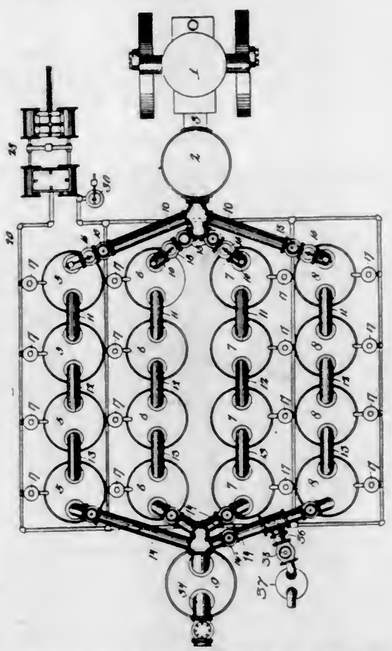


5. In an upholstering apparatus, the combination of a mold or forming-board provided with formers in its base, and with notches in its edge, with a rim secured to said edge, substantially as described.

6. In an upholstering apparatus, a mold or forming-board having combined formers and button-holders in its base, notches in its edges, corresponding in location with the combined formers and holders, and a rim upon said edge, substantially as and for the purposes set forth.

7. In an upholstering apparatus, the combination of a mold having combined formers and button-holders seated in wells in its base, and a notched edge, with means to seat suitable clamps at the notches in the edge, substantially as described.

654,686. CARBURETER. WILBUR F. STEELE, New York, N. Y. Filed Mar. 12, 1900. Serial No. 8,305. (No model.)



Claim.—1. In a gas-making apparatus, the combination, with means for supplying air under pressure, of a plurality of carbureters connected in multiple to such source of supply, automatic equalizing-valves interposed between the carbureters and such source of supply, by which valves the relative amount of work done in each of such carbureters may be regulated automatically, a pump for supplying oil to the several carbureters, pipe connections leading from the pump to said carbureters, automatic valves for regulating the level of the oil in the several carbureters, and an automatic relief-valve in communication with the oil-supply devices.

2. In a gas-making apparatus, the combination, with a single blower, of a plurality of carbureters connected in multiple to such blower, automatic equalizing-valves interposed between the carbu-

reters and the blower, by which valves the relative amount of work done in each of such carbureters may be regulated automatically, a pump for supplying oil to the several carbureters, pipe connections leading from the pump to said carbureters, automatic valves for regulating the level of the oil in the several carbureters, and an automatic relief-valve in communication with the oil-supply devices.

3. In a gas-making apparatus, the combination, with a series of carbureting-chambers, of a pump for supplying oil to such chambers, pipe connections leading from the pump to said chambers, automatic valves for regulating the level of the oil in the several chambers, and an automatic relief-valve in communication with the oil-supply devices.

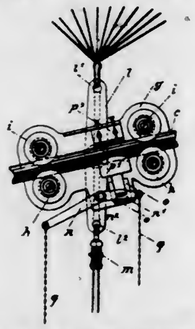
4. In a gas-making apparatus, the combination, with a carbureting-chamber, and a source of oil-supply, of a float-valve interposed between such chamber and source of supply, and consisting of a valve-casing and valve, a float-chamber connected with said valve-casing, and also with the carbureting-chamber at points both above and below the normal level of the oil therein, a float in said chamber, a valve-stem connected to the valve and having an adjustable nut connected thereto by screw-threads, said nut being adapted to be engaged by the float and lifted thereby, thereby closing the valve, and a regulating-stem, working in a stuffing-box in the casing, normally out of engagement with said nut, but adapted to be moved inward into engagement therewith for the purpose of adjusting the valve.

5. In a carbureting system the combination of a suitable air-supply, two or more series of carbureters, independent valve connections between the air-supply and each series of carbureters and suitable pressure-regulators in the said connections, the whole arranged to permit of any series of carbureters being cut out of the system or to permit of the different series of carbureters being worked independently.

6. In a carbureting system the combination of a suitable air-supply, two or more series of carbureters, independent connections between the air-supply and each series of carbureters and valves in said connections whereby each series of carbureters may be operated independently, substantially as set forth.

7. In a carbureting system the combination of a carbureter, a suitable oil-supply, a pump connecting such oil-supply and the carbureter and an automatic oil relief-valve in the oil-feed pipe adapted to open when the carbureter has been supplied with the desired quantity of oil, substantially as described.

654,687. AERIAL RAILWAY. HEINRICH SUTER, Kappel, Switzerland. Filed May 6, 1899. Serial No. 715,837. (No model.)



Claim.—1. In an aerial railway worked by a captive balloon, a car-trolley adapted to run on an inclined rope and guided thereon by grooved pulleys *h*, arranged on the said car two by two one above the other, the said car-trolley having a plate *g* to which is fixed at a right angle to the said rope, the stud *k* carrying a double-armed lever *l*, to the upper end of which is secured the balloon and to its lower end the car, all substantially as set forth.

2. In the balloon-propelled car-trolley *d*, the double-armed chain pull-lever *n* fulcrumed to the plate *g* in combination with two brake-jaws *p'*, *p²* having grooved faces adapted to grip the ropeway *c*, of which *p²* is stationary and *p'* rendered relatively movable on the plate *g*, through the chain pull-lever *n*, all substantially as set forth.

654,688. SUBSTITUTE FOR CELLULOID, &c., AND PROCESS OF MANUFACTURING SAME. JOHN E. THORNTON and CHARLES F. S. ROTHWELL, Manchester, England. Filed Aug. 26, 1899. Serial No. 728,646. (No specimens.)

Claim.—1. The method of producing a flexible transparent substance by treating the aluminium salt of a fatty acid with a quantity of volatile solvent and drying and hardening the same substantially as described.

2. The method of producing a flexible transparent substance by treating aluminium oleate with a quantity of a volatile solvent and drying and hardening the same.

3. The method of producing a flexible transparent substance by treating aluminium oleate with benzol and drying and hardening the same.

4. As a new article of manufacture a transparent substance consisting of the dissolved and hardened salt of aluminium and a fatty acid substantially as described.

5. As a new article of manufacture a transparent substance comprising aluminium oleate dissolved in a volatile solvent substantially as described.

6. As a new article of manufacture a transparent substance comprising aluminium oleate treated with benzol.

654,689. ARTICLE APPLICABLE FOR VARIOUS PURPOSES, TOGETHER WITH PROCESS OF MANUFACTURING SAME. JOHN E. THORNTON and CHARLES F. S. ROTHWELL, Manchester, England. Filed Aug. 26, 1899. Serial No. 728,647. (No specimens.)

Claim.—1. The method of producing a flexible transparent substance by treating the zinc salt of a fatty acid with a quantity of a volatile solvent and drying and hardening the same.

2. The method of producing a flexible transparent substance by treating zinc oleate with a quantity of a volatile solvent and drying and hardening the same.

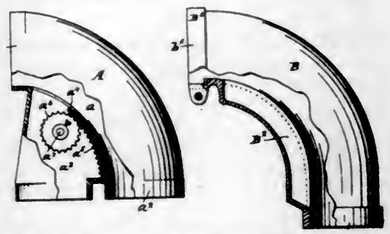
3. The method of producing a flexible transparent substance by treating zinc oleate with benzol and drying and hardening the same.

4. As a new article of manufacture a transparent substance consisting of the dissolved and hardened salt of zinc and a fatty acid substantially as described.

5. As a new article of manufacture a transparent substance comprising zinc oleate dissolved in a volatile solvent substantially as described.

6. As a new article of manufacture a transparent substance comprising zinc oleate treated with benzol.

654,690. PNEUMATIC-DESPATCH TUBE. WILLIAM TOWNSEND, Champaign, Ill., assignor to Truman W. Miller, Chicago, Ill.; Harriet B. Miller and Felix Babbage executors of said Truman W. Miller, deceased. Filed Sept. 14, 1899. Serial No. 730,467. (No model.)



Claim.—1. A composite structure to serve as a terminal of a pneumatic-despatch system, composed of separable parts or elements, said elements being so formed, proportioned and provided with uniting and carrier guiding and controlling parts that they may be assembled together in different relations to vary the completed form of the terminal.

2. In terminal devices for pneumatic-despatch systems, a group of fittings comprising a quadrant-casting, an elbow-casting, and a branched casting, each provided with uniting and carrier guiding and controlling parts, substantially as set forth, adapting two or more of them to be assembled in different relations, whereby the completed form of the terminal may be varied.

3. In terminal devices for pneumatic-despatch systems, in combination the following elements: a quadrant-casting, an elbow-casting, a branched casting comprising a short straight tube-section and a curved branch section communicating laterally therewith, and two doors or flaps; the said elements being so formed, proportioned and provided with uniting and carrier guiding and controlling parts that they may be assembled together in different relations to vary the completed form of the terminal.

4. In terminal devices for pneumatic-despatch systems, in combination the following elements: a quadrant-casting, an elbow-casting, two branched castings each comprising a short straight tube-section and a curved branch section communicating laterally therewith, and two doors or flaps; the said elements being so formed, proportioned and provided with uniting and carrier guiding and controlling parts that they may be assembled together in different relations to vary the completed form of the terminal.

5. In terminal devices for pneumatic-despatch systems, in combination the following elements: a quadrant-casting, an elbow-casting, and a door or flap; the said elements being so formed, proportioned and provided with uniting and carrier guiding and controlling parts that they may be assembled together in different relations to vary the completed form of the terminal.

6. In terminal devices for pneumatic-despatch systems, in combination the following elements: a quadrant-casting having a valve for regulating the flow of the propelling-current, an elbow-casting provided with an air by-pass, a branched casting comprising a short straight tube-section and a curved branch section communicating laterally therewith and having a switch pivoted at the union of said straight and curved sections to control the passage of carriers therethrough, and two spring-actuated doors or flaps; the said elements being so formed, proportioned and provided with uniting parts that they may be assembled together in different relations to vary the completed form of the terminal.

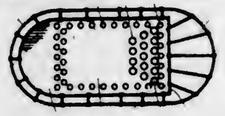
7. In terminal devices for pneumatic-despatch systems, in combination the following elements: a quadrant-casting having a valve for regulating the flow of the propelling-current, an elbow-casting provided with an air by-pass, two branched castings each comprising a short straight tube-section and a curved branch section communicating laterally therewith and having a switch pivoted at the union of said straight and curved sections to control the passage of carriers therethrough, and two spring-actuated doors or flaps; the said elements being so formed, proportioned and provided with uniting parts that they may be assembled together in different relations to vary the completed form of the terminal.

8. In terminal devices for pneumatic-despatch systems, in combination the following elements: a quadrant-casting having a valve for regulating the flow of the propelling-current, an elbow-casting provided with an air by-pass, and a spring-actuated door or flap; the said elements being so formed, proportioned and provided with uniting parts that they may be assembled together in different relations to vary the completed form of the terminal.

9. A terminal for pneumatic-despatch systems comprising a quadrant-casting having formed therethrough a curved guide for the passage of carriers and provided also with a short return-passage for the propelling-current communicating through a valve-controlled passage with said curved guide, in combination with a door or flap adapted to be secured to said quadrant-casting at one end of the curved guide, the other end of said guide being adapted to be entered by a conveying-tube of the system.

10. A terminal for pneumatic-despatch systems comprising a quadrant-casting having formed therethrough a curved guide for the passage of carriers and provided also with a short return-passage for the propelling-current communicating through a valve-controlled passage with said curved guide, in combination with a door or flap adapted to be secured to said quadrant-casting at one end of the curved guide, the other end of said guide being adapted to be entered by a conveying-tube of the system, and a chute having its upper end located around and beneath the discharge-opening of the quadrant-casting to receive and guide carriers to their point of final discharge.

654,691. STEAM-BOILER. JOHN T. TURNBOW, Crossland, Ky. Filed July 8, 1899. Serial No. 723,177. (No model.)



Claim.—In a boiler, the combination, with the front and rear heads of the fire-box, each of which is provided with a row of screw-threaded holes around each side and the top edges thereof and across near the bottom, the holes in one end being larger than in the other, of a series of tubes, each tube being of a greater length than the distance said heads are apart, and having each end screw-threaded, the threads at one end extending farther from the end than the other, the end having the shorter threads fitting in the smaller holes, an interiorly and exteriorly screw-threaded sleeve and a lock-nut on the longer threads, the head of the sleeve being inward, and a packing between said head and the lock-nut.

654,692. GOLF-TEE. WILLIAM H. TYLER and GEORGE R. SMITH, Shelburne, Vt. Filed Apr. 4, 1900. Serial No. 11,482. (No model.)

Claim.—1. A golf-tee consisting of a support for the ball, and a single piece of wire connected therewith and comprising an upright pin and a substantially-horizontal connection between the pin and support.



2. A golf-tee consisting of a single piece of wire comprising an upright pin, a substantially-horizontal connection or body leading from the pin, and a support consisting of a horizontal ring at the other end of the body.

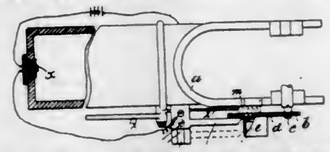
3. A golf-tee consisting of a single piece of wire comprising an upright pin, a substantially-horizontal connection or body leading from the pin, a support consisting of a horizontal ring at the other end of the body, and a guard covering the ring and a portion of the body.

4. A golf-tee consisting of a substantially-upright pin whose lower end is adapted to enter the earth and is deflected out of a straight line, a substantially-horizontal connection or body leading from the pin, and a substantially-horizontal ring at the other end of the body.

5. A golf-tee consisting of a substantially-upright pin deflected out of a straight line, a substantially-horizontal connection or body leading from the pin, and an incomplete ring at the other end of the body with its open side standing in the direction of the stroke.

6. A golf-tee consisting of a single piece of wire comprising a substantially-upright pin, a substantially-horizontal connection or body leading from the pin, and an incomplete ring at the other end of the body with its open side standing in the direction of the stroke.

654,693. ELECTRICAL IGNITER FOR HYDROCARBON-ENGINES. HUGO WEDEKIN, Augsburg, Germany. Filed Feb. 16, 1899. Serial No. 705,665. (No model.)



Claim.—1. In combination in an igniting device for gas-engines, a contact-piece, electric connections controlled thereby electrodes in said electrical connections and a tappet having an inclined edge adapted to effect early or late separation for early or late ignition according to the relative position of the contact and tappet, one of said parts being adjustable in relation to the other and means for operating the tappet as described.

2. In combination, in an igniting device, a rotary cam or tappet, an arm to engage the same, one of said parts being adjustable relative to the other, a shaft carrying the tappet, said tappet having its edge inclined with respect to the plane of the axis of rotation, electrical connections controlled by the arm and tappet and electrodes in said electrical connections substantially as described.

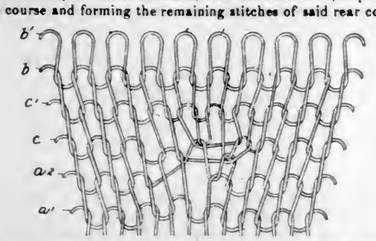
3. In combination in an igniting device for hydrocarbon-engines, a rotary tappet having an inclined edge, a device to engage the same, one of said parts being adjustable in relation to the other longitudinally of the inclined edge, electrical connections controlled by said tappet and said device and electrodes in said connections substantially as described.

4. In combination in an igniting device for gas-engines, a tappet having an inclined edge, a crank-shaft, a pinion mounted on the crank-shaft, a spur-wheel connected to the tappet, said spur-wheel rotating at one-half the speed of said pinion, a contact to engage the tappet electrical connections controlled by the tappet and contact, and electrodes in said electrical connections, substantially as described.

654,694. TUBULAR FABRIC AND METHOD OF CONSTRUCTING SAME. FRANK WILCOMB, Pawtucket, R. I., assignor to the Standard Machine Company, of Pennsylvania. Filed Dec. 7, 1897. Serial No. 661,014. (No specimens.)

Claim.—1. The method of knitting widened tubular fabric which consists in omitting the end loop and forming an additional loop in the front course, the thread passing directly from the last loop formed preceding the omitted loop to said additional loop, passing the thread from the additional loop of the front course to the rear course forming the rear course and in the next succeeding round forming all the

loops except the additional loop of the front course and forming an additional loop of the rear course, then the additional loop of the front course and forming the remaining stitches of said rear course.



2. In the method of knitting widened tubular fabric, forming with the front course the additional loop of the rear course and the loop preceding the additional loop of the rear course.

3. In the method of knitting widened tubular fabric, forming with the front course, the end and an additional loop of the rear course, then forming an additional loop of the front course and then forming the rear course.

4. In the method of knitting widened tubular fabric, forming all but the additional loop of the front course, then forming the end and the additional loop of the rear course.

5. In the method of knitting widened tubular fabric forming the front course, the end and an additional loop of the rear course, then forming an additional loop of the front course, then forming the rear course and omitting in that course the additional loop in the rear course.

6. In the method of knitting widened tubular fabric forming all but the additional loop of the front course, then forming the end and an additional loop of the rear course, then forming the additional loop of the front course, then forming the rear course, omitting the additional loop of the rear course.

7. In the method of knitting widened tubular fabric forming all but the additional loop of the front course, then forming the end loop of the rear course and then forming the additional loop of the front course, then forming all but the additional loop of the rear course.

8. The hereinbefore-described tubular fabric in which the additional loops or wales are drawn together to close the hole at the point of widening in which a loop is omitted preceding the additional loop of the front course, the thread being carried directly from the last preceding loop of said course to said additional loop, and from said loop to the rear course, and in the next round the loop preceding the first additional loop of the rear course and the first additional loop of said course are formed with the loops of the front course.

9. The hereinbefore-described tubular fabric in which an additional loop of the rear course and the loop preceding an additional loop of the rear course are formed with the front course.

10. The hereinbefore-described tubular fabric in which an additional loop of the rear course and the loop preceding the additional loop of the rear course are formed with the front course, and a loop upon the additional wale of the front course is formed with the succeeding rear course.

11. The hereinbefore-described tubular fabric in which an additional loop of the rear course and the loop preceding an additional loop of the rear course are formed with the front course, and in that course a loop being omitted from the additional front wale.

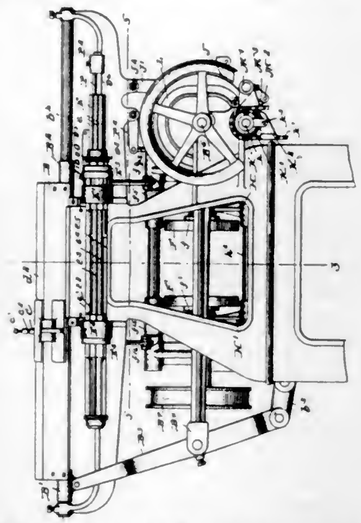
12. The hereinbefore-described tubular fabric in which an additional loop of the rear course and the loop preceding the additional loop of the rear course are formed with the front course and a loop upon the additional wale of the front course is formed with the succeeding rear course, a loop upon the additional rear wale being omitted in that course.

13. The hereinbefore-described tubular fabric in which an additional loop of the rear course and the loop preceding the additional loop of the rear course are formed with the front course, and in that course a loop being omitted from the additional front wale, and in which a loop upon the additional wale of the front course is formed with the succeeding rear course, a loop upon the additional rear wale being omitted in the last-mentioned course.

14. The hereinbefore-described tubular fabric in which an additional loop of the rear course is formed with the front course and in that course a loop being omitted from the additional front wale, a loop for the additional front wale being formed with the succeeding rear course the additional wale of that rear course being omitted.

654,695. KNITTING-MACHINE. FRANK WILCOMB, Pawtucket, R. I., assignor to the Standard Machine Company, of Pennsylvania. Filed Apr. 14, 1899. Renewed May 16, 1900. Serial No. 16,918. (No model.)

Claim.—1. In a straight-knitting machine, the combination with the needles and means for supporting them normally out of operative position, of devices corresponding to the needles and each adapted in its movement to force the corresponding needle into operative position, a cylinder, bars on said cylinder having raised portions and cut-away portions, means to move said bars longitudinally to bring said raised portions into alinement with predetermined needles and means to impart to said cylinder a complete revolution after each shifting of the bars whereby the needles are moved into operation in a predetermined order.



2. In a straight-knitting machine, the combination with the needles and means for supporting them normally out of operative position, of devices corresponding to the needles and each adapted in its movement to force the corresponding needle into operative position, a cylinder, bars on said cylinder having raised portions and cut-away portions, means to move said bars longitudinally to bring said raised portions into alinement with predetermined needles and means to impart to said cylinder a complete revolution after each shifting of the bars whereby the needles are moved into operation in a predetermined order, means to oscillate said cylinder to cause a single bar to engage needles repeatedly, whereby the needles engaged by said bar are moved into operative position a predetermined number of times, and whereby a fixed number of needles are thrown into operative position at successive rounds of knitting.

3. In a straight-knitting machine, the combination with the needles, of a support extending along the needle-bed, of bars extending longitudinally of said support having cut-away portions and needle-actuating raised portions, means enabling said raised portions to actuate needles in alinement therewith, means to move said bars longitudinally to bring said raised portions into position to actuate predetermined needles to throw them into operative position, and means to rotate said support after the shifting of said bars whereby the needles are moved into operative position in a predetermined order.

4. In a straight-knitting machine, the combination with the needles, of a support extending along the needle-bed, of bars extending longitudinally of said support having cut-away portions and needle-actuating raised portions, means enabling said raised portions to actuate needles in alinement therewith, means to move said bars longitudinally to bring said raised portions into positions to actuate predetermined needles to throw them into operative position, and means to rotate said support after the shifting of said bars whereby the needles are moved into operative position in a predetermined order, means to oscillate said support to cause the raised portion or portions of a single bar to actuate needles repeatedly whereby the needles actuated by said bar are moved into operative position a predetermined number of times and whereby a fixed number of needles are thrown into operative position at successive rounds of knitting.

5. In a straight-knitting machine, the combination with the needles, of a support extending along the needle-bed carrying a plurality of longitudinally-extending needle-actuating projections raised above the surface of said support out of alinement with each other and extending longitudinally of said support and having cut-away portions, means enabling said projections to actuate needles in alinement therewith, means whereby said needle-actuating projections are shifted longitudinally to bring them into position to actuate predetermined needles to throw them into operative position, and means to rotate said support whereby the needles are thrown into operative position in a predetermined order.

6. In a straight-knitting machine, the combination with the needles, of a support extending along the needle-bed carrying a plurality of longitudinally-extending needle-actuating projections raised above the surface of said support out of alinement with each other and extending longitudinally of said support and having cut-away portions, means enabliug said projections to actuate needles in alinement therewith, means whereby said needle-actuating projections are shifted longitudinally to bring them into position to actuate predetermined needles to throw them into operative position, means to rotate said support whereby the needles are thrown into operative position in a predetermined order, and means to oscillate said support to cause a single needle-actuating projection to actuate needles repeatedly whereby the needles actuated by said projection are moved into operative position a predetermined number of times and whereby a fixed number of needles are thrown into operation at successive rounds of knitting.

7. In a straight-knitting machine, the combination with the front and rear banks of needles and means for supporting them normally out of operative position, of needle-lifting devices for each bank, cylinders adjacent respectively to the front and rear needles, bars on said cylinders having raised portions and cut-away portions, means to move said bars longitudinally to bring said raised portions into alinement with predetermined needles, and means to impart to said cylinders a simultaneous movement of rotation after each shifting of the bars, whereby the needles of both banks are moved into operation in a predetermined order.

8. In a straight-knitting machine, the combination with the front and rear banks of needles and means for supporting them normally out of operative position, of needle-lifting devices for each bank, cylinders adjacent respectively to the front and rear needles, bars on said cylinders having raised portions and cut-away portions, means to move said bars longitudinally to bring said raised portions into alinement with predetermined needles, means to impart to said cylinders a simultaneous movement of rotation after each shifting of the bars, whereby the needles of both banks are moved into operation in a predetermined order, and means to oscillate said cylinders to cause a single bar of each cylinder to engage needles of the corresponding bank repeatedly whereby the needles engaged by said bars are moved into operative position a predetermined number of times and whereby a fixed number of needles in each bank are moved into operative position at successive rounds of knitting.

9. In a straight-knitting machine, the combination with the front and rear banks of needles, of supports adjacent respectively to the front and rear needles, bars extending longitudinally of each of said supports having cut-away portions and needle-actuating raised portions, means enabling said raised portions to actuate needles in alinement therewith, means to move said bars longitudinally to bring said raised portions into position to actuate predetermined needles to throw them into operative position, and means to impart to said supports a simultaneous movement of rotation after each shifting of the bars, whereby the needles of both banks are moved into operative position in a predetermined order.

10. In a straight-knitting machine, the combination with the front and rear banks of needles, of supports adjacent respectively to the front and rear needles, bars extending longitudinally of each of said supports having cut-away portions and needle-actuating raised portions, means enabling said raised portions to actuate needles in alinement therewith, means to move said bars longitudinally to bring said raised portions into position to actuate predetermined needles to throw them into operative position, means to impart to said supports a simultaneous movement of rotation after each shifting of the bars, whereby the needles of both banks are moved into operative position in a predetermined order, means to oscillate said supports to cause the raised portion or portions of a single bar to actuate needles of the corresponding bank repeatedly whereby the needles engaged by said bars are moved into operative position a predetermined number of times and whereby a fixed number of needles in each bank are thrown into operative position at successive rounds of knitting.

11. In a straight-knitting machine, the combination with the front and rear banks of needles, of supports extending respectively longitudinally along and adjacent to the front and rear needles, each support carrying a plurality of longitudinally-extending needle-actuating projections raised above the surface of said support, out of alinement with each other, and extending longitudinally of said support and having cut-away portions, means enabling said projections to actuate needles in alinement therewith, means whereby said needle-actuating projections are shifted longitudinally to bring them into position to actuate predetermined needles to throw them into operative position, means to impart to said supports a simultaneous movement of rotation after each shift of the projections whereby the needles of both banks are moved into operation in a predetermined order.

12. In a straight-knitting machine, the combination with the front and rear banks of needles, of supports extending respectively longitudinally aloog and adjacent to the front and rear needles, each support carrying a plurality of longitudinally-extending needle-actuating projections raised above the surfsce of said support, out of alinement with each other, and extending longitudinally of said support and having cut-away portions, means enabling said projections to actuate needles in alinement therewith, means whereby said needle-actuating projections are shifted longitudinally to bring them into position to actuate predetermined needles to throw them into operative position, means to impart to said supports a simultaneous movement of rotation after each shift of the projections whereby the needles of both banks are moved into operation in a predetermined order, means to oscillate said support to cause a single needle-actuating projection of each support to actuate needles of the corresponding bank repeatedly whereby the needles actuated by said projections are moved into operative position a predetermined number of times and whereby a fixed number of needles in each bank are moved into operative position at successive rounds of knitting.

13. In a straight-knitting machine, the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a cylinder, means for rotating said cylinder, a series of bars secured circumferentially upon said cylinder, said bars having raised portions and cut-away portions, the raised portions being in alinement with some or all of said needles, the raised portion of the bars in the rotation of the cylinder being adapted to strike the corresponding needle-lifting devices and move the corresponding needles into operative position, and means for simultaneously shifting said bars longitudinally.

14. In a straight-knitting machine the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a support, means for rotating said support, a series of bars secured upon said support, said bars having raised portions and cut-away portions, the raised portions being in alinement with some or all of said needles, the raised portion of the bars in the rotation of the support being adapted to strike one or more of the needle-lifting devices and move the corresponding needles into operative position, and means for simultaneously shifting said bars longitudinally.

15. In a straight-knitting machine the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a cylinder, bars on said cylinder each of which has projecting surfaces in alinement with some or all of the needles, said cylinder being rotatably supported, a ratchet secured to said cylinder, a pawl-holder, pawls connected to said holder and engaging said ratchet to act upon it in opposite directions, means for reciprocating said pawl-holder a limited distance to oscillate said cylinder, means to reciprocate said pawl-holder a greater distance, and pawl-disengaging devices engaging the return-pawl in the last-named reciprocation to withdraw it out of engagement with said ratchet whereby in the return movement of said pawl-holder the ratchet is disengaged from the return-pawl and whereby in successive reciprocations of said pawl-holder said cylinder is rotated.

16. In a straight-knitting machine the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a support, bars on said support each of which has projecting surfaces in alinement with some or all of the needles, said support being rotatably supported, a ratchet secured to said support, a pawl-holder, pawls connected to said holder and engaging said ratchet to act upon it in opposite directions, means for reciprocating said pawl-holder a limited distance to oscillate said support, means to reciprocate said pawl-holder a greater distance, and pawl-disengaging devices engaging the return-pawl in the last-named reciprocation to withdraw it out of engagement with said ratchet whereby in the return movement of said pawl-holder the ratchet is disengaged from the return-pawl and whereby in successive reciprocations of said pawl-holder said support is rotated.

17. In a straight-knitting machine in combination with the needles and means for supporting them independently normally out of operative position, of devices corresponding to the needles and each adapted in its movement to lift the corresponding needle into operative position, a cylinder, a bar in said cylinder having projecting surfaces in alinement with some or all of the needles, said cylinder being rotatably supported, a ratchet secured to said cylinder, a pawl-holder, pawls connected to said holder and acting upon the ratchet-wheel in opposite directions, said pawl-holder being secured so as to be capable of oscillation, a driving-shaft, a cam upon the main driving-shaft having at one point a cam-surface, a roller traveling on said cam, and connection between said roller and the pawl-holder whereby when the pawl-holder strikes the cam-surface said pawl-holder is oscillated.

18. In a straight-knitting machine the combination with the needles and means for supporting them independently normally out of operative position, of a cylinder, a bar in said cylinder having projecting surfaces in alinement with some or all of the needles, means enabling said projecting surfaces to actuate needles in alinement therewith, said cylinder being rotatably supported, a ratchet secured to said cylinder, a pawl-holder, pawls connected to said holder and acting upon the ratchet-wheel in opposite directions, said pawl-holder being secured so as to be capable of oscillation, a driving-shaft, a cam upon the main driving-shaft having at one point a cam-surface, a roller traveling on said cam, and connection between said roller and the pawl-holder whereby when the pawl-holder strikes the cam-surface said pawl-holder is oscillated.

19. In a straight-knitting machine the combination with the needles and means for supporting them independently normally out of operative position, of devices corresponding to the needles and each adapted in its movement to force the corresponding needle into operative position, a support, a bar in said support having projecting surfaces in alinement with some or all of the needles, said support being rotatably supported, a ratchet secured to said support, a pawl-holder, pawls connected to said holder and acting upon the ratchet-wheel in opposite directions, said pawl-holder being secured so as to be capable of oscillation, a driving-shaft, a cam upon the main driving-shaft having at one point a cam-surface, a roller traveling on said cam, and connection between said roller and the pawl-holder whereby when the pawl-holder strikes the cam-surface said pawl-holder is oscillated.

20. In a straight-knitting machine the combination with the needles and means for supporting them independently normally out of operative position, of a support, a bar in said support having projecting surfaces in alinement with some or all of the needles, means enabling said projecting surfaces to actuate needles in alinement therewith, said support being rotatably supported, a ratchet secured to said support, a pawl-holder, pawls connected to said holder and acting upon the ratchet-wheel in opposite directions, said pawl-holder being secured so as to be capable of oscillation, a driving-shaft, a cam upon the main driving-shaft having at one point a cam-surface, a roller traveling on said cam, and connection between said roller and the pawl-holder whereby when the pawl-holder strikes the cam-surface said pawl-holder is oscillated.

21. In a straight-knitting machine the combination with the front and rear needles and means for supporting them independently normally out of operative position, of devices corresponding to the needles and each adapted in its movement to lift the corresponding needle into operative position, cylinders adjacent respectively to the rear and front needles, a bar in each cylinder having projecting surfaces in line of movement with some or all of its corresponding needles, each of said cylinders being supported so as to be oscillated to bring its bar against and away from its corresponding lifting devices of the needles, a main driving-shaft, cams upon said shaft, each cam having at one point a cam-surface, said cam-surfaces being oppositely set upon said cams, a roller coacting with each cam, a ratchet connected to each of said cylinders, an oscillating pawl-holder for each cylinder, pawls connected to said pawl-holders, each set of pawls acting upon its corresponding ratchet in opposite directions, and connection between each pawl-holder and one of said rollers, whereby in the rotation of the shaft, the pawl-holders are alternately oscillated, the extent of said cam-surface being such as to move each of the bars against and away from the corresponding needle-lifting devices.

22. In a straight-knitting machine the combination with the front and rear needles and means for supporting them independently normally out of operative position, of needle-lifting devices, cylinders adjacent respectively to the rear and front needles, a bar in each cylinder having projecting surfaces in line of movement with some or all of the corresponding needles, each of said cylinders being supported so as to be oscillated to bring its bar against and away from its corresponding needles, a main driving-shaft, cams upon said shaft, each cam having at one point a cam-surface, said cam-surfaces being oppositely set upon said cams, a roller coacting with each cam, a ratchet connected to each of said cylinders, an oscillating pawl-holder for each cylinder, pawls connected to said pawl-holders, each set of pawls acting upon its corresponding ratchet in opposite directions, and connection between each pawl-holder and one of said rollers, whereby in the rotation of the shaft, the pawl-holders are alternately oscillated, the extent of said cam-surfaces being such as to move each of the bars against and away from the corresponding needle-lifting devices.

23. In a straight-knitting machine the combination with the front and rear needles and means for supporting them independently normally out of operative position, of needle-lifting devices, supports adjacent respectively to the rear and front needles, a bar in each support having projecting surfaces in line of movement with some or all of its corresponding needles, each of said supports being supported so as to be oscillated to bring its bar against and away from its corresponding needle-lifting devices, a main driving-shaft, cams upon said shaft, each cam having at one point a cam-surface, said cam-surfaces being oppositely set upon said cams, a roller coacting with each cam, a ratchet connected to each of said supports, an oscillating pawl-holder for each support, pawls connected to said pawl-holders, each set of pawls acting upon its corresponding ratchet in opposite directions, and connection between each pawl-holder and one of said rollers, whereby in rotation of the shaft the pawl-holders are alternately oscillated, the extent of said cam-surfaces being such as to move the bars against and away from the corresponding needle-lifting devices.

24. In a straight-knitting machine the combination with the needles and the means for supporting them independently normally out of operative position, of needle-lifting devices, a cylinder, a series of bars secured circumferentially upon said cylinder, said bars having portions of their surfaces projecting beyond said cylinder, said cylinder being rotatably supported, a driving-shaft, cams upon said driving-shaft one cam having a cam-surface at one point, the other having a cam-surface at two points oppositely placed, devices connected with said cylinder and adapted to be connected with either of said cams, the single cam-surface being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surfaces of the other cam being of sufficient extent to move the bars against and beyond the needle-lifting device.

25. In a straight-knitting machine the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a support, a series of bars secured upon said support, said bars having portions of their surfaces projecting beyond said support, said support being rotatably supported, a driving-shaft, cams upon said driving-shaft, one cam having a cam-surface at one point, the other having a cam-surface at two points oppositely placed, devices connected with said support and adapted to be connected with either of said cams, the single cam-surface being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surfaces of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting devices.

26. In a straight-knitting machine the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a cylinder, a series of bars secured circumferentially upon said cylinder, said bars having portions of their surfaces projecting beyond said cylinder, and said cylinder being rotatably supported, a ratchet moving said cylinder, a pawl-holder supported so as to be oscillated, a driving-shaft, cams upon said driving-shaft, one cam having a cam-surface at one point, the other having a cam-surface at two points oppositely placed, a roller adapted to be connected with either cam-surface and connection between said roller and the pawl-holder, the single cam-surface being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surfaces of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting device.

27. In a straight-knitting machine the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a support, a series of bars secured upon said support, said bars having portions of their surfaces projecting beyond said support, said support being rotatably supported, a ratchet moving with said support, a pawl-holder supported so as to be oscillated, a driving-shaft, cams upon said driving-shaft, one cam having a cam-surface at one point, the other having a cam-surface at two points oppositely placed, a roller adapted to be connected with either cam-surface and connection between said roller and the pawl-holder, the single cam-surface being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surfaces of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting device.

28. In a straight-knitting machine the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a cylinder, a series of bars secured circumferentially upon said cylinder, said bars having portions of their surfaces projecting beyond said cylinder, said cylinder being rotatably supported, a driving-shaft, cams upon said driving-shaft, one cam having a cam-surface at one point, the other having a cam-surface at two points oppositely placed, devices connected with said cylinder adapted to be connected with either of said cams, the single cam-surface being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surface of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting device, the cylinder-actuating device being normally in contact with the single cam-face, a clutch-holder controlling the position of said device with relation to the cams, a cam controlling said clutch-holder, means to rotate said cam, a pattern-chain, a lug upon said chain adapted to connect the cam with its rotating means.

29. In a straight-knitting machine, the combination with the needles, and means for supporting them independently normally out of operative position, of needle-lifting devices, a support, a series of bars secured upon said support, said bars having portions of their surfaces projecting beyond said support, said support being rotatably supported, a driving-shaft, cams upon said driving-shaft, one cam having a cam-surface at one point, the other having a cam-surface at two points oppositely placed, devices connected with said support and adapted to be connected with either of said cams, the single cam-surface being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surfaces of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting device, the device being normally in contact with the single cam-face, a clutch-holder controlling the position of said device with relation to the cams, a cam controlling said clutch-holder, means to rotate said cam, a pattern-chain, a lug upon said chain adapted to connect the cam with its rotating means.

30. In a straight-knitting machine, the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a cylinder, a series of bars secured circumferentially upon said cylinder, said bars having portions of their surfaces projecting beyond said cylinder, said cylinder being rotatably supported, a driving-shaft, cams upon said driving-shaft, one cam having a cam-surface at one point, the other having a cam-surface at two points oppositely placed, devices connected with said cylinder and adapted to be connected with either of said cams, the single cam-surface being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surfaces of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting device, the cylinder-actuating device being normally in contact with the single cam-face, a clutch-holder controlling the position of said device with relation to the cams, a cam controlling said clutch-holder, a reciprocating lever reciprocated by the driving-shaft, a wheel, having three or more projections connected with the last-mentioned cam, said lever being adapted to engage said projections, the distance between two of the projections in said wheel being greater than the throw of the lever, a pattern-chain, a lug upon said pattern-chain at predetermined point, mechanism in line of movement of the lug connected with the wheel having projections and adapted when struck by the lug to move the wheel.

31. In a straight-knitting machine, the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a support, a series of bars secured upon said support, said bars having portions of their surfaces projecting beyond said support, said support being rotatably supported, a driving shaft, cams upon said driving-shaft, one cam having a cam-surface at one point, the other having a cam-surface at two points oppositely placed, devices connected with said support and adapted to be connected with either of said cams, the single cam-surface being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surfaces of the other one being of extent sufficient to move the bars against and beyond the needle-lifting device, the cylinder-actuating device being normally in contact with the single cam-face, a clutch-holder controlling the position of said device with relation to the cams, a cam controlling said clutch-holder, a reciprocating lever reciprocated by the driving-shaft, a wheel having three or more projections, connected with the last-mentioned cam, said lever being adapted to engage said projections, the distance between two of the projections in said wheel being greater than the throw of the lever, a pattern-chain, a lug upon said pattern-chain at predetermined point, mechanism in line of movement of the lug connected with the wheel having projections and adapted when struck by the lug to move the wheel.

32. In a straight-knitting machine, the combination with the front and rear rows of needles and means for supporting them independently normally out of operative position, of needle-lifting devices, cylinders, one for the front row of needles, the other for the rear row of needles, a series of bars secured circumferentially upon each of said cylinders, and bars having portions of their surfaces projecting beyond said cylinder, each cylinder being rotatably supported, a driving-shaft, two sets of cams upon said driving-shaft, one set for each cylinder, one cam of each set having a cam-surface at one point, but oppositely set with reference to each other, the other cam of each set having a cam-surface at two points similarly placed with relation to each other but oppositely placed on each cam, a device connected with each cylinder and adapted to be connected with either cam of its set, the single cam-surface of each set being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surface of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting device.

33. In a straight-knitting machine, the combination with the front and rear rows of needles and means for supporting them independently normally out of operative position, of needle-lifting devices, supports, one for the front row of needles, the other for the rear row of needles, a series of bars secured upon each of said supports, said bars having portions of their surfaces projecting beyond said support, each support being rotatably supported, a driving-shaft, two sets of cams upon said driving-shaft, one set for each support, one cam of each set having a cam-surface at one point, but oppositely set with reference to each other, the other cam of each set having a cam-surface at two points similarly placed with relation to each other, but oppositely placed on each cam, a device connected with each support and adapted to be connected with either cam of its set, the single cam-surface of each set being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surface of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting device.

34. In a straight-knitting machine, the combination with the front and rear rows of needles and means for supporting them independently normally out of operative position, of needle-lifting devices cylinders, one for the front row of needles, the other for the rear row of needles, a series of bars secured circumferentially upon each of said cylinders, said bars having portions of their surfaces projecting beyond said cylinder, each cylinder being rotatably supported, a driving-shaft, two sets of cams upon said driving-shaft, one set for each cylinder, one cam of each set having a cam-surface at one point, but oppositely set with reference to each other, the other cam of each set having a cam-surface at two points similarly placed with relation to each other but oppositely placed on each cam, a device connected with each cylinder and adapted to be connected with either cam of its set, the single cam-surface of each set being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surface of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting device, the cam-surface of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting device, a clutch-holder for each device controlling the position of its corresponding device with relation to the cams of its corresponding set, a cam controlling said clutch-holders, means to rotate said cam, a pattern-chain, a lug upon said chain adapted to connect the cam with its rotating means.

35. In a straight-knitting machine, the combination with the front and rear rows of needles and means for supporting them independently normally out of operative position, of needle-lifting devices, supports, one for the front row of needles the other for the rear row of needles, a series of bars secured upon each of said supports, said bars having portions of their surfaces projecting beyond said support, each support being rotatably supported, a driving-shaft, two sets of cams upon said driving-shaft, one set for each support, one cam of each set having a cam-surface at one point, but oppositely set with reference to each other, the other cam of each set having a cam-surface at two points similarly placed with relation to each other but oppositely placed on each cam, a device connected with each support and adapted to be connected with either cam of its set, the single cam-surface of each set being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surface of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting device, a clutch-holder for each device controlling the position of its corresponding device with relation to the cams of its corresponding set, a cam controlling said clutch-holders, a reciprocating lever reciprocated by the driving-shaft, a wheel having projections, in connection with the last-mentioned cam, said lever reciprocating between said projections, the distance between two of the projections on said wheel being greater than the throw of the lever, a pattern-chain, a lug upon said pattern-chain at predetermined point, mechanism in line of movement of the lug connected with the wheel having projections and adapted when struck by the lug to move the wheel.

36. In a straight-knitting machine, the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a cylinder, a series of bars secured circumferentially upon said cylinder, said bars having portions of their surfaces projecting beyond said cylinder, said cylinder being rotatably supported, a ratchet moving with said cylinder, a pawl-holder supported so as to be oscillated, a driving-shaft, cams upon said driving-shaft, one cam having a cam-surface at one point, the other having a cam-surface at two points oppositely placed, a roller adapted to be connected with either cam-surface and connection between said roller and the pawl-holder, the single cam-surface being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surface of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting device, the roller being normally in contact with the single cam-face, a clutch-holder controlling the position of said roller with relation to the cams, a cam controlling said clutch-holder, means to rotate said cam, a pattern-chain, a lug upon said chain adapted to connect the cam with its rotating means.

37. In a straight-knitting machine, the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a support, a series of bars secured upon said support, said bars having portions of their surfaces

projecting beyond said support, said support being rotatably supported, a ratchet moving with said support, a pawl-holder supported so as to be oscillated, a driving-shaft, cams upon said driving-shaft, one cam having a cam-surface at one point, the other having a cam-surface at two points oppositely placed, a roller adapted to be connected with either cam-surface and connection between said roller and the pawl-holder, the single cam-surface being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surface of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting device, the roller being normally in contact with the single cam-face, a clutch-holder controlling the position of said roller with relation to the cams, a cam controlling said clutch-holder, means to rotate said cam, a pattern-chain, a lug upon said chain adapted to connect the cam with its rotating means.

38. In a straight-knitting machine, the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a cylinder, a series of bars secured circumferentially upon said cylinder, said bars having portions of their surfaces projecting beyond said cylinder, said cylinder being rotatably supported, a ratchet moving with said cylinder, a pawl-holder supported so as to be oscillated, a driving-shaft, cams upon said driving-shaft, one cam having a cam-surface at one point, the other having a cam-surface at two points oppositely placed, a roller adapted to be connected with either cam-surface, and connection between said roller and the pawl-holder, the single cam-surface being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surfaces of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting device, the roller being normally in contact with the single cam-face, a clutch-holder controlling the position of said roller with relation to the cams, a cam controlling said clutch-holder, means to rotate said cam, a pattern-chain, a lug upon said chain adapted to connect the cam with its rotating means, a reciprocating lever reciprocated by the driving-shaft, a wheel having projections on the shaft of the last-mentioned cam, said lever being adapted to engage said projections the distance between two of the projections on said wheel being greater than the throw of the lever, a pattern-chain, a lug upon said pattern-chain at predetermined point, mechanism in line of movement of the lug connection with the wheel having projections and adapted when struck by the lug to move the wheel.

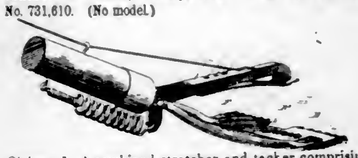
39. In a straight-knitting machine, the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a support, a series of bars secured upon said support, said bars having portions of their surfaces projecting beyond said support, said support being rotatably supported, a ratchet moving with said support, a pawl-holder supported so as to be oscillated, a driving-shaft, cams upon said driving-shaft, one cam having a cam-surface at one point, the other having a cam-surface at two points oppositely placed, a roller adapted to be connected with either cam-surface, and connection between said roller and the pawl-holder, the single cam-surface being of extent sufficient to move the bar against and away from the needle-lifting device, the cam-surfaces of the other cam being of extent sufficient to move the bars against and beyond the needle-lifting device, the roller being normally in contact with the single cam-face, a clutch-holder controlling the position of said roller with relation to the cams, a cam controlling said clutch-holder, means to rotate said cam, a pattern-chain, a lug upon said chain adapted to connect the cam with its rotating means, a reciprocating lever reciprocated by the driving-shaft, a wheel, having projections, on the shaft of the last-mentioned cam, said lever being adapted to engage said projections the distance between two of the projections on said wheel being greater than the throw of the lever, a pattern-chain, a lug upon said pattern-chain at predetermined point, mechanism, in line of movement of the lug connecting with the wheel having projections and adapted when struck by the lug to move the wheel.

40. In a straight-knitting machine, the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a cylinder, a series of bars secured circumferentially upon said cylinder, so as to oscillate with and be adapted to be moved along said cylinder, said bars having a portion of their surfaces projecting beyond said cylinder and adapted in the movement of said cylinder to strike the needle-lifting devices, a block to which said bars are secured, a slide upon which said block is adapted to move, a pawl connected to said block, a rack in which said pawl works, said pawl being operative with relation to the said rack in its movement in one direction, and inoperative in its movement in the other direction, a wheel having projections, a reciprocating lever working between the projections on said wheel, the distance between the two projections on said wheel being greater than the throw of said lever, a pattern-chain, a lug upon said pattern-chain, a device adapted to be struck by said lug in its movement, connection between said device and wheel having projections adapted when the lug strikes the device to move said wheel having projections into operative position with reference to said lever, a projection upon said wheel, a lever in line of movement of said projection, and connection between said lever and the rack, whereby when the projection last mentioned strikes the last-mentioned lever the rack is moved in one direction, and a spring to return said rack in the other direction.

41. In a straight-knitting machine, the combination with the needles and means for supporting them independently normally out of operative position, of needle-lifting devices, a support, a series of bars secured upon said support so as to oscillate with and be adapted to be moved along said support, said bars having a portion of their surfaces projecting beyond said support and adapted in the movement of said support to strike the needle-lifting devices, a block to which said bars are secured, a slide upon which said block is adapted to move, a pawl connected to said block, a rack in which said pawl works, said pawl being operative with relation to the said rack in its movement in one direction, and inoperative in the other direction, a wheel having projections, a reciprocating lever working between the projections on said wheel, the distance between the two projections on said wheel being greater than the throw of said lever, a pattern-chain, a lug upon said pattern-chain, a device adapted to be struck by said lug in its movement, connection between said device and the wheel having projections adapted when the lug strikes the device to move said wheel having projections into operative position with reference to said lever, a projection upon said wheel, a lever in line of movement of said projection, and connection between said lever and the rack, whereby when the projection last mentioned strikes the last-mentioned lever, the rack is moved in one direction, and a spring to return said rack in the other direction.

42. In a straight-bar knitting-machine, in combination sinkers or web-holders provided with pivotal orifices, of a sinker-block provided with slots, sinker-holders in said slots, said sinker-holders having heads projecting beyond said slots and orifices in said heads between pairs of which sinker-holders the sinkers are placed, the orifices in the sinkers registering with the orifices in the holders, and a rod or bar passing through the orifices in the sinkers or holders.

654,696. COMBINED CARPET STRETCHER AND TACKER. CHARLES W. WILLEY, Winterport, Me. Filed Sept. 25, 1899. Serial No. 731,610. (No model.)



Claim.—1. A combined stretcher and tacker comprising a pole or handle, barbed plate, and yoke connecting the plate and pole, the hammer pivoted in said yoke having an arm connected to a spring for throwing the said hammer downwardly, the top of the hammer being provided with a pin, a trigger secured to the pole and having its free end bifurcated and provided with a series of perforations to engage with the pin and hold the hammer in an elevated position, and the cord for releasing the trigger, substantially as shown and described.

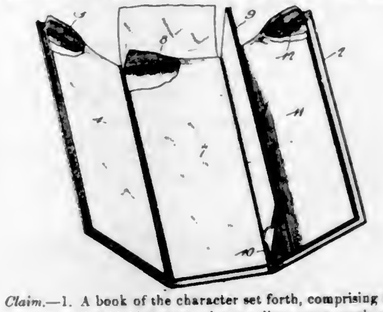
2. A combined stretcher and tacker, comprising the handle, a barbed plate and yoke in combination with the hammer, having a depending arm, the spring connecting the said depending arm and handle, the perforated trigger-plate attached to the handle, the pin carried by the hammer and adapted to engage the trigger, the tack-holding plate, and the cord adapted to release the trigger, substantially as described.

654,697. GRAPPLE OR TONGS. GEORGE E. WILSON, St. Clairsville, Ohio, assignor of one-half to Madison Aldredge, same place. Filed July 22, 1899. Serial No. 724,832. (No model.)



Claim.—In an ice-hook, the combination with a handle provided with two diverging perforated lugs, of two legs through said perforations, one end of each of which legs is formed into a hook and the opposite end is bent into a reverse curve and has its tip bent laterally, and the intermediate portion, substantially midway of the reverse curve, is perforated, and a pivot through said perforations, the curvature of the legs and the divergence of the lugs being such that when the hook is closed the bent portions of the legs will rest against the outer surface of the lugs, and when the hook is open said bent portions will rest upon the curved portions of the opposite legs, and the end of each lug will lie between the curved end of one leg and the reversely-curved portion of the other leg.

654,698. POCKET RECORD-BOOK. JEFFERSON M. YARNELL, Coshocton, Ohio. Filed Mar. 20, 1900. Serial No. 9,451. (No model.)



Claim.—1. A book of the character set forth, comprising opposite side covers infoldable over an intermediate cover, each of the covers having a plurality of end-opening leaves to receive inscriptions and removably attached thereto, and side-opening leaves also connected to the hinge of one of the side covers, the said side-opening leaves being normally disposed over the end-opening leaves of the latter cover.

2. A book of the character set forth, comprising intermediate and side folding covers, end-opening leaves removably attached to all the covers, a space being provided on each side of the end-opening leaves of the intermediate cover and the adjacent edges of the leaves on the side covers for convenience in folding the covers inwardly over the intermediate cover, and side-opening leaves to lie over a portion of the end-opening leaves and applied to the hinge of two of the covers and having their connected portions located in the space between two sets of the said end-opening leaves.

3. A book of the character set forth, comprising opposite side covers infoldable over an intermediate cover, each of the covers having a plurality of end-opening leaves to receive inscriptions and removably attached thereto, elongated wire holders for connecting the upper portions of the end-opening leaves to the covers and provided with loops at the opposite terminals in planes at right angles to the main bodies of the holders, and side-opening leaves also connected to the hinge of one of the side covers and normally located over the end-opening leaves of the latter.

654,699. APPARATUS FOR MOVING HOUSES. JEROME ABBEY, Reno, Nev. Filed Apr. 11, 1900. Serial No. 12,471. (No model.)

Claim.—1. An apparatus of the class described comprising a capstan-frame designed to be connected to the house or other structure to be moved, a drum or spool mounted on the capstan-frame, means for rotating the drum or spool, a rope or cable connected with the drum or spool, and a separate and independent anchoring-frame connected with the front or outer end of the rope or cable and adapted to be advanced independently of the capstan-frame, substantially as described.

2. An apparatus of the class described comprising a capstan-frame provided with means for winding up a rope or cable and designed to be secured to the house or other structure to be moved, a separate portable anchoring device comprising a supporting-frame, anchors, and a tongue connected with and adapted to withdraw the anchors from the ground when the anchoring device is to be advanced and a rope or cable connecting the anchoring device and the capstan-frame and adapted to permit the former to be advanced independently of the latter, substantially as described.

3. An apparatus of the class described comprising a capstan-frame designed to be connected with the structure to be moved, a vertical spool-shaft, a vertical drum or spool mounted on the spool-shaft at the lower portion thereof, a clutch for connecting the drum or spool with the spool-shaft and for releasing the former, a vertical shaft or spindle extended above the capstan-frame, gearing connecting the shaft or spindle with the spool-shaft, a sweep or lever connected with the upper portion of the shaft or spindle, a separate portable anchoring device provided with wheels and having anchors and a rope or cable extending from the anchoring device to the drum or spool and adapted to permit the said anchoring device to be advanced independently of the capstan-frame, substantially as described.



4. An apparatus of the class described comprising a capstan-frame provided with a drum and having means for operating the same and an anchoring device composed of a vertically-movable supporting-frame, a rock-shaft adapted to support the rear portion of the supporting-frame, an inclined anchor-carrying frame arranged at the front of the supporting-frame and pivoted to the top of the same, a combined tongue and lever connected with the bottom of the anchor-carrying frame and provided with an arm, and connections between the rock-shaft and the combined tongue and lever, substantially as described.

5. In an apparatus of the class described, the combination of the vertically-movable supporting-frame, an inclined anchor-carrying frame arranged at the front of the supporting-frame and pivotally connected at its top with the same and provided at its bottom with anchors, means for limiting the movement of the pivoted frame independent of the supporting-frame, and a combined tongue and lever connected with the bottom of the pivoted frame and provided with a depending arm, substantially as described.

6. In an apparatus of the class described, a portable anchoring device comprising a supporting-frame, a rock-shaft or axle adapted to support the rear portion of the said frame, an inclined anchor-carrying frame arranged at the front of the supporting-frame and pivotally connected at its top with the same, a tongue connected with the bottom of the pivoted frame and having an arm, and a catch for automatically locking the parts when the tongue is swung downward, substantially as described.

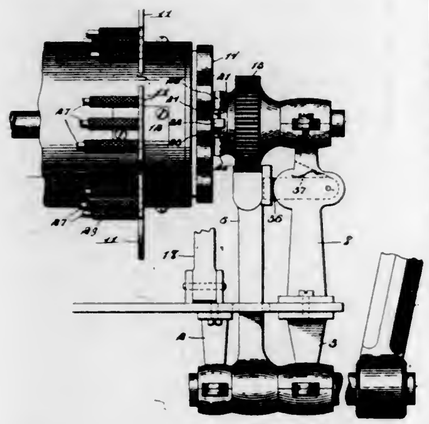
7. In an apparatus of the class described, a portable anchoring device comprising a vertically-movable supporting-frame, an inclined oscillating anchor-carrying frame arranged at the front of the supporting-frame and connected with the top thereof, a catch arranged at the top of the pivoted frame, an axle or rock-shaft adapted to support the rear portion of the supporting-frame and provided with an arm arranged to engage the said catch, a combined tongue and lever connected with the pivoted frame, and adjustable connections between the combined tongue and lever and the arm of the rock-shaft, substantially as described.

8. In an apparatus of the class described, a portable anchoring device comprising a supporting-frame, an inclined anchor-carrying frame connected with the top of the supporting-frame, a slotted arm secured to one of the frames, a pin mounted on the other frame and operating in the slot, a combined tongue and lever connected with the inclined frame, and a rear rock-shaft or axle connected with the combined tongue and lever, substantially as described.

9. In an apparatus of the class described, a portable anchoring device comprising a supporting-frame, an inclined anchor-carrying frame, a rock-shaft supporting the rear portion of the supporting-frame and having an arm, a combined tongue and lever connected

with the anchor-carrying frame, and the connecting-rod adjustably secured to the combined tongue and lever and having a slot-and-pin connection with the arm of the rock-shaft, substantially as described.

654,700. ELECTRIC CONTROLLER. WILLIAM ASBURY, New York, N. Y. Filed Dec. 1, 1899. Serial No. 738,899. (No model.)



Claim.—1. In an electric controller, the combination with a revoluble shaft, of a cylinder of non-conducting material loosely mounted on said shaft: radial contact-blades projecting from said cylinder: conducting-bases for said blades: a catch-disk secured to one end of said cylinder: contact-clips with which the blades contact: a gear-wheel fixed to said shaft: a quadrant-gear meshing with said gear-wheel: stop mechanism coöperating with said catch-disk and quadrant-gear: means for rotating said shaft and means for causing the rotation of the cylinder by the rotation of the shaft.

2. In an electric controller, the combination with a revoluble shaft, of a gear-wheel keyed thereon: a cylinder of non-conducting material loosely mounted on said shaft: a disk secured to one end of said cylinder and having peripheral recesses: contact-blades projecting from said cylinder in radial pairs: conducting-bases for said blades: conducting-clips with which said blades contact: spring-controlled pawls engaging the disk: a quadrant-gear meshing with said gear-wheel: and stop mechanism controlling the movement of said quadrant-gear.

3. In an electric controller, the combination with a revoluble shaft and contact-clips, of a cylinder loosely mounted on said shaft and carrying contact-blades, and a catch-disk: a gear-wheel fixed to said shaft: a quadrant-gear meshing with said gear-wheel: a shaft upon which said quadrant is fixed: a handle for the quadrant-shaft: and stop mechanism comprising inclined catches and lugs projecting from the quadrant: and a stop-bar, adapted to engage said inclined catches and lugs.

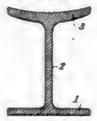
4. In an electrical controller, the combination with a revoluble shaft, and contact-clips: of a non-conducting cylinder loosely mounted on said shaft: perforated contact-blades projecting from the cylinder and arranged in radial pairs, and insulated conductors extending through the perforations of the blades.

5. In an electrical controller, the combination with a revoluble shaft, of a cylinder of non-conducting material loosely arranged thereon, and carrying contact-blades: of quick-break mechanism for said blades, comprising a disk secured to one end of said cylinder and formed with peripheral recesses: oppositely-arranged pawls engaging in said recesses: spring-pressed plungers on said disk: and a projection carried by said shaft for operating said plungers.

6. In an electrical controller, the combination with a revoluble shaft, of a gear-wheel fixed thereon, a cylinder loosely mounted on said shaft: a catch-disk secured to one end of the cylinder: housings on said disk: spring-pressed plungers supported in said housings: an arm or lug projecting from the shaft to operate said plungers: pawls to engage said disk: a toothed quadrant meshing with said gear-wheel: stop devices on said quadrant: and a stop-bar coöperating with said stop devices.

7. In an electrical controller, the combination with a revoluble cylinder, of radially-arranged blades, connected by insulated conductors supported above the surface of the cylinder.

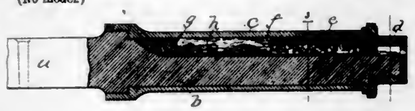
654,701. WAGON-ROAD CONSTRUCTION. CHARLES W. BAKER, Montclair, N. J., assignor to Menard K. Bowen, Chicago, Ill.; Allen D. Bowen executrix of said Menard K. Bowen, deceased. Filed June 12, 1897. Serial No. 640,419. (No model.)



Claim.—1. In wagon-road construction, a metallic girder-rail having a base, a web and a tread formed integrally with the tread substantially over the web and having means to accommodate and retain only flangeless wheels of vehicles.

2. In wagon-road construction, a metallic girder-rail having, integrally-formed, a base, a web, and a tread concave on its upper surface with the tread substantially over the web and having means to accommodate and retain wheels of vehicles with flat or flangeless tires.

654,702. SELF-LUBRICATING AXLE-SPINDLE. ELIJAH E. BAKER, Hyde Park, Mass., assignor of one-third to James E. Baker, same place. Filed May 20, 1899. Renewed June 21, 1900. Serial No. 21,083. (No model.)

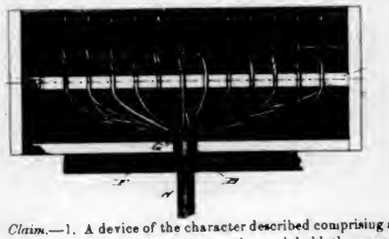


Claim.—1. A self-lubricating axle-spindle provided with a longitudinal channel, in combination with a lubricating-reservoir *e* constructed to fit the channel, the said reservoir having a closed bottom, closed sides, and a close-covered top excepting between the points *f* and *g* where it is provided with a longitudinal opening, and a wick *h* coextensive with the said opening inserted therein, substantially as set forth.

2. A self-lubricating axle-spindle provided with a longitudinal channel, a lubricating-reservoir to match the channel, having a closed bottom and closed sides, and an opening in the top to receive a wick *h*, the end of the reservoir being screw-threaded to correspond with the screw-threaded end of the spindle, substantially as set forth.

3. A lubricating-reservoir for self-lubricating axle-spindles having a closed bottom curved upwardly at its inner end to the top, closed vertical sides, and a close-covered top excepting between the points *f* and *g* where it is provided with a longitudinal opening for the reception of a wick, substantially as set forth.

654,703. MEANS FOR CONNECTING CABLES. NATHAN BASSETT, Philadelphia, Pa., assignor to the Globe Telephone Manufacturing Company, same place. Filed Dec. 30, 1899. Serial No. 742,098. (No model.)



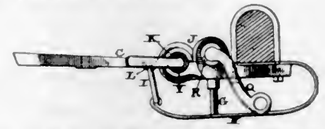
Claim.—1. A device of the character described comprising a box or closure provided with means to receive and hold the connected ends of the wires, substantially as described.

2. A device of the character described comprising a box or closure having a passage therein, and a partition provided with a series of slots for the reception of the connected ends of the wires, substantially as described.

654,704. THILL-COUPLING. HERMAN J. BIERHART, South Bend, Ind. Filed June 5, 1900. Serial No. 19,116. (No model.)

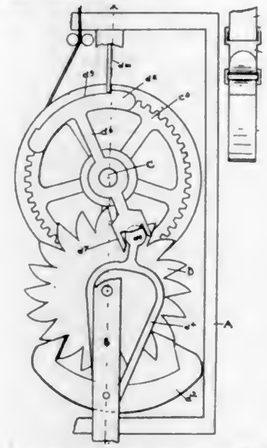
Claim.—1. In a thill-iron, a bar secured to the axle, and a spring secured to this bar at one end, combined with a cap upon which the spring exerts its tension for holding it closed, the thill-iron, an operating-lever for locking and unlocking the cap, and a rod operated by the cap, and which bears at one end against the spring for the purpose of increasing its tension upon the cap, substantially as shown

2. In a thill-coupling, the iron bar secured to the axle by the clip, and which bar is provided with perforated ears, and has a socket in its front end to receive the thill-iron, combined with an operating-lever having a cam or eccentric, the cap having an opening through its rear end to receive the cam or eccentric, a socket to catch over the thill-iron, and means for engagement upon its front end with the spring, the operating-lever being provided with a flu or flange and a groove formed upon the inner side of the eye or opening through its inner end, substantially as described.



3. In a thill-coupling, the bar which is secured to the under side of the axle by the clip, and which is provided with a socket at its front end to receive the thill-iron, the ears D, and the socket or recess E formed between the ears, and having an opening through it extending from the bottom of the recess, the spring secured to the bar at one end and provided with an eye at its front end, combined with the cap having an opening through its rear end, and a shoulder or stop inside of the opening, and a shoulder or projection W formed upon its lower side, the operating-lever provided with a cam or eccentric, and the thill-iron; the parts being arranged and combined to operate, substantially as set forth.

654,705. FIRE-ESCAPE. ROBERT M. BOODY, Haverhill, Mass., assignor to Louis M. Boody, Hyannis, Mass. Filed May 3, 1900. Serial No. 15,342. (No model.)

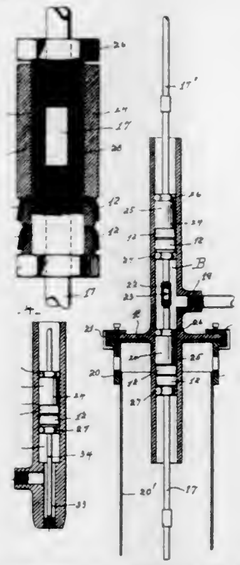


Claim.—1. A device for the purpose described comprising a winding-drum, a tape which is adapted to be wound therearound, an escapement-wheel which is connected therewith, a pallet which is adapted to engage said wheel, an arm extending from said pallet, a pivoted lever having one end connected to said arm and having its opposite end weighted, and a spring which is adapted to engage said lever as it approaches the limit of its movement in each direction.

2 A device for the purpose described comprising a winding-drum, a tape which is adapted to be wound therearound, an escapement-wheel which is connected therewith, a pallet which is adapted to engage said wheel, an arm extending from said pallet, a pivoted lever having one end connected to said arm and having its opposite end provided with a weight which extends from opposite sides of said lever, projections which extend from said weight near each end thereof, and a spring which is adapted to engage one of said projections as said lever approaches the limit of its movement in each direction.

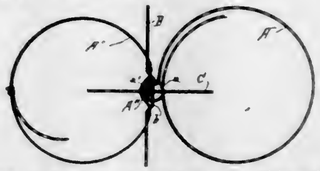
654,706. OIL-WELL PUMP. HARLEY E. BRAYMER, Prairie Depot, Ohio, assignor of one-half to Fred H. Braymer, Cygnet, Ohio. Filed Mar. 26, 1900. Serial No. 10,131. (No model.)

Claim.—1. In an oil-well pump, the combination of a pump-barrel having a lower and an upper extension, the lower extension being weighted within to adapt it for an anchor for the barrel, and perforated, and the upper extension being perforated above its connection with the barrel and provided with a cap having a reduced orifice; spiders secured at intervals to the pump-barrel and its extensions; a standing valve in the lower end of the pump-barrel; a reciprocating valved piston within the pump-barrel, comprising a central cage inclosing a valve and upper and lower tubular extensions of the cage, forming exit and entrance ports of the valve, each provided with a plurality of packing-cups, the cups of the lower extension being faced upward and those of the upper extension being faced downward and adapted to pack the valved piston thus formed within the barrel-cylinder; a casing in the top of the well; a casing-head secured to the top of the casing; a casing-head barrel secured to and supported by the casing-head, having a lateral branch for connecting the barrel to the distributing-pipe system; a tubular sucker-rod extended through the casing-head barrel into the pump-barrel, through the cap of the upper extension thereof, said sucker-rod being formed of coupled lengths of tubing, the upper length of which is divided into two sections coupled together with a perforated sleeve-coupling within the casing-head barrel; packing-heads secured on the sucker-rod within the barrel, above and below the perforated sleeve-coupling; a solid rod coupled to and closing the upper end of the sucker-rod, adapted to connect it with the pumping-jack, and a coupling within the pump-barrel adapted to couple the lower end of the sucker-rod to the reciprocating valved piston, as and for the purpose described.



2. In an oil-well pump, the combination of a casing-head top having a barrel provided with a lateral branch, a packing-head movable therein, and comprising a tubular sleeve internally threaded at both ends, externally-threaded plugs adapted to threaded engagement with the ends of the sleeve and provided with orifices to receive a sucker-rod, a compressible cylindrical gland within the sleeve around the rod, interposed between the plugs and adapted to be compressed thereby to frictionally secure the sleeve to the rod, and packing-cups upon one of the plugs and adapted to be compressed thereby against the sleeve to pack the barrel.

654,707. SPRING BED-BOTTOM. CHARLES D. BROUYETTE, Chicago, Ill., assignor to Francis Karr, same place. Filed July 8, 1899. Serial No. 723,234. (No model.)

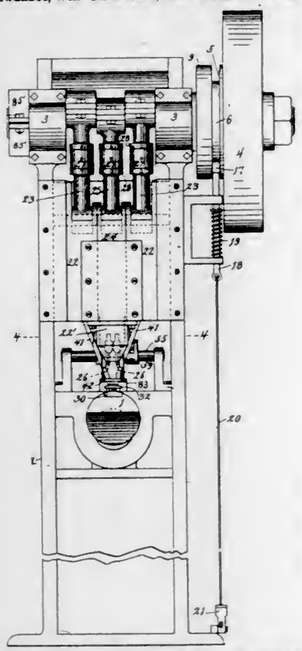


Claim.—1. A spiral-spring bed-bottom comprising coiled springs, longitudinal tie-rods having offsets that extend through the respec-

tive coils and beyond the adjoining wire of the adjacent coils, a loop formed on each coil to pass between the offsets on the longitudinal tie-rods and the adjacent spring-coils, and lateral tie-rods engaging said loops to form knots or ties between the coils, substantially as and for the purpose set forth.

2. In combination with the surface coils of a spiral-spring bed-bottom, one portion of each coil provided with an inwardly-projecting offset and the adjacent coils having a corresponding outward offset, longitudinal tie-rods having an offset at each coil arranged to pass through said coil and beyond the offset on the adjoining coil a loop formed upon the end of each coil to pass through the space between the offsets in the tie-rods and the coils, and lateral tie-rods arranged to engage said loops and tie the coils and tie-rods to form a continuous fabric, substantially as and for the purpose set forth.

654,708. PUNCHING AND RIVETING MACHINE. FRIEDRICH BRUNS, Milwaukee, Wis. Filed Jan. 2, 1900. Serial No. 36. (No model.)



Claim.—1. A punching and riveting machine, comprising an anvil for supporting rivets and the utensil to be riveted to, a plunger-die adapted to force a utensil upon the rivets as punches, rivet-sets movable with and in the plunger-die in apertures therefor in the plunger-die adapted to receive the rivets when the rivet-sets are withdrawn, means for delivering ears in proper position to be secured to the utensil, and means for placing rivets in position for punching the utensil and for insertion in the ear, the construction being adapted to force the rivets through the utensil and to upset the rivets at a single reciprocation of the plunger-die and the rivet-sets.

2. In a punching and riveting machine, an anvil, an elevated rivet-support on the anvil, on which support the rivet rests before and while being inserted in and riveted to the utensil, a movable false anvil above the anvil alongside the elevated rivet-support, and a movable plunger-die adapted to force the wall of a utensil down with the false anvil and about the rivet as a punch up through the utensil and into the die.

3. In a punching and riveting machine, an anvil, an elevated rivet-support on the anvil, a rivet passage or way leading to the elevated rivet-support, means adapted to push the rivet along the way to the elevated support, and a movable plunger-die adapted to force the wall of a utensil down about the rivet as a punch, the rivet passing through the utensil and into the die.

4. In a punching and riveting machine, an anvil, an elevated rivet-support on the anvil, a rivet passage or way leading to the elevated rivet-support, a reciprocable rivet-pusher located in the rivet-way, means for reciprocating the pusher and a movable plunger-die adapted to force the wall of a utensil down about the rivet as a punch.

5. In a punching and riveting machine, a reciprocable plunger-die, an anvil, an elevated rivet-support on the anvil, a horizontal and upwardly-inclined rivet passage-way leading to the elevated rivet-support, a pusher in the rivet-way provided with a hinged pilot, and a rock-shaft connected by one crank to the pusher and by another crank to said plunger-die.

6. A rivet holding and delivering hopper, comprising a receptacle having walls inclined downwardly to an elongated uptiltable bottom, said uptiltable bottom being pivoted near one end and being provided with a rivet-channel along its edge that forms a bottom to the hopper, said edge and channel continuing therefrom in a curve about the hub or end of the uptiltable bottom in a substantially-semi-circular course concentrically around its pivotal axis to a place of discharge of the rivets, said channel being of a size and form adapted to receive the stems of rivets therein while the rivet-heads are on the edge of the uptiltable bottom, and a portion of the hopper adjacent to and about the hub or curved part of the channel edge of the uptiltable bottom at a constant distance therefrom forming therewith a way for the bearing and travel of rivets partially around the axis of the uptiltable bottom and concentrically therewith to the place of discharge, the construction being such that the rivets in the hub or curved edge of the uptiltable bottom are overturned and advanced to the place of discharge by frictional contact with the oscillating bottom.

7. In a punching and riveting machine, a means for oscillating an uptiltable rivet-carrying and rivet-moving hopper-bottom, comprising the uptiltable bottom in the hopper, a shaft fixed to and serving as the pivot of the uptiltable bottom, a crank-arm on the shaft, a bell-crank pivoted on a fixed support one arm of which bell-crank is connected to the crank-arm on the shaft, and a vertically-reciprocable plunger provided with horizontal ways, in which a wrist-pin on one arm of the bell-crank rides.

8. In a riveting-machine, the combination with a reciprocable rivet-holding plate provided with a rib, of a spring adapted to hold the plate to initial position, and a reciprocating rivet-pusher provided with a shoulder adapted near the close of the movement of the pusher in one direction to engage the reciprocable rivet-plate and shift it temporarily from its initial position.

9. In a machine for securing bail-ears to utensils, an ear-holding well, a lifter in the well adapted to elevate ears therein and deliver them at the top to an ear-chute extending downwardly from the top of the well, a slide in ways reciprocable to and across the top of the well adapted to push an ear from the well into the chute, a bell-crank one arm of which is connected to said slide and the other arm of which rides in horizontal ways fixed on a vertically-reciprocating plunger.

10. An ear-manipulating device, comprising a bail-ear chute having its bottom at the discharging end cut out to the contour of the upper portion of the bail-ear, inclined and beveled blocks at the end of the chute, the blocks being on springs secured to the chute and being adapted to catch and hold the forward end of the ear and permit the rear upper end thereof to fall to a seat below the chute.

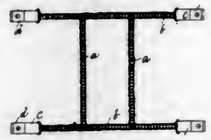
11. The combination with a bail-ear chute having its bottom at the discharging end cut out to the contour of the upper portion of the bail-ear, inclined and beveled blocks at the end of the chute the blocks being on springs secured to the chute and being adapted to catch and hold the forward end of the bail-ear and permit the rear upper end thereof to fall to a seat below the chute, and a block below the end of the chute, said block being provided with a recess or socket in its top and end adapted to receive the end of the ear therein on a seat as that end of the ear falls from the chute, and to hold it against lateral displacement.

12. The combination of an anvil having elevated rivet-supports thereon, a block adjacent to the rivet-supports provided with a bail-ear-holding recess, a bail-ear chute provided at its discharging end with bail-ear-holding devices substantially above the rivet-supports, and reciprocable rivet-sets above the ear-holding terminal blocks of the chute adapted to upset the rivets after they are pushed upwardly through the ear.

13. In a punching and riveting machine, a reciprocable plunger-die 22 provided with interior longitudinal ways and rivet-set openings in its forward end, adapted to receive rivets therein when the rivet-sets are withdrawn, a riveting set head 24 reciprocable on the ways in the plunger-die, riveting-sets 26 secured detachably in the forward end of the riveting-set head and passing movably through and guided by the forward ends of the plunger-die, and means for projecting the riveting-sets from and withdrawing them into the plunger-die while the plunger-die is reciprocating.

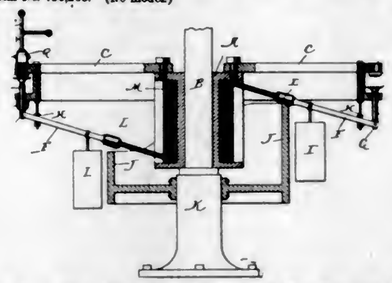
654,709. SCAFFOLDING. RICHARD J. BUNGARD, London, England. Filed Feb. 19, 1900. Serial No. 5,741. (No model.)

Claim.—1. An appliance for holding in position two scaffold-poles at an angle with one another, the said appliance comprising several parallelly-placed chains having their ends connected by two other parallelly-placed chains having their free ends projecting beyond the first-mentioned chains and having at the said free ends clips to embrace one of the said scaffold-poles and bolts to hold the clip in position, substantially as described and shown.



2. An appliance for holding in position two scaffold-poles at an angle with one another, the said appliance comprising a chain having at each end another chain crossing at right angles, the free ends of the said cross-chains projecting beyond the said chain, the cross-chains having at their free ends clips to embrace one of the said scaffold poles and bolts to hold the clip in place, substantially as described and shown.

654,710. MACHINE FOR BRAZING CAN CAPS AND COLLARS TOGETHER. MILTON R. CAPPS, Philadelphia, Pa. Filed Nov. 7, 1899. Serial No. 736,203. (No model.)



Claim.—1. In combination with a machine of the character described, a turn-table having a series of holes formed therein, a series of brazing-irons secured beneath the holes and adapted to receive the caps when forced upward by the plungers, a series of heaters located above the table and so arranged that said table acts as a valve to cut off the flow of gas except when the holes register with said heaters, whereby the flames issuing from the heaters are successively subjected against the brazing-irons, as and for the purpose set forth.

2. The herein-described combination of a rotary turn-table having holes in the outer portion thereof, a series of brazing-irons secured beneath the holes, a series of plungers adapted to carry the collars and caps, means for forcing said plungers upward so as to carry said caps into contact with the brazing-irons, a series of heaters located above the turn-table and so arranged that the upper surface of said table will act as a slide-valve to cut off the flow of gas from the heaters except when they register with the holes, and means for igniting the gas flowing from said heaters when the holes pass beneath the same, as and for the purpose set forth.

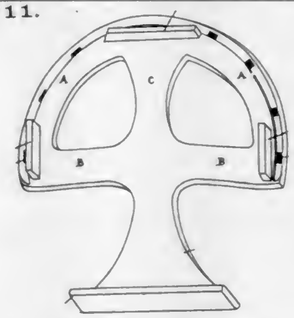
3. In combination with a machine of the character described, a turn-table having a series of holes formed in the outer portion thereof, a series of heaters located immediately above said table in such manner that the upper surface of the latter acts as a valve to cut off the flow of gas issuing from the heaters except when the holes register with the latter, pipes for conveying an admixture of gas and air to the heaters, and a pilot-burner for maintaining a flame in such manner as to ignite the remaining flames when the holes register therewith, as specified.

4. In combination with a turn-table of the machine of the character described, said turn-table having holes formed in the outer portion thereof, of brazing-irons secured to the turn-table immediately beneath said holes, said irons being adapted to receive the caps when forced upward for imparting the proper amount of heat thereto for brazing the caps to the collars, as specified.

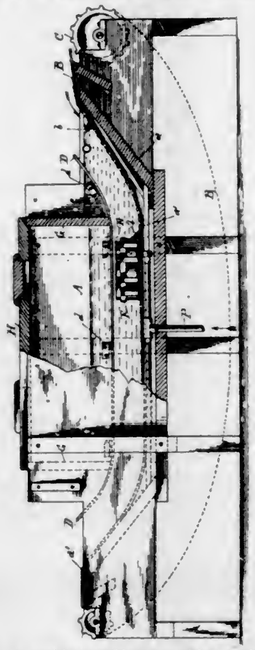
654,711. HORSESHOE. CHARLES CARMAN, Madison, Wis. Filed Jan. 8, 1900. Serial No. 677. (No model.)

Claim.—The combination of a three-quarter horseshoe, with a transverse bar connecting the ends thereof, a longitudinal brace connecting the toe of said three-quarter shoe with said transverse bar and a frog-support extending backward from said transverse bar, all joined as one piece, substantially as described.

654,711.



654,712. DOMESTIC BOILER. ANTONIO CERRUTI, San Francisco, Cal. Filed Apr. 16, 1900. Serial No. 13,060. (No model.)



Claim.—1. A cooking-machine comprising a suitable trough, a traveling carrier, mounted and adapted to travel through the water in said trough, and to receive and convey the can-laden trays therethrough, and a cover or box device above said trough and extending down below the water-level therein, whereby a chamber or trap is formed above the water, for confining the steam.

2. A cooking-machine comprising a suitable trough, a traveling carrier, mounted and adapted to travel through the water in said trough, and to receive and convey the can-laden trays therethrough, cross-partitions above the trough and extending down therein below the water-level, but terminating short of its bottom, and a lid on said partitions, whereby a steam space or trap is formed in the trough, above the water.

3. A cooking-machine comprising a trough, having upturned sloping ends, a traveling carrier adapted to pass down and up said ends and along the trough-bottom, and to receive and convey the can-laden trays through said trough, a cover or box device short of said sloping ends, leaving them free and exposed, to receive and to discharge the trays, said cover or box device extending down below the water-level in the trough, whereby a chamber or trap is formed above the water, for the steam.

4. A cooking-machine comprising a trough, having upturned sloping ends, a traveling carrier adapted to pass down and up said ends and along the trough-bottom, and to receive and convey the can-laden

trays through said trough, cross-partitions in the trough, separated far enough from the sloping ends, to leave the latter free and exposed, to receive and discharge the trays, said partitions extending down into the trough below the water-level therein, but terminating short of its bottom, and a lid on said partitions, whereby a steam space or trap is formed in the trough above the water.

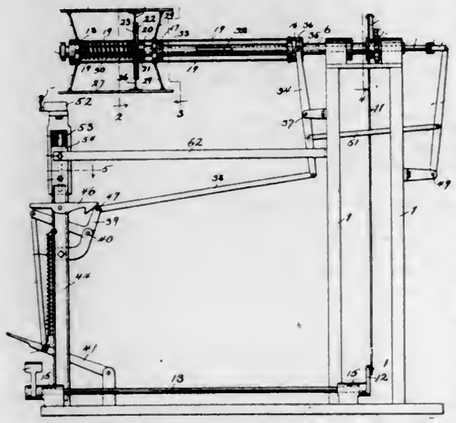
5. A cooking-machine, comprising a trough, fixed guide-plates therein, above its bottom, and a traveling carrier mounted and adapted to travel through the water in said trough, below the fixed guide-plates and to receive and convey the can-laden trays through the trough, with the tops of said cans below the fixed guide-plates, whereby they are held down in their trays.

6. A cooking-machine, comprising a trough, fixed guide-plates therein, above its bottom, and a traveling carrier mounted and adapted to travel through the water in said trough, below the fixed guide-plates and to receive and convey the can-laden trays through the trough, with the tops of said cans below the fixed guide-plates whereby they are held down in their trays, and a cover or box device extending down below the water-level in the trough, to form a steam space or trap above the water, said cover device consisting of cross-partitions extending down to below the level of the water in the trough, and a lid upon said partitions.

7. A cooking-machine comprising a trough, having upturned sloping ends, a traveling carrier adapted to pass down and up said ends and along the trough-bottom, and to receive and convey the can-laden trays through the trough, fixed separated guide-plates within the trough and located high enough above its bottom and ends to allow the cans to pass under them, said plates being adapted to hold said cans down in their trays while passing through the water, cross-partitions in the trough, separated far enough from the sloping ends, to leave the latter free and exposed, to receive and discharge the trays, said partitions extending down into the trough below the water-level therein, but terminating short of its bottom, and a lid on said partitions, whereby a steam space or trap is formed in the trough above the water.

8. A cooking-machine comprising a trough having sloping ends, wearing-rails upon each side of the bottom of both trough and ends, a traveling carrier passing over and upon said rails, and adapted to receive and convey the can-laden trays through the trough, fixed separated guide-plates within the trough and located high enough above its bottom and ends to allow the cans to pass under them, said plates being adapted to hold said cans down in their trays while passing through the water, cross-partitions in the trough, separated far enough from the sloping ends, to leave the latter free and exposed, to receive and discharge the trays, said partitions extending down into the trough below the water-level therein, but terminating short of its bottom, and a lid on said partitions, whereby a steam space or trap is formed in the trough above the water.

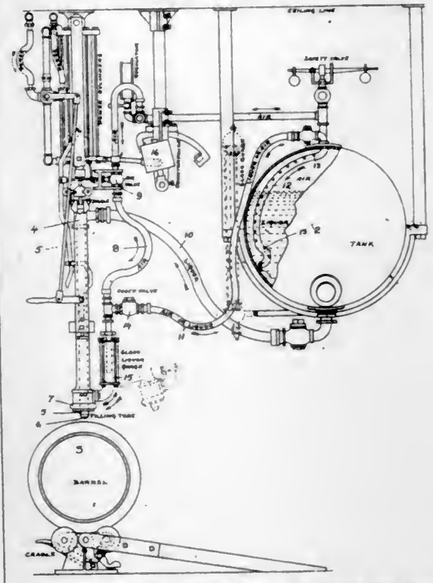
654,713. LINING-HOOP-ATTACHING MACHINE. OLIVER COLBORNE, Chicago, Ill., assignor to the Tomlinson Veneer Barrel Company, Indianapolis, Ind. Filed Apr. 30, 1900. Serial No. 14,890. (No model.)



Claim.—1. In a machine for attaching lining-hoops to veneer packages, the combination of a supporting-frame, a shaft supported at one end on said frame, and having its other end free therefrom, a collapsible drum mounted on said shaft for supporting the veneer package, means for collapsing and expanding said drum, means for rotating said drum, and an anvil for abutting the outer surface of the package and adjustable toward and from said surface, substantially as described.

2. The combination of a supporting-frame, a hollow shaft journaled at one end in said frame and having its other end free therefrom, a pair of sleeves slidingly mounted on said shaft and keyed against relative rotation, a guide rigidly mounted on said shaft for slidingly engaging radial arms, a drum consisting of a series of drum-segments each having an arm slidingly engaged by said guide and each having arms pivoted to said sleeves, a third sleeve slidingly mounted on said shaft and connected to one of said pair of sleeves, an inner shaft longitudinally movable in said hollow shaft and connected to the other of said pair of sleeves, an anvil adjustable toward and from the periphery of the drum at its free end, a foot-lever located under the free end of the drum, means connecting said foot-lever with the third sleeve and inner shaft and adapted through the movement of said foot-lever to simultaneously move said third sleeve and inner shaft in opposite directions for expanding or collapsing the drum, and means for rotating said shafts, substantially as described.

654,714. ART OF RACKING BEER. HARRY W. COLBY, Chicago, Ill., assignor to the Automatic Racking Machine Company, same place. Original application filed Mar. 15, 1899. Serial No. 709,225. Divided and this application filed Jan. 15, 1900. Serial No. 1,412. (No model.)

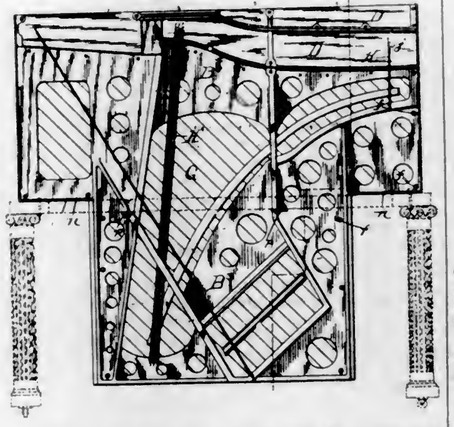


Claim.—1. The improvement in the art of racking beer or other liquids under pressure from a closed tank into a barrel or package through its bung-opening at the upper portion thereof, consisting in first sealing the barrel or package around its bung-opening and forming an air communication between said barrel or package and said closed tank through the sealed bung-opening of said barrel or package, then establishing an equilibrium of pressure between said tank and barrel or package by permitting air or gas to flow from the upper portion of the closed tank into the sealed barrel or package through its sealed bung-opening, and then causing the liquid to flow by gravity from the tank above and be discharged into the lower part of the barrel below through a connecting-pipe and a filling-tube extending through said sealed bung-opening to the lower part of the barrel or package, and maintaining the equilibrium of pressure in the tank and barrel or package while the liquid flows by gravity from the tank into the barrel by causing the air or gas displaced from the barrel by the entering liquid to flow back into the closed tank, substantially as specified.

2. The improvement in the art of racking beer or other liquids under pressure from a closed tank into a barrel or package, consisting in first sealing the barrel or package and forming an air communication between said barrel or package and said closed tank, then establishing an equilibrium of pressure between said tank and barrel or package by permitting air or gas to flow from the upper portion of the closed tank into the sealed barrel or package, and then causing the liquid to flow by gravity from the tank above into the barrel below through a connecting filling-tube and pipe, and maintaining the equilibrium of the pressure in the tank and barrel or package while the liquid flows by gravity from the tank into the barrel by causing the air or gas displaced from the barrel by the entering liquid to flow back into the closed tank through a connecting air-outlet pipe leading into the upper portion of the tank, the liquid standing in the air-outlet pipe at the beginning of the liquid flow into the barrel being caused to enter the tank above the level of the liquid therein by the force of the descending column of the liquid entering the barrel by the filling-tube, substantially as specified.

3. The improvement in the art of racking beer or other liquids under pressure from a closed tank into a barrel or package, consisting in first sealing the barrel or package and forming an air communication between said barrel or package and said closed tank, then establishing an equilibrium of pressure between said tank and barrel or package by permitting air or gas to flow from the upper portion of the closed tank into the sealed barrel or package, and then causing the liquid to flow by gravity from the tank above into the barrel below through a connecting filling-tube and pipe, and maintaining the equilibrium of the pressure in the tank and barrel or package while the liquid flows by gravity from the tank into the barrel by causing the air or gas displaced from the barrel by the entering liquid to flow back into the closed tank through a connecting air-outlet pipe leading into the upper portion of the tank, the liquid standing in the air-outlet pipe at the beginning of the liquid flow into the barrel being caused to enter the tank above the level of the liquid therein by the force of the descending column of the liquid entering the barrel by the filling-tube and separating the air, which enters with the liquid that is thus returned into the tank, from said liquid at the upper portion of the tank and before said liquid enters the mass of liquid in the tank, substantially as specified.

654,715. PIANO. JAMES F. CONOVER, Chicago, Ill. Filed Sept. 28, 1898. Serial No. 692,077. (No model.)



Claim.—1. In a piano a duplex or double-string frame, comprising a back plate having a main or body portion and an extension therefrom, a front plate also having a main or body portion and extension therefrom, a sounding-board between said plates, means for securing said plates together and a marginal web on one of said plates projecting angularly therefrom to meet the opposite plate and form a marginal casing to the sounding-board.

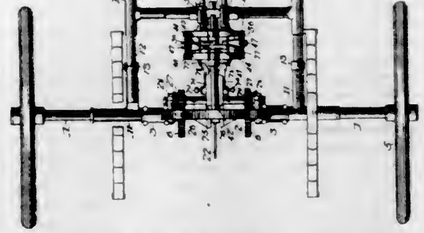
2. In a piano construction, a duplex frame having a main or body portion and an extension therefrom, the body portion projecting on either side of the extension to form shoulders, a key-bed secured to said shoulders and cut away to admit the extension and supporting-legs secured to the key-bed to support the frame and other parts of the piano from the floor independently of the case.

3. In a piano construction, a string-frame comprising a front plate and a back plate, which said plates are counterparts in marginal outline and each consisting of a body portion and an extension therefrom, shoulders formed on either side of the plate, a sounding-board and tuning-pin block held between said plates, which latter are bolted together, a key-bed secured to the shoulders and supporting-legs secured to the key-bed to support the parts from the floor independently of the case.

4. In a piano, a duplex or double-string frame comprising a front plate and a back plate each having a main or body portion and an extension therefrom forming shoulders, means for securing said plates together and a marginal web on one of the plates projecting angularly therefrom to meet the opposite plate and form a marginal casing to the sounding-board.

5. In a piano, a string plate or frame comprising in construction a main or body portion and an extension therefrom, the body portion projecting on either side of the extension to form shoulders, a key-bed secured under said shoulders and cut away to admit the extension and supporting-legs secured to the key-bed whereby the frame and all the parts of the piano are supported from the floor independently of the case.

654,716. MOTOR-VEHICLE. EDWARD P. COWLES, Warren, Ohio. Filed Aug. 25, 1899. Serial No. 728,502. (No model.)



Claim.—1. In an automobile vehicle, the combination with the driving-wheels, of a rotatable disk, a friction-roller arranged to engage with said disk, and means for adjusting the plane of rotation of said roller angularly whereby it is made to automatically traverse the disk between center and circumference.

2. In a device for changing speed, a rotatable wheel or disk, a friction-roller arranged to engage said wheel or disk, and means for adjusting the plane of rotation of said friction-roller angularly to cause said roller to traverse the said wheel or disk either toward or from its center.

3. In a device for changing speed, the combination with a rotatable wheel or disk, of a friction-roller adapted to engage said wheel or disk, a support in which said roller is pivotally mounted with freedom to turn about a line at right angles to its axis, said support and roller being bodily movable toward and away from the center of the disk, and means for turning said roller about said line at right angles to its axis, for the purpose set forth.

4. In a device for changing speed, the combination with a rotatable disk, of a pair of friction-rollers arranged on opposite sides of said disk and adapted to engage the same, said rollers being free to turn about a line at right angles with the disk whereby they may be caused to traverse the disk between its center and circumference automatically, for the purpose set forth.

5. In a device for changing speed, the combination with a rotatable disk, of a yoke having arms on opposite sides of said disk, friction-rollers carried by said arms and adapted to engage with opposite faces of said disk, said rollers being free to turn and also arranged to swing about an axis at right angles to the disk, and means for turning them simultaneously about said axis whereby they are caused to traverse the disk between its center and circumference.

6. In a device for changing speed, the combination with a rotatable disk, of friction-rollers arranged on opposite sides of said disk, blocks having studs 33 upon which said rollers are mounted, supports to which said blocks are pivoted to move axially about a line at right

angles to said disk, arms connected with the blocks, and means for turning said arms to cause the rollers to traverse the disk automatically between its center and circumference.

7. The combination with a rotatable wheel or disk, of a yoke-piece having arms on opposite sides of said disk, levers pivoted on the arms of said yoke, and friction-wheels mounted on said levers and adapted to engage the disk between them.

8. The combination with a rotatable wheel or disk, of a yoke-piece having arms on opposite sides of said disk, levers pivoted on the arms of said yoke, and friction-wheels mounted on said levers and adapted to engage the disk, said yoke being arranged to slide on a support which is parallel with the plane of the disk to carry said friction-rollers toward and away from the center of the disk, for the purpose set forth.

9. The combination with a rotatable wheel or disk, of a yoke-piece having arms on opposite sides of said disk, levers pivoted to said arms, friction-rollers carried by said levers, and eccentrics or equivalent devices pivotally supported on said yoke-piece and connected with said levers for the purpose of moving the rollers into and out of engagement with the disk.

10. The combination with a rotatable wheel or disk, of a yoke-piece having arms on opposite sides of said disk, levers pivoted to said arms, extension-pieces adjustably connected to said levers, friction-rollers carried by said extension-pieces and adapted to engage the disk, and means for simultaneously rocking the levers to move the rollers into and out of engagement with the disk.

11. The reversing device comprising a motor-shaft provided with a clutch member, a pair of shafts to be driven thereby, and each provided with a clutch member, and means for engaging the motor-shaft clutch member with either of the driven-shaft clutch members.

12. A reversing device comprising a movable block, a pair of shafts having bearings in said block, intermeshing gears on said shafts whereby they are made to rotate in opposite directions, clutch members on said shafts, a motor-shaft having a clutch member, and means for shifting said block and shafts to engage either of their clutch members at will with the motor-shaft whereby said driven shafts may be driven in either direction as desired.

13. A reversing device comprising a motor-shaft having a clutch member, a pair of shafts to be driven thereby each provided with a clutch member, intermeshing gears on said shafts, a common support or block in which said shafts are mounted, and cams governing the movements of said support or block whereby the clutch member of either driven shaft may be locked in engagement with the motor-shaft clutch member, for the purpose set forth.

14. The combination with a disk to be driven, of friction-rollers arranged on opposite sides of said disk and movable radially of the disk to vary its speed, extensible shafts for driving said friction-rollers, intermeshing gears on said shafts, clutch members on said shafts, a motor-shaft having a cooperating clutch member, and means for engaging either of the roller-shaft clutch members with the motor-shaft clutch member.

15. The combination with a disk to be driven, of friction-rollers on opposite sides of the disk and movable radially thereto to vary its speed, extensible driving-shafts for said friction-rollers, intermeshing gears on said driving-shafts, flexible joints connecting said shafts with said rollers and gears, a motor-shaft having a clutch member, corresponding clutch members on said gears, and means for shifting the gears to engage either of them at will with the motor-shaft clutch member, for the purpose set forth.

16. In a motor-vehicle, the combination with a driven disk, of a pair of friction-wheels arranged on opposite sides of said disk for driving the same, a pair of brake-shoes on opposite sides of said disk, and a common means for engaging the friction-rollers and the brake-shoes alternately with the disk to operate and stop the same.

17. In a motor-vehicle, the combination with a disk, friction-rollers arranged on opposite sides of said disk, levers upon which said friction-rollers are mounted, and means for rocking the levers to engage and disengage the friction-rollers and disk, of movable brake-shoes arranged on opposite sides of the disk, and connections between said levers and brake-shoes whereby the movement of the levers to disengage the rollers effects the application of the brake-shoes to the disk.

18. In a motor-vehicle, the combination of a disk, friction-rollers on opposite sides of said disk, means for moving said rollers radially of the disk to vary its speed, levers for clamping and releasing said friction-rollers, brake-shoes movably mounted on opposite sides of the disk, and connections between said levers and said brake-shoes whereby the latter are applied when the levers are moved to disengage the friction-rollers from the disk, the braking power being the same in any adjustment of the levers and friction-rollers with respect to the center of the disk.

19. In a motor-vehicle, the combination with a motor, driving-wheels, and mechanisms for applying brakes, varying speed, and connecting and disconnecting the motor, of a single operating-lever connected to said mechanisms, and means whereby the rearward movement of said lever brings the speed to a minimum, then disconnects the motor and finally applies the brakes, and the reverse or forward movement of said lever successively releases the brakes, connects the motor to the driving-wheels at reduced speed, and finally increases the speed to a maximum, substantially as set forth.

20. In a motor-vehicle, the combination with the driving-wheels and a motor, of reversing mechanism between said driving-wheels and motor, a lever for operating said reversing mechanism, means for connecting and disconnecting the motor with the driving-wheels, a lever for operating said means, and means for interlocking the reversing and disconnecting mechanisms whereby the motor must be disconnected before the direction of rotation of the driving-wheels can be reversed.

21. In a device for changing speed, the combination with a driven disk, of a pair of friction-rollers arranged on opposite sides of said disk and adapted to engage and drive the same, blocks upon which said rollers are mounted, said blocks and rollers being adjustable about an axis at right angles to the plane of the disk, arms 37 extending from said blocks in a direction contrary to the direction of movement of the contiguous part of the disk, and means for adjusting said arms to cause the friction-wheels to travel radially across the disk.

22. In a device for changing speed, the combination of the driven disk, the friction-roller for driving the same, a pivotally-mounted block carrying said roller, the arm for adjusting said block about an axis at right angles to the disk, and the stop 73 for limiting the outward movement of said arm.

23. The combination with the driven disk, of a friction-roller for driving the same, a block in which said friction-roller is mounted with freedom for adjustment about an axis at right angles to the plane of the disk, the driving-shaft for said friction-roller, and the joint between said driving-shaft and friction-roller comprising the hollow sleeve on one of said parts provided with longitudinal slots, and the radial pins on the other part cooperating with said slots.

24. In a motor-vehicle, the combination with the driving-wheels, a disk for driving the same, a motor for driving said disk, and brake-shoes cooperating with said disk, of means for alternately applying the motor and the brake-shoes to said disk, and a steering-lever connected to and operating said means and also connected to the steering-wheels, substantially as described.

25. In a motor-vehicle, the combination with a shaft, such as 45, for controlling the motor and the brake, of a steering-lever, and connections between said lever and said shaft for turning the latter as the former is moved forward or backward.

26. In a motor-vehicle, the combination with a shaft, such as 45, for operating the brakes and connecting and disconnecting the motor, of a lever for operating said shaft, and connections comprising a sliding rod 86, forked arm 91, cam-piece on said rod for operating said arm, and bevel-gears 92, 93 connecting said arm and said shaft, for the purpose set forth.

27. In a reversing-gear for motor-vehicles, the combination with a driven disk, and friction-wheels adjustable radially to said disk to change its speed, of devices for reversing the direction of said friction-wheels, a lever for operating said devices, and connections between the speed changing and reversing devices whereby the reversal can be only brought about when the friction-wheels are brought to the periphery of the driving-disk.

28. In a motor-vehicle, the combination with a motor adapted to run in one direction only, of reversing devices, speed-changing devices, motor-disconnecting devices, and operating mechanism for all of said devices so interlocked that the speed must necessarily be reduced to a minimum and the motor then disconnected before the reversing device proper can operate to change the direction of movement of the vehicle.

29. In a motor-vehicle, the combination with means for varying the speed, and means for applying a brake, of a motor, and connections for operating said means, the speed varying and braking means being so interlocked that the speed must be reduced to a minimum before the brake can be applied.

30. In a motor-vehicle, the combination of speed-changing means, a forked lever 89 for operating the same, braking means, and a forked lever 91 for operating the same, with a cam-block having projections to engage said forked levers and operate them alternately.

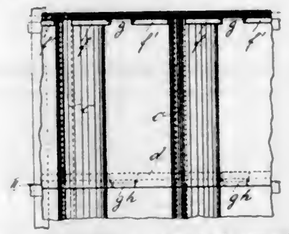
31. In a motor-vehicle, the combination with forked levers such as 89 and 91, the prongs of said forks being offset, of a cam-block having projections to operate on one prong of each fork, and elongated surfaces to cooperate with the other prong of each fork, whereby the forked levers are operated during a portion of the movement of the cam-block, said levers being arranged to operate alternately.

32. In a motor-vehicle, the combination of speed-changing and motor-disconnecting devices, and a lever for operating the same, of reversing devices, an independent lever for operating the reversing devices, and means for connecting the reversing-lever also with the speed-changing and brake-applying devices.

33. In a motor-vehicle, the combination with speed-changing devices, a brake device, and a motor-disconnecting device, of reversing devices, interlocking connections between all of said devices, and a single hand-lever adapted and arranged to operate all of said devices.

34. In a motor-vehicle, the combination with the reversing-clutch, of a rock-shaft for operating the same, the arm on said shaft having an offset fork, the offset rod adapted to operate alternately on the prongs of said fork, and the lever connected to said rod.

654,717. ROOFING. NICOLAS DAUBACH, Hermsdorf-Unterm-Kynast, Germany. Filed Sept. 15, 1899. Serial No. 730,647. (No model.)



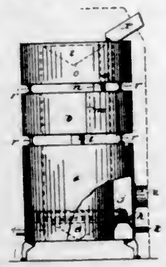
Claim.—1. In a roof the combination of consecutive series of overlapping tiles, each tile overlapping its neighbor on one side and each series overlapping that next below it, the said tiles having each a recess at its upper overlapping corner, mortar joints between each tile and its neighbor, and mortar joints between each series and the next, the two series of said mortar joints being integrally joined throughout the roof by means of the aforesaid recesses.

2. In a roof the combination of consecutive series of overlapping tiles, each tile overlapping its neighbor on one side and each series overlapping that next below it, the said tiles having each a recess at its upper overlapping corner, mortar joints between each tile and its neighbor, and mortar joints between each series and the next, the two series of said mortar joints being integrally joined throughout the roof by means of the aforesaid recesses, and continuous metal strips in the horizontal mortar joints.

3. In a roof the combination of consecutive series of overlapping tiles, each tile overlapping its neighbor, on one side and each series overlapping that next below it the said tiles having each a recess at its upper overlapping corner and having non-continuous ribs on their upper surfaces near their upper edges and counterpart non-continuous ribs on their lower surfaces at their lower edges adapted each to interpose with the corresponding non-continuous ribs of the tiles above and below them, mortar joints between each tile and its neighbor and mortar joints between each series and the next, the two series of said mortar joints being integrally joined throughout the roof by means of the aforesaid recesses.

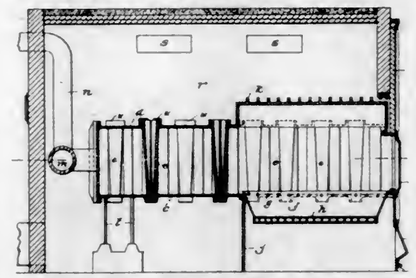
4. A tile having on one edge a cut-out portion *b* and on its surface near the upper border, running parallel therewith, a non-continuous rib *f f''* forming a dovetailed hollow interval *g* and on the under side ending on the lower border, a dovetailed projection *h* adapted to catch into the interval *g* of the tile lying thereunder to form a continuous rib.

654,718. GAS HEATING-FURNACE. DAVID A. ERINGER, Columbus, Ohio, assignor to the Vogelgesang Furnace Company, same place. Filed Apr. 6, 1899. Serial No. 711,969. (No model.)



Claim.—In a gas heating-furnace, the combination of an outer casing, a series of annular drums mounted one above the other and having communication with each other, diaphragms arranged in said drums so as to form a continuous passage for the products of combustion around in the drums and through their connections with each other, a burner located near the bottom and in the lower annular drum, air-inlets communicating with said lower drum and the outside, a perforated plate located below the burner, and cold-air deflectors located at the bottom and top of the furnace in the center of the annular drums to allow the cold air to be properly supplied and held in the center of the drums to be heated.

654,719. HEATING-FURNACE. DAVID A. ESLINGER, Columbus, Ohio, assignor to the Vogelgesang Furnace Company, same place. Filed Apr. 6, 1899. Serial No. 711,970. (No model.)



Claim.—1. In a furnace, the combination of an outer casing, a heating structure located therein, and two series of vertically-disposed air-tubes passing through said structure, one series of said tubes located adjacent to the fire-box and the other remote therefrom, all of said tubes being provided with webs and those remote from the fire-box being provided with baffle-plates in addition to the webs.

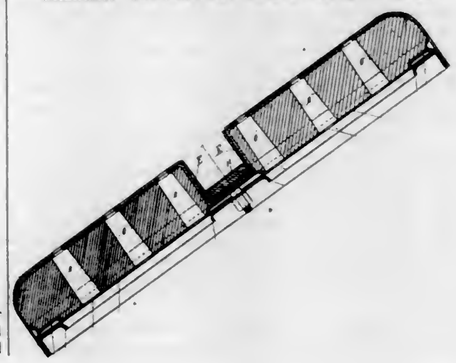
2. A furnace, comprising an outer casing, a fire-box, top and bottom plates located above the fire-box, and two series of vertically-disposed air-tubes passing through said plates, one series of said tubes located adjacent to the fire-box and the other remote therefrom, all of said tubes being provided with webs and those remote from the fire-box being provided with baffle-plates also.

3. A furnace, consisting of an outer casing, the furnace proper arranged therein and comprising, the top and bottom plates provided with openings, a fire-box having communication with said plates, and two series of vertically-disposed air-tubes passing through said plates, one series of said tubes located adjacent to the fire-box and the other remote therefrom, all of said tubes being provided with webs and those remote from the fire-box provided with baffle-plates also.

4. A furnace, consisting of the top and bottom plates provided with openings, a fire-box having communication with said plates, and two series of vertically-disposed air-tubes passing through said plates, one series of said tubes located adjacent to the fire-box and the other remote therefrom, all of said tubes being provided with webs and those remote from the fire-box provided with baffle-plates also.

5. A furnace, comprising the two flat plates provided with openings, and two series of vertically-disposed air-tubes passing through said plates, one series of said tubes located adjacent to the fire-box and the other remote therefrom, all of said tubes being provided with webs and those remote from the fire-box provided with baffle-plates also.

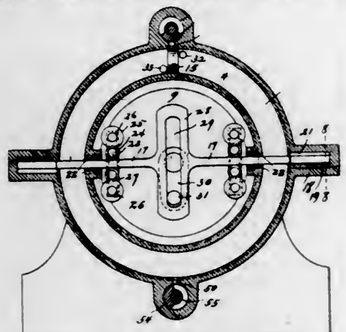
654,720. BICYCLE-SADDLE. LOUIS G. M. ENGELBERT, The Hague, Netherlands. Filed Dec. 3, 1898. Serial No. 698,176. (No model.)



Claim.—1. A bicycle saddle or seat, comprising a metal foundation-plate having openings A', A^2, on each side of the center of said plate, two perforated celluloid plates on said foundation-plate, a second metal plate for fastening and holding said celluloid plates, two perforated rubber cushions arranged on said celluloid plates, a cover and a layer of non-conducting materials interposed between the rubber pads and the said cover substantially as set forth.

2. In a bicycle saddle or seat, the combination with two rubber cushions provided with air-passages, and a non-conducting asbestos leaf laid upon said rubber cushions, of an air-circulation space between said cushions, and a cover for the said asbestos leaf, substantially as set forth.

654,721. FLUID-PRESSURE MOTOR. FREDERICK W. FLINT, Chicago, Ill. Filed Sept. 28, 1899. Serial No. 731,959. (No model.)



Claim.—1. In a motor of the character described, the combination, with a casing having an annular chamber and a reciprocating abutment, of a main shaft, a disk thereon in the casing having a vane to fit and travel in the annular chamber, said disk being provided with a port or passage opening into the annular chamber adjacent to the vane and with a circular groove and segment of a groove with which the other end of said port or passage communicates, and said casing being provided with apertures registering respectively with the groove and with the segmental groove, and means for admitting the motor fluid through either of said apertures, substantially as described.

2. In a motor of the character described, the combination, with a casing having an annular chamber and a reciprocating abutment, of a main shaft, a disk thereon having a vane to fit and travel in the annular chamber, said disk being provided with two inlet ports or passages opening into the annular chamber on opposite sides of the vane and with concentric circular grooves and segmental grooves, with two of each of which the opposite ends of said ports or passages respectively connect, the casing having a series of apertures each connected with one of said grooves or segmental grooves, and a valve having an opening which may be caused to register with any one of said apertures in the casing, substantially as described.

3. A fluid-pressure motor, comprising a suitable casing having a laterally-arranged annular chamber, a main shaft, a disk thereon having a laterally-extending vane which fits and travels within the annular chamber, and a reciprocating abutment extending across the face of the disk and intersecting the annular chamber at diametrically-opposite points, substantially as described.

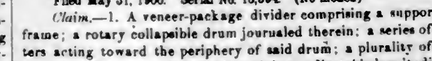
4. A fluid-pressure motor, comprising a suitable casing having a laterally-arranged annular chamber, a main shaft, a disk thereon having a laterally-extending vane which fits and travels within the annular chamber, said casing being centrally recessed, and a reciprocating abutment extending across said recess intersecting the annular chamber at diametrically-opposite points and having its actuating mechanism located within the recess of the casing, substantially as described.

5. A fluid-pressure motor, comprising a suitable casing having a laterally-arranged annular chamber and a centrally-recessed or inwardly-extending portion, a main shaft, a disk thereon having a central recess to receive the inwardly-extending portion of the casing and a laterally-extending annular portion provided with a laterally-extending vane which fits and travels within the annular chamber, packing-rings located at the outer margins of said annular portion of the disk, and a reciprocating abutment intersecting the annular portion at diametrically-opposite points and having its actuating mechanism located within the recess of the casing, substantially as described.

6. A fluid-pressure motor, comprising a centrally-recessed casing having a laterally-arranged annular chamber, a main shaft extending from said casing into said chamber and provided with a crank arm and pin therein, a disk secured on the main shaft within the casing and having a laterally-extending vane which fits and travels within the annular chamber, and a reciprocating abutment intersecting the annular chamber at diametrically-opposite points and provided within the recess of the casing with a slotted cross-head with which the crank-pin of the main shaft engages, substantially as described.

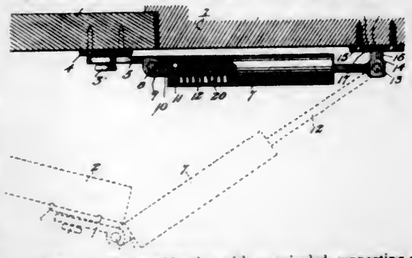
7. In a motor of the character described, the combination, with a casing having an annular chamber and a reciprocating abutment constantly exposed to the pressure of the motor fluid within the chamber, of rollers on the casing between which said abutment passes and bears, and other rollers carried by the casing and forming bearings for the first-mentioned rollers, substantially as described.

654,722. HOLDER FOR PENCIL LEADS, CRAYONS, LEADS, &c. WILLIAM H. FRANCIS, Swansea, England. Filed Feb. 27, 1899. Serial No. 707,023. (No model.)



Claim.—In a pencil, the combination with the lead, of two rigid half-strips separable throughout their entire length to receive the lead, each strip having one end chamfered inwardly, the two strips being confined by detachable clamps at the upper and at the lower ends.

654,723. DOOR-CHECK. PETER A. FRANKS, Galion, Ohio, assignor of two-thirds to Horrace H. Lininger and Frank A. Smith, same place. Filed Mar. 22, 1900. Serial No. 9,723. (No model.)



Claim.—1. The combination with a swiveled supporting member, of an extensible door-check pivotally connected at one end to said member, and locking means carried at the opposite end of the check.

2. The combination with a swiveled supporting member, of an extensible door-check pivotally connected at one end thereto, and a slotted locking-plate pivoted at the opposite end of the door-check.

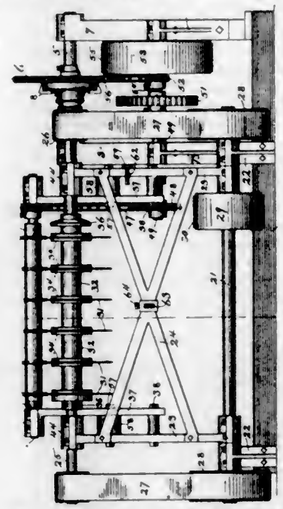
3. The combination with a fixed member, as for instance, a door-casing, of a movable member, as for instance, a door, a swiveled stud extending from said fixed member, a headed locking-stud extending from the movable member, an inflexible extensible door-check pivotally connected at one end to the swiveled stud, and a slotted locking-plate pivotally connected at the opposite end of said check and designed for engagement with the locking-stud.

4. The combination with an apertured stud-plate, of a swiveled stud carried thereby, a plunger-rod pivoted to said stud by a pintle extending transversely therethrough, a plunger on the plunger-rod, a cylindrical casing inclosing the plunger, a spring encircling the plunger-rod within the casing and bearing at its opposite ends against the end of the casing and the plunger, a locking-plate pivotally carried at the free end of the cylindrical casing and provided with a key-slot, and a headed locking-stud designed to be engaged by the locking-plate.

654,724. VENEER-PACKAGE DIVIDER. GEORGE A. GAGE, Chicago, Ill., assignor to the International Package Machine Company. Filed May 31, 1900. Serial No. 18,594. (No model.)

Claim.—1. A veneer-package divider comprising a supporting-frame; a rotary collapsible drum journaled therein; a series of cutters acting toward the periphery of said drum; a plurality of segmental sections secured upon said periphery adjustable longitudinally of the drum and projecting inward of the edges of said cutters; and means for operating said drum and cutters; substantially as described.

2. A veneer-package divider comprising a supporting-frame; a rotary collapsible drum journaled therein; a series of cutters acting toward the periphery of said drum; a plurality of segmental sections secured upon said periphery, adjustable longitudinally of the drum and projecting inward of the edges of said cutters; and means for operating said drum and cutters; said drum having extending longitudinal of same, and said segmental sections having projections seated in said grooves; substantially as described.



3. A veneer-package divider comprising a supporting-frame; a rotary collapsible drum journaled therein; a series of cutters acting toward the periphery of said drum; a plurality of segmental sections secured upon said periphery, adjustable longitudinally of the drum and projecting inward of the edges of said cutters; and means for operating said drum and cutters; said drum having extending longitudinal of same, grooves enlarged toward the inner part, and said segmental sections each having a bolt engaging with a nut seated in one of said grooves; substantially as described.

4. A veneer-package divider comprising a supporting-frame; a rotary collapsible drum journaled therein; a swinging frame having a series of rotary saws carried thereby to and from the periphery of said drum and adjustable opposite different parts of said periphery; a plurality of segmental sections secured upon said periphery, adjustable longitudinally of the drum and projecting inward of the edges of said saws; and means for operating said drum and saws; substantially as described.

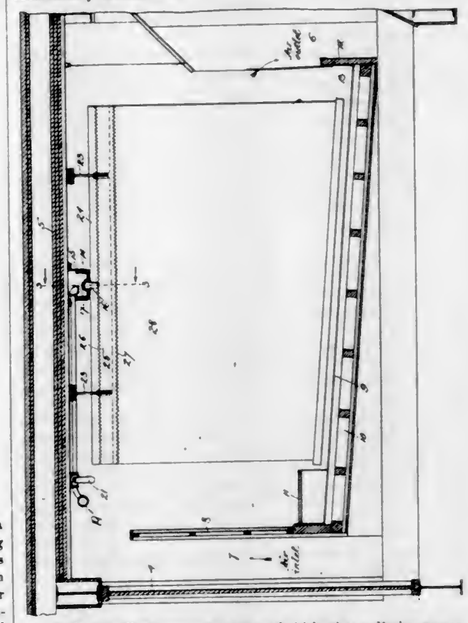
5. A veneer-package divider comprising a supporting-frame; a rotary collapsible drum journaled therein; a swinging frame having a shaft journaled therein and a series of rotary saws carried thereby to and from the periphery of said drum and adjustable opposite different parts of said periphery; a series of removable sleeves mounted on said shaft for separating the saws; a plurality of segmental sections secured upon said periphery, adjustable longitudinally of the drum and projecting inward of the edges of said saws; and means for operating said drum and saws; substantially as described.

6. A veneer-package divider comprising a supporting-frame; a rotary collapsible drum journaled therein; a swinging frame having a series of rotary saws carried thereby to and from the periphery of said drum and adjustable opposite different parts of said periphery; an auxiliary frame adjustable on said swinging frame and carrying a series of mills or metal-saws adjustable opposite said other saws; a plurality of segmental sections secured upon said periphery, adjustable longitudinally of the drum and projecting inward of the edges of said saws and mills; and means for operating said drum, and said saws and mills; substantially as described.

654,725. AIR-COOLING APPARATUS. HORACE C. GARDNER, Chicago, Ill., assignor to himself and Gustavus F. Swift, same place. Filed Apr. 21, 1898. Serial No. 678,320. (No model.)

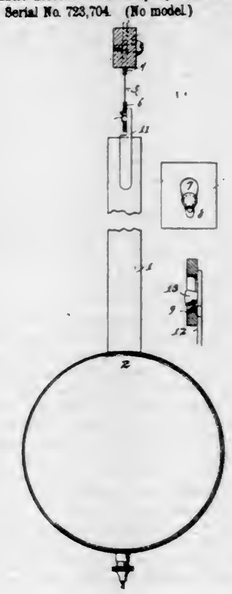
Claim.—1. In a cooling apparatus, a V-shaped trough having one side higher than the other, said other side comprising a vertically-disposed plate having an upper serrated edge, and a lower portion extending below the apex of the trough and having its edge serrated, a sheet arranged along and depending below said plate, and means for admitting a cooling liquid to said trough, substantially as described.

2. In a cooling apparatus, a V-shaped trough having one side higher than the other, said other side comprising a vertically-disposed plate having an upper serrated edge, and a lower portion extending below the apex of the trough and having its edge serrated, a sheet secured along the lower edge portion of said plate and depending therefrom, and means for admitting a cooling liquid to said trough, substantially as described.



3. In a cooling apparatus, a trough 14 having a discharge-nozzle, said discharge having an upper serrated edge projecting upward in said trough, a trough 22 arranged to receive the discharge from said nozzle, and having one of its sides provided with an upper and lower serrated edge, a sheet secured along the lower edge portion of said side and depending therefrom, and means for admitting a cooling liquid to the trough 14, substantially as described.

654,726. PENDULUM. FRED I. GETTY, Chicago, Ill., assignor to the Automatic Electric Clock Company, Kansas City, Mo. Filed July 13, 1899. Serial No. 723,704. (No model.)



Claim.—1. In a pendulum, a rod and a suspension-plate having plane meeting surfaces, one of said parts being provided with an opening and the other with a pin to engage the same, and one of said engaging devices being beveled, whereby the plane meeting surfaces of the rod and plate are held in firm bearing contact, substantially as described.

2. In a pendulum, a rod and a suspension-plate having plane meeting surfaces, said plate being provided with an opening having a beveled margin, and said rod being provided with a pin to engage the same, whereby the plane meeting surfaces of the rod and plate are held in firm bearing contact, substantially as described.

3. In a pendulum, the combination, with a suspension-plate having an opening therein the lower margin whereof is beveled or inclined, of a rod provided with a pin correspondingly beveled on its under side, said plate and rod having plane meeting surfaces which are held in firm bearing contact by the bevel or inclination of their engaging parts and the weight of the pendulum, substantially as described.

4. In a pendulum, the combination, with a suspension-plate having a plane contact-surface and an opening therein of comparatively-large diameter at its upper portion, its lower portion being V-shaped or of downwardly-decreasing diameter and marginally beveled, of a rod having a plane contact-surface to bear against that of the plate and provided with a tapered pin adapted to be inserted through the enlarged upper part of the opening in the plate and to fit the beveled margins of the V-shaped lower portion of said opening, substantially as described.

5. In a pendulum, the combination, with a suspension-plate having a plane contact-surface and an opening of comparatively-large diameter at its upper end and of downwardly-decreasing diameter or V-shaped below, the margin of said V-shaped portion being beveled and said bevel terminating short of the opposite wall of the plate to form a clearance, of a rod having a plane contact-surface to bear against that of the plate and provided with a tapered pin adapted to be inserted in the enlarged upper portion of the opening in the plate and to fit the beveled margin of the V-shaped lower portion, substantially as described.

654,727. GARMENT-SUPPORTER. ROBERT GORTON, Newton, Mass. Filed Apr. 14, 1900. Serial No. 12,793. (No model.)



Claim.—1. The combination with a buckle, comprising a base-plate and a clamping device, of a covering of inelastic material arranged along the front and rear faces of the base-plate, and an adjustable buckle-suspending strap interposed between the clamping device and the covered front face of the base-plate.

2. The combination with a buckle, comprising a base-plate and a hinged clamping-lever, of a covering of inelastic material arranged along the front and rear faces of the base-plate, and an adjustable buckle-suspending strap interposed between the hinged clamping-lever and the covered front face of the base-plate.

3. The combination with a buckle, comprising a base-plate and a clamping device, of a covering of inelastic material arranged along the front and rear faces of the base-plate, an adjustable buckle-suspending strap interposed between the clamping device and the covered front face of the base-plate and a strap suspended from the buckle and provided with a device for attachment to a garment.

4. The combination of a buckle, comprising a base-plate and a clamping device, a covering of inelastic material arranged along the front and rear faces of the base-plate, a buckle-suspending strap, interposed between the clamping device and the covered base-plate and a pendent strap of elastic webbing supporting an attaching device and secured to the inelastic material.

5. The combination with a buckle, comprising a base-plate and a clamping device, of a covering of inelastic material secured to the base-plate, a suspending-strap interposed between the base-plate and the clamping device, an attaching device adapted to be secured to the suspended garment and a strap to which the attaching device is secured and which is secured to the buckle-covering.

6. The combination with a buckle, comprising a base-plate and a clamping device, of a piece of inelastic material secured to the base-plate and depending below the lower edge thereof, an attaching device adapted to be secured to the suspended garment, a strap of elastic material to which the attaching device is secured and which is suspended from the base-plate and is attached to the depending end of the piece of inelastic material.

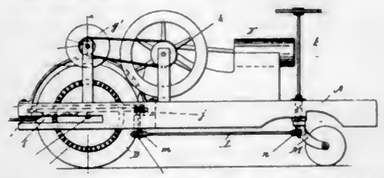
7. The combination of a buckle, comprising a slotted base-plate and a hinged clamping-lever, a covering for the base-plate of inelastic material, an elastic strap, the upper end of which passes through the slot and is secured to the buckle-covering, and a buckle-suspending strap adjustably secured to the buckle between the clamping-lever and the covered base-plate.

8. The combination of a buckle, comprising a slotted base-plate, and a hinged clamping-lever, a covering of inelastic material extending across the front of the base-plate over the upper edge thereof down along the back of the base-plate and through the slot, and an elastic strap of elastic webbing extending through the slot and secured to the buckle-covering.

9. The combination of a buckle comprising a base-plate and a clamping device, a buckle-suspending strap interposed between the clamping device and the base-plate, a garment-supporting strap suspended from the buckle, a covering of inelastic material arranged over the front and rear faces of the base-plate and having its lower ends secured to and between folded portions of the upper ends of the elastic straps.

10. The combination of a buckle, comprising a slotted base-plate, a hinged clamping-lever, a covering for the buckle of inelastic material which extends through the slot and over the top of the base-plate, and downward below the lower edge of the base-plate, and an elastic strap also extending through the slot of the base-plate and having a downwardly-projecting end which extends between folds of the buckle-covering and is stitched thereto.

654,728. TRACTION-ENGINE. HERMAN GRAMS, Dexter, Minn. Filed May 5, 1900. Serial No. 15,662. (No model.)



Claim.—1. In a traction-engine, the combination, with a frame provided with a circular guide, of a turn-table journaled in the said guide and provided with a slot, a single ground-wheel supported by the said turn-table and arranged in the said slot to one side of the axis of the turn-table, a driving-shaft journaled concentric with the turn-table and above it, and toothed driving-wheels constantly connecting the said shaft and ground-wheel, substantially as set forth.

2. In a traction-engine, the combination, with a frame provided with a circular guide, of a turn-table journaled in the said guide, a single ground-wheel supported by the said turn-table on one side of its axis, a steering-tongue arranged radially of the axis of the turn-table and parallel with the said ground-wheel, a driving-shaft arranged on the axis of the turn-table, and driving devices constantly connecting the said shaft with the ground-wheel, substantially as set forth.

3. In a traction-engine, the combination, with a frame provided with a circular guide, of a turn-table journaled in the said guide and provided with teeth around its periphery and having a slot through it, a single ground-wheel supported by the said turn-table and arranged in the said slot to one side of the axis of the turn-table, steering mechanism provided with a toothed pinion which gears into the said teeth on the turn-table, a driving-shaft journaled concentric with the turn-table and above it, and toothed driving-wheels constantly connecting the said shaft and ground-wheel, substantially as set forth.

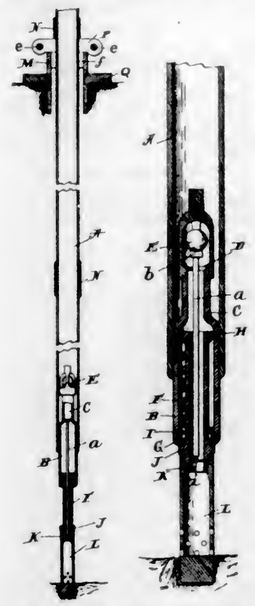
4. In a traction-engine, the combination, with a frame provided with a circular guide at one end, of a turn-table journaled in the said guide, a single ground-wheel supported by the said turn-table on one side of its axis, driving devices for revolving the said wheel irrespective of the position of the turn-table, and two casters supporting the other end of the said frame, substantially as set forth.

654,729. ARTESIAN OR OIL WELL. ROBERT D. GREEN, Cyclone, Pa. Filed Apr. 7, 1900. Serial No. 11,989. (No model.)

Claim.—1. An Artesian well comprising a working barrel having at its lower end a standing valve, and a telescoping member passing through the lower end thereof and projecting therein and adapted to lift the standing valve from its seat when the working barrel is lowered, substantially as described.

2. An Artesian well comprising a working barrel, a standing valve therein, a supplemental or dumping valve barrel carried by the working barrel below the standing valve, and a member passing through the lower end of the working barrel, and of a length sufficient to engage the standing valve when the working barrel is lowered, substantially as described.

3. An oil-well comprising a vertically-movable working barrel, a standing valve at the lower portion thereof, a supplemental dumping-valve barrel below the standing valve, a tube passing within the dumping-valve barrel, the said tube carrying means adapted to engage the standing valve when the working barrel is lowered for the purpose of unseating the standing valve and dumping the collected sediment or sand therefrom, substantially as described.



4. An oil-well comprising a vertically-movable working barrel, an attachment therefor comprising a supplemental valve-barrel carrying a standing valve, and a tube within the supplemental barrel, the said tube carrying means at its upper end adapted to engage the standing valve when the working barrel is lowered, substantially as described.

5. An oil-well comprising a working barrel, a standing valve therefor and at the lower end thereof, and a member vertically movable in relation to the working barrel and adapted to engage and unseat the standing valve when the working barrel is lowered, substantially as described.

6. An Artesian well comprising a vertically-movable working barrel, a standing valve in the lower end thereof, and a tube carrying an upwardly-projecting member adapted to engage and unseat the standing valve when the working barrel is lowered, substantially as described.

7. An Artesian well comprising a working barrel having at its lower end a standing valve, and a tube carrying an upwardly-projecting member adapted to engage and unseat the standing valve when the working barrel is lowered, substantially as described.

8. An Artesian well comprising a working barrel, an anchor at the lower end thereof, the working barrel having a standing valve at the lower end thereof, an independent tube having its lower end connected with the anchor and its upper end adapted to telescope the working barrel, the tube carrying means adapted to engage and unseat the standing valve when the working barrel is lowered, substantially as described.

9. An oil-well comprising a vertically-movable working barrel, a relatively-stationary telescoping member at the lower end of the well, the working barrel carrying a standing valve, the telescoping member adapted to unseat the standing valve when the working barrel is lowered, and means at the upper end of the well for supporting the working barrel, substantially as described.

10. An Artesian well comprising a working barrel, a relatively-stationary tube at the lower end of the well adapted to telescope the working barrel, the working barrel having a standing valve, the said stationary tube carrying therein a vertically-arranged rod with an upwardly-projecting end adapted to engage the standing valve and unseat it when the working barrel is lowered, substantially as described.

11. An Artesian well comprising a vertically-movable working barrel, a relatively-stationary dumping member, a standing valve carried by the working barrel and adapted to be unseated by the dumping member, and a supporting means at the upper end of the well comprising a ring M of sufficient size to permit the working barrel and its joints to pass therethrough, and a divided ring P having a relatively-smaller opening which will not permit the joints of the tube to pass through it, substantially as described.

12. An Artesian well comprising a working barrel having at its lower end a standing valve, a member projecting within the working barrel and adapted to engage the said valve, one of said members being vertically movable in respect to the other, whereby the standing valve is adapted to be unseated by the relative movement thereof, substantially as described.

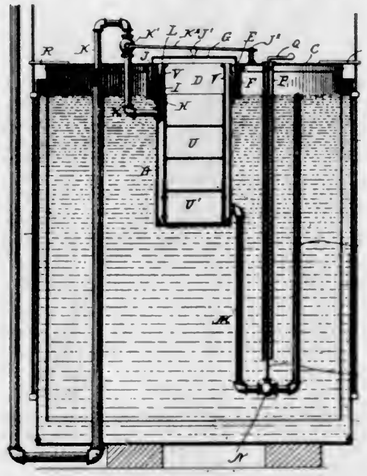
654,730. GLOVE. DAVID W. HANNA, New Castle, Pa. Filed Jan. 15, 1900. Serial No. 1,526. (No model.)



Claim.—1. A glove or hand-covering provided with an open thumb-joint, a loose internal flap covering said joint, and a pocket into which the flap loosely extends; substantially as described.

2. A glove or hand-covering provided with an open thumb-joint, a loose flap extending from the thumb across the joint, and under the palm portion, and a pocket in which the flap loosely projects, substantially as described.

654,731. ACETYLENE-GAS GENERATOR. GUS HARTMAN, Rockwall, Tex. Filed July 31, 1899. Serial No. 725,692. (No model.)



Claim.—1. An acetylene-gas generator consisting of an outer casing or reservoir adapted to hold water, a holder fitted to loosely slide within said casing and be sealed by the water therein, a carbid-chamber carried by the holder, a water-sealed pipe leading from said chamber and adapted to admit water to the chamber when the holder reaches the lower limit of its movement, a valve located within the pipe, a valve-stem extending through the top of the holder whereby the valve may be controlled from the outside, a pipe leading from the carbid-chamber to the holder, a valve in said pipe, a lever for operating the valve and retaining the cover of the carbid-holder when the valve is open, and means for charging the carbid-chamber, as specified.

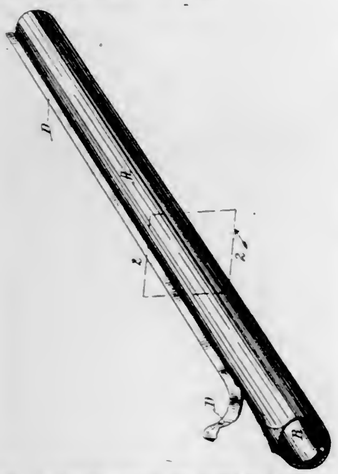
2. A gas-generator consisting of a suitable casing or reservoir being nearly filled with water, a holder loosely fitted within the casing and held by the water, means for guiding the holder in its vertical movements, a carbid-chamber carried by the holder, a casing surrounding the upper portion of the carbid-chamber so as to form a recess, a cover for closing the top of the carbid-chamber, the flanges

of said cover adapted to project within the recess and rest upon a layer of hemp or the like, a sand and water seal resting upon the hemp, a pipe leading from the carbid-chamber through the top of the holder and returning to said holder, a valve located in the pipe, a lever connected with the valve for operating the same and adapted to hold the cover closed, a link for engaging the outer end of the lever to prevent its displacement, a trapped pipe leading from the carbid-chamber to a point at or near the level of the water when the holder is in its lowered position, a valve controlling the flow of water through this last-named pipe, and an outflow-pipe leading from the apparatus to the service-pipes, as specified.

3. In combination with the carbid-chamber of a gas-generator of the character described, a series of cells adapted to hold a suitable supply of carbid and be inserted within the chamber, that the material therein will be utilized in sections, strips secured to the bottom cell of the series and confining the cells above the bottom cell, said cells being removably held by the strips and resting one on the other.

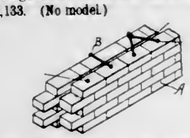
4. In combination with a gas apparatus of the character described, a carbid-chamber carried by the holder of the gasometer, a pipe carried by said carbid-chamber and so arranged as to admit water to said chamber upon the downward movement of the holder, and cut off said flow upon the upward movement thereof, a valve for controlling the flow through said pipe, a second pipe carried by the holder leading from the carbid-chamber so as to deliver the generated gas to the holder, a casing F surrounding the upper portion of the carbid-chamber so as to form a recess, a gas-bell, the flanges of which are adapted to fit within said recess, suitable sealing material surrounding the flanges, and means for holding the cover in place, as specified.

654,732. WRAPPER. FRANK E. HOUSE, Boston, Mass. Filed Apr. 29, 1898. Serial No. 679,187. (No model.)



Claim.—A mailing-wrapper bent crosswise of its length and the opposed surfaces secured together by cement or the like to form a wing D adapted to project from the outer surface of the wrapper when in use, substantially as described.

654,733. WALL-TIE. HARRY S. HUMES, Denver, Colo., assignor of one-half to Singleton M. Morrison, same place. Filed July 17, 1899. Serial No. 724,133. (No model.)



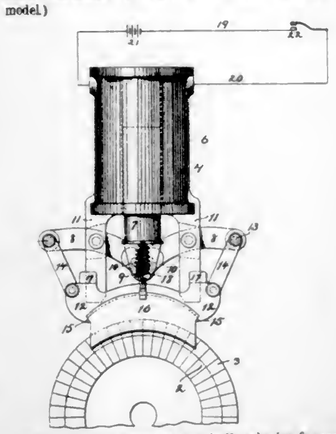
Claim.—1. The combination, a wall comprising a front course of brick having holes or apertures in the center or other parts of the brick, the backing-course of brick, the hook or tie, one end designed to be inserted into the hole or aperture in the brick on the face or outside course, and the other end of the tie hooked over the backing-course, substantially as specified.

2. As an article of manufacture, a wall-tie, made of a single piece of wire in V shape, having the point of the V and the ends bent at right angles with the main portion of the tie, and also provided with a small loop near the point, substantially as specified.

3. In a wall-tie, of the class described, the combination, comprising the bricks having the apertures or holes, the V-shaped tie having right-angled turned ends designed to hook into the apertures or holes A', A', and the right-angle turned-up point of the V-shaped main portion over the backing-course, substantially as specified.

4. In a wall-tie, the combination, comprising the bricks having the holes or apertures, the V-shaped tie, with the ends bent at right angles with the main portion of the tie designed to be inserted into the holes or apertures in the bricks and having the small loop near the point of the V-shaped tie provided as means of securing the tie to the joist or other parts of the building, substantially as specified.

654,734. ELECTRIC-COMMUTATOR CLEANER. AUGUST H. JAHN, Homestead, Pa. Filed Nov. 23, 1899. Serial No. 738,035. (No model.)



Claim.—1. In a cleaning or grinding device for commutator-cylinders, the combination with a supporting-frame, of a holder containing a cleaning-block and movable toward and away from a commutator-cylinder, a pair of levers pivoted in said frame, links connecting said holder with the outer ends of the levers, a solenoid and a core therefor having a slot-and-pin connection with the inner ends of said levers.

2. In a cleaning or grinding device for commutator-cylinders, the combination with a frame and a movable holder for cleaning material, of a solenoid, a core and lever-and-link connections between the core and the holder whereby the latter is moved toward the commutator-cylinder when the solenoid is energized, substantially as set forth.

3. In a cleaning or grinding device for commutator-cylinders, the combination with a frame and movable holder for cleaning material, of a solenoid, a core and lever-and-link connections between the core and the holder, whereby the latter is moved toward the commutator-cylinder when the solenoid is energized, and springs acting to retract the holder when the solenoid is deënergized.

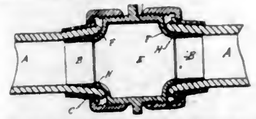
4. In a cleaning or grinding device for commutator-cylinders, the combination with a frame and a movable holder for abrading material, of a solenoid, a core and lever-and-link connections between the core and the holder, whereby the latter is moved toward the commutator-cylinder when the solenoid is energized, and one or more coiled springs connecting the solenoid-core with the holder and placed under tension when the solenoid is energized.

5. In a cleaning or grinding device for commutator-cylinders, a holder for a cleaner-block, provided with a recess of dovetail shape and a removable cleaner-block fitting in said recess, in combination with a supporting-frame, a solenoid, a core and operating-levers intermediate the core and the holder, substantially as set forth.

6. In a cleaning device for commutator-cylinders, a holder and a cleaner-block located in a recess therein and laterally removable therefrom, in combination with a solenoid, a core, and operating-levers connecting the core to the holder, substantially as set forth.

654,735. COUPLING. LINWOOD F. JORDAN, Portland, Me. Filed Mar. 30, 1900. Serial No. 10,740. (No model.)

Claim.—1. In a coupling, a pipe, an independent conical expanding-ring inserted in the end of said pipe, a main body provided with a flaring seat and means for forcing the flaring end of the pipe down upon said flaring seat, whereby a close joint is formed between said seat and the interior of said pipe.



2. In a coupling, a flexible pipe, an independent conical expanding-ring inserted within the end thereof, a body provided with a flaring seat to receive the end of the pipe, means for drawing the ends of the pipes down upon said seat, whereby the outer face of the expanding-ring registers with the end of the seat and the interior wall of the pipe makes a tight joint with the flaring wall of the seat.

3. In a coupling, a flexible pipe, an independent conical expanding-ring within said pipe, the end of the pipe extending beyond said ring, a body provided with a flaring seat to receive the protruding end of the pipe, interiorly-flaring ring surrounding the outside of the pipe and provided with an annular flange, a threaded ring provided with an annular flange adapted to be screwed into the said body and force the end of the pipe down over said flaring seat, whereby a tight joint is formed.

4. In a coupling, a flexible pipe, an independent conical expanding-ring within said pipe, the end of said pipe projecting beyond said ring, a tubular central body provided with a tapering seat surrounding the opening, the smallest diameter of said tapering seat corresponding with the diameter of said expanding-ring and means for forcing said pipe down upon said seat, the cone of the seat entering the flaring end of the pipe and driving said independent expanding-ring within the pipe.

5. In a coupling for uniting the ends of pipes, a main body provided with a flaring seat at each end and threaded interiorly and exteriorly, pipes provided with conical expanding-rings, one provided with an interiorly and exteriorly flaring conical ring with a flange thereon and a threaded nut adapted to mesh with the exterior thread on said body and having a flange adapted to engage the flange on said outside ring and the other provided with exteriorly-threaded and interiorly-flaring nipple adapted to mesh with the interior thread on the body.

6. In a coupling, a main body provided with a flaring seat, a pipe having an independent conical expanding-ring in the end thereof, means for drawing the flaring end of said pipe down over said seat and means for forcing the interior of said pipe closely against the flaring face of said seat.

7. In a coupling, a pipe, an independent conical expanding-ring inserted in the end of said pipe, an interiorly-flaring ring applied to the outside of the end of said pipe and provided with a flange, a main body provided with a flaring seat and threaded exteriorly and a coupling-ring threaded interiorly to mesh with the thread on the main body and having a flange to engage the flange on the outside ring on the pipe.

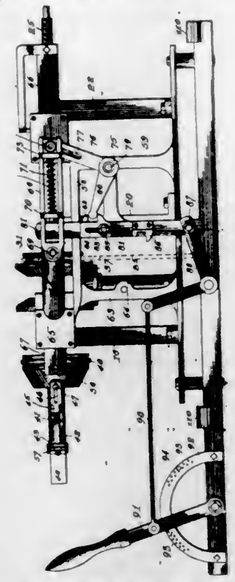
654,736. TOY BANK. CARL KEMPF, Milwaukee, Wis., assignor of one-half to Charles Mueller, Jr., same place. Filed Dec. 22, 1899. Serial No. 741,304. (No model.)



Claim.—1. In a toy money-bank, the combination with the casing, having openings in the side adjacent to the bottom, of the lifting-rods arranged upon the sides of the casing and having inwardly-bent ends projecting through said openings and the top adapted to fit snugly into the upper end of the casing, substantially as and for the purpose described.

2. In a toy money-bank, the combination with the body having grooves in the interior thereof, of a casing arranged within the said body and said casing having openings in the sides thereof adjacent to the bottom, the lifting-rods arranged in the groove of the body and having inwardly-bent ends adapted to extend through the openings, a top adapted to fit snugly into the upper end of the casing and means for securing the casing within the said body, said body and casing being slotted adjacent to their upper ends for the reception of coins, substantially as shown and described.

654,737. MACHINE FOR FINISHING NECKS OF BOTTLES. CHRISTIAN J. KONIG, Alton, Ill. Filed Mar. 23, 1900. Serial No. 9,904. (No model.)



Claim.—1. In a machine of the class described, the combination of a shaft, means for rotating said shaft, means for shifting the shaft longitudinally, a forming-tool carried by said shaft, a sleeve surrounding the shaft at its forward end, means for rotating said sleeve, independently of said shaft, levers pivoted to said sleeve, forming-dies carried by said levers, and means whereby said levers are rocked, substantially as described.

2. In a machine of the class described, the combination of a shaft, means for rotating said shaft, means for shifting said shaft longitudinally, a forming-tool carried by said shaft, a sleeve surrounding said shaft, means for rotating said sleeve independently of said shaft, a pair of forming-dies, levers by which said dies are carried pivoted to said sleeve, a collar slidably mounted on said sleeve arranged to move said levers, and means for shifting said collar, substantially as described.

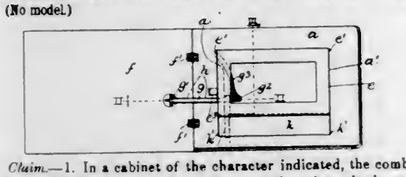
3. In a machine of the class described, the combination of a revoluble shaft, a forming-tool carried thereby, means for rotating said shaft, a sleeve surrounding the forward end of said shaft, means for rotating said sleeve independently of said shaft, a pair of levers pivoted to said sleeve, dies carried by said levers, means for rocking said levers to move said dies, and means for shifting said shaft longitudinally, substantially as described.

4. In a machine of the class described, the combination of a shaft, a forming-tool carried thereby, means for rotating said shaft, a sleeve surrounding the forward end of said shaft, means for rotating said sleeve independently of said shaft, levers pivoted to said sleeve, dies carried by said levers, means for rocking said levers, a slide having connection to said lever-rocking means, a slide having connection to said shaft, a reciprocating bar, means of connection between said slides and said bar, and means for actuating said bar, substantially as described.

5. In a machine of the class described, the combination of a shaft, means for rotating said shaft, a sleeve loosely surrounding the forward ends of said shaft, means for rotating said sleeve, dies carried by said sleeve, means for moving said dies, a slide having connection with said die-moving means, a slide having connection with said shaft, bell-cranks having connection to said slides, a reciprocating bar having engagement with said bell-cranks, and means for actuating said bar, substantially as described.

6. In a machine of the class described, the combination of a shaft, means for rotating said shaft, a slide, a yoke carried by said slide arranged for engagement with said shaft, a pair of dies, means for moving said dies, a second slide having connection to said die-moving means, a bell-crank having engagement with said first-named slide, a bell-crank having engagement with said second slide, a reciprocating bar arranged to engage said first-named bell-crank, and a dog carried by said bar arranged to engage said second bell-crank, substantially as described.

654,738. CABINET FOR SEWING-MACHINES, &c. THEODOR KUNDTZ, Cleveland, Ohio. Filed May 22, 1899. Serial No. 717,848. (No model.)



Claim.—1. In a cabinet of the character indicated, the combination, with a cabinet-top having an opening therethrough, the vertically-tilting load-carrying leaf *e* provided with a roller e^3, and hinged or pivoted at or near its rear edge, horizontally and longitudinally of the cabinet, to the aforesaid top and arranged to occupy the aforesaid opening in its upwardly-tilted position, and the lifting leaf hinged, horizontally and transversely of the cabinet, to one end of the cabinet-top and at right angles to the axial line of the load-carrying leaf, of a lever pivoted at one end, to and transversely of the lifting leaf centrally between the rear and forward edges of the said leaf, which lever extends in under the load-carrying leaf between the rear and forward edges of the load-carrying leaf, and is provided, below the load-carrying leaf, with a rearwardly-extending arm, and the said lever and its aforesaid rearwardly-extending arm having such arrangement and trend, relative to the aforesaid roller, that the lever-arm shall engage the roller from below and be instrumental in lifting the load-carrying leaf part of the way from the latter's lower position, and thereupon the lever shall directly engage the said leaf from below and complete the lifting operation.

2. The combination of the cabinet-top provided with an opening a'; a vertically-tiltable load-carrying leaf *e* having its left-hand end provided with a roller e^3, which leaf is hinged to the top, at the rear of the said opening, horizontally and longitudinally of the cabinet; the lifting leaf hinged, horizontally and longitudinally of the cabinet to the left-hand end of the top; the lever *g* pivoted to and horizontally and transversely of the lifting leaf between the rear and forward edges of the said leaf, and extending to and offset, as at g^3, in under the load-carrying leaf and having its offset portion provided with a rearwardly-extending arm g^2, and the left-hand end portion of the cabinet forming a fulcrum or bearing for the said lever, all arranged and operating substantially as shown, for the purpose specified.

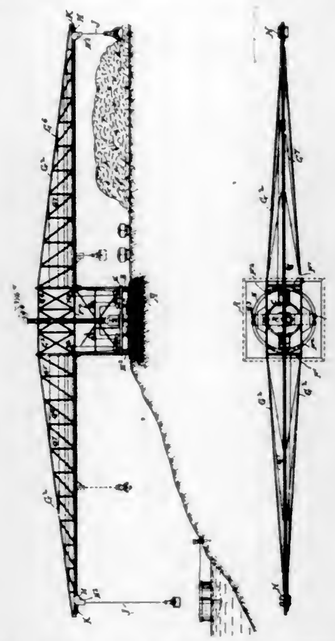
3. In a cabinet of the character indicated, the combination with the cabinet-top having an opening a'; a vertically-tilting leaf *e* having the roller e^3 and the arm e^4; the vertically-tilting leaf *k* cut away at k^4, and the lifting leaf *f*; of the lever *g* provided with the offset g^4 and the arm g^2, and the guide-plate *i* having the vertically-arranged channel i', all arranged and operating substantially as shown, for the purpose specified.

4. In a cabinet of the character indicated, the combination of the top having an opening *a*, the suitably-actuated vertically-tilting load-carrying leaf having the tongue e^2 and the arm e^4 that is provided with the shoulder e^5, and the vertically-tilting leaf *k* having the tongue k^2 and cut away at k^4, all arranged and operating substantially as shown, for the purpose specified.

654,789. HOISTING AND CONVEYING APPARATUS. JAMES H. LANCASTER, New York, N. Y. Filed June 28, 1897. Serial No. 642,777. (No model.)

Claim.—1. In hoisting and conveying apparatus, the combination with a rotatable supporting-frame, of a boom or truss frame supported thereon and consisting of a single upper and lower member located in vertical alinement and connected together by uprights, a track upon the lower member, a traveling carriage upon said track, and mechanism for operating said carriage and parts supported thereby.

2. In hoisting and conveying apparatus, the combination with a rotatable supporting-frame, of a boom or truss frame supported thereon, and consisting of a single upper and lower member located in vertical alinement and connected together by uprights, lateral braces extending from said upper member to said supporting-frame, a track upon the lower member, a traveling carriage upon said lower member, and mechanism for operating said carriage and parts supported thereby.



3. In hoisting and conveying apparatus the combination with a rotatable supporting-frame, of a boom or truss frame supported thereon and consisting of a single upper and lower member located in vertical alinement and connected together by uprights, said upper member being inclined, and a plurality of lateral braces connected with said upper member at different points in its length and extending from opposite sides of the same and situated one above the other and connected with said supporting-frame, a track upon the lower member, a traveling carriage upon said track, and mechanism for operating said carriage and parts supported thereby.

4. In hoisting and conveying apparatus, the combination with a rotatable supporting-frame, of a boom or truss frame supported thereon and consisting of a single upper and lower member located in vertical alinement and connected together by uprights, longitudinally-adjustable lateral braces, a track upon the lower member, a traveling carriage upon said track and mechanism for operating said carriage and parts supported thereby.

5. In hoisting and conveying apparatus, the combination with a rotatable supporting-frame, said frame having uprights suitably connected together, cross-stays extending between the upper ends of the end uprights, and truss-supports extending between said end uprights, and below said cross-stays, of a boom or truss frame consisting of a single upper and lower member connected together by uprights, the upper member being supported by said cross-stays and the lower member by said truss-supports, a track upon said lower member, a traveling carriage upon said track, and mechanism for operating said carriage and parts supported thereby.

6. In hoisting and conveying apparatus, the combination with a rotatable supporting-frame, said frame having uprights suitably connected together, cross-stays extending between the upper ends of the end uprights and truss-supports extending between said end uprights and below said cross-stays, of a boom or arm consisting of a single upper and lower member connected together by uprights, the upper member being supported by said cross-stays and the lower member by said truss-supports, lateral braces extending from opposite sides of said upper member to said end uprights, a track upon said lower member, a traveling carriage upon said track, and mechanism for operat ingsaid carriage and parts supported thereby.

7. In hoisting and conveying apparatus, the combination with a rotatable supporting-frame, said frame having uprights suitably connected together, cross-stays extending between the upper ends of the end uprights and truss-supports situated below said cross-stays, of a boom or truss frame consisting of a single upper and lower member connected together by uprights, the upper member being supported by said cross-stays and the lower member by said truss-supports, a plurality of lateral braces connected with said upper member at different points in its length and extending from opposite sides of the same and situated one above the other and connected with said uprights, a track upon the lower member, a traveling carriage upon said track, and mechanism for operating said carriage and parts supported thereby.

8. In hoisting and conveying apparatus, the combination with a rotatable supporting-frame, of a boom or truss frame supported thereon and consisting of a single upper and lower member, said lower member comprising two parallel beams, uprights connected with said upper member, and having their lower ends situated between and connected with the beams of the lower member, a track upon said lower member, a carriage traveling thereon, and mechanism for operating said carriage and parts supported thereby.

9. In hoisting and conveying apparatus, the combination with a rotatable supporting-frame, of a boom or truss frame supported thereon and consisting of a single lower and upper member located in vertical alinement and connected together by uprights, oppositely-extending lateral flanges on said lower member forming a track, a carriage traveling upon said track, and mechanism for operating said carriage and parts carried thereby.

10. In hoisting and conveying apparatus, the combination with a base, a turn-table structure mounted thereon, gearing between said turn-table structure and base for turning the former, a pair of hoisting-machines upon said turn-table structure, independently and conjointly operative, each of said hoisting-machines operating gearing for revolving said turn-table, of a boom or truss frame mounted upon said turn-table structure and having oppositely-extending tracks and carriages traveling upon said tracks, said carriages and parts supported thereby being operated by said hoisting-machines.

11. The combination with a boom or arm having a track, a traveling carriage, and cables for operating said carriages and parts supported thereby, of oppositely-extending bracket-arms secured to said boom or arm and provided with fixed and movable sheaves for supporting said cables.

12. The combination with a boom or arm having a track, a traveling carriage, and cables for operating said carriage and parts supported thereby, of oppositely-extending bracket-arms secured to said boom or arm and provided with fixed and movable sheaves for supporting said cables, said movable sheaves being situated below said boom or arm.

13. The combination with a boom or arm having a track, a traveling carriage, and cables for operating said carriage and parts supported thereby, of oppositely-extending bracket-arms secured to said boom or arm and provided with fixed sheaves situated laterally with respect to said boom or arm, and with movable sheaves situated below said boom or arm.

14. The combination with a boom or arm having a track, a traveling carriage, and cables for operating said carriage and parts supported thereby, of oppositely-extending bracket-arms secured to said boom or arm and provided with fixed sheaves situated laterally with respect to said boom or arm, and with movable sheaves situated below said boom or arm, said movable sheaves being carried by an axle extending at an angle from an upright rotatable shaft mounted upon one of said bracket-arms.

15. The combination with a boom or arm having a track, a traveling carriage, and cables for operating said carriage and parts supported thereby, of oppositely-extending bracket-arms secured to said boom or arm and provided with fixed sheaves situated laterally with respect to said boom or arm, and with movable sheaves situated below said boom or arm, said movable sheaves being carried by an axle extending at an angle from an upright rotatable shaft mounted upon one of said bracket-arms, and a spring acting upon said shaft for normally holding said movable sheaves transversely with respect to said boom or arm.

16. The combination with a boom or arm having a track, a traveling carriage, and cables for operating said carriage and parts supported thereby, of oppositely-extending bracket-arms secured to said boom or arm and provided with fixed and movable sheaves for supporting said cables, said movable sheaves being provided with a buffer on opposite sides thereof.

17. The combination with a boom or arm having a track, a traveling carriage upon said track having a spreader or plow tapered at its ends, cables for operating said carriage and parts supported thereby, of oppositely-extending bracket-arms secured to said boom or arm and provided with fixed and movable sheaves for supporting said cables, said movable sheaves being normally situated in the path of said spreader or plow, and means for yieldingly holding said movable sheaves in said position.

18. The combination with a boom or arm having a track, a traveling carriage upon said track having a spreader or plow tapered at its ends, cables for operating said carriage and parts supported thereby, of oppositely-extending bracket-arms secured to said beam or arms and provided with fixed and movable sheaves for supporting said cables, said movable sheaves being provided on opposite sides thereof with buffers situated in the path of said spreader or plow and with means for yieldingly holding the same in said position.

19. In hoisting and conveying apparatus, the combination with a rotatable supporting-frame having a boom or truss frame, said boom or truss frame consisting of a single upper and lower member located in vertical alinement and connected together by uprights, of oppositely-extending bracket-arms secured to said uprights and provided with fixed and movable sheaves, a track upon the lower member, a traveling carriage upon said track, and cables for operating said carriage and parts supported thereby, said cables being supported by said fixed and movable sheaves.

20. In a hoisting and conveying apparatus, the combination with a turn-table structure supporting a boom or cantaliver frame formed of a single truss, the corner uprights of the structure extending above the cross-bearings carrying the said boom or cantaliver frame together with cross-braces for the latter connected with uprights, said boom or frame having a trolley-way along which moves the load-carriage suspending the grapple or its equivalent, and a hoisting-machine for operating said carriage and buckets, substantially as set forth.

21. In a hoisting and conveying apparatus, the combination with a turn-table structure, a boom or frame supported thereon and comprising the upper horizontally-extended bar G^3, stays depending therefrom and secured between angle-irons forming a track or trolley way, lateral braces for said boom or cantaliver frame and a load-carriage and grapple or its equivalent movable along said track, and operating means for the carriage and grapple, substantially as set forth.

22. In a hoisting and conveying apparatus, the combination with a turn-table structure, of a boom or cantaliver frame supported thereon and comprising the upper horizontally-extended bar G^3, having the outer inclined portions, stays depending from said bar and secured between angle-irons forming a track or trolley way, and adjustable braces G^7, connected to the corner-uprights of said structure and to the projecting portions of the boom or trolley-way at different points in its length, together with a load-carriage and grapple or its equivalent and operating mechanism, substantially as set forth.

23. In a hoisting and conveying apparatus the combination with a central turn-table-structure carriage, a pair of hoisting-machines adapted for independent and joint operation and each actuating a turn-table gear-wheel, together with a boom, a cantaliver-frame having oppositely-extending tracks or trolley-way, and load-carriages and grapples or their equivalent operated by said hoisting-machines, substantially as set forth.

24. In a hoisting and conveying apparatus and in combination therewith the fall-rope carrier S, consisting of two bracket-arms secured to the vertical brace G^3, said brackets supporting fixed and movable sheaves respectively as described, and said movable sheaves provided with a semicircular buffer, attached, substantially as described and for the purpose set forth.

25. In hoisting and conveying apparatus, the combination with a rotatable supporting-frame, of a boom or truss frame supported thereon and extending on opposite sides thereof and consisting of a single upper and lower member suitably connected, lateral braces extending between said upper member and the said supporting-frame, a track upon said lower member, a traveling carriage upon said track, and mechanism for operating said carriage and parts supported thereby.

26. In hoisting and conveying apparatus, the combination with a rotatable supporting-frame, of a boom or truss frame supported thereon and extending on opposite sides thereof and consisting of upper and lower members mounted upon cross-pieces of said frame, longitudinally-adjustable lateral braces extending between the upper member of said supporting-frame, a track upon the lower member, a traveling carriage upon said track, and mechanism for operating said carriage and parts supported thereby.

27. In hoisting and conveying apparatus, the combination with the supporting-frame, of a boom or truss frame mounted thereon and consisting of a single upper and lower member situated in vertical alinement and suitably connected together, said upper member being inclined, and a plurality of lateral braces connected with said upper member at different points in its leugth and extending from opposite sides of the same and situated one above the other and connected with said supporting-frame, a track upon said lower member, a traveling carriage upon said track, and mechanism for operating said carriage and parts supported thereby.

28. The combination with a boom or arm having a track, a traveling carriage, and cables for operating said carriage, of fixed and movable sheaves for supporting said cables, said movable sheaves being situated below said track.

29. The combination with a boom or arm having a track, a traveling carriage, and cables for operating said carriage, of fixed sheaves situated laterally with respect to said boom or arm, and movable

sheaves situated below said boom or arm, said fixed and movable sheaves being adapted to support said cables.

30. The combination with a boom or arm having a track, a traveling carriage, provided with spreader or plow, and cables for operating said carriage, of fixed and movable sheaves for supporting said cable, said movable sheaves being situated in the path of said spreader or plow.

31. The combination with a boom or arm having a track, a traveling carriage, and cables for operating said carriage, of fixed sheaves situated laterally with respect to said boom or arm, and movable sheaves situated below said boom or arm and carried by an axle extending at an angle from an upright rotatable shaft mounted upon said boom or arm, said fixed and movable sheaves being adapted to support said cables.

32. The combination with a boom or arm having a track, a traveling carriage, and cables for operating said carriage, of fixed sheaves situated laterally with respect to said boom or arm, movable sheaves situated below said boom or arm, and means for normally holding said movable sheaves yieldingly beneath the boom or arm, said fixed and movable sheaves beiug adapted to support said cables.

33. The combination with a boom or arm having a track, a traveling carriage, and cables for operating said carriage, of fixed sheaves situated laterally with respect to said boom or arm, movable sheaves situated below said boom or arm and carried by an axle extending at an angle from an upright rotatable shaft mounted upon said boom or arm, and a spring acting upon said shaft for normally holding the movable sheave yieldingly beneath and transversely with respect to said boom or arm, said fixed and movable sheaves being adapted to support said cables.

34. The combination with a boom or arm having a track, a traveling carriage, and cables for operating said carriage, of fixed sheaves situated laterally with respect to said boom or arm, and movable sheaves situated below said boom or arm and provided with a buffer on opposite sides thereof and in the path of said carriage, said fixed and movable sheaves being adapted to support said cables.

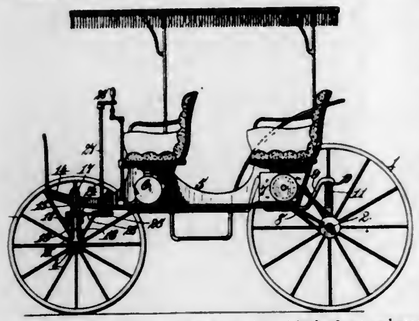
35. The combination with a boom or arm having a track, a traveling carriage, having an oppositely-extending spreader or plow, cables for operating said carriage, of fixed sheaves situated laterally with respect to said boom or arm, and movable sheaves situated normally in the path of said spreader or plow and provided with buffers on opposite sides thereof, said fixed and movable sheaves being adapted to support said cables.

36. The combination with a boom or arm having a track, a traveling carriage having a spreader or plow extending on opposite sides thereof, cables for operating said carriage, of fixed sheaves situated laterally with respect to said boom or arm, movable sheaves situated below said boom or arm and provided on opposite sides thereof with buffers situated in the path of said spreader or plow and means for normally holding said buffers in said position, said fixed and movable sheaves being adapted to support said cables.

654,740. SOAP. HERMAN J. LEASE, Madisonville, Ohio, assignor to Lizzie Moore Lease, same place. Filed Oct. 28, 1898. Serial No. 694,847. (No specimens.)

Claim.—The herein-described composition of matter consisting of a neutral soap mechanically combined with highly-pulverized carborundum substantially as and for the purposes specified.

654,741. MOTOR-VEHICLE. HOSEA W. LIBBEY, Boston, Mass. Filed Aug. 24, 1899. Serial No. 728,348. (No model.)



Claim.—1. In a vehicle, the combination with the front and rear axles thereof and the body, of curved springs supporting said body, and slides surrounding said axles and pivoted to said springs.

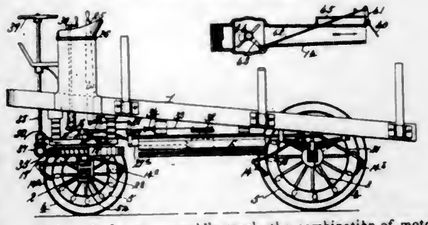
2. In a vehicle the combination with the axles thereof and the body, of semi-elliptical springs on which said body is supported, and sliding blocks on said axles secured to the ends of said springs, as and for the purpose set forth.

3. In a vehicle the combination with the axles thereof and the body, of semi-elliptical springs upon which the body is supported, slide-blocks on said axles secured to the ends of said springs, and stops for limiting the lateral movements of said blocks, as and for the purpose set forth.

4. In a vehicle the combination with the axles and the body thereof, the latter having an opening in its footboard, of an upright rod secured to the forward axle and extending through said opening, a cap secured to said body surrounding said opening, and inclosing the upper end of said rod, a rotatable steering-rod having a crank or handle thereon, sprocket-wheels mounted, respectively, on said upright and steering rods, and a sprocket-chain connecting said sprocket-wheels, as and for the purpose set forth.

5. In a vehicle the combination with the axles and the body thereof, the latter having an opening in its footboard, of a fifth-wheel connection between the body and the forward axle, the lower part of said fifth-wheel being mounted upon a spring on said forward axle, an upright rod secured to the forward axle extending through said fifth-wheel and through the opening in said footboard, a rotatable steering-rod extending through the body and having a crank or handle upon its upper end within reach of the operator, sprocket-wheels mounted, respectively, on said upright and steering rods, and a sprocket-chain connecting said sprocket-wheels, as and for the purpose set forth.

654,742. AUTOMOBILE TRUCK. HOSEA W. LIBBEY, Boston, Mass. Filed Oct. 18, 1899. Serial No. 733,994. (No model.)



Claim.—1. In an automobile truck, the combination of motor-wheels attached to the traction-wheels and provided with vanes, a reservoir for compressed or liquefied air or gas, carried by said truck, a reducing-valve communicating with the storage-reservoir, a three-way valve directly connected with said reducing-valve and provided with lateral outlets, pipe connections from one outlet of the three-way valve to the forward sides of the motor-wheels for propelling the vehicle forward, pipe connections from the other outlet of the three-way valve to the motor-wheels for backing the vehicle, and independent lever mechanism for actuating the reducing-valve and the three-way valve, substantially as described.

2. In an automobile truck, the combination of motor-wheels attached to the outer side and the inner side of all the traction-wheels, reservoirs for compressed or liquefied air or gas, carried by said truck, a reducing-valve intermediate said reservoirs and connected therewith, lever mechanism for operating said reducing-valve, a three-way valve directly connected with the reducing-valve and provided with lateral outlets, lever mechanism for controlling the three-way valve, pipe connections from one outlet of the three-way valve to points in front of some of the motor-wheels for propelling the truck forward, pipe connections from the other outlet of the three-way valve to the rear of other motor-wheels for backing the truck, and steering mechanism, substantially as described.

3. In an automobile truck, the combination of motor-wheels attached to the outer sides and inner sides of all the traction-wheels, storage-reservoirs for compressed or liquefied air or gas, carried by said truck, a reducing-valve intermediate the storage-reservoirs and connected therewith, lever mechanism for operating said reducing-valve, a three-way valve communicating with the reducing-valve and provided with lateral outlets, lever mechanism for operating the three-way valve, and pipe connections from the outlets of the three-way valve to positions adjacent to the motor-wheel, and automatic nozzles through which pressure from said pipes is to be applied to the motor-wheels, substantially as described.

4. In an automobile truck, the combination of motor-wheels, provided with vanes and attached to both sides of all the traction-wheels, storage-reservoirs for compressed or liquefied air or gas, carried by said truck, a reducing-valve intermediate said reservoirs and connected therewith, a three-way valve connected with the reducing-valve and provided with lateral outlets, pipes extended forwardly and rearwardly from one of the outlets of the three-way valve to apply pressure to the forward portions of some of the motor-wheels for propelling the truck forwardly, pipes extended forwardly and rearwardly from the other outlet of the three-way valve to apply pressure to rear portions of other motor-wheels for propelling the truck rearwardly and for braking purposes, automatic valved nozzles connected with the several pipes, and located adjacent to the several motor-wheels, and steering mechanism, substantially as described.

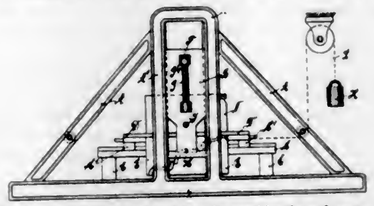
5. In an automobile truck, the combination of motor-wheels provided with vanes and attached to both sides of all the traction-wheels, a storage-reservoir for compressed or liquefied air or gas, a reducing-valve connected to said reservoir, a three-way valve connected with the reducing-valve and provided with lateral outlets, pipes extended forwardly and rearwardly from one of the outlets of the three-way valve to apply pressure to the forward portions of some of the motor-wheels for propelling the truck forwardly, pipes extended forwardly and rearwardly from the other outlet of the three-way valve to apply pressure to the rear portions of other motor-wheels for propelling the truck rearwardly and for braking purposes, concentric vertically-arranged pipes connected with said forwardly-extended pipes and rigidly supported at the forward end of the truck, a head supported on the forward axle and having a swivel connection with the lower portion of said concentric pipes, and nozzle-supporting pipes supported by said swivel-head and communicating through passages therein with said concentric pipes, substantially as described.

6. In an automobile truck, the combination of motor-wheels attached to the outer sides and inner sides of all the traction-wheels, a storage-reservoir for compressed or liquefied air or gas, a reducing-valve connected to said reservoir, a three-way valve communicating with said reducing-valve and provided with lateral outlets, forwardly and rearwardly extended pipe connections leading from said outlets, a fifth-wheel and steering-gear connected with the forward axle, concentric vertically-arranged pipes extended through the fifth-wheel, a swiveled head secured to the fifth-wheel and forward axle and adapted to turn on lower portions of said vertically-arranged concentric pipes and provided with internal passages, and nozzle-pipes carried by said head and communicating through its said passages with the concentric pipes, substantially as described.

7. In an automobile truck, the combination with a three-way valve provided with lateral outlets, of forwardly and rearwardly extended pipes connected with said valve-outlets by hinged joints, substantially as described.

8. In an automobile truck, the combination of motor-wheels carried by the traction-wheels, a storage-reservoir for compressed air or gas, a three-way valve in communication with said reservoir and provided with lateral outlets, pipes extended forwardly and rearwardly and having hinged connection with said outlets, a fifth-wheel and steering-gear, concentric vertically-arranged pipes extended through the fifth-wheel and rigidly supported by the truck, a head provided with passages and having swivel connection with the lower ends of said pipes, and nozzle-pipes carried by said head and communicating through its passages with said concentric pipes, substantially as described.

654,743. STONE-CUTTING MACHINE. FELIX F. LOEPER, Dresden, Germany. Filed Sept. 3, 1898. Serial No. 690,150. (No model.)

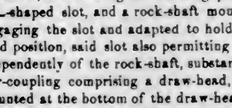


Claim.—1. In a sawing-machine, the combination of a saw, with a table-plate supporting the stone to be sawed, a templet fixed to the said table-plate, a sliding block bearing the saw and adapted to move downward in accordance with the contour of the templet, a brake connected with the said sliding block and adapted to control the downward movement of the same, and means for moving the said table-plate against the saw, substantially as and for the purpose set forth.

2. In a sawing-machine the combination of a saw, with a table-plate supporting the stone to be sawed, a templet fixed to the said table-plate, a weight adapted to move the said table-plate against the saw, a sliding block bearing the saw and adapted to move downward, a pin fixed to the said sliding block and capable of bearing against the contour of the said templet, and a brake connected with the said sliding block and adapted to control the downward movement of the same, substantially as and for the purpose set forth.

3. In a sawing-machine, the combination of a saw, with a table-plate for supporting the material to be sawed, a bracket on the table-plate, a templet secured in the bracket, a sliding block bearing the saw and adapted to move downward, a pin fixed to the sliding block and capable of following the contour of the templet, and a brake adapted to control the downward movement of the sliding block and consisting of a hydraulic cylinder and piston, substantially as described.

654,744. NUT-LOCK. LESLIE W. LOVING, Paris, Tenn. Filed Apr. 20, 1900. Serial No. 13,661. (No model.)



Claim.—1. In a nut-lock, the combination with the bolt and nut, of a groove in said bolt, a series of grooves in said nut, of a key having one arm straight its entire length, and one arm curved outwardly in such a manner that the nut and bolt are locked by one stroke of a hammer, substantially as described.

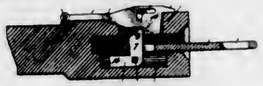
2. In a nut-lock, the combination of a bolt provided with a longitudinal groove, a subetantially-vertical opening in the end thereof, a nut provided with a series of grooves in the bore thereof, a key having one straight arm, and one arm curved outwardly in such a manner that the nut and bolt are locked by one stroke of a hammer, substantially as shown and described.

3. In a nut-lock, the combination with the bolt and nut, of a key having one straight arm and one arm curved outwardly, and an opening in the bolt arranged in such a manner that the nut and bolt are locked and the key is clenched by the same stroke of a hammer, substantially as described.

4. In a nut-lock, the combination with the bolt and nut, of a key having one straight arm and one arm curved outwardly forming a bearing for a hammer in such a manner that the nut and bolt are locked and the key clenched by the same stroke of a hammer, substantially as described.

5. In a nut-lock the combination with the nut, of a bolt provided with a longitudinal groove, an opening in the end thereof, and a key arranged in such a manner that one arm of said key is driven into said groove while the other is driven into said opening by the same stroke of a hammer, substantially as described.

654,745. CAR-COUPLING. WILLIAM M. MEAD, Wheat, Tenn., assignor of part to E. A. Adams, J. G. Carmichael, S. H. Fisher, R. L. Russell, J. F. Taylor, W. T. Russell, J. M. Crow, Cam Jones, A. N. Adams and L. N. Holloway, same place, and James H. Adams, Abe L. May, Marshal Waller, and William T. Gallaher. Filed Mar. 27, 1900. Serial No. 10,390. (No model.)



Claim.—1. A car-coupling comprising a draw-head, an L-shaped catch pivotally mounted at the bottom of the draw-head, a hinged locking device arranged at the top of the draw-head in position for engaging the catch, said locking device being provided with an approximately L-shaped slot, and a rock-shaft mounted on the draw-head and engaging the slot and adapted to hold the locking device in an elevated position, said slot also permitting the locking device to move independently of the rock-shaft, substantially as described.

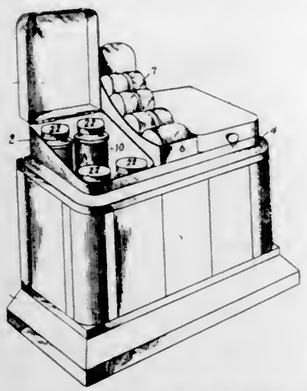
2. A car-coupling comprising a draw-head, an L-shaped catch pivotally mounted at the bottom of the draw-head, a locking device hinged at the top of the draw-head for engaging the catch and provided with an approximately L-shaped slot, and a transverse rock-shaft mounted on the draw-head and provided with a crank-bend extending through the L-shaped slot, substantially as and for the purpose described.

3. A car-coupling comprising a draw-head, a catch pivotally mounted within the draw-head at the bottom thereof, a locking device arranged at the top of the draw-head and adapted to engage the catch, said locking device being provided with an approximately L-shaped slot, and a rock-shaft engaging the L-shaped slot of the locking device and adapted to support the latter in an elevated position, substantially as and for the purpose described.

4. A car-coupling comprising a draw-head provided at its top with a slot, a catch mounted within the draw-head at the bottom

thereof and adapted to engage a link, and the exterior locking device arranged on the top of the draw-head and extending in advance and in rear of the slot and hinged at its rear end to the said draw-head, said catch being supported by the upper face of the draw-head at points in advance and in rear of the slot and being provided with an enlarged intermediate portion extending downward through the slot and engaging the said catch, substantially as described.

654,746. HAIR-DRESSER'S CABINET. ABRAHAM R. MIRANDA Boston, Mass. Filed Dec. 4, 1899. Serial No. 739,138. (No model.)



Claim.—1. In a hair-dresser's cabinet, the combination with the disinfecting-fluid receptacle, of the cell rising therefrom and having the exterior solid wall and the interior perforated wall, the wick fitting between said walls and descending into the said receptacle, the article-receiving basket adapted to be loosely inserted in said cell, and the stopper adapted to be engaged with said basket and to serve as a handle therefor, and at the same time to tightly close said cell, substantially as and for the purpose set forth.

2. In a hair-dresser's cabinet, the combination of the case divided into sections and having the receptacle-base, the double-walled cells located in one of said sections, the inner of which walls is perforated, the wick located in each of said cell-walls and descending into said receptacle, the perforated baskets loosely fitting in said cells, and the stoppers adapted to both tightly close said cells and to serve as handles for said baskets, substantially as set forth.

3. In a hair-dresser's cabinet, the combination with the receptacle, of the cylindrical cell rising therefrom and having a solid exterior wall and a perforated inner wall, the tubular wick fitted between said walls and descending into said receptacle, the basket loosely fitting into said cell, the stopper fitting friction-tight about said basket and having the flange, and the soft-rubber ring secured to the under face of said flange, substantially as set forth.

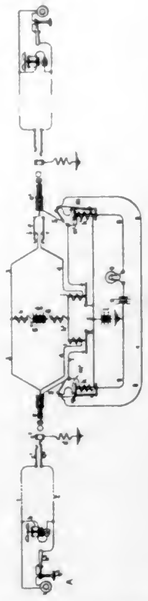
654,747. SUPERVISORY SIGNAL FOR TELEPHONE-SWITCHBOARDS. FRANK R. MCBERTY, Downer's Grove, Ill., assignor to the Western Electric Company, Chicago, Ill. Filed Nov. 13, 1897. Serial No. 658,398. (No model.)

Claim.—1. The combination with united telephone-lines and a signal associated with each line and controlled by current in the line of a pilot-signal and mechanism actuated in the simultaneous operation of the said signals adapted to cause the display of the pilot-signal, as described.

2. The combination with united telephone-lines, each provided with means for determining the flow of current in the line in the use thereof, of an electromagnet controlled by current in each line, and switch-contacts actuated by each magnet to be closed when the said magnet is excited, a signal, and a circuit including serially the contacts of both of said magnets, together with said signal and a source of current, as described.

3. The combination with pairs of united telephone-lines, and a supervisory signal for each line controlled by current therein determined in the use of the line, of a pilot-signal, a circuit including the pilot-signal, different bridges in multiple of the said circuit, and switch-contacts on each supervisory signal adapted to be closed thereby in one position, the switch-contacts of both members of a pair of supervisory signals being included serially in each of said bridges, substantially as described.

4. The combination with telephone-lines each having a switch at its substation for closing the line during the use of the telephone, of plugs and plug-circuits uniting the lines in pairs, a bridge of each plug-circuit including a source of current, a relay in the circuit of each line, a supervisory signal associated with each line in a local circuit controlled by the corresponding relay, a pair of switch-contacts on each supervisory signal actuated thereby to be closed when the signal is displayed, a general or pilot signal, a local circuit including the pilot-signal, together with a source of current, and normally-open bridges adapted to complete the said local circuit, each of said bridges including serially the switch-contacts of supervisory signals of united telephone-lines, as described.



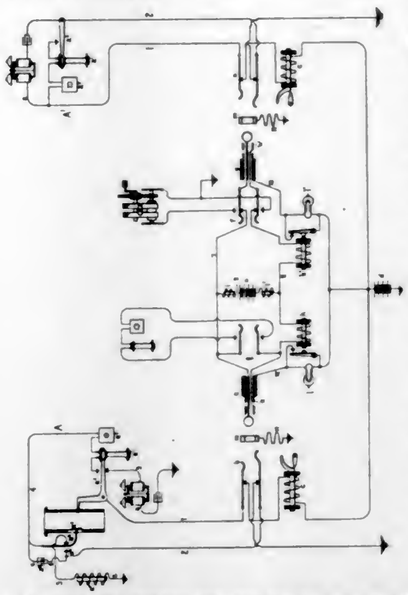
654,748. TELEPHONE TOLL APPARATUS. FRANK R. MCBERTY, Downer's Grove, Ill., assignor to the Western Electric Company, Chicago, Ill. Filed Nov. 13, 1897. Serial No. 658,399. (No model.)

Claim.—1. The combination with a telephone-line and a coin collecting or registering appliance at the station thereof, of a supervisory visible signal at a central office associated with the line, and circuit connections changed through the agency of said coin-collecting appliance adapted to operate the supervisory signal; whereby the required act of payment is signaled to the operator without the use of her telephone, as described.

2. The combination with a telephone-line and a coin collecting or registering appliance at the station thereof, said line extending to a central office, of a source of current applied to the line at the central office, an electromagnet in the path of current in the line from said source controlling a visible supervisory signal associated with the line, and circuit connections adapted to be changed in the operation of said toll-collecting appliance to determine the flow of current from said source and thus to operate the supervisory signal, as described.

3. The combination with a telephone-line extending between a substation and a central office, a line-signal for the line and a supervisory signal temporarily associated with the line in the central station, and a switch at the substation for controlling the operation of the said line and supervisory signals to call the office and to indicate the use of the telephone, respectively, of a toll-collecting appliance at the substation, normal circuit connections permitting the operation of the line-signal by the switch at the substation, and other circuit connections and means for changing the same in the act of payment of the toll adapted to cause the operation of the supervisory signal, as described.

4. The combination with a telephone-line having a toll-collecting appliance at its substation, and means for making connection with the line through the agency of a plug and plug-circuit, of a visible supervisory signal associated with the plug, a source of current and a magnet controlling the signal in the path of current from the said source through the telephone-line, of a switch in the toll-collecting appliance actuated in payment of toll, and circuit connections at the substation adapted to determine the flow of current in the line controlled jointly by the said switch in the toll-collecting appliance and the telephone-switch, as described.



5. In combination, telephone-lines, each provided at its station with a switch for determining the flow of current in the line in the use of the telephone, spring-jacks for the lines in a switchboard, a pair of plugs and a plug-circuit for making connection between any two lines, and a supervisory signal associated with the answering-plug of said pair adapted to indicate current in the line with which it may be connected, a toll-collecting appliance at one of the stations, and a device associated with the said appliance and controlled in the act of payment of the toll adapted to prevent the closure of the telephone-circuit by the telephone-switch until the toll is paid; whereby the supervisory signal associated with the answering-plug will indicate the position of the telephone-switch at all stations except the toll-line, but will indicate the payment of toll at the toll-station, as described.

6. The combination with a telephone-line, a toll-collecting appliance at the substation thereof, a supervisory signal associated with the line at the central office, and means for bringing an operator's telephone into circuit with the line, of a switch associated with the toll-collecting appliance to be actuated in the payment of toll, circuit connections and appliances completing the circuit as to telephonic currents only, and other circuit connections adapted to permit the flow of battery-current controlled by the said switch associated with the toll-collecting appliance; whereby a user of the telephone may talk with an operator, and the payment of toll will be signaled to the operator without the use of her telephone, as described.

7. The combination with a telephone-line, a toll-collecting appliance at its substation, and a supervisory signal at a central office associated with the line, of an inductive device interposed in the telephone-circuit to transmit telephone-currents, a switch connected with the toll-collecting appliance and actuated in the payment of toll, and circuit connections completed by the said switch to operate the supervisory signal, as described.

8. In combination, two telephone-lines, one of which is a toll-line, united in a complete circuit through link conductors to the central office, a supervisory signal associated with each line at the central office, and means at the called station for determining the flow of current in the line automatically in the use of the telephone and for controlling the supervisory signal associated with the same line, a toll-collecting appliance at the toll-station, a switch associated therewith to be actuated in the payment of toll, and circuit connections controlled by the switch adapted to operate the supervisory signal associated with the toll-line when the required payment is made; whereby the response of the called subscriber is signaled to the operator and she is enabled to insure the payment of the required toll, as described.

9. In combination, two telephone-lines, one of which is a toll-line, united through the agency of an answering-plug connected with the toll-line, and a calling-plug connected with the other line, of a supervisory signal associated with each of the plugs controlled by current in the corresponding line, and a source of current connected with the line, a toll-collecting appliance at the toll-station and a switch associated therewith to be actuated in the payment of toll, said switch being adapted to complete the line-circuit when payment is made, and a telephone-switch at the called substation adapted to complete the line during the use of the telephone; whereby the operator is informed of the response of the called subscriber and of the payment of toll by the user of the toll-line, as described.

10. The combination with a telephone-line, a line-signal permanently associated therewith in a switchboard, a supervisory signal adapted for temporary association with the line in making connection with the line in a switchboard, of a telephone-switch at the substation adapted to put circuit connections of the line in condition to operate either of the said signals when the telephone is removed from the hook, a toll-collecting appliance and a switch associated therewith to be actuated in the payment of toll and circuit connections thereof adapted to break the circuit of the line involved in the operation of the supervisory signal until the required payment is made, as described.

11. In combination, telephone-lines extending between different substations and a telephone-switchboard in a central office, link conductors for making connection between any two lines in the switchboard, and two supervisory signals, one for each of two connected lines associated with the said lines in the switchboard, a switch at each substation adapted to change the circuits of the line to operate the said supervisory signal, one of said stations being a toll-station and being equipped with a toll-collecting appliance, the switch at said station being associated with the said appliance and actuated in the payment of toll, the switches at the other stations being adapted for actuation automatically in the use of the telephone; whereby the operator is enabled to supervise connections between any two lines in a uniform manner and to determine the payment of the toll at the toll-station after the response of the called subscriber without aid of her telephone, as described.

12. The combination with a telephone-line having a toll-collecting appliance at its station, a supervisory signal associated with the line in a switchboard, and a switch connected with the toll-collecting appliance to be actuated in the payment of toll to operate the said supervisory signal, of a device at the substation controlled at the central office adapted to change the circuits at the substation to cause the operation of said supervisory signal; whereby the operation of the supervisory signal may be rendered independent of the said switch in the toll-collecting appliance, as described.

13. The combination with a telephone-line, a toll-collecting appliance at the station thereof, a supervisory signal adapted for connection with the line in the switchboard at the central office to respond to current in the line, and a source of current in the line, of a telephone-switch and a switch in the toll-collecting appliance adapted to coöperate in changing the line-circuit to cause the operation of the supervisory signal, an electromagnetic switch adapted to make a change in the circuits equivalent to that produced by the switch associated with the toll-collecting appliance, and means for exciting the said electromagnetic switch automatically in making connection to the line; whereby the supervisory signal may be caused to indicate the use of the telephone independently of the switch in the toll-collecting appliance, as described.

14. In combination, a toll-line and another line united in a circuit through the agency of a calling-plug connected with the toll-line, of an answering-plug connected with the said other line, a supervisory signal associated with each of said plugs, each adapted to indicate the flow of current in the corresponding line, a toll-collecting appliance at the toll-station, a telephone-switch and a switch in said toll-collecting appliance to be actuated in the payment of toll, circuit connections to complete the line controlled in the coöperation of said telephone-switch and said switch in the toll-connecting appliance, being completed when both switches are operated, an electromagnetic switch at the toll-station adapted when excited to effect the changes of the circuit connections equivalent to those produced by the said switch in the toll-collecting appliance, and means controlled through the agency of the calling-plug for applying current to the line to excite the said electromagnetic switch; whereby the operation of the supervisory signal of the calling-plug is made dependent on the position of the telephone-switch when the toll-station is called, but is dependent on the payment of toll in connections initiated at the toll-station, as described.

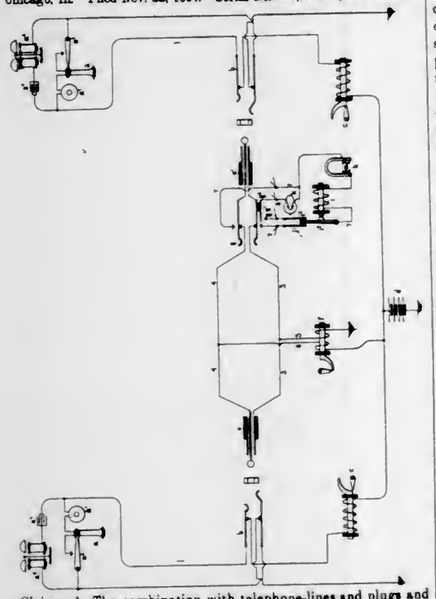
15. The combination with a telephone toll-line, of an answering appliance for making connection with the line as a calling-line, and a calling appliance for making connection with the line in response to a call from another line; a supervisory signal associated with each of said appliances, a toll-collecting appliance at the substation, a tele-

phone-switch adapted to change the circuits of the line to determine the flow of current in the line to operate the supervisory signal which may be associated with the line, a device in the toll-collecting appliance adapted to be operated in the payment of toll and constructed to prevent the said change of circuits by the telephone-switch until the toll is paid, an electromagnetic switch adapted, when excited, to make changes in the circuit equivalent to those produced by the said switch when moved in the payment of toll, and means for applying current to the telephone-line in making connection therewith to excite the electromagnetic switch, said means being made operative automatically in the use of the said calling appliance to make connection to the line: whereby the operation of the supervisory signal of the answering appliance is made dependent on the payment of toll while the operation of the supervisory signal of the calling appliance is made dependent only on the use of the telephone, as described.

16. The combination with telephone-lines and an answering and calling plug with their plug-circuit for uniting them, of a register or collecting device and a switch controlled thereby at one of the stations, said switch being adapted to close the path for current through the telephones at the substation, whereby the payment or registration may be insured, of a relay controlling circuit connections adapted to permit the passage of current in the telephones, and means for applying current to the calling-plug, to operate the said relay when the station provided with the same is called, as described.

17. The combination at a telephone pay-station with the telephone-switch, of circuit connections of the telephone-line normally broken, adapted, when closed, to permit the circulation of current through the telephones, a toll collecting or registering device, and a switch operated in the actuation of said device, controlling said circuit connections, said switch being adapted to engage the telephone switch when operated, to be held thereby while the telephone is removed from the hook, substantiallly as described.

654,749. SIGNAL APPLIANCE FOR TELEPHONE-SWITCH BOARDS. FRANK R. MCBERTY, Downer's Grove, and JAMES L. MCQUARRIE, Chicago, Ill., assignors to the Western Electric Company, Chicago, Ill. Filed Nov. 22, 1897. Serial No. 659,493. (No model.)



Claim.—1. The combination with telephone-lines and plugs and plug-circuits for making connection therewith, each telephone-line being provided with a switch at its station for changing the resistance of the line-circuit in the use of the telephone, of a key in each plug-circuit, a general supervisory signal and a source of current, each key being adapted to connect the general signal and source of current temporarily with the corresponding plug-circuit to determine the condition of use or disuse of the subtation instruments, as described.

2. The combination with telephone-lines, each provided at its station with a switch for changing the resistance of the line in response to a call-signal, of calling plugs and plug-circuits therefor for making connection with the line, a supervisory signal and a source of current, a key in the plug-circuit and circuit connections of the key and supervisory signal, whereby the signal and the source of current may be temporarily connected with a plug-circuit to determine the condition of the appliances at the substation, as described.

3. The combination with telephone-lines, each provided at its station with means for changing the resistance of the line in response to a call, of several calling plugs and plug-circuits therefor, a general supervisory signal and a source of current, a key in each plug-circuit and circuit connections therefor, said key being adapted to break the connection of the plug with the other appliances of the plug-circuit and to complete it with the said general supervisory signal and source of current, as described.

4. The combination with telephone-lines, each provided at its station with a telephone-switch adapted to change the resistance of the line in the use of the telephone, pairs of plugs and plug-circuits therefor, a source of current and a clearing-out signal connected with each pair of plugs, a general supervisory signal for the group of plugs, and a key in each plug-circuit, each key being adapted to break the connection between the plugs and to connect one of them in circuit with the said general supervisory signal, whereby an operator may determine the condition of use or disuse of the telephone at a substation, as described.

5. The combination with telephone-lines, each provided at its substation with a call-bell in a closed bridge of high resistance, a bridge of low resistance, and a switch for closing the bridge of low resistance, of plugs and their plug-circuits for making connection with the lines, a single generator of calling current for the group of plugs, an electromagnetic switch for the group of plugs, a key for each plug in the plug-circuit thereof adapted to connect the generator of signaling-current and the magnet of the electromagnetic switch with the corresponding plug, the electromagnetic switch being adapted to respond to current produced in the line when the said low-resistance bridge thereof is closed, the switch-contacts of the switch being interposed in the circuit of the generator to break the circuit when the magnet so responds, as described.

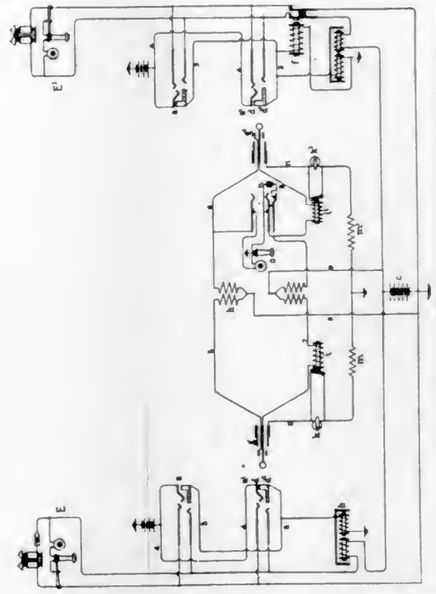
6. The combination with telephone-lines, each provided at its station with a signal-receiving instrument and a switch adapted to change the circuits of the line in response to a call, of plugs and plug-circuits therefor to make connection with the lines, a generator of signaling-current and an electromagnetic switch for the group of plugs, a key for each plug in the plug-circuit thereof adapted to connect the source of signaling-current and the magnet of said switch with the corresponding plug, the switch being adapted to operate by current in the line produced through the agency of said circuit connections as changed by the switch, said switch controlling the application of current of the generator to the line, as described.

7. The combination with telephone-lines, each provided at its substation with a call-bell and a switch for changing the circuit connections of the line in response to a call, of plugs and plug-circuits for making connection with the lines, a source of calling current, an electromagnetic switch, and a general supervisory signal, a key associated with each plug adapted to connect the electromagnetic switch, together with a source of current, to the line, said electromagnetic switch being adapted to respond to current determined by the condition of the line-circuit at the substation as changed by said switch, said switch being adapted to connect the generator of calling current with the line in one position and to cause the display of the supervisory signal in its other position: whereby the depression of a calling key will result in the transmission of a call-signal, or in the display of said supervisory signal, according to the position of the said switch at the substation, as described.

8. The combination with telephone-lines, each provided at its substation with a call-bell in a closed bridge of the line of high resistance, a bridge of the line of low resistance, and a switch for closing the said last-mentioned bridge in response to a call, of plugs and plug-circuits for making connection with the lines, a source of calling current and a relay, and a calling key for each plug, the calling key being adapted to connect the source of current and the relay with a line, the relay being responsive to current through the low-resistance bridge at the station of the line and having its switch-contacts interposed in the calling circuit to interrupt the calling current in its response, and a general supervisory signal controlled by the relay, substantially as described.

654,750. SWITCHBOARD FOR TELEPHONE-LINES. FRANK R. MCBERTY, Evanston, Ill., assignor to the Western Electric Company, Chicago, Ill. Filed Dec. 26, 1899. Serial No. 741,577. (No model.)

Claim.—1. The combination with a telephone-line, a spring-jack forming a terminal of the line, and a plug and plug-circuit for making connection with the spring-jack, of a local circuit terminating in normally-separated opposed contacts of the spring-jack adapted to be crossed together through the sleeve of the plug, and a magnet in the local circuit, a branch of the local circuit terminating in said contact-sleeve of the plug, a secondary supervisory signal in the last-mentioned branch, and a supervisory relay in the plug-circuit controlling said signal, as described.



2. The combination with a telephone-line, a self-restoring line-annunciator thereof, a spring-jack forming a terminal of the line in the switchboard, and a plug and plug-circuit for making connection with the spring-jack, and a local-battery circuit terminating in normally-separated contact-pieces of the spring-jack adapted to be crossed together through a local contact-piece of the plug, said local circuit including the restoring-magnet of the annunciator, of a supervisory relay and a source of current in the plug-circuit, a branch of the said local circuit in multiple with the restoring-magnet, a secondary supervisory signal and a resistance-coil in said branch, and a shunt of the secondary signal controlled by the supervisory relay; whereby the line-annunciator is reset and the secondary signal is excited for control by the relay when connection is made with the line, as described.

3. The combination with a telephone-line and a self-restoring line-annunciator in a normal bridge of the line-circuit, a spring-jack for the line, and a local circuit including the restoring-magnet of the line-annunciator and normally open at separated contacts in the spring-jack adapted to be closed together by an inserted plug, of an electromagnetic switch controlling the bridge of the line-circuit, the actuating-magnet of the said switch being in the same local circuit with the restoring-magnet of the line-annunciator, as described.

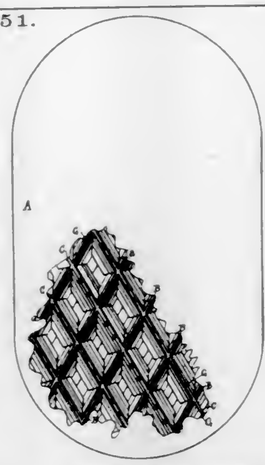
4. The combination with telephone-lines and a plug and plug-circuit forming a temporary extension of one of the lines, a source of current connected with the plug-circuit, and an operator's listening-key, of switch-contacts on the listening-key adapted to connect the telephone with the plug-circuit and to sever the conductive connection between the tip of the plug and the said battery; whereby the plug may be inserted into the spring-jack of a line without producing disturbances in the telephone of the line connected with the plug as described.

654,751. HORSE-BRUSH. ALEXANDER R. MCDONNELL, Littleton, Me. Filed May 1, 1900. Serial No. 15,117. (No model.)

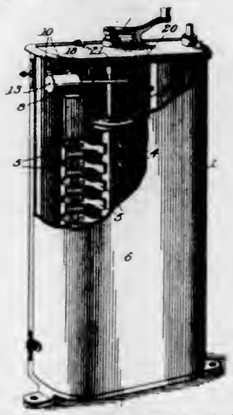
Claim.—1. A horse-brush consisting of the combination of a leather base-plate, and a piece of rubber fastened thereto, and having different series of narrow-edged ridges provided with notches and crossing one another.

2. A horse-brush, consisting of the combination of a base-plate, rows of ridges of triangular cross-section, and having narrow edges at their tops, and a second series of triangular ridges having narrow edges, crossing the first row or series at an angle, and formed of a soft yielding material.

654,751.



654,752. SPEED-GOVERNOR ATTACHMENT FOR ELECTRICAL APPARATUS. JAMES H. MCGURTY, Jersey City, N. J., assignor of forty-nine one-hundredths to Thomas McEwan, Jr., same place. Filed Apr. 25, 1900. Serial No. 14,300. (No model.)



Claim.—1. The combination with an electrical controller having a rotary controlling-shaft, of an air-check device comprising an air-cylinder and a reciprocating plunger working therein, said plunger having an operative connection with said rotary controlling-shaft, and coöperating means between the plunger and the cylinder for causing the plunger to have an intermittent slow and accelerated inward movement, substantially as set forth.

2. In a speed-governor attachment for electrical or other power apparatus, the combination with the moving member of the apparatus, of an air-check device comprising an air-cylinder, and a single governing-plunger working therein, the cylinder and plunger having vents coöperating at intervals for causing the plunger to have an intermittent slow and accelerated inward movement, substantially as set forth.

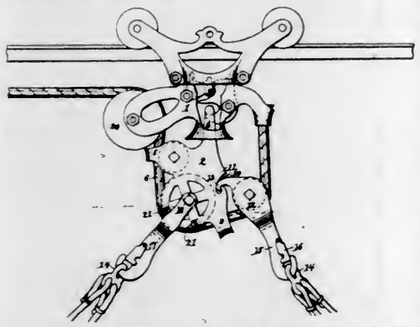
3. In a speed-governor attachment for electrical or other power apparatus, the combination with the moving member of the apparatus, of an air-check device comprising a cylinder provided with an open end and also with a closed end, having a pressure-vent therein, and a governing-plunger working within the cylinder, the latter and the plunger having vents coöperating at intervals for causing the plunger to have an intermittent slow and accelerated movement, substantially as set forth.

4. In a speed-governor attachment for electrical or other power apparatus, the combination with the moving member of the apparatus, of an air-check device comprising a cylinder having a succession of regularly-spaced relief-ducts, said cylinder being also provided with an open end and in its closed end with a pressure-vent, and a governing-plunger working within the cylinder and operatively connected

with the moving member of the apparatus, said plunger having a single port coöperating with the successive relief-ducts, substantially as set forth.

5. In a speed-governor attachment for electrical or other power apparatus, the combination with the moving member of the apparatus, of a stationary air-cylinder having an open end and provided at its closed end with a pressure-vent, a guide-bar fitted longitudinally within the cylinder and provided in one longitudinal face with a succession of regularly-spaced relief-ducts, and a governing-plunger operatively connected with the moving member of the apparatus and provided with a notch taking over said guide-bar, the said plunger being further provided with a single relief-port leading from an edge thereof to its outer face and coöperating with said ducts, substantially as set forth.

654,753. HAY-SLING PULLEY. JACOB NEY, Canton, Ohio, assignor to the V. L. Ney Company, same place. Filed Dec. 4, 1899. Serial No. 739,191. (No model.)

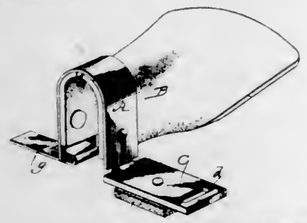


Claim.—1. The combination of a pulley-block provided with a registering head and a pulley, a recess being in one side of the pulley-block, an arm pivoted concentric with the axle of the pulley in the pulley-block, and a detachable head provided with a pulley and a hook, the hook adapted to engage the recess in the block provided with a registering head, substantially as and for the purpose specified.

2. The combination of a pulley-block provided with a registering head and a pulley, a notch or recess located upon one of its sides, an antifriction-roller, and an arm pivoted concentrically with the axle in the pulley-block, and a head provided with a hook adapted to engage the recess in the pulley-block, substantially as and for the purpose specified.

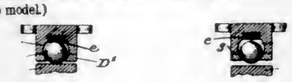
3. The combination of a pulley-head formed of separable blocks, and each of the blocks provided with pulleys, and one of said blocks provided with a registering head, an arm pivoted concentrically with the axle in the pulley-block provided with the registering head, a recess formed in the side of the block provided with the pivoted arm, and the other block provided with a hook to engage the recess, and stops to limit the movement of the pivoted arm, substantially as and for the purpose specified.

654,754. SPINDLE-PROTECTOR FOR VEHICLES. BENJAMIN F. NICKERSON, Webster City, Iowa. Filed May 12, 1900. Serial No. 16,427. (No model.)



Claim.—An attachment for vehicles comprising a metal frame, a flexible shield fixed to the frame, a metal plate hinged to one end portion of the frame, a key slidably hinged to the other end of the frame and adapted to pass through a slot in the free end of the hinged plate, and an elastic plate fixed to the hinged plate, arranged and combined to operate in the manner set forth for the purposes stated.

654,755. SIDE BALL-BEARING FOR CARS. JOHN E. NORWOOD, Baltimore, Md., assignor to the Baltimore Ball Bearing Company of Baltimore City, of Maryland. Filed Dec. 6, 1899. Serial No. 739,347. (No model.)



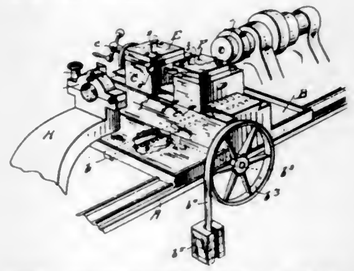
Claim.—1. In a side ball-bearing for railway-cars, a curved ball-box having a flat inside upper surface; balls in said box; and a removable bottom slotted plate, D', secured to the lower surfaces of the walls of said box, whereby the balls when seated against said upper surface may protrude through the slotted bottom and have a side rolling movement, as set forth.

2. In a side ball-bearing for railway-cars, the combination of a curved ball-box for attachment to the car-body bolster and having a flat inside upper surface, and balls secured in the box whereby said balls when in contact with said upper surface may roll in any direction.

3. In a side ball-bearing for railway-cars, the combination of a ball-box having an inside upper surface and side concave walls, *f*, joining said upper surface—the interior of said box being curved and wider between the side walls at the center than at the ends; a removable bottom slotted plate secured to said box; and balls loose in the box, whereby the balls when at the center are free to have a side rolling movement but when at the ends this movement is more limited.

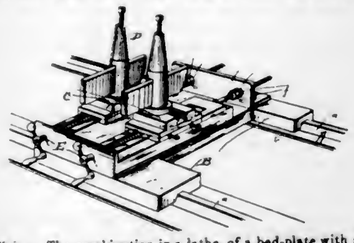
4. In a side ball-bearing for railway-cars, the combination of a ball-box curved from end to end and provided at one end with a dovetail-shaped slot and the other end open and provided with a threaded bolt; a removable slotted plate which confines the balls and has at one end a dovetail-shaped boss, and at the other end a flange which closes the open end of the box—said flange having a hole which takes onto the said threaded bolt, as shown and described.

654,756. LATHE FOR FORMING COLLARS UPON VEHICLE-AXLES. JOHN G. OBERMIER, Canton, Ohio. Filed Jan. 13, 1900. Serial No. 1,259. (No model.)



Claim.—The combination in a lathe, of a bed-plate with a revolving lathe-head mounted upon a stationary supporting-bracket, a longitudinally-adjustable slide-rest carrying laterally-adjustable tool-rests, and means for engaging the tools therewith, a rack attached to the under side of the slide-rest, a pinion meshing therewith, mounted upon a shaft journaled in the ways and carrying a weighted drive-wheel, substantially as described and for the purpose set forth.

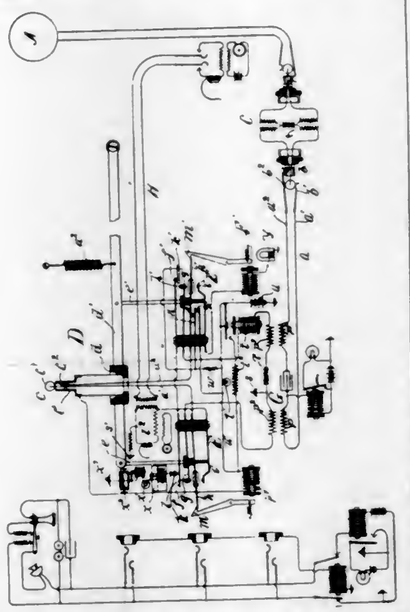
654,757. STOP-BLOCK FOR LATHES. JOHN G. OBERMIER, Canton, Ohio. Filed Jan. 13, 1900. Serial No. 1,260. (No model.)



Claim.—The combination in a lathe, of a bed-plate with a slide-rest mounted thereon, and carrying a tool-rest, cross-feed screws engaging the slide and tool rest, an angle-plate mounted upon the op-

posite side of the rest, a series of screw-threaded apertures in the projecting flange thereof, and headed stop-screws mounted therein and carrying adjusting-nuts, substantially as described and for the purpose set forth.

654,758. APPARATUS FOR TELEPHONE-SWITCHBOARDS. JOSEPH J. O'CONNELL, Chicago, Ill., assignor to the Western Electric Company, same place. Filed May 12, 1899. Serial No. 716,528. (No model.)



Claim.—1. An apparatus for telephone-switchboards, consisting of a connecting-plug and its cord-circuit, a seat wherein the plug is adapted to rest when not in use, switch-contacts and means for setting the same controlled by the coöperation of the plug with its seat, an electromagnet having an armature for releasing said switch-contacts, and means for energizing said magnet, substantially as set forth.

2. The combination with a telephone-line, extending from a subscriber's station and terminating in a spring-jack at the central office, of a plug and its cord-circuit, said plug being adapted for insertion in said spring-jack, a seat wherein said plug is adapted to rest when not in active use, a set of switch-contacts controlled by the coöperation of said plug with its seat, a source of signaling-current, means controlled by said switch-contacts for connecting the same to the cord circuit, whereby said source of current is connected with the cord-circuit and through the latter with the telephone-line when the plug is lifted from its seat and inserted in the spring-jack, an electromagnet connected or adapted to be connected with the telephone-line, mechanism adapted to be influenced by said magnet to change the relations of said switch-contacts to remove the source of signaling-current from circuit, and means controlled at the subscriber's station for energizing said magnet, whereby said source of signaling-current is cut out when the subscriber answers, substantially as described.

3. The combination with a connecting-plug adapted for insertion in a telephone-line spring-jack, of a seat wherein said plug is adapted to rest when not in active use, a set of switch-contacts controlled by the coöperation of said plug with its seat, a source of signaling-current and a circuit controlled by said switch-contacts for connecting the same with the cord-circuit, whereby said source of signaling-current is connected with the plug when the latter is lifted from its seat preparatory to making a connection, an electromagnet, circuit-changing mechanism adapted to be influenced thereby to cut out said source of signaling-current, and means for energizing said electromagnet, substantially as set forth.

4. The combination with a telephone-line extending from the subscriber's station and terminating in a spring-jack at the central office, of a plug and its cord-circuit, said plug being adapted for insertion in said spring-jack to connect the cord-circuit with the telephone-line, an electrically-operated time-indicating device, means controlled by registering-contacts on the plug and spring-jack for operating said indicating device, and means controlled by the subscriber's apparatus for preventing the operation of said time-indicating device, whereby said device is operated during the time between the insertion of the plug and the operation of said subscriber's apparatus, substantially as set forth.

5. The combination with a connecting-plug, of a seat wherein the same is adapted to rest, a switch-contact adapted to occupy alternative positions, controlled by the coöperation of the plug with its seat, a detent for retaining the spring in one of its alternative positions independent of the plug, an electromagnet having an armature adapted to release said contact, and means for energizing said magnet, substantially as described.

6. The combination with a connecting-plug and its cord-circuit, of a seat wherein said plug is adapted to rest when not in active use, a contact-spring, mechanical means for moving said contact-spring out of its normal position, said means being controlled by the coöperation of the plug with its seat whereby said spring is bent out of its normal position when the plug rests in its seat, contacts with which said spring is adapted to engage in alternative positions, a detent adapted to maintain said spring in an abnormal position independently of the means controlled by the plug and its seat, an electromagnet and means adapted to be influenced thereby to disengage said detent from said contact-spring, a circuit including said magnet, and a source of current and registering-contacts on the plug and spring-jack for controlling said circuit, whereby the spring is released from said detent by the insertion of the plug in the spring-jack, substantially as set forth.

7. The combination with a connecting-plug, of a seat wherein the plug is adapted to rest when not in use, two independent sets of switch-contacts, a telephone-circuit controlled by one set of contacts and a signaling-circuit controlled by the other set of contacts, means associated with the plug-seat for changing the relations of both sets of contacts and for setting the same, electromagnets associated one with each set of switch-contacts, armatures for said magnets adapted when moved to release the contacts previously set, and means for energizing said electromagnets, substantially as described.

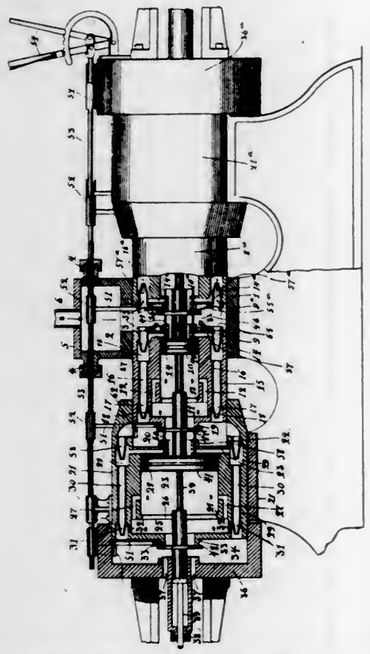
8. The combination with a connecting-plug, of a movable seat wherein the same is adapted to rest when not in use, two independent sets of switch-springs, both adapted to be set by the movable plug-seat, independent electric circuits controlled by each of said sets of switch-springs, electromagnets associated one with each of said sets of switch-springs, mechanism operated by said magnets for releasing the switch-springs, and means for energizing said electromagnets, substantially as set forth.

654,759. DUPLEX STEAM-ENGINE. JOHN R. O'DONNELL, Lee's Summit, Mo. Filed Sept. 22, 1899. Serial No. 731,275. (No model.)

Claim.—1. In a duplex engine having a pair of cylinders disposed end to end and operated alternately by a common piston-rod, and pistons on said rod, a steam-entrance, a central admission-chamber into which both cylinders open, two outer steam-chambers in the casing beyond each of said cylinders and opening into each other centrally, radial ports for exhaust-steam leading from said cylinders to the first of said outer steam-chambers, radial ports leading from the entrances of said cylinders, longitudinal passages connecting with said radial ports and leading into the second outer steam-chamber, reciprocating slide-valves mounted in the casings, transverse to said radial ports and having openings registering therewith, nozzles in the outer ends of said longitudinal passages, radial ports leading from the first outer steam-chamber and opening into said longitudinal passages immediately behind the orifices of said nozzles, tappet-valves slidably mounted on the piston-rod, and extending radially therefrom, within said central steam-chamber and the second outer steam-chambers, and adapted to alternately open and close the entrances to the cylinders and the openings connecting said outer chambers, and exhaust-ports in said second outer chambers, substantially as set forth.

2. In a duplex steam-engine, the combination of a pair of cylinders disposed end to end, open at their outer ends and operated by a common piston-rod, divisible pistons on said rod, consisting of conical portions, fixed to the rod, and annular portions surrounding said conical portions and separable therefrom, inwardly-projecting flanges at the head ends of the cylinders, against which said annular portions impinge, to divide the piston-head at the end of the direct stroke, a steam-entrance, a central admission-chamber into which both cylinders open, two outer steam-chambers in the casing, beyond each of said cylinders, opening into each other centrally, radial ports leading from the entrances of said cylinders, longitudinal passages connecting with said radial ports and leading into the second outer steam-chambers, reciprocating slide-valves mounted in the casings transverse to said radial ports and having openings registering therewith, nozzles in the outer ends of said longitudinal passages, radial ports leading from the first outer steam-chamber and opening into said

longitudinal passages immediately behind the orifices of said nozzles, tappet-valves slidably mounted on the piston-rod and extending radially therefrom, within said central steam-chamber and the second outer steam-chambers, and adapted to alternately open and close the entrances to the cylinders and the openings connecting said outer chambers, and exhaust-ports in said second outer chambers, substantially as set forth.



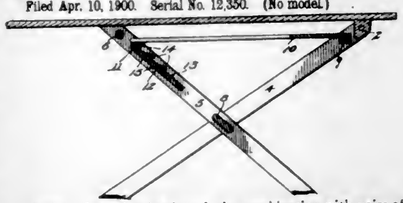
3. In a duplex engine the combination of a pair of cylinders disposed end to end, and operated by a common piston-rod, pistons on said rod, a central admission-chamber between said cylinders and connecting therewith, two outer steam-chambers at the head of each cylinder, communicating with each other by central openings through which the rod passes, exhaust-ports in the outermost of said chambers, means for passing expanded steam around or through the pistons into the first of said outer chambers at the end of the direct stroke, tappet-valves slidably mounted on the rod within the admission-chamber and the second outer chamber, adapted to alternately open and close the entrances to the cylinders and the openings between said outer chambers, valve-rods mounted on the casing and having arms extending through the same into the path of said tappet-valves, for reversing the engine, valve-controlled radial and longitudinal steam-passages leading around the cylinders, from the entrances thereto to said second outer chambers, said longitudinal passages terminating in nozzles adapted to produce a blast to draw expanded steam from the cylinders and first outer chambers, and project it into said second outer chambers substantially as set forth.

4. In a duplex steam-engine, the combination of a pair of cylinders axially in line, open at both ends and operated by a common piston-rod, pistons on said rod, a central admission-chamber between said cylinders and connecting therewith, two outer steam-chambers, concentric with the rod, at the head of each cylinder, and connecting with each other by central openings through which the rod passes, exhaust-ports in the outermost chambers, means for passing expanded steam around or through the pistons at the end of the direct stroke, tappet-valves slidably mounted on the rod within the admission-chamber and the second outer chambers, adapted to alternately open and close the entrances to the cylinders and the openings between said outer chambers, radial ports leading from said entrances and connecting with longitudinal passages opening into said outer chambers, slide-valves reciprocating transversely across said radial ports and having openings registering therewith to regulate the admission of steam to said ports, openings in the inner walls of the cylinder-casings, between the admission-chamber and said longitudinal passages, in alinement with said passages, nozzles fitted in said openings and projecting into said passages beyond said radial ports, valves for admitting steam to said nozzles during the return stroke, other nozzles in the outer ends of said longitudinal passages, radial ports opening from the first outer steam-chambers into said longitudinal passages, behind the orifices of said last-mentioned nozzles, whereby live steam is supplied to the cylinders during the return stroke, and expanded steam drawn out of the path of the pistons during both the return and direct strokes, substantially as set forth.

5. In a duplex engine, the combination of a central steam-entrance, a central admission-chamber, a plurality of cylinders on each side said chamber, all said cylinders being arranged axially in line and operated by a common piston-rod, and having openings at each end, through which the rod passes, the outer cylinders being of greater capacity than the inner cylinders, pistons on the rod in each of said cylinders, means for passing expanded steam around or through said pistons at the end of the direct stroke, two outer steam-chambers in the casing, at the head end of each cylinder, connected by central openings through which the rod passes, exhaust-ports in the outermost chambers at each end of the engine, radial ports leading from the entrances of said cylinders, longitudinal passages connecting with said radial ports and leading into the second outer steam-chambers, nozzles in the outer ends of said longitudinal passages, radial ports leading from the first outer steam-chamber adjacent to each cylinder and opening into said longitudinal passages immediately behind the orifices of said nozzles, tappet-valves slidably mounted on the piston-rod and extending radially therefrom, within said admission-chamber and the second outer steam-chambers, adapted to alternately open and close the entrances to the cylinders and the openings connecting said outer chambers, substantially as set forth.

6. In a duplex engine, the combination of a central steam-entrance, a central admission-chamber, a plurality of cylinders on each side said chamber, all said cylinders being arranged axially in line and operated by a common piston-rod, and having openings at each end, through which the rod passes, pistons on the rod in each of said cylinders, means for passing expanded steam aronnd or through said pistons at the end of the direct stroke, two outer steam-chambers in the casing at the head of each cylinder, connected by central openings, through which the rod passes, exhaust-ports in the outermost of said chambers, at each end of the engine, tappet-valves slidably mounted on the rod, within the admission-chamber and the second outer chambers, adapted to alternately open and close the entrances to the cylinders and the openings between said outer chambers, radial ports leading from said entrances and connecting with longitudinal passages opening into said outer chambers, openings in the inner walls of the cylinder-casings, in alinement with said passages, nozzles fitted in said openings and projecting into said passages beyond said radial ports, valves for admitting steam to said nozzles during the return stroke, other nozzles in the outer ends of said longitudinal passages, radial ports opening from the first outer steam-chambers into said longitudinal passages behind the orifices of said last-mentioned nozzles, whereby live steam is supplied to the cylinders during the return stroke, and expanded steam drawn out of the path of the pistons during both the return and direct strokes, substantially as set forth.

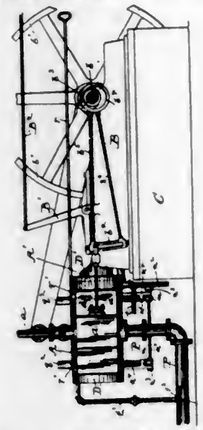
654,760. IRONING-TABLE. JEFFERSON D. PACE, Shreveport, La. Filed Apr. 10, 1900. Serial No. 12,350. (No model.)



Claim.—In an ironing-board, the combination with pairs of pivoted legs, and an ironing-board supported thereby, one of said pairs of legs being provided with opposed longitudinal recesses each having lateral extensions disposed at an acute angle with respect to the longitudinal recesses and extending in the direction of the other pair of legs, a rock-shaft journaled between said last-named legs, and a brace secured to the rock-shaft and provided with a terminal latch-bar the opposite ends of which latter are movable within the longitudinal recesses and are designed to be engaged within the lateral extensions of said recesses by the separation of the legs.

654,761. COMBINED STEAM AND EXPLOSIVE ENGINE. GEO PALM, Butler, Pa. Filed Dec. 18, 1897. Serial No. 662,402. (No model.)

Claim.—1. In an engine, the combination of a cylinder having two sets of ports, one set for the admission of steam to each end of said cylinder, and the other set for the admission of an explosive mixture to each end of said cylinder, valves controlling said ports, and a valve in each steam-port, whereby said steam-ports may be completely cut off from said cylinder.



2. In an engine, the combination of a cylinder having steam-ports at each end thereof, a main valve controlling said ports whereby the steam may be admitted alternately to each end of said cylinder, an independent valve in one of the steam-ports adapted to close said port permanently, said cylinder having a port for the admission of an explosive mixture to one end thereof, and inlet and exhaust valves controlling said explosive-mixture port, substantially as set forth.

3. In an engine, the combination of a cylinder having at one end thereof a steam-port, and a port for the admission of an explosive mixture, a steam-valve controlling said steam-port connected to a moving part of the engine to operate said valve, and a stop-valve in the same port between the steam-valve and the cylinder for permanently closing said port to the admission of steam.

4. In an engine, the combination of a cylinder having at one end thereof a steam-port, and at its opposite end a port for the admission of an explosive mixture, a steam-valve controlling the steam-port connected to a moving part of the engine to operate said valve, and a stop-valve in the same port between the steam-controlling valve and the cylinder for closing said port to the admission of steam.

5. In a gas-engine, the combination of a cylinder, a piston, said cylinder having two sets of ports at each end thereof, one for the admission of steam, and one for the admission of an explosive mixture, valves for controlling said ports, said gas-valves arranged to be held closed by the steam admitted through said steam-ports.

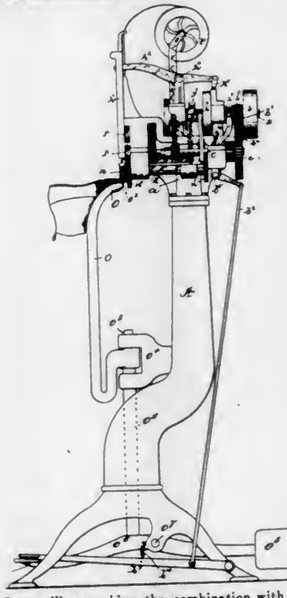
6. In an engine, the combination of a piston, a cylinder having two sets of ports, one set for the admission of steam to each end of said cylinder, and the other set for the admission of an explosive mixture to each end of said cylinder, exhaust-valves controlling the exhaust of steam and explosive mixture from said cylinder, mechanism for rendering permanently inoperative one of said inlet-valves, and mechanism for rendering permanently inoperative one of said exhaust-valves at the same end of the cylinder.

7. In an engine, the combination of a piston, a cylinder having two sets of ports, one set for the admission of steam to each end of said cylinder, and the other set for the admission of an explosive mixture to each end of said cylinder, exhaust-valves controlling ports leading from said cylinder to the exhaust, means for shutting off the explosive mixture from one of said inlet-valves at an end of the cylinder, and means for holding one of said exhaust-valves permanently open at the same end of the cylinder.

654,762. NAILING-MACHINE. FREDERN F. RAYMOND, 2d, Newton, Mass., assignor, by mesne assignments, to the United Shoe Machinery Company, of New Jersey. Filed Dec. 17, 1889. Serial No. 334,114. (No model.)

Claim.—1. In a nailing-machine, the combination with a stud or block having a throat through which the nails are driven into the work, a work-support, a feed-roll on one side of said throat carried by said block, means for positively driving said feed-roll, and a freely-rotatable bearing-roll carried by said block on the other side of the throat.

2. In a nailing-machine, the combination with a block or stud having a throat through which the fastenings are driven into the work, of a feed-roll mounted on said block or stud, said feed-roll having a threaded section, and an edge guide having a threaded sleeve mounted on said threaded section.



3. In a nailing-machine, the combination with a block or stud having a throat through which the fastenings are driven into the work, of a feed-roll mounted on said block or stud, said feed-roll having a threaded section, an edge guide having a threaded sleeve mounted on said threaded section, and means for locking said edge guide onto said feed-roll.

4. In a nailing-machine, the combination with a block or stud having a throat through which the fastenings are driven into the work, of a feed-roll mounted on said block or stud, and an edge guide carried by said feed-roll and detachable therefrom.

5. In a nailing-machine, the combination with a block or stud having a throat through which the fastenings are driven into the work, of a feed-roll mounted on said block or stud, and an edge guide carried by said feed-roll and adjustable thereon.

6. In a nailing-machine, the combination with a block or stud having a throat through which the fastenings are driven into the work, of a feed-roll adjustably mounted on said block or stud, an edge guide carried by said feed-roll and adjustable thereon, and means for locking said edge guide in its adjusted positions.

7. In a nail making or driving machine, the combination with rotary dies having a point-forming section and a wire-feeding section, of a reversely-acting wire-feed to draw the wire back any desired extent after it has been pointed and fed by the rotary dies.

8. In a nail making or driving machine, the combination with rotary dies having a point-forming section and a wire-feeding section, of a reversely-acting wire-feed to draw the wire back any desired extent after it has been pointed and fed by the rotary dies, and a cut-off to act upon the wire and produce a nail of the requisite length after it has been drawn back the desired extent by the reverse feed.

9. In a nail making or driving machine, the combination with pointing-dies, of a wire-feed to move the wire forward, a secondary wire-feed to move the wire in a reverse direction, and a cut-off to sever the pointed wire after the action of the reverse feed.

10. In a nail making or driving machine, the combination with the die-rolls D, D', having one or more pairs of wire pointing and feeding die-sections, a cut-off for each set of dies, and the reverse-feed rolls F, F' rotated in an opposite direction from the direction of rotation of said die-rolls D, D', said rolls F, F' having a pair of feed-blocks for each pair of dies on said die-rolls.

11. In a nail making or driving machine, the combination with the die-rolls D, D', of one or more sets of pointing and feeding dies mounted thereon, of the reverse-feed rolls F, F' mounted on the shafts f^3, f^3, the feed-blocks f, f', on said rolls, and the gears f^4, f^5, f^6 and f^7 connecting the shafts of said die-rolls with the said shafts f^3, f^3.

12. In a nail making and driving machine, the combination with the wire pointing and feeding dies, of a reverse wire-feed, a cut-off, a nail-transferrer, a nail-throat, and a nail-driver.

654,763. CURETTE. JAMES V. RUSSELL, Chicago, Ill. Filed Oct. 9, 1899. Serial No. 733,065. (No model.)



Claim.—1. In a curette, the combination with a stock, of flexible blades having a length greater than said stock and attached to the forward end of the latter, and a hollow handle at the opposite end and longitudinally adjustable on said stock and into which the ends of said blades extend, said handle being provided with means to engage the said flexible blades so that when the said handle is moved forward on said stock the said blades will be expanded.

2. In a curette, the combination with a stock provided with longitudinal channels in its opposite sides, flat flexible blades secured at their outer ends to the forward extremity of said stock and normally housed in said channels, and a handle at the opposite end and movable longitudinally on said stock and within which the free ends of said flexible blades are disposed and by which they are expanded when said handle is moved forward on the stock.

3. In a curette, the combination with a stock, of flexible blades attached to the forward extremity of said stock, a handle carried by said stock and longitudinally movable thereon and within which the free inner ends of said flexible blades extend and by which they are expanded, and an adjustable or sliding blade-controlling collar intermediate the forward ends of said blades and said movable handle, and which permits of a flexure of said blades below said collar.

4. In a curette, the combination with a stock provided with longitudinal channels in its opposite sides, of flat flexible blades attached to the forward extremity of said stock and normally housed within said longitudinal channels; a handle carried by said stock and longitudinally movable thereon and within which the free inner ends of said flexible blades are disposed and by which they are expanded; an adjustable blade-controlling collar intermediate the forward ends of said blades and said movable handle, and a lock-nut to limit the forward movement of said handle and hold it and said expanded blades against further movement and accidental displacement.

5. In a curette, the combination with a stock having a screw-threaded lower end and provided with opposite, longitudinal channels extending its entire length, of flat flexible blades detachably secured to the forward extremity of said stock and normally housed within said channels; a handle mounted on said screw-threaded lower end of the stock and within which the free inner ends of said flexible blades are disposed and by which they are expanded; a sliding blade-controlling collar between the forward extremity of said stock and said movable handle, and a nut-lock on said screw-threaded stock to determine and limit the movement of said handle and hold it and said expanded blades against further movement.

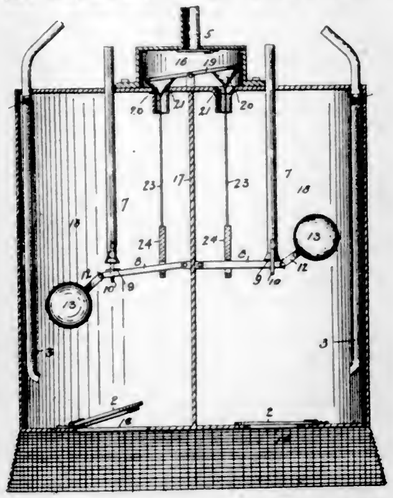
6. In a curette, the combination with a hollow stock having channels in its opposite sides extending its entire length, of a handle screw-threaded on one end of said stock and having an aperture in its bottom for the passage of a douche-tube; flat flexible blades having offset loops at their forward ends by which they are secured to the forward extremity of said stock, said blades being normally housed in the channels in said stock and having their free ends disposed within said movable handle, and said blades abutting against the bottom of said handle; a sliding collar on said stock between the forward end of the stock and said handle, a lock-nut threaded on said stock to determine and limit the movement of said handle and hold it and said expanded blades against further movement, and a douche-tube attachable to the lower end of said stock.

7. In a curette having expanding and contracting blades attached to the forward extremity of said curette at adjacent points thereon by means of loops or bends in said blades, offsets in said loops or bends whereby said blades are caused to flex laterally in opposite directions when the opposite extremities of said blades are forced to approach the said loops or beods in their respective blades.

8. In a curette, the combination of a stock, pins fixed in said stock at the forward extremity thereof adjacent to each other, expanding, cutting or scraping blades lying on opposite sides of said stock, said blades extending to the outer lateral surfaces of said pins, thence forward and inwardly around said pins, thence rearwardly, making return-bends wherein said pins are engaged; said blades forming at their forward bends the portion of the instrument whereby the mouth of the cavity is first spread, and means for flexing said blades by causing the rear extremities thereof to approach said pins.

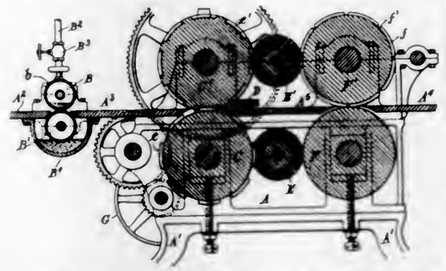
9. In a curette, the combination with a channeled or recessed stock provided with a douche-passage *a* and having a screw-threaded portion B at one end and pins or eyes *c* at its other end, of flexible blades G having open offset loops *g* by which they are secured to said eyes c so as to afford a tapering or rounded end to the instrument, the main portions of said blades being housed in the channels of said stock; a handle F mounted on the screw-threaded portion B of said stock and having a flange *f* provided with a douche-tube aperture *f* and against which flange the free inner ends of said blades G rest and by which they are expanded as said handle B is moved forward on the stock; a blade-controlling collar J longitudinally movable on said stock and adapted to serve as a means for closing the contracted entrance of the cavity; a lock-nut H to determine and limit the movement of the handle F and hold it and the expanded loops against accidental displacement, and a douche-tube D passing through the aperture *f* in handle F and attachable to the said stock.

654,764. PNEUMATIC WATER-ELEVATOR. MARION N. SCHAUFFLEBERGER, Bristol, Va., assignor of one-third to John W. Bolton, same place. Filed July 3, 1899. Serial No. 723,233. (No model.)



Claim.—In a duplex pneumatic water-elevator, the combination with the tank divided by a central partition into two compartments, each having an inlet-opening in the bottom provided with a valve, the outlet-pipes, the exhaust-pipes, the pivoted arms provided with valves, the rods pivoted thereto and the floats, of the housing at the upper part of the tank, the air-pipe communicating therewith, the pivoted lever having a valve at each end, the air-pipe with which said valves engage, the rods connected with said lever passing through said air-pipes, and the bars connected therewith having slots at the lower ends through which said pivoted arms pass, substantially as described.

654,765. MACHINE FOR MANUFACTURING METAL LATH. JACOB SCHRATWIESER, New York, N. Y. Filed Aug. 24, 1898. Serial No. 689,428. (No model.)



Claim.—1. In a machine for the manufacture of metallic lath, the combination of a plurality of primary rollers bearing complemental perforating-dies, and a plurality of secondary rollers one of which bears a series of annular ridges having interstices at intervals corresponding to the length of the cutting-dies on the primary rollers.

2. In a machine for the manufacture of metal lath, the combination of a plurality of primary rollers bearing complemental perforating-dies, and a plurality of secondary rollers, one of which bears a series of annular ridges of greater thickness than said perforating-dies and in line with the same, and the other a plain surface.

3. In a machine for the manufacture of metallic lath, the combination of a plurality of primary rollers bearing complemental perforating-dies, the male dies arranged in annular rings with annular apertures between, and the female dies arranged in like manner with shoulders corresponding to said apertures, and a plurality of secondary rollers one of which bears a series of annular ridges.

654,766. PRODUCTION OF COLORED PHOTOGRAPHS. GUSTAV SELLE, Brandenburg-on-the-Havel, Germany. Filed Dec. 7, 1898. Serial No. 698,579. (No specimens.)



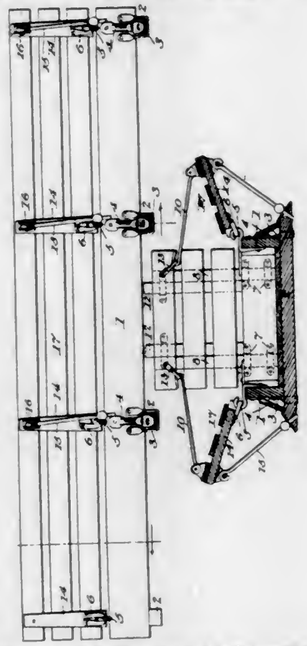
Claim.—1. The process of production of multicolored-paper photographs consisting in covering the paper with a waterproof layer, then with a sensitive layer exposing and developing the latter for one color, again covering same with a waterproof layer then with a sensitive layer, exposing and developing the latter for another color and repeating the operations of waterproofing sensitizing exposure and development for each additional color.

2. The process of production of multicolored-paper photographs consisting in covering the paper with a layer of collodion, then with a sensitive layer, exposing and developing the latter for one color again covering same with collodion then with a sensitive layer exposing and developing the latter for another color, and repeating the operation of covering with collodion layer, with sensitive layer, exposure and development for each additional color.

3. The process of production of multicolored-paper photographs consisting in stretching the paper securely on an impervious plane surface covering the paper with a waterproof layer, then with a sensitive layer exposing and developing the latter for one color, again covering same with a waterproof layer, then with a sensitive layer, exposing and developing the latter for another color and repeating the operations of waterproofing, sensitizing exposure and development for each additional color and afterward removing the paper from the plane surface.

4. The process of production of multicolored-paper photographs consisting in stretching the paper securely on an impervious plane surface covering the paper with a layer of collodion, then with a sensitive layer, exposing and developing the latter for one color again covering same with collodion then with a sensitive layer exposing and developing the latter for another color and repeating the operations of covering with collodion layer, with sensitive layer, exposure and development for each additional color and afterward removing the paper from the plane surface.

654,767. WAGON-RACK. ALBERT L. SIPE, Cardington, Ohio. Filed Apr. 12, 1900. Serial No. 12,697. (No model.)

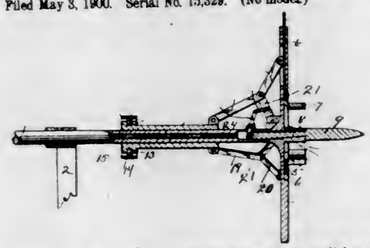


Claim.—1. A wagon-rack comprising in its construction a main body, hooks carried by sides and one end-gate of main body, hooks carried by top front end-gate, uprights carried by top front and rear end-gates, hooked rods, one of said hooked rods being carried by each of the top sides and connected thereto by means of ears, said hooked rods being adapted to engage said hooks carried by top front and under end-gates, substantially as described.

2. The main body comprising in its construction, a bottom supported by sills, the ends of said sills being beveled and apertured at an angle thereto, sides carrying hooks, braces connecting aforesaid sills with said sides, each of the braces extending over the beveled portion of each of the said sills and having an aperture which registers with the apertures in the sill, U-shaped pieces supporting said sills, and front and rear end-gates carrying pairs of loops, and hooks carried by said front end-gate substantially as described.

3. A wagon-rack comprising in its construction a main body having sills apertured at each end, ears carried by top sides, supporting-rods carried by said ears and adapted to enter the apertures in said sills and rest upon a collar carried by each of said rods, eyes carried by the top sides for engaging the hooks carried by the sides and one end-gate of the main body, and means for holding top sides in a closed position by the connection of the hooked rods with the hooks on front of rack, substantially as described.

654,768. BOTTLE-FINISHER. JAMES M. THOBURN, Canton, Ohio. Filed May 3, 1900. Serial No. 15,329. (No model.)



Claim.—1. The combination of a power-shaft, a disk connected thereto reciprocating radial bars connected to the disk and provided with right-angled portions, a blade provided with a shank having an

inclined edge, an inclined face formed upon the power-shaft and means for imparting reciprocating movement to the bars and to the blade, substantially as and for the purpose specified.

2. The combination of a power-shaft, a disk connected thereto, and rotatable therewith, bars carried by the disk, a sleeve mounted on the shaft, a blade on the shaft provided with a shank, links pivoted to the sleeve and connecting bars and blade and means for moving the blade laterally at a time when said blade is moved longitudinally, substantially as and for the purpose specified.

3. The combination of a power-shaft, a disk provided with reciprocating bars having flanges at their inner ends, said power-shaft provided with a blade, and means for imparting longitudinal and lateral movement to the blade, substantially as and for the purpose specified.

654,769. **WRENCH.** GEORGE S. TILTON, Bristol, N. H. Filed Nov. 27, 1899. Serial No. 738,419. (No model.)



Claim.—1. In a wrench, a stationary shank carrying the fixed jaw, a slidable shank carrying the movable jaw, a yoke embracing both shanks and pivotally connected to the stationary shank, a clutch housed within the yoke and interposed between the two shanks, and a yoke-actuating spring attached to the stationary shank and engaging the yoke, substantially as specified.

2. In a wrench, a stationary shank carrying the fixed jaw, a slidable shank carrying the movable jaw, a yoke embracing both shanks and pivotally connected to the stationary shank, a clutch housed within the yoke and interposed between the two shanks, a clutch-actuating spring secured thereto, and a yoke-actuating spring attached to the stationary shank and engaging the yoke, substantially as specified.

3. In a wrench, a stationary shank carrying the fixed jaw, a slidable shank carrying the movable jaw, a yoke embracing both shanks and pivotally connected to the stationary shank, a clutch housed within the yoke and interposed between the two shanks, a yoke-block having a notch, a clutch-actuating spring secured thereto and a yoke-actuating spring attached to the stationary shank and having its free end inserted in the notch in the yoke-block, substantially as specified.

4. In a wrench, a stationary shank carrying the fixed jaw and offset adjacent thereto to leave a recess, a slidable shank carrying the movable jaw, a yoke pivotally connected to the stationary shank and comprising spaced loops which embrace the slidable shank, a clutch arranged in the space between the yoke-loops and within the recess in the stationary shank, and a yoke-actuating spring connected with the stationary shank, substantially as specified.

5. The combination of a main shank, a yieldable yoke thereon, a spring acting against the yoke, means for limiting the movement of the yoke relative to the shank and under the repression of the spring, another shank slidable in the yoke, and a yieldable clutch normally engaging with the slidable shank, substantially as described.

6. The combination of a main shank, a slidable shank, a yoke embracing said shanks, a spring seated against the main shank and the yoke, and a yieldable clutch carried by the yoke and engaging with the slidable shank, said clutch arranged to be disengaged manually from the slidable shank, substantially as described.

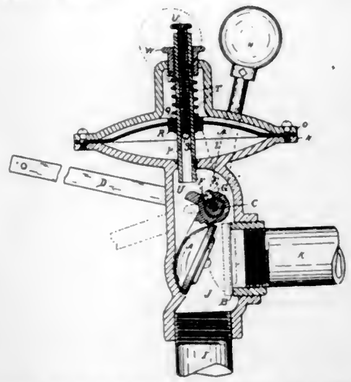
7. The combination of a main shank, a slidable shank, a yoke, a clutch pivoted to the yoke, and a spring seated on the yoke and acting against the clutch to normally force the latter into engagement with the slidable shank, substantially as described.

654,770. **AUTOMATIC VALVE-CLOSING MECHANISM.** EDWIN F. VAN VECHTEN, Milwaukee, Wis. Filed June 12, 1899. Serial No. 720,199. (No model.)

Claim.—1. A valve-chamber provided with inlet and exhaust ducts; a valve; means for opening the same; a movable part adapted to be actuated against a counter-pressure, independently of the valve, when the latter is closed; means for applying such counter-pressure to the movable part; means for communicating motion from said movable part to actuate the valve when the latter is open; and means for controlling the motion of the movable part in one direction.

2. A valve-chamber provided with inlet and exhaust ducts; a valve; means for opening the same; a movable part adapted to be actuated in one direction independently of the valve, and to communicate motion to the latter when actuated in the opposite direction; means for actuating said movable part; and means for controlling the motion thereof.

3. A valve-chamber provided with inlet and outlet ducts; a valve; means for opening the same; a movable part adapted to be actuated against a counter-pressure by means of the pressure of the supply fluid; means for applying such counter-pressure to the movable part; and means for communicating the motion of said movable part when relieved of the pressure of the supply fluid, to actuate the valve toward its seat.



4. A valve-chamber provided with inlet and outlet ducts; a valve; means for opening said valve; a movable part adapted to be actuated against a counter-pressure by the pressure of the supply fluid; means for applying such counter-pressure to the movable part; means for communicating the motion of the movable part to actuate the valve in one direction; and means for regulating the motion of the movable part.

5. A valve-chamber provided with inlet and outlet ducts; a valve; means for opening the same; a movable part adapted to be actuated against a counter-pressure by the pressure of the supply fluid; a device for applying such counter-pressure; means for adjusting the same; means for communicating motion of the movable part to actuate the valve in one direction; and means for regulating the motion of the movable part.

6. A valve-chamber provided with inlet and exhaust ducts; a valve; a diaphragm-chamber communicating with the valve-chamber through a contracted passage; a diaphragm located in said chamber and adapted to be actuated by the fluid-supply entering the valve-chamber through said passage; mechanism, independent of the diaphragm, for opening the valve; and means for communicating motion from said diaphragm to actuate the valve in one direction.

7. In a self-closing valve mechanism, the combination of a valve-chamber having inlet and exhaust ducts; a valve, means for opening the same; a diaphragm-chamber in communication with the fluid-supply through a contracted opening; a diaphragm adapted to be actuated in one direction by liquid entering the diaphragm-chamber through said opening; a spring adapted to exert a counter-pressure upon said diaphragm and to actuate the same when the pressure of the supply fluid is relieved; and connections adapted to communicate the motion of the diaphragm to actuate the valve toward its seat when the pressure of the supply fluid is relieved.

8. In a self-closing valve mechanism, the combination of a valve-chamber having inlet and exhaust ducts; a valve; means for opening the same; a diaphragm-chamber in communication with the fluid-supply through a contracted opening; a diaphragm adapted to be actuated in one direction by liquid entering the diaphragm-chamber through said opening; a spring adapted to exert a counter-pressure upon said diaphragm and to actuate the same when the pressure of the supply fluid is relieved; means for regulating the tension of said spring; and connections adapted to communicate the motion of the diaphragm to actuate the valve toward its seat when the pressure of the supply fluid is relieved.

9. In an automatic valve-closing mechanism, the combination of a valve-chamber having an inlet and an exhaust duct; a valve closing the exhaust-duct; a valve-shaft; a valve-actuating lever secured to the projecting end of said valve-shaft; a diaphragm-chamber; a diaphragm located in said chamber; a water duct or passage communicating from said valve-chamber to said diaphragm-chamber; and a connection between said diaphragm and said valve.

10. In an automatic valve-closing mechanism, the combination of a valve-chamber having an inlet and an exhaust duct; a valve closing the exhaust-duct; a valve-supporting shaft protruding through the wall of said valve-chamber; a valve-actuating lever secured to the protruding end of said shaft; a diaphragm-chamber; a diaphragm

located in said chamber; and a tubular connection between said diaphragm and said valve, forming a duct through which the water passes from said valve-chamber to and from said diaphragm-chamber.

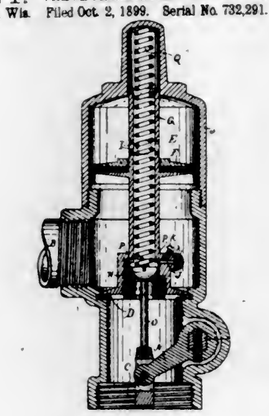
11. In an automatic valve-closing mechanism, the combination of a valve-chamber having an inlet and an exhaust duct; a valve closing the exhaust-duct; a valve-supporting shaft protruding through the wall of said valve-chamber; a valve-actuating lever secured to the protruding end of said shaft; a diaphragm-chamber; a diaphragm located in said chamber; a tubular connection communicating between said diaphragm and said valve, forming a duct through which the water passes from said valve-chamber to and from said diaphragm-chamber; and a regulating-screw located in said tubular connection and adapted to be adjusted so as to regulate the passage of water through the duct of said tubular connection.

12. In an automatic valve-closing mechanism, the combination of a valve-chamber having an inlet and an exhaust duct; a valve closing the exhaust-duct; a valve-supporting shaft protruding through the wall of said valve-chamber; a valve-actuating lever secured to the protruding end of said shaft; a diaphragm-chamber; a diaphragm located in said chamber; a tubular connection communicating between said diaphragm and said valve, forming a duct through which the water passes from said valve-chamber to and from said diaphragm-chamber; a regulating screw located in said tubular connection and adapted to be adjusted so as to regulate the passage of water through the duct of said tubular connection; and a spring interposed between said diaphragm and the exterior walls of said diaphragm-chamber.

13. In an automatic valve-closing mechanism, the combination of a valve-chamber having an inlet and an exhaust duct; a valve closing the exhaust-duct; a valve-supporting shaft protruding through the wall of said valve-chamber; a valve-actuating lever; a diaphragm-chamber; a diaphragm located in said chamber; a tubular connection communicating between said diaphragm and said valve, forming a duct through which the water passes from said valve-chamber to and from said diaphragm-chamber; a regulating-screw located in said tubular connection and adapted to be adjusted so as to regulate the passage of water through the duct of said tubular connection; a spring interposed between said diaphragm and the exterior walls of said diaphragm-chamber; and a tension-screw supported from the walls of said diaphragm-chamber and adapted to bear against said tension-spring, whereby the tension of said spring is adjusted.

14. In an automatic valve-closing mechanism, the combination of a valve-chamber having an inlet and an exhaust duct; a valve closing the exhaust-duct; a valve-supporting shaft protruding through the wall of said valve-chamber; a valve-actuating lever and a counterpoise secured to the protruding end of said valve-shaft, said counterpoise being adapted to counterbalance the weight of said valve when open and prevent it from closing of its own gravity; a diaphragm-chamber; a diaphragm located in said chamber; a tubular connection communicating between said diaphragm and said valve, forming a duct through which the water passes from said valve-chamber to and from said diaphragm-chamber; a regulating-screw located in said tubular connection and adapted to be adjusted so as to regulate the passage of the water through the duct of said tubular connection; a spring interposed between said diaphragm and the exterior walls of said diaphragm-chamber; and a tension-screw supported from the walls of said diaphragm-chamber and adapted to bear against said tension-spring, whereby the tension of said spring is adjusted.

654,771. **VALVE MECHANISM.** EDWIN F. VAN VECHTEN, Milwaukee, Wis. Filed Oct. 2, 1899. Serial No. 732,291. (No model.)



Claim.—1. The combination, of a valve-casing provided with inlet and exhaust ports; a movable partition; a main valve; a tubular connection communicating through said main valve and partition; a duct leading through said tubular connection between the main valve and partition; an auxiliary valve controlling the passage of fluid through said tubular connection below said duct; and connections for actuating both valves.

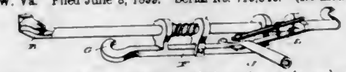
2. The combination, of a valve-casing provided with inlet and exhaust ports; a movable partition; a main valve; a tubular connection communicating through said main valve and partition; a duct leading through said tubular connection between the main valve and partition; an auxiliary valve controlling the passage of fluid through said tubular connection below said duct; and connections for actuating both valves, together with a spring engaging the upper portion of the casing and extending downwardly through said tubular connection to the auxiliary valve, said spring being adapted to automatically close the valves.

3. The combination of a valve-casing provided with inlet and exhaust ports; a piston-cylinder formed in said casing; a piston located therein; a main valve; a tubular connection extending through the main valve and piston, and secured to both; a passage communicating between the source of supply and said piston; cylinder beyond the piston; an auxiliary valve controlling the passage of fluid through the tubular connection to the exhaust-port; a partition located between the piston-cylinder and the main valve; a check-valve located therein and adapted to permit the fluid to pass into said cylinder; a duct leading from said cylinder to a suitable point of discharge; and a regulating device controlling the passage of fluid therethrough.

4. The combination of a valve-casing provided with inlet and exhaust ports; a movable partition; a main valve connected therewith by a tubular connection; an auxiliary valve located in said tubular connection; a duct communicating between the source of supply and the interior of said tube above the auxiliary valve; a stationary partition interposed between the source of supply and the movable partition; a valved aperture adapted to permit the passage of fluid through the stationary partition; a relief-duct also leading through said partition to a suitable point of discharge; and valve-actuating connection for said valves.

5. The combination of a valve-casing provided with inlet and exhaust ports; a movable partition; a main valve connected therewith by a tubular connection; an auxiliary valve located in said tubular connection; a spring interposed between the auxiliary valve and the upper portion of the valve-casing, and supported laterally by said tubular connection; a duct communicating between the source of supply and the interior of said tube above the auxiliary valve; a stationary partition interposed between the source of supply and the movable partition; a valved aperture adapted to permit the passage of fluid through the stationary partition; a relief-duct also leading through said partition to a suitable point of discharge; and valve-actuating connections for said valves.

654,772. **WIRE-STRETCHER.** HARRY C. WERNER, Wheeling, W. Va. Filed June 8, 1899. Serial No. 719,846. (No model.)



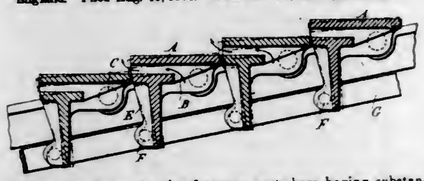
Claim.—A wire-stretcher consisting of a main rod, one end of which is constructed with a jaw thereon, a reciprocating toothed jaw pivoted on the end of said rod, a second rod depending therefrom and supported by collars which loosely encircle the main rod, a lever or handle pivoted on said second rod and having secured thereto one end of each of two plates, said plates secured at their other ends to the base of a binding-collar which encircles the main rod, a spring situated between said plates, another binding-collar pivoted at its base to the second rod and encircling the main rod, and a spiral spring controlling said last-mentioned binding-collar, substantially as and for the purposes set forth and described.

654,773. **WAGON-REACH COUPLING.** GEORGE W. WHITEHEAD, Montezuma, Iowa, assignor of one-half to Frank Bender, same place. Filed Feb. 20, 1900. Serial No. 5,894. (No model.)



Claim.—The combination with the reach of a vehicle, of a coupler consisting of an upper plate provided with depending flanges and a rectangular orifice, a lower plate having a rectangular orifice and bolted to the upper plate, rectangular locking-plates snugly fitting in the said orifices and adapted to be rigidly secured to the said reach passing therebetween, substantially as set forth.

654,774. COMBUSTION-FURNACE. WILFRED R. WOOD, London, England. Filed Aug. 19, 1899. Serial No. 727,759. (No model.)



Claim.—1. In combustion-furnaces, grate-bars having substantially box-like cross-sections the space within the bars forming the draft-inlet to the furnace and the top sections of such bars forming the furnace-bottom and the lower part of such bars in combination with the top of the next adjacent bar forming a stop-plate extending rearward from the draft-opening to prevent the fuel passing between said bars when in working position, substantially as described.

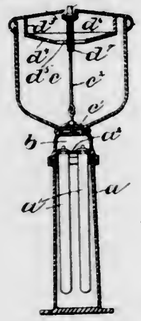
2. In combustion-furnaces, grate-bars having substantially box-like cross-sections the space within the bars forming the draft-inlet to the furnace, and means for moving such bars so as to cause the rear top section of one bar to move across the draft-opening between the top and bottom section of the next adjacent bar to partially or entirely close the draft, substantially as described.

3. In combustion-furnaces grate-bars having substantially a box-like cross-section and through which the draft passes and means for moving such bars and causing the rear top face of one bar to cut or shear across the draft-outlet of the next adjacent bar substantially as described.

4. In combustion-furnaces, grate-bars having substantially a box-like cross-section and through which the draft passes the top of such bars forming the furnace-bottom and the lower part of such bars in combination with the top of the next adjacent bar forming a stop-plate to prevent fuel passing between such bars when in working position, and means for moving such bars to form a dead-plate, substantially as described.

5. In combustion-furnaces, grate-bars having substantially a box-like cross-section and through which the draft passes the top of such bars forming the furnace-bottom and the lower part of such bars in combination with the top of the next adjacent bar forming a stop-plate to prevent fuel passing between such bars when in working position, and means for moving such bars to form a dead-plate and finally to open the spaces between the bars for discharge of fuel or ashes, substantially as described.

654,775. FILTER. WALTER G. WUICHET, Dayton, Ohio, assignor to the Pasteur-Chamberland Filter Company, same place. Filed Nov. 23, 1899. Serial No. 738,000. (No model.)

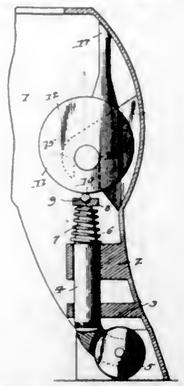


Claim.—1. In a filter, a reservoir connected thereto, a valve between said filter and reservoir, and a float connected to said valve, said float being adapted to extend over the top of said reservoir and form a cover therefor, substantially as specified.

2. In a filter, a reservoir connected thereto, and a valve between the filter and reservoir, a cover for said reservoir formed with a chamber on its under side, the bottom of said chamber being provided with an opening, and a connection from said cover to the valve, substantially as specified.

3. In a filter, a reservoir connected thereto, and a valve between said filter and reservoir, a cover for said reservoir provided with a chamber on its under side having an opening in the bottom thereof, a hollow rod or guide extending from said cover through said chamber to a point below said opening, and a connection from said valve to said cover extending through said hollow rod or guide, substantially as specified.

654,776. STOVE-LEG. WILLIAM J. BARBER, Honeoye Falls, N. Y. Filed May 2, 1900. Serial No. 15,247. (No model.)



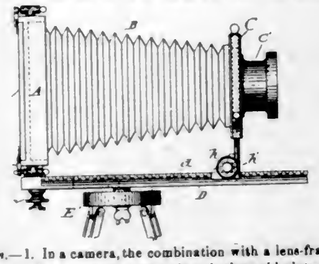
Claim.—1. In a device of the class described, the combination with a stove-leg having lower vertically-alined bearings and provided with upper bearings having recesses at their lower edges, a caster-stem arranged in the vertically-alined bearings, a lever having pivots or trunnions arranged in the upper bearing-recesses, and a spring engaging the stem and adapted to retain the pivots or trunnions of the lever in the bearing-recesses, substantially as described.

2. In a device of the class described, the combination with a leg provided with upper and lower bearings, the upper bearings being open, a caster-stem removably arranged in the lower bearings and provided with a caster-wheel, a lever detachably mounted in the upper bearings, and a spring engaging the caster-stem and retaining the same and the lever in the said bearings, substantially as described.

3. In a device of the class described, the combination with a leg provided with lower and upper bearings, a caster-stem arranged in the lower bearings and having a tapered upper portion, and provided at the top thereof with a head, a lever mounted in the upper bearings, and a tapering spring arranged on the tapered portion of the stem and engaging the head thereof and the lower bearing and retaining the said stem in the said bearings, substantially as described.

4. In a device of the class described, the combination with a leg having upper and lower bearings, a stem mounted in the lower bearing and provided at its top with a concavity, a lever mounted in the upper bearing, a ball arranged in the concavity and bearing against the said lever, and a spring engaging the stem and retaining the ball in contact with the lever, substantially as described.

654,777. PHOTOGRAPHIC CAMERA. FRANK BENJAMIN, Lansingburg, N. Y. Filed Jan. 16, 1900. Serial No. 1,852. (No model.)



Claim.—1. In a camera, the combination with a lens-frame, of a plate-frame, and means for transversely swinging said plate-frame to either side of the perpendicular to the base-frame.

2. In a camera, the combination with a lens-frame, of a plate-frame, a base-frame, means for supporting said plate-frame upon said base-frame, and provisions for swinging said plate-frame longitudinally of the base-frame and transversely of the perpeodicular to the base-frame.

3. In a camera, the combination with a lens-frame, of a plate-frame, a support for said plate-frame, and a universal connection between said plate-frame and its support.

4. In a camera, the combination with a lens-frame, of a bellows connected thereto, and a plate-frame adjustable to swing about its vertical axis to either side of the perpendicular to the base-frame, independent of the lens-frame, and to which the other end of said bellows is secured.

5. In a camera, the combination with a lens-frame, of a bellows, one end of which is adjustably connected to said lens-frame, a plate-frame to which the other end of said bellows is secured, and means for swinging said plate-frame transversely to either side of the perpendicular to the base-frame.

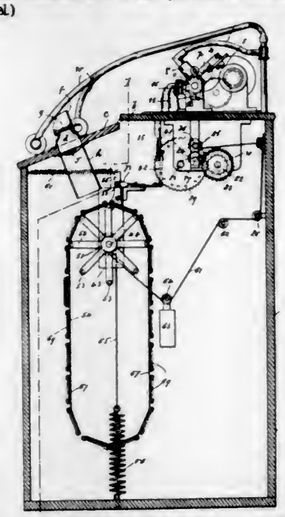
6. In a camera, the combination with a vertically-adjustable lens-frame, of a bellows, one end of which is adjustably connected to said lens-frame, a plate-frame to which the other end of said bellows is connected, and means for swinging said plate-frame longitudinally of the base-frame and transversely of the perpendicular to the base-frame.

7. In a camera, the combination with a vertically-adjustable lens-frame, of a universally-adjustable plate-frame A, bellows connected to said frames, a base-frame supporting said lens and plate-frames, a rack located at each side of said base-frame, gear-wheels engaging said racks, and means for simultaneously rotating said gear-wheels to regulate the focus of the camera.

8. In a camera, the combination with a lens-frame, of a plate-frame, a support for said frames, rods projecting above said support, one of which is provided with ratchet-teeth, and guides engaging said rod secured to said lens-frame, one of said guides having a pawl co-operating with said ratchet-teeth, whereby the lens-frame is vertically adjusted.

9. In a camera, the combination with a vertically and longitudinally adjustable lens-frame, of a plate-frame, and means for swinging said plate-frame transversely and longitudinally of the base-frame.

654,778. PANORAMIC ATTACHMENT FOR PHONOGRAPHS. GUSTAVE W. BOECHEN, Rahway, N. J., assignor of one-half to Philip Hildebrandt, Hoboken, N. J. Filed Apr. 25, 1899. Serial No. 714,349. (No model.)



Claim.—1. A device of the class described, comprising the combination, with a phonograph, of a plurality or series of pictures, mechanism for displaying said pictures, and means connected with the said phonograph and with the picture-displaying mechanism whereby the operation of the phonograph actuates the displaying mechanism to display the pictures at irregular predetermined intervals, corresponding to the vocal matter of the phonograph which said pictures are to illustrate, substantially as shown and described.

2. A device of the class described, comprising a phonograph in which is embodied a gear-wheel or part rotating in unison with the sound-producing cylinder, a plurality or series of pictures mounted relatively to said phonograph, mechanism for displaying the said pictures, and means upon the gear-wheel or moving part of the phonograph whereby the displaying mechanism may be actuated at irregular predetermined intervals, substantially as shown and described.

3. A device of the class described, comprising a phonograph in which is embodied a part rotating in unison with the sound-producing cylinder, a picture-displaying mechanism mounted relatively to said phonograph, and provided with means for causing the same to turn, means for holding said displaying mechanism in a stationary position, and means upon said gear-wheel or moving part of the phonograph for tripping or throwing off the said holding means, whereby the pictures may be displayed at predetermined intervals, substantially as shown and described.

4. In a device of the class described, a casing, a phonograph mounted thereon, a gear-wheel in operative connection with the operative parts of the phonograph and provided with a plurality of pins arranged at irregular intervals in a predetermined order on one side thereof, an endless belt revolubly mounted in said casing and provided with a plurality of picture-slides, devices exerting a constant tendency to turn said belt in one direction, and devices in operative connection with said gear-wheel for giving said belt a series of movements at irregular predetermined intervals, substantially as shown and described.

5. In a device of the class described, a casing, a phonograph mounted thereon, a shaft mounted in said casing, a drum mounted on said shaft, two cords connected with and wound on said drum in opposite directions, one of which is connected with the winding-shaft of the phonograph, a contractile spring connected with the other cord and exerting a constant tendency to revolve said shaft in one direction, an endless-belt support connected with said shaft, an endless belt mounted thereon and provided with picture-slides, a gear-wheel in connection with the operative mechanism of the phonograph, and devices in connection with said gear-wheel for permitting said endless-belt support to move intermittently, substantially as shown and described.

6. In a device of the class described, a casing, a phonograph mounted thereon, an endless belt supported within said casing and provided with picture-slides, means for turning the support of said belt constantly in one direction, a gear-wheel in connection with the operative mechanism of the phonograph, and devices in operative connection with said gear-wheel for permitting said endless belt to move intermittently, consisting of pins arranged in a circle on said gear-wheel, a pawl operated by said pins, a link operated by said pawl, a crank operated by said link, and a tripper operated by said crank, and operating in connection with the support of said endless belt, substantially as shown and described.

7. In a device of the class described, a casing, a phonograph mounted thereon, a gear-wheel in connection with the operative mechanism of the phonograph, an endless belt mounted on a support within said casing, devices exerting a constant tendency to turn said support in one direction, other devices in connection with said gear-wheel for permitting the support of the endless belt to move intermittently, and an electric light within said casing, said light being in a circuit which is opened and closed by the operative mechanism of the phonograph, substantially as shown and described.

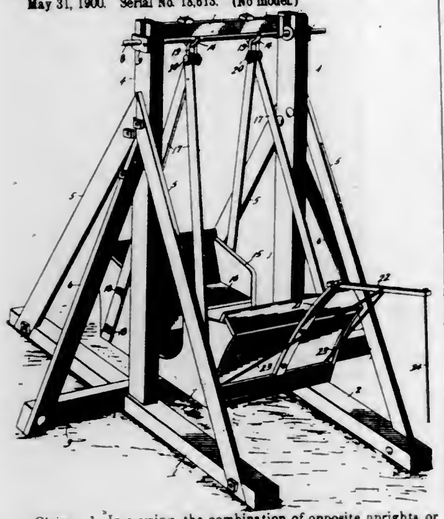
8. In a device of the class described, a casing, a phonograph mounted thereon, an endless belt mounted on a support within said casing and provided with picture-slides, a shaft on which the support of the endless belt is mounted, a drum mounted on said shaft and adapted to turn freely in one direction and to turn said shaft in the opposite direction, a cord wound on said drum, a spiral spring connected with said cord and operating to turn said drum in the direction to turn said shaft, another cord wound on said drum, and adapted to turn the same in the opposite direction, said last-named cord being connected with the crank-shaft of the phonograph, a gear-wheel in connection with the operative mechanism of the phonograph, and devices connected with said gear-wheel for permitting the support of the endless belt to move intermittently, substantially as shown and described.

9. In a device of the class described, a casing, a phonograph mounted thereon, the operative mechanism of which is partly within said casing, an endless-belt support mounted in said casing, an endless belt mounted thereon and provided with picture-slides, devices exerting a constant tendency to turn the support of said belt in one direction, other devices in connection with the operative mechanism of the phonograph for permitting said support to move intermittently, and an electric light mounted in said casing and in a circuit which is closed and opened by the operative mechanism of the phonograph, substantially as shown and described.

10. In a device of the class described, a casing provided with a phonograph which is mounted thereon, and the operative mechanism of which is partly within said casing, said casing being also provided with a hinged top portion having a sight-opening, tubes inclosing said opening and provided with a sight-glass and a lens, an endless-belt support mounted within said casing, an endless belt mounted thereon and provided with picture-slides, devices exerting a constant tendency to turn the support of said belt in one direction, and other devices in connection with the operative mechanism of the phonograph for permitting said support to move intermittently, said casing being also

provided with an electric light in a circuit which is adapted to be opened and closed by the operative mechanism of the phonograph, substantially as shown and described.

654,779. SWING. JOHN BOWLAND, Princess Anne, Md. Filed May 31, 1900. Serial No. 18,613. (No model.)

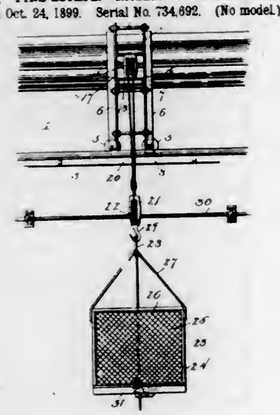


Claim.—1. In a swing, the combination of opposite uprights or standards, a transverse rock-shaft supported thereby, a bar secured to the upper side of the shaft, a pair of bolts passed through the bar, and provided at their lower ends with hooks that extend transversely across the under side of the shaft, and a carriage, having hanger-arms, and links connecting the arms to the hooks.

2. In a swing, the combination with opposite uprights or standards, having their upper ends bifurcated, of a rock-shaft mounted in the bifurcations and projecting outwardly beyond the respective standards, bearing-blocks secured to the outer sides of the standards and receiving the projecting ends of the shaft, a bar secured to the upper side of the shaft, a pair of spaced bolts passed through the bar and at one side of the shaft, the lower ends of the bolts being formed into upturned hooks extending transversely beneath the shaft, a carriage, hanger-arms therefor, and clevises secured to the upper ends of the arms and engaged with the respective hooks.

3. In a swing, the combination with a supporting-frame, of a carriage, hanger-arms pivotally or hingedly suspended from the frame, an upright bar at one end of the carriage, an outwardly-directed arm carried by the bar, opposite braces from the arm to the carriage, and an operating-rope secured to the arm.

654,780. FIRE-ESCAPE. RICHARD D. BURCHILL, Grand Ledge, Mich. Filed Oct. 24, 1899. Serial No. 734,692. (No model.)

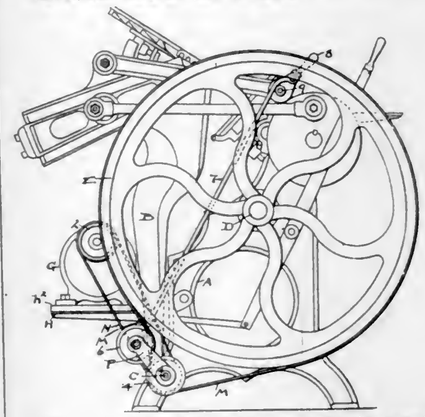


Claim.—1. In a fire-escape, the combination with a horizontally-movable hanger, of a cage, pulley-blocks connected with the hanger and cage respectively, a cable passing around the pulleys of said blocks and serving to suspend the cage, a braking device carried by the cage and engaging the cable, a footpiece connected with and designed to effect the operation of the braking device, and a release-rod likewise operatively connected with the brake and designed to effect the release of the cable, substantially as specified.

2. In a fire-escape, the combination with a cage, and support, of a cable suspending the cage from the support, a stationary brake-block and a movable brake-block designed to grip the cable, a brake-lever supporting the brake-block, and independent mechanism for operating the lever in opposite directions to effect the gripping or release of the cable, substantially as specified.

3. The combination with a support and cage, of a cable serving to suspend the cage from the support and passing through the bottom of the cage, one of said blocks having an inclined face, a movable brake-block provided with an inclined face in operative proximity to the inclined face of one of the stationary blocks, a pivoted lever carrying said movable brake-block and means projecting above the floor of the cage for operating the brake-lever in opposite directions to effect the engagement or release of the cable, substantially as specified.

654,781. PRINTING-PRESS. FRANK A. BURNHAM, Cleveland, Ohio, assignor to the Chandler & Price Company, same place. Filed Mar. 21, 1900. Serial No. 9,490. (No model.)



Claim.—1. The press-frame and a power-shaft and an extended bed-shaft thereon, a platform supported on said frame and bed-shaft, a motor on said platform, and power-transmitting mechanism on the bed-shaft extension having power-connecting means with both said power-shaft and motor, substantially as described.

2. The press-frame and an electric motor thereon having a shaft with pulleys, the bed-shaft of the press and pulleys thereon, and a belt connecting said pulleys, the crank power-shaft and power-transmitting mechanism thereto from the said bed-shaft, substantially as described.

3. The press and the electric motor, the bed-shaft of the press and power-conveying pulleys on one end thereof outside the press-frame and means to convey power from the motor to said pulleys, the main crank-shaft of the press and a combined band and balance wheel thereon, and a belt to drive the same engaged over a pulley on the bed-shaft, substantially as described.

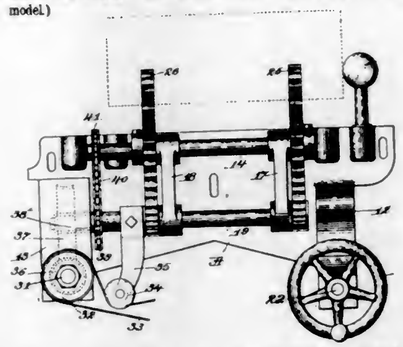
4. In a press substantially as described, the bed-shaft and a plurality of power-conveying pulleys sleeved thereon and adapted to different belt connections, the crank-power and a combined fly and band wheel on said shaft arranged to be driven from the power-conveying pulleys on the bed-shaft, substantially as described.

5. In a printing-press the crank power-shaft and a band-wheel fixed thereon, the bed-shaft and a sleeve on said shaft provided with a plurality of pulleys for different belt connections and one of said pulleys in line with said band-wheel, in combination with an electric motor supported on the press-frame, and a set of bands to carry the power from said motor to said band-wheel, substantially as described.

6. The press having a bed-shaft and a crank-shaft, a band-wheel on the crank-shaft and a pulley sleeved on the bed-shaft, a band over said band wheel and pulley, an idler to tighten said band, and a lever-and-link connection extending to the top of the press for controlling the idler, substantially as described.

7. The main frame of the press, a power-shaft thereon, a bed-shaft having an extension at the side of said frame, a set of brackets supported on said bed shaft and frame, a motor supported by said brackets, and power-transmitting and speed-controlling mechanism for said power-shaft supported in said bed-shaft extension, substantially as described.

654,782. LOG-TURNING ATTACHMENT. ALFRED G. CAMPBELL, Sherbrooke, Canada. Filed Jan. 29, 1900. Serial No. 3,110. (No model.)



Claim.—1. In an apparatus of the class specified, a rock-shaft, a worm-gear segment fixed to said rock-shaft, a worm meshing with said segment, a shaft carrying the worm and provided with means for turning the same, a swinging frame rigid with the rock-shaft, a rotative shaft carried by said swinging frame and provided with log-turning means, a driven and a driving member fixedly connected with each other and both loose on the rock-shaft, connections between said driving member and the rotative shaft for operating the latter and thereby the log-turning means, and means to actuate said driven member.

2. In an apparatus of the class specified, a rock-shaft, a swinging frame rigid with the rock-shaft and provided with a rotary shaft having log-turning means, a worm-gear and a sprocket-wheel rigidly connected with each other and both loose upon the rock-shaft, a sprocket-chain connecting the sprocket-wheels, a shaft having a worm to rotate the worm-gear, a worm-gear segment, a shaft having a worm meshing with said worm-gear segment and provided with means for rotating the same, and boxings to support the worm-gearing.

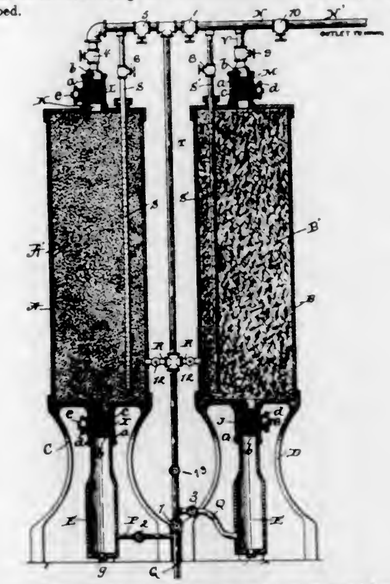
654,783. FILTERING APPARATUS. MARCELLUS COLE, Washington, D. C. Filed Apr. 23, 1900. Serial No. 13,964. (No model.)

Claim.—1. A filter comprising a vertically-arranged primary and a final filtering chamber, a vertically-arranged pipe T, the lower end of the pipe T in communication with the lower end of the final-filtering chamber, a valve regulating said communication, a pipe having communication with the water-main, and in communication with the lower end of the primary-filtering chamber, a valve controlling said communication, and an outlet-pipe having communication respectively with the upper end of the pipe T and the said primary and final filtering chambers, substantially as described.

2. A filter comprising vertically-arranged primary and final filtering chambers, a pipe T having its upper end in communication with the primary-filtering chamber, and extending downward, and its lower end in communication with the bottom of the final-filtering chamber, a pipe communicating with the water-main, and with the lower end of the primary chamber, and also with the lower end of the pipe T, a valve situated between the communications with the lower end of the said primary and filtering chambers, substantially as described.

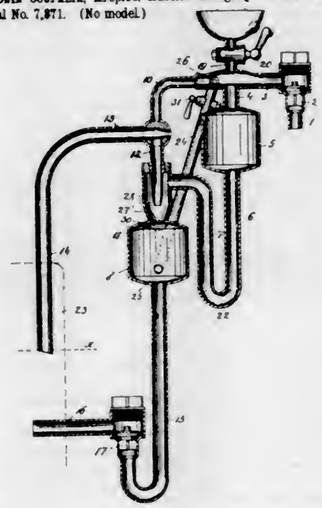
3. A filter comprising vertically-arranged primary and final filtering chambers, a pipe G having communication with the water-main and with the lower end of the primary chamber, a pipe N having communication respectively with the upper ends of the said chambers a return-pipe T having its upper end in communication with the pipe N and its lower end in communication with the bottom of the final-filtering chamber, and valves 1, 2, 3, 4, and 10, and the bottom of the said filtering-chambers having outlets, substantially as described.

4. A filter comprising vertically-arranged primary and final filtering chambers, a pipe G having communication with the water-main, and with the bottom of the primary-filtering chamber, a pipe N having communication respectively with the upper ends of the said primary and final filtering chambers, a pipe T having communication at its upper end with the pipe N and at its lower end with the pipe G and with the lower end of the final-filtering chamber and pipes S' depending within said chambers and the valves 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 for controlling said communications, substantially as described.



5. A filter comprising vertically-arranged primary and final filtering chambers, a pipe G having communication with the water-main and with the lower end of the primary-filtering chamber, a pipe N having communication with both of said filtering-chambers, a pipe T having its upper end in communication with the pipe N and its lower end in communication with the pipe G and with the lower end of the final-filtering chamber, the pipes S and S' depending within the said filtering-chambers, and having longitudinally-arranged passage-ways and the pipes R having communication with the lower portion of the filtering-chambers, and the valves 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, for controlling the said communication, substantially as and for the purpose described.

654,784. SELF-ACTING FEED APPARATUS FOR BOILERS. ANTONIN COUFALIK, Krepice, Austria-Hungary. Filed Mar. 8, 1900. Serial No. 7,871. (No model.)

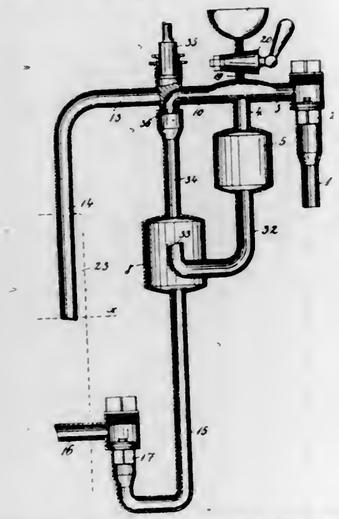


Claim.—1. The combination in a self-acting boiler, a condenser 8 located higher than the water-level in the boiler, an injector on the boiler, a water-tank connected thereto, said tank being situated higher than the condenser, the water-supply pipe, a pipe interposed between the same and the tank, the pipe 10 leading to the injector, the pipe 12 leading from the boiler to the pipe 10, a cock in said pipe controlling the communication between the pipes 10 and 13 and injector, a pipe connection between the bottom of the condenser and the boiler and a valve in the latter pipe, substantially as described.

2. The combination with the boiler, of a condenser, a pipe 15 leading from the same to the boiler, a supply-pipe, a pipe 3 leading from the latter, a pipe connection between the end thereof and the condenser, a pipe connection between the intermediate part of the pipe 3 and the condenser, a pipe connection from the upper part of the boiler to the condenser, a pipe 19 leading from the pipe 3 to the outer air and a pipe leading from the lower part of the condenser to said pipe 3, substantially as described.

654,785. SELF-ACTING FEED APPARATUS FOR BOILERS.

ANTONIN COUFALIK, Krepice, Austria-Hungary. Filed Mar. 8, 1900. Serial No. 7,872. (No model.)



Claim.—The combination in a self-acting boiler-feeder, with a boiler, of a condenser, a pipe 15 interposed between the same and the boiler, a supply-pipe, a pipe connection therefrom connecting with a like connection from the boiler, a pipe connection from said latter connection to the condenser, a valve located at the intersection of the latter pipe and the pipes leading from the boiler and feed-pipe, and a connection leading to the condenser from the feed-pipe back of said valve, and a tank interposed in said latter connection, substantially as described.

654,786. METAL FENCE-POST.

MONTRAVILL D. CUMMINGS, Columbus, Ohio. Filed Oct. 17, 1899. Serial No. 733,911. (No model.)

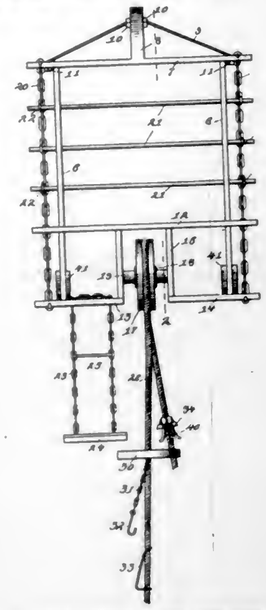


Claim.—1. As an improved article of manufacture the post herein described formed of a single sheet of metal rolled with edge flanges provided with holes and terminating in a circular base-flange projected alike from the ends of the longitudinal edge flanges and made continuous around the body of the post.

2. A sheet-metal post rolled with edge flanges provided with holes each flange terminating in a single circular base-flange projected from the body of the rolled sheet as a continuation of the edge flanges, in combination with staples clenching the edge flanges together and forming loops for the line-wires.

654,787. FIRE-ESCAPE.

PETER P. DOELL, New York, N. Y. Filed June 29, 1899. Serial No. 722,243. (No model.)



Claim.—1. In a fire-escape, a frame comprising side bars and a top bar and a bottom bar, a hook projecting upward and inward from the top bar, chains connecting the top and bottom bars outside the side bars, and rounds or rods engaged in holes in the side bars and with the links of the chains, all combined and arranged, substantially as described.

2. In a fire-escape, a frame comprising a top bar, a hook erected thereon, a bent rod connecting the hook with the ends of the top bar, a bottom bar, side bars extended below the bottom bar, chains connecting the top and bottom bars, rounds passing through the side bars and through the links of the chains, vertical bars depending from the bottom bars, horizontal bars connecting the vertical bars with the lower extended ends of the sides, a shaft in the vertical bars and a grooved pulley journaled on the shaft, all combined, substantially as described.

3. In a fire-escape, a ladder-frame, a hook for suspending it from a window-sill, a pulley journaled in the frame, an endless belt around the pulley, and a trapeze-seat suspended from the frame adjacent to the pulley, all combined, substantially as described.

654,788. ALE OR BEER FILTER.

ALFRED E. PEROR, Tivoli, N. Y. Filed Sept. 19, 1899. Serial No. 731,012. (No model.)

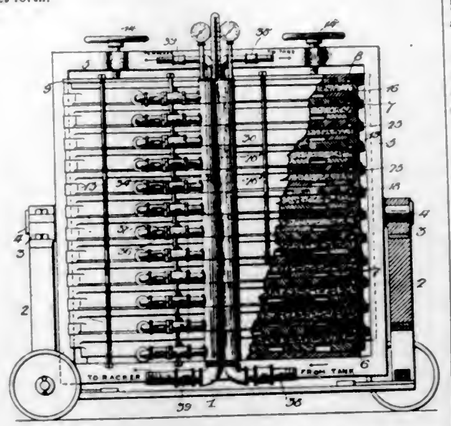
Claim.—1. A filter comprising a portable carriage, a yoke provided with trunnions journaled in said carriage, hand-wheels and screws, and filter-sections removably secured to said yoke by said hand-wheels and screws, substantially as and for the purposes set forth.

2. A filter comprising a portable supporting-carriage, a yoke journaled to rotate in said carriage, a filter-body mounted in said yoke, and means for clamping said filter-body to said yoke, substantially as and for the purpose set forth.

3. A filter comprising a series of parallel filter-sections provided with guide-lugs, a yoke adapted to bind together and support said filter-sections, and a support to which said yoke is journaled to rotate, whereby it may be reversed when desired, substantially as and for the purpose set forth.

4. A filter comprising a series of parallel filter-sections and an encompassing yoke adapted to support said sections, and means carried by said yoke to clamp the sections together and secure them to said yoke, substantially as and for the purpose set forth.

5. A filter comprising a series of superimposed independent filter-sections so arranged that the bottom of each intermediate section forms the top of the contiguous lower section, and provided with integral parts resting on the filtering media and keeping it in place on the foraminous plate beneath it, substantially as and for the purpose set forth.



6. A filter comprising a series of parallel filtering-sections, each section having independent and separate inlet and outlet ports above its bottom, and means for simultaneously connecting and disconnecting said sections, substantially as and for the purpose set forth.

7. A filter comprising a series of parallel filtering-sections having independent inlet and outlet ports, an inlet-pipe common to all the inlet-ports, an outlet-pipe common to all the outlet-ports, and independent vent-pipes leading from said inlet and outlet pipes, substantially as and for the purpose set forth.

8. A filter comprising a series of parallel filtering-sections having common inlet and outlet ports, and a vent-pipe leading from said outlet-ports to the racker, or a racking-tank, substantially as and for the purpose set forth.

9. A filter having inlet and outlet ports, and a vent-pipe leading from said outlet-port to the racker, or a racking-tank, substantially as and for the purpose set forth.

10. A beer and ale filter provided with an inlet-pipe leading from the beer tank or vessel; in combination with a vent-pipe connecting the top of the filter or its sections with the space above the beer in said tank or vessel, substantially as and for the purpose set forth.

11. A beer and ale filter provided with an inlet-pipe leading from the beer-tank to the filter; in combination with a vent-pipe connecting the top of said inlet-pipe and beer-tank, substantially as and for the purpose set forth.

12. A filter comprising a series of parallel sections, a gasket interposed between the contiguous sections, and a rotating yoke provided with screws and hand-wheels for simultaneously securing said sections together and to form air-tight joints between them, substantially as and for the purpose set forth.

13. A filter comprising a series of filter-sections, gaskets, a yoke, hand-wheels, and screws and rods for simultaneously forming air-tight joints between the contiguous sections, substantially as and for the purpose set forth.

14. A filter comprising a series of independent filter-sections provided with individual inlet and outlet ports, stationary gaskets, and means for simultaneously forming air-tight joints between said sections and their corresponding radial duplex couplings, substantially as and for the purpose set forth.

15. A filter-compartment formed with an inlet and an outlet port; in combination with a valved branch pipe leading from said outlet-port to the common outlet-pipe and provided with a transparent section, substantially as and for the purpose set forth.

16. A filter-section formed with independent inlet and outlet ports, and a valved branch pipe leading from said outlet-port to the common outlet-pipe, substantially as and for the purpose set forth.

17. A filter-section formed with independent inlet and outlet ports, and a valved pipe leading from said outlet-port to a common pipe and having an intermediate transparent section, substantially as and for the purpose set forth.

18. A filter-section comprising an annular pan with an imperforate bottom, inlet and outlet ports both in the side of the pan above said bottom, and an internal annular shoulder, substantially as and for the purpose set forth.

19. A filter-section comprising a pan with inlet and outlet ports through its side above its bottom, an internal annular shoulder, and a foraminous plate, substantially as and for the purpose set forth.

20. A filter-section comprising an imperforate bottom provided on its lower face with mutilated ribs, and a continuous encompassing wall formed with an internal annular shoulder, substantially as and for the purpose set forth.

21. A filter-section comprising an imperforate bottom formed with mutilated ribs, and an encompassing wall having its upper edge terminating in a grooved shoulder and its lower edge with a plain shoulder, and having its inner wall formed with a continuous grooved shoulder, substantially as and for the purpose set forth.

22. In a filter of the class described, a diaphragm provided with a series of inverted cone-shaped orifices, a series of ribs arranged between the orifices and integral with the solid portion of the diaphragm, substantially as and for the purpose set forth.

23. A filter comprising a series of independent filtering-sections provided with individual inlet and outlet ports, a supply-pipe common to all the inlet-ports, a discharge-pipe common to all the outlet-ports, and a series of independent valved branch pipes connecting said individual outlet-ports with said common discharge-pipe, substantially as and for the purpose set forth.

24. A filter comprising a series of independent filtering-sections provided with individual inlet and outlet ports, a supply-pipe common to all the inlet-ports, a discharge-pipe common to all the outlet-ports, a series of independent branch pipes connecting said outlet-ports and discharge-pipe, and means whereby the liquid may be visually inspected during its passage through said branch pipes, substantially as and for the purpose set forth.

25. A filter comprising a series of independent superimposed filtering-sections, each section being formed with an imperforate bottom provided on its lower face with mutilated intersecting ribs, and an internal annular shoulder; in combination with a foraminous diaphragm also formed with mutilated ribs, and a filtering medium interposed between said diaphragm and the bottom of the superimposed contiguous sections, substantially as and for the purpose set forth.

26. A filter comprising a series of superimposed independent filtering-sections, each section being provided with independent inlet and outlet ports through its side above its bottom, a foraminous diaphragm provided with vertical flanges or ribs for supports, and with an imperforate border interposed between said ports, substantially as and for the purpose set forth.

27. A filter comprising a series of independent filter-sections, provided with independent individual inlet and outlet ports above the bottom of each section, stationary gaskets in grooves, and means for simultaneously forming air-tight joints between said sections, substantially as and for the purpose set forth.

28. In a filter, an upper filter-section comprising a pan-shaped vessel with inlet and outlet ports and a foraminous plate; in combination with a plate or cover provided with integral parts on its lower face resting on and holding down the filtering media, substantially as and for the purpose set forth.

29. A filter-section comprising a pan-shaped vessel with an imperforate bottom and an internal shoulder with a gasket and foraminous plate resting thereon, substantially as and for the purpose set forth.

654,789. REFRIGERATING-MACHINE.

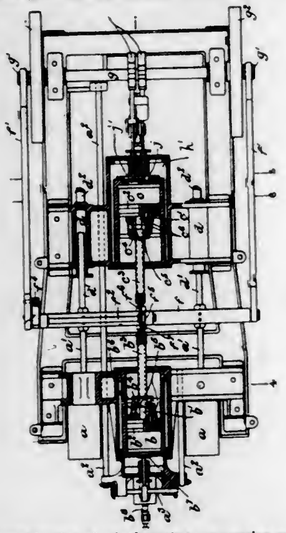
DANIEL MCGILL, Wellington, New Zealand, and FREDERICK W. TANNETT-WALKER, Leeds, England. Filed Jan. 31, 1899. Serial No. 704,006. (No model.)

Claim.—1. The combination of a single-acting compression-cylinder closed at both ends by cylinder-heads, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder closed at both ends by cylinder-heads receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, and connections between the three pistons.

2. The combination of a single-acting compression-cylinder, its piston and delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, its piston, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler its piston and admission and delivery valves, means for storing the energy of the outstroke of the power-cylinder, and connections between the three pistons such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, whereby the energy of the stored power is applied for the instroke of the piston of the compression-cylinder.

3. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, means for storing power from the outstroke of the single-acting

power-cylinder, and connections between the three pistons such that the outstroke of the compression and power pistons and the instroke af the expansion-piston take place simultaneously.



4. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, an accumulator, a hydraulic cylinder in constant communication with it, a ram in the cylinder, and connections between the three pistons and ram such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously.

5. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves to it, means for storing power, and connections between the three pistons such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously.

6. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves to it, an accumulator, a hydraulic cylinder in constant communication with it, a ram in the cylinder, and connections between the three pistons and ram such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously.

7. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, means for storing power, connections between the three pistons such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, and means actuated by the rocking shaft for working the valves in the pistons of the compression and expansion cylinders.

8. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, an accumulator, a hydraulic cylinder in constant communication with it, a ram in the cylinder, connections between the three pistons and ram such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, means actuated by the rockingshaft for working the valves in the pistons of the compression and expansion cylinders.

9. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler a piston in it, admission and delivery valves in the cylinder end and piston, means for storing power, connections between the three pistons such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, and a hollow jacket to the expansion-cylinder supplied with gas from the cooler and from which the admission-valve leads.

10. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, an accumulator, a hydraulic cylinder in constant communication with it, a ram in the cylinder, connections between the three pistons and ram such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, and a hollow jacket to the expansion-cylinder supplied with gas from the cooler and from which the admission-valve leads.

11. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves to it, means for storing power, connections between the three pistons such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, and a hollow jacket to the expansion-cylinder supplied with gas from the cooler and from which the admission-valve leads.

12. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, an accumulator, a hydraulic cylinder in constant communication with it, a ram in the cylinder, connections between the three pistons and ram such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, and a hollow jacket to the expansion-cylinder supplied with gas from the cooler and from which the admission-valve leads.

13. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, means for storing power, connections between the three pistons such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, means actuated by the rocking shaft for working the valves in the pistons of the compression and expansion cylinders, and a hollow jacket to the expansion-cylinder supplied with gas from the cooler and from which the admission-valve leads.

14. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, an accumulator, a hydraulic cylinder in constant communication with it, a ram in the cylinder, connections between the three pistons and ram such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, means actuated by the rocking shaft for working the valves in the pistons of the compression and expansion cylinders, and a hollow jacket to the expansion-cylinder supplied with gas from the cooler and from which the admission-valve leads.

15. The combination of a single-acting compression-cylinder, a piston in it, means for actuating the piston, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, an expansion-cylinder receiving compressed and cooled gas from the cooler, a piston in it connected to the piston of the compression-cylinder, admission and delivery valves to it, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder, a hollow jacket to the expansion-cylinder divided into two compartments, supplied with gas respectively from the cooler and the refrigerating-chamber, the admission-valve leading from the first compartment, a second admission-valve leading from the second compartment, and means for opening the latter valve toward the end of the outstroke.

16. The combination of a compression-cylinder, a piston in it, means for actuating the piston, delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it connected to the piston of the compression-cylinder, admission and delivery valves in the cylinder end and piston, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder, a hollow jacket to the expansion-cylinder divided into two compartments supplied with gas respectively from the cooler and the refrigerating-chamber, the admission-valve leading from the first compartment, a second admission-valve leading from the second compartment, and means for opening the latter valve toward the end of the outstroke.

17. The combination of a single-acting compression-cylinder, a piston in it, means for actuating the piston, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it connected to the piston of the compression-cylinder, admission and delivery valves in the cylinder end and piston, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder, a hollow jacket to the expansion-cylinder divided into two compartments, supplied with gas respectively from the cooler and the refrigerating-chamber, the admission-valve leading from the first compartment, a second admission-valve leading from the second compartment, and means for opening the latter valve toward the end of the outstroke.

18. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, connections between the three pistons, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder, a hollow jacket to the expansion-cylinder divided into two compartments, supplied with gas respectively from the cooler and the refrigerating-chamber, the admission-valve leading from the first compartment, a second admission-valve leading from the second compartment, and means for opening the latter valve toward the end of the outstroke.

19. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, means for storing power, connections between the three pistons such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder, a hollow jacket to the expansion-cylinder divided into two compartments, supplied with gas respectively from the cooler and the refrigerating-chamber, the admission-valve leading from the first compartment, a second admission-valve leading from the second compartment, and means for opening the latter valve toward the end of the outstroke.

20. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, an accumulator, a hydraulic cylinder in constant communication with it, a ram in the cylinder, connections between the three pistons and ram such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder, a hollow jacket to the expansion-cylinder divided into two compartments, supplied with gas respectively from the cooler and the refrigerating-chamber, the admission-valve leading from the first compartment, a second admission-valve leading from the second compartment, and means for opening the latter valve toward the end of the outstroke.

21. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves to it, means for storing power, connections between the three pistons such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder, a hollow jacket to the expansion-cylinder divided into two compartments, supplied with gas respectively from the cooler and the refrigerating-chamber, the admission-valve leading from the first compartment, a second admission-valve leading from the second compartment, and means for opening the latter valve toward the end of the outstroke.

22. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves to it, an accumulator, a hydraulic cylinder in constant communication with it, a ram in the cylinder, connections between the three pistons and ram such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder, a hollow jacket to the expansion-cylinder divided into two compartments, supplied with gas respectively from the cooler and the refrigerating-chamber, the admission-valve leading from the first compartment, a second admission-valve leading from the second compartment, and means for opening the latter valve toward the end of the outstroke.

23. The combination of a single-acting compression-cylinder, a piston in it, means for actuating the piston, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, an expansion-cylinder receiving compressed and cooled gas from the cooler, a piston in it connected to the piston of the compression-cylinder, admission and delivery valves to it, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, means actuated by the rocking shaft for working the valve in the piston of the compression-cylinder, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder divided into two compartments, supplied with gas respectively from the cooler and the refrigerating-chamber, a second admission-valve leading from the second compartment, and means for opening the latter valve toward the end of the outstroke.

24. The combination of a compression-cylinder, a piston in it, means for actuating the piston, delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it connected to the piston of the compression-cylinder, admission and delivery valves in the cylinder end and piston, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, means actuated by the rocking shaft for working the valve in the piston of the expansion-cylinder, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder, a hollow jacket to the expansion-cylinder divided into two compartments, supplied with gas respectively from the cooler and the refrigerating-chamber, the admission-valve leading from the first compartment, a second admission-valve leading from the second compartment, and means for opening the latter valve toward the end of the outstroke.

25. The combination of a single-acting compression-cylinder, a piston in it, means for actuating the piston, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it connected to the piston of the compression-cylinder, admission and delivery valves in the cylinder end and piston, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, means actuated by the rocking shaft for working the valves in the pistons of the compression and expansion cylinders, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder, a hollow jacket to the expansion-cylinder divided into two compartments, supplied with gas respectively from the cooler and the refrigerating-chamber, the admission-valve leading from the second compartment, and means for opening the latter valve toward the end of the outstroke.

26. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, connections between the three pistons, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, means actuated by the rocking shaft for working the valves in the pistons of the compression and expansion cylinders, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder, a hollow jacket to the expansion-cylinder divided into two compartments, supplied with gas respectively from the cooler and the refrigerating-chamber, the admission-valve leading from the first compartment, a second admission-valve leading from the second compartment, and means for opening the latter valve toward the end of the outstroke.

27. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, means for storing power, connections between the three pistons such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, means actuated by the rocking shaft for working the valves in the pistons of the compression and expansion cylinders, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder, a hollow jacket to the expansion-cylinder divided into two compartments, supplied with gas respectively from the cooler and the refrigerating-chamber, the admission-valve leading from the first compartment, a second admission-valve leading from the second compartment, and means for opening the latter valve toward the end of the outstroke.

28. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, an accumulator, a hydraulic cylinder in constant communication with it, a ram in the cylinder, connections between the three pistons and ram such that the outstroke of compression and power pistons and the instroke of the expansion-piston take place simultaneously, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, means actuated by the rocking shaft for working the valves in the pistons of the compression and expansion cylinders, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder, a hollow jacket to the expansion-cylinder divided into two compartments, supplied with gas respectively from the cooler and the refrigerating-chamber, the admission-valve leading from the first compartment, a second admission-valve leading from the second compartment and means for opening the latter valve toward the end of the outstroke.

29. The combination of a compression-cylinder, a piston in it, means for actuating the piston, delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, an expansion-cylinder receiving compressed and cooled gas from the cooler, a piston in it connected to the piston of the compression-cylinder, admission and delivery valves to it, a refrigerating-chamber receiving gas from the delivery-valve of the expansion-cylinder, a hollow jacket to the expansion-cylinder divided into two compartments, supplied with gas respectively from the cooler and the refrigerating-chamber, the admission-valve leading from the first compartment, a second admission-valve leading from the second compartment, and means for opening the latter valve toward the end of the outstroke.

30. The combination of a compression-cylinder, a piston in it, means for actuating the piston, delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, an expansion-cylinder receiving compressed and cooled gas from the cooler, a piston in it connected to the piston of the compression-cylinder, admission and delivery valves to it, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber

31. The combination of a single-acting compression-cylinder, a piston in it, means for actuating the piston, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, an expansion-cylinder receiving compressed and cooled gas from the cooler, a piston in it connected to the piston of the compression-cylinder, admission and delivery valves to it, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber.

32. The combination of a compression-cylinder, a piston in it, means for actuating the piston, delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it connected to the piston of the compression-cylinder, admission and delivery valves in the cylinder end and piston, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber.

33. The combination of a single-acting compression-cylinder, a piston in it, means for actuating the piston, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it connected to the piston of the compression-cylinder, admission and delivery valves in the cylinder end and piston, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber.

34. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, connections between the three pistons, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber.

35. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston means for storing power, connections between the three pistons such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber.

36. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, an accumulator, a hydraulic cylinder in constant communication with it, a ram in the cylinder, connections between the three pistons and ram such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber.

37. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves to it, means for storing power, connections between the three pistons such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber.

38. The combination a of single-acting compression-cylinder, a piston in it, delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves to it, an accumulator, a hydraulic cylinder in constant communication with it, a ram in the cylinder, connections between the three pistons and ram such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber.

39. The combination of a single-acting compression-cylinder, a piston in it, means for actuating the piston, delivery and suction valves, in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, an expansion-cylinder receiving compressed and cooled gas from the cooler, a piston in it connected to the piston of the compression-cylinder, admission and delivery valves to it, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber.

40. The combination of a compression-cylinder, a piston in it, means for actuating the piston, delivery and suction valves, a cooler receiving compressed gas from the compression-cylinder, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it connected to the piston of the compression-cylinder, admission and delivery valves in the cylinder end and piston, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, means actuated by the rocking shaft for working the valve in the piston of the compression-cylinder, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber.

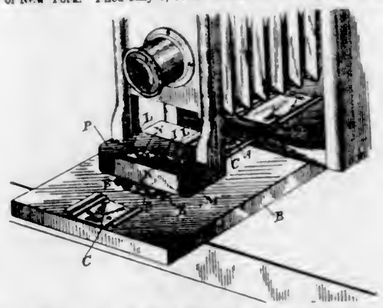
41. The combination of a single-acting compression-cylinder, a piston in it, means for actuating the piston, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it connected to the piston of the compression-cylinder, admission and delivery valves in the cylinder end and piston, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, means actuated by the rocking shaft for working the valves in the pistons of the compression and expansion cylinders, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber.

42. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, connections between the three pistons, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, means actuated by the rocking shaft for working the valves in the pistons of the compression and expansion cylinders, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber.

43. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, means for storing power, connections between the three pistons such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, means actuated by the rocking shaft for working the valves in the pistons of the compression and expansion cylinders, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber.

44. The combination of a single-acting compression-cylinder, a piston in it, delivery and suction valves in the cylinder end and piston, a cooler receiving compressed gas from the compression-cylinder, a single-acting power-cylinder, a piston in it, a single-acting expansion-cylinder receiving cooled and compressed gas from the cooler, a piston in it, admission and delivery valves in the cylinder end and piston, an accumulator, a hydraulic cylinder in constant communication with it, a ram in the cylinder, connections between the three pistons and ram such that the outstroke of the compression and power pistons and the instroke of the expansion-piston take place simultaneously, a crank-shaft, a crank on it, a cross-head, a rocking shaft on the cross-head, a connecting-rod pivoted to the crank and cross-head actuating the rocking shaft, means actuated by the rocking shaft for working the valves in the pistons of the compression and expansion cylinders, a refrigerating-chamber receiving gas from the expansion-cylinder, and means for mixing the gas expanded in the expansion-cylinder with gas drawn from the refrigerating-chamber.

654,790. GRIPPING DEVICE FOR CAMERA-FRONTS. ADOLF O. GRAF, Demarest, N. J., assignor to the Manhattan Optical Company, of New York. Filed May 1, 1900. Serial No. 15,037. (No model.)



Claim.—1. In a gripping device for camera-fronts, the combination of a flanged track, a flexible plate with a single perforation, gripping-flanges on the plate, to engage with the flanged track, and means engaging the plate at the perforation for buckling the plate, whereby its flanges are brought into engagement with the flanged track, substantially as described.

2. In a gripping device for camera-froots, the combination of a flanged track upon which the camera-front is adapted to run, a flexible plate beneath the camera-front and extending over the flanged track, flanges on the said flexible plate adapted to engage with the flanged track, a screw threaded nut beneath the flexible plate, a screw-bolt passing through the flexible plate and entering the nut, and means for turning the screw-bolt, whereby the nut may be drawn upon the screw-bolt and the flexible plate buckled, to bring its flanges into engagement with the flanged track, substantially as described.

3. In a gripping device for camera-fronts, the combination of a flanged track upon which the camera-front is adapted to run, a flexible plate beneath the camera-front and extending over the flanged track, flanges on the said flexible plate adapted to engage with the flanged track, a screw-threaded nut beneath the flexible plate, a screw-bolt passing through the flexible plate and entering the nut, means for preventing longitudinal movement of the screw-bolt, and means for turning the screw-bolt, whereby the nut may be drawn upon the screw-bolt and the flexible plate buckled, to bring its flanges into engagement with the flanged track, substantially as described.

4. In a gripping device for camera-fronts, the combination of an extension-front, a support on which the extension-front may run, a flexible plate carried by the extension-front, and engaging the support, and means for bringing the flexible plate into close engagement with the support to prevent longitudinal movement of the extension-front thereon, substantially as described.

5 In a gripping device for camera-fronts, the combination of a support for the camera-front, gripping means engaging with the support, a lever to operate the gripping means, pivoted at one end and having a finger-piece at the other end, and an offsetting finger-piece integral with the lever and located adjacent to the pivot whereby it is presented to the hand when the lever is in the unlocked position, substantially as described.

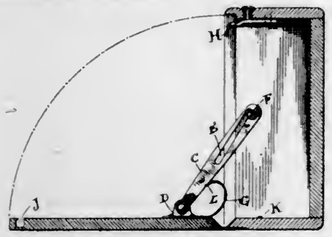
6. In a gripping device for camera-fronts, the combination of a support for the camera-front, gripping means for engaging with the support, a pivoted lever to operate the gripping means, and pins to limit the swing of the lever in either direction, substantially as described

654,791. SIDE-ARM-BRACKET SPRING FOR CAMERAS. ADOLF O. GRAF, Demarest, N. J., assignor to the Manhattan Optical Company, of New York. Filed May 1, 1900. Serial No. 15,038. (No model.)

Claim.—1. A side-arm-bracket spring having a point of attachment to the folding lid of a case, and having a convexly rearwardly curved portion adapted to bear upon the stationary bottom of the case when the folding lid is in its closed position, and having also a forwardly-curved tip adapted to bear on the side-arm bracket, said convexly rearwardly curved portion lying between the said point of attachment and the said tip, when the folding lid is in its open position, substantially as described.

2. In a camera-case, the combination of a folding side, a support thereon, a side-arm bracket pivoted to the support at one end and loosely engaging the camera-case at its other end, and a spring inte-

gral with the support and bearing at its tip on the side-arm bracket when the side is in its horizontal position, and bearing at its middle portion on the bottom of the camera-case when the side is in its raised position, substantially as described.



3. In a camera-case, the combination of a folding side, a support thereon, a side-arm bracket pivoted at one end to the support and having at its other end an elongated slot, a pin attached to the inner side of the camera-case and passing through the slot, and a spring integral with the support, terminating in a notched tip and bearing at said notched tip on the side-arm bracket to cause the slot and the pin to engage securely when the folding side is in a horizontal position, substantially as described.

654,792. DRAFT-EQUALIZER. MORGAN HEATON, Norton, Kans. Filed Jan. 9, 1900. Serial No. 856. (No model.)



Claim.—1. A device of the class described comprising a substantially-oblong frame provided at its rear end with perforated lugs and having a longitudinal partition, said frame being provided at intervals with a longitudinal series of perforations adapted to receive pivot-bolts and permit the same to be adjusted to and from each other, a pulley arranged within the frame and having a pivot passing through perforations of the same, and a doubletree pivoted within the frame, substantially as described.

2. A device of the class described comprising a main whiffletree, a pair of substantially-oblong frames arranged at the ends of the main whiffletree and provided with longitudinal plates or partitions dividing the frame into upper and lower spaces, the main whiffletree being arranged in one of the spaces, pulleys mounted in the other space, doubletrees pivotally mounted in the frame in substantially the same plane as the pulleys, and flexible connections arranged on the pulleys and extending forward at opposite sides of the frame and designed to be connected to the adjacent traces, substantially as described.

3. A device of the class described comprising an approximately-oblong frame provided with rearwardly-extending lugs and having a longitudinal plate or partition dividing it into upper and lower spaces, the lower space being designed to receive a main whiffletree, a doubletree pivotally mounted in the frame, a pulley also mounted in the frame and located in rear of the doubletree, and a flexible connection extending around the pulley and located at opposite sides of the frame, substantially as described.

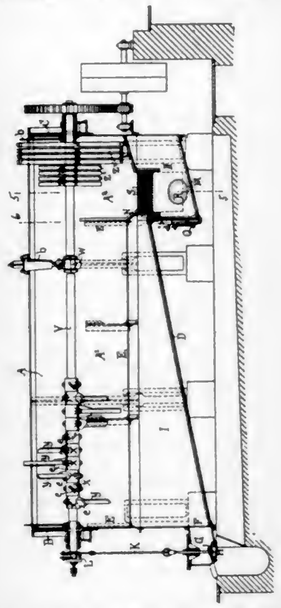
4. A device of the class described comprising an approximately-rectangular frame having a longitudinal partition thickened at its rear portion, whiffletrees pivoted in the frame, a pulley arranged within the frame on the thickened portion of the partition, and a flexible connection passing around the pulley, substantially as described.

5. A device of the class described comprising an approximately-rectangular frame having a longitudinal series of perforations and provided with a longitudinal partition, whiffletrees detachably connected to the frame by the said pivots, a pulley mounted on one of the pivots, and a flexible connection arranged on the pulley, substantially as described.

6. In a device of the class described, an approximately-rectangular frame provided at its rear end with perforated lugs and having a longitudinal partition, said frame being provided at intervals with perforations adapted to receive pivots, combined with a pulley mounted in the frame, substantially as described.

654,793. WASHING-MACHINE FOR BEETS, &c. LUDWIG HIRT, Grevenbroich, Germany, assignor to the Maschinenfabrik Grevenbroich, same place. Filed June 2, 1899. Serial No. 719,065. (No model.)

Claim.—1. An apparatus for washing beet-roots and similar articles and simultaneously removing therefrom the dirt and other foreign substances and the washed roots, consisting essentially of a receptacle A divided into two compartments, A' A^3, both of which are provided with inclined bottoms D M, compartment A' having a perforated curved bottom E and on its end or head a chamber G in communication with the space I and having a valve J and means for continually opening and closing said valve, compartment A^3 having a funnel N bearing a grating S and having a slanting bottom M, also a stone-box O and slide-valve Q, and the entire apparatus provided with a lengthwise horizontal shaft V on which there are spirally arranged the arms of a stirring device *x e* Y, and ejector-arms Z Z'.



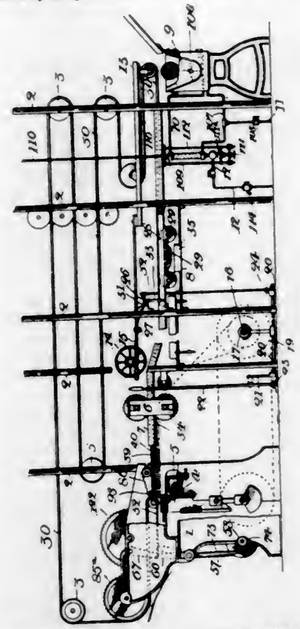
2. In an apparatus for washing beet-roots and similar articles the combination of a compartment provided with a perforated bottom for the free passage of the finer particles of dirt, a dirt-collecting chamber beneath said perforated bottom, an outlet communicating with said dirt-collecting chamber, a valve for controlling said outlet, said valve being closed by the pressure of the water thereon, mechanical means for automatically and intermittently opening said valve, a second compartment separate from but at all times in communication with said first-named compartment, mechanism contained within said second compartment for separating stones and like heavier particles from the beet-roots or other articles treated and means for discharging the stones from the apparatus without withdrawing the water therefrom.

3. In an apparatus for washing beet-roots and similar articles with a stirring device contained therein, the combination therewith of ejectors Z Z', one-half thereof being arranged at ninety degrees to the other half on the shaft, each ejector consisting of two arms, each arm consisting of a straight flat iron piece *f* and a curved flat iron piece *g*, the iron piece *f* being bent at one end, the iron piece *g* being bent at both ends for the connection of these two pieces together and to the shaft by bolts and nuts.

4. In an apparatus for washing beet-roots and similar articles, the combination therein with the compartment A^3, for the purpose of separating and removal of the heavier foreign bodies, of a stone-box O with slide P and slanting bottom and of the inclined grating S, with an attached slide U movable on the funnel N said grating S and slide being adapted to be raised by the lever-arm T against the margin of the funnel N, while the slide U closes the stone-chest from connection with the compartment A^3, so as to empty the stone-chest without undue loss of water.

654,794. MATCH-MAKING MACHINE. ALEXANDER KELLEY, Camden, N. J., assignor to the Ruby Match Company, Wilmington, Del. Filed Mar. 28, 1900. Serial No. 10,513. (No model.)

Claim.—1. In a match-machine, a carrier comprising a series of independent separable bars between adjacent ones of which splints are to be held, means for moving the bars in a curved path, and an auxiliary chain divided into sections each terminating at the curved path; substantially as specified.



2. In a match-machine having a curved path at the splint-receiving point, a carrier comprising independent bars, means for moving the same in the curved path, and an auxiliary chain terminating at the curved path and adapted to engage said bars as they leave the curved path; substantially as specified.

3. In a machine of the class described having a carrier and a curved path for the same at the splint-receiving point, an auxiliary chain adjustably mounted at one end at the curved path of the carrier; substantially as specified.

4. In a machine of the class described having a carrier and a curved path for the same at the splint-receiving point, an endless auxiliary chain mounted upon a relatively-small pulley adjustably mounted at the curved path of the machine; substantially as specified.

5. In a machine of the class described, an auxiliary chain mounted upon a relatively-small pulley at and adjacent to a bar-carrying sprocket of larger diameter than said pulley whereby a relatively-quicker angular action upon the part of the chain is secured; substantially as specified.

6. In a machine of the class described, a cleaner pivotally mounted upon rock-arms, a stop for limiting pivotal movement in one direction and a spring connection between the cleaner and the rock-arm, and means for vibrating the rock-arm; substantially as specified.

7. In a machine of the class described, a series of independent splint-clamping bars, a main chain for carrying the same, means for separating the main chain from the bars, sprockets for receiving the bars when separated from the main chain and moving them in the curved path, an auxiliary chain, a fixed curved guide for maintaining the bars in the teeth of the sprocket after leaving said auxiliary chain, and a separate auxiliary chain passing over a pulley of smaller diameter than the sprocket and arranged to seize the bars in clamping relation and separate them from a following bar in the teeth of the sprockets; substantially as specified.

8. In a machine of the class described, the combination with a cleaner, of a series of independent splint-clamping bars, a main chain for carrying the same, means for separating the main chain from the bars, sprockets for receiving the bars when separated from the main chain, an auxiliary chain, fixed curved guides for maintaining the bars in the teeth of the sprocket, said auxiliary chain passing over a pulley of smaller diameter than the sprocket and arranged to form a space between bars as they leave the teeth of the sprocket; substantially as specified.

9. In a machine of the class described, the combination with a cleaner adapted to yield only in the direction of the movement of the bars, of a series of independent splint-clamping bars, a main chain for carrying the same, means for separating the main chain from the bars, sprockets for receiving the bars when separated from the main chain, an auxiliary chain, a fixed curved guide for maintaining the bars in the teeth of the sprocket, and an auxiliary chain passing over a pulley of smaller diameter than the sprocket and arranged to form a space to separate the bars as they leave the teeth of the sprocket; substantially as specified.

10. In a machine of the class described, the combination with a cleaner adapted to yield only in the direction of the movement of the bars and to automatically return to its normal position, of a series of independent splint-clamping bars, a main chain for carrying the same, means for separating the main chain from the bars, sprockets for receiving the bars when separated from the main chain, an auxiliary chain, a fixed curved guide for maintaining the bars in the teeth of the sprocket, said auxiliary chain passing over a pulley of smaller diameter than the sprocket and arranged to form a space to separate the bars as they leave the teeth of the sprocket; substantially as specified.

11. In a machine of the class described, a series of independent splint-clamping bars, means for moving said bars in a curved path, and an auxiliary chain divided at said curved path; substantially as specified.

12. In a machine of the class described, a series of independent splint-clamping bars, means for moving them in a curved path including one section of an auxiliary chain, knockers adapted to advance the last bar in the curved path, and an independent section of an auxiliary chain adapted to seize the said bar during the operation of the knockers; substantially as specified.

13. In a machine of the class described, a knocker and means for bringing the same into contact with and to follow a splint-clamping bar after it is in clamping relation with an adjacent bar; substantially as specified.

14. In a machine of the class described, a series of independent bars arranged in a curved path, an auxiliary chain terminating at the curved path and mounted for adjustment rearwardly and downwardly at the curved path; substantially as specified.

15. In a machine of the class described, a series of independent splint-clamping bars, and an auxiliary chain divided into two sections, the one section acting to form a space in the bars and the other section acting to secure the bars in clamping relation; substantially as specified.

16. The combination with a carrier-chain, of a match-machine of a roller for said chain mounted on a vertically-adjustable cross-head and a pivotally-adjustable bracket for supporting the cross-head; substantially as specified.

17. In a machine of the class described, the combination with a series of independent clamping-bars of means for moving the bars in a curved path, means for transferring the bars from a curved path to a straight path, and an auxiliary chain terminating at the curved path and moving angularly faster than the means for moving the bars in said curved plath; substantially as specified.

18. In a machine of the class described, the combination with the frame thereof, of a carrier-chain, a cross-head carrying a pulley upon which the chain is mounted, means for adjusting the cross-head in a substantially-vertical direction, comprising a threaded rod, a bracket pivoted to the frame carrying the cross-head and threaded rod and means for adjusting the bracket in a substantially-horizontal position; substantially as specified.

19. In a machine of the class described, carrier starting and stopping mechanisms and paraffin-dipping mechanism connected to be conjointly controlled; substantially as specified.

20. In a machine of the class described, carrier starting and stopping mechanisms and paraffin-dipping mechanism and connections whereby the actuation of the starting mechanism puts into operation the dipping mechanism and the actuation of the stopping mechanism throws the dipping mechanism out of operation; substantially as specified.

21. In a machine of the class described, dipping mechanism pivotally supported at one end to a fixed part of said machine and connected at the other end with counterbalancing lifting mechanism, and a rod connecting the latter with the carrier starting and stopping mechanisms of the machine; substantially as specified.

22. In an evener mechanism for match-machines, sprockets mounted on a roll of the evener mechanism and meshing with the splint-clamping devices, whereby an even feed of said devices through the evener mechanism is secured; substantially as specified.

23. An evener mechanism comprising an upper and a lower roll, means for passing a splint-carrier between said rollers, and means upon one of said rollers for moving the carrier; substantially as specified.

24. In an evener mechanism, an upper and a lower roll, means for passing a splint-carrier between said rolls and means upon the

lower roll for supporting the ends of the carrier; substantially as specified.

25. In a machine of the class described, evener mechanism comprising a roll having means for supporting the carrier; substantially as specified.

26. In an evener mechanism, splint-clamping devices, means for moving the same, an upper and a lower roll, the former provided with means for cooperating with and moving the carrier and the lower roll provided with means for supporting the carrier; substantially as specified.

27. In a match-machine, a delivery-table comprising a series of narrow belts separated by partitions; substantially as specified.

28. In a match-machine, a delivery-table comprising a series of belts in width less than the length of the match, a series of partitions separating the belts from each other, and means for dropping the matches heads downward upon the belts whereby the matches are delivered with their heads to the front in the line of the movement of the belts; substantially as specified.

29. In a match-machine, a delivery-table comprising narrow belts, belt-dividing partitions, and a transverse belt wider than the length of the matches; substantially as specified.

30. In a match-machine, a splint-clamping carrier comprising bars having transverse match-receiving grooves upon all the sides thereof in combination with similar grooveless bars; substantially as specified.

31. In a match-machine, a carrier comprising independent separable bars between adjacent ones of which splints are to be held, means for moving said bars in a curved path at the splint-receiving point of the machine, a device arranged at and in rear of the termination of said curved path, and means for causing said device to contact with a bar of the carrier at about its mid-length and to move the same into the control of bar-moving means in advance of said curved path; substantially as specified.

32. In a match-machine, a carrier comprising independent separable bars between adjacent ones of which splints are to be held, means for moving said bars in a curved path at the splint-receiving point of the machine, a device arranged at and in rear of the termination of said curved path, and means for causing said device to contact with a bar of the carrier at about its mid-length and near its ends and to move the same into the control of bar-moving means in advance of said curved path; substantially as specified.

654,795. CAN ATTACHMENT. CHARLES L. KIDDER, New York, N. Y. Filed Nov. 2, 1899. Serial No. 735,575. (No model.)



Claim.—1. As an improved article of manufacture, a can attachment comprising a spout adapted to be thrust through the can, a clamping device to bind the spout in place, and a handle serving to operate the clamp and as a handle for the can.

2. As an improved article of manufacture, a can attachment comprising a spout having one end sharpened to pierce the can, and means embracing the can-top for clamping the spout in place.

3. A device of the kind described comprising a band to encircle the can-top, a spout carried by the band and adapted to pierce the can, and a clamp to fasten the band in place.

4. A device of the kind described comprising a can-encircling band, a spout carried by the band and having one end adapted to pierce the can, and a clamp to fasten the band to the can, the handle of the clamp serving as a handle to the can, substantially as described.

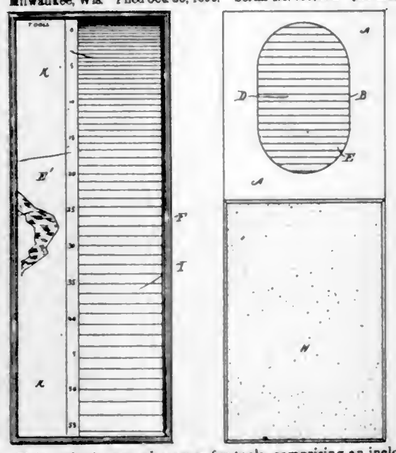
5. A device of the kind described comprising a band to encircle the can, a cam pivoted on one side of the band and provided with a handle, and a spout carried by the band, said spout having its inner end adapted to pierce the can.

6. A device of the kind described comprising a band to encircle the can, a clamp to hold the band to the can, a plate pivoted on the band and adapted to fit over the can-top, and a spout on the plate, said spout having a sharpened inner end to pierce the can, substantially as described.

7. A device of the kind described comprising a band to encircle the can, a cam pivoted on the band and provided with a handle adapted to turn down against the can, a plate pivoted on the band and adapted to turn over the can-top, and a spout carried by the plate, said spout having a sharpened inner end to pierce the can, substantially as described.

8. A device of the kind described comprising a band to encircle the can, a spout carried by the band and having means for puncturing the can, and a second puncturing means attached to the device and adapted to make an air-vent in the can to which the device is attached.

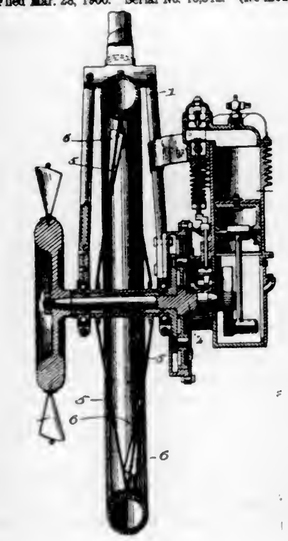
654,796. TEMPERING-GAGE FOR TOOLS. AUGUST J. KOEGLER, Milwaukee, Wis. Filed Oct. 30, 1899. Serial No. 735,204. (No model.)



Claim.—1. A tempering-gage for tools, comprising an inclosing case, open on one side and provided with an aperture on the other; a strip of transparent non-fragile material covering said aperture; a card provided with indicating colors, located in the case and having a colored portion on the rear side, arranged to register with said aperture; and a plate of transparent material covering the upper side of said card, and secured within the case.

2. A tempering-gage for tools, comprising an inclosing case open on one side and provided with an aperture on the other; a strip of transparent non-fragile material covering said aperture; a card provided with indicating colors, located in the case, and having a colored portion on the rear side, arranged to register with said aperture; and a plate of transparent material covering the upper side of said card, and secured within the case; together with a block surfaced with erosive material and secured to the rear side of the case adjacent to the aperture therein.

654,797. MOTOR-VEHICLE. HENRY J. LAWSON, London, England. Filed Mar. 28, 1900. Serial No. 10,512. (No model.)



Claim.—1. In combination with a motor-vehicle having a supporting and propelling ground-wheel, a motor mounted laterally to and driving said supporting and propelling ground-wheel, and fan-blades mounted upon said supporting and propelling ground-wheel sending a current transversely through the wheel and motor.

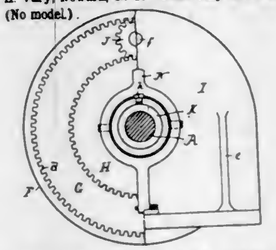
2. In combination with a motor-vehicle having a motor supporting and propelling ground-wheel, a motor laterally disposed thereto and driving the same, a fly-wheel on the shaft of the motor, and a fan located upon the fly-wheel sending a current of air transversely through the motor, for the purpose set forth.

3. In combination with a motor-vehicle having a supporting and propelling ground-wheel, a motor and its fly-wheel, located on opposite sides of the supporting and propelling wheel, and a fan on the fly-wheel sending a current transversely through the vehicle wheel and motor, for the purpose set forth.

4. In combination with a supporting and propelling ground-wheel of a vehicle, a shaft extending axially through and having driving connection with said ground-wheel, a motor and its fly-wheel connected to opposite ends of said shaft, and a fan on said fly-wheel sending a current of air transversely through the ground-wheel and motor.

5. In combination with a motor-vehicle having a motor and a fly-wheel laterally disposed with relation to the propelling-wheel of the vehicle, a fan upon the propelling-wheel, and an auxiliary fan upon the fly-wheel cooperating with the same; substantially in the manner and for the purpose set forth.

654,798. REVERSING MECHANISM. JOHN J. LEARY, Rochester, N. Y., assignor of two-thirds to Frank P. Wells, same place, and Calvin P. H. Vary, Newark, N. Y. Filed July 13, 1899. Serial No. 723,696. (No model.)



Claim.—1. In a reversible friction-clutch, a driving-shaft and a driven shaft having a common axis, a friction-cone rigidly secured to said driven shaft and provided with external and internal frictional surfaces for imparting motion to said driven shaft in opposite directions, a friction-sleeve secured in rotation with and movable axially upon said driving-shaft, a shell engaging frictionally with said fixed cone upon the driven shaft, a second sleeve engaging frictionally with said sleeve on said driving-shaft, a disk secured to said shell, interposed gearing, and means for imparting axial movement to said sleeve held in rotation with said driving-shaft, substantially as and for the purposes set forth.

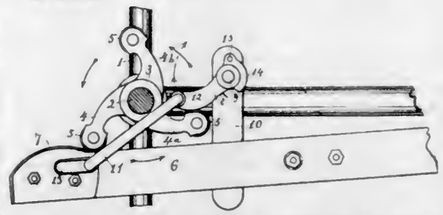
2. A reversible friction-clutch, consisting of a driving and a driven shaft and a cone secured to said driven shaft, provided with an external and an internal bearing-surface, a sleeve splined to said driving-shaft provided with a face to engage with the internal surface of said cone; a second sleeve taking over said sleeve splined to said driving-shaft and frictionally engageable with it, a spur-gear on said second sleeve, a spur-gear meshing therewith and mounted on a fixed support, an external shell provided with an internal gear meshing with said last-mentioned spur-gears and with an interior conical face to engage frictionally with the external face of the cone upon the driven shaft, a disk secured to said shell, and means for throwing the several frictional contact-surfaces in and out of action through axial action imparted to the sleeve splined to the driving-shaft, substantially as and for the purposes set forth.

654,799. DISPLAY DEVICE. MORRIS H. LEVETT, New York, N. Y. Filed Mar. 8, 1900. Serial No. 7,767. (No model.)

Claim.—1. As an improved article of manufacture, a display device comprising a foraminous opaque casing or shell, and a plurality of edge-to-edge-fitting bodies contained therein, substantially as shown and described.

2. As an improved article of manufacture, a display device, comprising a foraminous opaque casing or shell formed to simulate a letter of the alphabet, and a translucent body portion contained therein, substantially as shown and described.

654,800. BALING-PRESS. WINFIELD S. LIVENGOOD and GABRIEL LIVENGOOD, Kansas City, Kans. Filed Mar. 25, 1899. Serial No. 710,424. (No model.)

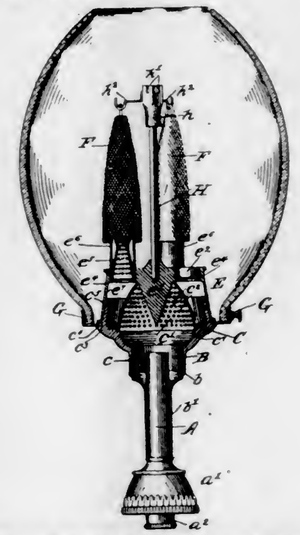


Claim.—1. In a baling-press having a suitable bed-plate the combination with the power-shaft provided with three trip-arms having antifriction-rollers in their ends, of a pitman, a guide-lever fulcrumed on the bed-plate to the rear of said power-shaft and arranged to operate in the path of said power-arms, and a link connected with said lever, and with the pitman controlling the path of the pitman, substantially as set forth.

2. In a baling-press having a suitable bed-plate, the combination with a power-shaft provided with triple power-arms having antifriction-rollers in their ends, of a pitman having a convex inner face, a guide-lever fulcrumed on the bed-plate to the rear of said power-shaft, and arranged to be operated by said power-arms, and a link connected with said lever and with the pitman and arranged to control the path of the pitman from the beginning to the end of its cycle substantially as set forth.

3. In a baling-press having a suitable bed-plate and a vertical power-shaft mounted on said bed-plate, the combination with a pitman having a vibrating end portion, of a triple-armed trip-lever mounted on said power-shaft and arranged to operate the pitman, a lever fulcrumed upon the bed-plate and arranged to be acted upon by said power-arms and to act upon the pitman to give an accelerated initial movement to the pitman, and means for retaining the pitman within the action of said power-arms whereby said arms act first upon the side and then upon the end of the pitman; substantially as set forth.

654,801. INCANDESCENT GAS-LAMP. RAGLAND MOMAND, New York, N. Y., assignor, by direct and mesne assignments, to Mary E. Pierce and Annie Momand, same place. Filed July 20, 1899. Serial No. 724,496. (No model.)



Claim.—1. In an incandescent gas-burner, the combination of an air and gas mixing tube, a perforated shell located above the end of said tube and constituting a mixing-chamber, a second shell inclosing said perforated shell and constituting another mixing-chamber, a plurality of burners carried by said shell, and a plurality of mantles of refractory material supported above said burners.

2. In an incandescent gas-burner, the combination of an air and

gas mixing tube, a perforated shell located above the end of said tube and constituting a mixing-chamber, a second shell inclosing said perforated shell and constituting another mixing-chamber, a plurality of burners carried by said shell for supplying air and gas to a plurality of mantles located above said burners, and a substantially cone-shaped part carried by said second shell projecting into said perforated shell, substantially as described.

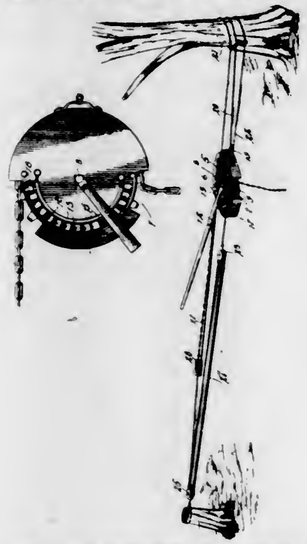
3. In an incandescent gas-burner, the combination of an air and gas mixing tube, a perforated shell supported above said tube and constituting a mixing-chamber, a second shell inclosing said perforated shell and constituting a second mixing-chamber, and a plurality of burners carried by said second shell for supplying air and gas to a plurality of mantles of refractory material located above the burners, each of said burners comprising a perforated shell and a tube inclosing said shell.

4. In an incandescent gas-lamp, the combination of an air and gas mixing tube, a perforated shell supported above said tube, a second shell inclosing said perforated shell and carrying a plurality of burners, a post or rod carried by said second shell, a cap carried by said rod, having a plurality of cuts or recesses, and a support for a mantle located in each of said slots.

5. In a gas-burner the combination of a gas and air mixing tube, a chamber in communication with said tube and having perforated walls for effecting the more thorough mixing of the gas and air from said tube, a shell inclosing said chamber for forming an outer chamber, and a plurality of gas-burners in communication with said outer chamber, substantially as described.

6. In an incandescent gas-lamp, the combination of a post, a cap having a plurality of slots or cuts extending longitudinally of the cap, carried by said post, a plurality of arms carried by said cap and extending radially therefrom, one end of each arm being provided with means for detachably holding it in a slot or cut and its other end formed into a hook, a mantle suspended from each hook, and a burner for each mantle.

654,802. STUMP-PULLER. THEODORE H. MCCAIN, Monroe, Wash. Filed Nov. 14, 1899. Serial No. 736,960. (No model.)



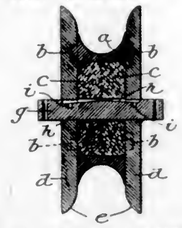
Claim.—1. In a stump-puller, the combination with a casing having a slot therein, of a drum mounted in the casing, a rack upon the drum, a lever mounted upon the casing, a dog carried by the lever and adapted for engagement with the rack through the slot of the casing, and a dog mounted upon the casing and adapted for engagement with the rack to hold the drum when the first-named dog is disengaged.

2. A stump-puller comprising a casing having a slot therein, a drum mounted in the casing, a rack upon the drum, a lever mounted on the casing, a dog carried by the lever adapted to enter the slot and engage the rack, a second dog pivoted to the casing and adapted to enter the slot and engage the rack, and a guide-plate fixed to the casing and adapted to hold the lever against outward displacement, said casing also having openings leading to the drum.

3. In a stump-puller, the combination with a casing having a slot, of guide-ribs upon the casing adjacent the slot, a drum mounted in the casing, a rack upon the drum, a lever mounted upon the casing and having slots which receive the guide-ribs, a dog carried by the lever and adapted for engagement with the rack through the slot of the casing, and a dog mounted upon the casing and adapted for engagement with the rack to hold the drum when the first-named rack is disengaged.

4. In a stump-puller, the combination with a casing having a slot therein, of a drum mounted in the casing, a rack upon the drum, a lever mounted upon the casing, a dog carried by the lever and adapted for engagement with the rack through the slot of the casing, a dog mounted upon the casing and adapted for engagement with the rack to hold the drum when the first-named dog is disengaged, means for the attachment of a rope to the casing, a chain engaged with the drum a block connected with the chain, and additional blocks adapted for connection with the stump to be pulled and with a suitable support.

654,808. TROLLEY-WHEEL. STEPHEN G. REYNOLDS, Easton, Pa., assignor of one-half to Nat Freeman, same place. Filed Dec. 11, 1899. Serial No. 739,985. (No model.)



Claim.—1. A trolley-wheel, having, in combination, a peripherally-grooved annular center provided with integral lateral projections, side disks having interlocking indentations or depressions on their inner sides corresponding in number and position with the projections, whereby said disk and center are locked against relative rotary movement and a pin on which the side disks have their bearings.

2. A trolley-wheel, having, in combination, the peripherally-grooved annular center *a*, provided on its outer edges with the integral radial lugs or teeth *b*, the side disks *d*, having radial interlocking indentations or depressions *f*, corresponding in number and location with the lugs or teeth, and the pin *g*, adapted to fit in bearings in the side disks.

3. A trolley-wheel having, in combination, the peripherally grooved, annular center ring *a*, having radial lugs or teeth projecting laterally from its opposite edges, the side disks *d*, having radial indentations or depressions *f*, corresponding in number and location with the teeth on the center ring, the fibrous packing *c*, and the pin *g*, adapted to be secured in the fork of the trolley-pole providing a bearing for the disks.

4. A trolley-wheel, having, in combination, a center ring, side disks, and a fibrous packing within the hollow of the ring, and a pin upon which the wheel revolves said pin provided at its top with flattened portions *h*, inclining in opposite directions from a central point.

654,804. PROCESS OF OBTAINING OXID AND CARBONATE OF ZINC FROM MATERIALS CONTAINING ZINC. GILBERT RIGG, Swansea, England. Filed May 6, 1899. Serial No. 715,855. (No specimens.)

Claim.—1. The process of producing oxid of zinc and carbonate of zinc from zinkiferous material which consists in leaching the zinkiferous material with a solution of ammonia and carbon dioxid wherein the carbon dioxid is in such proportion to the ammonia as to impart to the latter an approximately-maximum zinc-dissolving capacity, as herein set forth.

2. The process of producing oxid of zinc and carbonate of zinc from material containing an oxygen compound of zinc which consists in leaching the zinkiferous material with a solution of ammonia and carbon dioxid wherein the carbon dioxid is in such proportion to the ammonia as to impart to the latter an approximately-maximum zinc-dissolving capacity, as herein set forth.

3. The process of producing oxid of zinc and carbonate of zinc from material containing carbonate of zinc which consists in leaching the zinkiferous material with a solution of ammonia and carbon dioxid wherein the carbon dioxid is in such proportion to the ammonia as to impart to the latter an approximately-maximum zinc-dissolving capacity, as herein set forth.

4. The process of producing oxid of zinc and carbonate of zinc from oxid of zinc and carbonate of zinc which consists in leaching the zinkiferous material with a solution of ammonia and carbon dioxid wherein the carbon dioxid is in such proportion to the ammonia as to impart to the latter an approximately-maximum zinc-dissolving capacity, as herein set forth.

5. The process of producing oxid of zinc and carbonate of zinc from zinkiferous material which consists in leaching the zinkiferous material with a solution of ammonia and carbon dioxid wherein the carbon dioxid is in such proportion to the ammonia as to impart to the latter an approximately-maximum zinc-dissolving capacity, as herein set forth and subsequently separating from the solution oxid of zinc and carbonate of zinc contained therein by altering the amount of the active carbon dioxid contained in said solution.

6. The process herein described for producing or separating oxid and carbonate of zinc from material containing an oxygen compound of zinc which consists in leaching the zinkiferous material with a solution of ammonia and carbon dioxid wherein the carbon dioxid is in such proportion to the ammonia as to impart to the latter an approximately-maximum zinc-dissolving capacity, as herein set forth and subsequently separating from the solution oxid of zinc and carbonate of zinc contained therein by altering the amount of the active carbon dioxid contained in said solution.

7. The process of producing oxid of zinc and carbonate of zinc from zinkiferous ores or other materials which consists in leaching the zinkiferous material with a solution of ammonia and carbon dioxid wherein the carbon dioxid is in such proportion to the ammonia as to impart to the latter an approximately-maximum zinc-dissolving capacity, as herein set forth, and subsequently separating from the solution oxid of zinc and carbonate of zinc contained therein by altering the amount of the active carbon dioxid contained in said solution while keeping constant the quantity of ammonia, substantially as described.

8. The process herein described for producing or separating oxid and carbonate of zinc from material containing an oxygen compound of zinc which consists in leaching the said material with a solution of ammonia and carbon dioxid wherein the carbon dioxid is in such proportion to the ammonia as to impart to the latter an approximately-maximum zinc-dissolving capacity, as herein set forth, and subsequently separating from the solution oxid of zinc and carbonate of zinc contained therein by altering the amount of the active carbon dioxid contained in said solution while keeping constant the quantity of ammonia, substantially as described.

9. The process herein described for producing or separating oxid of zinc and carbonate of zinc from zinkiferous ores or other material which consists in leaching the zinkiferous ore or material with a solution of ammonia and carbon dioxid wherein the carbon dioxid is in such proportion to the ammonia as to impart to the latter an approximately-maximum dissolving capacity and subsequently separating from the solution oxid of zinc and carbonate of zinc contained therein by altering the proportion of the active carbon dioxid contained in said solution, removing the oxid of zinc and carbonate of zinc, and rendering the solution fit for leaching again by again establishing the proper proportion of carbon dioxid therein.

10. The process herein described for treating a solution containing ammonium carbonate, oxid of zinc, and carbonate of zinc which consists in separating the oxid of zinc and carbonate of zinc from the solution by altering the proportion of active carbon dioxid in the said solution as set forth.

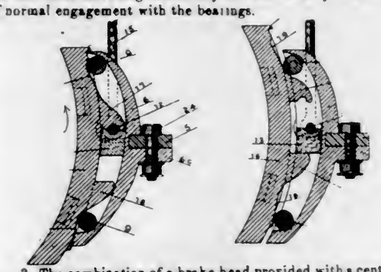
11. The herein-described process for separating oxid of zinc and carbonate of zinc from zinkiferous material which consists in leaching the said material with a solution of ammonium carbonate and ammonium hydrate containing carbon dioxid in such proportion to the ammonia in the solution as to impart to the solution a maximum zinc-dissolving capacity, as herein set forth, and subsequently separating from the solution oxid of zinc and carbonate of zinc by increasing the proportion of carbon dioxid in the solution while keeping constant the quantity of ammonia, substantially as described.

12. The process herein described of treating a solution containing ammonium carbonate, oxid of zinc and carbonate of zinc by increasing the proportion of carbon dioxid to the ammonia in the said solution as set forth.

654,805. AUTOMATIC BRAKE-SHOE. WILLIAM H. SAUVAGE, Denver, Colo., assignor of one-third to Henry Newton Wood, same place. Filed Oct. 30, 1899. Serial No. 735,264. (No model.)

Claim.—1. The combination of a brake-head mounted on a suitable support and provided with a longitudinal groove formed in its front face, a bolt passed transversely through said head and through the groove, a cushion inserted in the groove below and engaging said bolt, a roller journaled in the head near each extremity and protruding from the groove, a shoe formed with two separated projections entering the groove of the head, one being below the cushion and the other above the bolt, the shoe being also provided with two inclined faces adapted to be engaged by the rollers of the head, said faces extending rearwardly and downwardly from the point of normal engagement with the rollers when the shoe is inactive.

2. The combination of a brake-head provided with a longitudinal groove formed in its front face, a stop located in said groove at a suitable point between its extremities, bearings located at the extremities of the groove, a shoe having projections formed on its rear side and adapted to enter the groove of the head, one projection being located above and the other below the stop, the shoe being provided with inclined faces adapted to engage the bearings of the head, the said faces extending rearwardly and downwardly from the point of normal engagement with the bearings.



3. The combination of a brake-head provided with a central longitudinal groove, and a sustained cushion located in said groove at a suitable point intermediate its extremities, a cooperating brake-shoe mounted on the head and having a rearward projection entering the groove of the head below the cushion, and means for automatically raising and separating the shoe from the head as the wheel engages the face of the shoe, the projection of the shoe engaging the cushion of the head to limit the upward movement of the shoe.

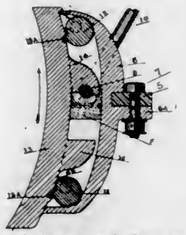
4. The combination of a brake-head and a cooperating shoe suitably mounted thereon, one of the said parts being provided with a stop-cushion and the other with an engaging part adapted to limit the travel of the shoe on the head, the shoe being provided at each extremity with an inclined face extending rearwardly and downwardly, the head being provided with suitable means for engaging the inclined faces of the shoe whereby as the shoe is raised by the friction of the wheel the brake is applied by forcing the shoe against the wheel.

5. The combination of a brake-head and a shoe mounted thereon, one of the said parts being provided with inclined faces at its extremities and the other part with bearings therefor, one of the said parts being also provided with a stop cushion and the other with an engaging part adapted to limit the movement of the shoe on the head.

6. The combination of a brake-head and a cooperating shoe suitably mounted thereon, one of the said parts being provided with two inclined faces extending rearwardly and downwardly and the other part with bearings engaging said faces, both inclined faces of the one part being simultaneously in operative engagement with the bearings of the other part during the brake-applying operation.

7. The combination of a brake-head and a cooperating shoe suitably mounted thereon, one of the said parts being provided with two inclined faces and the other part with bearings engaging said faces, both inclined faces of the one part being simultaneously in operative engagement with the bearings of the other part during the brake-applying operation.

654,806. AUTOMATIC BRAKE-BLOCK. WILLIAM H. SAUVAGE, Denver, Colo., assignor of two-thirds to Henry Newton Wood and Charles C. Welch, same place. Filed Nov. 13, 1899. Serial No. 736,785. (No model.)



Claim.—1. A brake block composed of two members, namely a supporting-head and a shoe connected therewith and movable thereon, and an eccentric cam mounted on one member and engaging the other member to force the shoe toward the wheel as the brake-setting movement is imparted to the shoe.

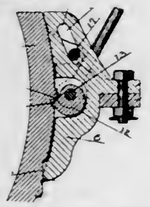
2. A brake-block composed of a supporting-head, a brake-shoe and interposed eccentric cams causing the shoe to move forwardly away from the head during the brake-setting operation.

3. The combination of a brake-head, a coöperating shoe connected therewith and movable thereon, an eccentric cam journaled in each extremity of the brake-head and adapted to engage the shoe during the brake-setting operation whereby the latter is moved away from the head.

4. The combination of a brake-head longitudinally grooved, an eccentric cam journaled in the head at each extremity of the groove, a cushion located in the groove intermediate the cams, and a shoe provided with projections engaging the groove of the head on opposite sides of the cushion, the shoe being arranged to be engaged by the cams to force the shoe away from the head during the brake-setting operation.

5. The combination with a brake-beam or other suitable support, of a brake-head mounted thereon and provided with a longitudinal groove formed in its front face, a cushion located in said groove at a suitable point between its extremites, an eccentric cam journaled in the head at each extremity of the groove and provided with a tooth or cog protruding therefrom, a coöperating shoe provided with rearward projections entering the groove of the head on opposite sides of the cushion, the rear side of the shoe being provided with recesses adapted to engage the tooth or cog of each cam carried by the head.

654,807. AUTOMATIC BRAKE-BLOCK. WILLIAM H. SAUVAGE, Denver, Colo., assignor of two-thirds to Henry Newton Wood and Charles C. Welch, same place. Filed Nov. 13, 1899. Serial No. 736,786. (No model.)



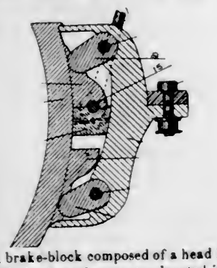
Claim.—1. A brake-block composed of two members, namely, a head and a shoe movably mounted thereon, said members being provided with inclined engaging faces, a bolt fitted into apertures formed in one member and engaging an inclined slot formed in the other member, an eccentric cam mounted on one member and engaging the adjacent face of the other member.

2. A brake-block composed of two members, namely, a head and a shoe, said members being provided with inclined engaging faces, and an eccentric cam mounted on one member and engaging the adjacent face of the other member.

3. A brake-block composed of two members, namely, a head and a shoe movably mounted thereon, a bolt fitted into openings formed in one member and engaging an inclined slot formed in the other member, and an eccentric cam mounted on one member and engaging the adjacent face of the other member.

4. A brake-block comprising a head and a shoe movably mounted thereon, the said members being provided with inclined engaging faces, a bolt fitted into openings formed in one member and engaging an inclined slot formed in the other member, an eccentric cam mounted on one member and engaging the adjacent face of the other member, the inclined faces, the cam, the bolt and the inclined slot being constructed and arranged to simultaneously coöperate to move the brake-shoe forward away from the head as the tread of the wheel engages the friction-face of the shoe.

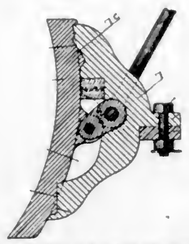
654,808. AUTOMATIC BRAKE-BLOCK. WILLIAM H. SAUVAGE, Denver, Colo., assignor of two-thirds to Henry Newton Wood and Charles C. Welch, same place. Filed Nov. 13, 1899. Serial No. 736,787. (No model.)



Claim.—1. A brake-block composed of a head having a horizontal groove formed in its front face, a stop located in said groove between the extremities of the head, a coöperating shoe having two rearward projections entering the groove of the head, the one above and the other below the stop, and interposed cam-arms taking end bearing in the shoe and the head for the purpose set forth.

2. The combination with a suitable brake-beam adapted to move back and forth in proximity to the car-wheel, of a head mounted thereon and having a groove in its front face, a stop-cushion located in said groove intermediate its extremities, a brake-shoe having rearward projections entering said grooves, the one above and the other below the stop-cushion, and interposed cam-arms engaging the head and the shoe for the purpose set forth.

654,809. AUTOMATIC BRAKE-BLOCK. WILLIAM H. SAUVAGE, Denver, Colo., assignor of two-thirds to Henry Newton Wood and Charles C. Welch, same place. Filed Nov. 13, 1899. Serial No. 736,788. (No model.)



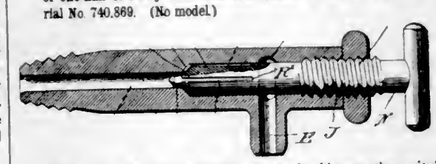
Claim.—1. An automatic brake-shoe composed of two members, namely, a head and a shoe movable thereon, the two members being provided with coöperating inclined engaging faces located at each extremity and simultaneously active during the brake-applying operation.

2. A brake-block composed of two members, namely, a head and a shoe movable thereon, the two members being provided with coöperating inclined engaging faces located at each extremity and an intermediate toggle connection substantially as described.

3. A brake-block composed of a head and a shoe movable thereon and provided with inclined engaging faces, the head being grooved on its front face, and a toggle-link located in said groove and connecting the head and the shoe in operative relation.

4. A brake-block composed of a head and a shoe movable thereon, the head being grooved on its front face, and a centrally-located toggle-link connecting the head and the shoe, the two members being provided with coöperating inclined faces located at each extremity, and arranged to coöperate with the toggle-link for the purpose set forth.

654,810. FAUCET. CHARLES H. SHULTZ, Baltimore, Md., assignor of one-half to Percy Donaldson, same place. Filed Dec. 19, 1899. Serial No. 740,869. (No model.)



Claim.—1. A faucet, made of vulcanized rubber or other suitable material, having a central longitudinal bore which is contracted a portion of its length, an outlet passage-way leading into said bore, combined with a screw-threaded valve-stem the circumference of the enlarged portion of which fits snugly against the inner wall of the enlarged portion of the bore, the end of said valve-stem being contracted, and the circumference of said contracted portion fitting snugly against the wall of the contracted portion of the bore, and beveled shoulders in the bore and on the valve-stem, as set forth.

2. A faucet, made of vulcanized rubber or other suitable material, and having a central longitudinal bore which is contracted a portion of its length, an outlet-passage leading into an annular recess in the inner wall of the faucet, combined with a threaded valve-stem having a contracted end the circumference of which snugly fits the inner wall of the contracted portion of the bore, the circumference of the enlarged portion of the valve-stem snugly fitting the inner wall of the enlarged portion of the bore, a beveled shoulder in the wall of the bore between the contracted and enlarged portion thereof, a beveled shoulder on the valve-stem, and radiating channels, in the shoulder of the stem, leading from the base of the contracted portion of the latter, said channels extending longitudinally in the

surface of the enlarged portion of the valve-stem, and extending a suitable distance, as shown and for the purpose set forth.

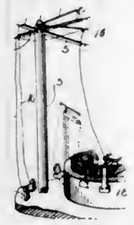
654,811. PUMP. TIMOTHY STEBBINS, Davenport, Iowa, assignor to the Red Jacket Manufacturing Company, same place. Filed Oct. 16, 1896. Serial No. 565,824. (No model.)



Claim.—1. The combination within a pump with the well-tubing, the plunger-rod and bucket on the lower end thereof, of a lower cylinder consisting of a suitable length of tube of less diameter than the bore of said well-tubing having its upper portion screw-threaded, a stationary circumferential base-flange surrounding the same, a compression-head engaging the screw-threaded portion of said cylinder, two expansible rings between said flange and head for suspending said cylinder within said well-tubing, a friction-washer between said expansible rings, and devices for holding the cylinder stationary during the expanding of said rings.

2. In a pump the combination with the well-tubing, the plunger-rod, and the bucket on the lower end thereof, of the cylinder consisting of a suitable length of tube of less diameter than the bore of said well-tubing having its upper portion screw-threaded, a circumferential flange surrounding said cylinder, a compression-head engaging the screw-threaded portion of the same, having two or more lugs projecting up therefrom, the tops of which overhang toward the center thereof, an expansion-ring between said flange and head, devices for preventing said cylinder from turning during the expansion of said rings, and a grapple having lugs projecting from its circumference which is provided with wings, as and for the purpose set forth.

654,812. YARN-HOLDER FOR KNITTING-MACHINES. BERNARD T. STEBER, Utica, N. Y. Filed Mar. 10, 1900. Serial No. 8,215. (No model.)



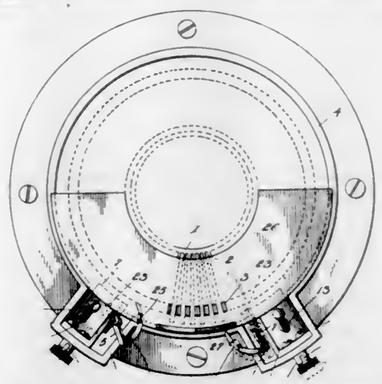
Claim.—1. A yarn-carrier for knitting-machines comprising a standard, a rotatable sleeve surrounding the same, two or more long arms carried by said sleeve, and two or more short arms carried thereby, means for supporting yarn upon the said long and short arms, and means for engaging the said sleeve to temporarily prevent its rotation on the standard, the construction being such that the sleeve is free to be lifted and turned so that one or the other of the yarns carried by the arms may be brought into knitting position, substantially as described.

2. A yarn-carrier for knitting-machines comprising a sleeve loosely mounted upon the standard, branch arms carried by the said sleeve for holding two or more kinds of yarns, a pin or projection upon the bed-plate of the knitting-machine and adapted to engage one or more notches formed in the lower end of said sleeve, the construction being such that by rotating the sleeve so that the pin engages different notches therein the yarn-carrying arms may be moved so that one side or the other will be in position to deliver yarn to the knitting-machine, substantially as described.

654,813. NEEDLE-DEPRESSING MECHANISM FOR KNITTING-MACHINES. BERNARD T. STEBER, Utica, N. Y. Filed Apr. 18, 1900. Serial No. 13,367. (No model.)

Claim.—1. A needle-depressing mechanism for knitting-machines, comprising an arm pivoted upon an incline and adapted to move back and forth to either side of the pivot-point, a weight connected with one end of the arm for automatically holding the arm in either position according as it may be thrown, and a needle-engaging portion formed at the other end, the action of the weight being to hold the arm in or out of operative position.

2. A needle-depressing device for knitting-machines, comprising an arm pivoted to a switch-slide, a switch-slide carrying the said arm and adapted to be moved back and forth for carrying the arm into and out of active position, and means for holding the said arm automatically in position for engaging the needles or out of said position, as desired.



3. A needle-depressing mechanism for knitting-machines, comprising an arm having a notched end for engaging the heels of the needles at one end, an arm projecting from the other end thereof having a weight secured thereto, the weight being so arranged with respect to the pivotal point of the depressing-arm that when it is thrown into or out of action the weight will be thrown to one or the other side of the said pivotal point for holding the arm in its changed position.

4. A depressing mechanism for knitting-machines, comprising an adjustable slide, an enlargement upon the cam-cylinder, of the knitting-machine for accommodating said slide, an arm, a bracket mounted in said enlargement and means for adjustably securing the slide to the bracket, the construction being such that by moving the slide back and forth the pivotal arm carried by the slide may be brought into or out of engagement with the heels of the knitting-needles.

5. A depressing mechanism for knitting-needles, comprising an inclined slide, means for adjustably mounting the same upon a knitting-machine, a pivoted arm carried by the said slide for drawing the needles into engagement with the same, the said arm being so pivoted as to move in an inclined plane, a weight connected with the said arm for holding it in or out of active position, and means for moving the slide so that it will be brought in position to receive the needles from the pivoted arm.

6. In a knitting-machine, the combination with a cam-cylinder having enlargements formed thereon, of brackets secured therein, slides secured to the said brackets, means for loosely holding the slides against the brackets, means for moving the slides back and forth, a needle-depressing arm pivoted to the said slides and adapted to extend into the path of needles which are raised out of action when the slide is pushed inwardly, and a cam upon the machine for bringing the arms into active position after having been depressed by one of the needles.

7. In a knitting-machine, the combination with a cam-cylinder having enlargements formed thereon, of brackets mounted therein and provided with guiding-grooves, slides adapted to move on the said brackets and having ribs engaging the said guiding-grooves for holding them in proper alinement, means for loosely holding the slides against the brackets comprising set-screws passing through elongated slots formed in the brackets, and stems secured to the said slides, and thumb-nuts secured to the slides for drawing them back and forth, substantially as described.

8. In a knitting-machine, the combination with a cam-cylinder having a portion of its walls extended to form a recess, a bracket mounted in the recess, said bracket having a slide-carrying groove formed therein, a slide provided with a rib for engaging the said groove, a stem upon the slide extending through the wall of the enlargement, a milled head secured to the outer end of the stem and provided with a detent or projection adapted to engage a notch formed in a boss on the said enlargement, and a spring interposed between the slide and the wall of the enlargement for normally pressing the slide inwardly, and a pivoted needle-depressing arm carried by the said slide, the structure being such that by the manipulation of the milled head the slide may be adjusted and held in its inner or outer position, substantially as described.

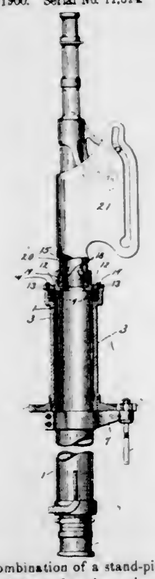
9. In a knitting-machine, the combination with a cam-cylinder having its walls extended to form recesses, a pivoted slide mounted in each of said recesses, means for adjusting the same in and out, a

needle-depressing arm pivoted to the said slide and having a needle-engaging notch at one end, and a weighted arm at the other end, a bracket having a bifurcated end portion secured in the said enlargement and adapted to engage the end of the said lever, whereby it will be held stationary when out of active position, and means for operating the said lever when in active position, so as to bring it into proper relation with the heels of the needles for depressing the same, substantially as described.

10. In a knitting-machine, the combination of a cam-cylinder having enlargements formed therein, lever-carrying slides mounted upon an incline in each of the said enlargements, pivoted needle-depressing arms carried by the said slides, curved weighted arms secured to the ends of the said depressing-arms adapted to hold the arms in or out of position, a plate mounted upon the knitting-machine and provided with a cam having inclined faces, the structure being such that when the cylinder is rotated in one direction it will engage one of the curved weighted arms and throw its depressing-lever into operative position, and when the cam-cylinder is rotated in the opposite direction it will bring the other weighted lever against the said cam and throw its depressing-lever into operative position substantially as described.

11. In a knitting-machine, the combination with a cam-cylinder of a needle-depressing mechanism carried thereby, outwardly-extending walls on the said cylinder forming a recess to receive the needle-depressing mechanism, a suitable support for carrying the needle-depressing mechanism secured to the inner surface of one of said walls the said depressing mechanism comprising a lever-carrying fulcrum mounted upon the said support and extending obliquely to the line of movement of the needles, and a needle-engaging arm carried by the said fulcrum, the construction being such that the needle-depressing mechanism is sufficiently inclosed to be well protected, substantially as described.

654,814. WATER-TOWER. ERNST F. STECK, Chicago, Ill., assignor to the Fire Extinguisher Manufacturing Company, New York, N. Y. Filed Apr. 6, 1900. Serial No. 11,814. (No model.)



Claim.—1. The combination of a stand-pipe having a flange attached to the upper end thereof, a sleeve inserted over the end of said pipe and having a circumferential recess receiving said flange for holding said sleeve against movement in one direction, a coupling member secured in the end of said sleeve over and against said flange for holding said sleeve against movement in the opposite direction and a nozzle mounted on said coupling member, substantially as set forth.

2. The combination of a stand-pipe, a flange secured to the upper end thereof, a rotary sleeve fitted over said stand-pipe and having its upper end enlarged to receive said flange, a coupling member screwed into said enlarged end of the sleeve against said flange, a gasket interposed between said flange and the part contiguous thereto and a nozzle carried by said coupling member, substantially as set forth.

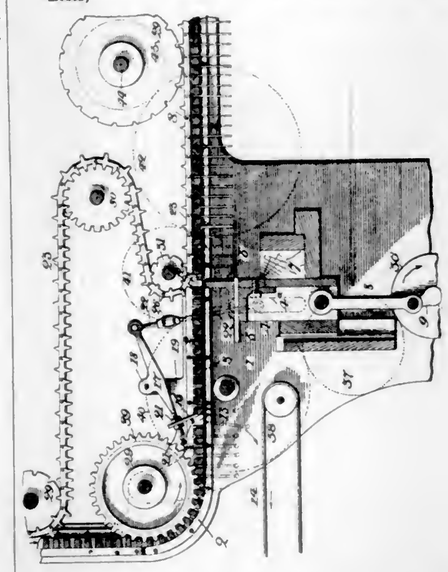
3. The combination of a stand-pipe, a flange screwed on the upper end thereof, means for holding said flange against unscrewing movement, a sleeve rotatably mounted on the upper end of said stand-pipe and having an enlarged mouth at its upper end receiving said flange, a coupling member screwed into said mouth and bearing against said flange, an annular gasket concentric with said sleeve let into said flange and the part contiguous thereto and a nozzle carried on said coupling member, substantially as set forth.

4. The combination of a stand-pipe, a rotary sleeve thereon, a coupling member carried by said sleeve and having an internal flange, a flexible nozzle having an external shoulder fitting in said coupling member above said flange and the portion 20 screwed into said coupling member above said shoulder for forcing it toward said flange, substantially as set forth.

5. The combination of a stand-pipe, a rotary sleeve thereon, a flexible nozzle, a coupling member carried by said sleeve and having an internal flange, a flanged ferrule inserted in said nozzle above the flange of said coupling member, a shoulder formed on said nozzle above the flange of said ferrule and the portion 20 screwed into said coupling member above the shoulder on said nozzle, substantially as set forth.

6. The combination of a stand-pipe, a rotary sleeve thereon, a coupling member carried by said sleeve and having an internal flange, a flexible nozzle having an annular peripheral shoulder inserted in said coupling member, a ferrule inserted in said nozzle and having a flange engaging under said shoulder above said flange in the coupling member, a ring surrounding said nozzle above said shoulder and the portion 20 screwed into said coupling member and bearing against said ring, substantially as set forth.

654,815. MATCH-MAKING MACHINE. EDGAR B. STOCKING, Washington, D. C. Filed May 17, 1900. Serial No. 17,012. (No model.)



Claim.—1. In a match-machine, a series of working splint-clamping bars, means for advancing the same, a series of idle, independent, match-splint-clamping bars arranged in a single plane, and a bar-moving means constructed and operating to form a space to discharge matches and to close a space to clamp splints; substantially as specified.

2. In a match-machine, a series of working splint-clamping bars, means for advancing the same, a series of idle independent match-splint-clamping bars arranged in a single plane, and a bar-moving means constructed and operating to simultaneously form a space to discharge matches and a space to clamp splints; substantially as specified.

3. In a match-machine, a series of independent working and idle match-splint-clamping bars arranged in a single plane with a splint receiving space between two successive bars and a space following bars containing matches and bar-moving means for separating the working bars to deliver matches therefrom and for moving into clamping relation the bars at the receiving-space; substantially as specified.

4. In a match-machine, idle, independent match-splint-clamping bars arranged in a single plane, and a bar-moving means for forming splint-receiving and match-delivering spaces between adjacent bars; substantially as specified.

5. In a match-machine, a series of independent, idle match-splint-clamping bars arranged in a single plane and working bars, a space being provided between adjacent bars arranged in the same plane as the idle bars, a carrier for said working bars, and a bar-mover for the idle bars serving to release matches from and to clamp splints between working bars; substantially as specified.

6. In a match-machine having a splint-clamping-bar carrier, a chain comprising links, each having an upper link-moving tooth and lower bar-moving teeth and slotted at one end, in combination with sprockets adapted to mesh with opposite sides of said chain; substantially as specified.

7. In a match-machine, the combination of an endless carrier, a series of independent bars between which splints are to be held separably connected with said carrier, means for separating from and returning said bars to said carrier, means for guiding the separated bars in a single plane, and a bar-moving and space forming and closing means adapted to enter between bars which are separated from the carrier to discharge matches therefrom, to feed said separated bars, and to bring the bars into clamping relation with splints presented thereto, substantially as and for the purposes set forth.

8. In a match-machine, the combination of an endless carrier, a series of independent bars between which splints are to be held separably connected with said carrier, means for separating from and returning said bars to said carrier, means for guiding the separated bars in a single plane, and a bar-moving and space forming and closing means moving faster than the endless carrier adapted to enter between bars which are separated from the carrier to discharge matches therefrom, to feed said separated bars, and to bring the bars into clamping relation with splints presented thereto, substantially as and for the purposes set forth.

9. In a match-machine, a series of independent match-splint-clamping bars, a lever for moving the same, and means driven by a rotary shaft for driving the lower end of said lever in a substantially-oval path; substantially as specified.

10. In a match-machine, a series of independent match-splint-clamping bars, a lever for moving the same, means driven by a rotary shaft for driving the lower end of said lever in a substantially-oval path, and a sliding bearing for the upper portion of said lever; substantially as specified.

11. In a match-machine, a series of independent match-splint-clamping bars, a bar-moving lever arranged above the same, a rotary shaft provided with a crank-arm journaled in said bar, a pivoted bearing at the upper end of said bar through which the bar reciprocates, and means for driving said shaft and crank-arm; substantially as specified.

12. In a match-machine, a series of independent match-splint-clamping bars, a bar-moving lever arranged above the same, a rotary shaft provided with a crank-arm journaled in said bar, a pivoted bearing at the upper end of said bar through which the bar reciprocates, means for driving said shaft and crank-arm, and driving-necks upon said bars with which the lower ends of said levers are adapted to engage in their contacting movement; substantially as specified.

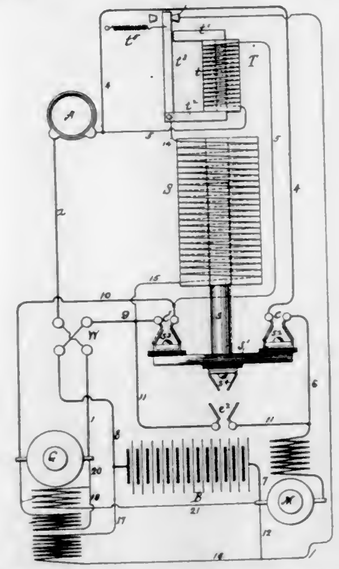
654,816. ELECTRICAL TRANSMISSION OF POWER. IMLE E. STOREY, Trenton, N. J. Filed Nov. 18, 1899. Serial No. 737,436. (No model.)

Claim.—1. The combination of a variable-speed dynamo-electric machine, a storage battery and an electric motor in series therewith, an exciting-coil on the field-magnet of the dynamo, an opposing coil for weakening the field-magnet excitation of the dynamo, and means whereby the voltage generated by the dynamo in excess of that required to charge the battery and drive the motor will cause current to flow through said opposing coil, for the purpose set forth.

2. The combination of a variable-speed generator, a storage battery and a translating device in series therewith, said generator having an exciting-coil and a coil opposing the exciting-coil on its field-magnet, said opposing coil being in a shunt-circuit from the armature of the generator which shunt-circuit also includes the battery, substantially as described.

3. The combination of a variable-speed generator, a storage battery and an electric motor in series therewith, said generator having an exciting-coil and a coil opposing the exciting-coil on its field-magnet, said opposing coil being in a shunt-circuit from the armature of the generator which shunt-circuit also includes the battery, substantially as described.

4. The combination of a variable-speed generator, a storage battery and an electric motor in series therewith, said generator having an exciting-coil and a coil opposing the exciting-coil, on its field-magnet, said opposing coil having one terminal connected with a brush of the generator and the other connected to the generator-circuit at a point between the battery and the motor, substantially as described.



5. The combination of a variable-speed dynamo-electric machine, a storage battery and an electric motor in series therewith, an automatic switch acting to maintain the dynamo-battery and motor in a closed circuit as long as the electromotive force of the dynamo is sufficient to charge the battery and drive the motor, and to open the circuit of the dynamo and close another circuit through the battery and motor when the electromotive force of the dynamo is not sufficient to charge the battery and drive the motor, and an opposing coil on the field-magnet of the dynamo tending to prevent an increase of the electromotive force of the dynamo beyond that required to charge the battery and drive the motor, substantially as described.

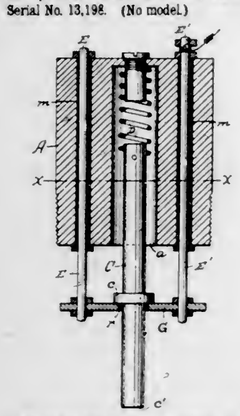
654,817. PIPE-HANGER. EDWARD E. TAFT, Mount Pleasant, Iowa, assignor of one-half to James Purdie, same place. Filed Aug. 8, 1899. Serial No. 726,566. (No model.)



Claim.—1. A pipe-hanger designed to be arranged in a horizontal position to support a vertical pipe and consisting of a pipe-receiving loop constructed of a single piece of wire having its terminals located at the front of the loop, one of the terminals being provided with an eye, and the other terminal being passed through the eye and adapted to be drawn through the same to a greater or less extent, whereby the diameter of the pipe-receiving loop may be varied, said loop being provided at opposite sides of its back with integral outwardly-extending looped portions twisted and offsetting the back of the loop from the supporting-surface to enable access to be had to the back of the pipe and the wall, substantially as and for the purpose described.

2. A hanger constructed of a single piece of wire and consisting of a loop, and legs extending from opposite sides of the inner portion of the loop, said hanger being formed by twisting the wire at opposite sides of the center to provide the legs and a connecting strand, and then twisting the end portions around the said strand and extending them from the ends thereof to form the loop, substantially as described.

654,818. SPARKING IGNITER FOR EXPLOSIVE-ENGINES. HARRY C. THAMSEN, Hamburg, Pa., assignor of two-thirds to Alexander Murdoch, same place, and Adam H. Leader, Reading, Pa. Filed Apr. 17, 1900. Serial No. 13,198. (No model.)



Claim.—In an electrical igniter, a casing A having vertical insulated parts E and E' passing through said casing, their ends depending below the casing and connected by means of a contact-plate G, an operating-rod C passing through an insulated opening *r* in said plate and having a flange *c* adapted to contact with the upper face of said plate, the upper end of said rod C entering the casing and backed by a coiled spring D, all substantially as and for the purpose set forth.

654,819. METHOD OF WELDING. CHARLES G. WIBORG, Galesburg, Ill. Filed Jan. 5, 1900. Serial No. 436. (No specimens.)

Claim.—1. The method of welding, which consists in placing the pieces of metal to be welded together, inclosing and holding together the portions of the same exposed to the heat by a refractory coating, and subjecting the whole to a welding heat.

2. The method of welding, which consists in placing the pieces of metal to be welded in contact with each other, binding them together by suitable binding-wires, inclosing the portions of the pieces exposed to the heat and the binding-wires by a refractory coating, and subjecting the whole to a welding heat.

3. The method of welding metals which consists in placing the pieces of metal to be welded together, inclosing and holding together the portions of the same exposed to the heat by a coating composed of a mixture of refractory material and sodium silicate, and subjecting the whole to a welding heat.

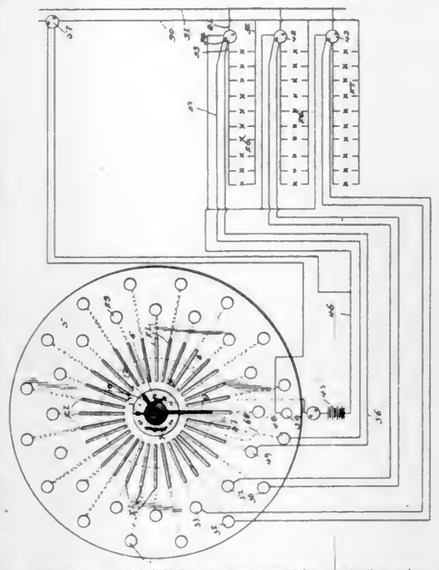
4. The method of welding, which consists in placing the pieces of metal together, completely inclosing the same by a refractory coating or envelop, and subjecting the whole to a welding heat.

654,820. RAILWAY CROSS-TIE. WILLIAM M. WOODWORTH, Sycamore, Ind. Filed Feb. 20, 1900. Serial No. 5,938. (No model.)



Claim.—A device of the class described comprising a straight flat bar of even thickness throughout its length presenting smooth horizontal upper and lower faces, the approximately-cubical imperforate blocks arranged upon the upper face of the bar at points between the ends thereof and being of even width with the said bar, and the clamps arranged in pairs and located adjacent to the side faces of the blocks and comprising two substantially L-shaped members having their vertical portions extending from the lower face of the bar to the upper faces of the blocks, the horizontal portions being arranged respectively on the lower face of the bar and on the upper faces of the blocks, each member being provided at one end with an eye and having its other end threaded and extending through the eye of the adjacent member, and the nuts arranged on the threaded ends of the members at the side faces of the blocks and at the side edges of the bar and engaging the eyes of the members, substantially as described.

654,821. FLASH-LIGHT SYSTEM. MARTIN WRIGHT, San Antonio, Tex. Filed Apr. 28, 1900. Serial No. 14,698. (No model.)



Claim.—1. A flash-light system comprising main-line wires, a plurality of banks of lamps connected across the main line, an electrically-operated switch for the circuit of each bank of lamps for cutting the banks of lamps into and out of the main line, an electrically-operated switch for opening and closing the circuit of the main line, a battery common to all the switch-circuits, and a circuit-closer adapted to open and close the circuits of the several switches successively.

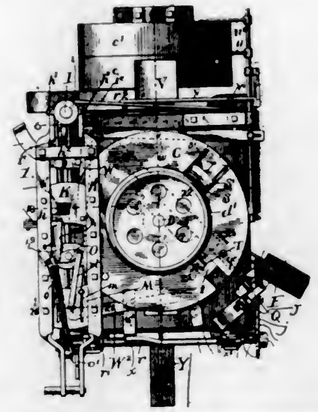
2 A flash-light system comprising main-line wires, a plurality of banks of lamps connected across the main line, an electrically-operated switch for opening and closing the circuit of each bank of lamps, an electrically-operated switch for opening and closing the circuit of the main line, a circuit-closer comprising a contact included in each circuit of each electrically-operated lamp-switch, a shiftable contact forming one terminal of the main-line switch, a contact-arm for engagement with said contacts, and a battery connected with said arm, said battery being common to all the circuits of the electrically-operated switches.

3. A flash-light system comprising main-line wires, a plurality of banks of lamps connected across the main line, an electrically-operated switch for the circuit of each bank of lamps for cutting the lamps into and out of circuit, an electrically-operated switch for opening and closing the main line, a source of energy for the several circuits of the switches, and a circuit-closer for the several switch-operating circuits, said closer including a series of contacts forming each one terminal of a switch-operating circuit and a movable arm for engagement with the contacts and forming the second terminal of all the switch-operating circuits of the banks of lamps, a shiftable contact forming one terminal of the operating-circuit of the main line, a movable arm for engagement with the last-named contact and forming the second terminal of the circuit of the main-line switch, and a clock mechanism connected with the arms for operating them.

4. An automatic switch comprising a base of insulating material having a plurality of radial commutator-bars fixed thereto, a binding-post electrically connected with each bar, a spindle, a contact-arm mounted upon the spindle and adapted for contact with the commutator-bars, a sleeve mounted upon the spindle and movable independently thereof, a contact-arm carried by the sleeve, a dial-plate disposed to be traversed by the arms, a contact which is shiftable over the dial and in electrical contact therewith and lies in the path of movement of the second contact-arm, and a binding-post electrically connected with the arms, said dial-plate being adapted for connection of a wire therewith.

654,822. TUB-MAKING MACHINERY. CHARLES D. AMES, Portland, Ind., assignor to the Creamery Package Manufacturing Company, Chicago, Ill. Filed July 31, 1899. Serial No. 725,577. (No model.)

Claim.—1. In a machine of the class described, the combination with a frame, a driving-gear, a rotating shaft journaled in the frame and driven by said gear and a longitudinally-movable tub-support upon the shaft, of a leveling-tool supported by the frame, and devices connected with the driving-gear for automatically moving the tub-support to bring the tub within range of the leveling-tool; substantially as described.



2. In a machine of the class described, the combination with a frame, a driving-gear, a rotating shaft journaled in said frame and driven by said gear and a longitudinally-movable tub-support upon said shaft, of a howeling-tool supported by the frame and devices connected with the driving-gear, for automatically moving the tub-support to bring the tub within the range of the howeling-tool; substantially as described.

3. In a machine of the class described, the combination with a frame, a driving-gear, a rotating shaft journaled in said frame and driven by said gear and a tub-support upon said shaft, of a tool-carrying arm supported by the frame, pivotal devices for said arm, permitting oscillation of the same both longitudinally of the rotating shaft and transverse thereof and connecting devices between said arm and the driving-gear for automatically oscillating the arm longitudinally of the driving-shaft; substantially as described.

4. In a machine of the class described, the combination with a frame, a driving-gear, a rotating shaft journaled in said frame and driven by said gear and a tub-support upon said shaft, of a tool-carrying arm supported upon the frame, pivotal devices between said arm and the frame, permitting the oscillation of the arm longitudinally of the shaft and connecting devices between said arm and the driving-gear for moving the arm longitudinally of the shaft to bring the tool carried by said arm into operation; substantially as described.

5. In a machine of the class described, the combination with a frame, a driving-gear, a rotating shaft journaled in the frame and driven by the gear and a tub-support upon said shaft, of a tool-carrying arm supported from the frame by a pivotal connection permitting oscillation transverse to the rotating shaft to bring the tool into operative position and longitudinal of the rotating shaft to advance the tool to its work, a catch supported from the frame and engaging said arm to hold it in operative position and connecting devices between said catch and the driving-gear for automatically moving the arm to advance the tool to its work; substantially as described.

6. In a machine of the class described, the combination with a frame, a driving-gear, a rotating shaft journaled in the frame and driven by the gear and a tub-support upon said shaft, of an oscillating tool-carrying arm supported from the frame and capable of swinging from an operative position to one out of the way of the tub, a catch supported from the frame and adapted to hold the arm in operative position, a tool, a tool-carrier movably supported upon the arm and connecting devices between said tool-carrier and the driving-gear for automatically advancing the tool to its work; substantially as described.

7. In a machine of the class described, the combination with a frame, a driving-gear, a rotating shaft journaled in the frame and driven by the gear and a tub-support upon the shaft, of an oscillating tool-carrying arm, capable of swinging from an operative position to one out of the way of the tub, a catch supported from the frame and adapted to hold the arm in an operative position, a tool, a tool-carrier movably supported upon the arm and connecting devices between said tool-carrier and the driving-gear, for automatically withdrawing the tool from its work; substantially as described.

8. In a machine of the class described, the combination with a frame, a driving-gear, a rotating shaft journaled in the frame and driven by the gear and a tub-support upon the shaft, of an oscillating tool-carrying arm, capable of swinging from an operative position to one out of the way of the tub, a catch supported from the frame and adapted to hold the arm in an operative position, a tool, a tool-carrier movably supported upon said arm, connecting devices between said carrier and the driving-gear for automatically advancing the tool to its work and connecting devices between the carrier and the driving-gear for automatically withdrawing the tool from its work, substantially as described.

9. In a machine of the class described, the combination with a frame, a driving-gear and a longitudinally-movable tub-support, of a tool, a carrier therefor supported from the frame and movable toward and from the tub, means for moving the tool toward the tub to advance it to its work and means for moving the tub away from the tool to check the operation of the latter; substantially as described.

10. In a machine of the class described, the combination with a frame and driving-gear, of a longitudinally-movable tub-support guided in said frame, a suitably-supported tool brought into operation upon one end of the tub by the longitudinal movement of the latter, a second tool, a support therefor movable longitudinally of the tub, means for moving said second tool toward the tub to advance it to its work and means for moving the tub longitudinally to withdraw it from the second tool and advance it toward the first; substantially as described.

11. In a machine of the class described, the combination with a frame, a driving-gear and a rotating shaft journaled in the frame and driven by the gear, of a longitudinally-movable tub-support upon the shaft, a stationary tool supported adjacent to one end of the tub-support and adapted to be brought into operation upon the corresponding end of the tub by the longitudinal movement of the latter toward the tool and a swinging arm adapted to extend across the other end of the tub, provided with a tool arranged to operate upon one side of the tub, said arm being capable of oscillation longitudinally of the tub-support to first bring said tool into operation upon one side of the tub and then bring the arm against the opposite side of the tub to crowd the latter toward the stationary tool; substantially as described.

12. In a machine of the class described, the combination with a frame, a driving-gear and a rotating shaft journaled in the frame and driven by the gear, of a longitudinally-movable tub-support upon the shaft and a swinging arm adapted to extend across the end of the tub, provided with a tool arranged to operate upon one side of the tub, said arm being capable of oscillation longitudinally of the tub-support to first bring said tool into operation upon one side of the tub and then bring the arm against the opposite side of the tub to crowd the latter away from said tool; substantially as described.

13. In a machine of the class described, the combination with a frame, a driving-gear and a tub-support, of two sets of tools operating respectively upon the opposite ends of the tub, supporting devices for said tools and connecting devices between the same and the driving-gear for automatically throwing one set of tools into operation and thereafter throwing the other set into operation; substantially as described.

14. In a machine of the class described, the combination with a frame and driving-gear, a swinging arm and a rotating tub-support, of a set of tub-working tools mounted upon the arm and devices connecting said arm and the driving-gear for automatically advancing said tools to their work by the swinging of the arm toward the tub; substantially as described.

15. In a machine of the class described, the combination with a frame, a driving-gear, a rotating and longitudinally-moving tub-support and an oscillating arm swinging longitudinally of the tub-support, of a set of tub-working tools mounted upon the arm and a second set of relatively-stationary tools mounted upon the frame of the machine and means for bringing said tools successively into operation by the swinging of the arm longitudinally of the tub and the longitudinal movement of said tub with its support; substantially as described.

16. In a machine of the class described, the combination with a frame, a driving-gear, a tub-support and a series of tub-working tools, of means for performing the work of said tools through the driving-gear, mechanism for advancing said tools to their work, mechanism for stopping the motion of the machine, a governing device connected with and driven by the driving-gear and connecting devices between said governing device and the stopping and tool-advancing mechanism for automatically advancing the tools to their work and for automatically stopping the machine when said work is completed; substantially as described.

17. In a machine of the class described, the combination with a frame, a driving-gear and a rotating tub-support, of a swinging arm, tub-working tools mounted upon the arm and movable with respect thereto, means for swinging the arm to move said tools in one direc-

tion and devices actuated by the swinging of the arm for moving said tools with respect to the latter; substantially as described.

18. In a machine of the class described, the combination with a frame, a driving-gear and a rotating tub-support journaled in the frame and reciprocating longitudinally therein, of a pair of beveling tools operating respectively upon the outside and inside of the tub and a supporting-block therefor loosely mounted in a horizontal slide, radial to the axis of the tub-support; substantially as described.

19. In a machine of the class described, the combination with the swinging arm, H, having the slides, K, M, guided therein, of the oscillating lever, O, pivoted between its ends to the arm and links, k, m^3, oblique with respect to each other, both pivoted at one end to the lever, O, upon opposite sides of its pivot and each pivoted at its other end to its respective slide; substantially as described.

20. In a machine of the class described, the combination with a frame, a leveling-tool and a driving-gear, producing relative rotation of tub and tool, of a longitudinally-movable tub-support and connecting devices between said tub-support and driving-gear for automatically moving the tub into engagement with the leveling-tool; substantially as described.

21. In a machine of the class described, the combination with a frame, a leveling-tool and a driving-gear, causing relative rotation of tub and tool, of a longitudinally-movable tub-support and connecting devices between said tub-support and the driving-gear for automatically moving said tub out of range of the leveling-tool; substantially as described.

22. In a machine of the class described, the combination with a frame, a leveling-tool and a driving-gear, causing relative rotation of tub and tool, of a longitudinally-movable tub-support, connecting devices between said tub-support and the driving-gear, for automatically advancing the tub into engagement with the leveling-tool, and devices for automatically moving the tub out of the range of said tool; substantially as described.

23. In a machine of the class described, the combination with a frame, a beveling-tool and a driving-gear, causing relative rotation of tub and tool, of a longitudinally-movable tub-support and connecting devices between said tub-support and the driving-gear for automatically moving the tub into engagement with the beveling-tool; substantially as described.

24. In a machine of the class described, the combination with a frame, a beveling-tool and a driving-gear, causing relative rotation of tub and tool, of a longitudinally-movable tub-support and connecting devices between the tub-support and said driving-gear for automatically moving the tub from the range of the beveling-tool; substantially as described.

25. In a machine of the class described, the combination with a frame, a beveling-tool and a driving-gear, causing relative rotation of tub and tool, of a longitudinally-movable tub-support, connecting devices between said tub-support and the driving-gear for automatically advancing the tub into engagement with the beveling-tool and devices for automatically removing the tub from the range thereof; substantially as described.

26. In a machine of the class described, the combination with a frame and a rotatable tub-support, of a leveling-tool adapted to operate upon one end of the tub, an arm carrying said tool, a suitably-supported leveling-tool adapted to operate upon the other end of the tub, driving-gear, a cam rotated by said driving-gear, a rod reciprocated by said cam and removably connected to said arm, said rod being adapted to bring the first-named tool into engagement with the tub during the first part of its movement in one direction and to bring the tub against the second-named tool during the latter part of said movement; substantially as described.

27. In a machine of the class described, the combination with a frame, and a rotatable tub-support, of a howeling-tool adapted to operate upon one end of the tub, an arm carrying said howeling-tool, a suitably-supported beveling-tool adapted to operate upon the other end of the tub, driving-gear, a cam rotated by said gear, a rod, reciprocated by said cam and removably connected to said arm, said rod being adapted to bring the howeling-tool into engagement with the tub during the first part of its movement in one direction and to bring the tub against the beveling-tool during the latter part of its movement; substantially as described.

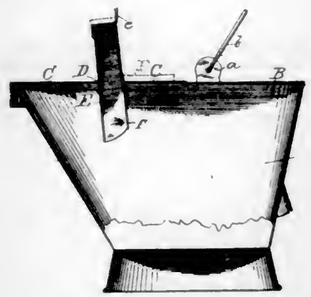
28. In a machine of the class described, the combination with a frame, driving-gear and tub-support, of suitably-supported howeling and crozing tools adapted to operate upon the same end of the tub, an oscillating lever, links pivoted to said lever, upon opposite sides of its pivotal point and to the howeling and crozing tool supports, the pivot of the link upon the howeling-tool being to one side of a line passing through the pivotal point of the oscillating lever and the pivot upon the crozing-tool, whereby the pivot of said link with the oscillating lever will pass the dead-center before the correspooding pivot on the other link; substantially as described.

29. In a machine of the class described, the combination with the swinging arm, H, having the slides, K, M, guided therein, of the oscillating lever, O, pivoted between its ends, to the arm, and links, k, m^3, pivoted upon the oscillating lever, upon opposite sides of its pivot and each pivoted at its other end, to its respective slide, the pivot of one of said links upon its slide being out of a line, passing through the pivot of the lever and through the pivot of the other link upon its slide, whereby the pivot of one of the links upon the oscillating lever will pass the dead-center before the other; substantially as described.

30. In a machine of the class described, the combination with a frame, a driving-gear and a tub-support, of a suitably-supported leveling-tool adapted to operate upon one end of the tub, a suitably-supported leveling-tool adapted to operate upon the other end of the tub and connecting devices between said leveling-tools and the driving-gear for automatically bringing the first tool into operation upon the tub, for automatically throwing it out of operation and for automatically bringing the second leveling-tool into operation after the operation of the first tool is completed; substantially as described.

31. In a machine of the class described, the combination with a frame, a driving-gear and a tub-support, of a howeling-tool adapted to operate upon one end of the tub, a beveling-tool adapted to operate upon the other end of the tub, supporting devices for both of said tools, connecting devices between said tools and the driving-gear for automatically bringing the howeling-tool into operation and throwing it out of operation and for automatically bringing the beveling-tool into operation after the operation of the howeling-tool is completed; substantially as described.

654,823. DEVICE FOR REMOVING ASHES OR LIKE REFUSE. MARY R. BERITHOFF, Chicago, Ill. Filed Aug. 12, 1899. Serial No. 726,968. (No model.)



Claim.—1. In a device for removing refuse, the combination with a receptacle having an aperture therein, of devices for delivering the refuse thereto consisting of a conveyer adapted to register with said aperture when delivering the refuse thereto, whereby said opening is closed by said conveyer and the escape of dust prevented, substantially as set forth.

2. In a device of the character described, the combination with a receptacle having a dust-retaining cover provided with an opening therein, of a conveyer for delivering refuse through said opening, arranged, when in engagement with said opening, to close the same, substantially as set forth.

3. In a device of the character described, the combination with a receptacle having an opening in its top, of a conveying member for delivering refuse through said opening, said member being open on one side only, and corresponding in transverse contour with the shape of said opening, whereby when said conveyer is in delivering position it closes the opening in said receptacle, substantially as set forth.

4. In a device for removing ashes and like refuse, the combination with a receptacle having an opening in the top thereof, of a conveyer for delivering refuse to said receptacle, comprising a scoop open at its top and end, whose transverse contour corresponds with the dimensions of the said opening, and a lid hinged to said scoop and adapted to close the top of said scoop, whereby said conveyer is adapted to close the opening in the receptacle when in position to deliver thereto, substantially as set forth.

5. In a device of the character described, the combination with a receptacle A, having a stationary cover B, extending over a portion thereof, and a hinged lid C, having an opening, D therein, of a refuse-conveyer E, adapted to register with and close said opening when in delivering position, comprising a scoop, closed at its sides and rear end, and having a stationary cover f, and a lid F hinged to said stationary cover, substantially as set forth.

654,824. SPEED-REGULATOR FOR PUMPS. JOHN M. D. BLAND, Baker City, Oreg. Filed Sept. 28, 1899. Serial No. 731,929. (No model.)

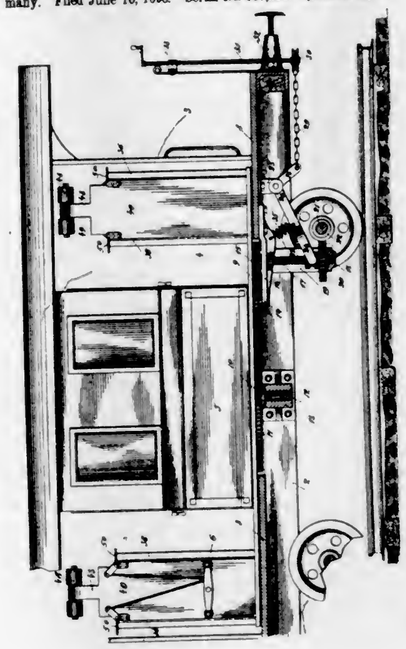


Claim.—1. The combination with a water-wheel and the shaft thereof provided with a crank, of a double crank connected with the shaft-crank for operation thereby, a pump having a piston connected with the double crank, an upright, and a spring-plate connected with the shaft-crank and having slidable connection with the upright said plate being adapted to slide when reciprocated at a normal speed and to bend under the influence of sudden increased motion.

2. The combination with a power-wheel and the shaft thereof having a crank, of a double crank having connection with the shaft-crank for operation by the latter, a pump having a piston connected with the double crank, an upright having a slot arranged at an angle to the plane of rotation of the shaft-crank, and a spring-plate pivotally connected with the shaft-crank and slidably mounted in the slot of the upright said plate being adapted to slide when reciprocated at a normal speed and to bend under the influence of sudden increased motion.

3. The combination with a power-wheel having a shaft provided with a crank, of means for conveying motion from the crank, an upright having a slot lying at right angles to the plane of movement of the crank, and a spring-plate pivotally connected with the crank and bent under tension and slidably disposed in the slot of the upright, whereby, as the crank is rotated with a constant motion the plate will slide through the slot when reciprocated at a normal speed and will bend under the influence of sudden increased motion.

654,825. DEVICE FOR TRANSPORTING PASSENGERS FROM AND ONTO MOVING CARS. ERNST F. BÖTTCHER, Langenfeld, Germany. Filed June 10, 1898. Serial No. 683,130. (No model.)



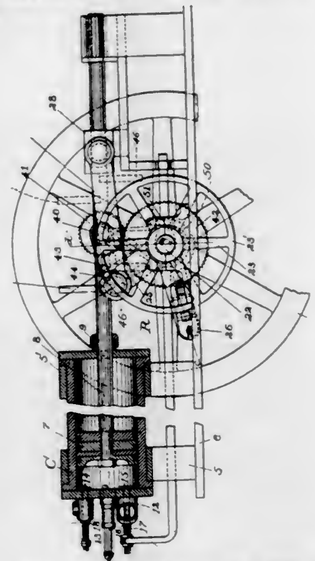
Claim.—1. In a device for transporting passengers from and onto cars, a cab mounted on a rotatable platform secured to a car, said cab having rollers on its top, in combination with a station-platform having rails supported thereon in position to engage said rollers upon the rotation of said platform, the upper edges of said rails being inclined upwardly from the ends toward the middle, in the manner and for the purpose described.

2. In a device for transporting passengers from and onto cars, a cab removably mounted on a rotatable platform secured to a car, said cab having rollers on its top, in combination with a station-platform having rails supported thereon in position to engage said rollers upon the rotation of said rotatable platform, the upper edges of said rails being inclined upwardly from the ends toward the middle, and means for adjusting the height of said station-platform, substantially in the manner and for the purpose set forth.

3. In a device for transporting passengers from and onto cars, a cab removably mounted on a rotatable platform, means for removably securing said cab on said platform, means for rotating said platform, rollers mounted at the top of said cab, in combination with a station-platform having rails supported thereon in position to engage said rollers upon the rotation of said rotatable platform, the upper edges of said rails being inclined upwardly from the ends toward the middle, and means for adjusting the height of said station-platform

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654,826. POWER-TRANSMITTING MECHANISM. WILLIAM H. BROADHEAD, Somerville, Mass. Filed June 26, 1899. Serial No. 721,801. (No model.)



Claim.—1. In a power-transmitting mechanism, a cylinder, a piston in said cylinder provided with a rod, driven mechanism actuated by said rod, and means operated by said driven mechanism for operating the piston.

2. In a power-transmitting mechanism, a cylinder, a piston in said cylinder provided with a rod, driven mechanism including a train of differential gears actuated by said rod, and means operated by said driven mechanism for operating the piston.

3. In a power-transmitting mechanism, a cylinder, a piston located in said cylinder and provided with a rod, a two-to-one train of intermeshing gears, connections between the rod and the large gear for operating said large gear, and means controlled by the small gear for operating the piston.

4. In a power-transmitting mechanism, a motive agent including a power-applying member operative from its backward to a forward position, driven mechanism operated by said power-applying member on its forward stroke, and means operated by said driven means for imparting a return stroke to the power-applying member.

5. In a power-transmitting mechanism, a motive agent including a power-applying member operative from a backward to a forward position, driven means operated by a power-applying member on its forward stroke, and means operated by said driven means for reciprocating said power-applying member and for also returning the same to its initial position.

6. In a power-transmitting mechanism, a motive agent including a power-applying member, a shaft, a wheel carried by said shaft, a rocker having a pawl for operating the wheel and connected with the power-applying member, and means operated by said shaft for operating the power-applying member.

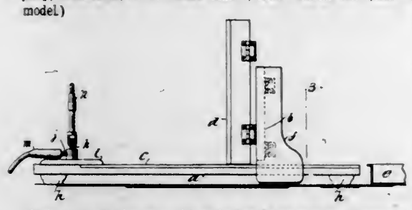
7. In a power-transmitting mechanism, a cylinder having valve mechanism and provided with a piston equipped with a rod, driven mechanism operated by the rod, a member for governing the valve mechanism and controlled by said driven mechanism, and means operated by the driven mechanism for actuating the piston-rod.

8. In a power-transmitting mechanism, a cylinder, a piston located in said cylinder and provided with a rod, a driven element, means for effecting the movement of said driven element and including a rocking device, means actuated by said power-transmitting member and located to act against said rocking device, and to cause the reciprocation of the same at one side only of a dead-center line, and means operated by said driven element for returning the piston-rod to its initial position.

9. In a power-transmitting mechanism, a cylinder, a piston located in said cylinder and provided with a rod, said rod having an offset, a driven element, means for effecting the movement of said driven element and including a rocking device, means actuated by said power-transmitting member and located to act against said rocking device and to cause the reciprocation of the same at one side only of the dead-center line of said driven element and an arm connected with and operated by said driven element and having a projection adapted to engage said offset to return the piston to its initial position.

10. In a power-transmitting mechanism, a cylinder, a piston in said cylinder provided with a rod, driven mechanism connected with and actuated by said rod, two offsets on the piston-rod, and an arm connected with said driven mechanism and adapted to engage said offsets to reciprocate the piston.

654,827. **PHOTOGRAPHIC-PRINTING-FRAME SUPPORT.** JOHN S. CUMMINGS, New York, N. Y., assignor to the General Aristo Company, Rochester, N. Y. Filed Mar. 7, 1900. Serial No. 7,683. (No model.)



Claim.—1. A photographic-printing-frame support comprising a base, a rest for the frame having a sliding connection with and adjustable longitudinally of the base, a scale by which to determine the position of the rest, and a frictional locking device carried by the rest and adapted to engage the base for retaining the rest in its adjusted position, substantially as described.

2. A photographic-printing-frame support comprising a base, an illuminating-fixture at one end of the base, a rest for the frame at the opposite end of the base having a sliding connection with and adjustable longitudinally of the base, and a scale by which to determine the position of the rest, substantially as described.

3. A photographic-printing-frame support comprising a base, a combined gas and electric-light fitting at one end of the base, a rest for the frame at the opposite end of the base having a sliding connection with and adjustable longitudinally of the base, and a scale by which to determine the position of the rest, substantially as described.

4. A photographic-printing-frame support comprising base *a*, adjustable rest *b* for the frame provided with wings *f* having grooves *g*, and scale *c*, substantially as described.

5. A photographic-printing-frame support comprising base *a*, rest *b* for the frame provided with hinged wings *f* having a sliding connection with the base, and scale *c*, substantially as described.

6. A photographic-printing-frame support comprising a base, and a rest for the frame having a sliding connection with the base and adjustable longitudinally thereof, said base being provided with adjustable legs, substantially as described.

7. A photographic-printing-frame support comprising a base, and a rest for the frame having a sliding connection with the base and adjustable longitudinally thereof, said base being provided with adjustable legs consisting of telescopic sections *t*, *t'* provided with a clamping device, substantially as described.

8. A photographic-printing-frame support comprising a base provided at one end with a combined gas and electric-light fitting comprising tubes *j k*, and an adjustable printing-frame rest mounted on the base, substantially as described.

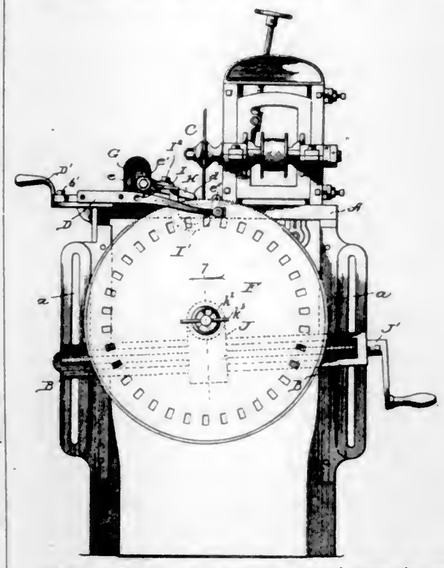
9. A photographic printing-frame support comprising base *a* having an illuminating-fixture at one end, printing-frame rest *b* provided with hinged wings *f* having grooves *g*, and a scale *c* on the base, substantially as described.

654,828. **BALE-TIE.** DAVID A. CYPHER and WILLIAM L. DAYTON, Austin, Tex. Filed Sept. 30, 1899. Serial No. 732,225. (No model.)



Claim.—A bale-tie fastener comprising a pair of three-sided members having reversely-disposed entrance-throats, the parallel arms of one member being of greater length than the width of the tie or band, the other member having one of its parallel arms terminally and pivotally connected to a medial point of one arm of the first-named member, and its other arm terminally reduced and pointed by rounding off the outer corner thereof, substantially as and for the purpose specified.

654,829. **SAW-SHARPENING MACHINE.** LARS L. FILSTRUP, Chicago, Ill., assignor of one-half to Henry P. Schofield, same place. Filed Mar. 24, 1900. Serial No. 9,984. (No model.)



Claim.—1. In a machine for sharpening circular saws, the combination with frame, arbor and grinding mechanism, of feeding mechanism, comprising a feed-arm-actuating device, a curved feed-arm connected with said actuating device and provided with a feed-finger for engaging the saw at the farther side of the grinding-wheel, and a shorter feed-arm connected with said actuating device and provided with a feed-finger for engaging the saw on the near side of said wheel, substantially as and for the purpose set forth.

2. In a machine for sharpening circular saws, the combination with frame, arbor and grinding mechanism, of feeding mechanism, comprising a feed-arm-actuating device, a feed-arm pivotally joined to said actuating device and provided with a feed-finger for engaging the saw at the near side of the grinding-wheel, and a two-part feed-arm comprising a member I having a pivotal perforation and an eccentric bearing-surface and a curved member I' adjustably connected at one end to the member I and provided at the opposite end with a feed-finger for engaging the saw on the farther side of the grinding-wheel, substantially as and for the purpose set forth.

3. In a machine for sharpening circular saws, the combination with frame, arbor and sharpening mechanism including a grinding-wheel, of feed mechanism, comprising an actuating-lever G having a flat-faced bearing-head, a feed-arm having a flat bearing-head bearing against the first-named head, a feed-arm having a flat-faced head bearing against said second-named head, and a pivotal bolt joining said heads, substantially as and for the purpose set forth.

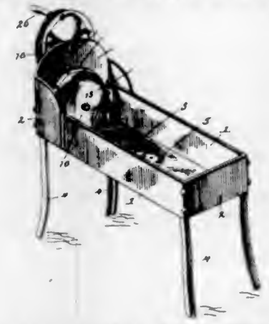
4. In a machine for sharpening circular saws, the combination with frame, sharpening mechanism and feed mechanism, of an adjustable arbor-support, provided with a split internally-threaded ring, an arbor-socket screwed into said support, and means for tightening said ring upon said socket, substantially as and for the purpose set forth.

654,830. **METHOD OF ENAMELING GRAIN SIDE OF LEATHER.** ALBERT A. GUIGUES, Newark, N. J. Filed Sept. 29, 1899. Serial No. 732,001. (Specimens.)

Claim.—1. In the manufacture of patent-leather, the method of preparing the leather to cause the adhesion of the coating, which method consists in converting a portion of the so-called "grain" into projecting fibers adapted to entangle and attach the coating, whereby the strength of the grain is largely preserved.

2. In the manufacture of patent-leather, the method of preparing the leather for enameling, which consists in first shaving the flesh side to make the leather of uniform thickness, and second, supporting the leather upon the flesh side and simultaneously abrading the "grain" side to convert a portion of the grain into projecting fibers.

654,831. **PORTABLE FORGE.** CHARLES R. HARPER, Marshalltown, Iowa. Filed Dec. 18, 1899. Serial No. 740,759. (No model.)



Claim.—1. In a portable forge, the combination with a forge-body, of a shield forming a part of, and wholly supporting, a fan-casing, a shaft mounted in the casing formed in part by the shield, and a fan-driving mechanism attached to the shield.

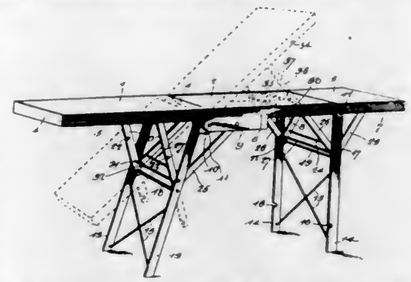
2. A forge-body provided with an upwardly-extending shield having a bulging portion forming part of a fan-casing, in combination with a complemental fan-casing section secured thereto and adapted to receive a fan.

3. In a portable forge, a shield having a portion thereof formed to constitute a member of a fan-casing as an integral part thereof, and a complemental fan-casing member secured to the shield in matching relation to the depressed portion thereof, combined with a bracket secured to the shield, a fan-shaft journaled in the shield and the bracket, and a fan-driving mechanism.

4. In a portable forge, the combination of a shield at one end of the forge-body, a fan-casing supported wholly by the shield and provided in one side with a ball-bearing, a bracket fast with the shield and having a ball-bearing in alinement with the similar bearing of the fan-casing, a fan-shaft journaled in said bearings, a stub-shaft supported on the shield, a crank-wheel having a ball-bearing on the stub-shaft, and gearing between the crank-wheel and the fan-shaft.

654,832. **SURGICAL OPERATING-TABLE.** GEORGE W. HATHAWAY, Lapeer, Mich. Filed Aug. 24, 1899. Serial No. 728,340. (No model.)

Claim.—1. In a table of the character set forth, the combination of a series of sections having a hinged mounting and adapted to be arranged in horizontal alinement, and comprising a head, intermediate and foot sections, the head and intermediate sections being of precisely the same length and adapted when folded to completely inclose the foot-section which is shorter, the head-section being hinged at such a point relatively to the top surface of the intermediate section as to extend completely under the lower edge of the folded foot-section when the parts are in folded condition, opposite pairs of foldable legs attached to parts of the sections and of a length equal to the said head and intermediate sections and incloseable by the latter, and pairs of braces attached to the sections at points distant from the location of the means of applying the legs, the said braces having an adjustable attachment with each pair of legs and converged in pairs toward the latter to prevent movement of the legs when the table is set up, the said braces being also foldable within the sections.



2. In a table of the character set forth, the combination of a series of sections adapted to be arranged in horizontal alinement and comprising a head, intermediate and foot sections, the head and intermediate sections being of the same length to completely inclose the foot-section which is shorter, the one end of the intermediate section being unattached and freely movable to and from a horizontal plane, the head-section also being adjustable below a horizontal plane and to continue in the same oblique angle of the intermediate section, opposite pairs of legs attached to parts of the sections and of a length to permit folding into the sections, braces attached to the intermediate section for supporting the latter above a horizontal plane, and other pairs of braces attached to all of the sections and adjustably and removably connectable to the pairs of legs, the legs being converged toward the latter from adjacent portions of the contiguous extremities of the sections.

3. A foldable table constructed of metal and comprising a head, intermediate and foot sections movably connected in adjacent relation, the head and intermediate sections being the same length and adapted to inclose the shorter foot-sections, hinged bars attached to the opposite sides of said sections, the bars of the intermediate section being formed with under recesses to receive the bars of the foot-section, the bars of the head-section being equal in length and adapted to cover the under edges of the folded bars of the intermediate and foot sections, the said central section being also free at one end for adjustment above a horizontal plane, legs and braces connected to the several sections and substantially of the same length as the head and central sections, the foot-section being centrally divided into two parts in a longitudinal direction and having independent pairs of braces for supporting the same, the separation of the said foot-section ceasing at the contiguous end of the intermediate section, braces for adjustably holding the intermediate section at an angle above the horizontal plane, and a leg-rest connected to the unattached end of the intermediate section.

4. A table comprising a series of sections adapted to be arranged in different angular positions and having foldable adjustable supports, the several sections being foldable inwardly toward each other and completely inclosing all of the parts of the device when in folded condition, and a transversely-arranged drip-cup movably suspended under contiguous ends of the sections to receive the washings and also adapted to be retained in connection with and inclosed by the folded sections.

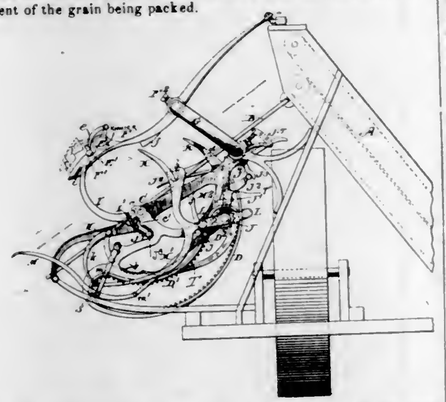
654,883. **GRAIN-BINDER.** EDWARD W. JENKINS, Norristown, Pa. Filed July 20, 1898. Serial No. 686,402. (No model.)

Claim.—1. In a grain-binder, the combination of a table and overhanging knotter-frame between which and the table the bundle is formed, and the pivoted cradle-arm having one end pivoted independent of the knotter-frame adjacent to the table and the other end free and adapted to swing so as to form a temporary connection with the knotter-frame and between the table or its frame and the knotter-frame whereby the latter is steadied.

2. In a grain-binder, the combination of a table and overhanging knotter-frame, between which and the table the bundle is formed, the pivoted cradle-arm having its free end adapted to swing upward from the table and form a temporary connection with the free end of the knotter-frame, whereby the latter is steadied, a knotter carried upon the free end of the knotter-frame, and a pivoted needle-arm hinged adjacent to the table and adapted to operate the knotter when fully raised.

3. In a grain-binder, the combination of a table and overhanging knotter-frame between which and the table the bundle is formed, the pivoted cradle-arm having its free end adapted to swing upward from the table and form a temporary connection with the free end of the knotter-frame whereby the latter is steadied, and retaining

teeth or claws extending respectively from the adjacent sides of the table and overhanging knotter-frame to prevent the backward movement of the grain being packed.



4. In a grain-binder, the combination of the table, an overhanging frame arranged above the table, a pivoted cradle-arm hinged adjacent to the table and having its free end adapted to form a connection with the free end of the overhanging arm, a pivoted needle-arm pivoted at or adjacent to the pivot of the cradle-arm, a lock for holding the cradle-arm in an elevated position adapted to be drawn into locking and unlocking positions by the moving needle-arm.

5. In a grain-binder, the combination of the table, an overhanging frame arranged above the table, a pivoted cradle-arm hinged adjacent to the table and having its free end adapted to form a connection with the free end of the overhanging arm, a pivoted needle-arm pivoted at or adjacent to the pivot of the cradle-arm, and means for positively raising the cradle-arm operated by the needle-arm when the latter descends to pass out of action.

6. In a grain-binder, the combination of a rotating shaft having two cranks arranged at an angle apart and laterally disposed to leave a space between them in the length of the shaft, two packers arranged to be operated by the cranks respectively, a movable needle-arm interposed between the packers, and connecting power devices between the needle-arm and the shaft intermediate of the cranks whereby the needle-arm may be positively moved between the packers.

7. In a grain-binder, the combination of a pivoted needle-arm having a pair of segmental racks, a rotating pinion adapted to mesh with said racks successively to cause the needle-arm to be reciprocated, a movable support for said pinion, a locking mechanism for holding the pinion out of mesh with the racks, and means operated by the pressure of the bundle being bound to shift the pinion into mesh with the racks, whereby the needle-arm is caused to operate as soon as the grain is sufficiently packed to form a bundle.

8. In a grain-binder, the combination of a pivoted needle-arm having a pair of segmental racks, a rotating pinion adapted to mesh with said racks successively to cause the needle-arm to be reciprocated, a movable support for said pinion, a locking mechanism for holding the pinion out of mesh with the racks, and means consisting of a movable shaft having cranks for rotating the pinion, and movable packer-arms hinged to the cranks and operated upon by the pressure of the bundle being bound to shift the pinion into mesh with the racks, whereby the needle-arm is caused to operate as soon as the grain is sufficiently packed to form a bundle.

9. In a grain-binder, the combination of a pivoted needle-arm having a pair of segmental racks, a rotating pinion adapted to mesh with said racks successively to cause the needle-arm to be reciprocated, a movable support for said pinion, a locking mechanism for holding the pinion out of mesh with the racks having an extension adapted to be acted upon by the bundle to release the lock when the bundle is sufficiently formed, and means operated by the pressure of the bundle being bound to shift the pinion into mesh with the racks, whereby the needle-arm is caused to operate as soon as the grain is sufficiently packed to form a bundle.

10. In a grain-binder, the combination of a rotating shaft having upon one part two cranks arranged at an angle apart, a pinion secured to the shaft intermediate of the cranks, a pivoted needle-arm having a segmental slot provided with racks in which the pinion operates to reciprocate the needle-arm, and pivoted packer-arms journaled upon the cranks and arranged, respectively upon each side of the needle-arm.

11. In a grain-binder, the combination of a rotating shaft having two cranks arranged at an angle apart, a pinion secured to the shaft intermediate of the cranks, a pivoted needle-arm having a segmental slot provided with racks in which the pinion operates to reciprocate the needle-arm, pivoted packer-arms journaled upon the cranks and arranged respectively upon each side of the needle-arm, and a movable bearing for the shaft with its cranks and pinions adapted to be moved under the pressure of the bundle to throw the pinion into mesh with the racks of the needle-arm.

12. In a grain-binder, the combination of a shaft having two cranks arranged at an angle apart, packing-arms pivoted to said cranks so as to operate alternately upon the grain, a pivoted needle-arm arranged intermediate of the cranks and packers, a movable support for the crank-shaft moved under the pressure of the bundle, and means between the crank-shaft and the needle-arm for intermittently operating the needle-arm upon the completion of the packing of the bundle.

13. The combination of a binder-arm, a guideway through which the grain is guided in being bound, a fixed frame and knotter arranged upon one side of the said guideway, and a pivoted cradle-arm pivoted at the opposite side of the said guideway and having its free end adapted to swing across said guideway so as to form a temporary connection with the fixed frame whereby it simultaneously acts as a cradle and a steadying-support for the knotter-frame while the bundle is being bound.

14. In a harvesting-machine, the combination of means for packing and binding a bundle, a pivoted kicker or discharge-arm connected at one end to a pivoted lever and at an intermediate point in its length to the needle-arm by a link, means to lock the lever to form a fixed pivot-bearing for one end of the kicker, and means operating by the pressure of the bundle being bound for throwing said locking mechanism into or out of actioo whereby in the forward motion of the needle-arm the lock is out of action and the kicker passes under the bundle, while in the return motion of the needle-arm the lock is in action and the kicker is caused to swing about a fixed pivot and thereby describe a path in line with the bundle to discharge it.

15. In a grain-binder, the combination of a stationary frame, a needle-arm pivoted to the frame, a kicker M connected to the needle-arm by a link *m*, a bell-crank lever M′ connected to one end of the kicker and provided with a locking connection M^2 with the fixed frame, a movable support for the bell-crank lever M′ to move it whereby the locking connection M^2 is thrown into or out of operation, and means operated upon by the bundle for operating the movable support whereby in the forward motion of the needle-arm when the bundle is thoroughly packed the bell-crank lever is free to oscillate and the kicker passes under the bundle, while in the return movement the bell-crank lever is retained in locking connection with the fixed frame and forms a fixed connection about which the kicker swings in discharging the bundle.

16. In a grain-binder, the combination of a pivoted needle-arm, a journal or bearing about which it oscillates, two kickers or arms movably connected and arranged to reciprocate in planes substantially parallel to the needle-arm and adapted to move across the axis of oscillation thereof whereby the said kickers may have free and unobstructed movement close to the needle-arm and above and below its axis of oscillation and a connection between said kickers and the needle-arm whereby they derive their motion from said needle-arm.

17. In a grain-binder, the combination of a pivoted needle-arm, a journal or bearing about which it oscillates, two kickers or arms movably connected and arranged to reciprocate in planes substantially parallel to the needle-arm and adapted to move across the axis of oscillation thereof whereby the said kickers may have free and unobstructed movement close to the needle-arm and above and below its axis of oscillation, and connecting devices between the needle-arm and the kickers whereby the movement of the needle-arm positively moves the kickers.

18. In a grain-binder the combination of an oscillating knotter, a movable needle-arm adapted to pass adjacent to but out of contact with the knotter, and a reciprocable part connected to the knotter to operate it and intermittently locked to and moved by the needle-arm for positively operating the knotter.

19. In a grain-binder, the combination of a knotter-frame F having a shoulder F′, a knotter carried thereby, a pivoted block E′ for operating the knotter provided with an oblique pin or stud *e* and normally held against operation by the shoulder F′, a movable needle-arm having a head *d* formed with a recess or aperture *d′* adapted to receive the pin *e*, whereby in the forward movement of the needle-head the pin enters the aperture in the head and raises the block E′ clear of the shoulder F′ and moves it forward to operate the knotter, and upon the return movement the head draws the block backward until it again falls back of the shoulder and withdraws the pin from the aperture in the head.

20. In a grain-binder, the combination of a pivoted needle-arm, two oscillating racks for moving said needle-arm, a power-shaft, a pinion on said shaft for meshing alternately with said racks, a movable support for the power-shaft moved under the pressure of the bundle, and suitable means for packing the bundle to the required density to operate the movable support.

21. In a grain-binder the combination of a pivoted knotter having an extended arm, a movable piece hinged to said arm and adapted to rock it to move the knotter, a pivoted needle-arm adapted to move past the knotter and means causing the needle to positively connect with the movable piece when in the vicinity of the knotter to cause the latter to be operated and automatically to detach itself on the reverse movement whereby the knotter is operated from the needle-arm but without direct connection therewith.

22. In a grain-binder the combination of a pivoted needle-arm, two reciprocable racks for moving said needle-arm, a driving-pinion journaled between said racks and adapted to mesh alternately with said racks to insure a reciprocating movement to the needle-arm, means to hold said racks and pinion out of gear operated by the pressure of the bundle to put said racks and pinion into gear, and suitable means for packing the bundle to the required density.

23. In a grain-binder the combination of a pivoted binder-arm provided with a curved rack at a distance from its axis, a pinion of relatively-small diameter adapted to mesh with the rack for operating the binder-arm, a rotating shaft for operating the pinion, means for causing the pinion and rack to be intermittently moved into and out of operative connection, pivoted reciprocating packing devices, and means controlled by the packing devices for causing the said pinion to operate the binder-arm when the proper amount of grain has been packed into a bundle.

24. In a grain-binder the combination of two packers laterally disposed so as to leave a space between them, a movable binder-arm pivoted so as to move through the space between the packers and provided with a gear or rack having its center of curvature coincident with the pivot of the binder-arm, a rotating shaft for rotating both the binding-arm and the packers and a gear carried by the said packer-shaft for directly actuating the binder-arm from the packer-shaft.

25. In a grain-binder the combination of a rotating shaft, a packing device operated thereby, a needle-arm having a pivot about which it oscillates, and power devices carried on the packer-shaft connecting directly with said needle-arm at a distance from its axis and interposed between said arm and the shaft, whereby the needle-arm may be directly operated by said shaft.

26. In a grain-binder the combination of a rotating shaft, a packing device operated thereby, a needle-arm having a pivot about which it oscillates, and kickers or discharge-arms linked to the main frame and movably connected to said needle-arm so as to shift bodily and arranged to reciprocate bodily with said arm, and connecting power devices between the needle-arm and the shaft whereby the needle-arm may be operated by said shaft and thereby operate the kickers.

27. In a grain-binder the combination of a pivoted needle-arm, a journal or bearing about which it oscillates, and kickers or discharge-arms movably supported so as to float and shift their positions bodily and arranged to reciprocate in planes parallel to the needle-arm, and connecting devices between the needle-arm and the kickers whereby the movement of the needle-arm positively moves the ends of the kickers across the axis of rotation of the needle-arm.

654,834. SECRET TELEGRAPH-SOUNDER. GEORGE H. LANDGRAF, Waterloo, Wis. Filed June 21, 1898. Serial No. 684,054. (No model.)

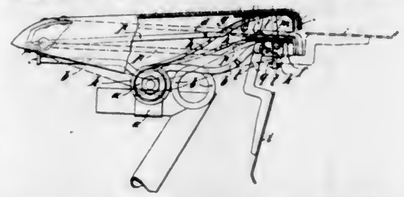


Claim.—1. A secret telegraph-sounder, comprising an inclosing tubular case provided with non-magnetic armature-bushings; an electromagnet having its core engaged in one of said bushings; a longitudinally-vibratory rod engaged in said bushings and adapted to contact with the end of the magnet-core; a spring coiled about said armature and adapted to support the same normally out of contact with the magnet-core; a removable cap for one end of said inclosing case extending in the form of a curved earpiece, and flexible conductors included in a telegraphic circuit and connected with said magnet through the other end of said case.

2. A secret telegraph-sounder, comprising an electromagnet, included in a telegraphic circuit by flexible conductors; an armature-inclosing cylinder closed at both ends by apertured caps or bushings; a longitudinally-vibratory armature having its ends engaged in said bushings and adapted to contact with the magnet-core; an adjusting-screw adapted to enter one of said end caps or bushings to limit the movement of the armature; an inclosing tubular case covering said magnet and armature-cylinder, and provided with a removable end cap extending to form a curved earpiece adapted to be engaged in the ear of the operator and support the entire device therefrom.

3. A secret telegraph-sounder comprising an inclosing tubular case; an electromagnet located at one end thereof and provided with a core longitudinally disposed within the casing; a rod or bar longitudinally disposed in non-magnetic bushings within the casing and adapted to reciprocate into and out of contact with the core of said magnet; a signal-conveying device of rigid material secured to the casing and adapted to be inserted in the ear or between the teeth of the operator and to support the instrument therefrom; and flexible conductors adapted to connect said magnet with a telegraphic circuit, substantially for the purpose set forth.

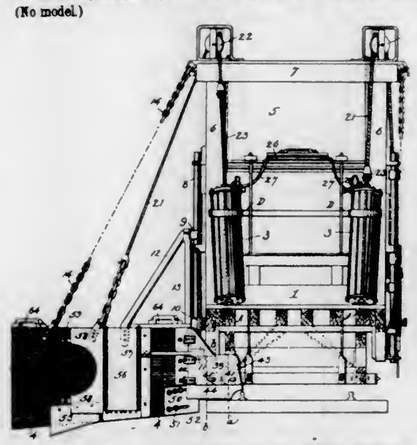
654,885. CYCLE-SADDLE. LUDWIG MANDL, Vienna, Austria-Hungary. Filed Mar. 21, 1899. Serial No. 709,950. (No model.)



Claim.—1. A cycle-saddle having a pivotally-mounted body portion, a rail secured to the under side thereof at its rear end, a second rail arranged below the first, a spring having a connection with the forward end of the body of the saddle and having its rear end connected with the second rail, lever-lappets pivotally connected with the second rail and having each an arm, projections on the first rail adapted to strike the arms of the lappets when the rear end of the body of the saddle is depressed.

2. A cycle-saddle having a pivotally-mounted body portion, a rail secured to the under side thereof at the rear end, a second rail arranged below the first, lever-lappets pivotally arranged below the body, means whereby when said body is tilted downwardly at the rear the lappets will be swung upwardly into position in a plane with the seating-surface of the body, pins depending from the first rail passing through slots in the second rail, and nuts screwing upon the lower ends of the pins.

654,886. GRADING-MACHINE. FREDERICK MERTSHEIMER and JOB A. EDSON, Kansas City, Mo. Filed Apr. 16, 1900. Serial No. 13,066. (No model.)



Claim.—1. The combination with the car, of the laterally-swinging and vertically-movable scraper-blade mounted thereon, a cylinder sustained by the car in an upright position and movable laterally at its upper end, a piston and piston-rod for said cylinder, a guide situated above the cylinder, a cable passing over said guide and attached at its ends respectively to the piston-rod and scraper-blade, and means for admitting fluid under pressure into the cylinder above the piston.

2. The combination with the car, of the laterally-swinging vertically-movable scraper-blade mounted thereon, an upright cylinder movable laterally at its upper end, a piston and piston-rod therefor,

a vertical guide-pulley mounted above the cylinder in a bearing-frame movable on a vertical axis, a cable passing over the pulley with one end connected with the scraper-blade and the other end with the piston-rod, and means for admitting a fluid under pressure to the cylinder above the piston.

3. The combination with the car, of the main scraper-blade sustained thereby at the side of the track and terminating at the ends of the ties, and an extension-wing adapted to extend beneath the car with its lower edge horizontal and at a higher level than the lower edge of the blade and closely overlying the upper sides of the ties and having its inner lower corner recessed to extend at the sides of the rails and closely at the tops of the same.

4. The combination with the car, of the scraper-blade sustained thereby to act at the side of the track, and a horizontally-swinging extension-wing sustained by the scraper-blade and adapted to act beneath the car.

5. In combination with the car, a scraper-blade sustained thereby to act at the side of the car, and an extension-wing pivoted to the scraper-blade and adapted to be swung under the car adjacent to the rails.

6. In combination with the car, a scraper-blade mounted at its inner end on the car and adapted to be folded at the side of the same, and an extension-wing pivoted near the inner end of the blade to fold flatly against the same and adapted to be swung beneath the car adjacent to the rail; whereby when the main blade is folded at the side of the car the extension-wing may be placed flat against its face.

7. The combination with the car, of the extension-wing having its lower edge movable rearward with respect to the upper portion; whereby the lower portion of the blade will yield in encountering obstructions.

8. The combination with the car, of the extension-wing comprising an upper main body and a lower horizontal section, and a spring acting to hold the lower section in an operative position; whereby the lower section may yield in encountering obstructions.

9. The combination with the car, of the extension-wing comprising an upper body portion and a lower horizontal section forming a continuation of the body portion, lugs on said parts, a rod jointed to the lug of the lower section and passing loosely through the lug on the body portion, a spiral spring encircling the rod and bearing between the lugs, and a hinged connection between the lower section and body portion.

10. The combination with the car of the scraper-blade sustained thereby to act at the side of the track, an extension-wing pivoted at one end only to swing beneath the car, and a stop on the car to limit the rearward motion of the wing.

11. The combination with the car, of the extension-wing mounted to swing beneath the same and provided with an opening, a rod extending from the car with its end in position to extend through said opening when the blade is swung to an operative position, and a shoulder on said rod adapted to limit the rearward movement of the blade.

12. In combination with the car, a scraper-blade formed with a lower scraping edge adapted to act at the side of the track and terminating at the ends of the ties, and a plate connected adjustably with the blade at its inner end and provided with a lower scraping edge forming a continuation of the lower edge of the blade, said plate adapted to be adjusted close up to the ends of the ties.

13. In combination with the car, a scraper-blade sustained thereby, to act at the side of the track, an adjustable blade at the inner edge of the blade adapted to be set close up to the ends of the ties, and an extension-wing adapted to extend over the ends of the ties.

14. In combination with the car, a main scraper-blade sustained thereby and provided with a lower scraping edge adapted to act at the side of the track, and a sloping wing adjustably connected with the main blade near its outer end and formed with a lower edge sloping outward and downward and forming a continuation of the lower active edge of the scraper-blade.

15. In combination with the car, a scraper-blade adapted to act at the side of the track at an inclination with respect to the car, and a distributing-wing applied to the front face of the scraper-blade and adapted to extend at an angle thereto.

16. In combination with the car, a main blade sustained thereby at an inclination to act at the side of the car, a distributing-wing on the face of the blade, and means for varying the angle of the same with respect to the blade.

17. In combination with the car, a scraper-blade extending at an inclination with the same to act at the side of the track, a distributing-wing consisting of a vertical plate hinged at its inner end to the face of the blade on a vertical axis, and means for sustaining its outer end so that it will extend at an inclination with respect to the blade.

18. In combination with the car, a scraper-blade extending at an inclination to the same to act at the side of the track, a distributing-wing consisting of a vertical plate hinged at its inner end to the face of the blade on a vertical axis, and a supporting-leg pivoted at the opposite end of the plate and adapted to engage the blade; whereby the distributing-wing may be adjusted at different inclinations with respect to the scraper-blade.

19. In combination with the car a scraper-blade sustained thereby at an inclination to act at the side of the track, a distributing-wing adjustably connected to the face of the blade and adapted to extend at an angle to the same.

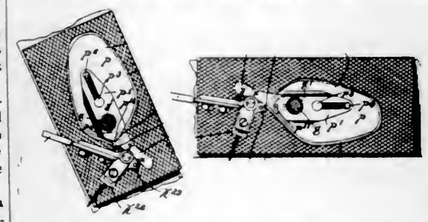
20. In combination with a car, a scraper-blade extending at an inclination at the side of the car, a distributing-wing pivoted at its inner end to the blade, and means for changing the point of attachment of the wing with the blade in the direction of the length of the blade.

21. The combination with the car of the swinging scraper-blade adapted to be folded at the side of the same, an extension-wing pivoted to the face of the blade near its inner end, and adapted to fold flatly against the same, and a distributing-wing pivoted to the face of the blade beyond the extension-wing, and adapted also to fold flatly against the blade; whereby when the scraper-blade is folded at the side of the car the extension-wing and distributing-wing may be adjusted flat against the face of the same.

22. In combination with the car, a scraper-blade pivoted at its inner end thereto, means for raising and lowering the same, and a brace-rod having its ends detachably connected on horizontal axes respectively with the scraper-blade and car.

23. The combination with the car, of the vertically-movable scraper-blades sustained on opposite sides thereof, two cylinders sustained by the car and provided with pistons, cables connecting the pistons with the respective blades, independently-acting valves for controlling the admission of fluid under pressure to the respective cylinders, a supply-pipe for the fluid under pressure, common to both cylinders and branch pipes extending from said supply-pipe to the respective valves; whereby the blades may be operated one independently of the other.

654,837. MACHINE FOR CUTTING ARTICLES OF CURVILINEAR OUTLINE FROM SHEET MATERIAL. RICHARD C. MONAHAN, Everett, Mass., assignor to Robert D. Evans and John S. Lockwood Boston, Mass. Filed Apr. 5, 1900. Serial No. 11,776. (No model.)



Claim.—1. A pattern according to which sheet material is to be cut, the edge of which pattern terminates at one extremity in a salient angle, and is provided with an automatically-adjustable guide for the trimming-knife, which guide projects beyond the edge of the pattern over said salient angle, and is capable of a swinging movement across said angle through an arc equal to the width of said guide measured at the apex of said angle.

2. A pattern of curved outline according to which sheet material is to be cut, the curves of the edge of which pattern are interrupted by a salient angle, combined with an arm to guide the trimming-knife beyond the edge of the pattern and which is pivoted over said angle and is adapted to swing upon its pivot across said angle a distance sufficient to place the respective edges of the guiding-arm over the apex of the salient angle at the extreme limits of the swinging movement of said arm.

3. In a machine for cutting articles of curvilinear outline from sheet material, a clamping-pattern of the same outline as the article desired, a guide fixed with relation to said clamping-pattern to guide the cutting-knife around its periphery, and an auxiliary guide pivotally adjustable in a limited arc over the edge of the pattern to guide the knife beyond its edge.

654,838. GOLD SOLVENT FOR REFRACTORY ORES. DAVID MOSHER, San Francisco, Cal., assignor of one-half to Peter A. Wagner and George A. Hinkelbein, same place. Filed Apr. 26, 1900. Serial No. 14,475. (No specimens.)

Claim.—1. The process of treating refractory ores containing gold, consisting in reducing the ore to a pulp, adding thereto a solution of bromin in hydrochloric acid and then adding an oxygen salt of an alkali metal capable of reacting on hydrochloric acid to evolve free chlorin to transform the hydrochloric acid conjointly with the bromin into strong gold solvent.

2. The process of treating refractory ores consisting in reducing the ore to a pulp, adding thereto a solution of bromin in hydrochloric acid, then adding potassium permanganate and thereby liberating chlorin from the hydrochloric acid to transform the acid and bromin into a more effective solvent.

3. The process of treating refractory ores consisting in reducing the ore to a pulp, adding thereto a solution of about fifteen pounds of bromin in one hundred and twenty pounds of commercial hydrochloric acid 21° Baumé, then adding potassium permanganate in dry and crystal form to slowly generate chlorin.

4. The process of treating refractory ores consisting in reducing the ore to a pulp; adding thereto a solution of bromin in hydrochloric acid; then adding an oxygen salt of an alkali metal capable of reacting on hydrochloric acid to evolve free chlorin; then agitating the mass to slowly liberate chlorin, and then precipitating the precious metals.

654,839. GRAPE CRUSHER AND STEMMER. JAMES S. PHILPOTT, Windsor, Cal., assignor of one-half to George A. Nalley, same place. Filed July 24, 1899. Serial No. 724,950. (No model.)



Claim.—1. The horizontally-revoluble journaled shaft of a grape-stemmer having radially-projecting blades, in combination with a spirally-disposed supplemental bar surrounding the shaft from end to end and in contact with the blades whereby the latter are strengthened.

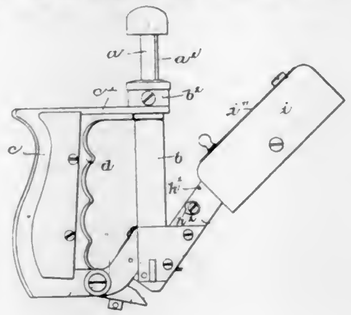
2. The horizontally-journaled and revoluble shaft of a grape-stemmer, blades fixed spirally around the shaft and extending radially outward therefrom, and a strengthening-bar in contact with the blades and wound spirally around the shaft and in a plane parallel with said blades.

3. The horizontally-journaled and revoluble shaft of a grape-stemmer, blades fixed spirally and radially around the shaft, a spiral bar surrounding the shaft contiguous to the blades, and fastenings by which the blades are secured to the bar exterior to the shaft.

4. In a grape crushing and stemming apparatus, the crushing-rollers, a casing within which they revolve, a second casing situated below and parallel therewith, with passages from one to the other, a shaft journaled in said second casing having bars spirally coiled around it and teeth secured to said bars and having shanks inserted in holes in said shaft whereby they are removably supported upon the shaft and said bars.

5. In a grape-stemming apparatus, a cylindrical casing, a shaft journaled axially therein having holes bored through it in spiral lines from one end to the other, bars spirally coiled around the shaft upon opposite sides coincident with the holes in the shaft, teeth having the inner ends fitted into the holes in the shaft and bolts by which said teeth are secured to the spirally-disposed bars, with the ends projecting radially outward from the shaft within the casing.

654,840. TACK-DRIVING MACHINE. ALBERT F. PRESTON, Boston, Mass., assignor to the Busell Lasting Machine Company, same place. Filed Dec. 11, 1897. Serial No. 661,573. (No model.)



Claim.—1. A tack-driving machine, comprising a driver, a casing having a guideway for the reciprocations of said driver and having slots, separable guide members between which the tacks may be forced one at a time by the driver, said guide members being mounted yieldingly in said slots, a chute or raceway for supplying tacks to the guide members, a yielding stop g having a shoulder g' flush with the top edges of the guide members, and a spring g^2 normally holding the shoulder in the path of the driver.

2. A tack-driving machine, comprising a driver, a chute or raceway for supplying tacks to the action of the driver, a bar over the line of tacks in the raceway and movable longitudinally toward and from the driver, said bar having a beveled end projecting in the path of the driver, whereby said bar is arranged to alternately engage the tack to be directly acted on by the driver and the tack next thereto.

3. A tack box or reservoir for delivering tacks to the raceway of a tack-driving machine, divided into two compartments having bottoms sloping upward from the ends to the center of the box, said compartments being connected by an aperture, and there being a groove leading from the outer compartment to the raceway.

654,841. EASEL AND ARTIST'S CABINET. ANNA SABIN-MACDONALD, Harveysburg, Ohio. Filed June 6, 1898. Serial No. 682,690. (No model.)



Claim.—1. A combined artist's folding cabinet and easel, comprising a rectangular cabinet-body provided with a plurality of compartments opening at opposite sides thereof, two pairs of legs pivotally attached at opposite sides of the cabinet-body in such manner as to be capable of being flexed into alinement with the main plane of the cabinet-body, means for holding said legs fixed in divergent relation to each other, folding supporting-arms adapted to support the cabinet-body rigidly upon said legs and means for securing the legs in folded position in the same plane with the cabinet-body.

2. A combined artist's folding cabinet and easel, comprising a rectangular cabinet-body of relatively-flat form or shallow depth, provided with two sets of compartments opening at opposite sides thereof, two pairs of legs pivotally connected with the opposite sides of the body at transversely-opposite points and near one end thereof, supporting-arms each pivotally connected with one of each pair of legs and adapted to be extended across and beyond the opposite leg of the pair to form a support for the cabinet-body, means for locking said legs to said supporting-arms at the points of intersection, engaging devices for locking the arms and cabinet-body together to support the latter in an approximately-horizontal position, engaging devices for locking the arms and cabinet-body together to hold the latter in an upwardly-inclined position, and means for securing the legs folded together and in the same plane as the body of the cabinet.

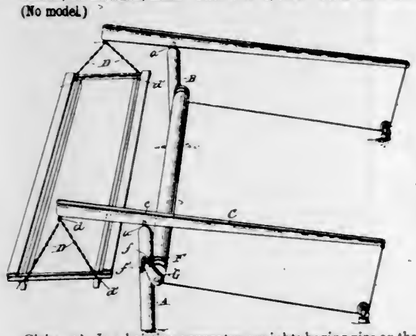
3. The combination with a cabinet, of a folding work-support, adapted to be folded within the cabinet and comprising a pair of supports or standards, notched arms carried by each of said standards, and means for holding the standards upright.

4. The combination with a cabinet, of a folding work-support, adapted to be folded within the cabinet and comprising a pair of supports or standards, each consisting of a plurality of sections having adjustable telescopic connection with each other, notched arms carried by each of said standards, and means for holding the standards upright.

5. The combination with a cabinet-compartment and the cover thereof, of a folding work-support adapted to fold within said com-

partment and comprising a pair of supports pivotally mounted within the compartment, each consisting of a plurality of sections, having adjustable telescopic connection with each other, detachable notched arms carried by each support, brace-rods pivotally mounted in the compartment adapted to be detachably engaged with said support to hold the latter upright, and holding devices upon the compartment-cover adapted to coöperate with the notched arms, substantially as described.

654,842. WAGON-BOX AND HAY-RACK LIFTER. MICHAEL J. SAGEN, St. Matthias, Minn. Filed Feb. 8, 1898. Serial No. 669,536. (No model.)



Claim.—1. In a hoisting apparatus, uprights having pins on their upper ends, recessed levers pivotally and revolubly mounted on said pins in said recesses and means for operating the same, substantially as and for the purpose described.

2. In a hoisting apparatus two standards having pins upon their upper ends and levers pivotally mounted on said pins in recesses in said levers, means at one end of said levers for grappling the body to be raised, and at the other end means for raising and lowering said lever, substantially as and for the purpose described.

3. A wagon-box and hay-rack lifter consisting of two posts set in the ground, and having pins set in their upper ends, recessed levers resting upon said pins; pulleys secured to the ground, and a windlass strapped to said posts, said levers having grappling-hooks on their short ends and ropes extending from their long ends through said pulleys to said windlass, substantially as and for the purpose described.

4. A hoisting apparatus consisting of two posts set in the ground, said posts having pins set in their upper ends, recessed levers resting on said pins in said recesses, chains provided with hooks at their ends and secured by eyebolts to the short arms of said levers, pulleys secured in the ground immediately under the ends of the long arms of said levers, a windlass tied to said posts, ropes extending from the ends of the long arms of said levers through said pulleys to said windlass, a crank-handle on one end of said windlass, and a pin adapted to enter holes in said post and prevent said crank-handle moving backward, substantially as and for the purpose described.

654,843. SAW SUPPORT AND GUIDE. HENRY P. SCHOFIELD, Chicago, Ill., assignor of one-half to L. L. Filstrup, same place. Filed Mar. 24, 1900. Serial No. 9,998. (No model.)

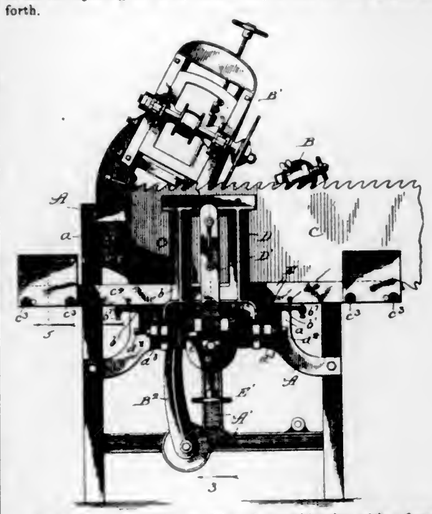
Claim.—1. In a saw-sharpening machine, the combination with the frame thereof, of a self-adjusting pivotally-supported saw-supporting guide-bar connected with the frame and provided with a bearing for the saw-teeth, and stops for limiting the movement of said bar on its pivot, substantially as and for the purpose set forth.

2. In a saw-sharpening machine, the combination with the frame thereof, of a vertically-movable slide connected with the front end of the frame, means for adjusting said slide, a guide-bar pivotally connected to said slide, and stops carried by said slide for limiting the movement of said guide-bar on its pivotal point, substantially as and for the purpose set forth.

3. In a saw-sharpening machine, the combination with the frame thereof, of a vertically-movable slide connected with the front end of the frame, means for adjusting said slide, a stop-carrying bar fixedly secured to said slide, stops thereon, and a guide-bar pivotally supported from said slide and limited in movement on its pivot by said stops, substantially as and for the purpose set forth.

4. In a saw-sharpening machine, the combination with a frame provided at its front end with a vertical guide-channel, a slide movable in said channel, a stop-bar secured to said slide, adjustable stops connected with said bar, a guide-bar pivotally supported from said slide and limited in movement by said stops, and means for raising and lowering said slide, substantially as and for the purpose set forth.

5. In a saw-sharpening machine, the combination with a frame provided at its front end with a vertical guide-channel, a slide movable in said channel, a stop-bar secured to said slide, stops carried by said bar, a guide-bar pivotally supported from said slide and limited in movement by said stops, and a screw connected with slide and frame for adjusting the slide, substantially as and for the purpose set forth.



6. In a saw-sharpening machine, the combination with a frame provided at its front end with a vertical guide-channel, of a slide movable in said channel, means for adjusting the slide, a stop-bar b' fixed to said slide, a pivot-yoke b^3 fixed to said bar b' and provided with a stud b^5, a guide-bar pivoted on said stud, and stops on the bar b' for limiting the movement of the guide-bar, substantially as and for the purpose set forth.

7. In a saw-sharpening machine, the combination with the frame, of a self-adjusting pivotally-supported guide-bar provided with a channel of sufficient width at the bottom to receive the lower edge of a saw freely and of less width some distance above said bottom to cause the body of the saw to be guided by the flanking walls of the narrower portion of the channel, whereby contact of the teeth at the lower edges with the side walls of the channel is avoided, substantially as and for the purpose set forth.

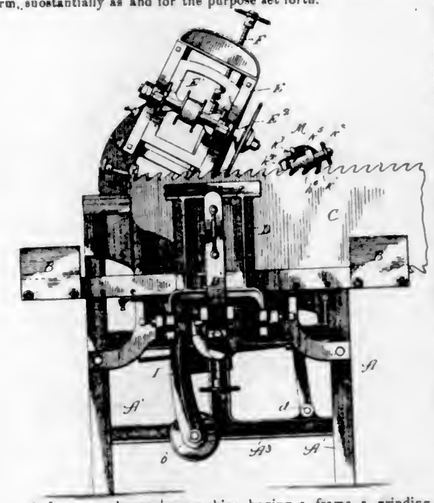
8. In a saw-sharpening machine, the combination with the frame, of a guide-bar provided with a channel supplied at its bottom with a separately-formed hardened-steel bearing strip upon which the saw rests, substantially as and for the purpose set forth

9. In a saw-sharpening machine, the combination with the frame, of a guide-bar provided with a channel of sufficient width to receive freely the lower toothed edge of a saw, and wooden flange-blocks on said guide-bar separated by a space less than the width of said channel, and serving to direct the saw into said channel without injury to the lower-edge teeth, substantially as and for the purpose set forth.

654,844. SAW-SHARPENING MACHINE. HENRY P. SCHOFIELD, Chicago, Ill., assignor of one-half to L. L. Filstrup, same place. Filed Mar. 24, 1900. Serial No. 9,999. (No model.)

Claim.—1. In a saw-sharpening machine, the combination with a frame, a grinding-wheel gate, a grinding-wheel, and mechanism for moving the grindjng-wheel gate and turning the grinding-wheel, of feed mechanism comprising a rock-arm, a rotating shaft provided with a cam engaging said rock-arm, a rock-shaft, a lever connected with said rock-shaft, a connecting-rod joining said lever to the rock-arm engaging said cam, a feed-arm pivotally connected with the free end of said lever and provided with a feed-finger, a pivoted arm, a weight connected therewith, and connecting means between said pivoted arm and said rock-shaft, whereby said weight tends to rotate said rock-shaft to retract the feed-arm and cause the rock-arm engaging said cam to remain in contact with said cam, substantially as and for the purpose set forth.

2. The combination in a saw-sharpening machine, of a frame, a rock-shaft pivoted therein, a feed-lever connected with said rock-shaft to rotate therewith, a feed-arm pivotally connected with the upper end of said lever and provided with a feed-finger, a rotating shaft provided with a cam, a rock-arm bearing against said cam, a connecting-rod joining said rock-arm to the lower end of said lever, a weight-bearing arm pivotally connected with the frame, and a link or arm connected with said rock-shaft to rotate therewith, and having sliding connection at its free end with said weight-bearing arm, substantially as and for the purpose set forth.



3. In a saw-sharpening machine, having a frame, a grinding-wheel, means for moving the grinding-wheel, a guide for a saw, and a feed-arm and means for actuating said feed-arm, said feed-arm being provided with a feed-finger-receiving perforation, a replaceable hardened-steel pin l' affording a feed-finger, substantially as and for the purpose set forth.

4. In a saw-grinding machine, the combination with a frame provided at its front end with a bearing-block for a feed-arm, of a feed-arm provided with a feed-finger and with a bearing-block resting upon said block on the frame, and provided also with a block bearing against the inner vertical surface of the block on said frame, and means for actuating said feed arm, substantially as and for the purpose set forth.

5. In a saw-grinding machine, the combination with a frame provided at its front end with a bearing-block for a feed-arm, of a feed-arm provided with a feed-finger with a replaceable horizontal bearing-block, and a replaceable vertical bearing-block serving to hold said horizontal bearing-block in place, substantially as and for the purpose set forth.

6. In a saw-sharpening machine, the combination with a frame provided at the upper surface of its front end with a projecting inclined surface, a replaceable bearing-block provided at its ends with inclined surfaces, one of its ends contacting with said first-mentioned inclined surfaces, and a securing-block provided with an inclined surface bearing upon the inclined surface of the adjacent end of the bearing-block, a feed-arm provided with a feed-finger and moving upon said bearing-block, and means for actuating said feed-arm, substantially as and for the purpose set forth.

7. In a machine for sharpening saws, the combination with a frame provided at the upper surface of its front end with a projecting beveled surface, a bearing-block provided with two upwardly-converging end surfaces, and a securing-block provided with two downwardly converging end surfaces, one of which engages the adjacent inclined end of the bearing-block, and the other an inclined surface on the frame, a feed-arm provided with a feed-finger and sliding upon said bearing-block, and means for actuating said feed-arm, substantially as and for the purpose set forth.

8. In a machine for sharpening saws, the combination with a frame provided at its front end with a bearing-surface for a feed-arm, a feed-arm resting at one end on said bearing-surface and provided with a feed-finger, an arm for actuating said feed-arm, a member pivotally connected to said last-named arm and provided with a perforation for the stem of the feed-arm, an adjusting-sleeve, having threaded connection with said pivotal connecting member and provided with a perforation through which the stem of said feed-arm passes, means for securing the stem of said feed-arm to said adjusting-sleeve to permit the sleeve to rotate on said stem, and means connected with said pivotal member and bearing upon said stem for securing the feed-arm in a given position, substantially as and for the purpose set forth

9. In a saw-sharpening machine, the combination with a frame provided at its front end with a bearing-surface for a feed-arm, a feed-arm sliding upon said bearing-surface and provided with a feed-finger, a feed-lever for actuating said feed-arm, a pivotal connecting member for joining said feed-arm to said actuating-lever, said pivotal member being provided with a perforation for the stem of the feed-arm, an adjusting-sleeve k' having threaded connection with said pivotal connecting member and secured rotatably and non-movably longitudinally upon the stem of said feed-arm, and a spring k^4 secured to said pivotal connecting member and bearing against the stem of said feed-arm, substantially as and for the purpose set forth.

10. In a saw-sharpening machine, the combination with a frame provided at its front end with a feed-arm bearing, a feed-arm sliding upon said bearing and provided with a feed-finger and provided with a stem having a flattened upper surface and a reduced outer end, an actuating-lever for said feed-arm, a pivotal connecting member between said actuating-lever and said feed-arm provided with a perforation through which the stem of said feed-arm projects, an adjusting-sleeve on the reduced end of said stem and connected therewith by a nut thereon and having threaded connection with said pivotal connecting member, a spring attached to said pivotal connecting member and bearing at its free end on the flattened surface of said stem, and a screw for tightening said spring upon said stem, substantially as and for the purpose set forth.

11. In a saw-sharpening machine, the combination with a frame provided at its front end with a feed-arm bearing, a feed-arm M sliding upon said bearing and provided with a feed-finger, a feed-arm-actuating lever provided with a circular head h, and a connecting member h' carrying said feed-arm and pivotally joined to the center of the head h and provided with a flange h^2 inclosing said head, substantially as and for the purpose set forth.

12. In a saw-sharpening machine, the combination with a frame provided at its front end with a feed-arm bearing, a feed-arm M sliding upon said bearing and provided with a feed-finger, a feed-arm-actuating lever provided with a circular head h, a connecting member h' carrying said feed-arm and provided with a stud h^3 projecting through the perforation in the head h and provided also with a flange h^2 embracing the head h, and means for securing the member h' to the head h, substantially as and for the purpose set forth.

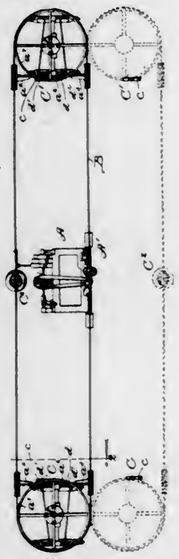
13. In a saw-sharpening machine, the combination with a frame provided at its front end with a bearing for a feed-arm, a feed-arm sliding upon said bearing and provided with a feed-finger, means for actuating said feed-arm, and an adjustable stop against which said feed-arm strikes comprising a member fixedly secured to the frame and affording a guide, a movable member in said guide and projecting into the path of said feed-arm at one end, and provided at the opposite end with an inclined surface, and an adjusting-screw bearing upon said inclined surface, substantially as and for the purpose set forth.

14. In a saw-sharpening machine, the combination with a frame provided at its front end with a bearing for a feed-arm, a feed-arm sliding upon said bearing and provided with a feed-finger, means for actuating said feed-arm, and an adjustable stop comprising a member n fixedly secured to the frame and provided with a guideway, and at the rear end of said guideway with a threaded perforation, a member n^3 moving in said guide and provided at one end with a feed-arm-engaging head and at the opposite end with an inclined surface, and an adjusting-screw projecting through said perforation and against said inclined surface, substantially as and for the purpose set forth.

15. In a saw-sharpening machine, the combination with a frame provided at its front end with a bearing for a feed-arm, a feed-arm sliding upon said bearing and provided with a feed-finger, means for actuating said feed-arm, and an adjustable stop comprising a fixed member n provided with a guide, a threaded perforation and a split lug n^7, a movable feed-arm-engaging member n^8 provided at one end with an inclined surface n^8, an adjusting-screw projecting through said threaded perforation and through said split lug n^7, and a screw n^6 serving to lock the adjusting-screw n^5, substantially as and for the purpose set forth.

16. In a saw-sharpening machine, the combination with a frame provided at its front end with a bearing for a feed-arm, a feed-arm sliding upon said bearing and provided with a feed-finger, means for actuating said feed-arm, and an adjustable stop comprising a fixed member n, a movable feed-arm-engaging member n^8 provided at its front end with a head n^4 and at its rear end with a head provided with an inclined surface n^5, an adjusting-screw n^5 passing through the perforation in the member n and bearing upon said inclined surface, a slotted lug embracing the stem of said adjusting-screw, a screw n^6 for tightening said lug upon the stem of the adjusting-screw, and a screw n^9 passing through the perforation in the member n and bearing upon the movable member n^8, substantially as and for the purpose set forth.

654,845. SAW-SUPPORT. HENRY P. SCHOFIELD, Chicago, Ill., assignor of one-half to L. L. Filstrup, same place. Filed Mar. 24, 1900. Serial No. 10,000. (No model.)



Claim.—1. In a saw-support for band-saws, the combination of a suitable base, and a bearing for the saw supported between its ends on said base and left free to swing in the plane of the saw, to adjust itself automatically, substantially as and for the purpose set forth.

2. In a saw-support, the combination of a suitable base, a bearing for the saw, and transversely-extending horizontally-disposed pivotal connection between said bearing and base, said bearing being left free to swing in the plane of the saw and thereby adjust itself automatically, substantially as and for the purpose set forth.

3. In a saw-support, the combination of a suitable base, a threaded stem passing loosely thereinto and provided with a way, a set-screw projecting into said way, an adjusting-wheel resting on the base and having threaded connection with said stem, and a saw-bearing carried by said stem, substantially as and for the purpose set forth.

4. In a saw-support, the combination of a suitable base, a head supported therefrom, adjustable stops carried by said head, and a saw-bearing receiving the teeth of the saw and having pivotal connection with said head and limited in its movement by said stops, substantially as and for the purpose set forth.

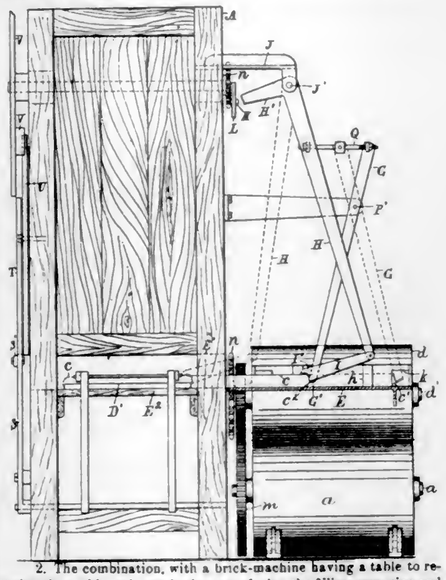
5. In a saw-support, the combination of a suitable base, a stem projecting upwardly therefrom, means for raising and lowering said stem, a head carried by said stem provided with two stops, and a bar-form saw-bearing pivoted on a transversely-extending pivot intermediate said stops and left free to swing in the plane of the saw, substantially as and for the purpose set forth.

6. In a saw-support, the combination of a suitable base, a stem projecting upwardly therefrom, means for raising and lowering said stem, a head carried by said stem provided with two stops, a block provided with lugs embracing said head intermediate said stops, pivotal connection between lugs and head, and a saw-bearing and side guide-strips connected with said block, substantially as and for the purpose set forth.

7. The combination with a saw-support for the loop or end of a band-saw, comprising a base mounted on rollers and provided with a stop-engaging lug, suitable guides and a wheel for the saw, of two floor-stops located to singly and detachably engage said lug in either of the principal positions of the support, substantially as and for the purpose set forth.

654,846. BRICK-MACHINE WITH SANDER ATTACHMENT. HERBERT SCHOONMAKER, Roseton, N. Y. Filed Apr. 21, 1900. Serial No. 13,715. (No model.)

Claim.—1. The combination, with a brick-machine having a table to receive the molds and sustain the same during the filling operation and having a crank-shaft to operate its press, of a platform extended from such table, a sanding-machine with devices for delivering the sanded molds upon such platform, and means for sliding the sanded molds from such platform to the table of the brick-machine, substantially as herein set forth.



2. The combination, with a brick-machine having a table to receive the molds and sustain the same during the filling operation and having a crank-shaft to operate its press, of a platform extended from such table, a sanding-machine with devices for delivering the sanded molds upon such platform, a lever for shifting the molds from the platform to the table, and means upon the crank-shaft for vibrating such lever, substantially as herein set forth.

3. The combination, with a brick-machine having a table to receive the molds and sustain the same during the filling operation and having a crank-shaft to operate its press, of a platform extended from such table, a sanding-machine with devices for delivering the sanded molds upon such platform, the lever G adapted to slide the mold partially along the said platform, the lever H with hinged pawl to grasp and slide the mold from the platform to the table, the connection Q between the two levers to move them in reverse directions, and means upon the crank-shaft for vibrating one of the levers, substantially as herein set forth.

4. The combination, with a brick-machine having a table to receive the molds and sustain the same during the filling operation and having a crank-shaft to operate its press, of a platform extended from such table, a sanding-machine with devices for delivering the sanded molds upon such platform, the lever G adapted to slide the mold partially along the said platform, the lever H movable at the side of the lever G and provided with pawl I to pass over the mold and engage its rear end, the adjustable connection Q between the two levers to move them in reverse directions, and means upon the crank-shaft for vibrating one of the levers and thus operating them alternately upon the mold, substantially as herein set forth.

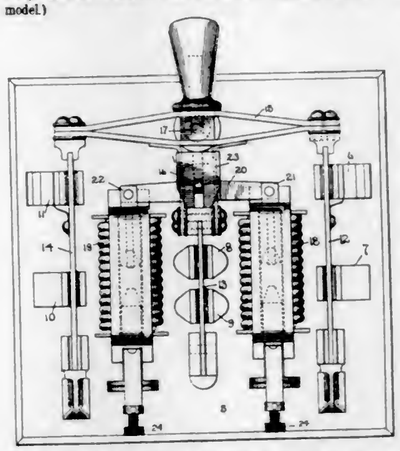
5. The combination, with a brick-machine having a table to receive the molds and sustain the same during the filling operation and having a crank-shaft to operate its press, of a platform extended from such table, a sanding-machine with devices for delivering the sanded molds upon such platform, the lever G adapted to slide the mold partially along the said platform, the lever H movable at the side of the lever G and provided with pawl I to pass over the mold and engage its rear end, the adjustable connection Q between the two levers to move them in reverse directions, an arm pivoted at one end and movable transversely across the end of the lever H and slotted at its outer end, and a crank upon the end of the crank-shaft movable in such slot, thus vibrating the levers and operating them alternately upon the ends of the mold, substantially as herein set forth.

6. The combination, with a brick-machine having a table to receive the molds and having a crank-shaft to operate its press, of a platform extended from such table, a sanding-machine with devices for delivering the molds upon such platform, and a lever vibrated by connection to the crank-shaft, and provided with a pawl to engage the rear end of the mold and of suitable length to push the mold within the opening E' upon the side of the brick-machine above the table.

7. The combination, with a brick-machine having a table to receive the molds and having a crank-shaft to operate its press, of a platform extended from such table, a sanding-machine with devices for delivering the molds upon such platform, and a lever vibrated by connection to the crank-shaft and provided with the pawl I having the toe I' upon its forward end and adapted to drag over the mold in the outward movement of the lever, and to engage, and rest upon, the rear end of the mold to push the same forward into the opening E' above the table E.

8. The combination, with a brick-machine having a table to receive the molds and sustain the same during the filling operation and having a crank-shaft to operate its press, of a platform extended from such table, a sanding-machine with devices for delivering the sanded molds upon such platform, the lever G adapted to slide the mold partially along the said platform, the lever H movable at the side of the lever G and provided with pawl to pass over the mold and engage its rear end, the adjustable connection Q between the two levers to move them in reverse directions, the crank-pin N upon the end of the crank-shaft, the arm L pivoted at one end and movable transversely across the end of the lever H and provided with slot M formed concentric in its outer end with the crank-pin N whereby the pawl I is held stationary when dropping behind the rear end of the mold, substantially as herein set forth.

654,847. AUTOMATIC CIRCUIT-BREAKER. WILLIAM M. SCOTT, Philadelphia, Pa., assignor to the Cutter Electrical and Manufacturing Company, of New Jersey. Filed Nov. 1, 1897. Serial No. 657,021. (No model.)



Claim.—1. In an automatic magnetic circuit-breaker, the combination of separable coöperative contacts, a latch for holding said contacts in closed relation, a plurality of independent electromagnetic actuating devices, and a bar operated independently by each of said actuating devices to impinge upon and disengage said latch, substantially as specified.

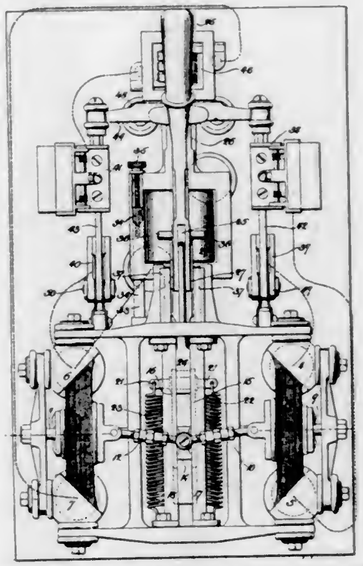
2. In an automatic magnetic circuit-breaker, the combination of a plurality of conductors, each provided with separable coöperative contacts, a plurality of independently-operative electromagnetic actuating means, and mechanical means common to all the actuating means for communicating the actuation of each to cause the separation of said separable coöperative contacts, substantially as described.

3. In an automatic magnetic circuit-breaker, the combination of separable coöperative contacts, with mechanism for separating the same, a latch for holding said contacts in closed relation, a plurality of electromagnetic actuating devices, each operating independently of the other, and a member operated by each of said electromagnetic actuating devices upon an overload therein to strike said latch and disengage the same, substantially as described.

4. In an automatic magnetic circuit-breaker, the combination of separable coöperative contacts, with a spring-actuated plunger for separating the same, mechanism for restraining the actuation of the plunger, a plurality of independent electromagnetic devices, and a bar operated independently by each of said electromagnetic devices for operating the restraining mechanism, substantially as specified.

5. In an automatic magnetic circuit-breaker, the combination of separable coöperative contacts, means for causing their separation, a latch for normally restraining the separating means, a plurality of solenoids, a reciprocating member in each solenoid, and a bar connecting said reciprocating members and moved to release said latch by the independent action of either of said solenoids, substantially as specified.

654,848. AUTOMATIC MAGNETIC CIRCUIT-BREAKER. WILLIAM M. SCOTT, Philadelphia, Pa., assignor to the Cutter Electrical and Manufacturing Company, of New Jersey. Filed Jan. 5, 1898. Serial No. 665,634. (No model.)



Claim.—1. In an automatic magnetic circuit-breaker the combination of a main breaker and a supplemental automatic magnetic breaker in shunt therewith adapted to break the circuit after the separation of the contacts of the main breaker, substantially as described.

2. In an automatic magnetic circuit-breaker the combination of a main breaker and separable coöperative contacts of a supplemental independently-actuated breaker in shunt therewith adapted to break the circuit after the separation of the contacts of the main breaker, substantially as described.

3. In an automatic magnetic circuit-breaker the combination of a main switch, spring means for actuating same, a latch for normally restraining said actuation, automatic magnetic means for operating said latch and a supplemental independently-operative switch in shunt with the main switch and so located as to be actuated as the result of the operation of the main switch after the opening of the same, substantially as described.

4. In an automatic magnetic circuit-breaker the combination of a main switch, spring means for actuating the same, a latch for normally restraining said actuation, automatic magnetic means for operating the latch, a supplemental independently-operative switch in shunt therewith, spring means for actuating same, a latch for normally restraining said actuation and means for actuating the latch of the supplemental switch after the opening of the main switch, substantially as described.

5. In an automatic magnetic circuit-breaker the combination of fixed and movable contacts, a movable cross-head intermediate the movable coutacts, spring means for actuating the cross-head in one direction and manually-operative means for actuating it in the other direction, means for normally restraining said spring actuation, automatic magnetic means for actuating the restraining means and means for changing the direction and communicating the force of movement of the cross-head to the said movable contacts, substantially as described.

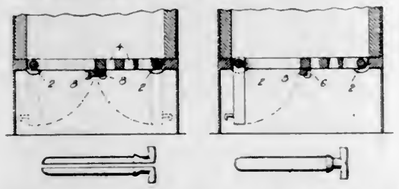
6. In an automatic magnetic circuit-breaker the combination of fixed contacts and contacts movable with respect to each other in divergent and convergent planes to and away from their respective fixed contacts, spring-actuated means for imparting motion to the movable contacts, means for normally restraining the said spring actuation, automatic magnetic means for actuating the restraining means, substantially as described.

7. In an automatic magnetic circuit breaker the combination of fixed contacts and movable contacts, a movable cross-head, the movable contacts movable in planes inclined to the plane of movement of the cross-head, spring means for actuating the movable cross-head in one direction and manually-operative means for actuating it in the opposite direction and means for communicating the movement of the cross-head to the movable contacts, substantially as described.

8. In an automatic magnetic circuit-breaker the combination of fixed and movable contacts, a cross-head, means for guiding and supporting the same, spring means for actuating said cross-head in one direction and manually-operative means for actuating it in the opposite direction, means for supporting and guiding the movable contacts in planes transverse to the plane of movement of the cross-head and rods operating intermediate the cross-head and movable contacts as means for communicating the force of the movement of the cross-head to the movable contacts to cause their operation to and away from their respective fixed contacts, means for normally restraining the movement of the cross-head against spring actuation and means for actuating said restraining means, substantially as described.

9. In an automatic magnetic circuit-breaker the combination of fixed and movable contacts, a cross-head movable intermediate the movable contacts, means for guiding the cross-head in a plane transverse to the movement of the movable contacts, spring means for actuating the cross-head in one direction, a pivoted handle-arm and link connecting the same with the cross-head so that the two connections of the link shall approach alinement upon the operation of the handle-arm as means for operating the cross-head against spring tension, means for normally restraining said spring actuation and means for actuating said restraining means, substantially as described.

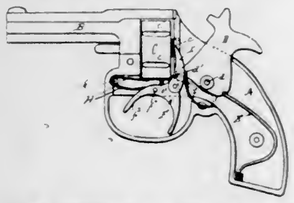
654,849. GRATE. MICHAEL V. SCULLY, New York, N. Y. Filed Apr. 19, 1900. Serial No. 13,427. (No model.)



Claim.—1. A dumping-grate comprising hinged sections, a pin or peg adapted to project inwardly beneath the meeting edges of the grate-sections, and hooks on the abutting edges of the said sections arranged opposite to each other, so that the said pin cannot become accidentally displaced, the said hooks preventing the pin from sagging and holding the same in a horizontal position for supporting the grates.

2. A dumping-grate comprising grate-sections pivotally mounted in a fire-box, their inner edges being arranged so as to come close together when the sections are raised, a divided key-pin for supporting the sections in their elevated positions, said key-pin being inserted in suitable apertures in the walls of the fire-box, and hooks for engaging said pin located on the abutting edges of the grate-sections and arranged face to face, so that each portion of the pin serves to hold the other from side movement, substantially as described.

654,850. REVOLVING PISTOL. FREDRICK SHIELDS, Erie, Pa. Filed Jan. 26, 1900. Serial No. 2,847. (No model.)



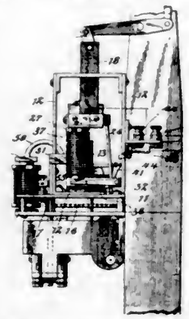
Claim.—1. The combination in a pistol, of a spring-actuated hammer pivoted in the pistol-frame, a forwardly-projecting toe on the hammer, and a trigger pivoted in the pistol-frame in front of the axis of the hammer having a rearward projection thereon adapted to directly engage the toe of the hammer and adapted to cock and release the hammer by the movement of the trigger, substantially as and for the purpose set forth.

2. The combination in a pistol, of a revolving cylinder, a spring-actuated hammer pivoted in the frame of the pistol, a forwardly-projecting toe on the hammer, a trigger pivoted in the pistol-frame in front of the hammer and under the cylinder, a projection on the trigger extending rearwardly from the pivot thereof and adapted to directly engage the toe on the hammer and adapted to cock and release the hammer by the movement of the trigger, and a spring-actuated dog adapted to engage a ratchet on the cylinder and rotate it when the trigger is drawn back, substantially as and for the purpose set forth.

3. A pistol-trigger having a projection to the rearward of the pivot-opening therein, a downwardly-projecting arm adapted to be engaged when pulling the trigger back to cock the hammer, and a forwardly-projecting arm for moving the trigger forward to disengage the trigger from the toe of the hammer, substantially as and for the purpose set forth.

4. The combination in a revolving pistol, of a frame A, a cylinder C, a barrel B, a hammer D pivoted in the frame A and having a forwardly-projecting toe d' thereon, a spring E engaging the hammer D, a trigger F pivoted in the frame A below the cylinder C, a rearward projection f on said trigger, adapted to engage the toe d' on the hammer D, an arm f^1 projecting forwardly from the trigger-pivot f', a trigger and cylinder spring H, and a cylinder-rotating dog I, substantially as and for the purpose set forth.

654,851. SEMAPHORE-OPERATING MECHANISM. JUDSON SHOECRAFT, Eskridge, Kans., assignor to Charles C. Gardiner, Bradford, Kans. Filed Oct. 10, 1899. Serial No. 733,210. (No model.)



Claim.—1. The combination with a semaphore, of a follower connected therewith and comprising two separable parts movable toward and away from each other, electrically-operated means in the path of movement of the parts of the follower for engagement by the parts of the follower, said electrically-operated means being adapted to move the follower and to move the semaphore in one direction, electrically-operated means for locking the parts of the follower to the moving means and for releasing the parts of the follower from the moving means for subsequently breaking the circuit of the moving means, means for holding the follower intermediate of the limits of its motion, means for releasing the follower to allow it to reach the limit of its continued movement, and means for moving the parts of the follower into engagement with the moving means.

2. The combination with a semaphore, of a follower connected therewith and comprising a plurality of separate parts, said follower having a definite path of movement, electrically-operated means for moving the follower in one direction to the limit of its movement, electrically-operated means for moving the parts of the follower into engagement with its moving means, electrically-operated means for releasing the parts of the follower from its moving means at said limit of movement, means in the path of the return movement of the follower for engagement thereby to break the circuit of the moving means, means for supporting the follower to hold the circuit broken, electrically-operated means for releasing the follower to permit its movement, means for simultaneously closing the circuit of the moving means, and means for subsequently throwing the parts of the follower into operative relation with the moving means.

3. The combination with a semaphore, of an electric motor, a circuit including said motor, a screw-shaft adapted for rotation by the motor, a separable follower adapted to move alternately with and independently of the screw-shaft, electrically-operated means for closing the follower upon the screw-shaft, means for releasing the follower from the shaft, connections between the follower and the semaphore, and a circuit-breaker for breaking the circuit of the motor and the follower-operating means, said circuit-breaker being adapted for operation by engagement of the follower.

4. The combination with a semaphore, of an electric motor, a circuit including said motor, a screw-shaft adapted for rotation by the motor, a separable follower adapted to move alternately with and independently of the screw-shaft, electrically-operated means for closing the follower upon the screw-shaft, said means being in the circuit of the motor, connections between the follower and the semaphore, a circuit-breaker for breaking the motor-circuit and the circuit of the follower-closing means, said circuit-breaker being adapted for operation by engagement with the follower.

5. The combination with a semaphore, of an electric motor, a circuit including said motor, a screw-shaft adapted for rotation by the motor, a separable follower adapted to move alternately with and independently of the screw-shaft, means for holding the parts of the follower normally separated and free from the screw-shaft, electrically-operated means for closing the follower upon the screw-shaft and for holding it in operative relation to the screw-shaft, said means being in the circuit of the motor, and a circuit-breaker for breaking said circuit.

6. The combination with a semaphore, of an electric motor, a screw-shaft adapted for rotation by the motor, an electric circuit for the motor, a separable follower adapted for engagement with the screw-shaft to move alternately with and free thereof, electrically-operated means for closing the follower upon the screw-shaft and for holding it in engagement with the screw-shaft, said means being in the motor-circuit, means in the path of the follower for engagement thereby to open the circuit of the closing and holding means and for initially opening the motor-circuit, means in the path of free movement of the follower for engagement of the follower to subsequently open the motor-circuit, means for holding the follower to maintain said circuit at a different point open, and means for releasing the follower to permit closing of the circuit.

7. The combination with a semaphore, of an electric motor, a circuit including said motor, a screw-shaft adapted for rotation by the motor, a split nut adapted to move alternately free of and with the shaft, means for engaging the nut with the shaft, means for holding the nut in engagement with the shaft, means for releasing the nut with respect to the shaft, and connections between the nut and semaphore.

8. In a semaphore-operating mechanism, a block, connections between the block and a semaphore, hangers carried by the block, nut-sections carried by the hangers, a screw-shaft adapted for engagement by the nut-sections, means for rotating the shaft, means for moving the nut-sections into engagement with the shaft, and electrically-operated means for holding the nut-sections in engagement with the shaft.

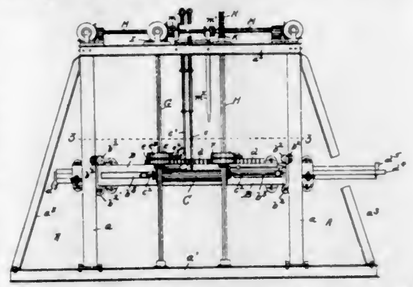
9. In a semaphore-operating mechanism, the combination with a screw-shaft, and means for rotating it, of a block, connections between the block and semaphore, hangers connected with the block, a nut-section connected with each hanger, means for moving the nut-sections into engagement with the shaft, a cam-shaft adjacent a nut-section, a wedge adapted for insertion between the cam of the cam-shaft and the adjacent nut-section to hold the nut-section in engagement with the screw-shaft, an armature connected with the cam-shaft for moving it into and out of operative relation to the adjacent nut-section, an armature connected with the wedge for moving it into and out of its operative position, and an electromagnet for each armature.

10. In a semaphore-operating mechanism, the combination with a shaft and means for operating it, of a follower having connections with a semaphore and adapted for movement into and out of operative relation to the shaft, a cam-shaft adjacent the follower, a wedge adapted for insertion between the cam-shaft and the follower, to hold the follower in operative relation with the first-named shaft, an armature connected with the cam-shaft for moving its cam into and out of operative position, an armature connected with the wedge for moving it into and out of operative position, and an electromagnet for each armature.

11. The combination with a follower adapted for connection with a semaphore, of means for moving the follower, said follower being movable into and out of operative relation to its moving means, a cam adjacent the follower, a wedge adapted for insertion between the cam and the follower to hold the follower in operative relation to its moving means, an armature operatively connected with the cam for moving it into and out of operative position, an armature connected with the wedge for moving it into and out of operative position, and an electromagnet for each armature.

654,852. APPARATUS FOR OPERATING STONE-SAWS. CHAS E. SMITH, Chattanooga, Tenn. Filed May 17, 1899. Serial No. 717,207. (No model.)

Claim.—1. The combination, with the supporting-frame, of a saw-frame support adjustably mounted thereon; a saw-frame mounted to reciprocate on its support; a rack-bar carried by the saw-frame; a cog-wheel rotatably mounted on the saw-frame support and adapted to be engaged by the rack-bar; a shaft splined in the cog-wheel; mechanism, connected with the shaft, adapted to actuate the adjusting mechanism of the saw-frame support; and means for reciprocating the saw-frame on its support.



2. The combination, with the supporting-frame, of a saw-frame support adjustably mounted thereon; a saw-frame mounted to reciprocate on its support; a rack-bar carried by the saw-frame; a cog-wheel rotatably mounted on the saw-frame support and adapted to be engaged by the rack-bar; a shaft splined in the cog-wheel; mechanism, connected with the shaft, adapted to actuate the adjusting mechanism of the saw-frame support; and an engine-cylinder, mounted on the saw-frame support, adapted to reciprocate the saw-frame on its support.

3. The combination, with the supporting-frame, of a saw-frame support adjustably mounted thereon; a saw-frame mounted to reciprocate on its support; means for reciprocating the saw-frame; a rack-bar carried by the saw-frame; a cog-wheel adapted to be actuated by the rack-bar; a pawl-carrying plate rotatably mounted to travel with the cog-wheel; a ratchet-wheel rotatably mounted to travel with the pawl-carrying plate; adjustable studs carried by the cog-wheel, adapted to engage the pawl-carrying plate and cause it to rotate with the cog-wheel during a portion of its stroke; and mechanism connecting the ratchet-wheel with the adjusting mechanism of the saw-frame support whereby actuation of the ratchet adjusts the saw-frame support.

654,858. SPRINKLER-HEAD. CYRUS E. SMITH, Fall River, Mass., assignor of one-half to Edward O. Ely, Boston, Mass. Filed Jan. 8, 1900. Serial No. 661. (No model.)



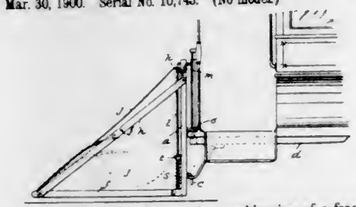
Claim.—1. In a sprinkler-head, a body portion provided with a valve-seat, a main valve, means to retain it seated and rendered operative to release the valve upon a predetermined rise in temperature, and a manually-movable auxilliary valve permanently mounted on the body portion and adapted to nearly close the seat when the valve has been unseated.

2. In a sprinkler-head, a body portion provided with a diaphragm having a discharge-opening therein, a closure for said opening, means to normally maintain the closure tightly in said opening, to prevent the escape of fluid therethrough, and a manually-movable auxiliary closure permanently mounted to slide on the body portion and adapted to partially close the opening in the diaphragm when the main closure is withdrawn.

3. In a sprinkler-head, a body portion having a discharge-opening and an annular wall, a valve for said opening, a strut to normally maintain said valve in position to tightly close the opening, and an auxiliary valve permanently mounted on the body portion and accessible from within the annular wall of the body and manually-movable into position to nearly close the discharge-opening when the main valve is removed.

4. In a sprinkler-head, a valve, means to normally maintain it in position and to release it upon a predetermined rise in temperature, and manually-actuated antiflooding means permanently connected with the sprinkler, operative only when the valve is unseated, to partially close the valve-opening and serve as a telltale until the valve has been properly replaced.

654,854. CAR-FENDER. GEORGE D. SMITH, Paterson, N. J. Filed Mar. 30, 1900. Serial No. 10,743. (No model.)



Claim.—1. In a car-fender, the combination of a frame, an inclined net or other similar receptacle carried by said frame, the upper portion of said net being adapted to fall or drop, and a latch or latches normally sustaining said net in its inclined position in the frame, substantially as described.

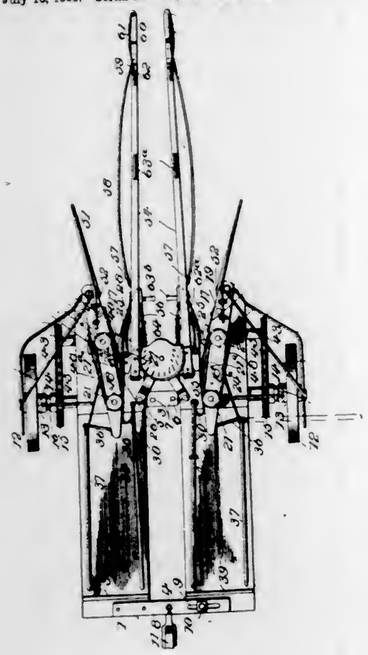
2. In a car-fender, the combination of a frame, an inclined net or other similar receptacle carried by said frame, the upper portion of said net being adapted to fall or drop, a latch or latches normally sustaining said net in its inclined position in the frame, and cushioning means for said net, substantially as described.

3. In a car-fender, the combination of a frame, guiding means mounted therein, an inclined net or other similar receptacle carried by said frame, the upper portion of said net being connected to the guiding means, and a latch or latches normally sustaining said net in its inclined position in the frame, substantially as described.

4. In a car-fender, the combination of a frame, guiding means mounted therein, a net or other similar receptacle carried by said frame, said net being secured to the frame at its front end and having its rear portion elevated and connected to said guiding means, a latch or latches normally sustaining the elevated portion of said net, and cushioning means for the net arranged on said guiding means, substantially as described.

5. In a car-fender, the combination of a frame, guiding means mounted therein, a falling or dropping net or other similar receptacle carried by said frame, said net being secured to the frame at its front end and being connected to said guiding means at its other end, means for normally sustaining said net in its elevated position, and arms projecting rearwardly from the forward portion of said frame and engaging the front section of the net, substantially as described.

654,855. CORN-HARVESTER. JAMES A. SMITH, Lutherville, Md. Filed July 18, 1899. Serial No. 724,289. (No model.)



Claim.—1. The combination, with a pair of connected curved thills for a corn-harvester projecting beyond the animal hitched to the machine in a downward direction, of a curved rod secured to the outer upper corner of each of said thills, and adjustable extensions on the thills, said extensions being in substantial alinement with the curved rods, the curvature of the rods being greater than the curvature of the thills, all for the purpose of picking up the stalks in front of the animal drawing the machine, and guiding them to the cutters, substantially as set forth.

2. A corn-harvester provided with two cutting and delivering mechanisms, means on each side of, and in advance of the animal pulling the harvester for picking up and guiding the corn to said cutters, consisting of a pair of curved adjustable thills, a curved rod secured to each of the thills, the curvature of the rods being greater than the curvature of the thills, and adjustable pick-ups or guides located on the extreme outer ends of the thills, said pick-ups or guides being in substantial alinement with the curved rods, substantially as set forth.

3. A corn-harvester, provided with two cutting and delivering mechanisms mounted on separate platforms, said platforms being transversely adjustable, a serrated rack secured to each platform, curved thills hinged to the platforms, a lever secured to each thill to engage the rack on the platforms, each thill carrying guides or fenders which consist of a curved rod secured to each thill, the curvature of the rods being greater than the curvature of the thills, and adjustable pick-ups or guides, located on the extreme outer ends of the thills, said pick-ups or guides being in substantial alinement with the curved rods, said thills, curved rods and extensions being capable of adjustment up or down, by the rack and lever, substantially as set forth.

4. A pair of curved thills for a corn-harvester having fenders or guides secured thereto, consisting of a curved rod secured to each thill, the curvature of each rod being greater than the curvature of the thills, and an adjustable pick-up or fender located at the tip of each thill, each pick-up made of a single piece of resilient material bent upon itself and secured adjustably to the end of the thill, said pick-ups or fenders being in substantial alinement with the curved rods, substantially as set forth.

5. In a corn-harvester, the combination with a platform made in two sections, said sections being transversely adjustable, each section having a notch in the front end, a pair of curved adjustable thills extending therefrom, each thill having a fender secured to it, each fender consisting of a curved rod rigidly secured to the thill, an adjustable pick-up secured to the extreme outer ends of each thill consisting of a single piece of material bent upon itself, the free end being adjusted by keepers and bolts, a series of spring-guards supported on standards on each platform-section, a frame mounted on each platform-section supporting a rotary knife and an endless apron, gearing deriving its motion from the main shaft operating the same, an adjustable fender projecting downwardly and outwardly from each frame, and a rack supported on each platform behind the cutters and aprons for catching the corn as it is delivered from the apron, substantially as shown and described.

6. In a corn-harvester, the combination with a platform made in two sections, removably connected together to allow of a transverse adjustment between each section, each section being notched at its front end a series of spring-guards supported on standards on the platform-sections a frame mounted on each of the platform-sections supporting a revolving knife and an endless apron, means for operating the same adjustable fenders projecting downwardly and outwardly from the frames, racks arranged behind the cutters and aprons, one member of which is movable, and a pair of adjustable thills extending forwardly from the platform-sections, each thill carrying a curved fender or guide which is located at the apex of the upper and outer sides of each thill in alinement with the spring-guards on the platform-sections, substantially as set forth.

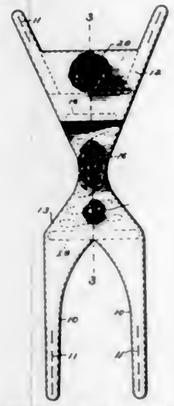
7. In a corn-harvester, the combination with means for picking up turned-down corn in advance of the horse pulling the machine, of two cutting mechanisms, each mounted on separate platforms, and adjustably held together by a sleeve locked by bolts to the ends of a shaft projecting from each platform, and a plate rigid on one section, and slotted at the opposite end and adjustably held to the other section by locking-bolts, substantially as set forth.

8. In a corn-harvester, the combination with a platform made in two sections, and transversely adjustable by a sleeve or sleeves, locked to lugs projecting therefrom, a plate secured to one section and adjustably secured to the other, and a seat, mounted on spring-standards, one of which is secured to each sectional platform, the two meeting and being pivotally connected to the under side of the seat, substantially as set forth.

9. In a corn-harvester, the combination with a platform, a holder, means for cutting and means for guiding corn to the holder, said holder consisting of a pair of parallel curved arms one of said arms being secured at the front end to the frame which supports the means for guiding the corn after it has been cut, the rear end of said arm being secured to the platform, the opposite or outer parallel arm being pivotally secured to the guard-frame, and the free end removably secured to the platform in rear of the parallel rods, then extending upwardly and then bent downwardly forming a concave seat for the ends of the corn to rest in, substantially as shown and described.

10. In a corn-harvester, the combination with a platform made in two sections, said sections movably connected together to permit of a transverse adjustment, each platform-section having a notch at the front end, along one edge of which is a stationary knife, a revolving knife carried on a vertical shaft which coacts with the stationary knife, a series of vertical shafts or rollers supported on the platforms, said rollers carrying aprons, a frame for supporting the knife-shaft and the apron shafts or rollers, a series of guards secured to vertical rods rising from the platform-sections, said guards positioned so as to press the corn after it has been cut against the horizontal aprons, gearing connected to the apron-shafts and the revolving knife-shaft, which secures its motion from the main operating-shaft of the machine, curved thills connected to the front of the platform, one to each section, each thill carrying a curved fender, the curvature of which is greater than the curve of the thills, and adjustable tips secured to the outer end of each thill, each tip consisting of a single piece of resilient material bent upon itself, the free end of which is adjustably held by bolts, substantially as shown and described.

654,856. COMBINED SUPPORT AND CATAMENIAL SACK. MARTHA E. STEELE, Cowden, Ill. Filed Aug. 23, 1899. Serial No. 728,239. (No model.)



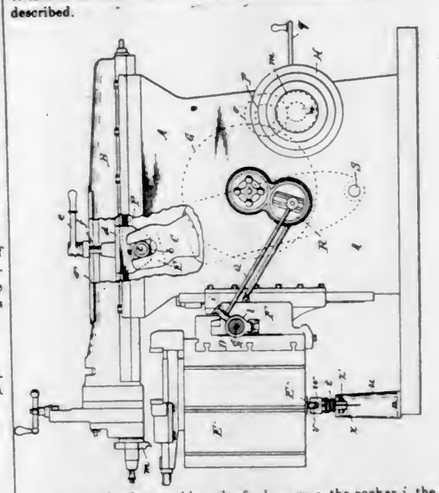
Claim.—In an abdominal support, a bandage, comprising front and rear sections, the front section having its opposite longitudinal edges converging rearwardly, and said section also being centrally and longitudinally bifurcated from the front edge thereof, the opposite edges of the bifurcation being laced, suspending-straps at the opposite front corners of the sections, and a transverse stiffening device located at the rear end of the section, the rear section having its longitudinal edges converging inwardly in opposite directions from the opposite front and rear ends thereof, and provided with a transverse stiffening device at its rear end, suspending-straps at its rear corners, and a detachable connection with the rear end of the front section, and a support for detachable connection with the suspending-straps, substantially as shown and described.

654,857. SHAPING-MACHINE. JAMES C. STEEL, Cincinnati, and PERRIN G. MARCH, Fernbank, Ohio, assignors to the Cincinnati Shaper Company, Cincinnati, Ohio. Filed Feb. 7, 1900. Serial No. 4,334. (No model.)

Claim.—1. In a shaping-machine for operating the ram, an arm pivoted at the lower end and having prongs at the upper end, slots in said prongs, rollers to travel within said slots, a pin upon which are mounted said rollers, said pin being attached to the ram, substantially as and for the purpose described.

2. In a shaping-machine for operating the ram, an arm pivoted in the frame of the machine at the lower end and having prongs at the upper end, slots in said prongs, an adjustable block in the ram, a pin secured to said block, and rollers mounted on said pin and designed to travel on the face of said slot, substantially as described.

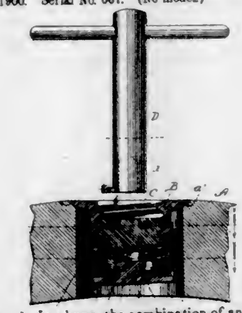
3. In a shaping-machine, as a means of regulating the advance of the feed-screw, a rocker loosely mounted on said feed-screw, a pawl carried by said rocker, a ratchet-wheel keyed to said feed-screw, a sleeve loosely mounted on said ratchet, and covering the teeth of said ratchet, a gap in said sleeve which leaves some of the teeth of said ratchet uncovered, and means for varying the angular position of said sleeve with reference to said pawl, substantially as shown and described.



4. In a shaping-machine, the feed-screw *g*, the rocker *i*, the reversible pawl *j*, the ratchet *k*, the sleeve *k'*, having the milled flange *k''*, and the supporting-bracket *l*, substantially as described.

5. In a shaping-machine, a main driving-shaft I, a gear *m*, loosely mounted thereon, a gear *n*, slidingly keyed thereto, a clutching device by means of which the gear *m*, may be caused to be rotated by the gear *n*, a second shaft J, the gears *p* and *o*, keyed thereto, the gear G, for operating the oscillating arm C, means for releasing the gear *n*, from its connection with the gear *m*, and for meshing the gear *n*, with the gear *o*, in combination with the arm C, pivoted at its lower end and operated by the gear G, said arm having prongs at its upper end, provided with slots, rollers to travel within said slots, a pin upon which are mounted said rollers, said pin being adjustably attached to the ram, substantially as and for the purpose described.

654,858. BUNG. CHRISTOPHER STRASSHEIM, Chicago, Ill. Filed Jan. 8, 1900. Serial No. 667. (No model.)



Claim.—1. In a bung, the combination of an internally-threaded sleeve, an externally-threaded plug adjustably screwing into said sleeve and provided on its inner end with a tubular extension having a slot, a sealing-ring on the sleeve, and a compression-plate having extending from it a neck terminating in a head confined in said tubular extension for removably connecting said plate with said plug to compress the ring between the plate and sleeve by turning the plug, substantially as described.

2. In a bung, the combination of an internally-threaded sleeve, an externally-threaded plug adjustably screwing into said sleeve and having a slotted key-socket in its outer end and provided on its inner end with a tubular extension having a slot, a sealing-ring on the sleeve, and a compression-plate having extending from it a neck terminating in a head confined in said tubular extension for removably connecting

said plate with said plug to compress the ring between the plate and sleeve by turning the plug, substantially as described.

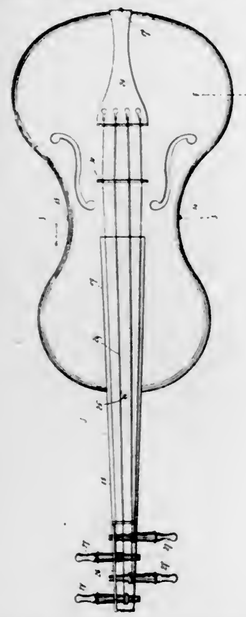
3. In a bung, the combination of an internally-threaded sleeve, an externally-threaded plug adjustably screwing into said sleeve and having a slotted key-socket in its outer end and provided on its inner end with a tubular extension flanged at its lower end and containing a T-shaped slot, a sealing-ring on the base of the sleeve, and a compression-plate having extending from it a neck terminating in a head adapted to enter said tubular extension through said slot for connecting said plate with said plug to compress the ring between the plate and sleeve by turning the plug, substantially as described.

4. In a bung, the combination of an internally-threaded sleeve, an externally-threaded plug adjustably screwing into said sleeve and provided on its outer end with a slotted flange forming a key-socket having an extension under the flange forming a recess extending from one side of the flange-slot, a sealing-ring on the base of the sleeve, and a compression-plate connected with said plug to compress the ring between the plate and sleeve by turning the plug, substantially as described.

5. In a bung, the combination of an internally-threaded sleeve having a rounded base, an externally-threaded plug adjustably screwing into said sleeve and provided on its inner end with a tubular extension having a slot, a sealing-ring on and conforming to the shape of the bottom of the sleeve, and a compression-plate having extending from it a neck terminating in a head confined in said tubular extension for connecting said plate with said plug to compress the ring between the plate and sleeve by turning the plug, substantially as described.

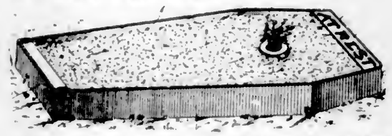
6. A bung comprising, in combination, an internally-threaded sleeve, an externally-threaded plug adjustably screwing into said sleeve and having on its outer end a central key-stud and a flange surrounding said stud to form a key-socket and provided with a slot having a recess extending from one of its sides under the flange, a tubular extension on the inner end of said plug containing a T-shaped slot and provided with an end flange, a sealing-ring on the base of the sleeve, and a compression-plate having extending from it a neck terminating in a head confined in said tubular extension for removably connecting said plate with said plug to compress the ring between the plate and sleeve by turning the plug, substantially as described.

654,859. VIOLIN. JOHN SWENSON, Boonton, N. J. Filed June 17, 1899. Serial No. 720,920. (No model.)



Claim.—As an improved article of manufacture, a violin of the class described, having the body portion formed of sheet metal, a body proper formed of the two plates constituting respectively upper and lower half-sections which plates are respectively formed with the side rims or flanges joined at their meeting edges and constituting together the sides and ends of the body portion, the upper and lower plates of said body portion being interiorly provided with reinforcing sheet-metal strips, and a separate neck portion similarly formed of sheet metal and having its bottom plate secured to the rear portion of the bottom plate of the body portion and its top plate intersected intermediately of its ends by the rear portion of the top plate of the body portion and secured thereto, said rear portion of the top plate of the body portion being bent upright, so that the front portion of the top plate of the neck portion forms an integral metallic finger-board projecting forwardly over the top plate of the body portion, substantially as and for the purpose set forth.

654,860. GRAVE-COPING. GEORGE P. TENNANT, Frostburg, Md., assignor of one-half to Clarance O. Towles, same place. Filed May 2, 1900. Serial No. 15,269. (No model.)

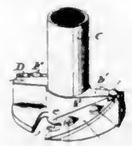


Claim.—1. A grave-coping, comprising an inclosing frame, a transverse brace connecting opposite sides of the frame, and inclined inwardly and upwardly from its opposite ends, which are connected to the lower portion of the frame, and a cup or receptacle carried by an intermediate portion of the brace.

2. A grave-coping, comprising an inclosing frame, a cup or receptacle located intermediate of the sides of the frame, opposite braces connected to the cup, inclined downwardly and outwardly in opposite directions, and provided at their outer ends with upstanding attaching-ears fitted against the inner faces of the respective sides of the frame, and detachable fastenings securing the ears of the frame.

3. A grave-coping comprising opposite side and end pieces, opposite end plates connecting the upper edges of the side pieces, inwardly-directed flanges at the lower edges of the side pieces, an intermediate cup or receptacle, opposite downwardly-inclined braces extending from the cup to the lower edges of the respective side pieces, the lower ends of the braces having upstanding attaching-ears fitted against the inner faces of the respective side pieces, and removable fastenings connecting the ears to the side pieces.

654,861. BORING-TOOL. JOSEPH J. TYNAN, Philadelphia, Pa., assignor, by mesne assignments, to the Pneumatic Tool Improvement Company, same place and Camden, N. J. Filed Aug. 7, 1899. Serial No. 726,406. (No model.)

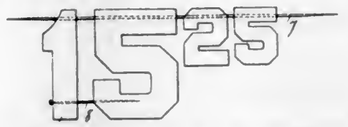


Claim.—1. A cutter for boring cylindrical holes, consisting of a disk head having approximately radial slots, symmetrical bit seats formed by inclines leading to said slots, each at its lower portion of the width of the circumferential path or area operated upon by the bits, cutters or bits mounted on the inclines and presenting through said slots and conforming to the seats in dimensions, each bit being as to its front edge provided with a blank space and a cutting edge, the cutting edge of one bit arranged to operate upon the region passed over by the blank space of the other, and the cutting edges of said bits being straight, substantially as set forth.

2. A cutter for boring cylindrical holes, consisting of a disk head having approximately radial slots, symmetrical bit seats formed by inclines leading to said slots, each at its lower portion of the width of the circumferential path or area operated upon by the bits, cutters or bits mounted on the inclines and presenting through said slots and conforming to the seats in dimensions, each bit being as to its front edge provided with a blank space and a cutting edge, the cutting edge of one bit arranged to operate upon the region passed over by the blank space of the other, the cutting edges of said bits being straight, and a vertically disposed cutting knife mounted upon the periphery of the disk head and projecting below the lower face of the same, substantially as set forth.

3. A cutter for boring cylindrical holes, consisting of a disk head having approximately radial slots, symmetrical bit seats formed by inclines leading to said slots, each at its lower portion of the width of the circumferential path or area operated upon by the bits, cutters or bits mounted on the inclines and presenting through said slots and conforming to the seats in dimensions, each bit being as to its front edge provided with a blank space and a cutting edge, the cutting edge of one bit arranged to operate upon the region passed over by the blank space of the other, the cutting edges of said bits being straight, and a vertically disposed cutting knife adjustably mounted upon the periphery of the disk head and projecting below the lower face of the same, substantially as set forth.

654,862. SIGN-LETTER. HENRY WILLSON, Chicago, Ill. Filed Jan. 13, 1899. Serial No. 702,030. (No model.)



Claim.—1. The combination, with a plurality of sign-letters, each having a body comprising a backing of a substantial thickness of felt or other fibrous material, and a comparatively-stiff facing of paper or paper-board, of a supporting-pin passing through said felt in the plane of the body of the letter and having a pointed end projecting freely therefrom, substantially as described.

2. The combination, with a plurality of sign-letters, each having a body comprising a backing of a substantial thickness of felt or other fibrous material, and a comparatively-stiff facing of paper or paper-board, of a supporting-pin passing through said felt in the plane of the body of the letter to unite the several letters and having each of its ends pointed to engage the article to which the sign is to be attached, substantially as described.

654,863. STICKER-PIN. HENRY WILLSON, Chicago, Ill. Filed Oct. 23, 1899. Serial No. 734,521. (No model.)



Claim.—1. A fastening device for signs, sign-letters, &c., comprising a metallic member having a head or enlargement, a pointed body portion, and a base or tab of paper or the like comprising two parallel sheets or parts united by an adhesive material, one of said sheets or parts being provided on its inner face with an embossed recess to receive the head and adjacent portion of the body of the metallic member, and the other sheet or part being provided on its exposed surface with a coating of adhesive material whereby a flat adhesive surface is obtained, substantially as described.

2. A fastening device for signs, sign-letters, &c., comprising a metallic member having a pointed body portion and a head extending at right angles thereto for a considerable distance laterally thereof, and a base or tab of paper or the like composed of two parallel sheets or parts united by adhesive material, one of said sheets or parts being provided with an embossed recess to receive the head and adjacent portion of the body of the metallic member, and the other sheet or part having its exposed surface coated with adhesive material whereby a flat adhesive surface is obtained, substantially as described.

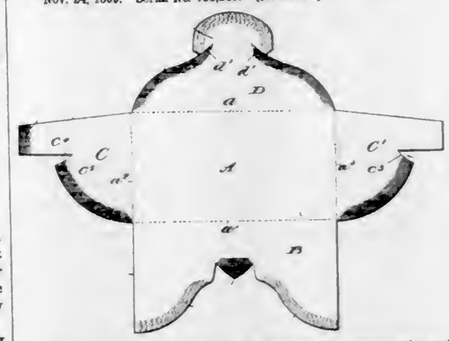
3. A fastening device for signs, sign-letters, &c., comprising a metallic member having a pointed body portion having a notch or short bend therein and having its unpointed extremity at a right angle to the body to form a head and fitting in said notch, and a base or tab of paper or the like composed of two parallel sheets or parts united by adhesive material, one of said sheets or parts being provided with an embossed recess to receive the head and adjacent portion of the body of the metallic member, and the other sheet or part having its exposed surface coated with adhesive material whereby a flat adhesive surface is obtained, substantially as described.

654,864. PROCESS OF OBTAINING BICOLORED HOSIERY. WALLACE WILSON, Philadelphia, Pa. Filed Apr. 9, 1900. Serial No. 12,106. (Specimens.)

Claim.—1. The process of making bicolored knit hosiery, which consists in knitting the leg and foot of undyed woolen yarn and the tips of the heel and toe of undyed mercerized cotton; and then subjecting the entire stocking to a dyeing process with a woolen dye of the ground color desired, which will be rejected by mercerized cotton, and with a mercerized-cotton dye of the contrasting color desired, which will be rejected by wool, substantially as described.

2. The process of making bicolored knit hosiery, which consists in knitting the leg and foot of undyed woolen yarn and the tips of the heel and toe of undyed mercerized cotton; and then subjecting the entire stocking to a dyeing process with a woolen dye of the ground color desired, which will be rejected by mercerized cotton; and thereafter subjecting it to a second dyeing process with a mercerized-cotton dye of the contrasting color desired, which will be rejected by wool, substantially as described.

654,865. ENVELOP. WILLIAM T. YOUNGER, St. Louis, Mo. Filed Nov. 24, 1899. Serial No. 738,209. (No model.)



Claim.—1. An envelop comprising among its members the main or central portion, the bottom flap having its outer edge cut away centrally, the side flaps having overlapping upper portions, lower portions adapted to overlap the bottom fold and angular notches between the upper and lower portions forming with the cut-away portion of the bottom flap, a tongue-receiving aperture, and the top flap provided with the anchor-shaped tongue of substantially the width of said aperture, said tongue being adapted to be passed through said aperture and being provided on its outer side with means for sealing it to the inner side of the bottom flap, substantially as described.

2. An envelop comprising among its members, the central portion, the bottom flap having its outer edge cut away to form inwardly-converging edges and a locking-flap between the inner ends of said converging edges, the side flaps having overlapping upper portions, lower portions adapted to overlap the bottom flap, and angular notches between said upper and lower portions forming with the cut-away portions of the bottom flap a tongue-receiving aperture, adjacent to said locking-flap, and the top flap having an anchor-shaped tongue adapted to be passed through said aperture beneath the locking-tongue whereby the outside of said tongue can be sealed to the inside of the bottom flap and the inside of said locking-flap can be sealed to said top flap adjacent to said tongue, substantially as described.

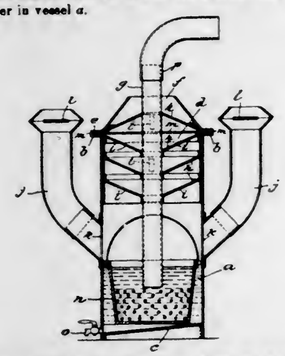
3. An envelop comprising among its members the central portion, the bottom flap having straight side edges of substantially the width of the central portion, and having its lower edge cut away to form inwardly-converging edges, and a locking-flap between the inner ends of said converging edges, the side flaps adapted to fold over the bottom flap, having overlapping upper portions sealed together, and to the upper portions of said bottom flap, lower portions sealed to said bottom flap, and angular notches between said upper and lower portions forming with the cut-away portion of the bottom flap a tongue-receiving aperture, said locking-tongue being gummed on its inner side, and the top flap provided with an anchor-tongue for engaging said aperture, said tongue being gummed on the outer side, whereby said tongue can be sealed to the inner side of the bottom flap and the locking-flap can be sealed to the outside of said top flap, substantially as described.

654,866. DUST-ARRESTER. JAMES ANGUS, Philadelphia, Pa. Filed Jan. 12, 1900. Serial No. 1,202. (No model.)

Claim.—1. In an apparatus for separating dust from air, in combination, a vessel carrying water in its lower end, air-escape pipes connected with said vessel above the water-level, a detachable chamber secured to the upper end of said vessel and furnished with an outlet at its upper end, perforated baffle-plates carried by said chamber, and a dust-pipe passing down through said chamber and baffle-plates and discharging below the level of the water in said vessel.

2. In an apparatus for separating dust from air, in combination, a water-carrying vessel *a*, air-pipes *j* connected with said vessel above the water-level, baffle-plates *l* within said pipes, a removable chamber *d* furnished with an opening in its top, perforated baffle-plates *h*

within said chamber and a dust-pipe *g* passing centrally downward through said chamber secured to said baffle-plates and discharging into the water in vessel *a*.

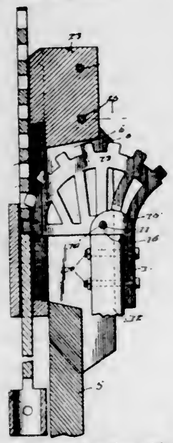


3. In an apparatus for separating dust from air, in combination, a water-carrying vessel *a* having an inclined bottom, a faucet *o*, air-exhaust pipes *j* connected with said vessel above the water-level, baffle-plates *l* within said pipes, a removable chamber *d* extending downwardly into said vessel furnished with an opening in its top, conical perforated baffle-plates within said chamber, a dust-pipe *g* passing centrally downward through said chamber secured to said baffle-plates and discharging below the water-level in said vessel, and a perforated removable basket or bucket, all substantially as and for the purposes set forth.

654,867. PROCESS OF PREPARING ETCHING-GROUNDS. JOHN BAKER, Birmingham, England. Filed Nov. 15, 1897. Serial No. 658,620. (No specimens.)

Claim.—The process of preparing etching-grounds which consists in coating a suitable base with a film of acid-resisting material, perforating said material in accordance with the design to be etched and removing the film from the base after perforation for transfer to a plate to be etched, substantially as described.

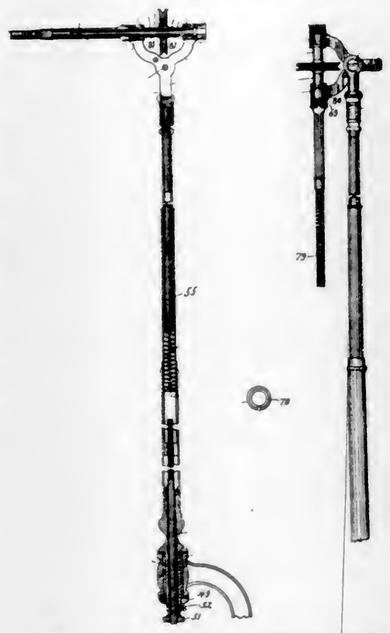
654,868. PUMP. ELDH BALLINGER, Laramie, Ohio. Filed Apr. 27, 1900. Serial No. 14,614. (No model.)



Claim.—1. In a pump the combination with the body portion having a bifurcated upper end, of a handle having a segmental gear journaled between the legs of the bifurcated portion, a plate disposed against the body, said plate having a block disposed between the legs of the body and having a slot opening into the slot of the bifurcation of the body to receive the periphery of the gear, a guide upon the plate and a rack slidably disposed in the guide and engaging the gear, said rack being adapted for attachment of a piston thereto.

2. In a pump, the combination with the body portion having a bifurcated upper end, and ears at the sides of the slot of bifurcation and provided with alining perforations, a pivot-pin engaging one pair of perforations, a segmental gear pivoted on the pin and having a rearwardly-extending lug and a bearing-face at the base thereof, a handle resting with its end against the face and a side against the lug, means for holding the handle against the lug, a plate disposed against the bifurcated portion of the body at the opposite side thereof from the ears said plate having a slot communicating with that of the body and through which the gear projects, a block upon the plate lying between the legs of the body and having perforations for alinement with the perforations of the ears, pins passed through said alining perforations, a loop upon the outer face of the plate, and a rack slidably engaged with the loop and engaged with the teeth of the gear, said rack being adapted for the attachment of a piston-rod to its lower end.

654,869. DENTAL ENGINE. FREDERICK H. BERRY, Milwaukee, Wis. Filed July 14, 1899. Serial No. 723,784. (No model.)



Claim.—1. In a dental engine, the combination, of an upwardly-extending sleeve, a dental-engine standard fitting therein, said standard having a threaded opening at one end, and a rod having a threaded portion engaging the threaded opening, whereby as a rod is turned the standard is raised or lowered.

2. In a dental engine, the combination, of an upwardly-extending sleeve, a two-part standard, the sections thereof telescoping, and the lower section fitting in the sleeve, and the end of said lower section having a threaded opening, a rod having a threaded portion engaging said opening, and a spring interposed between the lower end of the upper section of the standard and a fixed point of the lower section of said standard.

3. In a dental engine, the combination, of a standard, a slotted arm fitting in the standard, a slidable sleeve surrounding the arm and the standard, a dental-engine head pivoted to the arm and provided with a depending stem, which stem, when the head is turned upwardly, is adapted to fit in the slot of the arm, and means acting on the sleeve in order to hold said sleeve in a position to surround the depending stem of the head, when said stem is in the slot of the arm, but permitting said sleeve to be slid out of engagement with the stem so as to allow said stem to be turned out of the slot.

4. In a dental engine, the combination, of a standard, a slotted arm having a depending reduced portion, the latter fitting the standard, a slidable sleeve surrounding the arm and the standard, a dental-engine head pivoted to the arm and provided with a depending stem, which stem, when the head is turned upwardly, is adapted to fit in the slot of the arm, and a spring surrounding the reduced portion of the arm, and bearing at one end against a fixed portion of the sleeve and at its opposite end against the standard.

5. In a dental engine, the combination, of a standard, a slotted arm fitting in the standard, a slidable sleeve surrounding the arm and the standard, the upper end of said sleeve being rounded or beveled, a dental-engine head pivoted to the arm and provided with a depending stem, one corner of the lower end of said stem being rounded or beveled, and said stem, when the head is turned upwardly, adapted to fit in the slot of the arm, and means acting on the sleeve in order to hold said sleeve in position to surround the depending stem of the head when said stem is in the slot of the arm, but permitting said sleeve to be slid out of engagement with the stem so as to allow said stem to be turned out of the slot.

6. In a dental engine, the combination, of a dental-engine head, the arms thereof provided at their ends with tubes or cylinders, bearing-sleeves, said sleeves extending into the tubes or cylinders, rounded beads forming normally the only points of contact between the sleeves and the bores of the cylinders, a shaft extending into the bearing-sleeves, and a pulley connected fast to the shaft.

7. In a dental engine, the combination of a dental-engine head, the arms thereof provided at their ends with tubes or cylinders, bearing-sleeves, said sleeves extending into the tubes or cylinders, rounded beads forming normally the only points of contact between the sleeves and the bores of the cylinders, a shaft extending into the bearing-sleeves, a pulley connected fast to the shaft, and means for preventing the bearing-sleeves from turning in a direction parallel to the plane of rotation of the pulley.

8. In a dental engine, the combination, of a dental-engine head, the arms thereof provided at their ends with tubes or cylinders, bearing-sleeves provided with rounded beads, said sleeves extending into the tubes or cylinders, and the rounded beads thereof contacting with the interior of said tubes or cylinders, and said bearing-sleeves also provided with grooves or recesses, a shaft extending into the bearing-sleeves, a pulley connected fast to the shaft, and pins extending from the tubes or cylinders and engaging the grooves of the bearing-sleeves, whereby said sleeves are prevented from rotating in the same plane of rotation as the pulley.

654,870. EYEGLASSES. HARRY H. BOYD, Philadelphia, Pa. Filed Apr. 23, 1900. Serial No. 13,844. (No model.)



Claim.—In an eyeglass, the combination with the lens, of a strap A, for uniting the lens to the bridge or other device, a guard *c* formed on said strap adapted to embrace the edge of the lens, an ear extending from one side of the said guard, a boss *e*, formed on said ear adapted to an opening through the lens of a length equal to the thickness of the lens against which the head of the securing-screw is adapted to bear to relieve the lens of the clamping strain, a screw-threaded bore formed in said boss, and a screw *g*, adapted to the said bore, having an enlarged head which embraces the end of the boss and the side of the lens opposite the ear, substantially as described.

654,871. ELECTRIC CABLE. JOHN Y. BUCHANAN, Edinburgh Scotland. Filed May 18, 1900. Serial No. 17,147. (No model.)



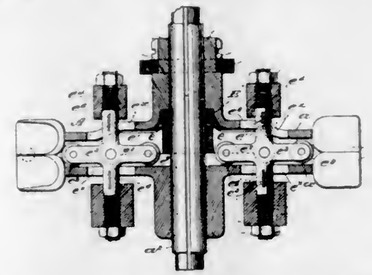
Claim.—1. An electric cable comprising a conductor having alternate coatings of gutta-percha and a compound of india-rubber and ozocerite the innermost and outermost of such coatings being of gutta-percha.

2. An electric cable comprising a conductor a coating of gutta-percha around the conductor a coating of a compound of india-rubber and ozocerite around the gutta-percha coating and another coating of gutta-percha around the compound coating substantially as described.

654,872. HYDRAULIC MOTOR. ELMER F. CASSEL, Seattle, Wash. Filed Feb. 28, 1900. Serial No. 6,821. (No model.)

Claim.—1. A hydraulic motor comprising a shaft, a motor-body mounted thereon, and weighted members pivotally supported by said shaft and arranged to automatically vary the relative positions of said body on said shaft, said members being operated by the centrifugal force developed in the rotation of said shaft, as set forth.

2. A hydraulic motor comprising a motor-body provided with buckets, and differentially-weighted members arranged to move said buckets out of the line of impact, said members being put into operation by the centrifugal force developed in the rotation of said motor, as set forth.



3. A hydraulic motor comprising a motor-body carrying buckets, arms or members carried by said motor, and movable weights mounted on said arms or members, whereby said buckets will be moved out of the line of impact by the centrifugal force developed in the rotation of said motor, as set forth.

4. A hydraulic motor comprising a body formed in sections and carrying buckets, weighted levers arranged to be operated by the centrifugal force developed in the rotation of said body and extending between said sections, and means for holding said sections normally together, as set forth.

5. A hydraulic motor comprising a body formed in sections, levers mounted between said sections and arranged to be operated by the centrifugal force developed in the rotation of said body, said levers having differentially-weighted ends, and means for holding said sections normally together.

6. A hydraulic motor comprising a shaft, a motor-body formed in sections and mounted on said shaft, a hub keyed to said shaft, levers mounted in said hub and arranged to be operated by the centrifugal force developed in the rotation of said body, said levers engaging said sections, said levers having differentially-weighted ends, and means for holding said sections normally together, as set forth.

7. A hydraulic motor comprising a shaft, a motor-body formed in sections and mounted on said shaft, a hub keyed to said shaft, levers mounted in said hub and arranged to be operated by the centrifugal force developed in the rotation of said body, said levers having differentially-weighted ends, arms or members extending from said levers between said sections, and means for holding said sections normally together.

8. A hydraulic motor comprising a shaft, a motor-body formed in sections and mounted on said shaft, a hub keyed to said shaft and having brackets, levers mounted in said brackets and arranged to be operated by the centrifugal force developed in the rotation of said body, said levers having differentially-weighted ends, arms or members formed with said levers and extending between said sections, antifriction-rollers mounted in the ends of said arms or members, and means for holding said sections normally together, substantially as set forth.

9. A hydraulic motor comprising a shaft, a motor-body formed in sections and mounted on said shaft, a hub keyed to said shaft, levers mounted in said hub and arranged to be operated by the centrifugal force developed in the rotation of said body, said levers engaging said sections, weights adjustably secured on said lever, and means for holding said sections normally together, substantially as set forth.

10. A hydraulic motor comprising a shaft, a motor-body formed in sections and mounted on said shaft, a hub keyed to said shaft, levers mounted in said hub and arranged to be operated by the centrifugal force developed in the rotation of said body, said levers engaging said sections, weights adjustably mounted upon said levers, means for holding said weights in any adjusted position, and means for holding said sections normally together, substantially as set forth.

11. A hydraulic motor comprising a shaft, a motor-body formed in sections and mounted on said shaft, a hub keyed to said shaft, levers mounted in said hub and arranged to be operated by the centrifugal force developed in the rotation of said body, said levers having opposite threaded ends, said levers engaging said sections, weights adjustably mounted on said levers, nuts working on said threaded ends, and means for holding said sections normally together, substantially as set forth.

12. A hydraulic motor comprising a shaft, a motor-body mounted on said shaft and formed in sections, each of said sections being provided with opposite coincident slots, a hub keyed to said shaft, levers mounted in said hub and arranged to be operated by the centrifugal

force developed in the rotation of said body, said levers being extended through said slots, and having arms or extensions engaging said sections, differential weights mounted on the ends of said levers, and means for holding said sections normally together, substantially as set forth.

13. A hydraulic motor comprising a motor-body formed in sections and provided with buckets, weighted levers arranged to be operated by the centrifugal force developed in the rotation of said motor-body, said levers having angular portions extending between said sections, and means for holding said sections normally together, as set forth.

14. A hydraulic motor comprising a shaft, a motor-body mounted thereon and carrying buckets, sleeves carried by said motor-body, coil-springs secured within said sleeves, a yoke engaged by said springs, and weighted levers connected and arranged to be operated by the centrifugal force developed in the rotation of said motor-body and designed to move said buckets out of the line of impact and against the action of said springs, substantially as set forth.

15. A hydraulic motor comprising a shaft, a motor-body mounted thereon and carrying buckets, sleeves carried by said motor-body, a yoke, coil-springs secured within said sleeves and having hooked ends engaging said yoke, means for adjusting the tension of said springs, and weighted levers connected and arranged to be operated by the centrifugal force developed in the rotation of said motor-body and designed to move said buckets out of the line of impact and against the action of said springs, substantially as set forth

16. A hydraulic motor comprising a shaft, a motor-body formed in sections and carrying buckets, sleeves carried by one of said sections, a yoke carried by the other section, springs secured within said sleeves and engaging said yoke, and means for automatically separating said sections, whereby said buckets are moved out of the line of impact, substantially as set forth.

17. A hydraulic motor comprising a shaft, a motor-body formed in sections and carrying buckets, bosses formed in one of said sections, elongated sleeves mounted in said bosses and projecting through coincident openings in the opposite section, a yoke carried by the latter, coil-springs secured in said sleeves and engaging said yoke, and means for automatically separating said sections, whereby said buckets are moved out of the line of impact, substantially as set forth.

18. A hydraulic motor comprising a shaft, a motor-body formed in sections, a ring-like yoke having lugs or pins engaging the hub of one of said sections, springs carried by the other section and engaging said yoke, and means for automatically separating said sections, whereby said buckets are moved out of the line of impact, substantially as set forth.

19. A hydraulic motor comprising a shaft, a motor-body formed in sections and carrying buckets, sleeves carried by one of said sections, a yoke carried by the other section, coil-springs carried by said sleeves, means for adjusting the tension of said springs, and means for automatically separating said sections, whereby said buckets are moved out of the line of impact, substantially as set forth.

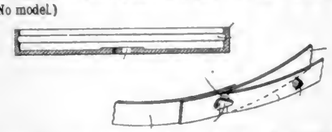
20. A hydraulic motor comprising a shaft, a motor-body formed in sections and carrying buckets, sleeves loosely mounted in one of said sections, springs located in said sleeves and having threaded ends engaging the latter, a yoke engaged by the free ends of said springs, and means for automatically separating said sections, whereby said buckets are moved out of the line of impact, substantially as set forth.

21. A hydraulic motor comprising a shaft, a motor-body formed in sections and carrying buckets, sleeves mounted in one of said sections and having closed ends provided with threaded apertures, coil-springs located in said sleeves and having threaded ends in engagement with said apertures, a yoke engaged by the free ends of said springs, and means for automatically separating said sections, whereby said buckets are moved out of the line of impact, substantially as set forth.

22. A hydraulic motor comprising a shaft, a motor-body formed in sections and carrying buckets, one of said sections having bosses formed therewith provided with recesses in their ends, sleeves mounted in said bosses and having a nut-like closed end provided with a threaded aperture, a pin carried by said sleeve, a spring arranged to normally hold said pin in engagement with one of said recesses, means for holding said pin as against the action of said spring, springs located in said sleeves and having threaded ends in engagement with the apertures thereof, a yoke engaged by said springs, and means for automatically separating said sections, and moving said buckets out of the line of impact, substantially as set forth.

23. A hydraulic motor comprising a motor-body carrying buckets, differential weights mounted to rotate with said body in such manner that an increase in the radius of action of the controlling-weights will result in a decrease in the radius of action of the resisting-weights and means operated by said weights, whereby said buckets will be moved out of the line of impact, as set forth.

654,873. MAINSPRING-FASTENER FOR WATCHES. DUANE H. CHURCH, Newton, Mass. Filed Apr. 14, 1899. Serial No. 712,971. (No model.)



Claim.—1. The combination of a spring and a barrel, of which elements one is formed with a continuous groove and the other is formed with a projection to slide in said groove, the spring and barrel having a free and unobstructed frictional movement relative to each other, whereby said spring and barrel are held against axial movement relatively each to the other.

2. The combination of a spring and barrel said spring having a tension device, of which elements one is formed with a continuous groove and the other is formed with a projection to slide in said groove, the spring and barrel having a free and unobstructed frictional movement relative to each other, whereby said spring and barrel are held against relative axial movement.

3. The combination of a mainspring, a barrel and a supplemental or drag spring for frictionally connecting the mainspring with the barrel, said barrel having a continuous internal groove, and said main and drag springs having one or more projections extending into said groove, whereby said springs and barrel will be permitted to have a free and unobstructed frictional movement relatively to each other and will be prevented from having a relative axial movement.

4. The combination of a mainspring, a barrel, a supplemental or drag spring for frictionally connecting the mainspring with the barrel, and means formed on each of said elements and coöperating with each other for preventing the springs from having an axial movement relative to the barrel, said means permitting the springs and barrel to have a free and unobstructed frictional movement relatively each to the other.

5. The combination of a barrel, a mainspring, and a supplemental or drag spring extending oppositely to the mainspring and interposed between the mainspring and the barrel to frictionally connect them, but permitting movement in either direction, said mainspring having at its end a rearwardly-projecting tongue or lip, said drag-spring having its end removably engaged with said tongue or lip, said tongue or lip also serving to retain the spring from vertical movement relatively to the barrel.

6. The combination of an internally-grooved barrel; a mainspring, having its outer end provided with a rearwardly-extending tongue or lip; a drag-spring removably secured between the mainspring and said tongue or lip, said drag-spring extending opposite to the mainspring and interposed between it and the barrel, to frictionally connect them; and outwardly-extending projections formed on said drag-spring, said projections and said tongue or lip extending into said groove, being adapted to prevent axial movement of said main and drag springs relatively to said barrel, without preventing movement of said springs in either direction horizontally.

654,874. SASH-CORD GUIDE. JULIUS S. CLARK, Melrose, Mass. Filed Dec. 13, 1899. Serial No. 740,150. (No model.)



Claim.—1. The combination of a window-casing and its stile, a cord-guide affixed to the back of the stile and consisting of a body portion grooved on its front face to form a channel between the body portion and the back of the stile, and cord-pulleys journaled on said body portion at its upper and lower ends.

2. The combination of a sash, a window-casing and its stile, a lower cord-pulley, an upper cord-pulley, a cord attached to the sash and passing upward over the lower pulley, around the upper pulley, and from thence down to the weight, the weight suspended on said cord, and a body-piece journaling both of said pulleys and detachably secured to the stile, said body-piece having an offset portion at its lower end flush with the outer face of the stile, and an upper portion extended up on the back side of the stile.

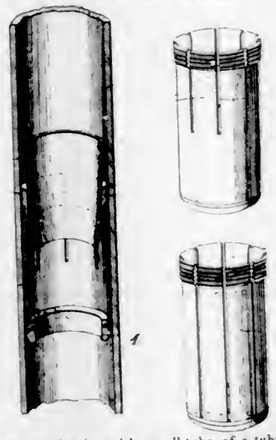
3. A sash-cord guide comprising an elongated body-piece formed for attachment to the stile of a window-casing, a pulley journaled at the lower end of said body-piece, a second pulley journaled at the upper end of said piece, and an intermediate pulley journaled on said piece between the said two pulleys.

4. A sash-cord guide comprising an elongated body-piece formed for attachment to the stile of a window-casing and grooved on one side to form a cord-channel, two pulleys journaled on said piece at the upper and lower ends of said groove, respectively, and a third pulley journaled on said piece below the lower one of said two pulleys.

5. A sash-cord guide comprising an integral body-piece having cord-pulleys at its upper and lower ends, a cord-guiding groove extending between said pulleys, and an integral curved wall over the upper pulley, adapted to direct the end of the cord over and behind said pulley.

6. A sash-cord guide comprising a grooved or channeled body portion having a flat face formed to bear on the inner surface of the stile of a window-casing, ears at the upper end of the guide projecting rearwardly from said face, an offset lower end projecting forwardly from the said face and adapted to enter a slot in said stile, cord-pulleys journaled in the said rearwardly-projecting ears and adapted to support a sash-weight at the rear of said body portion, a cord-pulley journaled in the offset end, and an intermediate pulley journaled in the upper portion of the offset end.

654,875. TUBE-WELL. AUGUST D. COOK, Lawrenceburg, Ind. Filed Nov. 25, 1898. Serial No. 697,403. (No model.)



Claim.—The combination with a well-tube, of a tubular anchor comprising a cylindrical body having its upper end flared and provided with kerfs or slits forming spring-tongues, a ring having an annular flange or shoulder arranged to receive the lower end of said body, serrated jaws secured to said tongues and having reduced flanged portions arranged to receive the latter, and a conical spreader arranged to spread said tongues.

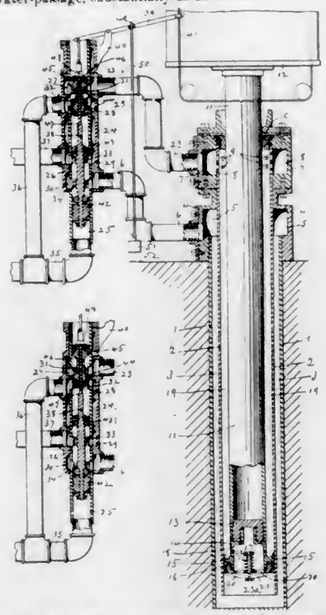
654,876. PLUNGER-ELEVATOR. JOHN A. DEAN, Worcester, Mass. Filed Sept. 23, 1899. Serial No. 731,395. (No model.)

Claim.—1. In a plunger-elevator, the combination of an outer cylinder, an inner cylinder united at its upper end to said outer cylinder and having its lower end opening into said outer cylinder, a plunger inclosed in said inner cylinder, an annular space between said cylinders, a water supply pipe communicating with said annular space, substantially as described.

2. In a plunger-elevator, the combination of an outer cylinder, an inner cylinder united to said outer cylinder at its upper end and having its lower end open, a plunger inclosed in said inner cylinder, an annular space between the outer and inner cylinders, a water-supply pipe communicating with said annular space, an inclosed annular space between said inner cylinder and said plunger, a water-passage connecting said annular space around the plunger with the inner cylinder and a check-valve closing said water-passage, substantially as described.

3. In a plunger-elevator, the combination of an outer closed cylinder, an inner cylinder communicating at the lower end with said outer cylinder, a plunger inclosed in said inner cylinder with an annular space between said cylinders and an annular space between said inner cylinder and said plunger, a water-pipe communicating with the annular space between said cylinders, a pipe communicating with the annular space between said inner cylinder and said plunger, and a valve mechanism for controlling the passages in said water-pipes, substantially as described.

4. In a plunger-elevator, the combination with the outer closed cylinder 1 and the inner cylinder 2 open at its lower end, and a plunger inclosed in said inner cylinder and having a flange fitting said inner cylinder with an annular space 3 between said cylinder and an annular space 19 between said inner cylinder and said plunger, of a water-pipe communicating with the annular space between said cylinders, a water-pipe communicating with the annular space between said inner cylinder and said plunger, valve mechanism for controlling the passages in said water-pipes, a water-passage between said annular space 19 and the space beneath said plunger and a check-valve closing said water-passage, substantially as described



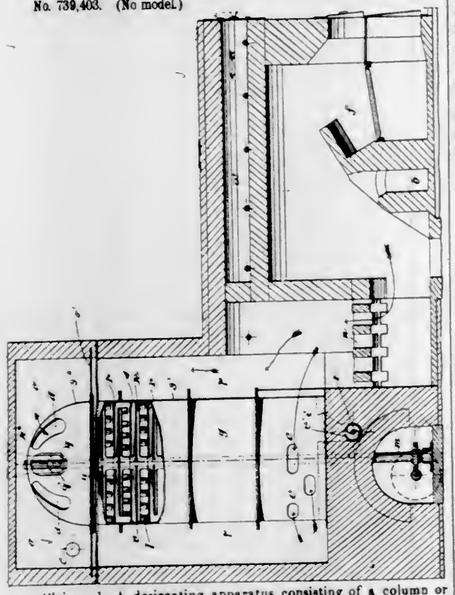
5. In a plunger-elevator, the combination of an outer closed cylinder 1, a shell 4 attached to the upper end of said cylinder and inclosing an annular chamber 5 communicating with said cylinder, a shell 7 attached to said shell 4 and inclosing an annular chamber 8, an inner pipe 2 having its upper end attached to said shell 7 and communicating at its lower end with said outer cylinder, water-pipes communicating with the annular chambers 5 and 8, valve mechanism for controlling the passages in said pipes, a plunger inclosed in said inner cylinder and having a flange fitting said inner cylinder, a water-passage between the spaces above and below said flange and a check-valve by which said water-passage is closed, substantially as described.

6. In a plunger-elevator having an outer and an inner cylinder and a plunger sliding in said inner cylinder, a valve mechanism for controlling the water-supply and exhaust comprising a valve-stem having a reciprocating motion, valves carried by said valve-stem, a spool held on said valve-stem and capable of a limited sliding motion thereon and valves carried by said spool whereby the reciprocating motion of said valve-stem will impart a less reciprocating movement to said spool, substantially as described.

7. In a plunger-elevator, the combination with an outer and an inner cylinder communicating at their lower ends, a flanged plunger acting in said inner cylinder with a water-passage connecting the opposite sides of said flanged plunger, and a check-valve closing said water-passage, as described, of a valve-cylinder, an exhaust-pipe, a water-supply pipe, a pipe leading from said valve-cylinder to said outer cylinder, a pipe leading from said valve-cylinder to said inner cylinder, a pipe connecting the upper end of said cylinder with said exhaust-pipe and a valve mechanism by which the passages in said pipes are controlled, substantially as described.

8. In a plunger-elevator, the combination of a closed outer cylinder, an inner cylinder communicating with the outer cylinder at its lower end, a flanged plunger inclosed in said inner cylinder forming an inclosed annular space around said plunger, a water-passage between said annular space and beneath the plunger, a check-valve closing said water-passage, water-supply and exhaust pipes connected with said outer cylinder, a water-passage from the annular space around said plunger to the exhaust-pipe and a valve mechanism for opening and closing said passages, whereby said annular space is emptied into or filled from said exhaust-pipe, substantially as described.

654,877. DESICCATING APPARATUS. GASTON DEVAUX, Breteuil, and HENRY DIEDRICH, Paris, France. Filed Dec. 6, 1899. Serial No. 739,403. (No model.)

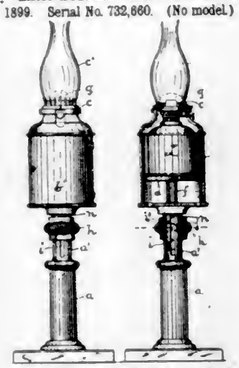


Claim.—1. A desiccating apparatus consisting of a column or chamber provided at or near its lower portion with inlet-openings, a dome or cap on the top of said column and communicating therewith and provided with outlet-openings, a series of parallel plates in the column—one above the other and each provided with a central opening, a second series of parallel plates alternately arranged with the plates of the first-mentioned series and each provided near its outer periphery with holes or openings, a revolving shaft penetrating said plates and column, a series of arms mounted on said shaft and between adjacent plates and provided with downwardly-extending pedals, the pedals of one series being arranged in opposite direction to the pedals of the adjacent series, a chamber or channel surrounding the column, a second chamber or channel surrounding the dome or cap and provided with an exhaust-outlet, said second-mentioned chamber or channel being separated from the first-mentioned chamber or channel but communicates with the dome, and a furnace communicating with the first-mentioned chamber or channel, substantially as described.

2. A desiccating apparatus consisting of a column or chamber provided at or near its lower portion with inlet-openings, a dome or cap on the top of said column and communicating therewith and provided with outlet-openings, a series of parallel plates in the column—one above the other and each provided with a central opening, a second series of parallel plates alternately arranged with the plates of the first-mentioned series and each provided near its outer periphery with holes or openings, a revolving shaft penetrating said plates and column, a series of arms mounted on said shaft and between adjacent plates and provided with downwardly-extending pedals, the pedals of the one series being arranged in opposite direction to the pedals of the adjacent series, a chamber or channel surrounding the column, a second chamber or channel surrounding the dome or cap and provided with an exhaust-outlet, said second-mentioned chamber or channel being separated from the first-mentioned chamber or channel but communicates with the dome, a furnace communicating with the first-mentioned chamber or channel, a hopper in the second-mentioned chamber or channel communicating with the dome, and a second hopper in the bottom of the column and communicating with the exterior of the apparatus, substantially as described.

3. A desiccating apparatus consisting of a column or chamber provided at or near its lower portion with inlet-openings, a dome or cap on the top of said column and communicating therewith and provided with outlet-openings, a series of parallel plates in the column—one above the other and each provided with a central opening, a second series of parallel plates alternately arranged with the plates of the first-mentioned series and each provided near its outer periphery with holes or openings, a revolving shaft penetrating said plates and column, a series of arms mounted on said shaft and between adjacent plates and provided with downwardly-extending pedals, the pedals of one series being arranged in opposite direction to the pedals of the adjacent series, a chamber or channel surrounding the column, a second chamber or channel surrounding the dome or cap and provided with an exhaust-outlet, said second-mentioned chamber or channel being separated from the first-mentioned chamber or channel but communicates with the dome, a furnace communicating with the first-mentioned chamber or channel, a hopper communicating with the dome, an endless screw intermediate the hopper and dome, and cooperating with said hopper, a second hopper in the bottom of the column, a discharge-tube communicating with said second hopper, and an endless screw in said discharge-tube, substantially as and for the purposes described.

654,878. LAMP-HOLDER. HENRY L. DE ZENG, Geneva, N. Y. Filed Oct. 5, 1899. Serial No. 732,660. (No model.)



Claim.—1. A lamp-holder comprising a pedestal formed with an internal guide, a case mounted rigidly on said pedestal and provided with a door, a vertically-movable stem in said guide and extending into said case, a lamp-support fastened to the upper end of said stem whereby the lamp is completely housed by said case, said support being detached from the lamp, and a vertically-movable collar on the pedestal and connected to the stem to elevate and lower the lamp-support, and provided with means to lock said support in its elevated position as set forth.

2. A lamp-holder consisting of a pedestal, a vertically-movable lamp-support sustained on said pedestal, means for controlling the elevation of said support, a chimney-holder supported on the pedestal, and gages on the lamp-support for adjusting the position of the lamp in relation to the chimney-holder as set forth.

3. A lamp-holder consisting of a pedestal, a vertically-movable lamp-support sustained on said pedestal, means for controlling the elevation of said support, a lamp-inclosing case mounted on said pedestal, a chimney-holder mounted on said case, and gages on the lamp-support for adjusting the position of the lamp in relation to the chimney-holder as set forth.

4. A lamp-holder consisting of a pedestal formed with a supplemental post of cylindrical shape and with a vertical guide in said post, and a vertical slot and lateral slot extending therefrom in the post, a vertically-movable stem in the said guide, a lamp-support mounted on said stem, a vertically-movable collar on the aforesaid post for lifting the lamp-support and provided with a lug engaged with the aforesaid slot, a lug on the stem engaging said slot to prevent the stem from turning, and a chimney-holder supported by the pedestal as set forth.

5. In a lamp-holder the combination of a pedestal formed with a supplemental tubular post and with a vertical slot and lateral slot extending therefrom in said post, a vertically-movable stem in the post, a lamp-support mounted on said stem, a guide preventing said stem from turning, a vertically-movable collar on the aforesaid post provided with a lug engaging the aforesaid slots and serving to lock the stem in its raised position, a lamp-inclosing case mounted on the post, a chimney-holder mounted on said case, and gages on the lamp-support for adjusting the position of the lamp in relation to the chimney-holder as set forth.

654,879. DEVICE FOR DISPENSING BEVERAGES. JOHN DIMEEN, Chicago, Ill. Filed Feb. 8, 1900. Serial No. 4,444. (No model.)

Claim.—1. A device for the purpose set forth, comprising a receptacle provided in its lower end with an opening, and means associated with said opening for discharging the fluid therefrom in a thin film.

2. A device for the purpose set forth, comprising a receptacle provided in its lower end with a valved opening, and means for discharging the fluid therefrom in a thin film.



3. A device for the purpose set forth, comprising a receptacle provided in its lower end with a valved opening, and a horizontal plate immediately below said opening.

4. A device for the purpose set forth, comprising a receptacle provided in its bottom with a valved opening, means located under said opening for discharging the liquid from the device in a film, and horizontal graduating-marks on the inner surface of said receptacle.

5. A device for the purpose set forth, comprising a receptacle, a tubular stem connected with the lower end thereof, a spreader-plate on the lower end of the stem, said stem being provided above the plate with one or more radial openings, and means for closing the openings.

6. A device for the purpose set forth, comprising a receptacle, a tubular stem connected with the lower end thereof, said stem being provided at its lower end with one or more radial openings, a spreader-plate on the lower end of the stem, and an endwise-movable sleeve surrounding and fitting closely on the stem.

7. A device for the purpose set forth, comprising a receptacle, a tubular stem connected with the lower end thereof, said stem being provided near its lower end with one or more radial openings, a spreader-plate on the stem below the openings, an endwise-movable sleeve surrounding and fitting closely on the stem, and means for giving endwise movement to said sleeve.

8. A device for the purpose set forth, comprising a receptacle, a tubular stem at the lower end thereof which is provided near its lower end with one or more radial openings, a sleeve surrounding said stem and fitting closely thereto, and movable endwise thereon, a spreader-plate on the stem below said sleeve, and an annular flange on the lower end of the sleeve adapted for engagement with said plate.

9. A device for the purpose set forth, comprising a receptacle, a tubular stem at the lower end thereof, provided near its lower end with one or more radial openings, a spreader-plate attached to the lower end of said stem, a sleeve surrounding the stem and having rotative and endwise movement thereon, and which normally covers said radial openings in the stem, means for giving endwise movement to said sleeve to open and close said radial openings, and a stop for limiting the rotation of the sleeve.

10. A device for the purpose set forth, comprising a receptacle provided at its lower end with a valved opening, a spreader-plate concentric with said opening, and detachably connected with said receptacle below said opening.

11. A device for the purpose set forth, comprising a receptacle provided at its lower end with a tubular stem, said stem being provided near its lower end with one or more radial openings, a sleeve surrounding said tubular stem, and adapted to cover said radial openings, means for giving longitudinal movement to said sleeve to open or close the openings, and a spreader-plate concentric with said stem and detachably connected therewith.

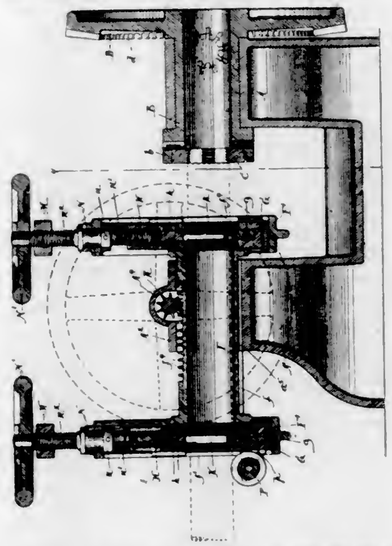
12. A device for the purpose set forth, comprising a receptacle, a tubular stem at the lower end thereof provided near its lower end with one or more radial openings, a spreader-plate connected with the lower end of said stem and concentric therewith, a sleeve surrounding said stem and adapted to cover said radial openings, a casing connected with said sleeve and surrounding said receptacle, and means for giving relative endwise movement to said casing and sleeve.

13. A device for the purpose set forth, comprising a receptacle, a tubular stem on the lower end thereof provided near its lower end with one or more radial openings, a spreader-plate connected with the lower end of said stem and concentric therewith, a sleeve surrounding said stem and adapted to cover said radial openings, a casing connected with said sleeve and surrounding said receptacle, and a radial pin on the upper end of said receptacle adapted to engage a cam-notch in the upper edge of the casing.

14. A device for the purpose set forth comprising a receptacle, a tubular stem on the lower end thereof provided near its lower end with one or more radial openings, a spreader-plate connected with the lower end of said stem and concentric therewith, a sleeve surrounding said stem and adapted to cover said radial openings, a casing connected with said sleeve and surrounding said receptacle, a radial pin on the upper end of said receptacle adapted to engage a cam-notch in the upper edge of the casing, and a stop for limiting the rotation of the casing and sleeve.

15. A device for the purpose set forth comprising a receptacle provided at its lower end with an opening and means for breaking the jet or stream discharged through said opening so that when the liquid strikes a subjacent layer of liquid it will float thereon.

654,880. THREAD-CUTTING MACHINE. JEAN B. Z. DUMAIS, Chicago, Ill., assignor of one-half to James B. Galloway, same place. Filed July 29, 1898. Serial No. 687,203. (No model.)

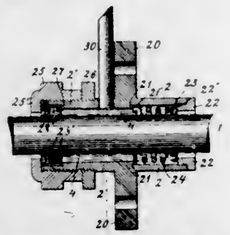


Claim.—1. In apparatus of the character described, the combination with a supporting-base, of an open-ended die-holder revolubly mounted upon one end of said base, an open-ended work-holder mounted upon the opposite end of said support in line with said die-holder, means for holding said work-holder against revoluble movement, means for longitudinally moving the same, and vises at each of the opposite open ends of said work-holder, each of said vises comprising oppositely-disposed movable jaws and a reversely-threaded shaft connected to each set of jaws for operating the same to hold the work in axial alinement with said revoluble die-holder.

2. In apparatus of the character described, the combination with a supporting-base, of an open-ended die-holder revolubly mounted in a bearing at one end of said supporting-base, said die-holder provided with a gear and pinion for revolving the same, a cylindrical open-ended work-holder keyed in a bearing at the opposite end of said supporting-base and provided with a rack, an operating hand-wheel and pinion engaging said rack for longitudinally moving said work-holder, vises at the opposite open ends of said work-holder, each having a pair of oppositely-disposed movable jaws and each provided with an oppositely-threaded shaft and hand-wheel therefor suitably connected to each of the jaws, and a supporting-roll arranged adjacent the lower jaw of the outer vise.

3. In apparatus of the character described, the combination with a supporting-base, of an open-ended die-holder revolubly mounted on one end of said base, an open-ended work-holder keyed to the opposite end of said support in line with said die-holder, means for longitudinally moving said work-holder, and vises at the opposite open ends thereof, each of said vises mounted in a yoke or frame attached to said work-holder and comprising movable cross-heads and jaws thereon carried by said yoke or frame, rods connecting with one of said cross-heads at its ends, the cross-bar connecting opposite ends of said rods, and a reversely-threaded shaft carried by said yoke or frame, one section of said screw-threaded screw-shaft engaging said cross-bar and the other section engaging the opposite cross-head, and means for operating the screw-shaft of each of said vises to shift the jaws, whereby the work is held in axial alinement with said revoluble die-holder.

654,881. STUFFING-BOX. HENRY S. DURAND, Rochester, N. Y. Filed Aug. 17, 1899. Serial No. 727,563. (No model.)



Claim.—1. A stuffing-box comprising: a hollow body; shaft-collars making a continuous changeable contact with surfaces at both ends of the body, each of the collars being movable on the shaft on an axis transverse to that of the shaft; and a displaceable filling confined in the body between the collars; substantially as described.

2. A stuffing-box comprising: a hollow body; shaft-collars making a continuous changeable contact with surfaces at both ends of the body, each of the collars being movable on the shaft on an axis transverse to that of the shaft; means for keeping said collars in contact with said surfaces; and a displaceable filling confined in the body between the collars; substantially as described.

3. A stuffing-box comprising: a hollow body having internal annular surfaces at its ends; and two or more shaft-collars, each being movable on the shaft on an axis transverse to that of the shaft, and two of said collars making a continuous changeable contact with said internal annular surfaces at the ends of the body; substantially as described.

4. A stuffing-box comprising: a hollow body having internal annular surfaces at right angles to its axis; a group of two or more shaft-collars interposed between said surfaces, each of said collars being movable on the shaft on an axis transverse to that of the shaft; and means for clamping the group of collars between said surfaces; substantially as described.

5. A stuffing-box comprising: a hollow body having a single internal annular surface at one end and a pair of internal annular surfaces near the other end; a shaft collar making contact with said single annular surface, and a group of shaft-collars interposed within said pair of annular surfaces, each of said collars being movable on the shaft on an axis transverse to that of the shaft; and means for clamping the group of collars within said pair of surfaces; substantially as described.

6. A stuffing-box comprising: a hollow body including the screw-plug 22 and screw-cap 25 and the internal annular shoulder 27; a shaft-collar 23 smaller in diameter than the interior of the body adjacent to the screw-plug 22, said collar making contact with said screw-plug; and a group of shaft-collars and felt rings 28 and 28', smaller in diameter than the interior of the body adjacent to the head of the screw-cap 25, said group of collars and rings being interposed between the head 25' of the screw-cap and the shoulder 27; substantially as described.

7. A stuffing-box comprising. a hollow body including the screw-plug 22 and screw-cap 25 and internal annular shoulders 21 and 27; a shaft-collar 23 smaller in diameter than the interior of the body adjacent to the screw-plug 22, said collar making contact with said screw-plug; a spring 24 between said collar and the shoulder 21; and a group of shaft-collars and felt rings 28 and 28', smaller in diameter than the interior of the body adjacent to the head of the screw-cap 25, said group of collars and rings being interposed between the head 25' of the screw-cap and the shoulder 27; substantially as described.

8. A stuffing-box comprising: a hollow body, containing surfaces that loosely surround the shaft; and a filling consisting of a viscous fluid interposed between said surfaces and extending around the shaft in contact with the shaft, its viscosity being great enough to prevent its escape from between said surfaces; substantially as described.

9. A stuffing-box comprising. a hollow body; loose-fitting shaft-collars at the ends of the body; and a filling, consisting of a viscous fluid, confined in the body between the collars; substantially as described.

10. A stuffing-box comprising. a hollow body; loose-fitting shaft-collars making a continuous changeable contact with surfaces at the ends of the body; and a filling consisting of a viscous fluid, confined in the body between the collars; substantially as described.

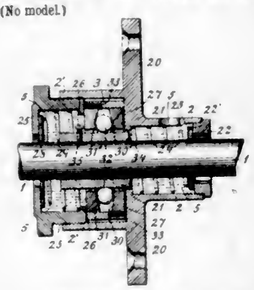
11. A stuffing-box comprising: a hollow body having internal annular surfaces at its ends; loose-fitting shaft-collars making contact with said annular surfaces; and a filling, consisting of a viscous fluid, confined in the body between the collars; substantially as described.

12. A stuffing-box comprising: a hollow body having internal annular surfaces at its ends; loose-fitting shaft-collars making contact with said annular surfaces; means for keeping the collars in contact with said surfaces; and a filling, consisting of a viscous fluid, confined in the body between the collars; substantially as described.

13. A stuffing-box comprising: a hollow body; shaft-collars making a continuous changeable contact with surfaces at the ends of the body, each of the collars being movable on the shaft on an axis transverse to that of the shaft; and a filling, consisting of a viscous fluid, confined in the body between the collars; substantially as described.

14. A stuffing-box comprising: a hollow body including the screw-plug 22 and screw-cap 25 and the internal annular shoulder 27; a shaft-collar 23 smaller in diameter than the interior of the body adjacent to the screw-plug 22, said collar making contact with said screw-plug; means for keeping said collar in contact with said plug; a group of shaft-collars and felt rings 28 and 28', smaller in diameter than the interior of the body adjacent to the head of the screw-cap 25, said group of collars and rings being interposed between the head 25' of the screw-cap and the shoulder 27; and a filling, consisting of a viscous fluid, confined in the body between the collar 23 and the group of collars and rings 28 and 28'; substantially as described.

654,882. STUFFING-BOX. HENRY S. DURAND, Rochester, and ROBERT K. MCLELLAN, New York, N. Y.; said McLellan assignor to said Durand. Filed Oct. 13, 1899. Renewed May 19, 1900. Serial No. 17,295. (No model.)



Claim.—1. A stuffing-box comprising: a hollow body; rings making a continuous changeable contact with surfaces at the ends of the body; and a shaft-bearing secured in the body between the rings; substantially as described.

2. A stuffing-box comprising. a hollow body; a shaft-bearing secured in the body; and a displaceable filling surrounding the shaft between the shaft-bearing and each end of the body; substantially as described.

3. A stuffing-box comprising: a hollow body; rings making a continuous changeable contact with surfaces at the ends of the body; a shaft-bearing secured in the body between the rings; and a displaceable filling confined between the rings and extending between the shaft-bearing and the rings; substantially as described.

4. A stuffing-box comprising: a hollow body; rings making a continuous changeable contact with surfaces at the ends of the body; a semifluid filling confined in the body; and a shaft-bearing comprising a ring of balls immersed in the filling; substantially as described.

5. A stuffing-box comprising. a hollow body; rings making a continuous changeable contact at the ends of the body with internal annular surfaces, larger in diameter than the rings; and a shaft-bearing secured in the body between the rings; substantially as described.

6. A stuffing-box comprising. a hollow body; rings making a continuous changeable contact at the ends of the body with luternal annular surfaces, larger in diameter than the rings; a shaft-bearing secured in the body between the rings; and a displaceable filling surrounding the shaft between the bearing and the rings; substantially as described.

7. A stuffing-box comprising: a hollow body; rings making a continuous changeable contact with surfaces at the ends of the body; a shaft-bearing in the body, movable in directions transverse to the axes of the body and bearing; and means for securing the bearing in different positions in the body; substantially as described.

8. A stuffing-box comprising: a hollow body; rings making a continuous changeable contact with surfaces at the ends of the body; and a shaft-bearing secured in the body between the rings, the bearing being a ball-bearing having only a single row of balls; substantially as described.

9. A stuffing-box comprising: a hollow body; rings making a continuous changeable contact with surfaces at the ends of the body; and a shaft-bearing secured in the body between the rings, the bearing being composed of a case, bearing-rings fixed in the case and forming a ball-channel, and a single ring of balls in the ball-channel; substantially as described.

10. A stuffing-box comprising: a hollow body; rings making a continuous changeable contact with surfaces at the ends of the body; a shaft-bearing in the body, movable in directions transverse to the axes of the body and bearing, and being composed of a case, bearing-rings fixed in the case and forming a ball-channel, and a single ring of balls in the ball-channel; and means for securing the bearing in different positions in the body; substantially as described.

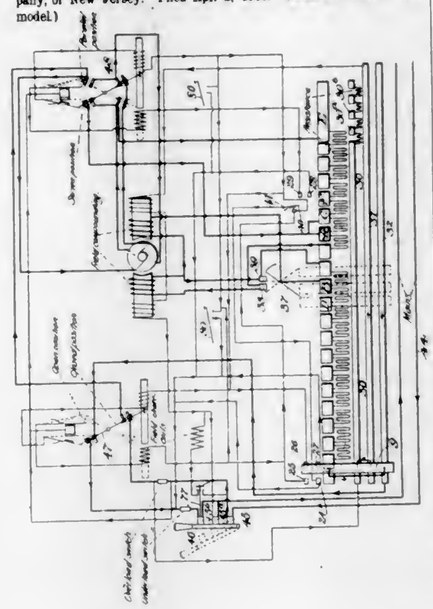
11. A stuffing-box comprising: a hollow body having the parts 2 and 2', and provided with an internal shoulder 27 at the inner end of the part 2', and with a screw-plug 25 extending into the part 2'; rings making a continuous changeable contact with the head of the screw-plug 25 and a surface at the front end of the part 2; and a shaft-bearing which is inserted in the part 2' and clamped therein against the shoulder 27 with the screw-plug 25; substantially as described.

12. A stuffing-box comprising: a hollow body having the parts 2 and 2', and provided with an internal shoulder 27 at the inner end of the part 2', and with a screw-plug 25 extending into the part 2'; rings making a continuous changeable contact with the head of the screw-plug 25 and a surface at the front end of the part 2; and a shaft-bearing which is inserted in the part 2' and clamped therein against the shoulder 27 with the screw-plug 25, the bearing being movable in the body in directions transverse to the axes of the bearing and body, and fixable in different positions between the screw-plug and shoulder; substantially as described.

13. A stuffing-box comprising: a hollow body having the parts 2 and 2', and provided with internal shoulders 21 and 27 at the inner ends of the parts 2 and 2' respectively, and with screw-plugs 22 and 25 extending into the parts 2 and 2' respectively, the plug 25 having an internal annular projection 26; a ring 23, smaller in diameter than the interior of the part 2, and a ring 28, smaller in diameter than the interior of the screw-plug 25, the ring 23 making contact with the end 22' of the plug 22, and the ring 28 making contact with the inside of the head of the plug 25; a coil-spring bearing against the ring 23 and shoulder 21, and a coil-spring bearing against the ring 28 and projection 26; and a shaft-bearing which is inserted in the part 2' of the body and clamped therein against the shoulder 27 with the screw-plug 25; substantially as described.

14. In a stuffing-box or other device comprising a ball-bearing, the combination of: a bearing-case; a screw 33 extending into a threaded hole in the case; bearing-rings in the case, one of the rings being threaded and engaging with a thread in the case and with that of the screw 33; and a ring of balls between the bearing-rings; substantially as described.

654,883. MOTOR-CONTROLLER. WILLIAM B. ELLIOTT and JOHN W. ESKHOLME, Westfield, N. J., assignors to the C. & C. Electric Company, of New Jersey. Filed Apr. 2, 1900. Serial No. 11,037. (No model.)



Claim.—1. In combination, a plurality of armature-windings, a hand-lever, means operated by the movement of said lever in one direction to connect said windings in series, a series of resistances in the armature-circuit, means connected with said lever and adapted on the movement of said lever in one direction to cut out in succession some of said resistances, a switch connected with said lever and operated by a further movement of said lever in the same direction to throw said windings into parallel and at the same time introduce into said circuit a series of substantially compensating resistances, and means connected with said lever and operated by a further movement of said lever in the same direction to cut out in succession some of said latter resistances.

2. In combination, a plurality of armature-windings, means to connect the same in series, a hand-lever, a series of resistances in the armature-circuit, means connected with said lever and adapted on the movement of said lever in one direction to cut out in succession some of said resistances, means operated by the further movement of said lever in the same direction to reduce the strength of the field, a switch connected with said lever and operated by a further movement of said lever in the same direction to throw said windings into parallel and at the same time introduce into said circuit a series of substantially compensating resistances, and means connected with said lever and operated by a further movement of said lever in the same direction to cut out in succession some of said latter resistances.

3. In combination, a plurality of armature-windings, a series of resistances in the armature-circuit, means connected with said lever and adapted on the movement of said lever in one direction to cut out in succession some of said resistances, means operated by the further movement of said lever in the same direction to cut out some of the field-coils to thereby reduce the strength of the field, a switch connected with said lever and operated by a further movement of said lever in the same direction to throw said windings into parallel and at the same time introduce into said circuit a series of substantially compensating resistances, and means connected with said lever and operated by a further movement of said lever in the same direction to cut out in succession some of said latter resistances, and means also operated by the movement of said lever in the same direction to introduce into the field-circuit in succession a series of resistances.

4. In combination, a compound-wound field-magnet, a plurality of armature-windings, a hand-lever, a series of resistances in the armature-circuit, means connected with said lever and adapted on the movement of said lever in one direction to cut out in succession some of said resistances, means operated by the further movement of said lever in the same direction to cut out some of the series field-coils to thereby reduce the strength of the field, a switch connected with said lever and operated by a further movement of said lever in the same direction to throw said windings into parallel and at the same time introduce into said circuit a series of substantially compensating resistances, and means connected with said lever and operated by the further movement of said lever in the same direction to cut out in succession some of said latter resistances.

5. In combination, a compound-wound field-magnet, a plurality of armature-windings, a hand-lever, a series of resistances in the armature-circuit, means connected with said lever and adapted on the movment of said lever in one direction to cut out in succession some of said resistances, means operated by the further movement of said lever in the same direction to cut out some of the series field-coils to thereby reduce the strength of the field, a switch connected with said lever and operated by a further movement of said lever in the same direction to throw said windings into parallel and at the same time introduce into said circuit a series of substantially compensating resistances, means connected with said lever and operated by the further movement of said lever in the same direction to cut out in succession some of said latter resistances, and means also operated by the movement of said lever in the same direction to introduce into the field-circuit in succession a series of resistances.

6. In combination, a plurality of armature-windings, means to connect the same in series, a series of resistances in the armature-circuit, contact-terminals for said resistances, connections, and a switch therefor, to throw said motors into parallel, a series of substantially compensating resistances, contact-terminals therefor, all of said terminals being arranged around a circle, a pivoted controlling-lever adapted to move around said circle and provided with means to make electrical contact in succession with said terminals, means controlled by said lever to throw said switch and at the same time introduce said compensating resistances into said armature-circuit, and a hand-lever connected with said controlling-lever to move the same over said terminals by a movement of said hand-lever in one direction.

7. In combination, a plurality of armature-windings, means to connect the same in series, a series of resistances in the armature-circuit, contact-terminals for said resistances, connections, and a switch therefor, to throw said windings into parallel, a series of substantially compensating resistances, contact-terminals therefor, all of said terminals being arranged around a circle, a pivoted controlling-lever adapted to move around said circle and provided with means

to make electrical contact in succession with said terminals, means, controlled by said lever to throw said switch and at the same time introduce said compensating resistances into said armature-circuit, including a pair of oppositely-disposed electromagnets, a circuit for each, and means to automatically close said magnet-circuits alternately, and a hand-lever connected with said controlling-lever to move the same over said terminals by a movement of said hand-lever in one direction.

8. In combination, a plurality of armature-windings, a hand-lever, means operated by a movement of said lever in one direction to connect said windings in parallel and at the same time introduce into the armature-circuit a series of substantially compensating resistances, and, by a further movement of said hand-lever in the same direction, to cut said resistances out in succession, means controlled by said lever and adapted, on the movement of said lever in the reverse direction, to introduce into said armature-circuit in succession some of said resistances, and means controlled by said hand-lever and operated by a further movement of the same in said reverse direction to throw said windings back from parallel into series.

9. In combination, a plurality of armature-windings, a hand-lever, means operated by a movement of said lever in one direction to connect said windings in parallel and at the same time introduce into the armature-circuit a series of substantially compensating resistances, and, by a further movement of said hand-lever in the same direction, to cut said resistances out in succession, means controlled by said lever and adapted, on the movement of said lever in the reverse direction, to introduce into said armature-circuit in succession some of said resistances, and means controlled by said hand-lever and operated by a further movement of the same in said reverse direction to open said armature-circuit.

10. In combination, a plurality of armature-windings, a hand-lever, means operated by a movement of said lever in one direction to connect said windings in parallel and at the same time introduce into the armature-circuit a series of substantially compensating resistances, and, by a further movement of said hand-lever in the same direction, to cut said resistances out in succession, means controlled by said lever and adapted, on the movement of said lever in the reverse direction, to introduce into said armature-circuit in succession some of said resistances, and means controlled by said hand-lever and operated by a further movement of the same in said reverse direction to open said armature-circuit, and at the same time throw said windings back from parallel into series.

11. In combination, an electromagnet, means to energize the same, an armature for said magnet adapted to be moved by said magnet when the same is energized, an abutment moved by said armature, a movable switch-lever having a part connected with said armature adapted to move said lever and standing in the path of movement of said abutment, said abutment being normally separated from said part connected with said lever whereby said abutment strikes a quick hammer-blow to throw said switch-lever when said magnet is energized.

12. In combination, a solenoid, means to energize the same, a core for said solenoid adapted to be moved into the same when said solenoid is energized, an abutment on said core, a movable switch-lever having a part connected with said core adapted to move said lever and standing in the path of movement of said abutment, said abutment being normally separated from said part connected with said lever whereby said abutment strikes a quick hammer-blow to throw said switch-lever when said solenoid is energized.

13. In combination, a solenoid, a core for said solenoid adapted to be moved into the same when said solenoid is energized, said core having a slot therein, a movable switch-lever having a part connected therewith located in said slot, said part being adapted to move said lever and standing in the path of movement of the ends of said slot, one end of said slot being normally separated from said part connected with said lever whereby the end of said slot strikes a quick hammer-blow to throw said switch-lever when said solenoid is energized.

14. In combination, a solenoid, a core for said solenoid adapted to be moved into the same when said solenoid is energized, said core having a slot therein, a movable switch-lever having a part connected therewith located in the slot, said part standing in the path of movement of the ends of said slot and adapted to move said lever, one end of said slot being normally separated from said part connected with said lever whereby said end of said slot strikes a quick hammer-blow to throw said switch-lever when said solenoid is energized, and an auxiliary core within said solenoid to increase the initial effect of the same upon said movable core.

15. In combination, a solenoid, a movable core located partly within and movable into said solenoid when the same is energized, and an auxiliary loosely-movable core also within said solenoid but normally separated from said movable core and operating to increase the initial magnetic effect of said solenoid on said movable core.

16. In combination, a solenoid, a movable core located partly within and movable into said solenoid when the same is energized, an auxiliary movable core also within said solenoid but normally separated from said first core, said auxiliary core being moved toward said first core when said solenoid is energized and operating to increase the initial magnetic effect of said solenoid on said first core.

17. In combination, a solenoid, a movable core located partly within and movable into said solenoid when the same is energized, and an auxiliary movable core also within said solenoid but normally separated from said first core and operating to increase the initial magnetic effect of said solenoid on said first core, said auxiliary core adapted to be moved by said first movable core.

18. In combination a pair of oppositely-disposed solenoids, a movable core between said solenoids and adapted to enter the same alternately, a normally-open electric circuit through each solenoid, a contact-block to which the source of electricity is connected and a switch-lever in each of said solenoid-circuits adapted to alternately make connection with said contact-block, manually-controlled means to close said solenoid-circuits alternately, and means, operated on the movement of said core, to automatically move the switch-lever in the closed solenoid-circuit out of connection with said contact-block, thereby breaking said closed solenoid-circuit, and move the other lever into connection with said contact-block while its solenoid-circuit remains open.

19. In combination, a pair of oppositely-disposed solenoids, a movable core between said solenoids and adapted to enter the same alternately, a pair of electric circuits, each circuit including as a part thereof one of said solenoids, each of said circuits being normally open, manually-operated means to close said circuits alternately, and means automatically operated on the movement of said core to ope the circuit so closed.

20. In combination, a switch, a pair of oppositely-disposed solenoids, a movable core between said solenoids and adapted to enter the same alternately, a connection between said switch and core, a circuit through each solenoid, a pair of switches to automatically close said circuits through said solenoids alternately and thereby move said core and also throw said switch, and means operated by said core to automatically open the switch in the closed solenoid-circuit on the movement of said core and consisting of a lever connected with said core and adapted to contact with said solenoid-switches.

21. In combination, a switch having a blade, a spring-jaw circuit-terminal engaged by said blade, a pair of oppositely-disposed solenoids, a movable core between said solenoids and adapted to enter the same alternately, a connection between said switch and core, a circuit through each solenoid, means to automatically close said circuits through said solenoids alternately and thereby move said core and throw said switch-blade out of said spring-jaw, and means to automatically open the closed solenoid-circuit during the movement of said core and after said blade leaves said terminal.

22. In combination, a plurality of armature-windings on the same shaft, a hand-lever, means operated by the movement of said lever in one direction to connect said windings in series, a series of resistances in the armature-circuit, means connected with said lever and adapted on the movement of said lever in one direction to cut out in succession some of said resistances, a switch connected with said lever and operated by a further movement of said lever in the same direction to throw said windings into parallel and at the same time introduce into said circuit a series of substantially compensating resistances, and means connected with said lever and operated by a further movement of said lever in the same direction to cut out in succession some of said latter resistances.

23. In combination, a plurality of armature-windings on the same shaft, means to connect the same in series, a hand-lever, a series of resistances in the armature-circuit, means connected with said lever and adapted on the movement of said lever in one direction to cut out in succession some of said resistances, means operated by the further movement of said lever in the same direction to reduce the strength of the field, a switch connected with said lever and operated by a further movement of said lever in the same direction to throw said windings into parallel and at the same time introduce into said circuit a series of substantially compensating resistances, and means connected with said lever and operated by a further movement of said lever in the same direction to cut out in succession some of said latter resistances.

24. In combination, a switch-blade having an aperture, a lever carrying the same, a pin on said lever entering said aperture in said blade, insulation on said pin and between it and said blade, and a sleeve surrounding said pin and insulation and located between said insulation and blade to distribute the blow from said blade.

25. In combination, a switch-blade having an aperture, a lever carrying the same, a pin on said lever entering said aperture in said blade, an insulated cushion on said pin and between it and said blade and a sleeve surrounding said pin and cushion and between said cushion and blade to distribute the blow from said blade, said blade being insulated from said lever.

26. In combination, a printing-press, a plurality of armature-windings, suitable circuits and a switch controlling the same to throw said windings from parallel to series connection, a second switch to open the armature-circuit, an electromagnet to actuate each switch, a plurality of emergency-switches located at different points around said printing-press, and connections from the circuits through said electromagnets to the terminals of each of said emergency-switches to energize both of said magnets at the same time.

27. In combination, a printing-press, a plurality of armature-windings, suitable circuits and a switch controlling the same to throw said windings from parallel to series connection, a second switch to open the armature-circuit, an electromagnet to actuate each switch, a plurality of emergency push-switches located in the floor at different points around said printing-press, and connections from the circuits through said electromagnets to the terminals of each of said emergency-switches to energize both of said magnets at the same time.

28. In combination, an electromotor, a switch to open a field-circuit of said motor, a safety resistance, a short circuit through said resistance for said field-circuit, a spring-pressed switch adapted to be released and close said short circuit when said field-circuit switch is opened.

29. In combination, an electromotor, a switch to open a field-circuit of said motor, a safety resistance, a short circuit through said resistance for said field-circuit, a spring-pressed switch resting against said first switch and adapted to be released and close said short circuit when said field-circuit switch is opened.

30. In combination, a plurality of armature-windings, means to connect the same in series, a series of resistances in the armature-circuit, contact-terminals for said resistances, connections, and a switch therefor, to throw said motors into parallel, a series of substantially compensating resistances, contact-terminals therefor, all of said terminals being arranged in succession, an arm adapted to move over said terminals and provided with means to make electrical contact in succession with the same, means controlled by said arms to throw said switch and at the same time introduce said compensating resistances into said armature-circuit, and a hand-lever connected with said controlling-arm to move the same over said terminals by a movement of said hand-lever in one direction.

31. In combination, a plurality of armature-windings on the same shaft, a hand-lever, means operated by a movement of said lever in one direction, to connect said windings in parallel and at the same time introduce into the armature-circuit a series of substantially compensating resistances, and, by a further movement of said hand-lever in the same direction, to cut said resistances out in succession, means controlled by said lever and adapted, on the movement of said lever in the reverse direction, to introduce into said armature-circuit in succession some of said resistances, and means controlled by said hand-lever and operated by a further movement of the same in said reverse direction to throw said windings back from parallel into series.

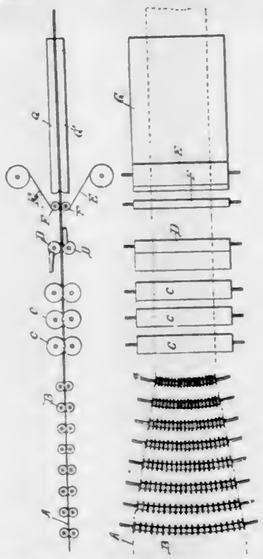
32. In combination, a plurality of armature-windings on the same shaft, a hand-lever, means operated by a movement of said lever in one direction to connect said windings in parallel and at the same time introduce into the armature-circuit a series of substantially compensating resistances, and, by a further movement of said hand-lever in the same direction, to cut said resistances out in succession, means controlled by said lever and adapted, on the movement of said lever in the reverse direction, to introduce into said armature-circuit in succession some of said resistances, and means controlled by said hand-lever and operated by a further movement of the same in said reverse direction to open said armature-circuit.

33. In combination, a switch, a pair of solenoids, a part moved by said solenoids alternately and in opposite directions, a connection between said switch and said movable part, a normally-open circuit through each solenoid, means to automatically close said circuits through said solenoids alternately and thereby move said part and throw said switch, and means operated by the movement of said part to automatically open the closed solenoid-circuit without closing the other solenoid-circuit.

654,884. APPARATUS FOR MAKING CORRUGATED PAPER. JEFFREY T. FERRES and AINSLIE W. FERRES, Anderson, Ind. Filed July 20, 1899. Serial No. 724,510. (No model.)

Claim.—1. The herein-described apparatus for making longitudinally-corrugated strips of paper, comprising gathering or folding means for indenting or creasing a plain strip of paper along gradually contracting and deepening longitudinal lines, to form preliminary longitudinal corrugations, and corrugating rolls to receive such strip of paper and finish and set the longitudinal corrugations therein.

2. The herein-described apparatus for forming longitudinally-corrugated faced paper, comprising gathering or folding means for indenting or creasing a plain strip of paper along gradually contracting and deepening longitudinal lines, to form preliminary longitudinal corrugations, corrugating-rolls to receive such strip of paper and finish and set the longitudinal corrugations therein, means for applying paste and a facing strip or strips to the corrugated strip as the latter emerges from the corrugating-rolls, and suitable heaters between which the several pasted strips are drawn to dry them and secure them together.



3. The herein-described apparatus for making longitudinally-corrugated strips of paper, comprising the gathering-rollers B arranged in pairs, the rolls of the succeeding pairs being set to intermesh with each other at gradually-increasing depth, and the disks upon the rollers of the succeeding pairs being arranged at gradually-decreasing distances from each other, for the purpose of gradually gathering or folding the plain strip of paper into corrugated form, and the corrugating-rolls C for receiving such strip of paper from the rollers B and finishing and setting the longitudinal corrugations therein.

4. The herein-described apparatus for making longitudinally-corrugated strips of paper, comprising the gathering-rollers B arranged in pairs, the rolls of the succeeding pairs being set to intermesh with each other at gradually-increasing depth, and the disks upon the rollers of the succeeding pairs being arranged at gradually-decreasing distances from each other, for the purpose of gradually gathering or folding the plain strip of paper into corrugated form, the corrugating-rolls C for receiving such strip of paper from the rollers B and finishing and setting the longitudinal corrugations therein, the paste-rollers D for applying paste to the corrugated strip, the guide-rollers F for directing the facing strip or strips upon the corrugated strip, and the heaters G G for drying the pasted strips and securing them together

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654,885. PROCESS OF CURING MEATS. HUGH J. FINN, Kansas City, Mo. Filed Sept. 8, 1899. Serial No. 729,841. (No specimens.)

Claim.—The process for preserving organic substances which consists in applying a dry preservative to the outer surface of said substance exclusively, confining the said substance and applied preservative within a dry air-tight inclosure and before any exudation of the juices of the substance, and immediately subjecting the said substance with the surface-applied preservative to air-pressure in excess of ordinary atmospheric pressure and while under confinement, such pressure having a force sufficiently strong to overcome the chemical action which tends to draw out or cause an exudation of the juices of the substance and prevent the formation of brine or a saline liquid around or adjacent to the said substance.

654,886. TUFTED UPHOLSTERING. ALFRED FRESCHL, Chicago, Ill. Filed June 13, 1896. Serial No. 683,275. (No model.)

Claim.—1. As a novel article of manufacture, a tufted cushion which embraces a covering of flexible material, filling material, sep-

arate retaining-pieces of cardboard or the like, applied to hold the filling material between the tufting-points, a backing-piece, and fasteners at the tufting-points which pass through the covering and backing-piece, and are provided with a part outside of the backing-piece which overlaps the corners of the adjacent retaining-pieces.

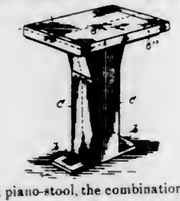


2. As a novel article of manufacture, a tufted cushion which embraces a covering of flexible material, filling material, separate retaining-pieces of cardboard or the like applied to hold the filling material between the tufting-points, a backing-piece and fasteners which pass through the cover and backing-piece, said fasteners each having at one end a head or button, and washers applied to the outer surface of the backing-piece and which overlap the corners of the adjacent retaining-pieces, the parts of said fasteners outside of the washer being spread to engage the outer surface of said washers.

3. As a novel article of manufacture, a tufted cushion which embraces a covering of flexible material, filling material, separate pieces of cardboard applied to hold the filling material between the tufting-points, a backing-piece and fasteners which engage the covering and backing-pieces, said fasteners consisting of buttons provided with prongs and washers interposed between the prongs and the backing-layer and adapted to overlap the corners of the retaining-pieces.

4. As a novel article of manufacture, a tufted cushion which embraces a covering of flexible material, filling material, separate retaining-pieces applied to hold the filling material between the tufting-points, a backing-piece and fasteners which engage the covering and backing at the tufting-points, said fasteners consisting of buttons provided with four prongs which are bent outwardly in position to overlap the adjacent corners of said filling-pieces.

654,887. **EXTENSIBLE PIANO-STOOL.** WILLIAM H. GIMITTY, Nelsonville, Ohio. Filed June 23, 1899. Serial No. 721,856. (No model.)



Claim.—1. In a piano-stool, the combination of the two-part seat adapted to slide together so that the seat may be extended or contracted horizontally, the overlapping sides of said parts being apertured to receive the locking-bolts, each of said parts having an independent leg, and the spring-actuated bolts adapted to enter the apertures of said overlapping sides for locking the two parts of the seat when closed or extended, said bolts having right-angled end portions extending through slots in said parts whereby said bolts may be actuated.

2. In a piano-stool, the combination of the two-part seat, said parts being adapted to slide so as to extend or contract said seat, an independent leg for each part of the seat, a rack-bar depending from the parts of the seat and adapted to slide vertically within said legs, pivoted spring-actuated arms mounted in said legs, rotary blocks mounted upon said pivoted arms adapted to engage the notches of said rack-bars, a movable rod on each of said rack-bars adapted to engage said blocks, means for moving said rods against said blocks to swing said blocks out of the path of the teeth of the rack-bars.

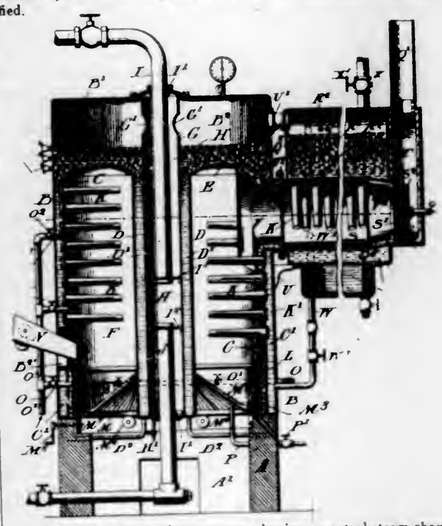
654,888. **STEAM-GENERATOR.** JOSEPH GIROUX, New York, N. Y., assignor of one-half to Frederic Tetreau, same place. Filed Nov. 29, 1899. Serial No. 738,725. (No model.)

Claim.—1. A steam-generating apparatus having its live-steam discharge at a central portion of its combustion-chamber, and a water-space inclosing said steam-discharge; substantially as specified.

2. A steam-generating apparatus having a steam-chamber located at a substantially-central portion of its combustion-chamber, a water-space surrounding said steam-chamber, and means for delivering steam therefrom; substantially as specified.

3. A steam-generating apparatus having its steam-delivering means terminating at substantially the hottest portion of its combustion-chamber and a water-space interposed between said steam-delivery and combustion chamber; substantially as specified.

4. A steam-generating apparatus having its steam-delivery means projected therein to a point where the steam delivered is of substantially the same temperature as the water within the generator, and a water-space surrounding said delivery means; substantially as specified.



5. A steam-generating apparatus having a central steam-chamber extending through its combustion-chamber and surrounded by an interposed water-space; substantially as specified.

6. In a steam-generating apparatus, means for delivering the steam therefrom and a water space for preventing the acquisition by the steam of a temperature above that of the water from which the steam was made, whereby superheating of the steam is prevented: substantially as specified.

7. In a steam-generating apparatus, a steam-chamber having an extension projecting into the combustion-chamber, and a circular water-leg arranged within the combustion-chamber and surrounding said extension; substantially as specified.

8. In a steam-generating apparatus, a steam-chamber, a surrounding water-leg arranged within the combustion-chamber, and a steam-supplying pipe projecting into the said steam-chamber; substantially as specified.

9. A steam-generating apparatus comprising an outer shell, a central cylindrical steam-chamber surrounded by a water-chamber, annular inner and outer fire-sheets, an annular crown-sheet connecting the same, and pipes connecting the intermediate spaces between the outer shell and fire-sheets; substantially as specified.

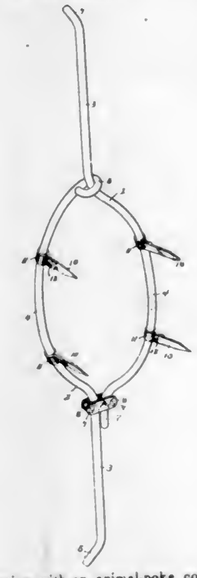
10. In a steam-generator, a central steam drum or chamber depending into the area of the combustion-chamber and having openings communicating with the steam-chamber of the apparatus, and a water-compartment surrounding said steam-chamber; substantially as specified.

11. In a steam-generating apparatus comprising a steam-chamber surrounded by a water-chamber and in combination with the wall of its combustion-chamber, an interiorly-screw-threaded and flanged socket in the wall of said combustion chamber, a water-tube provided with an exteriorly-threaded thickened wall tapered lengthwise and closed at its end; substantially as specified.

12. In a steam-generating apparatus comprising a combustion-chamber, a steam-chamber projected into the area of the combustion-chamber and having apertures communicating with the steam-chamber proper, a steam-supply pipe projected into the central steam-chamber and terminating at about the central portion of the combustion-chamber, a water-heating compartment connected with the steam-chamber proper of the generator at a point above its water-line and connected from a point below its water-line with the water-space of the generator; substantially as specified.

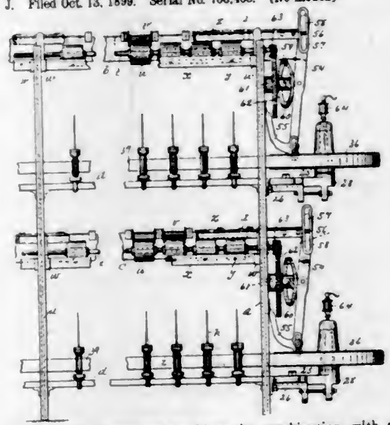
654,889. **ANIMAL-POKE.** PAUL M. GOEBELIN, Navajoe, Okla. Filed Apr. 2, 1900. Serial No. 11,184. (No model.)

Claim.—1. An animal-poke, comprising opposite substantially-duplicate sections, each of which is formed from a single bar or rod, having a straight end portion, and an outwardly-bowed opposite end portion, the outer extremity of the straight portion being formed into an outwardly-directed hook or projection, one section having the outer end of its bowed portion formed into a loop or eye embracing the straight portion of the other section adjacent to the bowed portion thereof, and forming a hinged or pivotal connection for the sections, the outer end of the other bowed portion being formed into a tongue to lie against the adjacent side of the other straight portion, opposite clamp-plates embracing the tongue and the adjacent portion of the other section, and removable fastenings connecting the plates and binding the latter upon the sections.



2. The combination with an animal-poke, comprising a neck-embracing portion, having opposite upwardly and downwardly extending hooked arms, of a plurality of spurs or prods each of which is formed from a single strip of metal that is pointed at its outer end, and has its opposite end bent or folded about the neck-embracing portion of the poke, and a removable fastening connecting the folded end of the strip to the body thereof.

654,890. **SPINNING-MACHINE.** ADOLPH HAENICHEN, Paterson, N. J. Filed Oct. 13, 1899. Serial No. 733,483. (No model.)



Claim.—1. In a spinning-machine, the combination, with the frame and with sets of alined revoluble spindles mounted in said frame, of a vertical shaft, bearing-brackets for said shaft projecting from one end of said frame, a rest extending from said end of the frame, bearing-blocks mounted on said rest, a drive-shaft journaled on said bearing-blocks, pulleys carried by said drive-shaft, a belt-shifting mechanism also mounted on said rest, operative connection between said shafts, pairs of sheaves, and belts extending over said sheaves and engaging said spindles, one sheave in each pair being mounted on said vertical shaft, substantially as described.

2. In a spinning-machine, the combination, with the frame and with sets of alined revoluble spindles mounted in said frame, of a vertical shaft, bearing-brackets for said shaft projecting from one end of said frame, a rest extending from said end of the frame, bearing-blocks mounted on said rest, a drive-shaft journaled on said bearing-blocks, pulleys carried by said drive-shaft, a belt-shifting mechanism also mounted on said rest, operative connection between said shafts, pairs of sheaves, and belts extending over said sheaves and engaging said spindles, one sheave in each pair being mounted on said vertical shaft, substantially as described.

3. In a spinning-machine, the combination, with the frame and with sets of alined revoluble spindles mounted in said frame, of a vertical shaft, bearing-brackets for said shaft projecting from one end of said frame, a rest extending from said end of the frame, bearing-blocks mounted on said rest, a drive-shaft journaled on said bearing-blocks, operative connection between said shafts, adjustable bearing-brackets extending from the other end of said frame, pairs of sheaves, one sheave in each pair being carried by one of said last-named bearing-brackets and the other by the vertical shaft, and belts extending over said sheaves and engaging said spindles, substantially as described.

4. In a spinning-machine, the combination, with the frame and with sets of alined revoluble spindles mounted in said frame, of a vertical shaft, bearing-brackets for said shaft projecting from one end of said frame, a rest extending from said end of the frame, bearing-blocks mounted on said rest, a drive-shaft journaled on said bearing-blocks, operative connection between said shafts, adjustable bearing-brackets extending from the other end of said frame, pairs of sheaves, one sheave in each pair being carried by one of said last-named bearing-brackets and the other by the vertical shaft, belts extending over said sheaves and engaging said spindles, roller-carrying shafts journaled in said frame, and operative connection between said roller-carrying shafts and the vertical shaft, substantially as described.

5. In a spinning-machine, the combination, with the frame and with sets of alined revoluble spindles mounted in said frame, of a vertical shaft, bearing-brackets for said shaft projecting from one end of said frame, means for rotating said shaft, adjustable bearing-brackets extending from the other end of said frame, pairs of sheaves, one sheave in each pair being carried by one of said last-named bearing-brackets and the other by the vertical shaft, belts extending over said sheaves and engaging said spindles, roller-carrying shafts journaled in said frame, adjustable frames carried by the main frame, gears carried by said roller-carrying shaft, worms mounted on the vertical shaft, and gearing carried by each adjustable frame and connecting the corresponding worm and gear, substantially as described.

6. In a spinning-machine, the combination, with the frame and with roller-carrying shafts and sets of spindles journaled therein, of a vertical shaft having bearings in said frame, belts driven by said shafts and engaging said spindles, gears carried by said roller-carrying shafts, worms mounted on said vertical shaft, adjustable frames mounted in the main frame, and gearing carried by said last-named frame and adapted to engage and connect said worms and the gears, substantially as described.

7. In a spinning-machine, the combination, with the frame and with roller-carrying shafts and sets of spindles journaled therein, of a vertical shaft having bearings in said frame, belts driven by said shafts and engaging said spindles, gears carried by said roller-carrying shafts, worms mounted on said vertical shaft, a bracket projecting from said frame, arc-shaped guides secured to said frame, L-shaped frames adjustably mounted in said bracket and the guides, and gearing carried by said last-named frame, adapted to engage and connect said worms and the gears, and comprising an interchangeable member or members, substantially as described.

8. In a spinning-machine, the combination, with the frame, of spindles journaled in said frame, spindle-driving means, a roller-carrying shaft also journaled in said frame, means for rotating said shaft, bobbins having operative engagement with the rollers on said shaft, a reciprocating thread-guide-carrying rail mounted in said frame in operative contiguity to said bobbins, a lever fulcrumed in said frame and connected to said rail, and a cam engaging said lever and operatively connected to said roller-carrying shaft, substantially as described.

9. In a spinning-machine, the combination, with a frame including spindle-rails, of a suitably-driven shaft vertically arranged in said frame at one end thereof, adjustable brackets projecting from the other end of said frame, pairs of sheaves, one sheave in each pair being journaled on a bracket and the other being carried by said vertical shaft, belts extending over said sheaves, spindles journaled on said spindle-rails and engaging said belts, bobbin-sustaining brackets arranged in said frame, roller-carrying shafts also journaled in said frame in proximity to said brackets, operative connection between said roller-carrying shafts and the vertical shaft, reciprocating thread guide-carrying rails arranged in said frame, levers operatively engag-

ing said thread-guide-carrying rails, and operative connection between said levers and the roller-carrying shafts, substantially as described.

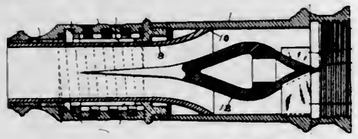
10. In a spinning-machine, the combination, with the frame, of spindles journaled in said frame, a belt connecting said spindles, a shaft journaled in said frame, said belt receiving its power from said shaft, a roller-carrying shaft also journaled in said frame and operatively connected to said first-named shaft, bobbin-brackets disposed in proximity to said roller-carrying shaft, a reciprocating thread-guide-carrying rail mounted in said frame in operative contiguity to said brackets, a lever fulcrumed in said frame and connected to said rail, and a cam contacting with said lever and operatively connected to said roller-carrying shaft, substantially as described.

11. In a spinning-machine, the combination, with the frame, of a shaft-carrying bracket comprising two members, one of which is secured to the frame and is provided with a slot and the other of which is mounted on said first-named member and is provided with a bolt engaging said slot, said members having downwardly-projecting lugs, a set-screw connecting said lugs, a shaft carried by said last-named member, a sheave journaled on said shaft, antifriction-bearings disposed between the hub of said sheave and the sheave-carrying member of the bracket, said shaft being penetrated by a lubricant-duct, and a lubricating device controlling said duct and mounted on the shaft, substantially as described.

12. A spindle-supporting device consisting of two hinged members, an elastic connection between them, one of said members being adapted to be secured to the spindle-rail or other sustaining means and the other of said members being adapted to provide bearings for the spindle both sides of the point of applying the driving power thereto, and a stop carried by said first-named member and adapted to engage the other member to secure the same against movement under actuation of said elastic connection and out of engagement with the driving means, substantially as described.

13. A spindle-supporting device consisting of two hinged members, a spring connecting them, one of said members being adapted to be secured to the spindle-rail or other sustaining means and the other of said members being adapted to provide bearings for the spindle both sides of the point of applying the driving power thereto, and a clip projecting from said first-named member and having a hooked extremity adapted to engage the other member to secure the same against movement under actuation of said spring and out of engagement with the driving means, substantially as described.

654,891. CONTROLLING-NOZZLE. THOMAS HALEY, Boston, Mass. Filed Dec. 13, 1899. Serial No. 740,157. (No model.)



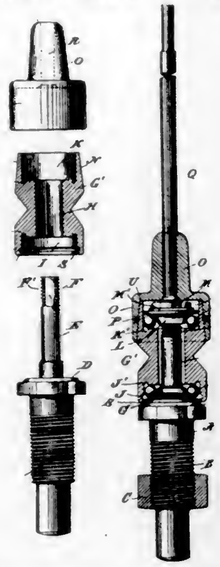
Claim.—1. A controlling-nozzle comprising an outer or guiding member, an inner member movable in the guiding member and having a flaring inner end, an elongated cone affixed to the interior of the guiding member and having an apex projecting into the inner member, the base of said cone coöperating with the flaring end of the inner member in forming an adjustable tapering annular channel converging toward the apex of the cone, and means for adjusting the inner member toward and from the base of the cone.

2. A controlling-nozzle comprising an outer or guiding member, an inner member movable in the guiding member and having a flaring inner end, an elongated cone affixed to the interior of the guiding member and having an apex projecting into the inner member, the base of the cone constituting a valve-seat, and the flaring end of the inner member a valve adapted to close on said seat and shut off the flow of water.

3. A controlling-nozzle comprising an outer or guiding member having an enlarged inner portion and a reduced longitudinally-slotted outer portion, an inner member movable in the reduced outer portion and having a flaring inner end which projects into the enlarged inner portion, a cone affixed to the inner portion of the guiding member, its apex projecting into the movable member, an externally-screw-threaded collar affixed to the movable member by studs passing through the longitudinal slots in the guiding member, and an internally-threaded sleeve or nut engaged with the said collar and compressed against endwise movement on the outer portion of the guiding member.

4. A controlling-nozzle comprising an outer or guiding member made in two sections 2 3 of different diameters, the larger section having an internal screw-thread at one end, while the smaller section has an externally-threaded flange engaged with said internal thread, said smaller section being horizontally slotted, an inner member movable in the smaller section and having a flaring inner end projecting into the larger section, a cone affixed to the inner section and having an apex projecting into the outer section, an externally-screw-threaded collar affixed to the movable member by studs passing through the slots in the guiding member, an internally-threaded sleeve or nut engaged with the said collar and bearing at one end against the said flange, and a detachable stop-collar bearing against the other end of the said nut.

654,892. BALL-BEARING SPINDLE FOR SPINNING-FRAMES. HERBERT H. HAM, New York, N. Y., assignor to Mercena F. Ham, same place. Filed Sept. 9, 1899. Serial No. 729,911. (No model.)

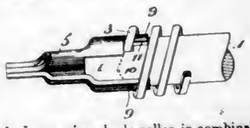


Claim.—1. The combination of a solid bolster provided with means whereby it may be attached to the spinning-frame, ball-bearing surfaces supported upon the bolster, means whereby the said bearings may be adjusted relative to each other, a whirl provided with ball-bearing surfaces and also with recesses for the retention of the lubricant connecting with the said ball-bearing surfaces, and a spindle attached to the whirl, for the purposes set forth.

2. The combination of a solid bolster provided with means whereby it may be attached to the spinning-frame, ball-bearing surfaces supported upon the bolster, means to adjust said ball-bearings toward and from each other, a whirl provided with ball-bearing surfaces and having recesses to receive the lubricant and prevent its escape, and a spindle attached to the whirl, for the purposes set forth.

3 The combination of a solid bolster, ball-bearing surfaces upon the bolster, a whirl recessed at its upper and lower ends and having ball-bearing surfaces within the recesses and having also depressions or receptacles connecting with its bearings for the retention of the lubricant, for the purposes set forth.

654,893. SPRING SHADE-ROLLER. EDMUND P. HARTSHORN, Newark, N. J., assignor to the Stewart Hartshorn Company, of New Jersey. Filed May 3, 1900. Serial No. 15,317. (No model.)



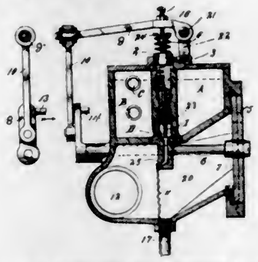
Claim.—1. In a spring shade-roller, in combination, a spindle; a metallic end member attached thereto provided with forked projections by which it is secured to the end of the spindle; and a spring mounted on the spindle, one end of which is adapted to be secured to the roller, and the other end of which is connected to the spindle, and held and rests between the forked ends of the end member whereby the spring impinges and bears against the diagonally-opposite edges of the forked projections, substantially as and for the purposes described.

2. In a spring shade-roller, in combination, a spindle 1; a spindle-tip 5 provided with the forked projections 9 whereby it is secured to the end of the spindle; and a spring 3 mounted on the spindle, the inner end of which is adapted to be secured to the roller, and the outer end of which is connected to the spindle and held and rests between the forked projections 9 of the spindle-tip, whereby the spring impinges and bears against the diagonally-opposite edges of the forked projections, substantially as and for the purpose described.

3. In a spring shade-roller, in combination, a spindle 1, having the cleft 2 in one end; an end member attached thereto provided with forked projections 9 whereby it is secured to the end of the spindle; and a spring mounted on the spindle, one end of which is adapted to be secured to the roller, and the other end of which rests in the cleft 2 in the spindle, and is held between the forked projections 9 of the end member, whereby the spring in the cleft impinges and bears against the diagonally-opposite edges of the forked projections, substantially as and for the purpose described.

4. In a spring shade-roller, in combination, a spindle 1, having the cleft 2 in one end, an end member attached thereto, provided with forked projections 9 and inner web 10 adapted to engage with the cleft 2 in the spindle, whereby the member is secured to the spindle; and a spring mounted on the spindle, one end of which is adapted to be secured to the roller, and the other end of which rests in the cleft 2 in the spindle, and is held between the forked projections 9 of the end member, whereby the spring in the cleft impinges and bears against the diagonally-opposite edges of the forked projections, substantially as and for the purpose described.

654,894. REGULATOR FOR GASOLENE OR OTHER LIKE ENGINES. STEPHEN A. HASBROUCK, New York, N. Y. Filed Aug. 5, 1899. Serial No. 726,245. (No model.)



Claim.—1. The above-described mechanism for adjusting the fuel-valve in gasolene and other like engines, comprising in combination a needle-valve, a regulating-screw in engagement with a screw-threaded aperture in the casing of the fuel-chamber, and provided with an aperture through which the stem of the needle-valve passes, a set-screw adapted to hold said regulating-screw in position, a shoulder upon the valve-stem engaging with the lower end of the regulating-screw, and an expansion-spring between the upper end of the regulating-screw and the head of the valve-stem, all constructed and operating as and for the purposes specified.

2. An improved regulator for gasolene and other like engines, comprising in combination a rotary air-valve, a needle fuel-valve, a shaft actuating said air-valve, and provided with a crank, which is connected by means of a connecting-rod with a lever adapted to depress the fuel-valve proportionately with the closing of the air-valve, by pressure upon the head of the valve-stem, and means for automatically restoring the fuel-valve to its normal position when the air-valve is reopened.

3. An improved regulator for gasolene and other like engines, comprising in combination a rotary air-valve, a needle fuel-valve, a shaft actuating said air-valve, and provided with a crank, which is connected by means of a connecting-rod, adjustable as to length, with a lever adapted to depress the fuel-valve, proportionately with the closing of the air-valve, by pressure upon the head of the valve-stem and means for automatically restoring the fuel-valve to its normal position when the air-valve is reopened.

4. An improved regulator for gasolene and other like engines, comprising in combination a rotary air-valve, a needle fuel-valve, a shaft actuating said air-valve, and provided with a crank, which is connected by means of a connecting-rod with a lever adapted to depress the fuel-valve, and provided with means for adjusting the pressure of the lever upon the head of the valve-stem, and means for automatically restoring the fuel-valve to its normal position.

5. An improved regulator for gasolene and other like engines, comprising in combination a rotary air-valve, a needle fuel-valve, a shaft actuating said air-valve, and provided with a crank which is connected by means of a connecting-rod with a lever in operative relation with the head of the valve-stem to operate the fuel-valve in proper proportion as the air-valve is operated.

6. An improved regulator for gasolene and other like engines, comprising in combination a rotary air-valve, a needle fuel-valve, a shaft actuating said air-valve, and provided with a crank, which is connected by means of a connecting-rod, adjustable as to length, with a lever in operative relation with the head of the valve-stem, to operate the fuel-valve in proper proportion as the air-valve is operated.

654,895. FIREARM. STEPHEN A. HUNTLEY, Elk Point, S. D. Filed May 6, 1899. Serial No. 715,850. (No model.)



Claim.—1. In a firearm, the combination with frame, barrel, magazine, extracting and ejecting means, and a reciprocable breech-block, of stored-power mechanism connected with and actuating said breech-block, an escapement for said power mechanism, and recoil-actuated means for controlling said escapement, substantially as and for the purpose set forth.

2. In a firearm, the combination with frame, barrel, magazine, extracting and ejecting means, a reciprocable breech-block, stored-power mechanism connected with and actuating said breech-block, and an escapement for said power mechanism, of an escapement-actuating weight movably mounted in said frame and with relation to which the frame is moved by the recoil in firing, substantially as and for the purpose set forth.

3. In a firearm, the combination with frame, barrel, magazine, extracting and ejecting means, a reciprocable breech-block, stored-power mechanism connected with and actuating said breech-block, and an escapement for said power mechanism, of a spring-operated escapement-actuating weight movably mounted in said frame and contacting with said escapement, with relation to which weight the frame is moved by the recoil in firing, substantially as and for the purpose set forth.

4. In a firearm, the combination with frame, barrel, magazine, extracting and ejecting means, a reciprocable breech-block, stored-power mechanism connected with and actuating said breech-block, and an escapement for said power mechanism, of a spring-operated escapement-actuating weight movably mounted in said frame, and hand-operated means for moving said weight and compressing its spring to give it the necessary resilience for moving the escapement in the operation of introducing the initial cartridge into the barrel, substantially as and for the purpose set forth.

5. In a firearm, the combination with frame, barrel, magazine,

and reciprocable breech-block, of means for actuating said breech-block, comprising a connecting-rod, gear mechanism connected with said rod for reciprocating it, a spring for actuating said gear mechanism, a spring-held pawl controlling the movement of the gear mechanism, and a yielding spring-held weight contacting with said pawl, substantially as and for the purpose set forth.

6 In a firearm, the combination with frame, barrel, magazine, and reciprocable breech-block, of means for actuating said breech-block, comprising a connecting-rod, an epicycloidal gear connected with said rod, a gear-train for actuating said epicycloidal gear, a spring for driving said train attached at one end to a stationary part and at the opposite end to the train, a spring-held pawl in the course of said gear-train permitting ready movement of the parts in one direction for winding purposes, and transmitting power in the opposite direction, an escapement-pawl controlling the movement of the epicycloidal gear, and means for actuating said escapement, substantially as and for the purpose set forth.

7. In a firearm, the combination with frame, barrel, magazine, and reciprocable breech-block, of means for actuating said breech-block, comprising a connecting-rod, an epicycloidal gear connected with said rod, a coil-spring for actuating said gear, an escapement for the gear, and a yielding spring-held devjce operating under the resilience of its spring to actuate the escapement when withdrawn from the escapement and then released, substantially as and for the purpose set forth.

8. In a firearm, the combination with frame, barrel, magazine, ejector, carrier, and a reciprocable breech-block, of means for reciprocating said block, comprising a casing, fixed gear F^9, stud x' provided with arm x^3 carrying gear x^8, connecting-rod G, two-part gear F^5 provided between its parts with a spring-held catch, pinion F^4, gear F^3, spring F^2, and an escapement for the power mechanism thus described, substantially as and for the purpose set forth.

9. In a firearm, the combination with frame, barrel, magazine, ejector, carrier, hammer, main trigger, and reciprocable breech-block, of stored-power mechanism, an escapement therefor, an auxiliary trigger, a yielding spring-held weight contacting with said escapement said weight being provided with a recess, a rod connected at its front end with said auxiliary trigger and provided at its rear end with means for engaging said recess, and means for guiding the rear end of the rod and releasing it from said weight, substantially as and for the purpose set forth.

10. In a firearm, the combination with frame, barrel, magazine, carrier, and reciprocating breech-block, provided with a rear slotted extension, a firing-pin extending to the slotted extension, a connecting-rod joined to said extension, spring-actuated power mechanism connected with said rod a hammer beneath said breech-block in the rear of its forward position and working when released in the slot of said extension to engage said pin, a mainspring for the hammer, and a trigger, substantially as and for the purpose set forth.

11. In a firearm, the combination with barrel, frame, and reciprocable breech-block provided at its rear end with a recess affording a locking-bolt socket, of a spring-held locking-bolt for said block pivoted to said frame in the rear of the block, a firing-pin in said block provided with a recess, and a spring-held lock-piece carried by the breech-block and entering said recess, said lock-piece being provided with an extension projecting into said socket, substantially as and for the purpose set forth.

12. In a firearm, the combination with barrel, frame, and reciprocable breech-block provided at its rear end with a recess affording a locking-bolt socket, of a spring-held locking-bolt for said block pivoted to said frame in the rear of the block, a vertical slide joined to said bolt, a lever pivotally joined to said frame and engaging said slide, and means connected with the breech-block for actuating said lever, to raise said bolt and for then actuating the breech-block, substantially as and for the purpose set forth.

13. In a firearm, the combination with frame, barrel, magazine, and reciprocable breech-block, of a vertically-movable carrier, and a bell-crank provided with two long arms embracing the sides of the carrier and engaging bearings thereon and with a short arm projecting into the path of the breech-block, substantially as and for the purpose set forth.

14. In a firearm, the combination with frame, barrel, magazine, and reciprocable breech-block, of a carrier provided with lateral vertical lugs moving into slots in the frame, said lugs being provided with slots, and a bell-crank provided with arms embracing the sides of said carrier and entering said slots and with an arm projecting into the path of the breech-block, substantially as and for the purpose set forth.

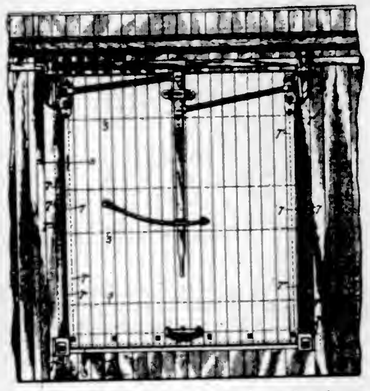
15. In a firearm, the combination with barrel, breech-frame, and reciprocable breech-block provided with extractor means, and with shoulders for engaging a lug, of an ejector-arm *f* pivoted near its rear end in one side of the breech-frame on a vertical pivot and provided with a recess, a lug pivoted in said recess adjacent to the rear wall thereof, and a spring for holding said lug normally at right angles to said arm and against said rear wall, whereby the lug is engaged by the breech-block in the rearward movement thereof to actuate the ejector-arm and is sheathed by said block in its forward movement, substantially as and for the purpose set forth.

16. In a firearm, the combination with frame, barrel, magazine, spring-held-shell follower, vertically-movable carrier, reciprocable breech-block, and means for actuating the carrier, of a spring-held magazine-shell stop, and a spring-held actuating-lug for said stop on said carrier, said stop and actuating-plug being provided with beveled surfaces for permitting them to ride upon each other, in the manner set forth and for the purpose specified.

17. In a firearm, the combination with frame, barrel, magazine, and reciprocable breech-block, of means for actuating said breech-block, comprising a connecting-rod, an epicycloidal gear connected with said rod, a coil-spring for actuating said gear, an escapement for the gear, and means for actuating said escapement, substantially as and for the purpose set forth.

18. In a firearm, the combination with barrel, breech-frame, and reciprocable breech-block provided toward its rear end with a recess affording a locking-bolt socket, of a spring-held locking-bolt for said breech-block pivoted to said frame in the rear of the block, a lever N pivotally connected to the frame, connecting means between the front end of said lever and said locking-bolt, a rearward extension on the breech-block, a connecting-rod for reciprocating said breech-block, pin-and-slot connection between said breech-block extension and the front end of said connecting-rod, a stud on the front end of said connecting-rod engaging said lever N, and means for actuating said connecting-rod, substantially as and for the purpose set forth.

654,896. FREIGHT-CAR. SINCLAIR J. JOHNSON, Nutley, N. J. Filed Jan. 9, 1900. Serial No. 813. (No model.)



Claim.—1. The combination, in a door, of a door-margin or boundary portion made of material not subject to shrinkage or swelling to a material degree and secured to a part free of appreciable shrinkage or swelling in a direction to shift the relations of the margin or boundary portion, and a body portion having free relation to such boundary portion or margin to permit the swelling or shrinkage of said body portion and adapted to engage such margin or boundary portion intermediate the outer and inner edges of such margin portion when in engagement therewith.

2. The combination, in a door, of a door-margin or boundary portion made of material not subject to shrinkage or swelling to a material degree and secured to a part free of appreciable shrinkage or swelling in a direction to shift the relations of the margin or boundary portion, and a body portion having free relation to such boundary portion or margin to permit the swelling or shrinkage of said body portion, said margin lapping a side of said body portion to an extent equal to the difference in dimensions of the door when swollen and when shrunk to the greatest amount which occurs in practice.

3. The combination, in a door, of a door-margin or boundary portion made of material not subject to shrinkage or swelling to a material degree and secured to a part free of appreciable shrinkage in a direction to shift the relations of the margin or boundary portion, and a body portion having free relation to such boundary portion or margin to permit the swelling or shrinkage of said body portion, said margin lapping both sides of said body portion to an extent equal to the difference in dimensions of the door when swollen and when shrunk to the greatest amount which occurs in practice.

4. A car-door comprising a body and margin or boundary means

comprising shaped irons each secured to a part free of appreciable shrinkage or swelling in a direction to shift the relations of said margin or boundary means, and each in position to form a space intermediate thereof and said body when such body is in its normal condition or contracted and adapted when in engagement with such body to engage it intermediate the outer and inner edges of said margin means.

5. A car-door the body of which has each edge subject to the effect of atmospheric changes provided with a shaped iron secured in position free of such body and lapping the side of said body to an extent at least equal to the dimensions of the door when swollen and when shrunk to the greatest amount which occurs in practice, whereby the door is permanently of the same size whether the body thereof be in a shrunken or swollen condition.

6. A car-door the body of which has each edge subject to the effect of atmospheric changes provided with a channel-iron secured in position free of such body and lapping the side of the body to an extent at least equal to the difference in dimensions of the body when swollen and when shrunk to the greatest amount which occurs in practice, whereby the door is permanently of the same size whether the body thereof be in a shrunken or swollen condition.

7. A car-door the body of which has each edge subject to the effect of swelling or shrinkage provided with a metallic device overlapping the inner and outer sides thereof to an extent at least equal to the difference in dimensions of the body when swollen and when shrunk to the greatest extent which occurs in practice, thereby forming a space at the edge of such door when in its normal condition or contracted, said device having one part thereof of greater width than another part thereof.

8. A car-wall having a doorway and a doorway margin or boundary portion made of material not subject to shrinkage or swelling to a material degree and secured to a part free of appreciable shrinkage or swelling in a direction to shift the relations of the margin or boundary portion, said wall having free relation to such boundary portion, the organization being such that the same size of the doorway is permanently maintained whether the car-wall be in a shrunken or swollen condition.

9. A car-wall having a doorway and a doorway-margin or boundary portion made of material not subject to shrinkage or swelling to a material degree and secured to a part free of appreciable shrinkage or swelling in a direction to shift the relations of the margin or boundary portion, said wall having free relation to such boundary portion, and said margin lapping a side of said wall to an extent at least equal to the difference in dimensions of the door when swollen and when shrunk to the greatest amount which occurs in practice, the organization being such that the same size of the doorway is permanently maintained whether the car-wall be in a shrunken or swollen condition.

10. A car-wall having a doorway and a doorway-margin or boundary portion made of material not subject to shrinkage or swelling to a material degree and secured to a part free of appreciable shrinkage or swelling in a direction to shift the relations of the margin or boundary portion, said wall having free relation to such boundary portion, and said margin lapping both sides of said wall to an extent at least equal to the dimensions of the wall when swollen and when shrunk to the greatest amount which occurs in practice, whereby the same size of the doorway is permanently maintained whether the car-wall be in a shrunken or a swollen condition.

11. A car-wall constructed of timber and provided with a doorway having each edge thereof contiguous to such doorway and subject to the effect of swelling or shrinkage provided with fixed or non-movable means inclosing the woodwork at such edge to an extent sufficient to prevent the formation of a gap or opening between said means and the edge of the wall when under contraction, and thereby forming a closed space when such wall is in its normal condition or contracted, the organization being such that the same size of the doorway is permanently maintained while providing for the swelling or shrinkage of the woodwork of the wall.

12. A car-wall having a doorway, a plurality of the edges of which wall contiguous to such doorway are provided with channel-irons, each so secured in position as to form a closed space between the web of such iron and the edge of the wall when the latter is in its normal condition or contracted, and thereby prevent the formation of a gap or opening between such iron and the edge of the wall.

13. A car-wall having a doorway, each edge of which wall, subject to the effect of swelling or shrinkage, is provided with a metallic device overlapping the inner and outer sides of such wall and forming a closed space at the edge thereof when the wall is in its normal condition or contracted, and thereby prevent the formation of a gap between such device and the edge of the wall, said device having one part of greater width than another part thereof.

14. A car-wall provided with a doorway and a door, each edge of which door and wall contiguous to such doorway and subject to the effect of swelling or shrinkage, is provided with a channel-iron located to form a closed space at such edge when the woodwork is in its normal condition or contracted, and thereby prevent the formation of a gap between such iron and the edge of such part.

15. A car-wall provided with a doorway and a door, each edge of which door and wall contiguous to such doorway and subject to the effect of swelling or shrinkage, is provided with means located to form a space at such edge when the woodwork is in its normal condition or contracted.

16. A car-wall having a doorway each edge of which wall contiguous to such doorway and subject to the effect of swelling or shrinkage is provided with a shaped iron so secured in position as to form a space between the web of such iron and the edge of the wall when such wall is in its normal condition or contracted.

17. A car-wall having a doorway and side posts and a doorway-margin portion free from a tendency to shrink or swell, secured to each of said posts and effective to always maintain the same size of the doorway while permitting the swelling or shrinkage of said wall.

18. A car-wall having a doorway; a post located at each side of said doorway: and a shaped iron secured to each of said posts and adapted to project in parallelism with the edge of such wall to always maintain the same size of the doorway while permitting the swelling or shrinkage of the car-wall.

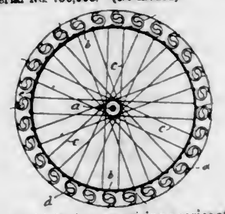
19. A car-wall provided with a doorway having side posts lapped by said car-wall, and a doorway-margin portion forming a jamb member free from a tendency to shrink or swell secured to each of said posts, each of said jamb members lapping the wall while free thereof so as to permit the swelling or shrinkage of said wall while permanently maintaining the same size of the doorway.

20. The combination, in a door having battens or braces, of a door-margin or boundary portion made of material not subject to shrinkage or swelling to a material degree and secured to said battens or braces, and a body portion having free relation to such boundary portion or margin, said margin lapping a side of said body portion to an extent equal to the difference in the dimensions of the door when swollen and when shrunk to the greatest amount which occurs in practice.

21. A car structure comprising a wall having a doorway, and a door therefor comprising a body, said doorway and body each having margin means free of material shrinkage or swelling and secured to parts free of appreciable shrinkage or swelling in a direction to shift the relations of said margin means, said margin means being free of said wall and body, thereby to permit the swelling or shrinkage of said wall and body while permanently maintaining the same size of said door and doorway.

22. A car structure comprising a wall having a doorway, and a door therefor comprising a body, said doorway and body each having margin means free of material shrinkage or swelling and secured to parts free of appreciable shrinkage or swelling in a direction to shift the relations of said margin means, said margin means being free of said wall and body, thereby to permit the swelling or shrinkage of said wall and body while permanently maintaining the same size of said door and doorway, and each such margin means overlapping its respective member, thereby to prevent the formation of a gap or opening between said margin means and said member when such member contracts.

654,897. VEHICLE-TIRE. GEORGE J. KELLER, Pittsburg, Pa., assignor, by mesne assignments, to John O'Donovan and George J. Keller, same place, and William O'Donovan, Crafton, Pa. Filed Sept. 19, 1899. Serial No. 730,993. (No model.)



Claim.—1. A vehicle-tire comprising a series of circumferentially-arranged springs, each of which embodies two reversely-coiled spirals, in combination with annular bands to which the free ends of the springs are fastened, substantially as described.

2. A vehicle-tire comprising a series of circumferentially-arranged springs, each of which embodies two reversely-intercoiled spirals rigidly joined at their inner ends and having their outer ends projecting in opposite directions.

3. A vehicle-tire comprising a series of circumferentially-arranged springs, each of which embodies two reversely intercoiled spirals rig-

idly joined at their inner ends and having oppositely-projecting outer ends, corresponding ends of adjacent springs being riveted together, thereby forming a continuous circumferential band.

4. A vehicle-tire comprising a series of circumferentially-arranged, intercoiled, double-spiral springs, the outer ends of which project in opposite directions and in concentric circumferential lines, the ends lying on the outer circumference being provided with offsets adjacent to the spiral portions, against which the adjacent spring ends abut, said parts being riveted together to form a continuous band.

5. A vehicle-tire comprising a series of intercoiled double-spiral springs, the free ends of which project in opposite directions to form concentric rings, the portions constituting the outer ring being offset and riveted together to form a smooth continuous surface.

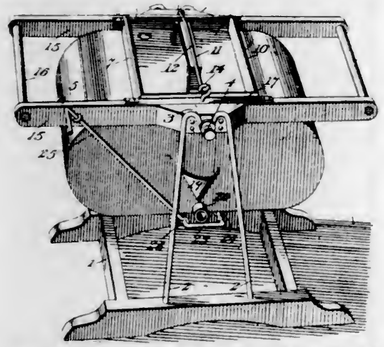
6. A vehicle-tire comprising a series of double reversely-intercoiled spirals, the free ends of which project in opposite directions to form two concentric rings, the inner one of which is reinforced by a continuous band and the outer one of which has its adjacent parts riveted together to form a self-sustained continuous band.

654,898. LACING-STRING. GEORGE T. KELLY, Des Moines, Iowa. Filed June 21, 1899. Serial No. 721,302. (No model.)



Claim.—The combination with a flat lacing-string, of a folded metal plate embracing the end of the string and bent inwardly at its side margins over the side edges of the string; said plate and the string having a central longitudinal fold and the side margins of the plate being located between the folded parts of the string and being parallel, and in contact, with each other.

654,899. CHURN. JAMES A. KERNODLE, Burlington, N. C., assignor of one-half to S. M. Hornaday, same place. Filed May 19, 1900. Serial No. 17,255. (No model.)

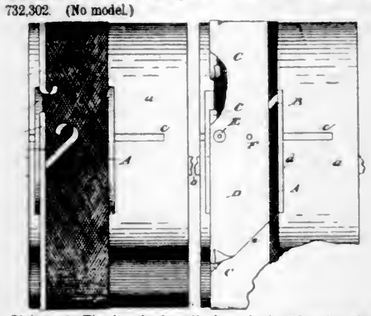


Claim.—1. In a churn, the combination of a base having side standards, each provided with approximately-parallel sides or legs, a churn-body or receptacle mounted to rock in bearings at the upper ends of the standards, and a looped slide mounted upon and carried by the churn-body for extension laterally of the churn-body to occupy a position between the sides or legs of one of said standards, the outer closed end of the loop formed by the slide constituting a grip, whereby the slide may be extended, substantially as specified.

2. In a churn, the combination of a base, hair-pin or looped side standards rising from the base and each having approximately-parallel sides or legs, and also having their upper ends inturned or looped downward to form bearings, a churn-body having trunnions mounted in said bearings, and a looped slide having its side arms mounted in guides upon the under side of the churn-body, and adapted for extension transversely of the churn-body to occupy a position between the sides or legs of one of said standards to lock the churn-body against rocking movement in either direction, substantially as specified.

3. In a churn, the combination of a base, looped side standards rising from the base, a churn-body having trunnions mounted in bearings at the upper ends of the standards, a slide mounted upon the churn-body for extension between the legs of one of the standards, said slide being of looped construction, and an operating-rod arranged at one side of the churn-body and terminally attached to one of the side arms of the slide, substantially as specified.

654,900. METHOD OF FORMING PNEUMATIC TIRES. GODFREY KNADLER, Peoria, Ill., assignor of seven-eighths to Alton G. Selberling and Charles J. Butler, same place. Filed Oct. 2, 1899. Serial No. 732,302. (No model.)



Claim.—1. The herein-described method of forming tires which consists in spreading a strip of suitable tire fabric in circumferential form, uniting the ends thereof, superimposing a strip of rubber upon the fabric strip, folding the edges of one over the other to form a tube, substantially as set forth, then attaching a second fabric strip to the tube and finally rolling the tube along the drum to cause the fabric to adhere to it for the purposes set forth.

2. The herein-described method of forming tires of the character described which consists in spreading a strip of suitable fabric circumferentially, uniting the ends thereof, superimposing on said fabric a strip of rubber, uniting the ends of the latter, folding the parallel edges of the united fabric and rubber one over the other to form a tube, substantially as described, attaching a second fabric strip to the tube thus constructed, then partially inflating the tube and rolling same upon the drum to wrap the fabric upon it and finally vulcanizing the finished tire.

3. The herein-described method of forming tires of the character described which consists in spreading a strip of suitable fabric circumferentially upon a drum, or former, uniting the ends thereof, covering the joint formed thereby with a protecting-strip, covering one edge thereof also with a protecting-strip, superimposing a strip of rubber upon said fabric substantially as set forth, folding the latter edge over, folding the opposite edge over upon that to form a tube, then attaching a second fabric covering to the tube and lastly vulcanizing the tire.

4. The herein-described method of constructing pneumatic tires which consists in first spreading a strip of fabric in circumferential form, uniting the ends thereof, superimposing a strip of rubber upon such fabric, uniting the ends thereof, folding the parallel edges of the united strips over to form a tube and finally applying a fabric covering to the tube and vulcanizing the finished product.

5. The method of forming pneumatic tires which consists in connecting the two ends of a strip of fabric, forming the body of the tire, such strip having adhered thereto a strip of rubber also united at its ends, the latter to form an air-container for the finished tire, folding one of the circumferential edges of each of the strips thus adhered over their other edges to form a tube and finally vulcanizing the tube so formed.

6. A method of forming pneumatic tires consisting in arranging a strip of tire fabric to form a ring, uniting its ends, adhering a strip of rubber to the outer surface thereof, uniting the ends thereof and lastly folding a circumferential edge of both the fabric strip and rubber strip over upon their opposite edges to form a tube for the purposes set forth.

7. A method of forming pneumatic tires consisting in arranging a strip of tire fabric to form a ring at its ends, adhering to the outer surface thereof a strip of rubber, uniting the ends of the latter, folding a circumferential edge of the fabric and rubber strip one over the other to form a tube and finally attaching a fabric strip to the tube thus formed and spreading it around the same and finally vulcanizing the product.

8. The herein-described method of forming pneumatic tires which consists in connecting the ends of united strips of fabric and rubber, overlapping the longitudinal edges thereof to form a tube, covering the tube with a final protecting-strip, uniting the latter at its ends and overlapping its longitudinal edges all substantially as described and finally vulcanizing the finished tire for the purposes set forth.

9. A method of forming pneumatic tires consisting in connecting the ends of a strip of rubber-coated fabric to form a circular band adhering a strip of rubber to the outer surface of the fabric and overlapping its ends substantially as set forth to form an air-container in the finished tire, then folding the edges of the united fabric and rubber over upon each other to form a complete endless tube and finally vulcanizing the same.

10. A method of forming pneumatic tires consisting in forming a band, or ring, with the elements comprising the tire, uniting the ends and edges thereof to form an endless tube adhering an outer protecting-covering thereto by partially inflating the tire and rolling it upon a band of covering fabric to cause the same to entirely cover it as described and finally vulcanizing the finished tire.

654,901. CHUTE. CHARLES W. LAMPHER, Norwich, N. Y. Filed Nov. 27, 1899. Serial No. 738,365. (No model.)



Claim.—1. A chute having sides converging in the line of its length, the sides integral with the base, the angle between each side and the base presenting a curved outline, the sides longitudinally corrugated, and their upper edges turned to form a substantially-complete circle, substantially as and for the purposes stated.

2. A chute having sides converging in the line of its length, the sides integral with the base, the angle between each side and the base presenting a curved outline, the sides longitudinally corrugated, their upper edges turned to form a substantially-complete circle, a transverse band securely attached at the wider end supporting the base, and, with the upper edges of the sides and the return of the band upon itself, forming sockets, and an upwardly arching or bent rod having each end bent and fitted to its corresponding socket, in combination substantially as and for the purposes set forth.

3. A chute having sides converging in the line of its length, a band or bands securely attached to the sides at the wider end forming sockets, an upwardly arching or bent rod having each end bent and fitted to the corresponding socket, in combination, substantially as set forth.

4. A chute having sides integral with the bottom, the angle between the bottom and each side being formed on the outline of a circle, a band securely fastened at one end of the chute to the bottom and to the sides, each end of the band being returned upon itself forming a socket or loop, an arched hoop or rod having each end bent to fit the corresponding socket, and a plate fixedly attached to the inside bottom at the wider end of the chute, as and for the purposes substantially as set forth.

5. A chute formed of a series of members each having its sides converging in the line of its length, the narrow end of one resting in and upon the wide end of the first succeeding section in series, an upwardly arched or bent rod connecting the sides of each section except the uppermost at its wider end, the arch passing over the smaller end of the adjacent section inserted in and resting upon the wider end of the section having the arch hoop, in combination, substantially as set forth.

6. A chute having its sides converging in the line of its length, each end bound with a band passing from the upper edge of one side underneath the body of the chute to the upper edge of the other side, the said bands and a reinforcing-plate riveted to the inner surface of the wider end of the chute, in combination, substantially as set forth.

7. In a chute formed with its sides converging in the line of its length, a plate secured to the inner surface of the wider end forming a reinforcing-plate, and a band on the opposite side of the chute secured to the chute and to the reinforcing-plate, substantially as set forth.

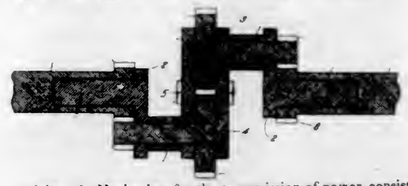
8. A chute having corrugated sides converging in the line of its length, a band or bands securely attached to its sides at the wider end forming sockets, a plate fixedly attached to the inside bottom of the chute, and an upwardly-bent hoop at its wider end, in combination, substantially as set forth.

654,902. SHIRT-STUD. PHILIPP H. LETTRÉ, Attleborough, Mass., assignor to T. I. Smith & Co., same place. Filed May 9, 1900. Serial No. 15,999. (No model.)



Claim.—In a shirt-stud, the combination with the back-plate a^3, the tubular post a' and the arm a, of the shaft b pivotally supported in the tubular post a', the square head b' formed on one end of the shaft b, the swinging arm b^2 at the other end of the shaft b, the stud c', and the bifurcated spring c secured to the plate a^3 by the stud c', as and for the purpose described.

654,903. POWER TRANSMISSION. ALLEN LOOMIS, Jackson, Mich. Filed Sept. 29, 1899. Serial No. 732,061. (No model.)



Claim.—1. Mechanism for the transmission of power, consisting of a divided shaft each portion of which is driven; an intermediate driving portion having a plurality of crank-pins and having with the divided shaft a common axis of rotation; and a train of gear-wheels having substantially-cylindrical pitch-surfaces, two of said gear-wheels being fixedly mounted upon the portions of the divided shaft, the remainder turning about bearings carried by the driving portion, said train of gears automatically compensating for a difference of angular velocities of said driven portions.

2. Mechanism for the transmission of power, consisting of a divided shaft each portion of which is driven, an intermediate cranked driving portion loosely mounted between the inner ends of the divided shaft, said cranked portion comprising two hollow crank-pins, means at their outer ends for mounting said cranked portion so that it may revolve about the same axis of rotation as the divided shaft, means at their inner ends for fastening them together, and bearings for a train of gears; said train of gears consisting of toothed wheels having substantially-cylindrical pitch-surfaces, two of said toothed wheels being fixedly mounted upon the portions of the divided shaft, and the remainder turning in bearings in the driving portion, said train of gears being in motion relative to the driving portion, when the driven portions are revolving with unequal angular velocities, automatically compensating for the differential motion.

3. Mechanism for the transmission of power, consisting of the following parts, namely: first, a divided shaft, each portion of which has fixedly mounted near its inner end one part of a bearing; second, an intermediate cranked portion mounted upon the complementary parts of said bearings and freely turning thereon, said cranked portion comprising two hollow crank-pins, means for fixing them at their outer ends to said parts of bearings, and means for fastening them together at their inner ends; third, a train of compensating gears for permitting a differential motion of the parts of said divided shaft, said train of gears consisting of the following-named elements, two spur-gears meshing with each other, fixedly mounted upon the inner ends of two spindles which rotate freely within the crank-pins; fixedly mounted upon the outer ends of said spindles two other spur-gears; and, fixedly mounted at approximately the inner ends of the portions of the divided shaft, two additional spur-gears, each one of which meshes with one of the last-mentioned spur-gears.

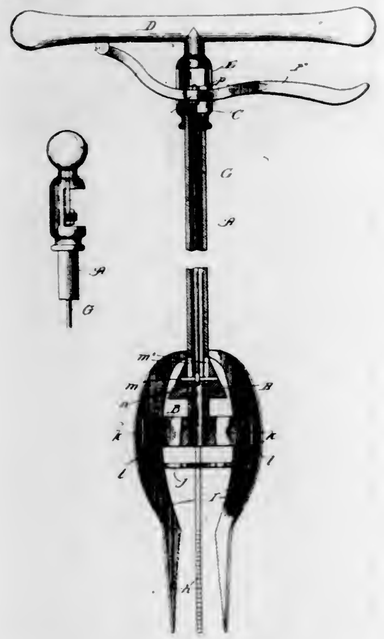
4. In a compensating driving mechanism, the combination of the shaft-sections, the crank-pins independent of said sections but adapted to be rotated about the prolonged axes of said shaft-sections, said crank-pins being rigidly connected together; the small shafts revoluble in said crank-pins; the gears fixed upon the ends of said small shafts, one gear of one shaft meshing with the corresponding gear of the other shaft; and the gears fixed upon said shaft-sections and meshing with the other of said gears on said small shafts, substantially as set forth.

5. In a compensating driving mechanism, the combination with two shaft-sections terminally separated but supported in alinement; of the two cranks located between the neighboring ends of said shaft-sections and independent thereof but adapted to be revolved about the common axial line thereof, said cranks being rigidly connected; and mechanism carried by said cranks and engaging said shaft-sections for enabling said cranks to forcibly rotate said shaft-sections while permitting relatively-unequal rotation of said shaft-sections, substantially as set forth.

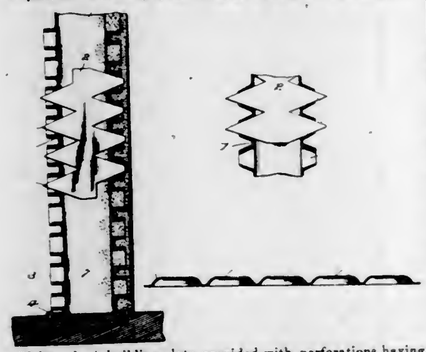
654,904. WEEDING-DEVICE. GEORGE F. MARCHANT, Chicago, Ill. Filed Aug. 15, 1898. Renewed May 31, 1900. Serial No. 18,641. (No model.)

Claim.—In a weeding device, the combination of a standard pipe provided toward its lower end with a slot, a bracket secured to the lower end of the pipe, an annular cone fitting slidingly upon said pipe at the slotted portion, a connecting-rod within the pipe, means joining the connecting-rod and cone, a handle for the device, means for actuating the connecting-rod, prongs pivoted to the arms of said bracket provided with upper ends in contact with said cone, and means for spreading the lower ends of the prongs when the connecting-rod is lowered, substantially as and for the purpose set forth.

654,904.



654,905. BUILDING MATERIAL. MARK W. MARSDEN, Philadelphia, Pa. Filed July 2, 1900. Serial No. 22,309. (No model.)



Claim.—1. A building-plate provided with perforations having continuous marginal flanges on one side only of the plate, substantially as described.

2. A building-plate provided with perforations having continuous marginal flanges on one side only of the plate with the burs turned toward the interior thereof, substantially as described.

3. A building-plate provided with circular perforations having continuous marginal flanges with the burs turned toward the interior thereof, substantially as described.

4. A building-plate having perforations punched therein forming continuous marginal flanges on one side only of the plate, said flanges being slightly dished or concaved, substantially as described.

5. A building-plate having perforations punched therein forming continuous marginal flanges on one side only of the plate, said flanges being slightly dished or concaved and having the burs turned inward toward the interior thereof, substantially as described.

6. A building-plate provided with circular perforations having continuous marginal flanges directed to one side only of the plate, said flanges being slightly dished or concaved, with the burs turned inward or reversely thereto, substantially as described.

7. A building-plate provided with perforations having continuous marginal flanges at one side of the plate in substantially the form of truncated cones, the burs of the flanges being turned inward or reversely thereto, substantially as described.

8. A perforated building-plate as an article of manufacture, having perforations punched in the same of circular form, said perforations being provided on one side only of the plate with continuous marginal flanges, in the shape of a frustum, the flanges being formed in the operation of punching and having the burs turned inward or reversely thereto, substantially as described.

9. A perforated building-plate as an article of manufacture, having perforations punched in the same of circular form, said perforations being provided on one side only of the plate with continuous marginal flanges slightly dished or concaved, the flanges being formed in the operation of punching and having the burs turned inward or reversely thereto, substantially as described.

10. A partition or wall consisting of sheets or plates provided with flanged perforations and having one of their edges equipped with tongues adapted to overlap the edge of an adjoining sheet or plate, and tie or distance pieces provided at their edges with teeth penetrating the perforations of adjoining sheets and bent over to clench the same, substantially as described.

11. A partition or wall consisting of sheets or plates provided with circular flanged perforations, and tie or distance pieces provided with pointed teeth fitted through said circular perforations, and bent over at their ends to clench the plates or sheets, substantially as described.

12. A partition or wall consisting of sheets or plates provided with conically-shaped perforations, and tie or distance pieces provided with pointed teeth fitted through said conical perforations and bent over at their ends to clench the plates or sheets, substantially as described.

13. A partition or wall consisting of perforated sheets or plates provided at one of their edges with tongues, and corrugated distance or tie pieces provided with teeth fitted through perforations of adjoining plates and bent over to clench the same, substantially as described.

14. A partition or wall consisting of sheets or plates provided with circular perforations having continuous marginal flanges, and tie or distance pieces provided with pointed teeth fitted through said perforations and bent over at their ends to clench the plates or sheets, substantially as described.

15. A building-plate provided with perforations having continuous marginal flanges on one side only of the plate, said plate having its edges equipped with tongues, as and for the purpose set forth.

16. A building-plate provided with perforations formed by removing circular blanks therefrom, said perforations having continuous marginal flanges on one side only of the plate, and the latter having its edges equipped with tongues, as and for the purpose set forth.

17. A building-plate provided with circular perforations having continuous marginal flanges directed to one side of the plate, in combination with a layer of plaster or cement material spread over said flanges and keying through the perforations, substantially as described.

18. Tie or distance pieces consisting of elongated sheets of metal provided laterally with serrated edges, substantially as described.

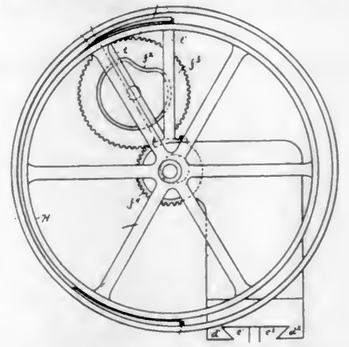
19. A building-plate provided with circular perforations having continuous marginal flanges to one side of the plate, with the burs turned inward or reversely thereto, in combination with a layer of plaster or cement material spread over said flanges and keying through the perforations, substantially as described.

654,906. APPARATUS FOR EXAMINING CONDITION OF THE LUNGS AND HEART. DANIEL R MARSH, Blackheath, Canada. Filed Nov. 11, 1897. Renewed Nov. 24, 1899. Serial No. 738,229. (No model.)



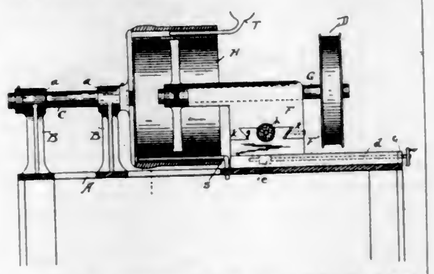
Claim.—In combination with an apparatus for examining the condition of the heart, lungs, &c., an index-plate, pivoted to the metallic disk and provided with an opening in the plate to register with the openings of different sizes in the disk underneath, and an index-finger attached to the index-plate to point to one of the letters L, S, and W, formed on the margin of the disk, indicating the vibrations to be low, soft or weak as desired, substantially as specified.

654,907. PILL-MAKING MACHINE. WALTER MIDDLEDITCH, Detroit, Mich. Filed May 24, 1899. Serial No. 718,018. (No model.)



Claim.—In a pill-making machine, the combination of a hollow roll, E, circumferentially grooved on its inner surface, a cylindrical roll, H, circumferentially grooved on its outer surface, the roll, H, being located within the roll, E, with its axis parallel to the axis thereof, and with each of its circumferential grooves in the same vertical plane as one of the circumferential grooves of the roll, E, said rolls being located eccentric to each other so that the salient portions of their surfaces shall be approximately tangent at one point, and shall be a distance apart as great as the diameter of the pipes of material to be used at another point, means for rotating said rolls at different velocities, means for feeding the pipes of material at a point ahead of the point of tangency and means for withdrawing the formed pills at a point beyond the point of tangency, substantially as described.

654,908. MACHINE FOR ROLLING PIPES OR STRIPS OF PILL MASS. WALTER MIDDLEDITCH, Detroit, Mich. Filed May 24, 1899. Serial No. 718,019. (No model.)



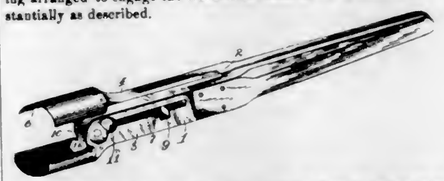
Claim.—1. In a machine for rolling pipes or strips of pill mass, a hollow roll, and a cylindrical roll inserted in the hollow of the first roll, means for feeding the pill mass between the rolls, and means for removing the formed pipes or strips from between the rolls, substantially as described.

2. In a machine for rolling pipes or strips of pill mass, a hollow roll, and a cylindrical roll inserted in the hollow of the first roll, a feed-pipe projecting into the space between the rolls, a tray adapted to be inserted in a space between the rolls, and a stop arranged to prevent the tray from rotating, substantially as described.

3. In a machine for rolling pipes or strips of pill mass, a hollow roll, and a cylindrical roll inserted in the hollow of the first roll, means for feeding the pill mass between the rolls, means for removing the formed pipes or strips from between the rolls, means for adjusting the eccentricity of one roll with respect to the other, and means for withdrawing one roll from the other, substantially as described.

654,909. ADJUSTABLE POST-HOLE DIGGER. CHALMERS L. MONROE, Geneva, W. Va. Filed Jan. 18, 1900. Serial No. 1,917. (No Model.)

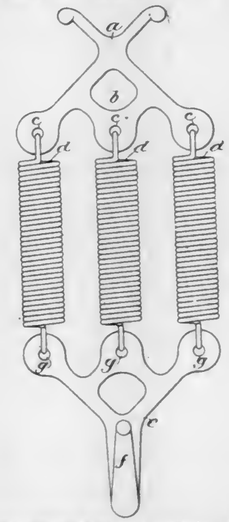
Claim.—1. A device of the class described comprising the member 1 provided with a longitudinal slot having transverse branches or extensions, and the member 2 provided with a pair of fastening devices passing through the said slot, one of the fastening devices being arranged to engage the transverse branches or extensions, substantially as described.



2. A device of the class described comprising the bar or member 1 provided with a longitudinal slot having transverse extensions or branches, the bar or member 2 provided with a pair of fastening devices passing through the said slot and laterally offset from each other, whereby one of the fastening devices forms a pivot and the other fastening device is adapted to engage the branches or extensions, substantially as described.

3. A device of the class described comprising the member 1 provided with a longitudinal slot having transverse extensions, the member 2 provided with laterally-offset diagonally-alined fastening devices passing through the said slot, one of the fastening devices forming a pivot and the other being adapted to engage the transverse extensions of the slot, and blades or shovels carried by the members, substantially as described.

654,910. YIELDING SLING FOR HAMMOCKS. LANGDON W MOORE, Boston, Mass., assignor to Frank Thompson, West Swanzey N. H. Filed May 3, 1900. Serial No. 15,304. (No model.)



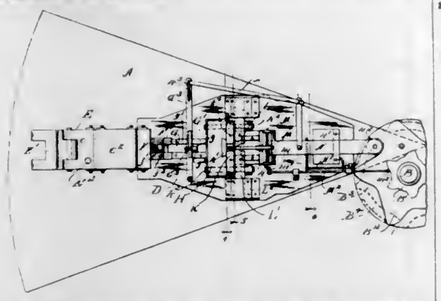
Claim.—In a yielding sling for hammocks, an upper member *a* having an eye *b* for the attachment of a tie-rope, and three apertures *c*, *c*, *c* for the attachment of springs, in combination with a lower member *e* having a hook *f* at its lower extremity, three apertures *g*, *g*, *g* for the attachment of springs, and interposed springs *d*, *d*, *d*, all substantially as and for the purpose specified.

654,911. NAIL-MAKING MACHINE. JAMES J. MORRISSEY, Chicago, Ill. Filed Dec. 9, 1899. Serial No. 739,786. (No model.)

Claim.—1. The combination with the central shaft carrying actuating-cams, of a plurality of frame-plates mounted therearound, wire feeding, nipping, heading and pointing and severing mechanisms carried by each of said plates, and reciprocating actuating-bars for said mechanisms provided with rollers on their ends adjacent to the shaft and each engaging with the same relative cam.

2. The combination with the central shaft carrying actuating-cams, of a plurality of frame-plates mounted therearound to slide convergingly theretoward, wire feeding, nipping, heading and pointing and severing mechanisms carried by each of said plates reciprocating actuating-bars for said mechanisms, the bars for each plate adapted to engage endwise with the same relative cam on the cen-

tral shaft, and means for moving each plate with its freighted group of mechanisms toward or away from said shaft to throw said mechanisms into or out of action.



3. The combination with the central driving-shaft carrying actuating-cams, one for each serial group of mechanisms, of frame-plates mounted therearound, wire feeding, nipping, heading and pointing and severing mechanisms carried by each of said plates, reciprocating actuating-bars for said mechanisms, the bars for each serial group of mechanisms adapted to engage endwise with the same relative cam on the central shaft, and independent means carried by each frame for controlling the length of feed thereon.

4. The combination with the central driving-shaft carrying actuating-cams, one for each serial group of mechanisms, of frame-plates mounted therearound, wire feeding, nipping, heading, and pointing and severing mechanisms carried by each of said frame-plates, reciprocating actuating-bars for said mechanisms mounted to move in guides in said plate tangentially to the shaft or pitch-line of the cams, and rollers on the proximate ends of said bars, riding upon the periphery of the same relative cam traveled by the actuating-bars of all the series of the same group.

5. The combination with the central driving-shaft carrying actuating-cams, one for each serial group of mechanisms, of frame-plates arranged therearound to slide in guides tangential to the shaft or pitch-line of said cams, reciprocating actuating-bars borne by said plates, one for each individual mechanism thereon, rollers on the proximate ends of said bars, traveling upon the same relative cam engaged by the actuating-bars of the other mechanisms of like rank carried by the remaining frame-plates, and means for independently advancing said frame-plates toward or retracting them from said cams.

6. The combination of the central driving-shaft, the table encircling it, the triangular bench-sections tangentially secured to said plate, the frame-plates mounted in guides therein to slide toward and from said shaft, the feeding, nipping, heading and pointing and severing mechanisms carried by said frame-plates, the reciprocating actuating-bars, also carried by said plates, the cams upon said shaft, one for each actuating-bar of a like serial group of mechanisms, and the locking-toggles with their levers for independently projecting and withdrawing each plate.

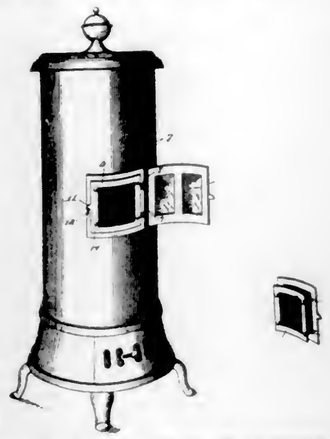
7. The combination of the central driving-shaft, the frame-plates encircling it, the wire-feed carried by each frame-plate, the upsetting-plunger and intermediate connections by which said feed is actuated, the cam on said central shaft common to all of said plungers, the nipping-jaws also carried by each frame-plate, the reciprocating bars by which they are operated, the cam on said central shaft common to all of said bars, the pointing and severing jaws likewise carried by said frame-plates, the reciprocating bar for actuating them and the cam on said central shaft common to all of said bars.

8. The combination of the central driving-shaft, the frame-plates encircling it, the wire-feed carried by each frame-plate, the upsetting-plunger and intermediate connections by which said feed is actuated, the cam on said central shaft common to all of said plungers, the nipping-jaws also carried by each frame-plate, the reciprocating bars by which they are operated, the cam on said central shaft common to all of said bars, the pointing and severing jaws likewise carried by said frame-plates, the reciprocating bar for actuating them, the cam on said central shaft common to all of said bars, the ejectors with their rock-shafts and actuating-rods further carried by said frame-plates, and the cam common to all of said rods.

9. The combination of the nipper-jaws, adjustably held in the ends of the elbow-levers, the spring attached to the opposite ends of said levers, adjustable stops to limit the throw of said levers, elbow levers or toggles engaging the ends of said levers and adapted to forcibly spread them, the reciprocating actuating-bar engaging the arms of said toggles, and the cam.

10. The combination of the pointing and severing jaws, adjustably held in slides arranged transversely of the throatway, the levers having their ends engaging said slides and adapted to move them, the spring engaging the opposite ends of said levers, the elbow-levers or toggles adapted to spread the ends of said levers, the reciprocating actuating-bar engaging the arms of said toggles, and the cam.

654,912. GAS-SCREEN. CHARLES J. MURPHY, Annapolis, Md. Filed Dec. 23, 1899. Serial No. 741,452. (No model.)



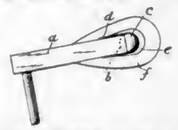
Claim.—In a gas-screen for stoves, the combination with a substantially-rectangular frame and a wire mesh carried thereby, of hooks on one edge of said frame adapted to fit over the hinges of the stove-door to detachably secure the screen in place, a second parallel frame and mesh secured to and carried by the first-mentioned frame and adapted to rest within the stove substantially as described.

654,913. PACKING-BOX FOR TIN-PLATE. JOHN G. MCILWRAITH, Anderson, Ind. Filed Dec. 6, 1899. Serial No. 739,372. (No model.)



Claim.—A packing-box for tin-plate the sides and ends whereof are composed entirely of thick wooden pieces, secured together at the corners of the box where they meet, and the top and bottom whereof are composed of thin pulp-board adapted to be easily cut and of a size to extend over the edges of said side and end pieces, to which they are nailed, the reinforcing-strips 3 being provided outside of said pulp-boards near the edges to receive and support the nails, whereby a light, and at the same time strong and serviceable box for the purpose is provided, substantially as set forth.

654,914. PIANOFORTE-HAMMER. CHARLES M. MCQUILKIN, Delson, Victoria. Filed Feb. 19, 1900. Serial No. 5,684. (No model.)

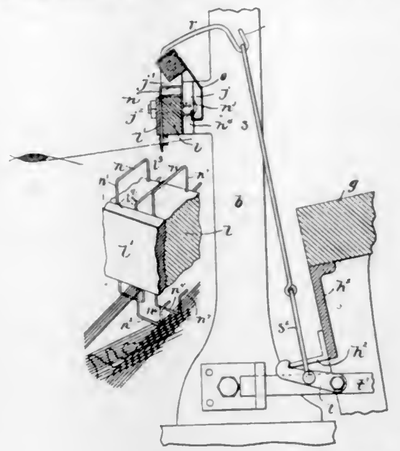


Claim.—1. A pianoforte-hammer having an elastic hollow ball seated on the rigid portion of the hammer, and bearing against the inner side of the cushioning material of the hammer.

2. A pianoforte-hammer having a recess at one end in which is placed a hollow elastic ball said ball being held in position by an elastic strip solutioned to the wood of hammer but not to the ball, and having coverings of felt or like material substantially as and for the purposes described.

3. A pianoforte-hammer having a hollow elastic ball placed at one end and held in position by elastic strips as *d* and *g*—solutioned to hammer—and having coverings of felt or like material substantially as and for the purposes described.

654,915. LOOM. CHARLES F. PERHAM, Lowell, Mass. Filed Nov. 4, 1896. Renewed May 31, 1900. Serial No. 18,638. (No model.)



Claim.—1. In a loom, the combination with means for disconnecting the power from the operative parts of the loom, of a series of detectors mounted independently of the lay and the harness and arranged above the warp-threads and having their lower ends resting loosely on the upper threads of the shed, a support above the warp in the rear of the harness for said detectors and means coacting with said detectors and operated by one of the moving parts of the loom for actuating the disconnecting means, when the warp threads break or become entangled.

2. In a loom, the combination with means for disconnecting the power from the operative parts of the loom, of a harness, a lay adapted to actuate the said means, detectors each arranged to connect the said device and the said means so as to effect the stoppage of the loom when the warp-threads are broken or entangled, said detectors each resting loosely at their lower ends upon two or more threads and a support located above the warp in the rear of the harness for said detectors.

3. In a loom, the combination with means for disconnecting the power from the operative parts of the loom, of a series of detectors having their lower ends resting loosely on the warp-threads and arranged to connect the lay with said disconnecting means, when the warp-threads break or become entangled, to operate said disconnecting means, said detectors being mounted independently of the lay and the harnesses and a support for said detectors located above said warp in the rear of the harness.

4. In a loom, the combination with means for disconnecting the power from the operative parts of the loom, of a dog connected with said disconnecting means, a lay-beam, a series of detectors mounted independently of the lay-beam and the harnesses and having their lower ends resting loosely upon the warp-threads and arranged to move said dog into the path of the said beam when said warp-threads are broken and become entangled and a support for said detectors located above said warp in the rear of the harness.

5. In a loom, the combination with means for disconnecting the power from the operative parts of the loom, of a dog connected with the disconnecting means, a lay-beam, a feeler connected to said dog and operated by said beam, a series of detectors having their lower ends resting loosely upon the warp-threads and coacting when the warp-threads break or become entangled with the feeler to move said dog into the path of the lay-beam and a support for said detectors located above said warp in the rear of the harness.

6. In a loom, the combination with the shipper, the lay-beam, and a dog for operating said shipper arranged to lie out of the path of the lay-beam, of a feeler connected to the device and reciprocated by the said lay-beam, a series of detectors each having a bent lower end to rest loosely upon the warp-threads, and arranged to drop into the path of the feeler when the threads become broken or entangled, and to thereby cause the feeler to hold the dog in the path of the lay-beam for the purpose described and a support for said detectors located above said warp in the rear of the harness.

7. In a loom, the combination with a lay, and means for disconnecting the power from the loom, of a series of float-detectors, each formed of a wire having a bent lower end resting upon the warp-threads and arranged to cause the actuating of the disconnecting means and a support for said detectors located above said warp in the rear of the harness.

8. A float-detector formed of wire and having a horizontal portion to rest on the thread transversely thereof, a vertical portion, and an end projecting forward parallel with the warp-threads in combination with a feeler, and mechanism coacting with said feeler to stop the loom as described.

654,916. SHUTTLE-BINDER. CHARLES F. PERHAM, Lowell, Mass. Filed Dec. 5, 1898. Renewed May 31, 1900. Serial No. 18,639. (No model.)



Claim.—1. A shuttle-checking mechanism comprising a shuttle-box, a false wall attached to the mouth of the box and having its free end extending toward the opposite end of said box, and a shuttle-binder pivoted adjacent the last-mentioned end of the said box, said shuttle-binder having an inwardly-curved edge bearing against the outer face of the said wall, whereby the point of contact between the binder and the wall advances toward the free end of the said wall as the shuttle continues to enter the box.

2. A shuttle-checking mechanism comprising a shuttle-box, a shuttle-binder, and a supplemental resilient, substantially-straight strip having one end attached to the mouth of the shuttle-box and the other free end projecting between the shuttle-binder and the opposing wall of the shuttle-box, whereby said shuttle-binder bears against the said free end of the said strip.

3. A shuttle-checking mechanism comprising a shuttle-box and a substantially-straight spring having one end secured to the shuttle-box at the mouth thereof, and its free end arranged to be thrust at an angle to the longitudinal lines of the shuttle-box in the path of the shuttle by the shuttle-binder, whereby said shuttle may be frictionally engaged substantially throughout its whole length by said spring.

4. A shuttle-checking mechanism comprising a shuttle-box, a substantially-straight resilient strip attached at the mouth of the said box and having its free end projecting toward the opposite end of the shuttle-box, and means for bearing yieldingly against the outer face of said wall to move its free end transversely of the path of the shuttle, whereby the shuttle may be frictionally engaged by substantially the entire length of the said strip.

5. A shuttle-checking mechanism comprising a shuttle-box, having a stationary side wall and a movable false wall between which the shuttle can enter, said wall being formed of resilient material attached at one end, and a pivoted lever having a cam-surface bearing against said false wall at its free end whereby said free end may be moved transversely of the path of the shuttle.

6. A shuttle-checking mechanism comprising a shuttle-box having a stationary side wall and a movable resilient false wall between which the shuttle can enter, said movable wall having one end secured at the mouth end of the said box, and having its other end free to move transversely of the box and a lever fulcrumed near the last-mentioned free end and having a curved surface bearing against said wall, said false wall and lever constituting compound levers for engaging the shuttle.

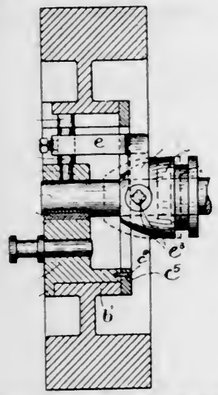
7. A shuttle-checking mechanism comprising a shuttle-box having a stationary side wall and a movable substantially-straight false wall between which the shuttle can enter, said movable wall being resilient and having one end secured at or near the mouth of the shuttle-box, with its free end movable transversely of the path of the shuttle and a curved lever fulcrumed near the other end of the box, and bearing against the said movable wall, said wall and lever constituting compound levers for gripping the shuttle.

8. A shuttle-checking mechanism, comprising a shuttle-box having a side wall and a false wall between which the shuttle can enter, said false wall being of a length adapted to contact with the shuttle throughout the length of the straight side thereof, said false wall being attached at one end to the mouth of the box, and having its free end movable transversely of the box, and means constructed and arranged to move the free end of the wall at an angle to the path of the shuttle, substantially as set forth.

9. A shuttle-checking mechanism comprising a shuttle-box having a false wall attached to the mouth thereof, with its free end extending toward the opposite end of said box, said false wall being of a length adapted to contact with the shuttle throughout the length

of the straight side thereof and an automatic binder for moving the free end of the said wall to an angle relatively to the path of the shuttle to check the same and then releasing said wall to reduce the pressure of the said wall against the shuttle.

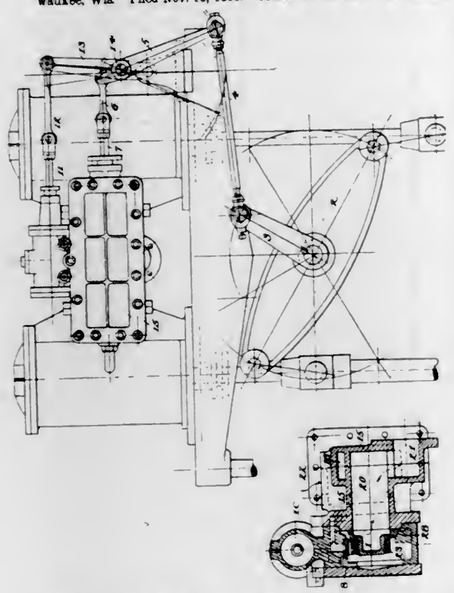
654,917. CLUTCH MECHANISM. CHARLES F. PERHAM, Lowell, Mass. Filed Apr. 17, 1899. Renewed May 31, 1900. Serial No. 18,640. (No model.)



Claim.—1. The combination of a shaft, an expansible ring having a hub rigidly secured to the shaft, a radial pin journaled in the hub and having a flattened end adapted to expand said ring, means for rotating said pin, a pulley having its hub journaled upon the periphery of the expansible ring and means on the ring for holding the pulley against axial movement.

2. The combination with a split ring, a hub, and an arm connecting said hub with said ring between the ends thereof, of a rocking pin arranged diametrically opposite said arm, said pin having one end journaled in the hub and its other end flattened and lying between the ends of the split ring, a wheel or other rotatable member encircling the split ring, and means for rocking said pin.

654,918. DUPLEX STEAM-PUMP. HARMANUS L. PERRINE, Milwaukee, Wis. Filed Nov. 16, 1899. Serial No. 737,214. (No model.)



Claim.—1. In a duplex pumping-engine and in combination with two simple or high-pressure steam-cylinders and their pistons having equal diameter and stroke, each cylinder having its own three-ported seat, a ported casting between and joining said cylinders with ported faces in communication therewith, a steam-chest on the third ported face, a reversing-piston in said chest, a slide-valve comprising two D-valves in one rigidly connected in line and a cavity in each valve part for each three-ported seat and having a movement at right angles with the travel of the pistons, the auxiliary slide-valve and mechanism connecting the double D-valve, the auxiliary slide-valve and the reversing-piston for operation as described.

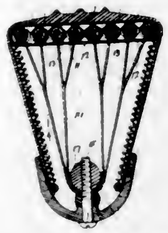
2. In a duplex pumping-engine and in combination with two steam-cylinders and their pistons having equal diameter and stroke, each cylinder having its own three-ported valve-seat, a casting between and joining said cylinders with ported faces in communication therewith, of a slide-valve comprising two D-valves in one rigidly connected in line and having a cavity in each valve part for each three-ported seat and having a movement at right angles with the travel of the pistons, the auxiliary slide-valve the reversing-piston and the compound levers connecting the double D-valve and the reversing-piston for operation in the way described.

3. In a duplex pumping-engine and in combination with two steam-cylinders and their pistons, each cylinder having its own three-ported seat, a casting between and joining said cylinders with ported faces in communication therewith, of a slide-valve comprising two D-valves in one rigidly connected in line and a cavity in each valve part for each three-ported seat standing vertical supported upon an inward-beveled seat and having a movement at right angles with the travel of the pistons, the auxiliary slide-valve, the reversing-piston and the compound levers connecting the double D-valve and the reversing-piston.

4. In a duplex-pumping-engine the combination of two vertical trunk or differential steam-cylinders and their pistons a working beam connecting said pistons a ported casting between and in communication with said cylinder three-ported valve-seats thereon one for each cylinder, a double D slide-valve each valve part rigidly connected in line and covering both three-ported valve-seats having a separate cavity for each valve-seat, a steam-chest and the auxiliary slide-valve, with a reversing piston and mechanism connecting said reversing-piston, the double D slide-valve and the auxiliary slide-valve for operation in the way described.

5. In a duplex pumping-engine and in combination with two differential steam-cylinders, a ported casting between, joining and in communication therewith, a three-ported valve-seat for each cylinder on said casting, a slide-valve comprising two D-valves in one rigidly connected and in line and covering both of said three-ported valve-seats, a steam chest and the auxiliary slide-valve, a reversing-piston and mechanism connecting said reversing-piston, the double D-valve and the auxiliary slide-valve for operation as described.

654,919. TIRE. CHARLES O. ROBERTON, Glasgow, Scotland, and JAMES J. ROBERTON, Leeds, England, assignors of one-third to George E. Roberton, Montreal, Canada. Filed Aug. 9, 1898. Serial No. 688,219. (No model.)



Claim.—1. In a wheel, the combination with the rim and tire thereof the tire being of greater width than the rim, of a series of coiled springs connecting the side edges of said tire to the adjacent side edges of the rim and said springs converging toward the center of the wheel in a plane at right angles to the axis thereof, substantially as shown.

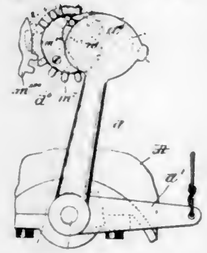
2. In a wheel, the combination with the rim and tire thereof the tire being of greater width than the rim of a cover for the tread of the tire, and a series of coiled springs connecting the side edges of said cover to the adjacent edges of said rim, substantially as shown.

3. In a wheel, the combination with the rim and tire thereof, of a pair of rings circumferentially encircling said rim, a series of coiled springs connecting the side edges of said tire to said rings, and a cover taking over said tire and coiled springs and having its side edges connected to said rings, for the purpose set forth.

4. In a wheel the combination with the rim and tire, thereof, of a pair of open rings circumferentially encircling said rim, a coiled spring for connecting the ends of each of said rings, a series of coiled springs connecting the side edges of said tire to said rings; and a cover taking over said tire and coiled springs and having its side edges connected to said rings for the purpose set forth.

5. In a wheel, the combination with the rim and tire thereof the tire consisting of a series of rings of U shape in cross-section and arranged side by side, of a series of flexible guy-strips extending from said rim to said rings; a series of short lengths of wire taking into the cavities of said rings; a series of clips adapted to retain said short lengths of wire in place; said guy-strips being connected at their outer ends to said short lengths of wire; and means for connecting the inner ends of said guy-strips to the rim, substantially as and for the purpose set forth.

654,920. SHUTTLE-BOX MOTION FOR LOOMS. EDWARD L. SARGENT, Taunton, Mass., assignor to the Mason Machine Works, same place. Filed Mar. 26, 1900. Serial No. 10,125. (No model.)



Claim.—1. In a loom, a rotating shaft; a crank; a shuttle-box; a two-part lever intermediate said crank and shuttle-box to impart motion to the latter by and from the former, said members of the lever having a common fulcrum and provided with opposite extensions, a spring directly connecting said extensions forming a separable yoke, and a shoulder on one member normally maintained by the spring in engagement with the other member.

2. The combination with a moving toothed member constituting a driver, of a driven gear having a plurality of toothless spaces, rigidly connected, radially-shiftable teeth for said spaces, and a shifter normally actuated by gravity to move said teeth into and out of operative position.

3. The combination with a rotatable driving-gear, of a driven gear having a toothless space, a shiftable tooth carried thereby, and a shifter normally actuated by gravity to move said tooth into or out of operative position.

4. The combination with a rotatable driving-gear, of a driven gear having a toothless space, a shiftable tooth carried thereby, a shifter normally actuated by gravity to move said tooth into or out of operative position, and a controller to govern the movement of the shifter.

5. The combination with a movable toothed driving member, of a driven gear having a plurality of toothless spaces, rigidly-connected and radially-movable teeth carried by said gear, a gravity-actuated shifter for said teeth, also mounted on the gear, and means to control the gravity-induced movements of the shifter.

6. The combination with a movable toothed driving member, of a driven gear having a diametral slot in its face and toothless spaces opposite the ends thereof, rigidly-connected and radially-movable teeth in the slot, a shifter movable at right angles to said teeth, to effect their radial movement, and a cap secured to said gear and having guideways for the shifter.

7. The combination with a movable toothed driving member, of a driven gear having a plurality of toothless spaces, rigidly-connected and radially-movable teeth carried by said gear, a gravity-actuated shifter for said teeth, a slotted cap on the gear, having guideways for the shifter, and a boss on the shifter, movable in said slot in the cap, to limit the movement of the shifter.

8. The combination with a movable toothed driving member, of a driven gear having a plurality of toothless spaces, rigidly-connected and radially-movable teeth carried by said gear, a gravity-actuated shifter for said teeth, a slotted cap on the gear, having guideways for the shifter, a boss on the shifter and extended into the slot, to limit the movement of the shifter, and means to control the gravity-induced movement of the shifter relatively to the gear.

9. The combination with a rotatable driving-gear, of a driven gear having a toothless space, a radially-movable tooth therefor and a gravity-actuated shifter for the tooth, both movable bodily with the gear and movable relatively to each other, and means to control the gravity-induced movement of the shifter.

10. The combination with a rotatable driving-gear, of a driven gear having a toothless space, a shiftable tooth carried thereby, a gravity-actuated shifter to move said tooth radially, both being mounted on the gear, a stud on the shifter, and a controller having a cam portion to engage said stud and govern the gravity-induced movement of the shifter, and means to maintain the controller in position to lock the shifter from operative movement.

11. In a loom, the combination with a moving driving-gear; a driven gear having a plurality of toothless spaces; a shuttle-box, and operating connections between it and said driven gear; of rigidly-connected, radially-movable teeth for said toothless spaces, a shifter normally actuated by gravity to move the teeth into and out of position for engagement with the driving-gear, and a controller to determine the time of operation of the shifter.

12. In a loom, the combination with a moving driving-gear; a driven gear having a plurality of toothless spaces; a shuttle-box, and operating connections between it and said driven gear; of rigidly-connected, radially-movable teeth for said toothless spaces, and means normally actuated by gravity to move one tooth into operative, and the other tooth into inoperative position relative to the toothless spaces, and vice versa.

13. In a loom, the combination with a moving driving-gear; a driven gear having a plurality of diametrically-opposite toothless spaces; a shuttle-box and operating connections therefor between it and the driven gear; of shifting teeth for said spaces, mounted on the gear, a shifter also mounted on the gear to move said teeth into and out of position for engagement with the driving-gear, as required, and a controller to at times lock the shifter from operative movement.

14. In a loom, the combination with a moving driving-gear; a diametrically-slotted driven gear having toothless spaces at the ends of the slots, a slide-bar in said slot, having a tooth at each end, a shuttle-box, and operating connections between it and the driven gear, of a gravity-actuated shifter mounted on the driven gear and operatively connected with said slide-bar, movement of the shifter effecting movement of the slide-bar to place one tooth in operative position and the other in inoperative position, whereby intermitting rotation will be transmitted to the driven gear and movement imparted to the shuttle-box.

15. In a loom, the combination with a moving driving-gear; a driven gear having a toothless space; the shuttle-box; and its operating mechanism actuated by the driven gear; of a movable tooth for the latter, a gravity-actuated, sliding shifter mounted on the driven gear and movable relatively to the tooth, to shift the latter into and out of position for engagement with the driving-gear, and means to control the gravity-induced movement of the shifter.

16. In a loom, the combination with a moving driving-gear; a driven gear having a toothless space; the shuttle-box; and its operating mechanism actuated by the driven gear; of a movable tooth for the latter; a shifter normally actuated by gravity to shift the tooth into and out of position for engagement with the driving-gear, a controller to govern the gravity-induced movement of said shifter, a pattern-surface, and connections between it and the controller, to determine the movement of the shifter by or through the controller.

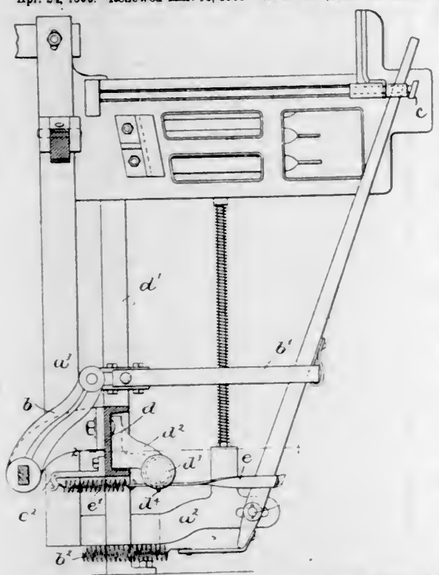
17. In a loom, the combination with a moving driving-gear; a driven gear having a toothless space; the shuttle-box and its operating mechanism actuated by the driven gear; of a movable tooth for the latter, a shifter normally actuated by gravity to shift the tooth into and ont of position for engagement with the driving-gear, a controller to at times lock the shifter from operative movement, and a pattern-surface operatively connected with the controller, to effect movement of the latter into locking or unlocking position.

18. The combination with a moving toothed member constituting a driver, of a driven gear having a toothless space, a shiftable tooth, a shifter to move it into and out of operative position, said tooth and shifter both being mounted on the gear, and means controlled by the position of the shifter to lock the tooth in operative position.

19. The combination with a moving toothed member constituting a driver, of a driven gear having a toothless space, a shiftable tooth on the gear, a relatively-movable shifter for said tooth, also mounted on the gear, means to prevent movement of the shifter relatively to the tooth, and a lug on one to coöperate with a locking-face on the other, to maintain the tooth in operative position.

20. The combination with a moving toothed member constituting a driver, of a driven gear having a toothless space, a shiftable tooth radially movable on said gear, a shifter movable at right angles to the tooth and having a cam-face and a straight locking-face, and a coöperating projection on the tooth, movement of the shifter effecting movement of the tooth by coöperative engagement of the cam-face and lug, the locking-face engaging said projection when the tooth is in operative position and maintaining the tooth operative.

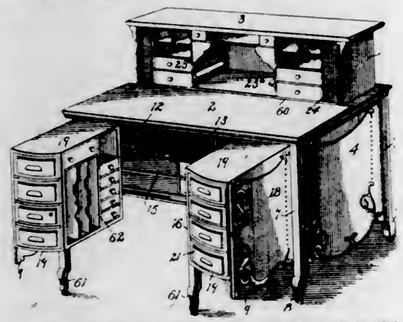
654,921. CHECKING DEVICE FOR LOOMS. OKREN A. SAWYER, Lowell, Mass., assignor to Charles F. Perham, same place. Filed Apr. 24, 1899. Renewed Mar. 16, 1900. Serial No. 8,998. (No model.)



Claim.—1. In a loom, the combination with a picker-stick, of a device for checking the return movement of said stick, the same comprising a non-rotary friction member, a strap frictionally engaged with said member, and having one end connected to the picker-stick, and a spring connecting the other end of said strap with a relatively-stationary part of the loom.

2. In a loom, the combination with a picker-stick, of a device for checking the return movement of said stick, the same comprising a friction member which is non-rotary with respect to the said stick, a strap frictionally engaging said member and adapted to slip therearound when the stick moves outward, and a spring for taking the slack in the strap when the stick moves inward.

654,922. TABLE-DESK. JULIUS SCHIPKOWSKY, Milwaukee, Wis. Filed Sept. 21, 1899. Serial No. 731,189. (No model.)



Claim.—1. A flat-top cabinet-desk comprising a vertically-slidable flush-seating section forming a flush portion of the writing-bed, a plurality of vertically-hinged sections, and operative connections between the slidable and hinged sections, whereby the operation of the hinged sections effects the operation of the slidable section, substantially as specified.

2. A flat top cabinet-desk comprising a vertically-slidable flush-seating section, forming a flush portion of the writing-bed, a vertically-hinged section having an operative connection with the slidable section for raising and lowering the same, a lever connected to the slidable section, a second lever connected with the first-named lever, a lever-actuating spring, and a tension-adjusting device for the spring, substantially as specified.

3. A flat-top cabinet-desk comprising a vertically-slidable flush-seating section forming a flush portion of the writing-bed, a vertically-hinged section having an operative connection with the slidable section for raising and lowering the same, a lever operatively connected with the slidable section, a lever-actuating spring pivotally mounted at one end on a fixed part and exerting its tension on said lever, and a tension-adjusting device for the spring, substantially as specified.

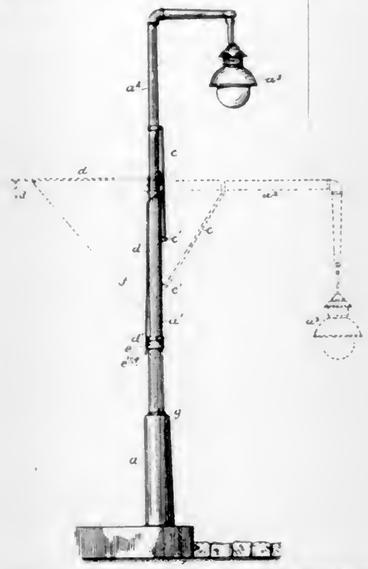
4. A flat-top cabinet-desk comprising a vertically-slidable section, a hinged section for raising and lowering the slidable section, said hinged section having an operative connection with the slidable section, and means actuated by the hinged section upon the latter resuming a normal position for locking the slidable section, substantially as specified.

5. A flat-top cabinet-desk comprising a vertically-slidable section, a hinged section having an operative connection therewith for raising and lowering the same, a slide-bar actuated by the hinged section, and means on the slidable section engaged by the slide-bar for locking the slidable section, substantially as specified.

6. A flat-top cabinet-desk comprising a vertically-slidable section, a vertically-hinged section having an operative connection therewith for raising and lowering the same, a slide-bar actuated by the hinged section, and hooks on the slide-bar engaging complemental devices on the slidable section for locking the latter, substantially as specified.

7. A flat-top cabinet-desk comprising a vertically-slidable section, a vertically-hinged section having an operative connection therewith for raising and lowering the same, a locking slide-bar arranged to be actuated by the hinged section, a cam-lever operatively related to the slide-bar and arranged in the path of the hinge-section, engaging devices on the slide-bar cooperating with complemental devices on the slidable section for locking the latter, and a retracting-spring for the slide-bar, substantially as specified.

654,923. LAMP-POST. GEORGE D. SCOTT, Birmingham, Ala., assignor to the Kitson Hydrocarbon Heating and Incandescent Lighting Company, Philadelphia, Pa. Filed Mar. 26, 1900. Serial No. 10,264. (No model.)



Claim.—1. The combination in a lamp-post having a slot, of a member hinged to the post and provided with a lateral projection, a counterbalance connected with the hinged member, a link pivoted to said hinged member, and a cross-head working in the slot in the post and attached to the link for guiding and holding the hinged member in respect to the post, substantially as described.

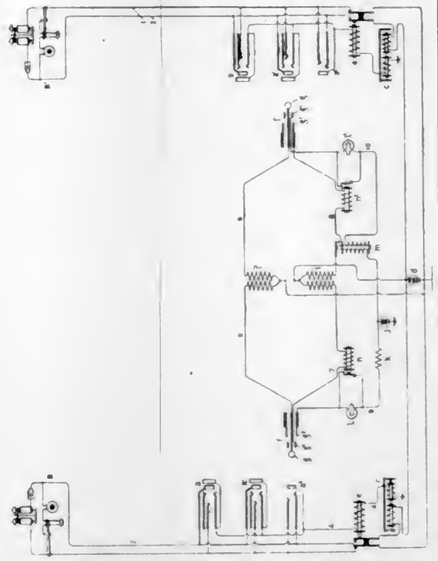
2. The combination in a lamp-post of a base, a post portion revolubly mounted on top of the base, a member hinged to the post portion and having a lateral projection, a lamp hinged to said portion and means for guiding and holding the hinged and revoluble members in respect to the base, substantially as described.

3. The combination in a lamp-post of a base carrying two members, whereof both are afforded a rotary movement and the one an oscillating movement, a lamp suspended from the oscillating member and adapted to respond to changes in its position, means for raising and lowering the member carrying the lamp, and a locking attachment whereby when said member is in lowered position the revoluble member is free to turn, substantially as described.

4. A lamp-post consisting of a base, a latch, a post portion revolubly mounted on the base, a hinged member terminating in an arm or projection having a movable lamp, a cross-head and its complemental link adapted to guide the hinged member, and a rod attached to the hinged member and having a pin adapted to engage the latch when in normal position and when in abnormal position to permit of the post portion being rotated, substantially as described.

5. A lamp-post consisting of a base, a revoluble post portion, a slotted hinged member carrying a movable lamp, and a supply-tube leading to the movable lamp through the members and coiled to permit the members to rotate and oscillate without interfering with the supply, substantially as described.

654,924. SWITCHBOARD FOR TELEPHONE-LINES. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Dec. 26, 1899. Serial No. 741,573. (No model.)

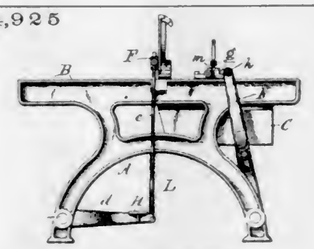


Claim.—The combination with telephone-lines and multiple jacks, one for each line on each section of a multiple switchboard, individual calling signals, one for each line, and an answering-jack for each line associated with its individual call signal, of an answering-plug and a calling plug united in a circuit for connecting lines together, and a source of current in a bridge of the plug-circuit, the answering-jack and answering-plug being adapted to each other to avoid the formation of accidental battery-currents in the insertion of the plug; a relay controlling the connection of the plug-circuit with the calling plug, and a local circuit closed in registering contacts of the calling plug and a multiple jack when the plug is in its place in the jack for exciting the said relay; whereby a call may be answered and a connection completed with the line called for without producing unnecessary variations in the current over the calling line, as described.

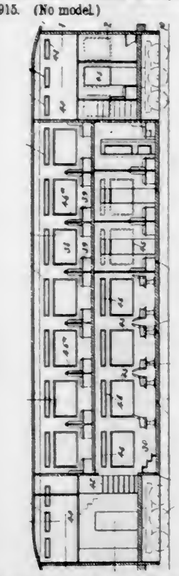
654,925. TABLE-SHEARS. CHARLES SEYBOLD, Dayton, Ohio. Filed July 28, 1898. Serial No. 687,115. (No model.)

Claim.—In a table-shears, a sliding gage-plate with ways for guiding same on the standards, oscillating shaft with lever secured thereto, links for connecting said gage at each end to the levers, and pair of cams pivoted at each end of the gage-plate, with movable plate resting on the standards against which said cams have a bearing, and a rod connecting said cams, whereby the shifting of the rod will lock the gage-plate in any desired position on the standards, substantially as shown and described.

654,925



654,926. RAILWAY-CAR. THOMAS L. STATE, Detroit, Mich., assignor of one-half to John F. Prentis, same place. Filed Apr. 21, 1899. Serial No. 713,915. (No model.)

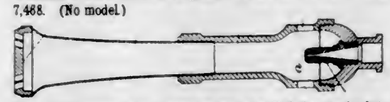


Claim.—1. A railway-car, having a frame comprising side sills extending throughout the length of the car, end sills extending between the ends of the side sills, and transoms extending between the side sills intermediate the ends thereof, the transoms being spaced from the corresponding end sills to form a place for the trucks between the transoms and end sills and between the side sills.

2. A railway-car, comprising a lower floor and an upper floor, furnishing two main compartments arranged the one above the other, an end compartment at each end of the lower floor, the end compartments being respectively situated over the trucks and having their floors raised above the lower floor of the car, an end compartment at each end of the upper floor and respectively over the lower end compartment, the floors of the upper end compartments being raised above the upper floor, and stairs in the lower end compartments, such stairs leading up to the upper main compartment and to the upper end compartments.

3. A convertible seat for railway-cars, having a back, a seat proper, a frame on which the seat is mounted a seat extension hinged to the frame, and a leg pivotally mounted on the seat extension to hold the extension horizontally in line with the seat, the back being capable of folding down on the seat and its extension to form a berth.

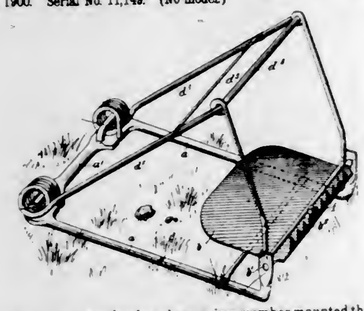
654,927. BURNER FOR INCANDESCENT GAS-LIGHTING. WILLIAM T. SUGG, London, England. Filed Mar. 6, 1900. Serial No. 7,468. (No model.)



Claim.—A burner for incandescent gas-lighting embodying in combination a circular chamber having air-inlets in its walls and

having an upward tubular extension, an upwardly-enlarged trumpet-mouthed burner-tube attached to said extension, a gas-nozzle within said chamber, and an internally and externally flat burner-disk which is inserted closely within the mouth of the burner-tube and which has a solid center surrounded by holes which have an outward inclination in an upward direction, substantially as herein described.

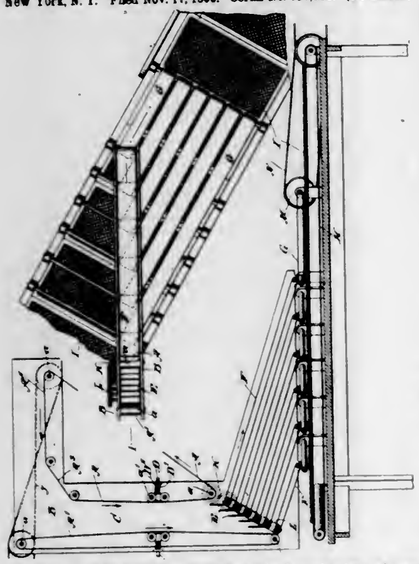
654,928. TRAP. THOMAS H. TAYLOR, Luzerne, N. Y. Filed Apr. 2, 1900. Serial No. 11,149. (No model.)



Claim.—1. A trap having a base, a jaw member mounted thereon, a spring pressing said jaw member to throw it against the base, a bail carried by the said jaw member, and a trip-plate pivotally mounted on the base and engaged by the bail to hold the trap open, movement of the trip-plate releasing the bail to close the trap, the trip-plate having its front edge turned to form a jaw working with the said jaw member, and the jaw member engaging the trip-plate when the trap is closed.

2. A trap having a base, a jaw member mounted thereon, a spring pressing the said jaw member to throw it toward the base, and a trip-plate pivotally mounted on the base and engaged by a part of the jaw member to hold the trap open, movement of the trip-plate releasing the jaw member to close the trap, and the trip-plate having a jaw formed thereon which works with the first-named jaw member.

654,929. APPARATUS FOR CUTTING GLUE. CARL WOLFF, New York, N. Y. Filed Nov. 17, 1899. Serial No. 737,318. (No model.)



Claim.—1. The combination with the feed mechanism, of a cutting device comprising a plurality of blades arranged stepwise and located in the path of the material laterally of each other, and a plurality of inclined belts, each of which has its receiving end adjacent one of the blades, whereby each slice of the material is carried away from the blades as soon as it is cut, independently of the other slices.

2. The combination of the vertical knives arranged stepwise, and superposed inclined belts whose upper and receiving ends are located adjacent said knives and whose delivery ends are approximately at the same level.

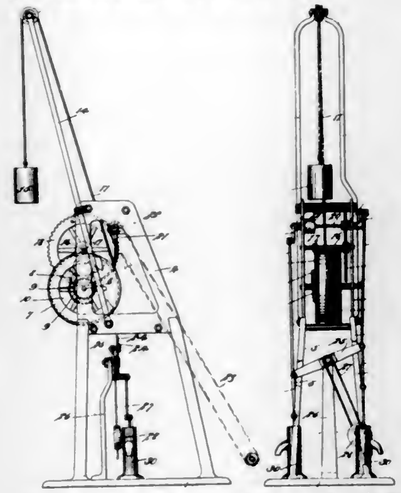
3. The combination of the knives arranged stepwise, the belts each of which has its receiving end located adjacent a knife, and the series of conveying-belts each of which is arranged with its receiving end adjacent the delivery end of one of the first-mentioned belts and at an angle to the plane of the same.

4. The combination of the vertical knives arranged stepwise, mechanism for feeding the material to the knives, the superposed inclined belts the upper ends of which are located adjacent to the knives, while their lower ends are approximately at the same level, and a series of conveying-belts located side by side and arranged at an angle to the plane of the first-mentioned belts, each belt of the second series being in receiving relation to one of the belts of the first series.

5. The combination of the vertical knives arranged stepwise, mechanism for feeding the material to the knives, the superposed inclined belts the upper ends of which are located adjacent to the knives, while their lower ends are approximately at the same level, a series of conveying-belts located side by side and arranged at an angle to the plane of the first-mentioned belts, each belt of the second series being in receiving relation to one of the belts of the first series, and a conveyer located under the second series of belts and projecting beyond their delivery ends.

6. In a device for the purpose described, a feeding mechanism consisting of belts one of which has a horizontal run at its receiving end and also a vertical run, and the other of which is provided with a vertical run parallel with the vertical run of the first-named belt and extending above such vertical run whereby to form a stop to direct the material into the channel formed by the parallel vertical runs.

654,930. MECHANICAL MOTOR. GEORGE S. ZENT, Little River, Kans. Filed Feb. 9, 1899. Serial No. 705,023. (No model.)

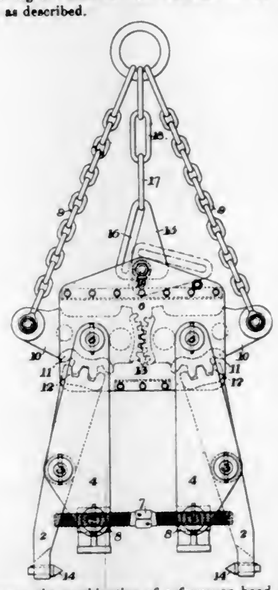


Claim.—In a mechanical motor, the combination with a frame, of a driven shaft mounted thereon, a crank attached to each end of the shaft, a connecting-rod attached to each crank, a walking-beam mounted on the frame and having the connecting-rods attached to its respective ends, a pendulum-frame attached to the walking-beam at the pivot thereof and hanging down therefrom, a weight mounted on the pendulum-frame, a link attached to each end of the walking-beam, and devices to be driven by the motor, such devices being respectively connected with the said links.

654,921. TONGS. HENRY AIKEN, Pittsburg, Pa. Filed Jan. 2, 1900. Serial No. 38. (No model.)

Claim.—1. In tongs, the combination of a frame or head, cheek-pieces pivotally mounted thereon on fixed centers, arms fulcrumed on the cheek-pieces, means for adjustably moving the cheek-pieces on said centers, and means for moving the arms on their fulcrums toward the burden; substantially as described.

2. In tongs, the combination of a frame or head, cheek-pieces carried thereby, arms fulcrumed on the cheek-pieces, and a screw connected with the cheek-pieces and adapted to adjust them, and means for moving the arms on their fulcrums toward the burden; substantially as described.



3. In tongs, the combination of a frame or head, cheek-pieces carried thereby, arms fulcrumed on the cheek-pieces, and a screw connected with the cheek-pieces by swiveled nuts, and adapted to adjust the cheek-pieces; substantially as described.

4. The combination with a suspending device, of a slotted drop-link applied thereto adapted when dropped to vary the working length of the suspending device; substantially as described.

5. The combination with two sets of suspending devices, of a drop-link applied to one of them and adapted when dropped to vary the working length of its suspending device; substantially as described.

6. In tongs, the combination of a head or frame, gripping-arms and their chains, a second chain adapted to bear the weight of the tongs and to permit the first chains to slacken, and a slotted connection between the second chain and the tongs head or frame, adapted when the chain is slackened to engage the same at a lower portion of the slot, substantially as described.

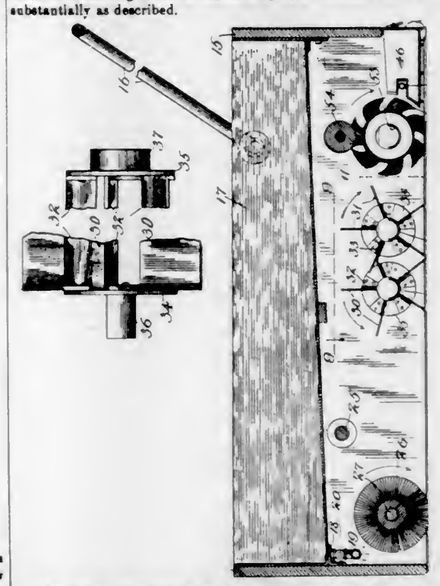
7. In tongs the combination of a head or frame, gripping-arms and their chains, a second chain adapted to bear the weight of the tongs and to permit the first chains to slacken, and a slotted connection between the second chain and the tongs head or frame, adapted when the chain is slackened to engage the same at a lower portion of the slot, and adapted to permit lateral movement of the chain to free the latter, said head or frame being adapted to bear upon the burden when the chains are slackened; substantially as described.

8. In tongs the combination of a head or frame, gripping-arms and their chains, a second chain adapted to bear the weight of the tongs and to permit the first chains to slacken, and a slotted drop-link connecting the second chain to the tongs-head and adapted, when dropped, to bring the end of the slot into holding engagement with the chain and to permit lateral movement thereof when the chain is slackened; substantially as described.

654,932. SCRUBBING-MACHINE. LOUIS ANDERSON, Chicago, Ill. Filed Apr. 23, 1900. Serial No. 14,043. (No model.)

Claim.—1. In a scrubbing-machine, in combination with and carried by a suitable frame; a water-tank, a discharge-pipe therefor, a scrubbing-brush, a pair of oppositely-rotative wipers having flexible radial blades, and being mounted so that their respective blades overlap, a receptacle for receiving water raised by the wipers, a passage for conveying water from the wipers to the last-named receptacle and a traction-wheel for actuating the scrubber and wipers.

2. In a scrubbing-machine, in combination with and carried by a suitable frame; a water-tank, a discharge-pipe therefor, a rotary scrubbing-brush, a pair of oppositely-rotative wipers having flexible radial blades and being mounted so that their respective blades overlap, a rotary drying-brush, a wringing-roller bearing upon the drying-brush, a receptacle for water raised from the floor, a trough located within each of the wipers and within the drying-brush, connection between such troughs and the last-named receptacle, and a traction-wheel for actuating the scrubbing and drying brushes and the wipers, substantially as described.

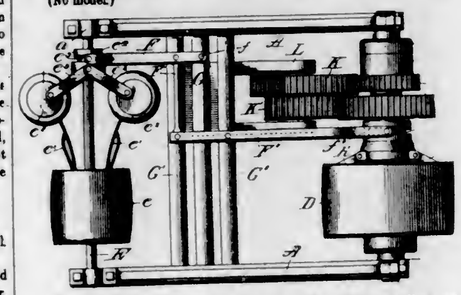


3. In a floor-wiping device, in combination, a pair of oppositely-rotative skeleton frames having flexible radial blades and being so mounted that their respective blades overlap, and a trough located within each frame for receiving water raised by its blades.

4. In a floor-wiping device, in combination, a pair of oppositely-rotative frames having flexible radial blades, the blades of the two frames overlapping, and a receptacle into which water raised by the blades may drain.

5. In a floor-wiping device, a suitable carrying-frame; a pair of oppositely-rotative frames each comprising a pair of end plates having tubular arbors, rigid radial blades connecting the end plates, and flexible blades projecting from the rigid blades; and a stationary trough located within each of such rotative frames; the rotative frames being mounted so that their flexible blades overlap.

654,933. GOVERNOR FOR STACKER-BLOWERS. ALVA APPELGATE, Green Mountain, Iowa. Filed May 3, 1900. Serial No. 15,333. (No model.)



Claim.—1. In combination with a driven instrumentality and means for normally actuating the same, governing mechanism adapted to impart a movement to said driven instrumentality relatively faster than the movement of the normal actuating means in its initial or slow-down operation.

2. In combination with a shaft and means for normally rotating the same, a governing mechanism adapted to be thrown into and out engagement with said operating means to increase the rotation of the shaft when said operating means is in its initial movement, or slows down, substantially as described.

3. In combination with a shaft and means for normally rotating the same comprising a pulley and rotating means therefor, a clutch mechanism between the shaft and the pulley, and means for maintaining a uniform speed of the shaft comprising a governor, and gearing operated by said governor in engagement with the shaft for imparting a rotation to the shaft relatively faster than that of the pulley in the initial or slow-down movement of the machine, substantially as described.

4. In combination with a shaft and means for normally rotating the same, comprising a pulley and rotating means therefor, a clutch between the pulley and shaft, and governing means comprising a governor, levers connected to said governor, a speed-increasing gear and a clutch operated by the end of one of the levers to impart motion from the operating-pulley to the gearing, and a clutch between the gearing and the shaft, substantially as described.

5. In combination with a shaft and means for normally rotating the same, comprising a pulley and rotating means therefor, clutches at opposite points on the shaft, and governing mechanism intermediate the clutches on the shaft and loosely mounted thereon comprising speed-increasing gearing and means for transmitting motion from the operating-pulley to the speed-increasing gearing, and through one of the clutches to the shaft, substantially as described.

654,934. ATTACHMENT FOR FEED-BAGS. HENRY BARK, Yonkers, N. Y. Filed Dec. 1, 1899. Serial No. 738,795. (No model.)

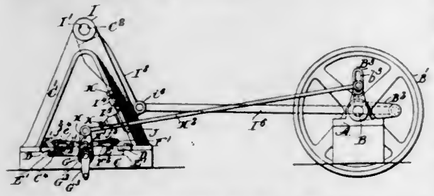


Claim.—1. As a new article of manufacture, a grain-guard for feed-bags, consisting of a crescent-shaped body independent of the feed-bag and having at its outer edge means for attachment to the same, and fastening devices arranged to connect the ends of the body, as set forth.

2. As a new article of manufacture, a grain-guard for feed-bags, consisting of a piece of fabric gathered at its inner edge to make it of crescent shape, the said edge being provided with a band and the outer edge being plain and full, and an elastic detachable connection between the ends of the fabric, as set forth.

3. The combination, with a feed-bag, of a grain-guard consisting of a piece of fabric gathered to a crescent shape at its inner edge and bound at said inner edge, the main portion of the outer edge of the body being detachably secured to the rear portion of a feed-bag at the top, and a strap connection between the ends of said body, said strap connection being adapted to extend over the mouth of the feed-bag at the front and at a portion of its sides.

654,935. PLANING-MACHINE. BIRNEY C. BATCHELLER, Philadelphia, Pa., assignor to William J. Kelly, same place. Filed Dec. 24, 1898. Serial No. 700,232. (No model.)

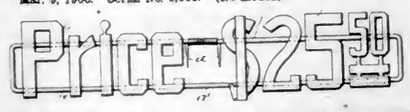


Claim.—1. A planing-machine having in combination a tool-carrying arm pivoted at one end and provided with means for holding a tool at its free end, a shaft as B, a crank moved by said shaft, a connecting-rod, as I^4, connecting said crank and the reciprocating arm, guides in the frame of the machine running transverse to the plane of movement of the arm aforesaid, a work-carrying table supported and movable in said guides, a feed-screw, as G', a ratchet-wheel, as G^3, secured to said screw, a lever, as H, pivotally connected to the shaft of screw G', a pawl H' secured on lever H in position to operate on ratchet G^3, a crank-arm B^3 secured on shaft B at an angle of substantially ninety degrees to the crank-arm B^2 and a connecting-rod H^3 connecting crank-arm B^3 and lever H as described.

2. A planing-machine having in combination a tool-carrying arm pivoted at one end and provided with means for holding a tool at its free end, a shaft, as B, a crank moved by said shaft, a connecting-rod, as I^4, connecting said crank and the reciprocating arm, guides in the frame of the machine running transverse to the plane of movement of the arm aforesaid, a work-carrying table supported and movable in said guides, a feed-screw, as G', a ratchet-wheel, as G^3, secured to said screw, a lever, as H, pivotally connected to the shaft of screw G', a pawl H' secured on lever H in position to operate on ratchet G^3, a longitudinally-slotted crank-arm B^3 secured on shaft B at an angle of substantially ninety degrees to the crank-arm B^2 and a connecting-rod H^3 having one end adjustably connected in the slot of crank-arm B^3 and its other end connected to lever H.

3. In a planing-machine substantially as described a work-holding table E having a face projection E^4 adapted to fit in a ring to be planed in combination with a clamping-ring F F and means for securing said clamping-ring to the face of the table.

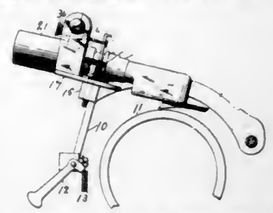
654,936. SIGN-FRAME. ETHEL M. BIGGBY, Detroit, Mich. Filed Mar. 9, 1900. Serial No. 8,003. (No model.)



Claim.—1. A sign-frame, consisting of an oblong supporting-frame, composed of wire, and the end bars of which are not longer than the space between the side bars, both ends of said frame being free from any projections or obstructions, and letters, figures or other characters having hooks at their rear, adapted to be slid or strung onto the frame lengthwise thereof, substantially as set forth.

2. A sign-frame, consisting of an oblong supporting-frame, composed of wire, and the end bars of which are not longer than the space between the side bars, prongs projecting from said frame, both ends of said frame, at each side of said prongs, being free from any projections or obstructions, and letters, figures or other characters having hooks at their rear, adapted to be slid or strung onto the frame lengthwise thereof, substantially as set forth.

654,937. PHONOGRAPH ATTACHMENT. JOSEPH N. BLACKMAN, East Orange, N. J. Filed Mar. 26, 1900. Serial No. 10,121. (No model.)



Claim.—1. A device of the kind described comprising a bracket or support, a fastening device to secure the bracket to the usual phonograph-arm, a tube mounted on the bracket, and adjustable means for connecting one end of the tube to the mouth of a recorder substantially as described.

2. A device of the kind described, comprising a bracket or support, fastening means to secure the bracket to a phonograph-arm, a tube adjustably supported on the bracket, and adjustable means for connecting the tube with the mouth of the recorder.

3. A device of the kind described, comprising a tube, a coupling at one end thereof adapted to connect with a recorder, a screw mechanism for adjusting the coupling in relation to the tube, and means for supporting the tube on the arm of a phonograph.

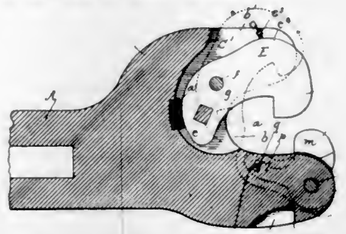
4. A device of the kind described, comprising a tube, a connection adjustable up and down, by means of which the tube may be connected to a recorder, and adjustable means for supporting the tube on the arm of a phonograph.

5. A device of the kind described, comprising a tube having means for connecting with a recorder, a bracket adapted to support the tube on the arm of the phonograph, and a plate adjustable on one arm of the bracket, said plate carrying the aforesaid tube substantially as described.

6. In a device of the kind described, the combination of the tube and coupling adapted to connect with a recorder, means as the fork on the coupling and the screw on the tube for adjusting the tube and coupling in relation to each other, and means for supporting the tube on the arm of a phonograph, substantially as described

7. A device of the kind described, comprising a tube, a vertically-adjustable connection between the tube and recorder, a supporting-bracket, means for adjusting the tube on said support, a detachable adjustable mechanism for retaining the bracket on the arm of a phonograph, substantially as described.

654,938. CAR-COUPLING. DAVID BOWERS, Emaus, Pa. Filed Nov. 23, 1899. Serial No. 738,084. (No model.)



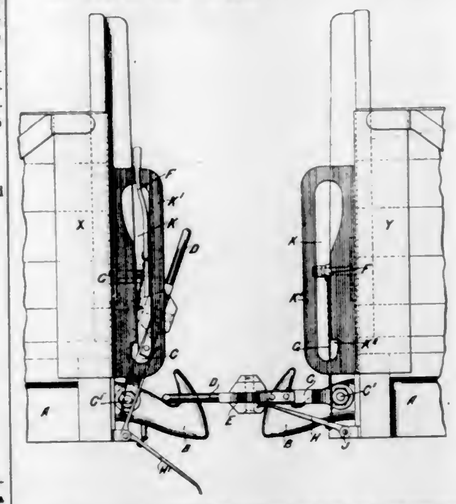
Claim.—1. In a car-coupling, the bifurcated draw-head, one bifurcation thereof having throughout its entire length and breadth a horizontal slot or recess extended into the draw-head proper, the knuckle pivoted in said recess at the base of said bifurcation, said knuckle having a hook at its inner forward portion and abutting in open position thereof at its outer forward portion against the rear wall of said recess extension into the draw-head proper, and abutting in closed position thereof at its rear wall also against the rear wall of said recess extension into the draw-head proper, and a chain or the like attached to the outer forward portion of said knuckle for opening the same, together with means for locking said knuckle in closed position, the other bifurcation of said draw-head having a catch-recess in its outer wall, substantially as specified.

2. In a car-coupling, the bifurcated draw-head, one bifurcation thereof having throughout its entire length and breadth a horizontal slot or recess extended into the draw-head proper, the knuckle pivoted in said recess at the base of said bifurcation, said knuckle being provided with a hook at its inner forward portion, and with a curved rear wall, and abutting in closed position thereof at its outer forward portion against the rear wall of said recess extension into the draw-head proper and in open position thereof at its rear wall also against the rear wall of said recess extension into the draw-head proper, and a chain or the like attached to the outer forward portion of said knuckle for opening the same, together with a drop-bolt for locking said knuckle in closed position, the other of said bifurcations having a catch-recess in its outer wall, substantially as specified.

3. In a car-coupling, the bifurcated draw-head, one bifurcation thereof having a horizontal recess extended into the draw-head proper, the knuckle pivoted and working in said recess, said knuckle having a hook at its inner forward portion, and adapted to abut in open position thereof against the rear wall of said draw-head recess, the tail of said knuckle also abutting in closed position thereof against the rear wall of said draw-head recess, a locking drop-bolt for engagement with a vertical opening or recess in the tail of said knuckle, a catch-recess in the other of said bifurcations, together with an auxiliary knuckle-hook pivoted and working in a horizontal recess of said last-named bifurcation, and means for locking said auxiliary hook in closed position, substantially as specified.

4. In a car-coupling, the bifurcated draw-head, one bifurcation thereof having a horizontal recess extended into the draw-head proper, the knuckle pivoted and working in said recess, said knuckle having a hook at its inner forward portion, and adapted to abut in open position thereof against the draw-head, the tail of said knuckle abutting in closed position thereof against the rear wall of said draw-head recess, a lock for said knuckle in the closed position thereof, a catch-recess in the outer wall of the other of said bifurcations, a vertical perforation in the outer end of said last-named bifurcation, and an auxiliary knuckle-hook pivoted upon a pin engaging said perforation, and working in a horizontal recess in the outer end of said last-named bifurcation, adapted for the reception of a common coupling-link, which is secured by a pin in said perforation, substantially as specified.

654,939. COUPLING FOR RAILWAY-CARRIAGES. ALBERT BROOKES and WILLIAM HAILEY, Eastleigh, England. Filed Mar. 28, 1900. Serial No. 10,430. (No model.)



Claim.—1. In a coupling for railway-vehicles, the combination with a draw-bar hook having an upwardly and rearwardly inclined front face; of a shackle jointed to the shank of the hook by a horizontal pivot-pin, the shackle encircling the hook and normally supported thereon in a horizontal position, a coupling-link jointed by a vertical pivot-pin to the forward end of the shackle, laterally-placed springs upon the latter to bear against the sides of the link to maintain the link centrally when free, and mechanism controlled by a lever extending entirely across the end of the vehicle and capable of being operated upon either side thereof to turn the shackle and link into a nearly-vertical position either to uncouple from an opposite draw-hook or to hold same out of action when the vehicles are coupled by a similar link and shackle of an opposite vehicle, as set forth.

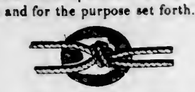
2. In a coupling for railway-vehicles, the combination with a draw-bar hook having an upwardly and rearwardly inclined front face calculated to raise an opposite coupling-link and direct same into the bite of the hook, a shackle horizontally jointed to the shank of the hook and normally resting thereon in a horizontal position, a coupling-link jointed by a vertical pivot-pin to the forward end of the shackle, and laterally-placed springs upon the shackle to maintain the link centrally when free; of an operating-lever pivoted centrally upon and extending entirely across the end of the vehicle, arms hinged upon horizontal pivots to the end of the vehicle, one such beneath each side of the shackle, and two flexible connections extending from the actuating-lever to the hinged arms one such connection extending from each side of the lever to the said arms whereby by rocking the actuating-lever out of the horizontal position, the shackle and links are raised out of action as set forth.

3. In a coupling for railway-vehicles, the combination with a draw bar hook having an upwardly and rearwardly inclined front face, a shackle horizontally jointed to the shank of the hook, a coupling-link vertically jointed to the forward end of the shackle, and springs upon the shackle to act upon the link and maintain the latter normally central; of an operating-lever pivoted centrally upon and extending entirely across the end of the vehicle, mechanism for raising the shackle and link out of action, flexible connections from the operating-lever to the said shackle and link raising mechanism, and slotted guide-plates on the end of the vehicle, the arms of the lever passing through the slots, springs on the lever-arms to act in the slots and frictionally maintain the horizontal position of the lever, and notches at the base of the slots to normally maintain the angular position of the lever when so placed, as set forth.

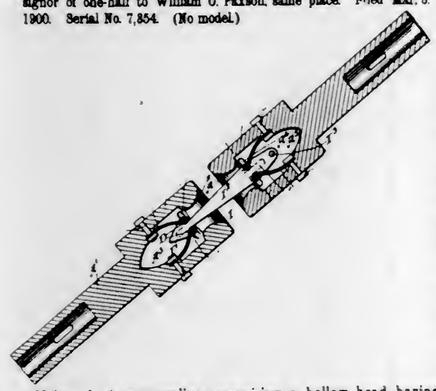
654,940. SEAL. FRANKLIN W. BROOKS, Washington, D. C., assignor to the Grant Manufacturing Company, of Virginia. Filed May 8, 1900. Serial No. 15,912. (No model.)

Claim.—A seal composed of soft metal, elliptical in shape and

with shackle-channels and a recess or pocket lying within the plane of the greater diameter of the seal, in combination with a shackle or cord, the free ends of which are knotted and said knot located within the pocket or recess and adapted to be concealed and locked therein, substantially as and for the purpose set forth.



654,941. CAR-COUPLING. MARK A. BROWN, Douglas, Ga., assignor of one-half to William O. Parson, same place. Filed Mar. 8, 1900. Serial No. 7,854. (No model.)



Claim.—1. A car-coupling comprising a hollow head having transverse slots, pins movable in said slots vertically and transversely, springs for pressing said pins together, a coupling-hook having a head adapted to force the pins apart in coupling, and a shank connected with a car, and means for operating said pins to release the hook.

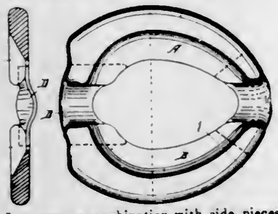
2. A car-coupling comprising a hollow head having transverse slots, pins movable in said slots vertically and transversely, springs for pressing said pins together, a coupling-hook having a head adapted to force the pins apart in coupling, and a shank having perforations adapted to receive the pins of another car, to connect the hook with said car, and means for operating said pins to release the hook.

3. A car-coupling comprising a hollow head having transverse slots, pins alining transversely and movable in said slots vertically and transversely, a coupling-hook connected with a car at one end and having at its other end a head adapted to be locked by the said pins, and means for operating the pins to release the hook.

4. A car-coupling comprising a hollow head, pins alining transversely of the head and movable therein vertically, a coupling-hook having at one end a head adapted to be locked by the pins on one car, and at its other end transversely-alining apertures adapted to be engaged by the pins of another car, and means for operating the pins to release the hook.

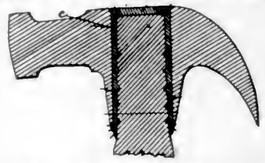
5. A car-coupling comprising a hollow head having transverse slots, pins alining transversely and movable in said slots vertically and transversely, a coupling-hook having at one end a head adapted to be locked by the pins on one car, and at the other end transversely-alining apertures adapted to be engaged by the pins on another car, and means for operating the pins to release the hook.

654,942. CLOSET-SEAT. HIRAM T. BUSH, Detroit, Mich. Filed Nov. 27, 1897. Serial No. 660,000. (No model.)



Claim.—In a seat, in combination with side pieces, a junction-piece for the front ends, a junction-piece for the rear ends, each of said junction-pieces being constructed with grooved tabular ends having a plurality of narrow engaging faces adapted to come in contact with the flat surfaces at the ends of said side pieces, and having between the tabular parts a surface sloping from a peripheral edge downward and inward, and means for securing the ends of said junction-pieces to the ends of said side pieces, so that said four pieces shall form a rigid unitary structure, substantially as described.

654,948. HANDLE-FASTENING. EMANUEL BUTLER, Newark, N. J. Filed May 16, 1900. Serial No. 16,837. (No model.)



Claim.—1. The combination with a hammer-head having an eye, and a handle having its end forced into said eye, of a holding-strip pressed between the handle and the walls of the eye and having sharpened studs driven into the handle, said holding-strip being longer than the eye of the hammer and projecting therefrom at both ends, one of said ends lying backward against the handle and having a stop engaging the edge of the hammer-head and the other end being reduced and projecting beyond the end of the handle, and a cap at the end of the handle, which engages, at its edges, the hammer-head, said cap being perforated and the said reduced end of the holding-strip passed through said perforation and riveted, substantially as set forth.

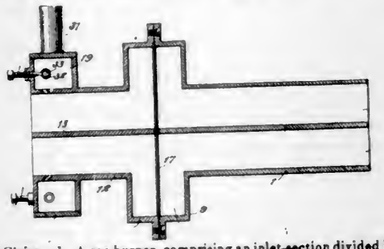
2. In a hammer or like handled tool, the combination with a head having an eye, of a handle having its end shaped to drive into said eye, holding-strips having pointed studs sunk into the sides of said handle end whereby longitudinal movement with respect to the handle is prevented, said holding-strips having their rearward ends engaging the edge of the head when seated in the eye and their forward ends reduced and projecting beyond the handle, and a cap at the end of the handle, engaging the hammer-head and having perforations receiving the said reduced ends of the holding-strips and having a middle aperture through which a wedge may be driven into the handle, substantially as set forth.

3. In a hammer or similar tool, the combination with a head having an eye and a handle inserted in said eye, of holding means clamped between said handle and the walls of the eye and having ends projecting beyond the hammer-handle, and a cap, secured to said ends and overlying upon the hammer-head and having an aperture through which a wedge may be driven into the handle end, substantially as set forth.

4. As an article of manufacture, the herein-described means for holding hammer-heads and the like to their handles, comprising holding-strips each having a thin flat body portion provided at one side with sharpened studs and at the other side with a stop near one end, and having the other end reduced to form a neck, and a cap perforated to receive said necks, substantially as set forth.

5. As an article of manufacture, the herein-described device for holding hammer-heads and the like to their handles comprising holding-strips each having a thin body portion provided on one side with sharp studs and on the other side and near one end with a stop d', and having at the other end a reduced neck adapted to project beyond the extremity of the handle, and a cap adapted to lie at the extremity of the handle in engagement with the head and having perforations to receive the said necks of the holding-strips and an aperture through which a wedge may be driven into the handle, substantially as set forth.

654,944. GAS-BURNER. MICHAEL R. CARMODY, Zanesville, Ohio. Filed Apr. 2, 1900. Serial No. 11,177. (No model.)



Claim.—1. A gas-burner, comprising an inlet-section divided into longitudinal chambers, an outlet-section divided into longitudinal chambers and registering with the first-named chambers, a mixing-chamber between the two sections, a strainer in said mixing-chamber, and means for regulating the supply of gas to one or more of the chambers in the outlet-section of the burner, substantially as specified.

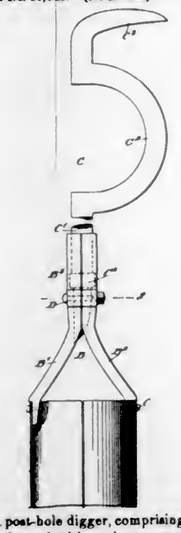
2. A gas-burner, comprising an inlet-tube section, partitions longitudinally arranged in said tube-section and forming chambers, an outlet-tube section also having partitions providing chambers communicating with the first-named chambers, the adjacent ends of the two sections being enlarged to form a mixing-chamber, a screen or spreader in said mixing-chamber, a gas-receiver attached to the outlet-section, and comprising a casing divided into a series of chambers having communication with the chambers in the outlet-section of the burner, and means for controlling a supply of gas to one or more of the chambers in the gas-receiver, substantially as specified.

3. A gas-burner, comprising an inlet-section divided into longitudinal chambers, an outlet-section divided into longitudinal chambers communicating with the first-named chambers, a strainer or spreader arranged between the two sections, a gas-receiver attached to the outlet-section of the burner and comprising a casing, partitions in said casing dividing it into chambers having communication with the chambers in the outlet-section of the burner, tubes extended through certain of the partitions, valves for controlling the passage of gas through said tubes, and a gas-supply pipe leading into one of the chambers, substantially as specified.

4. A burner for fuel-gas, comprising an inlet tubular section, divided into separate chambers, an outlet tubular section divided into separate chambers, the adjacent ends of the two sections being enlarged to form a gas and air mixing chamber, a strainer or spreader in said enlarged portion, a gas-receiver surrounding the outlet-section, partitions in said gas-receiver, dividing it into chambers, ports providing communication between said chambers in the gas-receiver and the chambers in the outlet-section of the burner, tubes extended through certain of the partitions, pin-valves adjustable through a wall of the receiver and adapted to control the outlet of gas through said tubes, and a gas-supply pipe having communication with one of the chambers in the gas-receiver, substantially as specified.

5. A gas-burner, comprising a tube having a plurality of outlet-chambers, a plurality of receiving-chambers having communication with the outlet-chambers, means for providing communication between two or more of said receiving-chambers, and a supply-pipe common to all of the receiving-chambers, substantially as specified.

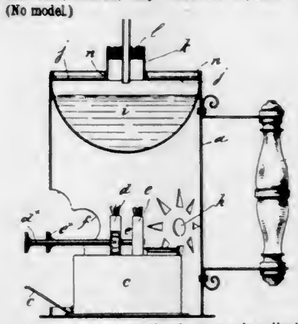
654,945. POST-HOLE DIGGER. JAMES L. CATES, Senatobia, Miss., assignor of one-half to Thomas R. Bray, Gurdon, Ark. Filed May 9, 1900. Serial No. 16,041. (No model.)



Claim.—1. A post-hole digger, comprising a digger-blade having a sectional shank formed with an inner annular recess and fork-recesses, a handle having a forked end for engagement with said fork recesses, and an annular bead on the handle, for engagement with said annular recess, substantially as shown and described.

2. A post-hole digger, comprising a digger-blade having a sectional shank formed with an inner annular recess and fork-recesses, a handle having a forked end for engagement with said fork-recesses, an annular bead on the handle, for engagement with said annular recess, and bolts for securing the sections of the said shank together at points below the said annular recess, substantially as shown and described.

654,946. APPARATUS FOR VOLATILIZING DISINFECTANTS. VINCENZO CERVELLO, Palermo, Italy. Filed Oct. 27, 1899. Serial No. 734,909. (No model.)

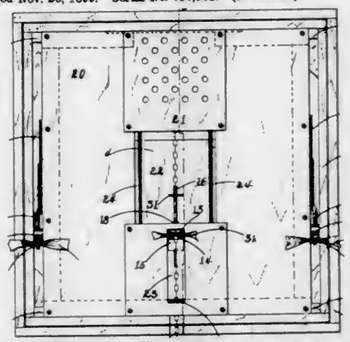


Claim.—1. In an apparatus of the character described, a casing, heating means, a boiler with a dome above the same, means for supporting the medicament above the boiler, and a vertical pipe extending through the dome and into the boiler independent of the medicament and to a distance above the same to condense the steam within the pipe and to prevent the same from commingling with the volatilized medicament.

2. In an apparatus for the purpose described, a casing, heating means, a boiler, a dome extending upward therefrom, a sealing device for the upper end of the dome, means for supporting a medicament above the boiler and around the dome independent of the medicament and its holder, and a long vertical pipe extending into the boiler and upward through the dome to condense the steam in said pipe and keep it from contact with the volatilized medicament.

3. A device for the purpose described, consisting of a casing, a boiler, heating means, a dome, a sector spider-ring above the boiler and surrounding the dome, and a vertical pipe extending through the dome into the boiler and entirely independent of the medicament and extended upward a distance sufficient to condense the steam within the pipe and return it to the boiler without wetting the exterior of the said pipe.

654,947. PIGEON-TRAP. JUSTIN F. CHAMPLIN, Buffalo, N. Y. Filed Nov. 20, 1899. Serial No. 737,561. (No model.)



Claim.—1. A pigeon-trap comprising a body having an upper opening, an open top non-collapsible car or receptacle mounted in said body, and having a range of movement therein and means for moving said car to bring its open top beneath the upper opening and thereby release the bird.

2. A pigeon-trap comprising a body, and a non-collapsible car or receptacle mounted in said body and adapted to have a bird placed therein either through the top or bottom.

3. A pigeon-trap comprising a bottom portion, a shaft journaled in said portion, frightening devices mounted on said shaft, a top portion having a central opening, rods mounted beneath said top portion, a car or receptacle for the bird supported and traveling on said rods, and an operating rope or chain attached to the car and having operative connection with the shaft.

4. A pigeon-trap comprising a top portion having a perforated part, a central opening and a rectangular opening, two rods arranged parallel to each other and one on each side of the central opening, a car or receptacle supported and traveling on said rods, a bottom portion having a bottom plate, a shaft journaled in said bottom portion, rods mounted on said shaft, a collar mounted at or near the middle of the shaft, a vertical strip and a horizontal strip projecting from said collar; said vertical strip having a longitudinal slot, a chain or rope attached to the car and passing through the longitudinal slot in said vertical strip and an enlargement on said rope or chain, as set forth.

5. A pigeon-trap comprising a top portion having a perforated part, a central opening and a rectangular opening, two rods arranged parallel to each other and one on each side of the central opening, a car or receptacle supported and traveling on said rods, and having two pivoted bottom plates, a bottom portion having a bottom plate, a shaft journaled in said bottom portion, a series of bars, rods and levers mounted on said shaft and comprising outer rods having images, inner rods adapted to rap against the under surface of the top portion, vertical bars having cloth portions at their top, and a lever, a spring, a link connecting the lever to the spring, a collar mounted at or near the middle of the shaft, a vertical strip and a horizontal strip projecting from said collar; said vertical strip having a longitudinal slot, a chain or rope attached to the car and passing through the longitudinal slot in said vertical strip and an enlargement on said rope or chain, as set forth.

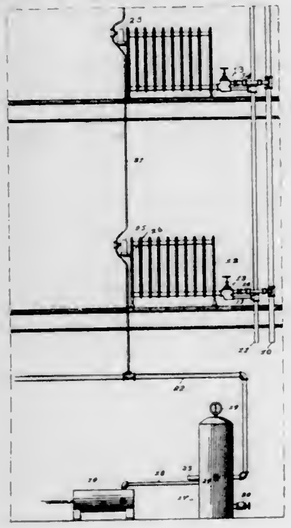
6. A pigeon-trap comprising a body, a top opening, rods mounted in said body, a car or receptacle for the bird supported and traveling on said rods, and an operating rope or chain attached to the car and adapted to move the car relatively to the opening in the body to release the bird.

7. A pigeon-trap comprising a body having a top portion having a perforated part and a bird-releasing opening, a rod mounted in said body on each side of the opening, and a car or receptacle supported and traveling on said rods, and adapted to retain a bird when beneath the perforated part and to release the bird when beneath the bird-releasing opening.

8. A pigeon-trap comprising a body having a top portion having a perforated part and a bird-releasing opening, a rod mounted in said body on each side of the opening, and a car or receptacle supported and traveling on said rods and having a movable bottom for the introduction of the bird, and adapted to retain a bird when beneath the perforated part and to release the bird when beneath the bird-releasing opening.

9. A pigeon-trap comprising a body, and a non-collapsible car or receptacle mounted in said body and having a movable bottom for the introduction of a bird and an open top, and adapted to be arranged to retain a bird and to be moved in the body to release the bird, as set forth.

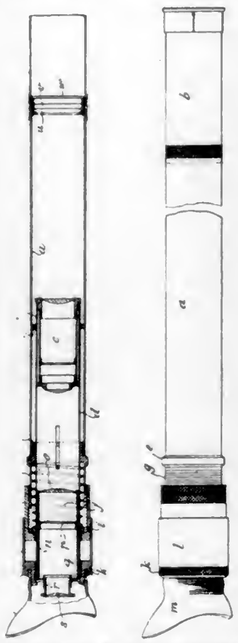
654,948. VACUUM STEAM HEATING APPARATUS. JOHN COLLIS, Des Moines, Iowa, assignor to William P. Collis, New York, N. Y. Filed Mar. 14, 1899. Serial No. 709,024. (No model.)



Claim.—1. A steam-heating system, comprising one or more radiators, pipes for conducting steam to and from the radiators, a vent-valve for each radiator, exhaust-pipes connected with the valves, said valves tending to close when the velocity of the fluid passing therethrough from the radiators exceeds a predetermined rate, and adapted to open upon a rise in pressure in said exhaust-pipes, and exhausting means connected with said exhaust-pipes, whereby the air may be exhausted from the entire heating system.

2. A steam-heating system, comprising one or more radiators, pipes for conducting steam to and from the radiators, a vent-valve for each radiator, an exhaust-pipe connected with each valve, said valve tending to close when the velocity of the fluid passing therethrough from the radiators exceeds a predetermined rate, and adapted to open upon a rise in pressure in said exhaust-pipes, means for admitting air to the exhaust-pipes, whereby said valves may be opened, and exhausting means connected with the said exhaust-pipes, whereby the air may be exhausted from the entire heating system.

654,949. TELESCOPE FOR SIGHTING ORDNANCE. ANDREW A. COMMON, London, England. Filed Mar. 16, 1900. Serial No. 8,868. (No model.)



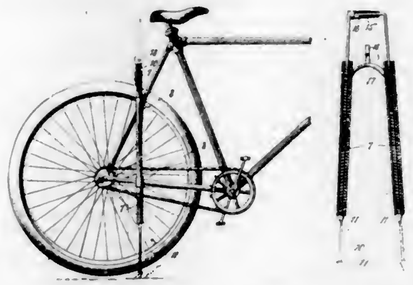
Claim.—1. In a telescope for sighting ordnance, the combination with the telescope-body, of a tube carrying the eyepiece and the erector and fitted to slide in said body, and a spring applied between the tube and body, substantially as and for the purpose herein described.

2. In a telescope for sighting ordnance, the combination with the telescope-body, of a tube carrying the eyepiece and the erector, a spring applied between said tube and body, and a nut screwed upon said body against an abutment on said tube for adjusting the tension of said spring and the focusing of the telescope, substantially as herein described.

3. In a telescope for ordnance, the means for correcting the error of collimation consisting in the combination with the telescope-body and the object-glasses, of an outer eccentric ring fitted to turn in the telescope-body and an inner eccentric ring in which said glasses are mounted and which is capable of turning within the first-mentioned ring, substantially as herein described.

654,950. BICYCLE-SUPPORT. HUGH H. COOTE, Phœnix, Ariz. Filed Apr. 19, 1900. Serial No. 13,485. (No model.)

Claim.—A bicycle-support, comprising two tubular casings disposed out of parallelism, a brace extending rigidly between the casings to join them together, a latch carried on the brace, leg-rods slidably mounted in the tubular casings and passing from end to end thereof, springs carried in the casings to hold the rods in raised position, and a transversely-disposed tube carried at the upper end of one rod and slidably receiving the transversely-bent end of the opposite rod, the said tube being in position to be engaged by the latch to hold the support in operative position.



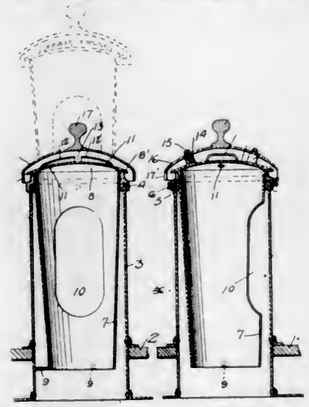
654,951. PROCESS OF MANUFACTURING COMPOSITION APPLICABLE FOR ELECTRIC INSULATION. WILLIAM J. CORDNER, London, England, assignor to Louis D. Brandeis, trustee, Boston, Mass. Filed Oct. 17, 1899. Serial No. 733,908. (No specimens.)

Claim.—A process for the manufacture of a composition consisting of treatment of rhea fiber, in a solution of silicate of soda of a density of 15° to 20° Baumé, the drying of same to extract the moisture, the saturation of the fiber with a heavy hydrocarbon such as resin-oil and the like, the removal of superfluous heavy hydrocarbon, the treatment by heat of the saturated fiber to transform it into a heavy hydrocarbon cellulose, the disintegration of the said cellulose and the mixture therewith of gums, resins, oxidizable oils and the like to form a composite material, substantially as described.

654,952. COMPOSITE MATERIAL APPLICABLE FOR ELECTRIC INSULATION. WILLIAM J. CORDNER, London, England, assignor to Louis D. Brandeis, trustee, Boston, Mass. Original application filed Oct. 17, 1899, Serial No. 733,908. Divided and this application filed Feb. 6, 1900. Serial No. 4,195. (No specimens.)

Claim.—A composite material made from a heavy hydrocarbon cellulose derived from rhea fiber, mixed with oils, resins, gums and similar materials, substantially as described.

654,953. CINDER-PROOF CAP OR COVER. RICHARD S. CUDDIHY, St. Paul, Minn. Filed Dec. 23, 1899. Serial No. 741,354. (No model.)



Claim.—1. A railway-car provided with a water-tank having a filling and vent pipe leading through the roof of the car, in combination, with a self-closing gravity-held cap or cover for said pipe, said cap having a tank-filling hole in its side and a tapered surface to engage a corresponding surface of the pipe, whereby a wedging is formed therewith, and said cap being adapted to be lifted to expose said filling-hole, substantially as described.

2. A railway-coach provided with a water-tank having a filling or vent pipe leading through the roof of the car, in combination, with a perforated head fitting over said pipe and normally forming a close joint therewith but having a vertical movement with respect thereto, a cover or hood provided on said head and tortuous air-passages provided between said hood and said head and leading through the perforations in said head to said pipe and tank, substantially as described.

3. A railway-car provided with a water-tank having a filling and vent pipe leading through the roof of the car, in combination, with a self-closing gravity-held cap or cover for said pipe, said cap being hollow and having a tank-filling hole in its side and adapted to be lifted to permit access to said filling-hole, substantially as described.

4. In a railway passenger-coach, having a water-tank provided with a pipe leading outside the car through which the tank may be filled, a cinder-proof deflector or cap provided on said pipe and having a section telescoping with said pipe, for the purpose specified.

5. In a railway passenger-coach, having a water-tank provided with a pipe extending outside the car, a screenless cinder deflector or cap provided on said pipe and a section telescoping with said pipe, substantially as described.

6. In a railway passenger-coach, having a water-tank, a pipe connected with said tank and extending outside the car, a cinder deflector or cap on said pipe and having a section telescoping therewith and provided with a tortuous air-passage leading to said section and pipe, for the purpose specified.

7. In a railway passenger-coach, having a water-tank provided with a pipe extending therefrom through the roof of the car, a screenless cinder-proof cap or deflector on said pipe and provided with a section telescoping therewith, and said deflector or section having a limited vertical movement with respect to said pipe, for the purpose specified.

8. In a railway passenger-coach, having a gravity water-tank provided with a pipe extending outside the car, a cinder-proof deflector having a slotted section telescoping said pipe, said deflector and section being vertically movable with respect to said pipe, and means for limiting their vertical movement, substantially as described.

9. In a railway passenger-coach, having a gravity water-tank provided with a pipe extending outside the car, a ring on said pipe, a cinder-proof deflector having a slotted pipe-section telescoping said pipe and ring and vertically movable with respect thereto, and a lug provided on said section and engaging said ring when said section is raised, for the purpose specified.

10. A screenless cinder-deflector, comprising a slotted pipe-section having a tapered surface, a ring having a flared oppositely-inclined surface to engage said tapered surface, a flanged head for said pipe resting upon said ring and having perforations, shields for said perforations, a cover or hood for said head forming therewith and said shields a tortuous air-passage leading to said perforations, for the purpose specified.

11. A railway-car provided with a water-tank having a filling and vent pipe leading through the roof of the car, in combination, with a self-closing gravity-held cap or cover for said pipe, said cap having a tank-filling hole and being adapted to be lifted to permit convenient access to said hole, substantially as described.

12. In a railway-car, the combination, with a water-tank having a filling and vent pipe extending through the roof of the car, of a screenless cap or cover for said pipe comprising a head having the perforations 11, the shields 12 provided over said perforations, a space being provided between said shields to permit the circulation of air beneath the same and through the said perforations, and a hood or cover provided over said head and having its edges overhanging the edges of said head and spaced from the same, substantially as described.

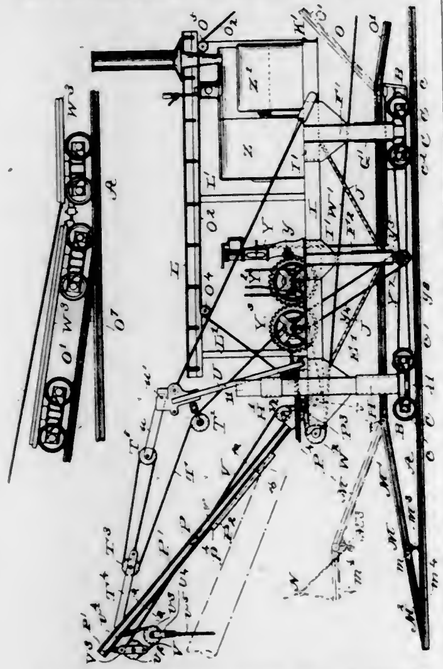
13. A railway-car provided with a water-tank having a filling and vent pipe leading through the roof of the car, in combination with a self-closing gravity-held cap or cover for said pipe, said cap having a tank-filling hole in its side exposed by the lifting of said cap, a ring provided on said pipe and whereon said cap normally rests, and a lug provided on said cap and adapted to engage said ring and limit the vertical movement of said cap, substantially as described.

14. A railway-car provided with a water-tank having a filling and vent pipe leading through the roof of the car, in combination, with a self-closing gravity-held cap or cover for said pipe, said cap having a tortuous air passage or vent and a tank-filling opening and being adapted to be lifted to permit access to said opening, substantially as described.

15. A railway-car, provided with a water-tank having a filling and vent pipe leading through the roof of the car, in combination, with a self-closing gravity-held cap or cover telescoping with said pipe and provided in its top with tortuous air-passages, said cap being adapted to be lifted to permit filling of said tank and means for limiting the vertical movement of said cap, substantially as described.

16. A railway-car, provided with a water-tank having a filling and vent pipe leading through the roof of the car, in combination, with a self-closing gravity-held cap or cover adapted to drop into said pipe, said cap having a tortuous air vent opening or passage and a tapered side surface to engage a corresponding surface of the pipe whereby a wedging water and dust tight joint is formed and said cap being adapted to be lifted to permit the filling of said tank, and means for limiting the vertical movement of said cap, substantially as described.

654,954. CAR-LOADING APPARATUS. GEORGE W. DECKER, Newport, Ark. Filed Apr. 21, 1899. Serial No. 713,835. (No model.)



Claim.—1. In a car-loading apparatus, the combination with a car adapted to run on a main railway-track, of a section of track running over or through said car, a second section of track for forming an inclination between said first section and the main track, a cross-tie carried by said second section and adapted to rest on the main track, and means connecting said second section of track with said cross-tie so as to allow lateral play.

2. In a car-loading apparatus, the combination with a car adapted to run on a main railway-track, of a section of track running over or through said car, a second section of track for forming an incline between said first section and the main track, a cross-tie provided with means for preventing it moving laterally on the main track, and connections between said cross-tie and second section of track, said connections allowing play between the said parts.

3. In a car-loading apparatus, the combination with a car adapted to run on a main track, of an incline for connecting said car with the main track, said incline consisting of two sections of track hinged together, a cross-tie for each of said sections, and a bridle connected with said ties for elevating said incline.

4. The combination in a car-loading apparatus of a car carrying a section of railway-track; and inclines for connecting said section of track with a main track, one of said inclines containing two sections of railway-track hinged to each other, and said incline being provided with a support between its ends.

5. The combination in a car-loading apparatus of a car carrying a section of railway-track and an incline for connecting said section of track with a main track, said incline containing two sections of track hinged together and the rails of each section being connected together by a cross-piece adapted to rest upon the rails of a main track and support the incline when in its lowest position.

6. The combination in a car-loading apparatus of a car, a section of a railway-track, carried by the car; and an incline for connecting said section of track with a main track, and containing four sections of rails, two on each side, connected by hinged joints, cross-pieces connecting each pair of rails near their respective outer ends, and a bridle for lifting the outer end of the incline which brings the strain first upon the outer section thereof and subsequently divides it between the outer and inner section.

7. In a loading apparatus, the incline M having the sections M' and M^2 connected by hinged joints; the cross-pieces M^3, the bridle N having the parts n and n^2 and the ring n'.

8. The combination of a derrick having a flanged swinging circle; a pair of clamping-jaws for gripping said flange and acting as a brake; and means for operating said jaws.

9. The combination of a derrick having a flanged swinging circle; a pair of clamping-jaws for gripping said flange and acting as a brake, a reciprocating engine for swinging the derrick; and means for transmitting motion from the engine to the derrick.

10. The combination of a spud; a rack carried by the spud; a pinion engaging the rack; a shaft; a loose worm-gear on said shaft; a clutch for said gear; a pinion engaging said worm and means connecting the first and last named pinions substantially as described.

11. In a car-loading apparatus, the combination with a pair of trucks provided with bolsters, of uprights carried by said trucks, side sills carried by said uprights, a bolster suspended from said side sills between said first-named bolsters, and a track supported by said bolsters.

12. In a car-loading apparatus, the combination with a pair of trucks provided with bolsters, of uprights carried by said trucks, side sills carried by said uprights, a bolster suspended from said side sills between said first-mentioned bolsters, a section of track supported by said bolsters, and a second section of track pivotally mounted on said first-named section.

13. In a car-loading apparatus, the combination with a pair of trucks, of a track supported by said trucks, uprights carried by one of said trucks, guides carried by said uprights, a pair of spuds in said guides, and means for raising and lowering said spuds.

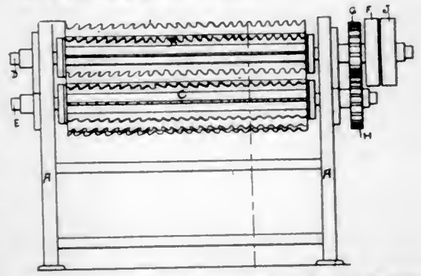
14. In a car-loading apparatus, the combination with a car adapted to run on a main railway-track, of a section of track carried by said car, a second section of track pivoted to said first section and provided with a support, and a third section of track pivoted to said second section and adapted to rest on the main track.

15. In a car-loading apparatus, the combination with a pair of trucks, of bolsters carried by said trucks, gusset-plates connecting one of said bolsters to uprights, said gusset-plates forming guides, spuds sliding in said guides, and means for raising and lowering said spuds.

16. In a car-loading apparatus, the combination with a car adapted to run on a railway-track, of a pair of spuds carried by said car and provided with racks, pinions meshing with said racks, worm-gearing for driving said pinions, and a shaft for driving said worm-gearing.

17. In a car-loading apparatus, the combination with a car adapted to run on a railway-track, of a pair of spuds carried by said car and provided with racks, pinions meshing with said racks, a worm-wheel for each of said pinions, a shaft provided with two worms meshing with said worm-wheels, and means for independently throwing said worms into operation.

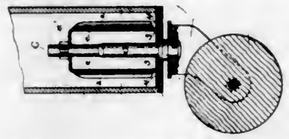
654,955. MACHINERY FOR SCUTCHING AND CLEANING FLAX. EDWARD J. DE COURCY and ROBERT CRAWFORD, Belfast, Ireland. Filed Jan. 9, 1900. Serial No. 344. (No model.)



Claim.—1. In a machine for scutching fiber the drums B C carrying longitudinal bars K arranged to slightly intermesh, provided with teeth k' inclined in opposite directions from a median line P P adapted to serve as herein specified.

2. In a machine for scutching fiber the drums B C carrying longitudinal bars K arranged to slightly intermesh, in two sections, one the divergent section having teeth k' inclined in opposite directions from a median line P P and the other regular section having upright teeth arranged adjacent adapted to serve as herein specified.

654,956. CASTER. ALBERT R. DIM, New York, N. Y. Filed Jan. 2, 1900. Serial No. 22. (No model.)

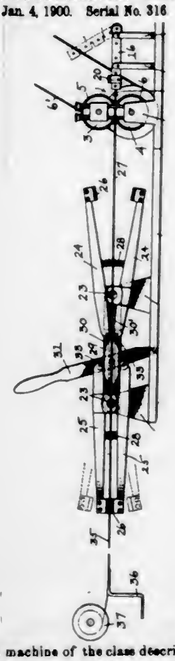


Claim.—1. The combination with the caster-wheel, jaws and pintle, a disk surrounding the pintle and upon which the tubular leg rests, and a spring-frame spanning the pintle within the tubular leg and acting outwardly against the inner surface of the tubular leg to maintain the caster frictionally in position, of means for insuring the central position of the pintle and means acting in connection therewith and with the spring-frame for limiting the movement of the spring-frame, substantially as set forth.

2. The combination with the caster-wheel, jaws and pintle, a disk surrounding the pintle and upon which the tubular leg rests, and a spring-frame spanning the pintle within the tubular leg and acting outwardly against the inner surface of the tubular leg to maintain the caster frictionally in position, of a guide-plate surrounding the pintle above the said disk and adapted to pass into the lower end of the tubular leg, said plate having perforations at opposite sides of the pintle and tangs upon the free ends of the spring-frame passing into the perforations of the said plate, substantially as and for the purposes set forth.

3. The combination with the caster-wheel, jaws and pintle and a disk surrounding the pintle and upon which the tubular leg rests, of an inverted-U-shaped spring-frame spanning the pintle within the tubular leg and having a central portion through which the pintle passes and the vertical edges of the frame bent outward as wings and which frame acts outwardly against the inner surface of the tubular leg to maintain the caster frictionally in position, means for insuring the central position of the pintle and means acting in connection therewith and with the spring-frame for limiting the movement of the spring-frame, substantially as set forth.

654,957. TAPE-NEEDLE DEVICE. CARROLL W. DODGE, Worcester, Mass. Filed Jan. 4, 1900. Serial No. 316. (No model.)



Claim.—1. In a machine of the class described, the combination with a needle, having a movable point at one end, and means for holding the needle, of friction-rolls for drawing the lace onto the needle, and a tension device for the lace substantially as shown and described.

2. In a machine of the class described, the combination with movable clamps or nippers, and means for opening and closing them, and friction-rolls, of a needle held by the nippers, and having a movable point at one end, onto which the lace is drawn by the friction-rolls, substantially as shown and described.

3. In the machine of the class described, the combination with two pairs of clamps or nippers, and means for closing one pair and opening the other, and friction-rolls, and means for operating the same, of a strip for holding the ribbon, a needle connected therewith and held by the nippers, and having a movable point to enter the perforations in the lace, which is strung on the strip and needle, substantially as shown and described.

4. In a machine of the class described, the combination with two pairs of clamps or nippers, and means for closing one pair and opening the other, and friction-rolls, and means for operating the same, and a tension device for the lace, of a strip for holding the ribbon, a needle connected therewith and held by the clamps, and having a movable point to enter the perforations in the lace, which is strung on the strip and needle, substantially as shown and described.

5. In a machine of the class described, the combination with movable clamps or nippers, and means for opening and closing them, and friction-rolls of a needle, consisting of a flat strip of metal, to be held by the nippers, and having a movable point at one end, onto which the lace is drawn by the friction-rolls, substantially as shown and described.

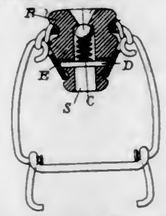
6. A friction-roll, comprising a central shaft, two disks of pliable material mounted thereon, an intermediate disk with a circumferential groove therein, and two outside disks or collars, one fast on said shaft, and the other loose, and an adjusting-nut turning on a thread on said shaft, and extending within a recess in the loose disk, to adjust the same substantially as shown and described.

654,958. NECK-YOKE. HERMAN DOERING, Reedsburg, Wis. Filed May 4, 1900. Serial No. 15,536. (No model.)



Claim.—A collar-strap-fastening device for neck-yokes, consisting of a ring provided with means for fastening it to a neck-yoke bar and having an inward-extending flange formed on its inner face, this flange having oppositely-facing inclined sides extending continuously around the ring, and a pair of disks fitted into the opposite sides of the ring and beveled at their edges to correspond with the inclined seats in the ring, these beveled edges being continuous and unbroken and the adjacent faces of the disks abutting against each other, said disks being provided with closed registering strap-slots, terminating short of the edges of the disk, and means for rigidly fastening the disks together.

654,959. BOTTLE-STOPPER FOR AERATED BEVERAGES. LOUIS DREVON, Pont-de-Beauvoisin, France. Filed Apr. 2, 1900. Serial No. 11,128. (No model.)



Claim.—1. In a bottle-stopper, the combination of the main portion R provided with a centrally-arranged vertical opening and a horizontally-extending recess, a valve-seat arranged in the said vertical opening, a spring-actuated valve adapted to engage said seat, means mounted in said horizontal recess for supporting said valve and a flexible band surrounding the stopper and inclosing said horizontal recess, substantially as described.

2. In a bottle-stopper, the combination of the main portion R provided with a centrally-arranged vertical opening and a horizontally-extending recess, a valve-seat arranged in the said vertical opening, a spring-actuated valve adapted to engage said seat, a pin arranged

in the said horizontal recess to support said valve, and a band surrounding the said stopper inclosing the said recess, substantially as described.

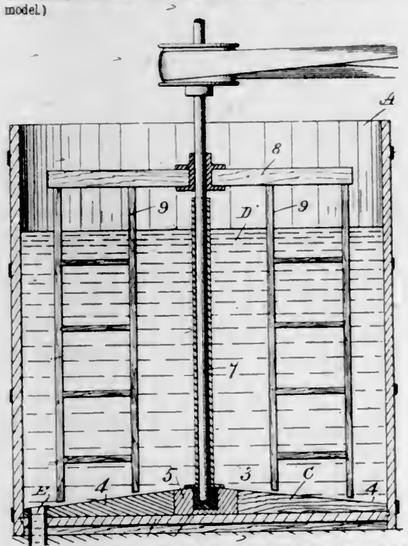
3. In a bottle-stopper, the combination of the main portion R provided with a centrally-arranged vertical opening and a horizontally-extending recess, a valve-seat arranged in said vertical opening near the top thereof, a flexible washer adapted to engage the said seat, a spring pressed ball-valve adapted to engage said washer for closing said vertical opening, a pin arranged in the horizontal recess for supporting the said valve, and a band surrounding the said stopper inclosing said horizontal recess, substantially as described.

654,960. **TAPE-MEASURE ATTACHMENT.** CORNELIUS H. ELSKAMP, Telluride, Colo. Filed Dec. 26, 1899. Serial No. 741,631. (No model.)



Claim.—A measuring device, comprising a tape, a link held at one end thereof and having at one side an inwardly-disposed portion, and a post pivotally mounted on the outer end of the link and formed with an indentation adapted to be engaged by the inwardly-disposed portion of the link, to hold the post in inactive position, and the post further having a head, the under side of which is beveled to be engaged by the side arms of the links when the post is in open position, to limit the opening of the post relatively to the link.

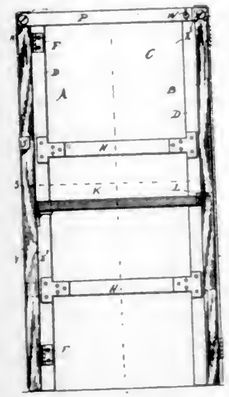
654,961. **STUFF-CHEST FOR PAPER-MILLS.** PASCHAL P. EMORY, Springfield, Mass. Filed May 14, 1900. Serial No. 16,562. (No model.)



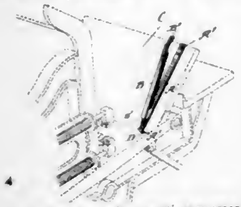
Claim.—In a paper-mill stuff-chest, a fixed lower bottom, an inner bottom laid thereon on which the pulp lies and over which it moves when discharged from the chest, comprising a series of tapering sections of gradually-decreasing thickness from the narrower to the wider end thereof laid on said fixed bottom, said sections extending from a central point on said lower bottom to the inner wall of the chest thereby forming a bottom inclined from said central point to said inner wall, and a step-block inserted between the central extremities of said sections, substantially as described.

654,962. **FOLDING VOTING-BOOTH.** CHARLES EUGERT, New York, N. Y. Filed Mar. 21, 1900. Serial No. 9,489. (No model.)

Claim.—A folding voting-booth constructed with a wooden rear frame and two wooden side frames, one side frame being hinged to the rear frame on the inner surface of the rear frame and the other side frame being hinged to the rear frame on the outer surface, the adjacent faces of the adjacent end standards of the rear and side frames being beveled to permit of folding one side frame on one surface of the rear frame and the other side frame on the other surface, substantially as herein shown and described.



654,963. **PERFORATOR.** GUSTAVUS A. EVANS, Nelson, Canada. Filed Mar. 28, 1900. Serial No. 10,544. (No model.)



Claim.—1. A perforator for printing-presses, comprising a bed-piece, and a punch-bar carrying punches for engagement with perforations in the said bed-piece, the punch-bar having its ends formed with springs, of which one is secured to the bed-piece to form a fulcrum for the punch-bar, the other spring having a longitudinally-extending guide for engagement with a corresponding guideway on the bed-piece, as set forth.

2. A perforator, comprising a bed-piece having perforations, a punch-bar having a spring connection with the said bed-piece, punches carried by said punch-bar and adapted to engage the said perforations in the bed-piece, and a slotted paper-releasing bar extending on the under side of the said punch-bar and having its ends loosely secured thereto, substantially as shown and described.

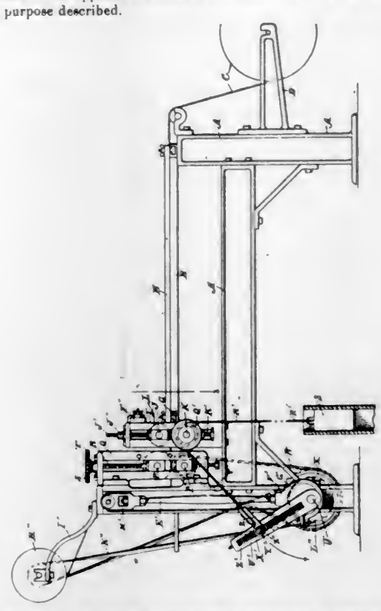
3. A perforator, comprising a bed-piece having perforations, a punch-bar having a spring connection with the said bed-piece, punches carried by the said punch-bar and adapted to engage the said perforations in the bed-piece, and a slotted paper-releasing bar secured to and having guided movement on the under side of the said punch-bar, the said paper-releasing bar extending normally beyond the ends of the said punches, as set forth.

4. A perforator, comprising a punch-bar, and a bed-piece having perforations for engagement by the punches of the said punch-bar, the said bed-piece being formed at its under side with a discharge-channel for the cut-out portions of the paper, the said channel terminating at each end in an opening leading to the front face of the bed-piece, as set forth.

5. A perforator, comprising a bed provided with perforations, a longitudinal channel on its under side, openings at its ends leading into said channel, and a recess at one end, a punch-bar having a spring connection with the bed and provided with punches and with a guide at its free end to enter the recess of the end, and a slotted paper-releasing bar extending on the under side of the punch-bar, and having guided movement thereon, substantially as described.

654,964. **PAPER-CUTTING MACHINE.** JEFFERY T. FERRIS, Anderson, Ind., assignor to the J. W. Sefton Manufacturing Company, same place and Chicago, Ill. Filed Mar. 9, 1899. Serial No. 708,368. (No model.)

Claim.—1. A feed mechanism comprising a feed-roller, a forwardly and backwardly rotatable member connected to said roller to turn the latter with it in one direction but not in the other, a rotary driving-shaft, a crank-arm upon said shaft, a member adjustably connected to said crank-arm and engaging the forwardly and backwardly rotatable member for causing the latter to be turned in one direction at each revolution of the driving-shaft, and means for turning said member in the opposite direction at each revolution of said shaft, for the purpose described.



2. A feed mechanism comprising a feed-roller, a forwardly and backwardly rotatable member connected to said roller to turn the latter with it in one direction but not in the other, a rotary driving-shaft, a crank-arm upon said shaft, a member connected to said crank-arm and adjustable to different points in its length and engaging the forwardly and backwardly rotatable member, to cause the latter to be turned in one direction a greater or less distance at each revolution of the driving-shaft, depending upon the point of connection with the crank-arm, and means for turning said member in the opposite direction at each revolution of said shaft, for the purpose described.

3. A feed mechanism comprising a feed-roller, a forwardly and backwardly rotatable member connected with said feed-roller to turn it with it in one direction but not in the other, a rotary driving-shaft, a crank-arm fast on said shaft, a strap connected at one end to said crank-arm and at its opposite end wound around the forwardly and backwardly rotatable member, whereby the latter is turned in one direction at each revolution of the driving-shaft, and means for turning said member in the opposite direction at each revolution of said shaft, for the purpose described.

4. A feed mechanism comprising a feed-roller, a forwardly and backwardly rotatable member connected with said feed-roller to turn it with it in one direction but not in the other, a rotary driving-shaft, a crank-arm fast on said shaft, a strap having at one end an adjustable connection with said crank-arm and at its opposite end wound around the forwardly and backwardly rotatable member, whereby the latter is turned in one direction at each revolution of the driving-shaft, and means for turning it in the opposite direction at each revolution of said shaft, for the purpose described.

5. A feed mechanism comprising a feed-roller, a forwardly and backwardly rotatable member connected therewith to turn the feed-roller with it in one direction but not in the other, a rotary driving-shaft, a crank-arm fast upon said shaft, a rotatable screw-rod extending longitudinally of the crank-arm, a nut threaded upon said rod and adjustable longitudinally of the crank-arm by the turning of said rod, a strap connected at one end to said nut and at its other end wound upon the forwardly and backwardly rotatable member, whereby the latter is turned in one direction at each revolution of the driving-shaft, and means for turning said member in the opposite direction at each revolution of said shaft, for the purpose described.

6. A feed mechanism, comprising a feed-roller to be intermittently turned in one direction, a rotatable member adapted to turn the feed-roller in one direction, a rotary driving-shaft, a crank-arm fast upon said shaft, a flexible member connected to said crank-arm and engaging said rotatable member to turn it in one direction, and means acting to turn said rotatable member in the opposite direction, substantially as described.

7. A feed mechanism comprising a feed-roller to be intermittently turned in one direction, a rotatable member adapted when turned in one direction to turn the feed-roller, a rotary driving-shaft a crank-arm on said shaft, a flexible member connected to said crank-arm and directly engaging said rotatable member for turning the same, and means for adjusting the connection of said member with said crank-arm, substantially as described.

8. A feed mechanism comprising a feed-roller, to be intermittently turned in the same direction, a rotary driving-shaft, a crank-arm fast thereon, a connecting member guided longitudinally upon said crank-arm, a screw-rod extending longitudinally of the crank-arm and coöperating with said member to adjust the latter longitudinally of the arm, and a flexible connection between said member and the feed-roller for turning the latter a greater or less distance, according to the adjustment of the connecting member upon the crank-arm, at each revolution of the latter.

9. The combination of the shaft K, the drum Q′ mounted to turn forwardly and backwardly upon said shaft and having a clutch connection therewith which causes the drum to turn the shaft forward with it but permits the drum to turn backward independently of the shaft, the rotary driving-shaft U, the crank-arm U′ fast thereon, the strap T′ having at its forward end a connection with the crank-arm U′ adjustable longitudinally of said arm and wound at its rear end upon the drum Q′, and the strap R′ wound in the opposite direction upon the drum Q′ and carrying the weight S′, for the purpose described.

10. The combination of the shaft K, the drum Q′ mounted to turn forwardly and backwardly thereon and having a clutch connection therewith causing the drum to turn the shaft with it in one direction but not in the other, the rotary driving-shaft U, the crank-arm U fast upon said shaft, the screw-rod Z′ extending longitudinally of said crank-arm, the nut X′ mounted upon said rod and guided longitudinally of the crank-arm, the strap T′ connected at one end to the nut X′ and at its other wound upon the drum Q′, and the strap R′ wound in the opposite direction upon the drum Q′ and carrying the weight S′, for the purpose described.

11. The combination of the shaft K, the drum Q′ mounted to turn forwardly and backwardly thereon and having a clutch connection therewith causing the drum to turn the shaft with it in one direction but not in the other, the driving-shaft U, the crank-arm U′ fast thereon and having the longitudinal slot, the nut X′ fitting in said slot and having the projecting stud Y′, the screw-rod Z′ extending longitudinally of the crank-arm and passing through the nut X′, the connecting-piece Z having the eye fitting the stud Y′, the strap T′ connected at one end to the piece Z and wound at its opposite end upon the drum Q′, and the strap R′ wound in the opposite direction upon the drum Q′ and carrying the weight S′, for the purpose described.

12. The combination of the shaft K having the ratchet V′ fast upon it, the drum Q′ mounted to turn forwardly and backwardly upon said shaft and carrying a plurality of pawls W′ coöperating with the ratchet V′ and set relatively to each other and to the teeth of the ratchet in the manner described, the rotary driving-shaft U, the crank-arm U′ fast thereon, the strap T′ having at one end a connection with the crank-arm adjustable longitudinally thereof and at its other end wound upon the drum Q′, and the strap R′ wound in the opposite direction upon the drum Q′ and carrying the weight S′, for the purpose described.

13. The combination of a feed-roller M having a circumferential groove therein, a guide N having a hooked or bent end resting in said groove in the feed-roller, whereby the guide is supported, substantially as described.

14. The combination of the feed-rollers L M, the several pairs of cutting-disks O O′, the transverse vertically-reciprocating knife C′, the guides N provided at their rear ends with hooks fitting in circumferential grooves in the rollers M and part of them having upturned forward ends *a*, and the storage-reel H″ for winding up the strip or strips directed upward by the upturned ends *a* of the guides N.

15. The combination of the corrugated feed-roller L meshing with the corrugations of the paper C to advance the latter, the cutting-disks O O′, and the transverse vertically-reciprocating knife C′, substantially as described.

16. The combination of the corrugated feed-roller L meshing with the corrugations of the paper C to advance the same, and the coöperating supporting roller or rollers M upon the opposite side of the paper, substantially as described.

17. The combination of the feed-table B, the corrugated feed-roller L meshing with the corrugations of the paper C to draw the latter forward over said table, and the cutting-scorer M″ N″ adjustably secured to the frame in rear of the roller L, substantially as described.

18. The combination of the feed-table B, the corrugated feed-roller L meshing with the corrugations of the paper C to draw the

latter forward over said table, and the creasing-scorer F‴ Q‴ adjustably secured to the frame in rear of the roller L, substantially as described.

19. The combination of the feed-table B, the corrugated feed-roller L meshing with the corrugations of the paper C to draw the latter forward over the table, the transverse longitudinally-slotted cross-bar F‴ secured to the frame above and in rear of the roller L, and the depending scorers attached to said cross-bar by the bolts and thumb-nuts O‴ and adjustable longitudinally of said bar, substantially as described,

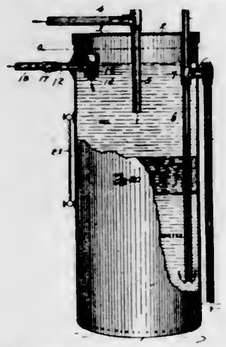
20. The combination of the feed-table B, the corrugated feed-roller L meshing with the corrugations of the paper C to draw the latter forward over said table, the supporting-rollers M beneath the roller L, the pairs of cutting-disks O O′ in front of said rollers, for cutting the paper C longitudinally, and the transverse vertically-reciprocating knife C′ in front of the cutting-disks O O′, for cutting the paper strips transversely, substantially as described.

21. The combination of the feed-table B, the corrugated feed-roller L meshing with the corrugations of the paper C to draw the latter forward over said table, the longitudinal guide-bars E at the opposite edges of the paper C and adjustable transversely of the table B, the cutting-disks O O′, and the transverse vertically-reciprocating knife C′, substantially as described.

22. The combination of the feed-table B, the corrugated feed-roller L meshing with the corrugations of the paper C to draw the latter forward over said table, the longitudinal guide-bars E at the opposite edges of said paper, the inverted bolts F passed vertically through the opposite ends of the guide-bars E and having their heads confined in and movable longitudinally of the T-slots G extending transversely of the feed-table B, and the thumb-nuts H threaded upon said bolts and cooperating with the guide-bars E, substantially as described.

23. The combination of the vertically-reciprocating knife-carrying cross-head D′, the shaft I′ extending longitudinally thereof and rotatable therein and provided at its opposite ends with the eccentrics L′, the driving-shaft U, and the connecting-rods E′ provided at their upper ends with the heads M′ having eyes fitting the eccentrics L′, substantially as described.

654,965. OIL-SEPARATOR. AUGUST H. FRANKE, St. Louis, Mo. Filed Apr. 11, 1900. Serial No. 12,462. (No model.)



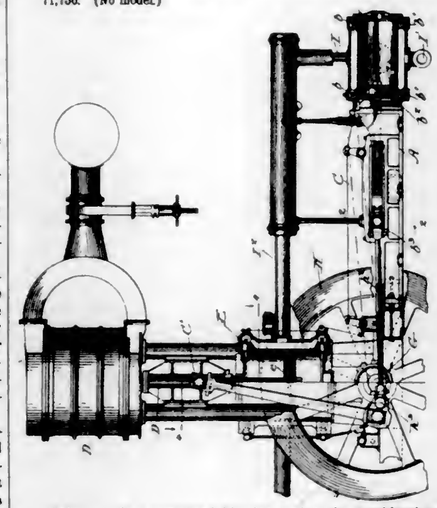
Claim.—1. An oil and water separator of the class described, comprising a tank, means for maintaining automatically the height of the water-level and the dividing-line between the oil and water in said tank, means for adjusting the maintained height of the water-level and the dividing-line between the oil and the water in said tank, substantially as specified.

2. An improved oil and water separator, comprising a tank open from the bottom up to the oil-level, means for maintaining, automatically, a specific oil-level in said tank, and means for automatically maintaining a specific water-level in said tank solely by the difference in specific gravity of the oil and water contained within and supplied to said tank, substantially as specified.

3. An oil and water separator, means for removing the impurities, riding on top of the water, from the said tank, means for removing automatically all excess of water from said tank, means for removing automatically all excess of oil from said tank, means for indicating the water-level within said tank, substantially as specified.

4. An improved oil and water separator, comprising a tank open from the bottom up to the top, an oil-overflow passage leading from said tank, a water-discharge passage having its entrance-opening at a point below the water-level and extending upwardly within said tank above the water-level and thence passing outwardly through said tank, and an air-vent communicating with said water-discharge passage, substantially as specified.

654,966. COMPOUND BLOWING-ENGINE. FERD G. GAESCHE and FREDERICK H. FOOTE, Chicago, Ill. Filed Feb. 26, 1898. Serial No. 71,736. (No model.)



Claim.—1. In a compound blowing-engine, the combination of a high-pressure cylinder, a low-pressure cylinder at right angles to the high-pressure cylinder, a movable piston in each cylinder, one piston having a horizontal and the other a vertical traverse in relation to each other for the advance movement of one piston to be coincident with the return movement of the other piston at the point of greatest power, a compressor-cylinder in line with a pressure-cylinder, a piston in the compressor-cylinder moving in unison with the piston of its alined pressure-cylinder, a crank-shaft at the juncture of the axial lines of the two pressure-cylinders, a connection for the piston of the high-pressure cylinder with the crank-shaft, a connection for the piston of the low-pressure cylinder with the crank-shaft, the two connections standing off center to each other, and means connecting the piston of the compressor-cylinder with the crank-shaft, substantially as described.

2. In a compound blowing-engine, the combination of a horizontal high-pressure cylinder, a vertical low-pressure cylinder, the two cylinders having a right-angle relation to each other, a movable piston in each cylinder for one piston to have its horizontal travel in an advance direction coincident with the vertical travel of the other piston in the return direction at the point of highest power and pressure, a compressor-cylinder in line with the vertical pressure-cylinder, a piston in the compressor-cylinder moving in unison with the piston of the vertical pressure-cylinder, a crank-shaft at the axial line of juncture of the high and low pressure cylinders, a connection for the piston of the horizontal high-pressure cylinder with the crank-shaft, a connection for the piston of the low-pressure cylinder with the crank-shaft, the two connections having an off-center relation to each other, and a connection between the pistons of the compressor-cylinder and the vertical low-pressure cylinder, substantially as described.

3. In a compound blowing-engine, the combination of a high-pressure cylinder arranged in a horizontal plane and provided with a movable piston having an extending piston-rod, a cross-head to which the piston-rod is secured, a low-pressure cylinder arranged in a vertical plane and provided with a movable piston and an extending piston-rod, a compressing-cylinder arranged in a vertical plane above and in line with the low-pressure cylinder, a compressing movable piston in the compressing-cylinder provided with a piston-rod, a cross-head to which the piston-rod of the low-pressure piston and the compressing-piston are connected, a crank-shaft, a wrist-pin for the crank-shaft, arranged substantially at the point where the axial lines of the cylinders meet, connecting-rods connecting the cross-head of the low-pressure piston to the wrist-pin, and connecting-rods pivotally connected in the same vertical plane to the low-pressure connecting-rods and the cross-head of the high-pressure cylinder, substantially as described.

4. In a compound blowing-engine, the combination of a horizontal high-pressure cylinder, a vertical low-pressure cylinder, the two cylinders having a right-angle relation to each other, a movable piston in each cylinder for one piston to have its horizontal travel in an advance direction coincident with the vertical travel of the other piston in the return direction at the point of highest power and pressure, a compressor-cylinder in line with the vertical low-pressure cylinder, a piston in the compressor-cylinder moving in unison with the piston of the alined low-pressure cylinder, a crank-shaft transversely of the cylinders at the axial line of juncture for the two pressure-cylinders, a crank at each end of the crank-shaft, a wrist-pin on each crank, a rod for each wrist-pin connecting the crank-shaft with the cross-head of the low-pressure and compressor cylinders, an offset at the lower end of each connecting-rod at the wrist-pin and a rod connecting each offset with the cross-head of the high-pressure cylinder at the offset, substantially as described.

5. In a compound blowing-engine, the combination of a horizontal high-pressure cylinder, a vertical low-pressure cylinder, the two cylinders having a right-angle relation to each other, a movable piston in each cylinder, a piston-rod for each piston, a cross-head for each piston-rod, a compressor-cylinder in line with the vertical low-pressure cylinder, a piston in the compressor-cylinder, a piston-rod connecting the piston of the compressor-cylinder with the cross-head of the piston-rod for the vertical low-pressure cylinder, a crank-shaft transversely of the high and low pressure cylinders at the axial line of juncture, a crank at each end of the crank-shaft, a wrist-pin on each crank, a rod for each wrist-pin extending vertically and connecting with the cross-head of the vertical low-pressure and compressor cylinders, an offset at the lower end of each vertical connecting-rod adjacent to the wrist-pin and a horizontal rod extending from each offset to and connecting with the cross-head of the horizontal high-pressure cylinder for operating the pistons of the high-pressure and low-pressure cylinders at the point of highest operation in the compressor-cylinder, substantially as described.

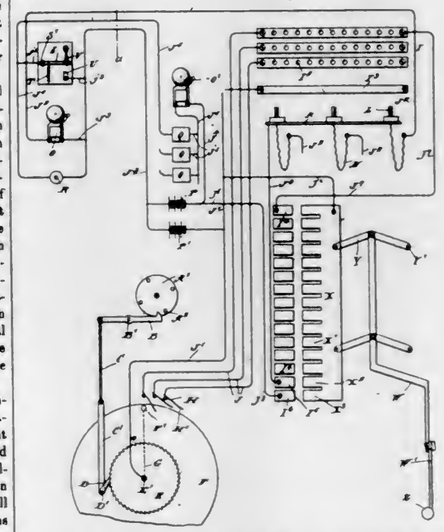
6. In a compound blowing-engine, the combination of a high-pressure cylinder, a low-pressure cylinder having a right-angle relation to the high-pressure cylinder, a compressor-cylinder in alinement with a pressure-cylinder, a piston in the high-pressure cylinder and a piston in the low-pressure cylinder, a piston in the compressor-cylinder moving in unison with the piston of the pressure-cylinder in alinement with the compressor-cylinder, a crank-shaft common to all three of the cylinders, and a differential connection for the pistons of the high and low pressure cylinders with the crank-shaft whereby the high-pressure cylinder is effecting its maximum power when the compressor-cylinder is operating at the point of compression to the greatest density, substantially as described.

7. In a compound blowing-engine, the combination of a horizontal high-pressure cylinder, a vertical low-pressure cylinder, the two cylinders having a right-angle relation to each other, a compressor-cylinder in alinement with the low-pressure cylinder, a piston in each of the pressure-cylinders and a piston in the compressor-cylinder moving in unison with the piston of the low-pressure cylinder, a piston-rod for each piston, a crank-shaft common to all of the piston-rods, a connection for the piston-rod of the vertical low-pressure cylinder with the crank-shaft at the end of the crank, and a connection for the piston-rod of the horizontal low-pressure cylinder with the crank-shaft at a point between the connection for the vertical piston-rod and the shaft for exerting the maximum power of the pressure-cylinders when the compressor-piston is acting at the point of compression for greatest density and for exerting the least power for the pressure-cylinders when the compressor-piston is at the point of least efficiency, substantially as described.

654,967. ELECTRIC SIGNAL AND FIRE-ALARM. DAVID GETWITS, Rome, and WILLIAM STILL, Utica, N. Y., assignors to Michael H. Powers, Rome, N. Y. Filed Feb. 16, 1900. Serial No. 5,458. (No model.)

Claim.—1. The combination of a movable contact-piece and a clock-work for operating the same, with a series of normally-stationary contact members adjustable to pass into or out of the path of said contact-piece, a switchboard having a series of conducting members each connected with one of the said contact members, and an additional conducting member not so connected, a series of movable circuit-closers, such as plugs, adapted for engagement with said conducting members, a series of circuits in which are included the said circuit-closers and the said contact-pieces, so that the engagement of the contact-piece with one of the contact members will close a circuit through the conducting member connected with said contact member, when said conducting member is engaged by one of the circuit-closers, and a permanent electrical connection from the additional conducting member to each of said circuits, so that said circuits may be closed, independently of the contact-piece and contact members, by an engagement of the circuit-closers with the additional conducting member.

2. The combination of a source of electricity, a series of conducting members and a series of contact members, each connected with one of the conducting members, an additional conducting member connected directly with one pole of the said source of electricity, a time-operated contact-piece connected with the same pole of the source of electricity and adapted for engagement with the contact members, a series of circuit-closers, such as plugs, adapted to engage the said conducting members, a series of circuits each connected with one of the said circuit-closers and with the other pole of the source of electricity and an electrically-actuated mechanism included in each of said circuits.



3. The combination of a movable contact-piece and a clock-work for operating the same, with a series of normally-stationary contact members adjustable to pass into or out of the path of said contact-piece, a switchboard having a series of conducting members, each connected with one of the said contact members, a series of movable circuit-closers, such as plugs, adapted for engagement with said conducting members, a conducting plate or base for normally receiving said plugs, a source of electricity, a connection from one pole thereof to said conducting-plate, a circuit-closer in said connection, another connection from the same pole to the clock-operated contact-piece, and a series of electric signals each of which has one terminal connected with the other pole of the source of electricity, and the other terminal connected with one of the plugs.

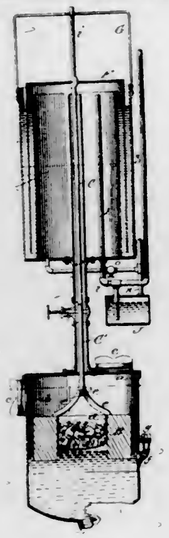
4. The combination of a movable contact-piece and a clock-work for operating the same, with a series of normally-stationary contact members adjustable to pass into or out of the path of said contact-piece, a switchboard having a series of conducting members each connected with one of the said contact members, a series of movable circuit-closers such as plugs, adapted for engagement with said conducting members, a conducting plate or base for normally receiving said plugs, a source of electricity consisting of two batteries connected in parallel at one pole, a series of electric signals, each of which has one terminal connected with the common pole of said source of electricity, and the other terminal connection with one of the said plugs, a circuit-closer comprising a movable member connected with the other pole of one of the batteries, and a series of contact-plates adapted to be engaged by said movable member, sundry of said contact-plates being connected individually with the conducting members of the switchboard, one of the remaining contact-plates being connected with the conducting-plate receiving the plugs, and the other with the free pole of the other battery, and a connection from said free pole to the clock-operated contact-piece.

5. The combination of a movable contact-piece and a clock-work for operating the same, with a series of normally-stationary contact members adjustable to pass into or out of the path of said contact-piece, a switchboard having a series of conducting members each connected with one of the said contact members, a series of movable circuit-closers such as plugs, adapted for engagement with said conducting members, a conducting plate or base for normally receiving said plugs, a source of electricity consisting of two batteries connected in parallel at one pole, a series of electric signals, each of which

has one terminal connected with the common pole of said source of electricity, and the other terminal connected with one of the said plugs, a circuit-closer comprising a movable member connected with the other pole of one of the batteries, and a series of contact-plates adapted to be engaged by said movable member, sundry of said contact-plates being connected individually with the conducting members of the switchboard, one of the remaining contact-plates being connected with the conducting-plate receiving the plugs, and the other with the free pole of the other battery, a connection from said free pole to the clock-operated contact-piece, a series of push-buttons each located in proximity to one of the signals, a connection from one terminal of each push-button to the wire connecting the corresponding signal with the common or connected pole of the two batteries, an annunciator and a bell, located at the central office in series with each other and connected with the other terminal of the push-button and with the same pole of the first-named battery which is connected with the main section of the circuit-closer, and a connection from the like pole of the other battery to the clock-operated contact-piece.

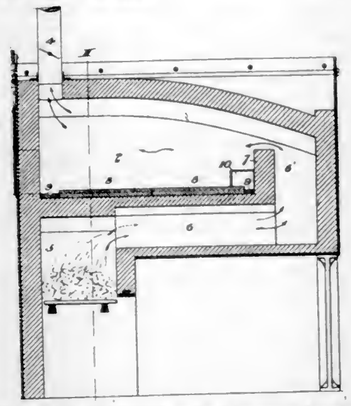
6. The combination of a movable contact-piece and a clockwork for operating the same, with a series of normally-stationary contact members adjustable to pass into or out of the path of said contact-piece, a switchboard having a series of conducting members each connected with one of the said contact members, a series of movable circuit-closers such as plugs, adapted for engagement with said conducting members, a conducting plate or base for normally receiving said plugs, a source of electricity consisting of two batteries connected in parallel at one pole, a series of electric signals, each of which has one terminal connected with the common pole of said source of electricity, and the other terminal connected with one of the said plugs, a circuit-closer comprising a movable member, connected with the other pole of one of the batteries, and a series of contact-plates adapted to be engaged by said movable member, sundry of said contact-plates being connected individually with the conducting members of the switchboard, one of the remaining contact-plates being connected with the conducting-plate receiving the plugs, and the other with the free pole of the other battery, a connection with said free pole to the clock-operated contact-piece, a series of push-buttons each located in proximity to one of the signals, a connection from one terminal of each push-button to the wire connecting the corresponding signal with the common or connected pole of the two batteries, an annunciator and a bell, located at the central office in series with each other and connected with the other terminal of the push-button and with the same pole of the first-named battery which is connected with the main section of the circuit-closer, a connection from the like pole of the other battery to the clock-operated contact-piece, and a series of thermostatic circuit-closers, one for each signal, and each having its ends or terminals connected respectively with the wires leading to the two terminals of the corresponding push-button.

654,968. ACETYLENE-GAS GENERATOR. HARRY E. GIFFORD Onset, Mass. Filed Dec. 19, 1899. Serial No. 740,876. (No model.)



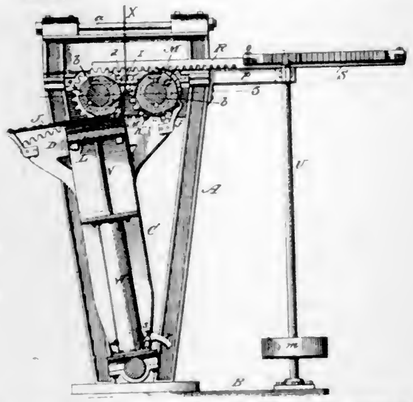
Claim.—A gas-producing apparatus comprising a generator, a float, a reticulated receptacle within the float, supported normally out of contact with the water in the generator, a stem extending upwardly through the top of the generator, having arms whereby it is secured to the float, a lower gas-pipe section, secured to the top of the generator, through which the stem extends, a gas-valve surmounting the lower gas-pipe section, and secured thereto, through which the stem normally extends, an upper gas-pipe section surmounting the valve and secured thereto, having an open upper end, a gasometer concentric with the upper gas-pipe section and secured thereto, a gas-receiver into which the upper gas-pipe section discharges upwardly, and a plunger-rod extending through the upper gas-pipe section, normally in contact with the stem, and secured to and supporting the receiver thereon.

654,969. HEATING-FURNACE. JOSEPH H. GILL, New Castle, Pa. assignor of one-half to Horace R. Nye, Sharon, Pa. Filed Jan. 6, 1900. Serial No. 575. (No model.)



Claim.—A heating-furnace having a horizontal floor faced with tiles and affording a flat surface for the support of the articles to be heated, gutters at the margin of the floor and cleaning-openings to communicating therewith; substantially as described.

654,970. COMPRESSING AND BALING APPARATUS. ALPHONSO S. GOOCH, Little Rock, Ark. Filed May 8, 1900. Serial No. 15,927. (No model.)



Claim.—1. A compressing and baling apparatus, consisting of an oscillating carrier having toothed segments, a movable and mechanically-resisted platen or follower-block connecting with the carrier, compressing and fold-laying rollers having toothed wheels to engage with the toothed segments of the carrier, and reciprocating rack-bars engaging the toothed wheels of the rollers, substantially as and for the purpose set forth.

2. A compressing and baling apparatus, consisting of a suitable frame, an oscillating carrier having a movable and mechanically-resisted platen or follower-block toothed segments on the carrier, compressing and fold-laying rollers provided with toothed wheels to engage the toothed segments, reciprocating rack-bars for operating the rollers and a suitable apron connecting the carrier with the rollers substantially as and for the purpose described.

3. A compressing and baling apparatus, consisting of a suitable frame, an oscillating carrier having a movable and mechanically-resisted platen or follower-block, compressing and fold-laying rollers, suitable aprons connecting the carrier with said rollers, and spring-mounted folder-plates connected with the rollers, substantially as and for the purpose specified.

4. In a compressing and baling apparatus, suitable compressing and fold-laying rollers and spring-mounted folder-plates connected to and moving therewith, substantially as and for the purpose set forth.

5. In a compressing and baling apparatus, suitable compressing and fold-laying rollers, suitable spring-mounted folder-plates connected to and moving with the rollers, and a holding and releasing mechanism for the plates, substantially as and for the purpose described

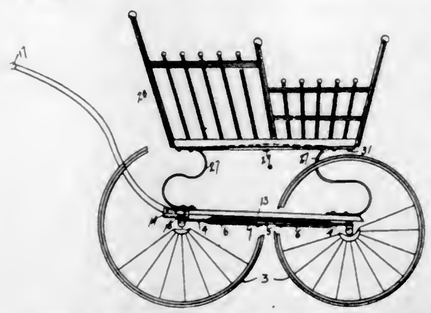
6. A compressing and baling apparatus, consisting of a suitable frame, an oscillating carrier having a movable and mechanically-resisted platen, means for operating the platen or follower-block, compressing and fold-laying rollers, suitable aprons connecting the rollers with the carrier, spring-mounted folder-plates connected to and moving with the rollers, and a holding and releasing mechanism therefor, substantially as and for the purpose specified.

7. A compressing and baling apparatus, comprising a suitable frame, an oscillating carrier having a movable and mechanically-resisted platen, compressing and fold-laying rollers, suitable aprons connecting the rollers with the carrier, folder-plates having lugs at their inner ends, suitable springs connecting the plates with the rollers, and a holding and releasing device for the plates, substantially as and for the purpose set forth.

8. A compressing and baling apparatus, consisting of a suitable frame, an oscillating carrier provided with a movable and mechanically-resisted platen or follower-block, compressing and fold-laying rollers, suitable aprons connecting the rollers with the carrier, spring-mounted folder-plates connected to and moving with the rollers, and a double-inclined spreader-block to operate the plates, substantially as and for the purpose specified.

9. In a compressing and baling apparatus, an oscillating carrier having a movable and mechanically-resisted platen or follower-block, toothed segments upon the carrier, compressing and fold-laying rollers having toothed wheels to engage the toothed segments, and means for operating the rollers, consisting of horizontally-movable rack-bars engaging the toothed wheels, substantially as and for the purpose set forth.

654,971. FOLDING CARRIAGE. LOUIS A. GREYER and BERTHA A. GREYER, Boston, Mass. Filed Jan. 10, 1900. Serial No. 1,015. (No model.)



Claim.—1. In a folding carriage, the combination with a folding body portion of two crossed bars pivoted together, an axle pivoted to each end of each of said bars and extending inward therefrom, and means connected with the inner ends of said axles for automatically preserving the parallelism thereof in both the folded and extended positions of the carriage.

2. In a folding carriage, the combination with a folding body portion of two side-bars each provided with a guide 15, two crossed bars each pivoted at one end to one of said side-bars and guided at its opposite end in one of said guides 15, said bars being also pivoted to each other at their point of intersection, axles 2 each provided with a wheel and pivoted to said crossed bars, and means connected with the inner ends of said axles for automatically keeping the same parallel with one another in both the folded and extended positions of the carriage.

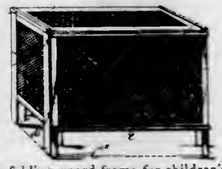
3. In a folding carriage, the combination of two crossed bars 4 pivoted together at their point of intersection, axles 2 pivoted respectively to the ends of said bars 4 and carrying wheels 3, links 6 each pivoted to an axle 2 and to the opposite bar 4, as described and for the purpose set forth, and a folding body portion supported by said axles.

4. In a folding carriage, the combination with a folding body portion of two crossed bars pivoted together at their point of intersection, axles 2 each provided with a wheel and pivoted respectively to the ends of said bars, means for automatically preserving the parallelism of said axles in both the folded and extended positions of the carriage, and a locking device comprising a bar 7 and a link 9 pivoted to each other and to said crossed bars respectively, as described, and pins 11 and 12 each secured to one of said axles and adapted to engage holes formed in said bar 7, for the purpose set forth.

5. In a folding carriage, the combination with a folding running-gear of two side-bars supported thereon, springs carried on said side-bars, and a folding body portion supported by said springs and comprising sides 20, ends 21 and a bottom 22, said ends being hinged to one of said sides and the bottom 22 to the other, and two crossed bars 28 pivoted together at their point of intersection and each pivoted at one end to one of the sides 20 and provided at its other end with a slot 30 containing a headed pin 31, substantially as described.

6. A folding carriage comprising in combination two crossed bars 4 pivoted together, axles 2 secured thereto and each carrying a wheel, links 6 each pivoted to an axle 2 and to one of said bars 4, side-bars 13 supported on said axles and each provided with a slotted guide 15 adapted to engage a headed stud 16 secured to one of the axles 2, a folding handle-bar, springs 27 carried by the side-bars 13, sides 20 supported on said springs, ends 21 hinged to one of said sides, a bottom 22 hinged to the other of said sides, and two crossed bars 28 pivoted together and to said sides respectively, a slot 30 in each bar 28, and a headed pin 31 passing through each slot 30 and secured to the corresponding side 20, as described.

654,972. FOLDING GUARD-FRAME FOR CHILDREN'S BEDS. IDA A. HAACK, New York, N. Y. Filed May 11, 1900. Serial No. 16,314. (No model.)



Claim.—1. A folding guard-frame for children's beds and cribs, consisting of a rear section, end sections hinged to the ends of the rear sections, a front section, and means for removably attaching the front section to the front ends of the end sections, said front section being provided with top and bottom guideways and a sliding door in said front section, said door being bodily removable with the front section from the remaining parts and said rear, end and front sections being closed by means of wire-gauze, substantially as set forth.

2. A folding guard-frame for children's beds and cribs, consisting of a rear section, end sections hinged thereto, and provided with guideways at their upper ends a top section guided in the ways at the upper ends of the end sections, a front section, and means for attaching the front section to the end sections, and a sliding door, said front section being provided with top and bottom ways for the sliding door, and all the sections being formed of suitable frames closed by wire-gauze, substantially as set forth.

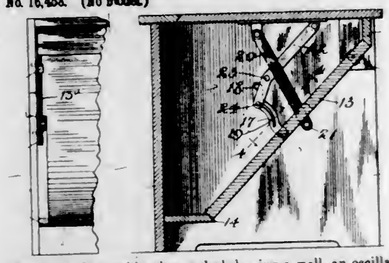
3. A folding guard-frame for children's beds and cribs, consisting of a rear section, end sections hinged to the ends of said rear section, and provided with top guideways, a sliding top section supported in the top guideways of the end sections, a front section provided with guideways, a front door sliding in the latter, and means for attaching the front section to the end sections, the rear, end and front sections being provided with suitable legs and auxiliary sections connecting said legs, substantially as set forth.

654,973. BATHING DEVICE FOR PRODUCING ARTIFICIAL WAVES. ERNST HAECKEL, Berlin, Germany. Filed Sept. 2, 1899. Serial No. 729,377. (No model.)



Claim.—The combination with a bath-tub, of a rocking support for the bather provided with an upturned head-rest at one end and with a boxed-in foot portion forming a pocket for confining water when the support is rocked in one direction and causing such water to flow over the body of the bather when said support is rocked in an opposite direction, substantially as described.

654,974. TYPE-WRITER DESK. MAGNUS J. HAFGAR, Chicago, Ill., assignor to Olaf C. S. Olsen, same place. Filed May 12, 1900. Serial No. 16,458. (No model.)

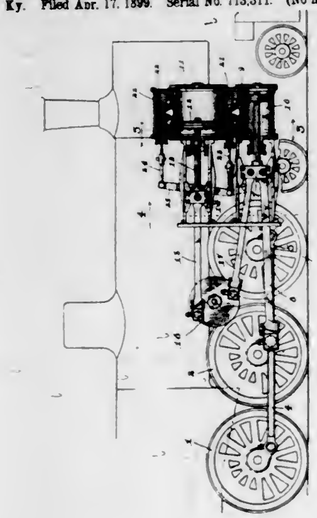


Claim.—1. In combination, a desk having a well, an oscillating table within the well, a support for the forward end of the table, a table-supporting link pivoted to the wall of the well and to the table and having a longitudinal slot, an oscillating cover for the well, a link pivoted to the wall of the well and to the rearward portion of the cover, a lever pivoted to the wall of the well and having its long arm pivoted to the forward portion of the cover, and a pin in the short arm of the lever and engaging the slot in the table-supporting link.

2. In combination, a desk having a well, an oscillating table within the well, a support for the forward end of the table, a table-supporting link pivoted to the wall of the well and to the table, an oscillating cover for the well, a link pivoted to the wall of the well and to the rearward portion of the cover, a lever pivoted to the wall of the well and having its long arm pivoted to the forward portion of the cover and its short arm in sliding engagement with the table-supporting link.

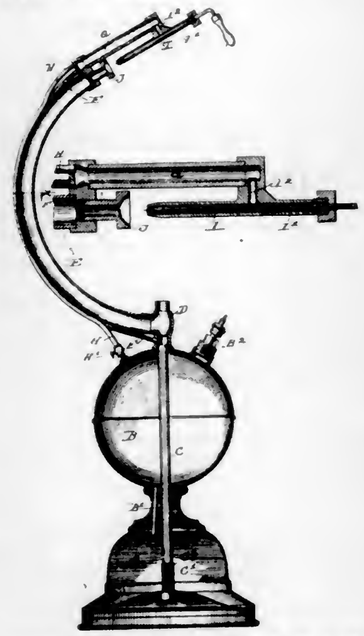
3. In combination, a desk having a well, an oscillating table within the well, a swiveled support for the forward end of the table, a table-supporting link pivoted to the wall of the well and to the table, an oscillating cover for the well, a link pivoted to the wall of the well and to the rearward portion of the cover, a lever pivoted to the wall of the well and having its long arm pivoted to the forward portion of the cover, and its short arm in sliding engagement with the table-supporting link.

654,975. COMPOUND ENGINE. WILLIAM T. HARRIS, Louisville, Ky. Filed Apr. 17, 1899. Serial No. 713,311. (No model.)



Claim.—The combination, in a locomotive, of the driving-wheels, the connecting-rods connected to the wrists thereof, a connecting-rod running from one of said wrists to a cross-head, suitable ways for said cross-head, a piston connected to said cross-head, a steam-cylinder in which said piston operates, a suitable valve whereby steam is admitted to and permitted to escape from said cylinder, a second steam-cylinder to which the steam as it escapes from the first steam-cylinder is conducted, a piston in said second cylinder, a cross-head to which said piston is connected, suitable ways for said cross-head, a rock-shaft extending through from one side to the other of the engine, a disk or rock-arm on each end of said rock-shaft, and connecting-rods running from wrists on each of said disks or rock-arms to the cross-heads connected with the duplicate cylinders on each side of the engine, whereby the force from the two sets of steam-cylinders is transmitted to and exerted upon said driving-wheels, substantially as shown and described.

654,976. HYDROCARBON ILLUMINATING-LAMP. WILLIAM HAWKS, Midland, Mich., assignor to Thomas B. Jeffery and Charles F. Stokes, Chicago, Ill. Filed Dec. 22, 1898. Renewed June 25, 1900. Serial No. 21,573. (No model.)

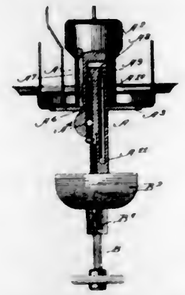


Claim.—1. In a hydrocarbon illuminating-lamp, in combination, a hydrocarbon-receptacle; a burner; a mixing-pipe for supplying gas to said burner; an air-funnel having an adjustable connection with the mixing-pipe; a generating-chamber having communication with said hydrocarbon-receptacle, located above said burner; and a needle-valve casing over the burner lying substantially parallel with and having communication with said generating-chamber, and being so arranged relative to said generating-chamber that the generated gas is reverted over the burner, and discharged into the mixing-pipe slightly to one side of the heated zone directly over said burner.

2. In a hydrocarbon illuminating-lamp, in combination, a hydrocarbon-receptacle, an air-chamber communicating with the receptacle, an air-valve for the chamber, a gas-generator, a communication between the generator and the hydrocarbon-receptacle, a burner, a gas-discharge valve for the generator, a mixing-pipe communicating between the discharge-valve and the burner, an air-tube communicating between the air-chamber and the generating-chamber, and a valve in the air-tube, substantially as and for the purpose specified.

654,977. HYDROCARBON-LAMP. WILLIAM HAWKS, Midland, Mich., assignor to Thomas B. Jeffery and Charles F. Stokes, Chicago, Ill. Filed Apr. 1, 1899. Renewed June 25, 1900. Serial No. 21,574. (No model.)

Claim.—In a hydrocarbon-lamp, in combination, a reservoir; a fuel-pipe; a filter in said pipe; a coupling C^4, for said fuel-pipe; a body portion for the lamp, having a tubular mixing-chamber with an annular flange extending from its lower end, also having an opening for the fuel-pipe, the generating-ducts A^6, A^7, A^8, A^9, A^{10}, and A^{11}, of which ducts A^7, and A^9, are of smaller diameter than those which they connect, a downwardly-extending L-shaped arm and a threaded tubular stem for the needle-valve; a needle-valve for said stem; and a generating-cup.



654,978. BICYCLE-LAMP HOLDER. EUGENE E. HENRY, Stamps, Ark. Filed Nov. 3, 1899. Serial No. 735,694. (No model.)



Claim.—1. In a bicycle-lamp holder, the combination of an arm adapted to be connected with the bicycle-fork, a bracket mounted to turn on the arm, and a connection extending from the bracket to a stationary part of the bicycle-frame.

2. The combination with a bicycle, of an arm attached rigidly to the steering-fork, a bracket supported to turn on the arm, and a connection between the bracket and the steering-head of the bicycle.

3. The combination of an arm, a bearing attached thereto, a spindle mounted in the bearing, a bracket attached to and turning with the spindle, a sprocket-wheel attached to the spindle, and a chain passing over the sprocket-wheel.

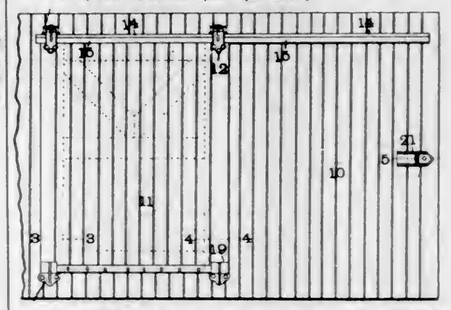
4. In a bicycle-lamp holder, the combination of a bracket, means for mounting the bracket on the steering-fork, the bracket being independently revoluble, and a connection extending between the bracket and the steering-head of the bicycle.

5. The combination of a lamp-holder, means by which the lamp-holder is mounted to turn, such means supporting the lamp-holder on the bicycle-fork, and a connection extending between the lamp-holder and a stationary part of the bicycle-frame.

6. The combination of two supporting-arms having extensions at their ends, bars secured to the extensions and having ball-cups formed therein, a spindle extended through the ball-cups, cones attached to the spindle and working in the ball-cups, a bracket attached to the spindle and serving to carry the lamp, a sprocket attached to the spindle, and a chain engaged with the sprocket and adapted to be connected with the steering-head of the bicycle.

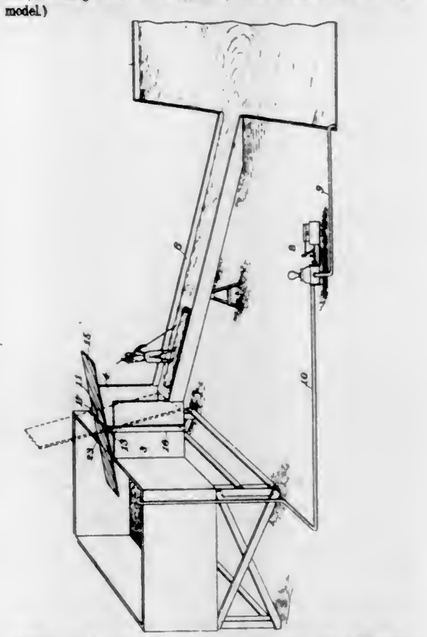
7. The combination of a lamp-holder, means on which it is mounted to turn, and a chain comprising two crossed runs engaging with the lamp-holder at opposite sides of the pivot thereof, the said means for carrying the lamp-holder and the chain being respectively adapted to be fastened to relatively-mobile parts of a vehicle.

654,979. CAR-DOOR. LOUIS A. HOERR, St. Louis, Mo. Filed Feb. 16, 1900. Serial No. 5,447. (No model.)



Claim.—The combination with a car, of a sliding door, a hanger carried by said door and provided with a grooved sheave, said sheave having one of its flanges over the center of gravity of said door, a fillet secured to said car, and an L-shaped track secured to the upper face of said fillet and consisting of a vertical web and a horizontal web, said vertical web projecting into the groove of said sheave and said horizontal web supporting the flange of said sheave which is over the center of gravity of the door.

654,980. LOGGING-EXHIBITION APPARATUS. ABRAM F. HOWARD, Munising, Mich. Filed Mar. 15, 1900. Serial No. 8,697. (No model.)



Claim.—1. In a logging-exhibition apparatus, the combination of an upper tank raised above the ground-level upon suitable supporting structure and adapted to hold water, a downwardly-inclined flume, a water-gate constructed and arranged to open said upper tank into said flume at its highest point, a lower tank, the said flume being connected with the upper tank and with the lower tank, substantially as described.

2. In a logging-exhibition apparatus, the combination of an upper tank raised above the ground-level upon suitable supporting structure and adapted to hold water, the said upper tank having an extension at one side, a lower tank, a downwardly-inclined flume connecting the extension of said upper tank with said lower tank, a water-gate located in the extension of said upper tank and adapted to confine water in said upper tank or to permit its discharge into said flume, substantially as described.

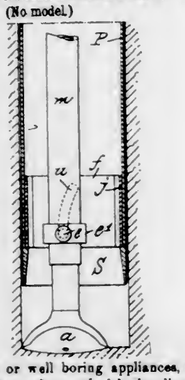
3. In a logging-exhibition apparatus, the combination of an upper tank, a flume, a gate arranged to open said upper tank into said flume, a lower tank arranged to receive the contents of said flume, and pumping mechanism adapted to raise water into said upper tank from said lower tank, substantially as described.

4. In a logging-exhibition apparatus, the combination of an upper tank raised above the ground-level upon suitable supporting structure and adapted to hold water, a lower tank, a downwardly-inclined curved flume connecting the said upper tank with the said lower tank, a water-gate constructed and arranged to open said upper tank into the said flume at its highest point, substantially as described.

5. In a logging-exhibition apparatus, the combination of an upper tank raised above the ground-level upon suitable supporting structure and adapted to hold water, a lower tank, a downwardly-inclined flume connecting the said upper tank with the said lower tank, artificial obstructions placed in said flume and adapted to interfere with the direct passage of logs floating down the flume, a water-gate constructed and arranged to open the said upper tank into the said flume at its highest point, substantially as described.

6. In a logging-exhibition apparatus, the combination of an upper tank having an extension at one side, a sill 20 transversely secured on the floor of said extension, a gate 15, a cross-beam secured to the middle of the gate, said cross-beam having journals at the ends, gate-posts 16 and 17 fixed to the walls of said upper-tank extension, said gate-posts having recesses in their tops within which the journals of the cross-beam may rise and fall, and devices adapted to detachably retain the journals of said cross-beam within said gate-post recesses thereby also keeping the lower edge of the gate against the said sill, as and for the purposes described.

654,981. BORING APPARATUS. JOSEF HOWARTH and WLADYSLAW PRUSZKOWSKI, Schodnica, Austria-Hungary. Filed Feb. 13, 1899. Serial No. 706,008. (No model.)



Claim.—1. Shaft or well boring appliances, comprising a bore tube or casing, a boring-tool, a vertical hydraulic power-cylinder, its piston, means for supplying water under pressure to the pressure-chamber of the cylinder below the piston, a spring acting upon the upper face of said piston, a connection between the said piston and tool, means for severing said connection when the tool is raised and for reëstablishing said connection by the downward movement of said piston, and means for exhausting the water from the power-cylinder into the lower end of the bore-casing, for the purpose set forth.

2. Shaft or well boring appliances, comprising a bore tube or casing, a boring-tool, a guide-casing for and in which said tool has vertical motion, a tubular tool-rod in communication with the lower end of the bore-casing, a vertical hydraulic power-cylinder within the guide-casing, the cylinder-piston, a spring acting upon the upper face of said piston, means for admitting water under pressure to the pressure-chamber of the cylinder below its piston, a connection between the latter and the tool-rod, means for severing said connection during the upward movement of said rod and reëstablishing such connection by the downward movement of the piston, and means for exhausting the contents of the cylinder pressure-chamber into the tool-rod, for the purpose set forth.

3. Shaft or well boring appliances, comprising a bore tube or casing, a boring-tool, a guide-casing for and in which said tool has vertical motion, a tubular tool-rod in communication with the lower end of the bore-casing, a vertical hydraulic power-cylinder within the guide-casing, the cylinder-piston a spring acting upon the upper face of such piston, means for supplying water under pressure to the pressure-chamber of said cylinder below its piston, a connection between the latter and the tool-rod, means for severing said connection during the upward movement of said rod and for reëstablishing such connection by the downward movement of the piston, a valve controlling exhaust-ports in the pressure-chamber of the power-cylinder and ports in communication with the tool-rod, and means operating said valve to periodically open and close said ports; in combination with a locking device locking the valve against motion when the ports are open, and means acting upon said locking device to release the valve by the downward movement of the piston, for the purpose set forth.

4. Shaft or well boring appliances, comprising a bore tube or casing, a boring-tool, a guide-casing for and in which said tool has vertical motion, a tubular tool-rod in communication with the lower end of the bore-casing, a vertical hydraulic power-cylinder within the guide-casing, the cylinder-piston, a spring acting upon the upper face of said piston, means for admitting water under pressure to the pressure-chamber of the cylinder below its piston, a connection between the latter and the tool-rod, means for severing said connection during the upward movement of said rod and reëstablishing such connection by the downward movement of the piston, and means for exhausting the contents of the cylinder pressure-chamber into the tool-rod; in combination with means for locking said rod to the guide-casing without interfering with its vertical movements, for the purpose set forth.

5. Shaft or well boring appliances, comprising a bore tube or casing, a boring-tool, a guide-casing for and in which said tool has vertical motion, a tubular tool-rod in communication with the lower end of the bore-casing, a vertical hydraulic power-cylinder within the guide-casing, the cylinder-piston, a spring acting upon the upper face of such piston, means for supplying water under pressure to the pressure-chamber of said cylinder below its piston, a connection between the latter and the tool-rod, means for severing said connection during the upward movement of said rod and for reëstablishing such connection by the downward movement of the piston, a valve controlling exhaust-ports in the pressure-chamber of the power-cylinder and ports in communication with the tool-rod, and means operating said valve to periodically open and close said ports; in combination with a locking device locking the valve against motion when the ports are open, and means acting upon said locking device to release the valve by the downward movement of the piston, for the purpose set forth.

6. Shaft or well boring appliances, comprising a cylindrical casing closed at its upper end, a partition dividing said casing into upper and lower chambers, a piston fitted in the upper chamber, a spring acting upon the upper face of said piston, means for supplying water to said chamber below the piston, a tubular tool-rod closed at its upper end, said rod having a piston-head at its lower end fitting the aforesaid lower chamber, and ports in communication therewith, a connection between the piston and tool-rods, means for severing said connection during the upward movement of the piston, and for reëstablishing the same by the downward movement of said piston; in combination with a valve controlling ports between the upper casing-chamber below the piston and the lower casing-chamber, and means operating said valve to periodically open and close said ports, for the purpose set forth.

7. Shaft or well boring appliances, comprising a cylindrical casing closed at its upper end, a partition dividing said casing into upper and lower chambers, a piston fitted in the upper chamber, a spring acting upon the upper face of said piston, means for supplying water to said chamber below the piston, a tubular tool-rod closed at its upper end, said rod having a piston-head at its lower end fitting the aforesaid lower chamber, and ports in communication therewith, a connection between the piston and tool-rod, means for severing said connection during the upward movement of the piston, and for reëstablishing the same by the downward movement of said piston; in combination with a valve controlling ports between the upper casing-chamber below the piston and the lower casing-chamber, means operating said valve to periodically open and close said ports, a locking device locking the valve against motion when the ports are open, and means acting upon said locking device to release said valve, for the purpose set forth.

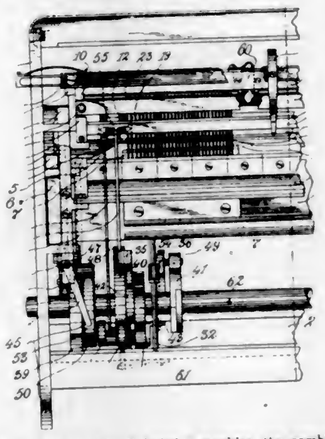
8. Shaft or well boring appliances, comprising a bore tube or casing, a boring-tool, a vertical hydraulic power-cylinder, its piston, a spring acting on the upper face thereof, means for supplying water under pressure to the pressure-chamber of the cylinder below its piston, a connection between the latter and the boring-tool, means for severing said connection during the upward motion of the piston and for reëstablishing the same by the downward movement of said piston, and means for exhausting the water from the pressure-chamber of the cylinder into the lower end of the bore-casing; in combination with a sleeve loosely seated in said casing near its lower end, and oblique guides engaging the boring-tool and guiding the same, substantially as and for the purpose set forth.

9. In shaft or well boring appliances, the combination with the bore tube or casing and a vertically-movable rigid tool-rod having the boring-tool rigidly secured thereto, said rod arranged axially in the casing; of a guide in the latter guiding said rod from its normal axial position into an operative position eccentric to said bore-tube and holding said rod in said position during its boring operation, for the purpose set forth.

10. In shaft or well boring appliances, the combination with the bore tube or casing provided with an annular seat, and a vertically-movable tool-rod arranged axially within said tube and having radial pins diametrically opposite each other: of a guide-sleeve seated on the aforesaid tube-seat and having cross-partitions provided with oblique slots guiding the tool-rod from an axial inoperative to an eccentric operative position and vice versa as said rod moves vertically in one or the other direction, for the purposes set forth.

11. Shaft or well boring appliances, comprising a main casing closed at its upper end, a partition dividing said casing into two chambers, a piston fitted in the upper chamber, and having hollow piston-rods projecting from its opposite faces, the downwardly-projecting rod having ports *o* and a solid extension having a tapering upper enlargement *b* and a conical lower head *g*, the tubular tool-rod provided with ports in communication with the lower casing-chamber and with a piston-head fitting said casing, a spring acting upon the upper face of said piston, and spring-pressed latches engaging the aforesaid head *g* on piston-rod; in combination with a valve-casing secured in the partition of the main casing and having ports in communication with the lower chamber thereof, a cylindrical reciprocatory valve in said valve-casing mounted on the lower piston-rod and open to the upper main casing-chamber and having ports adapted to register with those in its casing, a spring acting upon the valve to normally hold the same with aforesaid ports out of register, a plug secured in the lower part of the valve-casing having a conical axial projection *i*, a connection between the aforesaid valve and tool-rod, means for severing said connection during the downward movement of the rod and reëstablishing the same during its upward movement, a spring-actuated locking device locking the valve when moved to bring the aforesaid ports into register, and means on the lower piston-rod for disengaging said locking device from the valve during the downward movement of said rod, substantially as and for the purpose set forth.

654,982. STRAIGHT-RIB-KNITTING MACHINE. DANIEL HURLEY and WILLIAM T. BARRATT, Bennington, Vt., assignors to Charles Cooper, same place. Filed Dec. 30, 1899. Serial No. 742,150. (No model.)

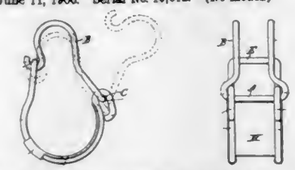


Claim.—1. In a straight-rib-knitting machine, the combination with the front and back needles, of mechanism to hold the back needles in their extreme or nearly extreme backward position until after the stitches have been cast off the front needles and the latter returned to their highest position, and mechanism to elevate the front ends of the back needles to carry them over the stitches on the front needles, as and for the purpose set forth.

2. In a straight-rib-knitting machine, the combination with the front and back needles, of means to lay the new loops in the heads of the back needles beneath their beards, means to retract and hold the back needles in their extreme or nearly extreme backward position, with the new loops hanging from their heads beneath their beards, during the period necessary to cast off the stitches from the front needles and return the latter needles to their highest position, and means to elevate the front ends of the back needles to carry them over the stitches on the front needles, as and for the purpose set forth.

3. In a straight-rib-knitting machine, the combination with the front and back needles, and mechanism to hold the back needles in approximately their extreme backward position until after the stitches have been cast off the front needles and the latter elevated, of a bar 5 on the front edge of which the back needles rest, said bar being supported on trunnions, a depending arm connected to the rear end of said bar, and a cam 45 to intermittently engage the lower end of said bar and thereby elevate the heads of the back needles as they return to their forward position, substantially as set forth.

654,983. CABLE-HANGER. JAMES C. HYDE, West Haven, Conn. Filed June 11, 1900. Serial No. 19,812. (No model.)



Claim.—1. The herein-described cable-hanger, consisting of a hook member comprising a bar, sides and hooks, said sides inset from the ends of the said bar, and a loop member comprising a bar adapted for engagement with said hooks, and formed at its opposite ends with eyes through which the bar of the hook extends, substantially as described.

2. The herein-described cable-hanger, consisting of a hook member formed from a single piece of wire, and comprising a bar, sides and hooks, said sides inset from the ends of the said bar, and a loop made from a single piece of wire and comprising a bar adapted for engagement with the said hooks, and formed at its opposite ends with eyes through which the bar of the hook extends, substantially as described.

3. The herein-described cable-hanger, consisting of a hook member comprising a bar, sides and hooks, said sides inset from the ends *c*, the said bar, a loop member comprising a bar adapted for engagement with said hooks, and formed at its opposite ends with eyes through which the bar of the hook extends, and a strap formed at one end with arms surrounding the sides of the hook member, substantially as described.

654,984. PROCESS OF PRODUCING STEEL. ELIAS M. JOHNSON, New York, N. Y. Filed Apr. 17, 1900. Serial No. 13,215. (No specimens.)



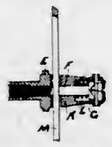
Claim.—1. The process of incorporating metals with steel during its conversion which consists in placing in a closed metal receptacle metals which will form an alloy with said receptacle, placing the receptacle in a crucible and piling the charge of steel around it, heating the charge until the contents of the receptacle form an alloy with said receptacle, and continuing the application of heat until the alloy thus formed is taken up and mixed with the entire charge.

2. The process of incorporating such metals with steel during its conversion as will form an alloy therewith, which consists in placing such metals in a closed steel receptacle or cup, inserting said cup in a crucible, placing iron or steel scrap around the cup, and heating the whole mass until the cup absorbs its contents and alloys therewith, and continuing the application of heat until the alloy thus formed is absorbed by the mass, substantially as described.

654,985. LEAF-HOLDER. THEODORE B. JONES, Harrogate, England. Filed Sept. 19, 1899. Serial No. 731,022. (No model.)

Claim.—1. The combination with the barrel E, the spindle F secured to said barrel, a collar G with a cam-groove therein at the outer end of said spindle and a weighted finger pivoted upon said spindle, of a cap K fitted to turn and slide upon the spindle F, and having a recess therein, a cross-pin in said cap adjacent to the face

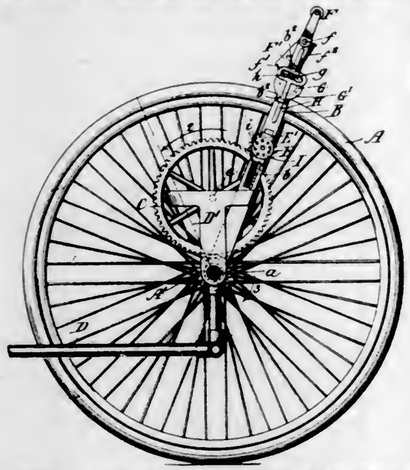
of said collar, and a helical spring in the recess of said cap and acting between said cap and collar, substantially as specified.



2. The combination with the leaf-holder having a projecting spindle, and the rail adapted to be secured longitudinally upon the under side of the music-rest, of a slide connected to and movable along said rail, a bracket having an upturned end receiving the spindle of the leaf-holder and movable in said slide for adjusting the leaf-holder transversely of the music-rest and means for clamping the bracket to the rail, substantially as specified.

3. The combination with the leaf-holder consisting of the attaching-barrel, a spindle secured to said barrel, a weighted finger pivoted upon said spindle, and means for clamping said finger, of the rail A, adapted to be secured longitudinally to the under surface of the music-rest, a slide C connected to and movable along the rail, a bracket D having an upturned end receiving said spindle of the leaf-holder and movable in said slide for adjusting the leaf-holder transversely of the music-rest, and means for clamping the bracket to the rail, substantially as specified.

654,986. HAND-OPERATED MOTOR. THEODORE F. KRUEGER, New York, N. Y. Filed Nov. 20, 1899. Serial No. 737,573. (No model.)



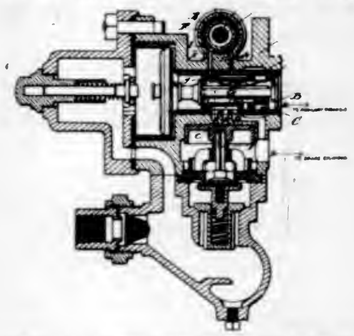
Claim.—1. A hand-operated motor composed of a pinion secured to the axle of the driving-wheels, a spur-gear mounted loosely on a stud contained in an uprising portion of the frame and meshing the pinion, a lever with handle mounted loosely on the driving-axle, a driving-pinion mounted upon a block which slides longitudinally in ways in the lever, a spring below the block tending to retain the driving-pinion in mesh with the spur-gear, a disk mounted upon the stud of the driving-pinion provided with projections, and a driving-pinion-locking device coöperating with said projections, substantially as described.

2. In a hand-operated driving mechanism, a lever mounted loosely upon the driving-axle and provided with a semiflexible joint composed of a handle pivoted to the top of the lever, a spring below the handle tending to return same to its normal position when released, a downward handle extension on the opposite side of the pivot forming below a segment of gear-teeth, a gear-pinion meshing with the toothed segment, a driving-pinion mounted upon a block which slides longitudinally in ways in the lever, a spur-gear meshing with the sliding pinion, a disk secured on the stud of the sliding pinion and provided with projections, a slidiag-pinion locking device coöperating with said projections, and a connection between the gear-pinion and said locking device for operating the latter by the movement of the handle relative to the lever, as specified.

3. In a hand-operated driving mechanism, a lever mounted loosely upon the driving-axle and provided with a semiflexible joint composed of a handle pivoted to the top of the lever, a spring below the handle tending to return same to its normal position when released, a downward handle extension on the opposite side of the pivot forming below a segment of gear-teeth, a gear-pinion meshing with the toothed segment, a driving-pinion mounted upon a block which slides longitudinally in ways in the lever, a spur-gear meshing with the sliding pinion, a disk secure on the stud of the sliding pinion provided with projections, and a sliding-pinion locking device coöperating with said projections composed of a locking-bar with slot sliding in suitable bearings upon the lever, a crank-disk mounted on the stud of the gear-pinion and rotating with same, and a wrist-pin carried by the crank-disk and engaging with the slot, so that upon operating the handle the locking-bar descends between the projections, thereby stopping the rotation of the sliding pinion until released, as specified.

4. In a hand-operated driving mechanism, a lever mounted loosely upon the driving-axle and provided with a semiflexible joint composed of a handle pivoted to the top of the lever, a spring below the handle tending to return same to its normal position when released, a downward handle extension on the opposite side of the pivot forming below a segment of gear-teeth, a gear-pinion meshing with the toothed segment, a crank-disk mounted on the stud of the gear-pinion and rotating with same, a wrist-pin carried by the crank-disk, and a locking-bar sliding in suitable bearings upon the lever and having a slot with which the wrist-pin engages, so that upon operating the handle the locking-bar descends and ascends and the pinion is locked or unlocked by the movement of the bar, as specified.

654,987. RETAINING-VALVE. JOSEPH S. LAPISH, Salt Lake City, Utah. Filed Oct. 7, 1899. Serial No. 732,903. (No model.)



Claim.—1. A retaining-valve for a brake-cylinder, comprising a retaining-cylinder, and a spring-pressed piston therein in combination with an auxiliary slide-valve operatively connected with the triple-valve slide-valve arranged for allowing the auxiliary-reservoir pressure to pass into the said cylinder, to force the said piston therein in one direction into a closed position when the said slide-valve is in an emergency position, the said piston being moved in an opposite direction by its spring, to bring the piston back into an open or normal position as the air contained in the retaining-cylinder and which moved the piston forward leaks out, substantially as shown and described.

2. A retaining-valve for a brake-cylinder comprising a retaining-cylinder, and a spring-pressed piston therein in combination with an auxiliary slide-valve operatively connected with the triple-valve slide-valve arranged for allowing the auxiliary-reservoir pressure to pass into the said cylinder, to force the said piston therein in one direction into a closed position when the said slide-valve is in an emergency position, the said piston being moved in an opposite direction by its spring, to bring the piston back into an open or normal position as the air contained in the retaining-cylinder and which moved the piston forward leaks out, and the piston beginning its return or opening stroke when the said auxiliary slide-valve is returned to service-application position, substantially as shown and described.

3. A fluid-pressure brake, provided with a triple valve-slide-valve and an auxiliary valve moving in unison therewith, and having a port der connection with the auxiliary reservoir, a retaining-valve cylinder connected at one eod with said port when the triple valve is in an emergency position, and a piston in said cylinder, and adapted to be forced outward by the pressure from the auxiliary reservoir by way of said port, the piston then closing the brake-cylinder exhaust, the retaining-cylinder connecting with the brake-cylinder when said slide valve is shifted to recharging position, to retain the pressure in the brake-cylinder, substantially as shown and described.

4. A fluid-pressure brake, provided with a triple slide-valve, an auxiliary slide-valve carried by and moving in unison with the triple valve slide-valve actuated by the triple-valve piston, the said auxiliary slide-valve having a channel and a port for connection with the auxiliary-reservoir pressure, a retaining-cylinder, and a spring-pressed piston therein, and adapted to be forced outward by the auxiliary reservoir pressure at the time the triple valve moves into an emergency position, the exhaust end of the cylinder being connected by way of said channel with the outer air the time the triple valve is in service application, and said retaining-cylinder connecting with the brake-cylinder at the time the triple valve is in an auxiliary-reservoir-recharging position, substantially as shown and described.

5. A retaining-valve for a brake-cylinder, comprising a slide-valve on the triple-valve slide-valve and operated by the piston thereof, a retaining-cylinder and a spring-pressed piston therein, and moved in one direction into a closed position by auxiliary-reservoir pressure when the said triple-valve slide-valve is brought to an emergency-application position and moved in the opposite direction by its spring, to bring the piston back into an open or normal position as the air contained in the retaining-cylinder and which moved the piston forward leaks out, the said piston being arranged to remain in a closed position while the auxiliary reservoir is recharged and only beginning its return or opening stroke when the triple valve is returned to a service application, the arrangement permitting of recharging the auxiliary reservoir to any pressure and in any desired time, without releasing any air from the brake-cylinder, substantially as shown and described.

6. A fluid-pressure brake, provided with a retaining-cylinder forming the escape of the brake-cylinder, a piston in the said cylinder, and an auxiliary valve moving in unison with the triple-valve slide-valve and controlling a connection between the said retaining-cylinder and the auxiliary reservoir, to permit of forcing the said piston outward by pressure from the auxiliary reservoir when the triple valve is in an emergency position, the piston then closing the brake-cylinder escape, the said auxiliary slide-valve also controlling an outlet-port for the retaining-cylinder, to connect the latter with the open air when the triple valve is in service-application position, substantially as shown and described.

7. A fluid-pressure brake, provided with a retaining-cylinder forming the escape for the brake-cylinder, a piston in the said cylinder, and an auxiliary valve moving in unison with the triple-valve slide-valve and controlling a connection between the said retaining-cylinder and the auxiliary reservoir, to permit of forcing the said piston outward by pressure from the auxiliary reservoir when the triple valve is in an emergency position, the piston then closing the brake-cylinder escape, the said auxiliary slide-valve also controlling an outlet-port for the retaining-cylinder to connect the latter with the open air when the triple valve is in service-application position, and a spring for returning the piston to open the brake-cylinder escape, substantially as shown and described.

8. A retaining-valve, comprising a retaining-cylinder, means for connecting the said retaining-cylinder with the brake-cylinder, to form the escape therefor, and a slide-valve moving with the triple-valve slide-valve, for connecting the said retaining-cylinder with auxiliary-reservoir pressure, and a spring-pressed piston movable in the cylinder and moved forward into a closed position by auxiliary-reservoir pressure, to cut off the escape of air from the brake-cylinder when the triple valve is moved into an emergency-application position, the spring of the piston returning the piston to an open or normal position as the air contained in the retaining-cylinder and which moved the piston forward leaks out, substantially as shown and described.

654,988. PROCESS OF MAKING ACETYL CELLULOSE. LEONHARD LEDERER, Sulzbach, Germany. Filed Mar. 16, 1900. Serial No. 8,970. (No specimens.)

Claim.—1. A process for producing acetyl cellulose consisting in converting cellulose into hydrocellulose and adding the latter to acetic anhydride in presence of sulfuric acid.

2. A process for producing acetyl cellulose consisting in adding hydrocellulose to acetic anhydride in presence of sulfuric acid.

654,989. DUPLEX PENHOLDER. HARVEY LONGENECKER and FRANK LONGENECKER, Beamsville, Ohio. Filed Apr. 9, 1900. Serial No. 12,094. (No model.)

Claim.—1. A penholder, comprising a case, a right and left hand screw-rod mounted in said case, and pen-sockets engaging the right and left hand threads of the screw-rod respectively, whereby when one socket is moved in one direction the other is caused to travel in an opposite direction, substantially as shown and described.

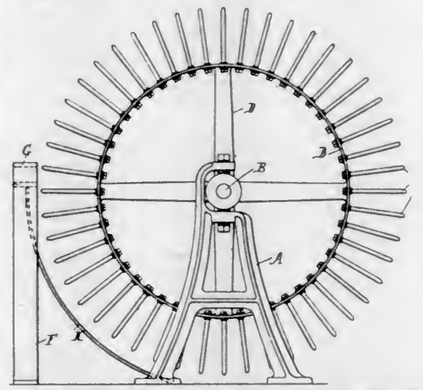
2. A penholder, comprising a case, a right and left hand screw-rod mounted to turn in said case, and pen-sockets mounted to slide in the case and engaging the right-hand and left-hand threads of the screw-rod respectively, whereby when one pen-socket is moved in one direction the screw-rod is turned and the other pen-socket is caused to travel in an opposite direction, substantially as shown and described.



3. A penholder, comprising a case, a right and left hand screw-rod mounted to turn in said case, pen-sockets mounted to slide longitudinally in said case, and a nut in each socket, one nut engaging the right-hand thread of the screw-rod and the other nut engaging the left-hand thread of said screw-rod, substantially as shown and described.

4. A penholder, comprising a case, a right and left hand screw-rod mounted to turn in said case, pen-sockets mounted to slide longitudinally in said case, a nut in each socket, one nut engaging the right-hand thread of the screw-rod and the other nut engaging the left-hand thread of said screw-rod, and means, as set forth, and connected with one of the pen-sockets, to allow of moving the same in either direction.

654,990. APPARATUS FOR PREPARING GRASS. GEORGE A. LOWRY, Chicago, Ill., assignor to the Northwestern Grass Twine Company, St. Paul, Minn. Filed Jan. 8, 1897. Serial No. 618,448. (No model.)



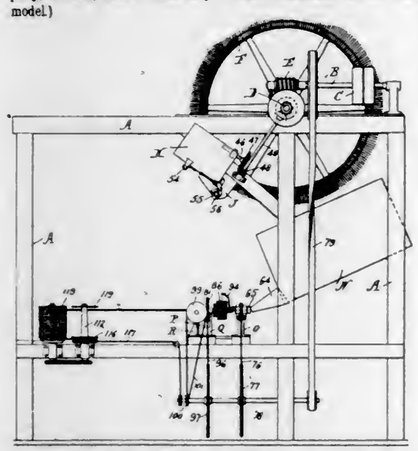
Claim.—1. In a machine for combing marsh or other grass, a wheel and means for rotating the same, in combination with substantially-blunt pins or spikes arranged to project radially from the periphery of said wheel in parallel rows arranged diagonally across said periphery, and operating to comb and straighten the stalks of grass when presented thereto, and means for supporting the material to be operated on longitudinally in the path of travel of the ends of said pins or spikes, as and for the purpose set forth.

2. In a machine for combing marsh or other grass, a carrier and means for actuating the same, in combination with substantially-blunt pins or spikes arranged to project from the peripheral surface of such carrier, said pins or spikes being arranged in staggered relation to each other and operating, when said carrier is actuated, to enter the mass of material being operated on, and comb and straighten the same, and means for supporting the material to be operated on longitudinally in the path traversed by the projecting ends of said spikes or pins, as and for the purpose set forth.

3. In a machine for combing marsh or other grass, a carrier

and means for actuating the same, in combination with substantially-blunt pins or spikes arranged to project from the surface thereof in staggered relation to each other and operating, when said carrier is actuated, to enter the mass of material being operated on and comb and straighten the same, a bracket arranged to one side of the plane in which said carrier moves, and bars mounted on said bracket and projecting therefrom transversely across the plane of travel of the carrier, said bars being separated from each other, thereby forming an open-sided box or pocket adapted to receive and support the material being operated on longitudinally in the plane of travel of the carrier, as and for the purpose set forth.

654,991. **MACHINE FOR MAKING GRASS TWINE.** GEORGE A. LOWRY, Chicago, Ill., assignor to the Northwestern Grass Twine Company, St. Paul, Minn. Filed July 7, 1897. Serial No. 643,768. (No model.)



Claim.—1. In a machine of the class described, a carrier, grippers mounted thereon and projecting radially from the periphery thereof, said grippers having jaws adapted to be opened and closed, a feedway for the material, feeding-plates carrying pivoted fingers arranged to project into said feedway for positively feeding the stalks of grass into position to be grasped by said gripping-jaws, means for rotating said plates, and means for actuating said carrier, as and for the purpose set forth.

2. In a machine of the class described a feedway adapted to receive the material to be operated on, a carrier provided on the periphery thereof with radially-extending grippers having gripping-jaws said feedway arranged in the path of travel of said gripping-jaws, means for positively feeding the material to said gripping-jaws comprising rotary plates having pivoted fingers arranged to project into said feedway and gearing for positively rotating said plates and means for actuating said carrier, as and for the purpose set forth.

3. In a machine of the class described, a box or tray adapted to receive the material to be operated on, a carrier provided with gripping-jaws, said box or tray arranged in the path of travel of said gripping-jaws, a cam for agitating said box or tray, and means for actuating said carrier and cam, as and for the purpose set forth.

4. In a machine of the class described, a box or tray adapted to receive the material to be operated on, a portion of said box or tray being pivotally mounted, a carrier provided with gripping-jaws, said box or tray arranged in the path of travel of said gripping-jaws, a cam for rocking said pivotally-mounted portion of the box or tray and means for actuating said carrier and cam, as and for the purpose set forth.

5. In a machine of the class described, a carrier provided on the periphery thereof with gripping-jaws, a feedway for the material arranged transverse to the path of travel of said carrier, a feed-plate having pivoted feed-fingers for positively feeding the material to said feedway and means for actuating said carrier and plate, as and for the purpose set forth.

6. In a machine of the class described a carrier provided on the periphery thereof with radially-extending grippers having gripping-jaws, a feedway for the material arranged transverse to the path of travel of said carrier and inclined relatively thereto, feed-plates carrying pivoted fingers arranged to project into said feedway for feeding the material to said carrier, means for actuating said carrier and means for rotating said plates, as and for the purpose set forth.

7. In a machine of the class described a carrier provided on the periphery thereof with radially-extending grippers having gripping-jaws a feedway for the material, a box or tray arranged in communication with said feedway and adapted to receive the material, feed-plates carrying pivotally-mounted feed-fingers arranged to operate in said box or tray for feeding the material from said box or tray to said feedway and into the path of travel of said gripping-jaws and means for actuating said carrier and feed-fingers, as and for the purpose set forth.

8. In a machine of the class described, a carrier provided on the periphery thereof with gripping-jaws, a feedway for the material, a box or tray pivotally mounted and arranged in communication with said feedway, feed-fingers for feeding the material from said box or tray to said feedway, means for agitating said box or tray, and means for actuating said feed-fingers and carrier, as and for the purpose set forth.

9. In a machine of the class described, a carrier provided with gripping-jaws, a feedway for the material, rotary plates having pivoted fingers arranged to project into said feedway and adapted when actuated to feed the material into the path of travel of said jaws, means for actuating said plates, and means for actuating said carrier, as and for the purpose set forth.

10. In a machine of the class described, a carrier provided with gripping-jaws, a feedway for the material, disks having fingers pivotally mounted thereon, said fingers arranged to project into said feedway, means for rotating said disks whereby said fingers effect a feeding of the material into the path of travel of said gripping-jaws, and means for actuating said carrier, as and for the purpose set forth

11. In a machine of the class described, a carrier provided with gripping-jaws, a feedway for the material, disks having fingers pivotally mounted thereon, means for rotating said disks, means arranged in the path of said fingers for projecting the same into the feedway and means for actuating said carrier, as and for the purpose set forth.

12. In a machine of the class described, a carrier having gripping-jaws mounted thereon, a feedway, a shaft arranged adjacent to said feedway and having disks mounted thereon, fingers pivotally mounted on said disks, means for rotating said disks, friction-rollers arranged in the path of travel of said fingers and arranged to engage and project the same into said feedway, and means for actuating said carrier, as and for the purpose set forth.

13. In a machine of the class described, a carrier provided with gripping-jaws, a feedway, plates having feeding-fingers for feeding the material through said feedway and into the path of said gripping-jaws, and means for yieldingly opposing the action of said fingers, and means for actuating said carrier and plates, as and for the purpose set forth.

14. In a machine of the class described, a carrier provided with gripping-jaws, a feedway, means for feeding the material through said feedway and into the path of said gripping-jaws, and a door for the end of said feedway, said door being yieldingly held in closed position, and means for actuating said carrier, as and for the purpose set forth.

15. In a machine of the class described, a carrier provided with gripping-jaws, means for actuating said carrier, a feedway for the material, said feedway provided with a door at the end thereof, a weighted arm attached to said door whereby it is normally and yieldingly maintained in closed position, means for adjustably regulating the tension of said weight, and means for feeding the material to said feedway, as and for the purpose set forth.

16. In a machine of the class described, a carrier, gripping-jaws mounted on the periphery thereof in diagonally-arranged transverse rows said gripping-jaws each comprising a stationary part, and a part hinged to said stationary part on a transverse axis, a rod connected to said hinged part, means for actuating said carrier, and means arranged in the path of travel of said rods for engaging the same whereby said rods are projected to open and close said jaws, as and for the purpose set forth.

17. In a machine of the class described a carrier provided with pairs of gripping-jaws arranged to extend radially and diagonally in transverse rows from the periphery thereof, one jaw of each pair being stationarily mounted on said carrier and the other jaw pivotally mounted on an axis transverse to said stationarily-mounted jaw, a rod connected to said pivotally-mounted jaw a spring for normally maintaining said jaws closed upon each other, and means arranged in the path of travel of said rods for successively engaging and projecting the same whereby said jaws are opened and closed, as and for the purpose set forth.

18. In a machine of the class described, a carrier provided with a side flange, pairs of gripping-jaws mounted on said carrier, one member of each pair being stationarily mounted on said carrier and the other member pivotally mounted on an axis transverse to said stationary jaw, a rod connected to said pivoted member and arranged to project through said flange, and means arranged in the path of the projecting end of said rod for engaging said end and projecting said rod endwise, as and for the purpose set forth.

19. In a machine of the class described, a carrier provided with a side flange, pairs of gripping-jaws mounted on said carrier, one member of each pair being perforated and rigidly mounted on said carrier and the other member being pivotally mounted on said rigid member, a rod connected to said pivoted member and arranged to pass through the perforation in the fixed member, and through said side flange whereby it is guided, and means arranged in the path of travel of the projecting ends of said rods for projecting the same endwise, as and for the purpose set forth.

20. In a machine of the class described, a carrier-wheel, gripping-jaws mounted upon the periphery thereof said gripping-jaws arranged in transverse diagonal rows and each comprising a stationary part and a part hinged or pivoted thereto, a rod connected to said hinged or pivoted part, means for actuating said carrier, cams arranged in the path of travel of said rods for successively engaging the ends thereof whereby said rods are projected to open said jaws, and means for adjusting said cams relative to the path of travel of the ends of said rods, as and for the purpose set forth.

21. In a machine of the class described, a carrier-wheel provided on the periphery thereof with pairs of gripping-jaws, arranged in rows diagonally across the periphery of said wheel, each succeeding pair of such jaws being arranged out of the peripheral line of the corresponding pair in the preceding diagonal row, and a cam arranged adjacent to the path of travel of said jaws for successively engaging the same to open and close them as they are carried by, as and for the purpose set forth.

22. In a machine of the class described, a carrier-wheel provided with pairs of gripping-jaws arranged to project radially from the periphery thereof, each succeeding pair of such jaws being arranged out of line both transversely and peripherally with respect to the preceding pair of jaws, a rod connected to one member of each pair of jaws for opening and closing the same, and a cam for successively engaging all of said rods, as and for the purpose set forth.

23. In a machine of the class described, a carrier comprising a cylindrical shell pairs of gripping-jaws mounted in said shell in transverse diagonal rows and arranged to project radially from the periphery of said wheel, one member of each pair provided with a shouldered shank arranged to pass through said shell, a clamp-nut for clamping said member to said shell the other member of said pair being pivotally mounted on the fixed member, means for automatically opening and closing successively all of said jaws, and means for actuating said carrier, as and for the purpose set forth.

24. In a machine of the class described a carrier having clamping-jaws radially mounted on the periphery thereof, plates having pivoted fingers for positively feeding the material into the path of travel of said jaws, means for automatically opening and closing successively the said jaws to grasp the material therebetween, means for actuating said plates and carrier, a receiver arranged in the path of travel of said carrier and means for automatically opening said jaws to deposit the material in said receiver, as and for the purpose set forth.

25. In a machine of the class described, gripping-jaws pivoted together, an operating-rod pivotally connected to one of said jaws, and means for actuating said rod, as and for the purpose set forth.

26. In a machine of the class described, a twisting device including a rotatable sleeve, clamping-jaws pivotally mounted thereon, and means for imparting a tension to said clamping-jaws directly proportioned to the speed of rotation of said sleeve, as and for the purpose set forth.

27. In a machine of the class described, a twisting device including a rotatable sleeve, clamping-jaws pivotally mounted thereon, said clamping-jaws being weighted, whereby through centrifugal force exerted upon said weighted jaws, and developed by the rotation of said sleeve, said jaws are clamped together with a tension proportioned to the speed of rotation of said sleeve, as and for the purpose set forth.

28. In a machine of the class described, a twister including a rotatable part, arms pivotally mounted on said rotatable part, said arms having clamping-jaws, and weights adjustably mounted on said arms, said weights and clamping-jaws being so relatively arranged that a the speed of rotation of said rotating part increases, the clamping effect of said jaws also increases, as and for the purpose set forth.

29. In a machine of the class described, a twister including a rotatable sleeve, arms pivotally mounted intermediate their ends upon said sleeve and having clamping-jaws at one of the ends thereof, and weights adjustably mounted on the other ends of said arms, as and for the purpose set forth.

30. In a machine of the class described, a twister including a rotatable sleeve, arms pivotally mounted on said sleeve and carrying cooperating clamping-jaws at one end thereof, and weights at the other end, and springs for normally pressing said clamping-jaw ends toward each other, as and for the purpose set forth.

31. In an organized machine for making grass twine, a carrier provided with radially-arranged gripping-jaws arranged in diagonal transverse rows, means for positively feeding the material into the path of said jaws, and means for opening said jaws to grip and release the material, and an inclined trough arranged to receive the material from said gripping-jaws, in combination with a twister adapted to receive the material from said trough, means for wrapping the twisted material with thread, and means for feeding the twisted and wrapped product from the machine, as and for the purpose set forth.

32. In an apparatus of the class described a twister having clamping-jaws arranged to grasp the material passing therethrough, a wrapping mechanism including a sleeve arranged in alinement with the twister and adapted to receive the twisted material from said clamping-jaws and support the same, and means for applying a wrapping-thread to the twisted material at a point between said twister and sleeve, and means for rotating said sleeve and twister, as and for the purpose set forth.

33. In an apparatus of the class described, a twister carrying clamping-jaws arranged to grasp the material passing therethrough, a wrapping mechanism including a tubular shaft arranged in alinement with said twister, and adapted to receive therethrough the twisted material from said clamping-jaws and to form a support therefor, a spool of wrapping-thread sleeved upon said shaft means for guiding the wrapping-thread to a point between said twister and shaft, and means for relatively rotating said twister and shaft, as and for the purpose set forth.

34. In an apparatus of the class described a twister-sleeve carrying clamping-jaws and arranged to grasp and twist the material passing through said sleeve, a tubular shaft arranged in alinement with said sleeve and adapted to receive longitudinally therethrough the twisted material from said clamping-jaws, and to form a support therefor a spool carrying wrapping-thread sleeved upon said shaft, means for guiding said thread from the spool to the twisted material at a point between said shaft and sleeve means for relatively rotating said sleeve and shaft, and means for feeding the twisted and wrapped material, as and for the purpose set forth.

35. In an apparatus of the class described, a wrapping mechanism including a tubular shaft, a spool carrying the wrapping-thread and sleeved upon said shaft, in combination with a twisting mechanism including a sleeve, twister-jaws carried thereby and arranged to deliver the twisted material to said tubular shaft whereby said shaft forms a support for the twisted material after it leaves the twisting mechanism, means for guiding the wrapping-thread to the twisted material at a point between said twister and shaft, and means for rotating said shaft and sleeve in opposite directions, as and for the purpose set forth.

36. In an apparatus of the class described twister-jaws arranged to grasp the material a tubular shaft arranged to receive the twisted material from said jaws, and to form a support therefor, a spool of wrapping-thread sleeved concentrically upon said shaft, means for applying the wrapping-thread to the twisted material as it emerges from the twister-jaws, and at a point between the twister-jaws and the tubular shaft, and means for rotating said jaws and shaft in reverse directions, as and for the purpose set forth.

37. In an apparatus of the class described twisting mechanism adapted to twist the material, a spool carrying the wrapping-thread said spool arranged to receive the twisted material longitudinally therethrough, whereby the twisted material is supported after leaving the twisting mechanism, means for guiding said thread to a point between said spool and twisting mechanism, and means for rotating said twisting mechanism and spool in opposite directions, as and for the purpose set forth.

38. In an apparatus of the class described a twister mechanism adapted to twist the material, in combination with a tubular shaft arranged in alinement with said twister mechanism and longitudinally through which the twisted material passes from said twister mechanism, said shaft thereby forming a support for the twisted material a tubular support for the wrapping-thread, said support sleeved upon and in concentric relation to said shaft, a guide-sleeve also mounted concentrically upon said shaft, means carried by said guide-sleeve for guiding the wrapping-thread to the twisted material, and applying the same thereto as it emerges from the twister mechanism, and at a point between such twister mechanism and said guide-sleeve, and means for reversely rotating said shaft and twisting mechanism, as and for the purpose set forth.

39. In an apparatus of the class described, a twister in combination with a wrapping mechanism including a tubular shaft, a tubular extension detachably connected to said shaft, said extension carrying the spool of thread, a thread-guide loosely sleeved upon said extension and means for feeding the material through said shaft and extension, as and for the purpose set forth.

40. In an apparatus of the class described, a twister in combination with a wrapping mechanism including a tubular shaft, a tubular extension detachably connected to said shaft, a spool of thread sleeved

on said extension, thread-guides loosely sleeved on said extension, and means for feeding the material through said shaft and extension, as and for the purpose set forth.

41. In an apparatus of the class described, a twister in combination with a wrapping mechanism including a rotary tubular shaft carrying a flange, a flanged tubular extension, carrying the thread, a guide for the thread loosely sleeved upon said extension, and means for detachably securing said flanges together, as and for the purpose set forth.

42. In an apparatus of the class described, a wrapping mechanism including a rotary tubular shaft carrying a flange, said flange being slotted in the periphery thereof, and a tubular extension carrying a spool of thread, said extension also being provided with a flange, said flange being slotted in the periphery thereof and bolts secured in said flanges and respectively arranged to pass through said slots, as and for the purpose set forth.

43. In an apparatus of the class described, a wrapping mechanism including a rotary tubular shaft having a peripherally-slotted flange, said flange being provided with a countersunk seat in the face thereof, and a peripherally-slotted flanged tubular extension carrying the wrapping-thread, the flange of said extension provided with a shoulder adapted to be received in said seat, bolts arranged to pass through the slots in said flanges, for detachably clamping the same together and means for feeding the material through said shaft and extension, as and for the purpose set forth.

44. In an organized machine for making grass twine, a twisting mechanism, means for delivering the grass, straws, or stalks thereto one after the other in uniform succession and at uniform distances apart, a wrapping mechanism arranged to receive the twisted material from said twisting mechanism and adapted to apply a wrapping-thread thereto, a feeding mechanism arranged to feed the twisted or wrapped material through said wrapping mechanism, in combination with a winding-reel arranged to receive the twisted or wrapped material and means for actuating said several mechanisms in unison, as and for the purpose set forth.

45. In an organized machine for making grass twine, a twisting mechanism, means for delivering thereto the stalks or stems of grass, one after the other in uniform succession a wrapping mechanism arranged to receive the material from said twisting mechanism, and to apply a wrapping-thread thereto, and a feeding mechanism for feeding the twisted and wrapped material through the machine, in combination with a winding-reel arranged to receive the twisted and wrapped material, and a deployer for guiding the material to and along said reel, and means for actuating said several mechanisms in unison.

46. In a machine for making grass twine, a winding mechanism comprising two or more shafts arranged in proximity to each other, a common drive-gear for all of said shafts, an independent reel mounted on each shaft, and a single deployer for all of said reels, said deployer arranged to guide the material to either one or the other of said reels, whereby when one reel has been filled said deployer may deliver the material to another and adjacent reel while the filled reel is being removed, as and for the purpose set forth.

47. In an organized machine for making grass twine, the combination of the following elements, a feedway, means for feeding the material thereto a carrier having grippers arranged in successive diagonal rows and adapted to project into said feedway, a chute, means arranged to open said grippers successively when they arrive adjacent to said chute whereby the stalks or stems of grass are successively deposited in said chute, a twisting mechanism arranged to receive the material from said chute and adapted to impart a twist thereto, a wrapping mechanism arranged to receive the twisted material from said twisting mechanism and adapted to apply a wrapping-thread thereto, a feeding mechanism for the wrapped material, a winding mechanism arranged to receive the material from said feeding machanism and adapted to wind the same upon a reel, a main drive-shaft, and means for actuating said several mechanisms from said drive-shaft, as and for the purpose set forth.

48. In a machine for making grass twine, the combination of a drum having a peripheral flange with openings therethrough nippers extending from the periphery of the carrier, said nippers having jaws, one of the jaws being pivoted, a rod secured to the pivoted jaw of each nipper, said rod extending through one of the openings of the flange of the carrier, means for normally holding the pivoted jaw of the nipper in close contact with the other jaw of said nippers, a mechanism located exteriorly of the carrier and adapted to act successively on the rod of the pivoted jaw in order to impart thereto a sliding movement and thereby turn the pivoted jaw of the nipper out of closed contact with the other jaw of said nipper.

49. In a machine for making twine, the combination of a carrier nippers carried thereby, said nippers having jaws, one of the jaws being pivoted, a rod slidingly engaging one of the jaws and connected to the pivoted jaw, cams adapted to act successively on the rod of the pivoted jaw of each nipper at the proper time, and means for closing the nipper after the cam has ceased to act on the pivoted jaw.

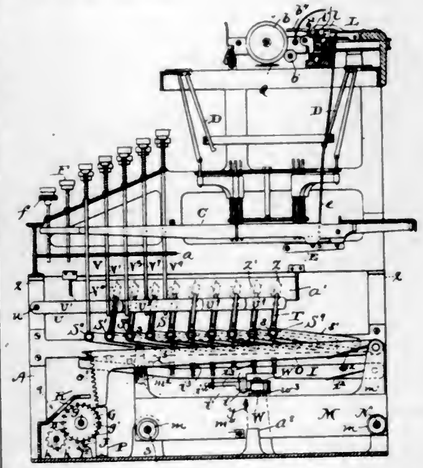
50. In a machine for making twine the combination, of a nipper having jaws, one of said jaws being movable, a rod slidingly engaging one of the jaws and connected to the movable jaw, means for sliding the rod endwise in order to bring the movable jaw of the nipper out of closed contact with the other jaw of said nipper, and means for normally holding the movable jaw of the nipper in closed contact with the other jaw of said nipper.

51. In a machine for making twine the combination of a carrier nippers carried thereby, said nippers having jaws, one of the jaws being pivoted, a rod pivotally connected to said pivoted jaw, means adapted to act successively on the rod of the pivoted jaw of each nipper in order to open the nipper at the proper time, and means for closing the nipper after the opened ones have ceased to act on the pivoted jaw.

52. In a machine for making twine the combination of a nipper having jaws, one of said jaws being movable, a rod pivotally connected to said movable jaw, means for sliding said rod endwise in order to bring the movable jaw of the nipper out of closed contact with the other jaw of said nipper.

53. In a machine for making grass twine, a feedway, a carrier, nippers arranged to project radially from the periphery of said carrier and in diagonal rows, means for opening and closing said nippers while passing through said feedway and means for opening said nippers for delivering the straws therefrom, whereby the straws are delivered successively, as and for the purpose set forth.

654,992. COMBINED TYPE-WRITING AND COMPUTING MACHINE. HOLMES MARSHALL, Cleveland, Ohio, assignor to the National Addograph Company, Jersey City, N. J. Filed Apr. 14, 1898. Serial No. 677,586. (No model.)



Claim.—1. A computing mechanism having a plurality of gear-wheels adapted in their rotation to move numeral characters to compute, a shiftable geared member adapted to engage with different gear-wheels and rotate them, and means for shifting said member whereby it may operate successively on different wheels, combined with a type-writer having numeral-keys, and intermediate mechanism between such numeral-keys and such shiftable member whereby the keys may actuate the member different amounts and thereby rotate the computing-wheels an amount corresponding to the numeral of the key, substantially as described.

2. In combination, a plurality of computing-wheels, loosely journaled side by side, a pivoted lever having a segmental rack on an arc about its pivot, said rack being adapted to engage with said wheels, means for changing the relative position of the lever and computing-wheels whereby the lever may engage with different wheels, and mechanism for actuating said lever the desired amount, substantially as described.

3. In combination, a plurality of computing-wheels, loosely journaled side by side, a pivoted lever having a segmental rack on an arc about its pivot, said rack being adapted to engage with said wheels, means for moving the lever out of engagement with a computing-wheel irrespective of the amount of rotation thereof, means for preventing the lever when thus released from passing into engagement with the next wheel until it has returned to an initial position, and mechanism for actuating said lever the desired amount, substantially as described.

4. The combination of a type-writing mechanism, and a computing mechanism, two distinct escapement mechanisms for the same, and finger-keys some of which operate both escapement mechanisms and some only one, substantially as described.

5. A type-writer mechanism having two classes of depressible keys, namely, numeral-keys and letter or punctuation keys, and a shifting paper-carriage and an escapement therefor which is adapted to be actuated by the depression of either class of keys, in combination with a series of computing-wheels, a shiftable intermediate mechanism between the computing-wheels and the numeral-keys of the keyboard whereby the actuation of the numeral-keys may cause the operation of the computing-wheels, an escapement mechanism for said shifting intermediate mechanism and means for actuating this escapement mechanism by the actuation of the numeral-keys but not by the other class of keys whereby characters other than numerals may be interspersed among the numerals written by the type-writer mechanism without shifting the intermediate mechanism to the computing-wheels, substantially as described.

6. The combination of a series of computing-wheels, a pivoted lever adapted to actuate the same, a series of type-writer keys adapted to strike numerals on a type-writer and to also operate said pivoted lever, an escapement mechanism for the pivoted lever distinct from the escapement of a type-writer carriage, and means for actuating said escapement by the depression of the numeral-keys, substantially as described.

7. The combination of a series of computing-wheels, a pivoted lever, a series of bails located above the same, a series of type-writer keys adapted to strike numerals on a type-writer and to depress these bails against the lever, means for communicating the movement of said lever to said computing-wheels, and an escapement actuated by the bails for shifting the lever laterally, and another escapement governing the printing of the type-writer, substantially as described.

8. A type-writing machine having a paper-carriage, type, and finger-keys connected with the type to print on paper on the carriage, and an escapement for the type-writer carriage, combined with a computing mechanism, a computer-carriage carrying means adapted to govern the computing mechanism and shiftable with reference thereto, an escapement for the computer-carriage distinct from that for the type-writer carriage, and connections between the finger-keys and the governing means of the computer-carriage, substantially as described.

9. In a combined type-writing and computing machine, a plurality of computing members, a computer-carriage, means carried thereby and adapted to govern the computing members, an escapement mechanism for said carriage adapted to move it laterally, part of said escapement being carried by said carriage, a keyboard containing numeral-keys, and suitable connections from said keys to said governing means and said escapement carried by the carriage, whereby said keys may operate said computing members and cause the escapement of said computer-carriage, combined with a carriage for the paper to be printed and an escapement for said paper-carriage, suitable type, and a connection between the type and said keys whereby the keys may actuate the printing of the paper on said paper-carriage, substantially as described.

10. In a combined type-writing and computing machine, a plurality of computing-wheels, a computer-carriage, a lever carried thereby and adapted in its movement to actuate the wheels, an escapement mechanism for said carriage adapted to move it laterally, a second lever carried by said carriage and adapted to actuate the escapement mechanism, a keyboard containing numeral-keys and suitable connections between said keys and the first-mentioned lever, and between said keys and the escapement-lever whereby said keys may operate said computing-wheel and cause the escapement of said computer-carriage, combined with a second carriage, for the paper to be printed, type adapted to coöperate therewith, and a connection between the type and the said keys whereby the keys may actuate the printing of the paper, substantially as described.

11. In a computing mechanism, the combination of a plurality of computing-wheels, a movable carriage, an operating-lever pivoted thereto, said lever being adapted to actuate said computing-wheels, a spring tending to draw said carriage in one direction, an escapement-lever pivoted to said carriage, a dog carried by said lever and constituting a portion of a suitable escapement mechanism, said escapement mechanism normally operating to retain the carriage against the pull of said spring but allowing said spring to pull the carriage a certain definite distance after the escapement has been actuated, substantially as described.

12. The combination of a series of computing-wheels arranged side by side, a shiftable lever adapted to operate the same, the amount of rotation of said wheels depending upon the amount of depression of said lever, finger-keys adapted to depress said lever different amounts, and an escapement adapted to cause said lever to shift laterally with reference to said computing-wheels, and means whereby said escapement may be actuated by a finger-key when said lever is depressed the full amount said key is adapted to give it, whereby a computer-wheel may remain undisturbed when the lever shifts from it, substantially as described.

13. The combination with the key-levers and type-bars of a type-writing machine, of a set of numeral-keys the stems of which not only engage with said key-levers but continue below the same while rigid with the upper part of the stem, a set of bails, said stems operating to actuate said bails, whereby depressions of the numeral-keys depress the usual key-levers and also the bails, combined with a computing mechanism operated by the depression of said bails, substantially as described.

14. The combination of a computing mechanism, a depressible lever for actuating the same, and adapted to actuate the same to a definite amount according to the depression of the lever, a type-writer mechanism, intermediate mechanism between the type-writer and lever whereby the depression of the key causes the actuation of said lever, and a safety device operating to prevent the return of said key to its normal position after it has been depressed a material amount until it has been depressed its full stroke, whereby a lever is always depressed a definite amount by the depression of a given key, substantially as described.

15. In a combined type-writer and computing mechanism, the combination of a lever for operating the computer, a series of bails standing across the lever and adapted to be depressed onto it and cause its depression, a stationary block having ratchet-teeth, a pawl carried by the bail and adapted to engage with said ratchet-teeth and prevent the return of the bails after such engagement has once begun until the pawl has descended clear of the block, and a key adapted to cause the depression of said bail, substantially as described.

16. The combination, in a type-writing and computing machine, of a type-writer mechanism having a movable paper-carriage and a computing mechanism adapted to add a column of figures of less width than the width of the line which may be written by the type-writing machine, and a stop for bringing the carriage to a standstill at a proper point at the left of the numerals to be added, said stop being normally inoperative, but being thrown into operation when the escapement mechanism of the carriage is thrown out of gear and the carriage loosely shifted, substantially as described.

17. The combination with a type-writer mechanism having a traveling carriage for its paper and a movable rack-bar on that carriage which may be moved to allow the free shifting of the carriage, of a pin secured to said rack-bar, and a stationary bar normally out of the path of said pin but adapted to stand in its path when the rack-bar is moved to allow free shifting of the carriage, whereby the carriage may be shifted by means of releasing its rack-bar and brought to a stop at a proper point by its pin engaging said bar, said engagement being broken when the rack-bar is returned to its normal position, substantially as described.

18. The combination of a type-writing mechanism and a computing mechanism, two distinct escapement mechanisms for the same, and a key which operates both escapements but does not operate to print or compute, substantially as described.

654,993. CARRIAGE-CURTAIN. WILLIAM L. MARTIN, Rancocas N. J. Filed Nov. 11, 1899. Serial No. 736,576. (No model.)

Claim.—1. In a vehicle, a curtain, a roller therefor, a spring-actuated pulley independent of said roller and a winding device extending from said roller to said independent pulley and connected with said parts.

2. In a vehicle, a curtain on a side thereof, a roller on the opposite side, a flexible connection for said curtain and roller, a spring-actuated pulley independent of said roller, and another flexible connection on said roller extending to said pulley.

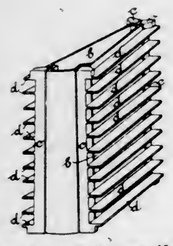
3. In a vehicle, curtains on opposite sides thereof, rollers likewise on opposite sides thereof, flexible connections, each passing from the curtain on one side to the roller on the opposite side, an additional flexible connection on each roller, and a spring-actuated pulley independent of the respective rollers connected with said additional flexible connection.

4. In a vehicle, a curtain, a roller to which the same is attached, a flexible connection on said roller independent of said curtain, a spring-actuated pulley independent of said roller and having said connection secured to it and grooved members on the frame of the vehicle having said flexible connection and the sides of said curtain movable in the same.

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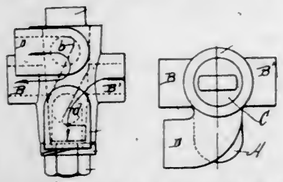


654,994. CENTRIFUGAL MACHINE. LEOPOLD MAY, Ungarisch-Ostra, Austria-Hungary. Filed Mar. 27, 1900. Serial No. 10,345. (No model.)



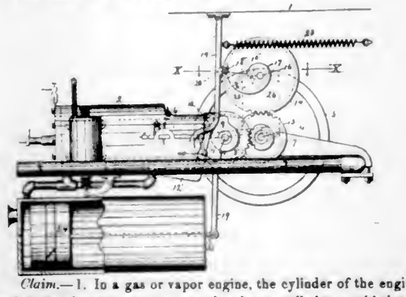
Claim.—The combination with a centrifugal drum, of wedge-shaped filling-pieces *b*, removable frames *c d* interposed between said filling-pieces, and removable partitions *f* between said frames forming chambers *h h*, substantially as and for the purpose herein described.

654,995. SWITCH-COCK FOR GAS-MACHINES. NELSON H. MEDBERY, Providence, R. I., assignor to Jacob S. Martin, East Greenwich, R. I. Filed Dec. 9, 1899. Serial No. 739,789. (No model.)



Claim.—A switch-cock for gas-machines and the like, consisting of a shell having a tapering hole through it, an outlet on two sides opposite to each other and about midway of its length, an upper and a lower outlet on the front side, in combination with a plug having an upper and a lower passage in it on opposite sides, each passage being cut almost directly in near the end and gradually sloping out to the side a little beyond the middle of the plug, substantially as described.

654,996. GASOLENE-MOTOR. STEPHEN MESSERER, Newark, N. J., assignor to the Messerer Automobile Company, of New Jersey. Filed June 8, 1899. Serial No. 719,862. (No model.)



Claim.—1. In a gas or vapor engine, the cylinder of the engine, having an exhaust-port, a vacuum chamber or cylinder provided with means for allowing the exhaust-gases to be expelled, a valve-casing at one side of the engine-cylinder in communication with the discharge-port of said cylinder, and also in communication with said vacuum-chamber, and a piston placed in the vacuum-chamber, combined with means for suddenly forcing the piston outward as the discharge takes place in the cylinder, and means for slowly returning the piston in the vacuum-chamber so as to expel the gases through the opening in the end of the vacuum-chamber, substantially as described.

2. In a gas or vapor engine, the cylinder, a vacuum-chamber connected thereto to receive the discharged gases, a piston placed in the vacuum-chamber, said chamber being provided with a discharge-opening through one end, and means for suddenly drawing the piston outward as the discharge in the cylinder takes place, combined with a pivoted lever, connections between the lever and said piston, and a cam arranged to engage said lever for returning the piston and thereby expelling the exhaust-gases from said vacuum-chamber, substantially as set forth.

3. In a gas or vapor motor, the explosion-cylinder, a piston working therein, a crank-shaft and means connected with and operated from said shaft for operating the said piston, a pinion upon said shaft, a gear-wheel with which the pinion meshes, and having a cam formed thereon, combined with a bell-crank lever pivotally attached to said explosion-cylinder, and a roller-carrying lever or arm pivotally connected with said bell-crank lever, a valve-chamber at one side of said explosion-cylinder, an exhaust-valve therein, a vacuum chamber or cylinder, a connection between the two cylinders, a valve-casing in which the valve is placed, an auxiliary cylinder into which the discharged gases are received, a piston in said cylinder, and means for withdrawing the piston, substantially as shown.

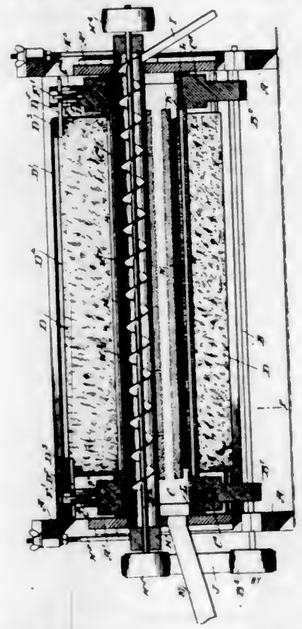
4. In a gas or vapor motor, an explosion-cylinder, an auxiliary cylinder connected thereto for receiving the discharged gases, means for connecting the two cylinders, an exhaust-valve, and mechanism for operating it, combined with a piston placed in the cylinder for receiving the exhaust-gases, a pivoted spring-held lever for operating the piston in one direction, a rigid cam which bears against said lever, and an auxiliary spring-actuated cam carried by the rigid cam, which also bears against the lever, substantially as described.

5. In a gas or gasolene motor, an explosion-cylinder, an auxiliary cylinder connected thereto for receiving the exhaust-gases, a connection between the two cylinders, the exhaust-valve, and a mechanism for operating it, combined with a piston placed in the auxiliary cylinder, a pivoted spring-held lever for operating the piston in one direction, a shaft 16, a rigid cam 17 on said shaft, said cam having a slot, an auxiliary spring-actuated cam connected thereto and provided with a pin which extends through said slot in the side of the rigid cam, substantially as set forth.

6. In a gas or vapor motor, an auxiliary cylinder for receiving the exhaust-gases, a piston therein, a spring-held lever for operating said piston in one direction, a shaft 16, a rigid cam on said shaft, in engagement with said spring-held lever, and an auxiliary spring-actuated cam connected with said first-mentioned cam, substantially as and for the purposes set forth.

7. In a gas or vapor engine, the combination, with an explosion-cylinder, a piston working therein, a crank-shaft and means connected with and operated from said shaft for operating said piston, of a valve-casing at one side of said cylinder, an exhaust-port between said cylinder and said valve-casing, an exhaust-valve in said valve-casing having a stem extending from said casing, a pinion on said crank-shaft, a gear-wheel with which said pinion meshes, a cam on said gear-wheel, a pivoted bell-crank lever operated by said cam, and an actuating arm or lever pivoted to said bell-crank lever in engagement with the end of the valve-stem extending from said valve-casing, an auxiliary cylinder or vacuum-chamber connected with said valve-casing for receiving the discharged gases from said valve-casing, a piston in said auxiliary cylinder or vacuum-chamber, and means connected with the piston in said auxiliary cylinder or vacuum-chamber for advancing said piston and a spring connected therewith for retracting said piston, substantially as and for the purposes set forth.

654,997. DUST-COLLECTOR. LOUIS C. MEYEROTT, Evansville, Ill. Filed Feb. 23, 1900. Serial No. 6,243. (No model.)



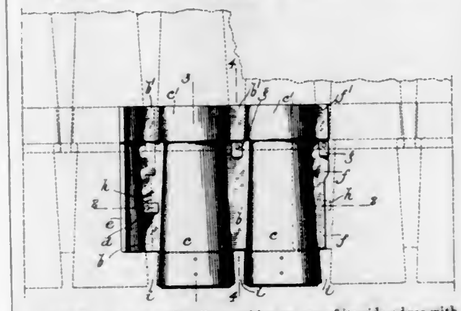
Claim.—1. A dust-collector, comprising a revoluble drum having slotted and recessed heads and longitudinal openings in its periphery between the heads, a plurality of filtering-cloth compartments secured with their inner, open ends on the peripheral surface of said drum, the openings of a compartment leading to an opening in said periphery, stretching-bars for the cloth of a compartment, and having extensions mounted to slide in the radial slots in the heads of the drum, springs in the recesses of the heads of the drum and pressing on said extensions to force them outward, and fixed cams adapted to engage the said extensions, to move the latter gradually inward against the tension of said springs and collapse the compartment, as set forth.

2. In a dust-collector, the combination with a drum having longitudinal openings and provided with recessed and slotted heads, said heads being of greater diameter than the body of the drum, of a plurality of filtering-cloth compartments arranged on the periphery of the drum, each compartment extending longitudinally of the drum over an opening thereof, bars projecting from opposite ends of the compartments and working in the slots of the heads of the drum, rods secured in the recesses of the heads and projecting through the bars, springs on said rods and bearing against the bars of the compartments, and fixed cams engaging the ends of the bars projecting through the heads, as the drum is revolved, as and for the purpose set forth.

3. A dust-collector, comprising a drum having longitudinal openings and provided with heads of greater diameter than the body of the drum, said heads being slotted and recessed, a plurality of filtering-cloth compartments arranged on the peripheral surface of the drum, each compartment extending longitudinally of the drum over an opening thereof, rods projecting from the ends of the compartments and extending through the slots of the heads, springs arranged in the recesses of the heads and forcing the rods outward, fixed cams for engaging the ends of the rods, a conveyer-casing in the drum and having an opening in its top, a screw conveyer in said casing, and brushes between the top of the conveyer-casing and the drum, substantially as herein shown and described.

4. A dust-collector, comprising a drum having longitudinal openings and provided with heads of greater diameter than the body of the drum, said heads being slotted and recessed, a plurality of filtering-cloth compartments arranged on the periphery of the drum, each compartment extending longitudinally of the drum over an opening thereof, stretcher-bars arranged transversely at the ends of the compartments and connected by rods with each other, bars projecting from the stretcher-bars beyond the ends of the compartments and extending through the slots of the drum-heads, springs in the recesses of the drum-heads and pressing said bars outward, a conveyer-casing in the drum and having an opening in its top, a screw conveyer in the casing, and brushes secured to the inner face of the drum, one at each side of each opening thereof, substantially as herein shown and described.

654,998. METALLIC ROOFING-TILE. LEVI H. MONTROSS, Camden, N. J., assignor to Clarke Merchant, Philadelphia, Pa. Filed Apr. 4, 1900. Serial No. 11,423. (No model.)



Claim.—1. A metallic tile provided on one of its side edges with a raised rib *d* terminating in a nailing-flange *e* and on its other side edge with a fastening-flange *f*, and a cleat *h* carried by the body of the tile adjacent to the raised rib *d* and adapted to engage the fastening-flange *f* of the laterally-adjacent tile.

2. A metallic tile consisting of a metal sheet having low portions *b* and raised portions *c*, a raised rib *d* and nailing-flange *e* on one side edge and a flange *f* on the other side edge, and provided with fastening-cleats *g* on the low portions *b* at a distance from the upper end thereof and with a cleat *h* adjacent to the raised rib *d*, substantially as and for the purposes described.

3. A metallic tile consisting of a metal sheet having low and raised portions extending longitudinally and said raised portions projecting at the lower end for a substantial distance beyond the lower ends of the low portions, so as to leave open spaces *i* of substantial depth between the ends of adjacent raised portions whereby said raised portions only may project beyond the eaves.

4. A metallic tile consisting of a metal sheet having low and raised portions extending longitudinally and said raised portions projecting at the lower end beyond the lower ends of the low portions, so as to leave open spaces between the ends of adjacent raised portions, and the ends of the low portions being provided with dowo-turned flanges.

5. A metallic tile consisting of a metal sheet having a low portion and a raised portion, the lower end of the raised portion extending for a substantial distance beyond the lower end of the low portion, so as to leave intermediate spaces *i* of substantial depth between the ends of the raised portions, and provided with a partition extending transversely across the interior of the raised portion adjacent to the end thereof.

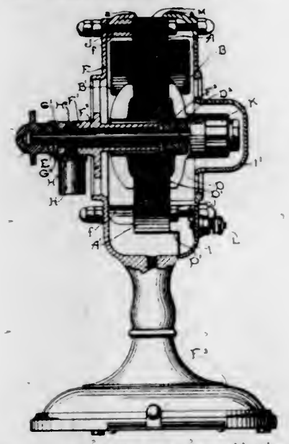
6. A metallic tile consisting of a metal sheet having a low portion and a raised portion, the lower end of the raised portion extending beyond the lower end of the low portion for a substantial extent so as to enable the raised portion only to extend beyond the eaves and said projecting end of the raised portion being provided with an internal reinforcing-layer *m* extending over and covering its inner surface.

7. A metallic tile consisting of a metal sheet having a low portion and a raised portion, the lower end of the raised portion extending beyond the lower end of the low portion for a substantial extent so as to enable the raised portion only to extend beyond the eaves and said projecting end of the raised portion being provided with an internal reinforcing-layer *m* extending over and covering its inner surface and terminating in an internal transverse partition *k*.

8. A metallic tile adapted for eaves courses, consisting of a metal sheet having a longitudinal raised portion projecting at the lower end beyond the body of the tile, and provided with an internal reinforc-

ing-layer at said projecting end having its edge extended over and covering the extreme lower edge of said projecting end.

654,999. ELECTRIC MOTOR. WALTER S. MOODY, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed May 7, 1898. Serial No. 679,980. (No model.)



Claim.—1. In an electric motor, the combination of a field-magnet having one wound and one unwound pole, an armature revolving within the field-magnet, and an energizing-coil for the field-magnet which surrounds the entire upper half of the armature.

2. In an electric motor, the combination of a field-magnet, a coil for energizing the field-magnet, and a spring-clip for securing the coil in place.

3. In an electric motor, the combination of a circular field-magnet which is cut away top and bottom and is provided with one wound and one unwound pole, recesses in the inner periphery of the maguet arranged to receive the coil, an energizing-coil mounted within the recess, which surrounds the entire upper half of the armature, and an armature mounted for movement within the field-magnet.

4. In an electric motor, the combination of a field-magnet, a casing for surrounding and supporting the field-magnet, which is divided into two parts in a vertical plane, and a metal band which is located between the parts of the casing for protecting the field-magnet from dirt and giving the motor a smooth external appearance.

5. In an electric motor, the combination of a field-magnet, a casing for surrounding and supporting the field-magnet, which is divided into two parts in a vertical plane, one of said parts being provided with the base or standard, the other part acting as a cover to inclose one end of the motor, means for securing the field-magnet between the parts of the casing, a metal band surrounding the field-magnet, and lips or projections on the parts of the casing for retaining the band in place.

6. In an electric motor, the combination of a field-magnet and laminated armature, a two-part casing surrounding the field and armature, which forms no part of the magnetic circuit, bolts for clamping the field-magnet to one portion of the casing, at the same time providing a support for the removable portion of the casing, and a cup-shaped removable casing which surrounds the commutator and forms an end for the motor.

7. In an electric fan-motor, the combination of an armature, a casing which surrounds and supports the armature, a single bearing for the armature and fan, means for taking up end play on the armature-shaft, an oil-cup secured to the bearing and provided with a wick which bears on the armature-shaft, and a circumferential ring for catching the oil as it works outward from the bearing and returning it to the oil-cup.

8. In an electric motor, the combination of a hollow metal supporting-base, a regulating-resistance mounted in the base in direct contact therewith so that the heat will be absorbed by the base, and a body of heat-resisting material secured to the base and forming a support for the resistance.

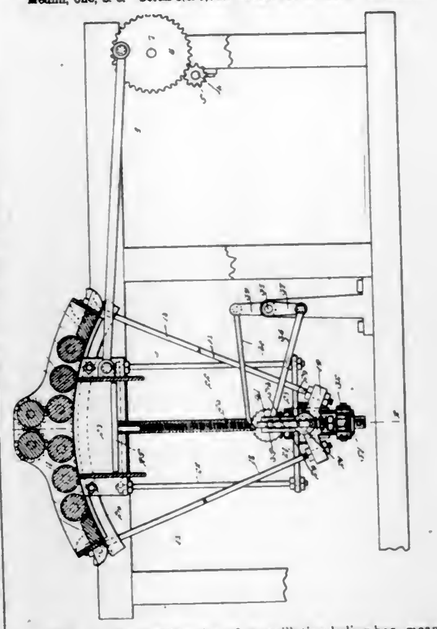
9. In an electric motor, the combination of a hollow metal supporting-base, a regulating-resistance mounted in the base in direct contact therewith so that the heat will be absorbed by the base, a body of heat-resisting material forming a support for the resistance which is secured to the base, and a switch mounted on the under side of the heat-resisting support, for cutting the resistance into and out of circuit.

10. In an electric fan-motor, the combination of an enlarged supporting-base, a flat porcelain or other heat-resisting support mounted horizontally within the base, a regulating-resistance lying on the top side of the porcelain base in heat-conductive relation to the base, and bearing against the same, and a regulating-switch which extends outside of the supporting-base mounted on the under side of the porcelain base.

11. An electric motor comprising a two-part casting completely housing the field-magnet and armature, one casting having a stand or support integral therewith.

12. An electric motor having a two-part casting including the field-magnet and armature, one casting including a stand or support, a chamber in the other casting to house the commutator, and brushes supported on the walls of said chamber.

655,000. COTTON-PRESS. SILAMON MCLEAN, Bingham, S. C., assignor of two-thirds to Charles S. McCall, Bennettsville, and James L. Medlin, Clio, S. C. Serial No. 3,833. Filed Feb. 3, 1900. (No model.)



Claim.—1. The combination of an oscillating baling-box, means adjacent to the box against which the material is compressed, a follower working in the baling-box, a rock-shaft on which the baling-box is supported, the rock-shaft being driven with the baling-box, and means actuated by the rock-shaft and permitting the gradual retraction of the follower.

2. The combination of a baling-box, means adjacent thereto against which the cotton is compressed, a rock-shaft connected with the baling-box and moving in time therewith, a follower working in the baling-box, a screw attached to the follower, means for moving the screw to actuate the follower, and driving-gear for such means, the driving-gear transmitting movement from the rock-shaft and having connection with the screw to be controlled by the pressure thereof.

3. The combination of an oscillatory baling-box, a follower working therein, a rock-shaft moving in time with the baling-box, and means actuated from the rock-shaft by which to permit the gradual retraction of the follower, the said means having connection with the follower, to be controlled by the pressure thereof.

4. The combination of a baling-box, a follower working therein, a rock-shaft, and means driven thereby, to permit the gradual retraction of the follower, such means having connection with the follower to be controlled by the pressure thereof.

5. The combination of a mounted rock-shaft, a baling-box carried thereby and reciprocating in time with the rock-shaft, a follower working in the baling-box, a screw attached to the follower, a nut carried by the rock-shaft and engaged with the screw to drive the same, and means driven by the rock-shaft, by which means to drive the nut, the said means comprising a movable part having connection with the screw to be actuated by the pressure thereon, and by which part the movement of the follower is regulated.

6. The combination of an oscillatory baling-box, a follower working therein, a rock-shaft connected to move in time with the baling-box, a screw attached to the follower, a nut mounted to turn in the rock-shaft and engage the screw, a sliding arm carried by the rock-shaft, a connection between the screw and the sliding arm, to move the arm according to the pressure of the screw, and means driven from the sliding arm by which to drive the nut and move the screw.

7. The combination of an oscillatory baling-box, a follower working therein, a rock-shaft driven in time with the baling-box, a follower mounted in the baling-box, a screw attached to the follower, a nut engaging the screw, a slidable arm carried by the rock-shaft means for driving the nut from said arm, and a lever carried by the rock-shaft and connected with the arm and with the screw, so as to actuate the arm from the pressure of the screw.

8. The combination with a framing, of a housing supported thereon, pressing-rolls carried by the housing, sling-rods depending from the housing, bearings carried by the sling-rods, a rock-shaft mounted in the bearings, a baling-box suspended on the rock-shaft and reciprocal in time therewith, and a follower working with the baling-box.

9. In a press, the combination with a framing, of means against which the material is engaged when under pressure, bearings supported by the framing, a rock-shaft mounted in the bearings, an oscillatory baling-box carried by the rock-shaft to move in time therewith in proximity to the said means against which the material is pressed, and a follower working in the baling-box.

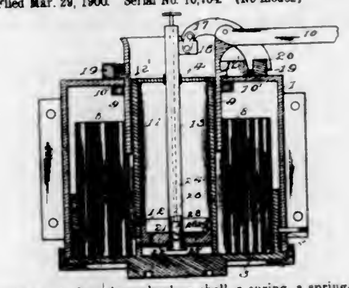
10. A baling-press having an oscillatory baling-box, means for oscillating the box, means on which the box is carried, such latter means rocking in time with the movement of the box, a follower working in the baling-box, and mechanism permitting the gradual retraction of the follower, such mechanism being connected with and actuated by the said means on which the baling-box is mounted.

11. A baling-press having a baling-box, a follower working therein, and means geared with and driven by the press for gradually retracting the follower, such means comprising a movement-transmitting arm or lever slidable to vary its fulcrum, the said arm or lever being connected with the follower and having its sliding movement controlled by the pressure of the bale on the follower, for the purpose specified.

12. A baling-press having an oscillatory baling-box, means on which the box is carried, such means rocking in time with the movement of the baling-box, a follower working in the baling-box, a screw attached to the follower, a nut working with the screw to gradually retract the follower, and mechanism actuated by the movement of the said means for carrying the baling-box, such mechanism driving the nut and comprising a movement-transmitting arm or lever slidable to vary its fulcrum, the said arm or lever being in connection with the follower and having its sliding movement controlled by the pressure of the bale on the follower, for the purpose specified.

13. A baling-press having a follower or other mobile part receiving the pressure of the bale, a mobile member in connection with the follower and actuated by the pressure thereof, a spring yieldingly sustaining the said mobile member against the pressure of the follower, an indicator carried by and moving with said mobile member, and a relatively-stationary scale against which the indicator reads.

655,001. DOOR-CHECK. CHARLES H. OCUMPAUGH, Brighton, N. Y. Filed Mar. 29, 1900. Serial No. 10,704. (No model.)



Claim.—1. In a door-check, a shell, a spring, a spring-cup having a central integral liquid-holding plunger-cylinder, and means of adjusting the tension of the spring independently of the cylinder.

2. In a door-check, a shell, a spring and a spring-cup having a central integral plunger-cylinder with a rotatable sleeve around said cylinder.

3. In a door-check, a spring-cup having a central integral plunger-cylinder, a rotatable sleeve around the cylinder, and a spring attached at its inner end to the sleeve, and at its opposite end to the spring-cup.

4. In a door-check, a spring, a plunger-cylinder, a plunger, a plunger-actuating lever, and a shell containing a sleeve rotatable about the cylinder, the sleeve forming the connection between one end of the spring and the lever.

5. In a door-check, the combination of a shell containing a spring chamber, a sleeve, a spring having one end connected to the sleeve, and a vertical plunger-cylinder with a rotatable vertically-moving plunger and plunger-stem.

6. In a door-check, the combination of a door-actuated arm, a plunger, a plunger-cylinder, a spring concentric with said cylinder, a part intermediate the arm and spring and fixed to both at their proximate ends, said part surrounding the plunger-cylinder, a device intermediate the arm and plunger to actuate the latter, and a shell inclosing the spring and cylinder.

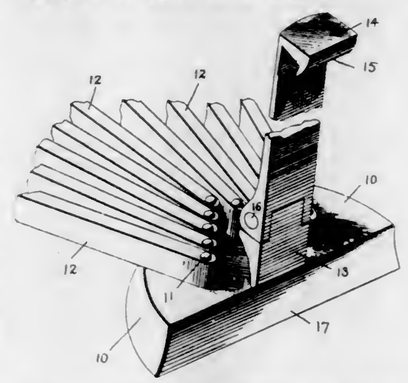
7. In a door-check, the combination of a shell, a door-actuated arm, a spring, a sleeve connecting the arm and spring, and a locking device to limit the upper movement of the sleeve within the shell.

8. In a door-check, the combination of a shell having an eccentric track projecting above its top to avoid accumulation of dust and unnecessary friction, a plunger, a lever connected at one end to the plunger-stem and at the other end loosely embracing said raised track, and a door-actuated arm to move the lever on the eccentric track to operate the plunger.

9. In a door-check, the combination of a shell, a plunger-cylinder, a sleeve rotatably mounted in the shell, an arm fixed to the sleeve, a rotatably-adjustable spring-cup, and a spring connecting the sleeve and spring-cup independently of the cylinder.

10. In a door-check, the combination of an arm, a shell, a plunger, a plunger-cylinder, a spring, and a rotatable spring-cup having with the cylinder an integral closed end to obviate leakage.

655,002. CLOTHES-DRIER. GUY H. ORCUTT, Worcester, Mass. Filed Sept. 16, 1899. Serial No. 730,676. (No model.)

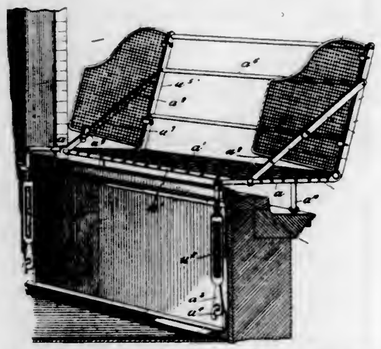


Claim.—In a clothes-drier, the combination of a base-piece or casting 10, a plurality of rods or bars 12 extending radially therefrom and pivotally mounted on rivets 11 secured in the base-piece 10, a supporting-arm 13 extending up from the rear side of the base-piece or casting 10, and having a hooked upper end for hanging the clothes-drier from a window-casing, a door-casing, or similar support without marring the face thereof, said supporting-arm being hinged or jointed as at 16 to fold down over the bars 12 when not in use, substantially as described.

655,008. WINDOW-SUPPORT. ISRAEL PAGE, Montreal, Canada. Filed Dec. 2, 1899. Serial No. 738,979. (No model.)

Claim.—1. A window-support comprising a base-frame provided with depending links adapted to rest upon a window-sill, the angular rods pivoted to the inner end of said base-frame, and having the depending threaded lengths, hooks adapted to be fastened below a sill, the threaded rods detachably connected to the hooks, and the turn-buckles connecting the threaded rods and the threaded ends of the

angular rods, whereby the entire support may be removed by disconnecting the threaded rods from the hooks and the position of the base-frame may be varied by adjustment of the turnbuckles, as set forth.

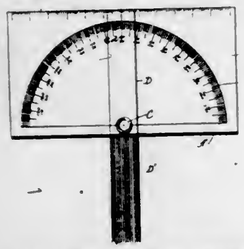


2. A window-support comprising a base-frame, a back support hinged to said base-frame, jointed links pivoted to the base-frame and the back support, and side shields foldably connected to the back support and having detachable locking connection with the jointed braces, substantially as described.

3. A window-support, comprising a suitable frame adapted to be supported upon a window-sill; a back support hinged to said frame; side shields hinged to said back support; rods connected with said frame and adapted to extend downwardly on the inside of the window-frame; and an adjusting device connected with said rods and to a fixed point, located below said window-sill for retaining the support in its operative position, substantially as described.

4. A window-support, comprising a suitable frame adapted to be supported upon a window-sill; a back support hinged to said frame; jointed links pivoted to said frame and to said back support; side shields hinged to said back support; a catch fixed to said links for retaining the side shields in their open position; rods connected with said frame; a rod pivoted to each of said rods and adapted to extend downwardly on the inside of the window-frame; and an adjusting device connected with said rods and to a fixed point, located below said window-sill for retaining the support in its operative position, substantially as described.

655,004. CONTACT-GONIOMETER. SAMUEL L. PENFIELD, New Haven, Conn. Filed Apr. 2, 1900. Serial No. 11,048. (No model.)



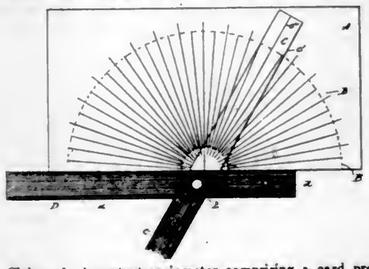
Claim.—1. A measuring instrument, comprising a card provided with a divided semicircle, and having a base-line, and a measuring-arm swiveled directly to the card at the center of the said semicircle, and having an indicating end of transparent material, provided with an indicating-line arranged so that if projected it would intersect the center of the swivel by means of which the arm is directly attached to the card.

2. A contact-goniometer, comprising a card provided with a divided semicircle, and having a base-line, and a measuring-arm swiveled directly to the card at the center of the said semicircle, and having a measuring end and an indicating end, the latter being made of transparent material, and provided with an indicating-line arranged so that if projected it would intersect the center of the swivel by means of which the arm is directly attached to the card.

3. A contact-goniometer, comprising a card provided with a divided semicircle and having a base-line, and a measuring-arm swiveled directly to the said card at the center of the said semicircle, and having a transparent indicating end and an opaque measuring end, its transparent indicating end being furnished with an indicating-line, which, if projected, would intersect the center of the swivel by means of which the arm is directly attached to the card.

4. A contact-goniometer, comprising a card provided with a divided semicircle, and having a base-line, and a celluloid measuring-arm swiveled to the card at the center of the said semicircle, and having its indicating end transparent and provided with an indicating-line, and having its measuring end opaque for use in conjunction with the base-line of the card.

655,005. CONTACT-GONIOMETER. SAMUEL L. PENFIELD, New Haven, Conn. Filed Apr. 2, 1900. Serial No. 11,049. (No model.)



Claim.—1. A contact-goniometer comprising a card provided with a divided semicircle having a base-line, and two independently-organized or detached measuring-arms swiveled together between their indicating ends and their measuring ends, and one of them being made of a transparent material through which the divisions of the said semicircle may be read, the said arms being adapted to be temporarily applied to the base-line of the card so that while the edge of one arm is in contact with the said base-line, the other arm will be brought into position upon the card to indicate in conjunction with the degree-lines thereof, the angle measured by the measuring ends of the arms.

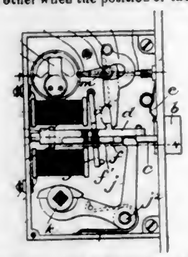
2. A contact-goniometer, comprising a card provided with a divided semicircle and having a base-line, and two independently-organized or detached measuring-arms swiveled together between their indicating ends and their measuring ends, and one of them having a transparent indicating end through which the divisions of the said semicircle may be read, the said arms being adapted to be temporarily applied to the base-line of the card, so that while the edges of one arm are in contact with the said base-line, the other arm will be brought into position upon the card to indicate in conjunction with the degree-lines thereof, the angles measured by the measuring ends of the arms.

3. A contact-goniometer, comprising a card provided with a divided semicircle and having a base-line, and two independently-organized or detached measuring-arms swiveled together between their indicating ends and their measuring ends, and made of readily-divisible material to adapt them to be cut off to meet the requirements of use, and adapted to be temporarily applied to the base-line of the card, so that while the edge of one arm is in contact with that base-line the other arm will be brought into position upon the card to indicate in conjunction with the degree-lines thereof, the angles measured by the measuring ends of the arms.

655,006. ELECTRIC LOCK. THEODORE P. PRATT, Boston, Mass., assignor to Fred Warren Clark, same place. Filed Apr. 21, 1900. Serial No. 13,737. (No model.)

Claim.—1. In an electric lock, the combination of a pivoted bolt-head or latch, a latch-bar connected with said latch and adapted to be moved to retract the same, two independent knob-operated tumbler-dogs arranged in proximity to said latch-bar, a dog pivoted to the latch-bar and adapted to be moved simultaneously into engagement with one tumbler-dog and out of engagement with the other, said bolt having a spring whereby it is normally engaged with one of the tumbler-dogs and normally separated from the other, and electrically-controlled means for displacing the latch-bar dog from its normal position and moving it into engagement with the tumbler-dog from which it is normally separated.

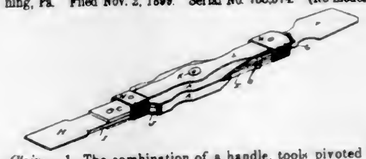
2. In an electric lock, the combination of a pivoted bolt-head or latch, a latch-bar connected with said latch and adapted to retract the same, two independently-operated tumbler-dogs arranged in proximity to said latch-bar, a dog pivoted to the latch-bar and adapted to be moved simultaneously into engagement with one tumbler-dog and out of engagement with the other, said dog being normally engaged with one tumbler dog and separated from the other, an electromagnet, and an armature for said magnet adapted to move the latch-bar dog out of engagement with one tumbler-dog and into engagement with the other when the position of the armature is shifted.



3. In an electric lock, the combination of a latch, a latch-bar connected therewith and adapted to be moved to retract the same, two independent knob-operated tumbler-dogs arranged in proximity to said latch-bar, a dog pivoted to the latch-bar and adapted to engage either of said tumbler-dogs, an electromagnet having two coils situated on either side of the latch-bar, and an armature pivoted at one side of said latch-bar and adapted to engage the pivoted dog intermediate of the ends of said armature, for the purposes specified.

4. In an electric lock, the combination of a casing, a pivoted latch, a latch-bar connected therewith and adapted to be moved to retract the same, two independent knob-operated tumblers arranged on one side of said latch-bar and with their ends in proximity thereto, a dog pivoted to said latch-bar and adapted to engage either of said tumbler-dogs, an electromagnet attached to the rear wall of the casing for the purpose specified and having two coils arranged on either side of the latch-bar, a pivoted armature adapted to engage the latch-dog intermediate of the ends of said armature for the purposes specified, a dog pivoted to the casing at the opposite side of the latch-bar from the knob-operated tumbler-dogs and engaged with said latch-bar, and a T-shaped key-operated lever pivoted underneath said dog and engaged therewith, the said lever being adapted to be turned in either direction to cause the said dog to retract the latch.

655,007. COMBINATION-TOOL. WILLIAM K. RAIRIGH, Kittanning, Pa. Filed Nov. 2, 1899. Serial No. 735,574. (No model.)



Claim.—1. The combination of a handle, tools pivoted to turn therein, a flat spring secured to the handle, and a device carried by a free portion of the spring for rigidly uniting the handle and tools, substantially as shown and described.

2. The combination of a handle, tools pivoted in the handle and adapted to turn therein, and a laterally-movable clip open on one side to embrace the tools and handle adjacent the pivotal point and hold the tools either in inwardly or outwardly turned position, substantially as shown and described.

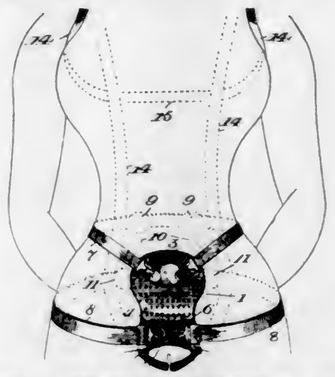
3. The combination of a handle, tools pivoted to turn therein, a flat spring secured to the outer side of the handle, and a clip secured to a free portion of the spring and maintained by the latter normally in engagement with the tools for holding them in position rigid with the handle, substantially as shown and described.

4. The combination of a handle, tools pivoted to turn in opposite ends of the handle, an elongated flat spring secured between its ends to the outer side of the handle, and tool-embracing clips on the extremities of the spring for engaging the tools and holding them in position, substantially as shown and described.

5. In an implement of the character described, the combination of a handle, tools pivoted therein, an elongated spring secured to one side of the handle, and a clip carried by the said spring, said clip having an open side to removably embrace the tools, substantially as shown and described.

6. In an implement of the character described, the combination of a handle, tools pivoted in opposite ends thereof, an elongated flat spring secured between its ends to one side of the handle, and a clip at each end of the spring for the corresponding ends of the handle, each of said clips having an open side to removably embrace the tools for rigidly holding them in adjustment, substantially as shown and described.

655,008. UMBILICAL TRUSS. HOWARD C. RASH, Salina, Kans., assignor to The Natural Body Brace Company, same place. Filed May 19, 1900. Serial No. 17,229. (No model.)

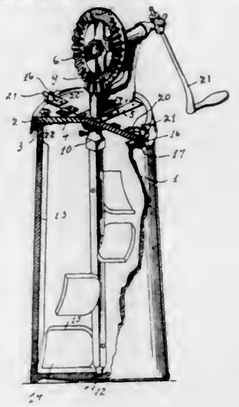


Claim.—1. A truss-plate and abdominal supporter for use in cases of navel hernia, formed of a single plate of thin slightly-flexible material, having its greater length in a vertical direction, curved longitudinally and transversely to the general shape of the abdomen, and adapted to form a support therefor; having formed therein near its upper end, a rearwardly-projecting pad or presser, having formed therein near its lower ends at opposite sides rearwardly-projecting pads or pressers, and having also formed therein on its front face, means for engaging supporting belts or straps; substantially as described.

2. The combination with a truss-plate and abdominal support for use in cases of navel hernia, having its greater length in a vertical direction, and having a pad or presser near its upper end and pads or pressers near its lower end, and provided on its front face, near its upper end and also near its lower end, with cleats, of upper and lower belts provided respectively with means for detachably engaging the upper and lower cleats on the plate, means for holding the belts apart at the back of the wearer, and straps connected to one of said belts and adapted to pass about the shoulders of the wearer; substantially as described.

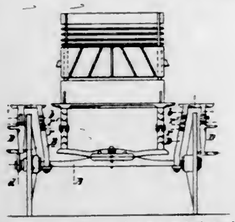
3. The combination with a truss-plate and abdominal support for use in cases of navel hernia, having its greater length in a vertical direction, and having a pad or presser near its upper end and pads or pressers near its lower end and provided on its front face near its upper end and also near its lower end with cleats, of upper and lower belts provided respectively with means for engaging the upper and lower cleats on the plate, means for holding the belts apart in rear of the wearer, straps connected to one of said belts in rear of the wearer and adapted to pass beneath the body of the wearer, and means for connecting such straps to the belt in front of the wearer; substantially as described.

655,009. CHURN. CHARLES RAW, Graytown, Ohio. Filed Dec. 22, 1898. Serial No. 699,990. (No model.)



Claim.—The butter-churn herein described, comprising an earthenware vessel having its top edge provided with an interior annular ledge 22, for receiving and supporting a cover for the vessel, and the bottom with socket 12, and having formed integral therewith vertical breakers 13, and a concentric exterior rim 2, provided with a concentric groove 3 on its under side, and vertical notches 19 in its periphery; a top closure 4, having projecting plates 20, provided with bolts 16, having heads 17, and thumb-nuts 21; a shaft 7 mounted on the cover 4, and extending centrally through it, provided with gear mechanism adapted to rotate it; a coupling-sleeve 10, and a paddle-arbor 11, provided with paddles; all constructed, combined and operating as shown and described

655,010. STEP-FRAME FOR CARRIAGE BOX-SEATS. WILHELM RECK, Cöslin, Germany. Filed Dec. 7, 1899. Serial No. 739,433. (No model.)

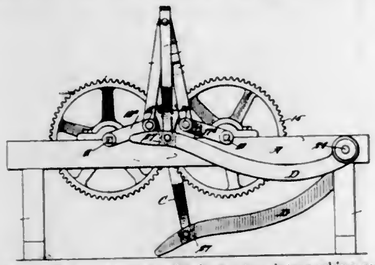


Claim.—1. A step-frame for carriages consisting of a forked frame embracing the wheel, one leg of which frame forms a strut fixed to the wheel-axle while the outer leg and the top are detachably pushed upon said strut, the outer leg being provided with steps, substantially as shown and described and for the purpose specified.

2. A step-frame for carriages consisting of a forked frame embracing the wheel, one leg of which frame forms a strut fixed to the wheel-axle while the outer leg and the top are detachably pushed upon said strut and supported at the lower end by the outer end of the wheel-axle, substantially as shown and described and for the purpose specified.

3. The combination with a vehicle of a forked frame secured at one end to the wheel-axle within the wheel, thence extending up, outward and then downward outside of the wheel, the outer leg of the frame being provided with steps, and the top where the two legs join forming a broad top step, substantially as shown and described.

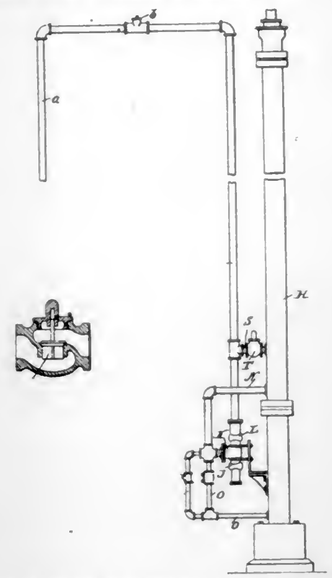
655,011. POWER-MACHINE. DAVID W. REYNARD, Morris, Pa. Filed Aug. 19, 1899. Serial No. 727,801. (No model.)



Claim.—The combination of a frame, two intermeshing gears, journaled thereon, two cranks carried by each gear on opposite sides thereof and arranged at an angle to each other, toggle-links arranged in sets on each side of the gears and having their inner ends pivotally connected with each other, while the outer ends of the toggle-links are pivotally connected with the respective cranks, a pitman pivotally connected with the inner ends of each set of toggle-links and a driving-lever for each set of toggle-links, said lever being fulcrumed on the frame and operatively connected with the corresponding pitman.

655,012. ELEVATOR. GEORGE H. REYNOLDS, Chicago, Ill., assignor to The Crane Elevator Company, same place. Filed Mar. 27, 1895. Serial No. 543,381. (No model.)

Claim.—1. In an elevator, the combination of a car, a ram operatively connected with, so as to elevate, said car, a closed cylinder in which said ram freely works, means for introducing a hydraulic lifting-column in said cylinder at the lower end thereof, for raising the ram, and means for connecting the hydraulic lifting-column with a hydrostatic column, substantially as described.



2. In an elevator, the combination of a car, a ram operatively connected with said car, a cylinder in which said ram freely works, supply and discharge ports at the lower end of said cylinder, a valve mechanism for controlling hydraulic pressure in said cylinder and an independent source of constant hydraulic pressure adapted to be connected with the discharge-port of the cylinder, substantially as described.

3. In an elevator, the combination of a car, a ram operatively connected therewith, a cylinder in which said ram freely works, supply and discharge ports at the lower end of said cylinder, a valve mechanism for controlling hydraulic pressure in said cylinder and a stand-pipe adapted to be connected by said valve mechanism with the discharge-port of said cylinder, substantially as described.

4. In an elevator, the combination with a car, a ram operatively connected therewith, and a cylinder in which said ram works, of a valve mechanism for admitting and relieving hydraulic pressure in the cylinder, connections from said valve mechanism to two different points along the cylinder, a check-valve in the lowermost connection, and a contracted by-pass around said check-valve, substantially as described.

5. In an elevator, the combination with a car, a ram operatively connected therewith, and a cylinder in which said ram works, of a valve mechanism for admitting and relieving hydraulic pressure in the cylinder, connections from said valve mechanism to two different points along the cylinder, a check-valve in the lowermost connection, a by-pass around said check-valve, and a cock-valve in said by-pass, substantially as described.

6. In an elevator, the combination with a car, a ram operatively connected therewith, and a cylinder in which the ram freely works, of a valve mechanism for admitting and relieving hydraulic pressure in said cylinder, a source of constant pressure into which said cylinder discharges, a passage connecting said source of constant pressure with the cylinder near the lower end thereof, and a check-valve located in said passage, substantially as described.

7. In an elevator, the combination with a car, a ram operatively connected therewith, and a cylinder in which said ram freely works, of a valve mechanism for admitting and relieving hydraulic pressure in said cylinder, a stand-pipe connecting with said valve mechanism and through which the cylinder discharges, a passage connecting said stand-pipe with the cylinder, and a check-valve in said passage, substantially as described.

8. In an elevator, the combination of a car, a ram, cable connections therebetween, a closed cylinder in which said ram works, a series of guide-bearings for said ram at intervals in the cylinder through which said ram freely works, a succession of supply and discharge openings in the cylinder upon opposite sides of the guide-bearings and means for raising said ram by hydraulic pressure to lower the car and for controlling the fall of the ram by hydraulic pressure to raise the car, substantially as described.

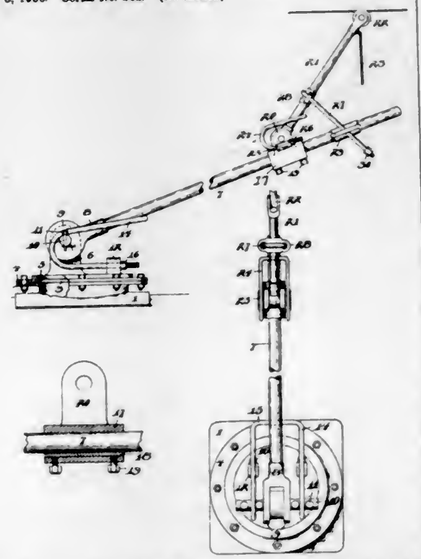
9. In an elevator, the combination with a car, a ram operatively connected therewith and having a reduced end, and a cylinder in which said ram works, composed of a series of sections having bulkheads at the ends thereof, of supply and discharge connections for the cylinder above and below the lowermost bulkhead, cooperating with the reduced end of the ram, substantially as described.

655,013. PROCESS OF MAKING GREEN TRISAZO DYES. CHRISTOPHER RIS and CHARLES SIMON, Basle, Switzerland, assignors to John R. Geigy & Co., same place. Filed Apr. 24, 1900. Serial No. 14,086. (Specimens.)

Claim.—1. The herein-described process of producing green coloring-matters, which consists in combining one molecule of the monoazo color, obtained from diazotized orthochloraniline and alpha, alpha$_4$ amidonaphtol beta$_2$ beta$_3$ disulphoacid, with one molecule of a tetrazo compound and one molecule of a phenol compound, substantially as set forth.

2. The new green coloring-matter thus obtained, which form a dark powder with greenish-broozy luster, easily soluble in water with green color, soluble in concentrated sulphuric acid with dark violet to blue-black color, difficultly soluble in alcohol, insoluble it ether and benzene, forming by complete reduction a colorless solution from which orthochloraniline may be regenerated, and dyeing unmordanted cotton green shades, substantially as set forth.

655,014. TROLLEY. FELIX J. ROGERS, Crafton, Pa. Filed Jan. 3, 1900. Serial No. 202. (No model.)

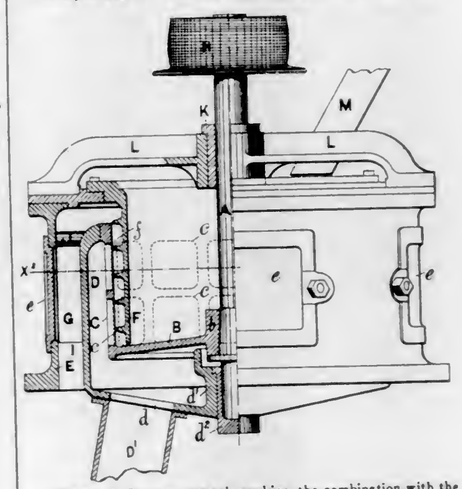


Claim.—1. In a trolley for electric cars, the combination, of a plate rotatably mounted in a trolley-stand and provided with eyes, a trolley-pole pivotally secured to said plate, a substantially U-shaped spring mounted upon the pivotal pin of the trolley-pole with the cross-bar which connects its two members engaging the underneath face of the trolley-pole and its ends adjustably secured in the eyes on the plate, a sleeve mounted upon said pole and provided with eyes, an auxiliary trolley-pole pivotally secured to said sleeve with a trolley-wheel mounted on its upper end, a substantially U-shaped spring 24 having its ends adjustably mounted in said eyes and the cross-bar connecting the two members engaging the underneath face of the auxiliary trolley-pole, a keeper 28 mounted on the auxiliary trolley-pole, a like keeper 29 mounted on the trolley-pole proper, and a yoke or clevis engaging said keepers for limiting the upward movement of the auxiliary trolley-pole, as and for the purpose described.

2. In a trolley for electric cars, the combination, with the plate 3 rotatably mounted in a trolley-stand, of a trolley-pole pivotally mounted on said plate with its pivot-pin extending outward on each side of the pole, a substantially U-shaped spring mounted on the pivot-pin of the trolley-pole with its ends adjustably connected to the plate and its cross-bar engaging the trolley-pole, a sleeve mounted upon said trolley-pole, an auxiliary trolley-pole pivotally mounted on said sleeve, a substantially U-shaped spring 24 having its ends adjustably connected to said sleeve with its cross-bar engaging the auxiliary trolley-pole, a trolley-wheel journaled in the free end of said auxiliary trolley-pole, and means carried by the auxiliary trolley-pole and engaging the trolley-pole proper to limit the upward movement of said auxiliary pole, as and for the purpose set forth.

3. In a trolley for electric cars, the combination, with the rotatably-mounted plate, of the trolley-pole 7 pivotally mounted on said plate, a tension-spring engaging said pole with its ends adjustably connected to the plate, an auxiliary trolley-pole pivotally mounted on the trolley-pole 7, a tension-spring 24 engaging said auxiliary trolley-pole with its ends adjustably connected to the trolley-pole 7, a trolley-wheel journaled in the outer end of said auxiliary trolley-pole, keepers 28, 29 mounted on the auxiliary trolley-pole and trolley-pole respectively, and a yoke or clevis operating in said keepers to limit the upward movement of the auxiliary trolley-pole, substantially as shown and described.

655,015. CENTRIFUGAL MACHINE. WILLIAM ROWLANDSON, Liverpool, England. Filed Feb. 8, 1900. Serial No. 4,496. (No model.)



Claim.—1. In a centrifugal machine, the combination with the cage, of an internal stationary drum F hung rigidly from a stationary support above and dipping into the cage, and having a spiral flange *f* thereon, substantially as and for the purposes described.

2. In a centrifugal machine the combination of a rotating cage, a stationary spiral guide fixed in and close to the periphery of that cage and an outer casing into which the spiral guide delivers the solid material, substantially as described.

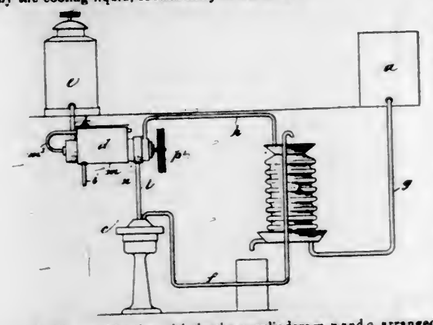
3. In a centrifugal machine, the combination with an outer, fixed casing, and an inner, fixed casing of less diameter than the outer casing, whereby an annular delivery-outlet is provided between them, of a rotative, foraminous cage within the inner casing, said cage and inner casing being both open at the top, and the cage fitting snugly at its top within the inturned rim of the inner casing, and means within the cage for automatically elevating and discharging the solid material, substantially as and for the purpose set forth.

4. In a centrifugal machine, the combination with the outer, fixed casing E, and the inner, fixed casing D, of less diameter than the outer casing, with a discharge-outlet G between them, of the foraminous, rotating cage C, within the casing D, and the fixed, pendent drum F, within the cage and having a spiral flange on its outer face adjacent to the wall of the cage, substantially as set forth.

655,016. REFRIGERATING DEVICE FOR CENTRIFUGAL APPARATUS. ERIK G. N. SALENIUS, Albano, Sweden. Filed Dec. 29, 1897. Serial No. 664,419. (No model.)

Claim.—1. The combination with a centrifugal apparatus, a primary cooler, which cools the liquid to be treated on its way to the centrifugal apparatus, a second cooler which cools the liquid coming from the said apparatus, conduits for conducting through the apparatus the liquid to be treated, and pipes conducting a cooling liquid

under a head or pressure, first to the second cooler and then, after it shall have passed through this cooler, to the primary cooler through which it finally passes, whereby the second cooler is first acted upon by the cooling liquid, substantially as set forth.



2. The combination with the three cylinders *m*, *n* and *o*, arranged one within the other and having interspaces between them, of the vessel m^3, having a perforated bottom and situated over an aperture in the upper side of the outer cylinder *m*, and a conduit m^8, connecting said vessel with the interior of the inner cylinder *o*, said inner cylinder having an inlet for a temperature-changing liquid, the cylinder *m* having an outlet for said liquid, and the cylinder *n* having an inlet and an outlet for the liquid of which the temperature is to be changed, substantially as set forth.

3. The combination with the three cylinders *m*, *n* and *o*, arranged one within the other and having interspaces between them, of the vessel m^3, having a perforated bottom and situated over an aperture in the upper side of the outer cylinder *m*, a conduit m^3, connecting said vessel with the interior of the inner cylinder *o*, and a rotating agitator in the inner cylinder, said inner cylinder having an inlet for a temperature-changing liquid, the cylinder *m* having an outlet for said liquid, and the cylinder *n* having an inlet and an outlet for the liquid of which the temperature is to be changed, substantially as set forth.

655,017. BANANA-CRATE. ANTONIO SARBONE and JOHN SARBONE, Keokuk, Iowa. Filed Mar. 31, 1900. Serial No. 10,931. (No model.)

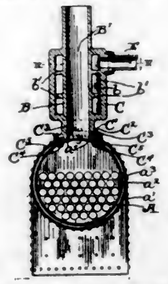


Claim.—A crate, comprising a rigid frame forming a crate proper, a sack situated within the said rigid frame, a flexible band encircling the sack and secured thereto, and flexible seizings extending from the band outward to the crate to yieldingly support the sack.

655,018. STEAM-BOILER. REINHARD SCHEIDLER, Newark, Ohio. Filed Feb. 28, 1898. Serial No. 672,010. (No model.)

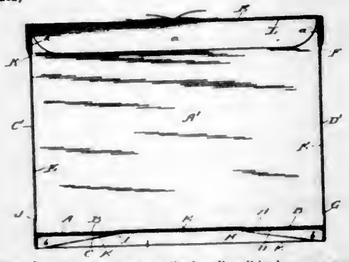
Claim.—1. As an article of manufacture, the dome C having the centrally-located open-ended upright passage-way B', the chamber *b* formed around the surrounding wall of the aforesaid passage-way, and the webs or stays *b'* connecting the said wall with the outer wall of the chamber, which last-mentioned wall is thicker than the first-mentioned wall, substantially as shown, for the purpose specified.

2. In a steam-boiler, the combination with the tubed water-carrying portion of the boiler, and the smoke-box comprising two separated shells supported the one within the other, and the inner shell's top having an aperture; of a casting having a centrally-located open-ended passage-way that communicates with the aforesaid aperture, and arranged upon the smoke-box and flanged laterally and externally at its lower end, bolts extending through the said flanged end and through both smoke-box shells, nuts upon the bolts, means for bracing apart the two shells at the bolts, a steam-chamber surrounding the passage-way, a pipe or passage-way between the said chamber and the steam-space of the tubed portion of the boiler, and another pipe or passage-way for conducting steam from the chamber, substantially as shown, for the purpose specified.



3. In a steam-boiler, the combination with the tubed water-carrying portion of the boiler, and the smoke-box comprising two separated shells supported the one within the other, and the inner shell's top having an aperture; of a casting arranged above the smoke-box and flanged laterally and externally at its lower end, bolts extending through the said flanged end and through both smoke-box shells, nuts upon the bolts, collars upon the bolts between the two shells, and the aforesaid casting being formed with a steam-chamber surrounding an upright smooth passage-way communicating with the aforesaid aperture, a pipe or passage-way between the said chamber and the steam-space of the tubed portion of the boiler, and another pipe or passage-way for conducting steam from the said chamber, substantially as set forth.

655,019. HAT-BOX. THEODORE F. W. SCHMIDT, Anderson, Ind., assignor of one-half to the J. W. Sefton Manufacturing Company, same place and Chicago, Ill. Filed Sept. 27, 1897. Serial No. 653,186. (No model.)



Claim.—1. The herein-described collapsible box, composed of the four sides, the four bottom flaps hinged thereto and folding upward within the sides when the box is to be collapsed, and the tape passed through the two opposite sides of the box and through each of two of the bottom flaps thereof at two points and extending across the other two flaps and serving to support the bottom flaps when bent down to close the bottom of the box but permitting said flaps to be bent upward against the sides of the box preparatory to collapsing the latter, substantially as described.

2. The herein-described collapsible box, composed of the four sides, the four bottom flaps hinged thereto and two of which overlap each other across the middle of the box, and the tape passed through two opposite sides of the box and through each of the two overlapping bottom flaps thereof at two points and extending across the bottom of the box parallel with the overlapping edges of said flaps, said tape serving to support the bottom flaps when in position to close the bottom of the box but permitting them to be bent to position to permit the box to be collapsed, substantially as described.

3. The herein-described collapsible box, composed of the four sides, the four bottom flaps hinged thereto and folding upward within the sides when the box is to be collapsed and two of said flaps overlapping each other across the middle of the box, and the tape passed downward along the middle of one side of the box, thence across the bottom of the box through the two overlapping bottom flaps and parallel with the overlapping edges thereof, and thence upward along the middle of the opposite side of the box, said tape serving to hold the inside bottom flaps from inward movement and the outside bottom flaps from outward movement but permitting said flaps to be bent upward against the sides of the box preparatory to collapsing the latter, substantially as described.

4. The herein-described collapsible box, composed of the four sides, the two narrow bottom flaps hinged to two of the opposite sides and the two wide bottom flaps hinged to the other two opposite sides and overlapping each other across the middle of the bottom of the box and above the two narrow flaps when the flaps are in condition to close the bottom of the box, and the tape passed downward along the middle of the side of the box having one of the narrow flaps hinged to it, thence inward beneath such flap, thence upward through coincident slits in the overlapping wide flaps, thence onward parallel with the edges of said overlapping flaps and downward through coincident slits therein, thence onward beneath the narrow flap hinged to the opposite side of the box, and thence upward along the middle of said side, substantially as and for the purpose described.

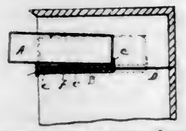
5. The herein-described collapsible box, composed of the four sides A' B' C' D', the two narrow bottom flaps C D hinged to the opposite sides C' D' and the two wide bottom flaps A B hinged to the opposite sides A' B' and overlapping each other across the middle of the bottom of the box above the flaps C D, when the bottom of the box is closed, and the tape E passed downward through the slits F G in the side D', thence across the middle of the bottom of the box beneath the flaps D and C and through coincident slits H I in the overlapping flaps A and B, and thence upward through the slits J K in the side C', substantially as described.

6. The herein-described collapsible box, composed of the four sides A' B' C' D', the bottom flaps A B C D formed integral with the respective sides of the box at their lower edges and bent upward and permanently secured to the inner faces of said sides beneath the creases *b* in said flaps, said flaps hinging along said creases when bent upward or downward, and the tape E passed through the sides C D' and each of the bottom flaps A B of the box at two points and extending across the other two flaps, substantially as and for the purpose described.

7. The herein-described paper box formed from a single blank composed of the four sides A' B' C' D', and the four bottom flaps A B C D bent upward against the inner faces of the sides of the box and provided with the creases *b*, the portions of the flaps beneath said creases being firmly secured to the vertical sides of the box and the flaps hinging along said creases as they are bent upward to vertical position or downward to close the bottom of the box, substantially as described.

8. The herein-described box, comprising four sides, four bottom flaps hinged thereto and foldable upward within the box, and a tape passed through two opposite sides of the box and through two bottom flaps and so arranged as to hold the inside bottom flaps from inward movement and the outside bottom flaps from outward movement, substantially as described.

655,020. MEANS FOR OPERATING FILE-CABINETS. CHARLES SCHRODER, Detroit, Mich. Filed Apr. 7, 1900. Serial No. 12,084. (No model.)

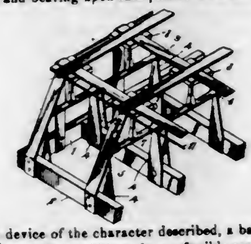


Claim.—In a box-cabinet, consisting of top, three closed sides and an open side having floors only partially covering the bottoms of the recesses for said boxes, said floors being in two parts, the front floor being stationary and the rear floor moving on horizontal transverse guides, the floors being connected by springs which operate to draw the rear floor to the front floor: the transverse guides upon which are operated the rear parts of floors as above set forth, substantially as described.

655,021. FURNITURE-SPRING. EDWARD A. SEABURG, Seattle, Wash. Filed Dec. 29, 1899. Serial No. 741,932. (No model.)

Claim.—1. A furniture bottom or spring, comprising a base-frame, plate-springs extended upward from the base-frame, flexible connections between the upper ends of opposite springs, standards mounted on said flexible connections, and flexible bands or strips attached to the side and end rails of the frame and bearing upon said standards, substantially as specified.

2. In a device of the character described, a base-frame, plate-springs attached to and extended upward from said base-frame, flexible connections between the upper ends of opposite springs, posts secured to said connections, bearing-plates on the upper ends of the posts, and bands or strips of flexible material attached at the ends to the frame and bearing upon said plates, substantially as specified.



3. In a device of the character described, a base-frame, springs extended upward from said base-frame, flexible connections between opposite springs, posts extended upward from said flexible connections, flexible bands or strips attached at the ends to the frame and passing over the upper portions of said posts, and a wire or rod passing around and engaging with the outer lines of standards, substantially as specified.

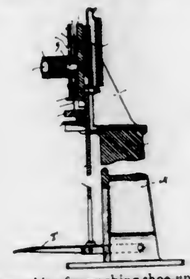
4. In a device of the character described, a base-frame, comprising side rails, end rails and cross-bars, springs extended upward from the end rails and cross-bars, flexible connections between the upper ends of opposite springs, posts removably connected to said connections, bearing-plates on the upper ends of said posts, straps or strips connected to said rails and extending over the several bearing-plates arranged in line, and bands or strips connected to the end rails and also extending over the bearing-plates arranged in line, substantially as specified.

655,022. NUT-LOCK. DAVID W. SHAVER, New York, N. Y. Filed Apr. 16, 1900. Serial No. 13,067. (No model.)



Claim.—In a device for locking the nuts of a rail-joint or similar structure an elastic plate bowed longitudinally substantially throughout its length having a bendable hook on each end, said hooks being on the convex side of the plate and extending inward and toward each other, said plate having a series of openings for the reception of the nuts to be locked.

655,028. MACHINE FOR MARKING SHOE-UPPERS. PEARL E. SELBY, Portsmouth, Ohio. Filed Apr. 28, 1900. Serial No. 14,678. (No model.)



Claim.—1. A machine for marking shoe-uppers consisting essentially of a reciprocating slide, an adjustable controlling-disk mounted thereon, having a series of engaging lugs of different widths, a series of openings between the same, a series of markers underneath said slide and adapted to be driven thereby, means for adjusting said disk and means for reciprocating the slide and disk, substantially as specified.

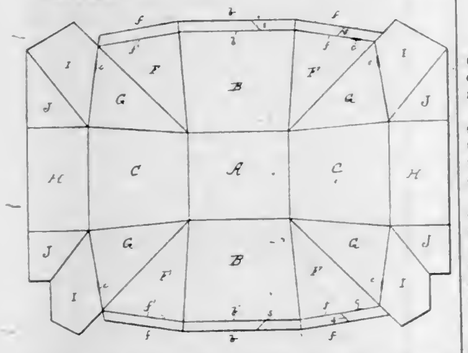
2. In a shoe-upper-marking machine, in combination with a reciprocating slide, a revoluble disk journaled upon a longitudinal and rotary adjustable axis affixed to said slide and provided with a series of driving-lugs, of progressively-increasing engaging faces with a series of spaces interposed between said driving-faces and decreasing in size, the same being adapted to engage and to span any desired number of markers in the series, substantially as specified.

3. In a shoe-upper-marking machine, in combination with a slide carrying a series of marking members, a revoluble disk journaled upon a rotary axis affixed to said slide means for locking said disk in various positions, a series of driving-lugs, a series of spanning-faces interposed between the same, means for locking said disk in various adjusted positions, whereby a different number of markers may be operated by the disk in each of its adjusted positions, substantially as specified.

4. In a marking-machine employing a slide carrying a series of marking members in one series, an outside marking member, a disk rotary adjustable upon said slide and having a series of driving-lugs of different dimensions, a single-marker driver also mounted upon said slide and means for adjusting said slide into and out of engagement with said individual driver, substantially as specified.

5. In a marking-machine employing a reciprocating slide carrying a series of marking members, a dial-disk journaled on an axis fixed to said slide and provided with a series of progressively-increasing driving-lugs and a series of progressively-decreasing spanning-spaces interposed consecutively between said driving-lugs, substantially as specified.

655,024. PAPER PAIL OR VESSEL. COLUMBUS U. SHIPLEY, JR., Dayton, Ohio, assignor to the J. W. Sefton Manufacturing Company, Anderson, Ind., and Chicago, Ill. Filed Nov. 4, 1898. Serial No. 695,434. (No model.)



Claim.—1. A paper vessel, comprising a folded blank having opposite sides, B, each provided with a fold *b* bent back upon the side whereby the upper portions of the said sides are reinforced, corner folds folded outside of said sides B, and holding means for said corner folds engaging said reinforced upper portions of the sides B, substantially as described.

2. In a paper pail or vessel, the combination of the inwardly-folded sides F F and B having crease-lines *b'* and *f' f'* throughout their edges, double folds *f f* and *b* formed by bending the said edges along said crease-lines, metal fasteners having their lower ends secured to the outer folds of the sides, and their upper ends projected through said folds and clamped over the edges *b f f* on the inside of the pail, substantially as specified.

3. In a paper pail or vessel, the combination with the overlapping side folds, the free edges *f* and *b* of the material comprising said folds being bent outwardly throughout the length thereof to provide reinforced edges, slits *x x* cut from the crease-line of said fold to the edge of the material to enable the said outward fold of the free edges, of a reinforcing-cover resting on said reinforced edges, the said cover constituting a former over which the top portions of the pail or vessel are bent, and having downwardly and upwardly projected sides, the former side extending down over the corners of the reinforced edges of the pail or vessel, and the latter sides extending up and adapted to reinforce the top flaps.

4. In a paper pail or vessel, the combination with the overlapping sides of said pail or vessel, of fasteners the upper and lower edges of which secure the folds of said sides, ears projected from said fasteners, and a bail or handle passed upwardly under said ears and across the closed top flaps of the vessel or pail.

5. In a paper pail or vessel, the combination with the folded sides of said pail or vessel, of fasteners the lower ends of which embrace the inclined edges of said folds, and the upper ends of which penetrate the overlapping portions of said folds and the inner adjacent walls and are clenched against the inner sides of said walls, ears projected downwardly from said fasteners, and a tape or cord secured to said ears and forming a handle, and securing the top flaps of the pail or vessel in a closed position.

6. A paper vessel, comprising a folded blank having opposite sides B, each provided with a fold *b* bent back upon the side whereby the upper edge of the sides are reinforced, corner folds F, G folded outside of said sides B, and metallic securing devices having portions passing through said folds F, G and engaged over the reinforced edges of the sides B, substantially as described.

7. A paper vessel, comprising a blank having opposite side folds, corner folds overlapped over said side folds, and a metallic securing device having portions bent over said corner folds, and a portion passing through said overlapped corner folds and engaging the upper edge of the side fold, substantially as described.

655,025. BRACELET. WILLIAM F. SIMON, West Hoboken, N. J. Filed Apr. 10, 1900. Serial No. 12,364. (No model.)

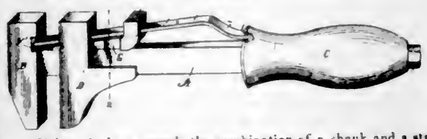


Claim.—1. A bracelet or other article consisting of a strip of metal coiled spirally and crimped or corrugated lengthwise of the coil, the ends of the coil being connected so as to form a continuous ring.

2. A bracelet or other article consisting of a strip of metal coiled spirally and crimped or corrugated lengthwise of the coil, a longitudinally-elastic core within said coiled strip, and means for securing the ends of the core relatively to the ends of the metal strip, the ends of the coil being connected so as to form a continuous ring.

3. A bracelet or other article comprising a body consisting of a coiled strip of metal, a casing consisting of two separable clasp-sections each receiving one end of the said body, and each provided with an interior transverse partition having an aperture, and a longitudinally-elastic core extending within said body and having its respective ends passed through said apertured partitions and secured on the opposing or inner sides of the partitions.

655,026. WRENCH. LOWELL SMITH, Wheeler, Mich. Filed Mar. 3, 1900. Serial No. 7,183. (No model.)



Claim.—1. In a wrench, the combination of a shank and a stationary jaw, of a movable jaw slidably mounted on said shank, a strip, and a wedge device between said strip and shank and having an operating-head projecting beyond the strip substantially in a plane passing longitudinally through said shank and strip, substantially as described.

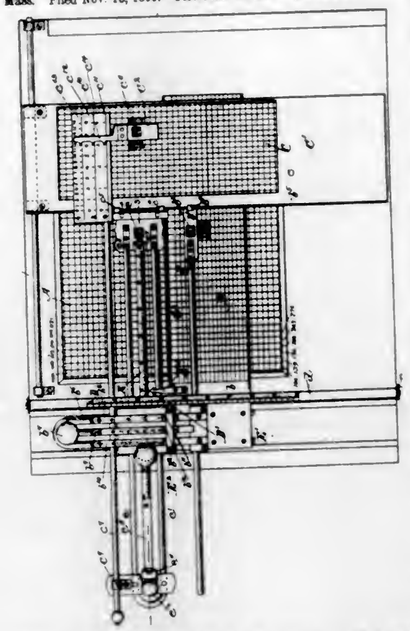
2. In a wrench, the combination of a shank, a stationary jaw, a strip having an inclined portion, a movable jaw having a hole through which said strip and shank pass, and a wedge between said shank and strip and having an operating-head provided with a hole through which said strip passes, substantially as described.

3. The combination with a stationary member, of a movable member slidable on the stationary member, a strip, and a wedge between said stationary member and strip and having relatively-long faces lying flat against said stationary member and one face of the strip and having an operating portion projecting beyond the opposite face of the strip, substantially as described.

4. In a wrench, the combination of a shank, a stationary jaw thereon, a handle thereon, a strip held by said jaw and handle from endwise movement and permitted to move laterally, a movable jaw having a hole through which said shank and strip pass, and a wedge between said shank and strip and having an operating-head provided with a hole through which said strip passes, substantially as described.

5. The combination of a stationary member, a movable member slidable on the stationary member, a strip secured at each end on said stationary member, and a wedge between said strip and stationary member and having an operating portion, substantially as described.

655,027. COMPUTING DEVICE. WALTER S. SMITH, Brookline, Mass. Filed Nov. 18, 1899. Serial No. 737,388. (No model.)



Claim.—1. In a computing device the combination of a single stationary table of computations, arranged in regular order in lines and columns, two main indicating-scales, one of which is arranged at one end of the table and is stationary, and the other of which is movable lengthwise the first-named scale and also crosswise it, lengthwise of the table and upon a right-angular line with respect to the fixed scale, and a product-finder movable with the movable scale over the table to a position which indicates in the table the product of two predetermined measurements.

2. In a computing device the combination of a table of computations arranged in regular order in lines and columns, two main indicating-scales, one of which is at a right angle to the other and movable with respect to the other, a product-finder movable over said table to a position determined by the movement of said indicating-scales and which position indicates in the table the product of two predetermined measurements, or a multiple thereof, and auxiliary tables prepared from said table of computations and an auxiliary scale and product finder for each auxiliary table.

3. In a computing device the combination of a table of computations arranged in regular order in lines and columns, two main indicating-scales, one of which is at a right angle to the other and movable with respect to the other, a product-finder movable over said table to a position determined by the movement of said indicating-scales and which position indicates in the table the product of two predetermined measurements, or a multiple thereof, auxiliary tables prepared from said table of computations movable with respect to the said table and to each other and a scale and product finder for each auxiliary table.

4. In a computing device the combination of a single stationary table of computations, arranged in regular order in lines and columns, two series of independent, main, indicating-scales, one series being in a stationary position and arranged at one end of the table, the other series being movable both lengthwise and crosswise the fixed series, and a product-finder carried by the movable series, each series comprising two or more independent scales adapted to be independently used and whereby different results are obtained from the use of the same table.

5. In a computing device the combination of a table of computations arranged in regular order in lines and columns, two sets of main indicating-scales, one of which sets is at a right angle to the other and movable with respect to the other, a product-finder movable over said table to a position determined by the movement of one of each set of said sets of indicating-scales and which position indicates in the table the product of two predetermined measurements, or a multiple thereof, two auxiliary tables prepared from said table of computations, a movable product-finder for each auxiliary table and auxiliary scales for each auxiliary finder one for each of the main scales.

6. In a computing device the combination of a table of computations arranged in regular order in lines and columns, a stationary main scale at one side of said table, a slide movable lengthwise said main scale and a pointer mounted thereon, a cross-slide mounted upon said first-named slide to be movable across the main scale at a right angle thereto and over the table, a main scale carried by said slide to be movable therewith, a product-finder carried by said slide and a stationary pointer to coöperate with the scale carried by said slide.

7. In a computing device the combination of a table of computations arranged in lines and columns, a stationary main indicating-scale, a slide movable lengthwise the stationary scale, a pointer on said slide, a slide carried by said first-named slide and movable therein at right angles to its path of movement, a main scale carried thereby, a product-finder also carried thereby, a pointer to coöperate with said second main scale, a bed attached to the first-named slide to be movable therewith, an auxiliary table mounted on said bed, an auxiliary scale mounted upon said first-named slide to be movable lengthwise it and an auxiliary product-finder movable over said auxiliary table and connected with the cross-slide to be actuated therewith, a bed attached to the cross-slide to be movable by it across the main computing-table, an auxiliary table mounted thereon, an auxiliary scale also mounted thereon, a product-finder independently movable across said last-named auxiliary table, having a pointer to coöperate with said last-named scale

8. In a computing device the combination of a table of computations arranged in order in lines and columns, a product-finder and scales by which it is adapted to be set, an auxiliary table movable up and down the table with the product-finder and connected with the product-finder or its slide to permit the lateral movement of one with respect to the other, an auxiliary table movable crosswise the main table by the product-finder or its slide and connected therewith in a manner to permit the product-finder to be movable lengthwise the same, an auxiliary product-finder for each auxiliary table and scales for governing the position of the same.

9. In a computing device the combination of a table of computations arranged in lines and columns, a movable product-finder and two or more sets of scales for governing its use, one set being arranged at a right angle to the other and movable with respect to the other and each additional scale of each set having its indicators of a different or multiplied arrangement as regards the first set, whereby the measuring capacity of the table is increased by multiplying its products to correspond to the multiplied scales.

10. In a computing device the combination of a table of computations arranged in lines and columns, a movable product-finder, rotary scale-supports and scales of different arrangements mounted upon the surfaces of said supports.

11. The combination in a computing device of a table of computations arranged in lines and columns, an auxiliary table movable lengthwise the first-named table, a second auxiliary table movable crosswise the first table and the first auxiliary table, independent product-finders for the main table and for each of the auxiliary tables and a series of main and auxiliary scales having different values for determining the position to which the product-finders shall be moved.

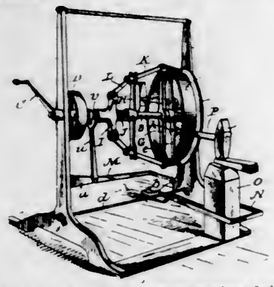
12. In a computing device the combination of a table of computations, arranged in regular order in lines and columns, two series of independent, main, indicating-scales, one series being arranged at one end of the table, and the other series being movable both lengthwise and crosswise it and the table, each series comprising two or more independent scales, adapted to be independently used, and a single product-finder, common to all the scales of the movable series, and movable with them, as and for the purposes set forth.

655,028. ROTARY DRAW-BLOCK HAMMER. WILLIAM SNELLER, Ionia, Kans., assignor of one-half to John G. McClun and Leonard Viergiver, Cawker City, Kans. Filed Mar. 24, 1900. Serial No. 10,031. (No model.)

Claim.—1. In a hammering-machine, the combination of the rotating shaft, the hammer-carrying head carried by the shaft, the helve pivoted in said head, the hammer attached to the helve, the guideway in the helve, the curved bar supported by said head and extending through the guideway, the spring mounted upon the curved bar and pressing upon the top of the helve, the adjusting-nut on the curved bar at the opposite side of the helve, and the anvil.

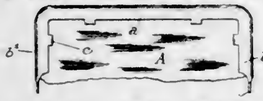
2. In a hammering-machine, the combination with the hammer carrying head having the hammer-helve pivoted therein, of the guide way in the helve, the bar supported by such head and extending through the guideway, the spring carried by such head and seated against the helve, and the adjusting-nut on the bar.

3. In a hammering-machine, the combination of the rotating plate and its axial shaft, the wrist-pin secured to the plate, the helve connected to the wrist-pin, the guideway in the helve, the headpiece secured to the rotating plate, the curved bar secured to the headpiece and extending through the guideway, the spring seated between the headpiece and the helve, the nut on the free end of the curved bar, the spring between the nut and the helve, the hammer on the helve, and the anvil.



4. In a hammering-machine, the combination of the frame, the anvil, the rotating shaft, the crank, the friction-wheel, the clutch devices, the lever connected to the clutch devices, the treadle connected to the lever, the rotating plate on the shaft carried by the friction-wheel, the wrist-pins, the pivoted helves provided with the guideway, the curved bar supported between the rotating plate and the friction-wheel and extending through the guideway, the cushion-springs engaging the helve, the hammer on the helve, and the adjusting-nut on the curved bar, substantially as set forth.

655,029. **POCKET-BOOK, SATCHEL, &c.** CHARLES SPIER, New York, N. Y. Filed June 8, 1900. Serial No. 19,523. (No model.)



Claim.—A pocket-book, satchel, or analogous receptacle, provided with hinged frame-bars each having parallel members, *a*, and *b*, between which the edge of the pocket-forming material is received; and tang-hooks secured to and extending from one of said members in approximately the same plane therewith, thence through the pocket-forming material, and bent back in a return direction with their ends between the said parallel members.

655,030. **ROD-PACKING.** HENRIK C. STRING, Chicago, Ill. Filed June 30, 1898. Serial No. 684,824. (No model.)

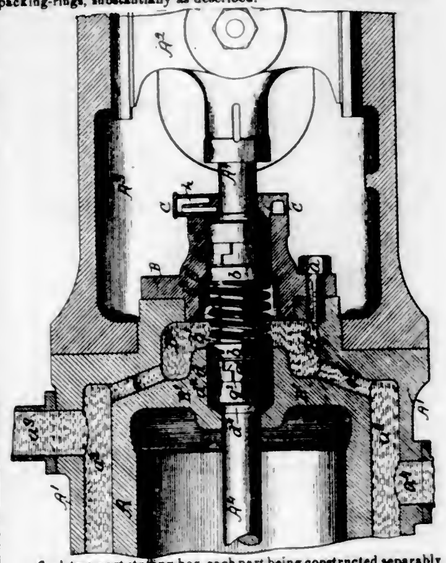
Claim.—1. A two-part stuffing-box, having a complete set of packing-rings in each part and separated by a chamber or space surrounding the piston-rod and opening into the water-space between the engine-cylinder and its inclosing jacket, substantially as described.

2. A two-part stuffing-box, having a complete independent set of packing-rings in each part and separated by a chamber or space the inclosing walls of which are exterior to that of the walls of the stuffing-box and having passages communicating with the water-space between the engine-cylinder and its inclosing jacket, whereby a continuous circulation of a cooling fluid is brought in contact with the piston-rod common with that of the circulation between the cylinder and inclosing jacket, substantially as described.

3. The combination with a stuffing box, of a chamber or space dividing the stuffing-box into two parts and opening into the water-space between the engine-cylinder and jacket, whereby a continuous circulation of a cooling fluid is brought in contact with the piston-rod, substantially as described.

4. A stuffing-box, divided into two parts, one part of which is formed in the end of the engine-cylinder, the other part being detachable and independent therefrom, said two parts being separated by a chamber or space communicating with the water-space of the engine-cylinder and inclosing jacket and providing for a continuous circulation of a cooling fluid having contact with the piston-rod, substantially as described.

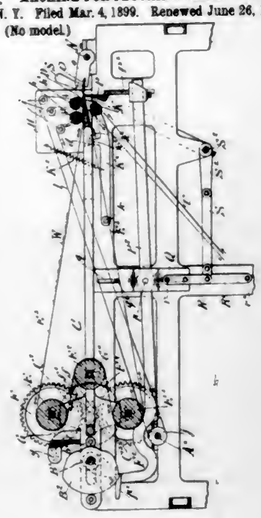
5. The combination in a two-part stuffing-box, one part of which is formed in the engine-cylinder and the other part independent and detachable therefrom, the dividing chamber or space providing for a continuous circulation of a cooling liquid, the independent sets of packing-rings, the piston-rod, and the spring, encircling said rod and having its respective ends bearing on and compressing each set of packing-rings, substantially as described.



6. A two-part stuffing-box, each part being constructed separably from the other and provided with independent sets of packing-rings, a liquid-cooling chamber, formed between and exteriorly to the walls of each of said parts and through which a continuous circulation is maintained, the piston-rod, working therethrough, and a coiled spring, located outside of either part of the stuffing-box and encircling the piston-rod but supported out of contact therewith and in position to exert a tension on both sets of packing-rings alike and hold the same in place and automatically compensate for the wear so as to uniformly maintain a tight joint, substantially as described.

7. The combination with a stuffing-box, divided transversely by a liquid-cooling chamber or space whose walls are exterior to the walls of the box proper, of the two sets of packing-rings located on each side of and separated from each other by said cooling-chamber, the piston-rod, and the coiled spring, located in said cooling-chamber and encircling said rod and adapted to divide its tension, and press against the two sets of packing-rings alike, substantially as described.

655,031. **MACHINE FOR PLUCKING PELTS.** JOHN W. SUTTON, New York, N. Y. Filed Mar. 4, 1899. Renewed June 26, 1900. Serial No. 21,683. (No model.)



Claim.—1. In a machine for plucking pelts, the combination, with a stretcher-bar, and guide-rollers disposed triangularly, of a taut endless apron guided over said rollers and stretcher-bar, mechanism for transmitting motion to said rollers and apron, and means for removing the hairs projecting at the parting, in front of the edge of the stretcher-bar, substantially as set forth.

2. In a machine for plucking pelts, the combination, with a reciprocating carriage, a stretcher-bar thereon, guide-rollers, a taut endless apron guided over said rollers, mechanism for reciprocating said carriage and stretcher-bar, and mechanism for transmitting motion to said rollers and apron, of means for making a parting in the fur, at the edge of the stretcher-bar such means comprising a rotary brush arranged at the leading side of the stretcher-bar corresponding with the ingoing portion of the pelt, and means for removing the hairs projecting at the parting in front of the edge of the stretcher-bar, substantially as set forth.

3. In a machine for plucking pelts, the combination, with a movable stretcher-bar over which the pelt is passed, of a pair of brushes arranged both on the same side of the stretcher-bar, one of said brushes continuously acting on the pelt and the other intermittently on the same, and the intermittently-acting brush being located in front of the continuously-acting brush, and means for rotating said brushes, substantially as set forth.

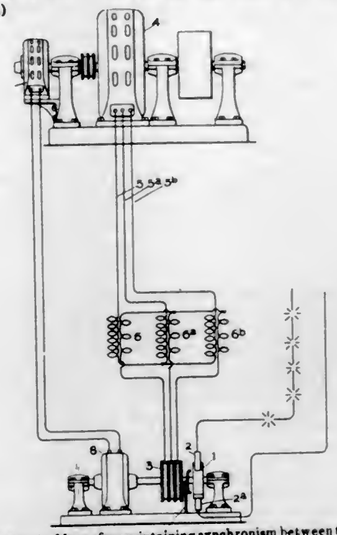
4. In a machine for plucking pelts, the combination, with a movable stretcher-bar, of a movable rotary separating-brush, and means in connection with said stretcher-bar and brush for producing the movement of said brush simultaneously with the stretcher-bar to and away from said stretcher-bar, substantially as set forth.

5. In a machine for plucking pelts, the combination, with a movable stretcher-bar over which the pelt passes, of a brush at one side of the stretcher-bar, and a movable rotary separating-brush at the opposite side of the stretcher-bar, substantially as set forth.

6. In a machine for plucking pelts, the combination, with a movable stretcher-bar over which the pelt passes, of a rotary brush mounted in stationary bearings at one side of the stretcher-bar, a movable rotary separating-brush arranged at the opposite side of the stretcher-bar, means in connection with the stretcher-bar for producing the simultaneous movement of the movable rotatable separating-brush, and means for removing the stiff or water hairs caused to project by said brushes, substantially as set forth.

7. In a machine for plucking pelts, the combination, with a movable stretcher-bar over which the pelt passes, of means for brushing back the fur, a movable rotary separating-brush and a stationary guard-comb arranged in advance of the knife-edge of the stretcher-bar at the receding side of the same, said brush being arranged between the stretcher-bar and guard-comb substantially as set forth.

655,032. **RECTIFYING ALTERNATING CURRENTS.** ELIHU THOMSON, Swampscott, Mass., assignor to the General Electric Company, of New York. Filed Mar. 28, 1900. Serial No. 10,436. (No model.)



Claim.—1. Means for maintaining synchronism between two electric machines connected in the same alternating-current circuit, comprising a synchronous motor and a source of supply therefor delivering impulses of higher frequency but constant relation to the currents in said circuit.

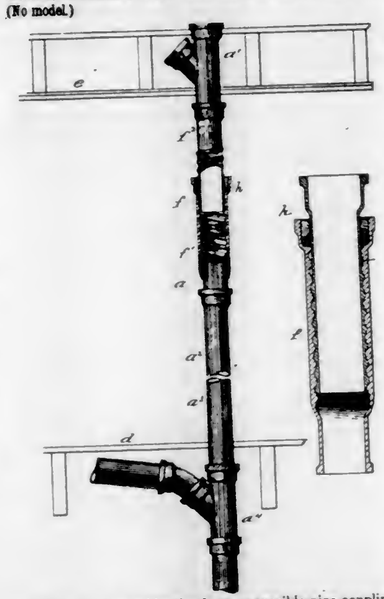
2. Means for rectifying an alternating current, comprising a commutator, a synchronous motor operating the same, and a source of electric alternation impelling the motor having a higher rate than that of the current to be rectified.

3. Means for rectifying alternating currents, comprising a commutator, a synchronous motor for driving the same, and a generating-station supplying the rectifier and the motor, the latter having the higher rate of electric alternation.

4. The combination in an alternating-current circuit, of a rectifying device, a synchronous motor for keeping it in step with the impulses to be rectified, and means for preserving proximity of phase between the rectifier and the impulses.

5. Means for rectifying alternating currents, comprising a polyphase circuit, a rectifier, a local distribution-circuit for the rectified current, in operative relation thereto, a synchronous motor operating the rectifier, and a source of higher frequency for the motor, said source being maintained in synchronous operation with the polyphase circuit.

655,033. **EXPANSION-COUPLING FOR PIPES.** WILLIAM VANDERMAN, Willimantic, Conn. Filed May 14, 1900. Serial No. 16,592. (No model.)



Claim.—1. In combination in an expansible pipe-coupling, a section having a spigot end, a hub end and a threaded enlargement between these parts, and a second section having its spigot end threaded, and a hub end.

2. In combination in an expansible pipe-coupling, a section having a spigot end, a hub end for the reception of a packing, a threaded part located between these ends, and a second section having its spigot end threaded to fit the thread on the opposite section, and a packing located in the hub end of the first-mentioned section, to pack the joint between the two sections.

3. In combination in an expansible pipe-coupling, two telescoping sections, the socket-section having a spigot end, an enlarged hub end and a threaded inner surface between the ends, and an inner section having a threaded spigot end and a hub end.

655,034. **BOWLING-ALLEY.** EDMOND VERSTRAETE, Chicago, Ill. Filed Apr. 2, 1900. Serial No. 11,188. (No model.)

Claim.—1. In a bowling-alley, a bowling-ball runway in combination with ball-actuated means for preventing the balls from coming in contact with each other at the player's end of said runway, substantially as described.

2. In a bowling-alley, the combination of a bowling-ball runway, ball-actuated means for preventing the balls from coming in contact with each other at the player's end of said runway, and means for

retarding the rotation of the ball-separating means, thereby diminishing the speed of the balls, substantially as described.



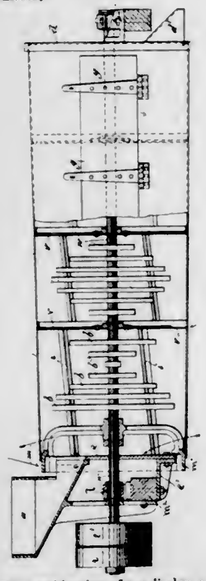
3. In a bowling-alley, a bowling-ball runway, in combination with ball-actuated means provided with two or more arms for preventing the balls from coming in contact with each other at the player's end of said runway, substantially as described.

4. In a bowling-alley, the combination of a bowling-ball runway, ball-actuated means provided with two or more arms for preventing the balls from coming in contact with each other at the player's end of said runway, and means for causing any one of said arms to assume a substantially-perpendicular position, substantially as described.

5. In a bowling-alley, the combination of a revoluble member provided with two or more arms, and a bowling-ball runway, the parts named being so combined that one of the arms referred to will prevent a ball coming from behind it from coming in contact with a ball in front of it, substantially as and for the purpose described.

6. In a bowling-alley, the combination of a ball-actuated revoluble member, provided with two or more arms, and a bowling-ball runway, the parts named being so combined that one of the arms of said revoluble member will lie in the path of a ball moving along said runway, substantially as, and for the purpose, described.

655,085. MACHINE FOR TREATING LIBERIAN COFFEE-FRUIT BEFORE SHELLING SAME. HENDRICK L. VERWOHLT, Pasoeroean, Island of JAVA, assignor to the Maatschappy ter Exploitatie Vande Constructiewinkel de Bromo, same place. Filed Nov. 26, 1897. Serial No. 660,173. (No model.)

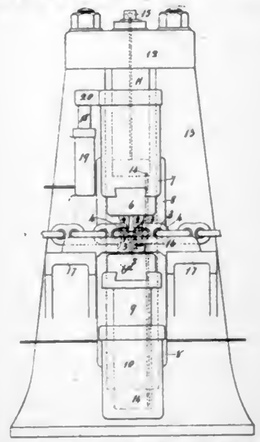


Claim.—1. The combination of a cylinder, a series of transverse partitions therein dividing its interior into a series of transverse compartments, said partitions having openings to permit the passage of material successively from one compartment to another, and a series of longitudinally-disposed inwardly-projecting ribs attached to the cylinder within each compartment; with a shaft extending axially through the cylinder and a spirally-arranged series of beaters attached tangentially to the shaft within each compartment; and means for oppositely rotating the shaft and cylinder, for the purpose and substantially as described.

2. In a machine for treating coffee-beans, the combination of a rotary cylinder, partitions therein dividing it into a series of transverse communicating compartments, and longitudinally-inclined ribs in each compartment; with a rotary shaft extending axially through the cylinder and a series of tangential spirally-arranged beaters secured to said shaft within each compartment adapted to cooperate with the ribs to loosen the hulls of the coffee-beans, said cylinder rotating oppositely to the beaters, for the purpose and substantially as described.

3. The combination of a rotary conical cylinder, a series of partitions forming transverse compartments therein, said partitions having openings at their peripheries to permit the passage of material from one compartment to another, a series of longitudinally-inclined inwardly-projecting ribs attached to the cylinder, with a rotary shaft extending through the cylinder, a spiral series of tangential beaters attached to the shaft within each compartment adapted to cooperate with the ribs and loosen the hulls by a stroking action, and means for rotating said cylinder oppositely to the said shaft and beaters for the purpose and substantially as described.

655,086. APPARATUS FOR PUNCHING OR SHEARING CHAINS, &c. JOHN W. WAILES, Whitley, England. Filed Dec. 20, 1899. Serial No. 740,976. (No model.)



Claim.—1. In shearing or punching apparatus, the combination of punches arranged to press on each side of a web of metal, and mechanism for moving one punch toward the other, the latter punch being mounted on a movable abutment; substantially as described.

2. In punching or shearing apparatus, the combination of punches arranged to press on each side of a web of metal, mechanism for moving one punch relatively to the other, and mechanism for moving both punches simultaneously transverse to the metal; substantially as described.

3. In apparatus for shearing or punching thin webs or sections of metal from thicker sections of metal the combination of a punch carried at one end of a slide a second punch movably supported at the other end of the slide, means for moving the second punch relatively to the first punch and means for moving both punches and the slide in a direction transversely to the thicker section of metal substantially as described.

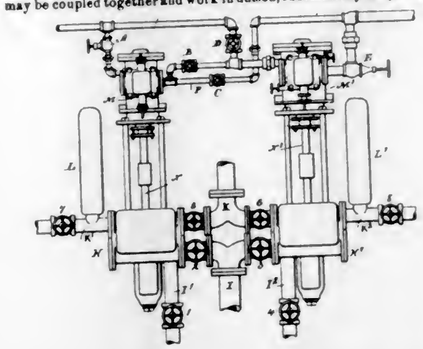
4. In apparatus for shearing or punching thin webs of metal from thick sections of metal the combination of a punch carried on a slide, a presser carried on the same slide, means for operating the punch, and means for holding the presser against the thin web of metal while being sheared substantially as described.

655,087. PUMP. FREDERICK M. WHEELER, Montclair, N. J., assignor to the Geo. F. Blake Manufacturing Company, New York, N. Y. Filed Oct. 21, 1897. Serial No. 655,932. (No model.)

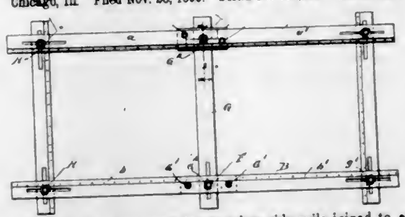
Claim.—1. The combination with the steam-cylinders, of pumps operatively connected to the steam-cylinders, inlet water-pipes and exit water-pipes to each pump and valves in the said inlet and exit pipes whereby the pumps may be operated simultaneously yet independently of one another, or either one be operated alone, an inlet-pipe and branches connecting both pump-cylinders, an exit-pipe and branches also connecting both pump-cylinders and valves in said branch pipes whereby both pumps may be coupled together and work in unison, substantially as specified.

2. The combination with the steam-cylinders, of pumps operatively connected to the steam-cylinders, inlet water-pipes and exit water-pipes to each pump and valves in the said inlet and exit pipes, and air vessels connected to the exit-pipes whereby the pumps may

be operated simultaneously yet independently of one another, or either one be operated alone, an inlet-pipe and branches connecting both pump-cylinders, an exit-pipe and branches also connecting both pump-cylinders, and valves in said branch pipes whereby both pumps may be coupled together and work in unison, substantially as specified.



655,038. LACE-CURTAIN STRETCHER. JAMES C. WHIPPLE, Chicago, Ill. Filed Nov. 20, 1899. Serial No. 737,606. (No model.)



Claim.—1. In a lace-curtain stretcher, side rails joined to end rails, a center bar connecting the side rails of the stretcher, such side rails comprising, on one side of the frame, bars secured together by a connecting-plate provided with a central opening and diagonally-extending openings near the ends thereof, bolts passing through such end openings and through the bars, respectively, nuts on the bolts and washers, and a bolt passing through the central opening in the plate, through the cross-bar which is secured to the connection on the other side rail and between the ends of the side bars, and on the other side of the frame-bars joined together by a connecting-plate provided with openings therethrough, bolts passing through such openings and through the bars, an additional bolt passing through such plate, the bar connecting the side rail with the side rail on the opposite side of the frame, and between the ends of the side bars, and washers and nuts on the several bolts; substantially as described.

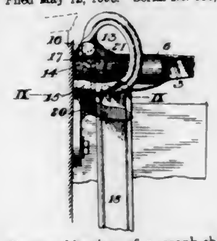
2. In a curtain-stretcher, a side rail comprising bars joined together at adjacent ends and a cross-bar attached to the under side of the side rail and extending across the frame to the other side rail thereof, such bars joined by a connection consisting of a plate having a central opening and additional openings therethrough, adjacent to the ends thereof, the central opening being substantially circular and at least one of the remaining openings being slot-shaped and extending radially to the turning-point of the rail ends, bolts extending through the several openings in the plate and through the side bars, the bolt in the central opening also extending through the cross-bar, with washers and nuts on the several bolts, with the plate interposed between the side rail and the cross-bar; substantially as described.

655,039. TRUNK-HANDLE. BERTNIE M. WILHITE and FRANK A. HOYT, Gordon, Nebr. Filed Nov. 11, 1899. Serial No. 736,623. (No model.)



Claim.—A trunk-handle, comprising a spring-strap, pins secured to the ends thereof and projecting transversely beyond the same, and housings secured to the trunk, in which are received the ends of the strap, the housings being formed with slots or guideways inclined with respect to the trunk and projected toward each other and the pins being mounted to move in the slots or guideways so that outward strain on the handle will cause the end portions to move diagonally outward and toward each other, thus bowing outward the spring-strap.

655,040. COUPLING-UNLOCKING DEVICE. JOHN WILLISON, Cleveland, Ohio, assignor to The National Malleable Castings Company, same place. Filed May 12, 1898. Serial No. 680,512. (No model.)



Claim.—1. The combination of a crank-shaft, a lifting-lever journaled adjacently to the shaft and adapted to engage and raise the same, a gravity cam or latch, and a fulcrum against which an angled portion or extension of the shaft bears, and which causes the shaft to turn; substantially as described.

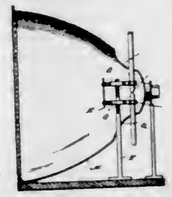
2. The combination of a crank-shaft, a lifting-lever journaled adjacently to the shaft, a gravity cam or latch, a fulcrum against which an angled portion or extension of the shaft bears, and a ledge or shelf adjacent to said extension; substantially as described.

3. The combination of a crank-shaft, a lifting-lever journaled adjacently to the shaft, a gravity cam or latch, a fulcrum against which an angled portion or extension of the shaft bears, a ledge or shelf adjacant to said extension, and an arc-shaped slot through which the shaft passes; substantially as described.

4. The combination of a crank-shaft having an angled portion or extension 14, a bracket having a slot through which the shaft passes; a ledge 15, a fulcrum 16 and a latch and lifting-lever journaled adjacently; substantially as described.

5. A lifting-arm having a hooked end, and a bracket having a fulcrum and an adjacent rib or shelf between which and the fulcrum the hook fits; substantially as described.

655,041. LIGHT ESPECIALLY ADAPTED FOR ELECTRIC HEADLIGHTS FOR LOCOMOTIVES. WILLIAM H. YOUNG and STEPHEN A. HAYES, Sanford, Fla. Filed Mar. 14, 1900. Serial No. 8,573. (No model.)



Claim.—1. In a headlight or the like, the combination with a source of light, and a lens or glass, of a transparent or translucent body interposed between the source of light and the lens or glass and nearer to the source of light and adapted to protect the same from the heat of the light.

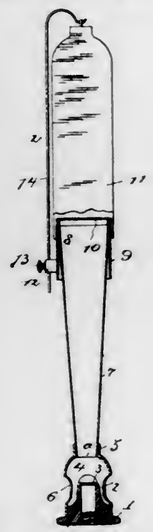
2. In a headlight or the like, the combination with a source of light and a glass or lens, of a disk or plate of mica interposed between the source of light and said glass, substantially as described.

3. In a headlight or the like, the combination of a reflector, a glass therefor, carbons extending into said reflector, a standard, arms secured to said standard and provided with guide-sockets for said carbons, and a transparent plate secured to said arms and interposed between said carbons and said glass or lens, substantially as described.

4. In an arc-headlight or the like, the combination of a reflector, a glass or lens therefor, carbons extending into said reflector, a standard or support extending into said reflector, two arms secured to said support or standard and projecting forwardly therefrom, a plate of mica secured to the forward ends of said arms, said arms being provided between said plate of mica and said standard with sockets for said carbons, substantially as described.

655,042. INCANDESCENT GAS-BURNER. LEE T. ALTON, New York, N. Y. Filed Aug. 5, 1897. Serial No. 647,145. (No model.)

Claim.—1. An improved burner for the purposes herein described, comprising a gas-inlet adapted to be detachably secured to a suitable fixture and having an upwardly-extending nozzle terminating in a crown having a multiplicity of apertures, and an initial gas and air mixing chamber secured to the exterior of the gas-inlet the upper portion of which is laterally contracted immediately above said apertured crown, an annular flange of less diameter than and surmounting said chamber, said flange being formed integral with said chamber, a conical tube, a burner-tip surmounting said conical tube, the lower and smaller end of said conical tube projecting into said annular flange and being located closely adjacent and immediately above said apertured crown, thereby forming an intercepting-shoulder between which and said apertured crown the air and gas can uninterruptedly pass, substantially as and for the purposes herein described.

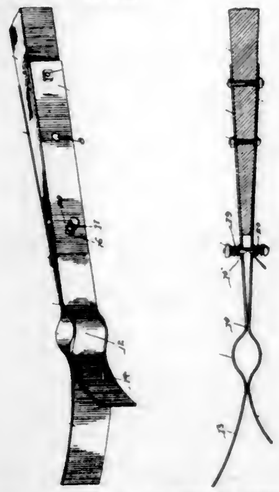


2. The combination in an incandescent gas-burner, of an inverted substantial conical tube of gradually-increasing diameter, a burner-tip consisting of a sieve-like diaphragm located over the top of said conical tube from which depends a ring, as 9, surrounding the said tube, a mantle surrounding and surmounting said burner-tip and ring, the stud 12 secured to the ring 9, a rod 14 secured to the stud and supporting the mantle, an initial mixing device comprising a dome-shaped and apertured chamber laterally contracted at its apex, an inlet-nozzle having a multiplicity of apertures located beneath the apex of the dome and admitting gas to said chamber, air-ports opening into said chamber, a short annular flange extending upwardly from the contracted section of said chamber and formed integrally therewith said flange interiorly diverging outwardly at an angle coincident with the outer surface of said conical tube, the lower end of said conical tube fitting snugly in and extending a short distance within said short tube or nipple immediately above and closely adjacent said apertures thereby forming a shoulder intercepting the admission of gas and air into said conical tube between which and said apertures there is no intercepting medium, substantially as described.

3. An improved burner for producing incandescent gas-light, comprising an upwardly-diverging hollow cone surmounted by another upwardly-diverging hollow cone, both cones forming a tube of gradually-increasing diameter, the lower cone having walls of a greater angle than the upper cone, the lower end of the lower cone being of lesser diameter than the upper portion, the top of the upper cone being of greater diameter than any other portion of the two cones, substantially as described.

4. In an incandescent gas-burner, the combination with an initial gas and air mixing chamber provided with an annular lip or nipple, of an upwardly-diverging hollow cone surmounted by another upwardly-diverging hollow cone, the two cones forming a tube of gradually-increasing diameter, the lower cone having walls of a greater angle than the upper cone, a burner-tip surmounting the upper portion of said combined tube, and the lower or smallest end of said tube extending into said annular nipple forming an intercepting-shoulder to the admission of gas and air into said tube, substantially as described.

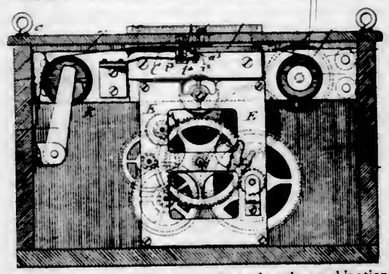
655,048. CANE-STRIPPER. NOAH ASBELL, Thomasville, Ga., assignor of one-half to William Howze, Cairo, Ga. Filed Feb. 13, 1900. Serial No. 5,102. (No model.)



Claim.—1. As an article of manufacture, a cane-stripper consisting of a handle portion having a tapered end, and a spring-plate secured against each of the converging faces of the handle portion, each of the plates being bowed outwardly at a point beyond the extremity of the handle and then brought inwardly and touching and then curved outwardly, one of the plates extending beyond the other and the upper and lower edges of the plates being sharpened at the bowed portions of the plates.

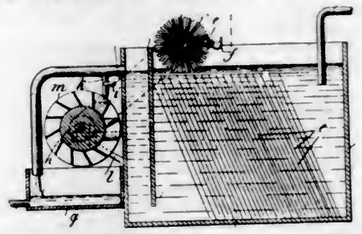
2. As an article of manufacture, a cane-stripper consisting of a handle having a tapered end, spring-plates secured against the converging faces of the tapered portion and extending therebeyond, said plates being bowed in opposite directions beyond the end of the handle and being brought to touch at both sides of the bows, and the plates being curved away from each other beyond the bows and one extending beyond the other, said plates having alining perforations between the bows and the end of the handle, a bolt passed through the perforations and provided with a nut, and helical springs disposed upon the bolt at the outer sides of the plates, whereby the nut may be manipulated to vary the pressure between the plates.

655,044. WORKMAN'S TIME-RECORDER. AUGUST AUF DER HEYDE, Jersey City, N. J., assignor of one-half to William Hoffman, New York, N. Y. Filed Sept. 23, 1899. Serial No. 731,386. (No model.)



Claim.—In a watchman's time-recorder, the combination of a casing having an opening in its top plate, a hinged door for closing said opening, means for locking said door, a table in the casing, below said opening, a graduated record-strip passing over said table, a clock-train connected with said strip, a marking device consisting of a stationary index having an opening, a flat spring, a punch mounted on the spring and guided through an aperture in the table and into the opening in said index, and acted upon by said spring, an upwardly-extending pin mounted on said spring adjacent to the punch and extending through the top plate, and means for acting on and depressing said pin on the closing of the door, substantially as set forth.

655,045. SEPARATOR. SEBASTIAN BENDER, Allmendingen, Germany. Filed Nov. 21, 1899. Serial No. 737,966. (No model.)



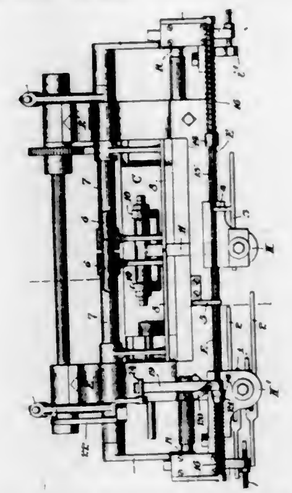
Claim.—1. In an apparatus for the recovery of oil from condensation-water by filtration, a brush rotatably supported so as to be immersed in the oil collected at the surface of the water, in combination with means for receiving the oil from the rotary brush and means for actuating the latter by the filtered water, substantially as described and shown.

2. In an apparatus for the recovery of oil from condensation-water by filtration, in combination with the rotary brush immersed in the oil collected at the surface of the water a brush-like wiper fitted to a channel for receiving the oil from said rotary brush, and means for actuating the latter by the filtered water, substantially as described and shown.

3. In an apparatus for the recovery of oil from condensation-water by filtration in combination with the rotary brush and with the brush-like wiper and guide-channel for leading away the oil recovered, a water-wheel or its equivalent, driven by the filtered water issuing on same, for actuating the rotary brush, substantially as described and shown.

4. In an apparatus for the recovery of oil from condensation-water in combination, a vessel receiving the condensation-water, filtering means in said vessel causing the oil to collect at the surface of the water, a rotary brush supported so as to be immersed in the oil at the surface of the water, a channel with brush-like wiper for receiving the oil from the rotary brush, a water-wheel or its equivalent driven by the filtered water issuing from the vessel serving for actuating the rotary brush, substantially as described and shown.

655,046. THREAD-FEEDING MECHANISM FOR STRAIGHT-KNITTING MACHINES. JOSEPH H. BENNOR, Macon, Ga., assignor to the Bibb Manufacturing Company, same place. Filed Jan. 30, 1899. Serial No. 703,761. (No model.)



Claim.—1. In a straight-knitting machine wherein both sets of knitting-needles are simultaneously in action during the knitting operation, the combination with two oppositely-disposed rows of needles, knitting-cams therefor, and pattern mechanism for rendering said needles active or inactive in respect to the knitting-cams, of two independent thread-carriers movable in the same longitudinal path and including each a partially-rotatable spindle provided with two thread-guiding eyes, means for guiding said carriers, means for actuating the same, and means whereby said carriers are independently released and engaged at opposite ends of the machine together with means for partially rotating the spindle of each carrier at predetermined intervals.

2. In a straight-knitting machine wherein both sets of knitting-needles are simultaneously in action during the knitting operation, the combination with two oppositely-disposed rows of needles, knitting-cams therefor, and pattern mechanism for rendering said needles active or inactive in respect to the knitting-cams, of two independent thread-carriers movable in the same longitudinal path and including each a partially-rotatable spindle provided with two thread-guiding eyes, means for guiding said carriers, a movable latch-arm on one of the cam-carriers, and means whereby said arm is independently engaged with and disengaged from said thread-carriers at opposite ends of the machine together with means for partially rotating the spindle of each carrier at predetermined intervals.

3. In a straight-knitting machine of the character described, the combination with the needle-bed, needles and cam-carrier, of a plurality of independent thread-carriers, means for guiding the same longitudinally of the machine, a movable latch-arm on the cam-carrier adapted to engage and disengage said thread-carriers at predetermined intervals, at opposite ends of the machine, cam-bars movable into and out of the path of said latch-arm, supports for said bars, and means whereby said supports are independently actuated.

4. In a knitting-machine of the character described, the combination with the needle-bed, needles, and cam-carrier, of two independent thread-carriers, means for guiding the same longitudinally of the machine, a movable latch-arm on the cam-carrier, adapted to engage and disengage said thread-carriers at predetermined intervals, cam-bars movable into and out of the path of said latch-arm, rock-frames supporting said bars, shafts for said frames, pattern mechanism, and independent connections between the same and said shafts.

5. In a straight-knitting machine wherein both sets of knitting-needles are simultaneously in action during the knitting operation, the combination with two oppositely-disposed rows of needles, knitting-cams therefor, and pattern mechanism for rendering said needles active or inactive in respect to the knitting-cams, of two independent thread-carriers movable in the same longitudinal path, means for guiding said carriers, means for actuating the same, yielding abutments for said thread-carriers, and means whereby the latter carriers are independently released and engaged at opposite ends of the machine.

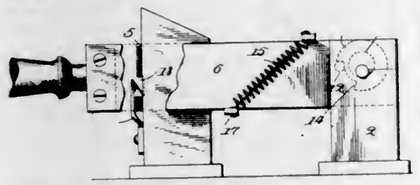
6. In a knitting-machine of the character described, the combination with the needle-bed, needles and cam-carriage, of two independent thread-carriers movable in the same longitudinal path, means for guiding said carriers, means for actuating the same, yielding abutments for said carriers, means whereby the idle carrier is locked against the action of its abutment, and means whereby the said carriers are independently released and engaged at opposite ends of the machine.

7. In a knitting-machine of the character described, the combination with the needle-bed, needles and cam-carriage, of two independent thread-carriers, means for guiding the same, means whereby said carriers are independently released and engaged at opposite ends of the machine, spring-actuated abutments for said carriers, a latch-lever adapted to automatically engage and lock the idle carrier against the action of its abutment, pattern mechanism, and connections between the same and the latch-lever.

8. In a knitting-machine of the character described, the combination with the needle-bed, needles and cam-carrier, of two independent thread-carriers, means for guiding the same longitudinally of the machine, a movable latch-arm on said carrier, adapted to engage and disengage said thread-carriers at predetermined intervals, cam-bars movable into and out of the path of said latch-arm, rock-frames supporting said bars, shafts for said frames, pattern mechanism, independent connections between the same and said shafts, spring-actuated abutments for said carriers, a latch-lever adapted to automatically engage and lock the idle carrier against the action of its abutment, and connections between the pattern mechanism and said latch-lever.

9. In a knitting-machine of the character described, the combination with the needle-beds, needles and cam-carriages, of two independent thread-carriers H, H', whereof each includes a partially-rotatable spindle having a pinion and duplex thread-guide, the carrier H' being provided with two racks 1 having extensions 2, and the carrier H being provided with a single rack, stops with which said racks coact means for supporting and operating said stops at predetermined intervals, means for guiding said carriers, means for actuating them, and means whereby said carriers are independently released and engaged at opposite ends of the machine.

655,047. QUICK-BREAK ELECTRIC SWITCH. WILLIAM F. BOSSERT, Utica, N. Y., assignor to the Bossert Electric Construction Company, same place. Filed Mar. 10, 1899. Serial No. 708,582. (No model.)



Claim.—1. In an electric switch the combination with terminals, of main and auxiliary blades adapted to bridge the terminals, a spring having connection with the auxiliary blade and adapted to throw it, means for placing said spring under tension, a latch adapted to hold the auxiliary blade against the action of the spring and means for moving the auxiliary blade bodily from the influence of the latch.

2. In an electric switch the combination with terminals of main and auxiliary blades adapted to bridge the terminals, a spring connection between the main and auxiliary blades, means for placing said spring under tension, and means for shifting the auxiliary blade longitudinally as an entirety with relation to both the terminals comprising an eccentric upon the pivot-pin of the bridging-blades, and means for oscillating said eccentric.

3. In an electric switch, the combination with terminals, of means for bridging the terminals, a spring adapted to exert pressure upon the bridging means to throw it, a catch adapted to hold the bridging means against the tendency of said spring, means for moving the bridging means bodily and longitudinally from the terminals, means for releasing the latch comprising an eccentric on the pivot-pin of the bridging means, and means for oscillating said eccentric.

4. In an electric switch the combination with terminals of main and auxiliary blades adapted to bridge the terminals, a spring connection between the main and auxillary blades and adapted to be placed under tension by the movement of the main blade to throw the auxiliary blade, a latch adapted to hold the auxiliary blade against the action of the spring, and means for moving the auxiliary blade bodily from the influence of the latch.

5. In an electric switch the combination with terminals of main and auxiliary blades adapted to bridge the terminals, a spring having connection with the auxiliary blade and adapted to throw it, means for placing said spring under tension, a latch adapted to hold the auxiliary blade against the action of the spring, and means for shifting the auxiliary blade bodily and longitudinally from the influence of the latch.

6. In an electric switch, the combination with terminals of main and auxiliary blades adapted to bridge the terminals, a spring having connection with the auxiliary blade, and adapted to throw it, means for placing said spring under tension, a latch adapted to hold the auxiliary blade against the action of the spring, and means for moving the auxiliary blade longitudinally from the influence of the latch comprising a pivot-pin mounted in bearings and having an eccentric portion upon which the auxiliary blade is mounted.

7. In an electric switch of the snap-action type, switch and auxiliary blades, a spring connection between the blades and adapted to have its tension increased when throwing the switch-blade, a catch for holding the auxiliary blade until the actuating-spring has acquired a given tension, and means controlled by the movement of the switch-blade to shift the auxiliary blade bodily and effect a release thereof from the catch or restraining means when the said spring has reached the predetermined tension.

8. In an electric switch of the snap-action type, switch and auxiliary blades, a spring connection between the blades and adapted to have its tension increased when throwing the switch-blade, a catch for holding the auxiliary blade until the actuating-spring has acquired a given tension, and an eccentric connection between the blades to cause a bodily movement of the auxiliary blade when throwing the switch-blade and effect a release thereof from the catch when the spring has acquired the predetermined tension.

9. In an electric switch of the snap-action type, switch and auxiliary blades, a spring connection between the blades and adapted to have its tension increased when throwing the switch-blade, a catch for holding the auxiliary blade until the actuating-spring has acquired a given tension, and a hinge-pin mounted in bearings and having the switch-blade secured to turn therewith, and having an eccentric portion upon which the auxiliary blade is mounted.

10. In an electric switch of the snap-action type, switch and auxiliary blades, a spring connection between the blades and adapted to have its tension increased when throwing the switch-blade, a catch for holding the auxiliary blade until the actuating-spring has acquired a given tension, and an eccentric mounting for the blades and adapted to turn with the switch-blade to cause a longitudinal movement of the auxiliary blade and release it from the catch when the spring has acquired a given tension.

11. In an electric switch of the snap-action type, switch and auxiliary blades, a spring connection between the blades and adapted to have its tension increased when throwing the switch-blade, a catch for holding the auxiliary blade until the actuating-spring has acquired a given tension, and a hinge-pin having an intermediate eccentric portion upon which the auxiliary blade is loosely mounted, and having the members of the switch-blade secured to the journals or reduced terminals of the hinge-pin to turn therewith.

12. In an electric switch of the snap-action type, switch and auxiliary blades, a spring connection between the blades and adapted to have its tension increased when throwing the switch-blade, a catch for holding the auxiliary blade until the actuating-spring has acquired a given tension, means controlled by the movement of the switch-blade to shift the auxiliary blade bodily and effect a release thereof from the catch or restraining means when the said spring has reached the predetermined tension, and coöperating means between the blades to give an initial movement to the auxiliary blade when released and upon the continued movement of the switch-blade.

13. In an electric switch of the snap-action type, switch and auxiliary blades, a spring connection between the blades and adapted to have its tension increased when throwing the switch-blade, a catch for holding the auxiliary blade until the actuating-spring has acquired a given tension, an eccentric connection between the blades to cause a bodily movement of the auxiliary blade when throwing the switch-blade and effect a release thereof from the catch when the spring has acquired the predetermined tension, and means between the auxiliary blade and said eccentric connection to start the auxiliary blade when released and upon the continued movement of the switch-blade.

14. In an electric switch of the snap-action type, switch and auxiliary blades, a spring connection between the blades and adapted to have its tension increased when throwing the switch-blade, a catch for holding the auxiliary blade until the actuating-spring has acquired a given tension, a hinge-pin mounted in bearings and having the switch-blade secured to turn therewith, and having an eccentric portion upon which the auxiliary blade is mounted, a washer or plate mounted upon the eccentric portion of the hinge-pin and having a shoulder, and a pin or stop projecting from the auxiliary blade to be engaged by the said plate.

15. In an electric switch of the snap-action type, switch and auxiliary blades, a spring connection between the blades and adapted to have its tension increased when throwing the switch-blade, a catch for holding the auxiliary blade until the actuating-spring has acquired a given tension, a hinge-pin having an intermediate eccentric portion upon which the auxiliary blade is loosely mounted, and having the members of the switch-blade secured to the journals or reduced terminals of the hinge-pin to turn therewith, a pin applied to the auxiliary blade and projecting from the sides thereof forming stops, and washers or plates mounted upon the end portions of the eccentric and having cut-away parts forming shoulders to engage with the aforesaid stops to overcome the inertia of the auxiliary blade and start it when released.

16. In an electric switch, the combination with terminals, of main and auxiliary blades for bridging the terminals, said main and auxiliary blades being independently pivoted, spring connections between the main and auxiliary blades, whereby when the main blades are rotated they will place the spring connection under tension, a latch engaging the auxiliary blade, and means for moving the auxiliary blade from engagement with the latch.

17. In an electric switch, the combination with terminals of main and auxiliary blades for bridging the terminals, a common pivot rigidly connected with the main blades and having an eccentric portion upon which the auxiliary blade is mounted, a spring having connection with the auxiliary blade to throw it, means for placing said spring under tension and a latch adapted to hold the auxiliary blade against the tendency of the spring, said eccentric being adapted to draw the auxiliary blade from the latch when the eccentric is rotated as the main blades are raised.

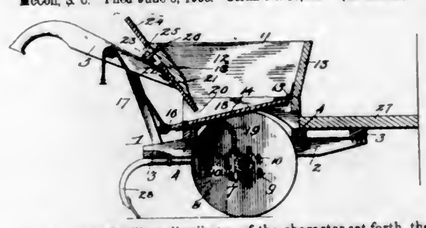
18. In an electric switch, the combination with terminals, of main and auxiliary blades for bridging the terminals, a common pivot rigidly connected with the main blades and having an eccentric portion upon which the auxiliary blade is mounted, a spring having connection with the auxiliary blade to throw it, means for placing said spring under tension, a latch adapted to hold the auxiliary blade against the tendency of the spring, said eccentric being adapted to draw the auxiliary blade from the latch when the eccentric is rotated as the main blades are raised, and projections carried by the main and auxiliary blades and adapted to mutually engage and start the auxiliary blade.

19. In an electric switch, the combination with terminals, of main and auxiliary blades for bridging the terminals, a common pivot rigidly connected with the main blades and having an eccentric portion upon which the auxiliary blade is mounted, spring connections between the main and auxiliary blades, and a latch adapted to hold the auxiliary blade against the tension of said spring connections as the main blades are raised, said eccentric being adapted to draw the auxiliary blade from the latch when the eccentric is rotated to a given point.

20. In an electric switch, the combination with terminals of main and auxiliary blades for bridging the terminals, a common pivot rigidly connected with the main blades and having an eccentric portion upon which the auxiliary blade is mounted, spring connections between the main and auxiliary blades, a latch adapted to hold the auxiliary blade against the tension of said spring connections as the main blades are raised, said eccentric being adapted to draw the auxiliary blade from the latch when the eccentric is rotated to a given point, and projections carried by the main and auxiliary blades and adapted to mutually engage and start the auxiliary blade.

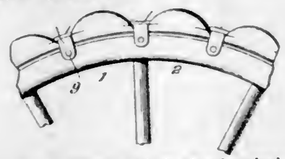
21. In an electric switch the combination with terminals of main and auxiliary blades adapted to bridge the terminals, a spring having connection with the auxiliary blade and adapted to throw it, means for placing said spring under tension, and means for moving the auxiliary blade bodily from the terminals, comprising an eccentric on the pivot-pin of the main and auxiliary blades, and means for oscillating said eccentric.

655,048. FERTILIZER-DISTRIBUTER. WELCOME A. BREEDEN, McColl, S. C. Filed June 8, 1900. Serial No. 19,606. (No model.)



Claim.—In a fertilizer-distributer of the character set forth, the combination, with a frame, of a hopper mounted thereon and having a discharge-opening at its rear, side guards depending from and forming continuations of the side walls of the hopper, a vibrating feeder-plate hinged or pivoted at its forward end to the hopper and arranged to move between said side guards, supporting-wheels carrying tappet devices, a downwardly and rearwardly curved contact-piece upon the free end of the feeder-plate to engage said tappet devices, means for elevating the feeder-plate to close the bottom of the hopper, and a vertically-movable valve or gate at the rear of the hopper and cooperating with the feeder-plate to control the discharge of fertilizer therefrom, substantially as described.

655,049. CUSHION-TIRE. OSCAR P. BROWN, Providence, R. I., assignor to Webber G. Kendall, same place. Filed Dec. 22, 1899. Serial No. 741,319. (No model.)



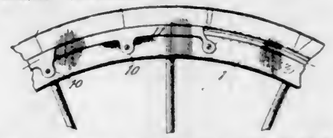
Claim.—1. The combination with the rim of a wheel, of a rubber tire consisting of a band having projections on its outer periphery and a cavity extending through its inner periphery up into each of said projections, and a series of independent staples for attaching the tire to the wheel.

2. The combination with the rim of a wheel, of a rubber tire consisting of a band provided on its outer periphery with a series of projections, and a series of independent staples, having their ends provided with oppositely-extending wings, for securing the tire onto the wheel.

3. The combination with the rim of a wheel, of a rubber tire consisting of a band provided with a series of projections on its outer periphery, a series of independent securing devices for attaching the tire onto the wheel, and a protecting covering for each screwing device between the projections.

4. The combination with the rim of a wheel, of a rubber tire consisting of a band having projections on its outer periphery and a cavity in each projection, extending through its inner periphery, a lining of canvas on the inner periphery of the tire, and independent staples for securing the tire to the wheel.

655,050. CUSHION-TIRE. OSCAR P. BROWN, Providence, R. I., assignor to Webber G. Kendall, same place. Filed Mar. 17, 1900. Serial No. 9,055. (No model.)



Claim.—1. An elastic or cushion tire, consisting of a base provided with a tread of less width than the base, said tire being provided with a series of transverse openings forming seats for independent tire-attaching devices, and with transverse vertical slits intersecting said openings, whereby the attaching devices may be guided and seated in their respective seats.

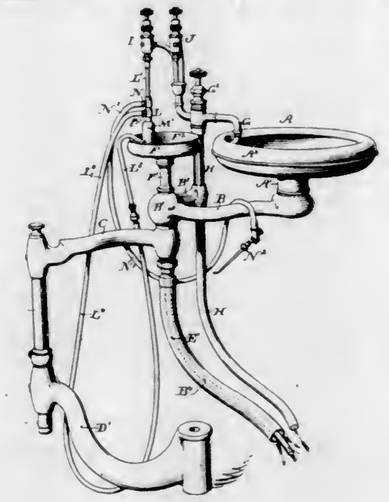
2. An elastic or cushion tire, consisting of a base and a tread, the latter being of less width than the former, said tire being provided with a series of transverse openings, independent tire-attaching devices seated in said openings, said attaching devices being provided with side flanges to engage the projecting sides of the base of the tire.

3. An elastic or cushion tire, consisting of a base provided with a tread of less width than the base, and said tread being provided with a series of transverse openings to form seats for attaching devices, and a series of clips or yokes having their arms provided with oppositely-extending branches formed with the upper flanges, said flanges being adapted to engage the side edges of the base of the tire.

4. The combination with the rim of a wheel, of an elastic tire consisting of a base provided with a tread of less width than the base, said tire being provided with a series of transverse openings to form seats for independent detaching devices, a lining of canvas secured to said base, and independent attaching devices provided with side flanges to engage the projecting sides of the base, whereby the tire is secured onto the wheel.

5. The combination with the rim of a wheel, of an elastic tire, consisting of a base and a tread, the tread being of less width than the base, said tire being provided with a series of transverse openings or seats intersected by slits, a canvas lining secured to said base, and independent attaching devices provided with side flanges, whereby the tire is secured onto the wheel.

655,051. FOUNTAIN-SPITTOON. ARTHUR W. BROWNE, New York, N. Y., assignor to The S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed Oct. 17, 1898. Serial No. 693,719. No model.



Claim.—1. The combination, in a fountain-spittoon, of the tubular horizontal supporting-arm swiveled at its inner end to a support a spittoon-bowl connected to the outer end of said supporting-arm the discharge from said bowl being by way of said supporting-arm, a rigid bracket projecting laterally from the inner end of said supporting-arm, a supply-pipe supported by said bracket, and an overhanging water-sprayer carried by said supply-pipe and projecting into said spittoon-bowl for supplying the same with water, substantially as and for the purpose set forth.

2. The combination, in a fountain-spittoon, of the tubular horizontal supporting-arm formed with a chamber at its inner end, a spittoon-bowl carried at its outer end, a discharge-pipe communicating with said chamber of the supporting-arm, a pocket or cup formed in said chamber, and a smaller discharge-pipe inside the discharge-pipe and communicating with said pocket, substantially as and for the purpose set forth.

3. The combination, in a fountain-spittoon, of a tubular horizontal supporting-arm formed with a chamber at its inner end, a spittoon-bowl carried at its outer end, a discharge-pipe communicating with said chamber, a pocket or cup formed in said chamber, a smaller discharge-pipe inside said discharge-pipe communicating with said pocket or cup, and an open tube projecting above said chamber and communicating therewith, substantially as and for the purpose set forth.

4. The combination in a fountain-spittoon of a tubular horizontal supporting-arm having horizontal turning connection at its inner end with a support, a spittoon-bowl supported at the outer end of said arm, a glass-holder bowl supported at the inner end of said arm, a vertical supply-pipe also supported by said arm independently of said spittoon-bowl and said glass-holder bowl, a water-sprayer for supplying the spittoon-bowl with water, and a faucet or faucets overhanging said glass-holder bowl, both the water-sprayer and the faucet or faucets being connected to said vertical supply-pipe, and having no connection with either the spittoon-bowl or the glass-holder bowl, substantially as and for the purpose set forth.

5. The combination, in a fountain-spittoon, of a tubular horizontal supporting-arm formed with an enlargement at its inner end and having horizontal turning connection at said inner end with a support, a discharge-pipe connected to said enlargement, a spittoon-bowl carried at the outer end of said supporting-arm, a glass-holder bowl connected to and communicating with said enlargement and supported above the same, a bracket projecting laterally from said enlargement, a vertical supply-pipe supported by said bracket, a water-sprayer for supplying the spittoon-bowl with water connected to said supply-pipe and having no connection with said bowl, and a faucet or faucets connected to said supply-pipe and overhanging said glass-holder bowl, substantially as and for the purpose set forth.

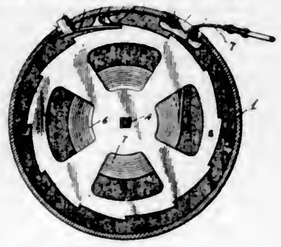
6. In a fountain-spittoon, the combination of the bowl, an overhanging water-sprayer for supplying the same with water and consisting of a curved jet-tube, and a guard-plate secured to said jet-tube in rear of its outlet-opening, and extending at an angle to the side of said bowl, substantially as and for the purpose set forth.

7. In a fountain-spittoon, the combination of the bowl consisting of the circular body, the outwardly-curved side, the flat and almost-horizontal bottom having a downward pitch toward the center of the bowl of approximately three and one-half degrees (3½), the inwardly and downwardly curved portion near the center of the bowl, and the tubular neck, and a spiral jet tube or nozzle inside the bowl and adapted to deliver a jet of water against the outwardly-curved side of the bowl, which serves to collect and convey the water in a spiral direction toward the almost-flat bottom of the bowl, said bottom serving to spread and retard the water and cause it to flow toward the center of the bowl, the passage of the water down the tubular neck of the bowl being accelerated by the inwardly and downwardly curved portion of the bowl near the center thereof, whereby the bowl may be completely and noiselessly flushed by the use of but a comparatively-small amount of water under low pressure, substantially as described.

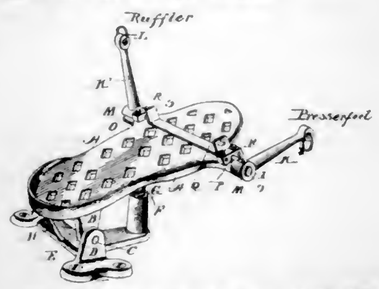
8. In a spittoon-bowl which from top to bottom is circular in horizontal section, the combination of the outwardly-curved side, the conical bottom declined toward the axis of the bowl at an angle of substantially three and one-half degrees (3½°) therewith, a circular discharge-orifice formed by an annular flange curved tangentially from said bottom, concentric with and terminating below the same, and means to discharge a jet of water within and against the side of the bowl and tangentially with respect to said bowl, substantially as and for the purpose described.

655,052. TAPE-MEASURE. JOHN J. BRUNELLO, Maybeury, W. Va. Filed Jan. 11, 1900. Serial No. 1,123. (No model.)

Claim.—A tape-measure comprising the case, provided with an opening in its periphery, a frame fitted to the walls of the opening and secured in the casing, guide-rollers journaled in said frame, the reel-shaft journaled in said casing, the tape-reel secured within the casing to said reel-shaft, an operating-handle secured to the said shaft, a ratchet-wheel secured to said shaft, a spring-dog pivoted in the casing, one end of said dog being engaged with the stud that projects through an aperture in the casing, while the other end of the dog is adapted to engage the ratchet-wheel, and the measuring-tape secured to said reel and leading out from the casing between the said rollers, substantially as and for the purpose set forth.



655,053. TREADLE. EDWARD BURKE, New York, N. Y., assignor to The Union Special Sewing Machine Company, Chicago, Ill. Filed June 6, 1899. Serial No. 719,620. (No model.)



Claim.—1. A treadle or the like having a connection with an operative part of a machine, and a second connection to another operating part of a machine, and a movable part on said treadle adapted alternately to engage one or the other of said operative connections; substantially as described.

2. A treadle having an arm in engagement with an operating part of a machine, and another arm in engagement with a second operating part of a machine, and a movable part on the treadle adapted by a sidewise movement of the foot of the operator to engage one or the other of said arms, and hold it rigid with the treadle; substantially as described.

3. A treadle provided with parts in operative engagement with machine parts, and a movable part on said treadle for alternately throwing said treadle parts into respectively rigid engagement with the treadle proper, substantially as described.

4. A treadle having a foot portion, arms pivoted thereto, and means on the foot portion for alternately engaging the arms and holding them respectively rigid with the foot portion, substantially as described.

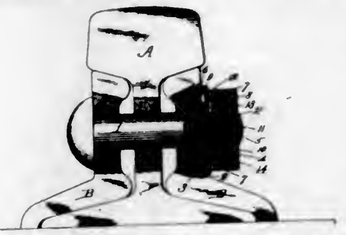
5. A treadle having a foot portion, arms pivoted thereto, and a slide on the foot portion adapted to engage one or the other of said arms and hold it rigid with the foot portion, substantially as described.

6. A treadle having a foot portion, a slide thereon having projections, arms pivoted on said foot portion and having means to receive the projections to hold one or the other of said arms rigid with the foot portion, substantially as described.

7. A treadle for sewing-machines having arms pivoted thereto, one connected to the presser-foot of the machine and the other to the ruffler thereof, and a movable part adapted to engage one or the other of said arms and hold it rigid with the treadle; substantially as described.

655,054. NUT-LOCK. ANDREW M. BURLESON, Kansas City, Kans. Filed May 14, 1900. Serial No. 16,573. (No model.)

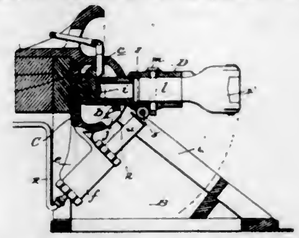
Claim.—1. A nut-lock, comprising a grooved bolt, a plate thereon provided with outwardly-projecting spring-arms, a washer fitting upon the bolt and provided with a tongue engaging said groove, and with openings through which said spring-arms project, and a nut screwed upon the bolt and provided with a circular series of ratchet-teeth adapted for engagement with said spring-arms, substantially as described.



2. A nut-lock, comprising a grooved bolt, a plate thereon provided with outwardly-projecting spring-arms, a washer fitting upon the bolt and interlocked with said plate and provided with holes through which the spring-arms of the latter project, and with a tongue engaging the groove of the bolt, and a nut screwed upon the bolt and provided with a circular series of ratchet-teeth, adapted for engagement with said spring-arms, substantially as described.

3. A nut-lock, comprising, a bolt having a groove intersecting its threads, a plate fitting thereon and provided with outwardly-projecting spring-arms, and with a tongue engaging said groove, a spring-metal washer fitting upon the bolt and having that portion immediately surrounding the latter flaring outward, and provided with a tongue engaging said groove and also flaring outward slightly, and provided with openings through which said spring-arms project, and a nut provided with a circular series of ratchet-teeth to engage said spring-arms, and adapted to press the flaring portion of the washer back into the plane of the body portion and thereby cause the latter to bind tightly upon the bolt and against the opposite walls of the groove, substantially as described.

655,055. LOCOMOTIVE-PILOT COUPLING. GEORGE W. BUTCHER, San Antonio, Tex. Filed Feb. 8, 1900. Serial No. 4,520. (No model.)



Claim.—1. In means for raising locomotive-pilot draw-bars, a draw-head, a cylinder held in a portion of and fixed with respect to the draw-head and connected with a fluid-pressure supply, a piston working in the cylinder, and a connection between the piston and bar.

2. In means for raising locomotive-pilot draw-bars, a draw-head or main casting, a vertically-swinging draw-bar connected thereto, a cylinder held in and fixed to the draw-head or main casting and connected with a fluid-pressure supply, a piston working in the cylinder, and a connection between the piston and bar.

3. In means for raising locomotive-pilot draw-bars, a draw-head or main casting having a tubular portion, a cylinder secured in said tubular portion and connected with a source of fluid-pressure supply, a vertically-swinging draw-bar connected to the draw-head, a piston working in the cylinder, and a connection between the piston and the draw-bar, substantially as specified.

4. In a locomotive-pilot coupling, a draw-head, a fluid-pressure cylinder, a draw-bar pivotally connected to the draw-head, a piston working in the cylinder, a connection between the piston and draw-bar, and a latch for automatically engaging and holding the draw-bar in its raised position, substantially as specified.

5. In a locomotive-pilot coupling, a draw-head, a fluid-pressure cylinder, a draw-bar pivoted in the draw-head and having an upwardly-extending beveled lug, a piston working in the cylinder and connected with the draw-bar, and a gravity-latch arranged to be raised by the lug of the draw-bar and adapted to drop in front of the same, substantially as specified.

6. In a locomotive-pilot coupling, a draw-head, a fluid-pressure cylinder, a draw-bar pivoted in the draw-head and having an upwardly-extending beveled lug, a piston working in the cylinder and connected with the draw-bar, and a gravity-latch arranged to be raised by the lug of the draw-bar and adapted to drop in front of the same, and a transverse rock-shaft having an arm connected with said latch, substantially as specified.

7. In a locomotive-pilot coupling, a draw-head or main casting having a tubular portion, a fluid-pressure cylinder secured in said tubular portion, a draw-bar pivoted in the draw-head and having an upwardly-extending beveled lug, a piston working in the cylinder and connected with the draw-bar, and a gravity-latch arranged in a vertical aperture in the draw-head and adapted to be raised by the lug of the draw-bar and drop in front of the same.

8. In a locomotive-pilot coupling, the combination of a chambered draw-head having coincident angular apertures in its side walls and an aperture in its top wall, a draw-bar pivoted in said draw-head and having an upwardly-extending beveled lug, a fluid-pressure cylinder, a piston working in said cylinder and connected with the draw-bar, a gravity-latch movable in the aperture in the top wall of the draw-head and adapted to automatically engage the lug of the draw-bar, and an auxiliary draw-bar support consisting of a transverse pin of angular form in cross-section removably arranged in the coincident apertures in the side walls of the draw-head, substantially as specified.

9. In a locomotive-pilot coupling, the combination of a draw-head or main casting, a cylinder held in and fixed thereto and connected to a source of fluid-pressure supply, a piston working in said cylinder, and a piston-rod connected in a swiveled manner to the piston and also connected to the draw-bar, substantially as specified.

10. In a locomotive-pilot coupling, the combination of a draw-head or main casting having a tubular portion, a draw-bar pivotally connected to the draw-head, a fluid-pressure cylinder comprising a tube arranged in the tubular portion of the draw-head or main casting, and heads secured on said tube at opposite ends of the tubular portion of the casting, a piston working in the cylinder, and a connection between the piston and draw-bar.

11. In a locomotive-pilot coupling, the combination of a draw-head, a fluid-pressure cylinder, a draw-bar pivoted in the draw-head, a piston working in the cylinder and having a tubular extension passed through one of the heads thereof, a piston-rod swiveled in the tubular extension of the piston and connected to the draw-bar, and a suitable closure for the outer end of the tubular extension, substantially as specified.

12. In a locomotive-pilot coupling, the combination of a draw-head or main casting having a tubular portion, a draw-bar pivotally connected to the draw-head, a fluid-pressure cylinder comprising a tube arranged in the tubular portion of the draw-head or main casting, and heads secured on said tube at opposite ends of the tubular portion of the casting, a piston working in the cylinder and having a tubular extension passed through one of the heads thereof, a piston-rod swiveled in the tubular extension of the piston and connected to the draw-bar, and a suitable closure for the outer end of the tubular extension, substantially as specified.

13. In a locomotive-pilot coupling, the combination of a draw-head, a fluid-pressure cylinder, a draw-bar pivoted in the draw-head, a piston working in the cylinder and having a tubular extension passed through one of the heads thereof, a piston-rod interposed between the piston and draw-bar and connected to the latter and having a groove in its portion within the tubular extension, and cross-bars connected to said tubular extension and resting in the groove of the rod, substantially as specified.

14. In a locomotive-pilot coupling, the combination of a locomotive, a draw-head, a draw-bar pivoted in said draw-head so as to swing vertically, and brace-rods journaled at their outer ends in bearings and having slotted portions at their inner ends arranged parallel to and receiving lateral projections on the draw-bar; substantially as specified.

655,056. BOTTLE-STOPPER. THOMAS J. BUTLER, Kearny, N. J. Filed Sept. 28, 1899. Serial No. 731,934. (No model.)



Claim.—1. The combination, with the tubular neck of a bottle, of a head on said neck, provided with a laterally-extending duct or opening and a downwardly-extending duct or opening in communication with the tubular neck, and a stopper removably arranged in said lateral duct or opening, the inner portion of said head, and the stopper, being constructed to permit the gas from the liquid in the bottle to entirely surround the portion of the stopper directly across

the opening of the neck, and provide an equal pressure on the surrounding surface of the stopper, substantially as and for the purposes set forth.

2. The combination, with the tubular neck of a bottle, of a head on said neck, provided with a laterally-extending duct or opening and a downwardly-extending duct or opening in communication with the tubular neck, a stopper removably arranged in said lateral duct or opening, and a head on said stopper having a cupped surface on its under side, the inner portion of said head, and the stopper, being constructed to permit the gas from the liquid in the bottle to entirely surround the portion of the stopper directly across the opening of the neck, and provide an equal pressure on the surrounding surface of the stopper, substantially as and for the purposes set forth.

3. The combination, with the tubular neck of a bottle, of a head on said neck, provided with a laterally-extending and tapering duct or opening and a downwardly-extending duct or opening in communication with the tubular neck, and a tapered stopper removably arranged in said lateral duct or opening, the inner portion of said head, and the stopper, being constructed to permit the gas from the liquid in the bottle to entirely surround the portion of the stopper directly across the opening of the neck, and provide an equal pressure on the surrounding surface of the stopper, substantially as and for the purposes set forth.

4. The combination, with the tubular neck of a bottle, of a head on said neck, provided with a laterally-extending and tapering duct or opening and a downwardly-extending duct or opening in communication with the tubular neck, a tapered stopper removably arranged in said lateral duct or opening, and a head on said stopper having a cupped surface on its under side, the inner portion of said head, and the stopper, being constructed to permit the gas from the liquid in the bottle to entirely surround the portion of the stopper directly across the opening of the neck, and provide an equal pressure on the surrounding surface of the stopper, substantially as and for the purposes set forth.

5. The combination, with the tubular neck of a bottle, of a head on said neck, formed with a chamber, a pair of laterally-extending ducts or openings, a downwardly-extending duct or opening in communication with the tubular neck, and a stopper removably arranged in said laterally-extending ducts or openings, the inner portion of said head, and the stopper, being constructed to permit the gas from the liquid in the bottle to entirely surround the portion of the stopper directly across the opening of the neck, and provide an equal pressure on the surrounding surface of the stopper, substantially as and for the purposes set forth.

6. The combination, with the tubular neck of a bottle, of a head on said neck, formed with a chamber, a pair of laterally-extending ducts or openings, a downwardly-extending duct or opening in communication with the tubular neck, a stopper removably arranged in said laterally-extending ducts or openings, and a head on said stopper having a cupped surface on its under side, the inner portion of said head, and the stopper, being constructed to permit the gas from the liquid in the bottle to entirely surround the portion of the stopper directly across the opening of the neck, and provide an equal pressure on the surrounding surface of the stopper, substantially as and for the purposes set forth.

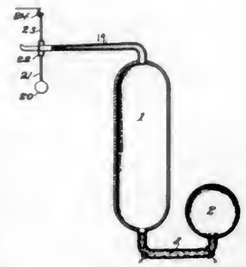
7. The herein-described bottle-stopper, consisting, essentially of an enlargement a^3 on the neck of a bottle, provided with an inner chamber a^4, a pair of laterally-extending openings a^6 and a^7 having tapering surfaces, a means of communication from said chamber a^4 with the mouth of the neck of the bottle, and a balanced stopper b removably arranged in said openings a^6 and a^7, having tapering surfaces b' and b^6, b^7 and b^8, all arranged, substantially as and for the purposes set forth.

8. The herein-described bottle-stopper, consisting, essentially, of an enlargement a^3 on the neck of a bottle, provided with an inner chamber a^4, a pair of laterally-extending openings a^6 and a^7 having tapering surfaces, a means of communication from said chamber a^4 with the mouth of the neck of the bottle, a stopper b removably arranged in said openings a^6 and a^7, having tapering surfaces b' and b^6, b^7 and b^8, all arranged, as set forth, and a head b^9 on said stopper having a cupped surface b^9, substantially as and for the purposes set forth.

655,057. THERMOSTAT AND ALARM CIRCUIT CONTROLLED THEREBY. HENRY G. CARLETON, New York, N. Y., assignor to the Carleton Electric Company, same place. Filed Sept. 8, 1899. Serial No. 729,796. (No model.)

Claim.—1. In a fire-alarm apparatus the combination of an electric circuit including a source of electric energy and suitable alarm mechanism, a thermostat comprising two hermetically-closed chambers containing a gaseous substance and of unequal thickness, a circuit-closer controlled thereby, and circuit-terminals leading from the source of energy to and controlled by the circuit-closer, substantially as described.

2. In a fire-alarm apparatus the combination of an electric circuit including a source of electric energy and suitable alarm mechanism, a thermostat comprising two hermetically-closed chambers containing a gaseous substance and of unequal thickness, a fluid circuit-closer controlled thereby, and circuit-terminals leading from the source of energy to and controlled by the circuit-closer, substantially as described.



3. In a fire-alarm apparatus the combination of an electric circuit including a source of electric energy and suitable alarm mechanism, a thermostat comprising two hermetically-closed chambers containing a gaseous substance and of unequal thickness, a displaceable circuit-closer between said chambers, and circuit-terminals leading from the source of energy to and controlled by the circuit-closer, substantially as described.

4. In a fire-alarm apparatus the combination of an electric circuit including a source of electric energy and suitable alarm mechanism, a thermostat comprising two hermetically-closed chambers containing a gaseous substance and of unequal thickness, a fluid circuit closer between said chambers, and circuit-terminals leading from the source of energy to and controlled by the circuit-closer, substantially as described.

5. In a fire-alarm apparatus the combination of an electric circuit including a source of electric energy and suitable alarm mechanism, a thermostat comprising two hermetically-closed chambers containing a gaseous substance and of unequal thickness, a circuit-closer of mercury controlled thereby, and circuit-terminals leading from the source of energy to and controlled by the circuit-closer, substantially as described.

6. In a fire-alarm apparatus the combination of an electric circuit including a source of electric energy and suitable alarm mechanism, a thermostat comprising two hermetically-closed chambers containing a gaseous substance and of unequal thickness, a circuit-closer of mercury between said chambers, and circuit-terminals leading from the source of energy to and controlled by the circuit-closer, substantially as described.

7. A thermostat comprising two coacting hermetically-closed chambers containing a gaseous substance and of unequal thickness and a circuit-closer controlled thereby, substantially as described.

8. A thermostat comprising two coacting hermetically-closed chambers containing a gaseous substance and of unequal thickness and a tubular connecting portion through which they coact and a circuit-closer controlled thereby, substantially as described.

9. A thermostat comprising two coacting hermetically-closed chambers of unequal thickness, a displaceable circuit-closer between said chambers, and circuit-terminals, controlled by said circuit-closer, for connection with a source of electric energy, substantially as described

10. A thermostat comprising two hermetically-closed chambers of unequal thickness and a tubular connecting portion through which they coact containing a displaceable circuit-closer, and circuit-terminals, controlled by said circuit-closer, for connection with a source of electric energy, substantially as described.

11. A thermostat comprising two hermetically-closed chambers of unequal thickness and a tubular connecting portion through which they coact containing a circuit-closer of mercury, and circuit-terminals, controlled by said circuit-closer, for connection with a source of electric energy, substantially as described.

12. A thermostat comprising two coacting hermetically-closed chambers containing a gaseous substance and of unequal thermal sensitiveness, the less-sensitive chamber being of larger size than the other and a circuit-closer controlled thereby, substantially as described.

13. A thermostat comprising two coacting hermetically-closed chambers containing a gaseous substance and of unequal thickness, the chamber of greater thickness being of larger size than the other and a circuit-closer controlled thereby, substantially as described.

14. A thermostat comprising two coacting hermetically-closed chambers, one of said chambers being provided with a portion more fragile than the body thereof, substantially as described.

15. A thermostat comprising two coacting hermetically-closed chambers of unequal thermal sensitiveness, the less-sensitive chamber being provided with a portion more fragile than the body thereof, substantially as described.

16. A thermostat comprising two coacting hermetically-closed chambers, one of said chambers being provided with a fragile tubular stem communicating with its interior, substantially as described.

17. A thermostat comprising two coacting hermetically-closed chambers of unequal thermal sensitiveness, the less-sensitive chamber being provided with a fragile tubular stem communicating with its interior, substantially as described.

18. A thermostat comprising two coacting hermetically-closed chambers of unequal thickness, the thicker chamber being provided with a portion more fragile than the body thereof, substantially as described.

19. A thermostat comprising two coacting hermetically-closed chambers of unequal thickness, the thicker chamber being provided with a fragile tubular stem communicating with its interior, substantially as described.

20. A thermostat comprising bulbs 1, 2, connected so as to coact, bulb 1 being provided with fragile tubular stem 19, substantially as described.

21. A thermostat comprising bulbs 1, 2, and connecting-tube 3, bulb 1 being provided with fragile tubular stem 19, substantially as described.

22. In a fire-alarm apparatus the combination of a main circuit including a source of electric energy and a drop-relay, an alarm-circuit controlled by the latter, a thermostat in the main circuit comprising two coacting hermetically-closed chambers containing a gaseous substance and of unequal thickness, a circuit-closer controlled by the thermostat, and circuit-terminals leading from the source of electric energy to and controlled by the circuit-closer, substantially as described.

23. In a fire-alarm apparatus the combination of a main circuit including a source of electric energy and a drop-relay, an alarm-circuit controlled by the latter, a thermostat in the main circuit comprising two coacting hermetically-closed chambers containing a gaseous substance and of unequal thickness, a circuit-closer between the chambers, and circuit-terminals leading from the source of electric energy and entering the thermostat in position for contact with said circuit-closer substantially as described.

24. In a fire-alarm apparatus the combination of a main circuit including a source of electric energy and a drop-relay, an alarm-circuit controlled by the latter, a thermostat in the main circuit comprising two coacting hermetically-closed chambers containing a gaseous substance and of unequal thermal sensitiveness, the less-sensitive chamber being provided with a portion more fragile than the body thereof, a device for engaging and breaking said fragile portion, fusible means for supporting said device out of breaking position, and a circuit-closer controlled by the thermostat, substantially as described.

25. In a fire-alarm apparatus the combination of a main circuit including a drop-relay, an alarm-circuit controlled by the latter, a thermostat in the main circuit comprising two coacting hermetically-closed chambers containing a gaseous substance and of unequal thermal sensitiveness, the less-sensitive chamber being provided with a portion more fragile than the body thereof, a device for engaging and breaking said fragile portion, fusible means for supporting said device out of breaking position, and a circuit-closer controlled by the thermostat, substantially as described.

26. In a fire-alarm apparatus the combination of a main circuit including a drop-relay, an alarm-circuit controlled by the latter, a thermostat in the main circuit comprising two coacting hermetically-closed chambers containing a gaseous substance and of unequal thermal sensitiveness, the less-sensitive chamber being provided with a fragile tubular stem communicating with its interior, a device for engaging and breaking said stem, fusible means for supporting said device out of breaking position, and a circuit-closer controlled by the thermostat, substantially as described.

27. In a fire-alarm apparatus the combination of a main circuit including a drop-relay, an alarm-circuit controlled by the latter, a thermostat in the main circuit comprising two coacting hermetically-closed chambers containing a gaseous substance and of unequal thermal sensitiveness, the less-sensitive chamber being provided with a portion more fragile than the body thereof, a device for engaging and breaking said fragile portion, fusible means for supporting said device out of breaking position, a fluid circuit-closer between the chambers, and circuit-terminals entering the thermostat in position for contact with said circuit-closer, substantially as described.

28. In a fire-alarm apparatus the combination of a main circuit including a drop-relay, an alarm-circuit controlled by the latter, a thermostat in the main circuit comprising two coacting hermetically-closed chambers containing a gaseous substance and of unequal thermal sensitiveness, the less-sensitive chamber being provided with a fragile tubular stem communicating with its interior, a device for engaging and breaking said stem, fusible means for supporting said device out of breaking position, a fluid circuit-closer between the chambers, and circuit-terminals entering the thermostat in position for contact with said circuit-closer, substantially as described.

29. In a fire-alarm apparatus the combination of a main circuit including a source of electric energy and a drop-relay, an alarm-circuit controlled by the latter, a thermostat in the main circuit comprising bulbs 1, 2, containing a gaseous substance and of unequal thickness, and tube 3 connecting said chambers and provided with a circuit-closing fluid and terminals 4, 5, leading from the source of electric energy and adapted to contact with said fluid, substantially as described.

30. In a fire-alarm apparatus the combination of a main circuit including a drop-relay, an alarm-circuit controlled by the latter, a thermostat in the main circuit comprising bulbs 1, 2, containing a gaseous substance and tube 3 connecting said chambers and provided with a circuit-closing fluid and terminals 4, 5, adapted to contact with said fluid, the bulb 1 being provided with fragile tubular stem 19, substantially as described.

31. In a fire-alarm apparatus the combination of a main circuit including a drop-relay, an alarm-circuit controlled by the latter, a thermostat in the main circuit comprising bulbs 1, 2, containing a gaseous substance and tube 3 connecting said chambers and provided with a circuit-closing fluid and terminals 4, 5, adapted to contact with said fluid, the bulb 1 being provided with fragile tubular stem 19, a weight 20 for engaging and breaking said stem, and fusible means for supporting said weight out of breaking position, substantially as described.

32. In a fire-alarm apparatus the combination of a main circuit including a source of electric energy and a drop-relay, an alarm-circuit controlled by the latter, a series of thermostats in the main circuit, each comprising two coacting hermetically-closed chambers containing a gaseous substance and of unequal thickness, a circuit-closer and an annunciator for each thermostat, and circuit-terminals leading from the source of electric energy to and controlled by the circuit-closer substantially as described.

33. In a fire-alarm apparatus the combination of a main circuit including a source of electric energy and a drop-relay, an alarm-circuit controlled by the latter, a series of thermostats in the main circuit, each comprising two coacting hermetically-closed chambers containing a gaseous substance and of unequal thickness, a circuit-closer between the chambers, and circuit-terminals leading from the source of electric energy and entering the thermostat in position for contact with said circuit-closer, and an annunciator for each thermostat substantially as described.

34. In a fire-alarm apparatus the combination of a main circuit including a source of electric energy and a drop-relay, an alarm-circuit controlled by the latter, a series of thermostats in the main circuit, each comprising two coacting hermetically-closed chambers containing a gaseous substance and of unequal thickness, a fluid circuit-closer between the chambers, and circuit-terminals leading from the source of electric energy and entering the thermostat in position for contact with said circuit-closer, and an annunciator for each thermostat substantially as described.

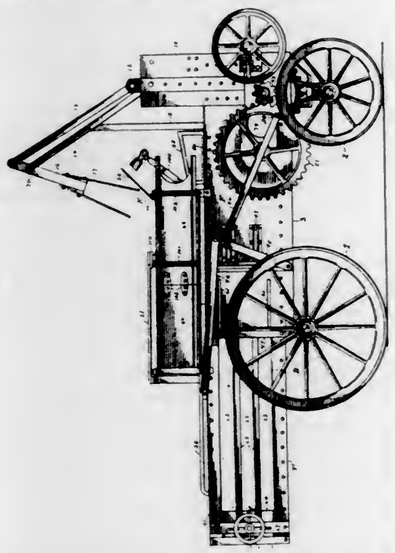
655,058. HAY-PRESS. JOHN W. CARNACK, Dyersburg, Tenn., assignor of one-fourth to Isaac H. Dawson, same place. Filed July 7, 1899. Serial No. 723,076. (No model.)

Claim.—1. In a baling-press, the combination with a frame, and the horizontally-reciprocating plunger, of uprights secured to the frame, feeder-bars pivoted at their rear ends to the uprights, a feeder-stem carrying blades and pivotally attached to the front end of the feeder-bars, and connecting-bars pivotally secured at their outer ends to the feeder-bars intermediate their pivotal points on the uprights and the feeder-stem, and at their lower ends having a sliding and pivotal connection with the plunger in a position to bring said connecting-bars to a vertical position when the plunger is at the forward end of its stroke, substantially as described.

2. In a baling-press, the combination with a frame and a slotted plunger, of uprights secured to the frame, feeder-bars pivoted directly to the uprights, a feeder-stem pivotally connected to the outer ends of the feeder-bars, boxes slidably secured to the plunger, and a shaft mounted in the boxes and passing through the connecting-bars and plunger-slot, substantially as described.

3. In a baling-press, the combination with a frame and a slotted plunger, of uprights secured to the frame, feeder-bars pivoted directly to the uprights, a feeder-stem pivotally connected to the outer ends of the feeder-bars, boxes slidably secured to the plunger, and a shaft mounted in the boxes and passing through the connecting-bars and plunger-slot, and springs normally holding the boxes at their rear positions, substantially as described.

4. In a baling-press the combination with the frame, and a slotted plunger, of a feeder-stem, arms supporting it, and pivotally connected to the frame, connecting-bars pivoted to said arms, boxes slidably secured to the plunger, and a shaft mounted in the boxes and passing through the connecting-bars and the slot in the plunger, rods projecting from said boxes parallel with the plunger, springs coiled about said rods, and clips secured to the plunger and bearing against the outer ends of the springs, substantially as described.



5. The combination in a baling-press, of a condenser comprising the side walls, each carrying a stationary pintle by means of which it is pivoted to the frame at one end, and composed of two sections pivotally connected at their inner ends, and means for moving the walls outward and inward on the stationary pintle, substantially as described.

6. The combination in a baling-press of a condenser comprising side walls hinged together in the center and to the frame at one end, a moving head or plunger and parallel vertical rollers on the moving plunger, straddling the hinged side walls, substantially as described.

7. The combination in a baling-press, of a condenser comprising side walls hinged to the frame at one end and together in the middle, a plunger, parallel vertical rollers journaled to the plunger, and embracing the side walls, a cross-head on the plunger, connecting-rods secured to the cross-head, a rocking arm pivoted at its outer end to the connecting-rod, a crank-wheel, and a pitman connecting the crank with the rocking arm, substantially as described.

8. In a baling-press, the combination with the main baling-chamber, a rocking arm pivoted thereto, a wheel having a crank-pin, a condenser and a condenser-plunger, a cross-head connected thereto, a rod connecting the cross-head to the rocking arm, and a pitman connecting the rocking arm to the crank-pin, substantially as described.

9. In a baling-press, a baling-chamber comprising sides composed of metal sheets slotted or deeply notched inward from their outer ends separating the middle portions of the ends of the sheets from the outer portions, in combination with the longitudinal strips forming the sides of the bale-chamber and secured to the middle portions of the ends of the side sheets of the baling-chamber, and means for pressing the said middle portions of the ends of the sheets inward, whereby the width of the baling-chamber is decreased and the ends of the middle portions of the side sheets projected inward, thereby preventing backward movement of the bales, substantially as described.

10. The combination in a baling-press of the side sheets of the baling-chamber slotted or deeply notched inward from their front or delivery ends, and means for pressing said slotted ends inward, whereby the sheets form side tension-plates to press upon the bales, and the ends of the sheets are pressed inward to prevent backward movement of the bale, substantially as described.

11. The combination in a baling-press with the top and bottom of the baling-chamber, of the side sheets thereof secured to the top and bottom and slotted, or deeply notched rearwardly from their forward ends leaving the middle portion of said ends free from attachment to the top or bottom, and springs arranged to press inwardly against the said free portions of said ends, substantially as and for the purposes set forth.

12. The combination in a baling-press with the top and bottom of the baling-chamber of the side sheets thereof secured to the top and bottom and slotted or deeply notched rearwardly from their forward ends, leaving the middle portion of said ends free from attachment to the top and bottom, stirrups secured to the top and bottom and extending vertically across the side sheets, and springs arranged between the stirrups and the free ends of the side sheets substantially as described.

13. In a baling-press, the combination with a charge-chamber provided with the usual hay-receiving opening, and having a transverse slot in its top wall adjacent to said opening, of a separator-block chute mounted above the chamber having its front end above and in proximity to the slot, and its top inclined rearwardly upward away from the slot, substantially as described.

14. In a baling-press, the combination with a charge-chamber provided with the usual hay-receiving opening and having a transverse slot in its top wall adjacent to said opening, of a separator-block chute mounted above the chamber having its front end above and in proximity to the slot and its top inclined rearwardly upward away from the slot, said top having longitudinal ribs, substantially as described.

15. The combination in a baling-press of the frame a cam-pinion, a plunger, a rack on the plunger engaging the cam-pinion, a return-arm pivoted to the frame, a link connecting the return-arm to the plunger, and a friction-roller carried by the cam-pinion and actuating the return-arm, substantially as described.

16. The combination in a baling-press, of a cam, a plunger, a return-arm pivoted to the frame, and connected to the plunger, a guide-link pivoted to the frame, a link connecting it to the return-arm, and a friction-roller on the cam engaging the connecting-link to actuate the return-arm, substantially as described.

17. The combination in a baling-press, of a cam, a plunger, a return-arm pivoted to the frame, and connected to the plunger, a guide link pivoted to the frame, a link connecting it to the return-arm, having a curved upper face, and a friction-roller on the cam adapted to force the connecting-link backward and to engage the curved upper surface thereof, in the return movement, substantially as described.

18. The combination in a baling-press with the frame, of a plunger, a rack carried thereby, a lever pivoted to the frame and connected to the plunger, and a cam-pinion provided with teeth for engaging the rack to actuate the plunger forward, a friction-roller to engage the lever to return the plunger, and a smooth portion between the teeth and the friction-roller whereby the rack and pinion are disengaged during the return movement of the plunger, substantially as described.

19. The combination in a baling-press, of a plunger, a rack carried thereby, a cam-pinion engaging the rack to actuate the plunger forward, and an arm pivoted to the frame, and connected to the plunger, and a roller on the cam-pinion to actuate the arm to move the plunger backward, the rack and pinion being disengaged during the return movement, substantially as described.

655,059. SAW. JOHN I. CARUTHERS, San Antonio, Tex. Filed Nov. 3, 1899. Serial No. 735,699. (No model.)

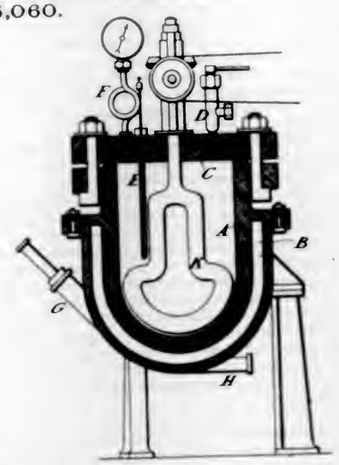


Claim.—A saw-blade tapered from the front edge to the back and provided with cutting-teeth extending diagonally entirely across it, each tooth being provided with a front side cutting edge and having, at its point, a transverse cutting edge extending entirely across the saw-blade, every point of which transverse cutting edge is equally distant from the base of the tooth, substantially as described.

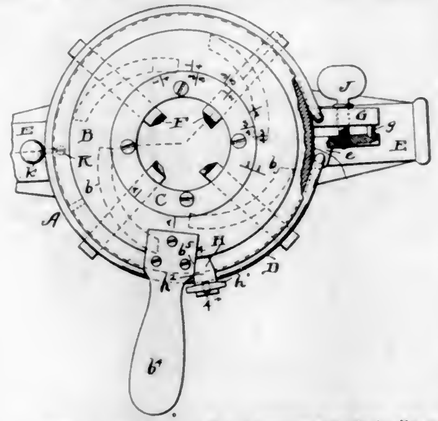
655,060. PROCESS OF MAKING NON-COAGULABLE ALBUMINOIDS. ALEXANDER CLASSEN, Aix-la-Chapelle, Germany. Filed Apr. 25, 1898. Serial No. 678,765. (No specimens.)

Claim.—The herein-described process of converting albuminous bodies into soluble albumen without peptonization, which consists in first heating albuminous bodies with water at a temperature between 80° and 125° centigrade in an autoclave under pressure produced by hydrogen, said pressure being higher than that produced by the steam, and then evaporating the liquid at a low temperature.

655,060.



655,061. ADJUSTABLE DIE-STOCK. IRA CULVER, Cleveland Ohio, assignor to the Bronson-Walton Company, same place. Filed June 2, 1899. Renewed Jan. 11, 1900. Serial No. 1,144. (No model.)



Claim.—1. In a die-stock, the combination of the body, dies radially movable therein, and a cam-ring rotatably mounted on said body and having cams for engaging the said dies, and having also a grooved periphery, with a clamping-wire which engages in said groove and is connected at one end to the body, and a tightening device to which the other end is connected, substantially as specified.

2. In a die-stock, the combination of the body, dies radially movable therein, and a cam rotatably mounted on said body and having cams for engaging the said dies, and having also a grooved periphery, with a clamping-wire which engages in said groove and is connected at one end to the body, a lever fulcrumed to an ear on the body, a screw passing through the lever and screwing into said ear, one end of said clamping-wire being connected with said lever, substantially as specified.

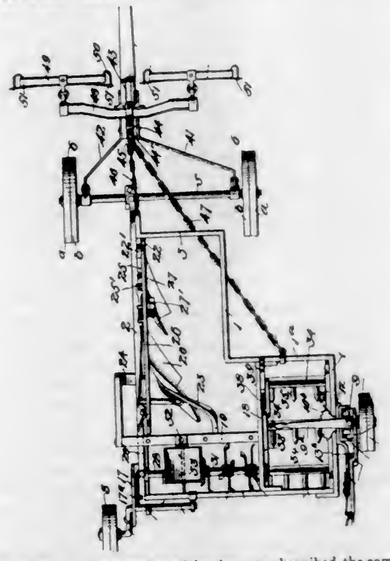
3. In a die-stock, the combination of the body, dies radially movable therein, and a cam-ring rotatably mounted on said body and having cams for engaging the said dies, and having also a grooved periphery, with a clamping-wire which engages in said groove and is connected at one end to the body, and a tightening device to which the other end is connected, a stop-clamp adjustably fastened to said clamping-wire and adapted to engage with a shoulder on said cam-ring, substantially as specified.

4. In a die-stock, the combination of a body, radially-movable dies mounted therein, and a cam-ring rotatably mounted on said body having cams for engagement with said dies, and having also a grooved periphery, with a clamping-wire having its ends turned down, one end being inserted in a hole in an ear on the body, a tightening-lever fulcrumed to said ear and having a hole in which the other end of said clamping-wire is inserted, and a screw passing through said lever between said hole and fulcrum and screwing into said ear, substantially as specified.

5. In a die-stock, the combination of the body, radially-movable dies and a cam-ring rotatably mounted on the body and having cams for engagement with said dies, and having also a beveled notch, with a beveled spring-pawl mounted in the body and adapted to automatically engage in said notch, substantially as specified.

6. In a die-stock, the combination of a body, radially-movable dies, and a cam-ring rotatably mounted on the body and having cams for engagement with said dies, and having also a beveled notch in its inner face, a vertically-movable spring-pawl mounted in the body beneath the ring, said pawl having a beveled upper end and an outwardly-projecting operating-arm, substantially as specified.

655,062. COMBINED PLOW AND HARROW. HARRY DAVERKOSEN and LUKE NIELSON, Janesville, Wis. Filed Apr. 12, 1900. Serial No. 12,539. (No model.)



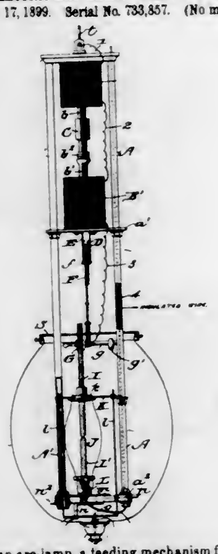
Claim.—1. In a machine of the character described, the combination with the supporting-frame, of a subsoil-plow having rearwardly-projecting arms which are pivoted to the frame, a forwardly-extending beam connected to the subsoil-plow, and having its forward end projecting upwardly, a surface plow bolted to the said beam, and an adjusting-lever pivoted to the upwardly-projecting end of said beam, and provided with means for locking it in adjustment, substantially as set forth.

2. In a machine of the character described, the combination with the main frame and a bracket secured thereto, and provided with a segmental rack, of a sliding frame mounted to slide vertically in said bracket, and a standard having a pivotal connection with said frame, and having at its lower end an angular extension upon which is journaled a wheel, an adjusting-lever pivoted to said bracket and provided with a spring-actuated detent to engage said segmental rack, a segmental rack carried by said sliding frame, an arm projecting inward from the upper end of said standard, and a spring-actuated detent carried by said arm for engaging the last-named segmental rack, substantially as set forth.

3. In a combined plow and harrow, the combination with the front supporting-axle, having the two-part carrying-wheels of a main frame pivoted to said axle, the two-part rear adjustable supporting-wheels, segmental racks and levers for adjusting said rear wheels, one of said rear wheels being capable of sidewise adjustment for increasing or diminishing the breadth of the furrow, means for producing such sidewise adjustment, the adjustable plow-beam, means for adjusting said plow-beam, a subsoil-plow, and an independently-adjustable surface plow carried by said plow-beam, a spring-controlled rotary harrow supported by said main frame in the rear and to one side of said plows, an adjustable toothed harrow supported by

said main frame to one side of said rotary harrow, means for adjusting said toothed harrow, a tongue, a whiffletree having slidable connection with said tongue, chains for connecting said slidable whiffletree with the main frame and with the plow-beam, substantially as set forth.

655,068. ELECTRIC-ARC LAMP. JAMES E. DAVIDSON, Butte, Mont. Filed Oct. 17, 1899. Serial No. 733,857. (No model.)



Claim.—1. In an arc-lamp, a feeding mechanism for the movable carbon having a lazy-tongs interposed between the carbon and its actuating devices, the carbon being sustained by the lazy-tongs in its center line and wholly supported thereby, and the said lazy-tongs forming the means for transmitting the motion of the actuating devices to the movable carbon, substantially as and for the purpose described.

2. In an arc-lamp, the combination with the movable carbon, and the devices for holding it; of two electromagnets arranged in axial alinement with each other to act upon the devices connecting with the said carbon, armatures arranged between the electromagnets to act in antagonism to each other from the pull of said magnets, and an elastic connection interposed between said armatures as and for the purpose described.

3. In an arc-lamp, the combination with the movable carbon, and the devices for holding it; of two electromagnets arranged to act upon the devices connecting with said carbon, armatures arranged to act in antagonism to each other from the pull of the magnets, and a pneumatic plunger and shell arranged to produce an elastic opposition between the armatures in one direction, and having an escape-valve for free action in the other direction substantially as described.

4. In an arc-lamp, the combination with the movable carbon and the devices for holding it; of two electromagnets arranged to act upon the devices connecting with said carbon, said magnets having solenoid-armatures arranged in alinement and acting in opposition to each other, and an elastic connection between the armatures substantially as and for the purpose described.

5. In an arc-lamp, the combination with the movable carbon and the devices for holding it; of two electromagnets arranged to act upon the devices connecting with said carbon, said magnets having solenoid-armatures arranged in alinement and acting in opposition, and a dash-pot arranged between and modifying the pull of said armatures as described.

6. In an arc-lamp, the combination with two magnets having solenoid-armatures arranged in alinement to act in opposition, and having an elastic connection between them, a cross-bar attached to one of said armatures, and a lazy-tongs carrying the movable carbon and acted upon by the said cross-bar substantially as and for the purpose described.

7. In an arc-lamp, the combination with the carbons, and an inner globe having a closure-cap at its upper end; of an outer globe inclosing the inner globe, and intermediate devices connecting the outer globe to said closure-cap whereby the weight of the outer globe is normally carried upon the closure-cap of the inner globe to maintain a tight joint substantially as described.

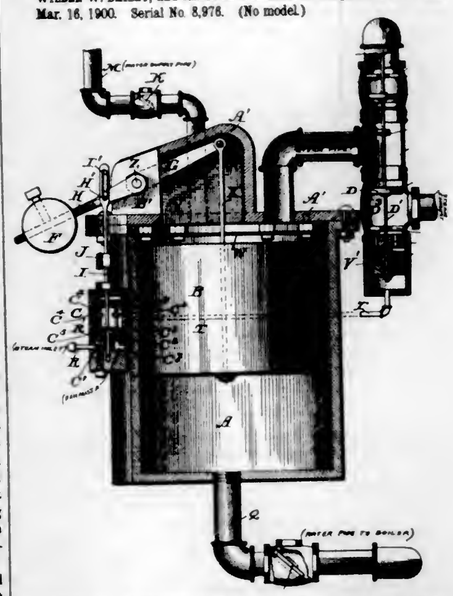
8. In an arc-lamp, the combination with the carbons, and an inner globe and suspended from the closure-cap at the top of the same having a closure-cap at the upper end; of an outer globe inclosing the inner globe, and lifting devices for said closure-cap adapted to be acted upon by the downward movement of the outer globe whereby the suspension of the outer globe when removed from its normal position is made to release the closure-caps of the inner globe substantially as described.

9. In an arc-lamp, the combination of the lower carbon and inner globe; of a horizontally-swinging bar bearing a cup carrying the said carbon and globe, a closure-cap at the top of the globe provided with and connected to a pendent yoke or stirrup, and the outer globe having a subjacent basic cup, and hook devices for connecting it to the pendent yoke or stirrup substantially as described.

10. In an electric-arc lamp, the combination of the lower carbon and inner globe; of a horizontally-swinging bar bearing a cup carrying the said carbon and globe, a closure-cap at the top of the globe provided with and connected to a pendent yoke or stirrup, the outer globe, having a subjacent basic cup and upper marginal rim, hook devices for connecting the said cup to the yoke or stirrup, and a lifting-lever fulcrumed to the framework and having one end projecting out into the range of the marginal rim of the outer globe, and having on the other end a foot lifting the said yoke or stirrup substantially as described.

11. In an electric-arc lamp, the combination with the movable carbon; of a clamp having a laterally-projecting screw-stem and adjustable screw-threaded counterweight thereon and a supporting device for the carbon placed between the carbon and counterweight substantially as described.

655,064. BOILER-FEEDER. HENRY J. DAVIS, PLATFAIR G. AULT, WILBER W. BAILEY, and JAMES H. WIDEMAN, Birmingham, Ala. Filed Mar. 16, 1900. Serial No. 8,976. (No model.)



Claim.—1. In an apparatus of the character described, a water-tank connected with a boiler, and a water-supply and a water-displacing weight in said tank, a lever-arm connected with such displacing-weight, a governor-weight applied to said arm and adapted for adjustment along the same for controlling automatically the water-level in the boiler, a steam-pipe leading from the boiler and opening into the tank, a valve governing the admission of steam through said pipe, and means for opening and closing said valve by the rise and fall of said weight, as set forth.

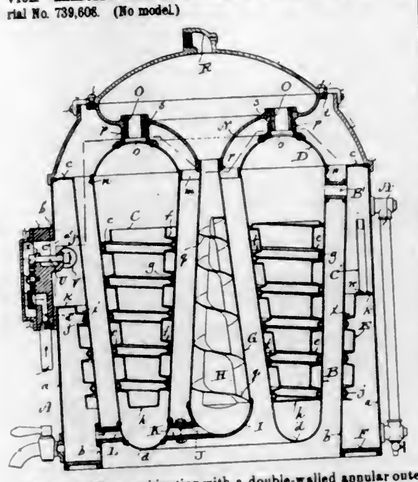
2. In an apparatus of the character described, a tank interposed between the boiler and a water-supply, a steam-pipe connection between said tank and the steam-space of the boiler, a steam-cylinder connected with said pipe and having a head provided with passages U', a piston working in said cylinder and carrying valves E and D which govern the admission and exhaust of steam in said pipe, a steam-pipe arranged to supply steam behind said piston, a steam-chest connected to said latter pipe, admission and reducing valves in said chest, and a water-displacing weight in the tank arranged to alternately open and close the last-named valves, steam having free access to the upper side of the piston from the chest containing the said admission and reducing valves, as shown and described, as set forth.

3. In an apparatus of the character described, the combination with the tank connected with a boiler and a source of water-supply, a displacing-weight adapted to rise and fall in said boiler, a rocking lever connected with said weight, and an adjustable governor or counterbalance weight applied to said arm, of a valve-chest, a steam-inlet valve C' and steam-exhaust valve C² arranged in said chest and provided with shouldered stems, a slidable rod having a lengthwise slot engaging a pin on said lever-arm, and provided with a shoulder or collar within the valve-chest, which collar is adapted to engage the shoulders on the valve-stems, steam-pipes connecting said chest with the boiler, and a steam-chest having admission and exhaust valves and a piston for operating them, as shown and described.

4. In an apparatus of the character described, a tank having a connection at its bottom with the boiler and provided with pipes at its top, one of said pipes leading from a water-supply and the other leading from the steam-space of the boiler, a float or weight adapted to control the passage of steam through said latter pipe, and a perforated baffle-plate fixed in the upper portion of said tank above the float or weight and extending over the same between it and the exits of said pipes, as and for the purpose set forth.

5. The combination of a tank interposed between the boiler and water-supply, a steam-pipe leading from the boiler into the top of the tank and provided with an exhaust-pipe, an admission-valve controlling the said exhaust, a cylinder connected with said pipes and provided with a piston whose movements alternately open and close said valves, a steam-chest having a connection with said cylinder, a steam-actuated valve in said chest which is closed by action of steam as soon as lifted off its base, a water-displacing weight in said tank arranged to apply or reduce the pressure in such connection, whereby to move the piston in the cylinder, a lever-arm connected with the displacing-weight, a counterbalancing-weight arranged to move on said arm and thus used as a governor or regulator, a valve-rod provided with a slot, and engaging a pin on the lever-arm when the lever-arm is near the end of its stroke, the whole apparatus being so placed that the tank does not completely empty, thereby always containing a quantity of hot water for heating the water discharging into it and always feeding hot water to the boiler; a check-valve interposed between the tank and the boiler admitting water to the boiler, but preventing the flow in the opposite direction; and a check-valve interposed between tank and water-supply, admitting water to the tank but closing when the pressure is on the tank, all substantially as set forth and for the purposes specified.

655,065. STEAM-GENERATING AND WATER-HEATING DEVICE. EMANUEL DETWILER, Milwaukee, Wis. Filed Dec. 8, 1899. Serial No. 739,608. (No model.)



Claim.—1. The combination with a double-walled annular outer casing having an annular band provided with a continuous spiral coil secured thereto, of a double-walled annular water-pot secured within said casing; a double-walled annular shell secured within and between the double walls of said pot, and provided with continuous spiral coils on the exterior surface of each wall forming fluid-tight joints between said double-walled pot and said annular shell; a single-walled shell supported within the central space of said annular pot, and provided with a continuous inner spiral coil; a water-inlet communicating with said outer casing; pipes connecting said annular pot with the outer casing and with the central shell; a chamber above and communicating with said annular pot and central shell, and an outlet leading from the upper wall of said chamber.

2. The combination with a double-walled annular outer casing, formed with a cylindrical outer wall, an inclined inner wall and closed top and bottom walls, and having an annular band provided with a continuous spiral coil secured therein, and a water-inlet communicating therewith, of a conical doubled-walled annular water-pot secured within said casing and connected thereto by a lower communicating water-pipe; a double-walled conical annular shell secured within and between the double walls of said pot and having continuous spiral coils on the exterior surface of each wall forming fluid-tight joints between said double-walled pot and said annular shell; a single-walled shell having an open top and closed bottom supported within the central space of said annular pot and provided with a continuous inner spiral coil, and a pipe connecting the lower end of said central shell with said annular pot; an annular dome closing the top of said annular pot and provided with openings; a cup or annular band having openings communicating with those in said annular dome and with the open top of the said central shell; a dome connected to said cup or annular band, forming therewith a fluid-chamber, and provided with an outlet; and another annular band, rising from said annular casing and surrounding said first-named annular band, but separated therefrom by an annular hot-air passage.

3. The combination with a double-walled closed outer casing having its lower part shut off from its upper part by the upper end of a continuous spiral coil secured therein, of a water-pot secured within said casing having a closed top and containing a close-bottomed shell located in said pot, and provided with a continuous spiral coil making fluid-tight joints with the said pot; a pipe connecting said outer casing with said pot above the top of the said coil-shell, and another pipe connecting said outer casing and said pot below the bottom of said coil-shell; a valve-block having three parallel vertical water-channels therein free from direct communication with each other, and one of said channels communicating with the interior of said outer casing above the top of the coil therein; a rocking valve pivotally secured to said valve-block and having a water-chamber adapted, as said valve is rocked, to connect the central water-channel in said block with the channel on one or the other side of said central channel; a rock-shaft having at its outer end a rigid arm in engagement with said rocking valve, and having its inner end projecting within said outer casing; a float rigidly secured to said inner end of the rock-shaft; water-inlet and water-escape pipes exterior to said outer casing and communicating with two of the said three channels in the valve-block; an equalizing-pipe located within said outer casing, and extending from the lower shut-off part to a point above the high-water line; a closed chamber located above said water-pot, and having openings in its lower wall in communication with corresponding openings in the closed top of said water-pot; and an outlet leading from said chamber.

4. The combination with a double-walled annular outer casing having an annular band provided with a continuous spiral coil secured therein, the upper end of said coil shutting off the lower part of said casing from its upper part, of a double-walled annular water-pot secured within said casing; a double-walled annular shell secured within and between the double walls of said pot and provided with continuous spiral coils on the exterior surface of each wall forming fluid-tight joints between said double-walled pot and shell; a single-walled shell supported within the central space of said annular pot, and provided with a continuous inner spiral coil, and having an open top and closed bottom; an annular dome closing the top of said pot and provided with a series of openings; a closed chamber located above said water-pot and having an outlet leading from its upper wall and openings in its lower wall communicating with those in said annular dome and with the open top of the said single-walled central shell; a water-inlet communicating with the upper part of said outer casing; an exterior valve controlling said inlet, and an interior float connected to and regulating said valve; pipe connections between the outer casing and annular pot, and between the said pot and central shell, below the respective coils in said parts; a pipe connection between said pot and outer casing above the respective coils therein; and an equalizing-pipe located within said outer casing, and extending from the lower shut-off part to a point above the high-water line.

655,066. WEIGHING MECHANISM FOR REFRIGERATORS. SAMUEL W. DODDS and GEORGE H. ROBERTSON, Paducah, Ky. Filed June 6, 1900. Serial No. 19,264. (No model.)

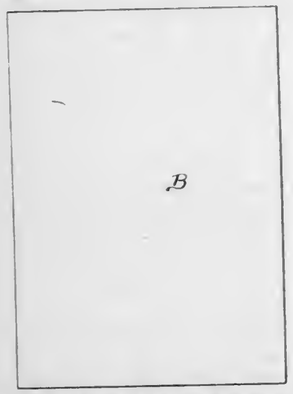
Claim.—1. A refrigerator having an ice-chamber, in combina-

tion with ice-weighing mechanism comprising a cylinder centrally located and opening thereinto, a movable platform in said ice-chamber, a plunger extending centrally from the under side of said platform and slidably mounted in the cylinder, a resistance-spring inclosed within the cylinder and acting on the plunger, a dial and pointer on the exterior of the refrigerator, and means for communicating motion to said pointer upon the movement of the plunger, substantially as set forth.



2. A refrigerator having a partition dividing the interior thereof into an ice-chamber and a chamber to receive the articles to be cooled, in combination with ice-weighing mechanism comprising a cylinder supported by said partition, a movable platform in the ice-chamber, a plunger depending centrally from said platform and slidably mounted in said cylinder and carrying a rack-bar, a resistance-spring in the cylinder surrounding the rack-bar and acting on said plunger, a dial and pointer on the exterior of the refrigerator, and a shaft having its outer end journaled in the wall of the refrigerator and carrying said pointer, and its inner end journaled in the wall of the cylinder and carrying a pinion meshing with said rack-bar, substantially as set forth.

655,067. TRANSFER-SHEET AND COMPOSITION THEREFOR. WILLIAM P. DUM LANY, Cleveland, Ohio, assignor to the International Facsimilegraph Company, same place. Filed Mar. 31, 1899. Serial No. 711,258. (No model.)



Claim.—1. A sheet covered with a coating of cerated and resinous matter, and adapted to be transferred by pressure to a metallic sheet.

2. A sheet having a coating of transfer material adapted to be transferred by pressure to a cold metallic sheet said coating being of a waxy character and thus adapted to protect the metallic sheet from the action of the acids employed in etching.

3. A transfer-sheet coated with a composition including wax, tallow and pulverized resinous matter.

4. A composition of matter for a transfer-sheet, consisting of wax, tallow, rosin and printers' ink.

5. A composition of matter for a transfer-sheet consisting of wax, tallow, rosin and oil of turpentine.

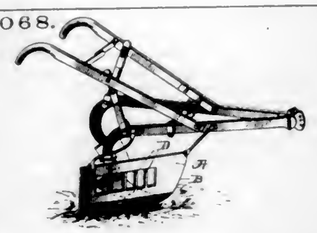
6. A composition of matter for a transfer-sheet consisting of wax, tallow, resinous matter, oil of turpentine and coloring-matter.

7. A transfer-sheet having a coating of printers' ink, wax, tallow, rosin, oil of turpentine, and dragon's blood, in about the proportions specified.

655,068. FENDER FOR CULTIVATORS. ROBERT B. ELLIOTT, Hamletsburg, Ill. Filed Aug. 11, 1899. Serial No. 726,964. (No model.)

Claim.—In a clod-fender, a metal plate having a series of vertical slots therein, the forward end of the plate curved up, and its lower edge curved inward, substantially as shown and described.

655,068.

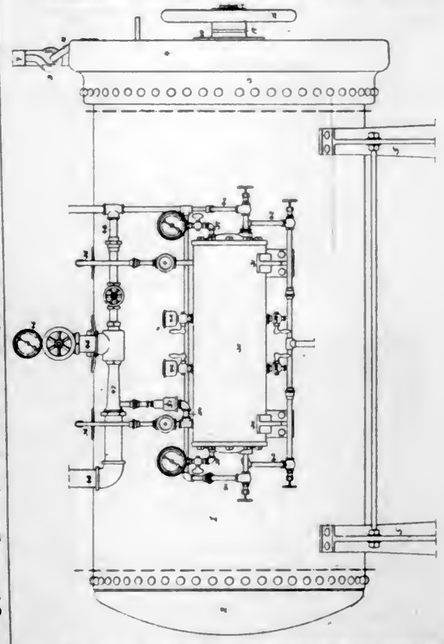


655,069. NAPKIN-RING. JACOB FRANK, Toledo, Ohio, assignor to Marie L. Frame, same place. Filed Jan. 25, 1900. Serial No. 2,777. (No model.)



Claim.—As an improved article of manufacture, the napkin-ring described comprising the two U-shaped members having their ends looped and pivotally connected together whereby one is adapted to swing within the other; the outer member also having an aperture *d* adjacent to one end, and the inner member having an aperture *b* adapted to register with the aperture *d* when the inner member rests within the outer member, and the aperture *c*, at the opposite side of the pivotal connection with reference to aperture *b*, adapted to register with the aperture *d* when the inner member is extended from the outer member, and a spring-pressed latch mounted on the outer member and having a teat adapted to enter the coincident apertures of the members and thereby positively lock them against casual movement with respect to each other, substantially as specified.

655,070. DISINFECTING APPARATUS. WILLIAM H. FRANCIS, Philadelphia, Pa. Filed Mar. 28, 1898. Serial No. 675,355. (No model.)



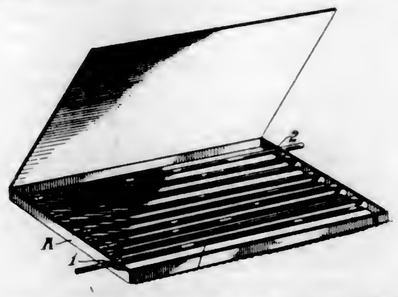
Claim.—1. A disinfecting apparatus in which are combined a treating vessel provided with means for tightly closing the same and

also with an escape-pipe, provision for exhausting air or vapor from the treating vessel and discharging it through the escape-pipe, a retort provided with means for vaporizing a disinfecting agent therein and also with a safety-valve, and communication between the discharge-pipe of said safety-valve and the escape-pipe of the vacuum apparatus, substantially as specified.

2. The combination in disinfecting apparatus, of the treating vessel having a flange with inwardly-projecting continuous rib, a cover carrying a series of lever-bolts having a fulcrum bearing on said cover and adapted to engage with the rib of the treating vessel, a bolt having a nut for acting upon the inner ends of the levers to tighten the same, and a ring movable around said bolt and connected to the inner ends of the lever-bolts, and stops arranged to limit the movement of the ring substantially as specified.

3. The combination in disinfecting apparatus, of a treating vessel having a flange with internally-projecting rib, a cover-plate for closing said vessel, a series of lever-bolts each bearing against a fulcrum-lug on said cover-plate and adapted to engage with the rib on the treating vessel, a bolt having a nut for acting upon the inner ends of the lever-bolts in order to tighten the same, a ring movable around said bolt, lugs carried by said ring and by the cover and serving by contact to limit the movement of the ring and an outer confining device for each lever-bolt secured to the fulcrum lug by means of bolts flanking said lever-bolts whereby, at the fulcrum, each lever-bolt is retained both longitudinally and laterally, substantially as specified.

655,071. BOX FOR PRESSES. OSCAR R. GALBRAITH, Honey Grove, Tex., assignor, by direct and mesne assignments, of five-sixths to W. J. Erwin, J. G. Beard, C. R. Bryan, K. O. Johnston, J. M. Johnston, T. U. Cole, S. L. Kirby, Vance Kirby, C. A. Leeman, J. W. Hamilton, and S. W. Gose, same place. Filed Feb. 26, 1900. Serial No. 6,601. (No model.)



Claim.—1. A press provided with plates and opening between said plates, and a box removably placed within said opening, said box consisting of a casing containing suitable means connected with a source of heat whereby to raise the temperature of the press.

2. In a press, the combination with plates having opening between them, of a box inserted in said opening, said box provided with connections to a suitable source of heat, and means within said box whereby the heat is diffused and communicated thereto, thereby imparting heat to the press.

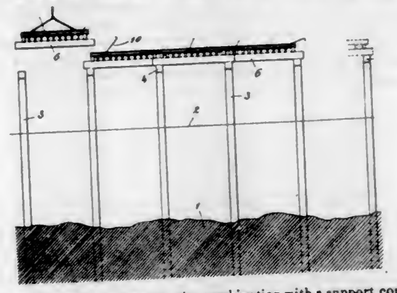
3. In a press, the combination with press-frames, and plates supported thereby, of means removably inserted within the press-frame and between the plates, said means consisting of a box provided with couplings at each end for permitting the passage of steam or other heating means therethrough, whereby the box may be heated.

4. In a press, the combination with a press-frame supporting the plates, of boxes removably placed within the press-frame and between the plates, said boxes each provided with a coil of pipe, the ends of which project from either side of the box and through which steam or other heating means is led.

5. In a press, the combination with press-frames supporting plates, of a box removably placed within the press-frame and between the plates, said box provided with a coil of pipe, the ends of which project from the sides of the box and through which steam or other heating means is led, and means for ventilating the box.

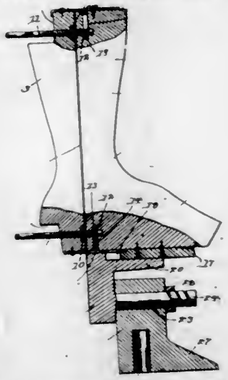
6. In a press provided with press-frames and plates supported thereby, the combination with boxes removably inserted within said press-frames and between said plates, couplings between and connecting the boxes, one of said boxes being connected with a suitable supply of heat, whereby the heat enters this box and is diffused among the other boxes by means of said couplings, whereby a continuous circulation of heat is obtained and an equal degree of temperature maintained throughout the entire press.

655,072. PORTABLE TRAMWAY. JOHN H. GARDNER, New Orleans, La. Filed Jan. 12, 1899. Serial No. 701,970. (No model.)



Claim.—In a tramway, the combination with a support comprising piles arranged in pairs at intervals apart, and transverse caps connecting each pair of piles; of a series of track-sections removably arranged end to end upon the support, and respectively comprising parallel pairs of longitudinal bars or stringers, cross-bars connecting said pairs of longitudinal bars adjacent to the ends thereof, cross-ties secured upon the longitudinal bars of each pair, and longitudinal rails secured upon said cross-ties; the said track-sections having the ends of their longitudinal bars or stringers interlocked or intermeshed, plates connected to one track-section and having perforations, and hooks loosely connected to the other track-section and engaging the perforated plates of the first-named section, substantially as specified.

655,073. LEATHER-CRIMPER. LOUIS GODBOUT, Wyandotte, Mich. Filed Mar. 21, 1900. Serial No. 9,593. (No model.)



Claim.—1. A crimping device comprising a crimping-block transversely divided at the rear to form two sections one of which is adjustable on the other, a laterally-rotatable intermediate support to which the front section of the crimping-block is removably attached, and a rotatable stand carrying the said support.

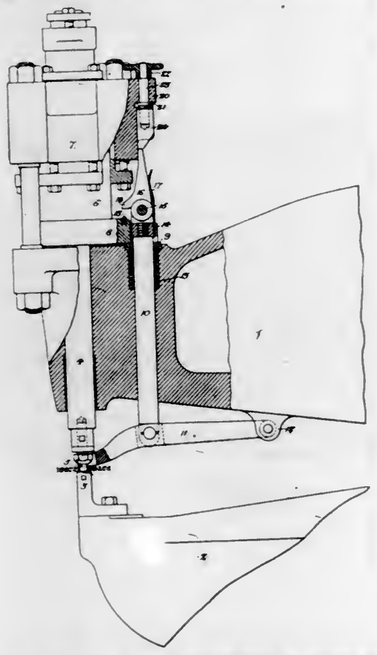
2. A crimping device comprising a crimping-block transversely divided at the rear to form two sections one of which is adjustable on the other, and an adjustable support to which the front section of the crimping-block is removably attached.

3. A crimping device comprising a crimping-block transversely divided at the rear to form two sections, one of which is adjustable on the other, gage-plates attached to the upper and lower portions of the said adjustable section and freely movable over portions of the other section, and an adjustable support to which the front section of the block is removably attached.

655,074. PUNCHING-MACHINE. ERWIN GRAVES, Camden, N. J., assignor to the Camden Iron Works, same place. Filed June 12, 1900. Serial No. 20,065. (No model.)

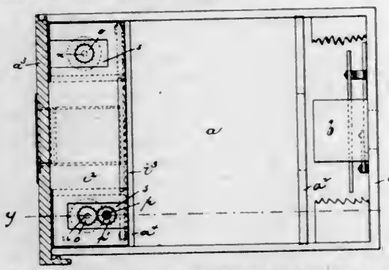
Claim.—1. The combination of the punch-operating plunger of a punching-machine with a stripper depressed by the action of said plunger, means for raising said stripper, and a locking device for retaining the stripper in its depressed position, one of the elements of said locking device being a trigger which is struck and released on the upward movement of the plunger, substantially as specified.

2. The combination of the punch-operating plunger of a punching-machine, with a stripper depressed by the action of said plunger, means for raising said stripper, and a locking device for retaining the stripper in its depressed position, elements of said locking device being a trigger to be struck and released on the rise of the plunger, and a vertically-adjustable locking-block for engaging with and retaining said trigger when the stripper is depressed, substantially as specified.



3. The combination, in a punching-machine, of the punch-operating plunger, the stripper having a rod with trigger thereon, a locking-block for said trigger, a spring-supported washer free to move vertically on said rod, means for arresting the upward movement of the washer on the rod, and provision on the punch-operating plunger for engaging said washer and trigger, substantially as specified.

655,075. ROLL-HOLDING CAMERA. HENRY W. HALES, Ridgewood, N. J. Filed July 14, 1899. Serial No. 723,755. (No model.)



Claim.—1. In a camera, the combination with the box *a*, open at the back and having stops a^4, of the film-holding frame *i*, removably inserted in the open end of said box and comprising top and bottom plates i', i^3, a front board i^3, serving as a platen and vertical side boards i^4, i^5, the latter being disposed a little in from the opposite sides of the frame, and forming chambers *j*, *j*, hinged doors *k*, *k*, closing the rear of said chambers and means in said chambers for holding the spools, substantially as set forth.

2. The improved camera comprising the box or case *a*, and a film-holding frame *i*, removable from said box or case and consisting of bottom and top plates i', i^3, one of which is in sections, connected by a spring, a front board serving as a platen, vertical side boards i^4, i^5, the latter being disposed a little in from the opposite sides of the frame and forming chambers *j*, *j*, hinged doors *k*, *k*, closing the rear of said chambers and means in said chambers for holding the film-spools, substantially as set forth.

3. In a camera, the combination with the box, *a*, open at the back and having a door for closing said opening, of a film-holding frame *i*, removably inserted in the open end of the box, and comprising bottom and top plates vertical boards disposed a little in from the sides of the frame, a platen, the center part of which is removable and provided with a sight-opening, substantially as set forth.

4. In combination with the box or case having a lens, of a frame comprising top and bottom plates, a front board and side boards, the latter being secured to the front board and side boards a little in from the lateral extremities to form spool-chambers, the front board forming a platen over which the film may travel and being in sections, the central section being removable, doors *k*, *k*, closing the backs of said chambers, the said frame being reversible to enable a small picture to be taken on the film through the opening provided by the removal of the central platen-section or in front of the complete platen, and means for operating the film and spools, substantially as set forth.

5. In combination with the box or case having spool-operating means and a lens, of a reversible spool-carrying frame having a sectional platen, the central section of which is removable to permit a picture to be taken through the aperture formed by the removal of said central section, substantially as set forth.

6. In combination with the box or case having spool-operating appliances, of a reversible frame, having spool-chambers and a light-passage between said spool-chambers whereby large pictures may be taken on the film lying at the front of the frame or small pictures through the opening between the chambers on the film lying back of said frame, substantially as set forth.

7. The combination with the box or case having spool-operating appliances of a reversible frame having spool-chambers and a light-passage between said spool-chambers, and means for closing said passage, substantially as set forth.

8. The combination with the box or case having spool-operating appliances and at the back a spy-hole, of a frame having spool-chambers at opposite sides and a perforated platen at the front over which the flexible film is adapted to travel from one spool to another, a tube extending from the perforation in the platen to the spy-hole, and a pane of transparent material preventing the passage of actinic-light rays, all arranged and adapted to operate substantially as set forth.

9. The combination with the box or case having spool-operating appliances including a cog-wheel, of a reversible frame having spool-chambers and axial supports for the spools on or with which the spools rotate, said axial supports being each provided with cogs adapted to intermesh with the cog-wheel first referred to, one when the frame is in its obverse position and the other when in reverse position, whereby the spools may be operated by the one finger appliance when the frame is in either of its positions in the case, substantially as set forth.

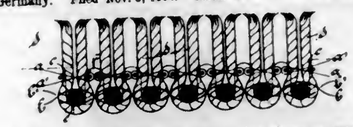
10. The combination with the box or case having spool-operating appliances, including a cog-wheel disposed within said box and a finger-piece outside thereof, of a reversible frame having spool-chambers at opposite ends, pivotal shafts *n*, adapted to receive the spools at the inside of said chambers and having pinions *p'*, each adapted to enter into engagement with the cog-wheel, substantially as set forth.

11. The combination with the box or case having spool-operating appliances operable from the outside of the camera and adapted to enter into coöperating connection with spool-operating appliances on the spool-holding frame, of said spool-holding frame having spool-chambers at opposite sides and each having said coöperating spool-operating appliances either of which is adapted to enter into connection with the appliances on the box or case, and a removable central section adapted to close the light-passage between said spool-chambers or be opened to open said light-passage, substantially as set forth.

12. The combination with the box or case having spool-operating appliances operable from the outside of the camera and adapted to enter into coöperating connection with the spool-operating appliances on the spool-holding frame, of said spool-holding frame having spool-chambers at opposite sides and appliances to connect with those of the case, of doors closing one side of each of said chambers adapted to be opened to facilitate the removal of the spools, substantially as set forth.

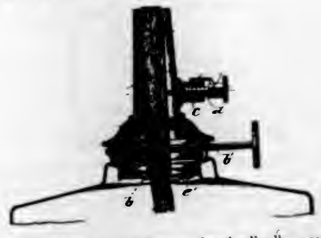
13. In a camera, the combination with the case having a wall or partition against which the film may lie in its passage from one spool to the other, of a spool-holding frame having spool-chambers and between said chambers, a spy-hole covered by transparent matter impervious to actinic-light rays, the wall or partition being of a color strongly in contrast to the color of the film whereby the letter or numbers formed by the perforation of the film will be strongly outlined to the eye as the said perforated letter or number passes across the spy-hole substantially as set forth.

655,076. WOVEN PILE FABRIC. OTTO HALLENSLEBEN, Hilden, Germany. Filed Nov. 5, 1897. Serial No. 657,565. (No specimens.)



Claim.—In a pile fabric, the combination of coarse ground weft-threads *e e*, pile-threads *d* secured between adjacent coarse weft-threads *e e*, binder-warps *b b'* binding the ground weft-threads *e e*, fine weft-threads *f* and warp-threads *a a'* located above the ground weft-threads *e e* and forming a second tying-web, a chain *c* connecting the two webs, for the purpose and substantially as set forth.

655,077. LAMP-BURNER. WILLIAM HARRIS, Mound Bayou, Miss., assignor of one-half to Isaiah T. Montgomery, same place. Filed Nov. 18, 1899. Serial No. 737,483. (No model.)



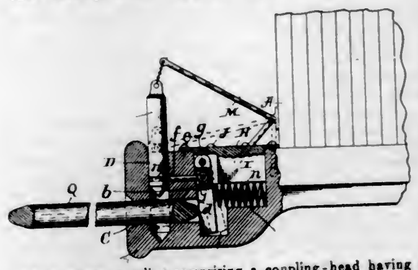
Claim.—1. A lamp-burner having a longitudinally-arranged bearing-strip within the wick-tube and held fixedly against upward longitudinal movement; in combination with a set-screw tapped through the side of the wick-tube and bearing against said strip substantially as and for the purpose described.

2. A lamp-burner having a longitudinally-arranged bearing-strip within the wick-tube held fixedly against upward longitudinal movement; in combination with an elongated sleeve-nut fixed in the side of the tube, and a set-screw tapped in said sleeve-nut and bearing against the pressure-strip substantially as and for the purpose described.

3. The combination of a lamp-burner, a pressure-bearing for the wick, and a set-screw acting upon the pressure-bearing and having a stop to limit the extreme movement of the screw and prevent putting out the lamp as described.

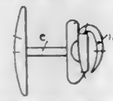
4. The combination of a lamp-burner, a pressure-bearing for the wick, and a set-screw acting upon the pressure-bearing and having a series of graduations and an indicator for showing the amount of pressure on the wick and its relation to the oil consumption substantially as and for the purpose described.

655,078. CAR-COUPLING. THOMAS HARRISON, Bowling Green, Ohio. Filed Apr. 2, 1900. Serial No. 11,124. (No model.)



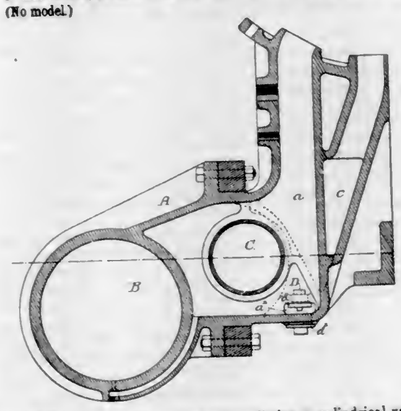
Claim.—A car-coupling comprising a coupling-head having a vertically-arranged coupling-pin opening and a horizontal link-receiving opening in the lower portion thereof, said head having a vertically-arranged lever-receiving opening extending below the link-receiving opening, a lever pivoted therein, a web between the pin-opening and the lever-opening, said web provided with horizontal locking-pin openings, a locking-pin pivotally connected to the lever and entering said opening, said head provided with a horizontally-extending spring-receiving opening above the lower end of the lever-opening and extending to the top of the coupling-head, a plate covering said opening, a block secured to the under side of said plate over the spring-receiving opening and resting on the spring, and means for detachably securing the said plate in place, substantially as described.

655,079. COLLAR-BUTTON. FRANZ J. HEILBORN, Plainville, Mass. Filed Dec. 18, 1899. Serial No. 740,801. (No model.)



Claim.—In a collar-button, the combination of the shoe, the flat post, the head, and the socket in the head, with the book having its shank held in the socket, and adapted for turning movement transversely of the hook, substantially as described.

655,080. RELIEF MECHANISM FOR PISTON-VALVES. GEORGE R. HENDERSON, Roanoke, Va. Filed Jan. 11, 1899. Serial No. 701,839. (No model.)



Claim.—1. The combination of a cylinder, a cylindrical valve-casing, a central steam-inlet passage, side cylinder-passages and end exhaust-passages, cavities extending from the live-steam passage under the cylinder-passages, ports in the partition between the cavities and the cylinder-passages, a check-valve in each port normally open but closing against steam-pressure in the live-steam passage and opening against said steam-pressure when there is excessive back pressure in one or other of the cylinder-passages, substantially as described.

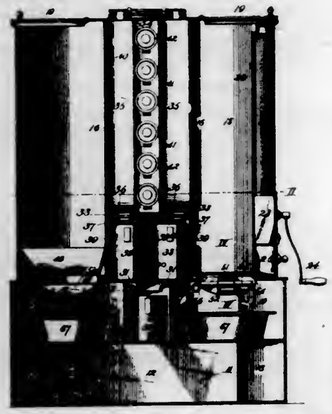
2. The combination in a locomotive, of a steam-cylinder, a cylindrical valve-chest, live-steam and exhaust passages leading to said valve-chest and ports leading to the steam-cylinder, a chamber to one side and below said valve-chest communicating with the live-steam passages, two check-valves in the partition between the said chamber and the steam-ports of the cylinder, said valves being normally held open by gravity, substantially as described.

3. The combination in a locomotive-cylinder casting, of a steam-cylinder, a cylindrical valve-chest, passages leading from said valve-chest to the steam-cylinder, to the exhaust and to the live-steam supply, a partition forming with the walls of the cylinder a chamber communicating with the live-steam passages, and check-valves with valve-seats in said partition opening into the passages to the steam-cylinder, threaded openings in the lower wall of said chamber directly beneath the check-valves through which both valves and seats may be introduced and fitted in place and threaded plugs constructed to close said openings, said valves and threaded openings being inside of the locomotive-frame and so placed as to be readily accessible, substantially as described.

655,081. KITCHEN-CABINET. WILLIAM M. HENSON, Kansas City, Mo. Filed Nov. 16, 1899. Serial No. 737,177. (No model.)

Claim.—1. A kitchen-cabinet having its front side or face centrally paneled or recessed, a horizontal partition dividing the cabinet

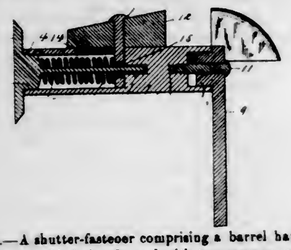
into upper and lower chambers opening into said panel or recess, and a pair of doors one above the other closing the front or uninclosed sides of said chambers and occupying said panel or recess, substantially as described.



2. A kitchen-cabinet having its front side or face centrally paneled or recessed, a horizontal partition dividing the cabinet into upper and lower chambers opening into said panel or recess, and provided with slide-controlled holes, a vertical partition dividing the lower chamber into a pair of chambers communicating with said holes, a pair of vertical partitions dividing the upper chamber into two side chambers 35 registering with the slide-controlled holes, and a central chamber between said side chambers with its front side open or uninclosed and containing can-supporting strips, and a pair of doors one above the other occupying said panel or recess and covering said chambers, substantially as described.

3. In a kitchen-cabinet, the combination with a lower portion provided with receptacle-chambers, and an upper portion comprising a pair of bins communicating with the receptacle-chambers of the lower portion; said upper portion having its front side or face centrally paneled or recessed for its full height, and provided between said bins with superimposed chambers opening into said panel or recess, and a pair of doors occupying said panel or recess and arranged one above the other and forming coverings for the front or uninclosed side of said chambers, substantially as described.

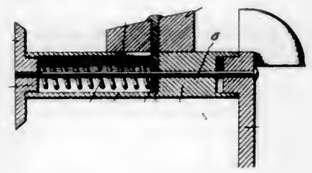
655,082. SHUTTER-FASTENER. HENRY S. HIBBS, Bristol, Pa. Filed Dec. 21, 1899. Serial No. 741,178. (No model.)



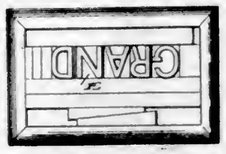
Claim.—A shutter-fastener comprising a barrel having a partition therein, one side being formed with two seats or sockets one of which is screw-threaded, a latch or turnbuckle provided with a lug that fits snug within the forward end of the barrel, a pin extending through the lug and having its inner end screw-threaded into the forward end of said seat or socket in the partition, a base-plate connected to said barrel and provided with a guide-pin the forward end of which is seated in the inner seat of the partition, a stop mounted upon the barrel, a pin connected to said stop and extending through a longitudinal slot and provided with a perforated head that engages the guide-pin, and a spring located about said guide-pin and confined between the base-plate and the perforated head, substantially as and for the purpose set forth.

655,083. SHUTTER-FASTENER. HENRY S. HIBBS, Bristol, Pa. Filed June 23, 1900. Serial No. 21,291. (No model.)

Claim.—A shutter-fastener comprising a base-plate, a barrel connected to said base-plate and provided with a longitudinal slot, a stem projecting outwardly from the base-plate through the end of the barrel, a latch or turnbuckle pivoted to the outer end of said barrel and held in place by said stem, a stop seated to slide upon said barrel, a pin projecting through said stop and the slot in said barrel and provided with an apertnre through which the stem passes, and a spring confined between said pin and the base-plate, substantially as set forth.



655,084. EMBOSSING PROCESS. JOHN S. HOERNER, Highland, Ill. Filed Apr. 25, 1896. Renewed Apr. 27, 1899. Serial No. 714,700. (No specimens.)



Claim.—1. The herein-described process of embossing words, characters, or designs, upon paper or other material, the same consisting in first printing the word, character or design in the usual manner, afterward taking a second impression upon the reverse side of the printed sheet, said second impression being taken from the positive-faced type which are made to register with the impression taken upon the paper in originally printing the sheet, substantially as described.

2. The process of embossing words, characters, or designs upon paper or other material, the same consisting of first printing the word or character to be embossed upon one side of the paper or sheet, and then taking an impression without ink from positive-faced type upon the rear face of the sheet, substantially as set forth.

655,085. FEED-BAG. THOMAS A. HOWARD, Baltimore, Md., assignor of one-third to William O. Davis, same place. Filed July 13, 1898. Serial No. 685,847. (No model.)

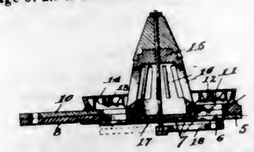


Claim.—1. As an improved article of manufacture a feed-bag comprising a hopper with enlarged mouth and a pouch and intermediate integral contracted portion, the pouch having its inner upper edge joined to the upper side of the lower end of the contracted portion and having inclined front side terminating at a point higher than the side joining the contracted portion, combined with a bottom to the pouch and independent attaching devices for the hopper and pouch, substantially as described.

2. As an improved article of manufacture a feed-bag for horses comprising a hopper of flexible material and having an enlarged mouth with means for holding the same open, a pouch and an intermediate connecting portion integral with the hopper, the connecting portion being contracted at its junction with the pouch, a bottom to the pouch, means for holding open the mouth of the pouch, means for attaching the pouch to the head of an animal the said hopper, pouch and contracted portion being all integral, and independent means for attaching the hopper to the neck of the animal, all substantially as and for the purpose specified.

655,086. ROTARY GRATE. HENRY H. HUNTER, Berkeley Springs, W. Va. Filed Dec. 11, 1899. Serial No. 739,956. (No model.)

Claim.—1. A grate comprising two rotary sections mounted one upon the other and provided with slots adapted to register one with the other, and a substantially cone-shaped dome secured to the upper of said sections and provided with a series of slots in the sides thereof for the passage of air above said sections.



2. A grate comprising two rotary sections disposed one upon the other and provided with elongated slots adapted to register with each other, a substantially cone-shaped dome on the upper of said sections, provided with a series of slots or passages for supplying air above said sections, and means for moving said sections independently for controlling the size of the passages through said slots.

3. A grate comprising two annular rotary sections disposed one upon the other, and provided with elongated slots adapted to register with each other, a hollow substantially cone-shaped dome secured to the upper of said sections and provided with a series of slots or openings for supplying air above said sections, and means for moving said sections independently of each other for controlling the size of the passages therethrough.

4. The combination with a diaphragm or partition having a central circular opening therein, of a grate comprising two annular sections disposed one upon the other, fitting and adapted to rotate in said opening and provided with radially-extending slots adapted to register with each other, laterally-extending arms on each of said sections constituting handles therefor, by means of which said sections may be rotated simultaneously or moved independently, and a hollow substantially cone-shaped dome secured to the upper of said sections and provided with a series of slots or openings in the sides thereof for the supply of air above said sections.

5. In a grate, two annular sections disposed one upon the other and provided with slots adapted to register with each other, a substantially cone-shaped dome secured to the upper of said sections and provided with a series of slots or openings for supplying air above said sections, and radially-extending ribs 12, 13 secured to the top surface of the upper of said sections between the slots therein, the ribs 12 having their upper surfaces parallel with the section to which they are secured and arranged alternately between the ribs 13, and the latter having upwardly-extending curved projections 14 arranged alternately at opposite ends of said ribs 13.

655,087. PILLOW. PETER JONES, London, England. Filed Dec. 30, 1897. Serial No. 664,757. (No model.)



Claim.—1. A pillow-case provided with separate compartments or receptacles one to contain filling material such as feathers, down or the like and the other to contain fluid whereby it can be inflated, the latter compartment or receptacle being arranged to support, when inflated, the neck of a person using such pillow, substantially as described.

2. A pillow consisting of a case stuffed with feathers or other suitable filling material and provided with an inflatable tubular portion adapted when inflated to support the neck of a person whose head is resting on the stuffed portion of the pillow, substantially as herein described for the purpose specified.

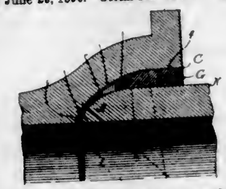
3. A pillow comprising a case divided internally by a web or partition into separate and parallel chambers or receptacles one of which is of less cross-sectional area than the other and is located at the border or edge of the pillow, filling material of the kind herein described located in the larger of said chambers or receptacles, and an inflatable tube located in the smaller of said chambers, or receptacles, substantially as herein described for the purpose specified.

4. A stuffed pillow having a long narrow expansible fluid-tight body arranged longitudinally therein and arranged to form a yielding support for the neck while the head rests on the stuffed portion or main part of the pillow.

5. A stuffed pillow provided with a longitudinally-arranged flexible neck-support to one side of the stuffed head-supporting part of the pillow, substantially as described.

6. A pillow provided with neck-supporting and head-supporting portions of different degrees of flexibility whereby the neck-support fills the space or cavity between the user's shoulder and head and relieves the head of undue pressure on the pillow, substantially as described.

655,088. SELF-CENTERING PIPE. THOMAS H. KANE, New York, N. Y. Filed June 29, 1899. Serial No. 722,321. (No model.)



Claim.—1. A pipe having beveling curves of different convexity on the spigot end, said curves extending from edge to edge of the thickness of the pipe-section and continually decreasing said thickness.

2. A pipe having beveling curves on the interior of its bell, the inner one of which meets the bore of the pipe sharply, forming a large angle, said curves also extending part way toward the exterior of the bell.

3. A pipe having beveling curves of different concavity in the interior of its bell end, the innermost of which meets the bore of the pipe sharply, forming a large angle, said curves also extending part way toward the open end of the bell.

4. The combination with a pipe having a curved spigot end, said curve being wholly within the thickness of the pipe-section and extending from the exterior to the interior diameter of said pipe, of a pipe, the bell of which has an interior curve corresponding with that of the spigot end of said first-mentioned pipe, whereby the pipe ends are automatically centered when joined together.

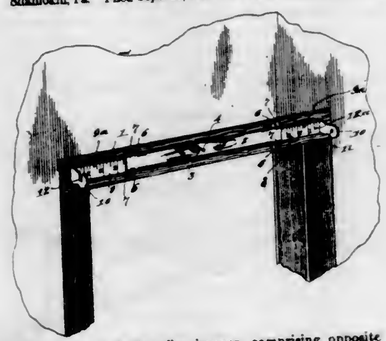
5. A pipe the bell end of which has curves of different concavity, said innermost curve meeting the bore of the pipe sharply, forming a large angle, and a shoulder at the inner end of the innermost curve.

6. A pipe having a bell on one end, said bell having a straight interior for a short distance from its extreme end inward parallel with the spigot-pipe and formed on two curves adjacent thereto, of different concavities, said innermost curve forming a large angle with the bore of the pipe.

7. A pipe having a bell on one end, said bell having a straight interior from its extreme outer end inward for a certain distance parallel with the spigot-pipe and then curved from the inner end of the straight portion toward the bore and having a shoulder immediately adjacent to the bore, said curves being effected by a combination of concave curves, the innermost of which connects with the bore of the pipe forming a large angle.

8. The combination with a pipe, the bell end of which has its interior straight and then formed upon two curves of different concavities, and a second pipe, the spigot end of which has curves of different convexities, of a packing between said bell and spigot ends.

655,089. SHADE-ROLLER BRACKET. WILLIAM E. KEARNEY, Shamokin, Pa. Filed Sept. 16, 1899. Serial No. 730,755. (No model.)

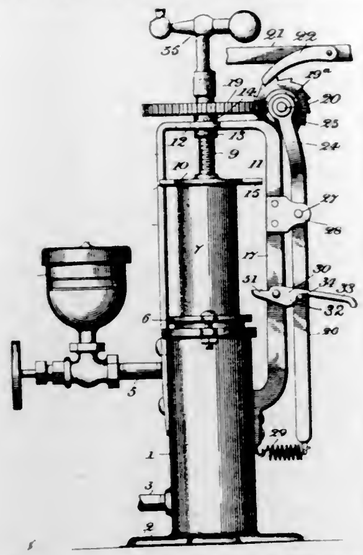


Claim.—1. A shade-roller hanger, comprising opposite roller-bracket slides, a sheet-metal sheath, having opposite inwardly-directed longitudinal spring-flanges located upon the rear side of the sheath and frictionally engaging the slides, and fastenings located adjacent to the ends of the flanges, to support the sheath and force

the flanges against the window-frame or other support and into adjustable frictional engagement with the slides.

2. A shade-roller hanger, comprising opposite roller-bracket slides, a sheet-metal sheath, having opposite inwardly-directed longitudinal spring-flanges located upon the rear side of the sheath, the opposite ends of each flange being bent outwardly into attaching-ears, which are disposed in advance of the adjacent flanges, and provided with perforations, and fastenings received through the perforations in the attaching-ears, for securing the sheath to a support, and to force the spring-flanges against the support and into adjustable frictional engagement with the slides.

655,090. AUTOMATIC LUBRICATOR. OLE O. KITTLESON, Lee, Ill. Filed Mar. 1, 1900. Serial No. 7,011. (No model.)

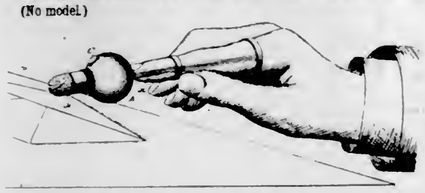


Claim.—1. In an automatic lubricator, the combination with a cylinder, plunger, feed-screw and worm-wheel carried by the latter, of a worm, a movable support for the worm tending to throw the latter out of engagement with the worm-wheel, and means operated by the plunger on the descent thereof, to release the said support and thereby permit the worm to disengage the worm-wheel.

2. In an automatic lubricator, the combination with a cylinder, plunger, feed-screw and worm-wheel carried by the latter, of a worm, a pivoted spring-urged worm-frame, a set-lever in operative relation with the worm-frame and means carried by the plunger for tripping the set-lever.

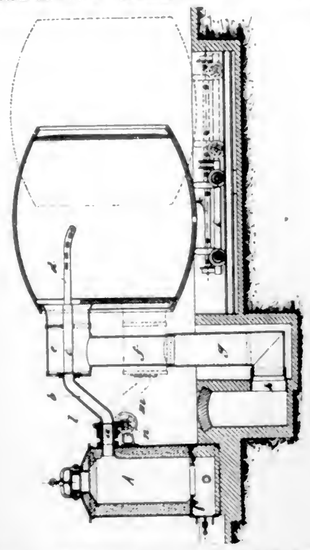
3. The combination with a cylinder, plunger, feed-screw and worm-wheel carried by the latter, of a worm, a pivoted worm-frame, means for urging the frame to throw the worm out of gear with the worm-wheel, a pin projecting from the frame, a set-lever comprising a nose and a cam-face engaging the pin and a trip-lug carried by the plunger and movable in a path obstructed by the nose of the set-lever.

655,091. ENVELOP AND STAMP MOISTENER. WALTER H. KNAUBER, Milwaukee, Wis. Filed Dec. 17, 1897. Serial No. 662,309. (No model.)



Claim.—In an envelop and stamp moistener, the combination, with a reservoir provided with a filling-orifice, a cylindrical projection and a holder, the holder and the projection extending in opposite directions from the reservoir and the projection being of two diameters and exteriorly screw-threaded and provided at its outer end with a perforated diaphragm, of an internally-screw-threaded collar on the smaller diameter of the projection, the outer end of which is provided with means for retaining a sponge, a sponge therein, and an internally-screw-threaded cap over the sponge and the collar and engaging with the larger diameter of the projection, substantially as described.

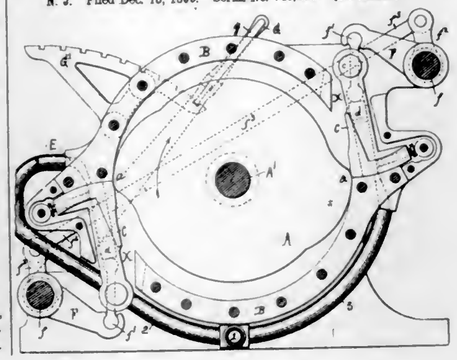
655,092. DEVICE FOR REMOVING PITCH FROM TUNS OR CASKS. CARL F. F. KÖPPING, Chemnitz, Germany. Filed Nov. 24, 1899. Serial No. 738,136. (No model.)



Claim.—1. In apparatus of the character described, the combination with a suitable oven, a coupling secured to said oven, an elbowed pipe revolubly mounted on said coupling, a tubular extension on said pipe adapted to project into the cask, means for conducting smoke from the latter, means for manipulating the cask, and means for actuating said elbowed pipe, substantially as set forth.

2. In apparatus of the character described, the combination with a suitable oven, of a coupling secured in the wall of the oven, a pipe revolubly mounted on said coupling, an extension on said pipe adapted to project into the cask, a suction-head revolubly mounted on said extension and communicating with the doorway of the cask, a pipe communicating with said suction-head and adapted to slide into a second pipe, a conduit communicating with the chimney and receiving the end of said second pipe, means for actuating the movable parts described, and means for moving casks to and from the suction-head, substantially as described.

655,093. ROTARY MOTOR. VINCENT F. LAKE, Pleasantville, N. J. Filed Dec. 15, 1899. Serial No. 740,469. (No model.)



Claim.—1. A rotary motor, having a casing, and a rotary piston therein, with cams, in combination with movable abutments having charging-chambers, the abutments constituting cut-off valves to cut off the supply of motive fluid to the charging-chambers, which then deliver the said motive fluid to the working spaces in the casing to work expansively on the piston, all substantially as described.

2. A rotary motor, having a casing and a rotary piston therein with cams, in combination with pivoted swinging abutments provided with charging-chambers, adapted when the abutments are in their outward positions to be open to the inlets for the motive fluid, but when moved to their inner positions to cut off the supply of motive fluid to the chambers and to deliver the charges to the piston, substantially as described.

3. A rotary motor, having a casing, and a rotary piston therein, with cams, in combination with movable abutments working in conjunction with the piston and having chambers to receive charges of motive fluid from the inlets, and to deliver said charges to the piston and means for varying the capacities of said chambers, substantially as described.

4. A rotary motor, having a casing and a rotary piston therein with cams, in combination with pivoted swinging abutments provided with charging-chambers adapted when the abutments are in their outward positions to be open to the inlets for the motive fluid but when moved to their inner positions to cut off the supply of motive fluid to the chambers and to deliver the charges to the piston, and means for varying the capacities of said chambers, substantially as described.

5. A rotary motor having a casing and a rotary piston therein with cams, in combination with pivoted swinging abutments provided with charging-chambers for the motive fluid, pistons in the backs of said charging-chambers, and means under the control of the engineer for varying the positions of the pistons in said charging-chambers to vary the capacities of the latter, as and for the purpose described.

6. A rotary motor, having a casing and a rotary piston therein, with cams, in combination with movable abutments working in conjunction with the piston to admit motive fluid to work expansively on the piston, and means whereby the pressure of motive fluid acting on the piston, presses the abutments up to the latter, as and for the purpose described.

7. A rotary motor having a casing and a rotary piston therein with cams, in combination with pivoted swinging abutments having chambers to receive charges of motive fluid and deliver them to the piston to work expansively, and means whereby the pressure of motive fluid in the charging-chambers presses the abutments up to the piston, as and for the purpose described.

8. A rotary motor having a casing and a rotary piston therein with cams, in combination with pivoted swinging abutments having chambers to receive charges of motive fluid and to deliver them to the piston to work expansively with lateral chambers opening into the charging-chambers, pistons in said lateral chambers and fixed points against which the outer ends of these pistons may bear, as and for the purpose described.

9. A rotary motor having a casing and a rotary piston therein, with cams, in combination with pivoted swinging abutments adapted when in their inward positions to deliver motive fluid to the piston, and a governing device adapted to temporarily hold the said abutments in their outward positions when the motor runs too fast, substantially as described.

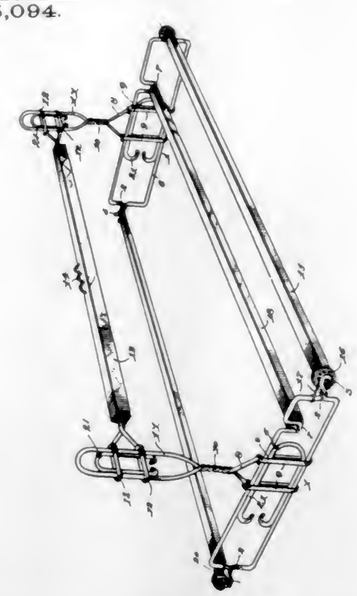
655,094. QUILTING-FRAME. JOHN L. LAMB, Chetopa, Kans. Filed Apr. 27, 1900. Serial No. 14,619. (No model.)

Claim.—1. A quilting-frame comprising open-wire end frames for holding the quilting bars or rollers, hangers having lower pairs of slide-loops for adjustably engaging the end frames and also having upper supporting wire loops in planes at right angles to the end frames, a suspending-bar having terminal pairs of slide-loops to engage the supporting-loops, and spring-wire keys inserted in the end frames and supporting-loops and the slide-loops on the same to set up a frictional binding between the parts.

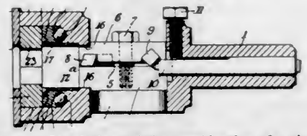
2. A quilting-frame comprising open-wire end frames for supporting quilting bars or rollers, hangers for the end frames having pairs of slide-loops adjustably engaging the latter, and U-shaped spring-wire keys removably inserted in the end frames and the pairs of slide-loops to set up a frictional binding engagement between the several parts.

3. A quilting-frame comprising open-wire end frames for supporting quilting bars or rollers, hangers for the said frames having upper supporting-loops, a suspending-bar having pairs of terminal slides to adjustably fit over the supporting-loops, and U-shaped spring-keys to engage the supporting-loops and slides to set up a frictional engagement between the several parts.

655,094.



655,095. LATHE-TOOL. HENRY S. LAND, London, England. Filed Apr. 5, 1900. Serial No. 11,825. (No model.)



Claim.—1. In a lathe-tool the combination of a shank, a neck portion attached to the said shank, cutters and means for holding the same, a head attached to the said neck portion, a revoluble holding device within said head for supporting the work, and a slide for retaining the holding device in position, substantially as described.

2. In a lathe-tool, the combination of a shank, a neck portion attached to the said shank, cutters carried by said neck portion, clamps for adjustably holding the cutters therein, a head, a collar within the said head having an opening shaped to receive and hold the work, and means for holding the said collar in place, substantially as described.

3. In a lathe-tool and in combination, a shank adapted to be held by a holding device, a neck portion, cutters carried by same, clamps for adjustably holding the cutters therein, a head, a collar carried by same having an opening shaped to receive the work and a ball-bearing for said collar adapted to reduce the friction when the work or tool is rotated substantially as described.

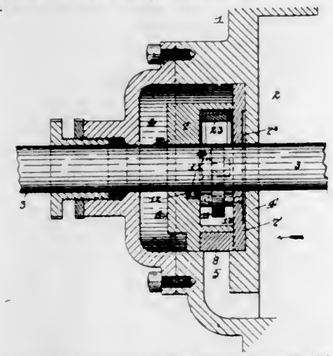
4. In a lathe-tool, the combination of a shank, a neck portion attached to the said shank, cutters carried by said neck portion, clamps for adjustably holding the cutters therein, a head, a collar within the said head having an opening shaped to receive and hold the work, and a slide-piece in said head for retaining the collar in place, substantially as described.

5. In a lathe-tool, the combination of a shank adapted to be held by a holding device, a centering-tool in said shank, means for holding the tool, a neck connected with the said shank, cutters adjustably held in the said neck, a head connected with the said neck, a revoluble holding device within the said head arranged for holding the work close to the cutters, and a slide for retaining the holding device in place, substantially as described.

655,096. GOVERNOR CUT-OFF VALVE FOR ENGINES. FRANK A. LARGE, Pittsburg, Pa. Filed Oct. 27, 1899. Serial No. 734,916. (No model.)

Claim.—1. In governors for steam-engines, the combination with a steam-chest having a supply-port leading therefrom to the cylinder

or piston-chamber of the engine, a shaft passing through said steam-chest and cylinder or piston-chamber, and a circular valve loosely mounted around said shaft within the steam-chest for regulating the supply of steam and the expansion thereof in the cylinder or piston-chamber.



2. In governors for steam-engines, the combination with a steam-chest having a supply-port leading therefrom to the cylinder or piston-chamber of the engine, a shaft passing through said steam-chest and cylinder or piston-chamber, and a circular valve loosely mounted around said shaft within the steam-chest and provided with a segmental opening or slot therein for regulating the supply of steam and the expansion thereof in the cylinder or piston-chamber.

3. In governors for steam-engines, the combination with a steam-chest having a supply-port leading therefrom to the cylinder or piston-chamber of the engine, a shaft passing through said steam-chest and cylinder or piston-chamber, a valve casting or collar loosely mounted around said shaft and within said steam-chest, and a loose ring fitting around said casting or collar having a segmental opening or slot therein for regulating the supply of the steam and the expansion thereof in the cylinder or piston-chamber.

4. In governors for steam-engines, the combination with a steam-chest having a supply-port leading therefrom to the cylinder or piston-chamber of the engine, a shaft passing through said steam-chest and cylinder or piston-chamber, a valve casting or collar loosely mounted around said shaft and within said steam-chest, a loose ring fitting around said casting or collar having a segmental opening or slot therein for regulating the supply of the steam and the expansion thereof in the cylinder or piston-chamber, and mechanism connected to said casting or collar and loose ring for varying the size of the segmental opening or slot in the loose ring according to the speed of the engine.

5. In governors for steam-engines, the combination with a steam-chest having a supply-port leading therefrom to the cylinder or piston-chamber of the engine, a shaft passing through said steam-chest, and cylinder or piston-chamber, a valve casting or collar loosely mounted around said shaft and within the steam-chest, a loose ring fitting around said casting or collar having a segmental opening or slot therein for regulating the supply of steam and the expansion thereof in the cylinder or piston-chamber, a flange or lug on said casting or collar extending across the segmental opening or slot in the loose ring, and mechanism connected to said casting or collar and loose ring for varying the size of the segmental opening or slot in the loose ring by the flange or lug on casting or collar.

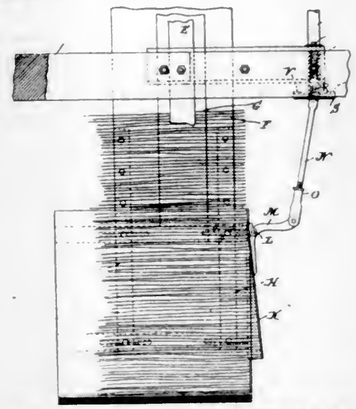
6. In governors for steam-engines, the combination with a steam-chest having a supply-port leading therefrom to the cylinder or piston-chamber of the engine, a shaft passing through said steam-chest and cylinder or piston-chamber, a valve casting or collar loosely mounted around said shaft and within the steam-chest, a loose ring fitting around said casting or collar having a segmental opening or slot therein for regulating the supply of steam and the expansion thereof in the cylinder or piston-chamber, a flange or lug on said casting or collar extending across the opening or slot in the loose ring, and a pinion on said casting or collar adapted to engage with the loose ring for varying the size of the opening or slot in the said loose ring by the flange or lug on the casting or collar.

7. In governors for steam-engines, the combination with a steam-chest having a supply-port leading therefrom to the cylinder or piston-chamber of the engine, a shaft passing through said steam-chest and cylinder or piston-chamber, a valve casting or collar loosely mounted around said shaft and within the steam-chest, a loose ring fitting around said casting or collar having a segmental opening or slot thereon for regulating the supply of steam and the expansion thereof in the cylinder or piston-chamber, a flange or lug on said casting or collar extending across the opening or slot in the loose ring, a pinion on said casting or collar adapted to engage with the loose ring to vary the size of the opening or slot in said loose ring by the flange or lug on the casting or collar, said pinion having a weighted arm connected thereto, and a spring pivotally connected to said weighted pinion and to the casting or collar.

8. In governors for steam-engines, the combination with a steam-chest having a supply-port leading therefrom to the cylinder of the engine, a shaft passing through said steam-chest and cylinder, a circular valve loosely mounted around said shaft within the steam-chest for regulating the supply of steam and the expansion thereof in the cylinder, and a cushioning steam-space between the valve and wall of the steam-chest for balancing said valve.

9. In governors for steam-engines, the combination with a steam-chest having a supply-port leading therefrom to the cylinder of the engine, a shaft passing through said steam-chest and cylinder, a circular valve loosely mounted around said shaft within the steam-chest for regulating the supply of steam and the expansion thereof in the cylinder, and a plate secured to said valve having a recess therein adapted to form a steam-space between the plate and wall of the steam-chest for balancing said valve.

655,097. MACHINE FOR MAKING GRASS TWINE. JUDSON LATTIN, St. Paul, Minn., assignor to the Northwestern Grass Twine Company, same place. Filed Apr. 26, 1899. Serial No. 714,487. (No model.)



Claim.—1. In a machine of the class described, a feed box or tray having a hinged end wall, a rod connected to said hinged end wall, a spring normally acting to project said rod in a direction to close said end wall, and means for periodically moving said rod in the opposite direction against the action of said spring, whereby said end wall is vibrated, as and for the purpose set forth.

2. In a machine of the class described, a feed tray or box having a hinged end wall, a rod adjustably connected to said hinged wall, a disk having cam projections thereon arranged to periodically move said rod in a direction to rock said end wall, and a spring arranged to oppose the action of said cams, as and for the purpose set forth.

3. In a machine of the class described, a stationary upper feeder-plate, in combination with lower feeder-plates, a securing-bolt for the latter, and adjusting-screws arranged on opposite sides of said securing-bolt, whereby said lower feeder-plates may be adjusted toward or from the upper feeder-plate or angularly with respect thereto, as and for the purpose set forth.

4. In a machine of the class described, a bracket having an elongated slot therein, a feeder-plate, a securing-bolt therefor arranged to pass through said elongated slot, set-screws tapped through said bracket on opposite sides of said securing-bolt and arranged to impinge against said feeder-plate, whereby said feeder-plate may be adjusted bodily or angularly, in combination with a cooperating stationary feeder-plate, as and for the purpose set forth.

5. In an apparatus of the class described, feeder-plates forming a passage through which the material is fed, one of said plates being fixed, and means for adjustably tilting the other of said plates laterally and with respect to the fixed plate, whereby the angular relation of said plates laterally with respect to each other may be varied, as and for the purpose set forth.

6. In an apparatus of the class described, feeder-plates forming between the adjacent surfaces thereof, a passage through which the material is fed, and means for relatively adjusting said plates laterally to change the angle of inclination of said surfaces laterally with respect to each other, as and for the purpose set forth.

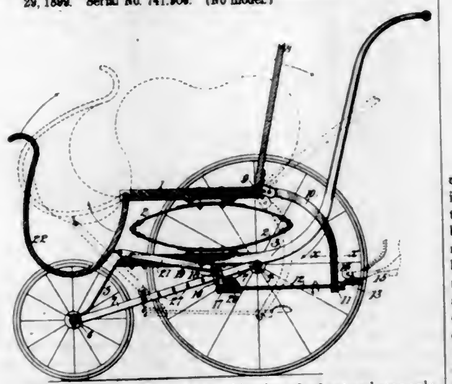
655,098. CUSHION-TIRE. ORVILLE L. LEACH, Providence, R. I. Filed May 31, 1900. Serial No. 18,565. (No model.)



Claim.—1. A tire of the type described, comprising a central, longitudinal elastic core, longitudinal parallel wings radiating equidistantly from the core, segmental, parallel, transverse webs connecting said wings and forming therewith annular series of air-chambers open at their outer ends and gradually increasing in area from their bases outward, said core, wings and webs being integrally connected and forming an internal filler, and a sheath inclosing said filler and closing the outer ends of all the air-chambers, said sheath being removably mounted upon the filler, substantially as described.

2. As a new article of manufacture, a filler for the covers or sheaths of pneumatic tires, comprising a central longitudinal core provided with radial longitudinal wings, and transverse webs connecting said wings and forming therewith annular series of air-chambers increasing in area from their bases outward and open at their outer ends, substantially as described.

655,099. GO-CART. HARRY LEVI, Philadelphia, Pa. Filed Dec. 29, 1899. Serial No. 741,909. (No model.)



Claim.—1. In a go-cart, the combination of a front and rear axle, side arms 3 supported on said rear axle, a strap or brace 5 connecting the forward ends of said side arms to the front axle, a brace 7 connecting said front and rear axle and adjustable locking devices carried by said brace 7 and having connections therefrom to a movable front piece and back.

2. In a go-cart, the combination with the running-gear, of a brace 7 suitably supported thereon and having openings therein, a sleeve provided with ears movable upon said brace, a rod having one end rotatably mounted in said sleeve and carrying a catch engaging said openings, an arm attached to the back of the cart and provided at its lower portion with a bearing for the other end of said rod, the latter carrying a footpiece and a link common to the ears of said sleeve and the front piece of said cart.

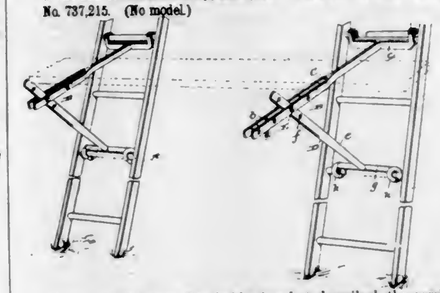
3. The combination with the movable back and front piece of a go-cart, of a link having one end connected to said front piece, a brace, a sleeve supported on said brace, ears on said sleeve engaging said link, a rotatable rod having a bearing in said sleeve, a catch carried by said rod adapted to engage openings in said ears, and in the brace which passes through the latter, an arm attached to said back, a bearing in said arm for said rod, and a footpiece for the latter.

4. The combination with the movable back and front piece of a go-cart, of a link having one end connected to said front piece, a brace, a sleeve supported on said brace, ears on said sleeve engaging said link, a rotatable rod having a bearing in said sleeve, a catch carried by said rod adapted to engage openings in said ears, and in the brace which passes through the latter, an arm attached to said back and a pivotal bearing on said arm for said rod, a footpiece for the latter, and a spring carried on said sleeve and having one member contacting with a projection from said ears and its other member engaging a projection on said catch.

5. In a go-cart, a base 1 supported upon springs 2, carried by the side frames 3, the latter being supported upon the rear axle 4 and having straps or braces extending from the forward end of the front axle 6, the brace 7 connecting the front and rear axles and having openings therethrough, a sleeve provided with ears adapted to move upon said brace 7, a rod rotatably mounted in said sleeve and carrying a catch 17, the nose of said catch being adapted to enter aliuing openings in said ears and contiguous brace, a link common to said ears and the adjustable front piece, an arm attached to the pivotal back of said cart and provided with a bearing in its lower portion, said rod being rotatably mounted in said bearing, a footpiece on said rod and tension devices for said catch.

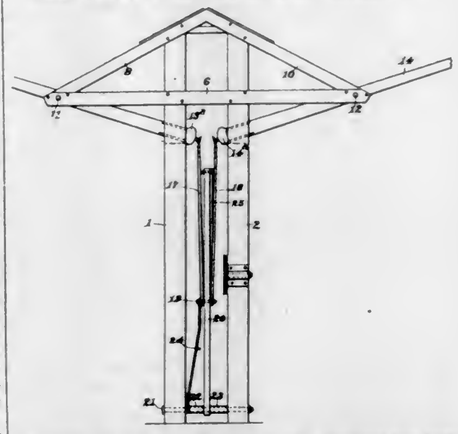
6. In a go-cart, the combination of a base having extensions at the front and rear thereof, a back and front piece journaled or pivotally mounted in said extensions, an arm projecting from said back and having a pivotal bearing at the lower portion thereof, a rod mounted in said bearing, mechanism carried by said rod for locking the back and front piece in adjustable position and a link connecting said mechanism and front piece.

655,100. BRACKET. LOWELL W. MACY, Lincoln, Nebr., assignor of one-half to James A. Bailey, same place. Filed Nov. 16, 1899. Serial No. 737,215. (No model.)



Claim.—In the reversible ladder-bracket described, the combination of the member C formed of one piece of metal and comprising the shank *a* having the long bifurcation in its outer end and the coincident transverse apertures *b* at intervals in the length of the bifurcated portion, and the T-head *c* at one end of the shank terminating in the upwardly and downwardly extending hooks *d*, the member D also formed of one piece of metal and consisting of the shank *e* resting in the bifurcation of the member C and having transverse apertures *f* at intervals in its length adapted to register with those of the shank *a*, the T-head *g* at one end of said shank *e*, and the circular hooks *h* arranged at the ends of the T-head *g* and disposed at right angles thereto, and provided with openings *h'* of a size to permit of the snug passage of a ladder-rung, and a pintle extending through registered apertures *b f* of the members C, D, respectively, and connecting said members, substantially as specified.

655,101. SLIDING GATE. ALEXANDER MASON, Fort Madison, Iowa. Filed Sept. 2, 1899. Serial No. 729,281. (No model.)



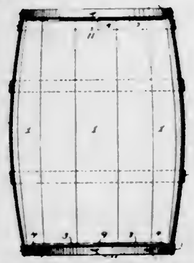
Claim.—In a sliding gate, the combination of the twin main posts having longitudinal slots near their upper ends, a sliding gate passing between said posts, main levers arranged to work vertically in

said slots, an arm pivoted at the base of said posts, a bolt 21 serving as the pivotal support of said arm, sleeves 22 and 23 encircling bolt 21 on opposite sides of the pivoted end of said arm, a side iron 24 having its upper end secured to the arm and its lower end engaging bolt 21 contiguous to one of said main posts, connecting-rods 17 and 18 joining the ends of the main levers and said arm, and connecting-rod 25 joining said arm and gate, as described.

655,102. PROCESS OF CONVERTING EARTH OR SOIL INTO FUEL. GEORG MONTAG and FRIEDRICH KRESSER, Mannheim, Germany. Filed May 26, 1899. Serial No. 718,413. (No specimens.)

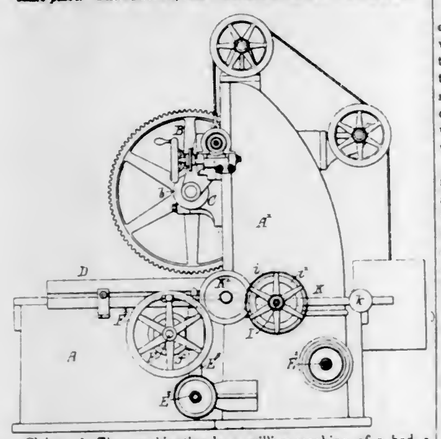
Claim.—Process for the manufacture of fuel essentially composed of earth or soil, consisting in adding to disintegrated earth or soil according to its quality six to eight per cent. of a material prepared by intimately mixing pitch or resin with sawdust and earth, simultaneously adding a half to one per cent. of five-per-cent. sulfuric acid, and hot water, substantially as and for the purpose set forth.

655,103. PACKING BARREL, KEG, OR TIERCE. GEORGE F. MCKEEVER, Allegheny, Pa., assignor of two-thirds to Frederick Barker and James McKeever, Jr., Pittsburg, Pa. Filed Mar. 9, 1900. Serial No. 7,953. (No model.)



Claim.—A barrel comprising a body composed of ungrooved wooden staves and hoops, the head comprising a metallic disk provided with a circumferential groove, the walls of which are straight and substantially parallel the entire depth of said groove and bearing tightly on the inner and outer sides of the stave ends, and means extending through the walls of the groove and staves for securing the head to the body.

655,104. MILLING-MACHINE. CHARLES C. NEWTON, Philadelphia, Pa., assignor to the Newton Machine Tool Works, Incorporated, same place. Filed Nov. 23, 1899. Serial No. 738,106. (No model.)

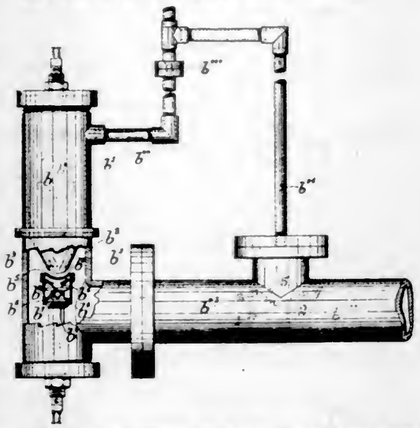


Claim.—1. The combination in a milling-machine, of a bed, a milling-tool shaft, means for driving said shaft so as to rotate the tool, means for moving the bed forward, and power mechanism for returning the bed when the forward feed mechanism and milling-tool shaft are out of gear, and means for throwing said power mechanism into gear with the bed, substantially as described.

2. The combination in a milling-machine, of a bed, a standard, milling mechanism carried by the standard, a table, driving mechanism for the table, a counter-shaft belted to the driving mechanism, a fast pulley and a loose pulley on the counter-shaft, a wheel belted to the loose pulley, a friction-wheel connected to the pulley, and a friction-wheel geared to the feed mechanism of the table, a lever, a friction-wheel thereon engaging the two friction-wheels so that a return motion may be imparted to the table, substantially as described.

3. The combination in a milling-machine, of a bed, a table thereon, milling mechanism, a shaft E^3, means for driving the shaft so as to feed the table forward, a vertical shaft E^2 geared to the shaft E^3, a shaft, F, geared to the vertical shaft, a friction-wheel mounted on the shaft F, a driven friction-wheel i adapted to be thrown into gear when the feed mechanism is stopped, a lever K carrying a friction-wheel K', adapted to be thrown into gear with both the friction-wheels i and F, substantially as and for the purpose set forth.

655,105. ENGINE-GOVERNOR. PERCY W. NORTHEY, Box, England. Filed Dec. 20, 1897. Serial No. 662,678. (No model.)



Claim.—1. In an electrical governing apparatus, a contact-making device comprising a casing, a float carrying a magnet retained within such casing but capable of movement therein when the water has reached the predetermined level, water-tight cases or boxes above and below such float, and one or more armatures attached to lazy-tongs or toggle-levers contained within said boxes whereby electrical contact is made or broken and the valves of the engine operated, substantially as set forth.

2. The combination, in a governing apparatus for marine engines, of a casing communicating with the exterior of the vessel below the water-line, a float and contacts within such casing, means whereby the incoming water is divided, part flowing into the casing beneath the float and the remainder into the pipe connected with the casing above the float, means to prevent the egress of water through said casing, means to admit of the discharge of water above said casing without passing through it, and means to prevent the outflow of water from said casing until such water as is above it has run out.

3. An electrical governor consisting essentially of a reversible motor fitted with an automatic circuit making and breaking device, and a contact-making device comprising a casing communicating with the exterior of the vessel, a float fitted with a magnet, and water-tight casings or boxes having suitable concavities or depressions adapted to receive the ends of the float and within each casing an arrangement of armatures actuating a contact-making device, substantially as set forth.

4. A governing apparatus comprising a reversible motor fitted with an automatic circuit making and breaking device, a contact-making device consisting of a casing having free access of water from the exterior, a round or egg-ended float fitted with a magnet and adapted to engage in one or other of correspondingly-shaped depressions or concavities in water-tight casings or boxes, each fitted with an arrangement of armatures actuating a contact-making device and an electromagnet forming a relay-switch, substantially as set forth

5. In a governing apparatus, the device for admitting of the motor continuing to revolve until it runs down and comes gradually to rest after having effected the opening or closing of the valves consisting essentially of a worm or tangent screw so mounted upon the motor-shaft, or a shaft connected thereto, as to rotate therewith, while at the same time the worm is moved longitudinally upon the said shaft by a nut rotatably connected to the said worm, which nut is

itself prevented from rotating but is free to move longitudinally and is threaded upon, or engaged with, a screw-threaded portion of the said spindle tapered at each end, a suitable worm-wheel gearing with the said worm, and spring or other buffers, substantially as set forth.

6. The combination of the throttle-valve, an electric motor for operating it, an emergency-governor, circuit connections between the emergency-governor and the electric motor, a clutch or catch for holding the governor and another circuit controlled by the governor for opening the throttle-valve.

7. The combination of a throttle-valve, an electric motor connected therewith, a float, circuit connections controlled by the float for controlling the movement of the motor in both directions, an emergency-governor, and circuit connections controlled by the emergency-governor for controlling the movement of the motor, irrespective of the action of the float.

655,106. GATE-HINGE. JOHN J. OSER, Kibbey, Mont. Filed Nov. 16, 1899. Serial No. 737,227. (No model.)

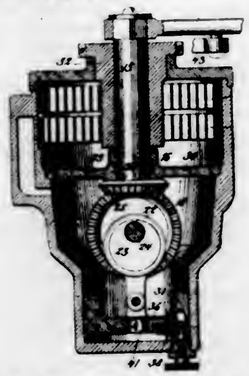


Claim.—1. A gate-hinge comprising a fixed vertical bar adapted for attachment to a gate-post, a bracket adjustable on said bar, and a roller-support consisting of a yoke swiveled to the bracket and having a roller journaled between its arms, said arms being of unequal length and the longer arm forming a guard extending some distance above the roller to hold a gate resting thereon against outward displacement, substantially as described.

2. A gate-hinge comprising a fixed vertical bar adapted for attachment to a gate-post and provided with a series of locking-slots, an adjustable bracket having a locking projection to engage said slots and carrying a bearing, and a roller-support consisting of a yoke swiveled to the bracket and having a roller journaled between its arms, said arms being of unequal length and the longer arm forming a guard extending some distance above the roller to hold a gate resting thereon against outward displacement, substantially as described.

3. A gate-hinge comprising a fixed bar, a bracket adjustably connected with the bar and having a bearing formed with an opening having at or below its center a groove or raceway in the wall thereof and a filling-bore communicating with said groove, a roller-support consisting of a yoke having a roller journaled therein and provided with a pendent shank fitting in said opening and also having a groove or raceway, antifriction-balls in said grooves and between the under side of the yoke and upper surface of the bearing, and a plug closing the filling-bore, substantially as described.

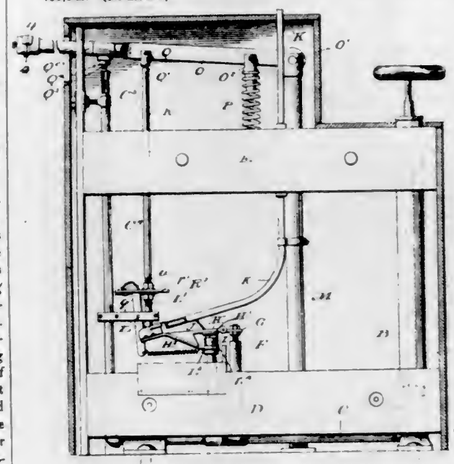
655,107. DOOR-CHECK. FREDERICK H. OGDEN, Newark, N. J., assignor of one-half to Henry Ill, same place. Filed Oct. 16, 1899. Serial No. 733,705. (No model.)



Claim.—1. In a door-check, the combination, with a vertical working cylinder, a vertically-movable piston therein, and a vertical spindle mounted to be rotated, and connections between the door and spindle to rotate the latter when the door swings, of mechanism driven from said spindle to transmit the motion thereof to the piston, said mechanism comprising a cam, reducing-gearing to transmit motion from the spindle to the cam, and a connection between the cam and the piston, the arrangement and proportion of said parts being such that the cam will be at a dead-center when the piston is at either limit of its travel, whereby the piston has a substantially-continuous motion in one direction during the opening or closing movement of the door.

2. In a door-check, the combination, with a vertical working cylinder, a vertically-movable piston therein, a vertical spindle mounted to be rotated, and connections between the door and spindle to rotate the latter when the door swings, of a shaft arranged at right angles to the axes of the cylinder and spindle, reducing-gearing connecting the spindle and shaft, an eccentric on the shaft, and a device connected to the piston and movable by the eccentric to transmit movement from the latter to the piston, the arrangement and proportion of said parts being such that the eccentric will be at a dead-center when the piston is at either limit of its travel, whereby the piston has a substantially-continuous motion in one direction during the opening or closing movement of the door.

655,108. COIN-OPERATED DEVICE FOR BICYCLE-PUMPS. THOMAS PALMER, Washington, D. C. Filed Dec. 7, 1899. Serial No. 739,542. (No model.)



Claim.—1. A coin-operated apparatus for bicycle-pumps comprising in combination with an air-pump, open-ended pipes communicating with the cylinder of the pump, a pivoted lever having a bore in one end, a nipple leading into said bore, adapted when said lever is depressed, to communicate with one of said open-ended pipes, and means for closing the open end of the second pipe communicating with the air-pump, as said lever is depressed.

2. A coin-operated apparatus for bicycle-pumps, comprising in combination with the pump, open-ended pipes communicating with the pump-cylinder, a lever pivoted to a suitable support, and having a bore in its outer end, a nipple leading into and communicating with said bore, and positioned opposite the upper end of one of said open-ended pipes, a pivoted plate carrying a valve, and means for seating said valve as the lever is depressed, as set forth.

3. A coin-operated apparatus for bicycle-pumps, comprising in combination with the pump, open-ended pipes communicating with the cylinder of the pump, a pivoted lever having a bore in its outer end, a nipple communicating with its inner end, and at right angles thereto, and opposite the upper end of one of said open-ended pipes, a pivoted plate having a valve adapted to be seated over the upper end of the second of the open-ended pipes, a rod, pivoted to said lever, and adapted, when a coin has been dropped onto said pivoted plate and in the path of said rod, to depress said plate and means for removing the coin from said plate, as set forth.

4. A coin-controlled apparatus for bicycle-pumps, comprising in combination with the pump, the open-ended pipes communicating with the cylinder of the pump, a pivoted lever having a bore in one end a nipple leading into and communicating with the inner end of said bore, said nipple being positioned opposite the end of one of said open-ended pipes, a pivoted plate spring-actuated and having a valve on its under surface adapted to be seated over the upper end of the second of said open-ended pipes, a rod pivoted to said lever, the lower end of said rod designed to strike against a coin, that has been previously deposited near the free end of said pivoted plate,

whereby the latter is depressed and the valve carried thereby seated, and a spring-actuated lever designed to kick the coin off from said plate, as the rod is raised, as set forth.

5. In a coin-controlled apparatus for bicycle-pumps, the combination with the pump, pipes communicating therewith, the pivoted lever having a bore with a nipple leading thereto, the spring-actuated plate having a valve on its under surface, the pivoted rod, the apertured plate carried thereby, a spring-actuated lever pivoted to a suitable support, the bent end of said lever having pivoted thereto a dog, a spring bearing against the latter, the outer end of the dog being in the path of said apertured plate, and designed to turn idly as the rod is depressed, but to cause the lever carrying the dog to tilt on the return movement of the rod, and after said apertured plate has passed the dog, the lower end of said spring-actuated dog-carrying rod, to kick against the edge of the coin which has been previously dropped into the chute and fallen by gravity into the path of said rod, as shown and described.

655,109. TOY MUSICAL INSTRUMENT. ROBERT PITT, St. Lewis, N. C. Filed Apr. 21, 1900. Serial No. 13,743. (No model.)



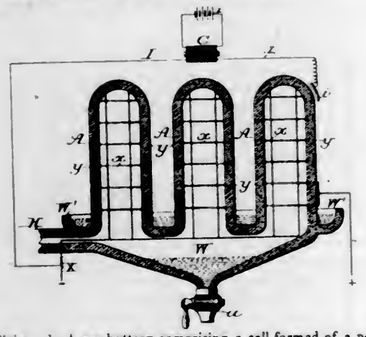
Claim.—1. A toy musical instrument consisting of a tubular body portion having oppositely-facing diaphragm-heads of flexible inelastic material arranged across the opposite end of its bore, and two lateral holes opening into said tube at points between the two heads substantially as described.

2. A toy musical instrument consisting of a tubular body portion having oppositely-facing diaphragm-heads of flexible inelastic material arranged across the opposite ends of the bore, and two lateral holes opening into the tube between the heads, and detachable perforated caps arranged upon the ends of the tube outside of the flexible heads substantially as and for the purpose described.

3. A toy musical instrument consisting of a tubular body portion made in two sections united by a separable joint, each section having a flexible inelastic head and a protecting-cap, the said body portion also having two lateral holes opening into the same between the heads substantially as and for the purpose described.

4. A toy musical instrument consisting of a tubular body portion having at each end a flexible inelastic head and a detachable cap covering the same and two holes opening into the tube between the heads, one of said holes having a tubular mouthpiece inserted in the same substantially as described.

655,110. GAS-BATTERY. ANDREW PLECHER, Savannah, Ga. Filed Nov. 23, 1899. Serial No. 738,026. (No model.)



Claim.—1. A gas battery comprising a cell formed of a porous solid non-conducting body, homogeneously filled with a chemically-deposited metal of the platinum group, and having on one side a superficial electrode adapted to be covered by one gas, and on the other side a superficial electrode adapted to be covered by the other gas substantially as and for the purpose described.

2. A gas-battery having a cell constructed of non-conducting material homogeneously filled with a chemically-deposited metal of the platinum group and having electrodes on its opposite sides combined with an induction-coil having its secondary wires connected to electrodes on the opposite sides of the walls of said cell to send a discharge through its walls for stimulating the action and securing depolarization as described.

3. A gas-battery having a cell constructed of non-conducting material homogeneously filled with a chemically-deposited metal of the platinum group and having electrodes on its opposite sides combined with an induction-coil having its secondary wire connected to said electrodes to act through the cell-body, and its primary wire connected to the circuit-wires of the gas-battery substantially as described.

4. A gas-battery having a cell constructed as a retaining-cup for the hydrogen or combustible gas, said cup being made of porous non-conducting material having homogeneously distributed through its body, a chemically-deposited metal of the platinum group and electrodes on its opposite faces as set forth.

5. A gas-battery having a cell constructed as an inverted gas retaining cup composed of porous refractory non-conducting material filled with a chemically-deposited metal of the platinum group homogeneously distributed through it, and electrodes on its opposite faces and a subjacent receptacle for receiving the water formed by the chemical union of the gases as described.

6. The gas-battery consisting of inverted cup-shaped cells A of porous refractory non-conducting material having internal and external electrodes and a common subjacent water-receptacle as shown and described.

655,111. ELECTROLYTIC APPARATUS. ANDREW PLECHER, Savannah, Ga. Filed Jan. 20, 1900. Serial No. 2,167. (No model.)



Claim.—1. An electrolytic apparatus of spheroidal shape consisting of two separate closed cells or chambers forming sections of the spheroid with flat sides juxtaposed and having registering openings for intercommunication, and an encompassing band or jacket completely encircling and holding them together, said cells being provided with electrodes and circuit-wires, and gas-discharging pipes substantially as described.

2. An electrolytic apparatus of spheroidal shape consisting of two separate closed cells or chambers forming sections of the spheroid, with flat sides juxtaposed as described, one of which has a filling-tube with closing device, and both of which have registering openings, and an encompassing band or jacket completely encircling and holding them together, said cells being provided with electrodes, circuit-wires, and gas-discharge pipes substantially as described.

3. An electrolytic apparatus of spheroidal shape composed of two metal cells forming sections of the spheroid and having flat sides insulated from each other and electroplated interiorly to form both electrodes and holders for the gases, said chambers being in open communication with each other, separate gas-discharge pipes for the cells, and separate electrical connection for carrying the current to the same, substantially as described.

4. An electrolytic apparatus made of two metal cells having rounded exterior walls and flat adjacent and juxtaposed sides with registering openings, an insulating medium between the juxtaposed sides, separate electrical connections for the cells and a detachable clamping and retaining band or jacket surrounding the cells substantially as described.

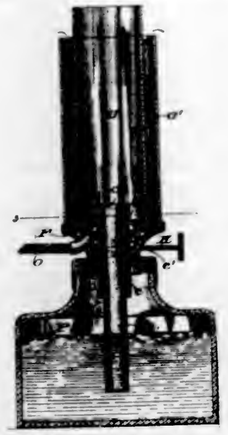
655,112. CALCIUM-WICK LAMP. ANDREW PLECHER, Savannah, Ga. Filed Jan. 20, 1900. Serial No. 2,170. (No model.)

Claim.—1. A lamp having an absorbent wick made of refractory incombustible material combined with a pipe having perforations for directing jets of oxygen directly against the upper end of the wick, the said wick being both a feeder of oil by capillary action and incandescing at its upper end by the combustion of oxygen with the hydrocarbon vapors volatilized from the wick below by the heat of incandescence substantially as described.

2. A lamp having a cylindrical absorbent wick made of a refractory incombustible material possessing capillary action, combined with a hollow ring-shaped tube arranged horizontally and surrounding said wick and having perforations on its inner side to cause jets of oxygen to impinge against the wick substantially as and for the purpose described.

3. A lamp having a non-combustible absorbent wick, a hollow horizontal ring embracing the same and provided with perforations on its inner side to direct jets of oxygen against said wick, a burner-frame with double chimneys mounted on the same to cause the air

to pass downwardly between the same and mingle with the oxygen gas impinging upon the wick substantially as and for the purpose described.



655,118. ELECTROMAGNETIC TELEPHONE. ANDREW PLECHER, Savannah, Ga. Filed Feb. 16, 1900. Serial No. 5,443. (No model.)



Claim.—1. A resistance-varying medium for a telephone consisting of a coil of fine bare wire of magnetic metal having separated turns or convolutions interposed in the circuit and arranged as described to collapse and reduce resistance from magnetic action substantially as set forth.

2. A resistance-varying medium for a telephone consisting of a coil of fine bare wire of magnetic metal having separated turns or convolutions, combined with two diaphragms connected respectively to the opposite ends of said coil and vibrating in opposite directions as set forth.

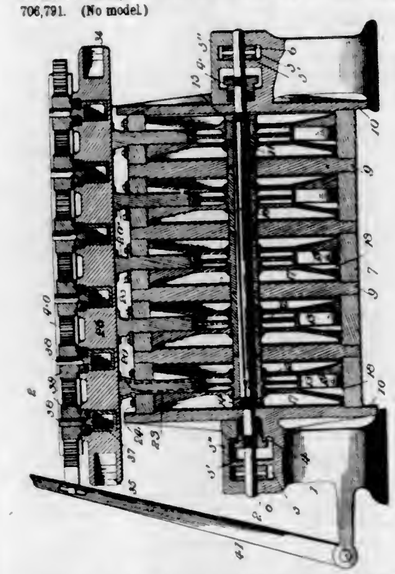
3. A telephone comprising an iron box and an attached iron circuit-wire, an insulated wire wound around the said circuit-wire between stations to render the boxes magnetic; in combination with two diaphragms, and a variable-resistance medium between them substantially as described.

4. The combination in a telephone, of two diaphragms having between them a resistance-varying medium within a hermetically-sealed chamber and means for increasing or decreasing the air-pressure within said hermetically-sealed chamber substantially as described.

5. The combination with the diaphragm-plates D D'; of the interposed wire coil X having carbon pieces at its ends in elastic contact with the plates D D' substantially as described.

6. A telephone comprising an iron box M having an iron wire I connecting it to a similar iron box, a battery-circuit wire coiled about the same, said battery-circuit wire being connected with the iron box through a variable-resistance medium and a diaphragm substantially as described.

655,114. PISTON-IMPACT ENGINE. WILLIAM E. PRALL and EDGAR F. PRALL, New York, N. Y. Filed Feb. 24, 1899. Serial No. 706,791. (No model.)



Claim.—1. In an engine, an engine-casing, a shaft, a wheel situated in the casing having two disks comprising a steamway, an intermediate disk fixed on the shaft, means for securing the disks on the shaft, such means being adapted to hold the wheel-disks against the intermediate disk, and a fixed abutment situated in the steamway.

2. In an engine, an engine-casing, a shaft, a hub surrounding the shaft and fixed against rotation, said hub having a disk fixed thereto, wheel-disks fixed to the hub and held against the first-named disk, a steamway outside the periphery of the intermediate disk, and an abutment situated in said steamway.

3. In an engine, a shaft, a cylinder-casing, a wheel having impact-faces and a steamway adjacent said faces, an abutment fixed in the steamway having separate ports adapted to communicate alternately with the steamway, and a valve having a single port adapted to be put in direct communication with either abutment-port.

4. In an engine, a shaft, a cylinder-casing, a wheel having impact-faces and a steamway adjacent said faces, an abutment fixed in the steamway having separate ports adapted to communicate alternately with the steamway, and a valve having a single port adapted to be put in direct communication with either abutment-port, and adapted in either case to be mediately put in communication with the port of a separate valve, and said separate valve.

5. In an engine, a shaft, a cylinder-casing, a plurality of wheels each having impact-faces and an abutment fixed in a steamway between said faces, the abutment being provided with separate ports adapted to communicate alternately with the steamway, and a plurality of valves each having a port to be put directly in communication with either port of a corresponding abutment and mediately with the admission-port of a similar adjacent valve.

6. In an engine, a shaft, a cylinder-casing, a plurality of wheels each having impact-faces and bucket-disks, hubs to connect the disks to the shaft, means to clamp the hubs on the shaft, and an abutment

fixed in a steamway between said faces of each wheel, each abutment being provided with separate ports adapted to communicate alternately with the steamway, and a plurality of valves each having a port to be put directly in communication with either port of a corresponding abutment and mediately with the admission-port of a similar adjacent valve.

7. In an engine, a shaft, a cylinder-casing, a plurality of wheels each having impact-faces and bucket-disks, hubs to connect the disks to the shaft, means to clasp the hubs on the shaft, and an abutment fixed in a steamway between said faces of each wheel, each abutment being provided with separate ports adapted to communicate alternately with the steamway, and a plurality of valves each having a port to be put directly in communication with either port of a corresponding abutment and mediately with the admission-port of a similar adjacent valve, and devices for simultaneously opening the valves to admit steam to the several wheels in succession.

8. In an engine, a shaft, a cylinder-casing, a plurality of wheels each having impact-faces and bucket-disks, hubs to connect the disks to the shaft, means to clamp the hubs on the shaft, and an abutment fixed in a steamway between said faces of each wheel, each abutment being provided with separate ports adapted to communicate alternately with the steamway, and a plurality of valves each having a port to be put directly in communication with either port of a corresponding abutment and mediately with the admission-port of a similarly adjacent valve, and devices for simultaneously opening the valves to admit steam to the several wheels in succession, said valves being each reversible and adapted to admit steam in a reverse order to the various ports communicating with its corresponding wheel.

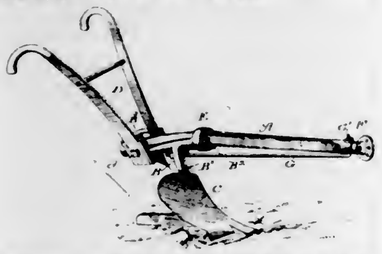
9. In an engine, a cylinder-casing, a plurality of wheels having impact-faces and a steamway adjacent said faces, abutments fixed one in each steamway, each abutment having separate ports alternately communicating with a steamway, and a plurality of valves each having a port adapted to be put directly in communication with either of its corresponding abutment-ports and mediately with the port of another valve.

10. In an engine, a shaft, a cylinder-casing comprising a series of rings 7 clamped between the cylinder-heads, a rotary motor-wheel fixed to the shaft within each ring, an abutment for each ring extending into a steamway in the wheel and communicating with a single steam-supply valve, and a supply-valve for each ring, all substantially as described, whereby steam may be passed through the several abutments in succession, and whereby the engine may be made of greater or less length by varying the number of rings and connections.

11. In an engine, the combination of a cylinder comprising separable sections each having an admission and exhaust port, valves, one for each cylinder-section situated outside the cylinder, and devices to operate the valves to pass steam through them and their corresponding cylinder-sections in succession.

12. In an engine, the combination of a cylinder comprising separable sections each having an admission and exhaust port, valves, one for each cylinder-section situated outside the cylinder, closed disks between the sections, and devices to operate the valves to pass steam through them and their corresponding cylinder-sections in succession.

655,115. PLOW. RICHARD H. PURNELL, Rosedale, Miss. Filed Mar. 27, 1900. Serial No. 10,377. (No model.)

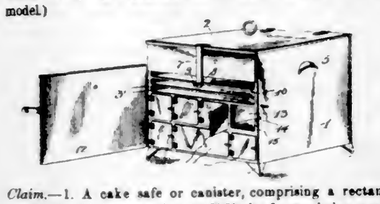


Claim.—1. In a device of the character described, a tubular metallic beam, a standard carrying cultivating devices and formed with a concave or semicircular upper edge in which said beam fits, and a coupling-band surrounding the beam and semicircular portion of the standard and binding the same together, as set forth.

2. In a device of the character described, a standard formed with a thickened forward edge forming a seat for the cultivating devices, said standard being also formed with a concave or semicircular upper edge and an integral socket-piece at the rear end of said edge, said socket-piece being formed with recessed sides in which handles are adapted to fit, a beam fitted in the concave edge of the standard and inserted through said socket-piece, and a coupling-band securing the front upper end of the standard to the beam, as set forth.

3. In a device of the character described, a standard having formed integral therewith a thickened forward edge, a concave upper edge, and a socket-piece at the rear end of the said edge and formed with recessed sides adapted to receive the handles, a tubular flattened beam fitted in said concave edge and inserted through the socket-piece, a coupling securing the beam to the forward upper end of the standard, a clevis having a shank inserted in the front end of the beam, and a brace-rod secured at its rear end in the thickened forward edge of the standard and having a bent forward end extending through the beam and the shank of the clevis, as set forth.

655,116. CAKE-BOX. NELLIE R. RAND, South Windham, Me. Filed June 1, 1899. Renewed May 17, 1900. Serial No. 16,988. (No model.)



Claim.—1. A cake safe or canister, comprising a rectangular box provided with horizontal trays 3' 3', the former being provided with a stud-pin 9, the cover 2 hinged to the top of said box, the hasp 7 provided with an orifice 8 to receive said pin, and the door 12 adapted to lock said hasp in place, substantially as and for the purpose set forth.

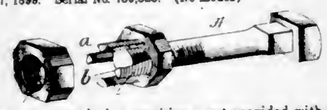
2. A cake safe or canister, comprising a rectangular box formed with a horizontal partition 3 and a series of compartments 13, an individual door for each compartment, a tray having a sliding engagement with the bottom of each compartment, and a door common to all the compartments, a hinged cover and a hasp carried by said cover and extending between the common door and the box, substantially as and for the purpose set forth.

655,117. PROCESS OF SEPARATING META AND PARA CRESOL. FRITZ RASCHIG, Ludwigshafen, Germany. Filed Oct. 4, 1899. Serial No. 732,552. (No specimens.)

Claim.—1. The herein-described process for the separation of meta-cresol and para-cresol, which consists in first converting them into sulfo-acids and subsequently separating the solid para-acid from the liquid meta-acid, substantially as set forth.

2. The herein-described process for the separation of meta-cresol and para-cresol, which consists in first converting them into their respective sulfo-acids, separating the solid para-acid from the liquid meta-acid, and finally treating each sulfo-acid with steam for recovering the cresol therefrom, substantially as set forth.

655,118. NUT-LOCK. JOHN C. REIS, West Union, Ohio. Filed Dec. 7, 1899. Serial No. 739,525. (No model.)



Claim.—1. A nut-lock comprising a nut provided with a plurality of outwardly-projecting locking-arms having inner longitudinally-extending biting edges adapted to engage the threads upon a bolt, and a locking member embracing the said locking-arms and forcing them inward in contact with the threads of the bolt, substantially as described.

2. A nut-lock comprising a bolt, a nut adapted to screw upon the said bolt, said nut provided with outwardly-projecting locking-arms, said locking-arms having screw-threaded external portions and their inner faces tapered to a biting edge for engaging the threads of the bolt, and a locking-nut having a screw-threaded opening adapted to engage the external screw-threaded portions of the locking-arms and forcing them in engagement with the threads of the bolt, substantially as described.

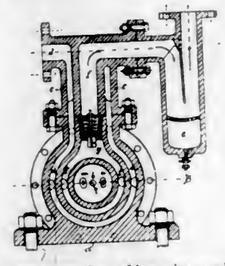
3. A nut-lock comprising a bolt, a nut adapted to be screwed thereon, said nut having outwardly-projecting locking-arms with external screw-threaded portions, said locking-arms being wedge shaped in cross-section constituting at their inner faces longitudinally-extending biting edges, and a locking-nut adapted to receive and screw upon the external screw-threaded surfaces of the locking-arms and force them in contact with the threads of the bolt, substantially as described.

655,119. COMPOSITION FOR PREVENTING BOILER INCRUSTATIONS. JOSEPH L. M. A. REIS, Antwerp, Belgium. Filed June 23, 1899. Serial No. 721,607. (No specimens.)

Claim.—1. The herein-described composition for preventing incrustations in steam-boilers, the same consisting of sugar, extract of tannin, silicate of soda or of potash, boric acid and sufficient water necessary for binding the above ingredients, substantially as described.

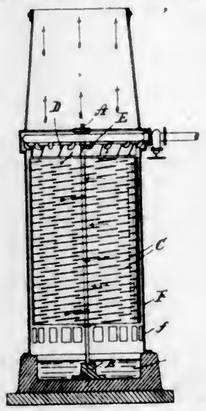
2. The herein-described composition for preventing incrustations in steam-boilers, the same consisting of fifty-eight (58) parts of sugar, twenty (20) parts of extract of tannin, twenty (20) parts of silicate, two (2) parts of boracic acid and water sufficient to bind the above ingredients.

655,120. COMPRESSOR FOR REFRIGERATING-MACHINES. HEINRICH RENNO, Hoerde, Germany. Filed Feb. 2, 1900. Serial No. 3,732. (No model.)



Claim.—A compressor for refrigerating-machines having, arranged around the compression-chamber, two concentric jackets continued into the cylindrical chamber thereof as central and annular passages, the outer completing the communication with the suction-pipe and the inner that with the pressure-pipe, for the purpose of more intense cooling of the compressed outgoing gas by means of the expanded incoming gas.

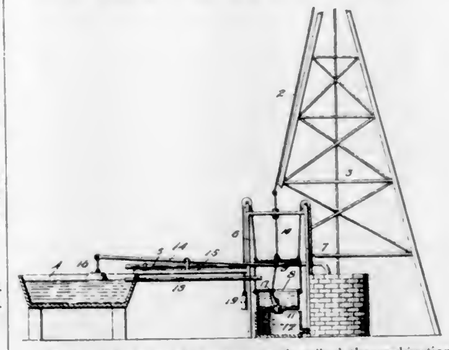
655,121. GRADUATOR. HEINRICH SCHAFFSTADT, Giessen, Germany. Filed Apr. 17, 1900. Serial No. 13,205. (No model.)



Claim.—1. In a graduator the combination of a rotatable spindle with arms which overlap one another in vertical planes and which are fixed in spiral lines on the spindle, means to distribute water on the top series of arms and means for admitting air at the lower portion of the structure, substantially as described.

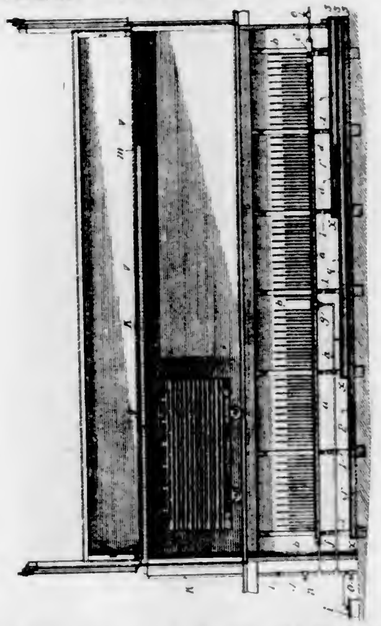
2. In a graduator the combination of a rotatable spindle with superposed arms which overlap one another in vertical planes and which are fixed in spiral lines on the spindle, means for distributing water on the top series of arms, means adapted to be acted upon by the water to turn the spindle and means for admitting air at the lower portion of the structure, substantially as described.

655,122. WINDMILL-REGULATOR. HENRY E. SCHULTZ, Wharton, Tex. Filed Jan. 11, 1900. Serial No. 1,126. (No model.)



Claim.—In a device of the character described, the combination, with a watering-trough, a well, a windmill, and its controlling-rod, of a framework arranged in close proximity to the windmill and well, a bucket mounted to move vertically in the framework and provided in its bottom with a discharge-opening, a bail connected to the bucket, a link mounted in a guide in said framework and connecting the bail with the windmill-rod, a tub arranged beneath the bucket to receive the discharge therefrom, a pipe connecting the tub with the well to allow the discharge to flow back into the latter, ropes connected with the bail and rove around pulleys in the framework and carrying counterbalancing-weights, an inlet-pipe leading from the well to the watering-trough, an overflow-pipe leading from the watering-trough to and discharging into the bucket, a lever pivoted intermediate its ends and having one end projecting over the watering-trough and the other end over the bucket, a valve for closing the discharge-opening in the bucket, a flexible connection between one end of the lever and the valve, and a float connected to the other end of the lever and arranged within the trough, substantially as described.

655,123. DRY-KILN. ALONZO H. SIMMS, Birmingham, Ala. Filed Feb. 23, 1900. Serial No. 6,877. (No model.)



Claim.—1. In a kiln, the combination with a heating-pipe, of a cold-air flue beneath the pipe, said flue subdivided into two or more

independent chambers, these chambers superimposed one above the other and extending successively one beyond another.

2. In a kiln, the combination with a main header-pipe carrying a series of radiating-pipes, of a cold-air flue beneath the header, said flue subdivided into two or more independent chambers, these chambers superimposed one above another and extending successively one beyond another.

3. In a kiln, the combination with a header carrying a series of radiating-pipes and mounted or supported throughout its length upon antifriction-bearings, of bolts hooked over certain of the radiating-pipes for securely fastening the header in place at that point while expansion and contraction takes place throughout the remainder of the length of the header upon the antifriction-bearings which support it.

4. In a kiln, a cold-air flue composed of two or more superimposed compartments, one extending beyond the next one above and said compartments perforated on their upper surfaces, and doors or shutters at the outer end of each flue-compartment for the regulation of the air-supply thereinto.

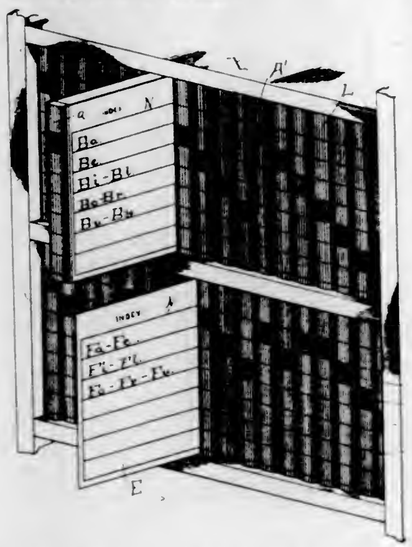
5. The combination with a suitable support, of a header thereon, said header carrying radiating-pipes, and eyebolts secured to certain of the radiating-pipes for securing the header at one end upon its support, and rollers upon which the header rests.

6. In a kiln, the combination with a main header-pipe and radiating-pipes extending therefrom, of cold-air ducts extending from a common point divided into separate compartments for discharging at different points immediately beneath said header-pipe, valves for these compartments and hot-air dampers at the upper end of the kiln for the discharge of heated air therefrom.

7. In a kiln, the combination with a main header-pipe, of cold-air ducts extending in proximity thereto, said ducts of varying lengths and perforated for the escape of air, and extending to a common point, and valves for the outer ends of these ducts.

8. In a kiln, the combination with a header wholly located within the kiln and supported upon antifriction-bearings throughout its length, and sets of inclining, diverging radiating-pipes extending from each side of the header-pipe which balance the latter axially upon the bearings, of means located at one end for rigidly securing it in place, and a steam-pipe passing from the exterior into the kiln and discharging into the header in close proximity to the point where the header is secured, whereby no strain is felt upon the wall of the kiln due to expansion and contraction of the header.

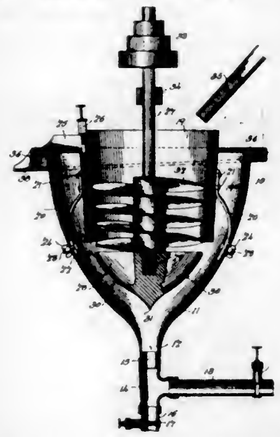
655,124. MEMORANDUM-FILE. WALTER L. SMITH, Chicago, Ill., assignor to Henry Date, Austin, Ill. Original application filed Sept. 12, 1898, Serial No. 690,813. Divided and this application filed Apr. 20, 1899. Serial No. 713,710. (No model.)



Claim.—1. The combination with a plurality of receptacles stored side by side and forming a single series, of an index for cooperating with such series and stored side by side with the receptacles, such index being subdivided into sections vertically arranged, each receptacle of the series bearing upon its exposed end an indicating-mark in horizontal alinement with one of the sections of the index-sheet.

2. The combination with a plurality of file-receptacles arranged in series side by side, of an index formed upon the side of one of the receptacles and being subdivided into sections vertically arranged, each receptacle of the series bearing upon its exposed end an indicating-mark in horizontal alinement with one of the sections of the index.

655,125. CORUNDUM-SEPARATOR. JESSE B. STALOUP, Waynesville, N. C. Filed July 24, 1899. Serial No. 724,967. (No model.)



Claim.—1. In an ore-separator, the combination of a bowl having a water-inlet at its lower end, an open-ended hopper arranged within the bowl to form an intermediate water-passage, a conveyer revoluble within said hopper, and a deflector revoluble with said conveyer, and having a conical under surface which faces said water-inlet the greatest diameter of the deflector being less than that of the hopper and said deflector arranged contiguous to and below the open end of said hopper to form an unobstructed narrow space therebetween, substantially as described.

2. In an ore-separator, the combination of a bowl having a water-inlet at its bottom, an open-ended hopper extending into said bowl and forming an immediate water-channel therewith, a spiral conveyer revoluble within said hopper, and an inverted conical deflector situated below the hopper, facing the water-inlet to the bowl and revoluble with said conveyer, the greatest diameter of the deflector being less than the interval diameter of the hopper, substantially as described.

3. In an ore-separator, the combination of a tapering bowl having a water-inlet at its lower contracted extremity, an open-ended hopper within said bowl and forming therewith an intermediate channel, a tapering imperforate deflector revolubly mounted contiguous to the open end of the hopper to leave an unobstructed narrow space therebetween and presenting an upwardly and outwardly flaring surface to the water-inlet of the bowl, and a conveyer within said hopper and above the deflector, substantially as described.

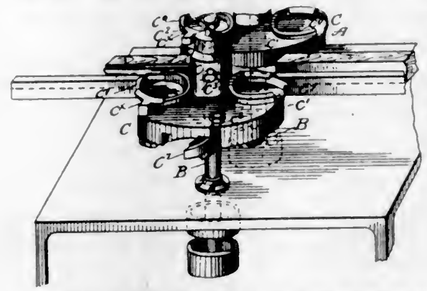
4. In an ore-separator, the combination of a bowl, having a water-inlet at the lower end, a bottomless, substantially-cylindrical hopper disposed in the bowl and vertically adjustable therein, for the purpose set forth, the revoluble agitator spiral or worm, centrally disposed in the bottomless hopper, and an inverted conical deflector at the lower end of said agitator or worm, below the bottomless hopper, revoluble with said agitator or worm, and of less diameter than the hopper, all arranged and adapted to operate, substantially as described.

5. In an ore-separator, the combination of a bowl having a water-inlet at its lower end, a hopper extending into said bowl, a discharge-spout extending laterally from the hopper and over the edge of the bowl, a valve supported in said spout and adjustable across the opening between the hopper-chamber and the spout, an agitator mechanism within the hopper, and a collector-tray below the upper edge of the bowl, substantially as described.

6. In an ore-separator, the combination of a bowl, a water-inlet thereto, a collector-tray inclined to the axis of the bowl and situated contiguous thereto, said tray having a discharge-spout, a hopper provided with a discharge-spout which overhangs the spout of the tray,

a valve in the spout of said hopper, and an agitator operable within the hopper, substantially as described.

655,126. CUTTER-HEAD. RICHARD STILLWELL, Kingsland, Ark. Filed Dec. 8, 1896. Serial No. 614,964. (No model.)



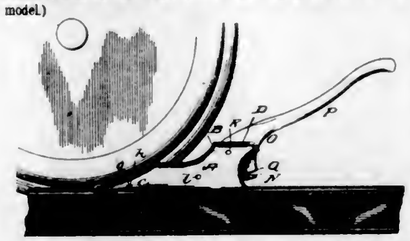
Claim.—In a head of a cutter-head tool, a hub adapted to be mounted on the power-shaft, a collar adapted to adjust said hub on the shaft, a set-screw in said hub to prevent turning on the shaft and a locking-nut on said shaft above said collar, a circular flange projecting at right angles to said hub provided alternately on either surface with circular recesses intersecting the periphery of the flange provided with grooves in their bottom next the side walls, and a square hole through the flange next said recesses, ring-shaped cutters with one edge rabbeted, adapted to set in said recesses, their cutting edges projecting beyond the periphery of said flange, clamps adapted to overlap the upper part of said cutter, said clamps being provided with square shanks adapted to fit in the square holes in said flange, said shanks having a round screw-threaded end, and nuts adapted to screw on the ends of said shanks, substantially as shown and described.

655,127. FASTENING FOR WEARING-APPAREL. JOSEF STOCK, London, England. Filed Apr. 25, 1900. Serial No. 14,339. (No model.)



Claim.—A fastener consisting of two sections adapted to be secured to the required object, one section carrying a projection having indentations or apertures, a piston having projections sliding in said projection, a spring controlling the movement of said piston, separating-springs attached to said section, an aperture in the other section, sliding bolts controlled by springs carried in said section, the ends of said sliding bolts being caused to project over the said aperture through the medium of the springs aforesaid, all in combination and substantially as described and illustrated herein and for the purpose set forth.

655,128. CAR-MOVER. CHARLES P. TAYLOR and GEORGE W. OGLESBY, Elberton, Ga. Filed Nov. 2, 1899. Serial No. 735,619. (No model.)

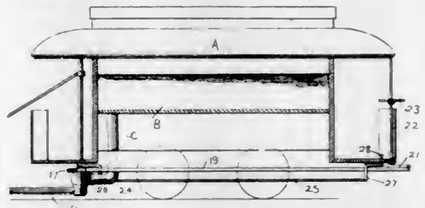


Claim.—1. In a car-mover, a frame, a thrust-bar pivoted intermediate of its ends to the frame and having its front end superior in weight to automatically return to a normal position, and an operating-lever having a cam-head pivoted to the frame and adapted to exert a vertical downward pressure upon the rear end of the thrust-bar, substantially as described.

2. In a car-mover, a frame adapted to fit upon the rail and having a longitudinal chamber opening through its lower face, a thrust-bar located in the chamber of the frame and having a centrally-disposed rocker-bearing for direct contact with the rail, and having the end portions of the lower face upwardly divergent, and an operating-lever having a cam-head pivoted to the frame and adapted to exert a downward pressure upon the rear end of the thrust-bar, substantially as described.

3. A car-mover, consisting of a pair of spaced plates joined at their front ends by a bridge-piece and having vertical rear extensions, the lower edges of the plates being beveled at their inner corners, the thrust-bar pivoted intermediate of its ends to the plates with its front end of superior weight, and having a rocker-bearing about in vertical line with the pivot to make direct engagement with the rail, and having the end portions of the lower face upon opposite sides of the rocker-bearing upwardly divergent, and an operating-lever having a cam-head pivoted to the rear extensions of the plates and adapted to exert a vertical downward pressure upon the rear end of the thrust-bar, substantially as specified.

655,129. SPRINKLING-CAR. ALFRED THOMAS, Worcester, Mass., assignor to the American Car Sprinkler Company, same place. Filed Aug. 23, 1897. Renewed Dec. 30, 1899. Serial No. 742,162. (No model.)



Claim.—1. In a street-sprinkling car, the combination of a car-body, a water-tank and a perforated sprinkler-pipe connected to the water-tank, said sprinkler-pipe being pivotally mounted at the rear of the running-gear of the car to swing behind the car when passing obstructions, substantially as and for the purpose set forth.

2. In a sprinkling-car, the combination of a car-body, a water-tank, a sprinkler-pipe pivotally mounted at the rear of the running-gear of the car to swing behind said car when passing obstructions, and connections for operating said sprinkler-pipe from the front part of the car, substantially as described.

3. In a sprinkling-car, the combination of a car-body, a water-tank, and a perforated sprinkler-pipe, said sprinkler-pipe being pivotally mounted to swing to the rear of the car when in use, and to be folded to the side of the car when not in use, substantially as described.

4. In a sprinkling-car, the combination of a car-body, a sprinkler-pipe pivotally mounted to swing to the rear of the car, a gear connected to said sprinkler-pipe, a vertical operating-shaft mounted near the front part of the car, a crank-arm extending from said operating-shaft, and a rod connected thereto, and having a rack engaging the gear, substantially as described.

5. In a street-sprinkling car, the combination of a car-body, a water-tank, a sprinkler-pipe pivotally mounted at the rear of the running-gear of the car to swing behind the car when passing obstructions, connections for operating said sprinkler-pipe from the front part of the car, and shut-off connection also arranged to be operated from the front part of the car, substantially as described.

6. In a street-sprinkling car, the combination of a car-body, a water-tank, a rearwardly-swinging sprinkler-pipe D, a normally-closed spring-pressed valve 13, an operating-collar 16 connected to the valve-stem, a bell-crank lever 24 engaging said collar, a bell-crank lever 27 mounted on the front part of the car, a footpiece 28 for operating said bell-crank lever, and a rod 25 for connecting the bell-crank levers 24 and 27, substantially as described.

655,130. METHOD OF TREATING WURTZILITE. ROBERT M. THOMPSON, Sutton, Nebr. Filed Apr. 23, 1898. Serial No. 678,634. (No specimens.)

Claim.—1. The process of treating wurtzilite to render it available for commercial use, which consists in reducing the mineral to a softened or fused state by the action of heat, substantially as described.

2. The process of treating wurtzilite to render it available for commercial use, which consists in subjecting the mineral to the action of steam heat to reduce it to a softened or fused state, substantially as described.

655,131. WURTZILITE METHOD AND PRODUCT. ROBERT M. THOMPSON, Sutton, Nebr. Filed Mar. 3, 1900. Serial No. 7,237. (No specimens.)

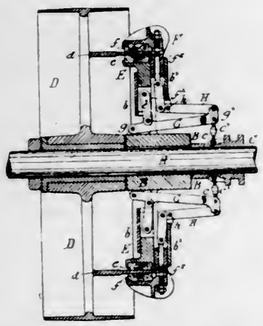
Claim.—1. The combination of a shaft, a pulley, a clutch-rim on the pulley, a hub on the shaft, arms carried by said hub, bearings in said arms, inner and outer jaws carried by the bearings and engaging the clutch-rim, levers pivoted to the hub and connected to the inner jaws, an operating-sleeve connected to the outer end of said levers, and a second set of levers pivoted to the arms and connected to the outer jaws and to the other set of levers, so that the two sets of jaws will act in unison, substantially as described.

2. The combination of a shaft, a pulley, a clutch-rim on the pulley, a hub on the shaft, arms carried by said hub, bearings in said arms, inner and outer jaws adapted to the bearings and to engage the clutch-rim, levers pivoted to the hub and connected to the inner jaws, an operating-sleeve connected to the outer end of said levers, a second set of levers pivoted to the arms and connected to the outer jaws and to the other set of levers, so that the two sets of jaws will act in unison, and means for adjusting the outer set of jaws independently of the inner set, substantially as described.

3. The combination of a shaft, a hub on the shaft, arms on the hub, boxes on the arms, inner and outer jaws adapted to slide in the boxes, a rim with which the jaws engage, a lever G pivoted to the hub, a link connecting the lever with the inner jaws, an operating-sleeve, a link connecting the operating-sleeve with the lever, a pivoted lever, a link connecting the pivoted lever with the outer jaw, said lever being connected to the first-mentioned lever, so that when the sleeve is moved the inner and outer jaws will move in unison to clutch the rim, substantially as described.

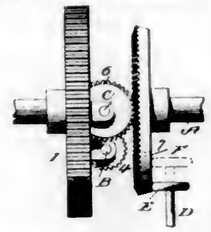
4. The combination in a friction-clutch, of a shaft, a pulley, a clutch-rim on the pulley, a hub on the shaft, arms carried by and being integral with said hubs, guides on said arms, outer and inner jaws constructed to engage said clutch-rim and movable in said guides in a plane at right angles to the shaft, a lever having the fulcrum at one end with a link connectiug same with the inner jaws, and a lever with the fulcrum away from the ends and links connecting same with the outer jaws, said levers being connected at one end, a sliding clutch-sleeve and adjustable links connecting said sleeve with the said lever ends.

655,132. FRICTION-CLUTCH. EDWARD TOOLE, Gloucester City, N. J., assignor of one-half to William F. Bokum, Philadelphia, Pa. Filed Mar. 19, 1900. Serial No. 9,245. (No model.)



655,133. CHANGEABLE-SPEED GEARING. CHARLES A. TRIPP, Hudson, Mass. Filed Feb. 5, 1900. Serial No. 4,013. (No model.)

Claim.—The herein-described variable-speed gearing comprising a shaft, a gear fixed to the shaft to rotate therewith, gear elements on opposite sides of said fixed gear and loosely mounted upon said shaft, one of said elements having bevel crown-gearing, a train of gears carried by the other gear element and comprising a pair of shafts, one carrying a worm-gear to mesh with the aforesaid fixed gear and a pinion, and the other gears to mesh, respectively, with said pinion and the bevel crown-gearing of the first-mentioned gear element, the gear element carrying the train of gearing adapted to be driven at a constant speed, and means for imparting a variable motion to the other gear element having the beveled crown-gearing, said means consisting of a shaft carrying a friction-disk to engage a frictional surface of said element, substantially as described.



655,134. METHOD OF MAKING PRINTING-SURFACES. CHAS. A. TRIPP, Hudson, Mass. Filed Feb. 5, 1900. Serial No. 4,014. (No specimens.)

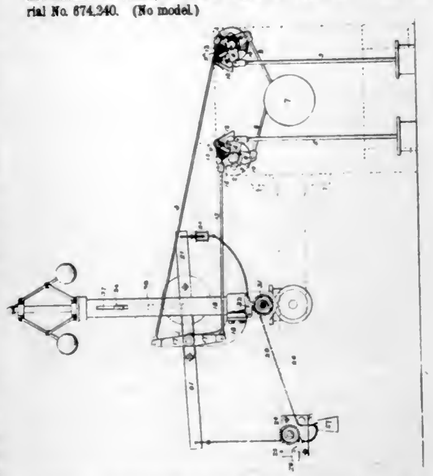


Claim.—1. The process of forming a type or printing-surface which consists in supplying to the matrix carrying the design pieces of ink-absorbing material of less dimensions than the actual printing surface or design, then filling the matrix with a plastic composition which simultaneously adheres to the felt and flows about the edges thereof forming marginal protecting portions, substantially as described.

2. The process of forming a type or printing-surface which consists in supplying to the matrix carrying the design, pieces of ink-absorbing material of less dimensions than the actual printing surface or design, then pressing rubber into the matrix and vulcanizing it while under pressure, whereby the rubber is hardened and caused to adhere by a fused joint to the felt, substantially as specified.

3. The process of forming a type or printing-surface which consists in supplying to the matrix carrying the design pieces of ink-absorbing material of less dimensions than the actual printing surface or design, then partly filling the space around the said pieces of ink-absorbing material with a spacing material to a depth less than the thickness of said pieces, then filling the matrix and the remainder of the space around the ink-absorbing pieces with the material to form the base or body of the type, substantially as described.

655,135. AUTOMATIC STOP FOR ENGINES. GEO. W. TURNER and SMILEY F. BUTLER, Gloucester City, N. J. Filed Mar. 17, 1898. Serial No. 674,240. (No model.)



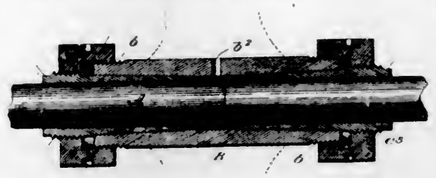
Claim.—1. The combination of the inlet-valve-operating mechanism of a steam-engine, a weighted lever under positive control of the governor, and intermediate devices connected to said lever whereby the movement of the same is caused to regulate the closing of the inlet-valves, with a suspended weight arranged to cause the said governing-lever to be held in a position in which the inlet of steam to the engine is prevented, and means operated by the governing-lever for releasing said suspended weight.

2. The combination of the inlet-valve-operating mechanism of a steam-engine, a weighted lever under positive control of the governor, and intermediate devices connected to said lever whereby the movement of the same is caused to regulate the closing of the inlet-valves, with a suspended weight arranged to cause the said governing-lever to be held in a position to operate said intermediate devices and cut off the inlet of steam to the engine, a retainer for said weight and a trip for said retainer connected to the governing-lever whereby when the latter is moved to a certain position by the governor, the weight will be released and act upon the governing-lever, substantially as described.

3. The combination of the inlet-valve-operating mechanism of a steam-engine, a weighted lever under control of the governor, and intermediate devices whereby the movement of said lever is caused to regulate the opening of the inlet-valves, with a suspended weight adapted to move the said governing-lever into position to cut off the inlet of steam to the engine, said intermediate devices comprising a ratchet-pinion 31 mounted at the base of the governor-pedestal, a drum on the hub of said pinion to which is connected and wound a chain carrying the weight, a ratchet-pinion 24 mounted on the frame of the engine, a chain also secured to the weight passing around the hub of said pinion 24 and connected to the light end of the governing-lever, a retaining-pawl for the ratchet-pinion 24, a retaining-pawl for the ratchet-pinion 31, and a trip for the latter pawl conuected to the governing-lever, whereby when the latter is moved to a certain position by the governor, the pinion 31 will be released allowing the weight to drop and act upon the governing-lever, substantially as described.

4. The combination in a device of the character described, of the governor-pedestal, a bracket carried by the same, a governor, inlet-valve mechanism, a weighted lever hung to said bracket and positively operated by the governor, a two-armed lever operatively secured to the weighted lever and connected to the inlet-valve mechanism, a suspended weight connected to one end of the governing-lever and adapted to move said lever into such position that the two-armed lever will operate the valve mechanism to cut off the inlet of steam, a retainer for said weight, a trip for operating said retainer connected to the opposite end of the governing-lever, whereby when the latter is moved to a certain position by the governor, the weight will be released and act upon the governing-lever, substantially as described.

655,136. SHAFT-COUPLING. THEODORE F. VANDEGRIFT, Shelbyville, Ind., assignor of one-half to Hiram J. Root, same place. Filed Apr. 21, 1900. Serial No. 13,702. (No model.)

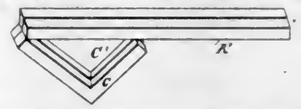


Claim.—1. In a shaft-coupling, a pair of compressible bushings of like construction both having threads of the same angle, a collar or hub which receives the bushings both ends thereof having threads of the same gage and angle which threads oppose the threads on the bushings, whereby the threads at either end of the coupling are right and left handed, and nuts with right and left hand threads, substantially as shown and for the purpose set forth.

2. In a shaft-coupling, the combination with a pair of compressible bushings both of like construction, a collar or hub which is tapered interiorly and provided at its ends with threads, the threads being at the same angle at both ends of said hub, the bushings being provided with threads which oppose the threads on the ends of the hub, whereby the threads at either end of the coupling are right and left handed, and nuts with right and left hand threads whereby the bushings and nuts may be used on either end of the hub, substantially as shown and for the purpose set forth.

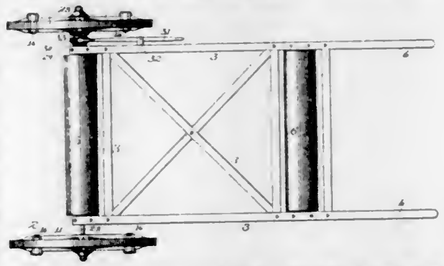
3. In a shaft-coupling, a hub the ends having similar threads, compressible bushings with threads the angle thereof opposing the threads on the hub, and nuts with apertures of different diameters threaded to present right and left hand threads, substantially as shown and for the purpose set forth.

655,137. CASKET-LOWERING APPARATUS. EMORY E. VOORHEES, Ovid, Mich. Filed June 9, 1900. Serial No. 19,753. (No model.)



Claim.—A device of the character described, comprising a sectional frame or structure, with the sections of its end pieces, each joined by a hinge having its axis arranged horizontally and the sections of its side pieces each joined by a hinge having its axis arranged vertically at right angles to the axis of the hinge connecting the end sections, said hinges for the side pieces being coincident when the sides are folded the one upon the other, substantially as set forth.

655,138. LUMBER-TRUCK. HORACE WELCH, Selma, Ala. Filed Feb. 3, 1900. Serial No. 3,848. (No model.)



Claim.—1. In a lumber-truck, the combination of a frame, an axle and wheels mounted thereon, said wheels capable of being folded down at a line at or near the center of the wheel, substantially as set forth.

2. In a lumber-truck, the combination of a frame, an axle, wheels adapted to be folded at a division-line as specified, and rollers mounted in the frame, substantially as set forth.

3. In a lumber-truck, the combination of a frame, an axle, a pair of wheels mounted thereon, one or both of which are capable of being folded down at or near the center line thereof, and means for locking the divided sections of said wheel or wheels together, substantially as set forth.

4. In a lumber-truck, the combination of a frame, an axle, a pair of wheels mounted thereon, one or both of which are capable of being folded down at or near the center line thereof, means for locking the divided sections of said wheel or wheels together, and means for releasing the respective segments of the wheel or wheels, substantially as set forth.

5. In a lumber-truck, the combination of a frame, an axle, wheels mounted on the axle, the hub of one wheel being provided with lugs, a roller loosely mounted upon said axle, and means whereby the said roller may be thrown into clutch with the said wheel so as to cause the roller to revolve in a direction opposite to that in which the truck is moved, substantially as set forth.

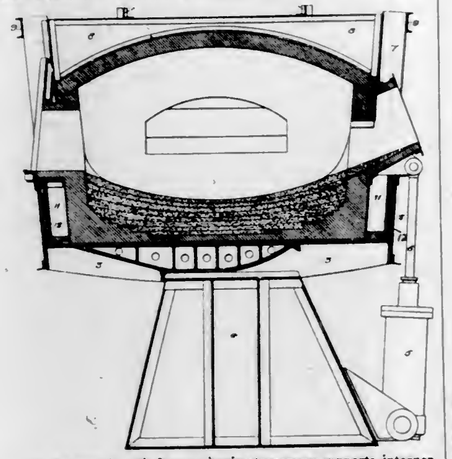
655,139. OPEN-HEARTH FURNACE. SAMUEL T. WELLMAN, CHARLES H. WELLMAN, and JOHN W. SEAVER, Cleveland, Ohio. Filed Oct. 24, 1898. Serial No. 694,444. (No model.)

Claim.—1. An open-hearth furnace having at the base transverse structures resting upon the furnace-supports, longitudinal side girders connected to the ends of said supporting structures, transverse base-beams alternating with the supporting structures but not resting upon the supports, and upright buckstaves at the sides of the furnace, said buckstaves and base-beams being secured to the longitudinal side girders whereby the latter serve as the mediums for conveying the weight of the furnace to the transverse supporting structures, substantially as specified.

2. An open-hearth furnace having at the base transverse structures resting upon the furnace-supports, longitudinal side girders connected to the ends of said supporting structures, transverse base-beams alternating with the supporting structures but not resting on the supports, upright buckstaves at the sides of the furnace, said buckstaves and base-beams being secured to the longitudinal side girders, and transverse stay-beams connecting portions of opposite buckstaves which project above the roof of the furnace, substantially as specified.

3. An open-hearth furnace having a roof arched transversely to the length of the furnace, buckstaves at opposite sides of the furnace

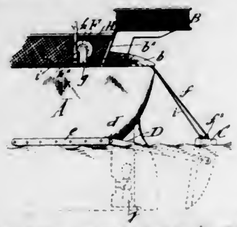
projecting above the arched roof thereof, and transverse braces connecting said projecting portions of said buckstaves, said transverse braces having concaved under faces which conform to, and have a bearing upon, the transversely-arched roof, and serve to retain the same in shape, substantially as specified.



4. An open-hearth furnace having transverse supports, intervening transverse base-beams, upright buckstaves at the sides of the furnace, and longitudinal side girders serving to connect said transverse supports to the base-beams and buckstaves, said transverse supports having convex under faces mounted upon fixed pedestals so as to permit of the tipping or tilting of the furnace, substantially as specified.

5. An open-hearth furnace having transverse base-girders and supports, upright buckstaves at the sides, deep longitudinal plate-girders secured to the outer sides of said buckstaves, and also to the base structure of the furnace, so that air-spaces intervene between said girders and the furnace shell or casing, and a refractory lining for said air-spaces, whereby the deep plate-girder is protected from the heat of the furnace, substantially as specified.

655,140. **DRAG-BRAKE FOR MARINE VESSELS.** FRIEDRICH WENDLER, New York, N. Y. Filed Aug. 24, 1899. Serial No. 728,291. (No model.)



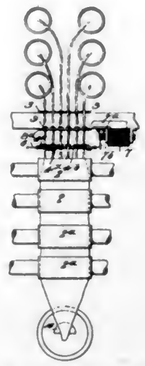
Claim.—1. The combination, with a marine vessel, of a swinging scoop-like drag-brake extending transversely across the stern, and means for raising and lowering the said drag-brake, substantially as set forth.

2. The combination, with a marine vessel, of a single scoop-like drag-brake, rigid links or arms extending from opposite sides thereof and pivoted to the sides of the lower part of the stern of the vessel, and means for raising and lowering the said drag-brake, substantially as set forth.

3. The combination, with a marine vessel, of a drag-brake, links or arms extending therefrom and pivoted to the sides of the lower part of the stern of the vessel, means for guiding and supporting the drag-brake on the deck, and means for raising and lowering the drag brake, substantially as set forth.

655,141. **STOP-MOTION FOR DRAWING-FRAMES.** SILAS M. WETMORE, Fayetteville, N. C., assignor of one-half to Walter L. Holt, same place. Filed Oct. 5, 1899. Serial No. 732,694. (No model.)

Claim.—1. An electric stop-motion for cotton-coiler drawing mechanisms, comprising devices for breaking the several strands of the sliver; a circuit-closer normally held open by the sliver but automatically closing upon a break in the sliver; and electromechanical devices governed by the circuit-closer for shifting the strand-breaking devices to an operative condition by the closing of the circuit closer.



2. An electric stop-motion for cotton-coiler drawing mechanisms, comprising devices for breaking the several strands of the sliver; a plurality of circuit-closers, one engaging the sliver at the rear of the draw-rolls and one engaging the sliver in advance of the said rolls, said circuit-closers being normally held open by the sliver, but automatically closing upon a break in the sliver; and electromechanical devices governed by the said circuit-closers for shifting the strand-breaking devices into an operative condition by the closing of either of the said circuit-closers.

3. As an improvement in cotton-coiler drawing-machines, in combination with the drawing-rolls and the calender-rolls; a guide for receiving the sliver as it passes out of the drawing-rolls to the calender-rolls, said guide consisting of a rest portion and a pendent member having a receiving-mouth open its length and terminating in a contracted seat for the purposes specified.

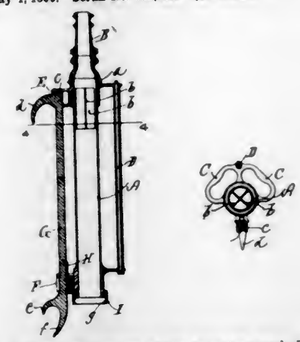
4. As an improvement in cotton-coiler drawing-machines, the combination with the drawing-rolls and the calender-rolls; of a guide for receiving the sliver as it passes from the drawing-rolls to the calender-rolls, said guide consisting of a rest portion and a pendent semi-conical member terminating in a contracted seat, said member having its discharge eod projected at an acute angle to the coacting surfaces of the calender-rolls.

5. The combination with the drawing-rolls, and a shifting guide engaging the several strands of the sliver; of electromechanical devices connected with the said guide and adapted, when energized, to move the guide in a direction to break the several sliver-strands; a separate circuit-closer for each sliver-strand, normally held open by contact with the sliver-strand, and adapted to move to a closing position when the strand passes from engagement therewith, all of the said closers being in circuit with the electromechanical devices for operating the shifting guide, as specified.

6. In a mechanism for the purposes described; the combination with the drawing-rolls and the main guides for the sliver-strands; of a supplemental guide member therefor, said guide member being adapted to automatically shift transversely of the line of feed of the sliver, whereby to break the sliver-strands; shifting mechanisms coacting with the said supplemental guide member, said shifting mechanism including a trip normally held to an inoperative position by the sliver and adapted to operate to shift the strand-breaking guide when a break occurs in the sliver as specified.

7. In a mechanism as described; the combination with the drawing-rolls and the main sliver-guides; of a shifting guide disposed between the main guide and the drawing-rolls for engaging the several strands of the sliver, said shifting guide moving in a plane transversely of the feed of the sliver; electromechanical devices coacting with the shifting guide and adapted when energized to shift the said guide and break the strands; a supplemental guide disposed between the main guide and the shifting guide, said supplemental guide having a separate passage for each strand and consisting of two plates forming the terminals of the circuit connected with the aforesaid electromechanical devices; and a gravity circuit-closer for each passage-way in the said supplemental guide, each closure being normally held open by reason of its coincident sliver-strand and adapted to drop to a closing position when the strand passes from thereunder, whereby to energize the electromechanical devices for operating the shifting guide for the purposes specified.

655,142. **PLAY-PIPE FOR FIREMEN'S HOSE.** EDGAR A. WHITAKER, Providence, R. I., assignor to Charles N. Richardson, same place. Filed May 1, 1899. Serial No. 715,236. (No model.)

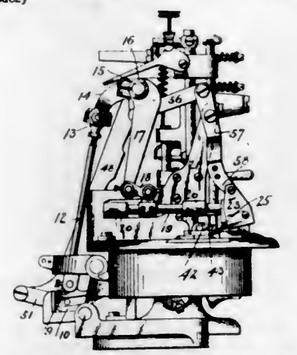


Claim.—1. The combination of the tapering nozzle B, and the barrel A, with the handles C, C, at opposite ends of the barrel, and the connecting-rod D for supporting the handles, substantially as described.

2. The combination of the nozzle B, and the barrel A, provided at its side with the socket-lug E and the guiding-lug F, with the sliding bar G provided with the hooks *d* and *e*, and the spur *f*, and the spring-catch H arranged at the guiding-lug F for locking the bar G, substantially as described.

3. The combination of the nozzle B, and the barrel A, provided at one side with the socket-lug E, and the guiding-lug F, the handles C, C, and the connecting-rod D for supporting the handles, with the sliding hook-bar G, provided with the spur *f*, and the spring-catch H arranged at the guiding-lug F, for locking the bar G, substantially as described.

655,143. **RUFFLING AND SEWING MACHINE.** RUSSEL G. WOODWARD, Waukegan, Ill., assignor to The Union Special Sewing Machine Company, Chicago, Ill. Filed July 20, 1898. Serial No. 686,444. (No model.)



Claim.—1. The combination with a sewing-machine, of a ruffling device, means for operating it, and means, under the control of the operator, for throwing the ruffling device into and out of action without stopping or retarding the action of the stitch-forming mechanism; substantially as described.

2. The combination with a sewing-machine, of a ruffling device, with means for operating it, and means under the control of the operator for throwing the ruffling device into and out of operation, without stopping or retarding the action of the sewing-machine, said controlling means being at all times accessibly presented to the operator irrespective of the speed of the mechanism controlled thereby, whereby at high speed the ruffling device may be thrown into and out of operation, without stopping or retarding the action of the stitch-forming mechanism, said stitch-forming mechanism maintaining its normal working speed; substantially as described.

3. The combination with a sewing-machine, of a ruffling device, actuating mechanism therefor, operative connections between the two, and means under the control of the operator cooperating with said operative connections for throwing the latter into and out of operation, the actuating member of the controlling means being at all times accessibly presented to the operator, irrespective of the speed of the mechanism controlled thereby; substantially as described.

4. The combination with a sewing-machine, of a ruffling device, actuating mechanism therefor, operative connections between the two, and means under the control of the operator, coöperating with said operative connections for throwing the latter into and out of operation, said controlling means being relatively stationary with respect to the operative connections, whereby the said controlling means are accessibly presented to the operator, irrespective of the speed of the mechanism controlled thereby, and the ruffling device thrown into and out of operation without stopping or retarding the action of the sewing-machine; substantially as described.

5. The combination with a sewing-machine, of a ruffling device, actuating mechanism therefor, operative connections between the two, and means under the control of the operator, coöperating with said operative connections, for throwing the latter into and out of operation, the said controlling means being relatively stationary with respect to the operative connections and so located as to be operable independent of the hands of the operator whereby said controlling means are accessibly presented to the operator irrespective of the speed of the mechanism controlled thereby, the ruffling device may be thrown into and out of operation without stopping or retarding the action of the sewing-machine, and both hands of the operator may be left free to manipulate the work; substantially as described.

6. In combination with a sewing-machine, a ruffling device, actuating mechanism therefor, operative connections between the two, and means under the control of the operator, coöperative with said operative connections but not substantially partaking of the movement thereof, for rendering said connections operative or inoperative whereby the ruffling mechanism may be thrown into and out of operation without stopping or retarding the action of the sewing-machine; substantially as described.

7. The combination with a sewing-machine, of a ruffling device, actuating mechanism therefor, operative connections between the two, and means under the control of the operator, coöperating with said operative connections but forming no part thereof, for throwing said operative connections into and out of engagement with the actuating mechanism, without stopping or retarding the action of the sewing-machine; substantially as described.

8. In combination with a sewing-machine, a ruffling mechanism, and means for actuating said ruffling mechanism, connections between the actuating mechanism and the ruffling mechanism, and means under the control of the operator substantially independent of said actuating mechanism and not aiding in the driving function of said operative connections, for rendering said connections operative or inoperative, whereby the ruffling mechanism may be thrown into and out of operation without stopping or retarding the action of the sewing-machine; substantially as described.

9. The combination with a sewing-machine, provided with suitable stitch-forming mechanism, and having in combination therewith means for guiding independent overlapping pieces of fabric to the stitch-forming mechanism, a ruffling device, actuating mechanism therefor, operative connections between the two, and means under the control of the operator, coöperative with said operative connections, but not substantially partaking of the movement thereof, said controlling means being adapted to be operated independently of the hands of the operator whereby the ruffling mechanism may be rendered operative or inoperative without stopping or retarding the action of the sewing-machine, and leaving both hands of the operator free to manipulate the work; substantially as described.

10. The combination with a sewing-machine, of a ruffling device, a driving-shaft, a rocking arm oscillated thereby, operative connections between the rocking arm and the ruffling device, said operative connections including a part having sliding engagement with said rocking arm, and means under the control of the operator for causing said sliding part to engage with, or be disconnected from the rocking arm, without interfering with the rotation of the driving-shaft, whereby the ruffling device may be thrown into and out of operation without interfering with the action of the sewing-machine; substantially as described.

11. In combination with a sewing-machine, a ruffling device with means for operating it, means for throwing the same into and out of operation without stopping or retarding the action of the sewing mechanism, said means under the control of the operator acting positively upon the ruffling attachment in one direction and automatically acting in the opposite direction when released by the operator; substantially as described.

12. In combination with a sewing-machine, a ruffling attachment, with means for operating it, means under the control of the operator for positively throwing the same into operation without stopping or retarding the action of the sewing mechanism, and means for throwing it out of action when the controlling means are released by the operator; substantially as described.

13. In combination with a sewing-machine, a ruffling attachment, with means for operating it, means under the control of the operator for throwing the same into and out of operation without stopping the action of the sewing mechanism, a ruffler-blade, and means whereby when the ruffling mechanism is moved out of action, the blade is automatically lifted from the work, and depressed when the ruffling mechanism is moved into action; substantially as described.

14. In combination with a sewing-machine, ruffling mechanism including a ruffling-blade, normally held in position to engage the work when its operating mechanism is thrown into action, means under the control of the operator for throwing the ruffling mechanism into and out of operation without stopping the action of the sewing mechanism, and means whereby when the ruffling mechanism is thrown out of action, the blade is raised out of contact with the work; substantially as described.

15. In combination with a sewing-machine, a ruffling mechanism, and means under the control of the operator for throwing the same into and out of operation, without interfering with the action of the sewing-machine, said ruffling mechanism including a tilting frame, a ruffling-blade carried thereby, said frame being normally depressed to cause the blade to engage the work, means for operating the ruffling mechanism, and means brought into operation when the ruffling mechanism is thrown out of action, to tilt the frame upward; substantially as described.

16. In a sewing-machine, a driving-shaft, a ruffling mechanism with means for throwing the same into and out of operative connection with the driving-shaft, a rocking frame connected to the part which is thrown into and out of engagement with the driving-shaft, a tilting ruffler-blade support, and connections between the ruffler-blade support and the rocking frame, whereby as the ruffling mechanism is thrown into action, the ruffler-blade support is released from the rocking frame; substantially as described.

17. In a sewing-machine, a tilting frame, a ruffling-blade supported thereby, mechanism for operating the ruffling-blade, and mechanism for throwing it out of action, said mechanism including the rocking frame 55, the arm 48 attached thereto, normally spring-pressed outwardly, the lever 57 attached to the opposite end of the rocking frame 55, and normally in engagement with said tilting frame which supports the ruffling-blade; substantially as described.

18. In a machine of the character described, a ruffling mechanism, and means for throwing it into and out of operation, said ruffling mechanism including a tilting ruffler-blade support, and means for tilting said support including the rocking frame 55, means to oscillate said frame when the ruffler mechanism is thrown into or out of action and connections extending between the rocking frame 55 and the tilting ruffler-blade support whereby in one position of the frame 55 the said ruffler-blade support is positively tilted while in the other position of said rocking frame, said ruffler-blade support is free to assume its normal position; substantially as described.

19. In the herein-described machine, the tilting frame, normally spring-pressed downwardly, a projection or pin on the frame, the forked piece engaging the pin or projection, a pivoted rocking frame to which the forked piece is connected, and means for swinging the pivoted frame to cause the forked piece to engage or disengage the pin or projection; substantially as described.

20. In the herein-described machine, the tilting frame normally spring-pressed downwardly, a projection or pin on the frame, the forked piece engaging the pin or projection, a pivoted rocking frame to which the forked piece is connected, a rock-shaft upon which said rocking frame is pivoted, said rocking frame and rock-shaft being connected to a common part with means for moving said common part into and out of operative engagement with the driving-shaft; substantially as described.

21. In the herein-described machine, the tilting frame normally spring-pressed downwardly, a projection or pin on the frame, the forked piece engaging the pin or projection, a pivoted rocking frame to which the forked piece is connected, a rock-shaft upon which said rocking frame is pivoted, a pivoted sliding block as 10, an arm as 5 operated from the main shaft, said frame having a guide to engage the block 10, the pitman 12 connecting the rock-shaft with the block, and the levers 48 and 51 connecting the rocking frame with the block 10, whereby as the block moves out of engagement with the arm 5, the forked piece tilts the ruffler-blade support; substantially as described.

22. In a sewing-machine, a driving-shaft, a rocking frame oscillated thereby, a ruffling device, connections between the ruffling device and the rocking arm, said connections including a block slidably engaging the rocking arm, and means under the control of the operator for causing the block to engage the rocking arm or release it therefrom without interfering with the operation of sewing, and an adjustable detent for varying the extent of engagement of the block with the rocking arm; substantially as described.

23. In combination with a sewing-machine, a driving-shaft, a ruffling device, a rocking arm, oscillated by the driving-shaft, connections between the rocking arm, and the ruffling device for operating the latter, means for controlling the length of ruffle, and means under the control of the operator for throwing the ruffling attachment into and out of operation without interfering with the action of the sewing mechanism; substantially as described.

24. In a sewing-machine, a driving-shaft, a rocking arm oscillated thereby, a ruffling device, and connections between the ruffling device and the rocking arm, said connections including a rock-shaft, a block having a sliding engagement with the rocking arm, a crank-and-pitman connection between the block and the rock-shaft, whereby in the operation of the rocking arm the ruffler is operated, means for forcing the block into engagement with the rocking arm, and means for throwing the block out of engagement with the rocking arm when the ruffling action is no longer desired; substantially as described.

25. In a sewing-machine, a driving-shaft, a rocking arm oscillated thereby, a ruffling device, and connections between the ruffling device and rocking arm, said connections including a rock-shaft, a block having a sliding engagement with the rocking arm, a crank-and-pitman connection between the block and the rock-shaft, whereby in the operation of the rocking arm the ruffler is operated, means for forcing the block into engagement with the rocking arm, and means for throwing the block out of engagement with the rocking arm when the ruffling action is no longer desired, said means including an independent device for operating the ruffler whereby the latter is returned to the commencement of its stroke; substantially as described.

26. In a sewing-machine, a driving-shaft, a rocking arm oscillated thereby, and having a transverse rib thereon, a block provided with a groove engaging said rib, a pitman to which said block is pivotally hung, a rock-shaft having a crank connection with said pitman, and a ruffler operatively connected with said rock-shaft, said operative connections between the ruffler and the rock-shaft including a sliding bar to which the ruffler is attached, and oscillating connections between the bar and the rock-shaft; substantially as described.

27. In a sewing-machine, in combination with a ruffling attachment and means for operating it, means for throwing the ruffler into position to engage the work, said means comprising a lever under the control of the operator, a swinging arm, a rocking frame connected to said arm, and connections between the end of the rocking frame and the ruffler-supporting device, whereby when the driving connections for the ruffler are out of engagement the ruffler will be thrown out of engagement with the work; substantially as described.

28. In a sewing-machine, a driving-shaft, a ruffling mechanism, including a ruffling-blade, and operative connections between the ruffling mechanism and the driving-shaft for operating the former, means for disconnecting the ruffling mechanism from the driving-shaft, and mechanism operated when the ruffling mechanism is disconnected from said driving-shaft, for returning the ruffling-blade to a position out of engagement with the work; substantially as described.

29. In a sewing-machine, a driving-shaft, a ruffling mechanism, including a ruffling-blade, and operative connections between the ruffling mechanism and the driving-shaft for operating the former, means for disconnecting the ruffling mechanism from the driving-shaft, and mechanism operated when the ruffling mechanism is disconnected from the driving-shaft, for returning the ruffler-blade to a position out of engagement with the work, said mechanism including a pivoted lever engaging the ruffler to force it back and tilt it up; substantially as described.

30. In a sewing and ruffling machine, suitable stitch-forming mechanism, a ruffling device including a ruffling-blade and its support, and means under the control of the operator for connecting and disconnecting the ruffling device from the driving-shaft without interfering with the operation of sewing, a swinging arm, a rocking frame, connections between the end of the rocking frame and the ruffler-blade support adapted to be thrown into operation when the ruffler-driving mechanism is disengaged from the driving-shaft; substantially as described

31. In a sewing and ruffling machine, suitable stitch-forming mechanism, a ruffling device, including a ruffling-blade and its support, and means under the control of the operator for operating the ruffling device without interfering with the operation of sewing, a swinging arm, a rocking frame, connections between the ends of the rocking frame and the ruffler-blade support adapted to be thrown into operation when the ruffler-driving mechanism is disengaged from the driving-shaft, and means for normally holding the ruffler-driving mechanism out of operative engagement with the driving-shaft; substantially as described.

32. In a sewing-machine, a driving-shaft, a rocking arm oscillated thereby, a ruffling device, connections between the ruffling device and the rocking arm, said connections including an elongated engaging surface, and means connected with the ruffling device to engage said surface to a variable extent, said means being under the control of the operator; whereby the ruffling device may be operated with gradually-increasing throw from the time of first contact of the operative connections with the rocking arm until the full engagement takes place and vice versa; substantially as described.

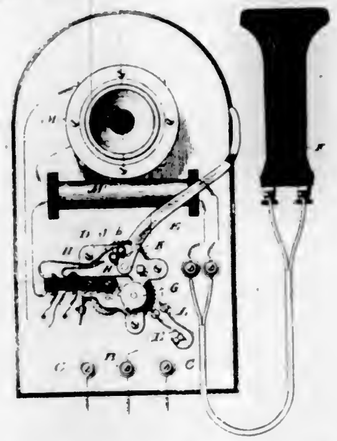
33. In a combined sewing and ruffling machine, a ruffling device, actuating mechanism therefor, operative connections between the two and means for throwing the operative connections into and out of engagement with the actuating mechanism while the machine is in operation, the coengaging members of the operative connections and actuating mechanism including means whereby the operator may impart a gradually-increasing throw to the ruffling device from the point of first contact to the maximum point of engagement; substantially as described.

34. In a combined ruffling and sewing machine, a ruffling device, actuating mechanism therefor including a rocking arm, operative connections between the rocking arm and the ruffling device, said operative connections being movable into and out of engagement with the rocking arm, the first point of engagement being substantially in line with the axis on which the arm rocks, whereby at that point the throw of the ruffler is least, and gradually increases as the operative connections move into engagement with the rocking arm; substantially as described.

35. In a combined ruffling and sewing machine, a ruffling device, actuating mechanism therefor, including a rocking arm, operative connections between the rocking arm and the ruffling device, said operative connections being movable into and out of engagement with the rocking arm, the first point of engagement being substantially in line with the axis on which the arm rocks, whereby at that point the throw of the ruffler is least, and gradually increases as the operative connections move into engagement with the rocking arm, and an adjustable detent for varying the extent of engagement of the operative connections with the rocking arm; substantially as described.

36. In a sewing-machine, a driving-shaft, a ruffling device, and operative connections between the driving-shaft and the ruffling device for operating the latter, said connections between the driving-shaft and the ruffling device, including means whereby said ruffling device may be given strokes or movements of successively-varying lengths; substantially as described.

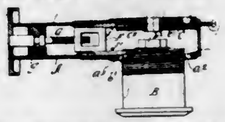
655,144. ELECTRIC-SIGNAL-REGISTERING SYSTEM. OTTO P. YURGAE and ROBERT H. YURGAE, Milwaukee, Wis., assignors, by direct and mesne assignments, to the Yurgae Signalphone Manufacturing Company, same place. Filed May 14, 1900. Serial No. 16,563. (No model.)



Claim.—1. The combination of a main-station battery and electric-signal-register apparatus, call-station instruments in series on a line in circuit with said battery and apparatus, each instrument comprising a number-wheel, a spring-motor for same, separable conductors intercepting the line and arranged to have one thereof in yielding opposition to teeth of said wheel, a crank on a motor-shaft movable in one direction to contract the motor-spring, a device movable with the crank to separate said conductors coincident with expansion of said spring, and an electric-telephone apparatus in circuit with the aforesaid conductors, the motor-crank serving as a hanger for the receiver element of this apparatus; means for ground-circuiting the number-wheel with the aforesaid battery, a main-station electric-telephone apparatus, a battery for same, and means for putting this telephone apparatus in and out of circuit with the line of call-stations.

2. The combination of a grounded main-station battery and electric-signal-register apparatus, call-station instruments in series on a line in circuit with said battery and apparatus, each instrument comprising a number-wheel, a spring-motor for same, separable conductors intercepting the line and arranged to have one thereof in yielding opposition to teeth of said wheel, a crank on a motor-shaft movable in one direction to contract the motor-spring, a device movable with the crank to separate said conductors coincident with expansion of said spring, electric-telephone apparatus in circuit with the aforesaid conductors, the motor-crank serving as a hanger for the receiver element of this apparatus, and separable contacts respectively in electric connection with ground and the aforesaid number-wheel, their arrangement being such that separation takes place incidental to descent of said crank; a main-station electric-telephone apparatus, a battery for same, and means for putting this telephone apparatus in and out of circuit with the line of call-stations.

655,145. CYLINDER-LOCK. WILLIAM T. ADAMS, Reading, Pa. Filed May 7, 1900. Serial No. 15,718. (No model.)



Claim.—1. The combination with a lock or latch case having similar openings through opposite sides, and a key-cylinder case adapted to be secured in either of said openings, of a handle-socket plate of larger size than said openings having a handle-socket rotatably mounted therein and a spring secured to the outer face thereof and arranged to bear upon the outwardly-projecting angular body of said handle-socket, and means for interchangeably securing said plate against the inner face of either side of the case, with said spring and the projecting portion of the handle-socket extending into the opening substantially as set forth.

2. The combination with a lock or latch case having similar openings through opposite sides, and a key-cylinder case adapted to be secured in either of said openings, of a handle-socket plate of larger size than said opening having a handle-socket rotatably mounted therein and adapted to bear against the inner face of either side of the case, and means for simultaneously securing or releasing both the key-cylinder case and handle-socket plate in interchangeably opposite positions in the case, substantially as set forth.

3. The combination with a lock or latch case having similar openings through opposite sides, and a key-cylinder case adapted to be secured in either of said openings, of a handle-socket plate having a Jug or projection on the outer face adapted to engage a peripheral recess or way formed in each of said openings, a single clamping device suitably mounted in the lock-case and adapted to engage both the key-cylinder case and the handle-socket plate in their interchangeable positions so as to simultaneously clamp or release the same, and an exteriorly-extended screw for operating said clamping device, substantially as set forth.

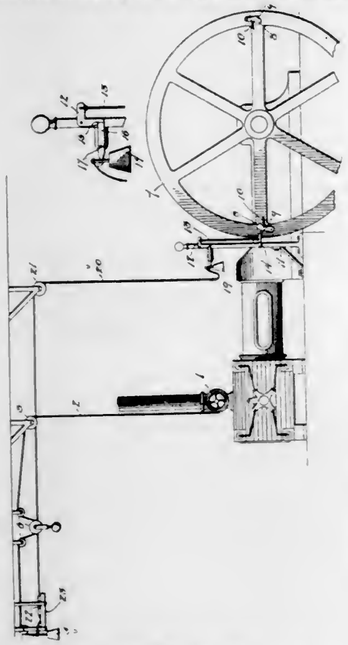
4. The combination with a lock or latch case having similar openings through opposite sides, and a key-cylinder case adapted to be secured in either of said openings, of an interchangeable handle-socket plate of larger size than said openings located between the case sides and carrying a rotatable handle-socket, and clamping means adapted to press the overlapping portion of said interiorly-located plate outward against the inner face of either side of the case, substantially as set forth.

5. The combination with a lock or latch case having similar openings through opposite sides, and a key-cylinder case adapted to be secured in either of said openings, of a handle-socket plate of larger size than said openings having edgewise recesses c^2 and suitably-mounted clamping devices adapted to enter said recesses and wedge said plate against the inner face of the case side, substantially as set forth.

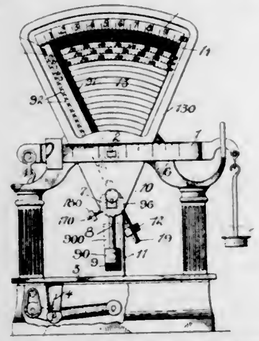
655,146. AUTOMATIC ENGINE-STOP. RICHARD R. CUNNINGHAM, Portsmouth, Ohio, assignor of two-thirds to Levi D. York, same place. Filed Mar. 12, 1900. Serial No. 8,321. (No model.)

Claim.—1. The combination of a throttle-valve and operating-wheel therefor, a cord attached to said wheel, a weight secured to said cord, means normally sustaining said weight whereby it is unaffected by the ordinary movements of the throttle, a second weight operative to free the first weight, a trigger device sustaining said second weight, and means operated upon the excessive speed of the engine to trip said trigger device.

2. The combination with the throttle, of a power device, a trigger mechanism normally holding said power device during the ordinary movements of the throttle inoperative, a second power device connected to said trigger mechanism, a second trigger normally holding the second power device inoperative, and means actuated upon the excessive speed of the engine to trip said second trigger device.



655,147. COMPUTING ATTACHMENT FOR SCALES. ALLEN DE VILBISS, Jr., Toledo, Ohio. Filed Nov. 21, 1899. Serial No. 737,770. (No model.)



Claim.—1. A computing attachment for scales consisting of a table, a disk pivotally connected thereto and having a pendulum hanging normally vertical and a hand standing normally at zero on the table, both rigid with the disk, a screw projecting from the disk diametrically opposite the hand, and a counterpoise-nut thereon: combined with an arm pivoted within the base, a link connecting one end with a pivot on said disk, a connecting-link connecting said arm with the scale mechanism within the base, and means for counterbalancing the weight of the arm and link, substantially as described.

2. A computing attachment for scales consisting of a table, a pendulum and hand standing at angles to each other and pivotally connected to said table at their point of juncture, and means for counterbalancing the weight of the hand when the pendulum stands vertical; combined with an arm pivoted within the base and arched over and connected with the main lever of the mechanism therein, a link connecting the outer end of the arm with said pendulum at a point normally above the pivot of the latter, and means for counterbalancing the weight of the arm and link, substantially as described.

3. A computing attachment for scales consisting of a table, and a pendulum and index at an angle to each other and pivotally connected to said table at their point of juncture; combined with an arm within the base connected respectively with the mechanism therein and with the pendulum, a frame at the inner end of the arm, alined pivots projecting laterally therefrom, a yoke carried by the base and having bearings for said pivots, and an adjustable counterpoise for the arm located within the frame, as and for the purpose set forth.

4. A computing attachment for scales consisting of a table, and a pendulum and index standing at an angle to each other and pivotally connected to said table at their point of juncture; combined with an arm within the base connected respectively with the mechanism therein and with the pendulum, a frame at the inner end of the arm, pivots for supporting this frame, a screw projecting from its outer side toward and in alinement with the body of the arm, and a counterpoise threaded upon said screw, as and for the purpose set forth.

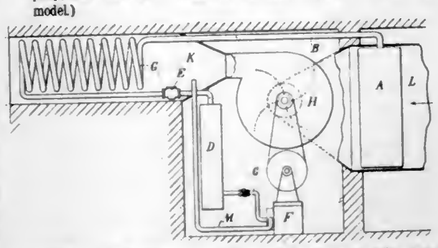
5. A computing attachment for scales consisting of a table, a pendulum, a hand moved by the pendulum over the table, and an arm within the base connected at its outer end with said pendulum; combined with a frame carried rigidly by the inner end of the arm, outwardly-projecting alined knife-edge pivots on the frame, a yoke within the base having bearings for said pivots, a screw within the frame in alinement with the body of the arm, and a counterpoise-weight adjustable thereon, all as and for the purpose set forth.

6. A computing-table for scales having a plurality of rows of weight-totals differently colored, and a plurality of rows of price-totals contiguous thereto and correctly graded; combined with indicating mechanism connected with and moved by the descent of the scale-platform, of which the hand or index moves along said rows and coacts with their figures, and the pendulum carries a fixed weight colored to correspond with the color of the row of smaller weight-totals as well as a removable weight colored to correspond with the color of the row of larger weight-totals, the whole capable of operation substantially as described.

7. A computing-table for scales having a plurality of rows of weight-totals differently colored, and a plurality of rows of price-totals contiguous thereto and correctly graded; combined with indicating mechanism connected with and moved by the descent of the scale-platform, of which the hand or index moves along said rows and coacts with their figures, and the pendulum carries a fixed weight colored to correspond with the color of the row of smaller weight-totals as well as a removable weight colored to correspond with the color of the row of larger weight-totals, said hand being also provided with a plurality of rows of price units colored to correspond with said weights and weight-totals and whereof each unit in one row is a multiple of that in the row adjacent, as and for the purpose set forth.

8. A computing-table for scales having a row of weight-totals, and a plurality of rows of price-totals contiguous thereto and correctly graded; combined with indicating mechanism connected with and moved by the descent of the scale-platform, of which the hand or index moves along said rows and coacts with their figures, and the pendulum carries a fixed weight of one color and a removable weight of another color, the face of the hand having two rows of price units colored to correspond with the weights and whereof the units in one row are respectively multiples of those in the other, substantially as described.

655,148. SYSTEM OF COOLING AND VENTILATING. WALTER H. DICKERSON, Newark, N. J., assignor to The Tripler Liquid Air Company, New York, N. Y. Filed May 31, 1900. Serial No. 18,562. (No model.)



Claim.—1. The combination of a ventilating blower or fan, a motor for driving the same, a receiver for liquid air connected with the motor, and expansion-coils intermediate to the receiver and motor, and exposed to the current of air produced by the blower, as set forth.

2. The combination of a ventilating blower or fan, a motor for driving the same, a receiver for liquid air connected with the motor, and expansion-coils intermediate to the receiver and motor and placed in the flue through which the air is forced by the blower, as set forth.

3. The combination of a ventilating blower or fan, a motor for driving the same, a receiver for liquid air, expansion-coils located in the flue through which air is forced by the blower, and a reservoir for compressed air, the liquid-air receiver being connected with the motor through the said coils and reservoir, as set forth.

4. The combination of a ventilating blower or fan, a motor for driving the same, a receiver for liquid air, exposed to the current of air which is drawn into the blower, expansion-coils located in the flue through which air is forced by the blower, and a reservoir for compressed air, the liquid-air receiver being connected with the motor through the said coils and reservoir, as set forth.

5. The combination of a ventilating blower or fan, a motor for driving the same, a receiver for liquid air connected with the motor, expansion-coils in the flue through which air is forced by the blower, and forming part of the connection between the liquid-air receiver and the motor, and an exhaust-pipe from the motor opening into the air-flue, as set forth.

6. The combination of a ventilating blower or fan, a motor for driving the same, a receiver for liquid air connected with the motor, expansion-coils, and a reservoir for compressed air intermediate to the receiver and motor, the expansion-coils being located in the flue through which air is forced by the blower, and the reservoir and liquid-air receiver being exposed to the air drawn into the blower, as set forth.

655,149. FASTENING FOR BAGS, SATCHELS, &c. GUSTAV GOERK, Newark, N. J., assignor to the R. Neumann & Company, same place. Filed June 17, 1899. Serial No. 720,889. (No model.)



Claim.—1. In a bag-lock, the combination of hooked catches *m'* projecting from one jaw of the bag, a casing *c'*, attached to the other jaw and being perforated to receive said catches, guides *e*, within said casing, horizontal plates *d*, *d'*, sliding vertically upon said guides and having projections *m*, engaging said hooked catches, springs normally holding said plates at their highest position, a finger-piece for depressing the said plates, bell-crank levers pivoted within said casing and having one arm adapted to be engaged by the horizontal plates as they descend and the other arm projecting outside of the casing through a slot, a connecting rod or wire coupled to said outwardly-projecting arm, and end catches on the bag connected to the said rods and adapted to be operated thereby, substantially as set forth.

2. In a bag-lock, the combination of catches projecting from one jaw of the bag, a casing attached to the opposite jaw and receiving said catches, a horizontal plate sliding vertically within said casing and engaging said catches to lock them against withdrawal, a spring normally holding said plate in locking position, bell-crank levers within said casing and pivoted on the inner wall thereof, one arm of each lever being depressed by the said plate as it moves against the power of the spring and the other arm projecting upwardly through an aperture in the top of the case, end catches on the bag, and connecting-rods extending horizontally from said end catches to the upwardly-projecting arms of the levers, substantially as set forth.

3. In a bag-lock, the combination of catch projections on one jaw, a casing on the other jaw, and a vertically-sliding member in said casing adapted to engage said catch projections, bell-crank levers within said casing at the opposite ends thereof, each having a substantially-horizontal arm adapted to be engaged by the sliding member to operate the lever and a vertical arm projecting through the top of the casing, end catches on the bag having sliding members, and horizontal connecting-rods extending from said sliding catch members to the extremities of the lever-arms projecting at the top of the lock-casing, substantially as set forth.

4. In a bag, the combination of a lock providing a depression-piece and having inner horizontally-disposed plates movable in a vertical direction, sliding end catches on the bag having inwardly-projecting operating-studs, bell-crank levers pivoted in vertical position and engaging at one arm said vertically-movable plates, and connecting-links extending from the other arms through eyes in said catch-operating studs and having heads preventing withdrawal from said eyes, substantially as set forth.

5. In a bag having a lock and end catches, said lock having a finger-piece and vertically-sliding plates and said end catches having operating-arms, of bell-crank levers within the lock-case, each having one arm engaging the under side of said sliding plates, a connecting-rod extending from the other arm of each lever to the operating-arm of the corresponding end catch, springs normally holding said end catches locked and the said connecting-rods having a sliding connection at one end permitting operation of the end catches without affecting the bell-crank levers, substantially as set forth.

655,150. SATCHEL-FASTENING. GUSTAV GOERK, Newark, N. J., assignor to the R. Neumann & Company, same place. Filed July 10, 1899. Serial No. 723,258. (No model.)

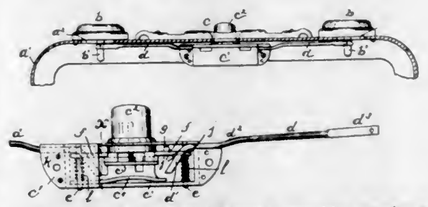


Claim.—1. In a bag, the combination of a middle lock comprising an apertured case fastened to one jaw of the bag and open at both ends, catches on the opposite jaw adapted to enter said case, pressure-pieces sliding telescopically in the opposite open ends of the lock-case, and adapted to engage said catches, rigid arms projecting downwardly from said pressure-pieces, end catches upon the bag having downwardly-projecting sliding tongues, and connecting-wires extending from said arms to said tongues, substantially as set forth.

2. In a bag, the combination with end catches having sliding tongues projecting within the bag, of a central lock comprising a casing arranged on one jaw and adapted to receive hook projections on the other jaw, pressure-pieces adapted to engage said projections sliding in said casing and having downwardly-extending arms, and connecting-wires extending from said arms to said tongues, substantially as set forth.

3. In a bag, the combination of a lock providing a longitudinal slideway open at both ends, pressure-pieces sliding telescopically into said slideway and having downwardly-extending arms, end catches on the bag having downwardly-projecting catching-tongues, connecting-wires extending between said arms and tongues and being provided with a sliding connection at one end, whereby said lock and end catches are operated simultaneously, and springs returning said parts to normal positions, substantially as set forth

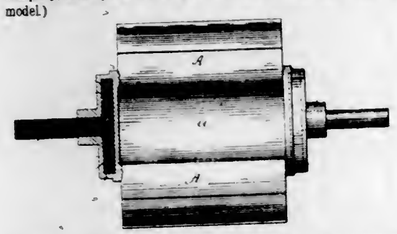
655,151. BAG LOCK AND CATCH. GUSTAV GOERK, Newark, N. J., assignor to the R. Neumann & Company, same place. Filed July 14, 1899. Serial No. 723,799. (No model.)



Claim.—1. A bag or satchel fastening, comprising opposite end catches having downwardly-extending sliding tongues, a central lock having a finger-piece working vertically and carrying within the lock-case a horizontal plate, connecting-wires secured at one end to said tongues of the end catches and at the other end being passed through perforations or bearings in the end of the lock-case and at their extremities bent obliquely downward through openings in the said horizontal plate, substantially as set forth.

2. The combination in a bag or satchel, of opposite end catches having sliding locking-tongues which project downward within the bag, a central lock comprising a case, having end flanges and slideways formed thereon in line with perforations in the end of the case, a longitudinally-disposed horizontal plate sliding vertically in said case and a finger-piece therefor, and connecting-wires pivoted at one end to said tongues of the end catches and having the other ends working upon the slideways of the end flanges of the lock-case and entering said case through the perforations, the inner extremities of said wires being inclined inwardly downward through end openings in the said horizontal plate, substantially as set forth.

655,152. IMPELLER FOR ROTARY BLOWERS. THOMAS W. GREEN, Philadelphia, Pa., assignor to the Wilbraham Baker Blower Company, same place. Filed Feb. 14, 1900. Serial No. 5,123. (No model.)

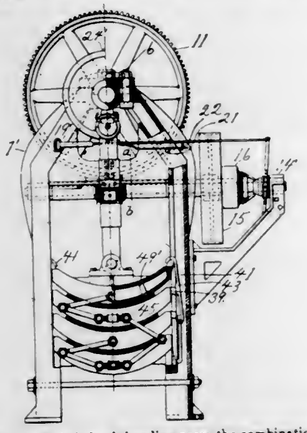


Claim.—1. In an impeller for rotary blowers, the combination with the separate and independent journals, of a solid head cast around a portion of each journal, a connecting-web between the solid heads, and oppositely-disposed wings connected to said web and solid heads, as set forth.

2. In an impeller for rotary blowers, the combination of separate and independent journals having oppositely-disposed arms, of a solid head cast around the arms and a portion of the journal, a connecting-web between the solid heads, and oppositely-disposed wings connected to said web and solid heads, as set forth.

3. In an impeller for rotary blowers, the combination of separate and independent journals, arms secured thereon and at about right angles thereto, of solid heads cast over said arms and a portion of the journals, a connected web between the solid heads and oppositely-disposed wings connected to said web and solid heads, the whole forming a complete and integral impeller, as set forth.

655,153. CHAIR-BACK-BENDING PRESS. FRANK HAYES, West Superior, Wis., assignor of one-half to the Webster Manufacturing Company, South Superior, Wis. Filed Dec. 23, 1898. Serial No. 700,268. (No model.)



Claim.—1. A chair-back-bending press, the combination with the frame therefor, a fixed bed therein, a plurality of vertical movable beds above said fixed bed, means for alternately raising and pressing down the uppermost of said beds to cause engagement of all of the other beds, said means comprising a shaft, and means for imparting a throw thereby, connections between said beds whereby when the uppermost of said beds is raised the other movable beds will be elevated with sufficient separating intervals for the introduction of the work, a continually-moving source of power, a clutch, means for manually engaging and automatically disengaging the same at the extremity of the downward throw of the shaft so that when the clutch is reëngaged the further rotation of the shaft in the same direction raises the beds.

2. A chair-back-bending press, the combination with the frame therefor, vertical parallel side pillars thereupon, a fixed bed upon said frame between said pillars, a plurality of vertical movable beds above said fixed bed, means supported upon said pillars for alternately raising and pressing down the uppermost of said beds to cause engagement of all of the beds said means comprising a shaft, and means for imparting a throw thereby, connections between said beds whereby when the uppermost of said beds is raised the other movable beds will be elevated with sufficient separating intervals for the introduction of the work, a continually-moving source of power, a clutch, means for manually engaging and automatically disengaging the same at the extremity of the downward throw of the shaft so that when the clutch is reëngaged the further rotation of the shaft in the same direction raises the beds.

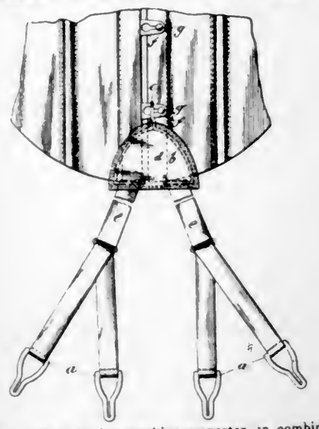
3. A chair-back-bending press, the combination with the frame therefor, vertical parallel side pillars thereupon, a fixed bed upon said frame between said pillars, a plurality of vertical movable beds above said fixed bed, a shaft supported upon said pillars, means for imparting a throw by said shaft, pitmen connecting the uppermost of the said beds for alternately raising and pressing down the same to cause engagement of all of the beds, connections between said beds whereby when the uppermost of said beds is raised the other movable beds will be elevated with sufficient separating intervals for the introduction of the work, and a continually-moving source of power, a clutch, means for manually engaging and automatically disengaging the same at the extremity of the downward throw of the shaft so that when the clutch is reëngaged the further rotation of the crank-shaft in the same direction raises the beds, substantially as described.

4. In a chair-back-bending press, the combination with the frame therefor, a fixed hollow bed therein, a plurality of vertical hollow movable beds above said fixed bed, means for alternately raising and pressing down the uppermost of said beds to cause engagement of all of the other beds, said means comprising a shaft, and means for imparting a throw thereby, connections between said beds whereby when the uppermost of said beds is raised the other movable beds will be elevated with sufficient separating intervals for the introduction of the work a continually-moving source of power which can be manually engaged and means for automatically disengaging it at the extremity of the downward throw of the shaft so that when the clutch is reëngaged the further rotation of the shaft in the same direction raises the beds, a stationary source of steam-supply, and flexible connections between said steam-supply and the movable beds, substantially as described.

5. In a chair-back-bending press, a series of superimposed press-beds, having lugs or projections 37, 38, 39, 40, thereon, the hooks therefor formed of the two parts 41, 42, flexibly connected together, and the cam projection 43, carried by the part 41, for disengaging the hook from the lower beds until the uppermost bed is raised clear, substantially as described.

6. In a chair-back-bending press, the combination with the frame, a plurality of superimposed pressing-beds arranged therein, a horizontal shaft mounted in said frame above the pressing-beds, cranks upon said shaft, pitmen connecting said cranks with the uppermost of said beds, a worm-wheel connected to the horizontal shaft, cams 24, 24′, thereon, a clutch, a clutch-operating rod 19, a stop thereon, a supporting-spring 20 normally engaging said stop with said cam, and a handle 19′ whereby the clutch may be manually operated.

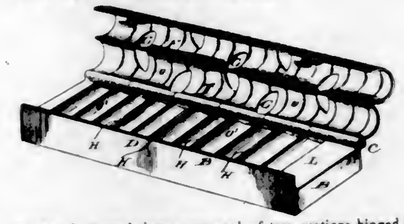
655,154. DUPLEX STOCKING-SUPPORTER. ISAAC B. KLEINERT, New York, N. Y., assignor to the I. B. Kleinert Rubber Company, same place. Filed Nov. 17, 1899. Serial No. 737,285. (No model.)



Claim.—1. In a duplex stocking-supporter, in combination, a metal frame having a loop at its upper central part lying in a plane at right angles to its main portion for attachment to the loop or eye of a corset-clasp, and having inward extensions at its lower end, stocking-clasps and their connecting-webbings for a pair of stockings, the upper ends of said connecting-webbings embracing the inward extensions of the frame and connected thereto as a means of support for the stocking connections.

2. In a duplex stocking-supporter, in combination, a metal frame having a loop, at its upper central part lying in a plane at right angles to its main portion for attachment to the loop or eye of a corset-clasp, and having inward extensions at its lower end; stocking-clasps and their connecting-webbings for a pair of stockings, the upper ends of said connecting-webbings embracing the inward extensions of the frame; and a fabric covering attached to the frame and the upper ends of the connecting-webbings.

655,155. CORD-CLAMP. HARDIN B. LITTLEPAGE, Washington, D. C., assignor of one-half to William B. Matthews, same place. Filed Jan. 6, 1898. Serial No. 665,854. (No model.)



Claim.—1. A cord-clamp composed of two sections hinged together, one of the sections being provided with two grooves for the reception of the cords, staggered cleats in each of the grooves and a key-operated lock for holding the clamp in its closed position, substantially as described.

2. A cord-clamp composed of two sections hinged together, one of the sections being provided with two grooves for the reception of the cords, each groove having staggered cleats, the other section being provided with cleats intermediate the cleats on the first-named section, and a key-operated lock for securing the clamp in its closed position, substantially as described.

3. A cord-clamp comprising two sections, spring-actuated cleats thereon adapted to accommodate cords of different sections and a key-operated lock for securing the clamp in its closed position, substantially as described.

4. A cord-clamp comprising two sections one of which is provided with cord-grooves, each groove provided with staggered cleats, the other section provided with spring-actuated cleats and a key-operated lock for securing the sections together, substantially as described.

5. A cord-clamp comprising two sections, one section provided with a key-operated lock, the other section provided with one or more hasps, each hasp having a plurality of lugs or catches with which the lock in the other is adapted to engage, whereby the clamp is adapted to accommodate cords of various sections, substantially as described.

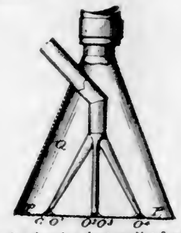
6. A cord-clamp comprising two sections hinged together, one of the sections provided with a key-operated lock and cleats, the other section grooved to receive the cords and each groove provided with staggered cleats and hasps on the latter section, each hasp provided with a plurality of lugs or catches with which the lock is adapted to engage, whereby cords of different sections may be accommodated, substantially as described.

7. A cord-clamp comprising two sections hinged together, one of the sections provided with a key-operated lock and spring-actuated cleats, the other section grooved to receive the cords, and each groove provided with staggered cleats and hasps in the latter section, each hasp provided with a plurality of lugs or catches with which the lock is adapted to engage whereby cords of different sections may be accommodated, substantially as described.

8. A key-operated cord-clamp composed of two sections, hinged together, the inner surface of one or both sections being corrugated, whereby the cord will be more securely prevented from slipping, substantially as described.

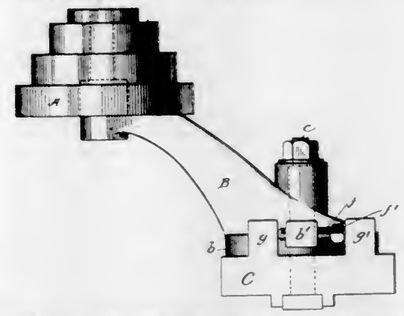
655,156. DUST REMOVING AND COLLECTING MACHINE. JOHN E. MOTE and LEWIS C. KING, Richmond, Ind. Filed Jan. 9, 1899. Serial No. 701,639. (No model.)

Claim.—1. The combination in a machine for removing and collecting dust or dirt from type-cases, drawers and shelves, of a fan-case J′ in the chamber of which is rotated a fan C, the inlet to said chamber being an opening 3 in the side of the case and the outlet, a spout tangential to the circumference of the case; a conductor-pipe K, from the outlet D to the nozzles, O′, &c., a gauze P P covering the open flared end of the hood Q, which is reduced in size, so that a conductor-pipe H connects it through a tangential inlet G to the chamber in the case or box F, which is connected to the chamber in case J by an eye or opening near the center of the side of the case J, in the chamber of which a fan B is rotated and the outlet to which is a spout E, tangential to the side of said case, substantially as and for the purpose set forth.



2. In a machine for cleaning dust or dirt from type-cases, drawers and shelves, a compressing fan and chamber, a conductor-pipe leading from said chamber, terminating in nozzles, an exhaust fan and chamber, a conductor-pipe, over the free end of which is a gauze, leading to said chamber, a conductor-pipe leading from it and the chamber, terminated in or above a dust-separating chamber, which contains a fabric supported on a liquid substantially as and for the purpose set forth.

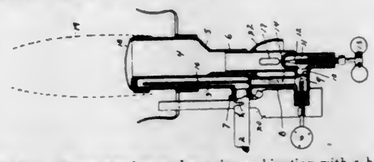
655,157. BELT-TIGHTENER. EDWARD J. MCCLELLAN, New York, N. Y., assignor to the Garvin Machine Company, of New York. Filed June 6, 1900. Serial No. 19,212. (No model.)



Claim.—1. A belt-tightener consisting of a pivoted bracket provided with a radial lug in combination with a threaded bolt passing through said lug, and two fixed abutments between which the bolt is confined, substantially as described.

2. A belt-tightener consisting of a bracket-arm having a circular base-plate, a pivot centrally located in the base-plate, a lug projecting radially from the edge of said base, a threaded bolt passing through said lug in a direction parallel to a tangent of the plate, and two fixed stops between which the first-named lug and its bolt extends said bolt bearing at its respective ends against the two fixed lugs, substantially as described.

655,158. INCANDESCENT LAMP. EDWARD H. PALMER, Detroit, Mich., assignor of one-half to Effie A. Wiggin, same place. Filed Jan. 5, 1900. Serial No. 427. (No model.)



Claim.—In an incandescent lamp, in combination with a hollow mixing-chamber, a semicylindrical lug parallel to the axis of said chamber forming a part of the walls, and extending into the hollow thereof, said lug being hollowed out longitudinally and having its upper end closed and its lower end communicating with the hydrocarbon-reservoir, a vertical tubular gas-conductor approximately concentric with said hollow in said lug, said gas-conductor leading from

the top of said hollow downward, and communicating with the mixing-chamber, substantially as described.

655,159. PHOTOGRAPHIC-PRINTING FRAME. WILLIAM S. PEPPERELL, Boston, Mass. Filed May 14, 1900. Serial No. 16,613. (No model.)



Claim.—1. An apparatus of the character specified consisting of a printing-frame; and a series of separately-movable shutter-slats each shiftably connected at one end to said frame, and the two end slats of which have their inner side edges in overlapping and underlapping relation, respectively, with the adjacent edges of the next adjoining slats, and each intermediate slat of which has one side edge in overlapping relation with the adjacent side edge of the next succeeding slat and its other side edge in underlapping relation with the next preceding slat, whereby the slats may have full opening movements independently and in successive order, or whereby two or more slats may have opening movements simultaneously.

2. An apparatus of the class specified including a printing-frame; and a plurality of shutter-slats in hinged connection at one end with said frame and having their adjacent side edges rabbeted and in overlapping relation.

3. An apparatus of the class specified consisting of a printing-frame; a series of shutter-slats each of which is shiftably connected at one end of the frame for opening and closing movements independent of the others and the two end slats of which have their inner side edges in overlapping and underlapping relation, respectively, with the adjacent side edges of the adjoining slats, and the intermediate slats of which have opposite side edges in overlapping and underlapping relation with the adjacent side edges of the next preceding and succeeding slats respectively; and locking means in connection with one or more slats.

4. The combination with a printing-frame of a plurality of parallel shutter-slats in hinged connection with the upper or exposing face of said frame and having their adjacent side edges beveled so that each slat will, when in a closed position, overlap the edge of the next adjacent slat; and means for locking one or more of said slats, normally, in closed position with relation to the frame.

5. An apparatus of the class specified including a printing-frame; a plurality of shutter-slats each in hinged connection at one end with said frame and having their adjacent side edges in lapped relation; locking means in connection with said slats and frame; and automatically-operative slat-opening means in connection with said slats.

6. An apparatus of the class specified comprising an open frame including means for supporting a glass or negative; a backing or press-board removably secured to the back side of the frame in position to bear against one side of the glass; a sectional shutter secured to the front side of the frame in position to bear against the other side of the glass and including a series of shutter-slats each of which has an independent pivotal connection at one end with the frame and are adapted to have successive or independent opening and closing movements.

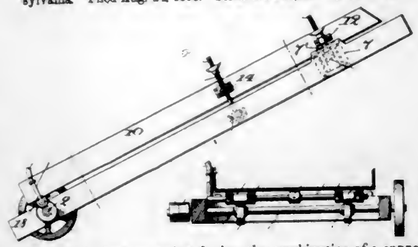
7. The combination of the slat-carrying strip adapted to be secured to one rail of a print-frame; and a series of shutter-slats each pivotally connected at one end to said rail and the two end slats of which have their inner side edges in overlapping and underlapping relation, respectively, with the adjacent side edges of the next adjoining slats, and each intermediate slat of which has one side edge in overlapping relation with the adjacent edge of the next succeeding slat and its other edge in underlapping relation with the next preceding slat, substantially as and for the purpose set forth.

8. The combination, with a printing-frame, of a plurality of shutter-slats pivotally connected to said frame in position to cover a part or the whole of the exposing face thereof and having their side edges in overlapping relation; a covering of soft pliable material on the under face of said slats; and locking means in connection with the frame and slats and effective for holding the slats, normally, in their closed position.

9. An apparatus of the class specified including an open print-frame having a glass-supporting flange; a glass supported on said flange; a backing or press-board removably secured to bear against the back of the glass; and a series of shutter-slats, each pivotally connected at one end to the frame in position to cover a part or the whole of the front of the glass and each slat having one or both side edges thereof rabbeted and in lapped relation with the side edge or edges of the next adjacent slat or slats; locking means in connection with one or more slats and the frame; and resilient slat-opening means in connection with each slat.

10. An apparatus of the class specified consisting of a rectangular open frame having an inwardly-projecting glass-supporting flange; a glass supported on said flange; a press-board or backing secured in the frame and bearing against the rear face of said glass and adapted for removal; a plurality of independent shutter-slats each of which is in hinged connection at one end with the front face of said frame and is adapted to cover a portion of the front face of the glass; and locking means in connection with the frame and the free ends of said slats and effective, normally, for holding said slats in closed position.

655,160. MINERAL-SCREEN. PHILLIP F. POORBAUGH, Allegheny, Pa., assignor to The Pittsburg Coal Mine Supply Company, of Pennsylvania. Filed Aug. 24, 1898. Serial No. 689,382. (No model.)



Claim.—1. In a screening device, the combination of a supporting-frame, an operating-shaft mounted in the lower end thereof, cams suitably mounted on said shaft, a screen-shoe provided with a suitable screen-plate and operated by said cams, guides connected to the inner face of each side of said frame, slide-plates mounted in said guides, a shaft 9 journaled in said slide-plates and with which the shoe is pivotally connected at its upper end, and vertical adjusting means connected to each of said slide-plates and to the said screen-shoe, substantially as described.

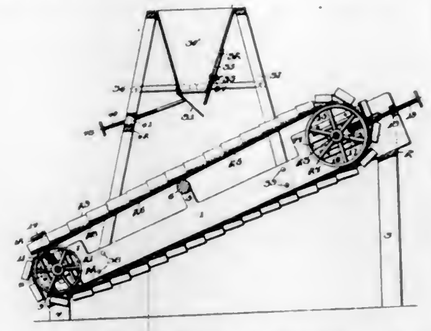
2. In a screening device, the combination, of a supporting-frame, an operating-shaft mounted in the lower end thereof, cams suitably mounted on said shaft, a screen-shoe provided with a suitable screen-plate and operated by said cams, guides connected to the inner face of each side of the frame, slide-plates mounted in said guides, a shaft 9 mounted in said slide-plates and with which the shoe is pivotally connected at its upper end, vertical adjusting means connected to each of the said slide-plates and to each side of the shoe, and a tension device arranged at each side of the said frame and connected to said shoe, substantially as described.

3. The combination of a supporting-frame having an operating-shaft arranged at the lower end thereof, a pair of cams mounted on said shaft, a screen-shoe provided with a suitable screen-plate, guides connected to the inner face of each side of the supporting-frame, a pair of slide-plates arranged to move vertically in said guides, a shaft 9 mounted in said slide-plates and with which the said shoe is pivotally connected at its upper end, a self-lubricating shaft connected to the under face of the lower end of said screen-shoe, antifriction-rollers mounted on the lubricating-shaft and adapted to be engaged by the said cams for elevating the screen-shoe, vertical adjusting means connected to the said slide-plates and to each side of the screen-shoe, a tension device arranged at each side of the said frame and connected to said shoe, and a bumper suitably mounted on said lubricating-shaft, substantially as described.

655,161. SLATE AND COAL SEPARATING DEVICE. PHILLIP F. POORBAUGH, Allegheny, Pa., assignor of one-half to Frederick C. Mancourt, Belleview, Pa. Filed Dec. 9, 1899. Serial No. 739,783. (No model.)

Claim.—1. In a separator, the combination with the frame mounted at an incline, of the guides 7, 8 secured to the inner faces of the frame at its lower end, bearings 9 mounted to slide vertically in said guides, adjusting-screws 12 connected to said bearings and operating through guides attached to the frame, a shaft 21 journaled in said bearings, a drum 22 mounted upon said shaft, longitudinal guides 15, 16 secured to the inner faces of the frame at its upper end, bearings 17 mounted to move within said longitudinal guides, adjusting-screws 19 connected to said bearings 17 for operating the same, a shaft 23 journaled in said bearings 17, a drum 24 mounted upon said shaft 23, an endless carrier mounted upon said drums 22, 24, and means carried by the frame for supporting the carrier intermediate of the drums, substantially as described.

2. In a separator, the combination with the frame mounted at an incline, of the guides 7, 8 connected to the inner faces of the frame at its lower end, the bearings 9 mounted to slide vertically in said guides, means connected to said bearings for adjusting the same vertically, a shaft 21 journaled in said bearings, a drum 22 mounted on said shaft, longitudinal guides 15, 16 connected to the inner faces of the frame at its upper end, bearings 17 mounted in said guides, means connected to said bearings 17 for moving the same longitudinally in their guides, a shaft 23 journaled in said bearings 17, a drum 24 mounted on said shaft, an endless carrier mounted upon said drums, means for supporting said carrier intermediate of the drums, a hopper supported by the frame above the carrier, and means for regulating the discharge from said hopper, substantially as described.



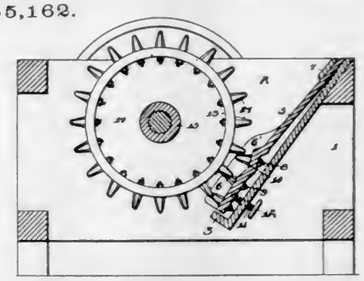
3. In a coal and slate separator, the combination, with the inclined supporting-frame, and the endless carrier mounted to travel within the frame toward the elevated end thereof, of means for adjusting the lower end of said frame vertically, separate means for adjusting the elevated end of the carrier longitudinally of the frame to tighten or loosen said carrier, a roller carried by the frame intermediate of its ends for supporting said carrier, a hopper supported by the frame above the carrier, an adjustable slide-plate connected to one side of said hopper, a hinged bottom connected to the opposite side, and a rod mounted in the supports of the hopper with its inner end engaging said hinged bottom for adjusting the same to control the point of discharge to the endless carrier, substantially as described.

4. In a separator, the combination, with an inclined supporting-frame, of a vertically-adjustable drum mounted in the lower end of said frame, means connected to the frame for adjusting said drum vertically, a longitudinally-adjustable drum mounted in the upper end of said frame, means connected to the frame for adjusting said drum vertically, an endless carrier mounted upon said drums and consisting of a series of overlapping slats having their ends turned upwardly at angles to the slats to form sides for the carrier, a friction-roller carried by the frame intermediate of the drums for supporting the carrier, a hopper supported by the frame above the carrier, and means connected to opposite sides of said hopper for regulating the outlet thereof and the discharge of the material onto the endless carrier, as and for the purpose set forth.

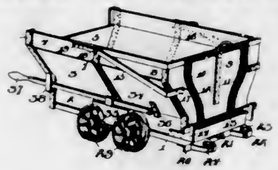
5. In a coal and slate separator, the combination, with the inclined supporting-frame, the endless carrier mounted to travel therein toward the elevated end of the frame and comprising a series of overlapping slats having their ends turned upwardly at right angles to form sides for the carrier, the means for adjusting the lower end of said carrier vertically, and the separate means for adjusting the elevated end of said carrier longitudinally to tighten or loosen said carrier, of the hopper supported above the carrier, the adjustable slide-plate connected to one side of said hopper, a hinged bottom forming a chute connected to the opposite side of said hopper, and means for adjusting said hinged bottom to vary the discharge of the material from the hopper to the endless carrier, as and for the purpose described.

655,162. COKE-BREAKER. PHILLIP F. POORBAUGH, Allegheny, Pa., assignor to The Pittsburg Coal Mine Supply Company, of Pennsylvania. Filed Dec. 15, 1899. Serial No. 740,383. (No model.)

Claim.—In a coke-breaker, the combination with the undershot drum or cylinder having the teeth seated therein, of an inclined plate having a ledge at its lower end, a breaking-plate arranged at an incline in front of said drum or cylinder and having a portion of its receiving-face set at an angle to the remainder of such face, a series of teeth seated in the lower portion of said breaking-plate and in the angular bent portion of its face, and screw-rods near the lower end of the inclined plate for adjusting the position of said breaking-plate, substantially as described.



655,163. STEEL-CAR CONSTRUCTION. PHILLIP F. POORBAUGH, Allegheny, Pa., assignor to The Pittsburg Coal Mine Supply Company, of Pennsylvania. Filed Dec. 18, 1899. Serial No. 740,731. (No model.)



Claim.—1. In a steel pit-car, the combination with the body of a car provided with an end-gate or door, of a pair of bearing-sleeves suitably secured thereto, a hollow axle mounted in said sleeve so as to prevent the lateral motion thereof, a stub shrunk in each end of the said axle, and a wheel suitably mounted upon said stub, substantially as set forth.

2. In a steel pit-car, the combination with the body of a car provided with an end-gate or door, of a pair of bearing-sleeves suitably secured thereto, a hollow axle mounted in said sleeve so as to prevent the lateral motion thereof, a stub shrunk in each end of the said axle, a wheel suitably mounted upon said stub, and roller-bearings interposed between the hub of said wheel and said stub, substantially as described.

3. In a steel pit-car, a bottom, sides mounted on the said bottom and consisting of an upper and lower vertical section and inclined or flared intermediate sections, a front end 5, means for securing the bottom, sides and end 5 together, separate means for securing said sides and bottom together, an end-gate suitably connected to said sides, and adapted to operate in a vertical manner when the car is tilted, and a draw-bar formed of a series of sections swivelly connected together having the central section rigidly secured to the underneath face of the said bottom, substantially as set forth.

4. In a steel pit-car, a bottom, sides mounted on the said bottom and consisting of an upper and lower vertical section and inclined or flared intermediate sections, a front end 5, means for securing the bottom, sides and end 5 together, separate means for securing said sides and bottom together, an end-gate suitably connected to said sides, and provided with an upwardly-extending hook for operating the gate or door in a vertical manner when the car is tilted, and means for securing said gate to said car when the same is not tilted, substantially as described.

5. The combination with the body portion of the car, of an end-gate provided with a hook, a fastening-bar connected to said gate, a pair of L-shaped irons secured to the body portion of the car and adapted to receive the ends of said fastening-bar for retaining the door in a closed position, means connected to said body portion of the car and to said gate or door and adapted to permit of a vertical motion of the end-gate when the said car is tilted.

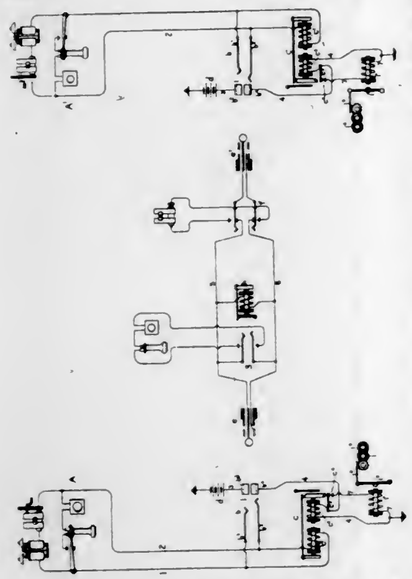
6. The combination with the body portion of a steel pit-car, of a pair of bearing-sleeves suitably secured thereto and having the opening thereof of two different diameters forming an offset or shoulder, a hollow axle having each end thereof mounted in one of the said sleeves and arranged in close relation to the body portion of the car, said ends abutting against the said offset or shoulder and preventing a lateral movement of the axle, a solid-metal stub shrunk within each end of the axle and extending outwardly therefrom, and a wheel mounted on each of the said stubs.

7. The combination with the body portion of a steel pit-car, of a pair of bearing-sleeves suitably secured thereto and having the opening thereof of two different diameters forming an offset or shoulder, a hollow axle having each end thereof mounted in one of the

said sleeves and arranged in close relation to the body portion of the car, said ends abutting against the said offset or shoulder and preventing a lateral movement of the axle, a solid-metal stub shrunk within each end of the axle and extending outwardly therefrom, a wheel mounted on each of the said stubs, and roller-bearings interposed between the hub of said wheel and said stub.

8. The combination with the body portion of a steel pit-car, of a suitable end-gate or door, a pair of hanger-rods connected at one end to said door and at their opposite end pivotally connected to the body portion, means for securing said door to said body portion, and an upwardly-extending hook carried by said door and adapted to cause a vertical movement of the door when said body portion is tilted, substantially as described.

655,164. CONNECTION-COUNTER FOR TELEPHONE-LINES. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Nov. 13, 1897. Serial No. 658,390. (No model.)



Claim.—1. The combination with a telephone-line, a magnet associated therewith to indicate a call, and means for making connection with the line, of an electrically-controlled connection-registering appliance associated with the line, a local circuit including the magnet thereof, said local circuit being normally broken at two points, switch-contacts controlled by the said call-indicating magnet to close one break in the local circuit, and other switch-contacts adapted to be brought together in the act of making connection with the line to close another break in the local circuit; whereby the registering appliance is actuated when a call is followed by the establishment of connection with the line, as described.

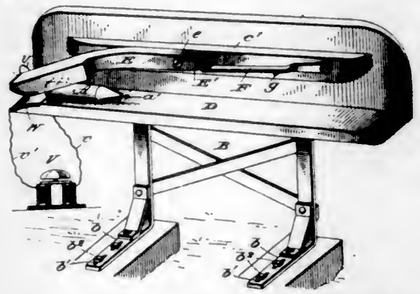
2. The combination with a telephone-line, the line-annunciator thereof, and the spring-jack for making connection with the line, of a connection-counter associated with the line, a local circuit including the controlling-magnet of the connection-counter normally broken at two points, switch-contacts on the line-annunciator adapted to be closed thereby in the display of the signal to close one of the breaks, and switch-contacts in the spring-jack adapted to be connected therein when a plug is inserted in the jack to close the other of said breaks, and a source of current in the local circuit, as described.

3. The combination with a telephone-line and means for causing calling or signaling current to flow in the line, of a line-annunciator associated with the line and responsive to current flowing therein, a terminal spring-jack for the line whereby connection may be made therewith, a connection-register for the line, a circuit controlling or governing the operation of said connection-register, a source of electric current included in said circuit for effecting the operation of the connection-register, and two sets of switch-contacts, one set actuated by the line-annunciator and the other set actuated by connection with the spring-jack, said two sets of switch-contacts acting jointly or cooperating to control the continuity of the said circuit governing the connection-register, whereby said connection-register is operated when connection is made with the spring-jack in response to a call indicated by the line-annunciator, substantially as described.

4. The combination with a telephone-line and means for causing a flow of calling current therein, of an annunciator for the line adapted to respond to the flow of calling current in the line, whereby a signal is displayed, a restoring-winding for the said annunciator adapted when traversed by electric current, to cause the effacement of the line-signal, a local circuit including a source of current and the restoring-winding of the line-annunciator, and switch-contact closed in the act of making connection with the spring-jack of the line for closing said local circuit, a connection-register for the telephone-line, a branch circuit controlling said connection-register, and a switch-contact governing said branch circuit, actuated by the line-annunciator in displaying its signal, substantially as set forth.

5. The combination with a telephone-line, the line-annunciator thereof, the spring-jack for the line and the local circuit normally open in the spring-jack including a restoring-magnet of the line-annunciator, of an electrically-controlled connection-counter associated with the line, the magnet thereof being in a normally-open shunt of the restoring-magnet of said line-annunciator, and switch-contacts actuated by the indicator of the annunciator controlling the continuity of said circuit through the magnet of the counter, as described.

655,165. MESSAGE-DELIVERING DEVICE FOR TRAINS. PETER P. SHIVES, Dickey's Mountain, Pa., assignor of one-half to John V. Fisher, Brunswick, Md. Filed May 10, 1900. Serial No. 16,223. (No model.)



Claim.—1. In combination with a cylinder-receiving device and provided with a spring operating from one side of the receiving-passage against the entering cylinder, carried by a train, a stationary spring-pressed cylinder-holder arranged to deliver the cylinder thereto as the train passes, substantially as set forth.

2. In combination with a cylinder-receiving device carried by a train, a stationary spring-pressed cylinder-holder arranged to deliver the cylinder thereto as the train passes, and contacts forming part of an electric alarm-circuit and mounted on the parts of the said holder in order that the closing of the latter may bring these contacts together and thereby sound the alarm, substantially as set forth.

3. In combination with a cylinder receiving device carried by a train, a fixed shelf, a spring-pressed pivoted jaw or lever which closes on said shelf, forming a stationary yielding holder for a cylinder, the proximate ends of the said jaw and shelf being beveled in opposite directions to provide a flaring mouth, substantially as set forth.

4. In combination with a receiving device on a train, a stationary cylinder-holder consisting of a spring-pressed jaw and a shelf, the said jaw being recessed to fit on a cylinder and overhang its open end preventing accidental dislodgment, substantially as set forth.

5. In combination with a cylinder-holder carried by a train, a stationary cylinder-holder consisting in part of a spring-pressed lever adapted to enter the former holder, remove the cylinder therefrom and retain it by clasping it against a rigid platform or shelf, substantially as set forth.

6. In combination with a pair of springs carried by a train and adapted to hold a message-cylinder between them and an incline leading down to said springs, a jaw pivoted to a stationary device along the track and adapted to slide down the said incline, enter between the said springs and remove the cylinder therefrom, and a shelf which forms the lower jaw of the stationary cylinder-holder to receive and retain the cylinder thus removed, substantially as set forth.

7. In combination with a stationary cylinder-holder for delivering train-messages, a receiving device carried by the train, a passage leading inward therefrom, an interior receptacle below the inner end of the said passage, and an upwardly-bent guard-plate at the rear end of the said receptacle to prevent the cylinders from flying out of the latter, substantially as set forth.

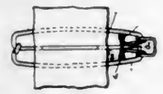
8. A removable exterior shelf adapted to be carried by a car and provided at one end with a receiving device for message-cylinders and at the other with a cylinder-holder, also with a passage leading inward from said receiver to a receptacle within the car, substantially as set forth.

9. In combination with a bell attached to a car message-cylinder receiver having an open channel with a movable piece in the inner end of its mouth and intervening devices whereby a cylinder in entering said channel and moving the said piece laterally will ring the bell, substantially as set forth.

10. In combination with a cylinder-receiver provided with an open channel and an inwardly-inclined plate in one side thereof, a pin sliding through the wall of a car and arranged in contact with said spring, a second spring acted on by the movement of said rod, and a bell-hammer operated by the pressure of this latter spring, substantially as set forth.

11. A stationary shelf and a shelf carried by a car, both being beveled at the ends and one adapted to slide over the other, in combination with a cylinder-receiver and a cylinder-holder formed in or attached to the car-carried shelf and a spring-pressed pivoted jaw or lever forming with the stationary shelf a cylinder-holder, the said jaw having also a square end recess on its under side and operating also to withdraw a cylinder from the holder on the said car-carried shelf, substantially as set forth.

655,166. SAFETY-PIN. WILLIS S. SMITH, Chicago, Ill. Filed Mar. 15, 1900. Serial No. 8,810. (No model.)



Claim.—1. A safety-pin comprising a body portion composed of a single piece of wire, said body portion having yielding sides, the base of one side having one end of the wire looped about it, and being continued longitudinally forward in the shape of a pin or prong, the forward end of the body being formed into an inwardly-concaved wall, a trigger looped about said concaved wall and having its free ends brought into proximity and constituting a lever for operating the trigger, the opposite end of the latter being bent into two diverging arms deflected substantially at right angles to the plane of the trigger, and adapted to bear against the free end of the pin and frictionally engage the yielding sides of the body portion when the lever portion is swung outwardly, substantially as set forth.

2. A safety-pin comprising a body portion having yielding side walls, and a locking-trigger adapted to engage the inner adjacent faces of said walls, and simultaneously force the prong of the pin to its locked position, substantially as set forth.

655,167. COTTON-GIN. MATTHEW PRIOR, Watertown, Mass. Filed July 23, 1896. Serial No. 600,205. (No model.)

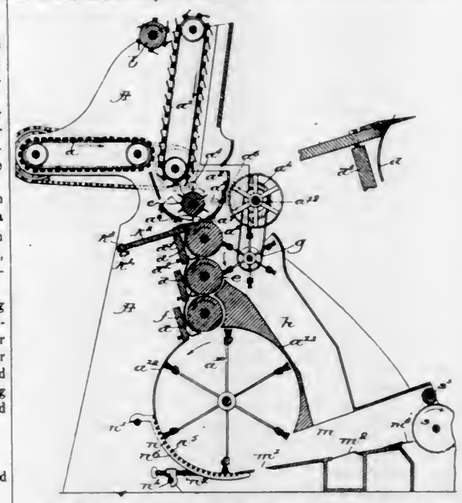
Claim.—1. In a gin, the combination with a roller, and its knife, of an adjustable card-case fixed at its upper side adjacent the knife, and partially surrounding the roller, and means to adjust the lower side of said card-case to and from said roller, substantially as described.

2. In a gin, the combination with a roller for ginning the cotton of a card-case partially surrounding and eccentric to the roller, and adapted to retard the cotton and straighten the fibers thereof, as the cotton is carried around by the roller, said card-case gradually approaching close to and substantially in contact with the roller at its lower edge, substantially as described.

3. In a gin, the combination with a roller, provided with a ginning or carding surface, of a yielding smooth card-case mounted in a stationary support held against and partially surrounding the roller and arranged to nip the cotton as the latter is carried by the carding-surface of the roller, substantially as described.

4. In a gin, the combination with a roller, of a stationary card-case partially surrounding the roller, means to hold said card-case at its lower edge against the roller, thereby to nip the cotton between the roller and case, and means to pick said cotton from the lowe edge of the card-case, substantially as described.

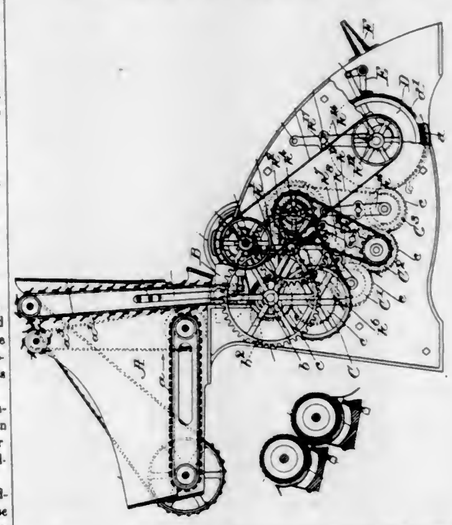
5. In a gin, a plurality of rollers arranged in series, said rollers being journaled tangentially to each other and arranged to pick the loose cotton fibers from each other and to pass them from one to another throughout the series, and a card-case for each roller, each card-case being eccentric to its roller and having its forward edge against the roller, substantially as described.



6. In a gin, a roller, and a doffer, combined with a dirt-grid mounted adjacent the doffer, said grid being pivotally supported at its rear upper end, a fixed rod beneath it, said grid having a screw n^3 mounted thereon adjacent said fixed rod, and a hook-nut n^3 carried by said screw, said nut having its hook turned to engage the forward side of said fixed rod, being held in engagement therewith by the gravity of the grid, substantially as described.

7. In a gin, the combination with a knife, a vibrating clearer cooperating therewith, and means to vibrate it, of a roller, means to rotate the latter, and means to vary the relative speed of vibration and rotation, substantially as and for the purpose set forth.

655,168. ROLLER OR BRUSH CARD. MATTHEW PRIOR, Watertown, Mass. Filed Mar. 2, 1897. Serial No. 625,717. (No model.)



Claim.—1. The herein-described machine for handling cotton, comprising a feeding mechanism, a ginning mechanism, a plurality of carding-rolls, operating means therefor, and a nipping device for each roll, all of said parts being arranged together to pass the cotton directly from one moving part to the next without distorting relaxation of the fibers thereof, and means for rotating each of said

rolls at higher speed than the next preceding roll, substantially as described.

2. The herein-described machine for handling cotton, comprising a feeding mechanism, a ginning mechanism, a plurality of carding-rolls, a nipping device for each roll, a fleece-roll, and a doffer therefor, all of said parts being arranged together to pass the cotton directly from one moving part to the next without distorting relaxation of the fibers thereof, and means to rotate each of the said rolls at higher speed than the next preceding roll, substantially as described.

3. In a cotton-handling machine, the combination with a roller and a knife, of a coöperating comb-like clearer having teeth of the shape described, said clearer being pivoted and provided with means to vibrate the same abont an axis arranged parallel with the axis of said roller and with its teeth standing at substantially right angles to a radius drawn therefrom through said axis, the said teeth moving back and forth slightly away from the surface of said roller in the arc of a circle and thereby acting under the cotton to lift the same bodily away from said roller-surface, and to shake or sift the seeds therefrom without tearing the cotton fiber, substantially as described.

4. In a cotton-handling machine, the combination with a roller, a hopper, means to vibrate the same, said hopper having its outlet adjacent the said roller, a knife, and a clearer connected to vibrate in unison with said hopper, formed to present a series of separated and disconnected fine comb-like teeth having their sides extending parallel from their extreme free ends, to act upon and comb out and lift the cotton, thereby avoiding all tendency to wedge and clog the same, substantially as described.

5. In a cotton-handling machine, the combination with a roller, and a knife bearing thereupon, of a clearer provided with independent, separated pin-like teeth arranged parallel to each other, each tooth having its sides parallel and terminating in a square blunt end, and means to swing said clearer in an arc tangential to said roller, substantially as described.

6. In a cotton-handling machine, the combination with a roller, a knife, a vibrating clearer and means to vibrate said clearer, of the feed-hoppers A′ and B, the apron *a*, an endless carrier *a′*, the latter extended down into and near the bottom of the hopper B, substantially as described.

7. In a cotton-handling machine, the combination with a roller, of a clearer provided at its edge adjacent to said roller with a series of pin-like teeth, said teeth being separated from each other by an intervening clear space with its adjacent sides parallel and means to vibrate said clearer and each tooth having its sides parallel, substantially as described.

8. In a cotton-handling machine, the combination with a roller, of a vibrating hopper means to vibrate it, said hopper being provided at its bottom with a delivery-opening arranged in close proximity to said roller and parallel therewith, and an endless carrier arranged to travel within said hopper near said opening, and provided with carrier-pins, whereby the feed of the cotton to said roller is automatically regulated and rendered uniform, substantially as described.

9. In a cotton-handling machine, the combination with a roller, of a vibrating hopper, means to vibrate said hopper, and an endless carrier arranged to travel within said hopper and provided with a series of pins projecting forwardly therefrom in the direction of travel obliquely to said direction of travel, substantially as described.

10. A roller, composed of a core, a bristle-support thereon, and bristles, said support having a plurality of rectangular pockets having rectangular cavities, set radially about the core over the entire area thereof, said cavities having thin walls, and said bristles being packed endwise into said pockets to together constitute a compact roller-surface, substantially as described.

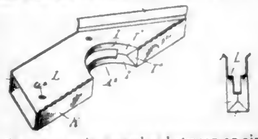
11. The herein-described machine for handling cotton, comprising a feeding mechanism, a ginning mechanism, a plurality of carding-rolls, operating means therefor, a nipping device for each roll, arranged to pass the cotton or other fiber directly from one to the next and means for adjusting said rolls relatively to each other, substantially as described.

655,169. COMPOSITION OF MATTER. WILLIAM J. CORDNER, London, England, assignor to Louis D. Brandeis, trustee, Boston, Mass. Filed Feb. 6, 1900. Serial No. 4,194. (No specimens.)

Claim.—A composition of matter consisting of china-grass or rhea fiber and the latex of the *tabernæmontana crassa*, substantially as described.

655,170. AIR-GUN. WILLIAM F. MARKHAM, Plymouth, Mich. Filed Dec. 18, 1899. Serial No. 740,672. (No model.)

Claim.—1. A connection between an air-gun barrel and stock, comprising two separated vertical side plates, tie-plates separating and tying the side plates together, flanges at the forward edges of the side plates to which the barrel is connected, and a pivotal connection between the rear ends of the side plates and the stock.

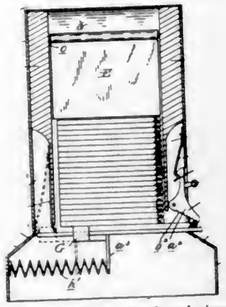


2. A hollow connecting member between an air-gun barrel and stock, comprising two separated, vertical, metallic side plates, each having a trigger-recess formed therein, a bottom connecting member, a top connecting member extending along the rear portions of the vertical plates, and side flanges at the forward edges of said latter plates to which the barrel is connected.

3. A member for connecting the barrel and stock of an air-gun, formed of a single piece of sheet metal, comprising side plates, a connecting bottom member, a connecting top member extending along the rear portions of the side plates, outwardly-projecting flanges at the forward top portions of said side plates to which the barrel is secured, a trigger-recess being formed in the under side of the side plates, and an inturned flange at the edge of each recess for the purpose described.

4. In an air-gun, a connecting device for the gun barrel and stock, comprising two separated metallic side plates, the outer end portions thereof being beveled forming inclined forward edges, and the lower portion of each plate being recessed, a bottom tie-plate connecting the lower edges of the side plates, a top tie-plate for the side members extending along their upper edges from the inner ends of the side plates to their inclined forward edges, an outwardly-projecting flange upon the inclined forward edge of each side plate, and an inturned flange at the edge of each recess formed in the side plates.

655,171. COMBINED MATCH-SAFE AND CIGAR-TIP CUTTER. DARIUS B. MOON, Lansing, Mich., assignor of one-half to Cyril Blatt, same place. Filed Sept. 25, 1899. Serial No. 731,634. (No model.)



Claim.—1. In a combined match-safe and cigar-tip cutter, the combination of a base-section, an inclosing casing thereon comprising a front and back wall and vertical side walls, one of said latter walls having a recess formed in its outer face in proximity to the front wall and immediately adjacent to the base-section, a match-delivery device for discharging the match from said casing, a magazine within the casing adapted to feed the match to the delivery device, and an igniting device comprising a bell-crank lever pivoted at its center within the recess in the side wall, said lever having a downwardly-depending arm provided with an igniting-face projecting into the path of the match to be discharged, and a vertical arm entirely concealed within the casing side, a spring within the said recess bearing against the vertical arm, and a lug or handle upon said latter arm projecting without the recess, substantially as described.

2. In a combined match-safe and cigar-tip cutter, the combination of a casing, a match-delivery device for discharging the matches from the casing, the match-magazine within said casing, adapted to feed the matches to the delivery device, said magazine being provided with an inclined and curved bottom plate and a discharge-opening at the lower end of said plate, and a follower-plate within the magazine pivoted to swing in an arc of a circle in close proximity to the magazine-bottom.

3. In a combined match-safe and cigar-tip cutter, the combination of a sectional casing, a match-magazine within the upper member of the casing having a match-discharge opening formed therein, and a vertical guideway leading downwardly from the magazine to the lower casing member, a horizontal shelf upon the lower member arranged beneath the guideway, a reciprocating plunger-head slidingly engaging the shelf and adapted to discharge the matches therefrom, and an igniting device carried by the upper casing member extending downwardly into operative relation to the shelf.

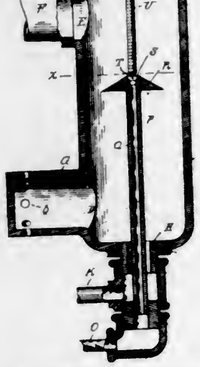
4. In a combined match-safe and cigar-tip cutter, the combination of a sectional casing, comprising a lower or base member, a match-delivery device and a cutting mechanism arranged therein, an upper or top member hinged to the lower member having formed therein a match-magazine, and an igniting device within the upper member, substantially as described.

5. In a match-safe and cigar-tip cutter, the combination of an inclosing casing having a cigar-tip aperture formed therein, a horizontally-reciprocating plunger for discharging the matches from the casing, a magazine for feeding the matches in advance of the plunger, a lever independent of the plunger pivoted within the casing, a spring for holding the lever normally in the path of the plunger, a cutter-blade carried by the lever arranged normally adjacent to the cigar-tip aperture, and means for reciprocating the plunger.

6. In a match-safe and cigar-tip cutter, the combination of an inclosing casing having a cigar-tip aperture formed therein, a horizontally-reciprocating plunger for discharging the matches from the casing, a magazine for feeding the matches in advance of the plunger, a lever independent of the plunger-head pivoted within the casing for movement in a horizontal plane, having one end extending outwardly through a slot within the casing, a spring bearing against said lever and acting normally to hold the latter in the path of the plunger, a cutter-blade carried by one lever-arm, said cutter being arranged normally adjacent to the cigar-tip aperture, and means for reciprocating the plunger to actuate the cutter-blade and discharge the match.

7. In a combined match-safe and cigar-tip cutter, the combination of a casing, a match-delivery device for discharging the matches from the casing, the match-magazine within said casing having an inclined bottom plate extending in the arc of a circle from the upper portion of one of the magazine sides to the lower end of the opposite side and provided with a discharge-opening at the lower end of said plate, and a follower-plate pivoted at one end within the magazine opposite to the upper portion of the bottom plate to permit its free end to swing in close proximity to the inclined bottom plate for the purpose described.

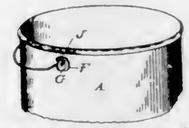
655,172. CARBURETER. WALLACE S. OLDS and DAVID M. HOUGH, St. Louis, Mich. Filed Dec. 26, 1899. Serial No. 741,606. (No model.)



Claim.—1. In a carbureter, the combination of the mixing-chamber provided with an air inlet and an outlet port, a liquid-discharge pipe extending within the chamber, an apertured spreader-plate upon the free end of the discharge-pipe having a valve-seat formed in its upper face, a valve controlling the discharge from the pipe, an operating-stem for said valve extending through and having a threaded engagement with the casing, and an overflow-pipe leading from the casing.

2. In a carbureter, the combination with an inclosing casing terminating at its lower end in a neck portion and having a closed upper end, the casing being provided with a lateral air-inlet port and a similar outlet-port, a liquid-supply pipe communicating with the interior of the neck portion, a liquid-discharge pipe within the casing having one end extending within the neck and communicating with the supply-pipe, an apertured spreader-plate upon the free end of the discharge-pipe, said plate having a valve-seat formed in its upper face, a valve adapted to seat upon the plate, an operating-stem for said valve extending through and having a threaded engagement with the closed upper end of the casing, and an overflow-pipe leading from the neck above the supply-pipe, substantially as described.

655,173. BAIL-EAR. CHARLES PUDDEFOOT, Detroit, Mich. Filed Jan. 8, 1900. Serial No. 702. (No model.)

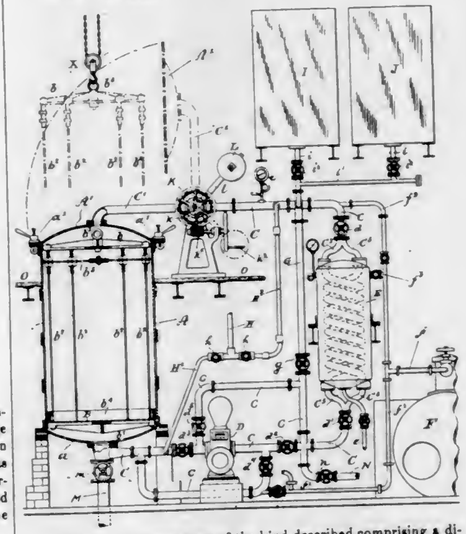


Claim.—1. The combination with the article to be supported having an aperture extending therethrough, of a metallic pin extending through said aperture and beyond the opposite surfaces of the article, a head integral with and formed upon each end of the pin, one of said heads being flattened and apertured to receive the bail-hook, and a member upon the pin immediately adjacent to one surface of the article, adapted to be clamped against said surface upon the formation of one of the heads.

2. The combination with the article to be supported having an aperture extending therethrough, of a metallic lug flattened and perforated to form an apertured ear, a pin integral with said ear extending through the aperture in the article, a washer upon the pin intermediate the ear and the adjacent surface of the article, and a head integral with the pin end opposite the ear adapted to beat against the other surface of said article.

3. In combination with the can or receptacle to be supported having an aperture extending through the body portion in proximity to the can-top, of a headed metallic pin adapted to be inserted through the aperture from the interior of the receptacle, a washer upon the outwardly-projecting portion of the pin, and an apertured ear upon the pin end opposite the head clamping the latter and the washer to the can-body, the ear being formed and the clamping simultaneously effected by flattening the pin end after the assemblage of the parts has been effected.

655,174. APPARATUS FOR USE IN TREATING FLAX-STRAW. CHARLES WETHERWAX, Best, N. Y. Filed Sept. 7, 1899. Serial No. 729,788. (No model.)



Claim.—1. An apparatus of the kind described comprising a digester having a removable cover and a removable cage open from top to bottom, a circulation system of piping connected to opposite ends of the digester, a heater forming a part of the said circulation system and comprising branch pipes contained in a steam-drum, and a by-pass pipe and valves arranged to cut out the said heater, substantially as described.

2. An apparatus of the kind described comprising a digester, a system of circulation-pipes with terminals connected to opposite ends of the digester, a pump and heater included in the circulation system, and a steam-pipe connected to the heater and also to the circulation-pipes direct, substantially as described.

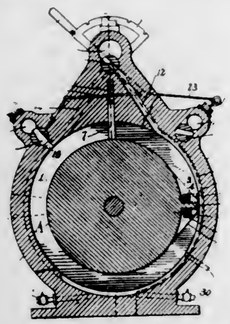
3. An apparatus of the kind described comprising a digester having a removable cover, a circulation system of pipes connected to opposite ends of the digester, a pump in the circulation system, a drain-pipe connected to the lower end of the digester, a second drain-pipe connected to the circulation-pipes at a point between the pump and the top end of the digester, and the system of valves and pipes for reversing the circulation, substantially as described.

4. In an apparatus of the kind described, the combination with the digester and circulation-piping, the pump and the heater forming a part of the circulation system, of a high-pressure water-pipe connected with the top and bottom of the digester, and a system of valves to cut out the pump and heater and to promote circulation either upward or downward through the digester, substantially as described.

5. The combination with the digester, the circulation system connected to opposite ends thereof and including a pump and heater, of a system of valves and pipes whereby the said pump and heater may be singly or collectively cut out of circulation, substantially as described.

6. The combination with the digester and its removable top, of the piping system connected to the top and bottom of the digester, the upper terminal of the piping system forming a cantaliver attached to the said digester-cover, and a gear mechanism for working the said cantaliver, substantially as described.

655,175. ROTARY ENGINE. CHARLES E. LINTON, Saginaw, Mich. Filed Nov. 16, 1899. Serial No. 737,185. (No model.)



Claim.—1. In a rotary engine a casing for the same having on different parts of its inner surface two or more channels a semicircumference or less in length, a metal wheel-piston having in its periphery one or more grooves extending nearly around the same, a head in each groove integral with the piston on the opposite sides thereof, sloping walls in each groove on each side of the head extending from the bottom of the groove and a short distance from the base of the head to the surface of the head, a gate in a pocket in the casing adapted to be actuated into the groove and block the same and be elevated out of the groove by contact with the sloping walls of the groove at the piston-head as the piston is revolved, channels in the piston adapted to connect with the channels in the casing as the piston revolves, steam-ports connected to the channels in the casing, and exhaust-ports connecting with the groove in the piston, substantially as set forth.

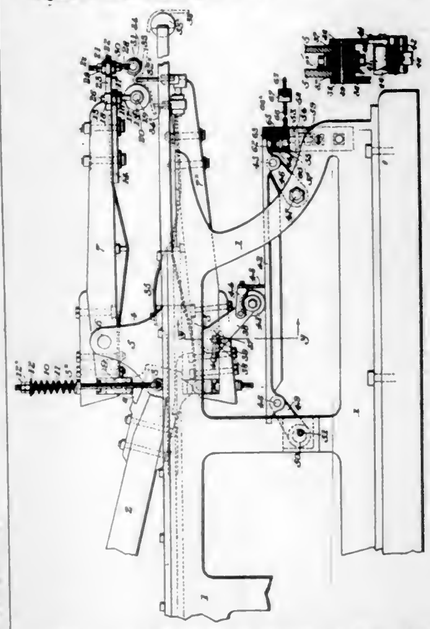
2. In a rotary engine, a piston-wheel having grooves forming the steam-chambers, each groove having a head, the heads in different planes of the piston, a casing for the piston, two or more channels in the surface of the casing between the grooves of the piston and in communication with steam-ports and in communication with channels in the piston connected with the piston-grooves and opening therein on each side of the piston-head, whereby each groove of the piston will, during a portion of the revolution of the piston be in communication with the live-steam ports through the piston-channels and casing-channels with sliding gate to be actuated in and out substantially as set forth.

3. In a rotary engine having a piston-wheel having two or more grooves in its periphery forming steam-chambers, a casing for the piston having two or more small channels on its inner circumference between the piston-grooves but not in communication therewith, each channel in communication with live-steam ports and during a portion of the revolution of the piston, in communication with the grooves of the piston with sliding gates in the casing to be actuated in and out substantially as set forth.

4. In a rotary engine, a piston having a steam-chamber extending nearly around the same formed by a groove in the piston, a head in the groove integral with the piston, a casing for the piston having two or more channels on its inner circumference not in direct communication with the steam-chamber but connected to live-steam ports, channels in the piston on each side of the head adapted to connect with the channels in the casing during part of the revolution of the piston and convey the steam to the steam-chamber just behind the piston-head, and a gate in the casing adapted to be actuated into the steam-chamber and form a back-stop for the steam, and means for throwing the gate in and out of the chamber substantially as set forth.

REISSUES.

11,848. LEATHER-STAKING MACHINE. JAMES CRAIG and FRANK F. SLOCOMB, Wilmington, Del. Filed Jan. 25, 1899. Serial No. 703,401. Original No. 604,580, dated May 24, 1898.



Claim.—1. In a leather-staking machine, a plurality of rollers mounted on a jaw thereof, and means for enabling one of said rollers to be raised or lowered independently of the other roller.

2. In a leather-staking machine, a plurality of rollers mounted on a jaw thereof, means for enabling one of said rollers to be raised and lowered independently of the other, and means for varying the distance between said rollers.

3. In a leather-staking machine, an upper jaw, a lower jaw, a blade carried by said lower jaw, a roller mounted in bearings attached to said upper jaw, adjustable arms carried by said upper jaw, stems adjustably supported in said arms, means for securing said stems in their adjusted positions and a roller having bearings in said stems.

4. In a leather-staking machine, an upper jaw, a roller mounted in suitable bearings attached to said jaw, adjustable arms carried by the latter, said arms supporting adjustable threaded stems, and a roller having bearings in said stems.

5. In a leather-staking machine, an upper jaw, a roller journaled thereupon, arms adjustably mounted on said jaw, adjustable stems supported by said arms, and a roller journaled in said stems.

6. In a leather-staking machine, an upper jaw having a plate attached thereto, a roller journaled in bearings depending from said plate, slotted arms having a cross-piece attached thereto, means for securing said arms to said plate, bearings capable of vertical adjustment depending from said arms, and a roller journaled in said bearings.

7. In a leather-staking machine, a cross-head having upper and lower jaws pivotally mounted therein, means for reciprocating and for opening and closing said jaws, a plurality of arms having hubs journaled in said cross-head, openings in said arms located eccentrically in said hubs, a rod passing through said openings, means for holding said rod in position, and means for raising and lowering said arms.

8. In a leather-staking machine, a bed or table, arms pivotally attached thereto and supported from the housing of the machine, an inclined or cam-faced projection depending from said table and adapted to contact with a hub having corresponding inclines thereon, and means for actuating said hub, in combination with connections from said bed for adjusting the lower jaw of the machine.

9. In a leather-staking machine, a bed or plate movably supported, arms common to said bed and to the housing of the machine, one of said arms having a shaft passing therethrough, said shaft being provided with bearings eccentric thereto, means for raising and lowering said bed, and connections from the latter to the lower jaw of the machine for adjusting said jaw.

10. In a leather-staking machine, a cross-piece, a hub supported thereupon, said hub having an opening therethrough and a shoulder therein, a threaded stem passing through said opening, and having a head adapted to engage said shoulder, a plurality of cam-faces on said hub, a table having a plurality of cam-faces thereon, arms extending from said hub and having a plate attached thereto, and pins projecting from said plate, in combination with connections common to said plate and to the lower jaw of the machine for adjusting said jaw without stopping the operation of the machine.

11. In a leather-staking machine, upper and lower jaws, a table, suitably supported, means for raising and lowering said table, a roller supported upon the latter, arms common to said roller and to one of said jaws, a scraper adapted to contact with said table, said scraper being located in advance of said roller, and suitably attached to said arms, and means for reciprocating and opening and closing said jaws.

12. In a leather-staking machine, an upper and lower jaw, a cross-head therefor, a plurality of arms having hubs mounted in said cross-head, openings in said hubs eccentrically located, a rod passing through said openings and the lower jaw of the machine, and means for raising and lowering said arms.

13. In a leather-staking machine, an upper and lower jaw, a roller mounted in suitable bearings attached to said upper jaw, adjustable arms carried by the latter, stems adjustably supported in said arms, and a roller having bearings in said stems, in combination with a plurality of upright blades attached to said lower jaw, one of said blades occupying the space between said rollers when said jaws are in their forward position.

14. In a leather-staking machine, a bed, arms pivotally attached thereto and supported from the housing of the machine, an inclined or cam-faced projection on said bed, adapted to contact with a hub having corresponding inclines thereon, and means for supporting and actuating said hub.

15. In a leather-staking machine, a hub suitably supported and having an opening therethrough, and a shoulder therein, a stem passing through said opening and provided with a head adapted to engage said shoulder, and hold said hub in position, a plurality of cam-faces on said hub, a table suitably supported and also provided with a plurality of cam-faces, and devices attached to said hub whereby the latter can be rotated by the knee of the attendant.

16. In a leather-staking machine, pivoted jaws, suitably supported, a movable bed, a roller carried by the lower of said jaws and bearing on said bed, a cam-face carried by said bed, and a rotatable hub having a cam-face adapted to register with the cam-face carried by the bed.

17. In a leather-staking machine, an upper and lower jaw pivotally supported, a movable bed, means for supporting the latter, a roller carried by said lower jaw and bearing on said bed, a cam-face on the latter, a rotatable hub having a cam-face adapted to coact with said first-mentioned cam-face, and means for actuating said hub, said means being controlled and actuated by the knee of the operator.

18. In a leather-staking machine, a pivoted jaw, the pivoted arms, a bed supported by said arms, a roller carried by said jaw and bearing on said bed, a cam-face carried by said bed, and a rotatable hub bearing a cam-face adapted to contact with the cam-face carried by said bed.

19. In a leather-staking machine, upper and lower jaws pivotally supported, a blade carried by said lower jaw, a roller mounted in bearings attached to said upper jaw, arms carried by the latter, stems adjustably supported in said arms, means for locking said stems in position and a second roller having bearings in said stems.

20. In a leather-staking machine, an upper and lower jaw pivotally supported, a movable bed, means for sustaining the latter, connections common to said bed and jaw for operating the latter, a cam-face on said bed, a rotatable element having a cam-face thereon adapted to coact with the first-mentioned cam-face, and means for actuating said element, said means being controlled and actuated by the knee of the operator.

21. In a leather-staking machine, in combination with the jaws thereof, mechanism for reciprocating and opening and closing said jaws, and laterally-movable means for adjusting said jaws, said means being controlled and operated by the knee of the attendant.

22. In combination with the jaws of a leather-staking machine, mechanism for actuating said jaws, laterally-movable means controlled by the knee of the operator for adjusting one of said jaws, and a frictional adjusting device for controlling said jaw-adjusting means.

23. The combination with the jaws of a leather-staking machine, of mechanism for reciprocating and opening and closing said jaws, and laterally-movable means for adjusting one of said jaws, said means being located below said jaws.

DESIGNS.

38,015. BADGE. JOSEPHINE RUSSELL, Tabor, Iowa. Filed June 13, 1900. Serial No. 20,212. Term of patent 7 years.



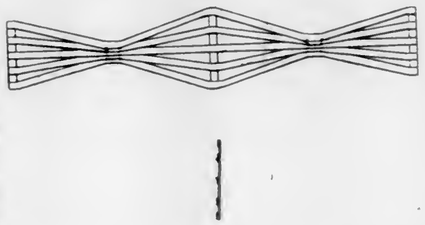
Claim.—The design for a badge, as herein shown and described.

38,016. CUFF-BUTTON. GEORGE WOOD, Providence, R. I. Filed June 27, 1900. Serial No. 21,857. Term of patent 3½ years.



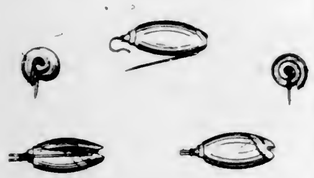
Claim.—The design for a cuff-button as herein shown and described.

38,017. BELT-BODY. KATE STEUERWALD, New York, N. Y. Filed June 16, 1900. Serial No. 20,601. Term of patent 3½ years.



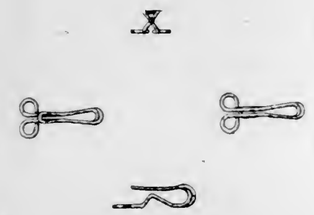
Claim.—The design for a belt-body, as herein shown and described.

33,018. SAFETY-PIN. ALBERT UNGFELDT, New York, N. Y. Filed May 25, 1900. Serial No. 18,012. Term of patent 7 years.



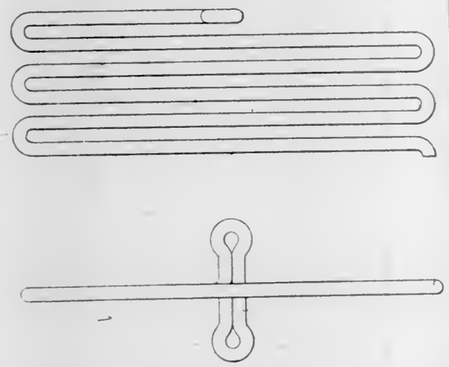
Claim.—The design for a safety-pin herein shown and described.

33,019. GARMENT-HOOK. HARRIOTT GRANT, Syracuse, N. Y. Filed July 5, 1900. Serial No. 22,642. Term of patent 7 years.



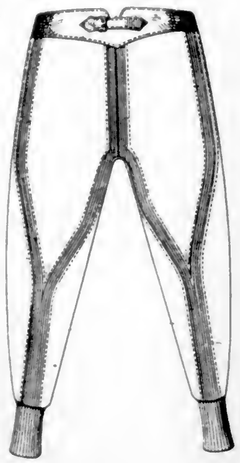
Claim.—The design for a garment-hook, substantially as herein shown and described.

33,020. TROUSERS-HANGER. HARRY R. WILLIAMS, Hartford, Conn., assignor, by mesne assignments, to Edward A. De Blois, same place. Filed June 7, 1900. Serial No. 19,467. Term of patent 3½ years.



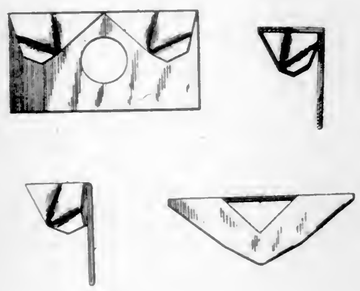
Claim.—The design for a trousers-hanger herein shown and described.

33,021. BIFURCATED NETHER GARMENT. JEREMIAH A. SCRIVEN, New York, N. Y. Filed Oct. 5, 1899. Serial No. 732,728. Term of patent 14 years.



Claim.—The design for a bifurcated nether garment, substantially as herein shown and described.

33,022. NUT-LOCK WASHER. ASA BRUCE BEALL, Sewickley, Pa. Filed June 14, 1900. Serial No. 20,368. Term of patent 14 years.



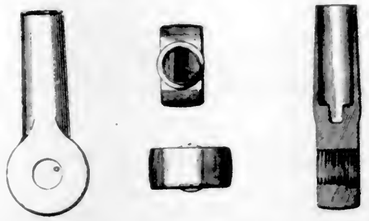
Claim.—The design for a nut-lock washer as herein shown and described.

33,023. MEMBER OF A WINDOW-LOCK. DARIUS L. HARSENER, Etna Green, Ind. Filed June 28, 1900. Serial No. 21,997. Term of patent 14 years.



Claim.—The design for a member of a window-lock, herein shown and described.

33,024. CRANK-ARM REPAIR-TIP. ORAN LILJEGVEST and SAMUEL DURANT, Wausau, Wis. Filed June 23, 1900. Serial No. 21,385. Term of patent 14 years.



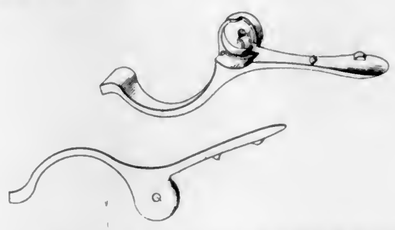
Claim.—The design for a crank-arm repair-tip substantially as herein shown and described.

33,025. HANDLE-BAR MEMBER. IVERT LARSEN, Chicago, Ill., assignor to the Chicago Handle Bar Company, same place. Filed Dec. 8, 1899. Serial No. 739,723. Term of patent 7 years.



Claim.—The design for a handle-bar member, as herein shown and described.

33,026. CLAMP MEMBER. JACOB WALTER and HENRY E. WALTER, Buffalo, N. Y. Filed July 9, 1900. Serial No. 23,052. Term of patent 3½ years.



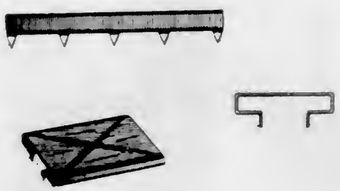
Claim.—The design for a clamp member, substantially as herein shown and described.

33,027. ANTIRATTLER FOR THILL-COUPLINGS. WILLIAM H. PARDEE, Antigo, Wis. Filed July 3, 1900. Serial No. 22,456. Term of patent 14 years.



Claim.—The design for an antirattler for thill-couplings, as herein shown and described.

33,028. HARNESS-LOOP. JOHN FRANKLIN BUTTON, Ardmore, Ind. Ter. Filed May 4, 1900. Serial No. 15,548. Term of patent 7 years.



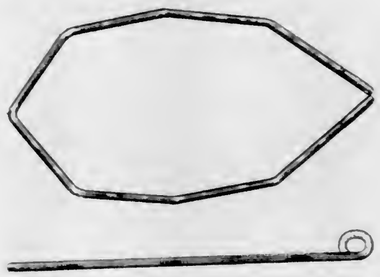
Claim.—The design for a harness-loop, as herein shown and described.

33,029. GUIDE-WIRE FOR THREAD-TWISTING MACHINES. HERBERT G. BREDE, Pawtucket, R. I. Filed June 14, 1900. Serial No. 20,374. Term of patent 14 years.



Claim.—The design for a guide-wire for thread-twisting machines, substantially as shown and described.

33,030. LINK FOR WIRE MATTRESSES. WILLIAM MCINTYRE and DELBERT L. NICHOLS, Hartford, Conn. Filed June 21, 1900. Serial No. 21,114. Term of patent 7 years.



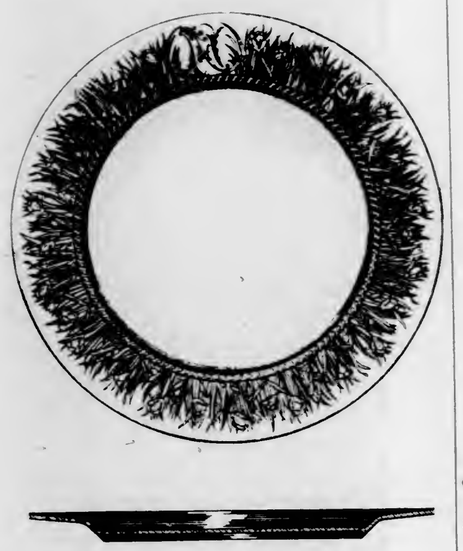
Claim.—The design for a link for wire mattresses, substantially as shown and described.

33,031. KNIFE. REUBEN S. HARPER, Milford, Mich. Filed June 23, 1900. Serial No. 21,386. Term of patent 7 years.



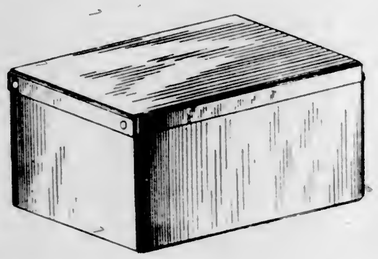
Claim.—A design for a knife as herein shown and described.

33,032. PLATE. ARTHUR S. HIGGINS, New York, N. Y. Filed July 2, 1900. Serial No. 22,383. Term of patent 7 years.

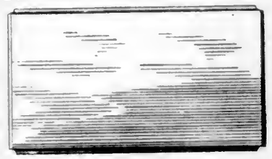


Claim.—The design for a plate herein shown and described.

33,033. COVERED BOX. JAMES LEO, Jersey City, N. J. Filed May 7, 1900. Serial No. 15,843. Term of patent 14 years.

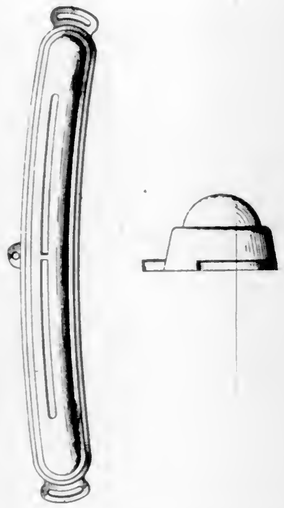


33,033.



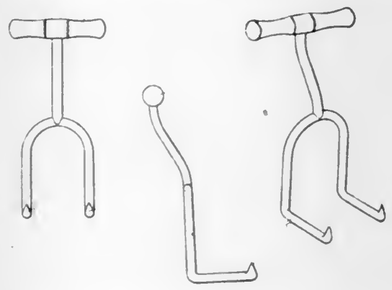
Claim.—The design for a covered box substantially as herein shown and described.

33,034. SHIP'S-LEVEL CASE. EARL C. AKERS, Port Huron, Mich. Filed June 6, 1900. Serial No. 19,330. Term of patent 14 years.



Claim.—The design for a ship's-level case, as herein shown and described.

33,035. COFFIN-HANDLING HOOK. ALFRED A. HALLOCK, Farmingdale, N. Y. Filed July 5, 1900. Serial No. 22,641. Term of patent 7 years.



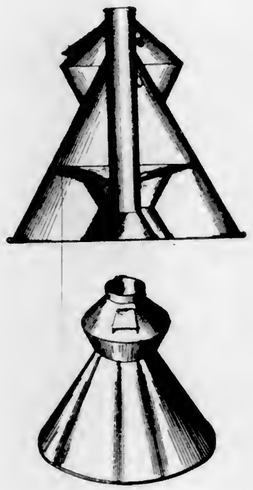
Claim.—The design for a coffin-handling hook, substantially as herein shown and described.

33,036. ELECTRIC-LAMP HOLDER. WILLIAM ROCHE, Jersey City, N. J. Filed June 27, 1900. Serial No. 21,853. Term of patent 7 years.



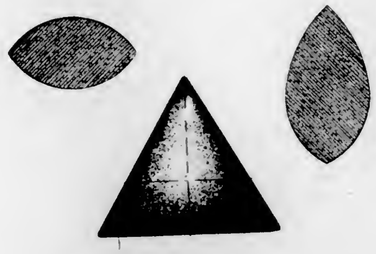
Claim.—The design for an electric-lamp holder as herein shown and described.

33,037. CLOTHES-POUNDER. JAKOB LEVITIN and JACOB ROSEN, Chicago, Ill. Filed May 3, 1900. Serial No. 15,417. Term of patent 7 years.



Claim.—The design for a clothes-pounder, substantially as shown and described.

33,038. CHARGING-BLOCK. ZEBULON E. BARKALOW, Reading, Pa. Filed June 27, 1900. Serial No. 21,849. Term of patent 14 years.



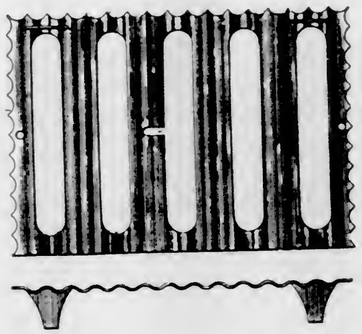
Claim.—The design for a charging-block, substantially as described and as shown in the accompanying drawings.

33,039. FIRE-POT. DWIGHT S. RICHARDSON, New York, N. Y. Filed June 28, 1900. Serial No. 21,940. Term of patent 14 years.



Claim.—The design for a fire-pot herein described and shown.

33,040. FIREPLACE REGULATING-PLATE. HENRY PANNILL, Petersburg, Va., assignor to the Virginia Coal Saving and Heat Regulating Company, same place. Filed Nov. 6, 1899. Serial No. 736,050. Term of patent 14 years.



Claim.—The design for a fireplace regulating-plate, as herein shown and described.

33,041. COOKING-STOVE. THOMAS R. KENNEDY and EDWARD J. KING, Rochester, N. Y., assignors to the Co-Operative Foundry Company, same place. Filed July 5, 1900. Serial No. 22,643. Term of patent 7 years.



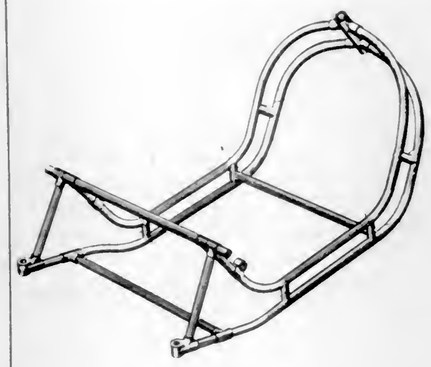
Claim.—The design for a cooking-stove substantially as herein shown and described.

33,042. SUBSOIL ATTACHMENT FOR CORN OR COTTON LISTERS. ALNEY G. NEWMAN, Wauneta, Kans. Filed July 5, 1900. Serial No. 22,634. Term of patent 14 years.



Claim.—The design for a subsoil attachment for corn or cotton listers, as herein shown and described.

33,043. AUTOMOBILE-FRAME. GEORGE T. TURNER, Philadelphia, Pa. Filed May 16, 1900. Serial No. 16,925. Term of patent 14 years.



Claim.—The design for an automobile-frame herein shown and described.

TRADE-MARKS

REGISTERED JULY 31, 1900.

34,964. SHEETINGS AND DRILLS. HERMANN NORDEN, New York, N. Y. Filed Mar. 17, 1900.



Essential feature.—The representation of a Chinese fisherman landing two fish with a pole and a line into a basket in front of him. Used since November 29, 1899.

34,965. CERTAIN NAMED FABRICS. TAYLOR & LOCKETT, New York, N. Y. Filed Apr. 28, 1900.



RABBIT

Essential feature.—A rabbit represented by word or symbol. Used since March 1, 1900.

34,966. HATS AND CAPS. BILL & CALDWELL, New York, N. Y. Filed May 25, 1900.



Essential feature.—A circular figure and the picture or representation of two women placed thereon so as to represent the continents of North and South America. Used since May 23, 1900.

34,967. BOOTS, SHOES, AND LEATHER. RICE & HUTCHINS, INCORPORATED, Boston, Mass. Filed June 7, 1900.



Essential feature.—The representation of a pine-cone. Used since June 2, 1900.

34,968. BOOTS AND SHOES. BARTON BROTHERS, Kansas City, Mo. Filed July 6, 1900.

Village

Essential feature.—The word "VILLAGE." Used since May 1, 1900.

34,969. BOOTS AND SHOES. BARTON BROTHERS, Kansas City, Mo. Filed July 6, 1900.



Essential feature.—The letters "B B B," each letter on a square background or inclosed in a square. Used since May 1, 1900.

34,970. SHOES. LYONS SHOE CO., Rochester and Lyons, N. Y. Filed June 14, 1900.



Essential feature.—An oval border open at its top and containing the initials "L. S. Co." Used since November 29, 1899.

84,971. CERTAIN NAMED PHOTOGRAPHS. FRANK T. BUTLER, New York, N. Y. Filed June 27, 1900.

AUBURNETTE

Essential feature.—The word "AUBURNETTE." Used since June 19, 1900.

84,972. PHOTOGRAPHIC DEVELOPERS. THE FIRM OF G. GENNERT, New York, N. Y. Filed June 15, 1900.

Pyrol

Essential feature.—The word "PYROL." Used since September, 1899.

84,978. TELEPHONES AND TELEPHONE SUPPLIES. CENTURY TELEPHONE CONSTRUCTION COMPANY, Cleveland, Ohio. Filed July 2, 1900.

CENTURY

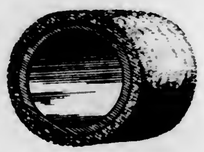
Essential feature.—The word "CENTURY." Used since September 1, 1899.

84,974. CERTAIN NAMED RUBBER GOODS. PEERLESS RUBBER MANUFACTURING COMPANY, New York, N. Y. Filed Mar. 21, 1900.

RAINBOW

Essential feature.—The word "RAINBOW." Used since October 1, 1899.

84,975. RUBBER HOSE. BOWERS RUBBER COMPANY, San Francisco, Cal. Filed Apr. 5, 1900.



Essential feature.—A distinguishing strip of rubber which contrasts in color with that of the rubber lining. Used since January 1, 1900.

84,976. DRUGGISTS' RUBBER GOODS, EXCEPT DENTAL RUBBER. IDEAL RUBBER COMPANY, New York, N. Y. Filed May 26, 1900.

IDEAL

Essential feature.—The word "IDEAL." Used since October 24, 1890.

84,977. SYRINGES. VICTORIA A. WILSOFT, New York, N. Y. Filed May 21, 1900.



Essential feature.—The representation of a white disk inclosed by a black circle, the disk being in contrast to the color of the background. Used since January, 1892.

84,978. FISH IN HERMETICALLY-SEALED TINS. ALASKA PACKERS ASSOCIATION, San Francisco, Cal. Filed June 6, 1900.

REINDEER

Essential feature.—The word "REINDEER." Used since July 1, 1896.

84,979. FISH IN HERMETICALLY-SEALED TINS. ALASKA PACKERS ASSOCIATION, San Francisco, Cal. Filed June 6, 1900.

Sentay

Essential feature.—The word "SENTAY." Used since May 10, 1900.

84,980. NOODLES AND VERMICELLI. WENDELIN BOEHM, Pittsburg, Pa. Filed July 3, 1900.

EXCELSIOR

Essential feature.—The word "EXCELSIOR." Used since March 1, 1893.

84,981. CANDY. THE ROCHESTER CANDY WORKS, Rochester, N. Y. Filed June 7, 1900.

WHITE SATIN.

Essential feature.—The words "WHITE SATIN." Used since June 1, 1892.

84,982. CHEWING-GUM. MEYER BROS. GUN COMPANY, Indianapolis, Ind. Filed June 9, 1900.

DARLING

Essential feature.—The word "DARLING." Used since May 4, 1900.

84,983. CHEWING-TOBACCO. RUCKER & WITTEN TOBACCO COMPANY, Martinsville, Va. Filed June 23, 1900.



Essential feature.—The words "LIBERTY BELL." Used since May, 1893.

84,984. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed June 29, 1900.

BROWN UNIVERSITY

Essential feature.—The words "BROWN UNIVERSITY." Used since June 7, 1900.

84,985. WHISKY. TAYLOR & WILLIAMS, Louisville, Ky. Filed July 9, 1900.

YELLOWSTONE

Essential feature.—The word "YELLOWSTONE." Used since November, 1878.

84,986. CERTAIN NAMED STOMACHIC AND APPETIZER. THE FIRM OF MERCK & CO., New York, N. Y. Filed June 28, 1900.

OREXOIDS.

Essential feature.—The word "OREXOIDS." Used since May, 1899.

84,987. MEDICAL COMPOUND. JAMES M. COLLINS, New York, N. Y. Filed June 28, 1900.



Essential feature.—The representation of a broken bottle or flask and the letters "D F." Used since May 15, 1898.

84,988. REMEDY FOR CERTAIN NAMED DISEASES. JUDGE & DOLPH PHARMACEUTICAL COMPANY, St. Louis, Mo. Filed July 5, 1900.

Cystogen

Essential feature.—The arbitrary word "CYSTOGEN." Used since November 1, 1898.

84,989. GERMICIDES OR DISINFECTANTS. FRANK F. CARLSON, Minneapolis, Minn. Filed July 2, 1900.

LAUQEONSAH

Essential feature.—The word "LAUQEONSAH." Used since May 1, 1900.

84,990. EYE-WATER. EUGEN NOLSEN, Stadtkyll, Germany. Filed Apr. 23, 1900.

Optal.

Essential feature.—The word "OPTAL." Used since February 23, 1900.

84,991. CERTAIN NAMED TOILET PREPARATIONS AND ARTICLES. H. CORNETTE & CO., Paris, France. Filed June 12, 1900.

YSOLINA

Essential feature.—The word "YSOLINA." Used since February, 1900.

84,992. CERTAIN NAMED MEDICAL COMPOUNDS. FORBES & COX DRUG CO., Lumpkin, Ga. Filed June 23, 1900.

B F Forbes

Essential feature.—The facsimile of the signature of "B. F. FORBES." Used since November, 1898.

34,993. BRONZING LIQUIDS, VARNISH, AND LACQUER. AUGUST WULFING, New York, N. Y. Filed June 23, 1900.



Essential feature.—The representation of a banana. Used since May 1, 1900.

34,994. PAINT-POWDER. WILLIAM D. WARNER, Providence, R. I. Filed July 5, 1900.

HERCULENE

Essential feature.—The word "HERCULENE." Used since June, 1896.

34,995. PORTLAND CEMENT. GERMAN-AMERICAN PORTLAND CEMENT WORKS, Chicago, Ill. Filed July 3, 1900.

OWL

Essential feature.—The word "OWL." Used since December 8, 1899.

34,996. PORTLAND CEMENT. GERMAN-AMERICAN PORTLAND CEMENT WORKS, Chicago, Ill. Filed July 3, 1900.



Essential feature.—The representation of an owl. Used since December 8, 1899.

34,997. AGRICULTURAL IMPLEMENTS. JANESVILLE HAY TOOL COMPANY, Janesville, Wis. Filed June 21, 1900.



Essential feature.—The representation of a padlock. Used since March 1, 1900.

34,998. VESSELS. J. F. JOHNSON & CO., Racine, Wis. Filed Nov. 18, 1899.

ANTI-DIRT

Essential feature.—The word-symbol "ANTI-DIRT." Used since September 20, 1898.

PHOTO-LITH. THE NORRIS PETERS CO. WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE THOMAS.

Decided July 11, 1900.

PETITION FOR RENEWAL—BY WHOM SIGNED.

The petition for the renewal of a forfeited application cannot properly be signed by the attorney for the applicant, but only by the inventor, discoverer, or assignee.

SAME—SIGNATURE OF ATTORNEY—PRACTICE CONTRARY TO LAW.

Although it is claimed that the practice of the Office for many years has been to receive as sufficient petitions for renewals signed by the attorneys who presented the original applications, *Held* that there is no authority of law for the practice. Antiquity of practice cannot justify an illegal act.

ON petition.

EMBOSSING-PRESS.

Application of Frank W. Thomas filed April 25, 1899, Serial No. 714,416.

Mr. James L. Norris for the applicant.

DUELL, *Commissioner:*

This is a petition from the refusal of the Office to receive a renewal petition signed by the attorney for the applicant. The petition is based upon a claim that the practice of the Office for many years has been to receive as sufficient petitions for renewals signed by the attorneys who presented the original applications.

No decision is cited sustaining the proposition, nor have I been able to find that the question has ever been passed upon.

It is farthest from my desire to disturb any practice that has been followed and permitted for years, provided such practice is not believed to be contrary to law. Antiquity of practice, however, cannot justify an illegal act. Of the practice in question I had no knowledge until a recent date, and from all that I can learn it has been the practice of the majority of attorneys to have renewal petitions executed by the "inventor, discoverer, or assignee," as provided by law.

When the practice was called to my attention, upon due consideration, the following notice was issued and published:

WASHINGTON, D. C., *June 8, 1900.*

Attention is called to section 4897, Revised Statutes, relating to the renewal of allowed applications forfeited through failure to pay the final fee within six months from the date of allowance. The law requires the petition for renewal to be signed by the *inventor, discoverer,* or *assignee* and that the same be filed in this Office within two years after the allowance of the original application. If the inventor be dead, the petition must be signed by the administrator or executor; if insane, by the guardian, conservator, or legal representative. It *will not be accepted if signed by the attorney.* (Form 12, page 64, Rules of Practice, should be used.)

The above requirement is now in force, and, being founded on the statutes, should stand. Section 4897 of the Revised Statutes says:

Any person who has an interest in an invention or discovery, whether as inventor, discoverer, or assignee, for which a patent was ordered to issue upon the payment of the final fee, but who fails to make payment thereof within six months from the time at which it was passed and allowed, and notice thereof was sent to the applicant or his agent, shall have a right to make an application for a patent for such invention or discovery the same as in the case of an original application.

It will be observed that the *person* to whom is given the right is clearly designated. The *person* is one who has an interest in the invention or discovery, whether as inventor, discoverer, or as assignee. The right is not given to the attorney of any such party by the statute. The phraseology is equally clear as to the course to be followed. The application is to be made "the same as in the case of the original application." That can mean nothing else but that it is to be made by the inventor or discoverer, unless the statute vests in some additional person the right to make the renewal application. The only other party mentioned by the statute is the "assignee." Hence it follows that the petition for the renewal application cannot be signed by the attorney. Such person is not mentioned and is therefore excluded.

It is apparent that an inventor may have good reason for permitting his application to become forfeited, and he may not wish to renew it. There is no reason why he should notify his attorney of his wishes in the premises; but without so notifying his attorney he runs the risk of having the application renewed by the attorney, provided such right is given to the attorney. It follows that an inventor or assignee might be injuriously affected by an unauthorized renewal of the application. If the inventor or assignee can request the attorney to renew the application, he can as easily sign the renewal petition, and he should do so.

The petition is denied.

EX PARTE ROBY.

Decided July 13, 1900.

DIVISION—MOTOR-VEHICLE.

Held that division was properly required between claims to, first, the steering and controlling devices; second, the motor and means for mounting it; third, the frame, and, fourth, the driving-gear of a motor-vehicle, since the devices are independent of each other in structure and operation and may be used in other relations.

ON petition.

MOTOR-VEHICLE.

Application of George L. Roby filed September 20, 1899, No. 731,134.

Mr. George L. Roby pro se.

CHAMBERLIN, *Assistant Commissioner:*

This is a petition from the action of the Primary Examiner requiring division in the above-entitled case.

The claims are said to cover four different inventions, as follows: claims 1 to 11 covering the steering and controlling devices; claims 12, 13, 14, and 15 covering the motor and means for mounting it; claims 16 and 17 covering the frame, and claims 18, 19, and 20 covering the driving-gear.

A careful consideration of the case shows that each of the devices is entirely independent of the others both in structure and operation. Each performs its functions without modifying in any manner the action of the other, and each may be used in other relations. It is true that they are all shown in connection with a single-motor vehicle; but the general combination of parts in such vehicles is old, and the several devices merely tend in disconnected ways to improve it as a whole. Division was therefore properly required. (*Ex parte Healey*, 84 O. G., 1281; *ex parte Wilkerson*, 87 O. G., 513.)

The petition is denied.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

ROSELL *v.* ALLEN.

Decided June 6, 1900.

1. INTERFERENCE—CONSTRUCTION OF THE ISSUE—PROCESS.

Where the issue covers the method of tanning which consists in subjecting the skins to the action of a certain bath and one party discloses a one-bath process using that bath and also a two-bath process which is distinct from the one-bath process, using it as the second bath, and his opponent discloses only a one-bath process, *Held* that the issue is limited to a one-bath process.

2. SAME—SAME—TANNING-BATH.

The second count, which covers "a tanning-bath," *Held* to be broad enough to cover either that used in a one-bath process where it performs the sole function of tanning or the second bath of a two-bath process where it acts first as a reducing agent and then as a supplementary tanning agent.

3. SAME—PRIORITY—PROCESS NOT WITHIN THE ISSUE.

Where it is conceded that R was the first inventor of and the first to use the particular bath, but always as the second bath of a two-bath process and as a reducing and not a tanning bath, *Held* that he is not the first inventor of the process of the first count of the issue, which is construed as limited to a one-bath process of tanning.

4. SAME—REDUCTION TO PRACTICE—ACCIDENTAL RESULTS OF INVENTION.

Where R used the bath only as the second bath of a two-bath process, but discovered that it acted first as a reducing agent and then as a supplementary tanning agent, *Held* that there is no analogy between this certain and direct result of the invention of the bath in issue and those accidental results of inventions which are not understood or appreciated by the inventors and which are held by the courts to be immaterial.

5. USES OF THE INVENTION—RIGHTS OF INVENTORS.

By a well-established rule of the patent law the inventor is entitled to all the uses to which his invention can clearly be put, no matter whether he had conceived the idea of the use or not

Messrs. Pollok & Mauro for the appellant.

Mr. W. Orison Underwood and *Mr. Charles L. Sturtevant* for the appellee.

SHEPARD, *J.:*

This is an appeal from the decision of the Commissioner of Patents in an interference proceeding involving invention in the art of mineral tanning, as embraced in the following issue:

1. The method of tanning skins which consists in subjecting them to the action of a bath containing sulphites, bisulphites or hyposulphites of chromic oxid.
2. A tanning-bath containing sulphites, bisulphites or hyposulphites of chromic oxid.

The Examiner of Interferences awarded priority to Allen on count 1 of this issue and to Rosell on count 2. Each party appealed to the Examiners-in-Chief who awarded priority to Allen on both. Their decision was affirmed on appeal to the Commissioner.

Allen filed his application on April 23, 1896. Rosell filed on August 11, 1896.

One and two bath processes, in which chromic oxid is the essential tanning agent, had been patented, and used in the manufacture of leather, before the discovery of the process and bath of the issue.

The leading two-bath process is that invented by Schulz which, patented in 1884, has been sustained by the courts in repeated decisions. (*Tannage Patent Co.* v. *Zahn*, 71 O. G., 1161; 70 Fed. Rep., 1003; *Tannage Patent Co.* v. *Donallan*, 93 Fed. Rep., 811, 813.)

Schulz, after dressing the skins in the usual manner, placed them in a first bath where they remained until sufficiently impregnated with the chromic acid produced by the constituents of the bath. A second bath was then prepared, usually of hyposulphite of soda and hydrochloric acid. This combination generated sulphurous acid which, acting upon the chromic acid in the skin, reduced it to chromic oxid and thus accomplished the conversion into leather. The chief difficulty in the operation of this process was, that the resulting deposit of free sulphur in the tanned skin often affected the salability of the leather.

As stated in the decision of the Examiner, the typical one-bath process is found in the patent to Dennis, No. 495,028, wherein—

the tanning agent, chromic oxid, is in solution in the presence of chlorid of chromium, and when the hides are placed in this bath they extract the chromic oxid directly therefrom, and are immediately converted into leather.

Rosell, as the record shows, was a chemist, well informed in the state of the art of mineral tanning, and had been an Assistant Examiner of the Patent Office from 1886 to December, 1895, in the class to which this invention belongs. During this period, he had made many experiments in the art and his attention was specially called to the operation of the Schulz process with a view to overcoming the difficulty that has been mentioned as frequently occurring therein. In the course of his experimentation, he discovered and used the bath of the issue composed of sulphites, bisulphites or hyposulphites of chromic oxid. This long antedated Allen's discovery so far as the record shows, because he, having introduced no evidence, is confined to the date of his application. After repeated trials of Rosell's invention by certain licensees of the Schulz process, they became satisfied of its superiority and substituted it for the latter in their manufacture for the trade. Having appliances adapted to the Schulz process, their use of Rosell's was in the same way of a first and second bath. Rosell's application covers both a one-bath and a two-bath process, which is fairly described and compared with the Schulz process by the Examiner as follows:

He prepares a bath which contains chromium sulphite, hyposulphite, or other reducing salt of chromium. This bath, he states, may be used either as the sole bath of a one-bath process or as the second bath of a two-bath process. In the latter case when hides, previously treated by a bath which has caused them to be more or less impregnated with chromic acid or chromium trioxid, are introduced into this chromium-sulphite or other similar bath, two reactions take place which it is necessary to notice. First, the chromium trioxid in the hides is reduced by the action of the reducing chromium salt to chromic oxid and the hides are partially tanned. Next, chromic oxid is taken up directly from this bath by the hides and the tanning action thereby completed. In the Schulz process it was necessary that the hides should receive in the first bath all the chromium necessary for the tanning, because the second bath had but the single function of reducing the chromium compound already in the hides to chromic oxid. In the Rosell two-bath process it is only necessary to impart to the hides in the first bath a fraction of the chromium necessary, because the second bath not only reduces the chromium compound already in the hides to chromic oxid, but also furnishes directly to the hides sufficient chromic oxid to complete the operation. When this same bath of chromium sulphite or other chromium reducing salt is used as a single bath, the hides are immersed therein, and by their own power abstract directly therefrom chromic oxid.

Allen's is thus stated by him also:

Allen's application describes and claims only a one-bath process. His bath consists of a solution of a chromic salt and a sulphite, bisulphite, or hyposulphite of an alkali or alkaline earth. This, of course, forms a chromium-sulphite or other reducing salt of chromium, and the action of the bath is similar to that described by Rosell.

Allen's original application was subjected to many objections by the Examiners, and amended from time to time in accordance therewith, and was finally divided. The final claims, which are substantially followed in the terms of the issue, were filed after the Principal Examiner had, on May 10, 1887, advised him as follows:

What the applicant appears to have novel in his case is a method of chrome-tanning, by a single bath containing, by virtue of double decomposition, sulphites, hyposulphites or similar reducing salts of chromic oxid (Cr_2O_3); and claims drawn on this line may, it is thought, be allowed, subject, of course, to the result of an interference.

Claim 1 of Rosell's application, which is one of ten embraced in the declaration of interference, reads thus:

In the art of chrome-tanning the improvement which consists in subjecting a skin to the action of a reducing salt of chromium; without the addition of a non-reducing acid in a free state.

As Rosell first invented the particular bath described in count 2 of the issue—the chemical composition that effects the tanning of the skin, whether used in a one-bath process as claimed by Allen, or as the second bath of a two-bath process according to the usage of manufacturers under Rosell, the chief discussion in the case has been in respect of the meaning and scope of the issue as settled on the declaration of interference.

Rosell argues that "a reducing salt of chromium," as mentioned in his claim 1, is descriptive generically of the various salts—sulphites, bisulphites and hyposulphites—capable of use in operating the invention, and not merely of their function as one step only in a process. Taking that claim, which is embraced in count 1 of the issue, in connection with the bath described in count 2, his contention is, that the issue must be broadly read as involving the method, or process, generally of tanning skins through the action of a bath containing a reducing salt of chromium, and ought not to be confined to either the function of reducing the chromic acid absorbed by the skin in a first bath, to the tanning agent, or to a tanning-bath exclusively.

The view maintained in all of the decisions of the tribunals of the Patent Office is, that the application of Rosell describes two distinct processes—the one-bath and the two-bath process; that the earlier application of Allen describes and claims distinctly the one-both process and nothing more; and that the issue embodies, and must be confined to, that process. It is conceded that Rosell first used the particular bath, but always as the second bath of a two-bath process, and as a reducing and not a tanning bath. His evidence of discovery and experimental use of the bath as a tanning-bath also, was rejected as insufficient in law to show priority of invention, over Allen, of the one-bath process of count 1. Hence the agreement of the several tribunals upon the award to Allen as regards count 1 of the issue.

In regard to count 2, as we have seen, there was disagreement. The Examiner of Interferences was convinced that, while Rosell had not used the bath "when it performed the sole function of tanning—that is as the single step in a one-bath process," he had used it as a second bath and discovered that it performed the dual function, first, of reducing the chromic acid absorbed by the skins in the first bath, and, second, of furnishing additional chromic oxid directly to the skins; thereby acting first as a reducing agent and then as a supplementary tanning agent.

The Examiners-in-Chief, whose decision was adopted by the Commissioner, were of the opinion not only, that count 1 should be restricted to a single-bath process, but also that count 2 should be restricted to the bath used in a single-bath process, as a tanning-bath exclusively. They were also of the opinion that Rosell, in the course of his experimentation before referred to, had in view a two-bath process only, as an improvement on the Schulz method, and that, prior to Allen's application, he had never disclosed to any one a discovery that the second bath would alone perform the operation of tanning. However, they do say—

the facts indicate that Rosell was operating to get a new two-bath process for tanning skins, and that some time after January, 1896, and before the filing of his application on August 11, 1896, in the working of his process, this modification of it to make the second bath a tanning-bath became known to him.

Then follows the conclusion:

The evidence establishes that Allen was the first to conceive that skins or hides could be tanned solely by the bath of the two counts of the issue, and was the first to tan leather by the use of that bath.

Consequently they affirmed the decision of the Examiner of Interferences as to count 1 and reversed it as to count 2.

If the question did not involve the general practice of the Patent Office, and were before us as an original one, we would be strongly inclined to adopt the broad reading of the issue as contended for by Rosell, and to regard him as claiming a generic invention in the bath, with an expressed preference for its specific use in a two-bath process; for, so far as this record shows, he was undoubtedly the inventor of the bath itself.

As said by Robinson, (Patents, sec. 535:)

> The same invention may be generic to the individuals of its own genus, and specific in its relations to some wider invention representing the group to which it belongs.

See also *ex parte Ewart*, (C. D., 1880, 78; 17 O. G., 448.)

As the practice of the Patent Office is involved, and as all of the tribunals thereof have agreed on the rule and its application, for reasons strongly stated in their decisions, we are not sufficiently satisfied of their error to justify us in reversing their conclusion. (*In re Barratt*, 79 O. G., 2020; 11 App. D. C., 177; S. C., 14 *Idem*, 255; *in re Neill*, 82 O. G., 749; 11 App. D. C., 584, 588; *Fowler* v. *Dodge*, 87 O. G., 895; 14 App. D. C., 477.)

The question is somewhat analogous to those involved in part in the following cases where the ruling of the Patent Office was accepted as controlling: *Cushman* v. *Lines*, (78 O. G., 2051; 10 App. D. C., 156, 159;) *Breul* v. *Smith*, (78 O. G., 1906; *Idem*, 180, 185;) *Tracy* v. *Leslie*. (87 O. G., 891; 14 App. D. C., 126, 135;) *Hisey* v. *Peters*, (71 O. G., 892; 6 App. D. C., 68, 70.)

Not without misgiving that the result may ultimately work injustice to Rosell—regarding him as the real discoverer of the novel and useful bath—we are constrained to affirm the decision on the first count, for there is no evidence, sufficiently satisfactory to show that he ever actually used the bath for tanning in a single-bath process.

As regards the final decision awarding priority to Allen on the second count, we have come to a different conclusion. To the extent that it involves a question of law only the decision is, in our judgment, erroneous. Passing by the question of the sufficiency of Rosell's evidence to show that, prior to Allen's application, he discovered and utilized the independent tanning property of the bath, we agree with the Examiner of Interferences who said in his decision:

> It does not appear necessary to determine whether or not Rosell has established this latter point. It is clear that he was, so far as the record shows, the first inventor of that particular chemical composition to be used in the operation of tanning hides. It was a bath for use in this art, and under the familiar rule Rosell is entitled to that bath for any use to which it may be put. * * * It is a tanning-bath and to hold that the term tanning is to be restricted to the narrow construction contended for, would be to give that term a meaning which is not attached to it usually and ordinarily

The bath invented by Rosell discloses the means, and the only means by which the result—the complete conversion of the skin into leather—can be effected. By a well-established rule of the patent law the inventor is entitled to all the uses to which his invention can clearly be put, "no matter whether he had conceived the idea of the use or not." (*Roberts* v. *Ryer*, 10 O. G., 204; 91 U. S., 150, 157; *Ansonia Co.* v. *Electrical Supply Co.*, 58 O. G., 1692; 144 U. S., 11, 18; *Lovell Mfg. Co.* v. *Cary*, 62 O. G., 182; 147 U. S., 623, 635; *Miller* v. *Eagle Mfg. Co.*, 66 O. G., 845; 151 U. S., 186, 201; *Hill* v. *Hodge*, 83 O. G., 1211; 12 App. D. C., 528, 530; *Stow* v. *Chicago*, 21 O. G., 790; 104 U. S., 547, 550.)

There is no analogy between the certain and direct result of the invention of the bath of the issue, and those incidental, or rather accidental results of the inventions, whether processes or devices, described in the cases cited on behalf of the contention of the appellee, Allen.

In *Tilghman* v. *Proctor* (19 O. G., 859; 102 U. S., 707, 711) the doubtful and accidental formation of fat acid claimed as the result of a process was regarded as of no consequence, for as was said by the Court:

> What the process was by which it was generated or formed was never fully understood. Those engaged in the art of making candles, or in any other art in which fat acids are desirable, certainly never derived the least hint from this accidental phenomenon in regard to any practicable process for manufacturing fat acids.

The other cases need not be reviewed; they go no further than that. (*Clough* v. *Baker*, 22 O. G., 2157; 106 U. S., 166, 175; *Pittsburgh Reduction Co.* v. *Cowles Electrical, etc., Co.*, 19 O. G., 789; 55 Fed. Rep., 301, 307; *Tannage Patent Co.* v. *Donallan*, 93 Fed. Rep., 811, 821.)

Although we have passed by, as unnecessary to the disposition of the case on this point, the evidence offered by Rosell to show his knowledge and utilization of the second bath as a tanning as well as a reducing bath, we are not to be understood as regarding it of no weight. Bearing in mind his competency as a chemist, the special direction of his constant efforts in the development of this art, and his discovery and knowledge of the chemical qualities and possibilities of the reducing salts of chromium therein, it would not be unreasonable to deduce therefrom the inference that he actually discovered the supplementary tanning property of his new bath, before the date of Allen's application, and, as he says, tested it. Consider in addition, the manner in which his two-bath process was necessarily operated in manufacture on a large scale—a use adopted as the preferred form of manufacture for reasons which he undertook to give—and it seems hardly possible to believe that he did not observe, and knowingly utilize the bath as a reducing, and as a tanning agent also.

For the reasons given, the decision appealed from will be affirmed as to count 1, and reversed as to count 2 of the issue. It is so ordered; and the proceedings and decision will be certified to the Commissioner of Patents as required by law.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

Vol. 92.—No. 6. TUESDAY, AUGUST 7, 1900. Price—$5 per year.

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., July 31, 1900.

SIR: The Secretary of the Interior has ordered that John A. Dugan, of Williamsport, Md., be not recognized after this date as attorney or agent in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,

EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

Revival of Abandoned Applications.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 13, 1900.

Notice is hereby given that petitions for the revival of abandoned applications will not be docketed for hearing. A full showing of the reasons for reviving an application must be filed with the petition for revival, and the case will be disposed of on such showing without oral argument.

C. H. DUELL,
Commissioner.

Access to Pending Applications.

Hereafter no person except the applicant, the assignee whose assignment is of record, or the attorney of record will be permitted to have access to the file of any application, except as provided for under the interference rules, unless written authority from the applicant, assignee, or attorney, identifying the application to be inspected, is filed in the case to become a part of the record thereof, or upon the written order of the Commissioner, which will also become a part of the record of the case.

Indexes to Patents on Electricity.

Indexes to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1890, have been issued, and are for sale. These indexes, arranged alphabetically, numerically, and by classes, comprise the following volumes, the prices of which are given below:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3. July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Vol. 4. Appendix No. 4, July 1, 1884, to June 30, 1885. One volume, 60 pages. In paper covers, $1.50.

Vol. 5. Appendix No. 5, July 1, 1885, to June 30, 1886. One volume, 54 pages. In paper covers, $1.50.

Vol. 6. Appendix No. 6, July 1, 1886, to June 30, 1887. One volume, 52 pages. In paper covers, $1.50.

Vol. 7. Appendix No. 7, July 1, 1887, to June 30, 1888. One volume, 68 pages. In paper covers, $1.50.

Vol. 8. Appendix No. 8, July 1, 1888, to June 30, 1889. One volume, 72 pages. In paper covers, $1.50.

Vol. 9. Appendix No. 9, July 1, 1889, to June 30, 1890. One volume, 84 pages. In paper covers, $1.50.

Vol. 10. Appendix No. 10, July 1, 1890, to June 30, 1891. One volume, 98 pages. In paper covers, $1.50.

Vol. 11. Appendix No. 11, July 1, 1891, to June 30, 1892. One volume, 86 pages. In paper covers, $1.50.

Vol. 12. Appendix No. 12, July 1, 1892, to June 30, 1893. One volume, 80 pages. In paper covers, $1.50.

Vol. 13. Appendix No. 13, July 1, 1893, to June 30, 1894. One volume, 70pages. In paper covers, $1.50.

Vol. 14. Appendix No. 14, July 1, 1894, to June 30, 1895. One volume, 63 pages. In paper covers, $1.50.

Vol. 15. Appendix No. 15, July 1, 1895, to June 30, 1896. One volume, 82 pages. In paper covers, $1.50.

CERTIFICATES OF REGISTRATION ISSUED AUGUST 7, 1900.

Labels.

7,724.—Title: "LA DEFENSA." (For Cigars.) *Gonzales, Mora & Co.*, Tampa, Fla. Application filed June 26, 1900.

7,725.—Title: "PETE DAILEY." (For Cigars.) *T. J. Dunn & Co.*, Philadelphia, Pa. Application filed July 6, 1900.

7,726.—Title: "PEANOLIA CANDIES." (For Peanut-Butter Candy.) *The Peanolia Food Company*, New Haven, Conn. Application filed July 11, 1900.

7,727.—Title: "BLACKINE." (For a Polish for Black Shoes.) *Burkard Blacking and Oil Company*, Baltimore, Md. Application filed July 12, 1900.

7,728.—Title: "OLD GLORY." (For Rope, Cord, and Twine.) *Anniston Cordage Company*, Anniston, Ala. Application filed July 14, 1900.

Print.

251.—Title: "CIGAR MOLD CODE AND SIZE LIST." (For Cigar-Molds.) *The Miller, Du Brul & Peters Manufacturing Company*, Cincinnati, Ohio. Application filed June 25, 1900.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business July 31, 1900.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. of applications awaiting action.
	In arrears—Under one month.			
38	XXXV. Advertising, Baggage, Buckles, Buttons, and Clasps, Packing and Storing Vessels, etc.	July 23	July 25	68
106	II. Farm Stock, Products, etc.	July 23	July 23	90
217	XXXIII. *Designs, †Trade-Marks, ‡Labels and Prints, Optics.	July 23	July 19	46
250	VIII. Furniture, Beds, Store Furniture, etc.	July 18	July 24	141
111	XXXII. Bottles and Jars, Carbonating Beverages, Refrigeration, Shipping and Storing Vessels, etc.	July 13	July 17	176
261	XXXVI. Weighing and Measuring Devices, Driers, and Drafting.	July 10	July 17	95
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	July 9	July 13	72
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	July 7	July 13	184
105	XI. Boots and Shoes, Harness, Hose and Belting, and Leather-Working Machinery.	July 7	July 10	190
30	IV. Civil Engineering, Fire-Proof Buildings, Bridges, Water Distribution, etc.	July 6	July 18	163
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	July 5	July 17	144
255	XII. Mechanical Engineering, Store-Service, etc.	July 5	July 17	128
240	VII. Velocipedes, Games, and Toys.	July 5	July 13	202
253	X. Carriages and Wagons	July 5	July 12	137
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	July 5	July 11	130
246	I. Tillage and Fences	July 3	July 23	98
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	July 3	July 20	84
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	July 3	July 16	93
122	XXIV. Sewing-Machines, Apparel and Toilet.	July 2	July 18	125
39	XXXI. Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	July 2	July 17	99
215	XVII. Printing, Type-Writing Machines, and Linotyping.	July 2	July 17	125
221	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	July 2	July 17	101
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	July 2	July 16	114
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	July 2	July 16	220
102	XIX. Stoves and Furnaces	July 2	July 12	234
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	July 2	July 12	113
	Between one and two months.			
93	XXI. Textiles, etc	June 30	July 13	121
120	IX. Hydraulics, Fire-Extinguishers, etc.	June 28	June 25	184
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	June 26	July 12	122
248	XVIII. Steam-Engineering, etc	June 25	July 2	214
35	XXVIII. Pneumatics, Air and Gas Engines, etc.	June 25	June 15	309
95	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	June 18	July 9	149
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	June 16	June 19	305
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	June 11	June 29	261
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	June 4	June 25	238
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 1	June 28	176

Total number of applications awaiting action.....5,451

Applications Under Examination—Continued.

Under one month.			
*Designs	July 27	July 28	13
†Trade-Marks	July 6	July 6	215
‡Labels and Prints	July 31	July 31	....

ISSUE OF AUGUST 7, 1900.

Patents	502	No. 655,176 to No. 655,677, inclusive.
Designs	12	No. 33,044 to No. 33,055, inclusive.
Trade-Marks	None.	
Labels	5	No. 7,724 to No. 7,728, inclusive.
Prints	1	No. 251.
Reissues	1	No. 11,844.
Total issue	521	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	2	1	Nevada	1	....
Arizona Territory	1	....	New Hampshire	4	....
Arkansas	3	....	New Jersey	18	....
California	17	....	New Mexico Territ'y	1	....
Colorado	4	....	New York	67	....
Connecticut	16	1	North Carolina	3	....
Delaware	1	....	North Dakota	2	....
District of Columbia	4	....	Ohio	23	1
Florida	1	1	Oklahoma Territ'y	....	....
Georgia	3	....	Oregon	3	....
Hawaii	....	....	Pennsylvania	59	1
Idaho	1	....	Rhode Island	10	....
Illinois	49	....	South Carolina	1	....
Indian Territory	....	....	South Dakota	2	....
Indiana	8	....	Tennessee	6	....
Iowa	8	....	Texas	6	....
Kansas	5	....	Utah	....	....
Kentucky	4	....	Vermont	4	....
Louisiana	5	....	Virginia	5	....
Maine	2	....	Washington	2	....
Maryland	4	1	West Virginia	11	....
Massachusetts	39	....	Wisconsin	....	....
Michigan	17	....	Wyoming	....	....
Minnesota	10	....	U. S. Army	....	....
Mississippi	....	....	U. S. Navy	....	....
Missouri	11	....	Total to citizens of the United States	445	6
Montana	....	....			
Nebraska	2	....			

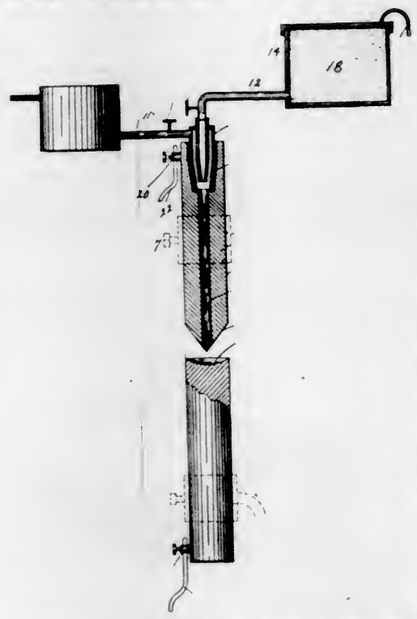
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	....	....	Italy	....	....
Australia	....	....	Japan	....	....
Austria-Hungary	1	....	Java	....	....
Barbadoes	....	....	Mexico	1	....
Belgium	....	....	Netherlands	1	....
Bermuda	....	....	New South Wales	1	....
Brazil	....	....	New Zealand	....	....
Canada	7	....	Norway	2	....
Chile	....	....	Queensland	....	....
China	....	....	Russia	....	....
Costa Rica	....	....	Scotland	1	....
Cuba	....	....	South African Republic	....	....
Denmark	1	....	South Australia	....	....
Egypt	....	....	Spain	....	....
England	22	....	Sweden	1	....
Finland	....	....	Switzerland	....	....
France	8	....	Tasmania	....	....
Germany	22	....	Victoria	1	....
Guatemala	....	....	Total to citizens of foreign countries	69	....
Haiti	....	....			
India	....	....			
Ireland	....	....			

PATENTS

GRANTED AUGUST 7, 1900.

655,176. ELECTRIC-ARC LAMP. JOHANN F. ACKERMANN, New York, N. Y. Filed Oct. 20, 1899. Serial No. 734,168. (No model.)



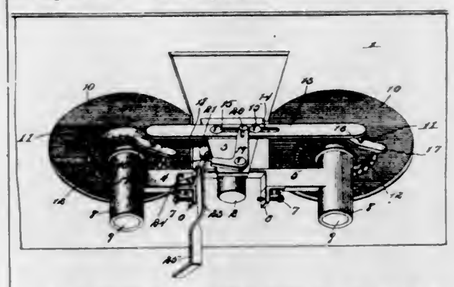
Claim.—1. In an arc-lamp, a negative pole member and a positive pole member, one of which is recessed at one end and the other pointed at one end and chambered longitudinally, an ejector communicating with said chamber, a fuel-receptacle arranged to communicate with said ejector, a source of compressed-air supply communicating with said ejector, and devices for regulating the feed of the fuel to the ejector, substantially as shown and described.

2. In an arc-lamp, a negative pole member and a positive pole member, one of which members is chambered longitudinally, an ejector communicating with said chamber, a fuel-receptacle arranged to communicate with said ejector, means communicating with said ejector for forcing said fuel through said chamber in said pole member, and devices for regulating the feed of the fuel to the ejector, substantially as shown and described.

3. In an arc-lamp, a negative pole member and a positive pole member, one of which is chambered longitudinally, an ejector communicating with said chamber, a fuel-receptacle arranged to communicate with said ejector, and provided with a quantity of pulverized carbon or analogous material, and means communicating with said ejector for forcing said pulverized carbon or analogous material through said chamber, and devices for regulating the feed from said fuel-receptacle, substantially as shown and described.

655,177. INKING ATTACHMENT FOR JOB-PRINTING PRESSES. HARRY S. ADAMS and CHARLES E. WILD, Philadelphia, Pa. Filed Oct. 24, 1899. Serial No. 734,642. (No model.)

Claim.—1. The combination with a plate or support provided on its under side with a depending bracket; a reciprocating bar supported upon said bracket; a bell-crank lever fulcrumed on said bracket; a lever for actuating said bell-crank lever to reciprocate said bar; a retracting-spring for the bar; rotating disks each provided with an annular toothed ring; and dogs on said bar for actuating said disks.

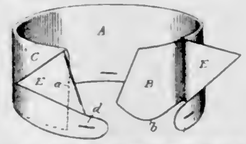


2. The combination with a plate or support provided, upon its under surface, with a bracket; of a slotted bar; means for securing said bar to the bracket; a bell-crank lever fulcrumed on the bracket and engaging with the bar; a finger to said lever; a second lever engaging said finger and adapted to reciprocate the bar; a retracting-spring connected to said bar and bracket; rotating disks mounted upon the plate or support; an annular toothed ring upon each disk; and a gravity-seated dog at each end of said bar for engagement with said disk-teeth.

3. The combination with a plate or support provided on its under surface with a depending bracket; of a slotted lever slidably mounted upon said bracket; a dog at each end of the bar; a retractor-spring connecting the bar and bracket; disks mounted upon the plate at opposite sides of the bracket; an annular ring upon each disk having teeth adapted to be engaged by one of said dogs; and means for operating said bar and disks.

4. The combination with a plate or support provided on its under surface with a bracket; of disks mounted upon said plate at opposite sides of the bracket; an annular ring upon each disk having teeth therein; a bar slidably mounted upon the bracket; a stud at each end thereof; a dog mounted upon each stud and adapted to engage with the teeth of a disk; a bell-crank lever engaging the bar; and an operating-lever engaging said bell-crank lever, whereby the bar is reciprocated and motion imparted to both disks.

655,178. APPAREL-COLLAR. LEO P. ADT, Troy, N. Y. Filed Mar. 9, 1900. Serial No. 8,087. (No model.)

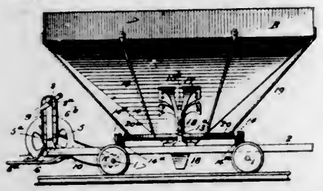


Claim.—1. A collar having its body provided with loose ends free to be turned outward or over from an oppositely-disposed neckband provided with an extension adapted to project beyond the opposite ends of said body and neckband, substantially as shown and described.

2. A collar having its body provided with loose ends free to be turned outward or over in the form of wings from an oppositely-disposed neckband provided with an extension adapted to project beyond the opposite ends of said body and neckband, substantially as shown and described.

655,179. CHARGING-CAR. FRANK D. ALLEN, Stonecliff, W. Va. Filed May 9, 1900. Serial No. 16,087. (No model.)

Claim.—1. In a dumping-car, the combination with a wheeled truck provided with a central turn-post; of a hopper having its outward end inclined to discharge to the side of the truck, a hub pendently projected from the bottom of the hopper, said hub being rotatably mounted upon the turn-post, and means for bracing the hopper-body upon the car-truck, said means being rotatable with the hopper as specified.

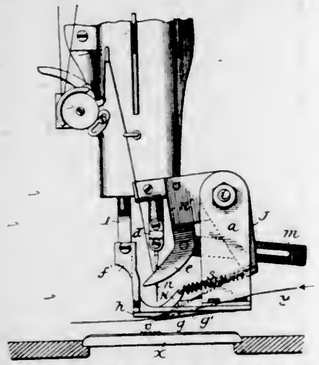


2. In a dumping-car, the combination with the wheeled truck, the central turn-post fixedly connected thereto, and a series of guide-flanges disposed in an annular arrangement about the turn-post; of the hopper, said hopper having its bottom inclined and projected to discharge to the side of the truck; a pendent hub projected down from the bottom to fit upon the turn-post, a series of stay-rods secured pendently to the hopper, and an annular flange supported from the lower end of the stay-rods, said flange engaging the fixedly-held annularly-disposed guides secured upon the truck substantially as shown and for the purposes described.

3. In a dumping-car of the character described, the combination with the wheeled truck-frame, said frame including the crossed beams 12, and the guides 14, said guides having tread portions 14^a, the overhanging guide-rollers 14^c, and the casting 13 secured upon the beams 12, said casting having a hub 13^a, and the spindle 13^b; of the hopper, said hopper having its discharge-bottom inclined to project from the side of the truck, the brackets 17 secured on the hopper-bottom said casting having an apertured hub 18, adapted to fit the spindle 13^b, the bars 19, and the ring 20, said ring having an annular flange adapted to engage the guides 14, all being arranged substantially as shown and for the purposes described.

655,180. RUFFLING ATTACHMENT FOR SEWING-MACHINES.

HENRY S. AYRES, McGrawville, N. Y., assignor to Albert P. McGraw, same place. Filed Feb. 12, 1897. Serial No. 623,163. (No model.)



Claim.—1. In a ruffling attachment for sewing-machines, the combination of a base-plate having two standards, a stationary ruffling-plate carried upon the base-plate having its end extending beneath the foot, a bell-crank lever pivotally mounted at its angle upon the second standard, a spring-plate carried by the bell-crank lever having a serrated edge which bears upon the stationary plate, a horn pivoted to one arm of the bell-crank lever, a slotted slide pivotally connected to the horn and a set-screw for securing the slide to the second arm of the bell-crank lever, substantially as described.

2. In a ruffling attachment for sewing-machines, the combination of a frame, a foot carried upon the frame adapted to be attached to the presser-foot bar, a stationary ruffling-plate likewise carried upon the frame and extending beneath the foot, a bell-crank lever pivotally mounted at its angle upon the frame, a spring connecting one arm of said lever and the foot, a horn pivotally connected to and extending from the bell-crank lever, said horn and one arm of the lever being in position to be engaged by a projection of the needle-bar, a slotted slide pivotally connected to the horn, a set-screw engaging the slot of the slide for securing it to one arm of the bell-crank lever, and a spring-plate carried by the bell-crank lever and having a serrated edge bearing upon the stationary plate, substantially as described.

655,181. MEANS FOR ATTACHING HANDLES TO BRUSHES.

FRANK BAUERLE and GEORGE BAUERLE, Chicago, Ill. Filed Dec. 23, 1899. Serial No. 741,440. (No model.)

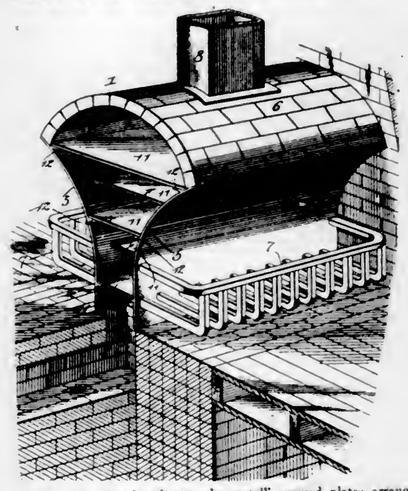


Claim.—1. The combination of a duster-head having a perforation therein; a handle having a stem fitting in said perforation; said stem being flattened or cut away on one side, and having at its base a groove extending away from one side of said flattened surface part way around said stem and terminating at a point back of said flattened surface; and a metallic cap secured to said head, having an aperture of substantially the same outline as a cross-section of said stem above the groove, and being adapted to engage said stem at said groove, substantially as described.

2. The combination of a duster-head having a perforation therein; a handle having a stem fitting in said perforation; said stem being flattened or cut away on one side, and having at its base a groove extending away from one side of said flattened surface part way around said stem and terminating at a point back of said flattened surface; and a metallic cap secured to said head, having an aperture of substantially the same outline as a cross-section of said stem above the groove, having the raised part 11 at the edge of the aperture registering with said flattened surface, and being adapted to engage said stem at said groove, substantially as described.

655,182. HOT-AIR DRUM.

JOHN F. BECK, Atlanta, Ga., assignor of two-thirds to Mary T. Kinsey and Samuel W. Lord, same place. Filed Apr. 24, 1899. Serial No. 714,211. (No model.)



Claim.—In a fireplace-heater, the metallic curved plates arranged in reversed positions for their upper portions to diverge laterally and to terminate in the same horizontal plane, the ribs integral with said plates and projecting horizontally from the inner opposing faces thereof, and the masonry arched top seated upon the top edges of, and supported wholly by, the plates, combined with the fireplace-walls closing the ends of the chamber which is formed between the plates, a single hot-air flue seated upon the arch, a cold-air flue in the hearth, and baffle-plates resting on the ribs within the chamber, substantially as described.

655,183. PNEUMATIC-TIRE FASTENING.

JOSEPH A. BERGER, Chicago, Ill., assignor of one-half to John P. Larson, same place. Filed Jan. 15, 1900. Serial No. 1,522. (No model.)

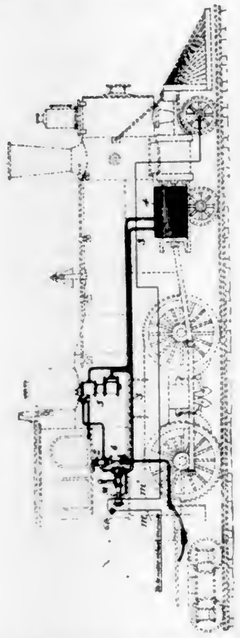
Claim.—1. The combination of a wheel-rim; with a metallic band having a series of apertures therein, and secured to said rim at points intermediate of said apertures; and a series of studs having heads of less diameter than the apertures and projecting through same, and having bases of greater diameter than the width of said apertures, and resting loosely upon the rim; said studs being slidable longitudinally of said apertures; and a pneumatic-tire jacket having a series of eyelets in each edge, adapted to pass over said heads, substantially as and for the purpose specified.



2. The combination of a wheel-rim with a continuous peripheral band having a series of apertures therein and secured to said rim at points intermediate of said apertures; a series of studs having heads projecting through said apertures, and integral bases of greater diameter than the width of said apertures, resting between said band and rim, and unattached to said rim, except by said band; and a pneumatic-tire jacket having a series of eyelets in each edge, adapted to pass over said heads, substantially as specified.

655,184. AUTOMATIC BRAKE-SETTING AND SIGNALING APPARATUS.

CHARLES BERGMANN, Pittsburg, Pa., assignor of two-fifths to J. E. O'Shea, same place. Filed Apr. 26, 1900. Serial No. 14,479. (No model.)



Claim.—1. In an apparatus of the class described, the combination with the engineer's brake-valve and main reservoir, of means, interposed between the main reservoir and the engineer's brake-valve, for automatically cutting off the excess pressure of said reservoir from the valve and simultaneously releasing the pressure in the train-pipe, substantially as set forth.

2. In an apparatus of the class described, the combination with the main reservoir and engineer's brake-valve of an air-brake system, of an air-controlling mechanism connected with the pipe between the reservoir and the brake-valve, and having means for automatically cutting off communication between the reservoir and said valve, and simultaneously releasing the pressure in the train-pipe, substantially as set forth.

3. In an apparatus of the class described, the combination with the main reservoir and the engineer's brake-valve of an air-brake system, of an air-controlling mechanism connected with the reservoir-pipe between the main reservoir and the brake-valve, and having means for automatically cutting off communication between the reservoir and said valve, and simultaneously releasing the pressure in the train-pipe and sounding a continuous alarm during such release of the air-pressure, substantially as set forth.

4. In an apparatus of the class described, the combination with the main reservoir and the engineer's brake-valve of an air-brake system, of an air-controlling mechanism interposed between the main reservoir and said valve and having means for automatically cutting off communication between the reservoir and the brake-valve and simultaneously releasing the pressure in the train-pipe, said mechanism also having means for sounding a continuous alarm during the releasing of the air-pressure in the train-pipe, and a separate alarm or signal upon the restoration of communication between the main reservoir and the engineer's brake-valve, substantially as set forth.

5. In an apparatus of the class described, an air-controlling mechanism interposed between the main reservoir and the engineer's brake-valve of an air-brake system, and having a main-valve casing provided with a through passage-way and with air-escape ports, a pair of cut-off valves arranged respectively to close the through passage-way and said air-escape ports, and common means for automatically actuating said valves, substantially as set forth.

6. In an apparatus of the class described, an air-controlling mechanism having a main-valve casing interposed in the pipe between the main reservoir and the engineer's brake-valve of an air-brake system, said valve-casing being provided with an interior ported seat, and beyond and in the transverse plane of said seat, with air-escape ports, a pair of spaced cut-off valves arranged to reciprocate within the valve-casing and adapted to respectively cover said ported seat and the air-escape ports, and common means for automatically actuating said valves to alternately carry the same to and from their seats, substantially as set forth.

7. In an apparatus of the class described, an air-controlling mechanism having a main-valve casing fitted to the main-reservoir delivery-pipe of an air-brake system, and provided with an interior cut-off seat and with lateral air-escape ports, an air-release valve in communication with said ports, and a pair of automatically-actuated cut-off valves working within the main-valve casing and respectively coöperating with the interior cut-off seat and said air-escape ports, substantially as set forth.

8. In an apparatus of the class described, an air-controlling mechanism having a main-valve casing fitted to the main-reservoir delivery-pipe of an air-brake system, and provided with an interior cut-off seat and with lateral air-escape ports, an air-escape chamber in communication with said air-escape ports, an air-release valve connected with said air-escape chamber, and a pair of automatically-actuated cut-off valves working within the main-valve casing and respectively coöperating with said interior cut-off seat and the air-escape ports, substantially as set forth.

9. In an apparatus of the class described, an air-controlling mechanism having a main-valve casing fitted to the main-reservoir delivery-pipe of an air-brake system, and provided with an interior cut-off seat and air-escape ports, an air-escape chamber in communication with said ports, a combined air-release valve and signal device connected with said air-escape chamber, and a pair of automatically-actuated cut-off valves working within the main-valve casing and adapted to alternately cover respectively the interior cut-off seat and said air-escape ports, substantially as set forth.

10. In an apparatus of the class described, an air-controlling mechanism comprising a main-valve casing fitted to the main-reservoir delivery-pipe of an air-brake system, and provided with an interior cut-off seat, air-escape ports, an air-escape chamber in communication with said ports, a combined air-release valve and signal device connected with said air-escape chamber, said combination device being provided with an adjustable air-release valve, and a pair of automatically-actuated cut-off valves working within the main-valve casing and respectively coöperating with said interior cut-off seat and said air-escape ports, substantially as set forth.

11. In an apparatus of the class described, an air-controlling mechanism comprising a main-valve casing fitted to the main-reservoir delivery-pipe of an air-brake system, and provided with an interior cut-off seat and side air-escape ports, an air-escape chamber in communication with said ports, automatically-actuated cut-off valves respectively for the interior cut-off seat and said ports, and a combined air-release and signal device connected with the air-escape chamber, said air-release and signal device consisting of a casing having at one end a ported seat in communication with the air-escape chamber, a blow-off whistle at its opposite end, an air-release valve working over the ported seat, and valve-regulating means within the casing, substantially as set forth.

12. In an apparatus of the class described, an air-controlling mechanism comprising a main-valve casing fitted to the main-reservoir delivery-pipe of an air-brake system, and provided with an interior cut-off seat and side air-escape ports, an air-escape chamber in communication with said ports, automatically-actuated cut-off valves respectively for the inte-

rior cut-off seat and said ports, and a combined air-release and signal device connected with the air-escape chamber, said air-release and signal device consisting of a sectional casing having a ported seat at one end in communication with the air-escape chamber, a blow-off whistle at the opposite end, an air-release valve working over the ported seat and having an extended stem, a regulating-spring arranged over the valve-stem and bearing at one end upon the valve, and a tubular nut adjustably mounted within the casing and coupling the sections thereof together, said nut being arranged to bear upon the spring at one end thereof to regulate its tension, substantially as set forth.

13. In an apparatus of the class described, an air-controlling mechanism comprising a main-valve casing fitted to the main-reservoir delivery-pipe of an air-brake system, and provided with an interior cut-off seat and side air-escape ports, cut-off valves respectively coöperating with the interior cut-off seat and said air-escape ports, and means for automatically uncovering the air-escape ports and closing the passage-way through the main-valve casing by the direct pressure of the air from the main reservoir, substantially as set forth.

14. In an apparatus of the class described, an air-controlling mechanism comprising a main-valve casing fitted to the main-reservoir delivery-pipe of an air-brake system, and having air-escape ports, and means for simultaneously uncovering the said air-escape ports to place the same in communication with the engineer's brake-valve and closing the passage-way through the main-valve casing by the direct pressure of air from the main reservoir, substantially as set forth.

15. In an apparatus of the class described, an air-controlling mechanism comprising a main-valve casing fitted to the main-reservoir delivery-pipe of an air-brake system, and having air-escape ports, valves for respectively closing the passage-way through the main-valve casing and the said air-escape ports, means for utilizing the direct pressure of air from the main reservoir to uncover the air-escape ports and to close the passage-way through the valve-casing, and an electrically-actuated valve for automatically admitting and cutting off the motive supply of air from the main reservoir for actuating the mechanism, substantially as set forth.

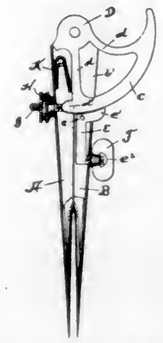
16. In an apparatus of the class described, an air-controlling mechanism comprising a main-valve casing fitted to the main-reservoir delivery-pipe of an air-brake system, and provided with air-escape ports, the main-valve stem carrying the valves for respectively covering the air-escape ports and the main cut-off seat of the valve-casing, a piston-chamber, a piston working within said chamber at 1 fitted to said valve-stem, a by-pass connection with the main-reservoir delivery-pipe for supplying air to the piston-chamber for actuating the valves in one direction, and an electrically-operated valve for automatically cutting off and opening up communication with the said by-pass connection, substantially as set forth.

17. In an apparatus of the class described, an air-controlling mechanism having a main-valve casing fitted to the main-reservoir delivery-pipe of an air-brake system, and provided with air-escape ports, a main-valve stem carrying a pair of cut-off valves working within the main-valve casing, a piston-chamber, a valve-actuating piston working in said chamber and connected with the main-valve stem, a separate valve-casing connected with the piston-chamber and in communication therewith, a by-pass pipe connecting the said separate valve-casing with the main-reservoir delivery-pipe, and an automatically-actuated valve working within said separate valve-casing and arranged to cut off and open up communication with said by-pass pipe, substantially as set forth.

18. In an apparatus of the class described, an air-controlling mechanism comprising a main-valve casing fitted to the main-reservoir delivery pipe of an air-brake system, and provided with air-escape ports, a main-valve stem carrying a pair of cut-off valves working in the main-valve casing and also carrying at the end opposite said valves, a valve-actuating piston, a reducing-spring arranged at one side of the said piston, a plunger-valve casing in communication with the piston-chamber, at one side of the piston therein, a blow-off signal fitted to the plunger-valve casing, a by-pass pipe connecting the main-reservoir delivery-pipe with said plunger-valve casing, and an automatically-operating and electrically-actuated plunger-valve working in said plunger-valve casing and provided with a longitudinal air-passage and separate air inlet and exhaust ducts adapted to respectively communicate with the by-pass pipe and said blow-off whistle, substantially as set forth.

19. In an apparatus of the class described, an air-controlling mechanism comprising a main-valve casing fitted to the main-reservoir delivery-pipe of an air-brake system, and having air-escape ports, a main-valve stem carrying cut-off valves working within the main-valve casing, and also carrying a valve-actuating piston, a piston-chamber housing the said piston, a spring arranged at one side of the piston, a plunger-valve casing in communication with the piston-chamber, a magnet-case connected with the plunger-valve casing, a controlling-magnet housed within said magnet-case and having an armature, a blow-off whistle fitted to the plunger-valve casing, a by-pass pipe connecting the plunger-valve casing with the main-reservoir delivery-pipe, a reciprocating plunger-valve connected with the armature of the controlling-magnet, and provided with a longitudinal air-passage and with separate inlet and exhaust ducts adapted to respectively communicate with the blow-off whistle and said by-pass pipe, and a spring arranged to engage with the plunger-valve for moving the same in one direction, substantially as set forth.

655,185. DIVIDERS. WILLIAM A. BERNARD, New Haven, Conn., assignor to the William Schollhorn Company, same place. Filed May 16, 1900. Serial No. 16,924. (No model.)



Claim.—1. In dividers or similar tools, the combination with a pair of legs; of a separate wing having a bearing on the pivot of the tool and capable of movement independent of the movement of the legs, substantially as described.

2. In dividers or similar tools, the combination with a pair of legs; of a separate wing having a rigid connection with the washer pivoted to swing independently between the bearing-surfaces of the legs; means for locking one of the legs upon the wing, substantially as described.

3. In dividers or similar tools, the combination with a pair of legs; of a wing; a screw pivoted to the wing; a nut mounted on said screw and adapted to limit the movement of one of said legs; substantially as described.

4. In dividers or similar tools, the combination with a pair of legs; of a separate wing having a rigid connection with the washer pivoted between the bearing-surfaces of the legs; a screw attached to the wing; a nut mounted on said screw and adapted to limit the movement of one of said legs, and means for locking the other leg to said wing; substantially as described.

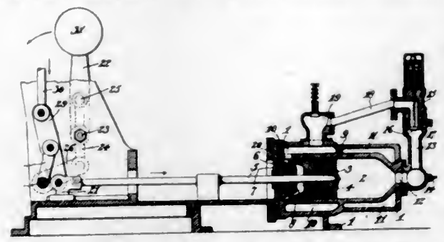
5. In dividers or similar tools, the combination with a pair of legs, one of which is U-shaped in cross-section; of a wing having a rigid connection with the washer pivoted between the bearing-surfaces of the legs; a spring housed within said U-shaped leg and bearing against said rigid connection of said wing and washer to force said wing and leg apart; and mechanism for drawing said wing and leg together, substantially as described.

6. In dividers or similar tools, the combination with a pair of legs, one of which is made U-shaped in cross-section; of a separate wing having a bearing on the pivot of the tool, and capable of movement independent of the movement of the legs; a locking-piece pivoted within one of said U-shaped legs and made to bind on said wing by the operation of a thumb-nut; and a yielding connection between the other of said legs and said wing; substantially as described.

7. In dividers or similar tools, the combination with a pair of legs made U-shaped in cross-section; of a separate wing, having a rigid connection with the washer pivoted between the bearing-surfaces of the legs, and capable of movement independent of the movement of either leg; a locking-piece in one U-shaped leg for locking said leg upon said wing; a spring housed in the other of said legs and bearing against said wing; a screw pivoted to the wing; a nut mounted on said screw and adapted to limit the movement of said legs against the tension of said spring, substantially as described.

655,186. REAR-COMPRESSION EXPLOSIVE-ENGINE. HENRIK A. BERTHEAU, Stockholm, Sweden. Filed July 20, 1898. Serial No. 686,441. (No model.)

Claim.—1. In an explosive-fluid engine, the combination with the power-cylinder, its piston and piston-rod, of a weighted lever pivoted to a stationary part, a link connection between said weighted lever and piston-rod, whereby said lever acts, first on one side and then on the other side of its central position, to aid compression, substantially as described.



2. In a single-acting horizontal engine, the combination with the power-cylinder and its piston; of a weighted lever, and means organized to transmit the power exerted by said lever to the piston during its compression, said lever composed of two straight arms pivoted together, the outer arm carrying the weight and the inner arm provided with an abutment for said outer arm to maintain both arms in alinement, and a spring connection between the arms to hold them normally in alinement, for the purpose set forth.

3. In a single-acting horizontal explosive-fluid engine, the combination with the power-cylinder, its piston and piston-rod, of a weighted lever pivoted to a stationary element of the engine, a link adapted to limit the motion of said lever, and support the same during the change of direction of motion and connected by means of a crank and intermediate link to said piston-rod, substantially as described.

4. In a single-acting horizontal explosive-fluid engine, its piston and piston-rod, the combination with the power-cylinder of a weighted lever pivoted to a stationary element of the engine, a link limiting the motion of said lever, and supporting it during the change of direction of motion, and connected by means of a crank and intermediate link to the piston-rod, said intermediate link adapted to transmit motion at right angles to the motion of said piston-rod, substantially as set forth.

5. In a gas-engine, the combination with the power-cylinder, the piston-rod, a weighted lever pivoted to a stationary part and a power-transmitting rod out of alinement with the piston-rod, a link connecting said power-transmitting rod and piston-rod, a second link connected to the weighted lever and a bell-crank having an arm connected to each link, substantially as described.

6. In a gas-engine, the combination with the power-cylinder, the piston-rod, a weighted lever pivoted to a stationary part, and a power-transmitting rod substantially at right angles to the piston-rod, a link connecting the two rods and out of alinement with both, a second link connected to the weighted lever, a shaft having two cranks set at an angle to one another, one of said cranks connected to the link attached to the weighted lever and the other connected to the link connecting the two rods and intermediate its ends, substantially as described.

655,187. BOILER-TUBE PLUG. STÉPHANE J. M. BERTHET, Sannois, France. Filed May 8, 1900. Serial No. 15,910. (No model.)

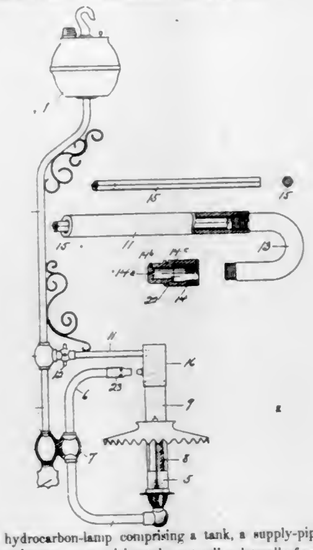


Claim.—1. The combination with a tube, of a plug having an opening therethrough adapted to be rigidly secured in the end of the tube, a bolt passing freely through the opening in the plug, a head on the bolt within the tube, a nut threaded on the shank of the bolt having a bearing on the outside of the plug and a compressible washer comprising a thin ring interposed between the bolt-head and plug, the edge of said ring being pressed against the tube on the compression thereof, substantially as described.

2. In a plug or closing device for tubes, the combination of bayonet-slots in the ends of the tube, of an inner ring having projections which enter the said slots, of a bolt passing through said ring having a head bearing against a soft-metal washer of a conical or semicircular section so that upon drawing the head of the bolt outwardly by means of a nut upon its stem, the said washer is compressed and expanded outwardly forming a tight joint, substantially as described.

655,188. HYDROCARBON-LAMP. WILLIAM G. BIRD, Kansas City, Kans., assignor to Jacob C. Dold, Kansas City, Mo. Filed Feb. 26, 1900. Serial No. 6,558. (No model.)

Claim.—1. A hydrocarbon-lamp comprising a tank, a supply-pipe leading therefrom, a burner, a vaporizing-tube extending laterally from said supply-pipe toward the burner, a polygonal bar of uniform diameter throughout its length within said tube, having its angles in contact with the walls of said tube, a gooseneck attached to the outer end of said tube, immediately above the burner, a nozzle at the end of said gooseneck, having a gas-orifice in its end, a gas-supply tube having its upper end opposite said orifice and leading to the burner, and an adjustable mixing-tube normally mounted on the upper end of said gas-supply tube and adapted to engage between said tube and nozzle, substantially as set forth.



2. A hydrocarbon-lamp comprising a tank, a supply-pipe leading therefrom, a burner, a vaporizing-tube extending laterally from said supply-pipe toward the burner, a gooseneck attached to the outer end of said tube, above the burner, a cylindrical metallic drum mounted on and inclosing said gooseneck, a nozzle at the end of said gooseneck, having a gas-orifice in its end, a gas-supply tube, having its upper end opposite said orifice and leading to the burner, and a mixing-tube normally mounted on the upper end of said gas-supply tube, and adapted to engage the outer end of said nozzle, and form a connection between said tube and nozzle, substantially as set forth.

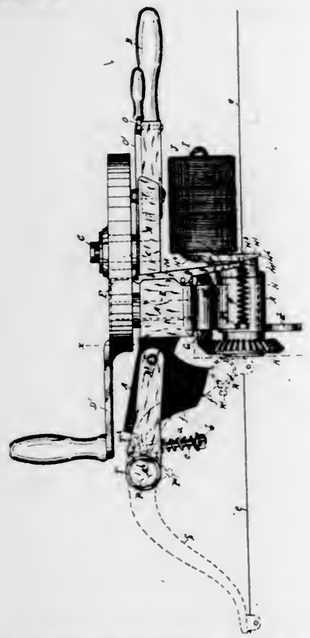
3. A hydrocarbon-lamp comprising a tank, a supply-pipe leading therefrom, a burner, a vaporizing-tube extending from said supply-pipe toward the burner, a gooseneck attached to the outer end of said tube, above the burner, a metallic heating-drum mounted on and inclosing said gooseneck, said drum consisting of two sections adjustably pivoted together and provided with notches in their edges, to engage said vaporizing-tube and gooseneck, a nozzle at the end of said gooseneck, having a jet-orifice in its end, a gas-supply tube having its upper end opposite said orifice, and leading to the burner, and an adjustable mixing-tube normally mounted on the upper end of said gas-supply tube, and adapted to engage the outer end of said nozzle and form a connection between said tube and nozzle, substantially as set forth.

4. A hydrocarbon-lamp comprising a tank, a supply-pipe leading therefrom, a burner, a vaporizing-tube extending from said supply-pipe toward the burner, a gooseneck attached to the outer end of said tube, above the burner, a metallic heating-drum mounted on and inclosing said gooseneck, said drum consisting of two sections adjustably pivoted together and provided with notches in their edges, to engage said vaporizing-tube and gooseneck, a nozzle at the end of said gooseneck, having a jet-orifice in its end, provided with concavo-convex recessed bore through which the gases pass to a suitable tube leading to the burner, substantially as described.

655,189. WIRE-FENCE-WEAVING MACHINE. ARTHUR E. BLASHILL, Delaware, Canada. Filed Nov. 7, 1899. Serial No. 736,209. (No model.)

Claim.—1. In a wire-fence-weaving machine, the shaft, H, in which a channel, H^2, is formed, and having an enlarged head, H', provided with a flange, H^4, in which a socket, H^3, is formed, and beveled at its ends adjacent to said channel, H^2, substantially as and for the purpose set forth.

2. In a wire-fence-weaving machine, the shaft, H, in which a channel, H^2, is formed and having a head, H', provided with a flange, H^4, in which a socket, H^3, is formed, and beveled at its ends adjacent to said channel, H^2, and means for supporting said shaft in which it rotates perfectly free, in combination with a locking-arm, M, provided with an angular end, M', and means for engaging said angular end with and disengaging it from the head, H', at the socket, H^3, substantially as and for the purpose set forth.



3. In a wire-fence-weaving machine, the frame, A, the stationary shaft, C, the internal gear-wheel, D, revolving on said shaft, C, and means for operating said internal gear-wheel, in combination with the shaft, E, the toothed pinion, F, rigidly secured to one end of said shaft, E, and meshing with the teeth of the internal gear-wheel, D, the beveled gear-wheel, G, rigidly secured to the opposite end of said shaft, E, the shaft, H, and beveled gear-wheel, K, rigidly secured thereto, and engaging with the beveled gear-wheel, G, substantially as and for the purpose set forth.

4. In a wire-fence-weaving machine, the frame, A, the stationary shaft, C, the internal gear-wheel, D, and means for operating the same, the shaft, E, the toothed pinion, F, rigidly secured to one end of said shaft, E, and engaging with the teeth of the internal gear-wheel, D, the beveled gear-wheel, G, secured to the opposite end of said shaft, E, the shaft, H, the beveled gear-wheel, K, rigidly secured thereto, and engaging with the beveled gear-wheel, G, and the sleeved spindle, I, secured to the end of the shaft, H, in combination with the locking-arm, M, formed with an angular end, M', and means for engaging the angular end of said arm with, and disengaging it from the shaft, H, or other operative part of the machine, substantially as and for the purpose set forth.

5. In a wire-fence-weaving machine, the frame, A, in which the opening, A', is formed, the stationary shaft, C, the integral gear-wheel, D, and means for operating the same, in combination with the shaft, E, the toothed pinion, F, rigidly secured to one end of said shaft, E, and engaging with the internal gear-wheel, D, the beveled gear-wheel, G, rigidly secured to the opposite end of the shaft, E, the shaft, H, formed with a channel, H^2, the beveled gear-wheel, K, formed with the slot, K', secured to the shaft, H, and engaging with the beveled gear-wheel, G, and the sleeved spindle, I, secured to the end of the shaft, H, substantially as and for the purpose set forth.

6. In a wire-fence-weaving machine, the frame, A, in which an opening, A', is formed, the stationary shaft, C, the internal gear-wheel, D, and means for operating the same, in combination with the shaft, E, the pinion, F, secured to one end of said shaft, E, and engaging with the internal gear-wheel, D, the beveled gear-wheel, G, secured to the opposite end of said shaft, E, the shaft, H, formed with a channel, H^2, the beveled gear-wheel, K, formed with the slot, K', secured to the shaft, H, and engaging with the beveled gear-wheel, G, the plate, L, in which the recess, L', and perforation, L^2, are formed, the guides, *d*, secured to the frame, A, and the sleeved spindle, I, secured to the end of the shaft, H, substantially as and for the purpose set forth.

7. In a wire-fence-weaving machine, the shaft, H, having an enlarged head, H', provided with a flange, H^4, in which a socket, H^3, is formed, and also formed with beveled ends, H^2, and, H^4, in combination with the frame, A, the stud, A^2, formed thereon, the locking-arm, M, formed with angular end, M', the spring, N, interposed between the angular end, M', of said locking-arm, M, and said stud, A^2, the bell-crank, O, pivotally mounted on said frame, A, the strand, O', connecting one end of the bell-crank, O, with the locking-arm, M, and the handle, B, substantially as and for the purpose set forth.

8. In a wire-fence-weaving machine, the pivot-bar, P, and means for supporting said bar, the sleeve, T, pivotally and vertically adjustable on said bar, P, in combination with the frame, A, pivotally secured to the sleeve, T, and a spring applied to said frame, so that the latter will move pivotally in relation to said sleeve, with a steady, even motion, substantially as set forth.

9. In a wire-fence-weaving machine, the pivot-bar, P, and means for supporting said bar, the sleeve, T, provided with the flange, T^2, and pivotally and vertically adjustable on said bar, P, in combination with the frame, A, provided with the flange, A^4, and pivotally secured to the sleeve T, substantially as and for the purpose set forth.

10. In a wire-fence-weaving machine, the pivot-bar, P, and means for supporting said bar, the sleeve, T, provided with the flange, T^2, and pivotally and vertically adjustable on said bar, P, in combination with the frame, A, provided with the flange, A^4, and pivotally secured to the sleeve, T, and a spring applied to said frame so that the latter will move pivotally in relation to said sleeve, with a steady, even motion, substantially as set forth.

11. In a wire-fence-weaving machine, the pivot-bar P, and means for supporting said bar, the sleeve, T, pivotally and vertically adjustable on the said bar, P, and the frame, A, pivotally secured to the sleeve, T, in combination with the bolt, *a*, extending through the frame, A, and sleeve T, a nut, *b*, on the end of said bolt, and a coil-spring, *c*, encircling said bolt and interposed between said frame, A, and nut, *b*, substantially as and for the purpose set forth.

12. In a wire-fence-weaving machine, the pivot-bar, P, and means for supporting said bar, the sleeve, T, provided with the flange, T^2, and pivotally and vertically adjustable on the bar, P, and the frame, A, provided with a flange, A^4, and pivotally secured to the sleeve, T, in combination with the bolt, *a*, extending through said flanges, T^2, and, A^4, a nut, *b*, on the end of said bolt, and a coil-spring, *c*, encircling said bolt, *a*, and interposed between said nut, *b*, and the flange, A^4, substantially as and for the purpose set forth.

13. In a wire-fence-weaving machine, the pivot-bar, P, the spacer-bar, R, and means for supporting said bars, the spacers, R^3, adjustable longitudinally on said bar, R, and means for holding said spacers at the position to which they are adjusted, and for holding the wire in contact therewith, the sleeve, T, pivotally and vertically adjustable on said bar, P, and the frame, A, provided with the flange, *f*, and pivotally secured to the sleeve, T, in combination with the bolt, *a*, extending through the frame, A, and sleeve, T, a nut, *b*, on the end of said bolt, and a coil-spring, *c*, encircling said bolt and interposed between said nut, *b*, and frame, A, substantially as and for the purpose set forth.

14. In a wire-fence-weaving machine, the pivot-bar P, the spacer-bar, R, and means for supporting said bars, the spacers, R^3, longitudinally adjustable on said bar, R, and means for holding said spacers at the position to which they are adjusted on said bar, R, and for holding the wire in contact therewith, the sleeve, T, provided with the flange, T^2, pivotally and vertically adjustable on the bar, P, and the frame, A, provided with the flanges, *f*, and, A^4, and pivotally secured to the sleeve, T, in combination with the bolt, *a*, extending through said flanges, T^2, and, A^4, the nut, *b*, on the end of said bolt, and a coil-spring, *c*, encircling said bolt, and interposed between said nut, *b*, and frame, A, substantially as and for the purpose set forth.

15. In a wire-fence-weaving machine, the pivot-bar, P, the spacer-bar, R, and the vertically and laterally curved arms, S, S, and means for engaging the horizontal wires, *e*, with said arms, in combination with the sleeve, T, pivotally and longitudinally adjustable on said pivot-bar, P, and the frame, A, substantially as and for the purpose set forth.

16. In a wire-fence-weaving machine, the pivot-bar, P, the spacer-bar, R, and the vertically and laterally curved arms, S, S, provided with flanges, and means for holding the horizontal wires, *e*, between said flanges, in combination with the sleeve, T, pivotally and longitudinally adjustable on said pivot-bar, P, and the frame, A, substantially as and for the purpose set forth.

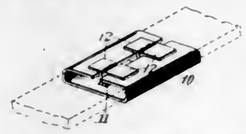
655,190. **SUTURATING INSTRUMENT.** LOUIS BRAMSON, Copenhagen, Denmark. Filed Nov. 27, 1899. Serial No. 738,391. (No model.)

Claim.—1. In an instrument for dressing wounds, the combination with two metal plates each provided with a quill inclined inwardly, of two needles, one passing through each quill, and means for separably connecting said plates, whereby said plates and quills when placed at a suitable distance from a wound and connected together, will keep the edges of the wound together.



2. In an instrument for dressing wounds, the combination with two metal plates each provided with a quill inclined inwardly, of needles passing through said quills, and separable fastenings, such as studs and holes on the respective plates, for connecting said plates when the quills and needles have been inserted in or near the edges of a wound.

655,191. **MEANS FOR SECURING RUBBER TIRES TO VEHICLE-WHEELS.** RICHARD A. BRINK, Revere, MASS. Filed June 27, 1900. Serial No. 21,778. (No model.)



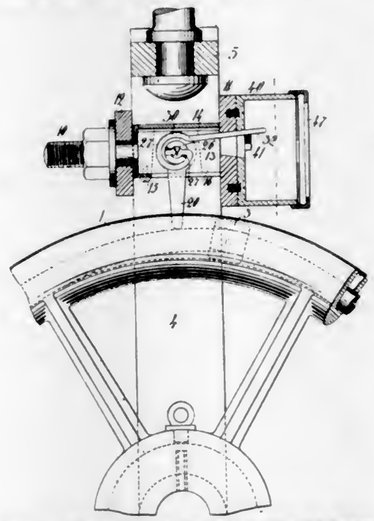
Claim.—1. The combination with a wheel, of a rubber tire; a slotted metallic tape; top and bottom plates in one piece; and arms or prongs passed through the slots and bent down.

2. The combination with a wheel, of a rubber tire; a slotted metallic tape; and an integral metallic plate having slots; and arms or prongs for uniting the several parts.

3. The combination with a wheel, of a rubber tire; a slotted metallic tape; and an integral metallic plate having slots, projecting ends, 9 9, and arms or prongs for uniting the several parts.

4. The combination with a wheel, of a rubber tire; a slotted metallic tape; an integral metallic plate having two slots and its edges bent and lapped over the sides of the free ends of the tape; and arms or prongs passed through the two slots in the plate and tape and the ends bent down.

655,192. **REGISTER.** JENS A. BRYNIE, Stavanger, Norway. Filed Mar. 20, 1900. Serial No. 9,430. (No model.)



Claim.—1. The combination with a sheave-block and sheave, of a register mechanism exposed at one side of the sheave-block, a bolt for securing the same in position extending through the opening in the block above the sheave, a pivot-pin extending transversely of the bolt, a swinging arm depending therefrom into proximity to the rim of the sheave, a stop to coact with said arm, and means carried by the pin to operate the register mechanism, substantially as described.

2. The combination with a sheave-block and sheave, of a register mechanism exposed at one side of the sheave-block, a bolt for securing the same in position, a pivot-pin extending therethrough, a swing-arm secured thereto, an operating-arm also carried by the pin at one end of the same, said pin having movement in one direction independent of said arm, and means for operating said arm, substantially as described.

3. In combination, with the registering mechanism the pulley-yoke, plates 11 and 12 fitting the yoke, a bolt 10 passing through the plates for securing them to the yoke, said bolt having a central square part 13, a surrounding casing 14 and means for operating the registering mechanism, substantially as described.

655,193. **CLAMP.** ALBERT CARLSON, Chicago, Ill. Filed Apr. 14, 1900. Serial No. 12,892. (No model.)



Claim.—1. A clamp comprising a supporting-bar having a freely-slidable jaw thereon, a pressure-jaw also mounted on the said bar, a screw-sleeve applied over the extremity of the bar adjacent the pressure-jaw and a screw-threaded clamping-cap adjustably mounted on the said sleeve to have contact with the pressure-jaw, the latter jaw having limited movement.

2. A clamp comprising a supporting-bar with a freely-slidable jaw thereon provided with an angularly-directed opening therethrough larger than the dimensions of the bar, a pressure-jaw having limited movement on the bar adjacent one extremity of the latter, the extremity of the bar adjacent the pressure-jaw being reduced, an exteriorly-screw-threaded sleeve mounted on the reduced extremity of the supporting-bar, a screw-threaded clamping-cap adjustably positioned on the screw-threaded sleeve to contact with the outer end of the pressure-jaw, and means for preventing the freely-slidable jaw from slipping off the bar and of limiting the movement of the pressure-jaw.

655,194. **STOVE-SHELF.** FRANKLIN K. CHASE, Taunton, MASS. Filed Dec. 18, 1899. Serial No. 740,743. (No model.)



Claim.—1. The combination with a stove and the pipe-opening thereof; of a shelf secured to said stove and carrying a casing open at top and

bottom, a panel above said casing provided with an opening at right angles to the top opening of the casing, and a removable plate normally covering the opening in the panel, substantially as described.

2. The combination with a plurality of shelves designed to be secured to a stove; of an open-ended casing carried by said shelves and registering with the pipe-opening in said stove, the top of said casing terminating at its juncture with the first shelf, a flat panel above, and on a line with the rear of the casing, and provided with an opening through which the stove-pipe can project, and a removable plate for normally keeping the last-named opening closed, substantially as described.

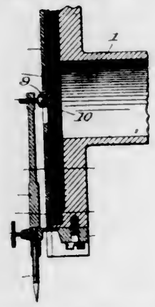
3. The combination with a plurality of shelves adapted to be secured to a stove and a casing carried by the shelves and registering with the pipe-collar of the stove; of a removable and reversible panel connecting two of the shelves and having an opening through which the pipe can project the position of which is adapted to be changed by the reversal of said panel, substantially as described.

4. The combination with a stove and its pipe-opening; of a panel arranged thereon; a casing carried by said panel and registering with the collar, a shelf projecting from said panel and provided with an opening registering with an opening in the top of the casing and a removable plate secured to the rear of the panel and casing, substantially as described.

5. The combination with a stove and its pipe-collar; of a panel arranged on one side of the stove, a casing carried by said panel and covering said collar, a shelf projecting from said panel and having an opening in alinement with an opening in the top of the casing, a second panel secured to the first panel, having an opening, and a removable plate normally covering the last-named opening, substantially as described.

6. The combination with a stove and its flue-opening, of a casing surrounding said opening, a panel secured to the stove and casing, a shelf projecting from the panel and having an opening in line with the first-named openings, a reversible panel secured to the first-mentioned panel and provided with an opening at right angles to the opening in the shelf and a second shelf projecting from the last-named panel also having an opening therein, substantially as described.

655,195. GRAMOPHONE SOUND-BOX. GEORGE K. CHENEY, New York, N. Y., assignor to the National Gramophone Corporation, same place. Filed Oct. 18, 1899. Serial No. 733,951. (No model.)



Claim.—1. The combination of a diaphragm, a stylus, and a ball-and-socket connection between the two.

In a talking-machine the combination of a triangular diaphragm, a stylus, and an adjustable ball-and-socket connection between the stylus and the center of the diaphragm.

3. The combination of a diaphragm, a stylus, and an adjustable ball-and-socket connection between the two.

4. The combination of a diaphragm, a stylus, and a ball-and-socket connection which has its female member connected to the center of the diaphragm and its male member adjustably connected to the stylus.

655,196. SERVING APPARATUS. WILLIAM C. CHURCH, Portland, Oreg., and JOHN B. MAHANA, Silver Lake, Wash. Filed July 17, 1899. Serial No. 724,163. (No model.)

Claim.—1. A stamp or ticket case having a removable end closure forming a support for a rolled strip of stamps or tickets, a spring-pressed movable closure for the other or delivery end, and means to feed the strip from the reel through the delivery end, substantially as described.

2. A stamp or ticket case having means to support a rolled strip of stamps or tickets in its rear end, and having its bottom formed in part of a hinged plate, a block carried by the plate and forming a movable end closure, means to yieldingly hold the block in its closing position, and means to feed the strip through the end of which the block is the movable closure, substantially as described.



3. In a stamp or ticket case, the combination with the sides and top of the case, of a bottom formed in two sections, the rear section being firmly secured to the sides and the forward section pivoted thereto, a block carried by the front end of the pivoted plate to form a movable end closure for the case, a spring to yieldingly hold the block in its closing position, a rolled strip of stamps or tickets supported within the case, and means to feed the strip through the end of which the block forms the movable closure, substantially as described.

4. A stamp or ticket case having a removable end closure forming a support for a rolled strip of stamps or tickets, a movable closure at the other or delivery end of the case, a diaphragm within the case to support the strip between the roll and delivery end, a presser-plate yieldingly supported above the strip and diaphragm and depressible and movable to engage the strip and feed it forward toward the delivery end, and means to move the closure at the delivery end of the case to permit the strip to pass through, substantially as described.

5. In a stamp or ticket case the combination with the outer casing having a slotted top and a supporting-diaphragm for the strip of stamps or tickets within the casing below the top, of a presser-plate above the diaphragm, a headed pin connected to the diaphragm and extending through the slot in the top of the casing, a washer supported on the top and through which the said pin passes, a spring interposed between the said washer and the head of the pin to normally hold the plate out of engagement with the strip, and a spring connecting the rear end of the presser-plate with the casing to normally retract the plate, substantially as described.

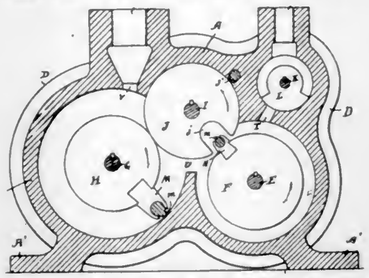
655,197. DETACHABLE CLAMP OR NAME-PLATE. SARAH J. COBRAN, Royal Oak, Mich. Filed Dec. 26, 1899. Serial No. 741,609. (No model.)



Claim.—1. A detachable clamp or name-plate for belts, collars and the like, consisting of a sheet of metal having its upper and lower edges turned over backward so as to overlap respectively the upper and lower edges of said belt or collar, and having its side edges turned inward slightly so as to press firmly on said belt or collar, said sheet of metal also being provided with a slot or opening in its center and adapted to have a card inserted between said sheet and belt or collar so as to be visible through said slot, said card being securely retained in place by the inward turning of said side edges, substantially as set forth.

2. A detachable clamp or name-plate for belts, collars and the like, consisting of a sheet of metal having its upper and lower edges turned over backward so as to overlap respectively the upper and lower edges of said belt or collar, and having its side edges turned inward slightly so as to press firmly on said belt or collar, preventing said clamp from accidentally slipping, substantially as set forth.

655,198. COMPOUND ROTARY ENGINE. GEORGE CODE, Boston, Mass. Filed Dec. 8, 1899. Serial No. 739,617. (No model.)



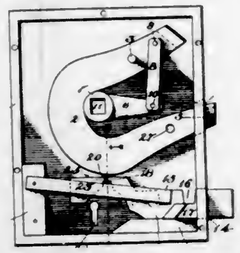
Claim.—1. A compound rotary engine, consisting of a casing adapted to receive two rotary pistons, a resistance-head, and an oscillating valve, and having an inlet, an outlet, and suitable ports, a cover on each side of said casing, adapted to carry shafts upon which are mounted rotary pistons, each having a projecting piston-head, a shaft carrying a resistance-head that works in close contact with the rotary pistons and having a recess in which the piston-heads pass as they rotate, each of said shafts having cog-gears outside the covers, whereby motion is imparted from one to the other, and a shaft upon which is mounted a reciprocating valve, operated from one of said cog-wheels in the manner set forth.

2. In a compound rotary engine, two rotary pistons having projecting piston-heads, in combination with a resistance-head having a recess into which the piston-heads pass, and means for rotating same; substantially as set forth.

3. In a compound rotary engine, two rotary pistons, each having a projecting piston-head rotating in cylinders and in contact with a resistance-head, having a recess to receive the piston-heads as they rotate, the cylinder containing the low-pressure piston being of larger diameter than that containing the high-pressure piston, in combination with an oscillating valve arranged and operated, substantially as set forth.

4. In a compound rotary engine the combination of a high and low pressure cylinder, each containing a rotary piston provided with a projecting head, a resistance-head having a recess to receive the piston-heads, and an oscillating valve to supply steam to the high-pressure cylinder; substantially as set forth.

655,199. COMBINED LOCK AND LATCH. MOSES E. COLLINS, Brighton, Ind. Filed Jan. 3, 1900. Serial No. 249. (No model.)



Claim.—1. In a latch, the combination with a casing, of a substantially U-shaped latch having one side or arm pivoted to the casing, a trip-lever located between the sides or arms of the latch, a link connection between the lever and the free end of the pivoted side or member of the latch and operating means for the latter.

2. In a latch, the combination with a casing having a transverse pivot-pin, of a substantially U-shaped latch, having corresponding openings or perforations provided in the opposite arms or sides thereof, and for interchangeably receiving the pivot-pin, and means for rocking the latch upon its pivotal support.

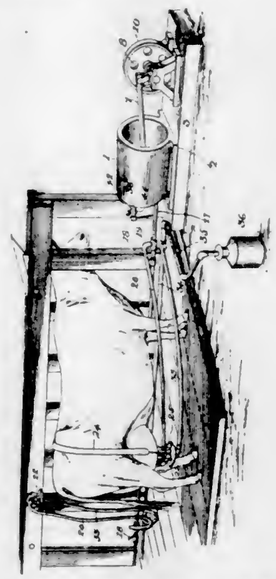
3. In a latch, the combination with a casing, having a transverse pivot-pin, of a substantially U-shaped latch, having corresponding openings or perforations provided in the opposite sides or arms of the latch, and for interchangeably receiving the pivot-pin, the opposite extremities of the arms or sides being beveled upon the same side of the latch, and means for rocking the latter upon its pivotal support.

4. In a latch, the combination with a casing, of a substantially U-shaped gravity-latch, having one arm or side pivoted intermediate of its ends and to the casing, a trip-lever located between the sides of the latch, and having a circular hub projecting at opposite sides of the lever, and mounted in opposite openings formed in respective sides of the casing, said hub being normally in engagement with the inner side of the latch and forming a stop therefor, and also provided with an angular bore, and a link connection between the free end of the trip-lever and the free end of the pivoted side of the latch.

655,200. COW-MILKING MACHINE. MARK M. COWDROY, Marshfield, Oreg. Filed Apr. 3, 1900. Serial No. 11,368. (No model.)

Claim.—1. In a milking apparatus operated by suction, the combination of air-exhausting devices, a suction-conveyer connected to said devices, one or more milk-receivers connected to said suction-conveyer and having gravitating valves operating in the lower portions thereof, outflow-conduits connected to the milk-receivers and having air-vents, and a common outflow-pipe for said conduits.

2. In a milking apparatus, the combination of air-exhausting devices having an automatic regulator, one or more milk-receivers having teat-cups, an exhaust-conveyer from said exhaust devices, an outflow-pipe common to all the receivers, and flexible conveyers between each receiver and the exhaust-conveyer and outflow-pipe, the flexible conveyer between the receiver and outflow-pipe having an air-vent and a gravitating valve adjacent the receiver.



3. In a milking apparatus, the combination of air-exhausting mechanism, a regulator in intimate relation to said mechanism, an exhaust-conveyer attached to said mechanism and having a valve therein with ways therethrough at angles to each other, one or more milk-receivers adapted to be suspended on the cows and having teat-cups upwardly projecting therefrom, a milk-receiving pipe or conveyer to all the receivers, and flexible-tube connections between the upper and lower portions of each receiver and the exhaust-conveyer and milk-receiving pipe or conveyer, the said milk-receiver having a gravitating valve operating in relation to its outflow connection and the latter also provided with an air-vent.

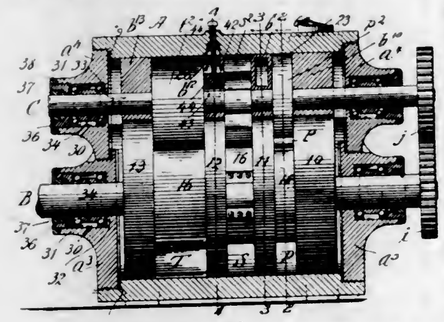
4. A washing mechanism for a milking apparatus and permanently forming a part of the latter, comprising a cylinder having an open rear end and a front closed end, a piston movably mounted in said cylinder, a pipe attached to the closed end of the cylinder supplied with a rotatable valve having a way therethrough covered at one end by a clack-valve opening outward from the rotatable valve, the said pipe being connectible to a water-supply, an exhaust-conveyer also attached to the closed end of the cylinder and having a valve therein provided with ways therethrough in planes at right angles to each other, one of the ways having a clack-valve at one extremity opening outward from said valve, the said exhaust-conveyer being continuous at a distance from the exhausting devices and connected to milking apparatus.

5. A milking apparatus comprising a milk-receiver having upper and lower connections and upstanding teat-cups, the lower connection adjacent the central bottom portion of the receiver having a gravitating valve therein with a stem provided with upper divergent arms and also supplied with an air-vent, and air-exhausting devices.

655,201. ROTARY ENGINE. LESLIE A. COOPER, Springfield, Mass., assignor of one-third to Alvah H. Sabin, New York, N. Y. Filed Oct. 27, 1899. Serial No. 734,902. (No model.)

Claim.—1. In a rotary concentric-piston compound steam-engine, the chambered engine-case having therein a shaft provided with several separated rotary partition-flanges, and therebetween piston-wings extending from the one flange to the other, and a second shaft having the rotary abutments, the lengths of which correspond to the spaces between the rotary partition-flanges, and non-rotary partitions between the rotary abutments, complementary to and arranged edgewise adjacent the rotary partitions, all said rotary partitions and rotary abutments being contained in and peripherally fitting the internal wall of the single engine-case, a steam-inlet passage leading into the steam-chamber comprised between the first two rotary partitions, a discharging-passage for that chamber

leading therefrom and entering a succeeding steam-chamber within the said casing and an exhaust-passage for such latter steam-chamber.



2. In a rotary concentric-piston compound steam-engine, the chambered engine-case having therein a shaft provided with several separated rotary partition-flanges, and therebetween piston-wings extending from the one flange to the other, and a second shaft having the rotary abutments, the lengths of which correspond to the spaces between the rotary partition-flanges, and non-rotary partitions between the rotary abutments, unattached to the engine-casing and free for compensating movements longitudinally of the engine, and arranged edgewise adjacent the rotary partitions, all said rotary partitions and rotary abutments being contained in and peripherally fitting the internal wall of the single engine-case, a steam-inlet passage leading into the steam-chamber comprised between the first two rotary partitions, a discharging-passage for that chamber leading therefrom and entering a succeeding steam-chamber within the said casing and an exhaust-passage for such latter steam-chamber.

3. In a concentric-piston rotary steam-engine, an engine body or casing comprising the partially-cylindrical space a and the adjoining partially-cylindrical space a^2, the one being open to the other and having opposite end heads with journals, parallel longitudinally-ranging shafts journaled in said end heads, and capable of endwise compensating movements therein, the one shaft having separated rotary partition-flanges peripherally fitting the internal wall of said space a, the outer faces of said flanges adjacent the inner sides of the end heads being separated therefrom and the other shaft having a rotary abutment running between two of the rotary partition-flanges, a piston-wing extending between the rotary partitions and constituting a movable wall of the steam-chamber comprised between such flanges, a steam-inlet passage and a steam-outlet passage leading to and from the steam-chamber, for the purposes set forth.

4. In a concentric-piston rotary steam-engine, an engine body or casing comprising the partially-cylindrical space a and the adjoining partially-cylindrical space a^2, the one being open to the other and having opposite end heads with journals, parallel longitudinally-ranging shafts B and C, journaled in said end heads, and capable of axial compensating movements therein, the one shaft having separated rotary partition-flanges peripherally fitting the internal wall of said space a, the outer faces of said flanges adjacent the inner sides of the end heads, being separated therefrom, and the other shaft having a rotary abutment running between two of the rotary partitions, the unattached non-rotary partitions of crescent shape edgewise fitting the peripheries of the rotary partition-flanges, a piston-wing extending between the rotary partitions and constituting a movable wall of the steam-chamber comprised between such flanges, a steam-inlet passage and a steam-outlet passage leading to and from the steam-chamber, for the purposes set forth.

5. In a concentric-piston rotary compound steam-engine, an engine-casing having the spaces a and a^2 extending from end to end, and having a series of steam-inlet ports arranged along one internal portion of said casing and steam-outlet ports arranged along a suitably-distant internal portion of the casing, parallel shafts, one carrying piston-wings and the other abutments, partitions between coöperating pairs of the piston and abutments, which separate the steam-chambers, into and from each of which one of the inlet and outlet ports communicate, and unvalved or ever-open and unobstructed passages leading from the outlet-port of a primary steam-chamber into the inlet-port of a secondary steam-chamber, for the purpose set forth.

6. In a concentric-piston rotary compound steam-engine, an engine-casing having the spaces a and a^2 extending from end to end, and having a series of steam-inlet ports arranged along one internal portion of said casing and steam-outlet ports arranged along a suitably-distant internal portion of the casing, parallel shafts, one carrying piston-wings and the other abutments, partitions between coöperating pairs of the pistons and abutments which separate the steam-chambers, into and from each of which one of the said inlet and one of the said outlet ports communicate, and unvalved or ever-open and unobstructed passages leading from the outlet-port of a primary steam-chamber into the inlet-port of a secondary steam-chamber, the piston-wings revolving in a secondary chamber being set in advance of the piston-wing in the steam-chamber primary thereto, for the purpose set forth.

7. In a compound rotary concentric-piston engine, an engine case or body constructed for and receiving the piston-shaft B having several separated rotary partition-flanges with partition-wings extending from the one flange to another, and the rotary abutment-shaft C having rotary abutments lapping by, and entering the spaces between the rotary partition-flanges wherein are comprised the steam-chambers, an inlet for the first steam-chamber leading thereinto, an outlet-port leading from said steam-chamber and continued in a substantially-spiral direction and terminating in a suitably-opposite port entering the next succeeding steam-chamber.

8. In a compound rotary concentric-piston engine, the engine-case having journal-supported thereby the piston-shaft B and a rotary abutment-shaft C, the first having a plurality of piston-wings and the second respectively coöperating rotary abutments, partitions dividing the spaces in which the piston-wings revolve one from another constituting together with the engine-case separate steam-chambers, means for introducing and exhausting the steam into and from the several chambers successively, and adjustable means for reinforcing the middle portion of the abutment-carrying shaft against being deflected by the steam-pressure transverse thereto.

9. A compound rotary concentric-piston engine, comprising the engine-case and the journal-supported piston-shaft B with rotary piston-wings and the rotary abutment-shaft with the rotary abutments coöperating with said wings, and suitable chamber-dividing transverse partitions, a saddle carrying the rollers in bearing against an intermediate part of the rotary abutment-shaft, and a screw threading through the engine-case and setting against the saddle at the side of the said shaft opposite the steam-chamber in the engine, for the purpose set forth.

10. In a compound rotary engine, comprising shafts having several piston-wings, and coöperating rotary abutments, partitioning means between the pistons and abutments, whereby the separate steam-chambers are comprised within the engine-case that is in common to, and incloses all the rotary pistons and corresponding rotary abutments, a steam-passage leading into the primary steam-chamber, and passages continued from each steam-chamber, to each succeeding steam-chamber whereby the steam is caused to pursue a practically-helical course through the engine for successive expanding actions against the piston-wings in the respective chambers therefor.

11. In a rotary engine, the end heads thereof having centrally-apertured hubs through which the shaft of the engine extends which is provided with the closely-fitting but unattached sleeve cone-formed at both its ends, the series of balls provided to support the inner conical end of the sleeve, a second series of balls and a ball-cup outside thereof provided in the hub-opening on which balls the outer conical end of the sleeve is supported, the annular screw-plug 36 threading into the outer end portion of said apertured hub against said ball-cup, and serving to adjust the same and a locking-nut on the outer end thereof, all whereby endwise expansion of the shaft may be without effect to change the adjusted conditions of the said ball-bearing.

12. An engine-case, having spaces each of the form of a portion of a cylinder and the one along its length open to the other, longitudinally-ranging parallel shafts, piston-wings on one shaft and rotary recessed abutments on the other shaft, stationary partition-sections between the rotary abutments, and in the planes thereof disks concentric with the piston-shaft which divide the chambered engine-case into separate steam-chambers, an inlet-opening entering the primary steam-chamber, and an outlet-passage leading from each steam-chamber into the chamber secondary thereto.

13. In a compound concentric-piston rotary engine, the combination with the engine-casing constructed with the longitudinally-extending spaces a and a^2 each comprising a portion of the cylinder and opening the one to the other, the rotary piston-shaft having the rotary partitions 10, 11, and 12, whereby separated primary and secondary steam-chambers are constituted within said casing, the non-rotary partitions b^{10}, b^{11}, and b^{12} arranged in the planes of and adjoining said rotary partitions, the one b^{11} having the passage 23 therethrough which opens to the opposite edges thereof which are in contact against opposite sides of the wall of said space a^2, the port leading through the engine-casing at one side into the primary chamber, a port formed within the internal wall of the casing at the opposite side of the primary steam-chamber, and continued around and also endwise to connect with the one end of said passage 23, a port formed in the casing in communication with the other end of said passage and continued around, and also endwise, and terminating in the secondary steam-chamber and a steam-discharging opening for said secondary chamber, substantially as described.

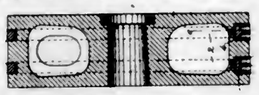
14. In a compound concentric-piston rotary engine, the combination with the engine-casing constructed with the longitudinally-extending spaces a and a^2, each comprising a portion of a cylinder, and opening the one to the other, and provided with the steam-inlet port e and other ports e and f which are continued in passages having a course around and also endwise along within the inner wall of the said space a^2, the rotary piston-shaft having the rotary partitions 10, 11, 12, and 13, fitted within the said space a and the non-rotary crescent-shaped partitions b^{10} and b^{12}, and the non-rotary partitions b^{11} and b^{12} which have the passages 23 and 25 therein which open at the opposite edges thereof, said passages each at its one end matching with the passages continued from said ports e and f, the piston-wings p, s, and t, and the corresponding rotary abutments p^2, s^2, and t^2, and means for rotating them and said casing furthermore having the ports d and d^2 opening at the inner portion of the chamber a^2 covered by the said non-rotary partitions b^{11} and b^{12}, and having communication with the passages therein and having endwise courses and terminating in the second and third steam-chambers, and an exhaust-passage for the third steam-chamber, substantially as described.

15. In a rotary engine, an engine body or casing having partially-cylindrical spaces therein, opening the one to the other, and extending to the end of the casing, and an end closure for the engine-casing comprising a head of circular form fitted at the end of the one partially-cylindrical space, and having a curved recess in its edge, and a cylindrical head fitted at the end portion of the other cylindrical space and also matching in the curved recess of the first-named head.

16. In a rotary engine, the engine body or casing having the partially-cylindrical spaces therein opening the one to the other, and extending to the end of the casing, and an end closure for the engine-casing comprising a head of circular form screw-threading in the end of the one partially-cylindrical space and having a curved threaded recess in its edge, and a circular head, screw-engaged in the threaded end portion of the other cylindrical space, and in the curved and threaded recess of the first-named head, and said parts so constructed as to provide an annular shoulder or seat inside of the marginal face of each of the said closing heads between which seat and the corresponding head an annular packing may be interposed.

655,202. PISTON-PACKING. MILLARD F. COX, Richmond, Va.

Filed Sept. 23, 1899. Serial No. 731,445. (No model.)



Claim.—1. The combination of a piston having a circumferential groove, a movable cylindrical plug slotted so as to form at its outer end two side walls and a central rib, the said plug being adapted to be inserted in a socket in the piston so that when the plug is in place the inner faces of its side walls shall be in alinement with the walls of the circumferential groove in the piston, and a packing-ring occupying the said circumferential groove and having slotted ends adapted to engage the central wall in the plug, and having one of its ends secured to the plug.

2. The combination of a piston having a circumferential groove, a movable cylindrical plug slotted so as to form at its outer end two side walls and a central rib, the said plug being adapted to be inserted in a socket in the piston so that when the plug is in place the inner faces of its side walls shall be in alinement with the walls of the circumferential groove in the piston, and a packing-ring occupying the said circumferential groove and having slotted ends adapted to engage the central wall in the plug.

655,203. TELEGRAPHIC TRANSMITTER AND RECEIVER.

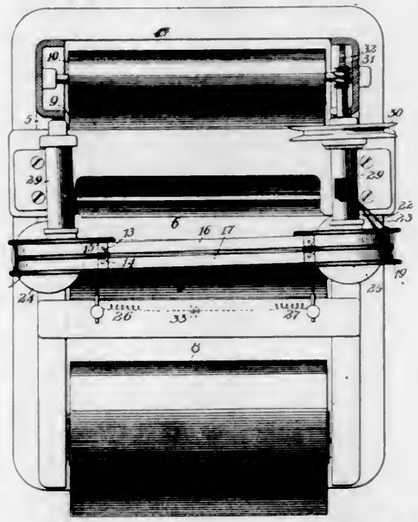
ALBERT C. CREHORE, Hanover, N. H., and GEORGE O. SQUIER, Portress Monroe, Va. Filed June 7, 1899. Serial No. 719,673. (No model.)

Claim.—1. In a telegraphic instrument, the combination with means for moving a message-sheet, of styluses mounted to move obliquely across the path of the sheet the movement of the sheet and the styluses being so timed that each succeeding stylus will strike the paper one line-space behind the preceding stylus, and that the lines made by the styluses will be perpendicular to the edge of the sheet.

2. In a telegraphic instrument, the combination with means for moving a message-sheet, of a stylus or styluses moving across the sheet, and means for protecting the margin of the sheet from the action of the styluses.

3. In a telegraphic instrument, the combination with means for moving a message-sheet, of a conducting-band mounted on pulleys at the sides of the instrument, one or more styluses carried by said band, and means for conveying current to said band and styluses.

4. In a telegraphic instrument, the combination with a message-sheet, of an insulated conducting-surface extending transversely under it, and pairs of styluses connected in the circuit of the instrument and movable across the sheet over said conducting-surface through which the path of the current from one stylus to the other is completed.



5. In a telegraphic instrument, the combination with means for moving a message-sheet, of a pair of conducting-bands insulated from each other, styluses carried by each band, pulleys provided with conducting-surfaces over which the bands pass, and electric brushes or contacts bearing upon projections or extensions of said surfaces for conveying current to the styluses.

6. In a telegraphic instrument, the combination with a prepared message-sheet and mechanism for feeding it, of a continuous conducting-band carrying conducting-styluses in straight lines transversely across the sheet.

7. In a telegraphic instrument, the combination with means for uniformly moving a message-sheet, of a continuous conducting band or bands carrying conducting-styluses adapted to move uniformly across the sheet in straight lines at right angles to the edge of the sheet.

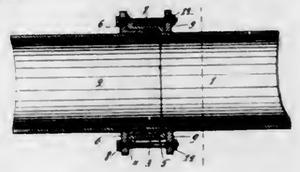
8. In a telegraphic instrument, the combination with a prepared message-sheet, of conducting-styluses carried upon a metallic belt or belts which are caused to revolve in a plane perpendicular to the sheet so as to move the styluses in straight lines transversely across the moving sheet and means for conveying current to said belt or belts.

9. In a telegraphic instrument, the combination with a prepared message-sheet and means for uniformly moving it, of two conducting-bands each insulated from the other, one being connected to the return and the other to the line, carrying styluses adapted to move in straight lines transversely across the sheet.

10. In a telegraphic instrument, the combination with a chemically-prepared message-sheet, means for uniformly moving the sheet, of a pair of steel bands insulated from each other, the one connected to the line and the other to the return, and means for moving the bands in a plane perpendicular to the sheet so that the styluses carried by the bands move uniformly in straight lines across the sheet.

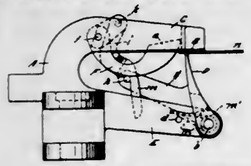
11. In a telegraphic instrument, the combination with a prepared message-sheet and means for moving the same, of conducting-bands carrying four sets of conducting-styluses equally distributed around the band and adapted to be carried in straight lines transversely across the moving sheet and means for conveying current to said bands.

655,204. PIPE-COUPLING. GEORGE R. CUSHMAN and WILLIAM F. CUSHMAN, Kansas City, Mo. Filed Dec. 26, 1899. Serial No. 741,611. (No model.)



Claim.—In a pipe-coupling, the combination of the flanged shoulder 3 on the faucet portion of the pipe, a gland 6 between said shoulder and the spigot portion of the adjacent pipe, said gland having an annular flange; a divisible ring 9 mounted on said faucet portion and abutting against said shoulder, projecting lugs 10 on said ring, projecting lugs 7 on the flange of said gland, bolts 8 passing through said lugs and connecting said flange with said ring, and a packing-ring 5, substantially as described.

655,205. CLIP FOR TENTERING-MACHINES. FREDERICK L. DANA, Providence, R. I., assignor to the Thomas Phillips Company, same place. Filed May 26, 1900. Serial No. 18,064. (No model.)



Claim.—1. A clip or clamp for a tentering-machine comprising an upper stationary jaw, a lower pivoted jaw, a spring tending to move said lower jaw about its pivot and force the same against the upper jaw, a pivoted guard for engaging the fabric, an arm extending rearwardly from the pivoted jaw and provided with a shoulder, a thrust-arm pivoted to the guard adjacent to its pivot and resting upon said shoulder.

2. A clip or clamp for a tentering-machine comprising a U-shaped frame, a plate secured to the upper arms of said frame, a jaw D, pivoted to the lower arms of said frame, an arm *g* extending rearwardly from said jaw, a pin *h* in said arm, a guard F pivoted to the upper arms of said frame, an arm *i* pivoted to said guard near its pivot and having its lower end engaging said pin *h*, and a guide *m* extending down from the end of said arm i.

655,206. TRUSS-PAD. AUSTIN J. DAVIDSON, Douglas City, Cal. Filed Mar. 3, 1900. Serial No. 7,845. (No model.)



Claim.—1. The combination with a hollow annular truss-pad having a central opening extending therethrough, of a cup-shaped holder having a central imperforate knob or boss which fits the central opening in the pad, substantially as described.

2. The combination with a truss-pad having a central opening therethrough, of a cup-shaped holder therefor having a central opening, and a hollow inwardly-projecting knob or boss extending across the opening in the holder and adapted to engage the central opening of the pad, substantially as described.

3. The combination with an open-center truss-pad, of a cup-shaped holder therefor having a central opening, headed studs arranged in a circle around said opening, and a strap provided with a terminal hook to engage said opening, the hook having a slot to receive one of the studs, substantially as described.

4. The combination with a hollow annular truss-pad having a central opening extending therethrough, of a cup-shaped holder, a plate at the back thereof provided with a central unobstructed opening, and studs disposed in a circle around said opening, in the plate, substantially as and for the purpose specified.

5. The combination with a hollow annular truss-pad having a central opening extending therethrough, of a cup-shaped holder having a hollow central boss extending across said opening in the holder and fitting the opening in the pad, and a centrally-apertured plate at the back of the holder forming an inwardly-extending annular flange, the inner edge of which is left free and unobstructed, substantially as specified.

6. A holder for truss-pads comprising a cup-shaped body having an annular groove forming a depressed seat for the pad, a hollow boss extending across the space encircled by the seat, and a plate fastened to the back of the holder and provided with an unobstructed opening and forming an inwardly-extending flange the edge of which is left free, substantially as and for the purpose described.

655,207. COMBINATION COBBLER AND BENT-WOOD ROLL CHAIR-SEAT. FRED A. DENNETT, Sheboygan, Wis., assignor to the Wisconsin Chair Company, Port Washington, Wis. Filed Jan. 4, 1900. Serial No. 314. (No model.)



Claim.—1. In a seat for chairs in which the surface of the seat is formed of veneer provided with an opening for a bottom, a chair-bottom, and a supporting-frame for said veneer and said bottom provided with grooves adjacent to two sides thereof.

2. In a seat for chairs, a frame portion supporting a chair-bottom, side braces secured to said frame portion, grooves in the frame portion adjacent to the side braces and a veneer covering for the frame.

3. In a seat for chairs a frame portion supporting a cobbler-bottom, side braces secured to said frame portion, grooves in the frame adjacent to the side braces and a veneer covering for the frame bent over in front to form a combination roll and cobbler seat.

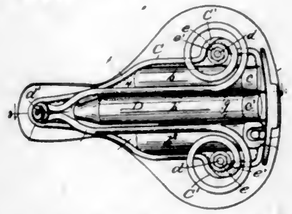
655,208. TAR ESTER OF FATTY ACIDS AND PROCESS OF MAKING SAME. HEINRICH L. DIEHL, Darmstadt, Germany, assignor to Dr. F. von Heyden Nachfolger, Radebeul, Germany. Filed Sept. 19, 1893. Serial No. 485,871. (Specimens.)

Claim.—1. The herein-described process of producing non-caustic esters of high molecular weight, insoluble in water and soluble in alcohol, ether and benzin, which consists in reacting upon fatty acids with beech-wood tar in the presence of a condensing agent.

2. As a new article of manufacture, a non-caustic fatty acid ester of beech-wood tar, insoluble in water and soluble in alcohol, benzin and ether.

3. As a new article of manufacture, a non-caustic fatty acid ester of guaiacol, insoluble in water and soluble in alcohol, benzin and ether.

655,209. COMBINED BICYCLE-SADDLE AND TOOL-CARRIER. RICHARD J. DOOLEY, Chicago, Ill. Filed Oct. 19, 1899. Serial No. 734,064. (No model.)



Claim.—1. A combined bicycle-saddle and tool-carrier, comprising the saddle having a catch or opening, a tool carrier or receptacle secured to the lower portion of the saddle, and a door pivotally secured below the saddle to close the carrier, and having means to engage the catch on the saddle, substantially as described.

2. The combination with the saddle having at its rear portion a catch or opening, of a tool carrier or receptacle secured to the lower portion of the saddle and having its rear end open, a door pivotally secured below the saddle to close the carrier, and a lock mounted on the door and having means to engage the catch on the saddle, substantially as described.

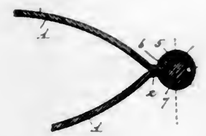
3. The combination with a frame having bends and a loop to receive the bolts of the saddle-spring, in order to secure it to the saddle, of a tool-carrier secured to said frame, and a door pivotally secured below the saddle to close the carrier, substantially as described.

4. The combination with a tool-carrier adapted and having means to secure it to the lower surface of a bicycle-saddle, and having one of its ends open, of a door pivotally secured below the saddle, to close said open end of the carrier, substantially as described.

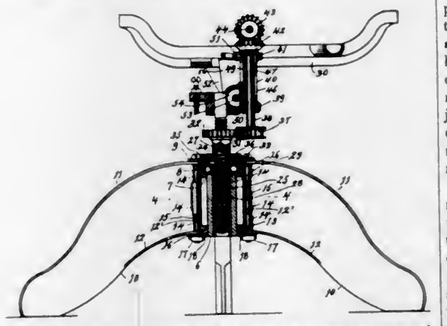
655,210. ELLIPTIC SPRING. CHARLES I. DUPONT, Plaquemine, La. Filed Mar. 22, 1900. Serial No. 9,713. (No model.)

Claim.—An elliptic spring comprising leaves, the extremities of which are reversely curled or rolled to form half-sleeves which bear against each other at their point of junction with the leaves proper, a cylindrical and headless split ferrule removably fitted upon the half-sleeves and coextensive therewith, a headed bolt passing through the half-sleeves, and a retaining-nut thereon, the bolt-head and nut bearing against the open ends of the ferrule and half-sleeves, substantially as described.

655,210.



655,211. REVOLVING CHAIR. JOHN ELLENBECKER, Port Washington, Wis. Filed Jan. 19, 1900. Serial No. 1,970. (No model.)



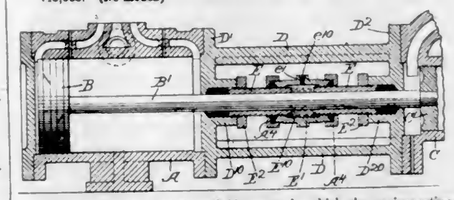
Claim.—1. The combination of a nub having an enlarged upper end forming an interior shoulder below said upper end, a loose sleeve in the hub, said sleeve having a smooth bore, and said sleeve having at its upper end a flange, said flanged upper end terminating below the upper end of the hub, antifriction-balls confined between the flange of the sleeve and the interior shoulder of the hub, a screw-threaded spindle extending into the smooth bore of the sleeve, means for locking the sleeve and spindle together, but allowing vertical movement of the latter, a nut on the screw-threaded spindle and supported by the flange at the upper end of the sleeve, and means for holding said nut against vertical movement on the spindle.

2. The combination, of a hub, a loose sleeve in the hub and having a smooth bore, a screw-threaded spindle extending into the smooth bore of the sleeve, means for locking the sleeve and spindle together, but allowing vertical movement of the latter, a nut on the screw-threaded spindle and supported by the sleeve, said nut formed or provided with a rigid toothed wheel, another toothed wheel engaging the toothed wheel of the nut, means for rotating said other toothed wheel, and means for holding the nut against vertical movement on the spindle.

3. The combination, of a hub, a loose sleeve in the hub and having a smooth bore, a screw-threaded spindle extending into the smooth bore of the sleeve, means for locking the sleeve and spindle together, but allowing vertical movement of the latter, a nut on the screw-threaded spindle and supported by the sleeve, said nut formed or provided with a rigid toothed wheel, shafts or spindles telescopically or slidingly fitted together so as to be extensible, but adapted to be rotated together, one of said shafts or spindles carrying a toothed wheel engaging the toothed wheel of the nut, and the other of said shafts or spindles carrying a gear-wheel, another shaft carrying a gear-wheel in mesh with the first-referred-to gear-wheel, means for turning said shaft, and means for holding the nut against vertical movement on the spindle.

4. The combination, of a hub, a spindle fitting therein, said spindle provided at its upper end with a cross-head having upwardly-extending arms therefrom, the said arms having eyes therethrough, a nut on the spindle, said nut provided with a toothed wheel, a spider, said spider provided with downwardly-extending arms having eyes therethrough registering with the eyes of the upwardly-extending arms, a yoke, the side arms thereof having connecting cross-bars formed with bearings, and said side arms of the yoke also provided with eyes registering with the eyes of the arms of the spider and with the eyes of the upwardly-extending arms, a pivot-pin passing through the registering eyes, shafts or spindles journaled in the respective bearings and telescopically or slidingly fitted each to the other and revolubly connected together, a toothed wheel carried by one of said shafts and meshing with the toothed wheel of the nut, a gear-wheel carried by the other shaft, and another shaft journaled in the side arms of the yoke and carrying a gear-wheel meshing with the other gear-wheel.

655,212. LUBRICATOR AND PISTON-ROD PACKING. WILLIAM E. ERB, Chicago, Ill. Original application filed Dec. 10, 1897, Serial No. 661,422. Divided and this application filed Apr. 19, 1899. Serial No. 713,685. (No model.)



Claim.—1. In a pressure-fluid motor, in which the reciprocating piston of the motor operates a reciprocating piston in a chamber where the work is done; closed connection between the motor-piston chamber and the secondary chamber, comprising stuffing-boxes on the proximate heads of such chambers respectively, each such stuffing-box consisting of one part rigid with the head of the chamber, and another part movable with respect thereto to compress the packing; a sleeve which rigidly and adjustably connects said movable parts, means by which the movable part of each stuffing-box is at all positions to which it may be adjusted with respect to the fixed member, positively stopped against longitudinal movement toward said fixed member.

2. In a pressure-fluid motor in which the reciprocating piston of the motor operates a reciprocating piston in a secondary chamber where the work is done; a closed connection between the motor piston-chamber and the secondary chamber comprising stuffing-boxes on the proximate heads of said chambers respectively, such stuffing-box consisting of the part rigid with respect to the chamber-head and a second part movable with respect to the first to compress the packing; adjustable stops on one of said parts to limit the compressing movement, and a coupling-sleeve connecting said two movable parts encompassing the piston-rod and forming an oil-chamber around the latter between the stuffing-boxes.

3. In a pressure-fluid motor, in which the reciprocating piston of the motor operates a reciprocating piston in a secondary chamber where the work is done; a closed connection between the motor piston-chamber and the secondary chamber, comprising stuffing-boxes on the proximate heads of such chambers respectively, and a right and left threaded coupling-sleeve connecting the movable parts of such stuffing-boxes respectively and encompassing the piston-rod between them and forming an oil-reservoir around them; and means by which the movable part of each such stuffing-box is, at all positions to which it may be adjusted with respect to the fixed member, positively stopped against longitudinal movement toward said members.

4. In a pressure-fluid motor in which the reciprocating piston operates; a reciprocating piston in a secondary chamber where the work is done; a closed connection between the motor piston-chamber and the secondary chamber consisting of stuffing-boxes on the proximate heads of said chambers; sleeves intruded into the stuffing-boxes respectively; a coupling which is screwed onto their proximate ends, and constitutes a closed connection between them and means by which the sleeves, at all positions to which they may be adjusted with respect to the boxes, are positively stopped against further intrusion into their boxes respectively.

5. In a pressure-fluid motor, in which the reciprocating piston of the motor operates a reciprocating piston in a secondary chamber where the work is done; a closed connection between the motor piston-chamber and the secondary chamber, comprising stuffing-boxes on the proximate heads of such chamber; the sleeves, E E intruded into such stuffing-boxes respectively, and oppositely threaded; a right and left interiorly-threaded coupling, E', screwed onto the proximate ends of said sleeves and comprising an oil-chamber between the intruded ends of the sleeves; and adjustable stops on such sleeves into the boxes respectively; whereby both sleeves are positively stopped against longitudinal movement in both directions at all positions to which they may be adjusted with respect to their boxes.

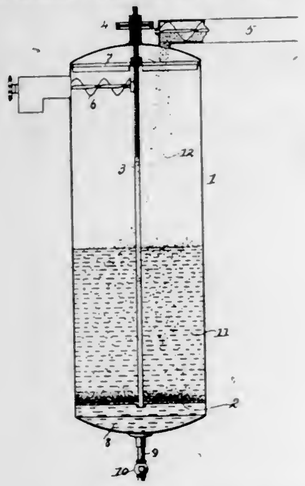
655,213. PROCESS OF EXTRACTING OIL. CLEM ERISMAN, Decatur, Ill., assignor to Frank M. Pratt, same place. Filed Apr. 25, 1900. Serial No. 14,228. (No specimens.)

Claim.—1. The process of extracting oil from substances containing it, which process consists in supplying the substance to be treated to the upper surface of a body of a solvent in a scattered condition and permitting it to settle unobstructedly therethrough.

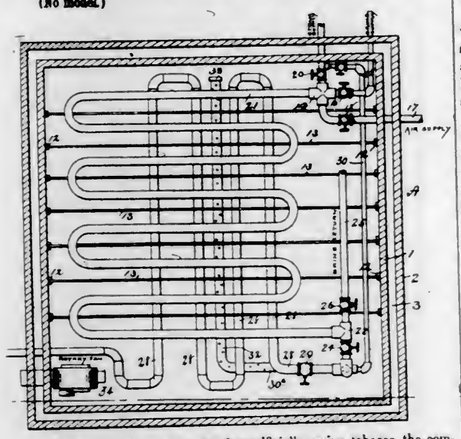
2. The process of extracting oil from substances containing it, which process consists in dribbling the substance to be treated onto a body of a solvent and permitting it to settle vertically therethrough.

3. The process of extracting oil from substances containing it, which process consists in finely separating the particles of the substance to be

treated, supplying such material gradually to the upper surface of a body of a solvent and permitting it to settle vertically therethrough.



655,214. APPARATUS FOR CURING TOBACCO ARTIFICIALLY. DAVID J. ETLY, Louisville, Ky. Filed Aug. 16, 1899. Serial No. 727,391. (No model.)



Claim.—1. In an apparatus for artificially curing tobacco, the combination with an apartment for the tobacco, of devices for simultaneously spraying the tobacco and maintaining the temperature of the apartment at a low degree, said devices including a steam-spray pipe discharging into the apartment and a refrigerant-pipe located in the apartment and independent of said spray-pipe, substantially as described.

2. In a means for artificially curing tobacco, the combination of an air-tight apartment for the tobacco, a spray-pipe in said apartment, pipes for the circulation of heating and refrigerating agents through said apartment, and means for supplying spraying, heating and refrigerating agents to said pipes.

3. In a means for artificially curing tobacco, the combination with an air-tight apartment having racks from which to suspend the tobacco-leaves, of a spraying-pipe, pipes for the circulation of heating and refrigerating agents, all of said pipes being located in said apartment, and means for supplying spraying, heating and refrigerating agents to said pipes.

4. In an apparatus for curing tobacco artificially, the combination of a receptacle for containing the tobacco undergoing treatment, and means for circulating heating and refrigerating agents within said receptacle and for spraying the tobacco in said receptacle, substantially as described, whereby the tobacco is sprayed, refrigerated and heated in the one receptacle, as specified.

5. In an apparatus for artificially curing tobacco, the combination with an apartment for the tobacco to be treated, of a valved pipe leading from a source of chilled-brine supply, a valved pipe leading from a source of steam-supply, and a pipe in the apartment having communication with both of the previously-mentioned pipes and common both to chilled brine and steam, as and for the purposes specified.

6. In an apparatus for artificially curing tobacco, the combination with an apartment for the tobacco to be treated, of a valved pipe for the supply of a refrigerating agent, a valved pipe for the supply of steam, means for circulating steam and the refrigerating agent through the apartment, and a spray-pipe having a valve-controlled communication with the steam-supply pipe.

7. In an apparatus for artificially curing tobacco, the combination with an apartment for the tobacco to be treated, of a valved pipe for the supply of a refrigerating agent, a valved pipe for the supply of steam, a pipe in the apartment having communication with both of said supply-pipes and common to both the steam and the refrigerating agent, and a spray-pipe in said apartment, having a valve-controlled pipe for supplying it with steam from the steam-supply pipe.

8. In an apparatus for artificially curing tobacco, the combination with an apartment for the tobacco to be treated, of an upper and a lower coil in said apartment, a down-pipe connecting said coils together, a valve for controlling communication of the upper coil with the lower coil, a valve for controlling communication of the lower coil with the down-pipe, a valved spray-pipe connected with said down-pipe, a valved pipe for refrigerant, discharging into the upper coil, a valved pipe for a heating agent also discharging into said upper coil, and a valved pipe for the spraying agent, connecting the latter supply-pipe with the down-pipe, substantially as described and for the purposes set forth.

9. In an apparatus for artificially curing tobacco, the combination with an apartment for the tobacco to be treated, of a valved pipe for the supply of chilled brine, a valved pipe for the supply of a brine-expelling agent, a valved pipe for the supply of a heating agent, and a pipe in said apartment having communication with the several supply-pipes and common to the several agents supplied thereby.

10. In an apparatus for artificially curing tobacco, the combination with an apartment for the tobacco to be treated, of a valved pipe for the supply of chilled brine, a valved pipe for the supply of a brine-expelling agent, a valved pipe for the supply of steam, a pipe in said apartment having communication with all of said supply-pipes, and a spray-pipe in said apartment having valved communication with the steam-supply pipe.

11. In an apparatus for artificially curing tobacco, the combination with an apartment for the tobacco to be treated, of means for circulating a heating agent and chilled brine through said apartment, said means including a pipe in the apartment through which the heating agent and chilled brine both flow, and means for expelling the brine from said pipe in advance of the supply of the heating agent thereto.

12. In an apparatus for artificially curing tobacco, the combination with an apartment for the tobacco to be treated, of means for successively spraying, refrigerating and heating the tobacco in said receptacle, said means including a steam-supply pipe, and a spray-pipe and a heating-pipe both having valve-controlled communication with said steam-supply pipe, substantially as described.

13. In an apparatus for artificially curing tobacco, the combination with an apartment for the tobacco to be treated, of a valved pipe for the supply of a refrigerant, a valved pipe for the supply of steam, a coil in the apartment having communication with both of said supply-pipes and common to both the refrigerating and heating agents, and a spray-pipe in the apartment having a valved connection with said steam-supply pipe independent of said coil, substantially as described and for the purposes set forth.

14. In an apparatus for artificially curing tobacco, the combination with an apartment for the tobacco to be treated, of a four-way coupling, a pipe for chilled brine, a pipe for steam and a pipe for a brine-expelling fluid all entering said coupling, said pipes having valves, a coil arranged in said apartment and leading from said coupling, a three-way coupling to which said coil leads, a valved brine-return pipe leading from said three-way coupling, a valved, down-pipe also extending from said three-way coupling, a valved steam-coil communicating with said down-pipe, a valved spray-pipe likewise communicating with said down-pipe, and a valved pipe connecting the steam-supply pipe with said down-pipe, substantially as described and for the purposes set forth.

15. In an apparatus for artificially curing tobacco, the combination with an apartment for the tobacco to be treated, of a pipe in said apartment, means for successively delivering to said pipe chilled brine for refrigerating the tobacco, a brine-expelling fluid, and steam for heating the tobacco, and a steam-spray pipe also located in said apartment.

16. In an apparatus for artificially curing tobacco, the combination with an air-tight apartment having racks from which to suspend the tobacco, and means for successively heating and refrigerating said apartment, said means including a steam-supply pipe and a pipe in the apartment through which steam for heating purposes flows, of a spray-pipe having a valved connection with said steam-supply pipe.

17. In an apparatus for artificially curing tobacco, the combination with an air-tight apartment having racks from which to suspend the tobacco, of a pipe in said apartment, means for successively delivering steam and a refrigerant to said pipe, and a steam-spray pipe having an independent connection with the steam-supply pipe, whereby the refrigerant and the spray may be used at once.

18. In an apparatus for artificially curing tobacco, the combination with an air-tight apartment having racks from which to suspend the tobacco, of a pipe in said apartment, means for successively delivering to said pipe chilled brine for refrigerating the tobacco, a brine-expelling fluid, and steam for heating the tobacco, and a steam-spray pipe also located in the apartment and having a separate valved connection with the steam-supply pipe, substantially as described and for the purposes set forth.

19. In an apparatus for artificially curing tobacco, the combination with an apartment for the tobacco to be treated, and a spray-pipe discharging into said apartment, of pipes in said apartment, having communication with sources of steam and chilled-brine supply and serving to circulate steam and chilled brine through the apartment, substantially as described and for the purposes set forth.

20. In an apparatus for artificially curing tobacco, the combination with an air-tight apartment for the tobacco to be treated, of means for successively spraying, refrigerating and heating and drying the tobacco in said apartment, and means for creating air-currents in said apartment to expel gases and odors therefrom, substantially as described.

21. In an apparatus for artificially curing tobacco, the combination with an apartment for the tobacco to be treated, a valved pipe leading from a source of chilled-brine supply and a valved pipe leading from a source of steam-supply, of a brine and steam circulating pipe in the apartment having communication with both of said supply-pipes, a valved pipe leading from a source of compressed-air supply and having communication with said pipe in the apartment, and a valved pipe opening into said apartment and having communication with said compressed-air-supply pipe, for discharging compressed air directly into the apartment, substantially as described and for the purposes set forth.

22. The herein-described apartment for containing tobacco to be cured artificially, said apartment having double walls with an insulating-space between said walls, and a door for said apartment consisting of a plurality of layers of material arranged to form within the interior of the door a space for magnesia and a space for dead air, and a layer of magnesia in the first-mentioned space, combined with means for spraying, heating and refrigerating the contents of said apartment.

655,215. ARTIFICIAL COMPOSITE FUEL. MARY C. FITTS and ELLA K. ZINGG, Salamanca, N. Y. Filed Jan. 15, 1900. Serial No. 1,528. (No specimens.)

Claim.—A novel composite fuel, consisting of coal particles, petroleum, resin and alkali in a quantity insufficient for the complete saturation of the acids, represented by the resin.

655,216. SWITCH FOR SUSPENDED ELECTRIC CONDUCTORS. JOHN FLOYD, Washington, D. C. Filed Dec. 8, 1899. Serial No. 739,666. (No model.)



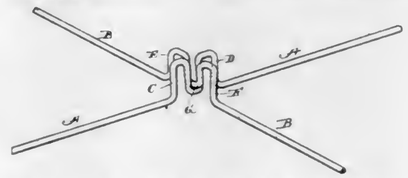
Claim.—1. A switch for electric conductors, comprising a single piece of wire, having arms extending integral therewith, of the wire bent upwardly in a loop, the arms having a twist in the center of the loop and extending obliquely, substantially as shown and described.

2. A switch for electric conductors, comprising a single piece of wire formed substantially in the shape of a Y, said wire bent upwardly in a curve similar to that of a balloon, its ends being bent oblique with respect to the stem of the Y, of a twist in the center of the curve, substantially as shown and described.

3. A switch for electric conductors, comprising a single piece of wire, having arms extending integral therewith and flaring obliquely therefrom, a portion of the wire and arms bent upwardly in a loop, and having a twist in the center of said loop, substantially as shown and described.

4. A switch for electric conductors, comprising a single piece of wire, bent upwardly and provided with integral arms flaring obliquely therefrom, each arm forming a loop, substantially as shown and for the purpose set forth.

655,217. CROSSING FOR SUSPENDED ELECTRIC CONDUCTORS. JOHN FLOYD, Washington, D. C. Filed Dec. 8, 1899. Serial No. 739,694. (No model.)

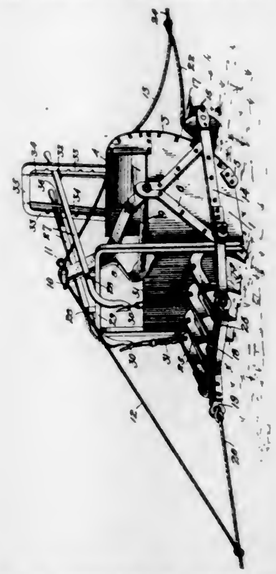


Claim.—1. In a crossing, two suspended electric conductors, each being bent in a double arch at the point of interception, the inner portion of the said arches forming a lug, substantially as shown and described.

2. In a crossing for suspended electric conductors, the combination of the two main conductors each being bent in an inverted double U, the inner sides of the inverted U forming a lug, substantially as shown and described.

3. In a crossing for suspended electric conductors, the combination of the two wires, each having a double arch formed therein at the point of interception, the relation of the double arches being such to each other that their inner sides or portions form a lug, substantially as shown and for the purpose set forth.

655,218. STEAM-EXCAVATOR. DE WILTON R. FRENCH, Westport, Wash. Filed Dec. 14, 1899. Serial No. 740,321. (No model.)



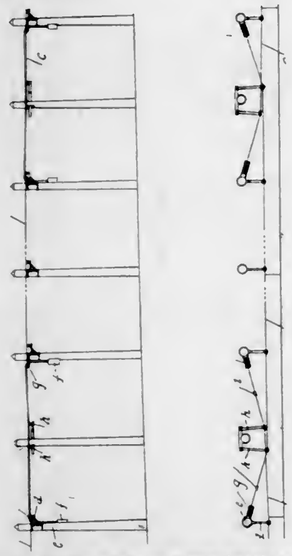
Claim.—1. The combination with the dredge-body provided with a shear; of a gang of plows pivotally connected with the dredge-body in advance of the shear, and a discharger pivoted within said body, substantially as and for the purpose set forth.

2. The combination with the dredge-body provided with a shear; of a gang of plows pivoted to the dredge-body in advance of the shear, a pivoted lever, a connection between one end of the lever and the plows, and a rack-bar for engaging the opposite end of the lever for holding it in adjustment, substantially as and for the purpose set forth.

3. The combination with the dredge-body provided with a shear; of a discharger pivoted within said body and provided with lever-arms, forward haul-lines, the rear end of one connected to the lever-arms of the discharger, and the rear end of the other connected to the dredge-body, the forward ends of said lines being connected to a forward haul-cable, whereby when the dredge is drawn forward, the discharger will be held

in the rear portion of the dredge, and return haul-lines, the forward end of one being connected to the lever-arms aforesaid, and the forward end of the other connected to the dredge-body, the rear ends of said lines being connected to a return haul-cable, whereby when strain is released from the forward haul-cable and strain exerted upon the rearward haul-cable, the discharger will be operated to discharge the dirt from the dredge and the dredge be returned to its point of starting, substantially as and for the purpose set forth.

655,219. **SYSTEM OF ELECTRICAL DISTRIBUTION.** EMMERICH E. PRIESCHUTH, Berlin, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Oct. 2, 1899. Serial No. 732,350. (No model.)



Claim.—1. The combination with a conducting-wire, of a swinging supporting means therefor, and a weight attached to one end of the wire, substantially as described.

2. The combination with a conducting-wire, of swinging supporting means therefor, and weights attached to the ends of the wire, substantially as described.

3. The combination with a conducting-wire, of a swinging supporting means therefor, a pulley adjacent to one end of the wire over which said wire is passed, and a weight attached to the said end, substantially as described.

4. The combination with a movable conducting trolley-wire, of a weight therefor, and a short-circuiting contact engaged by the wire when moved an abnormal distance, substantially as described.

5. The combination with a movable conducting trolley-wire, means for movably maintaining it in position and a short-circuiting contact engaged by the wire when moved an abnormal distance, substantially as described.

6. The combination with a conducting-wire, of a movable support therefor, a weight attached to one end of the wire, and a short-circuiting contact adapted for electrical connection with said wire through the agency of said movable support when moved an abnormal distance, substantially as described.

7. The combination with a conducting-wire, of a swinging support therefor, and a short-circuiting contact adapted for electrical connection with said wire through the agency of said swinging support when moved an abnormal distance, substantially as described.

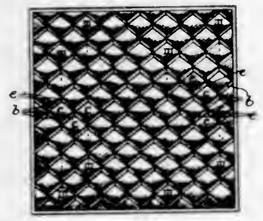
8. The combination with a conducting-wire, of a swinging support therefor carrying a portion having electrical connection with said wire, and a short-circuiting contact adapted for electrical connection with said portion when said support is moved an abnormal distance, substantially as described.

9. The combination with a conductor formed in a plurality of sections, of weights attached to said sections, the said sections overlapping at their contiguous ends, and short-circuiting contacts engaged by the sections of wire when moved abnormally, substantially as described.

10. The combination with a conductor formed in a plurality of sections, said conductors overlapping at their contiguous ends, of pulleys over which ends of the conductor-sections pass, supports movable longitudinally of the conductor for supporting said sections, and short-circuiting contacts engaged by the sections of wire when moved abnormally, substantially as described.

11. The combination with a conductor formed in a plurality of sections, said conductors overlapping at their contiguous ends, of pulleys over which ends of the conductor-sections pass, supports movable longitudinally of the conductor for supporting said sections, and swinging supports for supporting said sections, substantially as described.

655,220. **GLASS PRISM-PLATE.** GODFREY FUGMAN, Cleveland, Ohio. Filed May 3, 1900. Serial No. 15,313. (No model.)



Claim.—1. A prism-plate of the character indicated, having its inner side provided with a plurality of prismatic lugs that have each a main sloping refracting-surface that faces inwardly and is arranged obliquely to the plane of the body portion of the plate, which surface is widest at its central portion and gradually reduced in width toward its upper and lower extremities.

2. A prism-plate of the character indicated, having its inner side provided with a plurality of lugs that have each a main sloping surface that faces inwardly and is arranged obliquely to the plane of the body portion of the plate, which surface is widest at its central portion and reduced in width toward its thicker and thinner extremities, and two shoulders or edges formed upon opposite sides, respectively, of the thicker portion of the lug.

3. A prism-plate of the character indicated, having its inner side provided with a plurality of prismatic lugs that have each a main sloping surface that faces inwardly and is arranged obliquely to the plane of the body portion of the plate, which surface is widest at its central portion and gradually reduced in width toward its upper and lower extremities, and two shoulders or edges formed upon opposite sides, respectively, of the thicker portion of the lug and extending and diverging from the thicker extremity of the lug toward the central portion of the lug.

4. A prism-plate of the character indicated, having its inner side provided with a plurality of prismatic lugs having each a diamond-shaped or lozenge-shaped refracting-surface facing inwardly and arranged obliquely to the plane of the body portion of the plate and arranged with two corners thereof forming opposite side extremities, respectively, of the surface and with the remaining two corners thereof forming the upper extremity and lower extremity, respectively, of the said surface.

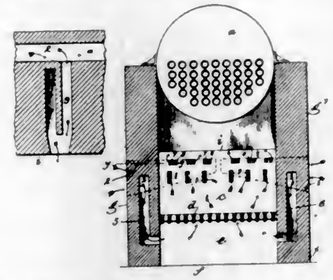
5. A prism-plate of the character indicated, having its inner side provided with rows of prismatic lugs that are each provided with inwardly-facing refracting-surfaces arranged obliquely to the plane of the body portion of the plate and widest at the central portion.

6. A prism-plate of the character indicated, having its inner side provided with rows of prismatic lugs having lozenge-shaped or diamond-shaped refracting-surfaces c facing inwardly and arranged obliquely to the plane of the body portion of the plate.

655,221. **SMOKE-CONSUMING DEVICE FOR FURNACES.** GEORGE S. GALLAGHER, New York, N. Y., assignor to Zilliah B. Gallagher, Emma G. Gallagher, and Harry F. Gallagher, same place. Filed Oct. 25, 1899. Serial No. 734,896. (No model.)

Claim.—1. The combination in a furnace with the grate-bars and a bridge-wall, of flues for the draft or currents of air under force, extending longitudinally through the bridge-wall, and short flues transversely in the bridge-wall, and connecting therewith, and acting to draw the smoke off the surface of the fire and commingle the same with the said currents of air, and eject the same into the combustion-chamber over the fire to be consumed, substantially in the manner and for the purposes set forth.

2. The combination in a furnace with the grate-bar and the bridge-wall, of entrance-flues for the draft or currents of air under force, a series of double or return flues connected and placed horizontally in said bridge-wall, flues for the draft acting in conjunction with the said series of return-flues as ejectors, whereby the smoke is drawn off the fire through the said series of double flues and commingled with the currents of air is forced over the fire into the combustion-chamber to be consumed, substantially in the manner and for the purposes set forth.

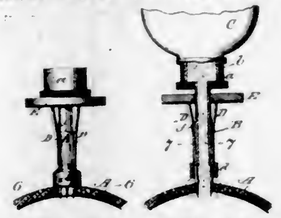


3. In a furnace, the combination with the grate-bar and the bridge-wall, of entrance-flues 2 3 from opposite sides through the said bridge-wall, a series of parallel double or return flues 7 8 connected at their inner ends, air-flues 9 parallel with the flues 7 and connecting at one end with the entrance-flues 2 3 and at the other end forming a common exit-opening with the flues 7, substantially as and for the purposes set forth.

4. In a furnace, the combination with the grate-bar and the bridge-wall, of entrance-flues 2 3 from opposite sides through the said bridge-wall, a series of parallel double or return flues 7 8 connected at their inner ends, air-flues 9 parallel with the flues 7 and connecting at one end with the entrance-flues 2 3 and at the other end forming a common exit-opening with the flues 7, and the branch flues 5 6 through the side walls of the furnace and opening beneath the grate-bars, substantially as and for the purposes set forth.

5. In a furnace, the combination with the grate-bar and the bridge-wall, of entrance-flues 2 3 from opposite sides through the said bridge-wall, a series of parallel double or return flues 7 8 connected at their inner ends, air-flues 9 parallel with the flues 7 and connecting at one end with the entrance-flues 2 3 and at the other end forming a common exit-opening with the flues 7, and a hollow arch *k* having air-openings 10 extending across the combustion-chamber forward of the bridge-wall, substantially as set forth.

655,222. **TOOL FOR REPAIRING RUBBER FABRICS.** CYRUS P. GIFFORD, Erie, Pa. Filed Jan. 10, 1900. Serial No. 957. (No model.)

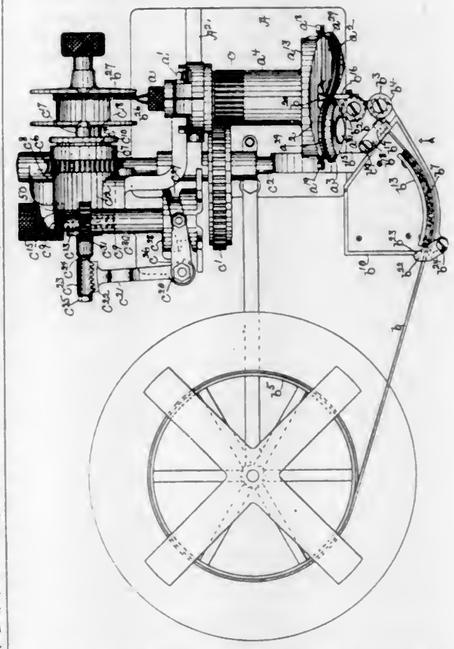


Claim.—1. A tool or device for repairing rubber or other fabrics, consisting of a discharge-tube provided at its upper end with a suitable cement or other liquid forcing device, and at or near its lower end having a plurality of perforations or holes, and a suitable plunger-head and a plurality of pointed rods or needles connecting therewith and extending into and through the perforations or holes whereby the rods or needles are contracted or expanded by the movement of the plunger, substantially as and for the purpose set forth.

2. A tool or device for repairing rubber or other fabrics, consisting of a discharge-tube, having grooved guides upon its outer periphery, a plurality of needles or rods adapted to move in the guides, a plunger-head to which the needles or rods are connected, and a suitable cement or other liquid forcing apparatus connecting with the tube, substantially as and for the purpose specified.

3. A tool or device for repairing rubber or other fabric, consisting of a discharge-tube, a cement or other liquid forcing apparatus connecting therewith, guide-grooves upon the outer periphery of the tube, said tube having a cup-shaped lower end with perforations therein, and a plurality of needles or rods extending through the perforations and engaging the guide-grooves, and a suitable plunger-head connecting the upper ends of the needles or rods, substantially as and for the purpose set forth.

655,223. **MACHINE FOR FORMING SCREW-THREADED WIRE.** GEORGE GODDU, Winchester, Mass., assignor to the United Shoe Machinery Company, of New Jersey. Filed Aug. 17, 1898. Serial No. 688,770. (No model.)



Claim.—1. In a machine of the class described, the combination of the following instrumentalities, viz: threading disks or rolls to act on the wire and form the threads thereon, a rotatable carrier for said threading disks or rolls, and means to cause the wire on its passage to the threading-rolls to move in a path at an angle to the path in which the wire is moved while under the action of the said threading-rolls, substantially as described.

2. In a machine of the class described, the combination of the following instrumentalities, viz: rotatable threading disks or rolls to act on the wire and form the threads thereon, and a wire deflecting or bending device to act on the unthreaded wire and cause the same on its movement toward the threading disks or rolls to travel in a path at an angle to the path in which the said wire is moved while under the action of the threading rolls or disks, whereby the said wire is held from twisting under the action of the threading rolls or disks and may be presented to the action of said rolls or disks in its normal condition, substantially as described.

3. In a machine of the class described, the combination with a threading disk or roll of substantially-large diameter having a substantially-narrow periphery provided with a plurality of annular projections and with a smooth portion forming a bearing for the unthreaded wire, of a coöperating threading disk or roll of substantially-large diameter having a substantially-narrow periphery provided with a plurality of annular projections in excess of the annular projections on the first-mentioned disk or roll, one of the annular projections on the second-mentioned roll coöperating with the smooth portion of the other roll, substantially as described.

4. In a machine of the class described, the combination of the following instrumentalities, viz: threading disks or rolls, a carrier for said disks or rolls comprising an outer cylinder or sleeve, an inner cylinder or sleeve secured to the outer cylinder but separated therefrom to form an oil well or chamber, and a head attached to said outer cylinder and having converging surfaces provided with a transverse slot; sliding blocks in said slot provided with oppositely-inclined faces corresponding to the converging surfaces of said head; studs or pins secured to the inclined surfaces of said sliding blocks and upon which said threading-disks are mounted; and antifriction-bearings for said disks, substantially as described.

5. In a machine of the class described, the combination of the following instrumentalities, viz: threading rolls or disks to act on the wire and form the threads thereon, a rotatable carrier for said threading rolls or disks, a reel for the unthreaded wire, and a deflecting or bending de-

vice interposed between said reel and said threading rolls or disks, substantially as and for the purpose specified.

6. In a machine of the class described, the combination of the following instrumentalities, viz: threading rolls or disks to act on the wire and form the threads thereon, a rotatable carrier for said threading rolls or disks, a reel for the unthreaded wire, a deflecting or bending device interposed between said reel and threading rolls or disks, and an oiler for the unthreaded wire interposed between said deflecting device and said reel, substantially as described.

7. In a machine of the class described, the combination of the following instrumentalities, viz: threading rolls or disks to act on the wire and form the threads thereon, a rotatable carrier for said threading-rolls, and means to deflect or bend the wire on its passage to the threading-rolls, comprising loosely-mounted wheels or rolls arranged substantially in line with each other, substantially as described.

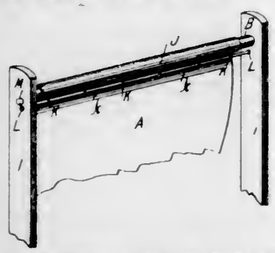
8. In a machine of the class described, the combination of the following instrumentalities, viz: rotatable threading disks or rolls to act on the wire and form the threads thereon, a wire deflecting or bending device to act on the unthreaded wire and cause the same on its movement toward the threading disks or rolls to travel in a path at an angle to the path in which the said wire is moved while under the action of the threading rolls or disks, and an oiling device for the unthreaded wire with which said wire makes contact previous to its meeting the deflecting or bending device, substantially as described.

9. In a machine of the class described, threading disks or rolls, supports for said rolls provided with oppositely-inclined faces, disks secured to said oppositely-inclined faces, studs or pins projecting beyond said disks and on which said rolls are loosely mounted, a cap or head on said studs or pins, and antifriction-bearings for the said threading-rolls interposed between said studs and said threading-rolls, and between the threading-rolls and the disks secured to the inclined faces, and between the cap or head on the studs or pins and said threading-rolls, substantially as described.

10. In a machine of the class described, the combination of the following instrumentalities, viz: mechanism to act on wire and form threads thereon, and means to cause the wire on its passage to the threading mechanism to move in a path at an angle to the path in which the wire is moved while under the action of the threading mechanism, substantially as described.

11. In a machine of the class described, the combination of the following instrumentalities, viz: mechanism to act on the wire and form threads thereon, and means to bend the wire before its presentation to the threading mechanism.

655,224. CHAIR. ALFRED C. GREENE, Southport, England. Filed Dec. 13, 1899. Serial No. 740,752. (No model.)



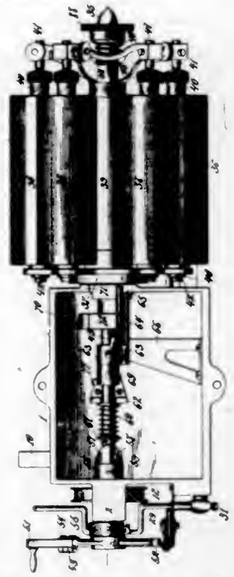
Claim.—1. The combination with a chair having cross-rungs and a fabric engaging said rungs, of eyelets J let into the ends of the fabric; hooks K fixed to the cross-rungs; and a rod adapted to pass through the hooks, substantially as described.

2. The combination with a chair having cross-rungs and a fabric engaging said rungs, of eyelets J let into the ends of the fabric; hooks K fixed to the cross-rungs; a rod G adapted to pass through the hooks and through the side bars of the chair; and means for preventing endwise movement of the rod.

3. In a chair, the combination of the side bars or members I; a rung B extending across between the same; means carried by said rung for engaging the chair fabric; and a bar secured beneath said rung B, adapted and arranged to act in conjunction with said means carried by the rungs.

655,225. MAGAZINE-PHONOGRAPH. GEORGE V. GRESS, Atlanta, Ga. Filed Apr. 12, 1898. Serial No. 677,391. (No model.)

Claim.—1. In a multiplex-cylinder phonograph, the combination with the longitudinally-movable and rotatable reel carrying the cylinders, of a cylinder-shifting means comprising two shafts, devices for locking one of said shafts against rotation until it has moved endwise a predetermined distance, devices carried by the latter shaft for engaging the reel, and means connecting the contiguous ends of said shafts and coacting with said locking devices in translating rotary motion of the one shaft into successive longitudinal and rotary motion of the other shaft, substantially as shown and described.



2. A cylinder-shifting means for multiplex-cylinder phonographs containing a first and a second shaft mounted end to end, a clutch having one member mounted on the first shaft and its other member mounted on the second shaft, said clutch having cam-surfaces, and a device coacting with said clutch in translating turning movement of the one shaft into successive endwise and turning movement of the other shaft.

3. A cylinder-shifting means for multiplex-cylinder phonographs, comprising a handle-shaft, a second shaft, a clutch one member of which is mounted upon the handle-shaft and the other member upon said second shaft, said clutch having cam-surfaces, a spring pressing said members toward each other, and a non-rotating lock for the second shaft, freed by an endwise movement thereof.

4. A cylinder-shifting means for multiplex-cylinder phonographs, comprising a cylinder-carrying reel having locking-holes in one head, a locking device engaged with and freed from the reel by endwise movement of the reel, a handle-shaft, a second shaft adapted to connect the handle-shaft and reel by an endwise movement of said second shaft, a clutch connecting said handle-shaft and second shaft and having cam-surfaces, and a non-rotating lock for the second shaft freed by an endwise movement of said shaft.

5. A cylinder-shifting means for multiplex-cylinder phonographs, comprising a cylinder-carrying reel having locking-holes in one head, a locking device engaged with and freed from the reel by an endwise movement of said reel, a handle-shaft, a second shaft adapted to connect the handle-shaft and reel by an endwise movement of the second shaft, a clutch connecting said handle-shaft and second shaft and having cam-surfaces, a non-rotating lock for the second shaft freed by the endwise movement of the latter, and stops limiting the oscillations of the second shaft.

6. A cylinder-shifting means for multiplex-cylinder phonographs, comprising a cylinder-carrying reel having holes in one head, a locking device engaged with and freed from the reel by endwise movement of said reel, a handle-shaft, a second shaft adapted to connect the handle-shaft and reel by endwise movement of said second shaft, a clutch connecting said shafts and having cam-surfaces, a lug movable with the second shaft, and a spring-arm engaging said lug and preventing rotation until cleared by the endwise movement of the second shaft.

7. A cylinder-shifting means for multiplex-cylinder phonographs, comprising a cylinder-carrying reel having holes in one head, a locking device engaged with and freed from the reel by endwise movement of the reel, a handle-shaft, a second shaft adapted to connect the handle-shaft and reel by endwise movement of the second shaft, a clutch connecting

said shafts and having cam-surfaces, a lug movable with said second shaft, a spring-arm engaging the same and preventing rotation until cleared by the endwise movement of the second shaft, and stops limiting the oscillations of the second shaft.

8. A cylinder-shifting means for multiplex-cylinder phonographs, comprising a cylinder-carrying reel, having locking-holes in one head, a locking device engaged with and freed from the reel by endwise movement of said reel, a handle-shaft, a second shaft adapted to connect the handle-shaft and reel by endwise movement of said second shaft, a clutch connecting the contiguous ends of said shafts, said clutch having cam-surfaces, a spring for returning said second shaft, and a non-rotating lock for said second shaft freed by endwise movement thereof.

9. A cylinder-shifting means for multiplex-cylinder phonographs, comprising a cylinder-carrying reel having locking-holes in one head, a locking device engaged with and freed from the reel by endwise movement of the latter, a handle-shaft, a second shaft adapted to connect the handle-shaft and reel by its endwise movement, a clutch connecting the contiguous ends of said shafts and having cam-surfaces, a spring for returning the second shaft, a non-rotating lock for the second shaft, freed by the endwise movement thereof, and stops limiting the oscillation of the second shaft.

10. A cylinder-shifting means for multiplex-cylinder phonographs, comprising a cylinder-carrying reel having locking-holes in one head, a locking device engaged with and freed from the reel by endwise movement of the latter, a handle-shaft, a second shaft adapted to connect the handle-shaft and reel by endwise movement of the second shaft, a clutch connecting the contiguous ends of said shafts and having cam-surfaces, a lug movable with the second shaft, a spring engaging said lug and preventing rotation of the second shaft until cleared by the endwise movement thereof, and a spring for returning said second shaft.

11. A cylinder-shifting means for multiplex-cylinder phonographs, comprising a cylinder-carrying reel having locking-holes in one head, a locking device engaged with and freed from the reel by endwise movement of the reel, a handle-shaft, a second shaft adapted to connect the handle-shaft and reel by endwise movement of the second shaft, a clutch connecting the contiguous ends of said shafts and having cam-surfaces, a pin fixed in the machine-base, and a device movable with the second shaft and engaged by said pin to prevent oscillation of the second shaft.

12. A cylinder-shifting mechanism for multiplex-cylinder phonographs, comprising a handle-shaft, a second shaft, interlocking jaw-clutches formed to provide end-faced cams, one part mounted on the handle-shaft and the other part upon the second shaft, said second shaft having a longitudinal reciprocating and oscillating movement, and locking devices for the second shaft preventing its oscillation except at the ends of its longitudinal reciprocations.

13. A cylinder-shifting means for multiplex-cylinder phonographs, comprising a longitudinally-movable and rotative reel carrying the cylinders, a shaft mounted to move endwise and to turn, means for imparting successive endwise and oscillatory movement to said shaft, and a device connecting said shaft with the reel for transmitting the motion of the former to the latter.

14. A cylinder-shifting means for multiplex-cylinder phonographs, comprising a longitudinally-movable and rotative reel carrying the cylinders, a shaft mounted to move endwise and to turn, means for imparting successive endwise and oscillatory motion to said shaft, and a device connected with and disconnected from said reel by the reciprocatory movement of said shaft and serving when engaged with the reel to turn the same in one direction.

15. A cylinder-shifting means for multiplex-cylinder phonographs comprising a cylinder-carrying reel having holes in one head, a shaft mounted to move endwise and to turn, means for imparting successive endwise and oscillatory motion to said shaft, an arm attached to said shaft, a pin projecting from said arm and designed to be inserted in said holes and withdrawn therefrom by the endwise motion of said shaft.

16. In a multiplex-cylinder phonograph, the combination with the base, and the cylinder-carrying reel having two series of holes in one head, of a pin projecting from the base and designed to engage the holes of one series, a shaft, means for causing said shaft both to reciprocate and to oscillate at each end of its reciprocations, and a pin carried by said shaft and inserted into and withdrawn from the holes of the second series by the reciprocations of said shaft.

17. In a multiplex-cylinder phonograph, the combination with the cylinder-carrying reel, of a shaft, a lug movable therewith, a spring-arm having a ledge to engage said lug, a pin projecting from the machine-base, a device carried by the shaft to engage said pin, means coacting with said arm and lug and with the pin and said device for causing said shaft to reciprocate and to oscillate at the ends of its reciprocations, and means for connecting said shaft with said reel.

18. In a multiplex-cylinder phonograph, the combination with the cylinder-carrying reel having holes in one head, of a shaft, a relatively-fixed spring-arm and pin adjacent to said shaft, devices movable with the shaft to be engaged by the spring-arm and pin respectively so as to lock said shaft against oscillation but permit it to reciprocate, said locking devices being disengaged by endwise movement of said shaft, and means, coacting with said locking devices for reciprocating said shaft, said means also serving to oscillate the shaft at the ends of its reciprocations, and a pin carried by said shaft and inserted into and withdrawn from said holes by the endwise movement of said shaft.

19. The combination with a guided sleeve, having a nut-carrying arm at one end and a diaphragm-arm at its other end, both of said arms projecting forward from the sleeve, the nut-section on one arm, and the feed-shaft engaged thereby, of the cylinder-shifting mechanism, having a shaft, an eccentric fixed on said shaft, a rod engaging said arms and operating when turned to simultaneously elevate both of the same, and a handle projecting from said rod and engaging said eccentric.

20. The combination with a reel, a shaft having a handle, a second shaft located between said handle-shaft and reel and having means to engage the reel, and means for translating rotary motion of the handle-shaft into successive endwise and rotary motion of the second shaft, of an eccentric on said handle-shaft, the feed-shaft, the connected arms carrying the feed-nut and diaphragm-support, respectively, a rod engaging said arms and elevating the same simultaneously, and a handle for said rod, engaging said eccentric.

21. A reel, a shaft, having a segment provided with a handle for turning said shaft, a means operated by said shaft to move the reel endwise and turn it, the feed-shaft, the connected arms carrying the nut-section and diaphragm-support, respectively, means operated by the first-mentioned shaft for elevating said connected arms simultaneously with the movement of the reel, and a connection between said segment and the arms for drawing the latter to the starting-place when elevated.

22. The feed-shaft, connected arms carrying the shaft-engaging device and diaphragm-support, respectively, a reel, a shaft having a handle, means operated by the handle-shaft for shifting the reel, an eccentric fixed on said handle-shaft, a U-shaped pivoted support for said connected arms, and a rod connected with said support and engaging said eccentric.

23. In a multiplex-cylinder phonograph, the combination with the feed-shaft, and the connected arms carrying the shaft-engaging device and diaphragm-support, respectively, of the cylinder-shifting mechanism, embodying a handle-shaft, an eccentric mounted on said shaft, a segment also mounted on said shaft, a rod engaging said connected arms, an elevating-handle for said rod, engaging said eccentric, and means connecting said segment with one of said arms.

24. The feed-shaft, connected arms carrying the shaft-engaging device and diaphragm-support, respectively, one of said arms having a shoulder, and an elevating means for said arms, consisting of a pivoted device which when raised will engage said shoulder and hold the arms elevated, and a handle projecting from said device by which it may be elevated.

25. In a multiplex-cylinder phonograph, the combination with the cylinder-carrying reel and its shifting mechanism, said shifting mechanism having a handle-shaft by which it is operated, of the feed-shaft, the connected arms carrying the shaft-engaging device and diaphragm-support, respectively, one of said arms having a shoulder, and a pivoted elevating device for said arms, said device being arranged to engage said shoulder and hold the arms elevated an arm projecting from said device and having a free end in position to be lifted by hand, and an eccentric engaging the latter arm for lifting it automatically during the shifting of the cylinders.

26. In a phonograph, the combination with the feed-shaft, and an arm projecting forwardly over the same, of a spring-arm secured at one end to said arm, a half-nut secured to the free end of said spring-arm, and an adjusting-screw for said spring-arm, threaded through the first-mentioned arm, substantially as described.

27. In a phonograph, the combination with the feed-shaft, and an arm projecting forwardly over the same, of a spring-arm secured at one end to the first-mentioned arm by a screw, a half-nut adjustably secured to said spring-arm, and an adjusting-screw threaded through said first-mentioned arm and extending through an elongated slot in said spring-arm.

28. In a multiplex-cylinder phonograph, the combination with the base and the axial bar or rod supported at one end by said base, of the cylinder-carrying reel rotatably and slidably mounted on said bar and removable therefrom, and the removable cap on the end of said bar, substantially as described and for the purposes specified.

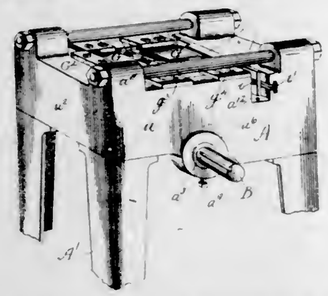
29. In a multiplex-cylinder phonograph, the combination with the base, of an axial bar or rod projecting therefrom, said bar having L-shaped channels or recesses in its end, a rotatable and slidable cylinder-carrying reel removably mounted on said bar, and a removable cap for the end of said bar having pins to engage the channel therein.

30. In a multiplex-cylinder phonograph, the combination with the base, and the axial bar or rod supported at one end by said base, of the

cylinder-carrying reel rotatably and slidably mounted on said bar and removable therefrom, a coiled spring on the free end of said bar, engaging said reel, and a removable cap on the end of said bar engaged by the outer end of said spring.

31. In a multiplex-cylinder phonograph, the combination with the base, the axial bar supported near one end by said base and having an opening in its inner end, and the rotatable and slidable cylinder-carrying reel mounted on said bar, of a shaft projecting at one end into said opening, a handle-shaft having an opening to receive the other end of the first-mentioned shaft, devices for translating oscillatory motion of the handle-shaft into successive endwise and oscillatory motion of the first-mentioned shaft, and devices connecting said first-mentioned shaft with the reel.

655,226. SWAGING-MACHINE. JOHN B. HALIFAX, Chicago, Ill., assignor to the Geo. L. Thompson Manufacturing Company, of Illinois. Filed Mar. 7, 1898. Serial No. 672,936. (No model.)



Claim.—1. In a swaging-machine, the combination of a bed-frame having an approximately-rectangular opening and inward-extending supporting-flanges on its side members below its upper face, an abutment-block set in said opening and abutting against the rear wall or member of the frame, means for locking said abutment-block to said wall or rear member, a die-block resting slidingly on the flanges on the side members of the frame and lying within the opening in the frame, removable plates secured to the bed-frame and confining the blocks in place in the opening therein, dies carried respectively by the die-block and the front member of the bed-frame, a toggle located between and pivotally connected to the adjacent faces of the abutment and die block respectively, a depending pitman connected to the toggle, and means supported below the blocks for operating the pitman, substantially as set forth.

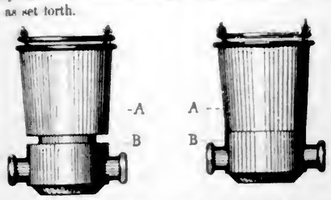
2. In a swaging-machine, a frame or bed having an approximately-rectangular opening and inward-extending supporting-flanges on its rear and side members, below its upper face, an abutment-block having its rear edge resting on the flange on the rear member of the frame and provided with a dovetail or undercut portion, flanges a^{10} and g^3 engaging this undercut part and locking it to said rear member, the upper one of the flanges being carried by a removable plate G^2 secured to the upper side of the rear member of the frame, a die-block resting slidingly on the flanges on the side members, removable plates confining the die-block on said flanges, dies carried respectively by the die-block and the front member of the bed, a toggle located between and pivotally connected to the adjacent faces of the abutment-block and die-block, a depending pitman connected to the toggle, and means connected to the pitman for intermittingly operating it, substantially as set forth.

3. In a machine for swaging or the like, the combination of a frame, a rotating shaft, an eccentric upon said shaft, a bushing fitted loosely on said eccentric and being free to rotate thereon, an eccentric-strap inclosing the bushing, said strap being free to rotate relatively to the eccentric and bushing and being provided at its ends with annular flanges which cover the ends of the bushing and terminate short of the shaft carrying the eccentric, a pitman connected to said eccentric-strap.

4. In a mechanism for swaging rods of metal, the combination of a frame, cooperating dies open at both ends, means for reciprocating one of the dies at an angle to the longitudinal axis of the cavity formed by the dies, and a gage, comprising a bar or rod extending into the cavity between the dies from the end opposite the feed end thereof, and means for endwisely adjusting this bar into and out of the die-cavity, substantially as set forth.

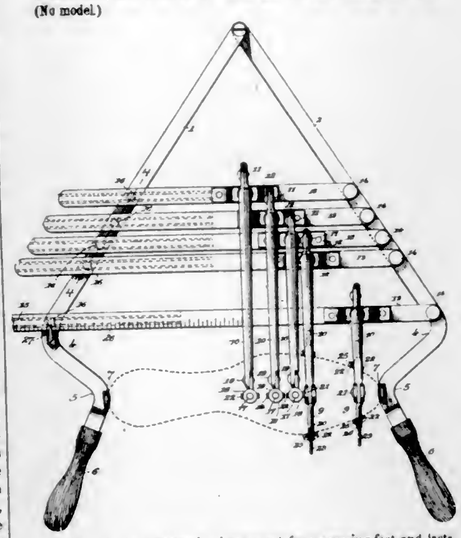
655,227. GLUE-HEATER. FRANK N. HASTINGS, Meriden, Conn. Filed July 24, 1899. Serial No. 724,994. (No model.)

Claim.—1. The combination, in a steam-heater, adapted to be used with an inner vessel of a circular outer case having a bottom of smaller diameter and flattened on two opposite sides, and of a hollow steam chamber or base, having a semi-annular central cavity and oppositely-disposed segmentally-recessed chambers leading outwardly from said cavity, all substantially as set forth.



2. The combination, in a steam-heater, adapted to be used with an inner vessel, of a circular outer case, having its lower end of lesser diameter than its body, and flattened on two opposite sides, and of an annular base, cored for the passage of a current of steam, having a semi-annular central cavity and two oppositely-disposed segmentally-recessed chambers leading outwardly from the central cavity; a series of projections forming a part of and depending downwardly from the lower end of the outer case, and a corresponding series of holes extending through the bottom of the cavity or depressed central portion of the steam-base, all substantially as described and for the purpose set forth.

655,228. MEASURING INSTRUMENT FOR LASTS, &c. CHAS. B. HATFIELD, New York, N. Y. Filed Mar. 7, 1900. Serial No. 7,645. (No model.)



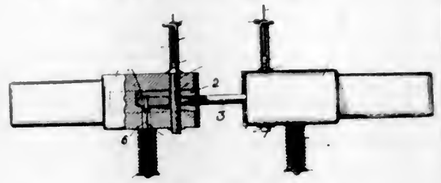
Claim.—1. In a measuring instrument for measuring feet and lasts, the combination with means for obtaining longitudinal measurements, of an indicator for locating a point of circumferential measurement, and means controlled by the operation of the instrument in obtaining longitudinal measurements for positioning the indicator to locate a point of circumferential measurement, substantially as described.

2. In a measuring instrument for measuring feet and lasts, the combination with means for obtaining longitudinal measurements, of a group of indicators for locating points of circumferential measurements, and means controlled by the operation of the instrument in obtaining longitudinal measurements for relatively positioning the indicators to locate the points of circumferential measurements, substantially as described.

3. In a measuring instrument for measuring lasts and feet, the combination with contact-points arranged to move toward and from each other to engage the heel and toe of a foot or last in obtaining longitudinal measurements, of indicators for locating points of circumferential measurements and means for differentially moving the indicators when the contact-points are moved, substantially as described.

4. In a measuring instrument for measuring feet and lasts, the combination with a pair of pivoted levers carrying contact-points to engage the toe and heel of a foot or last, of a series of bars pivoted to one lever and engaging guiding devices on the opposite lever, and a series of indicators for locating points of circumferential measurements carried by said bars, substantially as described.

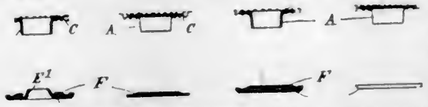
655,229. CAR-COUPLING. DAVID HAWKINS, Bertram, Tex. Filed Apr. 11, 1899. Serial No. 712,619. (No model.)



Claim.—1. A car-coupler, comprising a draw-head having a cavity formed on one side of the same, a link located within the said cavity, and having a solid portion, a pin passing through the draw-head, and through said link, a chain having its upper end attached to the solid portion of said link, and passing through an opening formed in the draw-head, a washer fixed to the lower end of said chain, a coiled spring encircling said chain, and interposed between the lower surface of the draw-head and washer, the opposite side of said coupler also being provided with alining slots, a standard forming a guide secured to the upper surface of the draw-head above the forward end of the slot formed in the upper wall thereof, a coupling-pin passing through said slots, a cross-pin secured to the said coupling-pin, the opposite ends of which are received by said guide, and a chain or rope attached to the upper end of said coupling-pin, for elevating the latter, as and for the purpose described.

2. A car-coupler, comprising a suitable draw-head, a link yieldingly secured at one side of the same, a cavity formed in the opposite side of said draw-head, and having alining slots formed in the upper and lower walls thereof, a guide secured to the upper surface of the draw-head, and composed of two U-shaped bars separated a suitable distance apart, a coil formed in the upper or medial portion of one of said bars, and arranged in a substantially-horizontal position, the upper medial portion of the other bar being also bent in a substantially-horizontal position, a coupling-pin normally located within the slots formed in the draw-dead, a cross-pin carried by the said coupling-pin, the free ends of which are normally located between the bars which form the guide, and a rope or chain attached to the upper end of the coupling-pin, and passing through the coil formed in one of said bars, as and for the purpose described.

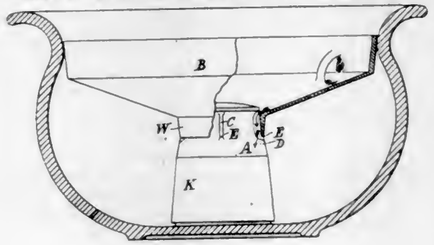
655,230. SAFETY-FASTENER FOR ENVELOPS. THOMAS HAWKINS, London, England. Filed May 8, 1899. Serial No. 715,996. (No model.)



Claim.—1. A safety-fastener consisting of a hollow rivet or eyelet fastened to one of the flaps or folds of an envelop and an anvil-plate with raised center secured to the opposite flap or fold at the point where they meet when folded down said anvil-plate carrying an annular disk or washer surrounding said raised center substantially as described and as shown by the accompanying drawings.

2. A safety-fastener consisting of a hollow rivet or eyelet fastened to one of the flaps or folds of an envelop and the combination of an anvil-plate, a spreader, and an annular disk or washer, said combination being secured to the opposite flap or fold at the point where they meet when folded down substantially as described and as shown by the accompanying drawings.

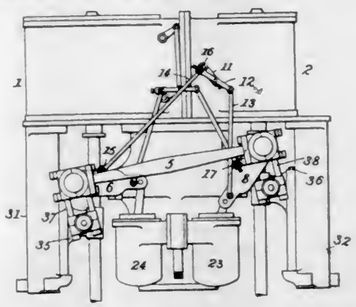
655,231. CHAMBER-POT, &c. THOMAS HAWKINS, London, England. Filed Nov. 17, 1899. Serial No. 737,303. (No model.)



Claim.—1. For use in a chamber-pot or like vessel, the combination of a post adapted to be rigidly fixed therein and a removable funnel resting upon said post and separable therefrom, such post having radial wings and intervening gaps, whereby the liquid may be conducted away from the funnel into the vessel down the outer surface of the post, the whole substantially as described.

2. For use in a chamber-pot or like vessel, the combination with a removable funnel of a supporting-post, a partially-hollow block or core within the upper part of said post, a screwed nut fixed within the mouth of said block or core, a screwed stem working therein, said stem and not being revoluble in relation to each other, and a suction-disk carried upon said screwed stem, the whole substantially as described.

655,232. PUMPING-ENGINE. CHARLES L. HEISLER, Erie, Pa. Filed Oct. 22, 1897. Serial No. 656,047. (No model.)



Claim.—1. The combination with a pair of steam-cylinders and their reciprocating piston-rods, of a compensating mechanism comprising a pair of rocker-arms each having a fixed pivotal support, connections between said rocker-arms and their respective piston-rods, and a floating link connecting the free ends of said rocker-arms, said compensating mechanism being constructed and arranged to limit the movement of either piston-rod while the other piston-rod is moving freely at or near its mid-stroke, for the purpose set forth.

2. The combination with a pair of steam-cylinders and their reciprocating piston-rods, of a compensating mechanism comprising a pair of rocker-arms each mounted upon a fixed pivotal support, links connecting said rocker-arms with their respective piston-rods, and a floating link connecting the free ends of said rocker-arms, said compensating mechanism being constructed and arranged to limit the movement of either piston-rod while the other piston-rod is moving freely at or near its mid-stroke, for the purpose set forth.

3. The combination with a pair of steam-cylinders and their reciprocating piston-rods, of a compensating mechanism comprising a pair of rocker-arms each mounted upon a fixed pivotal support, connections between said rocker-arms and their respective piston-rods, and a floating link connecting the free ends of said rocker-arms, the said rocker-arms and floating link being so proportioned, and the pivotal points of the rocker-arms so located, that when either rocker-arm and the floating link are in a common plane which is at right angles to their planes of movement the remaining rocker-arm will be out of said plane, for the purpose set forth.

4. The combination with a pair of steam-cylinders and their reciprocating piston-rods, of a compensating mechanism comprising two rocker-arms, connections between said rocker-arms and the piston-rods and a floating link connecting the two rocker-arms, the said compensating mechanism being constructed and arranged in such manner that one of said piston-rods is aided through a greater proportion of its stroke than the other, for the purpose set forth.

5. The combination with a pair of steam-cylinders and their reciprocating piston-rods, and a compensating mechanism comprising a pair of rocker-arms each mounted upon a fixed pivotal support, connections between said rocker-arms and their respective piston-rods, and a floating link connecting the free ends of said rocker-arms, of suitable counterweights secured to the said rocker-arms, said compensating mechanism being constructed and arranged to limit the movement of either piston-rod while the other piston-rod is moving freely at or near its mid-stroke, for the purpose set forth.

6. The combination with a pair of steam-cylinders and their reciprocating piston-rods, and a compensating mechanism comprising a pair of rocker-arms each mounted upon a fixed pivotal support, connections between said rocker-arms and their respective piston-rods, and a floating link connecting the free ends of said rocker-arms, of air-pumpe connected

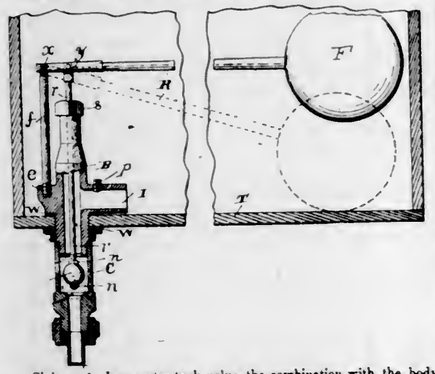
with and operated by the rocker-arms, said compensating mechanism being constructed and arranged to limit the movement of either piston-rod while the other piston-rod is moving freely at or near its mid-stroke, for the purpose set forth.

7. The combination with a pair of steam-cylinders and their reciprocating piston-rods, and a compensating mechanism comprising a pair of rocker-arms each mounted upon a fixed pivotal support, connections between said rocker-arms and their respective piston-rods, and a floating link connecting the free ends of said rocker-arms, of cross-heads 35, 36, secured to the piston-rods, said compensating mechanism being constructed and arranged to limit the movement of either piston-rod while the other piston-rod is moving freely at or near its mid-stroke, for the purpose set forth.

8. The combination with a pair of steam-cylinders and their reciprocating piston-rods, and a compensating mechanism comprising a pair of rocker-arms each mounted upon a fixed pivotal support, connections between said rocker-arms and their respective piston-rods, and a floating link connecting the free ends of said rocker-arms, of a member connected to and movable with the valve of one of said cylinders, an oscillating beam mounted on said member, and rods connecting said beam and two moving parts of the engine, for the purpose set forth.

9. The combination with a pair of steam-cylinders and their reciprocating piston-rods, and a compensating mechanism comprising a pair of rocker-arms each mounted upon a fixed pivotal support, connections between said rocker-arms and their respective piston-rods, and a floating link connecting the free ends of said rocker-arms, of a condenser arranged between the piston-rods and engine-cylinders, the pivotal supports for the rocker-arms being formed on or connected to the said condenser.

655,233. WATER-CLOSET VALVE. HENRY T. C. HEUCK, Champaign, Ill. Filed Mar. 14, 1900. Serial No. 8,824. (No model.)



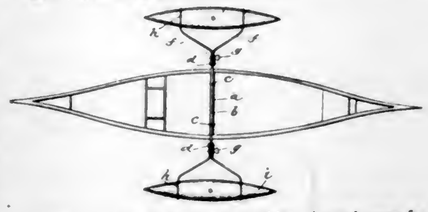
Claim.—1. In a water-tank valve, the combination with the body passing through the bottom of the tank and having a valve-seat at its lower end, means for making a water-tight connection between the body and tank, a coupling below the latter connecting the body with the service-pipe, and a valve-seat within the coupling; of a valve adapted to close against either seat, a float and float-rod, pivotal connections between the latter and the valve, a fulcrum-pivot for the rod, and means for supporting said pivot at either side of said connections as desired, substantially as set forth.

2. In a water-tank valve, the combination with the body passing through the bottom of the tank and having a valve-seat at its lower end, means for making a water-tight connection between the body and tank, a coupling below the latter connecting the body with the service-pipe, and a valve-seat within the coupling; of a valve adapted to close against either seat, a float and float-rod, pivotal connections between the latter and the valve, a fulcrum-pivot for the rod, an ear on said body opposite the inlet-pipe, threaded sockets in the ear and pipe, and a plug and fulcrum-rod interchangeably seated in these sockets with the rod supporting the fulcrum-pivot, substantially as set forth.

3. In a water-tank valve, the combination with the body passing through the bottom of the tank and having a valve-seat at its lower end, means for making a water-tight connection between the body and tank, a coupling below the latter connecting the body with the service-pipe, and a valve-seat within the coupling; of a valve adapted to close against either seat, a float and float-rod, pivotal connections between the latter and the valve, a fulcrum-pivot for the rod, an ear on said body opposite the inlet-pipe, sockets in the ear and pipe, and a plug and fulcrum-rod interchangeably seated in said sockets, the fulcrum-rod being in two members pivotally connected with each other and the uppermost supporting the fulcrum-pivot, all as and for the purpose set forth.

4. In a water-tank valve, the combination with the body passing through the bottom of the tank and having two opposing valve-seats near its lower end, and means for making a water-tight connection between the body and tank; of a valve adapted to close against either seat, a float and float-rod, pivotal connections between the latter and the valve, a fulcrum-pivot for the rod, sockets on said body at opposite sides thereof, and a plug and fulcrum-rod interchangeably seated in said sockets, the fulcrum-rod being in two members pivotally connected with each other and the uppermost supporting the fulcrum-pivot, all as and for the purpose set forth.

655,234. BOAT ATTACHMENT. RANDOLPH M. HOWE and LEWIS A. LEAVITT, Old Town, Me.; said Howe assignor to said Leavitt. Filed Mar. 7, 1900. Serial No. 7,717. (No model.)



Claim.—1. A boat attachment comprising a bar and means for attaching it transversely to a boat, said bar being provided at each end with a ball, a pair of float-supporting arms pivotally attached to each ball, the inner ends of these arms being formed into sockets adapted to engage the ball and the outer ends of the arms being spread apart laterally and provided with rings vertically arranged, and a float carried by each pair of rings.

2. A boat attachment, comprising an endwise-extensible bar, means for fastening said bar transversely of a boat, a float-supporting device attached to each end of said bar, and a float carried by each device at its outer end.

3. In combination with a boat, a pair of outward-extending arms projecting from each side of the boat and carrying rings at their outer ends, and inflatable floats supported in said rings, and secured therein by their inflation.

4. A boat attachment comprising an outward-extending float-carrying device, a pair of vertical rings at the outer end of said float-carrying device, means for securing the inner end of said float-carrying device to the boat, and an inflatable float supported in said rings and held therein by its expansion.

5. A boat attachment, comprising a bar extending transversely of the boat and projecting on either side thereof, means for detachably connecting this bar to the boat, and a float-carrying device adjustably clamped to each projecting end of said rod, for the purposes set forth.

6. A boat attachment comprising a support adapted to be secured to a boat, a pair of float-carrying arms pivotally and detachably connected to the outer end of said support, their outer ends being separated and carrying vertical rings, a clamp-screw to clamp said arms to the support and hold them against pivotal motion, and a float secured in the rings of the float-carrying arms.

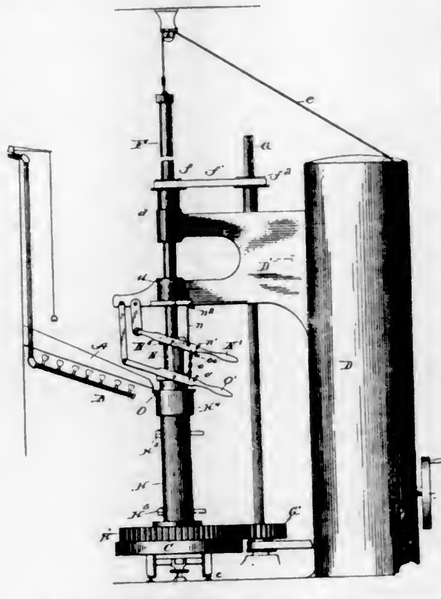
7. A boat attachment comprising a float-supporting device provided with separated vertical rings at its outer end, an inflatable cigar-shaped float fitting said rings, and having its largest diameter at a point between the rings, whereby when inflated it will be held against endwise movement through the rings, and means adapted to secure the float-supporting device to the float.

8. A boat attachment, comprising a bar adapted to extend transversely of the boat, means for attaching this bar to a transverse bar of the boat, and a float-carrying device adjustably clamped to each end of said bar, substantially as set forth.

9. In a boat attachment the combination of a support adapted to be secured to a boat, two float-carrying arms separated at their outer ends and brought together at their inner ends, a single connecting device for adjustably securing said float-carrying arms at their converged ends to the support, whereby both arms may be adjusted from the same point and by the manipulation of a single adjusting device, and a float carried by the float-carrying arms at their separated ends.

655,235. APPARATUS FOR FORMING GLASS OR VITREOUS PIPE OR TUBULAR BODIES. THOMAS B. HOWE and CHARLES E. WETMORE, Scranton, Pa. Filed Mar. 16, 1900. Serial No. 8,940. (No model.)

Claim.—1. In an apparatus for forming pipe from molten vitreous material, the combination with the rotary mold-support, of a mold adapted to receive the molten material detachably mounted on said support, a plunger arranged to work into and out of said mold and the plungers arranged concentrically of said first-mentioned plunger for forming the pipe end; substantially as described.



2. In an apparatus for forming pipe from molten vitreous material, the combination with a mold-carriage, of a rotary mold therein, a rotating mechanism for said mold mounted in fixed position whereby when said mold-carriage is moved into position for receiving molten material, the rotating mechanism will be brought into operative position, and during the supplying period the mold may be rotated; substantially as described.

3. In an apparatus for forming pipe from molten vitreous material, the combination with a mold-carriage, a rotary mold-base mounted on said carriage and a rotating mechanism for said base mounted in fixed position and adapted to be brought into operative position by the movement of the carriage, of a sectional mold mounted on said base and means for uniting said sectional mold and base during the formation of a section of pipe; substantially as described.

4. In an apparatus for forming pipe from molten vitreous material, the combination with the carriage; the horizontally-arranged gear-wheel journaled thereon and the vertically-arranged mold mounted on said gear-wheel, of a driven gear mounted in fixed position and adapted to be brought into mesh with said gear-wheel on the carriage by the movement of the carriage to the filling position and a core adapted to work longitudinally into and out of the mold when in the filling position; substantially as described.

5. In an apparatus for forming pipe from molten vitreous material, the combination with a carriage, a mold-base journaled to rotate in a horizontal plane thereon and an annulus having an external bead centrally arranged on said mold-base, of a two-part mold adapted to clamp about said annulus whereby it is retained in its vertical position on the mold-base, means for rotating said mold-base and mold, a core adapted to work into and out of the mold and a fixed supply-duct for the molten material whereby said molten material is distributed spirally by the rotation of the mold; substantially as described.

6. In an apparatus for forming pipe from vitreous material, the combination with a movable carriage, a rotary mold-base mounted on said carriage, and a mold carried by said base, of a mold-rotating mechanism and a core-operating mechanism arranged in positions fixed with relation to the movements of said carriage and adapted when said carriage and mold are in position for receiving molten material to be in operative relation to the mold; substantially as described.

7. In an apparatus for forming glass pipe, the combination with the carriage mounted upon a suitable way, of a mold carried by said carriage, mold-rotating and plunger-operating mechanisms mounted in fixed positions with relation to the carriage and adapted when the mold is in receiving position to be in position for coöperating with said mold for rotating the same and forming the central opening through the pipe; substantially as described.

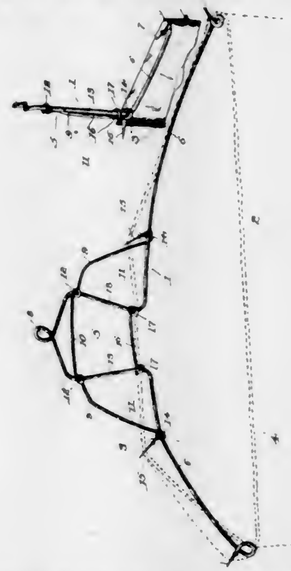
8. In a pipe-forming apparatus, the combination with the carriage, the rotary mold mounted thereon, and mechanism for rotating the same, of the vertically-movable plunger mounted in fixed position with relation to the movement of the carriage and the pipe-end-forming plungers arranged concentrically of said first-mentioned plunger; substantially as described.

9. In a pipe-forming apparatus, the combination with the carriage, the rotary mold mounted thereon and means for rotating said mold, of a rotary vertically-movable core with means for rotating said core in a direction opposite to that in which the mold is rotated and pipe-end-forming plungers arranged concentrically of said core; substantially as described.

10. In a pipe-forming apparatus, the combination with the rotary mold formed in vertical sections, of the rotary core formed in vertical sections with means for expanding and contracting said sections and a vertically-movable plunger connected with said core for contracting and elevating the sections and for lowering and expanding the sections; substantially as described.

11. In a glass-pipe-forming apparatus, the combination with a vertically-movable shaft carrying a core-piece and mounted in fixed bearings and a vertically-arranged rotary shaft gearing with said first-mentioned shaft for rotating the same and carrying a gear-wheel at its lower end, of a carriage, a rotary mold-base mounted on said carriage, and having a gear-wheel adapted to mesh with the gear-wheel on the vertical shaft, a mold mounted on said mold-base in position to be in line with the vertically-movable shaft when the gear on the mold-base and rotary shaft are in mesh, means for holding the carriage in such position, means for operating the vertically-movable shaft vertically; substantially as described.

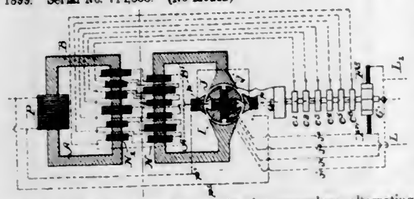
655,236. BAG-HOLDER. ARTHUR J. HURD, Baraboo, Wis. Filed Sept. 23, 1899. Serial No. 731,447. (No model.)



Claim.—A bag-holder comprising a body portion having a vertical loop and provided with arms 6 extending downward at a slight inclination substantially longitudinally of the body and curved to the front, whereby they are adapted to distend the mouth of the bag from side to side as far as possible and form a substantially-segmental opening with the back of the bag elevated above the front to prevent the material from escaping at the back and at the sides, the lower brace connecting the sides of the loop at the bottom of the same, and the upper brace extending from the upper portion of the loop to the arms 6, to stiffen them and prevent them from sagging, substantially as described.

655,237. APPARATUS FOR TRANSFORMING ALTERNATING CURRENTS INTO CONTINUOUS CURRENTS, AND VICE VERSA.

MAURICE HUTIN and MAURICE LEBLANC, Paris, France. Filed Apr. 28, 1899. Serial No. 714,835. (No model.)



Claim.—1. An apparatus for transforming monophase alternatiug currents into continuous currents comprising magnetic cores, secondary windings thereon for supplying the continuous-current leads, a primary circuit on one of the cores connected to the alternating-current leads and an inductor, moving with reference to the other core, and arranged to supply the electrical energy of transformation, substantially as described.

2. An apparatus for transforming monophase alternating currents into continuous currents comprising magnetic cores, secondary windings thereon for supplying the continuous-current leads, a primary circuit on one of the cores connected to the alternating-current lead and an inductor, moving with reference to the other core, and arranged to supply the secondary-circuit energy and the magnetization energy in their proper time relation, substantially as described.

3. An apparatus for transforming monophase alternating currents into continuous currents comprising magnetic cores, secondary windings thereon for supplying the continuous-current leads, a primary circuit on one of the cores connected to the alternating-current lead, and an inductor, moving with reference to the other core, carrying coils displaced with relation to each other and respectively connected in shunt and in series with the continuous-current leads, for supplying the secondary-circuit energy and the magnetization energy in their proper time relation, substantially as described.

4. An apparatus for transforming monophase alternating currents into continuous currents comprising magnetic cores, sinusoidal secondary windings thereon, a commutator connected with these windings for supplying the continuous-current leads, a primary circuit on one of the cores connected to the alternating-current leads, and an inductor, moving with reference to the other core, and arranged to supply the electrical energy of transformation, substantially as described.

5. An apparatus for transforming monophase alternating currents into continuous currents comprising magnetic cores, sinusoidal secondary windings thereon, a rotatable commutator connected with these windings, stationary brushes bearing on the commutator for supplying the continuous-current leads, a primary circuit on one of the cores connected to the alternating-current leads, and an inductor, moving with reference to the other core, and arranged to supply the electrical energy of transformation, substantially as described.

6. An apparatus for transforming monophase alternating currents into continuous currents comprising magnetic cores, sinusoidal secondary windings thereon, rings and brushes connected with these secondary windings, a rotary commutator having its segments connected with the rings, stationary brushes bearing on the commutator for supplying the continuous-current leads, a primary circuit on one of the cores connected to the alternating-current leads, and an inductor, moving with reference to the other core, and arranged to supply the electrical energy of transformation, substantially as described.

7. An apparatus for transforming monophase alternating currents into continuous currents comprising magnetic cores, secondary windings thereon for supplying the continuous-current leads, a primary circuit on one of the cores connected to the alternating-current leads, an inductor moving with reference to the other core, carrying a coil connected with the continuous-current lead, for supplying a part of the energy of transformation and a pole-piece, energized by the alternating current, for rotating the inductor, substantially as described.

8. An apparatus for transforming monophase alternating currents into continuous current comprising magnetic cores, secondary windings thereon for supplying the continuous-current leads, a primary circuit on one of the cores connected to the alternating-current leads, a movable inductor arranged to supply the electrical energy of transformation and a pole-piece, energized by the alternating current, for moving the inductor with reference to the other core, substantially as described.

9. In an apparatus for transforming alternating into continuous currents, a magnetic core carrying sinusoidal secondary windings and an inductor, movable with relation to the core, and carrying a winding energized by the continuous current, wound to supply part of the energy of transformation, substantially as described.

10. In an apparatus for transforming alternating into continuous currents, a magnetic core carrying sinusoidal secondary windings and an inductor, movable with relation to the core, and carrying a winding in series with the continuous-current side of the apparatus, wound to supply the secondary-circuit energy of the transformation, substantially as described.

11. In an apparatus for transforming alternating into continuous currents, a magnetic core carrying sinusoidal secondary windings, and an inductor, movable with relation to the core, and carrying a winding in shunt with the continuous-current side of the apparatus wound to supply the magnetization energy for the core, substantially as described.

12. In an apparatus for transforming alternating into continuous currents, a magnetic core carrying secondary windings, and an inductor, movable with relation to the core, and carrying a winding in series with, and a winding displaced therefrom in shunt with the continuous-current side of the apparatus for supplying respectively the secondary-circuit energy and the magnetization energy of the transformation, in their proper time relation, substantially as described.

13. In an apparatus for transforming alternating into continuous currents, a magnetic core carrying secondary windings, an inductor, movable with relation to the core, and carrying a winding connected with the continuous-current side of the apparatus wound to supply part of the energy of the transformation, and a pole-piece, energized by the alternating current, for synchronously rotating the inductor, substantially as described.

14. In an apparatus for transforming alternating into continuous currents, a magnetic core carrying secondary windings, an inductor, movable with relation to the core, and carrying displaced windings respectively connected in series and in shunt with the continuous-current side of the apparatus for supplying energy of transformation, and a pole-piece, energized by the alternating current, for synchronously rotating the inductor, substantially as described.

15. In an apparatus for transforming monophase alternating currents into continuous currents, a magnetic core carrying secondary windings, an inductor, movable with relation to the core, and carrying windings displaced by an amount corresponding to a quarter of a period, said windings being respectively connected in series and in shunt with the continuous-current side of the apparatus for supplying the energy of transformation, and a pole-piece, energized by the alternating current, for synchronously rotating the inductor, substantially as described.

16. In an apparatus for transforming alternating currents into continuous currents, a closed magnetic core carrying groups of sinusoidal windings to constitute a multipolar field and a ring-form inductor, rotating therewithin having displaced windings to coöperate with the field, which are connected in shunt and in series with the continuous side of the apparatus for supplying the energy of transformation, substantially as described.

17. In an apparatus for transforming alternating currents into continuous currents, a closed magnetic core carrying groups of sinusoidal windings to constitute a multipolar field, motor-windings energized by the alternating currents arranged to generate poles between those just mentioned, and a ring-form inductor rotating within the closed core having two displaced windings wound to produce a corresponding number of poles and connected respectively in shunt and in series with the continuous-current side of the apparatus, for supplying the energy of transformation, substantially as described.

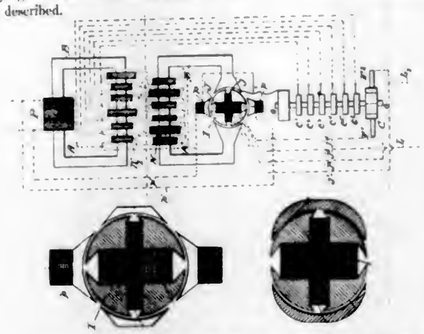
18. In an apparatus for transforming alternating currents into continuous currents, a closed magnetic core carrying groups of sinusoidal windings to constitute a multipolar field, motor-windings energized by the alternating current arranged to generate poles between those just mentioned, a ring-form inductor rotating within the closed core having two displaced windings wound to produce a corresponding number of poles and connected respectively in shunt and in series with the continuous-current side of the apparatus, rings connected with these windings and brushes bearing thereon for supplying currents thereto, substantially as described.

655,238. PROCESS OF TRANSFORMING ALTERNATING CURRENTS INTO CONTINUOUS CURRENTS, AND VICE VERSA.

MAURICE HUTIN and MAURICE LEBLANC, Paris, France, assignors to the Société Anonyme pour la Transmission de la Force par l'Électricité, same place. Original application filed Apr. 28, 1899, Serial No. 714,835. Divided and this application filed May 29, 1900. Serial No. 18,403. (No specimens.)

Claim.—1. The process of transforming alternating currents flowing along alternating-current mains into continuous current flowing along continuous-current mains which consists in charging an inductor from the continuous-current main and rotating the inductor with reference to a magnetic core carrying secondary windings and thereby supplying thereto either part of the energy of transformation, substantially as described.

2. In the transformation of alternating into continuous currents, the process which consists in charging an inductor in series fashion from the continuous-current side of the line and rotating the inductor with reference to a magnetic core carrying secondary windings and thereby supplying the secondary-circuit energy of the transformation, substantially as described.



3. In the transformation of alternating into continuous currents, the process which consists in charging an inductor shunt fashion from the continuous-current side of the line and rotating the inductor with reference to a magnetic core carrying secondary windings and thereby supplying the magnetization energy for the core, substantially as described.

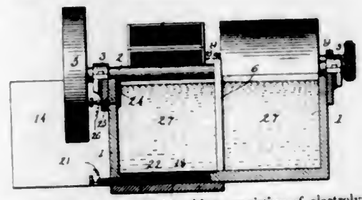
4. In the transformation of alternating into continuous currents, the process which consists in charging an inductor, carrying displaced series and shunt windings from the continuous-current side of the line and rotating the inductor with reference to a magnetic core carrying secondary windings and thereby supplying thereto the energy of transformation, substantially as described.

5. In the transformation of alternating into continuous currents, the process which consists in charging an inductor from the continuous-current side of the line, and rotating the inductor, with reference to a magnetic core carrying secondary windings, by means of energy derived from the alternating-current side of the line, whereby part of the energy of transformation is supplied to the secondary windings, substantially as described.

6. In the transformation of alternating into continuous currents, the process which consists in charging an inductor carrying series and shunt coils from the continuous-current side of the line, and rotating the inductor, with reference to a magnetic core carrying secondary windings, by means of energy derived from the alternating-current side of the line, whereby the energy of transformation is supplied to the secondary windings, substantially as described.

655,239. PROCESS OF BLEACHING BY ELECTROLYTIC CHLORIN WATER.

THOMAS JESPERSEN, Neenah, Wis. Filed May 29, 1899. Serial No. 718,679. (No specimens.)



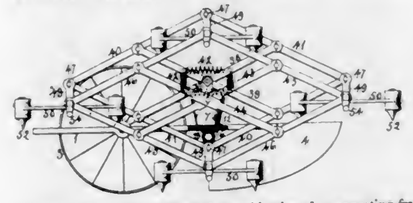
Claim.—1. The process of bleaching, consisting of electrolyzing a dilute watery solution of hydrochloric acid, allowing the chlorin gas liberated at the immersed anode to dissolve in the water of said watery solution, bleaching with the resulting chlorin water, and by the act of bleaching restoring hydrochloric acid to the solution and again electrolyzing as before, all of the processes being performed simultaneously and continuously in the same tank or container, substantially as described.

2. The process of bleaching, consisting of electrolyzing an aqueous solution containing hydrochloric acid, allowing the chlorin gas liberated at the immersed anode to dissolve in the said aqueous solution, bleaching with the resulting chlorin water, and by the act of bleaching restoring hydrochloric acid to the solution and again electrolyzing as before, all of the processes being performed simultaneously and continuously in the same tank or container, substantially as described.

3. The process of bleaching, consisting of electrolyzing an aqueous solution of one or more chlorids containing hydrochloric acid, allowing the chlorin gas liberated at the immersed anode to dissolve in said aqueous solution, bleaching with the resulting chlorin water, and by the act of bleaching restoring hydrochloric acid to the solution and again electrolyzing as before, all of the processes being performed simultaneously and continuously in the same tank or retainer, substantially as described.

655,240. CORN-PLANTER.

EMIL G. JOHANSON, Rockford, Ill., assignor to C. Pontus Haegg, same place. Filed Nov. 28, 1899. Serial No. 738,580. (No model.)



Claim.—1. In a corn-planter, the combination of a supporting-frame and wheels, seedboxes supported by the frame, two frames of rectangular form having a pivotal connection, and rotatable on different centers, feet supported at the point of connection between the frames and held in a horizontal position, the frames imparting motion to the seed-dropping devices.

2. In a corn-planter, the combination of a supporting-frame and wheels, seedboxes supported by the frame, two frames of rectangular form having a pivotal connection and rotatable on different centers, feet and markers supported at the point of connection between the frames, the feet held in a horizontal position, the frames imparting motion to the seed-dropping devices.

3. In a corn-planter, the combination of a supporting-frame and wheels, seedboxes supported by the frame, two frames of rectangular form having a pivotal connection and rotatable on different centers, springs connecting the arms of the frames, feet supported by the frames and held in a horizontal position, the frames imparting motion to the seed-dropping devices.

4. In a corn-planter, the combination of a supporting-frame and wheels, a stationary shaft, a tube surrounding the shaft having a pivotal connection with the main frame, the shaft having a downward extension, two rotatable frames pivotally connected and supporting feet, one frame supported by the tube, and movable therewith, the other frame supported by the extension, the frame supported by the tube adapted to operate the seed-dropping devices.

5. In a corn-planter, the combination of a main frame and supporting-wheels, a series of feet adapted to alternately engage the ground and imparting movement to the seed-dropping devices, and movable bodily to either side of the planter, the feet held in a horizontal position.

6. In a corn-planter, the combination of a main frame and supporting-wheels, a series of feet adapted to alternately engage the ground and imparting movement to the seed-dropping devices, and movable bodily to either side of the planter, the feet held in a horizontal position and means for adjusting the feet to properly set them.

655,241. CURTAIN OR PORTIÈRE FIXTURE.

GEORGE A. JOHNSON, Park Ridge, Ill., assignor of one-half to Fred H. Fricke, same place. Filed Mar. 21, 1900. Serial No. 9,499. (No model.)



Claim.—1. A curtain or portière fixture comprising a suitable traverse-pole, means for suspending a curtain or portiere therefrom, pulleys having blocks formed with hook-shaped portions engaging the ends of said pole, the relative formation of the pole and blocks being such that the pulleys are maintained in their proper positions, and an operating-cord reeved over the pulley-wheels and suitably connected with said portière or curtain.

2. A curtain or portière fixture comprising a hollow traverse-pole having a notch at each end and a slot in its under side, hangers sliding in said slot, pulleys having blocks formed with projections which engage said notches, and an operating-cord reeved over the pulley-wheels and

connected with one or more of said hangers, the cord and pulley-wheels being inclosed within said pole, substantially as described.

3. A curtain or portiere fixture comprising a hollow traverse-pole having a slot on its under side, hangers for suspending said curtain or portiere and arranged to slide in said slot, pulleys having hook-shaped blocks removably engaging the ends of said hollow traverse-pole, and an operating-cord reeved over the pulley-wheels and suitably connected with one or more of said hangers, the relative formation of the pole and blocks being such that the pulleys are maintained in their proper positions, and the cord and pulleys being inclosed within the hollow traverse-pole, substantially as and for the purpose set forth.

4. A curtain or portière fixture comprising a hollow traverse-pole having a slot on its under side and a notch at each end, hangers for suspending said curtain or portière and arranged to slide in said slot, pulleys having hook-shaped blocks adapted to removably engage notches in the ends of said pole, and an operating-cord reeved over the wheels of said pulleys and connected with one or more of said hangers, the hollow pole inclosing said cord and pulleys, substantially as and for the purpose set forth.

655,242. SHOO-FLY ATTACHMENT FOR DOORS. WILLIAM T. JOHNSON, Standish, Mo. Filed Jan. 29, 1900. Serial No. 3,252. (No model.)



Claim.—1. The combination with a door, of a frame pivoted to the door-frame adjacent to the free edge of the door, and embodying an arm in the path of the opening door so as to receive the thrust thereof, a brush carried by said pivoted frame, and a link pivotally connecting the door with said pivoted frame, substantially as described.

2. The combination with a door, of a frame comprising a substantially-horizontal arm above the plane of the door and pivoted at its inner end to the door-frame, and a brace-arm, at the outer side and in the path of the opening door so as to receive the thrust thereof, pivoted at its inner end to the door-frame, and united at its outer end to the outer end of said first-named arm, a brush carried by said pivoted frame, and a link pivotally connecting said pivoted frame with the door, substantially as described.

3. The combination with a door, of a frame comprising an arm adapted to swing in a plane above the door, and pivoted at its inner end to the door-frame, and a brace-arm arranged at the outer side and in the path of the door below its upper edge and pivoted at its inner end to the door-frame vertically below the pivotal point of said first-named arm, and united to the outer end of said first-named arm, a link pivotally connecting the door with the outer end of said pivoted frame, and a brush suspended from the first-named arm outward of said brace-arm, substantially as described.

4. The combination with a door, of a frame pivoted to the door-frame, and provided with an arm in the path of the door so as to receive the thrust of the latter as it opens, a brush carried thereby, a link pivotally connecting said pivoted frame with the door, and a spring tending to cause said pivoted frame and link to assume an approximately-parallel relation, substantially as described.

5. The combination with a door, of a frame, consisting of a rod bent to form approximately-parallel arms pivoted at their inner ends to the door-frame, and connected at their outer ends by an upright portion and eye or loop, one of said arms lying in the path of the opening door so as to receive the thrust thereof, a link pivotally connected to the door and to said eye or loop, and a brush depending from said pivoted frame, substantially as described.

6. The combination with a door, of a frame, consisting of a rod bent to form approximately-parallel arms pivoted at their inner ends to the door-frame, and connected at their outer ends by an upright portion and eye or loop, one of said arms lying in the path of the opening door so as to receive the thrust thereof, a link pivotally connected to the door and to said eye or loop, a spring mounted on the upright portion, and secured at its ends to said link and the lower arm of said pivoted frame, and a brush pendently attached to the upper arm of said pivoted frame, substantially as described.

7. The combination with a door, of a frame, consisting of a rod bent to form approximately-parallel arms pivoted at their inner ends to the door-frame, the lower arm occupying a plane nearer to the outer face of the door when closed than the upper to receive the thrust of the door in its opening movement, said arms being connected at their outer ends by an upright portion and eye or loop, a link pivotally connected to the door and to said eye or loop, and a brush depending from said pivoted frame, substantially as described.

655,243. FUSE-BLOCK. LORIN A. KEITH, Mansfield, Ohio. Filed Sept. 11, 1899. Serial No. 730,143. (No model.)



Claim.—1. A fuse-box comprising a base, a binding-plate fixed to the base, a screw rotatably mounted in the plate, a nut engaging the screw and adapted for movement upon the screw toward and away from the plate, and means for preventing rotation of the nut.

2. The combination with a plate having a screw rotatably mounted therein, of a nut engaging the screw and adapted for movement thereon toward and away from the plate, and means for preventing rotation of the nut.

3. The combination with a plate, of a screw passed therethrough and having a head lying at one side of the plate, a nut engaging the screw upon the opposite side of the plate from the head, and means for preventing rotation of the nut, said nut being movable upon the screw toward and away from the plate.

4. In a fuse-block, the combination with a member having a screw mounted therein, of a second member engaging the screw and adapted for movement thereon toward and away from the opposing member, an opening in one of the members, and an ear upon the other member, entering the opening and movable therein and adapted to prevent rotation of the second member upon the screw.

5. A fuse-block comprising a binding-plate having a screw rotatably mounted therein, an ear carried by the plate, and a nut engaging the screw and adapted for movement thereon toward and away from the plate, said nut having a recess in which the ear is adapted to lie to prevent rotation of the nut.

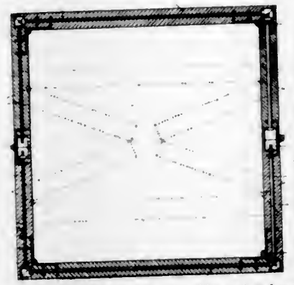
6. The combination with a fuse-block having a recess therein, of a binding-plate fixed to the block, a screw passed through the plate and having a head lying in the recess of the block, a nut engaging the screw and adapted for movement thereon toward and away from the plate, an ear carried by the plate and a recess in the nut in which the ear is disposed to prevent rotation of the nut.

7. The combination with a binding-plate adapted for attachment of a fuse-wire thereto, of a screw engaged with the plate and having a fixed frusto-conical head, and a channel-block having a slot therein through which the screw is passed, said block being movable transversely of the screw and being disposed to receive the head of the screw in its channel, whereby the screw may clamp the wire between its head and the channel-block with a grinding action.

8. A wire-clamp comprising a screw having a fixed head the under side of which is tapered, and a channel-block having an opening therein through which the screw is passed, said block being slidable transversely of the screw and arranged to receive the tapered portion of the head of the screw in its channel to exert a gripping action between the tapered portion of the screw and the channel-block.

655,244. COLLAPSIBLE PACKING-CASE. PAUL F. KESTING, Ottawa, Kans. Filed Jan. 11, 1900. Serial No. 1,068. (No model.)

Claim.—1. A collapsible packing-case having ends composed of two sections meeting each other on a central dividing-line, and hinged together on said line so as to fold inwardly, and sides hinged to each of the adjacent end sections, so that said sections will fold inwardly upon the sides, of strengthening-rods extending through said end sections and said sides, and provided with a head at one end and a nut at the other, seated in mortises formed in the meeting edges of said sections and said sides, substantially as set forth.



2. A collapsible packing-case having sides and end sections hinged together so as to fold inwardly upon each other, as described, the hinges connecting said parts being provided with ears extending inwardly into the material, and openings through said ears, of strengthening-rods extending through said sections and through said openings, and secured in mortises in the meeting edges of said sections, substantially as set forth.

655,245. MILK-AERATOR. DAVID D. KIMBERLIN, Hudson, Ohio. Filed Nov. 18, 1899. Serial No. 737,520. (No model.)



Claim.—1. In a device of the class described, a handle, an air-cup pivoted to the handle, said air-cup being so arranged with relation to the handle that it can swing into an inverted position when thrust downwardly into a liquid and thereby carry air into the same, and tilt to another position upon an upward movement, and means for limiting said tilting movement, substantially as described.

2. In a device of the class described, a handle having an abutment, and a cup hinged to the handle and adapted to rest against the abutment, substantially as described.

3. In a device of the class described, a handle, a cup hinged to the handle, and a stop arranged to limit the movement of the cup, substantially as described.

4. In a device of the class described, the combination with a cup, of a handle formed by a single piece of wire, the ends of which are coiled around the rim of the cup, whereby the cup and handle are hinged together, substantially as described.

5. In a device of the class described, the combination with a cup, of a handle formed of a single piece of wire or similar material bent upon itself, the ends of said wire being coiled around the rim of the cup forming a hinge and extending into the cup, whereby a stop is formed to limit the movement of the cup, substantially as described.

6. In a device of the class described, the combination with a handle, of a cup hinged to the handle, said handle having an offset bend forming an abutment or stop to hold the cup at an angle to the handle, substantially as described.

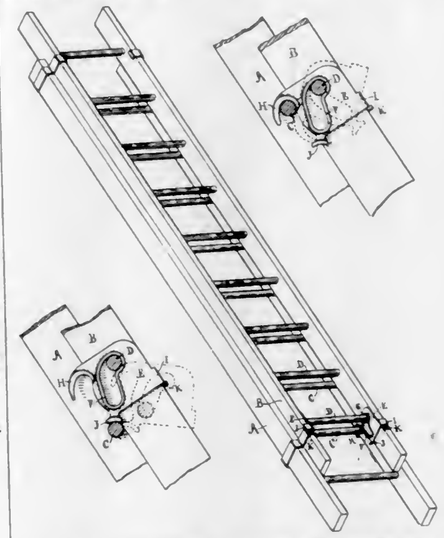
7. In a device of the class described, the combination with a handle, of a cup hinged to the handle, and a stop carried by the handle and projecting into the cup, whereby said cup is limited in its swinging movement, substantially as described.

8. In a device of the class described, a handle having an offset bend forming an abutment, a cup hinged to the handle, and a stop carried by the handle and projecting into the cup, whereby the cup is limited in its swinging movement by the abutment of the handle and the stop, substantially as described.

655,246. EXTENSION-LADDER. ALBA T. KINGSLEY, Millport, N. Y. Filed Dec. 22, 1899. Serial No. 741,220. (No model.)

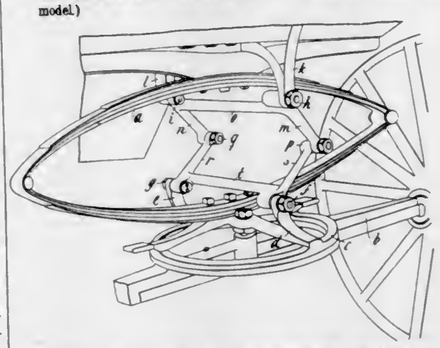
Claim.—1. An extension-ladder lock comprising a slotted body-piece carrying a downwardly-projecting hook at its forward end, a tripper projecting from its lower end, and a lug overlapping the top of the ladder-rail opposite said tripper, the lock being hung by its slot upon a pivot projecting from the side of the ladder-rail substantially as described.

2. An extension-ladder lock comprising a body-piece provided with an angular slot, a round of the ladder passing through said slot and having a collar thereon to prevent lateral motion in the lock, a downwardly-projecting hook at the forward end of said body-piece, a tripper projecting from the lower end thereof, and a lug overlapping the top of the ladder-rail opposite said tripper.



3. An extension-ladder lock comprising a body-piece provided with an angular slot, a round of the ladder passing through said slot and having a collar thereon to prevent lateral motion in the lock, a downwardly-projecting hook at the forward end of said body-piece, a tripper projecting from the lower end thereof, a lug overlapping the top of the ladder-rail opposite said tripper, and a stop on the top of said rail to engage the lower side of said lug.

655,247. CARRIAGE. JÖRGEN KLÖVSTAD and GUSTAV W. JONSEN, Christiania, Norway. Filed Apr. 10, 1900. Serial No. 12,343. (No model.)



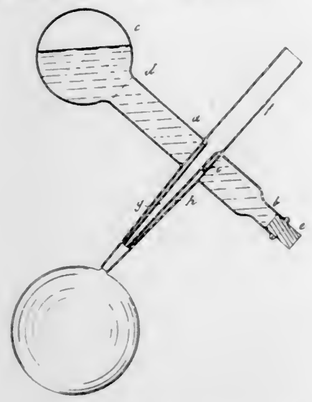
Claim.—1. In combination in a vehicle, the body, the front shaft, a fifth-wheel mounted thereon, an elliptical spring interposed between the same and the body, integral arms extending upwardly from the fifth-wheel and toggle-arms interposed between the same and the body, substantially as described.

2. In combination in a vehicle, the body, the front shaft, a fifth-wheel mounted thereon, the spring interposed between said wheel and the body and a toggle-frame interposed between the fifth-wheel and carriage-body arranged transversely of the spring, substantially as described.

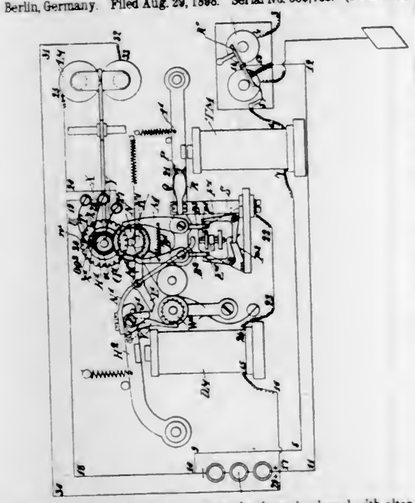
655,248. APPARATUS FOR MAKING SOAP-BUBBLES. GUSTAV KRAFFT, Schwelm, Germany. Filed Jan. 17, 1900. Serial No. 1,762. (No model.)

Claim.—As an article of manufacture, an apparatus for producing soap-bubbles consisting of a bottle *a* of any shape and size which is closed by a stopper and filled with soap-water said bottle being crossed by a

pipe *f* its downward-extending piece being pointed and having inserted therein a second pipe to form a channel within pipe *f* which has connection with the bottle for the purpose described and set forth.



655,249. TELEGRAPHIC TYPE-WRITER. REINHOLD KUEHLER, Berlin, Germany. Filed Aug. 29, 1898. Serial No. 689,783. (No model.)



Claim.—1. A telegraphic type-writer having a keyboard with alternating contact and breaking fields or surfaces, said keyboard forming one pole of an electric circuit, and a pointer forming the other pole and adapted to be passed along said keyboard, a rotary longitudinally-movable type-wheel and a series of actuating electromagnets and line-wire and local conductors and means for energizing the type-wheel-adjusting magnet when the pointer is passed over the keyboard, means for energizing the printing-magnet when the pointer is on the last field or strip and means for energizing the wheel-sliding magnet when the pointer is placed first on a conducting (in contradistinction to a non-conducting) strip of the keyboard substantially as described.

2. In a telegraphic type-writer, the combination of a keyboard having a series of conducting and non-conducting strips to indicate the various signs to be transmitted, a stop at the end of said keyboard to stop the pointer at one edge on a conducting and at the opposite edge on a non-conducting field, said board forming one pole of an electric circuit and a pointer forming the opposite pole, a rotary longitudinally-movable type-wheel, and actuating-magnets for the type-wheel, to cause the same to rotate, to shift the same longitudinally and to move the printing-strip against the type-wheel, and electric conductors, to operate the type-wheel-rotating magnet by a series of impulses, and to operate the printing-magnet at the longer end impulse and to operate the type-wheel-shifting magnet, when the pointer commences with a conducting-field, and means for returning the parts to their initial positions when the pointer is removed from the keyboard substantially as described.

3. The combination of a keyboard forming one pole of an electric circuit and a pointer forming the other pole, and means in connection with the said keyboard for producing in the line-wires a series of impulses, an electromagnet, ratchet mechanism actuated thereby to turn the type-wheel, a type-wheel in gear with the ratchet mechanism, a type-wheel-shifting magnet and a local battery to operate the same and means for retaining the said type-wheel in its shifted position until the letter has been printed and then releasing it, a printing-magnet and means in connection therewith for pushing a printing-strip against the type-wheel at the longer impulse at the end of the movement of the pointer over the keyboard as specified, and means for energizing the local battery and energizing the type-wheel-shifting magnet when the pointer is initially placed on a conducting-field of the keyboard, and means for returning all parts to their initial positions when the pointer is removed from the keyboard substantially as described.

655,250. TIRE-SEPARATOR. DELORE J. LAHAY, Nadeau, Mich. Filed Nov. 18, 1899. Serial No. 737,437. (No model.)



Claim.—1. A tire-separator, comprising a frame or body portion capable of encircling the inner tube and provided with antifriction wheels or rollers, for the purpose specified, the separator being movable between the two tubes of the tire to separate them.

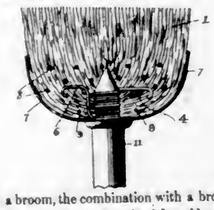
2. A tire-separator, comprising an essentially-elliptical frame adapted to encircle the inner tube of the tire, one end of the frame being split, and rollers or wheels mounted in the split end of the frame.

3. A tire-separator, comprising an open elongated frame capable of encircling the inner tire and of moving through the outer tire and having its end portions formed with internal oppositely-disposed bevels, whereby the frame is held diagonally disposed within the outer tire and permitted to move longitudinally of itself through the tire.

4. A tire-separator, formed of an open elongated frame capable of lying diagonally within the outer tire and of moving longitudinally of itself through the outer tire in such diagonal position, the frame encircling the inner tire to separate it.

5. A tire-separator, comprising an open elongated frame, one end portion of which is formed with outer side edges tapering toward each other in essentially the form of a wedge to facilitate moving the frame in the tire, in the manner described.

655,251. BROOM. FRANK R. LAY, Ridgeville, Ind. Filed Sept. 7, 1899. Serial No. 729,681. (No model.)

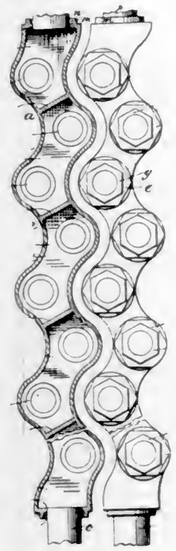


Claim.—1. In a broom, the combination with a broom head or body 1 having a socket and a coiled spring retained in said socket, of a broom-handle having a threaded portion 10 adapted to be screwed into said coiled spring, said portion 10 being provided with a tapering unthreaded extension 12, substantially as specified.

2. In a broom, the combination with a broom head or body 1 having a socket therein, a coiled spring inserted in said socket the inner end of the wire forming said coil extending laterally and engaging the material forming the broom-head and the outer end of said coil-wire being turned inward and also engaged with said broom material, of a handle having a threaded portion adapted to be screwed into said socket-coil, substantially as specified.

655,252. SECTIONAL STEAM-GENERATOR. SAMUEL E. LIGHT, Lebanon, Pa. Filed Dec. 20, 1899. Serial No. 740,990. (No model.)

Claim.—1. A header having screw-threaded openings on one side thereof, screw-threaded packing-boxes engaging said openings and provided with externally-screw-threaded packing-glands engaging said packing-boxes, and openings on the other side of the header opposite said former openings and of less diameter than the packing-boxes, and openings at each end of the header.



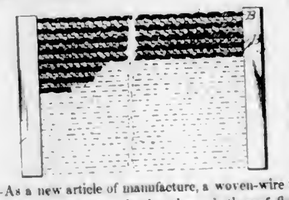
2. A serpentine header having opposite openings arranged in pairs, transverse partitions between each pair of openings, screw-threaded openings on one side of the header provided with detachable packing-boxes, adjustable packing-glands connected to said boxes, and openings at each end of the header.

3. A serpentine header having openings arranged in pairs, a transverse partition between each pair of openings and forming separate chambers, detachable packing-boxes in each chamber on one side of the header, and openings on the opposite side of the header of less diameter than the packing-boxes, and openings at each end of the header.

4. A steam-generator having serpentine headers at each end provided with openings arranged in pairs, a transverse partition between each pair of openings and forming separate chambers in the headers, detachable packing-boxes in each chamber, and openings opposite thereto, fire-tubes connected to the headers by said packing-boxes and their glands and extending through the headers, and water-tubes connected to said opposite openings in the headers and surrounding the fire-tubes.

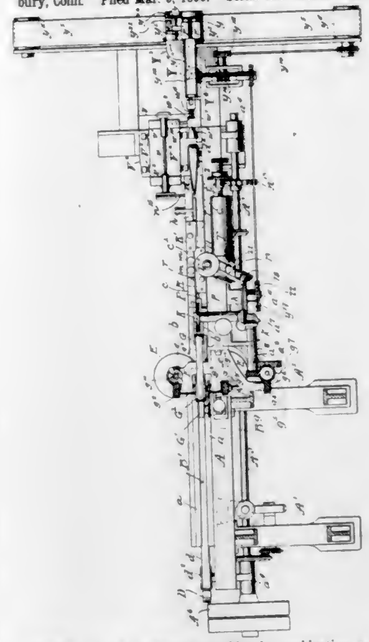
5. A steam-generator having serpentine headers at each end provided with openings arranged in pairs, a transverse partition between each pair of openings and forming separate chambers in the headers, detachable packing-boxes in each chamber, and openings opposite thereto, water and steam distributing pipes to which the headers are connected, fire-tubes secured in said packing-boxes to expand therein and extending through the headers, and water-tubes surrounding the fire-tubes and connected to the headers.

655,253. WOVEN-WIRE FABRIC. GEORGE C. LOCKLIN and BONHAM M. FOX, Chicago, Ill. Filed Aug. 14, 1899. Serial No. 727,162. (No model.)



Claim.—As a new article of manufacture, a woven-wire fabric comprising woven coiled-wire springs having the ends thereof flattened to a common plane and bound by a metallic strip folded longitudinally so as to inclose the flattened ends of the coiled strands of the fabric and then folded again upon itself, substantially as described.

655,254. CIGARETTE-MACHINE. FRANK J. LUDINGTON, Waterbury, Conn. Filed Mar. 9, 1899. Serial No. 708,348. (No model.)



Claim.—1. In a cigarette-machine in combination, a portion having a groove, means to feed a continuous strip of paper to said groove, a feeder to deliver loose tobacco in a continuous supply upon said paper, means to form a continuous rod of said tobacco and move the same and said paper along said groove, a curved compressor for the exposed portion of the rod within said groove and means to at the same time fold one edge of said paper over said compressor.

2. In a cigarette-machine in combination, a portion having a groove, means to feed a continuous strip of paper to said groove, a feeder to deliver loose tobacco in a continuous supply upon said paper, means to form a continuous rod of said tobacco and move the same and said paper along said groove, a curved compressor for the exposed portion of the rod within said groove and means to at the same time fold one edge of said paper over said compressor, means to then pass said paper and rod along beyond said compressor leaving said edge folded over said rod and means to fold over the other edge of said paper, so that it will overlap said paper.

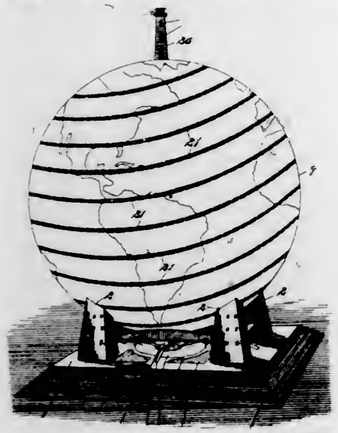
3. In a cigarette-machine in combination, means to feed a continuous strip of wrapping material in a substantially-flat condition, means to feed loose tobacco onto said strip whereby the same is carried along with said strip, a pair of flat-faced wheels on opposite sides of said tobacco to compress the same while moving along with said strip, a belt also moved along with said strip, and located on the other side of said tobacco to prevent the tobacco from escaping, whereby a substantially-square rod is formed and means to act directly upon and further compress said rod into substantially the shape of the compressed cigarette while moving along in contact with said strip, means to moisten one edge of said strip and fold the opposite edge of said strip over and down upon said rod, the two edges overlapping.

4. In a cigarette-machine in combination, a table, a belt moving along said table and presenting a substantially-flat surface, means to feed a strip of wrapping material onto said belt and move the same along with said belt in substantially-flat condition, means to feed tobacco upon said strip of wrapping material, means to compress said tobacco down upon said strip as the same is moving, a pair of substantially flat-faced rollers located on opposite sides of said tobacco and moving to compress the same from each side and thereby form a substantially-square rod, means to compress the same into a round rod as the same is moving along in contact with said strip and means to fold the opposite edges of said strip over and down upon said rod, the edges thereof overlapping whereby a continuous cigarette is formed.

5. In a cigarette-machine in combination, a table, means to feed a continuous strip of wrapping material in a substantially-flat condition along said table, means to feed loose tobacco onto said strip whereby the

same is carried along with said strip, a pair of flat-faced wheels on opposite sides of said tobacco to compress the same while moving along with said strip, a belt also moved along with said strip and located on the other side of said tobacco to prevent the tobacco from escaping, and means to further compress said rod into substantially the shape of the completed cigarette while moving along in contact with said strip and without folding said wrapper over said rod, means to moisten one edge of said strip and fold the opposite edges thereof over and down upon said rod, the two edges overlapping.

655,255. EXHIBITION STRUCTURE. HERBERT F. W. LYOUNS, Boston, Mass. Filed Aug. 12, 1899. Serial No. 727,046. (No model.)

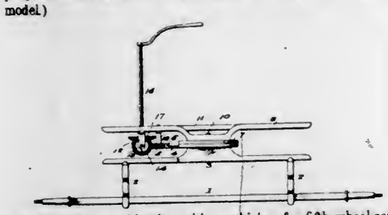


Claim.—1. An exhibition structure comprising a hollow sphere constituting a casing, having delineated upon its outer surface outlines or maps of continents, hemispheres, &c.; and a spiral railway-tunnel within the sphere, said casing being formed with openings spirally disposed, following the spiral course of the tunnel within the casing.

2. An exhibition structure comprising a hollow sphere constituting a casing, having its interior subdivided into compartments, and its outer surface provided with the outlines of continents, hemispheres, &c.; and a spiral support secured adjacent to the inner surface of the spherical casing, said casing being formed with openings disposed spirally around the casing following the spiral course of the railway-tunnel within the casing.

3. An exhibition structure comprising hollow supporting-pillars; a hollow globe supported on said pillars and having its interior divided into rooms or compartments; and a spiral tunnel or framework secured within the hollow globe adjacent to the inner surface thereof; said casing being formed with openings disposed spirally and following the spiral course of the tunnel; and a plurality of electric lights arranged on the outer surface of the globe to form the outlines of continents, hemispheres, &c.

655,256. FIFTH-WHEEL FOR VEHICLES. JOHN G. MACPHERSON, Philadelphia, Pa., assignor to the MacPherson Automobile Company, of New Jersey. Filed Nov. 22, 1899. Serial No. 737,863. (No model.)



Claim.—1. In combination with a vehicle, of a fifth-wheel consisting of an upper section, a lower section, a segmental worm-gearing having a flange upon its inner side and connected to the lower section, a worm-screw engaging said worm-gearing, means for engaging said flange of the segmental gearing to hold the screw and gearing together, and means for operating said screw to turn the fifth-wheel.

2. In combination with a vehicle, of a steering-geared fifth-wheel, consisting of a lower platform or section mounted upon the axle, a segmental worm-gearing connected to said platform and provided with a flange upon its inner side, an upper section of the wheel for resting upon the platform, a worm-screw for engaging and operating upon the segmental gearing, a lug or keeper for engaging the flange of said gearing to hold the part next to the worm-screw into close engagement, and a handle connected with said worm-screw to operate the steering-gear and turn the fifth-wheel.

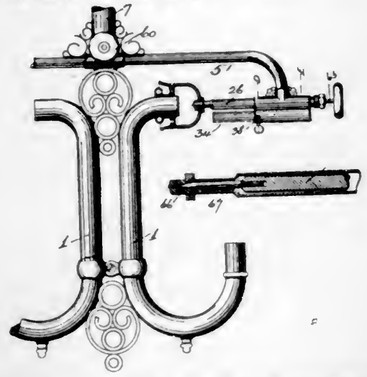
655,257. VETERINARY OBSTETRICAL INSTRUMENT. JACOB MARKUS, Harrison, S. D. Filed Apr. 13, 1900. Serial No. 12,711. (No model.)



Claim.—1. In an instrument of the character described, the two pivoted spring-actuated hollow levers, combined with a cord which is passed through the levers, substantially as shown.

2. In an instrument of the character described, the two pivoted hollow spring-actuated levers, and the cord which is passed through the levers, combined with a locking device at the outer ends of the handles, for holding the levers in a closed position, substantially as described.

655,258. VAPOR-LAMP. VINCENT A. MENUEZ, Memphis, Tenn. Filed Feb. 24, 1900. Serial No. 6,368. (No model.)



Claim.—1. In a lamp of the character described as a drop extension, the combination with a stationary pipe leading from the storage-reservoir and having a stuffing-box on its lower end adapted to slide inside a sliding pipe, of the said sliding pipe connected to the lamp, a stuffing-box on the upper end of the said sliding pipe adapted to slide on the stationary pipe, a collar on the upper end of said sliding pipe and a latch on the said stationary pipe to engage with the said collar and positively support the said sliding pipe in its raised position, substantially as shown and described.

2. In a lamp of the character described the combination with a stationary pipe leading from the storage-reservoir, and a sliding pipe encircling the said stationary pipe, of stuffing-boxes on the said pipes to make the same gas-tight and means of locking the sliding pipe when it is in a raised position consisting of an annular collar on the sliding pipe, a bell-crank catch pivoted on the stationary pipe a spring to force said catch to engage the said collar and a cord fastened to the end of said bell-crank to swing the catch out of engagement with said collar on the sliding pipe, substantially as shown and described.

3. In a lamp of the character described, as a mixing-chamber, the combination with a suitable gas-supply and a gas-chamber in line therewith, of a cylindrical chamber revolubly mounted on the gas-supply pipe and the gas-chamber, and having its axis at right angles thereto, said chamber having one or more of its ends perforated, and means of opening and closing said holes to regulate the supply of air substantially as shown and described.

4. In a lamp of the character described as a mixing-chamber the combination with a suitable gas-supply and a gas-chamber in line therewith, of a cylindrical chamber revolubly mounted on the gas-supply pipe and the gas-chamber and having its axis at right angles thereto, said chamber having one or more of its ends perforated and having cylindrical disks rotatably mounted thereon, said disks having perforations adapted to be rotated into and out of register with the perforations in the ends of the said chamber to regulate the supply of air substantially as shown and described.

5. In a gas-lamp, having an incandescent mantle, as a burner, the combination with a gas-pipe terminating in a vertical section, of a short section of pipe slipped thereover, an inverted-cup-shaped piece, terminating in a horizontal portion for the chimney to rest on, made integral therewith, lugs on the under side of the said horizontal portion to hold the chimney-clips and the mantle-support, perforations in the said cup-shaped portion and means regulating the opening of the perforation to regulate the supply of air, of a perforated cap having a deflecting-plate to throw the flame against the mantle, and corrugations around the outside of the cap to steady the mantle and permit access of air inside same substantially as shown.

6. In a gas-lamp, of the incandescent type, the combination with the mantle, means of suspending said mantle, a gas-pipe terminating in a straight section centrally located with reference to said mantle, a perforated cap, corrugated around its outer edge, placed on the end of said pipe, having a centrally-depressed portion to direct the flow of gas to the said holes and through them toward the surrounding mantle so that the flame will strike the mantle, of an inverted-cup-shaped portion adapted to hold the chimney, and the mantle-support, and having holes therein to permit access of air to the flame and means of regulating the supply of air consisting of an exteriorly close-fitting sleeve having perforations adapted to be rotated into and out of register with the holes in the cup-shaped portion and a bead around its lower edge to serve as a means of rotating it substantially as and for the purposes set forth.

7. In a lamp of the generator type the combination with a burner, a chimney thereon and a generator extending across above the chimney of a metal deflecting-cap resting on the chimney below the generator, said cap consisting of a cylindrical metal tube slightly larger in diameter than the chimney and having ears turned in to rest on the chimney, the upper part of said deflecting-cap being flattened to concentrate the hot gases from the burner on the generator substantially as shown and described.

8. In a lamp, as a shade-holder, the combination with a chimney having a contracted upper end, of a flat band of metal formed into a ring of slightly-larger diameter than the said chimney, of lugs integral with said ring, extending downward below said ring, and resting on the chimney where it enlarges, a portion of said lugs being extended out radially from the ring and having clips fastened thereon substantially as and for the purposes set forth.

9. In a lamp of the character described the combination with a suitable frame, a suitable burner and a generator thereover, of a hollow tube at one side thereof under the top of said frame and a fluid-receptacle slidably mounted therein substantially as and for the purposes set forth.

10. In a lamp of the character described, as an initial heater, the combination with a suitable frame, a suitable burner and a generator over the said burner, of a hollow chamber fastened to the under side of the top of said frame and a hollow receptacle filled with a non-combustible wool saturated with a combustible, slidably mounted therein, substantially as and for the purposes set forth.

11. In a lamp of the character described the combination with a suitable generator, a curved vapor-conducting pipe having its upper end in alinement with said needle-valve generator and its other end bearing the burner, and a mixing-chamber connecting the generator and the vapor-conducting pipe, of an air-operated reservoir situated above the said generator and pipes connecting the reservoir and the generator, said reservoir consisting of a hollow receptacle having a central tube passing therethrough, said tube having an opening near its upper end through which passes one end of a small tube, which tube terminates in a vertical portion in the center of the larger tube and has its other end near the bottom of the oil-receptacle substantially as and for the purposes set forth.

12. In a vapor-lamp, the combination with a reservoir, a generator, a mixing-chamber and a vapor-conducting pipe in alinement with said generator and carrying at its other end a suitable burner situated beneath the generator of an extension-drop pipe leading from the reservoir to the generator, the said extension comprising a stationary pipe with a stuffing-box on its lower end, a pipe, connected to the lamp, sliding thereon, having a stuffing-box and a collar on its upper end and an adjustable latch to engage the said collar, substantially as and for the purposes set forth.

13. In a vapor-lamp the combination with a suitable oil-reservoir, a generator, a mixing-chamber and a vapor-conducting pipe having its upper end in alinement with the generator and its lower end carrying the burner situated beneath the said generator of a sliding extension having upper and lower stuffing-boxes, a collar on the upper end of the sliding pipe and an adjustable latch engaging the said collar on the pipe leading from the reservoir to the generator substantially as and for the purposes set forth.

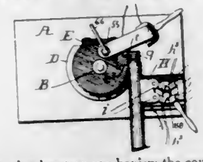
14. In a vapor-lamp, the combination with an oil-reservoir, and a drop extension leading from the reservoir, said extension consisting of a stationary pipe leading from the storage-reservoir, a sliding pipe inclosing the said stationary pipe, stuffing-boxes on the said pipes to make them gas-tight and means of locking the sliding pipe when it is raised, consisting of an annular collar on the sliding pipe, a bell-crank catch to engage the said collar and a spring to hold said catch in engagement with the annular collar, of a generator, a vapor-conducting pipe carrying a burner on its lower end and a similar pipe opposite the said vapor-pipe to form the frame for the lamp, and the burner, substantially as described.

15. In a vapor-lamp the combination with an oil-reservoir, a drop-extension pipe leading from the reservoir, a valved vapor-generating pipe, a vapor-conducting pipe, and a burner thereon situated under the said generating-pipe, of a cylindrical mixing-chamber revolubly mounted on the end of the said generator and the vapor-pipe in alinement therewith having its axis at right angles to the axis of the generating-pipe and the vapor-pipe and having its ends perforated with means of opening and closing the perforations to regulate the supply of air, substantially as shown and described.

16. In a vapor-lamp the combination with a source of supply, a drop-extension pipe, a valved generating-pipe, a vapor-conducting pipe a mixing-chamber connecting the generating-pipe and the vapor-conducting pipe, a burner situated on the vapor-pipe and beneath the generating-pipe, and a chimney on the said burner, of a cap on the chimney to direct the heat against the generating-pipe, said cap consisting of a cylindrical metal tube slightly larger in diameter than the chimney, having ears turned in to rest on the chimney, the upper part of said cap being flattened to concentrate the flow of gases on the generator, all arranged substantially as and for the purposes described.

17. In a lamp of the character described, as a mixing-chamber, the combination with a suitable gas-supply and a gas-chamber in line therewith, of a chamber revolubly mounted on the gas-supply pipe and the gas-chamber, said chamber having one or more of its ends perforated, and means of opening and closing said holes to regulate the supply of air, substantially as shown and described.

655,259. PIPE-BENDING MECHANISM. JAMES A. MILLER, New Haven, Conn. Filed May 31, 1899. Serial No. 718,816. (No model.)



Claim.—1. In pipe-bending mechanism the combination of a bending-former, a fixed jaw or half-nut secured thereto axially tangential to the curve of the bending-former, and a movable jaw or half-nut hinged or pivoted to the bending-former and comprising with the fixed jaw a split nut for receiving and clamping a threaded pipe, substantially as and for the purpose specified.

2. In pipe-bending mechanism the combination of a bending-former, a fixed jaw or half-nut secured thereto axially tangential to the curve of the bending-former and a movable jaw or half-nut hinged or pivoted to

the bending-former by an eccentric and comprising with the fixed jaw a split nut for receiving and clamping a threaded pipe substantially as and for the purpose specified.

3. In pipe-bending mechanism the combination of a bending-former a fixed jaw or half-nut secured thereto axially tangential to the curve of the bending-former a stirrup spanning the bending-former and hinged or pivoted thereto, a jaw or half-nut carried by the stirrup and comprising with the fixed jaw a split nut for receiving a threaded pipe, and clamping means for forcing the same together, substantially as and for the purpose specified.

4. In pipe-bending mechanism the combination of a bending-former, a fixed jaw or half-nut secured thereto axially tangential to the curve of the bending-former a stirrup carrying a jaw or half-nut and received upon or spanning the bending-former pivotally connected thereto and eccentric clamping means for compressing the movable jaw upon the fixed jaw, said jaws being countered to fit the unthreaded body of the pipe at the base of the thread in the operation of bending substantially as and for the purpose specified.

5. In pipe-bending mechanism the combination of a bending-former, clamping mechanism for securing a pipe to the former, a resistance-bearing fitting the pipe on the side of the strain and antifriction rolls or balls arranged in said bearing in a series around the periphery of the pipe-groove to sustain the thrust of the pipe against the bearings substantially as and for the purpose specified.

6. In pipe-bending mechanism the combination of a bending-former, clamping mechanism for securing a pipe to the bending-former, a movable resistance-bearing fitting the pipe on the side of the strain, friction rolls or balls arranged in said bearing in a series around the periphery of the pipe-groove to sustain the thrust of the pipe thereon and mechanism for throwing the bearing into working position against the pipe or releasing it therefrom, substantially as and for the purpose specified.

7. In pipe-bending mechanism the combination of a bending-former, clamping mechanism for securing the pipe to the bending-former, a movable resistance-bearing fitting the pipe on the side of the strain, friction rolls or balls arranged in said bearing to sustain the thrust of the pipe thereon, and a toggle-joint acting between the bearing and an abutment on the frame and adapted for throwing the bearing in working position against the pipe or releasing it therefrom substantially as and for the purpose specified.

8. In pipe-bending mechanism the combination with a resistance-bearing of a pipe having an outlet within the pipe-receiving cavity of the bearing and adapted for connection with a cooling-liquid supply for chilling the surface of the pipe preparatory to bending substantially as and for the purpose specified.

9. In pipe-bending mechanism the combination of a bending-former, threaded clamping mechanism for securing a pipe to the former, and a resistance-bearing provided with a groove or way fitting and adapted to receive the longitudinal semisection of the pipe and sustain the thrust thereof substantially as and for the purpose specified.

10. In pipe-bending mechanism the combination of a bending-former, a fixed jaw or half-nut secured thereto axially tangential to the curve of the bending-former, and a movable jaw or half-nut hinged or pivoted to the bending-former and comprising with the fixed jaw a split nut for receiving and clamping a threaded pipe, said jaws being provided with orifices within their threaded grooves or ways adapted to be connected with a cooling-liquid supply and to discharge the same upon the heated threaded portions of the pipe, substantially as and for the purpose specified.

11. In pipe-bending mechanism the combination of a bending-former provided with a pipe-receiving groove or seat, a threaded half-nut for engaging and clamping the threaded end of a pipe in said groove or seat, and clamping means for operating and holding the half-nut in position on the former, substantially as and for the purpose specified.

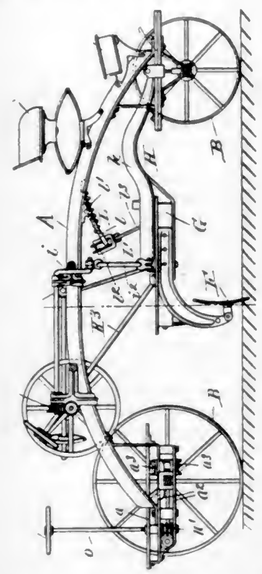
655,260. MACHINE FOR MAKING AND REPAIRING ROADS.

ORTUS E. MOATS, Harvey, Ill., assignor to Frederick C. Austin, Chicago, Ill. Filed Dec. 14, 1899. Serial No. 740,328. (No model.)

Claim.—1. A road-machine comprising a body-frame supported upon vehicle-wheels, a transversely-arranged track or way mounted upon said body-frame and movable up and down, and a scraper-blade suspended from said track or way and movable along the length of same.

2. The combination of a body-frame, a sleeve pivoted to the said frame, a long rear axle mounted in said sleeve, antifriction-balls interposed between the axle and sleeve, antifriction-balls interposed between the end portions of the sleeve and body-frame, means for sliding the sleeve along the said axle, and means for skewing the sleeve and axle.

3. In a road-machine, and in combination with the transversely-arranged scraper-blade, a sleeve having a pivotal connection with the body-frame, a long rear axle mounted in said sleeve, a chain-drum arranged in rear of said sleeve, a chain having its middle portion wound around said drum and its ends connected with the opposite end portions of said sleeve, means for rotating said drum for the purpose of skewing said sleeve and axle, and means for sliding the sleeve along the said axle.



4. In a road-machine, and in combination with the transversely-arranged scraper-blade, a long rear axle having a pivotal connection with the body-frame, a chain-drum arranged adjacent to said sleeve, a chain or like flexible connection having its middle portion wound around said drum and its ends suitably connected with the opposite end portions of said axle, and worm-gearing for rotating said drum for the purpose of skewing the said axle.

5. The combination of a long rear axle, a long sleeve which incloses the middle portion of said axle and which is slidably mounted upon the latter, the said sleeve being pivoted at its middle to the body-frame, a chain-drum arranged parallel with and in rear of said sleeve, a chain having its middle portion wound around said drum and its ends suitably connected with the opposite end portions of said sleeve, worm-gearing for rotating said drum for the purpose of skewing said sleeve and axle, means for sliding the sleeve along the axle, and means for locking the sleeve and axle against relative shift.

6. The combination of the sleeve which is pivoted to the body-frame, the long rear axle mounted in said sleeve and provided with teeth, a pinion arranged to engage said teeth and mounted in bearings on said sleeve, the hubs of the pinion extending through portions of the body-frame and the pinion in this way serving as a pivot for the sleeve, means for rotating the pinion for the purpose of sliding the sleeve along the axle, and means for skewing the sleeve and axle.

7. In combination with the vertically and laterally adjustable scraper-blade, a transversely-arranged double crank mounted upon the body-frame in such manner as to swing substantially up and down, floating springs for connecting the said crank with the body-frame, a traveler adapted and arranged to traverse the way afforded by the horizontal middle portion of said crank, and means for connecting said traveler with said blade.

8. In a road-machine, a laterally and vertically adjustable scraper-blade, a double crank arranged to swing substantially up and down in bearings on the body-frame, one or more springs for connecting the crank with the body-frame for the purpose set forth, a traveler having a grooved roll adapted and arranged to traverse the horizontal middle portion of said crank, and means for connecting said traveler with said blade.

9. In a road-machine, a rotatable turn-table from which the blade is suspended and which is provided with cogs or gear-teeth, a pinion arranged to engage said teeth, a shaft having a sliding connection with said pinion, a device for locking the turn-table against rotation, means whereby a longitudinal shift or end movement of said shaft will cause the said locking device to lock or unlock the turn-table, and means for rotating said shaft for the purpose of rotating said pinion and thereby rotating the said turn-table.

10. In a road-machine, a turn-table from which the scraper-blade is supported and which is provided with a segment, a pinion arranged to engage said segment, a shaft having a sliding engagement with said pinion, a locking device for locking the turn-table against rotation and arranged so as to be engaged by the end of said shaft, means for shifting said shaft longitudinally for the purpose of causing the locking device to lock or unlock the turn-table, and means for rotating said shaft for the purpose of rotating said pinion and thereby rotating said turn-table.

11. In a road-machine, a turn-table from which the scraper-blade is supported and which is provided with a segment, a pinion arranged to engage said segment, a swinging latch or detent which is arranged to engage notches in the turn-table and which has a beveled end, a shaft having a polygonal portion which slides in a polygonal opening in said pinion, means for shifting said shaft endwise for the purpose of causing its end to strike the beveled end of the detent and thereby unlock the turn-table, and means for rotating said shaft for the purpose of rotating said pinion and thereby rotating the turn-table.

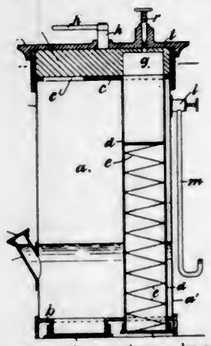
12. The combination of a turn-table, a device for locking said turn-table against rotation, a device for rotating said turn-table, a shaft having a sliding engagement with said rotating device, means for shifting said shaft endwise for the purpose of causing it to engage and open said locking device, and means for rotating said shaft for the purpose of rotating the turn-table.

13. The combination of a turn-table having a segment and having also a series of notches, a draw-bar to which the turn-table is pivoted, a detent or catch pivoted to said draw-bar and adapted to engage said notches in the turn-table, said detent being provided with a beveled end, a pinion arranged to engage said segment, a shaft provided with an arm and having also a polygonal portion which slides in a polygonal opening in the pinion, a coil-spring arranged and tending to force the shaft forward against the beveled end of said detent, one or more stops for engaging the arm on the shaft for the purpose of maintaining the spring under compression and the end of the shaft out of engagement with the beveled end of the detent, means for rotating the shaft for the purpose of rotating the turn-table, and means for shifting the shaft endwise for the purpose of disengaging the arm and allowing the spring to force the shaft forward against the beveled end of the detent, substantially as set forth.

14. The combination of the draw-bar, turn-table, rack, pinion, shaft, detent, spring and bolt *g*, all constructed and organized substantially as and for the purposes set forth.

655,261. ACETYLENE-GAS LAMP.

GEORGE A. MOORE, Bromborough, England. Filed Nov. 7, 1899. Serial No. 736,133. (No model.)



Claim.—1. In an acetylene-gas lamp, a lamp-body containing a water and generator chamber, a carbid-reservoir extending longitudinally of said chamber within the same, a transferring device located outside of said chamber and acetylene-reservoir, and within the lamp-body, means for operating the transferring device, means for feeding the carbid thereto and a burner-outlet.

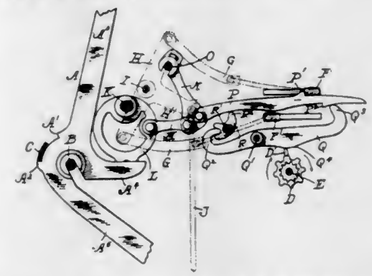
2. In an acetylene-gas lamp, a lamp-body containing a water and generator chamber, a carbid-reservoir located within said body, a transferring device located within the body and outside said generator-chamber and reservoir and having communication with the same, means for operating said device, and a burner-outlet.

3. In combination, a cylindrical body having a water and generator chamber within the same, a carbid-reservoir, a transferring device located above said chamber and reservoir and within the body having communication with both the generator-chamber and said reservoir, a stud carrying said transfer device journaled axially of said body, means for turning the stud and a burner.

4. In combination in an acetylene-lamp, a body including a cylinder forming the generator-chamber, a second cylinder extending longitudinally of the first within the same, a spring-pressed movable partition in the second cylinder adapted to support a series of carbid charges, a head to the first cylinder having an opening therein, the upper end of said second cylinder being open and extending through said head, a disk mounted in the body having a recess adapted to aline with the opening in the head and the second cylinder, a spindle extending through the head of the lamp carrying the disk, an operating-handle on said disk and a piercer guided in the head of the lamp in alinement with the second cylinder, substantially as described.

655,262. LOOM.

ALFRED MORELL, Millbury, Mass., assignor of one-half to John B. Brady, same place. Filed Feb. 19, 1900. Serial No. 5,732. (No model.)

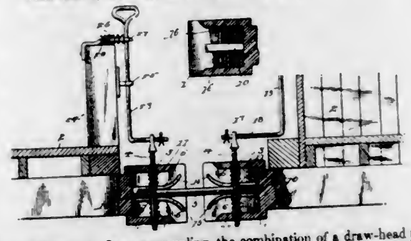


Claim.—1. In a power-loom, the jack or harness-lever A, having the arm A^4; dobby-eveners F, F' having horizontal, intermittent, reciprocating movements imparted thereto, and the pattern-cylinder D, provided with transverse pins or projections D', in combination with the eccentric L located at the junction of the arms A^3 and A^4 of jack A, and pivoted to transverse shaft K; link M pivoted at one end to said eccentric and at its other end to the lower end of a swinging arm N; said swinging arm, pivoted to shaft O; the dobby-hook P, pivoted at its inner end to the lower end of said swinging arm and whose outer end extends between the dobby-eveners, and with which said dobby-eveners are adapted to engage in their reciprocating movements; the rock-lever Q, arranged under the outer end of the dobby-hook, adapted to engage therewith, pivoted to the transverse shaft Q' and with which the pin or projection on the pattern-cylinder is adapted to engage, and the dog R, pivoted to shaft R' and with which the inner end of said rock-lever Q engages, said dog also being adapted to engage with the dobby-hook, substantially as and for the purpose set forth.

2. In a power-loom, the intermittently-reciprocating dobby-hook P, having a projection adapted to engage with the dobby-evener F and with another projection adapted to engage with the dobby-evener F', and said dobby-eveners, each adapted to have reciprocating movements imparted thereto, in combination with rock-lever Q, pivoted to shaft Q' and provided with the hooked ends Q^2 Q^3, the end Q^2 being adapted to engage with the dog R, and the end Q^3 with the dobby-hook P; said dog R pivoted to shaft R' and also adapted to engage with said dobby-hook P, and with the pattern-cylinder D and its pin D', substantially as and for the purpose set forth.

655,263. CAR-COUPLING.

WILLIAM MCDONALD, Luxora, Ark. Filed Mar. 5, 1900. Serial No. 7,371. (No model.)



Claim.—1. In a car-coupling, the combination of a draw-head provided at the inner faces of its sides with longitudinal ribs located at points between the top and bottom of the draw-head, plates located within the draw-head and fitting against the upper and lower edges of the ribs, and upper and lower springs engaging the plates and holding the same against the ribs, substantially as described.

2. In a car-coupling, the combination of a draw-head provided at

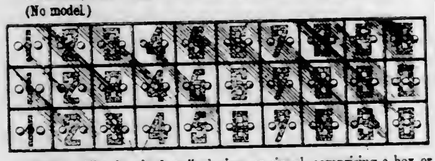
the inner faces of its sides with vertical guides and having intermediate stops, the upper and lower plates located within the draw-head and interlocked with the guides, and the upper and lower springs holding the plates against the intermediate stops, substantially as described.

3. In a car-coupling, the combination of a draw-head provided at the inner faces of its sides with vertical guides and having longitudinal ribs or enlargements located between the ends of the guides, upper and lower plates interlocked with the guides and fitting against the upper and lower faces of the ribs or enlargements, and upper and lower springs engaging the plates and holding the same against the ribs or enlargements, substantially as described.

4. In a car-coupling, the combination of a draw-head provided at the inner faces of its sides with vertical ribs, and having upper and lower openings at the ends thereof, upper and lower plates provided at their sides with notches located between their ends to engage the vertical ribs, stops for spacing the plates from each other, and upper and lower springs engaging the plates and holding the latter against the upper and lower faces of the stops, substantially as described.

5. In a car-coupling, the combination of a draw-head, a coupling-pin, an operating-rod connected with the coupling-pin, a guide consisting of a bar secured at its inner portion and having its outer portion offset from the plane of the inner portion and provided with an opening receiving the operating-rod, said offset outer portion forming a shoulder at its inner end and providing a space between it and the part to which the inner portion is secured, and a coiled spring disposed on the outer offset portion of the guide-bar and interposed between the said shoulder and the operating-rod, substantially as described.

655,264. **SIGN OR SIGNAL FOR CALLING CABS.** ARTHUR G. R. NICHOL, New York, N. Y. Filed Sept. 1, 1899. Serial No. 729,169. (No model.)



Claim.—The herein-described sign or signal, comprising a box or casing divided into compartments of approximately-equal size arranged in superposed rows, each compartment being provided with a distinguishing character, a plurality of differently-colored electric lamps in each compartment, lamps of a like color occupying the same relative positions in all the compartments, a switchboard having a series of switches or circuit-closers, one for each lamp, and connections from the switchboard to the lamps.

655,265. **ELECTRIC CABLE.** GEORGE H. NISBETT, Huyton, England. Filed Dec. 28, 1897. Serial No. 663,941. (No model.)



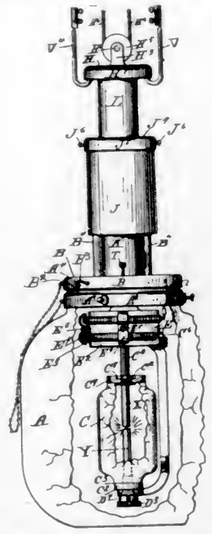
Claim.—1. In an electric cable, the combination with the outer strengthening and insulating layers and the inner conductor, of an interposed separating-coil of substantially-triangular cross-section, substantially as described.

2. In an electric cable the combination with the outer strengthening and insulating layers and the inner conductor, of an interposed separator comprising a helically-coiled insulating-support of triangular cross-section having its flat side out and its apex touching the conductor, substantially as described.

655,266. **ELECTRIC-ARC LAMP.** JOHN S. NOWOTNY, Madisonville, Ohio. Filed July 12, 1898. Serial No. 685,792. (No model.)

Claim.—1. In an arc-lamp, the combination of the solenoid-magnet, slidable core, and the carbon-holder, means for feeding down automatically the upper carbon, and the inner globe inclosing the carbons where they produce the arc-light, and an outer globe surrounding the inner globe, and a rheostat contained within the outer globe and located below the solenoid-magnet and core, and above the arc, between the carbons, substantially as and for the purposes specified.

2. The combination of the solenoid-magnet I, cap J^4, tube G, frame-piece B, interior piston N carrying tube O, embracing the slidable carbon-holder P and the core S, embracing the tube O, and the tube R, supporting tube O, and set-screw for setting tube R at a desired place on tube O, the core being located relatively to the solenoid-magnet, substantially as shown, and the box M, supported by the slidable core, and containing means in connection with the stationary tube M^3 for releasing its hold upon the carbon, and regaining it as the core shifts, and the frame B, supported on tube G, and frame E, E^2, supported by frame B, and carrying the tube M^3, substantially as and for the purposes specified.



3. The combination of the solenoid-magnet I, cap J^4, tube G, frame-piece B, interior piston N carrying tube O, embracing the slidable carbon-holder P and the core S, embracing the tube O, and the tube R, supporting tube O, the core being located relatively to the solenoid-magnet, substantially as shown, and the box M, supported by the slidable core, and containing means in connection with the stationary tube M^3 for releasing its hold upon the carbon, and regaining it as the core shifts, and the frame B, supported on tube G, and frame E, E^2, supported by frame B, and carrying the tube M^3, substantially as and for the purposes specified.

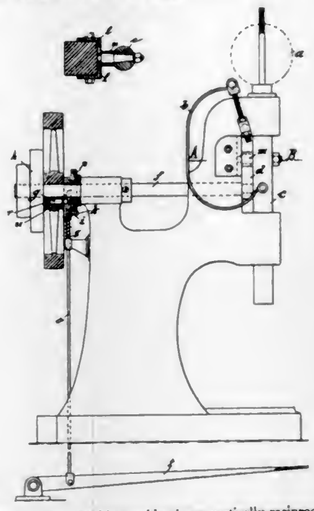
4. The combination of the solenoid-magnet I, cap J^4, tube G, frame-piece B, interior piston N carrying tube O, embracing the slidable carbon-holder P and the core S, embracing the tube O, and the tube R, supporting tube O, and set-screw for setting tube R at a desired place on tube O, the core being located relatively to the solenoid-magnet, substantially as shown, and the box M, supported by the slidable core, and containing means in connection with the stationary tube M^3 for releasing its hold upon the carbon and regaining it as the core shifts, and the frame B, supported on tube O, and frame E, E^2, supported by frame B, and carrying the tube M^3, and a rheostat supported by frame E, and encircling the carbon at that point, viz: below the core and the magnet, substantially as and for the purposes specified.

5. The combination of the solenoid-magnet I, cap J^4, tube G, frame-piece B, interior piston N carrying tube O, embracing the slidable carbon-holder P and the core S, embracing the tube O, and the tube R, supporting tube O, and set-screw for setting tube R at a desired place on tube O, the core being located relatively to the solenoid-magnet, substantially as shown, and the box M, supported by the slidable core, and containing means in connection with the stationary tube M^3 for releasing its hold upon the carbon and regaining it as the core shifts, and the frame B, supported on tube O, and frame E, E^2, supported by frame B, and carrying the tube M^3, and a rheostat supported by frame E, and encircling the carbon at that point, viz: below the core and the magnet, and a set-screw T in frame B above the box M, and in the path of the same, substantially as and for the purposes specified.

6. In an electric-arc lamp, an inner globe inclosing the arc-light electrodes, and an outer globe inclosing the inner globe, a rheostat located within the outer globe, substantially as and for the purposes specified.

7. In an electric-arc lamp, an inner globe inclosing the arc-light electrodes, and an outer globe inclosing this inner globe, a frame located below the solenoid-magnet, and at its upper end carrying a solenoid-magnet, and having a drop-bracket carrying the lower carbon, the frame and rheostat and drop-bracket located outside of the inner globe and within the outer globe, substantially as and for the purposes specified.

655,267. **MACHINE-TOOL FOR PUNCHING, STAMPING, &c.** ALEXANDER OBERMEYER, Barmen-Rittershausen, Germany. Filed Feb. 3, 1900. Serial No. 3,884. (No model.)



Claim.—1. In a machine-tool having a vertically-reciprocating tool-carrying bar and means for normally depressing the same and a cam device to raise it, the combination of means for arresting the bar, when the machine is stopped, in its highest position immaterial of the position of the parts at the moment of uncoupling, substantially as described.

2. In a machine of the class specified, the combination of a vertically-reciprocating tool-carrying bar, means for depressing the same, and a rotary cam to raise the same, a cam-shaft for the cam and means for driving the same and a coupling-disk, a laterally-projecting pin rotated by the driven shaft and a recess in which said pin may engage in the coupling-disk, a coupling-fork having cam-surfaces and a laterally-projecting lug, and a depression in the periphery of the said coupling-disk in which the said lug engages when the fork is in its upper position said depression being located so that when the cam is supporting the tool-carrying bar in the highest position the lug will be engaged by its end in the manner and for the purpose substantially as described.

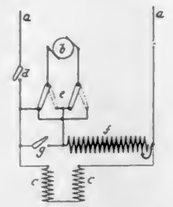
3. In a machine of the class specified the combination of a vertically-reciprocating tool-carrying bar, means for depressing the same and means for raising the same consisting of a rotary cam, a depression in the top of said cam into which the tool-bar roll, coöperating with said cam, may sink and effect a slight resistance when the bar is in its highest position and means for uncoupling the driving mechanism and for arresting the cam-shaft in its said highest position substantially as described.

4. In a machine of the class specified having a spring to depress the tool-carrying bar, and a cross-head against which the said spring bears, the combination of a shaft having two coupling-disks and a double coupling-clutch mounted therebetween having an open and a closed belt, cords attached at either side to the said spring cross-head and guided over suitable pulleys, gearing between said pulleys and the said shaft carrying the couplings and means for operating the said couplings to rotate the shaft in either direction at the fall of the tool-carrying bar substantially as described.

5. In a machine of the class specified, the combination of a vertically-reciprocating tool-carrying bar and a spring to normally depress the same and cam to raise it, a cross-head to determine the pressure of the said spring and means in connection with the machine-driving gear to vary the position of the said cross-head at any period of the working of the said machine substantially as described.

655,268. **ELECTRIC MOTOR.** ERNST G. P. OELSCHLÄGER, Charlottenburg, and CARL O. P. SCHROTTER, Berlin, Germany, assignors to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Dec. 27, 1897. Serial No. 663,564. (No model.)

Claim.—1. The combination with a main circuit, of a motor, means for connecting the same in circuit with and disconnecting it from the said circuit, a pole-changing switch having suitable connections for reversing the polarity of the motor, said motor having a field-winding in shunt of the armature thereof, starting-resistance, a parallel path about the field-winding, and means for closing the same through said starting-resistance when the motor is to be cut out of circuit, whereby injurious sparking is avoided, substantially as described.



2. The combination with a main circuit, of a motor having a field-winding in circuit with the armature thereof and in series with the main circuit, starting-resistance, means for including the same in parallel with said field-winding between the sides of the circuit, and means for disconnecting the motor from the main circuit, substantially as described.

3. The combination with a main circuit, of a motor, means for connecting the same in circuit with and disconnecting it from the said circuit, a pole-changing switch having suitable connections with the armature for reversing the direction of current passing through the same, said motor having a field-winding in shunt of the armature thereof, starting-resistance, means for establishing a shunt-circuit about the field and including said starting-resistance in circuit with the shunt, and means for including starting-resistance in circuit with the armature, to act as a brake, substantially as described.

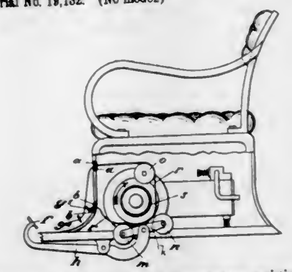
4. The combination with a main circuit, of a motor having a field-winding and an armature, starting-resistance adapted to be included in series with the armature-circuit of the said motor, a pole-changing switch, a secondary path about the field-winding, and means for closing said path through said starting-resistance and opening the main circuit, substantially as described.

5. The combination with a main circuit, of a motor having a field-winding and an armature, means for connecting the same in circuit with and disconnecting it from the said circuit, starting-resistance adapted to be included in series with the armature-circuit of the said motor, a pole-changing switch, a secondary path about the field-winding, and means for closing the same through said starting-resistance when the motor is to be cut out of circuit, whereby injurious sparking is avoided, substantially as described.

6. The combination with a main circuit, of a motor having a field-winding, a secondary path about the field-winding, starting-resistance adapted for inclusion in series with the armature-circuit of the said motor, and means for including said resistance in said secondary path of the field-winding, thereby avoiding injurious sparking, substantially as described.

7. The combination with a main circuit, of a motor having a field-winding, a secondary path about the field-winding, adjustable starting-resistance adapted for inclusion in series with the armature-circuit of the said motor, and means for including said resistance in said secondary path of the field-winding, thereby avoiding injurious sparking, substantially as described.

655,269. **STARTING DEVICE FOR EXPLOSIVE-ENGINES.** ROBERT R. VON FALLER, Nuremberg, Germany. Filed June 5, 1900 Serial No. 19,132. (No model.)



Claim.—1. A starting-gear for motor-cars, consisting of the combination with a pulley on the shaft of the motor, of a strap adjacent thereto, with its ends arranged to be grasped by the operator, and means for pressing the bight of said strap against said pulley.

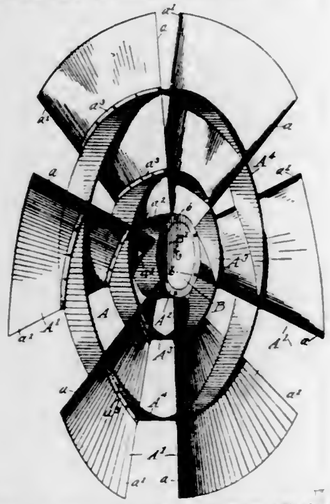
2. A starting-gear for motor-cars, consisting of the combination with a pulley on the shaft of the motor, of a strap adjacent thereto, with its

ends arranged to be grasped by the operator, and a lever arranged to press the bight of said strap against said pulley.

3. A starting-gear for motor-cars, consisting of the combination with a pulley on the shaft of the motor, of a strap adjacent thereto, with its ends arranged to be grasped by the operator, a lever, and a bar pivoted to said lever and carrying rollers adapted to press the bight of said strap against said pulley.

4. A starting-gear for motor-cars, consisting of the combination with the pulley S on the shaft of the motor, of a fixed roller o adjacent thereto, a lever *h* having a footpiece *f* and carrying a bar *k* provided with rollers *m n*, and a strap *r* having handles g' g^2 and passing between the pulley S and the rollers *m n* and around the roller *o*.

655,270. **WIND-WHEEL.** THOMAS O. PERRY, Chicago, Ill. Filed Jan. 3, 1898. Serial No. 665,342. (No model.)



Claim.—1. In a wind-wheel, the combination with the shaft and hub fixed thereon, of a plurality of radial transversely-curved sails, and segments of thin cylindrical bands interposed transversely between the sails at radial intervals, each segment abutting against the front and back of adjoining sails in compound curves, and having their edges in contact with the sails turned outward at about right angles with the cylindrical band-surface forming exterior band-flanges, and rivets or bolts binding the sails between the band-flanges, substantially as herein set forth.

2. In a wind-wheel, the combination with the shaft, and hub fixed thereon, of a plurality of radial transversely-curved sails having their leading and trailing edges axially separated at both inner and outer ends by practically the same distance, and segments of thin cylindrical bands interposed transversely between the sails at radial intervals, each segment abutting against the front and back of adjoining sails in compound curves, and having their edges in contact with the sails turned outward at about right angles with the cylindrical band-surfaces forming exterior band-flanges, and rivets or bolts binding the sails between the band-flanges, substantially as herein set forth.

3. In a wind-wheel, the combination with the shaft and hub fixed thereon, of a plurality of radial transversely-curved sails having their leading and trailing edges axially separated at both their inner and outer ends by practically the same distance, their inclinations to plane of wheel decreasing along their leading edges with increasing radial distances while the inclination of their trailing edges remains practically a small constant angle throughout, and segments of thin cylindrical bands interposed transversely between the sails at radial intervals, each segment abutting against the front and back of adjoining sails in compound curves, and having their edges in contact with the sails turned outward at about right angles with the cylindrical band-surface forming exterior band-flanges, and rivets or bolts binding the sails between the band-flanges, substantially as herein set forth.

4. In a wind-wheel, the combination with the shaft and spider fixed thereon, of a broad cylindrical hub-band surrounding the spider and secured directly thereto, and a plurality of transversely-curved sails radiating from said hub-band and secured thereto in a junction-line of compound curvature traversing the cylindrical surface from front to rear at great angle with plane of wheel in front and small angle in the rear, and segments of cylindrical bands interposed transversely between the sails at distances intermediate of their length, each of said segments having flanged ends of compound curvature abutting respectively against the front and back of adjoining sails, and rivets or bolts binding each sail between the adjoining flanges of the cylindrical segments, substantially as herein set forth.

5. In a wind-wheel, the combination with the shaft and spider fixed thereon, of a broad cylindrical hub-band surrounding the spider and secured directly thereto, and a plurality of radial transversely-curved sails secured to said hub-band at their inner ends and having both their leading and their trailing edges from inner to outer ends approximately located respectively in two parallel planes axially separated and perpendicular to the shaft, and segments of cylindrical bands interposed transversely between the sails at distances intermediate of their length, each of said segments having flanged ends of compound curvature abutting respectively against the front and back of adjoining sails, and rivets or bolts binding each sail between the adjoining flanges of the cylindrical segments, substantially as herein set forth.

6. In a wind-wheel, the combination with the shaft and spider fixed thereon, of a broad cylindrical hub-band surrounding the spider and secured directly thereto, and a plurality of radial transversely-curved sails, their widths expanding with increase of radial distance, secured to said hub-band at their inner ends and having both their leading and their trailing edges from inner to outer ends approximately located respectively in two parallel planes axially separated and perpendicular to the shaft, and segments of cylindrical bands interposed transversely between the sails at distances intermediate of their length, each of said segments having flanged ends of compound curvature abutting respectively against the front and back of adjoining sails, and rivets or bolts binding each sail between the adjoining flanges of the cylindrical segments, substantially as herein set forth.

7. In a wind-wheel, in combination with the shaft and hub fixed thereon, and supporting concentric bands; the radiating sails curved transversely with respect to their radial length and expanding in width with increasing radial distance, each sail having a trailing edge approximately parallel with the plane of the wheel throughout its radial length, while its leading edge at different radial distances makes with a plane containing said leading edge and the axis of the wheel a varying angle diminishing with decrease of radial distance, and whose rate of diminution with radial approach to center of wheel exceeds the rate of said radial approach, substantially as herein set forth.

8. In a wind-wheel, in combination with the shaft and hub fixed thereon, and supporting concentric bands; the radiating sails curved transversely with respect to their radial length and expanding in width with increase of radial distance, each sail having a trailing edge approximately parallel with the plane of the wheel throughout its radial length, while its leading edge at different radial distances makes with the plane of the wheel various angles whose cotangents are approximately proportional to the various corresponding radial distances, substantially as herein set forth.

9. In a wind-wheel, in combination with the shaft and hub fixed thereon, and a broad hub-band secured around the hub; the radiating sails curved transversely with respect to their radial length and expanding in width with increasing radial distance and having trailing edges longitudinally and laterally approximately parallel with the plane of the wheel, and concentric bands supporting the sails at radial distances intermediate of their extremities, the axial depths of the sails at the hub-band equaling their axial depths at the intermediate supporting-bands, substantially as herein set forth.

10. In a wind-wheel, in combination with the shaft and hub fixed thereon, and supporting concentric bands; the radiating sails curved transversely with respect to their radial length and expanding in width with increasing radial distance, each sail having a trailing edge approximately parallel with the plane of the wheel throughout its radial length, while its leading edge, everywhere separated from the trailing edge by a practically-constant axial interval, at different radial distances makes with a plane including the leading edge and the axis of the wheel a varying angle diminishing with decrease of radial distance, and whose rate of diminution with radial approach to center of wheel exceeds the rate of said radial approach, substantially as herein set forth.

11. In a wind-wheel, the combination with thin radial sails transversely curved and secured at their inner ends to a broad central band or hub, of one or more thin and broad cylindrical concentric bands whose juncture with each of the sails forms a compound curve extending transversely across the width of the sail, the bands and sails being secured to each other by dividing into segments and flanging the bands along the sails and clamping the sails between the flanges of the band-segments by means of a plurality of rivets or bolts, substantially as herein set forth.

12. In a wind-wheel, the combination with thin radial sails transversely curved and secured at their inner ends to a central hub or band, of one or more thin and broad cylindrical concentric bands divided into segments with flanged ends, each segment joining the concave face of one sail with the convex back of the following sail, the line of each juncture of sail and band forming a compound curve extending transversely across the sail at a radial distance from the axis of the wheel intermediate between the ends of the sails, and rivets or bolts piercing the sails and clamping them between the abutting flanges of the segmental bands, substantially as herein set forth.

13. A wind-wheel comprising a hub, transversely-curved sails supported from said hub, one or more broad cylindric supporting-bands made of a plurality of thin segments with broad sides perpendicular to radial lines each inserted between two adjacent sails, flanges on the margins of said segments along the sails, and rivets or bolts uniting the proximate flanges of each two adjacent segments through the intervening sail, substantially as herein set forth.

14. A wind-wheel, comprising a spider fixed to a supporting-shaft, a tubular hub removably mounted upon the spider, sheet-metal sails transversely curved secured to said hub, one or more broad cylindric supporting-bands concentric with the hub and composed of a plurality of thin sheet-metal segments with broad sides perpendicular to radial lines each inserted between two adjacent sails and having flanges at their juncture with the sails, and rivets or bolts securing the adjacent flanges together through the intervening sail, substantially as herein set forth.

15. A wind-wheel comprising a broad cylindric hub, a plurality of transversely-curved sails supported from said hub at their inner ends, one or more broad cylindric connecting-bands concentric with the hub and consisting of segments, secured each between two adjacent sails, and braces axially inclined secured to the hub and to the farther side of each sail, for additionally supporting the latter, substantially as herein set forth.

16. A wind-wheel comprising a broad cylindric hub, sheet-metal sails transversely curved secured to the hub at their inner ends, one or more cylindric supporting-bands concentric with the hub and composed of separate sheet-metal segments inserted between the sails and secured to each other with the sails between them, and braces axially inclined secured to the hub and sails and extending from one end of the hub to the farther side of each sail for additionally supporting the latter, substantially as herein set forth.

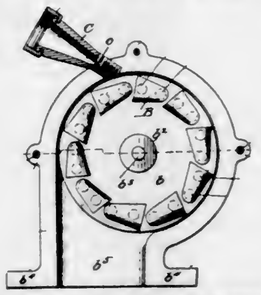
17. In a wind-wheel, the combination with the supporting-shaft and a spider permanently fixed thereon, of a broad tubular hub-band inclosing the spider and removably bolted thereto, and transversely-curved sails radiating from and secured to the hub at their inner ends, the juncture of said sails with said hub-band forming a compound curve extending diagonally from front to rear of hub-band, substantially as herein set forth.

18. In a wind-wheel, the combination with the radial sails curved transversely with respect to their radial length and expanding in width with increase of radial distance and whose trailing edges make a small and practically-constant angle with the plane of the wheel throughout their radial length, and whose leading edges at different radial distances, make with the plane of the wheel various angles, which increase with uniform approach to center of wheel at a greater rate than the uniform rate of radial progression; of a broad cylindric hub-band securing the inner ends of the sails throughout their width, an outer concentric cylindric band extending axially across and securing the curvature of the sails along their junctions therewith, and an intermediate concentric cylindric band likewise securing the curvature of the sails across their intermediate widths, the radial interval between the hub-band and the intermediate band being less than the radial interval between the intermediate band and the outer band, substantially as herein set forth.

19. In a wind-wheel, the combination with the radial sails curved transversely with respect to their radial length and expanding in width with increase of radial distance and whose trailing edges make a small and practically-constant angle with the plane of the wheel throughout their radial length, and whose leading edges at different radial distances, make with the plane of the wheel various angles, which increase with uniform approach to center of wheel at a greater rate than the uniform rate of radial progression; of a succession of broad concentric cylindric bands extending axially across and securing the curvature of the sails across their widths along their junctures therewith, the radial interval between consecutive concentric bands near the center of wheel being less than between consecutive bands whose radial interval is more remote from the center, substantially as herein set forth.

20. In a wind-wheel, the combination with the radial sails curved transversely with respect to their radial length and expanding in width with increase of radial distance and whose trailing edges make a small and practically-constant angle with the plane of the wheel throughout their radial length, and whose leading edges at different radial distances, make with the plane of the wheel various angles, which increase with uniform approach to center of wheel at a greater rate than the uniform rate of radial progression; of a broad cylindric hub-band securing the inner ends of the sails throughout their width, an outer concentric cylindric band extending axially across and securing the curvature of the sails along their junctures therewith at a less radial distance than the outer extremities of said sails, and an intermediate concentric cylindric band likewise securing the curvature of the sails across their intermediate widths, the radial interval between the hub-band and the intermediate band being less than the radial interval between the intermediate band and the outer band, substantially as herein set forth.

655,271. **IMPACT-MOTOR.** WILLIAM H. PFEIFFER, York, Pa. Filed Dec. 16, 1899. Serial No. 740,544. (No model.)

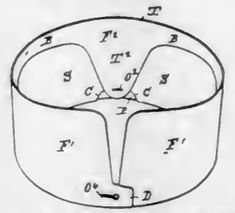


Claim.—1. In a motor, the combination of a casing provided with a supply and discharge, a revoluble disk housed within the casing, and buckets carried on opposite sides of the disk, the buckets on one side of the disk discharging into those on the opposite side thereof, and at about midway of their length, and vice versa, substantially as specified.

2. A motor comprising a sectional casing partially inclosing a double-bucketed turbine wheel, the buckets being arranged on opposite sides of a disk or plate, constituting the body of the wheel, the buckets on one side of the disk discharging into those on the opposite side thereof, and at about midway of their length, and vice versa, the disk being housed between the sections of the casing, and the buckets working in alined circumferential grooves of like size, formed in the inner opposing faces of the sections, substantially as specified.

3. A motor comprising a sectional casing partially inclosing a double-bucketed turbine wheel, the buckets being semicone-shaped, and arranged on opposite sides of a disk or plate constituting the body of the wheel, and those on one side of the disk discharging into those on the opposite side, the disk being housed between the sections of the casing, and the buckets working in alined circumferential grooves of like size, formed in the inner opposing faces of the sections, and a jet-nozzle discharging into the casing, substantially as specified.

655,272. **APPAREL-COLLAR.** WARREN A. PIKE, Lansingburg, N. Y., assignor to James K. P. Pine, same place. Filed June 1, 1899. Serial No. 718,975. (No model.)

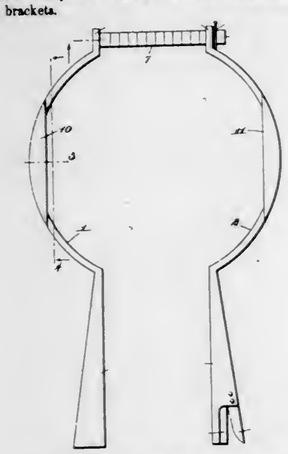


Claim.—In a collar the combination of the textile outer facing F and the textile inner facing F^2 with a border B for the top and ends of the latter facing, and an interposed stiffener S of material impervious to moisture, which is cut away at *m m*, these cut-away parts resting on the seams which connect the border aforesaid to the said outer facing, substantially as and for the purpose set forth.

655,273. **CAN-OPENER.** BLUFORD F. PIPKELL, Vienna, Mo. Filed Jan. 25, 1900. Serial No. 2,783. (No model.)

Claim.—1. A can-opener comprising a pair of semicircular sections, each having a lug or arm at one end and a handle at the opposite end; a rack-bar connecting the ends of the sections; cleats or brackets secured

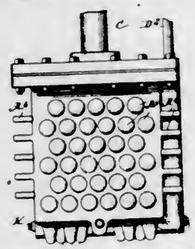
to the sections and adapted to overlap a can, and knives depending from said cleats or brackets.



2. A can-opener comprising a pair of semicircular sections, each having a lug or arm at one end, and a handle at the opposite end; a rack-bar secured at one end to one of said lugs or arms, and passing through a slot in the opposite arm or lug; a pin secured to one of the sections and adapted to engage said rack; cleats secured centrally to the semicircular sections; and knives depending from the under sides of the cleats.

3. A can-opener comprising a pair of semicircular sections each having a lug or arm at one end, and a handle at the opposite end; a rack-bar connecting the arms of the sections; cleats projecting from the sections and knives depending from said cleats, and formed with laterally-projecting shoulders.

655,274. STEAM-GENERATOR. ROBERT RAMSDEN, Philadelphia, Pa. Filed Nov. 23, 1899. Serial No. 737,993. (No model.)



Claim.—1. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, a passage in the wall of said vessel, a plurality of passages, passing through the wall, connecting the passage in the wall with the interior of the vessel.

2. A steam or gas generator comprising a vessel the walls of which are adapted to be subjected exteriorly to heat, passages in the wall of said vessel and a plurality of passages, passing through the wall, connecting the passages in the wall with the interior of the vessel.

3. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, a passage in the vertical wall of said vessel, a tranaverse passage in the lower wall of said vessel, and a plurality of passages passing through the wall and connecting the transverse passage with the interior of the generator.

4. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, a plurality of passages in the vertical wall of said vessel, a plurality of transverse passages in the lower wall of said vessel communicating with said last-mentioned passages, each transverse passage having a plurality of passages passing through the wall and connecting the transverse passage with the interior of the generator.

5. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, a passage in the wall of said vessel, said passage containing carborundum, and communicating with the interior thereof through a plurality of passages.

6. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, passages, containing carborundum, in the vertical wall of said vessel and communicating with the interior thereof through a plurality of passages.

7. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, a passage, containing carborundum, in the vertical wall of said vessel, a transverse passage in the lower wall of said vessel communicating with said last-mentioned passage, and a plurality of passages leading from the transverse passage to the interior of the generator.

8. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, a plurality of passages, containing carborundum, in the vertical wall of said vessel, a plurality of transverse passages in the lower wall of said vessel communicating with said last-mentioned passage, each transverse passage having a plurality of passages into the interior of the boiler.

9. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, a passage, containing wire mesh, in the wall of said vessel and communicating with the interior thereof through a plurality of passages.

10. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, passages, containing wire mesh, in the wall of said vessel and communicating with the interior thereof through a plurality of passages.

11. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, a passage, containing wire mesh, in the vertical wall of said vessel, a transverse passage in the lower wall of said vessel communicating with said last-mentioned passage, and a plurality of passages leading from the transverse passage to the interior of the generator.

12. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, a plurality of passages, containing wire mesh, in the vertical wall of said vessel, a plurality of transverse passages in the lower wall of said vessel communicating with said last-mentioned passages, each transverse passage having a plurality of passages leading into the interior of the generator.

13. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, a passage, containing alternate layers of carborundum and wire mesh, in the wall of said vessel and communicating with the interior thereof through a plurality of passages.

14. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, passages, containing alternate layers of carborundum and wire mesh, in the wall of said vessel and communicating with the interior thereof through a plurality of passages.

15. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, a passage, containing alternate layers of carborundum and wire mesh, in the vertical wall of said vessel, a transverse passage in the lower wall of said vessel, communicating with said last-mentioned passage, and a plurality of passages leading from the transverse passage to the interior of the generator.

16. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat, a plurality of passages, containing alternate layers of carborundum and wire mesh, in the vertical wall of said vessel, a plurality of transverse passages in the lower wall of said vessel communicating with said last-mentioned passages, each transverse passage having a plurality of passages leading into the interior of the generator.

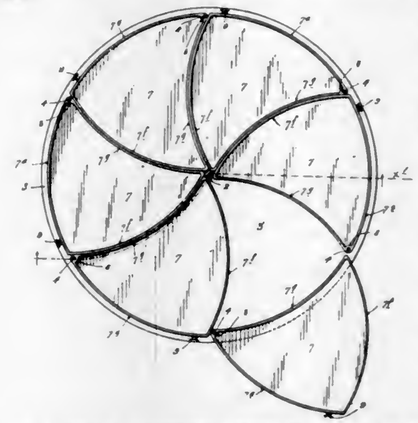
17. A steam or gas generator comprising a hollow vessel, the walls of which are adapted to be subjected exteriorly to heat and provided with an inlet for the liquid and an outlet for the gas or steam, the interior of said vessel between the inlet and outlet containing carborundum and wire mesh.

18. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat and provided with an inlet for the liquid and an outlet for the gas or steam, the interior of said vessel containing alternate layers of carborundum and wire mesh.

19. A steam or gas generator comprising a hollow vessel the walls of which are adapted to be subjected exteriorly to heat and provided on its interior with cross-walls of heat-conducting material extending from the walls of the vessel across the interior.

655,275. CABINET. HENRY G. ROTH, Minneapolis, Minn. Filed Feb 16, 1900. Serial No. 5,408. (No model.)

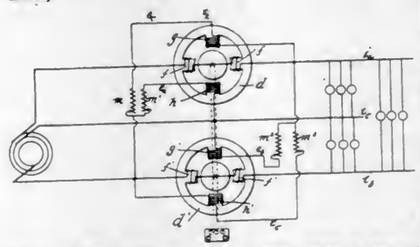
Claim.—1. A cabinet or case having six symmetrical drawers or receptacles each having three curved sides of approximately the same dimensions, and each being pivoted at one corner on a bearing the axis of which is spaced from the adjacent bearing approximately the distance of the radius of the circle intersecting the said pivots, substantially as described.



2. A cabinet or case comprising a support and six pivoted drawers or receptacles mounted on pivots intersected by a cylinder struck from the axial center of the cabinet, the adjacent sides of said drawers being curves struck approximately from the pivot of one of said drawers, whereby the said drawers when closed fit closely and without waste clearance, substantially as described.

3. In a cabinet or case, the combination with a suitable support having the general outline of a cylinder, of a supporting-rod passed axially through said support, and six pivoted drawers or receptacles 7 hinged or pivoted at 8, and provided with the adjacent sides 7^1 and 7^2, the contacting surfaces of which are curves struck from the pivotal axis of the drawer having the side 7^1, and by a radius which is slightly less than the distance between the axis of said cabinet and the axis of one of said pivots 8, whereby the said drawers when closed will fit closely and a passage will be left at the axis of said cabinet for the passage of the supporting-rod, substantially as described.

655,276. MEASURING INSTRUMENT. FRANK SCHROTTER, Berlin, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Nov. 18, 1899. Serial No. 737,433. (No model.)



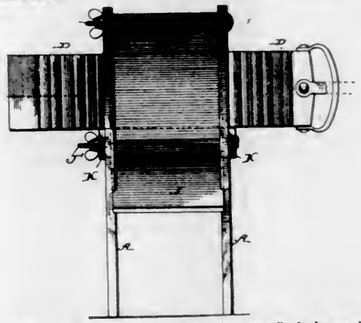
Claim.—1. The combination with a polyphase system of electrical distribution, of a wattmeter having motive windings comprising series and two sets of pressure coils, a pressure-coil of one set being connected in parallel with a pressure-coil of the other set, one terminal of each of the remaining pressure-coils of each set being connected to the conductor in which the series coil of the other set is included, the other terminal being connected to one of the remaining conductors of the system, substantially as described.

2. The combination with a polyphase system of electrical distribution, of a wattmeter having motive windings comprising series and two sets of pressure coils, a pressure-coil of one set being connected in parallel with a pressure-coil of the other set, one terminal of each of the remaining pressure-coils of each set being connected to the conductor in which the series coil of the other set is included, the other terminal being connected to one of the remaining conductors of the system, the first-aforesaid pressure-coils receiving their pressure from the two conductors of the circuit which includes the series coils, substantially as described.

3. The combination with a polyphase system of electrical distribution, of two electric induction-motors having rotatably-mounted armatures, indicating means adapted to be operated by said armatures, series coils each included in one of the conductors of the said system in inductive relation with the said armatures, shunt-coils in inductive relation with the said armatures, one terminal of each of the said shunt-coils being connected to the conductor in which the series coils of the respective motor members are included, the other terminal being connected to one of the remaining conductors of the system, the said pressure-coils being connected in parallel relation, and additional shunt-coils in inductive relation to the said armatures, each of the latter two shunt-coils receiving its pressure from the two conductors of the system not including its corresponding series coil, substantially as described.

4. The combination with a polyphase system of electrical distribution, of two mechanically-coupled electric induction-motors, having rotatably-mounted armatures, series coils each included in one of the conductors of the said system in inductive relation to the said armatures, shunt-coils in inductive relation to the said armatures, one terminal of each of the said shunt-coils being connected to the conductor in which the series coils of the respective motor members are included, the other terminal being connected to one of the remaining conductors of the system, the said coils being connected in parallel relation, and additional shunt-coils in inductive relation to the said armatures, each of these two shunt-coils receiving its pressure from the two conductors of the system not including its corresponding series coil, substantially as described.

655,277. MACHINE FOR BLANCHING PEANUTS. WILLIAM SIMPSON, Battle Creek, Mich. Filed June 9, 1899. Serial No. 719,960. (No model.)



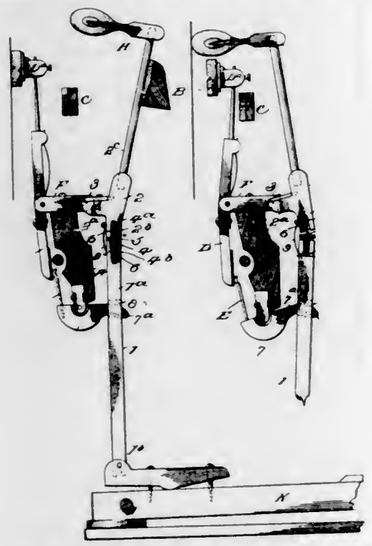
Claim.—1. In a machine of the class described, the combination with the parallel side members of the frame having vertical slots and the vertical rubbing-plate adapted to reciprocate horizontally in said slots, of a pair of stationary rubbing-plates disposed in planes intersecting the path of said movable rubbing-plate, and means for adjusting the positions of said stationary rubbing-plates in their respective planes in a direction toward and from the line of intersection of said planes, substantially as and for the purposes set forth.

2. The combination in a machine of the class described, of a pair of parallel side members having a vertical slot in each member and said slots being oppositely disposed, each side member also being provided with a pair of grooves converging downwardly toward its vertical slot, a pair of rubbing-plates with their ends entering said grooves in said side members and adapted for adjustment toward and from the line of intersection of their planes, means for clamping said side members and said rubbing-plates together in various positions of said adjustment, and a vertical rubbing-plate adapted to reciprocate horizontally in said opposite slots in said side members and between said converging plates, substantially as and for the purpoece set forth.

3. The combination in a machine of the class described, of a pair of parallel side members having a vertical slot in each member and said slots being oppositely disposed, each side member also being provided with a pair of grooves converging downwardly toward its vertical slot, a pair of rubbing-plates with their ends entering said grooves in said side members and adapted for adjustment toward and from the line of convergence of their planes, means for clamping said side members and rubbing-plates together in various positions of said adjustment, a vertical rubbing-plate adapted to reciprocate horizontally in said opposite slots in said side members and between said converging plates, and means for vertically adjusting the path of movement through said slots of the said reciprocating rubbing-plate, substantially as and for the purposes set forth.

655,278. PIANO-ACTION. WILLIAM R. ST. CLAIR, Nashville, Tenn. Filed Oct. 16, 1899. Serial No. 733,773. (No model.)

Claim.—1. In a piano-action, the combination with the hammer, and the lifter, of a yielding connection extending across the joint formed between the opposing ends of the hammer and lifter and positively attached at its respective ends to the said parts, and adapted to lengthen when the hammer is actuated and to contract to assist the rebound in quickly throwing the hammer away from the string, substantially as described.



2. In a piano-action, the combination with the hammer and the lifter for actuating the hammer, of a yielding connection between the contiguous ends of the hammer-butt and lifter positively connected with each and housed thereby, substantially as specified.

3. In a piano-action, the combination with the hammer, and the lifter for actuating the hammer, each having a recess in the meeting end, the recesses being in alinement, of a yielding connection located in the recesses and attached, respectively, at its ends to the said parts, substantially as set forth.

4. In a piano-action, the combination with the hammer, and the lifter for actuating the hammer, each having a recess in the meeting end, the recesses being in alinement, of a yielding connection located in the recesses and attached, respectively, at its ends to the said parts, and a cushion interposed between the abutting ends of the hammer and lifter and mounted upon the said yielding connection, substantially as described.

5. In a piano-action, the combination with the hammer, and the actuating-lifter therefor, of a retractile-spring connection joining the contiguous ends of the hammer and lifter, and an equalizing-spring exerting a lateral pressure against the hammer and lifter upon opposite sides of the joint formed between them, substantially as set forth.

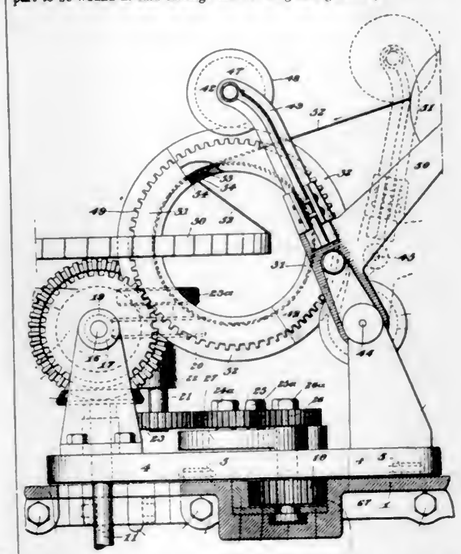
6. In a piano-action, the combination with the hammer and the lifter, a retractile-spring connection having its end portions housed by, attached to and extending across the joint formed between the hammer and lifter, and an equalizing-spring attached at one end to one of the latter parts and exerting a pressure against both of said parts at right angles to the length of the retractile-spring connection, substantially as described.

655,279. WINDING-MACHINE. BURDICK A. STEWART, Pittsfield, Mass. Filed Nov. 28, 1899. Serial No. 738,522. (No model.)

Claim.— 1. In a winding-machine in combination, a guideway forming an endless circuit, a carriage adapted to travel along said guideway, automatic means to move said carriage along the same, and a guide for the covering material, said guide carried upon said carriage, and automatic means to revolve said guide around the part to be wound as said carriage moves along said guideway.

2. In a winding-machine in combination, a guideway forming an endless circuit, a carriage adapted to travel along said guideway, automatic means to move said carriage along the same, a holder for the covering material, and a guide for the covering material, said guide and holder being carried by said carriage, and automatic means to revolve said guide and holder around the part to be wound as said carriage moves along said guideway.

3. In a winding-machine in combination, a guideway, a carriage adapted to travel along said guideway, automatic means to move said carriage along the same, a hollow bobbin on said carriage to hold the covering material and adapted to surround the part to be wound, said bobbin provided with an aperture in its periphery forming a guide for the covering material, and automatic means to rotate said bobbin around the part to be wound as said carriage moves along said guideway.



4. In a winding-machine in combination, a guideway, a carriage adapted to travel along said guideway, automatic means to move said carriage along the same, a guide for a covering material, said guide carried by said carriage, automatic means to revolve said guide around the part to be wound as said carriage moves along said guideway, movable supports for said part to be wound, and means whereby said supports are automatically moved away from the path of said guide as said guide approaches said supports.

5. In a winding-machine in combination, a guideway, a carriage adapted to travel along said guideway, automatic means to move said carriage along the same, a guide for a covering material, said guide carried by said carriage, automatic means to revolve said guide around the part to be wound as said carriage moves along said guideway, movable supports for said part to be wound, and means whereby said supports are automatically dropped away from said part to be wound and moved away from the path of said guide as said guide approaches said supports.

6. In a winding-machine in combination, a hollow bobbin upon the periphery of which a covering material may be wound, said bobbin having an opening through its periphery to its said hollow portion which opening forms a guide for the passage of said covering material, and means to rotate said bobbin about its axis and leave an unobstructed passage through its hollow portion for the reception of the part to be covered.

7. In a winding-machine in combination, a hollow bobbin upon the periphery of which a covering material may be wound, said bobbin having a flange at each side of said periphery and an opening through its periphery to its said hollow portion, which opening forms a guide for the passage of said covering material, and means to rotate said bobbin about its axis and leave an unobstructed passage through its hollow portion for the reception of the part to be covered.

8. In a winding-machine in combination, a hollow bobbin upon the periphery of which a covering material may be wound, said bobbin having an opening through its periphery to its said hollow portion, which opening forms a guide for the passage of said covering material, means to rotate said bobbin about its axis and leave an unobstructed passage through its hollow portion for the reception of the part to be covered, and means to vary the resistance to the passage of said material through said guide.

9. In a winding-machine in combination, a hollow bobbin upon the periphery of which a covering material may be wound, said bobbin having an opening through its periphery to its said hollow portion, which opening forms a guide for the passage of said winding material, means to rotate said bobbin about its axis and leave an unobstructed passage through its hollow portion for the reception of the part to be covered, and means to vary the resistance of the passage of said material through said guide consisting of a plurality of bars located at said opening and substantially parallel with the axis of said bobbin.

10. In a winding-machine in combination, a hollow bobbin upon the periphery of which a covering material may be wound, said bobbin having an opening through its periphery to its said hollow portion, which opening forms a guide for the passage of said covering material, and means to rotate said bobbin about its axis and leave an unobstructed passage through its hollow portion for the reception of the part to be covered, said bobbin being provided with rollers forming part of its periphery.

11. In a winding-machine in combination, a hollow bobbin upon the periphery of which a covering material is adapted to be wound, said bobbin having an opening from its periphery to its hollow portion for the passage of said covering material, a plurality of rotatable supports for said bobbin to hold the same in position, and means to rotate said bobbin about its axis.

12. In a winding-machine in combination, a hollow bobbin upon the periphery of which a covering material is adapted to be wound, said bobbin having an opening from its periphery to its hollow portion for the passage of said covering material, a plurality of rotatable supports for said bobbin to hold the same in position, and means to rotate said bobbin on its axis, including a circular gear on said bobbin and a geared driving-wheel in mesh therewith.

13. In a winding-machine in combination, a hollow bobbin upon the periphery of which a covering material is adapted to be wound, said bobbin having an opening from its periphery to its hollow portion for the passage of said covering material, and a flange at each side of said periphery, a plurality of rotatable supports for said bobbin to hold the same in position, and means to rotate said bobbin about its axis.

14. In a winding-machine in combination, a hollow bobbin upon the periphery of which a covering material is adapted to be wound, said bobbin having an opening from its periphery to its hollow portion for the passage of said covering material, a circular flange at each side of said periphery, a plurality of smooth-faced wheels in contact with said bobbin to form supports for said bobbin to hold the same in position, and means to rotate said bobbin on its axis including a circular gear on said bobbin and a geared driving-wheel in mesh therewith.

15. In a winding-machine in combination, a guideway, a winding-guide, means to move the same along said guideway, a support in the path of said guide including a movable base pivoted to one side of said guideway, a pair of arms pivoted thereto at one end and at the other to a supporting-block, and means to automatically rock said arms on said pivots thereby lowering said supporting-block, and means to turn said base on its pivot and thereby move it and said block out of the path of said guide as the same approaches said support.

16. In a winding-machine in combination, a guideway, a winding-guide, means to move the same along said guideway, a support in the path of said guide including a movable base pivoted to one side of said guideway, a pair of parallel arms pivoted thereto at one end and at the other to a supporting-block, a catch to hold said arms in one position, and means to automatically release said catch and rock said arms on said pivots, thereby lowering said supporting-block, and means to turn said base on its pivot and thereby move it and said block out of the path of said guide as the same approaches said support.

17. In a winding-machine in combination, a guideway, a carriage adapted to travel along said guideway, a winding-guide on said carriage, a variable-speed-gear train between said guideway and guide including a rotating wheel, a pivoted arm, the pivot thereof coinciding with that of said wheel, adjustable means to fix said arm in position, a gear-wheel carried by said arm and connected with said first wheel whereby power may be transmitted between the two, and a relatively-stationary wheel in mesh with said gear-wheel, one of said wheels being removable.

18. In a winding-machine in combination, a guideway, a carriage adapted to travel along said guideway, a winding-guide on said carriage, a variable-speed-gear train between said guideway and guide including a removable wheel, a pivoted arm, the pivot thereof coinciding with that of said wheel, adjustable means to fix said arm in position, a gear-wheel carried by and movable longitudinally of said arm and connected with said first wheel whereby power may be transmitted between the two, and a relatively-stationary wheel in mesh with said gear-wheel.

19. In combination, a table provided with a guideway forming an endless oval circuit, a carriage adapted to move along said guideway and means to move said carriage, said table being divided laterally of the long axis of said oval into a series of removable sections, the width of said sections increasing by multiples of the width of one of said sections.

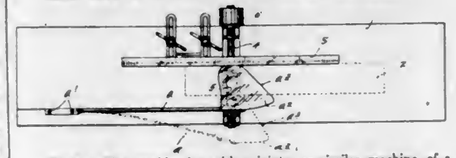
20. In combination, a table provided with a guideway forming an endless oval circuit, a carriage adapted to move along said guideway and means to move said carriage, said table being divided laterally of the long axis of said oval into a number of removable sections, the width of said sections increasing by multiples of the width of one of said sections, one end of said oval circuit being curved and said table being radially divided at this point into a number of sections the angles of which increase by multiples of the angle of one of said sections.

21. In a winding-machine in combination, a hollow bobbin adapted to surround a part to be wound and hold a covering material, means to rotate said bobbin and thereby wind said covering material off from said bobbin and upon said part to be wound and at the same time wind a fresh supply upon said bobbin.

22. In a winding-machine in combination, a guideway, a carriage adapted to travel along said guideway, automatic means to move said carriage along the same, means adapted to support and hold fixed adjacent said guideway an endless part to be wound, and means carried by said carriage and adapted to automatically wind a covering material over the whole length of said fixed endless part to be wound.

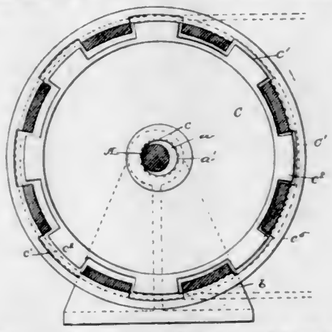
23. In a winding-machine in combination, a hollow bobbin adapted to surround a part to be wound and to hold a covering material wound thereon in superposed layers, means to rotate said bobbin and thereby wind the inner layer of said covering material off from said bobbin and upon said part to be wound, the portion of said covering material remaining upon the said bobbin sliding around the said bobbin as the same continues to rotate.

655,280. KNIFE-GUARD. WILLIAM J. STEWART, Minneapolis, Minn. Filed Feb. 17, 1899. Serial No. 705,764. (No model.)



Claim.—The combination with a jointer or similar machine, of a knife-guard comprising the arm a of sprung material, secured at one end to the bed or face plate of the machine, and provided at its free end with the rigidly-secured guard head or plate a^2, normally overlying the cutters and, movable flatwise over the face of the bed-plate, being supported thereby, and having the inclined or cam surface a^3, said parts operating substantially as and for the purposes set forth.

655,281. ROPE-TRANSMISSION DEVICE. OSCAR SUNDT, Cleveland, Ohio. Filed Feb. 5, 1900. Serial No. 3,982. (No model.)



Claim.—1. The combination of a drum provided with a number of independent grooves, a cable, said drum engaged by said cable in said grooves, and means embodied in said drum for transferring a cable-wrap from one groove to another, substantially as set forth.

2. The combination with a two-part drum provided with a number of independent grooves formed upon said two parts, of a cable engaging said drum in said grooves, each cable-wrap engaging the groove portions in one part during a portion of its revolution about the drum-axis and being free from engagement with such part during another portion of such revolution, substantially as set forth.

3. A drum consisting of two parts relatively fixed in and relatively movable in a direction transverse to the direction of rotation of said drum, substantially as set forth.

4. A drum consisting of two parts relatively fixed in the direction of rotation of the drum, the axes of rotation of the respective parts being inclined relatively to each other, substantially as set forth.

5. A drum consisting of two rotative parts mounted upon a common shaft, the axes of rotation of the respective parts being inclined to each other, substantially as set forth.

6. A drum consisting of two rotative parts one mounted within the other and jointly forming the drum's periphery, the axes of rotation of said two parts being inclined relatively to each other, substantially as set forth.

7. A drum consisting of two rotative parts, one within the other, the inner mounted upon a universal bearing and having lateral oscillatory movement upon such bearing, substantially as set forth.

8. A drum consisting of two rotative parts one within the other, and mounted upon a common shaft, the bearing of the inner being eccentric relatively to the bearing of the outer part, substantially as set forth.

9. A two-part drum, one part mounted within the other, the outer provided with a series of openings in its periphery, the inner provided with a series of projecting portions located in said openings and means for causing said projecting portion to extend beyond said periphery during a portion of the drum's rotation and for causing them to project below said periphery during another portion of such rotation, substantially as set forth.

655,282. PROCESS OF PRODUCING ARTIFICIAL FUEL. WILLIAM P. TAGGART, Reading, Pa., assignor to the Zwoyer Fuel Company, of New Jersey. Filed May 18, 1900. Serial No. 17,157. (No specimens.)

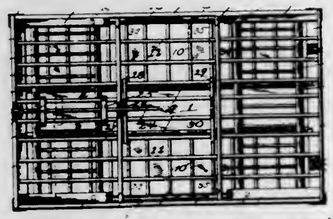
Claim.—1. The within-described process of making artificial fuel, which consists in mixing particles of coal reduced to small and substantially uniform size with a solution of dextrine and salt, pressing this mixture into lumps of any desired form and size, and then baking the same until thoroughly dry and hard.

2. The within-described process of making artificial fuel, which consists in mixing particles of coal reduced to small and substantially uniform size with a solution of dextrine and salt, pressing this mixture into lumps of any desired form and size, baking them until thoroughly dry and hard, and passing the same through a waterproofing bath.

3. As a new article of manufacture, an artificial fuel composed of particles of coal reduced to small and substantially uniform size bound together by dextrine and salt, and pressed into a geometrical form.

4. As a new article of manufacture, an artificial fuel composed of particles of coal reduced to small and substantially uniform size bound together by dextrine and salt, and pressed into a geometrical form, and provided with a waterproof coating.

655,283. FOLDING CRATE. ZANE B. TAYLOR and ORLANDO W. MOORE, Orbisonia, Pa. Filed Feb. 3, 1900. Serial No. 3,838. (No model.)

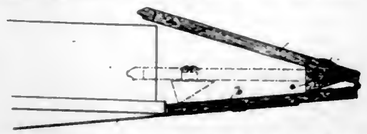


Claim.—1. In a crate, the combination with a cover provided with overhanging side bars and dowel-pins, of folding side and end sections, the top rails of the side sections being provided with dowel-pins adapted to enter dowels in the end sections when the crate is in position for use, a screw-eye or its equivalent carried by the end section, and a sliding rod adapted to enter said eye when the crate is standing, to lock the cover in place, a suitable bottom board and means for locking the cover on the crate when collapsed, substantially as set forth.

2. In a crate, the combination of a bottom section, side and end sections foldably secured thereto and means for securing them together in vertical position, a screw-eye or its equivalent carried by the top rail of one end section and the top rail of the other section being recessed, of a cover provided with overhanging side and end bars and carrying projections on the inside of one end bar and having a perforation in the other, a hinged door in said cover, a slidable locking-rod carried by said cover and adapted to pass through the eye on the top of the rail of the folding end section and into the perforation in the end bar of the cover and engage the door, and the projection on the end bar entering the recesses in the folding end section at the same time, thereby locking the cover to the crate proper and also the door in said cover when the crate is in standing position, as set forth.

3. In a crate, the combination with a suitable bottom section having cleats secured to the ends thereof, one of said cleats provided with recesses and the other with a screw-eye or its equivalent, of folding side and end sections adapted to be secured together in vertical position, of a cover provided with overhanging side and end bars and carrying projections on the inside of one end bar and having a perforation in the other, a locking-rod slidably mounted on the cover and adapted to enter the eye carried by the cleat and the perforation in the end bar of the cover, and a door rockably secured to said cover and adapted to be engaged by the locking-rod and the pins or projections adapted to enter the recesses in the cleat, all substantially as set forth.

655,284. HAND-REST. FRIEDRICH H. THIER, Koenigstein, Germany. Filed Oct. 13, 1899. Serial No. 733,516. (No model.)

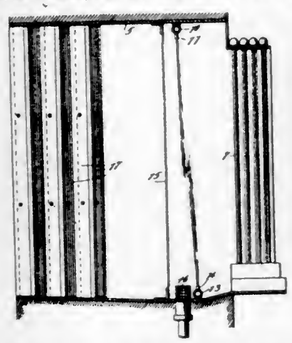


Claim.—1. A hand-rest comprising two leaves hinged together at their edges a wedge adjustably arranged between the two leaves and a thin plate pivoted on the under side of one of the plates substantially as described.

2. A hand-rest comprising two leaves hinged together at their edges, a slot in one of the leaves a wedge provided with a pin projecting through said slot, and means for adjusting and securing said pin in the slot substantially as described.

3. A hand-rest comprising two leaves hinged together at their edges, a slot in one of the leaves, a wedge provided with a pin projecting through said slot and means for adjusting and securing said pin in the slot and a thin plate pivoted on the under side of the plate substantially as described.

655,285. AIR-PURIFYING APPARATUS. RICHARD H. THOMAS, Chicago, Ill. Filed Apr. 20, 1900. Serial No. 13,654. (No model.)



Claim.—1. An air-purifier comprising a casing adapted for the passage of air therethrough, a screen disposed transversely of the casing, water-supply pipes disposed in the casing at opposite sides thereof and having discharge-nozzles disposed to discharge in opposite directions and in parallel planes, and baffle-plates in the rear of the screen.

2. An air-purifier comprising a casing adapted for the passage of air therethrough, a screen disposed transversely of the casing, water-supply pipes disposed in the casing at opposite sides thereof and in different planes transversely of the casing in advance of the screen, nozzles for each pipe disposed to discharge in opposite directions transversely of the casing and in different planes, and baffle-plates in the rear of the screen, each plate having an edge bent upon itself to form a gutter, and the plates being disposed with the gutters thereof vertical.

3. An air-purifier comprising a casing, a screen in the casing, water-supply pipes having nozzles disposed to discharge transversely of the casing in advance of the screen, and a plurality of rows of vertical baffle-plates in the rear of the screen, the rows of plates being turned alternately in opposite directions and each plate having its rear edge bent forwardly in the direction of the screen.

655,286. VEHICLE-TIRE. JAMES E. VAN NEST, Martinsville N. J. Filed Dec. 14, 1899. Serial No. 740,342. (No model.)

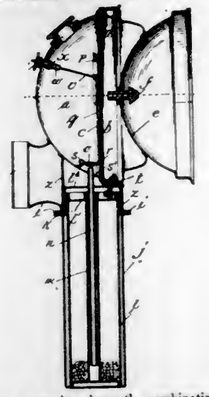
Claim.—1. A bicycle-tire comprising a spring-metal hoop which is arc-shaped in cross-section and concaved in its outer periphery, a second spring-metal hoop which is arc-shaped in cross-section and is concaved in its inner periphery, hinge connections between the edges of the hoops, and a flexible covering for each hinge connection.



2. A vehicle-tire comprising a spring-metal hoop, a second spring-metal hoop hingedly connected with the first-named hoop to form a tubular tire, and reinforcing spring-plates hingedly connected in pairs and disposed radially of the tire.

3. A vehicle-tire comprising two spring-metal hoops, arc-shaped in cross-section and having their edges hingedly connected to form a tubular tire, coverings for the hinged connections, and spring-plates hingedly connected in pairs and disposed radially of the tire and engaging opposite points of the inner periphery thereof.

655,287. ACETYLENE-GAS GENERATOR. CORNELIS VERWER Krommenie, Netherlands. Filed July 7, 1899. Serial No. 723,075 (No model.)



Claim.—1. In an acetylene-lamp, the combination, with a gas-chamber, of a water-chamber adjacent thereto, a vertical elastic partition wall or diaphragm between said gas-chamber and said water-chamber, a carbid-receptacle, a passage connecting said water-chamber and said carbid-receptacle, a bell-crank lever in said water-chamber, a plate mounted on one arm of said lever and pressed by spring-pressure against said diaphragm and a valve mounted on the other arm of said lever, and controlling said passage, substantially as, and for the purposes, hereinbefore described.

2. In an acetylene-lamp, the combination with a gas-chamber, of a water-chamber adjacent thereto, an elastic diaphragm separating said gas and water chambers, a carbid-receptacle, a passage connecting said water-chamber with said carbid-receptacle, a valve controlling said passage, and a pivoted lever engaging said diaphragm and said valve, substantially as, and for the purposes, hereinbefore described.

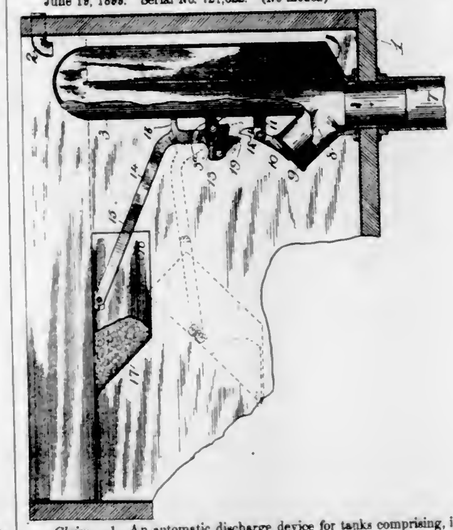
3. In an acetylene-lamp, the combination with a gas-chamber, of a water-chamber adjacent thereto, an elastic diaphragm separating said gas and water chambers, a carbid-receptacle, a passage connecting said water-chamber with said carbid-receptacle, a valve controlling said passage, a pivoted lever for transmitting the motion of said diaphragm to said valve, and means to actuate said lever by hand, substantially as, and for the purposes, hereinbefore described.

4. In an acetylene-lamp, the combination, with a gas-chamber, of a water-chamber adjacent thereto, an elastic diaphragm separating said gas and water chambers, a carbid-receptacle, a passage connecting said water-chamber with said carbid-receptacle, a valve controlling said passage, a spring-pressed bell-crank lever engaging said diaphragm and said valve, a screw-threaded rod pivotally connected to said lever, a stop on said rod adapted to engage the frame of the lamp, and a screw-nut on said rod, substantially as, and for the purposes, hereinbefore described.

5. In combination in an acetylene-gas lamp, a body portion comprising a gas-chamber and a water-chamber, and a depending tubular portion, a carbid-holder held therein, a chamber in said tubular portion above the carbid-holder, a passage between the same and the gas-chamber, a tube extending through the carbid-chamber open at its upper end, a tube depending from the water-chamber in the body portion through said open tube, and means for controlling the mouth of the depending tube, substantially as described.

6. In combination in an acetylene-gas lamp, a body portion comprising a gas-chamber and a water-chamber, and a depending tubular portion, a carbid-holder held therein, a chamber in said tubular portion above the carbid-holder, a passage between the same and the gas-chamber, a tube extending through the carbid-chamber open at its upper end, a tube depending from the water-chamber in the body portion through said open tube, a flexible diaphragm dividing the water from the gas chamber, and a tilting valve controlled by said diaphragm adapted to close the end of the depending tube, substantially as described.

655,288. AUTOMATIC TANK. WILLIAM O. WAYMAN, Chicago, Ill., assignor to the Illinois Malleable Iron Company, same place. Filed June 19, 1899. Serial No. 721,022. (No model.)



Claim.—1. An automatic discharge device for tanks comprising, in connection with a tank, a valve-governed discharge therefrom, a float actuating said valve and consisting of a pan adapted to tilt when filed and adapted to be filled with water over its edge, such pan being dumped by the gravity of its contained water when the water in the tank is being discharged, and means for arresting the upward movement of the pan to cause it to fill when the water in the tank reaches a predetermined level.

2. An automatic discharge device for tanks, comprising, in connection with a tank, a valve-governed discharge therefrom, and means for operating such valve comprising a float consisting of a pan pivoted above and at one side of its center of gravity and having its top longer than the bottom and that end inclined which is the farther removed from the pivotal point, and means for arresting the upward movement of the pan in the tank to cause the pan to fill when the water therein reaches a predetermined level, such pan being dumped by the gravity of its contained water when the tank is being discharged.

3. An automatic discharge device for tanks comprising, in combination with a tank, a valve-governed discharge therefrom, a float-actuated trigger mechanism for operating said valve, said float consisting of a pan adapted to tilt when filled and adapted to be filled with water over its edge after arrest of its movement with inflowing water, and to actuate such trigger mechanism while descending in a horizontal position after submergence, said pan being dumped by the gravity of its contained water after the water in the tank has receded and ceased to support the pan, and means for arresting the upward movement of the pan.

4. An automatic siphon device for tanks comprising, in connection with a tank, a siphon in the tank, a siphon-starting inlet, a valve governing such inlet and having a stem, an open pan or float, a pivoted arm carrying such float and having a projection contacting the valve of said inlet and opening the same when the float fills with water and descends, the valve of said inlet being adapted to close after the siphon is started and before the water is drained from the tank.

5. An automatic siphon device for tanks comprising, in connection

with a tank, a siphon therein, having a siphon-starting inlet adapted to close after the siphon is started but before the water is drained from the tank, a valve governing said inlet, an arm pivoted in the tank, a float open only at its top and pivotally carried at one end of said arm, and a pawl upon the other end thereof adapted to engage the valve when the float is submerged and descends.

6. An automatic siphon device for tanks comprising, in connection with a tank, a siphon therein having a siphon-starting inlet, a valve governing said inlet adapted to close after the siphon is started but before the water is drained from the tank, an arm pivoted in the tank, an open float carried by the arm, such arm having a pawl engaging the valve to open it when the float is submerged and descends and a stop for arresting the upward movement of the float and cause it to fill with water.

7. An automatic siphon device for tanks comprising, in connection with a tank, a siphon therein having a siphon-starting inlet, a pivoted valve governing said inlet, a projecting stem for such valve, an open pan forming a float, and an arm pivoted in the tank and carrying the float at one end and a pivoted dog at the other end, the dog moving said stem to open its valve when the float is submerged and descends.

8. An automatic siphon device for tanks comprising, in combination with a tank, a siphon therein connected with the tank discharge and having a siphon-starting inlet, a valve governing said inlet, a float consisting of a pan over whose top edge the water from the tank flows when the upward movement of the pan is arrested, such pan having an end extending obliquely outwardly and upwardly, an arm pivoted in the tank and carrying the float at one end, and actuating the valve by its other end, such arm being pivotally connected to the pan off its center of gravity and nearer that end opposite said oblique end, and means for arresting the upward movement of the pan.

9. An automatic siphon device for tanks comprising, in combination with a tank having a discharge, a siphon therein connected with such discharge and having a siphon-starting inlet, a valve governing said inlet, an arm pivoted in the tank and in its movements momentarily opening the valve, a float consisting of a pan open at its top from end to end, with one end extending obliquely outwardly and upwardly, said pan being pivotally supported so as to tilt when filled, and to dump by the gravity of the water therein and to discharge from such oblique end and means for arresting the upward movement of the pan to cause the same to fill with water from the tank.

10. An automatic siphon device for tanks, comprising, in combination with a tank, a siphon connected therein with the tank-discharge and having a siphon-starting inlet, a valve governing said inlet, an arm pivoted in the tank and having one end bifurcated with its other end controlling said valve, a float consisting of an open pan over whose top edge the tank-water flows when the upward movement of the pan is arrested, such pan being pivoted in said bifurcated end, off and above the center of gravity of the pan when filled with water and dumped by the gravity of its contained water and means for arresting the upward movement of the float.

11. An automatic siphon device for tanks comprising, in combination with a tank, a casing therein forming a siphon connected with the tank-discharge and having a siphon-starting inlet, a valve pivoted on such casing and governing said inlet, an open pan or float, and an arm pivoted upon the casing and carrying said pan at its outward end and having a pivoted dog at its other end engaging said valve.

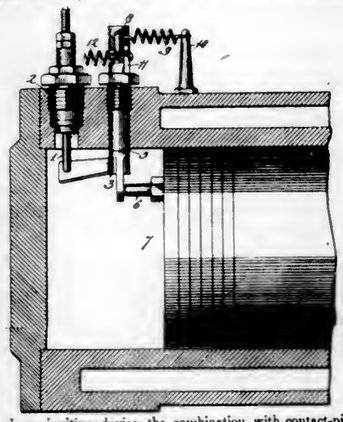
12. An automatic siphon device for tanks comprising, in combination with a tank, a casing 3 connected therein with the tank outlet or discharge and forming a siphon having a siphon-starting inlet 8, a pivoted valve 9 governing such inlet and having a projection 12, an open pan or float 16, a pivoted arm 14 carrying the pan, and a dog 19 pivoted on the arm 14 and coöperating with projection 12.

13. An automatic siphon device for tanks comprising, in combination with a tank having an outlet or discharge, a casing 3 connected therein with the tank-discharge and forming a siphon having a siphon-starting inlet 8, a valve 9 governing such inlet and having a valve-stem 10 pivoted on said casing, such stem having a projection 12, an open pan or float 16, an arm 14 pivoted on the casing and carrying said pan, a dog 19 pivoted on said arm and a stop 18 for limiting the upward movement of said arm.

655,289. IGNITER FOR EXPLOSIVE-ENGINES. LOUIS WITRY, Waterloo, Iowa, assignor to the Waterloo Gasoline Engine Company, same place. Filed Dec. 16, 1899. Serial No. 740,542. (No model.)

Claim.—1. In an igniting device for explosive and internal-combustion engines, the combination, with a circuit making and breaking device, and means operated by the engine in its movement to operate the same automatically, of an independent spring-retracted member, adapted, when released after the spring has been placed under tension, to encounter an operating member of said circuit making and breaking device, and by the force of its impact to operate the same.

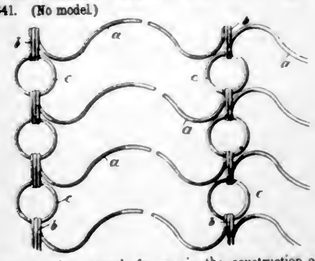
2. In an electric igniting device for explosive and internal-combustion engines, the combination with contact-pieces, one fixed and the other movable, relatively to each other, a spring adapted to move the movable contact-piece toward the stationary contact-piece, and means operated by the engine in its movement to separate the contact-pieces to produce a spark, of an independent spring-retracted member, adapted, when released after the spring thereof has been placed under tension, to encounter the movable contact-piece and by force of its impact operate the same.



3. In an igniting device, the combination, with contact-pieces, one of which is movable, and a spring for holding said movable contact-piece normally in one position, of a spring-retracted hammer, the spring of which opposes, but is weaker than, the spring of the movable contact-piece, said hammer being adapted, when drawn forward and then released, to encounter the movable contact-piece and by the force of its impacts to operate the same.

4. In an igniting device for internal-combustion engines and the like, the combination, with a fixed contact-pin and a movable crow-foot contact-piece, both located within the combustion-space of the engine, the crow-foot being mounted upon a revoluble spindle having an external projecting arm, and being arranged to be actuated by the piston of the engine, of a spring tending to hold said contact-pieces in contact normally, and a spring-retracted hammer, the spring of which opposes, but is weaker than, the spring of the movable contact-piece, said hammer being adapted, when drawn forward and then released, to encounter the arm on the crow-foot spindle, and by the force of its impact to separate the contact-pieces.

655,290. CONSTRUCTION OF WALLS AND CEILINGS. ANTON WOHLGEMUTH, Munich, Germany. Filed July 12, 1899. Serial No. 723,641. (No model.)

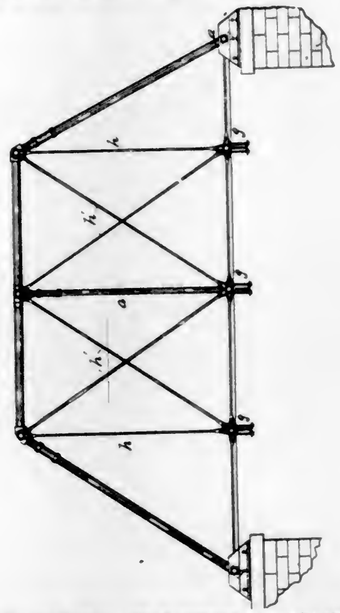


Claim.—A wire network for use in the construction of walls and ceilings, comprising a series of wire spirals *a* lying parallel to one another, which at their ends and at suitable distances apart along their lengths are wound round to form loops or rings *b* of any desired number of turns, said rings in any one wire spiral being connected to the corresponding rings in the adjacent parallel wire spiral by loose links or rings *c*, all substantially as and for the purposes hereinbefore set forth.

655,291. BRIDGE. EUGENE R. WOODRUFF, Groton, N. Y. Filed July 29, 1899. Serial No. 725,491. (No model.)

Claim.—1. A joint for truss-bridges consisting of concentric tubes of different lengths whereby end tenons adapted to enter the longitudinal compression members are provided, and a transverse pin inserted through the tubes and adapted to engage the other members of the truss.

2. In a truss-bridge, a joint for connecting longitudinal and vertical compression members comprising a longitudinal sleeve built up out of multiple tubes having end tenons entering said longitudinal members, a vertical sleeve built up out of multiple tubes entering said longitudinal sleeve at an angle, and having an end tenon entering said vertical member, and a pin inserted through both sleeves and projecting to form a bearing for the other truss members and cross-strut.



3. In a truss-bridge, a joint for connecting compression members to the piers, comprising a sleeve built up of tubes having end tenons entering said member, and a shoe in which said joint is pivotally mounted.

4. In a truss-bridge, a joint for connecting compression members to the piers, comprising a sleeve built up of tubes having end tenons entering said member, a shoe and a pin passing through said joint and base, for the purpose of forming a swinging joint, said pin being adapted to engage the other members of the truss.

5. In a bridge of the class described, a bracket secured between the compression members and the strut-rods by straps secured to said bracket and around the compression members and cross-struts respectively.

6. In a bridge of the class described, a cross-bracing bracket secured between the two compression members, by straps secured to the bracket and around the compression members.

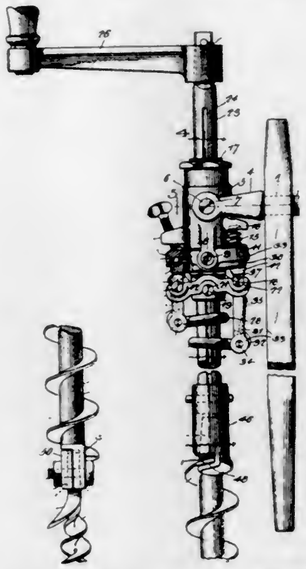
655,292. MINING-DRILL. JOHN WYNNE, Plymouth, and VITUS V. HAIDACHER, Wilkes-Barré, Pa. Filed Mar. 6, 1900. Serial No. 8,034. (No model.)

Claim.—1. In a drilling-machine, the combination of a support, a revoluble sleeve therein, and a drill-shaft adapted to move endwise in and rotate with said sleeve, of a rocker on the support, means to cant the same, feed-rings on the drill-shaft, and connections between said feed-rings and said canted rocker, substantially as described.

2. In a drilling-machine, the combination with a support, a sleeve revoluble therein, and a drill-shaft adapted to move longitudinally in and rotate with said sleeve, of a rocker on the support, means to cant the same, rocker-yokes on the sleeve, feed-rings on the drill-shaft, and connections between said feed-ring and the canted rocker, said connections engaging and actuated by the rocking yokes, substantially as described.

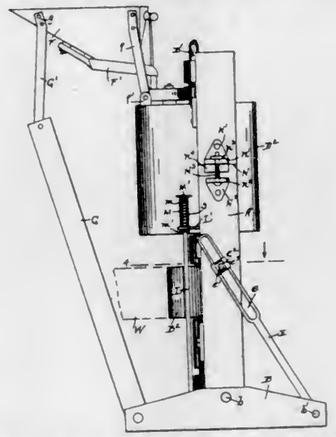
3. In a drilling-machine, the combination with a support, a sleeve adapted to rotate therein, and a drill-shaft adapted to move longitudinally in said sleeve, and to rotate therewith, of a rocker on the support, means to cant the same, a bearing-ring engaging said rocker, rocker-yokes connected to and rotated by the sleeve, feed-rings on the drill-shaft, and links connecting said rings and rocker-yokes and bearing against the bearing-ring, substantially as described.

4. In a drilling-machine, the combination with a support, a sleeve adapted to rotate therein, and a drill-shaft adapted to move longitudinally in said sleeve, and to rotate therewith, of a rocker on the said support, a bearing-ring, ball-bearings between said ring and said rocker, means to cant the latter, rocking yokes connected to and adapted to rotate with the sleeve-links engaging the bearing-ring and connected to said rocking yokes, feed-rings on the drill-shaft, connected to and actuated by said links, and the springs to normally cant said feed-rings, substantially as described.



5. In a drilling-machine, the combination of a pivoted support, adapted for universal movement, a sleeve to rotate therein, a drill-shaft adapted to move longitudinally in said sleeve and to rotate therewith, a rocker, pivotally mounted on said support, a bearing-ring, revoluble on said rocker, means to cant the latter, rocking yokes, connected to and adapted to rotate with the sleeve, links engaging the bearing-ring and connected to said rocking yokes, feed-rings on the drill-shaft, connected to and actuated by said links, and the spring to normally cant said feed-rings, substantially as described.

655,293. MILL-FRAME. ABRAHAM M. ZIMMERMAN, New Holland, Pa. Filed Oct. 5, 1897. Serial No. 654,109. (No model.)

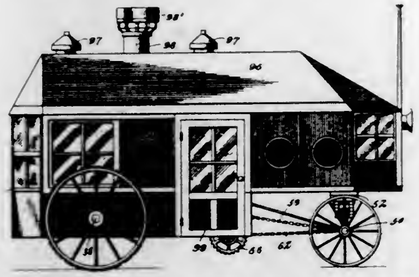


Claim.—1. The combination, in a mill of the character described, of a base, a support for the mill hinged to the base, means for securing said support in an adjusted position, arms secured to the delivery end of

the hopper and hinged to the mill-casing, and a support for the rear of the hopper having a pivot connection with the base, for the purpose specified.

2. The combination, in a mill of the character described, of a base, a support for the mill hinged to the base, means for securing said support in an adjusted position, arms secured to the delivery end of the hopper and hinged to the mill-casing, posts pivoted to the base, and links pivoted to the upper ends of said posts and secured to the rear end of the hopper, substantially as and for the purpose specified.

655,294. TRACTION-ENGINE. GEORGE ADAMSON, Crider, Ky. Filed Apr. 17, 1900. Serial No. 13,245. (No model.)



Claim.—1. In a steering mechanism for traction-engines, the combination with pivotally-mounted wheels and traction-wheels, of shafts, chains engaged with the shafts to be wound thereon the opposite ends of the chains having connection with the axle of the steering-wheels to pivotally move it, intermeshing gears fixed upon the shafts, friction-wheels upon the shafts, a lever, a friction-wheel upon the lever and adapted for movement thereby into engagement with the first-named friction-wheels, alternately, and connections between the traction-wheels and the friction-wheel upon the lever, for operating the latter to rotate the shafts in opposite directions.

2. In a traction-engine, the combination with steering-wheels having a pivotally-mounted axle, of shafts having intermeshing gears, chains connecting the shafts and axle to be wound upon and unwound from the shafts to move the axle pivotally, friction-wheels carried by the shafts, a movable friction-wheel disposed for engagement with the first friction-wheels alternately, connections between the traction-wheels and the movable friction-wheel to operate the latter, a lever connected with the movable friction-wheel to move it into engagement with the first friction-wheels, a latch mechanism for holding the lever at different points of its movement, a second lever a link connecting the levers whereby the first lever may be operated by the second lever, and means upon the second lever for releasing the latch upon the second lever.

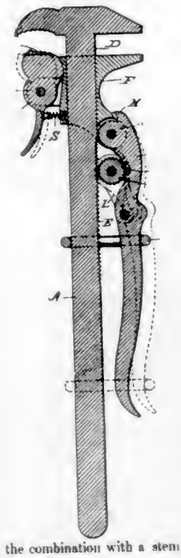
3. A traction-engine comprising a frame including front sills and rear sills of which the latter are in a lower plane than the former, steering-wheels mounted upon the front sills, traction-wheels movably connected with the rear sills, a cross-beam mounted in the frame, springs connecting the cross-beam and the axle of the traction-wheels, steering mechanism for the steering-wheels and having operable connection with the traction-wheels, an engine having a shaft mounted upon the cross-beam, chains connecting the engine-shaft and the traction-wheels for operating the latter, and spacing-rods between the engine-shaft and the traction-wheel axle.

4. A traction-engine comprising a frame including front and rear sills of which the latter are in a lower plane than the former, steering-wheels mounted upon the front sills, boxes slidably mounted at the rear of the frame, traction-wheels having an axle fixed thereto and journaled in the boxes, a cross-beam mounted in the frame, springs connecting the cross-beam and the boxes, steering mechanism for the steering-wheels, and having operable connection with the traction-wheels, an engine having a shaft mounted upon the cross-beam, and a spacing-rod between the engine-shaft and the box at each side of the engine.

655,295. WRENCH. ADOLPH COHEN and SIMON SACKHEIM, Chicago, Ill. Filed Dec. 23, 1899. Serial No. 741,438. (No model.)

Claim.—1. In a wrench, the combination with a stem provided at one end with a jaw, and between its ends with a rack, of a sleeve movable longitudinally on said stem and carrying a jaw, a lever pivotally mounted on said sleeve, a rack on said lever, and devices carried by said lever and projecting between the same and said stem and adapted to engage both said racks to hold said sleeves rigidly in any desired position on said stem.

2. In a wrench, the combination with a stem provided at one end with a jaw, and between its ends with a rack, of a sleeve movable longitudinally on said stem and carrying a jaw, a lever pivotally mounted on said sleeve, a rack on said lever, devices interposed between said racks on said stem and said lever and adapted to engage both the same to hold said sleeve against movement, a pivoted jaw provided with a serrated face carried by said sleeve and adapted to coact with said jaw on said stem to engage a pipe when said stem is turned in one direction and release the same when turned in the opposite direction, and a spring interposed between said sleeve and said jaw to hold the latter normally in engagement with a pipe.



3. In a wrench, the combination with a stem provided at one end with a jaw having a concave serrated face, and provided between its ends with a rack, of a sleeve longitudinally movable on said stem, a lever pivotally mounted on said sleeve, a rack on said lever, devices interposed between said racks on said stem and said lever and adapted to engage both the same to hold said sleeve against movement, a pivoted jaw provided with a serrated face carried by said sleeve and adapted to coact with said jaw on said stem to engage a pipe when said stem is turned in one direction and release the same when turned in the opposite direction, and a spring interposed between said sleeve and said jaw to hold the latter normally in engagement with a pipe.

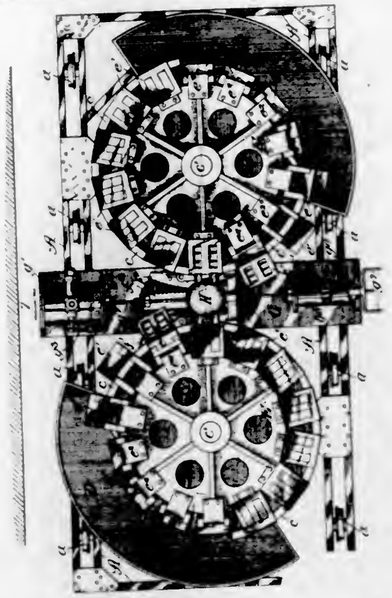
4. In a wrench, the combination with a stem provided at one end with a jaw having a concave serrated face, and provided between its ends with a rack, of a sleeve longitudinally movable on said stem, a lever pivotally mounted on said sleeve, a rack on said lever, parallel links pivoted at one end to said lever, a pinion pivotally mounted between the free ends of said links and adapted to engage both said racks to hold said sleeve against movement. a pivoted jaw provided with a serrated face carried by said sleeve and adapted to coact with said jaw on said stem to engage a pipe when said stem is turned in one direction and release the same when turned in the opposite direction, and a spring interposed between said sleeve and said jaw to hold the latter normally in engagement with a pipe.

5. In a wrench, the combination with a stem provided at one end with a jaw, and between its ends with a rack, of a sleeve movable longitudinally on said stem and carrying a jaw, a lever pivotally mounted on said sleeve, a rack on said lever, devices carried by said lever and interposed between the same and said stem and adapted to engage said racks to hold said sleeve against movement, and devices for holding said lever at the inner limit of its movement, whereby said devices are held in engagement with said racks to so hold said sleeve rigid on said stem.

655,296. AUTOMATIC CASTING-MACHINE. REUBEN G. COLLINS, Dollar Bay, Mich. Filed Oct. 24, 1898. Serial No. 694,401. (No model.)

Claim.—1. In a casting-machine, a ladle or like receptacle for containing material to be cast, a series of molds, a vertically-spiral track or guide lying near the said ladle, on which said molds are adapted to be moved, a device for controlling the movement of the said molds, a shaft or the like, for supporting said ladle, and an operative connection between said support and said controlling device, whereby said molds are governed in their movements by the movement of said support, substantially as set forth.

2. In a casting-machine a ladle or like receptacle, for containing material to be cast, a support for the said ladle, a series of molds, suitable mechanism for moving the said molds in progressive order, a track or guide for said molds lying near said ladle, and a controller for the said mechanism adapted to be operated by the movement of said ladle, substantially as set forth.



3. A casting-machine consisting of a base, a rotatable table carried thereon, a series of mold-carriers pivotally attached thereto, and a cam inclined at one end and truncated at the other end, by which the said mold-carriers are raised and from which they fall at the respective points in their path, both terminals of the said cam being in or over a water-bosh into which the castings are deposited, substantially as described.

4. A casting-machine comprising a base, a rotatable table carried thereon, a series of mold-carriers pivotally attached thereto, detachable molds within said carriers, a water-bosh, a vertically-spiral track or guide for said mold-carriers, precipitously terminating above said water-bosh, substantially as set forth.

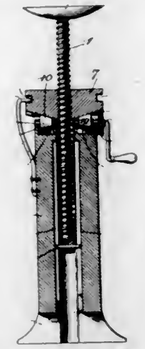
5. A casting-machine consisting of a ladle pivotally supported, two rotatable tables, one on each side of the said ladle, a series of molds carried by each of the said tables, and a mechanism by which intermittent impulses, or a step-by-step motion is imparted to each table, substantially as described.

6. A casting-machine comprising a base, a rotatable table provided with a series of ratchet-teeth, or notches, molds equaling the ratchet-teeth in number, carried on said table, an oscillating lever carrying a pawl adapted to engage in the said ratchet-teeth, a reciprocating mechanism for moving said lever, a ladle mounted upon a trunnion or shaft, a controller for said reciprocating mechanism, and a lever or the like connecting said controller with said trunnion, whereby the movement of said molds is governed, substantially as set forth.

7. A casting-machine comprising a base, a rotatable table provided with a series of ratchet-teeth, or notches, molds equaling the ratchet-teeth in number, carried by the said table, an oscillating lever carrying a pawl, adapted to engage with the said ratchet-teeth, a reciprocating mechanism for moving the said lever, a ladle, a shaft upon which said ladle is supported, and a controller operated by the said shaft for governing the movement of the said table, substantially as described.

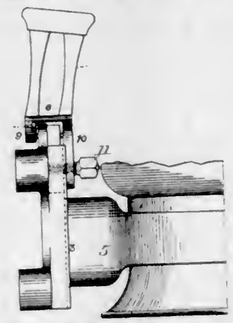
655,297. JACK-SCREW. WILLIS O. DERRY, Saganing, Mich. Filed Jan. 18, 1898. Renewed June 29, 1900. Serial No. 22,092. (No model.)

Claim.—1. In a device of the class described, the combination of a standard provided at its upper end with an annular groove, and having bearing-recesses at the inner and outer walls thereof, a series of antifriction-rolls arranged in said groove and provided at their inner and outer ends with journals fitting in the bearing-recesses, the journal of one of the rolls being extended at the outer end thereof, a gear-wheel mounted on the extended journal, a vertically-adjustable screw, a nut engaging the screw and resting upon the antifriction-rolls, said nut being provided with teeth meshing with the gear-wheel, and means for rotating the latter, substantially as described.



2. In a device of the class described, the combination of a standard provided at its upper end with an annular groove and having bearing-recesses at the inner and outer walls thereof, a series of antifriction-rolls arranged in said groove and provided at their inner and outer ends with journals fitting in the bearing-recesses, a vertically-adjustable screw, a rotary nut arranged on the antifriction-rolls and engaging the screw, said nut being provided with an exterior annular groove, means for rotating the nut, and a catch constructed of resilient material, mounted on the standard and provided at its top with an inwardly-extending arm engaging the groove of the nut, said catch being adapted to hold the nut and the screw against outward movement when the device is carried in a horizontal position, and capable of being drawn outward to disengage its arm from the groove of the nut, substantially as and for the purpose described.

655,298. LAMP-SOCKET. CHARLES H. DRESSEL, New York, N. Y., assignor to the Dressel Railway Lamp Works, of New York. Filed Feb 12, 1898. Serial No. 670,043. (No model.)



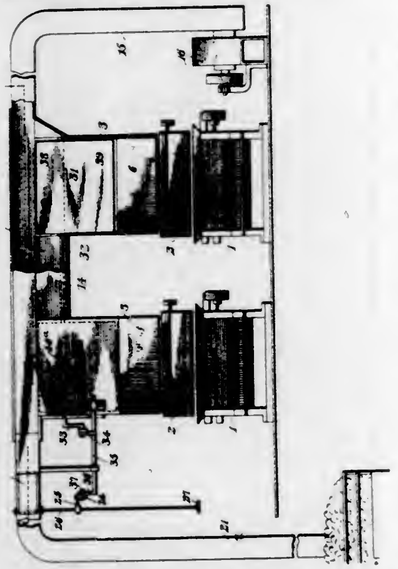
Claim.—The combination with a lamp-arm socket, of a projecting catch-piece formed thereon, and a hinge-clip arranged for engaging with said catch-piece, and a set-screw for locking the clip in place, substantially as shown and described.

655,299. PNEUMATIC COTTON ELEVATOR AND DISTRIBUTER. THEOPHILUS C. EBERHARDT, Prattville, Ala. Filed Jan. 4, 1899. Serial No. 701,146. (No model.)

Claim.—1. In a cotton-handling apparatus, a feeder-chute having a series of cotton-passages which communicate with a common outlet forming a single point of discharge, combined with mechanism substantially as described for delivering cotton successively to the passages of said feeder-chute, and a gin-stand, whereby cotton may be supplied continuously to said gin-stand, substantially as set forth.

2. In a cotton-handling apparatus, a feeder-chute having a series of cotton-passages which communicate with a common outlet, and a valve mechanism for closing one passage and opening another passage, combined with a gin-stand, and mechanism substantially as described for delivering cotton successively to the passages of said feeder-chute, substantially as described.

3. In a cotton-handling apparatus, a pneumatic conveyer, a gin, a longitudinally-divided feeder-chute between the gin and the conveyer and provided with a series of cotton-passages which communicate with a common outlet serving as a single point of discharge from the individual passages to the gin, and shiftable controlling devices substantially as described for causing an accumulation of cotton in one passage of the feeder-chute and at the same time opening the other passage of the feeder-chute to communication with the gin, said controlling devices being shiftable to alternately establish communication from the individual feeder-passages with the same gin, as and for the purposes described.



4. In a cotton-handling apparatus, a longitudinally-divided feeder-chute having individual cotton-passages communicating with a single outlet, and a valve for closing one passage and opening the other passage of said chute to the accumulation of cotton therein, combined with a conveyer having means for delivering cotton alternately into the individual passages of the chute, and means for continuously feeding cotton to said conveyer, substantially as described.

5. In a pneumatic cotton-handling apparatus, the combination of a divided feeder-chute having individual passages communicating with a common outlet, a valve mechanism in said feeder-chute to alternately close communication between said outlet and the passages, a longitudinally-divided pneumatic conveyer having isolated passages in communication with the cotton-passages of the divided feeder, means for supplying cotton alternately from the passages of said divided conveyer to the passages of the feeder, and a single suction-supply pipe communicating with said conveyer, substantially as described.

6. In a pneumatic cotton-handling apparatus, the combination of a divided feeder-chute having a pair of separate passages communicating with a common outlet, a pneumatic conveyer divided longitudinally into separate cotton-flues which communicate respectively with said separate passages of the chute, a valve in the feeder-chute serving to alternately close the cotton-passages therein and simultaneously change the course of a suction-current through the cotton-flues of the divided conveyer, a single exhaust-pipe connected with said conveyer for maintaining a continuous suction throughout the apparatus, and a single suction-supply pipe connected with the conveyer for feeding cotton to either of the cotton-flues thereof, substantially as set forth.

7. In a pneumatic cotton-handling apparatus, the combination of a divided feeder-chute having a pair of separate passages communicating with an outlet forming a common point of discharge to a gin, a pneumatic conveyer divided longitudinally into cotton-flues, communicating respectively with said separate passages of the divided feeder-chute, and also provided with a supplemental air-suction flue, having communication with both passages of the pneumatic conveyer, a suction-controlling valve for shifting the suction from one cotton-passage to the other of said pneumatic conveyer, a single exhaust-pipe communicating with said air-suction flue of the conveyer, and means for feeding cotton from a single source of supply to either of said cotton-flues of said pneumatic conveyer, substantially as set forth.

8. In a pneumatic cotton-handling apparatus, the combination of a divided feeder-chute having a pair of separate passages communicating with an outlet forming a single point of discharge to a gin, a pneumatic conveyer divided longitudinally into a pair of separate cotton-flues, communicating respectively with the separate passages of the divided feeder-chute, and also provided with an air-suction flue, which communicates with both passages of the divided feeder-chute, means for shifting the suction from one passage to the other of said divided conveyer and also for permitting the cotton to accumulate alternately in the separate passages of the divided feeder-chute, an exhaust-pipe connected with said air-suction flue of the pneumatic conveyer, and a suction-supply pipe having means for delivering the cotton into either cotton-flue of the divided conveyer, substantially as set forth.

9. In a pneumatic cotton-handling apparatus, the combination of a divided feeder-chute having a pair of separate passages communicating with a common outlet forming a single point of discharge to a gin, a pneumatic conveyer divided longitudinally into a plurality of flues, two of said flues forming cotton-flues which communicate respectively with the separate passages of the chute and another flue forming an air-suction flue having communication with both passages of said divided chute, means for shifting the suction from one passage to the other of the pneumatic conveyer and also permitting the cotton to accumulate alternately in the separate passages of the feeder-chute, an exhaust-pipe connection with the air-suction flue, a single suction-supply pipe having separate branches communicating respectively with the separate cotton-flues, and a shiftable device for deflecting the course of the cotton through either of said branches, substantially as set forth.

10. In a pneumatic cotton-handling apparatus, the combination of a divided feeder-chute having a pair of separate passages communicating with a common outlet forming a single point of discharge to a gin, a pneumatic conveyer divided longitudinally to form the individual cotton-flues, communicating respectively with the separate passages of the chute, and an intermediate air-suction flue, the latter being located between the side cotton-flues and having communication with both passages of the chute, means for shifting the suction from one cotton-passage to the other of the divided conveyer and also permitting the cotton to accumulate alternately in the separate passages of the conveyer and feeder-chute, a single suction-supply pipe having a distributing Y connection with the individual cotton-flues only of the conveyer, and a deflecting valve or valves mounted in said distributing Y connection of the suction-pipe, substantially as set forth.

11. In a pneumatic cotton-handling apparatus, the combination of a divided feeder-chute having a pair of separate passages communicating with a common outlet forming a single point of discharge to a gin, a pneumatic conveyer covering the top of the chute and divided into a series of three open-bottom flues, the side flues constituting cotton-passages in connection with the individual passages of the chute and the intermediate flue forming a suction-passage, a suction-controlling and cut-off valve for the feeder-chute, an exhaust-pipe connection with the suction passage or flue of the conveyer, and a suction-supply pipe having a valved distributing Y connection with the cotton-flues of the conveyer, substantially as set forth.

12. In a pneumatic cotton-handling apparatus, the combination of a divided feeder-chute having a pair of separate passages communicating with a common outlet forming a single point of discharge to a gin, a pneumatic conveyer divided longitudinally into side cotton-flues, communicating respectively with the separate passages of the chute, and an air-suction flue having communication with both passages of said divided chute, a suction-controlling and cut-off valve supported by the feeder-chute to close the passages alternately and simultaneously change the course of the suction-current in the cotton-passages of the divided pneumatic conveyer, an exhaust-pipe communicating at all times with the air-flue of said divided conveyer, a suction-supply pipe having separate distributing branches connected respectively with the separate cotton-flues of the conveyer, a deflector in said branched supply-pipe for directing the cotton into either of the cotton-flues, and mechanism for simultaneously actuating the deflector and the suction-controlling valve, substantially as set forth.

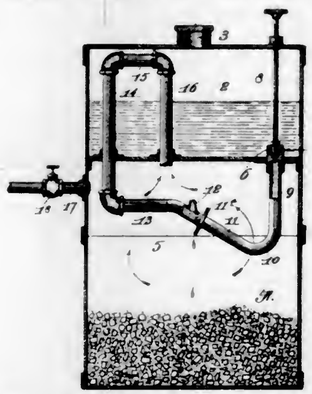
13. In a pneumatic cotton-handling apparatus, the combination of a divided feeder-chute having a pair of separate passages communicating with a common outlet forming a single point of discharge to a gin, and a suction-chamber arranged between said passages and having screened openings at opposite sides which are in communication with the individual passages of the feeder-chute, a pneumatic conveyer having cotton-flues, communicating respectively with the separate passages of the chute, and a single air-suction flue, communicating with said suction-chamber of the feeder-chute, means for alternately covering and uncovering the screened side openings of the suction-chamber, a cut-off valve hung in the feeder-chute below the suction-chamber and adjusted to alternately close the separate passages of said chute, and means for feeding cotton from a common source of supply alternately into the separate cotton-flues of the divided conveyer, substantially as set forth.

14. In a pneumatic cotton-handling apparatus, a feeder-chute having a pair of separate passages communicating with a common outlet, and a suction-chamber arranged between such passages and having screened side openings communicating therewith, a pneumatic conveyer having a pair of open-bottom cotton-flues arranged over the upper ends of said separate passages, and a single open-bottom air-suction flue arranged over and communicating with the said suction-chamber, a single exhaust-pipe connection with said air-suction flue, a single suction-supply pipe having branch connections with the cotton-flues, means for alternately covering and uncovering the screened side openings of the suction-chamber, and a cut-off valve operating within the lower part of the chute to alternately close the separate passages thereof, substantially as set forth.

15. In a pneumatic cotton-handling apparatus, a feeder-chute having a pair of separate cotton-passages communicating with a common outlet, and a suction-chamber arranged between such passages and having screened side openings communicating therewith, a pneumatic conveyer having a pair of cotton-flues opening into said separate passages, and a single air-suction flue opening into said suction-chamber, an exhaust-pipe connection with the air-suction flue, a suction-supply pipe having branch connections with the cotton-flues, a shutter-valve arranged over each of the screened side openings of the suction-chamber, and an oscillatory cut-off valve hung at the apex of the suction-chamber, substantially as set forth.

16. In a pneumatic cotton-handling apparatus, a feeder having a pair of separate cotton-passages communicating with a common outlet, and a suction-chamber arranged between such passages and having screened side openings communicating therewith, a pneumatic conveyer having separate cotton-flues opening respectively into said separate passages, and a single air-suction flue opening into said suction-chamber, an exhaust-pipe connection with the air-suction flue, a suction-supply pipe having a deflecting device for deflecting the cotton into either of said cotton-flues, a valve-shaft arranged at the bottom of the suction-chamber, a shutter-valve arranged over each of the screened side openings of the suction-chamber, and having adjusting connections with the valve-shaft, an oscillatory suction-controlled valve loosely hung from said valve-shaft and capable of swinging from side to side of the chute, and means for simultaneously operating the valve-shaft and the deflecting device of the suction-supply pipe, substantially as set forth.

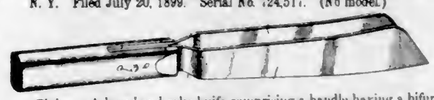
655,300. ACETYLENE-GAS GENERATOR. ALFRED C. EINSTEIN, St. Louis, Mo. Filed Nov. 20, 1899. Serial No. 737,544. (No model.)



Claim.—1. In a gas-generator, the combination of a carbid-container, a gas-chamber therein, a liquid-reservoir, a liquid-feed tube leading from said reservoir and having an uptake, an outlet-nozzle projecting upwardly from said uptake, said feed-tube having a horizontal part located beyond said nozzle and provided with communication with said gas-chamber; substantially as described.

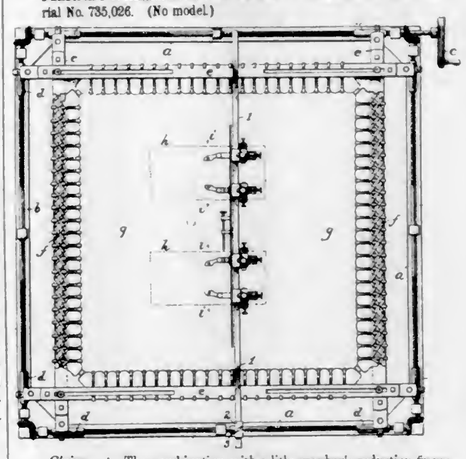
2. In a gas-generator, the combination of a carbid-container, the gas-chamber therein, a liquid-reservoir, a liquid-feed tube leading from said reservoir and having an uptake, an outlet-nozzle projecting upwardly from said uptake, said feed-tube having a horizontal part located beyond said nozzle and provided with communication with said gas-chamber, and a guard located on said uptake; substantially as described.

655,301. BREAD OR CAKE KNIFE. JAMES HAMILTON, Newburg, N. Y. Filed July 20, 1899. Serial No. 724,517. (No model.)



Claim.—A bread and cake knife comprising a handle having a bifurcation or opening, and a pair of blades having contiguous shanks rigidly secured to the handle and arranged within the bifurcation or opening, said blades being laterally bent and offset from each other and set at an angle and diverging from their cutting edges to their backs, whereby the space between them gradually increases in width to free the slice and prevent the same from binding against them, substantially as described.

655,302. REDUCTION-FRAME FOR LITHOGRAPHIC WORK. FERDINAND J. KALLENBACH, New York, N. Y. Filed Oct. 28, 1899. Serial No. 735,026. (No model.)



Claim.—1. The combination with a lithographer's reduction-frame, provided with means for stretching a sheet of elastic material thereon, of a bar hinged at one end to said frame and extending across the same, and markers mounted slidably on said bar, each marker having means for securing it in place on the bar, and an adjustable finger to occupy a position near the surface of the sheet stretched in the frame.

2. The combination with a reduction-frame for lithographers, of a bar mounted removably on and extending across said frame, said bar having an angular cross-section, and a plurality of markers slidably mounted on said bar, each of said markers having a finger, and means for adjusting said finger micrometrically in two directions, substantially as set forth.

3. The combination with the reduction-frame and the bar 1, mounted thereon, of a marker, mounted slidably on said bar and provided with an adjustable finger 13, a screw-stud 20, and a nut 21, the slotted plate 15, bearing a collared screw 17, the stud 20 engaging said slot, and the nut 19, fixed on the bar 1, and running on said screw 17, substantially as set forth.

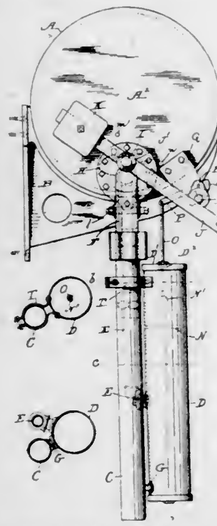
4. The combination with a reduction-frame and bar for the markers, mounted on and extending across the frame, of a marker, consisting of a sleeve which embraces said bar, means for securing said sleeve to the bar, a slide 7 mounted on the collar and provided with an operating-screw, a slide 10, carried by the slide 7, and movable at right angles to the latter, an operating-screw for the slide 10, and a finger 13, the stem of which is adjustably mounted in the slide 10, substantially as set forth.

5. In a reduction device, the combination with the slide 10, of the finger, its stem 12, having a flattened face, the spring on the slide bearing on said face, and a set-collar on the stem above the slide to limit its movement, substantially as set forth.

6. In a reduction device, the combination with the horizontal bar 1, the adjustable sleeve thereon, and the horizontal slide 10 carried thereby, of the upright stem 12 slidably and adjustably mounted in said bar, and the flat finger 13, on said stem and provided with a straight edge and a notch 13*, substantially as set forth.

655,303. APPARATUS FOR FLUSHING WATER-CLOSETS. ADOLPHUS LA BONTÉ, Worcester, Mass. Filed Mar. 8, 1900. Serial No. 7,818. (No model.)

Claim.—1. In an automatic apparatus for flushing water-closets, the combination of the main tank A and flush-pipe C, with a casting F secured to said tank and flush-pipe, and having a water-passage in alinement with that of said flush-pipe, also having a smaller, supplementary water-passage *k* opening from the main water-passage near its inner orifice, said casting also having a bearing for the shaft I, the refilling-tank D, said tank D being properly supported and connected at the bottom by a pipe G with the flush-pipe C; conducting-pipe E, connected at its upper end with casting F in alinement with the aforesaid supplementary water-passage *k* and at its lower end with the refilling-tank, above pipe G; the horizontal disk N, in said refilling-tank; vertical rod O, attached thereto and pivoted to lever P; said lever P the same having the cam P′ at its inner end; spring, snap-catch M, supported and fitted to slide longitudinally in a fixed bearing and having a projection for the cam P′ to impinge against; weighted, operating-lever J, secured to the outer end of shaft I and provided with means for operating it; said shaft I; the valve H secured to the inner end thereof and means for controlling the movements of said valve and parts connected therewith, substantially as set forth.

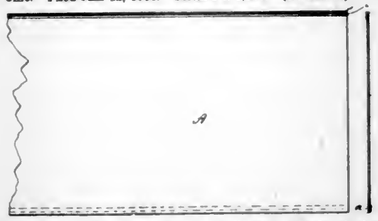


2. In an automatic apparatus for flushing water-closets, the combination of the main tank A and flush-pipe C, with a casting F secured to said tank and flush-pipe and having a water-passage in alinement with that of said flush-pipe, also having a smaller, supplementary water-passage *k* opening from the main water-passage near its inner orifice; the refilling-tank D, said tank D being properly supported and connected at the bottom by a pipe G with the flush-pipe C; conducting-pipe E, connected at its upper end with casting F, in alinement with the aforesaid supplementary, water-passage *k* and at its lower end with the refilling-tank above pipe G; the horizontal disk N in said refilling-tank; vertical rod O, attached thereto and pivoted to lever P; said lever P, the same having the cam P′ at its inner end; spring, snap-catch M, supported and fitted to slide longitudinally in a fixed bearing and having a projection for the cam P′ to impinge against, substantially as set forth.

3. In an automatic apparatus for flushing water-closets, the combination of the main tank A and flush-pipe C, with a casting F, secured to said tank and flush-pipe and having a water-passage in alinement with that of said flush-pipe, also having a smaller, supplementary water-passage *k*, opening from the main water-passage, near its inner orifice, the valve L fitted in casting F across water-passage *k* for controlling the flow of water therethrough; the refilling-tank D, said tank D being properly supported and connected at the bottom by a pipe G with the flush-pipe C conducting-pipe E, connected at its upper end with casting F in alinement with the aforesaid supplementary water-passage *k* and at its lower end with the refilling-tank above pipe G; the horizontal disk N in said refilling-tank; vertical rod O, attached thereto and pivoted to lever P; said lever P, the same having the cam P′ at its inner end; spring, snap-catch M, supported and fitted to slide longitudinally in a fixed bearing and having a projection for the cam P′ to impinge against, substantially as set forth.

4. In an automatic apparatus for flushing water-closets, the combination of the main tank A and flush-pipe C, with a casting F secured to said tank and flush-pipe, and having a water-passage in alinement with that of said flush-pipe, also having a smaller, supplementary water-passage *k* opening from the main water-passage near its inner orifice; the valve L fitted in casting F across said water-passage *k* for controlling the flow of water therethrough; the refilling-tank D, said tank D being properly supported, connected at the bottom by a pipe G with the flush-pipe C, and having its top end internally beveled around its central opening where vertical rod O passes through; conducting-pipe E connected at its upper end with casting F in alinement with the aforesaid supplementary water-passage *k*, and at its lower end with the refilling-tank above pipe G, and the horizontal disk N in said refilling-tank having the upper end of its hub beveled and attached to the bottom of rod O, which is in turn connected with the mechanism for automatically releasing lever J at the end of each flush, substantially as set forth.

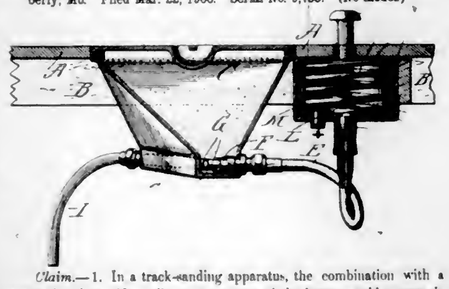
655,304. METALLIC TUBING. THOMAS MIDGLEY, Columbus, Ohio. Filed Jan. 12, 1900. Serial No. 1,225. (No model.)



Claim.—1. The method of making metallic tubing herein described, which consists in forming a blank with opposite grooves and ribs on the edges thereof, said ribs being thinner than the width of said grooves, bending the blank into the form of a tube with the members overlapped and interlocked, pressing said interlocked members into a seam or joint and thereby enlarging said ribs and filling said grooves, and then joining the members of the seam with soft metal.

2. The method of making metallic tubing herein described, which consists in forming a blank with opposite continuous and longitudinally-extending grooves and ribs on the edges thereof, said ribs being thinner than the width of said grooves, bending the blank into the form of a tube with the members on the edges overlapped and interlocked, pressing said members into a seam or joint of the same gage as the tube and thereby enlarging said ribs and filling said grooves, and then immersing the tube in a bath of molten metal and joining the members of the seam and coating the surfaces of the tubing.

655,305. TRACK-SANDING DEVICE. GEORGE W. MUDD, Moberly, Mo. Filed Mar. 22, 1900. Serial No. 9,735. (No model.)



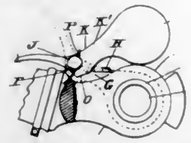
Claim.—1. In a track-sanding apparatus, the combination with a receptacle whose side walls converge toward the bottom, said receptacle being formed with a V-shaped trough in its bottom, of a pneumatic sanding apparatus arranged in said trough, an air-supply pipe leading into said apparatus, means for generating impulses of air and forcing the same through the supply-pipe, and delivery-pipes leading from the diverging ends of said apparatus to the rails on each side, substantially as described.

2. In a track-sanding apparatus, the combination with a receptacle formed with converging side walls and having a V-shaped trough in its bottom, of a Y-shaped coupling in the trough at the junction of its members, an air-supply pipe leading into said coupling, pipes G leading from the diverging members of said Y-shaped coupling, said pipes being inclined upwardly toward their outer ends, nozzles arranged in the inner ends of said pipes for directing blasts af air across sand-inlet openings in said pipes, and sand-delivery pipes arranged on the outer ends of said pipes G, substantially as described.

3. The combination with a suitable support, of a cylinder mounted on said support, a plunger cooperating with said cylinder, a spring interposed between said plunger and the end wall of said cylinder, an inlet-valve in said cylinder, an outlet-valve in said cylinder, a pipe for conducting the air passing beyond said outlet-valve into and through the sand-receptacle, said pipe terminating above the rail, a blast-nozzle in said pipe, and an opening for admitting sand into said pipe, said opening being located within the receptacle, substantially as described.

4. The combination with a platform, of a receptacle arranged therebeneath for containing sand, a cylinder mounted beneath the platform, a plunger cooperating with said cylinder, a spring for elevating said plunger, a button mounted on the plunger and extending through the platform, a pipe leading from said cylinder and passing through the sand-receptacle, said pipe terminating above the rail, inlet and outlet valves in said cylinder, the pipe within the limits of the sand-receptacle being provided with an inlet-opening for admitting sand thereinto, and a nozzle in said pipe behind said opening, substantially as described.

655,306. AUTOMATIC DUST-GUARD. RICHARD H. NYLAND and FREDERICK C. LINDT, St. Cloud, Minn. Filed May 8, 1900. Serial No. 15,937. (No model.)



Claim.—1. A dust-guard for brake-couplings comprising a bracket, a lever pivoted thereto having a handle and a head at opposite ends, and a spring for swinging said lever and moving it laterally, substantially as shown and described.

2. A dust-guard for a brake-coupling comprising a bracket provided with a lug, a lever pivoted thereto having a handle and a head at opposite ends, a stop, and a spring for swinging said lever and moving it laterally, substantially as shown and described.

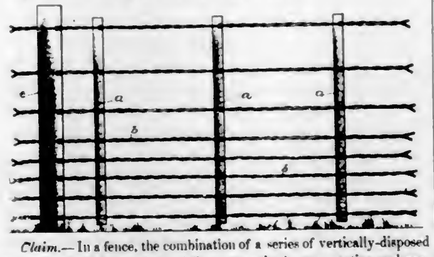
3. A dust-guard for brake-couplings comprising a lever provided with a head at one end having the lower edge of its inner face beveled, a handle at the opposite end, means for pivotally attaching the lever to a brake-coupling, and means for operating the same, substantially as shown and described.

4. A dust-guard for brake-couplings comprising a bracket, a lever pivoted thereto having a handle at one end, and a recessed head at the opposite end with the lower edge of its inner face beveled, and means for operating said lever, substantially as shown and described.

5. A dust-guard for a two-part brake-coupling comprising a detachable bracket adapted to be secured to each part of said coupling, each having a lever pivoted thereon provided with a flat circular head with a beveled lower edge, a handle, a depending stop adapted to contact with said head and limit the downward movement thereof, and means for operating said lever, substantially as shown and described.

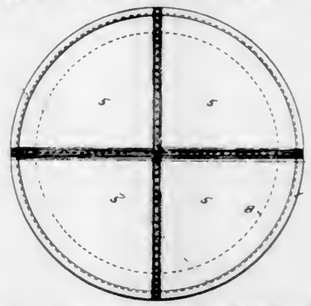
6. In a dust-guard for brake-couplings a lever having a head with the lower edge of its inner face beveled, substantially as shown and described.

655,307. WIRE FENCE. PETTIS A. REID, Richmond, Ind. Filed Apr. 5, 1898. Serial No. 676,512. (No model.)



Claim.—In a fence, the combination of a series of vertically-disposed posts or slats which are substantially rectangular in cross-section and provided with beveled recesses at intervals along the edges thereof to receive and confine a corresponding series of horizontally-arranged wires, said recesses extending diagonally across the corners of the slats and having flat bottoms, together with a series of wires twisted together in pairs so as to form loops at intervals along the length thereof, said loops embracing said posts or slats and occupying said recesses with their end portions lying along the flat bottoms of the recesses; said recessed portions of the posts or slats practically filling said loops, substantially as shown and described.

655,308. TABLE-MAT. WILLIAM W. ROBINSON, Chicago, Ill. Filed May 12, 1900. Serial No. 16,529. (No model.)



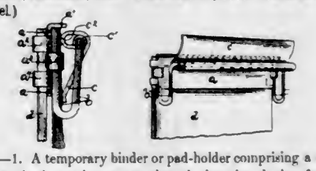
Claim.—1. The combination with two outer sheets of flexible material, of a plurality of sections of non-heat-conducting sheets slightly separated from one another at their adjacent edges and arranged between said outer sheets and secured thereto, substantially as described.

2. A table-mat composed of two outer sheets of flexible material, and a plurality of sections of non-heat-conducting material arranged between said outer sheets, said outer sheets being stitched together between said sections, substantially as described.

3. A table-mat composed of a plurality of sections of non-heat-conducting sheets slightly separated from one another, and a backing of flexible material secured to said sections, whereby the mat may be folded between said sections, substantially as described.

4. A mat consisting of an inner sheet of flexible material, a plurality of sections of non-heat-conducting sheets placed on each side of and secured to said inner sheets and slightly separated from each other, and outer coverings of flexible material, the whole being secured together, substantially as described.

655,309. TEMPORARY BINDER AND PAD-HOLDER. VENIAH C. ROUTZAHN, Mansfield, Ohio. Filed Jan. 27, 1900. Serial No. 2,984. (No model.)



Claim.—1. A temporary binder or pad-holder comprising a metallic plate forming a back portion, a cam-shaped clamping device forming a front portion, and two U-shaped springs for pivotally holding the clamping device in its position relative to the back portion, substantially as described and for the purpose set forth.

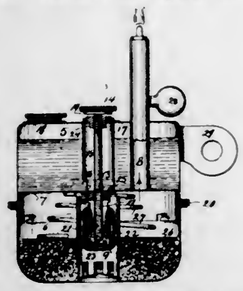
2. In a temporary binder for memorandum-pads and the like, the combination of a metallic plate forming a back portion, a cam-shaped clamping device and lever for operating the same forming the front portion, and two U-shaped springs forming operative connection between the front and back portions, each of said springs having one end rigidly secured to the metallic plate and having its other end bent at right angles and parallel with the said metallic plate to form a pivot for the said cam-shaped clamping device, substantially as described and for the purpose set forth.

3. The combination, with a support of cardboard or similar material, of a temporary binding attachment or pad-holder, comprising a metallic plate, clasps formed integral with said plate for attaching the said plate to the said support, a cam-shaped clamping device, a lever for operating the cam, and two U-shaped springs adapted to hold the clamping device against the said metallic plate, substantially as described and for the purpose set forth.

4. As a new article of manufacture, a temporary binder or pad-holder, comprising a back portion *a*, consisting of an oblong metallic plate having formed integral therewith a flange projecting at its top edge at right angles to its face, two clasp-forming flanges projecting at each of its ends, and two sockets located on its face, one at each end thereof, a front portion *c* consisting of a thin sheet of metal, having one edge bent in two

convolutions, forming, respectively, a cam and bearings therefor, and means for operatively connecting the back and front portions, consisting of two U-shaped springs *b* and *b'* rigidly fastened in the sockets on the back portion and forming pivotal supports for the front portion, substantially as and for the purpose set forth.

655,310. ACETYLENE-GAS GENERATOR. EDWARD F. SMITH, Cincinnati, Ohio. Filed Sept. 2, 1899. Serial No. 729,301. (No model.)

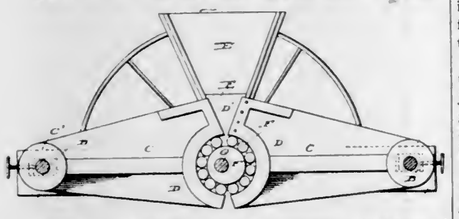


Claim.—1. In an acetylene-gas generator, the combination of a water-receptacle and a carbid-receptacle, the two detachably connected, the latter receptacle below the former, a tube 22, projecting upwardly from the bottom of the carbid-receptacle, a cup 9 depending from the bottom of water-receptacle into this tube, outlet-openings in this latter and in cup 9 and a pipe 11 supplying this latter from the water-receptacle.

2. In an acetylene-gas generator, the combination of a receptacle for water and one for carbid, a diaphragm between the two, a cup 9, secured to and depending from the under side of the latter into the carbid-receptacle and provided with lateral outlet-openings 12, a compartment set off in the water-receptacle and communicating therewith by an opening 16, a pipe 11 attached to diaphragm 7 and connecting the lower part of compartment 15 with the lower part of cup 9, and wicks supported in openings 12, depending into cup 9, and reaching outside into the carbid-receptacle.

3. In an acetylene-gas generator, the combination of a receptacle for water and one for carbid, a diaphragm separating the two, a cup 9 open to the carbid-receptacle, a compartment 15 set off in the water-receptacle and communicating therewith by an opening 16, an outlet-pipe from compartment 15 communicating with cup 9, a valve controlling this communication provided on the outside with a knob 14 for manipulation and a vent-opening 17 below this knob, the operation being such, that manipulation of this latter, for the purpose of operating the valve, controls at once the aforesaid communication as well as passage through opening 17.

655,311. ORE-CRUSHER. THOMAS SMITH, Hopewell, N. Mex., assignor of one-half to Eugene G. E. Jaccard and Arthur C. Sweet, Kansas City, Mo. Filed Oct. 5, 1899. Serial No. 732,672. (No model.)



Claim.—1. In a crushing-machine, the combination with a frame, of oppositely-arranged pivoted crushers having their adjacent ends recessed, and means within said recesses for operating the crushers, substantially as set forth.

2. In a crushing-machine, the combination with a frame, of two pivoted and horizontally-adjustable crushers recessed in their adjacent ends, and means within the recesses for supporting and operating the crushers, substantially as described.

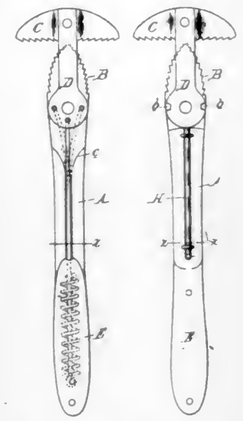
3. In a crushing-machine, the combination with a frame, of two pivoted crushers each provided with a recess at its inner end, and an eccentric mounted, and revoluble within, the recesses in said ends, and adapted to support and operate the crushers, substantially as described.

4. In a crushing-machine, the combination with a frame, of crushers each having a semicircular recess in its inner end, an eccentric mounted in said recesses, and rolls interposed between the eccentric and the walls of the recess, for the purpose described.

5. In a crushing-machine, the combination with the frame, of pivoted crushers, each crusher having a recess in its inner end, an eccentric mounted in said recesses, and a longitudinally-movable shaft secured to the eccentric, substantially as described.

6. In a crushing-machine, the combination with a frame, of crushers pivoted thereto at their outer ends, each having a semicircular recess in its inner end, an eccentric within said recesses, rollers interposed between the eccentric and the walls of the recesses, and a shaft secured to said eccentric and mounted in longitudinally-movable boxes within the frame, whereby a rocking motion may be imparted to the crushers from the eccentric, substantially as described.

655,312. WRENCH. THOMAS E. SMYTHE, Galion, Ohio, assignor to R. C. Fracht, Le Roy Marlay, J. E. Gelsanliter, and Frank A. Smith, same place. Filed Dec. 23, 1899. Serial No. 741,380. (No model.)



Claim.—1. In a wrench, composed of a lever-bar and jaw pivoted thereto, a tension device applied to the jaw to make it self-closing and a detent adapted to be engaged with the jaw at the will of the operator to hold it open.

2. In a wrench, composed of a lever-bar and jaw pivoted thereto, a tension device applied to the jaw making it self-closing in combination with a detent adapted to be engaged with the jaw to hold it open at the point of greatest distention.

3. In a wrench, composed of a lever-bar and jaw pivoted thereto, a tension device applied to the jaw making it self-closing and a detent adapted to cooperate therewith by being engaged with the jaw to hold it open against the operation of the tension device, said detent having a finger-piece for operating it in proximity to the hand of the operator on the lever-bar.

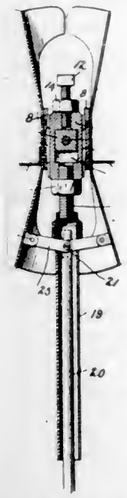
4. In a wrench, the combination of the lever-bar A, the head B thereof, the jaw C pivotally secured to the lever-bar, the shanks D of the jaw, the tension-rod G connected to the inner end of one of the shanks, the groove in the lever-bar in which said tension-rod is partially concealed and guided in its movements and the tension-spring F inclosed in the handle of the lever-bar and to which the tension-rod is directly connected.

5. In a wrench, the combination of the lever-bar A, the head B thereof, the jaw C pivotally secured to the lever-bar, the shanks D of the jaw, the tension-rod G connected to the inner end of one of the shanks the tension-spring F inclosed in the handle of the lever-bar, the detent H and the notches *b* in the shank on opposides sides of the pivot.

6. In a wrench the combination with the lever A and self-closing jaw C of the detent H slidingly secured in a groove of the lever-bar and the notches *b* in one of the shanks into which the detent is adapted to be engaged to prevent the jaw from closing.

7. In a wrench, the combination with the lever-bar A and jaw C, having the shanks D pivoted on opposite sides of the lever-bar of two longitudinal grooves formed in opposite sides of said lever-bar, and two rods slidingly engaging in said grooves, one of said rods adapted to be engaged with notches in the inner end of one of the shanks to hold the jaw open and the other rod connected to the inner end of the other jaw and to a spring in the handle of the lever-bar and operating by its tension to close the jaw when released by the other rod.

655,313. FLUE-SCRAPER. LEE V. TUCKER, Chicago, Ill. Filed Aug. 23, 1897. Serial No. 649,203. (No model.)



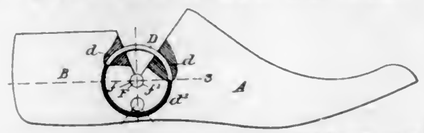
Claim.—1. A flue-scraper having in combination double-ended scrapers pivotally connected at their mid-length, a wedge arranged between connected with and having movement with relation to said scrapers, for forcing their ends apart, a stem secured to said wedge, and a stem having lever connection with said scrapers for contracting or expanding them at will, substantially as set forth.

2. A flue-scraper having in combination expansible scrapers, a wedge arranged between said scrapers and having a slot, a block arranged in said slot and having operative connection with said scrapers, and a set-screw threaded in said wedge and adapted to impinge said block for adjusting the latter, substantially as set forth.

3. A flue-scraper having in combination two scraping-blades having an edge at each end and being pivoted together about their mid-length, a stem operatively connected to one end of each blade, a wedge arranged between said blades and being movable with relation thereto and a second stem connected to said wedge, substantially as set forth.

4. A flue-scraper having in combination two blades pivoted together at their mid-length and each having an edge at each end, the curved plates 8 secured to said blades, respectively, a double-ended wedge arranged between said plates and having a slot through which the pivot of said blades passes, a hollow stem connected to said wedge, a second stem arranged within said hollow stem and a pair of toggle-arms pivoted to said second stem and to said blades, substantially as set forth.

655,314. TRANSVERSELY-DIVIDED BOOT OR SHOE LAST. ABEL D. TYLER, Jr., Brockton, Mass., assignor to Edward S. Beach, Boston, Mass. Filed July 22, 1899. Serial No. 724,798. (No model.)



Claim.—1. The combination of the fore part and heel part of a boot or shoe last with a substantially ring-shaped guide which is mounted in recesses in said parts, connects said parts and permits movement of one part in relation to the other to shorten the last.

2. The combination of the fore part and heel part of a boot or shoe last with a pair of substantially ring-shaped guides which are mounted in recesses in said parts, connect said parts and permit the movement of one of said parts in relation to the other part to shorten the last, one of said guides being mounted near one side of the last and the other guide being mounted near the other side of the last.

3. The combination of a fore part and heel part of a boot or shoe last; with a curved guide mounted in recesses in said parts, connecting the parts and permitting movement of one part in relation to the other part; the inner walls of said parts at the upper portion of the last being shaped to form an opening in the upper part of the last; a bearing near the bottom of said opening, and mounted in one of said parts and projecting therefrom; and a corresponding recess in the opposed wall of the other part to receive said bearing.

4. The combination of a fore part and heel part of a boot or shoe last, with a curved guide mounted in said parts, connecting the same and permitting movement of either of said parts in relation to the other part; the inner walls of said parts at the upper portion of the last being shaped to form an opening in the upper part of the last; a transverse bearing near the bottom of said opening, mounted on one of said parts and projecting therefrom; a corresponding recess in the opposed wall of the other part to receive said bearing; a projection from the inner end of one part; and a corresponding recess in the opposed wall of the other part to receive said projection.

5. A multipart divided shoe-last, the parts whereof are in contact substantially from the bottom of the last to an intermediate point removed from the bottom sufficiently to prevent the last from tending to collapse when in use, said last presenting two diverging lines of cut extending from said intermediate point to the top of the last; and a substantially ring-shaped guide mounted in said parts, connecting them and permitting movement of one part in relation to the other part.

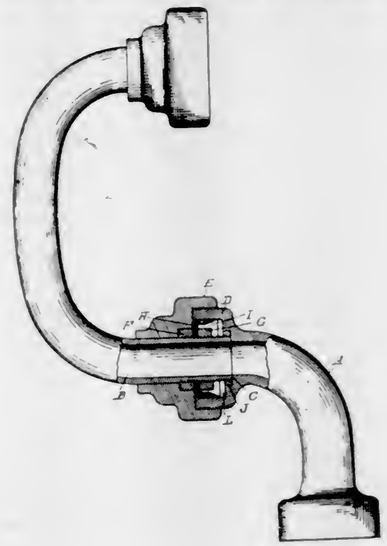
6. A boot or shoe last comprising a plurality of parts in combination with a substantially ring-shaped guide mounted in and connecting said parts which are formed, at the upper part of the last, with a downwardly-extending recess which permits upward movement of one part in relation to the other part, and, at the lower part of the last, with inner ends shaped to contact when the heel part and fore part are in alinement.

7. A bonded last comprising a heel-section and a fore-part section and a bond connected to one of said sections, said bond being formed with a curved end arranged and adapted to slide in a complemental socket in the other section, whereby the last may be shortened by the movement of one section relative to the other.

8. A bonded last comprising in its construction a heel-section and a fore-part section and a bond connected to one of said sections, one end of said bond being formed with a curved part arranged to have a sliding engagement with a complemental part upon the other section, whereby the last may be shortened by the movement of one section relative to the other.

9. As a new article of manufacture, a transversely-divided last comprising a fore part and heel part having reciprocal abutting services at their inner ends; and, also a free space between their inner ends; and, also opposed circular, guide-receiving recesses at their inner ends, the centers of said recesses being in a line passing through the last from side to side thereof.

655,315. SWIVEL PIPE-JOINT. CHARLES W. VAUGHAN, Hillsdale, Mich., assignor of one-fourth to John R. Sutton, same place. Filed May 1, 1899. Renewed Jan. 8, 1900. Serial No. 777. (No model.)



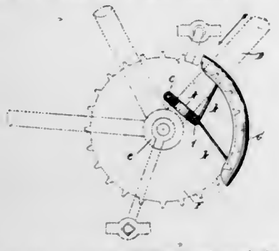
Claim.—1. In a swivel pipe-coupling, the combination of two pipe-sections, one section having an offset shoulder against which the end of the other section engages and having a concentric flange extending beyond the joint, packing-rings upon the inner section clamping a cup-shaped packing between which bears against the inner face of the flange, and a coupling-ring screwed to the exterior of the flange and having a shouldered bearing engaging the face of the outer packing-ring, substantially as described.

2. In a swivel pipe-joint, the combination of two meeting pipe members or sections, a concentrically-arranged flange upon one section spaced from the meeting sections, a coupling upon the complementary pipe-section engaging the spaced flange and forming in connection with the latter an annular chamber-casing surrounding the sections, and a cup-shaped packing arranged within and occupying a portion of the annular chamber, said packing being carried by one of the sections and abutting against the meeting section.

3. In a swivel pipe-joint, the combination of two meeting pipe members or sections, a concentrically-arranged flange upon one section spaced from the meeting sections, a coupling upon the complementary pipe-section engaging the spaced flange and forming in connection with the latter an annular chamber-casing surrounding the sections, a cup-shaped packing arranged within and occupying a portion of the chamber, said packing being carried by one of the sections and abutting against the meeting section, and a detachable packing-ring upon the pipe-section carrying the coupling, bearing against the packing to clamp the same in position.

4. In a swivel pipe-joint, the combination of two meeting pipe members or sections, a concentrically-arranged flange upon one section, a coupling-ring upon the complementary pipe-section engaging the flange, two detachable packing-rings upon the latter section, one abutting against the coupling, and a cup-shaped packing clamped between the detachable packing-rings and abutting against the concentric flange.

655,316. MUD-GUARD FOR BICYCLES. FRANK H. WELCH, New York, N. Y. Filed Jan. 11, 1900. Serial No. 1,157. (No model.)



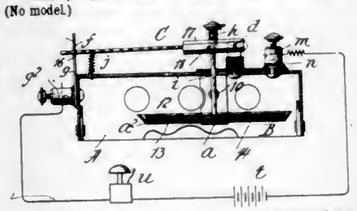
Claim.—1. An improved adjustable mud-guard for the sprocket drive-wheels of bicycles, comprising a cylindrical or ring-shaped clamp adapted to be adjusted laterally and longitudinally upon the cylindrical frame-bar of the bicycle, and a shield having a pivotal connection with said clamp and projecting therefrom on a lateral plane with respect thereto, substantially as and for the purpose set forth.

2. An improved mud-guard for the sprocket drive-wheels of bicycles, comprising a cylindrical or ring-shaped clamp adapted to be adjusted longitudinally and laterally upon a cylindrical frame-bar of the bicycle and having half members provided with projecting front ends, a shield carried by arms formed with a loop at their meeting termini, which loop is received between said meeting ends and by which said shield is independently adjustable upon and with relation to the clamp, and an adjusting bolt or screw passing through said meeting ends and loop, substantially as and for the purpose set forth.

3. An improved adjustable mud-guard for the sprocket drive-wheels of bicycles, comprising a clamp adapted to be adjusted laterally and longitudinally upon and with respect to the frame-bar of the bicycle, means for securing said clamp in adjusted position, a shield carried upon members projecting outwardly and laterally from one end of said clamp, said shield-carrying member being adjustable upon and with relation to the clamp in a longitudinal plane with respect to the shield device, and means for securing said shield-carrying members in adjusted position with relation to the clamp, substantially as and for the purpose set forth.

4. The combination, with the sprocket drive-wheel and the upwardly and forwardly projecting cylindrical frame-bar D of a bicycle, of a cylindrical clamp or ring surrounding and embracing said frame-bar and adjustable longitudinally and turnable thereon, means for securing said clamp or ring in adjusted position, and a shield carried on a plane beyond and at one side of said clamp or ring and sustained by the latter, said shield having an independent adjustable movement upon and with relation to said ring or clamp in a longitudinal plane with respect to the shield, substantially as shown and described.

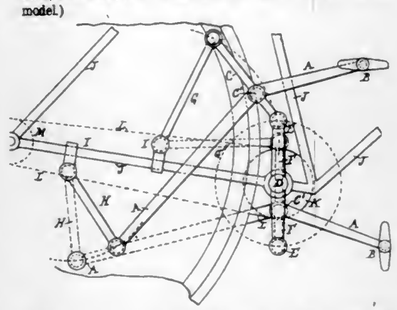
655,317. ELECTRIC TEMPERATURE-INDICATOR. LESLIE S. WILDER, Springfield, Mass. Filed Nov. 15, 1899. Serial No. 737,435. (No model.)



Claim.—1. In an electric temperature-indicator, the combination with the hollow base provided with the cross-support, the thermostat-disk thereon, the plate secured on the top of the base comprising a binding-post and upstanding earpieces, an upright plate supported on the base suitably distant from the said binding-post plate, and having a recess, a lever-rod pivoted in said earpieces and projected through said recess, a thrust-rod between and in bearing on the thermostat-disk and the lever, the circuit-conductors, a generator and an alarm device, substantially as described.

2. In an electric temperature-indicator, the combination with the thermostat, the contact-plate having the recess, the pivoted lever extending through the recess the rod controlled by the thermostat and engaging the lever, and means for adjusting the normal position of the lever and the margins of said recess, relatively the one to the other, whereby said lever may have greater or less proximity thereto as required, the conductors in electrical connection with the lever and said recessed plate and a battery and an alarm or signaling device in the circuit, substantially as described.

655,318. POWER-TRANSMITTING MECHANISM. EDWIN WINANS, New York, N. Y. Filed Nov. 14, 1899. Serial No. 736,928. (No model.)

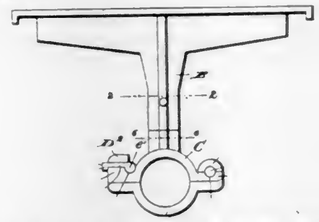


Claim.—1. In a power-transmitting device, the combination of a crank-shaft; a side rod, the inner end of which connects with said crank-shaft; a force-receiving lever connecting with said side rod, and a pair of pivoted guide-links connecting, one with the outer end of said side rod, the other with fulcrum end of said force-receiving lever, substantially as set forth.

2. In a power-transmitting device, the combination of a crank-shaft, a plurality of cranks attached at moderate angles to each other; side rods, the inner ends of which connect with said cranks; associate force-receiving levers connecting with said side rods; and associate pairs of pivoted guide-links connecting, one with the outer ends of associate side rods, the other with the associate fulcrums of said force-receiving levers, substantially as set forth.

655,319. SHAFT-HANGER. DWIGHT R. WING, Little Rock, Ark. Filed Aug. 26, 1899. Serial No. 728,609. (Model.)

Claim.—1. In a shaft-hanger, the combination, of the stationary section and movable section or cap, lugs formed on said sections and adapted to interlock, the lug of one of the sections having a recess at one side adjoining the other section and above the lugs thereof; together with a locking-plate adapted to be slid laterally into engagement with the lugs and comprising a pin with arms projecting therefrom, the pin engaging the aforesaid recess and the arms adapted to be swung down to engage the lugs and prevent withdrawal of said plate, substantially as shown and for the purpose set forth.

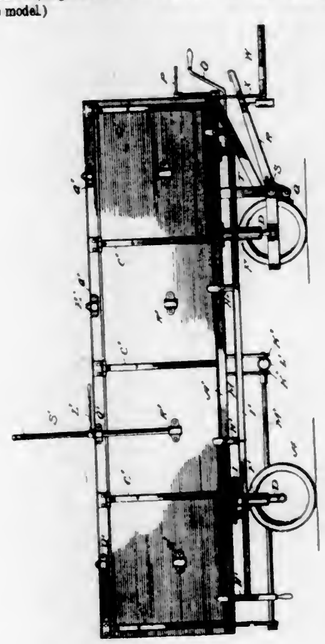


2. In a shaft-hanger, the combination, of the stationary section and movable section or cap, lugs formed on said sections and adapted to interlock, the lug of one of the sections having a recess at one side above the lugs of the other section; together with a locking-plate comprising a pin, arms projecting therefrom and a cross-bar connecting the outer ends of said arms, the pin engaging the aforesaid recess while the arms and cross-bar engage the lugs and lock the plate in place, substantially as shown and for the purpose set forth.

3. In a shaft-hanger, the combination, of the stationary section and movable section or cap, lugs formed on said sections and adapted to interlock, the lug of one of the sections having a recess at one side and the lugs of the other section having grooves in their upper side on a line with the aforesaid recess forming a continuous recess open at one side; together with the locking-plate comprising a pin with arms projecting therefrom, the plate being adapted to be slid into engagement with the lugs and the arms adapted to be swung down to prevent withdrawal of said plate, substantially as shown and for the purpose set forth.

4. In a shaft-hanger, the combination, of the stationary section and movable section or cap, one of the sections being bifurcated at its ends and provided with grooves across the upper side of said bifurcated ends, lugs at the ends of the other section and adapted to pass into the bifurcated ends aforesaid, pintles projecting from one of the lugs and a recess at one side of the other lag; together with a locking-plate comprising a pin with arms projecting therefrom, substantially as herein shown, and for the purpose set forth.

655,320. AUTOTRUCK FOR GARBAGE, ASHES, &c. JAMES C. ANDERSON, Highland Park, Ill. Filed Sept. 23, 1899. Serial No. 731,461. (No model.)



Claim.—1. An autovehicle composed of two independent longitudinal body-sections provided with hinged sides and vibratively mounted upon a truck in a plane intermediate of their longitudinal centers and their outside vertical planes, and means intermediate of the pivots of said body-sections and their inside vertical planes, for exerting a lifting power to vibrate the body-sections upon their respective pivots, substantially as hereinbefore set forth.

2. In an autovehicle in combination with a truck consisting of a frame mounted upon driving and steering wheels and means for operating the same, and a body composed of longitudinal sections vibratively connected with the truck-frame, a pivoted lifting-jack located below the bottom planes of the body-sections and means for vibrating and operating the same, substantially as and for the purposes set forth.

3. In combination with the truck-frame, vibrating sectional body and pivoted lifting-jack, safety-chains connecting the vibrating body-sections and the truck-frame, substantially as shown and described.

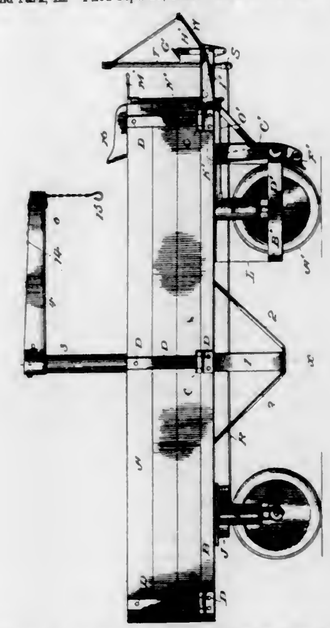
4. In combination with the sectional independent body portions, mounted upon a suitable running-gear, twin covers D′, hinged in pairs, through the medium of staples E′, secured in position, substantially as described.

5. The lifting-jack L′ pivotally mounted in brackets K′ secured to the frame of the running-gear, in combination with a stem M′ rotatively mounted in a bracket K^2, and provided with an operating-handle N′, substantially as and for the purpose set forth.

6. In combination with the truck-frame or running-gear and body-sections vibratively connected thereto and provided with recessed plates O′, the jack L′ pivotally mounted below the body-sections and provided with a piston having a cone-shaped head adapted to seat itself in the recesses of the plates O′, substantially as and for the purpose set forth.

7. In combination with the crane S′ rotatively mounted in keepers Q′, R′, secured to the body-sections and provided with a hanging pulley T′, a handle Z′ secured to the crane S′ and supported upon the keeper Q′, substantially as and for the purposes set forth.

655,321. AUTOTRUCK VEHICLE. JAMES C. ANDERSON, Highland Park, Ill. Filed Sept. 23, 1899. Serial No. 731,462. (No model.)



Claim.—1. An autotruck vehicle embodying in its organization a body mounted upon driving and steering wheels, means for rotating the driving-wheels, means for controlling the steering-wheels, a power-storage tank or cylinder connected with the driving mechanism, a revoluble crane mounted upon the body and provided with lifting mechanism and means intermediate of the lifting mechanism and the storage tank or cylinder for applying power to the lifting mechanism, substantially as and for the purposes set forth.

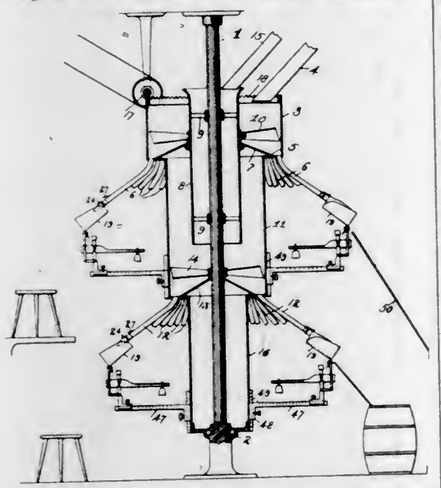
2. In combination with the steering-wheels N, spring-cylinders I, head J, and lugs O and Q, the rod P connected at its opposite ends to the lugs O, the steering-rods R, connected to the lugs Q, and a vibrating lever S, the rock-shaft T and radial lever U, substantially as and for the purposes set forth.

3. In an autotruck vehicle, the body composed of transverse channel-beams E, longitudinal angle-irons B and sides A, hinged to the angle-irons B and adapted to be raised and lowered, substantially as and for the purposes set forth.

4. In combination with an autotruck vehicle mounted upon driving and steering wheels and provided with a reservoir containing steam, air, or other similar agent; a revolving crane mounted upon a suitable step or platform connected with the body of the vehicle, and provided with a reciprocating piston and a lifting cable or chain operated by the piston, substantially as and for the purpose described.

5. In combination with the autotruck vehicle provided with a reservoir containing steam, compressed air or other suitable agent, the revolving crane mounted upon a step or platform and consisting of the tubular post 3, bifurcated radial arm 4, provided with pulleys 5 and 6, the cylinders 7, piston 8, pulley 10, cable or chain 14, the plug 11, provided with vertical and radial passage, the conduit-pipe 12, and vertical pipe 13, constructed and arranged to operate as hereinbefore set forth.

655,322. BAG-FILLING MACHINE. ADELMER M. BATES, Chicago, Ill. Filed July 25, 1898. Serial No. 686,791. (No model.)



Claim.—1. A bag-filling machine having in combination a holder for the material, a spout leading downwardly therefrom, a sliding valve-cap located on the end of said spout for closing it and means for closing said cap by the removal of the bag, substantially as set forth.

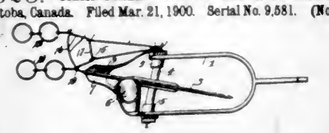
2. A bag-filling machine having in combination a holder for the material, a spout leading downwardly therefrom, means for supporting the bag under the spout, and an automatically-closing valve-cap fitted on the end of the spout and adapted to be opened by the spout when forced upwardly thereon, substantially as set forth.

3. A bag-filling machine having in combination a holder for the material, a spout leading downwardly therefrom, a valve-cap composed of a collar fitted over said spout and having attenuated spring-tongues adapted to be forced open by the end of the spout, and a friction-hold on said valve-cap for gripping the edge of the bag, substantially as set forth.

4. A bag-filling machine having in combination a receptacle or holder for the material, a spout leading downwardly therefrom, a sliding cap on said spout having a clip or friction-hold for supporting the corner of the bag, a bag-support arranged under said spout and having a hinged trap and means for automatically releasing said trap when the bag has obtained the required weight of material, substantially as set forth.

5. A bag-filling machine having in combination the upper receptacle 3 provided with the annular bottom 5, the upper bank of filling-spouts 6 leading downwardly and outwardly from said bottom 5, the standard 1, the pipe or cylinder 8 secured around said standard, the inclined bottom 7, the receptacle 11 of smaller diameter than the receptacle 3, the filling-spouts 12 leading downwardly from the bottom of the receptacle 11, the stem 16 supported upon the standard 1, the fixed propellers 10, 14, means for revolving said receptacles 3 11, the chutes 4 15 leading into receptacle 3 and pipe 8 respectively, and means arranged under each of the filling-spouts 6 12 for supporting the bag, substantially as set forth.

655,323. GRAIN-DRILL. SIMON BELANGER, St. Jean Baptiste, Manitoba, Canada. Filed Mar. 21, 1900. Serial No. 9,581. (No model.)



Claim.—1. In a grain-drill, the combination of a forked standard provided with a rearwardly-extending scraper-blade, a shaft or spindle connecting the sides of the standard, a rotary colter or disk mounted on the shaft or spindle, a seed-tube connected with one side of the standard and located at one side of the disk or colter, a fork connected with the shaft or spindle, and a scraper-blade located at the other side of the colter or disk and carried by the fork, substantially as described.

2. The combination of a forked standard provided at the inner faces of its sides with curved flanges forming guards or shields, a shaft or spindle connecting the sides of the standards, a disk or colter mounted on the shaft or spindle and having hub extensions and provided at one side with an oil hole or passage communicating with the hub extensions, a seed-tube connected with one side of the standard, and a fork straddling the disk or colter and connected with the shaft or spindle, substantially as described.

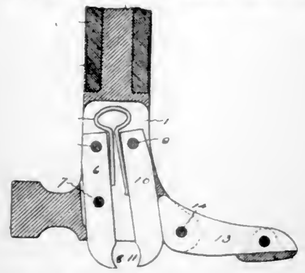
3. In a device of the class described, a drag-chain comprising the V-shaped connecting-piece, the loop or frame hinged to the sides of the V-shaped connecting-piece and provided at opposite sides with eyes, and chains linked into the eyes, substantially as described.

4. In a device of the class described, the combination of a forked standard having one of its sides longer than the other, a transverse shaft or spindle journaled in suitable bearings at the ends of the sides of the forked standard and set at an angle, said shaft or spindle being disposed horizontally, a disk or colter mounted on the shaft or spindle and arranged at an angle to the line of movement of the device and having one of its faces partially turned to the front, and a seed-tube located at the opposite face of the disk or colter, substantially as described.

5. In a device of the class described, the combination of a series of forked standards each having one of its sides longer than the other, transverse shafts or spindles journaled in suitable bearings at the ends of the sides, the reversely-arranged disks or colters mounted on the shafts, seed-tubes, and means for coupling the shafts, substantially as described.

6. In a device of the class described, the combination of a series of forked standards each having one of its sides longer than the other, transverse shafts or spindles journaled in suitable bearings at the ends of the sides, the reversely-arranged disks or colters mounted on the shafts, seed-tubes, and links connecting the shafts, substantially as described.

655,324. COMBINATION-TOOL. GEORGE J. CAPEWELL, Hartford, Conn., assignor to the American Specialty Manufacturing Company, same place. Filed Jan. 27, 1899. Serial No. 703,606. (No model.)



Claim.—A tool consisting of the combination of a thin case with an integral neck having a driving-head projecting from one edge and an integral tang projecting from another edge with a handle fixed to the tang, a jaw formed of a different metal from the case and held in a mortise in the case with its beak projecting substantially opposite to the handle, a pair of pins extending through the side of the case and the jaw and holding the jaw fixed with its edge against the back of the neck, a jaw formed of a different metal from the case and held in the mortise with its beak projecting substantially opposite to the handle, a pin extending through

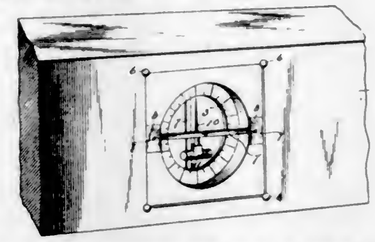
the side of the case and this latter jaw and pivotally retaining the jaw in place, a spring located between the jaws with its ends normally thrusting the beak of the pivoted jaw from the beak of the fixed jaw, a lever held in the mortise on one side of the jaws with the edge of a short arm bearing against the edge of the pivoted jaw and a long arm projecting outwardly from the case substantially in line with the driving-neck, and a pin extending through the side of the case and the lever pivotally retaining the lever in place, substantially as specified.

655,325. EYEGLASSES. HERBERT G. CHASE, Nashua, N. H. Filed May 24, 1900. Serial No. 17,859. (No model.)



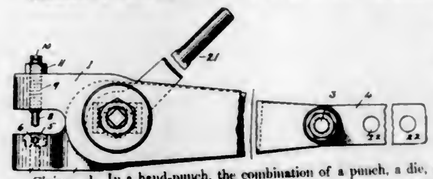
Claim.—Eyeglasses, comprising lenses, frames rigidly secured thereto, screws passed through the frames and rigidly fixed therein, and having their inner ends abutting against the glasses and their outer ends projecting beyond the frames, a bow or spring having apertures near its ends for engaging the said screws, nosepieces having arms provided with apertures for engaging said screws, cap-plates also provided with apertures for engaging the screws, the said cap-plates having laterally-turned-down flanges for embracing the ends of the spring, the arms of the nosepiece and the ends of the frame-arms, and nuts for holding the cap-plate upon the screws, whereby the parts are all firmly bound together, substantially as described.

655,326. LEVEL. SAM M. COMBS, Mount Sterling, Ky. Filed Apr. 5, 1900. Serial No. 11,689. (No model.)



Claim.—A level, comprising a stock, having an opening formed transversely therethrough, a scale-ring fixed within the opening and substantially midway between the opposite faces of the stock, opposite arms extending diametrically across the opposite ends of the opening and disposed at right angles to each other, one of the arms extending longitudinally of the stock, and the other arm extending transversely thereof, and a pointer located within the plane of the scale-ring and having an intermediate spindle, the opposite ends of which are mounted in the inner faces of the respective arms, the latter also forming guides for alinement with the pointer.

655,327. PUNCHING-MACHINE. ALEXANDER CRUICKSHANKS, Richmond, Va. Filed Sept. 28, 1899. Serial No. 731,919. (No model.)



Claim.—1. In a hand-punch, the combination of a punch, a die, a punch-arm, a die-arm, the said arms being pivotally connected at one end, and carrying, respectively, the punch and the die at the other end, a rotatable eccentric-pin located between the pivotally-connected ends and the punch and die carrying ends of the arms, and adapted to give, when rotated, to the arms a reciprocating motion, and means for rotating the eccentric-pin.

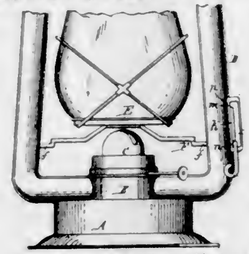
2. In a hand-punch, the combination of a punch, a die, a punch-arm, a die-arm, the said arms being pivotally connected at one end, and carrying, respectively, the punch and the die at the other end, and one of the arms being extended beyond the pivot, a rotatable eccentric-pin located between the pivotally-connected ends and the punch and die carrying ends of the arms, and having a part adapted to engage in a perforation in one of the arms, and having another part which is eccentric with the first-mentioned part, and which is adapted to engage in a slidable bushing in the other arm, and having collars adapted to keep the punch and die arms and the eccentric parts of the pin in proper relative position, and means for rotating the eccentric-pin.

4. In a hand-punch, the combination of a punch, a die, a punch-arm, a die-arm, the said arms being pivotally connected at one end, and carrying, respectively, the punch and the die at the other end, and one of the arms being extended beyond the pivot, a rotatable eccentric-pin located between the pivotally-connected ends and the punch and die carrying ends of the arms, and having eccentric parts adapted to engage in slidable bushings in the arms, and having collars adapted to keep the punch and die arms and the eccentric parts of the pin in proper relative position, means for rotating the eccentric-pin, and bushings slidably fitted one in each arm, and adapted to engage the eccentric parts of the pin.

5. In a punching-machine, a die-arm, a punch-arm, the said arms being pivotally connected at one end, and carrying, respectively, the die and the punch at the other end, and one of the said arms being extended beyond the pivot, a die, an adjustable punch adapted to engage in a perforation in the punch-arm, and adapted to be secured in position by means of a nut or nuts engaging threaded portions of its body, in combination with a rotatable eccentric-pin located between the pivotally-connected ends and the punch and die carrying ends of the arms, and adapted and arranged to give, when rotated, to the said arms a reciprocating motion, and means for rotating the eccentric-pin.

6. In a punching-machine the combination, of two punching-jaws pivoted together at their rear ends and connected near their forward ends by a pin journaled in the arms, one portion of the said pin in one of the arms being eccentric with reference to the other portion, and means for rotating the pin substantially as described.

655,328. TUBULAR LANTERN. FREDERICK DIETZ, New York, N. Y., assignor to The R. E. Dietz Company, same place. Filed Jan 5, 1900. Serial No. 414. (No model.)



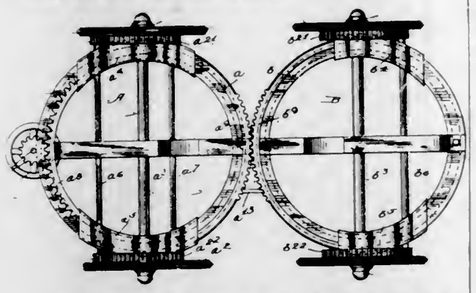
Claim.—1. In a tubular lantern, the combination with the air-tubes, the vertically-movable globe-plate and the transverse, bent, lifting-shaft connected therewith and provided with a lifting-lever, of an upright guide which is secured to the air-tube adjacent to the lifting-lever and which is provided with a slot which is closed at its upper and lower ends, in which slot said lever is guided and confined against improper movement, substantially as set forth.

2. In a tubular lantern, the combination with the air-tubes, the vertically-movable globe-plate and the transverse, bent, lifting-shaft connected therewith and provided with a lifting-lever, of an upright guide secured to the air-tube adjacent to the lifting-lever and provided with an upright slot in which said lever is arranged and which is closed at its upper and lower ends and provided with upper and lower locking depressions in which said lever engages in its raised and lowered positions, substantially as set forth.

655,329. MOTOR-VEHICLE. JAMES T. DOUGHTY, Chicago, Ill. Filed July 27, 1899. Serial No. 725,220. (No model.)

Claim.—1. A vehicle running-gear consisting of two pair of traction-wheels, a frame for each pair of traction-wheels, a path around the vertical axis of said frame through which it is adapted to be moved, and an independent motor for each wheel thereof operatively connected thereto and bodily moving therewith, substantially as set forth.

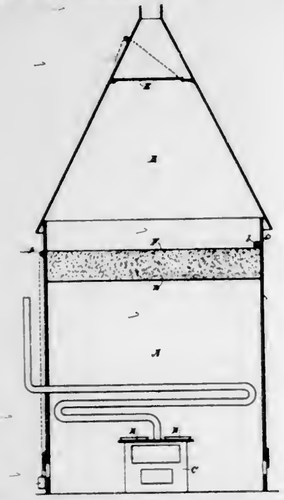
2. A vehicle running-gear consisting of two rings, or equivalent, loosely attached together, a pair of traction-wheels associated with each ring, a frame for supporting said traction-wheels, a path in which said frame moves around its own vertical axis, an independent motor attached to each traction-wheel and a means for independently or collectively controlling said motors, substantially as set forth.



3. In a self-propelled vehicle the combination of a traction-wheel, a friction-surface on said traction-wheel, a brake-shoe adapted to engage with said friction-surface, a propelling-motor adapted to rotate said traction-wheel, a friction-surface on the moving member of said propelling-motor, a means for positively applying the brake to the said traction-wheel, and a yielding connection for applying the brake to the said propelling-motor operated by the same mechanism, substantially as set forth.

4. A vehicle running-gear consisting of two trucks, each truck being provided with a single pair of traction-wheels, a motor attached to and moving with each traction-wheel, a means such as a bolt for connecting said two trucks together, whereby they are rigidly held in a longitudinal direction, but are free to oscillate with respect to each other, substantially as set forth.

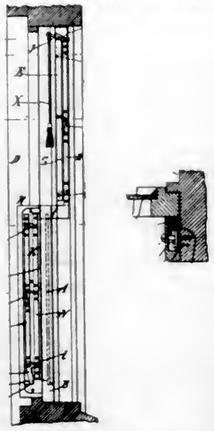
655,330. **HOP BLEACHING AND DRYING KILN.** JAMES DOWDELL and ARTHUR R. C. DOWDELL, St. Helena, Cal. Filed Oct. 26, 1899. Serial No. 734,793. (No model.)



Claim.—1. An apparatus for bleaching and drying hops and the like, including a chamber having a horizontal foraminous floor fixed between the top and bottom, a heater and means for producing sulfurous fumes within the lower part of the chamber, a cover and a roller upon which it is normally wound, and means connected with the free end of the cover and adapted to automatically extend said cover over and contiguous to the upper surface of the material to be treated, whereby moisture and sulfurous fumes are retained therein, said cover being withdrawn and wound upon the roller after the sulfur treatment is completed whereby hot air is permitted to rapidly pass through said material.

2. An apparatus for bleaching and drying hops and the like consisting of a chamber having a horizontal foraminous floor between the top and bottom, a heater and means for introducing sulfurous vapors in the lower part of said chamber, a flexible covering, a roller upon which said covering is wound, a pulley and a cord connected with the free edge of the covering and passing over said pulley and provided with a counterweight whereby the covering may be operated from outside the drying-chamber and may be extended above and contiguous to the upper surface of the material on the floor, to retain moisture and sulfur fumes in contact therewith, said roller serving to withdraw and roll up the covering whereby the hot air is allowed to pass freely through the material, and a door-controlled escape-opening therefor in the upper part of the chamber.

655,331. **WINDOW.** OLIVER M. EDWARDS, Syracuse, N. Y. Filed June 30, 1893. Serial No. 479,312. (No model.)



Claim.—1. The combination in a window, substantially as set forth, of a sash, a guideway in which the sash may move, two movable friction devices eccentrically pivoted to opposite edges of the sash, the movements of which on their pivots tend to wedge and unwedge the sash in its guideway, a spring or springs arranged to engage with the friction devices, and operating means mounted upon the sash and connecting the two pivoted friction devices together, whereby the sash is held in the desired position and the pivoted friction devices are simultaneously released by force applied to the operating means.

2. The combination in a window, substantially as set forth, of a sash, a guideway in which the sash may move, two movable friction devices eccentrically pivoted to opposite edges of the sash, the movements of which on their pivots tend to wedge and unwedge the sash in its guideway, a spring or springs arranged to engage with the friction devices, means for automatically moving the sash, and operating means mounted on the sash, whereby the sash is held in the desired position and the sash is automatically moved in one direction.

3. The combination in a window, substantially as set forth, of a sash, a guideway in which the sash may move, two movable friction devices eccentrically pivoted to opposite edges of the sash, the movements of which on their pivots tend to wedge and unwedge the sash in its guideway, a spring or springs arranged to engage with the friction devices, means for automatically moving the sash, and means mounted on the sash and connected to the friction devices and arranged to release the sash by moving with it in the direction the sash moves when opposed by the moving action of the automatic means, whereby the sash is held in the desired position and is released and moved by continued application of force to the operating means in opposition to the moving action of the automatic means.

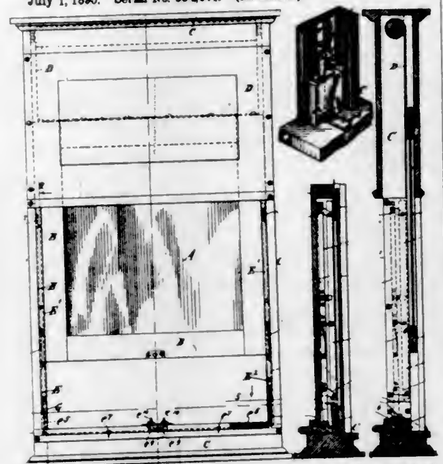
4. The combination in a window, substantially as set forth, of a sash, a guideway in which the sash may slide in opening and closing, and a friction holding device, consisting of two bars eccentrically pivoted together by one or more links, one of which bars is adapted to be fixedly attached directly to the sash or the frame and the other is adapted to bear against the sash or a portion of its guideway without one bar overlying the other, whereby the friction holding device is securely held in position to wedge and unwedge the sash in its guideway and the bars and links of such device are open to inspection and adjustment while the device is being properly attached to the sash or the window-frame.

5. The combination in a window, substantially as set forth, of a sash, a guideway in which the sash may slide in opening and closing, and a friction holding device, consisting of two bars eccentrically pivoted together by one or more links with one or more springs whose stress or tension tends

to move one bar away from the other, and one of such bars is adapted to be fixedly attached directly to the sash or the frame and the other is adapted to bear against the sash or a portion of its guideway without one bar overlying the other, whereby the friction holding device is securely held in position to wedge and unwedge the sash in its guideway and the bars, links and springs of such device are open to inspection and adjustment while the device is being properly attached to the sash or the window-frame.

6. The combination in a friction window-stop device, substantially as set forth, of a movable part, means by which such part is secured directly to the window-sash or its frame, such part and means composing the working portion of such device, and attachable to the sash or frame independently of any other portion, and a second portion attachable to the sash or frame over the working portion, whereby the first or working portion may be applied in proper working position before the second portion is applied, and the latter serves as a cover or finish for the former.

655,332. **WINDOW.** OLIVER M. EDWARDS, Syracuse, N. Y. Filed July 1, 1895. Serial No. 554,671. (No model.)



Claim.—1. The combination in a window, substantially as set forth, of a sash, a stop having a movable member, a pivoted lever, as e^4, and a second pivoted lever, pivoted to move in a plane at an angle to that of the first lever, and connecting the movable member of the stop to the first pivoted lever, whereby the movement of the first pivoted lever causes the movable member of the stop to be moved.

2. The combination in a window, substantially as set forth, of a sash, a stop having a movable member, a pivoted lever, as e^4, and an angle-lever pivoted at or near its angle to move in a plane at an angle to that of the first pivoted lever, and connecting the first pivoted lever to the movable member of the stop, whereby the movement of the first pivoted lever causes the movable member of the stop to be moved.

3. The combination in a window, substantially as set forth, of a sash, a stop having a movable member, a lever pivoted to the sill of the window-frame to move in a plane at an angle to the plane of movement of the movable member, and means connecting the lever with the movable member of the stop, whereby the movement of the lever causes the member to be moved.

4. The combination, substantially as set forth, of a sash, a stop having a movable member, a pivoted lever, means connecting the lever with the movable member of the stop, and a cap or cover, as G, adapted to move with the means connecting the member with the lever, whereby dirt or cinders are prevented from passing from the recess in which the member moves into the recess in which the pivoted lever moves.

5. The combination, substantially as set forth, of a sash, a stop having a movable member, a pivoted lever, an angle-lever connecting the member with the pivoted lever, and a cover or cap, as G, adapted to receive a portion of the angle-lever and to move therewith, whereby dirt or cinders are prevented from passing from the recess in which the movable member moves into the recess into which the pivoted lever moves.

6. The combination, substantially as set forth, of a sash, a stop having a movable member, means for operating the movable member and a locking device arranged to engage with the sash, and also adapted to be moved out of engagement therewith upon the movement of said means, whereby the sash is released from the control of the locking device upon the movement of the means which operate the movable member to permit the sash to be moved.

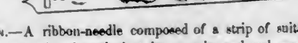
7. The combination, substantially as set forth, of a sash, a stop having a movable member, a pivoted lever, means connecting the lever with the member, and a locking device arranged to engage with the sash, and also adapted to be moved out of engagement therewith, upon the movement of the lever, whereby the sash is released from the control of the locking device upon the movement of the lever to operate the movable member to permit the sash to be moved.

8. The combination in a window, substantially as set forth, of a sash, two stops having movable members, two pivoted levers pivoted in the sill of the window-frame to move in a plane at an angle to the plane of movement of the movable members, means connecting the levers with the movable members, and means adapted to move the levers, whereby the movement of the levers causes the members to be moved.

9. The combination, substantially as set forth, two stops having movable members, two levers having one end of one connected to the corresponding end of the other and pivoted to move in a plane at an angle to that in which the movable member is moved, means connecting the levers with the movable members, and two shafts, each of which is provided with two arms, one arm of each shaft being connected with the levers, and the other arm of each shaft being adapted to be moved by the hand of the operator, whereby the movement of the two shafts causes the members to be moved.

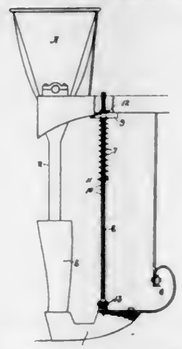
10. The combination, substantially as set forth, of a sash, two stops having movable members, two pivoted levers connected together, means connecting the levers with the movable members, and two shafts, each of which is provided with two arms, one arm of each shaft being connected with the levers, and the other arm of each shaft being adapted to be moved by the hand of the operator, a locking device arranged to engage with the sash, and also adapted to be moved out of engagement therewith upon the movement of the levers, whereby the sash is released from the control of the locking device upon the movement of the shafts to operate the movable members of the stops to permit the sash to be moved.

655,333. **TAPE-NEEDLE.** MARY N. ESTERBROOK, New York, N. Y. Filed May 8, 1900. Serial No. 15,953. (No model.)



Claim.—A ribbon-needle composed of a strip of suitable material smooth at one end and toothed at its opposite end and provided with a transverse slot near its toothed end.

655,334. **GRAIN-DRILL ATTACHMENT.** WILLIAM FALCONER, Selma, Cal. Filed Dec. 18, 1899. Serial No. 740,717. (No model.)



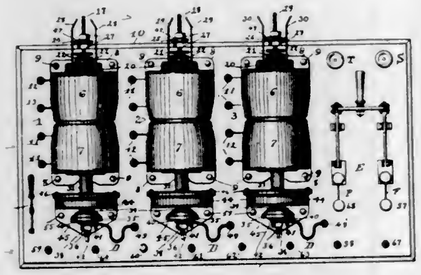
Claim.—1. In a grain-drill, a shoe adapted to be dragged over the ground and form a channel, means for delivering grain into the channel at the rear of the shoe, an elastic connection and support for the front of the shoe, a standard having a flexible connection with the shoe at a point in rear of the forward support, a bar fixed in line above the standard having a hole through which the standard is slidable, a spiral spring surrounding the standard, the upper end adapted to press against the lower part of said bar, and a pin or like stop adjustably fixed to the standard against which the lower end of the spring presses, and by which its tension is regulated.

2. In a grain-drill, shoes adapted to form channels in the soil, connections by which grain is delivered into said channels at the rear of the shoes, elastic connections and supports for the front ends of the shoes,

standards flexibly connected with each shoe at a point in rear of the forward connections and extending upwardly from their point of attachment, a fixed bar having holes through which the standards are slidable, pins or like stops adjustably fixed to the standards at points intermediate between the fixed bar and the shoes, spiral springs surrounding the standards, with their ends pressing respectively against the bar and against the adjustable stops whereby pressure is exerted to force the heels of the shoes into the ground, and other pins or like stops fixed to the standards above the bar and adapted to contact therewith whereby the depth to which the shoes are forced into the ground is regulated.

3. In a grain-drill shoes adapted to form channels in the ground for the reception of grain connections and supports for the front ends of the shoes, vertically-slidable spring-pressed standards having the upper ends slidable with relation to a support, and a connection between the lower ends and the shoes whereby a yielding and lateral movement is permitted.

655,335. MOTOR-STARTER. ETHELBERT M. FRASER, San Francisco, Cal., assignor, by mesne assignments, to the Otis Elevator Company, of New Jersey. Filed Mar. 11, 1899. Serial No. 708,773. (No model.)



Claim.— 1. The combination with an electric motor and its circuit, of a resistance placed in said motor-circuit, a shunt-circuit and operating-switch therefor, a solenoid forming part of said shunt-circuit and energized thereby, another solenoid having a heavy wire coil in series with said resistance and the armature of the motor and a lighter wire coil in shunt across the line, a plunger moved by the first solenoid, a contact-maker carried by said plunger and arranged, when moved, to close the motor-circuit with the resistance and heavy coil of the other solenoid remaining therein, a plunger in said other solenoid moved by its lighter coil when receiving the electric current from the first solenoid upon the rise of its plunger, and a contact-maker raised by the other plunger and operating to cut out the resistance and heavy wire coil from the circuit of the motor, substantially as set forth.

2. The combination with an electric motor, its circuit, and a resistance arranged to remain in said circuit till after the motor is started, of a shunt-circuit having a resistance in shunt relation to it, a solenoid supplied with electric current from said shunt-circuit, a plunger adapted to be moved by said solenoid, a contact-maker carried by said plunger, another solenoid having a light wire coil in shunt across the line and operated by the first solenoid and plunger and also having a heavier wire coil in series with the resistance in the motor-circuit and the armature of the motor, a plunger moved by the shunt-current flowing through said other solenoid, a contact-maker carried by the latter-named plunger, and electrical connections whereby the closing of the shunt-current will cause the first plunger to rise and its contact-maker to close the motor-circuit, and the raising of the first plunger will cause the other plunger and its contact-maker to cut out the resistance and heavy coil from the motor-circuit and cut in the resistance into the shunt-circuit while the motor is running, substantially as set forth.

3. A motor-starter consisting of two or more solenoids each comprising two coils of wire of different size and each having a plunger and a contact-maker, combined with an electric motor, the motor-circuit, a resistance in said circuit in series with the heavier coils of said solenoids and the motor-armature, a multiple shunt-circuit in which the lighter coils of said solenoids are placed, the heavy coil being farthest away from the contact-maker in the first solenoid and nearest to the contact-maker in the other solenoid or solenoids, and a switch to close the first shunt-circuit and cause the first solenoid to move its plunger and contact-maker, thereby closing the motor-circuit and second shunt-circuit, sending the electric current first through the resistance and heavy coils to the armature, and thereafter energizing the light coil of the other solenoid or solenoids and causing the plunger and contact-maker thereof to remove the resistance from the motor-circuit, substantially as set forth.

4. The combination of a number of solenoids each having two coils of wire of different size, the heavier coil being above the lighter coil in the first solenoid of the series and below the remainder, a plunger under the influence of each solenoid, a ring by each plunger, a valve-shaped contact-maker in movable relation to each ring and adapted to be seated therein, spring-contacts on each solenoid at the opposite end from the ring, a disk in movable relation to the spring-contacts of each solenoid, an electric motor, the motor-circuit, a multiple shunt-circuit, a suitable number of rheostats, electrical connections placing said rheostats in series with the heavy coils of the solenoids, the rings, valve-shaped contact-makers and the armature of the motor, and also placing the light coils of the solenoids, the spring-contacts and disks in series in the shunt-circuit, and an operating-switch to close the shunt-circuit and cause the current therein to move the several plungers and movable contacts successively, thereby closing the motor-circuit and gradually removing the resistance therefrom, substantially as set forth.

5. The automatic motor-starter herein described, consisting of three solenoids each having a double coil of wire, a heavy coil to be placed in the motor-circuit and a light coil wired to a shunt-circuit, the heavy coil being above the light coil in the first solenoid and under it in the other two solenoids, a movable core within each solenoid, a fixed core in the first solenoid above the movable core in the same, a fixed ring near the lower end of each movable core, a valve-shaped contact adapted to be seated in each ring and carried each by one of the movable cores, contact-springs with their ends bent inward placed above the first and second solenoids and similar springs with their ends bent outward located above the third solenoid, a disk connected with the upper end of the movable core in each of the first and second solenoids and arranged to make contact with the springs thereof when their said core is moved and to be out of contact when at rest, a disk in contact with the springs of the third solenoid when the core thereof is at rest but connected with this core so as to break contact when the same is moved, a resistance, such as one or more lamps, in shunt relation to the spring-contacts of said third solenoid, electrical connections placing the heavy wire coils, rings, and valve-shaped contacts in series with the armature of the motor and suitable resistances in the motor-circuit, and placing the light wire coils, contact-springs, disks, and lamps in multiple series in the shunt-circuit, and means to open and close the shunt-circuit, the whole constructed and operating substantially as described.

6. The combination with an electric motor and its circuit, of resistances in the motor-circuit, a shunt-circuit, and a plurality of electromagnetic devices controlling the resistances, each electromagnetic device having a plurality of coils, one of which is included in the circuit of the motor and another in the shunt-circuit thereof, substantially as described.

7. The combination with an electric motor and its circuit, of resistance in the motor-circuit, a shunt-circuit and switch therefor, a plurality of solenoids having plungers controlling the resistance, said solenoids having coils included in the motor-circuit and coils included in the shunt-circuit, and connections whereby the solenoids are successively operated to vary the resistance of the motor-circuit, substantially as described.

8. The combination with an electric motor and its circuit, of resistance in the motor-circuit, a shunt-circuit and switch therefor, and a plurality of solenoids having plungers controlling the resistance, each plunger being provided with contact devices controlling a terminal of the motor-circuit and a terminal of the shunt-circuit, substantially as described.

9. The combination with an electric motor and its circuit, of resistance in the motor-circuit, a shunt-circuit and switch therefor, and a plurality of solenoids having plungers controlling the resistance, each solenoid having a coil included in the motor-circuit and a coil included in the shunt-circuit and each plunger having contacts controlling a terminal of the motor-circuit and a terminal of the shunt-circuit, substantially as described.

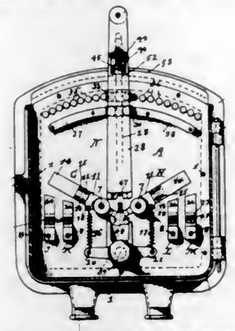
10. A motor-starter comprising a solenoid, a casing therefor, a plunger in said solenoid having a rod extension passing upwardly through said casing, a stop on the plunger-rod above the casing, a fixed contact at the opposite end of said plunger, and a contact-maker adjustably connected with the plunger in movable relation to the fixed contact, substantially as described.

11. A motor-starter comprising a solenoid, a fixed ring-shaped contact, a plunger moved by said solenoid, a cone-shaped contact adapted to be brought to the fixed contact by the plunger, and a spring connection between said plunger and cone-shaped contact, substantially as described.

12. A motor-starter comprising a solenoid, a ring below the same, and a holder for said ring, combined with a plunger passing through said solenoid and ring, and a cone-shaped contact carried by the plunger and seated by the same in the ring, substantially as described.

13. A motor-starter comprising a fixed ring and a solenoid with a movable core having a tubular extension, combined with a cone-shaped contact hung in movable relation to the said ring on a rod entering said tubular extension and held by a spring therein, substantially as described.

655,336. CONTROLLER. ETHELBERT M. FRASER, San Francisco, Cal., assignor, by mesne assignments, to the Otis Elevator Company, of New Jersey. Filed July 20, 1899. Serial No. 724,541. (No model.)



Claim.—1. The combination with one or more contact-blocks and one or more spring-actuated switches, of a spring-actuated counteracting device of a force superior to the switch-springs, and means for preventing the operation of the switch or switches before the counteracting device, substantially as described.

2. The combination with one or more contact-blocks and one or more spring-actuated switches, of a spring-actuated counteracting device, and stop devices limiting the action of said device to a definite position, substantially as described.

3. The combination with one or more contact-blocks and one or more spring-actuated switches, of a circuit-controlling lever, and a counteracting device of a force superior to the switch-springs, substantially as described.

4. The combination with one or more contact-blocks and one or more spring-actuated switches, of an operating-lever, a counteracting device carried by said lever of a force superior to the switch-springs, and stop devices limiting the action of the counteracting device to a definite position of the lever, substantially as described.

5. The combination with one or more contact-blocks and one or more spring-actuated switches, of an operating-lever, a spring-actuated counteracting device connected to move with said lever of a force superior to the switch-springs, and stop devices limiting the action of the counteracting device to a definite position of the lever, substantially as described.

6. The combination with one or more automatic switches respectively adapted to close contact with a contact-block, of a spring-pressed rod operating to open the switch or switches, and means for keeping said rod in a given position while the switch or switches are open, substantially as described.

7. The combination with one or more pivoted switches adapted to close contact with one or more contact-blocks, of a switch-controller and means to force it down upon one end of the switch or switches, substantially as described.

8. The combination with one or more electric switches, of a swinging controller controlling the opening and closing thereof, said controller carrying a latch, and devices coöperating with the latch and controlling the movement of the controller, substantially as described.

9. The combination with one or more electric switches, of a swinging controller controlling the opening and closing thereof, a latch connected with said controller, devices coöperating with said latch and limiting the movement thereof, and means for preventing the operation of the controller except when the latch is in a definite position, substantially as described.

10. The combination with one or more spring-actuated switches adapted to normally close contact with one or more contact-blocks, of a counteracting device for the switches, an operating-lever, a series of contacts controlled by the operating-lever, and connections between the operating-lever and the counteracting device whereby the switches must be closed before the operating-lever can be moved, substantially as described.

11. The combination with one or more spring-actuated switches, of an operating-lever, contacts controlled thereby, a counteracting device connected to said lever and controlling the switches, and means for insuring the action of the counteracting device before the lever can be operated, substantially as described.

12. The combination with one or more switches, of an operating-lever, contacts controlled by the operating-lever, a counteracting device for the switches connected to the operating-lever, a latch connected to the counteracting device, and means coöperating with the latch whereby the movement of the operating-lever is prevented until the counteracting device assumes a definite position, substantially as described.

13. The combination with one or more spring-actuated switches, of a swinging operating-lever, contacts coöperating therewith, connecting mechanism between the swinging operating-lever and the switches operating to stop said lever at a given point in its arc of oscillation while the switch or switches remain in a given position, substantially as described.

14. The combination with one or more spring-actuated switches, of a swinging operating-lever, contacts coöperating therewith, a spring-actuated counteracting device for the switches connected with the lever, a latch connected with the counteracting device, and means coöperating with the latch controlling the movement of the counteracting device, substantially as described.

15. The combination with one or more spring-actuated switches, of a swinging operating-lever, contacts coöperating with said lever, a spring-actuated counteracting device carried by said lever, a lug connected to said counteracting device and engaging the switches, a latch connected with said counteracting device, and means coöperating with said latch to limit the movement of the counteracting device, substantially as described.

16. The combination of one or more contact-blocks, one or more switches, a lever adapted to make an electric contact, and a device controlling both the working of the switch or switches and the movement of said lever, substantially as described.

17. The combination of one or more contact-blocks, one or more spring-actuated switches, a lever adapted to make an electrical contact, and a spring-pressed rod controlling said lever, said rod having a lug adapted to move the switch or switches, substantially as described.

18. The combination of one or more contact-blocks, one or more switches, a notched rail, a lever adapted to make an electrical contact, a spring-pressed rod connected with said lever and operating to open the switch or switches, said rod having a latch adapted to engage the notch in said rail, and means for closing said switch or switches upon the latch being disengaged from said notch, substantially as described.

19. The combination of one or more contact-blocks, one or more spring-actuated switches, a lever adapted to make an electrical contact, a notched rail, and a spring-pressed rod connected with said lever, said rod having a lug adapted to bear on the switch or switches and a latch adapted to engage the notch in said rail, the arrangement being such that the switch or switches will close upon the latch being disengaged from said notch and before the lever can be moved, and the lever must be brought back to the starting-point and the latch allowed again to engage the notch in the rail before the switch or switches can be opened, substantially as described.

20. The combination with one or more pairs of pivoted switches and means for closing the same, of a spring-pressed rod adapted to act upon both or all of said switches and open them simultaneously, substantially as described.

21. The combination of a frame, a lever pivoted on a central line therein, contact buttons and plates located on opposite sides of said lever, shoes carried by the lever and arranged so as to bear respectively on said buttons and plates, spring-actuated switches, a spring-pressed rod connected with the lever, said rod having a lug adapted to bear on said switches and work them together and a latch adapted to engage a notch in a part of the frame, and suitable electrical connections, substantially as described.

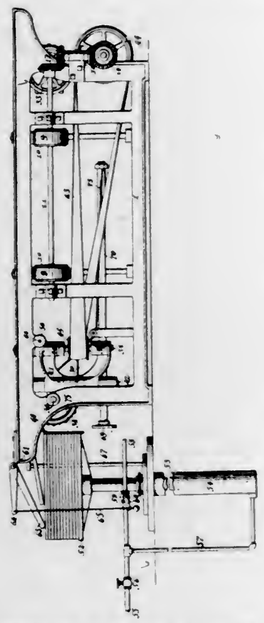
655,337. MACHINE FOR TRIMMING OIL-CAKES. ALFRED W. FRENCH, New York, N. Y. Filed Nov. 21, 1899. Serial No. 737,815. (No. model.)

Claim.—1. The combination with a feed-table over which the cakes are moved in being trimmed, of a rotary cutter arranged parallel with said table and mounted to be capable of free movement inwardly, and a yielding tension device which resists the outward movement of the cutter and holds the latter yieldingly against the edge of the hard portion of the cake, whereby the cutter is caused to follow the irregular outline of the hard portion, thus removing only the soft portion outside of the hard portion of the cake, substantially as set forth.

2. The combination with the feed-table, of a feed-board movably mounted thereon and provided on its under side with a longitudinal pattern-cam, rotary cutters arranged on opposite sides of the feed-board, transversely-movable supports carrying said cutters, a shoe in which said cam engages, toggle-bars extending from said shoe in opposite directions to said cutter-supports and moving the cutter-supports outwardly, and means whereby the cutter-supports are moved inwardly, substantially as set forth.

3. The combination with the feed-table and the cutters, of a vertically-movable table which receives the cakes successively from the feed-table, a restraining mechanism which resists the descent of the receiving-table, and an automatic releasing device which is actuated by each cake as it moves to the receiving-table and which releases the restraining mechanism for every cake fed upon the receiving-table and allows of a corresponding downward movement of the receiving-table, substantially as set forth.

4. The combination with the feed-table and the cutters, of a vertically-movable table which receives the cakes from the feed-table, a hydraulic device whereby the receiving-table is raised and which resists its descent; and a trip device which is actuated by the movement of the cakes from the feed-table to the receiving-table and which controls the hydraulic device and through it the descent of the receiving-table, substantially as set forth.



5. The combination with the feed-table, of a vertically-movable table which receives the cakes from the feed-table, a plunger carrying the receiving-table and arranged in a hydraulic cylinder, a pressure-pipe connected with said cylinder and having a valve, an escape-pipe connected with said cylinder and having an escape-valve, and a trip device which is connected with the escape-valve and which is adapted to be shifted by the movement of the cakes from the feed-table to the receiving-table, thereby opening the escape-valve, substantially as set forth.

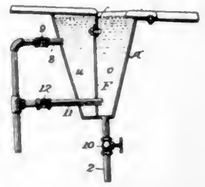
6. The combination with the feed-table, of a vertically-movable table which receives the cakes from the feed-table, a plunger carrying the receiving-table and arranged in a hydraulic cylinder, a pressure-pipe connected with said cylinder and having a valve, an escape-pipe connected with said cylinder and having an escape-valve, a rock-shaft provided with a transmitting-arm which is connected with said escape-valve and with a trip-arm which is adapted to rest on the receiving-table, or on the pile of cakes, and which is actuated by the movement of the cakes from the feed-table to the receiving-table, substantially as set forth.

7. The combination with the feed-table, the horizontal rotary cutters arranged above said table and the vertically-movable receiving-table arranged at one end of the feed-table and below the level thereof, of a horizontal pusher-rod arranged in guides below said feed-table to move toward and from the receiving-table, a rotary drum for actuating said pusher-rod, and a flexible connection extending from said drum to said rod, substantially as set forth.

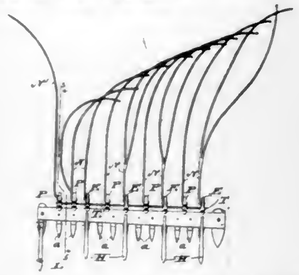
655,338. APPARATUS FOR SEPARATING SOLID BODIES FROM LIQUIDS. DENIS GALE, Denver, Colo. Filed Apr. 11, 1898. Serial No. 377,242. (No model.)

Claim.—1. In a separating apparatus, the combination with a vessel, consisting of two chambers, means for causing water in one chamber to flow in a thin sheet over the surface of water in the second chamber, a conduit with a flat bottom communicating with the surface of the water in the second chamber, and a slide adjustable over the surface of the water in the second chamber, substantially as described.

2. In a separating apparatus, the combination with a vessel, consisting of two chambers, adjustable means for causing water in one chamber to flow in a thin sheet over water in the second chamber, a conduit with a flat bottom communicating with the surface of the water in the second chamber, a slide adjustable over the surface of the water in the second chamber, and an inlet and an outlet pipe for the second chamber adapted to maintain a uniform level therein, substantially as described.



655,339. ATTACHMENT FOR FINGER-BARS OF MOWERS OR HARVESTERS. WILLIAM GATERMANN, Newton, Wis. Filed May 12, 1899. Serial No. 716,480. (No model.)



Claim.—1. In combination with the finger-bar and guards of a mower or harvester, a series of castings, each having a forward and downward projecting front end with a socket for receiving the point of the guard, lugs for engagement with the finger-bar on each side of the guard, and an upward-projecting heel with a longitudinal groove in its upper surface; a series of clamps, whose forward ends engage with the finger-bar and whose rear ends fit within the said heel-grooves; bolts connecting said clamps and castings; a series of vine-lifting shoes, having upward and rearward extending arms rising therefrom and having sockets in their rear ends for the reception of the front ends of said castings; springs secured to the upper rear ends of said shoes and bearing down upon the forward ends of said castings; pivot-bolts connecting said shoes and castings; and swath-removing fingers loosely connected to the heels of said castings.

2. In combination with the finger-bar and guards of a mower or harvester, a series of vine-lifting shoes, a series of castings pivotally connected to said shoes and clamped to said finger-bar, and each casting terminating in a heel having laterally-projecting lugs thereon, and a transverse opening therethrough, said opening being of generally circular shape with an upward elongation, and a series of swath-removing fingers having curved free outer ends and bent inner ends with rearwardly-turned terminations, whereby said bent ends may be inserted through the transverse openings in the heels of the castings and rest loosely on the said laterally-projecting lugs.

3. In combination with the finger-bar and guards of a mower or harvester, a series of vine-lifting shoes; a series of guard-supporting castings pivotally connected to said shoes, and each casting having lugs for engagement with the under side of the finger-bar, an upward-projecting heel with a longitudinal groove in its upper surface, a longitudinal slot between said lugs and said heel, and a series of opposed angular recesses surrounding said slot on the under side of said casting; a series of clamps, whose forward ends engage with said finger-bar, and whose rear ends fit within the said heel-grooves, said clamps having bolt-holes therethrough; and a series of bolts passing through said bolt-holes in the clamp and said slots in the castings, and having angular lower heads for adjustable engagement with the said angular recesses in the castings.

4. In combination with the finger-bar and guards of a mower or harvester, a series of vine-lifting shoes, a series of guard-supporting castings pivotally connected to said shoes and clamped to said finger-bar, a series of swath-removing fingers loosely connected to said castings, and a series of runners rigidly secured to said castings and projecting rearwardly therefrom.

5. In combination with the finger-bar and guards of a mower or harvester, a series of vine-lifting shoes; a series of guard-supporting castings pivotally connected to said shoes and each casting having lugs for engagement with the under side of the finger-bar, an upward-projecting heel with a longitudinal groove in its upper surface, a longitudinal slot between said lugs and said heel, and a series of opposed angular recesses surrounding said slot on the under side of said casting; a series of clamps, whose forward ends engage with said finger-bar and whose rear ends fit within the said heel-grooves, said clamps having bolt-holes therethrough; a series of runners each having a bolt-hole therethrough, and an angular-ended lug on its upper surface for adjustable engagement with the said angular recesses in the casting; and a series of bolts, each uniting a runner-casting and clamp together.

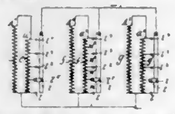
6. In combination with the finger-bar of a mower or harvester, a series of castings transversely clamped thereto, and having heels at their rear ends formed with transverse holes therethrough, and laterally-projecting lugs below the planes of said holes; and a series of swath-removing fingers, having bent inner ends hooked within the transverse holes in the said heels of the castings and loosely supported on said laterally-projecting lugs, and free curved outer ends inclined toward the wheel side of the machine.

7. In combination with the finger-bar of a mower or harvester, and the outer guard on the grain side, a shoe beneath said guard, and connected by bolts thereto and to the finger-bar at the rear end of the shoe, and having a projecting front end with a socket therein for the reception of the point of said guard; another shoe having an enlarged socket at its rear end for the reception of the front end of the first-named shoe, and a rear projecting upper portion; a pivot-bolt for connecting the two shoes; a set-screw projecting downward through the said rear projecting upper portion of the second-named shoe, and a spring surrounding the shank of said set-screw between said projecting portion and the upper surface of the first-named shoe; an upward and rearward projecting divider-arm adjustably jointed to the forward end of said second shoe, and a set-bolt for securing said arm in its adjusted position.

8. In combination with the finger-bar of a mower or harvester, a series of pairs of clamps, each pair having opposed shouldered and roughened or serrated jaws for holding the said finger-bar between them, and inner and outer opposed transverse semicircular grooves, and laterally-projecting lugs; a brace-rod seated in the inner grooves and extending through all the pairs of clamps to strengthen and connect them together; a series of swath-removing fingers having bent ends seated in the outer grooves and resting loosely on the said laterally-projecting lugs; and series of bolts uniting the members of each pair of clamps on each side of said brace-rod.

9. In combination with the finger-bar of a mower or harvester, a series of clamps, transversely secured thereto, the opposing members of each pair of clamps being formed with opposed transverse semicircular grooves, and laterally-projecting lugs; a series of swath-removing fingers having bent ends hooked within the transverse grooves of all the pairs of clamps except the outer pair next to the grain side of the machine, and having free curved outer ends inclined toward the wheel side of the machine; and a trailer, formed of a single spring-metal rod, having a bent end hooked within the transverse groove of the said outer pair of clamps, and having a free curved outer end, inclined, back of the curved end of the adjacent swath-remover, in an opposite direction, and toward the grain side of the machine, to engage with, lift and turn over the uncut mass in the field, as the machine advances, the said swath-removing fingers and trailer resting on said laterally-projecting lugs.

655,340. STARTING DEVICE FOR ELECTRIC MOTORS. JOHANNES H. F. GÖRGES, Berlin, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Dec. 31, 1897. Serial No. 665,080. (No model.)



Claim.—1. In an alternating-current motor, the combination with a field portion, of an armature therefor having a multiphase winding comprising a plurality of divisions for each phase, and means for changing the connections of said divisions to vary the effective electromotive force, substantially as described.

2. In an alternating-current motor, the combination with a field portion, of an armature therefor having a multiphase winding comprising two sets of coils for each phase, and means for changing the interconnections thereof to vary the effective electromotive force due thereto, substantially as described.

3. In an alternating-current motor, the combination with a field portion having a multiphase winding, of an armature therefor having a multiphase winding comprising a plurality of divisions for each phase and means for changing the interconnections of said divisions to vary the effective electromotive force due to said winding, substantially as described.

4. In an alternating-current motor, the combination with a field portion, of an armature therefor having a multiphase winding having a plurality of divisions for each phase, and means for connecting the said divisions in opposition to reduce the effective electromotive force and thereafter changing the connections of said divisions to remove them from opposition, substantially as described.

5. In an alternating-current motor, the combination with a field portion, of an armature therefor having a multiphase winding provided with two sets of coils, and means for connecting the coils of one set with the coils of the other set to have the electromotive forces due thereto opposed, thereby to decrease the effective electromotive force, and thereafter changing the connections between said sets of coils to remove them from opposition, substantially as described.

6. In an alternating-current motor, the combination with a field portion, of an armature therefor having a multiphase winding provided with two sets of coils, the coils of each set constituting in themselves a complete multiphase winding, and means for connecting the coils of one set with the coils of the other set to have the electromotive force due thereto opposed, thereby to decrease the effective electromotive force, and thereafter changing the connections between said sets of coils to remove them from opposition, substantially as described.

7. In an alternating-current motor, the combination with a field portion, of an armature therefor having a multiphase winding provided with two sets of coils, the coils of each set constituting in themselves a complete multiphase winding, the windings of one set being inductively associated with the windings of the other set, and means for connecting the coils of one set with the coils of the other set to have the electromotive force due thereto opposed, thereby to decrease the effective electromotive force, and thereafter changing the connections between said sets of coils to remove them from opposition, substantially as described.

8. In an alternating-current motor, the combination with a field portion, of an armature therefor, a multiphase winding comprising two sets of coils for each phase, and means for changing the interconnections of said winding to create opposing electromotive force thereby to reduce the effective electromotive force in starting, substantially as described.

9. In an alternating-current motor, the combination with a field portion, of an armature therefor having a multiphase winding provided with two sets of coils, and means for connecting the coils of one set with the coils of the other set to have the electromotive forces due thereto opposed, thereby to decrease the effective electromotive force and changing the connections between said sets of coils to remove them from opposition, and varying the effective number of turns of the coils of one set, substantially as described.

10. In an alternating-current motor, the combination with a field portion, of an armature therefor having a multiphase winding provided with two sets of coils, the coils of each set constituting in themselves a complete multiphase winding, and means for connecting the coils of one set with the coils of the other set to have the electromotive forces due thereto opposed, thereby to decrease the effective electromotive force and changing the connections between said sets of coils to remove them from opposition, and varying the effective number of turns of the coils of one set, substantially as described.

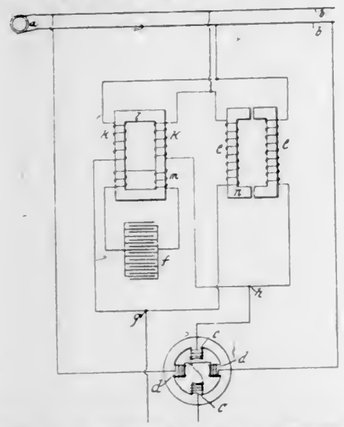
11. In an alternating-current motor, the combination with a field portion, of an armature therefor, having a multiphase winding provided with two sets of coils, the coils of each set constituting in themselves a complete multiphase winding, the windings of one set being inductively associated with the windings of the other set, and means for connecting the coils of one set with the coils of the other set to have the electromotive forces due thereto opposed, thereby to decrease the effective electromotive force and changing the connections between said sets of coils to remove them from opposition, and varying the effective number of turns of the coils of one set, substantially as described.

12. In an alternating-current motor, the combination with a field portion, of an armature therefor having a plurality of coils for each phase, and means for including the coils for each phase in opposition and varying the number of effective turns of one of the coils for each phase whereby the effective electromotive force may be reduced and varied, substantially as described.

13. In an alternating-current motor, the combination with the armature thereof having multiphase-winding coils; of means for changing the interrelation of portions of the armature-winding to create opposing electromotive forces therein, substantially as described.

14. In an alternating-current motor, the combination with the armature thereof having multiphase-winding coils; of means for changing the interrelation of portions of the armature-winding without destroying the multiphase relation of coils of the armature, to create opposing electromotive forces in the armature, substantially as described.

655,341. SYSTEM OF ALTERNATING-CURRENT TRANSMISSION. JOHANNES H. F. GÖRGES, Berlin, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Oct. 11, 1899. Serial No. 733,294. (No model.)



Claim.—1. The combination with a source of alternating current, of a motor having a plurality of energizing-windings a Wheatstone bridge for effecting the phase adjustment of the energizing-windings and a secondary circuit in inductive relation with a winding of the Wheatstone bridge and including a condenser, substantially as described.

2. The combination with a source of alternating current, of a motor having two sets of windings supplied thereby, a Wheatstone bridge included in circuit with one of the sets of windings, retardation-coils included in opposite sides of the Wheatstone-bridge circuit, a transformer, two primary windings thereon included in the remaining opposite sides of the Wheatstone-bridge circuit, a secondary circuit in inductive relation to the said windings of the transformer, and a condenser in the said secondary circuit, whereby the phase is advanced in the said primary windings, substantially as described.

3. The combination with a source of alternating current, of a motor having two sets of windings supplied thereby, a Wheatstone bridge included in circuit with one of the sets of windings, retardation-coils included in opposite sides of the Wheatstone-bridge circuit, a transformer, two primary windings thereon included in the remaining opposite sides of the Wheatstone-bridge circuit, a secondary circuit in inductive relation to the said windings of the transformer, and a condenser in the said secondary circuit, whereby the phase is advanced in the said primary windings, the set of windings of the motor connected with the Wheatstone bridge being included in a diagonal conductor across the Wheatstone-bridge circuit, substantially as described.

4. The combination with a source of alternating current, of a motor having two sets of windings supplied thereby, a Wheatstone bridge included in circuit with one of the sets of windings, retardation-coils included in opposite sides of the Wheatstone-bridge circuit, said coils being mounted upon the same core, a transformer, two primary windings thereon included in the remaining opposite sides of the Wheatstone-bridge circuit, a secondary circuit in inductive relation to the said windings of the transformer, and a condenser in the said secondary circuit, whereby the phase is advanced in the said primary windings, the set of windings of the motor connected with the Wheatstone bridge being included in a diagonal conductor across the Wheatstone-bridge circuit, substantially as described.

5. The combination with a set of exciting-coils of a motor, of a Wheatstone-bridge circuit connected therewith, impedance-coils included in opposite sides of the Wheatstone-bridge circuit, a transformer, two primary windings thereon included in the remaining opposite sides of the Wheatstone-bridge circuit, a secondary circuit in inductive relation to the said windings of the transformer, and a condenser in the said secondary circuit for advancing the phase in the primary windings, substantially as described.

6. In combination with a Wheatstone-bridge circuit, a set of exciting-coils of a motor included in the diagonal of said Wheatstone-bridge circuit, retardation-coils included in two opposite sides of the Wheatstone-bridge circuit, a transformer, two primary windings thereon included in the remaining opposite sides of the Wheatstone-bridge circuit, a secondary circuit in inductive relation to the said windings of the transformer, and a condenser in the said secondary circuit, whereby the phase is advanced in the said primary windings, substantially as described.

7. The combination with a source of alternating current, of a motor having two sets of windings supplied thereby, a Wheatstone bridge included in circuit with one of the sets of windings, retardation-coils included in opposite sides of the Wheatstone-bridge circuit, a transformer, a primary winding thereon included in a side of the Wheatstone-bridge circuit, a secondary circuit in inductive relation to the said winding of the transformer, and a condenser in the said secondary circuit, whereby the phase is advanced in the said primary winding, substantially as described.

8. The combination with a source of alternating current, of a motor having two sets of windings supplied thereby, a Wheatstone bridge included in circuit with one of the sets of windings, retardation-coils included in opposite sides of the Wheatstone-bridge circuit, a transformer, a primary winding thereon included in a remaining side of the Wheatstone-bridge circuit, a secondary circuit in inductive relation to the said winding of the transformer, and a condenser in the secondary circuit, whereby the phase is advanced in the said primary winding, the set of windings of the motor connected with the Wheatstone bridge being included in a diagonal conductor across the Wheatstone-bridge circuit, substantially as described.

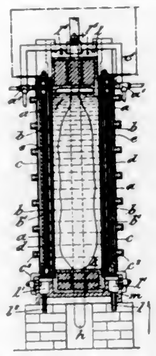
9. The combination with a source of alternating current, of a motor having a plurality of energizing-windings, a Wheatstone bridge for effecting the phase adjustment of the energizing-windings, and a condenser associated with but extraneous to a branch of the Wheatstone bridge to modify the phase of current flowing therethrough, substantially as described.

655,342. VALVE. CHARLES GULLAND, Pittsburg, Pa. Filed Aug. 24, 1899. Serial No. 728,383. (No model.)



Claim.—In combination with an automatically-operating valve, a piston connected with said valve, a cylinder receiving the piston, a spring-pressed plunger, closing exit-openings from said cylinder and an adjustable vent-opening carried by said plunger, substantially as described.

655,343. ELECTROLYTIC CELL. JAMES HARGREAVES, Widnes, England. Filed Jan. 31, 1899. Serial No. 704,067. (No model.)



Claim.—1. For use in the manufacture of alkalies by electrolysis, an electrolytic cell having an anode disposed in a chamber adapted for the reception of the electrolyte, a diaphragm and wire-gauze cathode, a series of inwardly and downwardly inclined metal strips or plates arranged between the cathode and the dished outer or cover plate inclosing the cathode, and forming a chamber for the cation; the said strips or plates extending from the said cover-plate to the surface of the cathode, substantially as and for the purposes herein described.

2. For use in the manufacture of alkalies by electrolysis, an electrolytic cell having an anode disposed in a chamber adapted for the reception of the electrolyte, a diaphragm and wire-gauze cathode, a series of inwardly and downwardly inclined metal strips or plates and a dished outer or cover plate inclosing a cathode and forming a chamber for the cation; the said strips or plates being arranged in the cathode-chamber so as to extend from the cover-plate to the surface of the cathode and being held in position by bedding them in a layer of cement formed against the inner side of the said cover-plate, substantially as and for the purposes specified.

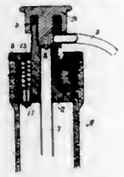
3. For use in the manufacture of alkalies by electrolysis, an electrolytic cell having a series of inwardly and downwardly inclined metal strips or plates formed with serrations or openings on their lower edges, arranged in the cation-chamber and extending from the outer or cover plate of the cell to the surface of the cathode, substantially as and for the purposes specified.

655,344. CATHODE FOR USE IN ELECTROLYTIC CELLS. JAMES HARGREAVES, Widnes, England. Original application filed Jan. 31, 1899, Serial No. 704,067. Divided and this application filed Oct. 2, 1899. Serial No. 732,367. (No specimens.)



Claim.—In an electrolytic cell, the combination with a porous diaphragm of a woven-wire cathode having the prominent parts of its surface, where the wires cross one another, flattened, substantially as and for the purposes set forth.

655,345. BOTTLE FAUCET ATTACHMENT. HIRAM A. KNIGHT, Alameda, Cal. Filed May 2, 1900. Serial No. 15,223. (No model.)



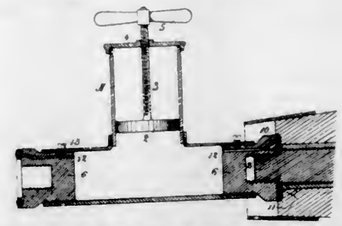
Claim.—1. The combination with a bottle having a screw-threaded neck of a tubular stopper having corresponding threads, a flange and washers to form a tight joint, a valve-seat interior to the stopper and an extension upwardly from the flange with exterior screw-threads, a cap fitting and turnable upon said threads, a valve-stem extending from the top of the cap downwardly having a valve upon its lower end adapted to close upon the seat in the stopper, a packing fitted around the valve-stem and forming a joint with the interior of the stopper extension, and a discharge-pipe opening upon the side of the extension between the flange and the cap.

2. The combination with a bottle of a tubular screw-threaded stopper fitting corresponding threads in the bottle-neck having a flange and washer to form a joint with the top of the bottle, and a tubular extension above and below the stopper, a cap having a central and packed valve-stem, a valve at its lower end closable upon a seat within the stopper, said cap forming an exterior screw-threaded sleeve fitting corresponding threads upon the outside of the stopper extension, a means for charging the bottle, consisting of an inwardly-opening spring-pressed valve having a stem extending through the stopper, and a cap upon the upper end with admission-channels formed upon each side thereof.

655,346.



655,347. AXLE-LUBRICATOR. JACOB E. LUDWIG, San Francisco, Cal. Filed Dec. 4, 1899. Serial No. 739,115. (No model.)



Claim.—1. An axle-lubricating device comprising a removable, readily-attachable, lubricant-containing cylinder having a piston and means whereby said piston is operated, means carried by the cylinder and forming an end socket adapted to inclose the end of the axle after the securing-nut is removed, said cylinder having a passage connecting its interior with the space surrounding the axle, and means whereby a tight joint is formed between the socket end of the cylinder and the parts to be lubricated.

2. The combination with a lubricant-container and means for forcing the lubricant therefrom, means carried by the container and having sockets to be alined with and adapted to receive the threaded end of the axle when the securing-nut is removed, said means provided with a passage connecting the interior of the container with the parts to be lubricated, and washers adapted to be compressed by an endwise movement of the container to form a tight joint substantially at the place where the lubricant is applied.

3. An axle-lubricating device consisting of a lubricant-containing cylinder, a plunger and means by which it is advanced, said cylinder having means connecting its interior with the space between the axle and its box, a washer forming a tight joint between the connecting end and the wheel-hub, and a compressible sleeve surrounding the screw-threaded end of the axle, said sleeve being thickened and expanded by compression to make a joint around the screw-threads and prevent accumulations of lubricant.

4. An axle-lubricating device consisting of a lubricant-containing cylinder, a plunger or piston movable therein, means connecting the inner end of the cylinder with the axle-hub consisting of a screw-threaded ring through which the corresponding threads upon the cylinder may be advanced, radially-disposed bracing-arms projecting outwardly from the ring and engaging the inner periphery of the projecting hub-band, washers

655,346. COTTON-PRESS. WILLIS W. KRUTSCH, Little Rock, Ark., assignor of one-half to L. H. Stevens, Fort Smith, Ark. Filed Sept. 14, 1897. Serial No. 651,603. (No model.)

Claim.—1. In a press, the combination of a plunger, toggle-levers connected at one end to the plunger and at the other end to the frame of the press, a pitman pivotally secured to the toggle-joint, a shaft having a recess in one side of its journal, and a crank pivoted on the shaft and having a feather in the recess thereof, substantially as described.

2. In a press the combination of the connecting-bar for the toggles having semicylindrical bearings on each side at its top and bottom, and on the inner side of its head or lower end, the double pairs of toggle-levers, each lever having a cylindrical journal to engage one of the side bearings, links for connecting the levers of each pair and holding them in the bearings, the bifurcated pitman having the lower ends of its forked arms rounded and seated in the last-mentioned bearing, and the bolt connecting the forked arms of the pitman with the connecting-bar concentrically located with reference to the curved bearings, substantially as described.

3. In a press the combination of the side pieces consisting of T-bars having thickened ends with triangular projections in the inner sides thereof, with the end bars T-shaped in cross-section having the ends of the rib portion beveled off to enter the triangular recesses in the side parts, and the ends of the flange cut off to form shoulders to rest against the inside of the side bars, and suitable means for clamping the side bars and end bars together, substantially as described.

forming joints respectively between the inner end of the cylinder and the hub and around the screw-threaded end of the axle to prevent the leakage of lubricant at these points, and a passage from the lubricant pressure-chamber to a space between the axle and its box.

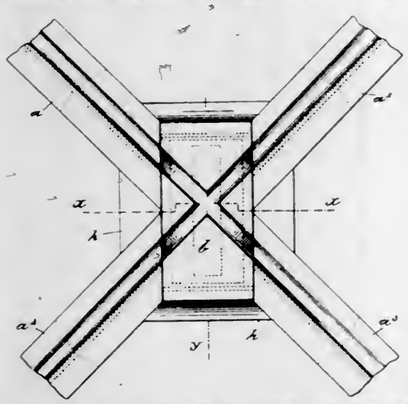
655,348. **METAL BOX.** WILLIAM H. MOORE, Baltimore, Md., assignor to H. F. Miller & Son, same place. Filed Dec. 31, 1897. Serial No. 664,958. (No model.)



Claim.—1. A metal box and a cover therefor, one of said parts having a flange disposed in a different plane from the body thereof an extent equal to the thickness of the other part, and said other part having an inwardly-projecting bead against which the end of said flange abuts, whereby the outer face of the box and cover will be in alinement with each other and together present a definite and predetermined length of exterior face for the reception of a label adapted to encircle the whole peripheral wall of the box and cover, the vertical wall of said box and alined cover being unbroken by external protuberances, substantially as set forth.

2. A metal box and a cover therefor, said box having a flange inwardly disposed to an extent equal to the thickness of the flange of the cover whereby said flange of the cover and wall of the box will be in alinement, one with the other, and a bead projecting inwardly from the cover and bearing against said inwardly-disposed flange on the box, the vertical wall of said box and alined cover being straight and unbroken by external protuberances, substantially as set forth.

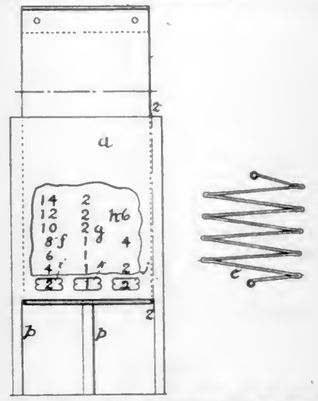
655,349. **RAILWAY-TRACK STRUCTURE.** HENRY B. NICHOLS, Philadelphia, Pa. Filed May 1, 1900. Serial No. 15,057. (No model.)



Claim.—A railway-track structure, comprising rail-sections permanently secured together by a cast-metal section having an opening at the center or crossing-point of the rail-sections extending entirely through the cast-metal section, a hard-metal plate provided on its lower face with a dovetail projection adapted to fit into the opening in the cast-metal section below the seat of the plate in the cast-metal section, the upper face of said plate forming a continuation of the rail-sections, and a soft-metal lining interposed between the dovetail projection of the plate and the adjacent parts of the cast section into which said projection is inserted, and said lining forming the means for securing the plate in the opening of the cast section, substantially as and for the purposes described.

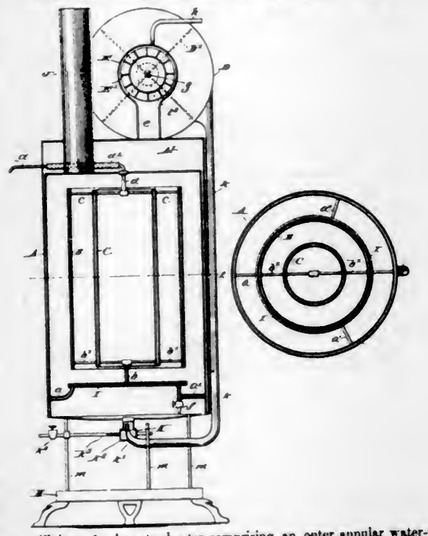
655,350. **POSTAGE-SCALE.** CHARLES F. RITCHEL, Bridgeport, Conn. Filed Aug. 9, 1899. Serial No. 726,669. (No model.)

Claim.—1. The combination in a weighing-scale, of the upright case composed of two side plates joined at the edges so as to provide a narrow space between them, and having supporting-legs, pan-supporting plate adapted to move up and down in said case, and the zigzag wire spring placed between said plate and one side of the case and suspending said pan-supporting plate in said case, the loops of the spring being pinched together a measurable distance from the bends.



2. The combination in a weighing-scale, of the upright case composed of two side plates joined at the edges so as to provide a narrow space between them and having integral supporting-legs, pan-supporting plate adapted to move up and down in said case, and the zigzag wire spring placed between said plate and one side of the case and suspending said pan-supporting plate in said case, said pan-supporting plate having one or more columns of weight-indicating numerals.

655,351. **WATER-HEATING APPARATUS.** WILLIAM ROCHLITZ, Chicago, Ill. Filed Dec. 30, 1899. Serial No. 742,066. (No model.)



Claim.—1. A water-heater comprising an outer annular water-receiving chamber, an imperforate hollow disk within the lower portion of the heater and in communication with said outer chamber, an inner annular chamber communicating with said hollow disk and provided at its upper end with an outlet-pipe extending through the outer chamber to the exterior of the heater, substantially as described.

2. In a water-heater, the combination of an outer annular water-receiving chamber which is provided with an extended water-receiving portion and an outlet for products of combustion extending through said portion, an imperforate hollow disk within the lower portion of the heater and in communication with said outer chamber, an inner annular chamber communicating with said hollow disk and provided at its upper end with an outlet-pipe extending through the outer chamber to the exterior of the heater, substantially as described.

3. In a water-heater, the combination of an outer annular water-receiving chamber which is provided with an extended water-receiving portion and an outlet for products of combustion extending through said portion, an imperforate hollow disk within the lower portion of the heater and in communication with said outer chamber, two inner annular chambers which are in communication with the disk and are provided at their upper ends with a common outlet-pipe extending through the outer chamber to the exterior of the heater, substantially as described.

4. A water-heater comprising an outer annular water-receiving chamber, an imperforate hollow disk within the lower portion of the heater and in communication with said outer chamber, two inner annular chambers in communication with the disk and provided at their upper ends with a common outlet-pipe extending through the outer chamber to the exterior of the heater, substantially as described.

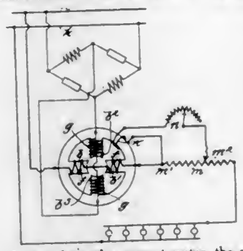
655,352. **BELL-STRIKER.** EDWARD D. ROCKWELL, Bristol, Conn., assignor to the Liberty Bell Company, same place. Filed Jan. 16, 1900. Serial No. 1,619. (No model.)



Claim.—1. In combination in a bell having a base, a gong and striking mechanism including a verge having a rivet-lug, a striker having a rivet-lug, and a hammer-arm having openings adapted to receive said rivet-lugs whereby the hammer, hammer-arm and verge are secured together.

2. In combination in a bell having a base, a gong and striking mechanism including a verge, a hammer, and a hammer-arm secured to said parts and adapted to be wrapped about one of said parts to provide for lengthwise adjustment.

655,353. **METER.** CARL O. F. SCHROTTKE, Berlin, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Dec. 27, 1897. Serial No. 663,613. (No model.)



Claim.—1. In an alternating-current meter, the combination with an annulus of magnetic material, of two shunt-coils placed at opposite points of said annulus, a closed coil wound about said annulus nearer to one of the shunt-coils than the other, a series winding, an armature subjected to the action of the fields created by the series and shunt windings, and a measuring-train actuated by the armature, substantially as described.

2. In an apparatus for measuring alternating currents, the combination with an annulus of magnetic material having four polar projections at intervals substantially of ninety degrees, of fine-wire coils disposed upon diametrically-opposite poles, series coils wound about the remaining poles, a rotatably-mounted drum surrounded by the poles, a measuring-train driven by the drum, a closed coil located near one of said shunt-coils, a resistance connecting the terminals of the closed coil, distributing-mains between which the shunt-coils are connected in bridge, and a consumption-circuit in series with the series coils and said resistance or a portion thereof, substantially as described.

3. In an alternating-current meter, the combination with a shunt-winding of fine wire, of a series winding, an armature subjected to the action of the fields created by said windings, a coil in inductive relation with the shunt-winding connected in shunt of resistance in the series circuit, and a resistance in series with the shunt containing the said coil, substantially as described.

4. In an alternating-current meter, the combination with a shunt-winding of fine wire, of a series winding, an armature subjected to the action of the fields created by said windings, a coil in inductive relation with the shunt-winding for producing a starting torque, and an adjusting-resistance in a closed local circuit with the said coil, substantially as described.

5. In an alternating-current meter, the combination with a shunt-winding of fine wire, of a series winding, an armature subjected to the action of the fields created by said windings, a coil in inductive relation with the shunt-winding, and an adjusting-resistance in closed circuit with the said coil, said resistance being partially included in the series circuit, substantially as described.

6. In an alternating-current meter, the combination with two shunt-coils of fine wire, each coil being adapted to create a field, of a series winding, an armature subjected to the action of the fields created by the series and shunt windings, a coil located in the field produced by windings of the meter, and an adjusting-resistance in circuit with said coil, said resistance being partially included in the series circuit, substantially as described.

7. In an alternating-current meter, the combination with two shunt-coils, of a series winding, a coil including adjusting-resistance for throttling or retarding lines of force in one of said fields connected in shunt of resistance in series with the series winding, and an armature subjected to the action of the field created by the series and shunt windings, substantially as described.

8. In an alternating-current meter, the combination with an annulus of magnetic material, of two shunt-windings placed at opposite points of said annulus, a series winding, a coil wound about said annulus nearer to one of the shunt-coils than the other and connected in bridge of resistance in series with the series winding, an adjusting-resistance in series with the said coil, and an armature subjected to the action of the fields created by the series and shunt windings, substantially as described.

9. In an apparatus for measuring alternating currents, the combination with an annulus of magnetic material having four polar projections at intervals substantially of ninety degrees, of fine-wire coils disposed upon diametrically-opposite poles, series coils wound about the remaining poles, a rotatably-mounted drum surrounded by the poles, a winding located near one of said shunt-coils and connected in bridge of resistance in series with the series winding, a resistance in series with the winding located near one of the shunt-coils, distributing-mains between which the shunt-coils are connected in bridge, and a consumption-circuit in series with the series coils, substantially as described.

10. In an alternating-current meter, the combination with a shunt-winding of fine wire creating lines of force following distinct paths, of a series winding, an armature subjected to the action of the fields created by said windings, a coil included in a closed local circuit in inductive relation with the said shunt-winding and surrounding the lines of force following one of said paths for producing a starting torque, the said coil being so disposed with relation to the instrument as to throttle lines of force set up by the shunt-winding, substantially as described.

11. In an alternating-current meter, the combination with a shunt-winding of fine wire, of a series winding, an armature subjected to the action of the fields created by said windings, a coil included in a closed local circuit in inductive relation with the said shunted winding for producing a starting torque, the said coil being so disposed with relation to the instrument as to throttle lines of force, and an adjusting-resistance in the same local circuit with said torque-coil, substantially as described.

12. In an alternating-current meter, the combination with a shunt-winding of fine wire creating lines of force following distinct paths, of a series winding, an armature subjected to the action of the fields created by said windings, a coil in inductive relation with the shunt-winding and surrounding the lines of force following one of said paths for producing a starting torque, substantially as described.

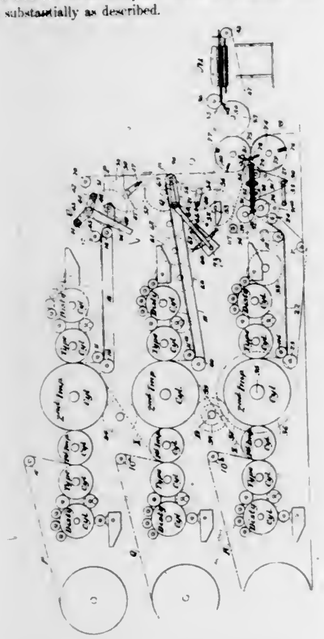
655,354. **PRINTING-MACHINE.** WALTER SCOTT, Plainfield, N. J. Filed Oct. 20, 1891. Serial No. 409,341. (No model.)

Claim.—1. The combination with a rock-shaft, a take-up borne by arms thereon, and a lever thereon to operate the same, of an adjustable toothed holder on the frame for said lever, and screws acting on said holder to move the same for adjustment, whereby the take-up can be accurately adjusted to position, and then be moved out of and into position at will, substantially as described.

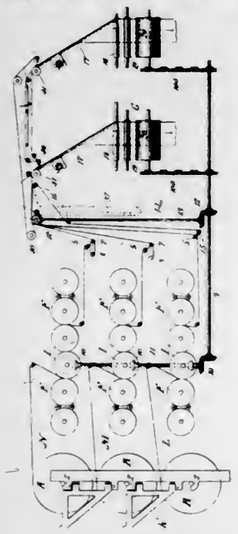
2. The combination of a number of printing-presses arranged one over another and each perfecting its own web, a folding and cutting mechanism to which all the webs are taken, web take-up or register roll or rolls for one or more of said webs, a rock-shaft and arms therefrom for each take-up for carrying said rolls, a resilient or flexible arm on each rock-shaft, and a stop for each of the last-named arms for limiting the motion thereof in one direction and from which said arm may be freed by being flexed or sprung and so be moved freely to slack up the corresponding web and be returned to position without disturbing the register of the webs, substantially as described.

3. The combination of a number of printing-presses arranged one over another and each perfecting its own web, a folding and cutting mechanism to which all the webs are taken, web take-up or register roll or rolls for one or more of said webs, a rock-shaft and arms therefrom for

each take-up for carrying said rolls, a resilient or flexible arm on each rock-shaft, and an adjustable stop for each of the last-named arms for limiting the motion thereof in one direction and from which said arms may be freed by being flexed or sprung and so be freed to move to slack up the web and be returned to position without disturbing the register of the webs, substantially as described.



655,355. PRINTING-MACHINE. WALTER SCOTT, Plainfield, N. J. Filed Feb. 28, 1895. Serial No. 539,962. (No model.)



Claim.—1. The combination of a plurality of printing-presses delivering each a web, and a circumferentially-corrugated roller around which the webs are deflected as they are associated, substantially as described.

2. The combination of two pairs of folding or forwarding rollers held together by spring-pressure, a hand-wheel or lever, a rod operated thereby, cones or wedges thereon, and connections from said cones or wedges to said pairs of rollers, whereby the pressures thereof on the printed products may be varied simultaneously, substantially as described.

3. The combination with the sidewise adjustable former, of the supplemental frame movable sidewise independently thereof on the main framework, the folding or forwarding rollers carried by said supplemental frame, a second frame movable up and down on said supplemental frame, and folding-rollers carried by said second frame, substantially as described.

4. The combination with the sidewise-adjustable former, of the supplemental frame movable sidewise independently thereof on the main framework, the folding or forwarding rollers carried by said supplemental frame, a second frame movable up and down on said supplemental frame, and folding rollers carried by said second frame, and adjustable sidewise thereon, substantially as described.

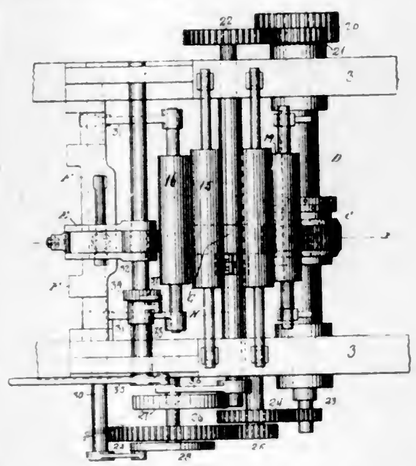
5. The combination of a printing-machine delivering a plurality of webs one over another, an internal guide or longitudinal former adjustable transversely of said machine, external guides or folding-rollers for coaction with said internal guide and likewise but independently adjustable, and a second longitudinal-folding and transversely-cutting machine adjustable as a whole transversely of the printing-machine, substantially as described.

6. The combination of two pairs of folding or forwarding rollers, movable bearings for one roller of each pair, connections between said movable bearings whereby motion of the bearings for one roller of one pair is communicated to the movable bearing of the movable roller of the other pair, a spring pressing one of said movable rollers toward the other roller of its pair, and means for moving said movable rollers against the force of said spring, substantially as described.

7. The combination of two pairs of folding or forwarding rollers, pivoted bearings for one roller of each pair, connections between said movable bearings whereby motion of the bearings for one roller of one pair is communicated to the movable bearing of the movable roller of the other pair, a spring pressing one of said movable rollers toward the other roller of its pair, and means for moving said movable rollers against the force of said spring, substantially as described.

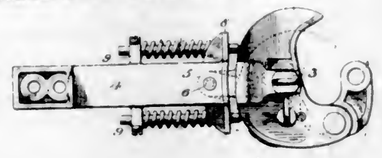
8. The combination of two pairs of folding or forwarding rollers, movable bearings for one roller of each pair, a hand-wheel or lever, a rod operated thereby, cones or wedges on said rod, connections from said cones or wedges to said movable bearings whereby the bearings are moved simultaneously, and a spring pressing said movable rollers toward the other rollers, substantially as described.

655,356. PRINTING-MACHINE. WALTER SCOTT, Plainfield, N. J. Filed Oct. 21, 1896. Serial No. 609,547. (No model.)



Claim.—In a printing-press, the combination with plate and impression cylinders for perfecting a web, of an auxiliary type-cylinder adjustable along one of said impression-cylinders and adapted to coact therewith, and inking apparatus for said auxiliary cylinder provided with a fountain, fountain-roller, and distributing-cylinder also adjustable longitudinally of said impression-cylinder and with non-adjustable distributing-rolls longer than said auxiliary cylinder and said distributing-cylinder substantially as described.

655,357. CAR-COUPLING. GEORGE W. SMILLIE, Newark, N. J. Filed Dec. 19, 1899. Serial No. 740,870. (No model.)



Claim.—1. In a car-coupler, the combination, of the draw-bar, the draw-head pivotally connected with said draw-bar, and two longitudinally-movable spring-pressed rods supported by said draw-bar with one end of the same acting against the draw-head and yieldingly holding the latter in a normal central position relative to the draw-bar, the said spring-pressed rods being supported by the latter independent of connection with the draw-head.

2. In a car-coupler, the combination, of the draw-bar having two laterally-projecting flanges on opposite sides thereof, the draw-head pivotally connected with said draw-bar, and two longitudinally-movable spring-pressed rods supported by the draw-bar with one end of the same extending through openings in said laterally-projecting flanges and acting against the draw-head to yieldingly hold the latter in a normal central position relative to the draw-bar, for the purpose set forth.

655,358. TABLE-LEG FASTENER. SAMUEL M. SMYTH, Strathroy, Canada. Filed May 14, 1900. Serial No. 16,633. (No model.)



Claim.—1. In a device of the class described, the combination with a table-top, of a base provided with an opening and having an interior groove or recess, a nut-receiving key or piece arranged within the groove or recess, a nut arranged in the nut-receiving key or piece and having its edges engaged to hold it against rotation, and a leg provided with a threaded stem extending through the opening of the base and engaging the nut and retaining the same and the said key or piece in place, substantially as described.

2. In a device of the class described, the combination with a table-top, of a base provided with a keyhole-slot and having an interior groove or recess communicating with the same, a nut-receiving key or piece arranged in the groove or recess, a leg having a threaded stem, and a nut mounted on the threaded stem and adapted to be passed through the keyhole-slot to arrange it within the groove or recess and on the nut-receiving key or piece, substantially as described.

3. In a device of the class described, the combination with a table-top, of a base having a keyhole-slot and provided with a circular recess, said base being also provided with a groove, a nut-receiving key or piece arranged within the groove a nut mounted on the key or piece and engaged by the same and by the walls of the said groove, and a leg having a threaded stem engaging the nut, said leg being also provided with a circular projection to fit in the circular recess, substantially as described.

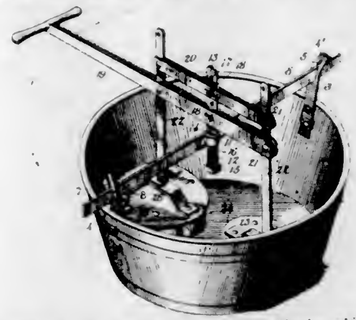
4. In a device of the class described, the combination with a table-top, of a base composed of two blocks or pieces spaced apart to provide an interior groove or recess, and a plate or piece mounted on the blocks or pieces and provided with an opening, a nut-receiving key or piece arranged within the groove or recess, a nut arranged in the nut-receiving key or piece and having its edges engaged to hold it against rotation, and a leg provided with a threaded stem extending through the opening of the base and engaging the nut and retaining the same and the key or piece in place, substantially as described.

655,359. BAG-FASTENER. HAYVEY AND ADAMS, Omaha, Nebr., assignor of one-half to Henry F. Cady, same place. Filed May 8, 1900. Serial No. 15,932. (No model.)

Claim.—The combination with a bag, of a fastening device for the mouth thereof, and comprising a pliable strip having its opposite ends passed through one side of the bag and from the interior thereof, one projecting end of the strip being longer than the other, the shorter end being bent toward the opposite end and flat against the outer side of the bag, the longer end being bent flat against the shorter end, and the free extremity thereof being rebent across the outer side of the longer end and forming a pliable hook or clamp, and a flexible cord, one end of which is fixedly clamped by certain folded portions of the strip, and its opposite free end being arranged for engagement with the flexible clamp or hook.



655,360. WASHING-MACHINE. GEORGE W. BOLTON, Honey Grove, Tex. Filed June 1, 1899. Serial No. 718,993. (No model.)



Claim.—1. In a washing-machine, the combination with a vertically-yielding post, of a pounder-carrying device and a pounder-operating device fulcrumed on a horizontal axis on said post, substantially as specified.

2. In a washing-machine, the combination with a suds-receptacle, of a spring-depressed post, means for adjusting the tension of the spring, and washing apparatus including pounders and an operating-lever fulcrumed on a horizontal axis on said post, substantially as specified.

3. In a washing-machine, the combination with a receptacle, of a vertically-movable post, a stationary guide through which the post moves, a spring encircling said post, a tension-adjusting nut on the post bearing against the spring, and washing apparatus including pounders and an operating-lever fulcrumed on a horizontal axis on the post and movable therewith, substantially as specified.

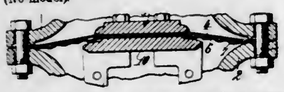
4. In a washing-machine, the combination with a receptacle, of a supporting-bar mounted thereon, a vertically-yielding post movable through a guide on said bar, a spring on the post below the bar for allowing the post to yield vertically, means for adjusting the tension of the spring, an operating-lever fulcrumed on a horizontal axis on the post above the bar, and pounders attached to the lever, substantially as specified.

5. In a washing-machine, the combination with a suds-receptacle, of a post mounted to yield vertically and also to turn on a longitudinal axis, pounders arranged at opposite sides thereof, and operating within the receptacle, and an operating-lever connected to said pounders, and fulcrumed on a horizontal axis on said post, substantially as specified.

6. In a washing-machine, the combination with a receptacle, of washing apparatus, a supporting-bar for said apparatus extending across the receptacle, brackets secured to said receptacle, one of said brackets having a bent and yielding upper end which is slotted to receive and press yieldingly upon one end of the supporting-bar, the other bracket having an open slot or notch and a retaining device for engaging the opposite end of the supporting-arm, substantially as described.

7. In a washing-machine, the combination with a receptacle, of washing apparatus mounted therein, a supporting-bar for the washing apparatus extending across the top of the receptacle, a spring-bracket having a slot in which one end of the supporting-bar is removably fitted, the upper end of said bracket bearing with a yielding pressure against the supporting-bar, and a bracket on the receptacle having a notch to receive the opposite end of the supporting-bar, said bracket having pivotally mounted thereon a retaining-latch which engages said bar.

655,361. **DIAPHRAGM FOR PRESSURE-REGULATING VALVES.** ARTHUR W. CASH, Newark, N. J., assignor to the Foster Engineering Company, same place. Filed Oct. 5, 1899. Serial No. 732,863. (No model).



Claim.— 1. The herein-described diaphragm for pressure-regulating devices, composed of an inner flexible sheet or plate of thin metal corrugated, and an outer flexible sheet or plate of metal non-corrugated but slightly bulged or dish-shaped and provided with a number of radial slots extended from a centrally-clamped portion of the diaphragm to points near its periphery, said plates being secured together in close juxtaposition, whereby the inner corrugated diaphragm-plate forms the seal and the outer radially-slotted diaphragm-plate gives the strength and flexibility to resist the fluid-pressure acting against the inner plate and prevent buckling or cracking, substantially as specified.

2. The herein-described diaphragm for pressure-regulating devices, composed of an inner flexible sheet or plate of thin metal provided with annular corrugations, and an outer flexible sheet or plate of metal having a plurality of radial slots extended from a centrally-clamped portion of the diaphragm to points near its periphery, said plates being secured together in close juxtaposition, whereby the inner corrugated diaphragm-plate forms the seal and the outer radially-slotted diaphragm-plate imparts the required flexibility and strength to resist fluid-pressure acting against the inner plate and prevent buckling, cracking and strain, substantially as specified.

655,362. **REST FOR CASKETS.** THOMAS W. COUGHLIN, Binghamton, N. Y. Filed Dec. 18, 1899. Serial No. 740,809. (No model.)



Claim.— 1. A rest for caskets consisting of two or more parts hinged together, the upper or head part or parts having pivoted legs adapted to engage the bottom of the casket to support the body at varying angles of inclination, substantially as described.

2. A rest for caskets consisting of two or more parts hinged together, the upper or head part or parts having pivoted legs adapted to engage the bottom of the casket to support the body at varying angles of inclination, the lower part being provided with means to prevent endwise movement, substantially as described.

3. A rest for caskets consisting of two or more parts hinged together, the upper or head part or parts having pivoted legs adapted to engage the bottom of the casket to support the body at varying angles of inclination, said legs having handles at their upper ends, substantially as described.

655,363. **FISHING-POLE ATTACHMENT.** FREDERICK J. DITCHEY, Middleport, Pa. Filed Apr. 19, 1900. Serial No. 13,520. (No model.)

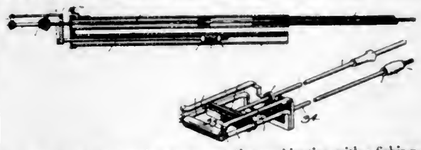
Claim.—1. In a fishing-pole attachment, the combination with a fishing-pole, of a reel thereon, a line-feed regulator on the outer end of the pole, and a separably-jointed operating device extending through the pole and connected to said regulator.

2. In a fishing attachment, the combination with tubular pole-joints, a line-feed regulator removably applied to the outer end of the pole, and an operating wire rod extending through the said tubular joints and made up of separable sections.

3. In a fishing-pole attachment, the combination with a fishing-pole, of a reel thereon, a line-feed regulator on the outer end of the pole, friction means for controlling the movement of said regulator, and means for operating the regulator.

4. In a fishing-pole attachment, the combination with a fishing-pole, of a line-reel thereon, a slidable line-feed regulator on the outer end of the pole having gripping devices, and means for operating the regulator.

5. In a fishing-pole attachment, the combination with a fishing-pole, of a reciprocable line-feeding regulator on the outer extremity thereof.

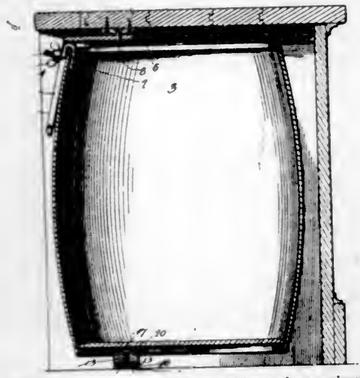


6. In a fishing-pole attachment, the combination with a fishing-pole, of a reciprocable line-feeding regulator on the outer end thereof, and a friction-piston connected to the said regulator.

7. In a fishing-pole attachment, the combination with a fishing-pole, of a reciprocable line-feeding regulator on the outer end thereof having line-gripping means, a portion of the latter being adjustable independently of the entire regulator, and means for operating the entire device.

8. In a fishing-pole attachment, the combination with a fishing-pole, of a reciprocable line-feeding regulator on the outer end thereof, the latter including flexible gripping means, and side guards, means for controlling the freedom of movement of the said regulator, and means for operating the same.

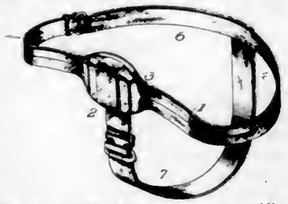
655,364. **BARREL-SWING.** GEORGE L. EDGERTON, Guilford College, N. C. Filed Dec. 9, 1898. Renewed July 10, 1900. Serial No. 23,155. (No model.)



Claim.—1. A barrel-swing comprising a lower pivoted support adapted to receive a barrel and arranged beneath the same, and an upper clamp independent of the lower support and composed of a pivoted L-shaped bracket provided in its depending arm with a longitudinal slot, and an adjustable hook for engaging the upper edge of the barrel, said hook being detachably mounted in the slot of the bracket and being adapted to be introduced longitudinally into engagement with the barrel, whereby the latter may be arranged close to the top of the bracket, substantially as described.

2. A barrel-swing comprising a lower pivoted support, a plate having a flat upper face and adapted to be fastened to a counter, an L-shaped bracket mounted independently of the lower support and pivoted to the plate and having its depending arms slotted, a hook detachably arranged in the slot and adapted to be passed through and withdrawn from the same and capable of engaging the upper edge of a barrel, and a nut mounted on the hook and engaging the bracket, substantially as described.

655,365. **HERNIAL TRUSS.** HENRY M. JOHNSON, Minden, La. Filed Nov. 14, 1899. Serial No. 736,954. (No model.)



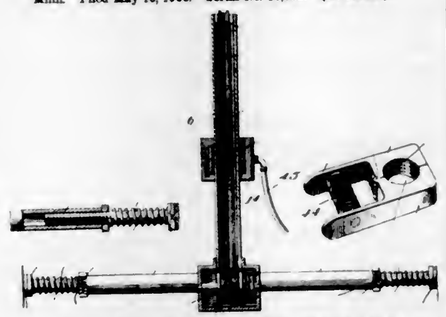
Claim.—1. In a truss, a flat spring having its middle portion widened, its ends divergently curved and its terminals outwardly deflected in opposite directions away from the body, a pad centrally disposed of the widened portion of the spring, a body-strap passing along and covering the inner side of the pad and encircling the flat spring upon opposite sides thereof, and a crotch-strap extending in the rear of the pad and attached to the upper and lower edge portions of the body-strap covering the front side of the pad, substantially as set forth.

2. In a truss, a pad-support having divergent spring end portions and a body-strap having running connection with the terminal portions o the pad-support and passing in rear of the latter, substantially as described.

3. In a truss, a pad-support having divergent spring end portions, rollers at the ends of the pad-support, and a body-strap having running connection with the pad-support and passing over the terminal rollers thereof, substantially as specified.

4. In a truss, a pad-support having divergent spring end portions, rollers at the ends of the pad-support, and a body-strap, the same consisting of a metal strip passing loosely over the said rollers and in rear of the pad-support, and end pieces attached to the ends of the metal strip, substantially as set forth.

655,366. **WINDOW-CLEANER.** SIMEON C. LAWLOR, Duluth, Minn. Filed May 16, 1900. Serial No. 16,882. (No model.)



Claim.— 1. The combination in a window-cleaner, of a hollow standard, a grooved pulley journaled in the upper end thereof, a grooved pulley and a spring-actuated windlass journaled at the base of the standard, a frame slidably mounted upon the vertical standard and carrying a brush, a cord secured to the spring-actuated windlass passing over the upper pulley and secured to the upper side of the brush-frame, and a cord secured to the lower side of the brush-frame and passing under the lower grooved pulley, substantially as described.

2. The combination in a window-cleaner, of a vertical standard, a frame slidably mounted thereon, means for reciprocating the frame on the standard, a brush carried by the frame, a spring for maintaining the brush in yielding contact with the window-glass, a horizontal tube upon which the standard is mounted to slide laterally, and means for securing the horizontal tube in the window-frame, substantially as described.

3. The combination in a window-cleaner, of a brush provided with a hollow body, means for vertically and horizontally reciprocating the brush, and a flexible tube connected with the hollow brush-body to supply it with water under pressure, substantially as described.

4. The combination in a window-cleaner, of a vertical standard, a brush-carrying frame mounted to slide vertically thereon, a horizontal arm secured to the vertical standard, a sleeve on said arm provided with a transverse opening, a tube mounted in said transverse opening, and means for rigidly securing the tube between the sides of the window-frame, substantially as described.

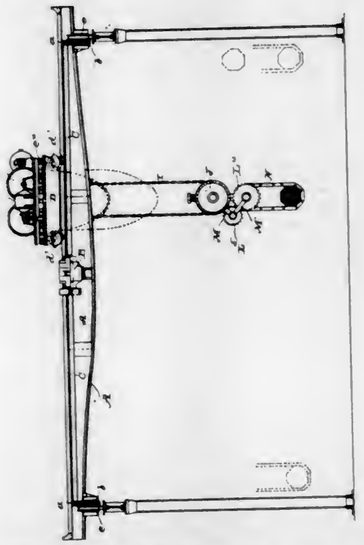
5. The combination in a window-cleaner, of a horizontal tube, threaded bolts slidably mounted in the outer ends of said tube, springs between the ends of the tube and the heads of the bolts for normally pressing the said heads outward into contact with the window-frame, a standard slidably mounted upon said tube, a brush mounted on the standard, and means for vertically reciprocating the brush on the standard, substantially as described.

6. The combination in a window-cleaner, of a horizontal tube, a vertical brush-carrying standard mounted thereon, threaded bolts slidably mounted in the outer ends of the tube, nuts on said bolts adjacent to the ends of the tube, and springs on said bolts for normally pressing their heads outward into contact with the sides of the window-frame, substantially as described.

7. The combination in a window-cleaner, of a horizontal tubular support, a brush carrying and operating mechanism slidably mounted on said tube, threaded bolts slidably mounted in the ends of said tube, and normally-closed divided nuts mounted on said bolts adjacent the ends of the tubular support, substantially as described.

8. The combination in a window-cleaner, of a horizontal tube, a brush carrying and operating mechanism slidably mounted thereon, threaded bolts slidably mounted in the ends of the tube, normally-closed divided nuts mounted on said bolts adjacent to the ends of the tube, and springs upon the bolts for normally pressing them outward into contact with the sides of the window-frame, substantially as described.

655,367. **CRANE.** WILLIAM H. MORGAN and CLARENCE L. TAYLOR, Alliance, Ohio; said Taylor assignor to the Morgan Engineering Company, same place. Filed July 1, 1899. Serial No. 722,592. (No model.)



Claim.— 1. In an overhead traveling crane, the combination with a traveling bridge and a trolley thereon, the upper section of the latter constructed to rotate, of an endless chain carried by said upper section of the trolley and passing downwardly between the bridge-girders and means for hoisting and lowering and for revolving said chain.

2. The combination with an elevated support and two pairs of drums or sheaves, of gearing for each pair of drums or sheaves, two motors each coupled up to the gearing of both pairs of drums or sheaves, and two endless chains, each mounted on two drums or sheaves.

3. The combination with an elevated support and two pairs of drums or sheaves thereon, of an independent motor for each pair of drums or sheaves, gearing connecting both pairs of drums whereby the drums or sheaves may be rotated in the same or in opposite directions, and two chains each chain passing over a drum of each pair.

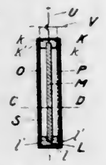
4. The combination with an elevated support and two drums or sheaves thereon, of gearing for each drum or sheave, two motors each coupled up to the gearing of both drums or sheaves and a chain carried by said drum or sheaves.

5. The combination with an elevated support two drums thereon, and a single chain suspended from both drums, of two motors and gearing connecting both motors and the drums whereby either or both motors can independently or simultaneously transmit motion to both drums, whereby the drums may be rotated in the same or in opposite directions or be rotated at different rates of speed.

6. The combination with two shafts, of a toothed wheel loose on each shaft, the two wheels intermeshing, a pinion fast to each toothed wheel, an internal and external spur-wheel loose on the hub of each toothed wheel, a disk secured to each shaft, each disk carrying pinions engaging the internal teeth of its spur-gear and the pinion fast to the toothed wheel, a drum fixed on each shaft, means for imparting motion through the toothed wheels, and a pinion meshing with the external teeth of the two spur gear-wheels.

7. The combination with an elevated support, drums thereon, means for revolving the drums in the same or in opposite direction, of endless chains carried by the drums, sheaves resting in the chains and carrying a cross-head, a sprocket-wheel carrying an endless chain and means for revolving said sprocket-wheel.

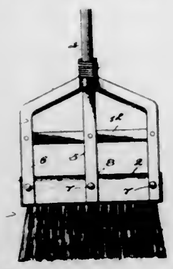
655,368. ELECTRICAL BATTERY. CHARLES E. O'KEENAN, Paris, France. Filed Dec. 30, 1897. Serial No. 664,516. (No model.)



Claim.—1. In a battery-cell, the combination with a tin casing S of a negative electrode contained therein, consisting of a spongy lead plate, two zinc plates constituting the positive electrodes and in contact with the inner face of the said casing, the insulating-blocks K L fitted into the ends of the said cell and grooved to allow the independent insertion and withdrawal of the said plates, while keeping them apart from each other, electric circuit connections to said plates and an excitant for the said plates within the said casing, substantially as set forth.

2. In combination with the tin casing S, the spongy lead plate M containing sulfate of lead and constituting a negative electrode, the zinc plates O P constituting positive electrodes and contained in the said cell, the insulating-blocks K L fitted into the ends of the said cell and grooved to allow the independent insertion and withdrawal of the said plates, while keeping them apart from each other, electric circuit connections to said plates and an excitant for the said plates within the said casing, substantially as set forth.

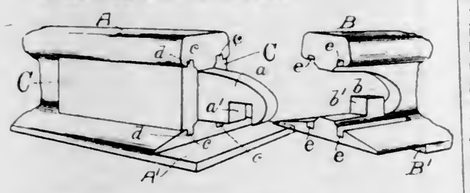
655,369. BROOM. WILLIAM C. PRICE, Blackfoot, Idaho. Filed Feb. 24, 1900. Serial No. 6,371. (No model.)



Claim.—1. A device of the class described comprising a clamp, a handle, a series of springs connecting the clamp and the handle and having their lower ends straddling the clamp, and a horizontal spring connecting the said springs, substantially as described.

2. A device of the class described comprising a clamp, a handle, central and side springs arranged in pairs and connecting the handle and the clamp, and a horizontal spring interposed between the central and side springs and connecting the same, substantially as described.

655,370. RAIL-JOINT. ALFRED RELAY, South Norwalk, Conn., assignor of one-third to William A. Gunther, same place. Filed Oct. 16, 1899. Serial No. 733,718. (No model.)



Claim.—1. In a rail-joint the combination with one rail-section having an extended platform and an extended projection with a recess therein, of a rail-section having a recess in its web, a recess in its base and an upwardly-extended lug in the recess in its web, substantially as shown and described.

2. In a rail-joint, the combination of the rail-section A, its recessed extension *a* and its platform A', with the rail-section B and its recesses *b'* and *b*, substantially as shown and described.

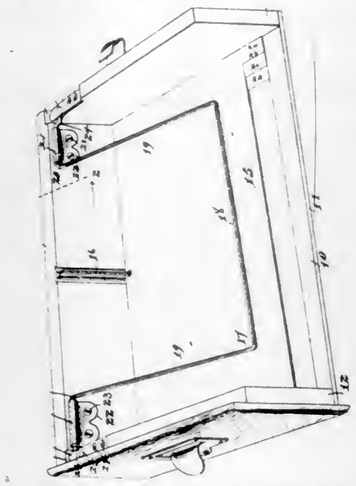
655,371. BELT-BUCKLE. LOUIS RITTER and JACOB RITTER, New York, N. Y. Filed June 22, 1900. Serial No. 21,153. (No model.)



Claim.—1. A belt-buckle, comprising two slide members, movable one on the other, one of said slide members being provided with a longitudinal series of teeth and the other with diametrically-opposite edge notches, a link having rearwardly-bent portions hung in said notches to form a hinge-joint, said bent portion being connected by a back bar provided with a heel projecting in the same direction as the engaging front loop of the link, and a spring engaging that side of said heel which is adjacent to the link-supporting member, substantially as set forth.

2. A belt-buckle, comprising two slide members, provided with longitudinal ribs, with narrow flanges at each side of the adjacent ends of the ribs and wider flanges at the opposite ends, one of said slide members having opposite notches in its wider flanges, and the other having a series of teeth on its rib, a link having rearwardly-bent portions hung in said notches to form a hinge-joint, said bent portions being connected by a back bar projecting in substantially the same direction as the engaging front loop of the link, and a semi-elliptic spring, the ends of which are seated in the groove at the back of the rib of the link-supporting slide member and the humped back of which bears on that side of said heel which is adjacent to the link-supporting slide member, substantially as set forth.

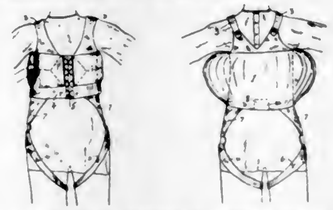
655,372. LETTER-FILE. IRVIN E. ROCKWELL, Chicago, Ill. Filed Nov. 29, 1897. Serial No. 660,078. (No model.)



Claim.—In a letter-file of the character described, the combination, of a drawer or tray having a single side wall and front and back end walls united therewith, each end wall having a portion adjacent to the side wall rabbeted or cut away at its top, leaf-springs secured in and overlying the rabbeted portions of the front and back walls, detachable sleeve-bearings secured on the inner surface of the side wall below the top thereof and having their sleeve-sockets arranged to extend at right angles to said springs, and a compressor-bail composed of a single rod or wire having pintle portions journaled in said sleeve-bearings, and cranked terminal portions each consisting of a returned crank-arm portion, which extends parallel with and close to the inner surface of the adjacent end wall, and an outturned end which extends parallel with said pintle portions and projects into the rabbet of the end wall beneath the leaf-spring therein, substantially as described.

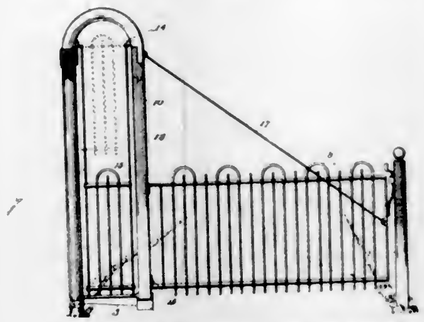
655,373. LIFE-PRESERVER. ERNEST K. RODEN, Scranton, Pa. Filed Nov. 28, 1899. Serial No. 738,529. (No model.)

Claim.—1. A life-preserver consisting of a suitable vestment constructed from light and pliable material adapted to encircle the body of the user and adjustable thereto, the said vestment being constituted from an inflatable bag, the walls thereof adapted to fold over by a continuous fold encircling the body in combination with loops extending to the upper and lower limbs for the purpose of securing the same to the body together with means for automatically inflating the said bag by immersion into water, substantially as and for the purpose specified.



2. In a life-preserver an inflatable bag adapted to encircle the body of the wearer, the walls thereof folding over in a continuous fold encircling the waist of the wearer, in combination with a metallic receptacle secured therein and having a curvature corresponding to that of the body and secured to the walls of the said inflatable bag by means of rivets and an outer plate, by means of which the fabric of the bag is clasped between the said outer plate and the receptacle within, the said receptacle adapted to hold a gas-producing compound and being provided with inlet and outlet valves admitting water and shutting it off automatically, and also providing a safety escape when the pressure becomes too great within, substantially as specified.

655,374. GATE. JAMES N. SALMON, Lathrop, Cal. Filed Mar 24, 1900. Serial No. 10,047. (No model.)



Claim.—1. In a gate, the combination, with a post, of a box-hinge at the lower end and an arch-hinge at the upper end, a gate, the rear end of which is secured to said hinges, and a small gate between said end and the post, substantially as described.

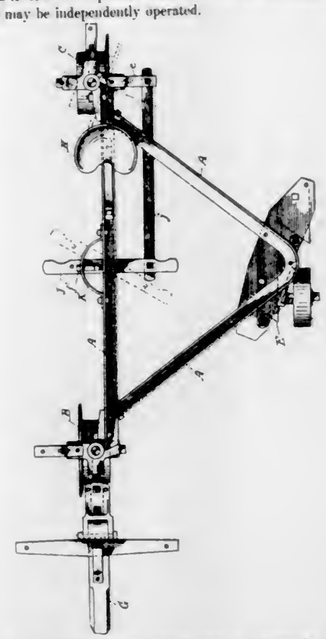
2. In a gate, the combination, with a post, the upper end of which is provided with a socketed casting and the lower end is provided with a track, of an arch-hinge and a box-hinge, the arch-hinge being provided with a pintle to fit in the socket and the box-hinge being provided at its inner end with a yoke to engage with said track, a gate, the rear end of which is secured to said hinges, and a vertically-sliding gate between said end and the post, substantially as described.

3. In a gate, the combination, with a post, of an arch-hinge provided with brackets and a box-hinge provided at its outer end with a box, of a gate, the rear end of which is rigidly secured at its upper end to the arch-hinge and has its lower end rigidly secured within the box of the box-hinge, two rods, the upper ends of which are secured to the arch-hinge and the lower ends are secured in the box-hinge, and a gate arranged to slide vertically upon said rods, substantially as described.

655,375. ORCHARD-PLOW. THOMAS SCANLON, Fresno County, Cal., assignor to James Porteous, same place. Filed Apr. 25, 1900. Serial No. 14,262. (No model.)

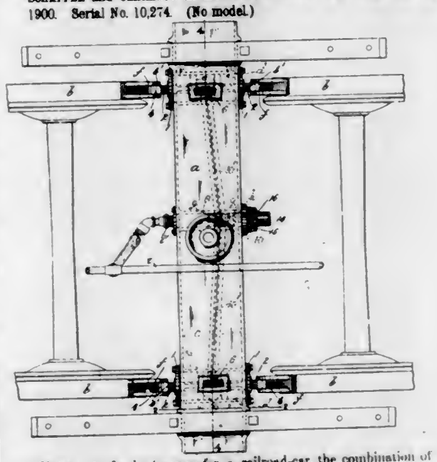
Claim.—1. The combination, in an orchard-plow, of a triangular frame, having its plow-bottoms, or other cultivator-teeth, at its apex, a swivel-wheel, at each extremity of the base of the frame, a connection between the tongue or pole and the forward swivel-wheel, whereby said wheel is under control of the team, a lever within reach of the driver, and a link connecting said lever with the pivotal stem of the rear swivel-wheel, whereby said wheel may be independently operated.

2. The combination, in an orchard-plow, of a triangular frame, having its plow-bottoms, or other cultivator-teeth, at its apex, a swivel-wheel, at each extremity of the base of the frame, a connection between the tongue or pole and the forward swivel-wheel, whereby said wheel is under control of the team, a cross-lever pivoted to the frame of the implement, in position to be operated by the feet of the driver, and a link connecting said lever with the pivotal stem of the rear swivel-wheel, whereby said wheel may be independently operated.



3. The combination, in an orchard-plow, of a triangular frame, having its plow-bottoms, or other cultivator-teeth, at its apex, a swivel-wheel, at each extremity of the base of the frame, a connection between the tongue or pole and the forward swivel-wheel, whereby said wheel is under control of the team, a cross-lever pivoted to the frame of the implement, in position to be operated by the feet of the driver, a rack with which said lever engages, and a link connecting said lever with the pivotal stem of the rear swivel-wheel, whereby said wheel may be independently operated.

655,376. BRAKE-GEAR FOR RAILROAD-CARS. MORSE B. SCHAFFER and CLARENCE H. HOWARD, St. Louis, Mo. Filed Mar. 26, 1900. Serial No. 10,274. (No model.)



Claim.—1. In brake-gear for a railroad-car, the combination of a cylinder containing two pistons and having its cylindrical wall integral

with the truck-bolster, a rod attached to each of the said pistons and passing through a fixed guide at a suitable distance from the piston, a brake-shoe coupled to the outer end of the said rod and adapted to bear against the car-wheel, a spring between the piston and the said guide, a suitable triple valve in communication with a train-pipe supplying compressed air and adapted to admit the air from the said pipe into a compressed-air reservoir, and from the reservoir into the said cylinder, and means for exhausting the compressed air from the cylinder into the atmosphere, the inclosing walls of the said valve and reservoir being integral with the truck-bolster, substantially as described.

2. In brake-gear for a railroad-car, the combination with the truck-bolster of a cylinder located on the bolster and containing two pistons, a rod attached to each piston and passing through a fixed guide at a suitable distance from the piston, a brake-shoe coupled to the outer end of the said rod and adapted to bear against the car-wheel, a spring between the piston and the said guide, a suitable triple valve in communication with a train-pipe supplying compressed air and adapted to admit the air therefrom into a compressed-air reservoir and from the reservoir into the cylinder, and means for exhausting the compressed air from the cylinder into the atmosphere, substantially as described.

3. In brake-gear for a railroad-car, the combination with the truck-bolster of a cylinder containing two pistons, a rod attached to each piston and passing through a fixed guide at a suitable distance from the piston, a brake-shoe coupled to the outer end of the said rod and adapted to bear against the car-wheel, a spring between the piston and the said guide, a passage from the cylinder into a cylindrical valve-chamber, formed in the bolster and containing a slide-valve and having openings communicating respectively with a train-pipe supplying compressed air and with a compressed-air reservoir, an outlet from the said passage into the atmosphere, and a valve adapted to open and close the said outlet, substantially as described.

4. In brake-gear for a railroad-car, the combination with the truck-bolster, of a cylinder containing two pistons, a rod attached to each piston and passing through a fixed guide at a suitable distance from the piston, a spring between the piston and the said guide, a brake-shoe coupled to the outer end of the said rod and adapted to bear against the car-wheel, a lever of the first kind, and a lever of the third kind, coupled respectively to the joint of the brake-shoe and rod of each piston, and fulcrumed to the car-truck, a beam arranged horizontally and transversely to the truck between the said levers, and bearing against the inner edge of the lever of the third kind, and having a yoke straddling and bearing against the outer edge of the free arm of the lever of the first kind, brackets supporting the said beam, and means for moving the beam horizontally in one direction for imparting a corresponding movement to the said levers about their fulcrums, substantially as described.

655,377. **POST FOR BOUNDARIES.** KONRAD SCHNEIDER, Hersfeld, Germany. Filed Dec. 29, 1899. Serial No. 741,945. (No model.)

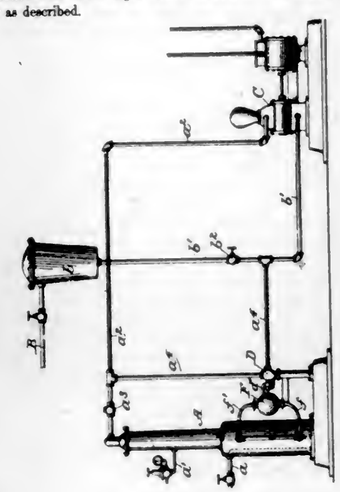


Claim.—In a device of the class set forth, the combination with a base-block having a central hemispherical recess in the same and having a central vertical bore therethrough, of a post having a rounded lower end adapted to fit said hemispherical recess, all substantially as and for the purpose set forth.

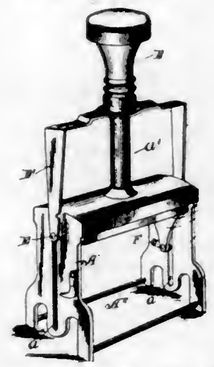
655,378. **APPARATUS FOR CHARGING LIQUIDS WITH GAS.** JOSEPH SCHENKEL, New York, N. Y. Filed Mar. 15, 1898. Serial No. 673,926. (No model.)

Claim.—1. In an apparatus for charging liquids with gas, the combination of a charger, a pump to deliver liquid to said charger, a by-pass from the connection between the pump and the charger to the intake of the pump, a valve to control said by-pass and a device operatively connected with the charger and directly with said valve to open and close said valve as the height of the liquid in the charger varies, substantially as shown and described.

2. In an apparatus for charging liquids with gas, the combination with a charger, a pump to deliver liquid to the charger, a by-pass from the connection between the pump and the charger to the intake of the pump and a valve to control said by-pass, of a weighted lever operatively connected by its axis with said valve, and a vessel on said lever having connection with the charger above and below its liquid-level, substantially as described.



655,379. **HAND-STAMP.** LOUIS K. SCOTFORD, Chicago, Ill., assignor to the Independent Manufacturing Company, same place. Filed Feb. 23, 1900. Serial No. 6,238. (No model.)



Claim.—1. In a hand-stamp, the combination with a frame and a bodily-movable, reversible die-plate which makes a half-rotation in its movement from its inking to its printing position, of means for rotating the die-plate, comprising a crank-arm pivoted to the stamp-frame and to the die-plate, said crank-arm being pivoted to the frame at a point midway between the extreme positions of the die-plate and being adapted to make a complete rotation in the movement of the die-plate from its inking to its printing position or vice versa.

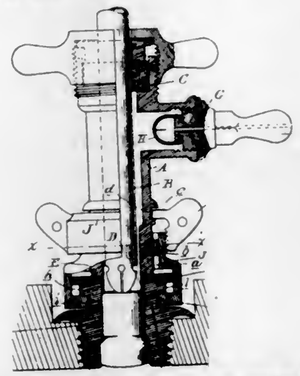
2. In a hand-stamp, the combination with a frame and a bodily-movable, reversible die-plate, of means for rotating the die-plate comprising a crank-arm which is pivotally connected with the frame and die-plate, and means supplementing the action of the said crank-arm in the turning of the die-plate.

3. In a hand-stamp, the combination with a frame, and a reversible die-plate provided with an arm, of a crank-arm which is pivotally connected with the frame and with said arm on the die-plate, and means acting on said die-plate to supplement the action of said crank-arm in turning the die-plate.

4. The combination with a frame and a reversible die-plate, of means for reversing said die-plate, comprising a crank-arm having pivotal connection with the frame and the die-plate, a stud connected with the frame and means on the die-plate adapted to engage said stud in such manner as to supplement the action of the crank-arm in turning the die-plate.

5. In a hand-stamp, the combination with a frame provided with vertically-slotted end plates, a forked handle the forks of which are located outside of said end plates, a pivot-rod attached to said forks on the handle and passing through the slots of said plates, a die-plate rotatively mounted on said pivot-rod, and provided at its ends with arms having bearing-apertures for the pivot-rod, a crank-arm pivotally connected with one arm of said die-plate and with one of the frame end plates, and a stud connected with the other frame end plate adapted for engagement with the other arm of the die-plate.

655,380. **TAP.** GEORGE STROH, Detroit, Mich. Filed June 23, 1898. Serial No. 684,227. (No model.)



Claim.—1. A bushing provided with interrupted coupling-flanges, stops formed at the ends of said flanges, a relief or depression formed in said flanges adjacent to the stops, a tap provided with an outer casing, and a two-part screw-connected coupling-sleeve on said casing one turning loosely on the casing and the other slidingly engaging therewith and provided with coupling-lugs adapted to couple with the bushing.

2. A bushing provided with interrupted screw coupling-flanges for coupling with the tap, stops formed at the ends of said flanges, depressions *k* formed adjacent to the stops, a tap provided with an outer casing and a two-part coupling-sleeve the parts of which have a screw-thread connection with each other, one turning loosely on the casing and having wings for turning by hand and the other slidingly engaging with the tap-casing and having coupling-lugs conformable to the depressions in the coupling-flanges of the bushing.

3. The combination with a bushing having a nipple adapted to form one member of a coupling and a tap having a casing adapted to form another member of said coupling, of interrupted cam-flanges on the nipple formed with depressions in the ends of said cam-flanges and a two-part coupling-sleeve one part of which has a sliding engagement on the casing and carries coupling-lugs adapted to be engaged with the depressions of the cam-flanges and the other part turning loosely on the casing and having a screw-threaded engagement with the aforesaid part whereby the same may be moved endwise to positively lock the coupling-lugs into the depressions of the cam-flanges to prevent uncoupling by twisting.

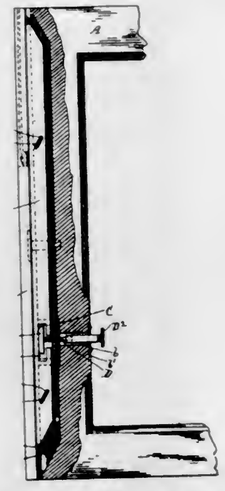
655,381. **BRAKE-SHOE.** JULIUS STROMEYER, Philadelphia, Pa. Filed Oct. 11, 1899. Serial No. 733,264. (No model.)



Claim.—A brake having in the rubbing-surface thereof downwardly-inclined pockets or receptacles, adapted to hold loose sand or other gritty substance and to distribute the same between the surface of the brake-shoe and the periphery of the wheel, whereby the efficiency of the brake is increased, as set forth.

655,382. **LOCK MECHANISM FOR REVERSIBLE WINDOWS.** WILLIAM H. TALBOT, San Francisco, Cal. Filed Mar. 26, 1900. Serial No. 10,196. (No model.)

Claim.—1. In a window of the described character, the combination with the sashes, of the slide blocks or shoes, vertical grooves or channels in the slide-shoes and the edges of the sashes in line with each other vertically, the vertically-slidable lock-plates fitted in said grooves or channels, of transversely-movable releasing-rods working through the sashes, and of a free or movable connection between the inner end of said releasing-rods and the lock-plates whereby the inward and outward movement of the releasing-rods serves to vertically move the lock-plates out of and into engagement with the slide-shoes.



2. In a window of the described character, the combination with the sashes, of the slide-shoes, vertical grooves or channels in the slide-shoes and edges of the sashes in line with each other, slidable lock-plates fitted in said grooves or channels, said lock-plates having inclined slots therein at their upper and lower end portions, pins extending into the channels or grooves of the sashes and upon which the lock-plates ride as moved inward and outward, a T-shaped slot in each lock-plate, a transversely-movable releasing-rod working through the sashes, said rod having an enlarged head fitted within the opening of the lock-plates.

3. In a window of the described character, the combination with the lock-plates, of the transversely-movable releasing-rods for actuating the same, said rods comprising, an enlarged head fitted within an opening in the lock-plates, a screw-threaded stem extending therefrom, and a knob or button having a shank screwed onto the screw-threaded stem, said releasing-rod working through transverse openings in the sides of the sashes.

4. In a window of the described character, the combination with the lock-plates fitted to move in vertical channels or grooves in the sashes, a stirrup or guide secured within said channels or grooves, a releasing-rod working through said stirrup or guide, the same comprising, an enlarged head fitted within an opening in the lock-plates, a stem extending from said head and a knob or button secured to the outer end of the stem, said releasing-rods working through transverse openings in the sides of the window-sashes.

655,383. **MACHINE FOR MANUFACTURING WELDLESS CHAINS.** JOHN W. WAILES and FELIX GROSS, Newcastle-upon-Tyne, England. Filed Dec. 4, 1899. Serial No. 739,129. (No model.)

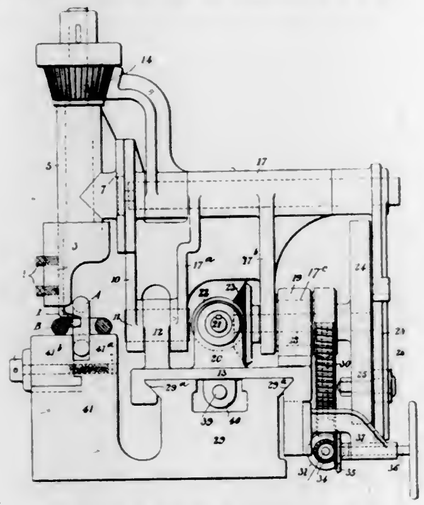
Claim.—1. A machine for removing the inside connecting portion between two adjoining links, comprising a cutting-tool, and means for causing a cutting movement of said tool relatively to the work about an axis approximately concentric with one link, and a feeding movement thereof approximately concentric with the other link.

2. A machine for removing the inside connecting portion between two adjoining links, comprising a cutting-tool, means for imparting a cutting movement to said tool about an axis approximately concentric with one link, and means for imparting a relative feed movement of the tool and work about an axis approximately concentric with the other link.

3. In a machine for removing the connection left between the insides of the ends of two adjoining links of a weldless-chain bar, a cutting-tool, means for imparting a cutting movement to said tool about an axis approximately concentric with the one link, and a feed movement approximately concentric with the other link, substantially as set forth.

4. In a machine for removing the connection left between the insides of the ends of two adjoining links of a weldless-chain bar, the combination of a spindle oscillating on an axis corresponding in center to

the form of the link ends to be operated on, with a milling cutter or tool carried by said spindle and operating with its outside and inside edges upon the connected surfaces of the links, substantially as set forth.

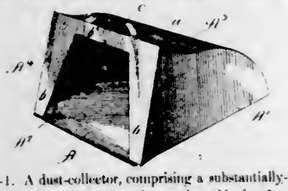


5. In a machine for removing the connection left between the insides of the ends of two adjoining links of a weldless-chain bar, a milling-cutter of annular form shaped to fit the internal space between the insides of the connected link ends and having inside and outside cutting edges, and a gap to receive the link end, substantially as set forth.

6. In a machine for removing the connection left between the insides of the ends of two adjoining links of a weldless-chain bar, the combination of a pivoted adjustable head, an oscillating spindle carried by said head, an annular cutter carried by said spindle, means for oscillating said spindle and means for feeding said cutter to its work, substantially as set forth.

7. In a machine for removing the connection left between the insides of the ends of two adjoining links of a weldless-chain bar, the combination of a pivoted head radiating from the center of the horizontal link to be operated on, an oscillating spindle carried by said head and an annular cutter carried by said spindle, with a rotary driving-shaft, a crank-disk, a slotted arm operated by said crank-disk, means for varying the angular position of the pivoted head, means for transmitting the rotary motion of said driving-shaft to said crank-disk, means for transmitting the oscillatory motion of said slotted arm to the said oscillating spindle, and means for feeding said cutter to its work, substantially as set forth.

655,384. DUST-COLLECTOR. LOBE WALDER, Chicago, Ill. Filed Feb. 4, 1899. Renewed Jan. 18, 1900. Serial No. 1,922. (No model.)

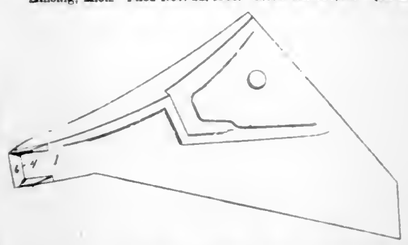


Claim.—1. A dust-collector, comprising a substantially-flat bottom, side pieces, a top and rear inclosing plate, strips widening from lower end to upper end flanking the front opening and affording inturned flanges at the front edges of the side pieces, and a handle at the top in front of the center of gravity, substantially as and for the purpose set forth.

2. A dust-collector, comprising a substantially-flat bottom, side, top and rear inclosing plates, and a front piece provided with a trapezoidal opening having upwardly-convergent sides or edges of equal slope, said front piece affording inturned flanges laterally of the opening and a depending flange above the opening, substantially as and for the purpose set forth.

3. A dust-collector, comprising a substantially-flat base-plate A, vertical side pieces A′ A^2 having front upper angles a, a curved rearwardly and downwardly sloping cover A^3 affording a top and rear end, a plane sloping front piece A^4 provided with a symmetrically-placed trapezoidal opening, and a handle c on the top and in front of the center of gravity, substantially as and for the purpose set forth.

655,385. WEAR-TIP FOR PLOW-POINTS. JEROME B. WILSON, Lansing, Mich. Filed Nov. 22, 1899. Serial No. 737,941. (No model.)



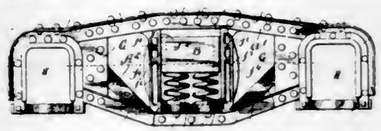
Claim.—1. A plow-point provided with a reinforcing-tip upon its under side extending below the bottom edge of the plow, said reinforcing-tip comprising a rectangular figure having opposed parallel sides and a transverse front portion, substantially as specified.

2. A plow-point provided with a reinforcing-tip cast thereon, extending below the bottom edge of the plow and comprising the opposed sides and front transverse portion, said transverse portion being beveled upon its upper face forming a continuation of the point, substantially as specified.

3. The herein-described tip, comprising the opposite sides and the front transverse portion, said sides being given a pitch, substantially as and for the purpose described.

4. The herein-described wear-tip for plows, the same consisting of the opposite sides having their inner surfaces beveled, the transverse connecting portion having its under side beveled to agree therewith, whereby transverse and opposite reduced running edges are provided, said transverse portion having its upper side beveled to agree with the upper side of the plow-point, substantially as specified.

655,386. CAR-TRUCK FRAME. EDWIN S. WOODS, Chicago, Ill. Filed Feb. 15, 1900. Serial No. 5,313. (No model.)



Claim.—1. A truck-frame comprising two parallel side frames, a transverse truck-bolster formed to detachably interlock with each of said side frames, and removable springs interposed between said bolster and said side frames and designed to hold said bolster interlocked with said side frames.

2. A truck-frame comprising two parallel side frames, a transverse truck-bolster, springs interposed between said frames and the ends of the truck-bolster and detachable interlocking connections between said truck-bolster and each of the side frames, said interlocking connections being located above the springs, whereby when the springs are removed the bolster may drop out of engagement from said connections.

3. A truck-frame comprising two parallel side frames, a transverse truck-bolster supported at its ends in said frames, springs interposed between said bolster and said frames, interlocking connections between said bolster and each of said frames which are located above the springs, said bolster when resting on the springs having a limited upward movement, whereby it may be raised to permit the springs to be removed from the frames.

4. A truck-frame comprising two parallel side frames, a transverse truck-bolster, which has detachable interlocking engagement at its ends with said side frames, acting to prevent lateral spreading of the side frames, springs interposed between the ends of said bolster and side frames, and tie-bars extending transversely between and connecting the lower sides of said side frames.

5. A truck-frame comprising two parallel side frames, a spring-box located in each of said frames provided with vertical walls, a transverse truck-bolster extending between said frames and supported between said vertical walls of the boxes, springs interposed between said bolsters and the lower parts of the spring-boxes, and holding-lugs on the vertical walls of the spring-boxes which terminate above the bottoms of the boxes, the ends of the bolster being provided with notches or grooves which are engaged by said lugs.

6. A car-truck frame comprising two side frames, an integral cast-metal spring-box located in each of said frames between the tension and compression members thereof and provided with flanges which overlap said members and are attached thereto, springs in said boxes, a bolster extending between said side frames and supported at its ends on said springs and holding-lugs on the side walls of said boxes above said springs designed for interlocking engagement with the adjacent sides of the truck-bolster.

7. A car-truck frame comprising two side frames, a spring-box located in each of said frames between and attached to the tension and compression members thereof, springs in said boxes, a bolster extending between said side frames and supported at its ends on said springs, holding-lugs on the side walls of said boxes designed for interlocking engagement with the adjacent sides of the truck-bolster, said truck-bolster having a limited vertical movement when it is supported on said springs, whereby it may be raised to permit the springs to be removed therefrom, and the holding-lugs being located above the bottom of said spring-box a distance greater than the width of said bolster.

8. A truck-frame comprising two parallel side frames, a transverse truck-bolster supported at its ends in said frames and adapted to have a limited upward movement beyond its normal position, and springs interposed between said bolster and said frames and designed to be removed by the raising of said bolster above its normal position.

9. A truck-frame comprising two parallel side frames, a transverse truck-bolster formed to interlock with said side frames, removable springs interposed between said side frames and bolster and designed to hold the bolster interlocked with said side frames, and a tie-bar extending between and rigidly connecting the lower sides of said side frames, the ends of said tie-bar being located below the springs and free to be detached from the side frames when the springs are removed.

10. A car-truck frame comprising two parallel side frames, and a bolster extending between and having detachable interlocking engagements therewith, springs interposed between said bolsters and the frames, a tie-bar extending between and rigidly connecting the lower sides of said side frames, said tie-bar being bent downwardly at its outer end to form toes which engage sockets in the side frames, and being located below said springs whereby they may be detached from the side frames when the springs are removed.

11. A truck-frame comprising two parallel side frames, provided at their opposite ends with pedestals, and each embracing a lower tension member provided with a horizontal flange, and an upper compression member, tie-bars extending between the pedestals and attached at their middle parts to the said tension members, said tie-bars being provided with horizontal flanges which at the central parts thereof are in the same planes as the flanges of the tension members, spring-boxes which are supported on the flanges of the tension members and tie-bars and attached at their lower parts to said flanges and at its upper parts to the compression members, springs in said boxes and a truck-bolster extending between and supported on said springs.

12. A truck-frame, comprising two parallel side frames each embracing a lower tension member and upper compression member, the latter having a horizontal flange, spring-boxes each comprising a bottom plate, two vertical side plates and a horizontal top plate supported centrally of the frames between the compression and tension members, the upper plates of said spring-boxes being attached to the vertical parts of said compression members and provided with flanges located in the same planes with, and directly opposite from, the flanges of the compression members, plates overlying and attached to the flanges of the compression members and flanges of the upper plates of the spring-boxes, springs in said boxes, and a truck-bolster supported upon said springs.

13. A truck-frame comprising two parallel side frames each embracing a lower tension member and an upper compression member, said tension and compression members being made of angle-bars the webs of which are vertical and the flanges horizontal, tie-bars extending between the pedestals and attached at the middle parts thereof to the webs of the tension members, horizontal flanges on said tie-bars which extend outwardly at the central parts thereof and in the same planes with the flange of the tension members, spring-boxes comprising each a bottom plate, two side plates and a top plate which rest on the horizontal flanges of said tension members, and tie-bars, the upper plates of which are attached to the webs of said compression members, flanges on the upper plates of said boxes which are horizontal and in the same planes with the flanges of the compression members, plates overlying and secured to the flanges of the compression members and spring-boxes, springs in said boxes and a truck-bolster extending between said side frames and supported on said springs.

14. A truck-frame comprising two parallel side frames and a transverse bolster extending between and supported in said frames, said side frames each embracing a compression member and a tension member, which are brought together at their outer ends in parallel relation to form parts of the pedestals, and tie-bars extending between said pedestals, said tie-bars being attached at their central parts to the central parts of the tension members and having their ends directed obliquely upwardly toward the pedestals.

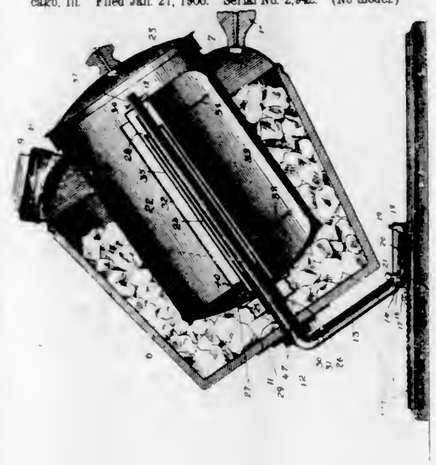
15. A car-truck frame comprising two parallel side frames, and a transverse bolster extending between and supported in said frame, said side frames each embracing an upper compression member and lower tension member which are arranged parallel at their outer ends and bent downwardly to form parts of the pedestals, the inner parts of said pedestals each embracing two continuous angle-bars of L shape in cross-section which are bent in an inverted-U form and arranged side by side and attached to the bent ends of said compression and tension members and a channel-bar of U form attached to the flanges of the pedestal member with the flanges overlapping the margins of said flanges of the L-shaped bars.

16. A truck-frame comprising two parallel side frames and a transverse bolster, the side frames each embracing a tension member which is horizontal at its middle part and extends obliquely upwardly toward the pedestals, spring-boxes supported on the tension members, and springs in said boxes upon which the bolster is supported, said boxes extending across the horizontal parts of the tension members and in contact with the oblique parts thereof.

17. A truck-frame comprising two parallel side frames and a transverse bolster, the side frames each embracing a tension member which is horizontal at its middle part and extends obliquely upwardly toward the pedestals, spring-boxes supported on the tension members, and springs in said boxes upon which the bolster is supported, said boxes extending across the horizontal parts of the tension members and in contact with the oblique parts thereof, and the bolster being detachably interlocked with the spring-boxes by means permitting detachment of the bolster from the side frames.

18. A truck-frame comprising two parallel side frames, and a transverse bolster, said side frames each embracing a tension member which is horizontal at its middle part and extends obliquely upwardly toward the pedestals, and supports in the frames for the bolster which extend across the horizontal parts of the tension members and in contact with the oblique parts thereof.

655,387. ICE-CREAM FREEZER. JOHN A. E. ANDERSON, Chicago, Ill. Filed Jan. 27, 1900. Serial No. 2,942. (No model.)



Claim.—1. The ice-cream freezer, having its reservoir and its cream-chamber rotatably mounted upon a pivotal axial support projecting upward into the reservoir and chamber, and also having a tubular bearing for said support covering that portion thereof passing through the brine, and a sleeve fitting over and soldered to said bearing and extending from below the cream-chamber up into the same, substantially as specified.

2. The ice-cream freezer, having its reservoir and its cream-chamber rotatably mounted upon a pivotal axial support projecting upward into the reservoir and chamber, and also having the tubular bearing 11

and sleeve 24 soldered together, and both surrounding said support, substantially as specified.

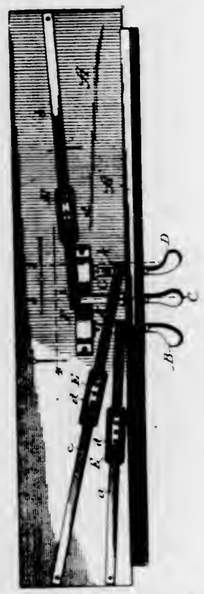
3. The ice-cream freezer having its ice-reservoir and cream-chamber rotatably mounted upon a pivotal axial support projecting upwardly through the bottom of both the reservoir and chamber, and also having in combination with said support a tubular bearing surrounding the lower end of said support and preventing access by the brine to that portion thereof below the cream-chamber, and a sleeve fitting over and soldered to said tubular bearing, and extending from below the cream-chamber upward into the same, whereby the brine is effectually excluded from between said bearing and said sleeve, substantially as specified.

4. The combination with the freezer, movably supported by a rock-shaft having its end 18 bent at right angles, a sliding catch for engaging said end 18, and a base to which both the rock-shaft and catch are secured, substantially as specified.

5. The combination with the freezer, movably supported by a rock-shaft having its end 18 bent at right angles, a sliding catch for engaging said end 18, and consisting of a looped wire 19, and retainer 20, the wire having limbs at each side of said end 18 and a projecting end 21 for operating it, and a base to which both the rock-shaft and retainer are attached, substantially as specified.

6. The combination with the rotatable ice-reservoir and cream-chamber, of supports therefor consisting of a pivot 12, standard 13, rock-shaft 14 and locking end 18 all in one piece of metal, the tubular bearing within the freezer for the part 12, the sliding catch, the base, the strap 15 and retainer 20, substantially as specified.

655,388. **PIANO-PEDAL.** WILLIAM M. BAUER, Chicago, Ill. Filed Apr. 21, 1900. Serial No. 13,682. (No model.)

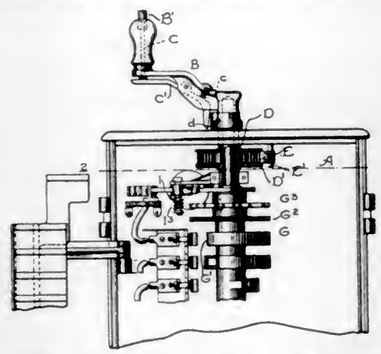


Claim.—1. In a piano, the combination of a pedal-lever supporting-block, a pedal-lever, a pedal-raising spring connecting the pedal-lever and said supporting-block, a pedal-support, a pedal, a connection between the pedal and said lever, and a torsional strain-resisting flexible-metal-plate connection separate from the pedal-raising spring between the pedal and pedal-support, whereby said plate connection operates as a torsional strain-resisting fulcrum for the pedal, and the pedal is raised by the pedal-raising spring.

2. The combination with the pedal and pedal-support, of a plate of flexible metal having an opening through it fastened at opposite sides of its opening to said support and pedal respectively, and a strip of flexible metal extending at an angle to said plate through the opening therein and fastened on opposite sides of said plate to the said support and pedal respectively, said plate and strip operating as the fulcrum of the pedal.

3. In a piano, the combination of a pedal-lever support *e* having a tenon *e'*, a pedal-lever having a mortise *d* into which the tenon extends, a spring E fastened to the lever and tenon and forming the sole connection between the said lever and support, a pedal-support, a pedal connected with the pedal-lever, and a flexible-metal-plate connection between the pedal and pedal-support.

655,389. **SAFETY DEVICE FOR ELECTRIC VEHICLES.** FRANK E. CASE, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed May 20, 1899. Serial No. 717,539. (No model.)



Claim.—1. In combination, a controller for electric circuits, an operating-handle therefor, a circuit-opening device, and means operating independently of the controller, upon the release of said handle, for opening the said circuit-opening device.

2. The combination with a controller for electric circuits, of a circuit-opening device, means actuated by the controller for closing the circuit at the circuit-opening device, and means operating independently of the controller and brought into action by releasing the controller-handle, for opening the circuit.

3. The combination, with a controller for electric circuits, of a circuit-opening device, means for closing the circuit-opening device actuated by the first movement of the controller from its off position, and means, operating independently of the controller and brought into action by the release of the controller-handle, for opening the circuit-opening device.

4. The combination, with a controller for electric circuits, of a circuit-opening device, means for setting it actuated by the first movement of the controller from its off position, means for opening the circuit-opening device brought into action by the release of the controller-handle, and means for opening the same device operated by excess of current in the controller-circuit.

5. The combination, with a controller for electric circuits, of a circuit-breaker in series with the controller, means independent of the controller for opening the circuit at desired times, and a connection between the controller and the circuit-breaker, such that the first movement of the controller after reaching its off position resets the circuit-breaker.

6. The combination with a controller for electric circuits, of a circuit-breaker in series with the controller, means independent of the controller for opening the circuit-breaker at desired times, and a cam actuated by the controller-shaft for resetting the circuit-breaker when the controller starts from its off position.

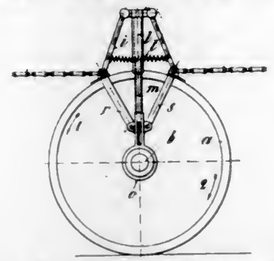
7. The combination with a controller for electric circuits, of a spring-actuated cam upon the controller, a circuit-breaker in series with the controller, means actuated by the handle of the controller for revolving the cam and setting the circuit-breaker, and means, brought into action by the release of the controller-handle, for releasing the cam and permitting the spring to open the circuit-breaker.

8. The combination with a controller, of a sleeve upon the controller-shaft, a connection from the controller-handle to the sleeve such that when the connection is brought into play the sleeve revolves with the controller, a cam actuated by the sleeve, and a circuit-breaker operated by the cam; the arrangement being such that when the connection between the sleeve and the controller-handle is released, the cam revolves and opens the circuit-breaker, and when the sleeve is engaged by the handle, the cam when revolved sets the circuit-breaker only after the controller has been returned to its off position.

9. The combination with a controller, of a spring-actuated sleeve upon the controller-shaft, means for connecting said sleeve to said shaft, and a circuit-breaker operatively connected to said sleeve.

10. In a device for regulating the application of power, a controller, a controller-handle therefor, a circuit-breaker, and means controlled from the handle for operating said circuit-breaker independent of the position of the handle.

655,390. **BRAKE FOR VEHICLES.** MARIE E. P. CHABOCHE, Paris, France. Filed Mar. 15, 1900. Serial No. 8,822. (No model.)



Claim.—1. The combination of a brake-drum, a continuous brake-band freely encircling the same and having its ends secured with limited play and means for tightening said band around said drum whereby the rotation of the latter in either direction takes up the slack of the former and applies the brake-power, substantially as described.

2. The combination of a brake-drum, a continuous brake-band freely encircling the same and having its ends secured with limited play, and a toggle for tightening said band around said drum whereby the rotation of the latter in either direction takes up the slack of the former and applies the brake-power, substantially as described.

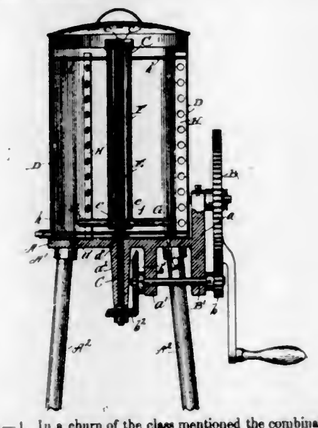
3. The combination of a brake-drum, a brake-band encircling the same and having its ends secured with limited play, a toggle whose free ends are secured to the opposite ends of said band and to limiting-chains, and means for spreading said toggle to tighten said band, substantially as described.

4. The combination of a brake-drum, a brake-band encircling the same, a toggle having its ends secured to the opposite ends of said band and having a limited angular movement relative to said drum, and means for spreading said toggle to tighten said band around said drum, substantially as described.

5. The combination of a brake-drum, a brake-band encircling the same, a toggle having its ends secured to the opposite ends of said band and having a limited angular movement relative to said drum, means for spreading said toggle to tighten said band around said drum, and an automatic device for reclosing said toggle, substantially as described.

6. The combination of a brake-drum, a brake-band encircling the same and having its ends secured with limited play, and means for tightening said band around said drum, the same consisting of toggle members pivoted respectively to the opposite ends of said band and having their inner ends carried on a head adapted to be telescoped radially of said drum, substantially as described.

655,391. **CHURN.** THOMAS J. CHENEY, Chicago, Ill., assignor of one-half to William R. Tucker, same place. Filed May 8, 1899. Serial No. 715,910. (No model.)



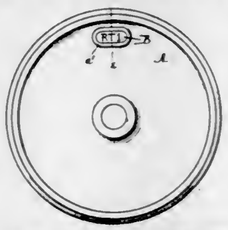
Claim.—1. In a churn of the class mentioned the combination with a receptacle for containing the liquid provided with a central perforation in the bottom, of a stationary tube secured with one end over the perforation by a liquid-tight connection with the bottom and extended up in the receptacle above the space for containing the liquid, the operating-shaft extended through the bore and projecting above the open end of the stationary tube and provided with means for supporting it vertically therein, a rotatable tube mounted on the stationary tube and connected with the projecting upper end of the operating-shaft so as to rotate therewith, an agitator mounted on the revoluble tube, and operating mechanisms connected with the operating-shaft below the bottom of the receptacle as specified.

2. In a churn of the class mentioned the combination with a receptacle for containing the liquid provided with a central perforation in the bottom of a stationary tube secured with one end over the perforation by a liquid-tight connection with the bottom and extended up in the receptacle above the space for containing the liquid, the operating-shaft extended through the base and projecting above the open end of the stationary tube and provided with means for supporting it vertically therein, a tube rotatably mounted on the stationary tube with intervening air-space and rigidly connected with the projecting upper end of the operating-shafts so as to rotate therewith, a series of open-ended flaring tubes radially mounted upon the rotatable tube near the bottom in a plane perpendicular to the axis of rotation, the small ends of said flaring tubes being connected so as to communicate with the bore of the rotatable tube and the larger ends being flattened so as to straighten the upper and lower sides of said flaring tubes and form an acute ovate opening and exterior therefor, and mechanism for operating said rotatable tube as specified.

655,392. **ALLOY.** GUILLIAM H. CLAMER and JOSEPH G. HENDRICKSON, Philadelphia, Pa., assignors to the Ajax Metal Company, same place. Filed Mar. 13, 1900. Serial No. 8,493. (No specimens.)

Claim.—A composition for admixture to copper castings which consists of an alloy of lead, tin and nickel, substantially as described.

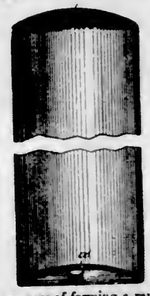
655,393. **MEANS FOR IDENTIFYING METAL CASTINGS.** RICHARD E. COLEMAN, Buffalo, N. Y., assignor of one-half to Herbert H. Hewitt, same place. Filed Feb. 1, 1900. Serial No. 3,589. (No model.)



Claim.—1. An identifying device for metal castings, comprising an inscription-plate of soft metal suitably secured within a recess cast in the body of the metal and adapted to be inscribed with suitable identifying-markings.

2. An identifying device for metal castings, comprising an inscription-plate of soft, non-corrosive metal suitably secured within a shallow recess cast in the body of the metal and adapted to be inscribed with suitable identifying-markings.

655,394. **RANGE-BOILER AND METHOD OF MAKING SAME.** CHESTER COMSTOCK, New York, N. Y. Filed Aug. 26, 1898. Serial No. 689,541. (No model.)



Claim.—1. The process of forming a range boiler or tank of an integral structure throughout and comprising a body having a pair of upset heads integral therewith, both formed after the formation of, and from the

material of, said body, whereby each is integral therewith, by subjecting the uncontracted ends of a shell, either separately or simultaneously, to an endwise-upsetting operation, thereby to decrease the diameter of said shell at its end portions without increasing or decreasing the diameter of the major part of said shell; and then subjecting the partially-formed head or heads to a further endwise-upsetting operation to form the integral upset head or heads without varying the shape of the major part of said body.

2. A range boiler or tank of an integral structure throughout, and comprising a body having a pair of upset heads integral therewith, both formed after the formation of, and from the material of, said body, whereby each is integral therewith.

3. The process of forming a range boiler or tank of an integral structure throughout and comprising a body having a pair of upset heads, both formed after the formation of, and from the metal of, said body, whereby each is integral therewith, and each having greater thickness adjacent to its central region than at its point of unition with the body, and each formed by subjecting the uncontracted end of a shell to an endwise-upsetting operation, thereby to decrease the diameter of said shell at its end portion without increasing or decreasing the diameter of the major part of said shell; and then subjecting the partially-formed head to a further endwise-upsetting operation to form an integral upset head without varying the shape of said body intermediate its ends.

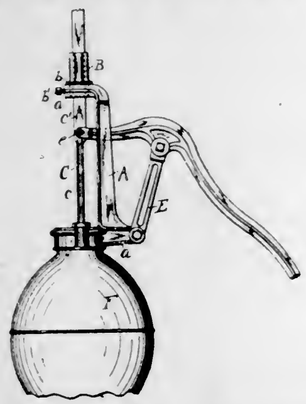
4. A range boiler or tank of an integral structure throughout and comprising a body having a pair of convex heads integral therewith, and both formed after the formation of, and from the metal of, said body, the convex face of one head projecting toward the interior of the body, and the convex face of the other head projecting toward the exterior of said body.

5. A range boiler or tank of an integral structure throughout and comprising a body having a pair of upset convex heads integral therewith, and both formed after the formation of, and from the metal of, said body, the convex face of one head projecting interiorly of the body, and the convex face of the other head projecting toward the exterior of said body, and each of said heads of increasing thickness from its point of unition with the body to its central region.

6. A range boiler or tank of an integral structure throughout, and comprising a body having a pair of upset heads, both formed after the formation of, and from the metal of said body, whereby each is integral therewith and each having greater thickness adjacent to its central region than at its point of unition with the body.

7. A tank or boiler comprising a body provided with an integral, upset, convex head, having its convex face projecting toward the interior of the boiler, and formed after the formation of and from the material of said body by first convexing the head by a step-by-step upsetting operation to project it toward the exterior and then upsetting it to have its convex face project toward the interior.

655,395. BUSHING FOR PUMP-RODS. GEORGE H. CUSHING, Seneca Falls, N. Y., assignor to the Goulds Manufacturing Company, same place. Filed Mar. 19, 1900. Serial No. 9,149. (No model.)



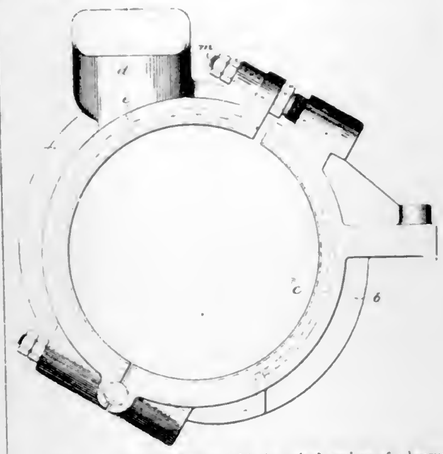
Claim.—1. The combination of the bracket and the pump-rod having round and square or flattened portions, with a bushing secured in the horizontal upper end of the bracket having a vertical square or flattened hole in its upper end and a vertical round hole in its lower end, as and for the purpose described.

2. The combination of the bracket on the upper part of a pump to support the pump-rod, the upper end of the bracket having a horizontal extension adapted to hold a bushing, a bushing secured in the extension and extending above the same, said bushing having a square or flattened hole in its upper end and a round hole in its lower end, and the pump-rod passing through the bushing having a square or flattened upper portion and a round lower portion, as and for the purpose described.

3. The combination of the bracket on the upper part of a pump, the upper end of the bracket having a horizontal extension adapted to hold a bushing, a bushing secured in the extension and extending above the same, said bushing, having a square or flattened hole in its upper end and a round hole in its lower end of a diameter equal to or greater than the width of the square or flattened hole, and a pump-rod having round and square or flattened portions to slide in the bushing, as set forth.

4. The combination of the bracket on the upper part of a pump, the upper end of the bracket having a horizontal extension adapted to hold a bushing, a bushing secured in the extension and extending above the same, said bushing, having a square or flattened hole in its upper end and a round hole in its lower end of a diameter equal to or greater than the width of the square or flattened hole, and a pump-rod passing through the bushing, formed of a round rod and a square or flattened rod in line with each other and joined together by a threaded coupling, substantially as shown and described.

655,396. BEARING. HERMAN FERNSTROM, Springfield, Ill., assignor to A. L. Ide & Sons, same place. Filed Mar. 31, 1900. Serial No. 10,942. (No model.)



Claim.—1. The combination with the united sections of a bearing, of a separating-screw interposed between ends of said sections and being adapted for access and engagement between the said ends, whereby it may be rotated to effect its required adjustment, and clamping means for securing the ends of the bearing-sections in fixed engagement with the said screw, substantially as described.

2. The combination with the united sections of a bearing, of a separating-screw interposed between ends of said sections and being adapted for access and engagement between the said ends, whereby it may be rotated to effect its required adjustment, said screw having threaded engagement with one of said sections only, and clamping means for securing the ends of the bearing-sections in fixed engagement with the said screw, substantially as described.

3. The combination with the united sections of a bearing, of a separating-screw interposed between ends of said sections and being adapted for access and engagement between the said ends, whereby it may be rotated to effect its required adjustment, and a bolt for clamping the sections into engagement with the said screw, substantially as described.

4. The combination with the united sections of a bearing, of a separating-screw interposed between ends of said sections and being adapted for access and engagement between the said ends, whereby it may be rotated to effect its required adjustment, said screw having threaded engagement with one of said sections only, and a bolt for clamping the sections into engagement with the said screw, substantially as described.

5. The combination with the united sections of a bearing, of a separating-screw interposed between ends of said sections and being adapted for access and engagement between the said ends, whereby it may be rotated to effect its required adjustment, said screw being provided with a bore and a bolt passing through the bore in said screw and directly engaging the ends of the sections between which the separating-screw is interposed, substantially as described.

6. The combination with the united sections of a bearing, of a separating-screw interposed between ends of said sections and being adapted for access and engagement between the said ends, whereby it may be rotated to effect its required adjustment, said screw having threaded engagement with one of said sections only, and being provided with a bore and a bolt passing through the bore in said screw and directly engaging the ends of the sections between which the separating-screw is interposed, substantially as described.

7. The combination with the united sections of a bearing, of a separating-screw interposed between ends of said sections, said separating-screw being provided with a nut *i* located between the said sections, whereby the screw may be rotated to effect its adjustment, and clamping means for securing the ends of the bearing-sections in fixed engagement with the said screw, substantially as described.

8. The combination with the united sections of a bearing, of a separating-screw interposed between ends of said sections, said separating-screw being provided with a nut *i* located between the said sections, whereby the screw may be rotated to effect its adjustment, the said screw having threaded engagement with one of the sections and being carried with its nut solely by said section, and clamping means for securing the ends of the bearing-sections in fixed engagement with the said screw, substantially as described.

9. The combination with the united sections of a bearing, of a separating-screw interposed between ends of said sections, said separating-screw being provided with a nut *i* located between the said sections, whereby the screw may be rotated to effect its adjustment, said screw and nut having a bore passing through the same, and a clamping-bolt passing through said bore and having direct engagement with the bearing-sections, substantially as described.

10. The combination with the united sections of a bearing, of a separating-screw interposed between ends of said sections, said separating-screw being provided with a nut *i* located between the said sections, whereby the screw may be rotated to effect its adjustment, said screw and nut having a bore passing through the same, and said screw having threaded engagement with one of the sections and being carried with its nut solely by said section, and a clamping-bolt passing through said bore and having direct engagement with the bearing-sections, substantially as described.

11. The combination with the hinged sections of a bearing of a separating-screw interposed between ends of said sections and being adapted for access and engagement between the said ends, whereby it may be rotated to effect its required adjustment, and clamping means for securing the ends of the bearing-sections in fixed engagement with the said screw, substantially as described.

12. The combination with the hinged sections of a bearing, of a separating-screw interposed between ends of said sections, said separating-screw being provided with a nut *i* located between the said sections, whereby the screw may be rotated to effect its adjustment, and clamping means for securing the ends of the bearing-sections in fixed engagement with the said screw, substantially as described.

13. The combination with the hinged sections of a bearing, of a separating-screw interposed between ends of said sections, said separating-screw being provided with a nut *i* located between the said sections, whereby the screw may be rotated to effect its adjustment, said screw and nut having a bore passing through the same, and said screw having threaded engagement with one of the sections and being carried with its nut solely by said section, and a clamping-bolt passing through said bore and having direct engagement with the bearing-sections, substantially as described.

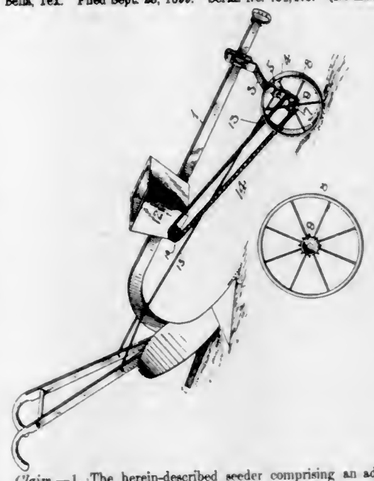
14. In a bearing, the combination with the sections thereof, of a pin extending longitudinally thereof for preventing radial displacement of the said sections, and transversely-acting clamping means to prevent transverse displacement of the bearing-sections, substantially as described.

15. In a bearing, the combination with the sections thereof, of a cylindrical pin extending longitudinally thereof for preventing radial displacement of the said sections, said pin engaging corresponding recesses at the hinged ends of the sections, the pin being provided with a transverse passage, and a clamping-bolt, engaging the hinged ends of the sections, passing through said transverse opening and serving to prevent transverse displacement of the hinged ends of the bearing-sections, substantially as described.

16. In a bearing, the combination with the hinged sections thereof, of a journal serving to prevent radial displacement of the said sections, and transversely-acting clamping means to prevent transverse displacement of the bearing-sections, substantially as described.

17. In a bearing, the combination with the hinged sections thereof, of means for preventing radial displacement of the said sections, and transversely-acting clamping means to prevent transverse displacement of the bearing-sections, substantially as described.

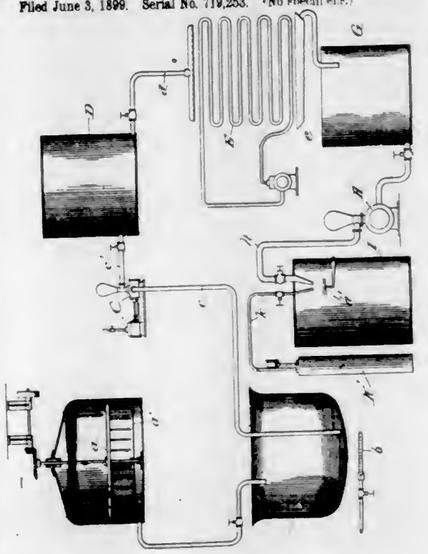
655,397. SEEDER. JOHN T. FITZGERALD and JOHN S. RAMSEY, Bella, Tex. Filed Sept. 23, 1899. Serial No. 731,475. (No model.)



Claim.—1. The herein-described seeder comprising an adjustable wheel-carrying bracket, and a sprocket carried by said wheel, in combination with a hopper having a longitudinal slot in its bottom, one edge of said slot being serrated, whereby the teeth 16 will be provided; a movable plate having the slots 20 and 23 secured to the bottom of said hopper and provided with the extension 19; an extension 22 formed upon the bottom of the hopper and provided with a set-screw 21 adapted to extend through the slot 20 whereby the plate 18 may be adjustably secured in any desired position all substantially as specified and for the purpose set forth.

2. In seeders, the herein-described hopper having a slot in its bottom one edge of said slot being serrated or provided with a series of points, the bottom of the hopper being provided with the central rear extension 22, in combination with an adjustable plate having the slots 20 and 23 and a central extension 19 designed to coöperate with the extension 22; bolts 17 coöperating with the slots 23 and a set-screw 21 coöperating with the slot 20, whereby the plate 18 may be readily secured in an adjusted position and the slot increased or diminished in extent substantially as specified and for the purpose set forth.

655,398. CARBONATED BEVERAGE. ERNST FUNK, Chicago, Ill. Filed June 3, 1899. Serial No. 719,253. (No specimens.)

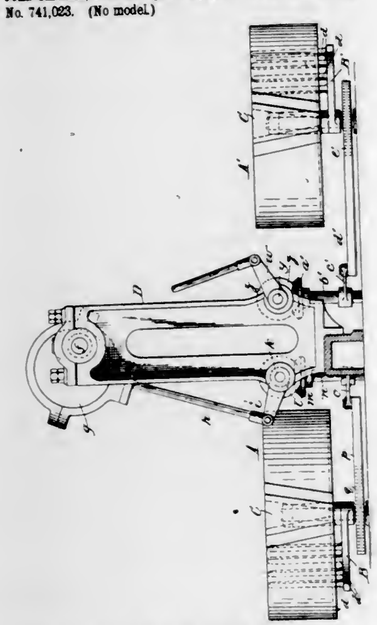


Claim.—1. The process of making a carbonated beverage similar to weiss-beer without the presence of alcohol, which consists in first mashing malt with water in a mashing-tub, then drawing off the malt mixture into a boiling-kettle and boiling the same therein with hops for at least an hour, then withdrawing the malt and hop liquid from the kettle into a stand-tank and cooling the liquid therein from 8° to 12° Réaumur, then discharging the cooled liquid over a refrigerating-coil into a storage-tank, then retaining the liquid in such tank under a temperature of 50° Fahrenheit and then withdrawing and charging with carbonic-acid gas, substantially as described.

2. The process of making a carbonated beverage similar to weiss-beer without the presence of alcohol, which consists first in mashing malt with water in a mashing-tub, then drawing off the malt mixture into a boiling-kettle and boiling the same therein with hops for at least an hour, then withdrawing the malt and hop liquid from the kettle into a stand-tank and cooling the liquid therein from 8° to 12° Réaumur, then discharging the cooled liquid over a refrigerating-coil into a storage-tank, then retaining the liquid in such tank under a temperature of 50° Fahrenheit, and then withdrawing the liquid from the storage-tank and charging it with carbonic-acid gas with the addition of sugar while it is being charged, substantially as described.

655,399. INSETTING ATTACHMENT FOR PRINTING-PRESSES.

JOHN GASKELL, Port Sunlight, England. Filed Dec. 20, 1899. Serial No. 741,023. (No model.)



Claim.—1. An insetting attachment for printing-presses, consisting of a hopper having a fixed transverse receptacle constructed to receive a folded sheet of paper and allow it to open and receive an insert leaf; in combination with a flier for removing the paper from said receptacle and from the hopper.

2. An insetting attachment for printing-presses, consisting of a hopper having a fixed transverse paper-receptacle provided with inclined walls to receive a folded sheet of paper and allow it to open and receive an inset leaf; in combination with a flier for removing the paper from said receptacle and from the hopper.

3. An insetting attachment for printing-presses, consisting of a hopper having a fixed transverse paper-receptacle to receive a folded sheet of paper and allow it to open and receive an inset leaf, and a slotted bottom; in combination with a flier having fingers projecting through the slots in the bottom for removing the paper from said receptacle and from the hopper.

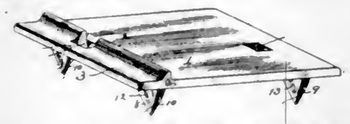
4. An insetting attachment for printing-presses, consisting of a hopper approximately semicircular in form and having concentric slots in its bottom, and a paper-receptacle crossing the hopper; in combination with a flier having fingers projecting through said slots, and means for imparting vibratory motion to the flier for removing the paper.

5. An insetting attachment for printing-presses, consisting of a hopper having a transverse paper-receptacle; in combination with a flier, a rack and pinion for operating the flier, and means for reciprocating the rack to impart vibratory motion to the flier.

6. An insetting attachment for printing-presses, consisting of a hopper, a paper-receptacle; and a flier; in combination with a rack and pinion, and suitable gearing and connections for lessening the speed of the flier one-half of that of its main driving-shaft, to permit the flier to travel through an arc of one hundred and eighty degrees and thereby effect a delivery on both its forward and return movement.

655,400. TIE-PLATE.

WILLIAM GOLDIE, Wilkinsburg, Pa. Filed Dec. 9, 1899. Serial No. 739,803. (No model.)



Claim.—1. A tie-plate having a body portion provided with a confining-rib on its upper face some distance in from the outer edge of the body portion, and long, comparatively-thin, sharpened prongs projecting downwardly from the plate-body directly under and extending parallel with the rib, substantially as set forth.

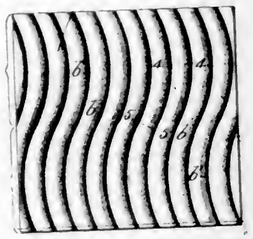
2. A tie-plate having a body portion provided with a confining rib or shoulder on its upper face some distance in from the outer edge of the plate, and a spike-hole formed in line with said rib, and long, comparatively-thin, sharpened prongs extending downwardly from the plate directly under and extending parallel with the rib.

3. A tie-plate having a body portion and having located some distance in from the outer edge of the plate long, comparatively-thin, sharpened, downwardly-projecting prongs, extending parallel with the rail, and having spike-holes passing through the plate on the same longitudinal plane as said prongs.

4. A tie-plate having a body portion provided with long, sharpened, downwardly-projecting prongs connected to the body of the plate by fillets.

655,401. PRISMATIC ROLLED SHEET-GLASS.

CHARLES C. HARTUNG, St. Louis, Mo., assignor to Edward Walsh, Jr., same place. Filed Sept. 25, 1899. Serial No. 731,607. (No model.)



Claim.—1. As a new article of manufacture, a sheet of glass formed with shoulders and inclined faces arranged in serpentine form and eccentric with respect to each other, the degrees of inclination of said faces varying from a point where said shoulders are most widely separated, to a point where said shoulders most nearly approach each other; substantially as described.

2. As a new article of manufacture, a sheet of glass provided with serpentine ribs on its faces, which are eccentric with respect to each other, at least one of the faces of said ribs being inclined, the height of said ribs varying from a point where the ribs most widely separated to a point where they most nearly approach each other; substantially as described.

655,402. ALLOY FOR ANTIFRICTION-BEARINGS, &c.

JOSEPH G. HENDRICKSON and GUILLIAM H. CLAMER, Philadelphia, Pa., assignors to the Ajax Metal Company, same place. Filed Mar. 7, 1900. Serial No. 7,714. (No specimens.)

Claim.—A bearing consisting of less than seven per cent. of tin and more than twenty per cent. of lead and the balance of copper, substantially as described.

655,403. BELT-FASTENER.

JONATHAN HILL, Jersey City, N. J. Filed Apr. 20, 1900. Serial No. 13,589. (No model.)

Claim.—1. In a belt-fastener, the combination with a curved connecting-bar terminating at each end in reversely-bent hooks, of washers adapted to engage said hooked ends, said washers consisting of plates having slots through which the bar passes and peripheral open notches engaged by the end of the hooks to effect a lock after the belt is in position on the pulley.

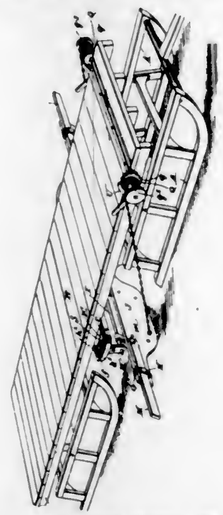


2. In a belt-fastener, the combination with a bar having hooked ends, of washers having a slot through which the bar passes and a peripheral notch engaged by a hooked end to effect a lock after the belt is in position on the pulley.

3. In a belt-fastener, the combination with a curved connecting-bar having bent ends, of flat washers having a slot through which the bar passes, and a peripheral notch parallel to the slot, to receive the hooked end of the bar, in order to effect a secure lock between the bar and the washer when the parts are in operative position upon a belt, as set forth.

655,404. ROAD BREAKING AND GOUGING MACHINE.

MATTHEW H. JOHNSON, Concord, N. H., assignor to Alpheus M. Johnson and Henry H. Johnson, same place. Filed Feb. 28, 1900. Serial No. 6,803. (No model.)



Claim.—1. In a road-breaking machine, a pair of wings or scrapers located normally in transverse alinement and pivotally connected to the machine at or near their adjacent ends, means for adjusting said wings at an angle forward or backward, and means for elevating the lower edge of said wings comprising rotary drums, ratchets and pawls for controlling the same, and a chain or cable connecting said wings and drums.

2. In a road-breaking machine, a pair of wings or scrapers having the lower corners of their adjacent ends cut away and located normally in transverse alinement and pivotally connected to the machine at or near their adjacent ends, means for adjusting said wings at an angle forward or backward comprising movable hangers, and means for elevating the lower edge of said wings comprising rotary drums, ratchets and pawls for controlling the same, and a chain or cable connecting said wings and drums.

3. In a road-breaking machine, a pair of wings or scrapers disposed transversely and in normal alinement, said wings being pivotally attached to the machine near their adjacent ends and having their lower adjacent corners cut away and the outer portions of their lower edge formed upon a higher plane than are the central working portions, means for adjusting said wings at an angle forward or backward said means comprising movable hangers, means for elevating the lower edge of said wings comprising rotary drums, ratchets and pawls for controlling the same and a chain or cable connecting said wings and drums, and extension-arms pivotally attached to said wings, substantially for the purpose set forth.

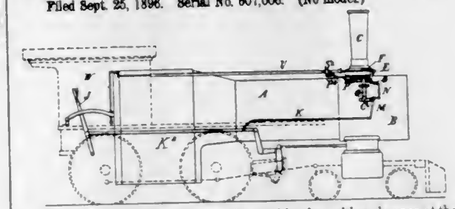
4. In road-breaking machines, a transversely-disposed plank bolted to the under side of the body portion and projecting beyond the sides of said machine, a pair of transverse wings or scrapers having their adjacent ends pivoted at a fixed point to said plank, suitable hangers pivotally attached to said wings and adapted for adjustment near either end of said plank and for securing said wings in alinement or at an angle therewith, and means substantially as shown for drawing the lowes edge of said wings forward, substantially for the purpose set forth.

5. In a road-breaking machine, a pair of wings or scrapers pivotally connected near their adjacent ends to said machine and disposed transversely in normal alinement, the under corners of said adjacent ends being cut away and said wings being adapted for vertical and horizontal adjustment whereby the snow may be closely packed at most desirable points in the road.

6. In a road-breaking machine, a pair of wings or scrapers pivotally connected near their adjacent ends to said machine and disposed transversely in normal alinement, the lower edge of that portion of the wings which extends beyond the machine being formed on a higher plane than that of the remainder of the working edge of said wings, extension-arms pivotally attached to the outer ends of said wings, and means for adjusting said wings vertically and horizontally whereby the ridges of snow which usually form at either side of the sleigh-tracks may be leveled.

655,405. LOCOMOTIVE.

HENRY A. LUTTGENS, Paterson, N. J. Filed Sept. 25, 1896. Serial No. 607,006. (No model.)

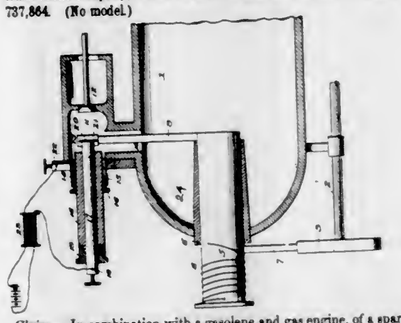


Claim.—1. In a locomotive, the combination with a damper at the base of the stack, valve-gear, a lever and connections between said lever and the damper and valve-gear, of a second lever pivoted at one end, a coupling attached to said second lever, a rod attached to said coupling, connections between said rod and the damper, a toothed segment on said coupling, a dog carried by said second lever and engaging said segment, said segment having a series of sockets at one side of the lever and a pin adapted to be placed in one or another of said sockets to limit the throw of the second lever and of the damper when the first lever is operated.

2. In a locomotive, the combination of a damper at the base of the stack, and valve-gear, of a bracket on the smoke-box, an arm pivoted to said bracket, guide-plates on the bracket for said arm, a slide pivotally connected with the upper end of said arm, a rod mounted in the hand-rail of the locomotive, a connection between said rod and the slide and serving to assist in supporting the latter, an adjusting device connected with said rod, connections between said slide and damper, an operating-lever and devices connecting said lever with the valve-gear and also with said slide.

655,406. ELECTRIC SPARKER FOR GASOLENE-ENGINES.

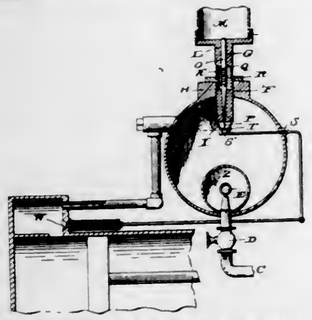
JOHN G. MACPHERSON, Philadelphia, Pa., assignor to the MacPherson Automobile Company, of New Jersey. Filed Nov. 22, 1899. Serial No. 737,864. (No model.)



Claim.—In combination with a gasolene and gas engine, of a sparker therefor, comprising an insulator mounted in the end of a gas-supply chamber, a cylindrical conductor fitting in said insulator, a circular disk

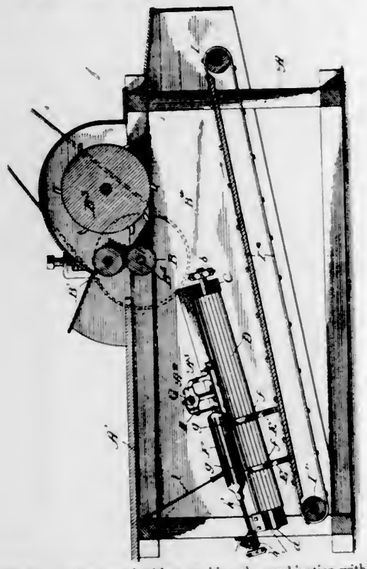
carried upon the inner end of said conductor, a sleeve mounted in the head of the explosion-chamber, a shaft mounted in said sleeve, a spring-arm carried by and at right angles to the inner end of said shaft the free end of said spring-arm extending into the gas-supply chamber, a plate carried by the free end of said arm in position to have its face contact with the edge of the disk upon the conductor, and a spring tending to separate the disk and plate, and a cam for bringing them together provided with means to release the spring to disengage the disk and plate to make a spark.

655,407. VAPORIZER FOR GASOLENE-ENGINES. JOHN G. MACPHERSON, Philadelphia, Pa., assignor to the MacPherson Automobile Company, of New Jersey. Filed Nov. 22, 1899. Serial No. 737,865. (No model.)



Claim.— In combination with a gasolene or gas engine, of a vaporizer, consisting of a cylinder within a cylinder, a flame-jet entering the inner cylinder, a spring-actuated gasolene-admitting valve located above the inner cylinder in the top of the outer cylinder, a lever fulcrumed upon the exterior of the outer cylinder and having a free end within and one without the cylinder, a guard or plate carried by the lever near the free inner end thereof to prevent gasolene from flowing too far upon the lever, and means for operating the lever to cause its inner end to contact the valve to admit gasolene to be vaporized.

655,408. CORN-HUSKING MACHINE. MADS H. MADSEN, Kimballton, Iowa. Filed Dec. 22, 1899. Serial No. 741,260. (No model.)



Claim.— 1. In a corn-husking machine, the combination with a pair of oppositely-rotating husking-rollers, of a pair of roughened coöperating ear-turning rollers, above the husking-rollers, rotating in the same direction and operating to engage the ears simultaneously at opposite sides.

2. In a corn-husking machine, the combination with a pair of oppositely-rotating husking-rollers, of a pair of coöperating ear-turning rollers, above the husking-rollers, rotating in the same direction and operating to engage the ears simultaneously at opposite sides, and an ear-feeder movable between the turning-rollers to engage and advance the ears longitudinally along the husking-rollers.

3. In a corn-husking machine, the combination with the husking-rollers, of turning mechanism for the ears operating to bear intermittingly against and rotate the ears, and means for advancing the ears between the said turning mechanism and husking-rollers, substantially as described.

4. In a corn-husking machine, the combination with the husking-rollers of intermittently-operating turning mechanism for the ears and an intermittent ear-feeder operating alternately with said turning mechanism to advance the ears along the husking-rollers, substantially as described.

5. In a corn-husking machine, the combination with the husking-rollers, of a pair of coacting ear-turning rollers above the husking-rollers, operating to bear intermittingly against the ears and turn the same, and an ear-feeder operating alternately with said turning-rollers to advance the ears along the husking-rollers, substantially as described.

6. In a corn-husking machine, the combination with the husking-rollers, of a pair of coacting ear-turning rollers above the husking-rollers operating to bear intermittingly against the ears and turn the same, and a gyrating ear-feeder operating alternately with said turning-rollers to advance the ears along the husking-rollers, substantially as described.

7. In a corn-husking machine, the combination with the husking-rollers, of a pair of ear-turning rollers above the husking-rollers, means for moving the turning-rollers alternately into and out of turning engagement with the ears, and feed mechanism alternating with the operation of the turning-rollers to engage and advance the ears, substantially as described.

8. The combination with the inclined parallel husking-rollers and ear-turning rollers of an ear-feeding frame between the turning-rollers pivotally mounted at one end upon a swinging support, above the lower end portion of said rollers, and mounted toward its opposite end upon a crank to rotate in the vertical plane, an ear-engager on the frame adjacent to the crank operating, during the movement of the frame, in the direction of the lower ends of said rollers, to engage, advance and then release the ears.

9. The combination with the inclined parallel husking-rollers and ear-turning rollers of an ear-feeding frame between the turning-rollers pivotally mounted at one end upon a swinging support, above the lower end portion of said rollers, and mounted toward its opposite end upon a crank to rotate in the vertical plane, and yielding ear-engaging teeth on the frame adjacent to the crank operating, during the movement of the frame, in the direction of the lower ends of said rollers, to engage, advance and then release the ears.

10. The combination with the inclined parallel husking-rollers and ear-turning rollers of an ear-feeder comprising a resilient frame between the turning-rollers pivotally mounted at one end upon a swinging support, above the lower end portion of said rollers, and mounted toward its opposite end upon a crank to rotate in the vertical plane, and yielding ear-engaging teeth on the frame adjacent to the crank operating, during the movement of the frame, in the direction of the lower ends of said rollers, to engage, advance and then release the ears.

11. In a corn-husking machine, the combination with a pair of coöperating husking-rollers of a pair of ear-turning rollers above the husking-rollers, movable supports in which the turning-rollers are journaled toward one end, means for moving the supports to move the turning-rollers alternately toward and away from each other and means for rotating the turning-rollers in the same direction, substantially as described.

12. In a corn-husking machine, the combination with a pair of coöperating husking-rollers of a pair of ear-turning rollers above the husking-rollers, movable supports in which the turning-rollers are journaled toward one end, means for moving the supports to move the turning-rollers alternately toward and away from each other, comprising a rotary shaft, and cams on the shaft engaging the supports, and means for rotating the turning-rollers in the same direction, substantially as described.

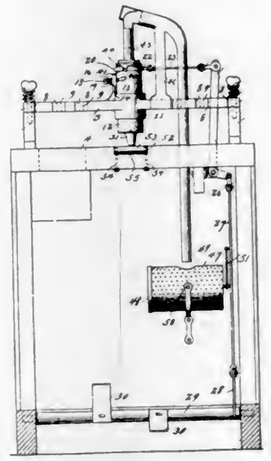
13. In a corn-husking machine, the combination with the husking-rollers, of a pair of ear-turning rollers above the husking-rollers, swinging supports, in which the turning-rollers are journaled at one end, a crank-shaft provided with cams engaging said supports to swing the turning-rollers alternately toward and away from each other, and a gyratory ear-feeder operatively connected with the crank-shaft to move between the turning-rollers, substantially as described.

14. In a corn-husking machine, the combination with the husking-rollers and means for turning the ears thereon, of a stationary ear-engaging stripping-finger extending at its end beyond the bite of the corn-husking rollers, substantially as described.

15. In a corn-husking machine, the combination with the frame of a pair of ear-husking rollers one of which is provided with a circumferential groove, a stationary ear-engaging stripping-finger fastened to the frame and extending in said groove and having a yielding end portion beyond the bite of the husking-rollers and movable into and out of said groove, and means for turning the ears against the stripping-finger, substantially as and for the purpose set forth.

16. In a corn-husking machine, the combination with the frame of a pair of ear-husking rollers, one of which is provided with a circumferential groove, a stationary stripping-finger fastened to the frame and extending between the husking-rollers in said groove and having a yielding end portion close to the bite of the husking-rollers, a pair of ear-turning rollers with means for moving them toward and away from each other, and a gyratory ear-feeder alternating in its operation with the turning-rollers, substantially as described.

655,409. APPARATUS FOR CUTTING ALTAR-BREAD. THOMAS M. MULKERINS, Chicago, Ill., assignor to John Hanley, St. Joseph, Mich. Filed Sept. 14, 1899. Serial No. 730,436. (No model.)



Claim.—1. In an apparatus of the character described, the combination, with a fixed bed or table, of a rotary tubular cutter supported in a suitable bearing above said table and adapted to advance and recede as it rotates, a rock-shaft provided with treadles and having a projecting arm, and a bell-crank lever and rods connecting said bell-crank lever with the rock-shaft arm and cutter respectively, the connections between said bell-crank lever and rods being universal, substantially as described.

2. In an apparatus of the character described, the combination, with a bed or table, of standards laterally adjustable toward and from each other, a cross-bar adapted to be connected with said standards at different points, and a rotary reciprocating tubular cutter carried by said cross-bar, substantially as described.

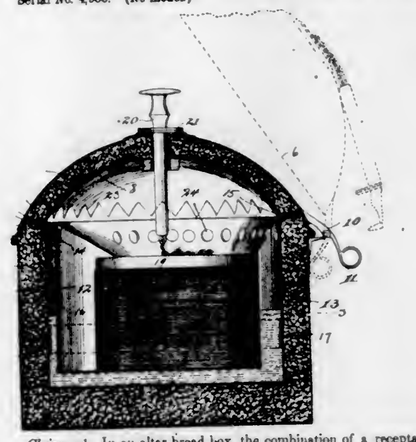
3. In an apparatus of the character described, the combination, with a rotating and reciprocating sleeve provided with a tubular cutter and having an inclined slot in its body portion, of a fixed pin engaging said slot, means for actuating said sleeve, a tubular lining for said sleeve provided with a flanged cover to fit said sleeve, and means for locking said sleeve and lining together, substantially as described.

4. In an apparatus of the character described, the combination, with the cutter and its operating mechanism, and a chute to receive the cut articles, of a foraminous receptacle to receive the articles from the chute, and means for connecting said receptacle with the cutter-operating mechanism to impart to the same a shaking motion, substantially as described.

5. In an apparatus of the character described, the combination, with a tubular cutter and means for actuating the same, of a chute to receive the cut articles from the cutter, a perforated cylinder pivotally mounted on a transverse axis, provided with an opening adjacent to the chute and with a removable closure at one end, and a link detachably connecting said cylinder with the cutter-operating mechanism, substantially as described.

6. In an apparatus of the character described, the combination, with a rotating and reciprocating sleeve, of a tubular cutter of smaller diameter connected with and extending upward into said sleeve, and a discharge-tube supported in said sleeve and having an enlarged end to pass over the upward extension of the cutter, substantially as described.

655,410. ALTAR-BREAD BOX. THOMAS M. MULKERINS, Chicago, Ill., assignor to John Hanley, St. Joseph, Mich. Filed Feb. 12, 1900. Serial No. 4,953. (No model.)



Claim.—1. In an altar-bread box, the combination of a receptacle comprising outer and inner casings and an intervening insulating-space, the upper portion of said receptacle being removable to afford access thereto, an interior chamber conformed approximately in cross-sectional form to the shape of the bread-wafers, and provided at one side with an extension to afford access to the edges of the wafers, and a weight adapted to rest upon the bread when the receptacle is closed.

2. In an altar-bread box, the combination of a receptacle comprising outer and inner casings and an intervening insulating-space, the upper portion of said receptacle being removable to afford access thereto, an interior chamber conformed approximately in cross-sectional form to the shape of the bread-wafers, and provided at one side with an extension to afford access to the edges of the wafers, a weight adapted to rest upon the bread when the receptacle is closed and a spindle mounted to extend loosely through the cover portion of the receptacle and flexibly united at its lower end with said weight, whereby the weight may be lifted from the contents and the cover of the receptacle removed by the same operation.

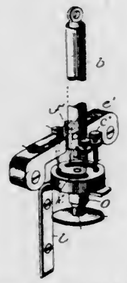
3. In an altar-bread box, the combination of a receptacle comprising outer and inner casings and an intervening insulating-space, the upper portion of said receptacle being removable to afford access thereto, an inner receptacle removably seated within the outer receptacle, having its interior conformed in cross-sectional form approximately to the shape of the bread-wafers for which the device is designed, and provided at one side with an extension-space to afford access to the edges of the bread-wafers, holding devices for holding said removable receptacle from rotation within the outer receptacle, a weight adapted to rest upon the bread when the receptacle is closed and a spindle mounted to extend loosely through the cover portion of the receptacle and flexibly united at its lower end with said weight, whereby the weight may be lifted from the contents and the cover of the receptacle removed by the same operation.

4. In an altar-bread box, the combination of a receptacle comprising outer and inner casings and an intervening insulating-space filled with insulating material, the upper portion of said receptacle being made removable to afford access to the interior thereof, a sheet of air-excluding material interposed between the meeting parts of the joint between the cover and main body of the receptacle, an inner receptacle of smaller dimensions than the interior of the outer receptacle, removably seated within the latter in such manner as to provide an intervening liquid-space between the outer walls of the removable receptacle and the interior of the outer receptacle, a weight adapted to rest upon the bread when the receptacle is closed and a spindle mounted to extend loosely through the cover portion of the receptacle and flexibly united at its lower end with said weight, whereby the weight may be lifted from the contents and the cover of the receptacle removed by the same operation.

5. In an altar-bread box, the combination of a receptacle comprising outer and inner casings and an intervening insulating-space provided with a filling of insulating material, the main body of said receptacle being made cylindric and its upper portion being made convex and constructed to form a cover hinged to the main body at one side thereof, the hinge connections being such as to permit a limited opening only of the cover whereby the latter will automatically close by gravity when the device is in upright position, a body of air-excluding material interposed between the meeting parts of the cover and main body, an inner receptacle of

smaller diameter than the internal diameter of the outer receptacle provided at its upper end with an outturned flange whereby it is suspended within the outer receptacle and free from contact with the walls thereof, the interior of said inner receptacle being conformed in cross-sectional form approximately to the shape of the altar bread-wafers throughout its main body, but provided at one side with a lateral extension to afford access to the edges of the wafers, means for holding said inner receptacle in fixed position in relation to the outer receptacle, a weight conformed approximately to the shape of the bread-wafers and adapted to rest upon the latter to hold them flat, a spindle arranged to extend loosely through the cover and flexibly united at its lower end with said weight, a sealing flange or shoulder upon said spindle arranged to normally rest in contact with the outer surface of the cover and a sheet of air-excluding material interposed between said sealing flange or shoulder and the supporting-surface of the cover around the aperture therein, substantially as described.

655,411. **ELECTRICAL DETECTOR FOR HEAT OR COLD.** JEREMIAH O'MEARA, New York, N. Y. Filed May 12, 1899. Serial No. 716,540. (No model.)



Claim.—1. In an electrical apparatus for detecting abnormal temperatures, the combination of an atmospherically-sensitive wire or support, a weight suspended from said wire or support and carrying contact-points, a holder containing electrically-conductive material forming the terminals of an electric circuit, stationary adjustable contacts in said circuit, a stationary support for said holder, and a movable support for said holder adjustably connected to said weight, the said wire or support, contact-points and movable support for said holder capable of relative adjustment whereby the apparatus may be set either for the detection of abnormal heat or for the detection of abnormal cold, substantially as described.

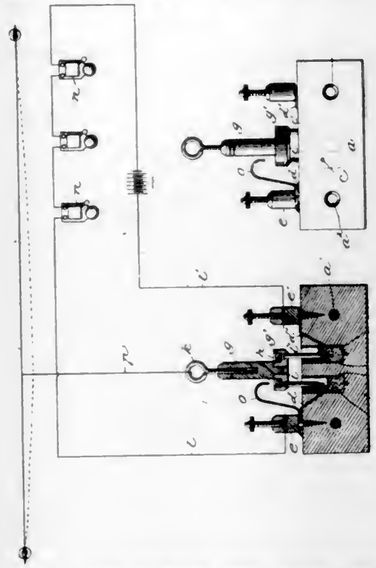
2. An electrical apparatus for detecting abnormal temperatures, comprising a normally-open circuit, a suspended weight carrying contact-points, a holder for electrically-conductive material included in said circuit, a stationary support for said holder, and a movable support for said holder connected to said weight, combined with an atmospherically-sensitive supporting device for said weight, the said supporting device and movable support for said holder capable of relative arrangement and adjustment whereby the apparatus may be set either for the detection of abnormal heat or for the detection of abnormal cold, substantially as described.

3. An electrical detector for abnormal temperatures, comprising a weight carrying contact-points, an adjacent fixture also containing contact-points, a holder containing electrically-conductive material forming the terminals of an electric circuit and arranged to receive the said contact-points, a stationary support for said holder, and a movable support for said holder connected to said weight, combined with an atmospherically-sensitive supporting device for said weight, the said sensitive supporting device, contact-points and movable support for said holder capable of relative arrangement and adjustment, whereby the apparatus may be set either for the detection of abnormal heat or for the detection of abnormal cold, substantially as described.

4. An electrical detector for abnormal temperature, comprising a suspended body carrying contact-points, a holder for electrically-conductive material, and a button for adjusting said holder on said body, a fixture carrying contact-points arranged in conjunction with circuit-wires, an alarm included in said circuit-wires, and a support for said body constructed of material sensitive to changes in temperature, substantially as described.

5. An electrical detector for abnormal temperatures, comprising a weight carrying adjustable contact-points, an adjacent fixture also containing adjustable contact-points, a holder containing an electrically-conductive material forming the terminals of an electric circuit and arranged to receive one or more of said contact-points upon an occurrence of an abnormal temperature, a stationary support for said holder, and an adjustable, movable support for said holder connected to said weight, combined with an atmospherically-sensitive supporting device for said weight, the said sensitive supporting device, contact-points and movable support for said holder capable of relative adjustment and adjustment whereby the apparatus may be set either for the detection of abnormal heat or for the detection of abnormal cold, substantially as described.

655,412. **CIRCUIT-CLOSER.** JEREMIAH O'MEARA, New York, N. Y. Filed May 20, 1899. Serial No. 717,634. (No model.)



Claim.—1. In an apparatus for detecting abnormal temperatures, the combination of an atmospherically-sensitive wire or support adapted to be slackened and tightened, a movable contact-carrier suspended therefrom, stationary contacts arranged in proximity to the contacts of said carrier, and an adjustable connection between said contact-carrier and the sensitive wire or support to compensate for the slackening or tightening of said wire or support according to the setting of the apparatus either for the detection of abnormal heat or for the detection of abnormal cold, substantially as described.

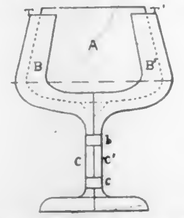
2. A circuit-closer, comprising a holder having receptacles for an electrically-conductive material, one of said receptacles having an overflow to maintain a uniform level of electrically-conductive material therein, a contact-carrier having contact-points of different lengths, the shorter being arranged in the receptacle having the overflow, and means for introducing the said device into an electric circuit, substantially as described.

3. A circuit-closer, comprising a holder for the reception of an electrically-conductive material, a contact-carrier provided with contact-points and a receptacle for an electrically-conductive material, means to introduce the device into an electrical circuit, and an auxiliary contact-point for cooperation with the electrically-conductive material in the carrier-receptacle, substantially as described.

4. A circuit-closer, comprising a holder for an electrically-conductive material, a contact-carrier, binding-posts in circuit with said holder, and a contact-point extending from one of the binding-posts into operative connection with the carrier, the said carrier being movable with relation to the holder and the said contact-point to complete the circuit, substantially as described.

5. In an apparatus for detecting abnormal temperatures, a holder having receptacles for an electrically-conductive material, binding-posts erected upon said holder, electric conductors connecting the said receptacles with said binding-posts, a movable contact-carrier having contact-points adapted to enter the conductive material in said holder, a stationary contact also erected upon said holder and arranged in the path of the upward movement of said contact-carrier, an atmospherically-sensitive wire or support for said contact-carrier adapted to be slackened or tightened, and an adjustable connection between said contact-carrier and sensitive wire or support to compensate for the slackening or tightening of said wire, whereby the apparatus may be adjusted for the detection either of abnormal heat or for the detection of abnormal cold, substantially as described.

655,413. **MAGNETIC DRINKING-CUP.** HERBERT A. PARKYN, Chicago, Ill. Filed Oct. 20, 1899. Serial No. 734,180. (No model.)



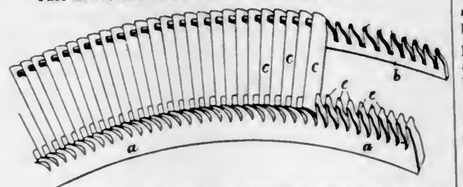
Claim.—1. A drinking-cup comprising as a part thereof two separate magnets of opposite polarity.

2. A drinking-cup comprising a bowl and a holder therefor, said holder being provided with two magnetic parts of opposite polarity.

3. A cup comprising a two-part holder, the parts of which are properly secured together, each part consisting of a base, a handle and a bowl receptacle in combination with a drinking-bowl.

4. A cup comprising a two-part holder, the parts of which are metal, the upper extremities of these parts being magnetized the one positively, the other negatively, the parts being properly secured together, each part consisting of a base, a handle and a bowl receptacle, in combination with a drinking-bowl.

655,414. **STEAM-TURBINE RING OF BLADES.** CHARLES A. PARSONS, GEORGE G. STONEY, and HUGH F. FULLAGAR, Newcastle-upon Tyne, England; said Stoney and Fullagar assignors to said Parsons. Filed Mar. 5, 1900. Serial No. 7,360. (No model.)



Claim.—1. In combination in a turbine, the blades, and means for holding the blades comprising a strip having notches to receive the blades, the walls of which notches are caused to grip the blades, substantially as described.

2. In combination in a turbine, the blades and holding means comprising a strip having notches in which the blades rest, the teeth between the notches being bent over to grip the blades, substantially as described.

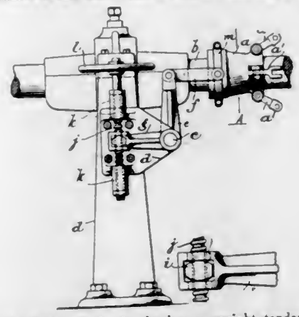
3. In combination in a turbine, the blades, a shroud having teeth gripping the blades, said shroud being considerably wider than the blades, the casing of the said turbine being provided with grooves to receive the abroud, substantially as described.

655,415. **SHIFTER FOR CLUTCHES, &c.** ANTONIO C. PESSANO, Philadelphia, Pa., assignor to the George V. Cresson Company, of Pennsylvania. Filed Mar. 19, 1900. Serial No. 9,299. (No model.)

Claim.—1. In a shifting device for clutches, &c., the combination with the part to be shifted, of a fixed standard or bearing, a bell-crank lever journaled in a stationary bearing on said standard and adapted to be operatively connected at one end with the part of the clutch to be shifted, and an operating-screw arranged transversely to the axis of the bearing of the bell-crank and operatively connected by an adjustable nut with the other end of said bell-crank lever, whereby the rotation of said screw will cause said lever to be rocked and the part to be shifted operated.

2. In a shifting device for clutches, &c., the combination with the part of the clutch to be shifted, with a fixed standard or bearing, a bell-crank lever formed of the arms *e*, *e*, *g* secured to a transverse shaft *c*, links *f* between the arms *e* of the bell-crank lever and the part to be shifted, fixed bearings *d* for the transverse shaft *c*, an internally-threaded nut *i* adjustably carried by the arm *g* of the said bell-crank lever, the vertical operating-screw *j* extending through said nut, and bearings for said screw to hold it against longitudinal movement.

3. In a shifting device for clutches, &c., the combination with the part to be shifted of a main frame or standard, a bell-crank lever consisting of a shaft *c* journaled in said main frame or standard transversely to the part to be shifted, of arms *e*, *e*, carried by said shaft and located one on each side of said part to be shifted and operatively connected therewith, and of an arm *g* recessed at its outer end, an internally-threaded nut *i* located in said recess, and an upright operating-screw *j* having its shank journaled in said main frame or standard, and engaging said nut *i*.

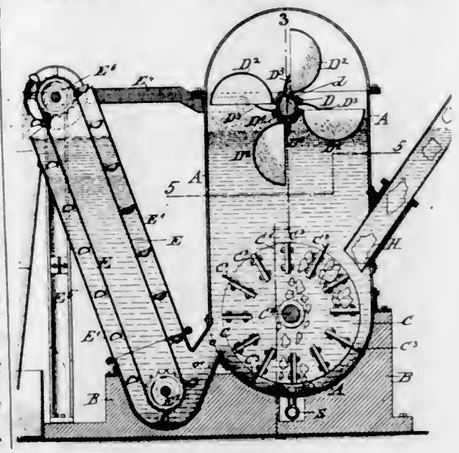


4. In a shifting device for clutches, an upright standard having three fixed bearings arranged at different angles to each other, combined with a main shaft journaled in one of said bearings, a transverse bell-crank shaft journaled in another of said bearings at right angles to said main shaft, an upright screw-shaft carried by the remaining bearings and transversely to both the main shaft and the bell-crank shaft, arms carried by the bell-crank shaft adapted to operate the movable part of the clutch, and an arm also secured to the bell-crank shaft and having an adjustable screw-threaded connection with the screw-shaft.

5. In a shifting device for clutches, &c., an upright standard having at the top a main bearing for the main shaft, in combination with a bearing structure carried by the main standard and provided with transverse and upright bearings, a bell-crank structure journaled in the transverse bearing and having its free end adapted for connection with the movable part of the clutch, a loose nut carried by the other arm of the bell-crank, and an adjusting-screw working through the nut and held in the upright bearings against longitudinal movement.

6. In a shifting device for clutches, &c., the combination of a main standard provided with a main bearing and a transverse bearing at right angles to said main bearing and having a relatively-fixed relation thereto, a transverse shaft journaled in said transverse bearings and provided with two upright arms extending upon each side of the main bearing for operating the movable part of the clutch and also having a power-arm to which the power is applied for rocking the said shaft, and an adjusting-screw connected to the power-arm of the bell-crank lever and to the main standard for adjusting the transverse shaft.

655,416. **MACHINE FOR SEPARATING ROCK-ASPHALT.** JACOB PHILIPPI, New York, N. Y., assignor of one-half to Maurice Featherson, same place. Filed Feb. 15, 1900. Serial No. 5,315. (No model.)



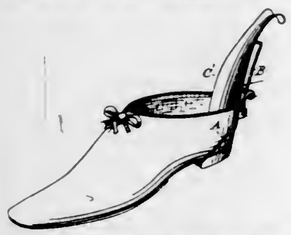
Claim.—1. The combination, with an upright casing provided with a supply-hopper for the rock-asphalt, said hopper being an entirely-separate element from said casing, of a suitable separator in the lower part of said casing, the discharge end of said hopper terminating close to said separator so as to deliver the rock-asphalt directly thereinto, a perforated tubular rotary shaft in the upper part of said casing, above the separator, perforated strainer-buckets attached to said shaft, and a stationary trough in said shaft, leading outside the casing, substantially as set forth.

2. The combination with an upright casing provided with a supply-hopper for the rock-asphalt, of a separator at the lower part of said casing, a tubular rotary shaft at the upper part of said casing and provided with openings, perforated strainer-buckets attached to said shaft, perforated guard-plates adjacent to the inner ends of the strainer-buckets, and means for discharging the separated asphalt from the trough to the outside, substantially as set forth.

3. The combination, with an upright casing, provided with a supply-hopper for the rock-asphalt, said casing having a semicircular bottom, of a rotary horizontal separator arranged in juxtaposition to said semicircular bottom and having radial beaters, some of which extend farther beyond the axis of the separator than the others and terminate close to said semicircular bottom, and a bucket elevator, the trunk of which is connected with the lower part of the casing, whereby upon a backward rotation of said separator the more extended beaters transfer the sand in the casing to the bucket elevator, substantially as set forth.

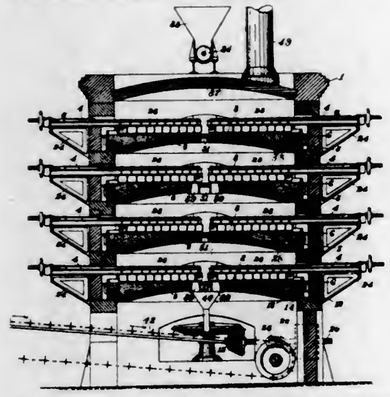
4. The combination, with an upright casing provided with a supply-hopper for the rock-asphalt, a rotary separator at the lower part of said casing provided with radial beaters, means for heating the water in the casing, a tubular rotary shaft at the upper part of said casing, strainer-buckets attached to said shaft for removing the asphalt from the surface of the water in the casing, a stationary trough in said shaft, and a discharge-trough for conducting the strained asphalt to the outside of the casing, substantially as set forth.

655,417. SHOE-HORN. EGBERT J. RANDALL, Evart, Mich. Filed Nov. 7, 1899. Serial No. 736,202. (No model.)



Claim.—The combination with a double-spoon shoe-horn, of the lever B pivoted to the back of the spoon and the bail A pivoted to the lever, the whole adapted to be used as shown and described, for the purpose set forth.

655,418. FURNACE. ROBERT SCHORR, San Francisco, Cal. Filed Jan. 18, 1900. Serial No. 1,926. (No model.)



Claim.—1. In a furnace, a masonry wall of interior cylindrical form, a vertical series of independent revoluble hearths set concentric therein, interior ledges on said masonry wall for supporting said revoluble hearths by their peripheries, ball-bearings and runways between said supports and said peripheries, means for shielding from the interior heat the said bearings and runways, means exterior to said shielded bearings for rotating said hearths by their peripheries, and means for stirring ore on the revolving hearths, substantially as specified.

2. In a furnace, a masonry wall of interior cylindrical form, a vertical series of independent revoluble hearths set concentric therein, means for revolubly supporting said hearths by their peripheries, sustained on said masonry wall, depending flanges on the revoluble hearths for shielding the revoluble supports from the internal heat, peripheral toothed racks on the said hearths outside said depending flanges, spur-gears in engagement with said toothed racks, with means to rotate the same simultaneously and means for stirring ore on the revolving hearths, substantially as specified.

3. In a furnace, a masonry wall of interior cylindrical form, a vertical series of independent revoluble hearths set concentric therein, rolling bearings beneath the peripheries of said hearths, and circular runways under said bearings, resting on but not attached to ledges formed in said wall, whereby said runways are free to expand and contract without disturbance to the said furnace-wall, substantially as specified.

4. In a furnace, an inclosing masonry wall of interior cylindrical form, a series of superposed independent revoluble hearths set concentric therein, the peripheries of said hearths being metallic rings, the interiors of said hearths being spherical arches of refractory material confined and supported by said rings, rolling bearings under said rings, runways under said bearings sustained by the inclosing wall, means for rotating said rings on said bearings by engagement with the peripheries of said rings, and means for stirring the ore on said revolving hearths, substantially as specified.

5. A furnace having a main inclosing masonry wall of interior cylindrical form, a series of superposed independent revoluble hearths set concentric therein, consisting of spherical arches of refractory material surrounded by peripheral metallic rings supporting the same, rolling bearings under said peripheral rings, runways for said bearings, and depending flanges on said peripheral rings covering and shielding said bearings and runways from the internal flame, substantially as specified.

6. A furnace having a main inclosing wall of interior cylindrical form, a series of superposed independent revoluble hearths set concentric therein, consisting of spherical arches of refractory material surrounded by peripheral metallic rings supporting said arches, rolling bearings under said peripheral rings, sliding runways under said bearings, resting on but not secured to ledges formed in said masonry wall, depending flanges on said peripheral rings, covering and shielding said runways and bearings and taking the thrust of said arches, curb-rings on said peripheral rings outside the bearings, toothed racks on said curb portions whereby the said rings are rotated from the peripheries, and means engaging with said toothed racks for rotating the same, substantially as specified.

7. A furnace having a main inclosing wall of interior cylindrical form, a vertical series of independent revoluble hearths set concentric therein, a series of annular grooved runways on which said hearths revolve, rolling bearings in said grooved runways, supports for the runways formed in the masonry wall, and apertures in and through said runways and wall-supports whereby dust and debris from wear may escape from the runways, substantially as specified.

8. A furnace having a main inclosing wall of interior cylindrical form, a vertical series of independent revoluble hearths set concentric therein, having peripheral metallic rings, rolling bearings under said rings whereby the hearths are revolubly supported, runways for the bearings, toothed gear-racks on the exteriors of said peripheral rings, a vertical rotary driving-shaft outside the furnace-wall, and a series of spur-gears on said vertical shaft, engaging said toothed gear-racks, whereby the hearths are rotated in unison, substantially as specified.

9. In a furnace having a main inclosing wall of interior cylindrical form, a vertical series of independent revoluble hearths of refractory material, spherically arched beneath, flat on the upper surfaces, having peripheral metallic rings by which the arched portions are confined and sustained, rolling bearings under said rings, detached sliding runways for said bearings, ledges formed in the masonry wall sustaining the said runways, depending flanges on said rings, shielding and protecting said runways, exterior curbs on said rings, toothed gear-racks on said curbs, and means external to the masonry wall engaging said racks whereby the said hearths are rotated in unison, substantially as specified.

10. In a furnace having a main inclosing masonry wall of interior cylindrical form, a vertical series of independent revoluble hearths formed of refractory material, spherically arched beneath, flat on the upper surfaces, rolling bearings supporting said hearths from their peripheries, runways under the said bearings, sustained by the masonry wall, means for protecting said bearings and runways from the internal flame, and openings 38 through said hearths, forming communications between the several spaces inclosed between the same, substantially as specified.

11. In a furnace having a main inclosing masonry wall of interior cylindrical form, a series of superposed independent revoluble hearths formed of refractory material set concentric therein, arched beneath and flat on the upper surfaces, forming a series of reverberatory chambers between them, means for sustaining said hearths revolubly by the peripheries thereof, apertures through the several hearths forming communications between said chambers, a series of fire-boxes outside the walls of said furnace communicating with said chambers respectively, and means for controlling the passage of flame from said boxes to said chambers, substantially as specified.

12. In a furnace having a main inclosing masonry wall of interior cylindrical form, a vertical series of independent circular revoluble hearths of refractory material, arched beneath, flat on the upper surfaces, peripheral rings confining and sustaining said arches, gear-toothed on their exterior margins, means for revolubly supporting said peripheral rings, and a vertical driving-shaft, set outside of said masonry wall, provided with a series of spur-gear-toothed wheels severally engaging the said toothed peripheral rings through apertures in the masonry walls, whereby all the said hearths are rotated in unison by said vertical driving-shaft, substantially as specified.

13. In a furnace having a main inclosing masonry wall of interior cylindrical form, a vertical series of independent circular revoluble hearths of refractory material, arched beneath, flat on the upper surfaces, forming a series of reverberatory chambers between the same, means for revolubly supporting said hearths from their peripheries, openings through the masonry wall into said reverberatory chambers, brackets on the outside of said wall opposite said openings, fixed stirrers sustained on said brackets, projecting through said openings into said chambers and over said hearths toward the centers thereof, adjustable vanes on said stirrers, and means outside of said walls for adjusting and setting the angles of said vanes, substantially as specified.

14. In a furnace having a main inclosing wall of interior cylindrical form, a vertical series of independent circular revoluble hearths of refractory material, arched beneath and flat on the upper surfaces, means for revolubly supporting said hearths from their peripheries, and for rotating the same, apertures through the several hearths, fixed stirrers supported outside the walls but projecting through the same and over the said hearths, and a spherical arch at the top of the structure, provided with an inlet-way for ore and an outlet-way for the products of combustion, substantially as specified.

15. In a furnace having a main inclosing masonry wall of interior cylindrical form, a series of superposed independent circular revoluble hearths of refractory material, arched beneath and flat on the upper surfaces, means for revolubly supporting said hearths from their peripheries, and for rotating the same, apertures through said hearths, fixed stirrers over the several hearths, having adjustable vanes, an arched top to the structure provided with an inlet-way for ore and an outlet-way for the products of combustion, a central hopper and discharge-way through the lowermost hearth, and means for conveying away the treated ore, substantially as specified.

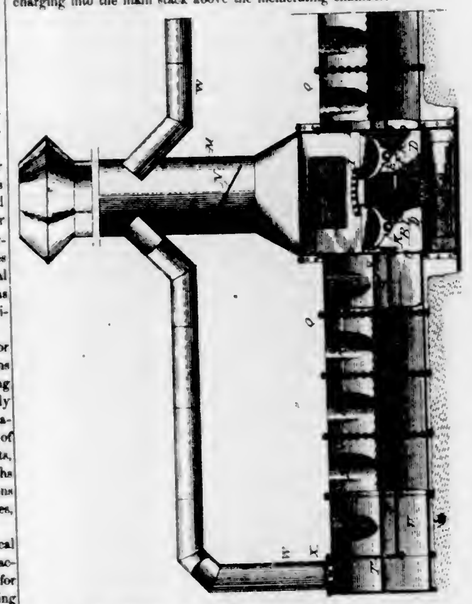
655,419. DRY CLOSET AND INCINERATOR. FRED P. SMITH, Albany, N. Y. Filed Feb. 11, 1899. Serial No. 705,817. (No model.)

Claim.—1. In a combined incinerator and dry closet, the combination of a combustion-chamber; an incinerator above said chamber; a dry closet in open communication with said incinerator; a main flue or stack extending from said incinerator; and a flue or duct extending from the combustion-chamber in proximity to the dry closet and discharging into the main flue.

2. In a combined incinerator and dry closet, the combination of a combustion-chamber; an incinerator forming the upper closed side of said chamber; a dry closet in open communication with said incinerator; a main flue or stack extending from said incinerator; and a flue or duct extending from the combustion-chamber in proximity to the dry closet and discharging into the main flue at a point above the incinerator.

3. In a combined incinerator and dry closet, the combination of a combustion-chamber; an incinerating-chamber located above the same and forming a substantially-closed upper side for the combustion-chamber; a dry closet in open communication with said incinerating-chamber; a main flue or stack arising from said incinerating-chamber; and a flue or duct extending from the combustion-chamber beneath the dry closet and discharging into the main flue above the incinerating-chamber.

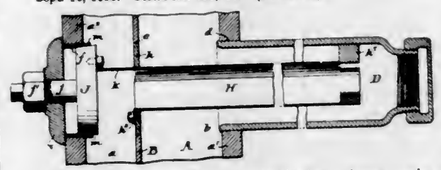
4. In a combined incinerator and dry closet, the combination of a main or central chamber containing a fire-box in its lower portion and an incinerating-chamber above said fire-box; a main stack arising from the incinerating-chamber; a trunk extending from the side of the central chamber containing a dry closet and a duct beneath the same, said closet and duct being in direct communication with the incinerating-chamber and fire-box respectively through openings formed in the side walls of the central chamber; and a flue extending from the outer end of the duct discharging into the main stack above the incinerating-chamber.



5. In combination with a combustion-chamber closed at its upper side; a duct U extending from the side of said chamber; a duct V located above said duct U and provided with a series of hoppers; a main stack in communication with said duct V; and a flue leading from the duct V and discharging into the main stack.

6. In a combined incinerator and dry closet, the combination of a central chamber provided with a fire chamber or box in its lower portion and an incinerating-chamber above said fire-box; a stack extending up from said incinerating-chamber; a series of trunks radiating from said central chamber each trunk having a lower duct U communicating with the fire-box and an upper duct V with a series of hoppers opening thereinto, said duct V opening into the incinerating-chamber; and flues W connecting the ducts U with the stack, substantially as described.

655,420. BOILER. NATHAN P. TOWNE, Philadelphia, Pa. Filed Sept. 16, 1899. Serial No. 730,716. (No model.)



Claim.—1. In a tubular boiler, in combination, a drum, a series of headers, a series of circulating tubes, and a series of evaporator tubes mounted in openings in the inner walls of said headers and expanded directly against the lips of said openings, and having each a reduced free end closed by a screw cap of smaller diameter than said header openings, substantially as set forth.

2. In a tubular boiler, in combination, a drum, a series of headers, a series of circulating tubes, and a series of evaporator tubes mounted in openings in the inner walls of said headers and expanded directly against the lips of said openings, said tubes having front ends of greater thickness than their bodies, and having reduced rear ends closed by screw caps of smaller diameter than said header openings, substantially as set forth.

3. In a tubular boiler, in combination, a drum, a series of headers, a series of circulating tubes, and a series of evaporator tubes mounted in openings in the inner walls of said headers and expanded directly against the lips of said openings, and having each a reduced free end closed by a screw cap of smaller diameter than said header openings, the front end lips of said tubes being upset or turned over against the inner faces of the header walls, substantially as set forth.

4. In a tubular boiler, in combination, a drum, a series of headers, a series of circulating tubes, and a series of evaporator tubes mounted in openings in the inner walls of said headers and expanded directly against the lips of said openings, said tubes having front ends of greater thickness than their bodies, and having reduced rear ends closed by screw caps of smaller diameter than said header openings, the front end lips of said tubes being upset or turned over against the inner faces of the header walls, substantially as set forth.

5. In a tubular boiler, in combination, a drum, a series of headers, a series of circulating tubes, and a series of evaporating tubes mounted in the rear walls of said headers, each evaporating tube having a reduced end of smaller diameter than the opening in the header in which said tube is mounted, and means by which a carrier bar or equivalent device may take hold of a tube to withdraw it through an opening in which it is mounted, substantially as set forth.

6. In a tubular boiler, in combination, a drum, a series of headers, a series of circulating tubes, and a series of evaporating tubes mounted in the walls of said headers and having each a screw thread formed in its inner face, and also having a reduced end closed by a screw cap of smaller diameter than the opening in the header in which said tube is mounted, substantially as set forth.

7. In a tubular boiler, in combination, a drum, a series of headers, a series of circulating tubes, a series of evaporating tubes mounted in the walls of said headers and having each a screw thread formed in its inner face, and a carrier bar having a threaded end adapted to the threads in the inner faces of the tubes, substantially as set forth.

8. In a tubular boiler, in combination, a drum, a series of headers having each an outer wall, an inner wall, and an intermediate diaphragm, a series of alined openings formed in said walls and diaphragms, a series of evaporating tubes the front ends of which are mounted in and expanded directly against the openings in the inner walls of the headers, a series of circulating tubes structurally independent of the evaporating tubes, mounted one in each of said evaporating tubes, opening as to their front ends through the diaphragms and into the regions between the diaphragms and front walls of the respective headers, and means for securing said circulating tubes in position independently of the means for securing the evaporating tubes in position, substantially as set forth.

9. In a tubular boiler, in combination, a drum, a series of headers having each an outer wall, an inner wall, and an intermediate diaphragm, a series of alined openings formed in said walls and diaphragms, a series of evaporating tubes the front ends of which are mounted in and expanded against the lips of the openings in the inner walls of the headers, each tube being of such dimensions as to be adapted to pass through the openings in the diaphragm and outer wall and each tube having a screw thread formed in its inner face for the engagement of a carrier bar, a series of circulating tubes mounted one in each evaporating tube and each as to its front end opening through a diaphragm and into the region between the diaphragm and the front wall of the header in connection with which it operates, means for centering the front end of each circulating tube in its diaphragm opening, and independent means for centering the rear end of each in its inclosing evaporating tube, substantially as set forth.

10. In a tubular boiler, in combination, a drum, a series of headers each comprising a front wall a rear wall and an intermediate diaphragm, a series of evaporating tubes mounted in the rear walls of the said headers and opening as to their front ends into the region between the diaphragms and rear walls of the respective headers, a series of circulating tubes mounted one in each of the evaporating tubes and opening as to their front ends into the regions between the diaphragms and front walls of the respective headers, each circulating tube having supporting devices at or near its rear end consisting of flaps cut from its own substance and turned radially outward, substantially as set forth.

11. In a tubular boiler, in combination, a drum, a series of headers having each an outer and inner wall and an intermediate diaphragm, alined openings formed in said walls and diaphragms, a series of evaporating tubes seated in and expanded directly against the lips of openings formed in the rear walls of the headers, a series of circulating tubes disposed respectively within the evaporating tubes and opening through the diaphragms, closing devices independent of the evaporating tubes adapted to close the openings in the front walls of the headers, and connections between the circulating tubes and said closing devices, substantially as set forth.

12. In a tubular boiler, in combination, a drum, a series of headers having each a front and rear wall and an intermediate diaphragm, a series of evaporating tubes mounted in the rear walls of the headers and opening into the spaces between said rear walls and the diaphragms of the headers, circulating tubes disposed within said evaporating tubes and opening through the diaphragms into the spaces between the diaphragms and front walls of the headers, openings formed in the front walls of the headers in alinement with said tubes, tapered plugs adapted to be passed to the inside of said openings, rings disposed between said plugs and the edges of said openings, threaded shanks connected to said plugs, nuts and washers mounted on said shanks, and connections between said plugs and the circulating tubes, substantially as set forth.

13. In a tubular boiler, in combination, a drum, a series of headers having each a front and rear wall and an intermediate diaphragm, a series of evaporating tubes mounted in the rear walls of the headers and opening into the space between said rear walls and the diaphragms of the headers, circulating tubes disposed within said evaporating tubes and opening through the diaphragms into the spaces between the diaphragms and front walls of the headers, openings formed in the front walls of the headers in alinement with said tubes, tapered plugs adapted to be passed to the inside of said openings, rings disposed between said plugs and the edges of said openings, threaded shanks connected to said plugs, nuts and washers mounted on said shanks, and connections between said plugs and the circulating tubes, said connections consisting of arms formed as integral continuations of the circulating tubes and the front ends of which are fastened to the plugs, substantially as set forth.

14. In a tubular boiler, in combination, a drum, a series of headers having each a front and rear wall and an intermediate diaphragm, a series of evaporating tubes mounted in openings in the rear walls of said headers, openings formed in the diaphragms and front walls of the headers, a series of circulating tubes of less diameter than the evaporating tubes, collars mounted on said circulating tubes and making contact with the edges of the openings in the diaphragms, a series of plugs respectively applied to the respective openings in the outer walls of the headers, and a series of connections, independent of the evaporating tubes, between the individual plugs and the individual circulating tubes, substantially as set forth.

15. In a tubular boiler, in combination, a drum, a series of headers having each front and rear walls and an intermediate diaphragm, a series of evaporating tubes mounted each in an opening in one of said rear walls, a series of circulating tubes mounted one in each of the evaporating tubes, and capable of removal independently of said evaporating tubes, openings formed in the front walls and diaphragms of the headers in alinement with openings in the rear walls, a series of collars which fit the openings in the diaphragms mounted one on each circulating tube, said tubes being expanded against the bores of the collars, a series of plugs respectively seated in the respective openings in the front walls of the headers, and a series of arms connecting the individual plugs to the individual circulating tubes, substantially as set forth.

16. In a tubular boiler, in combination, a drum, a series of headers having each front and rear walls and an intermediate diaphragm, a series of evaporating tubes mounted each in an opening in one of said rear walls, a series of circulating tubes disposed one in each of the evaporating tubes, and capable of removal independently of said evaporating tubes, openings formed in the front walls and diaphragms of the headers in alinement with the openings in the rear wall, a series of collars which fit the openings in the diaphragms mounted one on the front end of each circulating tube which tubes are expanded against the collars and each as to its end metal turned up against the side face of its collar, rivets passing through the collars and tubes, a series of plugs seated in the openings in the front walls of the headers, and a series of arms connecting the individual plugs to the individual circulating tubes, substantially as set forth.

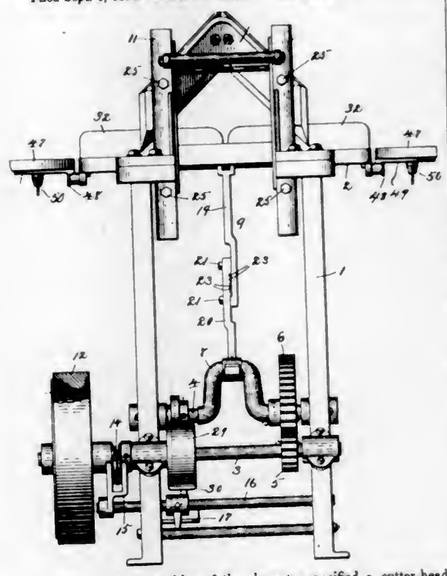
17. In a tubular boiler, in combination, a drum, having a series of tapered openings, a series of headers within the mouths of which are entered and expanded threaded tubular connections the upper ends of which are tapered to fit said tapered openings, a series of threaded rings mounted one on the exterior of each of said threaded tubular connections, and bolts or kindred devices which pass through said rings and the body or shell or a connection of the drum, a series of circulating tubes and a series of evaporating tubes connected to each header, substantially as set forth.

18. In a tubular boiler, in combination, a drum having a series of tapered openings, a series of headers, a series of threaded tubular connections the bodies of which are entered and expanded in the bores of said headers which are formed to receive them, and the tapered ends of which tubular connections are adapted to the tapered openings, a series of threaded rings mounted on the exteriors of said tubular connections, devices connective of said drum and rings adapted to draw said rings and tubular connections toward the drum, and a series of circulating tubes and evaporating tubes in circuit with each header, substantially as set forth.

19. In a tubular boiler, in combination, a drum, a series of tubular headers, and a series of evaporating and circulating tubes, each tubular header being of square or angular section formed as a seamless or lap-welded tube having its lower end closed and having a tapped block welded in place in its upper end, substantially as set forth.

20. In a tubular boiler, in combination, a drum, a series of circulating tubes, a series of evaporating tubes, and a series of tubular headers of square or angular section, each formed as a seamless or lap-welded tube, each having its lower end closed, and each having a tapped block welded in its upper end, a series of threaded tubular connections each of which is expanded as to one end in the tapped opening of one of the blocks and as to its other end entered in an opening in the drum or a connection thereof, rings on said tubular connections, and bolts or kindred devices provided with nuts through which the tubular connections carrying the headers are drawn toward the drum, substantially as set forth.

655,421. MITERING-MACHINE. JOSEPH L. TYLER, Lynn, Mass. Filed Sept. 6, 1899. Serial No. 729,577. (No model.)



Claim—1. In a machine of the character specified, a cutter-head, mechanism, for reciprocating the same, driving mechanism, a clutch for connecting said mechanisms, a clutch-controlling device including means for varying the speed of movement of the cutter-head in one direction, and means connected with the cutter-head-reciprocating mechanism for preventing the release of the clutch during movement of the cutter-head in the other direction.

2. In a machine of the character specified, a cutter-head, mechanism for reciprocating the same, driving mechanism, a clutch for connecting said mechanisms, a clutch-controlling device including means for varying the speed of movement of the cutter-head in one direction, and a cam connected with the cutter-head-reciprocating mechanism for preventing the release of the clutch during movement of the cutter-head in the other direction.

3. In a machine of the character specified, a cutter-head, a crank-shaft having a crank connected with and adapted to reciprocate said head, driving mechanism, a clutch adapted to connect said driving mechanism to said crank-shaft, a treadle controlling said clutch and carrying a roller and free to vary the speed of movement of the cutter-head in one direction, and a segmental cam secured to said crank-shaft and arranged to engage said roll and hold the clutch in operation during the cutter-head-returning stroke of the crank.

4. In a machine of the character specified, a cutter-head, mechanism for reciprocating the same, driving mechanism, a clutch for connecting said mechanisms, a clutch-controlling device including means for varying the speed of movement of the cutter-head in one direction, a cam connected with the cutter-head-reciprocating mechanism for preventing the release of the clutch during movement of the cutter-head in the other direction, and a brake operated by said clutch-controlling device, and adapted to restrain the reciprocating mechanism.

5. In a machine of the character specified, a cutter-head, mechanism for reciprocating the same, a drive-shaft carrying a drive-pulley, and a clutch adapted to connect said pulley to said shaft, a brake-drum secured to said drive-shaft, a treadle controlling said clutch and free to vary the speed of movement of the cutter-head in one direction and having a brake-shoe adapted to engage said drum and a roller, and a cam secured to said crank-shaft and arranged to engage said roller and hold the clutch in operation during the cutter-head-returning stroke of the crank.

6. In a machine of the character specified, a cutter-head provided with a guiding-tongue, an elongated guide therefor flexible and substantially U-shaped in cross-section with the ends of the U embracing said tongue, and means for increasing and decreasing the distance between the ends of the U.

7. In a machine of the character specified, the cutter-head 8 having the guiding-tongues 24, 24, the elongated guides 11, 11 flexible and substantially U-shaped in cross-section with the ends of the U's embracing said tongues, and the bolts 25, 25 passing transversely through said guides and adapted to increase and decrease the distance between the ends of the U's.

8. In a machine of the character specified, a work-supporting table, a gage-block mounted to slide longitudinally thereon, and having an upwardly-projecting stud, a gage having a split collar surrounding said stud and a bolt adapted to clamp said collar to said stud, a clamping-plate located below the table and a bolt passing through said stud and screwing into said plate.

9. In a machine of the character specified, a work-supporting table having two parallel guideways, two independent gages each of which is adjustable along said guideways and each being pivotally adjustable, means for clamping said gages longitudinally and pivotally, abutments for determining the longitudinal movement of said gages in one direction to secure their being brought parallel with each other, and a segmental index on the table for each of said gages and adapted to cooperate therewith in determining the pivotal adjustment of each gage when positioned by its abutment.

655,422. MITERING-MACHINE. JOSEPH L. TYLER, Lynn, Mass. Filed Sept. 6, 1899. Serial No. 729,578. (No model.)

Claim.—In a mitering-machine, a cutter-head having suitable guides, a treadle, a link connecting said treadle with said cutter-head and provided with a rack, an oscillatory weighted arm, and a gear-segment connected therewith and meshing with the rack, the rack and segment-gearing being relatively shaped to preserve the engagement of the teeth of the link with the teeth of the segment during the operation of the treadle, substantially as and for the purpose set forth.

655,423. FOUNTAIN-PEN. HENRY J. UPTON, Somerville, Mass., assignor to Rhodes Lockwood, Rhodes G. Lockwood, and William N. Lockwood, Boston, Mass. Filed Mar. 23, 1900. Serial No. 9,843. (No model.)

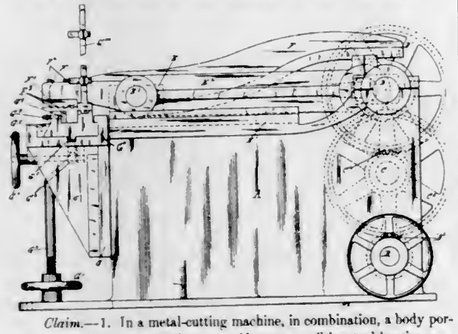
Claim.—1. A fountain-pen having a cylindrical body portion A; a tapered nozzle portion *a;* and a cylindrical mouth portion B; in combination with a cap adapted to engage and cooperate with the cylindrical portions of the fountain to form a double cylindrical ink and union joint, and having within it a stop adapted to abut against the cylindrical mouth portion B, to limit the movement of the cap upon the fountain, substantially as described.

2. A fountain-pen having a cylindrical body portion A; a tapered nozzle portion *a;* and a cylindrical mouth portion B; in combination with

a cap adapted to engage and coöperate with the cylindrical portions of the fountain, and having within it an annular shoulder adapted to abut upon and coöperate with the outer end face of the fountain-mouth B, to form a double cylindrical and annular ink and union joint, substantially as described.



655,424. METAL-CUTTING MACHINE. SWAN J. VERNSTEN, Chicago, Ill. Filed Sept. 22, 1899. Serial No. 731,362. (No model.)



Claim.—1. In a metal-cutting machine, in combination, a body portion; ways thereon; a carriage on said ways; a tilting tool-bearing arm pivotally mounted on said carriage; a cutting-tool fixed on said arm; a rotatable shaft; a cam on said shaft, adapted to engage the tool-bearing arm for moving said arm on its pivot to raise the cutting-tool from engagement with the work on the backward stroke of said tool; and means for reciprocating said carriage, which means is independent of the tool-bearing arm.

2. In a metal-cutting machine, in combination, a body portion; ways thereon; a carriage on said ways; a tilting, tool-bearing arm pivotally mounted on said carriage; a cutting-tool fixed on said arm; a cam for engaging said arm and moving it on its pivot, to raise the tool from engagement with the work on the backward stroke of the said tool; a shaft having a crank thereon; and a connecting-rod extending between the crank and said carriage, for reciprocating the latter on said ways.

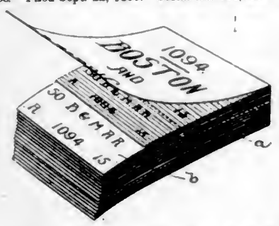
3. In a metal-cutting machine, in combination, a body portion; ways thereon; a reciprocatory carriage on said ways; a tilting, tool-bearing arm pivotally mounted on said carriage; a cutting-tool fixed on said arm at the forward end thereof; a shaft having a crank thereon; a cam on said shaft for engaging the rear end of said tool-bearing arm, and moving it on its pivot; a connecting-rod extending between the crank and a point of attachment to said carriage; and means for rotating the crank-shaft.

4. In a metal-cutting machine, in combination, a body portion; ways thereon; a reciprocatory carriage on said ways; a tilting, tool-bearing arm pivotally mounted on said carriage; a cutting-tool fixed on said arm at the forward end thereof; a shaft having a crank thereon; a cam on said shaft for engaging the rear end of said tool-bearing arm, and moving it on its pivot; a connecting-rod extending between the crank and a point of attachment to said carriage; means for rotating said crank-shaft; a table for supporting the work to be operated upon; means for adjosting said table in a vertical direction; and means for laterally moving said table.

5. In a metal-cutting machine, in combination, a body portion; ways thereon; a reciprocatory carriage on said ways; a pivotal shaft fixed on said carriage; a tilting, tool-bearing arm pivotally mounted on said shaft; a cutting-tool fixed on said arm at the forward end thereof; a shaft having a crank thereon; a cam on said shaft for engaging said tool-bearing arm, and moving it on its pivotal support; a connecting-rod extending between the crank and the shaft mounted on said carriage; for reciprocating the latter on said ways; a table for supporting the work to be operated upon; a screw for vertically adjusting the position of said table; and a rack and pinion for moving said table in a lateral direction.

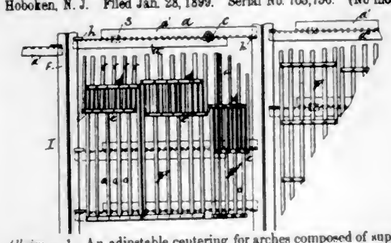
6. In a metal-cutting machine, in combination, a body portion; a driving-shaft rotatably mounted thereon; a crank-shaft having two cranks of equal throw and extending in the same plane; gear-wheels for imparting motion from said driving-shaft to said crank-shaft; horizontal ways on said body portion; a reciprocatory carraige on said ways; a shaft fixed on said carriage; a tool-bearing arm pivotally mounted on said shaft; a cutting-tool fixed on said arm near the forward end thereof; a cam on said crank-shaft for engaging the rear end of said arm, and moving it on its pivot; a connecting-rod extending between each of said cranks and the shaft fixed on said carriage; a table for supporting the work to be operated upon; means for clamping the work to said table; a screw and hand-wheel for vertically adjusting said table; and a rack and pinion for moving said table transversely.

655,425. COUPON-TICKET BOOK. GEORGE C. WADLEIGH, Haverhill, Mass. Filed Sept. 22, 1899. Serial No. 731,280. (No model.)



Claim.—A coupon-book comprising a series of leaves of a given tint or color, and a series of leaves of a contrasting tint or color, the leaves comprising detachable coupons and being substantially uniform in size and printed matter, the leaves of one series alternating with those of the other series, whereby the removal of a single coupon from any leaf exposes a coupon of a different color, the simultaneous removal of two superimposed coupons exposing a coupon of the same color as the upper removed coupon.

655,426. CENTER FOR FIREPROOF ARCHES. GUY B. WAITE, Hoboken, N. J. Filed Jan. 28, 1899. Serial No. 703,756. (No model.)



Claim.—1. An adjustable centering for arches composed of supporting-ribs and expanding centering resting upon the said ribs, substantially as described.

2. An adjustable centering for arches composed of adjustable ribs, *a*, and expanding centering, F, resting upon the said arches, substantially as shown and described.

3. An adjustable centering for arches composed of slats arranged in sets, each set being fastened together by a device which will allow the extension of the centering while preserving its capacity to act as one piece, all substantially as set forth.

4. An adjustable centering for arches consisting of slats each set of said slats being fastened together by straps which allow the extension crosswise of the center while preserving its capacity to act as one piece, substantially as described.

5. An adjustable centering for arches composed of slats *o* and slats *v*, each set of slats being fastened together by straps *d* and *e* having longitudinal slots to allow of the expansion of the centering crosswise, substantially as shown and described.

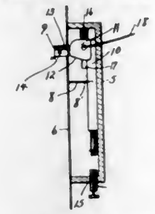
6. An adjustable centering for arches consisting of ribs *a* each composed of two lapping members *a'* *a''* with means for supporting their outer ends, a yoke *s* on the member *a''* hooked beneath the other, a clamp on the member *a'* having a notch opening longitudinally of the rib, and a pin on the member *a''* removably engaging said notch, substantially as shown and described.

7. An adjustable centering for arches consisting of ribs, each in two lapping members with supporting-hangers at their outer ends, a yoke secured on one member and hooked under but not over the other, and a clamp secured on the last-mentioned member and detachably engaging the first-mentioned, substantially as shown and described.

8. An adjustable centering for arches consisting of ribs, each in two lapping members with supporting-hangers at their outer ends, means for supporting the inner end of one member from the other, and a clamp in two parts one secured to the last-mentioned member and notched and the other held to the first-mentioned member by a bolt removably engaging said notch, substantially as shown and described.

9. An adjustable centering for arches consisting of supporting-ribs, *a*, hung to the flanges of the beams by means of clips, *h*, having edges curved about the center, *p*, within the contour of the clip to facilitate the removal of said ribs from the arches, substantially as set forth.

655,427. BURGLAR OR FIRE ALARM. FRANKLIN D. WALLACE, Wheatland, Ind. Filed Oct. 20, 1899. Serial No. 734,178. (No model.)



Claim.—1. As an article of manufacture, a casing, a movable terminal mounted therein, a coöperating terminal carried by said casing, a head carried by said movable terminal, said head being adapted to be acted upon and moved with relation to the coöperating terminal by means of a finger forced into engagement therewith, and means carried by said casing for supporting a fusible bar in position to engage a portion of said head.

2. As an article of manufacture, a casing 5, a cover 6 therefor having an opening leading into said casing, a pair of perforated ears adjacent said opening, a movable terminal mounted in said casing, a coöperating terminal, and means carried by said movable terminal for receiving a removable pin, the arrangement being such that said pin may be engaged by a fusible bar carried by said ears and thereby normally held either out of or in engagement with the coöperating terminal.

3. As an article of manufacture, a casing 5, a cover 6 therefor having an opening 7 leading into said casing, a pair of ears formed integral with said cover adjacent said opening, a sliding terminal mounted in said casing, a beveled head carried by said movable terminal opposite said opening, a coöperating terminal carried by said casing, and means carried by said sliding terminal for receiving a removable pin in position to be supported by a fusible bar supported by said ears.

655,428. HAND-STRAP FOR STREET-CARS. THEODORE E. WARDWELL, Stamford, Conn. Filed Feb. 3, 1900. Serial No. 3,849. (No model.)



Claim.—1. In a device of the character described the combination with a main strap, of an outer strap inclosing the lower end of the main strap and adapted to slide thereon, and a spring acting to retain the outer strap at its retracted position.

2. In a device of the character described the combination with a main strap having slots 17, of an outer strap adapted to slide thereon, a spreader lying between the plies of the main strap and having shanks which pass through the slots and through openings in the outer strap, and are provided with heads which retain the outer strap in place and a spring acting to retain the outer strap at its retracted position.

3. In a device of the character described the combination with a main strap having slots 17, of an outer strap having elongated openings 19, a spreader lying between the plies of the main strap and having shanks which pass through said slots and openings and are provided with heads lying transversely to the openings so that the outer strap may be placed in position or removed by placing the openings and heads in alinement and a spring connected to the spreader ,and to the main strap by which the outer strap is normally held at its retracted position.

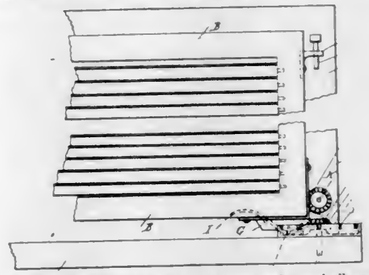
4. In a device of the character described the combination with a main strap having at its upper end an eye to receive a pole, of an onter strap inclosing the lower end of the main strap and adapted to slide thereon, a spreader between the plies of the main strap, a shaper in said eye whereby the latter is prevented from collapsing, and a spring whose ends are connected to said spreader and said shaper.

5. In a device of the character described the combination with a main strap having at its upper end an eye to receive a pole, of an outer strap inclosing the lower end of the main strap and adapted to slide thereon, a spreader between the plies of the main strap, a shaper comprising a curved portion lying within the eye, and a shank to which the plies of the strap are attached and a spring whose ends are connected to the spreader and shaper respectively.

6. The spreader E having two shanks 16 and heads 18, substantially as shown, for the purpose specified.

7. The spreader E comprising a body 15, two shanks 16 extending therefrom and elongated heads 18 at the ends of the shanks.

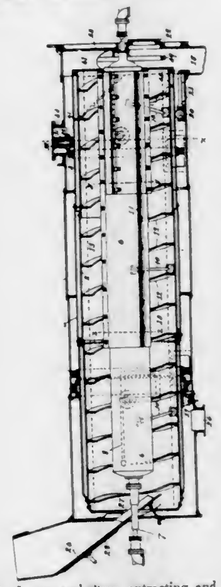
655,429. SHUTTER-WORKER. HIRAM K. WHITCOMB, Everett, Mass. Filed June 14, 1900. Serial No. 20,321. (No model.)



Claim.—1. The combination, with a frame, and a vertically-movable shutter provided with pivots for connecting it to the frame; of a plate secured to the lower part of the frame and provided with a notched flange, a stop on the shutter for engaging with the notches of the said flange, a disk on the lower pivot of the shutter, and a lever pivotally supported by the said plate and projecting under the said disk, whereby the shutter may be raised to free the stop and permit the shutter to be turned on its pivots, substantially as set forth.

2. The combination, with a frame, and a vertically-movable shutter provided with pivots for connecting it to the frame; of a shaft journaled in the said frame and provided with an operating-handle and a beveled toothed wheel, a beveled toothed wheel on the lower pivot of the shutter, said wheels being normally out of gear with each other, and means for raising the shutter, whereby the said wheels are placed in gear with each other, substantially as set forth.

655,430. APPARATUS FOR EXTRACTING AND REFINING ASPHALTIC MATERIAL. ARTHUR F. L. BELL, Carpenteria, Cal., assignor to the Alcatraz Company, San Francisco, Cal. Filed July 16, 1897. Serial No. 644,804. (No model.)



Claim.—1. In an asphaltum extracting and refining apparatus, a stationary casing, a revoluble main cylinder therein, with means for heating the exterior of said cylinder, a central concentric hollow core or drum fixed within said cylinder and revolving therewith, with means for heat-

ing said drum, and means for introducing and removing the material to be treated within the annular chamber included between said cylinder and drum, substantially as specified.

2. In an asphaltum extracting and refining apparatus, a stationary casing, a revoluble main cylinder within said casing, steam-jacketed as to its exterior, a central concentric hollow core or drum fixed within said cylinder and revolving therewith, means for introducing steam within said drum and said steam-jacket, helical vanes within the annular chamber between said main cylinder and said central drum, and means for introducing and removing the material to be treated within the said annular chamber, substantially as specified.

3. In an asphaltum extracting and refining apparatus, a stationary casing, a revoluble main cylinder therein, having a central hollow core, forming an annular chamber between the said inner core and the outer wall of the cylinder, means for heating said annular chamber through its inner and outer walls, helical vanes within said annular chamber, longitudinal lifting-plates between said helical vanes, and means for introducing and removing the material to be treated within said annular chamber, substantially as specified.

4. In an asphaltum extracting and refining apparatus, a stationary casing, a revoluble main cylinder therein, steam-jacketed as to its exterior, having a central hollow core, forming an annular chamber between said inner core and the outer wall of the cylinder, pipe connections for introducing steam into said inner core and outer jacket and for withdrawing water of condensation therefrom, helical vanes within said annular chamber, and means for introducing and removing the material to be treated within said annular chamber, substantially as specified.

5. In an asphaltum extracting and refining apparatus, a stationary casing, an annular melting-chamber therein, mounted revolubly upon an axis, means for heating said annular chamber through both its convex and its concave walls, helical vanes within said annular chamber, means for introducing the material to be treated, and a curved trap-outlet for discharging said material, with means for expelling the same through the trap, substantially as specified.

6. In asphaltum extracting and refining apparatus a revoluble main vessel or cylinder having a steam-jacket around its exterior, a longitudinal heating-drum set central therein and attached thereto, diaphragms forming pockets in the steam-jacket around the main cylinder by which water is raised from the bottom of the steam-jacket space and discharged through pipes leading from these pockets to the central heating-drum, all arranged substantially as described.

7. In an asphaltum extracting and refining apparatus, a steam-jacketed annular melting-chamber mounted revolubly upon an axis, a steam-heated hollow core therefor, a stationary outer casing, helical vanes within said annular chamber, means for introducing the material to be treated, a curved steam-jacketed-trap exit-pipe, and a rotative screw for impelling the softened material through the trap, substantially as specified.

8. In an asphaltum extracting and refining apparatus, a steam-jacketed annular melting-chamber mounted revolubly upon an axis, a steam-heated core therefor, helical vanes within the annular chamber, means for introducing and withdrawing the material from the said chamber, rotary supports for said revoluble chamber, gearing for rotating the said chamber, and a stationary casing, surrounding and inclosing the revoluble chamber, its rotary supports, and its actuating-gears, substantially as specified.

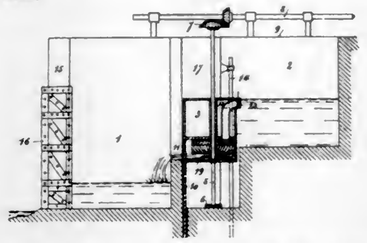
9. In asphaltum extracting and refining apparatus, a cylindrical melting vessel provided with steam-heating devices, an outer inclosing shell or casing, communicating therewith, a discharge-way and a propeller-screw to force the plastic melted material therethrough, the screw inclosed in a separable cylinder, made in sections and insertible without removing the shaft on which the screw is mounted, substantially as described.

10. In asphaltum extracting and refining apparatus, an inclined revoluble jacketed main vessel or cylinder having means to move the material longitudinally therethrough, a centrally-fixed heating-drum therein, steam connections between the central drum and steam-jacket of the main drum at one end, and water connections between the water-jacket and central drum at the other end, permitting steam circulation through the central drum and the steam-jacket, in the manner substantially as specified.

11. In asphaltum extracting and refining apparatus, a revoluble main cylinder having a steam-jacketed exterior and a central heating steam-drum revoluble therewith, pipes communicating from the central heating-drum to the steam-jacket, and pipes leading from the steam-jacket to the central steam-drum to return condensed water to the latter, said pipes discharging at or near the axis of the central steam-drum and above the water-level therein, substantially as described.

12. In asphaltum extracting and refining apparatus, the combination of a stationary casing or shell, and an interior revoluble main vessel or cylinder having a steam-jacket around its exterior, and a longitudinal heating-drum set central therein and attached thereto, means for admitting steam to the outer jacket and draining the water therefrom, means for supplying the material to the revoluble vessel, means for advancing the material through the revoluble vessel and means for discharging the material from the revoluble vessel, substantially as described.

655,431. **MEANS FOR UTILIZING TIDAL FORCE.** PAUL BOISRAMÉ, Paris, France. Filed Dec. 23, 1899. Serial No. 741,383. (No model)



Claim.—1. In a mechanism for utilizing tidal force, the combination of an outer reservoir, an inner reservoir, means for controlling the admission only of water to the inner reservoir, means for controlling the discharge only of water from the outer reservoir, a balance-float situated in the inner reservoir and movable vertically, a motor apparatus sustained by the float and movable vertically with it, a vertical rotary shaft on which the motor apparatus is slidingly mounted to revolve with it, said float and motor apparatus being constructed to form a connection between the two reservoirs independent of the said means for controlling the entrance and discharge of the water.

2. In a mechanism for utilizing tidal force, the combination with two reservoirs, of a counterbalance float-box formed with a passage constituting a connection between the two reservoirs, and comprising an upper water-tight compartment and a lower compartment included in said connecting-passage, a motor apparatus in the lower compartment, and a vertical shaft on which the motor apparatus is slidingly mounted to revolve therewith.

3. In a mechanism for utilizing tidal force, the combination with the two reservoirs formed with a vertical communicating opening, of a float provided with a passage in connection with said opening, a motor apparatus situated in said passage, and an apron carried by the float and extending below the discharge end of the passage, in position to close the communicating opening below the discharge end of the passage.

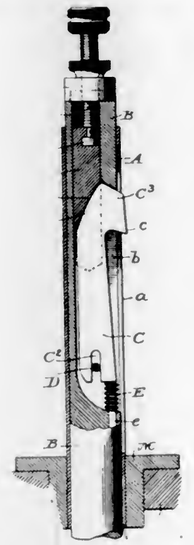
4. In a device for utilizing tidal force, the combination of two reservoirs, a float provided with a passage constituting a connection between them and formed with a bottom having a circular opening, a shaft extending loosely but snugly through said opening and formed with a longitudinal groove, a key extending in the groove and formed at its ends with lateral projections, and a cap secured to the bottom and closely surrounding the shaft above the bottom; whereby the cap and key prevent the entrance of water between the bottom and the shaft.

5. Means for utilizing tidal force and the like irregular source of power, comprising two basins having their bottoms arranged at different levels, a barrage-wall separating one basin from the other and having a narrow vertical opening permitting a fall or flow of water from the high-level basin to the low-level basin, a turbine or motor interposed in the course of said fall or flow and adapted to be operated thereby, a buoyant support for said motor adapted to cause the motor to shift its position vertically as the level varies in the high-level basin, a sliding apron adapted to prevent flow of water through that portion of the vertical opening in the barrage which lies below the floating motor, and means for permitting inflow from the exterior to the high-level basin and outflow to the exterior from the low-level basin while preventing return flow in each case; in combination, substantially as described.

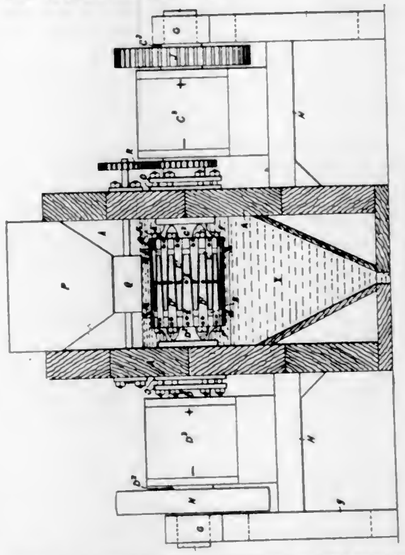
655,432. **KEY-SEATING MACHINE.** ABEL D. CATLIN, Chattanooga, Tenn. Filed May 22, 1899. Serial No. 717,775. (No model.)

Claim.—1. In a key-seating machine, the combination with a slotted guide, of a slotted bar working in said guide, a journal supported in said bar, a cutting-tool, a recess formed in the bottom of the same, said recess adapted to receive the journal, a wedge-block acting against the upper end of the tool, an adjusting-screw for said block, and a spring at the lower end of the cutter to normally press the same against the wedge-block, all substantially as set forth.

2. In a key-seating machine, the combination with a slotted guide, of a slotted bar working in said guide, a journal supported in said bar, a cutting-tool, a recess formed in the bottom of the same, said recess adapted to receive the journal, a wedge-block acting against the upper end of the tool, an adjusting-screw swiveled in the same, a pin supported in the lower end of the cutter-bar, a coiled spring surrounding the same, said spring engaging the rear end of the cutter and acting to normally press it forward, and a jam-nut to control the adjusting-wedge, all substantially as set forth.



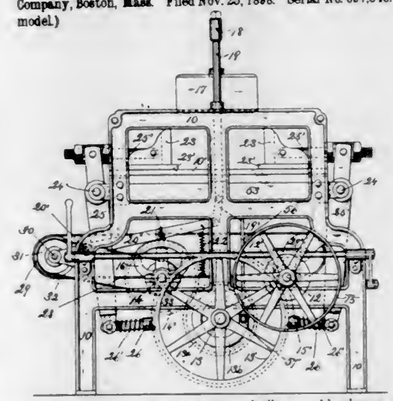
655,433. **MAGNETIC SEPARATOR.** CHARLES F. COURTNEY and ROBERT BUTTERWORTH, Broken Hill, New South Wales. Filed Mar. 19, 1900. Serial No. 9,285. (No model.)



Claim.—1. A magnetic separator, comprising two cores, energizing-coils for said cores, a rotary separating-drum supported between the inner ends of said cores and having a series of longitudinal spaced pole-pieces connected alternately with the said inner ends of the cores, the said pole-pieces being tapered from those ends which are connected with the cores toward their free ends, the surface of the non-magnetic drum being exposed between the pole-pieces, and means for feeding the material to said drum.

2. A magnetic separator, comprising two spaced axially-alining rotary cores having flanges at their inner ends, stationary energizing-bobbins surrounding said cores, a rotary separating-drum of non-magnetic material arranged between the inner ends of said cores and secured to the said flanges, the said drum having a series of longitudinal spaced pole-pieces connected alternately with the flanges of said cores, the said pole-pieces being tapered from those ends which are connected with the cores toward their free ends, the said drum being provided at each end with a guide-flange to confine the material within the active portion of the peripheral surface of the drum, an adjustable brush extending between the said flanges, and means for feeding the material to the said drum, substantially as described.

655,434. **MACHINE FOR MAKING PAPER BOXES.** WALTER S. DAVIS, Contoocook, N. H., assignor to the Kingsbury & Davis Machine Company, Boston, Mass. Filed Nov. 25, 1898. Serial No. 697,348. (No model.)



Claim.—1. In a box-machine, a vertically-movable plunger, mechanism for reciprocating it, plates placed upon opposite sides of the plunger and adapted to receive the end blanks, uprights 35 against which the inner end blanks bear, extensions 35' connected with the uprights, and bars or carriages provided with racks, combined with the shafts 45 provided with the wheels 43 for engaging with the said racks, means for causing the shaft 45 to turn in first one direction and then the other, and the blades 40, provided with bends or shoulders for feeding the end blanks, and which are connected to the carriages, substantially as shown.

2. In a box-machine, the blades provided with bends, and means for reciprocating the blades so as to feed the end blanks, combined with a vertically-reciprocating plunger, the two pressure-heads which apply the end blanks to the ends of the box carried by the plunger, and means for reciprocating the pressure-heads so as to apply the end blanks to the opposite ends of the box-blank carried by the plunger simultaneously when the plunger is in its lowest position, substantially as described.

3. In a box-machine the combination with a blank-support, of blank-feeding mechanism comprising a feeding-slide provided with a rack, a shaft geared to said rack, a second rack geared to the shaft, and a crank and pitman operatively connected to the last-named rack substantially as specified.

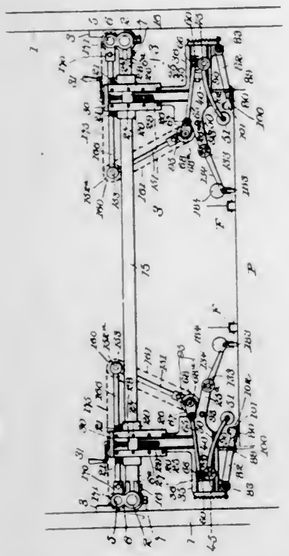
4. In a box-machine, the plates 34, upon which the end blanks are placed, the followers 37 by which the end blanks are fed forward, the uprights 35 against which the end blanks are forced by said followers, and endwise-reciprocating blades 40, provided with bends or shoulders for feeding the end blanks, and mechanism for reciprocating them, combined with a vertically-reciprocating plunger, the two reciprocating pressure-heads, and mechanism for operating them, whereby when the plunger reaches its lowest position carrying a box-blank the end blanks are simultaneously applied thereto, substantially as specified.

5. In a box-machine, the operating-shaft 13, a wheel placed thereon and provided with a cam-disk 13^b, a pivoted lever operated by said disk, a connecting-rod connected to the upper end of the lever, and the plate 54 operated by said lever, combined with the frame 52, the bar 53 to which the plate 54 is pivoted, and the endless belt 28 upon which the box is forced after it is completed, substantially as specified.

655,435. **PAPER-FEEDING MACHINE.** TALBOT C. DEXTER, Pearl River, N. Y. Filed Sept. 24, 1898. Serial No. 691,755. (No model.)

Claim.—1. In a paper-feeding machine, the combination of a support for a pile of sheets, means for effecting a preliminary separation of the top sheet from the pile, means for moving the top sheet upon the

pile, and a tail-gripper comprising an elongated rubber block in constant engagement with the pile arranged parallel with the direction of movement of the sheet, and a weight engaging the rear end of the elongated tail-gripper, substantially as set forth.



2. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable sheet-buckling mechanism, and means for moving a buckled sheet forward on a pile, with a tail-gripper comprising a spring-pressed arm supporting a rubber block, a second spring, and means for intermittently applying the pressure of the second spring to the spring-pressed arm for augmenting the pressure of the rubber block, substantially as set forth.

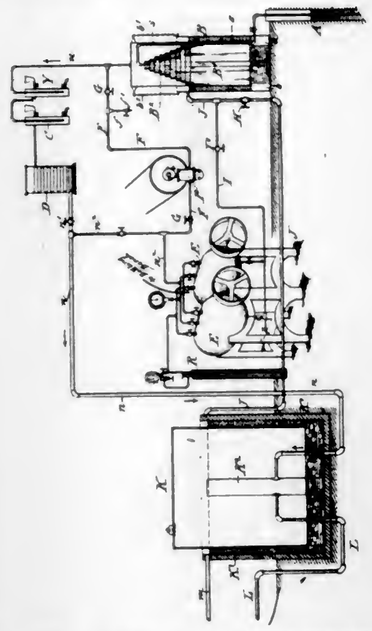
3. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable sheet-buckling mechanism, and means for moving a sheet forward upon the pile, with a tail-gripper constantly engaging the pile and comprising a rock-shaft, a rock-arm journaled upon the rock-shaft and supporting a rubber block, means of engagement between the rock-arm and rock-shaft, a torsional spring operating upon the rock-shaft, and means for operating the rock-shaft for intermittently applying the pressure of the torsional spring upon the rock-arm, substantially as set forth.

4. In a paper-feeding machine, the combination of suitable sheet-buckling mechanism, and means for moving a buckled sheet forward on a pile, with a tail-gripper comprising a rock-shaft 133, a rock-arm 134 journaled upon rock-shaft 133 and supporting a rubber block 183, a spring 180 connected at one end to shaft 133 and at its other end engaging rock-arm 134, a spring 135 attached at one end to a stationary point and at its other end to the rock-shaft 133, a rock-arm 142 keyed to rock-shaft 133, a cam 140 arranged to engage rock-arm 142, and means of engagement between rock-shaft 133 and rock-arm 134, substantially as and for the purpose set forth.

5. In a paper-feeding machine, the combination of a support for a pile of sheets, a reciprocating sheet-buckling finger, a holding-clamp, a rotary member operatively connected with the buckling-finger, a cam on the rotary member, a rock-arm connected with the holding-clamp and engaged by said cam, a tail-gripper in constant engagement with the pile, a spring device adapted to augment the pressure of the tail-gripper, a rock-arm connected with the spring device, a second cam upon the rotary member engaging the rock-arm of the spring device, and means for moving sheets upon the pile, substantially as and for the purpose set forth.

6. In a paper-feeding machine, the combination of a support for a pile of sheets, means for effecting a preliminary separation of the top sheet from the pile, means for moving the top sheet upon the pile, and a tail-gripper comprising a rock-shaft, and an elongated rubber block attached near its forward end to the rock-arm and supported in constant engagement with the pile arranged parallel with the direction of movement of the sheet, and a weight engaging the rear end of the elongated tail-gripper, substantially as set forth.

655,436. APPARATUS FOR PURIFYING NATURAL MINERAL WATERS. JULIUS Z. FORNEI, Saratoga Springs, N. Y. Filed Feb. 17, 1899. Serial No. 705,756. (No model.)



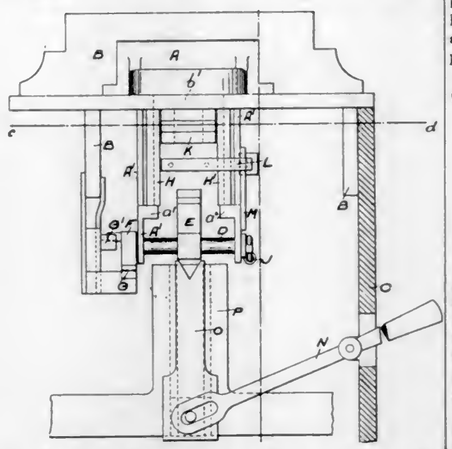
Claim.—1. The apparatus herein described for purifying natural mineral waters, which consists of a separator for the water and carbonic-acid gas contained therein, means for supplying the mineral water to said separator, purifiers for the carbonic-acid gas, a gasometer for the purified gas, mixing-fountains, a pipe connecting the mixing-fountains with the water-space of the separator at a point above the level of said fountains, a pipe connecting the gas-space of the separator with the purifiers, a pipe connecting said purifiers with the gasometer, means for supplying the purified carbonic-acid gas to said mixing-fountains, and a discharge-pipe connected with the mixing-fountains for drawing off the purified water, substantially as set forth.

2. The apparatus herein described for purifying natural mineral waters, which consists of a separator for the water and carbonic-acid gas contained therein, means for supplying the mineral water to said separator, purifiers for the carbonic-acid gas, a gasometer for the purified gas, mixing-fountains, a pipe connecting the mixing-fountains with the water-space of the separator, a pipe connecting the gas-space of the separator with the purifiers, a pipe connecting said purifiers with the gasometer, means for supplying the purified carbonic-acid gas to said mixing-fountains, a pipe connecting the mixing-fountains above their liquid-level, with the purifiers, and a discharge-pipe connected with the mixing-fountains for drawing off the purified water, substantially as set forth.

3. The apparatus herein described for purifying natural mineral waters, which consists of a separator for the water and carbonic-acid gas contained therein, means for supplying the mineral water to said separator, purifiers for the carbonic-acid gas, a gasometer for the purified gas, mixing-fountains, a pipe connecting the mixing-fountains with the water-space of the separator, a pipe connecting the gas-space of the separato with the purifiers, a pipe connecting said purifiers with the gasometer, means for supplying the purified carbonic-acid gas to said mixing-fountains, a vacuum-pump, a pipe connecting the mixing-fountains, above their liquid-level, with the vacuum-pump, a pipe connecting said vacuum-pump with the purifiers, and a discharge-pipe connected with the mixing-fountains for drawing off the purified water, substantially as set forth.

4. In an apparatus for purifying natural mineral waters, a separator, consisting of an outer drum open at its upper end, an inner drum water-sealed in the outer drum, a series of shelves supported in said inner drum, said shelves being of increasing surface from the uppermost to the lowermost shelf, and means for discharging the mineral water upon the uppermost of said shelves, substantially as set forth.

655,437. COIN-OPERATED VENDING-MACHINE. JOSEPH GRICK, Sutton-Coldfield, England. Filed Feb. 24, 1900. Serial No. 6,331. (No model.)



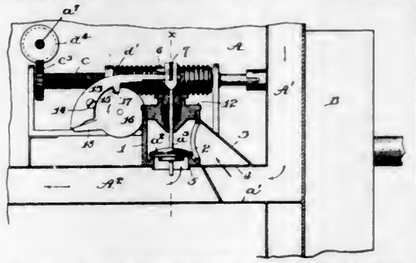
Claim.—1. A blank-returning device for coin-operated vending-machines comprising a chute extending from the inlet into the machine, and a push-piece with means for operating the same along the chute in a direction opposite to the entering movement of the coin so that the spurious coins may be ejected through the inlet-opening, substantially as described.

2. A returning device for coin-operated vending-machines consisting of a push-piece which is free to slide within the coin-chute and a push-piece-operating lever having its handle end projecting beyond the exterior of the casing of the machine, substantially as described.

3. In coin-operated vending-machines, the combination with the slotted bars H H′ forming the coin-chute and the balance-lever L mounted on the underframe A′ of the sliding drawer A, of a push-piece O, guides P, and push-piece-operating lever N, substantially as set forth.

4. In coin-operated vending-machines, the combination with the slotted bars H H′ forming the coin-chute and the magnets K secured to the under side of the fixed frame B, of a push-piece O, guides P, and push-piece-operating lever N, substantially as set forth.

655,438. PREPAYMENT GAS-METER. KRNEMER F. GRIFFITHS, Philadelphia, Pa. Filed Dec. 13, 1899. Serial No. 740,152. (No model.)

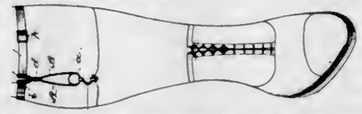


Claim.—1. A valve-lifting mechanism for prepayment gas-meters, consisting of the disk 16, having therein the beveled-edge notch 17, and provided with the extending arm 18, the lever 13, having thereon the downwardly-projecting slanting-edge spur 15, adapted to slide over the periphery of the disk 16, and fit into the notch 17, the forward end of said lever being connected with a suitable valve and the rear end adapted to be operated by the arm 18, substantially as shown.

2. In a prepayment gas-meter, the combination of the disk 16, connected to suitable operating mechanism and having thereon the beveled-edge notch 17, and extending arm 18, with the lever 13, having thereon the downwardly-projecting slanting-edge spur 15, one end of said lever being adapted to be operated by the arm 18, and the opposite end fitting into the lever 7, connected with a valve controlling the flow of gas through the meter, substantially as shown.

3. In a prepayment gas-meter, the combination of the disk 16, connected to suitable operating mechanism and having therein the beveled-edge notch 17, and extending arm 18, the pivoted lever 13, having thereon the spur 15, slotted lever 7, one end of which is connected with the lever 13, and the opposite end fitted to the post 10, with the casing 1, having therein the valve a^2, the stem of which is connected to the lever 7, and a stuffing-box, all arranged, substantially as shown and for the purpose described.

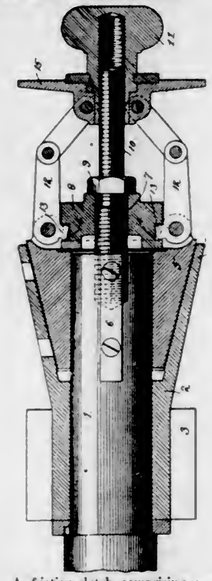
655,439. HOSE-SUPPORTER. OTTO H. HAKE, Washington, Mo., assignor of one-half to Arthur Miller, same place. Filed Oct. 4, 1898. Serial No. 692,622. (No model.)



Claim.—1. A hose-supporter, comprising a spring-wire connection presenting coils and spring members crossed above the coils, the ends of said spring members being bent into loops; a collar encircling the spring members where they cross; a band attached at one end to the looped end of one of the spring members, and a hook at the free end of the band for engagement with the other spring member; together with a metal loop or holding device carried by the coils of the spring-wire connection, as herein shown and for the purpose set forth.

2. In a hose-supporter, the combination, of a spring-wire connection made up of a single piece of wire bent to form a loop above which the two portions of the wire are twisted together, curved outward and crossed to form spring members the terminals of which are formed into loops; together with a band attached to the looped end of one of the spring members, and a hook attached to the other end of said band, substantially as shown and for the purpose set forth.

655,440. CLUTCH MECHANISM. FRANK G. HOBART, Beloit, Wis., assignor to the Fairbanks, Morse & Company, Chicago, Ill. Filed Oct. 13, 1898. Serial No. 693,434. (No model.)



Claim.—1. A friction-clutch comprising a driving-shaft; a loose gear or pulley mounted thereon; a sliding friction-sleeve mounted upon the shaft in position to be thrown into and out of engagement with the loose gear; a system of bell-crank levers pivotally attached at their angles to the sleeve; a collar or block fixed relatively as to movement between the shaft and sleeve, said block forming a fulcrum for one arm of each of the levers, and means for operating the levers to move the sleeve.

2. A friction-clutch comprising a driving-shaft; a loose gear or pulley mounted thereon; a sliding friction-sleeve mounted upon the shaft in position to be thrown into and out of engagement with the loose gear; a system of bell-crank levers pivotally attached at their angles to the sleeve,

a collar or block fixed relatively as to movement between the shaft and sleeve, said block forming a fulcrum for one arm of each of the levers, means for operating the levers to move the sleeve, and means whereby the position of said fulcrum-block may be adjusted.

3. A friction-clutch comprising a driving-shaft; a loose gear or pulley mounted thereon; a sliding friction-sleeve mounted upon the shaft in position to be thrown into and out of engagement with the loose gear; a system of bell-crank levers pivotally attached at their angles to the sleeve; a collar or block fixed relatively as to movement between the shaft and sleeve, said block forming a fulcrum for one arm of each of the levers, and hand-operated mechanism connected to the other arm of each of said levers for moving the sleeve.

4. A friction-clutch comprising a driving-shaft; a loose gear or pulley mounted thereon; a sliding friction-sleeve mounted upon the shaft in position to be thrown into and out of engagement with the loose gear; a system of bell-crank levers pivotally attached at their angles to the sleeve; a collar or block fixed relatively as to movement between the shaft and sleeve, said block forming a fulcrum for one arm of each of the levers, and means for operating the levers to move the sleeve, said means comprising a threaded extension of said shaft, a hand-wheel or nut working thereon, and connections between the bell-crank levers and said hand-wheel.

5. A friction-clutch comprising a driving-shaft; a loose gear or pulley mounted thereon; a sliding friction-sleeve mounted upon the shaft in position to be thrown into and out of engagement with the loose gear; a system of bell-crank levers pivotally attached at their angles to the sleeve; a collar or block fixed relatively as to movement between the shaft and sleeve, said block forming a fulcrum for one arm of each of the levers; a threaded extension on said shaft; a lock-nut upon said threaded extension for holding said fulcrum-block; a hand-wheel working on the same threaded extension; and connections between the bell-crank levers and said hand-wheel, whereby longitudinal movement of the hand-wheel is transmitted to the sleeve.

6. A friction-clutch comprising a driving-shaft; a loose gear or pulley mounted thereon; a sliding friction-sleeve mounted upon the shaft in position to be thrown into and out of engagement with the loose gear; a system of bell-crank levers pivotally attached at their angles to the sleeve; a collar or block fixed relatively as to movement between the shaft and sleeve, said block forming a fulcrum for one arm of each of the levers, hand-operated mechanism connected to the other arm of each of said levers for moving the sleeve, and a guard-flange between the levers and said hand-operated mechanism.

7. A friction-clutch comprising a driving-shaft; a loose gear or pulley mounted thereon; a sliding friction-sleeve mounted upon the shaft in position to be thrown into and out of engagement with the loose gear; a system of bell-crank levers pivotally attached at their angles to the sleeve; a collar or block fixed on said shaft and provided with a peripheral channel forming a fulcrum for one arm of each of the levers; and means for operating the levers to move the sleeve; said fulcrum-block, levers and sleeve all mounted to rotate with the driving-shaft.

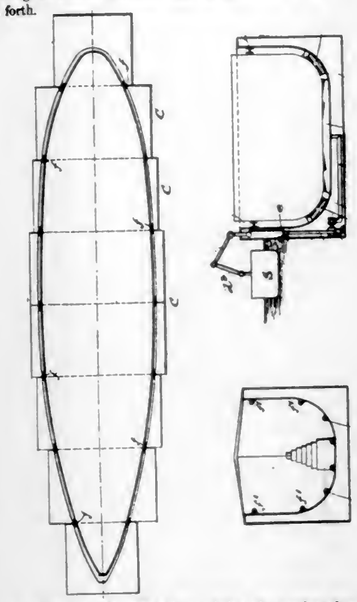
8. In a friction-clutch, in combination, a shaft; a wheel normally loose upon the shaft; a sliding friction-sleeve rotating with the shaft and adapted to engage the wheel to rotate it; a collar or block having threaded engagement with the shaft and provided with a peripheral channel; a system of bell-crank levers fulcrumed in said channel and engaging the sleeve to slide it; and means for actuating the levers.

9. A friction-clutch comprising a driving-shaft; a loose gear or pulley mounted thereon; a sliding friction-sleeve mounted upon the shaft in position to be thrown into and out of engagement with the loose gear; a system of bell-crank levers pivotally attached at their angles to the sleeve; a collar or block having threaded engagement with said shaft and forming a fulcrum for one arm of each of the levers; means for operating the levers to move the sleeve; said fulcrum-block, levers and sleeve all mounted to rotate with the driving-shaft; and means for moving said levers.

655,441. SECTIONAL FLOATING DOCK. WALTER JAMIESON, New York, N. Y. Filed Apr. 13, 1899. Renewed Dec. 26, 1899. Serial No. 741,675. (No model.)

Claim.—1. A sectional floating dock, consisting of bow and stern sections conforming at their interior walls respectively with the shape of the bow and stern of a vessel, said sections having closed outer ends, and intermediate sections, each of said intermediate sections conforming approximately in shape at its interior wall to the shape of the portion of the hull to which it is applied, substantially as set forth.

2. A sectional floating dock consisting of hermetically-closed bow and stern sections, said sections having closed outer ends, and a number of intermediate sections, each section being composed of an exterior and an interior shell, the latter adapted to conform to the shape of that portion of the hull to which it is to be applied, said sections being provided with the usual keel-blocks, chock-blocks and side supports or braces, and with partitions in their bottom portions forming compartments, and means for locking the sections together when applied to the vessel, substantially as set forth.



3. A sectional floating dock, consisting of a number of sections corresponding at their inner surface with the shape of that portion of the hull to which they are to be applied, said sections being composed of closed exterior and interior shells, locking devices for connecting the ends of the sections when applied to the hull of a vessel, longitudinal and transverse partitions forming compartments in the bottom part of each section, and valved pipes for admitting or removing the water from said sections and from the space between them and the vessel docked in the same, substantially as set forth.

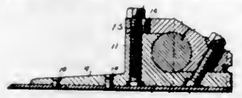
4. A sectional floating dock, consisting of bow and stern sections closed at their outer ends and of equal width, and a number of intermediate sections, the length of each of said intermediate sections being equal to the width of said bow and stern sections, and means for connecting all of said sections together with the sides of the intermediate sections abutting against each other and with the bow and stern sections arranged respectively at the ends of the line of intermediate sections, substantially as set forth.

5. In a sectional floating dock, the combination, with the bow and stern sections having closed outer ends, and intermediate sections, the interior shells of which are shaped to correspond with the portions of the hull to which they are to be applied, of an auxiliary closed section, and means for locking the sections together so as to form a pound for any individual section, substantially as set forth.

6. In a sectional floating dock, an individual dock-section composed of hermetically-closed exterior and interior shells provided with the usual keel-blocks, chock-blocks and side braces, longitudinal and transverse partitions forming compartments in the lower part of said dock-section, means for admitting or removing water from the interior of said section, and means for removing the water from the space at the interior of the inner shell, substantially as set forth.

655,442. PITMAN CONNECTION. ELIE JONES, Reagan, Tenn. Filed Mar. 20, 1900. Serial No. 9,436. (No model.)

Claim.—1. In a device of the class described, the combination with a pitman, of a bearing composed of a lower fixed section provided at the back of the opening with an extension forming the rear wall of such bearing-opening and terminating short of the top of the latter, said fixed section being also provided at its bottom with a front extension, an upper adjustable section extending over the top of the lower section and forming the top and front wall of the bearing-opening and terminating short of the bottom of the same, said adjustable section being provided at its front with an inclined or angularly-disposed face, a rear or inner fastening device arranged perpendicular to the length of the bearing, and an inclined or angularly-disposed front fastening device passing through the sections and engaging the front inclined or angularly-disposed face of the upper section, substantially as and for the purpose described.

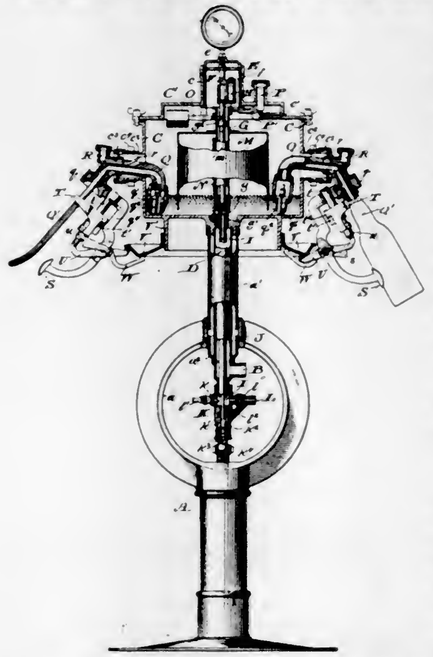


2. In a device of the class described, the combination with a pitman having a hook, of a bearing having an eye to receive the hook and composed of upper and lower sections terminating respectively short of the top and the bottom of the eye, and extending in advance and in rear of the same, the rear fastening device arranged perpendicular to the length of the bearing, and the front fastening device arranged at an inclination and adapted to force the adjustable section inward, substantially as described.

3. In a device of the class described, the combination with a pitman having a hook, of a bearing or knife-head composed of a lower section having an arm 9, and an upper section provided with front and rear slots, the front slot being inclined, and the front and rear fastening devices connecting the sections and passing through the said slots, substantially as described.

4. In a device of the class described, the combination with a pitman having a hook, of a bearing having an eye to receive the hook, a latch arranged to engage the hook and provided with a pivot or pintle extending through the bearing, and a coiled spring disposed on the pivot or pintle and connected with the same and with the bearing, substantially as described.

655,443. BOTTLE-FILLING MACHINE. FRANK C. KELLER, Milwaukee, Wis. Filed Apr. 20, 1899. Serial No. 713,704. (No model.)



Claim.—1. In a bottle-filling machine the combination with a suitable stand or support, of a closed reservoir rotatably mounted thereon and having a number of valve-controlled nozzles, a liquid-supply connection, and gas supply and waste connections; valves controlling said gas connections; and a vertically-movable bell within said reservoir adapted to operate said gas-valves, substantially as and for the purpose set forth.

2. In a bottle-filling machine the combination of a closed reservoir having valve-controlled gas supply and waste connections, one or more valve-controlled bottle-filling siphons or nozzles, and a vertically-movable bell within said reservoir having valve-controlled gas supply and waste connections, and adapted to operate the valves of the gas supply and waste connections of said reservoir, substantially as and for the purposes set forth.

3. In a bottle-filling machine the combination with a suitable stand or support, of a closed reservoir adapted to turn horizontally on said stand or support and having a liquid-supply connection and gas supply and waste connections, siphons pivotally connected with said reservoir, and having gas and liquid passages opening respectively into said reservoir above and below the level of the liquid therein, valves in said gas-passages adapted to be opened by the movement of said siphons into filling position, valves in said liquid-passages adapted to be automatically opened by counter-pressure of gas, and automatic means for regulating the gas-pressure in said reservoir, substantially as and for the purposes set forth.

4. In a bottle-filling machine the combination with a suitable stand or support having liquid and gas supply connections, of a closed reservoir having a vertically-disposed tubular stem adapted to turn in said stand or support in communication with its liquid-supply connection, a vertically-movable bell or gas-holder inclosed in said reservoir and having a tubular stem, tubes or passages leading from the gas-supply connections through the tubular stem of said reservoir and opening one into the bell and the other into the reservoir outside of the bell, manually-operated cocks controlling the gas connection which communicates with the interior of said bell, valves normally closing the tube or passage opening into said reservoir, and a waste port or passage opening out of said reservoir and adapted to be operated by the movement of said bell, and valve-controlled siphons leading out of said reservoir, substantially as and for the purposes set forth.

5. In a bottle-filling machine the combination of a closed rotary reservoir adapted to turn on a vertical axis and provided with lateral openings and with liquid-supply and gas supply and waste connections, vertically-swinging siphons pivotally connected with said reservoir and having gas and liquid passages communicating respectively with the interior of said reservoir above and below the level of the liquid therein, said liquid-passages terminating outside in downwardly-projecting nozzles, valves in said gas-passages adapted to be opened by the downward movement of said nozzles, valves in said liquid-passages adapted to be opened by the counter gas-pressure produced in the bottles to be filled, and means for regulating the gas-pressure in said reservoir, substantially as and for the purposes set forth.

6. In a bottle-filling machine the combination of a closed reservoir having liquid-supply and gas supply and waste connections, siphons pivotally connected with said reservoir, and having gas and liquid passages communicating with the interior of said reservoir above and below the liquid-level therein respectively, flexible diaphragms closing the openings between said siphons and reservoir, valves normally closing said gas-passages and adapted to be opened by the movement of the siphons into filling position, valves normally closing said liquid-passages and adapted to be automatically opened by the counter gas-pressure in bottles to be filled when that pressure is approximately equal to the pressure in said reservoir, and means for regulating the pressure in said reservoir, substantially as and for the purposes set forth.

7. In a bottle-filling machine the combination of a closed reservoir having liquid-supply and gas supply and waste connections, valves normally closing said gas supply and waste connections, a vertically-movable bell inclosed in said reservoir and adapted to open said valves, a valve-controlled gas supply and waste connection communicating with the interior of said bell, and valve-controlled gas and liquid passages leading out of said reservoir and adapted to be put in communication with bottles to be filled, substantially as and for the purposes set forth.

8. In a bottle-filling machine the combination of a rotary reservoir provided with bottle-filling nozzles and heads pivotally connected therewith, pivotally-connected jaws adapted to grasp the neck of a bottle placed on said nozzles and movable toward and from said heads, wedges for closing said jaws and moving them toward said heads, levers fulcrumed to arms on said heads and connected with said wedges, and an annular cam or incline adjustably attached to said reservoir and adapted to engage with said levers for operating said jaws, substantially as and for the purposes set forth.

9. In a bottle-filling machine the combination of a rotary reservoir provided with bottle-holders each pivotally connected therewith and comprising a head provided with an elastic packing-ring, a nozzle passing through said ring and communicating with said reservoir, a rest adjustably connected with said head and adapted to support bottles in the proper relation to said nozzle for filling, pivotally-connected jaws movable toward and from said head and the neck of a bottle placed between them upon said nozzle, a wedge for closing said jaws, a lever pivotally connected with said head and yieldingly connected with said wedge, and a vertically-adjustable cam attached to said reservoir and engaging with the wedge-operating levers of the several bottle-holders, substantially as and for the purposes set forth.

10. In a bottle-filling machine the combination of a rotary reservoir having liquid-supply and gas supply and waste connections, valves normally closing said gas supply and waste connections, a vertically-movable gas-containing bell inclosed in said reservoir and adapted to open said valves, siphons pivotally connected with said reservoir and having gas and

liquid passages communicating with the interior of said reservoir above and below the liquid-level therein, nozzles constituting the outer ends of the liquid-passages of said siphons, packing-rings surrounding said nozzles, pivotally-connected jaws movable toward and from said packing-rings, wedges for closing said jaws upon the necks of the bottles and moving them upward toward said packing-rings, levers having fulcrum connections with said siphons and yieldingly connected at their outer ends with said wedges, and a vertically-adjustable annular cam attached to said reservoir and adapted to engage with the inner ends of said levers, substantially as and for the purposes set forth.

11. In a bottle-filling machine the combination of a rotary reservoir adapted to turn on a vertical axis and having a liquid-supply connection and valve-controlled gas supply and waste connections, means for automatically regulating the gas-pressure and liquid-level in said reservoir, bottle-filling heads pivotally connected with said reservoir and having valve-controlled gas and liquid passages communicating with the interior of said reservoir above and below the liquid-level therein, said heads being provided with elastic packing-rings, pivotally-connected jaws movable toward and from said heads, levers fulcrumed to arms of said heads, wedges yieldingly connected with said levers and adapted by engagement with lugs on said jaws to close the same and to move them upward toward said heads, a vertically-adjustable cam-ring attached to said reservoir and engaging said levers, and stop-levers carried by the arms on said heads in engagement with said cam-ring in position to arrest the downward movement of said jaws, substantially as and for the purposes set forth.

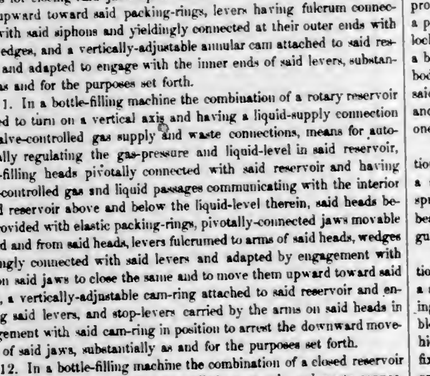
12. In a bottle-filling machine the combination of a closed reservoir having liquid-supply and valve-controlled gas supply and waste connections, means for regulating the gas-pressure and the liquid-level in said reservoir, siphons pivotally connected with said reservoir and having valve-controlled gas and liquid passages communicating with the interior of said reservoir above and below the liquid-level therein respectively, and sleeves having telescoping connections with the inner ends of said siphons and forming extensions of the liquid-passages therein, substantially as and for the purposes set forth.

655,444. TONGUE-RAIL FASTENING FOR RAILWAYS. PAUL KNITTEL, Crefeld, Germany. Filed June 15, 1900. Serial No. 20,429. (No model.)



Claim.—A fastening for a removable tramway tongue-rail consisting of a cross-key engaged in a slot of the tongue-rail pivot, and having its ends held in a slot of the base-casting substantially as described.

655,445. SPRING-BEARING FOR BICYCLES OR OTHER VEHICLES. FRED L. KOEHLER, Chicago, Ill., assignor of one-third to Thomas J. Dunne, Dubuque, Iowa. Filed Sept. 18, 1899. Serial No. 730,865. (No model.)



Claim.—1. In a spring-bearing for bicycles and other vehicles, in combination, an axle; a spring-casing fixed with relation thereto, which casing is provided in its opposite ends with two alined screw-threaded openings; a perforated adjusting-stud for each of said openings; a bearing-block; means for securing one of the supports for the vehicle-body to the bearing-block; two oppositely-extending guide-pins adapted to lie within the openings in the adjusting-studs; and a spring on each of said guide-pins between the bearing-block and one end of the spring-casing.

2. In a spring-bearing for bicycles and other vehicles, in combination, an axle; a spring-casing fixed with relation thereto, which casing is provided in its opposite ends with two alined screw-threaded openings; a perforated screw-threaded adjustiug-stud for each of said openings; a lock-nut, a dust-cap, and a spring-socket for each of said adjusting-studs; a bearing-block; means for securing one of the supports for the vehicle-body to the bearing-block; two oppositely-extending guide-pins fixed in said block and adapted to lie within the openings in the adjusting-studs; and a spring on each of said guide-pins between the bearing-block and one of the said spring-sockets.

3. In a spring-bearing for bicycles and other vehicles, in combination, an axle; a cone fixed on each end thereof; a ball-race; balls therein; a spring-casing rigidly secured to each cone; a bearing-block in each spring-casing; means for securing the supports for the vehicle-body to said bearing-blocks; a guide-pin for each bearing-block; and a spring on said guide-pin between the bearing-block and one end of the spring-casing.

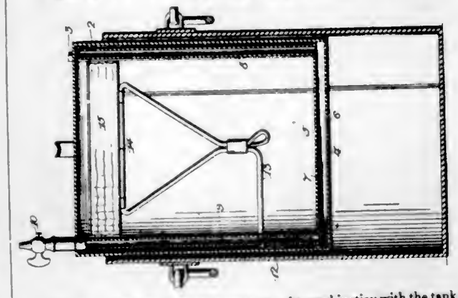
4. In a spring-bearing for bicycles and other vehicles, in combination, an axle; a cone fixed at each end thereof; a ball-race; balls therein; a spring-casing rigidly secured to the outer side of each cone, which casing is provided in its opposite ends with two alined openings; a bearing-block for each spring-casing; means for securing the supports for the vehicle-body to said bearing-blocks; two oppositely-extending guide-pins fixed in each of said bearing-blocks, and adapted to lie within said alined openings; and a spring on each of said guide-pins between the bearing-block and one end of the spring-casing.

5. In a spring-bearing for bicycles and other vehicles, in combination, an axle; a cone fixed at each end thereof; a ball-race; balls therein; a spring-casing rigidly secured to the outer side of each cone, which casing is provided in its opposite ends with two alined openings; a perforated adjusting-stud in each of said openings; a spring-socket, a lock-nut, and a dust-cap for each one of said adjusting-studs; a bearing-block for each of said spring-casings; means for securing the supports for the vehicle-body to said bearing-blocks; two oppositely-extending guide-pins adapted to lie within the openings in the adjusting-studs; and a spring on each of said guide-pins between the bearing-block and the spring-socket of each adjusting-stud.

6. In a spring-bearing for bicycles and other vehicles, the combination, with an axle, of a cone screwed into each end of said axle, and provided with a shoulder; casings arranged vertically at the ends of the hub; screws clamping the casings against the shoulders of the cones; a bearing-block in each one of said casings; means for securing the supports for the vehicle-body to said bearing-blocks; pins connected to said bearing-blocks and projecting therefrom, to operate through the ends of the casings; and springs adjustably mounted on said pins.

7. In a spring-bearing for bicycles and other vehicles, the combination with an axle, of a cone screwed into each end of said axle and provided with a shoulder, casings arranged vertically at the ends of the hub, screws clamping the casings against the shoulders of the cones, a bearing-block in each one of said casings; means for securing the supports for the vehicle-body to said bearing-block; pins connected to said bearings and projecting therefrom to operate through the ends of the casings and springs adjustably mounted on said pins.

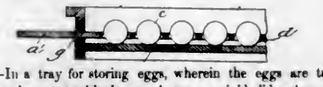
655,446. ACETYLENE-GAS GENERATOR. JOHN LAWRENCE, Columbus, Ohio. Filed Oct. 5, 1899. Serial No. 732,611. (No model.)



Claim.—In an acetylene-gas generator, the combination with the tank 1, of the bell 2 provided with the outlet-pipe 3 supported in its top portian and projecting through the same; the condenser-chamber 4 at the bottom of said bell 2; the inlet-pipe 8 connected with said condenser-chamber and opening within the upper portion of said bell; the outlet-pipe 9 connected at its lower end with said condenser-chamber 4; extending through the top of bell 2, and provided with a stop-cock 10 near its upper end; the removable bracket 13 secured in the socket 12 fixed to the inside of said bell 2 and terminating at its upper portion in the horizontal arm 14; and the carbid-basket 15 fixed to said horizontal arm 14; substantially as set forth

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655,447. TRAY FOR STORING EGGS. JAMES LYONS, ALFRED LYONS, and GEORGE LYONS, Manchester, England. Filed May 13, 1899. Serial No. 716,710. (No model.)



Claim.—In a tray for storing eggs, wherein the eggs are turned through frictional contact with the tray-bottom, a rigid slide *a'* mounted in the ends and a little above the bottom of the tray, the said slide being formed with egg-compartments *d* and serving both to keep the eggs apart from each other and to turn same, substantially as described.

655,448. TIN FOR INCLOSING PRESERVED PROVISIONS OR FOODS, &c. ARCHIBALD W. MACONOCHIE, London, England, assignor to Maconochie Brothers, same place. Filed Aug. 5, 1899. Serial No. 726,244. (No model.)



Claim.—1. The combination with a receptacle having a flange projecting outwardly therefrom around its upper edge or mouth, of a cover made of a metallic plate having a sheet of paper cemented to its under side and consisting of an outer flange which extends beyond the outer edge of, and is adapted to be bent around and under, the flange on the receptacle, and a depressed mid-portion of frusto-conical shape, its greatest diameter at the point where it joins the flange being slightly larger than the interior diameter of the mouth or opening of the receptacle, while its smallest diameter at its lower extremity is less than said diameter of the mouth of the vessel so that it may enter the same, whereby, upon application of pressure to the cover in the act of closing the receptacle, the inclined peripheral wall of the depressed mid-portion of the closure wedges into the mouth of the receptacle causing the same to expand and conform to the inclination of said wall, and constituting, with the joint formed by bending the flange on the cover about and under that on the receptacle, a tight and secure closure for the receptacle.

2. The combination with a receptacle having a flange projecting outwardly therefrom around its upper edge or mouth, said receptacle and flange being formed integrally from a single piece of sheet metal, of a cover made in one piece from a sheet-metal plate having a sheet of paper cemented to its under side and consisting of an outer flange which extends beyond the outer edge of, and is adapted to be bent around and under, the flange on the receptacle, and a depressed mid-portion of frusto-conical shape, its greatest diameter at the point where it joins the flange being slightly larger than the interior diameter of the mouth or opening of the receptacle, while its smallest diameter at its lower extremity is less than said diameter of the mouth of the vessel so that it may enter the same, whereby, upon application of pressure to the cover in the act of closing the receptacle, the inclined peripheral wall of the depressed mid-portion of the closure wedges into the mouth of the receptacle causing the same to expand and conform to the inclination of said wall, and constituting, with the joint formed by bending the flange on the cover about and under that on the receptacle, a tight and secure closure for the receptacle.

655,449. RAILWAY-SWITCH. ARATINE G. MOECKEL, Detroit, Mich. Filed Apr. 22, 1899. Serial No. 714,008. (No model.)



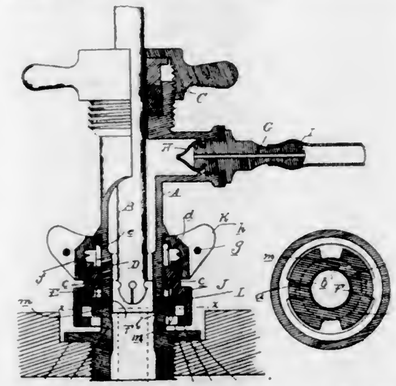
Claim.—1. In a switch the combination of the bed-plate having a central concavity therein, intersecting rails joined to said plate, a movable member pivoted within the concavity in the bed-plate having two laterally-extending flanges which project onto and at all times lie upon the surface of said bed-plate to completely close said concavity, said movable member having a centrally-disposed tongue and a longitudinal channel on each side of said tongue.

2. In a switch the combination of the bed-plate having a central concavity, intersecting rails joined to said plate, a movable switch member pivoted within said concavity, a depression in the upper face of said bed-plate having a solid bottom and outwardly-beveled walls, said movable switch member having a centrally-disposed tongue with a channel on each side thereof, said laterally-extending wings lying in said depressions and closing the concavity in the bed-plate, the edges of said wings being provided with a continuous bevel extending the entire length thereof, substantially as set forth.

3. In a switch the combination of the independent bed-plate, having a central concavity and a horizontal surface extending laterally from the opposite sides of said concavity, intersecting rails detachably joined to said plate, a movable switch member pivoted within said concavity and carrying a section of a rail, said movable member having lateral flanges which project onto the horizontal surface on each side of the concavity of said bed-plate to close said concavity, said flanges having continuous beveled edges, substantially as set forth.

4. In a switch the combination of the bed-plate having a central concavity and extending sides having a horizontal recess therein leading from the edge of said concavity, a movable member comprising a rectangular body portion adapted to lie within the concavity in the bed-plate and having a central integral tongue spaced from the walls of the body portion to form a way on each side of said tongue, said body portion also having horizontal wings projecting laterally from the vertical sides of the angular body portion and lying in the depressions in the upper face of the bed-plate to all times close the concavity therein.

655,450. BEER-TAP. JOHN MOHN, Detroit, Mich., assignor to the American Tap Bush Company, same place. Filed June 23, 1898. Serial No. 684,221. (No model.)

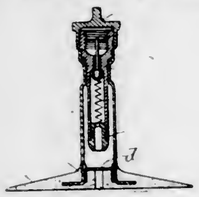


Claim.—1. The combination of a bushing secured in the barrel having a flanged coupling-nipple provided with a central bore and a coupling-seat around the mouth of the bore, a sleeve or casing adapted to be coupled with said nipple and having at its lower end a tubular extension adapted to fit into the mouth of the bore of the coupling-nipple and forming at its base a shoulder adapted to seat the casing upon the coupling-nipple, and a packing-ring upon said tubular extension and having its seat upon the shoulder of the casing, said tubular extension projecting beyond the packing-ring to form a centering-guide in coupling and terminating in a thin edge adapted to be forced into the mouth of the coupling-nipple between the inner wall thereof and the cork.

2. The combination of a bushing secured in the barrel, having a flanged coupling-nipple provided with an enlarged central bore, a sleeve or casing formed with a seat at its lower end adapted to be coupled to said nipple, a tap-tube slidingly secured within said casing, a coupling-sleeve adjustably secured upon the lower end of the casing and projecting beyond the same, a packing-ring inclosed within said coupling-sleeve and adapted to seat against the lower end of the casing and a tubular nipple secured in the lower end of the casing and projecting through the packing-ring and confining the same between it and the inner wall of the coupling-sleeve, said nipple having a thin lower edge adapted to enter the mouth of the bushing around the cork therein.

655,451. VALVE FOR PNEUMATIC TIRES. ELTON W. MCCASLIN, Chicago, Ill., assignor to the Morgan & Wright, same place. Filed Nov. 22, 1899. Serial No. 737,924. (No model.)

Claim.—1. A valve-device for pneumatic tires comprising an outer shell or casing into which the valve-casing proper is screwed and which is provided with a flanged base, a rubber cot molded upon said flanged base, and a thimble secured within the base of said outer shell or casing and having its interior filled with the rubber of said cot, the thimble being provided with an opening which registers with an opening in the rubber.



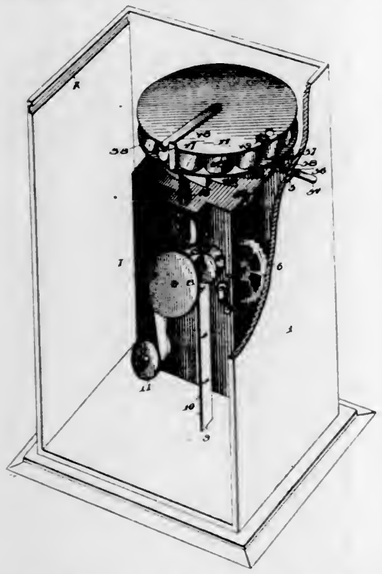
2. The combination of a metal shell having a flanged base, a rubber cot molded upon said flanged base, and a metal thimble inserted and expanded within the base of said shell, the rubber of the cot filling the thimble and said rubber filling and thimble having a passage therethrough, substantially as described.

655,452. PITCH OR TUNING PIPE. JOHN OEFINGER and ELIAS OEFINGER, Meriden, Conn. Filed Mar. 15, 1900. Serial No. 8,748. (No model.)



Claim.—A pitch or tuning pipe comprising a tube and a reed-plate formed at opposite ends with integral semicircular lips, adapted to partially close the opposite ends of the tube, substantially as described.

655,453. TIME-RECORDER. HENRY OESTE, Allegheny, Pa. Filed Sept. 29, 1899. Serial No. 732,071. (No model.)



Claim.—1. In a time-recorder, the combination with a clock mechanism, of a shaft attached to the hour-wheel of the said clock mechanism, a spool and tape carried by said wheel, a spring-actuated reciprocating marker, a spring-actuated inking-pad, means for locking said clock mechanism and means whereby said marker, clock mechanism and inking-pad are operated, substantially as herein shown and described.

2. In a time-recorder, the combination of a clock mechanism, a wheel attached to the hour-wheel of said clock mechanism, a spool and tape carried thereby, said tape having gradnations arranged thereon, a spring-actuated marker adapted to engage said tape, and a wheel carrying on its under face a series of ratchets adapted when operated to operate said marker, substantially as described.

3. In a time-recorder, the combination with a clock mechanism, a reciprocating marker, a spring-actuated rod operating said marker, a ratchet-wheel engaging the upper end of said spring-actuated rod, receptacles arranged on the upper face of said ratchet-wheel, and means whereby said ratchet-wheel and marker are simultaneously operated, substantially as described.

4. In a time-recorder, the combination with a clock mechanism, a reciprocating marker, a spring-pressed rod operating said marker, a spring-actuated finger, an inking-pad carried by the said finger adapted to engage said marker, a ratchet-wheel engaging said spring-actuated rod, receptacles arranged upon said ratchet-wheel, and means whereby said ratchet-wheel is operated, and a suitable casing, substantially as described.

5. In a time-recorder, the combination with a clock mechanism, a reciprocating marker, a spring-actuated rod operating said marker, a ratchet-wheel adapted to engage said spring-actuated rod, receptacles arranged on said ratchet-wheel, and a lever carrying a spring-pressed pawl adapted to engage the said ratchet-wheel and operate the same, substantially as described.

6. In a time-recorder, the combination with a clock mechanism, a wheel mounted upon the hour-spindle of said clock mechanism, a spool carrying a tape adapted to pass over said wheel, a spring-pressed friction-roller adapted to engage said wheel and tape, a reciprocating marker, a spring-pressed rod operating said marker, a spring-actuated finger carrying an inking-pad adapted to engage said marker, and a ratchet-wheel adapted to operate said spring-pressed rod, substantially as described.

7. In a time-recorder, the combination with a clock mechanism, a wheel and spool carrying a tape, a friction-wheel adapted to engage said wheel and tape, a reciprocating marker, a spring-pressed rod operating said marker, a spring-actuated finger carrying an inking-pad, said inking-pad being arranged at an angle and engaging said marker, a ratchet-wheel operating said spring-pressed rod, compartments arranged in said ratchet-wheel, and means whereby the movement of the said clock mechanism is set in motion when said ratchet-wheel is operated, substantially as described.

8. In a time-recorder, the combination with a clock mechanism, a wheel and spool carrying a tape, gradnations arranged on said tape, a friction-wheel adapted to engage said tape and wheel, a reciprocating marker, a spring-pressed rod operating said marker, a spring-actuated finger, an inking-pad mounted thereon at an angle adapted to engage said marker, receptacles arranged in said ratchet-wheel, a suitable cover secured over said receptacles having formed therein an opening, the said clock mechanism having an opening a casing surrounding the same having arranged therein an opening to correspond with the said opening of the cover, and means whereby said ratchet-wheel is operated, all parts being arranged and operated substantially as set forth and for the purpose specified.

9. In a device of the character described, the combination with a casing carrying a suitable clock mechanism, of a wheel 8 connected to said clock mechanism, a spool 11 connected to said casing, a tape carried by said spool and operating over said wheel, a spring-actuated marker carried by the said casing and adapted to engage said tape, a spring-actuated inking-pad carried by the said casing and adapted to be engaged by the said marker, a wheel mounted upon said casing and having its underneath face formed with a series of ratchets, and means adapted to operate said wheel by engagement with its ratchets causing thereby the operation of said marker, substantially as described.

10. In a device of the character described, the combination with a casing carrying a suitable clock mechanism, of a wheel 8 connected to said clock mechanism, a spool 11 connected to said casing, a tape carried by said spool and operating over said wheel, a spring-actuated marker carried by the said casing and adapted to engage said tape, a spring-actuated inking-pad carried by the said casing and adapted to be engaged by the said marker, a wheel mounted upon said casing and having its underneath face formed with a series of ratchets, a series of tag-receiving compartments arranged upon the upper face of said wheel, a suitable cover for the said compartments, and means adapted to operate said wheel by engagement with its ratchets causing the operation of said marker, substantially as described.

11. In a device of the character described, the combination with a casing carrying a suitable clock mechanism, of a wheel 8 connected to said clock mechanism, a spool 11 connected to said casing, a tape carried by said spool and operating over said wheel, a spring-actuated marker carried by the said casing and adapted to engage said tape, a spring-actuated inking-pad carried by the said casing and adapted to be engaged by the said marker, a wheel mounted upon said casing and having its underneath face formed with a series of ratchets, a series of tag-receiving compartments arranged upon the upper face of said wheel, a suitable cover for said compartments, a lever connected to said casing and carrying means for locking said clock mechanism, and means connected to said casing and adapted when operated to release said clock mechanism and cause the operation of said marker, substantially as described.

12. In a device of the character described, the combination with a casing carrying a suitable clock mechanism, of a wheel 8 connected to said clock mechanism, a spool 11 connected to said casing, a tape carried by said spool and operating over said wheel, a spring-actuated marker carried by the said casing and adapted to engage said tape, a spring-actuated inking-pad carried by the said casing and adapted to be engaged by the said marker, a wheel mounted upon said casing and having its underneath face formed with a series of ratchets, a series of tag-receiving compartments arranged upon the upper face of said wheel, a suitable cover for said compartments, a lever connected to said casing and carrying means for locking said clock mechanism, an operating-lever connected to said casing and adapted when operated to release said clock mechanism, revolve said wheel and cause thereby the operation of said marker, and means for locking said wheel, substantially as described.

13. In a time-recorder, the combination with a spring-actuated reciprocating marker, consisting of a rod 21 provided at its upper end with an enlarged portion having its upper face inclined and the lower end of said rod provided with a recess, a spiral spring surrounding said rod 21, a compression-spring arranged in said recess, a marker 27 slidably secured to said recess and operating against said spring, of a cylindrical casing surrounding said reciprocating marker and adapted to support the same, substantially as described.

14. In a time-recorder, the combination with a casing provided with a lug, of a finger 32 connected at its upper end to said lug, an inking-pad connected to the lower end of said finger at an angle, and a coiled spring connected at one end to said finger and at its opposite end to said lug, substantially as described.

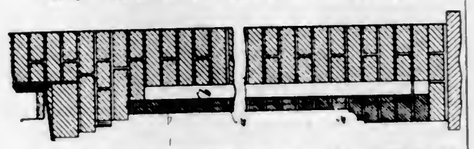
15. In a time-recorder, the combination with a casing provided with a lug, of a spring-actuated reciprocating marker suitably supported by said lug, a finger 32 connected at its upper end to said lug, an inking-pad connected at an angle to the lower end of said finger, and a coiled spring secured at one end to said finger and at its opposite end to said lug and adapted to normally keep said pad in engagement with said marker, substantially as described.

16. In a time-recorder, the combination with a casing provided with a lug, of a spring-actuated reciprocating marker suitably supported by said lug, a finger 32 connected at its upper end to said lug, an inking-pad connected at an angle to the lower end of said finger, a coiled spring secured at one end to said finger and at its opposite end to said lug and adapted to normally keep said pad in engagement with said marker, and means connected to said casing for operating said marker, substantially as described.

17. In a time-recorder, the combination with a casing provided with a lug, of a spring-actuated reciprocating marker suitably supported by said lug, a finger 32 connected at its upper end to said lug, an inking-pad connected at an angle to the lower end of said finger, a coiled spring secured at one end to said finger and at its opposite end to said lug and adapted to normally keep said pad in engagement with said marker, a ratchet-wheel carried by the said casing, and means for operating said wheel causing thereby the operation of said marker, substantially as described.

18. In a time-recorder, the combination with a casing provided with a lug, of a spring-actuated reciprocating marker suitably supported by said lug, a finger 32 connected at its upper end to said lug, an inking-pad connected at an angle to the lower end of said finger, a coiled spring secured at one end to said finger and at its opposite end to said lug and adapted to normally keep said pad in engagement with said marker, a ratchet-wheel carried by the said casing, a lever connected to said casing and adapted to operate said wheel causing thereby the operation of said marker, and means for locking the said wheel after a complete revolution, substantially as described.

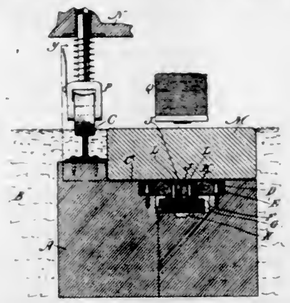
655,454. FACING FOR WALLS, &c. EMIL PRÜSS, Berlin, Germany. Filed Nov. 24, 1899. Serial No. 738,137. (No model.)



Claim.—1. In combination in a facing for walls and with the support or wall proper, a series of vertically-placed stiffening bars or bands, and a series of horizontal bars or bands lying in a different vertical plane from the vertical bars or bands, and facing-blocks with mortar joints within which joints both the vertical and the horizontal bars or bands are contained, substantially as described.

2. A wall-facing of bricks or blocks having mortar joints and stiffening bars or bands lying in two different planes, extending at right angles, and entirely embedded and contained within the joints of the said facing, and means for securing some of said bars or bands to a suitable support, substantially as described.

655,455. ELECTRIC RAILWAY. WILLIAM B. PURVIS, Philadelphia, Pa. Filed Apr. 24, 1900. Serial No. 14,091. (No model.)



Claim.—1. In an electric-railway system, a closed conduit containing a flexible main feeder, a third rail electrically connected with terminals situated within said conduit and adapted for contact with said main feeder, the covering for said conduit and the material of said conduit situated above said main feeder being composed of non-magnetic material.

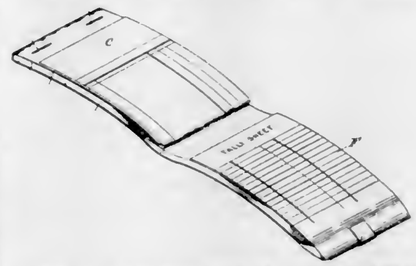
2. A conduit for an electric-railway system, consisting of a base of non-magnetic and non-conducting material having a longitudinal channel in its upper side, a flexible main feeder within said channel, a cover for said channel composed of non-magnetic material, conducting-plates of non-magnetic material situated on the upper and lower faces of said cover, and a third rail electrically connected with the upper conducting-plate.

3. In an electric-railway system, a closed conduit, a flexible main feeder therein, terminals within said conduit adapted for contact with said main feeder, and a contact-rail connected with said terminals, the portion of said conduit situated above said main feeder being non-magnetic.

4. In an electric-railway system, a closed conduit having its upper side composed of non-magnetic and non-conducting material, a flexible main feeder in said conduit, terminals within said conduit adapted for contact with said main feeder, and a contact-rail connected with said terminals.

5. In an electric-railway system, a conduit having a base of non-magnetic and non-conducting material provided with a channel in its upper side, a flexible main feeder in said channel, a cover for said channel of non-magnetic and non-conducting material, terminals within said conduit adapted for contact with said main feeder, a contact-rail mounted upon said base and connected with said terminals, and blocks mounted upon said conduit, said conduit, contact-rail and blocks being embedded in a suitable road-bed with the upper side of the contact-rail and blocks exposed.

655,456. MANIFOLDING SALES-BOOK. LEWIS G. REYNOLDS, Dayton, Ohio. Filed Jan. 11, 1900. Serial No. 1,122. (No model.)



Claim.—1. A memorandum sales-slip book composed of the series of sheets of paper perforated at the middle to form duplicate and original slips, said sheets lying in contact with each other throughout their whole

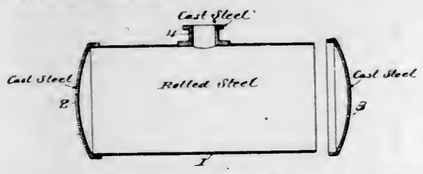
length, provided with a cover of suitable material having a fly-leaf cover-section approximately of the same length as the original-slip portion of the sheet, folded over the free ends of the original slips, whereby the next-to-be-used original slips may be separated from the balance of the original slips, substantially as shown and described.

2. A memorandum sales-slip book, composed of a series of sheets of paper, perforated at the middle to form duplicate and original slips, said sheets lying in contact with each other throughout their whole length, provided with a cover of suitable material, having a fly-leaf cover-section, approximately of the same length as the original-slip portion of the sheets, folded over the free ends of the original slips and imprinted on its outer side with proper matter to serve as a sales-entry sheet for posting a summary of the sales, whereby the next-to-be-used original slip may be separated from the balance of the original slips, substantially as shown and described.

3. A memorandum sales-slip book, composed of a series of sheets of paper perforated at the middle to form duplicate and original slips and lying in contact with each other, provided with a cover of suitable material, having a fly-leaf cover-section approximately of the same length as the original section, folded over the free ends of the original slips, whereby the next-to-be-used slip may be separated from the balance of the original slips, and means for maintaining the fly-leaf cover-section in folded position, substantially as shown and described.

4. A memorandum sales-slip book, composed of a series of sheets of paper perforated at the middle and lying in contact with each other, provided with a cover of suitable material, having a fly-leaf cover-section, approximately of the same length as the original section, folded over the free ends of the original slips, forming a cover for the original slips not ready for use, and serving as a means for separating the next-to-be-used slip from the balance of the original slips, said fly-leaf cover-section serving as a sales-entry sheet for posting a summary of sales, and a clip for maintaining said fly-leaf cover-section in folded position, substantially as shown and described.

655,457. **ART OF FORMING COMPOSITE METAL STRUCTURES.** WILLIAM H. SAVERY, Wilmington, Del. Filed Nov. 17, 1899. Serial No. 737,360. (No model.)



Claim.—1. The improvement in the art of forming a composite structure from a steel casting or castings and wrought-steel or wrought-iron which consists in forming the casting or castings and the wrought-steel or wrought-iron from metal having substantially the same characteristics and uniting them by welding, substantially as described.

2. The improvement in the art of forming a composite structure from a steel casting or castings and wrought-steel or wrought-iron which consists in forming the plain or simple parts of the structure from wrought-steel or wrought-iron, forming other parts of the structure from a steel casting or castings having substantially the same characteristics as the wrought-steel or wrought-iron, and uniting the casting or castings and wrought-steel or wrought-iron by welding, substantially as described.

3. The improvement in the art of welding steel castings and wrought-steel or wrought-iron which consists in preparing the castings and the wrought-steel or wrought-iron from metal having substantially the same characteristics, and uniting by welding, substantially as described.

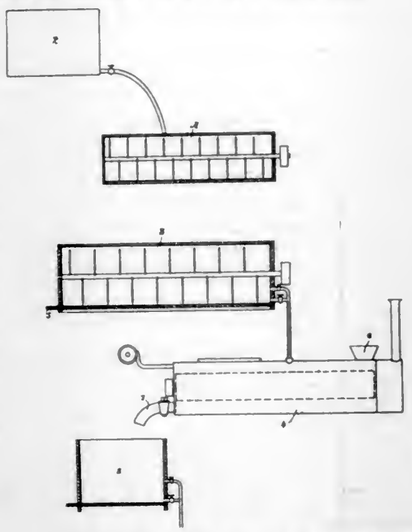
4. The improvement in the art of welding steel castings and wrought-steel or wrought-iron which consists in preparing a casting from metal which has substantially the same characteristics as the wrought-steel or wrought-iron, and uniting by welding, substantially as described.

5. The improvement in the art of welding steel castings and wrought-steel or wrought-iron which consists in preparing one of the parts of the welded structure from metal which has substantially the same characteristics as the other part and uniting the two by welding, substantially as described.

6. A metal structure consisting in part of wrought-steel or wrought-iron and in part of cast-steel having the same properties as the wrought-steel or wrought-iron, the said parts being united by welding, substantially as described.

655,458. **METHOD OF MAKING SUPERPHOSPHATES.** HEINRICH SAXL, San Francisco, Cal., assignor of one-half to Aaron A. Adler, same place. Filed Dec. 26, 1899. Serial No. 741,589. (No specimens.)

Claim.—1. In the manufacture of super-phosphate, the steps consisting in first producing a normal super-phosphate by subjecting the phosphate-of-lime-containing material to the action of sulphuric acid, then mixing the mass with about two parts of water to one of material, then separating the liquid from the mass and evaporating it, then mixing with the product a second body of phosphate-of-lime-containing material, and withdrawing the resultant mass and separating the liquid therefrom.

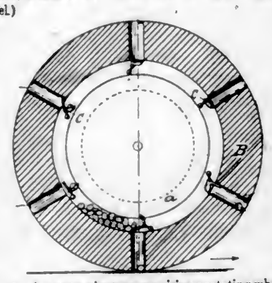


2. In the manufacture of super-phosphate, the steps consisting in mixing the pulverized phosphate-containing material with concentrated sulphuric acid, allowing the mass to become homogeneous, mixing the mass with water, allowing the solid portions to settle, withdrawing the liquid from the mixer, evaporating the same to about 20° Baumé, then mixing about fifty per cent. of fresh phosphate-of-lime-containing material, withdrawing the resultant mass and separating the liquid therefrom, returning the separated liquid and evaporating it to from 85° to 95° of strength, and then mixing therewith about fifty per cent. of phosphate-of-lime-containing material to form a dry high-grade super-phosphate.

655,459. **PROCESS OF IMPREGNATING WOOD.** JULIUS SCHENKEL, Dortmund, Germany. Filed June 9, 1899. Serial No. 719,981. (No specimens.)

Claim.—The process for the preservation of wood which consists in forcing into the wood under pressure, a preservative substance consisting of a watery emulsion composed of tar-oil, water and soap, the water and soap serving as a means of dissolving and emulsifying the tar-oil, and as a vehicle for conveying and distributing the same through the pores of the wood.

655,460. **POTATO-PLANTER.** JOSEPH SHEARER and WILLIAM J. SHEARER, Reading, Pa. Filed May 10, 1900. Serial No. 16,139. (No model.)



Claim.—1. A potato-planter comprising a rotating wheel with a thick rim provided with radial openings, flanges at the outer ends of said openings on the forward side thereof in the direction of rotation and standing entirely within the periphery of the wheel, and cups pivoted within the wheel entirely inside said rim and adapted to deliver the potatoes automatically through said openings, all substantially as described.

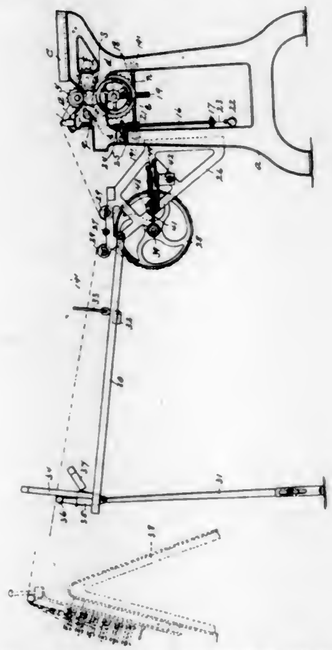
2. A potato-planter comprising a rotating wheel with a thick rim provided with radial openings restricted at their outer ends; combined with a weighted cup for each opening pivoted within the wheel entirely inside said rim and held by its weight normally across the inner end of the opening, substantially as described.

3. A potato-planter comprising a rotating wheel with a thick rim provided with radial openings restricted at their outer ends; combined with an L-shaped cup for each opening standing within the wheel and entirely inside said rim, pivoted at its angle, and comprising a scoop in one arm and a spoon in the other, the whole operating substantially as described.

4. A potato-planter comprising a rotating wheel with a thick rim having radial openings; combined with an L-shaped cup pivoted at its angle entirely within the wheel adjacent each opening, at the rear of such opening in the direction of rotation, and comprising a scoop in one arm and a spoon in the other communicating therewith, and a weight projecting from the angle and holding the scoop normally across the inner end of the opening, the whole operating substantially as described.

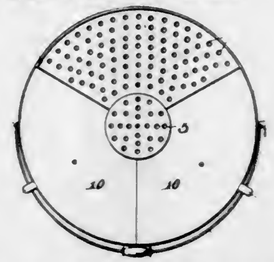
5. A potato-planter comprising a rotating wheel with a thick rim having radial openings; combined with an L-shaped cup pivoted at its angle entirely within the wheel adjacent each opening and comprising a V-shaped scoop in one arm and a spoon in the other communicating therewith, and a weight projecting from the angle and holding the scoop normally across the inner end of the opening, the whole operating substantially as described.

655,461. **WARPING-MACHINE.** CHARLES SLINGLAND and GEORGE F. KUETT, Paterson, N. J. Filed Dec. 16, 1899. Serial No. 740,510. (No model.)



Claim.—In a warping-machine, the combination, with the frame, of a warp-receiving device or devices journaled therein, a revoluble shaft journaled in said frame transversely to said warp-receiving device or devices, another shaft disposed intermediate said warp-receiving device or devices and said first-named shaft, said shaft being parallel to said warp-receiving device or devices, gearing comprising a series of pinions, a movable frame adjustably fulcrumed on said last-named shaft, some of said pinions being operatively connected to said device or devices and said last-named shaft and the remainder of said pinions being of different diameters, disposed in said movable frame, and respectively adapted to connect the members of the other part of said gearing, a worm-wheel mounted on said first-named shaft, a worm on the other shaft in engagement with said worm-wheel, a traverse-rail disposed parallel to said warp-receiving device or devices, a lever fulcrumed in said frame at one end, and operatively connected to said traverse-rail at the other end, a pulley journaled in said frame, a flexible band extending over said pulley and connected at one end to said lever, a weight on the other end of said lever, and a cam carried on said first-named shaft, said lever engaging the cam, substantially as described.

655,462. **COOKING UTENSIL.** ALICE SMITH, Wilkinsburg, Pa. Filed Mar. 10, 1900. Serial No. 8,222. (No model.)



Claim.—A cooking utensil comprising the following instrumentalities: a cylindrical outer vessel which is constructed with a perforated bottom and an open top and has a centrally-arranged tubular extension formed integral with the bottom, the extension being open at its bottom and provided with a perforated top which is above the rim of the outer vessel, and a removable cover for said extension, combined with a series of removable inner vessels which are adapted to be circumferentially arranged within the outer vessel, each inner vessel being substantially segmental in shape and provided on its inner face with a concave portion to receive the tubular extension of the outer vessel, a handle secured to the outer face of each inner vessel near the upper edge thereof, and a removable cover of substantially-quadrant form for each of said inner vessels, said cover having a downwardly-extending flange on the underneath face to engage within the inner vessels and hold the cover in position and being cut away on the shorter edge to receive the tubular extension of the outer vessel, substantially as described.

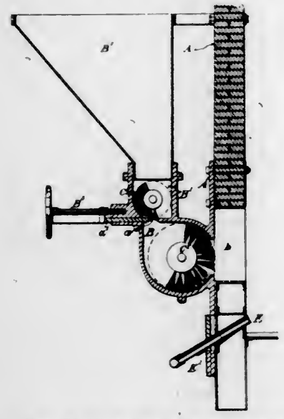
655,463. **HOUSEHOLD-TONGS.** THEODORE F. SMYTHE, Philadelphia, Pa. Filed Oct. 10, 1899. Serial No. 733,148. (No model.)



Claim.—Tongs consisting of two pivotally-connected members situated side by side and having flat meeting or adjacent faces extending in the same plane from end to end and situated at right angles to the axis of the pivot, a jaw at adjacent ends of each member, situated at right

angles to said flat faces of the members, and oppositely-projecting extensions upon each of said jaws situated opposite the other jaw, said jaws and extensions being adapted to contact when said members are situated opposite each other and with their edges approximately flush.

655,464. **FUEL-FEEDER FOR FURNACES.** FRANK N. SPEAR, Los Angeles, Cal. Filed Jan 10, 1900. Serial No. 976. (No model.)



Claim.—1. In a furnace-feeder, the combination with a casing having a feed-chamber and a delivery-chamber, a controlled fuel passage-way betweeo the chambers, a rotary feed-brush arranged within the feed-chamber for causing a continuous feed of fuel to the delivery-chamber, a delivery-brush arranged within the delivery-chamber and compressed by a wall thereof adjacent the discharge-opening by which the fuel is ejected directly into the combustion-chamber, and of means for imparting rotary motion to the said brushes.

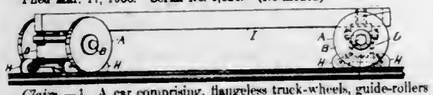
2. In a furnace-feeder, the combination with a casing having a feed-chamber and a delivery-chamber, a fuel passage-way between the chambers, a rotary feed-brush arranged within the feed-chamber for causing a continuous feed of fuel to the delivery-chamber, a delivery-brush arranged within the delivery-chamber, and compressed by a wall thereof adjacent the discharge-opening by means of which the fuel is ejected directly into the combustion-chamber. and of means for imparting rotary motion to the said brushes.

3. The combination with a combustion-chamber, of a pulverulent fuel-feeder comprising a feed-chamber and a delivery-chamber within which the fuel is delivered, rotary means arranged within the feed-chamber for causing continuous delivery of the fuel to the delivery-chamber, a resilient delivery-brush arranged within said delivery-chamber so as to contact with a part near the delivery-opening causing the brush to spring and positively throw the fuel directly into the combustion-chamber, and of means for imparting rotation to the delivery-brush.

4. In a fuel-feeder, the combination with a combustion-chamber, a fuel-delivery chamber communicating therewith, a yielding delivery-brush in the delivery-chamber, and means for compressing the brush adjacent the delivery-opening for throwing the fuel into the combustion-chamber, and means for rotating said brush, substantially as described.

5. In a fine-fuel feeder for furnaces, the combination of a casing having a feed-chamber and a delivery-chamber communicating by means of a passage, a rotary feed-brush in said feed-chamber and acting to cause a continuous feed of fuel to the delivery-chamber, a rotary delivery-brush so arranged in said delivery-chamber that a space is afforded for the fuel from the receiving-chamber and to engage a part of the wall near the delivery-opening of the chamber to cause said brush to spring and positively throw the fuel from the delivery-chamber, and means for rotating the brushes, substantially as described.

655,465. **CAR-TRUCK.** GUSTAVUS L. STUEBNER, New York, N. Y. Filed Mar. 17, 1900. Serial No. 9,026. (No model.)

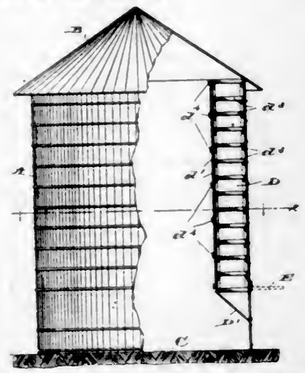


Claim.—1. A car comprising, flangeless truck-wheels, guide-rollers on horizontal axles, in combination with an oil-box for each flangeless truck-wheel, and journal-boxes for the guide-rollers attached to said oil-boxes, located on the opposite sides of a vertical plane passing through the center of each flangeless truck-wheel.

2. In a car; truck-wheels without flanges; guide-rollers; combined guide-roller journal-bearings and oil-boxes, the guide-roller journal-bearings placed on opposite sides of a vertical plane passing through the horizontal axes of the truck-wheels; a bolt passing under the dividing-walls of the oil-compartments of the oil-boxes, substantially as described.

3. In a car-truck; truck-wheels; guide-rollers placed on the opposite sides of the centers of the truck-wheels; combined oil-boxes and guide-roller journal-bearings; truck-frames secured to the oil-boxes; king-bolts with suitable bearings connecting truck-frames with car-body; journal-bearings secured to the truck-frames for the truck-wheels, substantially as described.

655,466. **SILO.** JAMES TODD, Batavia, Ill., assignor to the Challenge Windmill and Feedmill Company, same place. Filed Mar. 8, 1900. Serial No. 7,939. (No model.)



Claim.—1. A silo, in combination with an inclosed chute arranged to admit an operator to the interior of the silo at any desired level, and having an unobstructed passage serving to conduct the ensilage from the interior of the silo to the exterior thereof, substantially as described.

2. A silo, provided with an inclosed chute having an unobstructed passage and arranged to conduct the ensilage from the interior of the silo to the exterior thereof, in combination with a plurality of doors arranged to afford entrance to the silo at any desired level from the chute, and means for closing the chute, substantially as described.

3. A silo, provided with a chute forming a part thereof and having an unobstructed passage and arranged to conduct the ensilage from the interior to the exterior of the silo, in combination with a plurality of doors affording entrance from the chute into the silo at different levels, a ladder arranged within the chute, and means for externally closing the chute, substantially as described.

4. A silo, provided with a chute D arranged within the walls of the silo and having an unobstructed passage serving to conduct the ensilage from the interior of the silo to the exterior, in combination with a plurality of doors *d'*, a ladder within the chute and means for closing the entrance of the chute, substantially as described.

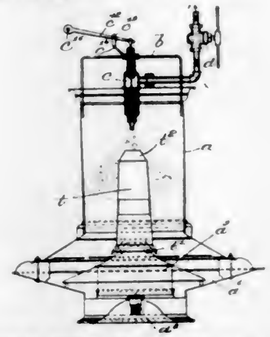
5. A silo, provided with a chute D arranged within the walls thereof, in combination with a plurality of doors *d'* retained in position by suitable guides, a ladder within the chute and arranged to have the chute an unobstructed passage for the ensilage, an incline D' at the bottom thereof, and a door E for closing the entrance to the chute, substantially as described.

6. A silo, provided at one side with a chute D having an inclined bottom D', a door above the inclined bottom to permit the passage of the ensilage from the chute, a door or doors affording communication between the chute and the silo, and a ladder arranged at one side of the chute so as to leave an unobstructed passage therein to the inclined bottom. substantially as described.

655,467. **HUMIDIFIER.** RICHARD C. ULBRICH, Boston, Mass. Filed Jan. 9, 1899. Serial No. 701,567. (No model.)

Claim.—1. In a humidifier, a discharge-nozzle, combined with a screw-like plug contained within said nozzle for giving the water at the discharge a rapid whirling movement, said plug being carried at the lower end of a rod mounted to reciprocate in said nozzle, substantially as described.

2. A humidifier-nozzle, having a water-inlet, a nozzle-discharge, a rod mounted to reciprocate in said nozzle, said rod having at one end a solid screw-like plug to restrict the nozzle-discharge, and at its other end above said water-inlet being provided with a spring normally holding said plug in the nozzle-discharge, substantially as described.

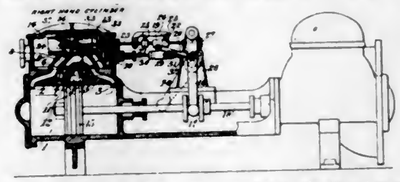


3. A humidifier apparatus having a water-inlet, a nozzle, a rod mounted to reciprocate in said nozzle, said rod having at one end a screw-like plug to restrict the nozzle-discharge, and at its other end being provided with a spring normally holding said plug in the nozzle, a housing for said spring, said spring and housing being above the water-inlet and out of contact with the water, and an operating-lever for said rod, substantially as described.

4. In a humidifier, means for delivering a shower of spray in the form of an inverted cone, and an air-tower having continuously-divergent walls from the extreme top opening to the bottom located centrally of and extending up within said cone of spray close to the said delivery means, for giving free passage of air within the cone of spray, substantially as described.

5. In a humidifier, a discharge-nozzle for delivering a cone of spray, means for passing a solid stream of water through and from said nozzle and a tall air-tower located centrally below said nozzle and extending up close to the nozzle and normally within the cone of spray, said air-tower having its external walls larger than the top edge opening at all points below said top edge and being in position to receive said solid stream of water, substantially as described.

655,468. **CUT-OFF FOR DUPLEX STEAM-PUMPS.** MAX J. ULRICH, Holyoke, Mass. Filed Feb. 26, 1900. Serial No. 6,450. (No model.)



Claim.—1. A duplex steam-pump consisting of a plurality of steam-cylinders, steam-chests therefor, each cylinder have five ports on its face, three of said ports serving as exhaust and a single port communicating with each end of each cylinder the outer of said exhaust-ports communicating with the adjacent single ports, main slide-valves for each cylinder, cut-off valves for each of said slide-valves, means for causing one of said cut-off valves to travel in the same direction as its piston, and means for causing the other cut-off valve to travel in an opposite direction to its piston.

2. In a duplex steam-pump, a plurality of cylinders, steam-chests therefor, each of said cylinders having five ports on each of their faces and a single port communicating with each end of each cylinder, the outer exhaust-ports being adapted for the reception of exhaust throttle-valves and said outer exhaust-ports communicating with the adjacent single port, main slide-valves for each cylinder, cut-off valves reciprocating directly upon each of said slide-valves, means for actuating said slide-valves, means for causing one of said cut-off valves to travel in the same direction as its piston, and means for causing the other cut-off valve to travel in an opposite direction to its piston.

3. The combination of a plurality of cylinders, main slide-valves therefor, a cylindrical bore in the top of each of said valves, cut-off valves located in said bores, one of said valves consisting of sections joined by a hub, ports in said sections, adjacent said hub for permitting the motive fluid to flow therethrough to said slide-valves, and means for actuating the latter and said cut-off valves.

4. The combination of a cylinder, a main slide-valve therefor, a cylindrical bore in the top of said slide-valve, a cut-off valve located in said bore said valve consisting of sections, joined by a hub, ports in said sections adjacent said hub and mechanism for operating said slide and cut-off valves.

5. In a duplex pumping-engine, a plurality of cylinders, main slide-valves therefor, cut-off valves movable in said slide-valves for the high-pressure cylinders only, valve-rods for said cut-off valves, one of the latter consisting of sections joined by a hub, ports in said sections adjacent said hub a bearing-stand, means for guiding the free ends of said rods in said bearing-stand and means for operating said valves.

6. In a duplex pumping-engine, a plurality of cylinders, main slide-valves therefor, cut-off valves movable in said slide-valves for high-pressure cylinders only, valve-rods for said cut-off valves, a bearing-stand, means for guiding the free ends of said rods in said bearing-stand a tappet and tappet-collars for each of said rods and means for operating said valves, in combination with an index mounted on said valve-rods, and extending over said collars whereby the cut-off of each high-pressure steam-cylinder end can be precisely ascertained.

7. In a duplex high-pressure pumping-engine, cylinders, a main slide-valve and a cut-off valve for each of said cylinders, cut-off-valve rods, a tappet mounted on each of said rods, a pair of adjustable threaded collars mounted on said rods on each side of said tappet, an index carried by said rods and extending over said collars, means for operating each cut-off valve from the main lever located at the same side of the engine, and means for operating each main slide-valve from the opposite side of the engine.

8. In a duplex pumping-engine, a pair of cylinders, main slide-valves therefor, valve-rods for each of said slide-valves, heads on each of said valve-rods, pins in said heads, links having slots therein, said slots being engaged by said pins and means for operating said links and valves, said slotted-link and pin connection serving to make provision for lost motion.

9. In a duplex pumping-engine, a pair of cylinders, main slide-valves therefor, cut-off valves movable directly upon said slide-valves one of said cut-off valves consisting of sections joined by a hub and parts in said sections adjacent said hub, main levers, means substantially as described operated by the latter for causing the right-hand cut-off valve to travel in the same direction as its piston, means substantially as described for causing the left-hand cut-off valve to travel in an opposite direction to its piston, and means for operating said slide-valves.

10. In a duplex pumping-engine, a pair of cylinders, main slide-valves, cut-off valves therefor, consisting of sections joined by a hub and ports in said sections adjacent said hub, pistons in said cylinders, means for operating said main slide-valves, means for causing one of said cut-off valves to travel in the same direction as its piston and means for causing the other of said cut-off valves to travel in an opposite direction to its piston.

11. In a duplex pumping-engine, a pair of cylinders having pistons therein, main slide-valves for each cylinder, cut-off valves for said main valves, one of said cut-off valves being composed of sections joined by a hub or necks, ports in said sections adjacent each hub, the other cut-off valve being a plain cylinder, and means for actuating said main and cut-off valves.

12. In a duplex pumping-engine, a pair of cylinders, main slide-valves for each cylinder, cut-off valves for each slide-valve, rods for said cut-off valves, a tappet on each of said rods, adjustable threaded collars on each of said rods, main levers, a link extending from one of said tappets to one of said main levers, a link extending from the other tappet to a crank on the other main lever, a bearing-stand having means thereon for supporting the free ends of said cut-off-valve rods, a lost-motion connection for said slide-valves and means for actuating the latter.

13. In a duplex pumping-engine, a plurality of cylinders, main slide-valves therefor, cut-off valves movable in said valves, valve-rods for said cut-off valves, a bearing-stand, means for guiding the free ends of said rods in said bearing-stand, a lost-motion connection for said slide-valves, consisting of valve-rods attached to said slide-valves, heads on said valve-rods, pins in said heads, links having slots therein, said slots being engaged by said pins, and means for operating said links and valves.

14. In a duplex pumping-engine, a pair of cylinders, main slide-valves, cylindrical cut-off valves reciprocating directly upon said slide-valves, one of said cut-off valves consisting of sections joined by a hub and ports in said sections adjacent said hub, pistons in said cylinders, means for causing one of said cut-off valves to travel in the same direction as its piston, means for causing the other of said cut-off valves to travel in an opposite direction to its piston, valve-rods for said cut-off valves, e bearing-stand and means on said bearing-stand for guiding said rods.

15. In a duplex pumping-engine, a plurality of cylinders, main slide-valves therefor, cut-off valves movable in said slide-valves, valve-rods for

said cut-off valves, a tappet and collar for said cut-off-valve rods, an index mounted on said valve-rods and extending over said collars, a bearing-stand, means for guiding the free ends of said rods in said bearing-stand and means for operating said valves.

16. In a duplex pumping-engine, a plurality of cylinders, main slide-valves therefor, cut-off valves movable in said slide-valves, valve-rods for said cut-off valves, a longitudinally-adjustable graduated index mounted on said valve-rods, a bearing-stand, means for guiding the free ends of said rods in said bearing-stand and means for operating said valves.

17. In a duplex pumping-engine, a pair of cylinders main slide-valves therefor, valve-rods for said slide-valves, heads on said valve-rods, pins in said heads, links having slots therein, said slots being engaged by said pins, means for operating said links and slide-valves, said slotted-link and pin connection serving to make provision for lost motion, cut-off valves mounted on said slide-valves, and means for operating said cut-off valves.

18. In a duplex pumping-engine, a pair of cylinders, main slide-valves therefor, valve-rods for said slide-valves, heads on said valve-rods, pins in said heads, links having slots therein, said slots being engaged by said pins, means for operating said links and slide-valves, cut-off valves mounted on said slide-valves, means for operating said cut-off valves, valve-rods for said cut-off valves, a bearing-stand and means for guiding said cut-off-valve rods in said bearing-stand.

19. In a duplex pumping-engine, a pair of cylinders, main slide-valves therefor, valve-rods for said slide-valves, heads on said valve-rods, pins in said heads, links having slots therein, said slots being engaged by said pins, means for operating said links and slide-valves, cut-off valves mounted on said slide-valves, means for operating said cut-off-valves, valve-rods for said cut-off valves, a bearing-stand and means for guiding said cut-off-valve rods in said bearing-stand, in combination with an index mounted on said cut-off-valve rods, whereby the cut-off which each steam end is working under can be precisely ascertained.

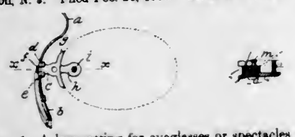
20. In a pumping-engine, a plurality of cylinders, main slide-valves therefor, valve-rods for said slide-valves, heads on said valve-rods, pins in said heads, links having slots therein, said slots being engaged by said pins, means for operating said links and valves, valve-rods for said cut-off valves, a tappet and collars for said cut-off-valve rods and an index mounted on said cut-off-valve rods and extending over said collars.

21. In an engine, cut-off valves, valve-rods for the latter, collars mounted on said valve-rods, an index mounted on the latter and extending over said collars, main slide-valves, cylinders therefor, and means for actuating said valves.

22. In an engine, a valve, a valve-rod therefor, collars on said valve-rod, means for actuating the latter and an index mounted on said valve-rod and exteoding over said collars.

23. A steam pumping-engine, consisting of a plurality of high-pressure steam-cylinders, a single port leading to each end of each of said cylinders, main slide-valves for each cylinder, cut-off valves for each of said slide-valves, one of said cut-off valves consisting of sections joined by a hub, ports in said sections adjacent said hub, and means for actuating said valves.

655,469. EYEGLASSES OR SPECTACLES. JOSEPH VILANCH, Paterson, N. J. Filed Feb. 26, 1900. Serial No. 6,569. (No model.)



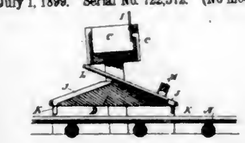
Claim.—1. A lens-setting for eyeglasses or spectacles consisting of two separable members adapted to receive between them the edge portion of a lens, means, disposed outside of the seat for the lens in said setting, for securing said members together, and a keeper adapted to penetrate, and thus maintain in position, said lens between the members, said keeper penetrating one of said members, being unattached to the same, and consisting of a rigid projection of the other of said members, substantially as described.

2. A lens-setting for eyeglasses or spectacles consisting of two separable members adapted to receive between them the edge portion of a lens, means, disposed outside of the seat for the lens in said setting, for securing said members together, a keeper adapted to penetrate, and thus maintain in position, said lens between the members, said keeper consisting of a rigid projection of one of said members, and lugs projecting from one of said members and straddling a portion of the other member, substantially as described.

3. A lens-setting for eyeglasses or spectacles consisting of two separable members adapted to receive between them the edge portion of a lens, means, disposed outside of the seat for the lens in said setting, for securing said members together, a keeper adapted to penetrate, and thus maintain in position, said lens between the members, said keeper consisting of a rigid projection of one of said members, a coacting lug and recess connection between said members, the lug being on one and the recess on the other of said members, and other lugs projecting from one of said members and adapted to straddle the other member, substantially as described.

4. A lens-setting for eyeglasses or spectacles consisting of two separable members adapted to receive between them the edge portion of a lens, means, disposed outside of the seat for the lens in said setting, for securing said members together, a keeper adapted to penetrate, and thus maintain in position, said lens between the members, said keeper consisting of a rigid projection of one of said members, and a lug projecting from one of said members, the other of said members having a recess adapted to receive said lug, substantially as described.

655,470. CONCENTRATOR. WILLIAM H. WASHBURN, Oroville, Wash., assignor of one-half to Julia B. Washburn, Baker City, Oreg. Filed July 1, 1899. Serial No. 722,572. (No model.)



Claim.—1. The combination in a concentrator of a water-distributing box, a transversely-movable distributer or spreader having oppositely-inclined surfaces and channels or partitions adapted to move beneath the falling streams of water whereby the latter are subdivided and delivered in small amounts upon the concentrator.

2. In a shaking-concentrator, a water-supply box, a distributer or spreader having oppositely-inclined surfaces and a series of divergent partitions or channels adapted to move transversely beneath the box, whereby the streams of water delivered therefrom are subdivided and successively fall into the various channels.

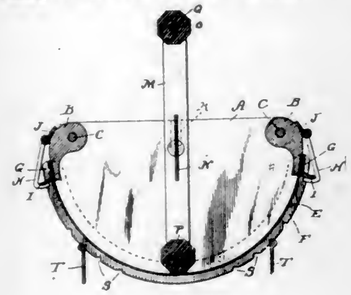
3. The combination with a concentrating belt or surface of a water-supply and a distributer or spreader composed of oppositely-inclined surfaces and a series of divergent channels thereon adapted to reciprocate beneath the falling streams of water.

4. In a concentrator, the combination of a source of water-supply, a spreader comprising oppositely-inclined surfaces with a series of divergent channels, and means for reciprocating said channels beneath the falling stream of water whereby it is subdivided into a number of small streams.

5. In a concentrator, a water-supply device having discharge-openings, a distributer or spreader having oppositely-inclined surfaces adapted to reciprocate beneath said openings, and having a series of divergent channels alternately supplied from the water-box, said distributer also having a series of discharge-openings at its opposite edges, and gates by which the amount of water delivered to the channels is regulated.

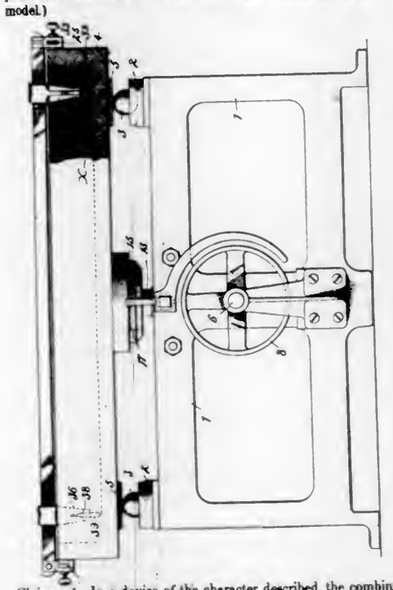
6. In a concentrator, the combination of a source of water-supply, a spreader or distributer comprising a series of channels, means for reciprocating said channels beneath the falling stream of water whereby it is subdivided into a number of smaller streams, and an adjustable support to which said channels are attached whereby they may be adjusted to cut out of the falling stream a greater or less amount of water as may be desired.

655,471. KITCHEN UTENSIL. HARRY WIESER, Philadelphia, Pa. Filed Apr. 6, 1899. Serial No. 711,921. (No model.)



Claim.—In combination, a suitable receptacle or body, cross-bars connecting the sides thereof, catch-hooks pivoted to the cross-bars, curved strips adapted to fit over the lower edges of the body, said strips having notches therein, a support for the curved strips, cross-strips G connecting the curved strips, a perforated screen secured to said strips, lugs projecting from the cross-strips with which the hooks are adapted to engage, as and for the purpose set forth.

655,472. PLATE-GRAINING MACHINE. GEORGE WISHART, New York, N. Y., assignor to the Aluminum Plate and Press Company, same place and Plainfield, N. J. Filed May 9, 1900. Serial No. 16,063. (No model.)



Claim.—1. In a device of the character described, the combination of a box or receptacle adapted to contain the graining materials and the plate to be grained, with suitable brackets adjustable longitudinally and transversely upon the box or receptacle, means for securing said brackets in the desired adjusted positions, and plate-engaging devices mounted upon said adjustable brackets, substantially as and for the purpose set forth.

2. In a device of the character described the combination of a box or receptacle adapted to contain the graining materials and the plate to be grained, with suitable bracket-arms adjustable longitudinally and transversely upon the box or receptacle and projecting downwardly therein toward the bottom thereof, and screws threaded into said bracket-arms and adapted to engage and hold the plate upon the bottom of the box or receptacle, substantially as set forth.

3. In a device of the character described, the combination of a box or receptacle adapted to contain the graining materials and the plate to be grained, with suitable bracket-arms adjustable longitudinally and transversely upon the box or receptacle and projecting downwardly therein toward the bottom thereof, horizontally-projecting ears or lugs upon the lower ends of said bracket-arms, and vertical plate-engaging screws threaded through said ears or lugs and adapted to rigidly engage and hold a plate, substantially as set forth.

4. In a device of the character described, the combination of a box or receptacle adapted to contain the graining materials and the plate to be grained, with the cross-bars supported upon and transversely of the box or receptacle, and adjustable longitudinally thereon, bracket-arms mounted upon said cross-bars and projecting downwardly into the box or receptacle, and suitable plate-engaging devices carried by said bracket-arms, substantially as and for the purpose set forth.

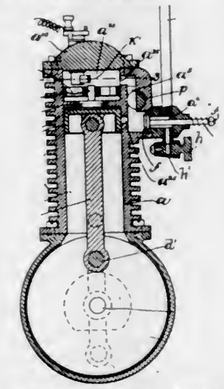
5. In a device of the character described, the combination of a box or receptacle adapted to contain the graining materials and the plate to be grained, with the cross-bars supported upon and transversely of the box or receptacle and adjustable longitudinally thereon, means for securing said cross-bars in the desired adjusted positions, bracket-arms mounted upon said cross-bars and projecting downwardly into the box or receptacle, and suitable plate-engaging devices carried by said bracket-arms, substantially as and for the purpose set forth.

6. In a device of the character described, the combination of a box or receptacle adapted to contain the graining materials and the plate to be grained, with the guide-rails secured to the sides of the box or receptacle, the cross-bars mounted upon said guide-rails and adjustable thereon longitudinally of the box or receptacle, bracket-arms mounted upon the cross-bars and adjustable transversely of the box or receptacle, and devices carried by said bracket-arms and adapted to engage the plate in the bottom of the box or receptacle and hold it firmly therein, substantially as and for the purpose set forth.

7. In a device of the character described, the combination of a grainer box or receptacle, with the guide-rails secured to and offset from the sides of the box or receptacle, the yokes embracing the guide-rails, the cross-bars mounted upon the yokes and extending across the box or receptacle, bracket-arms mounted upon the cross-bars and adjustable transversely of the box or receptacle, and devices carried by said bracket-arms adapted to engage the plate in the bottom of the box or receptacle, substantially as set forth.

8. In a device of the character described, the combination of a grainer box or receptacle, with the cross-bars adjustably mounted thereon, the bracket-arms formed with yokes which embrace the cross-bars and thereby adjustably support the bracket-arms, and devices carried by said bracket-arms and adapted to engage a plate in the bottom of the box or receptacle, substantially as and for the purpose set forth.

655,473. GAS-ENGINE. EDWARD C. WOOD, Somerville, Mass., assignor of one-half to Thomas W. Gleeson, Boston, Mass. Filed Aug. 9, 1899. Serial No. 726,683. (No model.)



Claim.—1. In an explosive-engine, a working cylinder, an explosion-chamber, a passage connecting the two, a check-valve controlling said passage and opening toward the explosion-chamber, a second passage connecting the chamber and cylinder, and a throttling-valve controlling said second passage.

2. In an explosive-engine, a working cylinder, an explosion-chamber, a passage connecting the two, a check-valve controlling said passage and opening toward the explosion-chamber, a second passage connecting the chamber and cylinder, a throttling-valve controlling said second passage, and a valved fuel-inlet opening into said second passage at a point between the working cylinder and the throttling-valve.

3. In an explosive-engine, a working cylinder, a piston operating therein, an explosion-chamber, a passage connecting said chamber and cylinder, a check-valve controlling said passage, and opening toward the explosion-chamber, and a second passage connecting the explosion-chamber and cylinder and entering the latter at a point covered by the side of the piston when the latter is at the beginning of its working stroke.

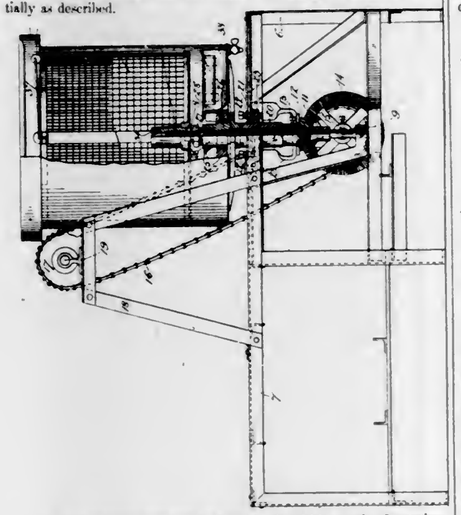
655,474. DISH-WASHING MACHINE. GEORGE S. BLAKESLEE, Chicago, Ill. Filed Mar. 23, 1898. Serial No. 674,856. (No model.)

Claim.—1. In a washing-machine, the combination with a tank, of a stationary spindle projecting into said tank, a basket carried by said spindle, and means for rotating said tank, substantially as described.

2. In a washing-machine, the combination with a tank, of a stationary spindle projecting into said tank, a stuffing-box around said spindle, and a basket mounted on said spindle, substantially as described.

3. In a washing-machine, the combination with a tank, of a stationary spindle projecting thereinto, a basket supported upon said spindle, a stuffing-box around said spindle, and means for rotating said tank upon said spindle, substantially as described.

4. In a washing-machine, the combination with a tank, of a stationary spindle projecting thereinto, a basket supported on said spindle, a sleeve connected to said tank, and means for rotating said sleeve, substantially as described.

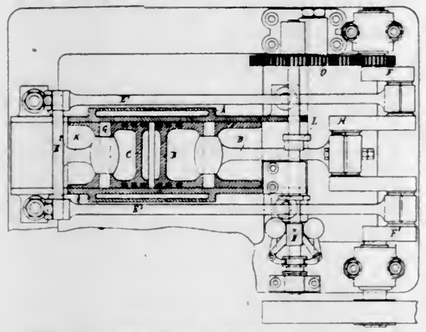


5. In a washing-machine, the combination with a tank, of a stationary spindle projecting thereinto, a basket supported on said spindle, a sleeve connected to said tank, means for rotating said sleeve, and an external sleeve supporting said rotary sleeve, substantially as described.

6. In a washing-machine, the combination with a tank, of a stationary spindle projecting thereinto, a stuffing-box, a basket, means for supporting said basket above and out of contact with the stuffing-box, and means for rotating said tank, substantially as described.

655,475. MULTIPLE-PISTON PETROLEUM OR GAS MOTOR.

CHARLES E. CALLOCH, La Flèche, France. Filed Aug. 14, 1897. Serial No. 648,488. (No model.)

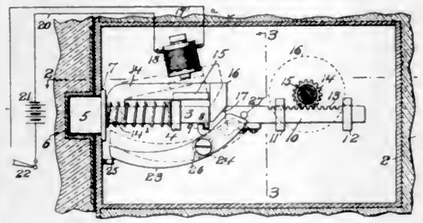


Claim.—1. In a gas-motor, the combination with the cylinder open at both ends, of the two pistons therein, the crank-shaft, the single piston-rod connecting one of the pistons with the crank-shaft, the rods E E^2 at one end connected to the crank-shaft and at the other end connected together by the cross-rod E^2, the arm K extending from the rod E^2, the pivot-pin G connecting the arm K and second piston together, the valve-chamber in communication with the space between the two pistons and provided with the spring-influenced valves S S', and means for automatically admitting atmospheric air into the cylinder when the pistons reach the end of their stroke, the several parts adapted to operate substantially as and for the purposes described.

2. In a gas-motor, the combination with the cylinder open at both ends, of the two pistons therein, the crank-shaft, the rod connecting one of the pistons with said shaft, the two rods connecting the other piston with the same crank-shaft, the valve-chamber in communication with the space between the two pistons and provided with the spring-influenced gas inlet and exhaust valves, the gas-inlet valve adapted to be opened by the suction created by the pistons, the cam for opening the exhaust-valve, the inlet for air opening into the explosion-chamber, and means for admitting air therethrough into the explosion-chamber after the admission of the explosive mixture, substantially as and for the purposes described.

655,476. ELECTRIC LOCK.

HENRY G. CARLETON, New York, N. Y., assignor to the Carleton Electric Company, same place. Filed Nov. 28, 1899. Serial No. 738,507. (No model.)



Claim—1. In a lock, the combination with one of the engaging parts, of a controller normally locking said part against movement, mechanical means operating in the first instance to move the controller from its locking position, electrical means for thereafter holding it out of locking position, and devices for actuating the part, substantially as described.

2. In a lock, the combination with one of the engaging parts, of a controller normally engaging said part to lock it against movement, mechanical means operating in the first instance to move the controller from its locking position, electrical means for thereafter holding it out of locking position, and devices for actuating the part, substantially as described.

3. In a lock, the combination with one of the engaging parts, of an actuating device therefor, a controller for normally holding said part against movement, means operated by the actuating device for moving the controller from its locking position, and means for electrically holding the controller out of locking position, substantially as described.

4. In a lock, the combination with one of the engaging parts, of a controller normally positioned to lock said part against movement, a slide, means for moving the slide to disengage the controller from its locking position, a magnet for holding the controller in its disengaged position and devices for operating the engaging part, substantially as described.

5. In a lock, the combination with a sliding bolt of a controller engaging the bolt, means for mechanically lifting the controller out of engagement with the bolt, a suitable magnet for holding the controller in its disengaged position, and devices for moving the bolt, substantially as described.

6. In a lock, the combination with a sliding bolt, of an arm, a stationary part to which said arm is pivoted, a controller-block carried by the arm, means for mechanically turning the arm on its pivot and disengaging the controller-block from the bolt, and a magnet for holding the block in its disengaged position, substantially as described.

7. In a lock, the combination with one of the engaging parts, of a slide for moving said part, said slide being normally arranged so that there will be an opening between its end and the end of the engaging part, a controller-block lying in said opening, means whereby a movement of the slide disengages the controller-block from the opening, and a suitable magnet for holding it in its disengaged position, substantially as described.

8. In a lock, the combination with a sliding bolt, of a slide, a loose connection between the slide and the bolt, the slide being normally arranged so that there is an opening between its end and the end of the bolt, a controller normally lying in the opening, and operating devices for the slide whereby a movement of the slide in one direction disengages the controller-block and a movement of the slide in the opposite direction draws the bolt, and a suitable magnet for holding the block in its disengaged position, substantially as described.

9. In a lock, the combination with one of the engaging parts, of a controller normally locking said part against movement, means for mechanically moving the controller from its locking position, a magnet for holding the controller out of locking position, and supplemental means for preventing a movement of the bolt unless the magnet is energized, substantially as described.

10. In a lock, the combination with a bolt, of a controller normally engaging said bolt, means for mechanically disengaging the controller, actuating devices for sliding the bolt, a magnet for holding the controller in its disengaged position, and a shoulder which the controller engages if the bolt is moved by means other than the actuating devices when the magnet is deënergized, substantially as described.

11. In a lock, the combination with a bolt, of a slide for moving the bolt, a loose connection between the slide and the bolt, an opening being thus formed between the slide and the bolt, a controller normally engaging the opening and arranged to be moved out of the opening by a movement of the slide, a magnet for holding the controller in its disengaged position, a shoulder on the bolt, and means for operating the slide, substantially as described.

12. In a lock, the combination with a bolt, of a slide having a rack thereon, a pinion on the knob-shaft for operating the slide, a loose connection between the slide and the bolt, the slide being arranged so as to leave an opening between it and the bolt, a controller engaging the opening and arranged to be moved out of the opening by the movement of the slide in one direction, a magnet for holding the controller in its disengaged position, and a shoulder on the bolt with which the controller engages in case the bolt is moved when the magnet is deënergized by means other than the slide, substantially as described.

13. In a lock, the combination with a bolt, of a slide having a rack thereon, a pinion on the knob-shaft for operating the slide, a loose connection between the slide and the bolt, the slide being arranged so as to leave an opening between it and the bolt, a pivoted arm carrying a controller-block engaging the opening and arranged to be moved out of the opening by the movement of the slide in one direction, a magnet for holding the controller-block in its disengaged position, and a shoulder on the bolt with which the controller-block engages in case the bolt is moved when the magnet is deënergized by means other than the slide, substantially as described.

655,477. FEED-TROUGH FOR HORSES.

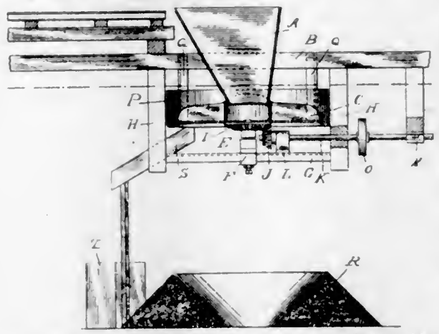
GEORGE E. COMBS, Chadwicks, N. Y. Filed Jan. 23, 1900. Serial No. 2,519. (No model.)



Claim.—In a feed-trough having a raised portion *b*, the combination of a hopper mounted on said raised portion and provided with side openings at its base, a cross-bar, provided with a nut *i* and extending across the chamber formed by said raised portion, threaded rods which extend down from the casing of said hopper and are secured to said cross-bar, a circular disk placed in said hopper and having a vertical plate forming a stirrer, secured to its upper face, and a downward projection extending through a hole in the bottom of the hopper, horizontal arms extending from said disk through said side openings, and a vertical screw mounted in the nut carried by said cross-bar, substantially as and for the purposes described.

655,478. ORE MIXER AND SAMPLER.

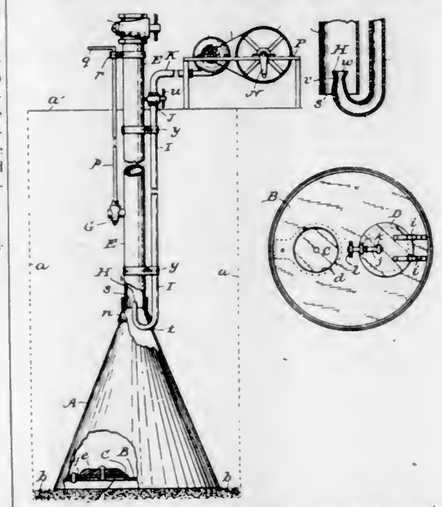
JOSÉ M. DAMM, Durango, Mexico. Filed Feb. 8, 1900. Serial No. 4,507. (No model.)



Claim.—In a device of the kind specified, the combination with a hopper, of a horizontally-rotating member below the same, comprising a central receptacle into which the delivery end of said hopper projects, and a plurality of radial spouts adapted to withdraw the ore from said receptacle and distribute same by centrifugal force, and a member surrounding said rotating member and of greater diameter than the sweep of the latter against which the ore is adapted to impinge and drop, whereby a heap of uniform grade is adapted to be formed, and an inclined radial trough mounted below said rotating member and extending outwardly from a point within the sweep thereof and intersecting the circle of falling ore, said trough being adapted to receive a small portion of the ore and deliver same at a point beyond the edge of the main heap.

655,479. CISTERN-CLEANER.

WYCKOFF DE MONT, Lafayette, Ind., and CHARLES L. GARWICK, Morrison, Ill.; said De Mont assignor to said Garwick. Filed Dec. 20, 1899. Serial No. 741,014. (No model.)



Claim.—1. A cistern-cleaner provided with an ejector comprising an air-outlet duct, a nozzle discharging into the outlet-duct, and an air-supply duct communicating with the nozzle.

2. A cistern-cleaner including a receptacle whereinto the debris may be drawn, an air-outlet pipe duct communicating with the receptacle, a nozzle situate within the air-outlet duct, and an air-supply duct communicating with the nozzle.

3. A cistern-cleaner consisting of a receptacle for debris, an air-outlet duct provided with an overflow-aperture, and an air-supply duct provided with a nozzle situate within the air-outlet duct.

4. A cistern-cleaner comprising a receptacle having a closed bottom provided with an inlet-valve and an aperture covered by a hinged latched door, an air-outlet duct communicating with the top of the receptacle and provided with a water-overflow aperture in the body portion thereof, a nozzle having its discharging-orifice directed into the air-outlet pipe, an air-supply duct communicating with the nozzle, and an air compressor or blower communicating with the air-supply duct.

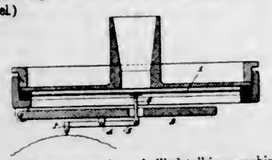
5. A cistern-cleaner comprising a receptacle for debris, an air-outlet duct, an overflow-aperture for water, an ejector whereby a partial vacuum may be formed in the receptacle, and an air compressor or blower communicating with the ejector.

6. A cistern-cleaner comprising a debris-receptacle having an inlet-valve and a discharging-door hinged to the bottom of the receptacle, an air-outlet duct attached to the top of the receptacle and provided with an overflow-aperture, a valve connected with the overflow-aperture, an operating-rod attached to the valve at the overflow-aperture, means for closing the air-outlet duct, a nozzle having its discharging-orifice delivering into the lower end of the air-outlet duct, an air-supply duct communicating with the nozzle and provided with a cut-off valve, and an air compressor or blower communicating with the air-supply duct.

7. In a cistern-cleaner, the combination with the receptacle having the air-outlet duct and the means for closing the same, of an overflow-aperture situate between the receptacle and such closing means whereby water may escape from such receptacle, and a valve at the overflow-aperture whereby the same may be closed to retain air in such receptacle.

8. In a cistern-cleaner, the combination with the receptacle having the air-outlet duct and the inlet-valve for debris at the bottom of such receptacle, of a nozzle situate at the lower portion of such air-outlet duct and delivering thereto, an air-supply duct communicating with the nozzle, and means for furnishing compressed air to the air-supply duct, whereby a partial vacuum may be formed in such receptacle.

655,480. PHONOGRAPHIC REPRODUCING DEVICE. THOMAS A. EDISON, Llewellyn Park, N. J. Filed May 3, 1900. Serial No. 15,351. (No model.)



Claim.—1. In phonographs and allied talking-machines, the combination with the diaphragm, of a reproducer connected therewith and comprising a disk-like body which presents transversely to the record a curve substantially coincident with that of the record-groove and longitudinally of the record a curve of less radius, substantially as set forth.

2. In a phonographic reproducer, the combination with the reproducer-diaphragm, of a reproducing device connected therewith, of substantially the same thickness throughout, and presenting transversely to the record a curve substantially coincident with that of the record-groove and longitudinally of the record a curve of smaller radius, substantially as set forth.

3. In a phonographic reproducer, the combination with a reproducer-diaphragm, of a disk connected to the diaphragm and having a rounded engaging surface, substantially as set forth.

4. In a phonographic reproducer, the combination with a reproducer-diaphragm, of a disk connected to the diaphragm and having a rounded engaging surface, and means for shifting the position of said disk with respect to its center, substantially as set forth.

5. In a phonographic reproducer, the combination with a reproducer-diaphragm and a head connected to said diaphragm, of a disk-like reproducing device carried by said head and presenting a rounded engaging surface, substantially as set forth.

6. In a phonographic reproducer, the combination with a reproducer-diaphragm and a head connected to said diaphragm, of a disk-like reproducing device carried by said head and presenting a rounded engaging surface, and means for shifting the position of said reproducing device within said head, substantially as set forth.

7. As a new article of manufacture, a reproducing device made in the form of a disk having a rounded engaging surface and of a diameter approximately three times the width of the record-groove, substantially as set forth.

8. As a new article of manufacture a reproducing device made of sapphire in the form of a disk having a rounded engaging surface, and of a diameter approximately three times the width of the record-groove, substantially as set forth.

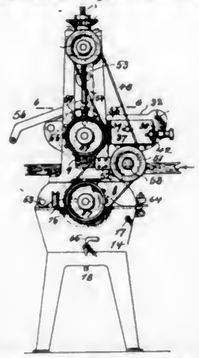
655,481. DEVICE FOR PROMOTING GROWTH OF HAIR. FREDERICK W. EVANS, St. Louis, Mo., assignor to Evans, Grove & Everett, same place. Filed Aug. 29, 1899. Serial No. 728,822. (No model.)



Claim.—A device for promoting the growth of hair consisting of a rigid skeleton frame, of a shape adapted to fit over the head and provided with a spring-band around its edges adapted to press upon the head when the device is applied thereto, in combination with a sheet of impervious material secured to the outside of the frame and having a free edge adapted to be forced against the head by the pressure of the atmosphere, substantially as described.

655,482. GLUE-SPREADER. CHARLES E. FRANCIS, Cincinnati, Ohio. Filed Nov. 16, 1899. Serial No. 737,212. (No model.)

Claim.—1. In a glue-spreader, the combination of a machine-frame, glue-applying rolls with a glue-supplying receptacle for each supported thereon, said rolls being adjustable to or from each other, a pressure-roll and means whereby it is connected to the machine-frame in a manner to be capable of occupying either an inoperative position or one in which it acts in conjunction with one of the glue-applying rolls.

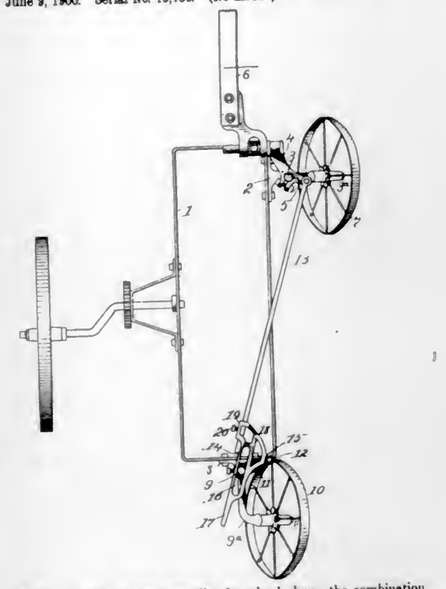


2. In a glue-spreader, the combination of two glue-applying rolls supported in a manner to permit adjustment of the space between them, a glue-supplying receptacle for each, and a pressure-roll adjustably supported in a manner to permit it to occupy positions, either within the space between the two glue-applying rolls, or one outside of such space.

3. In a glue-spreader, the combination of two glue-applying rolls, one above the other, boxes in which they are supported, screws attached to the boxes of the upper roll whereby this latter may be adjusted with reference to the lower one, a glue-trough and a pressure-roll, brackets, one on each side of the machine to which both are connected for support and which brackets are attached to the boxes of the upper glue-roll, the connection of the pressure-roll being an adjustable one, which permits change in position from one inoperative to one in which it acts in conjunction with the lower glue-roll and means to fixedly hold the pressure-roll in either one of its positions.

4. In a glue-spreader, the combination with a glue-applying roll of the hollow trough-casting 32, shaped, as shown, to form a bottom and a side of the trough with a jacket therefor and having its ends closed by heads 36.

655,483. WHEEL-PLOW. LEVI P. GRAHAM, Decatur, Ill., assignor to the Sattley Manufacturing Company, Springfield, Ill. Filed June 9, 1900. Serial No. 19,786. (No model.)



Claim.—1. In a caster-controller for wheel-plows, the combination with an arm fixed on the vertical extension of the caster-wheel shaft, of a tongue-controlled rod slidable lengthwise against a bearing on the rear end of the plow-frame and having a lateral extension that lies in the path of the forward and inward swing of the caster-wheel arm when the plow is in an operative position.

2. In a caster-controller for wheel-plows, the combination with an arm fixed on the vertical extension of the caster-wheel shaft and having a vertical bearing on its swinging end of a tongue-controlled rod slidable lengthwise against a bearing on the rear end of the plow-frame and having a lateral extension that lies in the path of the swing of the bearing on the end of the arm when the plow is in an operative position and is moved out of such path when the tongue is swung materially sidewise.

3. In a caster-controller for wheel-plows, the combination with an arm fixed on the vertical extension of the caster-wheel shaft and having a vertical bearing on its swinging end, of a tongue-controlled rod and a slotted plate fastened to the rear end of the rod and mounted slidably on the vertical extension of the shaft of the caster-wheel, the plate having a lateral extension that lies in the path of the swing of the bearing of the arm while the plow is in operation and that moves out of such path while the plow is turning.

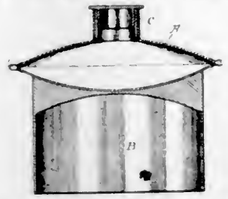
4. In a caster-controller for wheel-plows, the combination with an arm as 11 fixed on the vertical extension of the caster-wheel shaft, of a plate as 14 controlled from the tongue such plate being slotted to slide on the pivot of the arm and provided with the lateral extension 15, the inclined surface 18 and the horn 17, substantially as described.

655,484. PROCESS OF FORMING PINKING-CUTTERS. HENRY A. HANNUM, Cazenovia, N. Y. Filed Mar. 25, 1899. Serial No. 710,454. (No model.)



Claim.—The improved method of manufacturing a circular pinking-cutter by stamping a circular blank out of sheet-steel, maintaining said blank of a uniform thickness from the center to the extreme edge thereof then heating said blank and while in this condition crimping and curving the marginal portion thereof and imparting the final shape to the blank, then tempering and hardening the blank, and subsequently beveling the crimped edges of the tempered blank as set forth.

655,485. WATER-BAG. LORENZO M. HANSEN, Moorestown, N. J. Filed Mar. 15, 1899. Serial No. 709,203. (No model.)



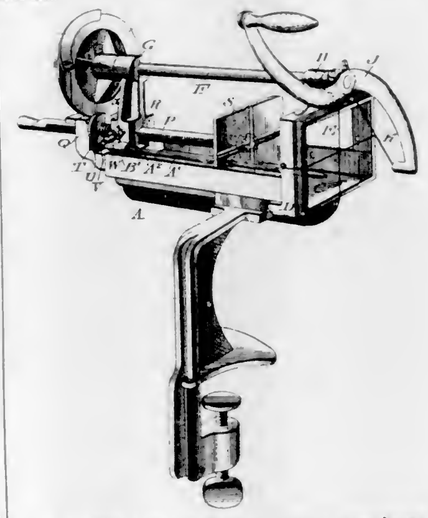
Claim.—In combination, a hood, a water-bag secured to and forming a top for the hood and a series of ribs within the hood adapted to form a seat for the water-bag on their upper surface and to conform to the shape of the head on their lower surface, substantially as described.

655,486. CUTTER FOR BUTTER, &c. FRANK HARDART and JOHN ANDERSON, Philadelphia, Pa. Filed Mar. 16, 1900. Serial No. 8,894. (No model.)

Claim.—1. In a cutter, a bed, a cutting device, a follower provided with a rearwardly-extending rod rigid therewith, a vibratory clutch-plate for said rod, stops between which said clutch-plate is confined, whereby it is prevented from moving beyond the stops with the follower and rod, said clutch-plate being normally disengaged from said rod, and means for simultaneously operating said cutting device for vibrating said clutch-plate between its stops to cause the clutch-plate to alternately engage said rod and advance the same.

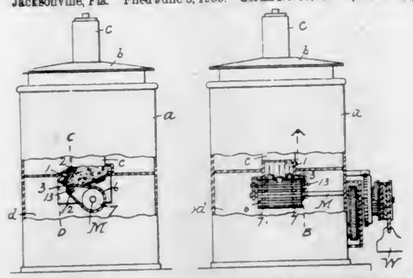
2. In a cutter, a bed, a cutting device, a rod provided with a follower mounted upon said bed, a clutch-plate for said rod, a spring for holding said clutch-plate normally disengaged from said rod, and means for simultaneously operating said cutting device and for moving said clutch-plate against the action of said spring into engagement with said rod and for advancing the same.

3. In a cutter, a bed, a cutting device, a rod provided with a follower mounted upon said bed, a movable clutch-plate, a spring for holding said clutch-plate normally out of engagement with said rod, a cam adapted to engage said clutch-plate and move the same against the action of said spring and into engagement with said rod and for advancing the same, and means for simultaneously operating said cutting device and said cam.



4. In a cutter, a bed, a cutting device, a follower mounted upon said bed, means for operating said cutting device and follower, said follower being provided with an aperture and a longitudinally-movable skewer mounted upon the frame of the machine and extending through said aperture, said skewer being adapted to be withdrawn and inserted longitudinally.

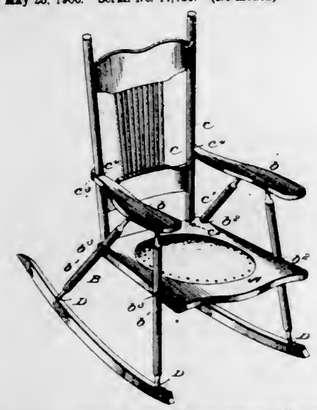
655,487. ACETYLENE-GAS GENERATOR. ISAAC L. HARRIS, Jacksonville, Fla. Filed June 8, 1900. Serial No. 19,582. (No model.)



Claim.—1. In an acetylene-gas generator in combination with a water-tank and a carbid-chamber, the hanging-strips 1 and the roller-pulleys 3 fastened thereto and working idly near the lower extremity of said hanging-strips and forming a part thereof for controlling the carbid in its delivery into the water-tank, said hanging-strips working loosely side by side on the fixed round bar 2 in sufficient numbers to extend across the full width of the opening into the water-tank at the bottom of the carbid-chamber substantially as shown.

2. In an acetylene-gas generator in combination with a water-tank and a carbid-chamber, the chain belt moving floor 6 for feeding the carbid into the water-tank, said chain belt comprising an endless series of transverse plates, the pins 10 fastened to the under side of the plates, the links 11 encompassing each pair of pins and holding the plates together in an endless belt, the channel-strips 9 fastened to the under side of the plates 6 with their meeting ends bent outward in two parallel rows, the two disks 7 fastened to a motor-shaft for operating said belt, one of said disks working in the channel formed by the parallel strips 9 for the purpose of guiding the belt uniformly, the small disks 12 and the idle shaft 13 to which said disks are fastened and over which the chain belt works loosely substantially as shown and described.

655,488. SEPARABLE CHAIR. LEWIS S. HAYES, Cortland, N. Y. Filed May 23, 1900. Serial No. 17,739. (No model.)

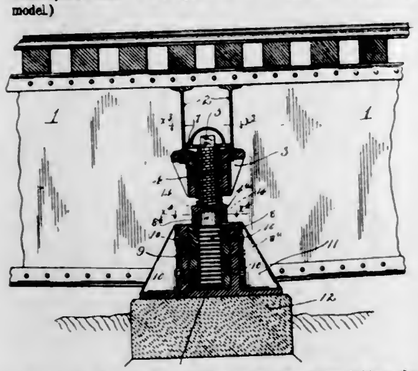


Claim.—1. In a separable chair, the combination with a suitable seat and a back having its posts notched to receive the rear edges of the seat, of the diverging side legs, notched to receive the side edges of said seat and connected at their upper ends by suitable arms, and screws for securing the posts together.

2. In a separable chair, the combination with a suitable seat and a back having its posts notched at their lower ends to receive the rear edge of the seat, of side panels consisting each of two diverging legs connected at their upper ends by an arm, the legs of each panel being notched to receive a side edge of the seat and the rear end of each arm being provided with a recess, whereby the said arms are caused to partially encircle said posts, so as to relieve the strain upon the securing-screws, and screws for firmly securing the posts together.

3. In a separable chair, the combination with a suitable seat and a back having its posts notched to receive the rear edge of the seat, of two side panels, each panel consisting of two diverging legs connected at their upper ends by an arm and at their lower ends by a rocker or other connection, the legs of each panel being notched to receive a side edge of said seat and the rear end of each arm adapted to partially encircle a back post, and screws for firmly securing the several parts together.

655,489. PIVOTAL BEARING FOR TURN-TABLES. OLAF HOFF, Minneapolis, Minn. Filed Apr. 23, 1900. Serial No. 13,849. (No model.)

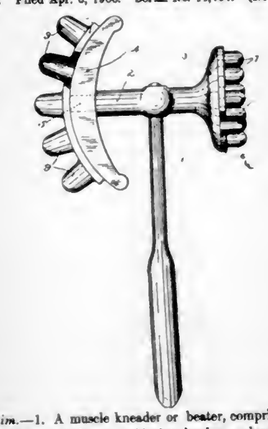


Claim.—1. A vertical pivot-bearing for turn-tables, bridges, &c., comprising a vertical pivot formed in sections connected by a flexible joint that causes them to rotate together, the lower pintle-section having peripheral annular bearing-surfaces, and a base or support having bearing-surfaces coöperating with the annular bearing-surfaces of said pintle, substantially as described.

2. A vertical pivot-bearing for turn-tables, bridges, &c., comprising a pintle having peripheral annular bearing-surfaces and a lower end bearing-surface, and a base or support receiving the lower portion of said pintle, having annular bearing-surfaces coöperating with the annular bearing-surfaces of said pintle, and provided with a bearing-surface at its bottom which engages the lower end of said pintle from its axis outward, substantially as described.

3. A vertical pivot-bearing for turn-tables, bridges, &c., comprising a pintle cut flat at its lower end and provided with peripheral annular bearing-flanges, and a base or support having annular flanges coöperating with the annular flanges of said pintle, and provided with a supplemental bottom or plug 13 recessed centrally at its under face, substantially as described.

655,490. MUSCLE-KNEADER. RUDOLPH HOLLEN, Sioux City, Iowa. Filed Apr. 6, 1900. Serial No. 11,797. (No model.)

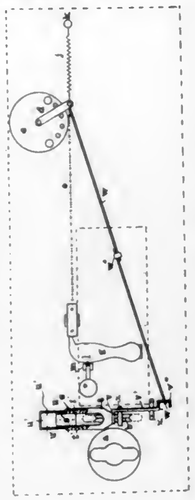


Claim.—1. A muscle kneader or beater, comprising a head and a rubber plate secured thereto, said plate having a plurality of hollow nipples with closed outer ends and opening at that side of said plates which is secured to said head, whereby air is caged in the said nipples, by the said head.

2. A muscle kneader or beater, comprising a handle and a pivoted head, said head having a rubber plate secured thereto, and provided with a plurality of hollow nipples with closed outer ends and opening at the side of said plates which is secured to said head, whereby air is caged in said nipples, by the said head.

3. A segmental muscle-kneading device, having secured to the convex surface thereof a rubber plate having a plurality of hollow nipples, with closed outer ends, substantially as described.

655,491. ELECTRICALLY-DRIVEN MACHINE. THEODORE H. JOSEPH and JAMES J. EHRENREICH, New York, N. Y. Filed Jan. 27, 1899. Serial No. 703,554. (No model.)



Claim.—1. The combination with a machine to be driven by a motor, of a brake for the motor, a rheostat for regulating the current of the motor, a starting-pedal connected up with both the said brake and said rheostat, and a retractile spring for returning the pedal, rheostat and brake to their normal phases, and means for causing the said brake to be non-active, permanently, said means consisting of a rod adjustable in length forming a connecting-rod between the said brake and the said rheostat.

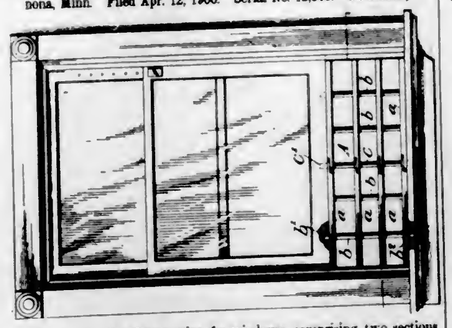
2. The combination with a machine to be driven by a motor, of a brake, a rheostat for respectively stopping and operating the motor in the usual manner, a pedal for operating the rheostat against the action of a retractile spring, and means for applying and releasing the said brake actuated by said rheostat mechanically, said means consisting of a crank for applying the brake against the action of a retractile spring, and a rod, adjustable in length, connecting said rheostat to said crank.

3. The combination with a machine to be driven, of a motor, a rheostat for regulating the current for the motor, a brake for stopping the pulley of the motor, a starting-pedal, a chain connecting the pedal to the handle of the rheostat, a spring *j* acting as a retractile spring to return the said handle to its original position, a crank provided with a finger which bears upon the brake to apply it against the action of a spring *u*, a connecting-rod, having a hook, engaging with the said crank, and adapted to actuate said crank at one portion of its throw only, the second spring *u*, being for returning the brake from pressing upon the said pulley, and a second or stopping pedal, having a ratchet to hold the starting-pedal in different positions, and adapted to release the said starting-pedal, and means for adjusting the length of said connecting-rod.

4. The combination, with a motor for driving a machine, of a rheostat for regulating the current for the motor, a brake for stopping the pulley of the motor, a pedal, a chain connecting the pedal to the handle of the rheostat, a spring *j*, acting as a retractile spring to return the said handle and the said pedal to their original positions, a crank provided with a finger which bears upon the brake, to apply it against the action of a given spring *u*, a connecting-rod having a hook, which engages with said crank, and adapted to actuate said crank at one portion of its throw only, the second spring *u*, being for returning the brake from pressing upon said pulley.

5. The combination, with the table of a machine, of a rheostat secured on the under side thereof, and having a handle, a retractile spring, having one end secured to said handle, and the other to a post *k* projecting downward from the said table, a rod extending from the said handle, parallel to the under surface of the table, a second rod *n'* having a crank at one end, and a finger at the other, and lying parallel to the said surface, and at an angle to the first rod, which is provided with a hook, which engages with the said crank, a motor secured under the table, with its driving-pulley located beneath the said finger, a brake for said pulley, a spring *u*, normally tending to hold the brake away from the said pulley, said brake being normally held against the pulley against the action of the spring *u*, and cleats for holding the rod *n'* to the under side of the table.

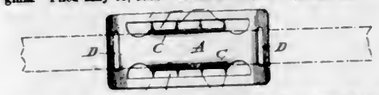
655,492. SAFETY-GRATING. HERBERT W. KINGSBURY, Winona, Minn. Filed Apr. 12, 1900. Serial No. 12,565. (No model.)



Claim.—1. A safety-grating for windows, comprising two sections each consisting of bars secured crosswise of each other, said sections being hinged together to permit folding, removable bars at the sides of the sections, and pins at the top and bottom of the grating for engagement with sockets in the sash and frame.

2. A safety-grating for windows, comprising two sections each consisting of bars secured crosswise of each other, said sections being foldably secured together centrally on a pintle-rod the ends of which are extended beyond the grating to form pins for engagement with sockets in the sash and frame, and other pins on the grating for engagement with other sash and frame sockets.

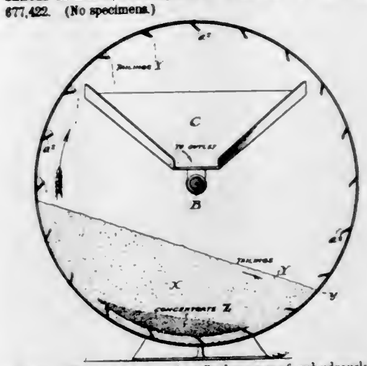
655,493. SHIRT-WAIST HOLDER AND SKIRT-SUPPORTER. RESTORE R. LAMB, Mount Holly, N. J., and WALTER LAMB, Philadelphia, Pa., assignors to the De Long Hook and Eye Company, of West Virginia. Filed May 19, 1900. Serial No. 17,309. (No model.)



Claim.—1. A plate having a central bar, slots between said bar and the upper and lower borders of said plate, salient lips projecting in opposite vertical directions from the upper and lower portions of said bar and teeth extending from said salient lips respectively in the directions thereof.

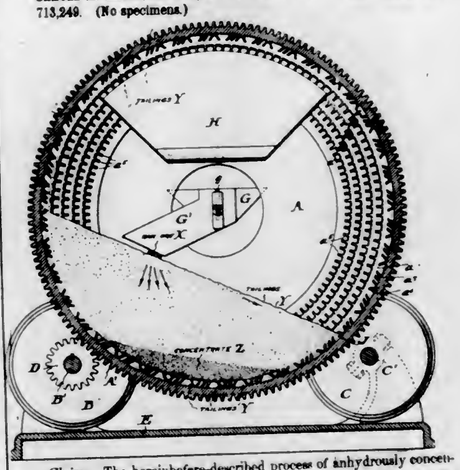
2. A holder and supporter consisting of a plate having a central bar, top and bottom borders, slots between said parts, lips on said bar and teeth on said lips, said lips extending respectively upwardly and downwardly and being salient.

655,494. PROCESS OF CONCENTRATING ORES ANHYDROUSLY. SAMUEL M. LESSAU, Philadelphia, Pa. Filed Apr. 13, 1898. Serial No. 677,422. (No specimens.)



Claim.—The hereinbefore-described process of anhydrously concentrating comminuted material containing precious metal, consisting in agitating a mass of said material, forming strata of its particles in accordance with the specific gravity thereof, retaining the concentrated product at the bottom of said mass, removing the lighter waste material in a dry condition, from the upper strata of the agitated mass, through the latter and beneath the concentrated product, retained at the bottom thereof, and discharging said waste material exterior to said mass, substantially as set forth.

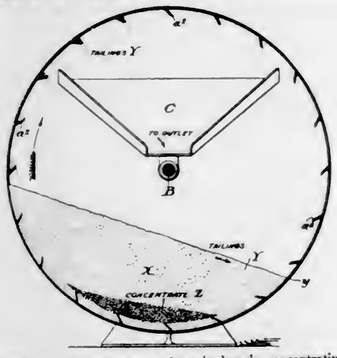
655,495. PROCESS OF CONCENTRATING ORES ANHYDROUSLY. SAMUEL M. LESSAU, Philadelphia, Pa. Filed Apr. 17, 1899. Serial No. 713,249. (No specimens.)



Claim.—The hereinbefore-described process of anhydrously concentrating comminuted material containing precious metal, consisting in con-

tinuously agitating a mass of said material, forming strata of its particles in accordance with the specific gravity thereof; retaining the concentrated product at the bottom of said mass; maintaining a layer of dry waste material above the concentrated product by supplying raw material to said mass during its agitation; continuously removing the lighter waste material, in a dry condition, from the upper strata of the agitated mass, through the latter and beneath the concentrated product at the bottom thereof; and discharging said waste material exterior to said mass, substantially as set forth.

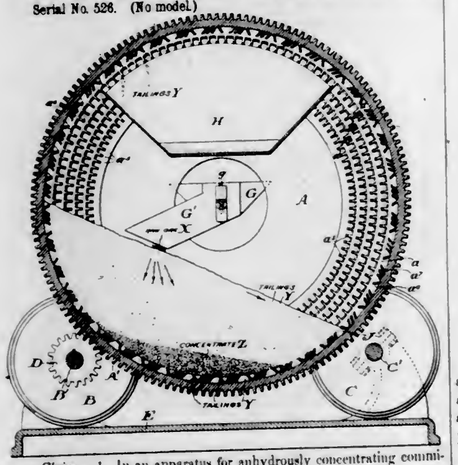
655,496. **MEANS FOR CONCENTRATING ORES ANHYDROUSLY.** SAMUEL M. LESSAU, Philadelphia, Pa. Original application filed Apr. 13, 1898, Serial No. 677,422. Divided and this application filed Jan. 5, 1900. Serial No. 525. (No model.)



Claim.—1. In an apparatus for anhydrously concentrating comminuted material containing precious metal, the combination of a drum, means for rotating the same, and means within the drum for agitating and stratifying the material during rotation, said means being adapted by reverse rotation of the drum to catch and deliver the material of the upper strata to a discharge-chute, within the drum, substantially as described.

2. In an apparatus for anhydrously concentrating comminuted material containing precious metal, the combination of a drum, a stationary discharge-chute extending within the drum, and wings fixed within the drum for agitating and stratifying the material during rotation, said wings being adapted by reverse rotation of the drum to catch and deliver the material of the upper strata to a discharge-chute within the drum, substantially as described.

655,497. **MEANS FOR CONCENTRATING ORES ANHYDROUSLY.** SAMUEL M. LESSAU, Philadelphia, Pa. Original application filed Apr. 17, 1899, Serial No. 713,249. Divided and this application filed Jan. 5, 1900. Serial No. 526. (No model.)



Claim.—1. In an apparatus for anhydrously concentrating comminuted material containing precious metal, the combination with means to revolve a drum, of a drum, means arranged to deliver said comminuted material in a dry condition, to said drum, during the operation of the latter, means arranged to continuously agitate a mass of said concentrated material in a dry condition, within said drum, means to retain the concentrated product at the bottom of said mass within said drum, buckets arranged to remove the lighter waste material in a dry condition, from the upper strata of said mass, through the latter, and beneath the concentrated product retained at the bottom thereof, and means coöperative with said buckets to discharge said waste material from said drum, substantially as set forth.

2. In an apparatus for anhydrously concentrating comminuted material containing precious metal, the combination with means to revolve a drum, of a drum whose periphery comprises concentric zones of differing diameters, means arranged to continuously agitate a mass of said comminuted material in a dry condition, within said drum, buckets fixed in said drum in the largest zone thereof, and arranged to remove the lighter waste material, in a dry condition, from the upper strata of said mass, through the latter, and beneath the concentrated product retained at the bottom thereof, and means coöperative with said buckets to discharge said waste material from said drum, substantially as set forth.

3. In an apparatus for anhydrously concentrating comminuted material containing precious metal, the combination with means to revolve a drum, of a drum, whose periphery comprises concentric zones of differing diameters, agitating-blades fixed in the smaller zones of said drum, buckets fixed in the largest zone of said drum, and arranged to remove the lighter waste material, in a dry condition, from the upper strata of said mass, through the latter, and beneath the concentrated product retained at the bottom thereof, and means coöperative with said buckets to discharge said waste material from said drum, substantially as set forth.

4. In an apparatus for anhydrously concentrating comminuted material containing precious metal, the combination of a drum, means for rotating said drum, means arranged to deliver said comminuted material in a dry condition, to said drum, during the operation of the latter, means within the drum for agitating and stratifying the material during rotation said means being arranged to remove the lighter waste material, in a dry condition, from the upper strata of said mass, through the latter and beneath the concentrated product retained at the bottom thereof, and mean to discharge said waste material from said drum, substantially as set forth

655,498. **HANDPIECE.** CORNEYS C. LUSBY, Philadelphia, Pa., assignor of one-half to Joseph A. Cramp, same place. Filed Aug. 18, 1899. Serial No. 727,638. (No model.)



Claim.—1. In a handpiece, the comomation with an outer casing, of a tubular spindle mounted for rotation in said casing, and comprising separable members, a chuck mounted in said spindle, and a lever, seated in said spindle to detachably secure the members thereof in relatively-fixed position, and arranged to operate said chuck, substantially as set forth.

2. In a handpiece, the combination with an outer casing, of a tubular spindle mounted for rotation in said casing, and comprising separable telescoping members, means to prevent relative rotation of said separable spindle members, and detachable means, distinct from said spindle members, to prevent relative longitudinal movement thereof, substantially as set forth.

3. In a handpiece, the combination with an outer casing, of a tubular spindle mounted for rotation in said casing, mechanism to clamp an instrument in said spindle; comprising a lever mounted to rotate with said spindle, a ring *g*, arranged to encircle said spindle and said lever, and to rotate therewith, and a normally-stationary sleeve G, mounted to slide within said casing in operative relation with said ring, substantially as set forth.

4. In a handpiece, the combination with a tubular spindle, of a sleeve A^2, in which said spindle is journaled, an exterior casing, comprising separable members A, A', respectively in adjustable relation with said sleeve, and means to adjust and secure said casing members with respect to said sleeve, substantially as set forth.

655,499. **PROCESS OF DISSOLVING COPAL GUMS.** GEORGE C. LYMAN, New York, N. Y. Filed May 9, 1899. Serial No. 716,075. (No specimens.)

Claim.—1. The improvement in the art of manufacturing copal compounds, which consists in dissolving the copal in part by the aid of wood-alcohol, heat and pressure, substantially as set forth.

2. The improvement in the art of manufacturing copal compounds, which consists in dissolving the copal in part by the aid of acetone, heat and pressure, substantially as set forth.

3. The improvement in the art of manufacturing copal compounds, which consists in dissolving the copal in part by the aid of wood-alcohol and in part by the aid of acetone, substantially as set forth.

4. The improvement in the art of manufacturing copal compounds, which consists in dissolving the copal in part by the aid of wood-alcohol and heat, and in part, but separately, by the aid of acetone and heat, and subsequently mixing the solutions so produced, thereby producing a substantially-complete solution of the copal.

5. The improvement in the art of manufacturing copal compounds, which consists in first dissolving the copal in a relatively more volatile solvent, and then adding a relatively less volatile solvent, whereby the evaporation of part of the solvents shall leave a plastic mass.

655,500. **PROCESS OF REFINING MINERAL OILS.** THOMAS MACALPINE, London, England, assignor to the Alcohol Syndicate, Limited, same place. Filed May 25, 1899. Serial No. 718,303. (No specimens.)

Claim.—1. The process of refining petroleum and mineral oils, which consists in subjecting them to the action of a compound of acetylene and manganese, substantially as described.

2. The process of refining petroleum and mineral oils, which consists in subjecting them to the action of a compound of acetylene and manganese and separating the purified oil from the mixture, substantially as described.

3. The process of refining petroleum and mineral oils, which consists in subjecting them to the action of a compound of acetylene and manganese, with or without the addition of other purifying agents, allowing the mixture to settle, with or without agitation, removing the oil and distilling it, substantially as described.

4. The process of refining petroleum and mineral oils, which consists in subjecting them to the joint action of a compound of acetylene and manganese and an alkali, substantially as described.

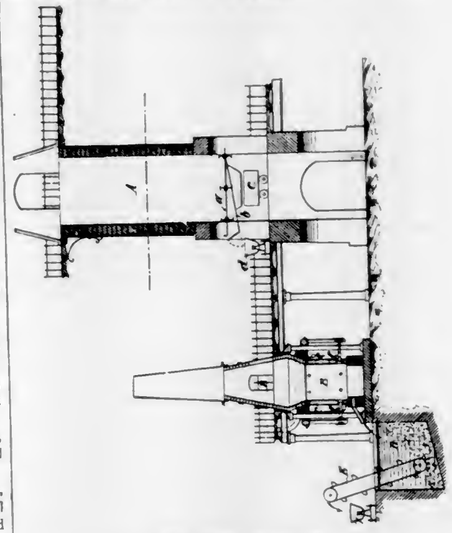
5. The process of refining petroleum and mineral oils, which consists in subjecting them to the joint action of a compound of acetylene and manganese and a mineral acid, substantially as described.

6. The process of refining petroleum and mineral oils, which consists in subjecting them to the joint action of a compound of acetylene and manganese and a mineral acid, removing the excess of acid by treatment with a neutralizing agent, such as alkali, washing out the excess of said agent and distilling the oil with or without filtering or settling, substantially as described.

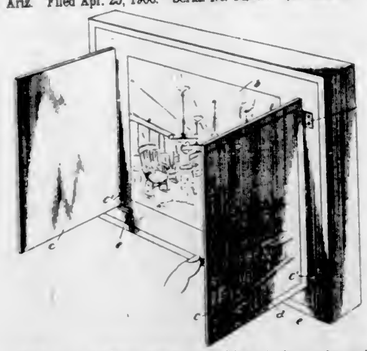
7. The process of refining petroleum and mineral oils, which consists in subjecting them to the action of a compound of acetylene and manganese, with or without the addition of other purifying agents, allowing the mixture to settle, with or without agitation, removing the oil and distilling under a partial or complete vacuum, substantially as described.

655,501. **ARTIFICIAL CEMENT.** LOUIS H. M. MERCERON-VICAT, Grenoble, France, assignor to himself and Nestor Joseph Emile Cornier, same place, and Marius Joseph Louis Valla, Marseilles, France. Filed Dec. 28, 1897. Serial No. 663,973. (No specimens.)

Claim.—In the art of making cement, the herein-described process consisting in calcining marly limestone and then fusing the same under oxidizing conditions, and thereby removing the sulfur while the materials are in a state of fusion, substantially as described.



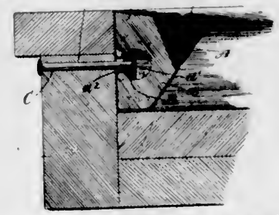
655,502. **PICTURE-FRAME.** ALBERT F. MESSINGER, Phœnix, Ariz. Filed Apr. 25, 1900. Serial No. 14,266. (No model.)



Claim.—1. A picture-frame, comprising a body, two leaves hingedly mounted thereon, sectors connected with each leaf, racks respectively meshing with the sectors, a spring-actuated lever connected with the racks, and a push-pin connected with the lever.

2. A picture-frame, comprising a body, a leaf pivotally mounted thereon, a sector connected with the leaf, a rack engaged with the sector, a lever to which the rack is pivotally connected, and a push-pin mounted in the body and connected with the lever to transmit movement thereto.

655,503. **BILLIARD-TABLE.** ROBERT W. MOFFETT, Chicago, Ill. Filed Mar. 14, 1899. Serial No. 709,037. (No model.)



Claim.—1. As an improvement in billiard-tables, the combination of a cushion provided with a longitudinal groove, which has a contracted

outer portion that opens at the back, or inner, side of the cushion, a tubular cover inclosing the cushion, with a portion extending into the groove, a bar engaging the portion of the cover in the groove and holding the cover under tension, and fastening-screws passing through the table-rail and directly engaging said bar, substantially as and for the purpose specified.

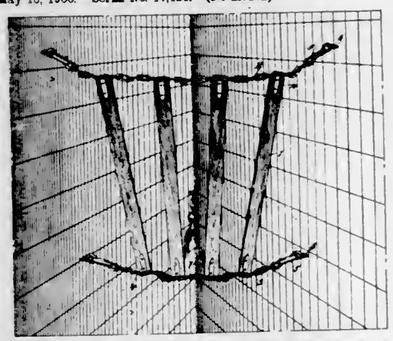
2. As an improvement in billiard-tables, the combination of a cushion provided with a longitudinal groove, a tubular cover inclosing the cushion with a portion extending into the groove, a bar engaging the portion of the cover in the groove and provided with side surfaces of different form, and shiftable to present surfaces of different form for contact with the cover, means for holding the bar in its different positions and means for holding said cushion to the table, substantially as and for the purpose set forth.

3. As an improvement in billiard-tables, the combination of a cushion provided with a longitudinal groove, a tubular cover inclosing the cushion with a portion extending into the groove, a bar engaging the portion of the cover in the groove, having opposite plane and convex sides adapted for alternate use, means for holding the bar in its different positions, and means for holding said cushion to the table, substantially as and for the purpose described.

4. As an improvement in billiard-tables, the combination of a cushion provided with a longitudinal groove with a contracted outer portion, a tubular cover inclosing the cushion with a portion extending into the groove, a bar engaging the portion of the cover in the groove and means for drawing the bar outward against portions of the cover in contact with the groove-walls, substantially as and for the purpose specified.

5. As an improvement in billiard-tables, the combination of a cushion which is provided within its rear side with a groove that has in cross-section a circular form with a narrow outer side, a half-round bar that is adapted to be passed into said groove, and to extend vertically across its narrow, outer portion, screws passing through the table-rail and having their inner ends engaged with said bar, and a tubular cloth cover unparted longitudinally which is adapted to inclose said cushion and to extend into its groove around said bar, substantially as and for the purpose shown.

655,504. FEED-RACK. JAMES MORRIS, New York, N. Y. Filed May 18, 1900. Serial No. 17,121. (No model.)



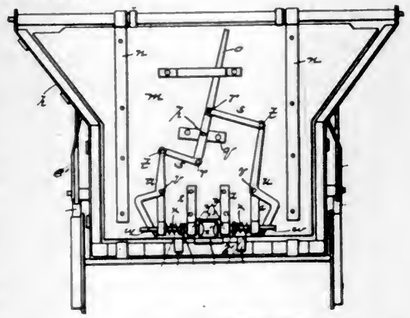
Claim.—1. A feed-rack, comprising a series of bars, flexible connections for said bars at the top and bottom, means for attaching said flexible connections to the walls of a stall, and flexible devices at the lower end of the rack and adapted for connection to a wall of the stall to form a bottom for the rack, substantially as specified.

2. A feed-rack, comprising a series of bars, chains extending over and connecting the ends of said bars, means for detachably connecting the ends of the chains to the walls of a stall, and a chain or chains connected to the lower portion of the rack and adapted for connection to a wall of the stall and forming a bottom for the rack, substantially as specified.

655,505. END-GATE FASTENER FOR MINING-CARS. LLOYD S. MORROW, Smithton, Pa. Filed Feb. 13, 1900. Serial No. 5,070. (No model.)

Claim.—1. The combination with the car, the swinging end-gate and the stop-bars n', n' carried by said gate, of the pivoted hand locking-lever o, the bars s, s, pivoted thereto, the pivoted angular levers u, u, having their upper ends pivoted to the bars s, s, the sliding bars x, x having slots in their outer ends to receive the free ends of said angular levers, the eye-lug x' to receive the inner ends of said bars x, x and the springs for holding said bars x, x normally in engagement with said eye-lug, substantially as shown and described.

2. In a dumping-car the combination with the swinging end-gate, of the hand locking-lever comprising the lever, arms, and angular bars, pivoted to one another, the lever and angular bars pivoted also to the gate, the sliding bars having the slots in their ends and beveled opposite ends, and the lug provided with the eye to engage said bars, and the springs adapted to force the sliding bars back to their normal position, all substantially as described.

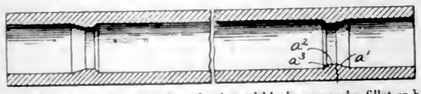


655,506. CHAIR-SEAT SUPPORT. HEZEKIAH MORTON, Thomasville, N. C. Filed June 1, 1900. Serial No. 18,700. (No model.)

Claim.—1. A chair-seat support, comprising crossed straps extended under the chair-seat to diagonally connect a front leg with a rear leg of the chair, each strap consisting of two spaced pieces connected at the ends, adjusting and supporting bolts extended from the legs through openings in said end connections, and nuts on the inner ends of said bolts, the said nuts having abutment against said end connections and being prevented from turning by engaging with the members of the straps.

2. A chair-seat support, comprising crossed straps extending under a chair-seat, to diagonally connect a front leg with a rear leg of a chair-frame, each strap consisting of two parallel spaced pieces of flat metal, cross-pieces for connecting the ends of the parallel spaced pieces with each other, said cross-pieces also forming a passage for a bolt and an abutment for the nut of a bolt, and adjusting and supporting bolts extending through the legs and through the passage formed by the cross-pieces, the nut of the bolt extending between the parallel spaced pieces and abutting against the inner edges of the cross-pieces, as set forth.

655,507. HOSE. JOHN F. MCGUIRE, Akron, Ohio, assignor to the B. F. Goodrich Company, same place. Filed May 17, 1900. Serial No. 17,011. (No model.)



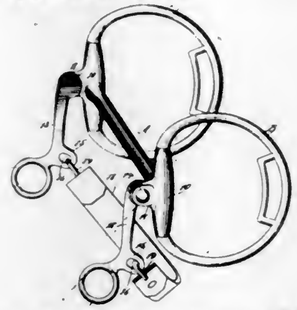
Claim.—1. A rubber hose having within it an annular fillet or boss of yielding material secured to the bore of the hose, substantially as described.

2. A rubber hose having within it an annular fillet or boss made integrally with the hose whereby a continuous skin of rubber is formed on the inside of the hose and over the boss, substantially as described.

3. A cylindrical hose having within it comparatively near its end an annular fillet inclined toward the end of the hose, said fillet being of yielding material and being carried by the hose, substantially as described.

4. A rubber hose having within it comparatively near its end an annular fillet which fillet has a cylindrical face a^2 and a gradually-inclined face a' leading therefrom to the bore of the hose toward the outer end of the latter, substantially as described.

655,508. BIT. MICHEAL MCNALLEY, St. Louis, Mo. Filed June 30, 1898. Serial No. 684,830. (No model.)



Claim.—In a bit, the combination, with a mouth or bit bar having a sleeve securely fastened thereto at each of its ends, lugs forwardly projected from the said sleeves, and rings adapted to receive the driving-reins mounted to turn in the said sleeves, of levers pivotally attached to the lugs, and adapted in one position to extend downward from the lugs and in another position to extend forwardly on practically a horizontal line, and a chin-strap connected with the said levers at the rear and at a point near their lower ends, the lower ends of the said levers terminating in forwardly-extending rings, as described.

655,509. OBSTETRICAL APPLIANCE. HALDORA OLSON, Duluth, Minn. Filed Oct. 31, 1899. Serial No. 735,391. (No model.)

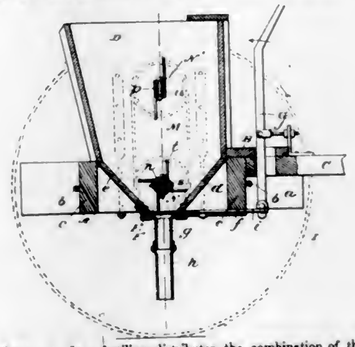


Claim.—1. An obstetrical appliance comprising a ribbon turned back upon itself to form an adjustable loop, a band or ring encircling the two sections of said ribbon, said loop being designed to be passed beneath the lower jaw and back of the neck of an infant, and a second ribbon secured to said loop, said ribbons being extended along the sides of the infant's head, as set forth.

2. An obstetrical appliance composed of a ribbon, an adjustable loop therein, a finger-pocket on such loop, and a second ribbon secured to the loop, as set forth.

3. An obstetrical appliance composed of a ribbon, a band forming a loop in such ribbon, a finger-pocket on such loop, and a second ribbon secured to the loop, substantially as set forth.

655,510. FERTILIZER-DISTRIBUTER. EVARISTE OUBRE, Burnside, La. Filed Apr. 5, 1900. Serial No. 11,766. (No model.)



Claim.—1. In a fertilizer-distributer, the combination of the main frame, the hopper arranged on and connected to the main frame and having a discharge-opening at its lower end, means for controlling the discharge of fertilizer from the hopper, an axle disposed transversely in the main frame and hopper and having its portion within the latter provided with flat sides, wheels on the axle, blade-sections respectively formed in one piece and comprising body portions arranged against the flat ends of the axle within the body, and blades extending laterally from said body portions, and transverse bolts extending through the axle and body portions of the blade-sections, substantially as specified.

2. In a fertilizer-distributer, the combination of the main frame, the hopper arranged on and connected to the main frame and having a discharge-opening at its lower end, means for controlling the discharge of fertilizer from the hopper, an axle disposed transversely in the main frame and hopper and having its portion within the latter provided with flat sides, wheels on the axle, blade-sections respectively formed in one piece and comprising body portions arranged against the flat sides of the axle within the body, transverse bolts extending through the axle and body portions of the blade-sections, a shaft journaled in the hopper above the axle and having its portion within the hopper provided with flat sides, blade-sections each formed in one piece and respectively comprising a flat body portion arranged against one flat side of the shaft in the hopper and blades extending laterally from said body portion, bolts extending through the shaft and body portions of the blade-sections and connecting the same, and gearing interposed between the axle and shaft, substantially as specified.

655,511. HARNESS-ROSETTE. JOSEPH E. PFLUEGER, Akron, Ohio. Filed Apr. 2, 1900. Serial No. 11,136. (No model.)



Claim.—1. The combination with a rosette having a marginal flange, of a back loop having foot portions, and a loop-holder plate having an elongated slot therein to receive the main portion of said back loop and having its ends secured under said flange, said foot portions of the back loop being secured between the body of the rosette and said loop-holder plate, substantially as specified.

2. The combination with a rosette having marginal portions thereof spun over or bent backwardly upon itself, of a back loop having flattened foot portions, and a loop-holder plate having an elongated slot therein of the same length and breadth as the main portion of said back loop to neatly receive the same, and having its ends secured under said backwardly-bent portions of the rosette, said foot portions of the back loop being secured between the body of the rosette, and said loop-holder plate, substantially as specified.

3. The combination with a rosette having a marginal flange, of the back loop having flattened feet, and a loop-holder plate of skeleton form extending transversely across the rosette and having its ends secured under said flange, said plate having an elongated slot therein to neatly receive the main portion of said back loop, and the feet of said loop being secured between the body of the rosette, and said loop-holder plate, substantially as specified.

4. In a harness-rosette, the slotted loop-holding plate, having the soldering-perforations in its ends, in combination with the footed loop, and flanged shell, substantially as specified.

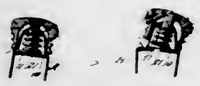
5. The combination with a rosette having a marginal flange, of a back loop having foot portions and a loop-holder plate having an elongated slot therein to receive the main portion of said back loop, and provided with soldering-perforations near its ends, which ends are secured under said rosette-flange, said foot portions of the loop being secured between the body of the rosette and said loop-holder plate, substantially as specified.

6. The combination with a concavo-convex or shell-form rosette having a marginal flange of a back loop having foot portions, and a loop-holder plate of arched skeleton form extending transversely across the rosette, having an elongated slot therein to receive the main portion of said back loop, and having soldering-perforations near its ends, which ends are secured under said rosette-flange, said foot portions of the back loop being secured between the body of the rosette and said loop-holder plate, substantially as specified.

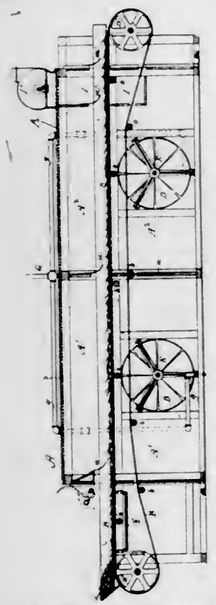
655,512. FRAME FOR BAGS, SATCHELS, PURSES, &c. LOUIS B. PRAHAR, New York, N. Y. Filed June 14, 1900. Serial No. 20,266. (No model.)

Claim.—1. The combination, with the members of a frame, and a stud carried by one of said members, of a conical extension formed upon the opposing member of the frame, said extension having an opening to receive said stud, and a spring-controlled catch-button for the stud, mounted to turn and rock around and upon the said bearing, for the purpose described.

2. The combination, with the members of a frame, one of said members being provided with a stud having an inclined inner longitudinal surface, of a conical bearing located upon the opposing member of the frame, which bearing is hollow and provided with an upper elongated slot and a slot at its base adapted to receive said stud, a chambered catch-button mounted to turn and to rock upon the conical bearing, a pin connected with said button, which pin is passed through the elongated slot in the conical bearing, terminating in an enlargement at its inner end, which end is within the conical bearing, and a spring likewise located within the conical bearing, which spring is coiled around said pin, for the purpose set forth.



655,513. MACHINE FOR SOFTENING TOBACCO. JOSIAH K. PROCTOR, Philadelphia, Pa., assignor to the Philadelphia Textile Machinery Company, same place. Filed July 2, 1897. Serial No. 643,239. (No model.)



Claim.—1. The combination, in a tobacco-softening machine, of a closed chamber in which the tobacco is subjected to moisture, an endless carrying-belt extending through the chamber and forming at the feed end a table on which the tobacco is placed, and an atomizer located at the feed end of the machine above the table, and adapted to spray the tobacco immediately before it enters the closed moistening-chamber, substantially as described.

2. The combination in a machine for softening tobacco, of an endless belt on which the tobacco is placed, a moistening-chamber through which the belt passes, with one or more fans in the moistening-chamber, means for moistening the air in said chamber or chambers, and steam or water pipes located outside of said chamber and adapted to spray steam or water onto the tobacco before it enters the chamber, so that the tobacco as it travels through the chamber will be subjected to a current of moist air, substantially as described.

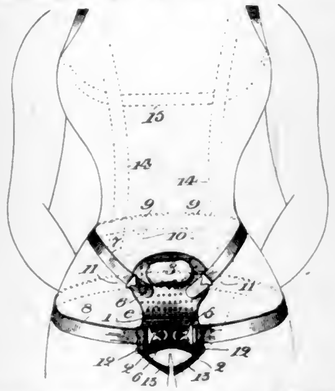
3. The combination of an endless perforated belt, a moistening-chamber through which the belt passes, with a collecting-pan underneath the carrying-run of the belt at the feed end of the machine by which the small particles that pass through the perforated belt are collected, and a spraying device located above the belt outside of the chamber, adapted to spray water upon the tobacco before it enters the chamber, substantially as described.

4. The combination in a tobacco-softening machine, of a closed moistening-chamber in which the tobacco is subjected to moisture, a collecting-box located at the rear of the machine, an exhaust-fan connected to the said box, and an endless carrying-belt for the tobacco passing through both the moistening-chamber and the collecting-box, whereby the steam, as it escapes from the moistening-chamber through the opening for the belt, will pass into the collecting-box and will be carried away and prevented from escaping into the room in which the machine is located, substantially as described.

5. The combination in a tobacco-softening machine, of the moistening-chamber, an endless belt, a series of atomizers located at the feed end, and outside, of the chamber, adapted to spray water onto the tobacco, before it enters the chamber, substantially as described.

6. In a tobacco-softening machine, the combination of an endless perforated belt, a moistening-chamber having two compartments therein fans in each compartment driven in opposite directions, so as to create in one chamber a downcurrent, and in the other chamber an upcurrent, through the tobacco, a steam-pipe in one or both chambers, so that the circulating air will be moistened, a series of atomizers at the feed end of the machine adapted to moisten the tobacco as it enters the chamber, a valved passage between the two compartments, a collecting-box at the rear of the machine communicating with the last compartment, an exhaust-fan communicating with the box, the whole arranged substantially as and for the purpose set forth.

655,514. UMBILICAL TRUSS. HOWARD C. RASH, Salina, Kans., assignor to The Natural Body Brace Company, same place. Filed May 19, 1900. Serial No. 17,230. (No model.)



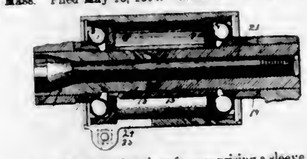
Claim.—1. A truss-plate and abdominal supporter for use in cases of navel-hernia, formed of a single plate of thin slightly-flexible material, curved longitudinally and transversely to the general shape of the abdomen, and adapted to form a support therefor, having formed therein near its upper end a recess adapted to receive and sustain the hernia and provided on its front face with means for engaging supporting belts or straps; substantially as described.

2. A truss-plate and abdominal supporter for use in cases of navel-hernia formed of a single plate of thin slightly-flexible material having its greater length in a vertical direction, curved longitudinally and transversely to the general shape of the abdomen, and adapted to form a support therefor, having formed therein near its upper end a recess adapted to receive and sustain the hernia, having formed therein near its lower end at opposite sides rearwardly-projecting pads or pressers, and having on its front face cleats for engaging supporting belts or straps; substantially as described.

3. The combination with a truss-plate and abdominal supporter for use in cases of navel-hernia, having near its upper end a recess adapted to receive and sustain the hernia, having near its lower end rearwardly-projecting pads or pressers, and having pairs of cleats on its front face near its upper and lower ends, of upper and lower belts provided respectively with means for detachably engaging the upper and lower cleats on the plate, means for holding the belts apart at the back of the wearer, and straps connected to one of said belts, and adapted to pass about the shoulders of the wearer; substantially as described.

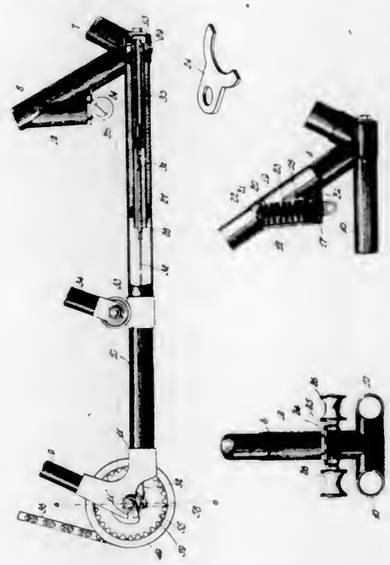
4. The combination with a truss-plate and abdominal supporter for use in cases of navel-hernia, having near its upper end a recess adapted to receive and sustain the hernia, having near its lower end rearwardly-projecting pads or pressers, and having pairs of cleats on its front face near its upper and lower ends, of upper and lower belts provided respectively with means for detachably engaging the upper and lower cleats on the plate, means for holding the belts apart at the back of the wearer, and straps connected to one of said belts in rear of the wearer, and adapted to pass beneath the body of the wearer, and means for connecting such straps to the belt in front of the wearer; substantially as described.

655,515. CRANK-SHAFT AND BEARING. JOHN C. ROBBINS, Waltham, Mass. Filed May 10, 1897. Serial No. 635,784. (No model.)



Claim.—A shaft and bearing therefor comprising a sleeve, outwardly-facing ballways in the sleeve, balls in the ballways, a shaft formed of tubular interlocking sections each furnished with an inwardly-facing ballway, said shaft-sections being adapted to abut when placed in the sleeve and to positively determine, at this time, the bearing of the ballways on the balls without auxiliary aid, and auxiliary locking means for the shaft-sections, contained therein, whereby the locking of the sections does not effect the adjustment of the bearings.

655,516. BICYCLE. JOHN C. ROBBINS, Waltham, Mass., assignor to the Waltham Manufacturing Company, of Maine. Filed Mar. 17, 1899. Serial No. 709,535. (No model.)



Claim.—1. The combination with a bicycle-frame having the side members 9 and 10, the rear fittings 11 having sockets whereby the side members are connected in pairs and are located within the vertical inner surface plane of said fittings, of a clutch mounted to rotate between the plates of said fittings and having drums located in line with the members 10, spring tension devices contained within the members 10, and connections between the tension devices and said drums.

2. A lever-bicycle having a frame member 8, a casing on said member, a spring-supported slide in said casing, and laterally-extending buffers mounted at the lower end of said slide.

3. A lever-bicycle having the frame member 8 furnished with the casing 12, the cap 17 secured in the lower end of said casing, the spring 23 mounted on the cap, the bolt 19, reciprocal through the perforation in the cap and provided with the washer 12 bearing on the spring, and having a cross-sleeve at its lower end, and a shaft supported in said sleeve and carrying buffers.

4. The combination with the frame member 10, of the spring tension device contained therein and comprising the spring 27 secured to said frame member, the tube 28 secured to the opposite end of the spring, the nut 29 bearing on the forward end of the tube 28 and having the tubular portion 30, the screw 31 screwed into said tube 30 and a clutch connection extending from the screw 31.

5. A clutch for a lever-driven bicycle, comprising a clutch member secured to the wheel-hub and having ball-pockets in its periphery, balls in the pockets, a chain-pulley having a collar embracing the clutch member and having a ballway bearing on the balls, a face-plate secured in said collar and having a ballway complemental to that of the collar, and a laterally-extending sleeve, and bearings on which said sleeve may rotate.

6. In a clutch for a lever-driven bicycle, the combination with the shaft 36 the cone 37 screwed thereon and having a sleeve, the double cone 40 sliding on the shaft and having a sleeve, the double cone 39 mounted on the sleeves of the cones 37 and 40, means for preventing the independent rotation of either cone, and balls between the cones, of the plate 55 having the laterally-extending sleeve 56 bearing on said balls, the balls 44 bearing on the inner face of the cone 40, and clutch a sleeve working on the balls 44.

7. The combination with the shaft 36, the cone 37 screwed thereon, the double cone 40 free to slide thereon, the double cone 39 mounted on the sleeves of the cones 37 and 40, balls between the cones, the plate 55 having the sleeve 56 mounted on said balls and having the end flange 57, said plate 56 also having the notched periphery, and the annular ballway 54, and the chain-pulley 49 having the collar 50, adjustably secured to the plate 55, having the ballway 52 and means for engaging the notched periphery of the plate 55, of the wheel-hub, the clutch member 45 secured thereto and embracing a portion of the sleeve 55 and having at this portion a pocketed periphery, balls in the pockets bearing on the ways 52 and 54, and balls between the inner face of the cone 40 and the inner surface of the clutch member, substantially as and for the purpose described.

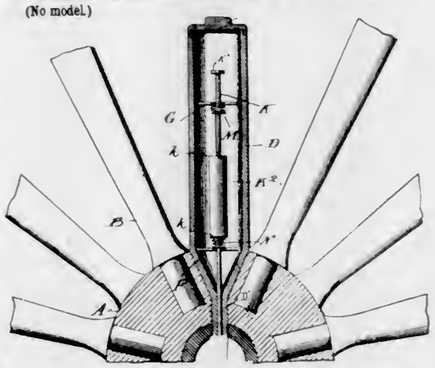
8. The combination with the frame having the upper member 6, the inclined member 8 and the fork members 9 and 10, the shaft 14 secured in said frame adjacent to the upper end of the member 9, the idle pulley 15 on said shaft, the stop 16 secured to the member 8, and a stop or buffer at the lower portion of the frame, of a clutch mounted in the rear fork, a lever pivotally mounted on the member 10 and adapted to swing between the stops, and a flexible connection, between the lever and the clutch, which works over the pulley 15, as described.

655,517. FOUNTAIN-PEN FILLER. WILLIAM W. ROBBINS, Brownsville, Pa. Filed Mar. 13, 1900. Serial No. 8,490. (No model.)



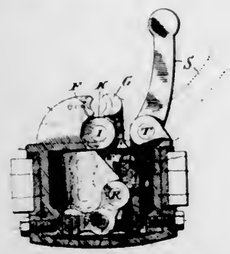
Claim.—A fountain-pen filler, comprising the barrel portion, having interior left threads, combined with a plug having an annular flange about its middle portion, the circumference of said plug below the flange being left threaded, to screw into said barrel, and the portion of the circumference above the flange having right threads, a filling-tube secured in an aperture in said plug and removable therewith, the interiorly-right-threaded cap, adapted to be screwed about the plug above said flange, the circumference of the latter when adjusted as described, being flush with the circumference of the cap and barrel portion, as set forth.

655,518. AUTOMATIC OILER FOR VEHICLE-WHEELS. VAN DON ROE, Maury City, Tenn. Filed June 26, 1900. Serial No. 21,679. (No model.)



Claim.—An automatic oiling device for vehicle-wheels, comprising an oil-receptacle, spider braces or guides secured to the inner wall of the receptacle and centrally apertured, coiled springs seated on the adjacent faces of said braces or guides, a reciprocating plunger passing through the apertures in said braces or guides and having a weighted middle portion, the ends of which are adapted to strike against said springs as the plunger reciprocates, the inner end of the plunger working constantly in the nose of the receptacle and in contact with its inner wall, as shown and for the purpose set forth.

655,519. FRICTION-GRIP. HOMER M. SACKETT, Denver, Colo. Filed July 30, 1897. Renewed June 25, 1900. Serial No. 21,572. (No model.)



Claim.—1. In a grip, the combination of a pivoted jaw, a toggle pivotally connected therewith at one end, and at the other end to a relatively-fixed point, a link connected to the toggle between its ends, and a lever connected to said link, that moves the toggle through the link to bring the toggle ends toward each other to open the jaw, and to move said ends from each other to close said jaw, substantially as and for the purpose described.

2. In a grip, the combination of a jaw to be moved, a toggle connected therewith, a link connected with the toggle, and a lever connected with said link, the pivotal centers of the lever and the link, being adapted to be placed in a straight, or substantially straight, line to form a lock, substantially as and for the purpose described.

3. In a grip, the combination of jaw-actuating mechanism, and a chambered part, within which such mechanism is mounted, inclosing and protecting the same, having one end permanently closed and carrying a fixed jaw, and the other end closed by a removable cover, substantially as and for the purpose described.

4. In a grip, the combination of the jaws, the jaw-actuating mechanism, and a revoluble support therefor, substantially as and for the purpose described.

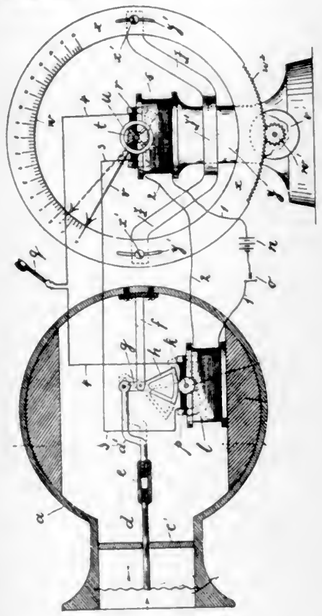
5. In a grip, the combination of a fixed jaw, a movable jaw, means for actuating the latter, a cylindrical casting or part, on which all of said parts are mounted, and a frame in which said casting is revolubly mounted, substantially as and for the purpose specified.

655,520. MARINE VELOCIMETER. PAUL SCHULTZE, Berlin, Germany. Filed Aug. 22, 1899. Serial No. 728,120. (No model.)

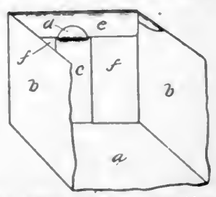
Claim.—1. A speed-indicator for vessels, consisting of a submerged measuring device having a diaphragm adapted to vibrate under the impact or pressure of the water, a primary coil having a source of electric current, a secondary within the primary adapted to be displaced relatively to the latter, and controlling and indicating mechanism as and for the purpose set forth.

2. In a speed-indicator for vessels, the combination of a submerged measuring device and a controlling-indicator, a diaphragm in the measuring device adapted to vibrate under the impact of the pressure of the water, a primary coil in the measuring device and another primary coil in the controller, both in circuit with a source of electrical energy; secondary coils transversely of and displaceable relatively to the respective primary coils, a signaling device in the secondary circuit, means for transferring the vibrations of the diaphragm upon the first secondary to displace the latter, and a dial-plate, and pointer in the controller, as and for the purpose set forth.

3. In a speed-indicator for vessels, the combination of a submerged measuring device and a controlling apparatus therefor, a diaphragm in the measuring device adapted to vibrate under the impact or pressure of the water, a primary coil in the measuring device and another primary coil in the controller both in circuit with a source of electrical energy; secondary coils transversely of and displaceable relatively to the respective primary coils, a movable dial-plate, a pointer upon a common axis with the secondary in the controller, means for adjusting said pointer and secondary in a predetermined position, and a telephone in the secondary circuit adapted to sound when the intensity of the secondary current varies, substantially as specified.



655,521. FOLDING PAPER BOX AND BLANK THEREFOR. JAMES A. SCOTT, Boston, Mass., assignor of one-half to Charles E. Fuller, Somerville, Mass. Filed Sept. 18, 1899. Serial No. 730,840. (No model.)



Claim.—1. In a folded paper box, the combination of a bottom, a side folded up from the same and having an end portion folded in so as to extend across above the bottom, and an end folded up from the bottom outside said side end portion and having an incision forming an upstanding latching-tab protruding inward past the latter and manipulative from the exterior of the box through the incision, said end having an extension constituting a locking fold turned down over the side end portion and entered behind the latching-tab, substantially as described.

2. In a folded paper box, the combination of a bottom, a side folded up from the same and having an end portion folded in so as to extend across above the bottom, and an end folded up from the bottom outside said side end portion and having an incision forming an upstanding latching-tab protruding inward past the latter and manipulative from the exterior of the box through the incision, said end having an extension constituting a locking fold turned down over the side end portion and entered behind the latching-tab, and the side end portion also being engaged behind said tab, substantially as described.

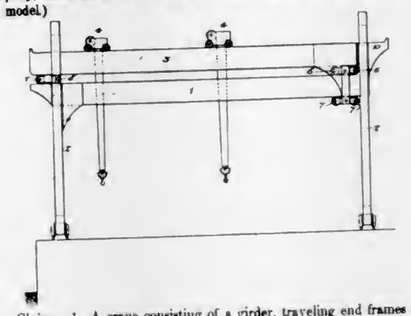
3. In a folded paper box the combination of a bottom portion, an end portion folded up from the latter and having an upstanding latching-tab and an extension constituting a locking fold turned in over the end portion and engaged behind the latching-tab thereof, and a side portion folded up from the bottom and having an end extension folded in between the end portion of the box and the locking-fold and having a slot through which the latching-tab extends, substantially as described.

4. A folded paper box comprising bottom, end, and side portions, the latter and the end portions being folded up from the bottom portion, the side portion having overlapping end extensions folded in over the bottom portion, and the end portions having upstanding latching-tabs extending over the end extensions of the side portions, said end portions also having extensions constituting locking folds turned down over the said end extensions of the side portions and engaged behind the latching-tabs.

5. A folded paper box comprising bottom, end, and side portions, the latter and the end portions being folded up from the bottom portion, the side portions having overlapping end extensions folded in over the bottom portion and formed with registering slots, and the end portions having upstanding latching-tabs extending through the registering slots of the end extensions of the side portions, said end portions also having extensions constituting locking folds turned down over the said end extensions of the side portions and engaged behind the latching-tabs.

6. A foldable-paper-box blank comprising a bottom portion, side portions with end extensions or folds, and end portions with abbreviated extensions constituting locking folds and formed with latching-tabs directed outwardly for engagement behind them of the locking folds when the latter are folded in over the side end folds.

655,522. CRANE. JOHN W. SEAVER and SAMUEL T. WELLMAN, Cleveland, Ohio, assignors to the Wellman-Seaver Engineering Company, same place. Filed July 21, 1898. Serial No. 686,522. (No model.)

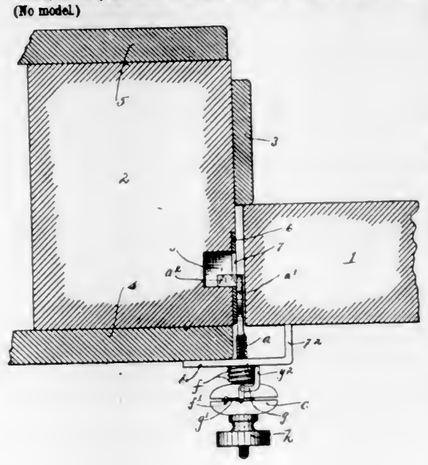


Claim.—1. A crane consisting of a girder, traveling end frames or legs supporting said girder and laterally braced or connected above the same, and a sliding boom mounted on said girder, substantially as specified.

2. A traveling crane having a girder and a boom mounted so as to slide thereon, said boom having a pair of independently-moving trolleys whereby one of said trolleys may be used as a counterweight when the other is lifting, substantially as specified.

3. A traveling crane having a girder with boom mounted thereon so as to be free to slide, a pair of independently-movable trolleys for said boom, and a fixed shelf or platform on the crane structure for the reception of the inner trolley, substantially as specified.

655,523. PORTABLE DOOR LOCK AND ALARM. ANTHONY L. SHORE, Minneapolis, Minn. Filed Apr. 21, 1900. Serial No. 13,726. (No model.)

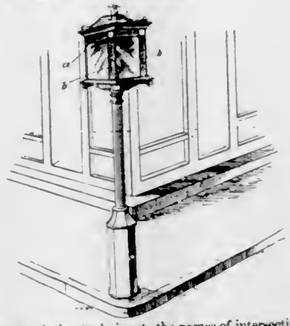


Claim.—1. The combination with a detent-stem securable between the free edge of a closed door and its frame, of a spring and a bell on the said stem, and a bell-actuating connection acted upon by the inital opening movement of the door, said spring having a limited compression and serving as a stop when compressed to its limit, substantially as described.

2. The combination with the screw-threaded stem *a* flattened at *a'* and provided with the detent-lug a^2, of the reversible angle-bracket *b*, b^3, the bell *c* adjustably securable on said stem *a*, the spring *f* between said bell and said bracket *b*, and the bell-crank lever *g* connected to the bell-lever *f* and actuating the said bell under the initial opening movement of the door, the said parts operating substantially as described.

3. The combination with the detent securable between the free edge of a door and its frame, of a bell, a nut and a spring on the said stem, said spring permitting a limited opening movement of the door and then acting as a stop, and bell-actuating connections operated by the initial opening movement of the door, substantially as described.

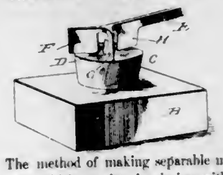
655,524. SIGN. JOHN A. SLEICHER, New York, N. Y. Filed Mar. 2, 1900. Serial No. 7,097. (No model.)



Claim.—1. A sign to designate the names of intersecting streets, the sign having a reading-face on which the names of both streets are produced, such names being arranged at angles to each other one lying horizontally and the other perpendicularly, for the purpose specified.

2. A sign for designating intersecting streets, the sign having four reading-faces in the form of a square, and being adapted to be placed with two faces in parallelism with each street, each face having produced thereon the names of the intersecting streets, and such names being written at right angles to each other one lying horizontally and the other perpendicularly, for the purpose specified.

655,525. METHOD OF MAKING SEPARABLE MATRICES FOR SEAMLESS TOOTH-CROWNS. SAMUEL C. SNYDER, Scranton, Pa. Filed Jan. 6, 1900. Serial No. 561. (No specimens.)

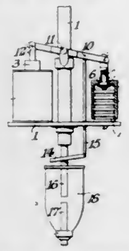


Claim.—1. The method of making separable matrices for forming seamless tooth-crowns which consists in placing within a mold a model tooth and a molten metal surrounding the tooth, said metal being fusible at a low temperature and having the property of brittleness while hot, allowing the metal to become set, then removing the casting thus made from the mold, then dividing the casting through the matrix while hot by compressing it between a blade and a suitable support, whereby said casting splits on the line of compression between the blade and the support.

2. The method of making separable matrices for forming seamless tooth-crowns which consists in placing within a mold a model tooth and a molten metal surrounding the tooth, said metal being fusible at a low temperature and having the property of brittleness while hot, allowing the metal to become set, then removing the casting thus made from the mold, and then splitting the metal while hot into three or more parts simultaneously on lines radiating from the matrix.

655,526. ELECTRIC-ARC LAMP. THOMAS SPENCER, Philadelphia, Pa., assignor to the Helios Upton Company, same place. Filed May 14, 1900. Serial No. 16,554. (No model.)

Claim.—1. In an electric-arc lamp, the combination with a regulating-solenoid, of a carbon-holder, a dash-pot operatively related to said solenoid, and means arranged to prevent the braking action of said dash-pot during the normal movement of said carbon-holder, and to automatically secure the braking action of said dash-pot by sudden movement of said carbon-holder, substantially as set forth.



2. In an electric-arc lamp, the combination with a regulating-solenoid, of a movable armature for said solenoid, a carbon-holder, a dash-pot operatively related to said armature, and to said carbon-holder, and means arranged to prevent the braking action of said dash-pot during the normal movement of said armature, and to automatically secure the braking action of said dash-pot by sudden movement of said armature, substantially as set forth.

3. In an electric-arc lamp, the combination with a regulating-solenoid, of a movable armature for said solenoid, a dash-pot, comprising a cylinder and piston arranged for relative reciprocation, means operatively connecting said armature and said dash-pot, an air-port between the interior of said dash-pot and the outer atmosphere, a valve arranged to control the passage of air through said port, means in operative relation with said valve arranged to normally maintain said port open, and means arranged to close said port by sudden movement of said armature, substantially as set forth.

4. In an electric-arc lamp, the combination with a regulating-solenoid, of a movable armature for said solenoid, a carbon-holder, a dash-pot, comprising a cylinder and piston in relatively-movable relation, an air-port between the interior of said dash-pot and the outer air, a valve arranged to control the passage of air through said port, a lever operatively connecting said armature, said carbon-holder and said valve, and a spring arranged to normally maintain said valve open, substantially as set forth.

5. In an electric-arc lamp, the combination with a frame, of a regulating-solenoid fixed upon said frame, a dash-pot piston fixed upon said frame, an armature arranged to reciprocate in said solenoid, a dash-pot cylinder arranged to reciprocate on said piston, an air-port extending through the wall of said cylinder, a valve arranged to close said port, and provided with a stem, extending therethrough, a lever fulcrumed on said frame and pivotally connected with said armature and said valve-stem, a carbon-holder connected with said lever in opposition to said armature, and a spring within said cylinder arranged to normally maintain said valve open and to permit the closure of said valve by sudden movement of said armature, substantially as set forth.

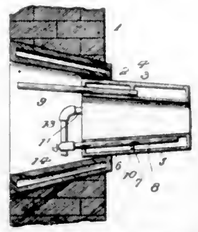
655,527. GAS-BURNER. JAMES E. TATHAM, London, England, assignor to the Intensified Gas Light Company, Limited, same place. Filed Dec. 19, 1899. Serial No. 740,911. (No model.)



Claim.—A gas-burner consisting of the combination of a mixing-chamber into which projects a nozzle from the gas-inlet and into which open upwardly-directed unobstructed air-inlets surrounding the said nozzle and from which mixing-chamber project upward first a conical and then a straight pipe surmounted by a mantle the said air-inlets being made at an angle substantially the same as that of the exterior of the said nozzle the said angle being thirty degrees or thereabout to the axis of the burner and the opening of the said nozzle being one-quarter of an inch or thereabout above the upper side of the air-inlets all substantially as hereinbefore described.

655,528. TWYER. WILLIAM A. THOMAS and JACOB FISHER, Niles, Ohio. Filed May 17, 1900. Serial No. 17,017. (No model.)

Claim.—1. A twyer having inner and outer compartments, each of said compartments being provided with separate inlet and outlet pipes, and means for conveying the discharge from one compartment to the other compartment, substantially as set forth.



2. A twyer having inner and outer compartments, each of said compartments being provided with separate inlet and outlet pipes, and means for conveying the discharge from the outer compartment to the inner compartment, as set forth.

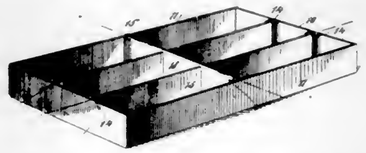
3. A twyer having inner and outer compartments, each of said compartments being provided with inlet and outlet pipes, and a cock connected to the outlet of one compartment and the inlet of the other compartment, substantially as set forth.

4. A twyer having inner and outer compartments, each of said compartments being provided with inlet and outlet pipes, a three-way cock, and branches connecting the latter to the outlet-pipe of the outer compartment and the inlet-pipe of the inner compartment, substantially as set forth.

655,529. AMIDOSULFONIC ACID. JOSEPH TURNER, Huddersfield, England. Filed Sept. 2, 1899. Serial No. 729,373. (No specimens.)

Claim.—The amido sulfo acids as herein set forth, the said acids being derived from nitro bodies of the phenolic and carboxylic series by the action of bisulfite of soda, and possessing the property of diazotizing and combining with phenols, the said acids being slightly soluble in alcohol, practically insoluble in benzin, forming crystallized diazo compounds with nitrous acid, and all the sodium salts, being very soluble in water.

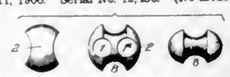
655,530. BREAD OR CAKE PAN. MARIE VOSSBECK, Trinidad, Colo. Filed Apr. 23, 1900. Serial No. 13,928. (No model.)



Claim.—1. A pan comprising a frame consisting of end walls and side walls having on their inner faces spaced projections forming slideways between them, said walls being also provided with inturned flanges at the bottom, a bottom adapted to rest on said flanges and provided with notches arranged to receive said projections, and intersecting partitions constructed to fit into said slideways, the partitions being slotted and loosely engaged with each other.

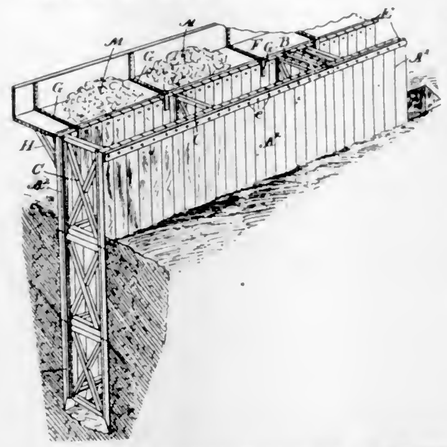
2. A pan comprising a frame consisting of end walls and side walls having on their inner faces spaced projections forming slideways between them, a bottom arranged to fit between said end walls and side walls and provided with notches arranged to receive said projections, and intersecting partitions constructed to fit into said slideways.

655,531. DEVICE FOR FASTENING CORDS. OTTO WALLMAN, Spokane, Wash., assignor of one-half to Charles W. Geib, same place. Filed Apr. 11, 1900. Serial No. 12,450. (No model.)



Claim.—A fastening device for fastening cords consisting of a block having a peripheral groove of a width approximately equal to the diameter of the cord to be used, and having parallel holes therethrough, said holes being of a diameter approximately equal to the diameter of the cord and extending into opposite sides of the groove, substantially as set forth.

655,532. APPARATUS FOR CONSTRUCTING LINES OF EXCAVATION. WILLIAM DE HERTBURNE WASHINGTON, New York, N. Y. Filed Jan. 23, 1900. Serial No. 2,536. (No model.)



Claim.—1. In an apparatus for use in excavating, a box with closed sides and ends and open top and bottom with sharpened edges at the bottom, bracing between the sides of said box, and detachable shelves mounted on the top of said box, substantially as described.

2. In an apparatus for use in excavating, a box having its sides formed of two lines of sheet-piling with stringers running along the sides thereof and bolts detachably securing said piles to said stringers, braces mounted between the sides of said box, and shelves detachably mounted on the side of said box, substantially as described.

3. An apparatus for use in excavating comprising a plurality of boxes united to each other at their ends and forming two lines of continuous piling, braces mounted between the sides of said boxes, and shelves detachably mounted on the sides of said boxes, substantially as described.

4. An apparatus for use in excavating comprising a plurality of boxes united to each other at their ends and forming two lines of continuous piling, braces removably mounted between the sides of said boxes, and shelves detachably mounted on the sides of said boxes, substantially as described.

5. An apparatus for use in excavating comprising a plurality of tiers of boxes whose sides form continuous sheet-piling with the bottom of the lower tier of boxes sharpened, braces separating the sides of said boxes, and detachable shelves mounted on the top of the upper tier of boxes, substantially as described.

6. An apparatus for use in excavating comprising a plurality of tiers of boxes whose sides form continuous sheet-piling with the bottom of the lower tier of boxes sharpened, sliding braces separating the sides of said boxes, and detachable shelves mounted on the top of the upper tier of boxes, substantially as described.

7. In an apparatus for use in excavating, a box with closed sides and ends and open top and bottom with sharpened edges at the bottom, bracing between the sides of said box, and detachable shelves mounted on the top of said box, and means for temporarily spreading the sides of said boxes from within substantially as described.

8. In an apparatus for use in excavating, a box having its sides formed of two lines of sheet-piling with stringers running along the sides thereof and bolts detachably securing said piles to said stringers, braces mounted between the sides of said box, shelves detachably mounted on the side of said box, and means for temporarily spreading the sides of said boxes from within, substantially as described.

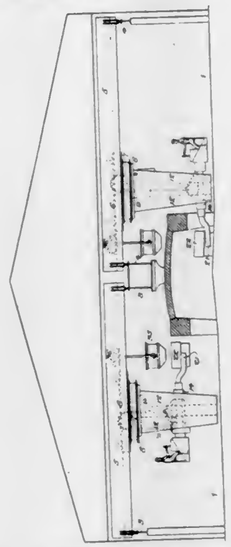
9. In an apparatus for use in excavating, a box having its sides adjustable vertically with respect to the box, weights supported on the sides of said box, and means for temporarily spreading the sides of said boxes from within, substantially as described.

10. An apparatus for use in excavating comprising a plurality of boxes united to each other at their ends and forming two lines of continuous piling, braces mounted between the sides of said boxes, shelves detachably mounted on the sides of said boxes, and means for temporarily spreading the sides of said boxes from within, substantially as described.

11. An apparatus for use in excavating comprising a plurality of tiers of boxes whose sides form continuous sheet-piling with the bottom of the lower tier of boxes sharpened, braces separating the sides of said boxes, detachable shelves mounted on the top of the upper tier of boxes, and means for temporarily spreading the sides of said boxes from within, substantially as described.

12. An apparatus for use in excavating comprising a plurality of tiers of boxes whose sides form continuous sheet-piling with the bottom of the lower tier of boxes sharpened, detachable shelves mounted on the top of the upper tier of boxes, and means for temporarily spreading the sides of said boxes from within, substantially as described.

655,533. CRANE. SAMUEL T. WELLMAN, CHARLES H. WELLMAN, and JOHN W. SEAVER, Cleveland, Ohio, assignors to the Wellman-Seaver Engineering Company, same place. Filed July 21, 1898. Serial No. 686,518. (No model.)



Claim.—1. Glass-pot-handling apparatus comprising a crane having a trolley with pot-gripping tongs combined with provision for opening and closing said tongs and for turning the same so as to tilt the pot, substantially as specified.

2. Glass-pot-handling apparatus comprising a crane with trolley having pot-gripping tongs combined with mechanism for opening and closing the same, for turning the tongs so as to tilt the pot, and for raising and lowering said tongs, substantially as specified.

3. Glass-pot-handling apparatus comprising a crane having two trolleys mounted thereon and movable independently of each other, one carrying the pot-handling mechanism and the other carrying a charging vessel whereby the pot may be refilled after being emptied, substantially as specified.

4. The combination of a train having a trolley with frame mounted thereon, a shaft mounted in said frame and carrying a pair of pot-gripping tongs, and a rod passing through said shaft or spindle and serving to open and close said tongs, substantially as specified.

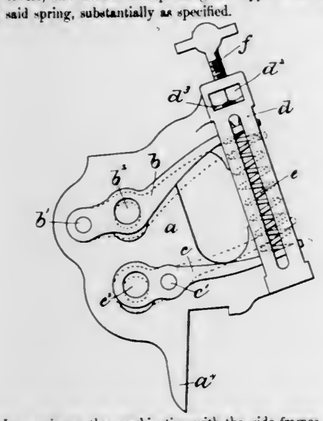
5. The combination of a crane, a trolley mounted thereon and provided with depending legs, a frame on said trolley having portions guided vertically by said depending legs, means on said trolley for raising and lowering said frame, a pair of horizontal gripping-tongs carried by said frame, and mechanism mounted on the frame for effecting a partial rotation of said tongs on the horizontal axis thereof for tipping a glass-pot carried thereby, substantially as specified.

6. The combination of the crane, a trolley mounted so as to travel on said crane and having an annular rack, a ring mounted so as to be free to turn on said trolley and having gearing meshing with said rack, and a pair of gripping-tongs and mechanism for operating the same carried by said rings, substantially as specified.

655,534. CLOTHES-WRINGER. FRANK R. WELLS, Springfield, Ohio. Filed Sept. 9, 1899. Serial No. 729,928. (No model.)

Claim.—1. In an adjusting device, upper and lower rolls, the upper roll being journaled in a lever pivoted at its forward end to a suitable support, the other end of said lever extending into a housing on said sup-

port, the lower roll being also journaled in a lever extending into said housing, said lower lever being pivoted to said support at a point between said lower roll and housing, a spring in said housing bearing against the respective levers, and means for depressing said upper lever against the tension of said spring, substantially as specified.

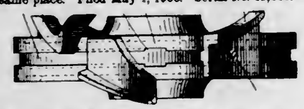


2. In a wringer, the combination with the side frames, levers pivoted on said side frames, rolls journaled in said levers, the outer ends of said levers extending into a housing formed at the rear of said support, a spring in said housing interposed between the ends of said levers, and an adjusting-screw above said housing adapted to bear against one of the said levers to vary the pressure between said rolls, substantially as specified.

3. In an adjusting device, upper and lower rolls, levers pivoted on the opposite sides of the axes of said rolls and arranged at the ends of the respective rolls so as to form bearings therefor, a spring acting against both of said levers and means for positively adjusting one of said levers in relation to the other lever, said other lever being adapted to yield against the tension of the spring, substantially as specified.

4. An adjusting device for rolls comprising two pivoted levers, one of said rolls being journaled in one of said levers between the pivotal point of said lever and the outer end thereof, a roll also journaled in the second lever, said second lever being pivoted at a point between said roll and the outer end of said lever, a spring or cushion adapted to exert pressure upon the outer ends of said levers, and means for adjusting the tension of said spring or cushion, substantially as specified.

655,535. CAM-WHEEL. FREDERIC E. WELLS and FRANK O. WELLS, Greenfield, Mass., assignors to the Automatic Machine Company, same place. Filed May 1, 1900. Serial No. 15,116. (No model.)



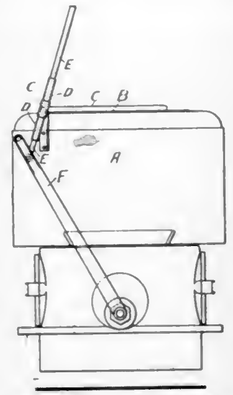
Claim.—1. A cam-wheel consisting of a body having a solid rim, an undercut groove in said rim on the face thereof, and an undercut groove in each side of said rim; one or more shoes adapted to slide in said grooves, cams secured to said shoes, there being an opening in each of said grooves whose width is equal to the greatest width of said shoes, whereby the latter may be entered in said grooves, and means for securing said shoes in said grooves, substantially as described.

2. A cam-wheel consisting of a body having a solid rim and an undercut groove in said rim, a cam for said wheel, said cam having projections adapted to enter said groove, a shoe located between said projections and adapted to slide in the groove, there being an opening in the latter whose width is equal to the widest part of said shoe, whereby the latter may be entered in the groove, and means on the cam for securing the shoe in said groove at any desired point, substantially as described.

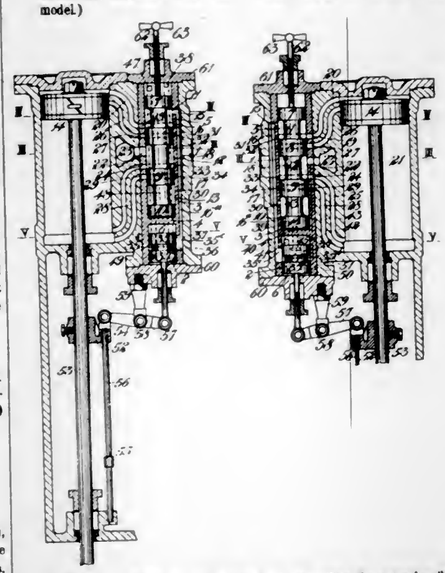
655,536. CENTRIFUGAL MACHINE. DAVID WILLOX, Glasgow, Scotland. Filed Mar. 8, 1900. Serial No. 7,787. (No model.)

Claim.—1. In a rotary or centrifugal machine having a stationary casing the combination with the stationary casing, of a cover adapted to close the orifice therein, and so connected to the usual starting-lever that it closes when said lever is operated to start the machine.

2. In a rotary or centrifugal machine, the combination with the stationary casing, of a cover adapted to close the opening in said casing, a rock-shaft carrying said cover, a crank-arm on said rock-shaft and a link connecting said crank and the usual starting-lever, substantially as described.



655,537. STEAM-ACTUATED VALVE. WILLIAM A. WOODESON, Gateshead, England. Filed Dec. 7, 1899. Serial No. 739,466. (No model.)



Claim.—1. Means for distributing and controlling the actuating fluid in engines or motors comprising a main valve and an auxiliary valve placed in line with each other and working within a liner having ports through its walls and passages formed in its outer walls connecting the ports with the steam-inlet, exhaust-outlet and with the motor-cylinder, as set forth.

2. Means for distributing and controlling the actuating fluid in engines or motors comprising a main valve and an auxiliary valve placed in line with each other and working within a liner divided into two chambers by a partition-plate, as set forth.

3. Means for distributing and controlling the actuating fluid in engines or motors comprising a main valve and an auxiliary valve placed in line with each other and working in two valve-chambers contained within the same liner having ports through its walls and passages formed in its outer walls connecting the ports with the steam-inlet, exhaust-outlet and with the motor-cylinder and the two valve-chambers together substantially as described.

4. Means for distributing and controlling the actuating fluid in engines or motors comprising a main valve and an auxiliary valve placed in line with each other and working in a liner divided into two valve-chambers by a partition-plate and ports and passages formed in the wall of the liner connecting the steam inlet and exhaust passages with the motor-cylinder and the two valve-chambers substantially as described.

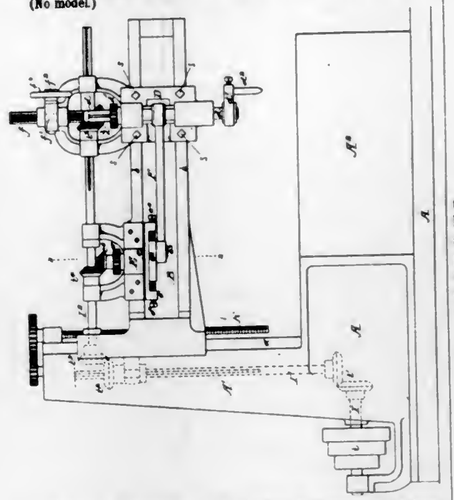
5. Means for distributing and controlling the actuating fluid in engines or motors comprising two valve-chambers in line with each other and contained within the same liner, a main distributing-valve in one of said chambers, an auxiliary distributing-valve in the other of said chambers, and adapted to operate the said main distributing-valve by controlling the passage of actuating fluid thereto, and means for moving said auxiliary slide-valve to and fro, as set forth.

6. Means for distributing and controlling the actuating fluid in engines or motors comprising a main valve and an auxiliary valve placed in line with each other, and working in two valve-chambers contained within the same liner, ports and passages formed in the wall of the liner connecting the steam inlet and exhaust passages with the motor-cylinder and the two valve-chambers, and means for operating said auxiliary valve to and fro to control said ports and passages, substantially as described.

7. Means for distributing and controlling the actuating fluid in engines or motors comprising two valve-chambers in line with each other and contained within the same liner, ports and passages formed in the wall of the liner connecting the steam inlet and exhaust passages with the motor-cylinder, and the two valve-chambers together, an exhaust-port near each end of the main distributing valve-chamber and adapted to cause the valve to be cushioned at the end of its strokes as set forth.

8. Means for controlling the passage of actuating fluid to or from an engine or motor cylinder 21 comprising two valve-chambers 5, 6 in line with each other and contained within the same liner 3 a main slide-valve 1, an auxiliary slide-valve 2, an inlet 18 for actuating fluid, an exhaust-outlet 23, passages formed in the wall of the liner 3 and adapted to put the ends of said cylinder 21 into full communication respectively with the said inlet 18 and with the said exhaust-outlet 23 through the chamber 5 containing the said main valve when the said valve is in one of its end positions, means for moving the said auxiliary valve 2 to and fro, and passages formed in the wall of the liner for connecting the chamber 6 with the inlet 18, the exhaust-outlet 23, and the chamber 5, so as to put the ends of the chamber 5 into communication respectively with the inlet 18, and the exhaust-outlet 23 for the purpose of moving the said main slide-valve 1 quickly from one of its extreme positions to the other.

655,538. MACHINE FOR CUTTING ELLIPTICAL HOLES. JOHN S. WORTH, Coatesville, Pa. Filed Dec. 31, 1897. Serial No. 664,935. (No model.)

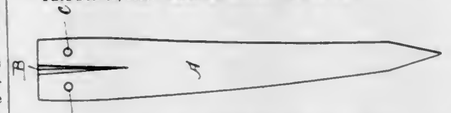


Claim.—1. The combination in a machine for cutting elliptical holes, of the carrier, a head thereon, a tool-shaft mounted in said head, an arm on said shaft carrying a tool, means for driving the tool-shaft, a driven shaft, a head thereon, a slide mounted on said head, a stud carried by said slide, a rod connecting the said stud to the head and set-screws bearing against each end of the slide for adjusting the slide, substantially as described.

2. The combination of a base adapted to receive material to be cut, a standard, an arm vertically adjustable on the standard, a bracket fixed on the arm, a shaft mounted on the bracket, an adjustable crank carried by the shaft, a carriage adapted to slide on the arm, a tool-shaft mounted in the carriage, an arm on the shaft carrying a tool, a rod connecting the adjustable crank to the carriage, a driven shaft geared to the crank-shaft and the tool-shaft so that as the tool-shaft is rotated the carriage will be reciprocated, substantially as described.

3. The combination in a machine for cutting elliptical holes, of the frame, a fixed shaft having an adjustable crank, a sliding carriage, a tool-shaft thereon, means for connecting the adjustable crank to the tool-carriage and means for fastening the tool-carriage in a fixed position when detached from the crank-shaft so that the tool can cut circular holes, substantially as described.

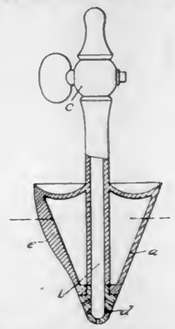
655,539. PICK-POINT. JACOB ARGENTER, San Francisco, Cal. Filed Dec. 15, 1899. Serial No. 740,488. (No model.)



Claim.—1. As an article of manufacture a pick-point adapted to be welded to the body of an ordinary pick, consisting of an elongated steel or other metallic piece having a downward-pointed end and beveled or wedge-shaped upper end, provided with ribs formed upon its beveled faces, substantially as set forth and for the purpose specified.

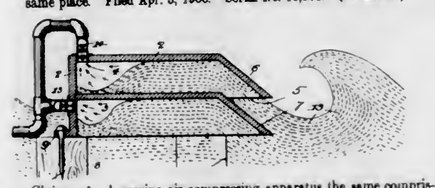
2. As an article of manufacture a supplemental pick-point having a downward-pointed end and wedge-shaped upper end, provided with rib B and projection C, substantially as set forth and for the purpose specified.

655,540. VAGINAL SYRINGE. ANTON ARLT, Bad Sommerstein, Germany. Filed Sept. 22, 1899. Serial No. 731,294. (No model.)



Claim.—A two-piece vaginal-syringe nozzle comprising a central tubular member or conduit *b* having a valved member at its outer end and having its walls extended and tapered to form a hollow truncated base *a*, said base having one of its faces slightly thickened and having its lower portion extended below the mouth of the tube *b* to form a socket; and a removable apertured member *d* adapted to be received in said socket, and conforming to the contour of the member *a*, substantially as shown and described.

655,541. MARINE AIR-POWER APPARATUS. AUGUST M. BECKER, New York, N. Y., assignor of one-half to Martin Steinthal, same place. Filed Apr. 3, 1900. Serial No. 11,801. (No model.)



Claim.—1. A marine air-compressing apparatus the same comprising the combination of a set of air-chambers arranged at different levels and open at the bottom only so that the water may enter and leave such air-chambers through the bottom, and communicating with the outer air through the bottom only, a compressed-air reservoir and pipe connections leading from the upper part of each of said air-chambers to said reservoir,

said pipe connections being provided with valves for preventing a backflow of air from the said reservoir to the said air-chambers, substantially as and for the purpose set forth.

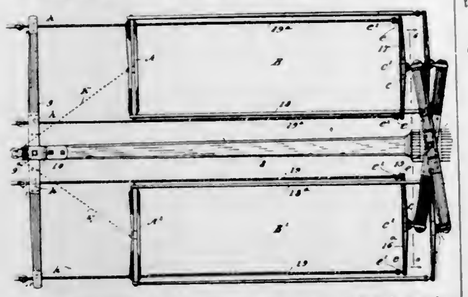
2. A marine air-exhausting apparatus, the same comprising the combination of a set of air-chambers arranged at different levels and open at the bottom only so that the water may enter and leave said air-chambers through the bottom, an exhaust-receptacle and pipe connections leading from the upper part of each of said air-chambers to the said exhaust-receptacle, said pipe connections being provided with valves for preventing the inflow of air from the said air-chambers to the exhaust-receptacle substantially as and for the purpose set forth.

3. A combined marine air compressing and exhausting apparatus, the same comprising the combination of a set of air-chambers arranged at different levels and each open only at the bottom, a compressed-air reservoir and an exhaust-air receptacle, pipe connections extending from said compressed-air reservoir to the upper part of each of said air-chambers and provided with valves for preventing a backflow of air from said reservoir to the said air-chambers, and pipe connections extending from said exhaust-air receptacle to the upper part of each of said air-chambers and provided with valves for preventing the inflow of air from said air-chambers to the exhaust-air receptacle, substantially as and for the purpose set forth.

4. A marine air-power apparatus, comprising the combination of a set of superposed air-chambers, the lowermost one being open at the bottom and the chambers above it being partially open at the bottom toward one side thereof at a point substantially at the level of the bottom, and valved pipe connections leading from the upper part of each of said air-chambers, substantially as and for the purpose set forth.

5. A marine air-power apparatus comprising the combination of a set of superposed air-chambers, the lowermost one of which is open at the bottom, the air-chamber above said lowermost one being partially opened at the bottom toward one side thereof, the open side of said second chamber being inclined downwardly and outwardly, and valved pipe connections leading from the upper part of each of said air-chambers, substantially as and for the purpose set forth.

655,542. DRAFT-EQUALIZER. JOHN A. BELTZ, Buxton, N. D. Filed Jan. 25, 1900. Serial No. 2,764. (No model.)



Claim.—1. In a draft-equalizer, two doubletrees adapted to swing independently on a wagon-pole.

2. In a draft-equalizer, two doubletrees held to rock one upon the other and also upon a wagon-pole.

3. In a draft-equalizer, a doubletree having a transverse opening near its center for the reception of a wagon-pole.

4. In a draft-equalizer, a pole, a doubletree having a central transverse opening to receive the pole, a draft-equalizer seated upon the said doubletree, and a pivot-bolt passing through both doubletrees and through the pole.

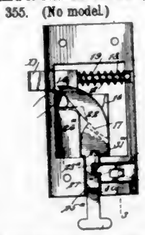
5. In a draft-equalizer, the combination with a pole, a doubletree having an opening therein receiving the pole, another doubletree mounted on the one having the opening, and a pivot-bolt passing through the doubletrees and pole, of pairs of singletrees shackled to the ends of each of the doubletrees.

6. In a draft-equalizer, a doubletree comprising a bar recessed on its upper side, and a recessed cap-plate secured over the recess in the bar, both the bar and cap-plate having a perforation opposite each other.

7. In a draft-equalizer, the combination with a pole, rockable doubletrees pivoted one over the other at the rear end of the pole, singletrees loosely secured on the ends of both of the doubletrees, and draft connections extended forwardly from the ends of the singletrees, of a spreader-bar or neck-yoke held transversely on the forward end of the pole, and loops on said spreader-bar through which the draft connections pass.

8. In a draft-equalizer, the combination with a pole, rockable doubletrees pivoted one over the other at the rear end of the pole, and a singletree shackled on each end of each doubletree, of a pair of traces loosely coupled to one of the singletrees at the outer end of the lower doubletree, a pair of traces coupled to the ends of one of the singletrees held on the opposite end of the upper doubletree, and pairs of draft connections loosely secured respectively upon the ends of each of the two other singletrees that are shackled upon the other ends of the doubletrees.

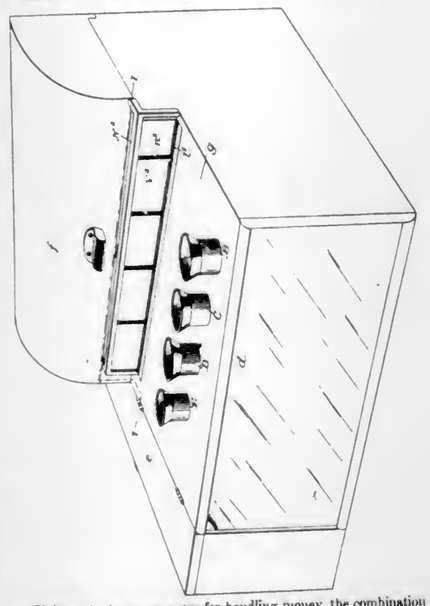
655,543. SASH-HOLDER. JOHN BOHLEN, Big Rapids, Mich., assignor of one-third to Michael Morrissey, same place. Filed Jan. 4, 1900. Serial No. 355. (No model.)



Claim.—1. The combination of a casing, a bolt mounted to slide therein and provided with two inclined surfaces facing respectively toward the outer and the inner end of the bolt, and an operating-arm having sliding movement in the casing and provided on one side with an inclined surface facing toward one end of the arm and arranged for contact with one inclined surface of the bolt, while on the other side the operating-arm is provided with a second inclined surface facing toward the other end of the arm and arranged for contact with the second inclined surface of the bolt.

2. The combination of a casing, a bolt mounted to slide therein and provided with opposing inclined surfaces facing respectively toward the inner and the outer end of the bolt, an operating-arm having sliding movement between the said opposing inclined surfaces of the bolt, and provided on opposite sides, with inclined surfaces, each arranged to engage one of the inclined surfaces of the bolt, and a latch arranged to lock the said operating-arm.

655,544. COIN ASSORTING, DELIVERING, AND RECORDING APPARATUS. SANFORD S. BOYD, Laurens, S. C. Filed Apr. 5, 1900. Serial No. 11,755. (No model.)



Claim.— 1. In an apparatus for handling money, the combination of a casing having outlets for pieces of money, a holder contained in the casing and adapted to receive pieces of money, a slide for transferring pieces of money from the holder to one outlet, a second slide superposed on the first-mentioned slide and adapted to transfer pieces of money from the holder to the other outlet, and means for operating the slides.

2. In an apparatus for handling money, the combination of a casing having an inlet and two outlets for pieces of money, an upright tube contained in the casing and open at its opposite ends, a slide for receiving pieces of money from the inlet and transferring the same to the tube, a slide for receiving pieces of money from the tube and conveying the same to one outlet, a slide for receiving pieces of money from the tube and conveying it to the other outlet, and a manipulating-key for each slide; said keys being connected with the slides, substantially as specified.

3. In an apparatus for receiving, delivering and registering pieces of money, the combination of a casing having an inlet and two outlets for pieces of money, a holder, for pieces of money, contained in the casing and open at its upper and lower ends, an upper slide for transferring pieces of money from the inlet to the holder, a lower slide for transferring pieces of money from the holder to one outlet, and a second lower slide superposed on the first-mentioned slide and adapted to transfer pieces of money from the holder to the other outlet, means connected and adapted to operate in concert with the upper slide for registering the pieces of money placed in the holder, and means connected and adapted to operate in concert with one of the lower slides for registering the pieces of money removed from the holder, through the medium of said lower slide.

4. In an apparatus for receiving and registering pieces of money, the combination of a casing having an inlet, a holder for pieces of money arranged in said casing, a slide for transferring pieces of money from the inlet to said holder, a record-strip, mechanism for moving said strip, a stop normally engaging said mechanism and controlling the movement of the record-strip, means, arranged to be actuated by a piece of money in the slide, for disengaging the stop from said mechanism, and means connected and adapted to operate in concert with the slide for registering on the record-strip the pieces of money placed in the holder.

5. In an apparatus for delivering and registering pieces of money, the combination of a casing having an outlet, a holder for pieces of money arranged in said casing, a slide for transferring pieces of money from the holder to the outlet, a record-strip, mechanism for moving said strip, a stop normally engaging said mechanism and controlling the movement of the record-strip, means, arranged to be actuated by a piece of money in the slide, for disengaging the stop from said mechanism, and means connected and adapted to operate in concert with the slide for registering on the record-strip the pieces of money removed from the holder.

6. In an apparatus for assorting and delivering pieces of money, the combination of a casing, a plurality of hoppers for pieces of money of different denominations arranged upon and communicating with the interior of the same, a series of discharge-conduits for pieces of money of different denominations leading from the under side of the casing, a plurality of upright tubes arranged in the casing and open at their upper and lower ends, slides interposed between the upper ends of the tubes and the hoppers for transferring pieces of money from the latter to the former, superposed slides interposed between the lower ends of the tubes and the two series of discharge-conduits for transferring pieces of money from the former to the latter, manipulating-keys connected with the upper slides, manipulating-keys connected with the upper of the superposed slides, and manipulating-keys connected with the lower of the superposed slides, substantially as specified.

7. In a money receiving and registering apparatus, the combination of a casing having an inlet and an outlet for pieces of money, a tube contained in the casing and open at its lower and upper ends, a slide for transferring pieces of money from the inlet to the tube, a slide for transferring pieces of money from the tube to the outlet, manipulating-keys for actuating the slides, a record-strip and a printing medium wound upon and stretched between two drums, a support for the record-strip and printing medium arranged below the same at a point intermediate of the two drums, spring-actuated mechanism for winding the record-strip and printing medium off one drum and on the other, a stop controlling the movement of the record-strip and printing medium, means, arranged to be actuated by pieces of money in the slides for disengaging the stop from the mechanism for moving the record-strip and printing medium, and printing devices connected with the manipulating-keys and adapted to strike against the printing medium, substantially as specified.

8. In an apparatus for receiving and registering pieces of money, the combination of a casing having an inlet, a tube contained in the casing, a slide for transferring pieces of money from the inlet to the tube; said slide having an aperture and a slot, a manipulating-key connected with the slide, two drums, a record-strip and a printing-ribbon wound upon and stretched between the two drums, a support or bed arranged between the drums and below the record-strip and printing-ribbon, spring-actuated mechanism connected with one of the drums for moving the record-strip and printing-ribbon, a rotary cam connected and movable with said spring-actuated mechanism and having a shoulder, a vertically-movable rod having a lateral lug arranged to engage the shoulder of the cam and also having a head, a rock-shaft having a crank arranged to engage the under side of the head and also having an arm resting in the slot of the slide and arranged to be engaged by the piece of money in said slide, a lever fulcrumed at an intermediate point of its length and provided with a type adapted to strike against the printing-ribbon, and a suitable connection between said lever and the manipulating-key, substantially as specified.

9. In an apparatus for receiving, delivering and registering pieces of money, the combination of a casing having an inlet and an outlet, a holder for pieces of money arranged in said casing, a slide for transferring pieces of money from the inlet to the holder, a slide for transferring pieces of money from the holder to the outlet, a record-strip, mechanism for moving said strip, a stop normally engaging said mechanism and controlling the movement of the record-strip, means, arranged to be actuated by a piece of money in one slide, for disengaging the stop from said mechanism, means, arranged to be actuated by a piece of money in the other slide, for disengaging the stop from the strip-moving mechanism, means connected and adapted to operate in concert with one slide for registering on the record-strip the pieces of money placed in the holder, and means connected and adapted to operate in conjunction with the other slide for registering on the record-strip the pieces of money removed from the holder.

10. In a money assorting, delivering and registering apparatus, the combination of a casing, a plurality of hoppers for pieces of money of different denominations arranged upon the casing and connected with the interior thereof, a plurality of conduits for the discharge of pieces of money of different denominations depending from the casing and connected with the interior thereof, a plurality of upright tubes for pieces of money of different denominations arranged in the casing, slides provided with apertures and slots and adapted to transfer pieces of money from the hoppers to the tubes, slides having apertures and slots and adapted to transfer pieces of money from the tubes to the discharge-conduits, manipulating-keys connected with the slides, two drums, a record-strip and a printing-ribbon wound upon and stretched between the two drums, a support or bed arranged between the drums and below the record-strip and printing-ribbon, spring-actuated mechanism connected with one of the drums for moving the record-strip and printing-ribbon, a rotary cam connected and movable with said spring-actuated mechanism and having a shoulder, a vertically-movable rod having a lateral lug arranged to engage the shoulder of the cam and also having heads at its upper and lower ends, upper and lower series of rock-shafts having cranks arranged to engage the under sides of the heads and also having arms resting in the slots of the upper and lower slides and arranged to be engaged by pieces of money in said slides, levers fulcrumed at intermediate points of their length and having type at one end, and connections between the other ends of the levers and the manipulating-keys, substantially as specified.

11. In an apparatus for assorting, delivering and registering pieces of money, the combination of a casing provided with a plurality of openings for the reception of pieces of money of different denominations and a plurality of openings for the discharge of pieces of money of different denominations, a plurality of holders for pieces of money of different denominations arranged in the casing, means for transferring pieces of money from the inlet-openings in the casing to the holders, means for transferring pieces of money from the holders to the discharge-openings in the casing; said means comprising manipulating-keys, means for recording the placing of each piece of money in and the removal of each piece of money from the holders, a cover inclosing the manipulating-keys, a lock for said cover, a plurality of individual keys for unlocking the cover, and means for recording the number or other mark of identification of the key by which the cover is unlocked, substantially as specified.

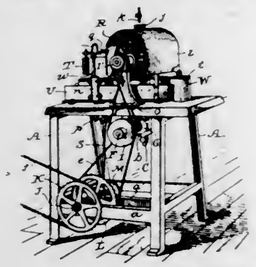
12. In an apparatus for the purpose described, the combination of the casing A having the cover f provided with an arrow-head catch, the supplementary casing having a front wall made up of slidable panels, the contiguous edges of which are beveled, a superposed record-strip and printing-strip arranged over a suitable bed in the casing A, levers fulcrumed in the casing A and having type at one end adapted to strike against the printing-ribbon, wheels arranged in the supplementary casing and having individual keyholes, connections between said wheels and the levers bearing type, the endwise-movable rod P^2 arranged in the supplementary casing and having an arm adapted to engage the arrow-head catch on the cover, and also having a plurality of arms f^5, the endwise-movable rod R^2 arranged in the supplementary casing and having the arm adapted to be engaged by the arrow-head catch and also having the arms h^5, and individual keys adapted to be inserted between the edges of the panels into the keyholes of the wheels and having notches to receive the arms h^5 of the rod R^2, substantially as specified.

13. In an apparatus for receiving, delivering and registering pieces of money, the combination of a casing having an inlet and an outlet, a holder for pieces of money in said casing, a slide arranged between the inlet and the upper end of the holder and having an aperture to receive a coin and a slot communicating therewith, a slide arranged between the

outlet and the lower end of the holder and having an aperture to receive a coin and a slot communicating therewith, a record-strip, mechanism for moving said strip comprising a cam-wheel having a shoulder, a vertically-movable rod having a lug normally engaging the shoulder of said cam-wheel and having T-heads at its ends, rock-shafts having arms arranged to engage the upper and lower heads, respectively, of said rod and also having portions extending through the slots of the slides, means connected and adapted to operate in concert with one slide for registering on the record-strip the pieces of money placed in the holder, and means connected and adapted to operate in concert with the other slide for registering on the record-strip the pieces of money removed from the holder.

14. In an apparatus for delivering and registering pieces of money, the combination of a casing, a plurality of holders for pieces of money of different denominations arranged in the casing, means for removing pieces of money from the holder; said means comprising manipulating-keys, means for registering the removal of each piece of money from the holder, a cover inclosing the manipulating-keys, a lock for said cover, a plurality of manipulating-keys for unlocking the cover, and means for registering the number or other mark of identification of the key by which the cover is unlocked, substantially as specified.

655,545. CAN TOPPER AND WIPER. WILLIAM S. BRISTOL, Flat Rock, Ind. Filed Mar. 19, 1900. Serial No. 9,204. (No model.)



Claim.—1. A can-wiper including a table having a circular aperture in the top thereof, a rotative disk mounted in the aperture, a wiper, and guides leading to the rotative disk.

2. A can-wiper including a table having a circular aperture in the top thereof, a circular rotative disk or plate mounted in the aperture, a rotative brush, and a guide-plate at two opposite sides of the rotative disk.

3. A can topper and wiper comprising a table having a circular aperture in the top thereof, a circular rotative disk or plate mounted in the aperture, a wiper, a channel leading to the rotative disk, and a topper mounted above the channel.

4. A can topper and wiper comprising a table having a circular aperture in the top thereof, a circular rotative disk or plate mounted in the aperture, a vertical shaft supporting and operating the circular disk, a wiper, guides leading to the rotative disk, and a topper mounted in proximity to the rotative disk.

5. In a can topper and wiper, the combination with the table of the filler, of a table continuing from the table of the filler and provided with a rotating section, a channel leading from the filler to the rotating section, a rotating brush mounted above the rotating section, and a topper operatively mounted above the channel between the filler and the rotating section.

6. In a topper and wiper, the combination of the table, the channel at the top of the table, a rotating plate in the channel and in the plane with the table whereby a can may be rotated, a rotating brush mounted above the rotating plate, and the topper mounted operatively in advance of the rotating plate above the channel.

7. In a topper and wiper, the combination of the table, the channel, the rotating plate in the channel, the rotating brush above the rotating plate, the topper mounted and working above the channel in advance of the rotating plate, the hood covering the rotating brush, the water-jet pipe mounted over the brush, the vertical shaft carrying the rotating plate and having the miter-wheel secured thereto, the hanger supporting the vertical shaft, the horizontal shaft having the miter-wheel engaging the miter-wheel on the vertical shaft, the sprocket-wheel on the horizontal shaft, the chain whereby said sprocket-wheel may be driven, the pulley on the horizontal shaft, the pulley on the brush-shaft, the belt connecting said pulleys, and means whereby the topper may be operated in unison with the rotating plate, substantially as set forth.

8. In a can topper and wiper, the combination with the table of a can-filler, of a table continuing from the table of the filler and having a circular aperture in the top thereof, a rotative disk or plate mounted in the aperture, a guide-channel leading from the filler to the rotative disk, a rotative brush mounted above the rotative disk, and a topper operatively mounted above the guide-channel between the filler-table and the rotative disk.

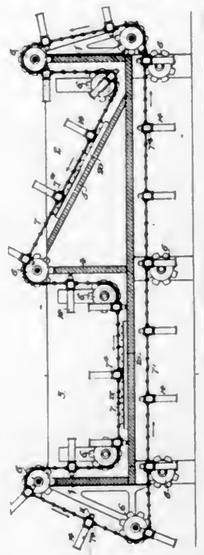
9. In a can-wiper, the combination with the table of a can-filler, of a table continuing from the table of the filler and provided with a rotative disk or plate mounted with its upper face in the plane with the plane of the upper face of the table, a wiper mounted above the rotative disk, and guides leading from the filler-table to the rotative disk.

10. In a can-wiper, the combination of the table, the guides, a rotating plate mounted between the guides, a wiper mounted above the rotative plate, the hood, the vertical shaft attached to the rotative plate, means for actuating the vertical shaft, and means for actuating the wiper.

11. In a can topper and wiper, the combination of the table, the channel on the table, a rotative plate mounted in the channel with its top surface in the plane with the top surface of the table, the rotative brush mounted above the rotative plate, the topper mounted operatively above the channel, the hood, the vertical shaft attached to the rotative plate and having the miter-wheel secured thereto, the hanger supporting the vertical shaft, the horizontal shaft having the miter-wheel engaging the miter-wheel on the vertical shaft, the sprocket-wheel on the horizontal shaft, the chain whereby said sprocket-wheel may be driven, the pulley on the horizontal shaft, the pulley on the brush-shaft, the belt connecting said pulleys, and means whereby the topper may be operated.

12. In a can topper and wiper, the combination of the frame, the table, the channel, the rotative plate, the rotative brush, the topper-plunger, the cross-heads, the rods connecting the cross-heads, guides for the rods, the pitman connected to a cross-head, the shaft mounted on the frame-beams and having a sprocket-wheel thereon, the driving-chain, the crank connected to the pitman, and the means whereby said shaft may transmit motion to said rotative plate and said rotative brush, substantially as shown and described.

655,546. MERCERIZING APPARATUS. WALTER G. DEEN, Philadelphia, Pa. Filed Nov. 6, 1899. Serial No. 736,000. (No model.)



Claim.—1. The combination in mercerizing apparatus, of a tub for containing mercerizing liquid, a pair of endless chains passing through said tub, and laterally separated from each other, bars extending from chain to chain and carried thereby, a pair of skein-carrying drums upon each of said bars, one of said drums being located near one end of the bar and the other near the opposite end of the same, substantially as specified.

2. The combination in mercerizing apparatus, of a tub having two chambers, one for containing mercerizing liquid and the other for containing wash-water, a pair of endless chains passing first through one chamber of the tub and then through the other chamber of the same, said chains being laterally separated from each other, a series of bars extending from chain to chain and carried by said chains, and a pair of skein-carrying drums mounted upon each of said bars, one of said drums being located near one end of the bar and the other near the opposite end of the same, substantially as specified.

3. The combination in mercerizing apparatus, of the mercerizing vessel, a pair of laterally-separated endless chains passing therethrough and carrying bars extending from chain to chain, a series of pairs of skein-carrying drums mounted on said bars, one drum at each end of the bar, means for traversing the chains so as to carry the pairs of drums through the mercerizing vessel, and means for automatically changing the position of the skeins on said drums while passing through the vessel, substantially as specified.

4. The combination in mercerizing apparatus, of a mercerizing vessel, an endless carrier passing through the same, pairs of drums mounted on said carrier for the reception of the skeins to be treated, and means for moving one of said drums of each pair from and toward the other so as to impart tension to the skein or skeins carried thereby, substantially as specified.

5. The combination in mercerizing apparatus, of a mercerizing-tub, an endless carrier passing through the same, pairs of skein-carrying drums mounted upon said endless carrier, and means for imparting yielding or elastic tension to the skeins carried by said drums, substantially as specified.

6. The combination in mercerizing apparatus, of a mercerizing-tub, an endless-chain carrier, a cross-bar thereon, a drum mounted in fixed longitudinal relation to said cross-bar, and another drum carried by a block which is adjustable longitudinally on the cross-bar, substantially as specified.

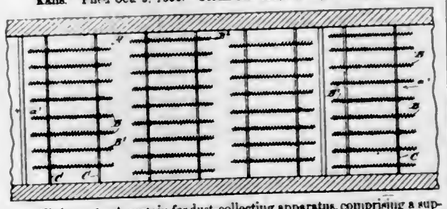
7. The combination in mercerizing apparatus, of a mercerizing-tub, an endless-chain carrier, a cross-bar thereon, a drum mounted in fixed longitudinal relation to said cross-bar, another drum carried by a block which is adjustable longitudinally on the cross-bar, a screw-stem for adjusting said block, and a spring acting on said screw-stem so as to impart its tension to the block, substantially as specified.

8. The combination in mercerizing apparatus, of a mercerizing or washing tub, an endless carrier, a pair of skein-drums mounted thereon, a toothed wheel carried by the spindle of one of said drums, and an engaging rack with which said toothed wheel meshes as the spools are carried forward through the tub, whereby rotating movement is imparted to the drum, substantially as specified.

9. The combination in mercerizing apparatus, of a mercerizing or washing tub, an endless carrier, a pair of skein-drums mounted thereon, one of said drums having a spindle with toothed wheel thereon and oppositely-disposed racks for engaging with said toothed wheel as it is carried forward through the tub, whereby movement first in one direction and then in the opposite direction is imparted to the drum, substantially as specified.

10. The combination in mercerizing apparatus, of a mercerizing or washing vessel, an endless carrier, a pair of skein-drums carried thereby, one of said drums having a spindle with toothed wheel thereon, a rack with which said toothed wheel engages as it is carried forward through the tub, an antifriction-roller on the spindle, and a bar with which said roller engages in order to retain the toothed wheel in mesh with the rack, substantially as specified.

655,547. CURTAIN FOR DUST-COLLECTING APPARATUS. ARTHUR S. DWIGHT, Kansas City, Mo., and RUDOLF RUETSCHI, Argentine, Kans. Filed Oct. 9, 1899. Serial No. 733,073. (No model.)



Claim.—1. A curtain for dust-collecting apparatus, comprising a support, and a series of parallel vertical members carried by the support, said members being arranged obliquely to a vertical plane passing through the support and spaced apart, forming passages between adjacent members, as and for the purpose set forth.

2. A curtain for dust-collecting apparatus, comprising a supporting rod or bar, and a series of vertical members carried by the bar or rod, said members being arranged obliquely to the bar or rod and spaced apart, whereby a curtain with a series of inclined passages will be formed, substantially as described.

3. In a dust-collecting apparatus, the combination with a flue, of a series of curtains arranged longitudinally in the flue, each curtain being formed of a series of obliquely-arranged and spaced vertical members, substantially as described.

4. In a dust-collecting apparatus, the combination with a flue, of a series of curtains arranged longitudinally in the flue, each curtain comprising a horizontal rod, and a series of vertical members hung on the rod to project on either side thereof, said members being arranged obliquely to the rod and spaced apart, substantially as described.

5. In a dust-collecting apparatus, the combination with a flue having dams in its bottom, of a series of curtains arranged longitudinally in the flue, and extending from the top of the flue to a short distance below the upper ends of the dams, each curtain being formed of a series of members arranged obliquely to the length of the flue and spaced apart, substantially as described.

6. In a dust-collecting apparatus, the combination with a flue, of a series of curtains arranged in sets in the flue and extending longitudinally thereof, the sets of curtains being out of alinement, and each curtain formed of a series of members spaced apart and arranged obliquely to the length of the flue, substantially as described.

7. The combination with a flue having dams in its bottom, of a series of curtains arranged longitudinally in the flue and extending from the top of the flue to a short distance below the upper ends of the dams, each curtain comprising a rod, and a series of members carried by the rod and projecting on either side of the same, said members being arranged obliquely to the rods and spaced apart, substantially as described.

655,548. SEWING-AWL. ELI C. ESPEY and ROBERT W. HARRIS, Pleasanton, Kans. Filed Apr. 3, 1900. Serial No. 11,331. (No model.)



Claim.—1. An awl, comprising a handle having a recess formed in its side, a needle carried by said handle, a removable spool-holder held in the handle and extending longitudinally in said recess to receive and hold a spool with the thread thereon, a guide or feed eye mounted to slide longitudinally in said handle and arranged for the passage of the thread from the spool to the needle, and a spring controlling said guide or feed eye, as set forth.

2. A sewing-awl, comprising a handle having a lengthwise recess formed in one side, a needle carried by said handle, a spool-holder in the form of a removable pin held in said handle and extending through said recess lengthwise thereof, said spool-holder being adapted to receive the spool, a slotted plate secured to said handle parallel to said recess, a guide-eye mounted to slide on said slotted plate and adapted to guide the thread from the spool to said needle and a helical spring arranged lengthwise in the handle and connected with the outer end of same and to said guide-eye, as set forth.

655,549. WRAPPER FOR CIGARS. FRANCISCO E. FONSECA, New York, N. Y. Filed Mar. 15, 1900. Serial No. 8,766. (No model.)



Claim.—1. A cigar-package, comprising a cigar, and the containing protecting-cover, the said cover extending normally beyond the ends of the cigar and having its extended ends twisted to form practically cords which are wound back upon the cover and secured.

2. A cigar-package, comprising a cigar, and the inclosing protecting-cover having its ends extending beyond the ends of the cigar, each of said ends being sloped or inclined to a point and twisted to form practically a tapering cord which is wound back upon the cover and secured.

3. A cigar-package, consisting of a cigar, and the inclosing protecting-cover having its ends extending beyond the ends of the cigar each of the said ends being sloped or inclined to a point and twisted to form practically tapering cords, which are wound back upon the cover and have their extremities passed under sundry of the coils.

4. A cigar-package, comprising a cigar, and the inclosing protecting-cover, said cover having one end extending beyond the cigar, the said extended end being pointed and twisted to form practically a tapering cord which is wound back upon the cover and has its extremity passed under sundry of the coils.

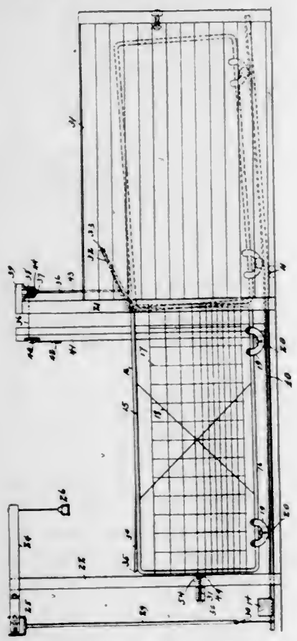
655,550. SNAP-HOOK. THOMAS G. FOSTER, Peterborough, Canada. Filed Feb. 11, 1899. Renewed June 22, 1900. Serial No. 21,230. (No model.)

Claim.—1. A snap-hook comprising the shank A, a center pin a^2 and cross-bar a^2 and a hook formed of a flat spring pivoted on said pin a^2, the free end of said hook being adapted to rest beneath the flat under face of the cross-bar a^2, substantially as described.



2. A snap-hook comprising the shank having a center pin, and an upwardly-curved portion terminating in a flat cross-bar and a hook formed of a flat spring having a portion bent around said center pin and back upon itself to provide a reinforce, the end of the hook being adapted to rest beneath the flat face of the cross-piece, substantially as described.

655,551. GATE. JOSEPH F. GLIDDEN, De Kalb, Ill. Filed June 10, 1899. Serial No. 720,047. (No model.)

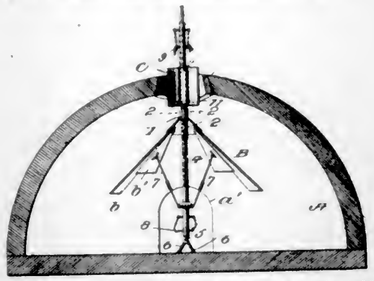


Claim.—In an automatic gate, the combination, of the bent tilting ground-rail 10, weighted at its gateway end to overbalance the opposite end when the gate is mounted thereon, the gate 15 mounted to slide upon the ground-rail, the pairs of uprights 21, 22, located at the respective sides of the gateway, the spring-pressed buffer-plate 45 mounted upon the uprights 22, the cooperating latch 54 mounted upon the end of the gate and adapted to automatically engage said buffer-plate, the gravity-latch 32 pivotally mounted to slide upon the upper edge of the gate and to automatically engage the catch upon the gate when the latter is fully retracted, the guide-pulleys 37 mounted upon the uprights 21 above the latch and the flexible connections 36 extending from said latch over said guide-pulleys and to points remote from the gate, the cross-bar 23 mounted upon the uprights 22, the levers 24 fulcrumed upon said cross-bar, each provided at one end with a handle, as 26 and the link 29 connected at its upper end with each of the levers 24 and at the opposite end with the weighted tilting ground-bar, substantially as described.

655,552. COAL-LEVELING MACHINE. SAMUEL GORTON, Mount Pleasant, Pa., assignor of one-half to Eugene Warden, Greensburg, Pa. Filed Dec. 26, 1899. Serial No. 741,661. (No model.)

Claim.—1. A device of the character herein described having an umbrella-like contractible and expansible deflector capable of being inserted into a coke-oven, means for supporting the same, and a guard above the deflector designed to be located in the opening in the oven-top, substantially as set forth.

2. A device of the character herein described having an inclined deflector composed of a series of separate sections each of which is hinged at one end, means for holding said sections expanded, and means for adjusting the inclination of the deflector, substantially as set forth.



3. The combination with a coke-oven, of a deflector located beneath the opening in the top of such oven, said deflector being composed of series of separate sections of different lengths, each section being hinged at one end, means for holding the sections extended, and means for closing such sections when they are to be passed through the opening in the oven, as set forth.

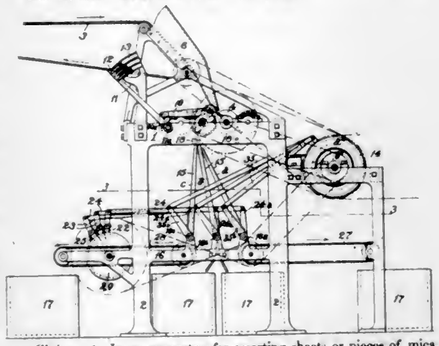
4. The combination with a coke-oven having an opening in its top, of a deflector comprising a series of hinged sections, a vertical support for said deflector designed to extend through said opening, means for holding said sections extended, and a guard on said support located within the opening of the oven and above the deflector, as and for the purpose set forth.

5. The device herein described comprising an upright frame, a movable portion mounted on said frame and capable of being secured thereto at different points, a series of sections hinged to said movable portion, and a series of braces secured to said frame and also to some of the hinged sections, whereby as the movable portion is lowered on the frame the sections of the deflector will be extended, substantially as set forth.

6. The device herein described having a frame comprising an upright rod, a tube movable on said rod, means for holding said tube at different points on the latter, a deflector composed of a series of hinged sections, a guard carried by said tube, and a series of braces secured to the frame and to some of the said hinged sections, substantially as set forth.

7. The device herein described having a movable tubular portion, a deflector carried thereby having a series of hinged sections, brace-rods secured to some of said sections, and a guard of concavo-convex formation secured on said tubular portion, substantially as and for the purpose set forth.

655,553. ASSORTING APPARATUS FOR SHEETS OF MICA, &c. RICHARD W. HEARD and RICHARD A. L. SNYDER, Pittsburg, Pa. Filed Feb. 12, 1898. Serial No. 670,095. (No model.)



Claim.—1. In an apparatus for assorting sheets or pieces of mica, &c., the combination, with the main frame, of a gaging device comprising a pair of oppositely-revolving rollers one of which is mounted on the fixed main frame and the other mounted on a light movable frame pivotally supported by the main frame, a series of distributing-vanes controlled by the gaging device and means for operating the rollers and the distributing-vanes, substantially as set forth.

2. In an apparatus for assorting sheets or pieces of mica, &c., the combination, with the main frame, of a gaging device comprising a pair of oppositely-revolving rollers having their axes in parallelism, means for

mounting one of the rollers so that it may be moved away from the other, and for maintaining the parallelism of the adjacent elements of the roller-surfaces in any such movement, by the sheet or piece passing between the rollers, distributing means controlled by the gaging device, and means for operating the rollers and the distributing means, substantially as set forth.

3. In an apparatus for assorting sheets or pieces of mica, &c., the combination, with the main frame, of a gaging device comprising a pair of oppositely-revolving rollers and a light movable frame pivotally supported by the main frame, one of said rollers mounted on the main frame and the other on the movable frame, a series of distributing-vanes below the rollers and controlled by the gaging device, means for driving the rollers, means for operating the vanes, and means connecting the movable frame with the means for operating the vanes, substantially as set forth.

4. In an apparatus for assorting sheets or pieces of mica, &c., the combination, with the main frame, of a gaging device comprising a pair of rollers, one of said rollers mounted on the main frame and the other on a movable frame pivotally supported by the main frame, said movable frame and its roller adapted to be moved away from the other roller on the entrance of material between the rollers whereby the maximum thickness of the material is gaged, brushes for cleaning the rollers, a series of distributing-vanes controlled by the gaging device, means for driving the rollers, means for operating the vanes, and means connecting the movable frame with the means for operating the vanes, substantially as set forth.

5. In an apparatus for assorting sheets or pieces of mica, &c., the combination, with the main frame, of a gaging device comprising a pair of oppositely-revolving rollers, having their axes in parallelism, means for mounting one of the rollers so that it may be moved away from the other, and for maintaining the parallelism of the adjacent elements of the roller-surfaces in any such movement, by the sheet or piece passing between the rollers, brushes for cleaning the rollers, a series of distributing-vanes controlled by the gaging device, receptacles below the vanes for receiving the material operated on, means for conveying the material to the receptacles, and means for operating the vanes and the rollers, substantially as set forth.

6. In an apparatus for assorting mica, &c., the combination with the main frame, of a driving-shaft, a gaging device for gaging the thickness of the material to be assorted comprising a movable frame and a pair of rollers, distributing means below the gaging device, an electric circuit, electromagnets mounted on the driving-shaft and adapted to make connections with the distributing means for moving the same, and means controlled by the gaging device for completing and breaking the electric circuit.

7. In an apparatus for assorting mica, &c., the combination, with the frame, of a driving-shaft, a gaging device for determining the thickness of the material to be assorted, a series of distributing-vanes below the gaging device, an electric circuit, a series of electromagnets and their armatures mounted on the driving-shaft, means connecting the armatures and the vanes, and means controlled by the gaging device for completing the electric circuit to move the vanes.

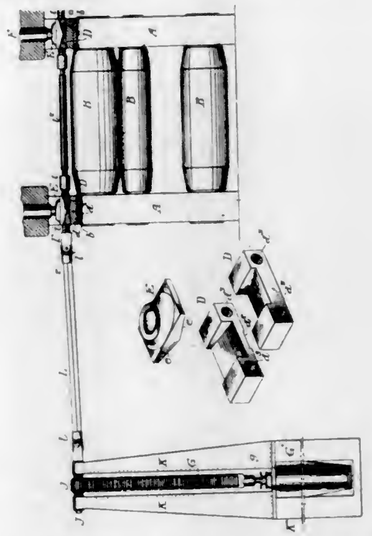
8. In an apparatus for assorting mica, &c., the combination, with the frame, of a driving-shaft, a gaging device for determining the thickness of the material to be assorted, a series of vanes below the gaging device, an electric circuit, a series of electromagnets and their armatures mounted on the driving-shaft, connections between the vanes and the armatures for moving the vanes in one direction and means for moving the vanes back to their normal positions, and means controlled by the gaging device for completing and breaking the electric circuit.

9. In an apparatus for assorting pieces of mica and other material, the combination, with an electric circuit of a gaging device for gaging the maximum thickness of the entire surface of the material to be assorted, distributing means, a magnetic clutch comprising, a revolving core and a stationary magnet-coil, and means connecting the magnetic clutch with the distributing means, said clutch controlled by the gaging device, substantially as set forth.

10. In an apparatus for assorting sheets or pieces of mica, &c., the combination, with the main frame, of an electric circuit, a gaging device for gaging the thickness of the material to be assorted, comprising, a pair of oppositely-revolving rollers and a light movable frame on which one roller is mounted, means for driving the rollers, a series of distributing-vanes controlled by the gaging device, a series of electromagnets and their armatures, means connecting the electromagnets and the vanes, and means in communication with the movable frame for completing and breaking the electric current.

655,554. ROLL-RELIEVING DEVICE FOR ROLLING-MILLS. CHARLES L. HUSTON, Coatesville, Pa. Filed Apr. 25, 1900. Serial No. 14,334. (No model.)

Claim.—1. The combination in a roll-releasing device for rolling-mills, of the housings, rolls, wedges, a screw passing through the wedges for controlling the same, and means for quickly operating the screw, substantially as described.



2. The combination of the housings, rolls, bearings for the rolls, caps mounted above the bearings, a pair of wedges between the caps and the bearings, threaded openings in the wedges, screws extending through the openings, and means for operating the screws, substantially as described.

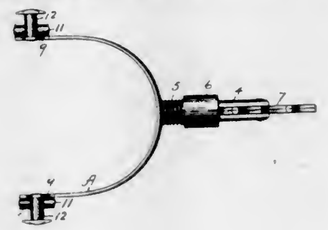
3. The combination of the housings, rolls, bearings for the upper rolls, caps mounted above each bearing, the caps being beveled on the under side, a pair of wedges mounted upon each bearing and tapered to correspond to the taper of the cap, two screws passing through threaded openings in the wedges, and means for turning the screws in unison, substantially as described.

4. The combination of the housings, rolls, bearings for the rolls mounted in the housings, caps mounted above each bearing, said caps being beveled on the under side, a pair of wedges mounted between each cap and the bearing, two threaded openings in each wedge, screw-rods made up of three sections coupled together, two of the sections being screw-threaded each having right and left hand threads, with means for turning the screws so as to move the wedges in unison toward or from each other, substantially as described.

5. The combination of the housings, rolls mounted thereon, bearings for the rolls, caps above the rolls, wedges mounted between the caps and the bearings, screw-rods extending through the wedges, two shafts connected to the screw-rods, pinions on said shafts, a rack engaging both pinions, and means for moving said rack, substantially as described.

6. The combination of the housings, rolls mounted thereon, bearings for the rolls, two wedges mounted above each upper bearing for the rolls each of said wedges having a central inclined portion and an enlarged side portion, a threaded opening in each side portion, a cap-plate shaped to conform to the inclined portion of the wedges, and adjusting-screws mounted in the threaded openings of the wedges, substantially as described.

655,555. SPUR. CLAUDE D. JACKSON, Amarillo, Tex. Filed Mar. 20, 1900. Serial No. 9,357. (No model.)

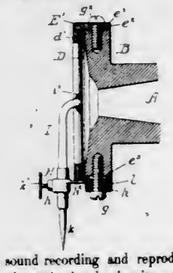


Claim.—1. In a spur, the combination of the rowel-stud with the rowel and locking device on the rowel-stud, whereby the rowel may rotate freely or be locked against such rotation when desired, substantially as described.

2. A spur, the rim of which at its forward ends is provided with the upwardly-projecting swinging ears hinged to the said rim for swinging outwardly said ears provided with devices to receive the fastening-straps, substantially as described.

655,556. SOUND RECORDING AND REPRODUCING MACHINE.

ELDRIDGE R. JOHNSON, Camden, N. J., assignor, by mesne assignments, of one-half to Thomas S. Parvin, Philadelphia, Pa. Filed June 1, 1897. Serial No. 639,028. (No model.)



Claim.—1. In a sound recording and reproducing machine, a diaphragm mounted upon the stylus-bar having its periphery free from contact with the casing in which it is mounted to allow the diaphragm to vibrate substantially evenly throughout its entire area, and yielding rings arranged near the periphery of the diaphragm, said rings being so constructed and arranged as to permit of the free vibratory movement of the diaphragm at the portion adjacent to said rings substantially evenly throughout its entire area, said rings operating as retainers against abnormal displacement, substantially as described.

2. In a sound recording and reproducing machine, a spring-mounted stylus-bar, a diaphragm loosely mounted in its casing free to vibrate approximately evenly throughout its entire area carried at its central point upon the upper end of said stylus-bar, yielding rings arranged on either side of and near the periphery of the diaphragm to retain said diaphragm against abnormal displacement and arranged and adjusted so as not to interfere with the free vibratory movement of the diaphragm substantially evenly throughout its entire area as described.

3. In a sound recorder or reproducer, the combination of a sound-box, a loose diaphragm free to vibrate at its periphery and loose gasket, substantially as described.

4. In a sound recording or reproducing machine, a spring-mounted stylus-bar, a diaphragm loosely mounted in its casing free to vibrate approximately evenly throughout its entire area, yielding rings arranged on either side of and near the periphery of the diaphragm to retain said diaphragm against abnormal displacement and arranged and adjusted so as not to interfere with the free vibratory movement of the diaphragm substantially evenly throughout its entire area as described.

5. In a sound recording or reproducing machine, the combination of a sound-box, a loosely-mounted diaphragm free to vibrate at its periphery, a retaining-gasket therefor, and a spring-mounted stylus phonetically connected with the said diaphragm, substantially as described.

6. In a sound recording or reproducing machine, the combination of the sound-box, a loosely-mounted diaphragm therein free to vibrate at its periphery, a stylus-bar supporting said diaphragm and gaskets sufficiently loose not to interfere with the free vibratory movement of the diaphragm at its periphery, substantially as described.

7. In a sound recording and reproducing machine, a loosely-mounted diaphragm carried at its central point upon a spring-supported stylus-bar, said stylus-bar being longitudinally bored at its lower end for the reception of the needle or stylus point, a thumb-screw provided in the lower end of said stylus-bar for securing and regulating the length of adjustment of the stylus-point in its relation to the main bar, a spring-plate rigidly secured to said stylus-bar intermediate of its length and to the casing of the sound-box, means for regulating the longitudinal adjustment of the said spring-plate, said spring-plate operating as a fulcrum for the stylus, the whole constructed to allow the loosely-mounted diaphragm to vibrate substantially evenly throughout its entire area from its central point, substantially as described.

8. In a sound recording and reproducing machine, the combination of the centrally-supported diaphragm loosely mounted in the sound-box casing, a spring-supported stylus-bar having one end thereof connected with the center of the diaphragm, and peripheral portions of the said diaphragm being freely and loosely mounted within the casing of the sound-box so as to allow said diaphragm to vibrate substantially evenly throughout its entire area, a yielding stylus-bar support secured to said casing and to said stylus-bar at opposite ends respectively, said support comprising a metallic spring-plate, h^3, rigidly secured at one end to the stylus-bar and at the other end adjustably mounted upon the sound-box, substantially as described.

9. A yielding stylus-bar support for sound recording and reproducing machines comprising a metallic plate, h^3, having an enlarged head or block, h', adapted to be secured to the stylus-bar, the opposite end being adjustable upon the sound-box, said metallic plate, h^3, being reduced in thickness to provide the requisite stiffness in the plate, substantially as described.

10. In a sound recording and reproducing machine, a diaphragm loosely mounted in the casing free to vibrate approximately evenly throughout its entire area, a stylus-bar carrying said diaphragm centrally upon the upper end of said bar, a spring-support for the stylus-bar comprising a thin spring-plate, h^3, having an enlarged end portion, h', rigidly secured upon the stylus-bar, an enlarged block portion, h, provided upon the opposite end of the spring-support integral with the plate, h^3, and orifice, l, transversely provided through the portion, h, for the reception of and adjustment upon the securing and adjusting screw, g, for securing said support to the sound-box of the machine, substantially as described.

11. In a sound recording and reproducing machine, a sound-box casing, a loosely-mounted diaphragm provided therein, a stylus-bar attached to the said diaphragm at its upper end, yielding rings provided on either side of said diaphragm near the periphery thereof constructed and arranged to permit of the free vibratory movement of the diaphragm substantially evenly throughout its entire area operating as retainers against abnormal displacement of the diaphragm and adjustable flanged ring provided upon the upper side of the casing to regulate the adjustment of the said yielding rings in relation to the diaphragm, substantially as described.

12. In a sound recording and reproducing machine, a sound-box, a loosely-mounted diaphragm free to vibrate substantially evenly throughout its entire area, yielding material provided upon either side of the diaphragm near the periphery to retain the diaphragm against abnormal displacement and so as not to interfere with the free vibratory movements at points adjacent to said yielding material and flanged cap E', adjustably provided upon the sound-box to regulate the adjustment of the yielding material to the diaphragm and means for adjusting and securing said flanged cap upon said sound-box, substantially as described.

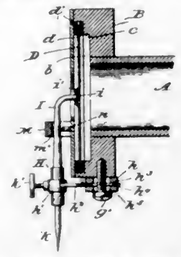
13. In a sound recording and reproducing machine, a sound-box casing, a spring-supported stylus, a diaphragm mounted in said casing at its central point upon the upper end of said stylus, a spring secured to said stylus and to the walls of the casing constituting a yielding support for said stylus, said diaphragm being of a diameter less than the diameter of the recess in said casing in which it is mounted to allow of play between the edges of the diaphragm and the circular walls of said recess, the faces of the said diaphragm near the periphery being loosely mounted to allow of full and free vibration, substantially as described.

14. In a sound recording and reproducing machine, a spring-mounting for the stylus-bar adjustable lengthwise upon the sound-box, said spring being secured at one end to the stylus-bar and at its opposite end upon the sound-box and an adjustable flanged retaining-ring adapted to the main frame of the sound-box adjustable thereon and means for holding the flanged ring in its adjusted positions, substantially as described.

15. In a sound-box, a casing, a loosely-mounted diaphragm therein free to vibrate approximately evenly throughout its entire area and a stylus-bar arranged substantially parallel to the face of the diaphragm yieldingly mounted upon the casing and having its upper end phonetically connected with the center of the diaphragm, substantially as described.

655,557. SOUND RECORDING AND REPRODUCING MACHINE.

ELDRIDGE R. JOHNSON, Philadelphia, Pa. Original application filed June 1, 1897, Serial No. 639,028. Divided and this application filed Aug. 23, 1898. Serial No. 689,291. (No model.)



Claim.—1. In a sound recording and reproducing machine, a yielding stylus-bar support secured at one end to a fixed point and its opposite end to the stylus-bar, said support having an enlarged head at the point of connection with the stylus-bar, said yielding support being reduced in thickness throughout the remainder of its length to properly yield under the impulses of the sound-waves to retain the diaphragm in its normal position in the sound-box when at rest, and means for adjusting said support upon said box, substantially as described.

2. In a sound recording and reproducing machine, a spring-plate stylus-bar support, h^3, an auxiliary adjustable block supporting said spring-plate on the sound-box, said block having a slot, h^4, formed in the center thereof transversely for the reception of the plate, h^3, a securing-screw, g', and an enlarged slot, h^5, provided vertically through said block to allow of lateral adjustment upon the securing-screw, substantially as described.

3. In a sound recording and reproducing machine, the combination of the diaphragm-supporting case, a diaphragm therein, a stylus-bar secured at one end to the center of the diaphragm, a slotted guard fitting over said stylus-bar, an adjustable set-screw projecting from the diaphragm-case immediately under the stylus-bar, said set-screw and guard being adapted to limit the range of vibratory and lateral movement of said stylus-bar.

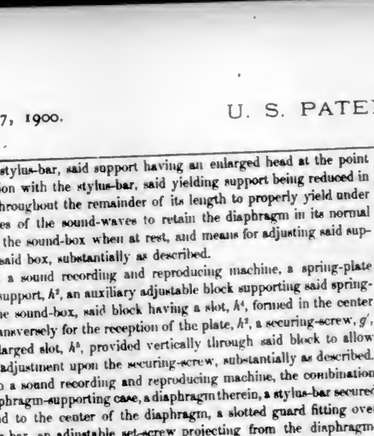
4. The combination of the diaphragm-support provided with a recess for the reception of the diaphragm, a diaphragm of a diameter less than the diameter of the recess, a stylus-bar having one end secured to the center of said diaphragm, and a slotted guard fitting around said stylus-bar and adapted to limit the range of movement of said stylus-bar.

5. In a sound recording and reproducing machine, the combination of the diaphragm-supporting case, a diaphragm therein, disk, E, a stylus-bar secured at one end to the center of the diaphragm, and a slotted guard, M, secured upon the disk, E, having a central slot, m', adapted to the passage of the stylus-bar and to limit abnormal movement of the stylus-bar, substantially as described.

6. In a sound recording and reproducing machine, a yielding stylus-bar support secured at one end to a fixed point and its opposite end to the stylus-bar, said support having an enlarged head at the point of connection with the stylus-bar, said yielding support being reduced in thickness throughout the remainder of its length to properly yield under the impulses of the sound-waves to retain the diaphragm in its normal position in the sound-box when at rest, substantially as described.

655,558. VARIABLE-SPEED MECHANISM.

MOSES C. JOHNSON, Hartford, Conn., assignor to the Helix Gear Company, same place. Filed Jan. 20, 1900. Serial No. 2,149. (No model.)



Claim.—1. The combination with a driving-shaft and a driven shaft, of a clutch between the driving and driven shafts, gearing between the driving and driven shafts, a portion of said gearing arranged to increase the speed of the driven shaft and a portion of said gearing arranged to diminish the speed of the driven shaft and means for throwing one or the other portion into action and simultaneously operating the clutch between the driving and driven shafts.

2. The combination with a tubular driven shaft and a driving-shaft passing through the same, of a clutch disposed between said shafts, gearing between said shafts for increasing the speed of the driven shaft, gearing for diminishing the speed of the driven shaft, a clutch for rendering one or the other of said gearings active and means for operating said clutches simultaneously.

3. The combination with a tubular driven shaft and a driving-shaft appreciably smaller in diameter than the driven shaft and passing through it, a clutch-sleeve disposed within the driven shaft and adapted to rotate therewith and have a longitudinal movement relatively thereto, means for connecting said clutch-sleeve with the driving-shaft, a high-speed gearing and a low-speed gearing connecting said shafts, a clutch for making one gearing or the other active and operating devices connected both to said clutch and clutch-sleeve for operating them simultaneously.

4. The combination with a driving-shaft, a driven shaft and a third shaft, of a clutch between the driving and driven shafts, a gear keyed to the driving-shaft, a smaller gear keyed to the third shaft and meshing with said first-mentioned gear, a large gear keyed to the driven shaft, a smaller gear loose on the third shaft and meshing with the large gear on the driven shaft, intermeshing gears of equal sizes keyed to the driven shaft and loose on the third shaft respectively and a clutch on the third shaft for locking one or the other of the loose gears mounted on said third shaft to the same.

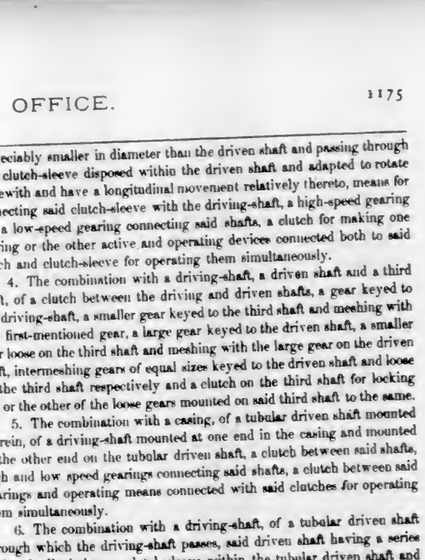
5. The combination with a casing, of a tubular driven shaft mounted therein, of a driving-shaft mounted at one end in the casing and mounted at the other end on the tubular driven shaft, a clutch between said shafts, high and low speed gearings connecting said shafts, a clutch between said gearings and operating means connected with said clutches for operating them simultaneously.

6. The combination with a driving-shaft, of a tubular driven shaft through which the driving-shaft passes, said driven shaft having a series of longitudinal slots, a clutch-sleeve within the tubular driven shaft and adapted to engage the driving-shaft, lugs projecting from said clutch-sleeve and passing through the slots in the driven shaft, a ring secured to said lugs, a lever, jaws carried by said lever and loosely embracing said ring, means for operating said lever, high and low speed gearings between said shafts, a clutch between said high and low speed gearings and connection with said lever and means for operating said lever.

7. The combination with a driving-shaft a driven shaft, low-speed gearing and high-speed gearing between said shafts and a clutch between said low and high speed gearings, of a lever for operating said clutch, an operating-shaft secured to said lever, an oscillatory collar or bracket, an arm projecting from said collar or bracket and secured to said operating-shaft, an operating-handle projecting from said collar or bracket, a notched segment, and a spring-pressed dog carried by the lever and adapted to engage said notched segment.

655,559. BOILER WASHOUT DEVICE.

BENJAMIN F. KEENEY, Watertown, S. D., assignor of one-half to Anthony L. Shore, Minneapolis, Minn. Filed Mar. 16, 1900. Serial No. 8,893. (No model.)



Claim.—1. A boiler washout device, comprising a tube projecting into the boiler and provided with one or more inlet-openings, an agitating-blade in the vicinity of each opening, and means for shifting to different points within the boiler the opening into the said tube, substantially as described.

2. A boiler washout device, comprising a discharge-tube projecting into the boiler and provided with one or more inlet-openings, each open-

ing having an agitating-flange in its vicinity, and the said tube having a movement within the boiler to agitate the sediment and vary the point of opening into said tube, substantially as described.

3. A boiler washout device, comprising a pair of telescoped tubes having longitudinally-spaced perforations adapted to be successively brought into registration by rotation of one of said tubes, substantially as described.

4. A boiler washout device, comprising a pair of telescoped tubes having longitudinally-spaced perforations adapted to be successively brought into registration by rotation of one of said tubes, and agitating-flanges in the vicinity of the openings in the outer tube, substantially as described.

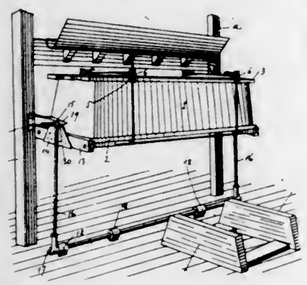
5. A boiler washout device, comprising a pair of telescoped tubes having longitudinally-alined perforations adapted to be brought successively into registration by rotation of one of said tubes, and having other perforations adapted to be longitudinally alined by a slight longitudinal movement of one of the said tubes and then to be brought successively into registration by rotation of one of the said tubes, substantially as described.

6. A boiler washout device, comprising a pair of telescoped tubes having longitudinally-alined perforations adapted to be brought successively into registration by rotation of one of said tubes, and having other perforations adapted to be longitudinally alined by a slight longitudinal movement of one of said tubes and then to be successively brought into registration by rotation of one of said tubes, and a cam-flange carried by one of said tubes and acting upon the other tube to produce the said longitudinal movement, substantially as described.

7. A boiler washout device, comprising the tubes *a* and *b* rotatable one upon the other, said tube *a* having the perforations a^3 and a^4 and said tube *b* having the perforations b^6 and b^7, disposed and operating as described, the cam-flange b^5 b^4 on said tube *b*, and the projection a^4 a^5 carried by said tube *a*, substantially as described.

8. A boiler washout device, comprising the telescoped perforations *a* and *b*, having perforations adapted to be registered by rotation of said tube *a*, and the U-shaped flanges a^5 embracing the perforations in said outer tube *a*, substantially as described.

655,560. **BURIAL-CASE.** MARTIN L. KEYES, Carthage, N. Y., assignor to Franklin E. Robinson, same place. Filed Dec. 5, 1899. Serial No. 739,321. (No model.)



Claim.—1. A stripper, an upper floor, mechanism for securely holding the stripper and the floor in contact with a burial-case and mechanism for swinging the burial-case and reversing the same, combined, for the purposes stated.

2. A stripper, a frame or floor, mechanism for holding the stripper and the floor in contact with a case and mechanism for swinging and reversing the burial-case for the purpose of transporting the same combined, substantially as set forth, for the purposes stated.

3. Frames for supporting the upper and lower sides of a burial-case, mechanism for securing the two frames in contact with the burial-case, consisting of rods, hooks, followers and cams, and mechanism for permitting the frame to reverse and swing on supporting-blocks, substantially as set forth for the purposes stated.

4. A lower frame, an upper floor, clamping-rods having loops and hooks, followers working in the loops of the clamping-rods, cams provided in the loops of the rods for securing the frame and floor in contact with a case and mechanism for reversing the position of the parts and swinging the case out of the machine, combined substantially as set forth for the purposes stated.

5. Frames for holding a case, mechanism pivoted to permit the reversing of the frames and the case, and mechanism for swinging the case and frames while the frames and case are being reversed, combined, substantially as set forth, for the purposes stated.

6. A pivoted stripper for supporting a case, mechanism for securing the case between the pivoted stripper and the floor, mechanism for swinging the stripper, floor and case, pivoted mechanism for reversing the case and the stripper combined, substantially as set forth, for the purposes stated.

7. A stripper, an upper frame, mechanism for holding a case between the stripper and the upper frame, combined, substantially as set forth for the purposes stated.

8. A stripper having an engaging surface for engaging and holding a burial-case on the stripper, a frame, and mechanism for holding the case between the stripper and the upper frame, combined, for the purposes stated.

9. A stripper mounted in a frame to be horizontally moved, ways on which the stripper moves, an upper frame, and mechanism for holding a case between the stripper and the upper frame, combined, substantially as set forth for the purposes stated.

10. A stripper mounted to be horizontally moved and provided with engaging surfaces, ways in which the stripper moves, an upper frame and mechanism for holding a case between the stripper and the upper frame, combined, substantially as set forth for the purposes stated.

11. A stripper mounted to be horizontally moved on antifriction-rolls, the stripper provided with a projection for engaging the wall of a case, the antifriction-rolls, an upper frame on the case and mechanism for holding the case between the stripper and the upper frame, combined, substantially as set forth, for the purposes stated.

12. A stripper, an upper frame on a case, a spring-actuated follower on the upper frame and mechanism for securing the parts together, substantially as set forth for the purposes stated.

13. A stripper, an upper frame, a follower, connecting-rods connected to the stripper and the follower movable cams for securing the parts combined, substantially as set forth, for the purposes stated.

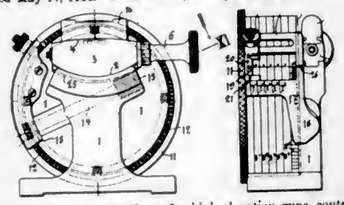
14. A stripper mounted to be horizontally moved in and out of a frame, ways in which the stripper moves, mechanism for holding a case on the stripper, mechanism for supporting the stripper when drawn from the press, said mechanism pivoted to swing for reversing the position, combined, substantially as set forth for the purposes stated.

15. A movable stripper, mechanism for holding the stripper, pivoted mechanism for supporting the stripper and connecting mechanism in position to be reversed by the movement of the pivoted mechanism, combined, substantially as set forth for the purposes stated.

16. A movable stripper having an upward-projecting face, a floor, mechanism for holding the stripper and floor in contact with a case, swinging pivoted mechanism for swinging the stripper and the floor into a reverse position, and for releasing the stripper from the floor, counterweights below the pivotal point of the pivoted swinging mechanism for counterbalancing the weight, combined, substantially as set forth for the purposes stated.

17. A movable pivoted stripper, a floor for securing a case between the stripper and the floor, followers on the floor, yielding springs between the followers and floor and mechanism for connecting and disconnecting the parts, combined, substantially as set forth for the purposes stated.

655,561. **LEVEL-QUADRANT FOR HIGH-ELEVATION GUNS.** JOSEF KURIG, Essen, Germany, assignor to Fried. Krupp, same place. Filed May 17, 1900. Serial No. 16,962. (No model.)

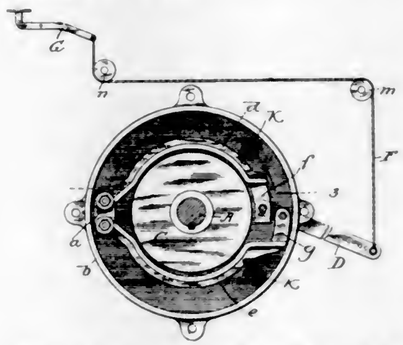


Claim.—1. A level-quadrant for high-elevation guns containing a rotatable drum carrying on its periphery a plurality of scales and positive means for making the angular-motion of the drum proportional to the angular motion indicated by the quadrant, substantially as described.

2. In combination with the frame of a level-quadrant for high-elevation guns; a level and its support adjustable to different angles in the frame; a scale and index showing the angle to which the level-support is adjusted; a rotatable drum carrying on its surface a plurality of scales, each scale showing by an index the range for a special powder charge at different elevations of the gun, the movable parts connected for equal or proportional relative angular motion between the scales and their indices, substantially as described.

3. In combination with the frame of a level-quadrant for high-elevation guns; a level and its support adjustable to different angles in the frame; a scale and index showing the angle to which the level-support is adjusted; a rotatable drum carrying on its surface a plurality of spiral scales, each scale showing by an index the range for a special powder charge at different elevations of the gun, the movable parts connected for equal or proportional relative angular motion between the scales and their indices, substantially as described.

655,562. **BRAKE FOR ELECTRIC MOTORS.** CHARLES A. LINDSTROM, Chicago, Ill., assignor, by direct and mesne assignments, to the Hewitt-Lindstrom Motor Company, same place. Filed May 5, 1899. Serial No. 715,691. (No model.)



Claim.—1. The combination with an armature-shaft, a case inclosing the same, and a dished head closing one end thereof, of a friction-wheel secured to said shaft and inclosed within the circumference of said head, two braking-arms having their adjacent ends pivoted at fixed points to the inner surface of said case at one side of said wheel around which they extend in opposite directions to an extent slightly greater than one-half of the circumference of said wheel, radially-arranged contraction-springs for normally keeping said arms out of contact with said wheel, and a suitable lever one end of which extends through a suitable slot in the circumference of said head and is pivotally connected to the movable ends of both of said braking-arms.

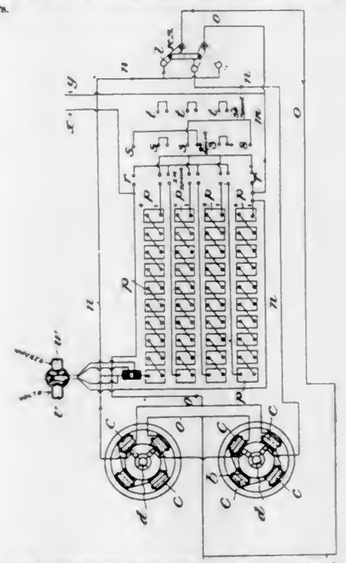
2. The combination with an armature-shaft and a case inclosing the same and motor thereon, of a friction-wheel keyed to said shaft within said case, two segmental braking-arms having their adjacent ends pivoted to the inner side of the head of said case and extending within said case in opposite directions partially around said wheel, contraction-springs within said case normally keeping said arms out of contact with said wheel, and a suitable lever one end of which extends through a slot in the circumference of the case and has the adjacent movable ends of said braking-arms pivoted thereto at different points.

3. The combination with a rotatable element of two brake-shoes, each pivotally mounted at one end, the said brake-shoes inclosing the said rotatable element, spring mechanism for normally maintaining a disengagement between the said shoes and the said rotatable element, a link having connection with each opposed free end of the brake-shoes, the connections of the said opposed ends with the link being separate, whereby upon proper actuation of the link the free ends of the brake-shoes are caused to approach to engage the rotatable element, the said link having an elongation, a cap for inclosing the brake-shoes, a slot in the said cap through which the elongation passes, and actuating means for operating the said link to cause the operation of the brake.

655,563. **ELECTRIC CARRIAGE.** CHARLES A. LINDSTROM, Chicago, Ill., assignor, by direct and mesne assignments, to the Hewitt-Lindstrom Motor Company, same place. Filed Mar. 3, 1900. Serial No. 7,146. (No model.)

Claim.—1. The combination of a battery, a pair of electrical motors having their fields connected in multiple and their armatures connected in series, and electrical connections between said motors and the battery; with a switch interposed in the circuit between the motors, whereby the speed of the motors may be changed by varying the electromotive force from the battery while maintaining the motor-fields always in multiple and the motor-armatures always in series.

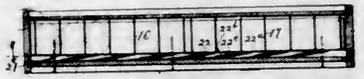
2. The combination of two multipolar motors, the fields of both motors being permanently connected in multiple and the armatures of both motors being permanently connected in series, and the air-gaps between the armatures and the field-magnets being less than one-fifth the width of the armature-slots, with an electrical battery and connections between said battery and the motors, and means for changing the electromotive force derived from the battery, interposed between the battery and the motors.



3. The combination of two multipolar motors for electrical vehicles, each having its field ring and poles or field-magnets cast integral and its field-coils connected in series, the fields of both motors being permanently connected in multiple and the armatures of both motors permanently connected in series; and the air-gaps between the armatures and the field-magnets being one-fifth or less of the width of the armature-slots; with an electrical battery and connections between said battery and the motors, and means interposed between the batteries and the motors for grouping the cells of the battery so as to change the electromotive force derived therefrom and thereby vary the speed of the motor, all substantially as and for the purpose described.

4. In an electric automobile, the combination of the axle, the independent motors supported near the opposite ends of the axle, said motors having their fields always connected in parallel and their armatures always connected in series, and an electrical battery composed of sets of units, the units in each set being connected in series; with a switch mechanism interposed in the circuit between the battery and the motors and adapted to connect the sets of battery-units in multiple, multiple series or series, thereby varying the voltage of the current from low to high and regulating the speed accordingly, while always maintaining the multiple connection of the motor-fields and the series connections of the motor-armatures, substantially as and for the purpose described.

655,564. **PORTABLE EGG-CASE.** JOSEPH H. LYDAY, Newton, Iowa. Filed July 13, 1899. Serial No. 723,659. (No model.)



Claim.—1. In an egg-case, a plurality of flexible curtains fixed at their ends to the side walls of the case to allow their free end portions to descend when the bottom of the case is removed and the case lifted in the manner set forth, for the purposes stated.

2. In an egg-case, a plurality of flexible curtains fixed at their ends to the side walls of a case to allow their free end portions to descend when the bottom of the case is removed and corresponding rows of filler-cells placed on top of the flexible curtains in the manner set forth for the purposes stated.

3. In an egg-case, a cushion consisting of a curtain that is composed of flexible material and doubled at its upper portion and provided with stiffening material and lateral extensions at its top end corners fixed to the side walls of the case, to operate in the manner set forth for the purposes stated.

4. In an egg-case having a removable bottom a plurality of cushions composed of flexible curtains fixed to the side walls of the case at their upper end corners and their lower free end portions adapted to overlie

each other and the removable bottom in the manner set forth for the purposes stated.

5. In an egg-case, the combination of two mating frames and a plurality of flexible cushions having projections at their ends fixed between the overlying frames in the manner set forth for the purposes stated.

6. A portable egg-case comprising a four-sided frame, a bottom slidably connected with the frame, a removable top cover, a plurality of flexible cushions in the form of curtains fixed at their ends to the lower portions of the parallel sides of the frame and fillers placed on top of the flexible curtains, arranged and combined to operate in the manner set forth for the purposes stated.

655,565. COIN-HOLDER. JOHN B. MERCER, Wilmington, N. C. Filed Feb. 24, 1900. Serial No. 6,392. (No model.)



Claim.—1. A package-holder made in a single piece from sheet metal, consisting of two disks constituting the bottom and top, respectively, a strip connecting said disks constituting one side, a second strip connected to one of said disks and constituting the other side, and means for connecting the free end of said second strip with the disk constituting the top.

2. A package-holder made in a single piece from sheet metal, consisting of two disks constituting the bottom and top, respectively, the top having a transverse slot therein, a strip connecting said disks and constituting one of the sides, a second strip connected to the bottom disk and constituting the other side, and a tongue on the end of said second strip adapted to fit within said slot for retaining the holder in its closed position.

3. A package-holder made in a single piece from sheet metal, consisting of two disks constituting the bottom and top, respectively, a transversely-curved strip connecting said disks and constituting one of the sides a second transversely-curved strip connected to the bottom disk and constituting the other side, and means for connecting the free end of said second strip with the top disk.

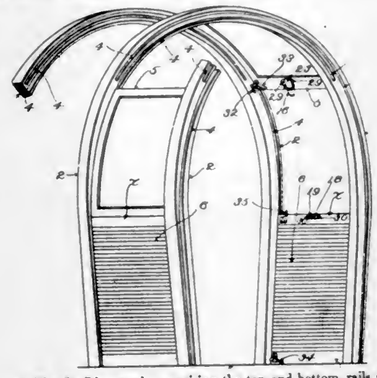
4. A package-holder made in a single piece from sheet metal, consisting of two disks constituting the bottom and top, respectively, the top having a transverse slot therein, a strip connecting said disks constituting one of the sides and attached thereto by a narrow web formed by inwardly-extending indentations or recesses providing for the transverse curvature of said strip, a second strip constituting the other side, attached to the bottom disk by a narrow web formed by inwardly-extending indentations or recesses, providing for the transverse curvature of said strip, and a tongue on said second strip adapted to be received by said slot for retaining the holder in its closed position.

5. A package-holder formed in a single piece from sheet metal consisting of two disks constituting the bottom and top, respectively, both of said disks having outwardly-extending segmental projections thereon and said top having a transverse slot therein, a strip connecting said disks, constituting one of the sides and attached thereto by narrow webs formed by inwardly-extending indentations or recesses providing for the transverse curvature of said strip, a second strip constituting the other side, attached to said bottom disk by a narrow web formed by inwardly-extending indentations or recesses, providing for the transverse curvature of said strip, and a tongue on said second strip adapted to be received by said slot for retaining the holder in its closed position.

6. A package-holder formed in a single piece from sheet metal consisting of two disks, constituting the bottom and top, respectively, the top having a transverse slot therein, a strip connecting the said disks, constituting one of the sides and attached to said disks by narrow webs formed by inwardly-extending indentations or recesses, said strip having notches extending longitudinally thereof leading from the indentations or recesses between it and the top disk, a second strip connected to the bottom disk constituting the other side and attached to said bottom disk by a narrow web formed by inwardly-extending indentations or recesses, the said indentations providing for the transverse curvature of said strips, and a narrow tongue on the end of said second strip, adapted to be received by said slot for retaining the holder in its closed position, said second strip being formed with longitudinally-extending notches adjacent to the point of connection therewith of said tongue, as and for the purpose set forth.

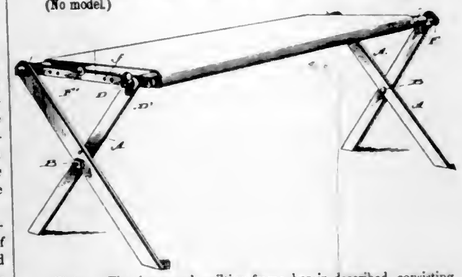
655,566. STREET-RAILWAY CAR. GEORGE MOORE, Boston, Mass., assignor to the Duplex Car Company, New York, N. Y. Filed Feb. 21, 1900. Serial No. 5,991. (No model.)

Claim.—1. A railway-car or the like vehicle having the grooved upright frames or ribs, the movable side section comprising the window-sash having its edges fitted to the grooves of the said frames or ribs, the panel also movable in the said grooves, the catch to connect the said sash and panel in a separable manner, the locking devices carried by the sash and panel, the fixed stop-piece which is engaged by the said locking devices respectively, and the disengaging finger carried by the panel.



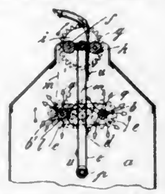
2. The flexible panel comprising the top and bottom rails and intermediate slats or strips with their convex and concave edges fitting together and having the recesses extending longitudinally in the said convex edges, the links passing through the said rails and slats or strips, and the wires passed through holes in the overlapping ends of the links extending in the direction of the length of the slats or strips and occupying said recesses.

655,567. QUILTING-FRAME. ANDREW D. MOYE, Wrightsville, Ga. Filed Oct. 8, 1897. Renewed June 26, 1900. Serial No. 21,684. (No model.)



Claim.—The improved quilting-frame herein described, consisting of the pivoted legs, the jointed braces extending across the ends of the frame, rolls held between the upper ends of the legs and bearing against said braces, screws with threads at each end and unthreaded shank between the threads, said screws being passed through the upper ends of the legs and through the braces and rotatable in the same, with their inner threaded ends fast in the rolls, washers between the braces and legs, and thumb-nuts on the outer threaded ends of said screws, all substantially as herein shown and for the purpose specified.

655,568. SACK-CLEANING MACHINE. FRITZ MÜLLER, Berlin, Germany. Filed Sept. 22, 1899. Serial No. 731,332. (No model.)

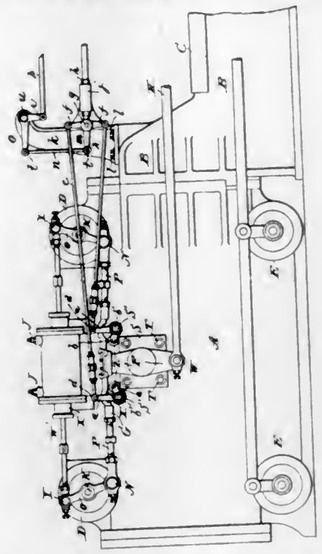


Claim.—1. In a machine for cleaning sacks, the combination with a box or casing, of beater-shafts mounted upon said casing or box, loosely-hanging beaters secured by straps to said beater-shafts, gearing upon the outside of said box or casing for driving said beater-shafts, a driving-shaft mounted above said beater-shafts, pulleys rigidly mounted upon said driving-shaft, and similar pulleys upon a counter-shaft beneath said driving-shaft, a belt adapted to run upon said pulleys, clips upon said belt adapted to engage the outer edge of a sack, and shafts upon each side of said driving-shaft carrying guide-rollers, substantially as described.

2. In a machine for cleaning sacks, the combination with a box or casing, a sieve or netting in the lower portion thereof, and a removable drawer beneath said sieve or netting; of beater-shafts mounted upon said box or casing, loosely-hanging beaters secured by straps to said beater-shafts, gearing upon the outside of said box or casing for driving said beater-shafts, a driving-shaft mounted above said beater-shafts, pulleys rigidly mounted upon said driving-shaft, and similar pulleys upon a counter-shaft beneath said driving-shaft, a belt adapted to run upon said pulleys, clips upon said belt adapted to engage the outer edge of a sack, and shafts upon each side of said driving-shaft carrying guide-rollers, substantially as described.

3. In a machine for cleaning sacks the combination of beater-shafts and their swinging beaters, with the chain-wheel *i* and chain-wheel *l* driven by the chain *m*, the adjustable pulley *n*, the bands *o* for holding the sack fast by clips or the like and leading it downward, past the beaters, to and round the loose shaft *p* then upward, past the beaters again and finally to the outside, the guide-rollers *f*, *g*, *h*, in connection with the guiding-bands *o*, the beater-shaft gearing *c*, *d*, *e*, and the casing or box *a* inclosing portions of said mechanism all substantially as set forth.

655,569. VALVE-GEAR. WALTER M. MUSGRAVE, Bolton, England. Filed Oct. 9, 1899. Serial No. 733,084. (No model.)

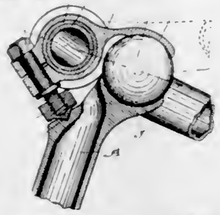


Claim.—1. In a valve-gear for steam-engines provided with rotary valves, the combination with a rocking lever, of trip-rods connected to the valves and actuated by said lever, said rods being provided with recesses, of rollers movable in arcs of circles and coöperating with the recesses in the tripping-rods, and intermediate mechanism between said rollers and a governor for regulating the position of said rollers, substantially as described.

2. In valve-gear for steam-engines provided with rotary valves, the combination of trip-rods provided with recesses, and means for actuating said rods, of rollers coöperating with said trip-rods, and mechanism connected to said rollers operated by the governor to regulate the position of said rollers, substantially as described.

3. In valve-gear for engines provided with rotary valves, the combination with tripping-rods G provided with recesses X, of levers *a*, rollers Z mounted thereon, rods *c* connected to the levers *a*, levers *f* mounted on a center *g* and connected to the rods *c*, a sliding rod *h* connected to the center *g*, and mechanism operated by the governor consisting of lever *m*, rod *n*, lever *o*, *r*, and rod *p* for moving the levers *f* to regulate the position of the rollers Z through the medium of the levers *a*, substantially as described.

655,570. HANDLE-BAR FOR BICYCLES. DANIEL O. MCAULIFF and WILLIAM A. B. HICKS, Toronto, Canada. Filed Jan. 27, 1899. Serial No. 703,638. (No model.)



Claim.—A post for the handle-bars or saddle of a foot-propelled vehicle consisting of a shank having a bifurcated end, fitted with a horizontal bore a bar passing through the bore, a clamp contained between the bifurcated ends embracing the bar, a clamping-bolt for the clamp, an adjusting-nut fitted on the clamping-bolt and bearing against the stem, a cup fitted to the stem, a cushion or a buffer contained in the cup, and a lug projecting from the clamp bearing on the top of the cushion, substantially as specified.

655,571. THREAD-TIER. JAMES W. MCCARTHY, Ware, Mass. Filed Sept. 20, 1899. Serial No. 731,090. (No model.)



Claim.—1. As an article of manufacture, a thread-tying device composed of a single piece of metal bent to form two plates, one of said plates having arms, and the other a tongue capable of binding against said arms, said plates being designed to be held between the fingers of one hand of the operator and pressed together to hold threads between the tongue and arms, as set forth.

2. A thread-tying device composed of a single piece of metal bent back over itself to form two plates, one having an arm and a stop, with a space between them, and the other a tongue capable of binding against such arm and stop, as set forth.

3. A thread-tying device composed of two spring-held plates, one having an arm and a stop formed with beveled edges, and the other a tongue beveled to conform to such edges, of the arm and stop, as set forth.

4. A thread-tying device composed of two spring-held plates, one having two parallel arms formed with beveled edges, and the other a tongue beveled to conform to the edges of said arms, as set forth.

5. A thread-tying device composed of two plates and a spring for normally holding said plates out of contact with each other, one of said plates having two arms with an intervening slot, the other plate having a tongue capable of fitting within said slot, the threads to be knotted being designed to be passed around said plates and across both ends thereof and between the tongue and one of said arms, as set forth.

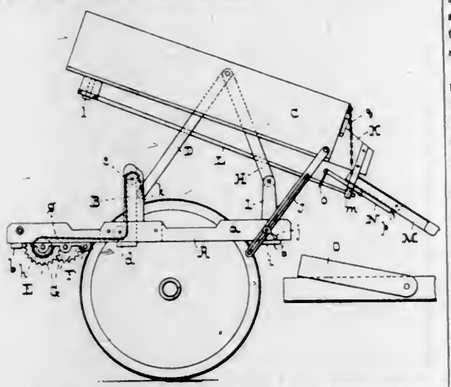
6. A thread-tying device composed of two plates, and a bowed spring uniting said plates at one end, one of said plates having two arms with an intervening slot, the other plate having a tongue capable of fitting within said slot, the threads to be knotted being designed to be passed around said plates, across the upper ends thereof and also across said spring, and between the tongue and one of said arms, substantially as set forth.

655,572. DUMPING COAL-WAGON. REUBEN A. MCCAULEY, Baltimore, Md., assignor of one-half to Thomas H. Blick, same place. Filed June 2, 1900. Serial No. 18,837. (No model.)

Claim.—1. In a dumping coal-wagon, the combination of a wheeled truck, stands erected on the truck, carrying-sheaves, winding apparatus on the truck, a body having pivoted standards with their free ends connected by chains to the winding apparatus, the said chains passing over the sheaves on the stands, brace-bars pivoted to the body at the same points as are the standards, with their lower ends pivoted to elevated stands on the truck, substantially as specified.

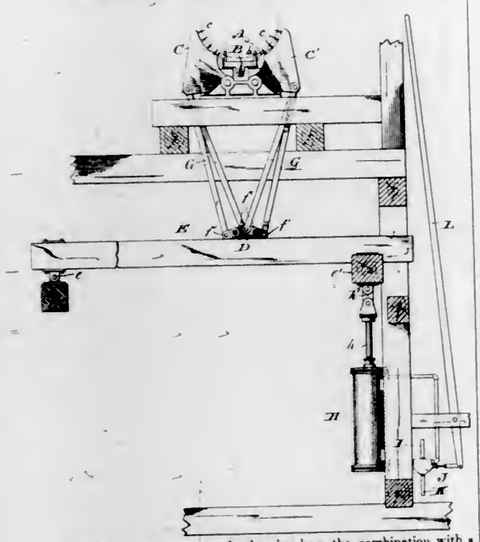
2. In combination with the body of a dumping coal-wagon, a bar secured under the body and extending longitudinally thereof, a cross-bar connected at one end to the said longitudinally-extending bar by means of a link, and at the other provided with a hook, a chute pivoted to the said cross-bar, and a chain attached at one of its ends to the body and at

the other adapted for connection to the hook of the cross-bar to sustain it and the chute, substantially as specified.



3. In a dumping coal-wagon, the chute thereof having hinged doors at its upper end, whereby the height of the sides or flanges of the chute at that point may be increased, substantially as specified.

655,573. LOG-DOGGING APPARATUS. THOMAS J. NEAGY, Milwaukee, Wis., assignor to the Filer & Stowell Company, same place. Filed Mar. 20, 1899. Serial No. 709,732. (No model.)



Claim.—1. In apparatus for dogging logs, the combination with a logway and conveyer, of vertically-disposed pivoted jaws arranged on opposite sides of the logway and movable transversely thereto, a vertically-movable lever connected with said jaws so as to simultaneously close the same upon a log, a cylinder having a fluid-supply connection provided with a controlling-valve, and a piston fitted in said cylinder and connected with said lever, substantially as and for the purposes set forth.

2. In apparatus for dogging logs, the combination with a logway and conveyer of two pairs of opposing jaws arranged in vertical planes on opposite sides of said logway and adapted to grasp a log on opposite sides at different points in its length, and means for simultaneously opening and closing said jaws, substantially as and for the purposes set forth.

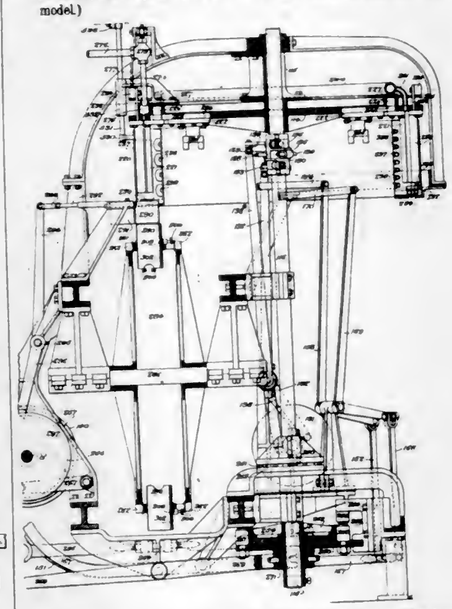
3. In apparatus for dogging logs, the combination of two pairs of opposing jaws adapted to engage a log on opposite sides and at different points in its length, means for simultaneously closing said jaws against a log, having self-adjusting equalizing connections with said jaws, whereby engagement of both jaws on each side of the log is insured, substantially as and for the purposes set forth.

4. In apparatus for dogging logs, the combination with a logway, of two pairs of opposing jaws arranged on opposite sides of and transversely to said logway, two equalizing-shafts each having oppositely-projecting arms which are respectively connected with the two jaws on one side of the logway, and means for moving said equalizing-shafts toward and from said jaws, substantially as and for the purposes set forth.

5. In apparatus for dogging logs, the combination with a logway, of two pairs of jaws arranged on opposite sides thereof and movable transversely thereto, equalizing-shafts each having oppositely-projecting arms which are connected with the jaws on one side of said logway, a vertically-movable lever carrying said equalizing-shafts, and means for raising and lowering said lever, substantially as and for the purposes set forth.

6. In apparatus for dogging logs, the combination with a logway and conveyer, of two pairs of opposing jaws pivoted at their inner lower portions to a suitable support and movable transversely to said logway, equalizing-shafts arranged below and parallel with the pivot-bearings of said jaws and each having oppositely projecting arms which are connected by rods with the jaws on one side of the logway outside of their pivot-bearings, a vertically-movable lever carrying said equalizing-shafts, a cylinder provided with a piston which is connected with and arranged to raise and lower said lever, and valve-controlled fluid supply and exhaust connections leading to opposite ends of said cylinder, substantially as and for the purposes set forth.

655,574. PACKAGE MAKING AND FILLING MACHINE. JOHN R. OKELL, Philadelphia, Pa. Filed Oct. 8, 1898. Serial No. 693,063. (No model.)



Claim.—1. The combination of the sheet-support, a sheet-lifter having paste-applying projections on the under side of the same, means for raising and lowering the lifter and for moving it to and fro, means for applying paste to the projections of the lifter, and a push-off plate spring-supported upon the lifter-carrier and having pins adapted to pass through openings in the lifter-plate, substantially as specified.

2. The combination of the sheet-support, a sheet-lifter carried by a horizontal slide, a vertical slide having guides for said horizontal slide, and means for reciprocating said slides in their respective directions of movement, substantially as specified.

3. The combination of the sheet-support, a sheet-lifter having long and short paste-applying projections on the under side of the same, means for raising and lowering said lifter and for moving it to and fro, and a roll for applying paste to the projections of the lifter, said roll consisting of independently-rotatable sections disposed side by side whereby each will be caused to rotate only when in contact with the projection to which it is to apply paste, substantially as specified.

4. The combination of the sheet-support, the sheet-lifter, means for operating the latter, a push-off device carried by the lifter and having pins pressed downwardly by springs, and means for moving said pusher so that said pins will remove the sheet from the lifter, substantially as specified.

5. The combination of a sheet-support, a sheet-lifter and conveyer having projections for applying paste to the upper side of the sheet, a platform onto which the sheet is delivered by the lifter, and pasters for applying paste to the under side of the sheet while it rests upon said platform, substantially as specified.

6. The combination of a platform, means for laying sheets of paper in succession thereupon, means for tilting the platform after each sheet is deposited upon it, one or more paster-fingers adapted to pass through openings in the platform and to paste the under side of the sheet while thereupon, a paste-roll, and means for moving said pasters into contact with said paste-roll when the platform is elevated so as to be free from engagement with said pasters, substantially as specified.

7. The combination of a mold-carrier, a tilting platform, means for laying sheets of paper in succession onto said platform, means for tilting the same after each sheet of paper is laid upon it, nippers for drawing the upturned sheet of paper laterally away from the platform and in front of the mold, and means for reciprocating said nippers and for opening and closing the same, substantially as specified.

8. The combination of means for successively feeding sheets of paper, a pair of nippers, a slide carrying the nipper-jaws, a rod guided upon said slide and adapted to operate the nippers, guides for said slide and swinging arms having the same axis for reciprocating the slide and rod independently, substantially as specified.

9. The combination of the mold-carrier and its projecting molds, means for imparting intermittent movement to said mold-carrier, means for folding a sheet of paper upon three sides of the operative mold, swinging lappers for lapping the edges of the sheet on the fourth side of the mold, hubs in which the stems of said swinging lappers are guided so as to move to and fro, and means for vibrating said hubs around an axis, substantially as specified.

10. The combination of a mold-carrier having a series of projecting molds, means for intermittently moving said carrier, means for folding a sheet of paper around three sides of a mold, while the latter is stationary, a swinging lapper for folding one of the edges of the paper on the fourth side of the mold, and means for moving said lapper at a less rate of speed than the movement of the mold, whereby the lap is drawn under the lapper as the mold travels, substantially as specified.

11. The combination of a traveling mold-carrier having molds with adjustable sections, and a controller acting upon the adjustable sections of the molds so as to cause them to expand or contract as they are carried around by the mold-carrier, said controller acting to move the mold-sections in both directions and also being adjustable so as to vary the extent of projection and retraction of the mold-sections, substantially as specified.

12. The combination of a traveling mold-carrier having expansible and contractible molds thereon, slides carrying the adjustable sections of said molds, a cam-plate controlling said slides and having a gap therein, and a cam-slide adjustable in said gap, substantially as specified.

13. The combination of a traveling mold-carrier having expansible and contractible molds thereon, slides carrying the adjustable sections of said molds, a cam-plate controlling said slides and having a gap therein, and a cam-slide adjustable in said gap, both the cam-plate and the cam-slide having grooves with flaring mouths, substantially as specified.

14. The combination of the traveling mold-carrier having molds with adjustable sections so as to vary the size of the molds, a movable controller acting upon the molds in succession and governing the position of the movable section of each mold, means for lapping the edges of a sheet of paper on the mold, and guides for said lappers engaging with the movable mold-controller, substantially as specified.

15. The combination of a traveling mold-carrier having projecting molds with movable bottoms, a stationary cam whose throw is less than the length of a mold, for controlling the position of said movable bottoms of the molds, whereby the bags are caused to move vertically to a slight extent in the molds as the mold-carrier travels, but are not withdrawn from the molds, substantially as specified.

16. The combination of a traveling mold-carrier having projecting molds, movable mold-bottoms having stems with rollers thereon, a stationary cam whose throw is less than the length of a mold and upon which said rollers are supported and can travel, whereby the bottoms of the molds are raised and lowered as the mold-carrier travels and the bags are caused to move vertically in the molds but are not withdrawn therefrom, substantially as specified.

17. The combination of a traveling mold-carrier having projecting molds, movable mold-bottoms having stems with rollers thereon, a roller-supporting track having an offset therein, and a bag-supporting plate in two different planes, one below the other, substantially as specified.

18. The combination in means for closing the end of a bag, of primary and secondary folders for folding in the projecting end of the tube to form the bag top or bottom, and means for imparting to the primary folder a combined forward-and-backward and upward-and-downward motion but retaining it in the same plane while acting upon the bag, substantially as specified.

19. The combination in means for closing the end of a bag, of primary and secondary folders for folding in the projecting end of the tube to form the bag top or bottom, and means for maintaining the primary folder while in action in a plane at right angles to the bag and giving to it first a substantially-horizontal and then a substantially-vertical movement, as described.

20. The combination in means for closing the end of a bag, of a slide carrying a primary folder mounted thereon by a parallel-motion hanger, whereby it preserves the same plane, side-folders also carried by the slide and adapted to swing upon an axis, means for reciprocating said slide and means for operating the folders, substantially as specified.

21. The combination of a bag-mold, means for forming thereon a paper tube with projecting end, and bottom-closing devices consisting of a primary folder, swinging side-folders and a final presser, the latter moving in a plane parallel with the mold, but being pivotally mounted upon its operating device so that it is free to tip or tilt thereon, substantially as specified.

22. In a bag-closing device the combination of a primary folder, opposite side-folders and a final-fold presser, operating in the order named, and a diagonally-guided paster-plate for applying paste to the inner side of the final fold before the pressing of the same, substantially as specified.

23. In a bag-closing device, the combination of a primary folder, opposite side-folders and a final-fold presser, operating in the order named, and a diagonally-guided paster-plate for applying paste to the inner side of the final fold before the pressing of the same, said paster-plate being projected to the base of the final fold so as to crease the same and cause it to bend over the plate, substantially as specified.

24. In a bag-closing device, the combination of a primary folder, opposite side-folders, and means for imparting to the primary folder a diagonal movement as it is withdrawn from above the primary fold, substantially as specified.

25. In a bag-closing device, the combination of a primary folder, opposite side-folders, a final presser, a diagonally-guided paster-plate for the final fold, means for imparting to the primary folder a diagonal movement as it is withdrawn from above the primary fold, and means for operating the diagonal paster in advance of the final-fold presser, substantially as specified.

26. The combination of a sliding paster-plate, a roll for applying paste thereto, a pivoted structure carrying said roll and a cam on the paster-slide adapted to act upon the paster-roll carrier so as to cause the same to swing as the paster-slide is reciprocated, substantially as specified.

27. The combination of a traveling mold-carrier having a series of projecting molds, with movable bottoms, means for operating said movable bottoms so as to cause them to rise and fall as the mold-carrier travels, and a support for the bottom of the bag also having a drop to permit of the lowering of the bag on the mold by the drop of the mold-bottom, substantially as specified.

28. The combination of a bag-mold, constructed so as to be expanded and contracted, and having a movable bottom, means for forming a bag on the mold, and means for subsequently contracting the mold, whereby the movable bottom can readily push the bag downward thereon, substantially as specified.

29. The combination of a hollow bag-mold and means for forming a bag thereon, means for contracting the mold after the formation of the bag, an air-supply pipe communicating with the interior of the mold and an outlet from the interior of the mold whereby the air can pass from the same and can escape between the sides of the contracted mold and the sides of the bag, substantially as specified.

30. The combination of a traveling mold-carrier having projecting hollow molds thereon, means for forming bags upon such hollow molds, means for contracting the mold after the formation of the bag and an air-supply pipe having branches communicating with the interior portions of the molds so as to force air simultaneously into a series of molds, substantially as specified.

31. The combination of a bag-mold having a movable bottom, means for forming a bag upon said mold, means for raising and lowering the bottom of the mold, mechanism for contracting the mold after the bag is formed thereon and means for forcing air into the mold when the bottom of the same is lowered, substantially as specified.

32. The combination of a traveling mold-carrier having a series of projecting molds, means for forming bags on said molds, a series of traveling bag-carriers operating in conjunction with the molds, air-blast apparatus for blowing the bags from the molds into said carrier, and a tube for guiding the bags in their transfer from the molds to the bag-carriers, substantially as specified.

33. The combination of a traveling mold-carrier having a series of projecting molds, means for forming bags on said molds, a series of traveling bag-carriers operating in conjunction with the molds, air-blast apparatus

for blowing the bags from the molds into said carrier, and a tube for guiding the bags in their transfer from the molds to the bag-carriers, said tube having a movable side in connection with means for withdrawing it at intervals, substantially as specified.

34. The combination of a pair of endless chains disposed side by side with a space between them, a series of bag-carriers mounted thereon and open at both top and bottom so that the bags can slide vertically therein, a support for the bags independent of the chains, and upon which the bags rest without exerting any downward pressure upon the chains, sprocket-wheels for driving said chains, and a support for the upper runs of the chains while they are traveling from one sprocket-wheel to the other, substantially as specified.

35. The combination of a traveling mold-carrier having a series of projecting bag-molds, a series of traveling bag-carriers into which the bags are delivered from the molds, means for effecting such transfer of the bags from the molds to the carriers, and a stripper for tearing the bags from the molds if they are not properly delivered therefrom, substantially as specified.

36. The combination in a machine for packaging powdered or granular material, of an endless series of bag-carriers, means for filling the bags with material, a device for applying paste to the open mouth of the bag, said device acting in advance of the filling mechanism and a paste guard or shield introduced into the open, pasted mouth of the bag during the filling operation, substantially as specified.

37. In a machine for packaging powdered or granular material, mechanism for pasting the open mouth of the empty bag, said mechanism consisting of a slide having projections for applying paste to the inside of the bag-mouth, a plunger for vertically retaining the bag, means for vertically reciprocating said paster-slide and plunger, and means for applying paste to the projections of the paster-slide, substantially as specified.

38. In a machine for packaging powdered or granular material, mechanism for applying paste to the open mouth of the bag, said mechanism comprising means for simultaneously applying paste to the inside of the mouth on three sides thereof, and means for applying paste to the outside of the mouth on opposite sides thereof at the same time that the paste is being applied to the inside of the mouth, substantially as specified.

39. In a machine for packaging powdered or granular material, mechanism for applying paste to the open mouth of the bag, said mechanism comprising a vertically-reciprocating inside paster, and two sets of swinging paste-applying devices, one for applying paste to the outside of the bag-mouth and the other for applying paste to the reciprocating inside paster when the same is raised above the bag-mouth, substantially as specified.

40. In a machine for packaging powdered or granular material, mechanism for applying paste to the open mouth of the bag, said mechanism comprising a vertically-reciprocating inside paster, two sets of swinging paste-applying devices, one for applying paste to the outside of the bag-mouth and the other for applying paste to the reciprocating inside paster when the same is raised above the bag-mouth, and paste wheels or disks with which the paste-applying devices are brought into contact when swung outwardly, substantially as specified.

41. In a machine for packaging powdered or granular material, mechanism for applying paste to the open mouth of the bag, said mechanism comprising a vertically-reciprocating inside paster, two sets of swinging paste-applying devices one for applying paste to the outside of the bag-mouth and the other for applying paste to the reciprocating inside paster when the same is raised above the mouth of the bag, paste wheels or disks with which the swinging paste-applying devices are brought into contact when swung outwardly, and means for causing the paste-applying devices of each set to move from and toward each other when they are at the limit of their inward or outward swinging movement, substantially as specified.

42. In a machine for packaging powdered or granular material, mechanism for applying paste to the inside of the bag-mouth, said mechanism comprising a vertically-reciprocating inside paster, a paste-roll for applying paste to said paster when it is raised above the bag-mouth, a presser for forcing the bag into contact with the paster after it has been lowered into the bag-mouth, and mechanism connecting said presser and paste-roll carrier, whereby one will be retracted as the other is projected, substantially as specified.

43. The combination in a machine for packaging powdered or granular material, of mechanism for feeding bags forwardly in succession, with two sets of weighing and filling mechanism, each set including two or more weighing and filling devices adapted to fill a series of bags simultaneously, and means for operating said sets of weighing and filling mechanism alternately, substantially as specified.

44. The combination in a machine for packaging powdered or granular material, of bag-conveying devices, a shaft having cams for operating the same, a series of weighing and filling devices adapted to simultaneously fill a series of bags, a shaft with cams for operating said weighing and filling devices, and gearing connecting the two shafts and serving to reduce the speed of one in respect to the other to accord with the number of bags which have to be simultaneously filled, substantially as specified.

45. The combination in a machine for packaging powdered or granular material, of mechanism for feeding bags forwardly in succession, mechanism for applying paste successively to the open mouths of the individual bags, a shaft having cams for operating said bag conveying and pasting devices, a series of weighing and filling devices operating to simultaneously fill a series of bags a shaft having cams for operating said weighing and filling devices, and gearing connecting the two shafts and serving to reduce the speed of one in respect to the other to accord with the number of bags which have to be simultaneously filled, substantially as specified.

46. The combination in a machine for packaging powdered or granular material, of mechanism for feeding bags forwardly in succession, mechanism for closing the mouths of the bags successively after they have been filled, a shaft having cams for operating said bag-feeding and mouth-closing devices, a series of weighing and filling devices operating to simultaneously fill a series of bags, a shaft having cams for operating said weighing and filling devices, and gearing connecting the two shafts and serving to reduce the speed of one in respect of the other to accord with the number of bags which have to be simultaneously filled, substantially as specified.

47. The combination in a machine for packaging powdered or granular material, of mechanism for internally pasting the open mouth of an empty bag, a feed-spout for delivering material into the bag, a tube for protecting the internally-pasted mouth of the bag, and means for reciprocating said tube so as to cause it to enter the mouth of the bag before the same is filled, and to be withdrawn after the filling has been accomplished, substantially as specified.

48. The combination in a machine for packaging powdered or granular material, of filling mechanism, mechanism for closing the tops of the filled bags, and a continuously-operating shaker for acting upon the filled bags, the forward end of said shaker being rounded or beveled, so that the bags can be moved over the same while it is being reciprocated, substantially as specified.

49. The combination in a machine for packaging powdered or granular material, of mechanism for filling bags, mechanism for closing the tops of the filled bags, a series of traveling bag-carriers open at top and bottom, an ejector for elevating the filled bags from said carriers, a side pusher for removing the bags from said ejector, a tilting table onto which the bags are delivered by said side pusher, and a traveling belt onto which the bags are delivered by said tilting table, substantially as specified.

50. The combination of the mold-wheel or conveyer-shaft, a notched wheel thereon, a swinging lever also having a notch therein, a plate free to swing with said lever and having a stud adapted to engage with its notch and also with the notches of the wheel, means for moving said plate in a direction at right angles to the plane of the wheel so as to carry its stud into and out of the notches of said wheel, and a locking-stud also moving in a plane at right angles to the plane of the wheel, substantially as specified.

51. The combination of the mold-wheel or conveyer-shaft, a notched wheel thereon, a swinging lever having opposite arms with notched ends, a plate free to swing with said lever and having studs adapted to engage with the notches in the same and with those in the notched wheel, means for moving said plate in a direction at right angles to the plane of the wheel so as to carry its studs into and out of the notches of said wheel, and a locking-stud also moving in a plane at right angles to the plane of the notched wheel, substantially as specified.

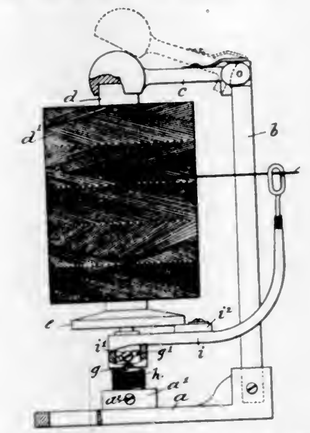
52. The combination of the mold-wheel or conveyer-shaft, a notched wheel thereon, a swinging lever also having a notch therein, a plate free to swing with said lever and having a stud adapted to engage with its notch, and also with the notches of the wheel, means for moving said plate in a direction at right angles to the plane of the notched wheel, a slide engaged by said plate, and a locking-stud carried by said slide and adapted to engage with the successive notches of the wheel, substantially as specified.

53. The combination in a machine for packaging powdered or granular material, of bag-making devices and traveling bag-carriers receiving the bags therefrom and bearing upon the sides of the bags only at and near the center, leaving the corner portions of the bags free from pressure whereby the frictional hold of the carriers upon the bags is reduced to a minimum and vertical movement of the bags in the carriers can be easily effected without expanding said carriers after the bags are filled, substantially as specified.

54. The combination of the bag-mold, means for bending a sheet of paper around three sides of the same, and lappers for lapping the paper on the fourth side of the mold, one of said lappers consisting of a roller mounted on the end of a swinging arm, which has a spring for pushing the roller outward, substantially as specified.

55. The combination of the bag-mold, means for bending a sheet of paper around three sides of the same, and lappers for lapping the paper on the fourth side of the mold, one of said lappers consisting of a roller centrally pivoted on the end of a swinging arm, and free to swing in a vertical plane, substantially as specified.

655,575. SLACK-THREAD CONTROLLER FOR SEWING-MACHINES. MARO V. PALMER, Willimantic, Conn., assignor to the American Thread Company, Jersey City, N. J., and New York, N. Y. Filed Oct. 1, 1894. Serial No. 524,614. (No model.)



Claim.—1. In combination in a thread-unwinder, a base, a revoluble bobbin-support mounted on the base, a tension-arm rotatively supported on the base and having a brake-shoe underlying the bobbin-support, and a cam in engagement with the tension-arm to cause it to move vertically, all substantially as described.

2. In combination in a thread-unwinder, a base, a revoluble bobbin-support supported on the base, a tension-arm rotatively supported on the base and having a brake-shoe underlying the bobbin-support, a cam in engagement with the tension-arm whereby the latter is forced toward or away from the bobbin-support, and a spiral spring underlying the tension-arm and tending normally to force the arm upward and to rotate it, all substantially as described.

3. In combination in a thread-unwinder, a base, a revoluble bobbin-support supported on the base, a sleeve secured to the base and supporting the bobbin-support, a tension-arm rotatively mounted on the sleeve, a cam-slot located in the sleeve and in engagement with a projection from the tension-arm, and a spring surrounding the sleeve and underlying the tension-arm whereby the latter is normally rotated and moved upward, all substantially as described.

4. In combination in a thread-unwinder, a base, a bushing adapted to be secured to the base, a sleeve adjustably secured to the bushing, a cam-slot located in the sleeve, a tension-arm rotatively mounted on the sleeve and having a projection engaging the cam-slot, and a spiral spring secured to the bushing and to the tension-arm and tending normally to rotate the latter and also force it upward, all substantially as described.

5. In combination in a thread-unwinder, a base, a socket in the base, a bushing adjustably secured in the socket, a sleeve adjustably secured in the bushing, a cam-slot located in the sleeve, a tension-arm rotatively mounted on the sleeve and having a projection engaging the cam-slot, and a spiral spring secured to the bushing and to the tension-arm and tending normally to rotate the latter and also force it upward, all substantially as described.

6. In a thread-unwinding apparatus, in combination, a base, a revoluble bobbin-support mounted on the base, a tension-arm rotatively supported and vertically movable on the base, a friction-brake operated thereby, and a cam connected with the tension-arm whereby horizontal oscillation of the tension-arm gives vertical movement to the friction-brake and thereby, by the braking and unbraking action of the friction-brake, controls the rotation of the bobbin holder or support.

7. In a thread-unwinder, in combination, a base, a revoluble bobbin-support mounted on the base, and having a stem with a shoulder, a stop coöperating with said shoulder, a cam for moving the stem vertically whereby the stop and shoulder are brought into engagement and a spring actuated thread-guide connected with the cam.

8. In a thread-unwinder, in combination, a base, a swinging tension-arm underlying the bobbin-support and adapted in its swinging movement to make contact with the under surface of the bobbin-support, a thread-guide borne on the tension-arm, a cam in operative connection with the tension-arm to cause it to move vertically in its swinging movement, a spring actuating the tension-arm in one direction, a stem for the bobbin-support, a peripheral groove located in the stem and a retaining-screw projecting into said groove.

9. A thread-unwinding apparatus comprising in combination a base, a revoluble bobbin holder or support mounted on the base, a tension-arm rotatively supported upon the base, a brake-shoe operated thereby, means arranged to be actuated by the tension-arm whereby horizontal oscillation of the tension-arm gives vertical movement to the brake-shoe and whereby the braking and unbraking action of the brake-shoe controls the rotation of the bobbin holder or support, substantially as described.

655,576. VENTILATED BOOT OR SHOE. JAMES J. PEARSON, New York, N. Y. Filed Oct. 6, 1897. Serial No. 654,253. (No model.)



Claim.—1. As a new article of manufacture, a ventilating-mat for shoes and boots, consisting of elastic buttons integrally connected with each other at their sides by reduced necks, substantially as shown and described.

2. As a new article of manufacture, a ventilating-mat for boots and shoes, having projections on each face and openings between the projections, the said projections being arranged on both sides in longitudinal and transverse rows, as set forth.

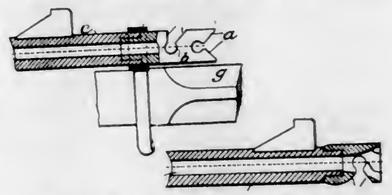
3. As a new article of manufacture, a ventilating-mat for boots and shoes consisting of a series of elastic buttons in the form of flattened spheres and connected together, as set forth.

4. As a new article of manufacture, a ventilating-mat for boots and shoes, consisting of a series of elastic buttons in the form of flattened spheres and connected together by reduced necks, whereby a perforated mat having projections and longitudinal and transverse passages on each side will be produced, as set forth.

5. As a new article of manufacture, a ventilating-mat for shoes and boots, consisting of elastic buttons arranged one alongside of the other, and a core for the said buttons, each button being formed over the intersection of two strands, substantially as shown and described.

6. As a new article of manufacture, a ventilating-mat of an elastic material, and consisting of flattened spheres or polygons and a core consisting of longitudinal and transverse flexible wire or thread, each sphere or polygon being formed over and having the intersection of the wires for its center and the neck or junction of each sphere or polygon reinforced with a single wire or thread, substantially as shown and described.

655,577. GUN ATTACHMENT. WILLIAM PELL, Flemington, and ISAAC WHEELDON, Elsternwick, Victoria, assignors to said Wheeldon. Filed May 11, 1900. Serial No. 16,368. (No model.)



Claim.—1. In a device of the character described, the combination with the muzzle of a firearm; of means for seating a wire or the like transversely across the bore of the firearm, substantially as described.

2. In a device of the character described, the combination with the muzzle of a firearm; of an attachment therefor provided with means for seating a wire or the like transversely across the bore of the firearm, substantially as described.

3. In a device of the character described, the combination with the muzzle of a firearm; of a bayonet provided with an attachment adapted to fit upon said muzzle, said attachment being provided with means for seating a wire transversely across the bore of the firearm, substantially as described.

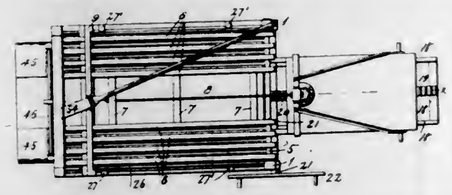
4. In a device of the character described, the combination with the muzzle of a firearm; of an attachment adapted to be secured upon the

said muzzle, said attachment having a transverse recess adapted to receive a wire or the like, substantially as described.

5. In a device of the character described, the combination with the muzzle of a firearm; of an attachment provided with screw-threads adapted to engage with corresponding screw-threads upon the said muzzle, said attachment having a transverse recess adapted to receive a wire or the like, substantially as described.

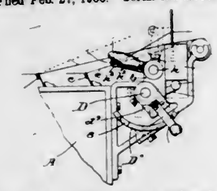
6. In a device of the character described, the combination with the muzzle of a firearm; of a bayonet provided with an attachment adapted to fit upon said muzzle, said attachment being provided with a transverse recess adapted to seat a wire or the like transversely across the bore of the firearm, substantially as described.

655,578. **MATTRESS-STUFFING MACHINE.** HENRY C. REHKOPF, Texarkana, Tex. Filed Dec. 11, 1899. Serial No. 739,908. (No model.)



Claim.—In an adjustable mattress-stuffing machine, a cross-beam 35, secured to the front posts 1, and having a longitudinal dovetail slot 36; blocks 38, working against the front face of said beam, and having rear dovetail extensions working in said dovetail slot; L-shaped sheets 39, one secured to the upper face of each of said blocks, one edge of each extending forward; a straight sheet 40, secured to the upper face of said beam; a beam 41, adjustably secured between said posts 1, and above last-mentioned beam 35, and having a longitudinal dovetail slot 42; blocks 44, working against the front face of said beam 42; said blocks provided with rear dovetail extensions, working in said dovetail slot 42; L-shaped sheets 45, one secured to the under face of each of said blocks, one edge of each sheet extending forward; a straight sheet 46, secured to the under face of said last-mentioned beam, one edge extending forward; levers 47, fulcrumed above said last-mentioned beam 41; links 48, linking said cross-beam 41, to the short ends of the levers 47, substantially as shown and described and for the purposes set forth.

655,579. **LEASE-FORMING MECHANISM.** ALONZO E. RHOADES, Hopedale, Mass., assignor to the Draper Company, same place and Portland, Me. Filed Feb. 27, 1900. Serial No. 6,680. (No model.)



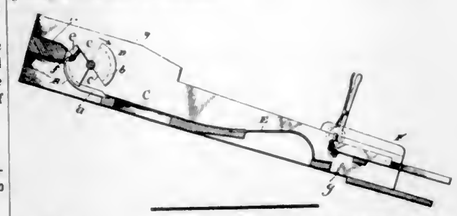
Claim.—1. The comb or reed having a series of dents, combined with a warp-separating rod adapted to be passed transversely between the warp-threads to divide them into two series or layers, a rock-shaft having rigidly-attached arms, said rod being positively connected with the free ends of the arms, and a handle by which the shaft may be rocked, to positively govern the position of the warp-supporting rod.

2. The comb or reed having a series of forked dents, a warp-separating rod adapted to be passed transversely through the warp-threads to divide them into two series or layers, rocker-arms to which said rod is positively connected, means to rock said arms to raise and lower the rod, and independent means to lift the dents.

655,580. **COAL-SEPARATOR.** JOHN R. RICHARDSON, Scranton, Pa. Filed July 16, 1897. Serial No. 644,808. (No model.)

Claim.—1. A coal-separator comprising an inclined chute, a concave grating connecting the upper and lower parts of the chute and a rotary agitator located above the grating within the concavity and acting in connection therewith, substantially as described.

2. In combination with an inclined chute, a grating of concave form, intermediate of the upper and lower sections of the chute and an agitator located in the concavity of the grating, said agitator being formed of a series of disks having a cut-away portion adapted to elevate the coal and discharge the slate and culm through the openings in the agitator and grating, substantially as described.



655,581. **ADJUSTABLE HANDLE-BAR.** GEORGE P. RISHEL, Hornellsville, N. Y., assignor to the Dirksen Handle Bar Company, same place. Filed Aug. 28, 1899. Serial No. 728,754. (No model.)



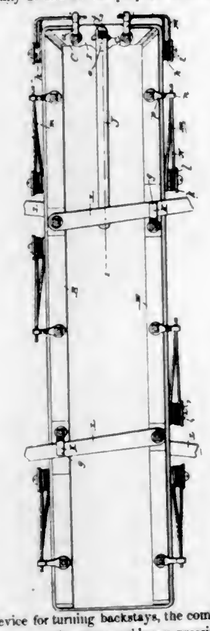
Claim.—1. In a bicycle, the combination of a handle-bar stem having an expansible lower end, a forwardly-projecting head at its upper end and a neck joining the head to the stem, a handle-bar extending through the head and having a toothed portion lying within the latter, a toothed dog lying within said neck for locking the handle-bar, a clamping-block having a screw-threaded orifice and arranged to advance the dog into engagement with the toothed portion of the handle-bar, a spindle extending through the stem and clamping-block and having means at its upper end block on the lower end of the spindle, a screw-threaded sleeve mounted on the spindle and for turning the same, a tapering expander engaging the screw-threaded orifice in the clamping-block, a finger-piece on the upper end of the sleeve for turning the same on the spindle, and means for holding the sleeve from lengthwise movement, substantially as described.

2. In a bicycle, the combination of a stem having an internal fixed diaphragm, expansible lower end and a head at its upper end constructed with a recess for a finger-piece, a handle-bar extending through the head and constructed with rigid collars and a toothed portion between the collars lying within said head, a toothed dog for engaging the toothed portion between said collars, a clamping-block having a vertically-extending screw-threaded orifice and arranged in the upper end of the stem to move the dog forwardly, and a vertically-arranged screw passing through the clamping-dog and having a disk-shaped finger-piece at its upper end seated in said recess in the upper end of the handle-bar stem, for turning the screw to raise the clamping-block and advance the dog, substantially as described.

3. In a bicycle, the combination with a handle-bar stem having a head, or T-piece, lying in front of its upper end, of a handle-bar lying in said head and having a corrugated or toothed portion between collars which fit the circular ends of the head, a dog lying in a short neck between the head and the end of the stem and provided with a corrugated or toothed face to engage the handle-bar, a clamping-block in the upper end of the stem having an inclined face bearing on the dog, a threaded sleeve passing through a threaded opening in the clamping-block, a spindle lying in the sleeve and having a threaded lower end tapped through an expander-block, the end of the sleeve resting on a collar on the spindle which has bearing in a seat in a diaphragm in the stem, and means for turning said spindle and sleeve independently, substantially as described.

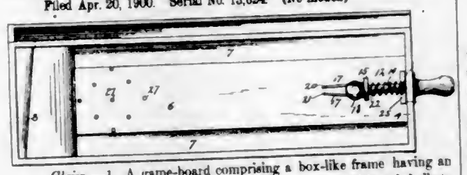
655,582. **DEVICE FOR TURNING BACKSTAYS.** ROBERT C. SCHEMMEL, Union City, Ind. Filed Jan. 25, 1900. Serial No. 2,784. (No model.)

Claim.—1. In a device for turning backstays, the combination of a body, pressing-pieces having lateral, outwardly-directed arms, provided with apertures, strips of flexible material connecting the pressing-pieces to the body, whereby said pressing-pieces are adapted to be swung toward and from the body, suitable means for securing the pressing-pieces in their closed position, and springs connected to the edges of the body and having arms extending through the apertures of the arms on the pressing-pieces, substantially as and for the purpose set forth.



2. In the device for turning backstays, the combination of the body having studs on its edges, the upper and lower pressing-pieces having lateral, outwardly-directed arms provided with apertures, strips of flexible material connecting the pressing-pieces to the body, whereby said pressing-pieces are adapted to be swung toward and from the body, suitable means for securing the pressing-pieces in their closed position, and springs coiled about the studs on the body and having their upper arms extending through the apertures of the arms on the lower pressing-pieces, and their lower arms extending through the apertures of the arms on the upper pressing-pieces, substantially as and for the purpose set forth.

655,583. **BOWLING-ALLEY.** LOUIS A. SCHOLL, Roanoke, Va. Filed Apr. 20, 1900. Serial No. 13,624. (No model.)

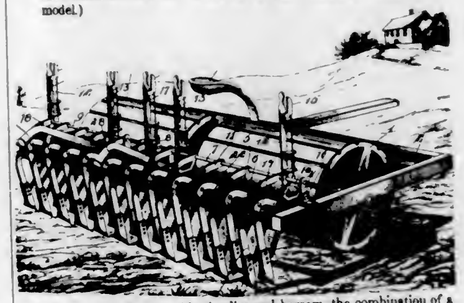


Claim.—1. A game-board comprising a box-like frame having an alley-board at the bottom thereof, pins to set up on said board, balls to project at said pins, a footboard provided with a transverse slot, and a spring-propeller for the balls mounted to move laterally in said slot in the footboard, said propeller provided with a slide having forwardly-converging guide-rods for the balls, substantially as described.

2. A portable bowling-alley game-board, comprising an inclosed frame, an alley-board in the bottom of said frame, pins and balls, a footboard provided with a transverse slot, a spring-propeller mounted in said slot, said propeller consisting of a handle, a shank provided with a slide at its end, said slide having a smooth bearing-face resting on the alley-board, converging guide-rods for the balls secured to the slide and projecting outward therefrom, a spring surrounding said shank, a plate having a tube loosely surrounding the shank, and a rubber buffer on said handle, substantially as described.

3. A ball-propeller for portable bowling-alleys, comprising a handle, a shank, a slide secured to the end of the shank, converging guide-rods projecting from the front of said slide, a spring surrounding said shank, and a plate provided with a sleeve loosely surrounding said shank, in combination with an alley, substantially as described.

655,584. **COMBINED ROLLER AND HARROW.** NICHOLAS SCHWARTZ, Aurora, Ind. Filed Apr. 26, 1900. Serial No. 14,456. (No model.)



Claim.—1. In a combined roller and harrow, the combination of a frame, a two-part roller mounted therein, an independently-adjustable series of teeth in rear of said roller, detachably secured to the frame and composed of united pairs, one tooth of each pair being in advance of the other and laterally projecting, the advance and rear teeth of the entire number being in transverse alinement respectively, and independent adjusting-bars connected with said teeth.

2. In a combined roller and harrow, the combination of a frame, a roller mounted therein, a strip detachably secured to the frame in the rear of the rollers, and a series of teeth mounted upon said strip, and having spring-actuated pivot-points thereon, and independent adjusting-bars connecting with said teeth.

3. A harrow attachment for a roller-frame comprising a cross-strip, independent adjusting-bars secured thereto, adjusting-levers connected to said bars, independent series of teeth movably attached to the strip, and links connecting each pair of teeth with the said bars.

4. In a combined roller and harrow, the combination with a frame, of a transverse strip detachably secured thereto, independent series of adjustable teeth mounted on said strip, handles secured thereto, and pivoted and adjustable points secured to said teeth.

5. The combination with a roller-frame, of an L-shaped strip detachably secured thereto, independent adjusting-bars on the rear part of the frame, an adjusting-lever connected to the said connecting-bars near each end thereof, an adjusting-lever connected to the center of the middle adjusting-bar, independent series of teeth movably attached to the cross-strip, links connecting each pair of teeth with said bars, and shovel-points adjustably and pivotally secured to the lower ends of said teeth.

655,585. **COMBINED HEATER-SHIELD AND VENTILATOR.** ALLAN B. SHANTZ, Caledonia, Canada, assignor of one-half to Richard C. Chesswright, Seaforth, Canada. Filed Aug. 4, 1897. Serial No. 647,062. (No model.)

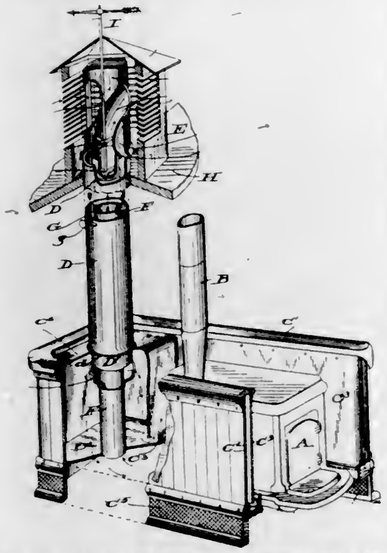
Claim.—1. In a ventilating apparatus, a shield for a stove or other form of heater, the said shield having a double wall and intermediate air-space and open at the bottom, a pipe leading up from the closed top of the double wall to outside of the roof, a cowl supported and journaled in the top of the pipe and provided with an intake-hole and a weather-vane connected centrally to the cowl and designed to control its rotation so as to present the intake-opening toward the weather side, as and for the purpose specified.

2. In a ventilating apparatus, in combination, a shield provided with a double wall having an intermediate air-space closed at the top and open at the bottom, a heater surrounded by the shield, an inlet-pipe extending upwardly from the top of the hollow wall to the outside of the roof, a cowl supported and journaled in the top of the pipe and provided with an intake-hole and a weather-vane connected centrally to the cowl and designed to control its rotation so as to present the intake-opening toward the weather side, as and for the purpose specified.

3. In a ventilating apparatus, in combination a shield provided with a double wall having an intermediate air-space closed at the top and open at the bottom, the inner wall being shorter than the outer wall, a ledge formed at the bottom of the outer wall and having an upwardly-projecting adjustable flap, a heater located within the shield and an inlet-pipe extending from the top of the shield to the outside of the roof and suitable means for causing the current of air to pass downwardly into the shield, as and for the purpose specified.

4. In a device of the class described, the combination with a stove, of

a shield having a double wall forming an intermediate air-space, the capping at the top of the double wall, the ledge and opening at the bottom, the grating extending beneath the ledge around the bottom of the shield and the inlet-pipe arranged as and for the purpose specified.

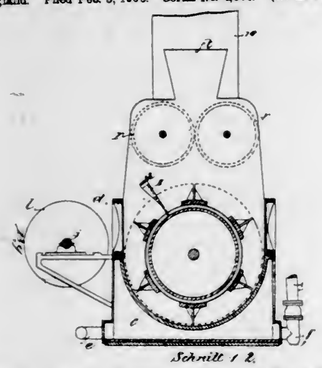


5. In a device of the class described, the combination with a stove, of a shield having a double wall forming an intermediate air-space, the capping at the top of the double wall, the ledge and opening at the bottom and the moisture-pan designed to rest on the ledge beneath the opening, as and for the purpose specified.

6. In a device of the class described, the combination, with a stove, of a shield, having a double wall forming an intermediate air-space which is closed at the top and open at the bottom, and an enlarged air-space between the walls arranged at the back, and the inlet-pipe, and moisture-pan situated beneath said pipe, as and for the purpose specified.

7. In a device of the class described, the combination with a stove of the shield having a double wall, and an intermediate air-space closed at the top and open at the bottom, the enlarged air-space between the walls arranged at the back, the inlet-pipe extending upwardly from the back portion of the double wall, the outlet-pipe extending through the enlarged air-space at the back down through the bottom back wide ledge and up through the top of the inlet-pipe, as and for the purpose specified.

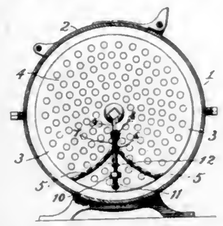
655,586. DRYING-MACHINE. RICHARD SIMON, Nottingham, England. Filed Feb. 5, 1900. Serial No. 4,071. (No model.)



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Claim.—In drying apparatus, the combination with a casing whose bottom is made up of hollow trough-shaped sections for the introduction of a heating medium, and a trough at the discharge end of said casing communicating with the interior thereof, of a hollow rotary drying-cylinder mounted in said casing and having blades thereon designed to agitate the material operated upon and to impart thereto a progressive movement toward the discharge end of the casing, a hollow shaft or axle upon which said cylinder is mounted, a gear-wheel on said shaft through which said cylinder is rotated, and a scoop carried by said gear-wheel and adapted to move within said trough, as and for the purpose set forth.

655,587. WASHING-MACHINE. HAMILTON E. SMITH, Philadelphia, Pa. Filed Oct. 28, 1899. Serial No. 735,115. (No model.)



Claim.—1. In a washing-machine, the combination with an oscillating agitator, of an adjustable partition carried by said agitator, substantially as and for the purpose described.

2. In a washing-machine, the combination with an oscillating agitator having two converging wings or blades, of an adjustable partition working between said blades, substantially as and for the purpose described.

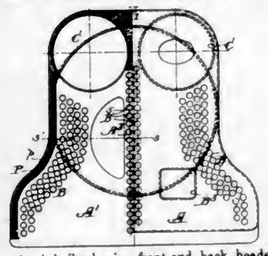
3. In a washing-machine, the combination with an oscillating agitator comprising two circular heads connected by two converging wings or blades, of a movable partition working between said wings or blades, and means for adjusting said partition comprising a lug on each head having a screw-threaded aperture and a screw working in each of said apertures and operatively connected with said partition, substantially as described.

4. An agitator for washing-machines comprising two circular heads connected by two converging wings or blades, an adjustable partition working between said wings or blades, and means for adjusting said partition.

5. In a washing-machine, the combination with an oscillating agitator having two converging curved wings or blades, of an adjustable partition working between said blades, substantially as and for the purpose described.

6. An agitator for washing-machines comprising two circular heads connected by two converging curved wings or blades, an adjustable partition working between said wings or blades, and means for adjusting said partition, substantially as and for the purpose described.

655,588. BOILER. GEORGE S. STRONG, New York, N. Y. Filed June 2, 1898. Serial No. 682,399. (No model.)

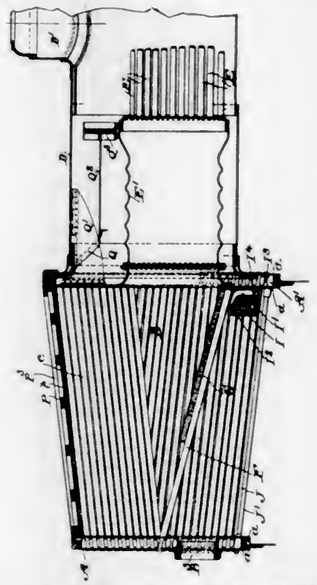


Claim.—1. A boiler having front and back headers, as A A', between which the fire-chamber is situated in combination with one or more conduits connecting the tops of the headers and partly forming the top of the fire-chamber, groups of tubes, as B B, connecting the lateral sides of the headers and partly forming the sides of the fire-chamber, a series of water-tubes dividing the fire-chamber into two divisions, a boiler-shell, as D, secured to the back plate of the rear header and through said header connecting directly with the water-tubes and conduits connecting the headers, a combustion-chamber, as Q, secured to the front plate of the rear header and extending back into the shell D, a tube-sheet Q' at the rear end of said chamber and a system of fire-tubes E extending from said tube-sheet through the rear of the shell D.

2. A boiler having front and back headers, as A A', between which the fire-chamber is situated in combination with drums as C and R connecting the headers at top and bottom groups of tubes, as B B, connecting the lateral sides of the headers and partly forming the sides of the fire-chamber, a series of water-tubes connecting the drums C and R and dividing the fire-chamber into two divisions, a boiler-shell, as D, secured to the back plate of the rear header and through said header connecting directly with the water-tubes and conduits connecting the headers, a combustion-chamber, as Q, secured to the front plate of the rear header and extending back into the shell D, a tube-sheet Q' at the rear end of said chamber and a system of fire-tubes extending from said tube-sheet through the rear of the shell D.

3. In combination with a header, of a boiler-tube, as B, expanded into both sheets of said head and formed with slots B^3 and open ends b^3 in combination with caps T for closing said ends, a hook S having a jaw S' for engaging the edge of a slot in the tube and a bracing-shoulder S^2 arranged in the rear of said hook and a screw connection between the hook and cap as described.

655,589. BOILER. GEORGE S. STRONG, New York, N. Y. Filed Aug. 26, 1899. Serial No. 728,536. (No model.)



Claim.—1. A boiler having in combination front and rear headers, as A and A', between which the fire-chamber is situated, a set of water and steam tubes c connecting the central upper portions of the headers and inclined upward from the front to the rear header, said tubes forming the top of the fire-chamber, two sets of water-tubes B B connecting the lateral sides of the headers and forming the sides of the fire-chamber, said tubes being inclined downward from the front to the rear header and lapping part of the front ends of the tubes c so as to form a lattice-bracing for the fire-box and a capacious and energetic circulating device for the water, and a boiler-shell secured to the rear header and having fire-tubes connecting with the fire-chamber.

2. A boiler having front and rear headers, as A A', between which the fire-chamber is situated and boiler-shell, as D, secured to the rear header, a set of water and steam tubes, as c, connecting the tops of the headers and forming the top of the fire-chamber, two sets of water-tubes, B B, connecting the lateral sides of the headers and forming the sides of the fire-chamber, and a deflecting-plate Q secured to the top of the boiler-shell D in front of the tubes c and extending nearly to the water-line.

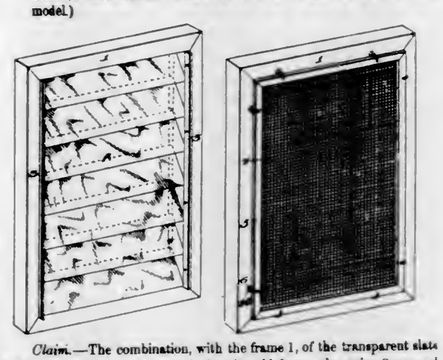
3. A boiler having front and rear headers, as A A', between which the fire-chamber is situated and a boiler-shell, as D, secured to the rear header, a set of water and steam tubes, as c, connecting the tops of the headers and forming the top of the fire-chamber, two sets of water-tubes B B, connecting the lateral sides of the headers and forming the sides of the fire-chamber, a deflecting-plate Q secured to the top of the boiler-shell D in front of the tubes c and extending nearly to the water-line, and a substantially-horizontal perforated plate Q^2 extending back above the water-line from the lower edge of plate Q.

4. A boiler having front and rear headers, as A A', between which the fire-chamber is situated and a boiler-shell, as D, secured to the rear header, a set of water and steam tubes, as c, connecting the tops of the headers and forming the top of the fire-chamber, two sets of water-tubes, B B, connecting the lateral sides of the headers and forming the sides of the fire-chamber, a deflecting-plate Q secured to the top of the boiler-shell D in front of the tubes c and extending nearly to the water-line, a substantially-horizontal perforated plate Q^2 extending back above the water-line from the lower edge of plate Q and swash-plate Q^3 secured across the boiler at the end of plate Q^2.

5. A boiler having in combination front and rear headers, as A and A', between which the fire-chamber is situated, a boiler-shell, as D, secured to and opening into the rear header, a set of water and steam tubes c connecting the central upper portions of the headers and inclined upward from the front to the rear header, said tubes forming the top of the fire-chamber, two sets of water-tubes B B connecting the lateral sides of the headers and forming the sides of the fire-chamber, said tubes being inclined downward from the front to the rear header and lapping past the front end of the tube c so as to form a lattice-bearing for the fire-box and a capacious and energetic circulating device for the water, and a deflecting-plate Q secured to the top of the boiler-shell D in front of the tube c and extending nearly to the water-line.

6. A boiler having in combination front and rear headers, as A and A', between which the fire-chamber is situated, a boiler-shell, as D, secured to and opening into the rear header, a set of water and steam tubes c connecting the central upper portion of the headers and inclined upward from the front to the rear header, said tubes forming the top of the fire-chamber, two sets of water-tubes B B connecting the lateral sides of the headers and forming the sides of the fire-chamber said tubes being inclined downward from the front to the rear header and lapping past the front end of the tubes c so as to form a lattice-bracing for the fire-box and a capacious and energetic circulating device for the water, a deflecting-plate Q secured to the top of the boiler-shell D in front of the tube c and extending nearly to the water-line, and a substantially-horizontal perforated plate Q^2 extending back above the water-line from the lower edge of plate Q.

655,590. WINDOW-SCREEN. JOHN O. THOMAS and BENJAMIN F. STARK, Homestead, Pa. Filed Sept. 28, 1899. Serial No. 731,948. (No model.)

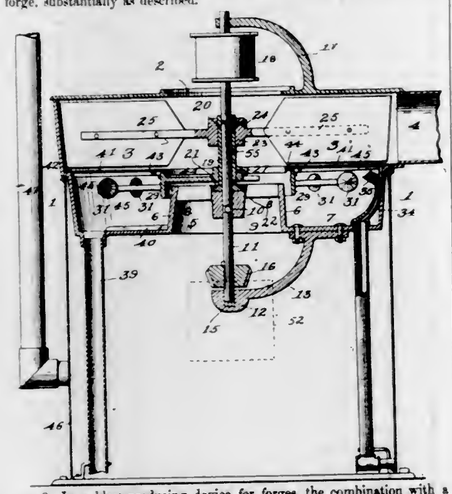


Claim.—The combination, with the frame 1, of the transparent slats having their ends seated at an incline in said frame, the strips 3 secured to the inner faces of the two vertical rails of said frame for holding the slats in position, a screen secured to the inner face of said frame 1 and a series of swiveled hooks mounted for rotation in the frame 1 and engaging the frame of the screen to hold the latter in position, as and for the purpose specified.

655,591. BLAST-PRODUCING APPARATUS FOR FORGES. NELSON TINGLEY, Scranton, Pa. Filed Nov. 7, 1899. Serial No. 736,156. (No model.)

Claim.—1. A blast-producing device for forges comprising a casing having an annular runway in its bottom, a shaft mounted in said casing, a sleeve revolubly mounted on said shaft, a fan secured on said sleeve and adapted to revolve in said casing, a water-wheel mounted on said sleeve comprising arms, each of which has at its extremity a bucket, one or more water-pipes projecting up into said runway and having discharge-orifices located in the horizontal plane of said bucket, said casing having air-inlets and a discharge-outlet, and a pipe leading from said discharge-outlet to the forge, substantially as described.

2. In a blast-producing device for forges, the combination with a casing having an annular runway provided in its bottom, of a shaft mounted in said casing, a fan revolubly mounted on said shaft within the casing, a water-motor revolubly mounted on said shaft and comprising a number of radial arms projecting into said runway, each of said arms having at its outer end a bucket, one or more water-supply pipes projecting up into said casing, each of said pipes having a discharge-orifice located in the horizontal plane of said buckets, an escape-pipe leading from the bottom of said runway, a ledge leading from the inner wall of the runway to the mouth of said escape-pipe, said casing having air-inlets and a discharge-opening, and a pipe leading from said discharge-opening to the forge, substantially as described.



3. In a blast-producing device for forges, the combination with a casing, of a shaft mounted therein, a fan and a water-wheel revolubly mounted on said shaft, pipes leading into said casing for supplying water to operate the water-wheel, said casing having air-inlets and a discharge-opening, a pipe leading from said discharge-opening to the forge, a pipe leading from the bottom of the casing for the discharge of water therefrom, a casing inclosing the said water-motor and the portion of the water supply and escape pipes above the ground, and a pipe leading into said casing and having an open end located in proximity to the forge, whereby the heat from the forge can enter said pipe and pass into said casing, substantially as described.

4. In a blast-producing device for forges, the combination with a casing, of a shaft mounted therein, a sleeve mounted on said shaft, a blast-fan and a water-wheel mounted on said sleeve, one or more pipes entering said casing for supplying water to operate said water-wheel, the driving-wheel mounted fast on said shaft, and means for driving the same, clutch mechanism located between the shaft and said sleeve, whereby the fan may be operated either from the water-motor or said driving-wheel, said casing having air-inlets and a discharge-opening, and a pipe leading from said discharge-opening to the forge, substantially as described.

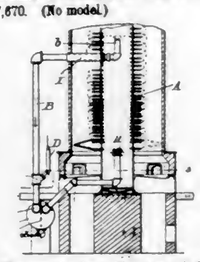
5. In a blast-producing device for forges, the combination with a casing having central openings in its top and bottom to afford air-inlets, of an annular wall surrounding the bottom opening to provide an annular runway in the bottom of said casing, a shaft mounted in said casing, a fan revolubly mounted on said shaft, a water-wheel revolubly mounted on said shaft, said water-wheel having an annular flange projecting downward around the upper edge of said wall, and having a series of arms projecting from said flange, each of said arms carrying at its outer end a bucket, an annular plate supported on said casing and covering the said runway, water-inlet pipes for operating the water-wheel, a water-discharge pipe leading from the bottom of said runway, said casing having a discharge-opening for the air, and a pipe leading from said discharge-opening to the forge, substantially as described.

6. In a blast-producing device for forges, the combination with a casing having a shaft mounted therein, of a fan revolubly mounted on said shaft, a water-wheel revolubly mounted on said shaft, said water-wheel comprising a series of arms, each of which carries at its outer end a bucket, and each of said buckets having the shape of a cone and being provided with a curved bottom, for the purpose described, means for discharging a jet or jets of water into each of said buckets in turn, said casing having a discharge-opening, and a pipe leading from said discharge-opening to the forge, substantially as described.

7. In a blast-producing device for forges, in combination with a casing, a shaft mounted therein, a blast-fan revolubly mounted on said shaft, a water-wheel revolubly mounted on said shaft and comprising a series of arms, each of which carries at its outer end a bucket, one or more pipes projecting into the bottom of said casing, a nozzle secured on the upper end of each of said pipes and being curved outward toward the wall of the casing and having its discharge end curved inward toward said buckets, whereby to discharge a jet of water into each of said buckets in succession, said casing having a discharge-opening for the air from the fan, and a pipe leading from said opening to the forge, substantially as described.

8. In a blast-producing device for forges, in combination with a casing inclosing a blast-fan and a water-motor for operating the same, of a pipe leading from said casing to the forge to conduct the blast of air to the latter, a chimney for conducting the smoke and gases from said forge, a flue leading outward from said chimney at right angles thereto, and a pipe connecting said flue with the interior of said casing, substantially as described.

655,592. AUTOMATIC CIRCULATING SYSTEM FOR STEAM-BOILERS. CHARLES C. UPHAM, New York, N. Y. Filed Mar. 3, 1899 Serial No. 707,670. (No model.)



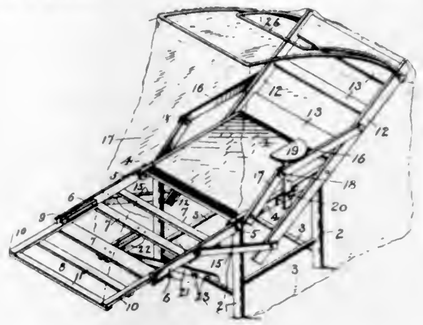
Claim.—1. The combination with a steam-boiler, of a precipitating-tank, a partition arranged within the tank and extending from one end thereof to within a short distance of the other end, a circulating-pipe having its upper end submerged below the operative water-level of the boiler and its lower end tapped into the said tank at the end to or against which the partition is secured and to one side thereof, a second circulating-pipe having one end tapped into the same end of the tank as the first circulating-pipe, but on the opposite side of the partition, and its other end discharging into the lower portion of the boiler, and an entering feed-water pipe connecting with the first circulating-pipe, substantially as described.

2. The combination with a steam-boiler, of a precipitating-tank, a partition arranged within the tank and extending from one end thereof to within a short distance of the other end, a circulating-pipe having its upper end submerged below the operative water-level of the boiler and its lower end tapped into the said tank at the end to or against which the partition is secured and to one side thereof, a second circulating-pipe having one end tapped into the same end of the tank as the first circulating-pipe, but on the opposite side of the partition, and its other end discharging into the lower portion of the boiler, an entering feed-water pipe, and an inductor, in the nature of an injector, connecting the entering feed-water pipe and the first circulating-pipe, substantially as described.

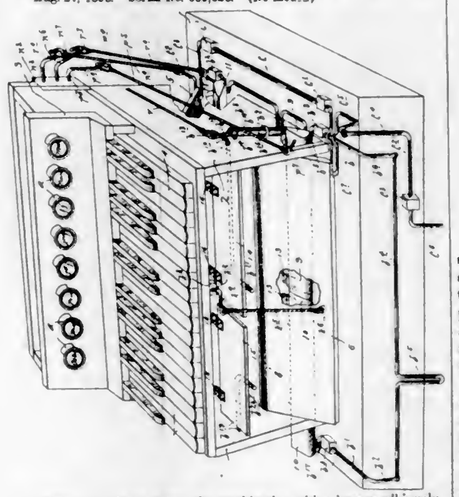
3. The combination with a steam-boiler, of a precipitating-tank, a partition arranged within the tank and extending from one end thereof to within a short distance of the other end, a circulating-pipe having its upper end submerged below the operative water-level of the boiler, and its lower end tapped into the said tank at the end to or against which the partition is secured and to one side thereof, a second circulating-pipe having one end tapped into the same end of the tank as the first circulating-pipe, but on the opposite side of the partition, and its other end discharging into the lower portion of the boiler, a deflecting-cap carried by the discharge end of this second pipe, an entering feed-water pipe, and an inductor, in the nature of an injector, connecting the entering feed-water pipe with the first circulating-pipe, substantially as described.

655,593. COMBINED RECLINING-CHAIR AND CLOTHES-RACK. JOHN G. WEBB, Washburn, W. Va. Filed Apr. 17, 1900. Serial No. 13,218. (No model.)

Claim.—A convertible reclining-chair and clothes-rack, consisting of a foot-rest having side strips and cross-pieces, a chair-back having side pieces and cross-slats, said foot-rest and back being pivoted to a chair-seat and connected together by a pivoted strip, said seat and pivoted strip, the chair-back having a wire bail attached thereto to serve as a support for a mosquito-net and to support said back when the chair is converted into a clothes-rack, and a brace pivoted to the foot-rest to adjust said foot-rest and to support it when the chair is converted into a clothes-rack, substantially as described.



655,594. ORGAN. JAMES WYVELL, Breckenridge, Minn. Filed Aug. 27, 1898. Serial No. 689,628. (No model.)



Claim.—1. In an organ, the combination with a knee-swell involving a rock-shaft having a projection connected to one of the sound-actuating devices, by a cord or flexible connection, of a rotary stop operating on said sound-controlling device through a flexible connection, whereby the actions of said stop and knee-swell do not interfere one with the other.

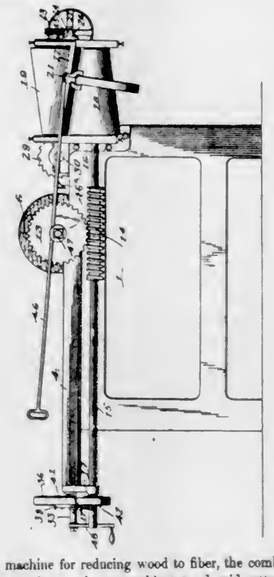
2. In an organ, the combinaton with a rotary stop connected to the sound-controlling mechanism actuated thereby, of a friction-brake applied to said stop for frictionally holding the same in various intermediate positions, which brake consists of a split spring-clamp, means for securing said clamp against rotation, and means for variably drawing said clamp onto said stop to put the same under slipping friction, to move in either direction, substantially as described.

3. In an organ, the combination with one of the stops and sound-controlling mechanism actuated thereby, of connections between the same involving the hooked arm l^7, the flexible connection and the clip l^9 secured to said flexible comection, and having the perforation l^{10} and notch l^{11} engageable with said hooked end, substantially as described.

4. In a reed-organ, a finger-operated stop having suitable connections to the sound-controlling mechanism operated thereby, in combination with a friction-brake applied to said stop, which friction-brake is adapted to be set for a predetermined tension and when set to frictionally hold said stop against movement, in either direction, substantially as described.

655,595. MECHANISM FOR REDUCING WOOD TO FIBER. JOSEPH ASKINS, Lima, Ohio, assignor to the American Wood Fiber Company, same place. Filed Jan. 16, 1900. Serial No. 1,679. (No model.)

Claim.—1. In a machine for reducing wood to fiber, the combination with the cutters, of a carriage movable toward the cutters, revoluble means for supporting a log or block of wood on said carriage, a screw for advancing the carriage, a worm-wheel to operate the revoluble supporting means, a single shaft arranged beside the machine and having a pulley belted to a pulley on the screw and a worm meshing with the worm-wheel, and means for rotating said single shaft at a variable speed, substantially as described.



2. In a machine for reducing wood to fiber, the combination with a series of cutters, of a carriage movable toward said cutters, a revoluble support on said carriage for the block or log of wood, a screw to move the carriage, a single shaft geared to rotate said screw and also the support for the wood, reversely-arranged cone-pulleys one of which is fast on said shaft, a friction-band between said cone-pulleys, and means for automatically controlling the position of said friction-band by the feed movement of the carriage, substantially as described.

3. In a machine for reducing wood to fiber, the combination with the cutters, of a carriage movable toward the cutters, a revoluble support on said carriage for the block or log of wood, a screw to move said carriage, a single shaft geared to the revoluble support and having a small pulley belted to a larger pulley loose on the screw, a ratchet fast on the screw, a pawl connecting the pulley with the ratchet, an annulus loose on the screw and having a pin carrying the pawl, and pins mounted on a rigid part of the machine-frame and adapted to engage the annulus as the carriage reaches the limit of its feed movement and disengage the pawl from the ratchet, substantially as described.

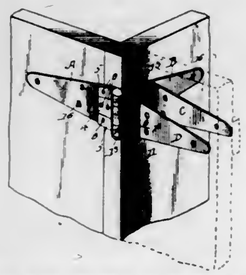
4. In a machine for reducing wood to fiber, the combination with the cutters, of a carriage movable toward the cutters, revoluble means for supporting a log or block of wood, a screw for advancing the carriage, a worm-gear to operate the revoluble support, a single shaft arranged beside the machine and having a pulley belted to a pulley on the screw and a worm meshing with the worm-gear, reversely-arranged cone-pulleys to operate said shaft, a friction-band between said cone-pulleys, and automatic means for controlling the position of said band by the movement of the carriage, substantially as described.

5. In a machine for reducing wood to fiber, the combination with the cutters, of a movable support for the wood, a single shaft operating through suitable connections with the support for advancing the wood to the cutters and simultaneously revolving the same, reverse cone-pulleys one of which is fast on said shaft, a friction-band between said pulleys, and means for controlling the position of said band by the movement of the wood toward the cutters as its diameter lessens, whereby the speed of the shaft will be proportionately increased, substantially as described.

655,596. HINGE. LEANDER BADER, Blencoe, Iowa. Filed Apr. 18, 1900. Serial No. 13,369. (No model.)

Claim.—1. A hinge, each leaf of which is formed by separate angularly-related members, having corresponding knuckles to receive a hinge-pintle, the respective corresponding knuckles being interembraced where-

by a continuous reinforced pintle-bearing is formed, substantially as described.



2. In a hinge, a leaf, comprising two sections, of which one section is in the form of a flat plate, having a knuckle formed at one edge, to receive a hinge-pintle, and the other member having angularly-related members, one of which is formed at its inner edge with a knuckle to embrace the knuckle of the other section and form a single reinforced knuckle, and the flat member being secured to the inner side of one of the members of the angular section.

3. In a hinge, a leaf, comprising two sections, of which one section is in the form of a flat plate, having an intermediate knuckle at one edge thereof, and the other section having angularly-related members, one of which is provided with a pair of transverse incisions, forming an intermediate tongue, and opposite end wings, said tongue and wings being secured flat against the outer side of the flat section, and the tongue having a knuckle at its inner edge, which snugly embraces the knuckle of the other section, to form a single reinforced knuckle.

4. In a hinge, a leaf, comprising two sections, of which one is in the form of a flat plate, having spaced knuckles formed at the opposite ends thereof, the other section having angularly-related members, one of which is provided with a pair of transverse incisions, forming an intermediate tongue, and opposite end wings, that have knuckles formed at their inner edges, to snugly embrace the knuckles of the other section and form individual reinforced knuckles, and the wings and tongues being secured to the outer face of the flat section.

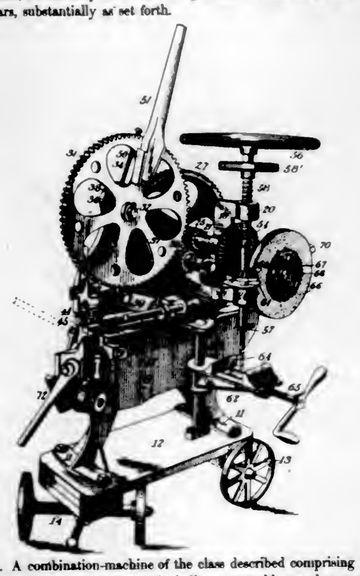
5. A hinge, comprising in its construction two leaves, one of which is formed by a flat section, having an intermediate knuckle at one edge thereof, and a second section, having angularly-related members, one of the latter having a pair of transverse incisions forming an intermediate tongue, and opposite end wings, said tongue and wings being secured flat against the outer side of the flat section, the tongue having a knuckle at its inner edge, which snugly embraces the knuckle of the other section, and the other of which is formed by a flat section, having spaced knuckles at one edge and at opposite ends thereof, and a second section having angularly-related members, one of the latter having a pair of incisions, forming an intermediate tongue, and opposite end wings, having knuckles at their inner edges, which snugly embrace the knuckles of the other section, and said tongue and wings being secured against the outer side of the flat section, whereby the respective leaves are provided with reinforced knuckles adapted to register with each other and be pivotally united by a pintle, substantially as set forth.

655,597. COMBINED METAL-WORKING MACHINE. ROBERT BATES, Grand Rapids, Wis. Filed Feb. 16, 1900. Serial No. 5,484. (No model.)

Claim.—1. A combination-machine of the class described comprising a supporting-frame, a rotatable power-gear mounted on the frame, a bending mechanism driven by said power-gear, a drilling mechanism actuated by the bending mechanism, an abrading mechanism geared with the power-gear, punching and shearing mechanism having a common operative connection with said power-gear, and means for shifting the said connection out of operative relation to the power-gear, to permit of the punching and shearing mechanisms being actuated independent of the remaining mechanisms.

2. A combination-machine of the class described, comprising a supporting-frame, a rotatable power-gear, punching and shearing mechanism having a common operative connection with said power-gear, and means for shifting said connection out of operative relation to the power-gear to permit of the punching and shearing mechanisms being actuated independently thereof, substantially as set forth.

3. A combination-machine of the class described, comprising a frame, a power mechanism including a rotatable gear, a punch, shears, a transmitting-wheel, means for shifting the transmitting-wheel into and out of operative relation to the rotatable gear of the power mechanism, and common means, actuated by the transmitting-wheel, for operating the punch and shears, substantially as set forth.



4. A combination-machine of the class described comprising a suitable frame, a power mechanism including a rotatable member, a punch, shears, a transmitting-wheel coöperating with the rotatable element of the power mechanism and having an eccentric, a lever operatively related to the eccentric and connected with the movable element of the shears, and means, operated by the lever, for actuating the movable element of the punch, substantially as set forth.

5. A combination-machine of the class described comprising a frame, a power device including a transmitting-wheel having an eccentric, a punch including a reciprocatory member, shears including a swinging blade member, a lever actuated by said eccentric and connected directly with the movable shear member, and a second lever loosely working in openings respectively in the reciprocatory punch member and the said eccentric-actuated lever, substantially as set forth.

6. A combination-machine of the class described comprising a frame, a power mechanism including a rotatable member, a punch, shears, a transmitting-wheel, operatively connected with the punch and shears, and means for shifting the transmitting-wheel into and out of operative relation to the said rotatable member of the power mechanism, substantially as set forth.

7. A combination-machine of the class described comprising a suitable frame, a power mechanism including a rotatable member, a punch, shears, a shaft eccentrically journaled on the frame, a transmitting-wheel loosely mounted on the shaft and coöperating with the rotatable member of the power mechanism, means for rocking the said shaft to throw the transmitting-wheel into and out of gear, and means, actuated by said transmitting-wheel, for operating the punch and shears, substantially as set forth.

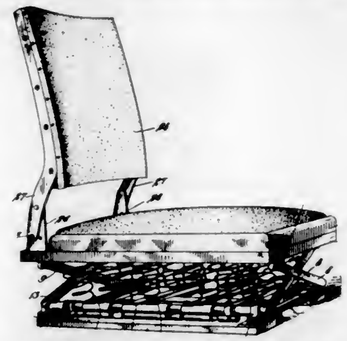
8. A combination-machine of the class described comprising a frame having a table, and a punch and shears working over the table, common actuating means for the movable members of both the punch and the shears, a horizontal rod fixed to the frame and arranged parallel to the table at one side of the plane of the punch and shears, and a shiftable work-clamp supported by the rod, substantially as set forth.

655,598. SPRING-SEAT. WILLIAM BORCHERT, Carson, Nev. Filed Dec. 29, 1899. Serial No. 741,954. (No model.)

Claim.—1. In a spring-seat, a seat, springs supporting the seat, opposite shafts mounted to rock and to slide toward and from each other, seat-spring supports having swinging connection with the rock-shafts and crossed arms extended from said shafts to connections with the seat, substantially as specified.

2. A seat, comprising a seat-frame, a fixed frame, rock-shafts mounted to slide relatively to the said fixed frame, equalizing-arms extended from said rock-shafts to sliding connections with the seat-frame, and seat-supporting springs supported from the rock-shafts, substantially as specified.

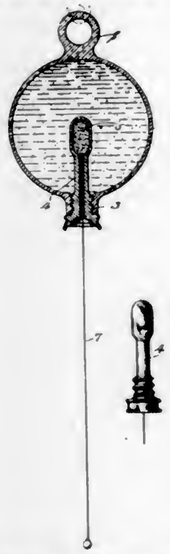
3. In a seat, a seat-frame, a fixed frame, bars mounted to slide on the fixed frame, rock-shafts having rocking and sliding connection with said sliding bars, crossed equalizing-arms extended from the rock-shafts to sliding connection with the seat-frame, springs for moving the shafts toward each other and springs supporting the seat-frame, substantially as specified.



4. In a seat, a fixed frame, shafts mounted to rock on and to slide relatively to the fixed frame, a seat, arms extended from the ends of the rock-shafts, the said arms being crossed and pivotally connected together and having sliding connection with the seat, spring-supporting slats having swinging connection with the shafts, and springs arranged between said slats and the seat, substantially as specified.

5. In a seat, a fixed frame, bars mounted to slide on said fixed frame, antifriction-bearings between the bars and the frame, loops on said bars, shafts mounted to rock in said loops and also to slide therein, a seat, equalizing-arms extended from the opposite shafts and having sliding connection with the seat, the two arms of an end being pivotally connected together, slat-supporting rods having swinging connection with the shafts, slats attached to said rods, springs arranged between the slats and the seat, and springs for moving the shafts toward each other, substantially as specified.

655,599. FIRE-EXTINGUISHER. JOHN BRAUNWALDER, Davenport, Iowa. Filed Nov. 29, 1899. Serial No. 738,717. (No model.)



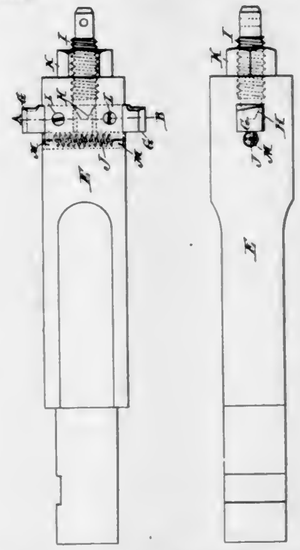
Claim.—1. A fire-extinguisher, comprising a container for an extinguishing liquid, a holder for an explosive arranged in the container, a fuse leading into the holder, and a chamber in the holder in which the fuse is normally coiled, substantially as specified.

2. A fire-extinguisher, comprising a container for an extinguishing liquid, a holder for an explosive within said container, a fuse leading into said holder, a chamber in the holder in which the fuse is normally held and a weight on the free end of the fuse, substantially as specified.

3. A fire-extinguisher, comprising a container for liquid, an explosive-holder extended into the container, a fuse communicating with the holder, a chamber in the lower portion of said holder and adapted to hold the fuse, a cover for the chamber and fusible wires for holding the cover in place, substantially as specified.

4. A fire-extinguisher comprising a container of glass or other similar material adapted to be suspended, a tube of glass or the like extended into said container and adapted to hold an explosive powder, a fuse extended through said tube and having a weight at its free end, a chamber in the outer end of said tube and within which the fuse may be coiled a cover for the chamber, a ring surrounding the outer end of said tube and having perforated lugs, lugs on the cover, and fusible wires extended through said lugs to hold the cover in position, substantially as specified.

655,600. EXPANSIBLE BORING-BAR. JOHN BROWN and THOMAS HADDOCK, Bolton, England. Filed Nov. 6, 1899. Serial No. 735,936. (No model.)



Claim.—In a boring-bar, the combination with a body provided with a transverse opening, of a plurality of cutters movably seated in said opening, each of said cutters provided with a lateral pin moving in a slot, and a spiral spring connected at its opposite ends to said pins and tending to draw the cutters into the transverse opening in the body, an expanding-screw arranged in the body at right angles to the transverse opening therein and provided with a conical point which enters between the cutters and operates to move the same outwardly in the transverse opening, and setting-screws passing through the body and impinging on the cutters to retain the same in the desired position of adjustment, substantially as described.

655,601. HERNIAL TRUSS. ROLLO W. BROWNE, Washington, D. C. Filed Feb. 3, 1900. Serial No. 3,856. (No model.)

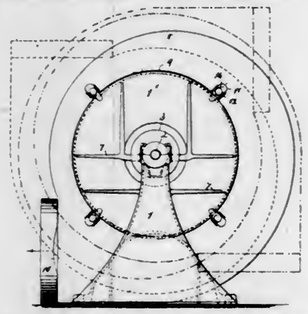


Claim.—1. The combination with a yielding pad having a peripheral channel, of a metallic shield inclosing the convex face of the pad and provided with a flange engaging the channel, substantially as described.

2. A truss-pad comprising a hollow, permanently-inflated structure, the rear wall of which is provided with a metallic plate, a metallic shield inclosing the convex face of the pad, and having its edge inturned and bearing against the rear wall of the pad, and a plate slightly larger, circumferentially, than the rear of the pad, between which and the rear wall of the pad the flange of the shield may work, substantially as described.

3. A truss-pad comprising a hollow, permanently-inflated structure, the rear wall of which is provided with a metallic plate, a metallic shield inclosing the convex face of the pad, and having its edge inturned and bearing against the rear wall of the pad, and a plate slightly larger, circumferentially, than the rear of the pad, and having its inner face channeled out to provide space in which the flange of the shield may work, substantially as described.

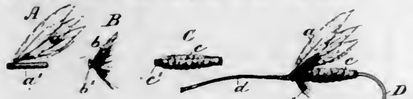
655,602. FAN-BLOWER. ROBERT BURNS, New York, N. Y. Filed Sept. 21, 1899. Serial No. 731,215. (No model.)



Claim.—1. The combination of a supporting-frame having a shaft-bearing therein and a rigid disk thereon, a shaft in said bearing, a reversible fan on said shaft, a reversible fan-casing having a discharge-mouth and having circular openings in its opposite sides, either of which fits, is rotatable upon, and is closed by said disk, radially-arranged parallel lugs on the heads of said casing, clip-plates between said lugs whose inner ends project inwardly beyond the edges of the openings in said casing and engage the surface of said disk, and bolts extending through said clip-plates and said casing for retaining said plates in locking position, substantially as described.

2. The combination of a stationary supporting-frame having a fan-shaft bearing and a perpendicular pillar-plate constructed with a fixed disk on its upper portion, a fan-shaft in said bearing, a reversible fan detachably mounted on the fan-shaft, a reversible fan-casing having a discharge-mouth and circular openings in its opposite sides either of which fits, is rotatable upon and closed by the disk on the upper part of the pillar-plate by reversing the fan-casing side for side, clip-plates arranged on the fan-casing around the edges of the circular openings therein and extended to overlap and engage the edge of the said disk to hold the fan-casing thereupon, and bolts securing said clip-plates to the fan-casing, substantially as described.

655,603. ARTIFICIAL BAIT. ROBERT B. CANTRELL, New York, N. Y. Filed Dec. 7, 1899. Serial No. 739,485. (No model.)



Claim.—1. A detachable artificial fly composed of two or more tubular and interchangeable, separate parts, adapted to be slipped onto the hook in succession, substantially as set forth.

2. A detachable, artificial bait composed of sections formed on tubes which enter telescopically one within another, the smaller tube being adapted to fit snugly on the shank of a hook.

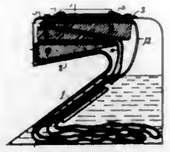
3. A detachable, artificial fly composed of separate tubular sections, namely, the wings, the hackle, and the body, substantially as set forth.

4. A detachable, artificial fly, composed of three sections, the section A having in it a tube *a'*, and the sections B and C having in them tubes of such size as to slip over the tube *a'*, substantially as set forth.

655,604. MOISTENING OR DAMPING DEVICE. EDWARD CAVERLY, Milwaukee, Wis. Filed Oct. 11, 1899. Serial No. 733,295. (No model.)

Claim.—1. A moistening device involving the combination of a vessel having a broad base, a substantially-horizontal, finely-perforated projecting ledge or shelf, an absorbent wick leading over the perforated, horizontal shelf and a block for holding the wick in contact with the shelf, substantially as described.

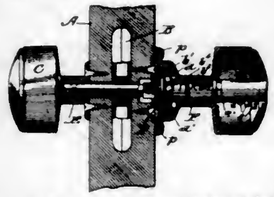
2. A moistening device involving the combination of a vessel having a broad base and a projecting horizontal perforated wall, a wick arranged above the perforated wall, means for holding the wick spread over the horizontal wall, a second perforated plate on the top of the vessel, and a second wick leading from reservoir beneath the top perforated plate, substantially as described.



3. In a moistening device the combination of a vessel having a projecting ledge or shelf with under surface finely perforated, a wick leading from the lower part of the vessel over said perforated surface and means for guiding and holding the wick in contact with the inner surface of the ledge.

4. In moistening devices, the combination of a vessel having a broad base, blocks arranged within the vessel, wicks arranged to pass above one of the blocks and beneath the other, a sliding cover carrying a finely-perforated plate, and a slide carried by said cover for covering and protecting the top perforated plate, substantially as described.

655,605. LOCK. THOMAS CHURCHILL, York County, Va. Filed Mar. 28, 1900. Serial No. 10,537. (No model.)



Claim.—1. In a knob-lock, the combination of the spindle having a hollow circular slotted end, a clutch-stem arranged therein with a spring behind it and having a lug protruding through the slot, a rotary barrel with cam-face adapted to operate on said clutch-stem, an encompassing fixed sleeve for the clutch-stem and barrel, and a knob with hollow shank and flange turning on the fixed sleeve and having locking-notches adapted to be engaged by the clutch-lug substantially as described.

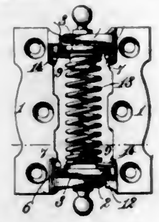
2. In a knob-lock, the combination of the spindle having clutch devices adapted to engage it, a fixed sleeve containing in its middle portion said clutch devices and having at its outer end a rotating barrel to operate said clutch devices, said barrel carrying H-shaped tumblers, and said sleeve having at diametrically-opposite points longitudinal locking-bars for the tumblers, and a swiveling knob with shank and flange having locking-notches as described.

3. In a knob-lock, the combination of a swiveling knob having a hollow shank and clutch devices as described for locking the knob to the spindle; of a stationary axial sleeve slotted longitudinally at opposite sides and having double-acting tumblers within passing through either side, a rotating barrel carrying said tumblers and constructed and arranged as described to operate the clutch devices, and a key acting on said tumblers at a point between their outer ends substantially as set forth.

4. In a knob-lock, the combination of a spindle having a hollow circular slotted end, a clutch-stem arranged therein with a spring behind it having a lug protruding through the slot and a cam-face on the other end, a rotary barrel with corresponding cam-face and locking-tumblers, a stationary sleeve inclosing said clutch-stem and barrel, and a swiveling knob with shank and flange turning on said fixed sleeve and having locking-recesses adapted to be engaged by the lug of the clutch-stem substantially as and for the purpose described.

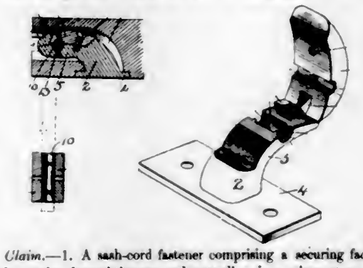
655,606. HINGE. HENRY R. CLARK, Buffalo, N. Y. Filed Dec. 16, 1899. Serial No. 740,572. (No model.)

Claim.—1. A hinge comprising two members identical with each other, but oppositely disposed when assembled, each of said members having lugs thereon, one of said lugs having a pintle, a lateral projection, and a recess or notch forming a tooth the said tooth being located between said lugs and the other of said lugs having a pintle-eye, a segmental rib or flange, a notch in said flange, and a shoulder, the pintle on each of said members extending toward the pintle-eye on the same member and fitting within the pintle-eye on the other of said members when the parts are assembled, the lateral projection on each of said members adapted to engage the shoulder on the other for limiting the pivotal movement of said members in one direction, the segmental rib or flange on each of said members fitting within the recess or notch on the other of said members, and the tooth formed by the recess on each of said members adapted to pass through the notch in the rib or flange on the other of said members, as and for the purpose set forth.



2. A spring-hinge comprising two members identical with each other, but oppositely disposed when assembled, each of said members having lugs thereon, one of said lugs having a pintle, a lateral projection, and a recess or notch forming a tooth the said tooth being located between the two lugs and the other of said lugs having a pintle-eye, a boss or hub, a segmental flange or rib, a notch in said flange or rib and a shoulder, the pintle and hub on each of said members extending toward each other, and the pintle on one of said members fitting within the pintle-eye on the other of said members when the parts are assembled, the lateral projection on each of said members adapted to engage the shoulder on the other for limiting the pivotal movement of said members in one direction, the segmental rib or flange on each of said members fitting within the recess or notch on the other of said members, and the tooth formed by the recess on each of said members adapted to pass through the notch in the rib or flange on the other of said members, and an actuating-spring whose ends encircle the bosses or hubs on each of said members and whose terminals engage the shoulder formed, respectively, on said members, as and for the purpose set forth.

655,607. SASH-CORD FASTENER. JAMES F. COLLINS, Washington, D. C., assignor of one-third to Francis A. Claveloux, same place. Filed May 26, 1900. Serial No. 18,117. (No model.)

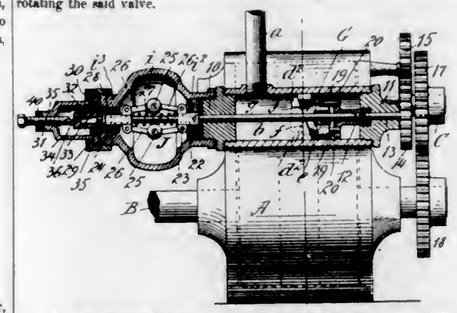


Claim.—1. A sash-cord fastener comprising a securing face-plate; a body portion formed thereon and extending in a plane at an angle to said plate, said body portion being curved and formed of two sections removably secured together; a cord-receiving opening formed between said sections and extending vertically therethrough and transversely to the length of the body portion; and means for removably securing said sections together to clamp said cord between the same.

2. A sash-cord fastener comprising a body portion formed in sections, one of said sections having a projection the rear face of which is formed angular, the opposing member or section having a recess adapted to receive said projection a cord-groove extending through said body portion and formed within both sections, and screw-threaded openings formed in said sections, said openings being adapted to receive a screw, said screw and said angular face coacting to cause said sections to approach equally at all points to secure the cord within said opening.

655,608. ROTARY CUT-OFF VALVE. LESLIE A. COOPER, Springfield, Mass., assignor of one-third to Alvah H. Sabin, New York, N. Y. Filed Oct. 27, 1899. Serial No. 734,903. (No model.)

Claim.—1. The combination with a cylindrical chamber having a steam-inlet and a port leading therefrom, of a valve rotatably fitted in said chamber and endwise adjustable therein, having a cylindrical periphery and constructed at its end which is adjacent the said port with portions which at different places around the valve have different degrees of longitudinal extension, non-automatic means which is accessible for operation at the exterior of the apparatus for longitudinally adjusting, and means for rotating the said valve.



2. The combination with a cylindrical chamber having a steam-inlet, and a port leading therefrom, of a valve rotatably fitted in said chamber and endwise movable therein, having a cylindrical periphery and constructed at its end which is adjacent the said port with portions which at different places around the valve have different degrees of longitudinal extension, non-automatic means for longitudinally adjusting said valve, for giving it any given normal relation to said port which non-automatic means is accessible for manual operation at the exterior of the apparatus, an automatic governing device operating to change the position longitudinally of said valve, and means for rotating the said valve and the governing device which coöperates therewith.

3. The combination with a cylindrical chamber having a steam-inlet, and a port leading therefrom, of an externally-cylindrical valve rotatably fitted and endwise movable in said chamber, non-automatic means for longitudinally adjusting said valve for giving it any desired normal relation to said port, an automatic centrifugal governing device operative to change the position longitudinally of said valve, and means for rotating said valve and said governing device.

4. The combination with the valve-chamber *b* having an inlet-opening, and having a port as d^2, of the valve rotatably mounted in said chamber and having its end formed with portions which at different points around it have varied degrees of endwise extension and provided with an axial stem fitted to move endwise, a centrifugal governor arranged about and also connected with said stem, means for endwise adjusting and restraining in its adjustment said valve-stem, and means for rotating said valve and its stem and the therewith-connected governor.

5. The combination with the valve-chamber *b* having an inlet-opening and a port d^2 leading outwardly therefrom, of the valve having its end constructed inclined and operating adjacent said port d^2 and comprising a valve-stem with which coöperates a centrifugal governor, a rotatable part, having a rotating engagement with the valve, and relative to which the valve may independently longitudinally move, and means for rotating said rotatable part, substantially as described.

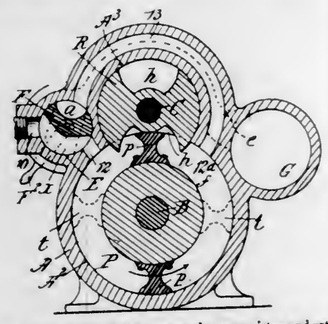
6. The combination with the valve-chamber *b* having an inlet-opening and port d^2, of the valve having its end formed inclined and operating adjacent said port, and comprising a valve-stem with which coöperates a cylindrical governor, the rotatable shaft 13 with which is united the sleeve-section 12 having radially-located endwise-extending projections 19 engaging to rotate and endwise movable relatively to the valve, and means for rotating the said shaft 13, substantially as described.

7. The combination with the chamber *b* having the inlet-port and one or more outlet-ports, and having closing appliances in its opposite ends, of the valve G having the stem *g* projecting to play endwise through the one end-closing wall of said chamber, the inclosing device *i* and the governor therein having a connection with the valve-stem and having the sleeve 24 provided with the shoulder 35, the screw-united parts 28 and 32 in which the governor-sleeve has a shoulder engagement whereby it may rotate independently of, but move in unison with said screw-united parts, devices for imparting a longitudinal adjusting motion to said screw-united parts, and means for rotating the valve.

655,609. ROTARY ENGINE. LESLIE A. COOPER, Springfield, Mass., assignor of one-third to Alvah H. Sabin, New York, N. Y. Filed Nov. 10, 1899. Serial No. 736,509. (No model.)

Claim.—1. In a rotary steam-engine of the character set forth, the engine-casing constructed with the partially-cylindrical longitudinally-extending chambers A^2 and A^3, the one thereof being along its length open to the other, the shaft B having thereon rotary pistons and rotary par-

titions, which latter separate the one steam-chamber P within the chambered portion A^2 of the casing from another or secondary chamber S therewithin, such casing being cast or constructed with detour-passages 13 and 15 each entering the steam-chamber corresponding to which it is provided at suitably-opposite points, an inlet-port leading to the first steam-chamber, a steamway leading from communication with the detour-passage for the first steam-chamber to the detour-passage of the second chamber, a steam-discharging passage for the latter chamber, end heads or walls for the chambered casing, stationary partitions D located in the chambered portion A^3 and adjoining the rotary partitions, and rotary abutments between the stationary partitions.



2. In a steam-engine of the compound, rotary-piston and rotary-abutment, type, an engine-casing having separated steam-chambers with radial pistons therein, and abutments corresponding thereto, and having within its wall detour-passages connecting the steam-chambers at suitably-opposite points, a cylindrical chamber E, also formed within the wall of the engine-casing, longitudinally extending and intersecting the said chamber-connecting detour-passages, a steam-inlet passage for the said first steam-chamber, a cylindrical part fitted in said longitudinal chamber having a length greater than the distance between the two detour-passages and constructed with a crosswise and longitudinally-extending passage *a* therein and therethrough to connect the first detour-passage with the similar passage for the next steam-chamber, substantially as described.

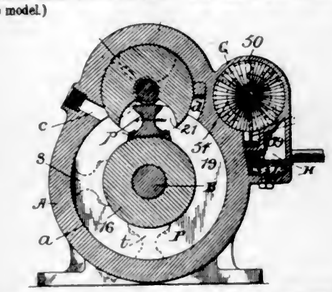
3. In a steam-engine of the compound, rotary-piston and rotary-abutment, type, an engine-casing having separated steam-chambers with radial pistons therein, and abutments corresponding thereto, and having within its wall detour-passages connecting the steam-chambers at suitably-opposite points, a cylindrical chamber E, also formed within the wall of the engine-casing, longitudinally extending and intersecting the said chamber-connecting detour-passages, a steam-inlet passage formed through the engine-casing and extended angularly to said cylindrical chamber E opposite the first steam-chamber, a cylindrical part fitted in said longitudinal chamber having a length greater than the distance between the two detour-passages, and constructed with the transverse recess *x* adapted to register with the inlet-port and the detour-passage leading to the first steam-chamber, and also constructed with the crosswise and longitudinally-extending passage *a* therein and therethrough to connect the first detour-passage with the similar passage for the next steam-chamber, substantially as described.

4. The engine-case having the partially-cylindrical spaces A' A^3 opening the one to the other and constructed with the detour-passages 13 and 15, and having in said cylindrical spaces rotary abutments and chamber-separating partitions, said casing being furthermore constructed with the cylindrical space intersecting the detour-passages at an intermediate portion of the length of each and with a steam-inlet leading thereto, the rotary cylindrical controlling-valve rotatably mounted and having a cross aperture or recess *x* at its one side connecting the steam-inlet with the portion of the first detour-passage which is to one side of the said controlling-valve, and having the obliquely-extending passage *a*, one end being about in the transverse plane corresponding to recess *x*, and having its other end opening to the next detour-passage, all whereby in its one position it will insure the passage of the steam from the inlet into the first and then into the second chamber in one direction, and upon being partially rotated to reverse the direction of the steam-passage into and through said steam-chambers, and a steam-discharging way for the second or final steam-chamber.

5. The engine-case having the partially-cylindrical spaces A' A^3 opening the one to the other and constructed with the detour-passages 13 and 15 opening to the interior of the engine-case at suitably-opposite sides, and the detour-passage 16 closed from connection with the interior of the case, and having in said cylindrical spaces rotary pistons and abutments, and chamber-separating partitions, said casing being furthermore constructed with the cylindrical space intersecting the detour-passages at an intermediate portion of the length of each and with a steam-inlet leading thereto, the cylindrical controlling-valve rotatably mounted and having a cross aperture or recess *x* at its one side connecting the steam-inlet with the portion of the first detour-passage which is to one side of the said controlling-valve, haying the obliquely-extending passage *a*, one end being about in the transverse plane corresponding to recess *x*, and having its other end opening to the next detour-passage, and also having the second obliquely-extending passage *b* connecting the second passage 15 and the passage 16, substantially as and for the purposes set forth.

655,610. OIL-SEPARATING APPARATUS FOR STEAM-ENGINES.

LESLIE A. COOPER, Springfield, Mass., assignor of one-third to Alvah H. Sabin, New York, N. Y. Filed Jan. 8, 1900. Serial No. 645. (No model.)



Claim.—1. An oil-separating apparatus for a steam-engine consisting of a casing with steam inlet and outlet openings leading thereto and therefrom, a rotary appliance therein of pervious formation, whereby it is longitudinally penetrable by the steam, and also radially pervious, whereby it will project accumulations of condensed steam and oil toward the wall of the casing, means for the rotation of said appliance, and an oil-collection receptacle in communication with the interior of the said casing.

2. In an oil-separating apparatus, a closed casing or chamber, having steam inlet and outlet ports at opposite portions thereof, a rotary oil collecting or arresting and centrifugally-projecting device having at an intermediate part thereof an unobstructed or vacant space, and a stationary steam-breaking device which projects within the said vacant space in he rotary device.

3. An oil-separating apparatus for a steam-engine consisting of a casing with steam inlet and outlet openings leading thereto and therefrom, a rotary brush-like appliance therein, and means for the rotation thereof, and an oil-collection receptacle open to the said casing.

4. An oil-separating apparatus consisting of a chambered casing, a rotary shaft extending through the casing having the multiplicity of radial wires with steam-breaking sections at intervals and an oil-collecting receptacle open to the chamber in the casing.

5. An apparatus for separating the oil from the steam exhausted from an engine consisting of a casing having an opening for the entrance of the admixed exhaust-steam and oil, a rotary appliance therein, a drainage-conduit, and means for rotating the said appliance.

6. An oil-separator for a steam-engine consisting of a chambered casing having a drainage-channel, a rotary shaft within said casing having the multiplicity of radial wires or members and at intervals annular steam-breaking sections, for the purposes set forth.

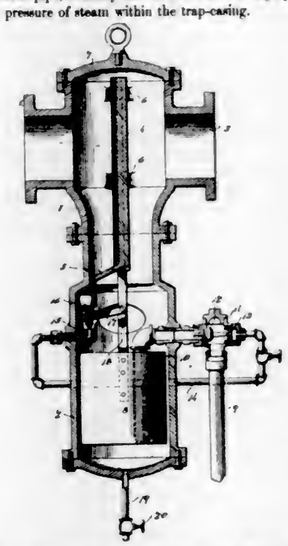
7. An oil-separating apparatus for a steam-engine consisting of the cylindrical chamber-casing G, the rotatable shaft therein, and means for turning it, said shaft being provided at intervals with the radial arms supporting the ring-plates and having between the several ring-plates, radial wires arranged brush-like, a drainage-channel in the base of the chamber and an oil-receiver into which said channel leads.

8. An oil-separator for a steam-engine consisting of a chambered casing, a rotary shaft within said casing having a multiplicity of radial wires or members and at intervals annular steam-breaking sections, and a series of non-rotating members within said casing projecting toward the axis of said shaft.

655,611. STEAM-SEPARATING TRAP.

JOHN R. COX, GEORGE H. WRIGHT, and WILLIAM H. REYNOLDS, Galveston, Tex. Filed Apr. 4, 1898. Renewed June 18, 1900. Serial No. 20,765. (No model.)

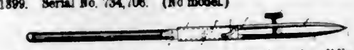
Claim.—1. A steam-trap, comprising a casing having a steam inlet and outlet and provided at the bottom with a water collecting and discharging chamber, a baffle-plate interposed between said inlet and outlet, a buoyant containing-float in the lower portion of the casing adapted to have a rise-and-fall movement and receive the water of condensation from the baffle-plate, said water of condensation also falling into the said chamber, a siphon discharge-pipe having one member thereof arranged within the float, a valve fitted to the siphon discharge-pipe, a steam-pipe connecting the upper portion of the collecting and discharge chamber with a part of the siphon discharge-pipe exterior of the trap, said steam-pipe having a valve located within the collecting and discharge chamber and also provided with a chamber, a piston in the latter for controlling the valve in the discharge-pipe, and a connection between the float and the valve of the steam-pipe, whereby the valve of the discharge-pipe may be closed by the pressure of steam within the trap-casing.



2. A steam-separating trap comprising a casing having a steam inlet and outlet and provided at the bottom with a water collecting and discharge chamber, a bucket-float adapted to be buoyed by water of condensation within the water collecting and discharging chamber to have a rising-and-falling movement and also to receive and contain water of condensation, a siphon discharge-pipe having one member arranged within the casing and extending into the bucket-float, a valve in said siphon discharge-pipe, a steam-pipe having one portion located within the casing and provided with a valve and also with a chamber, said chamber being in communication with the valve of the discharge-pipe, a piston in the said chamber for controlling the valve in the discharge-pipe, a connection between the valve in the portion of the steam-pipe within the casing and the bucket-float, and means within the trap-casing above the float and the water collecting and discharging chamber for separating purposes and directing the water of condensation downwardly into the float and said chamber.

655,612. DRAWING-PEN.

JOSEPH M. DANNHEISER, Chicago, Ill., assignor to the Eugene Dietzgen Company, of Illinois. Filed Oct. 25 1899. Serial No. 734,706. (No model.)



Claim.—1. In a drawing-pen, the combination of a sliding sleeve, a hinged blade, a fixed blade, and a cam-and-pin mechanism for swinging said hinged blade, said cam-and-pin mechanism being operated by the longitudinal motion of said sleeve.

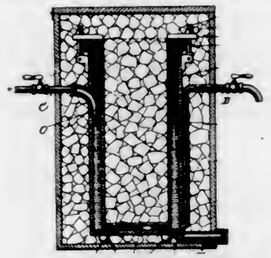
2. In a drawing-pen the combination of a hinged blade, pins attached to said blade, a longitudinally-moving sleeve, and oblique slots within said sleeve for engaging said pins.

3. In a drawing-pen, the combination of a hinged blade, a cam-and-pin mechanism for swinging said hinged blade, a longitudinally-moving sleeve for operating said cam-and-pin mechanism, and a portion at the upper or butt extremity of said hinged blade adapted to fit snugly within said sleeve and be rigidly held thereby.

655,613. BEER-COOLER.

GEORGE DONGES, Baltimore, Md. Filed Jan. 18, 1900. Serial No. 1,915. (No model.)

Claim.—1. In a beer-cooling apparatus, the combination, of two casings, arranged one within the other, supply and delivery pipes communicating with the liquid-chamber formed between said casings, a waste-duct or pipe communicating with said chamber and having an interior, transverse, valve-seat arranged relatively near its point of communication with said chamber, and a valve consisting of a stem, adapted to enter said duct and have its inner end seated against the valve-seat therein, and an enlarged head adapted to surround the outer end of said duct.

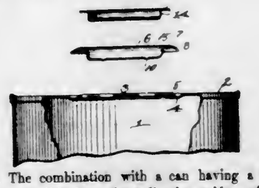


2. In a beer-cooling apparatus, the combination, of a cooling-chamber, an ice-box surrounding said chamber, inlet and delivery pipes communicating with the cooling-chamber and extending beyond the inclosing ice-box, a waste-duct leading from the cooling-chamber through a wall of the ice-box and having an internal valve-seat near its inner end, and a valve having an enlarged head, provided with an internally-threaded groove or chamber to receive and engage the outer end of the waste-duct, and a reduced stem adapted to enter said duct and have its inner end seated against the valve-seat therein, substantially as and for the purpose described.

3. The herein-described beer-cooling apparatus, consisting of an ice-box, a shell or casing, open at its upper end, arranged within the ice-box, a second casing, having a central ice chamber or receptacle, arranged within the first said casing and having at its upper end a flange adapted to extend across the space separating said casings, means arranged outside of said casings for detachably connecting them together, whereby the inner casing and the ice carried thereby may be removed without affecting the outer casing, inlet and delivery pipes extending from the liquid-chamber formed between said casings through walls of the inclosing ice-box, a waste-duct extending from said liquid-chamber through a wall of the ice-box and having an internal valve-seat adjacent to said liquid-chamber, and a valve having a stem adapted to extend from said valve-seat to the outer end of the waste-duct.

655,614. CAN AND MEANS FOR CLOSING SAME.

GEORGE H. DUNBAR, New Orleans, La. Filed June 25, 1900. Serial No. 21,528. (No model.)



Claim.—1. The combination with a can having a filling-mouth formed in its head, of a dished cap depending into said mouth and adapted to be soldered to the can-head to cover the filling-opening, and the bottom of which is adapted to be cut out to provide a pouring-opening, and a dished pry-cover adapted to seat snugly in the cap with its bottom resting upon and supported by the bottom of the latter, said pry-cover provided with a flange beneath which an instrument may be inserted and the cover pried out, substantially as described.

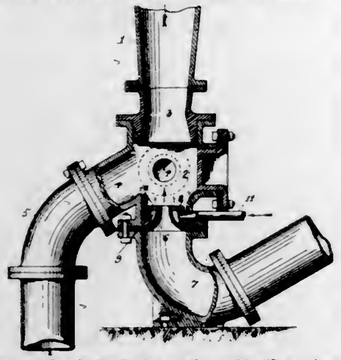
2. The combination with a can having a filling-mouth provided in its head, and a groove surrounding said opening, of a dished cap, the lip of which is constructed to seat in said groove and the dished body of which depends into the filling-mouth, the bottom of said cap provided with means for facilitating the cutting of the pouring-opening therein, and a dished pry-cover, the dished body of which fits snugly in the dished portion of the cap, with its bottom resting upon and supported by the bottom of said cap, and a flange on said pry-cover resting upon the ledge of the cap and arranged for the insertion of an instrument beneath said flange for prying the cover out, substantially as described.

3. The combination with a can provided with a filling-mouth in its top, and a groove around said opening, of a dished cap provided with a rim having a horizontal ledge and continuing in a downwardly-extending lip seated in said groove and adapted to be soldered therein, and a dished

pry-cover seated in said cap provided with a flange resting upon the horizontal lip of the rim of the cap and extending slightly beyond such portion whereby a space is provided for the insertion of an instrument beneath said flange to pry the cover out, substantially as described.

4. The combination with a can provided with a filling-mouth in its top, and a groove around said opening, of a dished cap provided with a rim having a horizontal ledge and continuing in a downwardly-extending lip seated in said groove and adapted to be soldered therein, and a dished pry-cover seated in the dished portion of the cap with its bottom resting upon and supported by the bottom of said cap and provided with a flange resting upon the horizontal ledge of the rim of the cap and extending slightly beyond such portion, whereby a space is provided for the insertion of an instrument beneath said flange to pry the cover out, substantially as described.

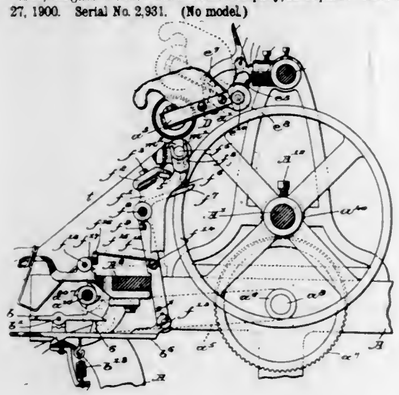
655,615. **HYDRAULIC ELEVATOR.** GEORGE H. EVANS, Oroville Cal., assignor to the Risdon Iron and Locomotive Works, San Francisco, Cal. Filed Jan. 26, 1899. Serial No. 703,428. (No model.)



Claim.—1. In a hydraulic elevator, the combination of a base-chamber or seat having a suction-opening, an elevator-pipe connecting with said chamber or seat, an ejector-pipe, a casing in said chamber provided with a part constituting a nozzle for said ejector-pipe which nozzle extends to the top of the casing and having an annular air-chamber provided with one or more openings through the casing-top exterior to said nozzle and through which air enters said base-chamber or seat, and an air-pipe connecting with said air-chamber, substantially as described.

2. In a hydraulic elevator, the combination of a base-chamber or seat having a suction-opening, an elevator-pipe connecting with said chamber or seat, an ejector-pipe, a casing secured in said chamber by means of a flange located between the ejector-pipe and said seat, said casing provided with a part constituting a nozzle for said ejector-pipe which nozzle extends to the top of the casing and having an annular air-chamber provided with one or more openings through the casing-top exterior to the nozzle and through which air enters said base-chamber or seat, and an air-pipe connecting with said air-chamber, substantially as described.

655,616. **SPOOLING-MACHINE.** CHARLES F. FOSTER, Westfield, Mass., assignor to the Foster Machine Company, same place. Filed Jan. 27, 1900. Serial No. 2,931. (No model.)



Claim.—1. In a spooling-machine, a drum, a winding-roll adapted to be rotated thereby and mounted loosely upon a suitable journal, and means coöperating with said journal to lift it and remove the roll from frictional contact with said drum.

2. In a spooling-machine, a winding-roll composed of a roller having a fixed sleeve extended therefrom, a plurality of rollers loose on said sleeve.

3. In a spooling-machine, a winding-roll composed of a roller having a fixed sleeve extended therefrom, a plurality of rollers loose on said sleeve, and a journal to sustain said sleeve loosely.

4. In a spooling-machine, a drum, means to rotate it, a winding-roll having a journal, bearings to sustain said journal, journal-lifting means extended through said bearings, and means to slide said journal-lifting means to remove the winding-roll from contact with said drum,

5. In a spooling-machine, a journal supporting a winding-roll, a stand having bearings for the journal of said winding-roll, dowel-pins guided in said bearings, a stop-motion device adapted to be operated by the breakage of the thread or yarn being wound, and means controlled by said stop-motion device to move said dowel-pins in said bearings to meet and lift the journal of said roll from its bearings.

6. In a spooling-machine, a winding-roll, suitable bearings for the journal of said roll, a rock-shaft having arms, means actuated by said arms and adapted to act upon the journal of said winding-rolls to lift the same from its bearings, means to operate said rock-shaft.

7. In a spooling-machine, a shaft, a drum carried thereby, a reciprocating thread-guide, a winding-roll adapted to be rotated by said drum, an arm carrying a spindle, a pivot for said arm parallel with the longitudinal axis of said drum, said pivot being located substantially close to said drum and at one side a vertical line intersecting the longitudinal axis of the drum and the axis of said winding-roll, the described location of the pivot of said arm preventing the contact of the enlarging thread mass with the reciprocating thread-guide.

8. In a spooling-machine, a drum, a rod parallel with the axis of rotation of said drum, a stand rotatably and slidably mounted upon or with relation to said rod and having a depending ear, an arm carrying a spindle and pivoted upon said depending ear whereby said pivot is located substantially close to the surface of the drum and at one side of a vertical line intersecting the axis of rotation of said drum.

9. In a spooling-machine, a drum, a rod parallel with the axis of rotation of said drum, a sleeve adjustably mounted on said rod, a stand having its shank adjustable and rotatable in said sleeve, said stand having a depending ear and a pivot, combined with an arm mounted to turn on said pivot and carrying a spindle provided with a tube for the reception of a shell on which the thread or yarn is to be wound.

10. In a spooling-machine, a drum, a rod parallel with the axis of rotation of said drum, a sleeve adjustably mounted on said rod, a stand having its shank adjustable and rotatable in said sleeve, said stand having a depending ear and a pivot, an arm surrounding said pivot, and a tension device coöperating with said pivot to produce friction upon said arm that it may be moved only positively during the winding operation due to increase in diameter of the thread mass being wound.

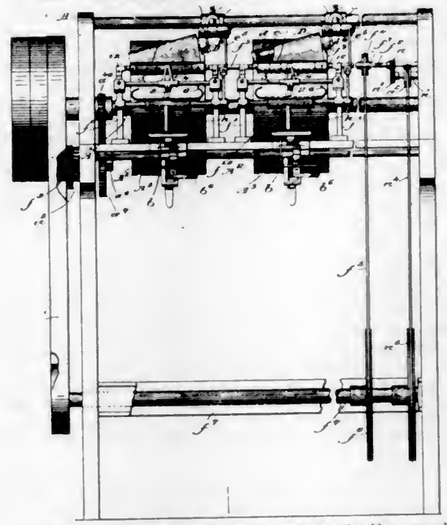
11. In a spooling-machine, a drum, a shaft carrying said drum, a rod occupying a position parallel with the axis of rotation of said drum, stands adjustably connected with said rod and having a depending ear, an arm pivotally mounted on the ear of said stand and carrying a spindle, and a locking device to engage a suitable projection of said arm when the latter is put in its inoperative position, said locking device retaining said arm in such position for the removal of thread or yarn from the spindle or the application of a new shell to the spindle.

12. In a spooling-machine, the following instrumentalities, viz: a drum having a spiral groove, a rod parallel with the axis of motion of said drum, a winding-roller, means to sustain the journal of said roller, dowel-pins acting upon said journal, means to move said dowel-pins to act upon said journal and remove the driving-roll from contact with said drum, an arm having a spindle, said arm being pivoted upon a depending ear of a stand adjustably mounted upon or with relation to said rod, and means to resist frictionally the movement of said arm due to increase of diameter of the thread mass being wound about a shell carried by a spindle mounted in said arm.

13. In a spooling-machine, the following instrumentalties, viz: a drum having a spiral groove, a rod parallel with the axis of motion of said drum, a winding-roller, means to sustain the journal of said roller, dowel-pins acting upon said journal, means to move said dowel-pins to act upon said journal and remove the driving-roll from contact with said drum, an arm having a spindle, said arm being pivoted upon a depending ear of a stand adjustably mounted upon or with relation to said rod, and means to resist frictionally the movement of said arm due to increase of diameter of the thread mass being wound about a shell carried by a spindle mounted in said arm, and a suitable locking device connected with said stand and coöperating with said arm to hold the latter in its adjusted position.

14. In a spooling-machine, stands having bearings, a journal mounted in said stands, a winding-roller mounted loosely on said journal, dowel-pins occupying a position in said bearing to contact with the under sides of said journals, and means to automatically lift said dowel-pins to move the journals in the bearings and break the contact of the winding-roller from the drum employed to actuate it.

655,617. **SPOOLING-MACHINE.** CHARLES F. FOSTER, Westfield, Mass., assignor to the Foster Machine Company, same place. Filed Jan. 27, 1900. Serial No. 2,932. (No model.)



Claim.—1. In a spooling-machine, a series of thread-guides, grooved drums for actuating the same, a shaft containing a plurality of sectional winding-rolls, means to rotate said shaft and its rolls, a plurality of arms having spindles to sustain shells upon which the thread or yarn is to be wound, stop-motion devices, and bars connected with said arms and operatively engaged by said stop-motion devices to remove the wound thread masses from contact with the driving-rolls on the breakage of the thread being wound.

2. A winding-roll, means to operate it, and an arm having an extension, a spindle mounted on said arm, and a carrier to receive and rotate a shell upon which thread or yarn is to be wound, combined with a bar connected with said extension, the movement of said bar removing the thread mass from contact with the driving-roll, and means coöperating with said bar to lock the latter in any position in which it may be left.

3. In a spooling-machine, a drum, means to support and rotate it, a series of thread-guides, means to reciprocate them, a shaft parallel with the axis of rotation of the drum, a plurality of sectional winding-rollers mounted on said shaft, means to rotate said shaft positively and with it said rolls, a series of arms one for each sectional roller, each arm having a spindle and carrying a shell to receive thread or yarn, and stop-motion devices to move said arms and remove the thread masses wound on said shells from driving contact with said winding-rollers leaving them at rest.

4. In a spooling-machine, a drum having a spiral groove, a thread-guide deriving its movement of reciprocation from said groove, means to move said drum at one speed, a shaft having a series of cylindrical rollers, a rotatable shaft independent of the drum-driving shaft, means connecting said independent shaft with the shaft carrying the driving-rollers to enable said shaft to be driven at any desired speed with relation to the speed of said drum, to thereby determine the degree of spirality of the windings, and spindles to carry each a shell to be rotated by said winding-rollers.

5. In a spooling-machine, a series of arms to sustain spindles provided with shells to receive thread or yarn, a shaft having a plurality of winding-rollers, means to rotate said shaft and the plurality of rollers carried thereby, each roller rotating a contacting shell or its yarn mass, a notched bar connected with each of said arms, and a series of stop-motion devices each having a tooth in engagement with said notched bar and adapted to remove a thread mass from contact with one of said rollers whenever a thread or yarn going to a thread mass breaks.

6. In a spooling-machine, a pivoted arm having an extension, a spindle mounted on said arm, a sustaining-carrier to receive and rotate a shell upon which thread or yarn is to be wound, combined with a toothed bar connected with said extension, the engagement and movement of said bar turning the arm carrying said spindle and putting the latter in its inoperative position.

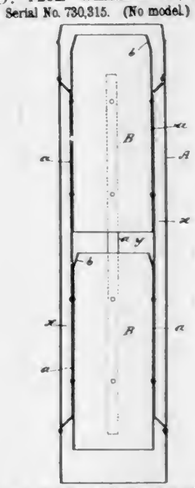
7. In a spooling-machine, an actuating-shaft, a plurality of thread-guides mounted at opposite sides the longitudinal center of said shaft, means carried by said shaft to reciprocate said thread-guides, bearings located at opposite sides the longitudinal center of the thread-guide-actuating shaft, a plurality of roller-carrying shafts parallel with the thread-guide-actuating shaft, a series of winding-rollers carried by each of said roller-carrying shafts, an independent rotatable shaft, and means connecting it with and to rotate the roller-carrying shafts independently of the thread-guide-actuating shaft, whereby the speed of the roller-carrying shaft may be changed at will without necessarily changing the speed of the thread-guide-actuating shaft.

655,618. **PILE-TRUSS.** DAVID L. GARVER, Hart, Mich. Filed May 6, 1899. Serial No. 715,880. (No model.)



Claim.—The improved truss formed of the body-belt C, the bifurcated strap B, the bulb or cushion attached to said strap, and the thumb-strap D, arranged substantially as shown and described.

655,619. **FLUE.** WILLIAM A. GAY, Newark, N. J. Filed Sept. 13, 1899. Serial No. 730,315. (No model.)



Claim.—1. A pipe or stack having in it a flue, and this flue having in it an inner, axial flue formed by a partition extending parallel to the main flue, the said flues communicating at intervals in their length through the medium of apertures in the partition separating them, substantially as set forth.

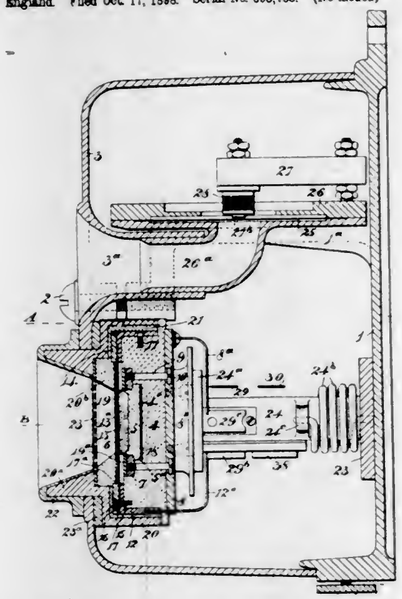
2. A pipe or stack for products of combustion, comprising an outer inclosing wall, and a series of alined inner pipe-sections within said outer wall, the said inner pipe-sections being of less diameter than the main flue, whereby an exterior down-flue *x*, is formed, and having spaces or apertures *y* between their ends whereby, the said exterior flue communicates with the axial flue within said pipe-sections, substantially as set forth.

3. The combination with a stovepipe A, which provides an upright flue for products of combustion, of alined pipe-sections B, secured in said pipe A, said sections being of less diameter than the pipe A, so as to form an external, down-flue *x*, and having spaces or apertures at *y* whereat the axial flue in the sections B communicates with the external flue *x*, substantially as set forth.

4. The combination with a pipe or stack having in it a flue for products of combustion, of the alined pipe-sections B mounted in the flue in said pipe or stack, said sections B being axially situated in and of less diam-

eter than the flue, having spaces *y* between their ends, and being slightly reduced in diameter at their upper ends, substantially as set forth.

655,620. TELEPHONIC APPARATUS. ALFRED GRAHAM, London, England. Filed Oct. 17, 1898. Serial No. 693,783. (No model.)



Claim.—1. Telephonic apparatus comprising a microphone-transmitter inclosed in a movable water-tight casing provided with a thin flexible wall or diaphragm, a receiver having its diaphragm held in a horizontally-arranged holder provided with a downwardly and forwardly projecting tubular extension, and a switch arranged to be moved by said transmitter and to control the circuits of said transmitter and receiver, substantially as described for the purpose specified.

2. Telephonic apparatus comprising a microphone-transmitter, a water-tight casing inclosing said transmitter, and mounted to turn about a horizontal axis and provided with a thin flexible wall or diaphragm that is adapted to transmit vibrations of the external atmosphere to said transmitter, a magneto-electric receiver having its diaphragm held in a horizontally-arranged holder provided with a downwardly and forwardly projecting tubular portion extending from its lowest part, and a switch adapted to be operated by movement of said transmitter and its casing and to control the circuits of said transmitter and receiver, substantially as described for the purpose specified.

3. In telephonic apparatus, a magneto-electric receiver, a microphone-transmitter, a water-tight case inclosing said transmitter and provided with a movable side or diaphragm adapted to transmit vibrations of the external atmosphere to said microphone-transmitter, a spindle attached to the transmitter-case, bearings wherein said transmitter-case and spindles are mounted to partly rotate, and a switch adapted to be operated by rotary movement of said transmitter, case and spindle, and to control the circuits of said transmitter and receiver, substantially as described.

4. Telephonic apparatus comprising a waterproof transmitter mounted to turn about a horizontal axis, a receiver having its diaphragm held in a horizontally-arranged holder provided with a downwardly and forwardly projecting tubular part, a switch arranged to be operated by movement of said transmitter and adapted to control the circuits of said transmitter and receiver, and a casing inclosing said transmitter, receiver and switch, and formed with an inwardly-extending trumpet-shaped part fitting the tubular part of said holder and with an opening opposite the mouthpiece of said transmitter, substantially as described.

5. In telephonic apparatus, a receiver, a transmitter, having a microphone inclosed within a water-tight case provided with a movable side or diaphragm adapted to transmit vibrations of the external atmosphere to said microphone, a spindle attached to the transmitter-case, bearings wherein said transmitter are mounted to partly rotate, and a switch comprising stationary battery, line, bell and receiver contacts and movable contacts adapted to be operated by the rotary movement of said transmitter and one of which serves when the transmitter is moved into the operative position to place the transmitter in series with said battery and one of said line-contacts, and another of which serves to disconnect the other line-contact from said bell-contact and to place it in connection with the receiver-contact, substantially as described.

6. Telephonic apparatus comprising a fixed receiver, a movable transmitter, and a switch comprising a rotary part attached to said transmitter and carrying two insulated contacts connected to the terminals of said transmitter and arranged one in advance of the other, and also a cam or projection, stationary battery, bell and receiver contacts, and two movable contacts connected to two line-contacts and one of which when said transmitter is being moved into the operative position is acted upon successively by said insulated contacts so as to be connected to said battery-contact first directly, and then indirectly through the transmitter, and the other of which is arranged to be operated by said cam or projection so as to break its connection with the bell-contact and put it in connection with the receiver-contact, substantially as described for the purpose specified.

7. In telephonic apparatus, a spring-controlled rotary transmitter mounted to turn about a horizontal axis and comprising a block of insulating material, a carbon-cup, a metal ring holding said cup in a recess in said block, a metal plate located at the back of said block and connected to said ring by screws secured in a water-tight manner to said plate, two clamping-rings secured in a water-tight manner to said block, and to one another, disks of carbon and metal foil secured in a water-tight manner between said clamping-rings, powdered carbon located between said carbon cup and disk, a supporting-ring secured around but insulated from said clamping-rings and attached parts and formed with a flaring mouthpiece, a perforated protecting-plate secured within said supporting-ring in front of said disks of carbon and metal foil, a handle for rotating said supporting-ring and attached parts, a spindle attached to but insulated from the plate at the back of said block, two insulated contacts fixed to said spindle and connected respectively to the clamping-plates and back plate, a spring fixed at one end to the combined transmitter and spindle and at the other end to a fixed part of the apparatus, and switch connections whereby said transmitter will be put in and out of circuit when it is moved into its "operative" and "inoperative" positions respectively, substantially as described.

8. Telephonic apparatus comprising a metal casing composed of a base or support and removable cover formed with a tubular part having a flaring outer end and a circular opening, a magneto-electric receiver having its diaphragm held in a holder that is supported horizontally within said casing and is provided with a downwardly and forwardly extending tubular extension fitting the tubular part of said cover, a bracket fixed within said casing, a transmitter with spindle mounted to rotate about a horizontal axis in said bracket and to extend through the opening in said casing, a switch adapted to be operated by rotation of said transmitter, a spring tending to hold the transmitter in the "inoperative" position, and means for rotating said transmitter into the "operative" position against the action of said spring, substantially as described.

9. Telephonic apparatus comprising a metal casing composed of a base or support and removable cover formed with a tubular part having a flaring outer end and a circular opening, a magneto-electric receiver having its diaphragm held in a holder that is supported horizontally within said casing and is provided with a downwardly and forwardly extending tubular extension fitting the tubular part of said cover, a bracket fixed within said casing, a waterproof transmitter constructed substantially as described, a spindle fixed to but insulated from said transmitter, said transmitter and spindle being mounted to rotate in said bracket opposite the circular opening in said cover, a spring that normally holds the transmitter in the "off" position, means for partly rotating said transmitter against the action of said spring, contacts 29^b, 29^c fixed to but insulated from said spindle, and connected to the terminals of said transmitter and one arranged in advance of the other, an insulated projection 38 on said spindle, battery, line, bell and receiver contacts 35, 29^a and 30^a, 32 and 33 respectively fixed to but insulated from said bracket, said battery-contact being connected to the transmitter-terminal that is connected to the forward insulated contact 29^c, and two spring-contacts 29 and 30 fixed to said insulated line-contacts 29^a and 30^a, said spring-contact 29 being opposite to and normally out of connection with said contacts 29^b, 29^c but arranged in their path, and said spring-contact 30 normally bearing against said bell-contact 32 but adapted to be moved therefrom by said projection 38 into connection with said receiver-contact 33, substantially as described.

655,621. SPRING-OPERATED MECHANICAL TOY OR ANALOGOUS DEVICE. FRANKLIN J. GUSTINE, New Orleans, La., assignor of one-half to Charles Carroll, same place. Filed Nov. 20, 1899. Serial 737,684. (No model.)

Claim.—1. In a mechanical toy, the combination with a spinning-top having a hollow body and a hollow stem passing through said body, a coiled spring fixed at one end within said body to an integral portion thereof and fixed at its opposite end to and surrounding said hollow stem, the said hollow stem being allowed axial movement with respect to said body, one end of said stem having a spinning-point and the opposite end having a locking clutch member formed thereon, and the said body having cylindrical extension concentric with said stem and provided with a locking clutch member, the opposite of the clutch member on the said stem; of a second spinning-top having a rigid stem provided with a spinning-point at one end adapted to enter loosely the open end of the said hollow stem, and having near its spinning end a projection arranged to engage said clutch members and to lock the body and stem of the first-named top together under tension upon said spring, the projection being arranged to become disengaged from the clutch member on the body of the first top by the axial movement of the hollow stem and the said tops receiving independent rotation by the reaction of said spring, substantially as described.



2. In a mechanical toy, the combination with a spinning-top provided with a hollow stem, a coiled spring loosely connecting said body and stem and allowing axial movement of the stem with respect to the body; of a second top having an integral or rigidly-connected body and stem, the latter provided with a spinning-point; means whereby the two tops may be connected together and the body and stem of the first-named top locked against rotation, and means for causing the disengagement of the two tops and their rotation in opposite directions upon the unlocking of the stem and body of the first-named top, substantially as described.

3. In a mechanical toy, and in combination, two spinning-tops, the one containing the impelling mechanism for both, and the other provided with means for locking such impelling mechanism under tension, and for receiving an impetus therefrom when suddenly released from such tension, substantially as described.

4. In a mechanical device, the combination with a body comprising two concentric rotary elements; a spring loosely connecting said rotary elements; and means whereby said elements may be locked against rotation with respect to each other; of a body provided with means for locking said elements under tension, arranged to become disengaged and to unlock said elements upon the axial movement of one of such elements, substantially as described.

655,622. VIOLIN. LOUIS H. HALL, Hartford, Conn. Filed Aug 30, 1899. Serial No. 728,984. (No model.)

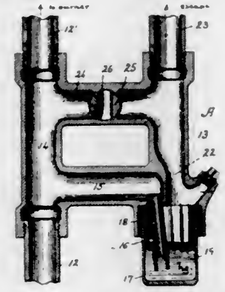


Claim.—1. A stringed musical instrument, the body of which consists of a rim or ribs, and a top and a bottom secured thereto, the edge portions of the top and bottom, at certain points, being under a strain and tending to separate from the ribs, the tension varying lengthwise of the body.

2. A top or bottom for a stringed musical instrument, the said top or bottom having its margin in a surface convexed toward the body of the instrument.

3. A stringed musical instrument, the body of which consists of a rim or ribs, and a top and bottom secured thereto, the edge portion of the top of which tends to separate from the ribs and is under a maximum strain at midway of its length and under a gradually-decreasing strain at the end portions, while the edge portion of the bottom also tends to separate from the ribs, but has its maximum of strain at the ends, the strain decreasing from the ends inward.

655,623. PRESSURE SAFETY DEVICE FOR ACETYLENE-GAS GENERATORS. FRANK H. HARRIMAN, Hartford, Conn., assignor to Wilbur E. Goodwin, same place. Filed July 5, 1899. Serial No. 722,803. (No model.)



Claim.—1. In a device of the class specified, the combination, with means for supplying gas under pressure, of a casing connected with such means and equipped with two sets of passages, one set located at an angle to the other set; an outlet connection leading from one of the passages of one set in said casing to the burner; a waste connection leading from the other passage of said set to the open air; a receptacle containing liquid; and a pipe leading from one of the passages of the other set to and below the liquid in the receptacle, whereby if the gas exceeds a certain pressure it will pass through the liquid and enter said connection.

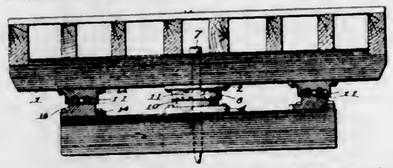
2. The combination, with a gas-reservoir, of a pipe leading therefrom; a casing connected with said pipe and having a passage in line therewith, a duct parallel to said passage, a valved duct connecting said parallel passage and duct, and another duct having a closed end; a pipe leading from the last-named duct; a receptacle containing liquid into which said pipe enters; and a pipe leading to the open air and connected with one of the parallel ducts.

3. The combination, with a gas-reservoir, of a pipe leading therefrom and passing up at one side of said reservoir; a casing having two vertical passages and upper and lower horizontal passages, the lower horizontal passage opening into one of the vertical passages and having a closed end adjacent to the other vertical passage; a valve in the upper horizontal passage; a pipe leading to the burners and connected to one of the vertical passages; a pipe leading to the open air and in communication with the other vertical passage; a receptacle containing liquid, attached to the lower part of said casing; and a pipe leading from the lower horizontal passage, the end of said pipe entering the liquid in said receptacle.

4. The combination, with a gas-reservoir, of a pipe leading therefrom; an integral casing connected to said pipe, said casing having a vertical passage in line with said pipe at one side, and a vertical passage at the other side of its structure; outlet-pipes communicating with said vertical passages; upper and lower horizontal passages in said casing, said lower passage having a closed end; a plug-valve in the upper horizontal passage; a glass receptacle connected to the lower part of said casing and in communication with one of said vertical passages; and a pipe leading from the lower horizontal passage adjacent to the closed end thereof and entering the liquid in said receptacle.

5. A safety-valve consisting of an integral body having vertical passages located as described, and upper and lower horizontal passages, the lower horizontal passage communicating with one of the vertical passages and having a closed end adjacent to the other vertical passage; a plug-valve in the upper horizontal passage; a receptacle containing liquid, rigidly secured to the casing; a pipe leading from the lower horizontal passage, and the end of which dips below the liquid in said receptacle; a passage within said casing through which the receptacle may be filled with liquid; and a stopper for closing said passage.

655,624. BEARING FOR CAR-TRUCKS. CHARLES H. HARTMAN, Allegheny, Pa. Filed June 4, 1900. Serial No. 19,013. (No model.)



Claim.—1. A bearing comprising a truck center plate, a swiveled body center plate rotating thereon, and means for automatically elevating the body center plate when the truck center plate turns, substantially as described.

2. A bearing comprising upper and lower center plates designed to be mounted respectively on a car-body and a truck and both of said plates provided in their bearing-faces with pockets forming oppositely-inclined faces, and antifriction devices interposed between the center plates, arranged in the pockets and adapted to ride up the inclined faces of said upper and lower plates, substantially as described.

3. A bearing comprising upper and lower center plates designed to be mounted on a car-body and a truck, and provided in their bearing-faces with tapering elliptical pockets arranged in an annular series and forming inclined end faces, and antifriction devices interposed between the plates, arranged in the pockets and adapted to ride up the inclined faces, substantially as and for the purpose described.

4. In a middle or center bearing, the combination with upper and lower members provided with annular series of ball-races having opposing inclined faces, and balls arranged in said ball-races, substantially as described.

5. In a middle or center bearing, the combination with upper and lower members provided with an annular series of independent ball-races having opposing inclined faces, and independent balls arranged in said races, substantially as described.

6. In a bearing, the combination with upper and lower center plates, provided with annularly-arranged ball-races, of balls arranged in said races, and inclined faces cooperating with the balls for the purpose described.

7. In a bearing, the combination with upper and lower center plates, provided with annularly-arranged independent ball-races, of independent balls arranged in said races, and inclined faces cooperating with the balls for the purpose described.

8. In a bearing for cars, the combination of a middle or center bearing and side bearings, each composed of upper and lower plates and provided with ball-pockets having oppositely-inclined faces, and antifriction devices interposed between the upper and lower plates of said bearings, substantially as described.

9. In a car-bearing, the combination of middle and side bearings composed of upper and lower members and means for automatically elevating the car-body when the truck turns with relation to the car-body, substantially as described.

10. In a car-bearing, the combination of middle and side bearings composed of upper and lower members and means interposed between the upper and lower members of said bearings for automatically elevating the car-body when the truck turns with relation to the car-body, substantially as described.

11. A bearing comprising a body center plate, a truck center plate, ball-pockets in said plates, balls arranged in said pockets, and an inclined ball-running face for each of said balls, whereby the car-body is automatically elevated when the truck moves with relation to the car-body, substantially as described.

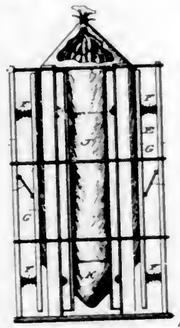
12. A car-truck bearing comprising upper and lower middle or center plates, each having a series of separated arc-shaped grooves and a series of balls, one resting in each groove of the lower plate, with a part of its circumference projecting into the corresponding groove of the upper plate, substantially as described.

13. A car-truck bearing comprising upper and lower plates, each having a series of individual separated pockets or grooves which are semicircular in cross-section, and a series of balls, a single ball resting in each pocket or groove of the lower plate and projecting into the corresponding groove or pocket of the upper plate, substantially as described.

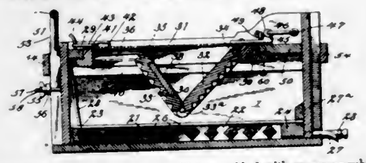
14. A bearing comprising a truck center plate, a swiveled body center plate rotating thereon, and coöperating means interposed between said plates for automatically elevating the body center plate when the truck center plate turns, substantially as described.

655,625. BANANA-SHIPPING CASE. JAMES JACKSON, Mansfield, Ohio. Filed Mar. 3, 1900. Serial No. 7,160. (No model.)

Claim.—In a banana-case, the combination of the outer skeleton case composed of the series of vertical strips, the hoops surrounding and holding said strips, the inner case composed of a series of vertical strips, the links connecting the strips of the inner to the strips of the outer case, the springs connected to and imposed between the strips of the inner and outer case forming cushions, and the banana-holding sack arranged in and secured to the inner case.



655,626. WASHING-MACHINE. LUKE L. KELLOGG, Leon, N. Y. Filed Feb. 13, 1900. Serial No. 5,079. (No model.)



Claim.—1. A washing-machine provided with an upper rubber composed of two oppositely-inclined sections hinged together at their adjacent ends, one of the sections being pivoted at its upper or outer end and the other section being slidingly and pivotally mounted, whereby the upper rubber is adapted to yieldingly engage the clothes and adjust itself to the same automatically, substantially as described.

2. A washing-machine having a lower rubber and provided with an upper rubber suspended within the body and having its ends located above its center, one end of the upper rubber being permanently pivoted, and the other being slidingly mounted, whereby the upper rubber is adapted to engage the clothes yieldingly to adjust itself to the quantity of clothes being washed, substantially as described.

3. In a washing-machine, the combination of a washing-machine body provided with a lid or cover, and an upper rubber composed of movably-connected sections and pivoted at one end to the cover and slidingly and pivotally connected at its other end to the same, said rubber being arranged to depend within the washing-machine body, and adapted to fit against the cover when the latter is swung out of the body to form a washboard, substantially as described.

4. In a washing-machine, the combination with a body, a lid or cover provided with side pieces having ways located at one end of the lid or cover, and an upper rubber composed of jointed or movable sections and provided at one end with pintles to fit into said ways and having its other end pivoted between the side pieces, substantially as described.

5. In a washing-machine, the combination of a washing-machine body, an upper rubber composed of sections and suspended within the body, one end of the upper rubber being permanently pivoted and the other end being slidingly and pivotally mounted, whereby the upper rubber is adapted to engage the clothes yieldingly and adjust itself to the quantity of clothes being washed, said sections being adapted to be arranged in alinement to form a hand-washboard, and a vertically-adjustable handle adapted to support the washboard in different positions, substantially as described.

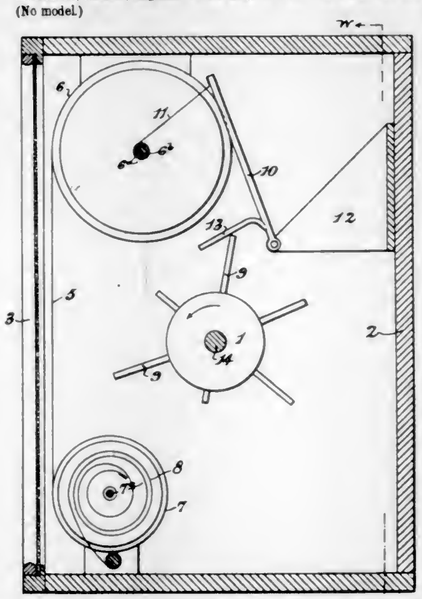
6. In a washing-machine, the combination of a body, a lower rubber arranged at the bottom of the body and provided with a hinged brace arranged to engage the upper portion of the body and adapted to be swung inward and outward from such engagement, and a lid or cover arranged adjacent to the upper end of the brace and locking the same against inward movement, substantially as described.

7. In a washing-machine, the combination of a body provided at its ends with transverse bars 27ª and 29, the bar 27ª being arranged near the bottom of the body and the bar 29 being located at the top thereof, the lower rubber arranged within the body and having one end arranged beneath the transverse bar 27, a brace hinged to the other end of the rubber and forming a handle and extending upward and engaging the lower face of the bar 29 to retain the lower rubber in position, and a cover engaging beneath the bar 29 and retaining the brace in engagement with the same, substantially as described.

8. In a washing-machine, the combination of a stand, a rocking body mounted thereon, plates or keepers depending from one end of the body and provided at their inner edges with slots, a hinged support mounted on the stand at the bottom of the same and arranged beneath the body and engaging the slots of the keepers, said support being adapted to swing inward beneath the body, an operating-rod arranged at one side of the washing-machine and hinged to the support, and means for supporting the operating-rod, substantially as described.

9. In a washing-machine, the combination of a body provided at one end with a hook-shaped projection and having keepers at the other, a cover provided with a link arranged at one of its ends and engaging the hook-shaped projection, and a cranked rod mounted on the other end of the cover and provided at its ends with arms engaging the keepers, substantially as described.

655,627. ADVERTISING APPARATUS. JOHN A. KENNEDY-MCGREGOR, London, England. Filed Aug. 18, 1898. Serial No. 688,929. (No model.)



Claim.—1. In an apparatus of the character described the combination of a series of independent flexible carriers arranged side by side and movable lengthwise, independent actuating mechanism adapted to move each carrier separately in one direction and independently of the other carriers, variable controlling mechanism operating each actuating mechanism to move all of said carriers simultaneously and each carrier to variable predetermined distances, means adapted to return the carriers to their normal position after each movement and driving means, substantially as described.

2. In an apparatus of the character described, the combination of a series of independent and parallel flexible carriers arranged side by side and approximately in the same plane and provided with characters for exhibition, yielding means for separately moving each of said carriers in one direction, actuating mechanism adapted to move each carrier separately in one direction and independently of the other carriers, controlling mechanism for operating simultaneously all the actuating mechanism and determining the extent of movement thereof, means adapted to return the carriers to their normal position after each movement, and driving means substantially as described.

3. In an apparatus of the character described, the combination of a case having an opening, a series of independent parallel and longitudinally-movable flexible carriers arranged to move lengthwise side by side behind said opening and each provided with a longitudinal series of representations arranged to be separately displayed behind said opening, whereby various combinations of the representations of the carriers can be displayed, independent operating mechanism adapted to move each of said carriers longitudinally and independently through a variable and predetermined distance, controlling mechanism adapted to actuate simultaneously the operating mechanism of the several carriers to variable extents means adapted to return the carriers to their normal position after each movement, and driving means for said controlling mechanism, substantially as described.

4. In an apparatus of the character described, a number of pairs of drums arranged with the axes of each pair parallel and one above the other, a series of independent and parallel longitudinally-movable flexible carriers arranged side by side, each of said carriers being wound on a separate pair of said drums, lever and rotary mechanisms for moving each carrier independently of the others through a variable predetermined distance, controlling and actuating means therefor adapted to move said carriers simultaneously and to different extents, and means adapted to return the carriers to their normal position after each movement, substantially as described.

5. In an apparatus of the character described, a series of independent and parallel longitudinal flexible carriers arranged side by side, independent supports for the several carriers, independent sets of actuating means adapted to move each of said carriers independently and longitudinally to a variable predetermined distance and thereby form the desired combination of characters, series of fingers or projections of various lengths to operate said actuating means to periodically move said carriers simultaneously and independently through various and predetermined distances, and means adapted to return the carriers to their normal position after each movement, substantially as described.

6. In an apparatus of the character described, a series of independent and longitudinally-movable parallel flexible carriers arranged side by side, each carrier having a series of characters to be separately displayed, independent supports for the several carriers, independent operating mechanism for each carrier, series of controlling and actuating means, one for each operating mechanism constructed and arranged to move the operating mechanisms simultaneously at intervals and to variable distances, means adapted to return the carriers to their normal position after each movement, and driving means, substantially as described.

7. In an apparatus of the character described, a series of independent and longitudinally-movable flexible carriers arranged side by side, each carrier having operating means independent of the operating means of the other carriers, independent sets of long and short movable projections or fingers for moving said independent sets of operating means and consequently said carriers through variable distances, a set of said projections being provided for each operating means, mechanism for simultaneously driving the several sets of projections, and means adapted to return the carriers to their normal position after each movement, substantially as described.

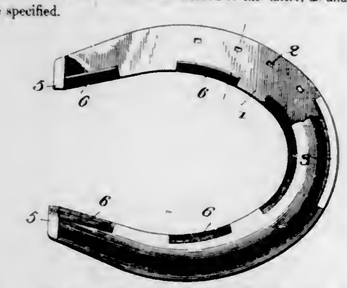
8. In an apparatus of the character described, the combination of a series of independent and parallel longitudinally-movable carriers arranged side by side and portions of which are displayed at intervals, independent supports for said carriers, and sets of movable projections arranged to move each of said carriers independently through a variable and predetermined distance, each set of projections comprising projections of various lengths acting on a particular strip and arranged to move the carrier periodically and to hold the same inactive for a short period after each movement, mechanism for moving all of said sets of projections simultaneously and means adapted to return the carriers to their normal position after each movement, substantially as described.

9. In an apparatus of the character described, the combination of a series of independent elements each comprising a loaded drum and a winding-drum arranged at a distance apart and parallel to one another, a carrier mounted on said drums, a lever mechanism to unwind the carrier from the loaded drum against the load acting thereon and arranged to release the carrier periodically so that it can be rewound on the loaded drum, and sets of projections of various lengths successively acting on said lever mechanism to move the same various predetermined distances and hold the same a short time at each movement, means adapted to return the carrier to its normal position after each movement and driving means for simultaneously operating the sets of projections corresponding to all the elements, substantially as described.

655,628. SOFT-TREAD HORSESHOE. WILLIAM M. KENNEDY and ROBERT C. DUNCAN, Franklin, Pa. Filed Nov. 14, 1899. Serial No. 736,922. (No model.)

Claim.—1. A soft-tread horseshoe comprising the metal shoe having calks and toe, a series of flanges formed integral with the shoe at the inner edge of its underneath face, said flanges being of less height than the calks and toe and provided with openings, a resilient tread secured to the underneath face of said metal shoe, and a flexible band eccentrically arranged in said resilient tread with its ends passing through and secured to said calks, as and for the purpose described.

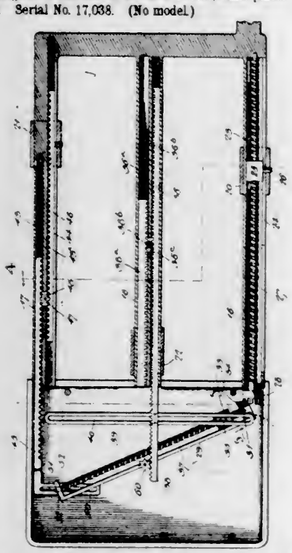
2. A soft-tread horseshoe comprising a metal shoe provided with calks and toe and with a series of apertured flanges of less height than the calks and toe, a resilient tread secured to the metal shoe with its one side engaging the inner faces of said flanges, said tread being provided on its upper face with recesses to receive heads of the nails which secure the metal shoe, and a flexible band passing eccentrically through the resilient tread and calks with its ends secured to the latter, as and for the purpose specified.



3. In a soft-tread horseshoe, the combination with the metal shoe having the calks and toe and provided with a series of apertured flanges, of the resilient tread engaging the underneath face of the metal shoe and provided on its upper face with recesses to receive the heads of the nails which secure the metal shoe, and means arranged within said tread and secured to the calks for retaining the tread in position, as and for the purpose specified.

4. In a soft-tread horseshoe, the combination, with the metal shoe having the calks 5 and toe 3 and a series of apertured flanges 6 with the flange opposite the toe 3 of greater length than the remainder of said flanges, of a resilient tread 8 having recesses in its upper face to receive the heads of the securing-nails for the shoe, and a flexible band eccentrically arranged in said tread with its ends secured to the calks for holding the tread in position, as and for the purpose specified.

655,629. COMPUTING-SCALE. THOMAS A. KILLMAN, Liberty, Tenn., assignor of one-half to Alvin E. Potter, same place. Filed May 17, 1900. Serial No. 17,038. (No model.)



Claim.—1. In a computing-scale, the combination with a scale-beam, and an indicator carried thereby, of a weight-poise, indicator-actuating mechanism operable by said poise, a rate-poise, and mechanism actuated by the rate-poise for counterbalancing the latter and for adjusting an element of the indicator-actuating mechanism previous to operation of said indicator-actuating mechanism by the movement of the weight-poise, substantially as described.

2. In a computing-scale, the combination with a scale-beam, and an indicator having a stationary dial and carried by said beam, of a weight-poise, an indicator-actuating mechanism including a shiftable spindle and a reciprocating bar and a device actuated by the spindle and engaging the reciprocating bar, said mechanism being operatively connected with the weight-poise, a rate-poise, and means actuated by the rate-poise for counterbalancing the latter and for adjusting said spindle of the indicator mechanism preliminary to adjustment of the weight-poise, substantially as described.

3. In a computing-scale, the combination with a scale-beam, an indicator mechanism thereon, and a weight-poise, of a poise-actuated spindle, a shiftable frame, a screw-spindle carried by said frame and intergeared to the poise-actuated spindle, and a reciprocating element operatively connected with the shiftable spindle and the indicator mechanism, substantially as described.

4. In a computing-scale, the combination with a scale-beam, an indicator mechanism thereon, and a weight-poise, of a shiftable spindle supported pivotally in coaxial relation to the fulcrum of the scale-beam, means actuated by the poise for rotating said spindle, an indicator-actuator, and connections between the shiftable spindle and the indicator-actuator, substantially as described.

5. In a computing-scale, the combination with a scale-beam, an indicator mechanism, and a weight-poise, of a shiftable frame supported pivotally in coaxial relation to the scale-beam, a screw-spindle journaled on said frame, a poise-actuated spindle intergeared with the shiftable spindle, means for shifting the frame and the spindle thereon, relative to the poise-actuated spindle, and an indicator-actuator connected operatively with the shiftable spindle, substantially as described.

6. In a computing-scale, the combination with a scale-beam, an indicator mechanism, and a weight-poise, of a pivoted shiftable frame, a revoluble spindle carried thereby, a reciprocating indicator-actuator connected with the indicator and provided with a cross-head, a traveling nut slidably confined on the shiftable frame and having a geared connection with the shiftable spindle, and a slidable connection with the cross-head of said indicator-actuator, and means for changing the position of the frame and the spindle preliminary to the adjustment of the weight-poise, substantially as described.

7. In a computing-scale, the combination with a scale-beam, an indicator mechanism thereon, and a weight-poise, of an indicator-actuating mechanism operable by said weight-pose, a rate-poise, and connections between the rate-poise and the indicator mechanism, said connections being shiftable automatically, substantially as and for the purpose described.

8. In a computing-scale, the combination with a scale-beam, an indicator mechanism, and a weight-poise, of an indicator-actuating mechanism operable by the weight-poise and including a shiftable element, a rate-poise, and oppositely-movable elements intergeared together for simultaneous movement, one of said elements being connected with the rate-poise and the other element connected with the shiftable element of the indicator-actuating mechanism, substantially as described.

9. In a computing-scale, the combination with a scale-beam, an indicator mechanism, and a weight-poise, of an indicator-actuating mechanism operable by the weight-poise and having a shiftable element, a rate-poise, the oppositely-movable racks, one of which is fast with the rate-poise, an idle gear intermeshing with both racks, and an arm fast with the other rack and connected slidably with the shiftable element of the indicator-actuating mechanism, substantially as described.

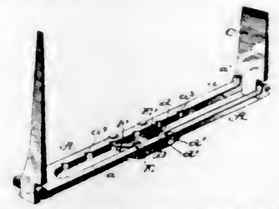
10. In a computing-scale, the combination with a scale-beam having a slotted weight-bar, an indicator mechanism, and a weight-poise, of a revoluble screw-spindle journaled in said weight-bar, a traveling nut fitted to said spindle and fast with the weight-poise, a shiftable frame, a screw-spindle journaled in said frame and geared to the poise-actuated spindle, a cross-head, a traveling nut engaging with the shiftable spindle and connected slidably with the cross-head and means for connecting the cross-head with the indicator mechanism, substantially as described.

11. In a computing-scale, the combination with a scale-beam having its bar 18 provided with a guideway, an indicator mechanism, and a weight-poise, of a rack-bar confined in said guideway and geared to the indicator mechanism, a slotted cross-head fast with said rack-bar, a shiftable frame, a spindle journaled on said frame, a nut engaging with the spindle and having a stud fitted in the slotted cross-head of the rack-bar, means actuated by the poise for rotating the shiftable spindle, and means for adjusting the shiftable frame, substantially as described.

655,630. GUIDE AND SUPPORT FOR DRAG-SAWS. EDGAR F. LAFAYETTE, Sedro, Wash. Filed May 19, 1900. Serial No. 17,277. (No model.)

Claim.—1. The improved saw guide and support, comprising a bar, a pointed device hinged to each end and adapted to fold flat, or to be driven into a log when turned out, and a support for a saw which is attached to the bar intermediate of said pointed devices, whereby the apparatus is adapted for application and use on the under side of a log as shown and described.

2. An improved saw guide and support, comprising a bar having wedges or pointed devices hinged to its ends, and a saw-guiding device which is movable on said bar, and means for securing such device in any adjustment, substantially as shown and described.



3. An improved saw guide and support comprising a bar having a longitudinal slot, wedges hinged to its ends, a plate having a notch or slot to receive a saw, and adapted to slide on the bar, and means for securing it in any adjustment, substantially as shown and described.

4. An improved saw guide and support comprising a slotted bar, wedges attached to its ends, and a slidable device, a roller carried by the latter, a pawl for holding said device at any desired height, as shown and described.

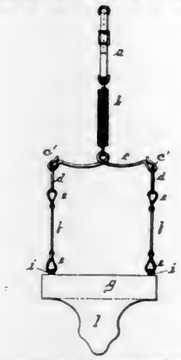
5. An improved saw guide and support comprising a bar having wedges hinged to its ends and adapted to fold, substantially as shown and described.

6. An improved saw-guide comprising a bar having its ends projected inward or to one side, and wedges hinged to such projections as shown and described, whereby they are adapted to fold and lie flat upon the body of the bar as shown and described.

7. An improved saw guide and support comprising a bar having wedges attached to its ends, one of which is inclined to one side, so as to be out of the path of the saw when the latter is in use, as shown and described.

8. An improved saw guide and support comprising a bar, wedges hinged to it and adapted to fold as specified, and having ends that project beyond the bar when said wedges are turned out in position for driving, substantially as shown and described.

655,631. BABY-EXERCISER. CHARLES E. LATSHAW, Lincoln, Nebr. Filed Sept. 25, 1899. Serial No. 731,690. (No model.)

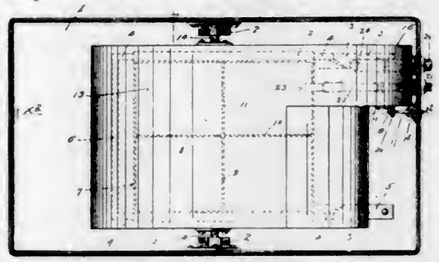


Claim.—In a baby-exerciser, the combination, with the main or horizontal spring having dependent hooks which are arranged as specified, of the two obtuse-angle springs *d*, adapted for attachment to and suspension from said hooks, and the girdle and four straps attached thereto and to ends of the angle-springs, as shown and described.

655,632. ACETYLENE-GAS GENERATOR. JAMES W. LAWRENCE, Minneapolis, Minn. Filed Oct. 26, 1899. Serial No. 734,809. (No model.)

Claim.—1. In a gas-generator, the combination with a water tank or receptacle, of a gas holder or drum mounted on a pivot for movements to and from operative position, a carbid-holder support, independent of said gas holder or drum, a carbid-holder supported by said support, within said holder or drum and adapted to be inclosed within and exposed without the said holder, when said holder is moved respectively into and from working position, substantially as described.

2. In a gas-generator, the combination with a water tank or receptacle, of a gas-holder open at its bottom and mounted for pivotal movement within said tank, a carbid-holder support rising through the open bottom of said gas-holder at one extremity thereof, and a carbid-holder removably held by said support and removable through the bottom of said gas-holder, when the same is inverted, substantially as described.



3. In a gas-generator, the combination with a water tank or receptacle, of a gas-containing drum or receptacle open at its bottom and mounted for pivotal movement on a horizontal axis in bearings secured to said tank, a support for the carbid-holder, a water-supply pipe and a gas-conveying pipe all rising through the opening in the bottom of said drum, and a carbid-holder held by the said support and removable through the bottom of the said pivoted drum when the said drum is inverted or turned open bottom upward, substantially as described.

4. In a gas-generator, the combination with the water-tank 1, of the gas drum or bell 13 pivoted to the sides of said tank by bearings 2 and trunnions 14, a latch for securing said drum in its normal position, the support 3, 4 for the carbid-holder projecting through the bottom of said drum, the carbid-holder 7 having the cleats 12 engageable with the horizontal bars 4 of said support, the water-pipe 22, 23 and gas-pipe 24 both passing through said tank 1 and rising into the gas-drum through the open bottom thereof, substantially as described.

5. In a gas-generator, the combination with the water tank or receptacle, and a gas drum or receptacle movable to and from operative positions, of the support comprising the vertical standards 3 rising within said gas drum or receptacle and provided with the horizontal bars 4 tied by the cross-strap 6, the water-supply pipe 22 with discharge-nozzle 23, and the carbid-holder 7 adjustably mounted on said horizontal bars 14 with freedom for sliding adjustments with respect to said discharge-nozzle 23 substantially as described.

655,633. JOURNAL-BEARING. WALTER T. LEE and NORMAN MELLOR, Philadelphia, Pa. Filed Mar. 10, 1900. Serial No. 8,167. (No model.)



Claim.—1. The combination of the journal-box with a retaining-cap therefor having a portion for closing the box so as to prevent removal of the journal therefrom, said cap being movable in one direction to release the journal, but having a portion engaging with the box or its carrier and necessitating movement of said engaging part in a different direction before the cap can be moved out of retaining position, substantially as specified.

2. The combination of the journal-box with a retaining-cap therefor having a portion for closing the box so as to prevent removal of the journal therefrom, said cap being movable in one direction to release the journal but having a portion engaging with the box or its carrier and necessitating movement of said engaging part in a different direction before the cap can be moved out of retaining position, and elastic provision for maintaining said engaging part in engagement, substantially as specified.

3. The combination of the journal-box, bushings receiving said journal and fitting in said box, and a retaining-cap having a portion for closing the box so as to prevent removal of the journal-bushing therefrom, said cap being movable in one direction to release the journal-bushing but having a portion engaging with the box or its carrier and necessitating movement of said engaging part in a different direction before the cap can be moved out of retaining position, substantially as specified.

4. The combination of the journal-box with a retaining-cap therefor having a portion for closing the box so as to prevent removal of the journal therefrom, said cap being pivoted so as to be movable in one direction out of retaining position but having a portion transverse to the axis of the pivot and engaging with the box or its carrier and necessitating movement of said engaging part in a direction different from that of the swing-

ing movement before the cap can be swung out of retaining position, substantially as specified.

5. The combination of a journal-receiving box with a removable cap therefor having a pivot-stud and a shoulder transverse to the axis of the pivot for engagement with the box whereby a vertical movement of the cap in order to free said shouldered portion is necessary before the cap can be swung around out of its retaining position, substantially as specified.

6. The combination of a journal-receiving box with a removable cap therefor, having a pivot-stem, a plate for closing the end of the box, and a shoulder transverse to the axis of the pivot for engaging with the top of the box, whereby vertical movement of the cap in order to free the said shouldered portion from the box is necessary before the cap can be swung around out of retaining position, substantially as specified.

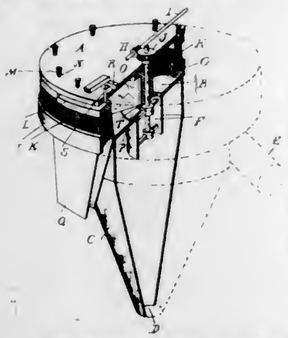
7. The combination of the journal-box with a retaining-cap therefor having a pivot-stem and a spring acting to depress the cap, said cap having a shoulder transverse to the axis of the pivot for engagement with the box and necessitating movement of the cap before it can be swung around out of retaining position, and a support for retaining the cap in the elevated position when thus swung around and for exerting such friction upon the cap as to prevent it from being accidentally swung back into retaining position, substantially as specified.

655,634. MACHINE FOR MAKING CIGARETTES. PETER J. LESCHANDER, Rochester, N. Y., assignor of one-half to James J. Stafford, same place. Filed May 3, 1900. Serial No. 15,362. (No model.)



Claim.—In a pocket cigarette-machine, the combination of a segment of a hollow cylinder turning within a larger segment of a hollow cylinder upon a common hinge which is substantially the axis of the cylindrical segments, and an apron secured to the smaller and inner segment.

655,635. DUST-COLLECTOR. ORVILLE M. MORSE, Jackson, Mich. Filed July 1, 1899. Serial No. 722,570. (No model.)



Claim.—1. A dust-collector comprising two circular heads, and a circumferentially-arranged brush, a series of imperforate radial division-walls forming a series of chambers, an air-inlet common to all the chambers at the center of one head, means for shutting off the chambers successively, and means for vibrating the brush of the shut-off chamber.

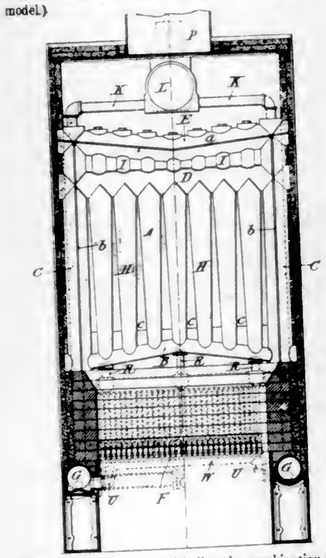
2. A dust-collecting device comprising a momentum dust-collector having a tapering body and an apertured head, of a dust-collector applied thereto comprising the head A, radial imperforate division-walls secured thereto, means for rotating the same, a brush formed in sections extending between the edges of the head A and the head of the momentum dust-collector, means for vibrating sections of the brushes, and a dust-spout over which the brushes are vibrated.

3. A dust-collecting device comprising a momentum dust-collector having a tapering casing and an apertured head B, of a dust-collector applied to the head and consisting of the head A complementary to the head B, means for rotating the head, a series of circumferentially-arranged brushes secured to the head A and extending to the head B, a series of radial apertures dividing the space between the head into a series of chambers, a cut-off between the opening in the head B and each of the chambers successively during the rotation thereof, and means for vibrating the brush during the cut-off period of such chamber.

4. A dust-collecting device comprising a momentum dust-collector, consisting of a casing having an apertured head and a tangential air-inlet, of a dust-collector applied to the aperture in the head and comprising a brush, arranged over the exit therefrom, means for shutting off communication between the exit-opening and the chamber within the casing and connecting it with a reverse-operating draft, and means for vibrating the brush during such shut-off period.

5. A dust-collecting device comprising a tapering casing, a tangential inlet for the dust-laden air, a dust-outlet at the small end, an imperforate top having a central aperture for the purified air, an imperforate head above the top of the dust-collector forming a chamber between the two and brushes extending between the head and top through which the air from the chamber last referred to must pass in its exit and means for vibrating or shaking said brushes intermittently.

655,636. SECTIONAL STEAM-GENERATOR. CHARLES W. NEWTON, Baltimore, Md. Filed Dec. 21, 1899. Serial No. 741,157. (No model.)



Claim.—1. In a sectional boiler, the combination of a series of sections, above the combustion-chamber of the furnace, each having a lower angular manifold converging upward, to which is connected a second manifold by conical tubes, a downward angular converging steam-manifold connected to the second manifold by straight tubes and circulating-tubes, connecting the end of all the manifolds, substantially as described.

2. In a sectional boiler, the combination of a series of sections, each having a lower upward angular converging manifold, to which is connected a second manifold by conical tubes, a downward angular converging steam-manifold connected to the second manifold by vertical tubes, circulating-tubes connecting the ends of all the manifolds, and a steam-drum connected to the circulating-tubes, substantially as described.

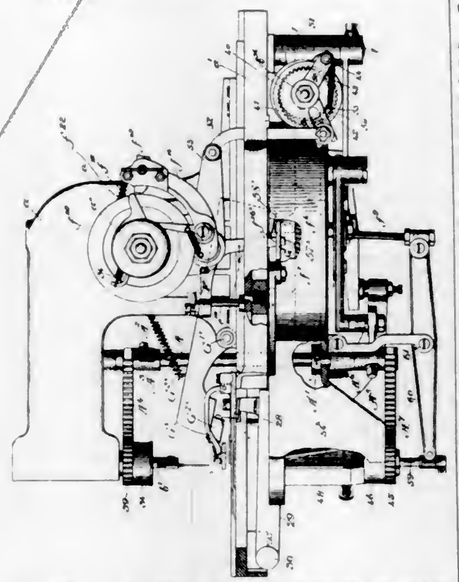
3. In a sectional boiler, the combination of a series of sections, each consisting of a series of manifolds, water-tubes and circulating-tubes, the top manifold and circulating-tubes of each section being in contact, forming the top and sides of the furnace and an independent section apart from and forming between it and the last section of the series, a flue for the furnace, substantially as described.

4. In a sectional boiler, the combination of a series of sections, with an independent back section, connected to steam and mud drums, and connected to the manifold of a water-circulating grate, said grate also being connected at its forward end to the mud-drums, substantially as shown and described.

5. The combination in a sectional steam-generator of an independent back-section consisting of the upwardly-projecting angular manifold B, the manifold D, said manifolds connected by upwardly-enlarging tubes H, the connecting-tubes R, R, R, to the lower manifold and tubes I, I, connecting the manifold D to steam-manifold E, and steam-pipes K K, to steam-drum L, as set forth.

6. In a sectional boiler composed of a series of sections with an end section composed of manifolds and water-tubes connecting the same, of webs between the manifolds and water-tubes of said end section extending nearly down to the bottom manifold, the openings forming an outlet from the furnace to the smoke-flue, substantially as described.

655,637. BUTTONHOLE SEWING AND CUTTING MACHINE. MARIETTA REECE and FRANCIS A. SHEA, Brookline, Mass., administrators of John Reece, deceased. Filed July 8, 1898. Serial No. 685,403. (No model.)



Claim.—1. In a machine for stitching buttonholes, the following instrumentalities, viz: a cloth-frame, a clamp mounted thereon, a stitch-frame containing part of the stitch-forming mechanism comprising a needle-bar and needle, a gear surrounding the needle-bar of the stitch-forming mechanism, a block containing the stitch-forming mechanism complemental to said needle-bar and needle, a second gear carried by said block, a vertical rock-shaft, two toothed sectors mounted on said rock-shaft, means to turn said rock-shaft and actuate said toothed sectors each for a distance sufficient to rotate both said gears for a distance in excess of one complete rotation, a part of said complete rotation being effected at each end of the buttonhole, and means on the completion of the buttonhole to reverse the movement of said stitch-forming mechanism and turn it back into its normal or starting position.

2. In a machine for stitching buttonholes, the following instrumentalities, viz: a stitch-frame having a casing, an operating-cam having a cam-groove, means to rotate said operating-cam, a pivoted lever movable with said casing and the stitch-frame, a stud carried by said lever and entering a groove in said operating-cam, a sector-lever having an arm, means to connect the lever movable with said casing and stitch-frame with said sector-lever, a rock-shaft to which said sector-lever is fixed, a second sector-lever carried by said rock-shaft near its upper end, two gears each engaged by one of said sector-levers, and stitch-forming mechanism rotated in unison by said sector-levers engaging said gears, said sector-levers being actuated for a distance sufficient to impart to said gears and the stitch-forming mechanism a movement in excess of a full rotation, and means to then reverse the movement of said sector-levers and stitch-forming mechanism, putting the stitch-forming mechanism into its normal or starting position.

3. In a buttonhole-stitching machine, a stitch-frame having a casing, stitch-forming mechanism mounted in said stitch-frame, said stitch-forming mechanism comprising an eye-pointed penetrating needle and a complemental under-thread-carrying needle, an operating-cam inclosed in said casing, and means to rotate said operating-cam; combined with a lever pivotally mounted upon and movable with said casing and stitch-frame, an adjustable roller-stud carried by said lever and entering a groove in said operating-cam, a sector-lever, an independent fulcrum therefor, said sector-lever engaging a gear operatively joined to the complemental stitch-forming means, and a jointed connection between the lever movable with the casing and stitch-frame and the end of said sector-lever, to operate, substantially as described.

4. In a buttonhole-stitching machine, stitch-forming mechanism comprehending an eye-pointed penetrating needle and complemental devices carrying an under thread, means to actuate said stitch-forming mechanism to form overedge-stitches, and means to rotate said stitch-forming mechanism for a distance greater than one rotation thereof during the formation of a buttonhole, means to suspend the operation of said stitch-forming mechanism at the completion of a buttonhole, and means to thereafter reverse the rotation of said stitch-forming mechanism and return it to its normal starting position.

5. In a buttonhole-stitching machine, stitching mechanism including an eye-pointed penetrating needle, an under-thread carrier, and a looper; means to actuate said stitch-forming mechanism to form a series of over-edge-stitches, and means to cause said stitch-forming mechanism to operate along the sides of the buttonhole, means for imparting to said stitch-forming mechanism a semirotative movement at opposite ends of the buttonhole, said semirotations being in the same direction, the extent of rotative movement given to the stitch-forming mechanism in making a buttonhole being more than one full rotation whereby the buttonhole is stitched about both ends, means to suspend the operation of the stitch-forming mechanism at the completion of the buttonhole, and means to thereafter turn said stitch-forming mechanism in the reverse direction returning it to its normal starting position.

6. In a buttonhole-stitching machine, a stitch-frame carrying stitch-forming mechanism including an eye-pointed penetrating needle, an under-thread carrier and looper; a clamp-frame; a shaft mounted in said clamp-frame, an operating-cam carried by said clamp-frame and rotated by said shaft intermittingly step by step during the operation of stitching a buttonhole, a starting and stopping cam adjustable in position and as to its operative length and carried by said operating-cam, and means controlled by said starting and stopping cam to start into operation and stop the action of said stitch-forming mechanism that the stitching may be commenced at the desired point in a buttonhole and be carried entirely about the buttonhole, the stitch-forming mechanism during such operation being rotated in one direction for more than a full rotation thereof, at which time the stopping mechanism acts to effect the stopping of the stitch-forming mechanism, further rotation of said operating-cam by said shaft, the stitching mechanism being at rest, reversing the said stitch-forming mechanism and returning the stitch-frame into its starting position.

7. In a machine for stitching buttonholes, a stitch-forming mechanism consisting of a reciprocating eye-pointed needle and complemental means coöperating therewith and to form an overedge-stitch, a support for said complemental stitch-forming means, a clamp to hold the work, cloth-cutting means, means to actuate it to cut the work in the clamp, means to actuate said stitch-forming mechanism, means to rotate said support in one direction intermittingly for more than one complete rotation while the stitch-forming mechanism is actuated to stitch a buttonhole and bar one end thereof, and means to thereafter rotate said support with its complemental stitch-forming means in an opposite direction while the stitch-forming mechanism is inoperative.

8. In a machine for stitching buttonholes, a clamp-frame, a clamp to hold the work, a stitch-frame, stitch-forming mechanism therein including an eye-pointed penetrating needle and complemental parts to control a second thread, means to actuate said stitch-forming mechanism to make overedge-stitches, means to control the time of starting said actuating means, and the commencement of the stitching, means to change the relative positions of said stitch-forming means and clamp-frame according to the size of the buttonhole to be stitched, means to impart to said stitch-forming mechanism during the formation of a buttonhole a circular motion in excess of one entire rotation, means to stop said actuating means at the completion of the rotative movement of the stitch-forming mechanism and to then reverse the movement of said stitch-forming mechanism, returning it to its normal starting-point.

9. In an organized buttonhole-stitching machine, a work-clamp, work-cutting mechanism, stitch-forming mechanism including an eye-pointed penetrating needle and complemental under-thread-carrying means, means to actuate said cutting mechanism to cut the work, means to then start the sewing mechanism to overstitch the edges of the buttonhole, means to rotate the said stitch-forming mechanism in one direction for more than a full rotation to thereby enable the last stitches made in finishing the buttonhole to overlap stitches made at the commencement of the buttonhole, and means to thereafter reverse the rotation of said stitch-forming means and bring it into its normal starting position.

10. In a buttonhole-stitching machine, the following instrumentalities, viz: a stitch-frame, a clamp to hold the work, actuating-arms having projections to open and close said clamp, a depending arm connected with the actuating-arms, a casing connected with said stitch-frame, a lever pivotally mounted on said casing and provided with a stud, said lever having operative contact with said depending arm, and a rotating cam shaped to actuate the lever carrying said stud and effect the closing of the clamp automatically at the proper time.

11. In a buttonhole-stitching machine, the following instrumentalities, viz: a stitch-frame, a clamp-frame, a work-holding clamp mounted thereon, actuating-arms connected with said cloth-clamp and having pro-

jections to be acted upon and close said clamp, a depending arm connected with the actuating-arms, a casing connected with said stitch-frame, a lever pivotally mounted on said casing and having its ends normally in contact with said depending arm, a spring acting on said depending arm to open the clamp, and a cam acting on said lever to depress the depending arm and close the clamp at the desired times.

12. In a buttonhole-stitching machine, a cloth-clamp having depending arms, an arm having a device to engage said depending arms and provided with an adjustable stop a change of position which limits the extent of opening of the clamp to adapt the same for receiving work of varying thickness.

13. In a buttonhole-stitching machine, a cloth-clamp, means in engagement with said cloth-clamp for moving the same in one or the other direction, a closing-lever, means to operate it, and adjusting means between said closing-lever and the means for opening and closing said clamp, whereby the degree of pressure of the clamp upon the goods may be determined.

14. In a buttonhole-stitching machine, a clamp, an arm having ears engaging depending arms of said clamp, a depending arm carried by the arm having the ears, an adjustable stud in said depending arm, a spring connecting a suitable point on the frame of the machine and said depending arm to open the clamp, and a closing-lever cooperating with said depending arm to close the clamp at the proper time and means for operating said lever.

15. In a buttonhole-stitching machine, the following instrumentalities, viz: a shaft having a worm, said shaft also having an arm with a projection, an operating-cam having worm-teeth engaged and adapted to be rotated by the worm of said shaft, a stitch-frame carrying said operating-cam and shaft, a continuously-rotating high-speed clutch-pulley mounted loosely on said shaft, stitch-forming mechanism carried by said stitch-frame, an independent rotating shaft, and means operated thereby to actuate said stitch-forming mechanism, means to start and stop the shaft for operating the stitch-forming mechanism at the desired times, a switch controlled by the means for starting and stopping the shaft for operating the stitch-forming mechanism, said switch having an incline and being operatively connected with a hub secured to said continuously-rotating high-speed clutch-pulley, an initial starting-lever having a stud, cloth-clamping mechanism provided with a stud to hold and release said initial starting-lever at the desired times, whereby when the said initial starting-lever is locked by said latter stud with the cloth-clamp in its open condition the movement of the stitch-frame with the switch having the incline causes said switch to operate and remove the clutch-pulley from engagement with the projection carried by the arm of the shaft having the worm to thereby stop the further rotation of said worm-shaft.

16. In a buttonhole-stitching machine, a stitch-frame, a shaft mounted therein, a continuously-rotating clutch-pulley loose on said shaft, a switch made as a lever and mounted on said stitch-frame, one end of said switch being in operative engagement with a part of a sleeve extending from said clutch-pulley, said switch having an incline; combined with means to move said switch in a direction to effect the engagement of a projection carried by said clutch-pulley with a projection carried by an arm extended from said shaft, means under the control of said shaft to move the stitch-frame longitudinally, a clamp-frame, an initial starting-lever pivoted thereon, means to lock said lever as the stitch-frame is started in its longitudinal movement, a projection carried by said lever being acted upon by the incline of the switch to effect the disengagement of the clutch from said shaft when the stitch-frame has been moved longitudinally for the proper distance to at such time release the clutch and leave the shaft actuated by it at rest.

17. In a buttonhole-stitching machine, a cloth-frame, a cloth-clamp carried thereby, and operatively connected with a stud to lock an initial starting-lever, said cloth-clamp being pivotally mounted on said clamp-frame, an initial starting-lever pivoted on said clamp-frame and provided with a stud, a stitch-frame having a shaft, a continuously-rotating clutch-pulley mounted loosely on said shaft, a switch, a spring controlling said switch to effect the engagement of said rotating clutch-pulley with said shaft to start it at its highest speed, said shaft actuating the stitch-frame and causing the incline on the switch acting against the stud of the initial starting-lever to disengage the clutch referred to and stop the rotation of said shaft.

18. In a buttonhole-stitching machine, a shaft having an arm provided with a projection, a constantly-rotating pulley loosely mounted on said shaft and provided with a projection, a cloth-clamp, means to retain said cloth-clamp in its open position, an initial starting-lever controlled by said cloth-clamp and operatively held in its abnormal position by said open clamp, a switch under the control of a spring to normally effect the engagement of the projection of said clutch-pulley with the projection of the arm fast on said shaft, the closing of the clamp releasing the initial closing-lever permitting the spring to act upon and turn the switch to engage the clutch-pulley with the shaft.

19. In a buttonhole-stitching machine, the following instrumentalities, viz: a stitch-frame, a shaft mounted therein having a worm, an operating-cam carried by said stitch-frame, said cam having worm-teeth adapted to be engaged and rotated by the worm of said shaft, a continuously-rotating high-speed clutch-pulley mounted loosely on said shaft, stitch-forming mechanism mounted in said stitch-frame and actuated from a primary shaft a^2, means to start and stop said primary shaft to operate or leave at rest the stitch-forming mechanism at the desired times, a switch having an incline at one end and held in one of its positions by the means for starting or stopping said primary shaft, means to connect said switch with the hub of said continuously-rotating high-speed clutch-pulley, an initial starting-lever having a stud, a cloth-clamp, and means intermediate said cloth-clamp and said initial starting-lever to lock and then release the latter lever at the desired times, whereby when the said initial starting-lever having said stud is locked by or through the cloth-clamp, the movement of the stitch-frame with the switch having the incline causes said incline acting against said initial starting-lever to disengage a projection from said clutch-pulley from a projection of the shaft having the worm, and a spring to move said switch when the initial starting-lever is released by the closing of the cloth-clamp, said spring at such time immediately effecting the engagement of the clutch and the immediate starting of the shaft having the worm at its high rate of speed.

20. In a buttonhole-stitching machine, a stitch-frame having a casing, a switch pivoted on said casing and having at one end an open slot, the other end of said switch having an incline, a high-speed continuously-rotating clutch-pulley, means to connect said switch with said clutch-pulley to slide it on the shaft about which it is rotated, a three-armed rock-shaft having one of its arms engaging said switch, means to actuate said rock-shaft to turn said switch in one direction, a spring to move said switch in an opposite direction, a clamp-frame, a lever pivoted on said clamp-frame, and having at one end a stud; combined with a clamp mounted on said clamp-frame, and means intermediate said clamp and said lever to hold the latter in fixed position when the clamp is open to receive work, said lever being released when the clamp is closed, thus freeing the switch that it may be immediately actuated by its spring to close the clutch and start the shaft at its high rate of speed.

21. In a machine for stitching buttonholes, the following instrumentalities, viz: a cloth-frame, a cloth-clamp mounted thereon; a stitch-frame containing stitch-forming mechanism, a gear having teeth entirely about its periphery and surrounding the needle-bar of the stitch-forming mechanism, a gear having teeth entirely surrounding its periphery mounted on a block containing the stitch-forming mechanism complemental to said needle-bar and needle; a vertical rock-shaft, two sector-levers having said rock-shaft as their center of motion, and means to turn said rock-shaft and impart to said sector-levers a movement sufficient to impart more than a complete rotation to the said gears and the stitch-forming mechanism, a part of such rotary motion being effected at opposite ends of the buttonhole, said sectors in their reverse movement reversing the said gears and turning the stitching mechanism backwardly into its starting position.

22. In a machine for stitching buttonholes, the following instrumentalities, viz: a frame having a clamp to hold the material to be stitched, a stitch-frame containing stitch-forming mechanism, actuating means therefor, means for imparting more than a complete rotary movement to said stitch-forming mechanism, part of such rotary movement being imparted at one period in the operation of stitching the buttonhole, and the remainder of such rotary movement being imparted at another period in the operation of the stitching of the buttonhole.

23. A sewing-machine, comprising a stitch-forming mechanism, means for imparting to said mechanism a complete rotation during its sewing operations, and means for reversing said rotation to restore said mechanism to its normal position after the completion of its sewing operations.

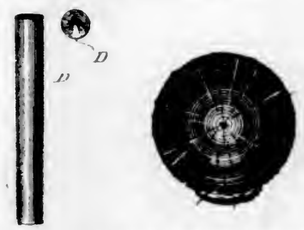
24. A sewing-machine of the character stated, comprising a bed-frame, a work-clamping member, an eye-pointed, reciprocating, straight needle located above the clamping member, and complemental stitch-forming mechanism consisting of an eye-pointed, reciprocating curved needle located below the clamping member, means to actuate the needles in forming the stitches, means to rotate the needles, step by step, a full revolution during the stitching operations, and means to reversely rotate the needles back to the starting-point.

25. A sewing-machine of the character indicated, having a work-clamping member, an eye-pointed, reciprocating, straight needle located above the work-clamping member, an eye-pointed, reciprocating curved needle below the work-clamping member, means to actuate the needles for making overseaming-stitches, a cam, and means to rotate the cam, said cam having a groove, and connections, substantially as described, with the needle-carrying parts, whereby a partial rotation of the cam causes a full rotation of the needles in one direction and complete rotation of the cam causes reverse rotation of the needles back to the starting-point.

26. A sewing-machine comprising a stitch-forming mechanism and a cutting mechanism, means for actuating said mechanisms alternately, means for imparting to the stitch-forming mechanism a complete rotation during its sewing operations, and while the cutting mechanism is at rest, and means for restoring both the stitch-forming and cutting mechanisms to position for a repetition of their operations; substantially as described.

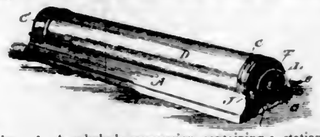
27. In a sewing-machine of the character indicated, in combination, a bed-frame, a work-clamping member, an eye-pointed, reciprocating, straight needle located above the work-clamping member, and complemental stitch-forming mechanism including an eye-pointed, reciprocating, curved needle located below the work-clamping member, means to actuate the needles in forming the stitches, a cam and means to actuate it, step by step, during the stitching operations, and separate means to actuate it continuously thereafter, said cam having the cam-groove B^4, and connections, substantially as described, with the needle-carrying parts b', 48, whereby the needles are rotated a full revolution during said step-by-step movement, and reversely rotated to the starting-point during the said continuous movement, substantially as described.

655,638. FENCE-POST. JULIUS G. ROBINSON, Brooklyn, Ala. Filed Aug. 18, 1899. Serial No. 727,672. (No model.)



Claim.—As an improved article of manufacture, a fence-post having its major portion saturated with pitch and a longitudinal, segmental portion unaffected by the pitch and therefore soft to receive the nails or other securing means, substantially as specified.

655,639. SCHOLAR'S COMPANION. CHARLES SCHNEIDER, Cold Spring, Ky. Filed Oct. 5, 1898. Serial No. 692,751. (No model.)



Claim.—1. A scholar's companion containing a stationary casing and a semicylindrical cover therefor pivoted in the ends of the casing, the cover being provided with ends each inclosing rubber sheets, the ends being provided with concentric series of registering perforations, and the inclosed rubber sheets with smaller perforations concentric with the perforations of the ends, substantially as described.

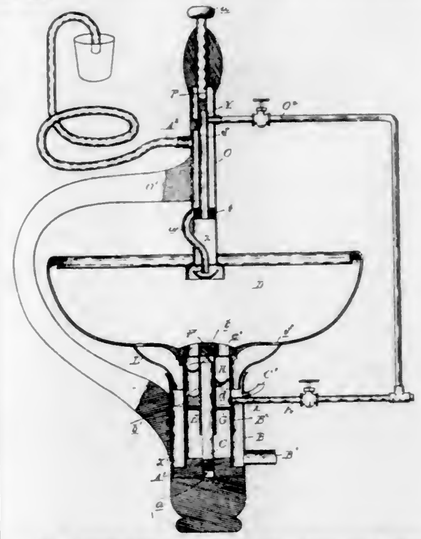
2. A scholar's companion containing a stationary casing and a semicylindrical cover therefor pivoted in the ends of the casing, the cover being provided with ends each inclosing rubber sheets, the ends being provided with concentric series of registering perforations, the inclosed rubber sheets with smaller perforations concentric with the perforations of the ends, and a disk intermediate of the ends also consisting of duplicate plates inclosing a rubber sheet, the plates being provided with registering series of perforations, and the rubber with smaller perforations concentric with the perforations in the plates, substantially as described.

3. A scholar's companion provided with a stationary casing, a semicylindrical cover having circular ends, trunnions projecting centrally from said ends to the ends of the main casing, and a sliding disk arranged in the cover parallel with and intermediate of its ends consisting of duplicate plates of metal provided with registering series of perforations, and an inclosing sheet of rubber provided with smaller perforations concentric with the perforations of the duplicate plates, substantially as described.

4. The combination of the main casing, the semicylindrical cover pivoted therein, the strip secured at its ends to the inside of the cover, the sleeve or slide P on said strip, and the perforated disk Q secured to said slide intermediate of and parallel with the ends of the cover substantially as described.

655,640. FOUNTAIN-SPITTOON. GEORGE H. TREADGOLD, Port Huron, Mich. Filed Oct. 23, 1899. Serial No. 734,570. (No model.)

Claim.—1. In a fountain-spittoon, the combination of a support, a bowl mounted thereon for rotary movement, a rotary fluid-motor arranged below the bowl and connected with the latter, and means for operating the motor.



2. In a fountain-spittoon, the combination of a support, a bowl mounted thereon for rotary movement having water inlet and outlet openings formed therein, a rotary water-motor arranged entirely beneath the bowl and connected to the latter, and a water-supply device arranged in operative relation to the motor.

3. In a fountain-spittoon, the combination of a support, a bowl mounted thereon for rotary movement having water inlet and outlet openings formed therein, a water-wheel arranged beneath the bowl and connected to the latter, and a nozzle arranged in operative relation to the wheel.

4. In a fountain-spittoon, the combination of a support, the bowl mounted thereon for rotary movement having water inlet and outlet openings formed therein, a guide-sleeve depending centrally from the bowl, a water-wheel secured to the said sleeve, and a nozzle or jet in operative relation to the wheel.

5. In a fountain-spittoon, the combination of a support, the bowl mounted thereon for rotary movement having water inlet and outlet openings formed therein, a motor-chamber arranged below the bowl provided with a water-discharge opening, a guide-sleeve depending from the bowl, a rotary fluid-motor carried by the sleeve and arranged within the chamber, and a water-supply device for the motor.

6. In a fountain-spittoon, the combination of a support, a bowl mounted thereon for rotary movement, said bowl being provided with discharge-apertures and having a perforated raised central portion substantially dome-shaped in configuration a motor-chamber arranged beneath the apertured bowl-center, a guide-sleeve fixed to the bowl and depending therefrom, a water-motor mounted upon the sleeve within the chamber, and a water-supply device for the motor.

7. The combination of a support provided with a discharge-casing, a bowl mounted upon the support above the casing for rotary movement, having formed therein a multiple of inlet-openings and a series of discharge-openings, a water-motor beneath the bowl and secured to the latter, a water-supply device arranged in operative relation to the motor, and a skirting attached to the exterior of the bowl above the discharge-apertures in the latter and extending downwardly to and within the discharge-casing, substantially as described.

8. In a fountain-spittoon, the combination of a support provided with a water-discharge casing, a bowl mounted upon the support above the casing for rotary movement, said bowl being provided with water inlet and outlet ports, a water-motor below the bowl, a water-supply device arranged in operative relation to the motor, and an air-pipe carried by and communicating with the discharge-casing, substantially as described.

9. In a fountain-spittoon, the combination of a support, a bowl mounted thereon for rotary movement, a motor for rotating the bowl arranged beneath the latter, and means for actuating the motor.

655,641. NON-REFILLABLE BOTTLE. José M. URGELLES, New York, N. Y. Filed Apr. 21, 1900. Serial No. 13,729. (No model.)

Claim.—1. The spiral coil C, combined with a ball-valve casing and a central conical cap, said spiral coil being arranged around the central conical cap and between its walls and those of the valve-casing, substantially as and for the purpose described.

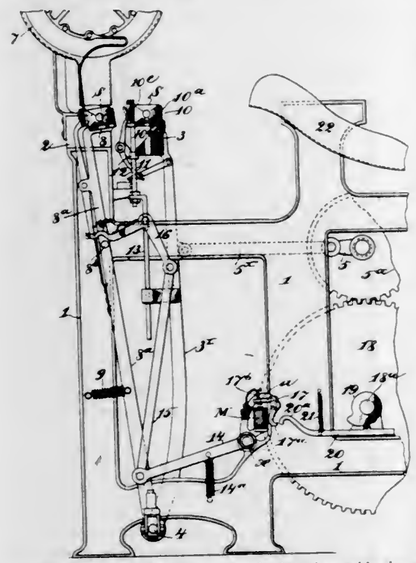


2. In a non-refillable bottle the combination with a valve-casing having a central conical chamber, of two balls both made of greater specific gravity than the liquid contents, the larger ball being made of glass and hollow, and the smaller ball being made of metal and enameled substantially as and for the purpose described.

3. The combination with a bottle-neck having a transverse internal groove; of a valve-casing having in its exterior wall a recess upon each side one hemispherical and the other a curved transverse groove, an elastic cushion and ball arranged in one, and an elastic cushion and curved locking-piece in the other substantially as and for the purpose described.

4. In a non-refillable bottle, the combination with the bottle-neck, a rigidly-locked valve-casing in the lower end of said neck and a cork in the upper end of the same; of a detachable transverse shield made of non-frangible material, said shield being formed as a disk fitted transversely in the neck of the bottle between the cork and the valve-casing and filling the transverse space of the neck, and having on its upper side a loop-handle for effecting its withdrawal substantially as described.

655,642. LOOM. WILLIAM H. BAKER, Central Falls, R. I., and FREDERIC E. KIP, Montclair, N. J. Original application filed July 19, 1899, Serial No. 724,385. Divided and this application filed Nov. 1, 1899 Serial No. 735,444. (No model.)



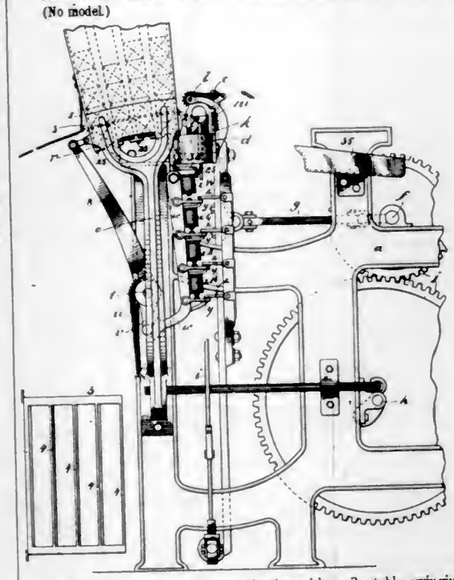
Claim.—1. In a weft-supplying mechanism, the combination with a stationary shuttle-magazine having a rotary drum, with shuttle-pockets and a delivery-chute at its bottom, a guided, shuttle-carrying placer which normally occupies a position under said chute to receive the shuttles, and a guided shuttle-box on the lay, adapted to be moved up and down, of means for simultaneously moving said shuttle-box upward and for moving said placer into the position left vacant by said shuttle-box, substantially as set forth.

2. The combination with the displaceable shuttle-box, the vibratable placer, and mechanism for operating said shuttle-box and placer, of the magazine, comprising a stationary casing, having a delivery-chute at its lower part, the rotatable drum in said casing provided with cells or pockets for the shuttles and with studs at its end, of means carried by the placer for imparting intermittent rotative impulses to said drum, substantially as set forth.

3. In a weft-supplying mechanism, the combination with a stationary shuttle-magazine having a rotary drum, with shuttle-pockets and a delivery-chute at its bottom, a guided, shuttle-carrying placer which normally occupies a position under said chute to receive the shuttles, and a guided shuttle-box on the lay, adapted to be moved up and down, of means for simultaneously moving said shuttle-box upward and for moving said placer into the position left vacant by said shuttle-box, and electromagnetic means for controlling the times of the operation thereof, substantially as set forth.

4. The combination with the displaceable shuttle-box, the vibratable placer, mechanism for operating said shuttle-box and placer, and electromagnetic means for controlling the times of operation of said mechanism, of the magazine, comprising a stationary casing, having a delivery-chute at its lower part, the rotatable drum in said casing provided with cells or pockets for the shuttles and with studs at its end, of means carried by the placer for imparting intermittent rotative impulses to said drum, substantially as and for the purposes set forth.

655,643. LOOM. WILLIAM H. BAKER, Central Falls, R. I., and FREDERIC E. KIP, Montclair, N. J. Filed Nov. 3, 1899. Serial No. 735,646. (No model.)



Claim.—1. In a loom, the combination with a vibratable, swinging shuttle-box, and a magazine to contain filled shuttles, of a vibratable placer, adapted to swing the shuttle-box to one side by its impact thereon, and also to receive the shuttles from the magazine and carry them to the picking position, and means for vibrating said placer at proper times.

2. In a loom, the combination with a laterally-vibratable, swinging shuttle-box, a spring which returns said box to its normal position, and a shuttle-magazine, of a vibratable placer to transfer the shuttles from the magazine, said placer being adapted to swing and displace the shuttle-box sidewise by its impact thereon, and means for vibrating said placer at proper times.

3. In a loom, the combination with a shuttle-magazine, of a vibratable placer to take a shuttle from the magazine and carry it to the picking-point, a detainer for holding said placer at the picking position until the shuttle of the placer has been picked, means for operating the placer at proper times, means for releasing the latter when its shuttle has been picked, and a laterally-swinging shuttle-box, adapted to be displaced by and to make room for the placer.

4. In a loom, the combination with a shuttle-magazine, of a vibratable placer to take a shuttle from the magazine and carry it to the picking-point, a detainer for holding said placer in its position at the picking-point until the shuttle held therein has been picked, the picker-stick, means for operating the placer at proper times, means actuated by the picking operation for releasing the latter when its shuttle has been picked, and a swinging shuttle-box adapted to be displaced by the impact of the placer, to make room for the latter.

5. In a loom, the combination with a shuttle-magazine, and a vibratable placer for carrying a shuttle from the magazine to the picking-point, of a detainer for holding the placer at the picking-point until the shuttle

therein has been picked, means for operating the placer at proper times, mechanism for picking the shuttle, means whereby the placer is released by the picking mechanism at the end of the picking operation, and a vibratable shuttle-box adapted to be displaced to make room for the placer.

6. In a loom, the combination with the lay, and a shuttle-magazine, of a vibratable placer to take a shuttle from the magazine and carry it to the lay, a detainer for holding said placer in its position on the lay until the shuttle of the placer has been picked, means for operating the placer at proper times, the picker-stick, means whereby said stick releases the placer through the picking operation, and a vibratable shuttle-box adapted to be displaced to make room for the placer.

7. In a loom, the combination with the lay, the swinging, vibratable shuttle-box thereon, and a spring or springs for returning said box to place, of the vibrating placer adapted to displace or swing aside said shuttle-box by impact thereon.

8. In a loom, the combination with the lay, the vibratable shuttle-box thereon, and a shuttle-magazine, of a vibratable placer, adapted to transfer a shuttle from the magazine to the lay and to displace at the same time the said shuttle-box, mechanism between the lay and said placer whereby the former operates the latter at proper times, and electrical means controlling the times of operation of the said intermediate mechanism, said electrical means being set in operation by the exhaustion or partial exhaustion of the weft or filling in the shuttle in play.

9. In a loom, the combination with the lay and a displaceable shuttle-box thereon, of a series of magazines or compartments for holding carriers of different kinds of weft or filling, a vibratable placer having a series of pockets to receive weft-carriers from the respective magazines or compartments and carry them to the lay, means for operating said placer and shuttle-box, and electrical means for determining the extent of movement of said placer toward the lay, said electrical means being set in operation by the exhaustion or partial exhaustion of the weft or filling on the weft-carrier in play.

10. In a loom, the combination with the lay and a displaceable shuttle-box thereon, of a series of magazines or compartments for holding carriers of different kinds of weft or filling, a vibratable placer having a series of pockets to receive weft-carriers from the respective magazines or compartments and carry them to the lay, means for operating said placer and shuttle-box, and electrical means for determining the extent of movement of said placer toward the lay, said electrical means including a normally-open circuit which is held open or closed by the presence or absence of weft or filling in the shuttle in play.

11. In a loom, the combination with the lay and a displaceable shuttle-box thereon, of a series of magazines or compartments for holding carriers of different kinds of weft or filling, a vibratable placer having a series of pockets to receive weft-carriers from the respective magazines or compartments and carry them to the lay, means for operating said placer and shuttle-box, and electrical means for determining the extent of movement of said placer toward the lay, said electrical means including a normally-open circuit which is held open or closed by the presence or absence of weft or filling in the shuttle in play, the circuit being completed by the entry of the shuttle into the said vibratable shuttle-box.

12. In a loom, the combination with the vibrating lay, and the shiftable shuttle-box mounted thereon, of a magazine having a series of compartments situated at different distances from the lay, a placer *r*, mounted slidably under said magazine and having a series of pockets corresponding to the several compartments of the magazine, means for operating said placer to advance it over the lay, and means for setting in operation at proper times the mechanism which operates said placer.

13. In a loom, the combination with the vibrating lay, the shiftable shuttle-box on the lay, and the stationary magazine having a series of compartments situated at different distances from the lay, of a placer *r*, slidably mounted under said magazine and having a series of pockets corresponding respectively to the several compartments of the magazine, means for operating said placer, means for detaining it when moved out over the lay, means for releasing the placer, and electrical means for setting in operation the placer-operating mechanism at proper times.

14. In a loom, the combination with the vibrating lay, the shiftable shuttle-box on the lay, and the stationary magazine having a series of compartments situated at different distances from the lay, of a placer *r*, slidably mounted under said magazine and having a series of pockets corresponding respectively to the several compartments of the magazine, means for operating said placer, means for detaining it when moved out over the lay, means for releasing the placer, electrical means for setting in operation the placer-operating mechanism at proper times, and for controlling the extent of movement of the placer.

15. In a box-loom, the combination with the vibrating lay, a shiftable, single shuttle-box *k* mounted thereon at one side of the loom, a box-motion 19, at the opposite side of the loom, and a magazine with shuttle-compartments at that side of the loom where the box *k* is situated, of the placer *r*, mechanism for operating the placer, electrical means, set in operation by the entry of the shuttle in play into the box *k*, for setting in operation the placer-actuating mechanism, and a switch device, actuated by the box-motion, which determines the extent of movement of the placer.

16. In a loom, the combination with the lay, the magazine having a series of compartments, the vibratable placer under the magazine, and means for moving said placer out over the lay, said means comprising a lever *s v*, a lever *w*, a series of electromagnets mounted on the lever *w* at different distances from its fulcrum, the armature-levers of said magnets, and a series of tappets *z*, moving with the lay, the said tappets and magnets corresponding in number to the pockets in the placer, of an open electric circuit having branches including said magnets, and terminals at a shiftable shuttle-box on the lay, the said box, means carried by the several shuttles whereby exhaustion of the weft on the shuttle in play closes said circuit on the entry of the shuttle into the said box, and means substantially as described for selecting and switching in the proper magnets.

17. In a loom, the combination with the lay, of the shuttle-box *k*, suspended thereon, the contact 13, mounted on the box and provided with a branch 32, which bears on a terminal at the hinge-axis, the said terminal, and a shuttle having a contact-plate on its face which forms a rubbing contact with the contact 13 when the shuttle enters the box.

18. In a loom, the combination with the vibrating lay, the box-motion 19 at one side of the loom, the shuttle-box *k*, at the other side of the loom, means for supplying shuttles carrying weft of the various kinds to replace those exhausted, and electrical controlling means comprising a series of magnets, an open electric circuit having branches including the respective magnets, said circuit having terminals at the shuttle-box whereat the circuit is completed by the entry of an exhausted shuttle into said box, and a selecting-switch 21, operated by the box-motion to switch in the proper magnet, substantially as set forth.

19. In a weft-supply mechanism for looms, the combination with the lay, the box-motion and the shuttle-box at the side of the loom opposite to the box-motion, of an electric circuit having branches 17 containing each an electromagnet and having a terminal 18, and the main circuit having terminals at the shuttle-box and a terminal 21, carried by the box-movement, whereby the shifting of the boxes of the box-movement serves to put the proper magnet in circuit, substantially as set forth.

20. A shuttle provided with a hinged spindle, exterior contact-plates 8 and 9, a contact-breaking spring 10, set in the shuttle-body and connected electrically with one of said contact-plates, and a pin or piece 11, connected electrically with the other of said contact-plates, the parts 10 and 11 being normally in contact, in combination with a bobbin or holder for weft or filling, adapted to fit on said spindle and having in it a slot to receive the free end of the spring 10 when said holder is in place on the spindle.

21. A shuttle provided with a hinged spindle, exterior contact-plates 8 and 9, a contact-breaking spring 10, set in the shuttle-body and connected electrically with one of said contact-plates, a pin or piece 11, connected with the other of said contacts, and means for connecting the spring 10 to the spindle so that it may flex and follow the spindle when the latter is opened out, the parts 10 and 11 being normally in contact, in combination with a bobbin or holder for weft or filling, adapted to fit on said spindle and having in it a slot to receive the free end of the spring 10 when said holder is in place on the spindle.

22. A box-motion loom having the following instrumentalities, namely, means for automatically supplying weft or filling of different kinds or colors as required, electrical means for setting in motion said supplying mechanism, said means being controlled by the presence or absence of weft or filling in the shuttle, and electrical selecting means, controlled by the box-motion of the loom, whereby the shifting of the box-motion determines the kind or color of weft or filling to be supplied.

23. In a loom, the combination with a shiftable shuttle-box situated at one side of the loom, a box-motion situated at the other side of the loom, and a magazine having shuttle-compartments to contain shuttles carrying different kinds or colors of weft or filling, of a shuttle-placer having a plurality of pockets corresponding and pertaining to the respective compartments in the magazine, and means for moving said placer to the picking-point of the loom to furnish a fresh supply of weft or filling of the kind or color substantially exhausted in the shuttle in play.

24. In a loom, the combination with a shiftable shuttle-box situated at one side of the loom, a box-motion situated at the other side thereof, and a magazine having a plurality of shuttle-compartments to contain shuttles carrying weft or filling of different colors or kinds, of a shuttle-placer having a plurality of shuttle-pockets corresponding and pertaining to the respective compartments of the magazine, and means for operating said placer and controlling the times of its movements to the picking-point of the loom to furnish a fresh supply of weft or filling of the color or kind being used by the shuttle in play, said means consisting of an electromagnet and an electric circuit including said magnet, said circuit being held open by the presence and adapted to be closed by the substantial absence of the weft or filling in the shuttle in play.

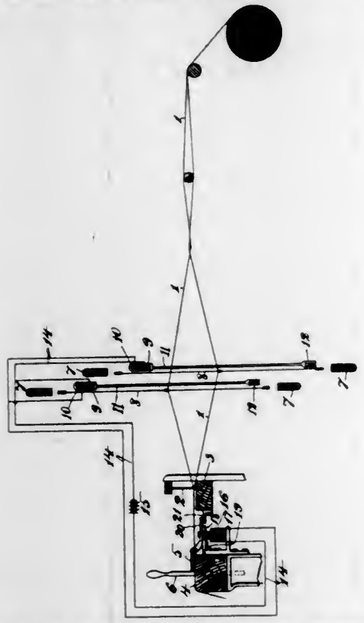
25. In a loom, the combination with a shiftable shuttle-box situated at one side of the loom, a box-motion situated at the other side thereof,

and a magazine having a plurality of shuttle-compartments to contain shuttles carrying weft or filling of different colors or kinds, of a shuttle-placer having a plurality of pockets corresponding and pertaining to the respective compartments in the magazine, means for operating said placer and shuttle-box, and electrical means for determining the kind or color of weft or filling which is to be placed in position to be picked through the warp-shed, said electrical means being set in operation by the exhaustion, or partial exhaustion of the weft or filling in the shuttle in play.

26. In a loom, the combination with a shiftable shuttle-box situated at one side of the loom, a box-motion, situated at the other side thereof, and a magazine having a plurality of shuttle-compartments to contain shuttles carrying weft or filling of different kinds or colors, of a shuttle-placer having a plurality of pockets corresponding and pertaining to the respective compartments in the magazine, means for operating said placer and shuttle-box, and electrical means for determining the color or kind of weft or filling which is to be placed in position to be picked through the warp-shed, said electrical means including a circuit which is held open or closed by the presence or absence of the weft or filling in the shuttle in play.

27. In a loom, the combination with the box-motion, and the shuttle-box at the side of the loom opposite to the box-motion, of an electric circuit having terminals at the shuttle-box, and a plurality of branches corresponding in number to the boxes in the box-motion, an electromagnet in each of said branches, and a switch device controlled by the box-motion and adapted to switch into the circuit the respective magnets as it is shifted, substantially as set forth.

655,644. WARP STOP-MOTION FOR LOOMS. WILLIAM H. BAKER, Central Falls, R. I., and FREDERIC E. KIP, Montclair, N. J. Filed Dec. 9, 1899. Serial No. 739,760. (No model.)



Claim.—1. In an electrical warp stop-motion, the combination with a heddle-frame, of a compound terminal mounted on and extending transversely across the same, the heddle-wires, and a plurality of circuit-closing drops mounted, carried and guided by said terminal.

2. In an electrical warp stop-motion, the combination with a heddle-frame, of a compound terminal mounted on and extending transversely across the same, the heddle-wires, and a plurality of circuit-closing drops mounted, carried and guided by said terminal, said drops having each a thread-aperture situated adjacent to the eye in the heddle-wire opposite to it.

3. In an electrical warp stop-motion, the combination with a heddle frame, of a compound terminal mounted on and extending transversely across the same, the heddle-wires, and a plurality of circuit-closing drops mounted, carried and guided by said terminal, said drops extending vertically over the frame beyond the shed and having a guide on the heddle-frame opposite to the said terminal.

4. In an electrical warp stop-motion, the combination with a heddle frame and wires, of a compound terminal mounted on the heddle-frame near one of its ends and extending across the same, and a guide on and extending across the heddle-frame near its other end, of slotted, circuit-closing, gravity-drops mounted on said terminal and the said guide, said drops having each a thread-aperture situated adjacent to the eye in the opposite heddle-wire.

5. In an electrical warp stop-motion, the combination with a heddle frame and wires, of a compound terminal mounted on the heddle-frame near its upper end so as to be above the shed, and a drop-guide, mounted on said frame near its lower end so as to be below the shed, of circuit-closing drops carried and guided by said terminal and guide, said drops having each a thread-aperture adjacent to the eye in the opposite heddle-wire.

6. The combination with a heddle-frame of a loom, a loom-stopping mechanism, and an electric circuit controlling said stopping mechanism, of a compound terminal mounted on said heddle-frame, the same forming the terminals of the said circuit, a drop-guide mounted on the heddle-frame, the heddle-wires, and means for closing said circuit when a warp-thread fails, said means comprising a plurality of circuit-closing drops suspended on the respective warp-threads and carried and guided by said terminal at one end, and the drop-guide at the opposite ends of said drops, the latter extending vertically across the shed in the warp.

7. The combination with a heddle-frame of a loom, of a compound terminal mounted on the frame above the shed in the warp, a drop-guide mounted on said frame below the said shed, the heddle-wires, and a plurality of slotted, gravity, circuit-closing drops mounted on said terminal and drop-guide and extending above and below the limits of the warp-shed, said drops having each a thread-aperture situated below the said compound terminal.

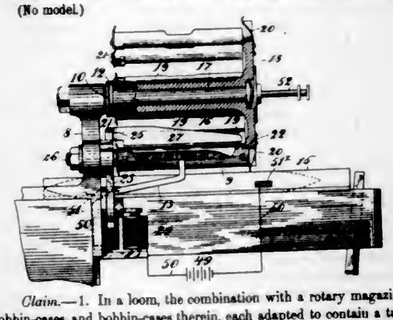
8. In a loom, the combination with the breast-beam, the knock-off lever 5, mounted to slide horizontally on the same for disengaging the shipper-lever, and the said shipper-lever, of the electromagnet on a non-going part of the loom, its armature and armature-lever, the arm 20, hinged at one end to the knock-off lever and resting loosely on the armature-lever, means for guiding said arm in its movements over said lever, and the tappet 21, on the lay, substantially as set forth.

9. The combination of a heddle-frame of a loom, of a compound terminal moving in unison therewith, the heddle-wires, and a plurality of circuit-closing devices guided by said terminal or bar and supported by the unbroken warp-threads.

10. The combination with the heddle-frame of a loom, of a compound terminal moving in unison therewith drop devices guided on said terminal or bar, the same forming terminals of an electric circuit, the said circuit, and a loom-stopping mechanism, said loom-stopping mechanism being made inoperative by said drop devices when supported by unbroken warp-threads and operative on the breaking of said warp-threads.

11. The combination with the heddle-frame of a loom, the heddle-wires, and a compound terminal, of a plurality of gravity circuit-closing devices guided by said terminal or bar, the same extending above and below the limits of the warp-shed, said circuit-closing devices having each a thread-aperture situated adjacent to the eye of one of said heddle-wires, said terminal or bar forming terminals of an electric circuit, and a loom-stopping mechanism, said loom-stopping mechanism made inoperative by said drop devices when supported by unbroken warp-threads and operative on the breaking of said warp-threads.

655,645. LOOM. WILLIAM H. BAKER, Central Falls, R. I., and FREDERIC E. KIP, Montclair, N. J. Filed Jan. 5, 1900. Serial No. 411. (No model.)



Claim.—1. In a loom, the combination with a rotary magazine for bobbin-cases, and bobbin-cases therein, each adapted to contain a tubular bobbin or weft-holder carrying weft, of the said weft-holders each provided with an indicator to indicate the substantial exhaustion of the weft, said indicator being a spring-actuated lever with an arm back of the fulcrum

which is held out of the hollow of the bobbin by the overwrapped weft, means for imparting to said magazine a tendency to rotate, a detent for arresting such rotation, a shuttle or weft-carrier adapted to receive the bobbin-case, a vibrating driver which drives a bobbin-case from the magazine down into the shuttle, and controlling intermediate mechanism between the said indicator and the driver, whereby the latter is operated at proper times.

2. In a loom, the combination with a rotary magazine for bobbin-cases, and bobbin-cases therein, each adapted to contain a tubular bobbin or weft-holder carrying weft, of the said weft-holders each provided with an indicator to indicate the substantial exhaustion of the weft, said indicator being a spring-actuated lever with an arm back of the fulcrum which is held out of the hollow of the bobbin by the overwrapped weft, means for imparting to said magazine a tendency to rotate, a detent for arresting such rotation, a shuttle or weft-carrier adapted to receive the bobbin-case, a vibrating driver which drives a bobbin-case from the magazine down into the shuttle, and magneto-electrical controlling mechanism between the said indicator and the driver, whereby the latter is operated at proper times.

3. In a loom, the combination with a rotary magazine to hold bobbin-cases, a continuously-running slip-belt for rotating said magazine, and a detent which normally arrests the rotation of the magazine, of the bobbin-cases, adapted to fit in said magazine, a bobbin or weft-holder adapted to fit into said bobbin-cases and each provided with an indicator to indicate the substantial exhaustion of the weft, a vibrating lay and shuttle-box thereon, a shuttle adapted to receive the bobbin-cases, means for driving a bobbin-case from the magazine down into the shuttle, and intermediate controlling mechanism between the indicator and the said driving mechanism, whereby the latter is caused to supply bobbin-cases to the shuttle at proper times.

4. In a weft or filling supplying mechanism for looms, the combination with a rotatively-mounted magazine having recesses with shoulders to receive and fit the bobbin-cases and spring-supports to hold them in place, of the said cases, each having a recess 22 in it near its end to receive said shoulder for positioning the case in the magazine, for the purpose set forth.

5. In a weft or filling supplying mechanism for looms, a bobbin-case to contain a bobbin, said case being of substantially-cylindrical form and having in it a spindle to carry and support the bobbin or weft-holder and an eye to guide the yarn, said spindle having in it a recess $34^{\times}$, and the said weft-holder provided with a contact-lever and its spring, the lever having a short arm or heel, for the purpose set forth.

6. The combination with a shuttle having spring-jaws at each end to embrace a bobbin-case, of the said bobbin-case provided with means to support within it a weft-holder and an eye for the yarn from the weft-holder, and having at its end and in its outer face a gain or recess 22, and a magazine having shoulders to fit the gained ends of the bobbin-cases, substantially as and for the purpose specified.

7. The combination with a shuttle having spring-jaws to embrace and hold a cylindrical bobbin-case, and cut down from the top at one side to provide a way for the yarn, of the said bobbin-case, having within it means for holding and supporting a bobbin or weft-holder, an eye for the yarn from the bobbin, and a spindle having a recess $34^{\times}$, and a bobbin adapted to fit onto said spindle and provided with a spring-actuated contact-lever provided with an arm 48, and a metal contact for said lever to impinge upon, substantially as and for the purposes set forth.

8. The bobbin or weft-holder having in it a longitudinally-extending slot, a contact-lever 45, fulcrumed in said slot and movable about its fulcrum radially in the weft-holder, and having an arm 48 back of said fulcrum, a spring behind said lever and tending to press it outward normally, and a contact-piece to limit the movement of said lever.

9. The bobbin or weft-holder having in it a longitudinally-extending slot, a lever-indicator fulcrumed in said slot and movable radially to the axis of the weft-holder, and a spring acting on the longer arm of said lever to press it outward, said indicator having an arm at the opposite side of the fulcrum which extends into the hollow of the bobbin when the longer arm thereof is pressed outward, for the purpose specified.

10. The combination with a bobbin or weft-holder having in it a slot, the lever-indicator fulcrumed therein and having its arm which is back of the fulcrum adapted to project into the hollow of the weft-holder when the other arm thereof is pressed outward, and the spring which tends to press said arm outward, of a spindle to receive the bobbin having in it a recess which registers with said inwardly-projecting arm when the bobbin is in place on the spindle, for the purpose specified.

11. The combination with a bobbin or weft-holder made tubular to fit on the spindle of a spinning or winding frame or apparatus and provided with a longitudinal slot, a lever-indicator fulcrumed in said slot and movable radially to the axis of the weft-holder, and a spring tending to press the said lever-indicator outward, said lever-indicator having a part which is projected into the hollow of the weft-holder by the action of said spring, substantially as and for the purposes set forth.

12. The metallic bobbin-case provided with means for holding and supporting a bobbin or weft-holder, and composed of two sections connected but electrically insulated from each other, for the purpose specified.

13. The combination with a shuttle having a pair of metallic spring-jaws at each end to support the respective ends of a bobbin-case, and contact-plates at its ends connected electrically with the respective pairs of jaws, of the said bobbin-case, constructed of metal and in two connected sections, insulated electrically from each other, the line of separation between said sections being transverse, substantially as set forth.

14. The combination of the sectional, metallic, bobbin-case, provided with a spring-plate 41, and means for supporting the bobbin, of a bobbin or weft-holder to fit into said case and provided with an indicator 45, its spring 47, a contact-ring 43, to form electrical contact with the indicator and the plate 41, and metal part 42, which is in electrical contact with the spring 47, for the purpose specified.

15. The magazine, open at one end for the entry of the driver, and comprising an axial boss 16, a head 18, bars 19, which project from the head 18 parallel with the axis of the magazine, spring-clips on the said head to support one end of the weft-holders, and spring-clips on the free ends of the bars 19 to support the other ends of the weft-holders.

16. The rotatively-mounted magazine, having an axial boss, a single end or head, arms on said head and extending therefrom substantially parallel with the axis of the magazine, and devices on said magazine for supporting therein the weft-holders, said arms being situated between, and alternating with the weft-holders in the magazine.

17. The combination with a shuttle having in it two pairs of spring-jaws, one pair at each end, each jaw being provided on its clamping-face with a plurality of upright ribs, of a substantially-cylindrical bobbin-case adapted to fit into the shuttle between the said jaws, said case having at each end, on its sides, a plurality of upright grooves to receive the ribs on the jaws, and on its upper face a cushion of soft, yielding material, substantially as set forth.

18. The combination with a shuttle having in it two pairs of spring-jaws, one pair at each end, each jaw being provided on its clamping-face with a plurality of upright ribs, of a substantially-cylindrical bobbin-case adapted to fit into the shuttle between the said jaws, said case having at each end, on its sides, a plurality of upright grooves to receive the ribs on the jaws, and on its upper face a cushion of soft material, and having within it means for supporting and holding a bobbin, substantially as set forth.

19. The combination with a shuttle, having in it two pairs of metal spring-jaws, one pair at each end, each being provided on its clamping-face with a plurality of upright ribs, of a metallic, sectional bobbin-case adapted to fit into the shuttle and be clamped by said jaws so as to produce electrical contact, said bobbin-case having at each end a plurality of upright grooves in its sides to receive the ribs on the jaws, and on its upper face a cushion of soft material, and having within it means for supporting and holding a bobbin, substantially as set forth.

20. A bobbin-case, having in it means for holding and supporting a bobbin and having a cushion of soft material on its exterior surface, for the purpose specified.

21. A substantially-cylindrical bobbin-case of metal, having near its respective ends exteriorly-situated cushions, substantially as and for the purposes set forth.

22. In a loom, a weft or filling replenishing mechanism comprising a magazine or holder for a reserve supply of weft or filling, said magazine being rotatively mounted and having an axial boss, a single head or end, arms on said head and extending therefrom, substantially parallel with the axis of the magazine, and means for supporting weft-holders therein, said means comprising spring-clips on said head and on the free ends of the respective arms which latter alternate with the weft-holders, means for effecting the transfer of a weft-holder from said magazine to the shuttle in play, and exhaustion-indicating devices controlling the operation of said transferring mechanism.

23. In a loom, a weft or filling replenishing mechanism, comprising a magazine or holder for a reserve supply of weft or filling, said magazine being rotatively mounted and having a single head or end, arms extending from the latter parallel with the axis of rotation, and clips on the said head and on the free ends of the respective arms for supporting the weft-holders, means for effecting the transfer of a weft-holder from said magazine to a shuttle in play, and electromechanical means for controlling the times of operation of said replenishing mechanism.

24. In a loom for automatically supplying a shuttle with a full weft-holder, the combination with a rotatable magazine and feeder for weft-holders, open at one end for the entry of the driver, and comprising an axial boss, a head, bars which project from the head parallel with the axis of the magazine, spring-clips on the said head to support one end of the

weft-holders, and spring-clips on the free ends of the bars to support the other ends of the weft-holders.

25. The metallic weft-case provided with means for holding weft or filling, being substantially cylindrical in form and composed of two sections connected but electrically insulated from each other, for the purpose specified.

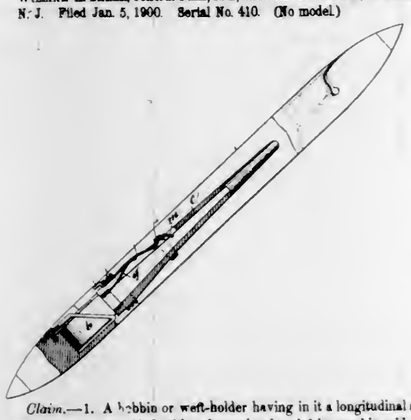
26. In a loom, the combination with a rotary magazine for weft-cases, and weft-cases therein, the said weft-case being constructed of metal and in two connected sections, insulated electrically from each other, and adapted to hold weft, means for imparting to said magazine a tendency to rotate, means for arresting said rotation as required, a shuttle adapted to receive the weft-case, a vibrating driver which drives a weft-case from the magazine into the shuttle, and electromechanical controlling means set in operation by the substantial exhaustion of the weft in the active shuttle for operating said driver to thereby furnish a new supply of weft or filling to said active shuttle at proper times.

27. In a loom, the combination with a shuttle-box, a shuttle having means to receive and hold a weft-case, said weft-case being constructed of metal and in two connected sections insulated electrically from each other, a weft-holder in the weft-case, a circuit-closer in said weft-holder, a driver, a weft-case feeder or magazine, having means to receive and hold both ends of a series of weft-cases, and actuating mechanisms for the said driver and the said magazine, whereby the latter is moved to bring one weft-case after another of the series into position between the driver and the shuttle-box, and the driver is made to transfer as required said weft-cases one after another from said magazine into the shuttle in the shuttle-box.

28. As an article of manufacture, a weft-holder having in it a slot, and a lever-indicator fulcrumed in said slot, said indicator having its shorter arm on the opposite side of the fulcrum adapted to extend into the hollow of the weft-holder when its longer arm is pressed outward.

29. The combination with a hollow bobbin or weft-holder provided with a longitudinal slot, of a lever-indicator fulcrumed in said slot and having an arm back of the fulcrum adapted to project into the hollow of the bobbin when the main arm of the indicator is pressed outward, and a spring which tends normally to press said main arm outward, substantially as and for the purpose set forth.

655,646. AUTOMATIC CONTROLLING MECHANISM FOR LOOMS. WILLIAM H. BAKER, Central Falls, R. I., and FREDERIC E. KIP, Montclair, N. J. Filed Jan. 5, 1900. Serial No. 410. (No model.)

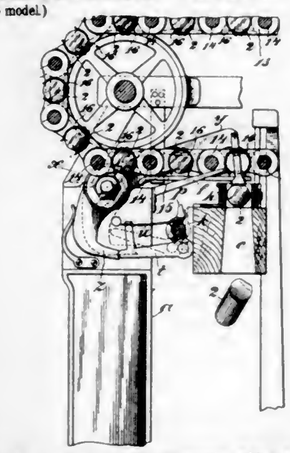


Claim.—1. A bobbin or weft-holder having in it a longitudinal slot, an indicator-lever provided with a detent-head and fulcrumed in said slot, a stop on said weft-holder to limit the outward movement of the detent-head on the lever, and a spring behind said lever and adapted to move the latter out to said stop, said lever having a projecting portion overwrapped by the weft and the detent-head on the lever being thus depressed and held out of the path of a feeler.

2. In a bobbin or weft-holder having a longitudinal slot and having in said slot a radially-movable indicator-lever backed by a spring which tends to move it outward and up to a stop, and the said spring, said lever having a curved or arched portion adapted to be overwrapped by the weft and a detent-head adapted to be put into and out of the path of a feeler, the weft on the bobbin holding it in one of its positions and the said spring holding it in its other position.

3. The combination with a shuttle having means for holding the bobbin in place therein, and adapted to permit the entry of a feeler, of a bobbin to fit into said shuttle and provided with a longitudinal slot, an indicator-lever fulcrumed in said slot, and having an arched portion to be overwrapped by the weft or filling, a heel which is adapted to project into the hollow of the bobbin when the latter is exhausted of weft, and a detent-head, adapted to be put into and out of the path of the feeler, and a spring adapted to hold said indicator-lever in one of its two positions.

655,647. LOOM. WILLIAM H. BAKER, Central Falls, R. I., and FREDERIC E. KIP, Montclair, N. J. Filed Feb. 6, 1900. Serial No. 4,221. (No model.)



Claim.—1. In a loom, the combination with a weft or filling supplying mechanism, a going part of the loom, and intermediate mechanism between said going part and supplying mechanism whereby the former is connected with the latter for operating it, of a shuttle having in it a spring feeler-finger adapted to swing transversely thereof when actuated by said intermediate mechanism, and a bobbin in said shuttle provided with a radially-movable indicator, backed by a spring which tends to move it into the path of said feeler-finger and held out of said path by the overwrapped weft or filling.

2. In a loom, the combination with a weft or filling supplying mechanism, a going part of the loom, and an intermediate mechanism between said going part and supplying mechanism whereby the former is caused to operate the latter at proper times, said intermediate mechanism being mounted on the going part adjacent to the shuttle-box and comprising a rock-shaft carrying an operating-tappet, a feeler-lever operated by said rock-shaft, and a spring tending to press said feeler-lever into the shuttle-box and into the shuttle therein, of a dagger on the loom-frame which withdraws said feeler-lever at the picking-point, and a shuttle carrying a weft-holder provided with a radially-movable indicator which tends to move outward into the path of the feeler device and which is held out of said path by the overwrapped weft or filling.

3. In a weft or filling supplying mechanism for looms, the combination with a shuttle having a spring feeler-finger adapted to swing across the shuttle, of a weft-holder having a radially-movable spring-indicator adapted to be moved into the path of said finger and to be held out of said path by the overwrapped weft, and means for holding said weft-holder in place in the shuttle.

4. In a weft or filling supplying mechanism for looms, the combination with a shuttle having a spring feeler-finger adapted to swing across the shuttle, of a weft-holder having a radially-movable spring-indicator adapted to be moved into the path of said finger and to be held out of said path by the overwrapped weft, a bobbin-case inclosing said weft-holder, and means for holding said bobbin-case in place in the shuttle.

5. In a weft or filling supplying mechanism for looms, the combination with a shuttle having a spring feeler-finger adapted to swing across the shuttle, of a weft-holder having a radially-movable spring-indicator adapted to be moved into the path of said finger and to be held out of said path by the overwrapped weft, a feeler-lever carried by the lay and adapted to normally press the feeler-finger into the shuttle in the shuttle-box, and means adapted to free the shuttle from said feeler-lever at the picking-point.

6. In a weft or filling supplying mechanism for looms, the combination with a shuttle having a spring feeler-finger adapted to swing across the shuttle, of a weft-holder having a radially-movable spring-indicator adapted to be moved into the path of said finger and to be held out of said path by the overwrapped weft, a feeler-lever carried by the lay and adapted to normally press the feeler-finger into the shuttle, and a dagger or tappet on the loom adapted to press back said feeler-lever at the picking-point.

7. In a weft or filling supplying mechanism for looms, the combination with a shuttle having a spring feeler-finger adapted to swing across the shuttle, of a weft-holder having a radially-movable spring-indicator adapted to be moved into the path of said finger and to be held out of said path by the overwrapped weft, a feeler-lever carried by the lay and adapted to normally press the feeler-finger into the shuttle, means for pressing back the feeler-lever at the picking-point, a driver for driving a weft-holder from the magazine, mechanism between the feeler-lever and the said driver for operating the latter, and the said magazine.

8. In a weft or filling supplying mechanism for looms, the combination with a magazine for supplying filled weft-holders, and means for actuating said magazine, of a driver for driving the weft-holders from the magazine into the shuttle, the rock-shaft *k* on the lay, its spring, the tappet *t* on said shaft adapted to actuate said driver at proper times, the spring controlling said tappet whereby it may yield, the feeler-lever *i*, pivotally mounted on the lay and connected to the said rock-shaft for mutual operation, and means for rocking the shaft *k* at the picking-point to withdraw the feeler-lever from the shuttle.

9. In a weft or filling supplying mechanism, the combination with the driver having an arm *z*, of the rock-shaft *k*, on the lay, its spring, the tappet *t*, hinged thereon, the tappet-spring *u*, and the feeler-lever *i*, coupled to the rock-shaft for mutual operation.

10. In a weft-supplying mechanism, the combination with the magazine, or device for carrying the weft-holders, said magazine comprising endless chains, rotative supporting sprocket-wheels, and spring devices on the chains for supporting the weft-holders, of means for actuating said chain-carrier to bring the weft-holders successively to the delivery-point, supports for the chains at said point and a driver with a laterally-extending head which enters at the side and which is adapted to drive the weft-holder from the chain into the shuttle.

11. In a weft-supplying mechanism, the combination with a magazine, or device for carrying the weft-holders, said magazine comprising supporting sprocket-wheels and carrying-chains, which latter move in a substantially-horizontal plane and are provided with spring devices to support the weft-holders, supports for the chain at the delivery-point, means for actuating said magazine, a fixed detent for arresting the movement of the magazine, and a driver situated above the lower side of the carrying-chains and adapted to drive the weft-holders down into the shuttle in the box below.

12. In a weft-supplying mechanism, the combination to form a magazine, or device for carrying the weft-holders, of the pairs of sprocket-wheels, rotatively mounted on the loom, the connected endless chains, the spring-clips on the links, and the supports 15, for the chains.

13. In a weft-supplying mechanism, the combination to form a magazine, or device for carrying the weft-holders, of the pairs of sprocket-wheels, rotatively mounted on the loom, the connected endless chains, the spring-clips on the links adapted to embrace the weft-holders and opening outward, means tending constantly to drive said magazine, a fixed detent which normally arrests the movement of the magazine, and the supports for the said chains at the delivery-point.

14. In a weft or filling supplying mechanism for looms, the combination with a shuttle having a feeler-finger, and a weft-holder therein having an exhaustion-indicating device which controls the extent of movement inward of said finger, of spring-actuated means on the lay tending normally to move said finger into the shuttle, and means which periodically withdraws said device and permits said feeler-finger to withdraw.

15. In a weft or filling supplying mechanism, the combination with a magazine containing a reserve supply of weft, and means for transferring weft from said magazine to the shuttle in play as required, of a shuttle having a feeler-finger, a weft-holder in the shuttle having an exhaustion-indicating device which controls the extent of movement inward of said finger, spring-actuated mechanism on the lay tending normally to press said feeler-finger into the shuttle, and means which periodically withdraws said pressing mechanism to permit the shuttle to enter and leave the shuttle-box.

16. In a weft or filling supplying mechanism, the combination with a magazine containing a reserve supply of weft, said magazine consisting of an endless-chain carrier provided with means for supporting the weft-holders, and means for transferring weft from said magazine to the shuttle in play as required, of a shuttle having a feeler-finger, a weft-holder in the shuttle having an exhaustion-indicating device which controls the extent of movement inward of said finger, spring-actuated mechanism on the lay tending normally to press said feeler-finger into the shuttle, and means which periodically withdraws said pressing mechanism to permit the shuttle to enter and leave the shuttle-box.

17. In a loom, a weft or filling replenishing mechanism comprising a magazine or holder for a reserve supply of weft or filling, said holder consisting of an endless-chain carrier furnished with means for supporting the weft-holders therein, means for effecting the transfer of a weft-holder from said magazine to the shuttle in play, and exhaustion-indicating devices controlling the operation of said transferring mechanism, said indicating devices comprising a weft-exhaustion indicator in the weft-holder, a feeler-finger in the shuttle, controlled by the exhaustion-indicator, and a feeler-lever which coöperates with said feeler-finger.

18. In a loom, a weft or filling replenishing mechanism comprising a magazine or holder for weft-holders containing a reserve supply of weft or filling, said holder consisting of an endless-chain carrier furnished with means for supporting the weft-holders therein, means for effecting the transfer of a weft-holder from said magazine to the shuttle in play, a slip-belt, tending constantly to move said magazine, a detent which arrests said movement, supports for the carrier at the delivery-point, and exhaustion-indicating devices controlling the operation of said transferring mechanism.

19. In a loom, a weft or filling replenishing mechanism comprising a magazine or holder for bobbin-cases containing a reserve supply of weft or filling, said holder consisting of an endless-chain carrier furnished with means for supporting the bobbin-cases therein, means for effecting the transfer of a weft-holder from said magazine to the shuttle in play, and exhaustion-indicating devices controlling the operation of said transferring mechanism, said devices comprising a weft-exhaustion indicator in the weft-holder, a feeler-finger in the shuttle, controlled by the exhaustion-indicator, and a feeler-lever which coöperates with said feeler-finger.

20. In a loom, a weft or filling replenishing mechanism comprising a magazine for weft-holders containing a reserve supply of weft or filling, said magazine consisting of an endless-chain carrier provided with means for supporting the weft-holders therein, a support for the carrier situated between the latter and the shuttle-box at the delivery-point, means for effecting the delivery of the weft-holder from the magazine to the shuttle in play, and exhaustion-indicating devices made operative and inoperative by the shuttle in play for controlling the operation of said transferring mechanism.

21. In a loom, a weft or filling replenishing mechanism comprising a magazine for weft-holders containing a reserve supply of weft or filling, said magazine consisting of an endless-chain carrier provided with means for supporting the weft-holders therein, a support for the carrier situated between the latter and the shuttle-box at the delivery-point, means for actuating said carrier to bring the weft-holders successively to the delivery-point, a driver adapted to drive the weft-holders from the chain into the shuttle, and exhaustion-indicating devices controlling the times of operation of said supplying mechanism.

22. A movable feeder and magazine for weft-holders, consisting of an endless-chain carrier having a series of yielding supports to receive and hold said weft-holders, and situated between the chain and the shuttle-box, a support to steady the said weft-holders while they are being transferred, substantially as set forth.

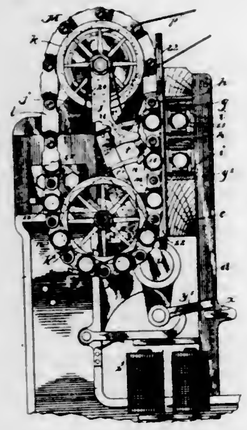
23. The combination with a rotatable magazine and feeder for weft-holders, consisting of an endless chain having spring devices for supporting a series of said weft-holders, and situated between the chain and the shuttle-box, a support to steady the said weft-holders while they are being transferred, of a stop device against which bears the weft-holder next to be removed from said magazine, substantially as set forth.

24. In a loom for automatically supplying a shuttle with a full weft-holder, the combination with a rotatable magazine and feeder for weft-holders, said magazine consisting of an endless chain provided with devices for supporting a series of weft-holders, and situated between the chain and the shuttle-box, a support to steady the said weft-holders while they are being transferred, and means for rotating or driving said magazine at proper times to bring a fresh weft-holder to the delivery-point, and a driver adapted to drive the weft-holder from its supports into the shuttle, substantially as set forth.

25. A movable magazine and feeder for weft-holders, the same consisting of an endless chain having devices for supporting a plurality of weft-holders, and situated between the chain and the shuttle-box, a support to steady the said weft-holders while they are being transferred, means for moving said magazine at the proper time to bring a weft-holder therein to the proper point for delivery, and a restraining device which arrests the movement of said magazine while the weft-holder is being transferred, in combination with a driver for ejecting the weft-holder from the machine, substantially as set forth.

26. A loom having the following instrumentalities, namely: a shuttle-box, a shuttle open for the passage through it of a weft-holder, a driver or pusher, a magazine and feeder for weft-holders, the same consisting of a movable, endless chain having devices for supporting a plurality of weft-holders, and situated between the chain and the shuttle-box, a support to steady the said weft-holders while they are being transferred, mechanism for intermittently moving said magazine to bring the weft-holders therein in succession into position for transfer from the magazine to the shuttle, and mechanism for actuating said driver to transfer said weft-holders, one by one, as required, from the magazine to the shuttle in the shuttle-box, substantially as set forth.

655,648. LOOM. WILLIAM H. BAKER, Central Falls, R. I., and FREDERIC E. KIP, Montclair, N. J. Filed Mar. 21, 1900. Serial No 9,493. (No model.)



Claim.—1. In a loom, the combination with a shuttle-box and shuttle adapted to receive and discharge weft-holders laterally, of an endless-chain carrier movable substantially vertically adjacent to said shuttle-box, means for moving said carrier, a detent for arresting the movement of said carrier, weft or filling holders mounted in said carrier, a driver for driving said holders from the carrier into the shuttle, means for operating said driver, and means controlled by the presence or absence of weft in the shuttle for setting said driver in operation.

2. In a loom, the combination with a shuttle-box and shuttle adapted to receive and discharge weft-holders laterally, of an endless-chain carrier movable substantially vertically adjacent to said shuttle-box, means for moving said carrier, a detent for arresting the movement of said carrier, weft or filling holders mounted in said carrier, a driver for driving said holders from the carrier into the shuttle, means for operating said driver, and electromagnetic means controlled by the presence or absence of weft in the shuttle for setting said driver in operation.

3. In a loom, the combination with two superposed shuttle-boxes, and shuttles, both adapted to receive and discharge weft-holders laterally, and means for picking the shuttles from said boxes simultaneously, of a magazine comprising an endless-chain carrier movable substantially vertically and provided with means for supporting weft-holders, means for moving said carrier, a detent for holding said carrier against movement normally with weft-holders opposite the superposed shuttle-boxes, two drivers for driving the weft-holders from the carrier into the respective boxes, means for actuating said drivers at proper times, and means controlled by the presence or absence of weft or filling in the respective shuttles for setting said drivers in operation.

4. In a loom, the combination with two superposed shuttle-boxes, and shuttles, both adapted to receive and discharge weft-holders laterally, and means for picking the shuttles from said boxes simultaneously, of a magazine comprising an endless-chain carrier movable substantially vertically and provided with means for supporting weft-holders, means for moving said carrier, a detent for holding said carrier against movement normally with weft-holders opposite the superposed shuttle-boxes, two drivers for driving the weft-holders from the carrier into the respective boxes, means for actuating said drivers at proper times, and electromagnetic means controlled by the presence or absence of weft or filling in the respective shuttles for setting said drivers in operation.

5. In a loom, the combination with two superposed shuttle-boxes, and shuttles, both adapted to receive and discharge weft-holders laterally, and means for picking the shuttles from said boxes simultaneously, of a magazine comprising an endless-chain carrier movable substantially vertically and provided with means for supporting weft-holders, means for moving said carrier, the automatic rocking detent *t* for holding said carrier against movement normally with weft-holders opposite the superposed shuttle-boxes, two drivers for driving the weft-holders from the carrier into the respective boxes, means for actuating said drivers at proper times, and means controlled by the presence or absence of weft or filling in the respective shuttles for setting said drivers in operation.

6. In a loom, the combination with the magazine, comprising the upper and lower pairs of sprocket-wheels and the endless-chain carrier provided with means for supporting weft or filling holders, of the fixed guides 22, the rocking detent *t*, means for transferring the weft-holders from the magazine to the shuttle, and means for driving said carrier.

7. In a loom, the combination with the upper and lower pairs of sprocket-wheels, the endless-chain carrier thereon, and means for driving said carrier, of the weft-end holder on the shaft 17, the said shaft, and means for driving said shaft in unison with the movements of the carrier.

8. The combination with a loom having two raceways and two shuttles, of a movable feeder or magazine for welt-holders, said weft-holders being adapted to go into the shuttles, consisting of an endless-chain carrier having means for supporting a series of said weft-holders, means for rotating said magazine, means for restraining at proper times said rotation of the magazine and means for driving as required, from said magazine, into the shuttles in play at the same pick of the loom, either one or two of said weft-holders, substantially as set forth.

9. In a double-shuttle loom, the combination with means for picking the shuttles through two warp-sheds, a movable magazine or feeder, for weft-holders, same consisting of an endless chain having devices for supporting a plurality of weft-holders, means for transferring as required either one or two weft-holders at the same time, from the said magazine to either or both of the shuttles in play, the time of operation of said supplying mechanism being controlled by the presence or absence of weft or filling in the shuttles in play.

10. In a double-shuttle loom, the combination with means for picking the shuttles through two warp-sheds, a movable magazine or feeder for weft-holders, same consisting of an endless chain having devices for supporting a plurality of weft-holders, means for transferring, as required, one or two weft-holders at the same time from the said magazine, to either or both of the shuttles in play, means for controlling the times of operation thereof, said means consisting of an electric circuit connected with said supplying mechanism and made inoperative and operative, respectively, by the presence or substantial absence of weft or filling in the shuttles in play.

11. In a loom, the combination with two superposed shuttle-boxes, and means for picking two shuttles through two warp-sheds at about the same time, of a single magazine, and means for supplying from said magazine either or both of said shuttles with a weft-holder containing a supply of weft or filling in place of that substantially exhausted, the times of operation of said supplying mechanism being controlled by the presence or substantial absence of weft or filling in the shuttles in play.

12. In a loom, the combination with two superposed shuttle-boxes, and means for picking two shuttles through two warp-sheds at about the same time, of a single magazine, means for supplying from said magazine either or both of said shuttles with a weft-holder containing a supply of weft or filling in place of that substantially exhausted, and means for controlling the times of operation thereof, said means consisting of an electric circuit connected with said supplying mechanism and made inoperative or operative, respectively, by the presence or substantial absence of weft or filling in the shuttles in play.

13. In a weft-supplying mechanism, the combination with means for picking shuttles through two warp-sheds at about the same time, a single feeder or magazine adapted to carry a reserve supply of weft-holders for both shuttles and two drivers adapted to drive or push in the same pick of the loom as required, either or both of the weft-holders that may be in their path into either or both of the shuttles, substantially as set forth.

14. In a weft-supplying mechanism, the combination with means for picking shuttles through two warp-sheds, at about the same time, a single feeder or magazine adapted to carry a reserve supply of weft-holders for both shuttles, two drivers adapted to drive or push, as required, either or both of the weft-holders before them into either or both of the shuttles during the same pick of the loom, and means connected with said feeder or magazine for always presenting to the proper delivery position two weft-holders, independent of whether one or two of said weft-holders have been previously transferred from said magazine to the shuttles, the time of operation thereof being controlled by the presence or substantial absence of weft or filling in the shuttles in play.

15. In a weft-supplying mechanism, the combination with means for picking shuttles through two warp-sheds at about the same time, a single feeder or magazine adapted to carry a reserve supply of weft-holders for both shuttles, two drivers adapted to drive or push as required, either or both of the weft-holders before them into either or both of the shuttles during the same pick of the loom, means connected with said feeder or magazine for always presenting to the proper delivery position two weft-holders, independent of whether one or two of said weft-holders have been previously transferred from said magazine to the shuttles, and means for controlling the times of operation of the supplying mechanism, said means consisting of an electric circuit connected with said supplying mechanism and made inoperative by the presence, and operative by the substantial absence, of weft or filling in the shuttles in play.

16. In a weft or filling supplying mechanism for looms, the combination with means for traversing two shuttles, through two warp-sheds at each pick of the loom, a feeder or magazine containing a reserve supply of weft or filling in the form of weft-holders, means for transferring the weft-holders from the magazine to the shuttles, means for rotating said magazine and a restraining device preventing, periodically, said rotation, said restraining device being made operative when two of the said weft-holders engage it, and inoperative on either one or both of said weft-holders being removed from said engagement, substantially as set forth.

17. In a weft or filling supplying mechanism for looms, the combination with means for traversing two shuttles, through two warp-sheds at each pick of the loom, a feeder or magazine containing a reserve supply of weft or filling in the form of weft-holders, means for transferring the weft-holders from the magazine to the shuttles, means for rotating said magazine and a restraining device preventing periodically said rotation, said restraining device being made operative when two of the said weft-holders engage it, and inoperative on either one or both of said weft-holders being removed from said engagement, the time of transferring said weft holder or holders from the magazine to the shuttle or shuttles being controlled by the presence or substantial absence of weft or filling in the shuttles.

18. In a weft or filling supplying mechanism for looms, the combination with means for traversing two shuttles through two warp-sheds at each pick of the loom, a feeder or magazine containing a reserve supply of weft or filling in the form of weft-holders, means for rotating said magazine and a restraining device preventing periodically said rotation, said restraining device being made operative when two of the said weft-holders engage it, and inoperative on either one or both of said weft-holders being removed from said engagement, combined with drivers adapted to transfer said weft-holders from the magazine to the shuttles in play, and means for controlling the time of operation thereof, said means consisting of an electric circuit connected with said supplying mechanism and made inoperative and operative, respectively, by the presence or absence of weft or filling in the shuttles in play.

19. In a weft or filling supplying mechanism for looms, the combination with means for picking two shuttles through two warp-sheds at each pick of the loom, a single feeder or holder containing a reserve supply of weft or filling for both shuttles, said holder consisting of an endless-chain carrier having means for supporting weft-holders, mechanism for transferring the weft-holders from the magazine to the shuttles, and a restraining device preventing, periodically, the shifting of the holder, said restraining device being made operative when two of the said weft-holders engage it, and inoperative when either one or both of said weft-holders is removed from said engagement, substantially as set forth.

20. In a weft or filling supplying mechanism for looms, the combination with means for picking two shuttles through two warp-sheds at each pick of the loom, a single feeder or holder containing a reserve supply of weft or filling for both shuttles, said holder consisting of an endless-chain carrier having means for supporting weft-holders, mechanism for transferring the weft-holders from the magazine to the shuttles a restraining device preventing, periodically, said rotation of the holders, said restraining device being made operative when two of the said weft-holders engage it, and inoperative when either one or both of said weft-holders is removed from said engagement, and means whereby the time of transferring said weft holder or holders from the holder to the shuttle or shuttles is controlled by the presence or absence of weft or filling in the shuttles.

21. In a double-shuttle loom having superposed shuttle-boxes, the combination with means for picking two shuttles at each pick through the warp-sheds, a feeder or magazine containing a reserve supply of weft or filling, said magazine consisting of an endless-chain carrier having means for supporting weft-holders, means for moving said magazine to bring the weft-holders to the delivery-point, and a restraining device for preventing periodically said movement, of driving or pushing mechanism adapted to drive or push said weft-holders from the magazine into the shuttle or shuttles and means for actuating said driving or pushing mechanism, at the same pick of the loom, to supply as required either one or both of the shuttles with a new supply of weft or filling to replace that substantially exhausted.

22. In a weft or filling supplying mechanism, the combination with means for picking two shuttles at each pick through the simultaneously-formed warp-sheds, a feeder or magazine containing a reserve supply of weft or filling, said magazine consisting of an endless-chain carrier having means for supporting weft-holders, means for moving said magazine to bring the weft-holders to the delivery-point, and a restraining device for preventing periodically said movement, of driving or pushing mechanism adapted to drive or push said weft-holders from the magazine into the shuttle or shuttles and electromechanical means for actuating said driving or pushing mechanism, at the same pick of the loom, to supply as required either one or both of the shuttles with a new supply of weft or filling to replace that substantially exhausted.

23. In a double-shuttle loom having means for forming at about the same time two superposed warp-sheds, and having two shuttles adapted to be picked therethrough, the combination with a single magazine adapted to carry a reserve supply of welt or filling, of means for automatically furnishing therefrom weft or filling to either or both of said warp-sheds, as required, to replace that substantially exhausted, the time of operation of said supplying mechanism being controlled by the presence or substantial absence of weft or filling in the respective shuttles in play.

24. In a double-shuttle loom having means for forming at about the same time, two superposed warp-sheds, and having two shuttles adapted to be picked therethrough, the combination with a single magazine adapted to carry a reserve supply of weft or filling, of means for automatically furnishing therefrom weft or filling to either or both of said warp-sheds, as required, to replace that substantially exhausted, and means for controlling the times of operation thereof, said means consisting of an electric circuit connected with said supplying mechanism and made inoperative or operative, respectively, by the presence or substantial absence of weft or filling in the respective shuttles in play.

25. A rotatively-mounted feeder or magazine, consisting of an endless chain, having means for carrying a reserve supply of weft or filling, and a support to steady the chain at the delivery-point combined with a weft-end holder, means for rotating said endless chain and means for rotating said weft-end holder in unison with the rotation of the endless chain, substantially as set forth.

26. A rotatively-mounted feeder or magazine, consisting of an endless chain having means for carrying weft-holders, adapted to go into shuttles, combined with a rotatable weft-end holder having its shaft separate from that of the magazine, means for rotating said endless chain, and means for rotating said weft-end holder in unison with the rotation of the endless chain, substantially as set forth.

27. A rotatively-mounted feeder or magazine, consisting of an endless chain having two sprocket-wheels, the links of the chain having means for carrying a reserve supply of weft or filling, and a support to steady the chain, situated at the delivery-point, combined with a weft-end holder, means for rotating said endless chain and means for rotating said weft-end holder in unison with the rotation of the endless chain, substantially as set forth.

28. A rotatively-mounted feeder or magazine, consisting of an endless chain having two sprocket-wheels, the links of the chain having means for holding and carrying weft-holders, combined with a weft-end holder having its shaft separate from that of the magazine, means for rotating said endless chain, and means for rotating said weft-end holder in unison with the rotation of the endless chain, substantially as set forth.

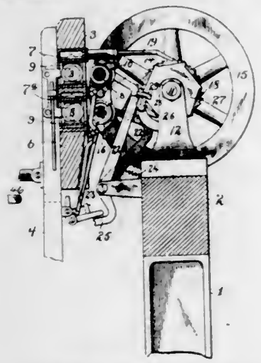
29. In a loom, means for traversing two shuttles through two warp-sheds, two superposed shuttle-boxes, a weft or filling replenishing mechanism comprising a feeder or magazine containing a reserve supply of weft-holders, means for transferring the weft-holders from the magazine to the shuttles, means for moving said magazine and a restraining device that periodically restrains said movement, said restraining device being inoperative to the extent of the space occupied in said magazine by one weft-holder when a weft-holder is supplied to the upper shuttle in play, and inoperative to the extent of the space occupied in the magazine by two weft-holders when a weft-holder is supplied to the lower shuttle or to both the lower and the upper shuttles in play, and electromechanical means made inoperative and operative, respectively, by the presence or substantial absence of weft or filling in the shuttles in play, for controlling the times of operation of said mechanism.

30. In a weft or filling supplying mechanism for looms, the combination with means for picking two shuttles through two warp-sheds at each pick of the loom, a feeder or holder containing a reserve supply of weft or filling, said holder consisting of an endless-chain carrier having means for supporting weft-holders, means tending to rotate said holder, a restraining device that periodically restrains said rotation, said restraining device being inoperative to the extent of the space occupied in the holder by one weft-holder when a weft-holder is supplied to the upper shuttle in play, and inoperative to the extent of the space occupied in the magazine by two weft-holders when a weft-holder is supplied to the lower shuttle or to both the lower and upper shuttles in play, means for transferring the weft-holders from the feeder to the respective shuttles, and electromechanical means made inoperative by the presence, and operative by the substantial absence of weft or filling in the shuttles in play, for controlling the times of operation of said replenishing mechanism.

31. In a weft-supplying mechanism for looms, the combination with means for picking two shuttles through two warp-sheds at each pick of the loom, a movable magazine adapted to hold and carry weft-holders, means for transferring, as required, on the same pick of the loom, from said magazine to the respective shuttles, either one, or two adjoining weft-holders, of a detent for arresting the rotation of the magazine, said device comprising two stops so spaced as to bear on contiguous or next adjoining weft-holders in the magazine, and exhaustion-indicating devices made inoperative by the presence, and operative by the substantial absence of weft or filling in the shuttles in play, which control the times of operation of said mechanism.

32. In a weft-supplying mechanism for looms, the combination with means for picking two shuttles through two warp-sheds at each pick of the loom, a movable chain-carrier, or magazine adapted to hold and carry weft-holders, means for transferring, as required, on the same pick of the loom, from said magazine to the respective shuttles, either one or two adjoining weft-holders, of a detent for arresting the rotation of the magazine, said device comprising two stops so spaced as to bear on contiguous or next adjoining weft-holders in the magazine, and exhaustion-indicating devices made inoperative by the presence, and operative by the substantial absence of weft or filling in the shuttles in play for controlling the times of operation thereof.

655,649. LOOM. WILLIAM H. BAKER, Central Falls, R. I., and FREDERIC E. KIP, Montclair, N. J. Filed May 7, 1900. Serial No. 15,786. (No model.)



Claim.—1. In a loom having means for picking two shuttles through two warp-sheds at each pick of the loom, a weft or filling supplying mechanism comprising a single magazine or holder, furnished with means for supporting weft-holders therein, means for effecting when required, and on the same pick of the loom, the transfer of either one or two weft-holders from said magazine to either or both of the shuttles in play, a device for restraining, as required, the movement of said magazine, means for rendering said restraining device inoperative to permit the magazine to always rotate to the extent of the space occupied by the two weft-holders, independently of whether one or two weft-holders have previously been transferred from the magazine, and means whereby the times of operation of said supplying mechanism are controlled through the presence or substantial absence of weft or filling in the respective shuttles in play.

2. In a loom having means for picking two shuttles through two warp-sheds at each pick of the loom, a weft or filling supplying mechanism comprising a single magazine or holder, furnished with means for supporting weft-holders therein, means for effecting, when required, and on the same pick of the loom, the transfer of either one or two weft-holders from said magazine to either or both of the shuttles in play, a device for restraining, as required, the movement of said magazine, means for rendering said restraining device inoperative to permit the magazine to always rotate to the extent of the space occupied by the two weft-holders, independent of whether one or two weft-holders have previously been transferred from the magazine, and means for controlling the time of operation of said supplying mechanism, said means consisting of mechanical devices which are made inoperative by the presence and operative by the substantial absence of weft or filling in the respective shuttles in play.

3. In a loom, the combination with means for picking two shuttles through two warp-sheds at each pick of the loom, of a weft-replenishing mechanism comprising a single rotatable feeder or magazine containing a reserve supply of weft or filling in the form of weft-holders adapted to be driven or pushed into the respective shuttles, means for maintaining two of said weft-holders at the delivery-point adjacent to the said shuttles, means for driving or pushing, during the same pick of the loom, either or both of the said weft-holders into either or both the shuttles in play, a device for restraining, as required, the rotation of said magazine, means for rendering said restraining device inoperative to permit the magazine to always rotate to the extent of the space occupied by the two weft-holders, independently of whether one or two weft-holders have previously been transferred from the magazine, and means whereby the times of operation of the weft-replenishing mechanism are controlled by the presence or substantial absence of weft or filling in the shuttles in play.

4. In a loom, the combination with means for picking two shuttles through two warp-sheds at each pick of the loom, of a weft-replenishing mechanism comprising a rotatable feeder or magazine containing a reserve supply of weft or filling in the form of weft-holders adapted to be driven or pushed into the respective shuttles, means for maintaining two of said weft-holders at the delivery-point adjacent to the said shuttles, means for driving or pushing during the same pick of the loom, either or both of the said weft-holders into their proper shuttles in play, a device for restraining, as required, the rotation of said magazine, means for rendering said restraining device inoperative to permit the magazine to always rotate to the extent of the space occupied by the two weft-holders, independently of whether one or two weft-holders have previously been transferred from the magazine, and means for controlling the time of operation of the weft-replenishing mechanism, said means consisting of mechanical devices made inoperative by the presence and operative by the substantial absence of weft or filling in the shuttles in play.

5. In a loom, the combination with means for picking two shuttles through two warp-sheds at each pick of the loom, of a weft-supplying mechanism comprising a rotatable feeder or magazine containing a reserve supply of weft or filling in the form of weft-holders adapted to be driven or pushed into the respective shuttles, means for maintaining two of said weft-holders at the delivery-point adjacent to the said shuttles, two drivers adapted for driving out laterally on the same pick of the loom either one or two weft-holders and driving or pushing same into the proper shuttles in play, means for operating said drivers independently, a device for restraining, as required, the rotation of said magazine, means for rendering said restraining device inoperative to permit the magazine to always rotate to the extent of the space occupied by the two weft-holders, and exhaustion-indicating devices, controlled by the presence or absence of weft or filling in the respective shuttles, for setting in operation said supplying mechanism.

6. In a loom, the combination with means for picking two shuttles through two warp-sheds at each pick of the loom, of a weft-supplying mechanism comprising a rotatable feeder or magazine containing a reserve supply of weft or filling in the form of weft-holders adapted to be driven or pushed into the respective shuttles, means for maintaining two of said weft-holders at the delivery-point adjacent to the said shuttles, two drivers adapted for driving out laterally, at the same pick of the loom, either one or two weft-holders and driving or pushing same into the proper shuttles in play, means for operating said drivers independently, a device for restraining, as required, the rotation of said magazine, means for rendering said restraining device inoperative to permit the magazine to always rotate to the extent of the space occupied by the two weft-holders, and mechanical feeler devices which control the times of operation of said supplying mechanism.

7. In a loom having means for picking two shuttles through two warp-sheds on each pick of the loom, a weft or filling supplying mechanism, comprising a magazine or holder for a reserve supply of weft or filling, said magazine being rotatively mounted and having an axial boss, a single head or end, arms on said head, extending therefrom, and furnished with means for supporting weft-holders, two drivers adapted for driving out laterally, on the same pick of the loom, either one or two weft-holders and driving or pushing same into the proper shuttles in play, means for operating said drivers independently, a device for restraining, as required, the rotation of said magazine, means for rendering said restraining device inoperative to permit the magazine to always rotate to the extent of the space occupied by the two weft-holders, and exhaustion-indicating devices, controlled by the presence or absence of weft or filling in the respective shuttles, for setting in operation said supply mechanism.

8. In a loom having means for picking two shuttles through two warp-sheds on each pick of the loom, a weft or filling supplying mechanism, comprising a magazine or holder for a reserve supply of weft or filling, said magazine being rotatively mounted and having an axial boss, a single head or end, arms on said head and extending therefrom, and means for supporting weft-holders therein, two drivers adapted for driving out laterally, at the same pick of the loom, either one or two weft-holders and driving or pushing same into the proper shuttles in play, means for operating said drivers independently, a device for restraining, as required, the rotation of said magazine, means for rendering said restraining device inoperative to permit the magazine to always rotate to the extent of the space occupied by the two weft-holders, and two mechanical devices which control the times of operation of said supplying mechanism.

9. In a double-shuttle loom having superposed shuttle-boxes and means for picking two shuttles simultaneously through the sheds in the warp, the combination with a rotatably-mounted weft-carrying magazine, means for driving the same, and drivers for transferring the weft-holders from said magazine into the respective shuttles, of means for operating the said drivers, an escapement device comprising a ratchet-wheel fixed to and rotating with the magazine and having one-half as many teeth as there are weft-holders in the magazine, a pawl which restrains the rotation of said ratchet-wheel, and means, carried by the respective drivers, for releasing said pawl from the wheel momentarily when a driver is actuated.

10. In a double-shuttle loom having superposed shuttle-boxes and means for picking two shuttles simultaneously through the sheds in the warp, the combination with a rotatably-mounted weft-carrying magazine, means for driving the same, and drivers for transferring the weft-holders from said magazine into the respective shuttles, of means for operating said drivers, an escapement device comprising a ratchet-wheel rotatable with the magazine and having half as many teeth as there are weft-holders in the magazine, a pawl which restrains the rotation of said ratchet-wheel, and spring-latches on the respective drivers and adapted to actuate said pawl, on the back stroke of either driver, to momentarily release the pawl from the wheel and allow the magazine to rotate to the extent of one tooth of said ratchet-wheel.

11. In a double-shuttle loom having superposed shuttle-boxes and means for picking two shuttles simultaneously through the sheds in the warp, the combination with a rotatively-mounted magazine which carries the weft in the form of weft-holders concentrically and equally distributed in the magazine, a spring for driving the magazine, a pawl-and-ratchet device for winding up said spring, said device comprising a ratchet-wheel connected with the spring and a cushioned pawl on the lay adapted to impinge upon and rotate said ratchet-wheel, drivers for driving the weft-holders from the magazine into the respective shuttles and means for operating said drivers, of an escapement device for permitting the magazine to rotate to the extent of two weft-holders at each operation of a driver.

12. In a weft or filling supplying mechanism for looms, the combination with a rotatively-mounted magazine adapted for carrying weft-holders, and means for transferring said weft-holders from said magazine into shuttles, of a spring for winding said magazine, a ratchet device connected with said spring, and a cushioned pawl for operating said mechanism, the said pawl yielding when the resistance to winding is too great.

13. In a weft or filling changing or supplying mechanism for looms, the combination with a rotatively-mounted weft or filling carrying magazine, and means for transferring the weft-holders from said magazine into shuttles, of a spring for driving the magazine, a ratchet-winding device connected with said spring, the pawl mounted in a guide and adapted to operate said winding device, the said guide for the pawl, and a spring behind the pawl, substantially as and for the purpose set forth.

14. In a weft or filling changing or supplying mechanism, the combination with the rotatively-mounted weft-carrying magazine, and means for transferring the weft-holders from the magazine into shuttles, of the spring-barrel having the ratchet-teeth 18, the backstop-pawl 21, engaging said teeth, the spring 17, and the vibrating, cushioned pawl which engages also the teeth 18 for intermittently rotating the spring-barrel for winding up the spring, and a detent which normally prevents the rotation of the magazine.

15. In a weft-supplying mechanism for looms, the combination with a rotatably-mounted weft-carrying magazine, means for driving the same, and means for transferring the weft-holders from said magazine into shuttles, of an escapement device comprising a ratchet-wheel fixed to and rotating with the magazine, a pawl which restrains the rotation of said ratchet-wheel, and means for releasing said pawl from the wheel momentarily when the transfer of weft is made.

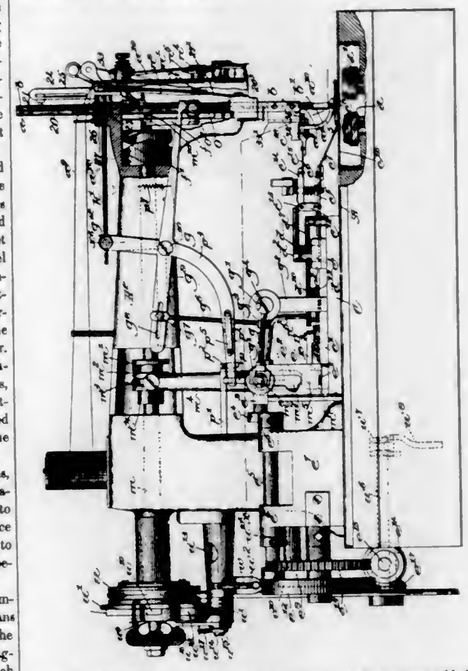
655,650. BUTTONHOLE SEWING AND CUTTING MACHINE. WILLIAM W. DIXON, Boston, Mass., assignor to the Reece Button Hole Machine Company, Portland, Me. Filed June 23, 1897. Serial No. 641,893. (No model.)

Claim.—1. In a sewing-machine, two independent needle-bars each provided with an eye-pointed needle, and means to reciprocate said needle-bars in unison, combined with means to automatically stop the operation of one of said needle-bars while the other of said bars continues to operate, substantially as described.

2. In a sewing-machine, a main and a secondary needle-bar, each provided with an eye-pointed needle, means to reciprocate said main needle-bar, a coupling device to couple said needle-bars together that the positively-moved main bar may reciprocate the secondary bar with it, combined with means to automatically uncouple the said secondary needle-bar from the main bar, substantially as described.

3. In a sewing-machine, a main and a secondary needle-bar each provided with an eye-pointed needle, means to reciprocate said main needle-bar, a coupling device to couple said needle-bars together that the positively-moved main bar may reciprocate the secondary bar with it, combined with means to automatically uncouple the said secondary needle-bar from the main bar, and suspend the operation of said secondary needle while the main bar and its needle continue in operation, substantially as described.

4. In a sewing-machine, a main and a secondary needle-bar each provided with an eye-pointed needle, means to reciprocate said main needle-bar, a coupling device to couple said needle-bars together that the positively-moved main bar may reciprocate the secondary bar with it, combined with means to automatically uncouple the said secondary needle-bar from the main bar, and with means to lock and hold stationary the said uncoupled secondary bar while the movement of the main bar is continued, for the purpose set forth.



5. In a sewing-machine, a main and secondary needle-bar, one guided by the other, each provided with an eye-pointed needle, means to reciprocate said main needle-bar, a coupling device to couple said needle-bars together that the positively-moved main bar may reciprocate the secondary bar with it, combined with means to automatically uncouple the said secondary needle-bar from the main bar, substantially as described.

6. In a sewing-machine, the following instrumentalities, viz: a stitch-forming mechanism, comprehending two needle-bars each provided with an eye-pointed needle, and complementary under-thread-carrying devices; a work-holder; means to effect automatically a relative change of position of said work-holder and stitch-forming mechanism to enable two parallel lines of depth and overedge stitches to be made simultaneously along the line of cut for the buttonhole, and means to automatically stop the operation of one of said needle-bars and its needle while the other of said bars with its needle continues in operation to form a bar, substantially as described.

7. Two under-thread-carrying devices, a main and a secondary needle-bar, each provided with an eye-pointed thread-carrying needle, means to reciprocate said main needle-bar, and a coupling to couple said secondary and main needle-bars together, a work-holder, and means to change the relative positions of said work-holder, and needles and under-thread carriers, whereby two parallel lines of depth and overedge stitches may be stitched simultaneously at opposite sides of the line of cut for a buttonhole, and means to automatically stop the operation of one of said needle-bars and its needle while the other of said bars with its needle continues in operation to form a bar, substantially as described.

8. Two under-thread-carrying devices, a main and a secondary needle-bar each provided with an eye-pointed thread-carrying needle, means to reciprocate said main needle-bar, and a movable coupling to couple said secondary and main needle-bars together, a work-holder, means to move said work-holder both in the direction of the length of the buttonhole, and in the direction transverse to the length of said hole for the production of alternate depth and overedge stitches, means to automatically uncouple said secondary needle-bar from said main needle-bar and then to lock said secondary bar stationary while the main bar continues to be reciprocated, and means to automatically increase the length of the transverse movement of said work-holder for barring while only the main needle-bar and its needle is operating, substantially as described.

9. In a sewing-machine, the following instrumentalities, viz: stitch-forming devices comprehending two needle-bars, each provided with an eye-pointed needle, and two under-thread carriers; a work-holder to clamp the material to be stitched, means to change the relative positions of said work-holder and stitch-forming mechanism to insure the production of two parallel rows of depth and overedge stitches to form the finish for the edges of a buttonhole, means to temporarily put out of operation one of said needle-bars and its needle, and means to at such time increase the relative change of position of said work-holder and stitch-forming mechanism, whereby with the one needle-bar and needle then in operation a series of stitches may be made transversely of the direction of the length of the buttonhole but longer for barring, substantially as described.

10. In a sewing-machine the following instrumentalities, viz: a main and a secondary needle-bar, each provided with an eye-pointed needle, means to reciprocate said main needle-bar, a movable coupling to couple said needle-bars together so that the main needle-bar may reciprocate said secondary needle-bar with it, a locking device to lock and hold said secondary needle-bar in its inoperative position when uncoupled from said main needle-bar, a work-holder to clamp the material to be stitched, means to move said work-holder longitudinally in the direction of the length of the buttonhole to be stitched, means to move said work-holder transversely with relation to the length of said buttonhole, means to automatically actuate said coupling device to uncouple and to couple said needle-bar and to operate the lock for holding the uncoupled bar stationary in its inoperative position, means to effect the length of the transverse throw of said work-holder, a cam, and operating devices therefor, whereby said cam may in its movement effect first the uncoupling of said secondary needle-bar and its locking, and the increased throw of said work-holder for barring, then to couple said secondary needle-bar with said main needle-bar and decrease for a period the transverse throw of said work-holder for the depth and overedge stitches at the sides of the buttonhole, and to then again uncouple said secondary needle-bar, lock it in its inoperative position and increase the transverse throw of the work-holder to bar the second end of the buttonhole, the buttonhole so stitched at one longitudinal movement of the work-holder presenting two lines of depth and overedge stitches one at each side of the buttonhole-slit, and bar-stitches at both ends of said two lines of depth and overedge stitches, substantially as described.

11. In a sewing-machine the following instrumentalities, viz: two independent needle-bars, each provided with an eye-pointed needle, means to reciprocate said needle-bars in unison to make the depth and overedge stitches simultaneously for the opposite edges of a buttonhole, means to automatically stop the operation of one of said needle-bars while the other of said bars continues to operate for barring a buttonhole, a work-holder to hold the material being stitched, a buttonhole-cutting device and means to operate it to cut a buttonhole-slit in the work held in the work-clamp, substantially as described.

12. In a sewing-machine, a work-holder to hold the material to be stitched, two needle-bars each provided with an eye-pointed needle, complementary stitch-forming devices coöperating with said needles to form stitches, a cutter-carrier, a cutter carried thereby, and connections between the said work-holder and said cutter to cause the cutter to follow the work-holder in its longitudinal movement, substantially as described.

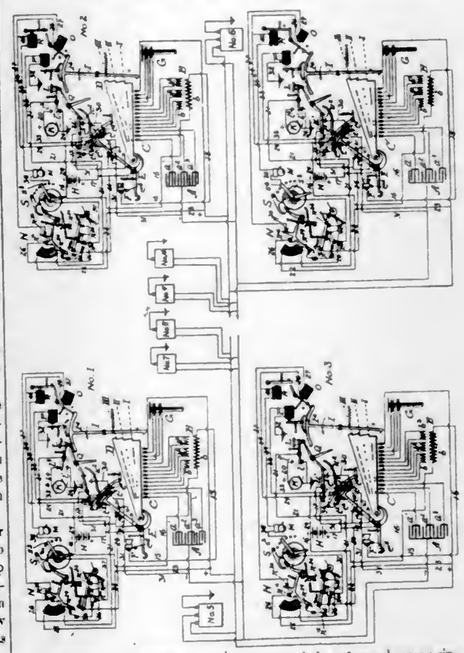
13. In a sewing-machine, a work-holder to hold the work to be stitched, two needle-bars each provided with an eye-pointed needle, a cutter located in a slot in said needle-bars between the shanks of said needles, a cutter-bar carrier to sustain said cutter, and connections between said work-holder and cutter to cause said cutter to travel through the space between said needles from one to the other side of said needles with the work-holder, to operate substantially as described.

14. In a sewing-machine, a work-holder, a movable fulcrum, a lever surrounding said fulcrum and connected with said work-holder, means to move said lever, a pawl, means operated by it to effect the step-by-step longitudinal movement of said work-holder, and intermediate means between said fulcrum and said pawl to automatically suspend the operation of said pawl when the said fulcrum is moved to increase the lateral throw of the work-holder for barring the end of a buttonhole, substantially as described.

15. In a sewing-machine for stitching buttonholes the following instrumentalities, viz: a stitch-forming mechanism comprehending two needle-bars each provided with an eye-pointed needle, and complementary under-thread-carrying devices; a work-holder; means to effect automatically a relative change of position of said work-holder and stitch-forming mechanism to enable two parallel lines of depth and overedge stitches to be made simultaneously along the line of cut of the buttonhole, means to cause said two needle-bars to reciprocate in unison for stitching the sides of a buttonhole; means to lock one of said needle-bars in its inoperative position during barring; stopping mechanism; and means to control the same whereby when a second line of barring has been made to finish the second end of a buttonhole; said machine will be stopped with the main or barring needle elevated, and mechanism, under the control of the operator, to operate said stopping mechanism to start the machine when a succeeding buttonhole is to be made, the main needle-bar containing the needle for barring being in its elevated position when the machine is started to thereby enable it working alone to commence the first bar for the buttonhole, substantially as described.

16. In a sewing-machine for stitching buttonholes the following instrumentalities, viz: stitch-forming mechanism comprehending two needle-bars each provided with an eye-pointed needle, and complementary under-thread-carrying devices; a work-holder; means to effect automatically a relative change of position of said work-holder and stitch-forming mechanism to enable two parallel lines of depth and overedge stitches to be made simultaneously along the line of cut of the buttonhole, a coupling uniting said two needle-bars for depth and overedge stitching, means to uncouple said needle-bars and lock one of them in its inoperative position during barring, stopping mechanism, and means to control the same whereby when the second line of barring made, it finishing the second end of a buttonhole, is finished, said machine will be stopped with the main or barring needle elevated, and mechanism, under the control of the operator, to operate said stopping mechanism to start the machine when the succeeding buttonhole is to be made, the main needle-bar containing the needle for barring being in its elevated position when the machine is started to thereby enable it working alone to commence the first bar for the buttonhole, buttonhole-cutting mechanism, and means to operate it at the termination of the depth and overedge stitches and preparatory to making the second bar, substantially as described.

655,651. MULTIPLEX TELEPHONY. ERNEST A. FALLER, San Francisco, Cal., assignor of one-half to James W. Chisholm, same place. Filed Apr. 27, 1900. Serial No. 14,605. (No model.)



Claim.—1. A system of multiplex transmission of speech over a single line comprising instruments at the different stations adjustable as to their ability to send and select voice-currents, controlling means at the different stations for effecting the adjustment of the instruments in pairs and selecting means for actuating said controlling means.

2. A system of multiplex transmission of speech over a single line comprising instruments at the different stations adjustable as to their ability to send and select voice-currents, means for effecting the adjustment of the instruments in pairs and automatically-operated controlling devices for said means, substantially as described.

3. A system of multiplex transmission of speech over a single line comprising instruments at the different stations adjustable as to their ability to send and select voice-currents, controlling means for effecting the adjustment of the instruments in pairs, signaling and selecting means for actuating said controlling means.

4. A system of multiplex transmission of speech comprising instruments adjustable as to their ability to send and select voice-currents, signaling and selecting apparatus, controlling means at the stations adapted to adjust the instruments, said controlling means comprising means controlled by the receivers and means controlled by the signaling and selecting apparatus, said controlling means being rendered effective in adjusting the instruments when the receivers are taken down, substantially as described.

5. A system of multiplex transmission of speech comprising instruments adjustable as to their ability to send and select voice-currents, signaling and sympathizing apparatus, controlling means at the stations adapted to adjust the instruments and comprising means controlled by the receivers and means controlled by the signaling and sympathizing apparatus, said controlling means being rendered effective in making the adjustments in the instruments when the receivers are taken down, substantially as described.

6. A system of multiplex transmission of speech, comprising instruments adjustable as to their ability to send and select voice-currents, controlling means at the different stations for adjusting the instruments and signaling and sympathizing apparatus for setting the said controlling means substantially as described.

7. In combination in a system of multiplex transmission of speech, the receivers, condensers and inductoria in the stations, said receivers and inductoria being adjustable as to their windings and the condensers being adjustable as to their capacity, switches for changing the electrical connections of the parts and signaling and sympathizing apparatus for controlling the switches, substantially as described.

8. In combination in a system of multiplex transmission of speech, receivers adjustable as to their windings, inductoria adjustable as to their windings, condensers adjustable as to their capacity, electrical connections between the receivers, inductoria and condensers and means for effecting the adjustment of the said parts simultaneously; transmitters and a line conductor, substantially as described.

9. In combination in a system of multiplex transmission of speech, receivers adjustable as to their windings, inductoria adjustable as to their windings, transmitters, electrical connections and switches for adjusting the winding of the receivers and the inductoria simultaneously, substantially as described.

10. A system of multiplex telephony comprising sending and receiving instruments adjustable as to their ability to send and select voice-currents, a conductor and means controlled by the manipulations necessary to establish communication, said means effecting like adjustments in the intercommonicating instruments and unlike adjustments between said instruments and all others in the system, substantially as described.

11. A system of multiplex telephony comprising sending and receiving instruments adjustable as to their ability to send and select voice-currents, a single line between all of said instruments, means for effecting like adjustments in the intercommunicating instruments and unlike adjustments between said instruments and all others in the system, and signaling and selecting apparatus controlling said means, substantially as described.

12. A system of multiplex telephony comprising sending and receiving instruments in the stations adjustable as to their ability to send and select voice-currents, a single line connecting them, controlling means for effecting like adjustments in the intercommonicating instruments and unlike adjustments between said instruments and others in the system, signaling apparatus for setting said means, the said controlling means being rendered effective by the manipulation of the receiver, substantially as described.

13. A system of multiplex telephony comprising sending and receiving instruments in the stations adjustable as to their ability to send and select voice-currents, a single line connecting them, controlling means for effecting like adjustments in the intercommunicating instruments and, signaling, selecting and sympathizing apparatus with electrical connections for controlling said means whereby intercommunicating stations have like adjustments existing therein while unlike adjustments exist between said stations and all others, substantially as described.

14. A system of multiplex telephony comprising sending and receiving instruments at the various stations adjustable as to their ability to send and select voice-currents, a single line, means whereby like adjustments are effected in intercommonicating instruments and means whereby adjustments are effected in all the idle stations step by step as the pairs of instruments in the system are successively brought into use, substantially as described.

15. A system of multiplex telephony comprising sending and receiving instruments adjustable as to their ability to send and select voice-currents, at the various stations, a single line, means whereby like adjustments are effected in intercommunicating instruments and whereby adjustments are effected in all the idle stations step by step as the pairs of instruments in the system are successively brought into use, said adjustments being rendered effective in changing the selective nature of each new pair of instruments as they are brought into use by taking down the receivers of said instruments, substantially as described.

16. A system of multiplex telephony comprising sending and receiving instruments at the various stations adjustable in pairs as to their ability to send and select voice-currents, a single line, means in each station whereby both instruments of each pair of intercommunicating stations are given like adjustments in establishing communication to sympathize with one another and are both adjusted out of sympathy with the other instruments and means controlled at the calling station for operating the sympathizing means.

17. A system of multiplex telephony comprising a plurality of receivers adjustable as to their resistance, means controlled by the operator for changing the said resistance in pairs of instruments, suitable transmitters and a line conductor, substantially as described.

18. A system of multiplex telephony comprising receivers adjustable as to their resistance and means controlled by the operators for changing the said resistance in pairs of instruments step by step as the pairs of instruments are brought into use in succession, substantially as described.

19. A multiplex system of telephony comprising sending and receiving instruments adjustable as to their ability to send and select voice-currents, means for effecting adjustments in the instruments step by step as the pairs of instruments are brought into use successively, and means whereby the system is restored to normal position step by step as the pairs of instruments are successively placed out of use, substantially as described.

20. A system of multiplex telephony comprising instruments adjustable as to their ability to send and select voice-currents in the stations, controlling means for adjusting the instruments, signaling apparatus, means in the calling and called stations for preventing adjustment of the controlling means when the signal is sent, and means in the idle stations of the system for adjusting the controlling means when said signal is sent, substantially as described.

21. A system of multiplex telephony comprising instruments in the stations adjustable as to their ability to send and select voice-currents, signaling apparatus, means for adjusting the instruments, controlling devices for said means, means in the calling and called stations for preventing adjustment of the controlling devices when the signal is sent, and means in the idle stations of the system for adjusting the controlling devices when said signal is sent, substantially as described.

22. A system of multiplex telephony comprising instruments in the stations adjustable as to their ability to send and select voice-currents, means for adjusting the instruments as to their ability to select voice-currents, means operating step by step for restoring the instruments to normal condition and for maintaining the relative difference in adjustment between the pairs of instruments while said instruments are being restored step by step to normal condition, substantially as described.

23. In combination, in a telephone system, instruments in the stations adjustable as to their ability to send and select voice-currents, controlling means for adjusting the instruments, setting mechanism for said controlling means and obstructing means to prevent said setting means from operating, said obstructing means including a manually-operated device acting upon the controlling means and an electrically-operated device also acting upon the controlling means, substantially as described.

24. In combination in a telephone system, instruments in the stations adjustable as to their ability to send and select voice-currents, controlling means for adjusting the instruments, a signaling-circuit and a Morse key controlling said circuit, said Morse key acting also as a mechanical obstructor at the calling station, for the said controlling means and an electrically-operated obstructor at the called station for the controlling means at that station, said electrical obstructor being controlled through the signal-circuit substantially as described.

25. In combination in a telephone system, instruments in the stations adjustable as to their ability to send and select voice-currents, controlling means for adjusting the instruments as to their ability to select voice-currents, a signaling-circuit, each station having a Morse key, a setting device and an electrically-operated obstructing device said obstructing device serving to prevent the operation of the setting device at the called station, a mechanical obstructor at the calling station to prevent the operation of the controlling means at the calling station and selecting means whereby the electrical obstructing device at the called station only is rendered active, substantially as described.

26. In combination in a telephone system instruments in the stations adjustable as to their ability to send and select voice-currents, controlling means for effecting the adjustment of the instruments, setting means for the said controlling means, electrically-operated obstructing means and manually-operated obstructing means for the setting means and resetting means to restore the instruments to normal position, substantially as described.

27. In combination in a telephone system, instruments in the stations adjustable as to their ability to send and select voice-currents, means for effecting the adjustments in the instruments, including resetting means, a resetting-circuit, circuit-closers, gravity-hooks for operating the same and a circuit-breaker whereby only one of said circuit-closers is rendered effective in establishing the resetting-circuit so that only one resetting impulse will result from each use of a pair of instruments, substantially as described.

28. In combination in a telephone system, instruments in the stations adjustable as to their ability to send and select voice-currents, means for effecting the adjustments in the instruments, including resetting means, a resetting-circuit, circuit-closers operated at the called and calling stations by hanging up the receivers, and means whereby only one of said circuit-closers is rendered effective in establishing the resetting-circuit so that only one resetting impulse will result from each use of a pair of instruments, said means comprising a circuit-breaker operated by the Morse key at the calling station, substantially as described.

29. In combination, in a multiplex-telephone system, instruments in the stations adjustable as to their ability to send and select voice-currents, means for effecting the adjustments in the instruments, comprising a switch and a selecting or stop lever, a setting means comprising an armature and magnet to operate the lever, an electrically-controlled obstructing device for the setting means, a signaling-circuit, a Morse key arranged to obstruct or lock the lever and resetting means to operate the lever, substantially as described.

30. In combination, in a multiplex-telephone system, adjustable condensers, adjustable inductoria and adjustable receivers in the stations, means for changing the connections between said parts comprising a switch having a plurality of series of contacts to connect certain sections of the said parts in each station in series or in parallel, and means for controlling the position of said switch, substantially as described.

31. In combination in a multiplex-telephone system, the adjustable condensers, adjustable inductoria and adjustable receivers, a switch D having a plurality of series of contacts adapted to connect certain sections of the said parts in series or in parallel, a gravity-hook for returning and holding the switch in its inactive position, a stop-lever for holding the switch in either of its operating positions, and means controlling the position of the said lever, substantially as described.

32. In combination in a multiplex-telephone system, an adjustable condenser, an adjustable inductorium and an adjustable receiver in each station, a switch having a plurality of contacts, the parts of the instruments being adapted to be connected up in series or in parallel by the said switch, a stop-lever to control the switch, a setting-magnet with its armature acting upon the stop-lever and a resetting-magnet having its armature arranged to control the resetting action of the stop-lever, substantially as described.

33. In combination in a multiplex-telephone system, the instruments adjustable as to their ability to send and select voice-currents, controlling means for adjusting the instruments comprising switches D having a plurality of series of contacts, stop-levers I for engaging said switches, said levers having toothed portions, the setting and resetting magnets with their armatures acting upon the said toothed portions, the resetting-circuit, a local circuit-breaker U for said circuit and a signaling device adapted to operate the circuit-breaker at the calling station.

34. In combination, in a multiplex-telephone system, instruments adjustable as to their ability to send and select voice-currents, means for adjusting the instruments at the several stations including setting and resetting devices, a resetting-circuit, resetting-switches and receiver-hooks to which the resetting-switches are connected, said switches comprising a series of contacts, means for holding the contacts out of engagement as the switches move one way and for allowing the said contacts to engage as the switches move the other way, substantially as described.

35. In combination, in a multiplex-telephone system, instruments adjustable as to their ability to send and select voice-currents, controlling means for adjusting the instruments, setting devices for said means, a resetting device, a resetting-circuit, a circuit-breaker U at the calling station, the receiver-hook and resetting-switch connected therewith, said switch being arranged to mechanically close the circuit-breaker U, substantially as described.

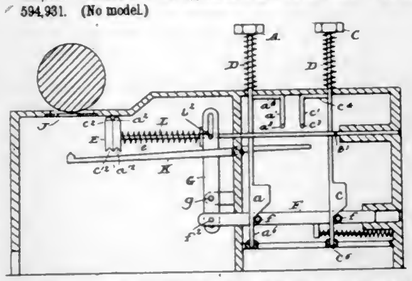
36. In combination in a multiplex-telephone system, instruments adjustable as to their ability to send and select voice-currents, controlling means for adjusting the instruments, resetting means for the controlling means and resetting-switches, each of said switches comprising a movable switch-arm, a fulcrumed lever, the said movable switch-arm carrying a plurality of contacts, and carrying also a movable part and the said fulcrumed lever having also a plurality of contacts and cam-surfaces adapted to engage said movable part whereby on one stroke of the switch the contacts will engage while on the other stroke they will be held out of engagement, substantially as described.

37. A system of multiplex transmissions of speech over a single line comprising instruments at the different stations, each of which is capable of assuming any one of a plurality of speaking conditions and means for causing the instruments to select the speaking conditions in a predetermined order as the pairs of instruments are successively placed into use, substantially as described.

38. A system of multiplex transmissions of speech over a single line, comprising instruments at the different stations each of which is capable of assuming any one of a plurality of speaking conditions and means for causing the instruments to select and release the speaking conditions in a predetermined order as the pairs of instruments are successively placed into and out of use, substantially as described.

39. In combination in a system of multiplex transmission of speech, receivers adjustable as to their windings, inductoria each having a secondary subdivided into sections, a transmitter and battery connected with the primary of each inductorium, electrical connections and means for adjusting the windings of the receivers and of the secondary of the inductoria, substantially as described.

655,652. TYPE-WRITING MACHINE. JONATHAN O. FOWLER, JR., New York, N. Y. Original application filed Nov. 8, 1892, Serial No. 451,412. Divided and this application filed June 10, 1896. Serial No. 594,931. (No model.)



Claim.—1. The combination, with a plurality of type-carriers E constructed and arranged to work back and forth, and with a common center gateway or aperture J, to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, of a plurality of keys A, and of a plurality of intermediate engaging means, consisting of rocking pivoted parts G, and sliding horizontal parts F, each constructed and arranged to engage a key with a traveling contact movement, the impacting portions *a*, *f*, of the key and said engaging means being relatively circular—as a stud or roll f^2—and an incline *a*, along which the stud or roll works, and a spring M to resist the forward stroke of the type-carriers with an increasing tension.

2. The combination, with a plurality of type-carriers constructed and arranged to work back and forth, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, of a plurality of keys, and of a plurality of engaging means intermediate the type-carriers and keys, and each provided with means constructed and arranged to engage a key with a traveling contact movement, the impacting portions of the key and said engaging means being relatively circular,—as a stud or roll—and an incline along which the stud or roll works.

3. The combination, with a plurality of type-carriers constructed and arranged to work back and forth, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, of a plurality of keys, and of a plurality of engaging means, intermediate the type-carriers and keys, and each provided with a pivoted rocking part having a slotted lower portion to engage a stud or roll actuated by one of the keys, and also adapted to engage and actuate one of the reciprocating type-carriers.

4. The combination, with a plurality of type-carriers constructed and arranged to work back and forth, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, of a plurality of keys, and of a plurality of engaging means, intermediate the type-carriers and keys, and each provided with a pivoted rocking part having a slotted lower portion to engage a stud or roll actuated by one of the keys, and also adapted to engage and actuate one of the reciprocating type-carriers with a stud or roll and groove movement.

5. The combination, with a plurality of type-carriers constructed and arranged to work back and forth, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, of a plurality of keys, and of a plurality of engaging means intermediate the type-carriers and keys, and each provided with a pivoted rocking part having a slotted lower portion to engage a stud or roll actuated by one of the keys, and also adapted to engage and actuate one of the reciprocating type-carriers, and also provided with means constructed and arranged to engage a key with a traveling contact movement.

6. The combination, with a plurality of radially-disposed type-carriers constructed and arranged to work back and forth in a horizontal plane, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, and in the same vertical plane with each type-carrier, of a plurality of keys, and of a plurality of engaging means, intermediate the type-carriers and keys, and each provided with means constructed and arranged to engage a key with a traveling contact movement, the impacting portions of the key and said engaging means being relatively circular,—as a stud or roll—and an incline along which the stud or roll works.

7. The combination, with a plurality of radially-disposed type-carriers constructed and arranged to work back and forth in a horizontal plane, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, and in the same vertical plane with each type-carrier, of a plurality of keys, and of a plurality of engaging means, intermediate the type-carriers and keys, and each provided with a pivoted rocking part having a slotted lower portion to engage a stud or roll actuated by one of the keys, and also adapted to engage and actuate one of the reciprocating type-carriers.

8. The combination, with a plurality of radially-disposed type-carriers constructed and arranged to work back and forth in a horizontal plane, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, and in the same vertical plane with each type-carrier, of a plurality of keys, and of a plurality of engaging means, intermediate the type-carriers and keys, and each provided with a pivoted rocking part having a slotted lower portion to engage a stud or roll actuated by one of the keys, and also adapted to engage and actuate one of the reciprocating type-carriers with a stud or roll and groove movement.

9. The combination, with a plurality of radially-disposed type-carriers constructed and arranged to work back and forth in a horizontal plane, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, and in the same vertical plane with each type-carrier, of a plurality of keys, and of a plurality of engaging means, intermediate the type-carriers and keys, and each provided with a pivoted rocking part having a slotted lower portion to engage a stud or roll actuated by one of the keys, and also adapted to engage and actuate one of the reciprocating type-carriers, and also provided with means constructed and arranged to engage a key with a traveling contact movement.

10. A plurality of keys A, each provided with a spring D, to hold the same in normal position, and each constructed and arranged to actuate horizontally-reciprocating means carrying type-faces, in combination with said reciprocating means, radially-disposed guides for the same, a common spring M, to resist the forward stroke of the said means with an increasing tension, and pivoted rocking means G, provided with slots at both extremities to coact respectively with a roll f^2 actuated by one of the keys, and with a stud or roll l^2 carried by the type-carrier.

11. A plurality of keys, each provided with a spring to hold the same in normal position, and each constructed and arranged to actuate horizontally-reciprocating means carrying type-faces, in combination with said reciprocating means, radially-disposed guides for the same, means for impelling said type-faces provided with a pivoted rocking part having a slotted lower portion to engage a stud or roll actuated by one of the keys, and a spring to resist the forward stroke of the said means with an increasing tension.

12. A plurality of keys, each provided with a spring to hold the same in normal position, and each constructed and arranged to actuate horizontally-reciprocating means carrying type-faces, in combination with said reciprocating means, radially-disposed guides for the same, means for impelling said type-faces provided with a pivoted rocking part having a slotted lower portion to engage a stud or roll actuated by one of the keys, and also provided with means constructed and arranged to engage a key with a traveling contact movement, and a spring to resist the forward stroke of the said means with an increasing tension.

13. A plurality of keys, each provided with a spring to hold the same in normal position, and each constructed and arranged to actuate horizontally-reciprocating means carrying type-faces, in combination with said reciprocating means, radially-disposed guides for the same, a common center gateway or aperture to register with each of the type-faces, upon being brought to the printing-point, means for impelling said type-faces provided with a pivoted rocking part having a slotted lower portion to engage a stud or roll actuated by one of the keys, and a common spring to resist the forward stroke of the said means with an increasing tension.

14. A plurality of keys, each provided with a spring to hold the same in normal position, and each constructed and arranged to actuate horizontally-reciprocating means carrying type-faces, in combination with said reciprocating means, radially-disposed guides for the same, a common center gateway or aperture to register with each of the type-faces, upon being brought to the printing-point, and a common spring to resist the forward stroke of the said means with an increasing tension, and pivoted rocking means provided with a slot at the lower part to engage a stud or roll actuated by one of the keys, and also adapted to engage one of the reciprocating type-carriers with a stud or roll and groove movement.

15. A plurality of keys, each provided with a spring to hold the same in normal position, and each constructed and arranged to actuate horizontally-reciprocating means carrying type-faces, in combination with said reciprocating means, radially-disposed guides for the same, a common spring to resist the forward stroke of the said means with an increasing tension, and pivoted rocking means provided with a slot at the lower part to engage a stud or roll actuated by one of the keys, and also adapted to engage one of the reciprocating type-carriers with a stud or roll and groove movement.

16. A plurality of radially-disposed type-carriers, and a common center gateway or aperture to register with each of the type-faces, upon being brought to the printing-point, the type-face of each type-carrier being inclined so as to register in alinement with the said aperture, and means to impel the said type-carriers, provided with pivoted rocking means having a slot at the lower part to engage a stud or roll actuated by one of the keys, and also adapted to engage one of the reciprocating type-carriers with a stud or roll and groove movement.

17. A plurality of radially-disposed type-carriers, located in a horizontal plane, and a common center gateway or aperture to register with each of the type-faces, upon being brought to the proper printing-point, the face of each type-carrier being inclined so as to register in alinement with the said aperture, and means to reciprocate said type-carriers provided with pivoted rocking means having a slot at the lower part to engage a stud or roll actuated by one of the keys, and also adapted to engage one of the reciprocating type-carriers with a stud or roll and groove movement.

18. The combination, with a plurality of type-carriers constructed and arranged to work back and forth, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, the type-face of each of the said type-carriers being inclined so as to register in alinement at the said aperture, of a plurality of keys, and of a plurality of engaging means, intermediate the keys and the type-carriers, and each provided with a pivoted rocking part having a slotted lower portion to engage a stud or roll actuated by one of the keys, and also adapted to engage and actuate one of the said reciprocating type-carriers.

19. The combination, with a plurality of type-carriers constructed and arranged to work back and forth, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, the type-face of each of the said type-carriers being inclined so as to register in alinement at the said aperture, of a plurality of keys, and of a plurality of engaging means, intermediate the keys and the type-carriers, and each provided with a pivoted rocking part having a slotted lower portion to engage a stud or roll actuated by one of the keys, and also adapted to engage and actuate one of the reciprocating type-carriers, and also provided with means constructed and arranged to engage a key with a traveling contact movement.

20. The combination, with a plurality of radially-disposed type-carriers constructed and arranged to work back and forth in the same plane, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, and in the same vertical plane with each type-carrier, the type-face of each of the said type-carriers being inclined so as to register in alinement at the said aperture, of a plurality of keys, and of a plurality of engaging means, intermediate the keys and the type-carriers, and each provided with a pivoted rocking part constructed and arranged to be actuated at its lower extremity with a stud or roll and slot movement, and also adapted to actuate one of the reciprocating type-carriers.

21. The combination, with a plurality of radially-disposed type-carriers constructed and arranged to work back and forth in the same plane, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, and in the same vertical plane with each type-carrier, the type-face of each of the said type-carriers being inclined so as to register in alinement at the said aperture, of a plurality of keys and of a plurality of engaging means, intermediate the type-carriers and keys, and each provided with a pivoted rocking part constructed and arranged to be actuated at its lower extremity with a stud or roll and slot movement, and also adapted to actuate one of the reciprocating type-carriers, and also being provided with means constructed and arranged to engage a key with a traveling contact movement.

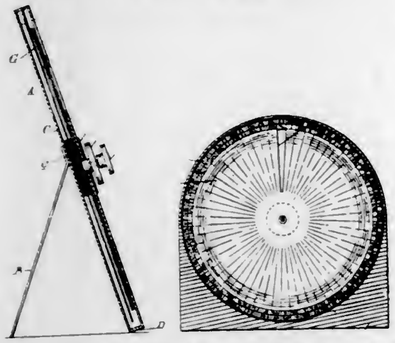
22. The combination, with a plurality of radially-disposed type-carriers constructed and arranged to work back and forth, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, and also of a plurality of radially-disposed guides for said type-carriers, and of a plurality of keys, and pivoted rocking means constructed and arranged to be actuated at its lower extremity with a stud or roll and slot movement, and also adapted to engage one of the reciprocating type-carriers with a stud or roll and groove movement.

23. The combination, with a plurality of radially-disposed type-carriers constructed and arranged to work back and forth, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, and also of a plurality of radial guides for the said type-carriers, and of a plurality of keys, and of a plurality of engaging means, intermediate the type-carriers and keys, and each provided with a pivoted rocking part constructed and arranged to be actuated at its lower extremity with a stud or roll and slot movement, and also adapted to actuate one of the reciprocating type-carriers.

24. The combination, with a plurality of radially-disposed type-carriers constructed and arranged to work back and forth in the same plane, and with a common center gateway or aperture to register with each of the type-carriers, upon being brought to the printing-point, and located in front of the same, and also of a plurality of radially-disposed guides for the said type-carriers, and of a plurality of keys, and of a plurality of engaging means intermediate the type-carriers and keys, and each being provided with a pivoted rocking part constructed and arranged to be actuated at its lower extremity with a stud or roll and slot movement, and also adapted to actuate one of the reciprocating type-carriers, and also provided with means constructed and arranged to engage a key with a traveling contact movement.

25. A plurality of keys, each provided with a spring to hold the same in normal position, and each constructed and arranged to actuate radially-disposed means reciprocating in the same plane and carrying type-faces, and a common spring to resist the forward stroke of the said means with an increasing tension, in combination with a common center gateway or aperture to register with each of the type-faces, upon being brought to the printing-point, the type-faces of each type-carrier being inclined so as to register in alinement with the said aperture, and pivoted rocking means constructed and arranged to be actuated at its lower extremity with a stud or roll and slot movement, and also adapted to engage one of the reciprocating type-carriers with a stud or roll and groove movement.

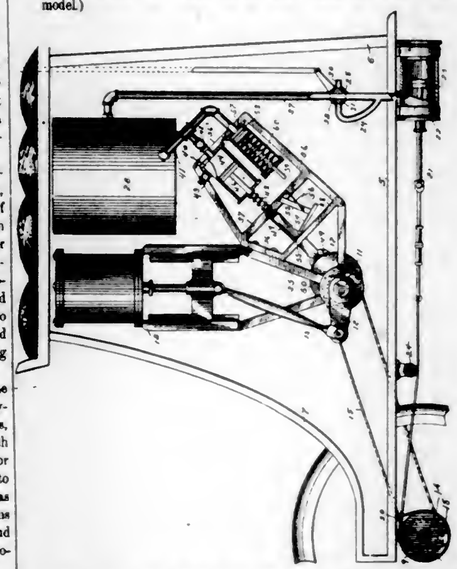
655,653. CALCULATOR. GEORGE J. GNAU, Detroit, Mich. Filed Oct. 23, 1899. Serial No. 734,571. (No model.)



Claim.—1. In a calculator, the combination of an inclosing casing having a segmental opening formed in the front thereof, and provided upon one side of said opening with a column of factors of value, an outer disk rotatably mounted within the casing, provided with a segmental opening corresponding to the opening in the casing-front, and having marked upon its periphery factors of time, and below each of said factors a radial column of computations of value, an inner disk of greater diameter than the outer disk, having markings thereon similar to those on the latter disk, a friction mechanism for holding the opening in the outer disk in coincidence with the casing-opening, comprising a depending finger extending downwardly from the inner face of the casing-top to and between the disks, and spaced lugs upon the outer disk above the radial opening adapted to engage upon opposite sides of said finger, and means for rotating the disks independently of each other in the manner and for the purpose described.

2. In a calculator, the combination of an inclosing casing provided with front and rear covers, bearing-plates thereon, a spindle journaled at its inner end in the inner bearing-plate and projecting through the outer plate, a disk secured to the inner end of the spindle, a sleeve journaled on the spindle and in the outer bearing-plate, a disk secured to the inner end of the sleeve, and actuating-heads detachably secured to the outer ends of said spindle and sleeve.

655,654. AIR-BRAKE FOR AUTOMOBILES. IRVING L. HAMMOND, Lewiston, Me. Filed Apr. 30, 1900. Serial No. 14,934. (No model.)



Claim.—1. In an air-brake, the combination with the reservoir and a rotatable cam, of a pump connected with the reservoir, a piston for the pump having a rod lying normally in the path of rotation of the cam for operation thereby, said rod having notches therein, a pivoted latch for engagement with the notches of the rod to hold it retracted from its operative relation to the cam, a cylinder connected with the reservoir and provided with a piston, and a rod for the piston disposed for engagement with the latch to move the latter to engage a notch of the pump-rod.

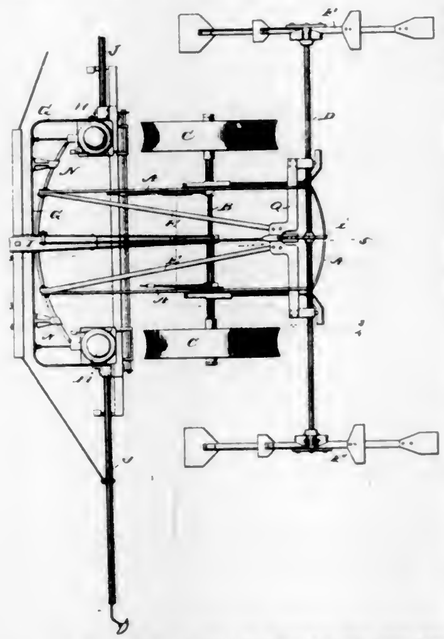
2. In an air-brake, the combination with the reservoir, of a pump connected therewith and including a piston provided with a notched rod, a rotatable cam for engagement with the rod to operate it in one direction, means for holding the rod yieldably in operative relation to the cam, a pivoted rocker having a head for engagement with the notch of the rod to hold the latter retracted, means for holding the latch normally inoperative, a cylinder communicating with the reservoir to receive pressure therefrom, a piston in said cylinder and having a rod for engagement with the latch to move it into operative position, and means for holding the said piston normally retracted.

655,655. AUTOMATIC CHECK-ROW CORN-PLANTER. JAMES B. JARMIN, Davenport, Iowa, assignor to the Implement Manufacturing Company, same place. Filed Apr. 21, 1900. Serial No. 13,713. (No model.)

Claim.—1. In an automatic corn-planter, the combination with a back frame and a marker attachment vertically movable, but laterally immovable, with relation to each other, of a front frame and a tongue rigidly connected together, a lateral sliding pivot connection between the front and the back frame and a flexible connection between the tongue and the axle of the main frame, substantially as described.

2. In an automatic corn-planter, the combination with a main frame and the marker attachment comprising a pair of coupling-bars, of the front frame, the tongue rigidly secured thereto, a guide-rod pivotally connecting the frout and back frame and the coupling-bars and a swivel connection between the tongue and the axle of the back frame, substantially as described.

3. In an automatic corn-planter, the combination with a back frame and a marker attachment vertically movable, but laterally immovable, with relation to each other, of a front frame and a tongue rigidly connected together, a lateral sliding pivot connection between the front and the back frame, the axle of the back frame, a vertically-elongated coupling-link secured to the rear end of the tongue and through which the axle passes and a latch-lever pivoted upon the back frame and connected with the tongue near the rear end thereof, substantially as described.



4. In an automatic corn-planter, the combination with a main frame and the marker attachment comprising a pair of coupling-bars, of the front frame, the tongue rigidly secured thereto, a guide-rod pivotally connecting the front and back frame and the coupling-bars, a guide-loop on the front frame through which the guide-rod passes, an antifriction-roller mounted thereon at the rear side of the loop-eye, the axle of the main frame, a coupling-link secured to the rear end of the tongue and having an elongated eye through which the axle passes, a latch-lever pivoted to the back frame and connected with the tongue near the rear end thereof, substantially as described.

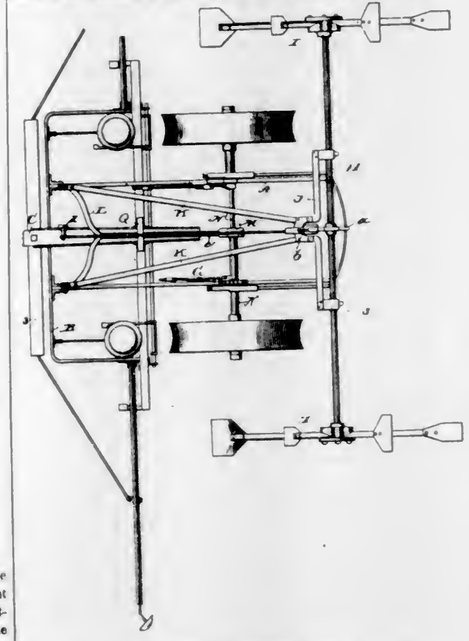
5. In an automatic corn-planter, the combination with a back frame and the marker attachment, of a pair of lifting-arms mounted upon a rock-shaft, prolongations on said arms to the opposite side of said shaft, springs connected at their ends, respectively, to said prolongations and the back frame, a crank-arm on the rock-shaft and a latch-lever pivoted on the back frame and connected with, so as to actuate, said crank-arm, substantially as described.

655,656. AUTOMATIC CHECK-ROW CORN-PLANTER. JAMES B. JARMIN, Davenport, Iowa, assignor to the Implement Manufacturing Company, same place. Filed Apr. 21, 1900. Serial No. 13,714. (No model.)

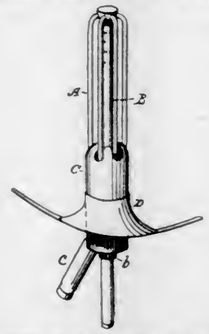
Claim.—1. In an automatic check-row corn-planter, the combination with the planter and the marker-shaft, of a push-bar having a universal coupling at one end with the planter at or about the center of length of the axle, coupling-bars having horizontal pivot connections at their ends respectively with the marker-shaft and the forward end of the push-bar and a guide for the push-bar permitting lateral movement only thereof, substantially as described.

2. In an automatic check-row corn-planter, the combination with the planter and the marker-shaft, of a T-shaped push-bar, a rock-shaft journaled in the planter-frame above the axle, a universal coupling between the rear end of said bar and the shaft, a pair of coupling-bars secured at one end to a cross-bar and in which cross-bar the marker-shaft is journaled, a horizontal pivot connection between the forward ends of said coupling-bars and the forward end of the push-bar, the planter-tongue and a horizontal elongated stay-loop rigidly secured to said tongue in which the push-bar works, substantially as described.

3. In an automatic check-row corn-planter, the combination with the planter and the marker-shaft, of a T-shaped push-bar, a rock-shaft journaled in the planter-frame above the axle, a universal coupling between the rear end of said bar and the shaft, a pair of coupling-bars secured at one end to a cross-bar and in which cross-bar the marker-shaft is journaled, a horizontal pivot connection between the forward ends of said coupling-bars and the forward end of the push-bar, the planter-tongue, a horizontal elongated stay-loop rigidly secured to said tongue in which the push-bar works, lifting-arms rigid upon said rock-shaft, a latch-lever connected with, so as to rock, said shaft and springs coacting with said lever to rock the shaft in one direction to raise the arms, substantially as described.



655,657. SYRINGE. FREDERICK J. LANDER, Rochester, N. Y. Filed Oct. 11, 1899. Serial No. 733,283. (No model.)

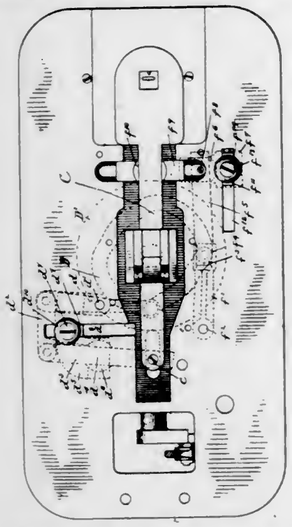


Claim.—A syringe having the cage-wires bent at their front ends toward each other, a screw with which said front ends engage, a receiver having a disk bottom centrally open and an outlet-pipe at its lower end, a spraying-tube connected to the said screw, and a shield adjustable on the receiver, all combined and arranged substantially as shown and described.

655,658. MACHINE FOR SEWING ON FLAT BUTTONS. ARTHUR A. MERRITT, Cohoes, N. Y., assignor, by mesne assignments, to W. Pierrepont White, Hugh White, and Clarence B. Crouse, Utica, N. Y. Filed May 3, 1897. Serial No. 634,875. (No model.)

Claim.—1. In a button-sewing machine, in combination, a flat bed having a slot d^9, a movable button-holder located on said bed, means

whereby said button-holder is moved to and fro lengthwise the bed and adjustable devices located beneath said bed, whereby the lengthwise movement of said button-holder may be adjusted or rendered nugatory, said devices comprising a slide carrying a movable fulcrum, a lever fulcrumed therein and connected both to said button-holder and to said means for moving said button-holder, a portion of said slide lying in said slot, and means for clamping it in place therein, as set forth.



2. In a flat-button-sewing machine, the combination of the flat bed having the long slot f^{12}, the stitch-forming devices, the button-holder, means for moving the button-holder to and fro crosswise the bed located beneath the bed, and devices for adjusting the extent of said movements of the button-holder or preventing them entirely, said devices comprising a slide, a movable fulcrum mounted thereon carrying a lever, means whereby one end of said lever is connected to said button-holder and the other end thereof to said work-plate, a portion of said slide extending into said slot, and a clamping device for moving said slide accessible from above the bed, as and for the purposes described.

3. In a flat-button-sewing machine, the combination of the flat bed having the slots d^3, f^{12} extending through the same, the stitch-forming devices, the button-holder, means for moving the button-holder backward and forward lengthwise the bed and to and fro across the bed, devices for adjusting the extent of movements of said button-holder and rendering them or either of them nugatory, portions of which carry rectangular slides which extend respectively through said slots in the bed and are adjustable therein to move the parts connected with them in a right line and are manipulated above the bed, as and for the purposes described.

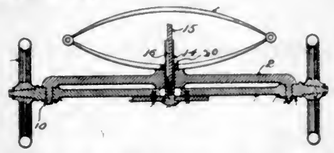
4. The combination in a button-sewing machine, of the stitch-forming devices, the button-holder, the slide or piece C, the cam-groove D, the lever d pivoted at d', one end of said lever being operated by said cam-groove D, the link d^2, the lever d^3 connecting said link with the slide or piece C, the sliding block d^5 carrying the movable fulcrum d^6 for the lever d^3, as and for the purposes described.

5. The combination in a button-sewing machine of the stitch-forming devices, the button-holder, the slide or piece C, the cam-groove f, the lever f', the free end of which is connected to said cam, said lever being pivoted at f^7 and engaging at its free end also the lever f^8, a moving fulcrum f^9 for said lever f^8 mounted in the slide-block f', the cross-slide f^{10} and means for connecting it with said slide-block f', and means for adjusting said slide-block, all as and for the purposes set forth.

655,659. BLACK SULFUR DYE. BERNHARD PRIEBS and OSKAR KALTWASSER, Berlin, Germany, assignors to the Actien-Gesellschaft für Anilin Fabrikation, same place. Filed Mar. 8, 1900. Serial No. 7,822. (Specimens.)

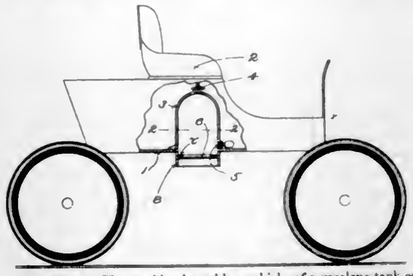
Claim.—The black dye produced by boiling dinitrophenol (1:2:4) with an aqueous solution of alkali sulfids and sulfur, said dye being insoluble in alcohol or acid solutions of bichromate of potash, readily soluble in water containing alkali sulfid with a greenish blue-black color which on addition of caustic soda-lye turns more bluish; the dye being precipitated from its aqueous solution by means of mineral acid, acetic acid, or carbonic acid in the form of a dark-colored precipitate; the solution of the dye yielding by introduction of a current of air a dark-colored precipitate and a decolored solution; the precipitate not being redissolved when the introduction of air is continued for some time; the dye being scarcely soluble in concentrated sulfuric acid in the cold, more readily on gently heating with dirty blue-green color, which on further heating turns black-blue; being soluble in fuming sulfuric acid of twenty-five per cent. SO_3 with black-blue coloration, this solution yielding a green-black precipitate on dilution with ice or ice-water; the new coloring-matter dyeing cotton directly deep black shades.

655,660. STEERING MECHANISM FOR VEHICLES. GUSTAF L. REENSTIERNA, Winchester, Mass. Filed Oct. 9, 1899. Serial No. 733,029. (No model.)



Claim.—The steering-gear comprising a pair of wheels, the independent pivoted axle-bars having the said wheels mounted on the short arms thereof, and their long inner arms extending into proximity to each other at their inner ends, and the actuating-disk, the said disk and long arms having the coacting cam slots and pins, whereby movement of said disk operates to swing the axle-bars respectively into line with radii of the respective curves which the said wheels should describe in changing the direction of movement of the vehicle.

655,661. FUEL-RECEPTACLE FOR GASOLENE-ENGINES. GUSTAF L. REENSTIERNA, Winchester, Mass. Filed Oct. 28, 1899. Serial No. 735,065. (No model.)



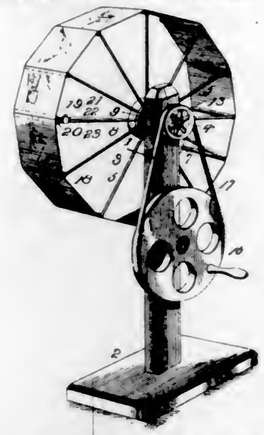
Claim.—1. The combination with a vehicle, of a gasolene-tank comprising a portion adapted to withstand a high pressure with its lower end exposed through the floor of the vehicle and having the bottom thereof adapted to withstand a less pressure, whereby if an explosion occurs the bottom will give way, allowing the escape of the contents and leaving the stronger portion of the tank intact, substantially as described.

2. A gasolene-tank for road-vehicles comprising a portion adapted to withstand a high pressure and having the bottom thereof adapted to withstand a less pressure, whereby if an explosion occurs the bottom will give way, allowing the escape of the contents and leaving the stronger portion of the tank intact, the said tank having a downwardly-projecting portion whereby to direct the escaping contents of the tank to the ground, substantially as described.

3. The combination in a road-vehicle with the floor thereof having an opening therein, of a gasolene-receptacle the body portion of which is adapted to withstand a high strain, the bottom of which is adapted to withstand a less strain, the bottom of the tank being below the floor of the vehicle, substantially as set forth.

4. The combination in a road-vehicle with the floor thereof having an opening therein, the tank or receptacle for gasolene set in said opening, the body portion of said tank being adapted to withstand a high strain, and the bottom thereof being adapted to withstand a less strain, said bottom being located beneath the floor of the vehicle and having a downwardly-projecting portion, whereby if the bottom of the tank is broken the contents thereof will be directed to the ground and prevented from spreading over the adjoining portions of the vehicle, substantially as set forth.

655,662. ROLL-FILM DRIER. CHARLES W. H. SMITHERS, Fond du Lac, Wis., assignor of one-half to Anthony A. Kelly, same place. Filed Nov. 13, 1899. Serial No. 736,851. (No model.)



Claim.—1. A roll-film drier for photographers comprising a rotary rack having arms formed with offset portions to receive the film, companion members constituting one of the arms and having their outer end portions bent to provide grippers, and means for drawing the grippers together, substantially as set forth.

2. In a roll-film drier for photographers, a shaft having its outer end portion threaded and provided with a shoulder a short distance from the threaded part, a hub composed of coaxially-pierced sections mounted upon the shaft and having radial seats in their meeting faces, film-supporting arms having their inner ends fitted in the said seats, and a clamp-screw mounted upon the threaded end of the shaft and adapted to clamp the sections of the hub between it and the aforesaid shoulder and secure the arms in their seats, substantially as described.

3. A roll-film drier for photographers comprising a standard, a shaft, operating mechanism applied to the shaft, a sectional hub composed of a plate and a radially-grooved part, arms having their inner ends flattened and removably fitted to the said grooved part and having their outer ends bent at a right angle and clothed, one of the arms composed of spring members having bent portions at their outer end to form grippers, means for drawing the grippers together, and a clamp-nut for drawing the parts of the hub together and clamping the arms between them, substantially as described.

655,663. FURNACE-GRATE. HENRY TRUESDELL, Toronto, Canada, assignor to the Cyclone Grate Bar Company, Limited, same place. Filed Apr. 8, 1899. Serial No. 712,344. (No model.)

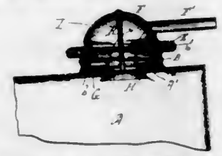


Claim.—1. A grate-bar comprising a rectangular frame having tapering slots in its sides, a number of wedge-shaped cross-bars fitting within the tapering slots and provided with parallel slots on their lower edges engaging the frame below the tapering slots, said cross-bars being provided with corrugated top surfaces, and suitable gudgeons formed on the ends of the frame substantially as described.

2. A grate-bar comprising two plates with tapering slots therein, a number of wedge-shaped cross-bars fitting within the tapering slots and provided with parallel slots on their lower edges engaging the plates below the tapering slots, substantially as described.

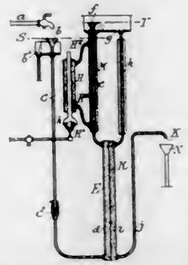
655,664. FAUCET AND FILLER FOR RECEPTACLES. HARRY J. VALENTINE, New York, N. Y., assignor to William Vogel & Brothers, same place. Filed July 29, 1897. Serial No. 646,375. (No model.)

Claim.—1. In a faucet for cans and like receptacles, a hollow head having a side spout and an inwardly-projecting valve-stem and valve, a metallic ring adapted to receive said head, the ring provided at its top with an outwardly-projecting flange and the lower part having an inwardly-projecting flange with under surface adapted to serve as a valve-seat, as and for the purpose set forth.



2. The combination with a receptacle having an opening in the top thereof, and an outwardly-projecting screw-threaded ring surrounding same, a screw-threaded ring adapted to fit within the aforesaid ring, the two rings having outwardly-projecting upper flanges and lower inwardly-projecting flanges, as described, with a hollow head provided with an inwardly-projecting bottom flange, a discharge-spout, and a valve-stem with valve adapted to be closed, or opened, by the turning of the hollow head and spout, substantially as specified.

655,665. APPARATUS FOR HEATING AND STERILIZING FLUIDS. ADDISON G. WATERHOUSE and JOHN S. FORBES, Philadelphia, Pa., assignors to said Forbes. Filed Feb. 24, 1900. Serial No. 6,379. (No model.)



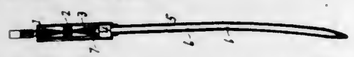
Claim.—1. The combination in an apparatus for heating fluids, of a receiver, a heat-exchange, a pipe forming communication between the receiver and the lower portion of one compartment to the heat-exchange, a stand-pipe communicating with the upper end of said compartment, means for applying heat to the fluid in said stand-pipe, said stand-pipe extending above the level of the receiver, a tank, an outlet-pipe communicating with the upper end of the other compartment of the heat-exchange, and an outlet-pipe communicating with the lower end of said compartment, the whole being constructed so that the temperature of the fluid must be raised to a predetermined degree of heat before it will flow through the apparatus, substantially as specified.

2. The combination of a receiver, a two-part heat-exchange, a pipe communicating with the lower portion of said exchange, the receiver being so arranged that its height can be increased or decreased, a stand-pipe communicating with the upper end of the heat-exchange, means for heating the fluid in said stand-pipe, said stand-pipe extending above the level of fluid in the receiver, a discharge-pipe communicating with the upper end of the other compartment of the heat-exchange, and a pipe communicating with the lower end of said compartment, substantially as specified.

3. The combination of the receiver, a two-part heat-exchange, a pipe forming communication between the receiver and the lower portion of the heat-exchange, a stand-pipe communicating with the upper portion of said compartment and extending above the level of the fluid in the receiver, a heater, circulating-pipes communicating the heater with the jacket, a chimney passing up through the heater, and means for heating the fluid in the heater, a tank into which the stand-pipe extends, a pipe extending from said tank to the upper end of the other compartment of the heat-exchange, and an outlet-pipe for said compartment, substantially as specified.

4. The combination of a receiver, a two-part heat-exchange, a pipe connecting the receiver with one compartment of the heat-exchange, a stand-pipe communicating with the upper end of said compartment, means for heating the fluid in said stand-pipe, a tank into which the stand-pipe extends, the top of the stand-pipe being above the level of the fluid in the receiver, an outlet-pipe communicating with the tank and with the other portion of the heat-exchange, an outlet for the other portion of the heat-exchange, a hood covering the said tank, and a condenser connected to the said hood, substantially as specified.

655,666. COMB. GEORGE WOLFF, North Bergen, N. J., assignor of one-half to Charles Schall, West Hoboken, N. J. Filed Dec. 1, 1899. Serial No. 738,870. (No model.)



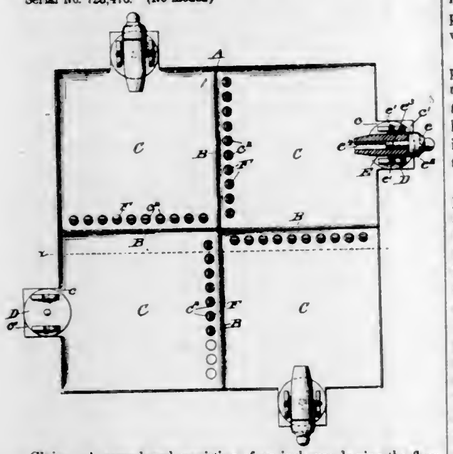
Claim.—1. An article for headwear having a hollow ventilating-tooth, and a ventilating-wheel carried by said tooth and arranged to force a current of air through the latter.

2. An article for headwear having a hollow perforated tooth open at its upper end, a hollow head or chamber carried by the said upper end of the tooth and communicating with the open end thereof, and a ventilating-wheel journaled in said hollow head and operating to force a current of air through the said perforated tooth.

3. A comb having a series of teeth some of which are hollow and provided with lateral outlets, a hollow head or chamber with which the hollow teeth communicate, and ventilating-wheels in the chamber substantially as described.

4. An article for headwear, comprising in its construction a hollow tooth provided with lateral outlets, a hollow head carried by the tooth, with which the upper end of the latter communicates, said head being provided with air-inlet openings, a ventilating-wheel journaled in said hollow head and arranged to force a current of air through the tooth, and means for regulating the size of the openings in the head to control the passage of air therethrough, substantially as described.

655,667. GAME OR TOY. EDWARD H. ALLISON, Fort Yates, N. D., assignor of one-half to Riley J. Hampton, Chico, Cal. Filed July 11, 1899. Serial No. 723,470. (No model.)

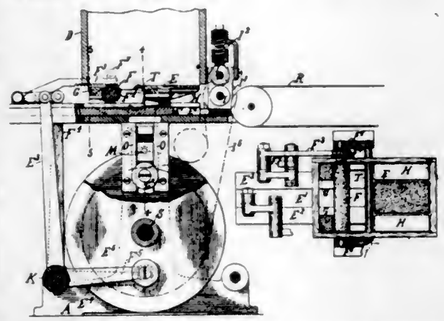


Claim.—A game-board consisting of an inclosure having the floor and walls formed of a continuous sheet of material, partitions extending entirely across and dividing the inclosure into separate compartments, an embrasure and a gun-platform on each side of said inclosure formed by cutting and turning down a portion of the wall, a gun mounted on said platform, a series of numbered figures in each of said compartments, placed in a row near each partition, substantially as shown and described.

655,668. MECHANISM FOR FEEDING SHEETS OF PAPER, &c. HUGO BILGRAM and OSCAR L. SCHEEL, Philadelphia, Pa., assignors to George W. Packler, New York, N. Y. Filed Aug. 21, 1899. Serial No. 728,029. (No model.)

Claim.—1. In a mechanism for feeding sheets of paper from the bottom of a pile, the combination, substantially as set forth, of devices constructed and operating to feed the bottom sheet beyond the limits of the pile before coming into feeding contact with the next sheet of the pile, and supporting devices having a vertical movement relatively to the feeding devices whereby the weight of the pile is temporarily shifted from the feeding devices to the supporting devices for the purposes set forth.

2. In a mechanism for feeding sheets of paper from the bottom of a pile, the combination, substantially as set forth, of a feeding device and a support both operating beneath the rear of the pile, and a longitudinally-reciprocating feeding device and a support both operating beneath the forward end of the pile, the supports having a vertical movement relatively to the feeding devices, whereby the rear end of the bottom sheet is fed forward and the rear weight of the pile is shifted from the rear feeding device to the rear support and the sheet is then fed bodily forward by the reciprocating feeding device and the forward weight of the pile is shifted to the forward support and retained thereon while the feeding device makes its backward movement.



3. In a mechanism for feeding sheets of paper from the bottom of a pile, the combination, substantially as set forth, of a longitudinally-reciprocating feeding device operating beneath the forward end of the pile, a retaining device operating at the rear of the pile and a supporting device located at the forward end of the pile and having a vertical movement relatively to the feeding device, whereby the bottom sheet of the pile is fed forward, the next sheet is held in place and the forward weight of the pile is shifted from the reciprocating feeding device to the supporting device while the feeding device returns to its normal position.

4. In a mechanism for feeding sheets of paper from the bottom of a pile, the combination, substantially as set forth, of a device operating beneath the rear end of the pile to frictionally feed the rear part of the bottom sheet forward, a device operating at the forward end of the pile to hold the forward end of the bottom sheet stationary while the rear feeding device operates, and a longitudinally-reciprocating device for feeding the bottom sheet forward bodily.

5. In a mechanism for feeding sheets of paper from the bottom of a pile, the combination, substantially as set forth, of a longitudinally-reciprocating feeding device arranged to operate beneath the forward part of the pile and having a roughened upper surface, a supporting device having a smooth upper surface and a vertical movement relatively to the feeding device, and a pair of rolls, as I, arranged to receive the fed sheet from the longitudinal feeding device and feed it beyond the limits of the pile over the smooth supporting-surface.

6. In a mechanism for feeding sheets of paper from the bottom of a pile, the combination, substantially as set forth, of a longitudinally-reciprocating carrier, as E, a starting-roll, as F, the former arranged to support the forward end of a pile of sheets and the latter the rear end thereof, a vertically-reciprocating heel piece or support, as G, and means for operating the carrier, starting-roll and heel-piece, whereby the starting-roll will move the bottom sheet away from the heel-piece, the heel-piece will raise the remaining sheets of the pile from the starting-roll and hold them in position while the carrier moves the bottom sheet bodily forward.

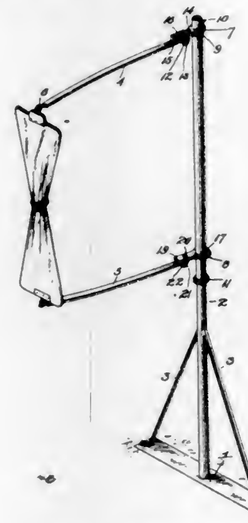
7. In a mechanism for feeding sheets of paper from the bottom of a pile, the combination, substantially as set forth, of a device operating beneath the rear of the pile to frictionally feed the rear part of the bottom sheet forward, a device operating beneath the forward part of the pile to hold the forward part of the bottom sheet stationary and subsequently feed the sheet forward, a vertically-reciprocating support or heel-piece located behind the rear feeding device, a vertically-reciprocating support or toe-piece located near the forward feeding device, and means for operating the feeding devices and supports, whereby, as the rear part of the sheet is fed forward, the rear weight of the pile is shifted to the rear support and the remaining sheets are held in position while the sheet is fed bodily forward, and the forward weight of the pile is shifted to the forward support.

8. In a mechanism for feeding sheets of paper from the bottom of a pile, the combination, substantially as set forth, of a longitudinally-reciprocating carrier, as E, a starting-roll, as F, vertically-moving heel-pieces, as G, and toe-pieces, as H, and means for giving the required movements to the combined parts, for the purposes set forth.

9. In a mechanism for feeding sheets of paper from the bottom of a pile, the combination, substantially as set forth, of a longitudinally-reciprocating carrier, as E, a starting-roll, as F, a bar or roll, as T, vertically-moving heel-pieces, as G, and toe-pieces, as H, and means for giving the required movements to the several parts, for the purposes set forth.

10. In a mechanism for feeding sheets of paper from the bottom of a pile, the combination, substantially as set forth, of a longitudinally-reciprocating carrier, as E, having a roughened upper surface and constructed and operating to feed a bottom sheet forward, a support, as H, having a smooth upper surface and a vertical movement relatively to the carrier, and a pair of feed-rolls arranged to receive the bottom sheet from the carrier and draw it over the smooth support and beyond the limits of the pile.

655,669. RAILWAY-MAIL CRANE. AMOS R. BLACK, Lamar, Colo., assignor of one-half to Ellis R. Black, same place. Filed Mar. 15, 1900. Serial No. 8,798. (No model.)



Claim.—1. In a crane, of the character described, the combination of a supporting-post, a head loosely mounted on said post and adapted to rotate freely and completely around the post without interruption or restriction, an arm loosely connected to said head and provided with means for holding the arm at an angle to the post, and a second arm also adapted to rotate freely and completely around the post without interruption or restriction and having a clutch for engaging the post.

2. In a crane, of the character described, the combination of a supporting-post, a head loosely mounted on said post and adapted to rotate completely around the post, a friction-clutch having a loose engagement with said post and also adapted to rotate completely around the post, arms loosely connected to said head and said friction-clutch and adapted to rotate with them completely around the post, and means for supporting said arms at an angle to the post.

3. In a crane of the character described, the combination with a supporting-post, a head secured to said post and arms loosely connected to said head and provided with a hook for engaging said head and supporting the arm at an angle to said post, and a second arm loosely connected to said post, substantially as set forth.

4. In a crane of the character described, the combination of a supporting-post, a head carried by said post and provided with an extension, an arm having a hinged and swiveled connection with said head extension, and a hook carried by said arm and adapted to extend over and engage said extension and support the arm at an angle to said post, substantially as set forth.

5. In a crane of the character described, the combination of a supporting-post, an arm loosely connected thereto, a second arm, a friction-clutch connected to said post and having a hinge-and-swivel connection with the second-named arm, substantially as set forth.

6. In a crane of the character described, the combination of a supporting-post, an arm having a loose connection with the supporting-post, a friction-clutch consisting of a ring the diameter of the inner wall of which is greater than the outer wall of the post, said friction-clutch being provided with an extension, and a second arm having a hinged and swiveled connection with said extension, substantially as set forth.

7. In a crane of the character described, the combination of a supporting-post, an arm having a loose connection with the supporting-post, a friction-clutch consisting of a ring the diameter of the inner wall of which is greater than the outer wall of the post, said friction-clutch being provided with an extension, a second arm having a hinged and swiveled connection with said extension, and a collar fixed to said post below the friction-clutch, substantially as set forth.

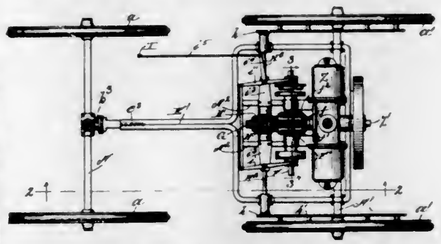
8. In a crane of the character described, the combination of a supporting-post provided with a friction-clutch and with a head, one being supported above the other and having a sliding engagement on said post and each being provided with extensions, spring-arms loosely connected to said extensions, one of said arms being provided with means for supporting it at an angle to the post, whereby when the free ends of said arms are engaged with the opposite ends of the mail-bag and the clutch forced downward upon said post said arms will be bowed or curved thus frictionally binding them at their points of engagement with the extensions aforesaid and hold the bag, substantially as set forth.

9. In a mail-bag crane, the combination with a post, of a head loosely mounted on the post and adapted to rotate completely around the post, an arm loosely connected to said head and adapted to rotate around the post therewith, independent means for detachably engaging the arm with the head, and a second arm loosely mounted on the post and also adapted to rotate completely thereabout.

10. In a mail-bag crane, the combination with a post, of a head loosely mounted on the post and adapted to rotate completely around the post, a friction-clutch loosely mounted on the post and adapted to rotate completely around the post, an arm loosely connected to the head and adapted to rotate around the post therewith, and an arm loosely connected to the friction-clutch and adapted to rotate around the post therewith, said arms being adapted to drop, with their points downward, after the mail-bag has been disengaged from the arms.

11. In a mail-bag crane, the combination with a post, and mail-bag arms rotatably connected to the post and adapted to revolve freely and completely around the post without interruption or restriction, of a friction-lock gripping the post to frictionally lock the arms in position for use.

655,670. MOTOR-FRAME ATTACHMENT FOR VEHICLES. LEONARD E. BROOKES, Chicago, Ill., assignor of one-half to Sidney M. Weir, Cleveland, Ohio. Filed Apr. 11, 1898. Renewed Dec. 15, 1899. Serial No. 740,472. (No model.)

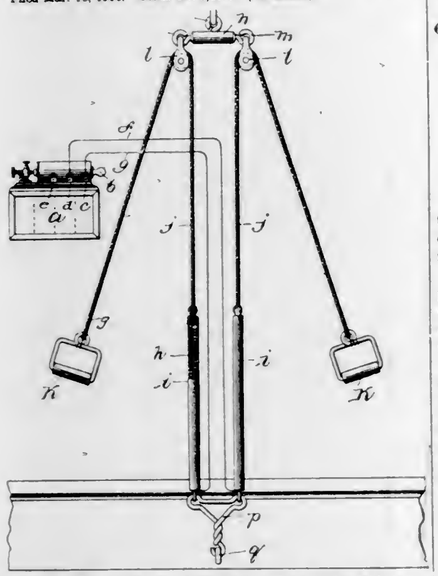


Claim.—1. The combination with the frame, of a socket-piece mounted on the front truck of the vehicle, a collar swiveled on said socket-piece, a swivel connection uniting the collar and the front of the frame, a pin located in said socket and having at its upper end a plate, and a spring located between said plate and the upper end of the socket-piece, substantially as described.

2. The combination with the attachable frame, of a motor transversely mounted on the rear part thereof and having a driving-shaft provided with a beveled gear on its forward end, beveled gears engaging said gear and loosely mounted on a shaft transversely journaled on the frame, a friction-disk secured to each of said gears, friction-clutches mounted on the transverse shaft, levers to move said clutches, a gear mounted on the transverse shaft between the beveled gears thereon, and an equalizing-gear geared to the wheels of the vehicle and engaging the last-named gear, substantially as described.

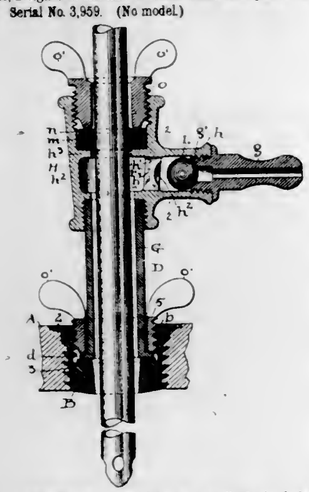
3. The combination with the attachable frame, of a motor transversely mounted on the rear part thereof and having a driving-shaft provided with a beveled gear on its forward end, beveled gears engaging said gear and loosely mounted on a shaft transversely journaled on the frame, a friction-disk secured to each of said gears, friction-clutches mounted on the transverse shaft, levers to move said clutches, a gear mounted on the transverse shaft between the beveled gears thereon, the shafts H^2, and H^3, transversely journaled on the frame and geared at their outer ends to the traction-wheels, a beveled gear mounted on the inner end of each of said shafts, a cogged gear journaled between said beveled gears and engaging the gear between the other beveled gears and having openings therein, beveled gears journaled in said openings and engaging the gears on the shafts H^2, and H^3, substantially as described.

655,671. ELECTRIC CONDUCTOR FOR EXERCISING APPARATUS. ALFRED M. CROOKER and FRANK N. MCDONALD, Boston, Mass., assignors to the Galvanic Health Exercising Company, of South Dakota. Filed Mar. 10, 1900. Serial No. 8,130. (No model.)



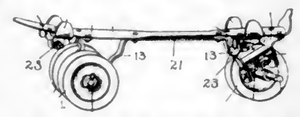
Claim.—The combination, with the galvanic battery, of the exercising device consisting of the elastic and distensible insulated conduits *i* having the distensible conductors *h* therein, the distensible conductors *h* being connected with the rigid conductors *j j*, substantially as set forth.

655,672. LIQUID-TAPPING APPARATUS. HENRY ENGEL, Cleveland, Ohio, assignor of one-half to Adam Linn, same place. Filed Feb. 5, 1900. Serial No. 3,959. (No model.)



Claim.—In apparatus substantially as described, the hub having an integral tubular arm and a nipple having a rounded valve-seat on its inner end threaded into said arm, a loose rubber ball-valve in said arm adapted to roll against said seat, a rear stop having a central slotted passage communicating with a chamber in said hub, and a seat on each side of said slot conforming with the curvature of the ball to prevent the flattening of said ball in places, a tube threaded in the lower portion of said hub, a coupling-nut on said tube, an expanding-nut threaded in the upper portion of said hub, an inward annular flange above the central hub-chamber, a rubber packing-ring on said flange, a flat metal bearing-ring between the nut and the packing-ring, and a draft-tube of smaller exterior diameter than the interior of the coupling-tube and extending through said tube, hub and expanding-nut, substantially as described.

655,673. ROLLER-SKATE. OTIS W. EVERETT, Worcester, Mass. Filed Jan. 19, 1900. Serial No. 2,064. (No model.)

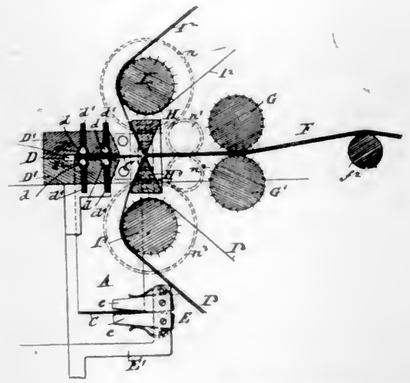


Claim.—1. In a roller-skate the combination of the foot-plate, and the three-part rocker-bracket comprising end pieces, and a cross-piece or casing for holding a spring-rubber, said parts being stamped from sheet metal and riveted together, substantially as described.

2. In a roller-skate, the combination of a rocker-bracket, and a rocker-piece stamped from a single piece of sheet metal, bent to form a cylindrical socket for receiving a wheel-axle, and having perforated upwardly-extending U-shaped wings for journaling the rocker-piece on a bolt in the rocker-bracket, substantially as described.

3. In a roller-skate, the combination of the foot-plate, a three-part rocker-bracket comprising end pieces, and a cross-piece or casing for holding a spring-rubber, said parts being stamped from sheet metal and riveted together, and a rocker-piece stamped from a single piece of sheet metal, bent to form a cylindrical socket for receiving a wheel-axle, and having perforated upwardly-extending U-shaped wings for journaling the rocker-piece on a bolt in the rocker-bracket, substantially as described.

655,674. MACHINE FOR CUTTING DOUBLE-PILE FABRICS. WILLIAM FISCHER, Sr., and WILLIAM VOGEL, Paterson, N. J., assignors, by mesne assignments, to William Fischer, Sr., Frank Fischer, August Fischer, and William Fischer, Jr., same place. Filed Mar. 2, 1900. Serial No. 7,100. (No model.)

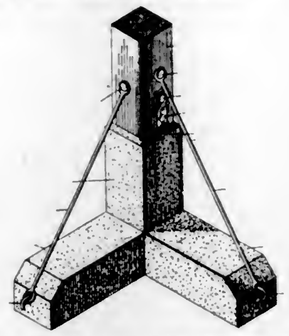


Claim.—1. In a machine for cutting double-piled fabrics, the combination of an endless pile-cutting knife, a longitudinally-grooved guide-block, said block being formed with recesses at the sides of its groove, antifriction-balls arranged in said recesses, and upon which the cutting-knife has bearing, and means for sharpening that portion of the knife-edge of the cutting-knife which is out of action, substantially as set forth.

2. In a machine for cutting double-piled fabrics, the combination, of an endless pile-cutting knife, with means for guiding the cutting portion of the same, said means being formed of guide-blocks having a guide-groove for the cutting-knife, antifriction-balls located in recesses of said guide-blocks, adjacent to said groove for the cutting-knife, and set-screws for adjusting said antifriction-balls, substantially as set forth.

3. In a machine for cutting double-piled fabrics, the combination of an endless pile-cutting knife, means for feeding the double-piled fabric toward said cutting-knife, means for winding up the separated fabrics, and means for pulling the latter taut, the same comprising two toothed feed-rolls, two guide-rollers, and endless aprons trained over the feed-rolls and guide-rollers, which aprons frictionally bear against the separated fabrics, substantially as set forth.

655,675. FENCE-POST. LEE K. FORSYTHE, Battle Creek, Mich. Filed Mar. 8, 1900. Serial No. 7,897. (No model.)



Claim.—1. The combination of the artificial-stone base, the yoke attached thereto, the post having its lower end supported in and secured to the bifurcations of the yoke, the diverging projecting artificial-stone anchor-pieces formed separately from but bolted to the lower end of the base and the brace-rods connecting the outer ends of said anchor-pieces to the post above the base.

2. The combination in a corner-post, of the base, the yoke attached thereto, the post supported in and bolted to the bifurcations of said yoke above the base, the anchor formed separately from the base, the rod extending through said anchor and transfixing the base and secured thereto by a nut and projecting through the free end of the anchor, the brace-rod attached to the outer end of said rod and connecting the same to the post above the base, substantially as described.

3. The combination of the base, the post having its lower end fastened thereto, the diverging projecting anchor-pieces, the rods projecting through said anchor-pieces and connecting the same to the lower end of the base, and the brace-rods attached to the outer projecting ends of said rods and to the post at a point above the base, all substantially as described.

4. The combination of the base, the yoke having its tang secured therein, and provided with bifurcations projecting above the top of the base, the post having its lower end fastened to the bifurcations of the yoke, the diverging projecting artificial pieces, the rods projecting through said anchor-pieces and connecting the same to the lower end of the base, and the brace-rods attached to the outer projecting ends of said rods and to the post at a point above the base, all constructed and arranged substantially as and for the purpose set forth.

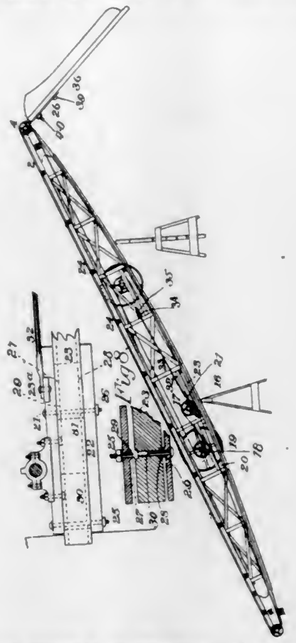
655,676. PORTABLE CONVEYER. JOHN A. BROWN, Portland, Oreg. Filed July 11, 1899. Serial No. 723,495. (No model.)

Claim.—1. In an apparatus of the class described, a conveyer-frame, drums at the ends of the frame, a conveyer-belt traveling over said drums, and a universal joint, said joint comprising a vertically-movable member, a horizontally-movable member, and means for connecting the vertically and horizontally movable members to allow for variable movements substantially as set forth.

2. A portable conveyer for the purpose specified comprising in combination, a trestle-like frame, drums at the ends of the frame, a conveying-belt traveling over said drums, means for tightening the belt, means for adjusting the shafts on the respective end drums, a universal joint, said joint comprising a vertically-movable member, a horizontally-movable member, and means for connecting the vertically and horizontally movable members to allow for variable movements, substantially as set forth.

3. In a portable conveyer, the combination with a belt-carrying frame, drums at the ends of said frame, a conveyer-belt traveling over said drums, means for tightening said belt, means for adjusting the shafts of the respective drums, said means comprising arms bent at right angles at one end, and carrying at their opposite ends boxes, in which the shafts are mounted, said arms having slots securing bolts, said bolts adapted to pass through the slots in the arms, a bearing-lug arranged in alinement with the bent end of the arms, and adjusting-screws seated in said lugs and bent ends, substantially as shown and described.

4. In an apparatus of the class described, a conveyer-frame, drums at the ends of said frame, a conveyer-belt traveling over said drums, a universal joint and a chute suspended from the head of the conveyer by the universal joint, said joint consisting of arms secured to the sides of the frame, a yoke provided with a radial slot hinged to said arms, a pivot-bolt, said bolt pivotally connecting the yoke to the chute, and a pin depending from the chute and passing through the slot in the yoke, said pin guiding the chute in its horizontal oscillatory movement, substantially as set forth.



5. In an apparatus of the class described, the combination with a frame, drums mounted at the ends of said frame, a conveyer-belt traveling over said drums and a device supported in the carrier-frame for tightening the conveyer-belt, consisting of stationary slotted girths, slidable shoes mounted above and below said girths, vertical bolts, the upper and lower shoes being connected by the vertical bolts passing through the slotted girths, bearings mounted on one of the shoes, a shaft, a tightening-drum, said shaft carrying the tightening-drum, converging arms connected to one of the shoes at opposite sides of the frame, a rod threaded on its outer end connected to the converging arms, and passing through a cross-sill of the frame, and a nut working on the threads behind the cross-sill for adjusting the tension of the belt as and for the purpose set forth.

6. In an apparatus of the class described, a conveyer, and a universal joint, said joint comprising a vertically-movable member, a horizontally-movable member, and means for connecting the vertically and horizontally movable members to allow for variable movements, substantially as set forth.

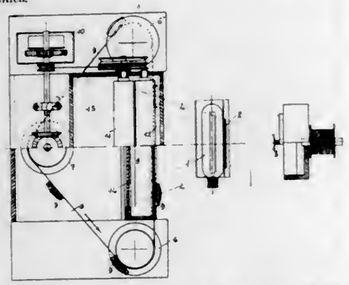
7. In an apparatus of the class described comprising a frame, drums at the ends of said frame, a conveyer-belt traveling over said drums, means for tightening the belt, means for adjusting the shafts of the respective end drums, and a universal joint, said joint comprising stationary supporting-arms, a vertically-movable member hinged to said arms and a horizontal member pivoted to the vertical member, said horizontal member having the chute pivotally connected to it, substantially as described.

8. A portable conveyer, comprising a trestle-like frame, a conveyer-belt, a chute universally suspended from the trestle-like frame, means supporting the chute, drums, means for adjusting the drums, and a brace-rod 42, fixed to the means for supporting the chute and having its upper end bent and threaded into the conveyer-frame, and receiving a nut and washer for clamping said end to the frame, substantially as set forth.

9. A portable conveyer, comprising a trestle-like frame, a belt, drums, means for adjusting the drums, said means consisting of boxes secured to adjustable arms having the opposite ends bent at right angles thereto, a U-shaped frame located adjacent the right-angle portion on said U-shaped frame having an ear, a bolt adjustably connecting the ear and said angular portion, bolts securing the U-shaped frame to the sides of the conveyer and dowel-pins in the ends of the U-shaped frame to retain said frame in a rigid position, substantially as set forth.

655,677. PHOTOGRAPHIC RECORDING APPARATUS FOR VIBRATORY RAYS OF LIGHT. ANTON POLLAK and JOSEF VIRAG, Buda-Pesth, Austria-Hungary. Filed Dec. 14, 1899. Serial No. 740,234. (No model.)

Claim.—1. The combination with means for varying a beam of light, a sensitive sheet, and means for advancing the sheet, of means traveling transversely to the sheet for directing said beam across the sheet in successive lines.



2. The combination with means for varying a beam of light, a sensitive sheet, and means for advancing the sheet, of a lens for directing said beam across the sheet in successive lines.

3. The combination with means for varying a beam of light, a sensitive sheet, and means for advancing the sheet, of a plurality of lenses for directing said beam across said sheet in successive lines, said lenses spaced apart a distance corresponding to the desired length of the lines.

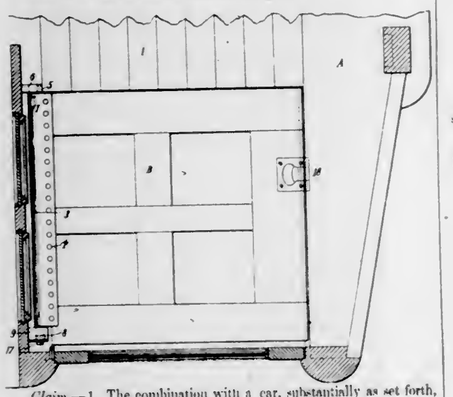
4. The combination with means for varying a beam of light, a sensitive sheet, and means for advancing the sheet, an opaque traveling ribbon moving across said sheet, and having openings at intervals, and means adapted to direct light through said openings.

5. The combination with means for moving a broad beam of light, a sensitive sheet, and means for advancing the sheet, of means for directing said light across said sheet in successive lines, comprising a traveling ribbon having openings, spaced apart a distance corresponding to the desired length of the lines, and moving across said sheet, and lenses carried by said ribbon at said openings, adapted to successively direct a part of said beam across the strip.

6. The combination with means for moving a broad and thin beam of light, a sensitive sheet, and means for advancing the sheet, of means for directing said light across the sheet in successive lines, comprising an endless opaque ribbon continuously moving across said sheet at greater speed than the travel of the sheet, said ribbon having openings spaced apart a distance corresponding to the desired length of the lines, and a cylinder-lens carried by the ribbon at each opening.

REISSUES.

11,844. EXTENSION-PLATFORM. GEORGE E. SEYMOUR and FERDINAND KAHLER, New Albany, Ind. Filed July 18, 1900. Serial No. 23,984. Original No. 635,401, dated Oct. 24, 1899



Claim.—1. The combination with a car, substantially as set forth, of an extension-platform, journals attached to said platform, one of which is hollow, sockets attached to the car and adapted to receive the journals, a spring secured at one end to the platform and connected to the car at the other end through the hollow journal, and means for adjusting the tension of the spring.

2. The combination with a car, substantially as set forth, of an extension-platform, journals secured to the platform by a strip to which the journals are first attached, one of which journals is hollow, sockets attached to the car and adapted to receive the journals, and a spring secured at one end to the platform and connected to the car at the other end through the hollow journal.

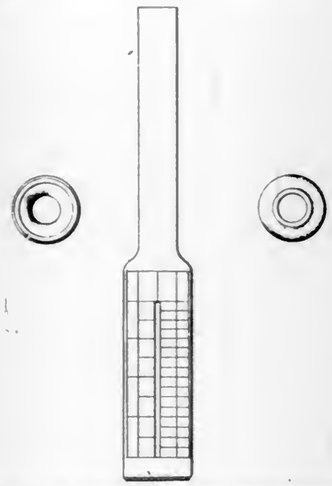
3. The combination with a car, of a platform extension a tube secured to one end of said platform extension, journals at the ends of the tube, a spring secured in the tube and projecting therefrom and means for regulating the tension of said spring.

4. The combination with a car, of a platform extension a tube secured to one edge of the platform extension and having journals at its ends, a spring secured at one end in the tube and projecting at its other end beyond the tube, a ratchet-wheel secured to the end of the spring and means for preventing the turning of said ratchet-wheel in one direction.

5. The combination with a car-platform, of an extension for said platform, a tube having flanges secured to one edge of the extension, journals at the ends of said tube, bearings for said journals, a torsional spring disposed in said tube and secured at one end in one end of the tube and projecting beyond the other end of the tube, a ratchet-wheel secured to the projecting end of the spring and having an angular extension and a pin to engage the teeth of said ratchet-wheel.

DESIGNS.

33,044. PEN OR PENCIL HOLDER. ESSINGTON N. GILPILLAN, Chicago, Ill. Filed July 11, 1900. Serial No. 23,277. Term of patent 3½ years.



Claim.—The design for a pen or pencil holder substantially as herein shown and described.

33,045. BADGE. THOMAS R. STEPHENSON, Jr., Bristol, Conn. Filed June 14, 1900. Serial No. 20,370. Term of patent 3½ years.



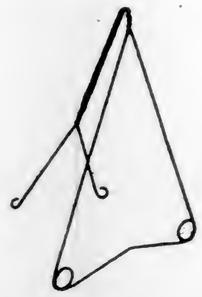
Claim.—The design for a badge, substantially as herein shown and described.

33,046. DRESS-SHIELD SAFETY-PIN. LYDIA ADELLA CRAVEN, Spokane, Wash. Filed Apr. 3, 1900. Serial No. 11,387. Term of patent 14 years.



Claim.—The design for a dress-shield safety-pin, substantially as shown and described.

33,047. EASEL. HOWARD B. PERRY, Wakefield, R. I. Filed June 11, 1900. Serial No. 19,969. Term of patent 14 years.



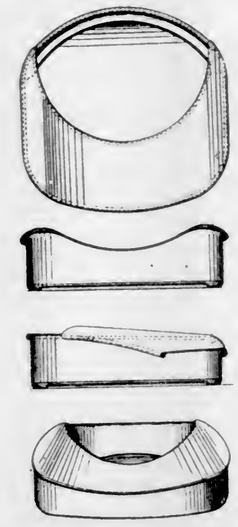
Claim.—The design for an easel substantially as shown and described.

33,048. CASKET. JOHN MAXWELL and JAMES A. ANDERSON, Oneida, N. Y. Filed July 7, 1900. Serial No. 22,880. Term of patent 7 years.



Claim.—The design for a casket substantially as herein shown and described.

33,049. DOUCHE-PAN. DANIEL HOGAN, New York, N. Y., assignor to the Meinecke & Company, same place. Filed July 7, 1900. Serial No. 22,883. Term of patent 14 years.



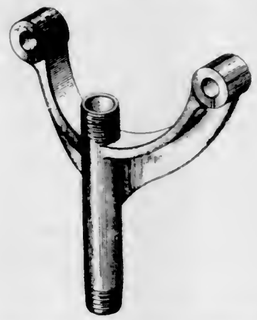
Claim.—The design for a douche-pan as herein shown and described.

33,050. NUT-LOCK WASHER. WILLIAM E. BALL, Zanesville, Ohio, assignor to William H. Adams, Muskingum County, Ohio. Filed July 5, 1900. Serial No. 22,635. Term of patent 14 years.



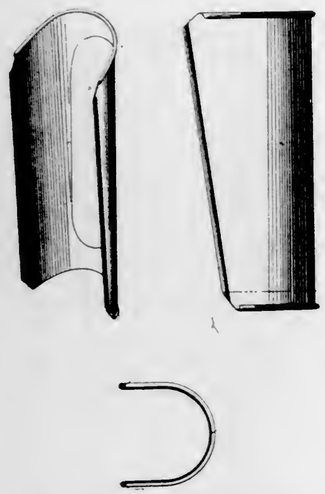
Claim.—The design for a nut-lock washer, substantially as shown and described.

33,051. PUMP-CASING. CHARLES T. FLETCHER, Worcester, Mass., assignor to the Locomobile Company of America, New York, N. Y. Filed Apr. 25, 1900. Serial No. 14,357. Term of patent 14 years.



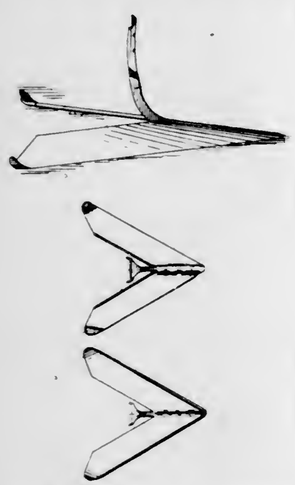
Claim.—The design for a pump-casing, substantially as herein shown and described.

33,052. HOPPLE. JOSEPH JORDAN PRITCHETT, Mason City, Ill. Filed June 12, 1900. Serial No. 20,077. Term of patent 7 years.



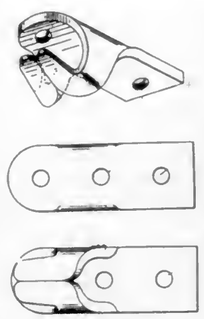
Claim.—The design for a hopple, herein shown and described.

33,053. CULTIVATOR-SHOVEL. THOMAS CHARITY, Burlington, Kans. Filed July 13, 1900. Serial No. 23,550. Term of patent 14 years.



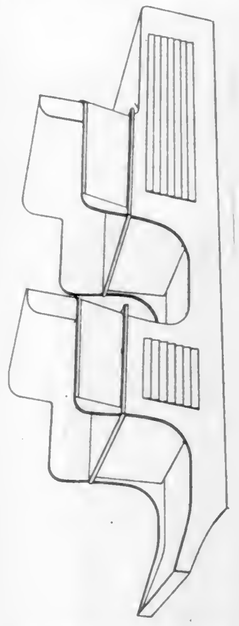
Claim.—The design for a cultivator-shovel, substantially as shown and described.

33,054. CONNECTOR FOR ELECTRIC WIRES. CLARENCE D. PLATT, Bridgeport, Conn. Filed June 12, 1900. Serial No. 20,080. Term of patent 7 years.



Claim.—The design for a connector for electrical wires substantially as shown and described.

33,055. MOTOR-VEHICLE BODY. JOHN H. MACALMAN, Somerville, Mass., assignor to the Locomobile Company of America, New York, N. Y. Filed July 12, 1900. Serial No. 23,421. Term of patent 14 years.



Claim.—The design for a motor-vehicle body, substantially as herein shown and described.

PHOTO-LITH. THE NORRIS PETERS CO. WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

KELLY *v.* FYNN.

Decided January 8, 1900.

1. INTERFERENCE—BURDEN OF PROOF—APPLICANT AGAINST PATENTEE.

Where one party holds a patent granted before the other's application was filed, he is entitled to insist that every reasonable doubt should be resolved against his opponent. The principle involved is analogous to that raised by the defense of prior invention in a suit in a court for the infringement of a patent.

2. SAME—EVIDENCE—TEST OF MACHINE.

Where the machine which was built was of such a character and nature that others must have assisted in or witnessed the tests, but where the testimony stops short with the construction of the machine and the inventor is not corroborated by any one as to the tests or as to the changes made in the machine after its construction, *Held* that the silence of the witnesses upon this point is very suggestive.

3. SAME—UNSUPPORTED TESTIMONY OF THE INVENTOR—INSUFFICIENT EVIDENCE.

The unsupported testimony of the party upon whom is the burden of proof is insufficient to prove that his machine would work practically and successfully so as to be considered an actual reduction to practice.

4. REDUCTION TO PRACTICE—EXPERIMENTAL MACHINE—UNSUCCESSFUL TESTS.

The machine belongs to that class that requires something more than mere construction in order to amount to a reduction to practice, and in the absence of any explanation of the nature of the tests, coupled with the fact that the machine was so frequently altered, and also taking into account the absence of any corroboration of the inventor's testimony, *Held* that the machine was experimental in nature and that there was no complete reduction to practice shown.

5. INTERFERENCE—PRIORITY—LACK OF DILIGENCE.

Where the testimony shows beyond a reasonable doubt that Kelly conceived the invention in 1894 and had a machine embodying it made during 1895, prior to any date proven by Fynn, but thereafter did nothing but experiment with it and make changes in it until he was stirred to greater activity by the grant of Fynn's patent, *Held* that Fynn is the prior inventor.

APPEAL from Examiners-in-Chief.

DYNAMO-ELECTRIC MACHINE.

Application of John F. Kelly filed October 20, 1897, No. 655,767. Patent granted to Valere A. Fynn August 3, 1897, No. 587,573.

Mr. Henry B. Brownell for Kelly; *Mr. C. E. Mitchell* of counsel.

Messrs. Pollok & Mauro for Fynn.

DUELL, *Commissioner:*

This is an appeal by Kelly from the decision of the Examiners-in-Chief affirming the decision of the Examiner of Interferences awarding priority to Kelly on the following issue:

1. In a dynamo-electric machine, the combination with an armature of a field-magnet having its poles arranged alternately in different planes, each pole embracing a section or portion only of the armature lengthwise of its axis, one portion or section of the armature being acted upon by south poles only, and the other by north poles only, so that the magnetic flux through each section of the armature varies its intensity without reversing its direction therein.

2. In a dynamo-electric machine, the combination of an armature composed of two laminated rings or sections, and a field-magnet having its two sets of poles arranged alternately in different planes transversely of the shaft, the poles of the same polarity acting upon the same armature ring or section.

3. In a dynamo-electric machine, the combination of an armature composed of two laminated rings or sections arranged side by side and separated by a collar, and a field-magnet having its two sets of poles arranged alternately in different planes transversely of the shaft, the north poles being in the plane of one of said rings or sections, and the south poles in the plane of the other ring or section.

4. In a dynamo-electric machine, the combination of an armature composed of two rings or sections arranged side by side, a field-magnet having its two sets of poles arranged alternately in different planes, the north poles being in the plane of one of said rings or sections, and the south poles in the plane of the other ring or section, and a single exciting-coil arranged between the two planes.

5. In a dynamo-electric machine, the combination with an armature composed of two rings or sections and a winding whose coils each embraces both rings or sections, of a field-magnet having its two sets of poles arranged alternately in different planes transversely of the shaft, the poles of like polarity acting upon the same armature ring or section.

Fynn, the senior partner and a patentee, having failed to file any testimony is restricted to August 3, 1896, the date on which his application which became the patent involved in the interference was filed. The grant of a patent to Fynn embodying the claims of the issue is *prima facie* evidence that he is the first inventor of the subject-matter in controversy. Holding a patent, he is entitled to insist that—

it is a sound and recognized administrative rule that a second patent should not issue for the same invention to a rival claimant except in a clear case. (*La Flare v. Chase*, 72 O. G., 741.)

The principle involved is analogous to that raised by the defense of prior invention in a suit in a court for the infringement of a patent. In *Cantrell v. Wallick* (35 O. G., 871; 117 U. S., 689) the Supreme Court, speaking of the defense of alleged prior invention raised in an infringement suit, said:

The burden of proof is upon the defendants to establish this defense, for the grant of Letters Patent is *prima facie* evidence that the patentee is the first inventor of the device described in the Letters Patent and of its novelty. (*Smith v. Goodyear Dental Vulcanite Co.*, C. D., 1877, 171; 11 O. G., 246; 93 U. S., 486; *Lehnbeuter v. Holthaus*, C. D., 1882, 263; 21 O. G., 1783; 105 U. S., 94.) Not only is the burden of proof to make good this defense upon the party setting it up, but it has been held that "every reasonable doubt should be resolved against him."

The onus of proof being upon Kelly, the question to be determined is whether he has fully discharged it. The testimony taken on behalf of

Kelly proves beyond a reasonable doubt that he conceived the invention in issue in 1894 and caused working drawings to be made; that these working drawings, in evidence as "Kelly's exhibit working drawings of motor-generator, sheets 1, 2, and 3," were completed on October 30 or 31, 18 4; that an order to make a machine in accordance with the drawings was placed in the shop of the Stanley Electric Manufacturing Company about the middle of January, 1895, and that this machine was finished in the latter part of the year 1895.

This machine never went into use; but Kelly testifies that it was tested in January, 1896.

The first test showed the machine was all right as to its principle, but various experiments were made later on as to the number of brushes to be used, the best method of making the commutator, the best manner of winding the armature, and the width of the pole-pieces. Except as to the changes referred to, the machine as it now stands is as it was when first finished. These later experiments that I have referred to, including the study of the machine as a rotary transformer, stretch over the period of say the first of February, 1896, to June, 1897.

He further testifies that the changes did not involve the issues in any way and that the machine was intended for practical use and not as a model. The machine as it stood at the time when his testimony was taken weighed about six thousand pounds and was something more than six feet long by about four feet high. It was inspected by counsel for Fynn, who admitted that the photograph which is in evidence as "Kelly's exhibit photograph of motor-generator" was a photograph of the machine so inspected. The production of the machine as an exhibit in the case was waived.

In X-Q. 35 he was asked whether the machine afforded the expected means of obtaining the information in reference to the operation of a rotary transformer, and in answer he said:

A. Yes. I feel satisfied now, from actual demonstration, that I can build a rotary transformer for the ordinary frequencies which will be commercially satisfactory and which will possess advantages over the ordinary form of continuous-current generator such as is generally used as a rotary transformer.

And being cross-examined as to the tests made he testified as follows:

X-Q. 36. When did you begin to study the operation of that machine?

A. All the tests that were made of it, from the first to the last, were studies of its operation. The first one was, I think, in January, 1896. The last test I made was in May or June, 1897.

X-Q. 37. Have you any record of the dates and character of these tests and of the dates and character of the structural changes in the machines made in consequence thereof?

A. I do not think there are any records of the tests. The shop records show the changes which were made at the time at which they were made. The photograph indicates the principal structural change, the narrowing of the pole-pieces. The pole-pieces originally extended over the surface of the cylinder which now appears roughened.

X-Q. 38. When was that change made and how long did it take to make it?

A. The cutting down of the pole-pieces was done in two distinct operations. I do not recall the exact date, but both cuts, I think, were made in the early part of 1896.

X-Q. 39. What were the observed results or peculiarities of the action of the transformer that led you to make this change?

A. The changes were made experimentally, with a view to improving the commutation so as to enable the machine to deliver larger current without sparking. I consider the improvement was affected by the first cut but not by the second.

X-Q. 40. Has the machine been used for anything but experimental purposes?

A. If by experimental you mean to cover the purpose of acquiring information, it has not.

X-Q. 41. That is to say, the machine was made for the purpose of study and was used for that purpose?

A. That is true, but with the expectation on my part that if the Stanley Electric Manufacturing Company should engage commercially in the building of rotary transformers that this machine would serve as a model and type.

X-Q. 42. What, if any, studies of rotary transformers had you made previous to the study of this machine?

A. Experimentally, very little. Theoretically, a good deal.

In reference to the changes in the machine he testified:

X-Q. 54. How long was that after you had made the last change in the construction of the rotary transformer illustrated by the exhibit photograph?

A. The last change in the machine shown in the photograph is the change from a multiple-series winding to a plain multiple winding. This was completed in January, 1897. I suppose I must have seen the Fynn patent within a couple of weeks after its issue.

X-Q. 55. Did this change in the winding make any material change in the operation of the machine?

A. No. Such a change has practically nothing to do with the operation of any machine. The advantages, if there are any, are as to construction. I found that the winders could understand and follow a diagram for a plain multiple winding more readily than one for multiple series. A multiple series winding is, however, in quite common use.

X-Q. 56. When was the next change in structure prior to that of January, 1897, made?

A. The next antecedent change I think was the modification of the brush-holder and the increase in the number of brushes. I do not know the exact date of this. My impression is that both of these latter changes were made at the same time.

X-Q. 57. Were the changes mentioned in your last answer also of an immaterial character?

A. One of the changes was contemplated from the outset; that is, in the increase in the number of the brushes. One of the points that I wished to ascertain from the beginning was just how few brushes I could get along with. I found, as I expected, that the greater the number the less tendency to sparking on account of the lower current density under the brush. The other change in the brush-holder itself was merely a mechanical change to enable the brushes to be held more securely against the commutator. The brushes and brush-holders, though necessary to the operation of my invention, were of course no part of it, and as a matter of fact the brush-holder was designed by Mr. Power or one of his assistants.

X-Q. 58. Were there any changes between those mentioned in your last answer and those made early in 1896, when you cut the field-poles down to their present dimensions?

A. During testing, we broke down the armature-winding a couple of times, and had to have it rewound. The rewinding was always on the same lines, so there was no real change involved, but it was the difficulty experienced in getting the winders to arrange the coils properly in these rewindings that led me finally to change to plain multiple winding.

X-Q. 59. With the exception then of changes that were either contemplated from the first or which you regard as unimportant, the machine is to-day substantially as it was early in 1896. Is that the case?

A. That is true.

Kelly is not corroborated by any one either as to the tests or as to the changes made in the machine after its construction in December, 1895. Kelly himself did not give any evidence as to the nature and character of the tests. The machine was of such a character and nature that others must have assisted in or witnessed the tests, and the silence of the witness Power upon this point is very suggestive. His testimony stops short with the construction of the machine, and he is silent both as to the tests of and the changes made in the machine. The machine was located in the factory of the Stanley Electric Manufacturing Company, and the invention was owned by said Company, and it would seem as though it would have been very easy to have proved what the tests were and what changes were made in the machine by evidence sufficient to prove beyond a reasonable doubt that Kelly "brought the machine to perfection and made it capable of useful operation." (*Agawan Co.* v. *Jordan*, 74 U. S., 583.)

The machine belongs to that class that requires something more than mere construction in order to amount to a reduction to practice. It falls rather within the class of cases referred to in *Hunter* v. *Stikeman*, (85 O. G., 610,) where the court said:

It is settled by a uniform course of decisions in the Patent Office and elsewhere, that "in the invention of a machine actual reduction to practice consists in the making of a machine of a size adapted for actual work, and proof of some kind, preferably by means of actual trial, that the machine will work practically and successfully." (*Schmiedl* v. *Booth*, Com. MSS. Dec., vol. 50, p. 401.)

In the absence of any explanation of the nature of any of the tests, coupled with the fact that the machine was so frequently altered, and also taking into account the absence of any corroboration of Kelly's testimony, I am constrained to find that the machine was experimental in nature and that there was no complete reduction to practice shown by Kelly prior to his constructive reduction to practice through the filing of his application for patent, which was October 20, 1897. This was nearly fifteen months after Fynn constructively reduced the invention to practice by filing his application and over two months and a half after his patent was issued.

In arriving at this conclusion it is not necessary nor do I adopt the intimation of the Examiners-in-Chief that in order to show a reduction to practice a machine must be one—

capable of doing full and satisfactory and economical work day after day in an industrial plant.

The testimony is insufficient to prove beyond a reasonable doubt that there was any actual reduction to practice prior to Fynn's constructive reduction to practice. Kelly's testimony itself falls short of proving to my satisfaction that his machine would work practically and successfully, so as to be considered an actual reduction to practice.

In *Young* v. *Donnelly* (82 O. G., 1417) I stated that—

in my opinion, in an interference proceeding, the unsupported testimony of a party to such interference is not sufficient to warrant a finding that drawings made and offered in evidence by such party were made at a claimed date.

The reason for holding such testimony to be insufficient is clearly stated in *McCormick* v. *Cleal*, (80 O. G., 1614, 1616:)

Testimony which should be rejected for insufficiency cannot be used in favor of a party on whom is the burden of proof to defeat another party, although the truthful intent of the witnesses may not be doubted. It is incumbent upon the party on whom is the burden of proof to produce such clear and direct evidence as will satisfactorily prove his case.

In the present case Fynn is a patentee, and, as stated by the Court of Appeals of the District of Columbia in *Christensen* v. *Noyes* (90 O. G., 223) in referring to contest between an applicant and a patentee—

it is certainly not the policy of the patent system of the United States that more than one patent should issue for the same invention, nor ought litigation to be encouraged or made necessary by issuing patents to any one except to those really entitled to them.

In the present case a patent was lawfully issued to Fynn. It is true Kelly states that he never abandoned his intention of applying for a patent; but when he would have applied for a patent had he not seen the Fynn patent is very problematic. On this point Kelly testifies as follows:

X-Q. 61. Has anything happened that led to the filing of your application for a patent except the grant of the patent to Fynn?

A. I do not know that anything new has occurred. I always expected to file an application on the matter, and I was unquestionably stimulated by the grant of the Fynn patent, first in that it was evident that the Patent Office regarded the matter as patentable, and secondly, if I failed to take action I was likely to be prevented from developing my own work.

Kelly also testifies that the invention belonged to the Stanley Electric Manufacturing Company as early as 1895, and it appears that that company had caused to be taken out several patents since January, 1895, which were the invention of Kelly.

The case is not free from doubt; but from all the testimony it appears that Kelly in 1894 became imbued with the idea that a rotary transformer was to occupy a permanent position in electrical work at some time, and with that in view he constructed the machine referred to in his testimony and experimented with it from time to time and made many changes in it, and from all that appears would have continued up to the present time his experiments and changes had he not been stimulated to greater activity by the issue of the Fynn patent.

Kelly although the first to conceive the invention in issue was the last to reduce the same to practice. In view of all the circumstances of the case, coupled with the issue of a patent to Fynn, Kelly was guilty of such laches that he is not entitled to prevail in this interference. The decision of the Examiners-in-Chief awarding priority of the matter in issue to Fynn, the senior party, is therefore affirmed.

EX PARTE JOHNSTON.

Decided June 1, 1900.

1. DIVISION—GRINDING-MACHINES.

Held that division was properly required between claims to a truing device and claims to the grinding mechanism of a machine for grinding knives where the devices are useful in other relations and have acquired a distinct status in art and manufacture.

2. SAME—COMBINATION AND SUBCOMBINATION.

It is not broadly true that in all cases where a party makes and is entitled to a combination claim he is also entitled in the same case to claim as many subcombinations or specific elements in that combination as he desires.

3. SAME—SAME.

Where the specific elements or subcombinations in a general combination are useful in other relations and are mere improvements on independent devices which have acquired a distinct status in art and classification, they cannot properly be retained in the same case as the combination claim.

ON petition.

GRINDING-MACHINE.

Application of Allen Johnston filed January 22, 1900, No. 2,370.

Mr. Philip Mauro for the applicant.

CHAMBERLIN, *Assistant Commissioner:*

This is a petition from the action of the Primary Examiner requiring division in the above-entitled case.

The application embodies means for grinding knives and means for truing the grinding-wheel when its surface becomes uneven by reason of wear. The application as filed contained fourteen claims, and the Examiner held that claims 1 to 8, inclusive, covering the truing device, were for a different invention from claims 9 to 14, inclusive, which cover the grinding mechanism. It appears that truing devices have acquired a distinct status in art and manufacture and have been made the subject of independent invention. They are classified in a different art and in a different division of the Office from grinding-machines. In so far as ap-

pears from the claims referred to the truing device is independent of the grinding mechanism, and the two devices may be used in other relations. Neither modifies in any manner the action of the other. The Examiner was therefore right in holding that the claims as presented cover different inventions and should be divided.

The petitioner, however, contends that the truing device and the grinding mechanism disclosed by him do coöperate to produce a single result, and since the requirement for division was made he has presented two claims covering the combination of the two devices. He argues that since those claims have been inserted his application covers the general combination and subcombinations in it and that under the practice this is permissible. The invention of the combination claims brings into consideration a factor not before the Examiner when he originally required division; but it does not make that requirement improper.

It is not broadly true that in all cases where a party makes and is entitled to a combination claim he is also entitled in the same case to claim as many subcombinations or elements in that combination as he desires. The question arises and must be determined whether those elements or subcombinations are useful in other relations and are mere improvements on independent devices which have acquired a distinct status in art and classification. If they are so independent, they cannot properly be claimed in one case, although the applicant has a claim covering the combination of all of them. As was said in *ex parte Willcox and Borton*, (45 O. G., 455:)

> The combination may depend upon the elements; but the latter do not depend upon the former. The combination cannot exist without its elements, but the elements may exist without the combination, and be used in some other relation, known or unknown. The applicant for a patent not only desires to secure and protect the combination of the elements as they coact and coöperate in such combination, but also to secure himself against their use and employment by others, whether as separate and distinct elements or in any other relation and combination. If these elements have separate and independent functions outside of the combination into which they are introduced, and may also be used in other relations or combinations, then they are distinct and separate inventions from the combination. They must have been conceived first, and at least have had a mental existence prior to the conception of the combination, just as any old element existed in advance of the combination into which it was introduced.

In support of his contention the petitioner cites *ex parte Bancroft and Thorne*, (90 O. G., 1539;) but that case is not controlling in the present case, for it was there said that it did not appear—

> * * * that attachments of the kind presented in this case have been recognized by inventors and manufacturers as a subject of invention distinct and independent from the other parts of grinding-machines or that such attachments are separately classified in this Office. It must be presumed therefore that such attachments have not acquired a distinct status in art and manufacture.

In the present case, as above stated, truing devices have acquired a distinct status in art and manufacture from grinding devices and are separately classified in this Office. They cannot, therefore, be separately claimed in one case, whether or not the applicant is entitled to combination claims including both. If the combination claims are allowable, the applicant is entitled to make them in the same case with claims to one of the separate inventions disclosed. (*Ex parte Casler*, 90 O. G., 447.)

The petition is denied.

CURTIS *v.* MARSH.

Decided July 13, 1900.

1. AMENDMENTS TO CASES IN INTERFERENCE—CANCELLATION OF CLAIMS IN ISSUE.

An amendment canceling the claims involved in interference, but unaccompanied by a disclaimer or abandonment of the invention covered by them, should not be entered during the pendency of the interference.

2. SAME—SAME—DISCLAIMER.

Where each party files an amendment canceling the claims in interference, thus indicating that neither wishes the interference to continue, *Held* that under the rules the amendments cannot be entered. (Rule 130.) Under Rules 107 and 125 they may disclaim or abandon the invention, and thus terminate the proceedings.

ON reference.

VALVE.

Application of Nelson Curtis filed June 17, 1899, No. 720,996. Application of Elon A. Marsh filed March 10, 1899, No. 708,493.

Mr. Henry Chadbourne for Curtis.
Messrs. Parker & Burton for Marsh.

CHAMBERLIN, *Assistant Commissioner:*

This case has been referred to me by the Primary Examiner for instructions as to what action should be taken in view of the peculiar circumstances presented.

It appears from the Examiner's statement that the devices shown by the parties are specifically different, but that each party presented a claim broad enough to cover the other's construction. These claims being identical, the interference was declared. Marsh moved to dissolve on certain of the grounds stated in Rule 122, and while that motion was pending before the Examiner each party filed an amendment to his application canceling his claim in interference and substituting a claim limited to his specific device. The Examiner states that these substitute claims do not interfere and that it is the obvious intention of the parties by presenting these amendments to avoid a continuation of the interference. He calls attention to the fact that by reason of Rule 130 he has no authority to enter the amendments, but argues that a continuation of the interference would under the circumstances be contrary to the wishes of both parties and serve no useful purpose, and therefore suggests that the Commissioner take jurisdiction under Rule 213 and dissolve the interference after directing that the amendments be entered.

It appears that the Examiner holds that the motion which has been filed presents no good grounds for a dissolution, but he has withheld his decision on that motion pending a decision on his present request for instructions.

It is clear that the amendments which have been presented are not only not provided for by the rules during the continuance of the interference, but are expressly prohibited by them, and therefore they cannot properly be entered. (*Bechman v. Johnson*, 48 O. G., 673.) While a continuation of the interference seems useless under the circumstances, the facts do not justify action under the general authority of the Commissioner referred to in Rule 213. That authority should be exercised only where the rules present no remedy. The rules do provide a remedy in the present case, since Rule 107 provides that such an amendment may be entered if accompanied by a disclaimer, and Rule 125 provides that a party may abandon an invention involved in interference.

The Examiner is instructed to refuse to enter the amendments presented and to decide the motion pending before him on its merits.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

KELLY *v.* FYNN.

Decided June 6, 1900.

1. INTERFERENCE—BURDEN OF PROOF—APPLICANT AGAINST PATENTEE.

Where the junior party has a patent to contend with and he was induced to file his application by a perusal of that patent, *Held* that the burden of proving his case beyond a reasonable doubt is upon him.

2. SAME—DELAY IN FILING APPLICATION.

Where the appellant took out seven patents on other inventions after the alleged reduction to practice before he filed his present application, *Held* that his delay and apparent indifference in regard to an application until after he saw the patent of the appellee are significant.

3. SAME—EVIDENCE OF REDUCTION TO PRACTICE.

Where it appears that a machine of full size was made for the purpose of study and with the expectation that it would be used as a model for others if it was decided to manufacture them and that after it was tested several experimental changes were made in it, but there is no satisfactory evidence that it operated practically and successfully, *Held* that it was not a reduction to practice.

4. SAME—SAME—EXPERIMENTAL MACHINE.

Where a party's testimony as to the operative character of a machine which he built is not satisfactory and no witnesses are called to corroborate him, although it appears that others must have been familiar with the tests of the machine, *Held* that the almost unavoidable inference, both from the testimony itself and from the omissions in the testimony, is that the machine was experimental and was not a reduction to practice.

5. PRIORITY OF INVENTION—DECISION OF COMMISSIONER AFFIRMED.

Although the preponderance of evidence may be with the appellant, *Held* that he has not established his case beyond a reasonable doubt, and therefore the decision of the Commissioner of Patents awarding priority of invention to the appellee affirmed.

Mr. H. B. Brownell for the appellant.
Messrs. Pollok & Mauro for the appellee.

MORRIS, *J.:*

This is an appeal from a decision of the Commissioner of Patents in an interference case.

The appellee Valere A. Fynn, of Kent, in England, on August 3, 1896, filed an application in the Patent Office for Letters Patent for certain improvements in dynamo-electric machines, and for his claims, as finally formulated after various amendments, he was allowed a patent on August 3, 1897. In the meantime for the same invention he had received an English patent dated December 20, 1895, but sealed on November 3, 1896; and also a Belgian patent, dated July 28, 1896. The claims in issue here are stated in his American patent in the following terms:

> 1. In a dynamo-electric machine, the combination with an armature of a field-magnet having its poles arranged alternately in different planes, each pole embracing a section or portion only of the armature lengthwise of its axis, one portion or section of the armature being acted upon by south poles only, and the other by north poles only, so that the magnetic flux through each section of the armature varies with its intensity without reversing its direction therein.
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> 2. In a dynamo-electric machine, the combination of an armature composed of two laminated rings or sections, and a field-magnet having its two sets of poles arranged alternately in different planes transversely of the shaft, the poles of the same polarity acting upon the same armature ring or section.
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> 3. In a dynamo-electric machine, the combination of an armature composed of two laminated rings or sections arranged side by side and separated by a collar, and a field-magnet having its two sets of poles arranged alternately in different planes transversely of the shaft, the north poles being in the plane of one of said rings or sections, and the south poles in the plane of the other ring or section.
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> 4. In a dynamo-electric machine, the combination of an armature composed of two rings or sections arranged side by side, a field-magnet having its two sets of poles arranged alternately in different planes, the north poles being in the plane of one of said rings or sections, and the south poles in the plane of the other ring or section, and a single exciting-coil arranged between the two planes.
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> 5. In a dynamo-electric machine the combination with an armature composed of two rings or sections and a winding whose coils embrace both rings or sections, of a field-magnet having its two sets of poles arranged alternately in different planes transversely of the shaft, the poles of like polarity acting upon the same armature ring or section.

On October 20, 1897, upward of two months after the issue of the patent to Fynn, which had come to his notice, Kelly filed his application for the same invention, and copied the claims of Fynn's patent for the purpose of being promptly put in interference with that patent. The interference was declared, and the parties filed their preliminary statement. Fynn alleged that he had conceived the invention and made sketches of it in October of 1895, made disclosure of it in December of 1895, made a model of it in November of 1895, and that a full-sized machine embodying the invention was placed upon the market about January 20, 1896. But he took no testimony to support his allegations, and therefore is compelled to rely upon the record date of his application (August 3, 1896) as that of his conception and constructive reduction to practice.

Kelly, in his preliminary statement, alleged that in August, 1894, he conceived and made sketches of the invention and explained it to others; that he made working drawings of it in October, 1894; and that he embodied his invention in a full-sized machine finished about January 1, 1896, and which was successfully operated as early as January 15, 1896. He took testimony in support of these allegations; but all the tribunals of the Patent Office in succession held that the testimony was insufficient to show reduction to practice by him at any time before the time of the filing of Fynn's application, although they conceded to him a priority of conception. Accordingly, they awarded judgment of priority of invention to Fynn; and from the Commissioner's decision in that regard the present appeal has been prosecuted.

Upon the appellant was and is the burden of proving his case beyond a reasonable doubt. Besides being the junior applicant, he has a patent to contend with: he came into the Patent Office after the patent had been issued to the appellee, and induced so to do by his perusal of that patent: and he comes to this court with the three concurrent

decisions of the Patent Office against him. We are not satisfied that he has borne this burden successfully. The appellee has rested on the record date of his application (August 3, 1896) as that of his conception and constructive reduction to practice. The testimony on behalf of the appellant is undoubtedly sufficient to show conception by him of the invention at a much earlier date, as early at least as August 23, 1894, or January 16, 1895, upward of a year and a half before Fynn's application. The sketches then made by him are held by all the tribunals of the Office to embody the invention in controversy; and that conclusion would seem to be just. There is no attempt to controvert it on behalf of the appellee. But there is grave doubt in regard to his reduction to practice.

The appellant was connected with the Stanley Electric Manufacturing Company of Pittsfield, in the State of Massachusetts. He communicated his invention to the managers of that company; and an order was given by them for the construction in their works of a full-sized machine to embody the invention. This was on January 16, 1895; and the machine seems to have been in course of construction during the whole of that year. It was completed so far as to be capable of being tested in the latter part of the year. That machine is still in existence, or was in existence at the time at which the testimony was taken, and was shown to the counsel for the appellee at the shops of the company. The machine itself was not put in evidence as an exhibit on account of its great size and weight. It was about six feet and six inches in length by about three feet and eleven inches in height, and weighed nearly six thousand pounds. The body of it, which was the machine proper, was a cylinder about thirty-three inches in diameter by about thirty inches in length. But a photo graph of it was put in evidence. It is claimed that this machine was a reduction of the invention to practice, and was a practical operative machine.

The appellant testified on his own behalf, apparently quite fully and fairly. The only witness besides himself was the mechanical engineer of the company, under whose superintendence the machine in question was constructed. The testimony of the latter was confined to the identification of Kelly's sketches and drawings as of the date of August 23, 1894; the order given on January 16, 1895, for the construction of the machine; and the actual construction of the machine before the end of that year. But he was not interrogated, and he did not testify, as to the capability or operativeness of the machine. And there is no testimony whatever on that point except that of the appellant himself; and his testimony is far from satisfactory. He stated that he had made tests of the machine, beginning with January, 1896, and continuing to May or June, 1897; that, as a result of these tests, he made several experimental changes in it; that the machine was made for the purpose of study, but with the expectation on his part that, if the Stanley Electric Manufacturing Company should engage commercially in the rotary transformers, this machine would serve as a model and a type. He stated also that his invention belonged to the Stanley Electric Manufacturing Company, as did all his other inventions of the same class, since January 1, 1895; and that since that date he had taken out seven patents for the company, in some of which he was the sole inventor, in others a joint inventor with others, but that he had not felt any pressure about this one, in view of a previous patent issued to him which covered principles essential to the construction of the rotary transformer, which was his present machine.

This testimony, as is apparent, is exceedingly inconclusive as to the operative character of the machine in question. It is very strange that no one else was called to testify on that point; and yet it would seem that the fact, if fact it was, could easily have been established by other witnesses. The mechanical engineer, who testified as to the construction of the machine, was competent to testify as to its operative character. If the inventor's tests were not made in secret and for the purpose of not being disclosed, those in whose presence they were made might have testified. When, in the course of the taking of the testimony in the company's shops, where it was taken, the machine was exhibited, it is not apparent that it might not have been tested then and there, and its operativeness made evident, if it was in fact operative. Nor is it apparent why it was not offered to be submitted to the experts of the Patent Office, or to other experts, for examination. The delay and apparent indifference of the appellant in regard to an application for patent until he saw the patent of the appellee, are also significant. The almost unavoidable inference, both from the testimony itself and from the remarkable omissions in the testimony, is that the machine was in its experimental stage, and was not a complete operative machine.

It might be, as we recently remarked in another case, that if the case were one to be governed by the mere preponderance of evidence, possibly the appellant would be entitled to prevail; but there is not that proof on his behalf beyond reasonable doubt which is required to enable a junior applicant in an interference suit to prevail against a patentee. We think, therefore, that, in the absence of such proof, the Commissioner of Patents was right in awarding judgment of priority of invention to the appellee, and that his decision should be affirmed.

The clerk will certify this opinion and the proceedings in this cause to the Commissioner of Patents, according to law.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

Vol. 92.—No. 7. TUESDAY, AUGUST 14, 1900. Price—$5 per year.

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Drawings.

RULES TO BE OBSERVED IN PREPARING AND FORWARDING DRAWINGS TO THE UNITED STATES PATENT OFFICE.

Where drawings are to be filed in connection with an application for Letters Patent in the United States Patent Office, each sheet, before it can be accepted by the Office as a part of the application, must be signed in the name of the inventor at the lower right-hand corner, either by him or by an attorney whose written authorization from the applicant is filed in connection with the application. This signature must also be attested by two witnesses, each of whom should sign the drawing at the lower left-hand corner of the sheet. The signatures should never be written on a line parallel with the longer edges of the sheet, one of the shorter edges being always regarded, for the purpose of locating the signatures, as the lower edge of the sheet. The signatures must all be within the margin-lines of the sheet and below the lines of the drawing. The title of the invention should be written with pencil on the back of each sheet of drawings.

When there are filed on the same day two or more applications by the same inventor, each of the documents and drawings belonging to the same application should have placed thereon the same letter or number, which should be different from the letter or number placed upon those of any other of the applications.

It is desirable that all parts of the complete application, including the drawings, be deposited in the Office at the same time. Should, however, the other parts of the application be filed before the drawings are sent, the latter when forwarded should be accompanied by a letter stating the number of sheets inclosed, and that the drawings are to be filed with the other parts of the application, giving the date at which such other parts were filed in the Office, the name of the inventor, and title of the invention. If the application has received a serial number, that should also be given, and it should be indorsed with pencil on the back of each sheet of drawings. The letter should also state, if such be the case, that the new drawings are to be substituted for those previously filed.

Drawings should be rolled—never folded—for transmission, and should be incased in a substantial mailing-tube.

Amendments to Allowed Applications.

Hereafter all amendments proposed to allowed applications and all petitions and requests relating thereto shall be filed with the docket clerk, Mr. J. M. Emory, and transmitted by him to the Primary Examiner for report. If the Examiner shall report favorably to the admission of such amendment, the matter will be laid before the Commissioner for immediate determination. If the Examiner shall report unfavorably, the case will be docketed and will be heard and decided by the Commissioner in regular course, unless good reasons shall appear for immediate action. (Order 629 amended October 15, 1898.)

Access to Pending Applications.

Hereafter no person except the applicant, the assignee whose assignment is of record, or the attorney of record will be permitted to have access to the file of any application, except as provided for under the interference rules, unless written authority from the applicant, assignee, or attorney, identifying the application to be inspected, is filed in the case to become a part of the record thereof, or upon the written order of the Commissioner, which will also become a part of the record of the case.

CERTIFICATES OF REGISTRATION ISSUED AUGUST 14, 1900.

Labels.

7,729.—Title: "Silk Fibre Bond." (For Writing-Paper and Envelops.) *Ph. Hake Manufacturing Co.*, New York, N. Y. Application filed April 30, 1900.

7,730.—Title: "Golf Cup." (For a Beverage.) *William P. Quentell*, New York, N. Y. Application filed July 18, 1900.

7,731.—Title: "Barrie's Nature's Health Spray." (For a Medicinal Substance.) *Gowans Bros.*, Detroit, Mich. Application filed July 11, 1900.

7,732.—Title: "Balloon Baking Powder." (For Baking-Powder.) *Balloon Baking Powder Co.*, Louisville, Ky. Application filed July 23, 1900.

7,733.—Title: "Mogul Sugar Corn." (For Corn.) *Illinois Canning Co.*, Hoopeston, Ill. Application filed July 23, 1900.

7,734.—Title: "Blackberry Brand." (For Confectionery.) *Lewis Schulman & Co.*, New York, N. Y. Application filed July 24, 1900.

Prints.

252.—Title: "Our New Capitol Cigar." (For Cigars.) *J. L. Shindler & Bro.*, Red Lion, Pa. Application filed July 23, 1900.

253.—Title: "Texas Arm and Pin Co." (For Arms, Pins, and Brackets.) *Texas Arm and Pin Company*, Beaumont, Tex. Application filed April 20, 1900.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business August 7, 1900.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. of applications awaiting action.
	In arrears—Under one month.			
250	VIII. Furniture, Beds, Store Furniture, etc.	July 30	July 31	126
217	XXXIII. *Designs, †Trade-Marks, ‡Labels and Prints, Optics.	July 30	July 25	50
106	II. Farm Stock, Products, etc.	July 28	July 30	91
38	XXXV. Advertising, Baggage, Buckles, Buttons, and Clasps, Packing and Storing Vessels, etc.	July 23	July 25	95
111	XXXII. Bottles and Jars, Carbonating Beverages, Refrigeration, Shipping and Storing Vessels, etc.	July 20	July 24	166
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	July 16	July 20	92
30	IV. Civil Engineering, Fire-Proof Buildings, Bridges, Water Distribution, etc.	July 13	July 26	164
39	XXXI. Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	July 12	July 25	114
255	XII. Mechanical Engineering, Store-Service, etc.	July 12	July 21	136
105	XI. Boots and Shoes, Harness, Hose and Belting, and Leather-Working Machinery.	July 12	July 13	183
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	July 11	July 25	147
246	I. Tillage and Fences	July 10	July 27	105
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	July 10	July 24	156
261	XXXVI. Weighing and Measuring Devices, Driers, and Drafting.	July 10	July 23	102
93	XXI. Textiles, etc	July 9	July 25	119
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	July 9	July 24	114
122	XXIV. Sewing-Machines, Apparel, and Toilet.	July 9	July 24	158
215	XVII. Printing, Type-Writing Machines, and Linotyping.	July 9	July 24	118
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	July 9	July 24	224
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	July 9	July 23	100
240	VII. Velocipedes, Games, and Toys.	July 9	July 19	196
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	July 9	July 18	164
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	July 9	July 18	121
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	July 9	July 12	123
102	XIX. Stoves and Furnaces	July 9	July 10	248
221	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	July 8	July 21	131
	Between one and two months.			
253	X. Carriages and Wagons	July 7	July 12	131
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	July 5	July 16	120
248	XVIII. Steam-Engineering, etc	July 5	July 12	198
120	IX. Hydraulics, Fire-Extinguishers, etc.	July 3	June 25	174
35	XXVIII. Pneumatics, Air and Gas Engines, etc.	June 26	June 27	329
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	June 21	June 23	268
95	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	June 18	July 9	191
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	June 14	July 23	239
256	V. Fine Arts, Harvesters, Bookbinding, Music, etc.	June 11	June 29	206
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 8	July 10	176

Total number of applications awaiting action.....5,665

Applications Under Examination—Continued.

Under one month.			
*Designs	Aug. 4	Aug. 3	32
Between one and two months.			
†Trade-Marks	July 6	July 6	290
Under one month.			
‡Labels and Prints	Aug. 4	Aug. 6	3

ISSUE OF AUGUST 14, 1900.

Patents	479—No. 655,678 to No. 656,156,	inclusive.
Designs	38—No. 33,056 to No. 33,093,	inclusive.
Trade-Marks	None.	
Labels	6—No. 7,729 to No. 7,734,	inclusive.
Prints	2—No. 252 to No. 253,	inclusive.
Reissues	3—No. 11,845 to No. 11,847,	inclusive.
Total issue	528	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama			Nevada		
Arizona Territory			New Hampshire	3	
Arkansas	1		New Jersey	22	
California	15		New Mexico Territ'y		
Colorado	4		New York	69	3
Connecticut	15		North Carolina	1	
Delaware			North Dakota	2	
District of Columbia	1		Ohio	43	
Florida	1		Oklahoma Terr t'y		
Georgia	5		Oregon	1	
Hawaii	1		Pennsylvania	51	1
Idaho	1		Rhode Island	4	
Illinois	55	1	South Carolina		
Indian Territory			South Dakota		
Indiana	11		Tennessee	6	
Iowa	10		Texas	5	1
Kansas	3		Utah	2	
Kentucky	9	1	Vermont	3	
Louisiana			Virginia	3	
Maine	3		Washington	4	
Maryland	7		West Virginia	1	
Massachusetts	31		Wisconsin	11	
Michigan	10	1	Wyoming	2	
Minnesota	9		U. S. Army		
Mississippi	3		U. S. Navy		
Missouri	12				
Montana	3		Total to citizens of the United States	445	8
Nebraska	2				

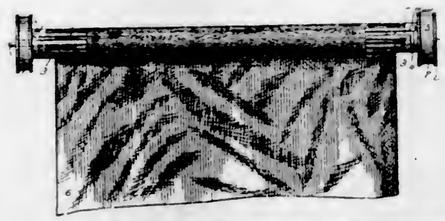
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina			Italy	1	
Australia			Japan		
Austria-Hungary	2		Java		
Barbadoes			Mexico		
Belgium			Netherlands		
Bermuda			New South Wales		
Brazil			New Zealand		
Canada	6		Norway		
Chile			Queensland		
China			Russia	1	
Costa Rica			Scotland	6	
Cuba			South African Republic		
Denmark			South Australia		
Egypt			Spain		
England	28		Sweden	1	
Finland			Switzerland	2	
France	10		Tasmania		
Germany	13		Victoria	1	
Guatemala					
Haiti			Total to citizens of foreign countries	72	
India					
Ireland	1				

PATENTS

GRANTED AUGUST 14, 1900.

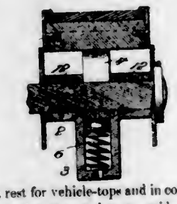
655,678. EXTENSION SHADE-ROLLER. JOHN ALLARD, Kewanee, Ill. Filed May 29, 1900. Serial No. 18,416. (No model.)



Claim.—1. The combination with a shade-roller, having studs adjacent to the opposite ends thereof, of a shade having one end rolled upon the roller, and opposite fastening-caps fitted to the respective ends of the roller and embracing the adjacent edges of the rolled portion of the shade, and also provided with bayonet-slots receiving the respective studs, whereby the caps are fixedly held upon the roller.

2. The combination with a shade-roller, having lateral studs adjacent to the opposite ends thereof, of a shade having one end rolled upon the roller and between the studs, and opposite tubular fastening-caps fitted to the respective ends of the roller, and provided with a plurality of longitudinal incisions or slots, forming spring-fingers to embrace the adjacent edges of the folded portion of the shade, and also provided with a transverse slot extending across the inner end of one of the longitudinal slots, forming a bayonet-slot for the reception of the adjacent stud.

655,679. REST FOR FOLDING VEHICLE-TOPS. WILLIAM Y. ARMSTRONG, Hutchinson, Kans. Filed Apr. 24, 1900. Serial No. 14,128. (No model.)



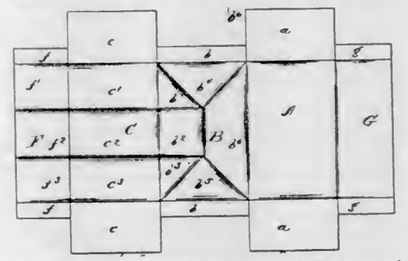
Claim.—1. In a rest for vehicle-tops and in combination with a supporting rail or bar, a socket mounted upon said rail, an impact-block movably mounted with reference to the socket, and washers secured to the aforesaid rail and adapted to embrace opposite portions of the socket and impact-block and adapted to direct the latter in its movements, substantially as set forth.

2. In a rest for folding vehicle-tops and in combination with a socket, an impact-block movably mounted with reference to the socket and having its top side convex and provided at its edges with longitudinal flanges and a covering applied to the convex side of the impact-block and having its edge portions fitted into the spaces formed between the said flanges and the convex portion of the impact-block, substantially as described.

3. In a rest for folding vehicle-tops, a socket, an impact-block movably mounted with reference to the socket and having a convex portion and longitudinal flanges, a covering applied to the convex portion of the impact-block and having its edges confined by the aforesaid flanges, and cap-plates secured to the ends of the impact-block and having their rims encircling the end portions of the covering and impact-block, substantially as set forth.

4. A rest for folding vehicle-tops, comprising a socket having offstanding collars at the upper ends of opposite sides, an impact-block having a slotted shank loosely fitted in the said socket, a spring located in the socket and exerting an outward pressure against the inner end of the said shank, a bar passing through the slot of the shank and the aforementioned collars, a covering applied to the top side of the impact-block and cap-plates secured to the ends of said block and encircling the latter and the end portions of the covering, substantially as set forth.

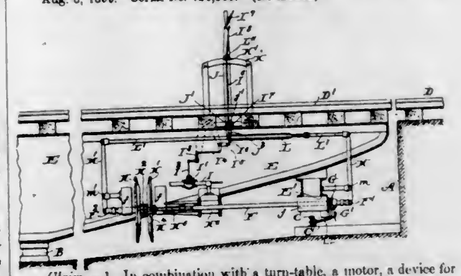
655,680. COLLAPSIBLE RECEPTACLE. SIEGMUND BACHMANN, Chicago, Ill. Filed Nov. 8, 1897. Serial No. 657,740. (No model.)



Claim.—1. A collapsible receptacle comprising the uncreased side A and ends E, the creased bottom B and creased side C both folded between the side A and ends E when it is collapsed, and the lid F integral with the side C and correspondingly creased and coacting therewith when closed down to prevent the tendency to collapse, substantially as shown and described.

2. A collapsible receptacle comprising the uncreased side A, the creased side C, the uncreased ends E composed of the parts *a* and *c*; and the bottom B reinforced by the parts *b*, and fastened to the ends by the pieces a^4 and c^4; the bottom B and side C both being folded between the side A and ends E when collapsed, substantially as shown and described.

655,681. TURN-TABLE. JAMES A. BEAMER, Tyrone, Pa. Filed Aug. 8, 1899. Serial No. 726,509. (No model.)



Claim.—1. In combination with a turn-table, a motor, a device for admitting to or cutting off motor fluid from the motor, a clutch member driven by the motor, a second clutch member arranged to be actuated by the first and connected to actuate the table, a lever for engaging and disengaging the clutch members, and means connected with said lever for actuating the device regulating the admission of motor fluid to the motor.

2. In combination with a turn-table, a motor, a device for admitting to or cutting off motor fluid from the motor, a clutch member driven by the motor, a second clutch member arranged to be actuated by the first, and connected to actuate the table, a lever for engaging and disengaging the clutch members, a segment, as K, having a locking-detent, as K', corresponding to a position of the lever when the clutch is disengaged, a bolt,

as L^{11}, arranged on the lever to engage said detent and when the lever is shifted to ride on the segment K and mechanism connecting the bolt and the device controlling the admission to the motor as described and whereby the motor fluid is admitted when the bolt is withdrawn and cut off when it again falls into the detent.

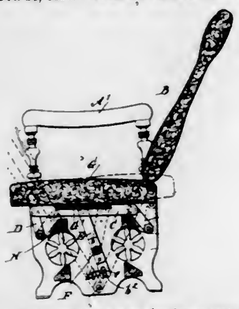
3. In combination with a turn-table, a motor, a clutch member, as friction-wheel H^3, actuated thereby, a shaft, as F, longitudinally movable, clutch members as friction-wheels H H′ secured to said shaft so as to move with, but not on the same, said wheels being arranged to engage the member H^3 as they are shifted with the shaft and be driven by it in opposite directions means for shifting said shaft and clutch members, and means actuated by said shaft for turning the table.

4. In combination with a turn-table, a motor, a clutch member, as friction-wheel H^3, actuated thereby, a shaft, as F, longitudinally-movable, clutch members as friction-wheels H H′ secured to said shaft and arranged to engage the member H^3 as they are shifted and be driven by it in opposite directions, a lever, as J, for shifting the clutch, a segment K having a detent K′, a latch-bolt secured to and movable on the lever J said bolt being adapted to engage in detent K′ when the lever is in its intermediate position and to be supported on segment K in all other positions of said lever, and means for starting and stopping the motor actuated by the movement of the latch-bolt, means for shifting said clutch members, and means actuated by said shaft for turning the table.

5. In combination with a turn-table, a chain extending around the base thereof, a shaft supported on the turn-table, a sprocket-wheel supported on the shaft and engaged by the chain, a motor, a friction-clutch member actuated by the motor, a double friction-clutch member secured to the shaft and arranged to engage the member driven by the motor to drive the shaft in either direction and means for engaging and disengaging the clutch members.

6. In combination with a turn-table and a track, as C, extending around its base, two or more anchor devices, as C′, arranged to engage and hold a chain against longitudinal movement while permitting it to be raised freely said anchors being situated on the outer side of the track, a chain situated around the track in engagement with the anchors, a shaft on the table, a vertical sprocket-wheel on the shaft over which the chain passes, and two vertical guide-wheels G′ G′ arranged below and on each side of the sprocket-wheel under which the chain passes.

655,682. **CAR-SEAT.** FREDERICK BENNETT, New York, N. Y., assignor to the Hale & Kilburn Manufacturing Company, Philadelphia, Pa. Filed Dec. 20, 1897. Serial No. 662,579. (No model.)



Claim.—1. A reversible car-seat having a seat mounted to move forward and rear, a back supported on swinging bars pivoted near the floor and extending outside the seat, and mechanism coacting with said bars and said seat, whereby the movement of said bars in one direction will cause the movement of said seat in the opposite direction, substantially as described.

2. A reversible car-seat having a seat mounted to move forward and rear and to rest in either position with its outer edge higher than its inner edge, a back supported on swinging bars pivoted near the floor and extending outside the seat, and mechanism coacting with said bars and said seat, whereby the movement of said bars in one direction will cause the movement of said seat in the opposite direction, substantially as described.

3. A reversible car-seat having a seat portion mounted upon pivoted links to swing forward and back, a back supported upon bars pivoted near the floor and extending outside the seat, said levers connecting the seat and back-bars, whereby their movements are in opposite directions, substantially as described.

4. A reversible car-seat having a seat mounted to move forward and rear, a back supported on swinging bars pivoted near the floor and extending outside the seat, and levers connecting said bars and the seat, whereby the two are moved in opposite directions, substantially as described.

5. A reversible car-seat having a swinging back supported upon bars which are pivoted near the floor and extend outside the seat and within the arms, pivoted supporting-links beneath the front and rear edges of the seat and arranged at different angles so that the one under the forward edge is nearer the vertical and supports this edge higher than the rear, and connections from the back to the seat-supporting links, whereby the seat is shifted laterally at the same time as the back and in an opposite direction and the angle of the seat is changed so as to keep the front edge the higher, substantially as described.

6. A reversible car-seat having a back mounted upon bars which are pivoted near the floor, a movable seat, supporting-links under front and rear edges of the seat and pivoted to the seat and to a fixed support, a rod or shaft extending lengthwise of the seat and journaled above the pivots of the bars carrying the back, and levers fixed to said rod or shaft and connected at their opposite ends to the seat and the back-supporting arms, substantially as described.

7. The combination, substantially as set forth, of seat-supports, a car-seat sustained thereon, a seat-back transferable from one side of the seat to the other, two reversing arms fulcrumed below the seat and attached, one to the inner end of the seat-back, and the other to the outer end thereof, and levers pivotally connected to the seat and to the reversing arms respectively, and adapted to move the seat in and by the reversal of the back, through the action of the reversing arms.

8. The combination, substantially as set forth, of seat-supports, a movable bearing-frame sustained thereon, a car-seat carried by said bearing-frame, a seat-back transferable from one side of the seat to the other, two reversing arms fulcrumed below the seat and attached, one to the inner end of the seat-back, and the other to the outer end thereof, and levers pivotally connected to the bearing-frame and to the reversing arms respectively and adapted to move the bearing-frame and the seat in and by the reversal of the back through the action of the reversing arms.

9. The combination, substantially as set forth, of seat-supports, a car-seat sustained thereon, a seat-back transferable from one side of the seat to the other, two reversing arms connected to fulcrums below the seat and attached one to the inner end of the seat-back and the other to the outer end thereof, and levers pivotally connected to the seat or its bearing-frame and to the reversing arms respectively.

10. A reversible car-seat, having a seat mounted to move forward and rear, a back supported on swinging bars, pivoted near the floor and extending outside the seat, levers connecting said bars and the seat, and a rod or shaft to which the levers are attached, whereby the seat and back are moved in unison and in opposite directions, substantially as described.

11. The combination, substantially as set forth, of seat-supports, a movable bearing-frame sustained thereon, a car-seat carried by said bearing-frame, a seat-back transferable from one side of the seat to the other, two reversible arms fulcrumed below the seat and attached one to the inner end of the seat-back and the other to the outer end thereof, a rod or shaft extending lengthwise of the seat and journaled in the seat-supports, and levers attached to said shaft and pivotally connected to the bearing-frame and to the reversible arms respectively and adapted to move the bearing-frame and the seat in and by the reversal of the back through the action of the reversing arms.

12. A seat having pivoted link-supports and mounted to have forward-and-backward movement, a shaft journaled to turn in bearings and extending lengthwise the seat, and reversing arms mounted on said shaft and engaging the ends of the seat whereby both ends are moved in unison, a seat-back mounted to swing from one side of the seat to the other and connections from said back to the shaft to actuate it, substantially as described.

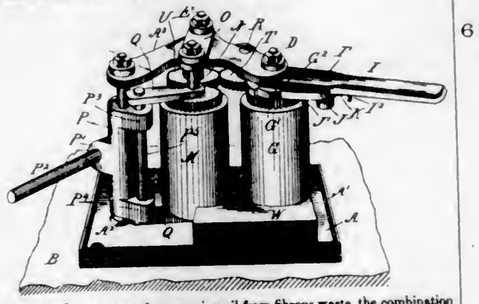
13. In combination, the seat, the back, the pivoted arms supporting the back and the levers between the arms and the seat for shifting the latter, said levers being pivoted intermediate of their length and connected directly to the arms and seat, substantially as described.

14. In combination, the seat and back, the arms pivoted near the floor and carrying the back, and the levers extending from said arms from a point below the seat and connected with the seat, said levers being pivoted intermediate of their length, substantially as described.

655,683. **MACHINE FOR RECOVERING OIL FROM WASTE.** JOHN B. BENTON, Elizabeth, N. J. Filed Aug. 17, 1899. Serial No. 727,580. (No model.)

Claim.—1. In apparatus for removing oil from fibrous waste, the combination with a bed provided with a rim and drain, of a pair of vertical expressing-rolls, means for rotating the same located at one side, and feed and receiving platforms both above the bottom of the bed within the rim area thereof, the receiving-platform being in a lower plane than that of the feed-platform, and means located at the opposite side for varying

the position of one roll relative to that of the other without interrupting the mesh substantially as herein specified.



2. In apparatus for removing oil from fibrous waste, the combination of a vertical roll having a gear-wheel and mechanism for positively turning it located at one side, a vertical roll M supported in movable bearings and also having a gear-wheel, intermediate gearing for transmitting motion from one roll to the other, and hand mechanism located at the opposite side for shifting the bearings of the roll M to and from the roll G, the mesh of the gear of the former roll with the intermediate gearing being maintained, substantially as herein specified.

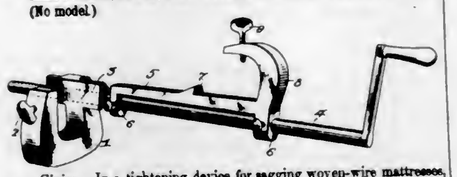
3. In apparatus for removing oil from fibrous waste, the combination with a bed provided with a rim and drain, of a pair of vertical expressing-rolls geared together, hand mechanism for positively turning one of said rolls, a toggle-bearing and hand provision for shifting the other roll without disturbing its mesh, and feed and receiving platforms within the rim area thereof, the receiving-platform being in a lower plane than that of the feed-platform, substantially as herein specified.

4. In apparatus for removing oil from fibrous waste, the combination with a pair of vertical expressing-rolls geared together through intermediate gearing, of a reciprocative hand-lever having a pawl engaging the gear of one of said rolls to turn the same, links O, O, in which the other roll bears to permit its movement relative to the fixed roll without disturbing the mesh with the intermediate gearing, hand provisions connected with said links for so shifting the other roll, feed-platform, a lower receiving-platform, and a bed provided with a rim and drain, substantially as herein specified.

5. In apparatus for removing oil from fibrous waste, the combination with a base having a suitable oil-receptacle, a bridge A^2, a fixed roll bearing in the base and bridge and having a gear-wheel meshing with intermediate gearing also journaled in the bridge, hand provisions for actuating the gear-wheel of said fixed roll, pivoted links O, O, carrying a roller M having a gear-wheel meshing with the intermediate gearing, and a hand-operated piece P connected to the link-bearings of the roll M to move the same and said roll to and from the fixed roll, substantially as herein specified.

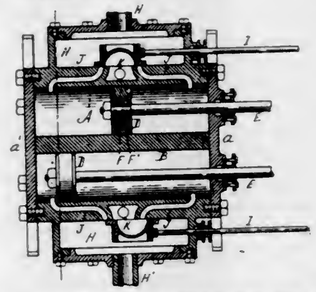
6. In apparatus for removing oil from fibrous waste, the combination with a base having a rim and a drain for retaining and conveying away the oil, of a vertical roll on a fixed center, a hand-operated lever carrying a spring-pawl for engaging and rotating the same, a vertical movable roll, link connections and gearing for transmitting motion to the same from the fixed roll, and hand controlling means for shifting the other roll at will during the operation, substantially as herein specified.

655,684. **TIGHTENING DEVICE FOR SAGGING MATTRESSES.** MARK BUNNELL, Tucker, Utah. Filed Nov. 16, 1899. Serial No. 737,161. (No model.)



Claim.—In a tightening device for sagging woven-wire mattresses, the combination with the clamp 1 provided with a face-plate 3 having a threaded seat therein on its inner jaw and a thumb-screw 2 in its outer jaw; of the carriage 5 provided with the integral knee 7, the integral clamping-jaw 8 provided with a thumb-screw 9 near its point, the depending lugs 6 6 provided with thumb-screws at its ends; and the crank-shaft 4 provided with the threaded end in engagement with the threaded seat in said face-plate 3, and having encircling grooves between its crank and its threaded end for receiving the points of thumb-screws seated in said depending lugs 6 6 for permitting rotary motion of said crank-shaft in said depending lugs 6 6; substantially as specified.

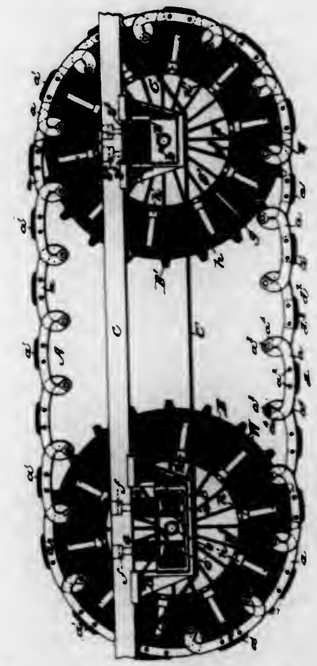
655,685. **CYLINDER FOR COMPOUND STEAM-ENGINES.** FRANKLIN G. BURLEY, Boston, Mass. Filed Oct. 23, 1899. Serial No. 734,429. (No model.)



Claim.—1. In a steam-engine, a double cylinder comprising a pair of cylinders, each consisting of a half-cylinder such as would be produced by dividing a cylinder longitudinally and vertically into two parts; a partition separating the two said cylinders or part cylinders; means for securing the open sides of the two said cylinders to the partition on the opposite sides thereof; steam-chests; distribution-valves; and exhaust and inlet ports, substantially as described.

2. In a steam-engine, a pair of semicylindrical cylinders; a dividing plate or partition, said semicylindrical cylinders having their open sides facing and secured to opposite sides of said dividing-plate; steam-chests; distributing-valves; and exhaust and inlet ports, substantially as set forth.

655,686. **TRACTION-ENGINE.** DANIEL C. CAWLEY, Allegheny Pa. Filed Dec. 15, 1899. Serial No. 740,480. (No model.)



Claim.—1. In a traction-engine, a truck consisting of pairs of sprocket-wheels connected by endless track chains or belts, one set of wheels having their journals spring-seated in both vertical and horizontal direction substantially as described.

2. In a traction-engine, a truck consisting of pairs of sprocket-wheels connected by endless track chains or belts, one set of wheels having their journals arranged in boxes having springs both in front and rear of said box, and guiding-frames for accommodating a slight forward and backward movement of said journals substantially as described.

3. In a traction-engine, a truck consisting of pairs of sprocket-wheels connected by endless track chains or belts, journal-boxes for said wheels made yielding in horizontal direction, said journal-boxes having vertical pivotal lugs, and a slotted guiding-frame for the same to accommodate the oblique angular position of the wheel-axes substantially as described.

4. In a traction-engine, the combination of sprocket-wheels with endless track-chains coupling them in pairs, the wheel-axle *b* with horizontally-adjustable box *d'*, the springs *c c* arranged on opposite sides of the same, a yoke *d* inclosing said box and springs, the hangers D D receiving the yoke, and the spiral springs and guide-rods *e f* arranged above the yoke substantially as and for the purpose described.

5. In a traction-engine, a track-chain composed of links having bearing-faces in the middle, and inwardly and upwardly turned ends lapped past each other and jointed together at the ends to keep the joints away from contact with the ground and to prevent openings between the bearing-faces of the links as described.

6. In a traction-engine, a track-chain composed of links each formed of two side bars with blocks *a'* of yielding material bolted between them and forming the grappling-surfaces for the sprocket-teeth and also the ground-bearings for the chain as described.

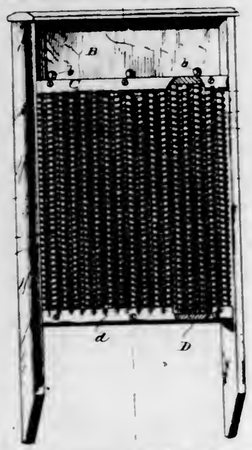
7. A chain formed with elastic bearing-blocks substantially as described.

8. A chain having elastic bearing-blocks combined with sprocket-wheels having teeth fitting against said elastic bearings substantially as described.

9. A sprocket-wheel for a traction-engine, consisting of a continuous outer metal ring having sprocket-teeth formed thereon, an inner ring of metal, an interposed ring of elastic material, and radial pins fixed rigidly in the middle of one of the metal rings and protruding loosely through the body portion of the elastic ring and the other metal ring and locking the same together against torsional movement substantially as described.

10. A sprocket-wheel for a traction-engine consisting of a continuous outer metallic ring having sprocket-teeth formed thereon, an inner metallic ring, and an interposed bushing-ring of elastic material, radial pins fixed rigidly in one of the metallic rings and protruding loosely through the body portion of the elastic ring and the other metal ring, and external guiding-tongues arranged radially on the sides of one of the metal rings, and keepers receiving said tongues and located on the sides of the other metal ring substantially as and for the purpose described.

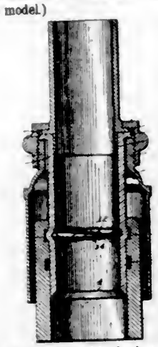
655,687. WASHBOARD. RALPH B. COFFMAN, Chattanooga, Tenn., assignor of one-half to W. S. Weitzell, same place. Filed Oct. 27, 1899. Serial No. 734,945. (No model.)



Claim.—1. In a washboard, a rubbing-surface comprising a series of rods each having a wire wound spirally around from end to end of the rod, the direction of the wind of the wire on each rod being opposite from that on the next preceding or following one, substantially as described and shown.

2. In a washboard, the combination with a frame and a one-piece back, of a plurality of spiral wire springs, rods passing through the springs and removable fastenings for the rods and springs, as and for the purposes specified.

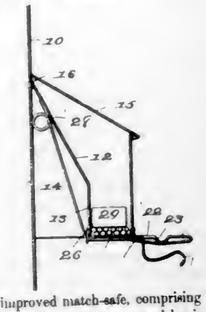
655,688. ATTACHMENT FOR WATER-CLOSET BOWLS. JOHN COLEMAN and HENRY MOORE, St. Louis, Mo. Filed Feb. 23, 1900. Serial No. 6,154. (No model.)



Claim.—1. The combination with the horn of a water-closet bowl having a plurality of interior annular grooves; of a rubber spud entering said horn, an expansible ring within the spud and distending it normally into one of said grooves, the ends of the ring lapping each other and their extremities formed into hooks, and a metallic tube coupled to the projecting end of said stod, substantially as described.

2. The combination with the horn of a water-closet bowl having an interior annular groove; of a rubber spud entering said horn, an expansible ring within the spud having its extremities turned inward toward the axis thereof, a threaded nipple around the outer end of the spud and having a cylinder surrounding said horn, a tube against the end of the spud, and a coupling between said tube and nipple, substantially as described.

655,689. MATCH-SAFE. JOHN A. COOPER, Adair, Iowa, assignor of one-half to A. C. Savage and G. W. Goodhart, same place. Filed Feb. 2, 1900. Serial No. 3,709. (No model.)

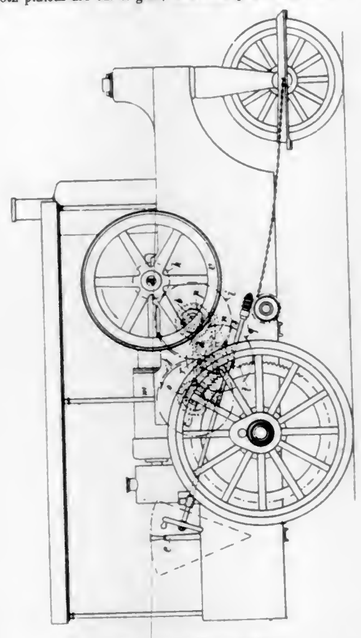


Claim.—1. An improved match-safe, comprising in combination, a suitable match-receptacle open at its bottom, and having tracks in a horizontal plane at its sides near the bottom, a bottom piece, for the receptacle, made of sheet metal, having its ends bent forwardly and outwardly to overlap said tracks, two integral, forwardly-extending brackets, each having a pocket therein, on the said bottom, and yielding pressure devices for normally holding said bottom to the forward limit of its movement.

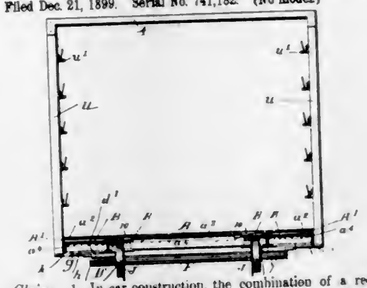
2. An improved match-safe, comprising in combination, a match-receptacle, having its back piece inclined forwardly to a position near the vertical center of its side piece, tracks on the lower part, or edges of said side pieces, a bottom piece made complete of a single piece of sheet metal, with its edges turned to overlap said tracks and having at its forward edge two forwardly-projecting parts, with pockets or depressions therein, said forwardly-projecting parts being designed to assume a position under the match-receptacle when the bottom is moved to its rearward limit, and yielding pressure devices for normally holding said bottom to its forward limit.

655,690. TRACTION-ENGINE. RAOUL COUTANT-DUJOUR, Paris, France, assignor of one-half to Emile Salmson, same place. Filed Feb. 9, 1899. Serial No. 705,082. (No model.)

Claim.—In a traction-engine or road-roller driven by petroleum or other oil, gearing comprising a double-armed lever acting on coupling-drums in such a manner as to cause one or other of two pinions on intermediate driving-shafts rotating in opposite directions to engage with and drive the one affecting the onward movement of a central pinion on a shaft from which the road-wheel of the vehicle is driven, while the other pinion for driving in the opposite direction is out of gear, said lever also serving for the purpose of applying a brake against both coupling-drums when both pinions are out of gear, substantially as described.



655,691. FACTORY-CAR. WILLIAM CROSSLEY, New Haven, Conn. Filed Dec. 21, 1899. Serial No. 741,182. (No model.)



Claim.—1. In car construction, the combination of a rectangular truck-frame, and diagonal stays connecting the sills of the truck across the corners thereof adapted to support the boxes of the axles, substantially as and for the purpose specified.

2. In car construction, the combination of a truck-frame composed of longitudinal and transverse sills connected at the ends, and diagonal stays arranged across the corners of the truck-frame with their ends connected respectively to the longitudinal and transverse sills, substantially as and for the purpose specified.

3. In car construction the combination of a rectangular frame composed of longitudinal and transverse beams of angle-iron riveted together at their ends or corners of the truck, diagonal stay-beams arranged across the corners of the rectangle with their ends secured respectively to the longitudinal and transverse angle-beams, and axle-boxes secured to and supported by the said diagonal stays substantially in the manner and for the purpose specified.

4. In car construction the combination of the rectangular frame of side and end sill angle-beams connected at their ends, diagonal stay-beams extended across from the longitudinal to the transverse angle-beam and riveted thereto, cross stay-bars connecting the side sills and adjacent diagonal stays, axle-boxes secured to the diagonal stays, and the axles journaled in said boxes and provided with truck-wheels, substantially in the manner and for the purpose specified.

5. In car construction the combination of the end and side sills A A' of angle-iron connected at the ends, the diagonal I-beams forming stays between the sides and ends and adapted to support the axles, the cross-stays joining said diagonal stays with the adjacent side sills, the boxes depending from the diagonal stays and the axles journaled therein and provided with truck-wheels, all arranged substantially in the manner and for the purpose specified.

6. In a factory-car the combination of the end and side sills A A' of angle-iron connected at the ends the diagonal beams crossing from the side to the ends and adapted to form supports for the axle-bearings, the axle-bearings attached thereto, the axle journaled in said boxes and provided with truck-wheels, the uprights riveted to the side sills and stayed together, and the racks supported by the uprights, substantially in the manner and for the purpose specified.

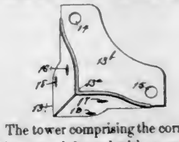
7. In a factory-car the rack comprising in combination a bar of angle-iron and the inclined supports or angle-pieces 63 riveted to the horizontal flange thereof, substantially as and for the purpose specified.

655,692. ICE-CHIPPING TOOL. GEORGE F. DANA and FRANK M. SNOOK, Cincinnati, Ohio. Filed Mar. 3, 1899. Serial No. 707,568. (No model.)



Claim.—In an ice-pick, stamped from a single piece of sheet metal, a guard provided with an opening, said guard being curved outwardly at its lower end, a blade integral with said guard, said blade provided with teeth at its lower edge and stiffened by ridges extending lengthwise of the teeth stamped in the metal, and flanges integral with the guard, said flanges rolled to form a ring for the reception of a handle, substantially as and for the purpose described.

655,693. STEEL-TOWER BRACKET. ALEXANDER R. DEMPSTER and WILLIAM D. RINEHART, Des Moines, Iowa, assignors to the Dempster Manufacturing Company, same place. Filed Jan. 18, 1899. Renewed Feb. 8, 1900. Serial No. 4,560. (No model.)



Claim.—1. The tower comprising the corner-posts, the corner-brackets mounted in said posts and formed with an angle-plate and a supporting-plate integral therewith, the horizontal stays bolted to the supporting-plates of the corner-brackets, the brace-rods mounted in the stays, brackets and corner-posts, the brace-rods mounted in the brackets and corner-posts, and the clamps connecting the brace-rods.

2. The corner-bracket comprising the angle iron or plate the supporting-plate within the angle and intermediate of the ends of the angle-plate and having its face planes at oblique angles to the line of the supporting-plate, and means for mounting said bracket in a post.

3. As an improved article of manufacture, a corner-bracket formed of a single piece of cast metal and comprising an angle-plate 13 and a plane supporting-plate 13^b arranged within the angle of the angle-plate and intermediate of the ends thereof and provided with transverse apertures 14, 15, the face planes of the supporting-plate being at oblique angles to the angle-plate.

4. As an improved article of manufacture, a corner-bracket comprising the angle-plate 13 and the plane supporting-plate 13^b integral therewith and arranged within the angle of the angle-plate and intermediate of the ends thereof, both plates being apertured to receive bolts or other means of fastening and the angle of the angle-plate being sharp and square, and the face planes of the supporting-plate being at oblique angles to the angle-plate.

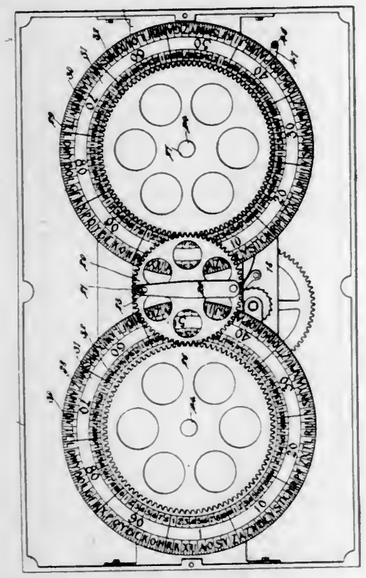
5. In a tower construction, the brace-rods crossing each other, the clamp-plates formed with interior diametrically-positioned grooves and segment-slots on either side of the grooves, which clamp-plates are mounted on opposite sides of the crossed rods with their grooves partially embracing the rods, and bolts traversing the segment-slots and clamping the plates together.

6. As an improved article of manufacture, a clamp-plate formed with a diametrical groove in one face and segment-slots on opposite sides of the groove, the arc of the segment-slots being concentric with the center of the plate.

7. As an improved article of manufacture, a clamp-plate formed with two crossing diametrical grooves in one face and segment-slots between the divergent portions of the grooves.

8. The combination of the plates formed with crossing diametrical grooves in their adjacent faces and segment-slots between the divergent portions of the grooves, and bolts traversing the segment-slots.

655,694. WATCHMAN'S DIALLESS REGISTER. JOHN A. DEMUTH, Oberlin, Ohio. Filed Aug. 16, 1899. Serial No. 727,425. (No model.)



Claim.—1. In a registering apparatus, the combination of a wheel, a pin carried thereby and adapted to pierce a card, and a dial geared with the wheel to turn in time therewith, for the purpose specified.

2. In a registering apparatus, the combination of a wheel, a pin carried by and turning with the wheel, and two dials arranged respectively on opposite sides of the wheel and geared to be driven in time therewith, the dials turning out of unison with each other.

3. In a registering apparatus, the combination of a pin adapted to pierce a card, means for carrying the pin to move in a fixed path, and a dial located adjacent to the pin and geared with the means for carrying the same, whereby to cause the dial and pin to turn in unison, for the purpose specified.

4. In a registering apparatus, the combination of means for marking a card, and a dial geared with said means and moving in time therewith, for the purpose specified.

5. In a registering apparatus, the combination with a casing, of means for marking a card, such means moving continuously to mark the card at different points at different periods, and a dial connected with said means and moving in unison therewith, the dial being visible through the casing.

6. In a registering apparatus, the combination with a casing, of clockwork mounted therein, a wheel connected with and driven by the clockwork, a pin carried by the wheel and projecting through the front wall of the casing, a card-holder mounted outside of the front wall and movable toward and from the pin to carry a card thereto to pierce the card, and a dial geared with the wheel and turning in time therewith, the dial being located within the casing and having a portion visible through the same.

7. In a registering apparatus, the combination of a casing, a clockwork mounted in the casing, a wheel driven by the clockwork, a pin carried by the wheel and projecting through the front wall of the casing, a card-holder mounted outside of said wall and moving toward and from the pin to carry a card to the pin and pierce the same, and two dials geared with the wheel and moving in unison therewith, the gearing of the dials being dissimilar to drive the dials out of unison with each other, the dials being located within the casing and having portions visible without the same.

8. A dial for a registering apparatus, the dial having a line of letters, and a line of figures identifying the letters, for the purpose specified.

9. A card for a registering apparatus, the card having a circular figure produced thereon, the figure being divided into segmental parts and each part having a plurality of characters produced thereon, the characters of each part being similar throughout the card.

10. A dial for a registering apparatus, the dial being formed in two divisions, one of which has a figure adapted to be marked by the registering apparatus, and the other of which has a number of consecutively-numbered divisions formed thereon.

11. A card for registering purposes, the card having a circular figure marked thereon, and the card also having a number of spaces produced thereon adjacent to the circular figure, the card being adapted to be punched at the circular figure, and the said spaces serving to receive notes respectively referring to the punches in the circular figure.

12. A card for registering apparatus, the card having a figure produced thereon which is adapted to be punched and the card also having a number of spaces marked thereon, such spaces being adapted to have characters written therein, the characters respectively referring to the punches on the said figure on the card.

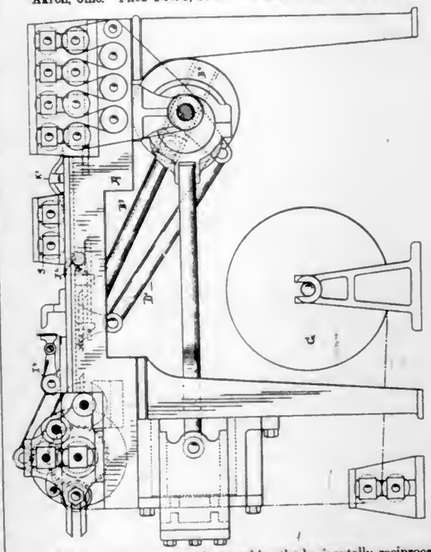
13. A registering apparatus, having means for marking a card, such means moving in a fixed path, and two dials geared with such means to be driven in time therewith, the dials moving out of time with each other, for the purpose specified.

14. In a registering apparatus, the combination of means serving to mark a card, such means being driven continuously, and two dials geared with such means and driven thereby, the dials moving out of time with each other, and the dials being duplicates in form.

15. A registering apparatus, having a casing, a card-holder mounted and movable on the casing over an opening therein, means in the casing for marking the card, against which means the card-holder moves, and a movable member mounted in the casing and driven in time with said means for marking the card, the casing having a second opening through which said member is movable.

16. A registering apparatus, having means for marking a card, such means being driven uniformly to advance, and a continuously-movable member geared to advance in time with said means for marking the card, for the purpose specified.

655,695. PAPER-BOX-MAKING MACHINE. JOHN W. DENNEAD, Akron, Ohio. Filed Feb. 5, 1900. Serial No. 4,093. (No model.)



Claim.—1. In a box-making machine the horizontally-reciprocating die located at the front of the machine, the guiding-roll G^2, the intermittently-actuated feed-rolls G^3 G^4, the glue-roll H', the vertically-vibrating knife combined with the reciprocating table that moves in a direction parallel with the line of the movement of the outgoing or traversing paper, that is being scored and folded substantially as shown and described.

2. In a paper-box-making machine the intermittently-actuated feed-rollers G^3 G^4, the glue-roll H', knife-arm I and knife I^3, combined with the reciprocating table D^3 provided with paper-holding nippers that carry forward the paper in the process of scoring and folding the same and deliver it to the pressure-rollers substantially as shown and described.

3. In a paper-box-making machine the main shaft B, its forked die-actuating pitman and their eccentric connection therewith, combined with the slotted crank-wheel B' its pitman B^3 actuating the feed ratchet-wheel B^4, and the crank D and its pitman D' actuating the horizontal laterally-reciprocating table D^3 substantially as shown and described.

4. In a paper-box-making machine the ratchet-wheel B^4 the intermittent-feed rollers G^3 G^4, glue-roller H', vibrating knife-arm I and its knife combined with the intermittently-reciprocating table D^3, the scoring-knives, the folding-guides, and pressing-rolls for completing the box, substantially as shown and described.

5. In a paper-box machine the combination of the horizontally-reciprocating table that moves forward to receive and support the blank, and the paper-holding nippers J'' secured to the shaft J and provided with the pressure-holding spring J^9 actuating-pinion J^2, its movable rack J^4, and the reversing-lug A^3, the pinion J^8, its pawl J^6, pawl-releasing friction-roller J^5 and disengaging-stop J^{10} substantially as shown and described.

6. In a paper-box-making machine the main driving-shaft B provided with the pitman C^3 for operating the punching or cutting die; and the crank-wheel B' for operating the pitman B^3; and its ratchet-wheel B^4 that imparts an intermittent reciprocating action to the feed-rolls; combined with the crank D and the reciprocating scoring-table D^3, that carries the paper beneath the scoring-rolls, and onward to the folding-guide and pressing-rolls substantially as shown and described.

7. In a paper-box-making machine the vibrating knife-arm I its friction actuating-roller I', retracting-spring I^4, combined with the reciprocating scoring-table D^3, its knife-actuating arm I'', and the nipper-shaft J, and its paper-holding nippers J'', operating substantially as shown and described.

8. In a paper-box machine, the main shaft B, its feed-driving wheel B', crank-slot B'', pitman B^3, actuating feed-operating pawls secured to the loosely-journaled disk B^4 mounted on the drive-shaft B^5 to which the ratchet-wheel is secured to impart an intermittent movement to the feed-rolls and its gear that actuates the gluing-roll, substantially as shown and described.

9. In a paper-box-making machine the horizontally-reciprocating table D^3 having the scoring-grooves and paper-holding nippers and knife-actuating arms mounted thereon, combined with the rotary scoring-rolls and folding-guides K' operating substantially as shown and described.

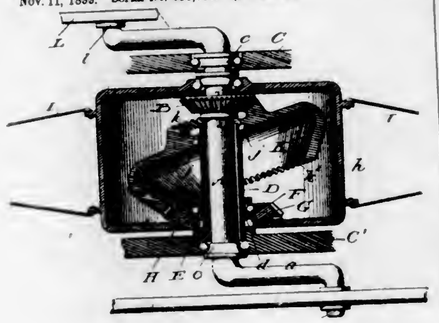
655,696. FASTENER. WILLIAM B. H. DOWSE, Newton, Mass., assignor to the Consolidated Fastener Company, Portland, Me. Filed May 5, 1899. Serial No. 715,757. (No model.)



Claim.—1. In a ball-and-socket fastener, a ball member having lands and grooves extending from base to top whereby elasticity is secured, substantially as and for the purpose set forth.

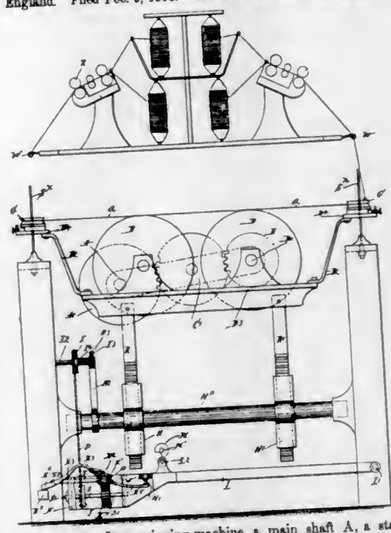
2. In a ball-and-socket fastener, a ball member of globular contour formed with ribs and grooves extending vertically from the base to top of the ball, whereby a circumferential elasticity is effected, substantially as and for the purpose specified.

655,697. BICYCLE. WILLIAM C. DUNN, Logansport, Ind. Filed Nov. 11, 1899. Serial No. 736,716. (No model.)



Claim.—The combination with the crank-axle, the sleeve eccentric therewith and held out of contact therewith, and having inclined ball-bearing surrounding the same, of a gear fast upon said axle, a hub, a gear moving surrounding the same, of a gear fast upon said axle, a hub, a gear moving surrounding the same, and having inclined ball-bearing on the said inclined therewith, and a gear having an inclined ball-bearing on the said inclined bearing of the sleeve and having angularly-disposed teeth upon its opposite faces to mesh directly with the gears on the axle and hub whereby rotation of the axle imparts a rotary movement to said hub, as set forth.

655,698. SPINNING-MACHINE. THOMAS EASTWOOD, Walsden, England. Filed Feb. 9, 1898. Serial No. 669,675. (No model.)

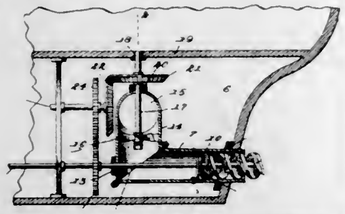


Claim.—1. In a spinning-machine, a main shaft A, a stationary frame, a vertically-movable support mounted therein, rack-bars connected with said movable support, a shaft H'' journaled in said frame, segmental gears mounted on said shaft and operating in connection with said rack-bars, a lever connected with said shaft and devices for intermittently depressing said lever to intermittently raise said rack-bars, comprising a lever-arm pivoted at its inner end to said stationary frame and provided at its outer end with a frame, a shaft O mounted therein, a worm and a ratchet-wheel rigidly mounted on said shaft O, a pawl-arm pivotally mounted on said shaft O and bearing a pawl adapted to operate in connection with said ratchet-wheel, a stop on said lever-arm against the inner and lighter end of which said pawl-arm normally rests, and a stop on said stationary frame which the outer end portion of said pawl is adapted to engage to force said pawl into operative engagement with said ratchet-wheel, said shaft H'' in said frame being flexibly and operatively connected with said lever and a cam operated by said main shaft and operating in connection with said lever-arm to intermittently depress the same, substantially as shown and described.

2. In a spinning-machine, a main shaft A, a stationary frame, a vertically-movable support mounted therein, rack-bars connected with said movable support, a shaft H'' journaled in said frame, segmental gears mounted on said shaft and operating in connection with said rack-bars, a lever connected with said shaft and devices for intermittently depressing said lever to intermittently raise said rack-bars, comprising a lever-arm pivoted at its inner end to said stationary frame and provided at its outer end with a frame, a shaft O mounted therein, a worm and a ratchet-wheel rigidly mounted on said shaft, a pawl-arm pivotally mounted on said shaft O and bearing a pawl adapted to operate in connection with said ratchet-wheel, a stop on said lever-arm against the inner and lighter end of which said pawl-arm normally rests, and a stop on said stationary frame which the outer end portion of said pawl is adapted to engage to force said pawl into operative engagement with said ratchet-wheel, said shaft H'' in said frame being flexibly and operatively connected with said lever, a cam operated by said main shaft, and operating in connection with said lever-arm to intermittently depress the same, a supplemental shaft S mounted at right angles to said shaft and provided with a gear-wheel in operative connection with said worm on said shaft, a chain-pulley on said supplemental shaft and a chain secured to and adapted to be wound thereon in connection with said lever, a cone-gear rigidly mounted upon said shaft H'' in said frame which is secured to said lever-arm, a second supplemental shaft T mounted in said frame and provided with a cone-gear, in

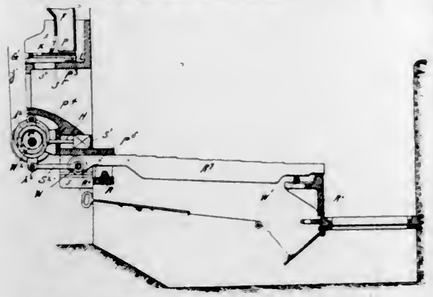
operative connection with said other cone-gear, and devices for turning said second supplemental shaft T to unwind said chain from said chain-pulley, substantially as shown and described.

655,699. SHIP'S PROPELLER. WILEY W. EDWARDS, Pusky, Miss. Filed July 15, 1899. Serial No. 723,919. (No model.)



Claim.—In a vessel the combination with a tube consisting of a horizontal longitudinal section projecting through the hull at the stern, a lateral horizontal section opening through the side of the hull and a vertical section connecting the two horizontal sections, the lateral horizontal section and the vertical section being of greater diameter than the longitudinal horizontal section, of a propeller mounted on the rear horizontal section, and a turbine wheel mounted on the vertical section and connected with the propeller for conjoint operation, a horizontal shaft journaled in the longitudinal horizontal section and projected into the hull, a screw-propeller thereon, a vertical shaft journaled in the vertical section and projected into the hull, an intermediate shaft, in the hull parallel with the propeller-shaft, intermeshing bevel-gears on the turbine and intermediate shafts and intermeshing gear-wheels on the intermediate and turbine shafts, substantially as described.

655,700. APPARATUS FOR CHARGING AND FEEDING FUEL TO STEAM-ENGINES. EMIL EFRAM, Brünn, Austria-Hungary. Filed Dec. 9, 1899. Serial No. 739,805. (No model.)

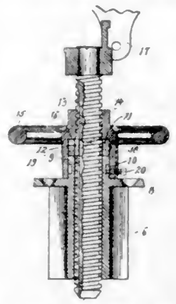


Claim.—1. In an apparatus of the class described, the combination with the longitudinally-movable and stationary fire-bars, and steps formed on the upper faces of said fire-bars, of the shaft W' supporting the rear ends of the movable fire-bars, another revoluble shaft, supporting the front ends of the movable fire-bars, wheels on said shaft and running on suitable rails secured to the frame of the fire-box, levers h^3 h^4 pivotally connected with said shaft and pivoted in pins z^2, elongated eyes in said levers a drive-shaft and cams E, E^4, keyed on the drive-shaft and the eccentric hubs e^4 of which are engaged by said elongated eyes, substantially as set forth.

2. In an apparatus of the class described the combination of the device for conveying fuel from the charging-funnel to the grating embodying the charging-funnel, a flat carriage the wheels of which run on the upper plate P' of the fire-box, a suitable aperture in the front wall of the charging-funnel, another aperture in the plate P, levers h', h^3 fulcrumed on pivots z^3 and pivotally connected with said carriage elongated eyes in the lower ends of said levers a drive-shaft W^3 and cams H', H^3 keyed on the drive-shaft and engaged by said elongated eyes, substantially as set forth.

655,701. REVOLVING CHAIR. JOHN ELLENBECKER, Port Washington, Wis. Filed July 2, 1900. Serial No. 22,252. (No model.)

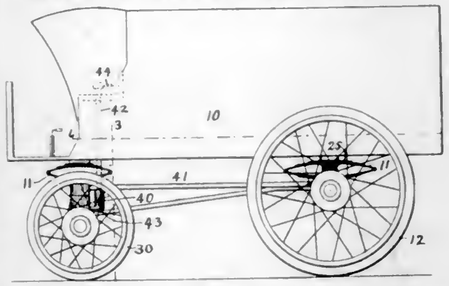
Claim.—1. A revolving-seat iron, comprising a hub provided with an upwardly-projecting tubular neck, a screw-threaded spindle rotatable freely in the hub and its neck, a sleeve resting on said neck and provided with an interior tongue projecting into a longitudinal groove in the spindle, and a nut turning by its thread on the spindle above the sleeve and resting on the sleeve and encircling said sleeve and said neck.



2. A revolving-seat iron, comprising a hub, a tubular neck projecting above the body of the hub, the hub and neck having an axial cylindrical bore of equal diameter throughout its length, a screw-threaded spindle fitted and rotatable freely in the hub and provided with a longitudinal groove, a sleeve resting on the neck and provided with a tongue entering the groove in the spindle, a nut turning by its thread on the spindle and provided with an annular shoulder at the lower end of its thread which shoulder rests on the sleeve, said nut also encircling said neck, and means securing the nut to the neck revolubly and releasably.

3. In combination, a chair-hub provided with an upwardly-projecting tubular neck, the neck having an annular exterior groove therein and the hub and neck having an axial cylindrical bore of equal diameter throughout its length, a screw-threaded spindle provided with a longitudinal groove fitted and rotatable freely in the hub and its neck, a sleeve resting on the neck and provided with a tongue projecting freely into the groove in the spindle and having a depression in its upper edge, a nut turning by its thread on the spindle and resting on the sleeve and provided with a boss adapted to enter the depression in the sleeve, said nut being extended downwardly about the sleeve and the neck, and a pin through the wall of the nut entering the groove about the neck of the hub.

655,702. AUTOMOBILE. FREDERICK G. FRANKENBERG, Chicago, Ill. Filed Oct. 23, 1899. Serial No. 734,482. (No model.)



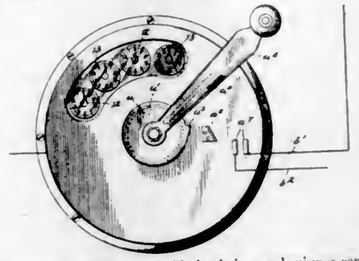
Claim.—1. In an automobile, a pair of driving-wheels mounted upon independently-movable shafts, a pair of independently-movable motors supported within the body of the vehicle, independent connections from the motors to the respective wheel-shafts, means for inclosing the motors so as to separate them from the carrying-space in the vehicle, separate means for inclosing the wheel-shafts, and a separate inclosing device for each of the independent connections from the motors to the wheel-shafts.

2. In an automobile, a pair of independent motors supported within the body of the vehicle and separated from the carrying-space thereof, connections from said motors to the shafts of independent wheels, a casing inclosing the shafts, and flexible casings surrounding the connections from the motors to the shafts and extending from the body of the vehicle to the casing for the shafts.

3. In the steering mechanism for an automobile, a pair of wheels each of which is movable about a pivot at right angles to its axis, a gear-segment and a gear for each wheel for so moving it, a sprocket-wheel connected to each gear, a chain connecting the two sprocket-wheels and serving to move them in unison, and a handle and connections by which said chain may be moved.

4. In the steering mechanism for automobiles, the combination with a pair of wheels each of which is movable about a pivot adjacent to the wheel and at right angles to its axis, of a sprocket-wheel for each wheel of the pair of wheels, a chain connecting said sprocket-wheels, and a handle provided with connections for moving said chain, substantially as described.

655,703. DEVICE FOR REGISTERING ELECTRIC CURRENTS. VICTOR G. FULLER, Toulon, Ill. Filed Dec. 16, 1899. Serial No. 740,541. (No model.)



Claim.—1. In combination with the timing mechanism, a combined winding-lever and switch-arm, a dog thereon whereby it is connected with the winding mechanism and a cam-trip for disengaging the dog from the winding mechanism as the circuit is closed.

2. In combination with the timing mechanism, a cut-out switch, a cut-out arm suitably pivoted, means for winding the timing mechanism, a wheel carrying a stud rotated by the timing mechanism, said stud being so arranged as to operate the cut-out lever; a latch for holding the cut-out lever in contact with the switch, said latch being in the path of travel of the stud whereby it is tripped and the cut-out switch released.

3. In combination with a timing mechanism of the character noted, a combined lever and switch-arm, an internal gear-wheel having a peripheral shoulder, a pinion of the winding device meshing with the internal gear-wheel, a dog on the winding-lever and switch-arm, a switch, a cam-trip for disengaging the dog from the peripheral shoulder, a cut-out switch, means whereby the cut-out switch is closed by winding the spring of the timing mechanism, means whereby the cut-out switch is held closed, a magnet in circuit with the switch and cut-out switch, and means controlled by the magnet for arresting the balance-wheel of the timing mechanism.

4. In combination with a timing mechanism of the character described, a switch, a combined winding-lever and switch-arm, a cut-out switch, a cut-out switch-lever and a magnet in electrical connection, a latch for holding the cut-out switch and its arm in contact, and a wheel under control of the timing mechanism for tripping the latch and releasing the cut-out lever.

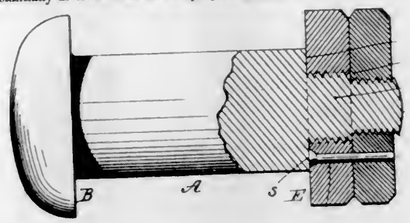
5. In combination with a timing mechanism of the character described, a cut-out switch and its lever, means for throwing the lever and switch in contact when the spring of the winding-mechanism is wound, a latch for retaining the parts in contact, a wheel carrying a pin for engaging and throwing the latch out of engagement with the cut-out lever, a magnet in circuit with the cut-out arm, an armature for controlling a lever, said lever being arranged to arrest the timing mechanism when the magnet releases the armature.

6. In a register for electric currents, a casing having a switch, a combined winding-lever and switch-arm acting in conjunction with the switch, a gear-wheel operated by the winding-lever, connections from the gear-wheel to the spring of the winding mechanism, a cut-out switch and lever within the casing, a wheel rotated by the action of the timing mechanism, an insulated pin on the wheel for throwing the cut-out lever into contact with the cut-out switch when the spring is wound, means for holding the cut-out lever and cut-out switch in contact until tripped by the pin of the wheel and means whereby the timing mechanism is arrested when the cut-out switch is opened or when the strength of the current diminishes.

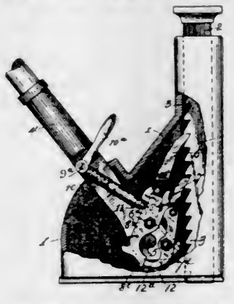
7. In a register for electric currents, the timing mechanism, a cut-out, a controlling-wheel rotated by the timing mechanism, a latch for holding the cut-out switch closed, means for tripping the latch, a magnet in circuit with the cut-out switch, a lever controlled by the magnet for arresting and releasing the timing mechanism, a switch, a winding-lever and switch-arm, means thereon for engaging and rotating a gear-wheel and a trip for releasing the gear-wheel when the circuit is closed.

655,704. NUT-LOCK. RICHARD A. GAGE, Pawtucket, R. I. Filed Nov. 27, 1899. Serial No. 738,439. (No model.)

Claim.—A bolt having a portion of its shank reduced in diameter and screw-threaded for a certain distance in one direction, thus forming a threaded portion with a circumferential shoulder between it and said shank, and also having the end portion still further reduced in diameter and screw-threaded in the opposite direction, thus forming a circumferential shoulder between said two threaded portions, in combination with two nuts, one engageable with the first-mentioned threaded portion of the bolt and the other engageable with the oppositely-threaded end of the bolt, one of said nuts having a hole through it and the other having a corresponding hole through it with a countersink at the end thereof, which is in contiguity with the circumferential shoulder first named, and a pin driven through both said holes and having a riveted head in said countersink, substantially as shown and for the purpose specified.



655,705. LIFTING-JACK. GEORGE B. GALLAGHER, St. Mary's, Ohio. Filed Apr. 23, 1900. Serial No. 13,856. (No model.)



Claim.—1. In a lifting-jack, a housing or frame, a ratchet-bar longitudinally movable therein, a lever or handle fulcrumed in the housing or frame, two pawls pivoted on said lever at opposite sides of its fulcrum, a spring-controlled lever pivoted upon said first-mentioned lever and adapted to actuate both pawls either toward or away from the ratchet-bar.

2. In a lifting-jack, a ratchet-bar, a lever, two pawls pivoted upon said lever, a lever fulcrumed upon said first-mentioned lever adapted to throw said pawls into or out of operative position, a spring and means for shifting the stress of said spring upon said last-mentioned lever from one side of its fulcrum to the other.

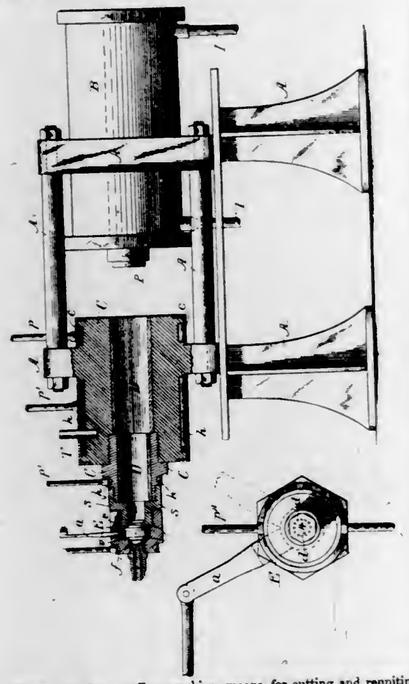
3. In a lifting-jack, a housing or frame, a ratchet-bar movable therein a handle fulcrumed in the housing or frame, a pair of pawls pivoted upon said handle and adapted to engage said ratchet-bar, a pivoted lever fulcrumed upon the handle and substantially parallel with one of said pawls and adapted to swing said pawl upon its pivot in either direction, a finger upon the other pawl in the same plane with said lever, a spring mounted upon said handle, means for applying the stress of said spring to said lever at either side of its fulcrum, and projections upon the adjoining faces of said lever and said finger the arrangement of which projections is such that when the spring-pressure is applied to one side of the fulcrum of said lever both pawls will normally engage the ratchet-bar, and when the spring-pressure is applied to the opposite side of the fulcrum of said lever the pawls will alternately be thrown out of engagement with said ratchet-bar at each throw to and fro of the handle.

4. In a lifting-jack, a housing or frame, a ratchet-bar movable therein, a handle fulcrumed in the housing, a pair of pawls pivoted upon said handle and adapted to alternately engage the teeth of said ratchet-bar, whereby the ratchet-bar is lifted step by step by the alternate action of the pawls, and mechanism mounted upon said handle, independently of the housing or frame, for holding said pawls in normal engagement with the ratchet-bar or for disengaging the pawls from the ratchet-bar alternately at each to-and-fro movement of the handle, whereby the ratchet-bar is lowered by the alternate action of the pawls.

5. In a lifting-jack, a ratchet-bar, a handle, a lever fulcrumed thereon, a pair of pawls controlled by said lever, a barrel pivoted upon said handle, a compression-spring in said barrel, a plunger actuated by said spring and engaging said lever, and means for shifting said barrel, spring

and plunger, whereby the stress of the spring may be shifted to opposite sides of the fulcrum of said lever.

655,706. STUFFING-MACHINE FOR MANUFACTURING RODS AND TUBES FROM PYROXYLIN COMPOUNDS. George C. Gillmore, Newark, N. J., assignor to The Celluloid Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 14, 1900. Serial No. 8,612. (No model.)



Claim.—1. In a stuffing-machine, means for cutting and reuniting at intervals the material passing through the stuffer, such cutting being in a direction transverse to the line of flow of said material, substantially as described.

2. In a stuffing-machine, a rotating perforated disk adjacent to and behind the nozzle, substantially as and for the purpose described.

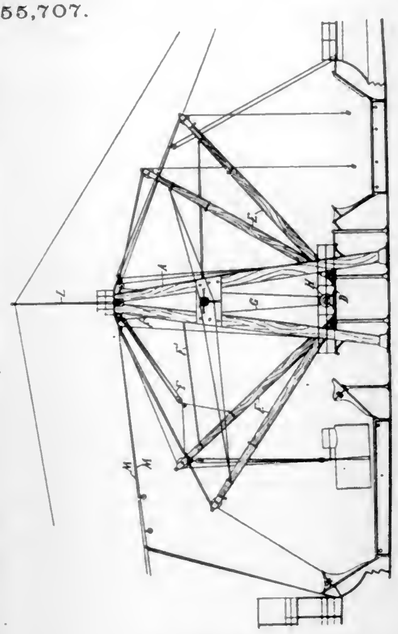
3. In a stuffing-machine, substantially as described, the rotating disk E having the rocking arm *a*, substantially as and for the purpose set forth.

655,707. MAST FOR STEAM VESSELS. William C. Haynes, Glasgow, Scotland. Filed June 1, 1899. Serial No. 719,003. (No model.)

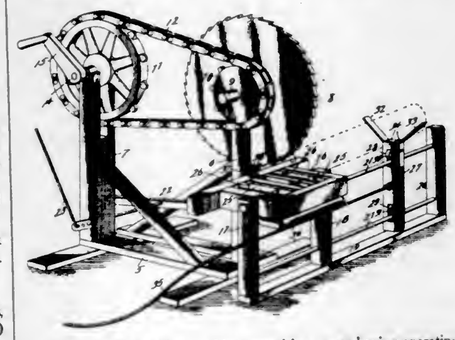
Claim.—1. The combination with the hull or body of a steam vessel having a continuous deck in which are formed hatch-openings provided with hinged hatch-covers, of the open-work structure of framework having its ends secured to the hull near the opposite sides thereof and extending transversely across the vessel, a platform arranged above a portion of the deck at such distance therefrom as to permit free movements on the deck, and arranged between the ends of the said open-work structure, and loading-cranes mounted on said platform and arranged to swing vertically, and horizontally over the hatch-openings in the deck of the vessel and outward over the sides of the vessel, substantially as described.

2. The combination with the hull or body of a steam vessel having a continuous deck with hatch-openings therein, of a plurality of masts each consisting of an open-work structure having its ends secured to the hull near the sides thereof and extending transversely across the vessel, platforms supported above the deck of the vessel and between the ends of the said open-work structure, cargo spans or stays running fore and aft the vessel and connecting the upper portions of the said mast structure, travelers or trolleys upon the said spans or stays whereby the cargo may be carried from the platforms to the hatchways near the center of the vessel and vice versa, and loading-cranes mounted upon the platforms adapted to swing horizontally over the sides of the vessel.

655,707.



655,708. WOOD-SAWING MACHINE. Jesse E. Herman, Macon, Miss. Filed May 9, 1900. Serial No. 16,077. (No model.)



Claim.—1. A sawing-machine comprising a saw having operating means, a tilting table, a frame movable with the table, a carriage slidably mounted in the frame and adapted to receive and feed the logs across the table, and a lever pivoted adjacent the table, said lever having a forked end provided with a bearing-roller engaging the under side of the table to tilt it when the lever is operated.

2. A sawing-machine comprising a saw having operating means, a tilting table adjacent to the saw, a frame pivotally connected with the table, said frame comprising guide-rods, means for tilting the frame and table, and a carriage comprising a post slidably engaged with the rods, said carriage having a forked npper end to receive the logs and provided with means for moving it to feed the logs over the table.

3. A sawing-machine comprising a saw having operating means, a table pivoted adjacent the saw for tilting movement, a frame pivotally connected with the table, said frame comprising guide-rods, a carriage slidably engaged with the guide-rods and having a forked upper end to receive the logs, means for moving the carriage to feed the logs across the table, and a lever pivoted adjacent to the table, said lever having a forked end provided with a bearing-roll resting against the under side of the table, whereby when the lever is operated, the table with the log thereon will be tilted.

655,709. VEHICLE-WHEEL. Frank M. Hilton, John S. Hilton, William W. Hilton, and Robert M. Merriman, Akron, Ohio. Filed Dec. 26, 1899. Serial No. 741,621. (No model.)

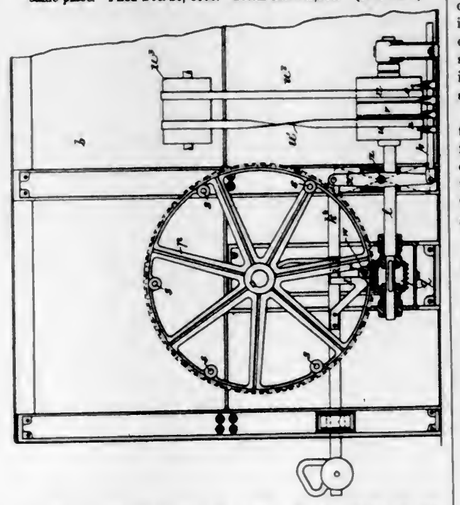


Claim.—1. An elastic tire having metal stays embedded transversely therein and crimped or fluted intermediate of their extremities, substantially as described.

2. An elastic tire having metal stays embedded transversely therein and crimped throughout their length, the crimps extending at a right angle to the length of the tire, substantially as specified.

3. In a vehicle-wheel, a channel-iron having its seat of approximately wedge form, one of the walls terminating in an inturned flange and the other wall having the outer edge portion of its inner face curved, an elastic tire having its base portion of wedge form to snugly fit the seat of the channel-iron and formed with lateral offsets, one of the offsets engaging under the aforesaid inturned flange, a binder engaging over the other offset, and crimped stays embedded transversely in the base portion of the tire with their end portions extending under, respectively, the said inturned flange and binder, substantially as described.

655,710. APPARATUS FOR DRYING SUGAR. Ludwig Hirt, Grevenbroich, Germany, assignor to the Maschinenfabrik Grevenbroich, same place. Filed Dec. 20, 1899. Serial No. 740,960. (No model.)



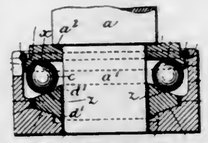
Claim.—1. In an apparatus for drying sugar in baskets, the combination of traveling endless basket-conveying chains, a heating-chamber through which said chains travel, a driving-gear for said chains, said driving-gear comprising a worm-wheel secured to one of the chain-wheel shafts, a worm cooperating with said worm-wheel, a fixed and two loose belt-pulleys on the shaft of said worm, means for shifting the belt on said pulleys to bring the chains to a standstill or to cause a forward or a reverse movement of the endless chains and means for automatically effecting a movement of said shifting means.

2. In an apparatus for drying sugar in baskets, a gear consisting of a worm-wheel on one of the chain-wheel shafts, a screw taking into said worm-wheel, said worm-wheel having apertures near the periphery thereof, a removable bolt adapted to be inserted in any of said apertures and a bar for shifting the belts, a nose protruding from said bar, said nose lying within the path of rotation of the bolt of said worm-wheel.

3. In an apparatus for drying sugar in baskets, the combination of a drying-chamber, endless chains moving in said chamber, rollers carried by said chains, rails for carrying said rollers and extending at one end of the apparatus out of the drying-chamber, a carriage traveling on said extensions of the rails and baskets provided with hooked hangers, which baskets are removable from and adapted to be carried by said carriage into and out of said heated chamber and to be automatically caught and released from said endless chains at a single point in the apparatus, whereby the baskets may be removed from or deposited on said carriage and means for causing a forward or reverse movement of the chains at will or for maintaining the chains against movement.

4. In an apparatus for drying sugar in baskets, a carriage for transporting the baskets into the reach or out of the reach of the endless chains traveling through the heated chamber, a reversing belt-gear for moving the endless chains in the forward or reverse direction and means for partly automatically shifting the belts in one direction and for shifting the belts by hand in the opposite direction.

655,711. THRUST-BEARING FOR SHAFTS. Ernst G. Hoffmann, Chelmsford, England. Filed Oct. 4, 1899. Serial No. 732,498. (No model.)



Claim.—1. In a ball thrust-bearing and in combination, a reversible cone member having two oppositely-arranged cone-faces each provided with a ledge for retaining the balls, a shaft on which the cone fits loosely and on which it is free to rock, and a casing having a seat for such member shaped to correspond to the face of same and on which it can take its rocking movement, substantially as described.

2. In a ball thrust-bearing and in combination, a casing having an opening in its base, a shaft having a reduced portion adapted to pass loosely into same, a cover for the casing forming the cup member of a cup-and-cone ball-bearing, on the upper side of which the larger portion of the shaft rests, a cone member in the casing, and an open spring-ring inserted in a groove in the casing above the cover for retaining the parts in place, substantially as described.

3. In a ball thrust-bearing, and in combination, a casing, a cover for the same forming the cup member of a cup-and-cone ball-bearing, means for retaining such cup in place, and a reversible cone member having two oppositely-arranged cone-faces each provided with a ledge for retaining the balls, said casing having a seat for such member shaped to correspond to either face of the same and on which it is capable of movement, substantially as described.

655,712. PHOTOCHROMOSCOPIC APPARATUS. Frederic E. Ives, Philadelphia, Pa. Filed Oct. 7, 1899. Serial No. 732,915. (No model.)



Claim.—1. In an instrument of the character described, the combination of a casing, a series of reflectors inclined one behind another in the same line, two of said reflectors being transparent, and a second series of reflectors disposed one behind another in a line which is diagonal to that of the first series of reflectors, substantially as specified.

2. In an instrument of the character described, the combination of a casing, a series of color-screens, a series of reflectors inclined one behind another in the same line, two of said reflectors being transparent, and a second series of reflectors disposed one behind another in a line which is diagonal to that of the first series of reflectors, substantially as specified.

3. In an instrument of the character described, the combinaton of a casing, a series of reflectors inclined one behind another in the same line, two of said reflectors being transparent, and a second series of reflectors

disposed one behind another in a line which is diagonal to that of the first series, said second set of reflectors being disposed so as to reflect the rays in a direction at right angles to that in which they are reflected by the transparent reflectors of the first series, substantially as specified.

4. In an instrument of the character described, the combination of a casing, three reflectors inclined one behind another in the same line, two of said reflectors being transparent, and a second series of three reflectors inclined one behind another in a line which is diagonal to that of the first series of reflectors, substantially as specified.

5. In an instrument of the character described, the combination of a casing, a series of inclined primary reflectors disposed one behind another in the same line, two of said reflectors being transparent, a series of secondary reflectors disposed in a line diagonal to that of the first series, and means for supporting a sensitive plate or plates in a position diagonal to the axial line of the incident rays, substantially as specified.

6. In an instrument of the character described, the combination of a casing, a series of inclined primary reflectors disposed one behind another in the same line, two of said reflectors being transparent, and a series of secondary reflectors disposed in a line diagonal to that of the first series, and each set in a plane at an angle to the plane of the primary reflector whereby the reflected images will have their horizon-lines disposed diagonally in respect to the longitudinal line of the series of images, substantially as specified.

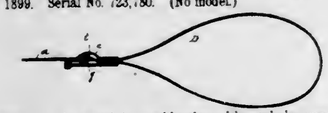
7. In an instrument of the character described, the combination of a casing, a series of reflectors inclined one behind another in the same line, two of said reflectors being transparent, a second series of reflectors inclined one behind another in a line which is diagonal to that of the first series, and means for mounting the casing at such an angle that the images produced will have their horizon-lines disposed parallel with or at right angles to the longitudinal lines of the plate or series of plates on which said images are formed, substantially as specified.

8. In an instrument of the character described, the combination of a series of inclined primary reflectors disposed one behind another in the same line, two of said reflectors being transparent, a series of secondary reflectors disposed in a line diagonal to that of the first series, a casing for containing said reflectors, a lens-bar having a lens for each division of the reflected rays, and means for adjusting said lens-bar for focusing purposes, substantially as specified.

9. In an instrument of the character described, the combination of a casing, a series of reflectors inclined one behind another in the same line, two of said reflectors being transparent, a second series of reflectors inclined one behind another in a line which is diagonal to that of the first series of reflectors, and diaphragms of different aperture, one for each image produced, substantially as specified.

10. In an instrument of the character described, a series of inclined primary reflectors disposed one behind another in the same line, two of said reflectors being transparent, a series of secondary reflectors disposed in a line diagonal to that of the first series and a sensitive-plate support inclined at an angle of forty-five degrees from the horizontal when the instrument is in use, substantially as specified.

655,713. SEAL. OSWALD F. JORDAN, Jackson, Mich. Filed July 14, 1899. Serial No. 723,780. (No model.)



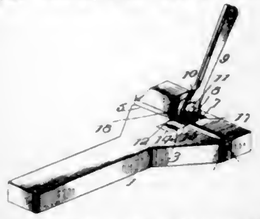
Claim.—1. In a seal, in combination with a tubular guard closed at one end, a strap one end of which is secured within the guard and the free end of which is provided with a hole near its extremity, a tongue and hook formed by bending outward portions of the strap, said tongue and hook being located within the guard, the said tongue having its point directed toward the closed end of the guard, and the hook having its point directed toward the mouth end of the guard and underlying the point of the tongue, substantially as described.

2. In a seal, in combination with a tubular guard provided with a tag attachment, a strap having one end fixed in the tubular guard, and provided in that part which is surrounded by the guard, with a hook, the bill of which points toward the mouth of the guard, and a tongue, the point of which lies toward and engages over the bill of said hook, and having the other end provided with a hole, substantially as described.

3. In a seal, in combination with a flat tubular guard having an enlargement in the chamber of the guard, a strap one end of which is fixed to the guard and is provided in the space within the enlarged portion of the chamber with a hook, the bill of which extends toward the mouth of the tube, and with a tongue, the point of which lies over the bill of the hook, the other end of said strap being provided with a hole adapted to engage over said tongue, substantially as described.

4. In a seal, in combination with a strap adapted to be bent on itself, a tubular guard provided with an inbent edge at the mouth-opening, whereby the tube is strengthened, means arranged on one end of said strap for engaging the other end of said strap, the said tubular guard being arranged to engage closely around the two ends of the strap, and being provided with an enlarged chamber to allow the locking parts of the seal to pass to the position of locking engagement, substantially as described.

655,714. SAW-SET. PETER C. KEMPER and WILLIAM E. RADER, Columbia, Mo. Filed May 3, 1900. Serial No. 15,373. (No model.)



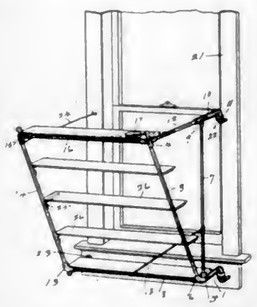
Claim.—1. In a saw-set, a base having a seat in its upper face of wedge form in cross-section, and provided with swaging mechanism, and a guide having its base portion removably fitted in the said seat and having its upper portion projecting above the plane of the base, substantially as described.

2. In a saw-set, a base having a seat in its upper face of wedge form in cross-section, and provided with swaging mechanism, and a guide having its base portion removably fitted in the said seat and having its upper portion projecting above the plane of the base, and cut away on its inner or rear face, as and for the purpose described.

3. In a saw-set, a base having an anvil, and a setting-lever reversibly fulcrumed upon the base and provided with a plurality of different-sized cam portions to be brought into action by differently positioning the said lever, substantially as specified.

4. The herein-described saw-set, comprising a base having a recess, transversely-alined seats at the sides of the recess, and having a projection at one side of the recess, an anvil removably fitted in the said recess, guide-strips detachably fitted in the said seats, and a lever reversibly fulcrumed to the said projection and having a plurality of cam-faces to be brought into active operation by differently positioning the lever, substantially as specified.

655,715. FLOWER-STAND. WILLIAM F. KESSLER, Auburn, Ind. Filed Feb. 7, 1900. Serial No. 4,361. (No model.)

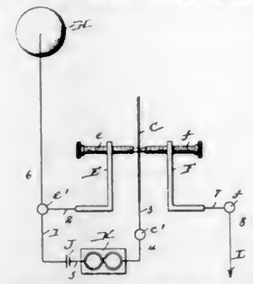


Claim.—1. In a flower-stand, the combination of pivotal supporting-arms; an oblique frame detachably secured to said arms; and a series of shelves mounted on the inclined face of said frame, the said frame being adapted to swing to and from the window-casing as described.

2. In a flower-stand the combination of the pivoted arms; the skeleton frame detachably secured thereto; consisting of the horizontal rods 12, 8 and 16, the upright rods 7 and the oblique rods 3 and 14, connected as shown, and a series of shelves arranged upon the said oblique rods as described.

3. A flower-stand consisting of two swinging sections, pivotally mounted at opposite sides of the window-casing, adapted to be united as shown, each of said sections consisting of an oblique frame detachably secured to arms and provided with a series of shelves mounted on the inclined face of said frame.

655,716. TELEGRAPHIC RELAY. ISIDOR KITSEE, Philadelphia, Pa., assignor to Charles E. Wilson, same place. Filed May 20, 1899 Renewed Dec. 21, 1899. Serial No. 741,189. (No model.)

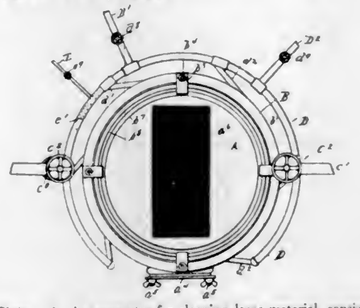


Claim.—1. In telegraphy a static relay consisting of a vibrating diaphragm, partially or wholly conducting in electrical contact with a circuit containing a generator of electricity and a receiving device, in juxtaposition to a conductor electrically connected to the battery-circuit and the aerial conductor, in combination with a conductor connected to the ground.

2. In telegraphy a relay consisting of two conductors in proximity to each other, one of said conductors being connected to the aerial conductor and one terminal of the local circuit containing a battery and a receiving device, the other conductor being connected to the ground, in combination with a vibrating diaphragm, partially or wholly conducting, placed between said conductors, the diaphragm being connected to the second terminal of the circuit containing the battery and receiving device.

3. A static relay consisting of a vibrating diaphragm wholly or partially conducting, in electrical contact with an adjustable conductor connected to one terminal of the receiving-circuit, a second adjustable conductor placed in proximity but out of electrical connection with said vibrating diaphragm, said second adjustable conductor being connected to the other terminal of the receiving-circuit.

655,717. MACHINE FOR WASHING FIBROUS OR LOOSE MATERIAL. EUGENE KÖPPELMANN, New York, N. Y. Filed Apr. 14, 1900. Serial No. 12,810. (No model.)



Claim.—1. An apparatus for cleaning loose material, consisting of a tank with a free and unobstructed interior and systems of piping connected with ports in said tank and said systems and ports so arranged as to introduce air, water or steam into said tank, under such pressure, quantity and in such a manner as to cause the contents of the tank to become rapidly and violently agitated.

2. An apparatus for washing loose material consisting of a tank and systems of piping connected therewith tangentially and perpendicularly arranged, for supplying air, water, hot water or steam under pressure, through the tank and in a manner to cause the contents of said tank to whirl and become rapidly agitated.

3. An apparatus for cleaning loose material, consisting of a tank provided with a cylindrical sieve mounted in its interior, a sieve mounted in its bottom, means for supplying under pressure, either water, air, steam or all of them, through ports in its side, and ports connected with the bottom of said tank, and means for drawing off foul water.

4. An apparatus for cleaning loose material, consisting of a tank provided with sieves, and means for supplying pressure to said tank either of water, air, steam, or all of them, through ports in its sides tangentially arranged, and means for drawing off the foul water.

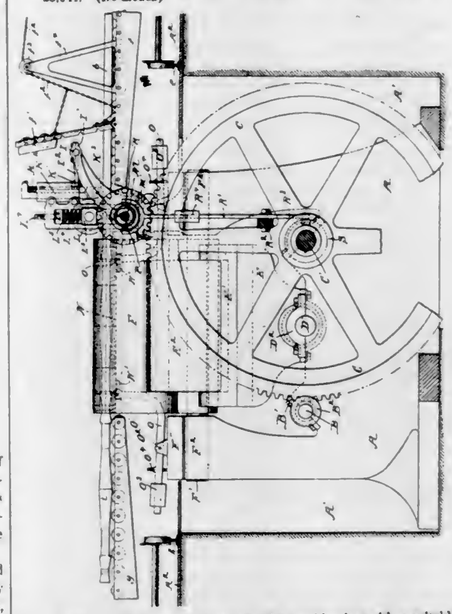
5. An apparatus for cleaning loose material, consisting of a tank provided with a cylindrical sieve mounted in its interior, a sieve mounted in its bottom, and means for supplying under pressure, either water, air, steam or all of them through ports in its sides tangentially arranged, and also through ports directly underneath the sieve in the bottom of the tank.

6. An apparatus for cleaning loose material, consisting of a cylindrical tank provided with a cylindrical sieve mounted in its interior, a sieve mounted in its bottom, a chamber underneath said bottom sieve, and means for supplying pressure either of water, air, steam or all of them through ports in its sides, and ports in said chamber, together with means for drawing off the foul water.

7. An apparatus for cleaning loose material consisting of a tank provided with a cylindrical sieve mounted in its interior, a sieve mounted in its bottom, a chamber underneath said sieve in which is mounted a spreader, directly connected with a pipe supplying steam and air or both of them under pressure, and means for supplying pressure either of water, air, steam, or all of them through ports in the sides of said tank and ports in the bottom and ports in the chamber, together with means for drawing off the foul water.

8. An apparatus for cleaning loose material, which consists of a cylindrical tank, provided with a cylindrical sieve mounted in its interior, a sieve mounted in its bottom, a door opening into the lower part of said tank, a chamber underneath said bottom sieve in which is mounted a spreader directly connected with a pipe containing air and steam, or either of them under pressure, and systems of piping provided with suitable valves connected with ports tangentially arranged in the sides of the tank, near the bottom of the same, and systems of piping with suitable valves connected with the chamber underneath the tank, said systems adapted to supplying air, water and steam or either of them to the tank, and systems of piping provided with suitable valves situated adjacent to the cylindrical sieve for the purpose of drawing off the foul water.

655,718. APPARATUS FOR SWAGING AXLES. JOHN LANZ, Pittsburg, Pa. Filed Apr. 24, 1897. Renewed July 9, 1900. Serial No. 23,041. (No model.)



Claim.—1. In swaging apparatus, the combination with a suitable frame, of an eccentric-shaft, a yoke mounted on said shaft, a sliding block engaging said yoke, oppositely-arranged die-boxes, and connections between said sliding block and said die-boxes, substantially as set forth.

2. In swaging apparatus, the combination with a suitable frame, of an eccentric-shaft, a yoke mounted on said shaft, a sliding block engaging said yoke, a shaft at right angles to said eccentric-shaft, die-boxes mounted on the former, and links connecting said die-boxes to said sliding block, substantially as set forth.

3. In swaging apparatus, the combination with a suitable frame, of an eccentric-shaft, a yoke mounted on said shaft, a sliding block engaging said yoke, a shaft at right angles to said eccentric-shaft, die-boxes mounted on the former, links connecting said die-boxes to said sliding block, and a

cap over the end of said shaft carrying the die-boxes, and bolts passing through said cap and said frame, substantially as set forth.

4. In swaging apparatus, the combination with a suitable frame, of an eccentric-shaft, a yoke mounted on said shaft, oppositely-arranged die-boxes, connections between said yoke and said die-boxes, an elliptic gear-wheel on said eccentric-shaft, a shaft parallel to said eccentric-shaft, and an elliptic gear-wheel on said shaft meshing with the elliptic gear-wheel on said eccentric-shaft, substantially as set forth

5. In swaging apparatus, the combination with a suitable frame, of oppositely-arranged die-boxes, mechanism for operating same, and a yielding table located between said die-boxes, substantially as set forth.

6. In swaging apparatus, the combination with a suitable frame, of oppositely-arranged die-boxes, mechanism for operating same, a table located between said die-boxes, and rocking arms connected to said table, substantially as set forth.

7. In swaging apparatus, the combination with a suitable frame, of oppositely-arranged die-boxes, mechanism for operating same, a table between said die-boxes, said table having slots therein, and rocking arms engaging said slots, substantially as set forth.

8. In swaging apparatus, the combination with a suitable frame, of oppositely-arranged die-boxes, mechanism for operating same, a table between said die-boxes, said table having slots therein, rocking arms engaging said slots, and weights at the outer ends of said arms, substantially as set forth.

9. In swaging apparatus, the combination with a suitable frame, of oppositely-arranged die-boxes, mechanism for operating same, a table between said die-boxes, said table having slots therein, rocking arms pivoted to said frame, said arms engaging said slots, weights on the outer ends of said arms, and a stop on said arms, substantially as set forth.

10. In swaging apparatus, the combination with a suitable frame, of oppositely-arranged die-boxes, mechanism for operating same, a table between said die-boxes, feed-rolls and mechanism for arresting the momentum of the bar fed thereto and for imparting an intermittent rotary movement to said roll, substantially as set forth.

11. In swaging apparatus, the combination with a suitable frame, of oppositely-arranged die-boxes, mechanism for operating same, a table between said die-boxes, feed-rolls, mechanism for imparting an intermittent rotary movement to said rolls, a gate for said rolls, and mechanism for raising and lowering said gate, substantially as set forth.

12. In swaging apparatus, the combination with a suitable frame, of oppositely-arranged die-boxes, mechanism for operating same, a table between said die-boxes, feed-rolls, mechanism for imparting an intermittent rotary movement to said rolls, a gate for said rolls, a roller on said gate, and mechanism for raising and lowering said gate, substantially as set forth.

13. In swaging apparatus, the combination with a suitable frame, of oppositely-arranged die-boxes, mechanism for operating same, a table between said die-boxes, feed-rolls, mechanism for imparting an intermittent rotary movement to said rolls, a vertically-movable gate for said rolls, a rock-shaft, a projection on said rock-shaft adapted to engage said gate, and mechanism for rocking said rock-shaft, substantially as set forth.

14. In swaging apparatus, the combination with a suitable frame, of oppositely-arranged die-boxes, mechanism for operating same, a table between said die-boxes, feed-rolls, mechanism for imparting an intermittent rotary movement to said rolls, a rock-shaft, a projection on said rock-shaft adapted to engage said gate, a pitman connecting said rock-shaft with a crank-shaft, substantially as set forth.

15. In swaging apparatus, the combination with a suitable frame, of oppositely-arranged die-boxes, mechanism for operating same, feed-rolls, a shaft for driving said rolls, a loose pinion on said snaft, a driven gear-wheel engaging said pinion, a sliding clutch on said shaft, a lever engaging said clutch, and cam mechanism engaging said lever for throwing said clutch into and out of engagement with said pinion, substantially as set forth.

16. In swaging apparatus, the combination with a suitable frame, of oppositely-arranged die-boxes, mechanism for operating same, feed-rolls, a shaft for driving said rolls, a loose pinion on said shaft, said pinion having a clutch-face, a driven gear-wheel eugaging said pinion, a sliding clutch on said shaft, a clutch-face formed in said frame, a lever engaging said clutch, and mechanism for throwing said clutch into engagement with said clutch-faces alternately, substantially as set forth.

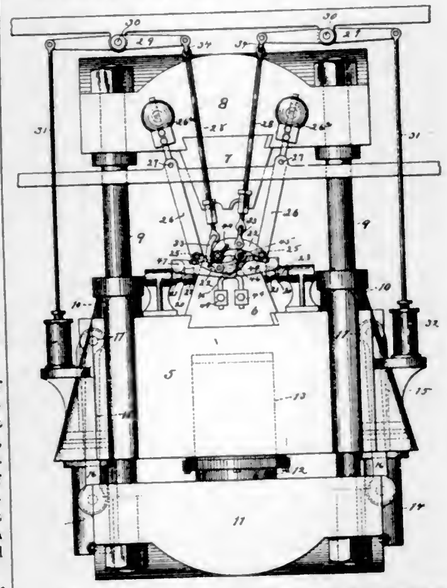
17. In clutch-operating mechanism, the combination with a sliding clutch, an operating-lever, a coupling-box mounted on a power-driven shaft, said coupling-box having a lug therein, a cam in said box having a lug engaging with said lug in said coupling-box, and means for securing said cam therein, said cam being adapted to engage said lever, substantially as set forth.

18. In clutch-operating mechanism, the combination with a sliding clutch, an operating-lever, a coupling-box mounted on a power-driven shaft, said coupling-box having a lug therein, a cam in said box having a lug engaging with said lug in said coupling-box, a liner inserted between said lugs, and means for securing said cam within said coupling-box, said cam being adapted to engage said lever, substantially as set forth.

19. In swaging apparatus, the combination with a suitable frame, of dies and mechanism for operating same, a table between said dies, feed-rolls arranged in suitable housings, vertically-movable journal-boxes within which the upper feed-roll is mounted, and a spring interposed between said boxes and a suitable abutment, substantially as set forth.

20. In swaging apparatus, the combination with a suitable frame, of dies and mechanism for operating same, a table between said dies, feed-rolls arranged in suitable housings, vertically-movable journal-boxes within which the upper feed-roll is mounted, a spring interposed between said boxes and a movable block, and a set-screw in said housings adapted to engage said block, substantially as set forth.

655,719. APPARATUS FOR HANDLING FORGINGS. JOHN LANE, Pittsburg, Pa. Filed Feb. 25, 1899. Renewed July 9, 1900. Serial No. 23,042. (No model.)



Claim.—1. In apparatus for handling forgings, the combination of suitable dies having a die-seat adapted to receive the blank, swinging arms adapted to engage the opposite ends of said blank, said arms being arranged at right angles to said die-seat, and said swinging arms carrying mechanism for moving said arms horizontally toward each other, substantially as set forth.

2. In apparatus for handling forgings, the combination of suitable dies having a die-seat adapted to receive the blank, swinging arms, rotatable shafts in said arms adapted to engage the opposite end faces of said blank, and mechanism carried by said swinging arms for moving said arms toward each other, substantially as set forth.

3. In apparatus for handling forgings, the combination of suitable dies having a die-seat adapted to receive the blank, swinging arms adapted to engage the opposite end faces of the blank, and a telescopic shaft carried by said swinging arms for moving said arms toward each other, substantially as set forth.

4. In apparatus for handling forgings, the combination of suitable dies having a die-seat adapted to receive the blank, swinging arms adapted to engage the opposite end faces of the blank, a hollow telescopic shaft on which said arms are mounted, one section of said shaft having a piston-chamber therein, and the other section having a piston adapted to reciprocate in said chamber, substantially as set forth.

5. In apparatus for handling forgings, the combination of suitable dies having die-seats adapted to receive the blanks, one die-seat formed to shape one portion of a blank, the other die-seat formed to shape the opposite portion of another blank, and mechanism for transferring the blanks from one die-seat to the other, substantially as set forth.

6. In apparatus for handling forgings, the combination of suitable dies having die-seats adapted to receive the blanks, one die-seat formed to shape one portion of a blank, the other die-seat formed to shape the opposite portion of another blank, swinging arms adapted to engage the ends of said blanks, and mechanism for raising and lowering said arms, substantially as set forth.

7. In apparatus for handling forgings, the combination of suitable dies having a die-seat adapted to receive the blank, swinging arms, rotatable shafts on said arms, projections on said shafts adapted to engage indentations at the ends of said blank, and mechanism for automatically turning one of said shafts to cause its projections to register with the indentations on the blank, substantially as set forth.

8. In apparatus for handling forgings, the combination of suitable dies having a die-seat adapted to receive the blank, swinging arms, rotatable shafts on said arms, projections on said shafts adapted to engage indentations at the ends of said blank, and a spring on one of said arms engaging its shaft and adapted to turn same, substantially as set forth.

9. In apparatus for handling forgings, the combination of suitable dies having a die-seat adapted to receive the blank, swinging arms, rotatable shafts on said arms, projections on said shafts adapted to engage indentations at the ends of said blank, and a spring on one of said arms engaging an oblong lug on its shaft, substantially as set forth.

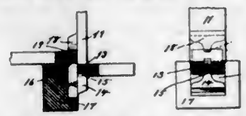
10. In apparatus for handling forgings, the combination of suitable dies having a die-seat adapted to receive the blank, swinging arms, rotatable shafts on said arms, projections on said shafts adapted to engage indentations at the ends of said blank, and a spring on one of said arms engaging an oblong lug on its shaft, said lug having curved faces, substantially as set forth.

11. In apparatus for handling forgings, the combination of dies having die-seats therein adapted to receive the blanks, one die-seat formed to shape one portion of a blank and the other die-seat formed to shape the opposite portion of another blank, feeding-rollers at each side of said dies, and mechanism for lifting said blanks from said rollers to the dies and from said dies back to said rollers, substantially as set forth.

12. In apparatus for handling forgings, the combination of dies having die-seats therein adapted to receive the blanks, one die-seat formed to shape one portion of a blank and the other die-seat formed to shape the opposite portion of another blank, feeding-rollers at each side of said dies, said feeding-rollers having conical portions, and mechanism for lifting said blanks from said rollers to the dies and from said dies back to said rollers, substantially as set forth.

13. In apparatus for handling forgings, the combination of suitable dies having a die-seat adapted to receive the blank, a shaft, arms on said shaft adapted to engage the opposite ends of said blank, mechanism for moving said arms toward each other, swinging rods connected to said arms, mechanism for raising and lowering said rods, swinging hangers supporting said shaft, the upper ends of said hangers being weighted, substantially as set forth.

655,720. METHOD OF PREPARING AND HANDLING FORGINGS. JOHN LANE, Pittsburg, Pa. Original application filed Feb. 25, 1899, Serial No. 706,804. Divided and this application filed Sept. 29, 1899. Renewed July 9, 1900. Serial No. 23,043. (No model.)



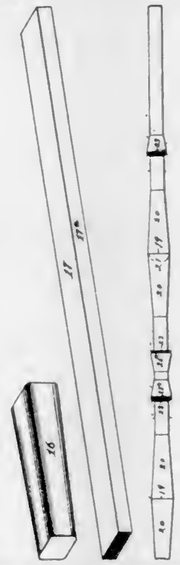
Claim.—1. The method of preparing and handling forged blanks, consisting in shearing the blanks to length, pressing indentations in the ends of the blanks, and subsequently grasping and centering said blanks by means of said indentations, and forging the same to shape when so centered, substantially as set forth.

2. The method of preparing and handling forged blanks, consisting in shearing the blanks to length and pressing indentations in the ends of the blanks during the shearing thereof, grasping and centering said blanks by means of said indentations, and forging the same to shape when so centered, substantially as set forth.

3. The method of preparing blanks, consisting in shearing the blanks to length and pressing indentations in the ends of the blanks during the shearing thereof, substantially as set forth.

655,721. METHOD OF SWAGING ARTICLES OF VARYING CROSS-SECTION. JOHN LANE, Pittsburg, Pa. Filed Jan. 10, 1900. Serial No. 934. (No specimens.)

Claim.—1. The improvement in the art of forming metal articles of longitudinally-varying cross-section, which consists in subjecting a heated metal bar or bloom to laterally-applied pressure on at least two of its sides substantially throughout the length of a blank-section in such a manner as to effect side flow and prevent end flow of the metal and thereby produce one or more depressions or tapers in the compressed sides and corresponding protuberances, swells or tapers in the free side or sides and then subjecting said bar to a rolling pressure applied progressively from end to end whereby the blank-sections are elongated without materially changing the width of said sections or the contour of the sides which are perpendicular to the axes of the rolls.



2. The improvement in the art of forming metal articles of longitudinally-varying cross-section which consists in subjecting a heated metal bar or bloom to lateral compression on at least two sides substantially throughout the length of a blank-section so as to produce side flow and prevent end flow of the metal and thereby produce one or more depressions in the compressed sides and one or more corresponding protuberances on the other sides, and then flattening and elongating said blank by subjecting said protuberances to a longitudinally-applied rolling pressure, substantially as set forth.

3. The improvement in the art of forming metal articles of non-uniform cross-section, which consists in subjecting a heated metal bar or bloom in multiples to laterally-applied pressure on at least two of its sides substantially throughout the length of a blank-section and thereby producing side flow and preventing end flow of the metal so as to form one or more depressions or tapers in the compressed sides and corresponding protuberances, swells or tapers on the other side or sides of each length, then subjecting the protuberances, swells or tapers to longitudinally-applied rolling pressure, and compressing or hammering each blank into final form, substantially as set forth.

4. The method of forming metal articles of longitudinally-varying cross-section, which consists in subjecting a heated metal bar or bloom of substantially-uniform cross-section to such degrees of laterally-applied pressure at different points throughout the length of a blank-section as will produce depressions in the compressed sides and corresponding protuberances, swells or tapers on the other sides by side flow of the metal only, then subjecting the last-named sides to such a degree of longitudinally-applied rolling pressure as will remove the protuberances, swells or tapers and correspondingly elongate the bar, then cutting the blank-sections from the bar and finally compressing or hammering each blank into final form, substantially as set forth.

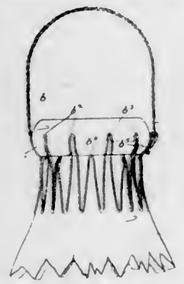
5. The method of forming metal articles of longitudinally-varying cross-section, which consists in subjecting a heated metal bar or bloom to laterally-applied pressure on at least two of its sides substantially throughout the length of a blank-section, in such a manner as will effect side flow and avoid end flow of the metal and thereby produce one or more depressions or tapers in the compressed side or sides and corresponding protuberances, swells or tapers in the free side or sides, then subjecting said bar to a rolling pressure applied progressively from end to end, then separating the blank-sections from each other, then heating the blanks and finally compressing or hammering the blanks into final form, substantially as set forth.

6. The improvement in the art of forming metal articles of non-uni-

in multiples to laterally-applied pressure on at least two of its sides substantially throughout the length of a blank-section to produce side flow and prevent end flow of the metal and thereby form one or more depressions or tapers in the compressed sides and corresponding protuberances, swells or tapers on the other side or sides of each length, then subjecting the protuberances, swells or tapers to longitudinally-applied rolling pressure, then separating the blank-sections from each other and finally compressing or hammering each blank into final form, substantially as set forth.

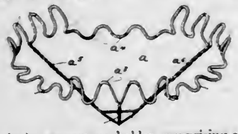
7. The improvement in the art of forming metal articles of longitudinally-varying cross-section which consists in subjecting a heated metal bar or bloom to edgewise compression substantially throughout the length of a blank-section in such a manner as will cause side flow and prevent end flow of the metal so as to produce one or more depressions in the compressed sides and one or more corresponding protuberances on the other sides, and then flattening and elongating said blank by subjecting said protuberances to a longitudinally-applied rolling pressure, substantially as set forth.

655,722. **CLAW BOTTLE CARRIER, HOLDER, OR HANGER.** CARRIE A. LAW, Philadelphia, Pa. Filed May 18, 1900. Serial No. 17,084. (No model.)



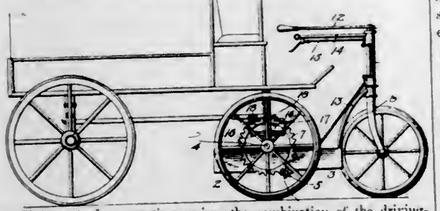
Claim.—A bottle carrier, holder or hanger comprising a continuous piece of spring-wire doubled and twisted to form a hook and diverging from the hook as single wires each semicircularly bent to form a carrier and also bent into the shape of claws extending inwardly and outwardly and terminating in a doubled portion twisted to form a handle or hanger ending in a loop for said hook, substantially as described.

655,723. **CLAW SHADE SUPPORT OR HOLDER.** CARRIE A. LAW, Philadelphia, Pa. Filed May 23, 1900. Serial No. 17,648. (No model.)



Claim.—A shade support or holder comprising a continuous wire bent to form a ring of single wire for a fixture and doubled and twisted to form arms extending outward to a single wire gallery or shade-support, consisting of inclined spring-claws and corrugated ledges along its circumference, substantially as described.

655,724. **TRACTION-ENGINE.** JOHN LIEBAU, New York, N. Y. Filed May 10, 1900. Serial No. 16,143. (No model.)



Claim.—1. In a traction-engine, the combination of the driving-wheels and an axle therefor, a front steering-wheel, a body supported by said wheels and axle and adapted to contain a suitable motive power for propelling said traction-engine, a fifth-wheel fixed upon said axle, and a grate-like or slotted vehicle-supporting plate adapted to be attached to different sized and shaped fifth-wheels of vehicles, substantially as and for the purpose set forth.

2. In a traction-engine, the combination of the driving-wheels and an axle therefor, a body mounted on the axle and adapted to contain a suitable motive power for propelling said traction-engine, a frame having a head-tube and braces projecting from said tube and supporting the front end of the body, a steering-wheel mounted in the head-tube, and a rigid arm projecting rearwardly from the head-tube and adapted to support the necessary operating and controlling levers for said motive power, substantially as described.

655,725. **CORK-EXTRACTOR.** LUCIAN C. MUMFORD, New York, N. Y., assignor of one-half to Gerard Crane, same place, and James Marshall, Somers, N. Y. Filed Dec. 20, 1899. Serial No. 740,959. (No model.)



Claim.—1. In a cork-extractor, the combination of a suitable handle, a plurality of substantially-parallel cork-extracting prongs adapted to engage a cork, one of the said prongs being pivotally carried by the said handle and a rotary prong-adjusting means for laterally moving said prong bodily to cause the same to swing.

2. In a cork-extractor, the combination of a cupped handle, a plurality of cork-engaging prongs pivoted in the cup and cam means carried by the handle and engaging the prongs.

3. In a cork-extractor, the combination of a cupped handle, a plurality of cork-engaging prongs pivoted in the cup and a cam-plate *g* pivotally connected to the handle, and adapted to engage the prongs.

4. In a cork-extractor, the combination of a handle, a plurality of prongs carried thereby, one of the said prongs being pivoted to the said handle by a pivot extending longitudinally of the prong, whereby the said prong may be swung on the said pivot toward or from the other prong to accommodate the said prongs to wider or narrower corks.

5. In a cork-extractor, the combination of a handle, a plurality of prongs carried thereby one of the said prongs being provided with a lateral extension, the said prong being pivoted by the said lateral extension to the handle by a pin extending longitudinally of the prong.

6. In a cork-extractor, the combination of a plurality of prongs pivoted to a handle by pivots extending longitudinally of the said prongs and adjusting means for swinging the said prongs on their pivots to adjust the same toward or from each other to accommodate corks of different diameters.

7. In a cork-extractor, the combination of a handle and a plurality of prongs, one of the said prongs being axially pivoted to the said handle on an axis extending longitudinally of the said prong, and adjusting means for swinging the said prong to adjust the same toward and from the other prong.

8. In a cork-extractor, the combination of a handle, a plurality of prongs axially pivoted thereto on axes extending longitudinally of the said prongs and a swinging plate for swinging the said prongs to adjust them toward or from each other, substantially as described.

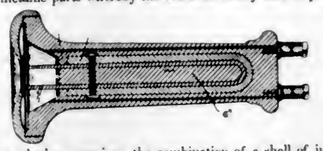
9. In a cork-extractor, the combination of a handle, a plurality of substantially-parallel prongs carried thereby, one of the said prongs being secured to said handle by a swinging connection so as to swing on an axis extending longitudinally of said prong to permit the said prong to be bodily moved laterally to maintain substantial parallelism between the prongs.

10. In a cork-extractor, the combination of a handle cork-grasping prongs retained within said handle and a centrally-pivoted slotted plate adapted to cause said prongs to approach and recede from each other, substantially as described.

655,726. **TELEPHONE-RECEIVER.** WILLIAM J. MURDOCK, Boston, Mass. Filed Apr. 11, 1900. Serial No. 12,456. (No model.)

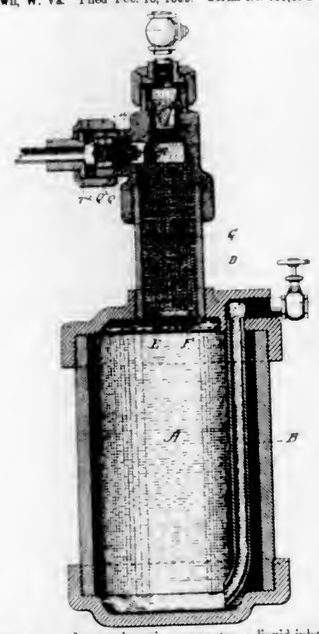
Claim.—1. A telephone-receiver comprising in its structure a shell or case of insulating material and a magnet for operating the diaphragm, the shell or case being provided with integral retaining portions projecting over and about the magnet, whereby the same is rigidly supported and held within the case.

2. In a telephone-receiver, the combination of a shell of insulating material, a magnet, binding-posts, and a suspending hook or ring, the shell being provided with integral retaining portions extending over and about the several metallic parts whereby the same are firmly held in place.



3. In a telephone-receiver, the combination of a shell of insulating material, a magnet having poles to influence the diaphragm, binding-post sockets having enlarged heads, and a suspending hook or ring, the shell being provided with retaining portions integral therewith whereby all other parts are firmly and permanently secured within the shell.

655,727. **CARBONATING APPARATUS.** EDWARD E. MURPHY, Boston, Mass., assignor to the New Era Carbonator Company, Charlestown, W. Va. Filed Feb. 10, 1899. Serial No. 705,154. (No model.)



Claim.—1. In a carbonating apparatus, a liquid-inlet pipe for supplying liquid under pressure, a gas-inlet pipe for supplying gas under less pressure than that on the liquid, a mixing-chamber for the gas and liquid in constant open communication with the liquid-supply under initial liquid-pressure and normally filled with gas and liquid, a valve normally closing said gas-inlet pipe by the pressure in said mixing-chamber and adapted to open automatically by the pressure of the gas upon a reduction of pressure in the mixing-chamber below the gas-pressure to admit the gas which flows into the mixing-chamber by its own pressure independently of the flow of the liquid, and means operating to allow the gas to fill the mixing-chamber before it is filled with the liquid.

2. In a carbonating apparatus, a liquid-inlet pipe for supplying liquid under pressure, a gas-inlet pipe for supplying gas under less pressure than that on the liquid, a mixing-chamber for the gas and liquid in constant open communication with the liquid-supply under initial liquid-pressure and normally filled with gas and liquid, a valve normally closing said gas-inlet pipe by the pressure in said mixing-chamber and adapted to open automatically by the pressure of the gas upon a reduction of pressure in the mixing-chamber below the gas-pressure to admit the gas which flows into the mixing-chamber by its own pressure independently of the flow of the liquid, means for subdividing and combining the gas and liquid, and means operating to allow the gas to fill the mixing-chamber before it is filled with the liquid.

3. In a carbonating apparatus, a liquid-inlet pipe for supplying liquid under pressure, a gas-inlet pipe for supplying gas under less pressure than

that on the liquid, a mixing-chamber for the gas and liquid in constant open communication with the liquid-supply under initial liquid-pressure and normally filled with gas and liquid, a valve normally closing said gas-inlet pipe by the pressure in said mixing-chamber and adapted to open automatically by the pressure of the gas upon a reduction of pressure in the mixing-chamber below the gas-pressure to admit the gas which flows into the mixing-chamber by its own pressure independently of the flow of the liquid, means through which the gas and liquid are forced under pressure for subdividing and mechanically combining the same, and means operating to allow the gas to fill the mixing-chamber before it is filled with the liquid.

4. In a carbonating apparatus, a liquid-inlet pipe for supplying liquid under pressure, a gas-inlet pipe for supplying gas under less pressure than that on the liquid, a mixing-chamber for the gas and liquid in constant open communication with the liquid-supply under initial liquid-pressure and normally filled with gas and liquid, a valve normally closing said gas-inlet pipe by the pressure in said mixing-chamber and adapted to open automatically by the pressure of the gas upon a reduction of pressure in the mixing-chamber below the gas-pressure to admit the gas which flows into the mixing-chamber by its own pressure independently of the flow of the liquid, a wire sponge through which the gas and liquid are forced under pressure for subdividing and combining the same, and means operating to allow the gas to fill the mixing-chamber before it is filled with the liquid.

5. In a carbonating apparatus, a liquid-inlet pipe for supplying liquid under pressure, a gas-inlet pipe for supplying gas under less pressure than that on the liquid, a mixing-chamber in constant open communication with the liquid-supply under initial liquid-pressure and normally filled with gas and liquid, a valve normally closing said gas-inlet pipe by the pressure in said chamber and adapted to open automatically by the pressure of the gas to admit the gas upon a reduction of the pressure in said chamber below the gas-pressure, and means for retarding the flow of the liquid from the liquid-inlet pipe into the mixing-chamber to allow the gas to fill the mixing-chamber before it is filled with the liquid.

6. In a carbonating apparatus, a liquid-inlet pipe for supplying liquid under pressure, a gas-inlet pipe for supplying gas under less pressure than that on the liquid, a mixing-chamber in constant open communication with the liquid-supply under initial liquid-pressure and normally filled with gas and liquid, a valve normally closing said gas-inlet pipe by the pressure in said chamber and adapted to open automatically by the pressure of the gas to admit the gas upon a reduction of the pressure in said chamber below the gas-pressure, means for retarding the flow of the liquid from the liquid-inlet pipe into the mixing-chamber, and means in said mixing-chamber for subdividing and combining the gas and liquid.

7. In a carbonating apparatus, a liquid-inlet pipe for supplying liquid under pressure, a gas-inlet pipe for supplying gas under less pressure than that on the liquid, a mixing-chamber in constant open communication with the liquid-supply under initial liquid-pressure and normally filled with gas and liquid, a valve normally closing said gas-inlet pipe by the pressure in said chamber and adapted to open automatically by the pressure of the gas to admit the gas upon a reduction of the pressure of said chamber below the gas-pressure, and a nozzle having a restricted outlet to retard the flow of the liquid from the liquid-inlet pipe into the mixing-chamber.

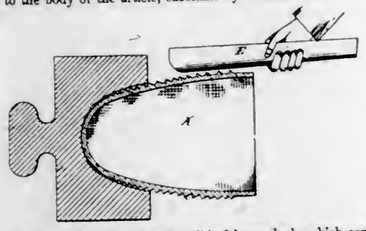
8. In a carbonating apparatus, a liquid-inlet pipe for supplying liquid under pressure, a gas-inlet pipe for supplying gas under less pressure than that on the liquid, a mixing-chamber in constant open communication with the liquid-supply under initial liquid-pressure and normally filled with gas and liquid, a valve normally closing said gas-inlet pipe by the pressure in said chamber and adapted to open automatically by the pressure of the gas to admit the gas upon a reduction of the pressure in said chamber below the gas-pressure, a nozzle having a restricted outlet to retard the flow of the liquid from the liquid-inlet pipe into the mixing-chamber, and a strainer located in said nozzle.

9. In a carbonating apparatus, a liquid-inlet pipe for supplying liquid under pressure, a gas-inlet pipe for supplying gas under less pressure than that on the liquid, a mixing-chamber for the gas and liquid in constant open communication with the liquid-supply under initial liquid-pressure and normally filled with gas and liquid, a valve normally closing said gas-inlet pipe by the pressure in said mixing-chamber and adapted to open automatically by the pressure of the gas upon a reduction of pressure in the mixing-chamber below the gas-pressure to admit the gas which flows into the mixing-chamber by its own pressure independently of the flow of the liquid, and means for retarding the flow of the liquid from the liquid-inlet pipe into the mixing-chamber to allow the gas to fill the mixing-chamber before it is filled with the liquid.

655,728. **METHOD OF CONSTRUCTING LAMP-SHADES.** OTIS A. MYGATT, New York, N. Y. Filed Jan. 19, 1899. Serial No. 702,687. (No specimens.)

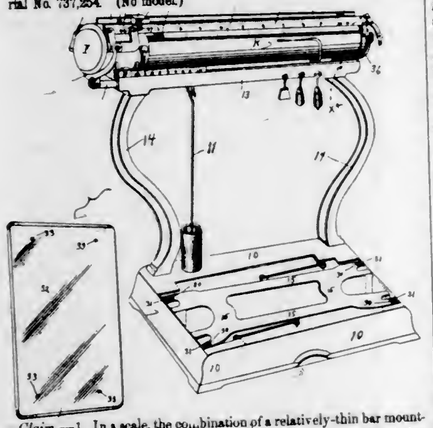
Claim.—1. The method of producing a ribbed hollow article of glass,

which consists in molding the article with open end and with projecting external ribs having a predetermined relation to the ultimate angles, heating the open end of the article and shaping down the open end, until the ribs assume the desired predetermined position or angular relation relatively to the body of the article, substantially as described.



2. The method of producing a ribbed lamp-shade which consists in molding the shade with external circumferential ribs projecting at angles and in planes other than the angles and planes of the completed shade but having definite relation thereto, heating a part of the molded shade, and shaping in the heated portion to give to the ribs the predetermined angle and to the shade the desired form, substantially as described.

655,729. PRICE-SCALE. ORANGE O. OKIAS, Dayton, Ohio, assignor to The Computing Scale Company, of Ohio. Filed Nov. 16, 1899. Serial No. 737,254. (No model.)



Claim.—1. In a scale, the combination of a relatively-thin bar mounted in fixed position adjacent an indicating-bar, said indicating-bar being at an angle to said first bar, a poise slidable with its gravity bearing downward upon the thin edge of said bar, the said point of sliding contact between said first bar and said poise being near the top of said poise, and a relatively-light pointer carried by said poise and projecting at an angle over and out of contact with the indicating-surface of said indicating-bar, said first bar being free from indications and forming only a slideway for said poise, substantially as specified.

2. In a scale, the combination of a relatively-thin bar mounted in fixed position adjacent indicating-bars on opposite sides of said first bar, said indicating-bars being at an angle to said first bar, a poise slidable upon said first bar, and pointers carried by and projecting at an angle from opposite sides of said poise and extending over and out of contact with the indicating-surface of said indicating-bars, substantially as specified.

3. In a price-scale, the combination of a price-indicating chart revolubly mounted upon a fulcrumed frame, a relatively-thin bar rigid upon said frame, said bar being thin horizontally at right angles to its length, an indicating-bar rigid upon said frame and at an angle to said first bar a poise slidable on said first bar, with the gravity of said poise bearing downward upon the thin upper edge of said first bar, said bearing-points between said first bar and said poise being near the top of said poise by which said poise is manually moved, a projection carried by said poise for designating the indications upon said price-indicating chart, a second projection carried by said poise at an angle to said poise and extending over the face of and designating the indications upon said indicating-bar, substantially as specified.

4. In a price-scale, the combination of a price-indicating chart revolubly mounted upon a fulcrumed frame, a bar rigid upon said frame, indicating-bars rigid upon said frame upon opposite sides of said first bar and at an angle to said first bar, a poise slidable on said first bar, a projection carried by said poise for designating the indications upon said price-indicating chart, a second and a third projection carried by opposite sides of said poise at an angle to said poise and each extending over the face of and designating the indications upon their respective indicating-bars, substantially as specified.

5. In a price-scale, the combination of a price-indicating chart revolubly mounted upon a fulcrumed frame, a casing inclosing said chart, an exposing-opening in said casing through which the prices upon said chart are adapted to be exposed to view, a bar extending substantially the length of said casing and rigidly mounted thereon in a plane passing through the axis of said casing, an indicating-bar upon each of the opposite sides of said first bar and extending substantially the length of said first bar and secured upon said casing at an angle to said first bar, the indicating-bar upon one side of said first bar being adjacent said exposing-opening in said casing, a poise slidable upon said first bar, a projection carried by said poise for designating the indications upon said price-indicating chart, a second and a third projection carried by opposite sides of said poise at an angle to said poise and each extending over the face of and designating the indications upon their respective indicating-bars, substantially as specified.

6. In a scale, the combination with a beam, the platform-levers connected therewith and the knife-edged bearings in said lever supporting the platform, a series of downward projections near the edges of the goods-support, a bearing-block yieldingly mounted near the lower end of each of said downward projections, a plurality of said bearing-blocks having a substantially V-shaped seat passing through their downward face for engaging said knife-edged bearings supporting the platform, walls on opposite sides of and extending below the edges of said bearing-blocks, said walls being parallel to said knife-edged bearings supporting the platform, and projections extending from the adjacent faces of said walls at a point below said bearing-blocks and overlapping the opposite edges of said bearing-blocks to prevent said knife-edged bearings being accidentally seated in the joint between said bearing-blocks and said walls, the slot between said walls in which each of said bearing-blocks is mounted being sufficiently large to permit said bearing-blocks being removed therefrom longitudinally relative to said knife-edged bearings supporting the platform, and means removably mounted in each of said slots for yieldingly mounting each of said bearing-blocks, substantially as specified.

7. In a scale, the combination with a beam, the platform-levers connected therewith and the knife-edged bearings in said lever supporting the platform, a series of downward projections near the edges of the goods-support, a bearing-block yieldingly mounted near the lower end of each of said downward projections, a plurality of said bearing-blocks having a substantially V-shaped seat passing through their downward face for engaging said knife-edged bearings supporting the platform, walls on opposite sides of and extending below the edges of said bearing-blocks, said walls being parallel to said knife-edged bearings supporting the platform, and projections extending from the adjacent faces of said walls at a point below said bearing-blocks and overlapping the opposite edges of said bearing-blocks said projections converging inwardly and upwardly toward the bearing-seat in the bottom face of said bearing-blocks to prevent said knife-edged bearings being accidentally seated in the joint between said bearing-blocks and said walls and to deflect said knife-edged bearings from said projections into the bearing-seats in said bearing-blocks should said bearings contact with said projections, the slot between said walls in which each of said bearing-blocks is mounted being sufficiently large to permit said bearing-blocks being removed therefrom longitudinally relative to said knife-edged bearings supporting the platform, and means removably mounted in each of said slots for yieldingly mounting each of said bearing-blocks, substantially as specified.

8. In a scale, the combination with a beam, the platform-levers connected therewith and the knife-edged bearings in said lever supporting the platform, a subplatform between said platform and said lever and having a series of downward projections, a bearing-block yieldingly mounted near the lower end of each of said downward projections, a plurality of said bearing-blocks having a substantially V-shaped seat passing through their downward face for engaging said knife-edged bearings supporting the platform, walls on opposite sides of and extending below the edges of said bearing-blocks, said walls being parallel to said knife-edged bearings supporting the platform, and projections extending from the adjacent faces of said walls at a point below said bearing-blocks and overlapping the opposite edges of said bearing-blocks said projections converging inwardly and upwardly toward the bearing-seat in the bottom face of said bearing-blocks to prevent said knife-edged bearings being accidentally seated in the joint between said bearing-blocks and said walls and to deflect said knife-edged bearings from said projections into the bearing-seats in said bearing-blocks should said bearings contact with said projections, the slot between said walls in which each of said bearing-blocks is mounted being sufficiently large to permit said bearing-blocks being removed therefrom longitudinally relative to said knife-edged bearings supporting the platform, means for removably mounting each of said bearing-blocks in their said projections, a series of projections extending upwardly from near the edges of said subplatform, a pin rising from each of said projections, and a recess in the bottom of said platform adapted to receive said pin, substantially as specified.

9. In a scale, the combination with a beam, the platform-levers connected therewith and the knife-edged bearings in said lever supporting the platform, a subplatform between said platform and said lever and having a series of downward projections, a bearing-block yieldingly mounted near the lower end of each of said downward projections, a plurality of said bearing-blocks having a substantially V-shaped seat passing through their downward face for engaging said knife-edged bearings supporting the platform, walls on opposite sides of and extending below the edges of said bearing-blocks, said walls being parallel to said knife-edged bearings supporting the platform, and projections extending from the adjacent faces of said walls at a point below said bearing-blocks and overlapping the opposite edges of said bearing-blocks said projections converging inwardly and upwardly toward the bearing-seat in the bottom face of said bearing-blocks to prevent said knife-edged bearings being accidentally seated in the joint between said bearing-blocks and said walls and to deflect said knife-edged bearings from said projections into the bearing-seats in said bearing-blocks should said bearings contact with said projections, the slot between said walls in which each of said bearing-blocks is mounted being sufficiently large to permit said bearing-blocks being removed therefrom longitudinally relative to said knife-edged bearings supporting the platform, means for removably mounting each of said bearing-blocks in their said projections, a series of projections extending upwardly from near the edges of said subplatform, a pin rising from each of said projections, and a recess in the bottom of said platform adapted to receive said pin, substantially as specified.

10. In a scale, the combination of a platform, a subplatform therefor, a series of projections extending upwardly near the edges of said subbase, a pin extending upwardly from the top surface of each of said projections, and a recess in the bottom of said platform for each of said pins, substantially as and for the purpose specified.

11. As an article of manufacture for scales, a bearing-block having a pivotal bearing in one end thereof, a rectangular slot in one face thereof, said slot being substantially at right angles to said pivotal bearing, and a projection at opposite ends of said slot extending partly across said slot, substantially as specified.

12. As a new article of manufacture for scales, a bearing-block, a pivotal bearing for said block, a slot in one face of said block extending through said block at substantially right angles to said pivotal bearing, a projection at opposite ends of said slot extending partly across said slot, and said slot being narrower at its outer face, substantially as specified.

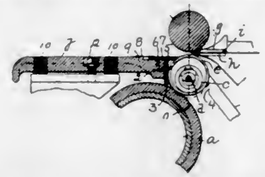
13. In a scale, the combination of a bearing-block, a support for said block, means for pivotally mounting said block in said support, a slot formed through one face of said block, a bearing portion in said slot, projection from a wall of said slot extending beyond one edge of said bearing portion to secure said portion in said slot, a bearing-seat on one face of said bearing portion, a knife-edged pivot adapted to engage in said bearing-seat, and a second slot extending vertically and being unobstructed from said bearing-seat in said bearing portion beyond said block and its said support; whereby said support, block and said bearing portion may be moved vertically to and from engagement with said knife-edged pivot, substantially as specified.

14. In a scale, the combination of a bearing-block pivotally mounted upon a support, a slot formed through one face of said bearing-block, a bearing portion mounted in said slot, projections from said slot extending beyond a plurality of the edges of said bearing portion and partly across said slot for confining said bearing portion in said slot, a bearing-seat formed on one face of said bearing portion, a knife-edged pivot adapted to engage said bearing-seat, and a second slot extending vertically and being unobstructed from said bearing-seat in said bearing portion beyond said block and its said support; whereby said support, block and said bearing portion may be moved vertically to and from engagement with said knife-edged pivot, substantially as specified.

15. In a scale the combination of a member, a block pivotally supported therein, a slot in one of the exterior faces of said block at an angle to the axis of said pivotal support for said block, said slot being tapering on opposite sides toward said exterior face of said block where said slot is the narrowest, a bearing portion in said slot, the opposite sides of said bearing portion being tapering and conforming with the taper of said slot, a bearing-seat upon the outer face of said bearing portion, a knife-edged pivot engaging with said bearing-seat, and means for preventing the movement of said bearing portion parallel to said tapering sides, substantially as specified.

655,730. LEATHER-SPLITTING MACHINE. FRANKLIN J. PERKINS, Woburn, Mass., assignor to the Vaughn Machine Company, Portland, Me. Filed June 6, 1900. Serial No. 19,237. (No model.)

Claim.—1. In a machine of the class described, the combination with a bed-roll, a gage-roll and an intermediate ring-roll, of a table or support for the material being acted upon provided with a straight front face substantially parallel with a vertical line through the center of the gage and ring roll in their normal position, and extended toward the bed-roll a sufficient distance to prevent lateral movement of the ring-roll when the latter is forced down into said bed-roll, for the purpose specified.



2. In a machine of the class described, the combination with a bed-roll, a gage-roll and an intermediate ring-roll, of means coöperating with said ring-roll to prevent lateral movement of the same when forced down into the bed-roll, substantially as and for the purpose specified.

3. In a machine of the class described, the combination with a bed-roll, a gage-roll, and an intermediate ring-roll, of a table provided with a detachable face-plate coöperating with said ring-roll and having its front face substantially parallel with a vertical line through the center of the gage-roll and ring-roll when in their normal position, and an adjustable top plate secured to the upper surface of the said table and adjustable toward and from said normal vertical line, substantially as and for the purpose specified.

4. In a machine of the class described, the combination with a bed-roll, a gage-roll, and an intermediate ring-roll, of a vertically-adjustable table provided with a detachable face-plate coöperating with said ring-roll and having its front face substantially parallel with a vertical line through the center of the gage-roll and ring-roll when in their normal position, and means to lock said table in its adjusted position, substantially as described.

5. In a machine of the class described, a table provided with a detachable face-plate 3 and with an adjustable top plate 5, substantially as described.

655,731. FOUNTAIN-PEN. PERCY E. PIERCE, Galion, Ohio. Filed Jan. 14, 1898. Serial No. 666,701. (No model.)



Claim.—1. In a fountain-pen, a reservoir-handle, a supplemental reservoir at one side of the handle and having the pen applied thereto, and an intermediate connection between the handle and supplemental reservoir and having a contracted passage, whereby the pressure at the delivery end of the fountain is materially reduced, substantially as set forth.

2. In a fountain-pen, a reservoir-handle, a supplemental reservoir at one side of the handle and having the pen applied thereto, and a lateral or intermediate connection between the handle and supplemental reservoir and connecting with the handle a short distance above its lower end, whereby a settling-chamber is provided, substantially as described.

3. A fountain-pen comprising a reservoir-handle, a supplemental reservoir at one side of the handle and having an air-space at its upper end and provided at its lower end with the pen, and an intermediate connection between the handle and supplemental reservoir, substantially as set forth.

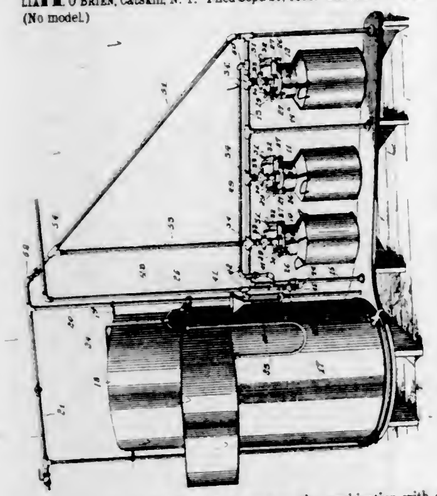
4. In a fountain-pen, a reservoir-handle having a settling-chamber at its lower end and supplemental reservoir at one side of the handle and having an air-space at its upper end and provided at its lower end with the pen, and an intermediate connection between the handle and supplemental reservoir and having a contracted passage, substantially as set forth.

5. A fountain-pen comprising a reservoir-handle closed at its lower end, a supplemental reservoir obliquely disposed at one side of the handle and provided at its lower end with the pen, and an intermediate connection having a contracted passage between the lower end of the reservoir-handle and the upper end of the supplemental reservoir, substantially as described.

6. In a fountain-pen, a reservoir-handle, a cap closing the lower end of the handle and having a lateral opening and a contracted passage, an obliquely-disposed supplemental reservoir comprising a cap and tip, and a coupling connecting the cap of the handle with the cap of the supplemental reservoir, substantially as specified.

7. As a new article of manufacture a pen-stock comprising a reservoir-tube, a lateral branch having a contracted passage at the lower end thereof adapted to retard the flow of ink, and an extension at the end of said lateral branch carrying a feed mechanism, substantially as described.

655,732. ACETYLENE-GAS GENERATOR. AMOS POST and WILLIAM M. O'BRIEN, Catskill, N. Y. Filed Sept. 29, 1899. Serial No. 732,097. (No model.)



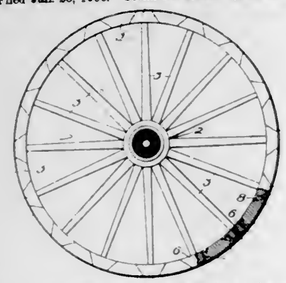
Claim.—1. In an acetylene-gas apparatus, the combination with a battery of generators and a gasometer-controlled water-supply, of means between said generator-battery and a water-supply for reversing the flow of water and establishing an automatic pressure-relief for the generator-battery, said means including pipes communicating at one end, a main trap, another trap between one pipe and the main trap, and a valved trap between the other pipe and said main trap, as set forth.

2. In an acetylene-gas apparatus, the combination with a main water-pipe, and a battery of generators connected therewith, of a main trap, a secondary valved trap communicating with the main water-pipe, a branch pipe connected with the other end of the main water-pipe, and another trap between the branch pipe and the main trap, substantially as described.

3. In an acetylene-gas apparatus, the combination with a main water-pipe, a series of generators connected therewith, and a main trap, of a branch pipe connected with the main pipe near one end, a secondary trap between the other end of the main pipe and the main trap, a safety-trap connected with the branch pipe and communicating with one leg of the secondary trap, a valve in the secondary trap, and a vent-pipe, substantially as described.

4. In an acetylene-gas apparatus, the combination with a water-feed pipe, and a battery of generators, of upright gas-pipes connected with the water-pipe substantially at opposite sides of the generators, and means for reversing the flow of water through the water-pipe, substantially as described.

655,733. VEHICLE-SPOKE. DAVIED C. POYNTER, Mount Vernon, Ky. Filed Jan. 20, 1900. Serial No. 2,140. (No model.)



Claim.—1. A vehicle-wheel having a felly portion comprising a series of iron sections, each composed of a central relatively-solid portion provided with a socket to receive a spoke-tenon, and angular elongated seats for the felly-sections, substantially as specified.

2. A vehicle-wheel having a felly portion comprising a series of iron sections, each composed of a central relatively-solid portion provided with a socket to receive a spoke-tenon, and angular elongated seats having openings to receive fastenings for the wooden felly-sections, substantially as specified.

655,734. GUARD FOR SHAFT OR POLE ENDS. SOUTH G. PRESTON, Catlettsburg, Ky. Filed May 21, 1900. Serial No. 17,449. (No model.)



Claim.—1. In a guard for vehicle-shafts, a tubular portion terminating in a padded enlargement, and a resilient split ring for securing the tubular portion to the shaft.

2. In a guard for vehicle-shafts, a tubular portion terminating in a padded enlargement, and a resilient ring having integral arms.

3. In a guard for vehicle-shafts, a tubular body terminating in a padded enlargement and a resilient split ring having integral arms, said arms being connected by a loop.

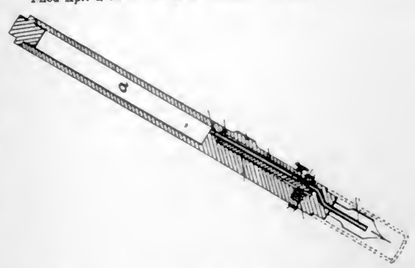
655,735. MANUFACTURE OF ENAMELED LEATHER. WALTER F. REID, Addlestone, and EDWARD J. V. EARLE, London, England, assignors to the Velvril Company, Limited, London, England. Filed Dec. 13, 1897. Serial No. 661,715. (No specimens.)

Claim.—1. The process of enameling leather consisting in pouring a solution of a mixture of nitrocellulose and nitrolinolein or nitroricinolein onto a non-absorbent smooth surface which the solution does not penetrate, evaporating the solvent thus forming a film, impregnating the leather with solvent, pressing one face of it onto the film while the latter is still on the surface evaporating the solvent from the other face and then detaching the film from the surface.

2. The process of enameling leather consisting in pouring a solution of a mixture of nitrocellulose and nitrolinolein or nitroricinolein onto a non-absorbent smooth surface which the solution does not penetrate, evaporating the solvent thus forming a film, impregnating the leather with solvent, pressing one face of it onto the film while the latter is still on the surface evaporating the solvent from the other face exposing the leather to a moist atmosphere and then detaching the film from the surface.

3. The process of enameling leather consisting of pouring a solution of the enameling material on a smooth non-absorbent surface, drying the film thus formed, impregnating the leather with a solvent of the material, pressing the face of the impregnated leather upon the film while the latter is still on the said surface, thereby causing the leather and film to unite and finally removing the film from said surface.

655,736. FOUNTAIN-PEN. EDUARD REISERT, Hennef, Germany. Filed Apr. 4, 1900. Serial No. 11,553. (No model.)

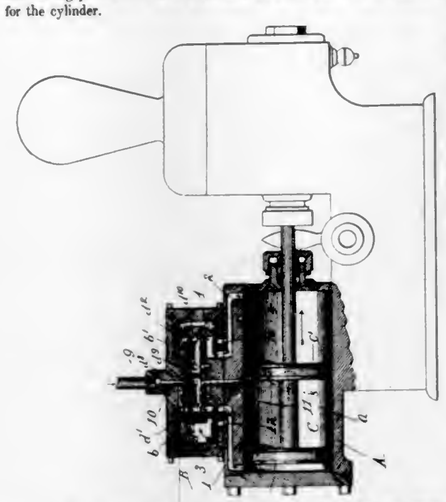


Claim.—1. In a fountain-pen the combination with a reservoir for the ink, a rubber hose connecting this reservoir with the pen proper, of a pressing-piece provided with a nose for closing the lower end of the rubber hose, a spiral spring for pressing said piece against the rubber hose and a second pressing-piece situated opposite to the first one and provided with a nose for closing the upper end of the rubber hose, as and for the purpose set forth.

2. In a fountain-pen the combination with a reservoir for the ink, a rubber hose connecting this reservoir with the pen proper, of a pressing-piece provided with a nose for closing the lower end of the rubber hose, a spiral spring for pressing said piece against the rubber hose, a button for pressing this piece back and a second pressing-piece situated opposite to the first one and provided with a nose for closing the upper end of the rubber hose, as and for the purpose set forth.

655,737. FLUID-ACTUATED VALVE. JAY B. RHODES, Harvey, Ill., assignor to Frederick C. Austin, Chicago, Ill. Filed Nov. 17, 1899. Serial No. 737,338. (No model.)

Claim.—1. The combination of a cylinder, valve-casing, piston and steam-actuated reversing-valve, the said cylinder and valve-casing having suitable ports or passages for admitting and exhausting steam to and from the piston-chamber, and the valve being provided with a cylindric portion having ports which serve alternately as supply and exhaust passages for the cylinder.



2. The combination of a cylinder, valve-casing, piston and steam-actuated valve, the cylinder and valve-casing having suitable ports or passages for admitting and exhausting steam to and from the piston-chamber, and the said valve being ported and having a couple of chambers which serve alternately as supply and exhaust passages for the cylinder.

3. The combination of a cylinder, valve-casing, piston and steam-actuated reversing-valve, the cylinder and casing having suitable ports or passages for admitting and exhausting steam to and from the piston-chamber, and the said valve having a reduced cylindric middle portion which slides in a bore or opening in the casing, and which is provided with ports serving alternately as supply and exhaust passages.

4. The combination of a piston provided with a constant-pressure chamber, a cylinder and valve-casing having suitable ports or passages, and a valve which is actuated by steam from said constant-pressure chamber and which is provided with a cylindric middle portion having ports which serve alternately as supply and exhaust ports.

5. The combination of the spool-shaped piston and the spool-shaped valve, the cylindric middle portion of the latter being hollow and provided with ports whereby both the live steam and the exhaust are conducted through the interior of said valve.

6. The combination of a cylinder, valve-casing, piston and steam-actuated reversing-valve, the valve-casing having a central bore or opening provided with three grooves or channels which encircle the cylindric middle portion of said valve, and the said cylindric portion of the valve being provided with ports which coöperate with said grooves or passages and which serve alternately as supply and exhaust passages.

7. The combination of a recessed or chambered piston, a spool-shaped steam-actuated reversing-valve, and a cylinder and valve-casing having the ports or passages 1, 2, 3, 4 and 11, and the by-pass openings 12 and 13; the valve being provided with ports which serve alternately as supply and exhaust ports, substantially as shown and described.

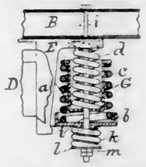
8. The combination of a cylinder, valve-casing, piston and steam-actuated reversing-valve, the cylinder and casing being provided with suitable ports or passages, and the valve being provided with ports which serve alternately as supply and exhaust passages for the cylinder and which also serve as exhaust-passages for the exhaust from the valve.

9. In combination with a suitable cylinder, piston and valve-casing, the spool-shaped steam-actuated reversing-valve D, having the chambers d^5 and d^6 and the lateral ports d^7, d^8, d^9 and d^{10}, substantially as and for the purpose set forth.

10. In a steam or other motive-fluid actuated engine, the combination of a cylinder and piston, the said piston being recessed or chambered to provide a constant-pressure chamber, and the said cylinder being provided with suitable ports or passages for admitting and exhausting steam to and from the ends of said cylinder, and also with a passage for supplying live steam to the said constant-pressure chamber in the piston; a steam-actuated reversing-valve which is substantially spool shape in form and which is provided at each end with a chamber and also with suitable ports by which live steam is admitted through the valve to the piston-chamber and by which the steam is exhausted from the piston-chamber by way of the said chambers and ports in the valve; and means for supplying steam to the valve at a point substantially midway between its heads or end portions.

11. In a steam-pump, the combination of the cylinder, the steam-chest, the spool-shaped piston arranged for reciprocation within said cylinder, the spool-shaped steam-actuated reversing-valve arranged for reciprocation within said steam-chest, both the cylinder and steam-chest being provided with suitable ports or passages for admitting and exhausting steam to and from the said cylinder and steam-chest, and a passage being also provided for supplying live steam to the cylinder at a point between the heads of the piston; and the said spool-shaped reversing-valve, which is actuated by steam admitted from the constant-pressure chamber in the piston, having a hollow and cylindric middle portion which is ported to permit live steam to pass through the valve to the cylinder, and which is also ported to permit the exhaust from the cylinder to escape through the said valve, substantially as shown and described.

655,738. CAR-SPRING. WILLIAM ROBINSON, Boston, Mass. Filed Dec. 31, 1896. Serial No. 617,555. (No model.)

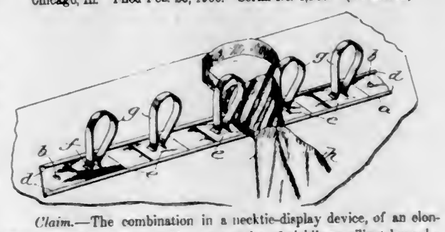


Claim.—1. In a car-spring, the combination, substantially as described, of an outer spring, a second spring extending within said outer spring, a spring-cup extending between said springs, said spring-cup having one end supported by one of said springs and its opposite end, in turn, supporting the other spring, caps or bearings on the respective free ends of said springs, a tension or check spring on the opposite side of one of said caps or bearings, an adjusting-rod passing through all of said springs and means for adjusting the tension of said springs.

2. In combination, substantially as described, the outer spring *c*, the spring *d* extending within said spring *c*, the intermediate spring-cup G located within the spring *c* and outside of the spring *d*, said spring-cup resting on one of said springs and supporting the other, each of said springs supporting the load imposed on the free or extreme end of either, caps or bearings *g*, *h* on the free ends of said springs *c*, *d*, the tension or check spring *k* on the opposite side of the bearing *h*, the adjusting-rod *i* passing through all of the springs, and the adjusting-nut *m* on the end of the rod *i* and adapted to impart initial tension to said springs.

3. In combination with the truck-frame and the axle-gear, an outer spring supported by the axle-gear, an intermediate spring-cup supported by said spring and extending down inside of the same, an inner spring passing down within said spring-cup and supported on the bottom thereof, the truck-frame resting on top of said inner spring, a post or rod connected to said truck-frame and passing down through said springs and axle-gear, a tension or check spring surrounding the lower end of said rod and abutting against a plate or bearing of said axle-gear, and a nut or device on the lower end of said rod adapted to adjust the tension of said springs, substantially as described.

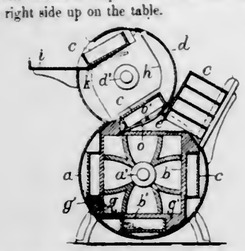
655,739. DISPLAY DEVICE FOR NECKTIES. HENRY RUNTA, Chicago, Ill. Filed Feb. 26, 1900. Serial No. 6,546. (No model.)



Claim.—The combination in a necktie-display device, of an elongated supporting-base or guideway, a series of yielding resilient loops located within said guideway, and laterally-adjustable slides for supporting said loops in position, substantially as described.

655,740. BRICK-MOLD-SANDING MACHINE. HERBERT SCHOONMAKER, Roseton, N. Y. Filed Apr. 21, 1900. Serial No. 13,716. (No model.)

Claim.—1. In a brick-mold-sanding machine, the combination, with a sanding-cylinder and rotary heads to move the molds therein, of a rotary device connected with such sanding-cylinder to reverse the molds, and a table, with means to strip the molds from the reversing device and deliver them right side up on the table.



2. In a brick-mold-sanding machine, a sanding-cylinder having rotary heads to move the molds therein, and having an opening at the side to insert the molds and an opening at the top to discharge the same, a reversing-cylinder mounted over the opening in the top of the sanding-cylinder with discharge-outlet upon one side, and ways adapted to transfer the molds from the rotary heads into the bottom of the reversing-cylinder, and rotary disks in such cylinder with projections adapted to carry the molds around within the same and deliver them right side up to the discharge-opening.

3. In a brick-mold-sanding machine, a sanding-cylinder having rotary heads to move the molds therein, and having an opening at the side to insert the molds and an opening at the top to discharge the same, a reversing-cylinder mounted over the opening in the top of the sanding-cylinder with discharge-outlet upon one side, ways at the ends of the sanding-cylinder to transfer the molds from the rotary heads into the bottom of the reversing-cylinder, rotary disks in such cylinder with projections arranged to clear the heads in the sanding-cylinder, and strippers arranged at the ends of the reversing-cylinder to transfer the molds from the disks and deliver them upon a table.

4. In a brick-mold-sanding machine, a sanding-cylinder having rotary heads with four seats and lugs to receive and propel the molds therein, the sanding-cylinder having an opening at the side to insert the molds and an opening at the top to discharge the same, a reversing-cylinder fitted to such top opening with ways to transfer the molds from the heads into the bottom of such cylinder, disks with two projections rotated in the reversing-cylinder to invert the molds, a stripper to discharge the molds from the disks to a table, and gearing rotating the disks at twice the speed of the heads, as and for the purpose set forth.

5. In a brick-mold-sanding machine, the combination, with a sanding-cylinder having a casing with an opening in the top, and provided with a rotary shaft and heads to carry the molds around within the casing, of means for jarring the molds when in the opening at the top of the casing, to drop the surplus sand into the sanding-cylinder, and a rotary device to remove the molds from the sanding-cylinder and reverse the same, as and for the purpose set forth.

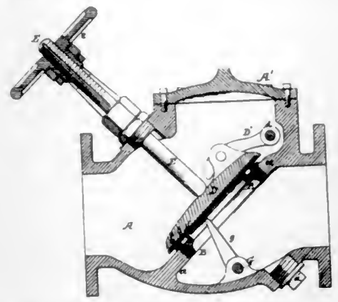
6. In a brick-mold-sanding machine, the combination, with rotary heads, of a sanding-cylinder inclosing such heads and having an opening to insert the molds and an opening at the top to discharge the same, ways arranged in the top opening to strip the molds from the heads in an inverted position and means to jar the molds when over said opening to discharge the surplus sand into the cylinder.

7. In a brick-mold-sanding machine, the combination, with rotary heads, of a sanding-cylinder inclosing such heads and having an opening to insert the molds and an opening at the top to discharge the same, and ways *o* arranged and operated to strip the molds from the heads, and having projections to jar the molds when forced over the ways, to thus loosen the surplus sand and discharge it into the cylinder.

8. In a brick-mold-sanding machine, the combination, with a sanding-cylinder having a central shaft with rotary heads having a series of seats and projections to move the molds within the cylinder, of a reversing-cylinder upon the top of the sanding-cylinder with means to transfer the molds to the reversing-cylinder, a central shaft in such cylinder and heads having two seats and projections to reverse and deliver the molds, and gearing connecting the shafts to revolve them at speeds inverse to the number of their respective seats.

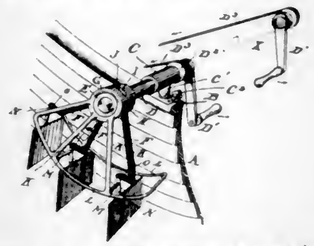
655,741. VALVE. JOHN C. SCOTT, Philadelphia, Pa., assignor, by mesne assignments, to Clarke Merchant and George S. Graham, same place. Filed Sept. 13, 1898. Serial No. 690,878. (No model.)

Claim.—1. The combination of a valve-casing, a seat therefor, pivoted valve-disk, means for closing said disk, an arm pivoted to the casing and adapted to rest against the under side of the valve to hold it open, and means for operating said arm from the outside of the casing, substantially as described.



2. The combination of a valve-casing having a seat, with a valve adapted to said seat, means for closing said valve, a shaft adapted to the casing having an arm resting against the under side of the valve, an arm secured to the shaft on the outside of the casing, a spring connecting said arm with the casing so that when the valve is opened the arm within the casing will be brought to such position as to prevent the valve from closing upon its seat, substantially as described.

655,742. PROPELLING MECHANISM FOR BOATS. DANIEL R. SHEEN, Peoria, Ill. Filed Sept. 5, 1899. Serial No. 729,428. (No model.)



Claim.—1. In a propelling mechanism for boats, a horizontal shaft having bearing on the gunwale thereof, a series of spokes secured to the shaft at right angles thereto, a series of paddles adapted to open and close, supports for the paddles, loose connections between the paddles and the spokes for opening and closing the former, as described, and means for imparting an oscillatory movement to the shaft whereby the paddles are swung concentric to the shaft, as set forth, and closed when out of the water but opened when immersed.

2. In a propelling mechanism for boats the combination with a bearing supported on the gunwale, a shaft held in such bearing and adapted to oscillate therein, a hub on the outer end of the shaft, spokes on said hub, a sleeve on the hub and having the spokes projecting therethrough, arms on the sleeve substantially parallel with the spokes on the hub, pivots between the arms, paddles supported on the pivots and links connecting the paddles and spokes as and for the purposes described and means for imparting an oscillatory movement to the shaft substantially as specified.

3. In a propelling mechanism for boats the combination with an adjustable bearing on the gunwale, a shaft for such bearing and adapted to oscillate therein, a crank and drum on the inner end of the shaft, the former having a rope or strap wound thereon, a foot-lever pivoted on the boat and having the said rope, or strap, attached thereto, a hub on the outer end of the shaft, spokes on the hub, a sleeve on the hub and having the spokes projecting therethrough, arms on the sleeve substantially parallel with the spokes on the hub, pivots between the arms, paddles supported on the pivots and links connecting the paddles and spokes as and for the purposes described and means for imparting an oscillatory movement to the shaft substantially as specified.

4. In a propelling mechanism for boats, a shaft mounted on the gunwale, bearing for the same, adjustable for height, a crank and drum on the inner end of the shaft, a rope, or strap, wound on the drum for the purposes set forth, a foot-lever for the said rope or strap, a hub on the outer end of the shaft, a pin therein, a sleeve on the hub, a slot in the sleeve for the pin, spokes on the hub, a slot in the sleeve for the passage of the spokes, arms on the sleeve, paddles pivoted between the arms, links between the spokes and paddles, the latter adapted to be opened and closed by the shifting movement of the spokes substantially as and for the purposes set forth and described.

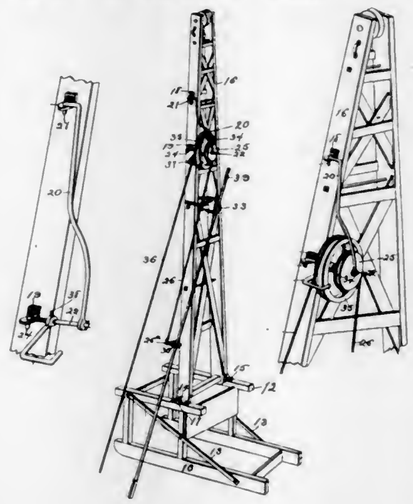
5. The combination with a boat-rowing mechanism constructed substantially as shown, of a guide D^7 secured to the inside of the boat, a crank for operating the said rowing mechanism, a sleeve adapted to slide thereon, means for limiting the movement of the sleeve, a wheel on the free end of such sleeve for engaging the guide and a handle for operating the crank substantially as shown.

6. In a boat-propelling mechanism the combination of adjustable paddles therefor, spokes for operating them, a wheel-section for supporting them, means for adjusting same for any height, all being arranged so that a forward movement of the said paddles and their operating parts, together with the reversed movement thereof, will collapse said paddles to a position substantially at right angles to the open or working position, and, by the backward movement such paddles will, by their momentum and the reversing movement, open into position for work, a shaft for carrying all the parts named, a crank on the shaft for hand use, a lever on the boat for foot-power, a drum on the shaft, flexible connection between the drum and foot-lever for assisting the hand-power, both the foot and hand powers combining to produce an oscillatory or partially-rotary movement of the shaft and paddles in an arc of a circle such are lying in the lowest portion of that circle whereby the greatest power is exerted by the operator in drawing the crank toward him substantially as and for the purposes specified.

7. In a boat-rowing mechanism, the combination with the bearing C secured to the gunwale of the boat, the shaft D revolubly mounted thereon, a crank D′ for operating it the same being operated inside the boat, a hub E secured to the outer end of the shaft, arms F secured thereto, a sleeve G surrounding the hub, a slot therein for the passage of the said arms F, a slot I in said sleeve, a pin J in the hub adapted to pass through the said slot, a series of arms K on the sleeve, and carrying the rims L, paddle-arms M pivoted between the rims, links O connecting the said paddle-arms and said arms F all arranged for the purposes set forth.

8. In a boat-rowing mechanism, the combination with the bearing C secured to the gunwale of the boat, the shaft D revolubly mounted thereon, a crank D′ for operating it, the same being operated inside the boat, a hub E secured to the outer end of the shaft, arms F secured thereon, a sleeve G surrounding the hub, a slot therein for the passage of the said arms F, a slot I in said sleeve, a pin J in the hub adapted to pass through said slot, a series of arms K on the sleeve carrying the rims L, paddle-arms K pivoted between them, links O connecting the said paddle-arms and said arms F, a drum D^2 secured to the shaft within the boat, a foot-lever D^4 pivoted to the side of the boat and flexible means attached to said lever at one end, and surrounding the said drum D^2 at the other, whereby a movement of the said crank D^3 in one direction will wind the said flexible means upon the drum and a movement of the lever, by the foot, will unwind the same in propelling the boat, substantially as described.

655,743. DERRICK ATTACHMENT FOR HANDLING DRILL-ROD SECTIONS OF WELL-AUGERS. WILLIAM E. THOMAS, Fontanelle, Iowa. Filed Nov. 17, 1899. Serial No. 737,303. (No model.)

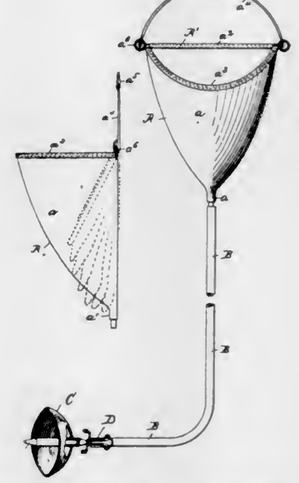


Claim.—1. In a derrick attachment for handling drill-rod sections, a shaft for pulleys having a right-angled extension at one end adapted to enter a fixed perforated ear, a hanger having a shaft-bearing at its lower end and a hook-shaped trunnion at its other end, a yoke or rope-guide extending at right angles from the shaft, two pulleys mounted on the shaft to rotate jointly, a rope fixed to each pulley and perforated ears fixed to a derrick for pivotally connecting the shaft and hanger with the derrick, all arranged and combined to operate in the manner set forth for the purposes stated.

2. In a derrick attachment for handling drill-rod sections, a shaft for pulleys having a right-angled extension at one end adapted to enter a fixed perforated ear, a hanger having a shaft-bearing at its lower end and a hook-shaped trunnion at its other end, a yoke or rope-guide extending at right angles from the shaft, two pulleys mounted on the shaft to rotate jointly, a rope fixed to each pulley and perforated ears fixed to a derrick for pivotally connecting the shaft and hanger with the derrick, and a metal loop fixed to the derrick at a point below the shaft and pulleys, all arranged and combined to operate in the manner set forth for the purposes stated.

3. A derrick attachment for handling drill-rod sections, comprising a shaft for pulleys having a right-angled extension at one end adapted to enter a fixed perforated ear, a hanger having a shaft-bearing at its lower end and a hook-shaped trunnion at its other end, a yoke or rope-guide extending at right angles from the shaft, two pulleys mounted on the shaft to rotate jointly, a rope fixed to each pulley and perforated ears fixed to a derrick for pivotally connecting the shaft and hanger with the derrick, a metal loop fixed to the derrick at a point below the shaft and pulleys and an elbow-shaped frame having a pawl pivoted thereto and the outer end of the pawl fixed to the end of the rope on the smallest of the two pulleys, all arranged and combined to operate in the manner set forth for the purposes stated.

655,744. SYRINGE. WASHINGTON S. VALENTINE, New York, N. Y. Filed Sept. 25, 1899. Serial No. 731,573. (No model.)



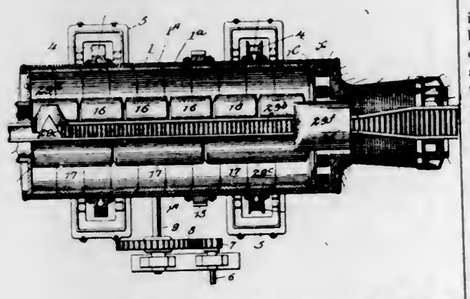
Claim.—1. In an appliance for urethral and vesical irrigation, the combination with a reservoir to hold the irrigation liquid, of a tube of soft rubber, connected at one end to said reservoir and having its circumferential wall at its opposite or free end convergent upon itself toward the longitudinal axial line of the tube and provided with an aperture in the extremity of said free end on said axial line, together with an annular concavo-convex flange of soft rubber, mounted on said tube adjacent to and with its concave face extending toward said contracted free end thereof, substantially as and for the purpose specified.

2. In an appliance for urethral and vesical irrigation, the combination with a reservoir to hold the irrigation liquid, of a tube of soft rubber, connected at one end to said reservoir and having its circumferential wall at its opposite or free end convergent upon itself toward the longitudinal axial line of the tube and provided with an aperture in the extremity of said free end on said axial line, together with an annular, concavo-convex flange on the tube, integral with its wall and adjacent to and with its con-

cave face extending toward and surrounding said contracted free end thereof; substantially as and for the purpose specified.

3. In an appliance for urethral and vesical irrigation, a reservoir to hold the irrigation liquid composed of a bag of soft rubber, provided with a discharge-aperture at its lower end, and with a rigid frame inclosed in its upward edge or rim, consisting of a wire constituting a section which describes a right line, an opposite section which describes a curve between one end and the other of said right-line section and eyes at the respective ends of said right-line section projecting beyond the bag-rim, together with a bail or handle hinged to said eyes on said frame, and a flexible tube attached to and leading from the discharge-aperture of said bag; substantially as and for the purpose specified.

655,745. CYLINDRICAL ROLLER-CRUSHER. THOMAS C. WALKER, Denver, Colo., assignor of two-thirds to James E. Bowden, same place, and Charles A. Gehrmann, Idaho Springs, Colo. Filed Oct. 8, 1898. Serial No. 692,999. (No model.)



Claim.—1. The combination, with a rotatable cylinder, of a series of rollers in a line therein, and an independent roller or rollers each of greater length than the rollers comprising the first-named series adapted to roll parallel to the said series of rollers within the cylinder, substantially as described.

2. The combination of a rotatable cylinder provided with a baffle-ring near one end and a series of buckets between the baffle-ring and the end of the cylinder, and a reciprocating pan discharging through the end of the cylinder into which said buckets may discharge their contents, substantially as described.

3. The combination of a rotatable cylinder provided with ends having central openings, a screen at one end of the cylinder, crusher-rollers within the cylinder, a trough extending through the cylinder and screen longitudinally, a hanger supported by the end piece of the cylinder for supporting the trough, and means for reciprocating the trough, substantially as described.

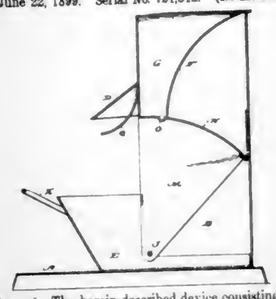
4. The combination of a rotatable cylinder provided with ends having central openings, crushing-rollers within the cylinder, a reciprocating trough through the cylinder, a baffle-ring forming an annular wall near one end of the cylinder, a series of buckets between the baffle-wall and the discharge end of the cylinder, and a pan carried by the trough upon which the said buckets may discharge their contents, substantially as described.

5. The combination with a rotatable cylinder of a cylindrical screen that rotates with the cylinder, a trough passing through the screen into the cylinder, a frame carried by the end of the cylinder for supporting the trough, and a series of buckets at the free end of the screen adapted to empty their contents into the trough, substantially as described.

6. In a grinding-mill, two concentric conical screens attached to one end of a cylinder of a stone-crusher, a series of buckets into which the material that will not pass through the screens empty, a trough for returning the material that passes into said buckets to the grinding mechanism of the mill, a frame having rollers running on a flange of the end of the screens for supporting the trough, substantially as described.

7. The combination of a rotatable cylinder provided with heads having central openings, a series of crushing-rollers in the cylinder, a cylindrical screen attached to the discharge end of the cylinder, a baffle-ring near the discharge end of the cylinder, a series of buckets between the baffle-ring and the discharge end of the cylinder, a series of buckets at the outer ends of the screens, a trough extending through the cylinder and the screen, said trough having a spout near the feed end of the cylinder, a pan above the trough and adapted to receive material discharged from the buckets between the baffle-ring and the discharge end of the cylinder, and means to reciprocate the said trough and pan, substantially as described.

655,746. AUTOMATIC DEVICE FOR HOLDING, DELIVERING, AND IGNITING MATCHES. ANDREW T. WANNENWETSCH, Buffalo, N. Y. Filed June 22, 1899. Serial No. 721,512. (No model.)



Claim.—1. The herein-described device consisting of a base, a casing provided with an opening in its lower front wall mounted upon said base, a curved wall in the upper part of said casing and forming a wall of a match-receptacle in the upper portion of the casing, a delivering mechanism in the lower portion and comprising the triangular side pieces and the curved plate forming the bottom of the holder and connecting the said sides together at the upper ends and adapted to form the bottom for the said receptacle and to deliver the match, and means to ignite the match while being delivered and spring-arms secured at one end to the casing and curved to conform to the curvature of said plate for holding the matches, substantially as shown and described.

2. The combination of the base, a casing, the curved plate in the upper portion of the casing and forming with the side and front walls of the casing, a match-holder, and a pivoted match-deliverer with curved upper end with slot and groove, and means for operating said deliverer, of a hood on the front of the casing, and spring holding-arms disposed beneath said hood with one end fixedly attached to the casing beneath the hood for holding the match in said groove, substantially as described.

3. The combination of the base and casing, a match-holder, a shaft, a handle on said shaft, a spring acting on the shaft to hold it in its normal position, a match-deliverer mounted on said shaft and having a match-receiving groove on its upper end, a hood and curved spring-arms arranged beneath said hood with one end fixedly attached to the casing beneath the hood for retaining the match in said groove and an igniter in the path of the head of the match as it is moved by said deliverer, as and for the purpose specified.

655,747. ELECTROMEDICAL VACUUM APPARATUS. GEORGE W. WINCKFIELD, Alameda, Cal., assignor of one-fourth to George C. Fabens, same place. Filed Nov. 29, 1899. Serial No. 738,661. (No model.)



Claim.—1. A vacuum-cup composed of sections detachably connected, and an electrode clamped between said sections.

2. A vacuum-cup composed of detachable sections, and a valve applied to one of said sections and controlling a relief-opening therein.

3. A vacuum-cup comprising a rim-section and a bowl-section detachably connected, and said rim-section having a fitting stem or nozzle and a valve-controlled relief-opening.

4. A vacuum-cup comprising sections having engaging flanges, one of which is provided with a notch or slot, and an electrode disk or plate clamped between said sections and having a binding-post exposed at said slot for attachment with a battery connection.

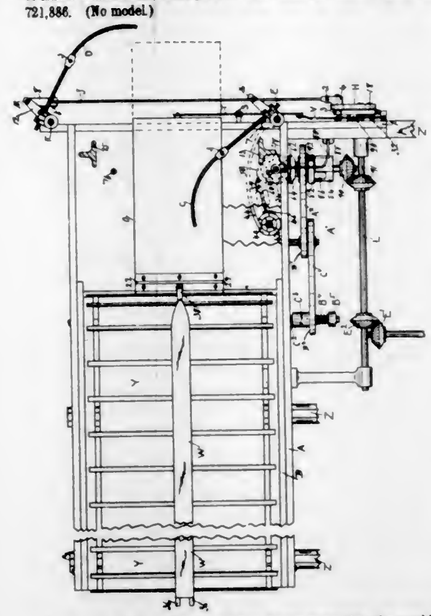
5. A cup of the character described, comprising detachable sections, an electrode composed of a metallic disk or plate clamped between said sections, and suitable battery connections for said electrode.

6. A cup of the character described, comprising a bowl-section having a nozzle for connection with a vacuum-pump, a valve-controlled relief-opening and a connecting-flange, and a rim-section also having a connecting-flange for engagement with that on the bowl-section.

7. In an instrument of the character described, the combination of a vacuum-pump having at one end valve-controlled inlet and eduction openings and a collar or socket in communication with said inlet-opening, and a vacuum-cup provided with a nozzle for engagement with said collar or nozzle.

8. In an instrument of the character described, the combination of a vacuum-pump having at one end of its cylinder a head provided with a check-valved inlet-opening, a valve-controlled discharge-opening in the wall of the cylinder adjacent to said head, a collar or socket rising from the head and in communication with said inlet-opening, and a vacuum-cup having a nozzle for engagement with said socket.

655,748. MACHINE FOR SHOCKING GRAIN. THOMAS A. WOOLEY and HERBERT FOX, Hamilton, Canada, assignors of one-half to Adam Zimmerman, same place. Filed June 26, 1899. Serial No. 721,886. (No model.)



Claim.—1. A machine for shocking grain comprising the combination of a carrier, adjustable sides, and a dividing-board above said carrier, rock-shafts E and F with arms at the receiving end of the carrier, a drive-shaft, a crank having a catch and mounted to revolve loosely on said shaft, a clutch-wheel secured to said shaft and engaged by the catch, a spring-board, stops for said catch operated by the spring-board, a lever connected to the spring-board to expand and contract the stops to allow half-revolution of the crank on the reception of each sheaf on the spring-board, to alternately operate the arms, a counter operated by the rock-shaft E, the knotter-shaft and the needle-shaft set in operation through the medium of the counter as described.

2. In a machine for shocking grain, a frame having adjustable sides, a carrier in said frame, a dividing-board parallel with and above said carrier, and rounded at the receiving end to a point, a hinged spring-board at the receiving end of the carrier, vertical rock-shafts E and F with arms, at the receiving end of the carrier, cranks at the lower ends to operate said rock-shafts and arms, a crank having a catch, a driving-shaft, a clutch-wheel secured to said shaft, said crank with catch mounted loosely on said shaft and by means of said catch engaging with said clutch-wheel, a lever connected to the spring-board to operate said stops to allow half-revolution to the crank on the reception of each sheaf on the spring-board to alternately operate the arms and a counter operated by the rock-shaft E, as described.

3. A machine for shocking grain consisting of a frame, the adjustable sides, a carrier in said frame, a dividing-board parallel with and above said carrier, a spring-board at the receiving end of the machine, said board being operated by the sheaves, vertical rock-shafts E, and F, with arms at the receiving end of the carrier, a shaft L, a crank to revolve loosely on said shaft to operate the rock-shafts, a catch on the crank, a clutch-wheel secured to the shaft, stops for the catch operated by said spring-board, a shaft 88, the carrier drive-wheel to revolve loosely on shaft 88, and to revolve once to discharge the shock, a clutch on the forward shaft of the carrier, the counter operated by the rock-shaft E, and mechanism regulated by said counter to set the carrier drive-wheel in operation, as described.

4. A machine for shocking grain comprising a frame and adjustable sides, a carrier at the discharging end of said frame, a dividing-board above said carrier, a hinged spring-board at the receiving end of said frame, supporting-springs at the receiving end of said spring-board to allow said board to yield by the weight of the sheaves, stops on the frame to move outwardly as the sheaves fall upon the spring-board, a crank with catch engaged by the stops and released by the sheaves falling on the spring-board, rock-shafts E and F with arms operated by said crank, a crank on rock-shaft E, a ratchet-wheel worked by a push-rod pivotally connected to said crank, the catch 50 on the knotter-shaft, said catch released by a lever 48, to operate the carrier as described.

5. A machine for shocking grain consisting of a frame with adjustable sides, a carrier in said frame, a dividing-board above the carrier, a spring-board at the receiving end of the carrier, a shaft L, a loosely-fitting crank H, on said shaft, a catch 3, the stops M, and N, to engage the catch 3, said catch released by the falling of the sheaves on the spring-board, the shaft E, having a crank 7, a ratchet-wheel 40, operated by said crank, a knotter-shaft and catch 50, at the receiving end of the frame, a lever 48, which is intermittently operated by a projection on said wheel 40, said catch released by the lever, to allow the knotter-shaft to turn one revolution, a needle-shaft opposite to said knotter-shaft, a crank on the lower end of the knotter-shaft, said crank connected to a crank on the needle-shaft to operate the same, said carrier operated by said shaft L, through the medium of mechanism, as described.

6. A machine for shocking grain comprising a frame with adjustable sides, a carrier at the receiving end of said frame, a dividing-board above said carrier, the vertical rock-shafts, a spring-board at the receiving end of the frame, stops pivoted to the frame and operated by the spring-board, a crank H, a catch 3, on said crank regulated by the stops, a drive-shaft L, and arms on the rock-shafts to take in the sheaves.

7. A machine for shocking grain consisting of a frame with adjustable sides, a carrier in said frame, a dividing-board parallel with and above said carrier, rock-shafts with arms at the receiving end of the frame, a drive-shaft L, a crank H, fitting loosely on the drive-shaft, to operate said rock-shafts, a clutch-wheel 32, secured to said shaft, a catch 3, on said crank to engage with the clutch-wheel and a knotter-shaft, said carrier revolved by the operation of the knotter-shaft, as described.

8. In a machine for shocking grain, a frame with adjustable sides, a carrier at the discharging end, a transverse shaft at the receiving end of carrier, a ratchet on said shaft, the wheel having a ratchet-face engaging the ratchet to operate said carrier, rock-shafts with arms on each said shaft at the receiving end of the carrier, a drive-shaft L, a loosely-fitting crank with catch on said shaft, to operate said rock-shafts, to alternately operate the arms, as described.

9. A machine for shocking grain consisting of a frame with adjustable sides and containing a carrier, a division-board parallel with and above said carrier, a spring-board at the receiving end of the machine, the stops M, and N, pivoted to the frame, a catch 3, that engages with the stops, a drive-shaft L, a loosely-fitting crank H, on the drive-shaft, the rock-shafts, the jointed arms on the rock-shafts, the rods J, and K, a counter operated by one of the rock-shafts, said counter consisting of a ratchet-wheel 40, having a projection 46, a lever 48, engaged by said projection, a knotter-shaft, a catch 50, released by said lever and secured to the knotter-shaft to revolve it once, a catch 78, on said knotter-shaft, a spring-arm 80, engaged by the catch, a catch 82, engaged by the spring-arm, a shaft 88, a clutch-wheel secured thereto, with belt-wheels to drive the carrier, as described.

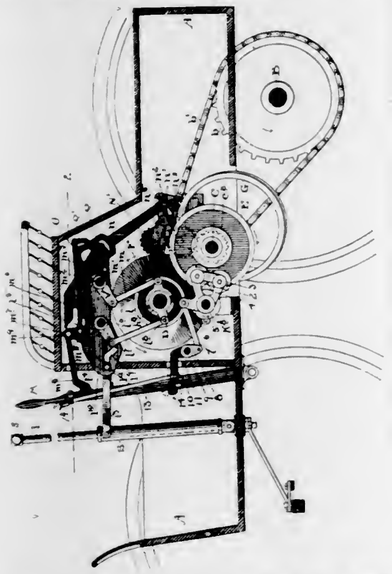
10. In a grain-shocking machine, a pair of double sheaf-placing arms on vertical rock-shafts opposite to each other at the receiving end of the machine, a spring-board between said rock-shafts, stops at the receiving end of the machine, said stops widened at the reception of a sheaf on the spring-board, a loosely-fitting crank carrying a catch and a pin on said catch, said crank on the drive-shaft released by said stops, a continuously-revolving clutch-wheel secured to said drive-shaft to receive the pin 20 of said catch to revolve said crank one half-revolution, and to disengage said clutch-wheel by the contracting of said stops when the spring-board has resumed its original position, as described.

11. In a machine for shocking grain, a frame attached to a binding-machine, a sheaf and shock carrier in said frame, vertical rock-shafts opposite to each other and at the sheaf-receiving end of the frame, arms secured to said rock-shafts, said arms on each rock-shaft curved inwardly and hinged midway of their length to pass each other and allow the sheaves to pass the opposite arms when alternately operating to take in the sheaves, as described.

12. In a machine for shocking grain, a counter consisting of a ratchet-wheel with sets of teeth and a projection, said counter being loosely journaled on the frame, a vertical rock-shaft E, with crank and rod to operate said ratchet-wheel, a catch 50, a lever to engage with said catch, the knotter-shaft, and a number on said shaft to coöperate with the catch, said ratchet-wheel projection intermittently engaging the said lever to release the catch of the knotter-shaft and permit the same to revolve, as described.

655,749. POWER MECHANISM FOR AUTOMOBILE VEHICLES.

EDMUND E. ALLYNE and LE DRU R. POMEROY, Cleveland, Ohio. Filed July 17, 1899. Serial No. 724,088. (No model.)



Claim.—1. The vehicle and the driving-engine, a pair of power-transmitting cones and a band between them, power connections from the engine to the drive-cone and power connections from the driven cone to the vehicle-axle, and a lever and mechanism to carry the driven cone out of working relation with the driving-cone, substantially as described.

2. The vehicle and the cones therein to convey the power to the vehicle, a shaft for each of said cones and link-and-lever mechanism in one of said cones about the shaft thereof to adjust it axially on the shaft, substantially as described.

3. In a power-driven vehicle, a main shaft and a counter-shaft and cones on said shafts in reverse position, and mechanism about the counter-shaft to adjust the cone thereon axially and to lock it in adjusted positions, substantially as described.

4. In a mechanism substantially as described, a pair of reversely-positioned cones and shafts carrying the same, and means in one of said cones to carry it toward and from the other cone uniformly its entire length, comprising opposite sets of links and rocking devices to operate the links and cause the cone to slide on its shaft, substantially as described.

5. In vehicle driving mechanism substantially as described, a shaft and a shifting cone thereon, a collar fixed on the shaft, a rocking member on said collar and opposite push-links engaging said member and the supports of the cone, and the said supports constructed to slide on the shaft, substantially as described.

6. The driving mechanism comprising a shaft and a cone slidably supported thereon, and means to slide the cone consisting of a rotatable sleeve directly upon the shaft, and connections between the sleeve and the cone to slide the cone comprising links to push in opposite directions, substantially as described.

7. The mechanism substantially as described for driving a vehicle, comprising a set of cones and shafts therefor, and means to slide one of said cones axially consisting of levers and links within the cone about the shaft, a sliding sleeve connected with said parts, a main lever, and connections therefrom to said sleeve to actuate the sleeve and the sliding cone, substantially as described.

8. The movable cone and its shaft, and means to slide said cone comprising actuating parts and lever-and-link connections uniting the said parts with the cone, in combination with a main lever and connections with the inner of said actuating parts to rotate the same about its axis and thus cause the cone to slide back and forth on its shaft, substantially as described.

9. In a motor-vehicle, means to provide a direct application of the power thereto comprising a main shaft and a counter-shaft, and a friction-cone on the counter-shaft axially adjustable, gears connecting said shafts and the gear on the counter-shaft constructed to be frictionally actuated through said cone, substantially as described.

10. A direct-acting mechanism to drive a motor-vehicle comprising the main shaft and a counter-shaft, a gear frictionally engaged with the counter-shaft, and a cone to frictionally engage said gear, a pinion on the main shaft, and a set of adjustable pinions intermediate said pinion and gear and arranged to bring either one into mesh with the counter-shaft gear, according to the direction of travel, substantially as described.

11. Means to apply the power directly in a motor-vehicle comprising a main shaft and a pinion thereon, and a counter-shaft and loose gear, a pair of power-transmitting pinions geared together and to said main pinion, means to bring either of said transmitting-pinions into working position with the counter-shaft gear, and a slidable cone on the counter-shaft to lock the loose gear thereon, substantially as described.

12. In power-transmitting mechanism for motor-vehicles, a main shaft and a counter-shaft, gears fixed on said shafts, a set of pinions in constant mesh through one of its members with the gear on the main shaft, and mechanism to operate said pinions comprising links constructed and arranged to throw either one in mesh with the gear on the counter-shaft, substantially as and for the purpose set forth.

13. In power-transmitting mechanism for motor-vehicles, two shafts and gears thereon, a pair of intermediate pinions adapted to bring said gears into operative relation, means to pivotally connect said pinions and a different set of links for operating each pinion, whereby either may be put in mesh, substantially as described.

14. The two shafts and the gears thereon, a pair of intermediate pinions arranged to be alternately used to transmit power, link connections for said pinions, a main controlling-lever and connecting mechanism therefrom to said link connections, whereby said pinions are operated as may be elected, substantially as described.

15. The main shaft and a gear thereon, a pair of pinions in constant mesh with said gear and with each other, direct-acting links for operating each pinion, and means connecting said links, substantially as described.

16. The main shaft and its gear, a pair of intermeshing pinions having one member engaged with said gear, supports on said shaft and links carrying said pinions, and a line of mechanism constructed and arranged to advance either of said pinions to working position and to hold the other out, substantially as described.

17. In a power transmitting and reversing mechanism for motor-vehicles, a pair of intermeshing pinions, links for supporting and adjusting said pinions and a lever and reversing mechanism connected directly with said links, in combination with a counter-shaft and a gear thereon to be engaged by either of said pinions at will, substantially as described.

18. In mechanism for transmitting power in motor-vehicles, a pair of intermeshing pinions, one to drive the vehicle forward and the other backward, and a counter-shaft and a loose gear thereon in meshing relation to both pinions, means to throw one pinion into a mesh at a time, and means to change said pinions, substantially as described.

19. The counter-shaft and its gear, and a cone on the shaft adapted to slide into engagement with said gear, in combination with two intermeshing pinions, a drive-gear connected with one of said pinions, means to throw either pinion into engagement with the counter-shaft gear, and means to change the engagement from one pinion to the other, substantially as described.

20. In motor-vehicle propulsion, a set of reversely-arranged cones and a band adjustable between them, a screw to carry said band, and a set of friction-disks to rotate said screw, substantially as described.

21. The screw to adjust the cone-band having a friction-wheel thereon, and means to rotate said screw comprising a set of friction-disks, a rocking support for said disks and means to rock said support, whereby either of said disks may be brought into operating position and the screw run in either direction, substantially as described.

22. The main shaft and a friction-disk thereon and the band-adjusting screw and a friction-disk thereon, a set of disks intermediate of these on a rocking support, and means to throw either of said disks into working relation with the others, substantially as described.

23. The main shaft and the band-adjusting screw and friction-disks thereon, in combination with a pair of intermediate disks and a rocking support therefor, a main lever, and means connecting said lever with said rocking support to throw either of said intermediate disks into working relation with the other two, substantially as described.

24. The vehicle and the drive and driven cones therein, in combination with means to move the driven cone axially comprising a slidable clutch, means to operate the clutch and means between the clutch and the cone to slide the cone, substantially as described.

25. In cone-operating mechanism for a motor-vehicle, a slidable clutch having substantially-spiral channels and a sleeve within the clutch having projections engaged in said channels, substantially as described.

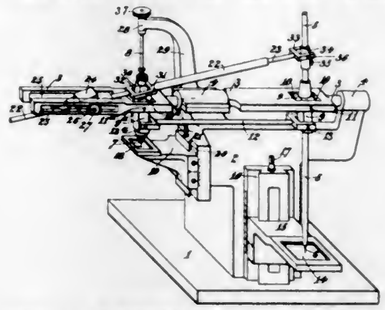
26. The counter-shaft and a cone slidable thereon, and means to slide the cone comprising a clutch, a rotatable sleeve engaged with the clutch and mechanism connecting the clutch with the cone and the shaft, substantially as described.

27. The counter-shaft and the cone thereon, and mechanism to shift the cone on the shaft comprising a rotatable sleeve on said shaft, a direct-acting clutch having a spiral operating engagement with said sleeve, a collar on the clutch, and parts extending thence to the interior of the cone, substantially as described.

28. The counter-shaft and the cone thereon, in combination with means to slide the cone comprising a system of oppositely-arranged push-links, a slidable clutch, an engaging sleeve within the clutch and a set of collars engaged about the clutch and one of said collars connected with the said push-links, substantially as described.

655,750. PANTOGRAPH ENGRAVING-MACHINE.

MARK BARR, Broadheath, England, assignor to the Linotype Company, Limited, London, England. Filed Jan. 4, 1900. Serial No. 343. (No model.)



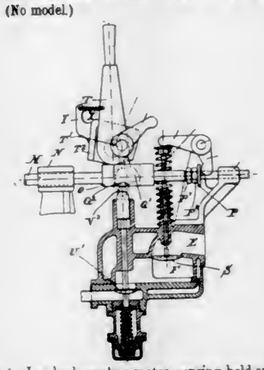
Claim.—1. The hereinbefore-described combination of rocking bar, tracer-rod capable of moving vertically through the said bar and of swinging therein on an axis at right angles with the axis thereof; tool-spindle capable of moving vertically through the said bar and of swinging therein on an axis at right angles with the axis thereof; a link connecting the tracer-rod and the tool-spindle; a telescopic lever having its fulcrum on the said rocking bar; a pivotal connection between the tool-spindle and one portion of the said lever and a pivotal connection between the tracer-rod and the other portion.

2. The hereinbefore-described combination with the pattern-table and the work-table of an engraving-machine, of a spindle centrally fast to each table and depending therefrom; a stationary ball-and-socket joint carried by the frame of the machine under each table and through the ball of which each spindle is respectively made fast; a socket in which the respective spindles can telescope; a rod having the two sockets above mentioned connected to its respective ends by ball-and-socket joints; guides in which the said rod turns; and guides at right angles with the said rod and upon which the said guides and rod can be moved.

3. The hereinbefore-described combination of rocking bar; tracer-rod capable of moving vertically through the said bar and of swinging therein on an axis at right angles with the axis thereof; tool-spindle capable of moving vertically through the said bar and of swinging therein on an axis at right angles with the axis thereof; a link connecting the tracer-rod and the tool-spindle; a telescopic lever having its fulcrum on the said rocking bar; a pivotal connection between the tool-spindle and one portion of the said lever; a pivotal connection between the tracer-rod and the other portion; pattern-table and spindle centrally fast thereto and depending therefrom; work-table and spindle centrally fast thereto and depending therefrom; stationary ball-and-socket joint carried by the frame of the machine under each table and through the ball of which each spindle is respectively made fast; a socket in which the respective spindles can telescope; a rod parallel with the above-mentioned rocking bar and having the two sockets above mentioned connected to its respective ends by a ball-and-socket joint; guides in which the said rod turns; and guides at right angles with the said rod and upon which the said guides and rod can be moved.

655,751. VALVE-GEAR FOR PETROLEUM-ENGINES.

HENRIK A. BERTHEAU, Stockholm, Sweden. Filed Jan. 30, 1899. Serial No. 703,930. (No model.)



Claim.—1. In a hydrocarbon-motor, a spring-held exhaust-valve and its operating mechanism, a passage leading to the exhaust-valve, a spring-held valve in said passage to control non-explosive gas under pressure, a bell-crank lever and its operating mechanism, said bell-crank lever arranged to actuate said spring-held valve and the exhaust-valve at periods intermediate the times at which said exhaust-valve is normally actuated by its operating mechanism, substantially as described.

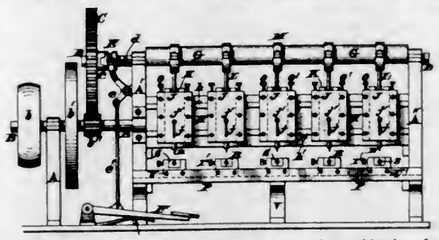
2. In a hydrocarbon-motor, a spring-actuated exhaust-valve and its operating mechanism, a passage leading to the exhaust-valve, a spring-held valve in said passage to control non-explosive gas under pressure, a bell-crank lever actuated by the exhaust-valve-operating mechanism arranged to actuate said spring-held valve and the exhaust-valve at periods intermediate the times at which said exhaust-valve is normally actuated by its operating mechanism, and devices to cause said bell-crank lever to run idle thereby converting the engine from a two-stroke-cycle to a four-stroke-cycle engine, substantially as described.

3. In a hydrocarbon-motor, a spring-actuated exhaust-valve, a rod and tappet arranged to operate the same, a passage leading to said exhaust-valve, a second spring-held valve in said passage controlling non-explosive gas under pressure, a bell-crank, means for operating the same, one arm of said bell-crank arranged to operate the second valve and the other to operate the exhaust-valve and mechanism to cause said bell-crank to run idle, substantially as described.

4. In a hydrocarbon-motor, a spring-actuated exhaust-valve, a rod and tappet arranged to operate the same, a passage leading to said exhaust-valve, a second spring-held valve in said passage controlling non-explosive gas under pressure, a yoke on said rod, a bell-crank operated by said yoke and arranged to operate both valves, substantially as described.

655,752. MULTIPLE PUNCHING-MACHINE.

CHARLES E. BLECHSCHMIDT, Bellevue, Ky., assignor to the Victor Safe and Lock Company, Cincinnati, Ohio. Filed Feb. 16, 1900. Serial No. 5,442. (No model.)



Claim.—1. In a multiple punching-machine, the combination of an operating-shaft eccentrically mounted, punch-carrying plungers operatively connected thereto and independent dies, one for each of said punches, all said parts being supported so as to be independently adjustable in a lateral direction with reference to each other and with reference to the operating-shaft.

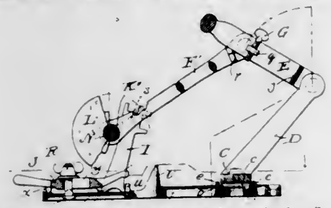
2. In a multiple punching-machine, the combination of a frame having upright and horizontal members, heads carried on one of these latter

and supported thereon, so that each is independently adjustable in a lateral direction to and from the other heads, plungers, one fitted to each of these heads in a manner to be capable of a reciprocating motion in a direction at right angles to the direction of adjustment of said heads which latter serve as guides for said plungers, punches carried by each of these latter, complementary dies, one of each for these punches, said dies also supported on one of the longitudinal members of the frame and each independently adjustable in a lateral direction with reference to the other dies and to meet the position of the punches, an operating-shaft eccentrically mounted and an independent operative connection between this latter and each of the plungers.

3. The combination, in a multiple punching-machine, of the standards A' A'', having a common eccentric shaft G journaled in them; a longitudinally-ribbed tie H h h', uniting said standards; shiftable heads I carried by said tie; plungers K reciprocating within said heads, and armed with punches *u*; pitman L connecting said plungers with said shaft and a grooved bed-plate P *p*, provided with shiftable bolsters R, having dies T inserted in them, all as herein described, and for the purpose stated.

4. In a punching-machine, the bed-plate P, having an undercut groove *p*, along its upper surface; a bolster R traversing said groove and provided with a groove *r* and clamp-screws *r'*, *r'*; a block S fitted within said groove *r*, and furnished with a die T, and a clamp-screw *s*, tapped in said block and bearing against said die, for the purpose stated.

655,753. GRINDING-MACHINE. HARRY W. BOLENS, Port Washington, Wis. Filed Jan. 31, 1900. Serial No. 3,392. (No model.)



Claim.—1. A grinding-machine of the species described having its base and standard-yoke in rocker rib-and-groove connection, means for determining proper set of said yoke, and lugs on said base facing the extremities of the rocker rib and groove.

2. A grinding-machine of the species described having its standard-yoke provided with an upper recess and its rocker-yoke provided with a lug engaging said recess in one assembly of the machine, a projection of said standard-yoke at the upper terminus of the aforesaid recess being in the path of said lug in another assembly of said machine.

3. A grinding-machine of the species described provided with a removable support held in working position by the sickle-bar clamp mechanism of said machine, and means for holding the carrier element of the machine in rigid connection with the support at a predetermined elevation.

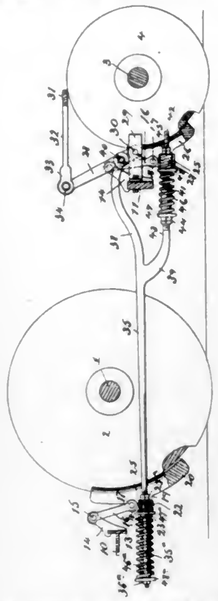
4. A grinding-machine of the species described having a removable part in the form of an angularly-recessed device by which the carrier element of the machine is supported in a predetermined position, said device being held in working position by the sickle-bar clamp mechanism of said machine.

5. A grinding-machine of the species described having a standard thereof provided with a stud, a spur-wheel loose on the stud, a pinion fast on the drive-wheel spindle of the machine and in mesh with the spur-wheel, a rocker-yoke in connection with the machine-standards, a grinding-device carrier in pivotal connection with the rocker-yoke, and a pitman in adjustable throw connection with the aforesaid spur-wheel and rocker-yoke.

655,754. DIFFERENTIAL BRAKE MECHANISM. JOHN A. BRILL and WALTER S. ADAMS, Philadelphia, Pa.; said Adams assignor to said Brill. Original application filed Mar. 3, 1897, Serial No. 625,891. Divided and this application filed Sept. 16, 1897. Serial No. 651,886. (No model.)

Claim.—1. In a brake mechanism for a truck of the maximum traction class having large and small wheels, and means for differentiating the brake-pressure exerted upon the large and small wheels, comprising shoes, and connecting-beams therefor for each of the sets of wheels, a primary lever supported on the truck, a connection between the primary lever and the shoes for the small wheels, whereby said shoes are applied to said wheels through the operation of said lever, a movable connection between said primary lever and the shoes of the large wheels, and a spring or springs interposed in the last-mentioned connection to oppose the application of pressure to said larger wheels, substantially as described.

2. In a brake mechanism for a truck of the maximum traction class having large and small wheels, of means for applying a differentiating braking pressure on the large and small wheels, comprising shoes and connecting-beams for each of the sets of wheels, a primary lever supported on the truck, a movable connection between said lever and the beam of the large-wheel shoes, a spring or springs interposed between said movable connection and beam, and an inflexible arm leading from said lever to the beam of the small-wheel shoes, substantially as described.



3. In a brake mechanism for a truck of the maximum traction class having large and small wheels, and means for differentiating the brake-pressure exerted upon the large and small wheels, comprising shoes, and connecting-beams therefor for each of the sets of wheels, a primary lever supported upon the truck, a movable connection between the primary lever and the shoes of the large wheels, a spring or springs interposed in this connection, a movable connection between said primary lever and the shoes of the small wheels and a spring or springs interposed in the latter connection, the spring or springs for the large-wheel shoes being of a greater resisting capacity, substantially as described.

4. In a brake mechanism for a truck of the maximum traction class having large and small wheels, of means for applying a differentiating braking pressure on the large and small wheels, comprising shoes and connecting-beams for each of the sets of wheels, a primary lever supported on the truck, a movable connection between said lever and the beam of the large-wheel shoes, a spring or springs interposed in said connection, an inflexible arm leading from said lever to the beam of the small-wheel shoes, and a spring or springs interposed between said arm and latter beam, the spring or springs for the large-wheel shoes being of a greater resisting capacity, substantially as described.

5. The combination with a truck of the maximum traction class having large and small wheels, of the brake mechanism comprising a primary lever pivoted on the truck, brake-shoes, of beams for connecting the shoes in pairs, a rod movably connecting said primary lever and the shoe-beam for the large wheels, a spring or springs interposed in said connection, a supplemental rod between the first-mentioned rod and the shoe-beam for the small wheels and movably connected with said latter beam, both rods moving in the same direction, a spring or springs between the supplemental rod and its beam, and an abutment on said supplemental rod on the other side of the beam, substantially as described.

6. In combination with a car-truck having paired large and small wheels, of a brake mechanism therefor, said mechanism comprising paired shoes and means for operating them, springs initially of different resisting capacity opposing the application of each of the pairs of shoes to each pair of said wheels, and further means for adjusting the capacity of said springs, substantially as described.

7. In combination with a car-truck having large and small wheels, of a brake mechanism therefor, said mechanism comprising shoes and means for operating them, springs for opposing the application of the shoes to the smaller wheels, and further springs of a greater resisting capacity for

opposing the application of the shoes to the larger wheels, substantially as described.

8. In combination with a truck having large and small wheels, of a brake mechanism therefor, said mechanism comprising paired shoes, beams for each set of shoes, brake-rods, a spring interposed between the rod and shoes for the smaller wheels, and a spring of greater resisting capacity interposed between the rod and shoes for the large wheels, substantially as described.

9. In combination with a truck having large and small wheels, of a brake mechanism therefor, said mechanism comprising paired shoes, beams for each set of shoes, rods passing loosely through said beams and extending therefrom in the same direction, abutments on the rods, heavier springs on the rods between said abutments and the shoes for the larger wheels, and lighter springs likewise located in reference to the smaller wheels, the springs and beams being thereby adapted to be moved in the same direction to apply the shoes and compress the springs, substantially as described.

10. In a brake mechanism, the combination with the shoes paired in sets, operating brake-rods, a spring or set of springs of one resisting capacity opposing the application of one set of shoes to one set of wheels, and another spring or set of springs of greater resisting capacity opposing the application of the other set of shoes to the other set of wheels, substantially as described.

11. In a brake mechanism, the combination with the shoes paired in sets, a brake-beam for each of the sets of shoes, brake-rods movably engaging said beams, a spring or set of springs of one resisting capacity opposing the application of one set of shoes to one set of wheels, and another spring or set of springs of greater resisting capacity opposing the application of the other set of shoes to the other set of wheels, substantially as described.

12. In combination with a car-truck having large and small wheels, of a brake mechanism having shoes paired in sets, operating brake-rods, springs of variable capacity opposing the action of the shoes, and means for varying the capacity of said springs, the springs for the large wheels being of greater capacity, substantially as described.

13. In a car-truck, the combination with paired wheels, of a brake mechanism therefor comprising brake-beams and paired shoes, and means for operating them, consisting of paired rods connected to one of said brake-beams, and having rigid branches connected to another brake-beam, abutments on said branches, and springs interposed between said abutments and one side of the corresponding brake-beam, substantially as described.

14. The combination in a brake mechanism of a pair of movable brake-beams, brake-shoes moved by said brake-beams, a pair of rods connected with one of said brake-beams and having branches connected with another brake-beam, abutments on said rods and springs interposed between said abutments and corresponding sides of both of said beams, said springs resisting the application of the brake-shoes, operating means working in unison and connection between said operating-levers and said rods, substantially as described.

15. The combination in a brake mechanism of movable brake-beams and brake-shoes carried thereby, rods passing through bearings on one of the said brake-beams, and having branches passing through bearings on another brake-beam, abutments on said rods on opposite sides of said bearings, springs resisting the application of the brake-shoes interposed between one set of such abutments and the corresponding sides of both brake-beams; and means connected to the said rods for operating the latter and the brake-beam in unison, substantially as described.

16. In a railway-brake, the combination of a pair of brake-beams provided with shoes, a brake-lever, a spring connection between one of the brake-beams and the brake-lever, and a spring connection of greater tension located between said lever and the other brake-beam, substantially as described.

17. In a brake apparatus, the combination with the truck side frames and the wheels, of the cross-bar, levers fulcrumed on the cross-bar, opposing brake beams and shoes, brake-rods connected to said levers and movably engaging said brake-beams, an equalizing connection of said levers with the source of power, and springs of different resisting capacity through the medium of which brake-pressure is applied to each of the pairs of shoes for the pairs of said wheels, substantially as described.

18. In a truck-brake apparatus, the combination with the wheels, of a floating equalizing-bar, a brake-beam and paired shoes at one end of the truck, a brake-beam and paired shoes at the opposite end of the truck, an upright brake-lever, connections between said lever and the former brake-beam, and said lever and the latter brake-beam, and springs interposed in said connections, the equalizing-bar being adapted to move the former brake-beam in the direction of movement of said bar, substantially as described.

19. In a brake mechanism for a truck having large and small wheels, means for exerting differential brake-pressure upon the large and small wheels, comprising shoes, connecting-beams for the shoes of each of the sets of wheels, a lever supported on the truck, a connection between the lever and the shoes for one of the sets of wheels whereby the said shoes are applied to said wheels through the operation of said lever, a movable connection between said lever and the shoes of the other set of wheels, and a spring or springs interposed in said last-mentioned connection through which pressure is applied to said last-named wheels, substantially as described.

20. In combination with a car-truck having paired large and small wheels, of a brake mechanism therefor, comprising paired shoes and means for operating them, and springs of different resisting capacity through the medium of which brake-pressure is applied to each of the pairs of shoes for the pairs of said wheels, substantially as described.

21. In combination with a car-truck having large and small wheels, a brake mechanism having shoes paired in sets, operating brake-rods, springs of variable capacity through which the action of the shoes is controlled, and means for varying the capacity of said springs, substantially as described.

22. In combination with a truck having large and small wheels, of a brake mechanism therefor, said mechanism comprising paired shoes, beams for each set of shoes, rods passing through said beams, abutments on the rods, heavier springs on the rods between said abutments and the shoes for the larger wheels, and lighter springs likewise located in reference to the smaller wheels, substantially as described.

23. In a brake apparatus, the combination with the truck, of the truck-frame and the wheels, the cross-bar, a lever fulcrumed on the cross-bar, opposing brake beams and shoes, brake-rods connected to said lever and movably engaging said brake-beams, and springs of different resisting capacity through the medium of which brake-pressure is applied to each of the pairs of shoes for the pairs of said wheels, substantially as described.

24. In a brake mechanism for a truck of the maximum traction class having large and small wheels, of means for applying a differentiated braking pressure on the large and small wheels, comprising shoes, and connecting-beams for one of the sets of wheels, a primary lever supported on the truck, an inflexible connection between said lever and the beam of the large-wheel shoes, an abutment on said connection beyond said beam, a resilient element interposed between said abutment and said beam, an inflexible arm leading from said lever to the beam of the small-wheel shoes, and a resilient element interposed between said arm and latter beam, substantially as described.

25. The combination with a truck of the maximum traction class having large and small wheels, of a brake mechanism comprising a primary lever pivoted on the truck, brake-shoes, of beams for connecting the shoes in pairs, a rod connecting said primary lever and the shoe-beam for the large wheels, between which rod and beam a spring is interposed, a supplemental rod between said first-mentioned rod and the shoe-beam for the small wheels, the rods being movably connected to both beams, both rods moving in the same direction, a spring between the supplemental rod and its beam, and an abutment on said supplemental rod on the other side of the beam, substantially as described.

26. The combination with the brake-shoes, of the beams connecting the shoes in pairs, an operating-lever, a brake-rod extending between said beams and movably engaging both of said beams, a connection between the rod and said lever, and springs interposed between both of said beams and said rod to oppose the application of the paired shoes to the wheels, substantially as described.

27. In a brake mechanism, the combination with the shoes and beams connecting said shoes in pairs, with the primary lever fulcrumed at its end, rods extending between one of said beams and secured to said primary lever between its power end and fulcrum, springs between said rod and said beam, a thrust-bar operated by said lever, and a spring or springs interposed between said thrust-bar and the opposing beam, said bar and beam having a movable connection, substantially as described.

28. In a truck-brake mechanism, the combination with the shoes adapted to be moved in the same direction, opposing beams connecting the shoes in pairs, one of said beams being located between the wheels, the other outside of the wheels, a brake-rod passing loosely through the beams, means for moving the rod, abutments on the rod, one of the abutments being between the wheels and the other outside of the wheels, and springs between each of the beams and each of said abutments, substantially as described.

29. The combination with the shoes and beams, of the upright lever fulcrumed at its end upon the car-truck, the inflexible brake-rod secured to one beam at one end and to the primary lever at its other end between the power end and fulcrum of said levers, a spring interposed between said brake rod and beam, an extension of said rod movably engaging the other beam, an abutment on said extension, and a spring between said abutment and said beam, substantially as described.

30. The combination with the shoes, and beams connecting them, with the primary lever, the brake-rod extending between one of the said beams and pivotally secured to said lever, a spring interposed between said brake rod and beam, an extension of said rod movably engaging the other beam, an abutment on said extension, a spring interposed between

said abutment and said beam, and an abutment on said extension for said beam, substantially as described.

31. The combination of the primary lever, the shoes and the beams connecting said shoes in pairs, a rod extending between one of said beams and said primary lever, an extension of said rod movably connected with the other beam, and springs interposed between the connection of the rod and the former beam and the extension of said rod and the latter beam, substantially as described.

32. In a brake system, the combination of the brake-shoes, beams, and operating means therefor, of the brake-rod resiliently connected at one end with one beam, and at the other with said operating means, and an extension from said rod resiliently connected with another beam of said system, substantially as described.

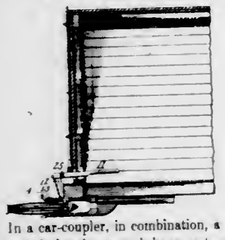
33. The combination of the primary lever, the shoes, and beams connecting said shoes in pairs, rods extending between one of said beams and said primary lever, the abutment 48*, springs between said abutment and said beam, and an extension of said rod movably connected with the other beam, a spring on said extension, one of which abuts against said beam, and the nuts 44, 45 respectively, forming an adjustable abutment for said latter spring and beam, substantially as described.

34. The combination with the cross-bar 11, the hanger 29 extending therefrom, upright lever 28 fulerumed at its end to said hanger, the brake-shoes 20 and connecting-beam 23, the shoes 26 and connecting-beam 27, a hanger for supporting the last-mentioned shoes from said cross-bar, a brake-rod 35 extending through the beam 23 at one end, the extension 35* of which carries the spring 46*, an abutment 48* for the spring, said brake-rod having a bifurcated end 38, 39, the arm 38 being secured to said brake-lever adjacent the latter's fulcrum, the lower arm 39 movably engaging the beam 27, an abutment on said arm 39, and a spring interposed between said abutment and said beam, substantially as described.

35. The combination of the shoes 20 and beam 23, the upright lever 28, the equalizing-bar 31, and extensions 32 pivotally secured to the upper end of said upright lever, forked rods each of which is secured at one end to the beam 23, the upper fork of each of said rods being secured to one of said upright levers above the latter's fulcrum, the lower fork movably engaging the beam 27, an abutment on the said lower fork, a spring between said abutment and beam, and a spring between the ends of said rods and the beam 23, substantially as described.

36. In a brake mechanism, the combination with the primary lever, the paired shoes and connecting-beams, of a rod having a direct connection with one of said beams, and a spring or springs of greater resisting capacity interposed between said beam and rod, a further connection of said rod with the other beam, and a spring or springs of lesser resisting capacity interposed between said connection and latter beam, substantially as described.

655,755. CAR-COUPLING. JOHN F. BUCKHOLTS, Lois, Ga. Filed Mar. 31, 1900. Serial No. 11,030. (No model.)



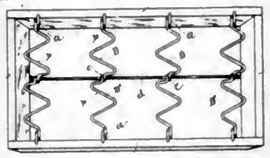
Claim.—1. In a car-coupler, in combination, a draw-head, a link-engaging device carried thereby, a rock-lever extending longitudinally above the draw-head, an operating-lever extending across the end of the car, two fulcrums therefor located at points equidistant from the rock-lever, and an operating-rod extending from the top of the car downward to the operating-lever, the operating-lever being cut away to form a seat for the rock-lever, and the operating-rod, operating-lever and rock-lever being coupled together, substantially as described.

2. In a car-coupler, an arrow-headed link, and centering-springs extending longitudinally from head to head thereof, and having both ends slidingly fitted to the heads of the link, substantially as described.

3. In a car-coupler, an arrow-headed link having the heads thereof mortised, in combination with centering-springs extending longitudinally of the link and slidingly fitted in the mortises in the heads thereof, substantially as described.

655,756. SPRING FOR UPHOLSTERED CUSHIONS. FREDERICK BEOB, Cincinnati, Ohio. Filed Nov. 20, 1899. Serial No. 737,585. (No model.)

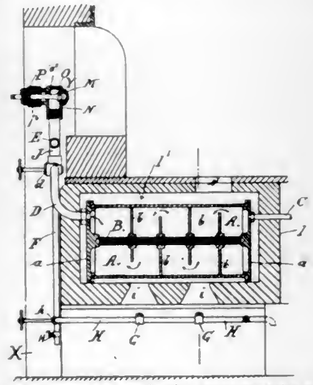
Claim.—1. In a buggy-cushion, the combination of a rectangular frame, a plurality of springs each having a vertical coil near one end attached to the side of the frame, the springs having horizontal undulations bearing against the cushion, a loop formed in the other end of each spring, and a spring-rod over which the loop ends of said springs engage, substantially as specified.



2. In a buggy-cushion, the combination of a rectangular frame, a plurality of springs attached to the opposite sides of said frame, each spring having a vertical coil near its attached end, and an arched extension having horizontal undulations bearing against the cushion, the meeting ends of the oppositely-disposed springs having loops, and a spring-rod over which the meeting loop ends of said springs engage, substantially as specified.

3. In a buggy-cushion, the combination of a rectangular frame, duplex springs attached to the opposite sides of said frame, having vertical coils near such attached ends and horizontal undulations bearing against the cushion-bottom, loops formed on the meeting end of said springs in vertical planes, and a horizontal flexible steel rod passed through said loops and supporting said springs making a jointed spring connection between the independent springs, substantially as specified.

655,757. LIQUID-FUEL FURNACE. PIERRE J. E. E. CHAMBOST, Liverpool, England. Filed Dec. 28, 1897. Serial No. 663,934. (No model.)



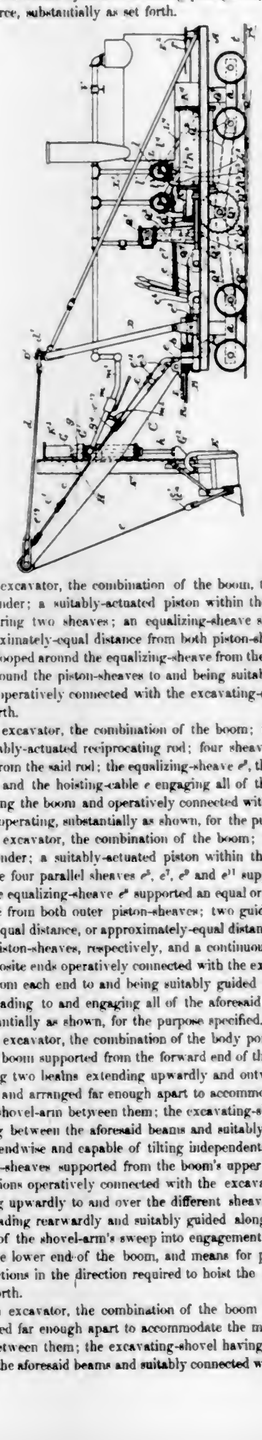
Claim.—1. In apparatus for heating steam-generator or other furnaces by oil-gas, a pair of oil-vaporizing cylinders A, with internal diaphragms *b* carried from a central spindle B; and oil-inlets and vapor-outlets for said cylinders; substantially as and for the purposes set forth.

2. In apparatus for heating steam-generator or other furnaces by oil-gas, the oil-vaporizing cylinders A, with internal diaphragms *b*, and threaded shaft B carrying said diaphragms, and on and by which they can be adjusted longitudinally; and oil-inlet pipe C at one end, and vapor-outlet pipe D at the opposite end; substantially as set forth.

3. In apparatus for heating steam-generator or other furnaces by oil-gas, the oil-vaporizing cylinder A with internal diaphragms *b*, and the threaded shaft B, carrying said diaphragms and on and by which they can be adjusted longitudinally, and oil-inlet pipe C at one end, and vapor-outlet pipe *d* at the opposite end; substantially as set forth.

655,758. EXCAVATOR. ARTHUR E. CHENEY, GEORGE A. CHENEY, and GEORGE W. KING, Marion, Ohio, assignors to the Marion Steam Shovel Company, same place. Filed July 2, 1898. Serial No. 685,020. (No model.)

Claim.—1. In an excavator, the combination with the excavating-shovel; a cylinder; the piston within the cylinder; the piston-rod, and such operative connection between the shovel and the piston as will hoist the shovel upon the actuation of the piston in the one direction; of a fluid-pressure-supply source; two passage-ways connected with the said source and in open relation with opposite ends, respectively, of the cylinder, and the passage-way communicating with the cylinder's hoisting-pressure-receiving end having a capacity of fluid transmission greater than the other passage-way; an exhaust-outlet, and valve mechanism arranged and operating to establish and interrupt the pressure-supply through each cylinder-connecting passage-way alternately, and to connect the exhaust-outlet with one of the cylinder-connecting passage-ways while it establishes open relation between the other cylinder-connecting passage-way and the pressure-supply source, substantially as set forth.



2. In an excavator, the combination of the boom, the excavating-shovel; a cylinder; a suitably-actuated piston within the cylinder; the piston-rod bearing two sheaves; an equalizing-sheave supported at an equal or approximately-equal distance from both piston-sheaves, and the hoisting-cable looped around the equalizing-sheave from the piston-sheaves and leading around the piston-sheaves to and being suitably guided over the boom and operatively connected with the excavating-shovel, substantially as set forth.

3. In an excavator, the combination of the boom; the excavating-shovel; a suitably-actuated reciprocating rod; four sheaves e^6, e^7, e^8 and e^{11} supported from the said rod; the equalizing-sheave e^9, the pair of guide-sheaves e^5 e^{10}, and the hoisting-cable *e* engaging all of the said sheaves, and guided along the boom and operatively connected with the shovel, all arranged and operating, substantially as shown, for the purpose specified.

4. In an excavator, the combination of the boom; the excavating-shovel; a cylinder; a suitably-actuated piston within the cylinder; the piston-rod; the four parallel sheaves e^6, e^7, e^8 and e^{11} supported from the piston-rod; the equalizing-sheave e^9 supported an equal or approximately-equal distance from both outer piston-sheaves; two guide-sheaves e^5 e^{10} supported an equal distance, or approximately-equal distance, from the different inner piston-sheaves, respectively, and a continuous hoisting-cable having its opposite ends operatively connected with the excavating-shovel and leading from each end to and being suitably guided along the boom and thence leading to and engaging all of the aforesaid sheaves in the manner substantially as shown, for the purpose specified.

5. In an excavator, the combination of the body portion; the laterally-swinging boom supported from the forward end of the body portion, and comprising two beams extending upwardly and ontwardly from the body portion, and arranged far enough apart to accommodate the movements of the shovel-arm between them; the excavating-shovel having its arm extending between the aforesaid beams and suitably connected with and movable endwise and capable of tilting independently of the boom; the two guide-sheaves supported from the boom's upper end; the hoisting-cable sections operatively connected with the excavating-shovel and thence leading upwardly to and over the different sheaves, respectively, and thence leading rearwardly and suitably guided along opposite sides, respectively, of the shovel-arm's sweep into engagement with the guide-sheaves at the lower end of the boom, and means for pulling upon the said cable-sections in the direction required to hoist the shovel, substantially as set forth.

6. In an excavator, the combination of the boom comprising two beams arranged far enough apart to accommodate the movements of the shovel-arm between them; the excavating-shovel having its arm extending between the aforesaid beams and suitably connected with and movable endwise and capable of tilting independently of the boom; two guide-sheaves supported from the boom's forward end and arranged vertically and longitudinally of the boom and a suitable distance apart; two other guide-sheaves arranged vertically and longitudinally of the boom and supported a suitable distance apart at the rear end of the boom; the hoisting-cable sections operatively connected with the excavating-shovel, thence leading upwardly to and over the different forward sheaves, respectively and thence to and engaging the different rear sheaves, respectively; means for pulling upon the said cable-sections in the direction required to hoist the shovel; two cable-spreading sheaves supported from the boom at the forward side of the shovel-arm's sweep, and arranged between and in position to spread apart the cable-sections; another pair of sheaves supported from the boom between the said spreading-sheaves and the boom's forward guide-sheaves and arranged to cause the cable-sections to converge in the direction of the last-mentioned sheaves from the said spreading-sheaves; another pair of spreading-sheaves supported from the boom at the rear side of the shovel-arm's sweep and arranged between and in position to spread apart the cable-sections, and another pair of sheaves supported from the boom at the outer sides of the different cable-sections, respectively, and between the last-mentioned cable-spreading sheaves and the guide-sheaves at the boom's rear end and close enough together to cause the cable-sections to converge in the direction of the last-mentioned sheaves, substantially as and for the purpose set forth.

7. In an excavator, the combination of the boom; a cylindrical member journaled upon and transversely of the boom; a ring or annular band embracing and turnable upon the journaled cylindrical member; the excavating-shovel having its arm arranged longitudinally of the said journaled cylindrical member and connected with and slidable longitudinally and independently of the aforesaid turnable ring or band, and means for limiting the circumferential movement of the aforesaid band or ring, substantially as set forth.

8. In an excavator, the combination of the boom comprising two beams arranged far enough apart to accommodate the movements of the shovel-arm between them; a cylindrical member journaled upon and transversely of the boom; a ring or annular band embracing and turnable upon the journaled cylindrical member; the excavating-shovel having its arm extending between the boom-beams and connected with, and slidable longitudinally and independently of, the aforesaid turnable ring or band, and means for limiting the circumferential movement of the aforesaid annular band or ring, substantially as set forth

9. In an excavator, the combination of the boom comprising two beams arranged far enough apart to accommodate the movements of the shovel-arm between them; the excavating-shovel having its arm extending between the aforesaid beams and less in dimension, transversely of the boom, than the space between the said beams; a cylindrical member journaled transversely of and supported from the boom; an annular band or ring embracing and turnable upon the journaled cylindrical member, and such a connection between the said ring and the shovel-arm as will hold the latter to the ring without interfering with the endwise movement of the shovel-arm independently of the ring, substantially as set forth.

10. In an excavator, the combination of the boom; an upright member journaled transversely of and supported from the boom; a slideway formed upon a member embracing and turnable upon the said upright member, and the shovel having an arm provided with a slide engaging the said slideway and extending longitudinally of the arm, substantially as set forth.

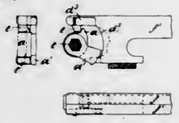
11. In an excavator, the combination of the boom; a member journaled transversely of and supported from the boom; two parallel slideways formed, a suitable distance apart, upon a laterally-turnable member embracing the said journaled member; the shovel having an arm provided with slides engaging the said slideways and extending longitudinally of the arm, and means for limiting the movement of the arm circumferentially of the aforesaid journaled member, substantially as shown, for the purpose specified.

12. In an excavator, the combination of the boom; a member journaled transversely of and supported from the boom; the excavating-shovel having an arm slotted longitudinally upon its back side; a member supported and turnable upon the said journaled member and having a flange or lug engaging the arm's slot and two slideway-forming recesses at opposite sides, respectively, of the lug or flange, and slides formed upon and extending longitudinally of the shovel-arm and engaging the said recesses, substantially as and for the purpose set forth.

13. In an excavator, the combination of the boom; a cylinder that has trunnions arranged transversely of and supported from the boom and being tubular, and has a piston internally, and two passage-ways connecting the chambers of the different trunnions, respectively, with opposite ends, respectively, of the cylinder's chamber at opposite ends, respectively, of the piston's travel; the piston-rod; the suitably-hoisted shovel attached to the said rod, and the fluid-pressure source, valve mechanism and passage-ways, whereby fluid under pressure is admitted alternately

to opposite ends of the cylinder, and whereby pressure is admitted to the one trunnion while the other trunnion is exhausting, substantially as set forth.

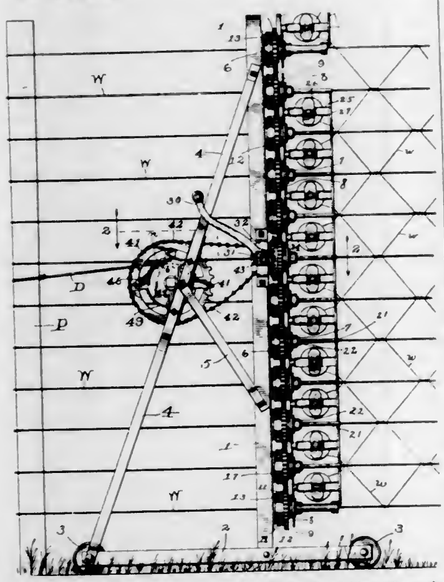
655,759. **FURNACE.** FRED CLAYTON, Strines, England, assignor to James Jones Meldrum, Thomas Frederick Meldrum, and John Wesley Meldrum, Manchester, England. Filed Dec. 28, 1897. Serial No. 664,025. (No model.)



Claim.—1. In a furnace having moving fire-bars, mechanically operated, the combination with a pair of fire bars, of double cams, adapted to operate upon the end of the bars, and one of said cams being in advance of the other, and the trailing cam adapted to act as a stop to its bar, while the other is in action and drawing its bar forward; substantially as set forth.

2. In a furnace having moving fire-bars mechanically operated, the combination of a pair of bars f f' having jaws d' d^2, respectively, and the cams a a' in advance of each other, and adapted to act upon the bars f and f' respectively, in succession, the cam a' acting as a stop to its bar while cam a is in action and drawing its bar forward; substantially as set forth.

655,760. **WIRE-FENCE MACHINE.** THEODORE M. CONNER and THOMPSON M. CONNER, Wabash, Ind. Filed Jan. 8, 1900. Serial No. 729. (No model.)



Claim.—1. The combination, in a wire-fence machine, of a series of disks geared together and revolving simultaneously, the alternate gears revolving in opposite directions, spool-carrying frames adapted to be transferred from certain of these disks to certain other of said disks, mechanism for locking and releasing said spool-carrying frames composed of locking-levers pivoted to one member of said disks, the locking-points whereof are adapted to enter suitable depressions in the bases of said spool-carrying frames, cams also mounted on said disk parts for operating said locking-levers, and cam-tracks secured to the frame of the machine for actuating said cams, said tracks being provided with notches, and said cams being provided with star-wheels the arms whereof are adapted at intervals to enter said notches, whereby said cams are rotated from time to time and the locking-levers thus actuated, substantially as set forth.

2. The combination, in a wire-fence machine, of spools carrying the woof-wires, frames for carrying said spools, having disk-like bases, revoluble disks each composed of two members between the edges whereof the edges of said disk-like frame-bases are adapted to enter, locking-levers mounted on one member of said disks, cams also mounted on said disk members, and cam-tracks mounted on the frame and adapted to actuate said cams, whereby at predetermined periods the said spool-carrying frames are locked and at other predetermined periods released, substantially as and for the purposes set forth.

3. The combination, in a wire-fence machine, with the spool-carrier frames, of mechanism for holding and carrying said frames and transferring them back and forth from one revolving mechanism to another, said mechanism being composed of double disks between which the disk-like bases of the spool-carrier frames enter, locking-levers thereon, cams for operating said levers, and cam-tracks for operating said cams, the adjacent sets of mechanisms being arranged to grip and release said spool-carrier frames alternatively, whereby said spool-carrier frames are at a predetermined instant transferred from certain of said disks to the adjacent disks, substantially as and for the purposes set forth.

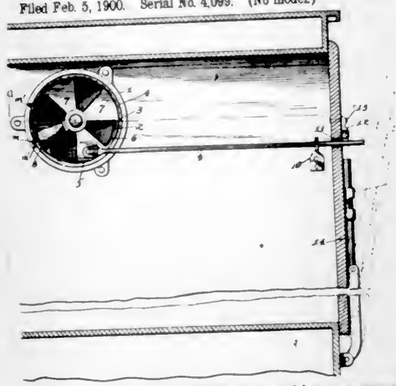
4. The combination, in a wire-fence machine, with the mechanisms for operating the spool-carriers carrying the woof-wires, of a mechanism driven from the same shaft for shifting the position of the machine as each mesh of fence is completed, said shifting mechanism being composed of a winding-drum the wire whereon runs to a fixed point, and a clutch mechanism whereby said winding-drum is automatically driven and permitted to remain at rest, the shifting cam of said mechanism being so positioned as that the shifting takes place when the individual meshes of the fence are completed, substantially as set forth.

5. The combination, in a wire-fence machine, with the mechanism for weaving the fence, of a mechanism for automatically shifting the position of the machine from time to time composed of a winding-drum having a ratchet thereon, a latch-lever for engaging with said ratchet, a spring for forcing said latch-lever inwardly when not forcibly drawn out, and a cam on an adjacent fixed part arranged in the path of said locking-lever whereby the same is retracted and held out of engagement during a portion of the revolution, substantially as set forth.

6. The combination, in a wire-fence machine, with the mechanism for weaving the fence, of a mechanism for automatically shifting the position of the machine from time to time composed of a winding-drum having a ratchet thereon, a latch-lever for engaging with said ratchet, a spring for forcing said latch-lever inwardly when not forcibly drawn out, a cam on an adjacent fixed part arranged in the path of said locking-lever, and means for adjusting said cam to the desired position in said path, substantially as and for the purposes set forth.

7. The combination, in a wire-fence machine, of the hollow shafts upon which the mechanism for manipulating the wires is mounted, spool-carrying frames mounted intermediately of said hollow shafts and provided with guide-rings at the outer end whereby the wires from the spools carried by said frame are guided, and hollow sleeves loosely mounted in said hollow shafts and extending out between said guide-rings and through which the main fence-wires pass, whereby said main fence-wires are protected from contact with said rings and the other elements of the operating mechanism.

655,761. **VENTILATOR FOR OVENS.** WALTER L. CULVER, St. Louis, Mo., assignor to the Wrought Iron Range Company, same place. Filed Feb. 5, 1900. Serial No. 4,099. (No model.)



Claim.—1. In an oven, a ventilator comprising an apertured plate, the apertures of which register with similar apertures in the oven-wall, an apertured disk pivotally secured to the front face of the plate, a rod pivotally secured to said disk for adjusting the same, and means for holding the rod in position to maintain the ventilator closed, said means being carried by the oven-door and adapted to permit the ventilator to be operated when the oven-door is closed.

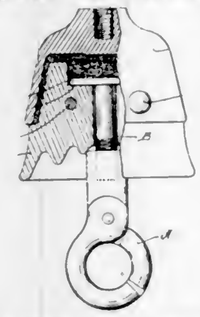
2. In an oven, a ventilator comprising an apertured plate, having an annular valve-seat on its outer face, an apertured disk pivotally secured within said valve-seat, a weight integral with one side of said disk which normally holds the ventilator open, a rod pivotally secured to the said disk, the free end of which rod projects through an aperture in the oven-door, and a curtain pivotally secured to the said door for holding the said rod inwardly, thereby closing the ventilator, substantially as specified.

3. In an oven, a ventilator, comprising an apertured plate, the apertures of which register with like apertures in the oven-wall, an apertured disk pivotally secured to the said plate, a weight integral with said disk whereby the ventilator is held in open position, a rod pivotally secured to said disk for adjusting the same, a door for said oven adapted to move said rod endwise to close the ventilator as the oven-door is moved to closed position, said door carrying a curtain or stop to permit the ventilator to be moved to its open position by the action of the weight while the oven-door remains closed, substantially as specified.

4. The combination with an oven provided with a door, of a ventilator secured to a wall of said oven, means carried by said ventilator adapted to be actuated by the closing of the door for closing said ventilator and actuated when the door is opened by gravity for opening said ventilator, and a stop on the door for holding the ventilator closed, substantially as specified.

5. The combination with an oven provided with a door with an aperture formed therein, of a ventilator secured to one wall of said oven, an actuating-rod carried by said ventilator and projecting through the aperture in said door, a curtain adapted to cover said aperture, whereby said ventilator may be opened when the door is closed, substantially as specified.

655,762. **INSULATED HANGER FOR ARC-LAMPS.** GEORGE CUTTER, Chicago, Ill., assignor to the George Cutter Company, same place. Filed May 4, 1900. Serial No. 15,436. (No model.)



Claim.—1. In an insulated hanger, the combination with a holder or support for the lamp; of an insulator supporting the lamp-holder; a hood covering the insulator; and devices for securing the insulator in position in the hood, said devices being arranged to act as supports for the lamp-holder in case the insulator becomes broken, and to extend through the hood so as to permit of their insertion and withdrawal from the exterior of the hood.

2. In an insulated hanger, the combination with a device for supporting or holding the lamp; of an insulator supporting said device; a hood covering and partially inclosing the insulator; and pins extended through the hood and insulator so as to secure the latter in position in the former, said pins being situated so as to engage the lamp-supporting device, should the latter be released by the breakage of the insulator.

3. In an insulated hanger, the combination with a hook or ring for supporting the lamp; of a bolt to which said hook or ring can be detachably secured; an insulator having a depressed bearing portion for supporting and engaging the head of the bolt; a hood covering and partially inclosing the insulator; a couple of pins extended through the hood and the insulator and separated a distance less than the width of the head of the bolt; and insulating material filling the space between the head of the bolt and the hood and insulator.

4. In an insulated hanger, the combination with a lamp-holding device; of a bolt to which the said device is screw-threaded; and an insulator having a socket for the bolt-head, said socket being adapted to engage the bolt-head so as to prevent its turning.

655,763. **ANNUNCIATOR.** WILLIAM M. DAVIS, Chicago, Ill., assignor to the Stromberg Carlson Telephone Manufacturing Company. Filed Dec. 15, 1899. Serial No. 740,414. (No model.)

Claim.—1. In an annunciator, the combination with an electromagnet, of a segmental pole-piece k in the form of a sleeve-section, a core q for the electromagnet projecting beyond the same and partially surrounded by the sleeve-section k, a pivoted armature arranged in juxtaposition with the said core and portion k, and a target-lever secured to the armature, substantially as described.



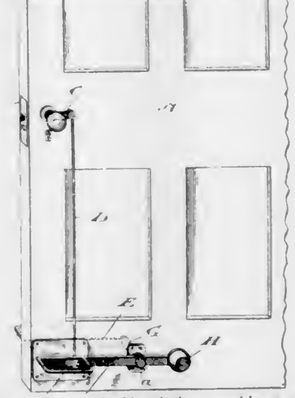
2. In an electromagnet, the combination with a coil, of a segmental sleeve-section k for conveying lines of force set up by the said coil, inwardly-projecting pivot-bearings located above said sleeve-section, and located between the periphery and axis of the annunciator, and an armature opposed to the said sleeve-section, substantially as described.

3. In an annunciator, the combination with an electromagnet, of a sleeve e inclosing the same provided with pivot-supporting extensions h, screws i, i, carried by the said extensions, an armature supported by the pivots, and a target-lever secured to the armature, substantially as described.

4. In an annunciator, the combination with an electromagnet, of a sleeve e inclosing the same, the said sleeve being provided with inwardly-projecting ears g, g, the said ears being provided with rearwardly-projecting extensions h, h, pivots i, i carried by the projections h, h, an armature held between the said pivots, and a target-lever secured to the armature, substantially as described.

5. In an annunciator, the combination with an electromagnet, of a sleeve e inclosing the same, the said sleeve being provided with inwardly-projecting ears g, g, the said ears being provided with rearwardly-projecting extensions h, h, pivots i, i carried by the projections h, h, an armature held between the said pivots, a target-lever secured to the said armature, and a segmental sleeve-section k of magnetic material for receiving lines of force set up by the electromagnet opposed to the lower end of the armature, the said lower end of the armature being shaped substantially to conform in contour to the said sleeve-section, substantially as described.

655,764. **DEVICE FOR UNLATCHING DOORS.** ELI DENNE, Winnipeg, Canada. Filed Apr. 14, 1900. Serial No. 12,830. (No model.)



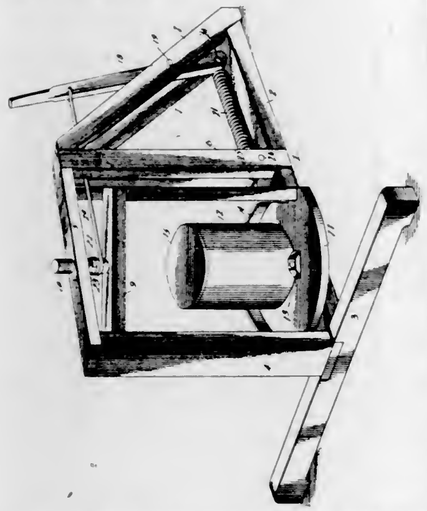
Claim.—1. A door-unlatching device comprising a crank-arm secured to the spindle of a lock in combination with a connecting-rod pivotally connected with the crank-arm; a lever fulcrumed on the door between its ends; a foot-plate secured to one end of the lever; and a counterbalancing-weight secured to the other, the connecting-rod being pivotally connected with the lever near the foot-plate, substantially as and for the purpose specified.

2. A door-unlatching device comprising a crank-arm secured to the spindle of a lock in combination with a connecting-rod pivotally connected with the crank-arm; a shaft journaled in the door; two levers secured to said shaft on opposite sides of the door, and a foot-plate formed on or secured to each lever, the connecting-rod being connected to one of the levers, substantially as and for the purpose specified.

3. A door-unlatching device comprising a crank-arm secured to the spindle of a lock in combination with a connecting-rod pivotally connected with the crank-arm; a shaft journaled in the door; two levers secured to said shaft on opposite sides of the door; a foot-plate formed on or secured to each lever, the connecting-rod being connected to one of the levers; and a counterbalancing-weight secured to the end of one of the levers

which is secured to the shaft at a point between its ends, the foot-plate being secured to one end and the weight to the other, substantially as and for the purpose specified.

655,765. CHURN-POWER. JOHN S. DICKEY, Ethel, Tex. Filed Feb. 19, 1900. Serial No. 5,847. (No model.)



Claim.—1. The combination of a supporting-frame, a rotary frame having a spindle and adapted to receive a churn-body, a lever fulcrumed between its ends on the supporting-frame, a spring connected with one arm of the lever, and a flexible connection secured at one end to the other arm of the lever and having its other end wound around the spindle of the rotary frame and adapted to be unwound therefrom, substantially as described.

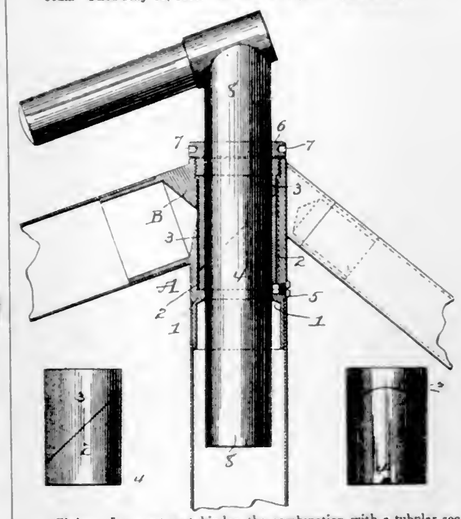
2. The combination of a supporting-frame, an approximately-rectangular rotary frame provided with upper and lower journals and having a table or support at its bottom for the reception of a churn-body, the weight of the latter being adapted to increase the momentum of the rotary frame, an upright operating-lever fulcrumed between its ends on the supporting-frame, a coiled spring connected with one of the arms of the lever, and a flexible connection having one end secured to the other arm of the lever and having its other end secured to and wrapped around one of the journals of the rotary frame and adapted to be unwound therefrom, substantially as and for the purpose described.

3. The combination of a supporting-frame, a rotary frame journaled on the supporting-frame and provided with a horizontal table adapted to receive a churn-body, the upwardly-extending bar or piece arranged at the back of the table or support in position to engage one side of the churn-body, a locking device mounted on the table or support and arranged to engage the opposite side of the churn-body, and means for operating the rotary frame, substantially as described.

4. The combination of a supporting-frame, a substantially-rectangular rotary frame provided at its top and bottom with journals and having a horizontal table at the bottom, said table being provided at the back with a bar or piece for supporting a churn-body, means for engaging the churn-body, and operating mechanism connected with one of the journals, substantially as described.

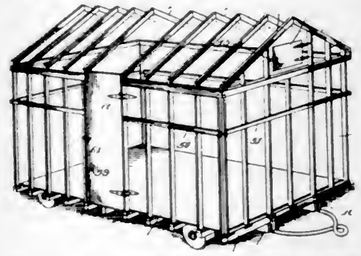
5. The combination of a supporting-frame composed of a horizontal base, the upright 4 arranged at one end of the frame, the uprights 6 spaced apart and located between the ends of the frame, a horizontal top bar connecting the uprights 4 and 6, the inclined braces spaced apart to form a guide and connected with the upper ends of the uprights 6, a rotary frame journaled on the supporting-frame and located between the uprights 4 and 6, an upright operating-lever fulcrumed between its ends in the space between the inclined braces, a horizontal coiled spring secured to the lower arm of the operating-lever and connected with the uprights 6 and located in the space between the same and the braces, and the flexible connection secured at one end to the upper arm of the lever and extending through the spaces between the braces and the uprights 6, and having its other end wound around the upper journal of the rotary frame and adapted to be unwound therefrom, substantially as and for the purpose described.

655,766. SEAT-POST BINDER. JOSEPH S. DIKEMAN, Torrington, Conn. Filed May 19, 1899. Serial No. 717,437. (No model.)



Claim.—In a seat-post binder, the combination with a tubular section having an internal annular shoulder, and a seat-post entering said tubular section, of two sleeves located one upon the other and disposed loosely within the tubular section so as to embrace the seat-post, the lower sleeve resting on said annular shoulder in the tubular section, the lower sleeve having a single transversely-beveled upper edge and the upper sleeve having a single transversely-beveled lower edge resting upon the beveled upper end of the lower section and a nut or ring threaded into the upper end of the tubular section and bearing upon the upper sleeve so as to exert a pressure thereon and cause said sleeves to be displaced laterally in opposite directions and tightly embrace the seat-post throughout the length of the two sleeves.

655,767. GRAIN-CAR. GEORGE DOUGLAS, Wolcott, Ind. Filed Dec. 30, 1899. Serial No. 742,070. (No model.)



Claim.—1. In a grain-car, the combination with longitudinal sills, of bearings depending therefrom, axles carrying fixed wheels and journaled in said bearings, transverse intermediate sleepers notched into the sills and having notches in their upper outer edges, studding seated in said notches, straps of metal around the ends of said sleepers, and bolts through the straps, sleepers and studs, substantially as described.

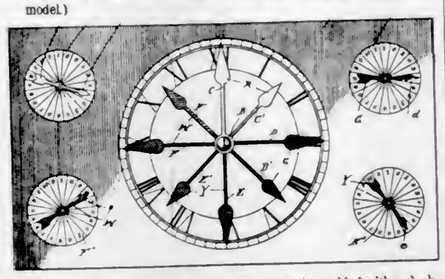
2. In a grain-car, the combination with longitudinal sills mounted on wheels and having transverse notches in their upper faces, intermediate transverse sleepers secured in said notches, and having notches in their upper outer edges and transverse sleepers having end and side notches, side studs end studs and corner-studs engaging in the notches of the sleepers, and metal straps for holding them therein, substantially as described.

3. The herein-described end sleepers, each having beveled ends, and notches and side notches, in combination with the corner-studs fitting in said notches, and metal straps holding them in, substantially as described.

4. The end and side plates herein described halved and lapped at their ends and provided with longitudinal and transverse notches, in combination with the corner-studs at right angles to each other and secured in said notches, substantially as described.

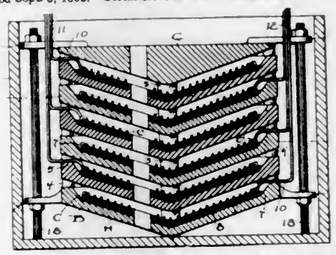
5. In a grain-car, the combination with two adjacent studs and two adjacent rafters, forming a doorway and a continuation thereof in the roof, of boards adapted to slide vertically between the studs, a door adapted to slide between the rafters, and an outside door hinged to one of the studs, substantially as described.

655,768. GAME APPARATUS. WILLIAM H. EYNON and DAVID DUCKETT, Cleveland, Ohio. Filed Apr. 25, 1899. Serial No. 714,406. (No model.)



Claim.—A game apparatus comprising a board provided with a clock-dial, a shaft or arbor removably fixed in the center thereof and a plurality of differently-colored sets of hour and minute hands loosely mounted on the shaft, and a series of graduated dials corresponding in number with the sets of hands and having swiveled arrow-hands colored to correspond with the sets of hands, substantially as described.

655,769. STORAGE BATTERY. GEORGE A. FORD, Cleveland, Ohio. Filed Sept. 5, 1895. Serial No. 561,485. (No model.)



Claim.—1. A storage-battery element consisting of a series of porous pans and a series of conductors on said pans, each of said conductors having a series of vanes at an angle to the plane of the pan, and active material between said vanes, substantially as described.

2. The battery element described, comprising a porous earthen pan, in combination with a conducting-plate of suitable metal provided with a series of flat-sided vanes cut from the plate itself and standing substantially edgewise to the said plate, substantially as described.

3. The cell described having a series of porous earthen pans with raised borders about their edge and wholly closed over their bottom between said borders except a single open passage, in combination with a conductor having a series of flat-sided vanes turned edgewise and resting on said pans, and active material upon the surface of said pans and between said vanes, substantially as described.

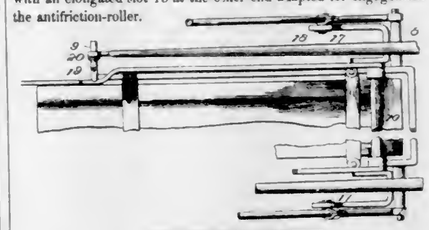
4. The cell described consisting of a series of bordered porous pans lowest at their center and having the bottom from said center inclined upward toward the border of the pan, in combination with a conductor constructed to rest over the entire bottom of each of said pans and having a series of flat vanes turned edgewise and a border about said vanes, and active material covering the bottom of said pan and between said vanes, substantially as described.

5. In a storage battery, the combination of a supporting-pan of non-conducting material with a conductor in said pan having a series of flat vanes extending through from side to side thereof, at an angle to the plane of the pan, substantially as described.

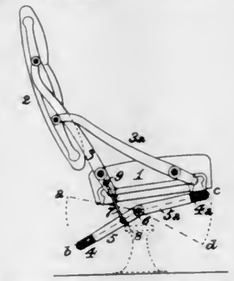
6. In a storage battery, a substantially dish-shaped earthen pan, in combination with a conductor shaped to conform to the pan and having a central rib and a series of panels in sets at either side of said rib and having an open space for the active material opening from side to side of the conductor to the top surface of the pan, substantially as described.

655,770. BUGGY-TOP RAISER. JOHN C. FORD, Macon, Mo., assignor to William Winkler, same place. Filed May 24, 1900. Serial No. 17,864. (No model.)

Claim.—In a buggy-top raiser the combination with the long hinged prop or joint, clips 16 secured around said props, a stud or bearing projecting therefrom and an antifriction-roller journaled thereon; a shaft 10 extending across the buggy, the lever 11 rigidly keyed to said shaft, the crank-arm 14 rigidly secured to said lever 11 at one end and provided with an elongated slot 15 at the other end adapted for engagement with the antifriction-roller.



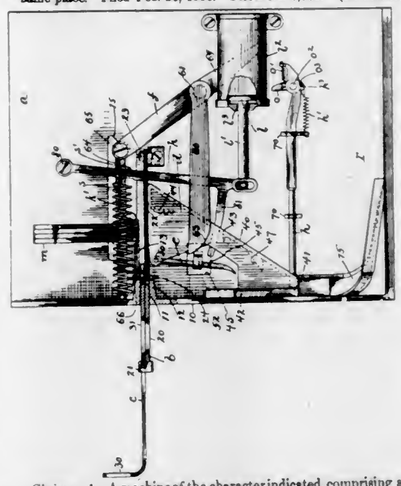
655,771. CAR-SEAT. MATTHIAS N. FORNEY, New York, N. Y., assignor to Sanford G. Scarritt, St. Louis, Mo. Filed Apr. 13, 1899. Serial No. 712,861. (No model.)



Claim.—1. The combination of a car-seat, a seat-back, arms for reversing the seat-back, a tilting frame pivoted below the seat, two foot-rests located on opposite sides of said tilting frame, and a link directly connecting said tilting frame with one of the reversing-arms.

2. The combination of a car-seat, a seat-back, arms for reversing the seat-back, a tilting frame pivoted below the seat, two foot-rests located on opposite sides of said tilting frame, and a link pivoted to the tilting frame adjacent to its axial line and pivoted to one of the reversing-arms below the pivot thereof.

655,772. TELEPHONE TOLL APPARATUS. WILLIAM A. FOSS, Cleveland, Ohio, assignor to the American Toll Telephone Company, same place. Filed Feb. 26, 1900. Serial No. 6,583. (No model.)



Claim.—1. A machine of the character indicated, comprising a clock-work that includes an escapement having its anchor provided with an arm or lever, means for winding up the clock-work, a movable part within the

machine and arranged to be engaged by a coin or check of a predetermined size and provided with a member arranged to engage and detain the aforesaid anchor arm or lever, and means whereby the aforesaid coin-engagable part is actuated, through the medium of the coin or check, in the direction required to release the aforesaid anchor arm or lever, substantially as and for the purpose set forth.

2. A machine of the character indicated, comprising a clockwork including an escapement that has its anchor provided with an arm or lever, mechanism for winding up the clockwork, a suitably-supported swinging part arranged to be engaged by a predetermined size of coin or check introduced into the machine, which swinging part is provided with an arm that has a member arranged to bear the free end of the anchor arm or lever during the winding up of the clockwork, and means for actuating the said swinging part, through the medium of the coin or check, in the direction required to cause it to release or recede from the aforesaid anchor arm or lever, substantially as and for the purpose set forth.

3. A machine of the character indicated, comprising a signal-constituting noise-producible instrument: a passage-way for conducting the coin or check, required in the operation of the machine, into the latter; means for arresting the coin or check within the machine; a movable part arranged to be engaged by the coin or check in the arrested position of the latter and provided with means for maintaining the signal inoperative, and means whereby the said coin-engagable part is, through the medium of the coin or check, actuated in the direction required to effect the operation of the signal.

4. In a machine of the character indicated, the combination, with a clockwork comprising an escapement whose anchor is provided with an arm or lever, a hopper internally of the machine for receiving the coin or check required in the operation of the machine, means for feeding the coin or check to the hopper, and means for winding up the clockwork while the coin or check is fed to the hopper, and a shoulder or shoulders internally of the hopper for arresting the coin or check, of a movable part adapted to cooperate with the said shoulder or shoulders in the detention of the coin or check within the hopper and provided with a member that bears the free end of the aforesaid anchor arm or lever during the winding up of the clockwork, and means for dislodging the coin or check from the aforesaid shoulder or shoulders, and, through the medium of the coin or check, actuating the aforesaid movable detaining part in the direction required to release the aforesaid anchor arm or lever, substantially as and for the purpose set forth.

5. A machine of the character indicated, comprising an internal hopper, a signaling device, a suitably-supported gate *e* arranged within the hopper and capable of swinging forwardly and rearwardly and instrumental in the operation of the signaling device, which gate is slotted laterally, as at 55, and is normally in its forwardly-swung position, means acting to actuate the gate rearwardly, mechanism for holding the gate in its forwardly-swung position, means for feeding the coin or check required in the operation of the machine to the hopper, a shoulder or shoulders 43 formed internally of the hopper, a suitably-operated forwardly and rearwardly tiltable lever *k* having an arm 81, all arranged and operating substantially as and for the purpose set forth.

6. A machine of the character indicated, comprising an internal hopper arranged within the forward side of the machine and having its rear wall inclining forwardly and downwardly and provided with a slot 48, means for feeding the coin or check required in the operation of the machine to the hopper, coin-arresting means provided internally of the hopper, a forwardly and rearwardly swinging gate *e* within the hopper forward of the said coin-arresting means and having the lateral slot 55 and an arm 52, the suitably-operated lever *k* having the arm 81, and the suitably-operated lever *f* having the arm 60, all arranged and operating substantially as shown, for the purpose specified.

7. A machine of the character indicated, comprising an internal hopper having its forward side provided with a window, and having its rear wall inclining forwardly and downwardly and provided with a slot 48, a device for feeding the coin or check to the hopper, coin-arresting means internally of the hopper, the forwardly and rearwardly swinging gate *e* within the hopper forwardly of the coin-arresting means, which gate has an arm 52 and the lateral slot 55, means acting to swing the said gate rearwardly, the suitably-operated lever *f* having the arm 60, the lever *k* having the arm 81 and arranged to be actuated by the aforesaid feeding device in one direction, a spring for actuating the said lever in the opposite direction, and means for retarding the operation of the said spring, all arranged and operating substantially as shown, for the purpose specified.

8. A machine of the character indicated, comprising an internal hopper having its forward side provided with a window and having its rear wall inclining forwardly and downwardly and provided with a slot 48, a device for feeding the coin or check to the hopper, coin-arresting means formed internally of the hopper, the forwardly and rearwardly swinging gate *e* within the hopper forward of the said coin-arresting means, which gate has the arm 52 and the lateral slot 55, means acting to swing the said gate rearwardly, the suitably-operated lever *f* having the arm 60, the lever *k* having the arm 81 and arranged to be operated by the aforesaid feeding device in the one direction, a spring for operating the said lever *f* in the opposite direction, the piston *l*, and the rod *l'*, and the cylinder l^2 containing the piston and having the air-inlet l^3, all arranged and operating substantially as shown, for the purpose specified.

9. A machine of the character indicated, comprising the stationary framework provided with a front having a slot extending therethrough; a hopper at the inner side of the said front; a device for feeding a coin or check from the outer side of the front to the said hopper; a shoulder or shoulders formed internally of the hopper and having the arrangement required to arrest a coin or check of a predetermined size; a gate arranged to render it capable of obstructing the passage-way through the hopper and normally in its non-obstructing position; means acting to move the gate into its obstructing position; mechanism for actuating the said gate from its obstructing to its non-obstructing position, mechanism for dislodging the coin or check from the aforesaid shoulder or shoulders and instrumental in the withdrawal of the aforesaid gate from its obstructing position, means for operating the dislodging mechanism, a signal, and means whereby the signal is rendered operative by the aforesaid dislodgment of a coin or check from the aforesaid shoulder or shoulders, substantially as and for the purpose set forth.

10. A machine of the character indicated, having an internal hopper for receiving the coin or check required in the operation of the machine, a device for feeding the said coin or check to the hopper, a rearwardly-tiltable lever arranged at the inner end of the path of the slide, a bar operatively connected with the lever and arranged to be operated by the coin-feeding device during the inward actuation of the latter, a clockwork comprising a clock-spring wound up during the rearward tilting of the said lever and adapted to return the said lever from its rearwardly-tilted to its normal position, and means for disengaging the aforesaid bar from the coin-feeding device and arranged to operate upon the said bar upon the winding up of the clock-spring as aforesaid.

11. A machine of the character indicated, having an internal hopper for receiving the coin or check required in the operation of the machine, a slide for feeding the coin or check to the hopper, a forwardly and rearwardly tiltable lever arranged at the inner end of the path of the slide, a bar operatively connected with the lever and arranged to be operated by the slide during the inward actuation of the latter, a clockwork comprising a clock-spring acting to retain the said lever in its forwardly-tilted and normal position, and means for disengaging the aforesaid bar from the slide, all arranged and operating substantially as and for the purpose set forth.

12. A machine of the character indicated, comprising an internal hopper arranged within the forward side of the machine, and having its rear wall inclining forwardly and downwardly and provided with a slot 48, means for feeding the coin or check to the hopper, two shoulders 43 and 43 formed internally of the hopper upon opposite side walls, respectively, of the hopper, a signal-constituting noise-producible part arranged to be engaged by the coin or check when the latter has been arrested within the hopper by the aforesaid shoulders and provided with means for maintaining the signal inoperative, and means whereby the said coin-engageable part is, through the medium of the coin or check, actuated in the direction required to permit the operation of the signal.

13. A machine of the character indicated having a slide for feeding the coin or check into the machine, the forwardly and rearwardly tiltable lever *f*, the bar 64 having the depending lug 66 and the laterally-projecting pin or member 67, a clockwork comprising a clock-spring *f'*, the stationary incline 15 and the spring *s*, all arranged and operating substantially as shown, for the purpose specified.

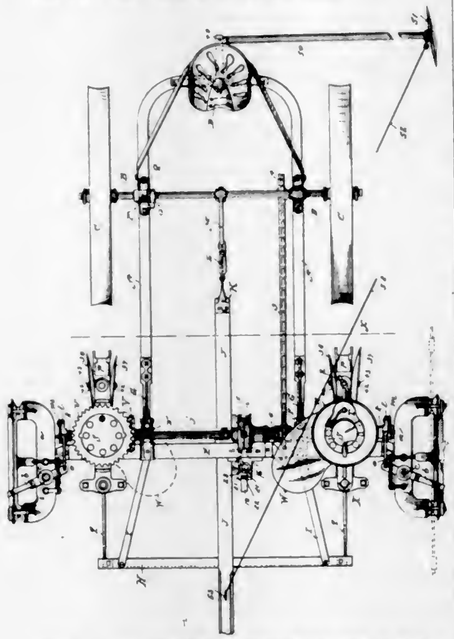
14. A machine of the character indicated, having a slide for feeding the coin or check into the machine, a forwardly and rearwardly tiltable lever arranged at the inner end of the path of the said slide, a bar 64 operatively connected with and extending forwardly from the said lever and having its forward end provided with a depending lug or member 66 having the arrangement required to render it capable of being engaged and actuated rearwardly by the slide when the slide is in its forward position, a clockwork comprising a clock-spring that is operatively connected with and wound up by the aforesaid lever when the lever is tilted rearwardly, and means for disengaging the aforesaid bar from the slide when the aforesaid spring has been wound up as aforesaid, substantially as and for the purpose set forth.

15. A machine of the character indicated, having an internal hopper for receiving the coin or check required in the operation of the machine, which hopper has its lower end provided with an outlet, a gate-forming endwise-shiftable rod or bar arranged to normally obstruct the lower end of the passage-way through the said outlet, a forwardly-tiltable dog supported from the said bar or rod, a stop upon the bar for preventing tilting of the said dog rearwardly of its normal position, means acting to retain the aforesaid rod or bar in its forward or normal position, a slide for feeding the coin or check to the hopper, a bar 64 arranged to be operated by the slide, means for disengaging the said bar from the slide, and the lever *f* operatively connected with the said bar and having an arm 69 provided with a laterally-projecting pin or member 68 arranged as required to render it capable of engaging the forward side of the aforesaid dog during the feeding operation of the aforesaid slide and thereupon resulting in the actuation of the aforesaid rod or bar into its non-obstructing position.

16. A machine of the character indicated, having an internal hopper for receiving the coin or check required in the operation of the machine, which hopper has its lower end provided with an outlet, a plate of glass forming a window at the forward side of the hopper, a gate-forming endwise-shiftable rod or bar arranged to normally obstruct the lower end of the passage-way through the said outlet, a forwardly-tiltable dog supported from the said bar or rod, a stop upon the bar for preventing tilting of the said dog rearwardly of its normal position, means acting to retain the aforesaid rod or bar in its forward or normal position, a device for feeding the coin or check to the hopper, and mechanism arranged to be actuated by the said feeding device during the latter's operation and provided with means for engaging the forward side of the aforesaid dog during the feeding operation of the aforesaid feeding device and thereupon actuating the rod or bar into its non-obstructing position, and the arrangement of parts being such that the said bar or rod shall have its forward end engaging the inner side of the aforesaid window in the normal and obstructing position of the said rod or bar so that the latter, upon its release after each rearward actuation thereof, shall return and strike against the aforesaid window, substantially as and for the purpose set forth.

17. A machine of the character indicated having an internal hopper for receiving the coin or check required in the operation of the machine, which hopper has its lower end provided with an outlet, the gate-forming endwise-shiftable rod or bar *h* having the shoulder h^2, the spring *h'*, the dog *o* having the lug o^2, the spring *o'*, a slide for feeding the coin or check to the hopper, the bar 64 arranged to be operated by the said slide, the means for operatively disengaging the said bar from the slide, and the lever *f* having the arm 69 provided with the laterally-projecting pin or member 68, all arranged and operating substantially as shown, for the purpose specified.

655,773. CORN-PLANTER. WILLIAM M. FRANK, Springfield, Ohio, assignor to the A. C. Evans Manufacturing Company, same place. Filed Aug. 5, 1898. Serial No. 687,794. (No model.)



Claim.—1. In a corn-planter, a check-row attachment having a cup, a lever pivoted within the cup, and a spring inclosed by the cup and connected at one end to the lever and at the other to the cup structure.

2. In a corn-planter, a check-row attachment having a cup provided with slots, a lever fitting within said slots, a pivot-bolt passing down through the cup, a cap held by the bolt and acting to hold the lever down within the slots, and a spring within the cup around the pivot-bolt and under the cap and secured at one end of the cap structure and at the other end to the lever.

3. In a corn-planter, the combination with the shaft and the seeding devices operated thereby, of a clutch composed of a ratchet-wheel adapted to receive rotary motion from the ground-wheels, two shells inclosing said ratchet-wheels, a detent carried by one shell and acting normally to engage with said ratchet-wheel and adapted to be thrown out of said engagement by the other shell, and a trip device operating in conjunction with said shells to effect the disengagement of the detent and ratchet.

4. In a corn-planter, the combination with the dropper-shaft and the seed devices operated thereby, of a clutch composed of a ratchet-wheel secured upon the dropper-shaft and adapted to receive motion from the ground-wheel, two shells housing said ratchet-wheel, one connected with the dropper-shaft and the other disconnected therewith, a detent carried by the connected shell and engaged by the disconnected shell, a spring to normally engage the detent and ratchet surface formations on the shells standing out of line when the detent is in engagement and in line when it is out of engagement, and a trip device acting in conjunction with said formations to throw them into line and to permit them to move out of line.

5. In a corn-planter, the combination with the dropper-shaft and its trip device, of a clutch composed of a ratchet having a sleeve secured to the dropper-shaft, a sprocket-wheel secured to the sleeve and adapted to receive motion from the ground-wheel, a shell fixed to the dropper-shaft and inclosing the ratchet, a spring-controlled detent mounted in said shell and adapted to coact with the ratchet-wheel, and another shell loosely mounted on the sleeve and having a lug engaging with the detent, and both shells provided with openings, one shell being slightly larger than the other, and a trip device composed of a spring-held lever having a roller adapted to travel on the larger shell and to work into said openings and cause them to match in position, for the purposes set forth.

6. In a corn-planter, a clutch composed of a rotatable ratchet-wheel and a rotatable shell secured upon the same shaft, a detent to alternately connect and disconnect said shells and ratchet-wheel, a spring to effect the normal engagement, and another shell loosely mounted upon said shaft and engaging with the detent to effect periodical disengagement, and a trip device adapted to act on said shells to effect the disengagement of said detent and ratchet.

7. In a corn-planter, a clutch for intermittently and continuously transmitting motion, composed of a shaft to be driven, a ratchet-wheel mounted upon said shaft, and adapted to receive rotary motion, a shell secured upon said shaft, a detent carried by the shell and normally engaging with the ratchet, another shell loosely mounted, and engaging with the detent to disengage it, and a trip device adapted to be set in and out of contact relation with said shells, whereby when in contact relation it will alternately permit of the engagement of the detent with the ratchet and disengage such detent from the ratchet, and when out of engagement it will permit the maintenance of said engagement, so that in one case intermittent and in the other continuous rotary motion is transmitted.

8. In a corn-planter, the clutch for transmitting intermittent and rotary motion, composed of a sleeve ratchet-wheel secured to the driven shaft, a shell connected to said shaft, a driving-wheel secured to said sleeve, and a shell loosely mounted on said sleeve, the fixed shell being larger than the loose shell and both shells having normally-unmatching openings, a detent carried by the connected shell, a spring to force it into engagement with the ratchet, and a lug on the loose shell to throw it out of engagement, and a pivoted trip-lever having a roller at one end and adapted to travel upon the larger shell and to spring into said openings to force them into line, a spring acting on said lever, and a device to lock the lever out of contact with the shells.

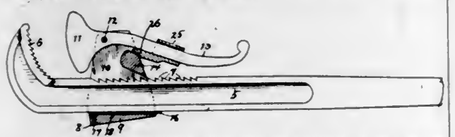
9. In a corn-planter, the combination with a dropper-shaft having a plate with pins, of a seed-tube, a pivoted valve therein working over a shelf, a valve-stem connected to said valve and having a projection intermittently lifted by said pins to open the valve, and another projection on the stem, and means to engage it to hold the stem and valve in open position and the stem out of reach of said pins, whereby hill-planting and drill-planting may be alternately done.

10. In a corn-planter, the combination with a seed-tube having one or more stud-shafts, of a disk for each of said stud-shafts having a hub, a removable sleeve mounted on each of said stud-shafts and within said hubs and longer than the hubs, caps covering the shaft-sleeves and hubs, and holding the sleeves against rotation, and a through-bolt to hold the caps.

11. In a corn-planter, the combination with a suitable frame or support having a slotted cup cast or otherwise secured thereto, a check-row lever or fork-arm pivotally mounted in said slotted cup, a helical spring secured to said lever or fork-arm at one end and at its other end made fast to a fixed part of the machine, and adapted to move said lever or fork-arm in the opposite direction from that in which it is moved by the check-row wire, substantially as shown and described.

12. In a corn-planter, the combination with a suitable frame or support having a slotted cup cast or otherwise secured thereto, a check-row lever or fork-arm extending through the slots in said cup, a bolt extending through said frame or support and into the cup and through the lever or fork-arm and acting as a pivot for said lever, a cap fitting upon the cup and adapted to be held thereon by means of said bolt, and a helical spring coiled about said bolt, one end of which engages with said lever or fork-arm and the other end of which is secured to a fixed part of the machine, said spring adapted to operate said lever in the opposite direction to that in which it is operated by the knots on the check-row wire, substantially as shown and described.

655,774. PIPE-WRENCH. GEORGE E. GARNER and SEDGWICK M. WADE, Andover, Ohio; said Wade assignor to said Garner. Filed Jan. 18, 1900. Serial No. 1,866. (No model.)



Claim.—1. A pipe-wrench comprising the following: a bar 5 having one end thereof forming a handle and provided, at its opposite end, with one of the jaws of the wrench, and having its inner edge provided with a series of notches 7, which jaw has its work-engageable surface serrated; a slide mounted upon the bar and extending a suitable distance beyond the inner and notched edge of the bar; a tooth formed upon the slide and engaging a notch of the aforesaid series of notches; means acting to retain the said tooth in engagement with the opposing notch, and the tiltable jaw 11 arranged opposite to the first-mentioned jaw and pivoted to and transversely of the slide and provided with a poise-forming arm that extends in the direction of the handle-forming end of the bar, which tiltable jaw has its work-engageable surface smooth and arranged eccentrically of the pivotal bearing of the said jaw, substantially as and for the purpose set forth.

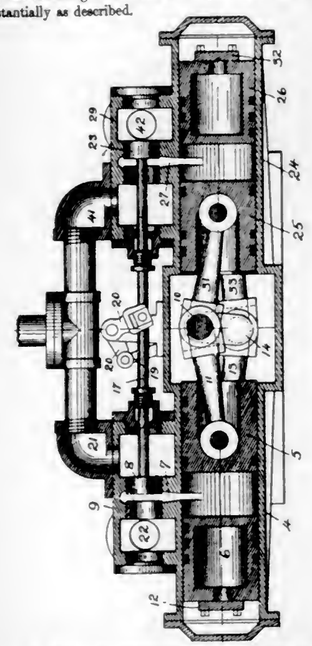
2. A pipe-wrench comprising the bar 5 having the series of notches 7, and the serrated jaw 6; a slide 8 consisting of a U-shaped metallic piece straddling the bar from the bar's outer longitudinal edge, and having its end members 10 and 10 snugly overlapping opposite sides, respectively, of the bar and extending beyond the notched edge of the bar; a tooth formed upon and between and integral with the said end members, which tooth engages a notch of the aforesaid series of notches; means acting to retain the said tooth in engagement with the opposing notch; the tiltable jaw 11 pivoted to and transversely of the said end members of the slide and having its work-engageable surface smooth and arranged eccentrically of the axis of the jaw, and the poise-forming arm 13 formed upon the jaw.

3. A pipe-wrench comprising a bar terminating, at one end, in a work-engageable jaw and having its inner edge provided with a series of notches; a slide mounted upon and slidable endwise of the said bar and provided with a tooth arranged to engage the notched portion of the bar; a work-engageable jaw arranged opposite to and tiltable toward and from the first-mentioned jaw, which tiltable jaw is supported from the aforesaid slide and has an arm arranged at the outer end of the aforesaid tooth, and a suitably-supported wedge arranged as required to render it capable of entering the space between the aforesaid arm and the tooth and thereby lock the tiltable jaw.

4. A pipe-wrench comprising the bar 5 provided, at one end, with a jaw 6, and having its inner edge provided with a series of notches 7; a slide mounted upon the said bar and extending beyond the inner edge of the bar and provided with a tooth arranged to engage the notched portion of the aforesaid bar; a jaw arranged opposite to and tiltable toward and from the first-mentioned jaw, which tiltable jaw is provided with an arm extending in the direction of the handle-forming end of the aforesaid bar and is supported from the aforesaid slide between the aforesaid tooth and the outer and free end of the jaw-bearing portion of the slide, and a sleeve mounted upon the said arm and provided with a wedge arranged as required to render it capable of entering the space between the said arm and the aforesaid tooth, substantially as shown, for the purpose specified.

655,775. STEAM-ENGINE. ELLICK H. GOLLINGS, Chicago, Ill., assignor to himself and John Hewitt, same place. Filed Oct. 19, 1899. Serial No. 734,042. (No model.)

Claim.—1. In an engine, the combination of a crank-shaft, a pair of cylinders arranged at opposite sides of the crank-shaft, at right angles thereto; and a pair of pistons in each cylinder; with pitmen directly connecting both of the inner pistons to one crank of the shaft so that these pistons move alike and in the same direction; and pitmen directly connecting both of the outer pistons to another crank of the shaft so that the outer pistons also move alike and in the same direction: and means for admitting the actuating fluid between the pistons in the opposite cylinders, substantially as described.



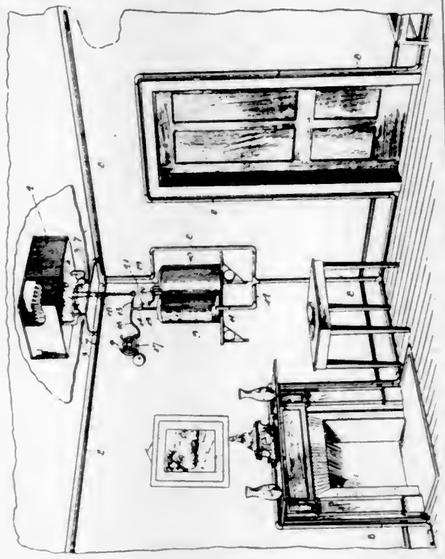
2. In an engine, the combination of a pair of opposite cylinders; a crank-shaft lying transversely of and between said cylinders, and provided with oppositely-disposed cranks, and a pair of pistons in each cylinder; with pitmen directly connecting the inner pistons to one crank; pairs of pitmen having their outer ends connected to the outermost pistons, and their inner ends connected to the crank-shaft opposite the connections of the inner pistons thereto, whereby the inner pistons move together in the same direction and oppositely to the outer pistons which also move alike and in the same direction, and means for admitting the propelling fluid alternately between the pistons in the opposite cylinders, for the purpose and substantially as described.

3. In an engine, the combination of a pair of diametrically-opposite alined open-ended cylinders; a crank-shaft lying transversely of and between said cylinders, and provided with triple cranks, the inner crank being set opposite to the outer ones; with a pair of pistons in each cylinder; thrust-pitmen directly connecting the inner pistons to the central crank; pairs of pitmen having their outer ends directly connected to and supported by the outermost pistons, at each side of the cylinders, and their inner ends connected to the outermost cranks, whereby the inner pistons move together in the same direction and oppositely to the outer pistons which also move together and in the same direction; and means for admitting the propelling fluid between the pistons in the opposite cylinders, alternately, for the purpose and substantially as described.

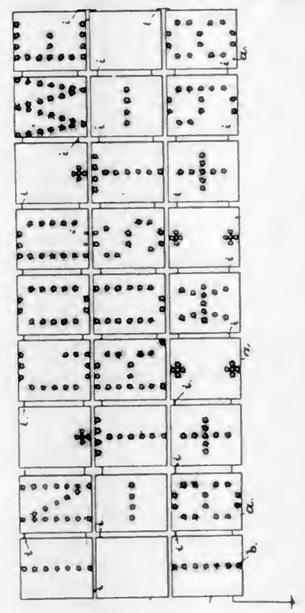
655,776. FIRE EXTINGUISHER AND ALARM. SAMUEL HALTENK, Greenville, Ky., assignor of one-half to John McIntosh, same place. Filed Apr. 10, 1900. Serial No. 12,387. (No model.)

Claim.—1. In a fire extinguisher and alarm, a source of water-supply, a closed tube system in communication therewith, one or more valves controlling the communication between the water-supply and the tube system, a pair of compressed-air tanks, one of which is in communication with the tube system, and is provided with a plunger or piston, an operative connection between the plunger and the valves, a whistle operated by the other tank, a trip carried by the plunger, and a whistle-lever, which is fulcrumed intermediate of its ends, one end being in operative relation to the whistle, and the opposite end being located in the path of the trip.

2. In a fire extinguisher and alarm, a source of water-supply, a closed tube system in communication therewith, one or more valves controlling the communication between the water-supply and the tube system, a pair of compressed-air tanks, one of which is in communication with the tube system, and is provided with a piston or plunger, a plunger-rod projecting exteriorly of the adjacent tank, a transverse head provided upon the outer end of the rod, an operative connection between one end of the head and the valves, a spring-actuated alarm normally held inactive by the opposite end of the head, a trip carried by the plunger-rod, a whistle operated by the other tank, and a whistle-lever, which is fulcrumed intermediate of its ends upon one of the tanks, one end of said lever being operatively connected to the whistle, and the opposite free end thereof being located in the path of the trip.



655,777. ELECTRICAL SIGN AND SIGNAL AND APPARATUS FOR OPERATING SAME. ANATOLE HEINY, San Francisco, Cal., assignor of two-thirds to Joseph E. Artigues and Dominique G. Lucien, same place. Filed Sept. 26, 1899. Serial No. 731,699. (No model.)



Claim.—1. A sign-board comprising a plurality of panels each containing incandescent bulbs arranged in spaced order and in parallel rows at intervals apart across the panel, conducting-strips connecting the bulbs in separate groups composed of individual bulbs in the separate rows and by different combinations adapted to form different letters or characters, said conducting-strips terminating at binding-posts on the panel, a plurality of contact-pieces corresponding in number with the conducting-strips of the individual panel and connecting electrically each conducting-strip with a source of electricity in open circuit, a selecting device comprising mechanism actuated by an individual key-lever for each letter or character to be formed and circuit-closing means controlling the circuit through each contact-piece and an operating-key by the movement of which the circuit is closed and the generator thrown upon the selected contact-pieces that go to form the letter or character represented by the individual key so actuated.

2. In an electric sign or signal, the combination of a plurality of panels having incandescent bulbs arranged in rows at intervals apart and connected together electrically in separate groups each composed of a number of bulbs in unchanging combination as described, a source of electricity and means for closing the circuit through the electrical generator and one or more of the separate groups of bulbs in variable combination to form given letters or characters, including a plurality of stationary contact-pieces corresponding in number with the groups or separate fixed combinations of bulbs and individually connected electrically with the terminals of said groups on the panel, a plurality of movable contact-pieces arranged in different groups one for each letter or character, the contact-pieces composing each group being adapted when closed upon the stationary contact-pieces to close the circuit through the groups or rows of bulbs on the panel that go to form a given letter or character, and means operated by a key to bring the movable and the stationary contact-pieces into electrical connection.

3. The combination with a signal-board comprising a plurality of panels composed of separate groups of incandescent bulbs electrically connected by separate conductors, the groups in each panel being adapted to form by varying combinations of two or more groups different letters or signal characters; of a plurality of stationary contacts for each panel divided into as many groups as there are separate letters or characters capable of being formed in the panel, the contacts of each individual group being electrically connected with the required combination of incandescent-bulb groups to form a given letter or character, movable contacts adapted to be moved into operative position with any selected one of said groups of stationary contacts, said movable contacts also corresponding in number with the separate letters or characters of the signal, means controlled by a single keyboard for selecting and setting into electrical contact any given one of the groups of movable contacts with that one of the groups of stationary contacts required to produce a given letter or character, and means controlled from the keyboard for shifting the movable contacts from the stationary contacts of one panel to the corresponding contacts of another panel.

4. In an electric sign or signal composed of a plurality of panels each containing incandescent bulbs arranged in separate groups that are adapted to form by varying combinations different letters or characters; the combination of a suitable supporting-frame, a series of stationary contacts for each panel arranged transversely across the frame and divided into separate groups one to each letter or character, the contacts of like letters or characters throughout the whole number of panels being arranged in order longitudinally of the frame, a traveling carriage movable longitudinally on the frame, movable contacts disposed in separate groups transversely upon said carriage, said groups corresponding in number with the groups of stationary contacts of an individual panel, carriage-shifting devices and key-controlled mechanism for operating the carriage-shifting devices and the movable contacts from a single keyboard.

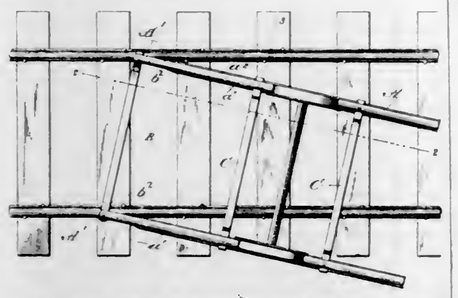
655,778. CAR-REPLACER. JACOB D. HOOVER, Winchester, Va. Filed Dec. 30, 1899. Serial No. 742,045. (No model.)

Claim.—1. In a car-replacer, the combination with a pair of retracking-rails each having a tread portion which extends beyond the webs thereof, said extended tread portion having bolt-receiving apertures, transverse openings through the webs below the tread-flanges and apertures intersecting said openings, of connecting-bars and means for attaching the connecting-bars to the retracking-rails, substantially as shown.

2. In a car-replacer, a longitudinally-inclined retracking-rail having a web which is cut away on each side so as to provide a point beyond which the tread-flange projects, said pointed portion of the web having therein a recess, substantially as shown, whereby the projecting end of the tread-flange of the retracking-rail will overlie the tread-flange of the track-rail.

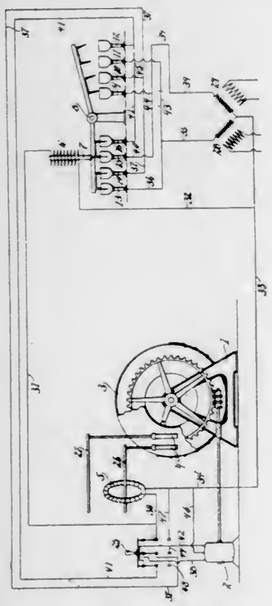
3. In a car-replacer, a longitudinally-inclined retracking-rail which presents in cross-section horizontal base and tread flanges which are connected by a vertical web the higher end of the base-flange and web being tapered, said tapered portion adjacent to the tread-flange being cut

away to provide a recess, the projecting portion of the tread-flange having therethrough a vertical aperture; together with a bar which is connected to said projecting portion and is provided adjacent thereto with a depending lug or block for the purpose set forth.



4. In a car-replacer, the combination with a pair of similarly-constructed retracking-rails each having tread portions which extend beyond the webs of said rails, apertures through the webs of the rails, said apertures having beveled end walls, of connecting-bars the connecting-bar which is attached to the projecting ends having depending lugs or blocks the other bars having centrally-raised portions, and means for connecting the bars to the rails.

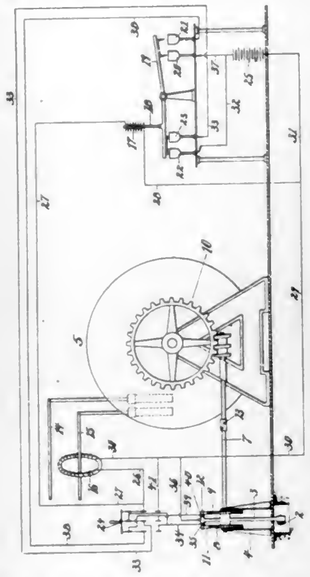
655,779. CONTROL OF ELECTRIC FURNACES. WILLIAM S. HORRY, New York, N. Y., assignor to the Union Carbide Company, Niagara Falls, N. Y. Filed Feb. 21, 1899. Renewed Jan. 15, 1900. Serial No. 1,543. (No model.)



Claim.—1. A system of electric-furnace regulation comprising an electrically-controlled motor geared or attached to the movable member or element of the furnace, electromechanical motor-controlling devices in operative position to the furnace-circuit and adapted to automatically start and reverse the motor to keep the amperes constant in the furnace, means for switching current into the motor by hand to run it in either direction, and means for permitting and preventing the control of the motor by the electromechanical devices, substantially as described.

2. A system of electric-furnace regulation comprising an electrically-controlled motor geared or attached to the movable member or element of the furnace, electromechanical devices in operative position to the furnace-circuit and adapted to automatically start and reverse the motor to keep the amperes constant in the furnace, and an electric switch for controlling the motor by hand to run it in either direction and for permitting and preventing the control of the motor by the electromechanical devices, substantially as described.

655,780. ELECTRIC FURNACE. WILLIAM S. HORRY, New York, N. Y., assignor to the Union Carbide Company, Chicago, Ill. Filed Aug. 15, 1899. Serial No. 727,279. (No model.)



Claim.—1. Means for regulating an electric furnace having a movable element and a motor for working it which means comprise regulating relay apparatus responding to the furnace-circuit, and devices worked by the relay for imparting motion from the motor to the movable element, said devices arranged to respond only to predetermined variations in the furnace-circuit thereby keeping the furnace-current approximately constant.

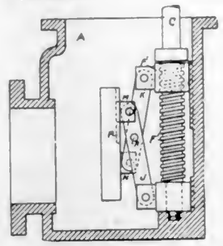
2. Means for regulating one or more electric furnaces which comprise motor apparatus, furnaces and their movable elements, power-transmission mechanism for independently connecting the movable element of each furnace with the motor apparatus to shift it in either direction and for disconnecting the same, electromechanical controlling devices in operative position to the furnace-circuits and adapted to automatically actuate the power-transmission mechanism to keep the amperes constant in the furnaces, and switches constructed and arranged to control the power transmission by hand, to shift the regulating elements in either direction and to permit and prevent control by the electromechanical devices, substantially as described.

3. In combination an electric furnace and its movable element, a positively-driven reciprocating rocker-arm provided with two pawls, ratchet-wheels connected with the movable element of the furnace and whereof one is driven in one direction by one pawl and the other is driven in the opposite direction by the other pawl, two coils respectively adapted to magnetize one of the pawls, and electromechanical devices responding to the furnace-circuit and adapted to pass current through one or the other of said coils, substantially as described.

4. In combination a furnace and its movable member, ratchet-wheels for shifting the movable member in one direction or the other, pawls normally out of range of said ratchet-wheels, means controlled by the current through the furnace for shifting said pawls into operative position, and a shaft interposed between the ratchet-wheels and the movable member of the furnace and provided with radial openings for the reception of a hand-bar, substantially as described.

5. In combination a series of furnaces having each a movable member, a reciprocating bar and means for reciprocating it, rocker-arms actuated by said bar, pawl-and-ratchet connections interposed between each rocker-arm and each furnace of a series and operatively connected with the movable member of each furnace, an electromagnet in operative position to each furnace-circuit, a switch controlled by each electromagnet, and a local circuit controlled by each switch and containing electromagnetic devices for throwing the pawls into and out of action, substantially as described.

655,781. FIRE-HYDRANT. ROBERT HUGHES, Waterford, N. Y., assignor to John Knickerbacker, Troy, N. Y. Filed Nov. 4, 1897. Serial No. 657,369. (No model.)

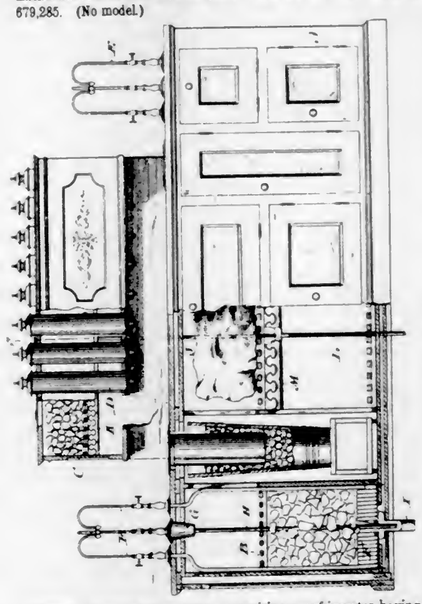


Claim.—1. In a hydrant-valve the combination of a casing, support and actuator for one lever-end support, a non-actuator support for the other lever, valve to close the opening in the casing, levers crossing each other and pivoted together between their ends and means for keeping the face of the valve parallel to the desired plane, and arranged to minimize the downward travel of the valve substantially as described.

2. In a hydrant-valve, the combination of the casing, support and actuator for one of the lever-end supports, stationary lever-end support for the other lever, levers attached to said supports and to the valve, a valve to close the opening in the casing, said levers being pivoted together between their ends, one end of one of the levers being pivoted to the back of the valve, and one end of the other lever attached to the back of the valve so as to freely move up or down relative to the back of the valve, substantially as described.

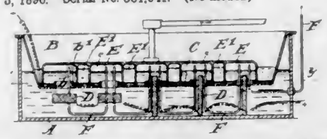
3. In a hydrant-valve, the combination of the casing, support and actuator for one of the levers, stationary lever-end support for the other lever, levers to operate the valve, a valve to close the opening in the casing, the stem being free to revolve in the lower lever-end support substantially as described.

655,782. SODA-WATER-DISPENSING APPARATUS. CHARLES P. KADE, Sheboygan, Wis., assignor to Isabella Francis Kade and Katharine Francis Winter, same place. Filed Apr. 30, 1898. Serial No. 679,285. (No model.)



Claim.—A counter-top casing comprising a refrigerator having an upper ice-compartment and lower cold-storage compartment, a coil cooling-compartment subdivided by a horizontal grating to provide an upper cooling-chamber, an ice-cream-storage compartment in cold-air circulation with said refrigerator and coil cooling-compartment, the several compartments and the cooling-chamber being provided with door-closed openings below the counter-top of the casing and this top provided with lid-covered openings to the ice-cream-storage compartment; an auxiliary refrigerator surmounting the casing in flue connection with the ice-compartment of the refrigerator aforesaid, syrup-jars in an overhang of the auxiliary refrigerator, faucets depending from the jars, and draft-tubes in connection with coils in the aforesaid cooling-compartment.

655,783. ELECTROLYTIC APPARATUS FOR DECOMPOSING METALLIC SALTS. CARL KELLNER, Vienna, Austria-Hungary. Filed Mar. 3, 1896. Serial No. 581,641. (No model.)



Claim.—1. Apparatus such as described comprising an external vessel for containing an electrolyte, suitable anodes, a mercury cathode suspended above the bottom of said vessel by suitable means, a chambered structure dipping into the cathode, means for moving said structure through the cathode and means for placing one or more chambers of the chambered structure in communication with the external vessel, substantially as described.

2. In an electrolytic apparatus in combination, a vessel for the reception of the electrolyte, containing a suitable anode or anodes and a cathode consisting of a stratum of mercury, a series of inverted cells for the reception of a liquid capable of combining with the metallic anion in the amalgam formed, said cells dipping into said stratum of mercury, means for imparting a to-and-fro motion to the cells collectively, a source of electricity, electrical connections between the electrodes and the proper poles of said source, a third electrode or electrodes for said cells short-circuited to the supply-circuit and means for separately collecting and educting the gases evolved at the cathode, and third electrodes, for the purposes set forth.

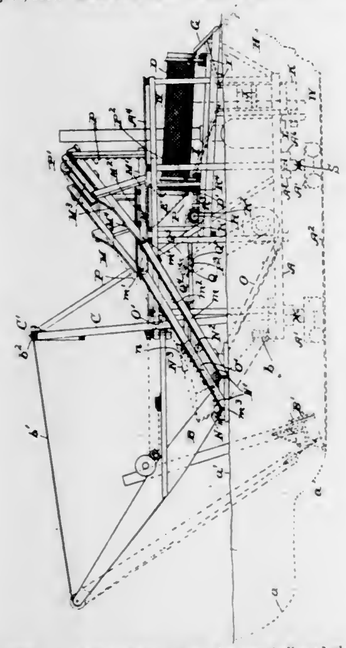
3. In an electrolytic apparatus in combination, a vessel for the reception of the electrolyte, a vessel arranged therein for the reception of a liquid capable of combining with the metallic anion resulting from the electrolytic decomposition of the electrolyte and containing a cathode consisting of a stratum of mercury, the last-named vessel in communication above the level of the mercury stratum and at different points with the first-named vessel, an inverted bell constructed with a series of intercommunicating cells and with a series of cells open at one end and alternating with the first-mentioned cells, said bell and cell-walls dipping into the aforesaid stratum of mercury, the intercommunicating cells encompassing the communications between the two vessels, means for imparting a to-and-fro movement to the bell, a suitable anode for each of said intercommunicating cells, a source of electricity, electrical connections between the electrodes and the proper poles of said source, and means for educting the gas evolved, for the purpose set forth.

4. The combination, with a closed vessel for the reception of the electrolyte provided with a longitudinal opening in its cover encompassed by a receptacle for a sealing liquid, and a cover for said opening dipping into and adapted to move to and fro in said receptacle, a cathode consisting of a stratum of mercury contained in said vessel, a series of inverted cells for the reception of a liquid capable of combining with the metallic anion in the amalgam formed, said cells dipping into said mercury stratum and communicating with each other at their upper end, an eduction-pipe connected with the last of the series of cells extending through the aforesaid opening in the cover of the vessel and fluid-tight through the cover for said opening, means for imparting a to-and-fro motion to the cells collectively, a suitable anode for each of said cells, a source of electricity, electric connections between the electrodes and the proper poles of said source, and a third electrode contained in said closed vessel short-circuited to the electric circuit, for the purpose set forth.

5. The combination with the vessel A, having the cathodes C, anodes D and the vessel B suspended therein, said vessel B provided with openings *b* surrounded by a raised flange; of the bell E having alternate cells *c* and E′ resting on the bottom of the vessel B, said bell E provided in its walls with notches or recesses *e*, and means for imparting a to-and-fro motion to said bell, substantially as and for the purpose specified.

6. Apparatus such as described comprising an external vessel, anodes, a second vessel having a perforated bottom suspended in the first vessel, a mercury cathode in said second vessel, means for retaining it therein, a hood having connected cells adapted to fit over said perforations, means for imparting motion to said cells and suitable electrical connections for the electrodes, substantially as described.

655,784. EXCAVATOR. GEORGE W. KING, Marion, Ohio. Filed May 17, 1897. Serial No. 636,837. (No model.)



Claim.—1. In an excavator of the character indicated, the suitably-supported incline extending downwardly and outwardly from the machine's body portion, and a cable O' attached at one end to the outer and lower end of the incline, and attached at its opposite end to the body portion, substantially as shown, for the purpose specified.

2. An excavator of the character indicated having its body portion provided with an incline or elevator that is supported, at its inner end, from the body portion and has its outer end provided with a runner, substantially as set forth.

3. In an excavator, the combination with the machine's body portion and the suitably-supported laterally-swinging boom provided with a suitably-operated excavating-shovel: of an incline supported from and extending laterally of and downwardly from the body portion, and provided, at its outer end, with a runner arranged longitudinally of the machine, a car movable upon the incline, means for propelling the car upon the incline, a hopper arranged to receive the material from the car when the latter is dumped at the upper portion of the incline.

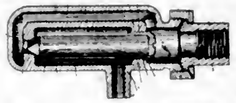
4. The combination with the excavator's body portion provided with an incline extended laterally of and downwardly from the body portion, and a car movable upon the incline: of a suitably-operated shaft Q supported from the body portion, a winding-drum loose upon said shaft, a clutch for establishing and interrupting operative connection between the drum and shaft, a cable engaging said drum and operatively connected with the aforesaid car, and sheaves for guiding said cable, substantially as and for the purpose set forth.

5. The combination with the machine's body portion having an incline extending outwardly from the body portion, a car mounted upon said incline, said car having a bail straddling and pivoted to the sides of the car, means for tilting the car's discharging end downwardly when the car is upon the upper portion of the incline, a suitably-actuated cable operatively connected with said bail and a gate attached to the bail and arranged to close the car's discharging end when the latter is upon the lower end of the incline, substantially as and for the purpose set forth.

6. An excavator having its car-body provided, at each end, with two trucks arranged a suitable distance apart; a bolster extending over the trucks of the rear pair of trucks, and arranged transversely of and below the car-body, which bolster has such connection with the trucks and car-body as to render the trucks and car-body movable together; a member depending from and rigid with the car-body and resting upon the central portion of the bolster, which member has its lower surface convex transversely of the body portion, and two stops S' and S' arranged at oppoite ends, respectively, of the aforesaid convex surface, substantially as shown, for the purpose specified.

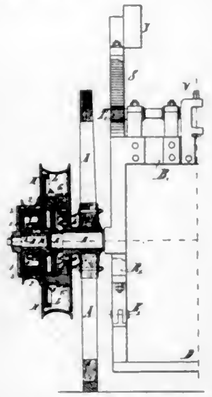
7. An excavator having its car-body provided, at each end, with two trucks arranged a suitable distance apart; a bolster, extending over the trucks of the rear pair of trucks and arranged transversely of and below the car-body, and having such connection with the trucks as to be movable with the latter; two beams A^5 and A^6 rigid with the car-body and arranged at opposite sides, respectively, of, and in close proximity to, the bolster, and a member rigid with and depending from the car-body between the beams and resting upon the central portion of the bolster, which depending member has its lower surface convex transversely of the car-body, substantially as shown, for the purpose specified.

655,785. AUTOMATIC AIR-VALVE. WILLIAM D. KLIPPEL, Chicago, Ill. Filed Jan. 17, 1900. Serial No. 1,752. (No model.)



Claim.—In an automatic air-valve, a valve-body composed of one integral piece provided with an inlet-opening, a cylindric central steam-chamber having communication with said inlet-opening, a discharge-chamber axially alined with said steam-chamber and having a screw-threaded opening communicating therewith, a discharge-duct formed within the walls of said steam-chamber extending at the top and the side thereof and communicating with the interior of said discharge-chamber, an escape-opening communicating between the upper part of the steam-chamber and the discharge-duct, which escape-opening is alined with said screw-threaded opening; in combination with a pencil of material expansible by heat; and a cup-shaped holder for said pencil, which holder is threaded to correspond with the threads in said screw-threaded opening.

655,786. VEHICLE. GIUSTO LANINO, Turin, Italy. Filed Dec. 5, 1899. Serial No. 739,308. (No model.)



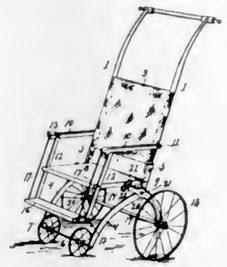
Claim.—1. In a two-wheeled carriage, a pair of carrying-wheels, a depressed main frame having axles upon which said wheels are journaled, pulleys carried by said axles and connected with said wheels, and a movable load-carrying frame, substantially as described.

2. In a two-wheeled carriage, a pair of carrying-wheels, a depressed frame having axles upon which said wheels are journaled, said axles projecting through the wheels, pulleys journaled upon said extended portions, and gearing connecting said pulleys with the wheels, substantially as described.

655,787. PERAMBULATOR. GEORGE D. LEADBETTER, Detroit, Mich. Filed Dec. 23, 1899. Serial No. 741,369. (No model.)

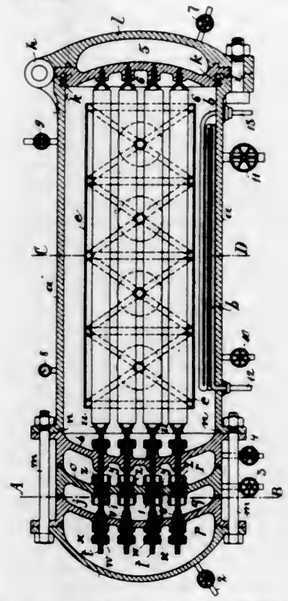
Claim.—1. In a folding cart, the combination of the uprights carrying the forward wheels at their lower ends, the seat pivoted to said uprights, the braces also pivoted to said uprights and carrying at their lower ends the rear set of wheels, the upper ends of said braces having slots therein, and the pins projecting from the sides of said seat and engaging in said slots.

2. In a cart, the combination of the main uprights carrying at their lower ends the forward set of wheels, the seat pivoted to said uprights, the braces also pivoted to said uprights and carrying at their lower ends the rear set of wheels, the upper ends of said braces having each a slotted head and a notch communicating with said slot, pins projecting from the sides of the seat lying in the slots in said heads and adapted to engage in said notches, whereby the seat may be supported at two different elevations and permitted to fold upward adjacent to said uprights.



3. In a cart, the combination of the uprights carrying at their lower ends the forward set of wheels, the seat and the arms pivoted to said uprights, the bars pivoted to said arms and seat and supporting the foot-rest, the braces pivoted to said uprights and having a movable connection with said seat.

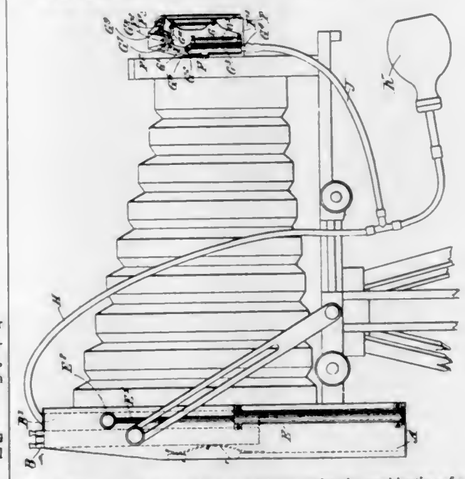
655,788. APPARATUS FOR IMPREGNATING WOOD. GEORG F. LIEBODA, Boulogne-sur Seine, France. Filed Mar. 31, 1900. Serial No. 10,977. (No model.)



Claim.—1. An apparatus for impregnating tree-trunks or wood longitudinally, consisting of a container *a* being closed at one end by a cover or door *l* provided with a number of pipes extending into bell-mouthed cutters 6 and at the other end by a cover or door *g* in combination with three partitions *j o s*, of which the center one *o* has a suitable number of cylinders for receiving pistons attached to pipes *t*, which pipes also extend into bell-mouthed cutters *u* and pass through the partitions *j* and *s* by means of stuffing-boxes, the said bell-mouthed cutters being adapted to penetrate the ends of the wood to be treated when a pressure medium is admitted to the middle chamber *q*, but being forced out of the wood on the admission of the pressure medium to the inner chamber *r* while from the outer chamber *p* situated between the door *g* and the partition *j* the impregnating fluid can be injected into the wood substantially as hereinbefore set forth.

2. In combination with the container, the bell-mouthed cutters, the conduits leading thereto, a cover carrying one set of said cutters, said cover comprising a chamber and being hinged to the container and a pipe leading to said chamber, substantially as described.

655,789. APPARATUS FOR COLOR PHOTOGRAPHY. ANNIBAL LEAK and WILLIAM H. ENGLAND, London, England. Filed Dec. 2, 1899. Serial No. 739,027. (No model.)



Claim.—1. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter, a pneumatic releasing device for that detent, a source of air under pressure and conduits connecting that source with the pneumatic shutter-operating mechanism and releasing device aforesaid, substantially as set forth.

2. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter, a pneumatic releasing device for that detent, a source of air under pressure, conduits connecting that source with the pneumatic shutter-operating mechanism and releasing device aforesaid and a timing mechanism for the air-supply substantially as set forth.

3. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter, a pneumatic releasing device for that detent, a source of air under pressure, conduits connecting that source with the pneumatic shutter-operating mechanism and releasing device aforesaid, a timing mechanism for the air-supply and a stopping device for the same, substantially as set forth.

4. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter operatively connected with the pneumatic shutter-operating mechanism, a source of air under pressure, and a conduit connecting that source with the pneumatic shutter-operating mechanism, substantially as set forth.

5. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter operatively connected with the pneumatic shutter-operating mechanism, a source of air under pressure, a conduit connecting that source with the pneumatic shutter-operating mechanism and a timing mechanism for the air-supply, substantially as set forth.

6. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter operatively connected with the pneumatic shutter-operating mechanism, a source of air under pressure, a conduit connecting that source with the pneumatic shutter-operating mechanism, a timing mechanism for the air-supply, and a stopping device for the same, substantially as set forth.

7. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a stop secured to a part which advances with the pawl, projections on the ratchet to engage the stop when the pawl is at the end of its stroke, a color-filter, slides for a sensitized layer and the

color-filter, a detent for the layer and color-filter, a pneumatic releasing device for that detent, a source of air under pressure, and conduits connecting that source with the pneumatic shutter-operating mechanism and releasing device aforesaid, substantially as set forth.

8. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl for the cam ratchet-wheel, a pneumatic operating device for that pawl, a source of air under pressure, conduits connecting that source and the pneumatic operating devices aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle and motive mechanism operatively connected with the cam-spindle, substantially as and for the purpose set forth.

9. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl for the cam ratchet-wheel, a pneumatic operating device for that pawl, a source of air under pressure, conduits connecting that source and the pneumatic operating devices aforesaid, and a timing mechanism for the air-supply, substantially as and for the purpose set forth.

10. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl for the cam ratchet-wheel, a pneumatic operating device for that pawl, a source of air under pressure, conduits connecting that source and the pneumatic operating devices aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, and motive mechanism operatively connected with the disk, substantially as and for the purpose set forth.

11. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl for the cam ratchet-wheel, a pneumatic operating device for that pawl, a source of air under pressure, conduits connecting that source and the pneumatic operating devices aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, motive mechanism operatively connected with the cam-spindle, and means for regulating the speed of the cam, substantially as and for the purpose set forth.

12. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl for the cam ratchet-wheel, a pneumatic operating device for that pawl, a source of air under pressure, conduits connecting that source and the pneumatic operating devices aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk, a stopping-cam on the cam-spindle and a stopping device for the motive mechanism operatively connected with the stopping-cam, substantially as and for the purpose set forth.

13. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl for the cam ratchet-wheel, a pneumatic operating device for that pawl, a source of air under pressure, conduits connecting that source and the pneumatic operating devices aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk, and a stopping device for the motive mechanism operatively connected with the cam-spindle, substantially as and for the purpose set forth.

14. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl for the cam ratchet-wheel, a pneumatic operating device for that pawl, a source of air under pressure, conduits connecting that source and the pneumatic operating devices aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk, a stopping-cam on the cam-spindle and a stopping device for the motive mechanism operatively connected with the stopping-cam, substantially as and for the purpose set forth.

15. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl for the cam ratchet-wheel, a pneumatic operating device for that pawl, a source of air under pressure and conduits connecting that source and the pneumatic operating devices aforesaid, substantially as and for the purpose set forth.

16. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl for the cam ratchet-wheel, a pneumatic operating device for that pawl, a source of air under pressure, conduits connecting that source and the pneumatic operating devices aforesaid, and a timing mechanism for the air-supply, substantially as and for the purpose set forth.

17. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl for the cam ratchet-wheel, a pneumatic operating device for that pawl, a source of air under pressure, conduits connecting that source and the pneumatic operating devices aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, and motive mechanism operatively connected with the cam-spindle, substantially as and for the purpose set forth.

18. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl for the cam ratchet-wheel, a pneumatic operating device for that pawl, a source of air under pressure, conduits connecting that source and the pneumatic operating devices aforesaid, a valve in those conduits, a cam

controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, motive mechanism operatively connected with the cam-spindle, and means for regulatiug the speed of the cam, substantially as and for the purpose set forth.

19. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl for the cam ratchet-wheel, a pneumatic operating device for that pawl, a source of air under pressure, conduits connecting that source and the pneumatic operating devices aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam-plate is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears and motive mechanism operatively connected with the disk, substantially as and for the purpose set forth.

20. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl for the cam ratchet-wheel, a pneumatic operating device for that pawl, a source of air under pressure, conduits connecting that source and the pneumatic operating devices aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk, and a stopping device for the motive mechanism operatively connected with the cam-spindle, substantially as and for the purpose set forth.

21. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl for the cam ratchet-wheel, a pneumatic operating device for that pawl, a source of air under pressure, conduits connecting that source and the pneumatic operating devices aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk, a stopping-cam on the cam-spindle, and a stopping device for the motive mechanism operatively connected with the stopping-cam, substantially as and for the purpose set forth.

22. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a catch for the same, a cam connected with the ratchet on the cam aforesaid and adapted to operate the catch, a source of air under pressure, and a conduit connecting that source with the pneumatic operating device aforesaid, substantially as and for the purpose set forth.

23. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a catch for the same, a cam connected with the ratchet on the cam aforesaid and adapted to operate the catch, a source of air under pressure, a conduit connecting that source and the pneumatic operating device aforesaid and a timing mechanism for the air-supply, substantially as and for the purpose set forth.

24. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a catch for the same, a cam connected with the ratchet on the cam aforesaid and adapted to operate the catch, a source of air under pressure, a conduit connecting that source and the pneumatic operating device aforesaid, a valve in that conduit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, motive mechanism operatively connected with the cam-spindle and means for regulating the speed of the cam, substantially as and for the purpose set forth.

25. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a catch for the same, a cam connected with the ratchet on the cam aforesaid and adapted to operate the catch, a source of air under pressure, a conduit connecting that source and the pneumatic operating device aforesaid, a valve in that conduit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, motive mechanism operatively connected with the cam-spindle and means for regulating the speed of the cam, substantially as and for the purpose set forth.

26. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a catch for the same, a cam connected with the ratchet on the cam aforesaid and adapted to operate the catch, a source of air under pressure, a conduit connecting that source and the pneumatic operating device aforesaid, a valve in that conduit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, and motive mechanism operatively connected with the disk, substantially as and for the purpose set forth.

27. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a catch for the same, a cam connected with the ratchet on the cam aforesaid and adapted to operate the catch, a source of air under pressure, a conduit connecting that source and the pneumatic operating device aforesaid, a valve in that conduit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk and a stopping device for the motive mechanism operatively connected with the cam-spindle, substantially as and for the purpose set forth.

28. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a catch for the same, a cam connected with the ratchet on the cam aforesaid and adapted to operate the catch, a source of air under pressure, a conduit connecting that source and the pneumatic operating device aforesaid, a valve in that condoit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk, a stopping-cam on the cam-spindle and a stopping device for the motive mechanism operatively connected with the stopping-cam, substantially as and for the purpose set forth.

29. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter operatively connected with the pneumatic shutter-operating mechanism, a source of air under pressure, a conduit connecting that source with the pneumatic shutter-operating mechanism, a valve in that conduit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, and motive mech-

anism operatively connected with the cam-spindle, substantially as and for the purpose set forth.

30. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter operatively connected with the pneumatic shutter-operating mechanism, a source of air under pressure, a conduit connecting that source with the pneumatic shutter-operating mechanism, a valve in that conduit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, motive mechanism operatively connected with the cam-spindle and means for regulating the speed of the cam, substantially as and for the purpose set forth.

31. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter operatively connected with the pneumatic shutter-operating mechanism, a source of air under pressure, a conduit connecting that source with the pneumatic shutter-operating mechanism, a valve in that conduit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears and motive mechanism operatively connected with the disk, substantially as and for the purpose set forth.

32. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter operatively connected with the pneumatic shutter-operating mechanism, a source of air under pressure, a conduit connecting that source with the pneumatic shutter-operating mechanism, a valve in that conduit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk, and a stopping device for the motive mechanism operatively connected with the cam-spindle, substantially as and for the purpose set forth.

33. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter operatively connected with the pneumatic shutter-operating mechanism, a source of air under pressure, a conduit connecting that source with the pneumatic shutter-operating mechanism, a valve in that conduit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk, a stopping-cam on the cam-spindle and a stopping device for the motive mechanism operatively connected with the stopping-cam, substantially as and for the purpose set forth.

34. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter, a pneumatic releasing device for that detent, a source of air under pressure, conduits connecting that source with the pneumatic shutter-operating mechanism and releasing device aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle and motive mechanism operatively connected with the cam-spindle, substantially as and for the purpose set forth.

35. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter, a pneumatic releasing device for that detent, a source of air under pressure, conduits connecting that source with the pneumatic shutter-operating mechanism and releasing device aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, motive mechanism operatively connected with the cam-spindle and means for regulating the speed of the cam, substantially as and for the purpose set forth.

36. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter, a pneumatic releasing device for that detent, a source of air under pressure, conduits connecting that source with the pneumatic shutter-operating mechanism and releasing device aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk and a stopping device for the motive mechanism operatively connected with the cam-spindle substantially as and for the purpose set forth.

37. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter, a pneumatic releasing device for that detent, a source of air under pressure, conduits connecting that source with the pneumatic shutter-operating mechanism and releasing device aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk, a stopping-cam on the cam-spindle and a stopping device for the motive mechanism operatively connected with the stopping-cam, substantially as and for the purpose set forth.

38. In a camera for color photography the combination of a lens-holder, an exposure-shutter, a pneumatic shutter-operating mechanism, a color-filter, slides for a sensitized layer and the color-filter, a detent for the layer and color-filter, a pneumatic releasing device for that detent, a source of air under pressure, conduits connecting that source with the pneumatic shutter-operating mechanism and releasing device aforesaid, a valve in those conduits, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk, a stopping-cam on the cam-spindle and a stopping device for the motive mechanism operatively connected with the stopping-cam, substantially as and for the purpose set forth.

39. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a cam connected with the ratchet on the cam aforesaid and adapted to operate the catch, a source of air under pressure and a conduit connecting that source with the pneumatic operating device aforesaid, substantially as and for the purpose set forth.

40. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a cam connected with the ratchet on the cam aforesaid and adapted to operate the catch, a source of air under pressure, a conduit connecting that source with the pneumatic operating device aforesaid and a timing mechanism for the air-supply, substantially as and for the purpose set forth.

41. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a cam connected with the ratchet on the cam aforesaid and adapted to operate the catch, a source of air under pressure, a conduit connecting that source with the pneumatic operating device aforesaid, a valve in that conduit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle and motive mechanism operatively connected with the cam-spindle, substantially as and for the purpose set forth.

42. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a cam connected with the ratchet on the cam aforesaid and adapted to operate the catch, a source of air under pressure, a conduit connecting that source with the pneumatic operating device aforesaid, a valve in that conduit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, motive mechanism operatively connected with the cam-spindle and means for regulating the speed of the cam, substantially as and for the purpose set forth.

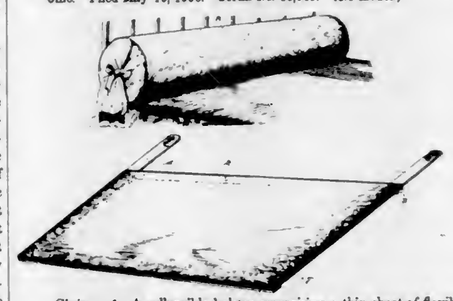
43. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a cam connected with the ratchet on the cam aforesaid and adapted to operate the catch, a source of air under pressure, a conduit connecting that source with the pneumatic operating device aforesaid, a valve in that conduit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears and motive mechanism operatively connected with the disk, substantially as and for the purpose set forth.

44. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a cam connected with the ratchet on the cam aforesaid and adapted to operate the catch, a source of air under pressure, a conduit connecting that source with the pneumatic operating device aforesaid, a valve in that conduit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk, and a stopping device for the motive mechanism operatively connected with the cam-spindle and substantially as and for the purpose set forth.

45. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a projection on the shutter, a cam to engage that projection, a ratchet on the cam, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the ratchet on the cam, a color-filter, slides for a sensitized layer and the color-filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a cam connected with the ratchet on the cam aforesaid and adapted to operate the catch, a source of air under pressure, a conduit connecting that source with the pneumatic operating device aforesaid, a valve in that conduit, a cam controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk, a stopping-cam on the cam-spindle and a stopping device for the motive mechanism operatively connected with the stopping-cam, substantially as and for the purpose set forth.

46. In a camera for color photography the combination of a lens-holder, an exposure-shutter pivoted thereon, a pinion secured to the shutter, a wheel having interrupted teeth to engage the shutter-pinion at stated intervals, a ratchet on the wheel, a pneumatic operating device, a pawl pivoted to that device and arranged to engage the wheel-ratchet, a retaining device for the ratchet-wheel, a color-filter, slides for a sensitized layer and the filter, a telescopic shaft operatively connected with the layer and color-filter, a catch for the layer and color-filter, a ratchet-wheel, a cam connected with the ratchet-wheel and adapted to operate the catch, a pawl and a detent for the cam ratchet-wheel, a pneumatic operating device for that pawl, a brake for the layer and color-filter, a source of air under pressure, conduits connecting that source and the pneumatic operating devices aforesaid, a valve in those conduits, a cam-plate controlling that valve, a lever operatively connected with the valve and bearing against the cam, a spindle to which the cam-plate is secured, bearings to support that spindle, a friction-roller free to move endwise but not to rotate relatively to the spindle, a shifting device for adjusting and retaining the friction-roller, a friction-disk against which the friction-roller bears, motive mechanism operatively connected with the disk, a stopping-cam on the cam-plate spindle, and a stopping device for the motive mechanism operatively connected with the stopping-cam, substantially as and for the purpose set forth.

655,790. COLLAPSIBLE BOLSTER. JOHN E. LONG, Chillicothe, Ohio. Filed May 16, 1900. Serial No. 16,915. (No model.)



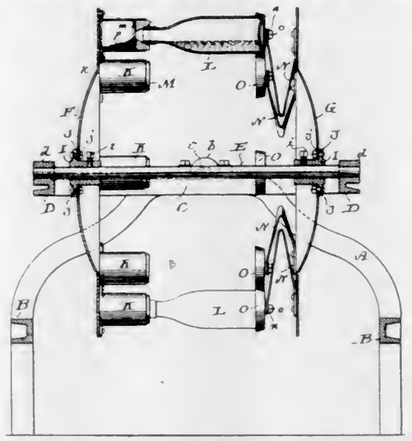
Claim.—1. A collapsible bolster comprising a thin sheet of flexible material having holding devices on the outer side edge thereof near the ends, and resilient end straps secured to said sheet and having a length greater than the width of the said sheet, the ends of the straps unengaged by the sheet being provided with articulating devices to removably engage the holding devices on the side edge of the sheet.

2. A collapsible bolster of cylindrical form comprising a thin sheet of flexible material having brace-strips along the side edge portions, resilient metal end straps attached to the sheet and of greater length than the width of said sheet, and having articulating devices in the free ends thereof, and headed studs on the edge of the sheet opposite that from which the straps extend to detachably receive the free ends of the latter.

655,791. PROCESS OF TREATING LEAF-TOBACCO. LAFAYETTE LOVE, Hamilton, Ohio, assignor of one-third to Frank E. Hoffman, same place. Filed Feb. 23, 1900. Serial No. 6,186. (No specimens.)

Claim.—The process for treating leaf-tobacco, consisting in subjecting the leaf, first, to immersion in gasolene or similar light petroleum product, second, partially drying the leaf to remove the gasolene or other light petroleum product therefrom, third, subjecting the leaf to a wetting in an infusion of wild-cherry bark to remove the harshness, &c., resulting from said immersion, and, fourth, partially drying the leaf.

655,792. BOTTLE-WASHING MACHINE. FRITZ LUGVIEL, Oconomowoc, Wis. Filed June 12, 1899. Serial No. 720,142. (No model.)



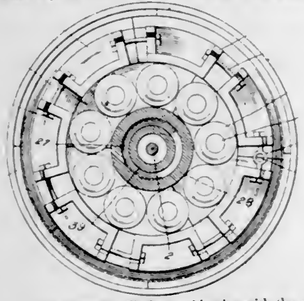
Claim.—1. In a bottle-washing machine, the combination with a supporting-frame, of a rectangular frame revolubly supported therein, and a pair of bottle-supporting disks revolubly supported in said rectangular frame, whereby said disks always revolve within the limits of the rectangular frame, and the latter always revolves within the limits of the supporting-frame.

2. In a bottle-washing machine, the combination with a stationary supporting-frame, of an independent rectangular frame revolubly mounted in said supporting-frame, a revoluble journal having bearings in said rectangular frame, a pair of bottle-supporting disks adjustably secured to said journal, means for holding the rectangular frame against rotation when desired, an annular series of cups projecting inwardly from one of said disks, and a corresponding annular series of spring-mounted socket-plates secured to the other of said disks.

3. In a bottle-washing machine, the combination with a revoluble frame, of a revoluble journal having bearings in said frame; a pair of bottle-supporting disks, each longitudinally movable upon said journal; set-screws for securing said disks to said journal after adjustment; an annular series of close-bottomed cups secured to one of said disks; and a corresponding annular series of doubled flat springs secured to the other of said disks, and having socket-plates removably secured to the free ends of said springs.

4. In a bottle-washing machine, the combination with a revoluble journal, of a pair of bottle-supporting disks, each longitudinally movable upon said journal; set-screws for securing said disks to said journal after adjustment; an annular series of close-bottomed cups secured to one of said disks; flexible blocks carried by said cups, and formed with conical bores for receiving the mouths of bottles; a corresponding series of doubled flat springs, secured to the other of said disks, and having perforations through their free ends; a series of socket-plates having screw-threaded shanks projecting from the bottoms thereof for removable engagement with the perforated ends of said springs; and nuts for temporarily securing the said springs and socket-plates together.

655,793. QUARTZ-MILL. ALEXANDER T. McMURTREY, Medford, Oreg. Filed Sept. 2, 1899. Serial No. 729,356. (No model.)



Claim.—1. In a quartz-mill, the combination with the pan of mullers, consisting of sections of a flat ring, provided with inner and end flanges, the latter having opposite notches, of double-headed bolts dropped into said notches, to couple the mullers loosely together, substantially as described.

2. In a quartz-mill, the combination with the pan of mullers, consisting of sections of a flat ring, provided with inner and end flanges, the latter having opposite notches, of double-headed bolts dropped into said notches, to couple the mullers loosely together, a vertical shaft, a yoke carried thereby, knees secured to the arms of the yoke, a cap or driving-ring secured on said knees, and a coupling-pin passed downward through the cap and into the eye in one of the muller-coupling bolts, substantially as described.

3. In a quartz-mill, the combination with a fixed horizontal pan and a set of revolving mullers, of an oppositely-driven cylinder and cylindrical shoes or rollers loosely set on end between the mullers and cylinder, substantially as described.

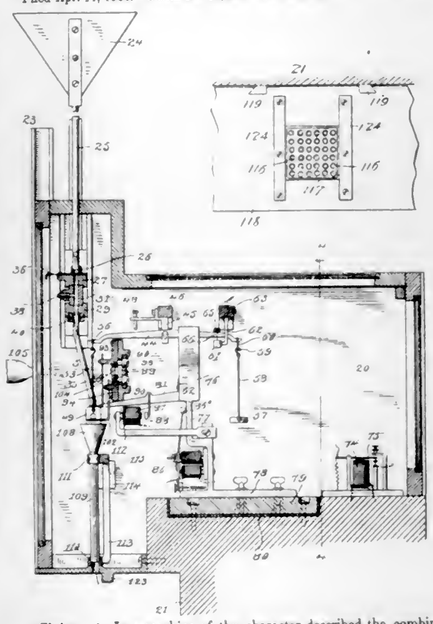
4. In a quartz-mill, the combination with a fixed horizontal pan and a set of revolving mullers, of a central vertical cylinder and cylindrical shoes or rollers set loosely on end between the cylinder and mullers, substantially as described.

5. In a quartz-mill, the combination with a fixed horizontal pan and a set of revolving mullers, of a central vertical cylinder, cylindrical shoes or rollers set loosely on end between the cylinder and mullers, and a circular screen surrounding the pan and projecting above its edges, substantially as described.

6. In a quartz-mill, the combination with a rigid, horizontal pan, of a vertical shaft projecting centrally through it and driven in one direction, a set of mullers connected with the shaft and rotating therewith, a bevel gear-wheel mounted loosely on the shaft and oppositely driven, a central cylinder in the pan connected with the gear-wheel and rotating therewith, and loose rollers or shoes set on end in the pan between the mullers and cylinder, substantially as described.

7. In a quartz-mill, the combination with a rigid horizontal pan, of a vertical shaft projecting centrally through it and driven in one direction, a set of mullers connected with the shaft and rotating therewith, a bevel gear-wheel mounted loosely on the shaft and oppositely driven a cylinder around the shaft and secured to the gear-wheel, a ring-clutch on the cylinder having radial wings, a central cylinder in the pan having notches in its upper edge to receive the wings, and loose shoes or rollers set on end between the central cylinder and the mullers, substantially as described.

655,794. WEIGHING-MACHINE. JEROME ORCUTT, Bridgeport, Conn., assignor to the Union Metallic Cartridge Company, same place. Filed Apr. 11, 1900. Serial No. 12,458. (No model.)



Claim.—1. In a machine of the character described the combination with a series of scale-beams having scale-pans depending therefrom, a series of tubes leading to the respective scale-pans and means for delivering charges to the scale-pans simultaneously, of supplemental reservoirs communicating with the scale-pans, horizontally and vertically movable slides, bars carried by the vertical slides respectively and rods carried by said bars and acting to discharge the scale-pans.

2. In a machine of the character described the combination with a series of scale-beams having scale-pans depending therefrom, a series of receiving-tubes leading to the respective scale-pans and means for delivering charges to the tubes simultaneously, of supplemental reservoirs communicating with the scale-pans, a series of delivery-tubes, horizontally and vertically movable slides, bars carried by the vertical slides respectively and rods carried by said bars by which the scale-pans are caused to discharge into the delivery-tubes.

3. In a machine of the character described the combination with a series of scale-beams having scale-pans depending therefrom, a series of tubes leading to the scale-pans, means for delivering charges to said tubes simultaneously and a series of supplemental reservoirs communicating with the scale-pans, of electrical buzzers adapted to rap the reservoirs, means operated by the tilting of each scale-beam whereby the corresponding buzzer is stopped independently and mechanism whereby the scale-pans are caused to discharge simultaneously.

4. In a machine of the character described the combination with a series of scale-beams, scale-pans depending therefrom, gates 50 upon said scale-pans by which the contents are retained and means for delivering charges to said scale-pans, of a series of supplemental reservoirs, troughs leading from said reservoirs to the scale-pans, gates 83 in said troughs, electrical buzzers adapted to rap the reservoirs, means for opening the gates and starting the buzzers simultaneously and then closing each gate 83 and stopping the corresponding buzzer independently and horizontally and vertically moving slides and connections intermediate said slides and gates 50 whereby said gates are opened and closed.

5. In a machine of the character described the combination with a series of scale-beams having scale-pans, receiving-tubes leading to the respective scale-pans, cross-piece 29 which supports the receiving-tubes and is provided with holes 34, cross-piece 27 having holes 32 out of alinement with holes 34, and a slide lying between said cross-pieces and provided with measuring-holes which receive charges through holes 32, said slide when moved cutting off the supply and delivering the charges through holes 34 to the receiving-tubes, of a series of supplemental reservoirs communicating with the scale-pans, electrical buzzers corresponding with the reservoirs, means for causing said buzzers to rap the supplemental reservoirs simultaneously, means operated by the tilting of the scale-beams to stop the buzzers independently and vertically-movable slides carrying bars and rods by which the scale-pans are caused to discharge simultaneously.

6. In a machine of the character described the combination with a series of scale-beams having scale-pans, means for supplying charges to the scale-pans simultaneously, a series of supplemental reservoirs communicating with the scale-pans, gates controlling the supply from the supplemental reservoirs, electrical buzzers adapted to rap the supplemental reservoirs and means for opening said gates simultaneously with the starting of the buzzers, of means operated by the tilting of the scale-beams whereby each gate is closed and the corresponding buzzer stopped independently of the other gates and buzzers and mechanism for discharging the scale-pans simultaneously.

7. In a machine of the character described the combination with cross-pieces 27 and 29 provided with holes out of alinement, said cross-piece 29 having threaded recesses in its under side, supply-tubes registering with the holes in cross-piece 27 and receiving-tubes having at their upper ends flanges 39, of recessed nuts which receive said flanges and lock the tubes in the threaded recesses and in alinement with the holes in cross-piece 29 and a slide lying between the cross-pieces and having measuring-holes which receive charges from the supply-tubes and when moved cuts off the supply and delivers the charges to the receiving-tubes.

8. In a machine of the character described the combination with a series of scale-beams having scale-pans and weight-pans depending therefrom and means for supplying approximate charges to the scale-pans, of a corresponding series of supplemental reservoirs, troughs leading therefrom to the scale-pans, gates in said troughs, electrical buzzers having clappers adapted to rap the reservoirs and electrical connections whereby the gates are opened and the buzzers operated and each gate is closed and the buzzer stopped when the corresponding scale-pan descends.

9. In a machine of the character described the combination with a series of scale-beams each scale-beam having a scale-pan, a weight-pan and an insulating-block with a U-shaped wire depending therefrom, of reservoirs 76, troughs leading therefrom to the scale-pans, gates in said troughs, electrical buzzers having clappers adapted to rap the reservoirs, mercury-cups normally engaged by the U-shaped wires and electrical connections whereby the gates are opened and the buzzers operated, each circuit being broken independently at the mercury-cups whereby the gates are closed and the buzzers stopped when the scale-beams descend.

10. In a machine of the character described the combination with a series of scale-beams having scale-pans, weight-pans and insulating-blocks with wires 66 depending therefrom, a series of reservoirs 76 and troughs leading therefrom to the scale-pans, of gates 83 in said troughs, an electric switch, wires leading therefrom, battery-circuits leading from said wires, each circuit comprising a battery, a pair of mercury-cups and an electromagnet having a pivoted armature 75 and corresponding local circuits, each local circuit comprising an armature 75 belonging to a battery-circuit, a buzzer and an electromagnet having a pivoted armature 88 carrying a gate 83, so that when the switch is closed the electromagnets in the battery-circuits are magnetized and draw armatures 75 to their poles thereby closing the local circuits and opening the gates in the troughs and starting the buzzers, each battery-circuit being broken at the mercury-cups when the scale-beam descends thereby breaking the corresponding local circuit and closing the gate in the trough and stopping the buzzer.

11. In a machine of the character described the combination with a series of scale-beams having insulating-blocks with U-shaped wires depending therefrom, of an electric switch, wires leading therefrom, battery-circuits leading from said wires each comprising a battery, a pair of mercury-cups and an electromagnet having pivoted armatures 75 and corresponding local circuits each comprising an armature 75 of a battery-circuit, a buzzer and an electromagnet having a pivoted armature 88, whereby when the series of battery-circuits is closed by the switch the movement of each armature 75 closes the corresponding local circuit and starts the buzzer, each battery-circuit and with it the corresponding local circuit being broken at the mercury-cups by the tilting of the scale-beam.

12. In a machine of the character described the combination with a scale-beam having an insulating-block with a U-shaped wire depending therefrom, of an electric switch, a battery-circuit leading therefrom and comprising a battery, a pair of mercury-cups and an electromagnet having a pivoted armature 75, and a corresponding local circuit comprising the armature 75 of the battery-circuit, a buzzer and an electromagnet having a pivoted armature 88, whereby when the battery-circuit is closed the movement of the armature 75 closes the local circuit and starts the buzzer, the battery-circuit and with it the local circuit being broken at the mercury-cups by the tilting of the scale-beam.

13. In a machine of the character described the combination with a series of scale-pans having hinged gates 50, rods extending from said gates and weights at the outer ends of the rods by which the gates are kept closed, of vertically-movable hooked rods which are adapted to lift rods 52 and open the gates against the power of the weights.

14. In a machine of the character described the combination with a series of scale-beams, scale-pans having rods 54 extending therefrom, connections intermediate said rods and the scale-beams, and pivoted gates upon the scale-pans having rods 52 carrying weights by which the gates are kept closed, of rods 102 adapted to engage rods 52 to open the gates, rods 104 adapted to engage rods 54 to hold the scale-pans down when the gates are opened and means for operating said rods.

15. In a machine of the character described the combination with a series of scale-beams, scale-pans depending therefrom and weighted gates upon the scale-pans by which the contents are retained, of vertically-movable rods 102 by which the gates are opened against the power of the weights and vertically-movable rods 104 by which the scale-pans are held down when the gates are opened.

16. In a machine of the character described the combination with a series of scale-beams, scale-pans depending therefrom and weighted gates upon the scale-pans by which the contents are retained, of a vertically-movable slide carrying a bar 101 having adjustable rods 102 by which the gates are opened against the power of the weights and a vertically-movable slide carrying a bar 100 having adjustable rods 104 by which the scale-pans are held down when the gates are opened.

17. In a machine of the character described the combination with a series of scale-beams and scale-pans depending therefrom and carrying weighted gates by which the contents are retained, of slides 93 and 94 carrying rollers 98 and bars 100 and 101, adjustable rods in said bars by which the gates are opened and the scale-pans held down and a slide 89 having oblique slots engaged by said rollers whereby slides 93 and 94 may be moved toward or from each other.

18. In a machine of the character described the combination with a series of scale-beams, scale-pans depending therefrom and weighted gates upon the scale-pans by which the contents are retained, of slides 93 and 94 carrying rollers 98 and adjustable rods by which the gates are opened and the scale-pans held down and a slide 89 having oblique slots engaged by said rollers, movement of said slide 89 acting to move slides 93 and 94 either toward or from each other.

19. In a machine of the character described the combination with the case having holes 125 and a stop 123, of vertically-adjustable table 118 having guides 124 and delivery-tubes 109 registering with holes 125, the parts being so combined and arranged that a block of cartridge-shells with a funnel-block may be moved forward on the table between the guides and when the funnel-block engages the stop a row of cartridge-shells will be in position to receive charges from the delivery-tubes.

20. In a machine of the character described the combination with the case and the delivery-tubes, of a removable carrier for said tubes and brackets secured to the case which support the upper end of the carrier.

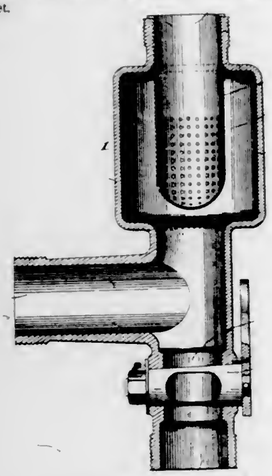
21. In a machine of the character described the combination with a series of scale-pans having weighted gates, mechanism for opening said gates and delivery-tubes which receive the contents of the scale-pans, of supply-tubes, a measuring-slide having holes which measure approximate charges, receiving-tubes which convey said approximate charges to the scale-pans, supplemental reservoirs having troughs leading to the scale-pans, gates in said troughs, buzzers having clappers which rap the supplemental reservoirs and electrical connections which open the gates in the troughs and operate the buzzers, the circuits being broken independently by the descent of the scale-pans.

655,795. LOCOMOTIVE FEED-WATER STRAINER. ROBERT B. PATTON, Clifton Forge, Va. Filed Jan. 31, 1900. Serial No. 3,393. (No model.)

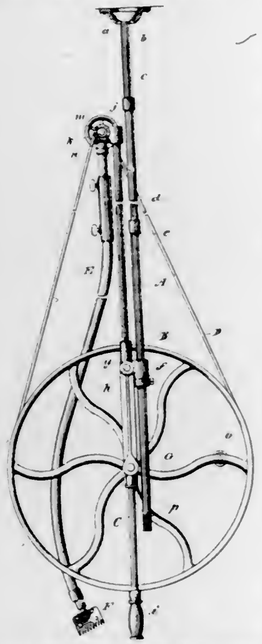
Claim.—1. A feed-water strainer comprising a vertical shell formed with a transverse water-inlet, a cylindrical expanding-chamber above the water-inlet, a settling-chamber below the water-inlet vertically beneath the expanding-chamber, and a reduced outlet-neck vertically above the expanding-chamber, a vertical strainer introduced through the outlet-neck into the expanding-chamber and having the lower portion of its surface perforated so as to leave an imperforate portion in the upper part of the expanding-chamber, and a valve forming the bottom of the settling-chamber; substantially as set forth.

2. A feed-water strainer comprising in one casting, a lateral inlet, cylindrical expanding-chamber above and at right angles to the inlet, the outlet of the expanding-chamber being of the same diameter as the said

inlet, a settling-chamber at right angles to and below the said inlet of a valve-plug forming the bottom of the settling-chamber and a perforated strainer secured in the outlet of and projecting into the center of the expanding-chamber, said strainer being of the same diameter as the said inlet and outlet.



655,796. CLIPPING-MACHINE. JOSEPH K. PRIEST, Nashua, N. H. Filed Mar. 22, 1900. Serial No. 9,664. (No model.)



Claim.—1. In a hair-clipping machine the combination of a rigid supporting-rod, means for movably connecting said supporting-rod to an overhead support, a vertically-adjustable bearing rotatably supported upon said supporting-rod, an arm pivoted to said bearing and the entire clipper and clipper-operating mechanism carried by said arm whereby the arm together with the clipper and clipper-operating mechanism may be moved in various directions.

2. In a hair-clipping machine the combination of a rigid supporting-rod, means for movably connecting said supporting-rod to an overhead support, an adjustable collar movably supported upon said supporting-rod, an arm pivoted in a bearing upon said collar so that the arm is adapted to turn with relation to the collar and the supporting-rod, clipper mechanism carried by said arm to one side of the pivot thereof, a driving-wheel carried by the arm on an opposite side of the pivot thereof from that which carries the clipper mechanism so as to act as a counterbalance therefor and intermediate driving connections between the clipper mechanism and the driving-wheel.

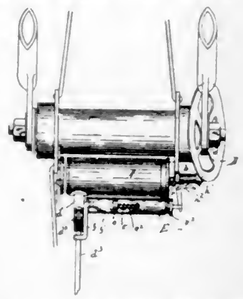
3. In a hair-clipping machine the combination of a rigid supporting-rod, a universal joint for movably connecting said supporting-rod to an overhead support, an adjustable collar movably supported upon said supporting-rod, an arm pivoted in a bearing upon said collar so that the arm is adapted to turn with relation to the collar and the supporting-rod, clipper mechanism carried by said arm to one side of the pivot thereof, a driving-wheel carried by the arm on an opposite side of the pivot thereof from that which carries the clipper mechanism so as to act as a counterbalance therefor and intermediate driving connections between the clipper mechanism and the driving-wheel.

4. In a hair-clipping machine the combination of a rigid supporting-rod, means adapted to be connected to said supporting-rod for movably connecting the same to an overhead support, means for connecting said rod to a foot-support, an adjustable bearing rotatably supported upon said supporting-rod, an arm pivoted to said bearing and clipper and clipper-operating mechanism carried by said arm whereby the arm together with the clipper and clipper-operating mechanism may be moved in various directions.

5. In a hair-clipping machine the combination of a rigid supporting-rod, a foot-support removably secured thereto, means adapted to be connected to said supporting-rod for movably connecting the same to an overhead support, an adjustable bearing rotatably supported upon said supporting-rod, an arm pivoted to said bearing, and clipper and clipper-operating mechanism carried by said arm whereby the arm together with the clipper and clipper-operating mechanism may be moved in various directions.

6. In a hair-clipping machine the combination of a rigid supporting-rod, a support removably secured thereto, a bearing rotatably supported upon said supporting-rod, an arm pivoted to said bearing, a hand-operated driving-wheel carried by the arm on one side of the pivot thereof and clipper mechanism carried by said arm upon the opposite side of the pivot from that which carries the driving-wheel so as to act as a counterbalance therefor and intermediate driving connection between the clipper mechanism and the hand-operated driving-wheel.

655,797. BICYCLE-PUMP. WALTER M. REASON, Pontiac, Mich. Filed Sept. 28, 1899. Serial No. 731,902. (No model.)



Claim.—1. In a pump for pneumatic tires, in combination with a relatively-stationary cam-disk, a pump-cylinder fixed to the wheel, a piston adapted to be reciprocated in one direction in said cylinder by said cam-disk, means acting to force said piston in the opposite direction with a yielding pressure, a dog adapted to engage the said piston to hold it out of engagement with said cam-disk, and means whereby said dog is forced into engagement with said piston at a predetermined air-pressure in the tire, and is disengaged from said piston at a less pressure, substantially as described.

2. In a pump for pneumatic tires, in combination with a relatively-stationary cam-disk, a pump-cylinder fixed to the wheel, a piston adapted to be reciprocated in said cylinder, a hollow piston-rod upon said piston adapted to contact said cam-disk, a spring within said piston-rod acting to press said rod against said cam-disk, a dog adapted to engage said piston-rod to hold the same out of engagement with said cam-disk, and means whereby said dog is forced into engagement with said piston-rod at a predetermined air-pressure in the tire and is disengaged from said rod at a less pressure, substantially as described.

3. In a pump for inflating the pneumatic tires of wheels, in combination with the pump-barrel, and means secured to the pump-barrel for engaging the pump at one end to the wheel, a brace provided with a notched plate adapted to engage against spokes of the wheel, and an adjustable connection between the plate and pump-barrel, substantially as described.

4. In a pump for inflating pneumatic tires of wheels, in combination with the pump-barrel, and means for securing on the piston of the pump a piston-chamber, a piston reciprocating therein adapted to actuate the hook, and a branch pipe leading from the air-conduit into the piston-chamber, and furnished with an elastic diaphragm constituting a closed terminal arranged to engage against said piston, substantially as described.

5. In a pump for pneumatic tires, in combination with a relatively-stationary cam-disk, a pump-cylinder fixed to the wheel, a piston adapted to be reciprocated in one direction in said cylinder by said cam-disk, means acting to force said piston in the opposite direction with a yielding pressure, a dog adapted to engage with said piston to hold it out of engagement with said cam-disk, a piston e, connected with said dog, the cylinder around said piston, a spring e^2, acting to force the piston e, in one direction, the cylinder of the piston e, being so connected to the tire that the piston e, shall be urged in a direction opposite to the action of the spring e^2, by a pressure proportional to the pressure in the tire, substantially as described.

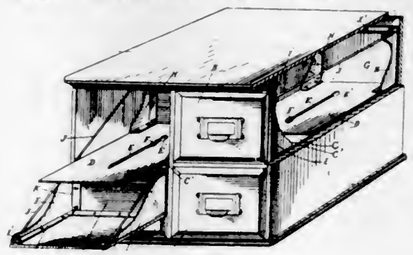
6. In a pump for pneumatic tires, in combination with a relatively-stationary cam-disk, a pump-cylinder fixed to the wheel, a piston adapted to be reciprocated in one direction in said cylinder by said cam-disk, means acting to force said piston in the opposite direction with a yielding pressure, a dog adapted to engage with said piston to hold it out of engagement with said cam-disk, means whereby said dog is forced into engagement with said piston at a predetermined air-pressure in the tire, and is disengaged from said piston at a less pressure, and means for adjusting said dog to engage said piston at a predetermined pressure in the tire, substantially as described.

655,798. SPARK-ARRESTER. WILLIAM REICHOW, Princeton, Minn. Filed May 11, 1900. Serial No. 16,298. (No model.)



Claim.—A spark-arrester consisting of a casing having openings through its sides and slides for closing the same, a central smoke-stack extending into the casing, a conoidal deflector having a gutter-shaped rim at its base, the apex of the deflector extending into the smoke-stack and the lower end of the stack extending below the lower end of the casing to form a coupling-collar, and a concave circumferential bearing between the walls of the casing and the walls of the coupling end of the smoke-stack, substantially as and for the purpose set forth.

655,799. FILE-BOX. LEANDER E. REYNOLDS, Grand Rapids, Mich. Filed Dec. 16, 1899. Serial No. 740,609. (No model.)



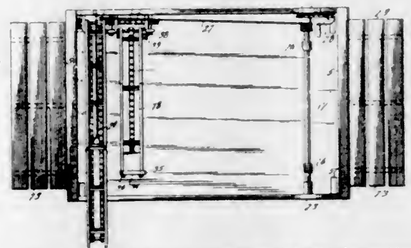
Claim.—1. The combination of a divided and hinged bottom plate, a front wall secured to the said plate, a plate slidable on the hinged bottom plate, a vertical rear wall attached to the slidable plate, and rods connecting the front and the rear walls, substantially as described.

2. The combination of a divided and hinged bottom plate, a front attached thereto, a sliding plate on the hinged bottom plate, a vertical rear wall on the sliding plate, slotted angle-braces connecting the rear wall and sliding plate, and rods pivoted to the front and engaging the slots in said angle-braces, substantially as described.

3. The combination of a transversely-divided plate having a hinge, a sliding plate resting thereon, a front wall attached to the front end of the divided plate, a rear wall attached to the rear end of the sliding plate, slotted braces connecting the sliding plate and the rear wall, angle-braces connecting the front wall and the divided plate, and rods pivotally connected to the front angle-braces and engaging the slots in the rear angle-braces and movable therein, substantially as described.

4. The combination of a transversely-divided plate having a hinge, and a flanged eyelet therein, a front wall attached to the front end of the hinged plate, a sliding plate resting on the divided plate and having a slot engaging the eyelet, a vertical wall attached to the rear end of the sliding plate, angle-braces connecting the sliding plate and the rear wall, and provided with slots, angle-braces connecting the front and the divided plate and provided with openings, and rods pivotally engaging the openings and movably engaging the slots, substantially as described.

655,800. GRAIN DUMP AND ELEVATOR. JOHN ROCKE, Meadows, Ill. Filed Apr. 19, 1900. Serial No. 13,513. (No model.)



Claim.—1. In an apparatus of the class described, the combination of a frame, a pivoted elevator adapted to swing across the frame, a transverse shaft, a guide mounted on the frame and located opposite the elevator, a flexible connection connected with the shaft and with the elevator and received by the guide, said flexible connection extending longitudinally and transversely of the frame, the depending flexible connection extending downward from the shaft and adapted to engage a vehicle, and means for rotating the shaft, whereby the elevator and the vehicle are moved simultaneously, substantially as described.

2. In an apparatus of the class described, the combination of a portable frame having a platform, a pivoted elevator adapted to swing across the frame, a transverse conveyer adapted to swing upward and downward to permit a vehicle to pass beneath it, a short longitudinal conveyer connecting the transverse conveyer with the elevator, and means for raising a vehicle, said means being also connected with the elevator, whereby the latter and the vehicle are adapted to counterbalance each other, substantially as described.

3. An apparatus of the class described comprising a frame, a pivoted elevator arranged to swing across the frame and adapted to be raised to permit a vehicle to pass it, a short longitudinal conveyer located at one side of the frame adjacent to the pivoted elevator, and a transverse conveyer arranged adjacent to and extending from the said conveyer and hinged whereby it is adapted to be raised and lowered to permit a vehicle to pass it, substantially as described.

4. An apparatus of the class described comprising a frame having a platform, a pivoted elevator arranged to swing across the frame, a hinged conveyer provided at opposite sides with hinged wings, an inclined board supported by the wings and pivoted at its lower end, means for connecting the wings and a short conveyer connecting the transverse conveyer with the elevator, substantially as described.

5. In a device of the class described, the combination of a frame having a platform, an inclined conveyer hinged at its upper end, wings hinged at opposite sides of the lower end of the conveyer, a pivoted board supported by the wings, and means for holding the wings in operative position, substantially as described.

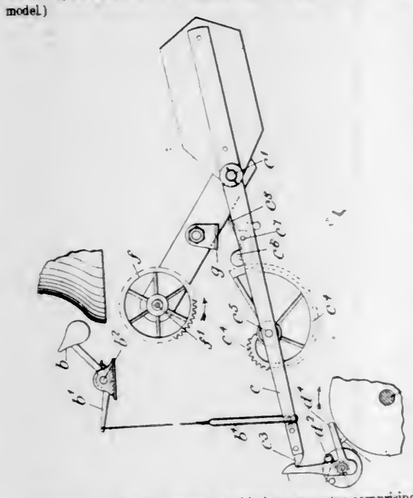
6. In an apparatus of the class described, the combination of a frame having a platform, the lower longitudinal shafts arranged beneath the platform and geared together, a pivoted elevator adapted to be arranged at

any corner of the frame, gearing for connecting the elevator with the adjacent lower longitudinal shaft, and conveyers connected with the elevator, substantially as described.

7. In an apparatus of the class described, the combination of a frame having a platform, longitudinal shafts located beneath the platform, gearing connecting the shafts, an extensible or telescoping rod or shaft slidingly mounted on the frame and connected by gearing with the adjacent longitudinal shaft, an elevator adapted to be arranged at any corner of the frame, and gearing for connecting the elevator with the adjacent longitudinal shaft, substantially as described.

8. In an apparatus of the class described, the combination of a frame having a platform, the longitudinal shafts located beneath the platform and connected by gearing, a pivoted elevator adapted to be arranged at different portions of the frame, gearing for connecting the elevator with the longitudinal shafts, the short longitudinal conveyer, the short horizontal shaft connected by gearing with the longitudinal conveyer, gearing for connecting either of the short horizontal shafts with the elevator, and the transverse conveyer connected with one of the short horizontal shafts, substantially as described.

655,801. STRIKING APPARATUS FOR CLOCKS. ROBERT J RUDD, Croydon, England. Filed May 26, 1900. Serial No. 18,137. (No model.)

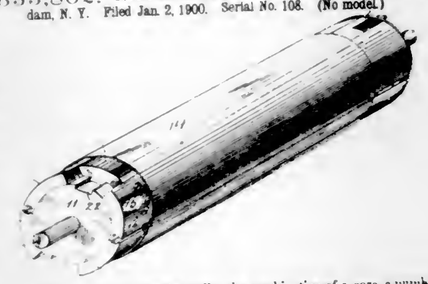


Claim.—1. A striking ringing or chiming apparatus comprising a main lever connected with the hammer or striker of the bell, means for raising the lever, a toothed snail or cam mounted upon an axis of motion carried by the main lever a constantly-driven toothed wheel arranged adjacent to the snail and adapted to engage the snail or cam and by the increasing diameter or radius of the latter depress the lever and cock the hammer, a detent for holding the main lever in its depressed position and means for tripping the detent and discharging the main lever and hammer substantially as herein shown and described.

2. A striking ringing or chiming apparatus comprising a main lever connected with the hammer or striker of the bell means for raising the lever a toothed snail or cam mounted upon an axis of motion carried by the main lever, a constantly-driven toothed wheel arranged adjacent to the snail and adapted to engage the same and by the increasing diameter or radius of the latter depress the lever and cock the hammer a detent for holding the main lever in its depressed position, means for engaging or guiding the snail as it leaves the driven wheel and holding it in correct position for that part adjacent to its axis to engage the driven wheel on the discharge and rise of the main lever and means for tripping the detent and discharging the main lever and hammer substantially as herein shown and described.

3. A striking ringing or chiming apparatus comprising a main lever connected with the hammer or striker of the bell, means for raising the lever, a toothed snail or cam mounted upon an axis of motion carried by the main lever, a constantly-driven toothed wheel arranged adjacent to the snail or cam and adapted to engage the same and by the increasing diameter or radius of the latter depress the main lever and cock the hammer, a detent for holding the main lever in its depressed position, a weighted brake-lever mounted upon an axis carried by the main lever for engaging the snail as it leaves the driven wheel and holding it in correct position for that part adjacent to its axis to engage the driven wheel on the discharge and rise of the main lever, a stop for limiting the upward movement of the main lever, a tail to the brake-lever for engaging said stop and releasing the snail at the times required and means for tripping the detent and discharging the main lever and hammer substantially as herein shown and described.

655,802. PRINTING-CYLINDER. WILLIS W. RUSSELL, Amsterdam, N. Y. Filed Jan. 2, 1900. Serial No. 108. (No model.)



Claim.—1. In a printing-roller the combination of a core, a number of comparatively-narrow surface-sections adjustably secured thereto to support the printing-plate, dowel-pins projecting from one of the edges of each section, to receive the perforated flanged edges of the printing-plate for the purpose of holding the same in position, such attachment adapted to be made between any two sections and at any point of the circumference of the roller, according to the length of the printing-plates and a wedge adapted to be inserted between two sections for the purpose of tightening the sections between the edges of the printing-plates.

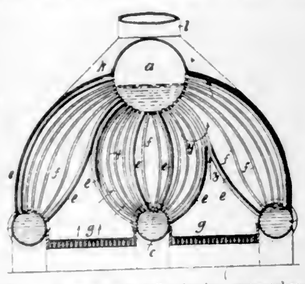
2. In a printing-roller, the combination of a core, circumferentially-adjustable surface-sections supported thereon, semicircular printing-plates supported on these surface-sections, dowel-pins at their outer edges whereby the printing-plates are held in position and two wedges diametrically opposite each other and one each between the edges of one of the semicircular printing-plates.

3. In a printing-roller the combination of a core, surface-sections fitted thereto upon which the printing-plate is to be supported and pins projecting from the edge of these sections adapted to engage and hold the printing-plates in position, said pins being adjustably connected to the sections.

4. In a printing-roller, the combination of a core, surface-sections fitted thereto upon which the printing-plate is to be supported, pins projecting from the edge of these sections adapted to engage and hold the printing-plates in position, said pins being each mounted upon a base, a groove in one edge of each section into which these bases are fitted in a manner to be laterally adjustable in this groove and means to hold these bases in their adjusted position.

5. In a printing-roller, the combination of a core, surface-sections fitted thereto upon which the printing-plate is to be supported, pins projecting from the edge of these sections adapted to engage and hold the printing-plates in position, said pins being each mounted upon a base, a dovetailed groove into which these bases are fitted in a manner to be laterally movable therein, spacers to adjust the distance between them and a screw engaging them endwise to hold the entire row laterally in position.

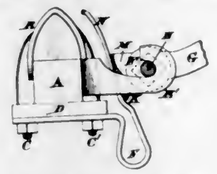
655,803. WATER-TUBE BOILER. RICHARD SCHULZ, Berlin, Germany. Filed Oct. 21, 1899. Serial No. 734,358. (No model.)



Claim.—1. A water-tube boiler having water-tubes connecting a plurality of lower boilers with an upper boiler, said water-tubes arranged to form main and return-draft flues, and means for admitting fire-gases direct from the fire-space to the main flues at or near the point where the products of combustion flow therefrom into the return-flues, substantially as and for the purpose set forth.

2. A water-tube boiler having water-tubes connecting a plurality of lower boilers with an upper boiler, a portion of said water-tubes arranged to form contiguous flues opening into each other at their forward end, means causing the products of combustion to enter one of said flues at its rear end, to escape from the other at the like end, and openings at the forward end of the main flue placing the same in direct communication with the fire-space below the flues, said openings arranged to direct the fire-gases into said main flue at substantially a right angle to the direction of flow of the products of combustion, for the purpose set forth.

655,804. THILL-COUPLING. DANIEL M. SECHLER, Cincinnati, Ohio. Filed Mar. 15, 1900. Serial No. 8,736. (No model.)



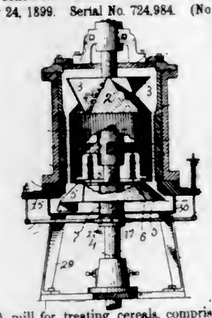
Claim.—1. A thill-coupling consisting of a clip provided with forwardly-projecting lugs; a thill-iron having a knuckle pivoted to said lugs; an unattached follower in contact with the rear of said knuckle; and a spring that bears with one of its ends against said follower and has its other end fixedly attached to the clip, for the purpose herein described.

2. A thill-coupling consisting of the clip B provided with forwardly-projecting hook shaped lugs E, E', the thill-iron G having a knuckle F, pivoted to said lugs; the spring N, having its fixed end secured to said clip; and the unattached follower K, located between said knuckle and spring and furnished with lateral stops M M', said follower having a concave bearing L, in front, all as herein described, and for the purpose stated.

3. A thill-coupling consisting of clip B provided with forwardly-projecting lugs E E', the thill-iron G having a knuckle F fitted between lugs E, E', a pivot-bolt to hold it in such position, a follower between clip and knuckle having lateral stops M, M' each adapted to rest upon one of lugs E, E', an arm O projecting laterally and forwardly from one of said stops and plates P, P' at the end of said arm adapted to engage respectively the upper and front sides of the head of the pivot-bolt.

4. A thill-coupling consisting of a clip B having two forwardly-projecting lugs E, E' provided with bolt-bearings which are rearwardly open, a thill-iron G having a knuckle F which is fitted between these lugs and has a closed bolt-bearing, a pivot-bolt occupying all these bearings and confining the position of the knuckle in a forward direction and against any pull from such direction, but leaving it free to yield rearwardly, a wedge-shaped follower fitted into the space between lugs E, E', back of the knuckle and a spring adapted to bear against this follower to hold the same in contact with the knuckle for the purpose of resisting and counteracting any rearward movement of this latter and of the pivot-bolt within its clip-bearings.

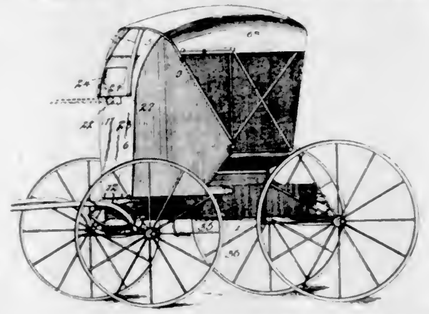
655,805. GRINDING-MILL. LUCIEN C. SHELLABARGER, Decatur, Ill. Filed July 24, 1899. Serial No. 724,984. (No model.)



Claim.—1. A mill for treating cereals, comprising a vertical concave or casing, a vertical shaft concentric with the casing, a cylinder fixed on the shaft, a conical valve below the cylinder turning with the shaft and having free motion lengthwise thereof and a spring-support for the valve, whereby the space between the valve and the casing depends on the relation of the downward pressure of the cereal to the upward pressure of the spring and the rotation of the valve distributes circumferentially.

2. A mill for treating cereals comprising a vertical concave or casing, a vertical shaft concentric with the casing, a cylinder fixed on the shaft, a conical valve below the cylinder splined on the shaft to rotate therewith and having vertical motion thereon and springs connected with the cylinder and with the valve to approximately sustain the valve.

655,806. BUGGY-TOP ATTACHMENT. HARRIS C. STOCKTON, Honey Grove, Tex. Filed June 26, 1900. Serial No. 21,660. (No model.)



Claim.—1. In a device of the class described, the combination with a vehicle having a top, of a pair of standards extending from the front of the vehicle to the said top, a transverse brace connecting the standards and forming a support for the reins, an apron supported by the standards, and means for securing the apron to the vehicle, substantially as described.

2. In a device of the class described, the combination with a vehicle having a top, of a pivoted supporting and clamping bow, mounted on one of the bows of the vehicle-top, standards detachably interlocked with the body of the vehicle and the said pivoted clamping and supporting bow, and an apron arranged on the standards and supported by the same and having its upper portion interposed between the pivoted supporting and clamping bow and the vehicle-top, substantially as described.

3. In a device of the class described, the combination with a vehicle having a top, and provided at its body or box with sockets, a pivoted bow mounted on the vehicle-top and having sockets, standards detachably fitting in the said sockets, and an apron supported by the standards and clamped by the pivoted bow, substantially as described.

4. In a device of the class described, the combination with a vehicle, of a pivoted bow mounted on the top of the vehicle, standards located at opposite sides of the front of the vehicle, an apron supported by the standards and clamped by the pivoted bow, and pivoted arms supporting the apron and adapted to be folded beneath the bow, substantially as described.

5. In a device of the class described, the combination with a vehicle having a top, of a pivoted bow mounted on the top, standards located at opposite sides of the vehicle, a cross-rod connecting the standards and forming a rein-support, and an apron supported by the standards and clamped by the bow, substantially as described.

6. In a device of the class described, the combination with a vehicle, of a pivoted bow mounted on the top of the vehicle, standards located at opposite sides of the front of the vehicle, a transverse rod or brace connecting the standards, an apron supported by the standards and engaged by the pivoted bow, and rods arranged at the rear edges of the apron at opposite sides of the vehicle and detachably mounted on the top of the same, said rods being adapted to be engaged with the transverse rod or brace and the adjacent standard, to hold the apron open, substantially as described.

7. In a device of the class described, the combination with a vehicle having a top, standards located at opposite sides of the vehicle and extending from the front of the box or body to the front bow of the top, a transverse rod or brace connecting the same, an apron supported by the standards, and means for securing the apron to the front bow and to the body of the vehicle, substantially as described.

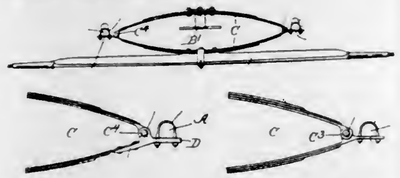
8. In a device of the class described, the combination with a vehicle having a top, of standards arranged at opposite sides of the vehicle and extending from the front thereof to the front bow of the top, a pivoted clamping-bow mounted on the front bow and supporting and engaging the upper ends of the standards, a locking device mounted on the front

bow and engaging the pivoted clamping-bow, an apron supported by the standards and secured to the front bow, and engaged by the pivoted bow, and clamps arranged at opposite sides of the vehicle on the exterior thereof and engaging the sides of the apron, substantially as described.

9. In a device of the class described, the combination with a vehicle having a top, of an apron provided with a front curtain, a pivoted bow mounted on the front bow of the top of the vehicle, and engaging the apron, and a flexible connection passing between the apron and the front bow of the top, and connected with the curtain, substantially as described.

10. In a device of the class described, the combination with a vehicle, of a transverse rod having a loop or bend, an apron provided with a curtain and having an opening at the bottom thereof to receive the reins, and means for securing the apron to the vehicle and for supporting the transverse rod, substantially as described.

655,807. VEHICLE. FRANK P. STONE, Chicago, Ill. Filed Jan. 29, 1900. Serial No. 3,067. (No model.)



Claim.—1. A vehicle, comprising a front and rear axle, an elliptical spring supported upon the rear axle, side-bars supported in a suitable manner upon the front axle and connected with said elliptical spring so as to receive the movement due to one-half of said spring, a vehicle-body connected with said elliptical spring so as to receive the movement due to the entire spring.

2. A vehicle, comprising a front and rear axle, an elliptical spring supported upon the rear axle, a vehicle-body supported upon said axles, a straight side-bar on each side of said vehicle-body, the front ends of said side-bars supported upon the front axle, the rear ends of said side-bars being connected directly to the elliptical spring.

3. A vehicle, comprising a front and rear axle, an elliptical spring supported upon the rear axle, a vehicle-body carried by said axles and supported at the rear upon the elliptical spring, two side-bars supported at their rear ends by said elliptical spring, the side-bars and vehicle-body being independently connected with said spring.

4. A vehicle, comprising a front and rear axle, a vehicle-body supported thereby, an elliptical spring carried by said rear axle, side-bars on each side of said vehicle-body, the rear ends of said side-bars being connected by a suitable connecting device with said elliptical spring and being substantially in line with said spring.

5. A vehicle, comprising a front and rear axle, an elliptical spring supported upon the rear axle, a vehicle-body carried by said axles, side-bars on each side of said vehicle-body pivotally connected with the front axle, a supporting device for each side-bar, by means of which it is connected with the elliptical spring, the ends of the side-bar projecting beyond the supporting device.

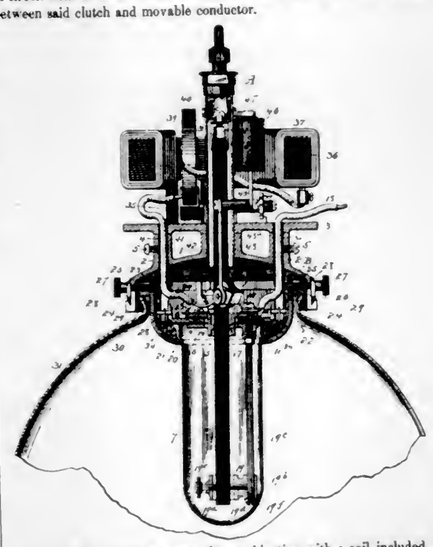
655,808. ELECTRIC-ARC LAMP. BERNARD A. STOWE, Cleveland, Ohio, assignor to the Jandus Electric Company, same place. Filed July 10, 1899. Serial No. 723,401. (No model.)

Claim.—1. In an electric-arc lamp, the combination with a clutch and a magnet, of a movable coreless coil disposed within the field of force of the magnet so as to be actuated by the fluctuations thereof, and connected with the clutch, said movable coreless coil included in circuit with the coil of the magnet.

2. In an alternating-current electric-arc lamp, the combination with a clutch and a stationary inductive resistance comprising a coil and a core having two poles, of a movable coil mounted to approach and recede from the maximum density of the field of force between the poles of the inductive resistance, said movable coil having its ends connected with the coil of the inductive resistance so as to be in circuit therewith, whereby the electromotive force of said movable coil will vary in direct proportion to the variations of the electromotive force in the coil of the inductive resistance, and connections between said movable coil and the clutch.

3. In an arc-lamp, the combination of a slotted choking-coil, feeding mechanism for controlling the feed of a movable carbon or electrode and an armature for controlling the feeding mechanism, the said armature consisting of a coreless coil included in circuit with the choking-coil and so located as to enter the slot of the choking-coil and be in operative relation to the pole-pieces thereof bounding the slot.

4. In an alternating-current electric-arc lamp, the combination with an inductive resistance having an air-gap between the poles of its core, of a non-magnetic movable conductor disposed in said air-gap and included in circuit with the coil of the inductive resistance, a clutch and connections between said clutch and movable conductor.



5. In an electric-arc lamp, the combination with a coil included in the lamp-circuit and a core within said coil, the poles of said core disposed opposite each other, of a conductor of non-magnetic material movably mounted so as to enter the field of force between said poles and included in circuit with said coil and means connected with said movable conductor for regulating the burning of the lamp.

6. The combination in an alternating or pulsating current electric-arc lamp, of a stationary inductive resistance and a conductor included in circuit with said inductive resistance and disposed in the field of force between the poles thereof to regulate and control the separation and feed of the carbons.

7. The combination in an electric-arc lamp, of a stationary inductive resistance, a movable coreless coil included in circuit with said inductive resistance and adapted to be actuated by the field of force between the poles thereof, and means for utilizing the movements of said coil to regulate and control the burning of the lamp.

8. The combination in an electric-arc lamp, of an inductive resistance, a clutch and a movable coreless coil included in circuit with said resistance and connected with said clutch said movable coil arranged to be actuated by said inductive resistance.

9. The combination in an alternating or pulsating current electric-arc lamp, of a fixed choke-coil having a laminated core, the poles of which are so disposed that a field of force will be generated between them, a movable coreless coil included in circuit with choke-coil and arranged to be actuated by the fluctuations of said field of force and means for utilizing the movements of said movable coil to control the separation and feed of the carbons.

10. The combination in an alternating or pulsating current electric-arc lamp, of an inductive resistance or choke-coil provided with a laminated core having its poles so arranged that a field of force will be generated between them, a working coil having no core, normally supported in position to be actuated by the fluctuations of said field of force, said working coil included in series with the inductive resistance or choke-coil and means for utilizing the movements of said working coil to regulate and control the burning of the lamp.

11. In an alternating or pulsating current electric-arc lamp, the combination with a coil having the poles of its core arranged so that a field of force will be generated between them, a movable coil included in circuit with the first-mentioned coil and adapted to be actuated by the fluctuations of said field of force, devices connected with said movable coil for controlling the burning of the lamp and means for adjusting the normal position of said movable coil to the width and density of said field of force.

12. In an alternating or pulsating current electric-arc lamp, the combination with a coil provided with a core having its poles so disposed that a field of force will be generated between them, an oscillatory shaft, a working coreless coil secured to said shaft and adapted to be actuated by the fluctuations of said field of force, said working coil included in circuit with said first-mentioned coil, a carbon-clutch and connections between said clutch and shaft.

13. The combination in an alternating or pulsating current electric-arc lamp, of a coil provided with a core having its poles so arranged that a field of force will be generated between them, a pivoted coil so disposed as to be actuated by the fluctuations of said field of force, an arm projecting from the pivoted coil, means for adjusting said arm relatively to the said coil, a carbon-clutch and a connection between said arm and clutch.

14. The combination in an alternating or pulsating current electric-arc lamp, of a coil provided with a core having its poles so arranged that a field of force will be generated between them, an oscillatory shaft, a working coil attached to said shaft and so disposed as to be actuated by the fluctuations of said field of force, a carbon-clutch connected with said working coil, a spring connected with the coil and means for adjusting said spring relatively to the size and density of said field of force, and to compensate for the variations in the tangent of the angle which that axis of the working coil which passes through the pivot of the same makes with the horizontal.

15. The combination in an alternating or pulsating current electric-arc lamp, of an inductive resistance provided with a core having its poles so arranged that a field of force will be generated between them, an oscillatory shaft, a cup or holder secured to said shaft, a working coil supported by said cup or holder and adapted to be actuated by the fluctuations of said field of force to oscillate said shaft, an arm projecting from said shaft, a carbon-clutch connected with said arm, a spring on the shaft and secured at one end to said arm and an adjusting device to which the other end of said spring is secured.

16. The combination in an electric-arc lamp, of an inductive resistance provided with a core having its poles so arranged that a field of force will be generated between them, a pivoted working coil included in circuit with the inductive resistance and adapted to enter said field of force and be actuated by the fluctuations thereof, an arm projecting from said pivoted working coil, a carbon-clutch, a rod connecting said arm and clutch, an air-pot and a connection between the plunger of said air-pot and said arm.

17. In an electric-arc lamp, the combination with a frame, of a concave or dish-shaped holder having a hole therein for the accommodation of an arc-inclosing globe, a peripheral flange on said holder against which the upper edge of an outer globe or reflector bears and set-screws passing outwardly through the wall of the holder below said peripheral flange, for supporting said outer globe or reflector and cooperating with said peripheral flange to hold the outer globe rigid.

18. In an electric-arc lamp, the combination with a frame and arc-inclosing globe-cover secured to said frame, of a holder for the arc-inclosing globe, and cams carried by said holder and adapted to engage the lamp-frame and simultaneously draw the upper end of the globe up against said cover.

19. In an electric-arc lamp, the combination with a hood and means for supporting the same, said hood having open slots in its vertical wall and lugs or shoulders at respective sides of each slot, of a holder constructed and adapted to support an inner or arc-inclosing globe, outwardly-projecting pins mounted in said holder to have longitudinal and revoluble movements, said pins adapted to enter the open slots in the hood, and cams on said pins to engage the lugs or shoulders on the hood.

20. In an electric-arc lamp, the combination with a frame, of an arc-inclosing globe-cover secured thereto, a gas-cap secured upon and insulated from said cover, a collar depending from said cap and through the cover for the passage of the upper carbon, said collar having an internal annular rib to guide the carbon, a ring secured to and insulated from the under face of said cover and a lower-carbon holder secured to said ring.

21. In an electric-arc lamp the combination with the regulating mechanism of a clutch-frame suspended therefrom, one or more clutching members mounted on said frame, one or more contacting members, also mounted thereon, adapted to conduct the current to the upper carbon, and means for movably supporting a portion of said frame to maintain the contact member or members in constant engagement with the carbon.

22. In an electric-arc lamp, the combination with the regulating mechanism, of a clutch-frame suspended therefrom, a clutch member mounted in said frame, a contact member also mounted in said suspended frame and means operating automatically to maintain the contact member constantly against the carbon.

23. In an electric-arc lamp, the combination with regulating mechanism, of a clutch-frame suspended therefrom and means for movably supporting each end of said frame and a clutch member and a contact member for the carbon, mounted in said suspended movably-supported frame, one of the supports for the frame being constructed and adapted to normally maintain the contact member against the carbon.

24. In an electric-arc lamp, the combination with the regulating mechanism, of a frame suspended therefrom and adapted to permit the passage of the upper carbon through it, a clutch-ring mounted freely within one end of said frame so as to be at one side of the carbon, means for causing said clutch-ring to bind against the carbon, a contact-wheel for the carbon mounted in the other end of said frame and means for movably supporting said last-mentioned end of the frame to maintain the contact-wheel in constant engagement with the carbon.

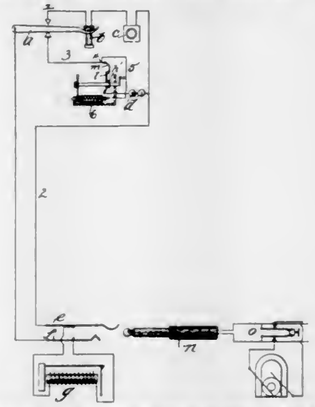
25. In an electric-arc lamp, the combination with the regulating mechanism, of a frame suspended from said regulating mechanism and adapted to permit the passage of the upper carbon through it, a clutch-ring mounted in one end of said frame, a contact-wheel mounted in the other end of the frame, and stops for the respective ends of the frame, the stop for the end of the frame carrying the contact-wheel being disposed in a plane above that of the stop for the other end of the frame and constructed to press the contact-wheel against the carbon.

26. In an electric-arc lamp, the combination with the regulating mechanism, of a frame suspended from said regulating mechanism and adapted to permit the passage of the upper-carbon rod, a plate below said suspended frame, a clutch-wheel mounted loosely in one end of said frame and adapted to normally rest on said plate, a contact-wheel for the carbon rod mounted in the other end of said suspended frame and an upright or chair on said plate and having an inwardly-beveled portion to be engaged by the end of the frame carrying the contact-wheel.

27. In an electric-arc lamp, the combination with the regulating mechanism and a frame suspended from said regulating mechanism and adapted to permit the free passage of the upper-carbon rod through it, one end of said frame having a beveled cross-bar or end wall, of a clutch-ring mounted loosely in said frame and adapted to engage said beveled cross-bar or end wall, a plate under the frame to receive the clutch-ring and the end of frame in which it is mounted, a contact-wheel mounted in the other end of the frame, studs projecting laterally from the end of the frame in which the contact-wheel is mounted, and two standards mounted on the plate under the suspended frame and embracing the contact-wheel so as to form a guide therefor, said standards having inwardly-beveled shoulders to be engaged by said studs to maintain the contact-wheel in constant engagement with the carbon rod.

28. In an electric-arc lamp the combination with an arm or rod, of a carbon-holding collar having a perforated boss for the reception of said rod, a pin disposed between the collar and boss and adapted to project into the bore of both and a set-screw passing through the wall of said carbon-holding collar at the opposite side thereof from said pin.

655,809. SIGNALING APPARATUS AND CIRCUIT THEREFOR. ALFRED STROMBERG and ANDROV CARLSON, Chicago, Ill., assignors to the Stromberg-Carlson Telephone Manufacturing Company, same place. Filed Apr. 26, 1899. Serial No. 714,534. (No model.)



Claim.—1. In a magneto-generator for telephone signaling, the combination with an armature normally disconnected from the signaling-circuit, of an electrically-actuated signal-receiver connected with said signaling-circuit, a contact *m*, a coacting switch-spring *l* normally engaging said contact and maintaining the signaling-circuit closed, a driving-shaft passing through an opening in said switch-spring, a second contact *h'* mounted upon the said shaft, connected with the armature-circuit, and automatic means for securing the longitudinal movement of the shaft, whereby contact *h'* is moved to establish connection with switch-spring *l* and disengage the latter from contact *m*, substantially as described.

2. The combination in a magneto-generator, with an armature normally included in a discontinuous circuit, of a bell *d*, an automatically-operated circuit-changing switch-spring *l*, a coacting contact *m* normally engaged thereby to complete the bell-circuit, a driving-shaft having an enlargement *h'* disposed in position for engagement with the said switch-spring, but normally disconnected therefrom, said part *h'* being connected with the armature-circuit, and automatic means for effecting the longitudinal movement of the shaft and enlargement, whereby the latter is caused to engage and actuate the switch-spring and connect the armature in series with the bell-circuit, substantially as described.

3. The combination with a manually-operated generator, of an automatically-operated circuit-changing switch *l*, the operating-shaft of the generator passing through a bore of a diameter larger than the diameter of the shaft, whereby the shaft is normally maintained out of contact with said circuit-changing switch, an enlargement *h'* upon the shaft normally maintained out of contact with the switch, a normal contact *m*, a bell *d* included in series with said normal contact *m* and switch *l*, one terminal of the generator being connected with the frame thereof and thereby with the operating-shaft, the other terminal of the generator being connected with the normal contact, and means permitting of the longitudinal movement of the shaft, said generator and bell being located at one station and a suitable signal-receiver at another station included in series with said bell and upon the operation of the generator with the bell and geoerator, substantially as described.

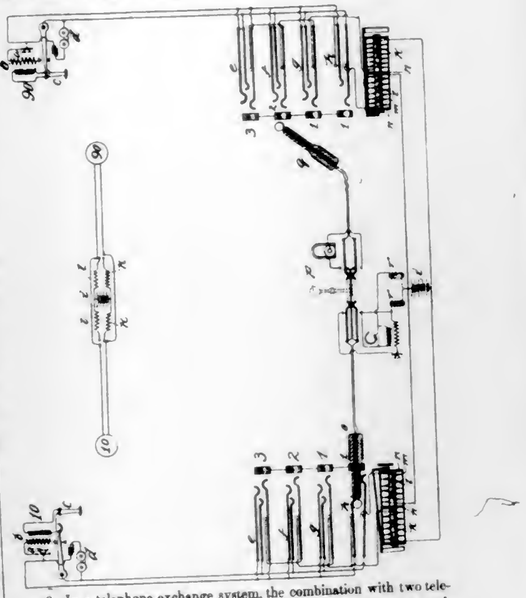
4. The combination with a manually-operated generator, of an automatically-operated circuit-changing switch *l*, the operating-shaft of the generator passing through a bore of a diameter larger than the diameter of the shaft, whereby the shaft is normally maintained out of contact with said circuit-changing switch, an enlargement *h'* upon the shaft normally maintained out of contact with the switch, a normal contact *m*, a bell *d* included in series with said normal contact *m* and switch *l*, one terminal of the generator being connected with the frame thereof and thereby with the operating-shaft, the other terminal of the generator being connected with the normal contact, means permitting of the longitudinal movement of the shaft, and cam mechanism for moving the shaft longitudinally upon its actuation, said generator and bell being located at one station and a suitable signal-receiver at another station included in series with said bell and upon the operation of the generator with the bell and generator, substantially as described.

5. In a magneto-generator, the combination with an armature formed of two portions *r r* each having longitudinal arc-shaped portions *r' r'* and a longitudinally-shorter base portion r^3, a space being provided between each transverse edge of the base portions and the ends of the portions *r'*, the base portions r^2 r^2 of the sections of the armature-core being placed together, of an armature-winding wound about the united base portions r^3, plates *s* secured to the portions *r' r'* and serving to unite the parts *r r*, and individual separated shaft-sections carried by said end plates serving to afford a rotatable mounting for said armature, the armature-winding being interposed between and not inclosing said shaft-sections, substantially as described.

655,810. **TELEPHONE-EXCHANGE SYSTEM.** ALFRED STROMBERG and WILLIAM M. DAVIS, Chicago, Ill., assignors to the Stromberg-Carlson Telephone Manufacturing Company, same place. Filed Apr. 26, 1899. Serial No. 714,536. (No model.)

Claim.—1. In a telephone-exchange system, the combination with two telephone-lines extending from substations to an exchange, of telephone switch-hooks at each of the substations for opening and closing the telephone-line at each substation; a centralized battery normally included in circuit with the said telephone-lines; a line-indicator for each of said telephone-lines, each normally included in circuit with said battery, whereby upon the completion of the circuit at either of said subscribers' stations the indicator corresponding to said station is operated, which station thus becomes the calling station; a cord-circuit for forming a continuation of one of said telephone-lines; means for effecting a connection between said cord-circuit and telephone-line without disconnecting the line-indicator corresponding to the said line from circuit; a jack-switch, and a connecting-plug united with said cord-circuit for effecting the connection of the cord-circuit and its connected telephone-line with the remaining telephone-line, said jack-switch being adapted upon the insertion of the said connecting-plug to disconnect the indicator from the said telephone-line, substantially as described.

2. In a multiple-switchboard telephone-exchange system, the combination with two telephone-lines, each extending to a plurality of sections of a multiple switchboard and connected at each of said sections with a jack-switch, of telephone switch-hooks at each of the substations for opening and closing the telephone-line at each substation; a centralized battery normally included in circuit with the said telephone-lines; a line-indicator for each of said telephone-lines, each normally included in circuit with said battery, whereby, upon the completion of the circuit at either of said subscribers' stations the indicator corresponding to said station is operated, which station thus becomes the calling station; a cord-circuit for forming a continuation of the telephone-line extending from the calling station; means for effecting a connection between said cord-circuit and said calling telephone-line without disconnecting the line-indicator corresponding to the said line from circuit, and a connecting-plug united with said cord-circuit adapted for insertion within a jack-switch of the remaining or called telephone-line, said jack-switch being adapted upon the insertion of the said connecting-plug to disconnect the indicator from the said telephone-line, substantially as described.



3. In a telephone-exchange system, the combination with two telephone-lines extending from substations to an exchange, of means at each of the substations for opening and closing the telephone-line at each substation; a centralized battery normally included in circuit with the said telephone-lines; a line-indicator for each of said telephone-lines, each normally included in circuit with said battery, whereby upon the completion of the circuit at either of said subscribers' stations the indicator corresponding to said station is operated, which station thus becomes the calling station; a cord-circuit for forming a continuation of one of said telephone-lines; means for effecting a connection between said cord-circuit and telephone-line without disconnecting the line-indicator corresponding to the said line from circuit; a jack-switch, and a connecting-plug united with said cord-circuit for effecting the connection of the cord-circuit and its connected telephone-line with the remaining telephone-line, said jack-switch being adapted upon the insertion of the said connecting-plug to disconnect the indicator from the said telephone-line, substantially as described.

4. In a multiple-switchboard telephone-exchange system, the combination with two telephone-lines, each extending to a plurality of sections of a multiple switchboard and connected at each of said sections with a jack-switch, of means at each of the substations for opening and closing the telephone-line at each substation; a centralized battery normally included in circuit with the said telephone-lines; a line-indicator for each of said telephone-lines, each normally included in circuit with said battery whereby, upon the completion of the circuit at either of said subscribers' stations, the indicator corresponding to said station is operated, which station thus becomes the calling station; a cord-circuit for forming a continuation of the telephone-line extending from the calling station; means for effecting a connection between said cord-circuit and said calling telephone-line without disconnecting the line-indicator corresponding to the said line from circuit, and a connecting-plug united with said cord-circuit adapted for insertion within a jack-switch of the remaining or called-subscriber's telephone-line to effect the connection of the cord-circuit with the remaining or called telephone-line, said jack-switch being adapted upon the insertion of the said connecting-plug to disconnect the indicator from the said telephone-line, substantially as described.

5. In a multiple-switchboard telephone-exchange system, the combination with two telephone-lines, each extending to a plurality of sections of a multiple switchboard and connected at each of said sections with a line-jack switch, of telephone switch-hooks at each of the substations for opening and closing the telephone-line at each substation; a centralized battery normally included in circuit with the said telephone-lines; a line-indicator for each of said telephone-lines, each being located at one section of the switchboard and normally included in circuit with said battery, whereby upon the completion of the circuit at either of said subscriber's stations the indicator corresponding to said station is operated, which station thus becomes the calling station; an answering-jack for each telephone-line located at the same section of the switchboard with each line-indicator of said line; a cord-circuit for forming a continuation of the telephone-line extending from the calling station; an answering-plug connected with said cord-circuit for insertion within the answering-jack of the calling line, said answering-jack and answering-plug being adapted to effect connection between the calling line and the cord-circuit without disconnecting the line-indicator of said line from circuit, and a connecting-plug adapted for insertion within a line-jack of the remaining or called-subscriber's telephone-line, said line-jack being adapted to effect the exclusion of the called-subscriber's line-indicator from circuit with the battery upon the insertion of the connecting-plug to prevent the operation of said line-indicator during the connection between the telephone-lines, substantially as described.

6. In a multiple-switchboard telephone-exchange system, the combination with two telephone-lines, each extending to a plurality of sections of a multiple switchboard and connected at each of said sections with a line-jack, of means at each of the substations for opening and closing the telephone-line at each substation; a centralized battery normally included in circuit with the said telephone-lines; a line-indicator for each of said telephone-lines, each being located at one section of the switchboard and normally included in circuit with said battery, whereby upon the completion of the circuit at either of said subscriber's stations the indicator corresponding to said station is operated, which station thus becomes the calling station; an answering-jack for each telephone-line located at the same section of the switchboard with each line-indicator of said line; a cord-circuit for forming a continuation of the telephone-line extending from the calling station; an answering-plug connected with said cord-circuit for insertion within the answering-jack of the calling line, said answering-jack and answering-plug being adapted to effect connection between the calling line and the cord-circuit without disconnecting the line-indicator of said line from circuit, and a connecting-plug adapted for insertion within a line-jack of the remaining or called-subscriber's telephone-line, said line-jack being adapted to effect the exclusion of the called-subscriber's line-indicator from circuit with the battery upon the insertion of the connecting-plug to prevent the operation of said line-indicator during the connection between the telephone-lines, substantially as described.

7. In a telephone-exchange system, the combination with two telephone-lines extending from substations to an exchange, of a centralized battery normally in circuit with said telephone-lines; a transmitter-circuit at each subscriber's station adapted to be supplied with current from said centralized battery over the telephone-line; a telephone switch-hook at each station for controlling the continuity of the transmitter-circuit thereat; one impedance-winding, constituting also the winding of a line-indicator, and an extra impedance-winding provided in connection with each telephone-line, each indicator-winding being normally included in circuit with the battery and adapted to be excited upon the removal of the receiver from its switch-hook; means for establishing telephonic circuit between the substations for conveying voice-currents, and additional means coöperating with said means adapted upon the completion of circuit between subscribers' stations to include the winding of a line-indicator of one of said lines in bridge between the battery and one side of the telephone-circuit uniting the subscribers' stations and the extra impedance-winding of the other telephone-line in the same bridge between said battery and the other side of the telephone-circuit and serving to exclude the remaining impedance and line-indicator windings from circuit, substantially as described.

8. In a telephone-exchange system, the combination with two telephone-lines extending from substations to an exchange, of a centralized battery normally in circuit with said telephone-lines; a transmitter-circuit at each subscriber's station adapted to be supplied with current from said centralized battery over the telephone-line; a telephone switch-hook at each station for controlling the continuity of a transmitter-circuit thereat; an impedance-winding constituting also the winding of a line-indicator associated with each of said lines and normally in circuit with said battery and telephone-line and adapted to be excited upon the removal of the telephone-receiver from its switch-hook; a cord-circuit for forming a continuation of one of said lines; a plug connected with the cord-circuit for connecting the remaining telephone-line with said cord-circuit, and means controlled by the apparatus for uniting the subscribers for conversation for excluding one of the line-indicator windings from circuit with said battery and including the other line-indicator winding and the said battery in a bridge between the sides of the telephone-circuit between the substations, substantially as described.

9. In a multiple-switchboard telephone-exchange system, the combination with two telephone-lines, each extending to a plurality of sections of a multiple switchboard and connected at each of said sections with a line-jack switch, of telephone switch-hooks at each of the substations for opening and closing the telephone-line at each substation; a centralized battery normally included in circuit with the said telephone-lines; one impedance-winding, constituting also the winding of a line-indicator, and an extra impedance-winding provided in connection with each telephone-line, each indicator-winding being normally included in circuit with the battery and adapted to be excited upon the removal of the receiver from its switch-hook; means for establishing telephonic circuit between the substations for conveying voice-currents, and additional means coöperating with said means adapted upon the completion of circuit between subscribers' stations to include the winding of the line-indicator of one of said lines in bridge between the battery and one side of the telephone-circuit uniting the subscribers' stations and the extra impedance-winding of the other telephone-line in the same bridge between said battery and the other side of the telephone-circuit and serving to exclude the remaining impedance and line-indicator windings from circuit, substantially as described.

10. In a multiple-switchboard telephone-exchange system, the combination with two telephone-lines, each extending to a plurality of sections of a multiple switchboard and connected at each of said sections with a line-jack switch, of telephone switch-hooks at each of the substations for opening and closing the telephone-line at each substation; a centralized battery normally included in circuit with the said telephone-lines; a line-indicator associated with each line, the winding of each indicator being also an impedance-winding, the winding of each indicator being normally in circuit with said centralized battery and being excited upon the removal of the receiver from the corresponding telephone switch-hook, the line corresponding to the indicator thus excited becoming the calling line; an additional impedance-winding associated with each line; an answering-jack connected with each line and located at the same section of the switchboard with the line-indicator; an answering-plug adapted for insertion within said answering-jack and being adapted thereby to effect the connection of the calling line with the cord-circuit without interrupting the circuit through the indicating-winding, said plug and answering-jack being adapted to effect the disconnection of the additional impedance-winding associated with said calling line, and a connecting-plug adapted for insertion within a line-jack of the remaining or called-subscriber's telephone-line, said plug and line-jack being adapted to exclude the indicator-winding of the called subscriber without excluding the additional impedance-winding associated with the called line, said plugs, by means of suitable circuit connections, being adapted to include the battery between the connected impedance-winding and indicator-winding in a bridge including said windings across the telephone-circuit between the subscribers, substantially as described.

11. In a multiple-switchboard testing system, the combination with two telephone-lines, each extending to a plurality of sections of a multiple switchboard and connected at each of said sections with a jack-switch, of test-thimbles one associated with each of said jack-switches, the test-thimbles of the jack-switches associated with each line being electrically connected; a cord-circuit provided with terminal plugs, each having a tip and a sleeve, the tip of each plug being connected with the sleeve of the other plug, to afford paths for testing current from the tips to the sleeves; a test-battery, and switch parts at the jack-switches connected with said test-battery and adapted for engagement with the tips of said plugs upon the insertion thereof within the jack-switches, whereby said test-thimbles are charged with current from said test-battery through the agency of the cord-strands independently of the subscribers' apparatus, substantially as described.

12. In a multiple-switchboard system, the combination with two telephone-lines, each extending to a plurality of sections of a multiple switchboard and connected at each of said sections with a jack-switch, of test-thimbles, one associated with each of said jack-switches, the test-thimbles of the jack-switches associated with each line being electrically connected, a testing-circuit for the test-thimbles independent of the subscribers' apparatus, connecting-plugs having a tip and sleeve connected by a cord-strand, a test-battery adapted for connection with a set of said thimbles and said strand, and a switching portion at each jack connected with said test-battery and adapted for engagement with the said tip upon its insertion within a jack-switch, thereby to connect the test-thimble engaging the said sleeve with the test-battery, through the agency of the said cord-strand, substantially as described.

13. In a telephone-exchange system, the combination with two telephone-lines extending from substations to an exchange, of a centralized battery normally in circuit with said telephone-lines, a transmitter-circuit at each subscriber's station adapted to be supplied with current from said centralized battery over the telephone-line, a telephone switch-hook at

each station for controlling the continuity of the transmitter-circuit thereat, an impedance-winding constituting also the winding of a line-indicator associated with each of said lines and normally in circuit with said battery and telephone-line and adapted to be excited upon the removal of the telephone-receiver from its switch-hook, a cord-circuit for forming a continuation of one of said lines, a plug connected with the cord-circuit for connecting the remaining telephone-line with said cord-circuit, an additional impedance-winding, and means controlled by the apparatus for uniting the subscribers for conversation for excluding one of the line-indicator windings from circuit with said battery and including the other line-indicator winding and the additional impedance-winding in a bridge with said battery between the sides of the telephone-circuit between the substations, substantially as described.

14. In a telephone-exchange system, the combination with two telephone-lines extending from substations to an exchange, of a centralized battery normally in circuit with said telephone-lines, a transmitter-circuit at each subscriber's station adapted to be supplied with current from said centralized battery over the telephone-line, a telephone switch-hook at each station for controlling the continuity of the transmitter-circuit thereat, an impedance-winding constituting also the winding of a line-indicator associated with each of said lines and normally in circuit with said battery and telephone-line and adapted to be excited upon the removal of the telephone-receiver from its switch-hook, a cord-circuit for forming a continuation of one of said lines, a plug connected with the cord-circuit for connecting the remaining telephone-line with said cord-circuit, an additional impedance-winding, and means controlled by the apparatus for uniting the subscribers for conversation for excluding one of the line-indicator windings from circuit with said battery and including the said battery between the other line-indicator winding and the additional impedance-winding in a bridge between the sides of the telephone-circuit, substantially as described.

15. In a telephone-exchange system, the combination with two telephone-lines extending from substations to an exchange, of a centralized battery normally in circuit with said telephone-lines, a transmitter-circuit at each subscriber's station adapted to be supplied with current from said centralized battery over the telephone-line, a telephone switch-hook at each station for controlling the continuity of the transmitter-circuit thereat, an impedance-winding constituting also the winding of an indicator, a cord-circuit for forming a continuation of one of said lines, a plug connected with the cord-circuit for connecting the remaining telephone-line with said cord-circuit, two additional impedance-windings, one associated with each telephone-line, and means controlled by the apparatus for uniting the subscribers for conversation for connecting the said battery between the indicator-winding and an extra impedance-winding in a bridge between the sides of the telephone-circuit, substantially as described.

16. In a telephone-exchange system, the combination with two telephone-lines extending from substations to an exchange, of a centralized battery normally in circuit with said telephone-lines, a transmitter-circuit at each subscriber's station adapted to be supplied with current from said centralized battery over the telephone-line, a telephone switch-hook at each station for controlling the continuity of the transmitter-circuit thereat, an indicator-winding, two impedance-windings one associated with each telephone-line, a cord-circuit for forming a continuation of one of said lines, a plug connected with the cord-circuit for connecting the remaining telephone-line with said cord-circuit, and means controlled by the apparatus for uniting the subscribers for conversation for including an impedance-winding, the battery and said indicator-winding in the circuit between the substations, substantialy as described.

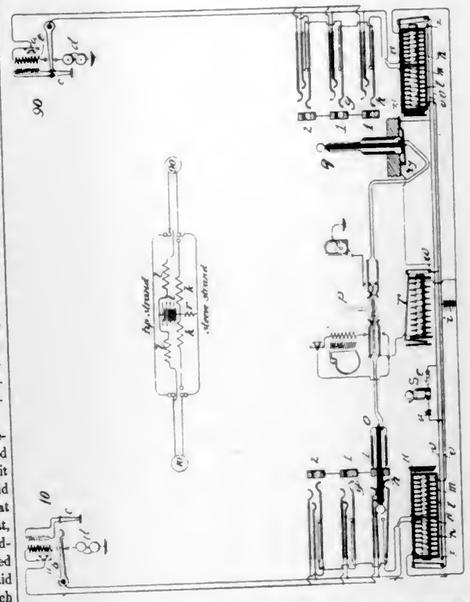
655,811. TELEPHONE-EXCHANGE SYSTEM. ALFRED STROMBERG and WILLIAM M. DAVIS, Chicago, Ill., assignors to the Stromberg-Carlson Telephone Manufacturing Company, same place. Filed July 13, 1899. Serial No. 723,732. (No model.)

Claim.—1. The combination with two united telephone-lines, of switching apparatus for uniting and disconnecting the same, an indicator associated with the united telephone-lines, an auxiliary alarm-circuit, and apparatus jointly controlled by the said indicator and switching apparatus for controlling the said alarm-circuit, substantially as described.

2. The combination with two united telephone-lines, of plug connecting apparatus for uniting and disconnecting the same, an indicator associated with the united telephone-lines, an auxiliary alarm-circuit, and apparatus jointly controlled by a switching-plug and the said indicator for controlling the said alarm-circuit, substantially as described.

3. The combination with a telephone-line, of a second telephone-line, cord connecting apparatus for uniting the said lines for conversation, a special clearing-out indicator associated with said cord connecting apparatus, an auxiliary alarm-circuit, and apparatus jointly controlled by the cord connecting apparatus and the said clearing-out indicator for controlling the said alarm-circuit, substantially as described.

4. The combination with a telephone-line, of a second telephone-line, cord connecting apparatus for uniting the said lines for conversation, a plug forming a part of said cord connecting apparatus, a special clearing-out indicator associated with said cord connecting apparatus, an auxiliary alarm-circuit and apparatus, and a switch controlled by the said plug acting in cooperation with said clearing-out indicator to control said auxiliary alarm-circuit and apparatus, substantially as described.



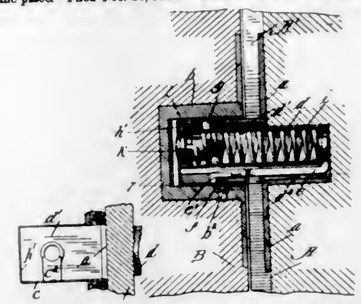
5. The combination with a telephone-line, of a second telephone-line, cord connecting apparatus for uniting the said lines for conversation, a plug forming a part of said cord connecting apparatus, a special clearing-out indicator associated with said cord connecting apparatus, an auxiliary alarm-circuit and apparatus, and a mechanical switch adapted to be operated by the plug for controlling the said alarm-circuit, substantially as described.

6. In a telephone-exchange system, the combination with two telephone-lines, of a cord switching apparatus adapted to unite the said telephone-lines into a single telephonic circuit, an impedance-coil associated with each telephone-line, each impedance-coil being permanently connected at one end with its telephone-line, a centralized battery, the remaining ends of the impedance-coils being connected with said centralized battery, a line-indicator magnet associated with each telephone-line, switching mechanism operated by the cord connecting apparatus for disconnecting the line-indicator magnets from the telephone-lines upon the establishment of connection between the same, and a special clearing-out indicator connected at one end with a strand of the cord-circuit and at the other end with the centralized battery, the said clearing-out indicator, battery and impedance-coils being included across the telephonic circuit formed by the united telephone-lines and the cord-circuit, substantially as described.

7. The combination with a telephone-line, cord connecting apparatus for uniting the said lines for conversation, a plug forming a part of said cord connecting apparatus, an indicator, an auxiliary alarm-circuit and apparatus, a plug-seat switch operated by the plug when idle and within its seat to open or render ineffective the auxiliary alarm-circuit, said cord connecting apparatus serving to associate said indicator with two united telephone-lines, and means whereby said indicator may effect the operation of the auxiliary alarm apparatus when two lines are connected for conversation, substantially as described.

8. The combination with a telephone-line, of a second telephone-line, line-indicators therefor, cord connecting apparatus for uniting the said lines for conversation, a plug forming a part of said cord connecting apparatus, a special clearing-out indicator, an auxiliary alarm-circuit and apparatus, a plug-seat switch operated by the plug when idle and within its seat to open the alarm-circuit, said switch serving to close said alarm-circuit at one point when the said plug is in use, and means whereby the said indicator may complete the said auxiliary alarm-circuit, substantially as described.

655,812. SPRING-HINGE. ABRAHAM L. STUMP and FRANCIS BRUCKER, Shelby, Ohio, assignors to the Easy Spring Hinge Company, same place. Filed Feb. 27, 1900. Serial No. 6,752. (No model.)



Claim.—1. A spring-hinge comprising a plate having a socket, a second plate having a hollow portion pivoted within the socket, a slide within the hollow portion having a flanged outer end, a spring exerting tension on said slide, and antifriction projections carried by said first-named plate coacting with said flanged end of the slide, substantially as described.

2. A spring-hinge comprising a plate having a socket, a second plate having a hollow portion pivoted within the socket, a slide within the hollow portion having a flanged outer end, a spring exerting tension on said slide, and projections carried by said first-named plate coacting with said flanged end of the slide, said flange having a recessed portion adapted to receive the projections when the door is swung to a predetermined limit to hold it in its opened position, substantially as described.

3. A spring-hinge comprising a plate having a socket, a second plate having a hollow portion pivoted within the socket, a slide within the hollow portion, a spring exerting tension on said slide, a movable projection carried by said first-named plate adapted to coact with said slide to move the same, and means for adjusting said projection, substantially as described.

4. A spring-hinge comprising a plate having a socket, a second plate having a hollow portion pivoted within the socket, a slide within the hollow portion, a spring acting on said slide, a plate carried by said socket-plate having movable projections acting with said slide, and means for adjusting said plate to move said projections, substantially as described.

5. A spring-hinge comprising a plate having a socket, a second plate having a hollow portion pivoted within the socket, a slide within the hollow portion having an operating connection with the socket-plate, a spring acting on said slide and an antifriction-bearing for said slide, substantially as described.

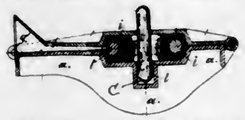
6. A spring-hinge comprising a plate having a socket, a second plate having a hollow portion pivoted within the socket, a slide within the hollow portion having a flanged outer end, an antifriction-roller between the slide and bottom of said hollow portion, a spring exerting tension on said slide, and a projection carried by said first-named plate coacting with said flanged end of the slide.

655,813. PREPARING MAPS, DRAWINGS, &c. NICOLAS TORNAUW, St. Petersburg, Russia. Filed Nov. 13, 1899. Serial No. 736,871. (No specimens.)

Claim.—1. The process substantially as hereinbefore described of treating maps, drawings and the like for the purpose specified, which consists in waterproofing the same, covering the same with a transparent adhesive substance, and applying a finely-powdered hard substance thereto.

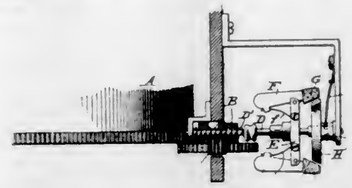
2. The process substantially as hereinbefore described of treating maps, drawings and the like for the purpose specified, which consists in printing the map, drawing or the like upon the proper material, waterproofing said material, covering the same with a transparent adhesive substance, and sprinkling on the adhesive substance while moist a finely-powdered hard substance.

655,814. MANUFACTURE OF CHAIN CABLES. JOHN VERITY, Liverpool, England. Filed Dec. 28, 1897. Serial No. 664,093. (No model.)



Claim.—A casting-box and cover portions having two recesses receiving a mold-lining *i*, having a central opening and a continuous gap *c* across the box and cover portions between said recesses, adapted to receive a pair of links to be connected by the link to be cast in said mold; substantially as set forth.

655,815. SPEED REGULATOR AND COMPENSATOR FOR MOTORS. ALEXIS VERNAZ, Ste. Croix, Switzerland, assignor to Mermod Frères, same place. Filed July 28, 1898. Serial No. 687,117. (No model.)



Claim.—1. In combination a rotatable shaft, a lever carried thereby, part thereof adapted to move outwardly from its position of rest by centrifugal force when said shaft is rotated, a spring to oppose the motion of said part inwardly from its position of rest, a contact part carried by said lever, and a friction device movable into the path of movement of said contact part, and means to adjust said friction device toward and from said contact part.

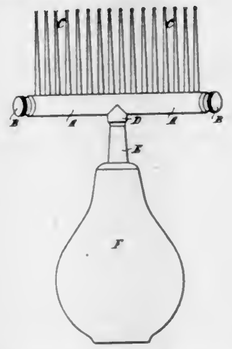
2. In combination, a rotatable shaft, a lever carried thereby and pivoted between its ends and adapted to move from its position of rest by centrifugal force when said shaft is rotated, a contact part at the lighter end of said lever, resilient means to oppose the motion of said lever in either direction from its position of rest and a friction device longitudinally movable into the path of movement of said contact part.

3. In combination a rotatable shaft, a lever carried thereby, part thereof adapted to move outwardly from its position of rest by centrifugal force when said shaft is rotated, a contact part carried by the lighter arm of said lever, resilient means to oppose the motion of said lever in either direction from its position of rest, and a friction device longitudinally movable into the path of movement of said contact part.

4. In combination a rotatable shaft, a lever carried thereby, part thereof adapted to move outwardly from its position of rest by centrifugal force when said shaft is rotated, a contact part on said lever, a spring to oppose the motion of said contact part outwardly from its position of rest, and a friction device movable toward said contact part to engage the same.

5. In combination a rotatable shaft, a lever carried thereby, part thereof movable outwardly from its position of rest by centrifugal force when said shaft is rotated, a contact part on said lever, a spring to oppose the motion of said contact part inwardly from its position of rest, and a friction device movable toward said contact part and engaging the same at said contact part's position of rest.

655,816. COMB. HENRI P. DE VOGEL, Surbiton, England. Filed Mar. 19, 1900. Serial No. 9,273. (No model.)



Claim.—A comb having the back formed of a curved metal tube closed by removable stoppers at its ends, and having hollow teeth extending out from one side of the tube approximately at right angles to the plane of the tube's curvature, a socket extending out from the opposite side of the tube, a nozzle fitting at one end to this socket and a flexible ball attached to the opposite end of the socket.

655,817. PLUMBER'S SHAVE-HOOK. WILLIAM J. WAYLAN, Sutton, England. Filed Mar. 5, 1900. Serial No. 7,393. (No model.)



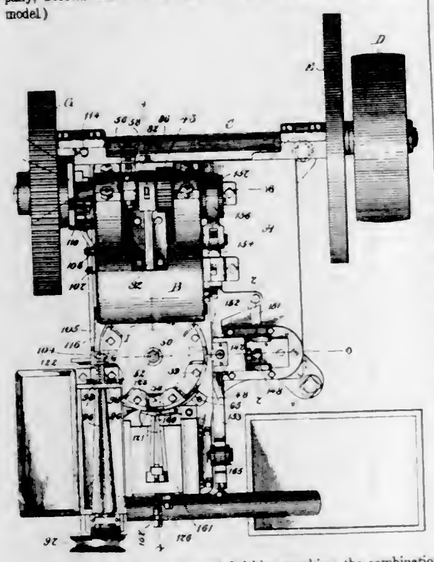
Claim.—1. A plumber's shave-hook, comprising a handle, a shank, a knife or hook secured thereto and a pointed gage adjustable on said shank, the major diameter of said gage equal to or slightly greater than the like diameter of the hook, for the purpose set forth.

2. A plumber's shave-hook comprising a handle, a shank, a knife or hook secured thereto and a pointed gage adjustable on said shank, the major diameter of said gage equal to or slightly greater than the like diameter of said hook, the least minor diameter of which is greater than the least minor diameter of the gage, for the purpose set forth.

3. A plumber's shave-hook comprising a handle, a graduated shank, a knife or hook secured to the end thereof, and a pointed gage adjustable along said graduated shank and having a plain outer face and a major diameter equal to or slightly greater than the like diameter of the hook, substantially as and for the purpose set forth.

4. A plumber's shave-hook comprising a handle, a shank, a V-shaped knife or hook having a convex heel end secured to said shank, and a pointed gage adjustable on the shank and having a major diameter equal to or slightly greater than the like diameter of the hook whose least diameter is greater than the like minor diameter of the gage, for the purpose set forth.

655,818. MACHINE FOR FINISHING HORSESHOE-NAILS. HENRY A. WILLIAMS, Quincy, Mass., assignor to the Putnam Nail Company, Boston, Mass. Filed Apr. 12, 1900. Serial No. 12,590. (No model.)



Claim.—1. In a horseshoe-nail-finishing machine, the combination with the intermittently-rotating die-carrying disk provided around its periphery with nail-holding dies, of a reciprocating slide moving in a plane at right angles to the axis of revolution of the die-carrying disk, a holder pivotally connected to said slide and provided with a scarfing-die adapted to act on the nail while being held by the disk die to form a scarf or bevel at its point, an anvil or support for the nail coöperating with said scarfing-die, and means for adjusting said holder toward or away from the anvil to vary the action of the scarfing-die for nails of different thicknesses, substantially as described.

2. In a horseshoe-nail-finishing machine, the combination with the intermittently-rotating die-carrying disk and its dies, of a reciprocating slide arranged at right angles to the axis of revolution of said disk, a frame or holder pivotally connected with said slide, and means for adjusting the same toward and from the die-carrying disk, a slide provided with a die for forming a scarf or bevel at the point of the nail, said slide being made vertically adjustable in said frame or holder, whereby the scarfing-die may be raised or lowered to vary the distance of the scarf or bevel from the head of the nail, substantially as described.

3. In a horseshoe-nail-finishing machine, the combination with the intermittently-rotating die-carrying disk and its dies, of a reciprocating slide arranged at right angles to the axis of revolution of said disk, a frame or holder pivotally connected with said slide, and means for adjusting the same toward and from the die-carrying disk, a slide provided with a die for forming a scarf or bevel at the point of the nail, and a die located above said scarfing-die for curving the shank of the nail, said slide being made vertically adjustable in said frame or holder, whereby the scarfing-die may be raised or lowered to vary the distance of the scarf or bevel from the head of the nail, substantially as described.

4. In a horseshoe-nail-finishing machine, the combination with the intermittently-rotating die-carrying disk provided around its periphery with nail-holding dies, of a reciprocating slide moving in a plane at right angles to the axis of revolution of the die-carrying disk, and provided with a scarfing-die adjustable vertically within said slide, whereby it may be raised or lowered to vary the distance of the scarf or bevel from the head of the nail, substantially as described.

5. In a horseshoe-nail-finishing machine, the combination with the die-carrying disk and its nail-holding dies, of a reciprocating slide arranged at right angles to the axis of revolution of said disk and provided with an upright head, a frame or holder pivotally connected with said head near its top, means for adjusting said holder toward and away from the die-carrying disk, a slide movable vertically within said holder and provided with a die for forming the scarf or bevel at the point of the nail, means for adjusting said vertically-movable die-slide, a stationary anvil or support for the nail while being acted on by the scarfing-die, and a toggle mechanism for reciprocating the main horizontal slide, substantially as described.

6. In a horseshoe-nail-finishing machine, the combination with the intermittently-rotating die-carrying disk with its nail-holding dies, and a horizontally-reciprocating die coacting with the disk dies to hold the nail while being headed, of a yielding band partially encircling said disk and adapted to hold the nails within said dies, the upper portion of said band which lies opposite to the reciprocating nail-holding dies being of reduced width, leaving a narrow portion at its bottom to hold the nail, whereby the holding-dies are enabled to come into contact with each other in embracing the upper portion of the nail, substantially as described.

7. In a horseshoe-nail-finishing machine, the combination with the intermittently-rotating die-carrying disk and its nail-holding dies, of an upright conductor provided with a yielding device for supporting a nail therein in line with one of said nail-holding dies, means for supporting pendent nails in line and delivering the same singly to the conductor, a reciprocating slide adapted to move transversely across the line of pendent nails beneath their heads and cut out or separate the nail in the conductor from the line of nails behind it, and a vertically-reciprocating nail-pusher located within the conductor and adapted to force the nail down into the nail-holding die of the rotating disk beneath, substantially as described.

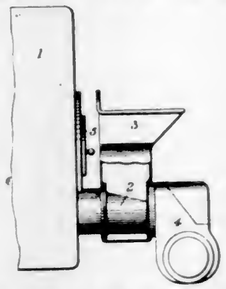
8. In a horseshoe-nail-finishing machine, the combination with the intermittently-rotating die-carrying disk and its nail-holding dies, of an upright conductor provided with a yielding device for supporting a nail therein in line with one of the nail-holding dies, means for supporting pendent nails in line and delivering the same singly to the conductor, a vertically-reciprocating nail-pusher located within the conductor, and means for actuating the same, a reciprocating slide adapted to move transversely across the line of pendent nails beneath their heads and cut out or separate the nail within the conductor from the line of nails behind it, and means controlled by the nail-pusher for actuating the cut-out slide, whereby the latter is withdrawn as the nail-pusher reaches the limit of its upward movement to permit of the entrance of a nail into the conductor beneath the lower end of the nail-pusher, substantially as described.

9. In a horseshoe-nail-finishing machine, the combination with the intermittently-rotating die-carrying disk and its nail-holding dies, of an upright conductor provided with a pair of spring-jaws for catching the nail and holding it suspended by the head in line with one of the nail-holding dies beneath, a vertically-reciprocating nail-pusher connected with a slide moving on the outside of the conductor, and means for actuating said slide, means for supporting pendent nails in line and delivering the same singly to the conductor, a reciprocating slide adapted to separate or cut out the nail within the conductor from the line of nails behind it and actuated in one direction by a spring and lever mechanism controlled by the nail-pusher slide for actuating the cut-out slide, whereby the latter is withdrawn on the ascent of the nail-pusher to permit of the passage of a nail into the conductor beneath the lower end of the nail-pusher, substantially as described.

10. In a horseshoe-nail-finishing machine, the combination with the intermittently-rotating die-carrier and its nail-holding dies, and the upright nail-conductor, of a yielding spring-band adapted to lie against each nail-holding die as it is brought around into line therewith and close the open side of the recess therein, and a guide secured to said yielding band and located between the lower end of the conductor and the die, whereby the nail is properly guided into the die-recess, substantially as described.

11. In a horseshoe-nail-finishing machine, the combination with the intermittently-rotating die-carrier and its nail-holding dies, and the dies for trimming the point of the nail, of guides adapted to bear on the top of the head of the nail and against its front side when in line with said trimming-dies to hold it firmly in position while the point is being trimmed, substantially as described.

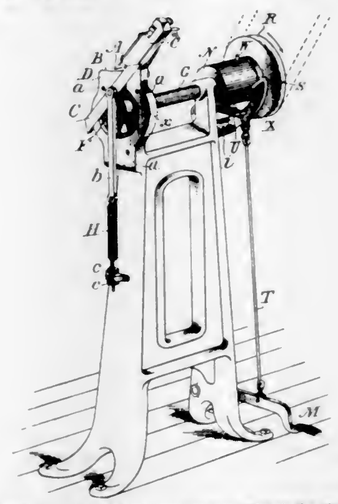
655,819. MECHANICAL STOKER. WILFRED R. WOOD, London, England. Filed Apr. 2, 1900. Serial No. 11,166. (No model.)



Claim.—1. In mechanical stokers and in combination, a fuel-feed casing, trunnion-bearings formed upon the outer end thereof, a feed-hopper mounted and capable of rotating on said bearings and means for holding said hopper in an upright position, substantially as and for the purposes set forth.

2. In mechanical stokers and in combination, a fuel-feed casing, trunnion-bearings formed upon the outer end thereof, a feed-hopper mounted and capable of rotating on said bearings, means for holding said hopper in an upright position, and a feed-actuating motor situated mainly below the fuel-feed casing, all substantially as and for the purposes set forth.

655,820. STITCH-SEPARATING MACHINE. JOSEPH E. BERTRAND, Boston, Mass., assignor to the Bay State Shoe Machinery Company, same place and Portland, Me. Filed Nov. 13, 1899. Serial No. 736,838. (No model.)



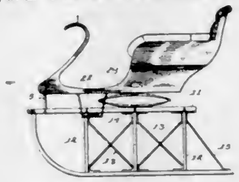
Claim.—1. A stitch-separating machine, wherein the stitched article operated upon is fed by hand, having, in combination, a stationary work-rest; an indenting-tool which rests yieldingly on the stitches during the completion of the feed of the article by hand, is then free to move to and from the stitches, and thrusts itself into a stitch-interval when presented, thus affording resistance to the further feed of the stitched article; and means for forcibly moving said tool to make an indentation, substantially as set forth.

2. A stitch-separating machine, wherein the stitched article operated upon is fed by hand, having, in combination, a stationary work-rest; an indenting-tool which is movable to and from the work-rest, said tool moving away from the work-rest so as to clear the article operated upon, then moving toward said work-rest so as to rest yieldingly upon said article during the completion of the feed of the article by hand, and then moving forcibly toward the work-rest to make an indentation; and means for so moving said tool, substantially as set forth.

3. A stitch-separating machine having, in combination, a work-rest; an indenting-tool; a carrier movable to and from the work-rest, in which carrier said tool is movably mounted; means for connecting said carrier and tool so that they move in unison away from the work-rest; means for automatically disconnecting said tool and carrier so that the tool then moves toward the work-rest independently of its carrier; and means for forcibly thrusting the tool toward the work-rest to effect the indentation, substantially as set forth.

4. A stitch-separating machine having, in combination, an indenting-tool carrier; means for reciprocating said carrier; and an indenting-tool supported and moved by said carrier and independently movable thereon, substantially as set forth.

655,821. RUNNING-GEAR FOR SLEIGHS. HORACE J. CHANDLER, Dummer, N. H. Filed Jan. 27, 1900. Serial No. 3,019. (No model.)

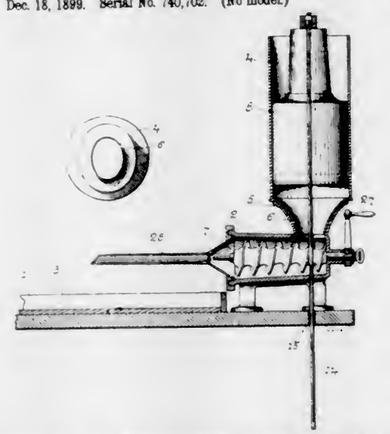


Claim.—1. In a sleigh, the combination with the raves each of which is provided with openings having flared ends, and the axles are each provided with a shoulder for engaging with the inner side of the rave and with a nut for engaging with the outside, of diagonally-arranged braces extending from a point on the axle at a distance from the rave, to the raves and to the runners respectively, to the front and to the rear of the axles.

2. In a sleigh, the combination with runners, standards and raves, of diagonally-arranged braces between the standards, the ends of which are bent into an angle and secured to the runners and to the raves respectively, and diagonally-arranged braces extending from the axles to the raves and to the runners respectively.

3. In a sleigh, the combination with a frame, the runners of which are vertically movable relatively to each other, of a bar secured at its ends to the forward part of the raves, an eyebolt secured upon the central portion of the bar against lateral movement, a spring upon each end of one of the axles, and a body secured to the springs and to the eyebolt.

655,822. FEEDING ATTACHMENT FOR MEAT-CUTTERS AND SAUSAGE-STUFFERS. THOMAS W. CLEMENTS, Auburn, N. Y. Filed Dec. 18, 1899. Serial No. 740,702. (No model.)



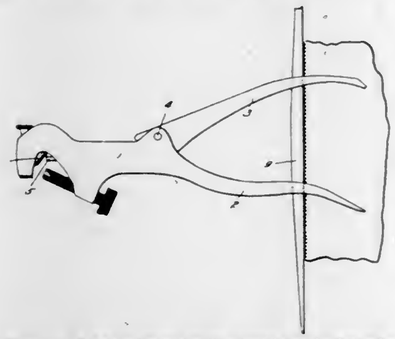
Claim.—1. In a feeding attachment for meat-cutters and sausage-stuffers, a meat-receiver having a tapered end adapted to fit in the hop-

per of the machine and extending downward nearly to the forcing-screw of the same; a piston inside of said meat-receiver having a pivoted cross-bar at the top end; a hinged foot-tread having a spring at its under side and a notched rack-piece pivoted thereon, and connecting-rods between said pivoted cross-bar and said notched rack-piece substantially in the manner and for the purpose herein described and shown.

2. In a feeding attachment for meat-cutters and sausage-stuffers, a meat-receiver having a tapered end adapted to fit in the hopper of the machine and extending downward nearly to the forcing-screw of the same, combined with a piston having a pivoted cross-bar at its top end adapted at either end to engage with the top ends of connecting-rods passing on the outer side of said meat-receiver, said connecting-rods being united below the machine and engaging on a vertical notched rack-piece pivoted on and adapted to be operated by a hinged foot-tread substantially in the manner and for the purpose herein described and shown.

3. In a feeding attachment for meat-cutters and sausage-stuffers, a meat-receiver having a tapered end adapted to fit in the hopper of the machine and extending downward nearly to the forcing-screw of the same; a piston movable in said meat-receiver having a pivoted cross-bar at its top end adapted at either end to engage with the top ends of connecting-rods passing on the outer side of said meat-receiver and united below the said machine, combined with a vertical notched rack-piece adapted to be carried vertically against the united ends of said connecting-rods by a suitably-arranged spring and pivoted on a hinged foot-tread having a reactive spring at one side thereof substantially in the manner and for the purpose herein described and shown.

655,823. SAW-JOINTER. SAMUEL DOUGALD, Pittsburg, Pa. Filed May 31, 1900. Serial No. 18,579. (No model.)



Claim.—1. A saw-set having handles pivoted to each other and provided with transverse openings for receiving a file, and longitudinal slots extending from the ends of said handles and intersecting said transverse openings.

2. A saw-set having handles pivoted to each other and provided with transverse openings for receiving a file, one of said openings being smaller than the other, and longitudinal slots extending from the ends of said handles and intersecting said transverse openings.

3. A saw-set having handles pivoted to each other and provided with transverse openings for receiving a file, a lug adjacent one of said openings provided with a set-screw for engaging the file, and longitudinal slots extending from the ends of the handles and intersecting the transverse openings therein.

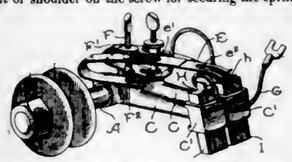
655,824. BRUSH-HOLDER. HERMANN F. T. ERBEN and WILLIAM B. POTTER, Schenectady, N. Y., assignors to the General Electric Company, of New York. Filed Aug. 29, 1898. Serial No. 689,779. (No model.)

Claim.—1. A brush-holder for a dynamo-electric machine, comprising a rigid arm secured to a stud and carrying a holder for the brush, a spring for the brush, an adjusting device for the spring, and means for relieving the tension of the spring without altering its adjustment.

2. In a brush-holder, a rigid arm having a clamp for attaching it rigidly to a stud, a brush, a spring pressing upon the brush, and a flexible conductor between the brush and the arm, with a tension-screw for the spring, a nut on said screw for securing the spring and the flexible conductor in place.

3. The means for relieving the spring tension in a brush-holder without disturbing the adjustment, consisting of the screw F, the nut or shoulder F^2, and the adjusting-nut F'.

4. In a brush-holder, the combination of the slotted spring, the nut held from rotation by the slot, the shank, the screw threaded into the shank, and the nut or shoulder on the screw for securing the spring to the shank.



5. The combination of the brush having a flexible conductor secured thereto, and the spring slotted at one end to bear upon the brush at each side of the conductor, and slotted at its other end whereby it can be moved rectilinearly off the brush.

6. In a brush-holder, the combination with the stud, of a one-part shank rigidly secured thereto, a brush supported in said shank, a spring secured to said shank and adapted to bear on said brush, and a flexible non-resilient conductor from the brush attached to the shank and forming a path for most of the current flowing between the brush and line.

7. In a brush-holder, the combination with a support, of a brush therein, a spring adapted to bear on said brush, a flexible non-resilient conductor having one terminal connected to said brush, and means for securing said spring and the other terminal of said conductor to said support.

8. In a brush-holder, the combination with a support, of a brush therein, a spring adapted to bear on said brush, a flexible non-resilient conductor having one terminal connected to said brush, a screw engaging in said support, and a nut on said screw for securing the other terminal of said conductor and said spring to the support.

9. The combination with a support, of a U-shaped spring, a screw passing through both legs thereof and engaging in said support, and nuts on said screw, one between the legs of the spring, and the other outside the leg which is farther from the support.

10. The combination with a support, of a brush therein, a spring adapted to bear on said brush, a flexible non-resilient conductor having one terminal connected to the brush, a screw passing through said spring and engaging in said support, an adjusting-nut for said spring operating on said screw, and a nut operating on said screw for securing said spring and the other terminal of said conductor to said support.

11. In a brush-holder, the combination with a spring for the brush, of means for adjusting the tension of said spring, and means for releasing the tension on said spring without changing the effect of said adjusting means.

12. In a brush-holder, the combination with an adjustable spring, of a support therefor, and means for securing the spring to the support without affecting the adjustment of the spring.

13. In a brush-holder, the combination with an adjustable spring, of a support therefor, and means for attaching the spring thereto whereby said spring can be revolved without affecting the adjustment thereof.

14. In a brush-holder, the combination with a slotted U-shaped spring, of a securing-screw passing through said slotted portions, and a tension-nut on said screw held from rotation with the screw in the slot.

15. In a brush-holder, the combination with a support, of a spring pressing the brush upon the collector, a screw mounted in the support and held against the tendency of the spring to force it from the support, and a nut on the screw which is adapted to control the tension of the spring.

16. In a brush-holder, the combination with a support, of a spring bearing on the brush, and means for adjusting the tension of the spring, adapted to permit the removal of the brush from the holder and the substitution of a new brush without changing the adjustment of said means.

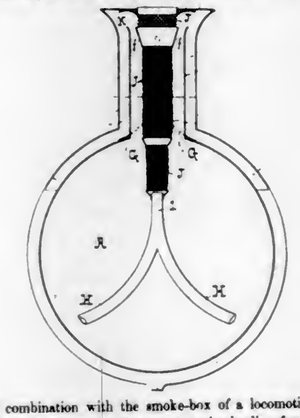
17. In a brush-holder, the combination of a support, a spring bearing on the brush, and means for adjusting the tension of the spring, said spring cooperating with said means to lock the latter in its adjusted position.

18. In a brush-holder, the combination, with a support, of a U-shaped spring, one portion of which bears on the brush, a screw for securing the other portion of the spring to the support, and a nut working along the screw and adapted to bear on the portion of the spring which bears on the brush, to control the tension of the spring.

19. In a brush-holder, the combination with a shank adapted to be secured to a suitable support, of a U-shaped spring, one portion of which bears on the brush, a flexible electric conductor secured to the brush, a screw for securing the other portion of the spring and the flexible conductor to the shank, and a nut working along the screw bearing on the portion of the spring which bears on the brush.

655,825. SPARK-ARRESTER. ANTON J. HAEBLER, Baltimore, Md., assignor, by direct and mesne assignments, of thirty-one seventy-fifths to Peter H. Thumlert, Thomas Mackenzie, and Henry C. Glover, same place. Filed Mar. 26, 1900. Serial No. 10,270. (No model.)

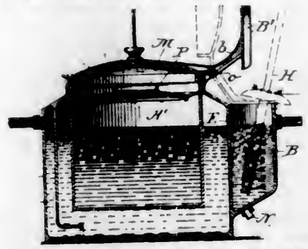
Claim.—1. In combination with a smoke-box, a smoke-stack, and a steam-pipe leading to the said smoke-stack, a cinder-pocket, a cinder-conduit leading from the cinder-pocket, and a wirework screen which surrounds the end of the steam-pipe, the mesh of the wirework increasing in size toward the top of the screen, substantially as specified.



2. In combination with the smoke-box of a locomotive-boiler, its smoke-stack, and the central exhaust-steam pipe leading from the engine-cylinders, a jacket placed around the said smoke-stack to form a cinder-pocket, a cinder-conduit leading from the cinder-pocket to a point underneath the boiler, and a wirework screen which extends from the central exhaust-pipe through the head of the jacket, the mesh of the wirework increasing in size toward the top of the screen, substantially as specified.

3. In combination with the smoke-box of a locomotive-boiler, a smoke-stack and a steam-pipe leading to the said smoke-stack, a cinder-pocket, a cinder-conduit leading from the pocket, and a screen which surrounds the end of the steam-pipe, the portion of the said screen which is surrounded by the smoke-stack consisting of wirework in sections connected by a flared or conoidal deflecting-plate, substantially as, and for the purpose specified.

655,826. GLUE-POT. FRIMAN KAHRS, New York, N. Y. Filed Aug. 19, 1897. Serial No. 648,762. (No model.)



Claim.—1. The combination of an outer water or steam containing pot, an inner glue-pot having steam-holes, and a scraper fastened to said inner pot above the steam-holes, with a removable cover for the inner pot.

2. The combination of an outer water or steam containing pot, an inner glue-pot having steam-holes, and a downwardly-inclined ledge forming a scraper and fastened to said inner pot above the steam-holes, with a removable cover supported upon said downwardly-inclined ledge or scraper, as and for the purpose set forth.

3. In a glue-pot, the combination of an outer pot, an inner pot having a downwardly-inclined annular ledge forming a scraper as shown, a removable cover supported on said ledge and adapted to close the inner pot, and a brush affixed to the movable cover and adapted to pass freely through the opening formed by the annular ledge.

4. In a glue-pot, the combination of an outer and inner pot, the inner pot having a ledge or scraper as shown, a removable cover, a brush-compartment and a brush, the latter being affixed to the movable cover, said cover being adapted to fit the glue-pot and the brush-compartment, as and for the purpose set forth.

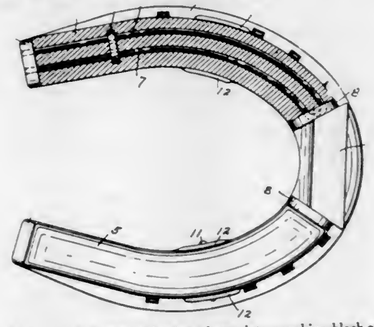
5. In a glue-pot, an outer pot having several steam or water ways cast integrally therewith or fastened thereon for conveying steam, hot or cold water to the inside of the pot, and at the same time serve as guides, in combination with the inner pot guided upon said ways.

6. The combination of a glue-pot substantially as hereinbefore shown and described, of an inner and outer pot and brush-compartment, the said glue-pot having a lid adapted to cover either the inner or the outer pots when closed, with a second cover adapted to close the brush-compartment when the main cover is raised.

7. The combination with the outer pot, having an overflow for securing a constant volume of water therein, of an inner pot capable of vertical movement in said outer pot and guided therein, and having a scale for indicating the amount of immersion of same in the water, and means for holding the inner pot in its lowermost position.

8. In a self-weighing glue-pot, the combination with the outer pot, of the inner pot sliding vertically therein and having an adjustable scale and guide-folds on the inner pot for supporting the said adjustable scale and allowing of vertical adjustment of same.

655,827. CUSHIONED HORSESHOE. THOMAS J. LOVETT, Chicago, Ill., assignor to the Budd Doble Tire Company, New York, N. Y. Filed June 17, 1898. Serial No. 683,691. (No model.)



Claim.—1. A horseshoe having a base-plate, a cushion-block on each side of the shoe, and one or more wires extending longitudinally through each block, said wires being secured to the base-plate, substantially at the ends of the blocks and serving to bind said blocks to the under side of the base-plate, substantially as described.

2. A horseshoe having a base-plate, a cushion-block on each side of the shoe, and one or more wires extending through each block, said wire or wires being secured to the base-plate at each end of said block and serving to bind said blocks to the under side of the base-plate, substantially as described.

3. A horseshoe having a base-plate, a toe-calk, a cushion-block on each side of the shoe, and one or more wires extending through each block, said wire or wires being secured to the base-plate at the heel and toe, substantially as described.

4. A horseshoe having a base-plate, a toe-calk, heel-calks, a cushion-block on each side of the shoe extending from the toe-calk to the heel-calk, and one or more wires extending through each block, said wire or wires being secured to the base-plate at each end of said block, substantially as described.

5. A horseshoe having a base-plate, a cushion-block on each side of the shoe, one or more wires extending through each block, said wire or wires being secured to the base-plate at each end of said block, and means for securing said blocks to the base-plate between the ends of said blocks, substantially as described.

6. A horseshoe having a base-plate, a cushion-block on each side of the shoe, one or more wires extending through each of said blocks, said wire or wires being secured to the base-plate at the ends of said block, and one or more clips at the side of each block, substantially as described.

7. A horseshoe having a base-plate, a cushion-block on each side of the shoe, one or more wires extending through each of said blocks, said wire or wires being secured to the base-plate at the ends of said block, clips on opposite sides of each block, and cross-pins having their ends secured in said clips and passing below said wire or wires, substantially as described.

8. A horseshoe having a base-plate, a cushion-block, a looped wire the two strands of which pass through said block, the loop of said wire being secured to the base-plate at one end of said block, and the ends of said wire being secured to the base-plate at the other end of said block, substantially as described.

9. A horseshoe having a base-plate, a stud secured to the base-plate, a cushion-block extending from the heel to said stud, a wire looped through the stud and having its two strands passing through said block and secured to the base-plate at the heel, substantially as described.

10. A horseshoe having a base-plate, a stud secured to said base-plate adjacent to the toe-calk, a cushion-block extending from the heel to said stud, a wire looped through said lug and having its two strands passing through said tread-section and secured to the base-plate at the heel, substantially as described.

11. A horseshoe having a base-plate, a cushion-block, one or more wires passing through said block, said wire or wires being secured to the base-plate at the ends of said block, and one or more clips for preventing lateral displacement of said block, substantially as described.

12. A horseshoe having a base-plate, a cushion-block having a strengthening-strip embedded therein, one or more wires extending through said block below said strip, and means for securing said wire or wires to the plate, substantially as described.

13. A horseshoe having a base-plate, a cushion-block having a strip of woven wire embedded therein, one or more wires extending through said block below the woven wire, and means for securing said wire or wires to the base-plate, substantially as described.

14. A horseshoe having a base-plate, a perforated stud on the under side of said plate intermediate the heel and toe calks, a cushion-block, and one or more wires extending through said stud and block, substantially as described.

15. A horseshoe having a base-plate, a stud secured to the under side of said base-plate, a cushion-block extending from the heel to said stud, one or more wires passing through said block and into said stud, and a lug for protecting said stud, substantially as described.

16. A horseshoe having a base-plate, a cushion-block, clips for preventing the lateral displacement of said block, one or more wires extending through said block, and a cross-pin passing through said clips and below said wire or wires, substantially as described.

655,828. SOFT-TREAD ATTACHMENT FOR HORSESHOES. THOMAS J. LOVETT, Chicago, Ill., assignor to the Budd Doble Tire Company, New York, N. Y. Filed June 17, 1898. Serial No. 683,694. (No model.)

Claim.—1. An attachment for a horseshoe consisting of one or more cushion-blocks, one or more securing-plates, devices securing said block or blocks and plate or plates together, and means for securing said plate or plates to the under surface of a horseshoe, substantially as described.

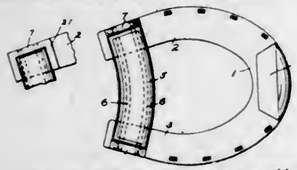
2. An attachment for a horseshoe consisting of one or more cushion-blocks, one or more securing-plates each provided with a pin for securing the same to a horseshoe, and devices for securing said block or blocks and plate or plates together, substantially as described.

3. An attachment for horseshoes consisting of one or more cushion-blocks, one or more securing-plates provided with means for securing the same to a horseshoe, one or more wires extending through said block or blocks and plate or plates, substantially as described.

4. An attachment for horseshoes consisting of one or more cushion-blocks, securing-plates at the ends of said block or blocks provided with means for securing the same to a horseshoe, and a wire looped through one of said plates and having its strands passing through said block or blocks and the other plate or plates, substantially as described.

5. An attachment for horseshoes consisting of one or more cushion-blocks, one or more securing-plates each provided with a pin projecting from its base, and one or more wires extending through said block or blocks and plate or plates, substantially as described.

655,829. CUSHIONED HORSESHOE. THOMAS J. LOVETT, Chicago, Ill., assignor to the Budd Doble Tire Company, New York, N. Y. Filed June 17, 1898. Serial No. 683,695. (No model.)

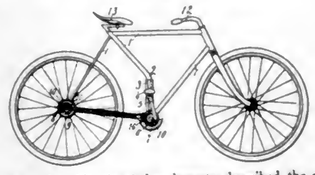


Claim.—1. A horseshoe having a base-plate, a cushion-block extending from side to side of the shoe, a stiffening-plate embedded in said block, and one or more wires passing through said block, said wires being secured to the base-plate, substantially as described.

2. A horseshoe having a base-plate, a cushion-block extending from side to side of the shoe, studs projecting from the base-plate, one or more wires passing through said block and into said studs, substantially as described.

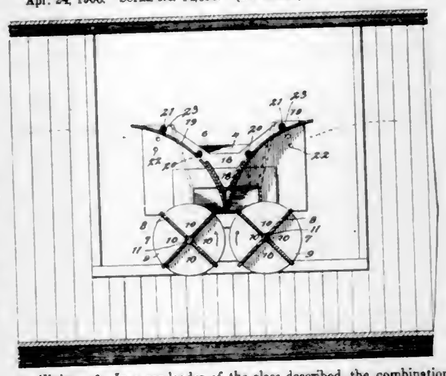
3. A horseshoe having a base-plate, a block of rubber extending from side to side of the shoe, a layer of protecting material above the rubber, and one or more wires extending through said block, said wires being secured to the base-plate substantially as described.

655,830. BICYCLE. ANTON PRAGER, South Omaha, Nebr. Filed Aug. 1, 1899. Serial No. 725,788. (No model.)



Claim.—In a bicycle of the character described, the combination of the following instrumentalities, to wit: a supporting-frame comprising the bars 1 and 2, the transverse bars 20, 21 and 22, the grooved holders 3 secured to said bars 2, the vertically-sliding pedals 4 within said holders 3, each of said posts 2 being provided with two of said grooved holders 3, the three seats 13, 14 and 15 secured to said horizontal frame-bar, three stub-shafts secured below to said frames, each being provided with the cranks 6, 6, the pitman-rods 5 extending from said cranks 6, said rods in turn being secured to said pedals 4, said pedals working vertically, the bevel-gear 7 secured to the central stub-shaft, the meshing gear 16 secured to the shaft 11, the second bevel-gear 8 meshing with the bevel-gear 9, secured to the rear axle, and the handle-bar 12 secured to the front of the wheel and common to all three sets of pedals, all arranged substantially as and for the purpose set forth.

655,831. CAR-LOADER. JAMES L. ROBERTS, Pontiac, Ill. Filed Apr. 24, 1900. Serial No. 14,158. (No model.)



Claim.—1. In a car-loader of the class described, the combination of a pair of oppositely-revoluble shovels arranged side by side, a chute to deliver grain onto the opposing sides of the said oppositely-revoluble shovels, and the oppositely-extending deflectors disposed above the said shovels, substantially as described.

2. In a car-loader of the class described, the combination of a pair of oppositely-revoluble shovels arranged side by side, a chute to deliver grain onto the opposing sides of the said oppositely-revoluble shovels and the oppositely-extending deflectors disposed above the said shovels, said deflectors having adjustable extensions, substantially as described.

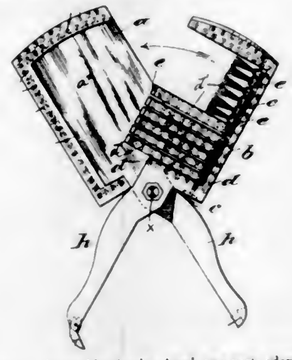
3. In a car-loader of the class described, the combination of a pair of oppositely-revoluble shovels, arranged side by side and having their axes converging toward their outer ends, the opposing sides of said shovels being parallel, a chute to deliver grain onto said opposing sides of said shovels, and deflectors disposed above said shovels, substantially as described.

655,832. BLASTING-POWDER. JOSEPH ROSS and WILLIAM D. CAIRNEY, Glasgow, Scotland. Filed June 4, 1900. Serial No. 19,068. (No specimens.)

Claim.—1. The method of producing an explosive which consists in taking a proportion of chlorate of potash, passing the same through a sieve in order to granulate it, mixing the granulated chlorate of potash with a proportion of charcoal and black oxide of manganese, taking a proportion of wax and mixing it with the mixture of chlorate of potash, charcoal and black oxide of manganese until the wax becomes perfectly black, placing the whole in a vessel, heating the vessel with its contents until the contents become moist with the melted wax, taking a proportion of vaseline, and bringing it to a liquid state, pouring the liquid vaseline over the mixture, and thoroughly stirring the whole mixture together for filling the crevices in the substance to which the paraffin is inaccessible, and providing a coating on the substance which the paraffin has failed to coat.

2. An explosive consisting of a mixture in about the following proportions of ingredients: chlorate of potash, seventy-five per cent.; black oxide of manganese, six per cent.; charcoal, six per cent.; wax, nine per cent.; vaseline, four per cent.

655,833. BRUSH. LEONHARD ROTH, Canth, Germany. Filed Feb. 16, 1900. Serial No. 5,496. (No model.)



Claim.—1. In combination in a brush, two parts adapted to be separated by a movement edgewise, one part carrying a series of bristle-holders which may be moved to expose the bristles when the two parts are separated, the said bristles being exposed for use when the two parts of the holder are together, substantially as described.

2. In combination in a brush, the two parts *a* and *b*, movably connected together, the bristles at their edges, a rod *c* carried by one part and a series of bars *e* carrying bristles and supported on the said rod *c*, substantially as described.

3. In combination, the two brush parts, separable by a movement edgewise in relation to each other, one part of which has the beveled rim, and the bristle-carrying bars movably held by the other part and having beveled ends to lock with the beveled rim when the parts are closed, the said bristles being exposed for use when the two parts of the holder are together, substantially as described.

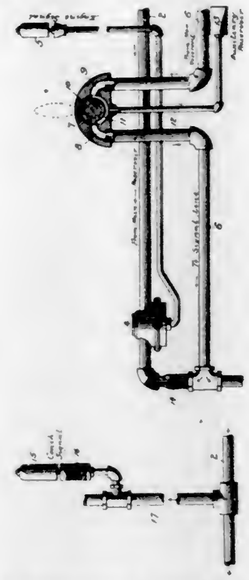
4. In combination, the two parts, *a*, *b*, pivoted together and having the arms *h*, a catch *g*, to hold the arms together and the bristle-supporting bars carried by one part and movably connected thereto, substantially as described.

5. In combination, the two parts, adapted to be separated by a movement edgewise, one of which has a locking-rim, and a back piece, and the other part is in the form of an open frame, and a series of bristle-carrying bars carried movably thereby and adapted to engage and be locked in position by the locking-rim, the said bristles being exposed for use when the two parts of the holder are together, substantially as described.

655,834. BURGLAR-ALARM. JOHN W. ROUGH, Orleans, Ind. Filed Nov. 22, 1899. Serial No. 737,944. (No model.)

Claim.—1. In a signaling system for trains, the combination with an air signal-pipe, and a source of air-pressure for maintaining an air-pressure normally in said pipe, of car-signaling devices, operated from said pipe but unaffected by the normal pressure therein, a reservoir, a pipe connection between said reservoir and the source of air-pressure, a pipe connection between the reservoir and the signal-pipe, means controlling the discharge from the reservoir through said pipe, and a valve for preventing escape of the air-pressure from the reservoir back into the source of air-pressure, said reservoir being adapted to supplement the normal air-pressure in the signal-pipe when discharging therein, whereby the signaling devices are operated.

2. In a signaling system for trains, the combination with an air signal-pipe, of a main air-reservoir for maintaining an air-pressure in said pipe, car-signaling devices operated from said pipe but unaffected by the normal air-pressure therein, an auxiliary signal-pipe, a valve interposed in said auxiliary signal-pipe, an auxiliary reservoir, and a pipe leading from said auxiliary reservoir to the valve, said valve being adapted to put the main reservoir normally in communication with the auxiliary reservoir to cause the charging of the latter, and to effect the discharge of the auxiliary reservoir into the main signal-pipe when operated.



3. In a signaling system for trains, the combination with an air signal-pipe, of a main air-reservoir in communication with said pipe, means for reducing the air-pressure supplied to the pipe so it will be below that of the main reservoir, an auxiliary signal-pipe leading from the main reservoir to the signal-pipe, an auxiliary reservoir connected to said auxiliary signal-pipe, a valve for establishing communication either between the main and auxiliary reservoirs or between the auxiliary reservoir and the main signal-pipe, and air-operated car-signaling devices operated from the signal-pipe which are normally inactive but are actuated by the supplemental pressure thrown into the signal-pipe from the auxiliary reservoir when discharging.

4. In a signaling system for railway-trains, the combination with an air-pressure pipe, a firearm, and a branch pipe leading from the air-pressure pipe to the firearm, of a valve within the branch pipe provided with an arm attached to the trigger of the firearm, and with an exhaust-opening, and means for retracting said valve after it has been forced outward by the air-pressure.

5. In a signaling system for railway-trains, the combination with an air-pressure pipe, a firearm, and a branch pipe leading from the air-pressure pipe to the firearm, of a bracket secured to the branch pipe for supporting the firearm, a valve within the branch pipe formed with an exhaust-opening, an arm projecting from the outer end of said valve and attached to the trigger of the firearm, a second arm pivotally secured to the trigger and a spring interposed between said arm and the stock of the firearm.

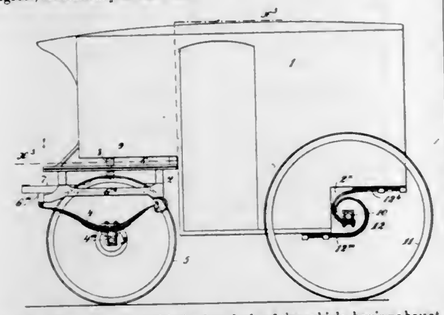
655,835. WAGON. WILLIAM O. SHADBOLT, New York, N. Y. Filed Sept. 28, 1898. Serial No. 692,071. (No model.)

Claim.—1. A gear for the front of a drop-body vehicle, comprising fifth-wheels and their frame, a non-rotative axle, two wheels rotatively mounted on said axle between the side members of said frame, and supports between the respective ends of said axle and said frame and fixed to the axle exterior to the wheels, substantially as set forth.

2. A gear for the front end of a drop-body vehicle, comprising fifth-wheels 6 and their frame, an axle, two wheels rotative thereon, and springs between the respective ends of the axle and said frame, exterior to the wheels, and fixed to said axle and frame, substantially as set forth.

3. A four-wheeled vehicle having a drop-body with a bay at its front end, fifth-wheels and their frame within said bay, a non-rotative front axle, two front wheels rotative thereon, and supports for the body, laterally ex-

terior to the wheels and between the axle and the horizontally-rotative part of the fifth-wheel frame, said bay extending entirely across the body, whereby the front gear may be turned on the king-bolt through ninety degrees, substantially as set forth.



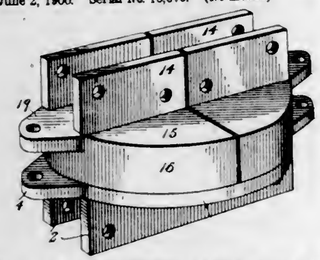
4. The combination with the drop-body of the vehicle, having a bay at its front end extending entirely across the body and open at the sides thereof, of the fifth-wheels 6 and their frame, situated within said bay, the front axle 3, the springs connecting the respective ends of said axle with the fifth-wheel frame, and the two front wheels 5, mounted rotatively on said axle between said springs, substantially as set forth.

5. As an article of manufacture, the vehicle-spring 12, consisting of two tapered members, 12^a and 12^b, connected together at their thinner ends, the former having a quarter-turn bend and the latter a three-quarter-turn bend, and the arms of the members extending in opposite directions, substantially as set forth.

6. In a vehicle, the combination with the rear axle, of a spring 12, comprising the front member 12^a and rear member 12^b, said front member extending rearwardly and curving upward over the axle toward the front and said rear member extending forward and curving down over the axle, said spring members being secured to said axle.

7. A vehicle having a drop-body with a bay at its rear end, a rear axle within said bay, and rear springs connecting said axle with the body, said springs each consisting of a front member 12^a, fixed to the drop portion of the body and extending rearwardly and about the said axle, and a rear member 12^b, attached to the elevated rear portion of the body and extending forward and about the said axle, both spring members being secured to the axle.

655,836. FIFTH-WHEEL. NORMAN C. SMITH, Waterloo, Iowa. Filed June 2, 1900. Serial No. 18,876. (No model.)

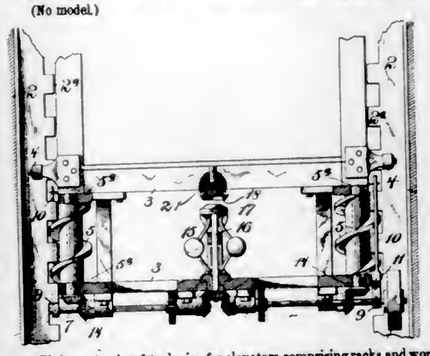


Claim.—1. A fifth-wheel composed of a non-sectional or single-piece member comprising a bed-disk, parallel bolt-flanges extending from one face of the disk, a circular bed-block of smaller diameter than the disk and extending from the opposite face thereof, and a head-disk surmounting the bed-block and having its edges extending beyond said block, and a second member composed of two semicylindrical sections which, when retained in effective relation with each other and with the first-named member, comprises a bearing-disk having a bearing upon the head-disk, a bearing-ring depending from the bearing-disk and bearing against the periphery of the head-disk, and an inturned horizontal bearing-flange below the bearing-ring and bearing against the opposed faces of the bed-disk and head-disk and against the periphery of the bed-block, and a pair of parallel bolt-flanges extending from the face of the bearing-disk opposite the head-disk, said flanges being disposed at right angles to the joint between the sections of the second wheel member.

2. A fifth-wheel comprising a lower member cast in a single piece and comprising a horizontal bed-disk, a horizontal head-disk of somewhat-smaller diameter, and an intermediate circular bed-block of smaller diameter than the head-disk, the bed-disk being provided with diametrically-opposed bolt-lugs extending from its periphery and with a pair of depending parallel bolt-flanges located at opposite sides of the bolt-lugs and extending entirely across the disk, and an upper wheel member composed of two identical semicylindrical sections each section being composed of a semicylindrical bearing-disk section, a depending semicircular bearing-ring section, a horizontal semicircular bearing-flange, and a pair of upstanding bolt-flanges disposed at right angles to the straight diametrical edge of the section, each bearing-disk section being provided with a peripheral bolt-flange located in a plane intermediate of, and at right angles to, the upstanding bolt-flanges, and said wheel members being provided with axial openings for the reception of a king-bolt.

3. A fifth-wheel comprising a pair of interfitting, circular members, one of said members being composed of two sections and having means for attaching the sections to the support with the joint between the sections disposed in a direction transverse to said support.

655,837. SAFETY APPLIANCE FOR ELEVATORS. ALBERT A. E. STERLING, New York, N. Y. Filed May 13, 1899. Serial No. 716,769. (No model.)



Claim.—1. A safety device for elevators comprising racks and worms gearing the car in the shaft, driving-gear for the worms consisting of rotatable and non-rotatable members, the non-rotatable members being fixed in the shaft and the rotatable members carried by the car and a governor controlling the rotatable members of the driving-gear by adjusting them into or out of engagement with the non-rotatable members, as specified.

2. A safety device for elevators, comprising racks and worms gearing the car in the shaft, frictional driving-gear for the worms, the non-rotatable members of the driving-gear being fixed in the shaft and the rotatable members thereof carried by the car and a governor controlling the rotatable members by adjusting them into or out of engagement with the non-rotatable members, as specified.

655,838. METHOD OF INSULATING ELECTRIC CONDUCTORS. NIKOLA TESLA, New York, N. Y. Filed June 15, 1900. Serial No. 20,405. (No specimens.)

Claim.—1. The method of insulating electric conductors herein described which consists in imparting insulating properties to a material surrounding or contiguous to the said conductor by the continued action thereon of a cooling agent, as set forth.

2. The method of insulating electric conductors herein described which consists in reducing to and maintaining in a frozen or solidified condition the material surrounding or contiguous to the said conductor by the action thereon of a cooling agent maintained in circulation through one or more channels as set forth.

3. The method of insulating electric conductors herein described which consists in surrounding or supporting the conductor by material which acquires insulating properties when in a frozen or solidified state, and maintaining the material in such a state by the circulation through one or more channels extending through it of a cooling agent, as set forth.

4. The method of insulating an electric conductor which consists in surrounding or supporting said conductor by a material which acquires insulating properties when frozen or solidified, and maintaining the material in such state by passing a cooling agent continuously through a channel in said conductor, as set forth.

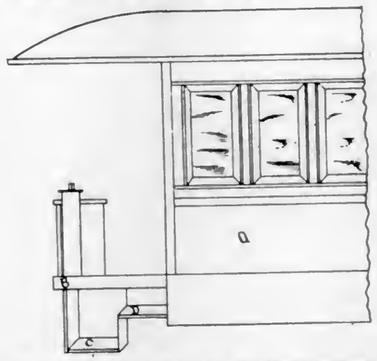
5. The method of insulating electric conductors, which consists in surrounding or supporting the said conductors by a material which acquires insulating properties when in a frozen or solidified state, and maintaining the material in such state by the continued application thereto of a cooling agent, as set forth.

6. The method of insulating conductors herein set forth which consists in surrounding or supporting the conductors by a material which acquires insulating properties when in a frozen or solidified state, and maintaining the material in such state by the circulation of a cooling agent through a circuit of pipes or tubes extending through the said material as set forth.



7. The method of insulating electric conductors which consists in laying or supporting the conductors in a trough or conduit filling the trough with a material which acquires insulating properties when frozen or solidified, and then causing a cooling agent to circulate through one or more channels extending through the material in the trough so as to freeze or solidify the material, as set forth.

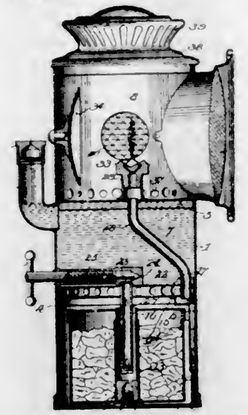
655,839. CAR-STEP. JOHN B. THACHER, Albany, N. Y. Filed Oct. 20, 1899. Serial No. 734,277. (No model.)



Claim.—1. Steps for street-cars and other vehicles arranged in connection with the end platforms thereof, the treads of the steps being set so their lengthwise axis will be parallel with the lengthwise axis of the car and having means preventing said steps being mounted from a direction lengthwise the treads and arranged so that said steps will be usable only when approached from a direction transverse to the length of said car, the steps or treads being arranged so that the upper one occupies but a portion of the distance between the end support of the series of steps and the end of the car and the lower one the supplementary distance substantially as described.

2. A plurality of steps leading to the end platforms of a car or other vehicle, and having means to prevent said steps being mounted from a direction lengthwise the treads, the front edges of the treads being approachable and usable only from a direction transverse to the length of said car and arranged in planes whose lengthwise axis is parallel with the lengthwise axis of the car, the steps or treads being also arranged so that the upper one occupies but a portion of the distance between the end support of the series of steps and the end of the car and the lower one the supplementary distance substantially as described.

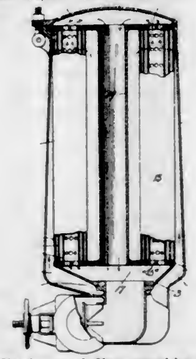
655,840. ACETYLENE-GAS LAMP. JAMES H. VAN TASSEL and OLIVER P. HIPPLE, Elmira, N. Y. Filed May 13, 1899. Serial No. 716,766. (No model.)



Claim.—1. In an acetylene-gas lamp, the combination with a casing divided by horizontal partitions, of a carbid-holder in the lowermost compartment, a gas-passage arranged at one side of the carbid-holder and comprising a plate secured to the wall of the casing and extending above and below the top of the carbid-holder, to cause the gas to be directed downwardly around said holder, and then upward to the burner-supply pipe, the lower end of the latter extending into said gas-passage.

2. In a acetylene-gas lamp, the combination with a casing divided by horizontal partitions, of a carbid-holder in the lowermost compartment, a gas-passage arranged at one side of the carbid-holder and comprising a plate secured to the wall of the casing and to the under side of the adjacent horizontal partition, and enlarged at its upper end to form a gas-chamber and a burner-supply pipe the lower end of which extends through said partition and projects into said gas-chamber.

655,841. FILTER. HENRY R. WATSON, JOHN S. WATSON, and TORBEN C. BILLETOP, Newcastle-upon-Tyne, England. Filed Nov. 8, 1899. Serial No. 736,281. (No model.)



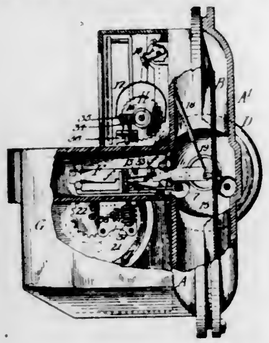
Claim.—1. The improved filter comprising a casing in which the filter-frames are supported between two diaphragms in each of which there are openings through which the interiors of the frames communicate, at the one end with a space above the top diaphragm, and at the other end with a space formed by a false bottom communicating with the outlet, the two said spaces being also in communication through a pipe such as 19; substantially as described and illustrated.

2. In a filter, in combination, the casing, the filtering-frames, the diaphragms, the false bottom connecting the openings in the lower diaphragm with the outlet, and the tube 19 connecting the openings in the upper diaphragm with the outlet, substantially as described and illustrated.

3. In combination in a filter, an outer cylinder, diaphragms arranged across opposite ends of the same, a series of filtering-cylinders extending between the diaphragms and having communication with the space between the same and the ends of the cylinder, a pipe connecting said spaces and an inlet leading into the space between the diaphragms and an outlet leading from the space between one of the diaphragms and one end of the cylinder.

4. In combination, in a filter, an outer cylinder, diaphragms arranged across opposite ends of the same, filtering-cylinders between the same, a way leading to the filtering-space, a way leading to the space between one head of the cylinder and the diaphragm extending across the same, and valves adapted to open and close communication to the respective space and to open and close communication between the respective ways independent of said spaces.

655,842. **PREPAYMENT-METER.** FREDERICK WEEGMANN, San Francisco, Cal., assignor to the California Pre-Payment Meter Company, same place. Filed Mar. 20, 1899. Serial No. 709,833. (No model.)



Claim.—1. The combination with a meter having a diaphragm operated by gas-pressure, of a bar connected to said diaphragm and adapted to be reciprocated as said diaphragm vibrates, gas inlet and outlet valves, means interposed between the same and said bar and controlled by the latter for operating said valves, means for locking and releasing said bar, and coin-controlled mechanism for controlling the latter, substantially as described.

2. In combination with a gas-meter having a diaphragm, of a bar connected to said diaphragm, gas inlet and outlet valves controlled by the movement of said rod, a locking-bolt adapted to engage said bar, coin-controlled mechanism and means interposed between said mechanism and said bolt for operating the latter, substantially as described.

3. In combination with a gas-meter having a diaphragm, of a bar connected to said diaphragm, gas inlet and outlet valves controlled by the movement of said rod, a locking-bolt adapted to engage said bar, coin-controlled mechanism, a screw-shaft adapted to be operated from the coin-controlled mechanism, a cross-head operated by said screw and means operated by said cross-head for controlling said bolt, substantially as described.

4. In combination with a gas-meter, having a diaphragm, of a bar connected to said diaphragm, gas inlet and outlet valves controlled by the movement of said rod, a locking-bolt adapted to engage said bar, coin-controlled mechanism, a screw-shaft, a cross-head, a rack adapted to be shifted thereby, a gear meshing with said rack and a connection between said gear and said locking-bolt, substantially as described.

5. In combination in a gas-meter having a diaphragm, of gas inlet and outlet valves, a bar secured to said diaphragm, means interposed between the same and said valves for operating the latter, a locking-bolt for said bar, coin-controlled mechanism, means operated therefrom for releasing said locking-bolt, a register-shaft operated from said bar, and connections interposed between said shaft and the releasing means for the locking-bolt for reëngaging the latter.

6. In combination in a gas-meter having a diaphragm, gas inlet and outlet valves, a bar secured to said diaphragm, means interposed between the same and said valves for operating the latter, coin-controlled mechanism, a locking-bolt for said bar, a screw-shaft rotated from the coin-controlled mechanism in one direction, means interposed between the screw and the locking-bolt for controlling the latter, a register-shaft, means operated from said bar for rotating the same, and gearing interposed between said register-shaft and said screw for rotating the latter in an opposite direction to the direction in which it is rotated by the coin-controlled mechanism, substantially as described.

655,843. **LABEL AND LABEL-HOLDER.** LOUIS WEIGEL, Helena, Mont. Filed June 20, 1900. Serial No. 20,957. (No model.)

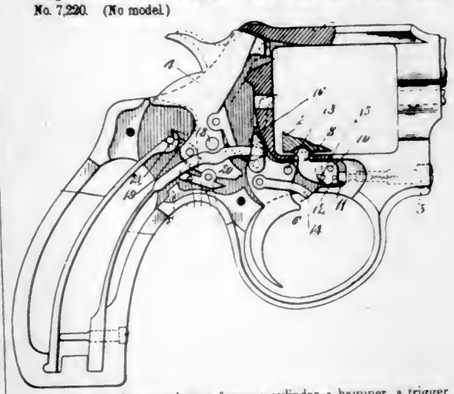


Claim.—1. A device for the purpose set forth comprising a holder having an open frame and a series of pockets below said frame, a card held in the open frame, and a series of tags removably inserted in the pockets below the frame.

2. A label-holder consisting of a strip having a series of pockets formed therein and an open frame rising from the strip, the said frame having vertical grooves at its side edges and rearwardly-projecting lips or flanges in its lower portion.

3. A label-holder consisting of a strip having portions struck back to form pockets and an open card-holding frame rising from the upper edge of the strip.

655,844. **REVOLVER.** JOSEPH H. WESSON, Springfield, Mass., assignor to Smith & Wesson, same place. Filed Mar. 3, 1900. Serial No. 7,220. (No model.)



Claim.—1. In a revolver, a frame, a cylinder, a hammer, a trigger, a hammer-spring, a safety-catch on the hammer, a trigger-spring, and a shoulder on the frame, said trigger-spring being adapted, upon the release of the trigger, to engage said catch and move it into connection with said shoulder on the frame, whereby the movement of said hammer toward the head of a cartridge will be blocked, and means for releasing said catch by the cocking movement of the hammer, substantially as described.

2. In a revolver, a frame, a cylinder, a hammer, a trigger, a hammer-spring, a trigger-spring, a hand on said trigger adapted to rotate the cylinder by the movements of the trigger, and a safety-catch on the hammer, said trigger-spring being adapted to bear on said hand to hold it yieldingly in cylinder-engaging position and adapted also to bear on said safety-catch to prevent the movement of the hammer toward the cylinder, substantially as described.

3. In a self-cocking revolver, a cartridge-cylinder, a hammer and spring therefor, a trigger, a trigger-spring, a cylinder-stop, a spring-plunger for holding said stop in engaging position relative to said cylinder, a spring-lever on the trigger adapted to engage a projection on said stop during the beginning of the cocking movement of the trigger to effect the release of said cylinder, and adapted to slide over said projection on the return movement of said trigger, substantially as described.

4. In a revolver, a frame, a hammer pivotally hung therein, and a safety-catch for said hammer pivotally supported thereon, said catch being adapted to frictionally engage said hammer at and about the point of its support thereon, whereby it may retain, temporarily, a certain relative position thereto, substantially as described.

5. In a revolver, a frame, a laterally-swinging cartridge-cylinder, a pivot-screw on which the latter swings, a cylinder-stop, a spring-actuated plunger located in said pivot-screw and adapted to bear against said stop; a trigger, a lever thereon adapted to engage a projection on said stop to move the latter out of engagement with the cylinder, a hand on said trigger, and a spring common to both said trigger and hand, substantially as described.

655,845. **METHOD OF FIREPROOFING CELLULOSE.** AUGUSTUS G. WIETER, Owensborough, Ky. Filed Mar. 30, 1900. Serial No. 10,833. (No specimens.)



Claim.—1. The process of rendering cellulose fireproof by mixing it with a dry incombustible salt in a heated receptacle, substantially as described.

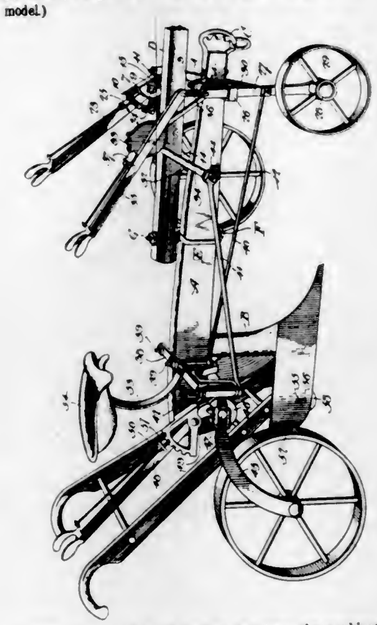
2. The process of rendering cellulose fireproof by mixing it with salammoniac in a heated receptacle, substantially as described.

3. The process of rendering cellulose fireproof by mixing it with salammoniac in a receptacle, into which is introduced steam, substantially as described.

4. The process of rendering cellulose fireproof by bringing the natural moisture in each grain to the surface by means of heat, and bringing the moisture in contact with a pulverized salt, all substantially as described.

5. The process of impregnating cellulose with pulverized salammoniac by bringing them into contact in the presence of steam.

655,846. **RIDING ATTACHMENT FOR PLOWS.** WILLIAM H. BRACKNEY, Fleegar, Pa. Filed May 8, 1900. Serial No. 15,907. (No model.)



Claim.—1. In riding attachments for plows, the combination of an arm adapted to be secured to and project laterally from a plow-beam, a connecting member hinged to the said arm and adapted to swing in a horizontal plane, a trail-bar fulcrumed to said connecting member and adapted to turn in a vertical plane and carrying a trail-wheel, a lever fulcrumed to said connecting member, and connections between said lever and said trail-bar, whereby the latter may be turned to adjust the trail-wheel vertically, substantially as described.

2. In riding attachments for plows, the combination with an arm projecting from the plow-beam, of a connecting member hinged to the said arm, a plate pivotally connected to said member, a trail bar or arm secured to said plate and carrying a trail-wheel, and a lever fulcrumed to said connecting member, said lever and said plate or disk having coacting spurs or gears whereby said lever is connected to said disk or plate, for the purpose set forth, substantially as described.

3. In riding attachments for plows, a yoke-arm comprising upper and lower bars, bolts connecting said upper and lower bars and adapted to clamp the same to a plow-beam, a connecting member hinged to said yoke or arm and adapted to swing in a horizontal plane, a trail-wheel bar fulcrumed to said connecting member and adapted to turn in a vertical plane and a lever carried by said connecting member, said lever coacting with said trail-wheel bar to adjust the trail-wheel vertically, substantially as described.

4. The combination with a plow, of yoke-arms projecting from opposite sides thereof, connecting members hinged to said yoke-arms, and adapted to swing in horizontal planes, trail-bars carrying trail-wheels pivotally connected to said connecting members and adapted to turn in vertical planes, levers fulcrumed to said connecting members and connections between said levers and said trail-bars, for the purpose set forth, substantially as described.

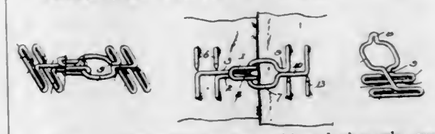
5. The combination with a plow, of yoke-arms projecting from opposite sides thereof, connecting members hinged to said yoke-arms, trail-bars carrying trail-wheels and pivotally connected to said connecting members, levers fulcrumed to said connecting members and connections between said levers and said trail-bars, and a vertically-adjustable wheel and supports therefor at the front end of the plow-beam, substantially as described.

6. The combination with a plow, of yoke-arms projecting from opposite sides thereof, connecting members hinged to said yoke-arms, trail-bars carrying trail-wheels and pivotally connected to said connecting members, levers fulcrumed to said connecting members, connections between said levers and said trail-bars, a vertically-adjustable standard in a guide with which the yoke-arm at the front end of the plow-beam is provided, a wheel carried by said vertically-adjustable standard and a lever to adjust the latter, substantially as described.

7. As a new article of manufacture, the connecting member comprising the joint-section, the arm extending therefrom and the segment-plate carried by said arm, substantially as described.

8. The combination with the connecting member comprising the joint-section, the arm extending therefrom and the segment-plate carried by said arm, of the disk or plate having its bearing in said arm and provided with the spurs, the trail-arm seated and secured on said plate or disk and the lever fulcrumed to the arm, having the spurs engaging those of the plate or disk, to partly rotate the latter, and provided further with a detent to engage the segment-plate and thereby lock said lever to said segment-plate when adjusted, substantially as described.

655,847. **HOOK AND EYE.** JOHN A. BRUNNER, Westfield, N. J. Filed Feb. 2, 1900. Serial No. 3,741. (No model.)



Claim.—1. A fastening device comprising a hook member consisting of a bill, and arms of different length extending therefrom, said arms bent at right angles, and then upon themselves transversely to form securing-prongs; and an eye member, consisting of a loop and arms extending therefrom, and bent to form transversely-disposed securing-prongs.

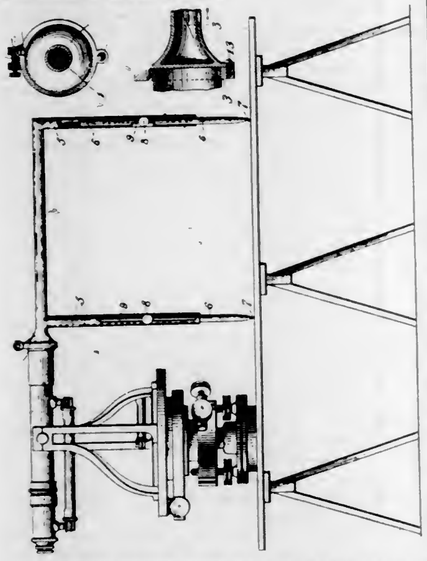
2. A fastening device comprising a hook member consisting of a bill and arms of different length extending therefrom, said arms being bent at right angles, and then upon themselves to form transversely-extending securing-prongs; and an eye member consisting of a loop provided with securing-prongs, and a projection adapted to be engaged by the bill of the hook member.

3. A fastening device comprising a hook member consisting of a single piece of wire bent to form a loop or bill and laterally-extending arms of different length bent to form transverse prongs; and an eye member consisting of a single piece of wire bent to form a loop, having a hump or projection; and arms bent to form transverse securing-prongs.

655,848. **PROTRACTOR.** WINFIELD S. CAREART, Telluride, Colo. Filed Mar. 28, 1900. Serial No. 10,498. (No model.)

Claim.—1. A protractor attachment comprising a rod or bar hav-

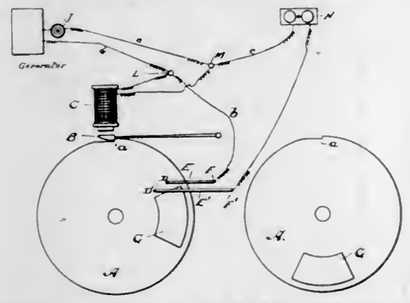
ing depending arms, rods extending into the said arms, and means for holding them in their adjusted positions, and means for securing the rod or bar to an instrument for ascertaining angles.



2. A protractor attachment comprising a rod or bar having depending hollow arms, rods moving in the said hollow arms, set-screws for adjustably securing the rods at different heights in the said arms, the said set-screws passing through slots in the arms, needle-points formed upon the said rods, and a clamping-band for securing the protractor to an instrument for ascertaining angles.

3. An attachment for surveyors' or engineers' instruments comprising a bar having depending hollow arms, a clamping-band for attaching the bar to the telescope of a surveyor's transit or other similar instrument, rods adapted to be adjusted in the hollow arms, set-screws passing through slots in the said arms for securing the rods in their different adjusted positions, the construction being such that by attaching the device to the telescope of a transit it may be used as a protractor upon a plotting-table or drawing-board for laying out different angles, substantially as described.

655,849. TELEPHONE-BELL CUT-OUT. LUTHER F. COBB, Providence, R. I. Filed Jan. 6, 1900. Serial No. 637. (No model.)



Claim.—1. A revoluble non-conducting disk A provided with a metallic segment upon its side, the two stationary rods provided with points upon their ends, and which have their upper ends to extend inwardly past the outer edge of the disk so as to come in contact with the segment, a catch for engaging with a notch in the edge of the disk, and an electromagnet for operating the catch, combined with the push-button, the wires *b*, *c*, connected therewith, wires extending from the electromagnet and connecting with the wires *b*, *c*, the wire *b* being connected to one of the rods, an alarm-bell connected to the wire *c*, and a wire extending from the alarm-bell to the other stationary rod; the parts being combined and arranged to operate, substantially as shown.

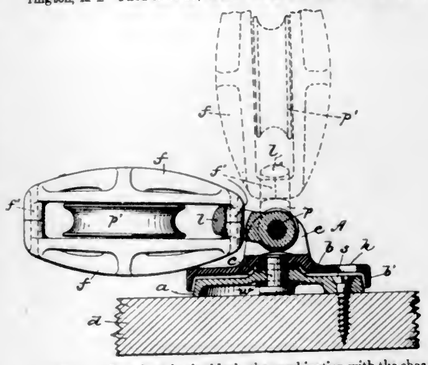
2. In a cut-out for telephone-bells, two or more revoluble disks having plates of metal attached to their faces, the shunt-circuit, points connected to the shunt-circuit and held so as to make contact with the plates, thereby closing said circuit, and catches to hold said disks from turning, combined with electromagnets, of high resistance connected in multiple, which allows them to be energized by either a continuous or an alternating current to release said catches from the disk, a bell for each disk connected with its contact-points so as to ring the bell when said disk closes the circuit by coming in contact with said points, substantially as described.

655,850. MANUFACTURE OF PAPER OR PASTEBOARD. HUGO COHN, Moys, Germany. Filed Mar. 28, 1899. Serial No. 710,817. (No specimens.)

Claim.—1. The process for the manufacture of paper or pasteboard, which consists in treating vegetable fibers with warm caustic lye of 9° Baumé at a temperature of about 100° centigrade, for about two hours in order to ruffle or curl the fibers, washing the fibrous material in hot water, subjecting the mass to the usual beating until it becomes an integral mixture, neutralizing the pulp with muriatic acid spreading it in a film without pressure or suction for the purpose of laying the felted fiber without compressing it; substantially as described.

2. The process for the manufacture of paper or pasteboard, which consists in treating vegetable fibers with warm caustic lye of 9° Baumé at a temperature of about 100° centigrade, for about two hours in order to ruffle or curl the fibers, washing the fibrous material in hot water, subjecting the mass to the usual beating until it becomes an integral mixture, neutralizing the pulp with muriatic acid spreading it in a film without pressure or suction, for the purpose of laying the felted fiber without compressing it, and covering the pulp with a layer or coating consisting of a mixture of about one hundred liters of water, ten kilograms of china-clay and ten kilograms of talcum, and about one hundred liters of water having one and one-half kilograms of quince-seeds boiled therein; substantially as described.

655,851. SHEET-LEADER BLOCK. EDWARD J. F. COLEMAN, Barrington, R. I. Filed Nov. 23, 1899. Serial No. 738,004. (No model.)

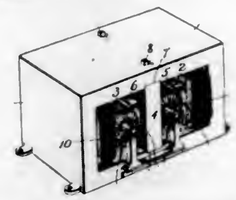


Claim.—1. In a sheet-leader block, the combination with the sheave or block carrying frame and a base-plate adapted to be secured to the deck, of an axially-movable guard-plate secured to said base-plate, and a link connecting said pulley or block frame to the central portion of the guard-plate, whereby the pulley-frame is capable of complete axial movement and also adapted to swing through a semicircular arc, substantially as described.

2. A sheet-leader block, constructed substantially as shown and described, the same consisting of the base-plate member *a* adapted to be secured to the deck, the guard-plate *b*, pivoted to the member *a*, having a pin *p* extending transversely through its upper portion, the link *l* mounted on said pin, and the block or sheave carrying frame *f* loosely coupled to the link, whereby the leader-pulley is capable of movement in any direction through a semicircular arc, the said member *b* also serving to keep the frame *f* from coming in contact with the deck.

655,852. ELECTRIC MOTOR. PATRICK J. COLLINS, Scranton, Pa., assignor to The Collins Electric Vehicle Company, same place. Filed Dec. 1, 1899. Serial No. 738,887. (No model.)

Claim.—1. An electric motor consisting of a hollow field-frame having inwardly-projecting pole-pieces at its opposite sides, a partition extending across the interior of the frame transversely to the pole-pieces and forming part of the magnetic circuit, said partition having pole-pieces opposing the pole-pieces upon the sides, and an armature between each pair of opposing pole-pieces.

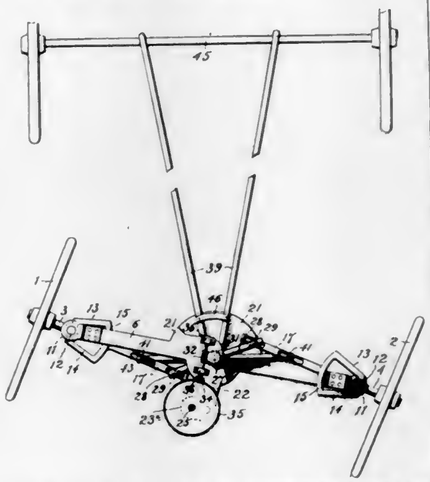


2. In an electric motor, a hollow field-frame having inwardly-projecting pole-pieces at its opposite sides, and a removable partition extending across the interior of the frame transversely to said pole-pieces and forming part of the magnetic circuit, said partition having pole-pieces opposing the pole-pieces upon the sides, and an armature between each pair of opposing pole-pieces.

3. In an electric motor, a hollow field-frame having inwardly-projecting pole-pieces at its opposite sides, said pole-pieces having coils thereon and a removable partition extending across the interior of the frame transversely to said pole-pieces and forming part of the magnetic circuit, said partition having consequent pole-pieces opposing the pole-pieces upon the sides, and an armature between each pair of opposing pole-pieces.

4. In an electric motor, a field-frame having inwardly-projecting pole-pieces at either side and coils thereon, double consequent pole-pieces arranged between the side pole-pieces and armatures arranged between the consequent pole-pieces and each of the side pole-pieces.

655,853. MOTOR-VEHICLE. PATRICK J. COLLINS, Scranton, Pa., assignor to The Collins Electric Vehicle Company, same place. Filed Feb. 15, 1900. Serial No. 5,282. (No model.)



Claim.—1. In a motor-vehicle, the combination with an axle casing or support consisting of two parallel bars united by offset portions near their ends, of a pair of axles journaled in the ends of said casing, each axle having arms extending around the offset portions of the casing, substantially as described.

2. The combination with the axle-casing consisting of two parallel bars united by offset portions near their ends, of a pair of axles pivoted in the opposite ends of said casing, each axle having formed integrally therewith, a trunnion journaled in the opposing bars of the casing and a frame consisting of arms which extend around the offset portions, substantially as described.

3. In a motor-vehicle, the combination with an axle-casing consisting of two parallel bars united by offset portions near their ends, of a pair of axles journaled in the ends of said casing, each axle having a hollow frame interposed between its outer and inner ends, said frame consisting of the arms 13 and 14 and segmental guide-piece 15, and guide-blocks within the casing for said guide-piece substantially as described.

4. In a motor-vehicle, the combination with the body and an axle casing or support in pivotal relation thereto, of axles pivoted to said support, and means controlled by a single steering-lever for turning the axles about their pivotal points and for simultaneously turning the support relatively to the body.

5. In a motor-vehicle, the combination with the body and an axle casing or support in pivotal relation thereto, of axles pivoted to said support, fixed bearings against which said axles are fulcrumed, and means for turning said axles about their pivotal points.

6. In a motor-vehicle, the combination with the body and an axle casing or support in pivotal relation thereto, of axles pivoted to said support, fixed bearings against which said axles are fulcrumed in sliding engagement, and means for turning said axles about their pivotal points.

7. In a motor-vehicle, the combination with the body and an axle casing or support in pivotal relation thereto, of axles pivoted in the ends of said support, means for turning said axles about their pivotal points, and fixed bearings arranged between the inner ends of said axles and their pivotal points against which said axles are fulcrumed.

8. In a motor-vehicle, the combination with a reach secured to the rear axle of the vehicle, of an axle-support pivoted to the forward end of said reach, bearings arranged in fixed relation to said reach on either side of its pivotal point, axles pivoted in the ends of said support and fulcrumed against said bearings, and means for turning said axles about their pivotal points.

9. In a motor-vehicle, the combination with a reach secured to the rear axle of the vehicle, of an axle-support pivoted to the forward end of said reach, a cross-piece carried by said reach, and bearings arranged upon said cross-piece on either side of the pivotal point of the reach, axles pivoted in the ends of said support and fulcrumed against said bearings, and means for turning said axles about their pivotal points.

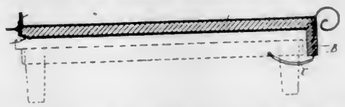
10. In a motor-vehicle, the combination with the body and an axle casing or support in pivotal relation thereto, of axles pivoted to said support, fixed bearings against which said axles are fulcrumed, and means for turning said axles about their pivotal points consisting of a shaft journaled vertically in said support, an arm fixed to said shaft and having its opposite ends in engagement with the inner ends of the axles, a worm-wheel upon said shaft, a worm engaging said wheel, a steering-head and gearing interposed between said head and worm for turning the latter.

11. In a motor-vehicle, the combination with a reach secured to the rear axle of the vehicle, of an axle-support pivoted to the forward end of said reach, a cross-piece carried by said reach, and pins arranged upon said cross-piece on either side of the pivotal point of the reach, axles pivoted in the ends of said support and having slots into which said pins extend, a steering-arm also having pins engaging slots in the axles, and means for turning said steering-arm.

655,854. PROCESS OF DYEING KHAKI. GEORGE COMBER, Knutsford, and JOHN C. CHORLEY, Warrington, England. Filed June 1, 1900. Serial No. 18,772. (No specimens.)

Claim.—The herein-described process for coloring textile fabrics which consists essentially in impregnating the fabrics with a mixture of tar and viscose, and fixing the same by steaming or boiling in concentrated brine and washing and finishing in the usual way.

655,855. KNEADING-BOARD. AMOS A. CUSHMAN, Mansfield, Ohio, assignor, by direct and mesne assignments, of three-fourths to Lorenzo D. Patten, same place, and the Bulter Novelty Company, Butler, Ohio. Filed June 15, 1899. Serial No. 720,699. (No model.)



Claim.—In a kneading-board, the combination of the wooden base, the continuous sheet of metal mounted upon said base, said metal sheet being formed with a guard-roll at the forward end which extends above the plane of the board and provided with a vertical flange at the rear end of the board, a headpiece depending from the under face of the board at its forward end, and a fixed curved spring extending from said headpiece.

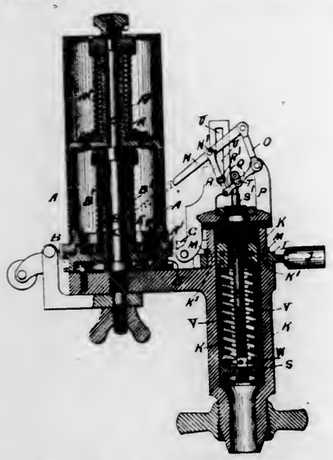
655,856. GARMENT-HOOK. IRVIN P. DOOLITTLE, Toronto, Canada. Filed Nov. 28, 1899. Serial No. 738,585. (No model.)

Claim.—1. A hook having a shank provided with attaching-eyes, a guard-bar arranged transversely between the shank and the bill of the hook and provided at both ends with eyes or attachments which are adapted to be secured to the fabric, and a resilient bar which connects said

guard-bar with the rear portion of the shank of the hook, substantially as set forth.

2. A hook formed of a single length of wire and comprising a shank and a bill formed of two thicknesses of wire, one of the branches of the shank being provided at its rear end with an eye formed of one extremity of the wire, a guard-bar arranged transversely between the shank and the bill of the hook and provided at one end with an eye formed of the other extremity of the wire, and a connecting-bar arranged substantially parallel with the shank and at the side thereof opposite that at which the last-named eye is arranged and having its front end connected with the adjacent end of said guard-bar by a coil or eye and its rear end with the adjacent branch of the hook-shank by a bend forming an eye, substantially as set forth.

655,857. STEAM-ENGINE INDICATOR. LEWIS R. DORAN and ARTHUR TAGGART, Glasgow, Scotland. Filed Mar. 20, 1900. Serial No. 9,435. (No model.)



Claim.—1. An indicator for steam or other engines comprising a cord-drum, an independent paper-carrying drum having a series of teeth thereon and mounted upon the same spindle as the cord-drum, springs controlling these drums, a pencil-carrying arm arranged in proximity to the paper-drum and forming one element of a parallel motion consisting of a link jointed to said pencil-arm and to a stationary standard, a pair of toggle-links connected to the standard and to the pencil-arm, and also connected by a short link to the piston-rod and a detent or pawl centered on a movable collar or sleeve capable of being rotated to bring said detent into engagement with a series of teeth on the paper-drum, substantially as and for the purpose set forth.

2. In an indicator for steam or other engines, the combination with a paper-drum having a series of teeth thereon, and mounted on a central spindle, of a spring for controlling said drum, a stud or pin secured in the paper-drum, a cord-drum independent of the paper-drum, a spring for controlling the cord-drum and a pin or stud therein in engagement with the paper-drum, so that the paper and cord drums normally rotate together, a detent or pawl adapted to engage the teeth on the paper-drum, a movable collar or sleeve on which said detent or pawl is centered capable of being rotated to bring the detent into engagement with the teeth upon the paper-carrying drum, to turn said drum to such a position that its stud is held out of the path of the pin on the cord-drum, and a spring bearing on said pawl and normally holding it out of engagement with the teeth, substantially as and for the purpose set forth.

3. In an indicator for steam or other engines, the combination with a rotating paper-drum of a parallel motion consisting of a pencil-carrying arm, a link connecting said pencil-arm to a stationary standard, a pair of toggle-links connected to said standard and to the pencil-arm, a guide-pin on one of the toggle-links, a stationary guide in which said pin moves, and a short link connected to the other toggle-link and to the piston-rod, substantially as and for the purpose set forth.

4. In an indicator for steam or other engines, the combination with a paper-drum having a series of teeth thereon, of a detent or pawl, a movable collar or sleeve on which said detent or pawl is centered capable of being rotated to bring the detent into engagement with the teeth upon the paper-carrying drum, and a spring bearing on said pawl and normally holding it out of engagement with the teeth, substantially as and for the purpose set forth.

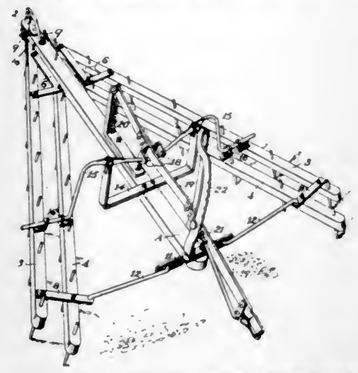
655,858. HITCHING DEVICE. SAMUEL F. ETTINGER, Little Rock, Ark. Filed Mar. 15, 1900. Serial No. 8,818. (No model.)



Claim.—1. A device of the class described, comprising a sleeve having its opposite ends open, retaining-flanges arranged along the inner end edges of one side of said sleeve, a bowed spring loosely housed within the sleeve, and adapted to clamp a strap passed through the same, said spring having its ends resting upon the side and arranged between the said flanges whereby it is retained in place, and a hook arranged upon one side of the sleeve, substantially as described.

2. In a device of the class described, the combination with a sleeve, of a spring-hook arranged upon one side of the sleeve, and having an outturned terminal lip portion, one portion of said hook being in juxtaposition to the side of the sleeve, and a loop adapted to be sprung upon the hook, said loop being of a relatively-narrow width whereby a straight pull thereon toward the mouth of the hook will cause a binding engagement thereof with the side of the sleeve and with the terminal lip portion of the hook, substantially as described.

655,859. VINEYARD-HARROW. JOHN F. FAY, Geyserville, Cal., assignor of one-half to William S. Vaughan, same place. Filed Mar. 28, 1900. Serial No. 10,481. (No model.)



Claim.—1. The combination in a harrow of a single longitudinally-disposed draft-beam, parallel tooth-carrying beams having a single hinge connection with the front of the draft-beam, said tooth-beams diverging rearwardly from the point of attachment, link connections between the rear of the beams and the rear of the draft-beam, and a lever and mechanism connecting with the tooth-beams whereby the latter may be raised or depressed, and a locking mechanism therefor.

2. In a harrow, a centrally-disposed draft-beam, parallel tooth-beams secured together in pairs upon opposite sides of the draft-beam, a single loose connection between the front of said beams and the front of the draft-beam, said tooth-beams diverging rearwardly from the draft-beam, a bar secured to the rear of the draft-beam, links loosely connecting said bar with the rear of the tooth-beams, a standard mounted upon the draft-beam having a lever fulcrumed thereto and extending rearwardly, a yoke fixed to the draft-beam, levers fulcrumed therein having the outer ends loosely connected with the tooth-beams, and loose connections between the inner end and the lever whereby the tooth-beams may be raised or depressed.

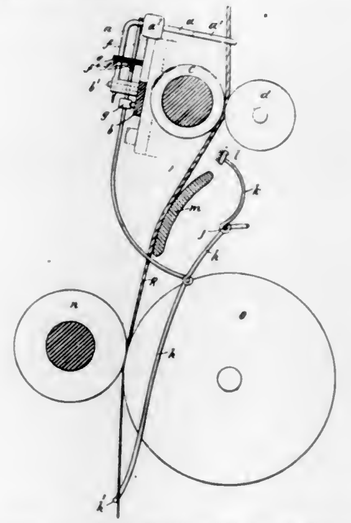
3. The combination in a harrow of a longitudinally-disposed draft-beam, parallel tooth-beams secured together in pairs having the front ends loosely connected with the front of the draft-beam, and the rear ends diverging therefrom, links by which the rear ends of said tooth-beams are loosely connected with the rear of the draft-beam, a yoke fixed upon the draft-beam, bent levers fulcrumed in said yoke with the outer ends slidable in brackets which are secured to the tooth-beams, a lever fulcrumed in front of said yoke, extending rearwardly, said lever having lugs or brackets upon the sides with holes through which the inner ends of the transverse levers are slidable, a vertically-disposed rack fixed upon the rear of the draft-beam, and a spring-pressed pawl carried by the handle adapted to engage with the rack whereby the harrow-frames may be tilted and maintained at any angle with relation to the draft-beam.

4. In a harrow, a central longitudinal draft-beam, divergent tooth-beams loosely connected with the draft-beam at front and rear, a lever, intermediate connections and locking-arms whereby the tooth-beams may be tilted and rigidly locked with relation to the draft-beam, and angle-iron plates fixed to the front ends of the tooth-frames and transverse plates across the rear ends whereby the parallelism of said frames is maintained.

5. The combination of the draft-bar of a harrow with means for connecting the parallel divergent tooth-frames of a harrow, consisting of metallic plates extending transversely across the rear ends of said beams and bolted thereto, angle-plates, the outer ends of which are bolted to the outer tooth-frame, and the angles are bolted to the inner tooth-frame so that the longer arms of said plates are approximately parallel with the draft-bar, and loose connections whereby each pair of beams has a single connection with the draft-bar at each end.

6. In a harrow, a central longitudinal beam with draft attachments, a plurality of parallel tooth-carrying beams located upon each side of the draft-beam and diverging from front to rear with relation thereto, angle-plates by which they are rigidly secured together at the front, and transverse uniting-plates at the rear, loose link connections between the front and rear ends of the tooth-beams and the draft-bar, a lever fulcrumed at the rear of the draft-bar connections between the tooth-beams and said lever whereby the tooth-beams may be tilted to stand at an angle with the draft-beam and means for locking said beams rigidly with relation to each other.

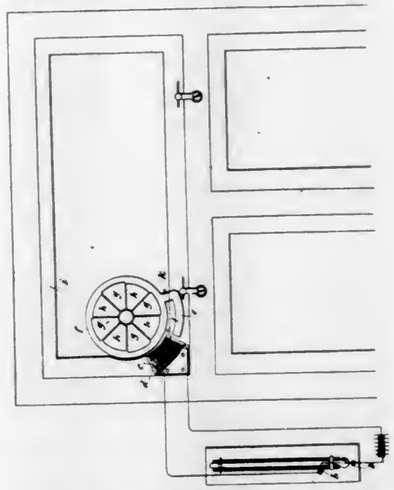
655,860. ROVE-STOP MECHANISM. JAMES FRASER, Dundee, and JAMES G. FRASER and HUGH WALKER, Aberdeen, Scotland. Filed Mar. 29, 1900. Serial No. 10,647. (No model.)



Claim.—1. In combination, a weighted tumbling throw-out lever, a sustaining or releasing trigger-rod engaging the throw-out lever, a hackle-gill, a lever carrying the same, said lever having an end h' to engage the rove and hold the hackle-gill out of contact with the rove and a connection between said hackle-gill lever and the trigger whereby when the rove breaks the hackle-gill lever will operate to withdraw the trigger and move the hackle-gill into the path of the rove, substantially as described.

2. In combination, a weighted tumbling throw-out lever, a sustaining or releasing trigger-rod engaging the throw-out lever, a hackle-gill, a lever carrying the same, said lever having an end h' to engage the rove and hold the hackle-gill out of contact with the rove and a connection between said hackle-gill lever and the trigger whereby when the rove breaks the hackle-gill lever will operate to withdraw the trigger and move the hackle-gill into the path of the rove, and a spring f^4 carried by the trigger to hold the tumbling-lever in position while the parts are being reset, substantially as described.

655,861. VENTILATOR. MAX GAUL, Frankfort-on-the-Main, Germany. Filed Sept. 23, 1899. Serial No. 731,459. (No model.)



Claim.—In a ventilator, the combination with a thermostat of a rotatable disk ventilator, a solenoid arranged concentric thereto and a core carried by said disk arranged concentric to the periphery of said disk, substantially as described.

655,862. GAME-SCORING APPARATUS. ANNA M. GOULDING, New York, N. Y. Filed May 4, 1900. Serial No. 15,540. (No model.)



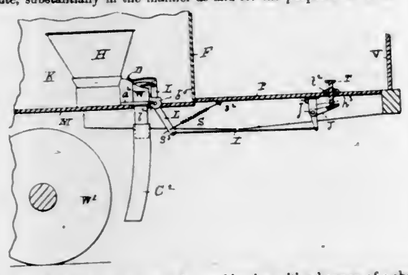
Claim.—A game-scoring apparatus comprising a coupon sheet or tablet having two series of consecutively-numbered gummed detachable coupons, and twice as many score-cards as there are series of coupons said score-cards being differently designated, each of the detachable coupons being formed to be applied to one of the score-card spaces, each series of coupons having the same designation as one of the score-cards.

655,863. SAND-BOX FOR CARS. ALBERT W. HAM, Lansingburg, N. Y., assignor to the Trojan Button Fastener Company, Incorporated, Troy, N. Y. Filed Feb. 26, 1900. Serial No. 6,447. (No model.)

Claim.—1. In a sand-box for cars the combination with a hopper of a distributing-chamber arranged on the side of the hopper, and at its bottom connecting therewith; a chute arranged in the bottom of said chamber and a stop-plate operated to descend into said sand, where passing from the hopper into said chamber to arrest the flow of the sand, and to rise therefrom, to permit the passage of the sand into the distributing-chamber, substantially as shown and described.

2. In a sand-box for cars the combination with a hopper; of a chamber arranged upon one side of the hopper, and connected therewith by a passage-way through which sand may flow into said chamber; a discharge-chute leading from said chamber-bottom; and a stop-plate provided with means substantially as described, whereby said stop-plate may be operated to descend into the sand in said chamber to prevent its flow to the

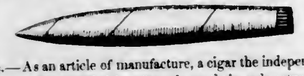
discharge-chute, or be raised from out of the sand in the chamber to permit of its passage from said hopper through said chamber to the discharge-chute, substantially in the manner as and for the purposes set forth.



3. In a sand-box for cars, the combination with a hopper, of a chamber formed upon one side of the hopper, and connected therewith by an opening through which sand may flow from said hopper into said chamber; an agitator operated to move back and forth on said hopper-bottom, and when moving inwardly to underrun the sand, and when moving outwardly to force sand from the hopper into the chamber; and a stop-plate actuated to descend into the sand, when said agitator is moving inwardly, and to move out the sand when the agitator is moving outwardly, substantially as, and for the purposes set forth.

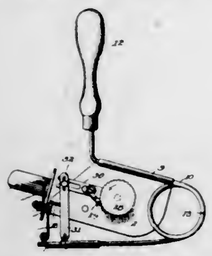
4. In a sand-box, the combination with the hopper H, constructed to have one of its sides formed by the plate E^2, so as to produce the bottom-opening O^2, of the chamber C, connected thereto and having the discharge-duct C^2; the bell-crank lever L; the stop-plate D, mounted upon said bell-crank lever; and means substantially as described, whereby said bell-crank lever may be operated to actuate said stop-plate substantially as, and for the purposes set forth.

655,864. **SELF-LIGHTING CIGAR.** BENNO HEIMANN, San Francisco, Cal., assignor of one-half to Isaac Dannenbaum, same place. Filed Mar. 6, 1900. Serial No. 7,461. (No model.)



Claim.—As an article of manufacture, a cigar the independent leaves of which, before being rolled into form, have their ends saturated with a composition including chlorate of potash, lampblack, pentasulphide of antimony, charcoal and gelatine.

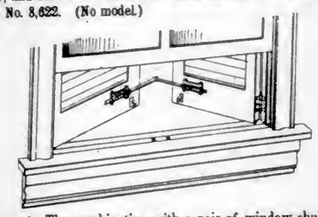
655,865. **AUTOMATIC STAMP-AFFIXER.** HOUGHTON HERRICK, Boonville, N. Y. Filed Dec. 9, 1899. Serial No. 739,825. (No model.)



Claim.—1. In a stamp-affixing device, the combination with a base-plate, of parallel springs secured thereto and formed with coils; a casing secured to said springs; a handle connecting the upper ends of said springs; a moistener within said casing; a wetting-roller supported revolubly transversely of the casing; a feed-roller adapted to be revolved by the wetting-roller; gearing for revolving the wetting-roller; and means for actuating said gearing, comprising a lever carrying a pawl, and having a link connection with the base-plate.

2. In a stamp-affixing machine, the combination with a base-plate; of springs secured thereto formed with coils, and bent to form parallel arms having converging ends; a handle secured to said ends; a casing suspended from said parallel arms; a transverse plate within the casing to form a moistener-compartment; a wetting-roller revolubly supported within the casing; a feed-roller driven by the wetting-roller; gearing for driving the wetting-roller; and actuating means for the gearing.

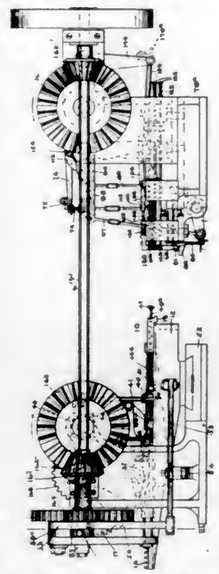
655,866. **SHUTTER BOWER AND FASTENER.** HARRY HEWES, Darby, and SAMUEL L. TROUPE, Philadelphia, Pa. Filed Mar. 14, 1900. Serial No. 8,622. (No model.)



Claim.—1. The combination with a pair of window-shutters, of a bower attached to the same, comprising two non-revoluble, slidable bolts, one of said bolts having an eye, the axis of which is maintained in a horizontal position, and the other provided with an outwardly-pointing, semicircular hook having its free end projecting at a right angle to the length of the bolt, upon which end the eye of the other bolt will pivotally engage when the shutters are being bowed, the eyebolt being free to be disengaged from said hook when the shutters are closed, whereby the shutter carrying the eyebolt is free to be opened from its closed position, substantially as described.

2. A shutter bower and fastener, comprising longitudinally-slidable, non-revoluble, engaging bolts, each provided with a series of notches and an operating handle or knob, one of said bolts being provided with an eye at its outer end having its axis maintained in a horizontal position, and the other of said bolts provided with a semicircular, outwardly-pointing hook having its free end projecting at a right angle to the length of the bolt, upon which hook the eye will engage when the shutters to which the bolts are attached are being bowed, the construction being such that said eye may be disengaged from said hook when the bolts are in line with each other, as when the shutters are closed, but cannot be disengaged at any other angle, guiding-housings, each of said housings being provided with a longitudinal slot in its wall through which the handle or knob operates, the rear wall of each of said slots being adapted to engage any one of the notches in its respective bolt, and a flat spring beneath each of said bolts, whereby the bolts are normally pressed to cause said rear walls to engage the notches, and thus hold the bolts in any desired longitudinal adjustment, substantially as described.

655,867. **KNOTTER.** WILLIAM HENDLEY, Hoboken, N. J., and JOSEPH W. HARDING, New York, N. Y., assignors, by mesne assignments, to the Diamond Wood Company, of New Jersey. Filed Dec. 2, 1897. Serial No. 660,479. (No model.)



Claim.—1. A device of the kind described, comprising a laterally and longitudinally movable cord-carrier, means for moving the carrier, and

means for receiving the cord from the carrier for folding and completing the knot, substantially as described.

2. A device of the kind described, comprising a cord-carrier, means for operating the carrier, a gripper, and means carried by the carrier adapted to guide the free end of the cord into the jaws of the gripper when the carrier is moved forward, substantially as described.

3. A knotter, comprising a two-way reciprocating cord-carrier, its two paths being at right angles to each other, a gripper adapted to receive the cord from the carrier, a nipper adapted to receive the cord from the gripper, and means for operating the nipper and gripper.

4. A knotter, comprising a two-way reciprocating cord-carrier, its two paths being at right angles to each other, means for operating the carrier, a gripper adapted to receive the cord from the carrier, a needle adapted to engage and rigidly hold a portion of the cord, fingers for engaging a portion of the cord when the carrier is moved laterally in one direction, a nipper adapted to receive the cord from the gripper, and means for operating the several parts.

5. In a device of the kind described, the combination with a movable carrier, of an independently-movable guide-bar arranged on the carrier and adapted to guide the end of the cord during the movement of said carrier, and means for operating the guide-bar, substantially as described.

6. In a device of the kind described, the combination of the movable cord-carrier, a guide-bar arranged on the cord-carrier, a rod secured to the guide-bar and having a bearing on the carrier, a block or yoke secured to the rod, and a pin or projection arranged to engage the block or yoke so as to move the guide-bar independently of the carrier, substantially as described.

7. In a device of the kind described, the combination with the movable cord-carrier, of a guide-bar, a rod on which the guide-bar is arranged, an arm or link yieldingly held to said rod, a lever and mechanism for operating the lever adapted to force the rod and guide-bar inwardly, substantially as described.

8. A knotter, comprising a cord-carrier, means for operating the carrier, a guide-bar adapted to move independently of the carrier, a gripper, means for folding and doubling the loop upon itself, a nipper adapted to receive the cord from the gripper, means for operating the nipper and the gripper, and mechanism for further advancing the guide-bar prior to the engagement of the free end of the cord by the nipper to start the bend of the loop while the knot is being formed, substantially as described.

9. In a device of the kind described, the combination with the movable cord-carrier having clamping-jaws thereon, of a guide-bar, rods secured to the guide-bar and movable thereon, means, as the yoke and pin or projection, for operating the guide-bar in one direction independently of the carrier, a spring arranged on one of the rods, an arm yieldingly held to the other rod and having pins thereon, an oscillatory lever and mechanism for operating the same so as to engage the yielding arm and impart further movement to the guide-bar, substantially as described.

10. In a device of the kind described, a cord-carrier, comprising a slide having a jaw fixed thereto, a movable jaw pivoted to the slide between which and the fixed jaw a cord is adapted to be clamped, a cam fixed to the movable jaw at the pivot thereof, a cam-bar adapted to operate the cam in one direction, and means for operating the cam-bar, substantially as described.

11. In a device of the kind described, the combination with the movable cord-carrier having a fixed jaw and a movable jaw thereon, of a cam rotatable with the movable jaw, a sliding cam-bar adapted to engage the cam and move the same in one direction, a rod secured to the sliding cam-bar, a link connected to the rod, a rocking block pivoted to the slide, and means for operating the rocking block so as to force the rod and sliding cam-bar in either direction, substantially as described.

12. In a knotter, the combination with the movable cord-carrier having a fixed and a movable jaw, of a cam secured so as to move with the movable jaw, a sliding cam-bar adapted to engage the cam and move the same in one direction, a rocking block, a toggle-joint connection between said block and the sliding cam-bar, a rocking arm connected to the rocking block, and means for operating the rocking block, substantially as described.

13. In a device of the kind described, the combination with the movable cord-carrier, of a retaining bar or bolt movable thereon and adapted to be thrown beneath the lower side of the loop, an arm connected to the retaining-bar, a rod to which the arm is secured, a shaft or stud secured to the rod, and a wheel mounted on the shaft and adapted to oscillate or rotate the rod in its bearings so as to operate the retaining-bar, substantially as described.

14. In a device of the kind described, the combination with the movable cord-carrier, of cutting mechanism mounted upon and movable with the carrier, and means for operating the cutting mechanism, said mechanism comprising a movable member, and a guide-bar for the cord forming the fixed member thereof, substantially as described.

15. In a device of the kind described, the combination with the cord-carrier having suitable clamping-jaws thereon, a guide-bar arranged on the carrier and forming a fixed member of the cutter, a movable cutter blade or knife arranged on the guide-head, a shaft or rod secured to the movable cutter-blade, and means for rotating the shaft, substantially as described.

16. The combination with the movable cord-carrier, of a cutter-blade arranged so as to move with the carrier, a shaft or rod to which the cutter-blade is secured, links secured to the shaft or rod, a bar connected to the links, and an arm and mechanism for operating the same so as to move the bar and oscillate the rod in its bearings so as to impart a shearing action to the cutter-blade, substantially as described.

17. The combination of a movable cord-carrier, a support in which the carrier is mounted, a lever pivoted intermediate its ends and connected at one end to the support, a link connected to the other end of the lever, an oscillating lever connected to one end of the link, and cams for operating the lever in both directions so as to impart lateral movement to the cord-carrier and its support, substantially as described.

18. In a device of the kind described, a gripper comprising two members between which the cord is adapted to be held, a longitudinally-movable rod adapted to force the gripper inwardly, means for operating the rod, a shaft or stud to which the gripper is secured, a pinion or segmental gear rotatable with the shaft, and a rack in mesh with the pinion or segmental gear, substantially as described.

19. In a device of the kind described, a gripper, comprising two members between which the cord is adapted to be held, a longitudinally-movable rod, to which the gripper is secured so as to move therewith, a shaft to which the gripper is secured, a slide in which the shaft is journaled, and means for imparting a vertical movement to the slide and the gripper, substantially as described.

20. In a device of the kind described, a gripper comprising two members between which the cord is adapted to be held, a shaft to which the gripper is secured, a pinion or gear secured to the shaft, a rack adapted to engage the teeth of the gear, a movable rod, a bar secured to said rod, a slide vertically movable in the bar, means for moving the rod longitudinally, and means for imparting a vertical movement to the slide and the gripper, substantially as described.

21. In a knotter, the combination with the head, of a needle-bar slidingly held in said head, a needle carried by the needle-bar, a bracket projecting outwardly from said bar, and means for operating the needle so as to wedge the cord when pierced by the needle between the same and the bracket, substantially as described.

22. In a device of the kind described, the combination of the head, a needle-bar, a needle held on said bar, means for operating the needle transversely of the bar in one direction, a yoke secured to the needle-bar, a link connected to the yoke, an oscillating arm or lever connected to the link, and means for operating the oscillatory lever backward and forward, substantially as described.

23. In a device of the kind described, the combination with the needle-bar, and the needle movable transversely thereof, of a yoke secured to the bar, rods slidingly arranged in the yoke so as to be moved in one direction thereby, means for holding the rods when in a predetermined position so that the needle-bar may retire independently of said rods, means for releasing the rods, and springs arranged around the rods for retiring the same when released, substantially as described.

24. In a device of the kind described, the combination with the head, of slidable rods having folding fingers thereon arranged in the head, a yoke slidingly arranged on the rods, means for moving the yoke back and forth, springs arranged on the rods between the ends thereof and the yoke, a plate securing the rods together, a pawl having a portion thereof adapted to be engaged by the plate on the rods when forced forward, and means carried by the pawl arranged in the path of movement of the yoke so as to release the pawl from engagement with the plates on the rods, substantially as described.

25. In a device of the kind described, the combination with the head, of the needle-bar arranged in the head, a needle movable transversely in the needle-bar, a cam engaging a portion of the needle, a rock-shaft on which the cam is arranged, a sleeve having a pin-and-slot connection with the shaft, an arm projecting outwardly from the sleeve, and means for operating the arm so as to rock the shaft and move the needle in the needle-bar, substantially as described.

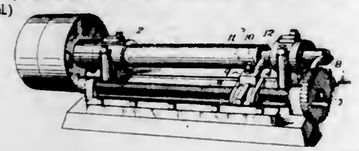
26. In a device of the kind described, the combination with the movable slide, a nipper carried by the slide and comprising two members, a cam actuating the movable member or members of the nipper, a shaft on which the cam is arranged, and collars carried on the shaft and adapted to engage fixtures on the head to rock the shaft in its bearings at predetermined points, substantially as described.

27. In a device of the kind described, the combination with the movable slide, of a nipper comprising two members pivotally arranged on the slide and normally retained in an open position by a spring, a cam adapted to force the jaws toward each other to clamp the cord, a shaft on which the cam is arranged, a wheel or disk arranged on the head, a col-

lar secured to the shaft and having a projection adapted to engage the disk or wheel for operating the cam and shaft in one direction, a cam-block arranged on the head, a second collar provided with a projection adapted to engage said cam-block for operating the shaft in the opposite direction, and mechanism for operating the slide, substantially as described.

655,868. APPARATUS FOR CUTTING METAL SHAVINGS.

AUGUST HOLTGEN, San Francisco, Cal., assignor of one-half to William E. Hampton, same place. Filed May 24, 1900. Serial No. 17,793. (No model.)



Claim.—1. An apparatus for producing metal shavings, consisting of an arbor upon which a sheet of metal is rolled and secured, a cutting-tool adapted to contact with the end of the roll thus formed, and means including a feed-screw having a ratchet and a connection from the arbor engaging the ratchet for feeding the tool forward at each revolution of the arbor.

2. An apparatus for cutting metal shavings of uniform thickness consisting of a journaled arbor having a keyway along its surface, a key by which the edge of the sheet of metal is locked to the arbor, said sheet being coiled upon itself and secured, a cutting-tool adapted to contact with the end of the coiled sheet, and a feed mechanism including a feed-screw having a ratchet and a connection from the arbor engaging the ratchet, by which the tool is advanced at each revolution of the arbor.

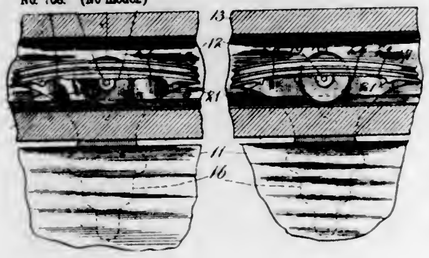
3. An apparatus for cutting shavings from sheets of metal consisting of a journaled arbor, a means whereby it is rotated, a keyway formed in one side of the arbor, a key fitting therein so as to lock one edge of the sheet of metal to the arbor, said sheet being coiled upon itself and having the outer end secured so as to form a solid roll, a cutting-tool, a holder in which said tool is adjustably fixed, with its end close to the arbor, a revoluble screw engaging with threads in the tool-holder, and means including a feed-screw having a ratchet and a pawl connection from the arbor engaging said ratchet by which said screw is revolved to advance the holder and tool into contact with the end of the metal roll at each revolution of the arbor.

4. An apparatus for producing metal shavings of uniform size consisting of a journaled revoluble arbor having a keyway and key by which one edge of the sheet of metal is secured to the arbor, said sheet being coiled about the arbor and having its opposite edge fastened so as to form a solid roll, a screw journaled parallel with the arbor, a tool-holder having threads engaging the screw and means for securing the tool so as to contact with the end of the roll, a ratchet-wheel fixed upon the screw-shaft and a pawl eccentrically mounted upon the arbor and engaging the teeth of the ratchet to advance it with each revolution of the arbor.

5. An apparatus for cutting sheet metal into shavings of uniform thickness consisting of a journaled revoluble arbor, means for securing one end of the sheet to the arbor, said sheet being coiled upon itself and the outer edge fastened, a screw journaled and revoluble parallel with the arbor having a ratchet-wheel upon its outer end, a pawl mounted upon a pin fixed eccentrically in the end of the arbor whereby the pawl is moved to advance the ratchet-wheel at each revolution of the arbor, a tool-holder consisting of a lower slidably-guided plain portion, and an upper portion hinged thereto having screw-threads engaging those of the screw when closed, said upper section being adapted to receive the tool, with means for adjusting and locking the latter thereto.

655,869. DOOR-HANGER.

JAMES M. HOPKINS, Chicago, Ill., assignor to the Q. & H. Company, of Illinois. Filed Jan. 3, 1900. Serial No. 708. (No model.)



Claim.—1. In a hanger for car-doors, in combination, a longitudinally and vertically slotted rider-bar having its bearing edges arched and provided with gear-racks, and a wheel adapted to enter the slot of the rider-bar and having a toothed axle upon which the rider-bar is supported.

2. In a hanger for car-doors, in combination, a longitudinally and vertically slotted rider-bar having its bearing edges provided with gear-racks through a portion of their length, and a wheel adapted to enter the slot of the rider-bar and having a toothed axle upon which the rider-bar is supported.

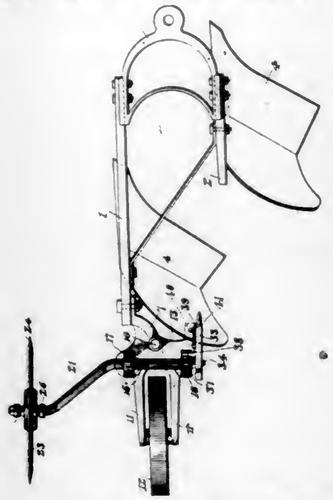
3. In a hanger for car-doors, in combination, a longitudinally and vertically slotted rider-bar having its bearing edges provided with gear-racks through a portion of their length, and having plane portions at each end of each rack, and a wheel adapted to enter the slot of the rider-bar and having a toothed axle upon which the rider-bar is supported.

4. In a hanger for car-doors, in combination, a longitudinally and vertically slotted rider-bar having its bearing edges provided with gear-racks through a portion of their length, and having plane portions at each end of each rack and a stop-lug at the outer end of each of such plane portions, and a wheel adapted to enter the slot of the rider-bar and having a toothed axle upon which the rider-bar is supported.

5. In a hanger for car-doors, in combination, a longitudinally and vertically slotted rider-bar having its bearing edges arched and provided with gear-racks through a portion of their length, and a wheel adapted to enter the slot of the rider-bar and having a toothed axle upon which the rider-bar is supported.

655,870. PLOW ATTACHMENT.

AMBROSE F. JACKSON, Rock Island, Ill. Filed Nov. 24, 1899. Serial No. 738,189. (No model.)



Claim.—1. In a plow attachment, the combination with the machine-frame carrying the plow or plows, of a rotary guide-cutter arranged at one side of the path of the plow or plows, means for setting and holding the cutter at an angle to the plane of movement of the machine-frame, and means for adjusting the cutter in a vertical direction, substantially as described.

2. In a plow attachment, the combination with the machine-frame carrying the plow or plows, of a rotary guide-cutter arranged at one side of the path of the plow or plows, and beyond the landside portion or portions thereof, and means for setting and holding the cutter at an angle to the plane of movement of the machine-frame, substantially as described.

3. The combination with the machine-frame, of a guide-cutter, an axle for the cutter, and bearings for said axle, one of the bearings being swiveled and the other bodily adjustable, whereby the angle of the cutter with respect to the path of movement of the machine may be adjusted and the adjustment maintained, substantially as specified.

4. The combination with the machine-frame, of a guide-cutter, an axle for the cutter having a crank-arm on which the cutter is journaled, bearings for said axle, one of which is swiveled and the other bodily adjustable, and means for rocking said axle, substantially as described.

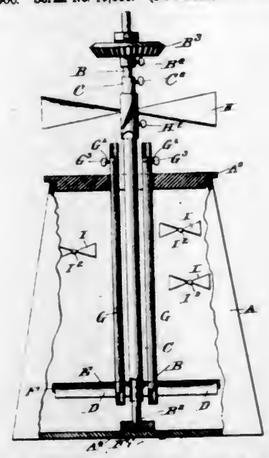
5. The combination with the machine-frame, of a guide-cutter, an axle for the cutter having a crank-arm extension on which the cutter is journaled, bearings for said axle one of which is swiveled and the other bodily adjustable, and an operating-lever fulcrumed on one of said bearings, substantially as and for the purpose specified.

6. The combination with the machine-frame, of a guide-cutter, an axle for the cutter, a bracket having a slot, a bearing having a swiveled connection with said bracket, a second bearing having a stem adjustable in said slot, and means for clamping and holding the stem of said bearing, substantially as specified.

7. The combination with the machine-frame, of a bracket, a cutter-axle mounted in bearings thereon, a guide-cutter on said axle, and a brace-ear on the bracket adapted to connect with the moldboard of an adjacent plow, substantially as specified.

655,871. CHURN.

ABNER B. JOHNSON, Springfield, Mo. Filed June 4, 1900. Serial No. 19,068. (No model.)



Claim.—The combination of a churn, A, having a bearing, A^2, and a revolving dasher-rod, B, with a sleeve C, having dashers D, a disk E, with a rim, F, air-tubes G, having dampers G^2, a fan-wheel H, and fans, I, all substantially as and for the purpose specified.

655,872. BOTTLE.

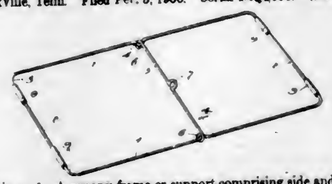
JACOB T. JOHNSON, Knoxville, Tenn. Filed Sept. 15, 1899. Serial No. 730,604. (No model.)



Claim.—The combination of a receptacle having a cylindrical neck practically of the same diameter throughout its length provided with a smooth upper portion and having a threaded lower portion, the threads slightly projecting beyond the plane of the face of the smooth portion and a practically-cylindrical yielding cap-closure having an elastic engaging face and its threaded surface adapted to engage liquid-tight the smooth upper portion after having engaged the lower threaded portion, substantially as and for the purpose described.

655,873. CANOPY FRAME OR SUPPORT.

JACOB T. JOHNSON, Knoxville, Tenn. Filed Feb. 5, 1900. Serial No. 4,056. (No model.)



Claim.—1. A canopy frame or support comprising side and end rods detachably connected, the side rods being provided with intermediate seats and a central cross-rod for suspending the frame or support having its terminals removably attached to said seats formed in the side rods.

2. A canopy frame or support comprising side and end bars detachably connected, the side bars having inwardly-deflected seats formed therein, and a cross suspending-rod having looped terminals removably fitted in the said seats and slidable on the said side bars.

3. A canopy frame or support comprising side rods having seats midway of the length of the same and inward angularly-bent extremities, end rods removably interposed between the said bent extremities and connected to the latter, and a cross suspending-rod having eyes at the opposite terminals adapted to be slipped over the side rods to and from the seats and normally fitted snugly in the latter.

4. A canopy frame or support comprising side rods having seats midway the length thereof in the form of depending inwardly-directed oblique bends, end rods removably connected to said side rods, and a suspending cross-rod having its opposite terminals removably fitted in the said seats.

5. A canopy frame or support comprising side rods having angularly-bent extremities and central depending inwardly-deflected oblique bends to form seats, end rods removably interposed between the angularly-bent extremities of the side rods, and a suspending cross-rod having opposite terminal eyes removably fitted in the said seats.

655,874. CANOPY-SUPPORT.

JACOB T. JOHNSON, Knoxville, Tenn. Filed Mar. 16, 1900. Serial No. 8,915. (No model.)



Claim.—1. In a canopy-frame the combination of a bracket having a core, a canopy-supporting arm having a rear continuous angular extremity removably and rotatably mounted in the said core, a coiled spring surrounding the core and having one portion thereof connected to the arm to automatically elevate the latter, the said parts being duplicated on opposite sides of the frame, means for connecting the free extremities of the said arms, and a rod extending from one core to the other.

2. In a canopy-frame the combination of opposite duplicate parts each comprising a core having a bracket connected thereto and provided with a guard or stop at one extremity, a canopy-supporting arm having its rear extremities removably and rotatably mounted in the said core, and a coiled spring surrounding the core and connected to the arm to automatically elevate the latter.

3. In a canopy-frame, the combination of a support having a bracket attachment at each side of the frame, a canopy-supporting arm having a rear extremity removably and rotatably mounted in each support, a connection between the opposite supports, and a resilient coil surrounding and having bearing on a portion of each support and connected to the adjacent arm, both arms being separably united at their outer free extremities.

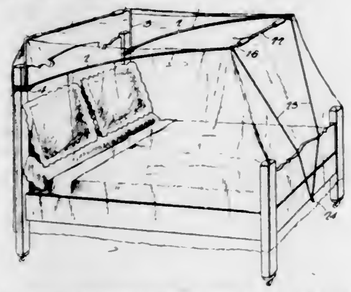
4. A canopy-frame comprising opposite duplicate members separably connected at their free extremities and each comprising a cylindrical support with a bore therethrough and a bracket, a canopy-supporting arm having a rear angularly-bent extremity removably and rotatably mounted in the said support, and a coiled resilient device surrounding the said support and having one terminal attached to the arm to automatically raise the latter, the said support having a stop device for limiting the movement of the arm in both a vertical and horizontal plane and also in a lateral direction.

655,875. CANOPY-FRAME.

JACOB T. JOHNSON, Knoxville, Tenn. Filed Mar. 16, 1900. Serial No. 8,916. (No model.)

Claim.—1. A canopy-frame comprising opposite members, each of which consists of a headboard-arm and a canopy-supporting arm with an intermediate spring-coil and a bracket, both arms being continuous with opposite portions of the coil.

2. A canopy-frame having a member comprising a headboard-arm and a canopy-supporting arm with a coil intermediate of the same, both arms being continuous with opposite portions of the coil.



3. A canopy-frame comprising two members, each of which is composed of a headboard-arm, a canopy-supporting arm and a bracket and coil at an intermediate point relatively to and having its opposite portions continuous with the said arms and all of integral construction, the coil being formed around a portion of the bracket.

4. A canopy-frame comprising opposite members consisting in each instance of a headboard-arm and a canopy-supporting arm with an intermediate spring-coil and bracket, all of the parts of each member being of integral instruction and the free extremities of the arms inturned, the said arms being continuous with opposite portions of the coil, and connecting devices removably attached to the free extremities of the arms.

5. A canopy-frame comprising opposite members each composed of a canopy-supporting arm, a headboard-arm and an intermediate coil continuous with both arms, and a combined buffer and core within the coil.

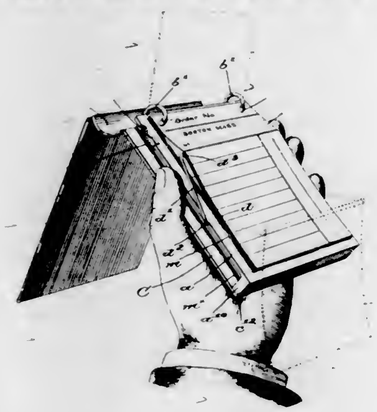
6. In a canopy-frame, the combination of opposite members each comprising a canopy-supporting arm, a headboard-arm, a spring-coil intermediate of the arms and continuous therewith and a bracket forming a part of the coil and arms, buffer devices for the said coils, and connecting devices for the free extremities of the opposite arms.

7. A canopy-frame comprising opposite members each having a canopy-supporting arm, a headboard-arm, a bracket and a coil of continuous or integral construction, one part of the bracket being continued into the headboard-arm and the other coiled about the first-named part and continued into the canopy-supporting arm.

8. A canopy-frame comprising opposite parts which are separably connected and each composed of a headboard-arm, a canopy-supporting arm, an intermediate spring-coil and a bracket all of continuous or integral construction, the bracket having an angular projection formed by one part and continued into the headboard-arm and around which the other part is coiled and continued into the canopy-supporting arm.

9. A canopy-frame having a member comprising a supporting-arm integrally formed with a coil, a part of the material being projected through the coil to serve as a bearing and support for the same, and a headboard-arm continuous with the said projected part of the material.

655,876. MANIFOLDING SALES-BOOK. DENNIS B. KEARNEY Keene, N. H. Filed Dec. 22, 1899. Serial No. 741,226. (No model.)



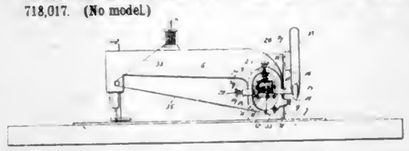
Claim.—1. In a device of the described character, a support, a superposed series of leaves detachably connected at one edge therewith, means to connect the leaves and to guide them to the under side of the support, a transfer-sheet operatively connected with the support and adapted to be temporarily inserted between the top and second leaves of the series, to record upon the latter matter inscribed upon the top leaf, the top leaf being thereafter detached from the support and the duplicate or record leaf turned under it, and a cover connected to the under side of the support at its end adjacent the free ends of the leaves, a portion of the cover protecting the turned-under leaves between it and the under side of the support when the device is in use.

2. In a device of the described character, a support, a series of leaves adapted to be superposed thereon, connected curved holding prongs pivotally mounted on the support, and extending around an edge thereof from one to the other side, to pass through the leaves near one edge thereof, connecting them with the support and guiding them when turned from one to the other side of the latter, keepers on the support, for the free ends of the prongs, and a catch pivotally mounted on one end of the connection between the prongs and adapted to engage the adjacent edge of the support, and thereby lock said prongs in operative position.

3. In a device of the described character, a support, a superposed series of leaves detachably connected therewith at or near one end, a carrier pivotally mounted on the side edges of the support near the middle thereof and adapted to swing toward and away from the attached ends of the leaves, and a transfer-sheet attached to the free end of the carrier, to be inserted between two of the leaves when the carrier is in operative position.

4. In a device of the described character, a support, a series of leaves adapted to be superposed thereon, curved holding and guide means for the leaves, pivotally mounted on the support at one end and extending around the same from bottom to top, to detachably connect the leaves with the support and to guide them when turned thereunder, a locking device for said means, located at one side of the series of leaves, a transfer-sheet, a carrier therefor attached to the support between its ends and adapted to carry the sheet between two leaves and to withdraw it therefrom, and a cover attached to the support near the free ends of the leaves and adapted when shut to inclose the support, leaves and carrier.

655,877. BOBBIN-WINDER. HENRY KISSEL, Jr., Union Hill, and GEORGE NAGEL, Grand View, N. J. Filed May 24, 1899. Serial No. 718,017. (No model.)



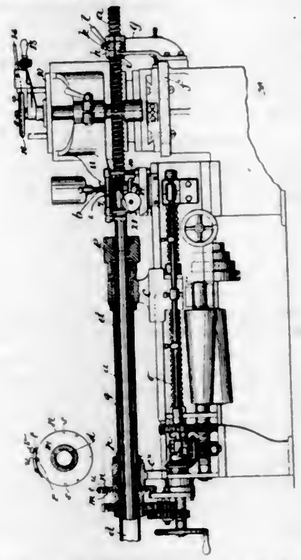
Claim.—In a device of the class described, a rigid, open, continuous-sided frame, a bobbin-holder arranged at each side thereof and directed inwardly of said frame, one of said bobbin-holders being provided with a drive-shaft journaled in said frame, a yoke-shaped spring-projected support, a plunger-rod slidably mounted in said frame and by means of which said yoke-shaped support is arranged in said frame parallel with said bobbin-holders, a roller mounted in said yoke-shaped support and arranged to bear on a bobbin supported by said bobbin-holders, said support being also provided at its opposite ends with outwardly-directed arms, a rod by which said arms are connected, and a pulley loosely mounted on said rod and over which the thread is passed; whereby a yielding pressure of the roller and a corresponding yielding feed of the thread are insured, substantially as shown and described.

655,878. MACHINE FOR MILLING SCREWS, &c. HENRY LIEBERT, Milnrow, England. Filed Dec. 12, 1899. Serial No. 740,078. (No model.)

Claim.—1. In a machine for milling screws, worms and the like, the feed-carriage *c* furnished with a hollow spindle *d* adapted to rotate therein and provided with means for securing the work thereto, and means for turning the spindle *d*, said means having a splined connection with the spindle *d*, a screw for moving the carriage and connections between the same and the spindle-driving means, substantially as described.

2. In a machine for milling screws, worms and the like, in combination with the hollow work-spindle, two disks *m* and *n* one of which is splined thereto and the other rotated loosely thereon and means for coupling together and varying the relative position of the said disks, and means for driving the loose disk whereby the position of the hollow work-spindle may be varied in relation to the driving means and tool, all substantially as and for the purpose set forth.

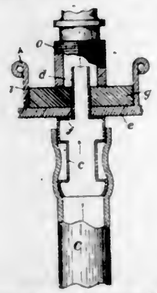
3. In a machine for milling screws, worms and the like, the work-support furnished with a vertically-adjustable V-step *w* adapted to support the work, in combination with a bar I rendered vertically and horizontally adjustable and adapted to press upon and hold the work in the said step, all substantially as set forth.



4. In a machine for milling screws, worms and the like, the screwed spindle *g* mounted in a bush 12 which is rendered vertically adjustable in the bracket 10 carrying the milling-tool bracket 11 and means for locking the said spindle and bush together, against rotary movement relative to each other, all substantially as and for the purpose set forth.

5. In a machine for milling screws, worms and the like, in combination the hollow spindle *d* provided with means for securing the work therein, means for simultaneously rotating and longitudinally moving the said spindle, a milling-tool *b* and a turning-tool 21 employed stationary in relation to the longitudinal movement of the said hollow spindle and adapted to operate jointly upon the work, the said milling-cutter serving to mill the thread into the work in one cut and the said turning-tool to enter between and finish the thread milled by the said cutter, all substantially as set forth.

655,879. HOSE-TIP. GEORGE W. LISK, Clifton Springs, N. Y. Filed Mar. 7, 1900. Serial No. 7,692. (No model.)



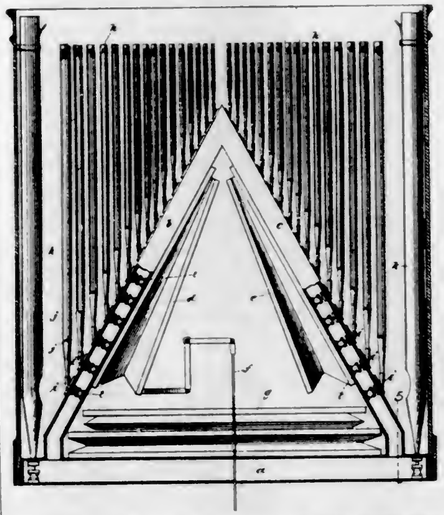
Claim.—1. A hose tip or coupling comprising a tubular part secured to the end of the hose, and a laterally-projecting finger-rest carried by said tubular part, and a cushion on the tubular part adjacent to the finger-rest, substantially as shown and described.

2. A tip or terminal for hose, comprising a tubular part carried by the hose, and a laterally-projecting finger-rest on said tubular part, formed with a circular flange or cup, substantially as and for the purpose specified.

3. A hose tip or coupling comprising a tubular part carried at the end of the hose, formed with a reduced part or terminal, and with a shoulder, a finger-rest on said reduced part and resting against said shoulder of the tubular part, and a yielding disk or cushion on the reduced part, substantially as set forth.

4. A hose tip or coupling comprising a tubular part held at the end of the hose, a laterally-projecting finger-rest on the tubular part, having a flange or cup, and a yielding disk or cushion in said cup, substantially as shown and described.

655,880. ORGAN. CHARLES MAIER, New York, N. Y. Filed Mar. 14, 1900. Serial No. 8,595. (No model.)



Claim.—1. In an organ, the combination with suitable pipes or sounding devices of a hollow-walled triangular wind-chest.

2. In an organ or other wind instrument, the combination of a hollow-walled wind-chest of a general triangular shape and feeder-bellows mounted upon the inner faces of the triangular wind-chest.

3. An organ provided with a hollow-walled wind-chest of a general triangular form, feeder-bellows delivering into the said hollow walls and organ-pipes mounted upon the said walls and having their mouths at different levels, whereby the organ-pipes may be placed close together and at the same time good speaking-room is attained.

4. A hollow-walled wind-chest for organs of substantially-triangular form.

5. A hollow-walled wind-chest for organs of substantially-triangular form combined with feeder-bellows mounted on the inner faces of the triangle and an air-reservoir, substantially as described.

6. A hollow-walled wind-chest for organs of substantially-triangular form, combined with organ-pipes mounted upon the sides of the triangle.

7. In an organ, the combination of a triangular support and organ-pipes mounted upon the said triangular support and having their mouths at different levels, whereby the said organ-pipes may be placed close together and the distance between the mouths of adjacent organ-pipes will be greater than their horizontal distance apart.

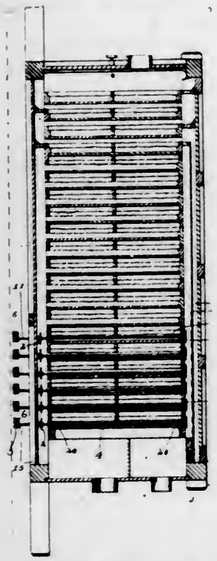
8. In a wind instrument, the combination of an air-reservoir, a wind-chest having inclined hollow sides, the said sides being partitioned, the space or spaces upon one side of the partition being connected to suitable feeder-bellows and the space or spaces on the other side of the partition being connected to the air-reservoir and to organ-pipes.

9. In an organ or other wind instrument, the combination of the wind-chest with inclined hollow walls, organ-pipes supported upon and communicating with the interior of the hollow walls and pneumatic organ-pipe-controlling valves *t* mounted in the hollow walls, substantially as described and for the purposes set forth.

10. In an organ, the combination with suitable organ-pipes, of a wind-chest having an inclined wall receiving the organ-pipes, whereby greater speaking-room is secured and an extended space for the feeder-bellows provided.

655,881. SEPARATING AND BOLTING MACHINE. WALTER C. MARMON, Indianapolis, Ind., assignor to the Nordyke & Marmon Company, same place. Filed Nov. 3, 1899. Serial No. 735,686. (No model.)

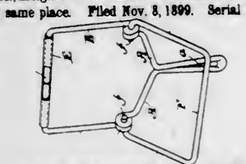
Claim.—1. The combination, in a sifting or separating machine, with a sieve having openings upon two sides, of connected shifting-gates, whereby one of the sides may be opened and the other closed, and the open and closed sides reversed at will, substantially as set forth.



2. The combination, in a sifting or separating machine, with a sieve having openings upon opposite sides, of rods mounted in bearings in said sieve and extending through the same from side to side, gates upon the opposite ends of said rods, a bridge-bar connecting said rods, and means whereby the structure comprising the foregoing elements may be shifted from one position to the other, whereby the openings may be alternately opened and closed, substantially as set forth.

3. The combination, in a sifting or separating machine, with a sieve having open discharging sides oppositely disposed, of gates for alternately opening and closing said open discharging sides, said gates extending through said sieves and resting in bearings therein, a connecting-piece by which the two are united, and a lever engaging with and adapted to operate said connecting-piece, substantially as set forth.

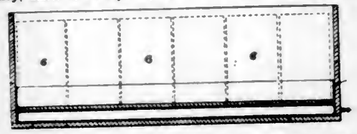
655,882. CLASP FOR GARMENTS. HERBERT A. MAXWELL, Boston, Mass., assignor of two-thirds to Thomas W. Herrick and George F Farwell, same place. Filed Nov. 8, 1899. Serial No. 736,239. (No model.)



Claim.—1. A spring-clasp comprising a pair of pivotally or hingedly connected and mutually coacting members, each of which is formed from a single piece of spring-wire, the fixed member having a cross-bar at its inner end, and coils formed at the opposite ends of the cross-bar, which coils provide laterally-alined bearing-eyes, the pitch of the coils being oppositely inclined and forming cam-faces upon the opposite ends of the eyes, and the swinging member being of substantially U shape, the opposite sides of which form spring-arms, and have their outer ends bent laterally forming oppositely-directed terminal pivots or spindles, the latter being sprung into the respective eyes from the cam ends thereof, and the spring-arms having a frictional swinging movement across the cam faces or ends of the respective bearing-eyes, whereby the arms are sprung and a spring tension is placed upon the swinging member, the latter being normally held thereby in contact with the fixed member.

2. A spring-clasp comprising a pair of pivotally or hingedly connected and mutually coacting skeleton members, each of which is formed from a single piece of spring-wire, the fixed member being of angular shape, and having an inner end cross-bar, and coils formed in the opposite sides of the member and located in the inner corners thereof at the opposite ends of the inner end cross-bar, said coils providing opposite laterally-alined bearing-eyes located wholly upon the outer side of the member, the pitch of the coils being inwardly in opposite directions and forming cam-faces upon the outer ends of the bearing-eyes, and the swinging member being of substantially U shape, the opposite sides of which form spring-arms, and have their outer ends bent laterally inward in opposite directions forming terminal lateral pivots or spindles, the latter being sprung into the respective bearing-eyes from the outer sides thereof, and the spring-arms having a frictional swinging movement across the outer cam ends of the bearing-eyes, whereby the arms are sprung apart and a spring tension is placed upon the swinging member, the latter being normally held thereby in contact with the fixed member.

655,883. RECEPTACLE FOR SECONDARY BATTERIES. JOSEPH MIDDLEBY, Jr., Malden, Mass., assignor of one-half to George E. Hatch, Quincy, Mass. Filed Apr. 24, 1900. Serial No. 14,082. (No model.)



Claim.—1. A receptacle for the cells of a secondary battery, comprising a box adapted to contain said cells, and a pneumatic cushion on which said cells are supported, for the purpose set forth.

2. A receptacle for the cells of a secondary battery, comprising a box provided with a double bottom, and a pneumatic cushion located between the parts of said bottom, for the purpose set forth.

3. A receptacle for the cells of a secondary battery, consisting of a box, a pneumatic cushion resting on the bottom of said box and provided with an upwardly-extending flap forming with the top of said cushion an impervious tray, and a false bottom resting on said cushion within said tray, for the purpose set forth.

655,884. HOOK AND EYE. VICTOR O. MILLS, Chicago, Ill. Filed Feb. 21, 1900. Serial No. 6,039. (No model.)



Claim.—1. As a new article of manufacture, a hook or eye having a hook or eye proper and an attachment member or shank with pin-point ends for attachment to the cloth, said shank having loops which have an opening at their inner adjacent sides and which have a socket on their bottom portion, said ends being insertible in the loops only through such openings and adapted to rest in such sockets.

2. As a new article of manufacture, a hook or eye having a hook or eye proper and a shank with a pin-point end for attachment to the cloth, the members of the shank lying in substantially the same plane, loops on such shank substantially at right angles to the plane of the shank, such loops having a restricted opening on their inner adjacent sides into which such pin-point ends snap.

3. As a new article of manufacture, a hook or eye comprising a strip or wire looped at the middle to form the hook or the eye proper, each of the ends remaining being bent to form, first, a loop in a plane substantially at right angles to the plane of the hook and eye, second, an outwardly-extending member and, third, an inwardly-extending portion bent laterally of, and in the same plane as, said member, the extreme free ends of said portions entering said loops.

4. As a new article of manufacture, a hook or eye comprising a strip or wire forming a hook or eye at its middle, the ends being formed into partial loops and finally into a U which is attached to the cloth, such loops rising above the plane of said U and in a plane substantially at right angles to the plane of the hook or eye.

5. As a new article of manufacture, a hook or eye comprising a strip or wire forming a hook or an eye at its middle, the remaining ends being first formed in partial loops in a plane substantially at right angles to the plane of the hook or eye with an entrance on their inner adjacent sides, and then formed substantially into a U, the extreme ends being adapted to be sprung inward to enter said loops and then to resume their normal relative position but in the loops said loops rising above the plane of the U.

6. As a new article of manufacture, a hook having a hook proper and an attachment member or shank with a pin-point end for attachment to the cloth, such shank lying in a plane parallel to the plane of the hook and having a loop in a plane substantially at right angles to the plane of the hook and extending toward such hook, said pin-point end of the shank resting in such loop.

7. A garment-hook having a hook proper, portions 5, lateral loops 6, with sockets 10, and members 7 and 8 which form a U, the ends of members 8 entering said loops and resting in said sockets.

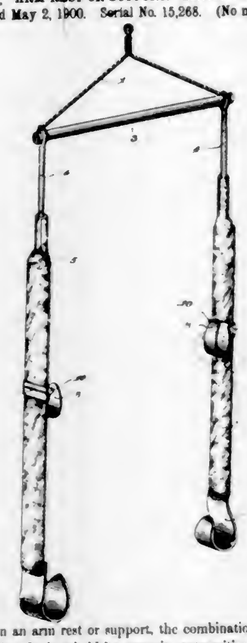
8. A garment-hook having a hook proper, loops 6 below the hook proper and in close proximity thereto and members 7 and 8 extending from the loops and in the form of a U, the ends of members 8 entering said loops the tops of the loops being above the plane of members 7 and 8.

9. A hook comprising a hook proper having swells 3, bend 4, short portions 5, loops 6 below the hook and open on their inner adjacent sides, said loops extending laterally and upwardly in proximity to the hook and substantially in a plane rearward of the swells, and members 7 and 8 extending from said loops and forming a U, the extreme free ends of members entering said loops.

10. As a new article of manufacture, a hook comprising a strip or wire bent to form a hook proper, a loop under such hook proper and finally bent to form a U, such loop alone extending into close proximity to the hook proper to prevent accidental disengagement of the eye from the hook.

11. As a new article of manufacture, a hook comprising a strip or wire bent at its middle to form a hook proper, the remaining ends being bent to form loops under the hook proper and finally formed into two U's, such loops engaging the free ends of the wire and alone extending into close proximity to the hook to prevent accidental disengagement of the eye from the hook such eye having free entrance under the hook until the loops are reached.

655,885. ARM REST OR SUPPORT. LEMUEL C. NEAL, Lewiston, Idaho. Filed May 2, 1900. Serial No. 15,268. (No model.)



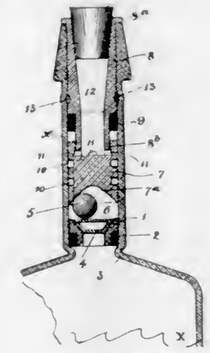
Claim.—In an arm rest or support, the combination of a spreader, yielding depending devices held by opposite extremities of said spreader and having open inturned hooks on the lower ends thereof, and another hook adjustably mounted on an intermediate portion of each depending device for engagement with the said inturned hooks on the lower ends of the devices to elevate the lower portions of the latter when not in use.

655,886. CAR-COUPLING. ROBERT P. NORTON, St. Thomas, N. D. Filed Apr. 23, 1900. Serial No. 14,010. (No model.)



Claim.—In a car-coupler, the combination with a draw-head, of a pin operating therein, and means for raising and lowering said pin comprising an operating-wheel, connections between the pin and said wheel, means for rotating said wheel, and means for limiting the rotary movement of said wheel, comprising catch-fingers carried by the wheel adapted to engage the draw-head, substantially as described.

655,887. BOTTLE OR SIMILAR RECEPTACLE. JOHN O'CONNOR, New York, N. Y., assignor of one-half to John Goodchild, guardian, same place. Filed Oct. 27, 1899. Serial No. 734,915. (No model.)

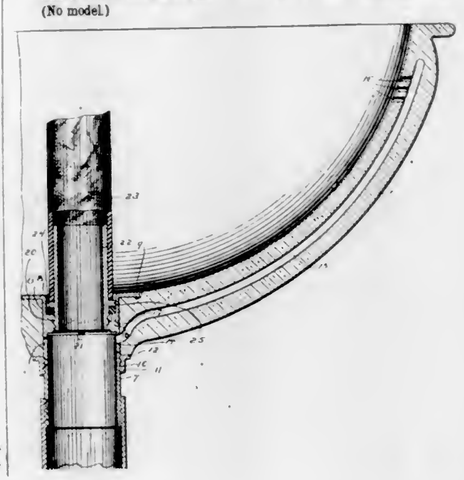


Claim.—1. In a device to prevent the refilling of a bottle, the combination with a neck-closure, comprising a tubular plug adapted to fit in the bottle-neck, said plug being provided with a cement-groove, and having a reduced and flared inner end, and a solid, exteriorly-grooved plug having a transverse, dovetail recess in its top to receive the flared inner end of the tubular plug, and a conical cavity in its lower face, of a buoyant valve, and a ball thereon, substantially as set forth.

2. In a device to prevent the refilling of a bottle, the combination to form a neck-closure, of a tubular plug 8 having a flange 8^a at its outer end, a circumferential cement-groove 13, a reduced inner end and a packing-ring 9 just below said cement-groove, and a solid, exteriorly-grooved plug 7, said plug 7 having a dovetail, transverse recess 7^b extending across its top and engaged by the flared inner end of the plug 8, substantially as set forth.

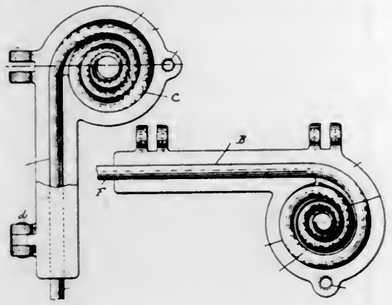
3. In a device to prevent the refilling of a bottle, the combination to form a neck-closure, of a tubular, flanged plug, having a cement-groove, and a flared inner end provided with apertures 11 at its end, and a solid plug with channels in its exterior surface to communicate with the apertures 11, said solid plug having in its upper surface a transverse, dovetail recess to receive the flared inner end of the tubular plug, substantially as set forth.

655,888. APPARATUS FOR CLEANING AND FLUSHING WASTE-PIPES. WALTER T. O'NEIL, Etna Mills, Cal., assignor of one-half to Bert Dunn, same place. Filed Feb. 6, 1900. Serial No. 4,198. (No model.)



Claim.—A sink having a drain-opening and an overflow-opening communicating with the drain-opening below the inner surface of the sink, and a drain-pipe disposed in the drain-opening, said pipe having an interior continuous flange forming a plug-seat at its upper face and having its inner periphery threaded to receive a hose, said pipe having openings therein below the flange and communicating with the overflow, and guard-bars disposed transversely of the pipe between the openings and the flange.

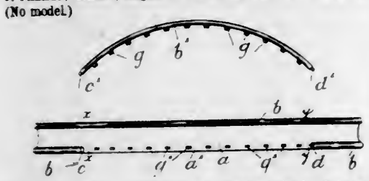
655,889. SHAPING WOOD. ALBERT H. ORDWAY, South Framingham, Mass. Filed Mar. 13, 1900. Serial No. 8,519. (No model.)



Claim.—1. The herein-described device for making scrolls on bars of wood, consisting of a shaping-block, having a guide-tube and having connected thereto a scroll-former into which the wooden bar is forced, and caused to be formed into a scroll form, substantially as and for the purpose set forth.

2. The herein-described device for making scrolls on bars of wood, consisting of a shaping-block having a guide-tube, and having connected thereto a scroll-former, provided with a helical guide-rib, serving as a guide for the formation of the scroll of the wood bar when forced into said scroll-former substantially as and for the purpose set forth.

655,890. RIM FOR DETACHABLE PNEUMATIC TIRES. CHARLES J. PALMER, London, England. Filed May 29, 1900. Serial No. 18,364. (No model.)



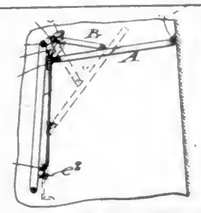
Claim.—1. The combination, with a wheel-rim having a projecting flange on one side which partially encircles it and has recesses in its ends, said rim having also a series of holes between the said recessed ends of the flange; of a detachable portion provided with projections which engage with the said recesses and holes, and forming a continuation of the said flange around the rim when secured in position, substantially as set forth.

2. The combination with a rim having upstanding edges or flanges such as *b*, of a detachable part such as *b'*, furnished with downwardly-extending projecting parts or hooks such as *g* designed to pass through corresponding holes or perforations *g'* in the bed of the rim *a*, and having reduced extremities *c' d'* designed to enter the tubular or recessed parts *c d* of the edge or flange *b*, substantially as herein described and shown and for the purposes specified.

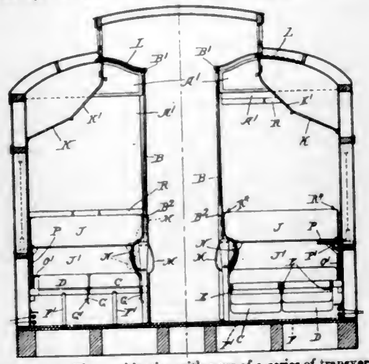
655,891. GATE-OPERATING MECHANISM. WILLIAM R. PITT, New Rochelle, N. Y. Filed May 22, 1899. Serial No. 717,725. (No model.)

Claim.—The combination with a gate, swinging arms forming a support for and having a pivotal connection with the gate and a spindle to which the swinging arms are secured, of a crank-arm secured to said spindle, an angle-lever and a connecting-rod between the angle-lever and crank-arm, the arrangement being such that the connecting-rod is thrown on or past center as the gate reaches the limit of its swinging movement thereby locking the gate at the limit of its locking movement, substantially as set forth.

655,891.



655,892. PARLOR COMPARTMENT-CAR. JOSEPH B. STRAUSS, Chicago, Ill., assignor of one-half to Edwin B. Tuteur, same place. Filed Apr. 16, 1900. Serial No. 13,025. (No model.)



Claim.—1. The combination with a car of a series of transverse partition-supports, one associated with each seat, a flexible adjustable partition connected with each transverse partition-support and adapted to be drawn down so as to divide the space between the seats, a series of adjustable longitudinal partitions adapted to be moved so as to inclose the front of the seat, the said partitions forming a private compartment for each seat, substantially as described.

2. The combination with a car of a series of seats, a divided adjustable piece associated with each seat and out of the way when the seat is being used in the ordinary manner, said divided adjustable piece adapted to be moved so as to bridge the space between the seats and form a berth or couch for the passenger and an adjustable pillow attachment associated with said seat and independent of the back thereof, substantially as described.

3. The combination with a car of a series of seats adapted to be used as ordinary seats in a day-coach, a series of transverse partition-supports, one associated with each seat, a flexible adjustable partition concealed within each support and adapted to be drawn down between the seats, a flexible adjustable longitudinal partition associated with each seat and adapted to be passed across the outer edges of the transverse partitions so as to inclose each seat in a private compartment, a divided adjustable piece adapted to bridge the space between the seats so as to form a berth or couch, and means for moving said divided adjustable piece to an inoperative position so as to leave the space between the seats open.

4. The combination with a car of a series of seats provided with adjustable backs, which may be moved from one side of the seat to the other, a series of transverse partition-supports above said seats, one associated with each seat, a flexible adjustable partition concealed within each partition-support and adapted to be drawn down toward the seat, a fastening device associated with the seat, by means of which the partitions may be held in their operative position, and a flexible longitudinal adjustable partition associated with each seat and adapted to be moved so as to inclose the front of the seat, the said partitions forming a private compartment for each seat.

5. The combination with a car of a series of seats, a two-part back for each seat provided with a lower part adapted to be swung down so as to form an extension to the seat, a divided adjustable piece adapted to be moved so as to bridge the space between the seats, substantially as described.

6. The combination with a car of a series of seats, a two-part back for each seat provided with a lower part adapted to be swung down so as to form an extension to the seat, a divided adjustable piece adapted to be moved so as to bridge the space between the seats, and a series of transverse and longitudinal adjustable partitions adapted to be moved so as to inclose each seat in a private compartment.

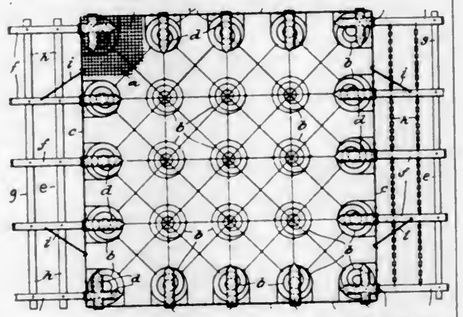
7. The combination with a car of a series of seats, each provided with a two-part back, the lower part of the back adapted to be moved downwardly so as to form an extension to the seat, a divided adjustable piece formed of sections pivotally connected with the seats and adapted to be moved upwardly so as to bridge the space between the seats, and a holding device adapted to hold said sections in their bridging position.

8. The combination with a car of a series of seats, each provided with a two-part back, the lower part of the back adapted to be moved downwardly so as to form an extension to the seat, a divided adjustable piece formed of sections pivotally connected with the seats and adapted to be moved upwardly so as to bridge the space between the seats, a holding device adapted to hold said sections in their bridging position, a series of transverse partition-supports attached to the roof of the car, one associated with each seat, a flexible adjustable partition concealed within said partition-support and adapted to be moved downwardly toward the back of the seat, a fastening device associated with each seat and adapted to engage said partitions, and a series of flexible adjustable longitudinal partitions adapted to coöperate with the transverse partitions so as to inclose each seat in a private compartment.

9. The combination with a car of a series of seats, a series of adjustably transverse partitions associated with said seats, a series of longitudinal adjustable partitions also associated with said seats, the two sets of partitions adapted when in position to inclose each seat in a private compartment, a locking device associated with each transverse partition out of the control of the passenger and comprising a holding part associated with the seat and an engaging part connected with the partition, which engages the holding part when the partition is moved to its operative position, so that it cannot be opened by the passenger, and a removable key adapted to engage the engaging part so as to move it out of engagement with the holding part.

10. The combination with a car of a series of seats, a divided adjustable piece adapted to bridge the space between the seats, said divided piece comprising a part adjustably connected with the seat and provided with a locking or holding device, which permits it to be fixed in various positions to form a foot-rest, substantially as described.

655,893. SPRING-BED. WILLIAM F. ADE, Jr., Williamsport, Pa. Filed Feb. 27, 1900. Serial No. 6,699. (No model.)



Claim.—1. In combination, a base formed of a metallic screen the edges of which are upturned, helical springs secured at their lower ends to said screen, a cover passing over the tops of said springs and secured to the upturned sides of the base, and a mattress on top of and secured to said cover.

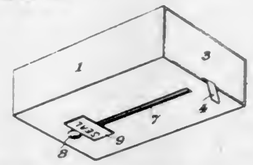
2. In combination, a base formed of a metallic screen the edges of which are upturned, helical springs secured at their lower ends to said screen, the springs along the edges of said base being stiffer than the inside ones, a cover passing over the tops of said springs and secured to the upturned sides of the base, and a mattress on top of and secured to said cover.

3. The combination in a spring-bed of helical springs, sockets carried by the tops of said springs, a detachable metal frame adapted to be held by said sockets, and a narrow section of mattress adapted to be carried by said spring metal frame.

4. The combination in a spring-bed of helical springs, sockets carried by the tops of said springs, detachable spring-frames carried by said sockets, a mattress secured on top of said helical springs, and narrow sections of mattress adapted to be carried by said spring-frames.

655,894. PACKAGE FOR PENS OR THE LIKE. FRANK H. BURDSALL, Camden, N. J. Filed May 28, 1900. Serial No. 18,202. (No model.)

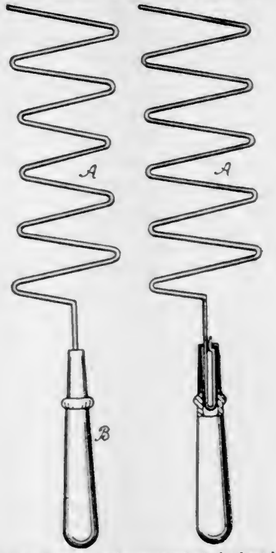
Claim.—1. In a telescopic box, the combination with an outer casing having a slot therein, of an inner drawer having a stud secured thereon, adapted to slide in said slot, and a frangible seal attached to the outer casing, across said slot, and adapted to prevent movement of said stud therein, substantially as set forth.



2. In a telescopic box, the combination with an outer casing having a slot therein, of an inner drawer fitted to slide in said casing, a stud adapted to slide in said slot, and comprising a circular flanged head overhanging the margins of said slot, and a bifurcated shank upon said stud in integral relation with said head, by which said stud is secured to said drawer, substantially as set forth.

3. In a telescopic box, the combination with an outer casing having a slot therein, of an inner drawer fitted to slide in said casing, a stud adapted to slide in said slot, and comprising a circular flanged head overhanging the margins of said slot, a bifurcated shank upon said stud in integral relation with said head, by which said stud is secured to said drawer, and a frangible seal consisting of an adhesive sheet or label attached to the outer casing, across said slot, and adapted to prevent movement of the stud therein, substantially as set forth.

655,895. HAIR-DRYING COMB. EDWARD R. COOPER and CHARLES F. THOMPSON, Lakewood, Ohio, assignors of one-half to Lewis C. Hopp, Cleveland, Ohio. Filed Mar. 19, 1900. Serial No. 9,166. (No model.)



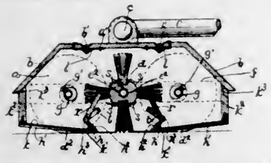
Claim.—A hair-drying comb composed of wire bent back and forth upon itself in zigzag form to form a double row of teeth or tines, capable of being heated, and a supporting-handle for said comb, substantially as described.

655,896. CARPET-SWEEPER. SOPHIE E. DAVIS, Cleveland, Ohio. Filed Apr. 9, 1900. Serial No. 12,186. (No model.)

Claim.—1. In a carpet-sweeping machine, the combination with the casing or framework and the suitably-supported and suitably-operated rotary brush, of two stationary bars arranged at opposite sides, respectively, of the brush and provided, respectively, with alternating combs and knives that extend into the sweep of the bristles of the brush, substantially as and for the purpose set forth.

2. In a carpet-sweeping machine, the combination with the framework or casing and the suitably-supported and suitably-operated rotary brush, of the two bars A having, respectively, arms A' and A', and a flange

h^3, and the removable dust-pans, all arranged and operating substantially as shown, for the purpose specified.



3. In a carpet-sweeping machine, the combination with the framework or casing and the suitably supported and operated rotary brush, of the bars h provided, respectively, with arms h' h', and a flange h^2 having the shoulder h^3 and the removable dust-pans k having the flanges k', all arranged and operating substantially as shown, for the purpose specified.

4. In a carpet-sweeping machine, the combination, with the framework or casing, and a suitably-operated and suitably-supported brush arranged centrally of the said casing, of two suitably-supported and removable dust-pans at opposite sides, respectively, of the brush and provided each with a back k^2, two covers b and b hinged to the top of the casing and normally arranged over the different dust-pans, respectively, and resting upon the back of the respective pan, and means acting to retain the covers in their closed positions, substantially as shown and described.

5. In a carpet-sweeping machine, the combination with the frame, comprising two side pieces a and a connected at the top and centrally by a top piece a', and the suitably-supported and suitably-operated rotary brush below the top piece, of two suitably-supported removable dust-pans at opposite sides, respectively, of the brush and having the backs k^2 that are provided at the top with the downwardly and outwardly sloping shoulders k^3, the covers b and b hinged to the aforesaid top piece, and means acting to retain the covers in their closed positions, all arranged and operating substantially as shown, for the purpose specified.

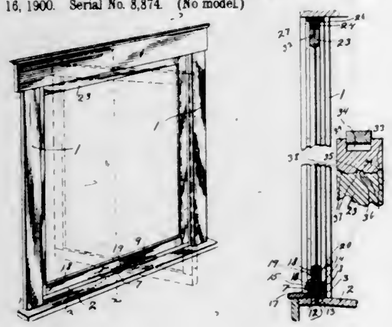
6. In a carpet-sweeping machine, the combination with the suitably-supported and suitably-operated rotary brush, of knives upon the peripheral surface of the ends of the bristle-bearing body of the brush, substantially as and for the purpose set forth.

7. In a carpet-sweeping machine, the combination with the framework, comprising two side pieces a and a suitably connected together at the top, and the suitably-supported and suitably-operated rotary brush arranged between the said side pieces and having the end portions of its bristle-bearing body extending through the said side pieces, of knives mounted upon the said end portions of the bristle-bearing body and extending through the aforesaid side pieces, substantially as and for the purpose set forth.

8. A carpet-sweeping machine having a rotary brush provided, at one end, with a suitably-driven wheel, and loosely mounted upon a hollow axle that has an oil-inlet, means for closing the said inlet, and orifices for conducting oil from within the axle to the bearings of the said wheel, the framework or casing of the machine, and bars or members f supporting the aforesaid axle and rigid with the said casing, substantially as and for the purpose set forth.

9. A carpet-sweeping machine having the following: a casing or framework, a suitably-supported rotary brush provided with the friction-wheels d', the friction-wheels d^2, and the suitably-supported axles bearing the last-mentioned wheels, which axles are hollow and provided with oil-inlets and having orifices for conducting oil from within the axles to the bearings of the wheels upon the axles, and bars or members f all arranged and operating substantially as shown, for the purpose specified.

655,897. WINDOW. OZIA A. ESSIG, Canton, Ohio. Filed Mar. 16, 1900. Serial No. 8,874. (No model.)



Claim.—1. In a window a fixed lower sill having connected thereto a plate provided with upper inclined faces, a lever provided with a disk having inclined faces, a plate located upon the upper face of the lever-disk, means for holding the plate against rotation, a plate connected to the bottom or under side of the lower sash-rail and provided with a hub or thimble, seated through the antifriction-plate and into the lever-disk all arranged, substantially as and for the purpose specified.

2. In a vertical swinging window, the upper and lower sashes thereof provided with beads having inclined faces or edges, a follower-strip located upon the upper sash-rail and provided with beads and grooves having inclined edges corresponding with the inclined edges of the beads and grooves formed upon the upper sash-rail and springs located upon the upper face of the follower and against the under side of the top part or rail of the window-frame, substantially as and for the purpose specified.

3. In a window an upper sash-rail, a follower provided with a center plate having a hub, a hub located through the center plate and flanged hub of said center plate and provided with teeth or serrations upon its inner end, substantially as and for the purpose specified.

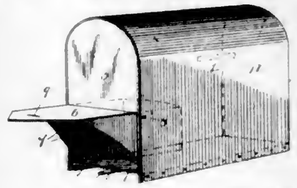
4. The combination of a window, a follower normally located upon the upper edge of the upper sash-rail, a center plate provided with a chambered hub or recess, a toothed hub located through said center plate and a single-convolution spring located around the hub, substantially as and for the purpose specified.

5. In a window of the class described, means for raising the window vertically, a follower located upon the upper side or edge of the upper sash-rail, and springs 33 connected to said follower, and grooves formed in the follower and adapted to receive the springs when compressed, said springs connected substantially as shown and for the purpose specified.

6. In a window of the class described, a follower located upon the upper side of the upper rail, a center plate connected to the follower, a hub 27, a spring having one convolution located around the hub and said hub connected to the upper sash-rail substantially as and for the purpose specified.

7. In a window, the combination of a strip provided with the springs 33 seated in grooves formed upon the face of the strip, a recess or groove formed upon the opposite side thereof, beads located upon the under side of the strip, and beads provided with inclined faces or edges, substantially as and for the purpose specified.

655,898. LETTER-BOX. CHARLES G. FOLSOM, South Bend, Ind. Filed Mar. 16, 1900. Serial No. 8,886. (No model.)



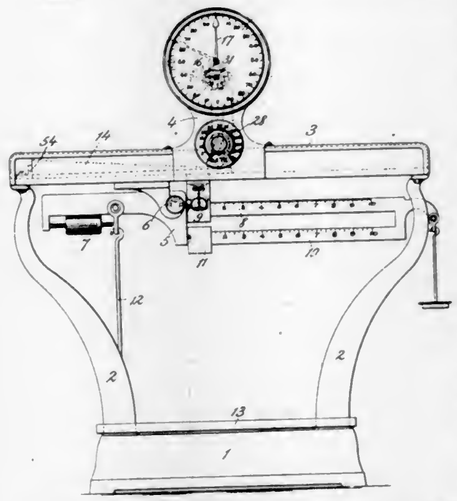
Claim.—1. A mail-box comprising a body portion; a bottom; end walls, one of said walls having an opening for the removal of the contents; and a door for said opening, pivotally connected to said body portion and having parallel ears frictionally engaging the inner sides of the box, said frictional engagement holding the door in the positions in which it may be placed, said door forming a projecting cover above said opening when in open position.

2. A mail-box comprising a body portion; a bottom; end walls, one of said walls having an opening for the removal of the contents; and a door for said openings, having parallel ears pivotally secured to said body portion, and frictionally engaging the inner sides of the box for holding the door in the positions in which it may be placed, the pivotal connection being intermediate the ends of said ears, the outer portion of said door forming a projecting cover above said opening when in open position.

3. A mail-box comprising a body portion; a bottom; end walls, one of said walls having an opening for the removal of the contents; and a door for said openings, having parallel ears pivotally secured to said body portion, and frictionally engaging the inner sides of the box for holding the door in the positions in which it may be placed, the pivotal connection being intermediate the ends of said ears, said door having a portion of its length operating solely within the box, the outer portion of said door forming a projecting cover above said opening when in open position.

4. A mail-box comprising a body portion; a bottom therefor, said bottom being of less length than the body portion, to form a recess at one end thereof; an end wall closing one end of the box, said wall extending downward from the top of the body portion to a point intermediate the top and bottom whereby an opening will be formed leading into the box near its bottom and a door having parallel ears frictionally engaging the sides of the box, said frictional engagement holding the door in the positions in which it may be placed pivotally mounted to normally close said opening, the pivotal connection being at a point intermediate the ends of the ears, said door being of greater length than the opening closed thereby, the inner portion operating solely within the box, said door forming a projecting cover above said opening when in open position.

655,899. PRICE-SCALE. FREDERICK L. FULLER, Trenton, N. J. Filed Sept. 15, 1899. Renewed June 15, 1900. Serial No. 20,453. (No model.)



Claim.—1. The combination with a scale-beam, of price-computing mechanism comprising an inclined member movable in a plane substantially parallel to the beam and a movable member controlled thereby, said members being adjustable one relatively to the other transversely to the incline and said incline varying progressively in the direction of adjustment, substantially as described.

2. The combination with a scale-beam and its poise, of price-computing mechanism comprising an inclined member movable in a plane substantially parallel to the beam and a movable member controlled thereby, said members being adjustable one relatively to the other transversely to the incline and said incline varying progressively in the direction of adjustment, and connections between the poise and inclined member, substantially as described.

3. The combination with a scale-beam and its poise, of price-computing mechanism comprising an inclined member movable in a plane substantially parallel to the beam and a movable member controlled thereby, said members being adjustable one relatively to the other transversely to the incline and said incline varying progressively in the direction of adjustment, and connections between the poise and inclined member, said connections being loose to permit vertical play of the beam and poise relatively to the inclined member, substantially as described.

4. The combination with a scale-beam, of price-computing mechanism comprising an inclined member movable in a plane substantially parallel to the beam and a movable member controlled thereby and adjustable transversely to the incline, said incline varying progressively in the direction of adjustment, substantially as described.

5. The combination with a scale-beam and its poise, of price-computing mechanism comprising an inclined member movable in a plane substantially parallel to the beam and a movable member controlled thereby and adjustable transversely to the incline, said incline varying progressively in the direction of adjustment, and connections between the poise and inclined member, substantially as described.

6. The combination with a scale-beam and its poise, of price-computing mechanism comprising an inclined member movable in a plane substantially parallel to the beam and a movable member controlled thereby and adjustable transversely to the incline, said incline varying progressively in the direction of adjustment, and connections between the poise and inclined member, said connections being loose to permit vertical play of the beam and poise relatively to the inclined member, substantially as described.

7. The combination with a scale-beam and its poise, of price-computing mechanism comprising an inclined member movable in a plane substantially parallel to the beam and a movable member controlled thereby, said members being adjustable one relatively to the other transversely to the incline and said incline varying progressively in the direction of adjustment, and connections between said poise and inclined member comprising two pivoted jaws carried by the inclined member and a member engaged thereby carried by the poise, substantially as described.

8. The combination with a scale-beam and its poise, of price-computing mechanism comprising an inclined member movable in a plane substantially parallel to the beam and a movable member controlled thereby, said members being adjustable one relatively to the other transversely to the incline and said incline varying progressively in the direction of adjustment, connections between said poise and inclined member comprising two pivoted jaws carried by the inclined member and a member engaged thereby carried by the poise, and means for limiting the gripping movement of the jaws, substantially as described.

9. The combination with a scale-beam and its poise, of price-computing mechanism comprising a member movable in a plane substantially parallel to the beam and inclined in the direction of its movement and a movable member controlled by said inclined member, and connections between the poise and inclined member whereby the two are caused to move together, substantially as described.

10. The combination with a scale-beam and its poise, of price-computing mechanism comprising a member movable in a plane subtantially parallel to the beam and inclined in the direction of its movement and a movable member controlled by said inclined member, and connections between the poise and inclined member whereby the two are caused to move together, said connections being loose to permit vertical play of the beam and poise relatively to the inclined member, substantially as described.

11. The combination with a scale-beam and its poise, of price-computing mechanism comprising an inclined member movable in a plane substantially parallel to the beam and a movable member controlled thereby, said members being adjustable one relatively to the other transversely to the incline and said incline varying progressively in the direction of adjustment, and connections between said poise and inclined member comprising pivoted jaws 39 carried by the inclined member, and a pin 40 carried by the poise and engaged by said jaws, substantially as described.

12. The combination with a scale-beam and its poise, of price-computing mechanism comprising an inclined member movable in a plane substantially parallel to the beam and a movable member controlled thereby, said members being adjustable one relatively to the other transversely to the incline and said incline varying progressively in the direction of adjustment, connections between said poise and inclined member comprising pivoted jaws 39 carried by the inclined member, a pin 40 carried by the poise and engaged by said jaws, and limiting-stop 42, substantially as described.

13. The combination with a scale-beam and its poise, of price-computing mechanism comprising an inclined member movable in a plane substantially parallel to the beam and a movable member controlled thereby, and connections between said poise and inclined member comprising pivoted jaws 39 carried by the inclined member and a pin 40 carried by the poise and engaged by said jaws, substantially as described.

14. The combination with a scale-beam, and its poise, of price-computing mechanism comprising an inclined member movable in a plane substantially parallel to the beam and a movable member controlled thereby, connections between said poise and inclined member comprising pivoted jaws 39 carried by the inclined member, a pin 40 carried by the poise and engaged by said jaws, and limiting-stop 42, substantially as described.

15. The combination with a scale-beam, of inclined member 14, rack 15, indicating devices actuated by the latter, and means for adjusting the rack transversely to the inclined member, substantially as described.

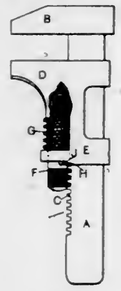
16. The combination with a scale-beam, of inclined member 14, suitably-supported rack 15, indicating devices actuated by the latter, shaft 22, and connections between said shaft and the rack-support consisting of a cam-groove 23 on one and a pin 24 on the other entering said cam-groove, substantially as described.

17. The combination with a scale-beam, of inclined member 14, rack 15, guiding-support 20 therefor, shaft 22 and connections between said shaft and support consisting of a cam-groove 23 on one and a pin 24 on the other entering said cam-groove, substantially as described.

655,900. WRENCH. EZRA N. GIFFORD, Chicago, Ill., assignor of two-thirds to George R. Gott, same place. Filed Dec. 26, 1899. Serial No. 741,511. (No model.)

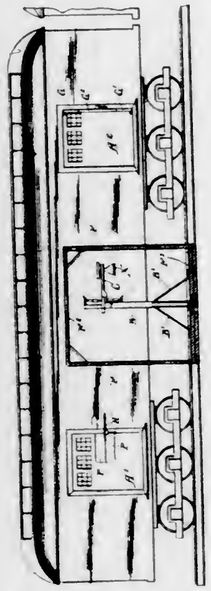
Claim.—In an adjustable wrench having a stationary jaw provided with a shank, and a movable opposing jaw mounted to slide on the shank, the shank provided with a rack, a revoluble shaft having journals at each end portion which are mounted in bearings in the movable jaw, a portion of the shaft between the said journals eccentric to the axial centers of the journals and forming a shoulder at the outer journal, an exteriorly-screw-threaded nut concentrically mounted upon the eccentric portion of the shaft against the said shoulder, the inner end journal of the shaft screw-threaded

and in engagement with a screw-threaded bearing in the movable jaw whereby in revolving the shaft the nut is carried longitudinally by contact with the shoulder of the shaft, and inwardly into engagement with the teeth of the rack, as and for the purpose hereinbefore stated.



655,901. PACKAGE RECEIVING AND DELIVERING DEVICE.

CHARLES E. HUTLEY, Quincy, Ill. Filed Oct. 9, 1899. Serial No. 732,996. (No model.)



Claim.—1. The combination with a receiving device adapted to receive a package from a passing car, and a discharging device, of connections between said devices whereby, when a package is received by the receiving device from a passing car, the discharging device is brought into position to deliver a package to said car, and a brake mechanism applied to said device to retard the movement thereof.

2. A package receiving and discharging device comprising an upright post, and receiving and discharging arms pivoted to the upper end thereof at right angles to each other and rigidly connected together.

3. A package receiving and discharging device comprising an upright post, receiving and discharging arms pivoted to the upper end thereof at right angles to each other, and means for locking said arms to the posts.

4. A package receiving and discharging device comprising an upright post, receiving and discharging arms pivoted to the upper end thereof and adapted to be brought alternately into operative position, a notched disk rigid with the upper end of said post and a dog connected with said arms and adapted for engagement with the notches of said disk.

5. A package receiving and discharging device comprising an upright post, receiving and discharging arms pivoted to the upper end thereof and adapted to be brought alternately into operative position, a notched disk rigid with the upper end of the post, a dog on the receiving-arm adapted for engagement with the notches of said disk, and means for actuating said dog which are operated when a package is received by the receiving-arm from a passing car.

6. A package receiving and discharging device comprising an upright post, receiving and discharging arms pivoted to the upper end thereof and connected together, receiving-jaws on the outer end of said receiving-arm, and means operated when a package is received between the jaws from a passing car to swing the receiving-arm out of its operative position and the discharging-arm into its operative position.

7. A package receiving and discharging device comprising an upright post, receiving and discharging arms pivoted to the upper end thereof and connected together, a notched disk rigid with the post, a dog on the receiving-arm adapted for engagement with the notches of the disk, receiving-jaws connected with the outer end of the receiving-arm, and means operated when a package is received by said jaws to release said dog from engagement with the disk and swing the parts out of and into their operative positions respectively.

8. A package receiving and discharging device, comprising an upright post, receiving and discharging arms pivoted to the upper end thereof and adapted to be brought alternately into operative position, a disk rigid with the upper end of the post, and a spring-pressed dog on the receiving-arm adapted to engage the notches of the disk and a lever connected with the dog and adapted to be oscillated when a package is received from a passing car.

9. A package receiving and discharging device, comprising an upright post, receiving and discharging arms pivoted to the upper end thereof and adapted to be brought alternately into operative position, a notched disk rigid with the upper end of the post, a spring-pressed dog on the receiving-arm adapted for engagement with the notches of said disk, receiving-jaws on the outer end of said receiving-arm and a lever located between said receiving-jaws and connected with said dog.

10. A package receiving and discharging device comprising an upright post, receiving and discharging arms pivoted to the upper end thereof, and connections between said arms which operate when one of the arms is swung out of its operative position to swing the other arm into its operative position.

11. A package receiving and discharging device comprising an upright post, receiving and discharging arms pivoted to the post adapted to be brought alternately into operative position, receiving-jaws on the outer end of said receiving-arm, one of which is pivoted to the arm and the other of which is rigid therewith, a notched disk rigid with the upper end of the post, a dog on the receiving-arm adapted for engagement with the notches of the disk and a tripping-lever between said jaws which is connected with the dog.

12. A package receiving and discharging device comprising an upright post, receiving and discharging arms connected with each other and pivoted to the post, receiving-jaws on the outer end of said receiving-arm, one of which is stationary with the arm and the other of which is pivoted thereto to move toward and away from the stationary arm, a spring applied to hold said pivoted jaw in engagement with the stationary jaw, a notched disk rigid with the upper end of the post, a dog on the receiving-arm adapted for engagement with the notches of the disk, and a tripping-lever between said jaws which is connected with the dog.

13. A package receiving and discharging device comprising an upright post, receiving and discharging arms pivoted to the post adapted to be brought alternately into operative position, receiving-jaws on the outer end of said receiving-arm, one of which is rigid with the arm and the other of which is pivoted thereto, a notched disk rigid with the upper end of the post, a dog on the receiving-arm adapted for engagement with the notches of the disk, and a tripping-lever between said jaws and connected with the dog, said lever being provided on its forward end with a contact-plate against which the package strikes when received from the passing car.

14. A package receiving and discharging device comprising an upright post, receiving and discharging arms pivoted thereto and connected together, a notched disk rigid with the upper end of the post, a dog on the receiving-arm and adapted for engagement with the notches of said disk, means operated when a package is received from a passing car to release said dog from one of the notches and to swing the receiving-arm out of its operative position and the discharging-arm into its operative position, a spring applied to said dog to hold it in engagement with the notches and means for adjusting the tension of said spring.

15. A package receiving and discharging device comprising an upright post, receiving and discharging arms pivoted thereto and connected together, a notched disk rigid with the upper end of the post, a dog on the receiving-arm adapted for engagement with the notches on the disk, means operated when a package is received from a passing car to release said dog from one of the notches and swing the receiving-arm out of its operative position and the discharging-arm into its operative position, the periphery of said disk between said notches being made eccentric to the post.

16. A package-receiving device comprising a pivoted arm, a disk rigid with the pivot provided with two circumferentially-separated notches, a dog connected with the arm adapted for engagement with one of said notches when the arm is in operative position, and means for releasing said dog from said notch whereby the arm may be swung out of its operative position when a mail-bag is received thereby and bring the dog in engagement with the other notch.

17. A package-receiving device comprising a pivoted arm, a disk rigid with the pivot of the arm, a dog connected with the arm adapted for engagement with the notches of the disk, and means for releasing said dog from the disk whereby the arm may be swung out of its operative position when a package is received by said arm, said disk being constructed to constitute, in connection with said dog, a brake to retard the movement of the arm.

18. A package-receiving device comprising a pivoted arm, a notched disk rigid with the pivot of the arm, a dog connected with the arm adapted for engagement with the notches of the disk, means for releasing said dog from the disk whereby the arm may be swung out of its operative position when a mail-bag is received by said arm, a spring applied to the dog to hold it in engagement with the said notches, and means for adjusting the tension of said spring, said disk being constructed to afford a brake to retard the movement of the arm.

19. A package-receiving device comprising a pivoted arm, a disk rigid with the pivot of the arm and provided in its circumference with two notches, a dog on the arm adapted for engagement with either of said notches, and means operated when a package is received by said device to release the dog from the notch engaged thereby and to swing the arm out of its operative position, the periphery of said disk between said notches being made eccentric to the pivot of the arm.

20. A package-receiving device comprising a pivoted arm provided on its outer end with a pivoted jaw and a stationary jaw, between which the package is received, and means for holding the pivoted jaw yieldingly in contact with the stationary jaw, said jaws diverging from each other both inwardly and outwardly from their point of contact.

21. The combination with a receiving device comprising a pivoted arm, means for locking the said arm in its operative position and means for releasing it from its operative position and swinging it in its inoperative position when a mail-bag is received thereby, of a discharging device comprising two vertically-swinging arms connected with the receiving device in a manner to be brought into its operative position when the receiving device is moved out of its operative position, said arms being adapted to be swung into horizontal positions for engagement with the opposite ends of packages to be delivered to the passing car and away from each other in vertical positions when not in use.

22. The combination with a car, provided with a sliding door which is provided with an opening which is closed by a swinging door or leaf, of a package-receiving device which is adapted to receive packages from a stationary discharging device and to deliver the same to the interior of the car through said swinging door or leaf.

23. The combination with a car, of a receiving device comprising an arm which is pivoted to the door-jamb of the car and provided on its outer end with receiving-jaws adapted to engage the package, means for locking the arm in its operative position, means operated by engagement of the package with the receiving mechanism for releasing the locking mechanism and swinging the end of the arm and the package carried thereby into the interior of the car, and a brake mechanism for said arm embracing an eccentric part between the arm and its pivot.

24. The combination with a car, provided with a sliding door and provided with an opening which is closed by a swinging door or leaf, of a package-receiving device comprising an arm pivoted to the door-jamb and having on its free end receiving-jaws, means for locking said arm in its operative position and means operated by the engagement of the package with the receiving mechanism to release the locking mechanism and to swing the outer end of the arm and the package carried thereby into the interior of the car through said swinging door.

25. The combination with the receiving and discharging arms of a receiving and discharging device, and a common pivot for the arms, of connections between said arms which are operated when a package is received from a passing car by the receiving-arm to bring the discharging-arm into its operative position, and an inclosure for said device which incloses the discharging-arm when the receiving-arm is in its operative position and into which the receiving-arm, and the package carried thereby is automatically moved when the package is delivered from the passing car to the receiving-arm.

26. The combination with a receiving device and discharging device comprising an upright post, and receiving and discharging arms pivoted to said post and which receiving and discharging arms are arranged at right angles to each other, of an inclosure for such device within which the receiving and discharging arms are adapted to be alternately moved.

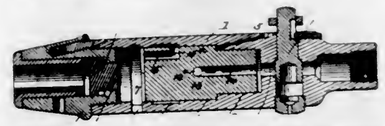
27. The combination with a receiving and discharging device, comprising an upright post and receiving and discharging arms pivoted to the upper end of the post, which receiving and discharging arms are located at right angles to each other, of an inclosure for said device, which incloses the discharging-arm and the package carried thereby when the receiving-arm is in position to receive a package from a passing car, and means for automatically swinging the receiving-arm and the package received thereby into the inclosure and the discharging-arm into its operative position which is operated by the delivery of the package from the car to the receiving-arm.

28. The combination with receiving and discharging arms which are adapted to be brought alternately into operative position, and which are pivoted to a common pivot, of a brake mechanism embracing an eccentric part between said arms and pivot.

29. The combination with receiving and discharging arms which are adapted to be brought alternately into operative position, of a spring-pressed dog for holding said arms in their operative position, and a brake for retarding the movement of said arms embracing an eccentric part in engagement with said dog.

655,902. PNEUMATIC HAMMER.

CHARLES H. JOHNSON, Chicago Heights, Ill., assignor to the Johnson, Parfitt Tool Company, Springfield, Ill. Filed Jan. 31, 1900. Serial No. 3,506. (No model.)



Claim.—1. In a motive-fluid-operated tool, the combination with a suitable cylinder provided with an exhaust-port of a differential piston having separate ports or passages leading from its opposite ends to its periphery at adjacent points, said cylinder having a supply-port arranged to maintain constant pressure on that head of that piston having the lesser area, substantially as and for the purposes specified.

2. In a motive-fluid-operated tool, the combination with a cylinder having a differential bore, an exhaust-port, a motive-fluid-supply port, and an annular groove on its interior at its greatest diameter, of a differential piston having ports or passages leading from its opposite ends to its periphery in adjacent planes and adapted to simultaneously register with the annular groove of the cylinder, substantially as and for the purposes specified.

3. In a motive-fluid-operated tool, the combination with a cylinder having a differential bore provided with an annular groove at its greatest interior diameter, an exhaust groove and port adjacent thereto, and a motive-fluid-supply port, of a differential piston having ports or passages leading from its opposite ends to points on its periphery, the motive-fluid-supply port being arranged to maintain constant pressure on that head of the piston having the lesser area, substantially as and for the purposes specified.

4. In a motive-fluid-operated tool, the combination with a piston and its cylinder, of an annular end plug having an annular flange or shoulder on its interior, a ferrule or bushing, and a block or button interposed between the piston and ferrule or bushing, substantially as and for the purposes specified.

655,903. MACHINE FOR EDGING SHEET-METAL ROOFING-PLATES.

WILLIAM MARTIN, New York, N. Y. Filed Oct. 31, 1899. Serial No. 735,353. (No model.)

Claim.—1. The combination with the bending-tools and means for operating them, of a sheet-lifting arm, means for imparting a rocking movement to the arm and means for moving the arm and sheet carried thereby bodily in a direction lateral to the rocking movement of the arm from the supply to the position where the plate is to be operated upon, substantially as set forth.

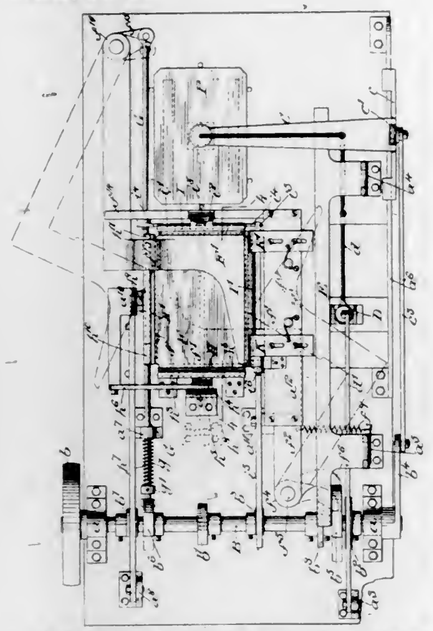
2. The combination with means for simultaneously bending the edges of a sheet and means for operating the bending means, of a sheet-lifting arm, a suction apparatus arranged to hold the sheet temporarily to the arm and means for moving the sheet and arm bodily from the supply to the point where the sheet is to be edged, substantially as set forth.

3. The combination with a drive-shaft, of bending-tools arranged to act simultaneously on the four sides of a sheet, sheet-conveying mechanism and a suction apparatus, and means for placing the tools, conveyer and suction mechanism under the control of the drive-shaft, substantially as set forth.

4. The combination with a set of bending-tools arranged to operate upon different edges of a sheet of metal and means for operating them, of a movable guide or anvil common to two adjacent sets of tools arranged to swing into and out of position to cooperate with the said tools, substantially as set forth.

5. The combination with tools arranged to bend different edges of a sheet of metal over toward opposite sides of the sheet, of anvils or guides

arranged to swing into and out of position to cooperate with the said tools, substantially as set forth.



6. The combination with a yielding support, of a bending-tool mounted in rocking adjustment in said yielding support, means for automatically feeding a sheet of metal to the bending-tool, means for holding a sheet of metal in position to have its edge bent by said tool and means for simultaneously rocking the tool and forcing it bodily toward the edge of the sheet of metal, substantially as set forth.

7. The combination with sets of tools arranged to act upon different edges of a sheet of metal, of means for simultaneously operating one set of tools in one direction to bend an edge upward and over toward one face of the sheet and the other set of tools in the opposite direction, to turn an edge of the sheet downward and under toward the opposite face of the sheet, substantially as set forth.

8. The combination with tools arranged to simultaneously bend two adjacent edges of a sheet of metal over toward the one face of the sheet and tools arranged to bend, at the same time, another two adjacent edges of the sheet toward the opposite face of the sheet, of movable guides or anvils arranged to swing into and out of position to cooperate with the several bending-tools, substantially as set forth.

655,904. MACHINE FOR EDGING METALLIC ROOFING PLATES. WILLIAM MARTIN, New York, N. Y. Filed Nov. 7, 1899. Serial No. 736,108. (No model.)

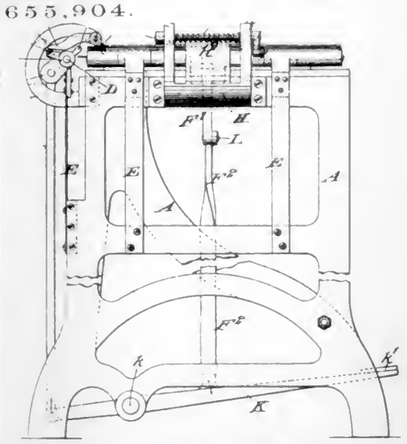
Claim.—1. The combination with means for supporting the sheet in position to be operated upon, of a bending-tool mounted to rock and movable bodily toward and away from the edge of the sheet, the said bending-tool being provided with a lip or flange in position to engage the edge of the sheet, means for rocking the tool, and means for moving the tool bodily toward and away from the edge of the sheet during its rocking movement, substantially as set forth.

2. The combination with means for holding the sheet in position, of a flexible support, a rocking tool mounted in the flexible support and means for rocking the tool and forcing the flexible support and tool thereon toward the edge of the sheet of metal, substantially as set forth.

3. The combination with a support for the sheet to be operated upon and a sheet-holder, of a rocking tool for engaging the edge of the sheet, means in connection with the rocking tool for operating the sheet-holder and means for operating the tool and hence the sheet-holder, substantially as set forth.

4. The combination with a sheet-support and a spring-actuated sheet-holder mounted over the edge of the sheet, of a rocking tool for engaging the edge of the sheet, an arm on the rocking tool for operating the spring-actuated sheet-holder and means for rocking the tool, substantially as set forth.

655,904.



655,905. WIRE-JOINT AND METHOD OF MANUFACTURING SAME. FRANCIS W. MAXSTADT, Chicago, Ill. Filed June 11, 1900. Serial No. 19,864. (No model.)

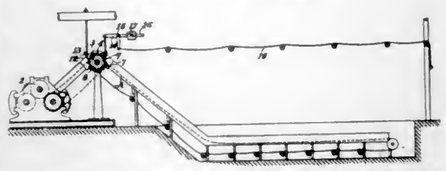


Claim.—1. As a new article of manufacture, a wire-joint formed from a single sheet-metal blank having the central internal ridge e and the longitudinal edges bent in opposite directions toward each other into permanent contact with said ridge to produce parallel closely-adjacent tubes which receive, and contact throughout their interior surfaces with, the wires to avoid intermediate air-spaces.

2. The method of forming a wire-joint D′, which consists in bending the longitudinal edges of a sheet-metal blank into U shape, inserting a mandrel into said bent blank and bending the edges of the blank toward each other over said mandrel, then removing said mandrel and introducing into said blank a second mandrel approximately of the gage of the wires to be joined, then bending the said edges farther in the same direction over said second mandrel to complete the joint, and then withdrawing said second mandrel.

3. The method of forming a wire-joint D′, which consists in bending the longitudinal edges of a sheet-metal blank into U shape with a central internal ridge, inserting a mandrel into said bent blank and bending the edges of the blank toward each other over said mandrel, then removing said mandrel and introducing into said blank a second mandrel approximately of the gage of the wires to be joined, then bending the said edges over said second mandrel into contact with said internal ridge to complete the joint, and then withdrawing said second mandrel.

655,906. CLUTCH. JOSEPH A. MOORE, Paauhau, Hawaii. Filed Apr. 19, 1900. Serial No. 13,412. (No model.)



Claim.—1. A frictional driving apparatus consisting of a shaft a drum fixed to the shaft through which power is to be transmitted, a driving-wheel loosely turnable upon the shaft contiguous to one end of the drum, a friction-wheel loosely turnable upon the shaft contiguous to the opposite end of the drum, a flexible rope or the like having one end fixed to the driving-wheel and the other to the friction-wheel, and the intermediate portion coiled around the drum, and normally movable without communicating motion to the drum, and means for tightening the rope about the drum and increasing its friction so that the movement of the driving-wheel will be communicated to the drum and the shaft.

2. A frictional driving device, consisting of a journaled shaft, and a drum fixed thereto, a driving-wheel loosely turnable upon the shaft contiguous to one end of the drum, a friction-wheel loosely turnable contiguous to the opposite end of the drum, a rope having its ends connected respectively with the driving-wheel and the friction-wheel and the intermediate portion loosely coiled about the drum, a frictional band and means by which it is tightened about the friction-wheel whereby the rope is tightened upon the drum and motion transmitted to it and the shaft.

3. A frictional driving apparatus consisting of a journaled shaft, a drum fixed thereto, a driving-wheel loosely turnable upon the shaft contiguous to one end of the drum, a loose friction-wheel upon the shaft contiguous to the opposite end of the drum, a rope having a number of turns about the drum, and its ends fixed respectively to the drive and friction wheel so that the wheels are normally turnable without communicating motion to the drum and shaft, a band fitted to the friction-wheel and connected with a weighted lever whereby the band is pressed upon the wheel and its movement retarded so as to tighten the rope and transmit motion to rotate it and the shaft.

4. A frictional driving mechanism, consisting of a drum fixed upon the shaft, a driving-wheel and a frictional wheel loosely turnable upon the shaft, contiguous to the ends of the drum, a rope loosely coiled about the drum having its ends fixed respectively to the driving and friction wheel, a fulcrumed lever, a band passing around a friction-wheel having one end fixed and the other connected with the lever, and a weight adjustable upon the lever whereby the friction of the band upon the wheel is regulated and the wheel retarded so as to compress the rope upon the drum and transmit movement to it and the shaft.

5. A frictional driving apparatus consisting of a drum fixed to the shaft to be driven, driving and frictional wheels loosely turnable upon the shaft contiguous to the ends of the drum, a rope coiled about the drum having its ends connected respectively with the driving and friction wheel and normally loosely slidable without communicating motion to the drum, a fulcrumed weighted lever, a band passing around the friction-wheel having one end fixed and the other connected with the weighted lever whereby the wheel is retarded and the rope caused to bind about the drum with sufficient pressure to drive the shaft, a connection between the weighted lever and a distant point whereby the lever may be turned and the friction of the band upon the wheel reduced to stop the movement of the shaft.

6. A frictional driving apparatus and carrier consisting of a shaft, a drum fixed thereto through which power is communicated to rotate the shaft and drive the carrier, a driving and a friction wheel loosely turnable upon the shaft contiguous to the ends of the drum, a rope having its ends connected respectively with the drive and friction wheel and the intermediate portion coiled about the drum, a fulcrumed bell-crank lever, a band passing around the friction-wheel having one end fixed and the other connected with the lever, an adjustable weight by which the tension of the band is adjusted so as to tighten the rope about the drum and drive the carrier and its load, a rope connecting with an arm of the lever extending parallel with the carrier whereby the lever may be turned about its fulcrum, and the friction of the band and the rope reduced so as to allow the drum and shaft to stop.

7. A frictional driving apparatus consisting of a drum fixed upon the shaft to be driven, a driving-wheel and a friction-wheel loosely turnable upon the shaft contiguous to the ends of the drum, a rope having its ends connected respectively with the driving-wheel and the friction-wheel, and the intermediate portion loosely coiled about the drum, a frictional band and means by which it is tightened about the wheel whereby the rope is tightened upon the drum and motion transmitted to it and the shaft, and guides extending from the driving-wheel parallel to and in proximity with the surface of the drum whereby the rope is retained in position.

655,907. LIFTING-JACK. MOSES M. MOORE, Chicago Heights, Ill., assignor to the Q. & C Company, Chicago, Ill. Filed June 7, 1900. Serial No. 19,417. (No model.)

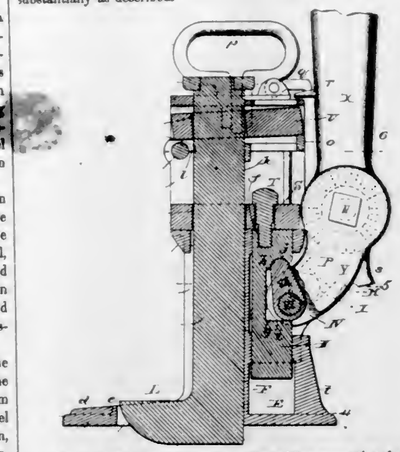
Claim.—1. In a lifting-jack the combination with a supporting-frame and a lifting-bar, of lifting and retaining blocks adapted to engage said bar alternately, an actuating-bolt reciprocally mounted in the frame and means for reciprocating said actuating-bolt, substantially as described.

2. In a lifting-jack the combination with a supporting-frame and a lifting-bar, of lifting and retaining blocks adapted to engage said bar alternately the latter located above the former, an actuating-bolt reciprocally mounted in the frame beneath said lifting-block, and means for reciprocating said actuating-bolt, substantially as described.

3. In a lifting-jack the combination with a supporting-frame a lifting-bar and an operating-lever, of lifting and retaining blocks adapted to engage said bar alternately, and an actuating-bolt reciprocally mounted in controllable connection with the first-named block and with the lever aforesaid, substantially as described.

4. In a lifting-jack the combination with a supporting-frame a lifting-bar and an operating-lever, of superposed lifting and retaining blocks adapted to alternately engage said bar in tilting relation, and an actuating-bolt reciprocally mounted having a beveled end in controllable connection with the first-named block and with the lever aforesaid, substantially as described.

5. In a lifting-jack the combination with a supporting-frame a lifting-bar and an operating-lever, of lifting and retaining blocks adapted to engage said bar alternately, an actuating-bolt in controllable connection with the first-named block, and a pawl pivotally connecting said bolt and lever, substantially as described.



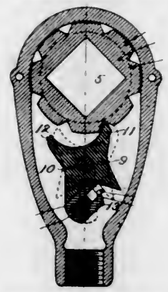
6. In a lifting-jack the combination with a supporting-frame a lifting-bar and an operating-lever, of tilting lifting and retaining blocks adapted to engage said bar alternately, a reciprocating bolt for actuating the lifting-block, and a pawl located within the confines of said actuating-bolt pivotally connecting same with the lever aforesaid, substantially as described.

7. In a lifting-jack the combination with a supporting-frame a lifting-bar and an adjustable operating-lever, of lifting and retaining blocks adapted to engage said bar alternately, a recessed actuating-bolt, and a pawl located in the recess of said bolt and pivotally connected with the lever aforesaid, substantially as described.

8. In a lifting-jack the combination with a supporting-frame a lifting-bar and an operating-lever, of lifting and retaining blocks adapted to engage said bar alternately, a reciprocating bolt for actuating the lifting-block, and a cam-shaft journaled in the supporting-frame for disengaging the retaining-block, substantially as described.

9. In a lifting-jack the combination with a supporting-frame comprising two parallel compartments, of a lifting-bar located in one of such compartments, an actuating-bolt in the other compartment, an operating-lever fulcrumed upon the frame, a pivotal connection between said lever and bolt, a lifting-block and a retaining-block for alternately engaging said bar, and means for releasing the last-named block, substantially as described.

655,908. RATCHET-WRENCH. WALTER H. MORSE, Lynn, Mass. Filed May 7, 1900. Serial No. 15,668. (No model.)

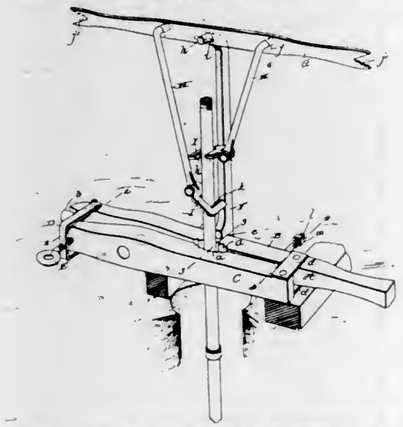


Claim.—1. A ratchet-wrench comprising a casing, a handle therefor, a ratchet-wheel formed with a hub which is mounted in said casing and constitutes the head of the wrench and has a polygonal hole extending axially through said hub to form the socket for the nut, a pawl pivoted within said case having two fingers either of which may at pleasure be engaged with said ratchet, a block journaled in said casing having a pin which is spring-seated in said block and engages with said pawl, and a lever connected with said block whereby it may be turned so that the

said pin will cause one or the other of the said pawl-fingers to engage with the ratchet at pleasure, substantially as described.

2. A ratchet-wrench comprising a casing, a handle therefor, a ratchet-wheel formed with a cylindrical hub which is journaled in said casing and has a polygonal hole extending axially through said hub to form a socket for a nut, said hub constituting the head of the wrench, a cylindrical opening in one face of the casing to admit the ratchet-wheel, a flanged ring which fits over the end of the hub and is secured to the casing to form one of the bearings for the hub, a pawl pivoted within said casing, a block journaled within said casing and having a spring-seated pin which engages with said pawl, and a lever by which said block is turned so that said pin will cause said pawl to engage or disengage with said ratchet at pleasure, substantially as described.

655,909. COMBINED VISE AND APPARATUS FOR RAISING OR LOWERING WELL-TUBES. OSCAR H. NEBEL and OSCAR B. HANSON, Austin, Minn. Filed Nov. 13, 1899. Serial No. 736,858. (No model.)



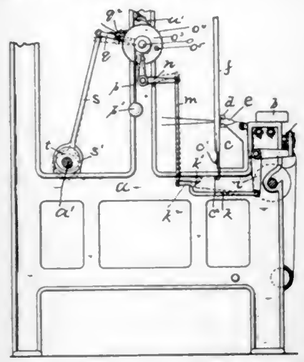
Claim.—1. In the apparatus described, the combination of the vise forming a base for the apparatus, and comprising two members connected together in a hinged manner and arranged so as to move horizontally toward and from each other; said members being provided on their inner faces at an intermediate point of their length with vertically-disposed teeth or serrations whereby they are enabled to hold a tube against both vertical and rotary movement, and means for clamping said members against a tube, a standard connected to and rising from one member of the vise, a lever fulcrumed at an intermediate point of its length on the standard, and tube-engaging dogs loosely connected with said lever at opposite sides of the fulcrum-point thereof, substantially as specified.

2. In the apparatus described the combination of a vise forming a base and comprising two members connected together in a hinged manner, and arranged to move horizontally toward and from each other; said members being provided on their inner faces at an intermediate point of their length with vertically-disposed teeth or serrations, and means for clamping said members against a tube, the standard connected to one member of the vise, a lever fulcrumed on the standard and detachable therefrom, and having a toothed fish-mouth at one end, arms or links loosely connected to the lever at opposite sides of the fulcrum-point thereof, and tube-engaging dogs loosely connected to said arms or links, all as and for the purpose set forth.

655,910. WEFT STOP-MOTION FOR LOOMS. EDWIN OLDFIELD, Norwich, Conn. Filed Feb. 16, 1898. Serial No. 670,599. (No model.)

Claim.—1. In a loom, a supporting-stud, a laterally-moving disk placed thereon, and provided with a stud, and a mechanism for causing said disk or plate to revolve upon the stud for the purpose of stopping the loom, combined with means operated by said stud upon the disk or plate, the shipper-rod and mechanism for operating the shipper-rod, and a swinging batten which operates the mechanism connected with the shipper-rod when said mechanism is moved into the line of travel with said batten, substantially as shown.

2. In a loom, a supporting-stud, a disk which is movable laterally thereon, a mechanism for causing the disk to revolve, and move outwardly upon the stud, a mechanism for returning the disk to position on the stud, a suitable pawl for preventing the backward movement of the disk upon the stud, combined with means which are operated by said disk, when the disk has reached the end of its travel for stopping the loom, mechanism for operating the shipper-rod, and which is moved into the line of travel with the batten by the said means, the shipper-rod, and a swinging batten which operates the mechanism connected with the shipper-rod when the quills are empty, substantially as described.



3. A threaded stud, an operating disk or plate placed thereon, and which has a lateral movement upon the stud, a mechanism for causing the disk to revolve, a pawl for preventing the backward movement of the disk, and a weighted cord attached to the disk for causing it to return to position upon the stud, combined with means which is operated by the disk at predetermined times, a mechanism for operating the shipper-rod, and which is moved into the line of travel by said means, the shipper-rod, and a swinging batten which operates the mechanism for operating the shipper-rod when the quills are empty, substantially as set forth.

4. In a loom, a threaded supporting-stud, a revolving disk placed thereon and provided with an operating-stud upon its outer side, and which disk has a lateral movement upon the said stud, combined with an operating mechanism for causing the disk to revolve forward, a pawl for preventing the disk from revolving backward, and a mechanism for causing the disk to return to position upon the stud when the pawl is raised, combined with suitable mechanism operated by said disk at predetermined times, a shipper-rod connected to and operated by said mechanism, and a swinging batten which is brought into the line of travel with the batten, substantially as shown.

5. In a loom, the combination with a shipper-rod and batten, of stop mechanism operatively connected with said shipper-rod normally out of operative relation with said batten, a rotary member arranged to move the stop mechanism into operative relation with the batten, and means for imparting a step-by-step movement to said rotary member.

6. In a loom, the combination with a batten and shipper-rod, of stop mechanism operatively connected with the shipper-rod and normally located out of the line of travel of the batten, actuating mechanism for moving said stop mechanism into the line of travel of the batten and means for causing the operation of said actuating mechanism when the quills are emptied.

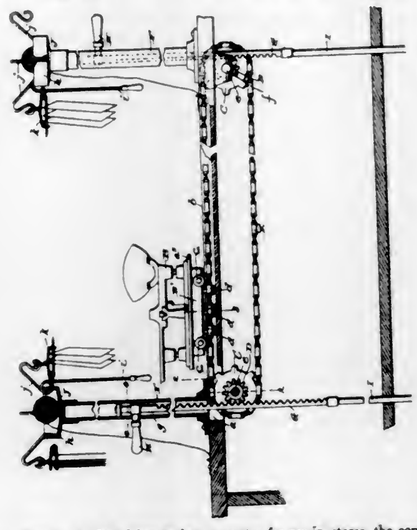
7. In a loom, an operating-shaft, a rotary disk operated from said shaft, a stop mechanism, and a batten, combined with means whereby the disk is made to operate the stop mechanism at predetermined times, whereby the machine is stopped at the same time that the thread is exhausted from all the bobbins, substantially as shown.

8. In a loom, the combination with the batten and shipper-rod, of stop mechanism operatively connected with the shipper-rod and normally out of operative relation with the batten, a rotary disk provided with a stud arranged to engage the stop mechanism and to move it into operative relation with the batten, means for rotating said disk to cause the engagement of the stud with the stop mechanism, and means for returning the disk to its normal position.

9. In a loom, the combination with the batten and shipper-rod, of stop mechanism operatively connected with the shipper-rod and normally out of operative relation with the batten, a threaded stud, an interiorly-threaded disk upon said stud and provided with a projection designed to engage the stop mechanism, means for imparting a step-by-step rotation to the disk, a pawl engaging the disk to prevent its backward rotation, and means for returning the disk to its normal position when the pawl is elevated.

10. In a loom, the combination with a batten and shipper-rod, of a bell-crank lever operatively connected with the shipper-rod, a swinging rod connected to said bell-crank lever and provided with a projection, a second bell-crank lever operatively connected with the swinging rod, and means for operating the second bell-crank lever at predetermined intervals to swing the projection on the rod into the path of the batten.

655,911. STORE-SERVICE APPARATUS. ELIZABETH H. PFEIFFER, Pensacola, Fla. Filed Jan. 25, 1900. Serial No. 2,781. (No model.)



Claim.—1. In a labor-saving apparatus for use in stores, the combination of a counter having a longitudinal guideway in its upper side, wheels mounted below the counter and adjacent to the ends thereof, a belt taking around said wheels and having its upper stretch arranged in the guideway, a handle, gearing intermediate of the handle and one of the wheels, and a scale or other device to be moved having a depending projection arranged in the guideway of the counter and connected to the belt, substantially as specified.

2. In a labor-saving apparatus for use in stores, the combination of a counter, wheels arranged adjacent to the ends of the counter, a conveying-belt taking around said wheels, a pinion fixed with respect to one of the belt-wheels, and a vertically-movable rack-bar intermeshed with said pinion, substantially as specified.

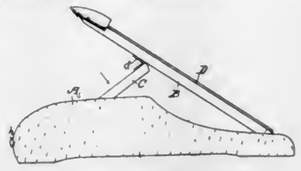
3. In a labor-saving apparatus for use in stores, the combination of a counter, a hollow upright rising from the counter and having a vertical slot, wheels arranged adjacent to the ends of the counter, a longitudinally-disposed conveyer-belt taking around said wheels, a pinion fixed with respect to one of the belt-wheels, and a vertically-movable rack-bar intermeshed with said pinion and movable in the hollow upright and having a lateral handle movable in the slot of said upright, substantially as specified.

4. In a labor-saving apparatus for use in stores, the combination of a counter, hollow uprights rising from the counter at points adjacent to the ends thereof and having vertical slots, wheels arranged adjacent to the ends of the counter, a longitudinally-disposed belt taking around said wheels arranged adjacent to the ends of the counter, pinions fixed with respect to the belt-wheels, and vertically-movable rack-bars intermeshed with the pinions and movable in the hollow uprights and having lateral handles movable in the slots of said uprights, substantially as specified.

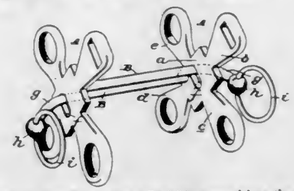
5. In a labor-saving apparatus for use in stores, the combination of a counter, a belt disposed longitudinally of the counter and having its upper stretch arranged above the counter, a carrier arranged on the counter and connected to the belt, and a scale pivotally mounted on said carrier whereby it may be turned thereon to any position desired, substantially as specified.

655,912. HEAD AND SHOULDER REST. GEORGE M. SELLINGER, Rochester, N. Y. Filed July 18, 1898. Serial No. 686,260. (No model.)

Claim.—A portable rest for the head and shoulders comprising a base-frame formed with vertical side rails and cross-bars in different horizontal planes, inclined notched rests independent of and secured to the inner faces of the side rails and extending forwardly from the under side of the front edge of the highest cross-bar, a tilting frame hinged to and resting upon the upper face of the lower cross-bar and provided at its free extremity with a transverse headboard and a brace-frame of a width to pass between the side rails of the base-frame and pivoted at one end to the under side of the tilting frame and provided with a foot-bar having extended ends designed to engage the rests and an inclined face designed to lie flush against the front face of the rear cross-bar of the base-frame when the tilting frame is in its lowest adjustment.



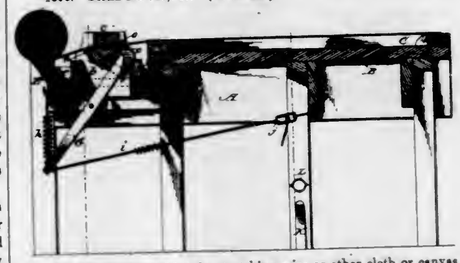
655,918. BRIDLE-BIT. MERRELL H. SIMS, Milledgeville, Ga. Filed Apr. 5, 1900. Serial No. 11,697. (No model.)



Claim.—1. The herein-described bit comprising the right and left hand cheek-pieces, having the slots or elongated openings *f*, arranged in different planes, a cross-bar fixedly connected at one end to the inner side of the right-hand cheek-piece, at one side of and a slight distance from the slot therein, and extending loosely through the slot of the left-hand cheek-piece, and a cross-bar fixedly connected at one end to the inner side of the left-hand cheek-piece at the opposite side of and a slight distance from the slot therein, and extending loosely through the slot of the right-hand cheek-piece whereby the bars are held apart throughout their length; the said bars having their outer portions curved rearwardly and adapted to be connected to driving-lines, substantially as specified.

2. The herein-described bit comprising cheek-pieces each formed in one piece and having the central portion provided with a slot or elongated opening *f* and four apertured arms reaching from said central portion, and the cross-bars each fixedly connected at one end to the inner side of the central portion of one cheek-piece at a slight distance from the slot therein and extending loosely through the slot in the central portion of the other cheek-piece whereby the bars are held apart; the said bars having their outer portions curved rearwardly and provided with loose rings, substantially as and for the purpose set forth.

655,914. MACHINE FOR STRETCHING WIRE-CLOTH. JONATHAN H. SOULE and NICHOLAS F. GREEK, Owosso, Mich. Filed Dec. 18, 1899. Serial No. 740,746. (No model.)



Claim.—1. A machine for stretching wire or other cloth or canvas while being secured to its frame, comprising a suitable bench or frame, a spring-actuated clamping device consisting of a movable carrier provided with a stationary clamping-jaw and a movable clamping-jaw, a spring-actuated pivoted lever to which the movable jaw is connected, and means for operating both the carrier and the pivoted lever, consisting of a suitable foot-treadle and an intermediate connection between the lever and treadle, substantially as and for the purpose described.

2. A machine for stretching wire or other cloth or canvas while being secured to its frame, comprising a suitable bench or frame, a supplemental frame connected to the main frame, a spring-actuated clamping device movable in the supplemental frame and consisting of a carrier having inclined guide-grooves upon its sides, a stationary jaw and a movable

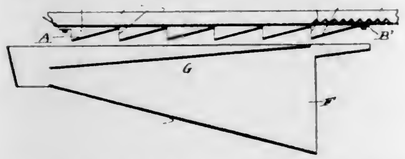
jaw with means for operating it, said movable jaw engaging the inclined grooves whereby its movement will be at an angle to a perpendicular, substantially as and for the purpose specified.

3. A machine for stretching wire or other cloth or canvas while being secured to its frame, comprising a suitable device for stretching the cloth lengthwise, and a device for holding the overlapping edge of the cloth against the side of the door-frame, consisting of a pivoted and spring-actuated presser-bar provided at its upper end with a presser-block, and means for operating said bar, consisting of a pivoted foot-trip operating upon the lower end of the bar, substantially as and for the purpose set forth.

4. A machine for stretching wire or other cloth or canvas while being secured to its frame, comprising a suitable bench or frame, a supplemental frame connected thereto having guide-grooves, a spring-actuated clamping device consisting of a carrier engaging the guide-grooves and provided with a stationary clamping-jaw and inclined guide-grooves, a movable jaw engaging the inclined guide-grooves, and suitable means for operating the carrier and the movable jaw successively, substantially as and for the purpose described.

5. A machine for stretching wire or other cloth or canvas while being secured to its frame, comprising a suitable bench or frame, a supplemental frame connected thereto, a spring-actuated clamping device consisting of a carrier provided with a stationary jaw and inclined guide-grooves, a movable jaw engaging with the guide-grooves, suitable means for successively operating the carrier and the movable jaw, and means for holding the overlapping edge of the cloth against the side of the door-frame, consisting of a spring-actuated pivoted presser-bar provided at its upper end with a presser-block, and a pivoted foot-trip for operating the bar, substantially as and for the purpose specified.

655,915. THRESHING-MACHINE. ALBERT N. THOMAS and JOHN CALDWELL, Avalon, Mo. Filed Oct. 31, 1899. Serial No. 735,406. (No model.)



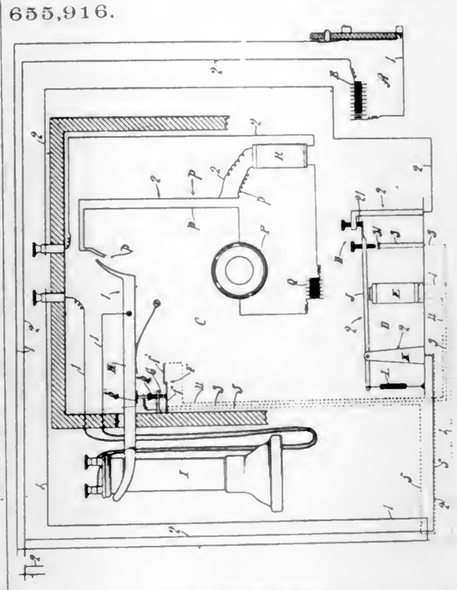
Claim.—In a threshing-machine, a grain-pan with a perforated extension, a detachable frame adapted to be carried on the under side of said extension, and having a series of imperforate shelves inclined rearwardly and downwardly in the direction of flow of material passing over the same, substantially as shown and described.

655,916. SYSTEM FOR INDIVIDUAL SERVICE ON ELECTRICAL PARTY-LINES. WILLIAM TORST, Jr., Los Angeles, Cal., assignor of one-half to William P. Mooney, San Pedro, Cal. Filed Sept. 25, 1899. Serial No. 731,672. (No model.)

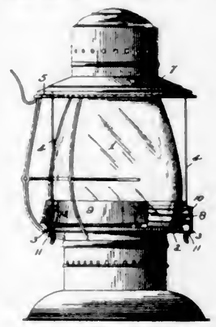
Claim.—1. A system for individual service on electrical party-lines comprising the combination with the central station and the service-machine connected therewith by a metallic service-circuit; of an electrical cut-out on said circuit; a magnet for operating the cut-out; a metallic circuit connecting the magnet with the service-circuit through the cut-out; a switch in the connection between the magnet and the cut-out; a supplemental conductor connected with one line of the service-circuit; a key connected with the supplemental conductor and arranged to open and close the switch and to electrically connect the supplemental conductor with the magnet-wire at the instants only of respectively opening and closing the switch; and independent means for opening and closing the service-circuit.

2. In an electrical system, the combination with a central station and a service-machine connected therewith by a metallic circuit, of an electrical cut-out on said circuit; a magnet for operating the cut-out; a metallic circuit connecting the magnet with the service-circuit through the cut-out; a switch in the connection between the magnet and the cut-out; a supplemental conductor connected with one line of the service-circuit; a key connected with the supplemental conductor and arranged to open and close the switch and to electrically connect the supplemental conductor with the magnet-wire at the instants only of respectively opening and closing the switch; the lever which makes the connections of the service-machine being arranged to close the switch when the connections in the service-machine are made; and independent means for opening and closing the service-circuit.

655,916.



655,917. LANTERN. DAVID P. VAN RIPER, Meadville, Pa., assignor of two-thirds to Frederick H. Murray and William Gebhardt, same place. Filed May 23, 1900. Serial No. 17,725. (No model.)

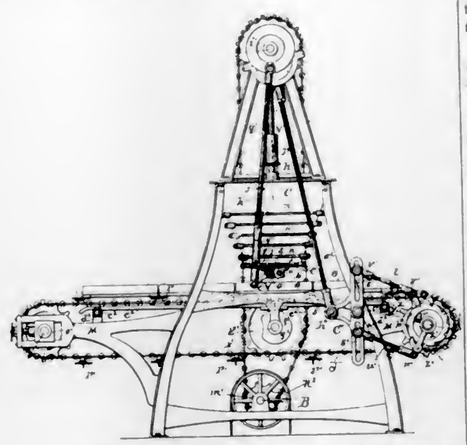


Claim.—1. The combination with a lantern, of a collapsible curtain adapted to inclose the globe thereof, a flat ring secured to the upper edge of the curtain depending outside of the same and movable therewith, a spring for holding the curtain distended, means for holding the curtain in folded position, said curtain folding within and being protected by said ring when in folded position, substantially as described.

2. The combination with a lantern, of a curtain adapted to cover the globe thereof, a ring secured to the base of the lamp having one edge of the curtain secured thereto, a ring secured to the opposite edge of the curtain depending outside of the same and movable therewith, a spring interposed between said rings and spring-catches carried by the movable ring adapted to engage the fixed ring when the curtain is in folded position, substantially as described.

655,918. MACHINE FOR MOLDING CONFECTIONS. JOSEPH C. WALKER, Syracuse, N. Y. Filed Jan. 27, 1899. Renewed June 28, 1900. Serial No. 21,979. (No model.)

Claim.—1. The combination with the main frame, main driving-shaft, and the hopper provided with discharge-openings in its bottom, of a conveyer below the hopper and carrying trays provided with molds, suitably-operated valves and plungers controlling the discharge from the hopper, a double or duplex ratchet mechanism imparting an intermittent and variable movement to the conveyer, a suitably-pivoted rock-arm, pitmen connecting said ratchet mechanism and rock-arm, an eccentric actuating said rock-arm, and mechanism transmitting motion from the main driving-shaft to said eccentric as set forth.



2. The combination with the main frame, main driving-shaft, and the hopper provided with discharge-openings in its bottom, of a conveyer below the hopper, molds carried on said conveyer, suitably-operated mechanism controlling the discharge from the hopper, mechanism dropping and raising the conveyer after each discharge, a double or duplex ratchet mechanism imparting an intermittent and variable movement to the conveyer, a suitably-pivoted rock-arm, pitmen connecting said ratchet mechanism and rock-arm, and means transmitting motion from the main driving-shaft to said rock-arm as set forth.

3. The combination with the hopper provided with discharge-openings in its bottom, endless chains or belts below the hopper, trays carried on said chains and provided with molds, longitudinal yielding bars supporting the intermediate portion of said chains, ratchet mechanism intermittently shifting said chains, suitably-operated cams dropping and raising said supporting-bars for the purpose set forth, valves and plungers controlling the discharge from the hopper, and means actuating said valves and plungers substantially as described and shown.

4. The combination with the main frame, main driving-shaft, and the hopper provided with discharge-openings in its bottom, tubes extending upward from said openings and provided with ports in their sides, plungers in said tubes, cut-off valves opening and closing said ports, oscillatory discharge-valves communicating with the aforesaid openings, means actuating the cut-off valves and plungers, meshing gears connecting said discharge-valves, an auxiliary shaft, a crank secured to the latter shaft, a lever secured to one of said gears, a pitman connecting said lever and crank, and means transmitting motion from the main driving-shaft to the auxiliary shaft as set forth.

5. The combination with the hopper provided with discharge-openings in its bottom, tubes extending upward from said openings and provided with ports in their sides, cut-off valves opening and closing said ports, plungers in said tubes, discharge-valves communicating with said openings, means for actuating said valves and plungers, a conveyer moving intermittently below the hopper, trays carried on said conveyer and provided with molds, mechanism operating said conveyer, and suitably-operated cams dropping and raising the conveyer for the purpose set forth.

6. The combination with the main frame, of two transverse shafts journaled at opposite ends of the frame, sprocket-wheels secured to said shafts, chains traveling on said sprocket-wheels, ratchet mechanism connected to one of said shafts to intermittently move said chains, means actuating said ratchet mechanism, yielding or flexible longitudinal bars secured to the frame and between the aforesaid sprocket-wheels, upon which bars the intermediate portion of the chains rest, a transverse shaft journaled on the frame and provided with two cams supporting the central portion of the aforesaid bars to drop and raise the same for the purpose set forth, and mechanism operating the cam-shaft, substantially as described.

7. The combination with the main frame and main driving-shaft, two shafts extending across the ends of the frame, sprocket-wheels secured to said shafts, chains traveling on said sprocket-wheels, ratchet mechanism intermittently moving said chains, a transverse rod extending across each end of the frame, two longitudinal centrally-divided yielding or flexible bars supported at their ends on said rods, a plate uniting two sections of each bar, a transverse shaft extending below said bars, cams secured to the latter shaft upon which cams the aforesaid plates rest to drop and raise said bars, for the purpose set forth, and mechanism transmitting motion from the main driving-shaft to the ratchet mechanism and cam-shaft respectively as described.

8. The combination with the conveyer, of a primary ratchet-wheel connected thereto, a pawl engaging said ratchet-wheel to impart successive intermittent movements to the conveyer, a secondary ratchet-wheel also connected to the conveyer and rigidly attached to the primary ratchet-wheel, a pawl engaging the secondary ratchet-wheel to impart a single and greater movement to the conveyer, pitmen connected to said pawls, a rock-arm actuating said pitmen, and mechanism operating said rock-arm as set forth.

9. The combination with the main frame, main driving-shaft and conveyer, a double or duplex ratchet mechanism imparting an intermittent and variable movement to the conveyer, a suitable pivoted rock-arm, pitmen connecting said ratchet mechanism and rock-arm, an eccentric actuating said rock-arm, and mechanism transmitting motion from the main driving-shaft to said eccentric as set forth.

10. The combination with the main frame, main driving-shaft, and the hopper provided with discharge-openings in its bottom, plungers, cut-off valves, and oscillatory discharge-valves controlling the discharge from the hopper, an intermittently-moving conveyer below said hopper, trays carried on said conveyer and provided with a plurality of molds, a shaft journaled above the hopper, a vertically-movable horizontal frame carrying the plungers, a vertically-movable horizontal bar carrying the cut-off valves, meshing gears secured to the aforesaid oscillatory valves, a lever attached to one of the latter valves, a pair of eccentrics mounted on the upper shaft, pitmen connecting said eccentrics and aforesaid bar, a third eccentric mounted on said shaft, a rod connecting the latter eccentric and plunger-carrying frame, a disk or crank secured to said eccentric-shaft, a pitman connecting said disk and aforesaid lever, sprocket-wheels secured to the eccentric-shaft and main driving-shaft respectively, and a sprocket-chain connecting said sprocket-wheels as set forth.

11. The combination with the main frame, main driving-shaft, and the hopper provided with discharge-openings in its bottom, oscillatory discharge-valves communicating with said openings, meshing gears connecting said valves, a lever secured to one of said valves, a second shaft, a disk or crank mounted on the latter shaft, a pitman connecting said disk and lever, and means transmitting motion from the main driving-shaft to the other shaft as set forth.

12. The combination with the main frame, main driving-shaft, and the hopper provided with discharge-openings in its bottom, tubes extending upward from said openings and provided with ports in their sides, plungers in said tubes, a vertically-movable horizontal frame carrying said plungers, cut-off valves sliding telescopically over said tubes to open and close said ports, a vertically-movable horizontal bar carrying said cut-off valves, oscillatory discharge-valves communicating with said openings, meshing gears connecting said oscillatory valves, a lever secured to one of the latter valves, a shaft journaled above the hopper, a pair of eccentrics mounted on the latter shaft, pitmen connecting said eccentrics and the aforesaid bar, a third eccentric mounted on the latter shaft, a rod connecting the latter eccentric and plunger-carrying frame, a disk or crank secured to said eccentric-shaft, a pitman connecting said disk or crank and the aforesaid lever, a sprocket-wheel secured to each of said shafts, and a sprocket-chain connecting said sprocket-wheels as set forth.

13. The combination with the main frame, main driving-shaft, and the hopper provided with discharge-openings in its bottom, valves and plungers controlling the discharge from the hopper, mechanism operating said valves and plungers, endless chains or belts moving intermittently below the hopper, ratchet mechanism operating said chains, a rock-arm pivoted to the frame, a pitman connected to said rock-arm and actuating said ratchet mechanism, longitudinal yielding or flexible bars supporting the intermediate portion of said chains, a transverse shaft below said bars and provided with cams upon which said bars rest for the purpose set forth, a shaft journaled above the hopper, an eccentric mounted on the said latter shaft, a pitman connecting said eccentric and aforesaid rock-arm, sprocket-wheels mounted on the main driving-shaft and eccentric-shaft, a sprocket-chain connecting said sprocket-wheels, and a sprocket-wheel mounted on the cam-shaft and engaging said sprocket-chain as set forth.

14. The combination with the main frame, main driving-shaft, and the hopper provided with discharge-openings in its bottom, suitably-operated discharge-valves communicating with said openings, tubes extending upward from the openings and provided with ports in their sides, cut-off valves sliding telescopically on said tubes to open and close said ports, a vertically-movable horizontal bar carrying said latter valves, plungers in said tubes, a vertically-movable horizontal frame carrying said plungers and provided with vertical guides, a shaft supported above the hopper, a pair of eccentrics mounted on the latter shaft, pitmen connecting said eccentrics

and valve-carrying bar, and passing through the aforesaid guides, a third eccentric mounted on the latter shaft, a rod connecting the latter eccentric and plunger-carrying frame, and mechanism transmitting motion from the main driving-shaft to the eccentric-shaft as set forth.

15. The combination with the main frame, main driving-shaft, and the hopper provided with discharge-openings in its bottom, oscillatory discharge-valves communicating with said openings, a lever secured to one of said valves, an upwardly-projecting stem pivotally connected to said lever and provided with a pair of adjustable stops, a sleeve sliding on said stem and engaging the said stops with a lost motion between the same, a shaft journaled above the hopper, a disk or crank secured to the latter shaft, a pitman secured at its upper end pivotally to said disk or crank, and at its lower end to the aforesaid sleeve, and means transmitting motion from the main driving-shaft to the other shaft as set forth.

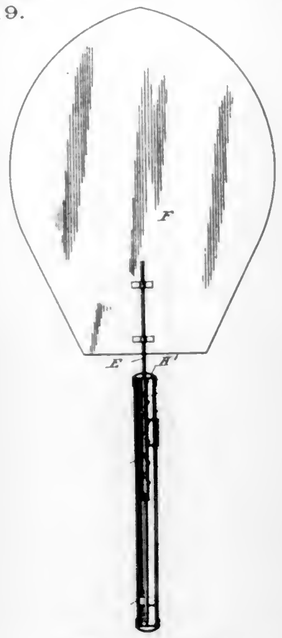
16. The combination with the main frame, main driving-shaft, and the hopper provided with discharge-openings in its bottom, tubes extending upward from said openings and provided with ports in their sides, plungers in said tubes, discharge-valves communicating with said openings, mechanism operating said plungers and discharge-valves, cut-off valves sliding telescopically on said tubes to open and close said ports, a vertically-movable horizontal bar carrying said cut-off valves, a shaft journaled above the hopper, an eccentric mounted on the latter shaft and provided with a downwardly-extending arm, a longitudinally-split friction-sleeve hung from the eccentric-shaft, a pitman secured at its lower end to the aforesaid bar and at its upper end vertically movable in said sleeve, adjustable stops on said pitman, a coupling pivoted to the eccentric-arm and sliding on said pitman to engage said stops with a lost motion between the same, and means transmitting motion from the main driving-shaft to the eccentric-shaft as set forth.

17. The combination with the main frame, and main driving-shaft, two transverse shafts journaled on opposite ends of the frame, sprocket-wheels secured to said shafts, a pair of endless sprocket-chains carried on said sprocket-wheels, a primary ratchet-wheel and a secondary ratchet-wheel mounted on one of the latter shafts, a longitudinally-slotted vertically-disposed rock-arm pivoted intermediate its length to the main frame, an upper and a lower pitman, said upper pitman having a greater thrust than the lower pitman, and each pivoted adjustably at its rear end to said rock-arm and at its front end to the free end of an arm, which latter arm is mounted loosely at its opposite end on said latter shaft, a pawl carried on the front end of the lower pitman and engaging the primary ratchet-wheel to impart a plurality of successive intermittent movements to the sprocket-chains, a similar pawl carried on the front end of the upper pitman, the secondary ratchet-wheel being timed to bring one of its teeth into position at regular intervals to be engaged by the latter pawl, whereby a greater and single movement is imparted to the chains, a suitably-journaled shaft having an eccentric mounted thereon, a pitman connecting said eccentric and rock-arm, and means transmitting motion from the main driving-shaft to the eccentric-shaft as set forth.

18. The combination with a suitably-journaled shaft, of an eccentric provided with a radial guide, a journal-box movable longitudinally in said guide, screw-threaded ears formed on the journal-box and eccentric respectively, and a screw passing through said ears to shift said box as and for the purpose set forth.

19. The combination with the endless conveyer-chains provided with transverse boards, of a continuous flexible sectional carrier supported on said boards, and provided with molds, the sections thereof being formed with an overlying lip and underlying lip at their respective meeting ends, and screws or bolts passing through said lips and boards substantially as described and shown.

655,919.



655,919. REVOLVING HAND-FAN. BARNIN I. BEHRENDT and MAX MAYER, New York, N. Y. Filed Apr. 6, 1899. Serial No. 711,972 (No model.)

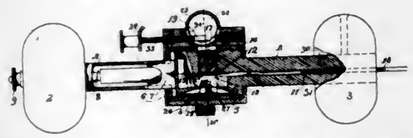
Claim.—The herein-described revolving fan comprising a vertically-disposed shaft, a fan secured to said shaft, a tubular handle having the shaft interiorly arranged, the lower end of said shaft having an endwise bearing against a solid plate and a lateral bearing in a perforated shell disposed within the said handle and above the said plate, a worm arranged upon the said shaft, a thumb-piece formed with two bent ends extending inwardly through a slot in said handle, grooves formed in both of said bent ends and fitting the inner edges of the slot in the handle and free to slide therein and be controlled in its direction of movement by its bearing within the said slot of the handle only, the said ends being in mesh with the worm of the shaft and adapted to be adjusted to proper mesh therewith, by bending either of the ends, said thumb-piece being also formed with a thumb-engaging surface in the direction of the length of the handle, whereby like pressure of the flat thumb may be exerted thereupon in either direction, and said shaft and fan being actuated thereby and independently of a spring: when all of said parts are arranged and operated as shown and described.

655,920. MANUFACTURE OF CARBON. WILLIAM J. BURKE, Scranton, Pa., assignor of one-half to Henry A. Kaufhold, same place. Filed Dec. 16, 1899. Serial No. 740,573. (No specimens.)

Claim.—1. As a new article of manufacture, carbon for electrical and other purposes manufactured from impalpably-powdered anthracite coal.

2. As a new article of manufacture, carbon for electrical and other purposes, manufactured from impalpably-powdered anthracite coal, and an oleaginous substance, thoroughly mixed together and carbonized in a mold, or suitable receptacle.

655,921. LOCK. PETER V. CORNILS, San Francisco, Cal. Filed Dec. 4, 1899. Serial No. 739,148. (No model.)



Claim.—1. In a lock and in combination with a spring-pressed slidable latch-bolt, knobs fixed to independent shanks the meeting ends of which fit one within the other, one of said shanks having a lug for actuating the bolt, a spring-pressed plate slidable in the other knob-shank and adapted to engage a slot in the end of the first-named shank whereby the knobs are turnable together, and an operating-button on the shank of the sliding plate and located exterior to the knob thereof whereby said plate may be withdrawn from its locked position with the shank of the first-named knob.

2. In a door-lock and in combination with a spring-pressed slidable latch-bolt, independent knob-shanks meeting centrally and transversely of the line of travel of the latch-bolt, one of said shanks having a lug adapted to engage the latch-bolt, a block slidable transversely in the other shank so as to engage with or be disengaged from the first-named shank, and tumblers movable within the second shank and normally engaging said block to retain it out of engagement with the first-named shank.

3. In a door-lock, a spring-pressed slidable locking-bolt, independent knob-shanks meeting transversely to the line of travel of the locking-bolt, one of said shanks having a sleeve upon its inner end within which the coincident end of the other shank is tornable, and a lug engaging the locking-bolt, slots made in said sleeve, a block slidable transversely in the interior shank so as to engage with or be disengaged from the slots of the sleeve, spring-pressed tumblers slidable through an opening in said block having transverse notches adapted to be brought in line, and a spring acting to force the block outward when such alinement has been produced whereby the outer end of the block will engage the notches of the sleeve and cause the knob-shanks to turn in unison.

4. In a door-lock, a spring-pressed slidable locking-bolt, independent knob-shanks meeting transversely to the line of travel of the bolt, one of said shanks having a sleeve upon its inner end with circumferential slots, and a lug to engage the locking-bolt, and the other having a head fitting and turnable within said sleeve, a block slidable transversely in said head having a point adapted to engage with or be disengaged from the slots of the sleeve, tumblers slidable longitudinally within said knob-shank and passing through an opening in the transversely-slidable block, notches formed in said tumblers, springs by which said notches are normally held out of alinement with the block whereby it is retained within the head in which it slides and out of engagement with the exterior sleeve, a key having bits to engage the ends of the tumblers and bring the transverse slots into alinement with the sliding block, and a spring whereby said block is projected when such alinement of the slots is made.

5. In a lock, and in combination with a spring-pressed slidable locking-bolt, independent knob-shanks meeting in line transverse to the line of travel of the locking-bolt, one of said shanks having a hollow sleeve formed upon its inner end and a lug to engage the locking-bolt, the other shank having a head fitting and turnable therein, a block slidable transversely through said head and having a point adapted to engage openings made in the sleeve of the other shank, tumblers slidable longitudinally in a second shank having transverse slots, a key insertible in the end of the shank and having bits which engage the tumblers and bring the slots into line with the transverse block, a spring whereby said block is moved out to engage the exterior sleeve when such alinement is effected and springs pressing upon the tumblers to force them back and carry the slots out of alinement when the block has been retracted into the slide whereby the knob-shanks are disengaged.

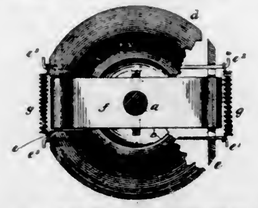
6. In a lock and in combination with a spring-pressed slidable locking-bolt, independent knob-shanks meeting in a line transverse to the line of travel of the locking-bolt, one of said shanks having a hollow sleeve upon its inner end, with peripheral openings and a lug adapted to engage the locking-bolt a head formed upon the other shank turnable within said sleeve, a block slidable transversely through said head having one end curved or beveled and forming a catch or point to engage the slots in the sleeve when projected, a spring acting upon the opposite side to project the block, tumblers slidable longitudinally in the shank, said tumblers having transverse notches which when brought into line with the slidable block, allow it to be projected to engage with the surrounding sleeve, whereby said sleeve and the locking-bolt are moved by turning this knob-shank in one direction, and the block is retracted by contact of its beveled end with the sleeve when turned in the opposite direction, and springs by which the tumblers are moved to carry the slots out of the line of travel of the block.

7. In a lock, and in combination with a spring-pressed slidable locking-bolt, independent knob-shanks, one meeting transversely to the line of travel of the locking-bolt, one having a hollow sleeve with lug to engage the locking-bolt and the other a head fitting and turnable in said sleeve, with a transversely-slidable spring-pressed block adapted to engage the sleeve when projected, spring-pressed tumblers slidable longitudinally in said shank and through an opening in the slidable block, said tumblers being normally held in position to retain the block within the head, slots formed transversely of the tumblers, a key having bits so formed as to move the tumblers through the sliding block until the transverse slots are in line therewith, a spring by which the block is then projected to engage with the surrounding sleeve, a slot or channel formed in the key-shank and a pin within the channel in which the key fits over which said slot is slidable when the key is properly introduced.

8. In a lock, a spring-pressed slidable latch-bolt, a knob-shank standing transversely to the line of travel of the bolt having a lug adapted to engage and retract the bolt when the knob-shank is turned, a casing for the knob-shank and a screw passing therethrough and adapted to engage the locking-bolt to prevent its being retracted, or to hold it in its retracted position.

9. In a door-lock and in combination with a spring-pressed slidable latch-bolt, independent knob-shanks meeting intermediately and transversely of the line of travel of the latch-bolt, one of said shanks having a lug adapted to engage the latch-bolt, a block slidable transversely in the other shank so as to engage with or be disengaged from the first-named shank and tumblers movable within the second shank and normally locking the block out of engagement with the bolt-actuating shank, said tumblers being movable to bring portions thereof to coincide with the slidable block whereby it is released and movable to engage with the bolt-actuating shank.

655,922. SPEED-GOVERNOR. CHARLES E. DURYEA, Peoria, Ill. Filed Nov. 6, 1899. Serial No. 736,004. (No model.)



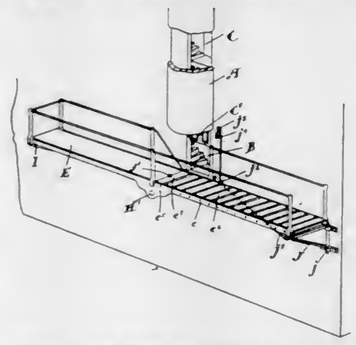
Claim.—1. In a speed-governor, the combination with the revoluble shaft and weights each having a heat-radiating flange, and guide-pins with slots, of the retaining-pins movable in said slots and yieldingly connected as set forth.

2. The combination with the shaft and the loose pulley thereon, of the weights embracing said pulley, the parallel guide-pins in said weights, the retaining-pins at right angles to the guide-pins and fixed in the weights and movable in slots in the guide-pins, and a weight-frame affixed to the main shaft and a gear fixed to the loose pulley, substantially as and for the purpose specified.

3. In combination with the revolving shaft of an electric generator, a loose driven pulley journaled on said shaft, a frame fixed to said shaft, weights carried by said frame on parallel guides: springs connecting said weights and retaining-pins engaging slots adapted to limit the motion of said weights.

4. The combination with the shaft and the loose pulley thereon, of the weights having frictional surfaces concentric with and adapted to contact with opposite sides of the said pulley, parallel guide-pins in the weights, retaining-pins in the weights at right angles to the guide-pins and working therein, with hooked ends, a weight-frame and springs connecting the hooked ends of said pins, as set forth.

655,923. FIRE-ESCAPE. CHARLES O. DUTTON, Lachine, Canada. Filed Jan. 22, 1900. Serial No. 2,402. (No model.)



Claim.—1. The combination with the tower and staircase, of a pivotally-swung balcony, pivotally-hung slats forming the floor thereof, adapted to form a stairway, a rod connecting said slats, a spring-held bolt having a projection passing through a slot in the first slat, a quadrant under the balcony to engage said bolt, a removable bracket under one end of the balcony and means for removing said supporting-bracket to allow the balcony to tilt, substantially as described.

2. The combination with a spiral staircase and a hollow tower of a pivotally-swung balcony fitted with a floor of pivotally-swung connected slats adapted to form a stairway when the end of the balcony swings to the ground, a spring-held bolt, a quadrant to receive said spring-held bolt said bolt having square-shaped notches at each end and teeth between to allow the bolt to slip when released from either of the end slats as and for the purpose specified.

3. The combination with a spiral staircase and tower of a pivotally-swung balcony fitted with a floor of pivotally-swung connected slats adapted to form a stairway, a spring-held bolt, having a lug projecting through the first slat a quadrant immediately under the balcony said bolt being adapted to engage the same the stationary bracket and the hinged bracket, a rope attached to the hinged bracket passing under the balcony to the wall in proximity to the tower and suitable guides and fastening for the rope as and for the purpose specified.

655,924. WEED-CUTTER. JOSEPH G. EVANS, Waltsburg, Wash. Filed Jan. 12, 1900. Serial No. 1,221. (No model.)



Claim.—1. The combination, with a supporting wheel-frame, of a vertically-movable drag-frame having a revoluble, double-edged cutter-bar, and a locking-lever for said cutter-bar, substantially as described.

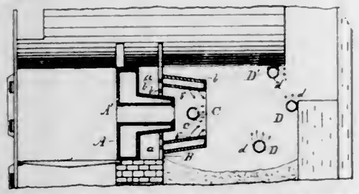
2. In a weed-cutter, the combination of a supporting wheel-frame, with a drag-frame connected thereto, a revoluble, double-edged cutter-bar having pivoted supports in the drag-frame, and a locking device for said cutter-bar, substantially as described.

3. In a weed-cutter, the combination of a supporting-frame, a drag-frame, connected thereto, a revoluble, double-edged cutter-bar, pivotally supported in the drag-frame, and a locking and tripping lever, carried by the drag-frame, and adapted to trip and lock the cutter-bar, for the purpose set forth, substantially as described.

4. In a weed-cutter, the combination of a supporting-frame, a drag-frame, connected thereto, a revoluble, double-edged cutter-bar, pivotally supported in the drag-frame, a locking and tripping lever, carried by the drag-frame, and adapted to lock and trip the cutter-bar, and a lever, carried by the supporting-frame and connected to the drag-frame, to raise and lower the latter, substantially as described.

5. In a weed-cutter, a supporting-frame, having independently-pivoted supporting wheel-bearings, a drag-frame connected to said supporting-frame, and a cutter-bar carried by said drag-frame, substantially as described.

655,925. SMOKE AND GAS BURNER. GEORGE L. FOGLER, Washington, D. C., assignor, by direct and mesne assignments, of one-half to Otis D. Swett, same place. Filed Apr. 25, 1899. Serial No. 714,464. (No model.)

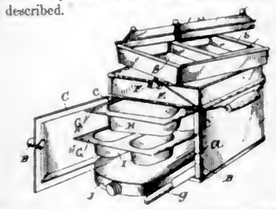


Claim.—1. In a furnace having a primary and a secondary flue, a transverse perforated air-duct within the secondary flue and supplying air in the direction of the draft, as described.

2. In a smoke and gas burner, the combination of a primary flue with the draft-flue set over the discharge end of the primary flue and provided with one or more openings through its wall and connecting with a supply of air.

655,926. LUNCH HEATER AND KIT. AARON C. FREED, Royersford, Pa. Filed Nov. 2, 1899. Serial No. 735,600. (No model.)

Claim.—1. In a lunch-kit the combination with a casing of a horizontal shelf having separate and isolated depending food-receptacles at points inside of its outer supporting edge, whereby each receptacle has the whole of its wall exposed and adapted to be subjected to the heat within the kit independent of its adjacent receptacle, substantially as shown and described.

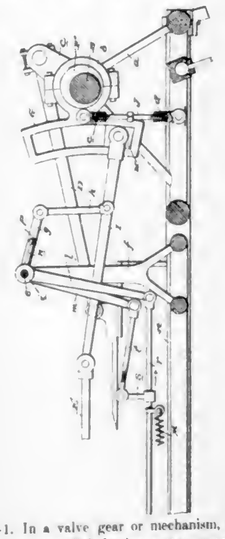


2. The combination in a lunch-kit of a horizontal shelf having a horizontally-projecting suppotting edge and separate and isolated depending food-receptacles, the horizontal portion of the shelf provided with vertical perforations for the passage of air thereabove, substantially as described.

3. In a lunch-kit, the combination with a casing of a horizontal shelf having a horizontal supporting edge, and depending isolated separate food-receptacles, the horizontal portion between the isolated separate food-receptacles provided with escape passage-ways or perforations, substantially as described.

4. A lunch-kit comprising a case having an open end, longitudinally-extending shelf-supporting beads, removable horizontal shelves having horizontal supporting edges for engaging the said beads, the said shelves having depending isolated and separate food-receptacles, the said case having an opened upper end, a pan adapted to fit in the open upper end of the case and to be removed vertically therefrom, a cover fitting within the upper end of the pan independent of the case, the said horizontal shelves having vertical passage-ways to permit the circulation of the heated air within the kit, substantially as shown and described.

655,927. VALVE-GEAR. CHARLES D. P. GIBSON, Jersey City, N. J. Filed July 18, 1899. Serial No. 724,268. (No model.)



Claim.—1. In a valve gear or mechanism, the combination of a valve-rod, an eccentric, a link having a strap receiving the eccentric, a link-block, a rod connecting said block and the valve-rod, two levers of different lengths fulcrumed on a common center; the larger of said levers being connected with the rod between the link-block and the valve-rod, and a resilient connection between said levers, substantially as specified.

2. In a valve gear or mechanism, the combination of a valve-rod, an eccentric, a link having a strap receiving the eccentric, a link-block connected with the valve-rod, and two levers mounted on a common center; one of said levers being connected with the link-block and the other lever being arranged to move faster than the first-named lever and being connected thereto by a resilient device adapted to bow, substantially as specified.

3. In a valve gear or mechanism, the combination of valve-rods, eccentrics, links having straps receiving the eccentrics, link-blocks, rods connecting said blocks and the valve-rods, a suitably-supported shaft, arms mounted on the shaft and connected with said rods, a resilient strap interposed between said arms, a lever on the shaft for rocking the said arms, a smaller lever on the shaft having an arm connected to the resilient strap, and an operating-rod connected to the larger lever and having a lateral arm connected with the smaller lever, substantially as specified.

4. In a valve gear or mechanism, the combination of valve-rods, eccentrics, links having straps receiving the eccentrics, link-blocks, rods connecting said blocks and the valve-rods, a suitably-supported shaft, arms mounted on said shaft and connected with the latter rods, a resilient strap interposed between said arms, a lever on the shaft for rocking the said arms, a smaller lever fulcrumed on the shaft and having an arm connected to the resilient strap and comprising two sections connected in a swiveled manner, and means for operating the levers, substantially as specified.

5. In a valve gear or mechanism, the combination of a valve-rod, an eccentric, a link having a strap receiving the eccentric, a link-block connected with the valve-rod, a lever connected with the link-block, a second lever, an operating device for rocking the levers, and a connection between the levers whereby the link-block is held against casual movement when moved to either end of the link, substantially as specified.

6. The combination with the link-block of the valve-gear; of a lever for moving the link-block, a second lever arranged to move faster than the first-named lever, and means controlled by the second lever whereby the link-block is held against casual movement when moved to either end of the link of the valve-gear, substantially as specified.

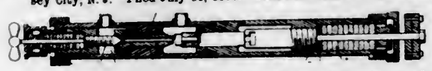
7. The combination with the link-block of a valve-gear; of a lever for moving the link-block, a second lever of less length than the first-named lever; said levers being fulcrumed on a common center, means for rocking the levers, and means controlled by the second lever whereby the link-block is held against casual movement when moved to either end of the link of the valve-gear, substantially as specified.

8. The combination with the link of a valve-gear, and a valve-controlling block fitted to slide therein; of means for quickly moving the block to either end of the link, and a block-controlling device connected to and actuated from the block-moving means for holding the block positively in its set position against either end of the link.

9. The combination with link-blocks of a valve-gear; of a lever, connections between the lever and blocks, a second lever, and means operated by the second lever for holding the blocks against casual movement, substantially as specified.

10. The combination with the link-blocks of a valve-gear; of arms mounted on a shaft and connected with the blocks, an arm mounted on the shaft between the first-named arms, a spring-strap interposed between and connected to the outer arms and also connected to the intermediate arm, and means for moving the intermediate arm faster than the outer arms, substantially as specified.

655,928. RECIPROCATING VALVE. CHARLES D. P. GIBSON, Jersey City, N. J. Filed July 18, 1899. Serial No. 724,269. (No model.)



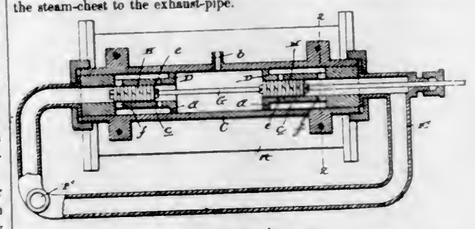
Claim.—1. A valve comprising a casing having chambers and a port connecting said chambers, a throttle-valve arranged in one of the chambers so as to control the port, and an auxiliary, regulating-valve, movable independent of the throttle-valve, for controlling communication between the other chamber and the port, substantially as specified.

2. A reciprocating valve comprising a casing having a partition, a nipple extending through and removably secured in the partition and having valve-seats at its opposite ends, and valves proper arranged at opposite sides of the partition and adapted to engage the opposite ends of the nipple, substantially as specified.

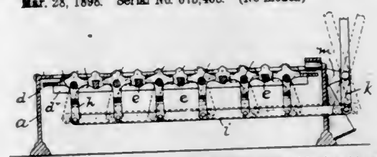
3. A reciprocating valve comprising a casing having a partition, a nipple secured by screw-threads in the partition and having valve-seats at its opposite ends, a rectilinearly-movable valve-body arranged in and held against turning by the casing, a stem connected in a swiveled manner to the valve-body and having a shoulder and also having threads designed to engage corresponding threads in the casing, one or more compressible washers surrounding the stem and interposed between the casing and the shoulder of said stem, an auxiliary valve disposed at the opposite side of the partition with respect to the said valve-body, and compressible washers surrounding the auxiliary valve and interposed between a shoulder thereof and a casing, substantially as specified.

655,929. PISTON-VALVE FOR ENGINES. CHARLES D. P. GIBSON, Jersey City, N. J. Filed Aug. 28, 1899. Serial No. 728,766. (No model.)

Claim.—The combination with the cylinder and piston of a fluid-pressure engine, of a steam-chest having ports or openings at its ends communicating with the ends of the cylinder, and a central chamber to which the motive fluid under pressure is supplied, valve-seat bushings fitted in the ends of the steam-chest formed to leave an annular space around them into which the cylinder-ports open, and each having a series of induction-ports at its end adjacent to the central fluid-receiving chamber and a series of eduction-ports at its outer end, pipe connections at the ends of the steam-chest to place the eduction-ports in communication with a common exhaust-pipe, a valve fitted to slide in each of the bushings, and an operating-rod connecting the valves and passing through a bearing or packing box formed or located in one of the pipes connecting the ends of the steam-chest to the exhaust-pipe.



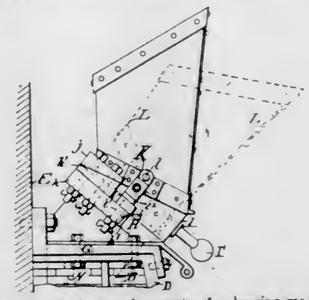
655,930. GRATE. WERTER C. HIGGINS, Norwich, Conn. Filed Mar. 28, 1898. Serial No. 675,468. (No model.)



Claim.—1. In a furnace, the combination with the side walls, each of which is provided with an inwardly-projecting flange, of rollers journaled therein, a grate-frame, each end of which is provided with tooth-like projections, and each side is grooved longitudinally to engage with the rollers, and is provided with a downward extension, said extension being provided with journal-bearings, and a series of grates journaled in the furnace, each of which is provided with wings, a portion of the wings of the end grates fitting between the projections of the frame.

2. In a furnace, the combination, with the side walls, the top of each of which is provided with two inwardly-projecting flanges, of rollers journaled in the lower flange, a grate-frame of a less width than the distance between the side walls, each side of which is grooved longitudinally and provided with journal-bearings, and a series of grates journaled in the bearings, the diameter of each journal being greater than the distance between the top of the frame and the upper flange of the side wall.

655,931. CHARGING-HOPPER FOR GAS-PRODUCERS. GEORGE R. HISLOP, Paisley, Scotland. Filed Dec. 20, 1897. Serial No. 662,518. (No model.)

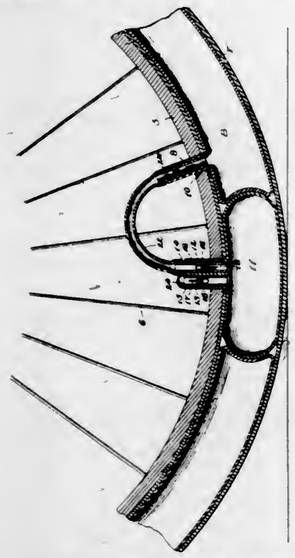


Claim.—1. The improved apparatus for charging gas-producers or heating-furnaces of gas and other retorts with hot residual coke consisting of a crown-plate having in it a mouthpiece opening to an inclined charging-chute a doorway thereon furnished with a self-sealing wedge-like door or disk hinged or pivoted thereto, and a charging-hopper jointed to the mouthpiece or doorway, and adapted to tilt into position to receive the fuel from said retorts or producers, by the movement under it of the disk or door substantially as described.

2. The combination with an oven, of a crown-plate G, a suitable mouthpiece B, a doorway H fixed at an angle above the crown-plate, a pivoted wedge-like door-plate I, said plate having a handle I', a locking device, adjustable journals K, and hopper L pivoted on said axis.

655,932. PUMPING ATTACHMENT FOR PNEUMATIC TIRES.

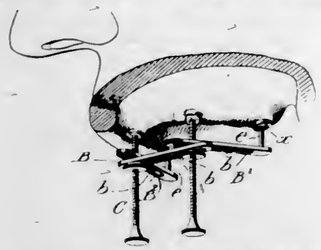
HENRY LAVIERS, Wellston, Ohio, assignor of one-half to E. E. Donaldson, same place. Filed Nov. 23, 1899. Serial No. 738,102. (No model.)



Claim.—In a device of the class described, the combination with a rim, of an outer tube or shoe, an inner air-tube arranged within the outer tube or shoe and having its ends closed and spaced apart, a separate and independent compressible air-bulb located within the outer tube or shoe and arranged on the exterior of the inner air-tube in the space between the closed ends thereof, the ends of the air-bulb abutting against the outer faces of the ends of the inner air-tube, an air-inlet valve communicating with the bulb and supported by the rim, and the exterior feed-tube having its ends supported by the rim and communicating with the bulb and with the inner air-tube, said feed-tube being provided with a suitable valve, substantially as described.

655,933. DENTAL APPLIANCE.

DANIEL O. M. LE CRON, St. Louis, Mo. Filed Feb. 26, 1900. Serial No. 6,579. (No model.)



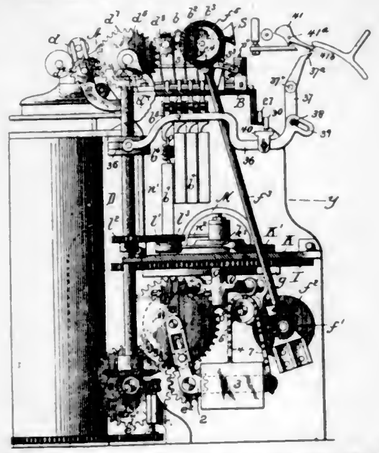
Claim.—1. A dental gage for the purpose specified, comprising a frame made up of adjustable jointed sections, and gage-pins on the frame certain of the pins forming the means for securing the sections together.

2. A dental gage for the purpose specified, comprising a frame made up of detachable jointed sections, gage-pins on the frame certain of the pins forming with binding-nuts the means for securing the sections together.

3. A dental gage for the purpose specified, comprising a frame made up of slotted sections or members, fixed pins on certain of the sections, screw-threaded pins passed through lapped ends of the sections, and binding-nuts on the pins at each side of the sections.

655,934. RAILWAY-HEAD.

ARTHUR W. MATHEWSON, Lewiston, Me., assignor of one-half to Herbert L. Pratt, same place. Filed Apr. 11, 1899. Serial No. 712,612. (No model.)



Claim.—1. The combination with the front drawing-rolls, the calender-rolls, and the evener mechanism belt-shifter, of the main driving-shaft, an upright shaft driven thereby, connections from said upright shaft to the front drawing-roll and to the calender-rolls and to the said belt-shifter for operating them positively, and means located both in the rear of the calender-rolls and of the drawing-rolls for controlling the movements and position of the belt-shifter according to the size and weight of the material passing to either or both of said sets of rolls.

2. The combination with the front drawing-rolls having connections with the main driving-shaft for positively driving them at a constant speed therefrom, of the rear drawing-rolls also having positive driving connections with the main shaft, the calender-rolls, devices for varying the speed of the rear drawing-rolls relatively to the speed of the front drawing-rolls, and means located both in the rear of the calender-rolls and of the drawing-rolls for controlling the variation of speed of the drawing-rolls according to the size and weight of the material passing to the calender-rolls or to the drawing-rolls.

3. The combination with the front drawing-rolls and the calender-rolls both having connections with the main driving-shaft for positively driving them at constant relative speeds, of the rear drawing-rolls also having positive driving connections with the main driving-shaft, devices for varying the speed of the rear drawing-rolls relatively to the speed of the front drawing-rolls, and means located both in the rear of the calender-rolls and of the drawing-rolls for controlling the said variation of speed according to the size and weight of the material passing to either the drawing-rolls or the calender-rolls, substantially as described.

4. The combination with the drawing-rolls, of a cylindrical drum, a conical drum, the cylindrical drum being mounted to swing toward and from the conical drum, a belt connecting the two drums, a belt-shifter mounted and arranged as explained whereby to travel back and forth in directions parallel with the face of the conical drum, means for positively driving the swinging cylindrical drum in whatever position it may be, and devices for communicating motion from the conical drum to the drawing-rolls, substantially as described.

5. The combination, with the drawing-rolls and an evener mechanism for varying the speed thereof, said evener mechanism including a cylindrical drum, a conical drum, a belt, a belt-shifter, and devices for communicating a variable traverse to the said belt-shifter, substantially as described.

6. The combination with the evener mechanism belt-shifter, of a disk having a cam or snail wheel connected thereto for operating the shifter, and means for moving the disk in either direction and supporting it with the cam or snail wheel in proper position with respect to the shifter, the action of the cam or snail wheel being in the direction of the plane of the disk, substantially as described.

7. The combination with the evener mechanism belt-shifter, of a disk, means for communicating movement to said disk in either direction, and a cam or snail wheel connected with the disk and with the shifter for operating the latter, the action of the cam or snail wheel being in the direction of the plane of the disk and the curve of the said cam varying substantially in the manner and for the purposes set forth.

8. The combination, with drawing-rolls and an evener mechanism,

of an intermediate deck or plate located above the evener mechanism to protect the belt thereof and other parts from the dropping of oil thereon, substantially as described.

9. The combination, with the evener mechanism, of the disk movable in either direction and carrying the cam or snail wheel having connections for imparting movement to the belt-shifter of the evener mechanism, a deck or plate above the disk, a wheel located above said plate and projecting through it and connected with said disk, and devices for operating said wheel, substantially as described.

10. The combination, with the ratchet-wheel, a deck or plate, and a cam or snail wheel supported thereby, of a pawl-carrier also supported by such deck or plate and provided with pawls and means for reciprocating this carrier, shields or baffle-plates interposed between the pawls and the teeth of the ratchet, a movable frame carrying said shields or baffle-plates, and means for controlling the position of said frame and baffle-plates from the material being acted upon, substantially as described.

11. The combination with the pawl-and-ratchet devices, and a disk carrying a cam operated from such devices, the cam being adapted to act in the direction of the plane of the disk, of a stud rising from said disk, a frame mounted on said stud and having shields or baffle-plates for controlling the action of the pawls, and means for moving said frame on the stud, substantially as described.

12. The combination, with the disk carrying the curved cam flange or scroll, of stationary guide-rods, and a belt-shifter mounted and movable upon said guide-rods and carrying a swiveled plate, said plate being provided with studs to bear upon each side of the flange, substantially as described.

13. The combination, with the trumpet, a shaft to which it is connected, and an evener mechanism, of a bar connected with the shaft, a sliding weight mounted on said bar, a screw for moving the weight back and forth, and gear connections between said screw and the evener mechanism, the said screw having reduced ends to prevent excessive movement of the said weight on the screw, substantially as described.

14. The combination, with the trumpet, and the bar connected therewith, of the sliding weight mounted upon said bar, and having the inclined rib on the side thereof, and fixed studs or projections with which this rib engages when moved in either direction, to raise or lower the weight, substantially as described.

15. The combination, with the front and rear trumpets, of the rod connecting them and having a slot and recess at one end for engaging a pin connected with the frame of one of the trumpets, to permit the latter to swing or be swung back when required, substantially as shown and described.

16. The combination, with an evener mechanism including two drums, a belt connecting the two drums and means for shifting the belt to obtain variations in speed, of swinging arms, for supporting one of said drums and a weight connected with the arms to swing the said drum away from the other drum to keep the belt under a constant tension at any of the positions to which it may be shifted, as set forth.

17. The combination, with the driving-drum of an evener mechanism mounted in journaled arms constituting a swinging cradle, of a weight having connections with a shaft and operating to turn the same in one direction, and connections between the said shaft and the arms of the cradle, whereby the downward tendency of the weight will elevate the outer ends of the cradle-arms, substantially as shown and described.

18. The combination, with a trumpet having a movable jaw or section for varying the size of the opening through the trumpet, of connections with the said jaw adapted to move the same, said connections being of a material adapted to be changed in its dimensions by changes in atmospheric temperature and humidity, substantially as described.

19. The combination, with a trumpet mounted in a swinging bow, of a second bow applied upon the first, the arms of the latter carrying blocks of expansible and contractible material bearing against the movable jaw of the trumpet, substantially as shown and for the purposes set forth.

20. The combination, with the belt-shipper and its spring, of a constantly-moving eccentric, the reciprocating bar connected at one end with the band thereof and having an inclined slot in the other end, a rocking lever connected with the reciprocating bar by a pin entering said slot, and a hooked piece over which the material passing to the machine rides, said hooked piece being arranged to arrest the rocking lever when the mass of material passing to the machine breaks, and thus to elevate the outer end of the reciprocating bar and thereby release the shipper-rod, substantially as and for the purposes set forth.

655,935. COMPOUND FOR SEALING VESSELS.

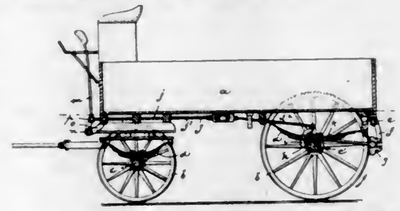
GEORGE W. MAWBEY, Jersey City, N. J., assignor to August Kress and George Carragan, Bayonne, N. J. Filed July 8, 1899. Serial No. 723,142. (No specimens.)

Claim.—1. The composition of matter consisting of gum-chicle and chloroform, substantially as described.

2. The composition of matter consisting of four parts gum-chicle and seven parts commercial chloroform, substantially as described.

655,936. WAGON-BRAKE.

ERNST F. MEYER, Waverly Park, N. J. Filed Mar. 6, 1900. Serial No. 7,469. (No model.)

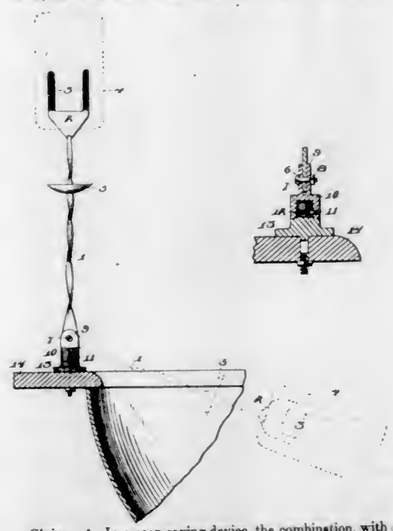


Claim.—1. In a vehicle, the combination of an axle and running wheels, a wagon-body and springs supporting said body upon said axle, brake-shoes hung at the rear of said running wheels, levers fulcrumed upon the axle, coupling-rods extending from the brake-shoes to said levers, a connecting-rod extending from said levers and means for applying draft to said rod, said rod having bearings upon the body of the vehicle and extending upward thereto from the levers on an incline, substantially as set forth.

2. In a vehicle, the combination with an axle, and running wheels, a body and springs supporting said body upon said axles, of a brake-shoe suspended from the body of the vehicle adjacent to the rear peripheral edge of a wheel, an upwardly and rearwardly inclined lever pivoted at or near its lower end upon the axle, a coupling-rod extending from said brake-shoe to a point of said lever intermediate of its ends, and a connecting-rod extending forwardly upward from the upper end of the lever and being jointed and its forward section having bearing on the vehicle-body, and means for applying draft to said rod, substantially as set forth.

655,937. SOAP-SAVING DEVICE.

JAMES T. MOLTRUP, Beaver Falls, Pa. Filed Dec. 4, 1899. Serial No. 739,092. (No model.)



Claim.—1. In a soap-saving device, the combination, with a washstand, of a standard hinged to said stand and provided with a forked end and a drip-tray secured upon said standard, as and for the purpose described.

2. In a soap-saving device, the combination, with a support, of a standard hinged to said support and provided with a serrated forked end, a drip-tray mounted upon said standard, and a swiveled connection between the support and standard to permit the rotation of the latter, substantially as described.

3. The combination, with a support, of a standard hinged to said sup-

port and provided with a forked serrated end adapted to receive and hold the soap, and a drip-tray mounted upon the standard between the forked end and hinged connection with the support to receive the drippings from the soap when the standard is in a vertical position, substantially as described.

4. In a device of the character described, the combination with a support, of a standard rotatably connected thereto, means carried by the free end of said standard for holding a cake of soap, and means mounted upon said standard to receive the drippings from the soap when the standard is in a vertical position, substantially as described.

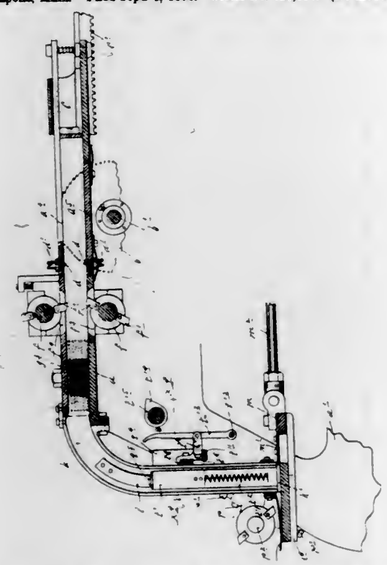
5. In a soap-saving device, the combination, with a support, of a standard adapted to hold the soap and rotatably connected to the support, and means mounted upon the standard to receive the drippings from the soap when the standard is in a vertical position, substantially as described.

6. In a soap-saving device, the combination with a suitable support, of a rotatable collar mounted upon said support, and a soap-holding device hinged to said collar.

7. In a soap-saving device, the combination with a suitable support, of a rotatable collar suitably mounted upon the said support, a standard hinged to said collar, and a serrated fork formed integral with the said standard and adapted to hold a cake of soap.

8. In a soap-saving device, the combination with a suitable support, of a standard adapted to be mounted thereon, a soap-holding device formed integral with the upper end of said standard, and a swivel connection mounted upon said support and hingedly connected to the lower end of said standard to permit of the rotation and inclination of the same.

655,938. **HONEY-BOX MACHINE.** CHARLES MONDENG, Minneapolis, Minn. Filed Sept. 1, 1899. Serial No. 729,157. (No model.)



Claim.—1. The combination with a guide-channel through which the box-sections are fed flatwise, of a feed device driven relatively slow and adapted to feed a plurality of sections flatwise into said channel, at each feed movement, box-section-forming mechanism acting on said sections as they are passed through said channel, an ejector driven relatively fast and arranged to eject the box-sections edgewise, one at a time, and cutters acting upon said sections as they are ejected, substantially as described.

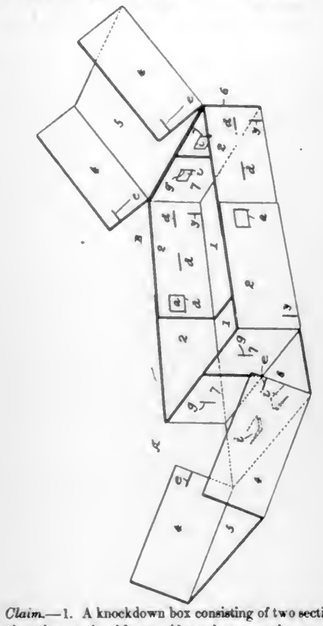
2. The combination with a horizontally-extended guide-channel having a downturned delivery-section, of a feed-head reciprocator longitudinally of and at the receiving end of said channel, an ejector reciprocating transversely of and at the lower end of said downturned channel-section, which channel passes said box-sections flatwise, and which feed device is adapted to deliver a plurality of said sections flatwise to said channel, and section-forming cutters operating upon said box-sections while they are subject to the said feed device and ejector, substantially as described.

3. The combination with a horizontally-extended guide-channel having a downturned delivery-section, of a feeding device operating to feed the box-sections flatwise into and through said guide-channel, section-forming cutters operating on the box-sections as they are passed through said channel, a spring-pressed section holder or carrier acting upon the sections in the downturned portion of said channel, and a trip for releasing said section-holder, substantially as described.

4. In a machine of the character described, the combination with an upright guide channel or section through which the box-sections are fed flatwise, of a box-section carrier or support yieldingly held upward but adapted to be depressed, and an automatic trip for releasing the same to permit the return movement thereof after having been depressed, substantially as described.

5. The combination with a horizontally-extended guide-channel having a downturned delivery end, of a relatively-slow feed device delivering box-sections flatwise into said guide-channel, a relatively-fast ejecting device working transversely of the downturned delivery end of said guide-channel for discharging the sections edgewise, cutters operating on the sections as they are passed through said guide-channel, a friction device engaging the slats in the downturned portion of said guide-channel, a section-carrier below said friction device yieldingly held upward, and an automatic trip for releasing said carrier from said sections, while depressed, substantially as described.

655,939. **FOLDING BOX.** ELLEN H. OVERTON, Frankfort, Ky. Filed May 21, 1900. Serial No. 17,415. (No model.)



Claim.—1. A knockdown box consisting of two sections slidable one upon the other, each with two sides a bottom and one open end, and a foldable bottom extension constituting an end and a cover, and means for connecting the sections together in different relative positions, substantially as set forth.

2. A knockdown box consisting of two knockdown sections having open ends one fitting in the other, and with tongues and slits whereby the two may be secured together in different positions, substantially as set forth.

3. A knockdown box consisting of two knockdown sections having open ends one fitting in the other, and with tongues and slits arranged to engage with the sections in different relative positions, substantially as set forth.

4. A knockdown box consisting of two knockdown sections having open ends one fitting in the other, and with tongues on one and a plurality of slits in the other whereby to secure the two together in different positions, substantially as set forth.

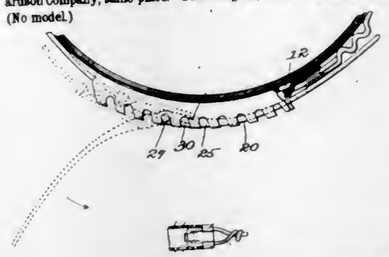
5. The combination in an extensible box, of two sections each with sides and one end and open at the other end, tongues on one section and slits in the other arranged to engage with the sections in different relative positions, substantially as set forth.

6. The combination in an extensible box, of two sections slidable one upon the other and each having a bottom and two sides and flaps on the sides at one end for turning inward to close one end of the section, and an extension of the bottom portion having a section adapted to be bent upward against the said flaps, and a further section foldable to form a cover with tongues and slits for connecting the bent-up section with the flaps, and means for connecting the sections together, substantially as set forth.

7. The combination in an extensible box, of two sections slidable one upon the other and each having a bottom and two sides and flaps on the sides at one end for turning inward to close one end of the section, an extension of the bottom portion having a section adapted to be bent upward against the said flaps, with tongues and slits for connecting the bent-up section with the flaps, and a terminal section of the bottom extension having side flaps and foldable to form a cover, and means for connecting the sections together in different relative positions, substantially as set forth.

8. The combination in an extensible box, of two sections slidable one upon the other and each having a bottom and two sides and flaps on the sides at one end for turning inward, to close one end of the section, an extension of the bottom portion having a section adapted to be bent upward against the said flaps, with tongues and slits for connecting the bent-up section with the flaps, and a terminal section of the bottom extension foldable to form a cover and having side flaps, each with a tongue adapted to a slit in one of the sides of the box, and means for connecting the two sections together, substantially as set forth.

655,940. **HOLDER FOR BARREL-CAPS.** ARTHUR S. RICHARDSON and JOHN H. J. COLCORD, Danvers, Mass., assignors to the Colcord-Richardson Company, same place. Filed Aug. 29, 1899. Serial No. 728,845. (No model.)

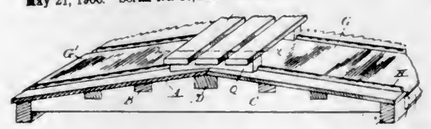


Claim.—1. A device of the class specified, a split band provided at one end with a bearing member, the side pieces of which have a plurality of openings, and a take-up lever having a fulcrum adapted to be detachably fitted to alined openings in said side pieces, and the point of attachment of the free end of the band to the lever being movable across the dead-center line intersecting the axis of movement of said lever and the latter being arranged to lie between said side pieces, when in its clamping or effective position.

2. A device of the class specified, a split band provided at one end with a bearing member, the side pieces of which have a plurality of openings, and a take-up lever having a fulcrum adapted to be detachably fitted to alined openings in said side pieces, and the point of attachment of the free end of the band to the lever being movable across the dead-center line intersecting the axis of movement of said lever and the latter being arranged to lie between said side pieces, when in its clamping or effective position, said band having a corrugated portion.

3. A device of the class specified consisting of a curved bearing-plate having notched side walls, a band connected with said bearing-plate and having a loop in its free end, a lever adapted to be detachably fitted in alined notches in said bearing-plate and having a projection beyond said fulcrum to receive said loop, and arranged between said side walls when in its clamping or effective position.

655,941. **CAR-ROOF.** DELMAR C. ROSS, Detroit, Mich. Filed May 21, 1900. Serial No. 17,469. (No model.)



Claim.—1. A metallic roof-section comprising a plate, locking-hooks upon opposite sides of the latter, an inverted trough at one end of the plate, the edges of said trough being in the plane of the plate extending transversely and at some distance beyond the plate at one side of the latter, and a securing-flange upon the opposite plate end.

2. A metallic roof-section comprising a plate, locking-hooks upon opposite sides of the plate, a securing-flange depending from one of the plate ends, and an inverted trough carried by and having its inner edge integral with the opposite plate end, the trough projecting laterally beyond the edge of one side of the plate and having its outer free edge in the plane of the plate, substantially as and for the purpose described.

3. In a metallic roof composed of roof-sections, a cap for covering a section-joint, comprising a hood having radially-extending channels formed in its under face and an opening formed therein, through which the securing-bolt is adapted to extend, and a housing, constructed to receive the bolt-head, covering the bolt-hole formed in the cap.

4. In a car-roof, the combination with a roof-sheathing, a multiple of connected metallic roof-sections thereon, a series of caps arranged over the meeting corners of the adjacent sections, each cap having a bolt-hole formed therein, a bolt extending through each cap, and a housing, constructed to receive and support the bolt-head, covering the bolt-hole formed in the cap.

5. In a car-roof, the combination with a roof-sheathing, a multiple of connected metallic roof-sections thereon, a series of caps arranged over the meeting corners of the adjacent sections, each cap having a bolt-hole formed therein, a bolt extending through each cap, a housing, constructed to receive and support the bolt-head, covering the bolt-hole formed in the cap, oppositely-arranged upwardly-extending perforated ears upon each cap, a sleeper intermediate each pair of ears, a bolt extending through said sleeper and ears and the running-boards supported upon the sleepers.

6. In a car-roof, the combination with the roof-sheathing, of a multiple of connected metallic roof-sections thereon, a series of caps arranged over the meeting corners of adjacent sections, each cap having a bolt-hole formed therein, a housing for each cap covering the bolt-hole, oppositely-arranged lugs upon the interior of the housing, a bolt for each cap, a bolt-head engaging the lugs within the housing, and a bolt-shank extending through the cap and sections, and a nut for each bolt, substantially as described.

7. In a metallic roof, the combination of two adjoining section-plates, and a joint connecting the adjacent portions of said plates, comprising two involute hooks one upon the meeting side of each plate, the said hooks being bent in the same direction and adapted to be engaged one within the other, and abutting flanges upon the free ends of the hooks, the relative arrangement and proportion of the parts being such that when the section-plates are turned into a common plane on the engaging hooks the flanges will abut.

8. In a metallic roof, the combination of two adjoining section-plates and a joint connecting the adjacent portions of said plates, comprising two involute hooks, one upon the meeting side of each plate, the said hooks being bent in the same direction and adapted to be engaged one within the other, and abutting flanges upon the hooks formed by bending upwardly at substantially right angles to the plane of the plate the free end of each hook, the relative arrangement and proportion of the parts being such that when the section-plates are turned into a common plane on the engaging hooks the flanges will abut.

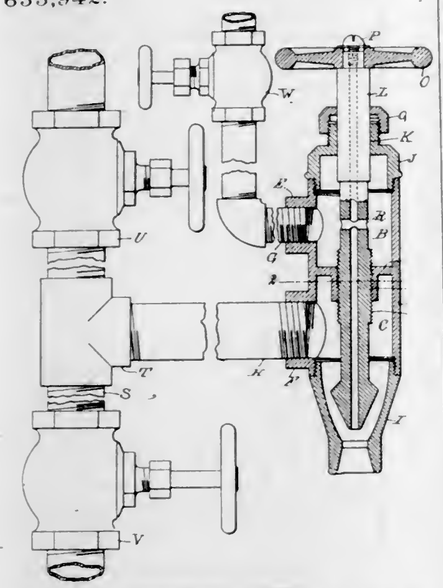
9. A car-roof comprising a roof-frame and covering, of a metallic covering consisting of a multiple of plates extending from the peak to the lower edge of the sheathing, sliding joints connecting the edges of adjoining plates and a flexible connection between the main section of each sheet and the car at the lower edge of each sheet, and a yielding connection at the peak, whereby each sheet may move longitudinally in relation to the adjoining sheets, without bending or buckling.

10. A metallic car-roof consisting of a series of plates extending from the peak to the lower edge of the sheathing, a connection with the car at the lower end, a flexible section between that car connection and the plate, sliding flexible joints connecting the adjoining plates, and a flexible joint at the upper end of the plate, for the purpose described.

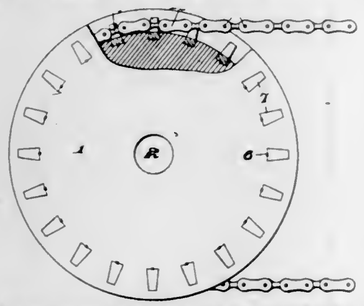
655,942. **HYDROCARBON-BURNER.** BERNARD F. WEBER, Chicago, Ill. Filed Mar. 13, 1899. Serial No. 708,881. (No model.)

Claim.—In an oil-burner, the combination with a cylindrical casing divided between its ends into two compartments adapted to be connected respectively with an oil-supply and a fluid-pressure supply, said fluid-pressure chamber terminating at one end in a mouth contracted between its ends, of a valve-stem passing centrally through both said compartments and provided at one end with an enlarged conical head serving as a valve to control the supply of the fluid under pressure and seating against said contracted portion of said mouth, a central opening in said valve-stem extending centrally through said head, and lateral openings in said valve-stem adapted to connect said central opening therein with said oil-receiving compartment of said casing.

655,942.



655,943. SPROCKET-WHEEL. ELMER S. WILLIAMSON, Pittsburg, Pa. Filed Jan. 10, 1900. Serial No. 948. (No model.)



Claim.—1. A sprocket-wheel provided with a circumferential groove in its periphery and a series of transversely-extending circumferentially-arranged openings, and a sprocket-tooth secured in each of the said openings, substantially as herein shown and described.

2. A sprocket-wheel consisting of a solid body portion provided with a circumferential groove in its periphery and a series of suitably-arranged openings, a sprocket-tooth mounted in each of the said openings, and means for securing said teeth in position, substantially as set forth.

3. A sprocket-wheel provided with a circumferential groove in its periphery and a series of suitably-arranged transversely-extending openings, a sprocket-tooth mounted in each of the said openings and projecting in the said groove, and means for securing said sprocket-teeth in position, substantially as described.

4. A sprocket-wheel consisting of a solid body portion provided with a circumferential groove in its periphery and a series of transversely-extending circumferentially-arranged openings, a sprocket-tooth mounted in each of said openings, and provided with a pair of retaining projections adapted to engage the center block of a chain, and means for securing the said teeth in position, substantially as described.

5. A sprocket-wheel provided with a pair of peripheral flanges and a series of sprocket-teeth secured in the said wheel and provided with a pair of retaining projections extending between the said flanges and adapted to engage the center block of a chain.

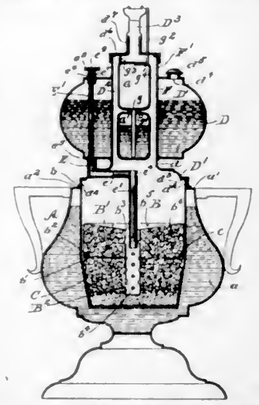
6. A sprocket-wheel consisting of a solid body portion provided with a pair of peripheral flanges and a series of circumferentially-arranged openings, a sprocket-tooth mounted in each of the said openings and provided with a pair of retaining projections extending between the said flanges and adapted to engage the center block of a chain, and means for securing each of the said teeth in position, substantially as described.

7. The combination with a solid body portion of a wheel provided with a series of suitably-arranged openings, of a wedge-shaped sprocket-tooth suitably secured in each of the said openings and provided with a pair of retaining projections adapted to engage the center block of a sprocket-chain, substantially as described.

8. The combination with a solid body portion of a wheel provided with a series of suitably-arranged openings, of a wedge-shaped sprocket-tooth mounted in each of the said openings and provided with a pair of retaining projections and adapted to engage the center block of a sprocket-chain, and a key securing each of the said teeth in position, substantially as described.

9. The combination with a solid body portion of a wheel provided with a series of transversely-extending openings, of a sprocket-tooth mounted in each of the said openings and provided with a pair of retaining projections adapted to engage the center block of a sprocket-chain, and means arranged in said openings for securing said teeth in position, substantially as described.

655,944. ACETYLENE-GAS-GENERATING LAMP. ALLEN WINCH, Chicago, Ill. Filed Oct. 16, 1899. Serial No. 733,748. (No model.)



Claim.—1. In an acetylene-generator, the combination of a carbid-chamber, a yieldable confining-plate, adapted to rest in contact with the carbid and means for holding said plate yieldably in bearing against the body of carbid and a flexible bag removably connected with the plate and forming in conjunction with the latter a substantially-complete inclosure for the carbid.

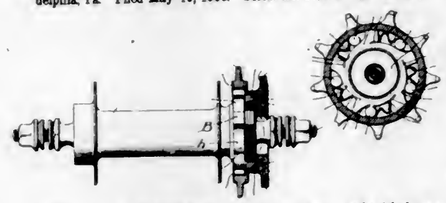
2. In an acetylene-generator, the combination with a generating-chamber having a portion of uniform cross-sectional area, of a supporting-disk arranged to fit within said portion and provided at its periphery with a flange having extended bearing with the side walls of the generator, an inturned ledge upon said flange, a flexible carbid-bag, and means for detachably connecting the carbid-bag with the ledge of the supporting-disk comprising an expansible spring-ring connected with the mouth of the bag and adapted for engagement with the ledge.

3. In an acetylene-generator, the combination with a generating-chamber, and an elevated liquid-reservoir, of a drip-pipe leading from the reservoir into the generating-chamber terminating in a horizontal portion closed at its extremity except for a lateral capillary drip-aperture through which the water must be forced against the pressure of the generated gas, substantially as described.

4. In an acetylene-generator, the combination with a generating-chamber and an elevated liquid-reservoir, of a drip-pipe as E, leading from the reservoir to, and communicating with, the generating-chamber, said drip-pipe comprising a horizontally-extended portion, a vertical tube portion e' connected with and forming an extension of the horizontal portion e, the vertical portion being fitted against the end of the horizontal portion so as to close the latter, an open capillary drip-aperture e^2 formed through that portion of the vertical tube which closes the end of the horizontal tube, an opening e^4 formed through the vertical tube portion at a point opposite the drip-aperture and a valve, as E', arranged to control the flow of liquid from the reservoir into the drip-tube, substantially as and for the purposes set forth.

5. In an acetylene-generator, the combination with a generating-chamber and an elevated liquid-reservoir, of a drip-pipe leading from the reservoir into the generating-chamber and comprising a laterally-extending conducting portion e and a vertically-depending discharge portion e' separated by an intervening partition e^2 having a capillary drip-aperture e^3 therein, substantially as described.

655,945. BACK-PEDALING BRAKE. EDWARD E. ZIEGLER, Philadelphia, Pa. Filed May 19, 1900. Serial No. 17,204. (No model.)



Claim.—1. A back-pedaling brake, comprising a wheel-hub provided at one end with a series of circumferential inclines, rollers adapted to said inclines, a sprocket-wheel encircling the hub and forming a bearing for the rollers, and having a hub formed upon the opposite side provided with oppositely-arranged inclines, loop-shaped springs interposed between the wheel-hub and sprocket-wheel having inclined ends adapted to engage the rollers, a cup-shaped disk inclosing the hub of the sprocket-wheel and rollers interposed between the disk and hub.

2. A back-pedaling brake, comprising a wheel-hub, a clutch-disk mounted thereon provided with inclines, rollers adapted to said inclines, leaf-springs adapted to act upon the balls, a sprocket-wheel forming a bearing for the balls, having a hub provided with oppositely-arranged inclines, rollers adapted to the said inclines, a spacing-ring, a cup-shaped disk, inclosing the inclines of the hub and forming a bearing for the rollers substantially as specified.

3. A device of the character specified comprising a wheel-hub, a disk mounted thereon provided with circumferential inclines, rollers adapted to said inclines, a leaf-spring adapted to engage the rollers, a wheel encircling said disk and forming a bearing for the rollers, said sprocket-wheel having a hub provided with oppositely-arranged inclines, rollers, adapted to said inclines, a spacing-ring, a disk having a bifurcated extension to engage the framework of a bicycle and having also a cup-shaped portion surrounding the hub of the sprocket-wheel, a ring threaded to the hub and adapted to hold the disk in position and a fiber washer interposed between said ring and disk.

655,946. CORN-SHELLER. HENRY A. ADAMS, Sandwich, Ill. Filed July 20, 1899. Serial No. 724,439. (No model.)

Claim.—1. In a corn-sheller, the combination with shelling mechanism, cob-carrier and grain-receiver, of a blower adapted to drive a current of air through the grain falling from the shelling mechanism and in the direction of advance movement of the cob-carrier, and a suction-fan so located as to apply draft laterally to the passage through which the cobs are discharged.

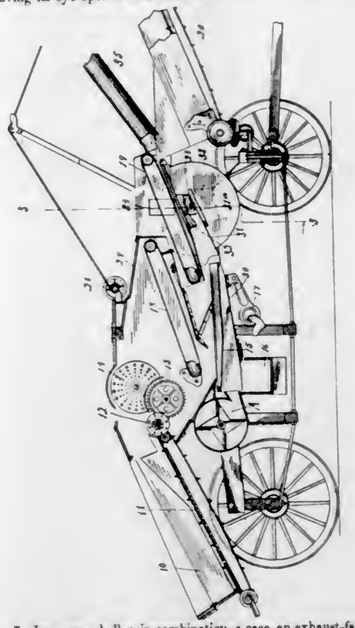
2. In a corn-sheller, the combination with shelling mechanism, a cob-carrier and a grain-receiver, of a blower adapted to drive a current of air through the grain falling from the shelling mechanism and in the direction of advance movement of the cob-carrier, and a suction-fan so located as to apply draft laterally to the passage through which the air-current is driven and the cobs conveyed.

3. In a corn-sheller, in combination, shelling mechanism, grain-receiver, a cob-carrier leading from below the shelling mechanism, a second cob-carrier leading from below the delivery end of the first-mentioned cob-carrier, a suction-fan arranged to apply draft laterally at the point of discharge from the one cob-carrier to the other.

4. In a corn-sheller, in combination with a case having a grain-chute and cob-discharge orifice, and with shelling mechanism, a cob-carrier leading from below the shelling mechanism, a second cob-carrier leading from below the discharge end of the first-mentioned cob-carrier to the cob-discharge orifice, and a blower arranged to drive an air-current across the passage from the shelling mechanism to the chute, and toward the cob-discharge orifice, all of such parts being inclosed within the case; of an exhaust-fan having its eye opening through the side of the case and to the passage through which the second cob-carrier is led.

5. In a corn-sheller, in combination, a case having a cob-discharge orifice, shelling and conveying mechanism within the case, one conveyer leading to the cob-discharge orifice, a blower adapted to drive an air-current through the case and toward the cob-discharge orifice, an exhaust-fan adapted to apply draft laterally to the passage through which the named conveyer leads, its eye extending above and below such conveyer.

6. In a corn-sheller, in combination, shelling mechanism, a riddle for receiving the shelled grain, a blower for throwing a blast of air across the riddle, a chamber for receiving such blast after it crosses the riddle, the floor of such chamber being inclined upwardly from the riddle, mechanism for causing the reciprocation of the inclined floor, and a suction-fan having its eye open to such chamber.

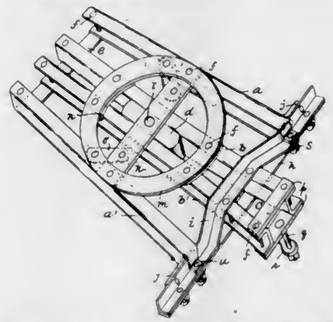


7. In a corn-sheller, in combination, a case, an exhaust-fan for withdrawing the dust from the case, an inclined reciprocating plate leading to the eye of the fan, and a riddle adjacent to the foot of the plate but spaced apart therefrom to provide an orifice for the escape of material not carried out by the fan.

8. In a corn-sheller, in combination, a case, an exhaust-fan for withdrawing the dust from the case, an inclined reciprocating plate leading to the eye of the fan, a riddle adjacent to the foot of the plate but spaced apart therefrom to provide an orifice for the escape of material not carried out by the fan, and a blower arranged to drive an air-current across the riddle and toward the inclined plate.

9. In a corn-sheller, in combination, a case, an exhaust-fan for withdrawing the dust from the case, a reciprocating riddle, and an inclined plate attached to the riddle so as to reciprocate therewith and leading therefrom to the eye of the fan.

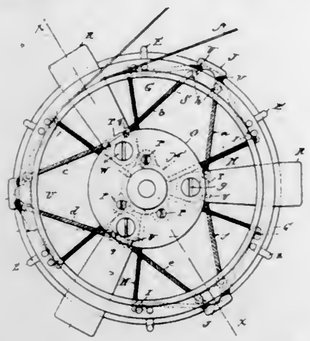
655,947. WAGON-PLATFORM. CHRISTIAN ARNOLD, Paterson, N. J. Filed Feb. 26, 1900. Serial No. 6,524. (No model.)



Claim.—A platform-gearing or cradle consisting substantially of a series of parallel bars, the outer bars constituting the futchells and the in-

termediate bars constituting the hounds and projecting at one end of the structure beyond the ends of the hounds, a cross-bar or cross-bars and a splinter-bar connecting said bars, said splinter-bar comprising two members the one of which is disposed beneath, and the other of which is arched over, the projecting ends of the hounds, said hound and futchell bars being composed of metal and being longitudinally channeled, an integral arm and projections formed at the end of each futchell adjoining the splinter-bar, and means for securing said cross-bar or cross-bars to said hound and futchell bars, and for securing together the ends of said members of the splinter-bar and said splinter-bar and the arms and projections, said projections receiving the splinter-bar between them, substantially as described.

655,948. VEHICLE-WHEEL. MARION M. BAILEY, Chillicothe, Ohio, assignor of seventy-one one-hundredths to J. S. Harshman and H. E. Murphy, Springfield, Ohio. Filed Jan. 8, 1900. Serial No. 649. (No model.)



Claim.—1. In a vehicle-wheel, the combination with an auxiliary hub, of a primary hub mounted within said auxiliary hub, means for connecting said hubs with each other, and means for moving said primary hub out of a vertical line through the wheel-center and relatively to said auxiliary hub to cause the load to act on the motion of said wheel.

2. In a vehicle-wheel, the combination with an auxiliary hub, and a primary hub suspended within said auxiliary hub, of a pneumatic tube sustained by one of said hubs and suspending the other through intermediate connections, and means for throwing said primary hub forward and backward of the wheel-center, all substantially as shown and described.

3. In a vehicle-wheel, the combination with an auxiliary hub, of a suitably-supported resilient body, a hub proper supported by said resilient body, and means to move said hub proper in advance of the wheel-center whereby the cushioning effect and a forward impulse are imparted to the wheel, substantially as shown and described.

4. In a vehicle-wheel, the combination with an auxiliary hub, of a pneumatic tube supported by said hub, a primary hub suspended within said auxiliary hub from said pneumatic tube, and means for engaging with said auxiliary hub to prevent lateral movement of said primary hub, substantially as shown and described.

5. In a vehicle-wheel, the combination with an auxiliary hub, of a primary hub suspended within said auxiliary hub, a resilient body carried by said auxiliary hub, and suspending means for connecting said primary hub with said resilient body, such means being also adapted to act upon such resilient body to rotate it and said auxiliary hub.

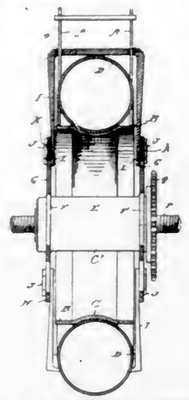
6. In a vehicle-wheel having an auxiliary hub, of a primary hub consisting of a sleeve mounted on an axle and carrying pivoted hangers, a sprocket-wheel carried by said primary hub and adapted to rotate it, means for connecting said auxiliary hub intermediate of said hangers, said means acting to assist in rotating the wheel proper when the weight and rotary motion are applied to said primary hub, all substantially as shown and described.

7. In a vehicle-wheel, the combination with an auxiliary hub, said auxiliary hub being composed of a pair of rings connected with each other by bridge-pieces, of supports carried by said rings extending inward, a pneumatic tube mounted within said auxiliary hub, loops of cord engaging with said supports and supporting said pneumatic tube, a primary hub mounted within said auxiliary hub and having hangers pivoted thereto, said hangers extending between said rings of the auxiliary hub and across said pneumatic tube, saddles carried by said pneumatic tube intermediate of said hangers, means to hold said saddles with said primary hub, all substantially as shown and described.

8. In a vehicle-wheel, the combination with an auxiliary hub consisting of rings and cross-pieces, of a primary hub consisting of a hub-sleeve carrying a pair of flanges, an annular ring for one of said flanges and adapted to be secured thereto, hangers pivoted to said annular ring, and to one of said flanges, said hangers adapted to fit between said auxiliary-hub rings and resiliently supported in such position, a friction-surface between each of said rings, and means to draw said hub out of the center of the wheel structure when the hub is partially rotated relatively to said auxiliary hub, all substantially as shown and described.

9. In a vehicle-wheel, having an auxiliary hub and a primary hub, of hangers pivotally carried by said primary hub and having friction contact with said auxiliary hub to prevent lateral movement, and a pair of supports carried by said hangers and extending inward, all substantially as shown and described.

655,949. VEHICLE-WHEEL. MARION M. BAILEY, Chillicothe, Ohio, assignor of seventy-one one-hundredths to J. S. Harshman and H. E. Murphy, Springfield, Ohio. Filed Jan. 8, 1900. Serial No. 650. (No model.)



Claim.—1. In a vehicle-wheel, the combination with an auxiliary hub having spokes secured near the outer edges of said hub, of a resilient body mounted between said spokes on said auxiliary hub, a primary hub within said auxiliary hub, hangers connected with said primary hub and extending over the resilient body and on the outside of said auxiliary hub.

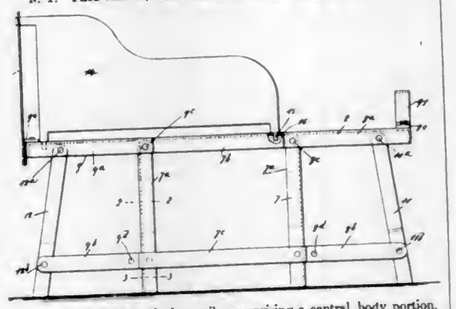
2. In a vehicle-wheel, the combination with an auxiliary hub with spokes secured thereto, of a resilient body carried by said auxiliary hub, a primary hub within said auxiliary hub carrying pivoted hangers, said hangers adapted to extend over said resilient body and on the outside of said auxiliary hub, all substantially as shown and described.

3. In a vehicle-wheel, the combination with an auxiliary hub, of a resilient body carried by said auxiliary hub, a primary hub within said auxiliary hub carrying a driving-gear, hangers pivotally engaging with said primary hub and adapted to extend over said resilient body and on the outside of said auxiliary hub, said hangers also having one or more holes therein through which a spoke of the wheel proper may pass, said spoke acting as a guide for the hanger, all substantially as shown and described.

4. In a vehicle-wheel, the combination with an auxiliary hub, of a resilient body carried by said hub, a primary hub mounted within said auxiliary hub, hangers pivotally connected with said primary hub and adapted to extend over said resilient body and outside of said auxiliary hub to support said primary hub, a bearing-surface for the outer extremity of said hangers having a pair of holes therein, a pair of spokes opposite each other adapted to pass through said holes to act as guides for said hangers, whereby the hub is held in its lateral position, means for partially rotating said primary hub relatively to said auxiliary hub, all substantially as shown and described.

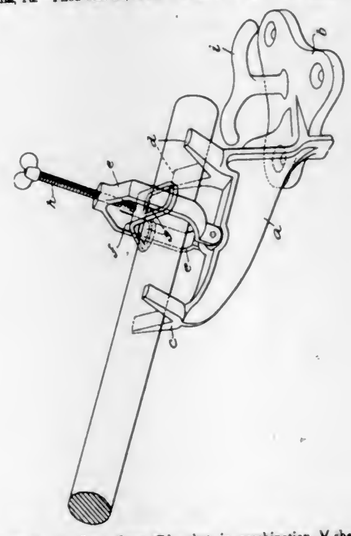
5. In a vehicle-wheel, the combination with an auxiliary hub, of a resilient body carried by said auxiliary hub, a primary hub within said auxiliary hub having radial arms, hangers pivotally connected with said radial arms by ball-bearings, said hangers extending over said resilient body and on the outside of the outer edges of said auxiliary hub, said hangers having bearing-surfaces at their outer ends with a pair of holes or openings therein, a pair of spokes adapted to extend through said holes whereby the hangers are held in position laterally, yet may slide in and out radially, and means for partially rotating said primary hub relatively to said auxiliary hub, whereby said former hub will be thrown either to one side or the other of the wheel-center according to the direction of rotation of the primary hub with respect to the auxiliary hub, all substantially as shown and described.

655,950. FOLDING BED OR CRIB. JOHN P. BALSER, New York, N. Y. Filed Jan. 12, 1900. Serial No. 1,193. (No model.)



Claim.—A folding bed or crib, comprising a central body portion, a foot portion and a head portion, each pivotally connected therewith and arranged to be swung into raised position, said head portion being provided with a headboard, and guard-pieces connected at one end with said headboard and adapted to be connected with said body portion when the parts are in operative position as a bed, and to be detached from said body portion when said headboard and foot portion are swung upwardly, whereby, with the parts in the latter position, said headboard may serve as a table-top, and said guards will depend into position to prevent displacement of the bedclothing, substantially as shown as described.

655,951. FLAGSTAFF-BRACKET. EUGENE D. BATES, Philadelphia, Pa. Filed Jan. 24, 1900. Serial No. 2,635. (No model.)

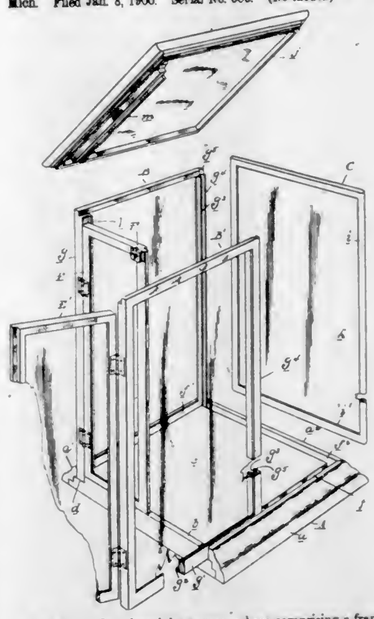


Claim.—1. In a flagstaff-bracket, in combination, V-shaped rests, formed integrally with the bracket, for supporting the under side of the staff, a standard, placed between the rests and pivoted at its lower end to the bracket, through which the staff passes, and a screw carried by the upper end of said standard adapted to engage the top of said staff.

2. In a flagstaff-bracket, in combination, V-shaped rests, formed integrally with the bracket, for supporting the under side of the staff, a standard, placed between the rests and pivoted at its lower end to the bracket, through which the staff passes, a vertically-movable keeper, the ends of which are guided by the sides of said standard, adapted to engage the top of the staff, and a screw passing through the top of said standard and adapted to force said keeper against the upper side of said staff.

3. In a flagstaff-bracket, in combination, rests adapted to engage the under side of the staff, a standard placed between the rests and pivoted to the bracket at its lower end, a vertically-movable keeper, furnished at its ends with slots through which the sides of said standard pass, adapted to engage the upper side of the staff, and a screw passing through the upper end of said standard and swiveled to said keeper.

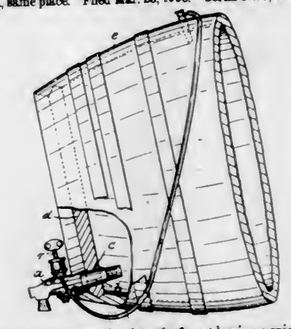
655,952. KNOCKDOWN CASE. HENRY E. BEKELING, Detroit, Mich. Filed Jan. 8, 1900. Serial No. 686. (No model.)



Claim.—1. In a knockdown case, a base comprising a frame one of the sides thereof having a channel formed along its inner edge with an upwardly-projecting flange at the inner edge of said channel, and a central panel secured to said flange and overlapping said channel; in combination with a side section adapted to slidingly engage with said channel and having a lateral projection extending beneath the overhanging portion of said panel.

2. In a knockdown case, a base comprising a frame formed of molding sections mitered at the corners and stepped or rabbeted on their under sides, bars extending parallel to opposite sides of said frame along the inner edges thereof, and secured in said steps or rabbets, said bars having upwardly-projecting flanges at their inner edges, a central panel secured to said upwardly-projecting flanges and overhanging said bars, the arrangement being such as to form parallel undercut channels between the inner edges of said sides, and said central panel; in combination with side sections adapted to slidingly engage said channels and having lateral projections engaging the undercut portion thereof.

655,953. AUTOMATIC VENT AND COMBINED TAP. DAVID BIRCHENOUGH, Paterson, N. J., assignor of one-fourth to Albert Richard Smith, same place. Filed Mar. 23, 1900. Serial No. 9,850. (No model.)



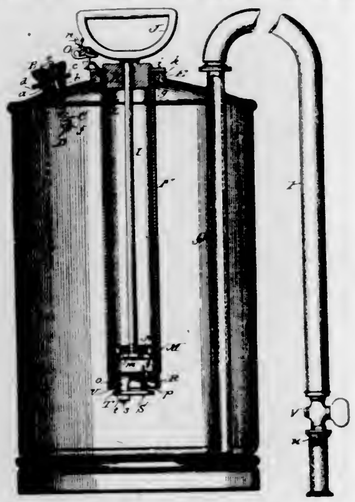
Claim.—1. The combination of a faucet having a spigot or plug, and also having perforations communicating with its bore, an adjustable plug of less diameter than the bore, arranged in the same, and adapted to control the communication through said perforations, said spigot and the body portion of the faucet having openings adapted to register when the spigot

is operated, air-conducting means communicating with one of the openings in the body portion of said faucet at one of its ends and adapted to be connected at the other of its ends to the container to which said faucet is applied, a removable operating-key for said spigot, said key having a reduced projection at one end and also having a laterally-extending lug, and the spigot having a groove in one of its ends adapted to receive the projection of the key, and a key-socket on said faucet, said key-socket having an internal recessed flange adapted to engage said lug, substantially as described.

2. The combination of a faucet having a controlling spigot or plug, air-conducting means controlled by said spigot or plug and adapted to be connected with the container to which said faucet is applied, said faucet having perforations communicating with its bore, and an adjustable plug of less diameter than the bore, arranged in the same, and adapted to control the communication through said perforations, substantially as described.

3. The combination of a faucet having perforations communicating with its bore, of an adjustable plug of less diameter than the bore, arranged in the same and adapted to control the communication through said perforations, substantially as described.

655,954. SPRAYING APPARATUS OR DEVICE. MOTT B. BROOKS, Rochester, N. Y. Filed May 3, 1900. Serial No. 15,343. (No model.)



Claim.—1. A spraying apparatus or device consisting of a suitable tank or vessel, a suitable cylinder, a valve at the lower end thereof, a suitable piston adapted to work in the cylinder, said cylinder at its upper end having slotted ears for engaging with suitable rods or fastenings on the tank or vessel, substantially as and for the purpose described.

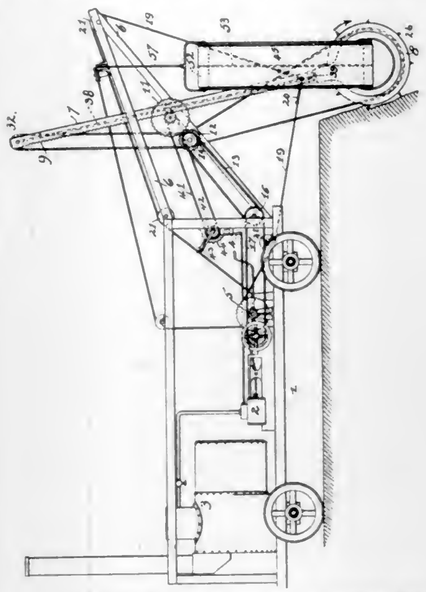
2. A spraying apparatus or device, consisting of a suitable tank or vessel, a discharge-tube extending down into the same, a spring-actuated safety-valve upon the top of the tank or vessel, a suitable cylinder extending down into the tank or vessel and removable therefrom, a spring-actuated valve at the lower end of the cylinder, a suitable piston adapted to work in the cylinder, and means for securing the cylinder to the tank or vessel, comprising slotted ears, screw-rods and thumb-nuts engaging therewith, substantially as and for the purpose set forth.

655,955. EXCAVATING-MACHINE. LUKE V. BROPHY, Chicago, Ill., assignor, by mesne assignments, to Frederick C. Austin, same place. Filed May 25, 1899. Serial No. 718,289. (No model.)

Claim.—1. In an excavating-machine, the combination with a rotary dipper constructed to excavate toward the machine, of a pivotal mounting for said dipper permitting the movement of the dipper substantially in the horizontal plane of its axis, and means for actuating said dipper and for controlling its pivotal movement, substantially as described.

2. In an excavating-machine, the combination with a supporting-arm of the rotary dipper mounted thereon, a pivotal connection provided between the supporting-arm and the dipper whereby the plane of rotation of said dipper may be adjusted, and means for actuating said dipper and for controlling its pivotal movement, substantially as described.

3. In an excavating-machine the combination with a dipper-arm, a mounting therefor permitting its longitudinal movement and angular adjustment, a rotary dipper disposed upon said arm, a mounting therefor permitting the movement of said dipper substantially in the horizontal plane of its axis, and means for actuating said dipper and for controlling its movement in the horizontal plane of its axis, substantially as described.



4. In a machine of the class described the combination with a dipper-arm having mountings permitting its longitudinal movement and angular adjustment, of a rotary dipper mounted thereon to rotate substantially in the plane of the direction of the movement of the machine, a mounting for the dipper permitting the control of the plane of rotation of said dipper, and means for actuating the dipper and for controlling its plane of rotation, substantially as described.

5. In a machine of the class described the combination with a dipper-arm, means for securing its longitudinal movement and for adjusting its angular position with respect to the ground, of a rotary dipper mounted at the end of said dipper-arm, a pivotal mounting for said rotary dipper permitting the adjustment of the dipper's rotation substantially in a horizontal plane through its axis, means for securing rotation of the dipper and for adjusting its plane of rotation, substantially as described.

6. In a rotary dipper for excavating-machines, the combination with annular end plates 24, of a plurality of transverse ribs 25 connected with said end plates, the said ribs being disposed to provide a central open portion within the dipper, journal-bearings exterior to said central open portion, and within the plane of rotation of the cutting-blades, and cutting-blades provided upon the said ribs, substantially as described.

7. In a rotary dipper for excavating-machines, the combination with annular end plates 24, of a plurality of transverse ribs 25 connected with said end plates, the said ribs being disposed to provide a central open portion within the dipper, journal-bearings exterior to said central open portion, and a plurality of relatively-displaced cutting-blades 26 provided upon the several ribs, substantially as described.

8. In an excavating-machine, the combination with a movable dipper-arm, of a rotary dipper having a journal-mounting for supporting the same upon the dipper-arm, the said journal-mounting having a swinging or rotary connection with the dipper-arm, whereby the dipper may be moved transversely, substantially as described.

9. In an excavating-machine, the combination with a dipper-arm mounted to move longitudinally and have its angular position with relation to the ground varied, of a rotary dipper having a journal-mounting for supporting the same upon the dipper-arm, the said journal-mounting having a swinging or rotary connection with the dipper-arm, whereby the dipper may be moved transversely, substantially as described.

10. In an excavating-machine, the combination with a dipper-arm mounted to move longitudinally and have its angular position with relation to the ground varied, of a rotary dipper having a journal-mounting for supporting the same upon the dipper-arm, the said journal-mounting having a swinging or rotary connection with the dipper-arm, whereby the dipper may be moved transversely, a shaft 38 mounted to rotate in bearings carried by the dipper-arm, a pinion 39 upon the said shaft, a gear 40 carried by the journal-mounting, and means for effecting the rotation of the said shaft to move the journal-mounting with the dipper transversely, substantially as described.

11. In an excavating-machine, the combination with a dipper-arm, of a boom, a rack provided upon the dipper-arm, a pinion mounted upon the boom, means for effecting the longitudinal travel of the dipper-arm through the agency of said pinion and rack, the dipper-arm being adapted to rotate about the axis of the pinion, a rotary dipper, means for rotating the same, a journal-mounting for the dipper having pivotal or swinging connection with the dipper-arm, a shaft 38 mounted in bearings carried by the dipper-arm and carrying a pinion 39, a rack 40 carried by the journal-mounting and engaging the latter pinion, a worm-wheel 37 rotatable with and longitudinally movable with respect to the shaft, a second worm-wheel 36 coaxial with the first aforesaid pinion, and means for rotating the latter worm-wheel to effect the transverse movement of the dipper, substantially as described.

12. In a rotary dipper for excavating-machines, the combination with end plates 24 24, of a series of transverse ribs 25, and a plurality of relatively-displaced blades 26 upon each of said ribs, substantially as described.

13. In a rotary dipper for excavating-machines, the combination with end plates 24 24, of a series of transverse ribs 25, a plurality of cutting-blades 26 upon each of said ribs, and a journal 27 for each of said end plates, substantially as described.

14. In a rotary dipper for excavating-machines, the combination with end plates 24 24, of a series of transverse ribs 25, a plurality of cutting-blades 26 upon each of said ribs, a journal 27 for each of said end plates, and ball or roller bearings interposed between the end plates and the journals, substantially as described.

15. In an excavating-machine, the combination with a rotary dipper having a hollow interior and provided with a series of transverse relatively-displaced cutting-lips, the spaces between which have direct communication with the said hollow interior, of a conveying device extending within the said interior longitudinally of the axis of rotation of the dipper to receive the material removed by the dipper as it falls from the said lips, and means for effecting the travel of the conveying device, substantially as described.

16. In an excavating-machine, the combination with a rotary dipper, of journals 27 therefor, the said dipper being provided with a hollow interior and having transverse cutting-lips, the spaces between which have communication with the said hollow interior, a conveyer extending within the dipper longitudinally of its axis of rotation, and interior gearing within the hollow dipper for effecting the travel of the conveyer operated by the dipper in its rotation, substantially as described.

17. In an excavating-machine, the combination with a dipper-arm, of a rotary dipper mounted thereon, and unitary means adapted simultaneously to effect the longitudinal travel of the dipper-arm and the rotation of the dipper, substantially as described.

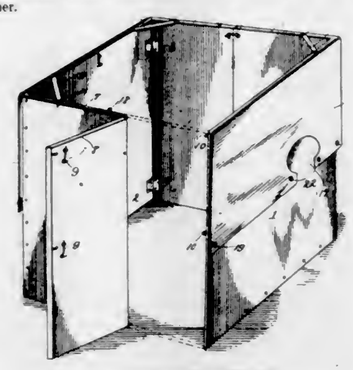
18. In an excavating-machine, the combination with a longitudinally-movable dipper-arm, of a rotary dipper mounted thereon, a conveyer for removing the excavated material, and means for moving the said conveyer with the dipper-arm as the latter is moved longitudinally, substantially as described.

19. In an excavating-machine, the combination with a longitudinally-movable dipper-arm, of a rotary dipper mounted thereon, a conveyer having its lower end movable with the dipper, and means for effecting the movement of the upper end of the conveyer as the dipper-arm is moved longitudinally to maintain the desired angular position of the conveyer with relation to the dipper-arm, substantially as described.

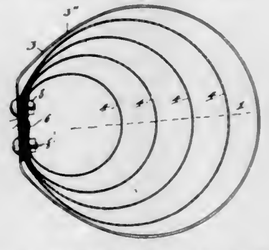
655,956. BATH-CABINET. LOUIS L. CAHOON, Racine, Wis. Filed Sept. 25, 1899. Serial No. 731,515. (No model.)

Claim.—1. A folding bath-cabinet comprising the rigid sides, two opposed sides, each composed of two sections hinged together on a vertical line so as to fold inwardly, and also hinged to the rigid sides so as to fold between them, one of the sections providing a door having fastenings, for connecting it to a rigid side, means for fastening the rear sections rigidly together, a top flap having a neck-aperture, and secured to one of the rigid sides, a top flap secured to the other rigid side, and fastenings for connecting the edges of the top flaps together and to the sections.

2. A folding bath-cabinet comprising rigid sides, two opposed sides, each composed of two sections hinged together on a vertical line so as to fold inwardly and also hinged to the rigid sides, so as to fold between them, one of the sections providing a door, having fastenings for connecting it to a rigid side, means for fastening the rear sections rigidly together, the top brackets extending across corners of the sides, a top flap having a neck-aperture and secured to one of the rigid sides, a top flap secured to the other rigid side, and fastenings for connecting the edges of the top flaps together.



655,957. CURRYCOMB. MARVIN CAMPBELL, South Bend, Ind. Filed May 18, 1900. Serial No. 17,092. (No model.)



Claim.—1. As a new article of manufacture, a currycomb comprising a group of relatively-eccentric circular comb-blades of successively-larger diameter from the innermost outwardly, secured together at one side, and a back to which the group of comb-blades is secured having a marginal configuration, substantially conforming to the shape of the outermost comb-blade, substantially as described.

2. As a new article of manufacture, a currycomb comprising a group of relatively-eccentric circular comb-blades of successively-larger diameter from the innermost outwardly, secured together at one side, and a back to which the group of comb-blades is secured having a marginal configuration, substantially conforming to the shape of the outermost comb-blade, said back being provided with a flange extending entirely around its margin and one part of which serves as the support to which the comb-blades are secured, substantially as described.

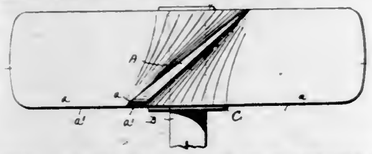
3. As a new article of manufacture, a currycomb comprising a group of relatively-eccentric circular comb-blades of successively-larger diameter from the innermost outwardly, secured together at one side, a sheet-metal back having a marginal shape substantially conforming to the outermost comb-blade, an integral flange portion extending at an abrupt angle to the plane of the back, and securing devices for detachably securing the group of comb-blades to said flange portion, said securing devices being located symmetrically with relation to the opposite edges of the comb-blades, whereby the latter may be reversed upon the back, substantially as described.

4. As a new article of manufacture, a currycomb comprising a group of relatively-eccentric circular comb-blades of successively-larger diameter from the innermost outwardly, secured together at one side, each blade being provided with a toothed edge and an opposite plain edge, a sheet-metal back shaped to conform substantially to the form of the outermost blade, and provided with an integral flange portion extending at an abrupt angle to the plane of the back, and securing devices for detachably securing the group of comb-blades to said flange portion, said securing devices being located symmetrically with relation to the comb-blades, whereby the latter may be reversed upon the back and the comb-blades being secured to said flange portion in position to stand free from the main body of the back, substantially as described.

5. In a currycomb, the combination of the sheet-metal back 1, provided with the integral circumferential flange 3, the group of comb-blades 4 formed from a continuous strip of ribbon of sheet metal toothed at one edge and plain at the opposite edge, and secured together at one side in-

dependently of the back, and the securing-bolts 8 extending through the flange and group of comb-blades and arranged symmetrically with relation to the opposite edges of said blades, substantially as and for the purposes set forth.

655,958. SCREW-PROPELLER. JOHN CARLSSON, Worcester, Mass. Filed Feb. 7, 1899. Serial No. 704,814. (No model.)



Claim.—A screw-propeller, as described, having blades placed at an angle to their plane of rotation, the front edges of said blades presenting surfaces to the impact of the water, as the propeller is moved forward, which are at right angles to its axis of rotation, said blades being gradually reduced in thickness from their front to their rear edges, substantially as described.

655,959. MANDOLIN PICK-HOLDER. CAROLYN M. COCHRANE, Buffalo, N. Y. Filed Feb. 3, 1900. Serial No. 3,862. (No model.)



Claim.—1. The combination with a pick-holder having a flat elongated shank projecting slightly from one side thereof, of a pick secured to and extending from the side of said holder opposite the shank.

2. The combination with a pick-holder having a longitudinal slot, and a projecting shank opposite the slot, of a pick secured in said slot.

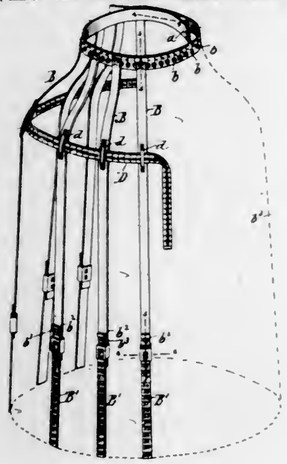
3. The combination with a pick-holder having a longitudinal slot, and an integral projecting shank opposite the slot, of a pick secured in said slot.

4. The combination with a roughened-surface cylindrical pick-holder having a longitudinal slot and closed ends, of a pick having one part slightly narrower than the distance between the ends of the holder and said part inserted and secured in said slot.

5. The combination with a hollow pick-holder having a slot, of a pick inserted in said slot, and a suitable adhesive within the hollow pick-holder for filling its interior and also securing the pick to the pick-holder.

6. A mandolin pick-holder consisting of a rigid hollow cylinder with closed ends and roughened surface and provided on one side with a longitudinal slot in which the widest end of the pick or plectrum is inserted and secured, its other side being provided with a flat rigid shank integral therewith and substantially equal in width to the widest end of the pick or plectrum the shank being in the same plane with and practically forming a prolongation of the same substantially as and for the purpose stated.

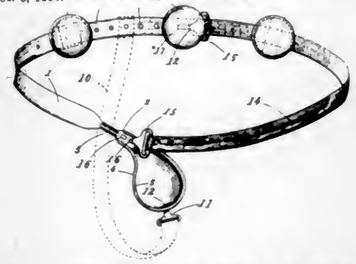
655,960. SKIRT-MEASURING DEVICE. EMMA E. CUNNINGHAM, Newton, Mass. Filed Oct. 20, 1899. Serial No. 734,218. (No model.)



Claim.—1. As an improved article of manufacture, the measuring device for drafting skirt and similar patterns, and skirts, comprising an adjustable waist-measuring band having attaching devices located thereon at equal distances apart, length-measuring tapes, vertically adjustable as to length and each provided at its upper end with an attaching device whereby it may be attached to one of the attaching devices carried by the waistband and be horizontally adjusted in fixed position thereon, and a hip-measuring strap supported by said measuring-tapes and horizontally movable with relation thereto.

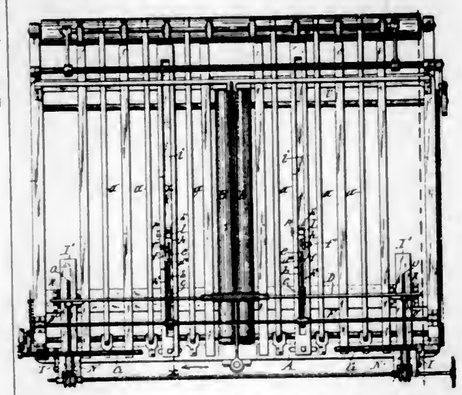
2. In a measuring device for providing measurements for skirt-patterns and skirts, the length-measuring tapes having means at their upper ends for detachably securing them to a waistband, and each consisting of two sections of tape and a connecting-clamp, in which one section is adjustably movable vertically with respect to the other, each tape being free to hang vertically at its lower end as and for the purposes set forth.

655,961. TRUSS. LORENZ A. DEUTHER, Buffalo, N. Y. Filed Feb. 6, 1897. Serial No. 622,278. (No model.)



Claim.—A truss comprising a band formed of one integral portion of annealed metal in which portions are rolled to a spring-temper and other portions are bendable, and having a main flattened portion of spring character curved to conform to the body, an intermediate short portion adapted to be bent in any direction, and a short end portion extending from said short bendable portion having its extreme bent at an angle and terminating in a rivet-point, and a hernia-supporting pad having its edge bent inwardly to form a partially-encircling flange, one end of the pad being reduced sufficiently to embrace the end portion of the band and having an opening through which the rivet-point of the bent extreme of the band is passed and riveted, as set forth.

655,962. PAPER-REGISTERING INSTRUMENT. TALBOT C. DEXTER, Pearl River, N. Y., assignor to the Dexter Folder Company, New York, N. Y. Filed May 29, 1899. Serial No. 718,655. (No model.)



Claim.—1. In combination with paper-delivering tapes and means for removing the delivered paper laterally from said tapes, an instrument sustained yieldingly toward the aforesaid paper-removing means, a stop arresting the movement of said instrument in position to register the paper delivered by the tapes, and means for yieldingly holding the instrument in contact with said stop.

2. In combination with paper-delivering tapes and paper-folding rollers parallel with said tapes, a supporting-bracket over the tapes, an arm pivoted to said bracket to swing in a horizontal plane toward and from the folding-rollers and provided with means for engaging and registering the paper, a stop on said bracket arresting the movement of said arm at its registering position, and a spring holding said arm in contact with the aforesaid stop.

3. In combination with paper-delivering tapes and means for removing the delivered paper laterally from said tapes, a bracket over the tapes and provided with pivots disposed one above the other, an arm sustained by and between said pivots and provided with means for engaging a slit or perforation in the paper, a stop on said bracket arresting the swinging movement of said pivoted arm in position to register the paper, and a spring holding said arm in contact with the stop as set forth.

4. In combination with paper-folding rollers and paper-delivering tapes disposed parallel with said rollers, a registering instrument comprising a supporting-arm provided with two screw-threaded eyes disposed one above the other and axially in line, vertically-adjustable screws passing through said eyes and provided with pivot-points on their adjacent ends, a hub pivoted on said screws, a registering-arm extending from said hub toward the plane of the delivered paper, a stop on the aforesaid supporting-arm arresting the swinging movement of the registering-arm at its registering position, and a spring attached to the said supporting-arm and yieldingly holding the registering-arm in contact with the aforesaid stop as set forth.

5. An automatic point-feed registering instrument consisting of a supporting-arm adjustable in length, a registering-arm pivoted to said supporting-arm and vertically adjustable thereon, a stop on the supporting-arm limiting the swinging movement of the registering-arm and means for yieldingly holding the registering-arm in contact with said stop as set forth.

6. In combination with paper-delivering tapes, a rock-shaft over said tapes, an arm receiving oscillatory motion from said shaft and a registering-arm pivoted to said oscillatory arm as set forth.

7. On a paper-folding machine having the paper-delivering tapes parallel with the paper-folding rollers, the combination of a rock-shaft over said tapes, an arm receiving oscillatory motion from said shaft, a registering-arm pivoted to said oscillatory arm to swing toward the folding-rollers and normally in position to register the paper delivered upon the aforesaid tapes, a stop sustaining the oscillatory arm in its normal position and a spring yieldingly retaining said arm in contact with the stop as set forth.

8. In combination with paper-folding rollers, paper-delivering tapes parallel with said rollers, and alternately advancing and receding front stop, pads at opposite sides of the folding-rollers and in a plane even with that of the aforesaid tapes and connected to the aforesaid front stop to move therewith, a rock-shaft disposed transversely over the tapes, rock-arms extending from said shaft, registering-arms connected to said rock-arms yieldingly toward the folding-rollers, and disposed over the aforesaid pads, stops on the rock-arms arresting the swinging of the registering-arms at their registering positions, and springs connected to the oscillatory arms and yieldingly holding the registering-arms in contact with the aforesaid stops as set forth.

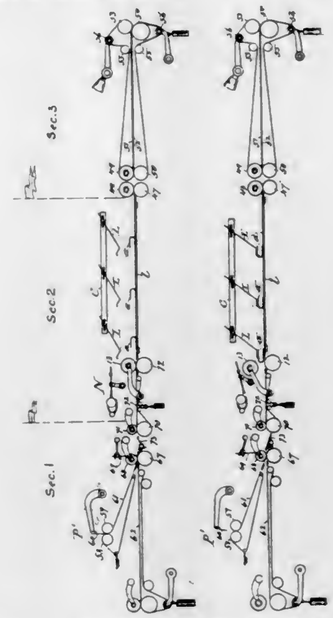
9. In combination with paper-folding rollers and paper-delivering tapes parallel with said rollers, pads at opposite sides of the folding-rollers and in the same plane with the tapes, registering-arms over the pads and supported yieldingly toward the folding-rollers, registering-points attached to said arms, and bridges facing said registering-points to open the slits in the paper preparatory to the entering of the registering-points as set forth.

10. In combination with paper-folding rollers, paper-delivering tapes parallel with said rollers, and an alternately advancing and receding front stop, pads at opposite sides of the folding-rollers and supported in the same plane with the aforesaid tapes, slides connecting said pads to the front stop, registering-arms over the pads and supported yieldingly toward the folding-rollers, registering-points attached to said arms, and bridges facing said registering-points to open the slits in the paper for the entering of the registering-points as set forth.

11. In combination with the registering-arm provided with a registering-point and an alternately advancing and receding front stop temporarily arresting the movement of the paper under said registering-arm, a stationary guide disposed parallel with the tapes, a slide in said guide provided with a longitudinal slot, a plate mounted on said slide and connected to the front stop, a bolt passing through the slot of the slide and adjustably securing the aforesaid plate to said slide, a pad attached to the opposite end of the slide and disposed under the aforesaid registering-arm and a slit-opening bridge attached to the aforesaid guide as set forth.

12. In combination with the paper-delivering tapes, and adjustable front stop, a rock-shaft transversely over said tapes, a longitudinally-adjustable rock-arm extending from said rock-shaft, a vertically-adjustable registering-arm carried on said rock-arm and provided with a registering-point, a stationary longitudinal guide, a slide in said guide and provided with a longitudinal slot in the end portion under the front stop, a plate mounted on said slide and connected to the front stop, a bolt passing through the slot of the slide and adjustably securing the aforesaid plate to the slide, a pad attached to the opposite end of the slide and disposed under the registering-arm and a slit-opening bridge connected to the aforesaid guide adjustably lengthwise thereof as set forth.

655,963. MAILING-MACHINE. TALBOT C. DEXTER and IRVEN H. DEXTER, Pearl River, N. Y., assignors of three-fourths to said Talbot C. Dexter and one-fourth to said Irven H. Dexter. Filed Aug. 2, 1899. Serial No. 725,835. (No model.)



Claim.—1. A paper-folder comprising a prolonged horizontal bed, a plurality of paper-folding devices distributed lengthwise over said bed and supported oscillatory to lie alternately in opposite directions upon said bed, mechanisms actuating said folding devices, and mechanisms shifting the folded paper from one of said devices onto the bed and thence into the succeeding folding device as set forth.

2. A paper-folder comprising a paper-supporting bed, a plurality of paper-folding forks disposed in a row over said bed and supported oscillatory toward opposite ends of said bed and at the same time lie in planes parallel and contiguous to the bed, mechanisms actuating said forks, and means traveling longitudinally over said bed and shifting the paper to the successive forks as set forth.

3. A paper-folder comprising a paper-supporting bed, a plurality of paper-folding forks disposed in a row over said bed and pivoted at the free ends of the forks in bearings disposed contiguous to the plane of the aforesaid bed, mechanisms rocking said forks into reversed positions, and means traveling longitudinally over said bed and shifting the paper to the successive forks and at the same time pressing upon the folded portion of the paper across the entire width thereof as and for the purpose set forth.

4. The combination of a paper-supporting bed, a plurality of paper-folding forks disposed in a row over said bed and pivoted to swing into reversed positions, mechanism imparting intermittent synchronous action to said forks, means reciprocating longitudinally over the aforesaid bed and movable vertically to and from the same to shift the paper to the successive forks, and mechanisms actuating said means and timed to lift the same from the bed during the reversing action of the aforesaid forks as set forth.

5. A mailing-machine comprising a plurality of sets of paper-folding forks disposed in a straight row, each of said sets supported oscillatory on an axis at the free ends of the forks, guides supporting the paper between the sets of forks, and means for shifting the folded paper into the successive sets of forks.

6. In a mailing-machine the combination of a paper-supporting bed, a plurality of paper-folding forks disposed in a row over said bed and pivotally supported at the receiving ends of the forks and in stationary bearings located in proximity to the plane of the aforesaid bed, means for im-

parting oscillatory motion to the forks, and means reciprocating over the bed and shifting the paper to the successive forks.

7. In a mailing-machine the combination of a paper-supporting bed secured stationary in its position, a plurality of paper-folding forks disposed in a row over said bed and pivotally supported at the receiving ends of the forks and in stationary bearings located in proximity to the plane of the bed, means for synchronously rocking the row of forks, and means reciprocating over the bed and shifting the paper to the successive forks as set forth.

8. A mailing-machine comprising a plurality of sets of paper-folding forks disposed in a row, each of said sets supported oscillatory on an axis at the free ends of the forks, means for turning the forks on said axis, paper-supporting guides between the sets of forks, means for introducing the paper into the first set of forks, means for shifting the folded paper into the successive sets of forks, and means for compressing the folded paper beyond the row of folding-forks.

9. A mailing-machine comprising a plurality of sets of paper-folding forks disposed in a row and each of said sets supported oscillatory at the free ends of the forks, stationary paper-supporting guides between the sets of forks, feeding devices supplying the paper and wrapper to the first set of forks, means for shifting the folded paper and wrapper into the successive sets of forks and paper-compressing rollers beyond the row of forks.

10. A mailing-machine comprising a stationary paper-supporting bed, a plurality of paper-folding forks disposed in a row over said bed and supported reversibly to present the receiving ends of the forks alternately toward opposite ends of the bed, mechanisms imparting the reversing action to the forks, feeding devices supplying the sheets of paper and wrapper simultaneously, a gage assembling said sheets, conveyers delivering the assembled paper and wrapper from said gage to the folding-forks, and means for shifting said sheets to the successive forks as set forth.

11. The combination of paper-folding rollers, a blade introducing the paper into the bite of said rollers, a prolonged bed disposed to receive the paper from said folding-rollers, and a plurality of paper-folding devices distributed over said bed and imparting successive folds to the paper during its transit over said bed.

12. The combination of a prolonged bed, wrapper-conveyers extending toward said bed, paper-folding rollers, a blade introducing the paper into the bite of said rollers, paper-conveyers extending from said rollers and delivering the folded paper upon the wrapper, a gage assembling said wrapper and paper, conveyers delivering the assembled sheets to the aforesaid bed, and a plurality of paper-folding devices distributed over said bed and imparting successive folds to the assembled sheets during their transit over the bed.

13. The combination of a plurality of sets of paper-folding forks disposed in a row and each set supported oscillatory to present the free ends of the forks alternately in opposite directions, paper-supporting guides between the sets of forks, means for introducing the sheets into the first set of forks, arms supported movable longitudinally over the row of forks and oscillatory to and from the same and means attached to the free ends of said arms to shift the folded sheets into the successive sets of forks as set forth.

14. The combination of a plurality of sets of paper-folding forks disposed in a row and each set supported oscillatory to present the free ends of the forks alternately in opposite directions, paper-supporting guides between the sets of forks, means for introducing the sheets into the first set of forks, arms supported movable longitudinally over the row of forks and oscillatory to and from the same, means attached to the free ends of the arms to shift the folded sheets into and out of the successive forks, and rollers compressing the folded sheets beyond the row of forks.

15. The combination of a plurality of sets of paper-folding forks disposed in a row and each set supported reversibly to present the free ends of the forks alternately in opposite directions, mechanisms imparting the reversing action to the sets of forks, paper-supporting guides between the sets of forks, feeding devices supplying the sheets of paper and wrapper to the machine, a gage assembling the sheets, propelling devices carrying the assembled sheets into the first set of forks, arms supported movable longitudinally over the row of forks and oscillatory to and from the same and means attached to the free ends of said arms for shifting the folded sheets into the successive sets of forks as set forth.

16. The combination of a plurality of sets of paper-folding forks disposed in a row and each set supported reversibly to present the free ends of the forks alternately in opposite directions, mechanism imparting the reversing action to the sets of forks, arms carried forward and back longitudinally over the row of forks and oscillatory to and from the same, means carried on said arms for shifting the folded paper forward into the successive sets of forks, and means for lifting said arms in their retrograding movement as set forth.

17. The combination of a plurality of sets of paper-folding forks disposed in a row and each set reversible to present the free ends of the forks alternately in opposite directions, mechanism reversing the sets of forks, feeding devices supplying the sheets of paper and wrapper to the machine, a gage assembling said sheets, propelling devices carrying the assembled sheets into the first set of forks, arms carried forward and back longitudinally over the row of forks and oscillatory to and from the same, means carried on said arms for shifting the folded sheets forward into the successive sets of forks and means for lifting the arms during their retrograding movements.

18. A mailing-machine comprising a plurality of sets of sheet-folding forks disposed in a row and each set supported oscillatory on a transverse axis located at the free ends of the forks, mechanisms imparting oscillatory motion to the sets of forks, means for introducing the sheets of paper and wrapper into the first set of forks, means for applying paste to the protruding portion of the wrapper, and means for shifting the folded sheets into the successive sets of forks.

19. A mailing-machine comprising a plurality of sets of sheet-folding forks disposed in a row and each set supported oscillatory on a transverse axis located at the free ends of the forks, mechanisms imparting oscillatory motion to the sets of forks, paper-supporting guides between the sets of forks, means for introducing the sheets of paper and wrapper into the first set of forks, means for applying paste to the protruding margin of the wrapper, and means for shifting the folded sheets into the successive sets of forks as set forth.

20. The combination of a yoke consisting of parallel arms united at one end by a transverse bar and pivoted at their free ends, and forks projecting from said bar between the aforesaid arms, means for inserting into said forks the articles to be folded, and mechanism imparting oscillatory motion to said yoke and thereby folding the inserted article.

21. The combination of a plurality of yokes disposed transversely in a row and each consisting of parallel arms united at one end by a transverse bar and pivoted at their free ends and forks extending from said bar between the aforesaid arms, means for inserting the articles to be folded into the forks of the first yoke, mechanism imparting oscillatory motion to the yokes, and means for shifting the articles successively from yoke to yoke.

22. The combination of a plurality of yokes, each consisting of parallel arms united at one end by a transverse bar and pivoted at their free ends, and forks projecting from the transverse bar between the aforesaid arms, pinions attached to the yokes concentric with the pivots thereof, intermittingly-reciprocating racks meshing with said pinions, means for introducing the articles to be folded into the forks of the first yoke, and means for shifting folded articles into the forks of the successive yokes as set forth.

23. The combination of a plurality of sets of paper-folding forks disposed in a row, mechanisms imparting oscillatory motion to said sets of forks, a carriage reciprocating longitudinally over said row, arms pivotally supported on said carriage and provided on their free ends with means for shifting the folded sheets into the successive forks and means for lifting said arms during the rearward movement of the carriage.

24. The combination of a plurality of sets of paper-folding forks disposed in a row, and each set pivoted to present the free ends of the forks alternately in opposite directions, pinions fastened to the sets of forks concentric with the pivots thereof, reciprocating racks meshing with said pinions, a carriage reciprocating longitudinally over the row of forks, arms pivotally supported on said carriage, means for introducing the sheets into the first set of forks, and means attached to the free ends of the aforesaid arms for shifting the folded sheets into the successive sets of forks as set forth.

25. The combination of a plurality of sets of paper-folding forks disposed in a row and each set pivoted at the free ends of the forks, pinions attached to the sets of forks concentric with the pivots thereof, reciprocating racks meshing with said pinions, a carriage reciprocating longitudinally over the row of forks, arms pivotally supported on said carriage, means for introducing the paper and wrapper into the first set of forks, means for applying paste to the protruding margin of the wrapper, means attached to the free ends of the aforesaid arms for shifting the folded sheets into the successive sets of forks, and means for lifting said arms during the rearward movement of the carriage as set forth.

26. The combination of successive sets of oscillatory paper-folding forks disposed in a row, a carriage reciprocating longitudinally over said row, shafts mounted transversely on said carriage, brackets connected to said shafts adjustable lengthwise thereof, arms connected to said brackets, means for introducing the paper and wrapper into the first set of forks, and means on the free ends of the aforesaid arms for shifting the folded sheets into the successive sets of forks.

27. The combination of successive sets of oscillatory paper-folding forks disposed in a row, a carriage reciprocating longitudinally over said row, shafts mounted transversely on said carriage, brackets connected to said shafts adjustable lengthwise thereof, arms connected to said brackets, means for introducing the paper and wrapper into the first set of forks, means for applying paste to the protruding margin of the wrapper, fingers on the free ends of the aforesaid arms for pressing upon the folded sheets and shifting the same into the successive sets of forks, and means for lifting said arms during the rearward movement of the carriage as set forth.

28. The combination of successive sets of oscillatory paper-folding forks disposed in a row, a carriage reciprocating longitudinally over said row, shafts mounted transversely on said carriage, rock-arms fastened to said shafts, rollers pivoted to said rock-arms, an intermittingly-reciprocating bar under said rollers, means for lifting said bar during its movement in one direction, arms firmly secured to the aforesaid shafts and means on the free ends of said arms for shifting the folded sheets into the successive sets of forks as set forth.

29. The combination of successive sets of oscillatory paper-folding forks disposed in a row, a carriage reciprocating longitudinally over said row, shafts mounted transversely on said carriage, rock-arms fastened to said shafts, carrying-rollers beneath the rock-arms, a bar sliding on said carrying-rollers and supported thereby parallel with the carriage and provided on its bottom with inclined downward projections to lift said bar, rollers pivoted to the aforesaid rock-arms and riding on said bar, means for intermittingly reciprocating said bar, and arms fastened to the transverse shafts and provided on their free ends with means for shifting the folded sheets into the successive sets of forks as set forth.

30. In combination with the successive sets of paper-folding forks and arms reciprocating longitudinally over said forks to shift the folded sheets into the successive sets of forks, plates attached to the free ends of said arms to engage the edge of the folded sheets, and fingers projecting from said plates to bear on the top of the folded sheets and adjustable vertically for varying thickness of the said sheets.

31. In combination with the successive sets of paper-folding forks and arms reciprocating longitudinally over said forks to shift the folded sheets into the successive sets of paper-folding forks, plates attached vertically to the free ends of said arms, sheet-depressing fingers projecting from said plates, and biting devices on the under sides of said fingers to reinforce their hold upon the sheets for shifting the same into the successive sets of forks as set forth

32. In combination with the successive sets of paper-folding forks and arms for shifting the folded sheets into said forks, vertical plates on said arms to engage the edges of the folded sheets, sheet-depressing fingers projecting from said plates, and friction-pads on the under sides of said fingers as set forth.

33. The combination of longitudinal guide-bars, successive sets of paper-folding forks over said bars and pivoted to present the free ends of the forks alternately toward opposite ends of said bars, mechanism imparting the reversing action to said forks, a feed-roller extending across the rear ends of said bars, drop-rollers over said feed-roller, means for shifting the folded sheets into the successive sets of forks, sheet-compressing rollers extending across the front ends of the aforesaid guide-bars, and conveying-tapes disposed to receive the sheets from the compressing-rollers as set forth.

34. A mailing-machine comprising longitudinal guide-bars, successive sets of paper-folding forks over said guide-bars and pivoted to present the free ends of the forks alternately toward opposite ends of said guide-bars, mechanisms imparting the reversing action to said forks, a feed-roller extending across the rear ends of the guide-bars, drop-rollers over said feed-roller, means for shifting the folded sheets into the successive sets of forks, sheet-compressing rollers extending across the front ends of the guide-bars, conveying-tapes disposed to receive the sheets from said compressing-rollers, and a receptacle disposed to receive the folded sheets from the delivery ends of the aforesaid tapes as set forth.

35. The combination with mechanism for folding paper with an inclosing wrapper, of a feed-roller advancing the sheets to said mechanisms, separate feeding devices supplying respectively the paper and wrapper, a gage assembling the supplied sheets, conveyers carrying the assembled sheets to the aforesaid feed-roller, and a paste-applying instrument extending across the machine in proximity to said feed-roller.

36. The combination with mechanisms for folding paper with an inclosing wrapper, of a feed-roller advancing the sheets to said mechanisms, a paste-applying instrument extending across the machine in proximity to said roller and actuated periodically to apply the paste to the protruding margin of the wrapper, drop-rollers over said feed-roller, and mechanism lifting said drop-rollers during the period of the passage of the pasted portion of the wrapper across the feed-roller as set forth.

37. The combination with mechanisms for folding paper with an inclosing wrapper, of a feed-roller advancing the sheets to said mechanisms, separate feeding devices supplying respectively the paper and wrapper, a gage assembling said sheets, conveyers carrying the assembled sheets to the aforesaid feed-roller, a paste-applying instrument extending across the machine in proximity to said feed-roller and actuated periodically to apply the paste to the protruding margin of the wrapper, drop-rollers over the feed-rollers, and mechanism lifting said drop-rollers during the period of the passage of the pasted portion of the wrapper across the feed-roller as set forth.

38. In combination with mechanisms for folding paper with an inclosing wrapper, conveyers supplying the sheets, and a pasting instrument disposed to apply paste to the margin of the wrapper, a pivoted guard-finger sustained with its free end normally in the path of the sheets on the conveyers and actuated by the sheets in transit, a stop-arm actuated by said guard-finger, and a detent controlled by said stop-arm and arresting the action of the pasting instrument.

39. In combination with mechanism for folding paper with an inclosing wrapper and conveyers supplying said paper and wrapper, a pasting instrument disposed to receive under it the sheets from said conveyers, a pivoted guard-finger sustained with its free end normally in the path of the sheets on the conveyers and actuated by the sheets in transit, a stop-arm actuated by said guard-finger, a spring forcing the pasting instrument into position to apply the paste to the wrapper, and a detent controlled by said stop-arm and disposed to resist the action of the aforesaid spring when the guard-finger is in its normal position as set forth.

40. In combination with mechanisms for folding paper with an inclosing wrapper, and conveyers supplying said paper and wrapper, a pasting instrument disposed to receive under it the sheets supplied by the conveyers, a transverse shaft beneath the pasting instrument, a guard-finger attached to said shaft and sustained normally in the path of the sheets passing under the pasting instrument and tilted by the sheets in transit, an arm fastened to the aforesaid shaft, a lever transmitting motion to the pasting instrument, a spring actuating said lever to carry said instrumen to a position to apply paste to the wrapper, and a detent connected to said lever and disposed to collide with the aforesaid arm held in position by the normally-disposed guard-finger, said collision of the detent arresting the movement imparted to the lever by the spring as set forth.

41. In combination with mechanisms for folding paper with an inclosing wrapper, and conveyers supplying said paper and wrapper, a pasting instrument disposed to receive under it the supplied sheets, a transverse shaft beneath the pasting instrument, a guard-finger attached to the central portion of said shaft, an arm attached to the end of said shaft, a stop limiting the motion of said arm and thereby sustaining the guard-finger in the path of the delivered sheets, means for yieldingly holding the aforesaid arm in contact with the stop, a lever transmitting motion to the pasting instrument, a spring actuating said lever to apply paste to the wrapper, and a detent connected to said lever and guided to collide with the aforesaid arm while in contact with the stop as set forth.

42. In combination with mechanisms for folding paper with an inclosing wrapper, a wrapper-feeder, tapes carrying the wrapper from the feeder part way toward the aforesaid folding mechanisms, paper-folding rollers, a blade introducing the paper between said rollers, tapes carrying the folded paper toward the delivery ends of the wrapper-conveying tapes, a gage assembling said wrapper and paper, a pasting instrument applying paste to the delivered wrapper, and means for carrying the said wrapper and paper to the aforesaid folding mechanisms.

43. In combination with mechanisms for folding paper with an inclosing wrapper, separate sets of tapes carrying respectively the wrapper and the paper part way toward said folding mechanisms, a gage assembling the delivered wrapper and paper, a switch normally in position to conduct the assembled sheets toward the aforesaid folding mechanisms and movable to divert the sheets from said direction, mechanisms actuating said switch, feelers actuated by the wrapper and paper in transit to the assembling-gage and controlling the action of the switch mechanism, a pasting instrument disposed to apply paste to the wrapper adjacent to the aforesaid folding mechanisms and a movable guard normally in position to arrest the action of the pasting instrument and thrown out of said position by the wrapper passing over it as set forth.

44. In combination with mechanisms for folding paper with an inclosing wrapper, separate sets of tapes conveying respectively the wrapper and paper part way toward said folding mechanisms, a gage assembling the delivered wrapper and paper, a switch normally in position to conduct the assembled sheets toward the aforesaid folding mechanisms and movable to divert the sheets from said direction, mechanisms actuating said switch, feelers actuated by the wrapper and paper in transit to the assembling-gage and controlling the action of the switch mechanisms, a transverse paper-supporting bar adjacent to the aforesaid folding mechanisms, conveyers delivering the assembled wrapper and paper over said supporting-bar, a pasting instrument movable to and from said bar, mechanisms actuating said pasting instrument, a movable guard normally projecting with its free end above the paper-supporting bar and actuated by the wrapper passing over it, and a detent connected to the actuating mechanism of the pasting instrument and controlled by the normally-disposed guard to arrest the action of the pasting instrument as set forth.

45. A mailing-machine consisting mainly of successive sets of paper-folding forks disposed in a row and each set reversible to present the free ends of the forks alternately in opposite direction, mechanism imparting the reversing action to said sets of forks, a carriage reciprocating longitudinally over said row of forks, arms pivotally supported on said carriage, means for moving the free ends of said arms to and from the sets of forks, means secured to said ends of the arms to shift the folded sheets into the successive sets of forks, separate sets of tapes conveying respectively the wrapper and paper part way toward the row of forks, a gage

assembling the delivered wrapper and paper, a switch normally in position to conduct the assembled sheets toward said forks and movable to direct the sheets from said direction, mechanisms actuating said switch, feelers disposed to be actuated by the wrapper and paper in transit to the assembling-gage and controlling the switch mechanisms, a transverse paper-supporting bar adjacent to the first set of paper-folding forks, conveyers delivering the assembled sheets over said supporting-bar, a pasting instrument over said bar and movable to and from the same, mechanisms actuating said pasting instrument, a movable guard normally projecting with its free end above the aforesaid supporting-bar and actuated by the wrapper passing over it, a detent connected to the actuating mechanism of the pasting instrument and controlled by the normally-disposed guard, compressing-rollers disposed beyond the row of forks to receive the folded sheets and fasten the pasted wrapper, and prolonged conveyers extending from said compressing-rollers to permit the paste to dry before the final delivery of the wrapped paper from the machine as set forth.

46. In combination with the successive sets of paper-folding forks disposed in a row, a carriage reciprocating longitudinally over said row, journal-boxes secured transversely to said carriage and adjustable longitudinally thereon, shafts mounted in said boxes, and paper-shifting arms secured to said shafts.

47. In combination with the successive sets of paper-folding forks disposed in a row, a carriage reciprocating longitudinally over said row, journal-boxes secured transversely to said carriage and adjustable longitudinally thereon, shafts mounted in said boxes, arms fastened to said shafts, means for imparting rocking motion to said arms, and paper-shifting arms fastened to said shafts and provided on their free ends with means for shifting the folded sheets into the successive sets of forks as set forth.

48. In combination with the successive sets of paper-folding forks disposed in a row, a carriage reciprocating longitudinally over said row, journal-boxes secured transversely to said carriage and adjustable longitudinally thereon, shafts mounted in said boxes, means for imparting rocking motion to the shafts, paper-shifting arms secured to said shafts, and springs depressing the free ends of said arms to insure their holds upon the folded sheets for shifting the same into the successive sets of forks.

49. In combination with the successive sets of paper-folding forks disposed in a row, a carriage reciprocating longitudinally over said row and provided with longitudinal slots, tubular journal-boxes extending transversely through said slots and provided on one end with an abutting collar and screw-threaded externally on the opposite end, nuts on the screw-threaded ends of said journal-boxes to clamp the same on the carriage, shafts mounted in said boxes and having screw-threaded protruding ends, nuts on said ends, rock-arms fastened to said shafts, means for actuating said rock-arms, brackets adjustably secured to the shafts, and paper-shifting arms adjustably secured to said brackets as set forth.

50. A mailing-machine comprising separate sets of conveyers delivering respectively the paper and the wrapper to said machine, an instrument applying paste to the wrapper, mechanisms folding said sheets, a switch normally in position to conduct said sheets from the aforesaid conveyers to the pasting instrument and movable to divert said sheets from said direction, and means actuated by the sheets in transit on the aforesaid conveyers, for controlling said switch.

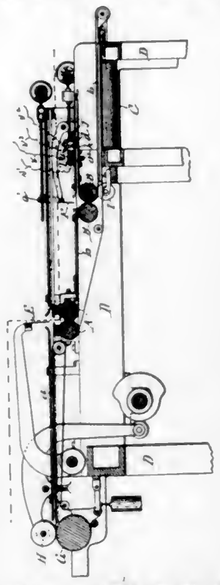
51. A mailing-machine comprising separate sets of conveyers delivering respectively the paper and the wrapper to said machine, an instrument applying paste to the wrapper, mechanisms folding said sheets with the wrapper, means for compressing the folded sheets, a switch normally in position to conduct the paper and wrapper from the aforesaid conveyers to the pasting instrument and movable to divert said sheets from said direction, and means for controlling said switch.

52. In a mailing-machine, the combination of mechanisms folding the paper with its wrapper, an instrument applying paste to the wrapper in advance of the folding mechanism, separate sets of tapes supplying respectively the paper and the wrapper, a gage assembling said sheets at the delivery ends of said tapes, conveyers carrying the assembled sheets to the pasting instrument, a switch interposed between said conveyers and assembling-gage and normally in position to conduct the assembled sheets to said conveyers, mechanism actuating said switch to divert the sheets from said direction, and means actuated by the sheets in transit to the assembling-gage and controlling the switch mechanism.

53. In a mailing-machine, the combination with mechanisms for folding the paper with the wrapper, an instrument applying paste to the wrapper, a guard normally in position to arrest the action of the pasting instrument and thrown from said position by the sheets delivered under said instrument, separate sets of tapes supplying respectively the paper and the wrapper, a switch normally in position to deliver said paper and wrapper to the pasting instrument, mechanism actuating said switch to divert the sheets from said direction, and means actuated by the sheets in transit on the separate sets of tapes and controlling the switch mechanism.

54. In a mailing-machine, the combination of mechanism for folding the paper with the wrapper, an instrument applying paste to the wrapper in advance of the folding mechanism, a guard normally in position to arrest the action of the pasting instrument and thrown from said position by the sheet delivered under the pasting instrument, separate sets of tapes supplying respectively the paper and the wrapper, a gage assembling said sheets at the delivery ends of the two sets of tapes, a switch normally in position to conduct the assembled sheets toward the pasting instrument, mechanism actuating said switch to divert the assembled sheets from said direction, means actuated by the sheets in transit on said separate sets of tapes and controlling the switch mechanism.

655,964. PAPER-REGISTERING INSTRUMENT. TALBOT C. DEXTER, Pearl River, N. Y., assignor to the Dexter Folder Company, same place. Filed Nov. 18, 1899. Serial No. 737,462. (No model.)



Claim.—1. The combination with two pairs of folding-rollers disposed parallel with each other, conveyers carrying the folded sheet from the delivery of one of said pairs of rollers to a position over the other pair of rollers, and a gage arresting the sheet in said position, of a registering instrument disposed in proximity to said gage and provided with means for engaging an abutment presented in the surface of the sheet and means for shifting said sheet to carry the aforesaid abutment into engagement and thereby register the folded sheet in advance of its entry into the second folding-rollers as set forth.

2. In a paper-folding machine having the second folding-rollers parallel with the first folding-rollers and a sheet-arresting gage disposed to receive the impact of the folded edge of the sheet delivered over the second folding-rollers, a registering instrument located at said gage and equipped with a tongue to engage a slit made in the folded edge of the sheet at right angles to said edge, and means for shifting said sheet in a line parallel with the aforesaid gage to carry the slitted portion of the sheet into contact with the aforesaid tongue and thereby register said sheet.

3. The combination with two pairs of folding-rollers disposed parallel with each other, tapes conveying the folded sheet from the first to the second pair of said rollers and a gage arresting the sheet delivered over the second pair of rollers, a registering instrument provided with a tongue for engaging an abutment presented in the surface of the sheet arrested by the aforesaid gage, and means for shifting the arrested sheet on a line parallel with the gage to bring the abutment in contact with the aforesaid tongue and controlled in its action by said contact.

4. The combination with two pairs of folding-rollers disposed parallel with each other, tapes conveying the folded sheet from the first to the second pair of said rollers, and a gage arresting the sheet delivered over the second pair of rollers, a registering instrument provided in proximity to said gage with a tongue for engaging a slit made in the folded edge of the sheet at right angles to said edge, an electric-circuit maker actuated by said tongue, and electrically-controlled means for shifting the paper on a line parallel with the gage and in circuit with the aforesaid maker.

5. The combination with two pairs of folding-rollers, tapes conveying the folded paper from the first to the second pair of said rollers, and a gage arresting the delivered paper, a bracket sustained over the central portion of said gage, a laterally-yielding tongue carried on said bracket and disposed to engage a slit made in the paper at right angles to the folded edge, an electric-circuit maker actuated by said tongue and electrically-controlled means for shifting the paper on a line parallel with the gage and in circuit with the aforesaid maker.

6. The combination with two pairs of folding-rollers, tapes conveying the folded paper from the first to the second pair of said rollers, and a gage arresting the delivered paper, a bracket sustained on the central portion of said gage, a laterally-yielding registering-tongue carried on said bracket and disposed to engage a slit made in the paper at right angles to the folded edge, slit-opening devices disposed in proximity to said tongue, means for shifting said folded paper to bring the slitted portion thereof into engagement with the registering-tongue and controlled by the action of said tongue.

7. The combination with two pairs of folding-rollers, tapes conveying the folded paper from the first to the second pair of said rollers, and a gage arresting the delivered paper, of a bracket sustained on the central portion of said gage, a laterally-yielding registering-tongue suspended from said bracket and disposed to engage a slit made in the paper at right angles to the folded edge, a paper-lifter at one side of the registering-tongue, a paper-depressor at the opposite side of said tongue, and means for shifting the arrested sheet on a line parallel with the gage and controlled by the action of the registering-tongue.

8. The combination with two pairs of folding-rollers, tapes conveying the folded paper from the first to the second pair of said rollers, and a gage arresting the delivered paper, of a bracket sustained longitudinally adjustable on said gage, a laterally-yielding registering-tongue suspended from said bracket a d disposed to engage a slit made in the paper at right angles to the folded edge, and mechanisms sustained adjustably along a line parallel with the gage and provided with means for shifting the paper in said direction and controlled by the action of the registering-tongue, as set forth.

9. The combination with two pairs of folding-rollers, tapes conveying the folded paper from the first to the second pair of said rollers, and a gage arresting the delivered paper, of a bracket sustained longitudinally adjustable on said gage, a laterally-yielding registering-tongue suspended from said bracket and disposed to engage a slit made in the paper at right angles to the folded edge, a paper-lifter and a paper-depressor respectively at opposite sides of said registering-tongue and attached to the aforesaid bracket, and mechanisms sustained adjustably along a line parallel with the gage and provided with means for shifting the paper in said direction and controlled by the action of the aforesaid registering-tongue as set forth.

10. The combination with two pairs of folding-rollers, tapes conveying the folded paper from the first to the second pair of said rollers, and a gage arresting the delivered paper, of a bracket sustained longitudinally adjustable on the central portion of said gage, a laterally-yielding registering-tongue suspended from said bracket and disposed to engage a slit made in the folded edge of the paper at right angles to said edge, a circuit-maker actuated by said tongue, mechanisms sustained adjustably along a line parallel with the aforesaid gage and provided with means for shifting the paper in said direction, and an electromagnet in circuit with the aforesaid maker and controlling the said shifting means, as set forth.

11. The combination with two pairs of folding-rollers, tapes conveying the folded paper from the first to the second pairs of said rollers, and a gage arresting the delivered paper, of a bracket composed of a main stay secured longitudinally adjustable on the central portion of the aforesaid gage, and a supplemental plate secured vertically adjustable on said main stay, a laterally-yielding registering-tongue suspended from said plate and disposed to engage a slit made in the folded edge of the paper at right angles to said edge, and means for shifting the arrested paper to bring the registering-tongue into engagement with the slit and controlled by the action of said tongue as set forth.

12. The gage provided with a longitudinal groove in combination with a bracket composed of a main stay riding on said gage and provided with a tongue engaged with the aforesaid groove, vertical and longitudinal slots in said main stay and a screw-threaded eye on the main stay axially parallel with the gage, an arm clamped longitudinally adjustable on the gage, an adjusting-screw journaled in said arm and engaging the aforesaid eye, a bolt passing through the horizontal slot of the main stay and clamping the latter adjustably on the gage, a supplemental plate fitted to the main stay by vertical tongue-and-groove joint, a bolt passing through the vertical slot of the main stay and clamping the supplemental plate adjustably in its position, and a laterally-yielding registering-tongue suspended from said plate as set forth.

13. The combination with a sheet-arresting gage, of a bracket secured to said gage, a registering-tongue suspended from said bracket adjacent to the face of the gage, an arm attached to the bracket and extending from the under side of the gage and horizontally from the face thereof, a plate extending ascendingly toward the face of the gage at one side of the registering-tongue, and a finger attached to the bracket and extending ascendingly from the face of the gage at the opposite side of the registering-tongue, the portions of said plate and finger adjacent to the registering-tongue being disposed to receive the advance edge of the sheet between them and that of the finger being in a plane slightly below that of the plate to open the registering slit in the paper abutting against the gage as set forth.

14. In a paper-folding machine having the first and second pairs of folding-rollers parallel with each other, and succeeding folding-rollers disposed at right angles to said second pair, a gage arresting the sheet at the second pair of rollers, a registering instrument supported upon the central portion of said gage and provided with a laterally-yielding registering-tongue disposed to engage a slit made in the folded edge of the sheet at right angles to said edge, means for shifting the arrested sheet lengthwise of the gage, a supplemental registering instrument disposed to engage the side edge of the sheet, electric-circuit makers actuated by said registering instruments, and an electromagnet in circuit with said makers and controlling the aforesaid paper-shifting means.

15. A paper-folding machine comprising the first and second pairs of folding-rollers arranged parallel with each other, a cutter severing the twice-folded sheet on a line at right angles to the aforesaid folding-rollers, succeeding folding-rollers operating on the severed portions of the sheet, a gage arresting the once-folded sheet at the second pair of folding-rollers, a bracket supported longitudinally adjustable on the central portion of said gage, a laterally-yielding registering-tongue supported on said bracket and disposed to engage a slit made in the folded edge of the sheet at right angles to said edge, an electric-circuit maker actuated by said tongue, mechanism shifting the arrested sheet lengthwise of the gage, a marginal registering instrument provided with a finger actuated by contact with the side edge of the shifting sheet, a circuit-maker actuated by said finger and an electromagnet in circuit with said makers and controlling the action of the shifting mechanism as set forth.

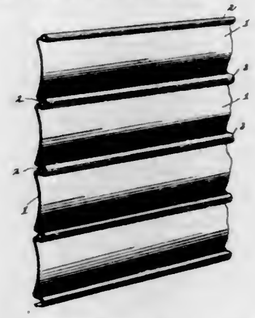
16. A point-feed paper-registering instrument comprising a slit-opening bridge, a registering-tongue disposed to engage the slit and a stationary support carrying in common said bridge and tongue.

17. A point-feed paper-registering instrument comprising a slit-opening bridge, a sheet-depressor coöperating with said bridge, a registering-tongue disposed to engage the slit, and a stationary support carrying in common said parts of the instrument.

18. In combination with sheet-delivering means and the front stop arresting the delivered sheet, a bracket supported adjustably along a line transversely to the line of the sheet-delivery, and a registering instrument comprising a slit-opening bridge, a sheet-depressor and a registering-tongue disposed to engage the slit all supported on the aforesaid bracket as set forth.

19. In combination with sheet-delivering means and the front stop arresting the delivered sheet, a bracket supported adjustably along the line at right angles to the line of the sheet-delivery, a registering instrument comprising a slit-opening bridge, a sheet-depressor and a registering-tongue all supported on said bracket, and means for shifting the arrested sheet laterally from its delivery as set forth.

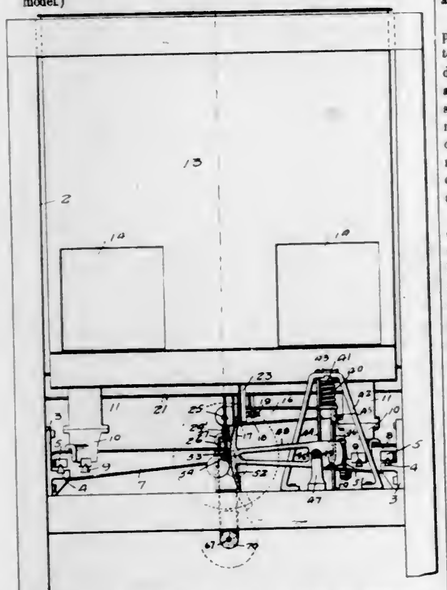
655,965. FIRE-SHUTTER. PETER EBNER, Columbus, Ohio. Filed Dec. 4, 1899. Serial No. 739,133. (No model.)



Claim.—1. A fire-shutter comprising a plurality of oblong metallic sections, the upper edge of each of said sections being provided with an outturned portion terminating in a roll parallel with the direction of the length of the section and the lower edge portion thereof having an outwardly-projecting and downwardly-inclined hook portion adapted to receive and form a hinge-seat for the edge roll 2 of an adjoining section, substantially as specified.

2. A fire-shutter construction comprising a plurality of oblong metallic sections 1, the bodies thereof being of a concavo-convex form as described and each of said sections being provided with an outturned upper edge portion terminating in a hinge-roll 2 and an outturned lower edge hook portion 3 adapted to receive and form a hinge-seat for the roll 2 of an adjoining section, said hook portion being downwardly inclined, substantially as specified.

655,966. **WEIGHING AND RECORDING SCALE.** RALPH P. FELTON, Minneapolis, Minn. Filed Feb. 3, 1900. Serial No. 3,763. (No model.)



Claim.—1. The combination, with a scale frame and platform, of a series of levers arranged beneath and supporting said platform, said levers radiating from a common point and pivotally supported near their outer ends, a lever 16 pivotally supported upon the scale-frame, a single pivotal connection provided between the short arm of said lever 16 and the free inner ends of said radiating levers, whereby the depression of either lever is transmitted to said lever 16, means for elevating the inner ends of said radiating levers to relieve said lever 16 of its load, a spring connected with said lever 16 and compressed by the depression of said radiating levers, and a suitable indicating mechanism connected with the lever 16 whereby the movement of said radiating levers is registered, substantially as described.

2. The combination, with a scale frame and platform, of a series of levers radiating from a common center and pivotally supported near their outer ends whereon the scale-platform is supported, a lever 16 pivotally suspended above said radiating levers, a hanger 24 pivoted on the short arm thereof and provided with a series of slots corresponding in number to said radiating levers, links pivoted in slots and connected with the inner free ends of said radiating levers, whereby downward movement of either lever will be transmitted to the lever 16, the centers of the pivots at each end of said links and the center of the hanger-pivot being always in line, whereby greater accuracy in weighing is attained, a spring provided on the long arm of said lever 16 and compressed by the depression of said radiating levers, an indicator, a dial and a suitable connection between said indicator and said lever 16, whereby the movement of said levers is registered upon the dial, substantially as described.

3. The combination, with a scale frame and platform, of a series of levers radiating from a common point beneath said platform, said levers being pivotally supported near their outer ends and pivotally supporting said platform, a lever 16 pivotally supported above said radiating levers, a single pivoted connection provided between the short arm of said lever 16 and the long arms of said radiating levers, a shaft provided above said lever 16, an eccentric and strap thereon, a plate provided beneath the inner ends of said radiating levers, means connecting said plate and said eccentric-strap, means for revolving said shaft to elevate said strap and the inner ends of said radiating levers, a spring provided on the long arm of said lever 16, and a suitable indicating mechanism connected with said lever, substantially as described.

4. The combination, with a hopper, of pivoted scale-levers, a spring compressed by the upward movement on the long arm of one of said levers, a dial, an indicator mounted thereon, an indicator-lever for operating said indicator, means connecting said indicator-lever and said long arm of the scale-lever, said dial being provided with a series of graduations representing tons and fractions of tons, a star-wheel mounted on said dial and bearing numerals representing with the graduations on the dial the weight of the contents of the hopper, and a pin provided on said indicator and engaging said star-wheel at each revolution of the indicator, substantially as described.

5. The combination, with a series of pivoted scale-levers, of a hopper supported thereon, a spring connected with said levers and adapted to be compressed by the weight of the material placed in the hopper, a dial having graduations on its face representing tons and fractions of tons, an indicator, a shaft whereon the indicator is mounted, means connecting said shaft and the long arm of one of said scale-levers, whereby the movement of said levers will move the indicator over the dial, a graduated dial-sheet provided beneath said first-named dial, an indicator thereon, means connecting said second indicator and said shaft and means provided on said second indicator for making a permanent record on said dial-sheet, substantially as described.

6. In a weighing-scale, the combination, with a dial having a series of graduations on its face representing tons and fractions of tons, of a shaft, an indicator mounted on said shaft, means connected with the scale-levers for revolving said shaft, a disk provided near said dial, a removable dial-sheet provided on said disk, a second shaft, means for driving it from said first-named shaft, an arm mounted on said second-named shaft and revoluble therewith over said disk and the dial-sheet thereon, and means provided on said arm for making a permanent record on said dial-sheet, substantially as described.

7. In a weighing-scale, the combination, with a suitably-graduated dial, of a shaft and means connected with the scale-levers for revolving the same, an indicator mounted on said shaft, a star-wheel mounted on said dial and bearing numerals representing with the graduations on said dial the weight of the contents of the scale-hopper, means provided on said indicator to engage said star-wheel at each revolution of the indicator, a disk provided near said dial, a removable dial-sheet provided on said disk, an arm revoluble over said dial-sheet, a shaft whereon said arm is mounted, means for driving said last-named shaft from said first-named shaft, and means provided on said arm for perforating said dial-sheet opposite the graduations beneath said arm, for the purpose specified.

8. In a weighing-scale, the combination, with a graduated dial, of an indicator thereon, means for operating said indicator, a disk or plate provided near said dial, a graduated dial-sheet thereon, a stud, a shaft whereon said stud is mounted, means connecting said shaft with the driving means of said indicator, means provided on said stud and engaging said dial-sheet, an arm mounted on said stud, a cylinder thereon, a piston provided in said cylinder, a punch provided on the stem of said piston, and means within control of the operator for operating said piston to move said punch into engagement with the dial-sheet, substantially as described.

9. The combination, with a scale frame and platform, of a series of levers radiating from a common center and pivotally supported near their outer ends whereon the scale-platform is arranged, a lever 16 pivotally supported above said radiating levers, a hanger 24′ pivoted on the short arm of said lever 16 and provided with a series of slots corresponding in number to said radiating levers, links 27′ pivotally connected to said hanger in said slots, the inner ends of said radiating levers being pivotally supported in said links, the centers of the pivots at each end of said links being in line with the pivotal center of said hanger, means for elevating the inner ends of said radiating levers, a spring provided on the long arm of said lever 16 and compressed by the depression of said radiating levers, an indicator, a dial, and a suitable connection between said indicator and said lever 16 whereby the movement of said levers is registered upon the dial, substantially as described.

10. The combination, with a scale frame and platform, of a series of levers radiating from a common point beneath said platform, said levers being pivotally supported near their outer ends and pivotally supporting said platform, a lever 16 having a slot 18, a knife-edge bearing 17 adjustably arranged in said slot, an I-beam 21, links 23 depending from said I-beam and supporting said bearing 17 and said lever 16, a hanger 24 pivotally connecting the short arm of said lever 16 and the long arms of said radiating levers, a spring provided on the long arm of said lever 16 and adapted to be compressed by the outward movement of the same, a dial, an indicator-hand therefor, and suitable means connecting the long arm of said lever 16 and said indicator-hand whereby the movement of said levers is registered upon the dial, substantially as described.

11. In a weighing-scale, the combination, with a dial having a series of graduations on its face representing tons and fractions of tons, an indicator mounted on said dial, means connected with the scale-levers for revolving said indicator, a disk provided near said dial, a removable dial-sheet provided on said disk, an arm mounted on said disk and revoluble over said dial-sheet, means connecting said arm with said indicator, whereby it is revolved simultaneously therewith, and means provided on said arm for making a permanent record on said dial-sheet, substantially as described.

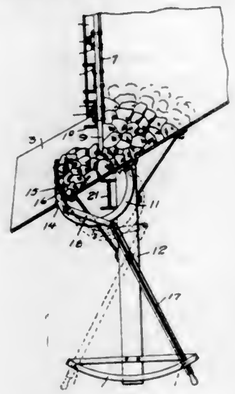
12. The combination, with a scale frame and platform, of a series of platform-levers having their inner ends radiating from a common center and lying in substantially the same horizontal plane, a scale lever or beam arranged above said platform-levers, a device pivoted on the short arm of said scale-lever, independent pivoted connections provided between said device and the inner or long arms of said platform-levers, the centers of the pivots of said device and said pivoted connections being always in line even though the weight be on one platform-lever only, whereby greater accuracy in weighing is attained, a spring connected with the long arm of said scale-lever and adapted to be compressed by the movement of the same, and a suitable weighing mechanism connected with said scale-lever, substantially as described.

13. The combination, with a scale frame and platform, of three levers radiating from a common center beneath said platform and pivotally supported near their outer ends, a fourth lever pivotally suspended above said radiating levers, a hanger device pivoted on the short arm of said fourth lever, independent pivoted connections provided between said hanger device and the inner or long arms of said radiating levers, the centers of the pivots of said hanger device and said pivoted connections being always in line, whereby greater accuracy in weighing is attained, a spring connected with the long arm of said fourth lever and adapted to be compressed by the depression of said radiating levers, and a suitable registering device connected with said fourth lever, substantially as described.

14. The combination, with a scale frame and platform, of a series of levers radiating from a common center and pivotally supported near their outer ends beneath said platform, a lever 16 pivotally suspended above said radiating levers, a hanger pivoted on the short arm of said lever 16, a series of links pivotally supported on said hanger and pivotally connected with the long arms of said radiating levers there being as many links as there are radiating levers, the centers of the pivots of said hanger and said links being always in line though the weight on the scale-platform be at one side of the center thereof, whereby greater accuracy in weighing is attained, a spring connected with the long arm of said lever 16, and compressed by the depression of said radiating levers, and a suitable indicating mechanism connected with the long arm of said lever 16, substantially as described.

15. The combination, with a scale frame and platform, of pivoted platform-levers radiating from a common point beneath said platform, a scale-lever pivotally supported above said platform-levers, means connecting the short arm of said scale-lever with the long arm of said platform-levers, a spring connected with the long arm of said scale-lever, an indicator, a dial having a graduated face over which said indicator is movable, a suitable mechanism provided between said indicator and said scale-lever, whereby the movement of said platform and scale levers will be registered upon the dial, a disk provided near said dial and having graduations corresponding to those on said dial, and a recording device provided on said disk and connected with said indicator, substantially as described.

655,967. **GATE AND CUT-OFF FOR HOPPERS OR STORAGE-BINS.** RALPH P. FELTON, Minneapolis, Minn. Filed June 12, 1900. Serial No. 20,091. (No model.)



Claim.—1. The combination, with an inclined chute and a gate adapted to shut off the flow of material through the same, of a cut-off device operating through the bottom of said chute below said gate and adapted to stop the flow of material that has passed under said gate during the operation of closing the same, substantially as described.

2. The combination, with an inclined chute and a gate adapted to stop the flow of material through the same, of a pivoted cut-off device operating through the floor or bottom of said chute below said gate and adapted to check the material that has passed under said gate during the operation of closing the same, substantially as described.

3. The combination with an inclined chute and gate, said chute having a transverse slot in its floor or bottom below said gate, of a pivoted cut-off device operating through said slot to check the flow of material in said chute, and means for raising and lowering said cut-off device, substantially as described.

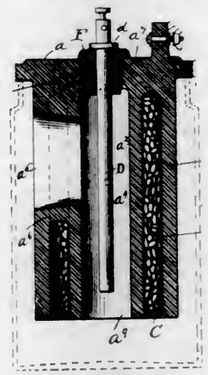
4. The combination, with an inclined chute and gate, said chute having a transverse slot in its floor or bottom below said gate, of a cut-off device operating through said slot to cut off the flow of material down said chute, and a pivoted plate or flap provided in said chute near said slot, for the purpose specified.

5. The combination, with a gravity-chute having a transverse slot in its floor or bottom, of arms pivotally supported beneath said chute, a plate connecting said arms and means for reciprocating said arms to raise and lower said plate within said slot and cut off the flow of material through said chute or permit it to flow therein, substantially as described.

6. The combination, with a gravity-chute, of semicircular arms pivotally supported beneath the same, a plate or blade connecting the free ends of said arms and means for projecting said plate through an opening in the floor of said chute to cut off the flow of material therein, substantially as described.

7. The combination, with a gravity-chute, having a transverse slot in its floor or bottom, of arms pivotally supported beneath said chute, a plate or blade connecting said arms, a pivoted lever, a link connecting said lever and one of said arms, whereby when said lever is operated said arms will be reciprocated and said plate projected through said slot to cut off the flow of material in said chute or withdrawn to permit the material to flow freely therein, substantially as described.

655,968. **VOLTAIC CELL.** EUGENE M. FISHELL, Cleveland, Ohio, assignor to the National Carbon Company, same place. Filed Jan. 20, 1900. Serial No. 2,092. (No model.)

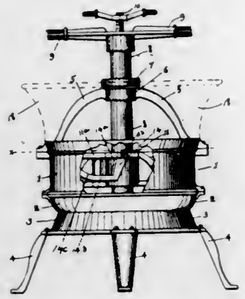


Claim.—1. In a voltaic cell, a porous carbon-cup consisting of a head having extending from it integrally two continuous walls one within the other, there being alined openings through said two walls, and a sleeve integral with said walls and connecting said openings, substantially as described.

2. In a voltaic cell, a porous carbon-cup consisting of two continuous cylindrical walls one within the other uniting at their upper end to form a head, said head having a laterally-projecting annular flange, said walls being pierced by a vertical opening surrounded by a sleeve, said sleeve lying between and being integral with the walls of the cup, substantially as described.

3. In a voltaic cell, a porous carbon-cup consisting of a head having extending from it integrally two continuous walls, one within the other, there being alined vertically-elongated openings through said two walls, and a sleeve integral with said walls and connecting said openings, the wall of said sleeve at its upper side uniting with said head, substantially as specified.

655,969. FEED-MILL. AARON T. FOSTER, Chillicothe, Ohio. Filed May 18, 1900. Serial No. 17,094. (No model.)



Claim.—1. In a feed-mill, the combination with a casing, a vertical shaft journaled therein, a fixed breaking or crushing section loose on said shaft, said section having radially-arranged arms 11ª and between said arms curved bars which incline from one arm and terminate in tooth-bars 14 which rise to meet the next succeeding arm 11ª, of a breaking-section 12 having its central portion keyed on said shaft and having radially-arranged arms provided with upwardly-projecting teeth adapted to move between the bars of said section 11, substantially as specified.

2. In a feed-mill, the combination with a casing, a vertical shaft 8 journaled therein and a breaking-section 11 loosely mounted on said shaft and fixed in said casing, said breaking-section consisting of radially-arranged arms united by parallel bars which incline from one of said arms to the base portions of upwardly-extending terminations 14 thereof, the latter rising to meet the next succeeding arm of said section and having tooth-like edges 14ª, of a breaking-section 12 keyed on said shaft below said section 11 and having radially-arranged arms provided with upwardly-projecting teeth which extend between the bars of the section 11, said teeth being provided on one side with cutting edges, substantially as specified.

655,970. MANUFACTURE OF PAPER FOR ELECTRIC PRINTING. WILLIAM FRIESE-GREENE, London, England. Filed Mar. 13, 1900. Serial No. 8,443. (No specimens.)

Claim.—1. The method or process of making paper suitable for electric printing, which consists in treating paper with an extract of marine algæ, substantially as described.

2. The method or process of making paper suitable for electric printing, which consists in treating paper with an extract of seaweed, substantially as described.

3. In the manufacture of paper suitable for electric printing the process which consists in boiling seaweed in sea-water to which carbonate of soda has been added, adding acid to the resulting liquor, then separating the supernatant liquor, adding hyposulfite of soda thereto and adding the resulting extract to paper, substantially as described.

4. As a new product, paper suitable for electric printing containing an extract of marine algæ.

5. As a new product, paper suitable for electric printing containing an extract of seaweed.

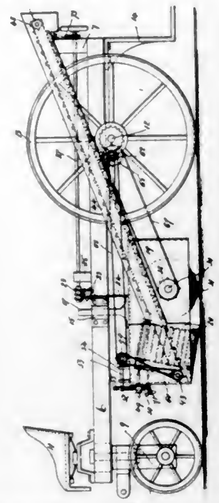
6. As a new product, paper containing the extract obtained by boiling seaweed in sea-water to which carbonate of soda has been added, adding acid to the resulting liquor, and (after separating the supernatant liquor) adding hyposulfite of soda thereto.

655,971. STREET-SWEEPER. CORNELIUS C. GARDNER, New York, N. Y. Filed Mar. 7, 1900. Serial No. 7,622. (No model.)

Claim.—1. A street-sweeper, embodying a frame, a main casing mounted therein, a carrier-casing pivotally supported in said main casing and provided with a main carrier arranged transversely of the apparatus, said carrier-casing being provided with means for adjusting the same, and a supplemental carrier which is arranged longitudinally of the apparatus and operates in connection with said main carrier, a brush whereby the sweepings are directed upon said main carrier, means for operating said carriers, and means for operating said brush, substantially as shown and described.

2. In a street-sweeper, a frame, a vertically-adjustable main casing arranged transversely thereof, means for adjusting the same, a rotary brush mounted in said main casing, a carrier-casing pivotally mounted in said main casing, a carrier arranged therein, means for adjusting said carrier-casing, and means for moving said carrier, substantially as shown and described.

3. In a street-sweeper, a frame, a main casing mounted therein, a main carrier-casing adjustably mounted therein and provided with a carrier, a supplemental carrier-casing communicating with said main carrier-casing and provided with a carrier, a brush mounted in said main casing and arranged to deposit the sweepings within said main carrier-casing, means for moving said carriers, and means for operating said brush, substantially as shown and described.



4. In a street-sweeper, a frame, a main carrier-casing mounted therein, a supplemental carrier-casing communicating therewith at one end, said main carrier-casing being beveled at one end whereby it projects above said supplemental carrier-casing, a carrier movably mounted in said main carrier-casing and extending above said supplemental carrier-casing, and a carrier mounted in said supplemental carrier-casing, means for moving said carriers, a brush whereby the sweepings are directed into said main carrier-casing, and means for moving said brush, substantially as shown and described.

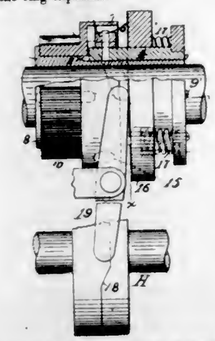
5. In a street-sweeper, a frame, a main casing mounted therein, a carrier, and a brush operatively mounted therein, means for moving said carrier and means for moving said brush, said main casing being provided with vertical guides which operate in connection with the frame of the street-sweeper, flexible suspension devices by which said main casing is supported, a shaft upon which said suspension devices are adapted to be wound, and an adjusting-shaft whereby said suspension devices may be wound upon the shaft with which they are connected, whereby said main casing may be raised or lowered, substantially as shown and described.

6. In a street-sweeper, a frame, a main casing mounted therein, a carrier-casing mounted in said main casing, a carrier movably mounted therein, said carrier being provided with a drive-shaft, and said carrier-casing being pivotally mounted within said main casing, a power-transmission shaft adjustably connected with said drive-shaft, means for adjusting said carrier-casing and means for driving said power-shaft, substantially as shown and described.

655,972. CLUTCH. REINHOLD HAKEWESSELL, Hartford, and EDWIN C. HENN, Bloomfield, Conn. Filed Dec. 9, 1899. Serial No. 739,775. (No model.)

Claim.—1. A clutch embodying two concentric rotative members the outer one of which is loosely mounted upon the inner one and has an annular flange; a divided expansible ring disposed around the inner member in position to frictionally engage the flange of the outer member; a rotative ring-expanding cam pivotally connected to the inner member with its axis radial thereto and disposed between the ends of the ring, whereby to hold said ring against rotation with respect to said inner member, and which cam has a curved arm or lever extending partly around said inner member with its free outer edge projecting slightly beyond the outer face thereof; a reciprocatory actuator mounted upon the inner rotative member and including springs for normally retaining the same in an advanced ring-expanding position; and automatic means for imparting a retractive ring-releasing movement to said actuator.

2. A friction-clutch including a sleeve-like driven member having flanges at both ends thereof; a rotative driving member mounted upon said driven member and bearing against one of said flanges; a divided expansile ring disposed between said members in position to frictionally engage one member; a ring-expander carried by the driven member and having a portion disposed between the ends of said ring in position to expand the same; a ring-expander actuator mounted upon the driven member adjacent the other flange; and springs disposed between this flange and actuator and effective for retaining the actuator normally in operative engagement with the ring-expander.

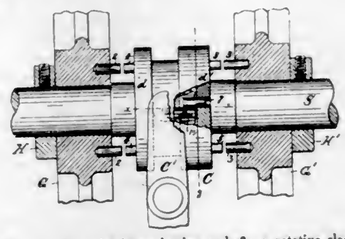


3. A clutch embodying a rotative driven member; a divided expansile ring partly surrounding said member; an adjusting-screw movably seated in a screw-threaded opening extending from the extreme end to the periphery of the ring; an expanding-cam disposed between the ends of said ring and bearing against the end of said screw; cam-actuating means; and a rotative peripherally-flanged driving member mounted on the driven member in position to be frictionally engaged by the expansile ring having a peripheral opening adapted to register with the screw-threaded opening in the ring, to facilitate the adjustment thereof.

4. A clutch embodying a driven member having two two diametrically-opposite key-seats formed longitudinally in the periphery thereof; keys seated therein; a driving member mounted for rotation on the driven member and having a recessed inner face; an expansile ring divided and comprising two members partly surrounding the driven member and located in the recess of the driving member in position to frictionally engage said last member; two ring-expanding cams pivotally supported at the inner ends of said keys and located between the adjacent ends of the ring members; two cam-levers, one formed on each cam, extending partly around the driven member with their outer free ends terminating substantially diametrically opposite each other; and means for concurrently actuating said levers.

5. The combination with a driven member having two diametrically-opposite longitudinal key-seats; a driving member mounted for rotation on the driven member; a two-section expansile ring disposed between the two members in position to operatively engage one member; keys loosely mounted in said key-seats and each having a pivot at the inner end thereof disposed radially with relation to the axis of the driven member; a ring-expander removably mounted on the pivot of each key between the adjacent ends of two ring-sections; and means for actuating said expanders.

655,973. PIN-CLUTCH MECHANISM. REINHOLD HAKEWESSELL, Hartford, and EDWIN C. HENN, Bloomfield, Conn. Filed Dec. 9, 1899. Serial No. 739,776. (No model.)

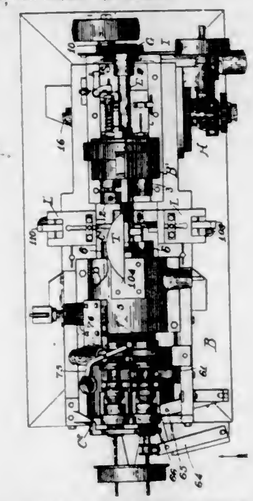


Claim.—1. In a clutch mechanism a shaft; a rotative sleeve-like member mounted on said shaft and having an annular recess in one end between the inner and outer faces thereof; and also having a plurality of substantially-equidistant pins or abutments fixed in said recess; an axially-recessed cap having a peripheral flange at the outer end and having a diametrically-reduced externally-threaded inner end screwed into a corresponding bearing in the sleeve-like member; a ring mounted for rotative movement upon said collar and having a shoulder against which the inner face of said collar bears; and also having a plurality of abutment-pins fixed at their inner ends thereto and having their outer ends extending into the annular recess of the sleeve-like member; and a plurality of spiral springs supported in said recess and each bearing at one end against an abutment of the sleeve-like member and at the other end against an abutment of the ring, substantially as described.

2. In a clutch, the combination of an internally-screw-threaded sleeve-like member having an annular recess in one end intermediate the inner and outer faces thereof and also having fixed pins or abutments in said recess; a collar or cap fitting the screw-threaded end of said sleeve-like member and having a stepped periphery the middle step of which constitutes a bearing for a ring-like member and the outer step of which constitutes a holding-flange; a ring-like member mounted for a rotative movement upon the bearing of the cap and having a recess to receive the flange; pins or abutments fixed to the ring-like member and projecting into the annular recess of the sleeve-like member; and cushioning means disposed between the abutments of the two members, whereby one member may have a limited rotative movement with respect to the other.

3. A clutch mechanism comprising a shaft; a clutch-sleeve splined to said shaft and having an annular recess in the end intermediate the inner and outer faces thereof; pins fixed in said recess and substantially equidistant; a collar surrounding said shaft and having a reduced externally-screw-threaded inner end fitting a threaded portion of the central opening of the sleeve, and having a peripheral flange at the outer end thereof disposed somewhat in advance of the end face of said sleeve; a ring supported for rotative movements upon the collar between the flange and adjacent face of the sleeve and having one or more clutch-pins on the outer face thereof; a plurality of pins fixed to said collar and entering the annular recess in the sleeve; a coöperative clutch member loosely mounted upon the shaft; means for preventing longitudinal displacement of the clutch elements with respect to the shaft; and clutch-shifting means in connection with the clutch-sleeve and operative for effecting an engagement between the coöperative clutch members.

655,974. METAL-WORKING MACHINE. REINHOLD HAKEWESSELL, Hartford, and EDWIN C. HENN, Bloomfield, Conn. Filed Dec. 9, 1899. Serial No. 739,828. (No model.)



Claim.—1. A metal-working machine embodying a bed; a tool-carrier shiftably supported on said bed; a turret supported for rotative movement; and differential-speed actuating mechanism in operative connection with the tool-carrier and turret and adapted for imparting slow advance and quick return movements to said carrier, and for imparting quick rotative movements to the turret concurrently with the quick return movements of said carrier.

2. A metal-working machine embodying a turret supported for rotative movements; a tool-carrier supported for movements toward and from said turret; differential-speed actuating mechanism in operative connection with the turret and carrier and effective for imparting quick rotative and quick return movements, concurrently, to the turret and carrier, respectively, and for imparting a relatively-slow advancing movement to

said carrier; and means for holding the turret at rest during the slow advancing movement of said carrier.

3. The combination with a carrier and a turret, supported for reciprocatory and rotative movements, respectively, of differential-speed actuating mechanism in operative connection with said carrier and turret and embodying instrumentalities imparting, alternately, slow advancing and quick return movements to said carrier and also for imparting quick step-by-step rotative movements to the turret concurrently with the quick return movements of the carrier; and automatically-operative means for locking the turret concurrently with the arrival of the carrier at the end of its retractive movement and for holding the same against rotative movement during the entire advancing movement of said carrier.

4. In a metal-working machine, the combination with a rotative turret and a reciprocatory tool-carrier; of differential-speed actuating mechanism embodying a high-speed train of gears and a low-speed train of gears; automatically-operative means for effecting an operative connection between the turret, carrier and high-speed train of gears concurrently, whereby simultaneously to impart quick rotative and quick return movements to the turret and carrier, respectively, and alternately for effecting an operative connection between the low-speed train and said carrier; and means for holding the turret at rest while the carrier is being operated through the low-speed train.

5. The combination of a rotative turret; a reciprocatory carrier; differential-speed actuating mechanism embodying a high-speed and a low-speed train of gears the latter of which is intermittently effective for imparting a slow advancing movement to the carrier and the former of which is intermittently effective for imparting concurrent quick rotative and quick return movements to the turret and carrier, respectively; and automatically-operative means for locking the turret against movement during the slow advancing movement of the carrier.

6. In a metal-working machine, the combination of a reciprocatory carrier; a rotative turret; carrier and turret actuating mechanisms including high and low speed devices alternately and automatically operating the carrier, and the high-speed device of which is automatically effective for concurrently operating both the carrier and turret; and means for holding the turret at rest during the operation of the low-speed device.

7. The combination with a work-holder, and with a tool-carrier supported for reciprocatory movements, of a tool-holder supported in said carrier for movements independent of said carrier; means for advancing and retracting said carrier; and a starting device operative at a predetermined point in the advancing movement of said carrier for imparting an independent advancing movement to the tool-holder with relation to said carrier.

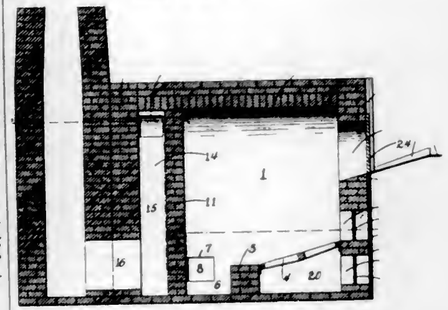
8. A screw-making machine embodying a turret; a tool-carrier; a screw-threading device supported in said carrier for independent movements; means for imparting rotative movements to the turret and for advancing and retracting the carrier; rod-spindles supported in said turret; rotating mechanism for said rod-spindles; and a starting device operable at a predetermined point in the advancing movement of the carrier for imparting an advancing movement to said screw-threading device independent of the tool-carrier.

9. In a screw-making machine, a reciprocatory tool-carrier, in combination with a screw-threading device supported in said carrier for independent longitudinal movement; a starting device pivotally supported on a part of said carrier and having an arm in operative relation with the rear end of the screw-threading device; a starting-device actuator supported on the frame or bed of the machine in the path of the starting device and adapted at a predetermined point in the advancing movement of the carrier for actuating said starting device to impart a slight advancing movement to the screw-threading device with relation to said carrier.

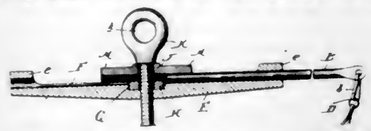
10. A metal-working machine embodying a multispindle turret supported for rotative movements; a tool-carrier supported for reciprocatory movements; differential-speed actuating mechanism in operative connection with the turret and carrier and effective intermittently for imparting concurrent quick rotative and quick return movements to the turret and carrier respectively, and for imparting a relatively-slow advancing movement to the carrier alternately with said quick return movements; automatically-operative locking means for holding the turret at rest during the advancing movement of the carrier; a plurality of rod-carrying spindles; a plurality of clutches in connection one with each spindle and embodying a driving and a driven member the latter of which is fixed to the spindle; resilient means normally for holding the clutch members in locked engagement; rotating means for the driving-clutch member; clutch-releasing means disposed in the orbital path of the clutch members; and automatic means for operating the clutch-releasing means at a predetermined point in the orbital movement of the spindles.

655,975. **RUBBISH-CREMATORY.** JAMES HALL, Buffalo, N. Y. Filed Nov. 23, 1899. Serial No. 738,025. (No model.)

Claim.—An improved furnace for burning combustible rubbish without the aid of additional fuel and having a combustion-chamber, a smoke-stack having its lower portion closely against the rear of the furnace proper, a transverse vertical wall in the furnace forming the rear wall of the combustion-chamber and the front wall of a vertical flue-space, and a longitudinal vertical wall dividing the flue-space into two separate vertical flues; the transverse vertical wall having a horizontal longitudinally-extending lower opening in its lower part leading into one of the flues; the longitudinal vertical wall having a horizontal transversely-extending top opening connecting the first-mentioned flue with the second flue, and the smoke-stack and rear wall of the furnace having common horizontally-extending lower openings connecting the second flue with the smoke-stack, a bridge-wall within the combustion-chamber, a grate extending diagonally downward from the first wall of the furnace to the bridge-wall; the front wall of the furnace having lower openings for the removal of ashes, intermediate openings on a level with the front of the grate, and an upper opening having its lower edge inclining diagonally inward and downward and a diagonally-inclined hopper having its rear end level with the outer lower edge of the upper opening, as set forth.



655,976. **BAIT OR OTHER NET.** JOHN R. HOLLOWAY, Westville, N. J., and HENRY S. JACOBS, Philadelphia, Pa.; said Holloway assignor to said Jacobs. Filed June 16, 1900. Serial No. 20,490. (No model.)



Claim.—1. In a net structure, the combination of four radiating rods, a net having detachable means of attachment with the ends of the rods, and a detachable clamp for holding the adjacent inner ends of the rods.

2. In a net structure, the combination of four radiating rods, a net having detachable means of attachment with the ends of the rods, and a detachable clamp for holding the adjacent inner ends of the rods, consisting of two socket-pieces in which the inner ends of the rods are held, a clamping-plate adapted to press upon and grip the ends of the rods, and a clamping-screw for drawing the clamping-plate toward the socket-pieces.

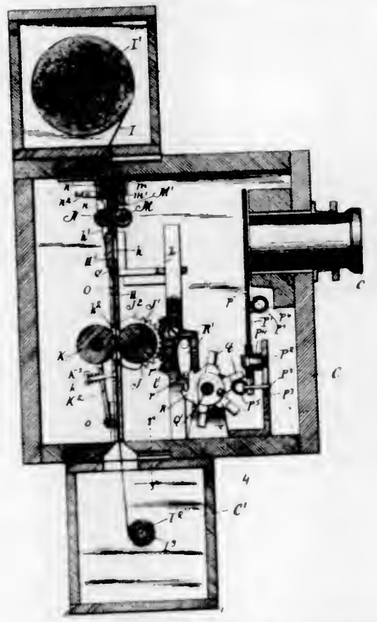
3. In a net structure, the combination of four radiating rods, a net having means of attachment with the ends of the rods, and a detachable clamp for holding the adjacent inner ends of the rods, consisting of two crossing detachable pieces interlocked one with the other and both provided with radiating sockets for the rods, a clamping-plate extending partly over each of the crossing pieces, and a clamping-screw for drawing the clamping-plate and crossing pieces together.

4. A net-frame consisting of two socket-pieces each having oppositely-directed sockets fitted with rods for holding the net, one of the socket-pieces being fitted into a recess or depression in the other to hold it at right angles and bring the rods in the same plane, a clamping-plate fitting partly over each of the socket-pieces so as to press upon all four rods, and a clamping-screw for holding the clamping-plate and socket-pieces together.

5. A clamp for uniting the radiating rods of a net-support, consisting of two pieces for holding the rods in pairs adapted to interlock with each other so as to be held at right angles, combined with a clamping-plate extending partly over each of the rod-holding pieces, and a clamping-screw for drawing the clamping-plate down upon the rod-holding pieces.

6. A clamp for uniting the radiating rods of a net-support consisting of the socket-piece E having sockets *e* on its ends and recessed portion G, combined with the crossing socket-piece H having the sockets *h* on its ends and the central part inverted recessed portion G′ adapted to fit the recessed part G, the clamping-plate J adapted to fit over each of the pieces E and H between the sockets *e*, *e* and *h*, *h*, and clamping-screw K for holding the parts E, H and J together and adapted to clamp the rods which pass through the sockets in place.

655,977. **APPARATUS FOR RECORDING PAPERS OR WRITINGS.** THOMAS JANSEN, WILLIAM H. GARDINER, and EDMUND KANDLER, Chicago, Ill.; said Kandler assignor to said Jansen and Gardiner. Filed June 12, 1899. Serial No. 720,176. (No model.)



Claim.—1. An apparatus for making a record of writings embracing a photographic camera, supply and receiving rolls for a sensitized record-strip, means for feeding forward or advancing intermittently said sensitized record-strip and for winding it upon the receiving-roll, a shutter and a holder for holding flat the writings to be recorded embracing a transparent plate against which the writings are placed and by which the same are held flat when exposed to the camera.

2. An apparatus for making a record of writings embracing a photographic camera, supply and receiving rolls for a sensitized record-strip, means for feeding forward intermittingly said sensitized record-strip and means for winding it upon the receiving-roll, a shutter and a flat holder for the writings to be recorded mounted to rotate about a central axis to present opposite sides of the writings held in the holder to the camera.

3. An apparatus for making a record of writings, embracing a photographic camera, supply and receiving rolls for a sensitized record-strip, means for intermittingly feeding forward said sensitized record-strip and for winding the same upon the receiving-roll, a holder for the writings constructed to maintain the same flat when presented to the camera, and means for illuminating the writing located at the sides of the holder nearest the camera, and operating to throw the light upon the writing within the holder upon the face thereof which is exposed to the camera.

4. An apparatus for making a record of writings, embracing a photographic camera, supply and receiving rolls for a sensitized record-strip, means for intermittingly feeding forward a sensitized record-strip and winding the same upon the receiving-roll, a movable holder for the writing to be recorded adapted to be moved into and out of position for presenting the writing to the camera and means connecting the holder and feeding devices by which the strip is advanced automatically when the holder is moved to bring each writing in position for exposure.

5. An apparatus for making a record of writings, embracing a photographic camera, supply and receiving rolls for a sensitized record-strip, means for intermittingly feeding forward said sensitized record-strip and winding the same upon the receiving-roll, a shutter, and actuating device therefor, a movable holder for the writings to be recorded, adapted to hold flat the said writings, and which is movable into and out of position for presenting the same to the camera, and connecting means between the holder and feeding means, and the shutter-actuating device, operated through the movement of the holder and producing movement of said feeding means and shutter-actuating device to accord with the movements of the said holder.

6. A photographic camera provided with a guide-plate having an aperture through which the record-strip is exposed, a presser which is held by spring-pressure against the record-strip at the rear of said aperture, feed-rollers between which the record-strip passes, one of said feed-rollers being movable toward and from the other one and being held in contact therewith by spring-pressure, and a hinged plate carrying the presser and movable feed-roll and which may be swung away from the guide-plate to permit the insertion of the record-strip in the camera.

7. The combination with a photographic camera, of supply and receiving rolls for a sensitized record-strip, strip-feeding mechanism for said strip, electrically-operated actuating means for said feeding mechanism, a movable holder for the papers to be recorded, said holder being movable into and out of positions for presenting the writing held therein to the camera, and a circuit-closing device operated by the movements of said holder.

8. The combination of a photographic camera, of supply and receiving rollers for a sensitized record-strip, feeding mechanism for advancing said strip, shutter-operating mechanism, electrically-operated actuating means for said feeding and shutter-operating mechanism, a movable holder for the papers to be recorded which is movable into and out of position for presentation of the writings to the camera, and a circuit-closing device, operated by the movements of said holder.

9. The combination with a photographic camera, of supply and receiving rolls for a sensitized record-strip, feeding devices for advancing said strips intermittingly, shutter-actuating mechanism, a solenoid which actuates the strip-feeding and shutter-actuating mechanism, an electric circuit including said solenoid, a movable holder for holding flat the papers to be recorded, said holder being movable into and out of position for presenting the papers to the camera and an electric contact device actuated by said holder, and operating to close a circuit through the solenoid when the holder is in position for operation of the camera.

10. The combination of a photographic camera, supply and receiving rollers for a sensitized record-strip, feeding mechanism for advancing said sensitized record-strip, a shutter-actuating mechanism, a solenoid which operates, both the strip-feeding and shutter-actuating mechanisms, a movable holder for the writings to be recorded constructed to hold said writings flat, and which is movable into and out of position for presenting the writings to the camera, and a circuit-closing device actuated by said holder and operating to close the circuit through said solenoid when the holder is in position for the operation of the camera.

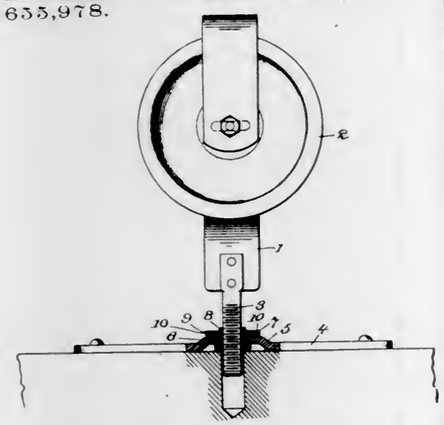
11. The combination with a camera, of a holder for papers to be recorded, constructed to hold the same flat, and which is rotative to present opposite sides of the said holder and the papers therein to the said camera, said holder being provided with a disk of insulating material provided with contact-strips, a movable contact-piece mounted on a stationary support and adapted for contact with said disks, a strip-feeding mechanism, a solenoid for actuating said strip-actuating mechanism, and electric connections between said strips on the disk of insulating material and a movable contact-piece and the solenoid, whereby the circuit will be closed to said solenoid when the rotative frame is in position for the operation of the camera.

12. The combination with a camera, of feed-rollers for a record-strip, actuating mechanisms for said feed-rollers embracing an endwise-movable actuating-bar provided with gear-teeth, an oscillatory toothed segment, a pawl-and-ratchet connection between said segment and one of said feed-rollers, shutters, shutter-actuating mechanism and actuating connections between said actuating-bar and the shutter-actuating mechanism.

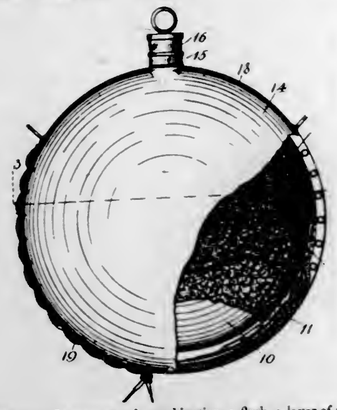
655,978. **DOOR-HANGER.** WILLIAM J. LANE, Poughkeepsie, N. Y., assignor to the Lane Brothers Company, same place. Filed Dec. 1, 1899. Serial No. 738,805. (No model.)

Claim.—The combination with a hanging-strap having a threaded extension at one end and carried on a roller at the other end, of a door member having an elongated slot with an outlet therein, and a nut adapted to screw on the threads of the hanger extension, said nut comprising two slightly-separated flanges which maintain a fixed relation to each other having a circumferential groove between them, said groove corresponding in width to the thickness of the door member and the flanges adapted to embrace the upper and lower surfaces of said member whereby to prevent oscillation of the nut and door member with respect to each other, the door member and nut being separable from each other, before the device is applied to the door irrespective of the position of the nut upon the hanger extension.

655,978.



655,979. CANTEEN. WILLIAM LANZ, Chicago, Ill. Filed Jan. 10, 1900. Serial No. 981. (No model.)



Claim.—1. In a canteen, in combination, a flask, a layer of materia of low-heat-conducting character covering the flask, a waterproof envelop for such covering, a jacket of fibrous material superimposed upon the envelop, and an openable cover of close-woven textile fabric for the jacket.

2. In a canteen, in combination, a flask, a layer of granular cork covering the flask, a waterproof envelop for such covering, a jacket of fibrous material superimposed upon the envelop, and a canvas cover for the jacket, such cover being composed of two sections joined together by lacing.

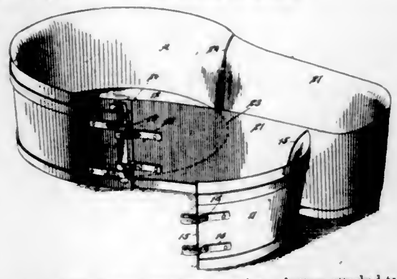
3. In a canteen, in combination, a flask, a jacket of uninterrupted absorbent material therefor, and an openable cover for the jacket made of close-woven fabric.

655,980. CONVERTIBLE TUB. RICHARD W. LEVY and JOSEPH HOLT, Paterson, N. J. Filed May 4, 1900. Serial No. 15,491. (No model.)

Claim.—1. A tub, comprising two sections, separable one from the other, a bottom secured to one of the sections and having a segmental portion extended beyond the ends of said section and adapted for engagement with the other section, and means for locking the two sections together, substantially as specified.

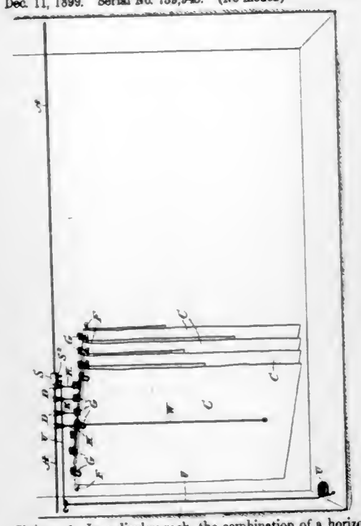
2. A tub comprising a main section having an attached bottom, a removable section having a surface provided with a washer and adapted to receive a portion of the main section, washers located between the contacting body portions of the two sections, eyes carried by the sections and arranged for registry at each side of the tub when the sections are brought together, and a pin which is removably passed through alining eyes, as set forth.

3. In a tub, a main semicircular section, a bottom attached to said section and extending beyond the ends of the section, an auxiliary section comprising side portions connected at one end, said side portions diverging at their opposite ends, a bottom connecting the side portions of the said auxiliary section, the free edge of which bottom is shaped to receive the extending portion of the bottom of the main section, elastic and waterproof washers located between the opposing edges of the two sections, and locking devices for the said sections, as set forth.



4. In a tub, a main semicircular section, a bottom attached to said section and extending beyond the ends of the section, an auxiliary section comprising side portions connected at one end, the said side portions diverging at their opposite ends, a bottom connecting the side portions of said auxiliary section, the free edge of which bottom is shaped to receive the extending portion of the bottom of the main section, elastic and waterproof washers located between the opposing edges of the two sections, straps attached to the outer face of the main section at its ends, said straps terminating in eyes, straps attached to the removable section of the tub, which latter straps also terminate in eyes, the eyes of the removable or auxiliary section extending beyond the ends thereof, being arranged to register with the eyes on the main section of the tub, and a fastening device passed through the registering eyes of the several sets of straps, as set forth.

655,981. DISPLAY-RACK. CHARLES LIETZ, Aurora, Ill. Filed Dec. 11, 1899. Serial No. 739,945. (No model.)



Claim.—1. In a display-rack, the combination of a horizontal support, carriers movable along said support, a flexible connection attached to each of such carriers, a clasp attached to each of said flexible connections, and a pole supported at its middle by such clasp, substantially as and for the purpose described.

2. In a display-rack, the combination of a horizontal support, broad hooks movable along said support, a flexible connection attached to the shank of each of such hooks, a clasp attached to each of such flexible connections, and a pole carried at its middle by each of said clasps, substantially as and for the purpose described.

3. In a display-rack, the combination of a horizontal wire, broad hooks movable along said wire, a flexible connection attached to the shank of each of such hooks, a clasp attached to each of such flexible connections, and a pole carried at its middle by each of said clasps, substantially as and for the purpose described.

4. In a display-rack, the combination of a support, carriers movable along said support, means attached to such carriers for suspending objects of considerable breadth as compared with their thickness, a block having a central bore for receiving said support and having a slot opening from such bore to the surface of said block, means for closing said slot, and means for moving said block along said support, substantially as and for the purpose described.

655,982. GARMENT-FASTENER. FANNIE B. MATHEWSON, New York, N. Y. Filed May 11, 1909. Serial No. 16,342. (No model.)



Claim.—1. In a garment-fastener, a hook member, comprising a hook portion, an engaging point on the hook member, and a receiver for a pin or the like on said hook member, the receiver being approximately at right angles to the hook and underneath the same, substantially as specified.

2. In a garment-fastener, a hook member, comprising a hook portion, an engaging point on the hook member, and a receiver for a pin or the like on said hook member, the receiver being at approximately right angles to the hook and terminating at its ends inward of the side edges of the hook, substantially as specified.

3. In a garment-fastener, a hook member, comprising a plate having a hook portion at one end, an engaging point at the rear edge of said plate and extended forward, and a receiver for a pin or the like, consisting of a portion of the plate extended downward underneath the hook portion, substantially as specified.

4. A garment-fastener, comprising a plate having laterally-extended wings, a hook on one end of said plate, engaging points on the opposite end of said plate, and a pin-receiver in the form of an elongated eye, consisting of a portion of the plate pressed outward below the hook, substantially as specified.

5. In a garment-fastener, an eye member consisting of a bar or body portion having a keeper at one end, the bend of said keeper being sharpened at the outer edge, a fastening-bar mounted to swing on the opposite end of the body portion and to engage with the keeper, and a guard on the fastening-bar adapted to engage over said bend or sharpened portion, substantially as specified.

6. In a garment-fastener, an eye member comprising a bar or body portion, a fastening-bar mounted to swing on one end of said bar or body portion and on a horizontal plane therewith, a keeper-hook formed on the opposite end of said bar or body portion and adapted to receive the free end of the fastening-bar, the said keeper-hook being sharpened at its bend, and a guard-plate fastened to the free end of the fastening-bar and adapted to engage over said sharpened portion of the keeper, substantially as specified.

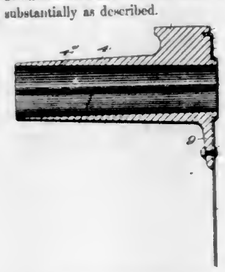
7. A garment-fastener, comprising a hook-section and an eye-section, the said hook-section consisting of a plate terminating at one end in a hook, an engaging point on the opposite end of said plate, and a receiver for a pin or the like on said plate and underneath the hook, and the eye consisting of a bar or body portion, a fastening-bar mounted to swing on the first bar or body portion, a keeper-hook on said bar or body portion and adapted to receive the free end of the fastening-bar, the bend of said keeper-hook being sharpened, and a guard-plate for said sharpened portion, substantially as specified.

8. In a garment-fastener, an eye member, consisting of a bar or body portion, a keeper on said bar or body portion, the bend of said keeper being sharpened at the outer edge, and a fastening-bar mounted to swing relatively to the body portion and to engage with the keeper, substantially as specified.

655,983. HOE. LEWIS E. MEASE, Upper Sandusky, Ohio. Filed May 2, 1900. Serial No. 15,243. (No model.)

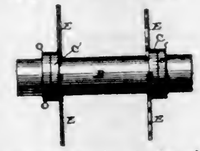
Claim.—1. As a new article of manufacture, a hoe, having the upward-extended portion of its blade provided with a rearward-extended lip at the upper edge, and its socket portion provided at the forward end with an extension upset around the edge of an opening in said blade, receiving said end of socket, said socket having its upward-extended portion provided with a notch to receive said lip, substantially as set forth.

2. As a new article of manufacture, a hoe, having its blade provided with a rearward-extended lip, at the upper edge thereof, and its socket having a forward end extension upset around the edges of an opening in said blade, receiving said forward end extension, said socket also having, in the front side of its upward-extended portion, a notch adapted to receive said lip, with its top and bottom walls clamping said lip therebetween, and a downward extension on said socket adapted to be secured to said blade, substantially as described.



3. As a new article of manufacture, a hoe, comprising a blade provided at its upper edge with a rearward-extended lip, an opening at a suitable point therein and a handle-socket having its upper forward edge provided with a notch adapted to receive said lip and with a downward extension secured to said blade, the bottom and top walls of said notch adapted to clamp said lip or flange therebetween, said socket portion having upon its inside a longitudinal tapered rib or feather, substantially as set forth.

655,984. HUB. CHARLES C. MUFFLIN, South Bend, Ind. Filed June 5, 1900. Serial No. 19,120. (No model.)



Claim.—1. A wheel consisting of a flanged axle, spokes having heads or enlargements, and means for clamping the heads of the spokes to the periphery of the axle, substantially as described.

2. The axle provided with a flange near one end, and a screw-thread at the other, and two washers having their inner surfaces inclined or beveled, combined with a sleeve having open-ended slots in its ends to receive the inner ends of the spokes, and a nut for forcing the washers over the ends of the sleeve and bending or forcing them inwardly toward the axle so that they clamp the heads of the spokes tightly against it, substantially as described.

3. In a hub, a sleeve having slotted ends which are adapted to be bent or forced inwardly over the heads of the spokes, and washers having inclined surfaces so that when the washers are forced over the ends of the sleeves, the sleeves will be curved or bent inwardly so as to clamp the heads of the spokes against the axle, substantially as set forth.

4. In a wheel, an axle having a flange, a slotted sleeve, and clamping-washers, combined with headed spokes, the parts being so assembled as to clamp the head of the spoke against the axle, substantially as set forth.

655,985. INK-RIBBON MECHANISM. SAMUEL A. NEIDICH, Philadelphia, Pa. Filed Sept. 11, 1899. Serial No. 730,063. (No model.)

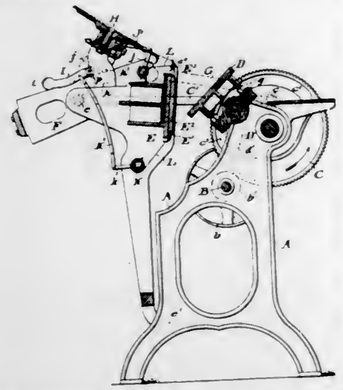
Claim.—1. The combination with an ink-ribbon feed-roller, of an ink-ribbon detachably secured thereon, means to unwind said ribbon from said roller, an electric switch connected with said roller, electric-circuit connections within said roller, and means to automatically operate said switch when said ribbon is unwound, substantially as set forth.

2. The combination with an ink-ribbon feed-roller, of an ink-ribbon detachably secured thereon, means to unwind said ribbon from said roller, an electric switch in said roller, electric-circuit connections within said roller, a signal connected with said switch, and means to automatically operate said switch and signal, when said ribbon is unwound, substantially as set forth.

3. The combination with an ink-ribbon feed-roller, of an ink-ribbon detachably secured thereon, means to unwind said ribbon from said roller, electric-circuit connections within said roller, an electric switch arranged to be depressed by the ribbon, when the latter is wound upon said roller, and means to automatically raise said switch when said ribbon is unwound, substantially as set forth.

4. The combination with two ink-ribbon feed-rollers, of means to alternately rotate said rollers, an ink-ribbon whose opposite extremities are respectively secured to said rollers, electric-circuit connections within said rollers, and electric switch mechanism in each of said rollers arranged to

be alternately operated by the unwinding of the ribbon therefrom, substantially as set forth.



5. The combination with an ink-ribbon feed-roller, of respectively fixed and adjustable bearing members, carried by the opposite extremities of said roller, two bearings arranged for respective engagement with said fixed and adjustable members, mechanism to rotate said roller, and means to detachably connect said rotary mechanism with said roller, substantially as set forth.

6. The combination with an ink-ribbon feed-roller, of electric switch mechanism, mounted therein and arranged to be operated by an ink-ribbon wound thereon, and electric-circuit connections within said roller, substantially as set forth.

7. The combination with an ink-ribbon feed-roller, of bearings to detachably engage the respective ends thereof, one of said bearings being electrically connected with, and the other insulated from, its support, an electric circuit connecting said bearings with a source of electrical energy, and an electric signal, and electric switch mechanism, secured upon said roller and arranged to be operated by an ink-ribbon wound thereon, substantially as set forth.

8. The combination with an ink-ribbon feed-roller having bearing-sockets in its respective ends, of fixed cone-bearings arranged to support the respective ends of said roller, a pawl-disk, loosely mounted upon one of said fixed bearings, a pawl pivoted upon said disk, a ratchet-wheel loosely mounted upon said bearing, in operative relation with said pawl, means to detachably connect said ratchet-wheel with said roller in rotative engagement therewith, and means to intermittently actuate said pawl-disk, substantially as set forth.

9. The combination with an ink-ribbon spindle, having a recess in its periphery, of a spring-hook mounted in said recess, and arranged to normally project beyond the circumference of said spindle, and to be withdrawn within the circumference of said spindle to disengage the ribbon, substantially as set forth.

10. The combination with an ink-ribbon feed-roller, having a recess in its periphery, of means arranged in said recess to detachably engage a ribbon, a bearing member fixed at one end of said roller, a bearing member at the opposite end of said roller in telescopic relation therewith, a slot in one end of said roller, and roller-driving mechanism arranged for detachable engagement with said slot, substantially as set forth.

11. The combination with an ink-ribbon feed-roller, of means to detachably secure a ribbon thereon, bearings at the opposite ends of said roller and a spring-pressed adjustable socket in one end of said roller arranged to rotatively engage an operating-handle, substantially as set forth.

12. The combination with an ink-ribbon feed-roller, of means to detachably secure a ribbon thereon, cone-bearings at the opposite ends of said roller, and a spring-pressed adjustable socket at one end of said roller, within said cone-bearing, arranged to rotatively engage an operating-handle, substantially as set forth.

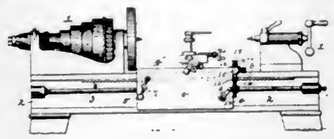
13. In a printing-press, the combination with an ink-ribbon, of two feed-rollers to which said ribbon is normally secured at its opposite extremities, a ribbon-spindle auxiliary to said two feed-rollers, means to detachably secure said ribbon to said spindle, and means to rotate said rollers and spindle to transfer the ribbon from one to the other substantially as set forth

14. In a printing-press, the combination with an ink-ribbon, of two feed-rollers to which said ribbon is normally secured at its opposite extremities, a ribbon-spindle auxiliary to said two feed-rollers, means to detachably secure said ribbon to said spindle, bearings in said press to detachably secure said auxiliary spindle, and means to rotate said spindle in said bearing to transfer the ribbon to and from said spindle and rollers, substantially as set forth.

15. In a printing-press, the combination with an ink-ribbon spindle having a recess in its periphery, of means secured in said recess to engage an ink-ribbon, a bearing-collar fixed at one extremity of said spindle an operating-handle upon said spindle, and means to detachably secure said spindle in said press, substantially as set forth.

16. In a printing-press, the combination with an ink-ribbon, of two feed-rollers to which said ribbon is normally secured at its opposite extremities, an operating-handle arranged to be detachably engaged with said feed-rollers, a ribbon-spindle auxiliary to said two feed-rollers, means to detachably secure said ribbon to said spindle, an operating-handle upon said spindle, bearings for said roller and said spindle, arranged to permit of the rotary transfer of said ribbon to and from said spindle, and means to detachably secure said rollers and said spindle, in cooperative relation in said bearings, substantially as set forth.

655,986. LATHE. RICHARD M. NUTTALL, Pittsburg, Pa. Filed Apr. 4, 1900. Serial No. 11,512. (No model.)



Claim.—1. The combination with a lathe having a table thereon adapted to engage with a revolving screw-bar, of a thread-indicator having a shaft or spindle, a pinion on said shaft or spindle adapted to engage with said screw-bar, and means on said shaft or spindle for shifting the indicator in and out of engagement with the screw-bar.

2. The combination with a lathe having a table thereon adapted to engage with a revolving screw-bar, of a thread-indicator adapted to engage with said screw-bar, means on said indicator for shifting the same in and out of engagement with the screw-bar, and means for locking said indicator in its inward and outward positions.

3. The combination with a lathe having a table thereon adapted to engage with a revolving screw-bar, of a head secured on said table, a shaft or spindle mounted within said head and carrying a dial thereon, a pinion on said shaft or spindle adapted to mesh with the screw-bar, and means on said head for permitting the shifting of the said pinion in and oot of engagement with the screw-bar.

4. The combination with a lathe having a table thereon adapted to engage with a revolving screw-bar, of a head screwed on said table, a spindle mounted within said head and carrying a dial thereon, a pinion on said spindle adapted to mesh with the screw-bar, and bolts secured in said table adapted to pass through slots in said head for permitting the shifting of the said pinion in and out of engagement with the screw-bar.

5. The combination with a lathe having a table thereon adapted to engage with a revolving screw-bar, of a head secured on said table, a spindle mounted in said head and carrying a dial thereon, a pinion on said spindle adapted to mesh with the screw-bar, means on said head for permitting the shifting of the said pinion in and out of engagement with the said screw-bar, and means connected to said head and spindle for locking the same in their inward and outward positions.

6. The combination with a lathe having a table thereon adapted to engage with a revolving screw-bar, of a head secured on said table, a spindle mounted in said head and carrying a dial thereon, a pinion on said spindle adapted to mesh with the screw-bar, means on said head for permitting the shifting of the said pinion in and out of engagement with the said screw-bar, a plunger-ring within said head surrounding the spindle, and a thumb-nut fitting within an opening in said head and adapted to press the plunger-ring against said table for locking said head and spindle in its inward and outward positions.

7. The combination with a lathe having a table thereon adapted to engage with a revolving screw-bar, of a head secured on said table, a spindle mounted within said head and carrying a dial thereon, a pinion on said spindle adapted to mesh with the screw-bar, means on said head for permitting the shifting and locking of said pinion in and out of engagement with the screw-bar, and means for raising and lowering said pinion on said spindle.

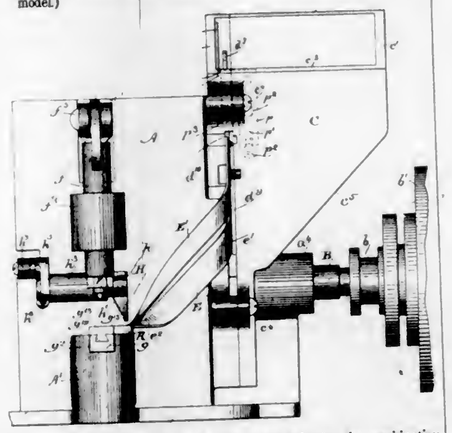
8. The combination with a lathe having a table thereon adapted to engage with a revolving screw-bar, of a head secured on said table, a spindle mounted within said head and carrying a dial thereon, a pinion on said spindle adapted to mesh with the said screw-bar, means on said head for permitting the shifting and locking of said pinion in and out of engagement with said screw-bar, and a set-screw on said pinion adapted to engage with a groove in said spindle for permitting the raising and lowering of said pinion.

9. The combination with a lathe having a table thereon adapted to engage with a revolving screw-bar, of a thread-indicator having a dial thereon adapted to engage with said screw-bar, means on said indicator for permitting the shifting and locking of the same in and out of engagement with said screw-bar, and means for setting or locking said dial at any desired point.

10. The combination with a lathe having a table thereon adapted to engage with a revolving screw-bar, of a head secured on said table, a spindle mounted within said head and carrying a dial loosely mounted around the same, a pinion on said spindle adapted to mesh with the screw-bar, means on said head for permitting the shifting and locking of said pinion in and out of engagement with said screw-bar, and a thumb-nut adapted to engage with the said spindle and dial to lock the latter at any desired point.

11. The combination with a lathe having a table thereon adapted to engage with a revolving screw-bar, of a head secured on said table, a spindle mounted within said head and carrying a dial loosely mounted around the same, a pinion on said spindle adapted to mesh with said screw-bar, means on said head for permitting the shifting and locking of said pinion in and out of engagement with said screw-bar, a thumb-nut adapted to engage with said spindle and dial to lock the latter at any desired point, a handle on said dial, and a pointer extending over said dial and secured to said head.

655,987. MACHINE FOR SETTING LACING-HOOKS. WILLIAM O'BRIEN, Taunton, Mass. Filed Sept. 15, 1898. Serial No. 691,006. (No model.)



Claim.—1. In a machine for setting lacing-hooks, the combination with a hopper having a vertical wall, of an oscillating blade for lifting and discharging hooks therefrom, a guard-plate interposed between the blade and the vertical wall of the hopper and carrying the blade, and mechanism for imparting vertical reciprocations to said blade and guard-plate, substantially as described.

2. In a machine for setting lacing-hooks, the combination with a hopper having a vertical wall, of a carrier having a guard-plate located adjacent to the vertical wall of the hopper, an oscillating blade carried by the carrier adjacent to the guard-plate, and means for moving the carrier, guard-plate and oscillating blade vertically in the hopper, substantially as described.

3. In a machine for setting lacing-hooks, the combination with a clenching-tool and a raceway, of a horizontally-reciprocating transferrer for taking hooks from the raceway and placing them in line with the clenching-tool, said transferrer comprising an under-cut anvil-block and a retaining-block movable toward and from the anvil-block, and means to reciprocate said transferrer, substantially as described.

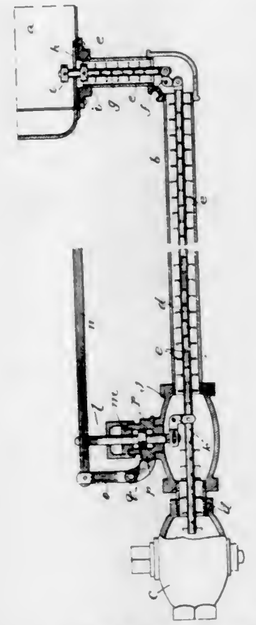
4. In a machine for setting lacing-hooks, the combination with a clenching-tool and a raceway, of a horizontally-reciprocating transferrer for taking hooks from the raceway and placing them beneath the clenching-tool, said transferrer comprising an anvil-block and a spring-pressed retaining-block movable toward and from the anvil-block arranged to grip the lacing-hooks, and means to reciprocate said transferrer, substantially as described.

5. In a machine for setting lacing-hooks, the combination with a raceway, of a curved cut-out arranged to separate the lowermost hook from the line of hooks in the raceway, said cut-out having a pointed end and an inclined edge and means for oscillating the cut-out across the raceway, substantially as described.

6. In a machine for setting lacing-hooks, the combination with an inclined raceway having its lower end inclined inwardly and a stationary receiving-plate having a recess in its upper side, of a horizontally-reciprocating transferrer having an opening extending therethrough and an intersecting-slot in its upper side, a vertically-movable clenching-tool, and means for feeding the lacing-hooks to said transferrer and for operating said transferrer and clenching-tool, substantially as described.

7. The combination with a hopper, raceway and clenching-tool, of a reciprocating transferrer for taking hooks from the raceway and placing them in line with the clenching-tool, means for actuating said transferrer, and an adjustable connection between the transferrer and its actuating means, substantially as described.

655,988. BLOW-OFF FOR STEAM-BOILERS. CLARENCE R. PARTINGTON, Richmond, Va. Filed Apr. 25, 1900. Serial No. 14,330. (No model.)



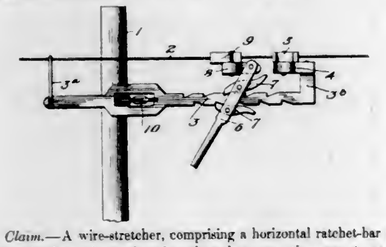
Claim.—1. In a blow-off device for steam-boilers, the combination of a boiler, a blow-off pipe connected thereto and provided with a blow-off cock at a distance from the boiler, a casing in the pipe between the cock and the boiler, an agitator inclosed in the pipe and extending from the cock, through the casing and to the opening into the boiler, and means extending into said casing for moving the agitator.

2. In combination, a boiler, a blow-off pipe provided with a cock at a distance from the boiler, a reciprocating agitator inclosed in the pipe and extending from the cock to the boiler, and devices for reciprocating said agitator.

3. The combination, a boiler, a blow-off pipe consisting of a vertical part and a horizontal part, the latter part being provided with a cock, reciprocating agitator-rods extending through both parts of the pipe and connected together, a casing interposed in the horizontal pipe, a reciprocating stem working through this casing, a bell-crank connecting the inner end of the stem to the reciprocating rod, and means for operating the stem.

4. The combination, of a boiler, a blow-off pipe consisting of a vertical part and a substantially-horizontal part connected thereto, the latter part being provided with a blow-off cock at a distance from the boiler, a reciprocating rod in each part of the pipe and provided with radial pins, means for guiding the vertical rod, means for connecting it to the adjacent end of the horizontal rod, and means for reciprocating both rods, consisting of a device attached to the horizontal rod at a point between the blow-off cock and the vertical pipe.

655,989. WIRE-STRETCHER. JETHERO PEOPLES, Byers, Kans. Filed Mar. 31, 1900. Serial No. 10,917. (No model.)



Claim.—A wire-stretcher, comprising a horizontal ratchet-bar provided with alternating series of teeth and a supporting-arm at one end thereof, a pivoted bail or loop upon the opposite end of the bar to engage the wire and support the bar, a lever extending vertically and having its upper end forked and projecting above and straddling said bar, pawls pivoted between the fork members of the lever and adapted to engage the respective ratchets, a head pivoted to swing vertically in the fork of the lever above the upper pawl and carrying a clamp, a head mounted horizontally upon said end-supporting arm of the ratchet-bar and pivoted to swing in a horizontal plane laterally of the bar and provided with a clamp, and a chain or analogous connection for adjustably connecting the ratchet-bar to a fence-post at a point adjacent to said bail or loop, substantially as described.

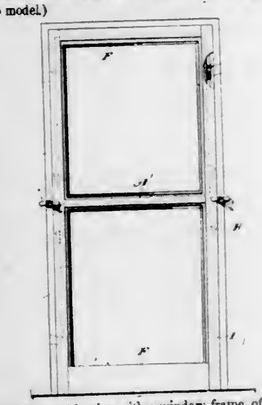
655,990. BILLIARD-CUE TIP. JEROME PRINCE, Milford, Mass., assignor to Sarah J. Bucklin, Andover, Mass. Filed Jan. 15, 1900. Serial No. 1,430. (No model.)



Claim.—1. The composite cue-tip described, consisting of rubber gum, asbestos and chalk, intermixed and compounded together and suitably hardened, substantially as set forth.

2. The described tip for billiard-cues, such tip being compounded of rubber gum, asbestos and chalk in about equal proportions, molded to proper shape and cured to retain its form, substantially as set forth.

655,991. COMBINED STORM AND FLY SCREEN CONSTRUCTION. JAMES G. RALPH, Aurora, Ill. Filed Feb. 16, 1900. Serial No. 5,478. (No model.)



Claim.—1. The combination with a window-frame, of a pair of vertical strips on such window-frame, a frame that is adapted to be removably secured to the faces of said strips toward the window-sash and in the lower portion of the window-frame, and a second frame that is adapted to be removably secured to said vertical strips in the upper portion of the window-frame separately from said first-mentioned removable frame, substantially as described.

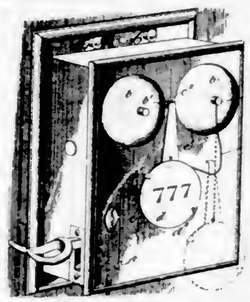
2. The combination with a window-frame of a supplemental frame that is adapted to fill and be secured in the opening thereof outside of the window-sash, and frames that are adapted to be removably secured to the inside of such supplemental frame and to be removed through the window-opening, substantially as described.

3. The combination with a window-frame, of a supplemental frame that is adapted to fit into and fill the opening of such window-frame, said supplemental frame having between its ends one or more cross-bars, and frames that are adapted to be removably secured to the inner side of such supplemental frame, to cover the openings in such frame and to be removed through the window-opening, substantially as and for the purpose described.

4. The combination with a frame having its outer surface formed in parallel lines, of a frame that is adapted to be removably secured to said first-mentioned frame, said removable frame having its inner surface formed similarly to the outer surface of such first-mentioned frame, being capable of overlapping all sides of the opening in said first-mentioned frame, and being shorter than such frame, and hooks fixedly secured to the side bars of one of said frames and engaging pins on the other of such frames, the surfaces of said hooks which engage such pins being inclined to the plane of the frame, substantially as and for the purpose described.

5. The combination with a window-frame, of a supplemental frame which is adapted to fill and be secured in the opening of such window-frame, a frame that is adapted to be removably secured over the opening in said supplemental frame, hooks on such supplemental frame, said hooks having arms whose surfaces are inclined to the adjacent surface of such supplemental frame, and pins on the sides of said removable frame, such pins being adapted to engage said hooks to secure the removable frame to the supplemental frame the opening in the supplemental and removable frames being of substantially the same size, substantially as described.

655,992. INDICATING DEVICE FOR TELEPHONE-RECEIVERS. WILLIAM R. RATHVON, Florence, Colo. Filed Nov. 28, 1899. Serial No. 738,524. (No model.)



Claim.—1. A visual telephone indicating device, consisting of an indicator constructed as a disk or plate provided with a hook for supporting said indicator upon a movable part of the receiving instrument, and a flexible connection secured to said indicator at one end and its other and free end adapted to be connected to any suitable part of the receiving instrument, substantially as and for the purpose described.

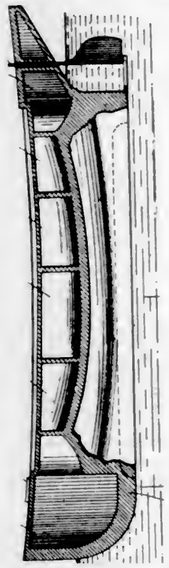
2. A visual telephone indicating device, consisting of an indicator constructed as a disk or plate provided with an arm terminating in a hook whereby said indicator may be supported upon a movable part of the receiving instrument, combined with a flexible connection secured to said indicator at one end and its other and free end adapted to be readily connected to any suitable part of the receiving instrument, substantially as and for the purpose described.

3. A visual telephone indicating device, consisting of an indicator constructed as a disk or plate provided with an arm terminating in a hook, whereby said indicator may be supported upon a movable part of the receiving instrument, clips on said disk adapted to support an independent display-face, and a flexible connection secured to said indicator at one end and its other and free end adapted to be readily connected to any suitable part of the receiving instrument, substantially as and for the purpose described.

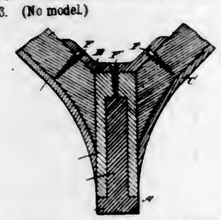
655,993. LIFE-BOAT. PETER U. RIESS and ANNA M. J. RIESS, New York, N. Y. Original application filed May 18, 1899, Serial No. 717,298. Divided and this application filed Feb. 17, 1900. Serial No. 5,591. (No model.)

Claim.—1. A marine vessel, comprising a hull having its sides curved outwardly and upwardly from the keel and provided with a hold or open central space, and with air-tight compartments surrounding the hold, the inner walls of the side compartments being of flexible material and curved downwardly and outwardly into engagement with the inner surface of the walls of the hull at a point slightly below the water-line, substantially as described.

2. A marine vessel, comprising a hull having its sides curved outwardly and upwardly from the keel, and provided with a series of side compartments extending slightly below the water-line, a bow-compartment extending the whole depth of the hull, a stern-compartment extending only slightly below the water-line, the bow and stern compartments being divided by longitudinal partitions, and a rudder having its post mounted in the partition of the stern-compartment, substantially as described.



655,994. MARINE VESSEL. PETER U. RIESS and ANNA M. J. RIESS, New York, N. Y. Original application filed May 18, 1899, Serial No. 717,298. Divided and this application filed May 24, 1900. Serial No. 17,833. (No model.)



Claim.—1. A marine vessel, having a keel-body with a longitudinal recess in its under side, ribs secured to the sides of the keel-body, and a weight fitted into the said recess and secured to the body independently of the said ribs, as set forth.

2. A marine vessel, having a wooden keel-body with a longitudinal recess in its under side, ribs abutting against the sides of the keel-body and secured thereto by flanged irons and screws, and a weight fitted into the said recess and secured to the said body independently of the said ribs, as set forth.

3. A marine vessel having a keel with a longitudinal recess in the under side, and a weight in the form of a metallic bar of inverted-T shape and fitted into said recess, as set forth.

4. A marine vessel having a wooden keel-body formed with a longitudinally-extending recess in the under side, and a weight fitted in the recess and secured to the wooden keel-body by transverse bolts, substantially as shown and described.

5. A marine vessel having a wooden keel-body formed with a longitudinally-extending recess in the under side, and a weight fitted in the recess and secured to the wooden keel-body, the lower end of the weight being broadened, to form a continuation of the lower end of said wooden keel-body, as set forth.

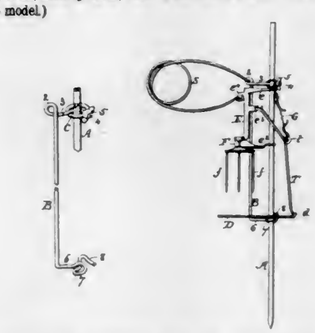
6. A marine vessel having a wooden keel-body formed with a longitudinally-extending recess in the under side, ribs connected with the said keel-body, a weight fitted in the said recess and having its lower end broadened to form a continuation of the keel-body, and means for fastening the body and weight together independently of the said ribs, as set forth.

7. A marine vessel, having a wooden keel-body formed with a longitudinally-extending recess in the under side, ribs abutting on the sides of said keel-body and secured thereon, and a longitudinally-extending weight fitted in said recess and secured to said body, the lower end of the weight being broadened to form a continuation of the lower end of said wooden keel-body, substantially as shown and described.

8. A marine vessel, having a wooden keel-body formed with a longitudinally-extending recess in the under side, ribs abutting on the sides of said keel-body and secured thereon, and a longitudinally-extending weight fitted in said recess and secured to said body, the lower end of the weight being broadened to form a continuation of the lower end of said wooden keel-body, said ribs and weight being independently secured to the keel-body, as set forth.

9. A marine vessel, having a keel-body formed with a longitudinally-extending recess in the under side, and a weight fitted into the said recess and secured to the said keel-body, the said weight being in the form of a metallic bar broadened at its lower end and with the broadened end extending rearwardly beyond the keel-body to form a bearing for the rudder-post, as set forth.

655,995. MOLE-TRAP. SILAS B. RITTENHOUSE and JAMES F. RITTENHOUSE, Liberty Mills, Ind. Filed Jan. 22, 1900. Serial No. 2,327. (No model.)



Claim.—1. In combination with the vertical anchoring-rod of a mole-trap, the body-rod of the trap adjustably clamped upon said rod substantially as described.

2. The combination of the vertical anchoring-rod of a trap with the vertical rod B, of the body of trap having its lower end encircling the anchoring-rod and its upper end bent to one side of said anchoring-rod and adjustably secured thereon, a thumb-nut on said upper end, and a link embracing both rods and supporting the thumb-nut substantially as described.

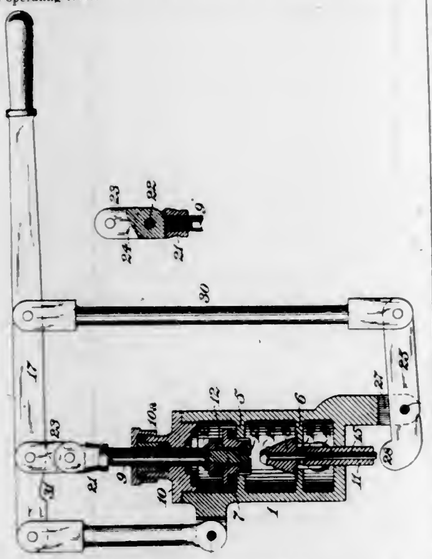
3. The combination of the vertical anchoring-rod of a trap having the vertical rod B, provided at the top with the eye 2, and side arm 3, and at the bottom with the side arm 6, the loop 7, and lateral arm 8, the tripping-plate resting upon the loop 7, and under the arm 8, the prongs-carrying frame and a trigger pivoted at one end to said frame substantially as described.

655,996. VALVE. JAMES J. RYLANDS, Homestead, Pa., assignor to the Homestead Valve Manufacturing Company, same place. Filed Jan. 20, 1900. Serial No. 2,114. (No model.)

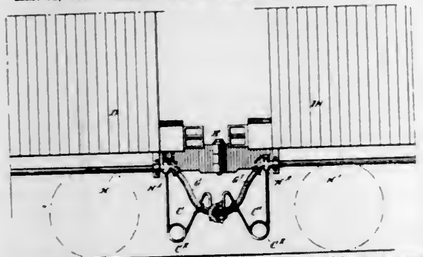
Claim.—1. In a valvular mechanism, the combination of a case or shell divided by transverse partitions into three superposed chambers, an inlet-passage, a machine-supply passage, and an outlet-passage, communicating, respectively, with the several chambers of the case, a supply-valve controlling communication between the inlet and machine-supply passages, an exhaust-valve working substantially in line with the inlet-valve and controlling communication between the machine supply and exhaust passages, said exhaust-valve being disconnected from, and movable independently of, the supply-valve, an operating-lever, an exhaust-valve lever unconnected with, and having a range of traverse independently of, the exhaust-valve, connections coupling the supply-valve to the operating-lever, and connections coupling the exhaust-valve lever to the operating-lever.

2. In a valvular mechanism, the combination of a case or shell having an inlet-passage, a machine-supply passage, and an outlet-passage, a supply-valve controlling communication between the inlet and machine-supply passages, an exhaust-valve controlling communication between the

machine supply and exhaust passages, stems connected to the supply and exhaust valves, an operating-lever, a link coupling one end of said lever to the valve-case, a link coupling said lever to the stem of the supply-valve, an exhaust-valve lever pivoted to the case and having a bearing-face at one of its ends adapted to abut against the stem of the exhaust-valve, and a link coupling the opposite end of the exhaust-valve lever to the operating-lever.



655,997. AUTOMATIC AIR-PIPE COUPLING. JOHN W. SPURLOCK, Ty Ty, Ga., assignor of one-half to Eliza C. Tift, Tifton, Ga. Filed Mar. 21, 1900. Serial No. 9,562. (No model.)



Claim.—1. An automatic air-pipe coupling, comprising two members, and spring-rods for supporting the same from the cars, the spring-rods being formed with coils between their ends and arranged for holding the members under the tension of the springs, when coupled, substantially as described.

2. An automatic air-pipe coupling, comprising two members having longitudinally-extending coupling-faces, guides for guiding one coupling-face upon the other and for limiting the movement of the members in one direction when coupling the members, and spring-rods for supporting the members and for holding the same under tension when in a coupled position, the spring-rods being formed with coils between their ends, substantially as described.

3. An automatic air-pipe coupling, having a member comprising a body with a longitudinally-extending coupling-face, a pipe extending transversely from the said member for connection with the coupling-hose, a gasket set in the said face and projecting therefrom, with the inner end of the gasket in communication with the pipe, and a forked guide carried by the said body, said guide projecting from one edge of the body and extending with its prongs in front of the coupling-face of the body, substantially as described.

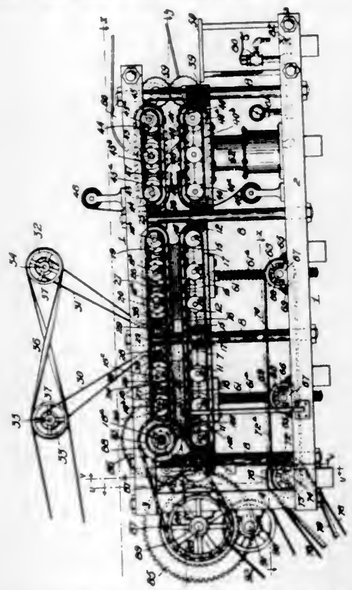
4. An automatic air-pipe coupling, having a member comprising a body with a longitudinally-extending coupling-face, a pipe extending transversely from the said member for connection with the coupling-hose, a gasket set in the said face and projecting therefrom, with the inner end of the gasket in communication with the pipe, and a forked guide carried by the said body, said guide projecting from one edge of the body and extending with its prongs in front of the coupling-face, the outer ends of the prongs flaring outwardly from the said face and in an oblique direction thereto, substantially as described.

5. An automatic air-pipe coupling, having a member comprising a body with a longitudinally-extending coupling-face, a pipe leading from the said member for connection with the coupling-hose, a gasket set in the said face and projecting therefrom with the inner end of the gasket in communication with the pipe, a forked guide carried by the said body and extending with its prongs in front of the coupling-face, the outer ends of the prongs flaring outwardly from the said face and in an oblique direction thereto, and a friction-roller on the said pipe adjacent to the said body to be engaged by the forked guide of the other coupling member, substantially as described.

6. An automatic air-pipe coupling, having a member comprising a body with a longitudinally-extending coupling-face, a pipe leading from the said member for connection with the coupling-hose, a gasket set in the said face and projecting therefrom with the inner end of the gasket in communication with the pipe, a forked guide carried by the said body and extending with its prongs in front of the coupling-face, the outer ends of the prongs flaring outwardly from the said face and in an oblique direction thereto, and a bolt on the middle portion of the said guide for engagement with an ordinary coupling, the said bolt operating in conjunction with a slot in the edge of the said body to hold the ordinary coupling member in place, substantially as described.

7. An automatic air-pipe coupling, comprising a member having a longitudinally-extending coupling-face and provided with a slot in one edge and with a forked guide extending in front of the coupling-face, and having a bolt on its middle portion, substantially as and for the purpose set forth.

655,998. BALING-PRESS. GEORGE TAYLOR, Dallas, Tex. Filed June 6, 1900. Serial No. 19,242. (No model.)



Claim.—1. In a baling-press, the combination with the follower or table and pressure-rolls journaled therein, of two sets of pressure-rolls journaled above the first-named rolls, an apron carried by the lower rolls, an apron carried by each set of upper rolls, means for feeding the material to be baled between the contiguous runs of the said aprons, and means for reciprocating the contiguous runs of the aprons in unison, substantially as set forth.

2. In a baling-press, the combination with the follower or table and pressure-rolls journaled therein, of two sets of pressure-rolls journaled above the first-named rolls, an apron carried by the lower rolls, an apron carried by each set of upper rolls, rollers located between the rolls and in

engagement with the aprons, means for feeding the material to be baled between the two sets of upper rolls and between the contiguous runs of the said aprons, and means for reciprocating the contiguous runs of the aprons in unison, substantially as set forth.

3. In a baling-press, the combination with the follower or table and pressure-rolls journaled therein, of two sets of pressure-rolls journaled above the first-named rolls, bat-forming rolls journaled between the upper rolls, a hopper, an apron carried by each set of upper rolls, an apron carried by the lower rolls, means for feeding the material to be baled between the two sets of upper rolls and between the contiguous runs of said aprons, and means for reciprocating the contiguous runs of the aprons in unison, substantially as set forth.

4. In a baling-press, the combination with the follower or table and pressure-rolls journaled therein, of two sets of pressure-rolls journaled above the first-named rolls, an apron carried by the lower rolls, an apron carried by each set of upper rolls, means for feeding the material to be baled between the two sets of upper rolls and between the contiguous runs of the said aprons, means for reciprocating the contiguous runs of the aprons in unison, and means for lowering the follower or table proportionately with the forming bale, substantially as set forth.

5. In a baling-press, the combination with the main frame, of a follower or table, means for raising or lowering said follower or table, pressure-rolls journaled in said follower or table, two sets of pressure-rolls journaled above the first-named rolls, bat-forming rolls journaled between the upper rolls, a hopper, an apron carried by each set of upper rolls, an apron carried by the lower set of rolls, and means for reciprocating the contiguous runs of the aprons in unison, substantially as set forth.

6. In a baling-press, the combination with the follower or table and pressure-rolls journaled therein, of two sets of pressure-rolls journaled above the first-named rolls, the two sets of upper rolls being spaced apart, bat-forming rolls journaled between the two sets of upper rolls, shields or guards located between the bat-forming rolls and the adjacent end rolls of the upper set of rolls, an apron carried by the lower pressure-rolls, an apron carried by each set of upper pressure-rolls, and means for reciprocating the contiguous runs of the aprons in unison, substantially as set forth.

7. In a baling-press, the combination with a suitably-mounted apron, of two aprons suitably mounted above the first-named apron and having their lower runs parallel with the upper run of the lower apron, and means for feeding the material to be pressed between the upper set of aprons and between the lower runs of the upper aprons and the upper run of the lower apron and means for reciprocating said aprons, substantially as set forth.

8. In a baling-press, the combination with a suitably-mounted apron, of two aprons suitably mounted above the first-named apron and having their lower runs parallel with the upper run of the lower apron, said upper aprons being spaced apart, and bat-forming rolls for feeding the material to be pressed between the upper set of aprons and between the lower runs of the upper aprons and the upper run of the lower apron and means for moving said aprons, substantially as set forth.

9. In a baling-press, the combination with the follower or table and pressure-rolls journaled therein and provided with sprocket-wheels, and chains connecting the sprocket-wheels, of two sets of pressure-rolls journaled above the first-named rolls and provided with sprocket-wheels, a sprocket-chain connecting said wheels, an apron carried by the lower pressure-rolls, an apron carried by each set of upper rolls, means for feeding the material between the contiguous runs of the aprons, means for lowering said follower or table, gear-wheels fixed to the axes of the forward upper and lower pressure-rolls, a second set of gear-wheels in mesh with the first set of gear-wheels and flexibly connected to the axes of the first-named set of gear-wheels and in mesh with each other, and means for rotating one of the axes of the first-named set of gear-wheels, substantially as set forth.

10. In a press, the combination of mechanism having opposing surfaces, means for reciprocating said opposing surfaces in unison and the same direction whereby a mass of material will be built up in layers between them, and means for controlling the movement of one of said mechanisms toward and away from the other.

11. In a baling-press, the combination with the frame and the guide-standards having rack-teeth, of a follower or table mounted to slide upon said guide-standards, means for supporting said follower or table, pressure-rolls carried by the follower or table, and automatic dogs carried by said follower or table and adapted to engage said rack-teeth and prevent the tilting of the follower or table, substantially as set forth.

12. In a baling-press, the combination with a drive-shaft and pressure-rolls, of reversing mechanism interposed between the drive-shaft and pressure-rolls, said mechanism comprising a gear-wheel and a sprocket-wheel fixed to the drive-shaft, a gear-wheel loosely fixed to one end of one of the pressure-rolls and in mesh with one of the first-named gear-wheels, a toothed disk fixed to the same end of said pressure-roll, a dog pivoted to the loosely-mounted gear-wheel and adapted to engage the tooth of said disk, a trip arranged within the path of movement of the outer end of said dog, a sprocket-wheel loosely mounted upon the other end of said pressure-roll, a toothed disk fixed to this end of said roll, a dog pivoted to said last-named sprocket-wheel, a trip arranged within the path of movement of said dog, and a sprocket-chain connecting the last-named sprocket-wheel and the first-named sprocket-wheel, substantially as and for the purpose set forth.

13. In a baling-press, the combination of opposed aprons, means for causing their contiguous surfaces to reciprocate in unison and in the same direction, and means to feed material between said aprons to form a bale.

14. In a baling-press the combination of a follower or table, an apron supported by said table, an apron opposed to said first-named apron, and means for reciprocating the opposing plies of the said aprons in unison to form a bale between them.

15. In a press, the combination of feeding devices for feeding the cotton to be baled, a support for receiving the cotton from the feeding devices, means for reciprocating said support beneath said feeding devices, and reciprocating compression-surfaces above said support and reciprocal in unison therewith.

16. In a press, the combination of feeding devices for feeding the cotton to be baled, a support for receiving the cotton from the feeding devices, means for reciprocating said support and the bale carried thereby beneath said feeding devices, reciprocating compression-surfaces above said support and reciprocal in unison therewith, and means for lowering the support during the formation of the bale.

17. In a press, the combination of feeding devices for feeding the cotton to be baled, an apron for receiving the cotton from the feeding devices, a plurality of aprons above the first-named apron, and means for reciprocating the contiguous runs of said aprons in unison.

18. In a press, the combination of feeding devices for feeding the material to be baled, an apron for receiving the cotton from the feeding devices, a plurality of aprons opposed to said first-named apron, rolls for supporting said aprons, and means for reciprocating the contiguous runs of said aprons in unison.

19. In a press, the combination of feeding devices for feeding the material to be baled, an apron for receiving the cotton from the feeding devices and for supporting the bale, a plurality of aprons opposed to said first-named apron, and means for moving the contiguous runs of said aprons in unison, said means comprising automatic reversing devices for changing the direction of movement at intervals.

20. In a press, the combination of a series of aprons having contiguous surfaces between which to form a bale, means for reciprocating said aprons in unison, a finishing-press adjacent one end of the series of aprons and provisions for transferring the bale from between the aprons and under continuous compression to the finishing-press.

21. In a press, the combination of feeding devices, aprons having opposed contiguous surfaces, means for reciprocating said contiguous surfaces in unison to form a bale, a finishing-press, and provisions for continuing the movement of the aprons in one direction to feed the bale under continuous compression to the finishing-press.

22. In a press, means for lapping material under compression to form a bale, a finishing-press, and means for moving the bale to the finishing-press said means holding it under continuous compression.

23. In a press, bale-forming mechanism and a bale-finishing mechanism, means for transferring the bale from the former to the latter, and devices for supporting the covering for said bale between said mechanisms whereby as the bale is transferred as specified the bagging will be caused to move with the bale.

24. In a press, bale-forming mechanism and bale-finishing mechanism, means for holding and transferring the bale under continuous compression from the former to the latter, and devices for supporting the covering for said bale whereby as the bale is transferred as specified the covering will be caused to move with said bale.

25. In a press, bale-forming mechanism and bale-finishing mechanism, and means for holding and transferring the bale under continuous compression from the former to the latter.

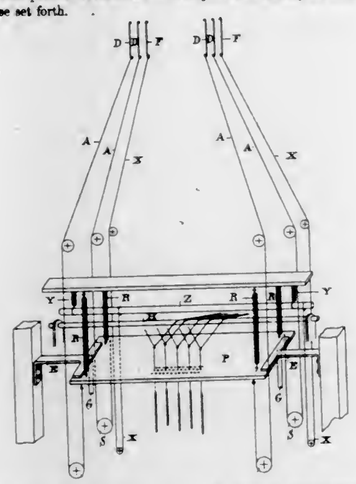
26. In a baling-press, the combination of aprons having opposed surfaces, one of said aprons being movable toward and away from the other and devices for controlling such movement, and means for causing said opposed surfaces to reciprocate in unison and in the same direction.

27. In a press, the combination with mechanism having opposing surfaces and means for reciprocating said surfaces in unison and in the same direction for building up a mass of material between them.

655,999. LOOM FOR WEAVING DOUBLE-PIECE FIGURED VELVET. ANTOINE THARDY, Lyons, France. Filed Sept. 25, 1899. Serial No. 731,588. (No model.)

Claim.—1. In a hand or mechanical loom for weaving double-piece figured velvet, the combination of a movable comber-board, means for moving same to cause the pile-threads at their rear parts to pull intermittently on their bobbins, and means for gripping the pile-threads at

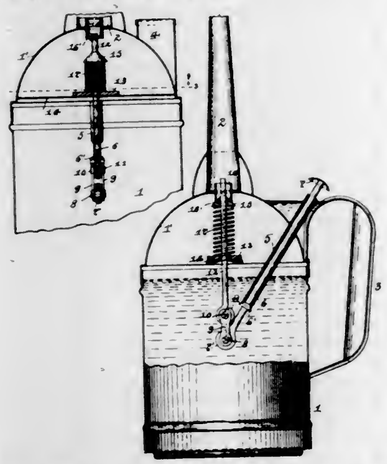
their front parts at the moment of said pull, substantially as and for the purpose set forth.



2. In a hand or mechanical loom for weaving double-piece figured velvet, the combination of a movable comber-board, springs supporting same and means for guiding it vertically, harness-cords connected to said board and to special hooks of the mechanism, and pulleys arranged to guide said cords to convert the pull of the mechanism on the cords into a pull of the cords on the board in opposite direction, substantially as and for the purpose set forth.

3. In a hand or mechanical loom for weaving double-piece figured velvet, the combination of a movable comber-board, means for moving same to cause the pile-threads to pull intermittently on their bobbins, two pile-rods, and means for pulling one pile-rod against the other to grip the pile-threads, at the moment of the pull of the pile-threads on their bobbins, substantially as and for the purpose set forth.

656,000. OIL-CAN. PATRICK WALL, Allegheny, Pa. Filed Sept. 29, 1899. Serial No. 732,072. (No model.)

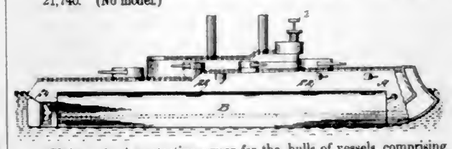


Claim.—1. In an oil-can; a body; a spout; a valve-stem carrying a valve adapted to engage with a seat connected to said spout; an operating-rod extending through the can and adapted to be given a reciprocating movement; a link loosely connected to said valve-stem and to said operating-rod, whereby when an inward reciprocation is imparted to the operating-rod a direct pull will be exerted on the valve-stem for the purpose of opening the valve; and a spring for closing the valve and imparting to the operating-rod an outward reciprocation.

2. In an oil-can having a spout, a valve mounted on a valve stem or rod adapted to engage with a seat connected to said spout, an operating-rod extending through the can, a link loosely connected to the valve stem or rod and operating-rod for opening and closing said valve, a tube surrounding said operating-rod and extending through the can, and a rigid collar on said operating-rod adapted to engage with the inner end of said tube when the valve is normally closed.

3. In an oil-can having a spout, a valve mounted on a valve stem or rod adapted to engage with a seat connected to said spout, an operating-rod extending through the can having a thumb-piece thereon positioned above the handle, a link loosely connected to the valve stem or rod and operating-rod for opening and closing said valve, a spiral spring interposed between said valve and a plate secured within the can to normally hold said valve closed, a tube surrounding said operating-rod extending through the can, and a rigid collar on said operating-rod adapted to engage with the inner end of said tube when the valve is normally closed.

656,001. PROTECTIVE ARMOR FOR HULLS OF VESSELS. ROBERT F. B. WALSH, New York, N. Y. Filed June 27, 1900. Serial No. 21,740. (No model.)

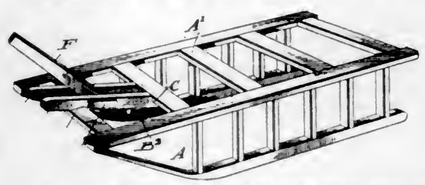


Claim.—1. A protective armor for the hulls of vessels, comprising a false keel, and side sections the inner faces of which are adapted to the exterior cross-section of the hull, and means for detachably connecting said armor to the hull.

2. In vessels, a protective armor consisting of a body portion adapted to serve as a false keel, and side sections, which side sections and the sides of the body incline from a central line at the bottom portion of the body outward or in opposite directions, the inner surface of the protective armor being adapted to fit to the exterior bottom and side portions of the hull, and means, substantially as described, for detachably connecting said armor to said hull.

3. The combination, with the hull of a vessel having lugs projected from its sides and lugs projected from its under central portion, of a protective armor consisting of a body which constitutes a false keel for the hull, the body being fitted to the bottom portion of the hull and the projections therefrom, and wings extending upward from the body, having their inner surfaces adapted to fit the outer side faces of the hull and projections therefrom, the bottom portion of the body being more or less sharp and the sides of the body and extensions therefrom having an inclination upward in opposite directions, and bolts detachably securing the body of the armor to the keel-lugs of the hull, and the extensions of the body of the armor to the side lugs of the hull, for the purpose set forth.

656,002. TONGUE ATTACHMENT FOR SLEDS. CHARLES M. WATT, Holt, Ohio. Filed Jan. 19, 1900. Serial No. 2,045. (No model.)



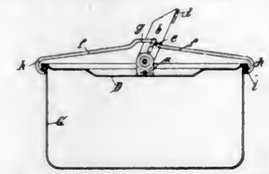
Claim.—1. In combination with the sled, a rack secured thereto, said rack inclined at an angle to the top of the sled, a tongue having laterally-projecting lugs which work in elongated slots in said rack, and a cross-piece on the under edge of the rack designed to hold the tongue in an elevated position, as shown and described.

2. In combination with a sled, a rack composed of two strips which have their upper edges at their rear ends notched, and adapted to fit under one of the cross-pieces of the sled, notches on the under edges of said rack engaging over one of the cross-strips of the sled, and secured by means of bolts thereto, the tongue having laterally-projecting lugs working in elongated slots in said rack, adapted to strike against the opposite ends of the slots to hold back and start the sled as the tongue is held back or drawn forward, as set forth.

3. The combination with the removable rack adapted to be secured to the sled in the manner described, the flanged metallic boxes seated in

elongated registering slots in said rack, the tongue having laterally-projecting lugs designed to work in said boxing, as shown and described, and for the purpose set forth.

656,003. APPLIANCE FOR SECURING COVERS OF CULINARY VESSELS IN CLOSED POSITION. JOHANN WEIDNER, Amberg, Germany, assignor to The Firm of Joh. Baumann's Wwe., same place. Filed June 16, 1899. Serial No. 720,800. (No model.)

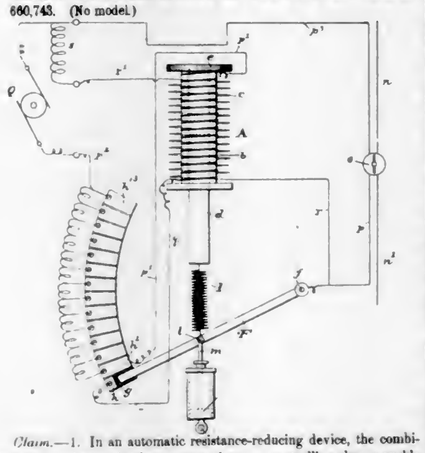


Claim.—1. The combination with a cover for culinary vessels and the like, of a bar with middle cranked portion having inclined sides, the said bar having hooked ends adapted to engage the rim of the vessel on which the cover is placed and a lever pivoted at its lower end to the upper side of the cover and having a handle at its upper end and a laterally-projecting finger adapted to engage either the cranked portion of the bar or the inclined side of the cranked portion of the bar, substantially as described.

2. The combination with a cover for culinary vessels and the like, of a bar *f* with middle cranked portion having inclined sides, the said bar having hooked ends *h*, adapted to engage under a projecting rim of the vessel on which the cover is placed, an angle-piece *a*, secured to the cover, and a lever *b*, pivoted to the angle-piece and having a handle *d* and a projecting finger *c*, the said finger being adapted to engage either the cranked portion of the bar or the inclined side of the cranked portion of the bar, for the purpose set forth.

3. The combination with a cover, of a lever mounted to swing thereon, a finger projecting laterally from the lever, and a bar arranged to engage the article on which the cover is placed, the said bar being provided with a middle cranked portion having inclined sides, the laterally-projecting finger of the lever being adapted to engage either the cranked portion of the bar or the inclined side of the cranked portion, substantially as described.

356,004. AUTOMATIC RESISTANCE-REDUCING DEVICE. GEORGE H. WHITTINGHAM, Baltimore, Md. Filed Dec. 4, 1897. Serial No. 660,743. (No model.)

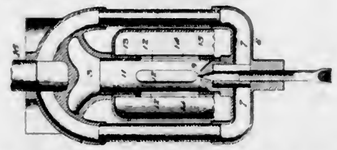


Claim.—1. In an automatic resistance-reducing device, the combination of a resistance having contact-plates; a controlling-shoe movable over said contact-plates; a magnet; a heavy-current circuit including the magnet and resistance but operative through both only at the initial movement of the said controlling-shoe; a small-current circuit direct from the main line and including only the magnet and field; and a spring or equivalent device to store power interposed in the connection between the movable controlling-shoe and the armature or core of the magnet, whereby when starting, the heavy current passes through the magnet only for the brief period required to draw its armature or core and said current is thereby automatically broken, and the resistance is then gradually cut out by the action of the stored power.

2. The combination of a motor; starting resistance for said motor; a solenoid included in the resistance-circuit; a contact-shoe engaging the resistance-plates; a spring or equivalent device to store power connecting the armature or core of the solenoid with the contact-shoe; and a governing device retarding the movement of the contact-shoe, whereby the momentary use of the starting-current will store sufficient power to accomplish the subsequent removal of the starting resistance from the motor.

3. In an automatic resistance-reducing device, the combination of a resistance having contact-plates; an arm pivoted at one end and at its free end carrying a controlling-shoe which moves over said plates; a solenoid included in the resistance-circuit; a weight connecting the pivoted arm and the core of the solenoid; and a governing device connected with said pivoted arm.

656,005. LAMP. CHARLES F. ALLEN, Massillon, Ohio. Filed Apr. 19, 1900. Serial No. 13,448. (No model.)



Claim.—1. In a lamp of the character described, the combination, with a supply-pipe, of a burner-head provided with radiating burners and with downwardly-extending by-passes and vertical upwardly and downwardly projecting nipples, one of which nipples communicates with the supply-pipe and the by-passes, and the other with the burners, a Y-pipe arranged below the burner-head, pipes establishing communication between the branches of the Y-pipe and by-passes, and the mixing-chamber connected to the downwardly-extending nipple, substantially as described.

2. In a lamp of the character described, the combination, with a supply-pipe, of a burner-head having radial upwardly-extending burners, by-passes and upwardly and downwardly projecting nipples, one of which communicates with the supply-pipe and the by-passes, and the other with the burners, a Y-pipe arranged below the burner-head, pipes connecting the Y-pipe with the by-passes, a mixing-chamber located between said connecting-pipes and in communication with the Y-pipe and downwardly-projecting nipple, a valve for controlling the escape of gas through the Y-pipe into the mixing-chamber, and a valve for regulating the supply of air to the mixing-chamber, substantially as described.

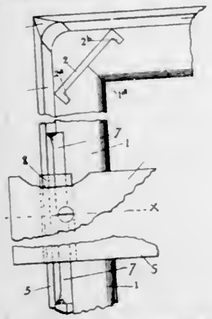
3. In a lamp of the character described, the combination, with a supply-pipe, of a burner-head provided with radiating burners and with by-passes and vertical upwardly and downwardly projecting nipples, one of which nipples communicates with the supply-pipe and the by-passes, and the other with the burners, a Y-pipe, pipes establishing communication between the branches of the Y-pipe and the by-passes, a mixing-chamber located between said connecting-pipes and secured to the downwardly-extending nipple and Y-pipe, and mantles supported above the burners, substantially as described.

4. In a lamp of the character described, the combination, with a supply-pipe, of a burner-head having radial upwardly-extending burners, downwardly-extending by-passes and upwardly and downwardly projecting nipples, one of which nipples communicates with the supply-pipe and the by-passes, and the other with the burners, a Y-pipe located below the burner-head, vertical pipes connecting the branches of the Y-pipe with the said downwardly-extending by-passes, a mixing-chamber located above the Y-pipe and secured thereto and to the downwardly-extending nipple, a valve for controlling the escape of gas from the Y-pipe into the mixing-chamber, a valve for regulating the supply of air to the mixing-chamber, and a hood surrounding the air-valve, substantially as described.

5. In a lamp of the character described, the combination with a burner-head provided with radiating burners and with by-passes and vertically upwardly and downwardly projecting nipples, one of which communicates with the by-passes and the other with the burners, of a Y-pipe, pipes establishing communication between the branches of the Y-pipe and by-passes, a mixing-chamber secured to the downwardly-extending nipple, a supply-pipe connected to the upwardly-extending nipple, a mantle-supporting head secured to said supply-pipe, and mantles connected to said head and surrounding said pipe and engaged at their lower end with the burners, substantially as set forth.

6. In a lamp of the character described, a burner-head provided with a series of upwardly-projecting radial burners, downwardly-projecting by-passes adapted for connection with pipes leading to a mixing-chamber, and central upwardly and downwardly projecting nipples, one adapted for connection with a supply-pipe and in communication with said by-passes, and the other adapted for connection with a mixing-chamber and in communication with the burners, all formed of a single piece of metal, substantially as described.

656,006. CARRIAGE-BODY. SAMUEL R. BAILEY, Amesbury, Mass. Filed Feb. 16, 1900. Serial No. 5,453. (No model.)



Claim.—1. A carriage-body having a wooden side panel, a wooden reinforce which extends over and is secured to substantially the whole inner surface of the panel which is beneath the seat, the grain of the reinforce being arranged across the grain of the panel, a sill, to the side of which the panel is secured, a recess in the side of the sill which is of the same depth laterally as the thickness of the reinforce and extends from the upper side of the sill downwardly and longitudinally to points corresponding to the length of the reinforce and distance which it extends below the top of the sill, and means for securing the upper edge portions of the panel and reinforce to the seat-bottom.

2. A carriage-body having a seat, a sill, a side panel which is secured to the side of said sill, a wooden reinforce which is glued to the inner side of the panel beneath the seat, the grain of the reinforce being arranged across the grain of the panel, a cap-piece which extends across the joint between the panel and reinforce at the upper edges thereof, said seat being secured to the upper side of said cap-piece, and to the panel and reinforce.

3. A carriage-body having a sill, a side panel which is secured to the side of said sill, a wooden reinforce which is glued to the inner side of the panel and extends from the upper side of the sill to the top of the panel, its grain being arranged across the grain of the panel, a recess in the side of the sill in which the bottom portion of the reinforce is secured, a cap-piece which extends across the joint between the panel and reinforce at the top and extends downwardly and engages the inner side of the reinforce, and a seat which is secured to the upper side of said cap-piece.

4. A carriage-body having a sill, a side panel which is secured to the side of said sill, a wooden reinforce which is glued to the inner side of the panel and extends from the upper side of the sill to the top of the panel, its grain being arranged across the grain of the panel, a recess in the side of the sill in which the bottom portion of the reinforce is secured, a cap-piece having a groove on its under side, in which the upper edges of the panel and reinforce are secured, and a seat which is secured to the upper side of said cap-piece.

5. A carriage-body having a sill, a side panel which is secured to the inner side of said sill, a wooden reinforce which is glued to the inner side of the panel which extends from the upper side of the sill to the top of the panel, its grain being arranged across the grain of the panel, a recess in the side of the sill in which the bottom portion of the reinforce is secured, a cap-piece which is of substantially the same length as the width of the seat-bottom and has a groove on its under side in which the upper edges of the panel and reinforce are secured and a depending portion on its inner side which engages and is secured to the inner side of the reinforce, and a seat-bottom which is secured to the upper side of the cap-piece.

6. A carriage-body comprising two panels which meet in a joint at the corner thereof, two sills which are secured at their outer sides to the inner sides of said panels and meet in a corner, the extreme outer portion of the corner formed by the sills being cut away from top to bottom, forming faces, one of which is at the end of each sill, and which are at an angle to the sides thereof, a metal strap which is secured to each sill and extends across said faces and across the joint between said sills, at its outermost points.

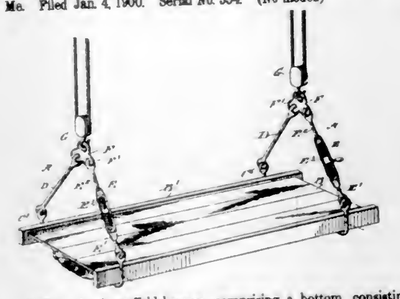
7. A carriage-body having two panels which meet in a joint at the corner thereof, two sills which are secured at their outer sides to the inner sides of said panels and meet in a joint in the corner, the extreme outer portion of the corner formed by said sills being cut away diagonally from top to bottom, forming a single continuous face on the ends of the sills and a triangular-shaped hole between said panels and said face, a metal strap or yoke which is arranged on said face and extends across the joint between the sills at its outer end and is secured to each sill.

8. A carriage-body having two panels which meet in a joint at the corner thereof, two sills which are secured at their outer sides to the inner sides of said panels and meet in a joint in the corner, the extreme outer portion of the corner formed by the sills being cut away diagonally from top to bottom, forming a diagonally-arranged face on the end of each sill, grooves which are cut in each face, a metal yoke having laterally-projecting flanges or ribs which are adapted to engage said grooves, said yoke spanning the outermost portion of the joint, means of securing said yoke to each of said sills, whereby the ends of said sills will be locked together so that the outer portion of said joint cannot open.

9. A carriage-body having two panels which meet in a joint at the corner thereof, two sills which are secured at their outer sides to the inner sides of said panels and meet in a miter-joint in said corner, the extreme outer portion of the corner formed by said sills being cut away from top to bottom forming a face which is in a plane substantially at right angles to the miter, a groove formed in each sill at opposite sides of the miter, a metal yoke which is secured to said sills on each side of the miter and is provided with ribs which engage said grooves.

10. A carriage-body having two panels which meet in a joint at the corner thereof, two sills which are secured at their outer sides to the inner sides of said panels and meet in a miter-joint in the corner, the corner formed by said sills being cut away from top to bottom forming a face which is in a plane substantially at right angles to the plane of the miter, a groove formed in each sill at opposite sides of the miter and parallel thereto, a metal yoke which is secured to said sills on each side of the miter and is provided with ribs which engage said grooves.

656,007. SCAFFOLD-HANGER. JOHN F. BARRON, Rumford Falls, Me. Filed Jan. 4, 1900. Serial No. 354. (No model.)



Claim.—1. A scaffold-hanger, comprising a bottom, consisting of adjustable sections and sides hinged to the bottom and pivotally connected with each other at their ends, one of the sides being arranged to be lengthened or shortened, substantially as shown and described.

2. A scaffold-hanger having a bottom with sections adjustable one upon the other, to allow of lengthening or shortening the bottom, the ends of the bottom being turned up to form clamping-lugs for engagement with the longitudinal scaffold-beams, substantially as shown and described.

3. A scaffold-hanger having a bottom formed of sections connected with each other by a turnbuckle, the ends of the sections being turned up to form clamping-lugs for engagement with the longitudinal scaffold-beams, substantially as shown and described.

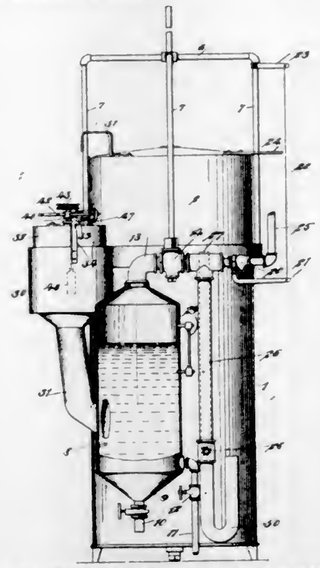
4. A scaffold-hanger having a bottom formed of sections connected with each other by a turnbuckle, the ends of the sections being turned up to form clamping-lugs for engagement with the longitudinal scaffold-beams, said sections also having drops near their inner ends for bringing the turnbuckle below the bottom of the scaffold, substantially as shown and described.

5. A scaffold-hanger, comprising a bottom made in sections to permit of lengthening or shortening the bottom, the latter having upturned ends for clamping the longitudinal beams of the scaffold, sides pivotally connected with the upturned ends of the bottom, one of the sides being made in sections connected with each other by a turnbuckle, and eyes independently engaged by the upper ends of said sides, substantially as shown and described.

6. A scaffold-hanger, comprising a bottom portion and side portions, and an eye-plate having eyes for receiving the ends of the side portions and having an eye to receive a hook, and also having a recess between the first-named eyes, for the purpose described.

656,008. ACETYLENE-GAS GENERATOR. THOMAS E. E. BARTLETT, Atlanta, Ga. Filed Nov. 18, 1899. Serial No. 737,451. (No model.)

Claim.—1. In a gas-machine, a gasometer, a generator, a cylinder having a pipe connection with the generator, a carbid-holder extended into the cylinder, a series of chambers in the upper portion of the holder a downwardly-swinging bottom for each chamber, a rotary rod for engaging with said bottoms, arms extended radially from the outer portion of the rod, a locking-lever having an upwardly-extended portion for engaging with the arms and an arm carried by the gasometer-bell for moving the lever out of locking position and also serving as a stop for the rotary rod, substantially as specified.



2. In a gas-machine, a gasometer, a generator arranged at one side thereof and having a pipe leading into the gasometer, a double-walled cylinder having a pipe connection with the generator, a carbid-holder having a portion extended between the walls of the cylinder, a series of chambers in the upper portion of the holder, a downwardly-swinging bottom for each chamber, a rod extended vertically through the upper portion of the holder and having a horizontally-disposed segmental coil at its inner end for engaging with the swinging bottoms, arms extended from the upper or outer portion of said rod, a weighted locking-lever adapted to engage with each of said arms, means for rotating the rod when an arm is released, and an arm carried by the gasometer-bell for releasing said lever from an arm, and also serving as a stop for the rotating rod, substantially as specified.

656,009. IMPLEMENT FOR EXTRACTING CARTRIDGE-SHELLS. PETER BERGERSEN, Cheyenne, Wyo. Filed Nov. 23, 1899. Serial No 738,050. (No model.)

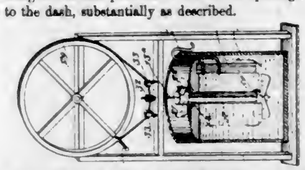


Claim.—1. An implement for extracting cartridge-shells, consisting of an expansible tubular body, and an expanding-rod extending entirely through said body and having a tapered head at one end and a flange at the other, whereby when power is applied to said flange to withdraw the device the head will engage with and expand the tubular body, as set forth.

2. An implement for extracting cartridge-shells, the said implement consisting of a tube constructed of spring metal and provided with a slot extending from its forward end to a point near its rear end, together with an outer annular flange at its forward end, and an expander located within the said body, consisting of a rod having end movement in the body and provided at its rear end with a flange corresponding in dimensions to the head of a cartridge-shell, the said head being provided at its forward and opposite end with an expanding-head having a tapering connection with the body of the rod, as described.

656,010. CHURN. CHARLES W. BOWLING, Fulton, Mo. Filed Feb. 16, 1900. Serial No 5,445. (No model.)

Claim.—1. A tubular churn-dash, made in two longitudinal sections and having air-inlet openings at a point near its upper end, the lower end being closed and the lower portion having openings in opposite sides, blades located above the said lower openings flanges secured to the blades and extending to the side portions of the lower openings, and a spindle clamped to the dash, substantially as described.

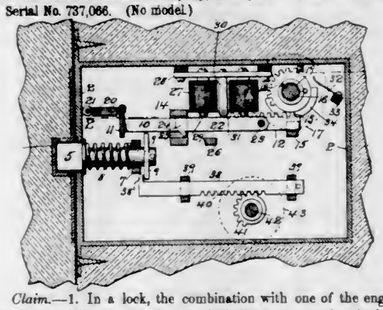


2. A churn-dash consisting of a tubular body constructed in two longitudinal sections, means for securing the said sections together, each of the sections having an air-inlet near its upper end, the bottom portion of the sections being closed and having downwardly-extending flanges formed thereon, each section being also provided with an opening adjacent to the bottom, a blade above each opening, and flanges secured to the under faces of the blades and extending to the side portions of the bottom openings, as and for the purpose specified.

3. A churn-dash consisting of a tubular body constructed in two longitudinal sections, a semicircular block secured in the upper portion of each section and each provided with a longitudinal groove adapted to register when the sections are brought together, each section of the dash having an air-inlet in the upper portion below the block, the said sections each having a bottom, and provided with an opening adjacent to the bottom and a blade above each opening, a shaft or spindle held in the grooves in the blocks, and means for securing the sections of the dash together and clamping the spindle or shaft to the dash, substantially as described.

4. A tubular churn-dash made in two longitudinal sections and having air-inlet openings at a point near its upper end, the lower end being closed and the lower portion having openings in opposite sides, and blades located above the said openings, the upper ends of the sections of the dash being adapted to receive and clamp a spindle when the sections are brought together, and means for securing the sections together, substantially as described.

656,011. LOCK. HENRY G. CARLETON, New York, N. Y., assignor to the Carleton Electric Company, same place. Filed Nov. 15, 1899. Serial No. 737,066. (No model.)



Claim.—1. In a lock, the combination with one of the engaging parts, of a withdrawing mechanism including an actuating device and suitable mechanical connections between said device and the part, a normally-inoperative controller for the withdrawing mechanism, and suitable electrical devices for causing the controller to remain inoperative, substantially as described.

2. In a lock, the combination with one of the engaging parts, of a withdrawing mechanism including an actuating device and mechanical connections between said device and the engaging part, said connections being constructed to permit a limited movement of the withdrawing mechanism without moving the engaging part, a controller for the withdrawing mechanism, and suitable electrical devices for actuating the controller, substantially as described.

3. In a lock, the combination with one of the engaging parts, of a withdrawing mechanism including an actuating device and suitable movable mechanical connections between said device and the engaging part, a controller mounted on said connections, and a suitably-located magnet for actuating the controller, substantially as described.

4. In a lock, the combination with one of the engaging parts, of a withdrawing mechanism including an actuating device, of suitable mechanical connections between said device and the engaging part, a normally-inoperative controller mounted on said connections, and a suitably-located magnet for causing the controller to remain inoperative, substantially as described.

5. In a lock, the combination with one of the engaging parts, of a movable member for operating said part, a controller, a connection between the controller and the member whereby it moves with the member, and means whereby the controller is actuated so as to make the movement of the member effective to move the engaging part, substantially as described.

6. In a lock, the combination with one of the engaging parts, of a movable member for operating said part, a controller, a connection between the controller and the member whereby it moves with the member, and electrically-operated means whereby the controller is actuated so as to make the movement of the member effective to move the engaging part, substantially as described.

7. In a lock, the combination with one of the engaging parts, of a movable member for operating the part, a moving controller by which the movement of the movable member is made effective to operate the engaging part, and a suitably-located magnet across the field of which the controller moves and by which it is actuated, substantially as described.

8. In a lock, the combination with one of the engaging parts, of a withdrawing mechanism including an actuating device, and a movable member adapted to engage said part, a normally-inoperative controller, and electrically-operated means for causing the controller to remain inoperative, substantially as described.

9. In a lock, the combination with one of the engaging parts, of a slide by which said part is operated, means for moving the slide, a normally-inoperative controller for the slide, and electrically-operated means for causing the controller to remain inoperative, substantially as described.

10. In a lock, the combination with one of the engaging parts, of a movable member, means for actuating the member, a controller for the member mounted thereon, and a suitably-located magnet for determining the position of the controller, substantially as described.

11. In a lock, the combination with one of the engaging parts, said part having a projection, of a movable operating member therefor also provided with a projection, means for actuating the member, a normally inoperative pivoted controller carried by the member, a stop with which the controller engages, the parts being constructed to permit the member to have a limited movement before the controller comes into operation, and means for causing the controller to remain inoperative, substantially as described.

12. In a lock, the combination with one of the engaging parts, said part having a projection, of an operating member therefor also provided with a projection, means for actuating the member, a pivoted controller carried by the member, a stop with which the controller engages, the parts being constructed to permit the member to have a limited movement before the controller comes into operation, and means for rendering the controller inoperative, substantially as described.

13. In a lock, the combination with one of the engaging parts, said part having a projection, of a movable operating member therefor also provided with a projection, means for actuating the member, a pivoted controller carried by the member, a stop with which the controller engages, the parts being constructed to permit the member to have a limited movement before the controller comes into operation, and electrically-operated means for rendering the controller inoperative, substantially as described.

14. In a lock, the combination with one of the engaging parts, said part having a projection, of an operating-slide therefor also provided with a projection, means for actuating the slide, a pivoted controller carried by the slide, a stop with which the controller engages, the parts being constructed to permit the slide to have a limited movement before the controller comes into operation, and electrically-operated means for rendering the controller inoperative, substantially as described.

15. In a lock, the combination with one of the engaging parts, of a movable member, a controller, a connection between the controller and the member whereby it moves with the member, means for operating the controller so as to make the movement of the movable member effective to open the lock, and means for actuating the member, substantially as described.

16. In a lock, the combination with one of the engaging parts, of a movable member for operating said part, a controller, a connection between the controller and the member whereby it moves with the member, means for operating the controller so as to permit the movable member to open the lock, and means for actuating the member, substantially as described.

17. In a lock, the combination with one of the engaging parts, of a slide independent of said part, a controller moving with the slide, means for actuating the controller, and means for actuating the slide, substantially as described.

18. In a lock, the combination with one of the engaging parts, of a slide, means whereby the slide is caused to move the said engaging part to open the lock, a controller moving with the slide, means for rendering the controller inoperative when the lock is to be opened, and means for actuating the slide, substantially as described.

19. In a lock the combination with one of the engaging parts of a hand-actuated device, moving means between the hand-actuated device and the engaging part whereby said part may be operated, a controller, a connection between said controller and the means whereby the controller moves with the means and suitable electrical devices for operating the controller, substantially as described.

20. In a lock, the combination with one of the engaging parts, of a slide independent of said part, a hand-actuated device for operating the slide, a controller moving with the slide, and a magnet located along the path of movement of the controller and operating to determine the position of the controller, substantially as described.

21. In a lock, the combination with one of the engaging parts, of a member for operating said engaging part, means for actuating said member, a controller moving with the member, a magnet located alongside the path of movement of the controller, the controller forming the armature for the magnet, and means for preventing the controller from touching the poles of the magnet, substantially as described.

22. In a lock, the combination with a movable member, of means for actuating the member, a controller moving with the member, and a magnet for determining the position of the controller and thus making the movement of the member effective to open the lock, substantially as described.

23. In a lock the combination with a movable member of means for actuating the member, a controller, a connection between the controller and the member whereby the controller moves with the member, a suitably-located magnet for which the controller forms the armature and across the field of which it moves, and means whereby the movable member is caused to open the lock, substantially as described.

24. In a lock, the combination with a slide of means for actuating the slide, a controller, a connection between the controller and the slide whereby the controller moves with the slide, a magnet for which the controller forms the armature and across the field of which it moves, and means whereby the slide is caused to open the lock, substantially as described.

25. In a lock, the combination with a movable member, of a pivoted controller therefor moving with the member, means for holding the controller in a normally-operative position, a magnet, and means for energizing it, said magnet being located so as to act upon the controller and retain it in its normally-inoperative position when the magnet is energized, and means engaged by the controller when the magnet is deënergized, whereby the controller determines the movement of the member, substantially as described.

26. In a lock, the combination with one of the engaging parts, said part being provided with a projection, of a slide, means controlled by the slide for engaging the projection, guides for the slide, a controller moving with the slide, said controller being normally held in inoperative position, a magnet and means for energizing it, said magnet being arranged to operate upon the controller, and a stop located in the path of the controller and engaged thereby when the magnet is deënergized, and means for moving the slide and controller, substantially as described.

27. In a lock, the combination with a bolt having a projection, of a slide having a projection which engages the projection on the bolt, a controller pivoted on the slide, a magnet located in the path of the controller, and operating when energized to hold the controller in an inoperative position, a stop engaged by the controller when the magnet is deënergized, a rack for operating the controller, and a hand-operated segment for operating the rack, substantially as described.

28. In a lock, the combination with a bolt having a projection, of a slide having a projection which engages the projection on the bolt, a controller pivoted on the slide, a magnet located in the path of the controller and operating when energized to hold the controller in an inoperative position, the controller forming the armature for the magnet, means for preventing the controller from touching the poles of the magnet, a stop engaged by the controller when the magnet is deënergized, a rack for operating the controller, and a hand-operated segment for operating the rack, substantially as described.

29. In a lock, the combination with one of the engaging parts, said part having a projection, of a slide having an operating projection, guides for the slide, a controller moving with the slide, means whereby the controller is normally held in inoperative position, a magnet for which the controller forms the armature, said magnet operating to retain the controller in its inoperative position when energized, a stop engaged by the controller when the magnet is deënergized, and means for actuating the slide, substantially as described.

30. In a lock, the combination with a bolt having a projection, of a slide having means for engaging with said projection, guides for the slide, a pivoted controller mounted on the slide and normally held in inoperative position by one of the guides, a magnet of which the controller forms the armature, said magnet operating when energized to retain the controller in its inoperative position, means for preventing the controller from touching the poles of the magnet, a stop engaged by the controller when the magnet is deënergized, a rack for moving the slide, and a hand-operated segment for engaging the rack, substantially as described.

31. In a lock, the combination with one of the engaging parts, said part having a projection, of a slide having means for engaging said projection, said means being normally out of engagement with the projection, whereby the slide is permitted to have a limited movement without operating the engaging part, a controller moving with the slide, a magnet for which the controller forms the armature, the magnet operating when energized to retain the controller in inoperative position, and its stop engaged by the controller when the magnet is deënergized, said stop being located so as to permit a limited movement of the slide before the controller engages its stop, substantially as described.

32. In a lock, the combination with one of the engaging parts, of an operating-slide therefor, a controller moving with the slide, said controller having a cam-face, a stop engaged by the controller, means for holding the controller in a normally-inoperative position, said means and stop being located so as to permit a limited movement of the slide and controller, a magnet for retaining the controller in an inoperative position when energized, and a cam-face on the controller, said cam-face being arranged to engage the holding means for raising the controller as the slide resumes its normal position, substantially as described.

33. In a lock, the combination with a slide and the means for moving it, of a controller moving with the slide, said controller having a cam-face, means with which said cam-face engages for operating the controller, and a stop with which the controller engages, substantially as described.

34. In a lock, the combination with one of the engaging parts, of an actuating device, connections between the actuating device and the engaging part, a magnet for controlling the connections, a suitable circuit therefor, and two sets of circuit-controlling devices, one set of said circuit-controlling devices being operated by the actuating device, substantially as described.

35. In a lock, the combination with one of the engaging parts, of an actuating device, mechanical connections between the actuating device and the engaging part, a magnet for controlling the connections, a suitable circuit therefor, and two sets of circuit-controlling devices, one set of said circuit-controlling devices being operated by the actuating device, substantially as described.

36. In a lock, the combination with a movable engaging part, of means whereby it is moved to open the lock, a magnet, devices operated thereby to control the operation of said moving means, a suitable circuit for the magnet, and two sets of circuit-closing devices, one set of said devices being operated by the means which move the engaging part, substantially as described.

37. In a lock, the combination with one of the engaging parts, of means for moving it, a controlling-magnet located in the lock-casing, a suitable circuit for the magnet, and two sets of circuit-controlling devices, one set of said devices being located within the lock-casing and operated by the moving means, substantially as described.

38. In a lock, the combination with one of the engaging parts, of an actuating device therefor, connections between said device and the engaging part, a controlling-magnet, a suitable circuit for the magnet, and two sets of circuit-controlling devices, one set of said circuit-controlling devices being operated by the actuating device, the arrangement being such that the actuating device operates said set of circuit-controlling devices before it operates the connections, substantially as described.

39. In a lock, the combination with one of the engaging parts, of an actuating device therefor, mechanical connections between said device and the engaging part, a controlling-magnet, a suitable circuit for the magnet, and two sets of circuit-controlling devices, one set of said circuit-controlling devices being operated by the actuating device, the arrangement being such that the actuating device operates said set of circuit-controlling devices before it operates the connections, substantially as described.

40. In a lock, the combination with one of the engaging parts, of operating connections therefor, a controlling-magnet, a suitable circuit for the magnet, two sets of circuit-controlling devices, and a rotating actuating device normally out of engagement with the operating connections, said device also actuating one set of the circuit-controlling devices, said device being arranged to first operate said set of circuit-controlling devices and then the connections, substantially as described.

41. In a lock, the combination with one of the engaging parts, of suitable connections for operating the same, said connections including a rack, a controlling-magnet, a suitable circuit therefor, two sets of circuit-controlling devices therefor, a rotating actuating device having a toothed segment for engaging the rack, said segment being normally out of engagement with the rack, and means whereby the rotating actuating device is caused to operate one set of circuit-controlling devices before its segment comes into engagement with the rack, substantially as described.

42. In a lock, the combination with one of the engaging parts, of a slide for operating it, a controller for the slide, a magnet for determining the position of the controller, a suitable circuit for the magnet, two sets of circuit-controlling devices, a rack for operating the slide, an actuating device including a rotating toothed segment for operating the rack, said segment and rack being normally disengaged, and means whereby the actuating device operates one set of the circuit-controlling devices before the segment engages the rack, substantially as described.

43. In a lock, the combination with one of the engaging parts, of two actuating devices therefor, connections between one of the actuating devices and said engaging part, connections between the other actuating device and said engaging part, a controller mounted on the last-named connections, and means for operating the controller to cause said connections to open the lock, substantially as described.

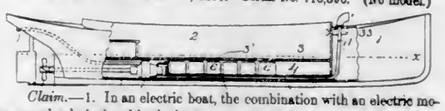
44. In a lock, the combination with one of the engaging parts, of two actuating devices, a slide between one of the actuating devices and the engaging part, a slide between the other actuating device and said engaging part, a controller mounted on one of said slides, and means for operating the controller to make the movement of the slide effective to operate the engaging part, substantially as described.

45. In a lock, the combination with one of the engaging parts, of two actuating devices, a slide between one of the actuating devices and the engaging part, a slide between the other actuating device and said engaging part, a controller mounted on one of said slides, and a magnet for operating the controller to make the movement of said slide effective to operate the engaging part, substantially as described.

46. In a lock, the combination with one of the engaging parts, of two actuating devices, a slide between one of the actuating devices and the engaging part, a slide between the other actuating device and said engaging part, a controller mounted on one of said slides and governing its movement, and a magnet for actuating the controller, substantially as described.

47. In a lock, the combination with a sliding bolt having an operating projection, of two slides provided with means for engaging said projection, an independent actuating device for each of the slides, said actuating devices lying on different sides of the bolt, a controller for one of the slides, the said controller moving with the slide, a magnet located in the path of the controller and operating to determine the position of the controller, a suitable circuit for the magnet, and two sets of circuit-controlling devices for the magnet, one of said sets of circuit-controlling devices being arranged to be operated by one of the actuating devices, substantially as described.

656,012. ELECTRIC LAUNCH. JACOB C. CHAMBERLAIN, New York, N. Y. Filed Mar. 27, 1899. Serial No. 710,596. (No model.)



Claim.—1. In an electric boat, the combination with an electric motor completely inclosed in the boat structure, and located beneath the floor thereof of ventilating-pipes communicating with different portions of the motor-casing and extending forwardly and rearwardly therefrom to points outside of the boat structure.

2. In an electric boat, the combination with an electric motor completely inclosed in the boat structure, and located beneath the floor thereof of flexible insulating ventilating-pipes communicating with different portions of the motor-casing and extending forwardly and rearwardly therefrom to points outside of the boat structure.

3. In an electric boat, the combination with a propelling-motor, its storage battery and a changing connection, of a double-throw switch, multiple connections from said battery respectively through said motor and said changing connections, to different terminals of said double-throw switch and a common return from said double-throw switch to the battery, such connection including a detachable plug.

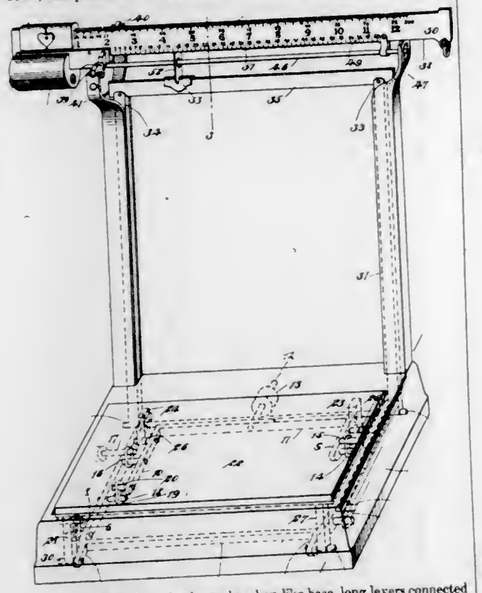
656,013. WEIGHT AND PRICE SCALE. CLARK CORBIN, Carbon Cliff, Ill. Filed Dec. 11, 1899. Serial No. 739,949. (No model.)

Claim.—1. In a weight and price scale, a platform, levers on which the platform is mounted, rigidly connected in pairs, a frame comprising uprights and a top cross-bar, the uprights being supported at their lower ends by one pair of the platform-supporting levers, a scale-beam above the cross-bar of said frame, and an indicator, movable on the cross-bar of the frame and loosely connected with the scale-beam, and adapted at its end to be engaged by the lower edge of the scale-beam, substantially as described.

2. A weight and price scale, comprising a base provided with standards, a platform, levers on which the platform is supported, a frame supported on one set of the levers and having a top cross-bar, a scale-beam fulcrumed on one of the standards, an indicator loosely connected with the scale-beam, movable on the cross-bar of the said frame, and adapted at its end to be engaged by the lower edge of the scale-beam, and poises movable on the scale-beam, substantially as described.

3. A weight and price scale, comprising a base provided with standards, levers mounted on the base, a platform supported on the levers, a

frame having a top cross-bar and supported at its lower end on one set of the platform-supporting levers, a scale-beam having a notched lower edge and fulcrumed on one of the standards of the base, said scale-beam having graduations representing cents and ounces, graduations representing pounds, and graduations representing prices, an indicator loosely connected with the scale-beam, movable on the cross-bar of the said frame, and adapted at its end to be engaged by the notched lower edge of the scale-beam, and poises on the scale-beam, substantially as described.



4. In a weight and price scale, a box-like base, long levers connected by cross-bars at each end and fulcrumed near their rear ends in links supported in the base, short levers of unequal length connected by a cross-bar at their forward ends and fulcrumed in links supported in the base, a link connection between the longer of said short levers and one of the first-named long levers, a platform supported at its rear end on the long levers and at its forward end on the short levers, a frame mounted on the forward ends of the long levers, a price-indicator mounted on said frame, and a scale-beam so connected with the said frame by the indicator as to limit the lateral movement of the frame, said beam being adapted to be moved by said price-indicator, substantially as specified.

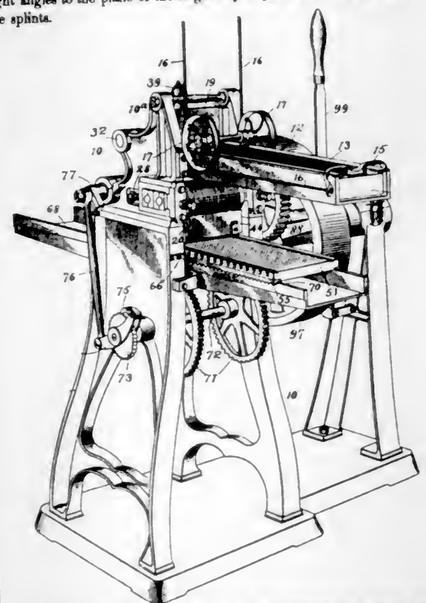
5. In a weight and price scale, the combination with a platform, levers for supporting the same, and a frame supported by the platform-supporting levers, of standards, a scale-beam fulcrumed on one of the standards, a rod or bar parallel with the lower edge of the scale-beam, and an indicator slidably mounted on the cross-bar of the said frame, and provided with an opening through which the said rod loosely passes, the free end of the indicator being adapted to be engaged by the scale-beam, substantially as described.

6. In a weight and price scale, the combination with a base provided with standards, a platform, levers for supporting the platform, and a frame supported by the platform-supporting levers, of a scale-beam fulcrumed on one of the standards, a rod or bar secured to the scale-beam and extending beneath the same, the outer end of the said rod projecting into an opening in one of the standards, a saddle slidably mounted on the cross-bar of the said frame, and an indicator secured to the saddle and provided with an opening through which the said rod loosely passes, the free end of the indicator being adapted to be engaged by the scale-beam, substantially as described.

656,014. MACHINE FOR MAKING MATCHES. JAMES A. E. CRISWELL, New York, N. Y. Filed June 1, 1900. Serial No. 18,695. (No model.)

Claim.—1. A match-making machine, comprising splint-cutting means, a separator provided with a single way, pass or opening in the plane of the material and diverging into independent rows of independent channels having fixed or stationary walls, each channel forming a continuation of said single way or pass, and holding means for the splints.

2. In a match-making machine, the combination with splint-cutting means, of a separator provided with a single way, pass or opening in the plane of the card and diverging into independent rows of independent channels having fixed or stationary walls, each channel forming a continuation of said single way or pass and the plane of its divergence being at right angles to the plane of the single way or pass, and holding means for the splints.



3. In a match-making machine, the combination with a splint-cutting device provided with a series of knives or cutters spaced apart, of a separator provided with fingers entering between the knives and forming a single way or pass in the plane of the material and diverging independent rows of channels having fixed or stationary walls, each channel forming a continuation of said single way or pass, and holding means for the splints.

4. In a match-making machine, the combination with a splint-cutting device provided with a series of knives or cutters spaced apart, of a separator provided with fingers entering between the knives and forming a single way or pass in the plane of the card and diverging independent rows of independent channels having fixed or stationary walls, each channel forming a continuation of said single way or pass and the plane of its divergence being at right angles to the plane of the single way or pass, and holding means for the splints.

5. A match-making machine, comprising splint-cutting means having knives or cutters spaced apart equal to the width of the splints and cutting the latter, in a close row, a separator receiving the splints endwise and separating them into a series of more than two independent rows, and holding means for the splints.

6. In a match-making machine, the combination with a splint-cutting device having a series of knives spaced apart and cutting the splints in a close row, of a stationary separator having a series of more than two independent rows of independent channels receiving the splints endwise direct from the cutting device, and holding means for the splints.

7. A match-making machine, comprising splint-cutting means, a separator having a single way, pass or opening in the plane of the material and diverging into more than two independent rows of independent channels, each channel forming a continuation of said single way or pass, and holding means for the splints.

8. In a match-making machine, the combination with splint-cutting means of a separator having a single way, pass or opening in the plane of the card and diverging into more than two independent rows of independent channels, each channel forming a continuation of said single way or pass and the plane of its divergence being at right angles to the plane of the single way or pass, and holding means for the splints.

9. In a match-making machine, the combination with a splint-cutting device provided with a series of knives or cutters spaced apart and cutting the splints in a close row, of a separator having fingers entering between the knives and forming a single way, opening or pass in the plane of the material and more than two independent rows of diverging channels, each channel forming a continuation of said single way or pass, and holding means for the splints.

10. In a match-making machine, the combination with a splint-cutting device provided with a series of knives or cutters spaced apart equal to the width of the splints, of a separator having fingers entering between the knives and forming a single way, pass or opening in the plane of the card and more than two independent rows of independent diverging channels, each channel forming a continuation of said single way or pass and the plane of its divergence being at right angles to the plane of the single pass, and holding means for the splints.

11. In a match-making machine, the combination with a cutting device and means for feeding veneer cards endwise to the cutting device, of a separator located adjacent to and receiving complete splints in a common plane, direct from the cutting device and provided with independent rows of diverging channels having fixed or stationary walls separating the splints into parallel rows, and holding means for the splints.

12. In a match-making machine, the combination with a cutting device and means for feeding the material endwise to the cutting device, of a separator located adjacent to and receiving complete splints in a common plane direct from the cutting device and having more than two independent rows of diverging channels separating the splints into parallel rows, and holding means for the splints.

13. In a match-making machine, the combination with a cutting device having knives or cutters spaced apart, of a separator located beneath and immediately adjacent to and receiving complete splints in a common plane direct from the cutting device and provided with independent rows of diverging channels having fixed or stationary walls separating the splints into parallel rows, each channel forming a continuation of one of the spaces between the cutters, and holding means for the splints.

14. In a match-making machine, the combination with a cutting device having knives or cutters spaced apart equal to the width of the splints and cutting the latter in a close row and means for feeding veneer cards to the cutting device, of a separator located beneath and immediately adjacent to and receiving complete splints in a common plane direct from the cutting device and provided with independent rows of diverging channels having fixed or stationary walls separating the splints into parallel rows, each channel forming a continuation of one of the spaces between the cutters, and holding means for thesplints.

15. In a match-making machine, the combination with a cutting device having knives spaced apart, of a stationary separator located immediately adjacent to the cutting device and having a series of more than two independent rows of diverging channels, each channel forming a continuation of one of the spaces between the knives or cutters and receiving complete splints endwise from said cutters, and holding means for the splints.

16. In a machine for making matches, the combination with a cutting device having a series of cutters or knives spaced apart and cutting the splints in a close row, and means for feeding veneer cards endwise to said cutting device, of a separator located immediately adjacent to the cutting device and having a series of more than two independent rows of independent channels, each channel forming a continuation of one of the spaces between the knives and receiving complete splints endwise from the cutters, and holding means for the splints.

17. In a match-making machine, the combination with means for supplying splints, of a separator provided with independent rows of independent channels having fixed or stationary walls receiving the splints in a close row and in a common plane and separating them into independent parallel rows, and holding means for the splints.

18. In a match-making machine, the combination with means for supplying splints, of a separator receiving the splints in a common plane and separating them into a series of more than two independent parallel rows, and holding means for the splints.

19. In a match-making machine, the combination with splint-cutting means cutting the material in a substantially-closed row, of a separator receiving the splints endwise in a common plane and separating them into a series of more than two independent parallel rows, and holding means for the splints.

20. In a match-making machine, a separator provided with a single way, pass or opening in the plane of the material and diverging into independent rows of channels having fixed or stationary walls, each channel forming a continuation of said single way or pass.

21. In a match-making machine, a separator having a single way, pass or opening in the plane of the material and diverging into more than two independent rows of independent channels, each channel forming a continuation of said single way or pass.

22. In a match-making machine, a separator provided with a single way, pass or opening in the plane of the card, and diverging into independent rows of independent channels having fixed or stationary walls each channel forming a continuation of said single way or pass, and the plane of its divergence being at right angles to the plane of the single way or pass.

23. A match-making machine, comprising splint-cutting means, a cutting device having knives or cutters spaced apart, a separator provided with fingers entering between and extending to the opposite sides of the cutters so as to form a single way, pass or opening in the plane of the material, and diverging independent rows of channels having fixed or stationary walls, each channel forming a continuation of said single way or pass, and holding means for the splints.

24. In a match-makiog machine, the combination with a cutting device having knives spaced apart, of a stationary separator located immediately adjacent to the cutting device and having fingers entering between and extending to the opposite side of the cutters and forming a single way, pass or opening in the plane of the card, and diverging independent rows of channels, each channel forming a continuation of said single way or pass and the plane of its divergence being at right angles to the plane of the single way or pass, and holding means for the splints.

25. In a match-making machine, the combination with a splint-cutting device having a series of cutters or knives spaced apart, of a stationary separator located immediately adjacent to the cutting device and comprising a series of plates having fingers entering between the knives and independent rows of diverging channels, each channel forming a continuation of one of the spaces between the knives and into which the splints are guided endwise from the cutting device, and holding means for the splints.

26. In a match-making machine, the combination with splint-cutting means, of a stationary separator comprising a series of plates forming a single way, pass or opening in the plane of the material and independent rows of independent channels, each channel forming a continuation of said single way or pass, and the plane of its divergence being at right angles to the plane of the single way or pass, and holding means for the splints.

27. In a match-making machine, the combination with a cutting device having knives or cutters spaced apart, of a stationary separator located immediately adjacent to the cutting device, and having a series of short independent rows of independent diverging channels, each channel forming a continuation of one of the spaces between the cutters, and holding means for the splints.

28. In a match-making machine, the combination with a cutting device having knives or cutters spaced apart and cutting the splints in a close row, of a stationary separator located immediately adjacent to the cutting device and having more than two independent rows of short diverging channels, each channel forming a continuation of one of the spaces between the cutters, and holding means for the splints.

29. In a match-making machine, the combination with splint-cutting means, of a separator having a single way, pass or opening in the plane of the material and diverging into independent rows of independent short channels through which splints are forced, each channel having fixed or stationary walls forming a continuation of the single way or pass, and the plane of its divergence being at right angles to the plane of the pass or way, and holding means for the splints.

30. In a machine for making matches, the combination with a splint-cutting device having knives spaced apart and cutting the splints in a close row, of a stationary separator located beneath and immediately adjacent to the cutting device and comprising a series of plates forming between them a single pass, way or opening in the plane of the card and more than two independent rows of independent short diverging channels through which complete splints are forced by those following, each channel forming a continuation of the single way or pass, and the plane of its divergence being at right angles to the single way or pass, and holding means for the splints.

31. In a match-making machine, the combination with a splint-cutting device, of a separator dividing the splints into a series of more than two independent rows, and holding means for the splints.

32. In a match-making machine, the combination with splint-cutting means, of a separator receiving the splints endwise direct from the cutting means and dividing them into a series of more than two independent rows, and holding means for the splints.

33. A match-making machine, comprising splint-cutting means, a separator provided with a single way, pass or opening in the plane of the material and diverging into four independent rows of independent channels having fixed or stationary walls, each channel forming a continuation of said single way or pass, and holding means for the splints, substantially as and for the purpose set forth

34. In a match-making machine, the combination with a splint-cutting device having a series of knives spaced apart, of a stationary separator provided with a series of four independent rows of independent channels having fixed or stationary walls and receiving the splints endwise from the cutting device, and holding means for the splints, substantially as and for the purpose set forth.

35. In a match-making machine, the combination with a splint-cutting device, of a separator dividing the splints into a series of more than two independent rows, holding means for the splints, and means located in the path of movement of the splints and adapted to engage their ends for driving them into the carrier and alining the same.

36. In a match-making machine, the combination with splint-cutting

means, of a separator dividing the splints into a series of independent rows, a carrier for the splints, means for holding cards or blanks on one side of the cutting means, together with a plunger and yielding connections therefor for forcing the cards to the cutting means and to assist in alining the splints.

37. In a match-making machine, the combination with splint-cutting means, of a separator dividing the splints into a series of more than two independent rows, a carrier for the splints, means for holding cards or blanks on one side of the cutting means, together with a plunger and yielding connections therefor for forcing the cards to the cutting means and to assist in alining the splints.

38. In a match-making machine, the combination with splint-cutting means, of a separator dividing the splints into a series of independent rows, a carrier for the splints, means for holding cards or blanks on one side of the cutting means, together with a plunger which changes the speed while the cards are being cut into splints and which assists in finally alining the splints, substantially as and for the purpose described.

39. In a match-making machine, the combination with splint-cutting means, of a separator dividing the splints into a series of more than two independent rows, a carrier for the splints, means for holding cards or blanks on one side of the cutting means, together with a plunger having a variable speed during the stroke that forces the cards to the cutting means, substantially as and for the purpose described.

40. In a match-making machine, the combination with a splint-cutting device having knives spaced apart, means for holding cards or blanks on one side of the cutting means, a separator for the splints, a carrier, and a plunger device having its end cut or slotted to pass some distance by the knives, substantially as and for the purpose described.

41. In a machine for making matches, the combination with means for supplying splints, of a separator having more than two independent rows of channels and comprising two separable sections permitting ready access to said channels, and holding means for the splints.

42. In a machine for making matches, the combination with means for supplying splints, of a separator having a single way or pass and independent rows of channels forming a continuation of the single way or pass, thin strips of metal forming a side partition or wall for the channels at the point where they join the single pass, and holding means for the splints.

43. The combination with means for supplying splints, of a holding device or carrier having independent rows of openings receiving the splints endwise and spaced apart, and devices movable in the carrier and having teeth which penetrate the surface of the splints and hold them against the walls of the openings of the carrier.

44. The combination with splint-cutting means, of a carrier or holding device having a series of independent rows of openings receiving the splints endwise, and slides movable transversely of the splints and provided with teeth which penetrate the surface of the splints.

45. The combination with a splint-cutting device, of a carrier or holding device having a series of independent rows of openings receiving the splints endwise, and a slide for each two rows of splints, said slide having outwardly-projecting portions on opposite sides thereof having teeth which engage each splint to hold it in the carrier.

46. A carrier or holding device for match-splints, having a series of rows of openings therein adapted to receive splints endwise, and devices having teeth to penetrate the surface of the splints to hold them in the carrier.

47. In a match-making machine, a carrier or holding device having a series of rows of openings therein adapted to receive splints endwise, and slides movable transversely of the splints and provided with teeth which penetrate the surface of the splints.

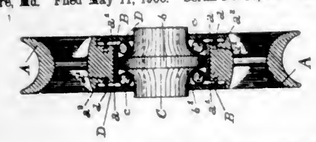
48. A carrier or holding device for match-splints having a series of rows of openings therein adapted to receive splints endwise, and a slide for each two rows of openings having outwardly-projecting teeth on opposite sides thereof which engage each splint to hold it in the carrier.

49. A carrier or holding device for match-splints having a series of rows of openings therein adapted to receive splints endwise, and a slide for every two rows of openings having a series of outwardly-projecting portions on opposite sides thereof, said portions being each provided with a tooth having two points which penetrate the surface of each splint to hold it in the carrier.

656,015. PROCESS OF DYEING. FERNAND DOMMER, Paris, France. Filed Feb. 5, 1900. Serial No. 4,111. (No specimens.)

Claim.—The process of dyeing on fabrics herein described, the same consisting in first impregnating a fabric of silk, cotton, ramie, jute, linen or parchment paper with a mordant having a base of iron by submerging said fabric in a bath of soluble nitro ferri cyanid, adding to the bath while the fabric is submerged therein an organic acid, and exposing the fabric when dried to the action of light-rays; then washing the fabric to remove the sensitive coating, passing the fabric into a bath of dye adapted to adhere to the iron mordant, reviving or h ightening the fabric, and then drying, substantially as set forth.

656,016. BALL-BEARING SHEAVE. JOHN T. DONOHUE, Baltimore, Md. Filed May 11, 1900. Serial No. 16,253. (No model.)



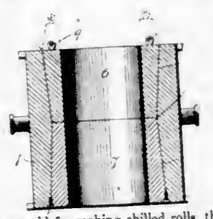
Claim.—A sheave comprising a body or rim portion formed with a central bore, a recess, *a'*, at each side of and concentric with said bore and having circumferentially screw-threaded walls; a bushing, B, in said bore; a hub loosely fitted in said bushing and formed with ball-races; two flat rings, D, of less thickness than the depth of said recesses and having their peripheries screw-threaded and engaged with said screw-threaded walls, whereby when the outer faces of said rings are flush with the sides of the sheave-body, spaces are provided between their inner faces and the inner walls of the said recesses; and antifriction-balls interposed between said bushing and hub.

656,017. JOURNAL-BEARING. GEORGE FULTON, Roodhouse, Ill. Filed June 14, 1900. Serial No. 20,340. (No model.)



Claim.—In a journal-bearing, a bearing-section having a curved face to receive the journal, a central transverse dovetailed recess opening through said curved face, and grooves also opening through the curved face upon opposite sides of and parallel with said recess, in combination with friction-rollers journaled in the grooves and adapted to be slipped into or out of the same by an endwise movement, and a dovetailed stick of Babbitt or like metal removably mounted in the recess and having a curved face which is in the arc of a circle that touches the outermost points of the rollers, substantially as set forth.

656,018. MOLD FOR MAKING CHILLED ROLLS. FRANK GORMAN, Mount Oliver, Pa. Filed June 16, 1900. Serial No. 20,592. (No model.)

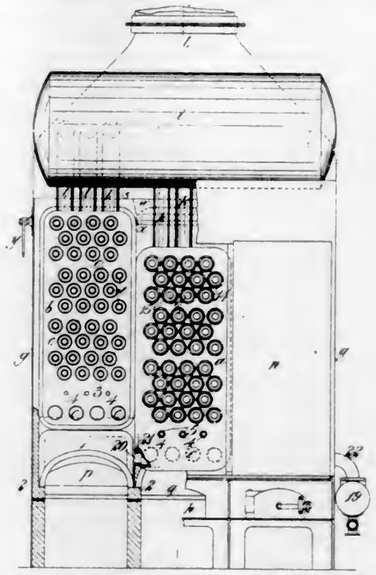


Claim.—In a mold for making chilled rolls, the combination of an inclosing casing tapering interiorly from each end and forming reversely-flaring mold-chambers, and frusto-conical mold-sections arranged in apposition and removably mounted in said chambers, substantially as set forth.

656,019. WATER-TUBE BOILER. JOSEPH HALLETT and GEORGE HALLIDAY, London, England. Filed Oct. 2, 1899. Serial No. 732,364. (No model.)

Claim.—1. In a steam-boiler, the combination of a steam-generating element comprising two headers, water-tubes connecting the inner walls of said headers, and flue-tubes connecting the outer walls of said headers, a steam-drum connected to said headers, a casing wherein said header is located, a combustion-chamber, an uptake, smoke-boxes located at the front and rear of said element, one of said smoke-boxes being in communication at the bottom with said combustion-chamber and the other being in communication at the top with said uptake, a plate or cover arranged above said element and formed with a gas-exit opening leading to said uptake, and a damper adapted to control said gas-exit opening, substantially as described for the purpose specified.

2. A steam-boiler having one or more steam-generating elements of the kind herein described, a steam-drum connected to said elements, a casing surrounding said element or elements and provided with a plate or cover arranged above said element or each element and formed with a gas-exit opening, a damper for controlling said opening, an uptake located above said opening, smoke-boxes at the front and rear of said element, a combustion-chamber in communication at its rear end with one of said smoke-boxes, a gas-exit passage in communication with the top of the other smoke-box and with said uptake, and a damper for controlling said communication, substantially as described.



3. A steam-boiler having a steam-generating element of the kind herein described, a steam-drum connected to said elements, a fire-grate and combustion-chamber below said element, an uptake above said element, a casing surrounding said element and provided with a gas-exit opening at the top communicating with said uptake, a damper for controlling said opening, smoke-boxes at the front and rear of said element the front smoke-box communicating at the top with said uptake and the rear smoke-box communicating at the bottom with the rear end of said combustion-chamber, and a hood located in the passage between the combustion-chamber and rear smoke-box and extending over the rear end of said fire-grate, substantially as described for the purpose specified.

4. A steam-boiler comprising steam-generating elements of the kind herein referred to, a steam-drum connected to said elements, a casing surrounding said elements and forming therewith front and rear smoke-boxes, a plate or cover with gas-exit openings above each element, a damper for controlling each of said openings, a combustion-chamber and fire-grate below each element, an uptake and gas-exit passage located above said elements and in communication with the top of each front smoke-box, a damper controlling said gas-exit passage, passages whereby the rear smoke-boxes communicate with the rear ends of said combustion-chambers, hoods located within said passages and extending over the rear ends of said fire-grates, a steam-drum located above said elements, and uptake and downtake pipes connecting said steam-drum to the headers of the elements, substantially as described.

5. In a steam-boiler a steam-generating element having two headers each provided with a single removable outer wall, inclined water-tubes connecting the inner walls of said headers, and flue-tubes extending through said water-tubes and removably connected to the outer walls of said headers, a roof or cover extending over the space between said headers and formed with a gas-exit opening, a chimney with which said space can communicate through said opening, a combustion-chamber below said element, a steam-drum located above and connected to said headers, smoke-boxes arranged at the front and rear of said element and provided with doors, one of said smoke-boxes being closed at the top and in free communication with said combustion-chamber and the other being closed at the bottom and having a gas-exit opening at the top, and dampers for controlling the said gas-exit openings, substantially as described.

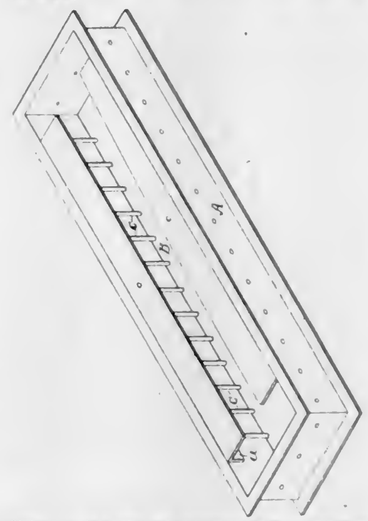
6. In a steam-boiler, the combination of steam-generating elements of the kind herein referred to, arranged with their water and flue tubes in an inclined position, a steam-drum located above and connected to said elements, a mud-receptacle below said elements, tubular connections between the lower parts of adjacent lower headers, and a tubular connection between the outer side wall of one of the end headers and said mud-drum, substantially as described.

7. A steam-boiler comprising steam-generating elements of the kind herein referred to, a casing surrounding said elements and forming therewith front and rear smoke-boxes *n* and *m* of which the former are closed at the bottom and open at the top and the latter are open at the bottom and closed at the top, a cover *u* with gas-exit opening thereinabove each element, a chimney or uptake *t*, arranged above said elements, a steam-drum *i* above said elements, uptake-tubes *l* connecting the upper headers of the said elements to said steam-drum, downtake-tubes *h* connecting the lower part of said steam-drum to the lower headers of said elements, a fire-grate *p* and combustion-chamber *q* below each element, a passage *p* between the rear end of each combustion-chamber and the lower end of said rear smoke-box *m*, a hood *l* of refractory material located in said passage and extending over the rear end of said fire-grate, and dampers *w* and *f* for controlling the exit of gases from between the headers of each element and the front smoke-box, substantially as described.

656,020. GAS-ENGINE. CAMILLE HAUTIER, Paris, France. Filed Nov 9, 1899. Serial No. 736,307. (No model.)

Claim.—In an explosive-gas engine, the combination with the main explosion-chamber; and the auxiliary explosion-chamber formed with the valve-seats 5 and 6; of the valve-stem having a threaded engagement with the neck of said auxiliary explosion-chamber; the valves 9 and 10, the former at the inner, and the latter at the outer, end of said threaded valve-stem; and the crank-arm 12 for operating said valve-stem from the outside of said auxiliary explosive-chamber, substantially as described.

656,021. MEANS FOR RETAINING SAND IN MOLDS. JAMES R. JONES, Johnstown, Pa. Filed July 18, 1899. Serial No. 724,293. (No model.)



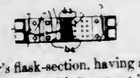
Claim.—1. In a mold, the combination with a vertically-separable flask-section, and a sand mold therein, of a sand-retaining device rigidly but removably secured within the said section, said device comprising an

outer flange-like frame fitting the interior wall of said section, a horizontal flange or plate portion carried by said frame and extending underneath the outer portion of the sand, and pins or projections extending vertically from said plate and plate portion.

2. The herein-described means for retaining sand in place in molders' flasks, consisting of a sand-support secured in the flask and having plate portions lying horizontally therein, together with pins or projections extending vertically from said plate portions into the interior of the flask.

3. The combination with a flask-section, of sand-supporting plates secured to the interior walls of the flask and lying horizontally therein, and vertically-extending sand-retaining devices rising from said plates into the interior of the mold.

656,022. **MOLDER'S FLASK.** JAMES R. JONES, Johnstown, Pa. Filed Dec. 28, 1899. Serial No. 741,809. (No model.)



Claim.—1. A molder's flask-section, having a longitudinally-extending division-piece therein provided with flanges at its base, and supports for gaggers carried by the said flanges.

2. A molder's flask-section having a longitudinally-extending division-piece therein; and upwardly-extending supports for carrying gaggers rising from the base of said piece at the sides thereof.

3. A molder's flask-section having a longitudinally-extending division-piece therein, formed with lateral flanges at its base, and upwardly-extending pins or projections on said flanges adapted to carry gaggers, substantially as described.

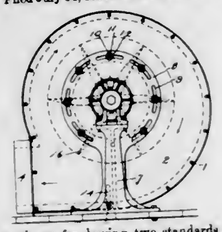
4. A molder's flask-section having a longitudinally-extending division-piece therein provided with upwardly-extending pins or projections at its sides, and a series of projections secured to the inner walls of the sides of said section, substantially as described.

5. A molder's flask-section, having a longitudinally-extending division-piece therein provided with lateral base-flanges, and with laterally-arranged pins or projections rising from said base-flanges, said section also having a series of projections secured to each of its side walls, substantially as described.

6. A molder's flask, having secured to its side walls a gagger plate or carrier formed with a series of upward projections or fingers substantially as described.

7. A molder's flask having a longitudinally-extending division-plate formed with lateral sand-supporting flanges, a series of gagger-supports carried by each of said flanges, and plates secured to the inner longitudinal walls of the flask, and having each a series of gagger-supports at their upper edges, substantially as described.

656,023. **EXHAUSTER AND BLOWER.** CHARLES H. KEENEY, Hartford, Conn. Filed July 31, 1899. Serial No. 725,578. (No model.)

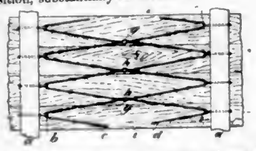


Claim.—1. An exhaust-fan having two standards with an annular series of slots around the head of each standard, a shell with an inlet-opening through one side and an outlet-opening through the edge, adjustable between the standards, bolts extending horizontally through the slots into the sides of the shell and adjustably securing the standards and the shell, bearings held by the standards, a shaft supported by the bearings and a fan mounted upon the shaft within the shell, substantially as specified.

2. An exhaust-fan having a standard with a disk-like head, a standard with an annular head, a circular series of slots around each standard, a shell with an inlet-opening through one side and an outlet-opening through the edge, adjustable between the standards, bolts extending horizontally through the slots into the sides of the shell and adjustably securing the standards and the shell, bearings held by the standards, a shaft supported by the bearings, and a fan mounted upon the shaft within the shell, substantially as specified.

656,024. **CONSTRUCTION OF CEILINGS AND WALLS FOR BUILDINGS OR OTHER STRUCTURES.** FRANZ KENNITZ, Berlin, Germany. Filed Dec. 6, 1899. Serial No. 739,375. (No model.)

Claim.—1. In the construction of walls and ceilings of buildings, long ropes each extending in a continuous line to and fro between suitable supports, the said ropes crossing each other, the ropes being tightened and the ends of the ropes being fastened, the ropes being twisted together at the point of crossing, and a fastening device for maintaining the ropes in the twisted position, substantially as described.



2. In walls or ceilings, beams or girders, clamps on the beams or girders, metal ropes extending to and fro between the beams or girders and secured at their bends to the said clamps, the ropes being tightened and fastened at their ends, and a filling material, substantially as described.

3. In walls or ceilings, a network consisting of metal ropes each extending in a continuous line to and fro, fixed clamps or the like for engaging the ropes at the bends, the said ropes being tightened and fastened at their ends, substantially as described.

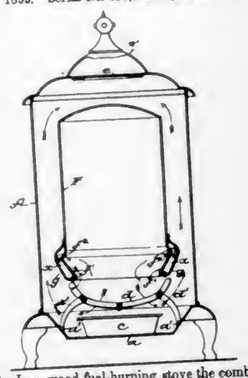
4. In walls or ceilings, the combination of beams or girders, clamps on the beams, the clamps having bends at different heights, a network and strands crossing the network, the network being secured to the clamps at one series of bends and the strands to the other series of bends, and a filling material.

5. In walls or ceilings, beams or girders, strands extending across between the beams and secured thereto, the strands being crossed and twisted, a boarding, and a fastening device engaging the twisted strands and the boarding.

6. In walls or ceilings, beams or girders, metal ropes each extending in a continuous line to and fro between the beams or girders and crossing each other, and nail-like devices for twisting the ropes at the point of crossing to exert tension thereon, the said devices being fastened in position to secure the ropes under tension, substantially as described.

7. In walls or ceilings, beams or girders, strands or ropes each extending in a continuous line to and fro between the beams or girders, the strands crossing each other and secured at their bends alternately to opposite beams or girders, and a filling material, substantially as described.

656,025. **WOOD-FUEL STOVE.** JOHN A. KENDALL, Cameron, Mo. Filed Aug. 8, 1899. Serial No. 726,502. (No model.)



Claim.—1. In a wood-fuel-burning stove the combination of a casing having a draft-inlet and an outlet for the products of combustion, a fuel-chamber air-tight in its upper portion and having a contracted open lower end and an offset above said contraction in which are a plurality of air-outlets, a horizontal air-chamber extending along the base portion of the fuel-chamber communicating with the draft-inlet and with the air-outlets whereby the draft is delivered above the lower end of the fuel-chamber, and a fire-grate arranged in proximity with said fuel-chamber.

2. In a wood-fuel-burning stove, the combination of a casing having a draft-inlet, with a downward-extending tube, or passage, and an outlet for the products of combustion, a fuel-chamber, air-tight in its major upper portion, having an open bottom, and a horizontal air-chamber extending along its base, and having air-outlets communicating with said fuel-chamber, above its bottom, said air-chamber communicating with said downward-extending tube or passage, and a fire-grate, substantially as set forth.

3. In a wood-fuel-burning stove, the combination with a casing having a draft-inlet and an outlet for the products of combustion, a fuel-chamber air-tight at its top and provided with an open lower end, draft-openings in the base of the fuel-chamber above its lower end, a passage leading from the draft-inlet to the draft-openings, and direct-draft openings in the walls of the passage.

4. In a wood-fuel-burning stove, the combination of a casing having a draft-inlet and an outlet for the products of combustion, a fuel-chamber, air-tight in its major upper portion, having an open bottom, and a horizontal air-chamber extending along its base, said fuel-chamber being contracted at its bottom end and having an offset above said contraction, within said air-chamber, provided with air-outlets communicating with said fuel-chamber, and said air-chamber communicating with said draft-inlet, and a fire-grate arranged in proximity with the bottom or open end of said fuel-chamber, substantially as described.

5. In a wood-fuel-burning stove, the combination of a casing having a draft-inlet and an outlet for the products of combustion, a fuel-chamber, air-tight at its top, provided with an open-bottom end, and a horizontal air-chamber extending along its base portion, and provided with draft-openings, a passage leading from the air-chamber to said draft-inlet of the casing, and direct-draft openings in the wall of said passage, substantially as set forth.

6. In a wood-fuel-burning stove, the combination of a casing having a draft-inlet and an outlet for the products of combustion, a fuel-chamber, air-tight in its top portion, provided with an open-bottom end, draft-openings in the base of the fuel-chamber above its lower or bottom end, a passage leading from the draft-inlet to the draft-openings, a valve or adjustable damper arranged in the draft-inlet to control the draft, and direct draft openings in the wall of said passage, substantially as set forth.

656,026. **HORSESHOE-PAD.** JACOB KRONENBERG, New York, N. Y. Filed Apr. 5, 1900. Serial No. 11,664. (No model.)



Claim.—1. A horseshoe-pad having a raised rear or heel portion and provided in the lower face of the said raised portion with suction-cups, as and for the purpose set forth.

2. A horseshoe-pad having a body formed with a recess in its under side, the opposing walls of the recess being curved inward toward each other to form gripping edges, substantially as shown and described.

3. A horseshoe-pad having a raised rear or frog portion and provided with suction-cups in the said raised portion, a recess, and a marginal flange to receive the shoe, said flange terminating in shoulders against which the ends of the shoe abut, substantially as described.

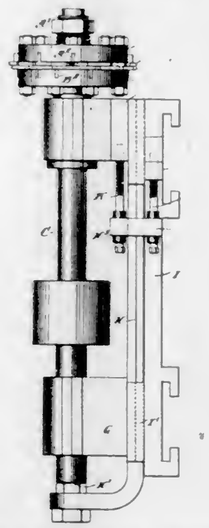
4. A horseshoe-pad, comprising a body of elastic material, and a back plate secured to the body, the said body having a raised rear or frog portion and provided with suction-cups in the said raised portion, a recess having inwardly-curved walls, and a marginal flange to receive a shoe, said flange terminating at the raised frog or rear portion in shoulders against which the ends of the shoe abut, substantially as described.

656,027. **MATCHING-MACHINE.** JOHN M. KUEBLER, Wausau, Wis. Filed Mar. 12, 1900. Serial No. 8,331. (No model.)

Claim.—1. In a machine of the class described, the combination with a sliding shaft, of a cutter-head formed of two sections, one section being secured to the shaft to move therewith and the other mounted to slide on the shaft but to turn therewith, cutters secured in the opposing faces of the sections and having their cutting edges projecting beyond the peripheral surfaces of the said sections, the cutters of one section being arranged alternately with the cutters of the other section so that when the sections are in a closed position the cutting edges of the cutters will overlap, means for moving the shaft endwise, and means for adjusting the sliding section on the shaft to move it closer to or farther from the section secured to the shaft, substantially as described.

2. In a machine of the class described, the combination with an adjustable yoke, and a spindle mounted in the yoke and movable therewith, of a cutter-head comprising two sections, each provided with cutters, one section being secured to the shaft and the other mounted on the shaft to rotate therewith but free to slide thereon, and a bearing adjustable in the yoke and carrying the sliding cutter-head section, substantially as described.

3. In a machine of the class described, the combination with a yoke, and a spindle mounted in the yoke, of a cutter-head, comprising two sections, each provided with cutters, one of the sections being secured to the spindle, a sleeve mounted to turn with the spindle but free to slide thereon, and to which the other cutter-head section is secured, a bearing mounted to slide in the yoke, and means for adjusting said bearing, substantially as described.



4. A machine of the class described, comprising a stock, a yoke mounted to slide on the stock, a screw mounted in the yoke and engaging the stock, a spindle mounted in a bearing on the yoke and having one end set in a step carried by the yoke, a cutter-head formed of two sections, each provided with cutters, the cutters of one section being arranged alternately with the cutters of the other section, one of the cutters being secured to the spindle, a sleeve mounted to turn with the spindle but free to slide thereon, and to which the other cutter-head section is secured, a bearing mounted to slide in the yoke and in which the said sleeve is mounted, and a screw mounted in the yoke and engaging the said bearing, substantially as described.

5. A machine of the class described, having a cutter-head made in sections each with a set of cutters, a revoluble spindle carrying one section, a sleeve for carrying the other section and mounted to slide on and to turn with the said spindle, and means for independently adjusting the said sleeve and the said spindle in the direction of their axes, substantially as shown and described.

6. A machine of the class described, having a cutter-head made in sections each with a set of cutters, a revoluble spindle carrying one section, a sleeve for carrying the other section and mounted to slide on and to turn with the said spindle, and a bearing carrying the said sleeve and adjustable in the direction of the axis of the sleeve, substantially as shown and described.

7. A machine of the class described, comprising a vertically-adjustable yoke carrying a bearing and a step, a revoluble spindle journaled in the said bearing and resting on the said step, a sleeve bearing vertically adjustable on the said yoke, a sleeve carried by the said bearing and mounted to slide on and to turn with the said spindle, and a cutter-head made in sections, one of which is secured to the spindle and the other to the said sleeve, each of said sections having a body and cutters set and fastened in grooves in the body, the cutters of one body being arranged alternately with the cutters in the other body, substantially as shown and described.

656,028. **BALE-TIE.** LESTER R. LANTZ, Wyalusing, Pa. Filed Dec. 26, 1899. Serial No. 741,691. (No model.)

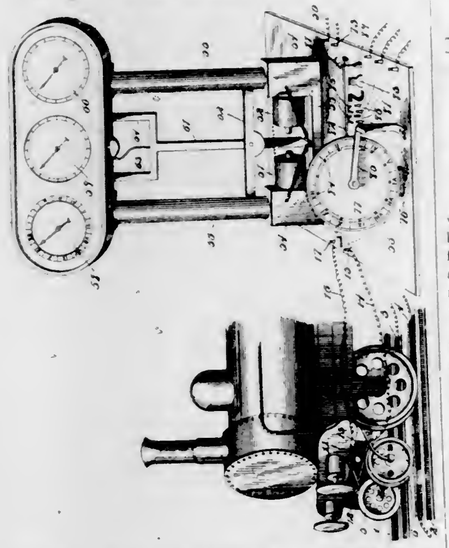


Claim.—1. A bale-tie composed of a connecting-band and a coupling member consisting of a flat pliable-metal plate, said plate bent into two folds between which the ends of the band are clamped, and having its central part and the band bent into a common arch or corrugation and the portions extending from said arch or corrugation to the ends of the

plate made flat and straight, said plate compressed against said band for its whole length, substantially as described.

2. A bale-tie composed of a connecting-band and a coupling member consisting of a flat pliable-metal plate bent into two folds between which the ends of the band are clamped, a locking-lip folded from one fold upon the other so as to overlap the latter and close the opening between the folds in contact with the band, a single arch or corrugation bent in both the band and plate at the center of the latter, the portions of said plate extending from said arch or corrugation to the ends of the plate made flat and straight, said plate compressed against said band for its whole length, substantially as described.

656,029. ELECTRIC AUTOMATIC CONTROLLER AND INDICATOR FOR RAILWAYS. VITO LETO, Newark, N. J. Filed Sept. 14, 1899. Serial No. 730,474. (No model.)



Claim.—1. In a controller, indicating and signaling apparatus for railway-trains, the combination with an instrument carried by the train provided with distance-indicating dials, and a dial for telegraphic messages; of a station instrument having dials corresponding to those on the train instrument; a telegraph-transmitter comprising a rotary wheel having numbers thereon corresponding to those on the telegraphic indicating-dial, a pointer or lever for rotating said transmitter-wheel, and electrical devices operated by the transmitter-wheel for moving the pointer of the telegraphic-dial indicator.

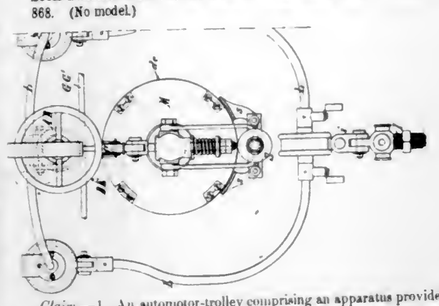
2. In a controlling and indicating apparatus for railways; the combination with an instrument carried on a train, and a station instrument, of conductor-rails between the track-rails; current-collectors supported in front of the locomotive and in circuit with both instruments; a telegraphic transmitter-wheel on each instrument provided with teeth; a pointer or lever provided with means for engaging the transmitter-wheel; a circuit-closing lever adapted to be depressed by the teeth of the transmitter; and circuit-closing contacts below said circuit-closing lever.

3. In a controlling and indicating apparatus for railways, the combination with an instrument carried by the train, and a station instrument, of a normally-closed electric circuit connecting the two instruments; pendulum-armatures, electromagnets of opposite polarity for operating said armatures; ratchet-wheels and indicating-pointers; a toothed telegraphic transmitter-wheel for each instrument; a circuit-closing lever operated by the transmitter-wheel; and signal-bells operated by the movement of the pendulum-armature.

4. In a controlling and indicating apparatus, the combination with indicating-dials, pendulum-armatures carrying wheel-actuating pawls, and electromagnets, of a circuit-breaking device comprising a mechanically-operated wheel provided with equidistant teeth; a lever adapted to be struck by the teeth of the wheel; contact-pins projecting from opposite sides of the lever, and pivotally-supported arms carrying contact-plates coacting with said contact-pins.

5. In a controlling and indicating apparatus, the combination with a plurality of indicating instruments, each provided with ratchet-wheels and means for actuating said wheels, of a telegraphic transmitter-wheel provided with teeth and bearing numbers corresponding to numbers upon an indicating-dial upon the indicator, and provided with a hole opposite each number; a pointer or lever pivotally secured at one end to the center of the transmitter-wheel; a stop-post for the free end of the pointer or lever; a circuit-closing lever adapted to be depressed by the teeth of the transmitter-wheel, and circuit-closers below said circuit-closing lever.

656,030. TROLLEY FOR ELECTRICALLY-DRIVEN VEHICLES. LOUIS LOMBARD-GERIN, Lyons, France. Filed Jan. 9, 1900. Serial No. 868. (No model.)

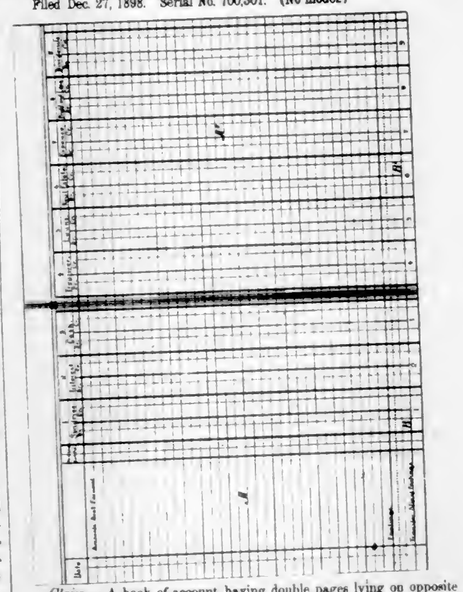


Claim.—1. An automotor-trolley comprising an apparatus provided with a shaft having contact-rollers adapted to travel on conductors insulated one from another, the said apparatus having a motor possessing a fixed inductor and a movable armature, the periphery of which directly actuates friction-rollers on the shaft of the said contact-rollers, in combination with a flexible cable which conveys the current to the motor of the vehicle, substantially as hereinbefore described.

2. In an automotor-trolley the combination of a motor, a shaft driven thereby and carrying contact-rollers adapted to travel on insulated conductors, with a third contact-roller traveling on a third conducting-wire, the said third roller being carried by spring-rods R subject to the action of a spring T, substantially as described.

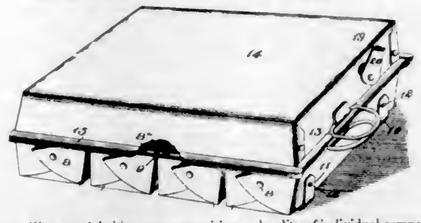
3. In an automotor-trolley, a motor having a fixed inductor and a movable armature, in combination with an electromagnetic brake adapted to act on and arrest the said movable armature, substantially as described.

656,031. BOOK OF ACCOUNT. ESROM MAYER, Freeport, Ill. Filed Dec. 27, 1898. Serial No. 700,301. (No model.)



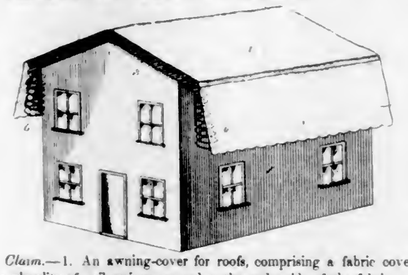
Claim.—A book of account having double pages lying on opposite sides of a vertical folding-line and ruled in columns parallel to said folding-line, for sets of accounts, each leaf being provided with a detachable footing-strip across its lower end and each such footing-strip being adapted to receive, on its two faces, the respective footings of the columns of the two single pages of a double page, and to be detached and used in carrying forward the footings, substantially as described.

656,032. BAKING PAN. JACOB F. MEREDITH, Newark, Ohio. Filed Dec. 9, 1899. Serial No. 739,840. (No model.)



Claim.—A baking-pan, comprising a plurality of individual compartments, and formed from a single sheet of metal, which is folded at a plurality of points to form downwardly-divergent pairs of side sections, between which are interspaces that are open at their opposite ends, bottom sections between respective side sections and separated by the respective interspaces, end sections folded upwardly at opposite ends of the bottom sections and between the adjacent side sections, wings bent inwardly at the ends of the side sections and connected to the end sections, the upper edges of the end sections and the outer longitudinal sides of the opposite outer compartments being formed into beads, a strengthening and stiffening wire inclosed within the beads, and extending entirely around the pan, and opposite metal strips extending transversely across the bottoms of the several compartments, to form braces and feet therefor.

656,033. AWNING. ISABELLA MILLER, Union Ridge, W. Va. Filed Jan. 13, 1900. Serial No. 1,340. (No model.)



Claim.—1. An awning-cover for roofs, comprising a fabric cover and a plurality of coil-springs secured to the under side of the fabric.

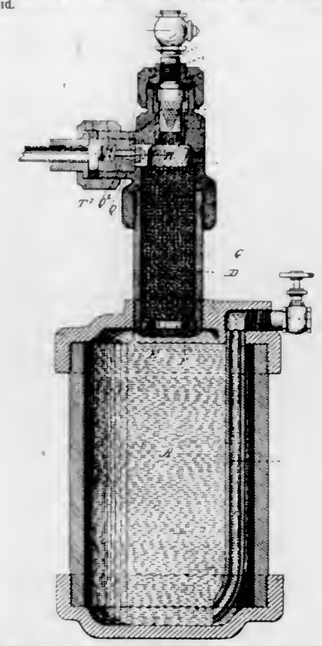
2. An awning-cover for roofs, comprising a fabric adapted to be spread over the roof; a plurality of coil-springs secured to the under side of the fabric; a flap depending from the edge of the fabric; and coil-springs secured to the inner side of said flap.

3. An awning-cover for roofs, comprising a fabric adapted to be spread upon the roof; coil-springs secured to the under side of the fabric to support the latter above the surface of the roof; a flap depending from the edge of the fabric; vertically-disposed conical coil-springs secured to the inner side of the flap, and means for raising and lowering said flap.

656,034. METHOD OF CHARGING LIQUIDS WITH GAS. EDWARD E. MURPHY, Somerville, Mass., assignor to the New Era Carbonator Company, Charlestown, W. Va. Original application filed Feb. 10, 1899, Serial No. 705,154. Divided and this application filed Nov. 27, 1899. Serial No. 738,341. (No model.)

Claim.—1. The method of charging liquids with gas, which consists, first, in supplying liquid under pressure, second, in supplying gas under less pressure than that on the liquid, third, in bringing the gas and liquid into the presence of each other in the mixing-chamber upon a reduction of the pressure in said mixing-chamber below the initial gas-pressure by the withdrawal therefrom of carbonated liquid whereby the gas is caused by its initial pressure to enter said mixing-chamber independently of the inflowing liquid, fourth, in retarding the flow of the liquid into said mixing-chamber to allow the gas to fill the mixing-chamber before it is filled with the liquid, and fifth, in filling said mixing-chamber with liquid and normally maintaining the initial liquid-pressure in said chamber.

2. The method of charging liquids with gas, which consists, first, in supplying liquid under pressure, second, in supplying gas under less pressure than that on the liquid, third, in bringing the gas and liquid into the presence of each other in the mixing-chamber upon a reduction of the pressure in said mixing-chamber below the initial gas-pressure by the withdrawal therefrom of carbonated liquid whereby the gas is caused by its initial pressure to enter said mixing-chamber independently of the inflowing liquid, fourth, in retarding the flow of the liquid into said mixing-chamber to allow the gas to fill the mixing-chamber before it is filled with the liquid, fifth, in filling said mixing-chamber with liquid and normally maintaining the initial liquid-pressure in said chamber, and lastly, in subdividing and combining the gas and liquid in said chamber by the pressure on the liquid.



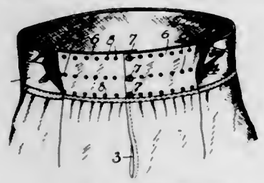
3. The method of charging liquids with gas, which consists, first, in supplying liquid under pressure, second, in supplying gas under less pressure than that on the liquid, third, in bringing the gas and liquid into the presence of each other in the mixing-chamber upon a reduction of the pressure in said mixing-chamber below the initial gas-pressure by the withdrawal therefrom of carbonated liquid whereby the gas is caused by its initial pressure to enter said mixing-chamber independently of the inflowing liquid, fourth, in filling the mixing-chamber with gas before it is filled with the liquid, and fifth, in subsequently filling said chamber with liquid and normally maintaining the initial liquid-pressure in said chamber.

4. The method of charging liquids with gas, which consists, first, in supplying liquid under pressure, second, in supplying gas under less pressure than that on the liquid, third, in bringing the gas and liquid into the presence of each other in the mixing-chamber upon a reduction of the pressure in said mixing-chamber below the initial gas-pressure by the withdrawal therefrom of carbonated liquid whereby the gas is caused by its initial pressure to enter said mixing-chamber independently of the inflowing liquid, fourth, in filling the mixing-chamber with gas before it is filled with the liquid, fifth, in subsequently filling said chamber with liquid and normally maintaining the initial liquid-pressure in said chamber, and lastly, in subdividing and combining the gas and liquid in said chamber by the pressure on the liquid.

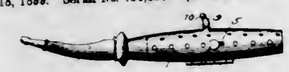
656,035. SKIRT. SUSAN MCGEE, Jackson, Mich. Filed Mar. 23, 1899. Serial No. 710,187. (No model.)

Claim.—A skirt provided with a waistband or yoke extending partially around the waist-line and secured to the upper edge of the skirt material, a portion of the upper edge of said skirt material being unprovided with a waistband or yoke, a pair of placket-tabs of the width of said waistband or yoke secured to the upper edge of the skirt on the opposite sides of the placket at the back, and each provided with a series of vertical rows of fasteners and complemental means for detachably closing the placket,

and a vertical series of fasteners on the rear ends of the waistband or yoke complemental to the rows of fasteners on the placket-tabs, substantially as described.



656,036. CIGAR-HOLDER. JOHN W. NEW, Philadelphia, Pa. Filed Sept. 18, 1899. Serial No. 730,828. (No model.)

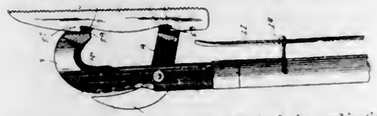


Claim.—1. A cigar-holder comprising a mouthpiece, and a body portion, the latter consisting of perforated sections hinged together, in combination with means arranged within the perforated sections for closing the perforations, to shut off the draft to the cigar.

2. A cigar-holder comprising a mouthpiece; a perforated holder-section projecting from the mouthpiece, and semicircular in cross-section, a second semicircular perforated holder-section hinged to the other section; and perforated slides fitting one within each of said sections, and provided with means for adjustment to open and close the perforations of the sections.

3. The combination with a mouthpiece, and a semicircular perforated shell or section, projecting therefrom, of a second semicircular perforated shell-section hinged to the other section; a fastening for detachably securing the two sections together; and slides or dampers within the sections comprising perforated plates bent to conform to the shape of the sections, and pins for operating the slides, projecting through elongated slots in the sections.

656,037. PRUNING IMPLEMENT. CHARLES C. NEWELL, Salem, Mo. Filed Apr. 24, 1900. Serial No. 14,155. (No model.)



Claim.—1. In a device of the class described, the combination of the stationary and movable cutting members, a saw-blade detachably engaged by the said members, and operating mechanism connected with the movable cutting member and adapted to hold the saw-blade firmly in position, substantially as described.

2. In a device of the class described, the combination of the stationary and movable cutting members provided with recesses, a saw-blade detachably fitted in the said recesses and engaged by the said members, and operating mechanism connected with the movable member and retaining the saw-blade in place, substantially as described.

3. In a device of the class described, the combination of the stationary and movable cutting members provided with recesses or bifurcations, a saw-blade provided with opposite shoulders and fitted in the bifurcations or recesses, means carried by the cutting members for engaging the shoulders of the saw-blade, and operating mechanism connected with the movable member and holding the said stops in engagement with the said shoulders, substantially as described.

4. In a device of the class described, the combination of the shank or bar having a hook and provided at the outer end thereof with a bifurcation, a fastening device extending across the bifurcation, a cutting-lever having one end bifurcated, a connecting bar or rod having a pivot passing through the bifurcated portion of the lever, a saw-blade cut away at its back to provide converging shoulders to engage the said fastening device and the said pivot, and operating mechanism connected with the rod or bar, substantially as described.

5. In a device of the class described, the combination of two cutting members one of which is movable, a saw-blade detachably engaged by said members, and means for holding the movable member in a fixed position, substantially as described.

656,038. EYE-SHADE. HENRY E. NEWTON, Los Angeles, Cal. Filed Mar. 20, 1899. Serial No. 709,836. (No model.)

Claim.—1. An eye-shade comprising an adjustable shade-carrying band; eye-shades consisting of semi-oval sheets curved from end to end attached to such band mid-length their curvilinear edges and having their shorter and more blunt ends adjacent each other.



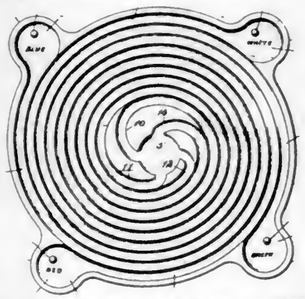
2. The blank for forming an eye-shade comprising a straight band portion and a half-oval eye-shade portion having a straight edge and a curvilinear edge; the band being attached to the eye-shade portion at a point between the ends of the curvilinear edge of the shade.

3. An eye-shade, comprising the brow-band parts *b b'* having their ends joined by a suitable pivot, means for holding said bands upon the head of the wearer, and the independent eye-shades *a a'* attached to said parts respectively, said eye-shades projecting from said bands at an obtuse angle and having curved upper edges and adapted to be bent at will, substantially as and for the purpose specified.

4. As a new article of manufacture, the stamped band and eye-shade parts, comprising the brow-band and the eye-shade joined integrally therewith by a narrow portion, the upper and lower edges of said eye-shade part being curved and the ends thereof adapted to be bent to shape at will, substantially as described.

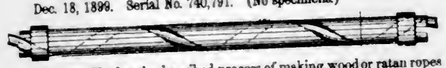
5. The eye-shade, comprising the two brow-band parts, with the eye-shade portions depending therefrom and joined thereto by narrow integral parts, substantially as described.

656,039. PUZZLE. THOMAS J. NOLAN, Albany, N. Y. Filed Sept. 6, 1899. Renewed June 13, 1900. Serial No. 20,184. (No model.)



Claim.—A puzzle comprising a box or board formed with equidistant side pockets, and a central pocket; a series of independent trackways consisting of a plurality of convolutions, each of said trackways connecting one of the side pockets with the central pocket corresponding in color to that of the pocket; a ball or marble for each side pocket; a transparent cover for the box or board and a supplemental opaque cover for the central pocket secured at the center of the transparent cover.

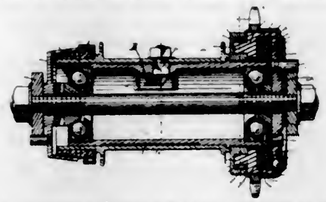
656,040. METHOD OF MAKING WOOD OR RATAN ROPES. ALBERT H. ORDWAY, South Framingham, Mass. Original application filed June 26, 1899, Serial No. 721,861. Divided and this application filed Dec. 18, 1899. Serial No. 740,791. (No specimens.)



Claim.—The herein-described process of making wood or ratan ropes which consists in first individually twisting a series of wood or ratan rods about a suitable support while in a steamed or moist state, then positively confining the same upon the support in such twisted shape until dried, and finally bringing the twisted wood or ratan rods together in intertwined relation to form the rope, substantially as described.

656,041. BACK-PEDAL BRAKE AND COASTER. JOHN N. PARKS, Rochester, N. Y. Filed Dec. 8, 1899. Serial No. 739,634. (No model.)

Claim.—1. The combination of an inner hub, an outer hub longitudinally movable on the inner hub, means for moving the hubs longitudinally relative to each other, a friction-surface attached to the outer hub and rotative therewith, a fixed friction-surface to engage the same, means for rotating the inner hub, means for retarding the rotation of the inner hub, and means for forcing the wedges against the ring, substantially as described.



2. The combination of an inner hub having a spiral slot, an outer hub both rotatively and longitudinally movable on the inner hub and having a stud engaging the slot, a conical friction-surface on the outer hub, and a fixed cup to engage said friction-surface, and means for driving and retarding the rotation of the inner hub, substantially as described.

3. The combination of an inner hub having a spiral slot, a sprocket-wheel rotative on the said hub, a clutch connecting the wheel and the hub, a brake to retard the movement of the hub, an outer hub rotative and longitudinally movable on the inner hub, a stud on the outer hub engaging the spiral slot, a conical friction-surface on the outer hub, and a fixed cup engaging said friction-surface, substantially as described.

4. The combination of a hub, a ring fixed on the hub and having a channel in its side, segmental wedges in said channel and having recesses, a driving-ring rotative on the hub, and lugs on the driving-ring engaging the recesses in the wedges, and rolling means for operating said wedges, substantially as described.

5. The combination of a hub, a ring secured to the hub and having a channel in its side, segmental wedges freely movable in the channel, and having recesses with inclined forward sides, a driving-ring rotative on the hub, and lugs on the driving-ring to engage the recesses in the wedges and having corresponding inclined forward sides, and rolling means for operating said wedges, substantially as described.

6. The combination of a hub, a ring secured to the hub and having a channel in its side, segmental wedges and rolls freely movable in the channel, a driving-ring rotative on the hub, and having lugs engaging recesses in the wedges, and a brake operated by the driving-ring when the latter is turned backward, substantially as described.

7. The combination of a hub, a ring fixed on the hub and having a channel in its side, segmental wedges freely movable in the said channel and having recesses with inclined forward sides, rolls in the channel and engaging the wedges, a driving-ring rotative on the hub and having lugs with inclined forward sides and engaging the recesses in the wedges, and a brake operated by the driving-ring when the latter is turned backward, substantially as described.

8. The combination of a hub, a friction-flange fixed on the hub and rotating therewith, a driving-ring rotative and longitudinally movable on the hub and adjacent to one side of the friction-flange, a non-rotative and laterally-movable disk at the other side of the friction-flange, and means for forcing the disk and driving-ring against the opposite sides of the friction-flange, when the driving-ring is turned backward, substantially as described.

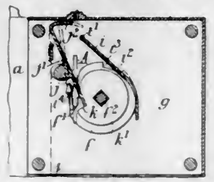
9. The combination of a hub, a friction-flange fixed on the hub and rotating therewith, a driving-ring rotative on the hub and adjacent to one side of the friction-flange, a clutch connecting the ring and hub, a non-rotating and laterally-movable disk at the other side of the friction-flange, and having inclined surfaces, balls engaging the said surfaces, and a cap engaging the balls and attached to the driving-ring, substantially as described.

10. The combination of a hub, a ring fixed on the hub and having a channel in its side, a friction-flange fixed on the hub, a driving-ring rotative on the hub, wedges in the channel of the fixed ring, and having recesses, rolls in said channel engaging the wedges, lugs on the driving-ring engaging the recesses in the wedges, a non-rotative and laterally-movable disk engaging the friction-flange and having inclined surfaces, balls engaging said surfaces, a cap engaging the balls and attached to the driving-ring, and rotative therewith, substantially as described.

11. The combination of an inner hub, a ring fixed on the hub and having a channel in its side, a friction-flange fixed on the hub, a driving-ring at one side of the friction-flange, and having lugs with inclined forward sides, and rotative on the hub, wedges in the channel of the fixed ring and having recesses with inclined forward sides, rolls in the said channels engaging the wedges, a laterally-movable disk engaging the friction-flange at the side opposite the driving-ring, and having segmental outwardly-inclined surfaces, balls engaging the same, a cap engaging the balls and secured to the driving-ring and rotative therewith, an outer hub rotatively and longitudinally movable on the inner hub, a stud fixed in the outer hub and engaging a spiral slot in the inner hub, a friction-cone on the outer hub, and a fixed cap engaging the same, substantially as described.

12. The combination of an inner hub, a driving-ring rotative on the same, a clutch connecting the driving-ring with the hub, a friction-flange rotative with the hub and adjacent to the driving-ring, a non-rotative and laterally-movable disk adjacent to the friction-flange, inclined surfaces on the disk, balls engaging said surfaces, and a cap engaging the balls and attached to the driving-ring, and rotative therewith, an outer hub spirally movable on the inner hub, a friction-surface on the outer hub and rotative therewith, and a fixed friction-surface engaging the friction-surface on the outer hub, substantially as described.

656,042. COIN-FREED GAS-METER. BERTIE PATERSON, London, England. Filed Feb. 15, 1900. Serial No. 5,348. (No model.)



Claim.—1. In a coin-freed apparatus, the combination with the rotatable coin-carrier provided with coin-engaging portions, of a pawl normally engaging said carrier and having a part adjacent to the coin-engaging portions of the carrier adapted to be engaged by the coin as it enters the carrier, to disengage said pawl from the carrier, a second pawl normally engaging said carrier and having a part in the path of the coin as it is carried around in the carrier for disengaging said second pawl from the carrier, substantially as described.

2. In a coin-freed apparatus, the combination with the rotatable coin-carrier provided with coin-engaging portions, of a pawl normally engaging said carrier and holding it against forward movement, said pawl having a part adjacent to the coin-engaging portions of the carrier adapted to be engaged by the entering coin to disengage the pawl from the carrier, a second pawl engaging elongated cut-away portions of the carrier to permit a limited forward movement of the carrier but preventing the rearward movement of the carrier, said pawl having a part in the path of the coins carried by the carrier to disengage the pawl from the carrier, substantially as described.

3. In a coin-freed apparatus, the combination with a casing provided with a coin-slot, a rotatable coin-carrier within the casing having coin-engaging portions, a pawl normally engaging the carrier to prevent its forward movement, provided with a shutter adjacent to said coin-slot, adapted to close the same when the pawl is disengaged from the carrier, said pawl having a part in the path of the entering coin for disengaging the coin from the carrier, a second pawl normally engaging the carrier and having a part in the path of a coin carried by said carrier for disengaging said second pawl when the carrier is rotated, substantially as described.

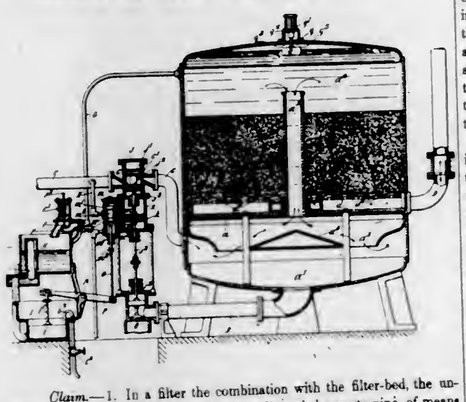
4. In a coin-freed apparatus, a coin-carrier comprising two slotted end plates mounted upon a rotatable spindle, a cam-disk keyed upon the said spindle, a gravity-pawl normally locking the cam-disk and adapted to be unlocked by the weight of the coin and a pawl normally locking the coin-carrier and adapted to be unlocked by the coin when the carrier is rotated, substantially as described.

5. In a coin-freed or prepayment gas-meter, the combination with a rotatable coin-carrier, a pawl holding said carrier from forward movement and having a part in the path of an entering coin, a second pawl engaging the carrier and having a part in the path of a coin carried thereby, a screw-shaft operatively connected with said rotatable carrier, a pinion having a threaded aperture engaging said shaft, an elongated pinion gearing with said first-mentioned pinion and operatively connected with the registering apparatus of the meter, a cut-off valve and an operating device for the cut-off valve in the path of said threaded pinion, substantially as described.

6. In a coin-freed or prepayment gas-meter, the combination with a casing provided with a coin-slot, a rotatable coin-carrier adapted to receive coins from said slot, a locking-pawl normally engaging said carrier to prevent its forward movement and having a part in the path of the entering coin to disengage the pawl from the carrier, said pawl having operatively connected therewith a shutter for closing the coin-slot when said pawl is disengaged from the carrier, a second pawl engaging said carrier and having a part in the path of a coin carried by said carrier, a screw-shaft op-

eratively connected with said carrier, a pinion having a threaded aperture engaging said screw-shaft, an elongated pinion meshing with said threaded pinion and operatively connected with the registering apparatus of the meter, a cut-off valve having an operating device provided with a part in the path of said threaded pinion when moving in one direction along its screw-shaft, a device operatively connected with said shutter and located in the path of said threaded pinion when moving in the opposite direction along its screw-shaft, substantially as described.

656,043. FILTER. WILLIAM PATERSON, London, England. Filed Oct. 20, 1899. Serial No. 734,258. (No model.)



Claim.—1. In a filter the combination with the filter-bed, the unfiltered-liquid inlet, the filtered-liquid outlet and the waste-pipe, of means operated by the increase in the difference of the pressure between the inlet side of the filter and outlet side of the filter when the filter-bed becomes foul, whereby the flow of liquid through the filter is automatically severed substantially as described, for the purpose specified.

2. In a filter, the combination with the filter-bed, the unfiltered-liquid inlet, the filtered-liquid outlet and the waste-pipe, of means operated by the increase in the difference of the pressure between the inlet side of the filter and the outlet side of the filter when the filter-bed becomes foul, whereby the flow of liquid through the filter is automatically reversed so as to cleanse the filter-bed, and the filtering operation automatically restarted after the filter-bed has been cleansed, substantially as described.

3. In a filter the combination with the filter-bed the unfiltered-liquid inlet, the filtered-liquid outlet, and the waste-pipe, of a spring-valve, means connecting the said valve with the internal filter-pressure, and means operated automatically by said valve for reversiug the flow of liquid through the filter-bed when the latter becomes foul, substantially as described for the purpose specified.

4. In a filter the combination with the filter-bed, the unfiltered-liquid inlet, the filtered-liquid outlet and the waste-pipe, of a spring-valve, means connecting the said valve with the internal filter-pressure, and means operated automatically by said valve for reversing the flow of liquid through the filter-bed when the latter becomes foul and for restarting the filtering after the filter-bed is cleansed, substantially as described.

5. In a filter the combination with the filter-bed, the unfiltered-liquid inlet, the filtered-liquid outlet and the waste-pipe, of a slide-valve controlling the unfiltered-liquid inlet, a waste-valve for controlling the waste-pipe, a rod connecting the said slide-valve and waste-valve, and means for automatically operating said valves so as to close the unfiltered-liquid inlet and open the waste-pipe when the filter-bed is foul, and to close the waste-pipe and open the unfiltered-liquid inlet after the filter is cleansed, substantially as described.

6. In a filter the combination with the filter-bed, the unfiltered-liquid inlet, the filtered-liquid outlet, the waste-pipe, and means for automatically reversing the flow of liquid through the filter-bed when the latter becomes foul, of means located in the filtered-liquid outlet to restrict the backward flow of filtered liquid when the direction of the flow through the filter is reversed for cleansing purposes, substantially as described, for the purpose specified.

7. In a filter the combination with the filter-bed, the unfiltered-liquid inlet, the filtered-liquid outlet and the waste-pipe, of a slide-valve controlling the unfiltered-liquid inlet the filtered-liquid outlet and the waste-pipe, a piston, a closed cylinder containing said piston, a rod connecting said piston with the said slide-valve, a distributing-valve for controlling a supply of fluid under pressure to the said cylinder, and means for automatically operating the distributing-valve so as to reverse the piston and slide-valve when the filter-bed is foul and to again reverse the piston and slide-valve after the filter-bed has been cleansed, substantially as described.

8. In a filter the combination with the filter-bed, the unfiltered-liquid inlet, the filtered-liquid outlet, and the waste-pipe, of a spring-valve controlling a liquid-supply pipe, means for adjusting the load on said valve, means for controlling said valve by the internal filter-pressure, and means operated automatically by said valve for reversing the flow of liquid through the filter-bed when the latter becomes foul and for restarting the filtering after the filter-bed is cleansed, substantially as described.

9. In a filter the combination with the filter-bed, the unfiltered-liquid inlet, the filtered-liquid outlet and the waste-pipe, of a valve-chamber, a valve controlling the outlet of said valve-chamber, a liquid-supply pipe connected to said valve-chamber, a closed cylinder, a piston in said cylinder, pipes respectively connecting the opposite ends of said cylinder with the inlet and outlet of the filter, a rod passing through the valve-chamber and cylinder and having the valve and piston attached thereto, an adjustable spring which tends to hold the valve closed, and means operated automatically by said valve for reversing the flow of liquid through the filter-bed when the latter is foul and for restarting the filtering after the filter-bed has been cleansed, substantially as described.

10. In a filter the combination with the filter-bed, the unfiltered-liquid inlet, the filtered-liquid outlet and the waste-pipe, of a spring-valve controlling a liquid-supply, means for adjusting the load on said valve, means for controlling the said valve by the internal filter-pressure, a chamber into which the valve discharges liquid when the filter-bed is foul, a float-chamber below the first-mentioned chamber, a siphon connecting the first-mentioned chamber with the float-chamber, a float in said float-chamber, a siphon for emptying the float-chamber, and means automatically operated by said float for reversing the flow of liquid through the filter-bed when the latter becomes foul and for restarting the filtering after the filter-bed is cleansed, substantially as described.

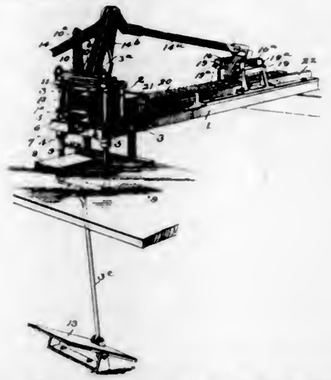
11. In a filter the combination with the filter-bed, the unfiltered-liquid inlet the filtered-liquid outlet and the waste-pipe, of a spring-valve controlling a liquid-supply pipe, means for adjusting the load on said valve, means for controlling the valve by the internal filter-pressure, a chamber into which the spring-valve discharges liquid when the filter-bed is foul, a float-chamber below the first-mentioned chamber, a siphon connecting the first-mentioned chamber with the float-chamber, an adjustable siphon for emptying said float-chamber, a float in said float-chamber, a slide-valve controlling the unfiltered-liquid inlet the filtered-liquid outlet and the waste-pipe, and means connecting said float to the slide-valve so that the latter is automatically reversed when the filter-bed becomes foul and is again reversed to restart the filtering after the filter-bed is cleansed, substantially as described.

12. In a filter the combination with the filter-bed, the unfiltered-liquid inlet the filtered-liquid outlet and the waste-pipe, of a spring-valve controlling a liquid-supply pipe, means for adjusting the load on said valve, means for controlling said valve by the internal filter-pressure, a chamber into which the spring-valve discharges liquid when the filter-bed is foul, a float-chamber below the first-mentioned chamber, a siphon connecting the first-mentioned chamber with the float-chamber, an adjustable siphon for emptying the float-chamber, a float in said float-chamber, a rod fixed to said float, a lever connected to said float-rod, a slide-valve controlling the unfiltered-liquid inlet the filtered-liquid outlet and the waste-pipe, a piston, a closed cylinder containing said piston, a rod connecting said piston with the slide-valve, a distributing-valve for controlling a supply of fluid under pressure to the said cylinder, a valve-rod on said distributing-valve, and a connecting-rod connecting said distributing-valve rod to the said lever, substantially as described for the purpose specified.

13. In a filter the combination with the filter-bed, the unfiltered-liquid inlet, the filtered-liquid outlet and the waste-pipe, of a spring-valve controlling a liquid-supply pipe, means for adjusting the load on said valve, means for controlling said valve by the internal filter-pressure, a chamber into which the spring-valve discharges liquid when the filter-bed is foul, a float-chamber below the first-mentioned chamber, a siphon connecting the first-mentioned chamber with the float-chamber, an adjustable siphon for emptying the float-chamber, a float in said float-chamber, a rod fixed to said float, a lever connected to said float-rod, a slide-valve controlling the unfiltered-liquid inlet, a closed cylinder, a piston in said cylinder, a waste-valve for controlling the waste-pipe, a rod connecting the slide-valve the piston and the waste-valve, a distributing-valve for controlling a supply of fluid under pressure to the said cylinder, a valve-rod on said distributing-valve, a connecting-rod connecting said distributing-valve rod to the said lever, and a float-valve in the filter-casing to admit air to the filter when the flow of liquid is reversed for cleansing the filter-bed, substantially as described for the purpose specified.

656,044. MACHINE FOR MOLDING AND CUTTING ICE-CREAM. GEORGE M. PINKERTON, York, Pa. Filed Mar. 22, 1900. Serial No. 9,764. (No model.)

Claim.—1. In a machine for the purpose specified, the combination with a longitudinal bed, a mold, and a slidable plunger, of the vertical parallel guide-rods, 3, 4, a transverse blade connecting the latter, a cross-head arranged on and connecting the upper ends of said guide-rods, a vertical extension of said cross-bar, automatically-operated means connecting such extension with the plunger, and a treadle for reciprocating the aforesaid guide-rods, substantially as shown and described.



2. In a machine as described, a stationary slicer-knife having a tilting movement, means for automatically tilting said knife and means for returning it to its normal or slicing position, substantially as shown and described.

3. In a machine as described, a plunger, a bell-crank lever, longitudinally-movable pawls for shifting the plunger forward, the pitman connecting the bell-crank lever and such pawls, and means for manipulating the bell-crank lever, as set forth.

4. A machine for cutting ice-cream, comprising a suitable framework, a tilting slicing-knife, a reciprocating guide-frame a cutting-knife carried thereby, a plunger mechanism, feed-pawls for forcing it intermittently forward and a mechanism for operating said pawls connected with the reciprocating guide-frame as set forth.

5. In a machine of the character described, the combination of a vertically-reciprocating cutting-knife, a tilting slicer-knife, means for operating said cuttiog-knife, and a trip for tilting said slicer-knife, said trip being actuated by the operating means for the cutting-knife, as set forth.

6. In a machine of the character described, a reciprocating cutter-knife, guide-rods carrying said knife, a tilting slicer-knife provided with a crank, and a trip-lever adapted to depress said crank and arranged for engagement by a device carried by one of said guide-rods, as set forth.

7. In a device of the character described, a reciprocating cutting-knife, guide-rods carrying said knife, a tilting slicer-knife having a crank, a trip-lever adapted to move said crank and arranged to be tripped by the movement of the guide-rods, and spring secured to said crank whereby to return the slicer-knife to its normal position, as set forth.

8. In a machine of the character described, a mold-box, a cutting-knife movable across said mold-box, guide-rods carrying said knife and having an extension formed with lugs, a bell-crank lever one arm of which is located in the path of said lugs, pawls adapted to feed the material into the mold-box, and a pitman connecting said pawls with the other arm of said lever, as set forth.

9. In a machine of the character described, a mold-box, a plunger and rack-bar adapted to feed the material into said mold-box, pawls arranged for engagement with the rack-bar to feed the same forward, bearing-blocks on which said pawls are mounted, guides in which said blocks are slidably fitted, and means in said guides for regulating the movement of said blocks, as set forth.

656,045. TIRE AND RIM FOR VEHICLE-WHEELS. WILLIAM F. RAE, London, England. Filed Mar. 3, 1899. Serial No. 707,649. (No model.)

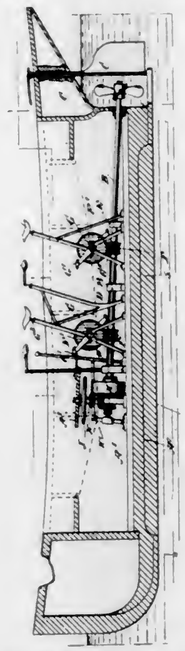


Claim.—1. A hollow wheel-rim formed of thin metal of uniform thickness, and having a circumferential slot for reception of a solid tire, the opposite edges of said rim being doubled upon themselves, and forming inwardly and outwardly projecting radial, flat, parallel flanges, as shown and described.

2. A hollow wheel-rim constructed of thin metal of uniform thickness, and slotted circumferentially, the opposite edges of the same being bent outward radially, and doubled back, flatwise, upon themselves, and extended inward at B' beyond the bases, as shown and described.

3. In combination with the rim having inwardly and outwardly projecting integral flanges, a rubber tire having a body portion adapted to lie between said flanges and project beyond the same, and wings projecting laterally from the inner edges of said body portion, said tire having inwardly-extending cuts or slits at the angles formed by the meeting of said flanges and body portion whereby said flanges or wings may be brought into line with the body portion for the purpose of inserting or withdrawing the same from the tire, substantially as described.

656,046. MARINE PROPULSION. PETER U. RIESS and ANNA M. JU. RIESS, New York, N. Y. Filed May 18, 1899. Serial No. 717,298. (No model.)



Claim.—1. A manually-propelled gear for marine vessels, comprising a propeller-shaft, a sleeve through which passes said shaft, a foot-actuated driving-gear for said sleeve, and a gearing between said sleeve and said propeller-shaft, substantially as shown and described.

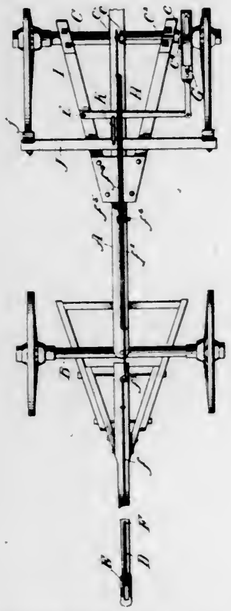
2. A manually-propelled gear for marine vessels, comprising a propeller-shaft, a sleeve through which passes said shaft, a foot-actuated driving-gear for said sleeve, a gearing between said sleeve and said propeller-shaft, and comprising a bevel gear-wheel on the sleeve, a bevel-pinion in mesh with said bevel gear-wheel, a fly-wheel shaft carrying said pinion, a bevel gear-wheel on said fly-wheel shaft, and two gear-wheels mounted to turn with the said propeller-shaft, and adapted to be moved into and out of mesh with the gear-wheel on said fly-wheel shaft, substantially as shown and described.

3. A manually-propelled gear for marine vessels, comprising a pedal-actuated crank-shaft, a worm-wheel on said shaft, a worm in mesh with said worm-wheel, a sleeve carrying said worm, a propeller-shaft extending through said sleeve, and a gearing between said sleeve and said propeller-shaft, substantially as shown and described.

656,047. WAGON-BRAKE. HENRY E. ROLPH, St. Paul, Minn. Filed May 29, 1900. Serial No. 18,422. (No model.)

Claim.—1. In a wagon-brake, the combination of a lever adapted to be operated by the neck-yoke, a double crank-rod, a connection between

the lever and the crank-rod, a friction-plate operatively connected with the rod, and a lever connecting the plate and the brake-beam, substantially as described.



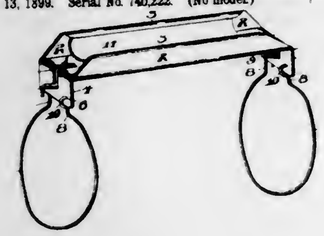
2. In a wagon-brake, the combination of a lever adapted to be operated by the neck-yoke, a doubl crank-rod, an adjustable connection between the lever and the crank-rod, a friction-plate operatively connected with the rod, and a lever connecting the plate and the brake-beam, substantially as described.

656,048. **EXPLOSIVE AND PROCESS OF MAKING SAME.** JOSEPH ROSS and WILLIAM D. CAIRNEY, Glasgow, Scotland. Filed Dec. 28, 1899. Serial No. 741,861. (No specimens.)

Claim.—1. The method of producing an explosive which consists in taking a proportion of chlorate of potash, passing the same through a sieve in order to granulate it, mixing the granulated chlorate of potash with a proportion of charcoal, taking a proportion of wax and mixing it with the mixture of chlorate of potash and charcoal until the wax becomes perfectly black, placing the whole in a vessel, heating the vessel with its contents until the contents become moist with the melted wax, taking a proportion of vaseline, and bringing it to a liquid state, pouring the liquid vaseline over the mixture, and thoroughly stirring the whole mixture together for filling the crevices in the substance to which the paraffin is inaccessible, and providing a coating on the substance which the paraffin has failed to coat.

2. An explosive consisting of a mixture in about the following proportion of ingredients: chlorate of potash, eighty-seven per cent.; charcoal, three per cent.; wax, seven per cent.; vaseline, three per cent.

656,049. **PACKAGE-CARRIER.** CHARLES A. SAWER, Powhatan Point, Ohio, assignor of one-half to George A. Korner, same place. Filed Dec. 13, 1899. Serial No. 740,222. (No model.)



Claim.—1. In a package-carrier, a handle formed of one piece of sheet metal and having at each end thereof downwardly-extending lips, a slot in each of said lips, and wire loops depending from said lips, each loop having one end fixedly secured in the lip and its other removably secured in the slot, substantially as and for the purposes set forth and described.

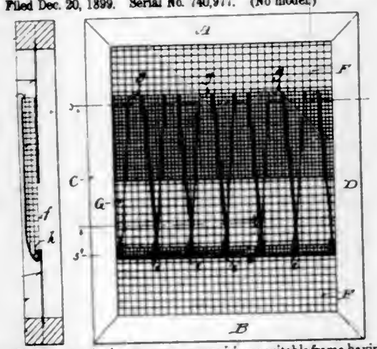
2. A package-carrier comprising a handle formed of one piece of sheet metal, a place provided therein for an advertising or other card, a lip on each end of said handle, an angular slot or aperture in each lip, spring-metal-wire loops, one of said wire loops depending from each lip and having one of its ends securely fastened in the lip and the other end removably secured in the angular slot of the lip, substantially as and for the purposes set forth and described.

3. A package-carrier comprising a handle formed of one piece of thin sheet metal with a base portion and sides, said sides having inturned edges, a downwardly-extending lip on each end of the base portion having an angular slot and a hole therein, a spring-metal-wire loop having its ends bent to form hooks, one of said hooks being secured in the hole of the lip and bent upon its shank to securely hold it in place, and the other hook removably secured in the angular slot, substantially as described.

4. As an article of manufacture, a package-carrier, consisting of a handle formed of one piece of sheet metal, with a base portion and sides, said sides having inturned edges forming a groove between the sides and the edges, a downwardly-extending lip on each end of the base portion, an obtuse-angled slot and a small hole in each lip, a circular spring-metal-wire loop having its ends bent vertically upward from its periphery and forming shanks, and the ends of said shanks bent to form hooks, one of said hooks being fixedly secured in the hole and the other removably secured in the slot of the lip, substantially as herein described.

5. A package-carrier and advertising device, comprising a handle with a base portion, sides bent vertically upward from the edges of said base portion, the upper edges of the sides turned inward and downward forming grooves adapted to hold in place an advertising-card, a lip on each end of said base portion, an obtuse-angled slot or aperture in each lip, and a circular spring-metal-wire loop having its ends bent vertically upward from its periphery forming shanks, the ends of said shanks bent back upon themselves forming hooks, one of said hooks being securely fastened to the lip and the other removably secured in said aperture or slot, substantially as and for the purposes set forth and described.

656,050. **INSECT-SCREEN.** GEORGE SATTLER, Elkhart, Wis. Filed Dec. 20, 1899. Serial No. 740,977. (No model.)

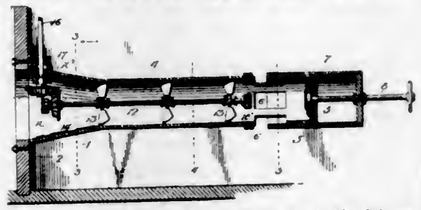


Claim.—1. An insect-screen comprising a suitable frame having separate pieces of screen material secured across the upper and lower parts thereof from side to side, and separated by a space, in combination with a strip of like material formed into a series of open-topped flutes or channels, said strip entirely closing the described space between the upper and lower pieces, and extending above the lower edge of said upper piece, on the outer side thereof, to form egress-passages leading from the inner to the outer side of said screen.

2. An insect-screen, comprising a suitable frame having separate pieces of screen material secured across the upper and lower parts thereof from side to side, and separated by a space, in combination with a strip of like material formed into a series of open-topped tapering flutes or channels, whose side walls upwardly converge, said strip entirely closing the described space between the upper and lower pieces, and extending above the lower edge of said upper piece on the outer side thereof, to form insect-egress passages, and the lower edge of said strip being turned upwardly and inwardly and flattened to close communication between it and the upper edge of the said lower piece.

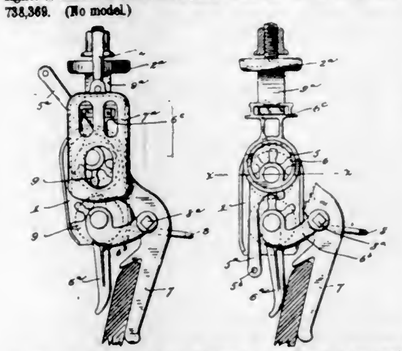
3. In an insect-screen, the combination with the screen-frame and a screen secured thereto, and whose upper and lower parts are formed with a transverse opening between them, of an independent continuous strip of screen material, formed into a series of vertical flutes or channels, and secured to the outer surface of said screen, the said flutes or channels having upwardly-converging side walls, and being wholly open at the top, and wholly closed at the bottom.

656,051. **TURBINE.** EDWARDS J. SCOVEL and CHARLES F. ROSS, Scovel, Ill. Filed Oct. 5, 1899. Serial No. 732,626. (No model.)



Claim.—In a turbine, the combination with the bulkhead A provided with the central orifice B, of the funnel-shaped hood provided with an annular flange, the integral tubular casing 4 forming a continuation of said funnel-shaped hood and provided with the closed end 5; the longitudinal openings 6 6 formed in the rear end of said casing; the sleeve 7 encompassing the rear end of said casing; the threaded rod 8 provided with the hand-wheel 9, and engaging said closed end 5; the cross-braces 10^1 and 10^2; the vertical shaft 16 provided with the bevel-gear 15; and the power-shaft 12 provided with the propeller-wheels 13 13 and the bevel-gear 14, the latter meshing with the bevel-gear 15; substantially as and for the purpose set forth.

656,052. **WRINGER.** CHARLES P. SEARLES, Columbus, Ohio, assignor to Samuel L. Black, same place. Filed Nov. 27, 1899. Serial No. 738,369. (No model.)

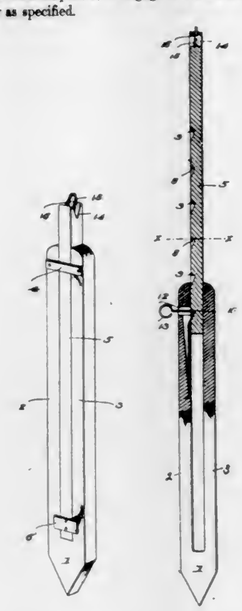


Claim.—1. In a wringer, a main frame having legs 7, a bow-spring 9^a supported in said frame, upper and lower rollers, movable bearings for said rollers, seats for the ends of the bow-spring in the bearings for the upper roller, eccentrics on the shaft of one of said rollers, and collars or straps on said eccentrics, and means for rocking said eccentrics, substantially as described.

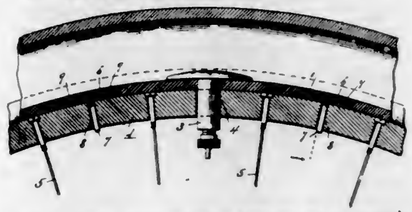
2. In a wringer, a main frame having legs 7, a bow-spring 9^a supported in said frame, upper and lower rollers within said frame, eccentrics on the shaft of the upper roller, collars or straps on said eccentrics, and bearings for the ends of said spring on said collars, substantially as described.

656,053. **CLOTHES-LINE PROP.** WILLIAM T. SHAFFER, Evanston, Wyo. Filed Sept. 13, 1899. Serial No. 730,303. (No model.)

Claim.—In a clothes-line prop, the combination of the pointed base having the integral parallel longitudinal arms, 2, 3, connected near their upper ends by strap-braces, 4, 4, serving, also, as guides for the extension-bar, 5; the recess or slot, 12, extending entirely through the integral arm, 2, near the upper end of the latter; the spring-pawl, 10, having an integral arm extending outwardly through said recess or slot, 12, and terminating in an integral eye, 13; and the extension-bar, 5, provided near its lower end on its opposite exposed faces with the guide-plate, 6, provided with an integral thumb-piece, 7; and a guide-plate, 6', directly opposite said guide-plate, 6, said plates, 6 and 6', being secured to said extension-bar, 5, by pins, 6^2, driven through said guide-plates, 6, 6', into said extension-bar; the V-shaped notch, 14, in the upper end of the extension-bar, 5; the spring, 15, having the bill-shaped keeper, 16, arranged to operate in conjunction with said notch, 14, and the ratchet-shaped notches, 8, provided with wear-staples, 9, to engage the point of the spring-pawl, 10, substantially as specified.



656,054. **VALVE PROTECTOR AND FASTENER FOR PNEUMATIC TIRES.** WILLIAM E. SMITH, Johnstown, Pa. Filed Apr. 10, 1900. Serial No. 12,307. (No model.)



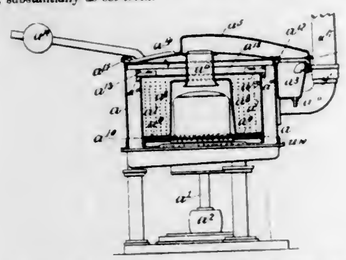
Claim.—The combination with a wheel-rim, and a pneumatic tire having a valve-tube passing through an opening in the rim, of a pair of fasteners located on opposite sides of the valve-tube and each comprising a pin removably fitted in an opening in the rim, and a head in the form of a sheet-metal plate to which the pin is secured, said head being provided with a plurality of openings for the reception of the tire material and further punched to form a series of barbs which are embedded in the tire material, the head being inclosed and concealed within the rim portion of the tire, substantially as specified.

656,055. **CENTRIFUGAL MACHINE.** WILLIAM M. SMITH, London, England. Filed Oct. 22, 1898. Serial No. 694,317. (No model.)

Claim.—1. In centrifugal apparatus, the combination of a casing, a small chamber attached to one side of said casing, a steam-pipe leading into said chamber, a hinged cover for the casing, a fixture on said cover forming a passage for the steam from the small chamber to the center of the cover, means for positioning said cover and fixture on the casing and chamber, and an exhaust-pipe attached to the casing, substantially as set forth.

2. In centrifugal apparatus, the combination of a casing, a hinged cover for said casing, means for positioning said cover on the casing, a downwardly-projecting pipe carried by said cover, a perforated basket arranged in the casing, a removable top for said basket, a loose dome in said

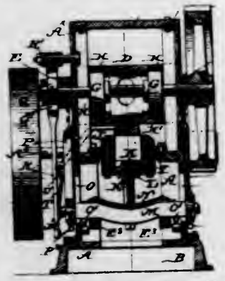
basket, and a plate attached to said dome forming a false bottom for said basket, substantially as set forth.



3. In centrifugal apparatus, the combination of a casing, a small chamber attached to said casing, a steam-pipe leading into said chamber, a hinged cover for the casing, a counterbalance attached to said cover, a fixture on said cover forming a steam-passage between said casing and chamber, means for positioning the cover and fixture on the casing and chamber, a downwardly-projecting pipe carried by said cover, a perforated basket arranged in said casing, a removable top for said basket, means for locking the top to the basket, an opening in the said top, a loose dome in said basket, an opening in the top of the dome for said downwardly-projecting pipe, a plate attached to said dome forming a false bottom to the basket, and a steam-exhaust pipe attached to the casing, substantially as set forth.

4. In centrifugal apparatus, the combination of a casing, a small chamber attached to said casing, a steam-pipe leading into said small chamber, a hinged cover for the casing, a fixture on said cover forming a steam-passage between said casing and chamber, means for positioning said cover and fixture on the casing and chamber, a downwardly-projecting pipe carried by said cover, a perforated basket arranged in said casing, a loose dome in said basket, a plate attached to said dome forming a false bottom, bars for said plate to rest upon, and an exhaust-pipe for the steam, attached to the casing, substantially as set forth.

656,056. **BRICK-PRESS.** CLARENCE M. STEELE, Statesville, N. C. Filed Dec. 29, 1899. Serial No. 741,946. (No model.)



Claim.—1. In a brick-press, a framework, a mold-box in said framework, a vertically-reciprocable cross-head mounted in said framework above the mold-box, an operating-shaft extending through said cross-head and provided with cams located in the interior of said cross-head at each end of the same, whereby to reciprocate the latter, and a plunger secured to the bottom of said cross-head and adapted to work in the mold-box, as set forth.

2. In a brick-press, a framework, a mold-box in said framework, a vertically-reciprocable cross-head mounted in said framework and carrying a plunger adapted to fit in the mold-box, straps secured to and depending from said cross-head, a vertically-movable cross-bar in said framework below the mold-box and carrying a plunger adapted to fit in the bottom of the mold-box, the ends of said bar being slidably fitted in the lower ends of said straps, and means whereby the upward movement of the straps will carry the cross-bar with them, as and for the purpose set forth.

3. In a brick-press, a framework, a mold-box in said framework, a vertically-reciprocable cross-head in said framework carrying a plunger adapted to fit in said mold-box, a vertically-movable cross-bar in said framework carrying a plunger adapted to fit in the bottom of the mold-box, means for moving the cross-head and cross-bar toward each other, means for reversing the movement of said cross-head, and straps secured to said cross-head and having adjusting-screws in their lower ends, the ends of said cross-bar being arranged for engagement by said screws, as set forth.

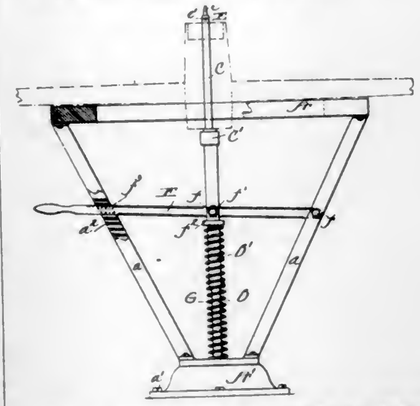
4. In a brick-press a framework provided with vertical spaced-apart uprights, a hollow cross-head guided vertically between said uprights, an operating-shaft inserted through the cross-head and provided on the interior of the latter with cams which are located at the ends of the cross-head and are adapted to raise and lower the same, an upper plunger secured to the bottom of the cross-head, a mold-box adapted to receive said plunger, a lower plunger moving in the bottom of the mold-box, straps secured to the cross-head and depending therefrom below the mold-box, a cross-bar adapted to raise the lower plunger and having its ends fitted in the straps, an operating-wheel on the said shaft, a shaft below the cross-bar and provided with bearing-lugs adapted to raise the cross-bar in the straps, and an arm secured on said shaft and arranged for engagement by a pin on said wheel, as and for the purpose set forth.

5. In a brick-press the combination with the framework, the mold-box in said framework, the upper and lower plungers, independent mechanism for simultaneously moving said plungers toward each other and including a vertically-movable cross-bar, straps carried with the upper plunger and receiving in their lower ends the ends of the cross-bar, whereby the upward movement of the upper plunger will raise the cross-bar and the lower plunger, and screws working in the lower ends of said straps in engagement with the ends of the cross-bar, as and for the purpose set forth.

6. In a press of the character described, the combination with the upper and lower plungers and the main operating-shaft for actuating said plungers, of a feed-table on which the bricks are fed between the plungers, a feed-block adapted to slide over the surface of said table, a horizontally-reciprocable rod having a bent end secured to said block, an eccentric on said operating-shaft, a lever pivoted above said shaft and having an elliptical seat or guideway receiving said eccentric whereby the lever is oscillated an arm secured to the horizontally-moving rod, and a link connecting the lower end of said lever with said arm, as and for the purpose set forth.

7. In a brick-press the combination with a framework provided with a mold-box, of upper and lower plungers arranged to move in said box, a feed-table adjacent the mouth of said box, a feed-box adapted to reciprocate on said feed-table, means for raising the lower plunger to a level with the mouth of the mold-box whereby to raise the pressed brick out of the box, and a connection between the feed-block and the operating means for depressing the lower plunger whereby the latter will be slightly below the mouth of the box as the feed-block pushes the brick therein, thereby causing a shoulder to be formed at the rear side of the mold-box so as to stop the incoming brick as and for the purpose set forth.

656,057. **WHEEL-HOLDER.** PETER S. STEPHEN, Washburn, Ill. Filed Nov. 7, 1898. Serial No. 696,716. (No model.)



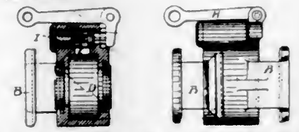
Claim.—1. In a wheel-support, the combination of a main frame, of a locking-lever pivoted to said frame and having a pivotal connection with a vertically-movable cylinder, a locking mechanism pivoted in said cylinder, and of the mechanism adapted to automatically engage said locking device when the cylinder is lowered, all substantially as described and shown.

2. In a wheel-support the combination with a stationary bar or rod, a telescoping cylinder carried above said rod, of a locking device pivotally carried in said cylinder at or near its outer end, a plunger loosely carried in said cylinder, of the mechanism for lowering said cylinder causing the upper end of said bar or rod to engage with said plunger for actuating the locking device carried in the cylinder, substantially in the manner herein shown.

3. In a wheel-support, a base-plate and a vertically-carried rod therefrom, of a cylinder telescoping on said rod and a lever pivotally secured thereto, of a locking device consisting of a lug pivotally carried in the upper end of said cylinder and purposed to be engaged by a plunger carried therein when the cylinder is lowered by means of said lever, causing a contact of said plunger with the locking device by the rod on the base-plate, in the manner described.

4. In a wheel-support, the combination with a main frame, of the bar or rod B, the telescoping cylinder B', having the elongated reduced portion C, of the locking device consisting of the lug *e*, arranged to be actuated by a plunger carried within said cylinder, lever F, arranged to actuate the cylinder B', which when lowered will cause the locking device to be automatically set by the plunger engaging therewith, all substantially as set forth.

656,058. **BRAKE-APPLICATION VALVE FOR TRAIN-PIPES.** JEREMIAH J. SULLIVAN, Louisville, Ky. Filed Mar. 2, 1900. Serial No. 7,057. (No model.)



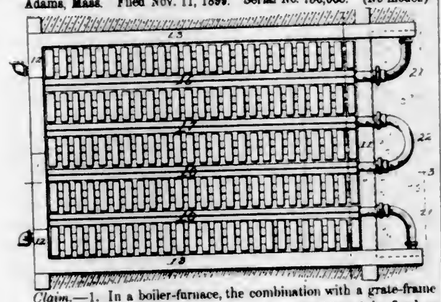
Claim.—1. In combination with a coupling-head, having an air-compartment, means for connecting the two adjoining ends of a hose-pipe thereto, an air-passage connecting the air-compartment of said head with the external atmosphere, valve mechanism seated in said passage normally sealing the same, and an exteriorly-fulcrumed lever connected thereto for tripping said valve, substantially as specified.

2. In a coupling-head having an air-compartment, the combination of means for connecting the adjoining ends of a hose-pipe thereto, a valve-chamber connected to said head, an air connecting-passage between said compartment and chamber, an air-escape passage tapping said chamber, valve mechanism seated in said chamber normally sealing one of said passages, and an exteriorly-fulcrumed lever engaging the valve-stem and adapted to trip the same, substantially as specified.

3. In a coupling-head having an air-compartment, the combination of means for coupling the adjoining ends of a hose-pipe thereto, a valve-chamber connected to said head parallel with the barrel thereof, a passage between said compartment and chamber, an air-escape passage in the end of said chamber, a valve seated in said chamber normally sealing one of said passages, and an exteriorly-fulcrumed lever engaging the valve-stem which is tripped to connect said passages, substantially as specified.

4. In combination with a coupling-head having an air-compartment, means for connecting thereto the adjoining ends of a train hose-pipe, a valve-chamber connected to said head, an air-passage between said air compartment and chamber, a valve seated in said chamber, an air-escape orifice tapping said valve, a tripping-lever pivoted to the valve-chamber, the inner end of said lever engaging the valve-stem, and the outer end of said lever being free to move, substantially as specified.

656,059. **STEAM-BOILER FURNACE.** JOHN THURELL, North Adams, Mass. Filed Nov. 11, 1899. Serial No. 736,633. (No model.)



Claim.—1. In a boiler-furnace, the combination with a grate-frame comprising two hollow casings supported on opposite sides of the fire-box and extending up the inner sides of the latter above the normal level of the fuel, said hollow casings at their front ends being formed with right-angled hollow extensions built into the front wall of the furnace, a return-bend conduit connecting the rear ends of said hollow side casings and disposed horizontally in the bottom of the fire-box, a water-inlet leading into one of said hollow extensions, and a water-outlet leading from the other hollow extension into the boiler, substantially as described.

2. In a boiler-furnace, the combination with a grate-frame comprising two hollow casings supported on opposite sides of the fire-box and extending up the inner sides of the latter above the normal level of the fuel, of grate-bars supported in the lower portion of said hollow grate-frame, water-tubes arranged between the grate-bars and connecting the rear ends of said hollow casings, a water-inlet connected to the front end of one of said hollow casings and a water-outlet connected to the other hollow casing, substantially as described.

3. In a boiler-furnace, the combination with a grate-frame comprising two hollow casings supported on opposite sides of the fire-box and extending up the inner sides of the latter above the normal level of the fuel, of longitudinal grate-bars supported in the lower portion of said hollow grate-frame, water-tubes arranged between the grate-bars, elbows connecting the rear ends of the outermost water-tubes to the rear ends of the hollow side casings, means for connecting together the rear ends of the intermediate water-tubes, a hollow casing connecting together the front ends of the water-tubes, a water-inlet connected to the front end of one of said hollow casings and a water-outlet connected to the front end of the other hollow casing, substantially as described.

4. In a boiler-furnace, the combination with a grate-frame comprising two hollow casings supported on opposite sides of the fire-box and extending up the inner sides of the latter above the normal level of the fuel, of longitudinal grate-bars supported in the lower portion of said hollow grate-frame, water-tubes arranged between the grate-bars and alternately connected together at their opposite ends, the rear ends of the two outermost of said water-tubes being respectively connected to the rear ends of the hollow casings, a water-inlet connected to the front end of one of said hollow casings and a water-outlet connected to the front end of the other hollow casing, substantially as described.

5. In a boiler-furnace, the combination with a grate-frame comprising two hollow casings supported on opposite sides of the fire-box, of longitudinal grate-bars supported in the lower portion of said hollow grate-frame, water-tubes arranged between the grate-bars, elbows connecting the rear ends of the two outermost water-tubes to the rear ends of the hollow side casings, means for connecting together the rear ends of the intermediate water-tubes, a hollow casing connecting together the front ends of the water-tubes, a water inlet and outlet connected respectively to the front ends of the two hollow side casings, and an arched perforated shield supported over the rear connections of the water-tubes, substantially as described.

6. In a boiler-furnace, the combination with a grate-frame comprising two hollow casings supported at the opposite sides of the fire-box and formed at their front ends with right-angled hollow extensions built into the front wall of the furnace, of a hollow door-casing fitted between said hollow extensions, longitudinal grate-bars supported in the lower portion of the grate-frame, water-tubes arranged between the grate-bars, said water-tubes communicating at their front ends with the hollow door-casing, elbows connecting the rear ends of the two outermost of the water-tubes with the rear ends of the hollow casings, means for connecting the rear end of the intermediate water-tubes, and water inlets and outlets respectively connected to the said hollow extensions, substantially as described.

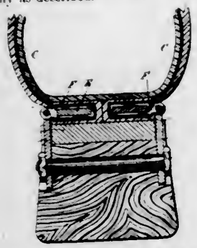
7. In a steam-boiler furnace the combination with the hollow door-casing provided with lateral arms supported at their ends in the sides of the furnace-walls, of the grate-frame comprising two hollow casings disposed in the opposite sides of the fire-box and formed at their front ends with right-angled hollow extensions supported on said lateral arms between the ends of the door-casing and the side walls of the furnace, a cross-beam fitted at its opposite ends in the side walls at the rear of the furnace and supporting the rear ends of the hollow side casings, grate-bars supported in the bottom of the grate-frame, water-tubes disposed between the grate-bars, said water-tubes at their front ends being connected with the hollow door-casing and alternately connected together at their rear ends, the ends of the outermost of said water-tubes being connected respectively to the rear ends of the hollow side casings, substantially as described.

656,060. **MEANS FOR SECURING RESILIENT TIRES TO WHEELS.** FREDERICK J. TRENCH, Dublin, Ireland. Filed Feb. 12, 1900. Serial No. 4,984. (No model.)

Claim.—1. In combination with the felly of a wheel, a rubber tire thereon having a band embedded therein and encircling the felly, and a series of yokes extending transversely through the tire at intervals and engaging over said band, each of said yokes having at its ends clips extending at right angles thereto and embracing the sides of the felly, and means for securing said clips to the felly, substantially as described.

2. In combination with the felly of a wheel, a rubber tire thereon, a series of yokes extending transversely through the tire at intervals, each of said yokes having an opening and being provided at its ends with clips embracing the sides of the felly, bolts extending through the clips and felly, and a band embedded in the tire and passed through the openings in said yokes, substantially as described.

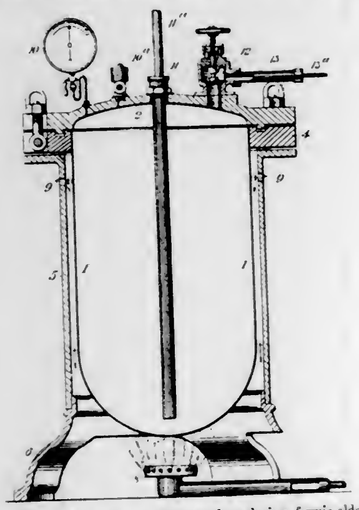
3. In combination with the felly of a wheel, a rubber tire thereon having a band embedded therein and encircling the felly, and a series of yokes extending transversely through the tire at intervals and engaging over said band, each of said yokes having at its ends clips hinged thereto and embracing the sides of the felly, and bolts extending through said clips and felly, substantially as described.



4. In combination with the felly of a wheel, a rubber tire thereon, a series of yokes extending transversely through the tire at intervals, each of said yokes comprising two hinged sections each of which is provided with an opening, a pair of bands embedded in the tire and passing through the openings in said yokes, clips hinged to the ends of said yokes and embracing the sides of the felly, and bolts passed through said clips and felly, substantially as described.

656,061. PROCESS OF PRODUCING FORMALDEHYDE VAPORS.

JEAN J. A. TRILLAT, Paris, France, assignor to the Société Chimique des Usines du Rhône Anciennement Gilliard, P. Monnet et Cartier, Lyons, France. Filed Nov. 24, 1896. Serial No. 613,270. (No specimens.)



Claim.—1. The improved process of producing formic-aldehyde vapors, which consists in subjecting a substance containing formic aldehyde to pressure, and evolving stable depolymerized vapors therefrom while such substance is under pressure, and discharging the compressed vapors in the air.

2. The improved process of producing stable depolymerized formic-aldehyde vapors, which consists in subjecting polymerized formic aldehyde to heat and pressure while evolving vapors therefrom, and discharging such vapors under pressure.

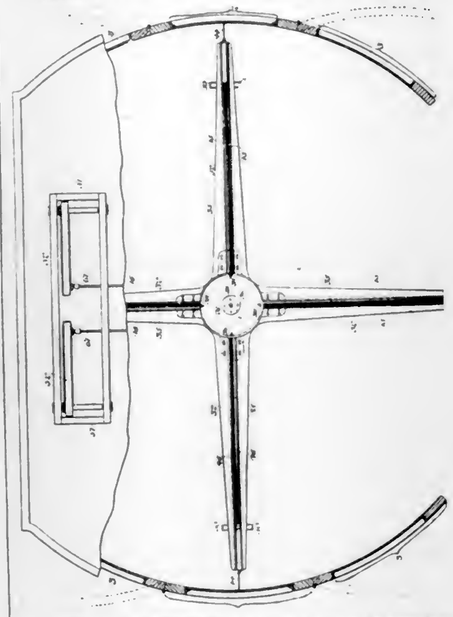
3. The improved method of producing stable formic-aldehyde vapors, which consists in heating a formic-aldehyde solution and preventing polymerization during heating by confining the vapors and solution under pressure and discharging such vapors.

4. The improved method of producing formic-aldehyde vapors, which consists in heating a formic-aldehyde solution and preventing polymerization during heating by confining the vapors and solution under a pressure of at least two atmospheres and discharging such vapors.

5. The improved process of producing formic-aldehyde vapors which consists in subjecting an aqueous solution of formic aldehyde to pressure, whereby to raise its boiling-point to above 100° centigrade and heating it to a temperature intermediate of such higher boiling-point and 100° centigrade, whereby the formic aldehyde is evolved without boiling of the solution, and discharging the itable formic-aldehyde vapors thus evolved.

656,062. REVOLVING DOOR.

THEOPHILUS VAN KANNEL, New York, N. Y., assignor to the Van Kannel Revolving Door Company, Charleston, W. Va. Filed Oct. 2, 1899. Serial No. 732,347. (No model.)



Claim.—1. The combination, in a revolving door, of a structure having wings mounted so as to be revoluble around a central axis in fixed radial relation thereto, said wings having also independent hinges so disposed that all of the wings may be folded and lie side by side so as to project in one direction from the center.

2. The combination in a revolving door, of a structure mounted so as to rotate about a central axis, a series of wings mounted so as to swing independently of their joint rotating movement about said axis, and self-releasing locking devices, whereby said wings are normally retained in fixed radial relation to said central axis.

3. The combination in a revolving door, of a series of wings mounted so as to rotate about a central axis, each of said wings being hinged so that the series may be folded side by side and may project in one direction from the general axis of rotation, and means for locking said wings in position when they have been swung apart from each other.

4. The combination, in a revolving door, of a structure mounted so as to rotate around a central axis, wings each pivoted so as to swing independently of their joint rotating movement about the central axis, and locking means for engaging each wing with the structure which rotates around said central axis, one of the elements of said locking means being movable to release the wing, when the wings swing independently of their joint axial rotation.

5. The combination, in a revolving door, of a structure mounted so as to rotate about a central axis, and radiating wings, each locked to said rotating structure but capable of swinging independently of the same when released therefrom, said wings being capable of radial expansion and contraction for the purpose of engaging them with or disengaging them from the structure which rotates around said central axis.

6. The combination in a revolving door, of a structure mounted so as to rotate about a central axis, radiating wings, each comprising an inner and outer portion hinged together, the inner portion having an axis of rotation independent of the central axis, and the outer portion being provided with means whereby it can be locked to the rotating structure.

7. The combination in a revolving door, of a structure mounted so as to rotate about a central axis, radiating wings each mounted so as to swing independently of their joint rotation about the central axis, means for locking said wings to the rotating structure, and means whereby lateral pressure exerted upon the inner portion of either wing will automatically unlock the same.

8. The combination in a revolving door, of a center post, with radiating wings normally locked to said center post but mounted so that they will be automatically unlocked therefrom, and swung forwardly to project side by side when pressure is exerted upon them in other than a normal direction.

9. The combination in a revolving door, of a structure mounted so as to rotate about a central axis, wings, each composed of two parts hinged together so as to bend or fold in either direction, and locking devices whereby said wings are normally secured to said rotating structure in fixed relation to the axis of rotation, said locking devices of each wing being constructed for automatic release when the wing is bent or folded at its hinge.

10. The combination in a revolving door, of a structure mounted so as to rotate about a central axis, radiating wings each composed of inner and outer parts hinged together, and locking devices engaging with the wings in line with the hinges between the inner and outer parts of the same, said wings being free to swing independently of their joint rotation about the central axis when unlocked.

11. The combination in a revolving door, of a structure mounted so as to rotate about a central axis, radiating wings each composed of inner and outer parts hinged together, and self-releasing locking devices engaging with the wings in line with the hinges between the inner and outer parts of the same, said wings being free to swing independently of their joint rotation around the central axis when thus released.

12. The combination in a revolving door, of a structure mounted so as to rotate about a central axis, wings each composed of two parts hinged together, and means for locking said wings to the structure which rotates with the post, one of said locking devices being in line with the hinge between the two parts of the wing and the other at the outer end of the wing, said wings being free to swing independently of their joint rotation about the central axis when unlocked.

13. The combination in a revolving door, of a center post, a series of radiating arms mounted upon and rotating therewith, and each tapered or reduced in width from the inner toward the outer end, and radiating wings each mounted so as to be free to swing on an axis independent of that of the post, and normally locked to one of said arms, but capable of being automatically released therefrom.

14. The combination in a revolving door, of a center post, a series of radially-projecting arms mounted thereon, truss-rods extending from the inner to the outer portion of each arm, and radiating wings each mounted so as to be free to swing on an axis independent of that of the post, and normally locked to one of said arms but capable of being automatically released therefrom.

15. The combination in a rotating door, of a structure mounted so as to rotate about a central axis, and having a series of depending lugs at its outer portion, and a series of radiating wings each constructed for radial expansion and contraction and each having an open-ended pocket for the reception of one of said depending lugs.

16. The combination in a revolving door, of a structure mounted so as to rotate about a central axis, and provided with a series of expansible and contractible depending lugs at its outer portion, and radiating wings each constructed for radial expansion and contraction and having an open-ended pocket for the reception of one of said lugs.

17. A revolving door in which are combined a center post, radiating arms mounted upon and rotating therewith, wings normally locked to said arms but free to swing independently thereof when released therefrom, and means whereby the swinging of one wing against another will automatically release the latter from the control of its arm.

18. The combination in a revolving door, of wings mounted so as to project radially from and rotate about a central axis and so as to be capable of swinging around in order to project side by side in the same direction from said axis, and locking devices for preventing lateral movement of the series of wings when they are thus adjusted side by side.

19. The combination in a rotating door, of wings mounted so as to project radially from and rotate about a central axis and so as to swing around in order to project side by side in the same direction from said axis, and locking devices for preventing lateral movement of the series of wings when they are thus adjusted side by side, said locking devices consisting of a pair of weighted levers depending one on each side of the series of wings and each capable of being lifted by the swinging wing as the latter moves beneath it.

20. The combination in a revolving door, of a structure mounted so as to rotate about a central axis, a series of radiating wings normally locked to said structure so as to rotate therewith but each capable of swinging independently thereof when released therefrom whereby they may all be caused to project side by side in one direction, means for locking the series of wings when they are thus projected, and means whereby the swinging movement of the wings independently of their rotating movement is caused to render said locking device operative.

21. The combination in a revolving door, of a structure mounted so as to rotate about a central axis, of a series of radiating wings normally locked to said structure but capable of swinging independently thereof when released therefrom, whereby they can all be swung around so as to project in the same direction side by side, levers for locking the series of wings when they are thus projected, a support whereby said levers are normally held out of locking position, and tripping mechanism for the levers operated by the wings when they swing independently of their rotating movement.

22. The combination of a revolving door having radiating wings mounted so as to be swung around side by side, locking-levers for engaging the series of wings when thus adjusted, plates carried by the levers and normally resting upon supports whereby the levers are held in operative position, and means for pushing the plates from said support so as to permit the levers to drop.

23. The combination in a revolving door, of a structure mounted so as to rotate about a central axis, radiating wings normally locked to said structure but capable of swinging independently thereof when released therefrom so as to project side by side in the same direction, a locking device for retaining the series of wings in this position, cams carried by the wings, and a tripping device for the locking-levers acted upon by said cams when the wings swing independently of their rotating movement.

24. The combination in a revolving door, of a structure mounted so as to rotate about a central axis, radiating wings normally locked to said structure but self-releasing therefrom when subjected to pressure in other than a normal direction, said wings being mounted so as to swing independently of the said rotating structure when thus released, whereby they can project side by side in the same direction, locking devices for maintaining them in this position, and means whereby said locking devices are rendered operative by the swinging of the wings after they have been released from the rotating structure.

25. The combination in a revolving door, of a structure mounted so as to rotate about a central axis, radiating wings normally locked to said structure but self-releasing therefrom when subjected to pressure in any but a normal direction, means whereby said wings are permitted to swing around into position side by side when thus released, locking-levers for retaining the series of wings when thus adjusted, supporting devices whereby said locking devices are normally held out of locking position, a lever having rods for tripping said supporting devices, rods carried by the rotating structure so as to act upon said lever, and cams carried by the wings of the door and adapted to act upon said rods when the wings swing independently of their rotating movement.

26. The combination of the rotating structure of a revolving door, with a casing having hinged end portions retained by means of bolts which are self-releasing from their retainers when excessive outward pressure is exerted upon said end portions of the casing.

27. The combination of the rotating structure of a revolving door, with a casing having hinged end portions retained by bolts which are self-releasing from their retainers when excessive outward pressure is exerted upon said end portions of the casing, and means for retaining the bolts in the retracted position after their release from the control of the retainers.

28. The combination of the swinging outer portion of the door-casing with a retaining-bolt therefor having a beveled end, a keeper-plate for engaging with said beveled end of the bolt, a lug projecting from the bolt and adapted to engage with notches in the bolt-guide, and a spring acting upon the bolt so as to both depress and turn it.

29. The combination of the center post of the rotating structure of a revolving door, with a pivot-screw therefor, a threaded socket with which said screw engages, a plate mounted on said socket and having a lug for engaging with a slot in the screw, and means for securing said plate in different positions of circumferential adjustment.

656,063. TANNING APPARATUS.

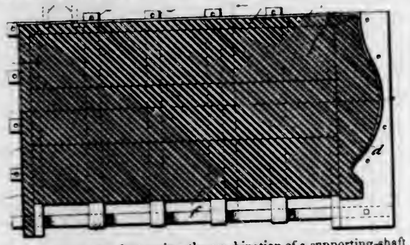
ADOLPH E. VIDAL, London, England. Filed Nov. 14, 1899. Serial No. 736,990. (No model.)

Claim.—1. In an apparatus for tanning, a gripping-frame composed of parts which may be adjusted relatively to each other, one of said parts being provided with a gripping edge adapted to conform to the shape of the tail end of the hide, substantially as described.

2. In an apparatus for tanning, the combination of a vat, and a gripping-frame supported therein, said frame being composed of parts which may be adjusted relatively to each other, one of said parts being provided with a gripping edge shaped to conform to the shape of the tail end of the hide, whereby hides of different sizes may be secured in said frame, substantially as described.

3. In an apparatus for tanning, a cylindrical gripping-frame, said frame being provided with closed ends, one of which is shaped to conform to the shape of the tail end of the hide, substantially as described.

4. In an apparatus for tanning, the combination of a support, a cylindrical gripping-frame mounted thereon, the ends of said frame being adjustable relatively to each other, substantially as described.



5. In an apparatus for tanning, the combination of a supporting-shaft, a cylindrical gripping-frame mounted on said shaft, one of the ends thereof being adjustable and shaped to conform to the shape of the tail end of the hide, and means for supplying tanning liquor to the interior of said frame, substantially as described.

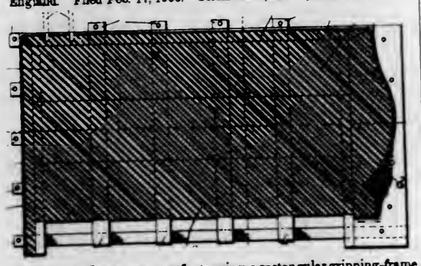
6. In an apparatus for tanning, the combination of a hollow shaft provided with openings and a cylindrical gripping-frame mounted on said shaft, substantially as described.

7. In an apparatus for tanning, the combination of a hollow shaft, a cylindrical gripping-frame mounted on said shaft, one of the ends of said frame being adjustable in relation to the other, substantially as described.

8. In an apparatus for tanning, the combination of a hollow shaft provided with openings, a cylindrical gripping-frame mounted on said shaft, one of the ends of said frame being adjustable and provided with telescoping tubes connecting said ends, substantially as described.

9. In an apparatus for tanning, the combination of a tank, a hollow shaft provided with openings mounted in said tank, means for revolving said shaft, a cylindrical gripping-frame mounted on said shaft, one of the ends of said frame being adjustable on said shaft and shaped to conform to the shape of the tail end of the hide, said frame being provided with telescoping tubes connecting said ends, substantially as described.

656,064. TANNING APPARATUS. ADOLPH E. VIDAL, London, England. Filed Feb. 17, 1900. Serial No. 5,648. (No model.)



Claim.—1. In an apparatus for tanning, a rectangular gripping-frame, one side of said frame being provided with a gripping edge adapted to conform to the shape of the tail end of the hide, substantially as described.

2. In an apparatus for tanning, a rectangular gripping-frame composed of parts which may be adjusted relatively to each other, one side of said frame being provided with a gripping edge adapted to conform to the shape of the tail end of a hide, substantially as described.

3. In an apparatus for tanning, the combination of a gripping-frame, rectangular in its general outline, but having one end shaped to conform to the shape of the tail end of the hide, and a backing for said frame, substantially as described.

4. In an apparatus for tanning, the combination of a gripping-frame, rectangular in its general outline, but having one end shaped to conform to the shape of the tail end of a hide, and a grooved or corrugated backing for said frame, substantially as described.

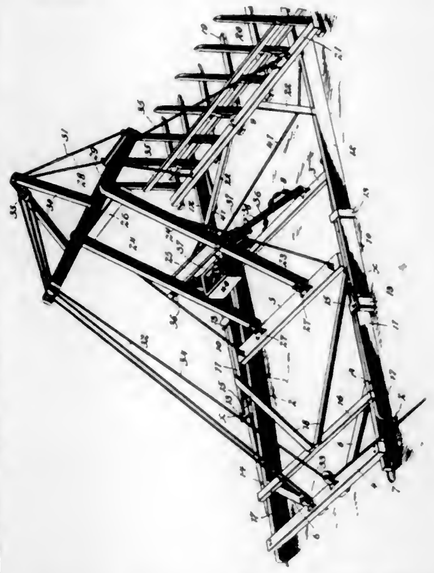
5. In an apparatus for tanning, the combination with a gripping-frame, of perforated back-boards for said gripping-frame, substantially as described.

6. In an apparatus for tanning, the combination with a gripping-frame, of grooved and perforated back-boards for said gripping-frame, substantially as described.

7. In an apparatus for tanning, the combination of a detachable and adjustable gripping-frame, one of the parts of said frame being shaped to conform to the shape of the tail end of a hide, substantially as described.

8. In an apparatus for tanning, the combination of a detachable and adjustable gripping-frame, one of the parts of said frame being shaped to conform to the shape of the tail end of a hide, and a backing for said gripping-frame, substantially as described.

656,065. HAY-STACKER. OLER P. VROOM and CHARLES H. ARBUCKLE, Winigan, Mo., assignors of one-half to Augustus G. Sorge and James H. Sorge, same place. Filed Jan. 25, 1900. Serial No. 2,769. (No model.)



Claim.—1. The combination, with a pivoted hoisting-frame, of a tilting frame, a rocking frame mounted on the tilting frame, and connected to the hoisting-frame, tackle for tilting and drawing the rocking and tilting frames, and thereby elevating the hoisting-frame, substantially as described.

2. The combination, with a pivoted hoisting-frame, of a tilting frame, a rocking frame mounted on the tilting frame, and connected to the hoisting-frame, tackle for tilting and drawing the rocking and tilting frames, and thereby elevating the hoisting-frame, and guys for the hoisting-frame, substantially as described.

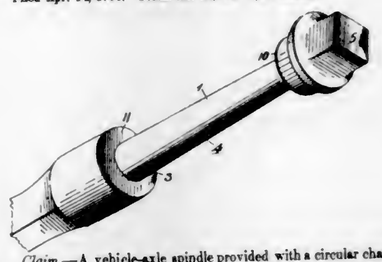
3. The combination, with a hoisting-frame, and a tilting frame connected thereto, tackle for applying power to the tilting frame and thereby elevating the hoisting-frame, the guy-frame and guys connecting said guy-frame to the hoisting-frame the latter being adapted to engage the tilting frame and arrest the retrograde movement thereof when the hoisting-frame is being lowered, substantially as described.

4. The combination of a hoisting-frame, a tilting frame, a rocking frame mounted on said tilting frame, and connected to said hoisting-frame, tackle for tilting and drawing the rocking and tilting frames and thereby elevating the hoisting-frame, a guy-frame, guys connecting said guy-frames to the said hoisting-frame, the latter being adapted to engage the tilting frame and arrest the retrograde movement thereof when the hoisting-frame is being lowered, substantially as described.

5. The combination of a hoisting-frame, a tilting frame, a rocking frame mounted on said tilting frame, and connected to said hoisting-frame, tackle for tilting and drawing the rocking and tilting frames and thereby elevating the hoisting-frame, a guy-frame, guys connecting said guy-frame to the said hoisting-frame, the latter being adapted to engage the tilting frame and arrest the retrograde movement thereof when the hoisting-frame is being lowered and means to lengthen and shorten said guys, for the purpose set forth, substantially as described.

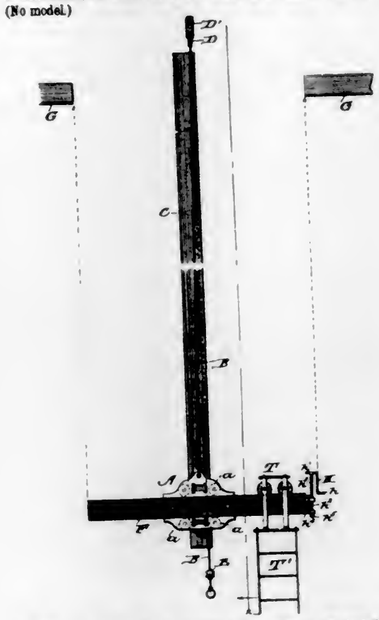
6. The combination, with a hoisting-frame, of a tilting frame, a rocking frame mounted on the tilting frame and connected to the hoisting-frame, and a tackle to apply power to the rocking frame, the latter being adapted to engage the tilting frame after a partial rotation of the rocking frame, and thereafter form an extension of the tilting frame, and to swing in conformity with said tilting frame, substantially as described.

656,066. VEHICLE-SPINDLE. MILTON WALKER, La Harpe, Ill. Filed Apr. 14, 1900. Serial No. 12,842. (No model.)



Claim.—A vehicle-axle spindle provided with a circular chamber at its inner end, a spiral spring seated in said chamber, a metal washer outside said chamber against which said spring bears, a cap-nut fitting the outer end of said spindle and provided with a circular chamber, a spiral spring fitted therein, and a metal washer outside said chamber and against which said spring bears to prevent lateral vibration to the hub, substantially as described.

656,067. HOISTING APPARATUS. ROBERT WATSON and CHARLES E. STEVENSON, Nanaimo, Canada. Filed Jan. 3, 1900. Serial No. 257. (No model.)

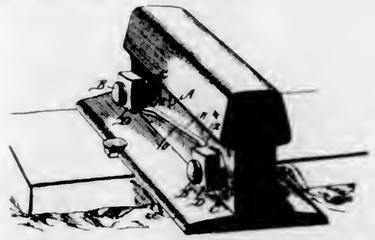


Claim.—1. A hoisting apparatus comprising a vertical fixed bar forming a slideway, a frame with rollers guided on the same and having a rigidly-attached horizontal rail-section, a cable attached at one end to and supporting the said frame and rail-section, a fixed pulley at the upper end of said bar sustaining the cable a pulley arranged below said bar and receiving the cable, and a trolley mounted on said movable rail-section and movable longitudinally thereon substantially as described.

2. A hoisting apparatus comprising a vertical fixed bar forming a slideway, a frame with rollers guided on the same and having a rigidly-attached horizontal rail-section, a cable attached at one end to and supporting the said frame and rail-section, a fixed pulley at the upper end of the bar sustaining the cable, a pulley at the lower end of said bar for the cable, fixed horizontal rail-sections, and a trolley mounted on the movable rail and transferable to the fixed rails substantially as described.

3. The combination with two rail-sections, one stationary and the other movable and arranged to be brought into or out of alinement; of a bar H arranged on the end of the movable section and having stop projections h h', and a long leg h^3 moving on guides on the end of the movable rail and a spring normally holding said bar H in its elevated position substantially as described.

656,068. NUT-LOCK. ASA W. WEBB, South Union, Ky. Filed Jan. 10, 1900. Serial No. 915. (No model.)



Claim.—1. A nut-lock for two nuts, comprising a lock-bar having notched ends adapted to engage the inner and side faces of the nuts, the rear walls of the notches being inclined in parallel planes oblique to the length of the bar, whereby a backward turn of the nuts will bind their side faces against such rear walls, as set forth.

2. A nut-lock for two nuts, comprising a lock-bar adapted to lie against the fish-plate or the like and having notched ends arranged to fit against the inner and side faces of the nuts, the rear walls of the notches being inclined or beveled in parallel planes oblique to the length of the bar and the side faces of the bar being also beveled whereby to lie snugly against the washers of the nuts, as set forth.

656,069. BRACE-HEAD FOR BORING-TOOLS. AUGUST WEISENHORN, Helena, Mont., assignor of one-third to William Weisenhorn, Quincy, Ill. Filed Mar. 19, 1900. Serial No. 9,317. (No model.)



Claim.—1. In a brace-head, the combination of a socket-piece to receive the shank of a bit, a shell movable on said socket-piece, and compressible crossed links held between said socket-piece and shell and adapted to be compressed by said shell into clamping engagement with the bit to hold the same firmly in its socket, substantially as described.

2. In a brace-head, the combination of an externally-screw-threaded socket-piece to receive the shank of a bit, an internally-screw-threaded shell to engage the said socket-piece, and spring clamping-links held between said socket-piece and shell and provided with looped portions crossing each other in such manner as to be capable of securely embracing the inserted bit and be clamped thereon by screwing down said shell, whereby the bit will be held firmly in its socket, substantially as described.

3. In a brace-head, the combination of an externally-screw-threaded and longitudinally-grooved socket-piece having in one end a socket to receive the shank of a bit, an internally-screw-threaded shell to engage the said socket-piece, and crossed spring-links arranged in the grooves of said socket-piece and compressible by screwing down said shell, whereby the crossed portions of said links will be made to securely clamp the bit and hold it firmly in its socket, substantially as described.

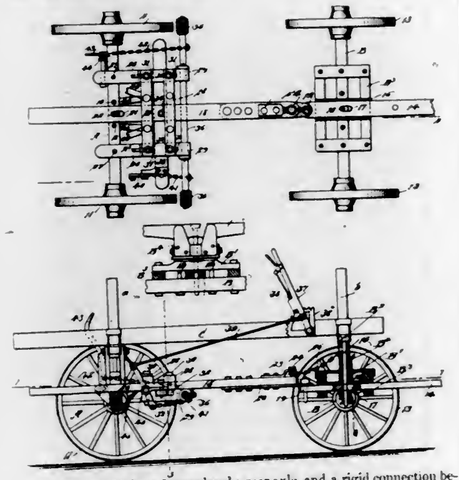
4. In a brace-head, the combination of an externally-screw-threaded and longitudinally-grooved socket-piece having a socket to receive the shank of a bit, an internally-screw-threaded shell to engage the said socket-piece and provided in one end with an annular groove or recess, and compressible crossed links comprising spring-arms arranged in the grooves of the socket-piece and a divided spring base-ring engaged in the annular groove or recess of the shell, the crossed portions of said links being adapted to clamp the bit by screwing down said shell, whereby the bit is held firmly in its socket, substantially as described.

5. In a brace-head, the combination of an externally-screw-threaded socket-piece having a socket to receive a bit and provided on two sides with parallel longitudinally-extended grooves, an internally-screw-threaded shell to engage the said socket-piece, and crossed spring-links provided with a base-ring engaged in said shell and with arms or shanks engaged in the grooves of the socket-piece, the crossed portions of said links being adapted to be clamped onto the bit by screwing down said shell, to hold the bit firmly in its socket, substantially as described.

656,070. VEHICLE-BRAKE. RUBEN H. WHITE, Princeton, Ky. Filed Nov. 15, 1899. Serial No. 737,106. (No model.)

Claim.—1. In a vehicle, a forward and a rear axle, a reach having sliding movement on the rear axle, said reach being provided with a slot, and a pin passed through the slot into the axle, a pole or tongue pivotally attached to said reach, the pole or tongue being mounted to slide on the

forward axle and having a slot therein, and a pin passed through the slot into said forward axle, as described.



2. In a vehicle, a forward and a rear axle, and a rigid connection between the axles, a reach held to slide upon the rear axle, and having a longitudinal slot therein, a pin passed through the slot into the rear axle, a pole or tongue mounted to slide on the forward axle and connected with the reach, the pole or tongue having a slot therein, and a pin passed through the slot into the forward axle.

3. In a vehicle, the combination, with the forward and the rear axles, a fixed frame attached to the rear axle, a reach having sliding movement upon the rear axle, a pole connected with the reach and having sliding movement on the forward axle, both the pole and reach having longitudinal slots therein over the axles, and pins passed through the slots and into the axles, of a brake-bar, a sliding support for the brake-bar, and a connection between the reach and said sliding supports, whereby said supports may be moved by said reach, as described.

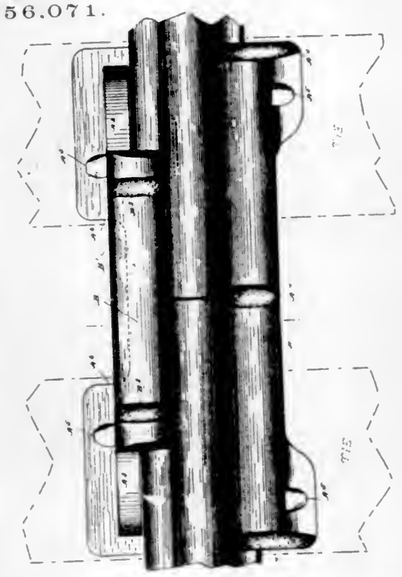
4. In a vehicle, the combination, with the forward and the rear axles, a fixed frame attached to the rear axle, a reach having sliding movement upon the rear axle, a pole connected with the reach and having sliding movement on the forward axle, both the pole and reach having longitudinal slots therein over the axles, and pins passed through the slots and into the axles, of a bed rigidly connecting the axles, a brake-shaft, supports for said brake-shaft held to slide upon said frame, said brake-shaft being provided with brake-shoes mounted to revolve, and a connection between the reach and the supports for the brake-shaft, a shifting lever, and a connection between the shifting lever and the brake-shaft, for the purpose set forth.

5. In a vehicle, the combination, with the forward and rear axles, a reach having limited movement upon the rear axle, a pole connected with the reach and having limited movement upon the forward axle, a brake-shaft, sliding supports for said brake-shaft, and a connection between the reach and said sliding supports, of a shifting lever, a lever-arm carried by the connecting medium between the reach and the sliding supports for said brake-shaft, a connection between the lever-arm and shifting lever, and a chain connection between the lever-arm and the brake-shaft, said chain being passed below the brake-shaft to the front, a hand-lever located at the rear of the brake-shaft at the side opposite that near which the lever-arm is located, and a chain attached to the hand-lever, said chain being carried over the brake-shaft to the front thereof, as described.

656,071. RAILWAY-RAIL JOINT. CARLOS WHITMORE, San Francisco, Cal., assignor of one-half to James H. Boriand, same place. Filed Mar. 27, 1899. Renewed May 8, 1900. Serial No. 15,980. (No model.)

Claim.—A rail-joint comprising a plate adapted to bear against one side of the rail, an extension upon said plate adapted to extend under and beyond the base of the rail, said extension having lugs thereon, a second plate adapted to bear against the rail on the side opposite to that engaged by the first-mentioned plate, and means for preventing vertical displacement of the plates, the said second plate fitting between the said lugs, whereby spikes engaging the outer side of said second plate will serve with the lugs to secure the said second plate in position; substantially as described.

656,071.



656,072. SODA-WATER APPARATUS. JOSEPH O. WILD, Holyoke, Mass. Filed Jan. 4, 1900. Serial No. 340. (No model.)



Claim.—1. The apparatus herein described comprising the base, the central holder having the shelf-like support on its outer side, the turntable plate encircling the central holder and resting upon the shelf-like support and adapted to receive the syrup vessels, the syrup vessels having depending outlet-tubes at their lower ends, a retaining device for the upper ends of the syrup vessels, and a casing overlapping the lower ends of the syrup vessels and having an opening through which access may be had to the syrup vessels, substantially as set forth.

2. In an apparatus substantially as described, the combination of the base, the central holder having the shelf-like support on its outer side, the syrup vessels resting on said shelf-like support, the top carried by the central holder and extending over and having portions depending outside the upper ends of the syrup vessels, and the casing resting upon the base and overlapping the lower ends of the syrup vessels substantially as set forth,

3. In an apparatus substantially as described, the combination of the syrup vessels, a rotating support therefor, said vessels having depending outlet-tubes provided with faucets having outwardly-projecting handles and the casing overlapping the lower ends of the vessels and having a channel or passage-way for the handles of the faucets, substantially as set forth.

4. An apparatus substantially as described, comprising the central holder, the turn-table plate encircling the holder and adapted to support the syrup vessels, and the turn-table for the glasses, such turn-table being concentric with that of the syrup vessels, substantially as set forth.

5. An apparatus substantially as described comprising the central holder, the turn-table plate encircling the holder and adapted to support the syrup vessels, and the turn-table plate below said first turn-table plate and adapted to support the tumblers, and the casing fitting over said plates and inclosing the space between the same substantially as set forth.

6. An apparatus substantially as described comprising the central holder, the turn-table for the syrup vessels, the cover on said holder, the casing, both the cover and the casing having coincident openings, the compartments for the syrup vessels on said turn-table and the doors to said compartments, such doors being held from opening except when opposite the coincident openings in the cover and casings, substantially as set forth.

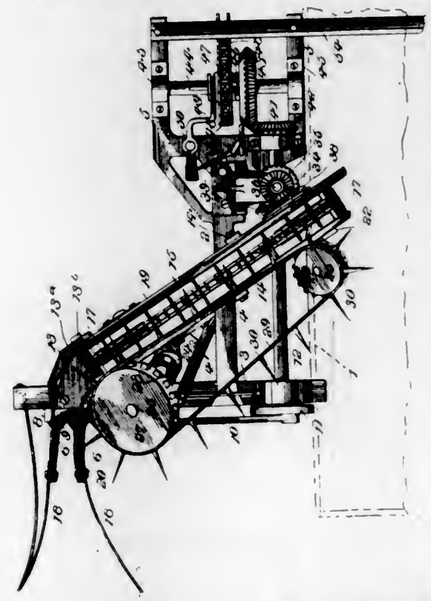
7. An apparatus substantially as described, comprising the central holder, the turn-table revolving around the same, the syrup vessels supported on said turn-table and retaining means overlapping the syrup vessels and having coincident openings through which the syrup vessels may be withdrawn, substantially as set forth.

8. In an apparatus substantially as described, the combination of the turn-table for the syrup vessels, the individual doors for said vessels, said doors being arranged to open and shut independently of their respective vessels and the casing having means by which to hold said individual doors closed except in certain adjustments thereof, substantially as set forth.

9. An apparatus substantially as described comprising the central holder, the base, a shelf-like support upon the outer side of the holder, a cover having a depending flange overlapping the upper ends of the vessels, the casing upon the base and having at its upper end a portion overlapping the lower ends of the vessels, such portion and the depending flange of the cover having coincident openings through which the jars may be removed, the turn-table plate upon the base within the casing and adapted to support the glasses substantially as set forth.

10. In an apparatus substantially as described, the combination of the central holder, the top thereon having a depending flange, the casing having a portion adapted to overlap the lower ends of the jars, the jars, a turn-table support therefor, and individual doors for each of said jars, said doors being movable to open and closed position independently of their respective jars, substantially as set forth.

656,073. MACHINE FOR HARVESTING SEED FROM CORN, &c. RANSFORD C. WILSON, Abilene, Kans. Filed Aug. 5, 1899. Serial No. 726,339. (No model.)

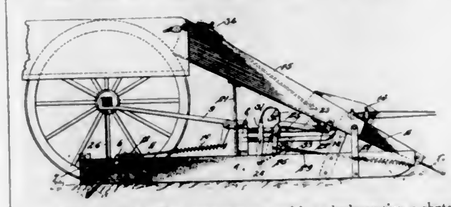


Claim.—1. In a machine of the class described, the combination of a vehicle, a frame, and mechanism carried thereby, for cutting, elevating and delivering the corn to the vehicle, consisting of a horizontally-vibrated knife, operated by a pitman connected to a horizontal shaft, said shaft being geared by bevel-gears to a shaft, which is clutched to a wheel which receives motion from a wheel of the vehicle supporting the mechanism, a pair of supports 6 6 secured to the front horizontal bar of the frame out from which extend downwardly-projecting gathering-arms, a support secured on the horizontal bar immediately above and behind the aforesaid supports 6 6, to which is secured a belt-supporting frame consisting of two side pieces connected by a horizontal web, vertical rods 14, supporting said belt-frame at the end opposite the front horizontal bar a shield secured to the rear of the frame, said frame positioned in a vertical plane, at an oblique angle to the cutter, an endless carrier mounted on rollers in said frame, a belt passing around suitable wheels mounted on shafts, having bearings secured to the belt-supporting frame, gathering-fingers on said belt, means for tightening said belt, a bevel gear-wheel on the end of the upper shaft supporting the carrier, a simila bevel-wheel on a vertical shaft, meshing with the aforesaid bevel-wheel a bevel-wheel on the lower end of said vertical shaft, which meshes with a bevel-wheel on the horizontal shaft hereinbefore mentioned, all for the purpose as specified.

2. In a machine of the class described, the combination of a vehicle, a frame, and mechanism carried thereby, consisting of a horizontal vibrated knife, operated by a pitman connected to a shaft, means for imparting motion to said knife from a wheel of the vehicle supporting the mechanism, a pair of supports 6 6 secured to the front horizontal bar of the frame, out from which extend downwardly-projecting gathering-arms, a support secured on the horizontal bar immediately above and behind the aforesaid supports 6 6, to which is secured a belt-supporting frame consisting of two side pieces connected by a horizontal web, vertical rods 14, supporting said belt-frame at the end opposite the front horizontal bar, a shield secured to the rear of the frame, said frame positioned in a vertical plane, at an oblique angle to the cutter, an endless carrier mounted on rollers in said frame, a belt passing around suitable wheels mounted on shafts having bearings secured to the belt-supporting frame, gathering-fingers on said belt, means for tightening said belt, a bevel gear-wheel on the end of the upper shaft supporting the carrier, a similar bevel-wheel on a vertical shaft, meshing with the aforesaid bevel-wheel, a bevel-wheel on the lower end of said vertical shaft, which meshes with a bevel-wheel on the horizontal shaft hereinbefore mentioned, all for the purpose specified.

3. In a machine of the class described, the combination of a vehicle, a frame, and mechanism carried thereby, for cutting, elevating and delivering the corn to the vehicle, consisting of a horizontally-vibrated knife, operated by a pitman connected to a horizontal shaft, said shaft being geared by bevel-gears to a shaft, which is clutched to a wheel which receives action from a wheel of the vehicle supporting the mechanism, a pair of supports 6 6 secured to the front horizontal bar of the frame, out from which extend downwardly-projecting gathering-arms, a support secured on the horizontal bar immediately above and behind the aforesaid supports 6 6, to which is secured a belt-supporting frame consisting of two side pieces connected by a horizontal web, vertical rods 14, supporting said belt-frame at the end opposite the front horizontal bar, a shield secured to the rear of the frame, said frame positioned in a vertical plane, at an oblique angle to the cutter, an endless carrier mounted on shafts having bearings secured to the belt-supporting frame, gathering-fingers on said belt, means for tightening said belt, and means for imparting motion to the belt, carrier and horizontally-vibrated knife, substantially as specified.

656,074. WAGON-LOADING DEVICE. LEONARD C. WOOD, Alden, Iowa. Filed Dec. 5, 1899. Serial No. 739,297. (No model.)



Claim.—1. A loading apparatus, comprising a body portion, a chute-section movably mounted thereon to engage and disengage the receptacle to be loaded, and means for engaging said receptacle to hold it stationary during the loading, such means having connection with the chute-section to be operated thereby.

2. In a loading apparatus, a body, a chute-section mounted to swing thereon, a spring-actuated lever mounted on the body to engage the receptacle to be loaded, to hold the receptacle during the loading, and a connection between the chute-section and the lever to move the lever away

from the said receptacle to be loaded when the chute-section is thrown into inoperative position.

3. In a loading apparatus, a body, a chute-section mounted to swing thereon, means serving to engage the receptacle to be loaded to hold it during the loading, a spring actuating said means to throw it normally into said engagement, an angle-bar attached to the chute-section and moving in time therewith, and a connection between the angle-bar and the said means, whereby to move the means against the spring.

4. A loading apparatus, having a body portion, and a U-shaped bar mounted to rock thereon, the end portions of the bar being outwardly curved and extended downward below the body portion for the purposes described.

5. In a loading apparatus, the combination of a body portion, a chute-section mounted to swing thereon, a track-bar mounted on the body portion, an angle-bar pivotally attached to the chute-section and guided on the track-bar, and a spring attached to the angle-bar.

6. In a loading apparatus, the combination of a body portion, a chute-section mounted to swing thereon, a bar pivotally mounted on the chute-section and having guided movement on the body portion, the bar moving in time with the chute-section, and a spring having connection with the said bar.

7. In a loading apparatus, the combination of a body portion, a chute-section mounted to swing thereon, a bar attached to the chute-section and moving in time therewith, the bar having guided movement on the body portion, a lever mounted on the body portion, a flexible connection between the bar and lever, a retractile spring having connection with the bar, and a flexible connection between the lever and spring, such parts being arranged to operate as described.

8. In a loading apparatus, the combination of a swinging chute-section, a spring for assisting in actuating the same, and means establishing connection between the spring and the chute-section, such means comprising a sliding part, and a lever connected therewith and with the spring, which means maintain the spring continuously under tension.

9. In a loading apparatus, the combination of a body, a chute-section mounted to swing thereon, a bar having guided movement on the body and connection with the chute-section to move in time therewith, a lever having connection with the bar, and a spring having connection with the bar and with the lever, for the purpose described.

10. In a loading apparatus, the combination of a swinging chute-section, a spring, and means connecting the spring with the chute-section and serving to maintain the spring continually under tension irrespective of the position of such chute-section.

11. In a loading apparatus, the combination of a movable chute-section, means for assisting in actuating the same, and an element connected with the chute-section and with said means, whereby to cause said means to act uniformly on the chute-section irrespective of the position thereof.

656,075. SHOE-FASTENER. DAN M. YOUNG, Newburg, N. Y., assignor of one-third to Joseph M. Leeper, same place. Filed Sept. 27, 1899. Serial No. 731,801. (No model.)

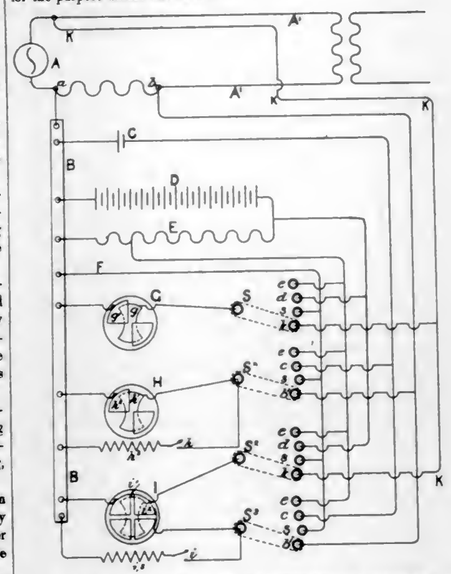


Claim.—A fastening, consisting of a single piece of material bent or turned upon itself at about its middle portion to form a loop and top and bottom members, the top member being offset near its middle toward the bottom member and formed with prongs at its rear edge of which one forms a clenching-prong and the others are bent around and clamped upon the rear edge of the bottom member, and the bottom member being formed with clenching-prongs on its sides adapted to attach the fastening to an article, in connection with the clenching-prong of the top member, as shown and described.

656,076. METHOD OF ELECTROSTATICALLY MEASURING CURRENTS IN WORKING CIRCUITS. GEORGE L. ADDENBROOKE, London, England. Filed May 7, 1900. Serial No. 15,783. (No specimens.)

Claim.—1. The herein-described method of electrostatically measuring electric currents in a working circuit, which comprises the setting up of an electrostatic instrument with suitable connections to the said circuit, testing, comparing by standard, and calibrating the said instrument and taking a deflection reading therefrom upon a suitable adjusted scale; then making measurements of the current in the said circuit under working conditions by a deflection reading or readings upon the said scale as adjusted; and finally retesting or calibrating the instrument by a further reading or readings upon the said scale as first adjusted, substantially as and for the purpose herein described.

2. The herein-described method of electrostatically measuring electric currents in a working circuit, which comprises the setting up of an electrostatic instrument with suitable connections to the said circuit; then taking and noting one or more deflection readings upon a suitable scale of the current from the said circuit under working conditions; and finally ascertaining the value of the said deflection readings by adjustments of the ratio of resistance in shunt with the battery until the exact deflection of the readings under working conditions are reproduced, substantially as and for the purpose herein described.



3. The herein-described method of electrostatically measuring electric currents in a working circuit by first testing or calibrating an electrostatic wattmeter, voltmeter, and ammeter by means of a suitable standard cell, ratio resistance, and battery, and taking deflection readings therefrom upon suitably-adjusted scales; then connecting the said instruments to the circuit to be tested, and taking measurements of the current therefrom under working conditions by deflection readings upon the said adjusted scales, substantially in the manner and for the purpose hereinbefore described

4. The herein-described method of electrostatically measuring electric currents in a working circuit by first testing or calibrating an electrostatic wattmeter, voltmeter, and ammeter by means of a suitable standard cell, ratio resistance, and battery, taking deflection readings therefrom upon scales suitably adjusted for direct reading; then connecting the said instruments to the circuit to be tested and taking measurements of the current therefrom under working conditions by deflection direct readings upon the said scales so adjusted, as and for the purpose hereinbefore described.

5. The herein-described method of electrostatically measuring electric currents in a working circuit by connecting an electrostatic wattmeter, voltmeter, and ammeter to the said circuit and taking deflection readings therefrom under working conditions upon suitable scales; then calibrating the said instruments by means of a suitable standard cell, ratio resistance, battery, and readings upon the said scales adjusted for direct reading; and finally reproducing the original deflections upon the said scales so adjusted and ascertaining their value directly as and for the purpose hereinbefore described.

656,077. MANUFACTURE OF INCANDESCENT MATERIALS FOR ELECTRIC LIGHTING. GEORG ALEFELD, Darmstadt, Germany, assignor to Ludwig Wilhelm Gans, Frankfort-on-the-Main, Germany. Filed June 15, 1899. Serial No. 720,718. (No model.)



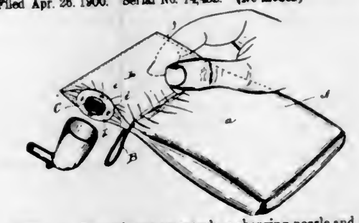
Claim.—1. The within-described method of making incandescents adapted to incandescent electric lighting, which consists in first: forming a body of the desired shape from one or more of those oxids of the earthy metals which become conductive and luminous at elevated temperatures; second, applying to the surface of the body so formed a partial coating of a ceramic lustrous preparation of one or more of the highly-infusible metals of the platinum group; and lastly, burning said ceramic preparation in to reduce the same to a metallic form and cover the coated portion of said body with a superficial adherent film-like deposit of such metal or metals.

2. As a new article of manufacture, an incandescent adapted to electric lighting, which consists of a body composed of one or more of those oxids of the earthy metals which become conductive and luminous at elevated temperatures, provided with an initial heating device consisting of a film-like coherent and adherent partial coating of one or more of the highly-infusible metals of the platinum group produced by burning in a ceramic luster of the same.

3. As a new article of manufacture, an incandescent adapted to electric lighting, which consists of a body composed of one or more of those oxids of the earthy metals which become conductive and luminous at elevated temperatures, provided with an initial heating device consisting of a film-like coherent and adherent partial coating of one or more of the highly-infusible metals of the platinum group, as produced for example by burning in a ceramic luster of the same.

4. As a new article of manufacture, an incandescent adapted to incandescent electric lighting, which consists of a hollow body composed of one or more of those oxids of the earthy metals which become conductive and luminous at elevated temperatures, provided with an initial heating device consisting of an interior adherent coating of one or more of the highly-infusible metals of the platinum group.

656,078. TOBACCO-POUCH. DAVID H. ALLEN, Miamisburg, Ohio. Filed Apr. 26, 1900. Serial No. 14,432. (No model.)



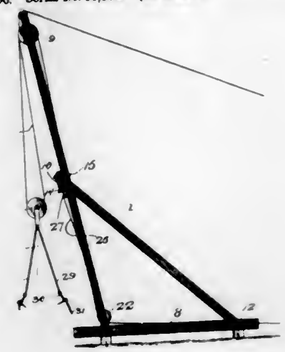
Claim.—1. In a tobacco-receptacle, a charging-nozzle and a finger-opening disposed diametrically opposite each other in the sides of the receptacle at one end thereof, in a line transverse to its length, substantially as specified.

2. In combination with a bag provided with a draw-string dividing the same into two compartments, a charging-nozzle inserted in an orifice in one of the bag-compartments and a finger-opening opposite the charging-nozzle, substantially as specified.

3. A tobacco-pouch having a reservoir and a charging-compartment, a nozzle in the charging-compartment adapted to fit the bowl of a pipe and an opening for access to the interior of said compartment, substantially as specified.

4. A tobacco-receptacle having a reservoir and a charging-compartment, means for separating them, a nozzle in the charging-compartment adapted to fit the bowl of a pipe and an opening for access to the interior of said compartment, substantially as specified.

656,079. DERRICK. EDWARD P. ARSENAU, Duluth, Minn. Filed Mar. 24, 1900. Serial No. 10,104. (No model.)



Claim.—1. A derrick, comprising a base, a derrick proper movably mounted thereon, a cross brace or bar on the said derrick, an anchor-beam pivotally secured to the said base, means for adjustably securing the cross-brace to the anchor-beam at different points along its length, whereby the derrick may be varied in its position with respect to the base, the construction being such that the derrick will be positively held against movement in either direction by the said brace.

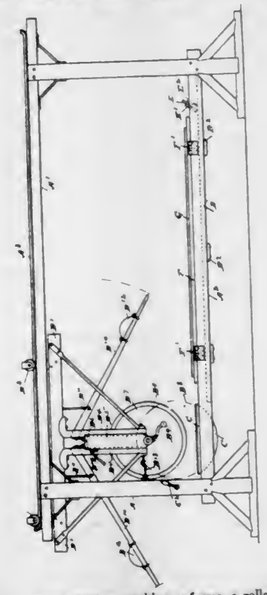
2. A derrick comprising a base, a derrick proper formed of poles joined together at their tops and provided with tenons at their lower ends adapted to rest in sockets formed in the base, slack chains for connecting the derrick-poles with the base so that they cannot be accidentally displaced from their sockets, and means for bracing the derrick in position, substantially as described.

3. A derrick comprising a base having mortises or sockets formed therein, a derrick proper mounted upon said base and having tenons engaging said sockets, the said tenons being rounded at their ends so that they may have a pivotal movement in said sockets, a guy-rope for holding the upper end of the derrick against lifting strains, and an anchor-beam pivoted to the base and adjustably secured to the derrick for further bracing the same, substantially as described.

4. A derrick comprising a base, a derrick proper formed of beams joined together at their tops and resting in sockets at their lower ends, a cross brace or beam upon the said derrick proper, an anchor-beam pivoted at one end to the base and provided at its other end with a series of apertures, a pin for adjustably connecting the apertured end of the anchor-beam with the cross-beams of the derrick, whereby the derrick will be prevented from tipping forward or backward, a sheave or pulley mounted at the apex of the derrick, a swivel-block secured to the base, and a hoisting-block for receiving a hoisting-cable, substantially as described.

5. A derrick comprising a base, a derrick proper formed of derrick-poles secured together at their upper ends and spread apart at their lower ends, a brace-rod connecting the said poles about midway of their length, an anchor-beam for bracing the said derrick and adjustably connected with the cross-beam, a sheave mounted at the apex of the derrick, a swivel-block secured to the base, a cable or rope connecting the swivel-block with the cross-brace so that the said block will be held vertical when the draft-cable is slack, a hoisting-block, a crotch-chain, hooks carried thereby, and a draft cable or rope passing over the blocks and sheaves for raising and lowering the hoisting-block, substantially as described.

656,080. PAINTING-MACHINE. BERNARD W. AUGUSTINE, Alameda, Cal. Filed Aug. 4, 1899. Serial No. 726,182. (No model.)



Claim.—1. In a painting-machine, a frame, a roller traveling upon guides upon said frame, said roller having a surface adapted to pick up a wood-filler, supports upon said frame for bolding in the path of the roller a board to receive the filler, and additional supports upon said frame to hold the board to be treated above the said board to receive the filler.

said additional supports being movable whereby they can be moved out of the path of travel of the roller; substantially as described.

2. In a painting-machine, a frame, a roller traveling upon guides upon said frame, said roller having a surface adapted to pick up a wood-filler, supports upon said frame for holding in the path of the roller a board to receive the filler, and additional supports hinged to the frame and adapted to be swu g into and out of the path of the roller: substantially as described.

3. In a painting-machine, the combination with a roller having a surface adapted to pick up a wood-filler; of a carriage for said roller adapted to travel on a frame and having vertically-adjustable bearings for said roller; a frame having guides for said carriage and adapted to hold a board to receive the filler in the path of the said roller; and a removable platform to rest over the said board to hold the board to be treated in the path of the said roller substantially as described.

4. In a painting-machine, a frame having stringers, a roller traveling upon guides upon said frame and above said stringers, the path of travel of the said roller being between said stringers, supports upon said stringers for the board to receive the filler, and additional supports upon said stringers for the board to be treated; substantially as described.

5. In a painting-machine, a frame having stringers, a roller traveling upon guides upon said frame and above said stringers, the path of travel of the said roller being between said stringers, cross-pieces between said stringers adapted to support the board to receive the filler, and additional supports hinged to said stringers and adapted to be swung into and out of the path of the roller to support above the first-mentioned board the board to be treated; substantially as described.

6. In a painting-machine, a frame, supports thereon for the board to be painted, guides upon said frame in proximity to said supports, a brush-supporting frame having reciprocation along said guides, oppositely-inclined brush-supports upon said frame, and a brush having removable engagement with one set of said supports and adapted to fit either of said sets; substantially as described.

7. In a painting-machine, a frame, supports thereon for the board to be painted, guides upon said frame in proximity to said supports, brush-frame side pieces movable along said guides, and a brush adapted to extend between said side pieces and engage the same, whereby said brush connects the side pieces to cause them to move together; substantially as described.

8. A brush for painting-machines and the like comprising a holder, a brush thereon, and a squeegee thereon in rear of the brush; substantially as described.

656,081. **SULFONATED ANTHRAQUINONE DYE.** OSCAR BALLY, Mannheim, Germany, assignor to the Badische Anilin und Soda Fabrik, Ludwigshafen, Germany. Filed May 15, 1900. Serial No. 16,796. (No specimens.)

Claim.—1. The new coloring-matter mono-alphyl-mono-amido-anthraquinone-mono-sulfoacid which can be obtained by treating mono-nitro-anthraquinone-sulfoacid with an aromatic amin and which is soluble in water, soluble in dilute sodium-carbonate and in sodium-hydrate solutions but precipitated by an excess of these reagents, soluble in alcohol and in concentrated sulfuric acid, all substantially as described.

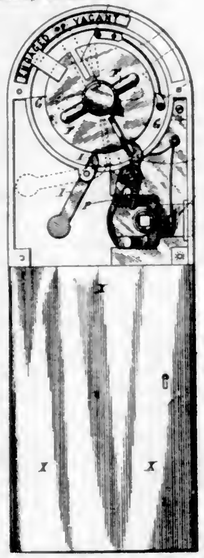
2. The specific new coloring-matter which can be obtained by treating beta-mono-nitro-anthraquinone-sulfoacid with para-toluidin and which yields a violet solution in water, and dissolves in dilute sodium-carbonate solution giving a red-violet color and in dilute caustic-soda solution giving a violet color but which is precipitated from it aqueous solution by an excess of the reagents, soluble in alcohol giving a bluish-cherry-red solution and in concentrated sulfuric acid giving a brown solution, all substantially as described.

656,082. **COIN-CONTROLLED LAVATORY-LOCK.** FREDERICK J. BEAUMONT, London, England. Filed Mar. 13, 1900. Serial No. 8,477. (No model.)

Claim.—1. In a coin-controlled lock, the combination with the lock-bolt and actuating means therefor, of a coin-conveyer arranged to support and carry a coin in the path of said bolt-actuating means so that said coin will engage said means to move the bolt, and means for rotating said coin-conveyer, substantially as described.

2. In a coin-controlled lock, the combination with the lock-bolt and actuating means therefor, of coin-conveying disks arranged to support and carry a coin in the path of said bolt-actuating means so that said coin will engage said means to move the bolt, a track surrounding said disks and having an opening therein adjacent to the bolt-actuating means, a device for closing said opening during the passage of a coin thereover, and means for rotating said coin-conveying disks, substantially as described.

3. In a coin-controlled lock, the combination with the lock-bolt and actuating means therefor, of a pair of rotary coin-conveying disks arranged to support and carry a coin in the path of said bolt-actuating means so that said coin will engage said means to move the bolt, means for rotating said disks in one direction, and means for preventing backward rotation thereof, substantially as described.

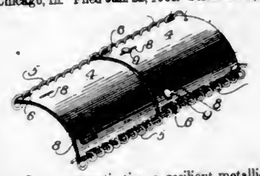


4. In a coin-controlled lock, the combination with the lock-bolt and actuating means therefor, of coin-conveying disks arranged to support and carry a coin in the path of said bolt-actuating means so as to engage said means to move the bolt, a track surrounding the disks and having a coin-outlet opening therein adjacent to the bolt-actuating means, a pivoted flag arranged to be actuated by a coin to close said opening during its passage thereover, means for rotating said disks in one direction, and a pawl for preventing rotation of the disks in the opposite direction, substantially as described.

5. In a coin-controlled lock, the combination with the spindle A, having a transverse coin-slot therethrough, of coin-carrying disks mounted on said spindle, a track surrounding the coin-disks and having an opening therein disposed below the slotted spindle, a lock-bolt, and actuating means therefor projecting into said track in position to be actuated by the coin carried by the disks, substantially as described.

6. In a coin-controlled lock, the combination with the lock-bolt and actuating means therefor, of a coin-conveyer arranged to positively move the coin over a coin-slot and into contact with the bolt-actuating means to operate the bolt, a pivoted flag arranged in the path of the coin and adapted to be actuated thereby to close said coin-slot during the passage of the coin thereover, and means for operating the coin-conveyer, substantially as described.

656,083. **PUNCTURE-PROOF PNEUMATIC TIRE.** JOSEPH A. BERGER, Chicago, Ill. Filed Jan. 22, 1900. Serial No. 2,278. (No model.)



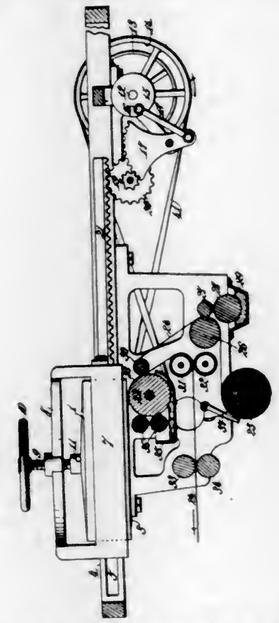
Claim.—1. In a pneumatic tire, a resilient metallic band seated in the material of the tire near the tread, and having a coil-spring secured to and along each edge of said band for the purpose specified.

2. In a pneumatic tire, a resilient metallic band seated in the material of the tire near the tread, and having a series of perforations along each edge, and a coil-spring extending through said perforations and over the adjoining edge, substantially as and for the purpose specified.

3. In a pneumatic tire, an armor-band, comprising a series of plates slidingly connected together, having a series of perforations along their side edges, and elongated slots toward each end, and a coil-spring extending through said perforations and slots, and over the edges of said plates, substantially as and for the purpose specified.

4. In a pneumatic tire, an armor-plate seated in the material of the tire and having a coil-spring secured to and along its edge for the purpose specified.

656,084. **MEANS FOR REPRODUCING MULTICOLOR DESIGNS.** ANTON VON BEUST, Orange, N. J. Filed Mar. 17, 1900. Serial No. 9,101 (No model.)



Claim.—1. In an apparatus for reproducing multicolored designs, the combination with a block comprising a multiplicity of stipple-sticks or crayons set up on end and side by side to form the colored design to be reproduced and suitably bound together, a cutting-tool for cutting off successive thin layers from the surface of said block, and means for transferring said layers to and fixing them on the surfaces designed for the reception of the reproductions, substantially as described.

2. In an apparatus for reproducing multicolor designs, the combination with a block comprising a multiplicity of stipple-sticks or crayons set up on end and side by side to form the colored design to be reproduced and suitably bound together, means for shaving off successive thin layers from the surface of said block, and means for transferring said layers to and fixing them on the surface designed for the reception of the reproductions, substantially as described.

3. In an apparatus for reproducing multicolor designs, the combination with a block comprising a multiplicity of stipple-sticks or crayons set up on end and side by side to form the colored design to be reproduced and suitably bound together, means for cutting off in numerous subjoining sections successive thin layers from the surface of said block, and means for transferring said layers to and fixing them on the surface designed for the reception of the reproductions, substantially as described.

4. In an apparatus for reproducing multicolor designs, the combination with a block formed of a plurality of solid colors arranged to form the design to be reproduced, a rotary roller provided on its periphery with numerous small longitudinal corrugations or grooves arranged to contact with the surface of the said block, means for guiding the block in a rectilinear direction transversely to the said roller, and means for rotating the roller in an opposite direction to the movement of the block, substantially as described.

5. In an apparatus for reproducing multicolor designs, the combination with a block formed of a plurality of solid colors arranged to form the design to be reproduced, a rotary roller provided on its periphery with numerous small longitudinal corrugations or grooves arranged to contact with the surface of the said block, means for guiding the block in a rectilinear direction transversely to the roller, means for rotating the roller in an opposite direction to the movement of the block, a yielding pressure-roller arranged in contact with the grooved roller, means for feeding a web of fabric between the pressure and grooved rollers, and means for coating the fabric with an adhesive substance before its passage between said rollers, substantially as described.

6. In an apparatus for reproducing multicolor designs, the combination with a block formed of a plurality of solid colors arranged to form the design to be reproduced, of a rotary roller provided on its periphery with numerous small longitudinal corrugations or grooves, means for moving the block in a rectilinear direction transversely to the said roller, means for feeding the said block toward the roller, and means for rotating the roller in an opposite direction to the movement of the block, substantially as described.

7. In an apparatus for reproducing multicolor designs, the combination with a block formed of a plurality of solid colors arranged to form the design to be reproduced, of a roller provided on its periphery with numerous small longitudinal corrugations or grooves, means for reciprocating the block transversely across the corrugated roller, means for intermittingly rotating the roller in an opposite direction to the movement of the block, and means for feeding the block toward the roller, substantially as described.

8. In an apparatus for reproducing multicolor designs, the combination with a block formed of a plurality of solid colors arranged to form the design to be reproduced, of a roller provided on its periphery with numerous small corrugations or grooves, means for reciprocating the block transversely across the corrugated roller, means for intermittingly rotating the roller in an opposite direction to the movement of the block, a yielding pressure-roller disposed in contact with the corrugated roller and arranged to intermittingly rotate with the latter, means for feeding a web of fabric between the pressure and corrugated rollers, means for coating the fabric with an adhesive substance before its passage between said rollers, and means for feeding the block toward the corrugated roller, substantially as described.

9. In an apparatus for reproducing multicolor designs, the combination with a block formed of a plurality of solid colors arranged to form the design to be reproduced, of a roller provided on its periphery with numerous small corrugations or grooves, means for reciprocating the block transversely across the corrugated roller, means for intermittingly rotating the roller in one direction as the block is reciprocated in the opposite direction, means for coating a web of fabric with an adhesive substance and feeding it to the corrugated roller, burnishing-rolls between which the web passes after it leaves the corrugated roller, and means for feeding the block toward the said roller, substantially as described.

10. In an apparatus for reproducing multicolor designs, the combination with a block formed of a plurality of solid colors arranged to form the design to be reproduced, of a longitudinally corrugated or grooved roller, means for reciprocating the block transversely across the corrugated roller, means for intermittingly rotating the roller in an opposite direction to the movement of the block, a pressure-roller disposed in contact with the corrugated roller and arranged to intermittingly rotate with the latter, means for feeding a web of fabric between said rollers, and rotating brush-rollers arranged to rotate in contact with the corrugated roller and clean the latter, substantially as described.

11. In an apparatus for reproducing multicolor designs, the combination with a block formed of a plurality of solid colors arranged to form the design to be reproduced, of a longitudinally corrugated or grooved roller, means for reciprocating the block transversely across the corrugated roller, means for adjusting the block toward the roller, means for rotating the roller in one direction as the block is reciprocated in the opposite direction, means for throwing the roller out of operation when the block is retracted, and means for feeding a web of fabric into contact with said roller, substantially as described.

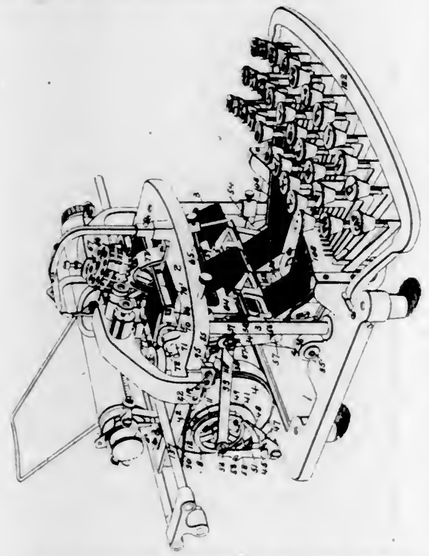
656,085. **TYPE-WRITING MACHINE.** GEORGE C. BLICKENSDERFER, Stamford, Conn. Filed Apr. 26, 1900. Serial No. 14,452. (No model.)

Claim.—1. The combination with a constantly-running power mechanism, of a type mechanism, a normally-inoperative actuating mechanism, means for intermittently connecting the actuating mechanism and the type mechanism, a bank of keys, and means controlled by each of the keys for causing the power mechanism to operate the actuating mechanism, substantially as described.

2. The combination with a constantly-running power mechanism, of a type mechanism, a normally-inoperative actuating mechanism therefor, a bank of keys, means for positively connecting the actuating mechanism to the type mechanism, said means being constructed to be operated by each of the keys, and means for causing the power mechanism to operate the actuating mechanism, substantially as described.

3. The combination with a constantly-running power mechanism, of a type mechanism, a normally-inoperative actuating mechanism, a bank of keys, means for positively connecting the actuating mechanism to the type mechanism, and means for causing the power mechanism to oper-

ate the actuating mechanism, both sets of means being constructed to be operated by each of the keys, substantially as described.



4. The combination with a constantly-running power mechanism, of a type mechanism comprising a series of separate characters, a normally-inoperative actuating mechanism connections between the actuating mechanism and the type mechanism whereby the actuating mechanism is caused to operate each of said characters, a clutch mechanism for connecting the actuating mechanism to the power mechanism, a bank of keys, and connections between each key and the clutch mechanism, substantially as described.

5. The combination with a constantly-running power mechanism, of a type mechanism, a normally-inoperative actuating mechanism therefor, a clutch mechanism for connecting the operating mechanism to the power mechanism, connections including locking devices between the type mechanism and the actuating mechanism, a bank of keys, connections between each key and the clutch mechanism, and means whereby each key operates the locking devices, substantially as described.

6. The combination with a constantly-running power mechanism, of a type mechanism, a normally-inoperative actuating mechanism therefor, a clutch mechanism for connecting the actuating mechanism to the power mechanism, connections including locking devices between the type mechanism and the actuating mechanism, locking mechanism for preventing the operation of the type mechanism, releasing devices for the locking mechanism, a bank of keys, connections between each key and the clutch mechanism, means whereby each key releases the locking mechanism and throws the locking devices into operation, substantially as described.

7. The combination with a constantly-running power mechanism, of a type mechanism, a normally-inoperative actuating member, a clutch mechanism for connecting said member to the power mechanism, connections including locking devices between said member and the type mechanism, a bank of keys, connections between each key and the clutch mechanism, and means whereby each key operates said locking devices, substantially as described.

8. The combination with a constantly-running power mechanism, of a type mechanism, a normally-inoperative actuating-bar, connections including a clutch between the bar and the power mechanism, means for giving the bar a lateral movement, means whereby said bar operates the type mechanism, a bank of keys, and connections between each key and the clutch, substantially as described.

9. The combination with a constantly-running power mechanism, of a type mechanism, a normally-stationary actuating-bar, connections including a clutch between the bar and the power mechanism, means for giving the bar a lateral movement, means whereby said bar operates the type mechanism, a bank of keys, and connections between each key and the clutch, substantially as described.

10. The combination with a constantly-running power mechanism, of a type mechanism, a normally-inoperative actuating-bar, connections including a clutch between the bar and the power mechanism, connections including locking devices between the type mechanism and the bar, a bank of keys, connections between each key and the clutch, and means whereby each key operates the locking devices, substantially as described.

11. The combination with a constantly-running power mechanism, of a type mechanism, a normally-stationary actuating-bar, connections including a clutch between the bar and the power mechanism, connections including locking devices between the type mechanism and the bar, a bank of keys, connections between each key and the clutch, and means whereby each key operates the locking devices, substantially as described.

12. The combination with a constantly-running power mechanism, of a type mechanism, a normally-inoperative actuating-bar, connections including a clutch between the bar and the power mechanism, connections including locking devices between the type mechanism and the bar, locking mechanism for preventing the operation of the type mechanism, releasing devices for said locking mechanism, a bank of keys, connections between each key and the clutch, means whereby each key operates the locking devices, and means whereby each key operates the releasing devices for the locking mechanism, substantially as described.

13. The combination with a constantly-running power mechanism, of a type mechanism, a normally-stationary actuating-bar, connections including a clutch between the bar and the power mechanism, connections including locking devices between the type mechanism and the bar, locking mechanism for preventing the operation of the type mechanism, releasing devices for said locking mechanism, a bank of keys, connections between each key and the clutch, means whereby each key operates the locking devices, and means whereby each key operates the releasing devices for the locking mechanism, substantially as described.

14. The combination with a type mechanism comprising a series of separate characters, of a constantly-running power mechanism, a bank of keys, means common to and controlled by each of the keys for intermittently establishing a connection between the type mechanism and the power mechanism whereby the power mechanism operates each character, and means for interrupting said connections after each printing movement whereby the operation of a key produces a single printing movement only, substantially as described.

15. The combination with a type mechanism comprising a series of separate characters, of a constantly-running power mechanism, a driving-wheel, devices whereby said driving-wheel may be secured to the power mechanism, a controller for said devices, means whereby the driving-wheel operates each character of the type mechanism, a bank of keys, and means whereby each key operates the controller, substantially as described.

16. The combination with a type mechanism, of a constantly-running power mechanism, a driving-wheel, stopping devices for the wheel, devices whereby said wheel may be secured to the power mechanism, a controller for said devices, said controller also operating the stopping devices, means whereby the driving-wheel operates the type mechanism, a bank of keys, and means whereby each key operates the controller, substantially as described.

17. The combination with a constantly-running power mechanism, of a type mechanism, a driving-wheel, a movable actuating member, connections between said member and the driving-wheel, connections including locking devices between the type mechanism and the actuating member, devices for connecting the driving-wheel to the power mechanism, a controller for said devices, a bank of keys, means whereby each key operates the controller, and means whereby each key operates the locking devices, substantially as described.

18. The combination with a constantly-running power mechanism, of a driving-wheel, a type mechanism, connections between the driving-wheel and the type mechanism, devices for securing the driving-wheel to the power mechanism, a controller for said devices, a slide-bar for operating the controller, a bank of keys, and means whereby each key operates the slide-bar, substantially as described.

19. The combination with a constantly-running power mechanism, of a type mechanism, a driving-wheel, connections between said wheel and the type mechanism, devices for connecting the wheel to the power mechanism, a controller for said devices, a bank of keys, means whereby each key operates the controller, and means for disconnecting the wheel from the power mechanism after each operation of the type mechanism, substantially as described.

20. The combination with a constantly-running power mechanism, of a type mechanism, a driving-wheel, a clutch between the wheel and the power mechanism, a controller for said clutch, a bank of keys, means whereby each key operates the controller to permit the clutch to secure the wheel to the power mechanism, means operated by the controller for disconnecting the wheel from the power mechanism after each operation of the type mechanism, and connections between the wheel and the type mechanism, substantially as described.

21. The combination with a constantly-running power mechanism, of a type mechanism, a driving-wheel, connections between the type mechanism and the wheel, a clutch between the wheel and the power mechanism, a controller for said clutch normally positioned to render the clutch inoperative, a bank of keys, means whereby each key operates the controller, and means whereby the controller is caused to assume its normal position after it has been operated so as to again disconnect the clutch, substantially as described.

22. The combination with a constantly-running power mechanism of a type mechanism, a driving-wheel, connections between the driving-wheel and the type mechanism, a clutch between the driving-wheel and the power mechanism, a controller normally positioned to render the clutch inoperative, a slide-bar for operating the controller, a bank of keys, means whereby each key operates the slide-bar, and means for disconnecting the slide-bar from the controller after it has been operated so that the controller may resume its normal position, substantially as described.

23. In a type-writing mechanism, the combination with a constantly-running power mechanism, of a driving-wheel, a clutch for securing the driving-wheel to the power mechanism, a controller normally rendering the clutch inoperative, a stopping machine for the driving-wheel, means for operating the controller to throw the clutch into operation, means whereby the controller operates the stopping devices to release the wheel, and means moving with the wheel for throwing the stopping devices into operation, substantially as described.

24. In a type-writing mechanism, the combination with a constantly-running power mechanism, of a driving-wheel, a clutch between the driving-wheel and the power mechanism, a rocking controller normally rendering the clutch inoperative, a stopping mechanism for the wheel, connections between the controller and the stopping mechanism whereby the stopping mechanism is caused to release the wheel as the controller moves into inoperative position, means whereby the controller assumes its operative position after the clutch has been thrown into operation so as to again throw out the clutch, means carried by the wheel for throwing the stopping mechanism into operative position as the controller throws out the clutch, substantially as described.

25. In a type-writing mechanism, the combination with a constantly-running power mechanism, of a driving-wheel, a clutch between the power mechanism and the wheel, a controller normally rendering the clutch inoperative, a slide-bar for operating the controller, a stopping mechanism, means whereby the controller throws the stopping mechanism out of operation as the clutch connections become operative, means carried by the wheel for disconnecting the slide-bar from the controller, whereby the controller is allowed to assume its normal position, and means carried by the wheel for throwing the stopping mechanism into operation, substantially as described.

26. In a type-writing mechanism, the combination with a constantly-running power mechanism, of a driving-wheel, means for connecting the wheel to and disconnecting it from the power mechanism, a stop-arm engaging the wheel, said arm having a curved extension, means for throwing the stop-arm out of operation as the wheel is connected to the power mechanism, a pin mounted on the wheel and engaging the extension of the stop-arm for throwing the same into operation as the wheel is disconnected from the power mechanism, substantially as described.

27. In a type-writing mechanism, the combination with a constantly-running power mechanism, of a driving-wheel, a clutch between the shaft and the wheel, a controller normally rendering the clutch inoperative, a slide-bar for operating the controller, a projection on the bar, and a coöperating projection on the wheel for disconnecting the bar from the controller after the controller has been operated, substantially as described.

28. In a type-writing mechanism, the combination with a constantly-running power mechanism, of a driving-wheel, a clutch between the power mechanism and the wheel, a rocking controller normally rendering the clutch inoperative, a slide-bar for operating the controller, a stop-arm having a curved extension, means whereby the controller throws the stop-arm out of operation as it is moved to render the clutch operative, means carried by the wheel for disconnecting the slide-bar from the controller, whereby the controller is allowed to assume its normal position, and a pin carried by the wheel and engaging the extension of the stop-arm for throwing the same into operation as the wheel is disconnected from the power mechanism, substantially as described.

29. The combination with a constantly-running power mechanism, of a type mechanism, a driving-wheel, connections between the driving-wheel and the type mechanism, a clutch for securing the driving-wheel to the power mechanism, a controller normally holding the clutch out of operation, stopping devices for the driving-wheel, a bank of keys, means whereby each of the keys operates the controller to throw the clutch into operation, means whereby the controller operates the stopping devices to release the wheel, and means moving with the wheel for throwing the stopping devices into operation, substantially as described.

30. The combination with a constantly-running power mechanism, of a type mechanism, a driving-wheel, a clutch between the driving-wheel and the power mechanism, a rocking controller normally rendering the clutch inoperative, a bank of keys, means whereby each key operates the controller, a stopping mechanism for the wheel, connections between the controller and the stopping mechanism whereby the stopping mechanism is caused to release the wheel as the controller moves into inoperative position, means carried by the wheel for disconnecting the controller from its operating connections, whereby the controller is allowed to resume its normal position, and means carried by the wheel for throwing the stopping mechanism into operative position, substantially as described.

31. The combination with a constantly-running power mechanism, of a type mechanism, a driving-wheel, a clutch between the driving-wheel and the power mechanism, a rocking controller normally rendering the clutch inoperative, a slide-bar for operating the controller, a bank of keys, means whereby each key operates the slide-bar, a stopping mechanism, means whereby the controller throws the stopping mechanism out of operation as the clutch becomes operative, means carried by the wheel for disconnecting the slide-bar from the controller, whereby the controller is allowed to assume its normal position, and means carried by the wheel for throwing the stopping mechanism into operation, substantially as described.

32. The combination with a constantly-running power-shaft, of two wheels mounted thereon, one of which is a driving-wheel loose on the shaft and the other of which is secured thereto, pawl-and-ratchet connections between the wheels, a rocking controller having a cam which normally holds the pawl out of operation, a slide-bar for operating the controller, a bank of keys, means whereby each key operates the slide-bar, a type mechanism, and connections between the type mechanism and the driving-wheel, substantially as described.

33. The combination with a constantly-running power-shaft, of two wheels mounted thereon one of which is a driving-wheel loose on the shaft and the other of which is secured to the shaft, pawl-and-ratchet connections between the wheels, a rocking controller having a cam which normally holds the pawl out of operation, a slide-bar for operating the controller, a bank of keys, means whereby each key operates the slide-bar, a stop-arm, means whereby the controller operates the stop-arm as it is rocked so that its cam passes from beneath the pawl, means carried by the driving-wheel for disconnecting the slide-bar from the controller, and means also carried by the driving-wheel for throwing the stop-arm into operation as the controller throws out the pawl, substantially as described.

34. The combination with a constantly-running power-shaft, of two wheels mounted thereon one of which is a driving-wheel loose on the shaft and the other of which is secured to the shaft, pawl-and-ratchet connections between the wheels, a rocking controller having a cam which normally holds the pawl out of operation, a slide-bar for operating the controller, a bank of keys, means whereby each key operates the slide-bar, a stop-arm, means whereby the controller operates the stop-arm as it is rocked so that its cam passes from beneath the pawl, means carried by the driving-wheel for disconnecting the slide-bar from the controller, means also carried by the driving-wheel for throwing the stop-arm into operation as the controller throws out the pawl, a type mechanism and connections between the type mechanism and the driving-wheel, substantially as described.

35. The combination with a type mechanism, of a normally-inoperative power-driven actuating mechanism, a bank of keys, mechanical means controlled by each of the keys for throwing the actuating mechanism into operation, and means independent of the means for throwing the actuating mechanism into operation whereby each of the keys causes the actuating mechanism to operate the type mechanism, substantially as described.

36. The combination with a type mechanism of a normally-inoperative power-driven actuating mechanism, a bank of keys, means controlled by each of the keys for throwing the actuating mechanism into operation, key-controlled means independent of the means for throwing the actuating mechanism into operation for causing the actuating mechanism to operate the type mechanism and means for throwing the actuating mechanism out of operation after the actuation of the type mechanism, substantially as described.

37. The combination with a type mechanism, of a normally-inoperative actuating mechanism, connections including locking devices for securing the actuating mechanism to the type mechanism, a bank of keys, mechanical means controlled by each of the keys for throwing the actuating mechanism into operation, and means whereby each of the keys operates the locking devices, substantially as described.

38. The combination with a type mechanism, of a normally-inoperative actuating-bar, connections including locking-levers for connecting the type mechanism to the bar, a bank of keys for operating the locking-levers, and mechanical means for throwing the actuating-bar into operation, substantially as described.

39. The combination with a type mechanism, of a series of operating members therefor, an actuating member, a series of locking-levers serving to connect the operating members to the actuating member, a bank of keys, means whereby the keys operate the locking-levers, and mechanical means for throwing the actuating member into operation, substantially as described.

40. The combination with a type mechanism, of a series of operating members therefor, an actuating member, a series of locking-levers serving to connect the operating members to the actuating member, a bank of keys, means whereby the keys operate the locking-levers, and mechanical means controlled by the keys for throwing the actuating member into operation, substantially as described.

41. The combination with a type mechanism, of an actuating-bar, a series of operating-levers, a series of locking-levers serving to connect the operating-levers to the actuating-bar, a bank of keys for operating the locking-levers, and mechanical means for operating the actuating-bar, substantially as described.

42. The combination with a type mechanism, of an actuating-bar, a series of operating-levers, a series of locking-levers serving to connect the operating-levers to the actuating-bar, a bank of keys for operating the locking-levers, and mechanical means controlled by the keys for operating the actuating-bar, substantially as described.

43. The combination with an actuating-bar, of a type mechanism, a series of operating-levers therefor, a series of notched locking-levers serving to connect the operating-levers to the actuating-bar, a series of key-levers for operating the notched locking-levers, a power mechanism for driving the actuating-bar, and means for connecting the actuating-bar to the power mechanism, substantially as described.

44. The combination with an actuating-bar, of a type mechanism, of series of operating-levers therefor, a series of notched locking-levers serving to connect the operating-levers to the actuating-bar, a series of key-levers for operating the notched locking-levers, a power mechanism for driving the actuating-bar, means controlled by the key-levers for connecting the actuating-bar to the power mechanism, substantially as described.

45. The combination with a type mechanism, of a power mechanism, an actuating-bar, connections including a clutch between the actuating-bar and the power mechanism, a series of operating-levers, a series of notched locking-levers serving to connect the operating-levers to the actuating-bar, a series of key-levers for operating the notched locking-levers, and means controlled by the key-levers for throwing the clutch of the power mechanism into operation, substantially as described.

46. The combination with a type mechanism, of an actuating-bar, a series of operating members, a series of spring-held locking-levers, a guide for positioning the locking-levers, a series of key-levers arranged to operate the locking-levers, and a power mechanism for operating the actuating-bar, substantially as described.

47. The combination with a type mechanism, of an actuating-bar, a power mechanism, connections including a clutch between the power mechanism and the actuating-bar, a series of operating-levers, a series of spring-held locking-levers operating to connect the operating-levers to the actuating-bar, a series of key-levers arranged to operate the locking-levers, and means controlling each key-lever for throwing the clutch into operation, substantially as described.

48. The combination with a type mechanism, of an actuating-bar, a power mechanism, connections including a clutch between the power mechanism and the actuating-bar, a series of operating-levers, a series of spring-held locking-levers operating to connect the operating-levers to the actuating-bar, a guide for the locking-levers, a series of key-levers arranged to operate the locking-levers, and means controlled by each key-lever for throwing the clutch into operation, substantially as described.

49. The combination with a type-carrier, of a support, a series of tumblers movable with respect to the support, operating connections between the support and the type-carrier, means for locking each tumbler to the support, and an operating device for each tumbler, substantially as described.

50. The combination with a type-carrier, of a sleeve, a series of tumblers movable with respect to the sleeve, operating connections between the sleeve and the type-carrier, means for locking each tumbler to the sleeve, and an operating device for each tumbler, substantially as described.

51. The combination with a type-carrier, of a support, operating connections between the support and the type-carrier, a series of tumblers movable with respect to the support, means for locking any one of the tumblers to the support, means for moving the tumbler so locked and the support, and means for preventing any other tumbler from engaging the support until the support has returned to its normal position, substantially as described.

52. The combination with a type-carrier, of a sleeve, operating connections between the sleeve and the type-carrier, a series of tumblers movable with respect to the sleeve, means for locking any one of the tumblers to the sleeve, means for moving the tumbler so locked and the sleeve, and means for preventing any other tumbler from engaging the sleeve until the sleeve has returned to its normal position, substantially as described.

53. The combination with a type-carrier, of a support, operating connections between the support and the type-carrier, a series of tumblers movable with respect to the support, means brought into operation by the movement of each tumbler with respect to the support for locking that tumbler to the support, and an operating device for each tumbler, substantially as described.

54. The combination with a type-carrier, of a sleeve, operating connections between the sleeve and the type-carrier, a series of tumblers movable with respect to the sleeve, means brought into operation by the movement of each tumbler with respect to the sleeve for locking that tumbler to the sleeve, and an operating device for each tumbler, substantially as described.

55. The combination with a type-carrier, of a support having a projection, a series of notched tumblers movable with respect to the support, and an operating member for each tumbler, said member operating to move the tumbler so that its notch engages the projection on the support and then to move the support and the tumbler, substantially as described.

56. The combination with a type-carrier, of a sleeve having a projection, a series of notched tumblers movable with respect to the sleeve, and an operating member for each tumbler, said member operating to move the tumbler so that its notch engages the projection on the sleeve and then to move the sleeve and the tumbler substantially as described.

57. The combination with a type-carrier, of a support having a projection, a series of notched tumblers movable with respect to the support, segment-teeth on each tumbler, and a segment-lever for each tumbler, each segment-lever operating to move its tumbler so that the notch in the tumbler engages the projection on the support and then to move the support and the tumbler, substantially as described.

58. The combination with a type-carrier, of a support, a series of tumblers movable with respect to the support, operating connections between the support and the type mechanism, means for locking each tumbler to the support, an operating device for each tumbler, an actuating mechanism, means for locking each operating device to the actuating mechanism, and a power mechanism for operating the actuating mechanism, substantially as described.

59. The combination with a type-carrier, of a support, a series of tumblers movable with respect to the support, operating connections between the support and the type-carrier, means for locking each tumbler to the support, an operating device for each tumbler, an actuating mechanism, a locking device for securing each operating device to the actuating mechanism, a clutch-controlled power mechanism, a bank of keys, and means operated by each key for connecting the power mechanism to the actuating mechanism, substantially as described.

60. The combination with a type-carrier, of a support, a series of tumblers movable with respect to the support, operating connections between the support and the type-carrier, means for locking each tumbler to the support, an operating device for each tumbler, an actuating mechanism, a locking device for securing each operating device to the actuating mechanism, a power mechanism, a bank of keys, and means operated by each key for connecting the power mechanism to the actuating mechanism, substantially as described.

61. The combination with a type-carrier, of a support, a series of tumblers movable with respect to the support, operating connections between the support and the type-carrier, means for locking each tumbler to the support, an operating device for each tumbler, an actuating mechanism, a locking device for securing each operating device to the actuating mechanism, a power mechanism, a bank of keys, a clutch for throwing the power mechanism into operation and means operated by each key for throwing in the clutch, substantially as described.

62. The combination with a type-carrier, of a support, a series of tumblers movable with respect to the support, operating connections between the support and the type-carrier, means for locking each tumbler to the support, an operating device for each tumbler, an actuating mechanism, a locking device for securing each operating device to the actuating mechanism, a power mechanism, a bank of keys, means whereby each key operates a locking device to lock an operating device to the actuating mechanism, and means operated by each key for connecting the power mechanism to the actuating mechanism, substantially as described.

63. The combination with a type-carrier, of a support, a series of tumblers movable with respect to the support, operating connections between the support and the type-carrier, means for locking each tumbler to the support, an operating device for each tumbler, an actuating mechanism, a locking device for securing each operating device to the actuating mechanism, a power mechanism, a bank of keys, means whereby each key operates a locking device to lock an operating device to the actuating mechanism, connections including a clutch between the power mechanism and the actuating mechanism, and means whereby each key operates the clutch, substantially as described.

64. The combination with a type-carrier, of a pair of supports, operating connections between the type-carrier and each of the supports, a series of tumblers carried by each support, means for locking each tumbler to its support, a locking device for each support which prevents any movement of that support, an operating device for each tumbler, means for operating said devices, means for releasing the locking device for the support by which an actuated tumbler is carried, and means for releasing the locking device for the second support after a predetermined amount of movement of the first support, substantially as described.

65. The combination with a type-carrier, of a pair of supports, operating connections between the type-carrier and each of the supports, a series of tumblers carried by each support, means for locking each tumbler to its support, a locking device for each support which prevents any movement of that support, an operating device for each tumbler, means for operating said devices, means for releasing the locking device for the support by which an actuated tumbler is carried, and means thrown into operation by the moving tumbler for releasing the locking devices for the second support after a predetermined amount of movement of the first support, substantially as described.

66. The combination with a type-carrier, of a pair of supports, operating connections between the type-carrier and each of the supports, a series of tumblers carried by each support and movable with respect to the supports, means brought into operation by the movement of each tumbler with respect to its support for locking the tumbler to the support, an operating device for each tumbler which first moves the tumbler with respect to the support whereby it is locked to the support and then moves the tumbler and the support, means for releasing the locking device of the support by which an actuated tumbler is carried, means for releasing the locking device of the second support after a predetermined amount of movement of the first support, substantially as described.

67. The combination with a type-carrier, of a pair of supports, operating connections between the type-carrier and each of the supports, a series of tumblers carried by each support and movable with respect to the supports, means brought into operation by the movement of each tumbler with respect to its support for locking the tumbler to the support, an operating device for each tumbler which first moves the tumbler with respect to the support whereby it is locked to the support and then moves the tumbler and the support, means for releasing the locking device of the support by which an actuated tumbler is carried, means thrown into operation by the moving tumbler for releasing the locking device of the second support after a predetermined amount of movement of the first support, substantially as described.

68. The combination with a type-carrier, of a pair of supports, operating connections between the type-carrier and each of the supports, a series of tumblers carried by each support, means for locking each tumbler to its support, a locking device for each support which prevents any movement of that support, an operating device for each tumbler, operating means therefor, an independent releasing device for the locking device of each support, a releasing device common to the locking devices of both supports, means for releasing the independent locking device of one support when one of its tumblers is actuated, and means for actuating the common releasing device after a predetermined amount of movement of the moving support and tumbler, substantially as described.

69. The combination with a type-carrier, of a pair of supports, operating connections between the type-carrier and each of the supports, a series of tumblers carried by each support, said tumblers being movable with respect to the support, means brought into operation by the movement of the tumblers with respect to their supports for locking the tumblers to the supports, a locking device for each support which prevents any movement of that support, an actuating device for each tumbler, means for operating each actuating device, an independent releasing device for the locking device of each support, a releasing device common to the locking devices of both supports, means for releasing the independent locking device of one support when one of its tumblers is actuated, and means for actuating the common releasing device after a predetermined amount of movement of the moving support and tumbler, substantially as described.

70. The combination with a type-carrier, of a pair of supports, operating connections between each support and the type-carrier, a series of tumblers having graduated operating ends carried on each support, a locking device for each support, an independent releasing device for each locking device, a releasing device common to the locking devices of both supports, said releasing devices including a bar or bail which is operated by the graduated ends of the tumblers, and means for actuating the tumblers, substantially as described.

71. The combination with a type-carrier, of a pair of supports, operating connections between the type-carrier and each support, an operating device for each support including a tumbler, a locking mechanism for each support, an independent releasing mechanism for each locking device, and a releasing mechanism common to the locking devices of both supports, substantially as described.

72. The combination with a type-carrier, of a pair of supports, operating connections between the type-carrier and each support, a series of key-levers a part of which coöperate with one of the supports and the remainder of which coöperate with the other support, means including a tumbler thrown into operation by the key-levers for operating the supports, a locking device for each support, an independent releasing device for the locking device of each support operated by the key-levers for that support, a releasing device common to the locking devices of both supports which is thrown into operation after a predetermined amount of movement of one of the supports, substantially as described.

73. The combination with a type-carrier, of a pair of supports, operating connections between each support and the type-carrier, a series of key-levers a part of which operate in connection with one of the supports and a part of which operate in connection with the other support, means thrown into operation by each key-lever for operating the supports, a locking-arm extending from each support, a finger coöperating with each locking-arm, means whereby one of the fingers is operated by a part of the key-levers, means whereby the other finger is operated by the remainder of the key-levers, and a common operating device for both fingers, substantially as described.

74. The combination with a pair of supports, of a type-carrier, operating connections between each support and the type-carrier, a series of key-levers, a part of which operate in connection with one of the supports, and the remainder in connection with the other support, means thrown into operation by the key-levers for operating the support, a locking-arm connected with each support, a shaft, a finger coöperating with each locking-arm, said fingers being mounted on and movable with respect to the shaft and each finger having an extension, means connected with each extension for operating the shaft, means whereby part of the key-levers operate one of the extensions, and means whereby the remainder of the key-levers operate the other extension, a power mechanism, means controlled by the shaft for throwing the power mechanism into operation, and a releasing device operating on both extensions, substantially as described.

75. The combination with a type-carrier, of a two-part operating mechanism including a plurality of tumblers, connections between each part of the operating mechanism and the type-carrier, an independent locking device for each part of the two-part operating mechanism, an independent releasing device for each locking device, and a common releasing device for both locking devices, substantially as described.

76. The combination with a type-carrier, of a two-part operating mechanism including a plurality of tumblers, connections between each part of the operating mechanism and the type-carrier, an independent locking device for each part of the two-part operating mechanism, an independent releasing device for each locking device, and a common releasing device for both locking devices operated from the operating mechanism, substantially as described.

77. The combination with a type-carrier, of a plurality of sets of tumblers, connections between each set of tumblers and the type-carrier whereby each tumbler operates the carrier, a plurality of locking devices, one for each set of connections, a releasing device for each locking device, and a releasing device common to all the locking devices, substantially as described.

78. The combination with a type-carrier, of a plurality of sets of tumblers, connections between each set of tumblers, and the type-carrier whereby each tumbler operates the carrier, a plurality of locking devices one for each set of connections, a releasing device for each locking device, a releasing device common to all the locking devices, and means whereby said device is operated from the tumblers, substantially as described.

79. The combination with a type-carrier, of a plurality of sets of graduated tumblers, connections between each set of tumblers and the type-carrier whereby each tumbler operates the carrier, a plurality of locking devices one for each set of connections, a releasing device for each locking device, a releasing device common to all the locking devices, and means whereby said device is operated from the tumblers, substantially as described.

80. The combination with a type-carrier, of a plurality of sets of graduated tumblers, connections between each set of tumblers and the type-carrier whereby the tumblers operate the type-carrier, a set of key-levers, means controlled by the key-levers for operating the tumblers, a locking device for each set of connections, an independent releasing device for each locking device, a releasing device common to all the locking devices, means whereby each tumbler operates the common releasing device, and means whereby a movement of a key-lever throws one of the tumblers into operation and simultaneously releases the locking devices for the connections of that tumbler, substantially as described.

81. The combination with a type-carrier, of a pair of supports having projections, operating connections between the supports and the type-carrier, a series of notched graduated tumblers carried on each support and movable with respect thereto, a locking device for each support, an independent releasing device for each locking device, a common releasing device for both supports including a bar which is actuated by the graduated tumblers, a series of key-levers, a power mechanism, means whereby the power mechanism operates the tumblers, the connections being such that a tumbler is first moved until it engages the projection on the support and then the tumbler and support are moved together, and means whereby each key-lever operates the independent releasing device for a support when a tumbler of that support is actuated, substantially as described.

82. The combination with a type-carrier, of a two-part operating mechanism therefor, connections between each part of the operating mechanism and the type-carrier, a locking device for each part of the operating

mechanism, a power mechanism, connections between the power mechanism and the two-part operating mechanism, a set of key-levers, and means whereby each key-lever operates one of the releasing devices and throws the power mechanism into operation, substantially as described.

83. The combination with a type-carrier, of a two-part operating mechanism therefor, a shaft, an independent locking device for each part of the operating mechanism, said locking devices being mounted on the shaft and movable with respect thereto, a series of key-levers, a power mechanism, connections between the power mechanism and the two-part operating mechanism, and means whereby a movement of one of the key-levers operates one of the releasing devices and turns the shaft to throw the power mechanism into operation, substantially as described.

84. The combination with a type-carrier, of a two-part operating mechanism therefor, a shaft, a locking-finger for each part of the two-part operating mechanism carried on the shaft, said fingers being movable with respect to the shaft, a projection on the shaft, a series of key-levers, part of which coöperate with one part of the two-part operating mechanism and the remainder with the other part, extensions connected with the fingers and in position to be struck by the key-levers, an arm on the shaft, connections operated by the arm for throwing the power mechanism into operation, and a common releasing device for the two fingers operated from the two-part operating mechanism, substantially as described.

85. The combination with a constantly-running power mechanism of a type mechanism, means for intermittently connecting the actuating mechanism to the type mechanism, a bank of keys, and means controlled by each of the keys for causing the power mechanism to operate the actuating mechanism, said means including a yielding connection, substantially as described.

86. The combination with a type mechanism comprising a series of separate characters of an actuating mechanism, a bank of keys, connections controlled by the keys between the type mechanism and the actuating mechanism whereby the actuating mechanism operates each of the characters, a power mechanism, a yielding connection between the power mechanism and the actuating mechanism and a spring for controlling said connections, substantially as described.

87. The combination with a constantly-running power-shaft of a type mechanism comprising a series of separate characters, an actuating bar, a bank of keys, key-controlled connections between the actuating-bar and the type mechanism whereby the bar operates each character, a driving-wheel, and means whereby the driving-wheel produces a lateral movement of the bar, said means including a spring-controlled yielding connection, substantially as described.

88. The combination with a type mechanism, of an actuating-bar, operating connections between the actuating-bar and the type mechanism, a driving-wheel, a bank of keys, a clutch for connecting the driving-wheel to the shaft, means controlled by each of the keys for operating the clutch, a slotted rod connecting the driving-wheel to the actuating-bar, and a spring bearing against the end of the rod, substantially as described.

89. In a power-driven type-writing machine, the combination with the power mechanism and the carriage, of a key-lever, and connections between the carriage and power mechanism controlled by the key-lever whereby the carriage is returned by the power mechanism, substantially as described.

90. In a power-driven type-writing machine, the combination with the power mechanism and the carriage, of a friction mechanism interposed between the power mechanism and the carriage, a key-lever, and connections between the friction mechanism and the key-lever, substantially as described.

91. In a power-driven type-writing machine, the combination with the power mechanism and the carriage, of a shaft, driving devices intermediate the shaft and the power mechanism, driving devices intermediate the shaft and the carriage, a key-lever, and connections between the key-lever and the shaft for causing the engagement of the driving devices, substantially as described.

92. In a power-driven type-writing machine, the combination with the power mechanism and the carriage, of a shaft, means whereby the shaft is driven from the power mechanism, a friction driving device mounted on the shaft, a key-lever, and connections between the shaft and the key-lever whereby the friction driving device is caused to engage the carriage, substantially as described.

93. In a power-driven type-writing machine, the combination with the power mechanism and the carriage, of a shaft, a friction driving-wheel mounted on the shaft and arranged to be driven from the power mechanism, a friction-driving-wheel mounted on the shaft and arranged to engage the carriage, a key-lever, and connections from the shaft to the key-lever, whereby one friction-wheel is caused to engage the power mechanism and the other the carriage, substantially as described.

94. In a power-driven type-writing machine, the combination with the power mechanism and the carriage, of a bodily-movable shaft, a friction driving-wheel mounted on the shaft and arranged to be driven from the power mechanism, a friction driving-wheel mounted on the shaft and arranged to engage the carriage, and means whereby the shaft is moved to cause the engagement of both friction-wheels, substantially as described.

95. In a power-driven type-writing machine, the combination with the power mechanism and the carriage, of a bodily-movable shaft, a friction driving-wheel mounted on the shaft and arranged to be driven from the power mechanism, a friction driving-wheel mounted on the shaft and arranged to engage the carriage, a key-lever, and connections between the key-lever and the shaft, whereby the shaft is moved to cause the engagement of both friction-wheels, substantially as described.

96. In a power-driven type-writing machine, the combination with a power mechanism and the carriage, of a spring-supported shaft, a friction driving-wheel mounted on the shaft and arranged to be driven from the power mechanism, a friction driving-wheel also mounted on the shaft and arranged to engage the carriage, and means for moving the shaft against the stress of the spring for causing the engagement of both wheels, substantially as described.

97. In a power-driven type-writing machine, the combination with a power mechanism and the carriage, of a spring-supported shaft, a friction driving-wheel mounted on the shaft and arranged to be driven from the power mechanism, a friction driving-wheel also mounted on the shaft and arranged to engage the carriage, a key-lever, and connections between the key-lever and the shaft, whereby the shaft is moved against the stress of the spring for causing the engagement of both friction-wheels, substantially as described.

98. In a power-driven type-writing machine, the combination with a power mechanism and the carriage, of a spring-supported shaft, a block forming a bearing for the shaft, diagonal ways in which the block moves, a friction driving-wheel mounted on the shaft and arranged to be driven from the power mechanism, a friction driving-wheel also mounted on the shaft and arranged to engage the carriage, and means for moving the block in its ways and thus causing the engagement of the friction-wheels, substantially as described.

99. In a power-driven type-writing machine, the combination with a power mechanism and the carriage, of a spring-supported shaft, a block forming a bearing for the shaft, diagonal ways in which the block moves, a friction driving-wheel mounted on the shaft and arranged to be driven from the power mechanism, a friction driving-wheel also mounted on the shaft and arranged to engage the carriage, a key-lever, and connections between the block and the key-lever whereby the block is moved in the ways, thus causing the engagement of the friction-wheels, substantially as described.

100. The combination with a constantly-running power-shaft, of a crank driving-wheel loosely mounted thereon, a clutch mechanism between the driving-wheel and the shaft, means whereby the clutch mechanism is normally held inoperative, a pivoted actuating-bar, a series of operating-levers, a series of bell-crank locking-levers for connecting the actuating-bar and the operating-levers, a pair of supports, a series of graduated tumblers mounted on each support, means whereby each tumbler may be locked to its support, a locking device for each support, an independent releasing device for each locking device, a common releasing device for both locking devices, a type-wheel, operating connections between the supports and the type-wheel, a stopping-ratchet connected to the type-wheel, a stop-pawl, a bail on which the pawl is carried, connections from the bail to the common releasing device, a series of key-levers, and connections whereby each key-lever operates one of the independent releasing devices, a bell-crank locking-lever and throws in the clutch mechanism, substantially as described.

101. The combination with a constantly-running power-shaft, of a driving crank-wheel loosely mounted thereon, a clutch mechanism between the driving crank-wheel and the power-shaft, means whereby the clutch mechanism is normally held inoperative, a vibrating actuating-bar, connections between the actuating-bar and the driving-wheel, a pair of supports, a series of graduated tumblers carried on each support, operating-levers for the tumblers, locking devices connecting said operating-levers to the actuating-bar, a locking device for each support, an independent releasing device for each locking device, a releasing device common to both locking devices, a series of key-levers, a shaft, an arm on the shaft, operating connections between said arm and the clutch mechanism, means whereby each key-lever operates an independent releasing device, rocks the shaft, operates the clutch and operates a locking device to connect an operating-lever to the actuating-bar, and means controlled by the graduations on the tumblers for operating the common releasing device, substantially as described.

102. The combination with a constantly-running power mechanism, of a driving-wheel, a clutch between the driving-wheel and the power mechanism, an actuating mechanism, separable connections between the actuating mechanism and the driving-wheel, a type mechanism, connections between the actuating mechanism and the type mechanism, a series of key-levers, and means whereby each of the key-levers operates the clutch, the key-levers being arranged when the connections between the driving-wheel and the actuating mechanism are disconnected to operate the type mechanism through the connections between it and the actuating mechanism, substantially as described.

103. The combination with a constantly-running power-shaft, of a driving-wheel loosely mounted thereon, a clutch for connecting the wheel to and disconnecting it from the shaft, an arm, connections between the arm and the power-shaft, an actuating-bar, a set-screw connecting the actuating-bar and the arm, a type mechanism, connections between the type mechanism and the actuating-bar, a series of key-levers, means whereby each key-lever operates the clutch when the arm and bar are connected by the set-screw, and means whereby each key-lever operates the type mechanism through the connections between it and the actuating-bar when the bar and arm are disconnected, substantially as described.

104. The combination with a constantly-running power mechanism, of a driving mechanism, a clutch between the driving mechanism and the power mechanism, an actuating mechanism, separable connections between the driving mechanism and the actuating mechanism, a type mechanism locking devices between the type mechanism and the actuating mechanism, a series of key-levers, and means whereby each key-lever operates the clutch and the locking devices to throw the actuating mechanism into operation and cause it to operate the type mechanism, the key-levers being arranged to operate the type mechanism through the locking devices when the connections between the driving mechanism and the actuating mechanism are uninterrupted, substantially as described.

105. The combination with a constantly-running power-shaft, of a driving-wheel, a clutch between the driving-wheel and the power-shaft, an arm, connections between the arm and the driving-wheel, a pivoted actuating-bar, means for separably connecting the arm and the actuating-bar, a series of operating-levers, a series of locking devices connecting the operating-levers and the actuating-bar, a type mechanism, connections between the operating-levers and the type mechanism, a series of key-levers, and means whereby each key-lever operates the clutch and a locking device to throw the actuating-bar into operation and cause the operation of the type mechanism, the levers being arranged when the connections between the driving-wheel and the actuating-bar are uninterrupted to operate the locking devices and through the locking devices effect the operation of the type mechanism, substantially as described.

106. In a type-writing machine the combination with a type mechanism of a power mechanism, a series of key-levers, devices for causing the power mechanism to operate the type mechanism and means whereby the key-levers operate the type mechanism when it is not operated by the power mechanism, substantially as described.

107. The combination with a type mechanism, of a power mechanism, a series of key-levers, devices controlled by the key-levers for causing the power mechanism to operate the type mechanism, means whereby the key-levers operate the type mechanism when it is not operated from the power mechanism, a stop operating to limit the movement of the key-levers when the power mechanism is operated, the stop being arranged to be moved out of the way when the power mechanism is inoperative and the key-levers are operating the type mechanism, substantially as described.

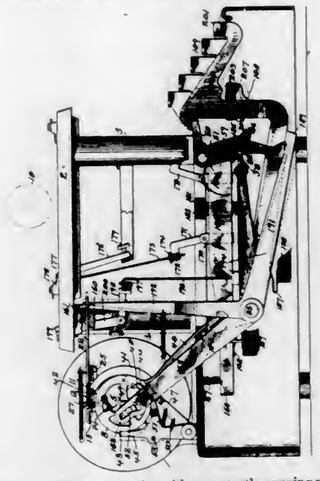
108. The combination with a type mechanism, of a power mechanism, a series of key-levers, devices controlled by the key-levers for causing the power mechanism to operate the type mechanism, means whereby the key-levers operate the type mechanism when it is not operated from the power mechanism, a pivoted stop operating to limit the movement of the key-levers when the power mechanism is operated, said stop being arranged to be moved out of the way when the power mechanism is inoperative and the key-levers are operating the type mechanism, substantially as described.

109. In a type-writing machine, the combination with a type mechanism of a power mechanism, a series of key-levers, a stop for limiting the movement of the key-levers, means for rendering the stop inoperative, and connections whereby the key-levers throw the power mechanism into operation to actuate the type mechanism when the stop is in operative position and operate the type mechanism when the stop is in inoperative position, substantially as described.

110. In a type-writing machine, the combination with a type mechanism of a series of key-levers, a pivoted stop located beneath the levers and at a distance therefrom, the construction being such that the levers may be given a limited downward movement when the stop is turned on its pivot into operative position, and a spring for holding the stop in said position, substantially as described.

111. The combination with a type mechanism, of a power mechanism, a series of key-levers, devices controlled by the key-levers for causing the power mechanism to operate the type mechanism, means whereby the key-levers operate the type mechanism when it is not operated from the power mechanism, a pivoted stop operating to limit the movement of the key-levers when the power mechanism is operated, and a spring for holding the stop in position, said stop being arranged to be moved out of the way when the power mechanism is inoperative and the key-levers are operating the type mechanism, substantially as described.

656,086. TYPE-WRITER. GEORGE C. BLICKENSDERFER, Stamford, Conn. Filed Apr. 23, 1900. Serial No. 14,453. (No model.)



Claim.—1. The combination with a constantly-running power mechanism, of a series of type-bars, a normally-inoperative actuating mechanism, a series of key-levers, means for positively connecting each of the type-bars to the actuating mechanism, and means for causing the power mechanism to operate the actuating mechanism, both sets of means being constructed to be operated by each key-lever, substantially as described.

2. The combination with a constantly-running power mechanism, of a series of key-levers, a series of type-bars, a normally-inoperative actuating mechanism, key-controlled connections between the type-bars and the actuating mechanism, connections including a clutch between the actuating mechanism and the power mechanism, and connections between each key-lever and the clutch mechanism, substantially as described.

3. The combination with a constantly-running power mechanism, of a series of type-bars, a normally-inoperative actuating mechanism therefor, connections including a clutch between the actuating mechanism and the power mechanism, connections including locking devices between the type-bars and the actuating mechanism, a series of key-levers, means whereby each key-lever operates the clutch, and means whereby each key-lever operates a locking device, substantially as described.

4. The combination with a constantly-running power mechanism, of a series of type-bars, a normally-stationary actuating-bar, connections between the type-bars and the actuating-bar, connections including a clutch between the actuating-bar and the power mechanism, a series of key-levers, and means whereby each key-lever operates the clutch, substantially as described.

5. The combination with a constantly-running power mechanism, of a series of type-bars, a normally-stationary actuating-bar, connections including locking devices between the type-bars and the actuating-bar, connections including a clutch between the actuating-bar and the power mechanism, a series of key-levers, means whereby each key-lever operates the clutch, and means whereby each key-lever operates a locking device, substantially as described.

6. The combination with a constantly-running power mechanism, of a series of type-bars, a series of operating-levers, connections between each operating-lever and a type-bar, an actuating-bar, a series of key-levers, means operated by the key-levers for positively connecting the operating-levers to the actuating-bar, and means whereby the power mechanism operates the bar, substantially as described.

7. The combination with a constantly-running power mechanism, of a series of type-bars, a series of operating-levers, connections between each operating-lever and a type-bar, a normally-stationary actuating-bar, a series of key-levers, means operated by each key-lever for positively connecting the operating-levers to the actuating-bar, and means controlled by the key-levers for throwing the actuating-bar into operation, substantially as described.

8. The combination with a constantly-running power mechanism, of a series of type-bars, a series of operating-levers, connections between the operating-levers and the type-bars, a series of pivoted locking-levers carried by the operating-levers, an actuating-bar, connections including a clutch between the power mechanism and the actuating-bar, a series of key-levers, and means whereby each key-lever operates a locking-lever and throws in the clutch, substantially as described.

9. The combination with a constantly-running power mechanism, of a shaft, a power-transmitting arm, means whereby the arm rocks the shaft, an actuating-bar secured to the shaft, a series of type-bars, a series of operating-levers, connections between the type-bars and the operating-levers, a series of pivoted locking-levers operating to connect the operating-levers to the actuating-bar, a series of key-levers, and means operated by each key-lever for causing the power-arm to be operated by the power mechanism, substantially as described.

10. The combination with a constantly-running power mechanism, of a driving-wheel, a clutch between the driving-wheel and the power mechanism, a shaft, a power-transmitting arm, means whereby said arm rocks the shaft, an actuating-bar connected to the shaft, a series of operating-levers, means whereby each of the operating-levers is connected to the actuating-bar, a type mechanism, connections between the type mechanism and the operating-levers, an operating-bar underlying the key-levers, and means whereby the operating-bar throws in the clutch, substantially as described.

11. The combination with a constantly-running power mechanism, of a driving-wheel, a clutch between the driving-wheel and the power mechanism, an actuating-bar, means whereby the driving-wheel operates the actuating-bar, a type mechanism, connections between the actuating-bar and the type mechanism, a series of key-levers, an operating-bar actuated from the key-levers, and means whereby the operating-bar throws in the clutch, substantially as described.

12. The combination with a constantly-running power mechanism, of a driving-wheel, a clutch between the driving-wheel and the power mechanism, an actuating-bar, means whereby the driving-wheel operates the actuating-bar, a series of type-bars, a series of operating-levers, connections between the type-bars and the operating-levers, a series of locking-levers for connecting the operating-levers to the actuating-bar, an operating-bar, means whereby the operating-bar actuates the clutch, and a series of key-levers arranged to actuate the locking-levers and the operating-bar, substantially as described.

13. The combination with a constantly-running power mechanism, of a series of type-bars, a series of horizontally-arranged operating-levers, connections between the type-bars and the operating-levers, a series of bell-crank locking-levers, an actuating-bar arranged to be engaged by said locking-levers, a series of key-levers having projections which operate the locking-levers, an operating-bar actuated by the key-levers, and means controlled by the operating-bar for causing the power mechanism to operate the actuating-bar, substantially as described.

14. The combination with a constantly-running power mechanism, of a series of type-bars, a shaft, an actuating-bar connected to the shaft, means including a clutch whereby the power mechanism operates the shaft, a series of pivoted horizontally-arranged operating-levers, connections between each operating-lever and a type-bar, a bell-crank lever carried by each operating-lever for locking said lever to the actuating-bar, a series of key-levers arranged to operate the bell-crank levers, an operating-bar arranged to be actuated by the key-levers, and connections whereby the operating-bar actuates the clutch, substantially as described.

15. The combination with a constantly-running power mechanism, of a series of type-bars, a power-transmitting arm, a shaft, a yielding connection between the arm and the shaft, an actuating-bar carried by the shaft, a series of horizontally-arranged operating-levers, locking connections between the operating-levers and the actuating-bar, connections between the levers and the type-bars, a series of key-levers arranged to operate the locking connections, and means controlled by the key-levers for causing the power mechanism to operate the power-arm, substantially as described.

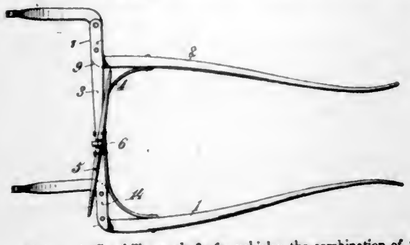
16. The combination with a constantly-running power mechanism, of a driving-wheel, a clutch for connecting the driving-wheel to the power mechanism, a shaft, a slotted arm loose on the shaft, a stud on the driving-wheel engaging the slot in the arm, an arm fast to the shaft and carrying a spring which bears on the slotted arm, an actuating-bar, a series of type-bars, connections including locking devices between the type-bars and the actuating-bar, a series of key-levers, each of said key-levers being arranged to operate a locking device, and connections whereby said key-levers operate the clutch, substantially as described.

17. The combination with a constantly-running power mechanism, of a driving-wheel, a clutch between the driving-wheel and the power mechanism, means including a slide-bar for operating the clutch, a series of key-levers, an operating-bar arranged to be operated by the key-levers, a bell-crank to one arm of which the operating-bar is secured the other arm being arranged to operate the slide-bar, a series of type-bars, an actuating-bar, connections between the actuating-bar and the type-bars, and means whereby the driving-wheel is caused to operate the actuating-bar, substantially as described.

18. The combination with a constantly-running power mechanism, of a series of type-bars, a series of pivoted operating-levers, connections between the type-bars and the operating-levers, a series of key-levers having projections, a series of bell-crank locking-levers pivoted to the operating-levers, one of the arms of each bell-crank lever underlying the projection on a key-lever, a removable stop for limiting the movement of the key-levers, an actuating-bar arranged to be engaged by the locking-levers, a shaft on which the actuating-bar is carried, separable connections between the shaft and the power mechanism, and means controlled by the key-levers for causing the power mechanism to operate the shaft and the actuating-bar, substantially as described.

19. The combination with a power mechanism, of a driving-wheel, a clutch between the power mechanism and the driving-wheel, a series of type-bars, a series of pivoted operating-levers, connections between the type-bars and the operating-levers, a series of key-levers having projections, a series of bell-crank locking-levers pivoted to the operating-levers, one of the arms of each bell-crank lever underlying the projection on a key-lever, a removable stop for limiting the movement of the key-levers, an actuating-bar arranged to be engaged by the locking-levers, a shaft on which the actuating-bar is carried, separable connections between the shaft and the power mechanism, an operating-bar arranged to be actuated by the key-levers, and means whereby the operating-bar throws the clutch into operation, substantially as described.

656,087. THILL OR SHAFT FOR VEHICLES. CHARLES R. BROWN and ARTHUR R. BROWN, Weatherby, Mo. Filed June 8, 1900. Serial No. 19,513. (No model.)

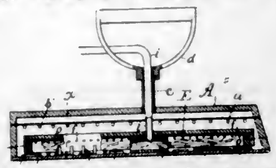


Claim.—1. In thills or shafts for vehicles the combination of the thill or shaft 1, extending inward to form a horizontal portion, then rearward and downward therefrom, the opposite thill or shaft 2 extending outward to form an opposite horizontal portion, then rearward and downward therefrom, the cross-piece having its ends extending across and fastened to the said horizontal portions of the said shafts or thills, whereby the same are firmly and securely held together and the whiffletree substantially as and for the purposes hereinbefore set forth.

2. In thills or shafts for vehicles the combination of the thill or shaft 1, extending inwardly to form a horizontal portion, then rearward and downward therefrom, the opposite thill or shaft 2 extending outwardly to form a corresponding or opposite horizontal portion, then rearward and downward therefrom, the cross-piece having its ends fastened to the said horizontal portions, thereby firmly securing the shafts together, the curved brace secured at its ends to the shafts or thills and at its center to the cross-piece, and the whiffletree, substantially as and for the purposes hereinbefore set forth.

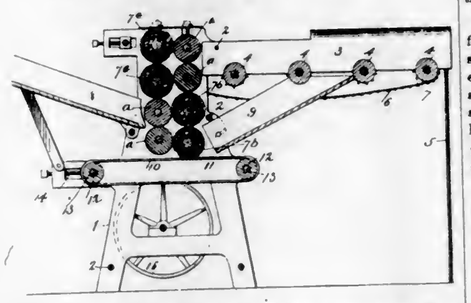
3. In thills or shafts for vehicles the combination of the thill or shaft 1, extending inwardly to form a horizontal portion, then rearward and downward therefrom, the opposite thill or shaft 2 extending outwardly to form a corresponding or opposite horizontal portion, thence rearward and downward therefrom, the cross-piece formed thicker at its center, and having its ends fastened to the said horizontal portions, thereby firmly securing the shafts together, the curved brace secured at its ends to the shafts or thills and at its center to the cross-piece, and the whiffletree, substantially as and for the purposes hereinbefore set forth.

656,088. SAD-IRON. HERBERT O. BROWN and JOHN R. DONNELLY, Fairfield, Me. Filed Apr. 12, 1899. Serial No. 712,719. (No model.)



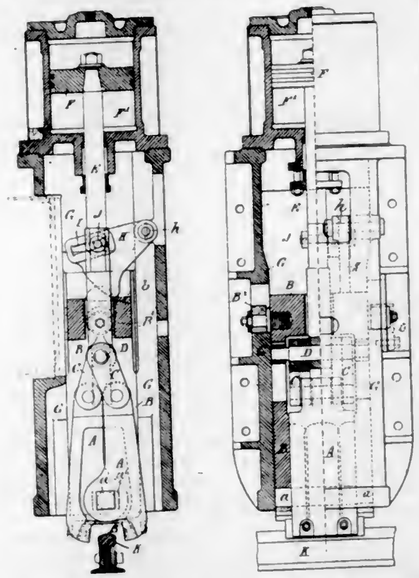
Claim.—The herein-described gas-burning sad-iron provided with an open-bottomed, elongated perforated combustion-chamber in which the combustion takes place having refractory end walls, conduction-supports beneath the combustion-chamber for raising the same above the bottom of the iron and conducting heat to the bottom, and a gas-pipe for supplying gas to said combustion-chamber, substantially as described.

656,089. MACHINE FOR CLEANING, BURNISHING, OR POLISHING TIN-PLATE. JAMES W. BRYSON, New Castle, Pa. Filed May 19, 1900. Serial No. 17,270. (No model.)



Claim.—In a machine for cleaning tin-plate, a conveyer, comprising a plurality of rollers journaled in a chute and provided with means for revolving them, a pair of feed-rollers at the inner end of the chute, a pair of brush-rollers journaled at one side of the feed-rollers, an inclined chute below said brush-rollers, another pair of feed-rollers at the inner end of said inclined chute, a pair of brush-rollers opposite said last-mentioned feed-rollers, an inclined chute suspended from the conveyer-chute, and a conveyer-belt below said lower feed-rollers, and means for revolving said feed-rollers, brush-rollers and conveyer-belt, substantially as described.

656,090. RAILWAY-BRAKE. WILLIAM P. BULLIVANT, London, England. Filed Mar. 13, 1900. Serial No. 8,502. (No model.)

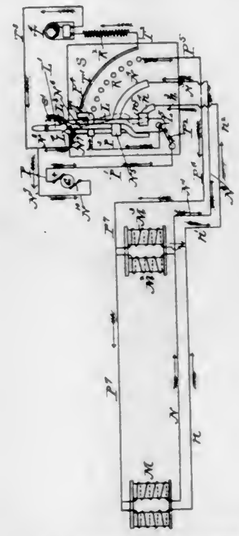


Claim.—1. In a railway brake apparatus, the combination with a stationary frame and motor mechanism thereon, of a slide vertically movable in the stationary frame, two jaws pivoted in the slide and adapted at their lower ends to grip a stationary rail or device extending along a railway-track, toggle-links connecting the upper ends of the jaws to each other and to the motor mechanism and means whereby the slide is caused positively to descend to its lower position before the jaws are closed and to rise again only after the jaws are reopened, substantially as described.

2. In railway brake apparatus the combination with a stationary frame and motor mechanism thereon of a slide vertically movable in the stationary frame, two jaws pivoted in the slide and adapted at their lower ends to grip a stationary rail or device extending along a railway-track, toggle-links connecting the upper ends of the jaws to each other and to the motor mechanism, abutments on the slide and stationary frame for arresting the descent of the slide, a dog or cam pivoted to the fixed frame and operatively connected to the motor mechanism, and an abutment on the slide for engaging with the dog or cam, substantially as set forth.

3. In railway brake apparatus, the combination with a stationary frame and motor mechanism thereon, of a slide vertically movable in the stationary frame, two jaws pivoted in the slide and adapted at their lower ends to grip a stationary rail or device extending along a railway-track, a slotted connection between the pivot of the jaws and the slide for enabling the jaws to adjust themselves in a horizontal direction, and toggle-links connecting the upper ends of the jaws to each other and to the motor mechanism, for opening and closing the said jaws, substantially as set forth.

656,091. ELECTRICALLY-OPERATED RAILWAY-GATE. GEORGE D. BURTON, Boston, Mass., and GEORGE W. STEINER, New York, N. Y. Filed Apr. 22, 1899. Serial No. 714,151. (No model.)



Claim.—1. In an electrically-controlled railway device, the combination of a swinging gate, solenoids having cores connected to said gate, and a circuit switch-lever having a movable switch-blade adapted to direct the electric current from one solenoid to the other.

2. In an electrically-controlled railway device, the combination of a swinging gate, a source of electricity, an electrical device for operating said gate, and a current-controlling switch-lever having a contact adapted to close the circuit through the resistance and said electrical device, a movable switch-blade disposed on said lever, contacts adapted to connect said blade with contact-segments, and conductors connecting said contact-segments with the device for operating the gate.

3. In an electrically-controlled railway device, the combination of an electrical circuit having a resistance disposed therein, solenoids disposed in said circuit, a pivoted lever having a contact for closing the circuit through said resistance, a movable switch-blade disposed on said lever and adapted to direct the current from one solenoid to the other, contacts disposed on said lever and insulated therefrom, and conductors connecting said contacts with the solenoids.

4. In an electrically-controlled railway device, the combination of an electrical circuit having a resistance disposed therein, solenoids disposed in said circuit, a pivoted lever having a contact-spring for closing the circuit through the resistance, a movable switch-blade pivoted to said lever and adapted to direct the current from one solenoid to the other, contacts disposed on said lever and insulated therefrom, contact-segments connected with said contacts, and conductors connecting said segments with the solenoids.

656,092. POCKET-KNIFE. JAMES H. CARLES, Thomaston, Conn. Filed Nov. 29, 1899. Serial No. 738,713. (No model.)



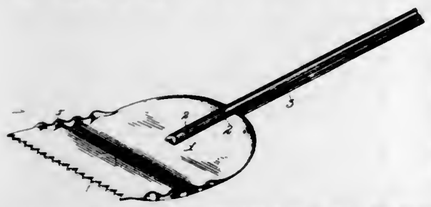
Claim.—1. The combination of two removably-connected sections, one section having a headed pin, and the other section having an orifice for said headed pin, a spring mounted on said orificed section and engaging the headed pin to push the same into locked position, and an instrument mounted on the section having the spring and engaging the spring to throw the spring out of engagement with the pin.

2. The combination of two sections having means for removably connecting them, a spring mounted on one of the sections to lock said means, and an instrument connected with one of the sections to engage the spring and actuate the same as the said instrument moves.

3. The combination of two sections, one of which is provided with two orifices, and the other of which is provided with two headed pins respectively adapted to enter the orifices, a spring mounted on the section having the orifices and capable of engaging one of the pins to cause the same to be locked with said section, and an instrument mounted on said section and engaging and actuated by the spring, the instrument serving to move the spring.

4. The combination of two tool-carrying sections having means for removably securing them together, and a lock device on one of said sections, the lock device working with said means for holding the sections secure, and being released by a movement of one of the tools.

656,093. LAWN-SWEEPER. JOHN I. CARUTHERS, San Antonio, Tex. Filed Dec. 28, 1899. Serial No. 741,862. (No model.)



Claim.—1. A lawn-sweeper comprising a handle, and a thin blade or head having a concave upper face and provided at opposite sides with corrugated flanges adapted to retain the material on the blade and capable of contracting and expanding longitudinally, substantially as described.

2. A lawn-sweeper comprising a handle, and a sheet-metal blade having teeth at its front or outer edge, said blade being curved longitudinally and provided at opposite sides with resilient corrugated bracing-flanges adapted to expand when the front portion of the blade is subjected to a strain and also serving to retain the material on the blade, substantially as described.

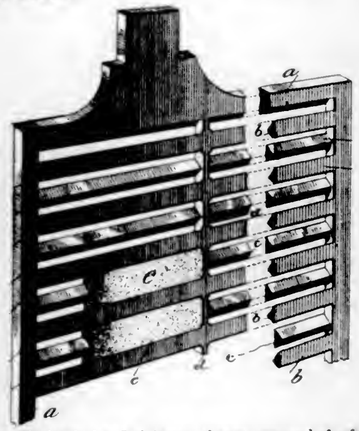
3. A lawn-sweeper comprising a handle, and a thin resilient blade having a concaved upper face and provided at opposite sides with upwardly-extending flanges terminating short of the front and back of the blade, whereby they are adapted to retain material on the blade and support the latter without destroying the resiliency of the same, substantially as described.

656,094. COMPOSITION OF MATTER FOR PAVING ROADS. CHARLES A. C. DE CAUDEMBERG, Nice, France. Filed Feb. 23, 1900. Serial No. 6,438. (No specimens.)

Claim.—A new paving composition, comprising powdered asphalt intimately mixed with rubber dissolved in spirits, the rubber forming a thin film surrounding each of the molecules of asphalt and operating as a binder to bind the whole together in one homogeneous mass, substantially as and for the purpose specified.

656,095. PLATE FOR SECONDARY BATTERIES. JOHN R. CONRAD, Chicago, Ill., assignor to the Hewitt-Lindstrom Motor Company, same place. Filed Mar. 9, 1900. Serial No. 8,009. (No model.)

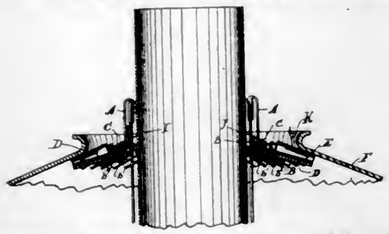
Claim.—1. The herein-described plate for storage batteries composed of a frame and two oppositely-facing series of non-intersecting individual and distinct bars each bar being triangular in cross-section and connected at its ends to the opposite sides of the frame, all the bars in both series being parallel but alternate bars being members of opposite series and disposed on opposite faces of the plate and facing in opposite directions, and the apices of all the bars pointing inwardly, substantially as and for the purpose described.



2. The herein-described battery element composed of a frame and two opposite series of similar non-intersecting triangular bars respectively arranged on opposite faces of the plate, the bars in each series being parallel and extending from side to side of the frame, the broader angles or bases of said bars being flush with and forming part of the outer surfaces of the plate and the apices of all the bars pointing inwardly and extending to about the median line or plane of the plate, and vertical partitions extending from top to bottom of the plate and intersecting and connecting all the bars in both series, substantially as and for the purpose described.

3. The herein-described battery element composed of a frame and two series of similar non-intersecting triangular transverse distinct bars each series being arranged at opposite sides of the plate; all the bars in both series being parallel and extending from side to side of the frame with their apices pointing inwardly and extending to about the median line or plane of the plate, and alternate bars being of opposite series: with a continuous mass of active material extending from the top to the bottom of the plate in the longitudinal spaces between and transversely of said bars, all substantially as and for the purpose described.

656,096. LAMP-SHADE SUPPORTER AND PROTECTOR. LINDON Y. COWL, Chicago, Ill. Filed Mar. 5, 1900. Serial No. 7,330. (No model.)

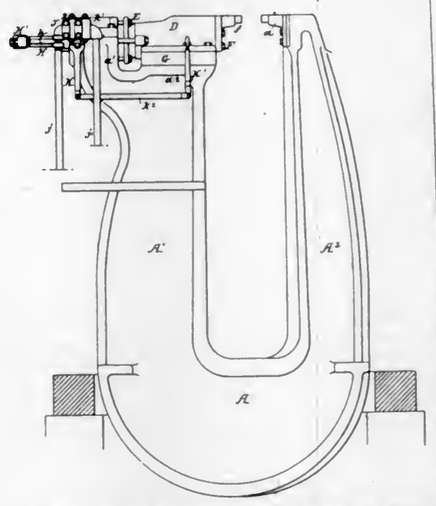


Claim.—1. In a lamp-shade supporter and protector, the combination of a flanged cylindrical part, an asbestos cover of substantially the same shape, a separable radially fluted or corrugated part supported by the cylindrical part and a cover of non-heat-conducting material of substantially the same shape fitting thereover; whereby the supported shade is protected thereby from the heat generated by the lamp, and the supporter and shade are provided with passage-ways for the passage of heated air from under the shade substantially as described.

2. A lamp-shade supporter and protector comprising a cylindrical part and a radially fluted or corrugated part and a cover of non-heat-conducting material of substantially the same shape fitting thereover; whereby the supported shade is protected thereby from the heat generated by the lamp and passage-ways are obtained from underneath the shade for ascending currents of heated air; substantially as described.

656,097. HYDRAULIC RIVETING-MACHINE. WILLIAM H. DERBYSHIRE, Chambersburg, Pa. Filed May 18, 1899. Serial No. 717,363. (No model.)

Claim.—1. The combination in a hydraulic riveting-machine, of an arm having two extensions, a cylinder carried by one extension, a riveting-head adapted to the other extension and having a plunger-section adapted to the cylinder, a recess in the cylinder around the plunger, packing adapted to said recess, and a ring adapted to clamp the packing to the cylinder, said ring being mounted between the two projections of the arm, substantially as specified.



2. The combination in a riveting-machine, of an arm having two extensions, a cylinder-casting mounted on one projection, two cylinders mounted in said casting, one within the other, the larger cylinder being open at the front and the small cylinder open at the back, a riveting-head, a plunger adapted to the larger cylinder, a cross-head connected to the riveting-head, and a plunger extending from the cross-head into the small cylinder, the two cylinders being recessed with packing-rings entering said recesses and confining the packing therein, the parts being so arranged that the packing can be adjusted or renewed without dismantling the machine, substantially as described.

3. The combination in a riveting-machine, of an arm, a cylinder mounted on said arm, a base-plate also mounted on the arm, a space between the base-plate and the end of the cylinder, a riveting-head adapted to the base-plate, said riveting-head having a plunger adapted to the cylinder, a flanged packing-ring adapted to a cavity in the cylinder, the flange of the packing-ring resting within the space between the cylinder and the base-plate, with means for adjusting the packing-ring, substantially as described.

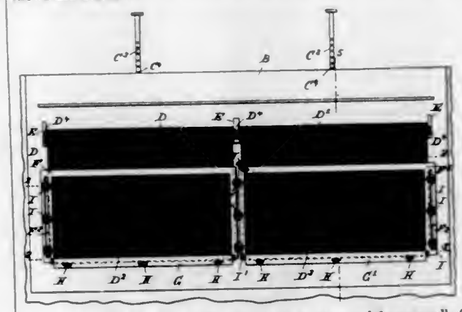
4. The combination in a hydraulic riveting-machine, of an arm, a cylinder-casting mounted on said arm having two cylinders, one within the other, a riveting-head having a plunger adapted to the larger cylinder, said plunger being recessed so as to pass the smaller cylinder, a plunger adapted to the smaller cylinder, a cross-head to which the plunger is secured, connecting-rods connecting the cross-head to projections on the riveting-head, bearings for the rod carried by the cylinder-casting, substantially as described.

5. The combination in a riveter, of an arm having two extensions, a cylinder-casting carried by one extension, a base-plate carried by the other extension, said base-plate being recessed at the top, a riveting-head adapted to the recessed portion of the base-plate, flanges on the side of the riveting-head, and cap-plates extending over the flanges, and screws and bolts for securing the cap-plate and base-plate to the extension of the arm, substantially as described.

6. The combination in a hydraulic riveter, of the cylinder, a riveting-head having a plunger adapted to the cylinder, a slotted base-plate, on which the riveting-head slides, and a removable pin carried by the riveting-head adapted to the slot in the base-plate, substantially as described.

656,098. SCREEN FOR STAMP-MILLS. MARTIN R. DRISCOLL, Frisco, Utah. Filed Oct. 20, 1899. Serial No. 734,275. (No model.)

Claim.—1. A screen for stamp-mills, comprising an apertured frame, a roll of screen-cloth mounted above the aperture and having a portion of the cloth extending over the aperture, the said roll being adjustable to bring the roll in firm contact with the front face of the apertured frame, a rectangular clamping-frame for clamping the cloth to the sides top and bottom of the aperture, bolts for adjustably holding the clamping-frame in place on the apertured frame, and an auxiliary clamping-bar on the apertured frame for clamping the lower end of the cloth upon the front face of the bottom bar for the rectangular clamping-frame, substantially as shown and described.



2. A screen for stamp-mills, comprising an apertured frame, a roll of screen-cloth mounted above the aperture, and having a portion of the cloth extending over the aperture, the roll being transversely adjustable, to bring the rear part thereof flush with the face of said apertured frame and means for clamping the cloth to the frame, substantially as shown and described.

3. A screen for stamp-mills, comprising an apertured frame, a roll of screen-cloth mounted above the aperture, and having a portion of the cloth extending over the aperture, the roll being transversely adjustable, to bring the rear part thereof flush with the face of said apertured frame, means for locking the roll against accidental unwinding of the cloth and permitting of stretching the extended portion and means for clamping the cloth to the frame, substantially as shown and described.

4. A screen for stamp-mills, comprising a frame having a plurality of apertures, a plurality of separate clamping-frames for the screen to hold the latter in front of the openings, a single row of bolts for clamping the adjacent inner ends of said frames in position, a row of bolts for each outer end of a clamping-frame, and a device carried by the apertured frame for temporarily engaging and holding the inner end of either of said clamping-frames, substantially as shown and described.

5. A screen for stamp-mills, comprising a frame having a plurality of apertures, rolls of screen-cloth mounted above the apertures, and having portions of the cloth extending above the apertures, a plurality of separate clamping-frames for said extended portions of the screen-cloth, a single row of bolts for clamping the adjacent inner ends of said frames in position, a row of bolts for each outer end of a clamping-frame, and a crank-screw on the apertured frame, and arranged for temporarily engaging the inner end of either of said clamping-frames, substantially as shown and described.

6. A screen for stamp-mills, provided with a screen-cloth roll having toothed journals at the ends, and supports for said roll, and having toothed transverse members adapted to be engaged by the toothed journals, substantially as shown and described.

7. The combination with the apertured frame on the front of the stamp-mill or mortar, of a roll of screen-cloth mounted above the aperture, means for adjusting said roll to bring its rear face flush with the face of the apertured frame, a rectangular clamping-frame to hold the screen-cloth in front of the aperture, means for adjusting the clamping-frame, and an auxiliary clamping-bar for the lower end of the screen-cloth, substantially as described.

8. The combination with the apertured skeleton frame on the front of the stamp-mill or mortar, of a plurality of clamping-frames for the screen, to hold the latter in front of the skeleton-frame openings, clamping-bolts for engaging the side bars of the said frames, the bolts for the adjacent side bars simultaneously engaging the latter, and a clamping-bolt on the said skeleton frame, and adapted to engage either of the said clamping-frames, substantially as shown and described.

656,099. GOLF-CLUB. WILLIAM DUNN, New York, N. Y. Filed Jan. 5, 1900. Serial No. 449. (No model.)

Claim.—1. A golf-club provided with a head having a playing-face which forms with the sole of the head an obtuse angle and adapted to strike the ball above the center when the club is held in normal playing position with its sole on the ground.

2. A golf-club provided with a head having a playing-face which is convexly curved from the sole to the top of the head and adapted to strike the ball above the center when the club is held in normal playing position with its sole on the ground.

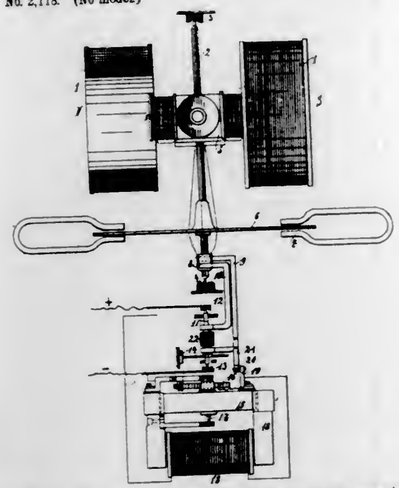
3. A golf-club provided with a head having a curved playing-face said face forming with the sole of the head an obtuse angle and adapted to strike the ball above the center when the club is held in normal playing position with its sole on the ground.



4. A golf-club provided with a head having a playing-face, said playing-face being convexly curved from the sole to the top of the club and forming with the sole an obtuse angle and adapted to strike the ball above the center when the club is held in normal playing position with its sole on the ground.

5. A golf-club provided with a head having a playing-face which will strike the ball above the center when the club is held in normal playing position, with its sole on the ground.

656,100. ELECTRICITY-METER. PAUL EBHG, Berlin, Germany, assignor to Martin Behrendt, same place. Filed Jan. 20, 1900. Serial No. 2,113. (No model.)



Claim.—1. In an electricity-meter the combination of a motor having an oscillating armature with a motor having a rotating armature substantially as and for the purpose specified.

2. In an electricity-meter the combination of a motor having an oscillating armature with a motor having a rotating armature and current-conducting parts which swing periodically substantially as described.

3. In an electricity-meter the combination of a motor having an oscillating armature with a motor having a rotating armature and periodically-swinging conducting parts which are taken along with the rotating armature through a certain angle, a switch carried by the said rotating armature and means for returning the conducting parts on the said switch of the rotating armature substantially as described.

4. In an electricity-meter the combination of a motor having an oscillating armature with a motor having a rotating armature and periodically-swinging conducting parts which are taken along with the rotating armature through a certain angle and a counter acted upon by the oscillating armature substantially as described.

5. In an electricity-meter the combination of a motor having an oscillating armature with a motor having a rotating armature and periodically-swinging conducting parts acted upon by the oscillating armature and taken along with the rotating armature through a certain angle substantially as described.

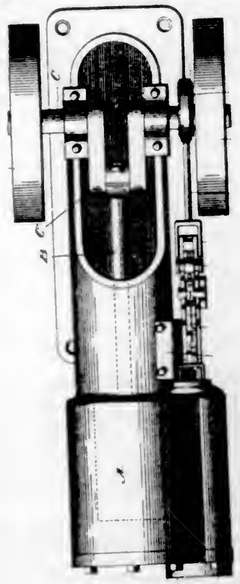
6. In an electricity-meter the combination of a motor having an oscillating armature and a counter driven thereby with a motor having a rotating armature and conducting parts periodically swung by the oscillating armature and taken along with the rotating armature through a certain angle substantially as described.

7. In an electricity-meter the combination of a motor having an oscillating armature with a motor having a rotating armature and an axle consisting of two insulated parts which are in connection with the electrical circuit and carrying the conducting-arms for supplying the current to the switch of rotating armature and an electromagnet periodically swinging this axis in one direction substantially as described.

8. In an electricity-meter the combination of a motor having an oscillating armature with a motor having a rotating armature and periodically-swinging conducting parts which are taken along with the rotating armature through a certain angle and means for returning the conducting parts and means such as a spring for assisting the turning of the armature in one direction and acted upon in the other direction at each returning of the conducting parts substantially as described.

9. In an electricity-meter the combination of a motor having an oscillating armature with a motor having a rotating armature and periodically-swinging conducting parts which are taken along with the rotating armature through a certain angle and an oscillating armature for switching the conducting parts periodically, this armature having a contact-arm switching the current through its own field-coils substantially as described.

656,101. EXPLOSIVE-ENGINE. OREN J. FAIRCHILD, Jamestown, N. Y. Filed Aug. 25, 1899. Serial No. 728,456. (No model.)



Claim.—1. In an explosive-engine, the combination with the crank-shaft, of a reciprocating device, operative connections between it and the crank-shaft for reciprocating said device once for each revolution of the shaft, a valve-operating tumbler, a latch carried by said reciprocating device and adapted to engage said valve-operating tumbler, a reciprocating cam-tumbler provided with a part adapted to engage said latch and hold it out of engagement with the valve-operating tumbler and a cam-tumbler-actuating latch carried by said reciprocating device, substantially as described.

2. In an explosive-engine, the combination with the crank-shaft, of a reciprocating device, connections between it and the crank-shaft for reciprocating it once for each revolution of the shaft, a valve-operating tumbler, a valve-tumbler-actuating latch carried by said reciprocating device, a reciprocating cam-tumbler having a part for engaging said latch and holding it out of operative relation with the valve-operating tumbler, a cam-tumbler-actuating latch carried by the said reciprocating device, and a governor operatively connected with said cam-tumbler-actuating latch, substantially as described.

3. In an explosive-engine, the combination with the cylinder provided with an inlet-valve, and a normally-closed spring-actuated exhaust-valve, the piston and the crank-shaft, of a reciprocating device, operative connections between said reciprocating device and the crank-shaft for reciprocating it once for each revolution of the crank-shaft, an exhaust-valve-operating tumbler for opening the exhaust-valve, a valve-tumbler-actuating latch carried by said reciprocating device, a cam-tumbler having a part adapted to engage said latch and hold it out of operative relation with the valve-operating tumbler, a cam-tumbler-actuating latch carried by said reciprocating device and adapted to move said cam-tumbler in one direction, said cam-tumbler having a part in position to be engaged by the valve-tumbler-actuating latch to move it in the opposite direction, substantially as described.

4. In an explosive-engine, the combination with the cylinder provided with an inlet-valve, and a normally-closed spring-actuated exhaust-valve, the piston and the crank-shaft, of a reciprocating device, operative connections between said reciprocating device and the crank-shaft for reciprocating it once for each revolution of the crank-shaft, an exhaust-valve-operating tumbler for opening the exhaust-valve, a valve-tumbler-actuating latch carried by said reciprocating device, a cam-tumbler having a part adapted to engage said latch and hold it out of operative relation with the valve-operating tumbler, a cam-tumbler-actuating latch carried by said reciprocating device and adapted to move said cam-tumbler in one direction, said cam-tumbler having a part in position to be engaged by the valve-tumbler-actuating latch to move it in the opposite direction, and a pendulum-governor carried by said reciprocating device and operatively connected with the cam-tumbler-actuating latch for disengaging said latch from operative relation with said cam-tumbler in case of overmotion of the crank-shaft, substantially as described.

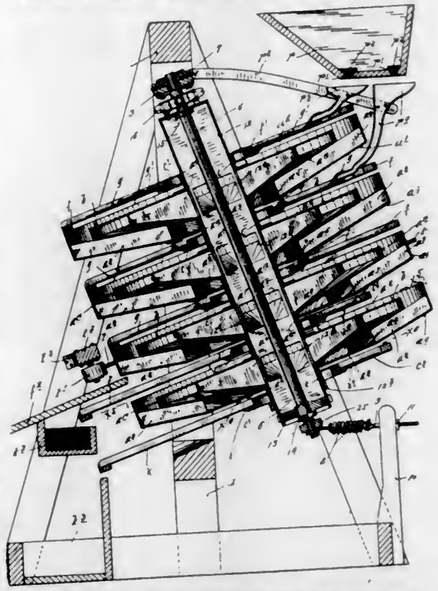
5. In an explosive-engine, the combination with the cylinder provided with an inlet-valve and a normally-closed spring-actuated exhaust-valve, the piston and the crank-shaft, of a reciprocating device, operative connections between said reciprocating device and the crank-shaft for reciprocating it once for each revolution of the crank-shaft, an exhaust-valve-operating tumbler for opening the exhaust-valve, a pawl for engaging said tumbler and holding the exhaust-valve in open position, a valve-tumbler-actuating latch carried by the governor-reciprocating device, a cam-tumbler having a part adapted to engage said latch and hold it out of operative relation with the valve-operating tumbler, and a part for engaging said pawl and throwing it out of engagement with said valve-operating tumbler, a cam-tumbler-actuating latch carried by the said reciprocating device for moving the cam-tumbler in one direction, said cam-tumbler having a part adapted to be engaged by the valve-tumbler-actuating latch to move it in the opposite direction and a pendulum-governor carried by said reciprocating device and operatively connected with the cam-tumbler-actuating latch, substantially as described.

6. In an explosive-engine, the combination with the crank-shaft, of a reciprocating device, operative connections between it and the said shaft for reciprocating the same once for each revolution of the crank-shaft, a valve-operating tumbler, a cam-tumbler for controlling the operation of said valve-operating tumbler, a valve-tumbler-actuating latch carried by the said reciprocating device, a cam-actuating latch carried by the reciprocating device, a pendulum-governor pivotally connected to the reciprocating device, operative connections between said governor and said cam-actuating latch, a resistance-spring operatively connected with said governor for resisting the movement thereof caused by the momentum of the governor and an adjusting device for said spring, substantially as described.

7. In an explosive-engine, the combination with the crank-shaft, of a reciprocating device, operative connections between it and the said shaft for reciprocating the same once for each revolution of the crank-shaft, a valve-operating tumbler, a cam-tumbler for controlling the operation of said valve-operating tumbler, a valve-tumbler-actuating latch carried by the said reciprocating device, a cam-actuating latch carried by the reciprocating device, a pendulum-governor pivotally connected to the reciprocating device, operative connections between said governor and said cam-actuating latch, a resistance-spring operatively connected with said governor for resisting the movement thereof caused by the momentum of the governor, an adjusting device for said spring and an adjustable stop for limiting the movement of said governor under the action of said spring, substantially as described.

8. In an explosive-engine, the combination with the cylinder provided with a gravity inlet-valve and a normally-closed spring-actuated exhaust-valve, the piston and crank-shaft, of a reciprocating device, operative connections between it and the crank-shaft for reciprocating the same once for each revolution of the crank-shaft, an exhaust-valve-operating tumbler for opening the exhaust-valve, a pawl for engaging said tumbler and holding the valve in open position, two cam-tumblers pivotally connected together provided with cam portions for disengaging said pawl from the valve-operating tumbler, one of said cam-tumblers having a part capable of vertical movement with respect to the other cam-tumbler, a valve-tumbler-actuating latch carried by the reciprocating device and adapted to be engaged by the vertically-movable part of said cam-tumbler, whereby said latch is held out of engagement with the valve-operating tumbler, a cam-tumbler-actuating latch adapted to engage one of said cam-tumblers, a pendulum-governor carried by said reciprocating device, operative connections between said governor and said cam-tumbler-actuating latch, said cam-tumblers having portions adapted to be engaged by the valve-tumbler-actuating latch to move said tumblers in the direction opposite to that in which they are moved by the cam-tumbler-actuating latch, said valve-operating tumbler having an elevated portion adapted to be engaged by the said cam-tumbler-actuating latch to hold it out of operative relation with the cam-tumbler, substantially as described.

656,102. GRAIN-SEPARATOR. OLUF O. FIELD, Mayville, N. D. Filed Mar. 21, 1899. Serial No. 709,870. (No model.)



Claim.—1. In a separator, the combination with a screen and a co-operating flexible apron or cover overlying the same, and between which parts the grain or material is delivered, of means for vibrating at least one of the said parts and means for rotating one of the said parts over the other, whereby the grain or stock is subjected to a vibratory and a rotary movement, while subject to the action of centrifugal force, substantially as described.

2. In a separator, the combination with a screen set on an incline, and mounted to vibrate, of a disk-like flexible cover, mounted to vibrate with and to rotate over the said screen, substantially as described.

3. In a separator, the combination with a hollow, rotary sleeve, or shaft, having lateral openings and mounted to rotate on an inclined axis, of an elevating-pan carried by said sleeve and delivering to the lateral openings thereof, a screen overlying said pan and onto which the grain is delivered, and a flexible apron or cover coöperating with the said screen, one of the said coöperating parts having a rotary movement with respect to the other, substantially as described.

4. In a separator, the combination with the hollow, inclined rotary sleeve with lateral openings, of the primary and supplemental elevating-pans, provided with the radial flights or partitions, the latter leading to said lateral openings and the former opening at its central portion, of the rotary screen covering said supplemental pan, the vibrating screen overlying said primary pan, and the flexible cover or apron mounted to rotate over said vibrating screen, substantially as described.

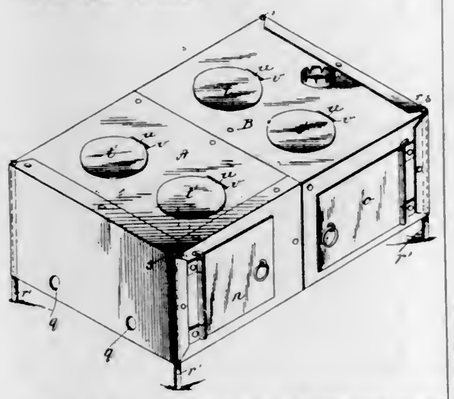
5. In a separator, the combination with a hollow sleeve or shaft with lateral openings, and means for rotating and vibrating the said sleeve, of an elevating pan or receptacle carried by said sleeve and delivering to said lateral openings, a screen overlying the said pan and mounted to vibrate therewith, and a flexible apron or cover overlying said screen and mounted to vibrate therewith, substantially as described.

6. In a separator, the combination with a hollow sleeve or shaft mounted to rotate on an inclined axis, and to vibrate, of a spring device partially supporting the same at its lower end, a pan or receptacle carried by said sleeve and delivering to the lateral openings thereof, a screen overlying said pan, and means for delivering the grain onto said screen, subetantially as described.

7. In a separator, the combination with a hollow rotary sleeve mounted to vibrate and provided with lateral openings, of a pan or receptacle carried by said sleeve and delivering to the lateral openings of said sleeve, a screen overlying said pan or receptacle, and means for vibrating said sleeve and receptacle, comprising a serrated or irregular flange movable with said shaft, and a roller or wheel over which the said flange is mounted to run, substantially as described.

8. In a separator, the combination with a screen mounted to vibrate but not to rotate, of a vibrating shaft supporting and turning through said screen to vibrate the same, and an apron or cover carried by such shaft and moving over the upper surface of said screen, substantially as described.

656,103. MINER'S OR CAMP STOVE. WILLIAM FORKER and WILLIAM MITCHELL, Glenwood Springs, Colo. Filed Dec. 9, 1899. Serial No. 739,755. (No model.)



Claim.—1. A sectional sheet-metal stove separable transversely and each section provided with rings on the lower side and near the inner end thereof for supporting it pannier-like on an animal and means for securing the sections in connected position.

2. A sectional stove having a fire-box and an oven in the same horizontal plane, separable at a point adjacent to the inner end of the oven, means for securing the sections in connected position and each section provided with rings on its lower side and near the inner end thereof for supporting it pannier-like on the back of an animal.

3. A sectional stove separable transversely near the oven, means for detachably securing the sections and each section provided with rings on the lower side and near the inner end thereof for suspending it pannier-like on the back of an animal.

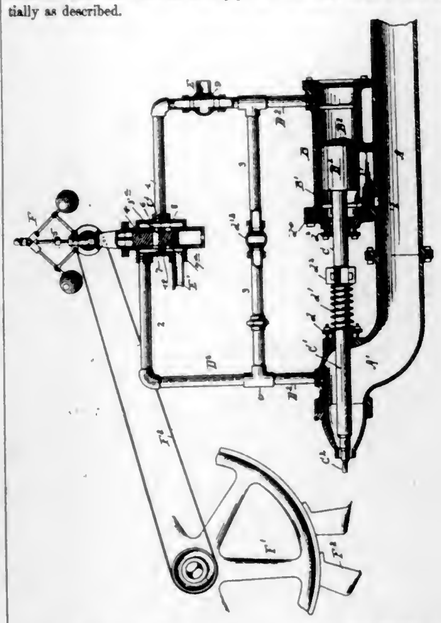
4. A sectional stove having a fire-box and an oven in the same horizontal plane, separable at a point adjacent to the inner end of the oven and connected by a separable hinge, and each section provided with means on the lower side and near the inner end thereof for supporting it pannier-like on the back of an animal.

5. A sectional stove separable transversely near the oven and having a removable end for the oven adjacent to the fire-box, and each section provided with means on the lower side and near the inner end thereof for suspending it pannier-like on the back of an animal.

6. A sectional stove separable transversely adjacent to the inner end of the oven and having spaces on the upper and lower sides of the oven; in combination with packing-boxes constructed to enter said spaces for transportation.

656,104. REGULATING MEANS FOR HYDRAULIC MOTORS. JULES D. FRIOOT, San Francisco, Cal. Filed June 12, 1899. Serial No. 720,256. (No model.)

Claim.—1. The combination with the main pipe, of a cylinder, a piston in said cylinder dividing the same into a main and an auxiliary chamber, the former of which communicates directly with the main pipe, a piston-rod connected to said piston and working in the main chamber only, whereby different operative areas are obtained on opposite sides of the piston, a pipe connection between said main pipe and auxiliary chamber, a controlling device for the main-pipe outlet operated by said piston-rod, and means interposed in said pipe connection for controlling the water communication between the main pipe and auxiliary chamber, substantially as described.



2. The combination of a motor, a water-supply pipe therefor, a cylinder communicating with said supply-pipe, a piston in said cylinder, a controlling device for said supply-pipe, connected to said piston, a pipe connection between said supply-pipe and said cylinder, a valve-casing interposed in said pipe connection, a valve in said valve-casing, mechanism for operating said valve in accordance with the speed of the motor, a valve-controlled discharge for said pipe connections, and an intermediate pipe connection constituting a by-pass around said valve, and a stop-cock in said by pass, substantially as described.

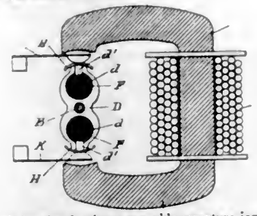
3. The combination, with the main pipe having a nozzle, of a cylinder parallel with said main pipe, a piston in said cylinder and dividing the same into a main and an auxiliary chamber, the former of which communicates directly with the main pipe, a nozzle-tip, a piston-rod connected with said piston and with said nozzle-tip and working in said main chamber only for the purpose set forth, a pipe connection between said main pipe and auxiliary chamber, and means in said connection for controlling the admission and exhaustion of fluid to and from said auxiliary chamber, substantially as described.

4. The combination with a main pipe having an outlet-nozzle, of a cylinder, a piston in said cylinder dividing the same into a main and an auxiliary chamber, the former of which communicates with the main pipe, a piston-rod connected to said piston and working in the main chamber only, pipe connection between the main pipe and auxiliary chamber, and means for controlling the movement of the piston through variation of the water-pressure in accordance with the speed of the driven motor, substantially as described.

5. The combination with a nozzle, a piston-cylinder and the pipe connections between the nozzle and piston-cylinder, of a ported-valve casing interposed within said pipe connections, a single ported valve fitted within said casing, mechanism for operating said valve in accordance with the speed of the driven motor, communication between said pipe connections and the atmosphere, a stop-cock for controlling said communication, and an intermediate or middle pipe connection constituting a by-pass around the valve, and of a stop-cock located therein.

656,105. CIRCUIT-BREAKER. FRANK W. GARRETT, Johnstown, Pa., assignor to the Lorain Steel Company, of Pennsylvania. Filed Dec. 1, 1899. Serial No. 738,751. (No model.)

Claim.—1. In a circuit-breaker, the combination of means in the main circuit of the instrument for producing a magnetic field, the armature movably supported in said field and carrying a coil whose plane is normally substantially parallel to the lines of force of said field, means for normally restraining movement of said armature, and for permitting such movement under abnormal conditions, means for effecting a circuit through the body of said armature independent of its coil, and a normal short circuit around the last-named circuit



2. A circuit-breaker having a movable armature journaled in a magnetic field, a coil on said armature and connections to said coil from the main circuit, means for normally holding said armature in a position in which the lines of force of the said coil do not have a maximum coincidence with the lines of force of the field in which the armature is journaled, means for effecting a circuit through the body of said armature independent of its coil, and means whereby said circuit is broken by a predetermined movement of said armature.

3. A circuit-breaker having a movable member or armature situated in a magnetic field, a coil on said member or armature, a series of contacts on the periphery of said member or armature within the said field, and means for effecting a circuit through the said contacts and for breaking the same at each of said contacts upon a predetermined movement of the said member or armature.

4. In a circuit-breaker, an electromagnet whose coil is energized from the main circuit, an armature movably supported between the poles of said magnet, and carrying the movable contacts of the instruments said contacts being situated in the arc-disrupting field of said magnet and a coil on said armature connected in parallel with the coil of said magnet, together with means whereby said coil is normally held in such a position in the field of said magnet that the lines of force generated by the coil do not have a maximum coincidence in direction with the lines of force generated by the said magnet.

5. In a circuit-breaker having fixed and movable contacts, the combination with an electromagnet whose coil is connected in the main circuit, of an armature journaled between the poles of said magnet and carrying movable contacts which normally complete two circuits, one of which short-circuits the other and means whereby those contacts forming part of the short circuit lose their connections in such circuit upon movement of said armature before the other of said circuits is broken, said armature having a coil connected in parallel with the field-magnet coil, and means for normally holding said coil in a plane parallel to the direction of the lines of force of the said magnet.

6. In a circuit-breaker, the combination with an electromagnet and an armature supported in the field of said magnet and itself capable of generating a magnetic field, of a plurality of contacts secured to said armature and a series of contact-fingers engaging said contacts and connected in series with each other and also connected to line, said contacts and contact-fingers forming a shunt-circuit through the body of said armature.

7. In a circuit-breaker, the combination with an electromagnet, of an armature journaled in the field of said magnet, and carrying the movable contacts of the instrument, a coil on said armature, means for energizing the said coil and a pawl device for normally holding the armature against movement and for releasing the same under abnormal conditions of the said coils.

8. In a circuit-breaker, the combination with an electromagnet, of an armature journaled in the field of said magnet, and carrying the movable contacts of the instrument, a coil on said armature, and means for energizing the said coil, and a pawl device for normally holding the armature against movement and for releasing the same under abnormal conditions of the said coils, together with means for adjusting the action of said pawl to vary its restraining action on the armature.

9. In a circuit-breaker, the combination of an electromagnet, an armature in the field of said magnet and carrying movable contact devices, said armature having a coil, means for energizing the said coil, and fixed contact devices cooperating with the said movable contact devices, together with means for restraining the movement of the said armature under normal conditions, means for normally short-circuiting the circuit through said movable contacts and fixed contact devices, and for breaking such short circuit upon the initial movement of said armature.

10. In a circuit-breaker, the combination of an electromagnet whose coil is connected with the circuit, an armature in the field of said magnet and carrying movable contacts, said armature having a coil and circuit connections for energizing with said coil, fingers for engagement with the said contacts, said fingers being electrically connected with the circuit and with each other, a pair of main contacts, a bridging-piece for said contacts carried by the armature and forming with said main contacts a short circuit for the said movable contacts and fingers in the normal position of the armature.

11. In a circuit-breaker, the combination with an electromagnet whose coil is connected with the circuit, of an armature journaled in the field of said magnet and having a coil also connected in circuit, a plurality of insulated contacts on said armature, a plurality of contact-fingers for engagement therewith, said fingers being connected to opposite terminals of the line and in series with each other, and means for normally connecting the line-terminals to short-circuit said fingers.

12. In a circuit-breaker of the character described, the combination with an electromagnet connected with the circuit, of an armature journaled in the field of said magnet, and composed of a plurality of insulated plates secured to a shaft, a coil seated in slots of the said plates, and also connected with the circuit, a plurality of contacts carried by the said plates, and fixed contact-fingers engaging the said contacts and connected with the circuit.

13. In a circuit-breaker of the character described, the combination with an electromagnet, of the armature journaled in the field of said magnet, said armature comprising a series of insulated plates centrally secured on a shaft, and slotted at each end portion, and a coil seated in the slots of said plate, connections for energizing the said coil, and means for normally restraining the movement of the said armature, together with a series of contacts closing the slots in said plates, and cooperating fixed contacts and connections for effecting a circuit through the said plates.

14. The herein-described circuit-breaker, comprising the electromagnet having its coil connected in the circuit, the armature composed of series of insulated slotted plates situated between the poles of said magnet, a journaled shaft to which said plates are secured, and a coil seated in the slots of said plates, connections for energizing the said coil, a contact on each end of each of said plates, contact-fingers engaging the same, and electrically connected in series with each other and also in the line-circuit, means for normally short-circuiting the said fingers, and means for normally holding said armature with its coil in a plane substantially parallel to the lines of force of said electromagnet, and for releasing said armature under abnormal conditions in the circuit.

15. In a circuit-breaker, an armature composed of a shaft, a series of separated metal plates secured thereon and insulated therefrom and from each other, and having contact-pieces at their ends, a coil seated in slots in said plates, and brushes bearing on said shaft and electrically connected to the line in which the circuit-breaker is placed.

16. In a circuit-breaker, an armature, means carried thereby for producing a magnetic field, external means for producing a surrounding non-coincident field, a series of contacts carried by the said armature, and fixed contact devices coöperating therewith and engaging the same in the said magnetic field, whereby arcs formed by the separation of said contacts are subject to the disrupting action of said field.

656,106. METAL-PUNCH. ANSON W. GODDARD, Farnam, Nebr., assignor of one-half to Charlie C. Caldwell, Lincoln, Nebr. Filed May 12, 1900. Serial No. 16,498. (No model.)

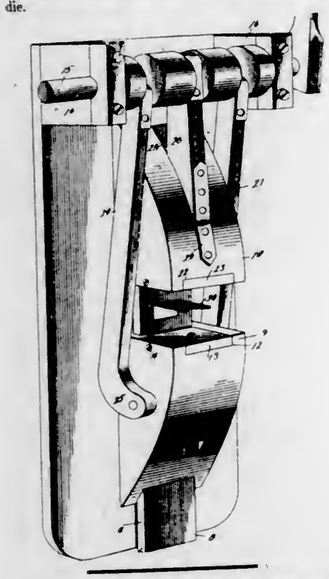
Claim.—1. A punching-press comprising a supporting-plate, a flanged guide-plate carried by the supporting-plate, a slotted table engaged with the guide-plate, a slotted head engaged with the guide-plate, recesses in the head and table for the reception of dies, and means for moving the head and table simultaneously toward and away from each other.

2. A press comprising a supporting-plate having a flanged guide-plate thereon, a movable table engaged with the guide-plate, a movable head engaged with the guide-plate, said table and head being adapted to receive coöperating dies, a finger mounted upon the guide-plate in operative relation to the table to exert a clamping action thereagainst, and means for moving the head and table simultaneously toward and away from each other.

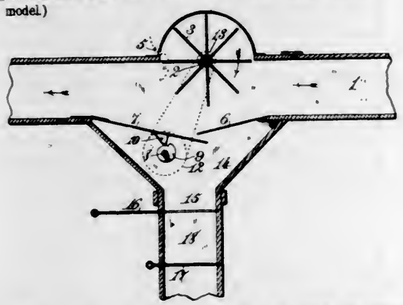
3. A press comprising a supporting-plate, a crank-shaft mounted on the plate, a table slidably engaged with the plate, a head slidably connected to the plate, a recess in the head a connecting-rod engaged with a crank of the shaft and having an arc-shaped lower end resting upon the base of the recess to press the head in one direction as the shaft is operated, a strap connecting the rod and head to raise the head when the shaft is further rotated, and connections between the table and additional cranks of the shaft for reciprocating the table.

4. A press comprising a supporting-plate having a guide-plate provided with flanges, a table slidably engaged with the guide-plate and adapted to receive a die, a head slidably engaged with the guide-plate and adapted to receive a die, a crank-shaft, rods connected with the shaft and the table for reciprocating the latter as the shaft is rotated, a clamping-finger in operative relation to the table, a recess in the head, a connecting-rod having its lower end arc-shaped and resting upon the base of the re-

cess, said rod having connection with the shaft for reciprocation thereby, and a strap connecting the head and its rod, said head being adapted to receive a die.



656,107. **MECHANISM FOR CLEANING SEED-COTTON.** HENRY W. GRABER, Dallas, Tex. Filed June 19, 1900. Serial No. 20,871. (No model.)



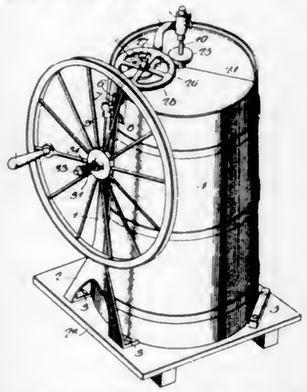
Claim.—1. In a mechanism for cleaning seed-cotton, the combination with a conduit, of a shaft carrying beater-arms and arranged out of the interior space of said conduit, a lid or cover rising above the top wall of said conduit to inclose said beater-arms, and means for revolving the latter in the same direction of movement with the air-current, but at a higher speed, substantially as described.

2. In a mechanism for cleaning seed-cotton, the combination with a conduit, of a shaft arranged in the plane of the upper wall of said conduit and carrying beater-arms, a semicircular cover over the arms having an air-inlet opening between the edge of said cover and the wall of the conduit on the side on which the ends of said arms move upward to pass into the cover, and means for driving said arms in the same direction with the air-current in the conduit but at a higher speed, substantially as described.

3. In a mechanism for cleaning seed-cotton, the combination with a conduit of a beater-shaft arranged out of the interior thereof and having arms which move in said conduit in the same direction with the air-current, a two-part screen in the lower wall of said conduit beneath the beater, one section of said screen being rigid and inclined downward and the other section being flexibly connected to the lower wall and inclined to pass below the lower edge of the rigid section, and means for vibrating said screen, substantially as described.

4. In a mechanism for cleaning seed-cotton, the combination with a conduit, of a beater-shaft arranged in the plane of and transverse to the top wall of the conduit, a cover over said shaft and its arms having upon one edge an air-inlet, a two-part screen below said beater-shaft consisting of a rigid and a vibrating section inclined from the lower wall of the conduit downward, the vibrating section passing under the edge of the rigid section, means for vibrating said section toward and from the lower edge of the rigid section and for driving the beater-arms at a greater speed than the air-current in the conduit and in the same direction, a dust-chamber beneath the screen, and two slides therein one over the top and the other at the bottom of said chamber, substantially as described.

656,108. **CHURN.** WILLIAM F. GRAY, Millersburg, Ohio, assignor of one-third to Christian J. Fisher, same place. Filed Dec. 28, 1899. Serial No. 741,853. (No model.)



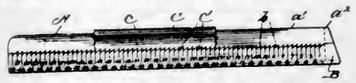
Claim.—1. In a churn, the combination of a base, a standard having inwardly-extending lugs secured to the base and provided near its top with a longitudinal slot, a churn-body supported upon the base and fitting against the said lugs, a plate secured to the exterior of the churn-body and provided with a lug having a threaded socket extending into the slot of the standard, a clamping-screw engaging the standard and the threaded socket, and gearing supported by the standard and adapted to operate a dasher, substantially as described.

2. In a churn, the combination of a base, a churn-body arranged thereon, a standard secured to the base and having inwardly-extending lugs conforming to the configuration of the churn-body and adapted to support the latter at one side thereof, a block mounted on the base and located at the opposite side, a plate secured to the upper portion of the churn-body, and provided with a lug extending through an opening of the standard and having a threaded socket, a screw mounted in the threaded socket and engaging the standard, a dasher, and gearing supported by the standard and operating the dasher, substantially as described.

3. In a churn, the combination of a base, a standard rising from the base and provided at its upper end with an inwardly-extending arm, an upwardly-extending arm located at the inner end of the said arm and provided with a bearing, a churn-body arranged on the base and secured at its upper portion to the standard, a dasher-shaft journaled in the bearing of the upwardly-extending arm, a friction-pinion carried by the dasher-shaft, a horizontal friction-wheel mounted on the upper face of the inwardly-extending arm and engaging the pinion, and a vertical gear-wheel arranged on the exterior of the standard and frictionally engaging the horizontal friction-wheel, substantially as described.

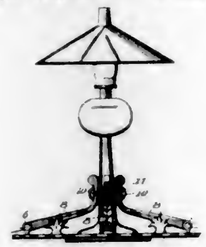
4. A churn, comprising a base, a standard rising therefrom and provided with a slot adjacent to its upper end, an arm extending inward and upward from the top of the standard and having an adjustable bearing, a churn-body provided with a projection or lug engaging the slotted portion of the standard, a fastening device detachably securing the projection or lug to the standard, a dasher-shaft journaled at its upper end in the adjustable bearing, a friction-pinion mounted on the dasher-shaft, a vertical friction-wheel mounted on the standard, and a horizontal friction-wheel arranged at the top of the standard and interposed between and frictionally engaging the pinion and the vertical wheel, substantially as described.

656,109. **PRINTER'S STICK.** THOMAS GRIFFIN, Chicago, Ill. Filed Nov. 10, 1899. Serial No. 736,457. (No model.)



Claim.—The combination with the tray A, having the side and end pieces a' and a^2 respectively, of the plate or piece B, secured to the side of the tray, and having a series of teeth in its upper edge, the edges of said teeth adjacent to the end piece a^2, being slightly undercut, the holder C, provided with a downturned portion to form a clamp, the lower edge of said downturned portion being provided with teeth to engage those of the tray, substantially as described.

656,110. **LAMP-HOLDER.** GEORGE GRIMM, Baltimore, Md. Filed May 7, 1900. Serial No. 15,741. (No model.)



Claim.—1. In a device of the character described, the combination with a base; of inwardly-movable braces secured thereto; and means for securing the free ends of said braces together.

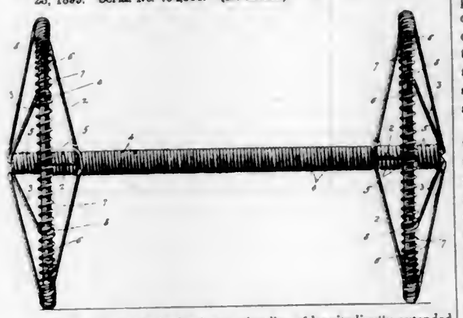
2. In a device of the character described, the combination with a base; of inwardly-movable braces pivoted thereto; and a flexible connection between the inner ends of said braces.

3. In a device of the character described, the combination with a base; of extensions thereon; braces having trunnions journaled within the extensions, said braces adapted to swing inwardly upon their pivots; and a flexible connection between the free ends of said braces.

4. The combination with an internally-threaded cylinder; of a base mounted thereon and having an opening therein; means for detachably securing said base to the cylinder; braces secured to the base and adapted to swing inwardly thereon; and a flexible connection between the free ends of the braces.

5. The combination with an internally-threaded flanged cylinder; of a base thereon having an opening therein; means for detachably securing said base to the cylinder; extensions upon the base; braces having trunnions mounted within said extensions, said braces adapted to move inwardly; and a flexible connection between the free ends of the braces.

656,111. **WHEEL AND AXLE.** FRANK HALL, Minneapolis, Minn., assignor, by direct and mesne assignments, of three-fourths to Gustav Elfstrand, C. B. Shove, and Charles J. Hedwall, same place. Filed Oct 23, 1899. Serial No. 734,550. (No model.)



Claim.—1. An axle, having a plurality of longitudinally-extended rods or wires turned at their ends to form the spokes of connected wheels, substantially as described.

2. The combination with an axle having a plurality of longitudinally-extended rods or wires turned at their ends to form the spokes of connected wheels, of wheel-rims around which the ends of the spokes are bent to complete the wheels, substantially as described.

3. An axle comprising a plurality of longitudinally-extended rods or wires in cylindrical arrangement, with their ends turned to form the spokes of connected wheels, and a spiral wrapping around said axle for binding together the said rods or wires thereof, substantially as described.

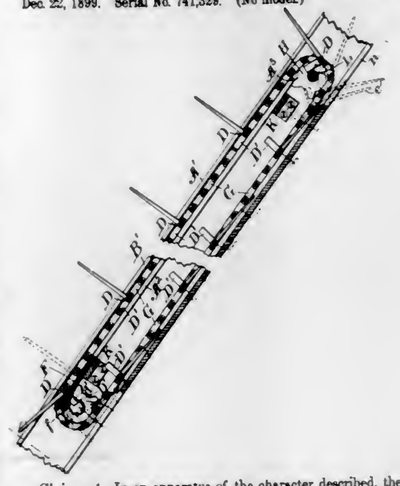
4. An axle comprising a central shaft or core, a plurality of longitudinally-extended rods or wires in cylindrical arrangement around said shaft or core, with their ends turned to form the spokes of connected wheels, and a spiral wrapping binding the said rods or wires to said shaft or core, substantially as described.

5. An axle comprising a plurality of longitudinally-extended rods or wires in cylindrical arrangement, with their ends turned to form the spokes of connected wheels, and a spiral wrapping around said axle for binding said rods or wires together, in combination with wheel-rims around which the outer ends of said spokes are bent to complete said wheels, substantially as described.

6. The combination with the rods or wires 2, 3, bent at their ends to form the wheel-spokes, as described, of the coiled wrapping 4 binding the parallel portions of said rods 2, 3, together, the end coils 5 on the rods 3 between the inner and the outer wheel-spokes, and the wheel-rims 6 around which the outer ends of the wheel-spokes are bent to complete the wheels, substantially as described.

7. An axle having a plurality of rods or wires extending lengthwise thereof and bent to form the spokes of a connected wheel, substantially as described.

656,112. **CONVEYER AND ELEVATOR FOR REAPING AND BINDING MACHINES.** THOMAS HANRAHAN, Bungaree, Victoria. Filed Dec. 22, 1899. Serial No. 741,329. (No model.)



Claim.—1. In an apparatus of the character described, the combination with the frame, provided with a platform and guides beneath said platform, sprocket-wheels mounted near the ends of said frame, endless chains passing over said sprocket-wheels, rods connecting said chains and carrying a plurality of teeth, and slide-blocks on said rods sliding between the said platform and guides; of a tongue secured to the frame and extending into the path of the teeth, engaging the latter and turning the slide-blocks into proper position to engage the said guides; substantially as described.

2. In an apparatus of the character described, the combination with the frame provided with a platform and guide-tracks beneath said platform; of sprocket-wheels mounted upon a shaft at one end of the frame, and sprocket-wheels mounted on stud-shafts in the other end of the frame, endless chains passing over said sprocket-wheels, rods running transversely of said frame and connecting said chains, a plurality of teeth carried by said rods, slide-blocks secured near the ends of the said rods at right angles to the said teeth, and sliding between the said guides and said platform, a tongue secured to the frame and extending into the path of the central teeth, and engaging the latter and turning the slide-blocks into proper position to engage the said guides, substantially as described.

656,113. **INGRAIN CARPET FABRIC.** HARRY HARDWICK, Philadelphia, Pa., assignor to the Ivins, Dietz & Metzger Company, same place. Filed Mar. 31, 1899. Serial No. 711,274. (No specimens.)

Claim.—1. A carpet fabric having a body composed of interwoven warps and wefts and surface figures composed of special wefts overlying the body-wefts and tied down by certain of the warps, each of said special figuring-wefts being independent of and disconnected from the others, and discontinued from figure to figure across the back of the fabric.

2. A carpet fabric having a body composed of interwoven warps and wefts and surface figures composed of special wefts and tied down by certain of the warps, said special face-wefts being also united to the body of the fabric on the back of the same for a short distance beyond the figures but being otherwise discontinued from figure to figure across the back of the fabric, substantially as specified.

3. A carpet fabric having a body composed of interwoven warps and wefts and surface figures composed of special wefts overlying the body-wefts, and tied down by certain of the warps, there being, adjacent to the edges of said face-figures, fabric composed of one of the body-wefts and certain of the warps interwoven to form an upper ply, and said special face-wefts and the other warps interwoven to form a back ply, the other body-wefts floating between the two plies and the special face-wefts being tied up to the body of the fabric by certain of the warps beyond such plicated portions, substantially as specified,



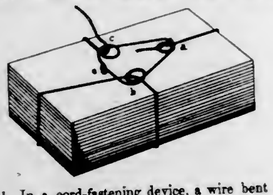
4. A carpet fabric in which both the warps and wefts are disposed in sets of eight, said warps and four of the wefts being interwoven to form the body of the fabric, and the remaining four wefts being introduced only at intervals and throughout portions of the width of the fabric to form special surface figures, such figured portion being tied by four of the warps of each set, the remaining four warps of each set floating behind the face-wefts throughout the extent of such figures, substantially as specified.

5. A carpet fabric having a body composed of interwoven warps and wefts forming a two-ply fabric and having special wefts extending throughout only a portion of a width of the fabric and overlying the body-wefts so as to form figures on the face of the fabric, said figured portions forming a three-ply fabric, substantially as specified.

6. A carpet fabric having a body composed of interwoven warps and wefts forming a two-ply fabric and having special wefts extending throughout only a portion of the width of the fabric and overlying the body-wefts so as to form figures on the face of the fabric, said figured portions forming a three-ply fabric in which the face-ply is bound down and the back ply is bound up by warps engaging with the embedded intermediate ply, substantially as specified.

7. A carpet fabric having a body composed of interwoven warps and wefts and surface figures composed in part of special wefts overlying the body-wefts, and in part of said body-wefts, said special figuring-wefts being discontinued from figure to figure across the fabric, substantially as specified.

656,114. CORD-FASTENER. CHARLES J. W. HAYES, Detroit, Mich. Filed May 15, 1899. Serial No. 716,858. (No model.)



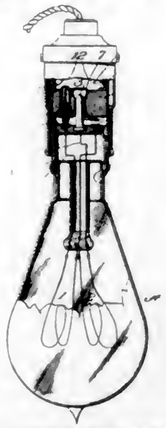
Claim.—1. In a cord-fastening device, a wire bent and the ends brought and secured together to form an elastic frame, said frame carrying one or more elastic helices tangent internally to the side bars of the frame formed from said wire, whereby a cord or tape may be clamped, substantially as described.

2. In a cord-fastening device, a wire bent into a plurality of separated single-coil elastic clamping-helices, the ends of said wire being brought together and secured to form an elastic frame, substantially as described.

3. In a cord-fastener, the device consisting of a wire having separate clamping convolutions forming hooks all pointing toward a common center, and the ends of the wire brought and secured together, each convolution-hook consisting in part of an overlapping portion formed by the crossing of the wire in entering and leaving the convolution, substantially as described.

4. A cord-fastener, comprising a plurality of connecting elastic convolutions of wire, fashioned to form cord-clamps, and arranged within an endless frame formed by the portions of wire connecting said convolutions, substantially as described.

656,115. INCANDESCENT LAMP. CHRISTIAN HOELSCHER, Warren, Ohio. Filed Apr. 30, 1900. Serial No. 14,953. (No model.)



Claim.—1. The combination with a socket having a main terminal and two auxiliary terminals, of a lamp having a plurality of filaments therein, a central contact for constantly engaging said main terminal, and two other contacts for engaging either or both of said auxiliary terminals when the lamp is turned axially, said filaments being connected to said contacts of the lamp.

2. The combination with a socket having a main terminal and two auxiliary terminals, of a lamp having a plurality of filaments therein, a post projecting centrally from the base of the lamp for constantly contacting with said main terminal, and two other contacts for engaging either or both of said auxiliary terminals when the lamp is turned axially, said filaments being connected to said post and contacts of the lamp.

3. The combination with a socket having a main terminal and two auxiliary spring-actuated terminals, of a lamp having a plurality of filaments therein, a central contact for constantly engaging said main terminal, and two other contacts for engaging either or both of said spring-actuated terminals when the lamp is turned axially, said filaments being connected to said contacts of the lamp.

4. The combination with a socket having a main terminal and two auxiliary spring-actuated terminals, of a lamp having a plurality of filaments therein, a base on said lamp having a contact-post for constantly contacting with said main terminal, two contact-plates in said base for engaging either or both of said spring-actuated terminals when the lamp is turned axially, said filaments being connected to said post and contact-plates, as set forth.

5. The combination with a socket having a central terminal-plate, a plunger in electrical connection therewith, and a spring-terminal, of a lamp having a plurality of filaments, a base, a post projecting centrally therefrom for constantly engaging said central terminal plate of the socket, and two contact-plates in said base for engaging either the plunger or spring-terminal, or both, when the lamp is turned axially, said filaments being connected to said post and contact-plates, substantially as set forth.

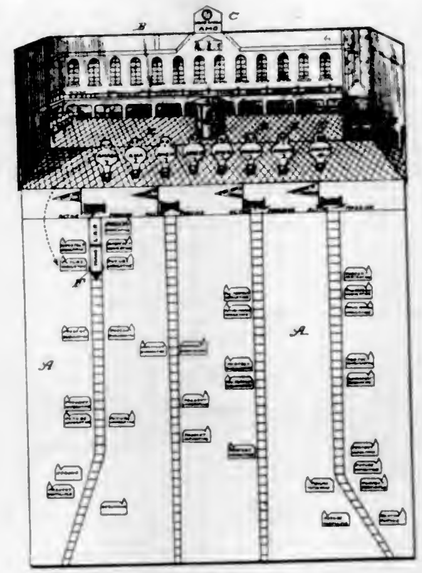
656,116. DOOR OR WINDOW FASTENER. ADDISON F. HOFFMAN, Tifton, Ga. Filed Dec. 18, 1899. Serial No. 740,760. (No model.)



Claim.—A door-fastener comprising a strip of resilient metal bent at right angles at one end to form a lip or lug having a toothed edge adapted to engage in the floor, and bent upon itself at the opposite end to form an arm which is curved downward at its end, and provided with teeth which are also adapted to penetrate the floor, whereby the device serves as a wedge, and is firmly anchored at two points.

656,117. EDUCATIONAL GAME. JAMES R. HUGHES, Bellefonte, Pa. Filed Mar. 24, 1900. Serial No. 10,025. (No model.)

Claim.—1. An educational game comprising a representation of a main railroad-station, a series of tracks representing the principal parts of the verb and having stations along the said track representing the tenses derived from said principal parts of the verb, and movable images representing passengers and bearing the various names of the forms of the verb and adapted to be transferred to their proper stations substantially as described.



2. An educational game comprising a representation of a main railroad-station, a series of tracks representing the principal parts of the verb and having stations along the said tracks representing the tenses derived from said principal parts of the verb, movable images representing passengers and bearing the various names of the forms of the verb, and a railroad-guide bearing the names of the forms, the tenses, and the tracks or gates to which they belong substantially as described.

3. An educational game comprising a representation of a main railroad-station, a series of tracks representing the principal parts of the verb and having stations along the said tracks representing the tenses derived from said principal parts, movable images representing passengers and bearing the various names of the forms of the verb, and a spinning indicator having the forms of the verb displayed in circular series, and a central revolving index-hand or pointer substantially as described.

4. An educational game comprising a representation of a main railway-station, a series of tracks representing the principal parts of the verb and having stations along the said tracks representing the tenses derived from said principal parts of the verb, one or more dummy trains arranged upon said tracks, and movable images representing passengers and bearing the various names of the forms of the verb adapted to be transferred to the trains and run to their respective stations substantially as described and for the purpose set forth.

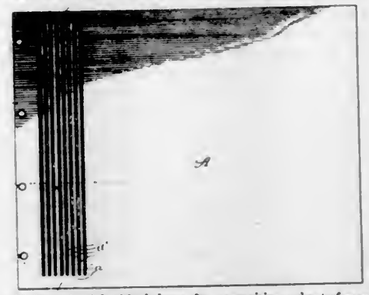
656,118. AUTOMATIC GAS-LIGHTER. EDWARD C. JONES and MORA M. BARRETT, San Francisco, Cal., assignors to Jones & Barrett, same place. Filed Oct. 2, 1899. Serial No. 732,381. (No model.)



Claim.—1. In a gas-lighting device, a burner, and a member carrying a substance adapted to light the gas flowing from the burner when said gas contacts with said substance, said member being so connected to its supporting part that it has adjustable movement across the burner and will remain in the position to which it is adjusted; substantially as described.

2. In a gas-lighting device, a burner, an arm pivoted to a suitable support, and a substance supported by said arm in the path of gas flowing from said burner and adapted to ignite the gas by contact therewith, the pivot connection between said arm and its support being such that the arm can be adjusted across the burner and will remain in its adjusted position; substantially as described.

656,119. LEAF FOR LEDGERS, &c. HARVEY P. JONES, Chicago, Ill., assignor to the Jones Perpetual Ledger Company, same place. Filed Jan. 13, 1900. Serial No. 1,338. (No model.)



Claim.—1. A leaf for ledgers, &c., comprising a sheet of paper glazed upon both sides and having the glazing on one side cut in continuous lines parallel to the binding edge and extending from an intact upper margin to a similar lower margin, the sheet being left imperforate throughout the area of bending, substantially as and for the purpose set forth.

2. A leaf for ledgers, &c., comprising a sheet of paper glazed upon both sides and having grooves of substantial width cut parallel to the binding edge and producing a weakened area of bending, upper and lower margins being preserved intact to prevent the leaf from tearing and the sheet remaining imperforate throughout the area of bending, substantially as and for the purpose set forth.

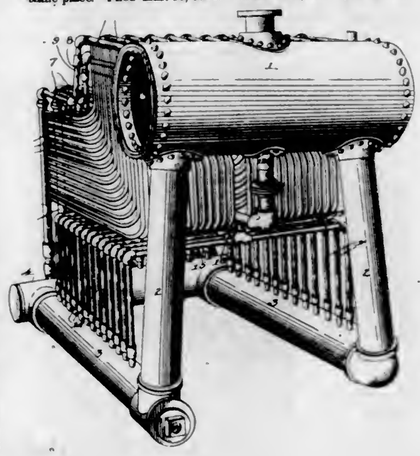
3. A leaf for ledgers, &c., comprising a sheet of glazed paper provided on one of its surfaces with continuous parallel grooves *a* located near the binding edge of the leaf and preserving margins *c* at the top and bottom, said grooves being of less depth than the thickness of the paper and destroying the glazing on one side of the paper throughout the area of bending, substantially as and for the purpose set forth.

656,120. YELLOW AZO DYE AND PROCESS OF MAKING SAME. PAUL JULIUS, Ludwigshafen, Germany, assignor to the Badische Anilin and Soda Fabrik, same place. Filed May 29, 1900. Serial No. 18,430. (No specimens.)

Claim.—1. The process for the production of yellow azo coloring-matters by diazotizing a specified thiazol body and combining the diazo compound obtained with nitro-meta-phenylene-diamin-sulfoacid.

2. As a new product the yellow azo coloring-matter which can be obtained by combining a diazotized thiazol body with a salt of nitro-meta-phenylene-diamin-sulfoacid, which is soluble in water, and dyes unmordanted cotton giving yellow shades which when treated with a bleaching-powder solution of 1° Baumé for half an hour remain practically unchanged, substantially as described.

656,121. PIPE-BOILER. JAMES KAINE, New York, N. Y., assignor of two-thirds to Charles Howard Boyer and Frank Woodruff Boyer, same place. Filed Mar. 16, 1900. Serial No. 8,964. (No model.)



Claim.—1. In a pipe-boiler, in combination with the steam-drum, water-columns and side water-legs, a horizontal manifold located centrally of and communicating with said drum, a series of vertical pipes communicating with each of said legs at intervals throughout its length, a series of three-way couplings, a series of horizontal pipes extending inward from the upper ends of said vertical pipes and into opposite sides of said couplings and a series of short vertical pipes connecting said couplings with said manifold, substantially as described.

2. In a pipe-boiler, in combination with the steam-drum, water-columns and side and back water-legs, a horizontal manifold located centrally of and communicating at its forward end with said drum, a vertical uptake connecting the rear end of said manifold with the back water-leg, a series of vertical pipes communicating with each of said side water-legs at intervals throughout its length, and a series of horizontal pipes connecting the upper ends of said vertical pipes, said horizontal pipes communicating centrally at their length with said manifold, substantially as described.

3. In a pipe-boiler, in combination with the steam-drum, water-columns and side and back water-legs, a series of horizontal manifolds communicating at one end with the rear side of said drum, a series of vertical uptakes communicating at their lower ends with the back water-legs and at their upper ends with the other, or rearward ends of said manifolds, a series of flats arranged as described and connecting said manifolds and said uptakes, a horizontal manifold located centrally of and communicating at its forward end with said drum through the bottom thereof, a vertical uptake connecting the rear end of said manifold with the back water-leg, a series of vertical pipes communicating with each of said side water-legs at intervals throughout its length, and a series of horizontal pipes connecting the upper ends of said vertical pipes, said horizontal pipes communicating centrally of their length with said manifold, substantially as described.

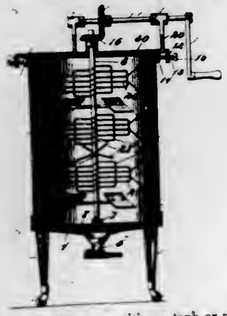
656,122. BICYCLE-PUMP. OTTO KEEN, Berlin, Wis. Filed June 6, 1900. Serial No. 19,301. (No model.)



Claim.—1. In a pump of the character described, the combination of a moving or sliding cylinder or barrel having a fixed lateral lug, and a piston with its tubular piston-rod, a spring adapted to effect automatically the relative return stroke of the piston, a yoke or frame looped over the hub and having its ends attached to the rim adapted to carry said cylinder and connected to a bicycle-wheel, substantially as set forth.

2. In a pump of the character described, the combination of a sliding or moving air cylinder or barrel, a piston with its hollow or tubular piston-rod, a yoke or frame, carrying said pump and serving as a guide therefor, looped over the hub and having its ends detachably connected to the rim of a bicycle-wheel, substantially as set forth.

656,123. APPARATUS FOR REFINING LARD. CARL KEMPF, Milwaukee, Wis., assignor of one-half to Bernhard Huber, same place. Filed Aug. 4, 1899. Renewed June 13, 1900. Serial No. 20,135. (No model.)



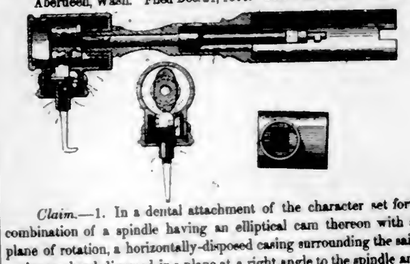
Claim.—1. A lard-refiner comprising a tank or vessel; a cross-bar removably secured at its ends within the vessel near the bottom thereof and having a central bearing; an upper cross-bar removably secured to the top edge of the vessel; a vertical shaft supported revolubly by said cross-bars; a series of overlapping beaters projecting radially from the shaft; pairs of adjustable elevating-blades; and means for revolving the shaft, beaters, and blades.

2. In a lard-refiner, the combination with a tank or vessel, of a vertical shaft supported in bearings centrally within the vessel; overlapping beaters of varying width and length projecting in radial groups from the shaft; adjustable, radial, elevating-blades arranged upon the shaft adjacent to the groups of beaters; and means for revolving the shaft, beaters, and blades.

3. In a lard-refiner, the combination with a tank or vessel, of a revoluble shaft formed with vertical rows of radial openings; beaters arranged in overlapping groups, and each comprising a single piece of wire bent to form loops or bails and having its ends inserted into the openings in the shaft and arranged between the beaters; adjustable blades or shovels carried by the shaft; and means for revolving said shaft.

4. In a lard-refiner, the combination with a vessel formed with concavo-convex bottom, having a central opening, of a fancet fitted to said opening; a revoluble shaft supported centrally within the vessel, and carrying beaters of varying width and length, arranged in groups and projecting radially from the shaft and comprising loops or bails having their ends secured to the shaft.

656,124. DENTAL MALLET OR PLUGGER. ULYSSES G. KINNISON, Aberdeen, Wash. Filed Dec. 21, 1899. Serial No. 741,206. (No model.)



Claim.—1. In a dental attachment of the character set forth, the combination of a spindle having an elliptical cam thereon with a fixed plane of rotation, a horizontally-disposed casing surrounding the said cam, a plugger-head disposed in a plane at a right angle to the spindle and having a portion thereof normally in the plane of rotation of the said cam, an adjustable cap extending downwardly from the casing in a plane at a right angle to the latter and surrounding an upper portion of the plugger-head to vary the force of the blow of the latter, said cap having its lower end provided with a central opening and forming a lower projecting portion of the attachment, and a spring surrounding a portion of the said plugger-head and forcing the latter upwardly to the cam, said spring being inclosed by the cap and bearing at opposite extremities on part of said head and cap.

2. In a dental attachment of the character set forth, the combination of a spindle having an elliptical cam thereon, with a fixed plane of rotation, a casing surrounding the cam and having an angular opening in the lower portion thereof, and a spring-actuated adjustable plugger-head disposed in a plane at a right angle to the spindle and having a portion thereof normally in the plane of rotation of the said cam, the part of the head adjacent to the cam being of angular form and movable through the correspondingly-shaped opening in the casing to prevent rotative movement of the said head.

3. In a dental attachment of the character set forth, the combination of a spindle having an elliptical cam fixed thereon, an inclosing device for the said cam having an angularly-shaped opening in the lower portion thereof, and a plugger-head having a spring action and including an upper lug or projection having a shape corresponding to said opening in the inclosing device for the cam to prevent rotary movement of the head.

4. In a dental plugger or mallet of the character set forth, the combination of a casing including a neck having an outer reduced screw-threaded extremity, a spindle mounted in the said casing and having its front terminal projecting beyond the screw-threaded extremity of the neck and also provided with screw-threads and a slot therethrough, a holding-washer mounted on the outer terminal of the spindle and having a diametric slot therein, a key inserted through the slot in the spindle and that of the washer, the said washer bearing against the outer extremity of the neck and the spindle having a stop enlargement at an intermediate point to contact with another portion of the neck to thereby prevent longitudinal movement of the spindle, an elliptical cam removably mounted on the outer terminal of the spindle, a plugger-head disposed in a plane at a right angle to the spindle and having an actuating-spring to normally project a portion thereof in the plane of rotation of said cam, and means for inclosing the cam and the greater portion of the plugger-head.

5. In a dental attachment of the character set forth, the combination of a casing, a spindle inclosed thereby and adapted to have operating mechanism connected thereto, an elliptical cam removably mounted in fixed position on the outer end of the spindle, an inclosing cylinder removably applied to the outer extremity of the casing and in which the cam is located, the said cylinder having a lower angularly-shaped opening surrounded by a screw-threaded collar, a cap removably mounted in the end of the cylinder, a regulating-cap adjustably engaging the said collar, and a spring-actuated plugger-head adjustably controlled by the said regulating-cap and having an upper lug or projection shaped to correspond to the opening in the cylinder to prevent rotary movement of the head, the said lug or projection being adapted for contact with opposite portions of the cam.

6. In a dental attachment of the character set forth, the combination of a spindle having an elliptical cam thereon with a fixed plane of rotation, a casing surrounding the cam and having an angular opening in the lower portion thereof, a spring-actuated adjustable plugger-head disposed in a plane at a right angle to the spindle and having an upper lug or projection in the plane of rotation of the cam, the said lug or projection being of angular form and movable through the correspondingly-shaped opening in the casing to prevent turning of the head, and a bottom adjustable cap through which the head movably projects.

7. In a dental attachment of the character set forth, the combination of a spindle having a cam fixed thereon and rotatable therewith, a cylindrical casing inclosing the cam and in the same plane as the spindle, the said casing having an end cap and a collar in a plane at right angles thereto, a bottom cap adjustably mounted on the said collar, and a spring-actuated plugger-head partially inclosed by the collar and cap adjustable on the latter and disposed in a plane at a right angle to the spindle, said plugger-head having the upper portion thereof normally in the plane of rotation of the cam, the adjustable cap on the collar forming the lowest projecting portion of the casing and thereby closely arranging and inclosing the parts of the device of the attachment for insertion in the mouth of a patient.

656,125. BOND FOR TRACK-RAILS. HENRY F. A. KLEINSCHMIDT, Johnstown, Pa., assignor to the Lorain Steel Company, of Pennsylvania. Filed Dec. 28, 1899. Serial No. 741,843. (No model.)



Claim.—1. A welding-block for use in bonding electric-railway track, said block having its welding-face provided with a raised portion and with a seat for a bonding member, substantially as described.

2. The herein-described weld-block for use in bonding track-rails, said block having that portion of its surface which is designed to form the weld raised above the surrounding portion and provided with a seat for a bonding member, substantially as described.

3. The herein-described weld-block for use in bonding track-rails, said block having its inner face formed with a depressed marginal portion and having a seat for a bonding device, substantially as described.

4. The herein-described weld-block for use in bonding track-rails, said block having a raised weld-surface and a surrounding depressed portion designed to be pressed into contact with the rail-web, said block also having a groove extending across said depressed portion into the raised portion, substantially as described.

5. The herein-described weld-block for use in track-bonding work, said block having a central peripherally-tapered welding portion provided with a groove to seat a bonding-cable, substantially as described.

6. The herein-described weld-block for use in track-bonding work, said block having a raised boss, and a cable-seating groove in said boss, substantially as described.

7. The herein-described weld-block for use in track-bonding work, said block having a raised central boss, and a groove extending into the same, said groove having its bottom wall depressed exteriorly of the said boss, substantially as described.

8. The herein-described welded connection for rail-bonding cables, comprising a grooved block in which the cable is seated and welded to the web of the rail, said block being also welded to the rail by a central boss, substantially as described.

9. In a welded connection for rail-bonds, the combination with a bonding-cable, of a block having on its inner face a grooved boss in which the cable is seated and which with the cable is welded to the web of the rail, the weld between the cable and rail being confined entirely within the lines of said block, substantially as described.

10. In a welded connection for rail-bonds, the combination with a bonding-cable, of a block having a central grooved boss in which the cable is seated and which is welded to the web of the rail, the marginal portion of said block surrounding said boss being also forced into contact with said web, substantially as described.

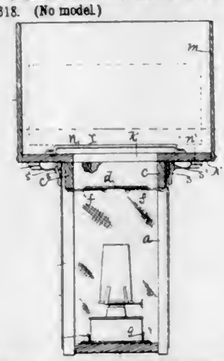
11. In a welded connection for rail-bonds, the combination with the rail of the two blocks having raised central bosses welded to the web of the rail upon opposite sides of the same and marginal portions in contact with said web, one of said blocks having a groove therein for the bonding-cables, substantially as described.

12. In a welded connection for rail-bonds, the combination with the rail, and the bonding-cable, of a block welded to one side of the rail-web and having a groove in which the cable is seated, said cable being also welded to the said web, and a reinforcing-block upon the opposite side of said web and welded thereto by a central boss, said blocks having their marginal portions forced against said web, substantially as described.

13. In a welded connection for rail-bonds, a pair of blocks welded to opposite sides of the rail by central bosses thereof, and having their marginal portions pressed against the rail and embracing that portion of the rail around the weld which was subject to the deteriorating heat thereof, one of said blocks having a bonding-cable also welded to the rail therein, substantially as described.

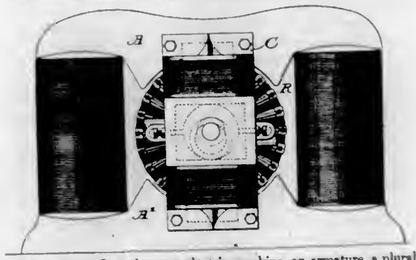
14. The herein-described weld-block for the purpose described having a central boss formed with a seat therein for a bonding member, and designed to be welded to the web of a rail, and a surrounding depressed portion of sufficient area to embrace that portion of the rail-web which is subject to the deteriorating heat of the weld, substantially as described.

656,126. APPARATUS FOR WARMING SPONGE, RAISING BREAD, &c. RICHARD E. PEDIGO, Charlton, Iowa. Filed Feb. 9, 1900. Serial No. 4,618. (No model.)



Claim.—The lamp-chamber consisting of a rectangular wooden frame, a wooden bottom and wooden cross-pieces at the top and a canvas cover or wall fixed around the outside of the frame, a metal deflector fixed in the central top portion of the lamp-chamber, a door in one of the sides of the frame, and a warming-chamber consisting of a wooden bottom having a central opening and wires fixed across said opening and a sheet-metal wall fixed to the circumference of the bottom, cleats and dowel-pins and hooks and eyes for connecting the two chambers, arranged and combined as shown and described for the purposes stated.

656,127. DYNAMO-ELECTRIC MACHINE. JOHN D. SPENCE, Somerville, Mass., assignor to Charles L. Cotton, Dedham, Mass. Filed May 12, 1899. Serial No. 716,494. (No model.)



Claim.—1. In a dynamo-electric machine, an armature, a plurality of field-poles, exciting-coils therefor, a magnetic shunt for shunting poles of opposite polarity, a shunt-coil encircling said magnetic shunt and in circuit with an armature-winding to reduce the shunting power of said magnetic shunt, and a neutralizing-coil normally of slight effect also encircling

said magnetic shunt and adapted when excited to neutralize or counteract the effect of said shunt-coil, substantially as described.

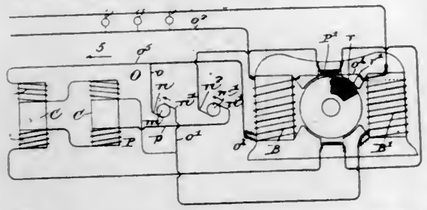
2. In a dynamo-electric machine, an armature containing main and auxiliary windings, a plurality of field-poles coöperating with said main armature-winding to produce a main or working current, and means controlled by said auxiliary armature-winding for weakening the field for and proportionately to excesses of armature speed, substantially as described.

3. In a dynamo-electric machine, an armature containing main and auxiliary windings, a plurality of field-poles, and exciting-coils therefor, a magnetic shunt for shunting poles of opposite polarity, a shunt-coil encircling said magnetic shunt and in circuit with said main armature-winding, said shunt-coil acting to independently magnetize and thereby lessen the shunting or weakening power of said magnetic shunt; a neutralizing-coil also encircling said magnetic shunt and in circuit with said auxiliary armature-winding, said neutralizing-coil when excited acting in opposition to said shunt-coil to neutralize the magnetizing effect of the latter and thereby more or less restore the shunting or weakening power of said magnetic shunt and more or less weaken said field-pole, substantially as described.

4. In a dynamo-electric machine, an armature; a plurality of field-poles and main exciting-coils therefor; a magnetic shunt for shunting two poles of opposite polarity, a shunt-coil encircling said magnetic shunt and when energized acting to independently magnetize and thereby lessen the weakening power of said magnetic shunt; a neutralizing-coil also encircling said magnetic shunt and when energized acting to counteract or neutralize the magnetizing effect of said shunt-coil and thereby cause said magnetic shunt to weaken said field-poles; and one or more auxiliary field-coils excited independently of said main field-coil, substantially as described.

5. In a dynamo-electric machine, an armature containing main and auxiliary windings; a plurality of field-poles, and main exciting-coils therefor; a magnetic shunt for shunting two poles of opposite polarity; and a shunt-coil encircling the same, said shunt-coil when excited acting to magnetize and thereby lessen the weakening power of said magnetic shunt; a neutralizing-coil also encircling said magnetic shunt and when energized acting in opposition to said shunt-coil to cause said magnetic shunt to weaken said field-poles; and one or more auxiliary field-coils in circuit with and excited by said auxiliary armature-winding, substantially as described.

656,128. METHOD OF REGULATING DYNAMO-ELECTRIC MACHINES. JOHN D. SPENCE, Somerville, Mass., assignor to Charles L. Cotton, Dedham, Mass. Original application filed May 12, 1899, Serial No. 716,494. Divided and this application filed Jan. 22, 1900. Serial No. 2,264. (No model.)



Claim.—1. The herein-described method of regulating dynamo-electric machines having a magnetic shunt, to produce a current of substantially-uniform electromotive force at varying speeds, which consists in varying the strength of the field inversely and in proportion to the variations in speed, by the inductive influence on said magnetic shunt of a neutralizing-current, increasing said current directly as the speed increases, substantially as described.

2. The herein-described method of regulating dynamo-electric machines to produce a current of substantially-uniform electromotive force at varying speeds, which consists in varying the strength of the field in inverse proportion to the variations in armature speed by the inductive influence of a neutralizing-coil energized by an auxiliary current independent of the main current and generated in and by the field the strength of which it varies, substantially as described.

3. The herein-described method of regulating dynamo-electric machines to produce a current of substantially-uniform electromotive force at varying speeds, which consists in weakening the field in proportion to and to compensate for the excess of speed, by the inductive influence of a neutralizing-current; and preserving the polarity of the field when thus weakened to an extreme degree, by passing a current adjacent said field so as to maintain fixed polarity therein by induction, said current being independent of the current by which the main field-coils are energized, substantially as described.

4. The herein-described method of regulating dynamo-electric machines having a magnetic shunt, to produce a current of substantially-uniform electromotive force, which consists in varying the strength of the field in inverse proportion to the variations of the armature speed, by the inductive influence, on said magnetic shunt, of a neutralizing-current distinct from both the field and main currents, substantially as described.

656,129. BICYCLE-SUPPORT. OLIVER WESTON, Montreal, Canada, assignor of one-half to James Coleman, same place. Filed June 3, 1898. Serial No. 682,480. (No model.)



Claim.—A solid portable bicycle-support having a pair of legs oblong in cross-section and pivoted at their extreme ends to the axle of the front wheel of the bicycle and adapted when the support is not in use to fit against and brace the sides of the front of the bicycle, the opposite ends of said legs being connected by a flat U-shaped portion, extending at right angles to said legs and adapted to incase three sides of the crown of the fork of the bicycle, a spring device carried by the front fork of the bicycle to engage said support and maintain same out of contact with the ground substantially as and for the purpose set forth.

656,130. WINDOW. ARCHIBALD M. WHIPPLE, North Adams, Mass., assignor of three-fourths to William W. Anthony and George N. Rich, same place, and E. A. Carlisle, Boston, Mass. Filed Nov. 6, 1899. Serial No. 735,866. (No model.)



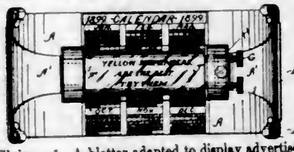
Claim.—1. In a window, the combination with the sash-frame having formed therein a glass-receiving channel and a packing-groove, opening into said channel, said channel being extended more deeply into the frame than said groove; of a glass located in said channel; and packing located in said groove, in contact with the glass, substantially as described.

2. In a window, the combination with the sash-frame having formed therein a glass-receiving channel and a packing-groove, said channel being extended more deeply into the frame than said groove; of a glass located in said channel; and packing inserted in said groove and inclosed between the outer wall of the groove and the body of the glass at a distance from its edge, substantially as described.

3. In a window the combination with the sash-frame having formed therein a glass-receiving channel on three sides of the glass-opening, a slot in the fourth side of the frame opening exteriorly thereof and communicating directly with said glass-channel, and a packing-groove on all sides of said glass-opening, said channel being more deeply extended into the frame than said groove; of a glass located in said channel in position to close said glass-opening; means for closing said slot in the fourth side of the frame; and packing inserted in said groove, substantially as described.

4. In a window, the combination with the sash-frame having formed therein a glass-receiving channel, and a packing-groove, said channel being extended more deeply into the frame than said groove, and the opposing walls of said channel and groove being extended to approximately the same distance from the bottom of said channel; of a glass located in said channel; and packing located in said groove opposite the extended portion of the channel-wall, substantially as described.

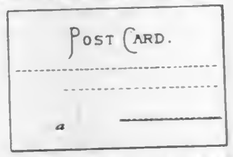
656,131. ADVERTISING DEVICE. PAUL E. WHITE, Los Angeles, Cal. Filed Sept. 25, 1899. Serial No. 731,869. (No model.)



Claim.—1. A blotter adapted to display advertisements comprising a yielding frame having an inner and outer face semi-elliptic in cross-section and having upturned extensions provided with clasps to hold a blotter against the outer face of the frame, a blotting-pad interposed between the clasps and the frame, the inner face of the frame adapted to receive and display matter printed thereon, a handle for said blotter attached at each end to the upturned extensions of the frame and having an outer transparent shell or casing, two drums journaled in said casing and provided with means for their rotation, a strip containing printed matter surrounding said drums, a friction-spring resting on the axes of said drums and provided with means to adjust the pressure exerted by the spring on the axes.

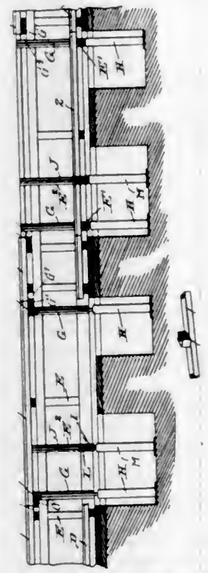
2. The herein-described advertising device comprising a semi-elliptic yielding frame A having upturned extensions A′ and having also affixed thereto clips D adapted to hold a blotting-pad interposed between them and the frame, in contact with the frame, a blotting-pad B placed therein, the inner surface of the frame arranged to receive and retain a printed calendar of the current year or other printed matter, a calendar and other printed matter printed thereon, a handle C extending from one end of the frame to the other end and connecting with extensions A′, the outer casing or shell J of the handle being composed of transparent material, two drums E revolubly mounted in bearings in said handle and being provided with thumb-pieces G projecting therefrom for rotating the same, a band or strip F containing advertisements and printed matter thereon wound on said drums and adapted to be unwound from one drum and wound upon the other drum, displaying meanwhile the advertising and other matter printed thereon, a spring H resting on the axes of said drums and adapted to bear against said axes, a spring-adjusting thumb-screw I arranged to bear against said spring when screwed down against the spring and prevent the drums from any unnecessary rotation.

656,132. POST-CARD. DAVID H. BUFF, Zurich, Switzerland. Filed Apr. 6, 1900. Serial No. 11,794. (No model.)



Claim.—A post-card, consisting of a face layer of paper, a back layer of paper, an intermediate layer of a suitable fabric, and embroidery worked into the back and intermediate layers, all of said layers being suitably gummed together, substantially as set forth.

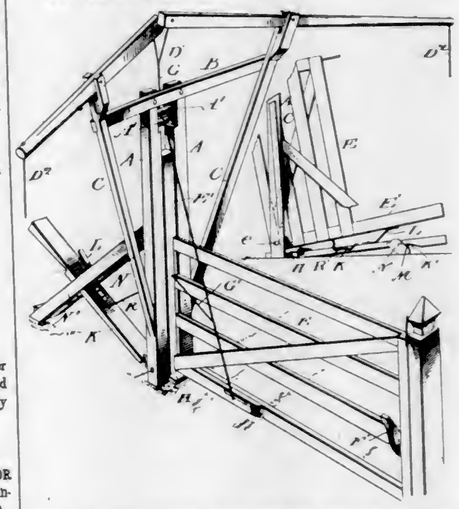
656,133. TRUCK, WHEEL, AND ARMATURE EXCHANGE FOR STREET OR OTHER RAILWAY CARS. WILLIAM H. CORNNER, Anderson, Ind. Filed Nov. 23, 1899. Serial No. 738,100. (No model.)



Claim.—1. Means for facilitating car-repairs, comprising a pit having an interrupted track therein, a track extending over said pit and having a section vertically movable in guides over the interrupted portion of said first-named track, transverse bars extending the full width of said track, working in slots of supporting-framework for said track, and arranged to be moved in under and support the end portions of both rails of said vertically-movable track-section, and to be moved from under the same to allow said section to be lowered, together with supplementary vertical guides, and a transverse armature-supporting bar working in said guides, and having a central pivoted motor or armature rest, substantially as specified.

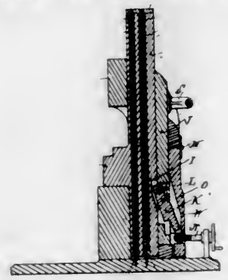
2. Means for facilitating car-repairs, comprising a pit, a car-track extending over said pit and having a section movable into and out of said pit, a motor or armature supporting carriage also in said pit and vertically movable therein, said carriage having a pivoted motor or armature rest, substantially as specified.

656,134. GATE. HENRY G. DAVIS, Darby, Mont. Filed Mar. 19, 1900. Serial No. 9,296. (No model.)



Claim.—In combination, in a tilting gate, the vertical posts, the gate pivoted between same, the operating-levers, two antifriction-rollers arranged one above the other between the upper ends of said posts, rope connections between said levers and the gate, said rope passing between the rollers, a stationary block and a weighted member pivoted to the latter, said weighted member being notched on its under surface, a block adapted to engage said notch when the weighted member approaches a horizontal position, and connections between the gate and the weighted member for holding the latter normally in a raised position when the gate is closed, as set forth.

656,135. HAMMERING-PRESS. HENRY H. HAMLETT, Providence, R. I. Filed May 11, 1900. Serial No. 16,370. (No model.)

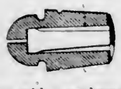


Claim.—1. The combination of the anvil, the hammer and the sliding hammer-bar with the actuating-spring held in the longitudinal cavity of the hammer-bar, the operating-lever, the sliding catch-bar connected with the operating-lever, the catch pivoted to the sliding catch-bar, and adapted to engage with the hammer-bar, the pivoted catch-deflector and

means for adjusting the catch-deflector to vary the stroke of the hammer, substantially as described.

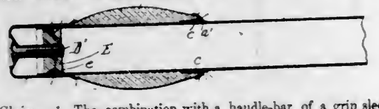
2. The combination of the anvil, the hammer, and the sliding hammer-bar, with the actuating-spring held in the longitudinal cavity of the hammer-bar, the operating-lever, the spring and notch for holding the said lever and hammer-bar in an intermediate position, the sliding catch-bar connected with the operating-lever, the catch pivoted to the sliding catch-bar and adapted to engage with the hammer-bar, and the catch-deflector for releasing the catch from the hammer-bar, substantially as described.

656,136. GAS-REGULATING TIP FOR BURNERS. JAMES W. HENTZ, Baltimore, Md. Filed Feb. 8, 1899. Serial No. 704,874. (No model.)



Claim.—In combination with a gas-burner tip having a cylindrical cavity therein, and a gas-exit slot, substantially as described, a flow-regulating disk situated underneath the tip, provided with spring expanding wings which have a width which is less than the diameter of the cylindrical cavity and which are sprung slightly together and inserted in the said cavity and held therein by friction, substantially as specified.

656,137. GRIP. THOMAS B. JEFFERY, Chicago, Ill. Filed June 4, 1898. Serial No. 682,571. (No model.)



Claim.—1. The combination with a handle-bar, of a grip sleeved thereon, stops bent up from the metal of the bar, a ferrule at the inner end of the grip resting against the stops, and means for securing the grip in place.

2. The combination with a handle-bar, of a grip thereon, ferrules for engaging the ends of the grip, stops bent up from the metal of the bar against which the inner ferrule rests, a block or nut in the end of the bar and a screw engaging the outer ferrule and block, substantially as described.

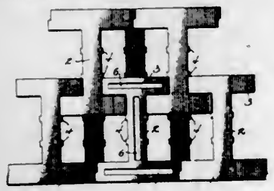
3. In a handle-bar, the combination with a metal bar having stops bent from the metal thereof, of a grip limited in its movement by the stops, and sleeved on the bar, substantially as described.

4. The combination with a tubular metal handle-bar having stops upset from the metal thereof, of a notched ferrule engaging the stops and a grip engaging the ferrule and said stop engaging the notch of the ferrule, substantially as described.

5. In a handle-bar, the combination with a tubular bar, of a grip on the bar, a stop at the inner end of the grip, a block or nut in the end of the bar, inturned stops struck from the metal of the bar, engaging and securing the block in place and means engaging the block for securing the grip in place, substantially as described.

6. In a handle-bar, the combination with a metal bar, of a grip formed of soft solid compressible material, a stop struck up from the bar, a ferrule interposed between the stop and grip, and means for forcing the grip toward the stop to compress the rubber onto the bar, substantially as described.

656,138. BUILDING-BLOCK. WILLIAM A. JOHNSTON, Barberton, Ohio, assignor of one-half to Ohio C. Barber, same place. Filed Mar. 29, 1900. Serial No. 10,645. (No model.)



Claim.—1. Building-blocks comprising each, a head, a base and a web, said web having ribs adapted to engage the base of the next succeeding block.

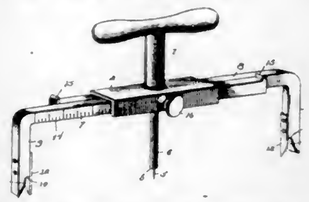
2. A building-block comprising a base, a web, ribs on the web equidistantly positioned, and a head.

3. A building-block comprising a base, a web and a head, the base being of less length than the head, and ribs on the web, all arranged as and for the purpose set forth.

4. A building-block comprising a base, a web, ribs on the web equidistantly positioned, a head, said head having shoulders on either end; said block having recesses in its surfaces, all arranged as and for the purpose set forth.

5. A building-block comprising a head, a base and a web, said base being equal in length to the length of the head plus the thickness of the web.

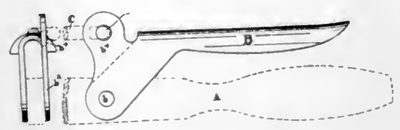
656,139. CAN-OPENER. CARL KEMPF, Milwaukee, Wis. Filed Dec. 18, 1899. Serial No. 740,758. (No model.)



Claim.—1. A can-opener comprising a handpiece, and socket having an open bottom and a bridge-piece at the center thereof, a centerer extending from the bridge-piece, a pair of graduated shanks extending through the socket and each provided with an angular end, and a cutter carried by the angular end of each shank.

2. A can-opener comprising a handpiece and socket having an open bottom closed at its center by a bridge-piece, a pointed centerer extending from the bridge-piece in axial alinement with the handpiece, a pair of shanks passed through the socket and each having an angular end and a stop-lug at its opposite extremity, a terminal guide and opposed cutter at the extremity of each shank, graduations upon said shanks and a set-screw piercing one wall of the socket and constituting shank-adjusting mechanism.

656,140. THUMB-LATCH FOR ADJUSTMENT-LEVERS. BURR A. KENNEDY, Chicago, Ill. Filed Mar. 23, 1900. Serial No. 9,810. (No model.)



Claim.—1. A thumb-latch blank formed of sheet metal and having extensions projecting outwardly from one end and adapted to be bent around the lever to form the pivotal supports of said latch, and being provided also with a catch-rod connection.

2. A thumb-latch formed of sheet metal and having extensions projecting outwardly from one end and bent around the lever to form the pivotal supports of said latch, and a catch-rod connection projecting from one of said side extensions.

656,141. PRESSURE-RELIEVING DEVICE. CORNELIUS KUELWIND, Knoxville, Pa. Filed Dec. 22, 1899. Serial No. 741,208. (No model.)

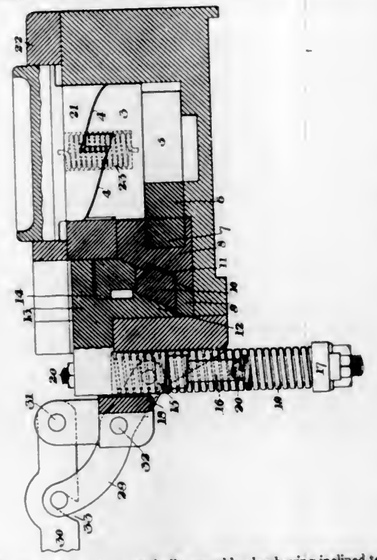
Claim.—1. In a relief device, a vertically-movable element, a rotatable element coacting therewith, and a yielding device arranged to hold the rotatable element against turning; substantially as described.

2. In a relief device, a vertically-movable element held against rotation and having an inclined face, a rotatable block having a corresponding inclined face, and a yielding pressure device arranged to resist turning of the rotatable block; substantially as described.

3. In a relief device, a reciprocatory block, having an inclined face, a rotatable block having a corresponding face coacting therewith, a cam or eccentric arranged to be actuated by the turning of the rotatable block, and a yielding pressure device coacting with the cam; substantially as described.

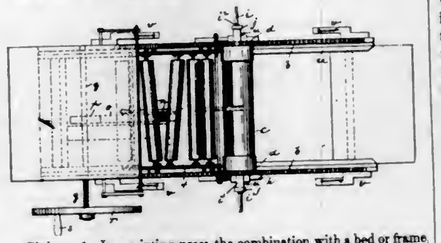
4. A relief device for rolls, having a vertically-movable angular block guided in an angular socket, and having inclined teeth, a rotatable plug having correspondingly-inclined teeth, an eccentric or cam upon the rotary plug, and a yielding pressure device acted upon by the cam; substantially as described.

5. In a relief device, a reciprocatory block held against rotation, a rotary element arranged to be turned by reciprocation of the block, a yielding pressure device arranged to be actuated by the turning of the rotary element, and hand mechanism arranged to relieve the yielding pressure device; substantially as described.



6. In a relief device, a vertically-movable plug having inclined teeth, a rotary plug having corresponding teeth, said rotary plug having a cam or eccentric, and a spring-pressed wedge system arranged to be actuated by the cam or eccentric; substantially as described.

656,142. PRINTING-PRESS. JESSE D. LARSWELL, Newark, N. J., assignor of one-half to Louis Hannoch, same place. Filed Jan. 13, 1900. Serial No. 1,314. (No model.)



Claim.—1. In a printing-press, the combination with a bed or frame, a reciprocating cylinder adapted to travel back and forth upon said bed, and bearings or boxes at opposite ends of said cylinder and having screw-threads, of a cylinder-carriage having threaded supporting-studs for said boxes or bearings, and having bent arms extending out therefrom and adapted to engage at the opposite ends of the reciprocal strokes of the cylinder, and means arranged upon the frame to engage the said arms and effect a turning thereof with the stud to raise or lower the cylinder, substantially as set forth.

2. In a printing-press, the combination with a bed or frame, of a cylinder-carriage having screw-threaded studs, with arms extending radially outward and upward therefrom, boxes or bearings arranged on the threaded ends of said studs, a handled cylinder arranged in said boxes, means controlling the reciprocal movements of the cylinder when moved by the hands back and forth, and means disposed on the bed or frame at the ends of the stroke of said cylinder for automatically raising and lowering the cylinder by turning the screw-studs, whereby the operator pushing back and forth on the handles will be relieved of care in directing either the vertical or reciprocal movements, substantially as set forth.

3. The combination in a printing-press, of a frame having longitudinal racks and carriage-ways, brackets disposed at opposite sides of said frame at the opposite ends of said racks and carriage-ways, carriages arranged upon said carriage-ways and provided with screw-threaded supporting studs or standards, boxes or journaled bearings having corresponding screw-threads arranged upon said threaded supports or standards, and cylinders disposed in said journaled bearings or boxes and adapted to rotate in said journaled bearings, and to move reciprocally with said carriages upon the frame, the said studs or standards having arms projecting therefrom, and adapted to engage guides adapted to turn said arms and said threaded studs or standards, said guides being disposed at the opposite ends of the path of reciprocations of the cylinder and adapted to give to the said arms projecting from the studs or standards a turn whereby the journaled bearings of the cylinder are raised and lowered, substantially as set forth.

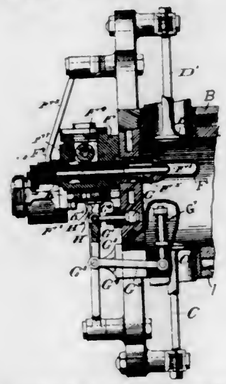
4. In combination with the bed-frame of a printing-press and a rotary cylinder rolling reciprocally thereover, the journal-bearings of said cylinder being supported on threaded studs having bent arms by the turning of which the said journal-bearings are adapted to be raised or lowered with relation to the frame to raise or lower the cylinder in its relation to the type on said frame, and means disposed at opposite ends of the path of reciprocation of the cylinder to engage the journal-supports and operate the same to effect a raising and lowering of the cylinder alternately as the cylinder is forced to roll backward and forward, said means comprising pivoted wedges arranged in guide-apertures of brackets or pieces of the frame, substantially as set forth.

5. The combination in a printing-press having a rack, of a cylinder having cog-wheels at its opposite ends and at the outer sides of said wheels, at the axial center of the cylinder, having handles whereby the workman can pull or push the cylinder so that said wheels will roll over the rack, said cylinder being connected with slotted levers *j*, *j*, and wheel *r*, in which the hand-power is stored, and means including said slotted levers *j*, *j*, the wheel *r*, and connections thereof for storing the hand-power and limiting the distances of reciprocal movement due to the impulse derived from the hands, substantially as set forth.

6. The improved printing-press in which is combined a bed having a rack and at opposite ends having apertured guide-brackets and wedges adapted to turn the cylinder stud-arms, of slotted levers *j*, *j*, a handled cylinder having cog-wheels at opposite ends arranged on said racks, a fly-wheel *r*, and a train of cog-wheels and connections of said slotted lever and fly-wheel, threaded boxes and studs for said cylinder, supported on carriages, said carriages, arms extending out from the threaded studs and adapted to enter the apertures of the guide-brackets and be turned thereby, said apertures containing pivoted wedges, whereby the cylinder will be raised or lowered at the end of the stroke, and springs for said wedges, all said parts being arranged and operating, substantially as set forth.

7. The combination in a printing-press having a rack, of a cylinder having cog-wheels at its opposite ends, and at the outer sides of said cog-wheels at the axial centers of said cog-wheels having handles, and means in connection with said cylinder and handles for limiting and governing the movements of said cylinder on said frame, whereby when the workmen are exerting their power on the handles in forcing the cylinder back and forth on the frame, no time or care will be required of said workmen in regulating the reciprocal movements, substantially as set forth.

656,143. INCANDESCENT IGNITER FOR GAS-ENGINES. ANTHONY G. NEW, Woking, England. Filed Nov. 21, 1899. Serial No. 737,809. (No model.)



Claim.—1. In a gas or oil engine, the combination of a member actuated by the pressure in the combustion-chamber, a second member actuated by the engine-shaft, a third member actuated by the resultant of the

first and second members, and a variable-timing ignition device connected to the third member and adjusted by it.

2. In a gas or oil engine, the combination with the working cylinder and shaft operated thereby, a piston seated in the walls of the cylinder, a rock-shaft connected thereto, arms projecting from the rock-shaft, a rod slidably mounted in the arms, means for sliding the rod longitudinally during certain periods in the cycle of the engine, oppositely-disposed pawls carried by the rod, a rack-bar having sets of teeth engaged by the pawls, and an igniting device regulated by the rack-bar, substantially as described.

3. In a gas or oil engine, a rod adapted to receive a longitudinal reciprocation from the engine-shaft, means actuated by the pressure in the combustion-chamber for giving said rod a lateral reciprocation, oppositely-disposed engaging means carried by the rod, a member operated by said engaging means, and a variable-timing ignition device regulated by said member, substantially as described.

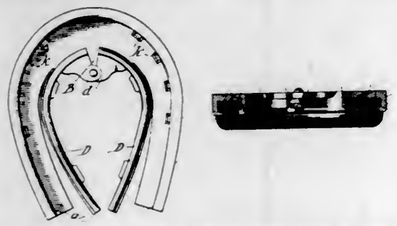
4. In a gas or oil engine, a rod adapted to receive a longitudinal reciprocation from the engine-shaft, means actuated by the pressure in the combustion-chamber for giving said rod a lateral reciprocation, oppositely-disposed engaging means carried by the rod, a sliding rod, oppositely-disposed racks carried thereby and adapted to be engaged by the engaging means, and a variable-timing ignition device regulated by the sliding rod, substantially as described.

5. In a gas or oil engine, a rod adapted to receive a longitudinal reciprocation from the engine-shaft, means actuated by the pressure in the combustion-chamber for giving said rod a lateral reciprocation, oppositely-disposed spring-pawls mounted on the rod, a sliding rod, oppositely-disposed racks carried thereby and adapted to be engaged by the pawls, and a variable-timing ignition device regulated by the sliding rod, substantially as described.

6. In a gas or oil engine, a spring-pressed rock-shaft, means actuated by the pressure in the combustion-chamber for operating said rock-shaft, arms projecting from the rock-shaft, a rod slidably mounted in said arms, means actuated by the engine-shaft for giving the rod a longitudinal reciprocation oppositely-disposed engaging means carried by the rod, a member operated by the engaging means, and a variable-timing ignition device regulated by said member, substantially as described.

7. In a gas or oil engine, a rod adapted to receive a longitudinal reciprocation from the engine-shaft, means actuated by the pressure in the combustion-chamber for giving said rod a lateral reciprocation, oppositely-disposed engaging means carried by the rod, a sliding rod actuated by said engaging means, a lever connected to the sliding rod, a variable cam splined on the engine-shaft and operated by the lever, and an ignition device actuated by said cam, substantially as described.

656,144. SOFT-TREAD HORSESHOE. HARVEY D. PALMER, Chicago, Ill. Filed Mar. 30, 1899. Serial No. 711,052. (No model.)

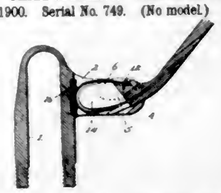


Claim.—1. The combination with a horseshoe which is L-shaped in cross-section and has the horizontal portion thereof uppermost and the vertical portion defining and forming the outer side of said shoe, and clamps, one end of each of which is pivoted to the toe of said shoe, and which conform to and are adapted to bear against the inner edge of the same, of a cushion seated and secured by said clamps in the channel formed between the same and the vertical portion of the shoe.

2. The combination with a horseshoe which is L-shaped in cross-section and has the horizontal portion thereof uppermost and the vertical portion defining and forming the outer side of said shoe, and clamps which are L-shaped in cross-section, one end of each of which is pivoted to the toe of said shoe, and conforms to and is adapted to bear against the inner edge of the same so that the horizontal portions of said clamp overlap the said edge, of a cushion seated and secured by said clamps in the channel formed between the same and the vertical portion of the shoe.

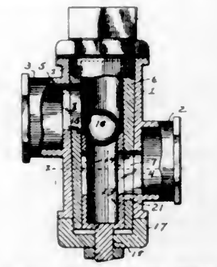
3. The combination with a horseshoe which is L-shaped in cross-section, has the horizontal portion thereof uppermost, and has the vertical portion defining and forming the outer side of said shoe and provided with an inwardly-projecting bead on its lower edge, and clamps which are L-shaped in cross-section, one end of each of which is pivoted to the toe of said shoe and conforms to the shape of the inner edge of the quarters of the same against which they are adapted to bear so that the horizontal portions of said clamp overlap the said edge and the lower edge of the vertical portions of which have an inwardly-projecting bead, of a cushion seated and secured by said clamps in the channel formed between the same and the vertical portion of the shoe.

656,145. THILL-COUPLING. JAMES C. PERRY, New York, N. Y. Filed Jan. 8, 1900. Serial No. 749. (No model.)



Claim.—In a thill-coupling, the combination with a shackle, formed on the inner sides of its side walls, with horizontal and vertical grooves; of a thill-iron having projecting lips and fingers; a spring bent to embrace the end of the thill-iron, a screw securing one end of the spring and a block of yielding material against which the spring bears.

656,146. COMBINED CHECK-VALVE AND STOP-COCK. HIRAM M. PENNEY, Alma, N. Y., assignor of one-half to Gottlieb F. Vosler and Martin F. Vosler, same place. Filed Jan. 27, 1900. Serial No. 3,011. (No model.)



Claim.—1. A valve, having inner and outer port-controlling turning plugs, and a check-valve.

2. A valve, having an outer hollow turning plug provided with inlet and outlet ports, an inner turning plug to control one of the ports, and a check-valve located between the ports of the outer turning plug.

3. A valve, having inner and outer port-controlling turning plugs, and a check-valve supported by one of the plugs.

4. A valve, having inner and outer port-controlling turning plugs, of which the inner plug is removable without unseating the outer plug, and a check-valve supported by and removable with the inner plug.

5. A valve, having an outer hollow turning plug, which is open at one end, and also provided with a port, an inner turning plug to be inserted through the open end of the outer plug, and controlling the port thereof, and a check-valve supported by the inner plug.

6. A valve, having an outer hollow turning plug, which is open at one end, and also provided with inlet and outlet ports, an inner hollow turning plug controlling one of the ports of the outer plug, and having inlet and outlet ports, and a check-valve controlling the outlet-port of the inner plug.

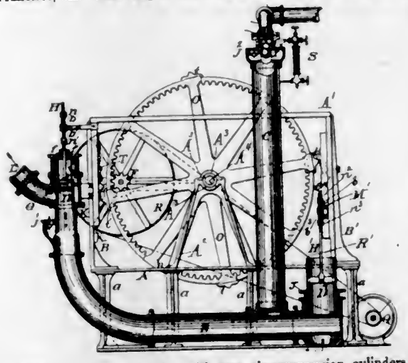
7. A valve, having an outer turning plug, which is hollow, and provided with an open end, and also having inlet and outlet ports, an inner hollow turning plug controlling one of the ports of the outer plug, and having a lateral inlet-port, and an open inner end forming a valve-seat, and a check-valve supported thereon.

8. In a valve, a valve-casing, which is open at opposite ends, and also provided with inlet and outlet branches, a hollow turning plug, having one open end, a tubular valve-seat to be inserted into the hollow plug and through the adjacent open ends of the casing and the plug, the tubular valve-seat having an open inner end forming the valve-seat proper, and also provided with an opening to be alined with the inlet branch, and a check-valve for the valve-seat.

9. In a valve, a casing, which is open at opposite ends, and also provided with inlet and outlet branches, a hollow turning plug, which is open at one end, and said open end also projecting beyond the casing, a valve-seat to be inserted into the plug and through the open end thereof, and also having a stem projecting outwardly through the open end of the plug, a check-valve for the valve-seat, a screw-cap fitted to the projecting end of the plug, and bearing against the casing, and also having an opening for the reception of the stem, and a nut fitted to the projecting end of the stem, and bearing against the cap.

10. In a valve, a casing, having inlet and outlet branches, and a drain port or perforation located between said branches, a hollow turning plug, having inlet and outlet openings for alinement with the respective branches of the casing, and the inlet-opening having a notch formed in one edge thereof, and for alinement with the drain port or perforation, a hollow valve-seat located within the turning plug, and movable therewith, and also provided with an inlet-opening, normally alined with the inlet-opening of the plug, and a check-valve for the valve-seat.

656,147. HYDRAULIC AIR-COMPRESSOR. JOHN W. VAN BROCKLIN, Seattle, Wash., assignor of one-sixteenth to Russell L. Dunn, San Francisco, Cal. Filed Aug. 9, 1898. Serial No. 688,171. (No model.)



Claim.—1. In combination with two air-compression cylinders of two water-pipes connected therewith, a cylindrical inlet-valve and cylindrical outlet-valve for each of these pipes, a rod connected to each of these valves, a rotating wheel carrying cams, intervening parts arranged to be operated by the said cams and lifting the said valves and adjusting-nuts and springs for regulating this action, substantially as set forth.

2. In hydraulic air-compressors, the combination of a wheel and cams carried thereby with sliding bars K having projections engaged by the said cams, the racks W moving with said cams, the intervening cogged idler engaging the said racks to insure reciprocal motion, the water-inlet valve and water-outlet valve operated by the said slides and the adjusting-nuts and springs for regulating the action of the valves, substantially as set forth.

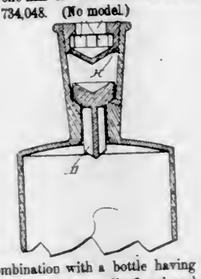
3. The lever T, spring U and wedge P as locking devices for a valve, in combination with the sliding bars K to which they are attached, a wheel carrying cams which are arranged for contact with the said lever as the wheel revolves, and a valve forming part of a hydraulic air-compressing device and arranged to be locked and operated by the said parts, substantially as set forth.

4. In hydraulic air-compressors the combination of a wheel carrying cams or lugs arranged at equal intervals around its periphery and alternately on opposite sides of the central, circumferential line, with two pairs of sliding bars arranged in front and behind the said wheel and provided with lugs which are respectively in the plane of the cams on one side or the other of said central line, a pair of inlet-valves opened and closed by one pair of the said sliding bars, a pair of outlet-valves opened and closed by another pair of the said sliding bars, a pair of pipes each extending from one inlet-valve to the corresponding outlet-valve, a pair of air-compressing cylinders supplied by said pipes respectively, and means for admitting air to the said cylinders, substantially as set forth.

5. In hydraulic air-compressing mechanism, the combination of a pair of inlet-valves and a pair of outlet-valves with slides which respectively actuate them and which are provided with lugs and blocks of wedge form, two stationary springs each proximate to each pair of sliding bars and having its free end of sufficient width to overlap both sliding bars of the pair and engage their blocks, reciprocating connections between the sliding bars of each pair, two levers arranged each in contact with one of the said springs for lifting the same and freeing the sliding bars and having a lever of sufficient length at its actuated end to extend across the two series of operating-cams on the wheel, an operating-wheel, carrying cams arranged at equal distances around the periphery, alternately on opposite sides of the central, circumferential line and adapted to engage both the lugs of the sliding bars and the levers for freeing the same from the spring, and pipes and air-compression cylinders controlled by said valves, wheel and intermediate devices, substantially as set forth.

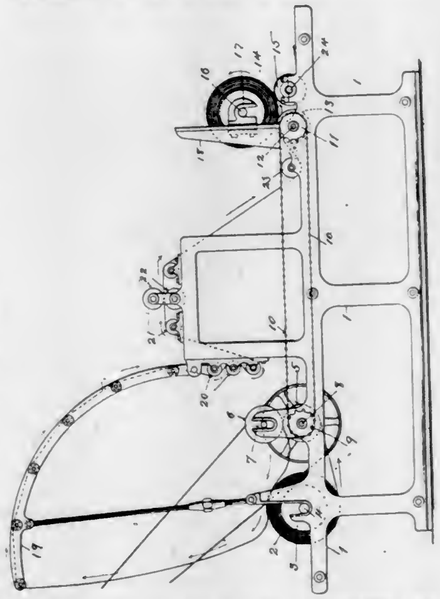
6. In combination with a pair of compression-cylinders, and pipes supplying the same, inlet and outlet valves for these pipes, a wheel carrying cams, and sliding bars operating the said inlet and outlet valves, devices for temporarily locking the said valves in their seats, and devices for transmitting reverse motion between the sliding bars of each pair, the cams of the said wheel being adapted to operate all these sliding bars by engaging lugs or projections on them and also to engage the said locking devices and free the valves, substantially as set forth.

656,148. NON-REFILLING BOTTLE. JAMES WALKER, Vineland, N. J., assignor of one-half to D. D. Lucas, same place. Filed Oct. 19, 1899. Serial No. 734,048. (No model.)



Claim.—In combination with a bottle having a valve-seat formed integral with its thickened and upwardly-flared neck, a valve, having depending guide-wings, adapted to fit snugly in said valve-seat and having a conical recess in its top, a hollow keeper adapted to fit in the mouth of said bottle, having a central opening leading to the interior of said keeper and passages from the interior of said keeper to the neck, lugs on said keeper and a readily-refrangible conical base or shield depending from the lugs and adapted to fit in a recess of the upper surface of the valve.

656,149. PAPER-WINDING MACHINE. WILLIAM P. WOOD, Holyoke, Mass., assignor to Frederick S. Newman, Springfield, Mass. Filed Mar. 14, 1900. Serial No. 8,652. (No model.)



Claim.—1. In a paper-winding machine, a suitable frame, a feed-roll on one part thereof adapted to draw paper from a roll, a second feed-roll on another part of the frame adapted to effect the rewinding of said paper on another roll, means for applying a tension to the paper between said feed-rolls, and for imparting to the latter the same circumferential speed, substantially as described.

2. In a paper-winding machine, a suitable frame, a roll from which paper is drawn, a feed-roll for drawing said paper from said roll, another feed-roll adapted to effect the rewinding of said paper on a second roll, means for alternately lifting each end of said second roll away from its feed-roll during its rotation, and suitable tension devices for the paper between the two feed-rolls, and a positive driving connection between the two feed-rolls adapted to impart to each of them the same circumferential speed, substantially as described.

3. In a paper-winding machine, a suitable frame, a feed-roll on one part thereof adapted to draw paper from a roll, a second feed-roll on another part of the frame adapted to effect the rewinding of said paper on another roll, a guide-rack, and tension-rolls between said feed-rolls, a positive driving connection between said feed-rolls, whereby both of the latter have imparted to them the same circumferential speed, and means for rotating one of said rolls, substantially as described.

4. In a paper-winding machine, the combination of the feed-roll 5 and the feed-roll 13, a positive driving connection between said rolls consisting of sprocket-wheels on the rolls and a chain extending over said wheels, whereby both of said rolls have imparted to them the same circumferential speed, a guide-rack 19, tension-rolls 20, and slitter-rolls 22, located between said feed-rolls and an eccentrically-supported cylindrical roll 15, substantially as described.

5. In a paper-winding machine, the combination of a paper-receiving roll as 14, with two supporting-rolls therefor, one of which is a feed-roll and is adapted to rotate the paper-receiving roll, the latter and said feed-roll having parallel axes of rotation; said second supporting-roll having an axis inclined to the axis of said paper-receiving roll, whereby each end of the latter will be alternately raised and lowered by the rotation of said second supporting-roll, substantially as described.

656,150. **VAPOR-LAMP.** WILLIAM T. WOOD, Nashville, Tenn. Filed Mar. 11, 1899. Renewed Apr. 12, 1900. Serial No. 12,631. (No model.)



Claim.—1. In a vapor-lamp, the combination with a base having an annular chamber and an opening, of an inverted substantially U-shaped bridge-piece spanning the opening and dividing the same, the interior thereof forming a cross-chamber in the base, a removable base-plate formed with openings registering with the openings in the base and constituting a bottom for the chambers, a vapor-supply pipe leading into the crown of the bridge-piece, a valve in the pipe having a stem projecting through the bridge and base-plate, a drip-cup below the openings in the base having an absorption-pad therein and burners communicating with the annular chamber in the base, substantially as described.

2. In a vapor-lamp, the combination with a hollow base member having openings therethrough and a series of burners, of a tubular support connecting with the base member and having air-inlet openings at its lower end adjacent to the burners, a valve-seat in the supporting tubular member adjacent said inlet-openings, a supply to said tubular member and a valve engaging said valve-seat from below and having a stem projecting through the base and terminating in a suitable hand-piece below the base, substantially as described.

3. In a vapor-lamp, the combination with a base formed with an annular flange at its outer edge, an opening at the center having depending flanges d^4 forming an outer wall to the opening, of a bridge-piece spanning the opening, its sides constituting a continuation of the base and forming the bottom flanges d^4, a plate G removably secured to the walls to the hollow bridge-piece and the spaces between the outer flange and the flanges d^4 and having openings therein on the opposite sides of the bridge-piece, a hollow support connected with the bridge-piece having side openings above the base and a valve-seat adjacent to the openings, a wire-gauze spanning said openings in the support, a supply-pipe leading into the support, a valve-stem carrying a valve at its upper end engaging the valve-seat, the stem passing through the base-plate, a drip-cup carried by the stem and a pad on the drip-cup surrounding the stem below the opening through which the latter passes, substantially as described.

4. In a vapor-lamp, the combination with a base having an opening therein and a series of burners, of a support extending above the base having a valve-seat and air-inlet openings adjacent thereto located at the lower end of the support and a vertically-disposed valve-stem adjustably secured in the base having a valve at its upper end and a support carried by the valve-stem having a non-combustible pad arranged directly below the opening in the base through which the valve-stem passes for the purpose described.

5. In a vapor-lamp, the combination with a base, having a chamber therein, and a series of burners communicating with the chamber, of a centrally-arranged hollow support having a valve-seat near its base and an inlet-opening adjacent thereto, a valve and means for controlling the same extending below the base, a vapor-inlet pipe, and means for creating a preliminary flame at the center of the lamp, substantially described.

6. In a vapor-lamp, the combination with the lamp, of a valve-seat member having an enlarged chambered portion below the seat and a valve having a tapered portion engaging the seat and a portion directly below said engaging portion formed with reduced sides of varying depth, substantially as described.

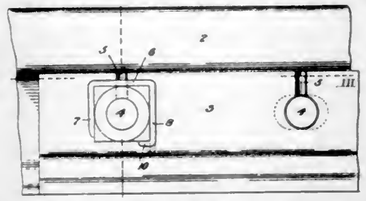
7. The combination with a valve-seat member formed with an enlarged chamber below the seat portion, of a valve member having a tapered portion fashioned to fit the seat and inclined opposite side portions arranged to extend into the enlarged chamber, substantially as described.

8. A valve for the purposes described consisting of a valve-seat and an enlarged passage below the same, and a valve having a tapered portion fashioned to fit the valve-seat and of substantially the diameter of the enlarged passage, its side being formed with inclined reduced portions working in the enlarged passage, substantially as described.

9. In a vapor-lamp, the combination with a hollow base having a burner thereon and formed with an air-passage, of a tubular member having an air-inlet opening adjacent to and opposite the burner, a valve-seat opposite the air-opening and a valve engaging the seat, substantially as described.

10. In a vapor-lamp, the combination with a tubular member having an air-inlet opening therein, and a controlling-valve adjacent the opening, of a hollow base having a burner opposite and adjacent to the said air-inlet, and an air-passage through which air is drawn into the space between the burner and air-inlet opening and a supply-conduit leading into the tubular supply, substantially as described.

656,151. **NUT-LOCK.** MILTON BARTLEY, Polk, Pa., assignor of three-tenths to James Moorhead Murdoch and Harry Fleming McDowell, Pittsburg, and George Lincoln Weaver, Philadelphia, Pa. Filed Feb. 9, 1900. Serial No. 4,640. (No model.)

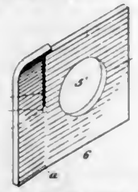


Claim.—1. A nut-lock consisting of a rectangular clasp, one or both sides of which are adapted to be bent around the corner of the nut, and a lug projecting outwardly from the back, and with an inwardly-extending face on a plane with the inner edges of the clasp, substantially as set forth.

2. In combination with a fish-plate provided with a retaining-groove, a rectangular clasp adapted to embrace the sides of a nut and a backwardly-projecting lug adapted to engage the retaining-groove and to bear against the inner face of the nut, substantially as set forth.

3. In a nut-lock, the combination of a fish-plate or member provided with a bolt-hole, a groove in the face of the plate extending outwardly from the bolt-hole, a clasp formed of a flat metallic bar bent to conform to the sides of the nut and to be bent around its corner, and provided with a backwardly-projecting lug in engagement with the groove and held therein by the inner face of the nut, substantially as set forth.

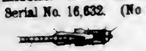
656,152. **NUT-LOCK.** MILTON BARTLEY, Polk, Pa., assignor of three-tenths to James Moorhead Murdoch and Harry Fleming McDowell, Pittsburg, and George Lincoln Weaver, Philadelphia, Pa. Filed Mar. 31, 1900. Serial No. 10,987. (No model.)



Claim.—1. A nut-lock washer consisting of a plate provided with a bolt-hole and a bearing edge, a tongue extension partially severed from the plate on a line corresponding to the edge of the nut and bent outwardly at an angle to the face of the washer on the line of severance whereby when the tongue is bent down it will bind inwardly against the side of the nut.

2. In a nut-lock, the combination with a bolt and a nut of a washer-plate engaging the bolt under the nut provided with a bearing edge, a partially-severed tongue extension bent outwardly on the line of severance at an angle to the face of the washer, and adapted to be bent down and to bind inwardly against the side of the nut.

656,153. **EYEGLASSES.** FRANK M. DANIELS, Manchester, Md. Filed May 14, 1900. Serial No. 16,632. (No model.)



Claim.—1. Clamping devices for eyeglasses, compriving a clip screw-threaded at one end and bifurcated at its opposite end, a sleeve fitting over said clip and a nut for securing the sleeve upon the clip.

2. Clamping devices for eyeglasses, comprising a clip screw-threaded at one end, and bifurcated at its opposite end to form clamping-jaws, a sleeve fitting over said clip and formed with curved arms adapted to embrace the edges of the lenses, and a nut for securing the sleeve upon the clip.

3. The combination with rimless-eyeglass lenses, and the nose-spring, thereof, of clamps comprising clips screw-threaded at their inner ends and bifurcated at their opposite ends and lined with rubber or like yielding material, to receive the lenses, sleeves fitting over said clips, and nuts for securing the sleeves in place upon the clips.

656,154. **PIPE-WRENCH.** CHARLES L. DUNHAM, Centre View, Ohio. Filed June 6, 1900. Serial No. 19,272. (No model.)



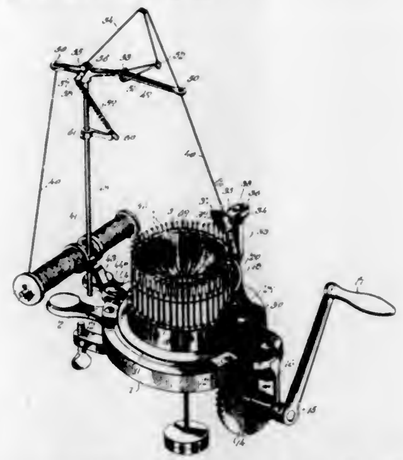
Claim.—1. In a pipe-wrench, the combination with the skeleton frame, connecting-links and lever, of the section *d* having the gradual inner curve and provided with the interlocking lugs, the curved point adapted to engage said lugs, and the opening, comprising a small and large space to receive the fulcrum-pin, substantially as described.

2. In a pipe-wreneh, the combination of the skeleton frame, and links, of the lever provided with the nose and opening, the latter having the enlarged curved portion and narrow portion, the section *d* having the inner-curved face and interlocking lugs on its outer face adapted to engage the nose of the lever, substantially as described.

3. In a pipe-wrench, the lever provided with the opening, comprising different-sized spaces and having a projection, in combination with the section having the inner gradual-curved face and outer-curved interlocking lugs, the skeleton frame and connecting-links, all substantially as described.

656,155. **CIRCULAR-KNITTING MACHINE.** ASHLEY J. GULICK, Clearfield, Pa., assignor to the Perfection Knitting Machine Company, same place. Filed Mar. 30, 1899. Serial No. 711,132. (No model.)

Claim.—1. In a circular-knitting machine, the combination with a knitting-cylinder and a yarn-carrier, of a cross-arm on the carrier, a yarn-lock connected to and freely movable on said cross-arm and provided with a guide-eye, a take-up arm normally elevated above the cross-arm and supported by the yarn-carrier in coöperative relation to the yarn-lock, said take-up arm having a yarn-guide eye and pivotally mounted on the yarn-carrier, and an automatically-adjustable tension device having a slidable connection with said take-up arm to vary the tension exerted thereby according to the slack or feed of the yarn.



2. In a circular-knitting machine, the combination with a knitting-cylinder and a yarn-carrier, of a cross-arm on the carrier, a take-up arm normally elevated above the cross-arm and having a yarn-guide eye and mounted pivotally on the yarn-carrier, and an automatically-adjustable tension-spring having a slidable connection with said take-up arm to vary the tension exerted on the yarn by the take-up arm according to the feed or slack in the yarn, substantially as described.

3. In a circular-knitting machine, the combination with a knitting-cylinder, a yarn-carrier, and a yarn-lock supported on said carrier, of a self-adjusting take-up arm pivoted on the carrier and having a slot and a guide-eye, the latter being in operative relation to the yarn-lock, and a tension-spring having a shiftable connection with the slotted part of the take-up arm, substantially as described.

4. In a circular-knitting machine, the combination with the knitting-cylinder and the cam ring or head, of a yarn-carrier having a yarn-lock, a self-adjusting take-up wire mounted for movement independently of and coöperating with said lock, and a tension-spring having a slidable self-adjusting connection with said take-up wire to vary the tension or stress thereof, substantially as set forth.

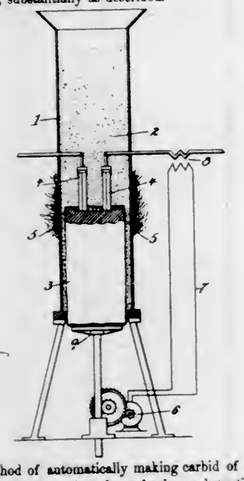
5. In a knitting-machine, the combination with the needle-cylinder and the cam ring or head, of a yarn-carrier having a standard carrying a horizontal arm at its upper end, a yarn-lock mounted on said horizontal arm, a take-up wire pivotally supported contiguous to one end on said horizontal arm and coöperating with the yarn-lock, said take-up wire having the short arm thereof at one side of its pivot formed with a longitudinally-disposed slot, and a tension-spring having a fixed support at one end, and having its other end slidably engaged in said slot, substantially as set forth.

656,156. **METHOD OF PRODUCING CARBID OF CALCIUM, &c.** WILLIAM S. HORRY, New York, N. Y. Filed Mar. 4, 1899. Renewed Jan. 15, 1900. Serial No. 1,544. (No specimens.)

Claim.—1. The dustless method of making carbid of calcium and the like which comprises arranging electrodes of opposite polarity in a substantially-vertical position and electrically maintaining a zone of reduction near their depending ends, feeding a charge around and between and above the electrodes to a depth sufficient to oppose the passage through it of the evolved gases and supporting the product beneath the charge and electrodes and thereby forming a lateral path of least resistance from the heat zone, conducting away the evolved gases laterally by said path, and shifting the carbid and charge vertically in respect to the electrodes to bring successive portions of the charge into the zone of reduction, substantially as described.

2. The method of antomatically making carbid of calcium and the like which consists in arranging electrodes in a substantially-vertical position and electrically maintaining a zone of reduction near their depending ends, superimposing a charge above the electrodes to a depth sufficient to oppose the passage of evolved gas and permitting it to gravitate between and around the electrodes, supporting the product beneath the

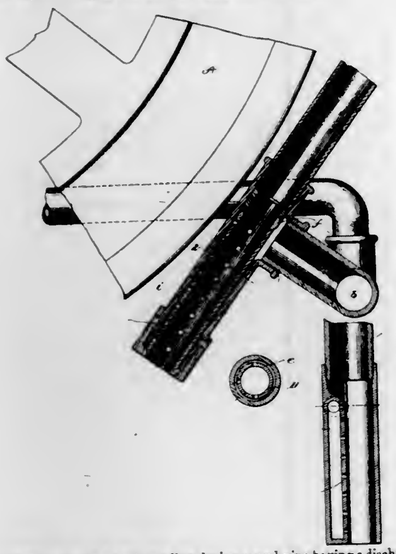
charge and electrodes, conducting the evolved gases away laterally from the zone of reduction, and shifting the carbid vertically in respect to the electrodes to permit successive portions of the charge to gravitate into the zone of reduction, substantially as described.



3. The method of automatically making carbid of calcium and the like which consists in arranging electrodes in a substantially-vertical position and passing a current between them to maintain a zone of reduction near their depending ends, superimposing a charge above the electrodes to a depth sufficient to oppose the passage of evolved gas and permitting it to gravitate between and around the electrodes, automatically shifting the product to keep said current constant, and conducting the evolved gases away laterally from the zone of reduction, substantially as described.

REISSUES.

11,845. PNEUMATIC DEVICE FOR CLEARING RAILWAY-TRACK-SANDING PIPES. JOHN H. HANLON, Boston, Mass., assignor of one-half to William James Hanlon, Fitchburg, Mass. Filed May 26, 1900. Serial No. 18,171. Original No. 633,193, dated Sept. 19, 1899.



Claim.—1. In a track-sanding device, a sand-pipe having a discharging tip or nozzle provided with an air-chamber opening into said tip throughout its length, whereby air forced into said chamber will enter and clear the tip of sand.

2. In a track-sanding device, a sand-pipe having a discharging tip or nozzle provided with an air-chamber having a series of holes leading into said tip or nozzle to discharge air from said chamber in a plurality of streams into said tip or nozzle, said air cleaning the nozzle and preventing the adherence thereto of sand.

3. In a track-sanding device, a sand-pipe, a tip or nozzle at one end thereof presenting an inner perforated wall at one side of the tip-passage, leaving the other side imperforate or smooth, said tip presenting an air-chamber at the opposite side of said perforated wall whereby air forced into said chamber and through said perforations may impinge directly against the imperforate side of the tip-passage.

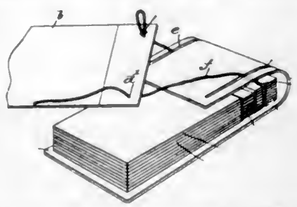
4. In a track-sanding device, the combination with the sand-pipe, of a tip or discharge-nozzle consisting of an outer shell or casing adapted to be connected with a pipe for containing air under pressure, and an inner perforated tube open at both ends, and forming the discharge-outlet for the sand, said perforated tube being arranged within the outer casing to form an air space or chamber between the two, whereby the air is caused to pass from the air-chamber through the perforations in the inner tube, to keep said tube free and clear for the passage of sand to the rail, substantially as described.

5. A sand-pipe tip or discharge-nozzle for track-sanding devices, comprising an outer tubular member adapted to be connected with a pipe for containing air under pressure, an inner tubular member open at both ends, and arranged within the outer member to form an air space or chamber between said two members closed at the top and bottom, said inner tubular member forming the outlet or discharge pipe for conducting the sand to the rail, and having perforations on one side for the passage of the air from the air-chamber to its interior, substantially as described.

6. The combination with a track-sanding pipe, of a tip or nozzle secured to the lower end of the same, said tip consisting of an outer tubular shell or casing having on one side a branch connection with a pipe for containing air under pressure, an inner perforated tube arranged within the outer casing to form an air space or chamber between the two, a washer interposed between the bottom of the sand-pipe and the adjacent end of the inner perforated tube to close the top of the air-chamber, and a ring fitted to the bottom of the tube, and having a seat for receiving the lower end of the inner tube, said ring closing the bottom of the air-chamber, and having a central aperture for the passage of the sand to the rail, substantially as described.

7. In a track-sanding device, the combination with two track-sanding pipes, each having a tip or nozzle provided with a delivery passage or outlet for the sand, and an adjoining air space or chamber having its wall perforated for the passage of the air from the air-chamber to the sand-passage, of an air-pipe extending from one tip to the other, and connecting their air-chambers, said connecting-pipe bracing and holding the tips in position over the rails, and being connected with a compressed-air-supply pipe, substantially as described.

11,846. SEPARABLE BOOK. FRANKLIN H. GILSON, Wellesley, Mass., assignor to the F. H. Gilson Company, Boston, Mass. Filed June 28, 1898. Serial No. 684,700. Original No. 584,997, dated June 22, 1897.



Claim.—1. A book or album cover, comprising two solid lids, which are unattached and disconnected, one of them being extended at its inner end to form a back, and means completely surrounding portions of said lids and extension for binding said lids together.

2. A book or album cover comprising two unattached and disconnected lids, one lid having a part or extension forming a back and lying loosely under the inner edge of the other lid, and a binding device completely surrounding portions of said lids and extension for detachably connecting the two lids together.

3. A book or album cover comprising two unattached and disconnected lids, of which, one has a flexible extension forming a back and lying loosely under the inner edge of the other, and a flexible binding device passed through openings in said lids and completely surrounding portions of said lids and extension for binding them together.

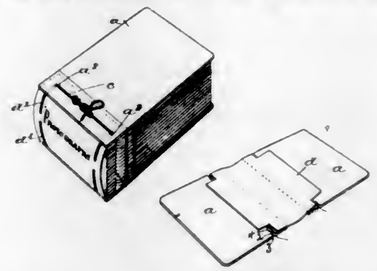
4. A book or album cover comprising two unattached and disconnected lids, of which one has a flexible extension forming a back and lying loosely under the inner edge of the other lid, said extension and said lids having openings, and binding devices passing through said openings and completely surrounding portions of said lids and extension for connecting said lids together.

5. A book or album cover comprising a front lid provided with orifices near its inner end; a flexible extension or back formed thereon, and provided with longitudinal slots arranged to register with said orifices; and a back lid having orifices near its inner end arranged to register with the said slots and first-mentioned orifices, said slots and orifices being arranged to receive a cord or lacing, whereby the lids may be connected with each other and with a series of leaves interposed between the lids, the slots permitting said cord to pass through the flexible extension at various points, as set forth.

6. A book of the character specified, comprising two separable lids, each having orifices near its inner end; a flexible extension or back formed on one of said lids and provided with longitudinal slots arranged to register with the orifices in the lids; a series of independent leaves interposed between the lids, and having slots extending inwardly from their edges near their inner ends, the inner ends of said slots coinciding with the orifices in the lids; and a lacing-cord connecting said lids and leaves, the said cord passing through the orifices of the lids, the slots of the back extension, and the slots of the leaves.

7. A book or album comprising a number of independent leaves each consisting of a main part upon which the photograph is mounted, a narrow binding part or end having short, narrow notches or recesses opening from the top and bottom edges and extending parallel with the rear edge and a wide flexible hinge connecting the two parts of the leaf, and a front and back lid adapted to be connected by a flap which forms an extensible back and is integral with one of the lids, and detachable means uniting the two lids and the separate leaves together consisting of flexible cords seated at the inner end of the said open notches passing through slots in line with the ends of said notches in the back flap and attached to the lids in line with the ends of said notches.

11,847. SEPARABLE BOOK. FRANKLIN H. GILSON, Wellesley, Mass., assignor to the F. H. Gilson Company, Boston, Mass. Filed June 28, 1898. Serial No. 684,699. Original No. 584,203, dated Nov. 23, 1897.



Claim.—1. A book of the character specified, comprising a cover consisting of two independent lids, and a back separate from said lids, said back and lids having their ends loosely overlapping; a series of leaves interposed between said lids and having slots extending inward from the top and bottom edges; and a fastening device for binding the ends of the lids against the ends of the back, and also for securing the leaves in the cover, the said back having straight portions bearing laterally against the fastening device to prevent endwise movements of said back.

2. A book of the character specified, comprising a cover consisting of two independent lids, and a back separate from said lids, said back and lids having their ends loosely overlapping; a series of leaves interposed between said lids; and a fastening-cord passed through recesses in the back and lids and leaves, to bind all of said parts together, the edges of the recesses in the back being elongated and bearing laterally against the fastening-cord.

3. A book of the character specified, comprising a cover composed of two independent lids, each having openings at or near its top and bottom edges and near its inner end, the openings in one lid coinciding with those of the other; leaves interposed between said lids and having openings coinciding with the openings in the lids; a flexible fastening-cord passing through the openings in the leaves and lids; and a flexible back piece separate from the lids and having provisions for engagement with the portions of the cord that pass through the lids and leaves, whereby the back piece is retained in its operative position by said cord, the back piece being adjustable endwise in either direction, to centralize its exposed portion between the lids, the openings in said leaves being open end slots formed to retain the cord when loose.

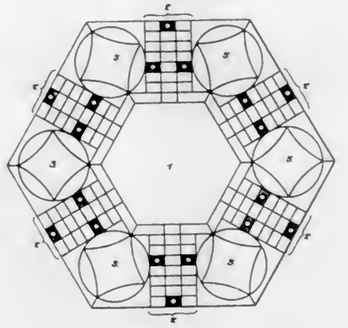
DESIGNS.

33,056. SPINNING-TOP. EDGAR L. WILLIAMS, Peoria, Ill., assignor to the Archarena Company, same place. Filed June 6, 1900. Serial No. 19,332. Term of patent 14 years.



Claim.—The design for a spinning-top substantially as shown and described.

33,057. GAME-BOARD. CHARLES B. PENNELL, Duncannon, Pa. Filed July 2, 1900. Serial No. 22,369. Term of patent 14 years.



Claim.—The design for a game-board, substantially as described and shown.

33,058. LABEL. NICHOLAS WITSCH, Jersey City, N. J., assignor to the American Lithographic Company, New York, N. Y. Filed July 13, 1900. Serial No. 23,537. Term of patent 7 years.



Claim.—The design for a label as herein shown and described.

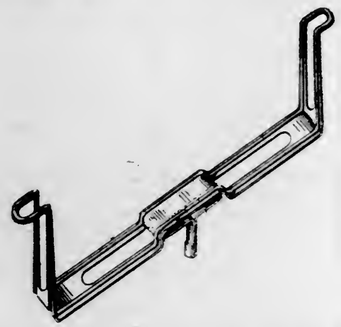
33,059. CARD-MOUNT. JOHN P. ODGERS, Philadelphia, Pa., assignor to the A. M. Collins Manufacturing Company, same place. Filed June 4, 1900. Serial No. 19,077. Term of patent 7 years.

33,059.



Claim.—The design for a card-mount substantially as described and as shown in the accompanying drawings.

33,060. STEREOSCOPIC-PICTURE HOLDER. HENRY E. RICHMOND, North Bennington, Vt., assignor to Elmer Underwood and Bert Elias Underwood, Summit, N. J. Filed May 26, 1900. Serial No. 18,159. Term of patent 14 years.



Claim.—The design for a stereoscopic-picture holder substantially as herein shown and described.

33,061. BADGE. WILLIAM H. LYNCHARD, Council Bluffs, Iowa. Filed June 29, 1900. Serial No. 22,079. Term of patent 3½ years.



Claim.—The design for a badge, as herein shown and described.

33,062. BADGE. WILLIAM H. LYNCHARD, Council Bluffs, Iowa. Filed June 29, 1900. Serial No. 22,080. Term of patent 3½ years.



Claim.—The design for a badge, as herein shown and described.

33,063. BADGE OR SIMILAR ARTICLE. JAMES H. STOCKHAM, Des Moines, Iowa. Filed June 21, 1900. Serial No. 21,110. Term of patent 3½ years.



Claim.—The design for a badge or similar article, as herein shown and described.

33,064. BUTTON. JULIUS CLARK HILTON, Neenah, Wis. Filed June 29, 1900. Serial No. 22,083. Term of patent 14 years.



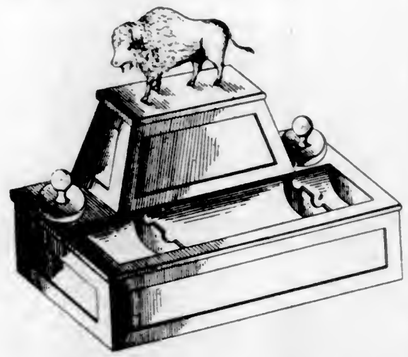
Claim.—The design for a button, as herein shown and described.

33,065. SUSPENDER-END BODY. GEORGE E. ADAMS, New Britain, Conn. Filed June 19, 1900. Serial No. 20,903. Term of patent 7 years.



Claim.—The design for a suspender-end body as herein shown and described.

33,066. INKSTAND. MAX GANTER, Buffalo, N. Y. Filed July 19, 1900. Serial No. 24,229. Term of patent 7 years.



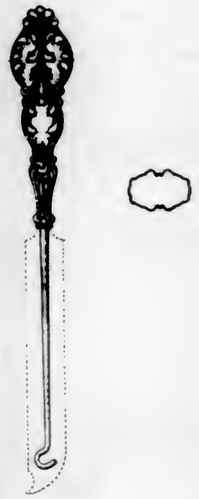
Claim.—The design for an inkstand, substantially as herein shown and described.

33,067. NAPKIN-HOLDER. JAMES H. MARDOCK, Fruitland, Iowa, assignor of one-half to John A. Shoultz, same place. Filed July 13, 1900. Serial No. 23,551. Term of patent 14 years.



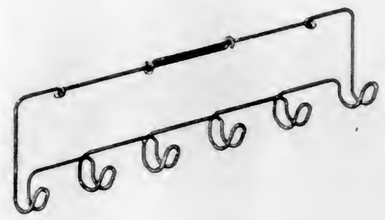
Claim.—The design for a napkin-holder, herein shown and described.

33,068. HANDLE FOR BUTTON-HOOKS OR SIMILAR ARTICLES. WILLIAM H. SAART, Attleborough, Mass., assignor to the James E. Blake Company, same place. Filed July 9, 1900. Serial No. 23,053. Term of patent 3½ years.



Claim.—The design for the handle of a button-hook or similar article herein shown and described.

33,069. SKIRT-HANGER. ARCHIA L. ROSS, New York, N. Y. Filed July 12, 1900. Serial No. 23,422. Term of patent 14 years.



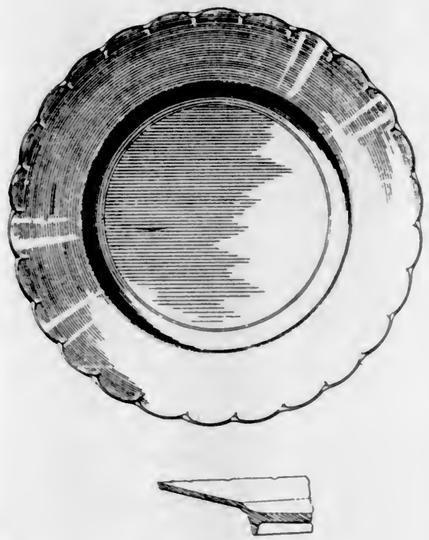
Claim.—The design for a skirt-hanger, as herein shown and described.

33,070. BRUSH. HENRY A. HAMILTON, Emlenton, Pa. Filed Apr. 7, 1900. Serial No. 12,022. Term of patent 7 years.



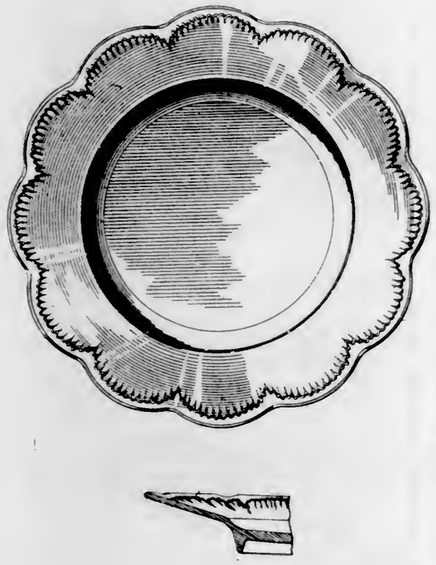
Claim.—The design for a brush substantially as herein described and shown.

33,071. PLATE OR SIMILAR ARTICLE. CHARLES EDWARD HAVILAND, Limoges, France. Filed May 31, 1900. Serial No. 18,678. Term of patent 7 years.



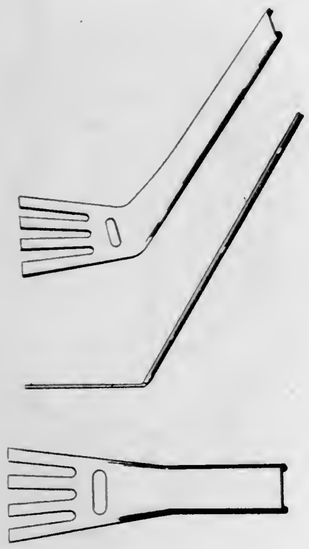
Claim.—The design for a plate or similar article, substantially as shown and described.

33,072. PLATE. CHARLES EDWARD HAVILAND, Limoges, France. Filed May 31, 1900. Serial No. 18,679. Term of patent 7 years.



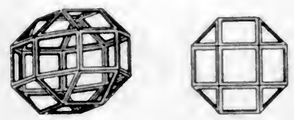
Claim.—The design for a plate or similar article, substantially as shown and described.

33,073. PASTRY-MIXER. LAURA BASSETT, Princeton, Minn. Filed July 17, 1900. Serial No. 23,980. Term of patent 7 years.



Claim.—The design for a pastry-mixer, substantially as shown and described.

33,074. LANTERN-BODY. PIETER HENDRIK VERBEEK, Herrnhut, Germany. Filed Mar. 25, 1899. Serial No. 710,509. Term of patent 14 years.



Claim.—The design for a lantern-body, as herein shown and described.

33,075. PLATE FOR THUMB-SCREWS. WILLIAM H. DAVENPORT, Norwich, Conn. Filed June 7, 1900. Serial No. 19,476. Term of patent 14 years.



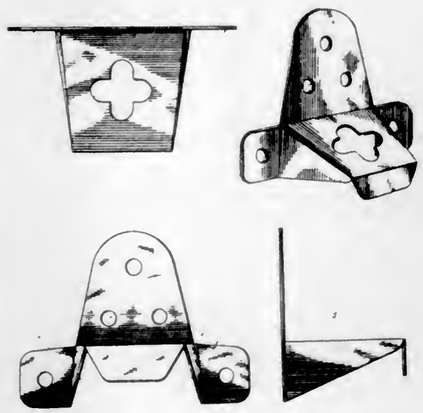
Claim.—The design for a plate for thumb-screws, substantially as herein shown and described.

33,076. WINDOW-FASTENER. GEORGE F. NICHOLS, Woodsborough, Md. Filed July 18, 1900. Serial No. 24,108. Term of patent 7 years.



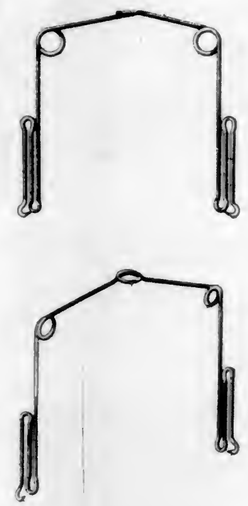
Claim.—The design for a window-fastener, as herein shown and described.

33,077. HINGE-LEAF. URIAH E. LEMON, Fairfield, Wash. Filed July 12, 1900. Serial No. 23,425. Term of patent 7 years.



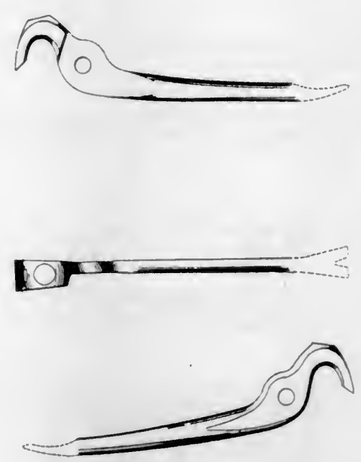
Claim.—The design for a hinge-leaf, as herein shown and described.

33,078. SUPPORT FOR CHIMNEY-CAPS. FRED ZIEGEL, Hazelhurst, Miss. Filed July 10, 1900. Serial No. 23,166. Term of patent 7 years.



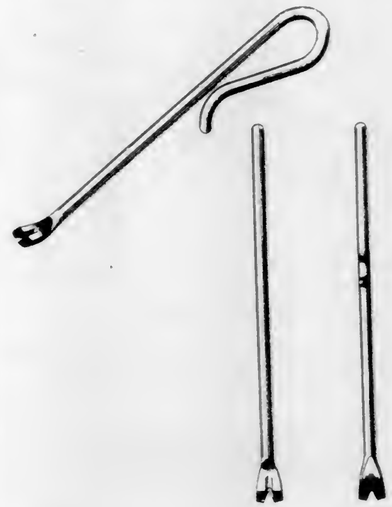
Claim.—The design for a support for a chimney-cap as herein shown and described.

33,079. MEMBER FOR CARPENTERS' PINCERS. WILLIAM S. WARD, Plantsville, Conn., assignor to the H. D. Smith & Company, same place. Filed July 19, 1900. Serial No. 24,226. Term of patent 14 years.



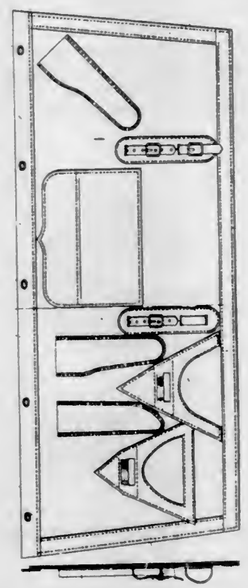
Claim.—The design for a member of a carpenter's pincers, as herein shown and described.

33,080. TACK OR NAIL EXTRACTOR. HENRY M. QUACKENBUSH, Herkimer, N. Y. Filed May 4, 1900. Serial No. 15,550. Term of patent 7 years.



Claim.—The design for a tack or nail extractor substantially as shown and described.

33,081. TOOL-CARRIER FOR VEHICLES. GEORGE A. MACKER, Westborough, Mass., assignor to the Locomobile Company of America, New York, N. Y. Filed June 21, 1900. Serial No. 21,111. Term of patent 14 years.



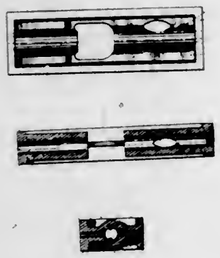
Claim.—The design for a tool-carrier for vehicles, substantially as herein shown and described.

33,082. MUD-GUARD BRACE FOR BICYCLES. FRANK N. STEVENS, Rutherford, N. J. Filed July 7, 1900. Serial No. 22,879. Term of patent 7 years.



Claim.—The design for a mud-guard brace for bicycles substantially as shown and described.

33,083. TOOL-STOCK. LEROY S. STARRETT, Athol, Mass. Filed July 9, 1900. Serial No. 23,055. Term of patent 14 years.



Claim.—The design for a tool-stock substantially as herein shown and described.

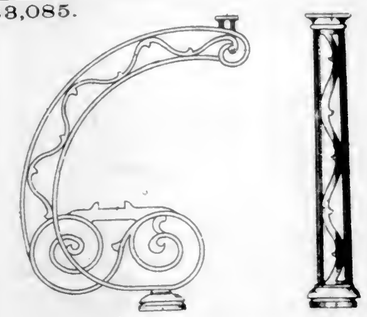
33,084. SCALE-WEIGHT. PERLEY F. HASEN, St. Johnsbury, Vt., assignor to the E. & T. Fairbanks & Company, same place. Filed June 14, 1900. Serial No. 20,371. Term of patent 14 years.



Claim.—The design for a scale-weight, substantially as shown and described.

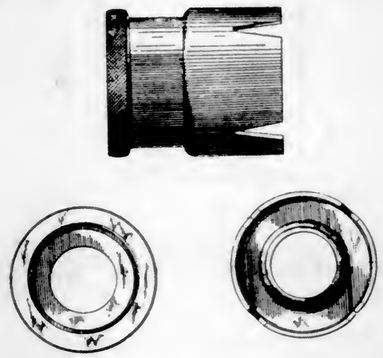
33,085. BEAM-STANDARD FOR PLATFORM-SCALES. WILLIS H. SARGENT, St. Johnsbury, Vt., assignor to the E. & T. Fairbanks & Company, same place. Filed July 12, 1900. Serial No. 23,419. Term of patent 14 years.

33,085.



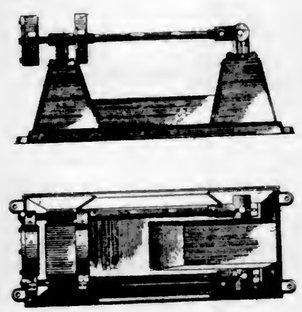
Claim.—The design for a beam-standard for platform-scales, substantially as shown and described.

33,086. MEMBER FOR HOSE-COUPLINGS. MARK S. LEVERING, Philadelphia, Pa., assignor to the Standard Hose Mender and Pipe Coupler Company, Camden, N. J. Filed July 3, 1900. Serial No. 22,454. Term of patent 14 years.



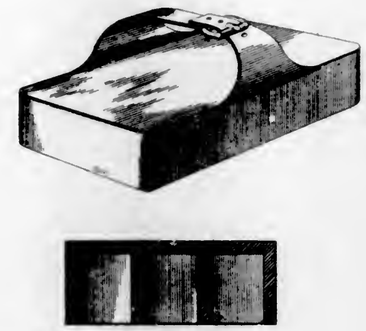
Claim.—The design for a member of a hose-coupler, substantially as herein shown and described.

33,087. ENGINE-FRAME. HENRY V. A. PARSELL, Jr., and ARTHUR J. WEED, New York, N. Y. Filed June 21, 1900. Serial No. 21,106. Term of patent 7 years.



Claim.—The design for an engine-frame, as herein shown and described.

33,088. HAIR-SHEDDER. WILLIAM HERRICK, Chicago, Ill., assignor to the Morgan & Wright, same place. Filed June 27, 1900. Serial No. 21,852. Term of patent 14 years.



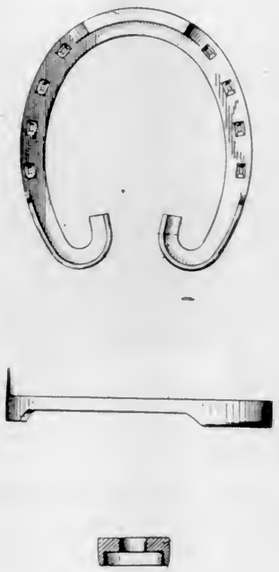
Claim.—The design for a hair-shedder, substantially as shown and described.

33,089. HOOF-PAD. WILLIAM J. KENT, New York, N. Y. Filed June 27, 1900. Serial No. 21,851. Term of patent 14 years.



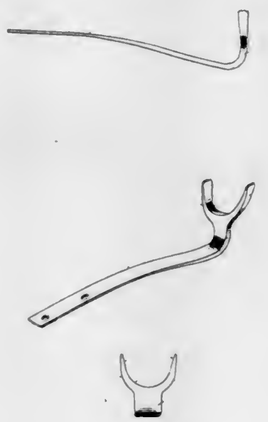
Claim.—The design for a hoof-pad, substantially as herein shown and described.

33,090. HORSESHOE-FRAME. STEWART S. KURTZ, Canton, Ohio, assignor to the Paar Double-Cushion Horse Shoe Company, same place. Filed July 16, 1900. Serial No. 23,840. Term of patent 14 years.



Claim.—The design for a horseshoe-frame substantially as herein shown and described.

33,091. CARRIAGE-POLE TIP. JOSEPH A. SEKORA, Ann Arbor, Mich. Filed Apr. 16, 1900. Serial No. 13,143. Term of patent 14 years.



Claim.—The design for a carriage-pole tip, herein shown and described.

33,092. GAS HEATING-STOVE. MATTHEW GRISWOLD, Jr., Erie, Pa. Filed July 5, 1900. Serial No. 22,633. Term of patent 14 years.



Claim.—The design for a gas heating-stove, substantially as shown and described.

33,093. WOVEN FABRIC. CHARLES FRANK, New York, N. Y., assignor to A. A. Vantine & Co., same place. Filed July 20, 1900. Serial No. 24,342. Term of patent 3½ years.



Claim.—The design for a woven fabric herein shown and described

THE NORRIS PETERS CO. PHOTO-LITH. WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE HALE.

Decided June 7, 1900.

DESIGNS—QUESTION OF MERITS—APPEAL TO EXAMINERS-IN-CHIEF.

The holding of the Examiner that the device does not cover proper subject-matter for a design patent because made up of movable parts relates to the merits and is appealable to the Examiners-in-Chief. (*Ex parte Sherman and Harms*, 89 O. G., 2067.)

ON petition.

DESIGN FOR A HINGE-ARM FOR CAR-SEAT BACKS.

Application of Henry S. Hale filed July 22, 1899, No. 724,871.

Mr. R. M. Hunter for the applicant.

CHAMBERLIN, *Assistant Commissioner:*

This is a petition from the action of the Primary Examiner rejecting the claim in the above-entitled case on the ground that it does not cover proper subject-matter for a design patent under section 4929 of the Revised Statutes.

The device disclosed in this case and covered by the claim is a hinge-arm for car-seat backs and is made up of parts which are movable relative to each other. The Examiner on the authority of certain decisions cited held that the device is an apparatus and not an article of manufacture referred to in the design statute, for the reason that "the design claimed is made up of parts which move in relation to each other, and which, as they move, change the design of the entirety."

The Examiner's action has been in the form of a rejection, not an objection, and he has informed the applicant that his remedy was by an appeal to the Examiners-in-Chief and not by petition. The applicant, however, contends that the question presented is one of form and that—

> it is proper that the honorable Commissioner shall say whether or not an integral structure such as a hinge must be divided up into its parts before a design patent can issue for said parts.

In a case presenting a similar state of facts to that here presented the question whether the applicant's remedy was by petition or by appeal to the Examiners-in-Chief was fully considered, and it was held that his remedy was by appeal. (*Ex parte Sherman and Harms*, 89 O. G., 2067.) That decision is believed to be correct for the reasons fully set forth therein.

The petition is dismissed.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Ninth Circuit.

N. K. FAIRBANK COMPANY *v.* LUCKEL, KING & CAKE SOAP COMPANY.

Decided May 7, 1900.

1. TRADE-MARKS—INFRINGEMENT—"GOLD DUST" AND "GOLD DROP."

Held that the name "Gold Drop," used by the respondents to designate washing-powder, is an infringement of the plaintiff's trade-mark or trade-name "Gold Dust," notwithstanding a dissimilarity of the labels, character of symbols, and size of packages.

2. SAME—TRADE-NAMES DISTINGUISHED FROM TRADE-MARKS.

There are two kinds of trade-marks—one of peculiar pictures, labels, or symbols, the other in the use of a name. The first appeals to the eye and the second to the ear. To constitute infringement of a trade-name, it is not necessary that there should be similarity in appearance, but merely such similarity in the names that the ordinary purchaser having no knowledge of the appearance of the package or label would be deceived by the name and induced to purchase an article under one name supposing it to be the other.

APPEAL from the Circuit Court of the United States for the District of Oregon.

Messrs. Fenton, Bronaugh & Muir (Rowland Cox, of counsel) for the appellant.

Messrs. Cake & Cake for the appellee.

Before GILBERT, ROSS, and HAWLEY, Judges.

HAWLEY, *J.:*

This is a suit in equity. It was instituted to restrain the infringement of the trade-mark or trade-name "Gold Dust," used to designate a washing-powder manufactured and sold on the market by appellant. The alleged infringement consists of the use of the name "Gold Drop" to designate a washing-powder manufactured and sold by appellee. The circuit court held that appellant was not entitled to the relief prayed for, dismissed its bill, and rendered a decree in favor of respondent, (88 Fed. Rep., 694,) from which the present appeal is taken.

The bill, after alleging complainant's use, appropriation, and right to the trade-mark or trade-name of "Gold Dust" to identify its washing or soap powder since the year 1887, avers that respondent, since the 1st day of July, 1897, with full knowledge of complainant's rights in the premises—

> wholly without your orator's consent, intending to injure and defraud your orator, and to divert to itself the business and

profits connected with the sale of "Gold Dust" washing-powder which of right belong to your orator, has knowingly and fraudulently made use, in connection with the manufacture and sale of a washing or soap powder by said defendant manufactured, of the words or designation "Gold Drop," and has caused washing or soap powder by it, the said defendant, manufactured, to be offered and sold as "Gold Dust" washing-powder, and as and for the washing-powder of your orator's manufacture, and continues so to do, notwithstanding your orator's protest in the premises, in violation of your orator's rights aforesaid, and contrary to equity, to your orator's great loss and injury actually sustained.

that the acts of the respondent are unlawful and—

tend to cause the washing or soap powder of the defendant, put up as aforesaid, to be mistaken for your orator's "Gold Dust" washing-powder, and to be substituted therefor by unscrupulous persons, and because, all and singular, they enable and promote an unfair competition, and a false and fraudulent sale of the defendant's washing-powder, as and for your orator's "Gold Dust" washing-powder, to your orator's great loss and injury—

and—

constitutes a fraudulent, inequitable, and unfair competition in business, and a trespass upon, and violation of, the good-will of your orator's business, connected with the manufacture and sale of its "Gold Dust" washing-powder, against which your orator is equitably entitled to be protected, and which fraudulent, inequitable, and unfair competition and trespass upon your orator's good-will it prays may be prevented and restrained according to the course of equity, etc.

The answer denies having committed any wrongful, illegal, or fraudulent acts or any acts in violation of complainant's rights in the premises and for a separate answer alleges—

that on or about July, 1894, defendant began to manufacture a certain washing compound or soap powder, and that on or about said time defendant offered said soap powder for sale in the market, and has continued so to do, without interruption, ever since; that defendant placed upon said package of washing compound aforesaid the name or designation "Gold Drop," and wrapped the said package in paper of an entirely different color and character from that of the plaintiff, the general effect of which said wrapper was such that the packages of plaintiff and defendant might easily be distinguished, and in truth the defendant avers that there are no common features whatever between the packages of plaintiff and defendant, but that said packages cannot be mistaken one for another; * * * that said soap powder, the package in which the same was sold, the wrapper thereon, designation "Gold Drop," figures, color, and general effect of said package was produced, and said powder sold with said wrapper as afore said, without any intention to enter into unfair competition with the plaintiff, or to violate any of the rights of the plaintiff whatever; and the defendant avers that the said name "Gold Drop" on said package, the color, the lettering, and the general effect of said package, does not in any manner whatever violate any of the rights of the plaintiff, or infringe upon the word or name or designation "Gold Dust," nor the package in which said plaintiff puts up its said washing compound or soap powder under the name "Gold Dust."

There is no substantial conflict in the evidence produced at the trial. The questions as to priority of use and expenditure and popularization of the washing-powder under the name of "Gold Dust" by appellant are undisputed.

Jasper G. Gilkinson, the secretary of the N. K. Fairbank Company, testified that—

ever since the introduction of "Gold Dust," in the year 1887, the N. K. Fairbank Company has used every possible means to familiarize the public with the words "Gold Dust," and to increase its sale. They have advertised extensively in newspapers, have issued hangers, cut-outs, etc., and in every way they have endeavored to draw the attention of the public to the name of the goods. They have expended during the period after its first adoption, in 1887, more than a million of dollars in advertising, and hundreds of thousands of dollars for traveling salesmen.

The testimony shows that respondent at the time it commenced the manufacture of its washing-powder "Gold Drop" was well aware of the existence of complainant's "Gold Dust" and that it had been extensively and expensively advertised in Oregon as well as in other States; that in 1897 respondent sent a letter to Rowland Cox, counsel for complainant, which reads as follows:

PORTLAND, OREG., *September* 23, 1897.

Mr. Rowland Cox, New York, N. Y.:

DEAR SIR.—Replying to your letter of the seventeenth inst., we inclose the face of our label, which we think is sufficient answer, being at once seen to be the most strikingly distinctive washing-powder label in the market. We might add that the name commended itself to us from the fact that it is familiar to the people of this great prune-growing region as the name of a popular prune or plum known as the "Gold Drop Prune," as will be seen by referring to any Northwest nursery catalogue.

Very truly yours,
LUCKEL, KING & CAKE SOAP CO.,
CHAS. W. COTTEL, *Secretary.*

Mr. Luckel, the president of the respondent, in reply to the question, "How did you come to choose the name 'Gold Drop'?" answered as follows:

Our secretary, Mr. Cottel, had a whole lot of names; that is, we were going to get up a washing-powder, and he wrote out from twenty-five to thirty, I should judge, on a small piece of paper,—different names,—and this was one of them; and he preferred a different name, and Mr. King and I thought that this would be the best, on account of it being short,—good for advertising, and easy to remember.

It also appears from the testimony that the packages of the respondent's "Gold Drop" were sold to retail dealers at a less price than the complainant's "Gold Dust" and that both were sold to purchasers at the same price; that at four different stores in Portland two witnesses at different times asked for "Gold Dust" and were given "Gold Drop" without any explanation, and that the bills were in three instances marked as "G. Dust." There was testimony on behalf of respondent to the effect that its "Gold Drop" was sold by it without any fraudulent or other intention to palm off or sell the same upon the reputation acquired for the soap under the name of "Gold Dust" and that respondent took especial pains to avoid any imitation of complainant's labels.

Upon these general facts, without entering into details, we pass to the legal questions involved herein. It is assigned as error that—

the court erred in adjudging and decreeing that the name "Gold Drop" used by the defendant does not infringe upon the trade-mark and trade-name "Gold Dust" of this complainant, and does not deceive the trade and consumers to the detriment of complainant—

and that the court erred in refusing to enter a decree in favor of complainant enjoining respondent from the commission of certain acts as prayed for in the bill of complaint. In many of the decided cases it has been held that the respondent ought not to be held liable for the imposition or fraud of the merchants or shopkeepers or their assistants in palming off upon the innocent public his goods as those of another. As an abstract proposition this may be conceded to be correct, but it falls far short of being the only view of the case. The controlling question is whether or not the respondent has "knowingly put into the hands of the retail dealer the means of deceiving the ultimate purchasers." (*N. K. Fairbank Co.* v. *R. W. Bell Mfg. Co.*, 23 C. C. A., 554; 77 Fed. Rep., 869, 878, and authorities there cited; *New England Awl & Needle Co.* v. *Marlboro Awl & Needle Co.*, Mass., 46 N. E., 386; *Von Mumm* v. *Frash*, 68 O. G., 143; C. C., 56 Fed. Rep., 830, 838.) The fact that "Gold Drop" was sold to retail dealers for a less price furnished an incentive and inducement to retail dealers to dispose of "Gold Drop" instead of "Gold Dust," as they thereby gained a greater profit for themselves.

The law is well settled that in suits of this character the intention of the respondent in adopting the style of package or choosing a name for a similar product is to a certain extent immaterial. It is not essential to the right of complainant to an

injunction to show absolute fraud or wilful intent on the part of the respondent. Upon familiar principles it will be presumed that the respondent contemplated the natural consequences of its own acts. If the acts of respondent in the adoption of the name of "Gold Drop" constituted an infringement of the trade-mark or trade-name of the complainant, and it was put on the market in such a manner as to interfere with the legal rights of complainant, to its loss and injury, it would be entitled to an injunction irrespective of the question of any testimony as to actual fraud or wilful intent. The court must determine the intent from respondent's acts and the results produced thereby. (*R. Heinisch & Sons* v. *Boker*, C. C., 86 Fed. Rep., 766, 769.)

It is claimed that the respondent's packages are to the eye unlike complainant's. Admit it. There are many cases where respondent's packages and labels are to the eye so distinctive and unlike the packages of complainant as not to deceive purchasers exercising ordinary care who are accustomed to the size of the packages and the general characteristics of the labels. But how about the stranger who knows nothing about the packages or of the labels, but has read the advertisement and remembers the name "Gold Dust?" Is it not fair to assume in a case like this that a decided majority of the purchasers would not ask for a specific size of a package with a certain designated label? Would they not call for the article by name? It must constantly be borne in mind that there are two kinds of trade-marks—one of peculiar pictures, labels, or symbols, the other in the use of a name. The infringement charged herein is in the adoption by the respondent of both the trade-name and trade-mark. So far as the name "Gold Dust" is concerned the dissimilarity of the labels, size of packages, and character of symbols can make no essential difference. As was said in *Hier* v. *Abrahams*, (82 N. Y., 519, 525:)

The trade-mark consisted in the word simply, and the plaintiffs might have printed it on any form of label they might fancy, without losing the protection of the law. The defendants had no right to adopt it by merely putting it on a label of different fashion from that which the plaintiffs had been in the habit of using.

See also *Battle* v. *Finlay*, C. C., (45 Fed. Rep., 796;) *N. K. Fairbank Co.* v. *Central Lard Co.*, C. C., (64 Fed. Rep., 133, 136.)

The trade-name differs from the trade-mark in this, that one appeals to the ear more than to the eye. The advertisements of the name were for the purpose of having the intended purchaser ask for "Gold Dust" without his having any knowledge of the character of the label on the package he was to receive, and in this sense the fact that the infringer of the name used different devices and symbols would have no great force. The imitation of the name "Gold Dust," by which the soap or washing powder of complainant was known, would constitute an infringement, because purchasers would be liable to be misled who had no knowledge of the article except the advertised name as being the best soap or washing powder in the market. It is not unusual for a certain specific article advertised extensively, of reputed excellence, to become publicly known and called for by the name which is more readily retained in the memory. This is one of the reasons why respondent selected the name "Gold Drop"—

on account of its being short; good for advertising, and easy to remember.

Many precautions were taken by respondent to avoid imitating complainant's label. Is it not peculiarly significant that no efforts whatever were made in this direction with reference to the selection of a name totally dissimilar from that of "Gold Dust?" Why was "Gold Drop" selected? There were plenty of other names that were short and easy to remember. Other manufacturers of washing-soap had found no difficulty in this regard—for instance, "Pearline," "Babbit, 1776," etc. When these facts are considered, is it not reasonably clear that in selecting "Gold Drop," which conveys to the mind so close an imitation of "Gold Dust," there was some intention or design upon the part of respondent to impose "Gold Drop" upon the public as that of "Gold Dust" or at least to obtain some advantage or benefit from complainant's advertised trade-name "Gold Dust?" Was not this result accomplished whether so intended or not?

These general views bring us directly to what we conceive to be the controlling question in this case. In the light of the evidence and of all the surrounding circumstances presented herein are the names "Gold Dust" and "Gold Drop" so similar in sound as to deceive the unwary or mislead an unsuspecting customer to accept "Gold Drop" for "Gold Dust?" This is the test that has often been applied in cases of this character.

In *Celluloid Mfg. Co.* v. *Cellonite Mfg. Co.*, C. C., (32 Fed Rep., 94, 97,) Mr. Justice Bradley said:

Similarity, not identity, is the usual recourse when one party seeks to benefit himself by the good name of another. What similarity is sufficient to effect the object has to be determined in each case by its own circumstances. We may say, generally, that a similarity which would be likely to deceive or mislead an ordinary unsuspecting customer is obnoxious to the law.

It may be said that if one stops to reflect upon the names "Gold Dust" and "Gold Drop" and listens to the sound he will discover that the names are not entirely similar. A layman, as well as a lawyer or a judge, might so decide upon a careful inspection and reading of the names; but in determining that question we must put ourselves in the place of a purchaser of ordinary caution who asks for a washing-powder called "Gold Dust" and from his standpoint determine whether he would be liable to be misled or deceived by the name "Gold Drop." (*Glen Cove Mfg. Co.* v. *Ludeling*, C. C., 22 Fed. Rep., 823; *N. K. Fairbank Co.* v. *R. W. Bell Mfg. Co.*, 23 C. C. A., 554; 77 Fed. Rep., 869; *Manufacturing Co.* v. *Simpson*, 54 Conn., 527, 545; 9 Atl., 395; *Colman* v. *Crump*, 70 N. Y., 573, 578.)

The question whether complainant's trade-name of the words "Gold Dust" has been appropriated by respondent's use of the words "Gold Drop," separate and distinct from the use of symbols and devices adopted by complainant, may be said to be a close one; but after a careful examination of the numerous authorities cited by the respective

counsel upon this subject we are of opinion that it must be answered in the affirmative. It is true that in many of the cases the alleged infringer dressed the words relied upon with such accessories that made it clear that the name used might be mistaken for the complainant's words, and the courts in such cases have usually placed their conclusions upon such grounds. The following cases shed some light upon the similarity of names that have been held to be infringements:

In *Glen Cove Mfg. Co.* v. *Ludeling*, C. C., (22 Fed. Rep., 823, 825,) the contesting parties were both engaged in the manufacture of corn-flour for food. Complainant adopted and used the word "Maizena;" respondents, "Maizharina." The court held that the defendant's word and picture as applied by him to the packages of his corn-flour, in connection with the similarity of his packages in form, size, color, printing, and other characteristics to the complainant's were well calculated to lead purchasers to confuse the identity of the products of the respective parties. In the course of his opinion, Wallace, J., said:

> If the decision were to depend solely upon the question of a substantial similarity in the sonorous properties between the word used by complainant and that used by the defendant, decisions in analogous cases furnish sufficient authority for granting an injunction. Thus, the word "Cocoine" has been held to be an infringement of a trade-mark in the word "Cocoaine" (*Burnett* v. *Phalon*, *42 N. Y., 594); "Bovina," of the word "Boviline" (*Lockwood* v. *Bostwick*, 2 Daly, 521); the word "Appolinis," of the word "Appolinaris" (*Actien-Gesellschaft Appolinaris-Brunnen* v. *Somborn*, 14 Blatchf., 390; Fed. Cas. No. 496); "Hostetler," of the word "Hostetter" (*Hostetter* v. *Vonwinkle*, 1 Dill., 329; Fed. Cas. No. 6,714); "Leopoldsalt," of the word "Leopoldshall" (*Radde* v. *Norman*, L. R. 14, Eq. 349). The rule is well settled that to enable the proprietor of a trade-mark to relief against an illegal appropriation it is not necessary that the imitation should be so close as to deceive persons seeing the two marks side by side; it is sufficient if there is such a degree of resemblance that ordinary purchasers, using ordinary caution, are likely to be deceived.

In *Estes* v. *Leslie*, C. C. (29 Fed. Rep., 91,) Shipman, J., said:

> The name "Chatter-Book," as printed upon the cover of the defendant's books, is, in my opinion, an imitation of the name "Chatter-Box," which by association, when used upon books of a juvenile character, points "distinctively to the origin or ownership" of the books to which it is applied; and the use by the defendants of the name "Chatter-Book" upon the books which are represented by the exhibits in the case, the same being books of a juvenile character, of the general appearance, style, and manner of cover of complainant's books, should be enjoined *pendente lite*.

In *Celluloid Mfg. Co.* v. *Cellonite Mfg. Co.*, *supra*, Mr. Justice Bradley said:

> The name "Cellonite Manufacturing Company" is sufficiently similar to that of the "Celluloid Manufacturing Company" to amount to an infringement of the complainant's trade-name. The distinguishing words in both names are rather unusual ones, but supposed to have the same sense. Their general similarity, added to the identity of the other parts of the names, makes a whole which is calculated to mislead.

In *N. K. Fairbank Co.* v. *Central Lard Co.*, C. C., (64 Fed. Rep., 133, 135,) it was held—

> that the word "Cottoleo" is sufficiently similar to "Cottolene" to infringe it.

The conclusions we have reached upon this point are not in opposition to the views expressed by the court in *Coats* v. *Thread Co.*, (63 O. G., 1531; 149 U. S., 562, 565; 13 Sup. Ct., 966; 37 L. Ed., 847;) *Sterling Remedy Co.* v. *Eureka Chemical & Mfg. Co.*, C. C., (70 Fed. Rep., 704,) affirmed upon appeal in 25 C. C. A., 314; 80 Fed. Rep., 105, and *Proctor & Gamble Co.* v. *Globe Refining Co.*, (34 C. C. A., 405, 92 Fed. Rep., 357,) upon which respondent chiefly relies. These cases were decided on the dissimilarity of the labels used by the respective parties and other clearly-distinguishing features of the signs, symbols, and colors used thereon. The first case related to spool-thread of "six cords." The court said:

> The controversy between the two parties * * * is reduced to the single question whether, comparing the two designs upon the main or upper end of the spool, there is such resemblance as to indicate an intent on the part of defendants to put off their thread upon the public as that of the plaintiffs', and thus to trade upon their reputation.

The second case related to certain medicinal tablets for the cure of the tobacco habit. The complainant used the trade-mark "No-To-Bac" and the defendant "Baco-Curo." The court with reference to these names said it was not "seriously claimed that they are the same, or so similar that one could well be mistaken for the other." The third was a soap case. The complainant's trade-mark was impressed upon a wrapper or label used for covering cakes of washing-soap known to the trade as "Everyday Soap;" on the wrapper or label of defendant's cakes the words were "Everybody's Soap." The case was disposed of by the distinguishing features of the respective labels. The court said: "The appellant relies not so much upon the infringement of its trade-mark as upon its complaint that the use by the defendant of its label is an unfair competition in trade." That case differs from the case in hand in this, that there the appeal was taken from an order denying a preliminary injunction, and the question to be determined was whether the court below had improvidently exercised its discretion, "and not whether, upon the final hearing, upon full view of all the facts in the case, this court would, upon the evidence before it, reach the same conclusion as that of the court below." Here we have the whole case before us for a decision upon its merits, and upon the whole case we are of opinion that the court erred in dismissing the bill and refusing to grant an injunction. The decree of the circuit court is reversed and cause remanded, with directions to enter a decree in favor of appellant in accordance with the views expressed in this opinion.

Patents No. 656,157 to 656,618.

THE

OFFICIAL GAZETTE

OF THE

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[BY AUTHORITY OF CONGRESS.]

Vol. 92.—No. 8. TUESDAY, AUGUST 21, 1900. Price—$5 per year.

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Attorneys.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., August 16, 1900.

SIR: I am directed by the Secretary of the Interior to inform you that the order dated July 7, 1899, disbarring Charles Freer, of Warren, Ohio, from practice before this Department and its Bureaus has been rescinded and revoked.

Very respectfully,

EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

Names of Applicants.

When the full first name of the applicant does not appear either in his signature or in the preamble to the specification, the Examiner will, in his first official letter, require an amendment supplying the omission, and he will not pass the application to issue until the omission has been supplied, unless an affidavit shall have been filed setting forth that the full first name of the applicant is the one originally given by him.

The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. Terms: To subscribers within the United States, Canada, and Mexico, $5 per annum; to foreign subscribers, $10; single copies, 10 cents; if mailed to foreign countries 10 cents additional for postage; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. *Payment in advance.* No subscription will be received for less than three months. All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Notice.

Hereafter coupons unless properly filled out will not be accepted in payment for copies of publications.

CERTIFICATES OF REGISTRATION ISSUED AUGUST 21, 1900.

Labels.

7,735.—Title: "DIXIE MOIRE FINISH PERCALINE." (For Percaline.) *Strauss Brothers*, Baltimore, Md. Application filed July 25, 1900.

7,736.—Title: "DIXIE SILESIA." (For Silesia.) *Strauss Brothers*, Baltimore, Md. Application filed July 25, 1900.

7,737.—Title: "MUCILAGE ON A STICK." (For Mucilage.) *Edward I. Root*, Denver, Colo. Application filed May 17, 1900.

7,738.—Title: "ALL UNION." (For Cigars.) *The Richardson-Weber Cigar and Tobacco Company*, Syracuse, N. Y. Application filed July 19, 1900.

7,739.—Title: "CLOISTER BEER." (For Bottled Beer.) *The Maumee Brewery Company*, Toledo, Ohio. Application filed July 25, 1900.

7,740.—Title: "OLYMPIA BEER." (For Bottled Beer.) *The Maumee Brewery Company*, Toledo, Ohio. Application filed July 25, 1900.

7,741.—Title: "ST. GEORGE ALE." (For Bottled Ale.) *The Maumee Brewery Company*, Toledo, Ohio. Application filed July 25, 1900.

7,742.—Title: "PRIVATE SEAL." (For Liquors.) *H. Silverman*, Atlanta, Ga. Application filed July 26, 1900.

7,743.—Title: "RED OWL CHOP." (For Tea.) *Anthony Kelly & Co.*, Minneapolis, Minn. Application filed July 30, 1900.

7,744.—Title: "LITTLE DIXIE." (For Cheese.) *Samuel B. Koons*, Philadelphia, Pa. Application filed July 26, 1900.

7,745.—Title: "GOLD SEAL." (For Canned Corn.) *Robinson & Crawford*, Philadelphia, Pa. Application filed July 30, 1900.

7,746.—Title: "STRAWBERRY BEETS." (For Canned Beets.) *The United States Printing Company*, Cincinnati, Ohio, and New York, N. Y. Application filed July 30, 1900.

7,747.—Title: "MOTHERS PREPARATOR." (For a Medicine.) *A. Stocker Co.*, Des Moines, Iowa. Application filed July 30, 1900.

7,748.—Title: "U. S. ARMY AND NAVY TABLETS." (For a Medicine.) *Abraham Meyers*, New York, N. Y. Application filed November 14, 1899.

7,749.—Title: "KOMPOUND KAMPHOR PILLS." (For Pills.) *Sanitarium Supply Co.*, Scranton, Pa. Application filed July 30, 1900.

Print.

254.—Title: "FOSFO." (For a Tonic Drink.) *W. D. Egolf*, Mena, Ark. Application filed June 23, 1900.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business August 14, 1900.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. of applications awaiting action.
	In arrears—Under one month.			
250	VIII. Furniture, Beds, Store Furniture, etc.	Aug. 9	Aug. 7	85
217	XXXIII. *Designs, †Trade-Marks, ‡Labels and Prints, Optics.	Aug. 9	Aug. 1	31
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111	XXXII. Bottles and Jars, Carbonating Beverages, Refrigeration, Shipping and Storing Vessels, etc.	July 27	July 31	167
38	XXXV. Advertising, Baggage, Buckles, Buttons, and Clasps, Packing and Storing Vessels, etc.	July 27	July 30	100
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251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	July 17	July 19	133
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39	XXXI. Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	July 14	Aug. 2	123
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Under one month.			
‡Labels and Prints			

ISSUE OF AUGUST 21, 1900.

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Trade-Marks	1	No. 34,999.
Labels	15	No. 7,735 to No. 7,749, inclusive.
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Total issue	502	

TO CITIZENS OF THE UNITED STATES.

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Alabama	1		Nevada		
Arizona Territory			New Hampshire	5	
Arkansas	2	1	New Jersey	20	1
California	12		New Mexico Territ'y		
Colorado	9	1	New York	67	2
Connecticut	9		North Carolina	1	
Delaware			North Dakota	2	
District of Columbia	4		Ohio	28	4
Florida	2		Oklahoma Territ'y	2	
Georgia	1	1	Oregon	1	
Hawaii			Pennsylvania	69	3
Idaho			Rhode Island	18	
Illinois	41		South Carolina		
Indian Territory			South Dakota		
Indiana	9		Tennessee	3	
Iowa	11	1	Texas	10	
Kansas	5		Utah	3	
Kentucky	2		Vermont		
Louisiana	1		Virginia	5	
Maine			Washington		
Maryland	3	2	West Virginia	2	
Massachusetts	30		Wisconsin	5	
Michigan	5		Wyoming	1	
Minnesota	10	1	U. S. Army	1	
Mississippi	2		U. S. Navy		
Missouri	18		Total to citizens of the United States	418	17
Montana	2				
Nebraska	1				

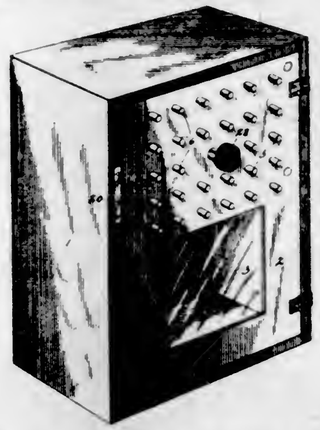
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina			Italy		
Australia			Japan		
Austria-Hungary	7		Java		
Barbadoes			Mexico	1	
Belgium	1		Netherlands	1	
Bermuda			New South Wales		
Brazil			New Zealand	1	
Canada	2		Norway		
Chile			Queensland		
China			Russia		
Costa Rica			Scotland		
Cuba			South African Republic		
Denmark			South Australia		
Egypt			Spain		
England	20		Sweden	1	
Finland			Switzerland		
France	6		Venezuela	1	
Germany	24		Victoria	1	
Guatemala					
Haiti			Total to citizens of foreign countries	66	
India					
Ireland					

PATENTS

GRANTED AUGUST 21, 1900.

656,157. PERMUTATION-LOCK. HANS A. ALM, Hankinson, N. D. Filed May 1, 1900. Serial No. 15,082. (No model.)



Claim.—1. In a permutation-lock for the purpose set forth, the combination of a support therefor, a sliding tumbler-plate having a plurality of slots therein in regular arrangement, a latch carried by and movable with said plate, a plurality of pins movable in said plate, a portion only operating to release the plate, a movable plate back of the pins, and a rotatable repressible spindle for moving the tumbler-plate to an unlocking position.

2. In a permutation-lock of the character set forth, the combination of a support, a sliding tumbler-plate, a latch carried by and movable with said plate, a plurality of pins extending freely through the said plate, a portion only of the said pins being operable to release the plate, a resetting-plate in rear of the pins and movable by and with the latter, and means for moving the tumbler-plate when the latter is free.

3. In a permutation-lock of the character set forth, the combination of a support, a sliding tumbler-plate having a locking device movable therewith, a plurality of pins movably extending through the plate, a portion of said pins being used for solving the combination, a resetting-plate in rear of the pins and the tumbler-plate, and a repressible spindle for moving the said resetting-plate and having a projection to engage the tumbler-plate.

4. In a permutation-lock of the character set forth, the combination of a support, a sliding tumbler-plate having a locking device movable therewith and provided with a series of slots, a plurality of pins movably extending through the plate and having grooves, the grooves of a part of the pins being in a different position from those of the others, a movable resetting-plate at the back of the support against which the rear ends of the pins contact, and means for shifting the said tumbler-plate when the latter is free to be so operated.

5. In a permutation-lock of the character set forth, the combination of a support, a tumbler-plate carrying a locking device, said plate having a plurality of slots therethrough, a plurality of grooved pins movable in the slots of said plate, the grooves of some of the pins being in a different position relatively to those of the others, and a movable resetting-plate engaging the rear ends of the pins and operated to restore the pins to normal position.

6. In a permutation-lock for the purpose set forth, the combination of a spring-actuated tumbler-plate with a plurality of slots therein having end enlargements, a plurality of grooved pins movable through said plate, the grooves in a part of the pins being in a position different from that of the others, a movable resetting-plate engaging the rear ends of the pins, and means for sliding said tumbler-plate on the pins when the latter is free to be so operated.

7. In a permutation-lock, the combination of a slidable tumbler-plate having a plurality of slots therein and a central opening, a latch-arm slidable on the said plate and also shiftable with the latter, a plurality of grooved pins freely movable in the said plate, the grooves of a part of the pins being in a position different from that of the others, a rotatable repressible spindle extending through the plate and having a movable resetting-plate connected to the rear thereof and also provided with a projection to operate the tumbler-plate, and means for returning the parts to normal position.

656,158. CONFINER OF WIRES FOR ELECTRICAL CONNECTIONS. CHARLES F. ASH, New York, N. Y. Filed Dec. 11, 1899. Serial No. 739,870. (No model.)



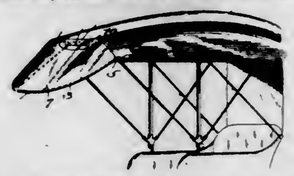
Claim.—1. A wire-confiner for electrical contacts consisting of a piece of resilient metal bent into the desired form, one end of which is permanently attached to the binding-post or similar part of the apparatus adjacent to the point of contact, the other end being adapted to automatically open for the release of the wire and to be closed upon the wire by the pressure of the thumb-screw or similar device, for the purposes set forth.

2. A wire-confiner for electrical contacts consisting of a piece of conductive metal rigidly attached to the binding-post or similar part of the apparatus at or near the points of contact, within which the end of the wire may be caught and prevented from dislodgment during the act of manipulating the thumb-screw, and which is adapted to be pressed upon the wire by the pressure of the thumb-screw, for the purposes set forth.

3. A wire-confiner for electrical contacts consisting of a strip of conductive material bent into the form of a hook, one prong whereof is attached at or near the points of contact, the other part being adapted to independent movement whereby the wire may be hooked over said part during the act of making the connection and held against displacement when the thumb-screw or similar part is manipulated, for the purposes set forth.

4. A wire confiner and guide for electrical contacts consisting of a strip of conductive material bent into hook-like form, one prong of which is rigidly attached to the binding-post or similar part of the apparatus, the other free end whereof is slotted to permit free passage through it of the threaded stem of the thumb-screw, for the purposes set forth.

656,159. BUGGY-TOP ATTACHMENT. PERRY G. AUSTIN, Hecla, Ind. Filed May 26, 1900. Serial No. 18,106. (No model.)



Claim.—1. In an attachment for vehicles, the combination, with a hinged frame, the ends of which are each provided with a hook, of brace-rods hinged to the intermediate portion of each side of the frame, a covering for the same provided with means for securing the attachment in position.

2. In an attachment for vehicles, the combination, with the vehicle-top, of a perforated plate secured to the central front portion thereof, buttons upon the front bow, a flexible hinged frame, the ends of which are formed into loops and adapted to engage with the front bolts of the

top braces, brace-rods pivotally secured to the intermediate portion of each half of the frame, the rear ends of which enter the openings in said plate, and a waterproof covering secured at its forward edge to said frame and having its rear end provided with buttonholes for engaging the buttons on top of the bow.

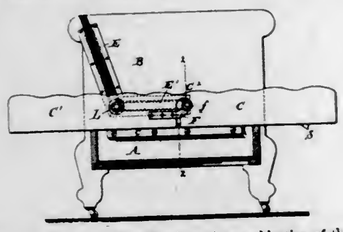
656,160. WATCHMAKER'S TOOL. CHARLES A. BASSETT, Anderson, Ind. Filed Dec. 22, 1899. Serial No. 741,266. (No model.)



Claim.—1. A body having its end bent laterally and then back to present said terminal portion at right angles to the main part of the body, said end terminating with an enlargement or knob, a bar resting normally on said transverse terminal portion and pivotally secured to it to permit the bar to be turned out of alinement and back, and a locking-bar having sliding attachment with the main portion of the body and having a spring by which it is pressed endwise into contact with the transverse end portion of said body, as and for the purposes specified.

2. In a tool for the purposes specified, a body having a handle at one end and having its other end bent laterally and then back to present that terminal portion at right angles to the main part of the body, said right-angled portion having beveled notch opposite the main body and having a knobbed terminal, a bar resting normally upon said transverse end portion of the body and pivotally secured at its end thereto and having a knob at its free end, and a locking-bar having sliding attachment to the main portion of the body and having a spring by which it is pressed endwise into contact with the transverse body portion, said bar having its end notched and having an under-side lug near the notched end, all substantially as described and for the purposes specified.

656,161. SOFA-BED. FREDERICK BENNETT, New York, N. Y., assignor to the Hale & Kilburn Manufacturing Company, of Pennsylvania. Filed June 16, 1900. Serial No. 20,503. (No model.)



Claim.—1. In an article of furniture the combination of the main frame and end frames having oblique guides, a movable back-cushion having guide rollers or projections at or about the middle of its ends working in the oblique guides, horizontal racks, pinions meshing with the racks, shafts carrying the pinions and journaled on the back-cushion so as to move it, and springs having one end attached to the shafts and the other end to the cushion, whereby the tendency of the spring to unwind rotates the pinion and assists in shifting the cushions.

2. In articles of furniture the combination of the main frame and end frames having oblique guides, a movable back-cushion having guide rollers or projections at or about the middle of its ends working in the oblique guides, horizontal racks, pinions meshing with the racks, shafts carrying the pinions and journaled on the back-cushion so as to move it, springs having one end attached to the shaft and the other end to the cushion, whereby the tendency of the spring to unwind rotates pinion and assists in shifting the cushion, and locking mechanism to lock the pinions and their shafts against rotation after a given number of revolutions.

3. In an article of furniture, the combination of the main frame and end frames having oblique guides, a movable back-cushion having guide rollers or projections at or about the middle of its ends working in the oblique guides, horizontal racks secured to the end frames, pinions meshing with the racks, shafts carrying the pinions and journaled on the back-cushion so as to move it and having screw-threaded ends, springs having one end attached to the shaft and the other end to the cushion, whereby the tendency of the springs to unwind rotates the pinions and assists in shifting the cushion, and locking mechanism to lock the pinions and their shafts against rotation after a given number of revolutions, consisting of locking-nuts working on the screws, and guides for the nuts to prevent them rotating.

4. In articles of furniture, the combination of the main frame structure, a shifting back-cushion guided on the main frame from an upright to a horizontal position and vice versa, a rack secured to the main frame structure, a pinion meshing with the rack, a shaft secured to the pinion and carried in bearings connected and moving with the cushion, and spring mechanism for rotating the shaft and pinion to assist in shifting and raising the back-cushion.

5. In articles of furniture, the combination of the main frame structure, a shifting back-cushion guided on the main frame from an upright to a horizontal position and vice versa, a rack secured to the main frame structure, a pinion meshing with the rack, a shaft secured to the pinion and carried in bearings connected with and moving with the cushion, spring mechanism for rotating the shaft and pinion to assist in shifting and raising the back-cushion, and means to lock the shaft and pinion after the spring causes them to make a given number of revolutions.

656,162. FLOOR-COVERING. EMILE BERLINER, Washington, D. C. Filed Dec. 5, 1899. Serial No. 739,232. (No specimens.)



Claim.—1. A floor-covering composed of matting backed by a material which fixes its fibers, said matting having apertures therein, and pieces of matting correspondingly backed, inserted in and filling the apertures in a displaced position, substantially as described.

2. A floor-covering composed of a matting backed by a material which fixes its fibers, said matting having apertures therein, pieces of matting correspondingly backed inserted in and filling the apertures in a displaced position and additional backing to which the parts are secured, substantially as described.

656,163. FLOOR-COVERING. EMILE BERLINER, Washington, D. C. Filed Feb. 21, 1900. Serial No. 5,998. (No specimens.)

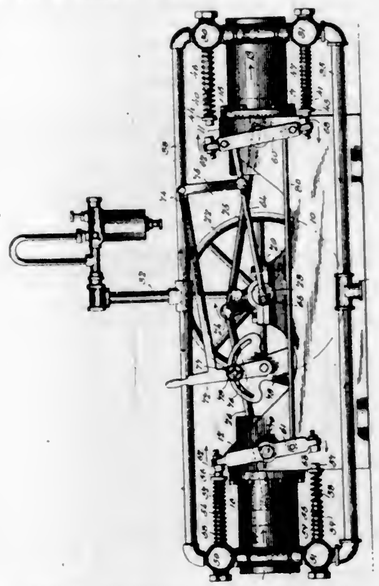


Claim.—1. A floor-covering composed of a wearing-surface of matting and a backing of dried paper-pulp anchored in the interstices thereof, substantially as described.

2. A floor-covering composed of a wearing-surface of matting and a backing of dried waterproofed paper-pulp anchored in the interstices thereof, substantially as described.

656,164. VALVE-GEAR FOR ENGINES. ANDREW W. J. BEST, Macon, Ga. Filed Nov. 17, 1899. Serial No. 737,308. (No model.)

Claim.—1. In a steam-engine, the combination with oppositely-disposed cylinders and a common crank-shaft, of pistons in the cylinders connected with the crank-shaft, a steam-supply pipe connected with the cylinders, valves between the supply-pipe and the cylinders, an exhaust-pipe connected with the cylinders, valves between the cylinders and the exhaust-pipe and rockers operatively connected with the crank-shaft and adapted to open an inlet-valve and an outlet-valve simultaneously and alternately with the opening of the remaining inlet and outlet valves.



2. In an engine, the combination with oppositely-disposed cylinders, and a crank-shaft, of pistons in the cylinders, pitmen connected with the pistons and with the crank-shaft, steam supply and exhaust pipes connected with the cylinders, inlet-valves between the supply-pipes and the cylinders, outlet-valves between the exhaust-pipes and the cylinders, mutually-connected rockers adjacent the cylinders and adapted to open an inlet-valve and an exhaust-valve simultaneously, and alternately with the opening of the remaining inlet and outlet valves, and connections between the crank-shaft and one of the rockers for moving the rockers.

3. In a steam-engine, the combination with cylinders and a crank-shaft, of pistons within the cylinders and connected with the crank-shaft, steam supply and exhaust pipes connected with the cylinders, inlet-valves between the supply-pipes and the cylinders, outlet-valves between the exhaust-pipes of the cylinders, pivoted rockers having mutual connection and adapted to operate the inlet and outlet valves, a connecting-rod connected with one of the rockers and with the crank-shaft to move the rocker, and means for shifting the connecting-rod with respect to the attached rocker to reverse the engine.

656,165. ELECTRIC GENERATING APPARATUS. JOHN H. BICKFORD, Salem, Mass. Filed Dec. 8, 1899. Serial No. 739,677. (No model.)

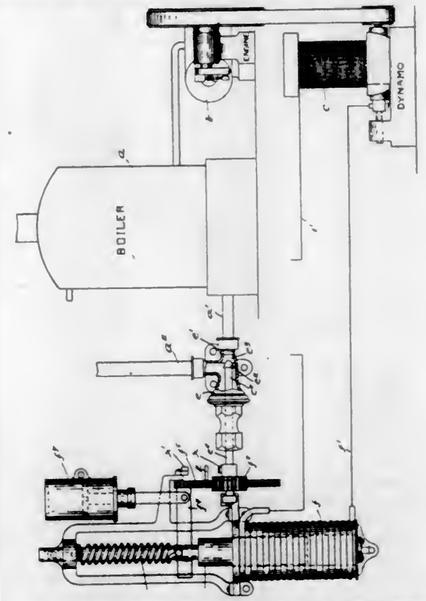
Claim.—1. An electric generating apparatus comprising a power generating and converting apparatus, the energizing agent of which is developed by heat, a dynamo, and a controlling device operated by the circuit of said dynamo for varying the supply of energizing agent to said generating and converting apparatus, whereby the output of said generating and converting apparatus may be varied to compensate for variations in the output of the dynamo, substantially as described.

2. An electric generating apparatus comprising a steam-generator, engine and dynamo, a burner for said steam-generator and means for controlling the supply of fuel to said burner which is operated by the circuit of said dynamo, substantially as described.

3. An electric generating apparatus comprising a steam-generator, engine and dynamo, a burner for said steam-generator and automatic means for controlling the supply of fuel to said burner which is controlled by the circuit of said dynamo, substantially as described.

4. An electric generating apparatus comprising a steam-generator, engine and dynamo, a burner for said steam-generator, a valve for controlling the supply of fuel to said burner and means for operating said valve operated by the circuit of said dynamo, substantially as described.

5. An electric generating apparatus comprising a steam-generator, engine and dynamo, a burner for said steam-generator, a valve for controlling the supply of fuel to said burner, an electromagnetic device operated by the circuit of said dynamo, the armature of which is connected with and adapted to operate said valve, substantially as described.



6. An electric generating apparatus comprising a steam-generator, engine and dynamo, a burner for said steam-generator, a valve controlling the supply of fuel to said burner and automatic means for operating said valve operated by the circuit of said dynamo and means for operating said valve independently of said automatic means, substantially as described.

7. In an electric generating apparatus comprising a steam-generator, engine and dynamo, a burner for said steam-generator, a valve controlling the supply of fuel to said burner and automatic means for operating said valve operated by the circuit of said dynamo and means for operating said valve independently of said automatic means, which also serves as and constitutes means for throwing said automatic means into action, substantially as described.

8. An electric generating apparatus comprising a steam-generator, engine and dynamo, a burner for said steam-generator, a valve controlling the supply of fuel to said burner, automatic means for operating said valve operated by the circuit of said dynamo and means for opening said valve independently of said automatic means which is in turn operated automatically to close said valve, substantially as described.

9. An electric generating apparatus comprising a steam-generator, engine and dynamo, a burner for said steam-generator, a valve controlling the supply of fuel to said burner, automatic means for operating said valve operated by the circuit of said dynamo and means for opening said valve independently of said automatic means which serves as a means for throwing said automatic means into action and which is in turn operated by said automatic means to close said valve, substantially as described.

10. An electric generating apparatus comprising a steam-generator, engine and dynamo, a burner for said steam-generator, a valve for controlling the supply of fuel to said burner, an electromagnetic device operated by the circuit of said dynamo and means for connecting the armature of said electromagnetic device with said valve whereby said valve will be operated by said electromagnetic device, substantially as described.

11. An electric generating apparatus comprising a steam-generator, engine and dynamo, a burner for said steam-generator, a valve for controlling the supply of fuel to said burner, an electromagnetic device operated by the circuit of said dynamo and means for operating said valve and for also connecting the armature of said electromagnetic device with said valve, substantially as described.

12. An electric generating apparatus comprising a steam-generator, engine and dynamo, a burner for said steam-generator, a valve for controlling the supply of fuel to said burner, an electric magnetic device operated by the circuit of said dynamo and means for connecting the armature of said electromagnetic device with said valve whereby said valve

will be operated by said electromagnetic device, said means comprehending an automatic device for closing said valve when the armature returns to its retracted position, substantially as described.

656,166. MACHINE FOR CUTTING TEETH OF GEARED WHEELS. HUGO BILGRAM, Philadelphia, Pa. Filed Dec. 27, 1898. Serial No. 700,311. (No model.)



Claim.—1. In a machine for cutting gear-wheels, in combination, a tool adapted to cut intermittently, an arbor adapted to hold the blank to be cut, means for intermittently imparting a spacing-movement to the said arbor during the interval between two cuts of said tool and a feeding mechanism controlling the relative position of the tool and the blank to be cut.

2. In a machine for cutting gear-wheels, in combination, a tool, means for imparting to the said tool a reciprocating cutting movement, an arbor adapted to hold the blank to be cut, means for intermittently imparting a spacing movement to the said arbor simultaneously with the return stroke of the tool and a feeding mechanism controlling the relative position of the tool and the blank to be cut.

3. In a machine for cutting gear-wheels, in combination, a tool, means for imparting to the said tool a reciprocating cutting movement, means for lifting the tool, during its return stroke, clear of the teeth of the wheel to be cut, an arbor adapted to hold the blank to be cut, means for intermittently imparting a spacing movement to the said arbor simultaneously with the return stroke of the tool and a feeding mechanism controlling the relative position of the tool and the blank to be cut.

4. In a machine for cutting gear-wheels, in combination, a tool, means for imparting to said tool a reciprocating cutting movement, means for lifting the tool, during its return stroke, clear of the teeth of the wheel to be cut, an arbor adapted to hold the blank to be cut and to be set at an angle with the line of the cutting movement of the tool, means for intermittently imparting a spacing movement to the said arbor simultaneously with the return stroke of the tool and a feeding mechanism controlling the relative position of the tool and the blank to be cut.

5. In a machine for cutting gear-wheels, in combination, a tool, means for imparting to the said tool a reciprocating cutting movement, means for imparting to the said tool a feed movement approximately at right angles to the cutting movement, an arbor adapted to hold the blank to be cut, and means for intermittently imparting to the said arbor, during the return stroke of the tool, a spacing movement which shall slightly differ from the exact distance between the teeth to be cut in the blank, said difference corresponding to the feed movement of the tool.

6. In a machine for cutting gear-wheels, in combination, a tool, means for imparting to said tool a reciprocating cutting movement, means for imparting to said tool a feed movement approximately at right angles to the cutting movement, means for lifting the said tool, during its return stroke, clear of the teeth of the wheel to be cut, an arbor adapted to hold the blank to be cut, and means for intermittently imparting to said arbor, during the return stroke of the tool, a spacing movement which shall slightly differ from the exact distance between the teeth to be cut in the blank, said difference corresponding to the feed movement of the tool.

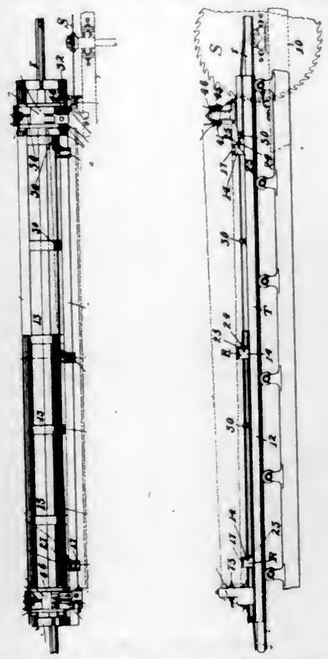
7. In a machine for cutting gear-wheels, in combination, a tool, means for imparting to the said tool a reciprocating cutting movement, means for imparting to the said tool a feed movement approximately at right angles to the cutting movement, and means for lifting the said tool, during its return stroke, clear of the teeth of the wheel to be cut, an arbor adapted to hold the blank to be cut and to be set at an angle with the line of the cutting movement of the tool, and means for intermittently imparting to the said arbor, during the return stroke of the tool, a spacing movement which shall slightly differ from the exact distance between the teeth to be cut in the blank, said difference to correspond to the feed movement of the tool.

8. In a machine for cutting spiral gears, in combination, a tool, means for imparting to the said tool a reciprocating cutting movement, means for imparting to the said tool a feed movement approximately at right angles to the cutting movement, an arbor adapted to hold the blank to be cut and to be set at an angle with the line of cutting movement of the tool, and means for imparting to the said arbor a feed movement corresponding to the feed movement of the tool.

656,167. COMPOSITION OF MATTER. ERNST BUSHMAN, New York, N. Y., assignor of one-fourth to William Bucknor, same place. Filed Nov. 10, 1899. Serial No. 736,522. (No specimens.)

Claim.—The above-described composition of matter consisting of silicate of soda, caustic potash, aluminium and water in the proportions specified, substantially as described and for the purpose specified.

656,168. WOOD-SAWING MACHINE. THERON S. CARROLL, Winsted, Conn. Filed Oct. 6, 1899. Serial No. 732,749. (No model.)



Claim.—1. In a machine of the class specified, the combination, with a saw, of a table for supporting the work; a laterally-adjustable head-stock embodying a spindle upon which one end of the work is sustained; means carried by the spindle for engaging the work and for preventing the movement thereof relatively to said spindle during the sawing operation; a slide carried by the head-stock in which slide said spindle is mounted; means for independently adjusting said slide; means for rotating the spindle to adjust the work; a laterally-adjustable tail-stock adapted to sustain the other end of the work; and a laterally-adjustable slide on which said tail-stock is mounted.

2. The combination, with a saw, of a table for supporting the work; a head-stock adjustable laterally of the table and adapted to sustain one end of the work; a laterally-adjustable tail-stock; a block on said tail-stock, carrying a center adapted to sustain the other end of the work; an independent laterally-adjustable slide, having a series of recesses, for supporting said tail-stock; and a pin for securing the independent slide in its adjusted position.

3. The combination, with a saw, of a table for sustaining the work; a head-stock adjustable laterally of the table; an index between the head-stock and table, for determining the position of the work near the head end thereof; a laterally-adjustable tail-stock having a center adapted to sustain the other end of the work; a slide supporting said tail-stock; an index for positioning the tail-stock to correspond to the head-stock; and an index for positioning said tail-stock to determine the line of taper upon which the work shall be sawed.

4. The combination, with a saw, of a table for sustaining the work; a laterally-adjustable head-stock having ways; an independent slide located in the ways of said head-stock and carrying a center and holding devices for supporting one end of the work; means for adjusting said slide; means for adjusting the center in a rotary direction thereby to turn the work to the desired position; a tail-stock for sustaining the other end of the work; a transversely-movable slide on which said tail-stock is adjustably held; and means for adjusting said slide laterally of the table.

5. The combination, with a saw, of a table for sustaining the work; a laterally-adjustable head-stock having ways; a slide mounted in said ways; a center mounted for rotary adjustment in the slide and carrying a face-plate equipped with devices for engaging one end of the work and preventing the movement of the same on said center; means for imparting a rotary adjustment to said center and face-plate; a laterally-adjustable tail-stock adapted to hold the other end of the work; a series of rests; and means for independently or simultaneously adjusting said rests in a vertical direction.

6. The combination, with a saw, of a table for sustaining the work; a head-stock adapted to hold one end of the work; a tail-stock adapted to hold the other end of the work and adjustably held on the tail-slide; a tail-slide adjustable laterally of the table; a rest for the work, shiftable longitudinally of the table; and means for vertically adjusting said rest.

7. The combination, with a saw, of a table for receiving the work; a laterally-adjustable head-stock adapted to hold one end of the work; a laterally-adjustable tail-stock adapted to hold the other end of the work; a series of individual work-supporting rests separately shiftable longitudinally of the table; means for simultaneously adjusting said rests; and means whereby the rests may be independently adjusted.

8. The combination, with a saw, of a table for sustaining the work; a head-stock adapted to hold one end of the work; a tail-stock adapted to hold the other end of the work; a series of individual, separated work-supporting rests separately shiftable longitudinally of the table; and means including rack and worm-wheel mechanisms for vertically adjusting each individual rest.

9. The combination, with a saw, of means for supporting the work; a table; a series of rests for sustaining the work, shiftably mounted on said table, and means whereby said rests may be either simultaneously or individually adjusted.

10. The combination, with means for cutting the work, of a table; a rest mounted thereon and comprising a block, a rack adapted for movement in said block, a worm meshing with said rack, and a platen supported by the rack.

11. The combination, with means for sawing the work, of a table; a rest mounted thereon and comprising a recessed block; racks mounted in the recesses of said block; means for simultaneously adjusting said racks and platens supported by the racks.

12. The combination, with a saw, of means for supporting the work; a table; a rest mounted thereon and comprising a block; racks mounted in recesses of said block; a worm engaging the racks for adjusting the same; and a platen supported by the racks.

13. The combination, with a saw, and with means for supporting the work, of a table; a rest mounted thereon and comprising a block; racks mounted in recesses of said block; a worm engaging the racks for adjusting the same; platens supported by the racks; and means for operating the worm.

14. The combination, with a saw, of a table for sustaining the work; a head-stock for holding one end of the work; a tail-stock for holding the other end of the work; a slide on which said tail-stock is adjustably held; means for laterally adjusting said slide; a rest for the work, having a platen, said rest being shiftable longitudinally of the table; and worm-and-rack mechanism for adjusting said rest.

15. The combination, with a saw, of a table for sustaining the work; a laterally-adjustable head-stock mounted on one end of the table and having ways; a slide vertically adjustable in said ways; a center-spindle mounted for rotary adjustment in said slide; a worm and worm-gear for adjusting said spindle; a tail-stock mounted on the other extremity of the table; a slide adjustable laterally of the table; an independently-adjustable slide carrying the tail-stock; a series of separated rests for supporting the work intermediate its ends; and means for simultaneously or individually adjusting said rests.

16. The combination, with a saw, of a table for sustaining the work; a laterally and longitudinally adjustable head-stock mounted on ways at one end of said table; a laterally and longitudinally adjustable tail-stock mounted at the other end of said table; an adjustable slide carried by the head-stock; a center-spindle mounted in said slide; means for adjusting said spindle in a rotary direction; an independent slide mounted in ways on the tail-stock; means for adjusting said slide; and a series of separated, adjustable rests located between said head and tail stocks for sustaining the work.

17. In a machine for sawing logs to taper form, the combination, with a table for sustaining the work, of a head-stock located at one end of said table and adjustable on ways thereof; a laterally-adjustable slide constituting a part of the head-stock; an independent slide vertically adjustable on ways of the first-named slide; a center-spindle mounted for rotary adjustment in said independent slide; a tail-stock mounted for adjustment longitudinally of the table-ways; a slide constituting a part of said tail-stock; means for laterally adjusting said slide; a block carrying a tail-center mounted in ways carried by the tail-stock; means for vertically adjusting said block; a series of rests each carrying a platen; and mechanisms for simultaneously adjusting said rests.

18. In a machine of the class specified, the combination, with a table, of a head-stock mounted near one end thereof; a slide constituting a part of the head-stock and having a projecting portion carrying ways; an independent slide fitted on said ways; a rotary center-spindle mounted in the independent slide; a laterally-adjustable tail-stock; a center carried by the tail-stock; means for vertically adjusting said center; a series of separated rests; and means for adjusting said rests.

656,169. HARNESS ATTACHMENT FOR LOOMS. PATRICK CASSIDY, Salem, Mass. Filed Oct. 14, 1899. Serial No. 733,631. (No model.)



Claim.—1. In a loom, the combination with the upper roller of the harness-motion, of an extension-arm secured thereto in line with the roller, a cross-arm secured on the extension, and selvage-heddles connected to the ends of the cross-arm, substantially as described.

2. In a loom, the combination with the selvage-heddles, of an oscillating cross-arm, a bracket secured to the frame of the loom carrying two rollers or spools, a strap connecting one heddle with one end of the cross-arm direct and a strap connecting the other heddle with the other end of the cross-arm and passing under one and over the other spool or roller, substantially as described.

3. In a loom, the combination with the upper harness-motion roller, and the usual strap connecting it with the harness, of an extension-arm fitted at one end over the roller, a set-screw securing both the strap and extension to the roller, and a cross-arm secured to the extension-arm and carrying the selvage-heddles, substantially as described.

4. In a loom, the combination with the upper harness-motion roller, of an extension-arm secured thereto in line with the roller and longitudinally slotted, a cross-arm on the extension adapted to carry the selvage-heddles, and a screw-bolt passing through the slot of the extension-arm, having a head fitting over the cross-arm, and a nut threaded on the bolt; whereby the cross-arm is securely but adjustably clamped upon the extension, substantially as described.

5. In a loom, the combination with the harness-motion roller and an arm in line therewith, removably secured thereon, and longitudinally slotted, of a cross-arm comprising two wires bent to form parallel arms and hooked ends, said arms being positioned across the extension-arm, a bolt passing through the slot of the extension and provided with a hooked head to hold the wires, and a nut for clamping the bolt, substantially as described.

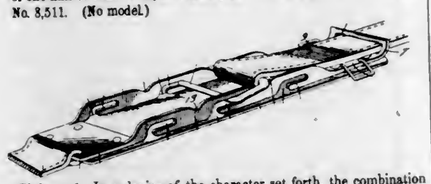
6. In a loom, a selvage-harness motion comprising the harness-motion roller, an extension-arm secured thereto and in line therewith, a cross-arm on the extension, straps attached at the ends of the cross-arm, selvage-heddles suspended by said straps, a bracket attached to the floor or other basic support, a roller therein, and a strap attached to the lower edges of the selvage-heddles and passed around said roller, substantially as described.

7. The combination, with a loom, of an arm, one end of which is provided with means for securing it to the harness-roller, and the other end is provided with a cross-arm, said cross-arm being provided with means for connecting the selvage-harness therewith, and means for adjusting the length of the cross-arm and also adjusting it relatively to the first-mentioned arm.

8. In an attachment for looms the combination, with an arm, one end of which is provided with means for detachably connecting it with the harness-roller and the other end is slotted longitudinally, a bolt through said slot, of two wires secured under the head of said bolt, the outer end of each of which is formed into a lock by means of which the selvage-harness is connected therewith.

9. In an attachment for looms the combination, with an arm, one end of which is provided with means for securing it to the harness-roller and the other end is provided with means for connecting the straps of the selvage-harness thereto, of a bracket provided with two rollers and with means for detachably securing it to the arch of the loom, said rollers being so arranged that one of said straps may pass under one and over the other.

656,170. HAME-TUG. WILLIAM H. CESSNA, Macon, Mo., assignor of one-half to John M. Dyson, same place. Filed Mar. 13, 1900. Serial No. 8,511. (No model.)



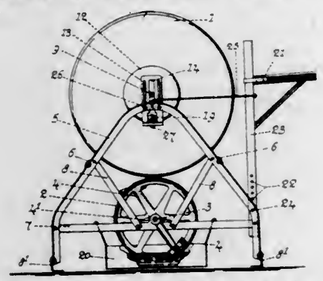
Claim.—1. In a device of the character set forth, the combination of parallel-spaced side bars having longitudinal seat-slots having throats opening through the inner edges, said bars being rigidly connected at their opposite extremities, a movable device applied over the edges of the bars, and a trace carrying a loop adjustably engaging said side bars and removably fitting the said seat-slots.

2. In a device of the character set forth, the combination of parallel-spaced side bars rigidly connected at their opposite extremities and having longitudinally-disposed seat-slots therein opening through the inner edges of the bars, the latter also having intermediate depressions in the opposite edges, a movable device applied over the edges of the bars through which the seat-slots open, and a trace having a loop movably connected to the forward end to removably engage the said seat-slots.

3. In a device of the character set forth, the combination of oppositely-disposed parallel side bars spaced apart from each other and having receptive devices in transverse alinement, movable means applied over the inner edges of the said bars, and a trace having movement and disposal between the bars and provided with a loop to removably and adjustably engage the said receptive devices.

4. In a device of the character set forth, the combination of oppositely-disposed rigidly-connected bars in spaced parallel relation having a plurality of seat-slots opening through the inner edges thereof, a trace having a loop for removable entrance into said seat-slots, and a yielding covering loosely mounted against the inner edges of said bars.

656,171. GRINDSTONE. WILLIAM H. CLAPP, Auburn, N. Y. Filed Mar. 28, 1899. Serial No. 710,850. (No model.)



Claim.—1. In a grindstone resting on the face of and frictionally rotated by a water-supplying friction-wheel 2, and having disks 12, 12′, mounted on its shaft 9, the combination of the vertically-adjustable stands 13, carried on the side pieces 5, 5, of the framework and having the ribs 13′, 13′, on their inner or grindstone sides adapted to admit the vertical movement between them, of the shaft 9, and to keep the same in working place, the slots 15, 15, adapted for their vertical adjustment and the feet 16, with the horizontally-adjustable roller-plates 17, having the slots 18, and the pivoted rollers 19, substantially constructed in the manner and for the purpose herein described and shown.

2. In a grindstone resting on the face of and frictionally rotated by a water-supplying friction-wheel 2, the shaft 9, carrying the disks 12, 12′, centrally on either side of said grindstone in combination with the vertically-adjustable stands 13, carried on the side pieces 5, 5, of the framework and having the ribs 13′, 13′, on their inner or grindstone sides adapted to admit the vertical movement, between them, of the shaft 9, and to keep the same in working place, the slots 15, 15, adapted for their vertical adjustment, the feet 16; and the horizontally-adjustable roller-plates 17, having the slots 18, and the pivoted rollers 19, rotating on the outer side of said disks 12, 12′, in the manner and for the purpose herein described and shown.

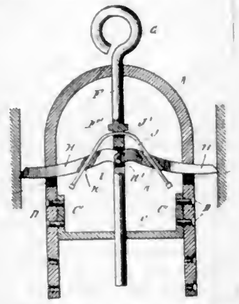
656,172. VEHICLE-TIRE FASTENER. JAMES R. COLT, Batavia, N. Y. Filed Apr. 14, 1900. Serial No. 12,868. (No model.)

Claim.—1. In a vehicle-wheel, the combination, with a rim provided with flaring wings, of an elastic tire seated therein, the base of which is provided with a longitudinal groove, and the sides of which are provided with a laterally-extending rib to overlap the corresponding wings of the tire, of two flat insulated metallic bands in the main portion of the tire, the inner edges of which are outside of a vertical line drawn from the groove in the base, and the outer edges overhang the bottom portion of said wings, the sides of the tire overlapping the upper portion of said wings, substantially as described.



2. In a vehicle-wheel, the combination, with a rim provided with flaring wings, of an elastic tire seated therein, the base of which is provided with a semicylindrical groove extending longitudinally thereof, and the main portion is provided with two flat metallic bands, and a piece of canvas secured to the base of the tire, so as to span or lap over said groove, substantially as described.

656,173. SAFETY-BAIL FOR WELL-BUCKETS. HENRY N. CRAWFORD, Topisaw, Miss., assignor of one-half to Needham E. Ball, Magnolia, Miss. Filed Oct. 5, 1899. Serial No. 732,684. (No model.)



Claim.—1. The combination with the inverted-U-shaped frame provided with vertical slots in its parallel legs, of a vertical draft-rod slidably mounted in said bail and provided with a vertical slot in the same plane with the vertical slots of the legs, a pair of pawls having their outer ends in the vertical slots of the bail and their inner ends in the slot of the draft-bar, a pin pivotally connecting the inner ends of the pawls together, and a spring passing through a slot in the draft-rod above the pawls and engaging in inclined slots in the pawls, substantially as described.

2. The herein-described safety-bail for well-buckets comprising an inverted-U-shaped frame provided with vertical slots in its upper end, a cross-brace having vertical ends secured to the legs of the frame and provided with a central vertical opening in line with the opening in the top of the bail, a vertical draft-rod slidably mounted in the vertical openings of the frame and brace and provided with a stop-flange between them, a pair of toggle-pawls pivoted together at their inner ends and to the draft-rod, and having their outer ends in vertical slots in the legs of the bail, said pawls having slots intermediate their ends and a spring-bar in an opening in the draft-bar having its outer ends projected into and slidably movable in the slots in the pawls, all combined and operating substantially in the manner and for the purpose set forth.

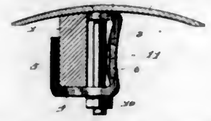
656,174. LANTERN ATTACHMENT. THOMAS M. CREPAR, Swan River, Minn. Filed Dec. 22, 1899. Serial No. 741,290. (No model.)



Claim.—1. A lantern attachment comprising an annular flange or collar, having glass-carrying frames hinged to opposite sides thereof, said hinges being provided with springs to normally hold them open and the chains for drawing the said frames together and surround the burner by the colored glass, substantially as shown and described.

2. A lantern attachment, the combination with an annular flange or collar having the upper edges thereof scalloped, of the essentially-semi-circular frames hinged thereto and carrying colored glass, the springs arranged in connection with the hinges to normally throw the frames upon the chains connected to the frames and adapted to close the same, the guide-eye through which the chains pass, and the rod to which the chains are connected, said rod passing through a slot in the base and provided with stops, substantially as described.

656,175. PLOW-CLIP. WILLIAM H. CURD and ORION V. HANGER, Dearborn, Va. Filed Apr. 7, 1900. Serial No. 12,029. (No model.)



Claim.—1. The combination with a standard, and a shovel, of a fastening-clip for the latter, comprising arms passing on opposite sides of the standard, a transverse head or bar connecting the arms at one end only of the clip, one arm fitting snugly the adjacent side of the standard, and the opposite arm having an inwardly-directed foot-flange, the outer side of which bears against the shovel, and its extremity bears against the opposite side of the standard, and a fastening securing the clip to the shovel.

2. The combination with a standard, and a shovel, of a fastening-clip for the latter, comprising arms passing on opposite sides of the standard, and a transverse head or bar connecting the arms at one end only of the clip, one arm having a terminal foot-flange bearing against the shovel and also against the adjacent side of the standard, and a fastening passing through the shovel, the foot-flange and the head of the clip.

3. The combination with a standard, and a shovel, of a fastening-clip therefor, comprising arms passing on opposite sides of the standard, and a transverse head or bar connecting the arms at one end only of the clip, one arm of the clip being longer than the other and made elastic, the terminal end of said elastic arm bearing against the rear side of the shovel, and a fastening device connecting the clip to the shovel and located between the elastic arm and the standard.

4. The combination with a standard, and a shovel, of a fastening-clip therefor, consisting of arms passing on opposite sides of the standard, and a transverse head or bar connecting the arms at one end only of the clip, one arm being longer than the other, bowed to form a spring-arm, and having its outer terminal end bearing against the rear side of the shovel, and a fastening device connecting the clip to the shovel and located between the spring-arm and the standard.

5. The combination with a standard, and a shovel, of a fastening-clip, consisting of arms passing on opposite sides of the standard, and a transverse head or bar connecting the arms at one end only of the clip, one arm being longer than the other and bearing against the rear side of the shovel, and also bowed to form a spring-arm, an inwardly-directed foot at the free end of the spring-arm and bearing against the adjacent side of the standard, and a bolt carried by the shovel and passing through the foot and the transverse head or bar of the clip.

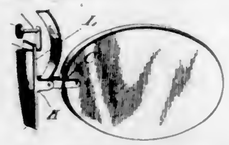
6. A cultivator-shovel fastening, consisting in a clip, having opposite sides or arms, a transverse head or bar connecting the arms at one end only of the clip, and an inwardly-directed foot-flange at the free end of one arm, said foot-flange and the transverse head or bar being provided with corresponding openings.

7. A cultivator-shovel fastening, consisting in a clip, having opposite sides or arms, and a transverse head or bar connecting the arms at one end only of the clip, one of the arms being longer than the other and bowed to form a spring-arm, an inwardly-directed foot-flange provided at the free end of the spring-arm, and the foot-flange and the transverse head or bar having corresponding openings formed therein and located adjacent to the inner side of the spring-arm.

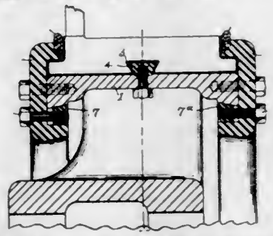
8. The combination with a standard, and a shovel, of a fastening-clip therefor, consisting in arms passing on opposite sides of the standard, a transverse head or bar connecting the arms at the outer end only of the clip, one arm being in contact with the adjacent side of the standard, and the opposite arm being longer than the former arm and also bowed transversely inward to form a spring-arm, an inwardly-directed foot-flange at the free end of the spring-arm and bearing against the adjacent side of the standard, and a longitudinal fastening passing through the transverse head or bar and the foot-flange and securing the clip to the shovel, the inner face of the bowed spring-arm being provided with a longitudinal groove to receive the fastening.

656,176. GUARD FOR EYEGLASSES. BERNARD P. CURRIER, Chicago, Ill. Filed Nov. 22, 1899. Serial No. 737,844. (No model.)

Claim.—The combination in a nosepiece for eyeglasses having a main part or bar, to the lower end of which is attached a thin flexible spring which passes along the front side of said bar to a point near the upper end thereof where said spring is bent backward passing through rectangular opening in said bar, and again bent upward in a direction parallel to that of said bar to receive a rivet set at right angles and extending outwardly, on the end of which rivet is a disk or nose-pad, and a nose-pad attached to said spring and extending from the lower end of same to its point of curvature for passing through rectangular opening in said bar, substantially as described herein.



656,177. COMMUTATOR. JOHN T. H. DEMPSTER, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed June 8, 1900. Serial No. 19,536. (No model.)



Claim.—1. A commutator for an electric machine, having its segments locked together at their bases between the ends of the bars by an insulated metallic fastening device to prevent buckling.

2. A commutator having its segments bound at a point between its ends by a fastening device bolted to the commutator-support to prevent buckling.

3. A commutator having its segments mechanically locked together between their ends by an insulated bar.

4. A commutator having its several segments provided with a keyway between the ends, and an insulated key threading the keyway secured to the commutator-support.

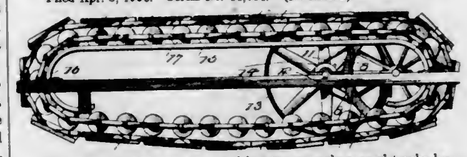
5. A commutator having its segments provided with an undercut groove in the base between the ends, and an insulated key extending circularly through the grooves, and means for binding the key to the commutator-support.

6. A commutator having its bars mechanically secured together in groups at a point between the ends of the bars.

7. A commutator having its bars mechanically secured together in groups at a point between the ends of the bars, the several groups being secured to the commutator-support.

8. A commutator having its bars secured in groups to a segmental bar of insulated metal, the several groups being bolted to the commutator-support.

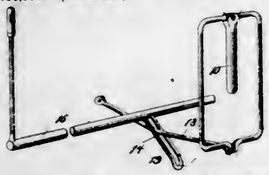
656,178. TREAD-POWER. TITUS D. DERSHIMER, Square Top, Pa. Filed Apr. 5, 1900. Serial No. 11,761. (No model.)



Claim.—A tread-power comprising transversely-spaced tracks having opposite curved end portions, independent endless antifriction devices supported by the said tracks and comprising chains and rollers mounted upon the link connections of the chains, side chains composed of alternately-arranged square-ended and bevel-ended links, transverse rods pivotally connecting transversely-alined links of the side chains, treads secured to the square-ended links, a shaft 6 at one end of the tread-power and concentric with the adjacent curved ends of the tracks, pulleys secured to the end portions of the said shaft and having notched projections and depressed portions intermediate of the said notched projections and pro-

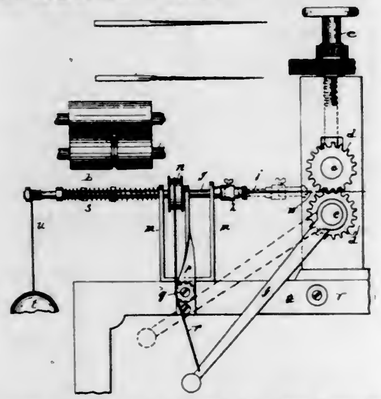
vided at one side with cog-gearing, and a shaft 12 parallel with the shaft 6 and geared to the cog-gearing of the pulleys thereof, and provided with a belt-pulley, substantially as described.

656,179. CAR-COUPLING. LEVI N. DOBBINS, Progress, W. Va., assignor of one-half to J. J. Stalnaker, same place. Filed Sept. 18, 1899. Serial No. 730,939. (No model.)



Claim.—In a car-coupler the combination with a substantially-rectangular yoke, the upper end of which is perforated at its middle, and the lower end is open and has its ends perforated and bent at an angle and lying parallel with each other, the sides of the yoke fitting loosely upon the opposite sides of the draw-bar, of a coupling-pin having its head bifurcated and pivotally secured to the yoke at said perforation, a lever pivotally secured at one end between the parallel ends of the yoke and having its opposite end secured beneath the car, and a rock-shaft journaled across under the end of the car, the central portion of which is provided with a link for engaging with the lever and each end is provided with a handle.

656,180. MACHINE FOR MANUFACTURING NERVE-BROACHES, &c. JAMES H. DOWNIE, Detroit, Mich. Filed May 25, 1900. Serial No. 17,924. (No model.)



Claim.—1. A machine for manufacturing a dental implement embodying in combination a pair of rolls to flatten a blank from which the implement is formed as it advances between the rolls, a reciprocatory twisting-shaft, means to engage a blank with the shaft, and means to simultaneously rotate said shaft and said rolls as the blank recedes from the rolls.

2. A machine for manufacturing a dental implement embodying in combination a pair of rolls to flatten a blank from which the implement is formed as it advances between the rolls, a reciprocatory twisting-shaft provided with means for engaging a blank therewith, a lever or handle connected with one of said rolls to actuate the rolls, and a cord connecting said lever or handle with said shaft to simultaneously rotate said shaft and said rolls as the blank recedes from the rolls.

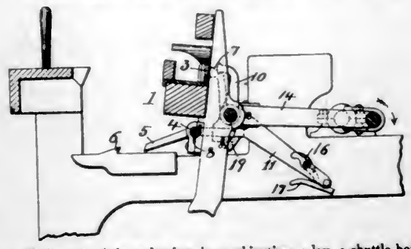
3. A machine for manufacturing a dental implement embodying in combination a pair of rolls, a lever or handle for rotating one of said rolls, gears upon the shafts of said rolls meshing the one with the other, a rotatable and reciprocatory twisting-shaft provided with means for engaging a blank therewith, means to simultaneously rotate said twisting-shaft and said rolls, said twisting-shaft provided with a tension device.

4. A machine for manufacturing a dental implement embodying in combination a pair of rolls geared one with the other, a handle or lever for operating said rolls, a twisting-shaft provided with means for engaging a blank therewith, a support for said twisting-shaft through which said shaft is reciprocatory, means to simultaneously rotate said shaft and said rolls, and a weight provided with a cord connecting the weight with said shaft.

5. A machine for manufacturing a dental implement embodying in combination a pair of rolls geared the one with the other to flatten a blank from which the implement is formed as it advances between the rolls, a lever or handle to operate said rolls, a reciprocatory twisting-shaft provided with means to engage a blank therewith, and a cord connecting said lever or handle with said shaft to simultaneously rotate said shaft and said rolls as the blank recedes from the rolls.

6. A machine for manufacturing a dental implement embodying in combination a pair of rolls arranged to receive a blank therebetween and flatten it as the rolls are rotated in one direction, and means to twist said blank as the rolls are rotated in the opposite direction.

656,181. SHUTTLE-CHECK FOR LOOMS. WILLIAM F. DRAPER, Hopedale, Mass. Filed Oct. 24, 1899. Serial No. 734,598. (No model.)



Claim.—1. A loom having, in combination, a lay, a shuttle-box, a binder, a warp-protector, a spring the force of which is substantially constant upon the shuttle when boxed so that it is then subject to light pressure, a shuttle-checking-pressure producer, which is independent of the warp-protector, which coöperates with the binder during the shuttle-boxing period, and the force of which is increased during said period, and means for automatically varying the force of said pressure-producer, substantially as set forth.

2. A loom having, in combination, a lay, a shuttle-box, a binder, a warp-protector having a spring the force of which is substantially constant upon the shuttle when boxed so that it is then subject to light pressure, a shuttle-checking-pressure producer which coöperates with the binder during the shuttle-boxing period and the force of which is increased during said period, and means for automatically varying the force of said pressure-producer, substantially as set forth.

3. A loom having, in combination, a lay, a shuttle-box, a binder, a warp-protector, a spring which applies a substantially constant and uniform but light pressure on the shuttle when boxed, a shuttle-checking-pressure producer for said binder which is independent of the warp-protector, which is brought into action after the lay starts on its forward movement, the force of which is gradually increased during the boxing period of the lay's forward motion, and which is taken off during the picking period of the lay's backward motion, and means for automatically operating said pressure-producer to apply, gradually increase and take off its pressure, substantially as set forth.

4. A loom having, in combination, a lay, a shuttle-box, a binder, a warp-protector having a spring which applies a substantially constant and uniform but light pressure on the shuttle when boxed, a shuttle-checking-pressure producer for said binder which is brought into action after the lay starts on its forward movement, the force of which is gradually increased during the boxing period of the lay's forward motion, and which is taken off during the picking period of the lay's backward motion, and means for automatically operating said pressure-producer to apply, gradually increase and take off its pressure, substantially as set forth.

5. A loom having, in combination, a lay, a shuttle-box, means for automatically inserting a fresh bobbin or cop in the shuttle, a binder, a shuttle-checking-pressure producer acting upon said binder to apply pressure to the shuttle, and means for automatically relieving said pressure on the binder while the fresh bobbin or cop is inserted, substantially as set forth.

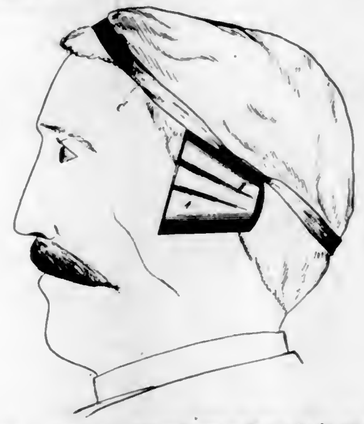
6. A loom having, in combination, a lay, a shuttle-box, means for automatically inserting a fresh bobbin or cop in the shuttle when the lay is at or near the forward limit of its movement, a binder, a shuttle-checking-pressure producer acting upon said binder to apply pressure to the shuttle, and means for automatically relieving said pressure on the binder during the forward stroke of the lay and before the lay reaches the position where the fresh bobbin or cop is inserted, substantially as set forth.

7. A loom having, in combination, a lay, a shuttle-box, a binder, means for automatically inserting a fresh bobbin or cop in the working shuttle when the lay is at or near the forward limit of its movement, a warp-protector having a spring which applies a substantially constant and uniform but light pressure to the shuttle, an independent shuttle-checking-pressure producer also acting on said binder, and in such a manner as to apply a gradually-increasing pressure during the boxing period of the lay's forward movement and to be taken off before the lay is at its position where the insertion of the bobbin or cop is effected, and to remain off during the picking period of the lay's backward stroke, and means for automatically operating said pressure-producer to apply, gradually increase and take off its pressure, substantially as set forth.

8. A loom having, in combination, a lay, a shuttle-box, a binder, a warp-protector which is actuated when the shuttle enters the box, a shuttle-checking-pressure producer independent of the warp-protector which is actuated to apply pressure to the binder after the lay has started on its forward stroke, and means for automatically actuating said pressure-producer, substantially as set forth.

9. A loom having, in combination, a lay, a shuttle-box, a binder, a warp-protector which is actuated when the shuttle enters the box, a shuttle-checking-pressure producer independent of the warp-protector the force of which is increased during the shuttle-boxing period, and means for automatically increasing the force of said pressure-producer, substantially as set forth.

656,182. SOUND-COLLECTOR FOR THE EARS. WILLIAM G. EBERHARDT, New York, N. Y. Filed Apr. 17, 1900. Serial No. 13,178. (No model.)

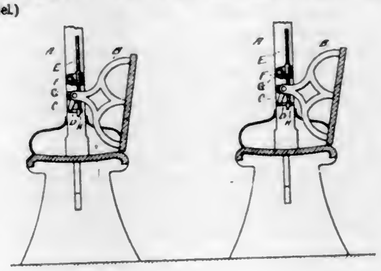


Claim.—1. The herein-described sound-collectors for the ears, said collectors being shaped like the half of a truncated cone, and being hollow and open at one side and at the larger end and provided at one side or edge with a keeper or loop, and a tape or band which is passed through said keeper or loop, substantially as shown and described.

2. The herein-described sound-collectors for the ears, consisting of devices which approximately resemble the half of a hollow truncated cone, which are open at one side, and at the larger end, and which are provided with means for securing them to the head so as to inclose the ears, substantially as shown and described.

3. The herein-described sound-collectors for the ears, consisting of hollow devices which are shaped like the half of a truncated cone, and which are open at one side and at the larger end, the smaller end being closed, said devices being provided with means for securing them to the head so as to inclose the ears, substantially as shown and described.

656,183. GATE FOR OPEN CARS. CRAWFORD M. FAIRBANKS, Central Falls, R. I. Filed Apr. 18, 1900. Serial No. 13,311. (No model.)



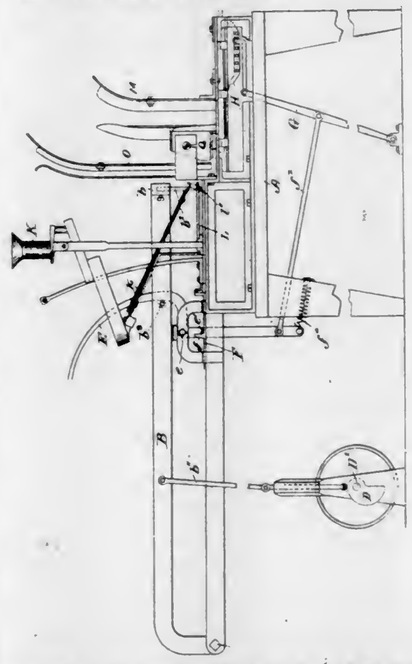
Claim.—1. A gate for cars, comprising a sliding pivoted bar, a pivoted fulcrum for guiding said bar in its reciprocations, and means for connecting said bar with the reversible seat-back of a car, whereby the bar will be raised or lowered according to the position of the reversible back of the seat.

2. In a gate for open cars, the combination of a car-standard and a reversible seat-back, of a gate-bar and pivoted socket inclosing said bar for guiding it in its movement, an arm secured to the end of the said bar, and an actuating-lever carried by the reversible seat-back and pivotally connected with the arm on the bar, whereby the gate-bar will be raised or lowered by the movement of the reversible seat-back, the socket permitting of a longitudinal as well as a pivotal movement of the said bar, substantially as described.

3. In an open-sided car having seats with reversible backs, the combination of a series of gate-bars, pivoted sockets for movably holding the said bars in position, arms upon the ends of the said bars, levers secured to the reversible seat-backs and pivotally connected with the arms on the gate-bars, sockets also secured to the ends of the gate-bars, the construction being such that when the seats are operated to lower the bars their free ends will rest in the sockets upon the ends of the adjoining bars, thereby locking the bars and the seats in position.

4. In an open-sided car having seats with reversible backs, the combination of a series of gate-bars, pivoted sleeves or sockets for loosely holding the bars in position, means connecting the ends of the bars with the reversible seat-backs, whereby the bars may be moved longitudinally and pivotally for raising or lowering them, and locking means interposed between the ends of the bars, the construction being such that intermediate seats cannot be turned over until the one in front of the same has been turned, substantially as described.

656,184. MACHINE FOR FASTENING STIFFENERS TO SHANKS. JAMES H. PASSETT, Nashua, and JOHN E. WARREN, Greenfield, N. H. Filed Nov. 1, 1899. Serial No. 735,546. (No model.)



Claim.—1. In a machine of the class described, a feeding mechanism made up of coöperating slides one of which carries the ejector-fingers and the shank-feeding fingers, and the other of which carries the stiffener-feeding fingers; mechanism for reciprocating one of said slides; and means by which the reciprocating motion of the driven slide is communicated to its coöperating slide.

2. In a machine of the class described, a feeding mechanism made up of coöperating slides, one of which carries the ejector-fingers and the shank-feeding fingers; and the other of which carries the stiffener-feeding fingers; mechanism for reciprocating one of said slides; and adjust-

able means, such as stop-screws, by which a reciprocating motion of the driven slide is communicated to its coöperating slide, and the position of the stiffener on the shank is determined.

3. In a machine of the class described, an automatic feeding mechanism made up of a hopper for the shanks; a hopper for the stiffeners; and coöperating slides, one of which carries the ejector-fingers and the shank-feeding fingers, and the other of which carries the stiffener-feeding fingers; mechanism for reciprocating one of said slides; and means by which the reciprocating motion of the driven slide is communicated to its coöperating slide.

4. In a machine of the class described, an automatic feeding mechanism made up of a hopper for the shanks; a hopper for the stiffeners; and coöperating slides, one of which carries the ejector-fingers and the shank-feeding fingers, and the other of which carries the stiffener-feeding fingers; mechanism for reciprocating one of said slides; and adjustable means, such as stop-screws, by which a reciprocating motion of the driven slide is communicated to its coöperating slide, and the position of the stiffener on the shank is determined.

5. In a machine of the class described, a feeding mechanism made up of coöperating slides, one of which carries spring-controlled ejector-fingers and shank-feeding fingers, and the other of which carries the stiffener-feeding fingers; mechanism for reciprocating one of said slides; and means by which the reciprocating motion of the driven slide is communicated to its coöperating slide.

6. In a machine of the class described, a feeding mechanism made up of coöperating slides, one of which carries the ejector-fingers and the shank-feeding fingers, and the other of which carries the stiffener-feeding fingers; mechanism for reciprocating one of said slides; means by which the reciprocating motion of the driven slide is communicated to its coöperating slide; and adjustable means, such as stop-screws, by which the travel of said slides is limited and the points of fastening of the shank to its stiffener determined.

7. In a machine of the class described, a feeding mechanism made up of coöperating slides, one of which carries the ejector-fingers and the shank-feeding fingers, and the other of which carries the stiffener-feeding fingers; mechanism for reciprocating one of said slides; means by which the reciprocating motion of the driven slide is communicated to its coöperating slide; and means for adjusting the position of the fingers on their carrier.

8. In a machine of the class described, the combination of a tack-feeding mechanism; a tack-driving mechanism; an anvil; a slidable shank-carrier; shank-feeding fingers mounted on said slidable carrier; ejector-fingers; stiffener-feeding fingers; and mechanism for reciprocating said slidable carrier.

9. In a machine of the class described, the combinatioo of a tack-feeding mechanism; a tack-driving mechanism; an anvil; a slidable shank-carrier; shank-feeding fingers mounted on said slidable carrier; ejector-fingers; stiffener-feeding fingers; mechanism for reciprocating said slidable carrier; and fingers for retaining the shank and stiffener in place upon each other on the anvil.

10. In a machine of the class described, the combination of a tack-feeding mechanism; a tack-driving mechanism; an anvil; an automatic feeding mechanism made up of a hopper for the shanks, a hopper for the stiffeners, coöperating slides, one of which carries the ejector-fingers and the shank-feeding fingers, and the other of which carries the stiffener-feeding fingers; mechanism for reciprocating one of said slides; and means by which the reciprocating motion of the driven slide is communicated to its coöperating slide.

11. A machine of the class described, made up of a supporting-base; a driving mechanism; a lever carrying plungers for driving tacks and reciprocated by said driving mechanism; an anvil; a tack-feeding mechanism comprising a hopper and chutes for leading the tacks to the tack-carriers, a cut-off permitting the tacks to drop from the tack-chutes into the tack-carrier, a tack-holder for receiving the tacks from the tack-carrier, and mechanism for reciprocating the tack-carriers between the tack-chutes and the tack-holder; and a feeding mechanism made up of coöperating slides, one of which carries the ejector-fingers and shank-feeding fingers, and the other of which carries the stiffener-feeding fingers, mechanism for reciprocating one of said slides, and means by which the reciprocating motion of the driven slide is communicated to its coöperating slide.

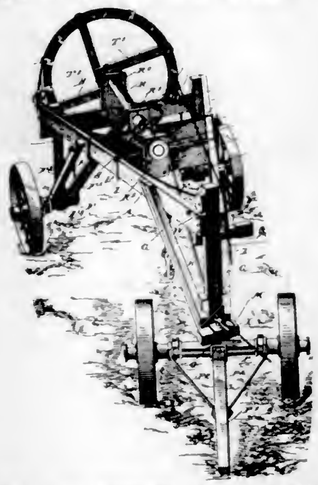
12. A machine of the class described made up of a supporting-base; a driving mechanism; a lever carrying plungers for driving tacks and reciprocated by said driving mechanism; an anvil; a tack-feeding mechanism comprising a hopper and chutes for leading the tacks to the tack-carriers, a cut-off permitting the tacks to drop from the tack-chutes into the tack-carrier, a tack-holder for receiving the tacks from the tack-carrier, and mechanism for reciprocating the tack-carriers between the tack-chutes and the tack-holder; and an automatic feeding mechanism comprising a hopper for the shanks, a hopper for the stiffeners, coöperating slides, one of which carries the ejector-fingers and the shank-feeding fingers, and the other of which carries the stiffener-feeding fingers, mechanism for reciprocating one of said slides, and means by which the reciprocating motion of the driven slide is communicated to its coöperating slide.

13. A machine of the class described made up of a supporting-base; a driving mechanism; a lever carrying plungers for driving tacks and reciprocated by said driving mechanism; an anvil; fingers which retain the stiffener in place upon its shank on the anvil; a tack-feeding mechanism comprising a hopper and chutes for leading the tacks to the tack-carriers, a cut-off permitting the tacks to drop from the tack-chutes into the tack-carrier, a tack-holder for receiving the tacks from the tack-carrier, and mechanism for reciprocating the tack-carriers between the tack-chutes and the tack-holder; and an automatic feeding mechanism comprising a hopper for the shanks, a hopper for the stiffeners, coöperating slides, one of which carries the ejector-fingers and the shank-feeding fingers, and the other of which carries the stiffener-feeding fingers, mechanism for reciprocating one of said slides, and means by which the reciprocating motion of the driven slide is communicated to its coöperating slide.

14. The herein-described cut-off for a tack-feeding mechanism comprising a thin plate slotted on one side; one of the walls of said slot being bent from its opposing wall sufficiently to allow a tack to pass through the slot between them.

15. The herein-described tack-holder for a tack-driving mechanism made of spring metal and having a shank portion by which the tack-holder is secured and a head portion for receiving and holding the tack; the sides of the tack-holder yielding when the plungers enter and closing to their original position when the plungers are withdrawn.

656,185. HAULING-TRUCK. FRANK W. FRITZ, Dewar, Iowa. Filed Dec. 30, 1899. Serial No. 742,029. (No model.)



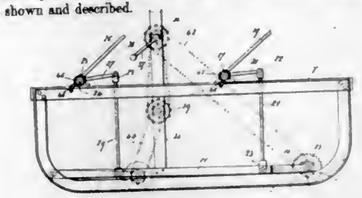
Claim.—1. In a hauling-truck, the combination, with a triangular frame provided with cross-pieces, of a wheeled standard at each corner of the frame, three sheaves, one at the forward end of the frame, one at the rear end and one at the lower end of the front standard, a shaft journaled on the rear end of the frame and on the cross-pieces, the forward end of which is adapted to receive a lifting-chain, a pulley-wheel mounted on the rear end of said shaft, the rim of which is adjacent to the rear sheave, and a rope over the pulley and through the sheaves, substantially as described.

2. In a hauling-truck, the combination with a frame, of a shaft journaled thereon, the forward portion of which is provided with lifting-chains and the rear end is provided with a wheel, the periphery of the wheel being provided with stops, guides on the frame adjacent to the said stops, a spring-actuated lever pivotally secured to the frame adjacent to the guides, a bar pivotally secured to the lever and projecting through the slides in position to engage with the stops on the wheel, a rod connected with the lever, and a rope around the operating-wheel, substantially as described.

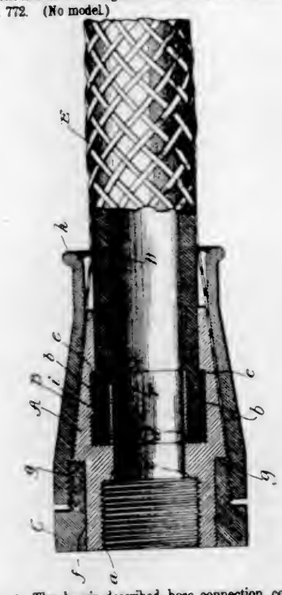
656,186. ICE-CUTTING VEHICLE. JAMES C. GREEN, Sergeantsville, N. J. Filed Oct. 17, 1899. Serial No. 733,872. (No model.)

Claim.—A vehicle of the class described, comprising a frame consisting of side members and cross members, said side members consisting of strips of angle-iron, the lowermost of which rests upon the ice and

serves as relatively-broad runners, a pair of arms pivotally mounted in the forward portion of said frame and extending longitudinally thereof and provided at their outer ends with a revoluble cutter-wheel, another pair of arms pivotally mounted adjacent the pivotal support of said first pair of arms, a pair of drive-wheels journaled between the same, and devices for vertically adjusting said pairs of arms and for locking the same in adjusted position, a supplemental upwardly-directed frame connected with said first pair of arms, a shaft journaled therein and provided with means for turning the same, said shaft being provided with a sprocket-wheel which is connected by a sprocket-chain with a sprocket-wheel upon the shaft of said cutter-wheel, another shaft mounted in said supplemental frame and provided with a sprocket-wheel and connected with the first-mentioned shaft of said supplemental frame by means of sprocket-wheels connected with either thereof, and a sprocket-chain passed operatively about the latter sprocket-wheels and also connected with the shaft of said drive-wheels by means of sprocket-wheels and a sprocket-chain, substantially as shown and described.



656,187. HOSE CONNECTION. ELIAS GUNNELL, Chicago, Ill., assignor of one-half to W. Irving Babcock, same place. Filed Jan. 8, 1900. Serial No. 772. (No model.)

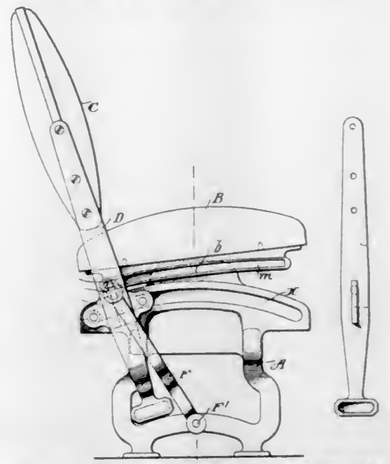


Claim.—1. The herein-described hose connection, comprising the member A adapted to receive within it the flexible hose D and to receive upon its tapered exterior the covering E of said hose, the sleeve B fitting upon the tapered exterior of the member A and adapted to clamp the covering E against said member, the nut C screwed into the end of the member B and abutting against the shoulder *g* on the member A, and the retaining-ring F adapted to be expanded within the end of the hose D to confine the latter in the member A, substantially as described.

2. The herein-described hose connection, comprising the member A having the external cylindrical portion *f* and tapered portion connected therewith by the shoulder *g*, and the circumferentially-enlarged internal portion *b;* the tapered sleeve B adapted to fit upon the tapered portion of the member A, and provided at one end with the flaring portion *h* and at its opposite end with the internally-threaded portion projecting beyond the shoulder *g;* the nut C adapted to fit over the cylindrical portion *f* of the member A and provided with the reduced externally-threaded portion adapted to engage the internally-threaded member B and abut against the shoulder *g;* and the ring F adapted to be expanded within the end of the hose to confine the same within the internal enlargement *h* of the member A; substantially as described.

3. The herein-described hose connection, comprising the member A having the internally-threaded portion *a*, contracted portion *c*, and enlarged portion *b* forming shoulders *d e* at its opposite ends, and having the external cylindrical portion *f* and tapered portion connected therewith by the annular shoulder *g;* and the members B, C, and F coöperating therewith in the manner and for the purpose described.

656,188. CAR-SEAT. HENRY S. HALE, Philadelphia, Pa. Filed Mar. 20, 1900. Serial No. 9,362. (No model.)



Claim.—1. In a car-seat, the combination of stationary side frames, shifting side arms carrying the seat-back, rocking links pivoted at one end to said side arms and at the other end held in bearings supported against vertical movement, and transversely-movable frames guided in the side frames and carried by the side arms with provision for longitudinal movement of said side arms with reference thereto.

2. In a car-seat, the combination of stationary side frames, the seat-cushion, shifting side arms carrying the seat-back, and having their lower ends extended below the seat-cushion, a transverse foot-rest carried by the lower ends of said side arms and movable bodily therewith, rocking links pivoted at one end to said side arms and at the other end held in bearings supported against vertical movement, and transversely-movable frames guided in the side frames and carried by the side arms with provision for longitudinal movement of said side arms with reference thereto.

3. In a car-seat, the combination of stationary side frames, shifting side arms carrying the seat-back, rocking links pivoted at one end to said side arms and at the other end to relatively-fixed bearings, a connection between said links whereby they are moved in unison, and transversely-movable frames guided in the side frames and carried by the side arms with provision for longitudinal movement of said side arms with reference thereto.

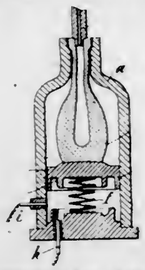
4. In a car-seat, the combination of the stationary side frames having transverse guides, slides movable transversely in said guides, shifting side arms carrying the seat-back and connected with said slides with freedom of longitudinal movement with reference thereto, and rocking links pivotally connected at one end with said side arms and held at the other end against vertical movement.

5. In a car-seat, the combination of the stationary side frames having transverse guides, slides movable transversely in said guides, shifting side arms carrying the seat-back and connected with said slides by means of a longitudinal groove and feather to permit said arms to move longitudinally with reference to said slides, and rocking links pivotally connected at one end with said side arms and at the other end with relatively-fixed bearings.

6. In a car-seat, the combination of the stationary side frames having transverse guides, slides movable transversely in said guides, shifting side arms carrying the seat-back and connected with said slides with freedom of longitudinal movement with reference thereto, rocking links pivotally connected at one end with said side arms and at the other end with relatively-fixed bearings, a tilting seat-cushion and operative connections between said seat-cushion and slides to tilt it when the slides are shifted.

7. In a car-seat, the combination of the stationary side frames having transverse guides, slides movable transversely in said guides, shifting side arms carrying the seat-back and connected with said slides with freedom of longitudinal movement with reference thereto, rocking links pivotally connected at one end with said side arms and the other end with relatively-fixed bearings, a tilting seat-cushion, and provided with transverse guides, and projections carried by the slides and engaging said guides of the seat-cushion to tilt said seat-cushion when the slides are shifted.

656,189. GLASS-MOLD. HEINRICH W. HEERDT, Aussig, Austria-Hungary. Filed Mar. 21, 1900. Serial No. 9,622. (No model.)



Claim.—1. The combination with a glass-mold of means for automatically closing an electric circuit by aid of the weight of the glass, substantially as shown and described.

2. The combination with a glass-mold of a spiral spring fastened on top of the bottom and a false bottom borne by said spring, electrically-insulated contacts being disposed in the wall and in the bottom, substantially as shown and described.

656,190. GRAPPLE. WALTER S. HOLCOMBE, Lambertville, N. J., assignor of one-third to E. W. Closson, same place. Filed Mar. 31, 1900. Serial No. 10,993. (No model.)



Claim.—1. A grappie, comprising a handle having a loop and a shank portion, legs pivoted at their inner ends to the shank portion, a collar movable upon said shank, links pivotally connected at their inner ends to said collar, and at their outer ends pivoted to said legs intermediate the ends of the latter, and a coiled spring connected at its respective ends to said legs, substantially as described.

2. A grapple, comprising a handle having a loop and a shank portion, legs pivoted at their inner ends to said shank portion, a collar movable upon said shank portion and provided with diametrically-opposite lugs, links having their inner ends bifurcated to receive said lugs to which they are pivoted, and having their outer ends formed angular and bifurcated to receive the legs to which they are pivoted, and a coiled spring connected at its respective ends to said legs, substantially as described.

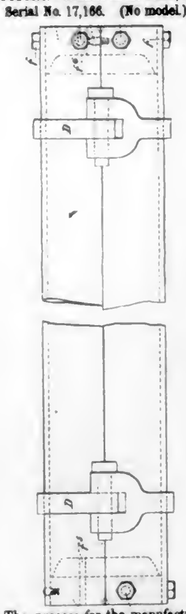
3. A grapple, comprising a handle having a shank portion and a loop, legs pivoted at their inner ends to said shank portion, a collar movable upon said shank portion and provided with an upwardly-extending curved finger-piece positioned directly beneath and in vertical alinement with one end of the loop and moving upon one side of the shank portion, and links pivotally connected at their respective ends to said collar and legs, substantially as described.

656,191. COMPOUND AS SUBSTITUTE FOR CAOUTCHOUC, GUTTA-PERCHA, OR THE LIKE. EUGEN HORNUNG and RUDOLF LIEBL, Vienna, Austria-Hungary. Filed June 1, 1895. Serial No. 551,381. (No specimens.)

Claim.—1. A rubber substitute consisting essentially of a mixture of rubber, and glue rendered insoluble in water prior to such mixture, in about the proportions specified, for the purposes set forth.

2. A rubber substitute consisting essentially of a vulcanized compound of rubber, and glue rendered insoluble in water before compounding with the rubber, for the purposes set forth.

656,192. MANUFACTURE OF PIPES OR CONDUITS FOR ELECTRICAL CONDUCTORS. ALBERT H. HOWARD, London, England. Filed May 18, 1900. Serial No. 17,166. (No model.)



Claim.—1. The process for the manufacture of pipes, or conduits, consisting in placing asphalt, or like bituminous matter, in a mold, or in a tube closed at the ends, and imparting rapid rotation to the mold, or tube, so as to cause the asphalt, or the like, under the action of centrifugal force, to spread out over the interior of the mold, or form a lining to the tube, as hereinbefore described.

2. The process for the manufacture of pipes, or conduits, consisting in placing a suitable metallic strengthening material in a mold together with asphalt, or like bituminous matter, and imparting rapid rotation to the mold so as to cause the asphalt, or the like, under the action of centrifugal force, to spread out over the interior of the mold, and surround the metallic strengthening material so that the said material becomes embedded in the asphalt.

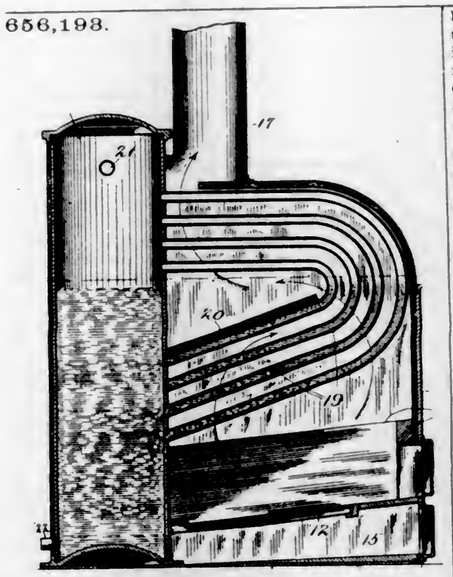
3. The process for the manufacture of pipes, or conduits, consisting in placing asphalt, or like bituminous matter, in a mold, or tube, provided with end pieces to form the projecting and recessed ends of the pipes, or conduits, and then rapidly rotating the mold, or tube, so that the asphalt, or the like, under the action of centrifugal force, spreads itself over the interior of the mold, or of the tube, and the projecting and recessed ends of the pipes, or conduits, are formed by the end pieces substantially as hereinbefore described.

4. As a new article of manufacture, a pipe or conduit made of asphalt or like bituminous matter and a metallic strengthening matter embedded in said asphalt.

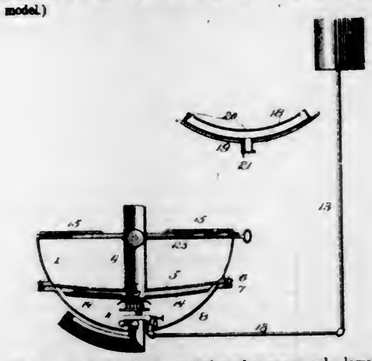
656,193. WATER-TUBE BOILER. WILLIAM L. JANCEY, Chicago, Ill., assignor to Bugbee & Laycock, same place. Filed Apr. 18, 1900. Serial No. 13,368. (No model.)

Claim.—In a water-tube boiler and furnace therefor, in combination, a furnace having a combustion-chamber; a vertical drum, a plurality of bowed circulating-tubes projecting into the combustion-chamber, both ends of each tube entering the drum above the fire-grate and at different elevations, the lower arm of each tube being inclined upwardly from its end, and the upper arm thereof being substantially horizontal; and a deflecting-plate extending from the drum between the two arms of the several tubes, whereby the line of draft is caused to substantially follow the line of the tubes.

656,193.



656,194. DRY CLOSET. ROBERT R. L. JANNEY, New York, N. Y. Filed Jan. 12, 1899. Renewed Dec. 30, 1899. Serial No. 742,163. (No model.)



Claim.—1. A dry closet, consisting of an upper and a lower chamber, an intermediate excrement-receiving pan, a gas or vapor burner in said lower chamber for applying a heating-flame to said pan from beneath, and an air-supply pipe leading from the interior of said upper chamber into said lower chamber and extended into and forming a part of the mixing-chamber of said burner, whereby the air-supply from said upper chamber becomes the sole oxygen-supply element of the burning flame, substantially as set forth.

2. A dry closet, consisting of an upper and a lower chamber, an intermediate excrement-receiving pan, a heat-supply located centrally beneath said pan, and means for causing the products of combustion to spread from the center to the outer edge of the pan and beneath the same, then back to the center of said pan and still beneath the same, and finally through a central draft-pipe up through said pan and through said upper chamber, substantially as set forth.

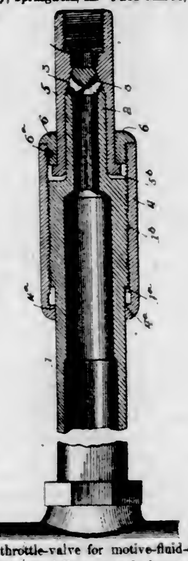
3. A dry closet, consisting of an upper and a lower chamber, an intermediate excrement-receiving pan, a heat-supply located beneath said pan in said lower chamber, draft-ducts communicating with said lower chamber at approximately the outer edge of and beneath the excrement-pan, and a draft-pipe communicating solely with said ducts at the ends opposite to their point of communication with the lower chamber, said pan being exposed to the direct action of the heat during the entire passage of the products of combustion from the burner to the draft-pipe, substantially as set forth.

4. In a dry closet, the combination with an upper and a lower chamber, an intermediate excrement-receiving pan, a heat-supply located centrally beneath said pan in said lower chamber, of a series of pipes extending radially from the center to the circumference of and immediately beneath said pan and opening into said chamber at their outer ends, and a central draft-pipe extending down through said upper chamber and pan and communicating solely with the inner ends of said pipes, substantially as set forth.

5. In a dry closet, the combination with an upper and a lower chamber, said upper chamber having a plurality of seat-apertures therein arranged in circular form around a common center, an excrement-receiving pan intermediate said chambers and common to all said apertures, a burner in said lower chamber for supplying heat to said pan, draft-ducts communicating with said lower chamber at approximately the outer edge of and beneath the excrement-pan, and a draft-pipe communicating solely with said ducts at the ends opposite to their points of communication with the lower chamber, said pan being exposed to the direct action of the heat during the entire passage of the products of combustion from the burner to the draft-pipe, substantially as set forth.

6. A dry closet, consisting of a closed upper chamber having a plurality of seat-apertures therein, lids for closing said apertures, said chamber having valved air-inlet apertures therein, a closed lower chamber, an intermediate excrement-receiving pan, a burner in said lower chamber located centrally beneath said pan, an air-supply pipe leading from the interior of the upper chamber into the lower chamber and extended into the burner-pipe, radial pipes beneath said pan opening at their outer ends into said lower chamber, and a draft-pipe extending through said upper chamber and pan and communicating at its lower end solely with said radial pipes, substantially as set forth.

656,195. THROTTLE-VALVE FOR MOTIVE-FLUID TOOLS. CHARLES H. JOHNSON, Chicago Heights, Ill., assignor to the Johnson Parfitt Tool Company, Springfield, Ill. Filed Jan. 31, 1900. Serial No. 3,507. (No model.)



Claim.—1. In a throttle-valve for motive-fluid-operated tools, the combination of a plurality of axially-arranged pipe-sections comprising a valve and a valve-seat, and a coupling-sleeve adapted to cause the axial approach and permit the recession of said sections, substantially as and for the purposes specified.

2. In a throttle-valve for motive-fluid-operated tools, the combination of a plurality of axially-arranged pipe-sections comprising a valve and a valve-seat, one of said sections being threaded on its exterior, and an internally-threaded coupling-sleeve for adjustably connecting said valve and valve-seat sections, substantially as and for the purposes specified.

3. In a throttle-valve for motive-fluid-operated tools, the combination with a pipe-section threaded on its exterior and having its end of reduced diameter and constituting a valve, of a second pipe-section whose inner diameter corresponds with the external diameter of the reduced portion of the first-named section the bore of the second section reduced to constitute a valve-seat, and an internally-threaded coupling-sleeve for adjustably connecting said valve and valve-seat sections, substantially as and for the purposes specified.

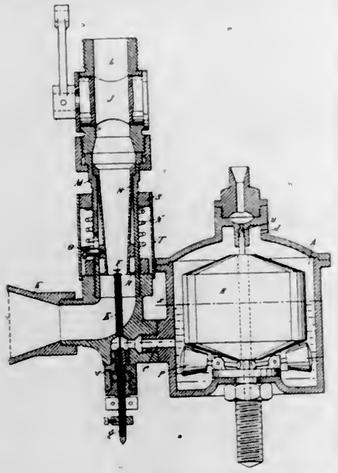
656,196. CARPET-FASTENER. FREDERICK C. LOVEJOY, Lodi, Ohio. Filed Jan. 18, 1900. Serial No. 1,838. (No model.)



Claim.—1. The combination of a plate or blade provided with tangs, and having at one end thereof a downward-extending portion consisting of two members, one member thereof being a spring member, and the other member provided with a shoulder and groove, and the spring member provided with an outward-extending flange upon its free end, and an attaching-disk, substantially as and for the purpose specified.

2. As an improved article of manufacture, a carpet or rug fastener consisting of a plate or blade having integral tangs, an integral downward-extending portion consisting of two members, said members located at an angle one to the other, and the member 5 being a spring member, and provided with an outward-extending flange at its free end, and the opposite member provided with a groove and shoulder, substantially as and for the purpose specified.

656,197. CARBURETER FOR PETROLEUM OR OTHER ENGINES. AUGUSTE LUMIÈRE and LOUIS LUMIÈRE, Lyons, France. Filed Mar. 27, 1900. Serial No. 10,339. (No model.)



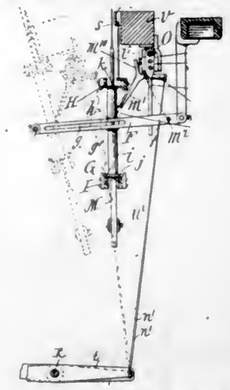
Claim.—1. In a carbureter for a motor, the combination of a reservoir having an oil-feed opening, a float within said reservoir, a valve connected with the float and controlling said feeding-opening, an opening in the upper part of said reservoir communicating with the outer air, a passage in the side of said reservoir, a vertical tube into the lower end of which such passage opens, a regulating-valve at the upper end of the vertical tube, and a little above the level of the liquid in the reservoir, a reversed truncated conical chamber into the lower end of which the vertical tube opens, a casing within which the conical chamber fits and is capable of sliding, a funnel-shaped air-entrance communicating with the lower end of the casing, studs on the conical chamber passing through vertically-elongated holes in the casing, a coiled spring surrounding the casing and acting on said studs, a tube inclosing the spring and screwed on the exterior of the casing to regulate the action of the spring, a tube above the larger end of the conical chamber communicating with the suction-valve of the motor and a regulating-cock in said tube, substantially as herein set forth.

2. In a carbureter for a motor, the combination of a reservoir having an oil-feed opening, a float in said reservoir, a valve connected with said float and coöperating with said feed-opening to control the feed of the carbureting liquid into the reservoir, an opening in the upper part of said reservoir communicating with the outer air, two or more counterbalanced weighted levers arranged below the float in the reservoir, the inner ends of which are in contact with the under side of the float, a passage in the side of said reservoir, a vertical tube into the lower end of which such passage opens, a closed regulating-tube below and in line with said vertical tube, a stuffing-box into which such closed regulating-tube is screwed, a regulating-valve at the upper end of the vertical tube and a little above the level of the liquid in the reservoir, a rod carrying the said regulating-valve the lower end of which rests upon the bottom of the closed tube, a reversed truncated conical chamber into the lower end of which the vertical tube opens, a casing within which the conical chamber fits and is capable of sliding, a funnel-shaped air-entrance communicating with the lower end of the casing, studs on the conical chamber passing through vertically-elongated holes in the casing, a coiled spring surrounding the casing and acting on said studs, a tube inclosing the spring and screwed on the exterior of the casing to regulate the action of the spring, a tube above the larger end of the conical chamber communicating with the suction-valve of the motor and a regulating-cock in said tube, substantially as herein set forth.

3. In a carbureter for a motor, the combination of a reservoir, a passage in said reservoir, a vertical tube into which such passage opens, a regulating-valve at the upper end of the vertical tube, a reversed truncated conical chamber, a rim around the lower end of such chamber, a casing within which the conical chamber fits and is arranged to slide, a spring exerting tension upon such conical chamber and an air-entrance communicating with the lower end of the casing, substantially as set forth.

4. In a carbureter for motors, the combination of a vertical valve-tube with means for supplying carbureting liquid, a reversed truncated conical chamber into the lower end of which the valve-tube opens, an air-opening communicating with said chamber, a rim around the lower edge of such chamber, a casing within which the conical chamber fits, and is arranged to slide and a spring exerting tension upon such conical chamber, substantially as set forth.

656,198. LAPPET-LOOM. JAMES R. MACCOLL, Pawtucket, R. I. Filed Mar. 10, 1897. Serial No. 626,838. (No model.)



Claim.—1. In a lappet-loom, the combination of a needle-holding bar or frame, means for giving the bar or frame its movements transversely of the warp, needles adapted for movement relatively to the needle bar or frame, needle-selecting mechanism, and connections passing between the warp-threads and held from movement with the needles transversely of the warp, to connect the needles with the needle-selecting mechanism, substantially as described.

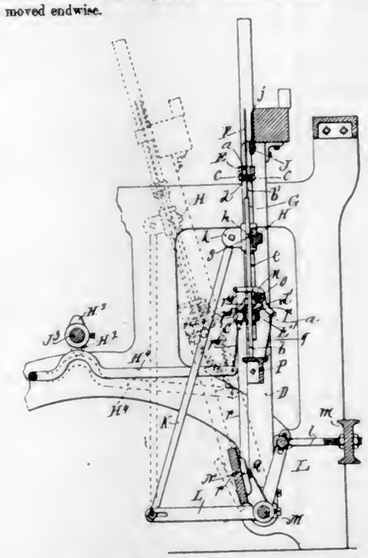
2. In a lappet-loom, the combination of the needle-holding bar or frame, mechanism for moving the needle-holding bar or frame transversely of the warp to determine the length or position of the stitches, means for imparting movement to the needle-holding bar or frame toward and from the warp, needles adapted for movement both transversely of the warp, and toward and from the warp in connection with the needle bar or frame, and selecting mechanism for inhibiting the movement of the needles into the shed of the warp with the movement of the needle bar or frame, substantially as described.

656,199. LAPPET-LOOM. JAMES R. MACCOLL, Pawtucket, R. I. Filed Jan. 28, 1898. Serial No. 668,323. (No model.)

Claim.—1. In a lappet-loom the combination of needles adapted for independent movement into the shed, means for moving the needles laterally of the warp, means connected with the lay for moving the needles endwise, and a pattern mechanism for selecting the needles to be moved endwise, substantially as described.

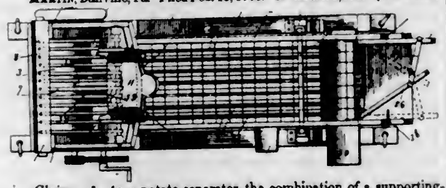
2. In a lappet-loom the combination of needles adapted for independent movement into the shed, means for moving the needles laterally of the warp, means connected with the lay for moving the needles endwise, a pattern mechanism for selecting the needles to be moved endwise, and flexible connections between the pattern mechanism and the means for moving the needles endwise, substantially as described.

3. In a lappet-loom the combination of needles adapted for independent movement into the shed, means for moving the needles laterally of the warp, means connected with the lay for moving the needles positively in both directions endwise, and a pattern mechanism for selecting the needles to be moved endwise.



4. In a lappet-loom, the combination of needles adapted to be controlled individually as to their movement into the shed, means for moving the needles laterally of the warp, means connected with the lay for moving the needles endwise, a pattern mechanism for selecting the needles to be moved endwise, and flexible connections between the needles and the pattern mechanism, said connections being grouped together at that side of the warp from which the needles enter and thence operated in groups by means of leading connections to the pattern mechanism.

656,200. POTATO SEPARATOR AND CLEANER. WILLIAM J. MARTIN, Danville, Pa. Filed Feb. 13, 1900. Serial No. 5,091. (No model.)

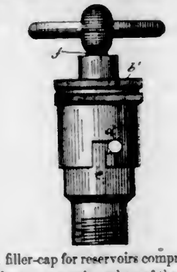


Claim.—1. In a potato-separator, the combination of a supporting-frame, a receiving-hopper having a downward and rearward inclined front wall and a discharge-opening at its bottom, a dirt-screen in said hopper, said screen extending approximately parallel with the front wall of the hopper downward and rearward through the discharge-opening thereof, a dirt-space open at its lower end being thereby formed between said screen and the front wall of the hopper, means for pivotally supporting said screen at its lower end, whereby said screen may be raised and swung backward and the dirt dislodged from the dirt-space without stopping the operation of the machine.

2. In a potato-separator, the combination of a main frame, a hopper supported thereon and formed with a discharge-opening, a series of downward and rearward inclined parallel bars in the hopper and extending rearward through the discharge-opening and forming a dirt-screen, a transverse rocking shaft rigidly secured to the rear lower ends of said bars, a transverse top bar connecting the upper ends of said bars, said top bar extending laterally beyond the side edges of the dirt-screen, recesses in the main frame to receive the ends of said top bar, eccentric surfaces in said recesses over which the top bar must be sprung in passing into or out of said recesses, and a screen to receive the potatoes from the dirt-screen.

3. In a separator for potatoes, &c., the combination of a frame, a screen, a pair of deflecting-bars mounted in the discharge end of the screen, the respective forward ends of said bars being pivotally connected to the respective sides of the screen, so that the rear ends of the bars are free to swing inward over the bottom of the screen, a link pivotally connecting the rear ends of the bars, said link being shorter in length than the width of the screen, so that when either of the bars is adjusted parallel with the side of the screen the other bar will extend inward and form a contracted discharge mouth or chute for the screen, and means for detachably holding the bars in either of their adjusted positions.

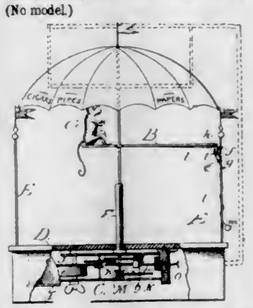
656,201. FILLER-CAP FOR RESERVOIRS. EDWARD MEREDITH, Philadelphia, Pa., assignor to the Pennsylvania Globe Gas Light Company, same place. Filed May 1, 1900. Serial No. 15,109. (No model.)



Claim.—1. A filler-cap for reservoirs comprising a fixed or neck portion and a removable or cap portion whereof the fixed or neck portion is provided with a valve-seat and whereof the removable portion is provided with a valve and screw-valve stem, and a bayonet-joint interposed between the fixed or neck portion and the removable portion, substantially as described.

2. A filler-cap for reservoirs comprising a fixed or neck portion provided with a valve-seat, a removable cap portion provided with a stem having a swivel-valve and a hard bearing-surface adapted to engage the valve-seat, and a bayonet-joint interposed between the fixed or neck portion and the removable portion, substantially as described.

656,202. WINDOW DISPLAY AND ADVERTISING DEVICE. ARMISTEAD Y. MOOREFIELD, Waco, Tex. Filed Dec. 29, 1899. Serial No. 741,921. (No model.)



Claim.—1. In a window display and advertising device, the combination of a vertical shaft and means for rotating the same, a substantially-horizontal arm carried by the shaft, a lever freely suspended from the outer end of the arm and having a member or trip projecting beyond the end of the arm, a cord or thread connected with the lever and having a weight at its lower end adapted to be thrown outward by centrifugal force, and a series of stops or rods arranged in the path of movement of the said lever member or trip and adapted to be engaged by the latter to suddenly check the movement of the horizontal arm whereby the cord or thread is caused to wind about the stop or rod and then unwind therefrom and automatically actuate the lever to withdraw the trip or member thereof from its contact with said stop or rod, and allow the power-shaft to again operate.

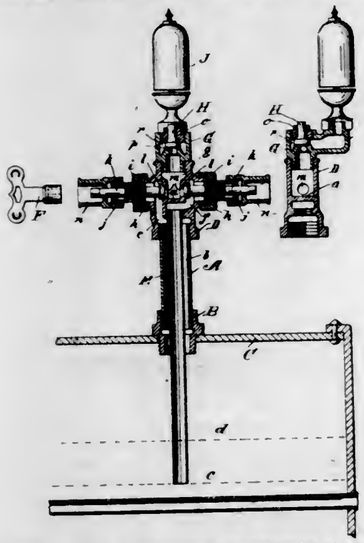
2. In a window display and advertising device, the combination with a motor, a rotatable shaft operatively connected therewith, and a frame or case, of a series of vertical rods or posts secured to said case, a horizontal arm on the rotatable shaft, a pivoted lever on the outer end of the arm provided with long and short arms one of which lies substantially in the path of the vertical rods and is designed to engage the rods successively to check the motion of said horizontal arm, and a cord or thread connected with the long arm of the lever and having a weight attached to its lower end said cord adapted to alternately wind and unwind about said rods or posts by centrifugal action and to actuate the lever to withdraw the short arm or trip at the completion of each unwinding.

3. The combination of a vertical power-shaft, a horizontal arm carried thereby, an annular series of rods or posts, a cord, a weight freely suspended therefrom and adapted to be thrown outward by centrifugal action and caused to alternately wind and unwind about successive rods or posts, and a lever freely suspended upon the outer end of the horizontal arm and having a short arm or trip and a guide for the said cord, whereby the centrifugal action of the weight, in one movement, causes the lever to be actuated to project the short arm or trip thereof into the path of the rods or posts while the centrifugal action, in a reverse movement, automatically releases the trip from the post engaged thereby.

4. The combination with a vertical shaft and means for rotating the same, of a horizontal arm secured at a point between its ends to the upper end of the shaft, a figure secured to the inner end of the arm and a lever freely suspended from the outer end of said arm, and provided with eyes or guides and a forwardly-projecting short arm or trip, a cord secured to the horizontal arm and passing through the eyes or guides of the lever, and having a weight suspended from its free end, and a stand or case having an annular series of vertical rods or posts disposed in the path of movement of the cord and about which the latter alternately winds and unwinds to check and release the power devices.

5. A window display and advertising device including a base or stand adapted to display subject-matter, an annular series of vertical ornamental posts secured to said base, a motor contained within the base, a vertical power-shaft carrying a horizontal arm at its upper portion, a figure mounted on one end of the arm and a lever freely suspended from the outer end, a cord connected with the lever and adapted to wind and unwind about said posts, and having a weight operated by centrifugal action to actuate the lever at the completion of each unwinding action of the cord and thereby release the power devices.

656,203. **LOW-WATER ALARM FOR STEAM-BOILERS.** SAMUEL L. MOYER, Cincinnati, Ohio, assignor to the Lunkenheimer Company, same place. Filed June 26, 1900. Serial No. 21,472. (No model.)

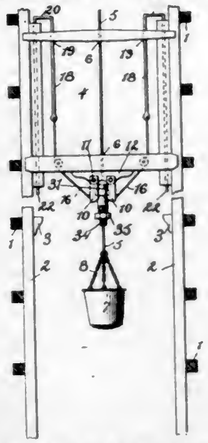


Claim.—1. In a low-water alarm, the combination of a tube communicating at its lower end with the steam-space of a boiler, a second tube within the first-mentioned tube whose lower end is submerged in the water of the boiler and extends to the low-water level thereof, a valve-casing upon said tubes provided with two valve-controlled openings one giving access from the first-mentioned tube and the other from the interior tube, a whistle carried by said valve-casing, and a fusible plug interposed between the whistle and the valve-casing, substantially as described.

2. In a low-water alarm, the combination of a tube communicating at its lower end with the steam-space of a boiler, a second tube within the first-mentioned tube whose lower end is submerged in the water of the boiler and extends to the low-water level thereof, a valve-casing upon said tubes provided with two oppositely-set valves controlling openings the one from the first-mentioned tube and the other from the interior tube, a whistle carried by said valve-casing, and a fusible plug interposed between the whistle and the valve-casing, substantially as described.

3. The herein-described low-water alarm composed of the tube A opening into the steam-space of the boiler, the tube E within the tube A extending at its lower end to the low-water level of the boiler, the valve-casing D upon the upper ends of said tubes provided with the diaphragm *a* forming the chambers *e f g*, the oppositely-set valves *l* with operating mechanism therefor controlling openings between the chambers *e* and *g* and *f* and *g* respectively, (the tube A opening into the chamber *e* and the tube E opening into the chamber *f*) the whistle J carried by the valve-casing D, and a fusible plug covering an aperture between the chamber *g* and said whistle, substantially as described.

656,204. **SAFETY DEVICE FOR MINES.** DUNCAN MCCOWAN, Neihart, Mont. Filed Mar. 29, 1900. Serial No. 10,617. (No model.)



Claim.—1. In a safety device for mines, the combination with the guides, the cross-head moving thereon, the bucket-rope passing loosely through the cross-head, and supports on the guides; of a clutch at the bottom of the cross-head, means for opening it when the cross-head engages the supports, a clamp below the clutch and adapted to be engaged by the same, and means for removably and adjustably attaching the clamp to the rope, as and for the purpose set forth.

2. In a safety device for mines, the combination with the guides, the cross-head moving thereon, the bucket-rope passing loosely through the cross-head, and supports on the guides; of a clutch at the bottom of the cross-head, means for opening it when the cross-head engages the supports, a clamp below the clutch and adapted to be engaged by the same, the body of the clamp being tubular to receive the rope and notched at its lower end to produce fingers, and a nut surrounding these fingers for securing the clamp adjustably on the rope, substantially as described.

3. In a safety device for mines, the combination with the guides, the cross-head moving thereon, the bucket-rope passing loosely through the cross-head, and supports on the guides; of rods moving loosely in holes in the side bars of the cross-head and projecting at their lower ends below the same, their upper ends being bent inward, a clamp on the rope below the cross-head, a clutch on the cross-head for engaging said clamp, and connections between the members of the clutch and the interned ends of said rods, as and for the purpose set forth.

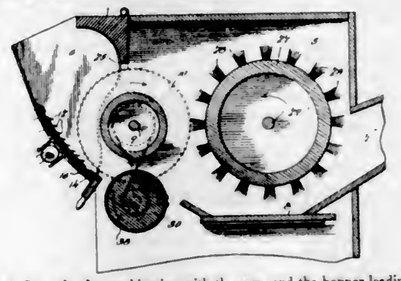
4. In a safety device for mines, the combination with the guides, the cross-head moving thereon, the bucket-rope passing loosely through the cross-head, and supports on the guides; of a clutch having spring-actuated members pivoted to the lower cross-bar on the cross-head, a rope-clamp which said members are adapted to engage, chains or cords leading from the members outward and over pulleys in said cross-bar, and rods extending from said chains or cords upward through the top cross-bar, thence outward, thence downward through holes in the side bars of the cross-head, and projecting below the latter so as to rest upon said supports, as and for the purpose set forth

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656,205. **SAW-GIN.** BENJAMIN F. MCGAW, Columbia, Tenn., assignor of two-thirds to James M. Parker and Zachariah A. Parker, Pulaski Tenn. Filed Oct. 28, 1899. Serial No. 735,095. (No model.)

Claim.—1. In a gin, the combination with the saws and a hopper leading thereto, of a breast-board comprising movable elements adapted for reciprocation to feed to the saws.

2. In a gin, the combination with the saws and the hopper, of a breast-board comprising sections provided with teeth and adapted for reciprocation to feed from the hopper to the saws.



3. In a gin, the combination with the saws and the hopper leading thereto, of a breast-board comprising movable sections arranged in two alternate series, and means for reciprocating the series alternately, said sections having teeth adapted to engage the cotton and feed it to the saws.

4. In a gin, the combination with the saws and the hopper leading thereto, of a breast-board comprising a plurality of elements having teeth adapted to engage the cotton and feed it to the saws, U-shaped plates carried by the sections, a shaft, a plurality of cams mounted upon the shaft and lying within the inclosure of their respective U-shaped plates, and means for rotating the shaft to reciprocate the elements of the breast-board.

656,206. **GIN-SAW CLEANER.** BENJAMIN F. MCGAW, Columbia, Tenn. Filed May 21, 1900. Serial No. 17,428. (No model.)



Claim.—1. A gin-saw cleaner comprising a roller having peripheral grooves to receive the saws, and continuous bands of pliable material fixed upon the roller and projecting part way over the grooves to engage their edges with the faces of the saws.

2. A gin-saw cleaner comprising a roller having peripheral grooves adapted to receive the teeth of the saws, and bands of pliable material at the sides of the groove and extending part way thereover to engage their edges with the faces of the saws, said grooves having abrasive material therein.

3. A gin-saw cleaner comprising a roller having peripheral grooves adapted to receive the teeth of the saws, and bands of pliable material at the sides of the grooves and extending part way thereover, said grooves having oil and pumice therein.

656,207. **TROLLEY-WHEEL.** HENRY A. OSBORNE, Plainville Conn. Filed Dec. 6, 1899. Serial No. 739,376. (No model.)



Claim.—1. As an improved article of manufacture, a trolley-wheel having a web, side parts extending beyond the web and forming a groove, projecting ribs extending along the side of the web from a point within its periphery and terminating at a point beyond the periphery of the web.

2. As an improved article of manufacture, a trolley-wheel having a web, side parts extending beyond the web and forming a groove, projecting ribs extending along the web from a point within to a point beyond the periphery of the web, openings through the side parts between the ribs beyond the periphery and recesses formed between the ribs and bounded by the ribs and web within the periphery of the web.

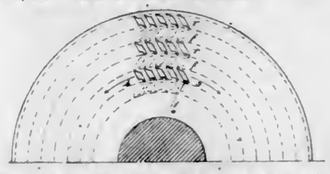
3. As an improved article of manufacture, a trolley-wheel having a peripheral groove forming side parts, curved ribs extending from the hub toward the periphery of the side parts, openings through the walls of the side parts arranged in alternation with the rib on the opposite side part, and a web located between the side parts and forming a bottom for the peripheral groove.

4. As an improved article of manufacture, a trolley-wheel having a peripheral groove forming side parts, a hub, a thin web located between the side parts and with its edge forming the bottom of the groove, recesses formed in and extending in part through the walls of the side parts, and curved ribs extending from the edge of the web to the outer edge of each side part.

5. As an improved article of manufacture, a trolley-wheel having a peripheral groove forming side parts, openings through said side parts leaving solid portions or ribs arranged in alternation on the one side with the openings on the opposite side, the inner projecting edges of such ribs forming cutting or clearing edges, and a web extending between the ribs.

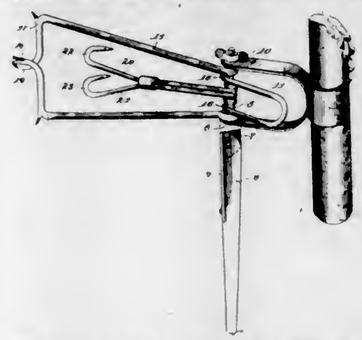
6. As an improved article of manufacture, a trolley-wheel comprising a web and side parts forming a peripheral groove about the web, said side parts having a series of ribs and openings and cutting edges on the ribs, and recesses formed within the periphery of the web and bounded by the ribs and web adapted to present a new cutting edge on the ribs as the web decreases in diameter through wear.

656,208. **REVERSING STEAM-TURBINE.** CHARLES A. PARSONS, Newcastle-upon-Tyne, and ALAN A. C. SWINTON, London, England. Filed Nov. 19, 1897. Serial No. 659,141. (No model.)



Claim.—Turbine-blades formed with flat parallel sides and concavities at both ends to enable them to work efficiently in both directions, substantially as hereinbefore set forth.

656,209. **MINER'S CANDLESTICK.** CHRISTOPHER PEACOCK, Altman, Colo. Filed May 17, 1900. Serial No. 17,036. (No model.)



Claim.—1. A device of the class described comprising a spindle, a yoke having its arms slidably engaged with the spindle a candle-holding clip connected with the yoke, an attaching device engaged with the spindle between the arms of the yoke, and a clamping nut engaged with the spindle for clamping the yoke-arms against the attaching device to hold them against independent movement.

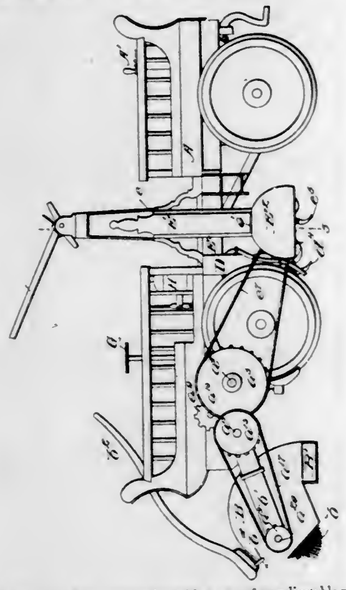
2. A device of the class described comprising a spindle, a yoke having its arms slidably engaged with the spindle, a candle-holding clip connected to the yoke, and an attaching device engaged with the spindle between the arms of the yoke, said attaching device consisting of a spring-wire wrapped at one end around the spindle and having fingers at the opposite end for movement toward each other to effect a gripping action.

3. A device of the class described comprising a spindle, a standard pivoted to one end of the spindle and adapted to fold to lie thereagainst, a yoke having its ends slidably engaged with the spindle and provided with candle-holding means disposed between the arms of the yoke to limit their inward movement, and a clamping-nut engaged with the spindle to clamp the yoke-arms against the interposed limiting means, to hold the yoke against pivotal movement on the spindle.

4. A device of the class described comprising a spindle, a standard pivoted to the spindle, a yoke having its arms slidably connected with the spindle, a candle-holding clip pivoted to the bight of the yoke, an attaching device consisting of a U-shaped, spring-wire having its end adjacent

the bight wrapped around the spindle between the ends of the yoke, and having its opposite end portions bent toward each other to form shoulders and then outwardly to form attaching-fingers, and having oppositely-disposed spikes at the shoulders, and a second attaching device comprising wires wrapped around the spindle between the sides of the first wire and having hooks, the spindle having a clamping-nut engaged therewith to clamp the attaching devices and yoke against pivotal movement on the spindle.

656,210. STREET-SWEEPER. ALPHONSE PITON, Quebec, Canada. Filed Dec. 15, 1899. Serial No. 740,449. (No model.)



Claim.—1. The combination with a car, of an adjustable rotary ice-cutter, a fixed rotary cutter, a rotary broom, and intermediate gearing connecting each of said cutters and said broom with the car-wheels for operating the same, substantially as described.

2. The combination with a car, of an adjustable rotary ice-cutter, a fixed rotary cutter, a rotary broom, a chute operatively connected with said broom, a train of gearing connected with each of said cutters and said broom and meshing with a gear fixed to the car-wheel, substantially as described.

3. The combination with a car, of an adjustable rotary cutter, a fixed rotary cutter, a broom, a train of gearing operatively connected therewith and meshing with a gear fixed to the car-wheel and a suitable adjusting mechanism for said adjustable cutter, substantially as described.

4. The combination with a car, of an adjustable rotary cutter, a fixed rotary cutter, a broom, a chute operatively connected with said broom, a train of gearing operatively connected with said cutters and said broom and meshing with a gear fixed to the car-wheel, an adjusting-bar secured to said adjustable cutter and an operating-lever secured to said adjusting-bar, substantially as described.

5. The combination with a car, of an adjustable rotary cutter, a chain-and-sprocket connection between said cutter and the car-wheel, a protecting-cover attached to said cutter, an adjusting-bar secured to said hood and an operating-lever pivoted upon the car for raising said cover and cutter up out of their operative position, substantially as described.

6. The combination with a car, of an adjustable rotary cutter, a chain-and-sprocket connection between said cutter and the car-wheel, an adjusting-bar secured to said cutter, an operating-lever pivoted upon the car for raising said cutter up out of its operative position, a fixed rotary cutter, and a train of gearing operatively connecting said fixed rotary cutter with the car-wheel, substantially as described.

7. The combination with a car, of a shaft journaled in vertically-adjustable bearings, a chain-and-sprocket connection between said shaft and the car-wheel, adjusting-bars mounted upon each side of the car and attached to each end of said shaft, an operating-lever pivoted upon the car for raising said shaft and a series of cutter-hooks mounted upon said shaft, substantially as described.

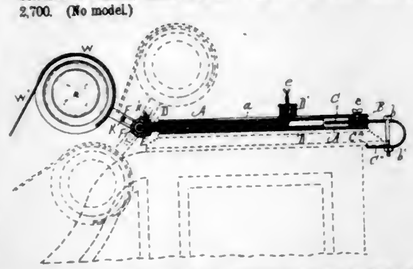
8. The combination with a car, of a shaft journaled in vertically-adjustable bearings, means for adjusting said bearings, a series of cutter-hooks mounted upon said shaft, a shaft journaled in fixed bearings, a series of cutter-hooks mounted on said shaft and extending along its entire length, and a train of gearing connecting each of said shafts to the car-wheel, substantially as described.

9. The combination with a car, of a series of rotary cutter-hooks mounted in adjustable bearings, means for adjusting said bearings, a series of rotary cutter-hooks mounted in fixed bearings, a train of gearing operatively connecting said cutter-hooks with the car-wheel, a rotary broom, and a train of gearing operatively connecting said broom with the car-wheel, substantially as described.

10. The combination with a car, of a rotary shaft mounted in adjustable bearings, a series of cutter-hooks fixed on said shaft, a rotary shaft mounted in fixed bearings and arranged behind said adjustable shaft, a series of cutter-hooks fixed on said shaft, a train of gearing operatively connecting said shaft with the car-wheel, a rotary broom journaled in the rear end of said car, a train of gearing operatively connecting said broom with the car-wheel, a hood arranged to cover said broom and a chute transversely arranged in said hood and in operative connection with said broom, substantially as described.

11. The combination with a car, of a rotary shaft mounted in independently-adjustable bearings and arranged one on each side of the car, a series of cutter-hooks fixed on each of said shafts, a rotary shaft mounted in fixed bearings and arranged behind said adjustable shafts, a series of cutter-hooks fixed on said shaft, a train of gearing operatively connecting said shafts with the car-wheel, a rotary broom journaled in the rear end of said car, a train of gearing operatively connecting said broom with the car-wheel, a hood arranged to cover said broom, and a chute transversely arranged in said hood and in operative connection with said broom, substantially as described.

656,211. ELECTRIC-LAMP-SUPPORTING BRACKET FOR DESKS. STANLEY S. PORTER, Melrose, Mass. Filed Jan. 25, 1900. Serial No. 2,700. (No model.)



Claim.—1. In an electric-lamp-supporting bracket for desks, &c., the telescopically-arranged tubes A and D, the former provided with the longitudinal slot *a* and the latter with an opening coincident with said slot; branches connecting with the forward end of the inner telescopically-arranged tube D, one of said branches being tubular and connected with the electric lamp and the two said branches supporting rotatively the shade, whereby the electric wires may enter the telescopically-adjustable tubes behind the shade and extend through said tubes and one of the branch tubes to the lamp, substantially as described.

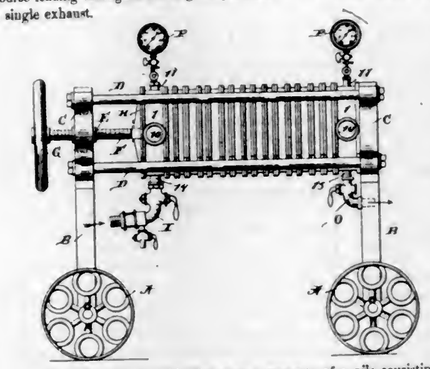
2. In an electric-lamp-supporting bracket of the character described, the telescopically-arranged adjustable tubes A, D both open at their forward ends; the tubular connection E provided with the opposite branches E' and secured to the forward end of the inner tube D; the pipes F, F' extending oppositely from said branches E' and constituting a frame for supporting the lamp and supporting rotatively the shade; mechanism for holding the pipe F' friction tight within one of the branches E'; and the yoke K provided with the tubular sockets K' through which the pipes F, F' extend and to which they are adjustably secured, substantially as set forth.

656,212. FILTER. JOSEPH POSCH, St. Paul, Minn. Filed Feb. 21, 1898. Serial No. 671,089. (No model.)

Claim.—1. In a filter, the combination with a support; of a filter-pile comprising cup-shaped end members, one having an inlet and the other an outlet, a pair of strainer members next inside the cups, a series of grated members between the strainers, and means for clamping the members of the pile together, as and for the purpose set forth.

2. In a filter, the combination of members formed respectively with filtering portions and clear passages, such members being so relatively arranged as to leave a plurality of courses through the filter from the inlet to the exhaust.

3. In a filter, the combination of members formed with filtering portions and clear passages, such members being so arranged relatively as to form a plurality of courses through the filter from inlet to exhaust, each course leading through a filtering compartment and all courses uniting in a single exhaust.

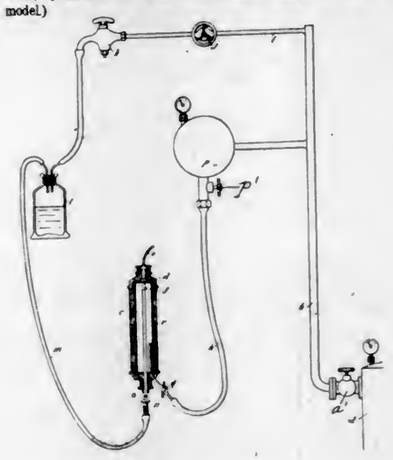


4. In a filter, the combination with a support; of a pile consisting of cup-shaped end members having inlet and outlet openings, grated intermediate members, filtering material proper supported on the grates, and strengthening-ribs adjacent certain of the grates, as and for the purpose set forth.

5. The herein-described filter-pile, the same comprising a cup-shaped inlet member with the supply-opening at one side thereof, filtering members next adjacent and having clear through-passages at points opposite said supply-opening, a switch member next adjacent and having a similar passage with a switch-plate therein, this member having a solid plate, a grate, and an interposed chamber into which the switch-plate delivers, and also having an outlet clear passage at its opposite side, and a cup-shaped outlet member having the exhaust-opening, all as and for the purpose set forth.

6. The herein-described filter-pile, the same comprising a pair of endmost cup-shaped members with inlet and outlet openings; strainer members next adjacent, the one near the inlet having a through clear passage; filter members next inside the strainers, each having a grating supporting filtering material proper, and these members being provided with clear passages of which one registers with that in the adjacent strainer and the other stands opposite; switch members next inside, each having an inlet clear passage with a switch-plate therein, an outlet clear passage, a solid cross-plate, and a grating with a chamber between it and the plate and into which chamber the switch-plate directs the liquid; and at the center of the pile a compound member having grating, filtering material, and opposite clear passages, all constructed and arranged for operation substantially as hereinbefore set forth.

656,213. APPARATUS FOR PROJECTING HEATED AIR. LOUISE PRAT, Lyons, France. Filed May 1, 1900. Serial No. 15,092. (No model.)



Claim.—1. In combination with a tube through which air may be projected to the affected part directly, an air-reservoir, a conduit-pipe leading therefrom to the tube, a reducing-valve in said pipe, a platinum tube in said air-projecting tube, an air-pipe leading from the said reservoir to the platinum tube and a carbureter in the said air-pipe, substantially as described.

2. In an apparatus for projecting air at a determined pressure and temperature, the combination of a high-pressure air-reservoir, a reducing-valve, an air-carbureting apparatus, tubes connecting the compressed-air reservoir with the reducing-valve and carbureting apparatus, a non-conducting air heating and projecting apparatus connected by tubes to the reducing-valve, and carbureting apparatus, and regulating and stop cocks on the tubes connecting the compressed-air reservoir with the reducing-valve and carbureter and on the tube connecting the reducing-valve with the air heating and projecting apparatus, substantially as herein set forth.

3. In an apparatus for projecting air at a determined pressure and temperature, the combination with a high-pressure air-reservoir, a reducing-valve and a carbureting apparatus connected together by tubes provided with suitable stop-cocks and regulating-cocks, of an air heating and projecting apparatus consisting of a closed non-conducting cylinder, having an air-projecting nozzle at one end, a movable central tube connected to the carbureter by a flexible tube and conveying the carbureted air to the interior of the apparatus near to the nozzle, a tube surrounding said central tube and closed at its upper end by a closed platinum tube and passing to the exterior of said apparatus where it is pivoted with an exit-orifice, and a short side tube at its lower end provided with a regulating-cock and connected to the reducing-valve by a flexible tube fitted with a stop-cock, substantially as herein set forth.

656,214. BUTTON. CHARLES RADCLIFFE, Newark, N. J. Filed Dec. 9, 1899. Serial No. 739,750. (No model.)



Claim.—1. As a new article of manufacture, a button, comprising a face-plate or upper shell and a hub having a hole or opening, a shoe or back-plate, a flat post on said shoe or back-plate arranged in said hole or opening, and, approximately, of the same width as the diameter of said hole or opening, and a doubled-over or looped portion at the top of said post, having its four angular edges extending beyond the circumferential edge of said hole or opening and resting in supporting contact with the surrounding portions of the said opening or hole, substantially as and for the purposes set forth.

2. As a new article of manufacture, a button, comprising a face-plate or upper shell and a hub having a hole or opening, a base-plate having a hole or opening, an annular shoulder or projection on said base-plate extending into the hole or opening in said hub, and having the surrounding edge of the shoulder or projection in holding engagement with a portion of the inner surface of said hub, a shoe or back-plate, a flat post of approximately the same width as the diameter of the said hole or opening in said base-plate, and a doubled-over or loop portion at the top of said post, having portions thereof in holding engagement with the surrounding edge of the said opening or hole in said base-plate, substantially as and for the purposes set forth.

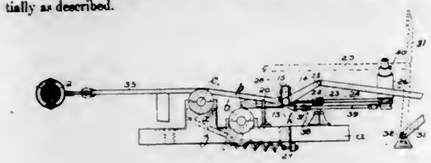
3. The herein-described button, consisting, essentially, of a face-plate *a*, a hub *a'* having a hole or opening a^2, a base-plate *b*, of a disk shape of a greater cross area than that of the bottom of said hub, a central hole or opening in said base-plate, and an annular shoulder or projection on said base-plate extending into the hole or opening in said hub, a shoe or back-plate *c*, a post *c'* connected with said shoe or back-plate, having a flat post extending into and through said hole or opening in said base-plate, and a loop-shaped portion c^1 on the upper part of said post, having angular edges c^2 resting in supporting contact upon the upper surrounding portion of said annular shoulder or projection on said base-plate, substantially as and for the purposes set forth.

656,215. MOTOR-CAR DRIVING-GEAR AND GEAR-CHANGING DEVICE. ALFRED RAWLINSON, Rugby, England. Filed Jan. 9, 1900. Serial No. 862. (No model.)

Claim.—1. In combination, a driving and a driven shaft, variable-speed gearings connecting said shafts, clutch mechanisms interposed between the gearings and one of the shafts, and a clutch-selecting device comprising a longitudinally-movable crank-shaft, links engaging said shaft and having operating connections to the clutches, and means for reciprocating said shaft and for rotating it, substantially as described.

2. In combination, a driving or motor shaft, a driven shaft, variable-

speed gearing connecting said shafts, interposed clutch mechanisms, a driven axle, variable-speed gearings connecting said driven axle, clutch mechanisms for said variable-speed gearings, a lever for operating said last-named clutches, links having operating connections to the first-named clutches and a longitudinally-movable and rotatable shaft having cranks for engaging said links and means for operating said crank-shaft, substantially as described.



656,216. KNITTING-MACHINE. JOSEPH A. RICARD, Manchester, N. H. Filed June 21, 1895. Serial No. 553,518. (No model.)

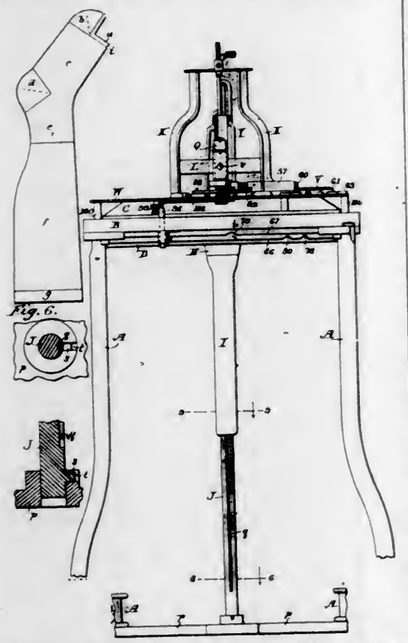


Fig. 6.

Claim.—1. Plain needles, their carrier and cams, and rib-needles, their carrier and cams, said plain and rib needles being latch-needles of the usual construction, each having a single shank at its hooked end, in combination with means for automatically bringing said rib-needles into and out of action, all of the plain needles remaining in action, and means for automatically freeing the stitches or loops on the rib-needles from both sets of needles, substantially as set forth, whereby both plain and ribbed work can be automatically produced in succession upon the same machine.

2. Plain needles, their carrier and cams, and rib-needles, their carrier and cams, said plain and rib needles being latch-needles of the usual construction, each having a single shank at its hooked end, in combination with means for automatically bringing said rib-needles into action after plain knitting has been done with the plain needles alone, all of the plain needles remaining in action, and then, after ribbed work has been knit by the conjoint action of both sets of needles, for bringing said rib-needles out of action, and means for automatically freeing the stitches or loops on the rib-needles from both sets of needles, substantially as set forth, whereby plain knitting thereafter continues with the plain needles alone.

3. Plain needles, their carrier and cams, in combination with rib-needles, their carrier and cams, provisions in virtue of which said rib-needle carrier has a fixed relation to the plain-needle carrier during the entire knitting operation of the machine, means for automatically moving the rib-needle throw-out cam in and out, whereby when said throw-out cam is in, a plain fabric is knit with the plain needles alone, and when said throw-out cam is out, a ribbed fabric is knit by the conjoint action of both the rib and all of the plain needles, and means for automatically freeing the stitches or loops on the rib-needles from both sets of needles, said plain and rib needles being latch-needles of the usual construction each having a single shank at its hooked end, substantially as set forth.

4. The plain needles, their carrier and cams, of a knitting-machine, whereby a seamless toe, heel, foot, and ankle may be knit by the plain needles alone, in combination with rib-needles, their carrier and cams, provisions in virtue of which the rib-needle carrier has a fixed relation to the plain-needle carrier during the entire knitting operation of the machine, the rib-needles being idle during the knitting of the toe, heel, foot, and ankle, and means for automatically bringing the rib-needles into action when the leg of the stocking is to be knit so that a ribbed leg is knit by the conjoint action of the rib and all of the plain needles; and for automatically bringing the rib-needles out of action when the ribbed portion of the leg is finished, said plain and rib needles being latch-needles of the usual construction each having a single shank at its hooked end, whereby a string of indefinite length of stockings with ribbed legs and seamless heels and toes may be automatically knit, substantially as set forth.

5. Plain needles, their carrier and cams, and rib-needles, their carrier and cams, said plain and rib needles being latch-needles of the usual construction each having a single shank at its hooked end, in combination with means for automatically freeing the stitches or loops on the rib-needles from both sets of needles and discontinuing the action of the rib-needles upon the completion of the ribbed portion of the fabric, so that plain knitting with the plain needles alone may proceed without interrupting the action of the machine, substantially as set forth.

6. Plain needles, their carrier and cams; and rib-needles, their carrier and cams; in combination with means for automatically bringing said rib-needles into and out of action, the plain needles remaining in action; and means for automatically freeing the stitches or loops on the rib-needles from both sets of needles, substantially as set forth, whereby both plain and ribbed work are automatically produced in succession upon the same machine.

7. The combination of the framework A, stationary bed-plate B, the rotary cam-plate C, carrying the cams for the plain needles, the time-wheel D, the plain-needle carrier E, the plain needles *j*, *j*, the rib-needle carrier H, held from rotation by connection with the framework, the rib-needles, the spindle M, secured to the cam-plate, said spindle M, having plate N, within the carrier H, the rib-cam carrier O, secured to said spindle so as to rotate therewith, the movable throw-out cam R, the movable collar T, the rod S, connecting cam R, and collar T, the shaft U, having crank-pin engaging collar T, and pinion 60, the star-wheel V, carried by the cam-plate and having rack 61, engaging pinion 60, and tappet-arms 63, 63, the tappet-pins 64, and 65, and means connecting said tappet-pins with cam-grooves in the time-wheel, whereby said tappet-pins are projected in succession and at the proper instants into the path of said arms 63, 63, substantially as set forth.

8. Plain needles, their carrier and cams, rib-needles, their carrier and cams, and means for automatically bringing said rib-needles into and out of action, in combination with a knife for cutting the stitches or loops on said rib-needles when the same are rendered inactive, and means for automatically actuating said knife, substantially as set forth.

9. Plain needles, their carrier and cams, and rib-needles, their carrier and cams, in combination with the movable leading-in yarn-guide, the yarn-guide shifter coupled to the said yarn-guide, said shifter having a hook on its end, the rotary pin-disk having a pin in the path of said hook, the ratchet on said pin-disk, the slide 104, having pawl 107, coöperating with said ratchet, and cam-arm 102, the roller 99, movable into and out of the path of said cam-arm 102, the time-wheel, and means controlled by said time-wheel for elevating and depressing said roller 99, substantially as set forth.

10. Plain needles, their carrier and cams; sinkers or web-holders coöperating with said plain needles, and their cams; and rib-needles, their carrier and cams; in combination with means for automatically bringing said rib-needles into and out of action, the plain needles remaining in action; and means for automatically freeing the stitches or loops on the rib-needles from both sets of needles, substantially as set forth, whereby both plain and ribbed work are automatically produced in succession upon the same machine.

11. The needle-carrier H, around which the knitted fabric passes, in combination with a sliding connection between said needle-carrier and a fixed part of the machine substantially as set forth, whereby the knitted fabric can be removed from time to time.

12. The rib-needle carrier, and the framework, in combination with the sleeve I, connected with said carrier, and the post J, supported on said framework, said sleeve and post being connected by a sliding joint, substantially as set forth.

13. The plain needles, their carrier and cams, and the rib-needles, their carrier and cams, said plain needles and their cams being adapted to have a relatively-reciprocating movement during a portion of the knitting operation, and provisions in virtue of which the rib-needles may be thrown out of action, in combination with an automatically-movable leading-in yarn-guide which by a movement toward the middle of the machine during the reciprocation prevents the catching of the yarn beneath the ends of the latches of the plain needles and the dropping of stitches, substantially as set forth.

14. The automatically-movable leading-in-yarn-guide in combination with the yarn-guide shifter with hook 87, and the rotary pin-disk having pin 118, for moving said yarn-guide shifter, substantially as set forth.

15. The rib-needles, the stationary rib-needle carrier, the rotary rib-needle cam-block O, the rib-knitting cam R, means for automatically moving said cam, and means for casting off the stitches from the rib-needles, in combination with the rotary yarn breaker or severer comprising the jaws 113, and 114, rod 115, spring 116, and fixed cam 117, substantially as set forth.

16. The yarn-changer head having yarn-channels, said channels, having openings for the reception of the yarns, and inwardly-projecting shoulders beneath said openings, said channels being larger in diameter above than below their said respective openings, in combination with the movable feed-brushes within said channels, substantially as set forth.

17. The swinging yarn-changer head, having yarn-channels, the feed-brushes within said channels, and the brush-carriers for said brushes, in combination with springs for elevating said brush-carriers, and automatic means for depressing said brush-carriers, substantially as set forth.

18. The swinging yarn-changer head, and the cam-slide connected therewith which by its movements shifts said head, in combination with the time-wheel, and means intermediate the time-wheel and cam-slide for automatically shifting said cam-slide, substantially as set forth.

19. The combination of the swinging yarn-changer head, having crank-arm 158, and stud 162, the spring-detent 161, coöperating with said stud 162, to hold the yarn-changer head in its different positions, the cam-slide 155, having cam 154, the link 180, connecting said crank-arm and cam-slide, the connected tappet-pins 150, and 151, between which the cam 154, passes, the time-wheel D, and the slide 144, actuated by the time-wheel, and itself actuating the said tappet-pins, substantially as set forth.

20. The feed-brushes, and their carriers, and springs for elevating said brush-carriers, in combination with oppositely-sliding racks, couplers carried by said racks adapted to couple with said brush-carriers, means for uncoupling said racks and brush-carriers when said racks approach their lowermost positions, clampers carried by said racks for depressing said brush-carriers, and means for automatically moving said racks in opposite directions, substantially as set forth.

21. The yarn-changer head having yarn-channels, the feed-brushes within said channels, the brush-carriers 138, and 139, the rods 198, and 199, connected to said brush-carriers respectively, said yarn-changer head having channels 200, for said rods, said channels having slots 202, and 203, and each of said rods having studs 204, and 205, extending through said slots respectively, and springs 201, for elevating said rods, and the brush-carriers, in combination with the brush-slide 172, having rack 185, means for automatically moving said brush-slide, the spindle 132, having pinion 186, engaging said rack, and having rack 187, the pinion 188, engaging said rack 187, the pinion 190, connected with said pinion 188, the racks 191, and 192, engaging said pinion 190, on opposite sides thereof so as to move in opposite directions, the clampers 195, and 196, carried by said racks and engaging the respective studs 204, on said brush-carrier rods, the coupling-springs 207, on said racks having apertures 206, engaging said studs 205, on said brush-carrier rods, and said coupling-springs having uncoupling-studs 208, and the stationary cams 209, acting upon said studs 208, to uncouple the racks and the brush-carriers, substantially as set forth.

22. The rotary cam-plate, and the stationary cam-ring W, in combination with a yarn-changer carried by said cam-plate, and comprising a yarn-changing slide 172, having shifters coöperating alternately with the opposite cam-faces of said cam-ring, and means for actuating the shifters of said slide, substantially as set forth.

23. The yarn-changing slide 172, having connected shifting pins 180, and 181, in combination with the movable cam-bar 174, having cams 175, and 176, for shifting said pins, substantially as set forth.

24. The yarn-changing brushes and their carriers, in combination with the movable brush-slide, mechanism between said slide and brush-carriers, locking devices for locking said brush-slide in its different positions, and automatic means for unlocking said brush-slide, substantially as set forth.

25. The cam-slide 155, having operating-cam 154, and the slide 172, in combination with locking-pins 168, 169, for said slide 172, springs 171, for moving said pins in one direction, and the cam-bar 163, on slide 155, having inclines 166, 167, for elevating said pins alternately, substantially as set forth.

26. The swinging yarn-changer head having yarn-channels, in combination with the independently-moving knives for each of said channels and means controlled by a time-wheel for automatically moving said knives independently of each other, substantially as set forth.

27. The swinging yarn-changer head having yarn-channels, and the leading-in yarn-guide having stop-shoulders, in combination with the knives, one for each yarn-channel, located between said head and guide, the movable knife-carriers, said carriers having stops which encounter said shoulders in succession when said head swings in opposite directions, substantially as set forth.

28. The yarn-changer head having yarn-channels, and oppositely-beveled shear-plates at the discharge ends of said channels, in combination with the knife-carriers pivoted to said head, and having knives coöperating with said shear-plates, substantially as set forth.

29. The swinging yarn-changer head, the knives and their carriers, in combination with the knife-operators 220, and 224, and the slide 172, having cams for moving said knife-operators in opposite directions, substantially as set forth.

30. The swinging yarn-changer head having yarn-channels, the feed-brushes within said channels and their carriers, the independently-movable knives, and the carriers therefor pivoted to said head, in combination with the brush and knife slide, mechanism intermediate said slide and brush and knife-carriers for moving said carriers, locking devices for said slide, movable connected shifting pins on said slide, a cam-ring acting upon said shifting pins for moving said slide to and fro, a movable cam-slide having an actuating-cam, and cam-bars for moving said shifting pins and unlocking said brush and knife slide, the time-wheel and mechanism intermediate said time-wheel and the actuating-cam on said cam-slide for moving said cam-slide, substantially as set forth.

31. The needle-carrier H, operatively connected to parts of the machine above and below it respectively, in combination with connecting means intermediate between one of said parts and said needle-carrier restraining said needle-carrier from longitudinal movement, and connecting means intermediate between the other of said parts and said needle-carrier restraining said needle-carrier from rotary movement, substantially as set forth, whereby a free passage-way around said needle-carrier for the knit fabric exists at all times.

32. Plain needles, their carrier and cams, and rib-needles, their carrier and cams, said plain and rib needles being latch-needles of the usual construction, each having a single shank at its hooked end, sinkers or web-holders coöperating with said plain needles and their cams, in combination with means for automatically bringing said rib-needles into and out of action, all of the plain needles remaining in action during the operation of the rib-needles, and means for automatically freeing the stitches or loops on the rib-needles from both sets of needles, substantially as set forth, whereby both plain and ribbed work can be automatically produced in succession upon the same machine.

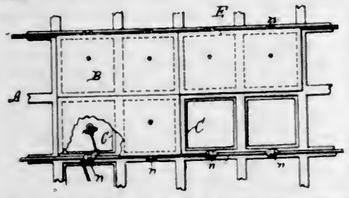
33. Plain needles, their carrier and cams, sinkers or web-holders coöperating with said plain needles and their cams, rib-needles, their carrier and cams, and provisions in virtue of which the rib-needle carrier has a fixed relation to the plain-needle carrier during the entire knitting operation of the machine and an unobstructed passage-way is furnished at all times between said two carriers for the passage of the fabric, in combination with means for automatically bringing said rib-needles into action after plain knitting has been done with the plain needles alone, and then, after ribbed work has been knit by the conjoint action of both sets of needles, for bringing said rib-needles out of action, and means for automatically freeing the stitches or loops on the rib-needles from both sets of needles, substantially as set forth, whereby plain knitting thereafter continues with the plain needles alone.

34. Plain needles, their carrier and cams, in combination with rib-needles, their carrier and cams, provisions in virtue of which said rib-needle carrier has a fixed relation to the plain-needle carrier during the entire knitting operation of the machine and an unobstructed passage-way is furnished at all times between said two carriers for the passage of the fabric, means for automatically moving the rib-needle throw-out cam in and out, whereby when said throw-out cam is in, a plain fabric is knit with the plain needles alone, and when said throw-out cam is out, a ribbed fabric is knit by the conjoint action of both the rib and all of the plain needles, and means for automatically freeing the stitches or loops on the rib-needles from both sets of needles, said plain and rib needles being latch-needles of the usual construction each having a single shank at its hooked end, substantially as set forth.

35. The plain needles, their carrier and cams, the sinkers or web-holders coöperating with said plain needles, and their cams, whereby a seamless toe, heel, foot, and ankle may be knit by the plain needles alone, in combination with rib-needles, their carrier and cams, provisions in virtue of which the rib-needle carrier has a fixed relation to the plain-needle carrier during the entire knitting operation of the machine and an unobstructed passage-way is furnished at all times between said two carriers for the passage of the fabric, the rib-needles being idle during the knitting of the toe, heel, foot, and ankle, means for automatically bringing the rib-needles

into action when the leg of the stocking is to be knit, so that a ribbed leg is knit by the conjoint action of the rib and all of the plain needles, and for automatically bringing the rib-needles out of action when the ribbed portion of the leg is finished, and means for automatically freeing the stitches or loops on the rib-needles from both sets of needles, said plain and rib needles being latch-needles of the usual construction each having a single shank at its hooked end, substantially as set forth.

656,217. **APPARATUS FOR MANUFACTURING CORELESS CAN ICE.** WILLIAM ROETTINGER, Newport, and JOHN COMB, Bellevue, Ky.; said William Roettinger assignor of one-fourth to William D. Roettinger, Newport, Ky. Filed July 6, 1897. Serial No. 643,659. (No model.)



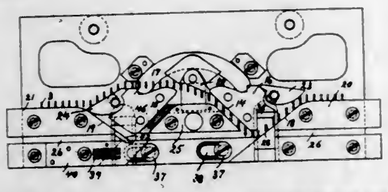
Claim.—1. The combination of an ice-forming can containing water to be frozen, a freezing-tank therefor containing a liquid-freezing mixture, a vertically-set revoluble agitator submerged just below the surface of the water in the ice-forming can at its center and terminating a short distance below the surface of the water in said can, said agitator being constructed to draw the water at the top of the can toward itself and force the same downward whence it spreads and arises at the sides of the can, and means for revolving said agitator, substantially as described.

2. The combination of an ice-forming can, a freezing-tank therefor, a vertically-set frusto-conoidal agitator with curved blades arranged at the center of the can and adapted to draw the water toward itself and force it downward, and means for revolving said agitator, substantially as described.

3. In a can-freezing system, the combination of the freezing-tank, its independently-removable covers, agitators suspended and carried therefrom, driving-shafts journaled below the covers, and intermeshing gearing between said shafts and agitators, substantially as described.

4. In apparatus of the character described, the combination and arrangement of the shafts, E, provided with gears, *n*, covers, B, having journaled thereunder, shafts, L, provided with gears, *m*, *k*, stirrups, *a*, on the under side of the covers, shafts, *b*, journaled therein, and carrying agitators, gears, *j*, feathered on shafts, *b*, and means for raising and lowering the agitators, substantially as described.

656,218. **KNITTING-MACHINE.** JAMES E. ROWE and LAWRENCE A. BENTS, Pawtucket, R. I., assignors to the E. Jencker Manufacturing Company, same place. Filed Feb. 4, 1899. Serial No. 704,578. (No model.)



Claim.—1. In a knitting-machine, the combination with the needles, sinkers and knitting-cams, of means for moving the needles to bring the needles into such relation with the sinkers that a transfer quill-cup may be applied to and be centered by the sinkers, substantially as described.

2. In a knitting-machine, the combination with the needles, sinkers, and knitting-cams, of means for moving the needles to bring them into such relation with the sinkers that a transfer quill-cup may be applied to and centered by the sinkers, and means for bringing the needles and quills into proper relation for the transfer of stitches from the quills to the needles, substantially as described.

3. In a knitting-machine, the combination with the needles, sinkers, and knitting-cams, of means for moving the needles to bring the ends of all the needles below the sinkers, means for lowering and raising the sinkers, substantially as described.

4. In a knitting-machine, the combination with the needles, sinkers and knitting-cams, of means for leveling the needles and simultaneously bringing them into such relation with the sinkers that a transfer quill-cup may be applied to and be centered by the sinkers, substantially as described.

5. In a knitting-machine, the combination with the needles, sinkers, and knitting-cams, of means for leveling the needles below the sinkers, means for moving the sinkers below the plane of the needle-hooks, and means for returning the parts into knitting relation, substantially as described.

6. In a knitting-machine, the combination with the needles, sinkers, and knitting-cams, of means for guiding the needle-butts into a plane below the knitting-cams, means for lowering the sinkers to bring the hooks of the needles above the sinkers, and means for returning the parts into knitting relation, substantially as described.

7. In a knitting-machine, the combination with the needles, sinkers, and knitting-cams, of means for guiding the butts of the needles into substantially the same plane below the knitting-cams, means for raising and lowering the sinkers, and means for returning the needle-butts into the path of the knitting-cams, substantially as described.

8. In a knitting-machine, the combination with the cam-cylinder and needle-cylinder, of knitting-cams carried by the cam-cylinder, needles guided in the needle-cylinder, sinkers supported by the needle-cylinder, a circumferential groove in said cam-cylinder, means for directing the needle-butts into said groove, and means for raising and lowering the needle-cylinder, substantially as described.

9. In a knitting-machine, the combination with the cam-cylinder and needle-cylinder, of knitting-cams carried by the cam-cylinder, needles guided in the needle-cylinder, sinkers supported by the needle-cylinder, a circumferential groove in the cam-cylinder below the knitting-cams, means for directing the needle-butts into said groove, and means for raising and lowering the needle-cylinder, substantially as described.

10. In a knitting-machine, the combination with the cam-cylinder and needle-cylinder, of knitting-cams carried by the cam-cylinder, needles guided in the needle-cylinder, sinkers supported by the needle-cylinder, a circumferential groove in the cam-cylinder, and movable cams extending across said groove and forming extensions of the knitting-cams, substantially as described.

11. In a knitting-machine, the combination with the cam-cylinder and needle-cylinder, of knitting-cams carried by the cam-cylinder, needles guided in the needle-cylinder, sinkers supported by the needle-cylinder, a circumferential groove in the cam-cylinder, and a movable cam extending across said groove and forming an extension of one of the knitting-cams, substantially as described.

12. In a knitting-machine, the combination with the cam-cylinder and needle-cylinder, of needles guided by the needle-cylinder knitting-cams 14 and 18 carried by the cam-cylinder, a groove 26 in the cam-cylinder, cam 28, extending across the entrance of groove 26, and bridge 35, for bridging the space between cams 14 and 18, substantially as described.

13. In a knitting-machine, the combination with the knitting-cams, of a swinging cam-plate bridging the space between them and having one end arranged to engage one of said knitting-cams, substantially as described.

14. In a knitting-machine, the combination with the knitting-cams 14 and 15, of a cam-plate 25′ pivoted between said cams and bridging the space between them said cam-plate having one end arranged to engage cam 15, substantially as described.

15. In a knitting-machine the combination with the knitting-cams 14 and 15, of a cam-plate 25′ pivoted between said cams and having the end 64 beveled off as at 65, substantially as described.

16. In a knitting-machine, the combination with the cam-cylinder and needle-cylinder, of needles guided in the needle-cylinder, knitting-cams 14, 15, 18 and 19 carried by the cam-cylinder, cam-plate 25′ pivoted between cams 14 and 15, groove 26 and cam 28, substantially as described.

17. In a knitting-machine the combination with the knitting-cams, of a groove 26, a continuous ledge 60 forming the lower side of said groove, a slide 29′ having an arm 61 and a cam 28 carried by said arm, substantially as described.

18. In a knitting-machine, the combination with the cam-cylinder and needle-cylinder, of needles guided in the needle-cylinder, cams 14, 15, 18 and 19 carried by the cam-cylinder, a groove 26 in said cam-cylinder, and cams 28 and 42, substantially as described.

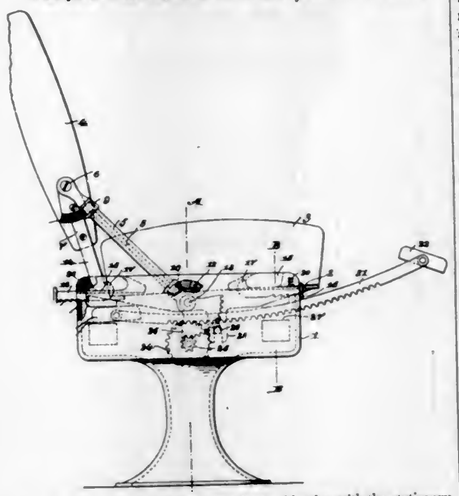
19. In a knitting-machine, the combination of the cam 19, groove 26 and yielding cam 42 extending from cam 19 across said groove, substantially as described.

20. In a knitting-machine, the combination of cam 14, cam 18, groove 26, cam 28, and means for withdrawing and returning said cam 28, substantially as described.

21. In a knitting-machine, the combination with the needle-cylinder, the sinkers, the cam-cylinder, two sets of knitting-cams carried thereby, and a switch-cam between said sets of knitting-cams, of means for guiding the needle-butts out of and below the knitting-cams, means for lowering and returning the sinkers, and means for guiding the needle-butts into the knitting-cams, substantially as described.

22. In a knitting-machine, the combination with the needle-cylinder, the sinkers, the cam-cylinder, a ledge therein for supporting the needle-butts, two sets of knitting-cams at the ends of said ledge, and a switch-cam between said knitting-cams, of a circumferential groove in said cam-cylinder below said ledge, cams for directing the needle-butts into and out of said groove, and means for lowering and returning the sinkers, substantially as described.

656,219. **SEAT STRUCTURE.** WILLIAM L. SCHELLENBACH, Philadelphia, Pa., assignor to the Hale & Kilburn Manufacturing Company, same place. Filed July 22, 1899. Serial No. 724,774. (No model.)



Claim.—1. In a seat structure, the combination with the stationary frame, and shifting seat-back, of movable shifting side arms, between the stationary frame and seat-back, to which said seat-back is pivoted, power-transmitting connections between said stationary frame and seat-back to cause the seat-back to rock on its pivotal connection with the side arms when said side arms are rocked, and independently-adjustable supports between the seat-back and stationary frame at each side for supporting the seat-back when it is shifted with provision for adjustment to vary its angular position.

2. In a seat structure, the combination with the stationary frame, of a shifting seat-back, a foot-rest movable transversely with reference to the stationary frame when the seat-back is shifted, and oppositely-acting power-transmitting connections between the seat-back and foot-rest for moving the foot-rest in a direction opposite to that in which the seat-back moves, whereby the foot-rest is always brought into a position at the front of the seat structure opposite to the position occupied by the seat-back.

3. In a seat structure, the combination of a stationary frame, a shifting seat-back, movable shifting arms, between the seat-back and stationary frame, to which the seat-back is pivoted, rotary shafts carried by said shifting arms, and gearing between said shafts and the seat-back and stationary frame respectively.

4. The combination in a seat structure, of the stationary frame and shifting seat-back, with the arms 5, 5, pivoted to the seat-back and stationary frame respectively, the shafts 8, 8, journaled in said arms, and the gearing 9, 11 and 10, 12 between the shafts and the seat-back and stationary frame respectively, substantially as and for the purposes described.

5. In a seat structure, the combination of a stationary frame, a shifting seat-back, movable shifting arms between the stationary frame and the seat-back, a foot-rest carrier movable bodily transversely to the stationary frame, a foot-rest carried by said foot-rest carrier on each side, and power-transmitting devices for bodily shifting said foot-rest carrier, when the seat-back is shifted, to project the carrier and foot-rest at the side of the seat opposite to that at which the seat-back is located.

6. In a seat structure, the combination with the stationary frame, of a shifting seat-back, a foot-rest movable transversely with reference to the stationary frame when the seat-back is shifted, and power devices for shifting said foot-rest to move it bodily into a position at the front of the seat structure at the side opposite to that occupied by the seat-back.

7. In a seat structure, the combination with the stationary frame, a foot-rest carrier movable bodily and transversely with reference to the stationary frame so as to project beyond it at either end, in a more or less elevated position at the front of the seat and a foot-rest carried by said bodily-movable foot-rest carrier at each end and forming a support for the legs or feet of the occupant of said seat.

8. In a seat structure, the combination with the stationary frame, of a shifting seat-back, a foot-rest carrier movable bodily and transversely with reference to the stationary frame, when the seat-back is shifted, so as to project beyond the stationary frame at either side, a foot-rest carried by said foot-rest carrier at either end, and power-transmitting devices for shifting said foot-rest carrier to move it bodily into a position with the foot-rest at one end projecting at the front of the seat structure at the side opposite to that occupied by the seat-back.

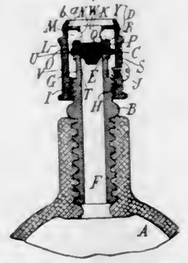
9. In a seat structure, the combination with the stationary frame, of the transversely and bodily movable shifting toothed bars, 21, 21, a foot-rest carried thereby, a shifting seat-back, means to shift said toothed bars, and power-transmitting connections between the seat-back and the means to shift said toothed bars 21, 21, to shift said bars transversely and bodily with reference to the stationary frame and to project them beyond the seat-frame.

10. In a seat structure, the combination with the stationary frame, of the transversely and bodily movable shifting toothed bars, 21, 21, a foot-rest carried thereby, means to shift said toothed bars, a shifting seat-back, movable shifting side arms between the stationary frame and seat-back, and power-transmitting connections between the shifting side arms and the means to shift said toothed bars 21, 21 to shift said bars transversely and bodily with reference to the stationary frame and to project them beyond the seat-frame.

11. In a seat structure, the combination with the rocking side arms, of the transversely and bodily movable shifting toothed bars 21, 21, a foot-rest carried by said bars, means to shift said toothed bars, and power-transmitting connections between the rocking side arms and means to shift said toothed bars to shift said bars transversely and bodily with reference to the stationary frame and project them beyond the seat-frame.

12. In a seat structure, the combination with the rocking side arms, of transversely and bodily movable shifting toothed bars 21, 21, pinions 24, 24 engaging said bars and acting to shift them bodily and transversely with reference to the stationary frame and to project them beyond the seat-frame, a foot-rest carried by said toothed bars, and power-transmitting connections between said side arms and the pinions 24, 24.

656,220. **VALVE FOR PNEUMATIC PILLOWS, &c.** GEORGE H. F. SCHRADER and HENRY P. KRAFT, New York, N. Y.; said Kraft assignor to said Schrader. Filed July 31, 1897. Serial No. 646,589. (No model.)



Claim.—1. For air and other valves, a cap D consisting of a tubular member V having a screw-thread I, a chamber M, an internal shoulder X, and a flange Y, in combination with a part W having a head L within said chamber, a wall *a* resting on said shoulder, and a flange *b* fitting within said flange Y, said flange Y overhanging said flange *b* and uniting said parts together.

2. In valves for air-pillows and for other articles, the combination with a tube B having a seat E, and external screw-thread H, of a tubular cap D inclosing the end of said tube, having an internal screw-thread I engaging that of the latter, a tubular neck connected at its upper end to said cap, projecting into said cap, and having a head, a valve proper C engaging said seat, and a carrier O carrying said valve proper and swiveled to said head.

3. In valves for air-pillows and for other articles, a tube B having a seat E and external screw-thread H, in combination with a cap D embracing the end of said tube, having an internal screw-thread I engaging the thread thereof, having an inwardly-extending tubular neck at its upper end, and a flanged head L at the extremity of its neck, a valve proper engaging said seat, and a metal carrier carrying said valve proper and having a socket P embracing said head, and an inturned flange Q surrounding said neck.

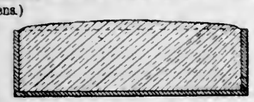
4. For air and other valves, a cap member consisting of a cap D having an internal chamber M, a tubular neck and a head L in said chamber, a valve proper C carried by said cap in said chamber, and a carrier O carrying said valve proper and swiveled to said head.

5. For air and other valves, a cap D having an internal chamber M,

a tubular neck open at its upper end and having a head at its lower end, and having an intermediate lateral opening within said chamber, and a valve proper carried by said cap on the inner side of said head within said chamber.

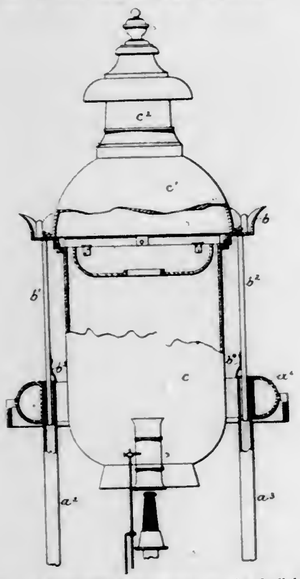
6. In valves for air-pillows and other articles, the combination with a tube B having a seat E, and an external groove below said seat, of a cap inclosing the end of said tube, a valve carried by said cap for engaging said seat, and a screw J carried by said cap and projecting into said external groove.

656,221. METHOD OF PRODUCING ARTIFICIAL STONE. EDMOUND J. SEYMOUR, Benton, La. Filed Aug. 3, 1899. Serial No. 725,996. (No specimens.)



Claim.—The method of producing artificial stone consisting of molding mortar of the composition required, permitting the mortar to partially dry, during which it will expand, striking off such expanded portion therefrom, permitting the mortar further to dry and again striking off the expanded portion until the materials set and cease to expand.

656,222. STREET-LAMP. ARTHUR E. SHAW, Philadelphia, Pa., assignor to the Pennsylvania Globe Gas Light Company, same place. Filed Mar. 16, 1900. Serial No. 8,938. (No model.)

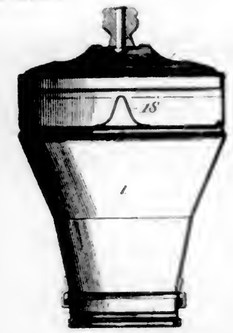


Claim.—A lamp comprising a support carrying the light, hollow arms rising from the support, an oil-reservoir carried by the arms, an oil connection between the reservoir and light, a ring carrying a dome and globe, and rods attached to said ring and telescopically fitted to said arms, whereby the globe, dome and ring may be elevated to clear the light without disturbing the oil connection, substantially as described.

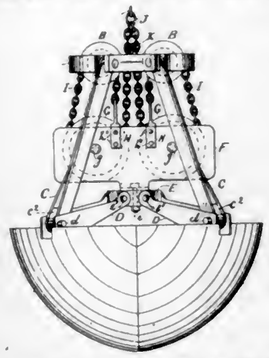
656,223. PERCOLATOR FOR COFFEE-POTS. CHARLES A. SICKEL, Washington, D. C., assignor of one-half to Watson E. Coleman, same place. Filed Nov. 28, 1899. Serial No. 738,535. (No model.)

Claim.—1. A coffee-percolator comprising a tapering body portion, a cylindrical upper end and an internal shoulder at the junction of said parts; a water-distributer resting upon said shoulder and consisting of a disk having a series of radial slots therein and a central deflector and a removable strainer comprising a ring having a gauze bottom and means for securing the strainer in place upon the body of the percolator, substantially as described.

2. In a coffee-percolator, a tapering body portion, a cylindrical upper end provided with a cover, a shoulder at the junction of said body portion and cylindrical upper end, a water-distributer resting on said shoulder and consisting of a disk having radial slots and a central deflector, and a removable strainer for the bottom of said percolator, said strainer comprising a ring having a wire-gauze bottom, a bead or flange having slots therein, and hooks on the lower end of the percolator to engage said slots, substantially as described.



656,224. DREDGING-BUCKET. CHARLES H. SMITH, Jersey City, N. J. Filed May 8, 1900. Serial No. 15,926. (No model.)



Claim.—In a bucket a head-block with bifurcated lugs and a housing; two pulleys journaled in said head-block; a cross-shaped bottom block, the ends of the cross constituting journal-boxes, and the said block vertically drilled through its center for a bolt; a housing consisting of two vertical sides and a horizontal bottom drilled for a bolt to secure the same to the bottom block; two sheaves turning on parallel and horizontal axles secured in the housing; links consisting of two parallel portions open at their lower ends; a filler between the open ends of the said links; approximately right-angular braces pinned to the bottom block and riveted to the sections of the bucket; spherical-shaped bucket-sections, disposed so that the adjacent edges of the same meet at obtuse angles; U-shaped straps secured to the sheave-housing; a chain linked to said straps running over the pulleys and under the sheaves; eyebolts with a chain secured to head-block, all substantially as described.

656,225. DRESS-SHIELD FASTENER. JENNY W. STEVENS, Fitchburg, Mass. Filed Jan. 9, 1900. Serial No. 834. (No model.)

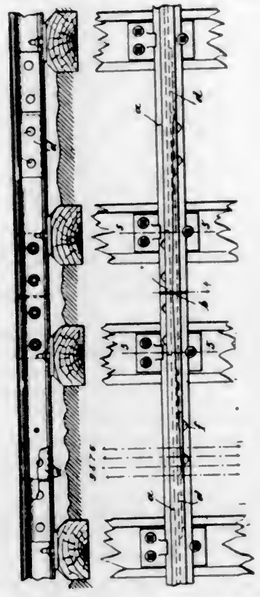


Claim.—1. A fastener of the character described, comprising a body portion adapted to be attached to a garment, a jaw extended from one end of said body portion back over the same and provided with side flanges, and a second jaw extended from the opposite end of the body portion back over the same and coöperating with the said side flanges to grip the material inserted between them, substantially as described.

2. A fastener of the character described, comprising a body portion, an arm attached to one end of said body portion, extended back over the same and provided with side flanges, and a spring tongue or arm attached to the opposite end of said body portion, extended back over the same and between said side flanges, substantially as described.

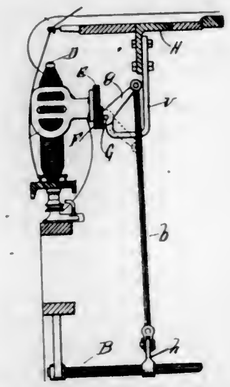
3. A fastener of the class described, comprising a body portion *a*, the arm *d* having toothed side flanges, and the spring tongue or arm *e*, substantially as described.

656,226. RAIL-JOINT. BERNHARD STÜRENBERG, Alfhausen, Germany. Filed Feb. 6, 1900. Serial No. 4,181. (No model.)



Claim.—The improved rail-joint, the distinguishing feature of which is a double-wedge-shaped fish-plate *b* lying against the suitably-tapered-off heads and webs of the rail ends to be joined together the head of the fish-plate being cut away at both ends in the form of a screw, or in a similar manner so that it runs under the heads of the stock-rails, substantially as shown and described.

656,227. SEPARATOR FOR SPINNING-FRAMES. CHARLES E. TEFFT, Pawtucket, R. I. Filed May 3, 1900. Serial No. 15,339. (No model.)



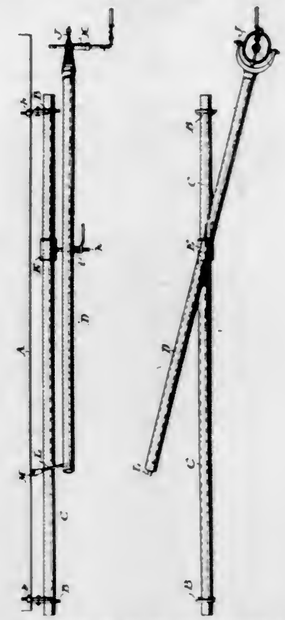
Claim.—1. The combination of two parallel bars means for sliding one on the other, separator-blades pivoted on both bars, and a bracket pivoted to one of the bars, a gear-wheel fast on said bracket, a plate pivoted on one bar and having a segment of gear at one end engaging with the gear on the bracket, a slot in said plate, a pin in the slot fast in the sliding bar S, substantially as described.

2. In a separator for spinning-frames the combination of two bars, one sliding on the other, blades pivoted to both bars, an arm fast on one bar for turning the two bars up and down, substantially as described.

3. In a separator for spinning-frames the combination of two bars, one sliding on the other, blades pivoted to both bars an arm fast on one bar for turning the two bars "up or down" with means for sliding one bar on the other to give the blades a quarter-turn, substantially as described.

4. In a separator the combination of two bars one arranged to slide on the other, a series of blades pivoted to both bars, with means for sliding one bar on the other to give the blades a quarter-turn, substantially as described.

656,228. RIVETING APPARATUS. JOSEPH J. TYNAN and HENRY C. MOETTELER, Philadelphia, Pa., assignors, by mesne assignments, to the Pneumatic Tool Improvement Company, same place and Camden, N. J. Filed Nov. 6, 1899. Serial No. 735,898. (No model.)



Claim.—1. In an apparatus for movably supporting a riveting or other apparatus, in combination, a supporting rail, means for supporting said rail, a traveling hanger formed or provided with a sleeve which encircles said rail and is adapted to have both longitudinal and circumferential movement with respect to it, anti-friction devices disposed between said sleeve and said rail, and a carrying arm secured to said hanger by a swivel connection so as to be capable of revolving movement on an axis perpendicular to the axis of the rail, substantially as set forth.

2. In an apparatus for movably supporting a riveting or other machine, in combination, a supporting rail of cylindrical exterior, means for supporting said rail, a carrying arm, a traveling hanger connected to said arm in such manner that the latter has movement of rotation, and as to its upper end formed or provided with a sleeve which encircles the rail, and ball bearings mounted in suitable races formed in the inner face of said sleeve, substantially as set forth.

3. In an apparatus for supporting a riveting machine or kindred device, in combination, a supporting rail, a sleeve encircling said rail and embodying countersinks in its respective extremities, balls mounted in said countersinks, annular nuts mounted in said countersinks the opposing faces of the bottoms of the countersinks and the inner ends of the annular nuts being oppositely inclined, a carrying arm, and a depending device connected to the sleeve and pivotally connected to said carrying arm, substantially as set forth.

4. In a riveting machine supporting apparatus, in combination, a supporting rail, a sleeve encircling said rail, two recesses in the inner face of said sleeve, two series of balls mounted in each recess, a steel ring placed at the base of each recess, and an annular dividing plate disposed between the balls of the two adjacent series, and a carrying arm hingedly connected to said sleeve.

5. In a riveting machine supporting apparatus, in combination, a sup-

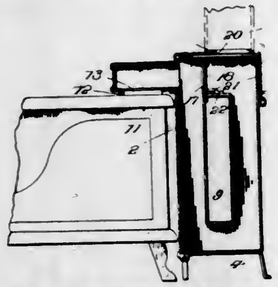
porting rail, a sleeve encircling said rail, two recesses in the inner face of said sleeve, two series of balls mounted in each recess, a steel ring placed at the base of each recess, and an annular dividing plate of hardened steel disposed between the balls of the two adjacent series, a carrying arm hingedly connected to said sleeve, a riveting apparatus or similar device mounted on said arm, and a strut provided with a wheel or caster mounted on said arm.

6. In a device for supporting riveting and other apparatus, in combination, a supporting rail, means for supporting said rail, a traveling hanger formed or provided with a sleeve which encircles said rail and is adapted to have both longitudinal and circumferential movement with respect to it, and a carrying arm which is connected at a point intermediate of its length to said hanger, substantially as set forth.

656,229. AROMATIC FLUORO-HYDROCARBON. FRIEDRICH VALENTINER, Leipsic-Plagwitz, Germany. Filed Apr. 30, 1897. Serial No. 634,632. (Specimens.)

Claim.—The described process for the production of aromatic fluorohydrocarbons, which consists in treating diazo compounds with a hydrofluoric compound.

656,230. HEATING ATTACHMENT FOR STOVES. AMASA B. VERDER, Sedalia, Mo. Filed Apr. 26, 1900. Serial No. 14,491. (No model.)



Claim.—1. A heating attachment, comprising inner and outer shells having an intercommunicating space formed between corresponding walls and provided at its upper portion with a smoke inlet and an outlet, and a damper intermediate of the said smoke inlet and outlet and located between the top portions of the two shells and comprising a fixed plate forming an extension of the rear wall of the inner shell and having its upper edge portion folded, and a movable plate having its lower edge portion outwardly bent and held to the top wall of the inner shell, and having its upper edge portion fitted into the space formed by the folded edge portion of the fixed plate, both plates having corresponding openings, substantially as set forth.

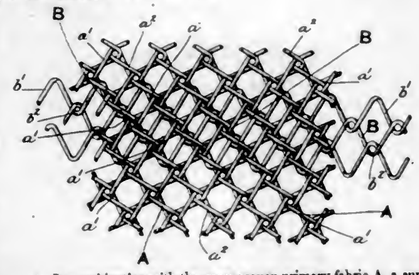
2. The herein-described heating attachment, comprising an inner and an outer shell having an intercommunicating space formed between corresponding walls, the inner shell opening through opposite walls of the outer shell, a hinged cover constituting the top of the outer shell and having a pendent portion at its swing end to overlap the upper portion of the front wall of the outer shell, said cover having a smoke-outlet, a box projected from the upper portion of the outer shell and adapted to be connected with the smoke-outlet of a stove, a stopper closing an opening in the lower portion of an end wall of the outer shell, and a damper comprising a fixed and a movable plate having corresponding openings, the fixed plate being an extension of the rear wall of the inner shell and having its upper edge portion folded and the movable plate having its upper edge fitted into the space formed by the folded edge portion of the fixed plate and having its lower edge portion bent to obtain a bearing upon the top portion of the inner shell and held thereto, substantially as set forth.

656,231. WIRE MESH FOR CYCLE-SEATS. ALFRED E. WALE, Elmdon, England. Filed Dec. 23, 1899. Serial No. 741,468. (No model.)

Claim.—1. The new woven-wire mesh or fabric for cycle-saddle seats and other articles consisting of the combination with a primary or ordinary cross-woven wire fabric of longitudinally-woven helices of either right or left hand convolutions engaging and interlocking with the helices of the primary fabric either on one or both sides of the primary fabric substantially as herein set forth.

2. The woven-wire mesh or fabric for cycle-saddles or the like, comprising a primary cross-woven fabric A of helices and a supplemental fabric one longitudinal helix of one fabric engaging two longitudinal helices of the other fabric, substantially as described.

3. The woven-wire mesh or fabric B for cycle-saddle seats and other articles composed of helices b' b^2 in combination with the primary fabric A each of the helices b' and b^2 being caused to engage with two of the longitudinal helices a' of the cross-woven primary or foundation fabric A thus producing one new fine strong fabric in the manner and for the purpose substantially as herein set forth.

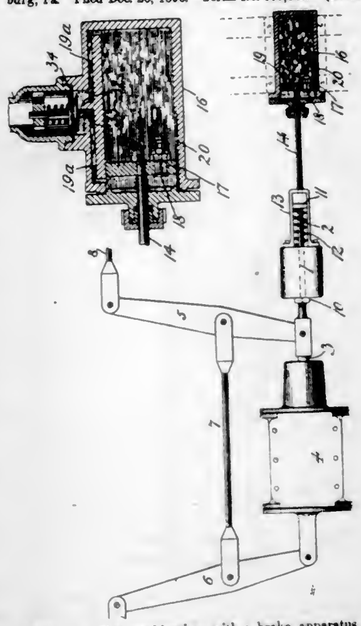


4. In combination with the cross-woven primary fabric A, a supplemental fabric engaging the same consisting of longitudinal helices engaging longitudinal helices of the primary fabric, and a series of additional helices interwoven with the primary fabric on the under side of the same, substantially as described.

5. In combination with the primary cross-woven fabric A, a supplemental fabric comprising longitudinal helices engaging with the longitudinal helices of the primary fabric and an additional fabric interwoven on the under side of the primary fabric, said additional fabric having its helices of different hand from those of the primary fabric and engaging also with transverse helices of the primary fabric.

6. In combination with the primary cross-woven fabric A, a supplemental fabric comprising longitudinal helices engaging with the longitudinal helices of the primary fabric and an additional fabric interwoven on the under side of the primary fabric, said additional fabric having its helices of different hand from those of the primary fabric and engaging also with each alternate transverse helix of the primary fabric.

656,232. RAILWAY-BRAKE. HENRY H. WESTINGHOUSE, Pittsburg, Pa. Filed Dec. 20, 1898. Serial No. 699,843. (No model.)



Claim.—1. The combination, with a brake apparatus, comprising means for applying the brakes, of additional means for utilizing the force of inertia to augment the braking force, and means whereby the additional force may be gradually reduced.

2. The combination, with a brake mechanism, comprising means for applying the brakes, of additional means for utilizing the force of inertia to augment the braking force and a cylinder and a piston connected with the mechanism, for effecting and continuing the application of an additional force due to the action of inertia.

3. The combination, with a brake mechanism, of an additional inertia device and a cataract-cylinder and a piston connected with the mechanism, whereby a gradual reduction of the braking force may be effected.

4. The combination, in a brake mechanism, of a brake-actuating device, a yielding connection between the brake-actuating device and a part of the mechanism which is movable relatively thereto by the action of inertia, and a cataract, or dash-pot, device connected with the part of the mechanism which is movable relatively to the brake-actuating device by the action of inertia.

5. The combination, in a brake mechanism, of a brake-actuating device, a yielding connection between the brake-actuating device and a part of the mechanism which is movable relatively thereto by the action of inertia, a cylinder and a piston in the cylinder connected with the mechanism which is movable by the action of inertia.

6. The combination, in a brake mechanism, of a brake-actuating device, an inertia device connected thereto, a cylinder, a piston in the cylinder connected with the inertia device and adapted to retard return movement of the inertia device.

7. The combination, in a brake mechanism, of an inertia device, a yielding connection between the mechanism and the inertia device, which is subject to strain by the action of inertia, and means for continuing and gradually reducing the strain.

8. The combination, with a brake apparatus, of an inertia device, means for utilizing the force of inertia to augment the braking force, means whereby the additional force may be gradually reduced, and means whereby the rapidity of the reduction may be varied.

656,233. SNAP-HOOK. CHARLES A. WHITNEY, Stevensville, Pa. Filed Dec. 5, 1899. Serial No. 739,304. (No model.)



Claim.—1. In a snap-hook, the combination with the tongue having an arcuate movement at its outer end, and a curved bar movable with the tongue, of a catch applied to the hook and located at one side of the bar and having a portion constructed to interlock therewith and secure the said bar and tongue when the latter is closed, substantially as described.

2. In combination, a hook, a casing having a circumferentially-disposed pocket adjacent to its rim, a pivoted tongue, a curved bar movable with the tongue and having one end entering said pocket, a spring located in the said pocket and adapted to automatically close the tongue, and a catch disposed to engage with the opposite end of the bar and lock it and the tongue, substantially as set forth.

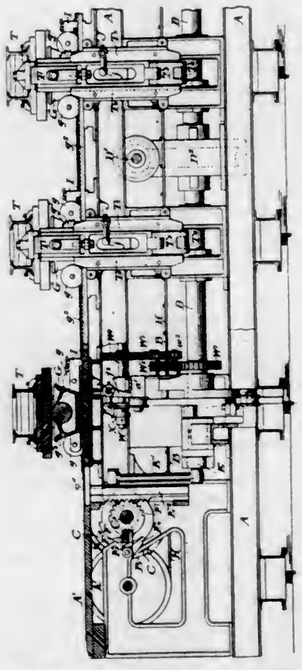
3. In combination, a hook, a casing having an opening and a pocket in line with the said opening, a pivoted tongue, a curved bar movable with the tongue and having a side portion cut away, and a spring-actuated catch located in the aforesaid pocket and comprising a shouldered part to interlock with the curved bar and a reduced part to pass by the reduced part of the curved bar and extend through the opening of the casing, substantially as described.

4. In combination, a hook, a casing having a series of openings in its rim, a pivoted tongue operating through one of the openings, a curved bar movable with the tongue and having an operating-stud passing through another of the openings, and a spring-actuated catch for the tongue projecting through another of the said openings, the curved bar closing all of the said openings, substantially as described.

656,234. MACHINE FOR PRINTING OIL-CLOTH. WILLIAM T. WIEGAND, Philadelphia, Pa., assignor of one-half to John Haverstick, same place. Filed Dec. 7, 1899. Serial No. 739,464. (No model.)

Claim.—1. A machine for printing oil cloth linoleum and kindred products, comprising means for systematically advancing a web to be imprinted,—a series of printing forms or blocks, and means for occasioning the throws of the printing blocks in such order that individual blocks will, in a run of the machine, be automatically held out of operation periodically but ununiformly, each being so held out during two or more cycles of operation of the machine, substantially as set forth.

2. A machine for printing oil cloth and kindred products, comprising means for advancing a web to be imprinted,—a series of printing blocks,—means for supplying color to said blocks,—and automatic means for occasioning the throws of the printing blocks so that selected blocks will be periodically held out of operation during a run of the machine for non-coincident periods of time, during one of which periods two or more cycles of operation of the machine occur, substantially as set forth.



3. In a machine for printing oil cloth and kindred products, in combination, a supporting framework, a series of printing blocks, means for occasioning the regular intermittent travel of a web of fabric, means for normally occasioning the throw or operative descent of the several printing blocks at regular intervals, and means for automatically holding individual printing blocks out of operation, during a run of the machine, for various predetermined ununiform periods of time, substantially as set forth.

4. In a machine for printing oil cloth and kindred products, in combination, a supporting framework, a series of printing blocks, means for occasioning the advance of a web of fabric to be printed, mechanism adapted to normally occasion the regular throw of each printing block at regular measured intervals, and means for so manually setting or prearranging said mechanism as to automatically occasion the holding of selected printing blocks out of operation during periods in each of which the machine makes or performs two or more of its cycles of operation, such periods being ununiform as respects individual blocks of those held out, substantially as set forth.

5. In a machine for printing oil cloth, a supporting framework, a series of printing blocks, means for occasioning the advance of a sheet of fabric to be printed along said framework, a series of independent mechanisms for occasioning the throw of the printing blocks at predetermined regular intervals, and means, manually adjustable, to automatically interrupt, during the run of the machine the operation of selected blocks of such series at periodically recurring intervals for predetermined lengths of time, ununiform as respects the several blocks so interrupted, substantially as set forth.

6. In a machine for printing oil cloth, in combination, a framework, a series of printing blocks, a driving shaft, independent trains of mechanism leading from said shaft to the respective blocks to occasion the throw of said printing blocks, adjustable automatically operated mechanism which interrupts the operation of selected trains of mechanism at periodic intervals during a run to hold printing blocks out of operation for predetermined variable non-coincident lengths of time, substantially as set forth.

7. In a machine for printing oil cloth, in combination, a framework, a series of printing blocks, means for occasioning the feed of a sheet of fabric to be printed, a main driving shaft, a series of cams mounted on said shaft one in connection with each printing block, arms depending from said printing blocks, studs or devices against which the respective cams operate in their rotation, and connections between each stud and the arms of an associated printing block, the arrangement being such that the weight of a printing block normally holds a stud in operative relation against the

edge of its cam, and a single cam occasions the elevation of a printing block substantially as set forth.

8. In a machine for printing oil cloth, in combination, a framework, a series of printing blocks, means for occasioning the feed of a sheet of fabric to be printed, a main driving shaft, a series of cams mounted on said shaft, one in association with each printing block, two arms depending from each printing block, studs or devices corresponding in number to the cams against one of which each of said cams operates in its rotation, connections between each stud and the two arms of the associated printing block, the arrangement being such that the weight of a printing block normally holds the stud in operative relation against the edge of the cam, and the movement of said stud under the actuation of said cam is transmitted equally to both arms of a printing block and controls the movement of said block, substantially as set forth.

9. In a machine for printing oil cloth, in combination, a framework, a series of printing blocks, means for occasioning the feed of a sheet of fabric to be printed, a main driving shaft, a series of cams mounted on said shaft, one in association with each printing block, two arms depending from each printing block, studs or devices corresponding in number to the cams against one of which each of said cams operates in its rotation, connection between each stud and the two arms of the associated printing block, the arrangement being such that the weight of a printing block normally holds the stud in operative relation against the edge of the cam, and the movement of said stud under the actuation of said cam is transmitted equally to both arms of a printing block and controls the movement of said block, and automatically operated devices for holding said stud in fixed position for predetermined periods, substantially as set forth.

10. In a machine for producing oil cloth, linoleum, and kindred products, in combination, a main frame, means for occasioning the advance of a sheet of fabric to be ornamented, a series of printing forms or blocks, pairs of walking beam levers, one pair employed in connection with each form or block, a connection between the outer ends of the members of each pair and the respective ends of a form or block, and means located at the inner ends of the members of each pair for contemporaneously rocking or tilting said members, substantially as set forth.

11. In a machine for printing oil cloth, in combination, a main frame, means for occasioning the advance of a sheet of fabric to be printed, a driving shaft, a printing block, a cam on said shaft, a follower plate having a projection against which said cam operates, a pair of walking beam levers, and connections between said levers and the follower plate on the one hand and the printing block on the other, substantially as set forth.

12. In a machine for producing oil cloth and kindred products, in combination, a main frame, a printing form or block, means for occasioning the advance of a sheet of fabric, a main driving shaft, a cam mounted on said shaft, a pair of walking beam levers, a connection between the said levers and the printing form or block, and a device through which said cam operates to tilt or throw said walking beam levers, substantially as set forth.

13. In a machine for printing oil cloth, in combination, a main frame, a printing block, means for occasioning the advance of a sheet of fabric, a main driving shaft, a cam, a follower plate having a central longitudinal slot through which the driving shaft extends, a stud projecting from said plate against which the cam bears, a pair of walking beam levers, means for connecting said walking beam levers to the follower plate on the one hand and to the printing block on the other, a lug connected to said cam and a projection carried by said lug adapted when the parts are in a given position to pass beneath the stud on the follower plate, substantially as set forth.

14. In combination, a main frame, a series of printing blocks, means for occasioning the advance of a web of fabric to be printed, a main driving shaft, independent trains of mechanisms leading from the driving shaft to the several printing blocks, and each embodying a reciprocating or other movable device caused to positively move in one direction and caused to move in the opposite direction by the weight of a printing block, and an adjustable controlling device for encountering said reciprocating device and holding it in fixed position against the weight of the printing block for variable periods without interrupting the operation of the other portions of the machine, substantially as set forth.

15. In combination, a main frame, a series of printing blocks, means for occasioning the advance of a web of fabric to be printed, a main driving shaft, independent trains of mechanisms leading from the driving shaft to the several printing blocks, and each embodying a reciprocating or other movable device caused to positively move in one direction and caused to move in the opposite direction by the weight of a printing block, a controlling device adapted to encounter said reciprocating device and hold it out of operation against the weight of the printing block without interrupting the operation of the other portions of the machine, and means for automatically throwing said controlling device into contact with said reciprocating device, at predetermined intervals for predetermined selected periods, substantially as set forth.

16. In combination, a main frame, a series of printing blocks, means for occasioning the advance of a web of fabric to be printed, a main driving shaft, independent trains of mechanisms leading from the driving shaft to the several printing blocks, and each embodying a reciprocating or other movable device caused to positively move in one direction and caused to move in the opposite direction by the weight of a printing block, a controlling device for encountering said reciprocating device and holding it out of operation against the weight of a printing block without interrupting the operation of the other portions of the machine, and means for automatically throwing said controlling device into contact with said reciprocating device and maintaining it in contact for predetermined periods variable at the will of the operator, substantially as set forth.

17. In combination, a main frame, a series of printing blocks, means for occasioning the advance of a web of fabric to be printed, a main driving shaft, independent trains of mechanisms leading from the driving shaft to the several printing blocks, and each embodying a reciprocating or other movable device caused to positively move in one direction and caused to move in the opposite direction by the weight of a printing block, a controlling device for encountering said reciprocating device and holding it out of operation against the weight of the printing block without interrupting the operation of the other portions of the machine, and a cam surface mounted on a rotating shaft and adapted to be manually brought to a position in which it will hold said controlling device in engagement with said reciprocating device for a period of time determined by the length of the cam, substantially as set forth.

18. In a machine for printing oil cloth, in combination, a framework, a main driving shaft, a series of printing blocks, means for occasioning the advance of a sheet of fabric to be printed, a series of mechanisms independent of each other through which the motion of the driving shaft is independently communicated to the several printing blocks, and each such train consisting of a cam, a follower plate, a pair of walking beams, connections between said beams and said printing block on the one hand and said follower plate on the other, a controlling bell crank one arm of which is adapted to engage the plate, a rotating shaft, and a cam mounted on said shaft and adapted to encounter the other arm of said controlling bell crank, substantially as set forth.

19. In a machine for printing oil cloth, in combination, a framework, a main driving shaft, a series of printing blocks, means for occasioning the advance of a sheet of fabric to be printed, a series of mechanisms independent of each other through which the motion of the driving shaft is independently communicated to the several printing blocks, and each such train consisting of a cam, a follower plate, a pair of walking beams, connections between said beams and said printing block and said plate, a controlling bell crank one arm of which is adapted to engage the follower plate, a rotating shaft, and a series of cam crests mounted on said shaft in such arrangement that any one of them may be brought into position to encounter the other arm of said controlling bell crank, substantially as set forth.

20. In a machine for printing oil cloth and kindred products, in combination, a main frame, a follower plate, means for occasioning the rise and fall of said follower plate, a connection between said follower plate and said printing block, a bell crank lever one arm of which is adapted to engage said follower plate, a rotatable shaft, and a cam mounted on said shaft adapted to be moved into and out of a position in which it will encounter the other arm of said bell crank lever, substantially as set forth.

21. In a machine for printing oil cloth and kindred products, in combination, a main frame, a printing block, a follower plate, a connection between said follower plate and printing block, means for occasioning the vertical reciprocation of said follower plate, a bell crank one arm of which is adapted to encounter said follower plate and prevents its rise, a cam embodying a series of cam crests mounted free for adjustment with relation to the other arm of said bell crank, and means for occasioning the rotation of said cam, substantially as set forth.

22. In an oil cloth printing machine, in combination, a main frame, a printing block, a follower plate, means for occasioning the reciprocation of said follower plate, a bell crank lever adapted to engage said follower plate, a cam embodying a series of cam crests of dissimilar length, a constantly rotating shaft on which said cam is mounted, and means for securing said cam in different positions on said shaft, substantially as set forth.

23. In an oil cloth printing machine, in combination, a main frame, a printing block, a vertically reciprocating follower plate, a connection between said follower plate and said printing block, a bell crank lever, a cam adapted to encounter said lever, a shaft on which said bell crank lever is loosely mounted, a ring fast on said shaft, and a device through which said ring engages said bell crank, substantially as set forth.

24. In an oil cloth printing machine, in combination, a main frame, a printing block, a vertically reciprocating follower plate, a connection between said follower plate and said printing block, a bell crank lever, a cam adapted to encounter said lever, a shaft on which said bell crank lever is loosely mounted, a ring fast on said shaft, a device through which said ring engages said bell crank, and a weighted arm connected to said shaft, substantially as set forth.

25. In a machine for printing oil cloth, in combination, a main frame, a printing block, a driving shaft, a heart cam on said shaft, a follower plate operatively connected to said cam, walking beams connected respectively to the follower plate and to the printing block, a bell crank lever, a constantly rotating cam shaft, and a cam adjustably mounted on said shaft and embodying a series of cam crests of different length adapted to engage each with one arm of the bell crank substantially as set forth.

26. In a machine for printing oil cloth, in combination, a main frame, a series of printing blocks, means for occasioning the throw of said printing blocks, a traveling apron embodying a series of engaging points, and an inclined deflecting plate supported over the traveling apron at the receiving end of the machine the lower end of which is below the level of the engaging points, substantially as set forth.

27. In a machine for printing oil cloth, in combination, a series of printing blocks, means for occasioning the vertical reciprocation of said printing blocks, a series of inking carriages, cables connected to said carriages bent upon suitable cable wheels, a gear wheel mounted on the shaft of a cable wheel, a rocking toothed sector in mesh with said gear wheel, an arm adapted to rock with said sector and embodying a slot, and a pair of oppositely rotating gears having studs at opposite points of their faces adapted to alternately engage said slot, substantially as set forth.

28. In a machine for printing oil cloth, in combination, a series of printing blocks, means for occasioning the vertical reciprocation of said printing blocks, a series of inking carriages, cables connected to said carriages and bent upon suitable cable driving wheels, a device in the nature of a bell crank lever one arm of which is slotted and the other arm of which occasions through interposed mechanisms the intermittent advance of the carriage actuating cable wheels, a pair of oppositely rotated wheels, and studs mounted on said wheels and adapted to alternately engage in said slot to occasion the throw of the bell crank, substantially as set forth.

29. In a machine for printing oil cloth, in combination, a series of printing blocks, means for occasioning the vertical reciprocation of said printing blocks, a series of inking carriages, cables connected to said carriages and bent upon suitable cable driving wheels, means for occasioning the rotative oscillation of said wheels, a liquid chamber through which extends a shaft connected with the cable operating mechanism, and a vane mounted on said shaft and submerged in the liquid in said chamber, substantially as set forth.

30. In a machine for printing oil cloth, in combination, a series of printing blocks, means for occasioning the vertical reciprocation of said printing blocks, a series of inking carriages, cables connected to said carriages and bent upon suitable cable driving wheels, a segmental liquid chamber through which extends a shaft connected with the cable actuating mechanism, a circulating pipe the respective extremities of which open into the liquid chamber at the respective sides thereof, and a vane mounted on said shaft and extending across the interior of said chamber and the edge of which in the rotation of the shaft sweeps the cylindric interior face of the same, substantially as set forth.

31. In a machine for printing oil cloth, in combination, a series of printing blocks, means for occasioning the vertical reciprocation of said printing blocks, a series of inking carriages, cables connected to said carriages and bent upon suitable cable driving wheels, a segmental liquid chamber through which the shaft of a cable wheel extends, a circulating pipe the respective extremities of which open into the liquid chamber at the respective sides thereof, a vane mounted on said shaft extending across the interior of said chamber and the edge of which in the rotation of the shaft sweeps the cylindric interior face of the chamber, a valve in communication with the circulating pipe, and means for automatically operating said valve after each regular movement of the shaft and vane, substantially as set forth.

32. In a machine for printing oil cloth and kindred products, a bed plate, a series of printing plates, means for occasioning the reciprocation of said printing plates, means for occasioning the travel of a web to be printed, inking carriages, cables connected to said carriages and bent upon wheels, mechanism for occasioning the rotative oscillation of said wheels, and the backward and forward movement of the inking carriages, a segmental liquid chamber through which the axle of one of said wheels extends axially with respect to its cylindric wall, a vane mounted in said chamber and connected to said axle, a circulating pipe the respective extremities of which communicate with the interior of said chamber at opposite sides of the vane, the said chamber and pipe being normally full of liquid, a valve chamber connected with said pipe, a valve mounted in said chamber, a spring which normally holds said valve in closed position, and a cam mounted on a rotating part of the machine which cam operates to open said valve each time before each regular movement of said axle, substantially as set forth.

33. In an oil cloth printing machine, in combination, a bed plate, a series of printing plates, means for occasioning the rise and fall of said printing plates, inking carriages, cables or kindred devices connected to said carriages, wheels over which said cables pass, one of which has an extended axle, a liquid chamber inclosing part of said axle, the vane mounted on said axle, the circulating pipe, the valve chamber connected with said circulating pipe, the valve mounted in said chamber and having a protruding stem, and a cam having two crests mounted on a moving part of the apparatus and adapted to occasion the predetermined movement of the said valve head, substantially as set forth.

34. In an oil cloth printing machine, in combination, printing plates, means for occasioning the rise and fall of said printing plates, inking carriages, cables connected to said inking carriages, wheels over which said cables run, one of which cables is provided with an axle, a liquid chamber inclosing part of said axle, a vane mounted on said axle, the circulating pipe, the valve chamber connected with said circulating pipe, the valve mounted in said chamber and having a protruding stem, an arm connected to said valve stem, and to a fixed part of the framework, a spring which maintains said valve normally closed, and a cam mounted upon a moving part of the apparatus and adapted to encounter said arm, substantially as set forth.

35. In a machine for printing oil cloth, in combination, a series of printing blocks, a series of groups of mechanism adapted to occasion the throw of said printing blocks, a constantly rotating shaft extending longitudinally of the machine, and provided with devices adapted to interrupt the operation of said groups of mechanism, substantially as set forth.

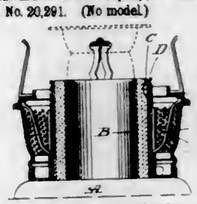
36. In a machine for printing oil cloth, in combination, a series of printing blocks, a series of gronps of mechanism adapted to occasion the throw of said printing blocks, a series of controller shafts, one arranged in the vicinity of each of said groups of mechanism, bell crank levers mounted one on each of said controller shafts, each of which when in thrown position interrupts the operation of that group of printing block operating mechanism near which it is located, a cam shaft extending through the machine, and a series of cams mounted on said shaft one in the vicinity of each of said bell cranks, substantially as set forth.

37. In a machine for printing oil cloth, in combination, a series of printing blocks, and a series of inking carriages, a pair of oppositely rotating wheels, means for operating said wheels in unison in the opposite direction, studs mounted on said wheels, a bell crank lever one arm of which is alternately engaged by said studs, and mechanism connective of the other arm of said lever and said inking carriages, substantially as set forth.

38. In a machine for printing oil cloth, in combination, a series of printing blocks, means for occasioning their throw, a series of inking carriages, means for occasioning the reciprocation of said carriages connected with which means is a vane mounted in a liquid chamber, substantially as set forth.

39. In a machine for printing oil cloth, in combination, a series of printing blocks, means for occasioning their throw, a series of inking carriages, means for reciprocating said carriages including a member provided with a vane disposed within a liquid chamber, a pipe or channel the respective ends of which are in communication with the opposite sides of said liquid chamber, a valve which controls said pipe or channel, and means for automatically opening and closing said valve, substantially as set forth.

656,235. **LAMP-BURNER.** FRANK T. WILLIAMS, Meriden, Conn., assignor to the Edward Miller & Company, of Connecticut. Filed June 14, 1900. Serial No. 20,291. (No model.)

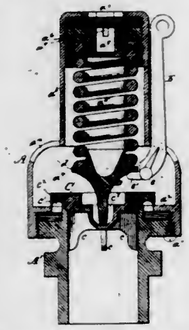


Claim.—1. In a lamp-burner in combination, a wick-tube adapted to surround a wick, a stationary flange turned outwardly from said wick-tube to direct the air-supply away from the base of the flame, a tube slidable up and down outside of said wick tube and flange, and a chimney-gallery carried by said slidable tube.

2. In a lamp-burner in combination, a wick-tube adapted to surround a wick, a stationary flange turned outwardly from said wick-tube to direct the air-supply away from the base of the flame, a tube slidable up and down outside of said wick-tube and removable therefrom over said flange, and a chimney-gallery carried by said slidable tube.

3. In a lamp-burner in combination, a wick-tube adapted to surround a wick, a stationary flange turned outwardly from said wick-tube to direct the air-supply away from the base of the flame, a tube slidable up and down outside of said wick-tube and removable therefrom over said flange, a chimney-gallery carried by said slidable tube, and means to hold said slidable tube and gallery in a raised position.

656,236. SAFETY-VALVE. EDWIN A. WOOD and WILLIAM E. WOOD, Utica, N. Y. Filed Nov. 7, 1899. Serial No. 736,163. (No model.)

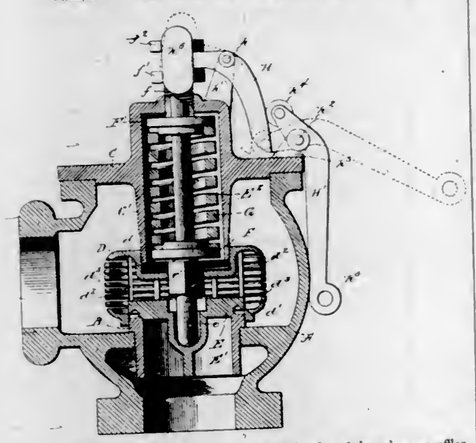


Claim.—1. The combination with the casing, the valve and its spring, of a screw-washer in the casing, said washer having a key-opening formed therein, and the casing having a hole conforming to the key for the insertion of a removable key for adjusting the washer to regulate the tension of the spring.

2. The combination with the interiorly-threaded valve-casing, the valve, the spring, and the plug or washer for adjusting the tension of the spring, of a threaded locking-disk located in the casing above the plug and adapted to be screwed down upon the same, and a separable key adapted to engage said plug and said disk separately to effect adjustment thereof.

3. In a safety-valve, the combination with the valve-casing made in two parts screwed together, one part having an interior annular flange and the other part or shoulder overlapped by said flange, and a set-screw extending through said flange and adapted to engage the shoulder.

656,237. SAFETY VALVE AND MUFFLER. WILLIAM E. WOOD, Utica, N. Y. Filed Oct. 4, 1899. Serial No. 732,535. (No model.)



Claim.—1. In a safety-valve, the combination of the valve, a muffler, a blow-down ring at one end of said muffler surrounding the valve, and means at the other end for supporting and adjusting said ring.

2. In a safety-valve, the combination with the valve-casing and its valve, of the combined blow-down ring and muffler adjustable in the casing in the direction of movement of the valve, and means for adjusting said ring and muffler from the exterior of the casing.

3. In a pop safety-valve, the combination with the valve and with the blow-down ring the latter being adjustable, of a spring-pressed spindle stepped on the valve to close the same, and having operative connection with the blow-down ring, to adjust the latter, said spindle having an angular head, of a lever for lifting the spindle, with means thereon for engaging the angular head to prevent rotation of the spindle.

4. In a safety-valve, the combinaton with the valve-casing and its valve, of a longitudinally-movable and rotatable rod or stem stepped on the valve and extending through the casing, a spring acting on said rod or stem to close the valve, and a blow-down ring adjustable in the direction of movement of the valve and operatively connected with said rod or stem whereby said ring is adapted to be rotated to adjust the same from the exterior of the casing.

5. In a safety-valve, the combination with the valve-casing and its valve, of a blow-down ring surrounding the valve and having screw connection with the casing whereby it is adapted to be adjusted in the direction of movement of the valve, a stem or spindle stepped on the valve, a spring acting on said stem to close the valve, said ring and stem having sliding and non-rotatable connection relatively to each other, whereby the ring is adapted to be adjusted by rotating the stem.

6. In a safety-valve, the combination with the valve-casing and its valve, of a blow-down ring having screw connection with the casing, whereby it is adjustable relatively to the valve, and a stem or spindle extending through the casing and having operative connection with said ring, whereby adjustment of the latter may be effected from the exterior of the casing.

7. In a safety-valve, the combination of an adjustable ring surrounding the outer circumference of the valve, a series of arms or perforated wall connected with a central portion, having an irregular-shaped opening at its axis, a threaded portion formed on the casing engaging a corresponding thread formed with the arms or wall, a central spindle formed to fit and engage the irregular-shaped opening for imparting a rotary motion to the arms and permitting a vertical motion of the spindle, and means for turning the spindle at the top and outside the valve-casing substantially as described.

8. In a safety-valve, the combination with the valve and its casing, a longitudinally-movable rod stepped on the valve and projecting from the casing, a spring acting on said rod to close the valve and projecting from the casing, a spring acting on said rod to close the valve, a lever mounted on the case and operatively connected with said rod to relieve the valve, and a lever of the first order fulcrumed on the casing for operating the first said second lever bearing such relation to the first that its operative end passes a central line so that the resistance of the first-named lever holds the second against return movement.

9. In a pop safety-valve, the combination of the central spindle, a primary lever for lifting the same, a secondary lever acting thereon composed of a long and short arm, with the short arm to bear against the primary lever, and a stop substantially as described, whereby the end of the short arm may pass the dead-center between the secondary and primary lever, and engage the stop as set forth.

656,238. COMPOSITION OF MATTER FOR MAKING GAS. CHARLES H. WORSNOP, Halifax, England, assignor to himself and the Worsnop & Company, Limited, same place, and Henry Edwin Hodgson, Cleckheaton, England. Filed Mar. 15, 1900. Serial No. 8,701. (No specimens.)

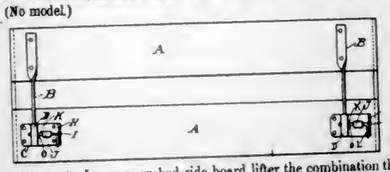
Claim.—1. The herein-described composition of matter for the production of gas, consisting of carbid of calcium, wax, grease, and sugar, substantially as and for the purpose specified.

2. The herein-described composition of matter for the production of gas, consisting of carbid of calcium, paraffin-wax, cocoa-butter, and sugar, substantially as and for the purpose specified.

3. The herein-described process of producing a composition of matter for the production of gas, consisting in melting together wax, grease and sugar, then immersing carbid of calcium in the hot liquid mixture for a time, and then withdrawing and cooling the treated carbid of calcium.

4. The herein-described process of producing a composition of matter for the production of gas, consisting in melting together paraffin-wax, cocoa-butter, and sugar, then immersing carbid of calcium in the melted mixture for a time, and then withdrawing and cooling the treated carbid of calcium.

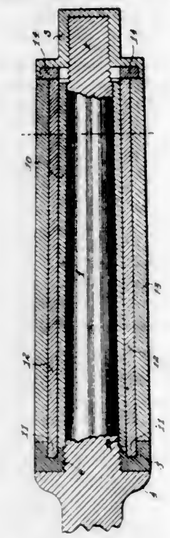
656,239. SIDE-BOARD FASTENER FOR WAGON-BEDS. SIMON R. ZIMMERMAN, Amazonia, Mo. Filed June 4, 1900. Serial No. 19,066. (No model.)



Claim.—1. In a wagon-bed side-board lifter the combination therewith of a plate riveted to the outside of the lower bed, a vertical channel in said plate, a brace adapted to be carried in said channel and having its upper end riveted to the outside of the upper bed in a position vertically above said channel, two perforations or holes horizontally opposite in the sides of the channel, a lip on an end of said plate and its slot, a bolt and its lug upon the face of said plate, the bolt pin and handle and the notches to receive said bolt, substantially as described.

2. In combination with the upper and lower beds of a wagon, a plate rigidly attached to the lower bed, a channel on the face thereof, a brace and the notches in its inner edge and having its upper end rigidly attached to the upper bed, and a bolt carried on the face of said plate and adapted to engage the notches of said brace, substantially as described.

656,240. AXLE. HENRY B. BEEBE, Jacksonville, Fla. Filed Jan. 11, 1900. Serial No. 1,127. (No model.)



Claim.—1. A device of the class described comprising a spindle, having an enlargement or shoulder at its inner end, a removable collar arranged on the inner portion of the spindle contiguous to the shoulder or enlargement and provided with an annular groove concentric with the spindle, and an axle-skein arranged on the spindle and abutting against the inner portion of the collar and having its bearing-face arranged flush with and forming a continuation of the adjacent face of the annular groove, substantially as described.

2. A device of the class described comprising a spindle having a shoulder or enlargement at its inner end, a removable collar arranged on the inner end of the spindle, contiguous to the shoulder or collar and provided with an annular groove, an axle-skein arranged on the spindle and fitting against the inner portion of the collar, and a sleeve designed to be arranged within an axle-box and extending beyond the inner end of the skein and fitting within the annular groove of the collar, substantially as described.

3. A device of the class described comprising a spindle a removable collar arranged on the inner end thereof and provided with an annular groove, an axle-skein arranged on the spindle and fitting against the inner portion of the collar, an axle-box fitting against the outer portion of the collar, and a sleeve arranged within the axle-box and projecting beyond the same and fitting in the groove of the collar, substantially as described.

4. A device of the class described comprising a spindle having a threaded inner portion, a removable interiorly-threaded collar arranged on the inner threaded portion of the spindle and provided at its outer bearing-face with an annular groove, the wall at the inner side or bottom of the groove terminating short of that at the outer side thereof, an axle-skein arranged on the spindle and fitting against the removable collar and having its outer face flush with the adjacent face of the annular groove, an axle-box fitting against the outer portion of the collar, and a sleeve arranged within the axle-box and projecting beyond the inner end thereof and fitting in the annular groove, substantially as described.

5. A device of the class described comprising an axle having a spindle provided with inner and outer threaded portions, said spindle being provided at its inner end with an enlargement or shoulder, an interiorly-threaded collar arranged on the inner threaded portion of the spindle and provided with an annular groove, an axle-skein arranged on the spindle and fitting against the collar at the inner side of the groove, an axle-box fitting against the outer portion of the collar, a sleeve arranged within the axle-box and projecting beyond the inner end of the same and extending into the annular groove of the collar, and an axle-nut arranged on the outer end of the spindle, substantially as described.

656,241. METALLIC TUBE. LEWIS F. BETTS, New York, N. Y. Filed Dec. 26, 1899. Serial No. 741,563. (No model.)

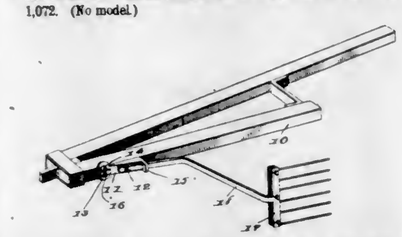


Claim.—1. The metal tube described of rectangular cross-section, consisting of a main portion bent to form the back and sides in channel form from a single piece of sheet metal, and an inner face portion formed from a single piece of sheet metal and having folded edge strips receiving and holding the free edges of said main portion and completing the tube, all combined substantially as herein specified.

2. The tubular sheet-metal elbow described, consisting of a main tobe portion in one piece of channel form having a continuous back forming the outer angle of the elbow, and the sides cut away to allow bending at that point, and a continuous inner face portion bent to form the inner angle of the elbow and having folded edge strips receiving and holding the free edges of said main portion, all combined substantially as herein specified.

3. In a tubular sheet-metal elbow, the main tube portion in channel form of rectangular cross-section consisting of the continuous back A′ common to both members of the elbow, the sides A^2 A^2 cut away at a^2 a^2 to allow said back to bend at such point and to form the wings A^5 A^5, the flanges A^4 A^4 on said sides having the offsets A^3 A^3, in combination with the inner face portion B′ common to both members of the elbow, the strips B^2 B^2 and folds B^3 thereon receiving said flanges, all substantially as herein specified.

656,242. FENDER FOR CULTIVATORS. THOMAS I. BRINKLEY and DANIEL A. WETRICH, Stuart, Iowa. Filed Jan. 11, 1900. Serial No. 1,072. (No model.)



Claim.—1. A fender for cultivators and the like, comprising, in combination, a fender-frame, rods fixed to the frame, a bracket having a central opening, a slotted head at the forward end of the bracket, a right-angled slot, a projection at the rear end of the bracket, which slot is capable of admitting the arm from the fender-frame and permitting the arm to move vertically to a limited extent therein, a bolt to be passed through the forward end of said arm and through the central opening in the bracket, and a bolt to pass through the slot in the forward end of the bracket, substantially as, and for the purposes stated.

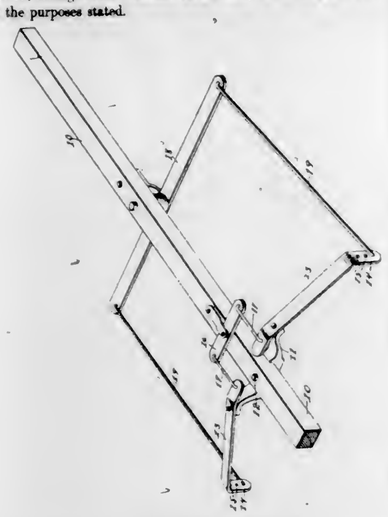
2. In an improved fender for cultivators, the combination of a plate 17, having an integral arm 18 thereon, lugs 19 on the face of the plate 17, rods 21 to pass around each pair of lugs 19, a flat plate 22 to correspond in outer contour with the plate 17, and bolts to pass through said plates, substantially as, and for the purposes stated.

656,248. DRAFT-EQUALIZER. THOMAS I. BRINKLEY and DANIEL A. WETRICH, Stuart, Iowa. Filed Jan. 11, 1900. Serial No. 1,073. (No model.)

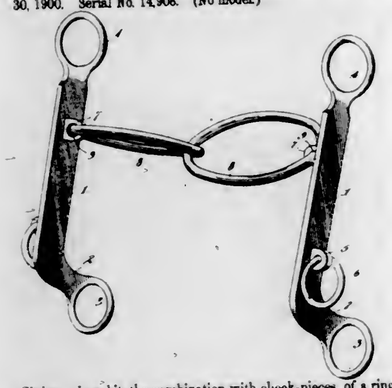
Claim.—1. The combination, with a vehicle-tongue, of two levers pivotally connected with the tongue, and evener-bar pivoted to the tongue, means for connecting the ends of the evener-bar with the inner ends of the said levers, a second evener-bar pivoted to the tongue, and means for connecting the outer ends of said levers with the said second evener-bar, substantially as, and for the purposes stated.

2. An improved draft-equalizer, comprising in combination, a vehicle-tongue, a bracket 11 fixed to the tongue, levers 13 fulcrumed to the ends of said brackets, inclined outwardly and downwardly therefrom, with the ends thereof extending approximately straight downwardly, a short evener-bar pivoted to the top of the tongue in the rear of said levers, links

for connecting the ends of said evener-bar with the inner ends of said levers, and a long evener-bar 18 pivoted to the under surface of the tongue, and links 19 for connecting its outer ends with the outer ends of the levers 13, arranged and combined substantially in the manner set forth, and for the purposes stated.

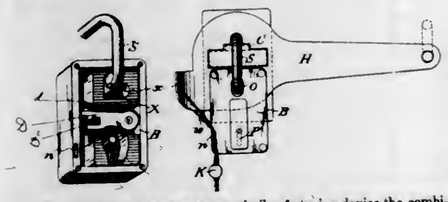


656,244. BIT. ALBERTO CASTRO, San Antonio, Tex. Filed Apr. 30, 1900. Serial No. 14,906. (No model.)



Claim.—In a bit, the combination with cheek-pieces, of a ring movably attached to the inner portion of each of the same, each ring at the center being loosely passed through the other, the said rings being circular and disposed in reverse angles of inclination to bring diametrically-opposed portions of each respectively in contact with the roof of the mouth and the tongue of the animal.

656,245. FASTENING DEVICE AND PADLOCK. JOHN T. DUFAU, San Francisco, Cal. Filed Oct. 10, 1899. Serial No. 733,234. (No model.)

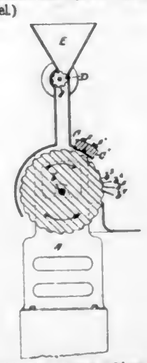


Claim.—1. In a box-fastener or similar fastening device the combination of a staple S having in one prong a notch or groove *a*, in combination with a padlock B, permanently swung in the staple, and the hasp H attached to the lid or cover of the box, and provided with a cross-shaped slot adapted to engage the staple and also to pass over the padlock when it is raised at right angles to said staple and to box-wall, said padlock consisting of a casing provided with an apertare through which passes the notched prong of staple S, and also provided interiorly with a slide-bolt X consisting of one solid piece of metal, having an opening *x* through which also passes the said notched prong of staple S, and so arranged that when locked the slide-bolt X is immovably engaged by the groove *a* of staple S, said slide-bolt X being moved and operated by key, through aperture P, in exterior casing of padlock, engaging tumblers, all substantially as hereinbefore described and set forth.

2. In a fastening device of the character described, the combination of a staple having a channel or recess in one prong thereof; a lock-case permanently swung on said staple, and provided on its inner side with a sliding bolt, and means substantially as described for throwing the said bolt from one side of the lock-case to the other to engage or disengage said staple; with a hasp provided with a suitable opening adapted to permit the passage therethrough of said lock-case and staple, as set forth.

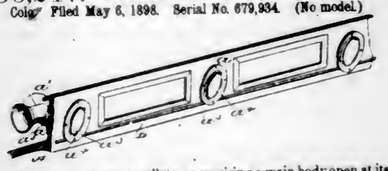
3. In a fastening device of the character described, the combination of a staple having a groove or channel in one prong thereof; a lock-case permanently swung thereon, a slidable bolt in said lock-case provided at one end thereof with a slot having vertical and horizontal ends, and means, substantially as described, for holding said sliding bolt in locked or unlocked position, with a hasp provided with an opening in one end thereof, and adapted to be passed over said lock and staple, as set forth.

656,246. HULLER. FRANKLIN W. FEE, Cincinnati, Ohio, assignor of one-half to Guy Mallon, same place. Filed Feb. 14, 1898. Serial No. 670,198. (No model.)



Claim.—The combination of a rotatable cylinder formed with grooves, having abrupt front walls and inclined rear walls, and intervening surfaces or lands having sloping faces connecting with the inclined rear walls; a hulling-block faced with an elastic material presenting a frictional surface, and means for feeding the seed upon the cylindor, substantially as and for the purpose set forth.

656,247. CAR-VENTILATOR. GUSTAF GUSTAFSON, New Castle, Colo. Filed May 6, 1898. Serial No. 679,934. (No model.)



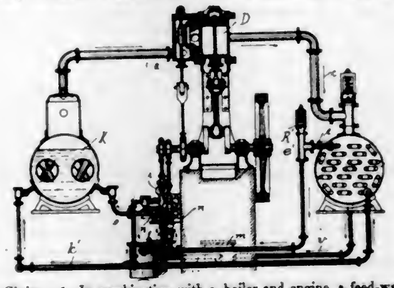
Claim.—1. A car-ventilator comprising a main body open at its inner end and having outer lateral oppositely-facing inlets, absorbent material, such as felt, located centrally within said body over the inner ends of said inlets, a support therefor, and spray-pipes located in said body on opposite sides of and facing said absorbent material, as set forth.

2. A car-ventilator comprising a main body open at its inner end and having outer lateral oppositely-facing inlets, a partition disposed centrally within said body and extending over the inner ends of said inlets, sections of felt, or other absorbent material, removably secured to the sides of said partition, and spray-pipes extending into said body along the top thereof on each side of said partition, substantially as set forth.

3. The combination with a car having a main water-supply pipe, of a series of ventilators extending through the car-roof, each of said ventilators having a main body portion open at its inner end, a damper for said end, oppositely-facing inlet-tubes extending laterally from said body outside of the car, a central partition within said body having felt or the like secured thereto, and spray-pipes extending from said main water-supply pipe into said body on opposite sides of said partition so as to supply water to said felt, or the like, on said partition, substantially as set forth.

4. A car-ventilator comprising a main body open at its inner end and having outer lateral oppositely-facing inlets, a partition disposed centrally within said body and extending over the inner ends of said inlets and having grooves on both sides, sections of absorbent material removably secured in said grooves, and spray-pipes extended longitudinally within said body on opposite sides of said partition, substantially as set forth.

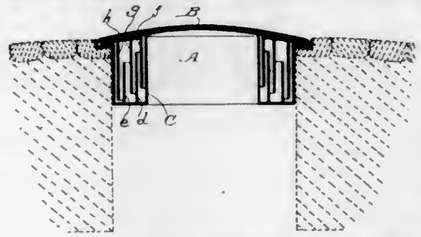
656,248. FEED-WATER HEATER. JOHANN F. HAUBER, Nuremberg, Germany. Filed Apr. 30, 1896. Serial No. 589,701. (No model.)



Claim.—1. In combination with a boiler and engine, a feed-water heater having circulating-pipes therein, a pipe for the exhaust-steam leading from the engine to said heater, a pump having pipe connections to the heater and to the circulating-pipes therein, said pump drawing water from the heater and forcing it mixed with fresh water through the circulating-pipes of the heater, and a second pump having pipe connections with said circulating-pipes and with the boiler for forcing the water into the boiler, substantially as described.

2. In combination with a boiler and engine, a feed-water heater having circulating-pipes therein, a pipe for the exhaust-steam leading from the engine to said heater having a relief-valve, a pump and connecting-pipes for drawing water from the heater and forcing it mixed with fresh water through the circulating-pipes of the heater, and a second pump having pipe connections with said circulating-pipes and with the boiler for forcing the water into the boiler, and a relief-valve in the pipe connection between said pump and circulating-pipes, substantially as described.

656,249. DEVICE FOR EXCLUDING WATER FROM MANHOLES. RUDOLPH HERMAN, San Francisco, Cal. Filed Jan. 17, 1900. Serial No. 1,799. (No model.)

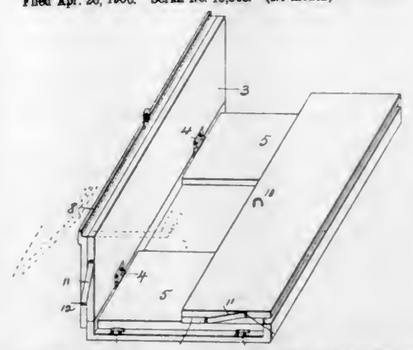


Claim.—1. A sealing-joint for manhole-covers consisting of a wall surrounding the manhole-opening; a channel surrounding the wall of the opening containing one or more vertical partitions spaced apart, the wall surrounding the manhole-opening extending slightly higher than the outer wall of the channel, and a cover for the manhole-opening adapted to extend over the projecting wall and rest at its outer edge upon the outer wall of the channel and provided with depending flanges, which enter between the vertical partitions in the channel, substantially as described.

2. In the construction of manhole-openings, a wall around the central opening, which extends slightly higher than the surrounding level, and one or more concentric channels surrounding the manhole-opening, in combination with a manhole-cover large enough to extend over the wall around the central opening and rest on an outer level, which is lower than the wall around the central opening, said manhole-cover having depending flanges adapted to enter and extend into the concentric channels surrounding the wall around the central opening, substantially as described.

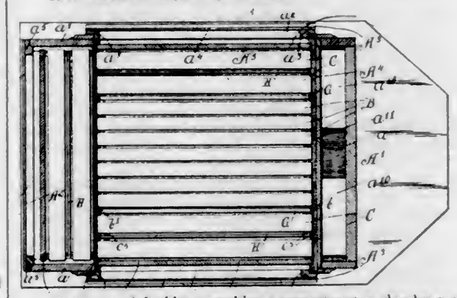
3. In the construction of seal-joints for manhole-openings, a central wall surrounding the manhole-opening, the top of which extends slightly higher than the level on which the outer edge of the manhole-cover rests; two or more concentric channels surrounding the manhole-opening, the partition of the inner channel being lower than the wall of the manhole-opening, and the partition of the outer channel being lower than the partition nearest the manhole; a cover for the manhole constructed on its under side to receive the extended top of the wall surrounding the manhole-opening, and depending flanges on the under side of the cover entering and extending down into the concentric channels around the manhole-opening, substantially as described.

656,250. FOLDING BOX. HARRY M. HOOVER, Allegheny, Pa. Filed Apr. 20, 1900. Serial No. 13,568. (No model.)



Claim.—A folding crate comprising in combination with the bottom having its longitudinal edges flanged, the side pieces hinged to the upper edges of said flanges, the end pieces, of a thickness equal to the height of said flanges, hinged to the upper face of the bottom and between said flanges, the top made of two sections each having their two longitudinal edges free, the links, one end of each being pivoted to the end of a hinged side piece at a suitable location in from the free edge of said piece, the other end of each link pivoted to the end of a top section in from the outer longitudinal edge of the section, the under faces of said top sections designed to fold flat against the outer faces of the side sections, the outer edges of the top sections and the outer faces of the flanges designed to be flush when the crate is folded, as shown and described.

656,251. BEEHIVE. HANS JOHANSEN, Chicago, Ill. Filed Aug. 14, 1899. Serial No. 727,197. (No model.)



Claim.—1. A beehive comprising a compartment or chamber provided at the opposite sides thereof with parallel supporting-ledges, brood-frames and honey-frame holders supported on said ledges, and shiftable laterally thereon, and a movable queen-bee-excluding partition between said brood-frames and honey-frame holders, and laterally shiftable in said chamber to any position desired, said partition being made of open-work construction, and supported on the floor of the hive by means temporarily holding it stationary.

2. A beehive comprising a compartment, a brood-frame arranged centrally thereof, a honey-frame holder located in each side of the brood-frame and between the same and the side wall of the inclosure, and a removable queen-bee-excluding partition made of open-work construction which permits the passage of the working bees therethrough located be-

tween said brood-frame and each honey-frame holder and free to be laterally shifted to any position desired in said inclosure.

3. A beehive comprising a compartment having removable side walls, brood-frames and honey-frame holders located side by side in said compartment, a movable queen-bee-excluding partition or partitions interposed between the brood-frames and honey-frames, and movable transparent walls located inside of the said removable side walls of the compartment.

4. A beehive comprising a compartment or chamber having a horizontal bottom wall or floor, parallel supporting-ledges on the upper edges of opposite walls thereof, a group of laterally-separated and shiftable brood-frames supported on said ledges centrally in said compartment, laterally-separable and shiftable honey-frame holders located at either side of said brood-frames and between the same and the side walls of the compartment, and queen-bee-excluding partitions made of open-work construction which permits the passage of the bees therethrough located between said brood-frames and honey-frame holders and free to be shifted laterally to any position desired in the chamber, and partitions located between the several honey-frame holders.

5. A beehive comprising a compartment or chamber, a movable brood-frame in said chamber, a movable honey-frame holder also in said chamber, and a movable queen-bee-excluding partition between said frame-holder and said brood-frame, said partition being provided on its lower edge with sharpened projections which are adapted to engage the bottom wall or floor of the hive.

6. A beehive comprising a compartment or chamber, a movable brood-frame located in said chamber, a movable honey-frame holder also located in said chamber, and a queen-bee-excluding partition between said frame-holder and said brood-frame, said partition consisting of parallel slats connected by transverse end strips, which latter project below the lowermost slat of the partition and are provided with sharpened lower ends.

7. A beehive comprising a compartment or chamber, a group of removable brood-frames in said chamber, a group of honey-frame holders, partitions between said honey-frame holders, and projections on said frame-holders adapted for engagement with the partitions to maintain the same out of contact with the partitions.

8. A beehive comprising an inclosure, a partition in said inclosure dividing the interior thereof into a main compartment and a smaller compartment, said partition being constructed to permit the passage therethrough of the working bees but to exclude the queen-bee, a group of brood-frames in said main compartment, honey-frame holders also in said compartment, a queen-bee-excluding partition between said frames and honey-frame holders, and honey-frame holders located in said smaller compartment.

9. A beehive comprising an inclosure, a partition in said inclosure dividing the interior thereof into a main compartment and a smaller compartment, said partition being constructed to permit the passage of the working bees therethrough but excluding the queen-bee, a group of brood-frames in said main compartment, shiftable honey-frame holders also in said compartment and removable and shiftable queen-bee-excluding partitions between said frames and honey-frame holders, and honey-frame holders located in said smaller compartment.

10. A beehive comprising an inclosure having side and end walls, a permanent partition in said inclosure dividing the interior thereof into a main compartment and a smaller compartment, said partition being constructed to permit the passage therethrough of the working bees and to exclude the queen-bee, a group of brood-frames in said main compartment, honey-frame holders also in said main compartment, said frame-holders and brood-frames being supported from the upper edges of the said permanent partition and a parallel wall of the inclosure, a queen-bee-excluding partition between said brood-frames and honey-frame holders, and honey-frame holders located in said smaller compartment.

11. A beehive comprising an inclosure having end and side walls, a group of brood-frames in said inclosure, a group of honey-frame holders also in said inclosure, and a movable queen-bee-excluding partition between said frame-holders and brood-frames, one wall of said inclosure being provided at the upper edge thereof with a groove to afford a transverse passage for the working bees from one side of the hive to the other and the partition being provided with a wing which projects into said groove to prevent the passage of the queen-bee therethrough but which does not exclude the working bees.

12. The combination with a beehive comprising a main compartment or chamber having side and end walls, and a removable top wall or roof, a group of shiftable brood-frames in said compartment, a plurality of shiftable honey-frame holders also in said compartment, and a shiftable queen-bee-excluding partition between said brood-frames and honey-frame holders, of an auxiliary frame which is adapted to be inserted between the upper edges of said side and end walls of the inclosure and the upper wall thereof, and honey-frame holders in said auxiliary frame, said top wall or roof when the auxiliary frame is not employed being fitted upon the walls of the main chamber or compartment.

13. A honey-frame holder comprising flexibly-connected end and side members, one of said end members being detachably connected at one end with the adjacent side member to permit the removal of the honey-frames from the holder.

14. A honey-frame holder comprising flexibly-connected end and side members, one of said end members being detachably connected with one side member and one of the side members being extended beyond the end members to afford projections by which to suspend the holder.

15. A honey-frame holder comprising flexibly-connected side and end members, one of said end members being detachably connected with one side member to permit the removal of the honey-frames from the holder, and strips extending between said side members intermediate said end members, said strips being attached to one of said side members and adapted to engage the side edges of the adjacent honey-frames which are contained within the holder.

16. A honey-frame holder comprising flexibly-connected side and end members, and a spring-latch attached to one end of one of said members and adapted for engagement with the adjacent end of one of the other members, whereby said members are detachably connected to permit the holder being removed from the honey-frames.

17. A beehive having a compartment or chamber provided with removable side walls and adapted to receive both brood-frames and honey-frame holders, and laterally-shiftable partitions in said chamber which are free to be moved to any desired position therein and adapted for positive holding connection with the floor of the hive and forming lateral spaces adapted to contain honey-frame holders in summer or fillings of non-conducting material in winter.

18. A beehive having a large and a small compartment divided by an open queen-bee-excluding partition, of which the larger compartment is adapted to receive both brood-frames and honey-frame holders and the smaller compartment to receive honey-frame holders located at right angles to those in the large compartment, a movable queen-bee-excluding partition located in said larger compartment contiguous to the brood-frames and forming at either side thereof spaces adapted to receive the honey-frame holders.

19. A beehive having a chamber and brood-frames located in said chamber, the wall of said chamber being provided with two lateral bee-inlet openings located one on each side of the center of said chamber, and a queen-bee-excluding partition between the brood-frames in said chamber and between said bee-inlet openings.

20. A beehive comprising an inclosure for the honey-frame holders having an outer removable wall and inside of said wall provided with an inner wall constructed to permit observation therethrough of the honey-frames when the outer wall is removed, said inner wall engaging the top and bottom walls of the hive and said top and bottom walls being constructed to permit said inner wall to be shifted from one side to the center of said inclosure.

21. A beehive comprising a compartment, laterally-shiftable brood-frames and honey-frame holders therein and a laterally-shiftable queen-bee-excluding partition between said brood-frames and honey-frame holders, said brood-frames, honey-frame holders and partition being separated by spaces from the side, bottom and top walls to permit the passage of the working bees therethrough.

656,252. COMPOUND FOR DISSOLVING RESINS. FRANZ G. KLEINSTEUBER, Pankow-Berlin, Germany. Original application filed Nov. 9, 1899, Serial No. 736,403. Divided and this application filed May 3, 1900. Serial No. 15,396. (No specimens.)

Claim.—1. A compound to be used with solvents for resins consisting of a solution of dammar, tung or wood-oil, benzole and oil of turpentine in about the proportions set forth.

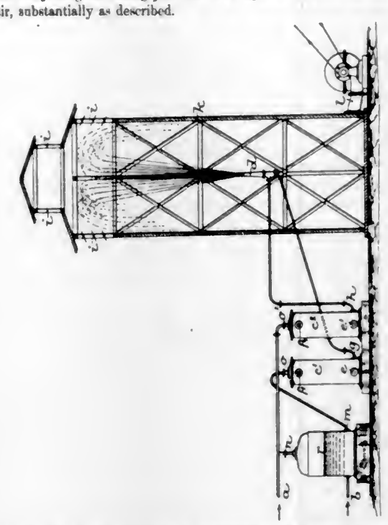
2. A compound to be used with solvents for resins consisting of a solution of dammar and tung or wood-oil in benzole and oil of turpentine and oil of rosemary in about the proportions set forth.

656,253. METHOD OF MAKING SODIUM-CARBONATE CRYSTALS. JOSEF KUNSTNER, Obersedlitz-Aussegg, Austria-Hungary. Filed Apr. 23, 1900. Serial No. 13,955. (No specimens.)

Claim.—1. Process for the production of carbonate-of-soda crystals, consisting in converting a warm saturated solution of carbonate of soda into small particles by spraying and cooling such sprayed small particles, substantially as described.

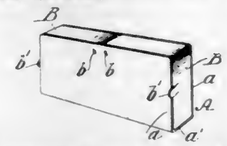
2. Process for the production of carbonate-of-soda crystals consisting in converting a warm saturated solution of carbonate of soda into small particles by the spraying action of a jet of compressed air propelled in the same direction as the jet of liquid whereby the liquid particles are at the same time cooled, substantially as described.

3. Process for the production of carbonate-of-soda crystals consisting in converting a warm saturated solution into small particles by spraying, and then subjecting the falling particles to an upward-directed current of cold air, substantially as described.



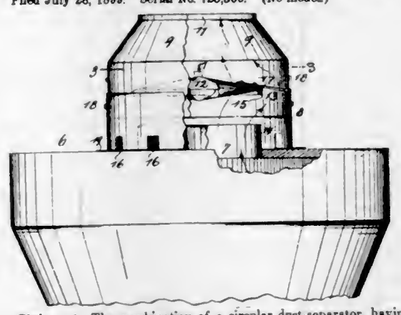
4. Process for the production of carbonate-of-soda crystals consisting in converting a warm saturated solution of carbonate of soda into small particles by spraying by means of a jet of compressed air issuing in the same direction as the jet of liquid, and then subjecting the falling liquid particles to a second upward current of cold air, substantially as described.

656,254. COMBINED STAMP AND COURT-PLASTER RECEPTACLE. EDWARD K. LATHROP, Springfield, Mass. Filed Feb. 16, 1900. Serial No. 5,448. (No model.)



Claim.—A receptacle for stamps and court-plaster and like materials, comprising a case A, constructed as specified, and two boxes B, B, pivoted in said case at b and b, and arranged to turn separately, in and out of said case, and formed with thumb-pieces b' and b', and hinged lids, and finger-openings b^2 and b^2, all substantially as and for the purpose set forth.

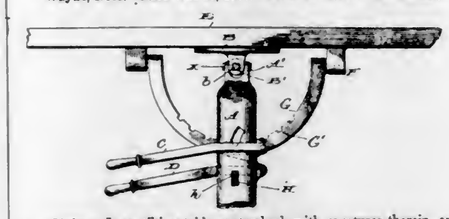
656,255. DUST-SEPARATOR. THOMAS LEE, Home City, Ohio. Filed July 28, 1899. Serial No. 725,366. (No model.)



Claim.—1. The combination of a circular dust-separator, having a flat top with a central circular air-outlet opening of much smaller diameter therein, an upwardly-projecting circular rim or curb surrounding this opening, a circular stack with a contracted outlet surrounding this rim, of considerable larger diameter, and having lateral outlets in its lower portion, and a conical hood or deflector of a diameter not less than the curb, and supported by the stack directly above and clear of the rim or curb.

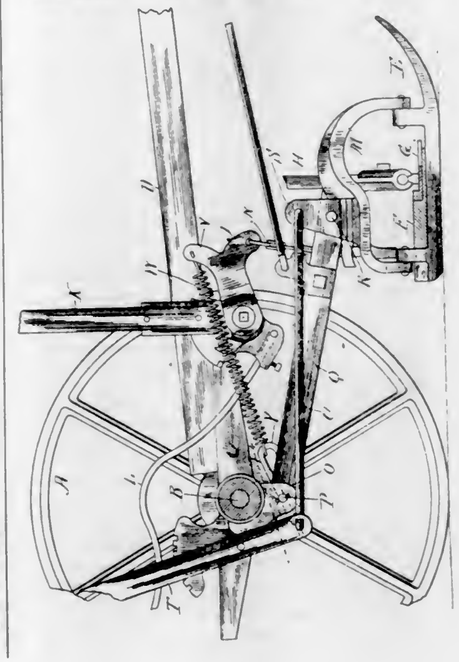
2. The combination with the top 6 of a dust-separator, being entirely closed with the exception of a central air-outlet opening therein, a rim 14 surrounding this opening from the margin of which it projects upwardly, a stack 8 provided outside of rim 14 with a space between the two, both being secured to top 6, which closes this space and prevents passage of air-currents therethrough said stack consisting of two parts, telescopically connected, to permit adjustment of the upper part on the lower one, a hood carried within this upper part, being thus rendered vertically adjustable with this latter, with reference to the air-outlet opening below and lateral outlet-openings 16 in the lower part of stack 8.

656,256. TILTING TABLE OR CHAIR. HENRY G. LEIBERING, Wayne, Nebr. Filed Jan. 29, 1900. Serial No. 3,192. (No model.)



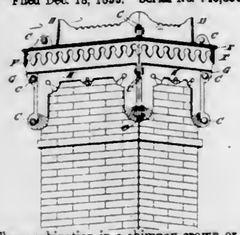
Claim.—In a tilting table, a standard, with apertures therein, one of which is curved, said standard having a contracted upper end terminating in two arms A′ spaced apart, the pin mounted in apertures in said arms, a ball B^3 mounted to turn on said pin, combined with the table-top, a plate B secured to its under face, and having integral arms B′ disposed at right angles to the arms A′, screws seated in diametrically oppositely disposed holes in said ball, the shanks of said screws turning in apertures in the arms B′, the notched braces pivoted at their ends to the under side of the table-top and passing through apertures in the standard, the lever C pivoted to and working outside the standard and having an integral lug, which works in the curved aperture in said standard, and designed to engage the teeth in the brace G, the lever D pivoted to the standard, and passing through an aperture in the standard and adapted to engage the notches in said brace H, as shown and described.

656,257. MOWING-MACHINE. JAMES MACPHAIL, Blue Island, Ill., assignor to the Plano Manufacturing Company, Chicago, Ill. Filed Mar. 14, 1900. Serial No. 8,593. (No model.)



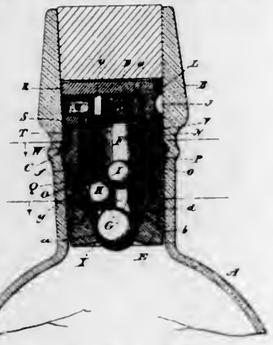
Claim.—In a machine of the class described, the combination with the wheels, the axle, and the frame supported thereby; of the shoe E and its associated parts, including the yoke M, the raising-crank J having a lever for operating it, connections between said crank and the shoe for lifting the shoe, the ears O on said frame in immediate proximity to the axle, the push-bar Q pivotally connected at one end of the yoke M of the shoe E, and at the other end to the ears O by the I-bolt pivot P; and the coiled spring W attached at one end to the raising-crank J above its pivot, and at the other end to the eye of the I-bolt pivot P, substantially as and for the purpose described.

656,258. CHIMNEY-CROWN. WILLIAM D. MCLAUGHLIN, Merriam, Kans. Filed Dec. 18, 1899. Serial No. 740,838. (No model.)



Claim.—The combination in a chimney-crown or structure for purposes before mentioned of the four separate and distinct sections, the ends of said sections being beveled at an angle of forty-five degrees and provided with one or more flanges C C C having a smooth inner surface corresponding to the inner surface of said angles, and provided with holes through which are passed bolts or rivets for binding and holding firmly together the four sections of the crown as above shown.

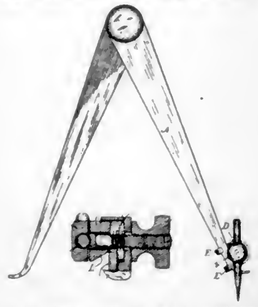
656,259. NON-REFILLABLE BOTTLE. CHARLES R. OVERBAUGH, New York, N. Y. Filed Jan. 9, 1899. Serial No. 701,578. (No model.)



Claim.—1. The bottle, and the plug for preventing refilling, said plug comprising the parts D, E, F, the upper part D having the horizontal annular groove J, the vertical grooves K leading therefrom, the horizontal passages M leading outwardly into said groove J, and the downwardly-extending walls N forming a central chamber and having the grooves O, and the said part E fitting upon the lower portion of said walls N and having the opening X and valve-seat *a*, and the said part F being in the form of a thimble with solid walls fitting within said central chamber and surrounded by said grooves O, while the lower edge of said thimble is above the lower ends of said grooves O and above said valve-seat *a* and forms the shoulder *g*, combined with the ball G adapted to said seat, and the ball H adapted to engage said ball G and said shoulder; substantially as set forth.

2. The bottle, and the plug for preventing refilling, said plug comprising the parts D, E, F, the upper part D having the horizontal annular groove J, the vertical grooves K leading therefrom, the horizontal passages M leading outwardly into said groove J, and the downwardly-extending walls N forming a central chamber and having the grooves O, and the said part E fitting upon the lower portion of said walls N and having the opening X and valve-seat *a*, and the said part F being in the form of a thimble with solid walls fitting within said central chamber and surrounded by said grooves O, while the lower edge of said thimble is above the lower ends of said grooves O and above said valve-seat *a*, and forms the shoulder *g*, combined with the ball G adapted to said seat, the ball H adapted to engage said ball G and said shoulder, and the ball I confined within said part F by said ball H and exerting its downward force upon said ball H; substantially as set forth.

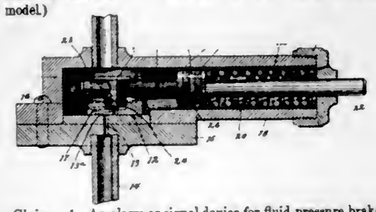
656,260. CALIPER ATTACHMENT. THOMAS A. PANYARD, Milwaukee, Wis. Filed July 7, 1899. Serial No. 723,041. (No model.)



Claim.—1. An attachment for calipers, consisting of the combination of a binding-screw, the head of which is provided with a tool-retaining aperture; a collar loosely fitted to said screw and adapted to impinge, at one side, against the tool or other instrument in said aperture, and at its opposite side, against the leg of the calipers or other instrument; a clamping-bracket also loosely fitted to said screw and adapted to bear against the other side of said leg; a spring interposed between said bracket and said collar; and a clamping-nut adapted, as it is turned down, on said screw, to clamp said parts together upon the leg of the calipers or other instrument, substantially as and for the purpose specified.

2. An attachment for calipers, consisting of the combination of a binding-screw, the head of which is provided with a tool-retaining aperture; a collar beveled at one side so as to engage beneath the edge of the calipers' leg or other instrument, loosely fitted to said screw and adapted to impinge, at one side, against the tool or other instrument in said aperture, and at its opposite side, against the leg of the calipers or other instrument; a clamping-bracket also loosely fitted to said screw and adapted to bear against the other side of said leg; a spring interposed between said bracket and said collar; and a clamping-nut adapted, as it is turned down on said screw, to clamp said parts together upon the leg of the calipers or other instrument, substantially as and for the purpose specified.

656,261. LOW-PRESSURE AIR-BRAKE ALARM. AVERY H. PARSONS, Somerville, Tex. Filed Mar. 20, 1900. Serial No. 9,445. (No model.)



Claim.—1. An alarm or signal device for fluid-pressure brake mechanisms, having a casing adapted for attachment to a train-pipe and provided with a valve-seat having a signal-port adapted for connection to a signal-pipe, a valve provided with a complemental signal-port adapted for registration with that of the valve-seat, said valve being capable of movement in opposite directions from a position wherein said signal-ports are in registration, and a valve-operating piston exposed at one side to a variable fluid-pressure controlled by train-pipe pressure, and at the other side to a constant pressure, substantially as specified.

2. An alarm or signal device for fluid-pressure brake mechanisms, having a casing adapted for attachment of a train-pipe to receive train-pipe pressure and provided with a valve-seat having a signal-port adapted for connection of a signal-pipe therewith, a valve provided with a complemental signal-port adapted for registration with that of the valve-seat, said valve being capable of movement in opposite directions from a position wherein said signal-ports are in registration, a valve-operating diaphragm exposed at one side to a variable fluid-pressure controlled by train-pipe pressure, means engaged with the opposite side of the piston for exerting constant pressure in opposition to the fluid-pressure, and means for adjusting the constant pressure means bodily to vary the position of the valve.

3. An alarm or signal device for fluid-pressure brake mechanisms, having a casing adapted for attachment of a train-pipe to receive train-pipe pressure and provided with a valve-seat having a signal-port adapted for connection of a signal-pipe therewith, a valve provided with a complemental signal-port adapted for registration with that of the valve-seat, said valve being capable of movement in opposite directions from a position wherein said signal-ports are in registration, a valve-operating piston exposed at one side to a variable fluid-pressure, a spring for applying pressure to the piston in opposition to said variable pressure, and a tension-adjusting device in operative relation with said spring, substantially as specified.

4. An alarm or signal device for fluid-pressure brake mechanisms, having a casing exposed to train-pipe pressure and provided with a valve-seat having a signal-port, a slide-valve mounted upon said seat and provided at an intermediate point with a complemental signal-port and a communicating socket, a piston exposed at one side to a variable fluid-pressure and at the opposite side to a constant pressure, and a stem actuated by said piston and provided with a lug fitted in said socket of the valve and provided with a fluid passage or channel, substantially as specified.

656,262. FLUID-DISCHARGE VALVE. IRA D. PERRY and JOHN B. WEIR, Chicago, Ill. Filed Dec. 28, 1899. Serial No. 741,880. (No model.)



Claim.—1. Means for controlling the closure of fluid-valves comprising a valve, a supply-channel, a discharge-channel, a stem and a step gradually originating in rear of the stem and terminating abruptly in immediate proximity thereto, so as to create a suction directly about the stem.

2. In a cock or faucet, a supply-pipe, a discharge-pipe, a valve and a spindle therefor, extending through or into the discharge-pipe transversely to the direction of the discharge, said discharge-pipe being of increased diameter relatively to the supply-pipe together with a lip or step formed by said increased diameter, in immediate proximity to the spindle.

3. In a cock or faucet, a supply-pipe and a valve therein, a stem for said valve, said supply-pipe being so shaped as to direct the flow of water away from the spindle, and then transversely across the spindle and a step in immediate proximity to the spindle whereby a suction is created about the stem and the discharge directed past the said spindle.

4. In a cock or faucet, a supply-pipe and a valve therein, said supply-pipe extending in gooseneck form from the valve, away from the spindle and then back transversely across the spindle.

5. In a cock or faucet, a supply-pipe and a valve therein, said supply-pipe extending in gooseneck form from the valve, away from the spindle and then back transversely across the spindle together with a step in immediate proximity to the spindle.

6. In a cock or faucet, a supply-pipe and a discharge-pipe, a valve, and a valve-spindle extending transversely into or across the discharge-pipe, and a step arranged on the pressure side of the spindle, to direct the flow of liquid away from the opening in the spindle-casing.

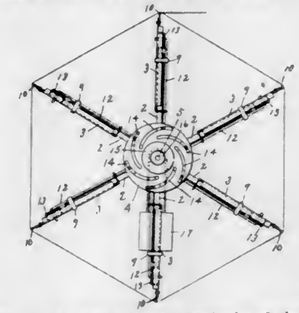
656,263. PROCESS OF SEPARATING CRESOLS. FRITZ RASCHIG, Ludwigshafen, Germany. Filed Mar. 3, 1900. Serial No. 7,230. (No specimens.)

Claim.—1. The process for separating metacresol from paracresol, which consists in sulfonating a mixture of the two cresols and treating the mixture of sulfo-acids thus obtained with steam at a temperature which causes the decomposition of the metacresol-sulfonic acid, but leaves the paracresol-sulfonic acid intact, substantially as described.

2. The process for separating metacresol-sulfonic acid from paracresol-sulfonic acid, which consists in subjecting a mixture of the same to steam at a temperature sufficient to decompose the metacresol-sulfonic acid, substantially as described.

3. The process for separating metacresol from a mixture of metacresol-sulonic acid and paracresol-sulfonic acid, which consists in subjecting the said mixture to superheated steam at a temperature ranging approximately between 120° and 130° centigrade, thereby splitting up the metacresol-sulfonic acid into metacresol which distils off, and sulfuric acid which remains with the undecomposed meta-cresol sulfonic acid, but not sufficient to decompose the paracresol-sulfonic acid, substantially as described.

656,264. SKEIN-HOLDER. JUSTINIEN REVEL, Ellicott City, Md. Filed June 13, 1900. Serial No. 20,121. (No model.)



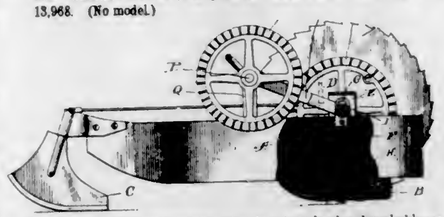
Claim.—1. In a skein-holder, the combination of a hub; a cam-disk revoluble independent of the said hub; a plurality of spokes projecting from the periphery of the said hub; an adjustable arm on each of said spokes; a rod secured to each of the said spokes, said rods having their upper ends bent to fit into the holes in the said arms, and the opposite ends bent to fit within the slots in the cam-disk.

2. In a skein-holder, the combination of a hub; a plurality of spokes projecting from the periphery of the said hub; an adjustable arm on each of said spokes and having a series of holes therein; a cam-disk fitted on the said hub and revoluble independent thereof, said disk having a slot for each spoke; and a rod secured to each spoke and having the upper ends bent to fit within the holes in the arms and the lower ends bent to fit within the slots in the cam-disk, whereby when the disk is turned in one direction the arms will be forced outwardly and when turned in the opposite direction the said arms will be forced inwardly.

3. In a skein-holder, the combination of a hub, 1; a plurality of spokes, 2, projecting from the periphery of the hub; an adjustable T-shaped arm on each of the said spokes, having a series of holes, 11, therein; a disk, 4, having a number of cam-slots, 14, corresponding to the number of spokes, 2; a rod, 12, on each of said spokes, said rod having one end projecting through one of the holes, 11, and the opposite end projecting through one of the cam-slots, 14, whereby when the disk, 4, is turned in one direction the rods and arms will move outwardly from the center of the holder and when moved in the opposite direction the said rods and arms will move inwardly toward the center of the holder.

4. In a skein-holder, the combination of a hub, 1; a plurality of spokes, 2, secured to the hub; an adjustable arm, 3, on each of said spokes, 2, provided with holes, 11, and a corrugated cross-bar, 10; a cam-disk, 4, revoluble independent of the hub, and having a plurality of slots, 14, therein; a rod, 12, on each spoke connecting the adjustable arms with the slots in the cam-disk; an elastic band, 9, to hold the arms and rods firmly to the spokes; a lug, 13, on each rod to prevent the latter from turning; and a friction-brake, 17.

656,265. COMBINATION-TRICYCLE FOR LAND, WATER, AND ICE. THOMAS RICHMOND, Jesup, Iowa. Filed Apr. 23, 1900. Serial No. 13,968. (No model.)



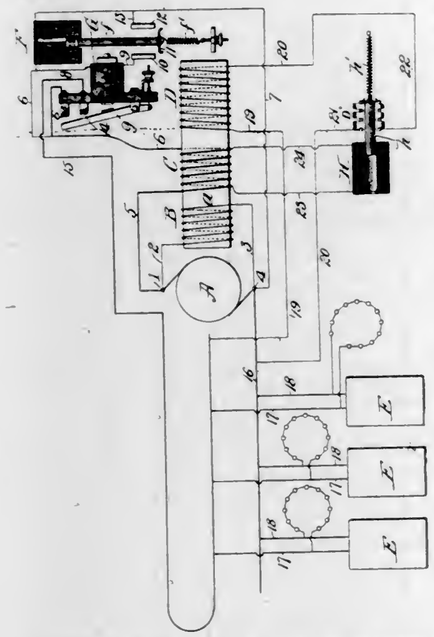
Claim.—1. In a combination-tricycle, a boat having detachable runners and a steering device, of propelling-wheels mounted in the said boat,

the said propelling-wheels having projections and teeth upon their circumferences and paddles upon their sides, and mechanism for driving the said propelling-wheels, substantially as shown and described.

2. In a combination-tricycle, a boat having detachable runners and a detachable steering device, of an axle mounted in slotted journals upon the boat, the said axle having upon each end thereof similar propelling-wheels, of cogs secured to the propelling-wheels adapted to mesh with similar cogs mounted upon a crank-shaft, substantially as shown and described.

3. In a combination-tricycle, a boat provided with runners and a steering device, of an axle mounted upon the said boat in slotted bearings, of coiled springs connected to the bottom of the boat and to sleeves upon the said axle, of similar propelling-wheels mounted upon the ends of the said axle, the said propelling-wheels being provided with projections and teeth upon their circumferences and paddles upon their sides, of cogs secured to the said propelling-wheels and adapted to mesh with similar cogs mounted upon a crank-shaft, substantially as shown and for the purpose set forth.

656,266. SYSTEM OF ELECTRICAL DISTRIBUTION. HARRY F. ROACH, St. Louis, Mo. Filed July 10, 1899. Serial No. 723,307. (No model.)



Claim.—1. The combination with a dynamo and the armature and working circuits, of a separately-excited field-coil for the dynamo, and connected to the working circuit, of a shunt-coil opposed to said separately-excited field-coil, a series coil for assisting the shunt-coil in its opposition, both of said last-mentioned coils being in the armature-circuit, and means consisting in an electroresponsive device shunted across the armature-circuit for cutting in and cutting out said working circuit at predetermined voltages; substantially as described.

2. The combination with a dynamo and its circuit, of a separately-excited field-coil therefor, a shunt-coil opposed to said separately-excited field-coil, a series coil for assisting the shunt-coil in its opposition, resistance in the circuit of the separately-excited field-coil, and means energized by the dynamo-circuit for cutting in and cutting out said resistance; substantially as described.

3. The combination with a dynamo and the armature and working circuits, of a separately-excited field-coil for the dynamo, and connected to the working circuit, of a shunt-coil opposed to said separately-excited field-coil, a series coil wound in the same direction as the shunt-coil and for assisting the shunt-coil in its opposition, both of said last-mentioned coils being in the armature-circuit, means shunted across the armature-circuit for cutting in and cutting out said working circuit at predetermined voltages, resistance in the circuit of the separately-excited field-coil, and means energized by the armature-circuit for cutting in and cutting out said resistance; substantially as described.

4. The combination with a dynamo and its circuit, of a battery in multiple with said circuit, a field-coil which is separately energized by said battery, an armature shunt-coil in the field which is opposed to said battery-coil, and a differential series coil in said field wound in the same direction as the shunt-coil for variably assisting the shunt-coil in its opposition; substantially as described.

5. The combination with a dynamo and its circuit, of a battery in multiple with said circuit, a field-coil which is separately energized by said battery, an armature shunt-coil in the field which is opposed to said battery-coil, a differential series coil in said field for variably assisting the shunt-coil in its opposition, resistance in the circuit of said separately-excited field-coil, and means energized by the dynamo-circuit for cutting in and cutting out said resistance; substantially as described.

6. The combination with a dynamo and its armature-circuit, of a working circuit, a switch for cutting in and cutting out said working circuit, a solenoid in the armature-circuit for operating said switch at predetermined voltages, batteries in multiple with the working circuit, a field-coil for the dynamo which is constantly energized by said batteries, resistance in said battery-circuit, a solenoid for cutting in and cutting out said resistance, said solenoid being energized by the armature-circuit, a shunt-coil in the field opposing said separately-excited or battery coil, and a differential series coil likewise in said field, opposing said battery-coil; substantially as described.

656,267. ARTIFICIAL TOOTH. BERNARD ROBINSON, Philadelphia, Pa., assignor to Samuel S. Bloom, same place. Filed Jan. 25, 1900. Serial No. 2,780. (No model.)



Claim.—1. As a means for attaching artificial teeth to a mouth-plate, an elongated metal plate or strip having pins projecting from one face thereof, the pin-carrying face being of less width than the remainder of the plate or strip, said plate or strip being adapted to accurately fit a correspondingly-shaped transverse cavity in the rear of the tooth.

2. An artificial tooth having a transverse cavity with an abutment at one end, said cavity having a contracted elongated opening at the rear of said tooth, and a plate or strip closely fitted in said cavity and carrying pins projecting through said opening.

3. An artificial tooth having a transverse cavity with an undercut abutment at one end, said cavity having a contracted elongated opening at the rear of said tooth, and a plate or strip closely fitted in said cavity and having one end beveled to fit the undercut of the abutment, said plate or strip carrying pins projecting through the rear of the tooth.

4. An artificial tooth having a transverse cavity with an undercut abutment at one end, said cavity having a contracted elongated opening at the rear of said tooth, and a plate or strip closely fitted in said cavity and having one end beveled to fit the undercut of the abutment, said plate or strip carrying pins projecting through the rear of the tooth, and means for locking said plate or strip in the cavity.

656,268. PROCESS OF TREATING ORES FOR RECOVERY OF METALLIC INGREDIENTS. BENJAMIN SADTLER, Denver, Colo., assignor to Albert G. Clark, Cincinnati, Ohio. Filed July 13, 1899. Serial No. 723,698. (No specimens.)

Claim.—1. The improvement in the process of treating ores, wherein zinc is combined with iron or other agents which attack fire-clay, consisting in distilling such ores in a retort wherein chemical reactions between the ingredients of the ores and of the retort are excluded, and thereafter treating the residue from such distillation for the extraction of metallic ingredients, substantially as described.

2. The herein-described improvement in the process of treating ores wherein precious metals are combined with zinc and iron or other corrosive agents, consisting in distilling such ores in a retort adapted to resist the action of such corrosives, thereby extracting the zinc, and thereafter treating the residue in a smelting-furnace for the recovery of the remaining metals, substantially as described.

656,269. EYEGLASSES. HARRY F. SANGER, Lima, N. Y., assignor to the Bay State Optical Co. Filed June 6, 1900. Serial No. 19,317. (No model.)

Claim.—1. In supplemental eyeglasses adapted to be attached to a pair of spectacles, the combination of two lenses, eye-rims for the same, a clamping-jaw on each eye-rim provided with a screw-hole near its outer end, a clamping-jaw on each eye-rim parallel with the first-named clamping-jaw with a space between them and having a screw-hole near its outer end in alinement with the first-named screw-hole, a bow-spring having its ends bent at an angle and inserted between said pairs of clamping-jaws, respectively, a clamping-screw for each pair of clamping-jaws engaging the same through the alined screw-holes thereof and adapted to compress said clamping-jaws upon the ends of the bow-spring, and finger-pieces projecting at an angle from said rims on the front of said eyeglasses, substantially as described.



2. In supplemental eyeglasses adapted to be attached to a pair of spectacles, the combination of two lenses, eye-rims for the same, a clamping-jaw on each eye-rim provided with a screw-hole near its outer end, a clamping-jaw on each eye-rim parallel with the first-named clamping-jaw with a space between them and having a screw-hole near its outer end in alinement with the first-named screw-hole, a bow-spring having its ends bent at an angle and inserted between said pairs of clamping-jaws, respectively, a clamping-screw for each pair of clamping-jaws engaging the same through the alined screw-holes thereof and adapted to compress said clamping-jaws upon the ends of the bow-spring, and bent prongs projecting from said eye-rims, respectively, at an angle on the rear of said eyeglasses and adapted to engage the eye-rims of said eye-shades, substantially as specified.

3. In supplemental eyeglasses adapted to be attached to a pair of spectacles, the combination of two lenses, eye-rims for the same, a clamping-jaw on each eye-rim provided with a screw-hole near its outer end, a clamping-jaw on each eye-rim parallel with the first-named clamping-jaw with a space between them and having a screw-hole near its outer end in alinement with the first-named screw-hole, a bow-spring having its ends bent at an angle and inserted between said pairs of clamping-jaws, respectively, a clamping-screw for each pair of clamping-jaws engaging the same through the alined screw-holes thereof and adapted to compress said clamping-jaws upon the ends of the bow-spring, finger-pieces projecting at an angle from said rims on the front of said eyeglasses, and bent prongs projecting at an angle from said rims on the rear of said eyeglasses and adapted to engage the eye-rims of said spectacles, substantially as specified.

4. In supplemental eyeglasses adapted to be attached to a pair of spectacles, the combination of two lenses and eye-rims for the same, a bow-spring and means for attaching it to the eye-rims, means connected with the eye-rims adapted when operated to move the lenses nearer each other, a pair of bent parallel prongs extending from each eye-rim to the rear and adapted to engage the adjacent eye-rim of said spectacles, one prong above and the other below the nosepiece of said spectacles, substantially as specified.

5. In supplemental eyeglasses adapted to be attached to a pair of spectacles, the combination of two lenses and eye-rims for the same, a bow-spring and means of attaching it to the eye-rims, means connected with the eye-rims and adapted when operated to move said lenses in relation to each other and bent prongs extending from said eye-rims, respectively, to the rear and adapted to engage the frame of said spectacles, substantially as described.

6. In supplemental eyeglasses adapted to be attached to a pair of spectacles, the combination of two lenses and eye-rims for the same, bent prongs projecting from said eye-rims, respectively, to the rear, and a bow-spring with means of attachment to the eye-rims and adapted by its resilience to engage and hold in engagement said prongs with the eye-rims of said spectacles near the points of the junction of the nosepiece of the spectacles with the eye-rims thereof, substantially as specified.

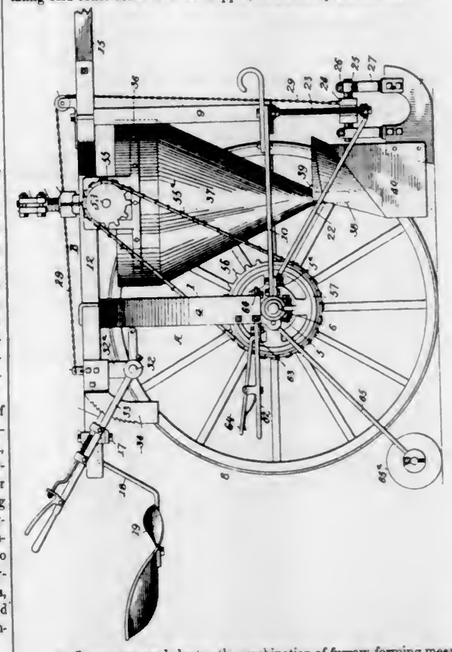
656,270. COTTON-SEED PLANTER. MORSE P. SCOTT, Yonkers, N. Y., assignor to Colin M. Thompson, New York, N. Y. Filed July 14, 1899. Serial No. 723,875. (No model.)

Claim.—1. In a cotton-seed planter, the combination of furrow-forming means, a hopper for containing seed, in the rear and in alinement with the furrow-forming means, and means for rolling the seed prior to discharging them from the hopper, substantially as described.

2. In a cotton-seed planter, the combination of furrow-forming means, a hopper for containing seed, having a discharge-opening in alinement with the furrow-forming means, a roller mounted within the hopper, and means for imparting rotation to the roller during movement of the machine to roll the seed prior to discharging them from the hopper, substantially as described.

3. A cotton-seed planter comprising furrow-forming means and means in alinement with the furrow-forming means for subjecting the seed to a rolling action prior to their discharge from the machine into the furrow, substantially as described.

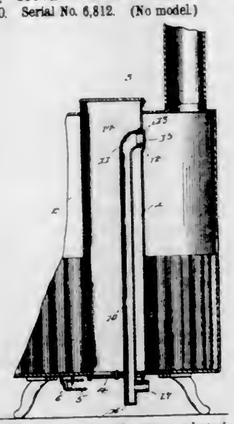
4. In a cotton-seed planter, the combination with an inverted-cone shaped hopper having a discharge-opening at the lower end of the hopper, an inverted-cone-shaped roller within the hopper, and means for rotating said roller relative to the hopper, substantially as described.



5. In a cotton-seed planter, the combination of furrow-forming means, an inverted-cone-shaped hopper having a discharge-opening at its lower end in alinement with the furrow-forming means, an inverted-cone-shaped roller within the hopper, means for adjusting the roller relative to the hopper to vary the space between their surfaces, and means for rotating the roller, substantially as described.

6. In a cotton-seed planter, the combination of furrow-forming means, a hopper having a discharge-opening arranged rearwardly of and in alinement with the furrow-forming means, said hopper being provided with a yielding lining, a roller within the hopper having a yielding covering, and means for rotating the roller, substantially as described.

656,271. STOVE. CHARLES H. SEAMAN, St. Joseph, Mo. Filed Feb. 28, 1900. Serial No. 6,812. (No model.)



Claim.—1. The combination of a stove, a hot-air tube or conductor passing upward through the same and having its upper end or exit at the top of the stove, a cover located at the top of the stove and arranged over the upper end of the tube or conductor, and a ventilator-tube arranged for a

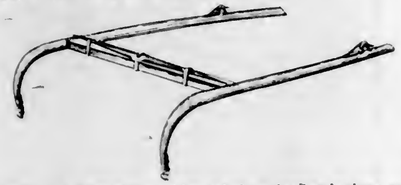
portion of its length within the hot-air tube or conductor and terminating at its upper end short of the top of the same and communicating thereat with the interior of the stove, the lower portion of the ventilator-tube being extended beyond the hot-air tube or conductor and arranged on the exterior of the stove substantially as described.

2. The combination with a stove, of a pipe or conductor extending through the stove from the bottom to the top thereof and provided at one side with an aperture, a ventilator-tube arranged within the pipe or conductor with its upper end registering with the said aperture, and a thimble having a diaphragm and detachably secured to the ventilator-tube and connecting the same to the pipe or conductor, said diaphragm being provided with openings, substantially as described.

3. The combination with a stove, of a tube or conductor extending through the same, and a ventilator-tube located within the said tube or conductor and having its upper end communicating with the interior of the stove, said ventilator-tube being closed at its lower end and provided above the same with an arm or branch, substantially as described.

4. The combination with a stove, of a hot-air tube arranged in the stove and extending to the top thereof and provided at its upper end with a cover, and a ventilator-tube located partly within and partly without the stove and extending from the upper portion of the stove to a point beneath the same and having its upper portion arranged within the hot-air tube, said ventilator-tube having its lower portion extended beyond the hot-air tube and terminating near the floor, substantially as described.

656,272. HOLDBACK. HARVEY SHIBLEY, Fonda, N. Y. Filed May 4, 1900. Serial No. 15,527. (No model.)



Claim.—A holdback comprising a body or bracket, having a post and provided with an inclined guard, said post being provided at its outer end with an arm extending toward the thill, a latch pivoted at one end to the arm and having its other end abutting against the thill and provided at its pivoted end with an outwardly-extending grip 17, and the spring extending longitudinally of the inner face of the latch and secured at one end to the same and having its free end located at the pivoted end of the latch and arranged to engage the inner face and the outer end of said arm, to hold the latch in its closed and open position, said spring being carried by the latch, whereby it is completely housed within the device when the latch is closed, and is arranged on the exterior of the same to expose it when the latch is open, substantially as described.

656,273. INCUBATOR. JESSE S. STEWART, Tyrone, Pa. Filed May 2, 1900. Serial No. 15,255. (No model.)

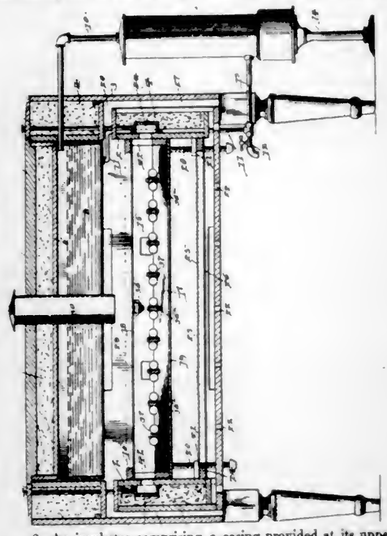
Claim.—1. An incubator comprising a casing, a heating device arranged at the top of the casing, a vertically-movable egg-compartment provided with means for supporting the eggs and having a top interposed between the eggs and the heating device and forming a shield, substantially as described.

2. An incubator comprising a casing provided at the top with a heating device and having an air-passage extending upward from its bottom, a ventilating tube or pipe extending through the top of the casing, means for controlling the passage of air through the ventilating tube or pipe, and an egg-tray arranged within the casing at a point below the upper end of the air-passage, substantially as described.

3. An incubator comprising a casing provided at the top with a heating device and having air-passages located at its ends and extending upward from its bottom, a ventilating tube or pipe extending through the top of the casing, means for automatically controlling the passage of air through the ventilating tube or pipe, and an egg-tray arranged within the casing at a point below the upper ends of the air-passages, substantially as described.

4. An incubator comprising a casing provided at the top with a heating device and having opposite air-passages located within its walls and extending upward from its bottom and terminating short of the heating apparatus, said casing being also provided at its bottom with openings, a vertically-movable egg compartment or receptacle provided with means for supporting the eggs, and having a top interposed between the latter and the heating device and forming a shield, and a partition interposed between the egg compartment or receptacle and the bottom of the casing, substantially as described.

5. An incubator comprising a casing provided in its walls with a horizontal channel or recess located at a point between its top and bottom, a ventilating tube or pipe extending from the channel or recess and extending to the egg-compartment, a heating device arranged at the top of the casing, and a vertically-movable egg-compartment provided with means for supporting the eggs and having a top interposed between the same and the heating device and forming a shield, substantially as described.

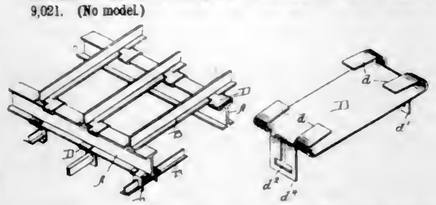


6. An incubator comprising a casing provided at its upper portion with a heating device, and a vertically-adjustable egg compartment or chamber composed of upper and lower frames and provided with means for supporting eggs, the upper frame being provided with a fabric top wall forming a shield and interposed between the eggs and the heating device and the lower frame having a bottom with openings, substantially as described.

7. An incubator comprising a casing provided at its bottom with openings, a heating device arranged at the upper portion of the casing, an egg compartment or chamber having a fabric top wall and provided at its bottom with openings, and a horizontal diaphragm interposed between the egg compartment or chamber and the bottom of the casing and having the fabric and woven-wire sheets spaced apart, substantially as and for the purpose described.

8. An incubator comprising a casing, a heating device arranged at the top of the casing, a vertically-movable egg compartment or receptacle composed of upper and lower frames connected together, the upper frame being provided with a top forming a shield, egg-supporting bars journaled on the bottom frame, and means for operating the egg-supporting bars, substantially as described.

656,274. CLIP FOR STEEL BUILDING CONSTRUCTION, &c. HERBERT A. STREETER, Chicago, Ill. Filed Mar. 17, 1900. Serial No. 9,021. (No model.)



Claim.—1. In a steel building or other structure, the combination with the crossing beams or bars A, B, of a metal strap-clip for securing said beams or bars together, having folds at its ends embracing one of said beams or bars, and provided with flanges having eyes formed or punched through the same at right angles to their plane to receive the other beam or bar, substantially as specified.

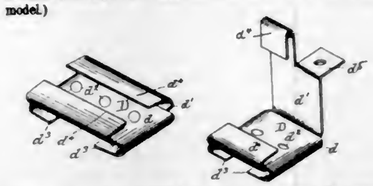
2. A metal strap-clip having folds d d at its ends to embrace one beam or bar, and flanges d' d^4 furnished with eyes d^2 d^3, substantially as specified.

3. A metal strap-clip having folds d d at its ends to embrace one beam or bar, and flanges d' d^4 furnished with eyes d^2 d^3, said flanges d' d^4 being folded flat together or doubled, substantially as specified.

4. A metal strap-clip D slit at its ends and having a portion of its slit ends formed into folds d d to embrace one beam, and other portions of its slit ends formed into flanges d' d^4 extending at right angles and provided each with an eye d^2 to receive a crossing-beam, substantially as specified.

5. The metal strap-clip D having folds d at its ends embracing one beam or bar, and a flange d', crosswise of said clip, provided with an eye d^2 to receive a crossing bar or beam at an angle to the plane of said flange d', substantially as specified.

656,275. METAL CLIP FOR UNITING AND SPACING BEAMS AND BARS IN STEEL BUILDING CONSTRUCTION, &c. HERBERT A. STREETER, Chicago, Ill. Filed Mar. 17, 1900. Serial No. 9,022. (No model.)

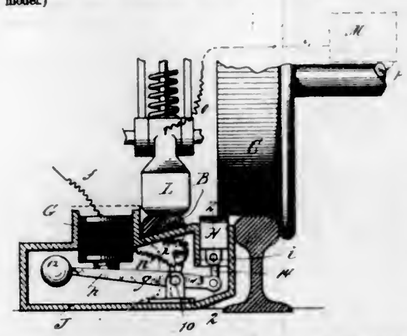


Claim.—1. In a steel building or other structure, the combination with crossing beams or bars A, B, of a metal clip composed of two narrow strips or straps extending transversely to each other, furnished with folds transversely to their length to embrace said crossing beams, substantially as specified.

2. The metal strap-clip composed of two separate straps d d' crossing each other and furnished each with transverse folds to embrace a beam or bar, substantially as specified.

3. The steel strap-clip composed of two separate straps d d' crossing each other and united together by a rivet, and provided with folds d^3 d^3 and d^4 d^4, said strap d having a flange or shelf d^5, substantially as specified.

656,276. ELECTRIC-RAILWAY SYSTEM. LOUIS E. WALKINS, Springfield, Mass. Filed Dec. 15, 1898. Serial No. 699,401. (No model.)

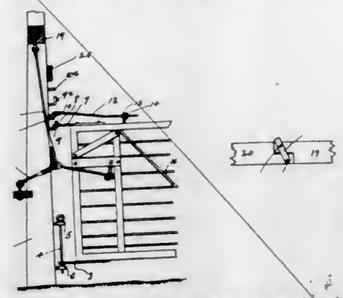


Claim.—1. In an electric-railway system, the combination with the usual track-rails and a series of successive third-rail sections, and a continuous current-feed wire, of devices for each third-rail section each consisting of an electromagnet, a depressible member movably mounted adjacent the magnet and having its top normally above the tread of one of the track-rails, a lever adapted to be swung in conjunction with the movements of said depressible member and having an armature coacting with the electromagnet, a contact-piece, electrically connected with the third-rail section, a switch member constituted by a member of said lever and adapted to make and break connection with said contact-piece, a conductor connecting the feed-wire with the coil of the electromagnet and a conductor also connecting the coil of the electromagnet with said switch member, substantially as and for the purpose set forth.

2. In an electric-railway system, the combination with the usual track-rails A A and a series of successive third-rail sections and a continuous current-feed wire, of devices for each third-rail section, each consisting of an electromagnet, a depressible member H movably mounted adjacent the magnet and having its top normally above the tread of one of the track-rails, an intermediately-pivoted lever, one arm of which is connected with said depressible member, the other arm extending adjacent the electromagnet and having an armature and a counterpoise-weight, the switch-arm i carried by said lever, and a stationary contact-piece j with which said switch-arm passes to and out of contact in conjunction with the movement of the lever, a wire connecting the electromagnet and said feed-wire, another wire connecting the electromagnet and the switch-arm and a wire connecting the contact-piece j and the third-rail section, substantially as described.

3. An electric current switching and maintaining device, for electric-railway systems consisting of a vertically-guided normally-elevated depressible member, the intermediately-pivoted lever g linked to said depressible member, and having an arm thereof provided with an armature, an electromagnet with which said armature coacts, the switch-arm i extending radially from the pivot of said lever, and movable with the latter, a wire connecting the electromagnet and said switch-arm, the contact i adjacent the switch-arm and the conductor m connected with said contact, substantially as described and shown.

656,277. GATE. WILLIAM A. WHITCOMB, Downs, Ill. Filed May 1, 1899. Serial No. 715,120. (No model.)



Claim.—1. The combination with a gate, of two pivoted operating-levers having their ends abutting together and interlapped, means operatively connecting said levers with the gate and a link pivotally connecting the ends of said levers together, substantially as set forth.

2. The combination of a gate, a post to which said gate is hinged at its lower side with capability of vertical movement, a hinge member carried by the upper side of the gate, a plurality of hinge members secured to the post and with either of which said hinge member on the upper side of the gate is adapted to engage, a rod attached at one end to the gate, and a plurality of devices secured to the post one above the other eccentric to the center of oscillation of the gate and either of which is adapted to be attached to the other end of said rod, substantially as set forth.

3. The combination of a gate, a post to which said gate is hinged, a lever-post, two levers fulcrumed on said posts respectively and having their inner ends operatively connected together, an intermediate post between said first two posts, having a guide extension rising past one of said levers on one side, a guide-bar rising past the other of said levers on the opposite side and an operative connection between said levers and gate, substantially as set forth.

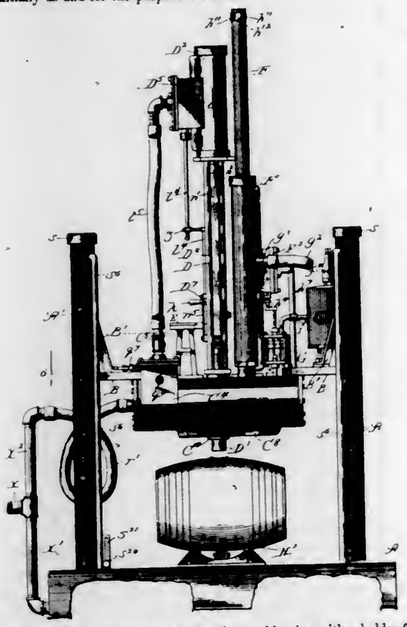
4. The combination of a gate, a post to which said gate is hinged, a lever-post, two levers fulcrumed on said posts respectively and oscillating in planes at an angle to each other and having their inner ends operatively connected together, a bar 25 supported on said lever-post, a guide secured to said lever-post and bar 25 and projecting across one side of one of said levers, a guide on the other side of the other of said levers, and an operative connection between said levers and gate, substantially as set forth.

5. The combination of a gate, a post to which said gate is hinged, a lever-post, two levers fulcrumed on said posts respectively, a cross-brace connecting said posts together, an intermediate post secured to said cross-brace and having an upwardly-projecting guide extension arranged out of line with said first two posts and bearing against one of said levers on one side, the guide-bar 33 secured to one of said posts and to said horizontal brace and projecting past the other one of said levers on the opposite side to that on which the first said guide extension is arranged, an operative connection between the inner ends of said levers and an operative connection between said levers and gate, substantially as set forth.

656,278. FILLING-MACHINE. HENRY A. WHITE, Chicago, and ROYAL C. WHITE, Geneseo, Ill.; said Henry A. White assignor to said Royal C. White. Filed Apr. 20, 1896. Serial No. 588,308. (No model.)

Claim.—1. In a liquid-filling machine for breweries or the like, the

combination with a source of fluid-pressure, of hollow columns, pistons in said columns simultaneously movable, filling and stopper-driving mechanisms, a support for said mechanisms operatively connected with the said pistons to be raised and lowered thereby, means for controlling the pressure whereby the support, and filler and driving mechanisms are automatically operated, and valve mechanism operative to direct the pressure equally to the columns and vent the pressure equally from the columns, substantially as and for the purpose set forth.



2. In a filling-machine for liquids, the combination with a holder for positioning the package to be filled, of a chamber having compressed-air supply and exhaust ports, a carrier-piston in the chamber, a vertically-reciprocatory filling-tube and a vertically-reciprocatory stopper-driver on the carrier-piston, means for connecting the chamber with a compressed-air supplier and for directing the pressure alternately into opposite ends of the chamber to reciprocate the carrier-piston and thereby move the said tube and driver alternately into alinement with the filling-opening of a positioned package, and reciprocating means for the tube and driver, substantially as and for the purpose set forth.

3. In a filling-machine for liquids, the combination with the source of fluid-pressure of the establishment for furnishing pressure for back-pressure bunging or the like, of a horizontal piston-chamber, a carrier-piston in the chamber, a vertically-reciprocatory filling-tube and a vertically-reciprocatory stopper-driver on the carrier-piston, the carrier-piston being movable to bring the said tube and driver alternately into alinement with the filling-opening of the positioned package, a stopper-receiver on the carrier-piston for holding a stopper in the path of movement of the said driver, and actuating means for the driver, substantially as and for the purpose set forth.

4. In a filling-machine for liquids, the combination of a support, having a piston-chamber and a guide-opening with which the filling-opening of a positioned package to be filled registers, a carrier-piston in the chamber, a filling-tube and a stopper-driver upon the carrier-piston and reciprocatory through openings in the carrier-piston, means for moving the carrier-piston to bring the said filling-tube and driver alternately into alinement with the said guide-opening, means for reciprocating the filling-tube and driver through the said guide-opening, a stopper-feed opening on the support, and a stopper-holding receptacle on the carrier-piston in the path of the vertical movement of the driver, the said receptacle in the movement of the carrier-piston registering alternately with the said stopper-feed opening and guide-opening, substantially as and for the purpose set forth.

5. In a filling-machine for liquids, the combination with a holder for positioning the package to be filled, of a casing above the said holder containing a piston-chamber, a valve-chamber provided with means for its connection with a compressed-fluid supplier and having ports leading to opposite ends of said piston-chamber, a valve in said valve-chamber movable to direct the fluid-pressure alternately into the opposite end portions of said piston-chamber, said piston-chamber having an elongated guide-slot in its upper side and a guide-opening in its under side, a carrier-piston in the piston-chamber, a reciprocatory filling-tube and a reciprocatory stopper-driver mounted in openings through the said piston, and laterally movable in the said guide-slot, and reciprocating means for the said tube and driver, the carrier-piston being movable in the chamber under the fluid-pressure to carry the said tube and driver alternately into alinement with the said guide-opening, substantially as and for the purpose set forth.

6. In a filling-machine for liquids, the combination of a casing, a chamber in the casing provided in its upper side with an elongated guide-slot, and in its under side with a guide-opening, a downward-projecting package-engaging seal on the casing about said guide-opening, a carrier-piston in the chamber, a vertically-reciprocatory filling-tube, and a vertically-reciprocatory stopper-driver, laterally movable in said guide-slot and mounted in and movable through vertical openings in said carrier-piston, the carrier-piston being movable to bring the said tube and driver alternately into alinement with said guide-opening, whereby they may reciprocate through said opening, substantially as described.

7. In a filling-machine for liquids, the combination with a holder for the package to be filled, of a carrier above the holder, a vertically-reciprocatory filling-tube and a vertically-reciprocatory stopper-driver on the carrier, the carrier being movable to bring the said tube and driver alternately into alinement with the filling-opening of a positioned package, and actuating means for the driver, operating to plunge the driver down to its bung-driving position and then lower the driver beyond said position, whereby the driver operates as a package-positioning medium, substantially as and for the purpose set forth.

8. In a liquid-filling machine for breweries or the like, the combination with the source of fluid-pressure of the establishment for supplying pressure for back-pressure bunging or the like, of the stopper-driver, a cylinder having pipe connection with the said source of fluid-pressure, a piston in the cylinder movable under said fluid-pressure and operatively connected with said driver, a stop on said driver, and cut-off mechanism for the piston-actuating fluid-pressure in the path of the said stop whereby in the driving movement of the stopper-driver the said stop actuates the cut-off mechanism, substantially as and for the purpose set forth.

9. In a liquid-filling machine for breweries or the like, the combination with the stopper-driver, of a cylinder connected with the fluid-pressure supplier of the establishment, a piston in the cylinder movable under said fluid-pressure and operatively connected with said driver, a stop on said driver, and adjustable cut-off mechanism, for the piston-actuating fluid-pressure, in the path of the said stop, whereby in the driving movement of the stopper-driver, the said stop actuates the cut-off mechanism, substantially as and for the purpose set forth.

10. The combination with the stopper-driver D′, operating-piston D^3 and piston-stem D^4, of the toggle mechanism D^6 comprising links m', levers m^2 pivotally connected to the links, fulcrumed between their ends upon stationary supports and provided with segmental racks, and racks upon the said stopper-driver engaged by said segmental racks, substantially as and for the purpose set forth.

11. The combination of the stopper-driver D′, operating-piston D^3, toggle mechanism D^6 and valve I^3, of an operating-rod I^4 for said valve, a lever D^7 pivotally connected with said rod, a spring engaging the lever and holding the said rod and valve I^3 normally raised, a catch upon the toggle mechanism engaging said lever in the downward movement of the toggle mechanism to lower said rod and valve, and engaging means for said catch on the stopper-driver operating to withdraw the catch out of the path of the lever in the upward movement of the stopper-driver, substantially as and for the purpose set forth.

12. The combination with the carrier C′, stopper-driver, piston operatively connected therewith, and valve I^3 movable to direct pressure against opposite sides of said piston, of the operating-lever D^7 for said valve, spring I^5 engaging said lever, and the stationary guide-bar E having the hinged extension i', all constructed and arranged to operate substantially as and for the purpose set forth.

13. In a filling-machine for liquids, the combination with a carrier, the stopper-driver, stopper-driver-actuating mechanism and the operating-lever D^7, all constructed and arranged to operate substantially as described, of the stationary lever-guide E comprising the bar i, having the guide-recess i^2, swinging extension i' having the cam i^4, and spring i^3 bearing against said extension, as and for the purpose set forth.

14. In a filling-machine for liquids, the combination with the filling-tube, guide therefor, and means for lowering and raising the tube in the guide, of a downwardly-seating valve in the lower end portion of the tube, a stem for said valve projecting beyond the end of the tube to be opened by contact with a surface of the package to be filled, a catch for said valve engaging and holding the same from its seat when open, and a catch-releasing stop on the guide in the path of the said catch, substantially as and for the purpose set forth.

15. In a filling-machine for liquids, the combination with the reciprocatory carrier provided with the guide-opening p', filling-tube, and means for raising and lowering the tube through the said guide-opening, of a downwardly-seating valve g^6, in the lower end portion of said tube, having a stem g^4 projecting beyond the end of the tube, a pin g^5 mounted in the tube to extend through a slot in said stem and having a head, a spring operating normally to press the head into the said slot when the valve is raised, a cam on the end of the pin movable through the side of the tube under the action of the spring, and a stop at the said guide-opening in the path of said cam, operating, as the tube is raised at its lower end portion into said guide-opening, to engage the cam end of the pin and move the head out of engagement with the valve-stem, whereby the valve may close, substantially as described.

16. In a filling-machine for liquids, the combination, of a support, a carrier upon the said support, a vertically-reciprocatory filling-tube movable through the said carrier, a cylinder, a valve-chamber with means for its connection with a compressed-fluid supplier and having ports leading to the opposite ends respectively of said cylinder, a piston in the cylinder operatively connected with the said filling-tube, a slide-valve in said chamber movable to direct fluid-pressure alternately against opposite sides of said piston, and having a stem extending beyond said chamber, a vent-passage at the support for the package, a vent-chamber at said passage, a movable abutment in said vent-chamber, an air-passage affording communication between opposite sides of said abutment, a float in the chamber operating when raised to close the said air-passage and lift the abutment, the abutment being operatively connected with said valve-stem, whereby when liquid rises through the said vent-passage it lifts the float to close said air-passage and raise the abutment to slide the valve, substantially as and for purpose set forth.

17. In a filling-machine for liquids, the combination, of a support, a carrier upon the said support, a vertically-reciprocatory filling-tube movable through the said carrier, a cylinder, a valve-chamber with means for its connection with a compressed-fluid supplier and having ports leading to the opposite ends respectively of said cylinder, a pistoo in the cylinder operatively connected with the said filling-tube, a slide-valve in said chamber movable to direct fluid-pressure alternately against opposite sides of said piston, and having a stem extending beyond said chamber, a vent-passage, at the support, for the package, a vent-chamber at said passage, a movable abutment in said vent-chamber, a back-pressure chamber communicating with the vent-chamber at the side of the abutment opposite the said vent-passage, an air-passage affording communication between opposite sides of said abutment, a float in the chamber operating when raised to close the said air-passage and lift the abutment, the abutment being operatively connected with said valve-stem, whereby when liquid rises through the said vent-passage it lifts the float to close said air-passage and raise the abutment to slide the valve, substantially as and for the purpose set forth.

656,279. SELF-ACTING MINING-DOG. WILLIAM A. WILSON, Murphysborough, Ill. Filed Feb. 26, 1900. Serial No. 6,655. (No model.)

Claim.—1. The combination with a track or way, of a horizontally-disposed oscillating dog pivoted between its ends and having its opposite ends alternately projected over said track or way, and means for oscillating said dog; substantially as specified.

2. The combination with a track or way, of a horizontally-disposed oscillating dog pivoted between its ends and having its opposite ends alternately projected over said track or way, and means for automatically actuating said dog; substantially as specified.

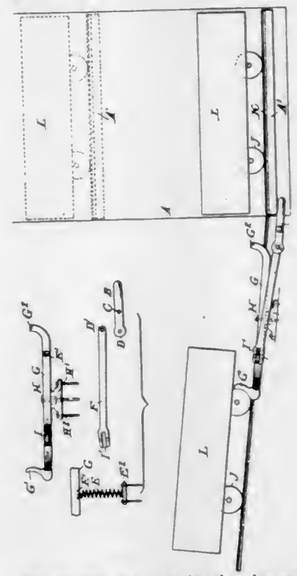
3. The combination with a track or way, of an oscillating dog pivoted between its ends and having its opposite ends alternately projected over said track or way, and means engaged by a traveling member for automatically shifting said dog; substantially as specified.

4. The combination with a track or way, of an oscillating dog pivoted between its ends and having its opposite ends alternately projected over said track or way, means engaged by a traveling member for automatically shifting said dog, and means for restoring said dog to its initial position; substantially as specified.

5. The combination with an inclined track or way, of an oscillating dog having one of its ends projected over said track or way, an elevating platform or cage, a device for shifting said dog adapted to contact with said platform or cage in its descending movement to automatically operate the dog, and means for restoring said dog to its initial position; substantially as specified.

6. A track-dog comprising a pivoted member having contact-blocks at opposite ends, a treadle for operating said dog, a pitman pivoted to said treadle and dog, and a restoring-spring for said dog; substantially as specified.

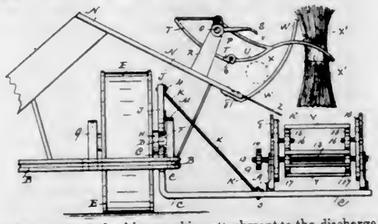
7. A track-dog comprising a member pivoted to oscillate in a horizontal plane and having contact devices at its opposite ends, a treadle pivoted to oscillate in a vertical plane, a pitman pivoted to said dog and treadle, and a restoring-spring placed under compression in the downward movement of the free end of said treadle; substantially as specified.



8. A track-dog comprising a member pivoted to oscillate in a horizontal plane and having contact devices at its opposite ends, a treadle pivoted to oscillate in a vertical plane, a pitman pivoted to said dog and treadle, a restoring-spring placed under compression in the downward movement of the free end of said treadle, in combination with an inclined track or way above which said dog operates, and an elevating platform or cage beneath which the free end of said treadle extends; substantially as specified.

9. A track-dog having a pivoted member with projecting ends adapted alternately to engage the wheels of adjacent independent cars, and means connected with said member for operating it; substantially as specified.

656,280. MACHINE FOR SHOCKING GRAIN. THOMAS A. WOOLEY and HERBERT FOX, Hamilton, Canada, assignors of one-half to Adam Zimmerman, same place, and Arthur Ernest Osler, Toronto, Canada. Filed Dec. 6, 1899. Serial No. 739,360. (No model.)



Claim.—1. A shocking-machine attachment to the discharge side of the binder, comprising a transverse bar, or tube, the binder end of said bar turned to vertical position and concaved to fit against the under side of the stationary axle of the binder and between the hub of the ground-wheel and the axle-housings, thereof, a bracket fitting on the top of said axle and against said hub, vertical ends to said bracket a distance apart, a double brace-rod secured to the ends of the bracket and to the lower transverse bar to support the receiving end of a shocking-machine, independently to the adjustment of the binder, as described.

2. A shocking-machine attachment to the discharge side of a binder comprising a transverse support, the binder end of said support extended vertically to fit to the under side of the stationary axle of the ground-wheel and the end of the hub, a bracket extending across and fitting on the said axle and against the said end of hub and between the binder-frame and the wheel, vertical extensions to the ends of said bracket, a double brace-rod secured to said vertical extensions, and apart, the lower end of said brace-rod secured to the said transverse bar to support the same, the receiving

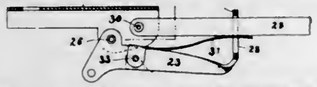
end of a shocking-machine frame secured on the outer part of said transverse bar, as described.

3. In a binder-machine, sheaf-guide rods secured to the discharge side of the binder and above the inclined sheaf-deck thereof, the forward said rod formed with stay branch and outwardly and upwardly and then downwardly curved to guide the butt-end of the discharged sheaf downward, in combination with the rear guide-rod positioned and suitably curved upward and to the rear to guide the head of the sheaf upward and place the same in a vertical position on the carrier of a shocker by the power of the discharging-arms of the binder.

4. A binder and shocker comprising sheaf-guide rods secured to the discharge side of a binder, the forward rod with its stay branch positioned at the discharge side of the forward discharge-arms of the binder, and said rod extending over the attached shocker, said rod being outwardly and upwardly and then downwardly curved to guide the butt-end of the discharged sheaf downward, an incline-plate secured to the discharge side of the binder and forward of said guide-rod and extending to the shocker to receive the butt-end of the sheaf, the rear sheaf-guide rod positioned at the discharge side of the middle and the rear discharge-arms of the binder, and extending over the shocker, said rod being upwardly and rearwardly curved to guide the head of the sheaf upward in vertical position by the power of the discharge-arms of the binder.

5. In a shocking-machine, a transverse bar or tube for supporting the receiving end of the machine, said bar or tube, engaging the under part of the stationary axle of the drive-wheel of a binder, and at the discharging side of the binder, a bracket having upwardly-extending ends, stay-rods connecting said transverse bar to the upper extended ends of the bracket, said bracket supported on and by the said stationary axle and against the hub of said wheel, a carrier at the receiving end of said machine, and in oblique position inclining downward toward the discharging end thereof, slats on said carrier, supporting-brackets secured to the frame of the shocker and to the sides of said carrier and a shaft supported by the brackets, carrier-sprockets on said shaft, a gear or sprocket wheel secured on said shaft, at the binder end, to connect to binder mechanism and receive continuous power, side studs at the receiving end of the carrier to support the carrier-sprockets, a board between the sides of the carrier and beneath the sheaf-carrying slats thereof and an incline-plate secured to the deck of the binder and projecting to the receiving end of the shocker to carry the butt-ends of the sheaves when being changed from a horizontal to vertical position, as described.

656,281. TYPE-WRITING MACHINE. WALTER J. BARRON, New York, N. Y., assignor to the Densmore Typewriter Company, Syracuse, N. Y. Filed June 29, 1899. Serial No. 722,280. (No model.)



Claim.—1. In a type-writing machine, the combination of a pivoted type-bar, an operating-lever therefor, said parts being constructed to have relative play, a transmitting-spring interposed between the two, means for limiting the relative play of the type-bar and operating-lever in each direction, and a key-lever connected to the operating-lever.

2. In a type-writing machine, the combination of a pivoted type-bar, an operating-lever therefor, said parts being constructed to have relative play, means for limiting such play in each direction, a spring fast to one and adapted to bear against the other of said bar and lever elements whereby power is transmitted through the spring to the bar to throw it to the printing-point, and a key-lever connected to the operating-lever.

3. In a type-writing machine, the combination of an upwardly-striking pivoted type-bar, a lifting-lever therefor, said parts being constructed to have relative play, means for limiting such play in each direction, and a flat or leaf spring fast to one and adapted to bear against the other of said bar and lever elements and transmitting the lifting power to the bar.

4. In a type-writing machine, the combination of a pivoted type-bar, an operating-lever through a slot of which the bar passes, and in which said bar has limited play, and a spring interposed between said bar and said lever to transmit the power of the finger-stroke to the bar and to absorb the shock on the impact of the type.

5. In a type-writing machine, the combination of a pivoted type-bar, a lifting-lever therefor, said parts being constructed to have relative play, means for limiting such play in each direction, and a spring for transmitting the lifting action of the lever to the bar at a point between the pivot and the type thereof.

6. In a type-writing machine, the combination of a pivoted type-bar, a lifting-lever therefor, said parts being constructed to have relative play, means for limiting such play in each direction, and a flat or leaf spring fast to the lever and adapted to bear against the type-bar at a point intermediate its pivot and type.

7. In a type-writing machine, the combination of a pivoted type-bar, a lifting-lever therefor provided with a slot through which the bar passes and in which it has play, means for limiting the play in each direction, and a spring fast to one and adapted to bear against the other of said bar and lever elements.

8. In a type-writing machine, the combination of a pivoted type-bar, a lifting-lever therefor provided with a slot through which the bar passes and in which it has play, means for limiting the play in each direction, and a flat or leaf spring fast to one and adapted to bear against the other of said bar and lever elements at said slot.

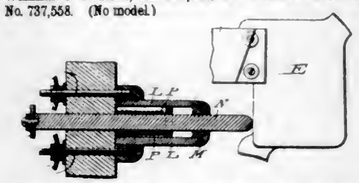
9. In a type-writing machine, the combination of a pivoted type-bar, a lifting-lever therefor provided with a slot through which the bar passes and in which it has play, means for limiting the play in each direction, and a flat or leaf spring fast to the lever and adapted to bear against said bar.

10. In a type-writing machine, the combination of a pivoted type-bar, a lifting-lever therefor, said parts being constructed to have relative play, means for limiting such play in each direction, a hanger to which both type bar and lever are pivoted, and a flat or leaf spring fast to one and adapted to bear against the other of said bar and lever elements to transmit the lifting power to the type-bar.

11. In a type-writing machine, the combination of a type-bar, an operating-lever therefor having a slot embracing said bar, and enabling said bar to have a limited play relatively to said lever, a transmitting-spring intermediate said lever and said bar, a key-lever, and a connection between said key-lever and said operating-lever.

12. In a type-writing machine, the combination of a type-bar, a pivoted arm, said parts being constructed to have relative play, means for limiting such play in each direction, a spring connected to one and adapted to bear against the other of said bar and arm parts to transmit power to move the bar to the printing-point, and a key-lever connected to and operating said arm.

656,282. CIRCUIT-BREAKER. GEORGE S. W. BRUBAKER and WILLIAM S. TWINING, Philadelphia, Pa. Filed Nov. 20, 1899. Serial No. 737,558. (No model.)



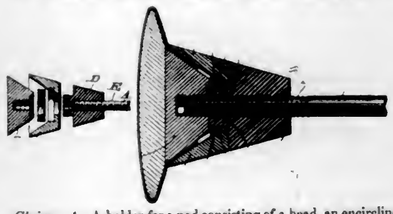
Claim.—1. In a circuit-breaker means for operating the same and a spring-tube or throw-out device, the exposed parts of which present a surface of non-conducting material, so that the same can be placed in proximity to the terminals of other live parts of the circuit-breaker and arcing thereto is prevented.

2. In an automatic circuit-breaker, a spring-tube or throw-out device having the exposed parts protected by a non-conducting material, and means operated by said spring-tube for controlling a second or auxiliary circuit.

3. In an automatic circuit-breaker, a spring-tube or throw-out device, consisting of a tube, a spring-actuated plunger in said tube, means for operating said plunger, said tube and plunger being constructed of non-conducting material, whereby the said throw-out device can be placed in close proximity to current-carrying parts, and arcing thereto is prevented.

4. In an automatic circuit-breaker, a throw-out device, consisting of a tube, a spring-actuated plunger within said tube and a contact device carried by said plunger and adapted to close a second or auxiliary circuit.

656,283. HOLDER FOR PADS. GEORGE A. EDWARDS, Philadelphia, Pa. Filed Sept. 25, 1899. Serial No. 731,541. (No model.)



Claim.—1. A holder for a pad consisting of a head, an encircling collar movable to and from the same, a sleeve which is mounted upon a spindle and rotatable thereon and a joint freely coupling said collar and sleeve, adapting the sleeve to carry the collar in both the closing and opening motions thereof without rotating the same.

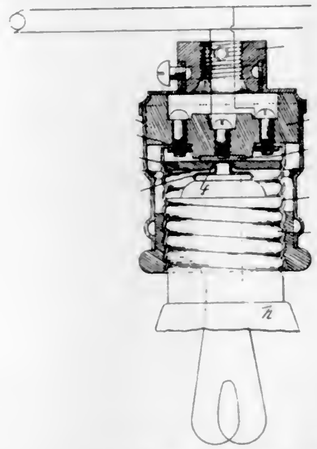
2. In a pad-holder, a collar, a threaded spindle carrying the same, a sleeve fitted on the threaded portion of said spindle and a swivel-joint coupling said collar and sleeve whereby said sleeve by its rotation is adapted to impart opening and closing motions to said collar without rotating the latter.

3. In a pad-holder, a collar in combination with a sleeve, and a ring which is connected with said sleeve and engages said collar, forming a swivel-joint for said parts.

4. In a pad-holder, a sleeve provided with a neck, a collar freely mounted on said neck, and a ring which is fitted on said neck and engages with said collar forming a swivel-joint for said collar and sleeve.

5. A head, a threaded spindle carrying the same, a sleeve fitted on the threaded portion of said spindle and formed with a neck, a collar mounted on said neck and partly encircling said head, and a ring fitted to said neck and engaging a shoulder on said collar forming a free connection for said collar with said sleeve whereby the rotation of the sleeve on said spindle may impart longitudinal motion to said collar without rotating the same.

656,284. SYSTEM OF NON-INTERCHANGEABLE CONTACT PARTS. MORIZ FRÖSCHL, Vienna, Austria-Hungary, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Sept. 2, 1899. Serial No. 729,345. (No model.)



Claim.—1. In a terminal socket, the combination with a base portion *b*, of a threaded terminal contact-shell *d*, means for removably securing the threaded shell to the base *b*, a second contact-terminal *c* also mounted upon the base portion *b*, and a guarding-washer interposed between the contact-terminal *c* and the threaded portion of the contact-shell *d*, said washer being provided with an aperture therethrough to permit of engagement of a contact, carried by a plug inserted within the socket, with the terminal *c*, the interior diameter of the thread of the shell *d* being smaller than the diameter of the washer, the thread of the contact-shell directly engaging and securing the guarding-washer in position, whereby screws for securing the washer in place may be dispensed with, substantially as described.

2. In a system of non-interchangeable electrical contact appliances, the combination with sockets, each provided with a base portion *b*, a threaded terminal contact-shell *d*, means for removably securing the threaded shell to the base *b*, a second contact-terminal *c* also mounted upon the base portion *b*, a guarding-washer interposed between the contact-terminal *c* and the threaded portion of the contact-shell *d*, said washer being provided with an aperture therethrough to permit of engagement of a contact, carried by a plug inserted within the socket, with the terminal *c*, the interior diameter of the thread of the shell *d* being smaller than the diameter of the washer, the thread of the contact-shell directly engaging and securing the guarding-washer in position, whereby screws for securing the washer in place may be dispensed with, the aperture in the guarding-washers of the different sockets being of different sizes, and plugs having threaded terminals adapted for engagement with the threaded terminals of the sockets and also having contact-tips of different sizes corresponding in size to the apertures in the washers of their respective sockets, substantially as described.

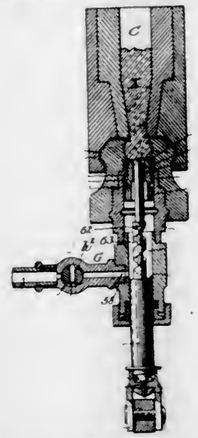
656,285. SEALING-WAX HOLDER. GEORGE H. GOEBEL, Newark, N. J., assignor to the Pomeroy Brothers Company, Harrison, N. J. Filed Apr. 27, 1900. Serial No. 14,549. (No model.)



Claim.—1. A new article of commerce consisting of a glass tube containing a body of sealing-wax that has been poured into said tube while in a fluid condition and allowed to cool and harden therein.

2. A new article of commerce consisting of a non-inflammable tube or casing provided with two or more compartments all opening out of one end of said tube, the said compartments containing sealing-wax of different colors.

656,286. GLASS-BOTTLE-BLOWING MACHINE. LUDWIG GROTE, London, England, assignor to the Grote Bottle Machine Company, Jersey City, N. J. Filed Mar. 5, 1900. Serial No. 7,376. (No model.)



Claim.—1. A glass-bottle-blowing machine having, in combination, a mold in which the head of the bottle is cast, a plunger having a flattened mouth-forming portion, and means for simultaneously rotating and thrusting the same into the molten glass while within said mold.

2. A glass-bottle-blowing machine having, in combination, a mold in which the head of the bottle is cast, a plunger having a flattened mouth-forming portion, and means for thrusting the same into the molten glass while within said mold, and for retracting the same, and for rotating the same during the longitudinal movement.

3. A glass-bottle-blowing machine having, in combination, a mold in which the head of the bottle is cast, an imperforate plunger having a flattened mouth-forming portion, and means for thrusting the same into the molten glass while within said mold, for retracting the same and for rotating the same during its longitudinal movement.

4. A glass-bottle-blowing machine having, in combination, a mold in which the head of the bottle is cast, a centrifugal mouth-forming plunger, and means for simultaneously rotating and thrusting the same into the molten glass while within said mold, thereby solidifying the head of the bottle, and shaping its mouth to receive a cork.

5. A glass-bottle-blowing machine having, in combination, a mold in which the head of the bottle is cast, a plunger having a flattened mouth-forming portion, a casing surrounding the plunger in which the plunger may rotate freely, and which admits air around the plunger, and means for thrusting the mouth-forming portion of the plunger into the molten glass in the mold and for rotating the same to form the mouth with a smooth inner cylindrical surface.

6. A glass-bottle-blowing machine having, in combination, a mold in which the head of the bottle is cast, an imperforate plunger having a flattened mouth-forming portion, a casing surrounding the plunger in which the plunger may rotate freely, and which admits air around the plunger, and means for supplying air under pressure to the casing and for thrusting the mouth-forming portion of the plunger into the molten glass in the mold and for rotating the same to form the mouth with a smooth inner cylindrical surface.

7. A glass-bottle-blowing machine having, in combination, a mold in which the head of the bottle is cast in inverted position, a plunger having a flattened mouth-forming portion, means for thrusting the same upward into the molten glass and retracting the same and for simultaneously rotating the same, a casing for said plunger, and a swiveled bushing within

said casing having a bore corresponding in cross-section with said mouth-forming portion.

8. A glass-bottle-blowing machine having, in combination, a mold in which the head of the bottle is cast in inverted position, an imperforate plunger having a flattened mouth-forming portion, means for thrusting the same upward into the molten glass and for retracting and for simultaneously rotating the same, a casing for said plunger, and means for forcing air into the glass simultaneously with and around said mouth-forming portion.

9. A glass-bottle-blowing machine having, in combination, a mold in which the head of the bottle is cast in inverted position, an imperforate plunger having a flattened mouth-forming portion and an air-propelling shoulder, a casing for said plunger having an air-chamber discharging around said mouth-forming portion, and means for reciprocating and rotating said plunger.

10. A glass-bottle-blowing machine having, in combination, a mold, a rotatable plunger having a spiral groove therein and an imperforate flattened mouth-forming portion adapted to enter the molten glass, and a casing for said plunger, said spiral groove forming a vent for the escape by way of said casing of heated air of excessive pressure.

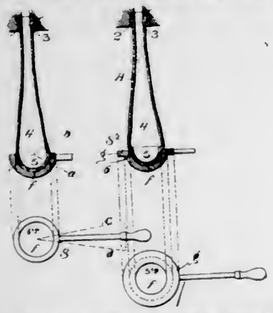
11. A glass-bottle-blowing machine having, in combination, a casing, a neck-mold clasped upon said casing and other molds adapted to be alined with said neck-mold, a rotatable plunger reciprocating through said casing and having a spiral groove therein, a stud in said casing engaging said spiral groove, an air-conduit communicating with said casing, and means for reciprocating said plunger.

12. In a glass-bottle-blowing machine, the combination with a disk having a hub thereon, molds carried by said disk, and a toothed pinion on the hub of said disk, of a toothed segment engaging said pinion, lever-arms pivoted to the ends of said segment and to the frame of the machine, a spring connected with one end of the segment and a treadle connected with the other end of said segment to turn said disk, and stops on the disk and on the frame of the machine to limit the rotation of said disk.

13. In a glass-bottle-blowing machine, the combination with a shaft, a disk mounted on said shaft, molds carried by said disk, and means for rotating said disk through one-half a revolution, of an air-pump connected with said shaft to be operated by the rotation of said disk.

14. In a glass-bottle-blowing machine, the combination with a shaft, a disk mounted on said shaft, molds carried by said disk, and means for rotating said disk through one-half a revolution, of an air-reservoir, an air-duct leading from the reservoir through said shaft and disk to the molds, and an air-pump, communicating with said reservoir and connected with the shaft, to be operated by the rotation of the disk, substantially as described.

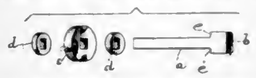
656,287. ART OF MAKING GLASS BOTTLES. LUDWIG GROTE, London, England, assignor to the Grote Bottle Machine Company, Jersey City, N. J. Filed June 16, 1900. Serial No. 20,591. (No model.)



Claim.—1. The within-described process of making a glass bottle with a deep dome-shaped bottom, such process consisting in measuring the glass, casting the head of the bottle and forming the mouth and initial cavity within the glass; then suspending the glass by means of its head, gently admitting air under pressure into said cavity, and exposing the glass for manipulation; then working the lower extremity of the glass to render the bottom-glass homogeneous and substantially hemispherical; then paddling the same to form a shoulder circumscribing a depending central portion of the bottom-glass, reversing or turning the circumscribed bottom-glass during the blowing operation and finally completing the blowing of the bottle, whereby a dome or kick-up of any required depth is formed and the glass evenly distributed throughout the bottom and base edge or rim of the bottle.

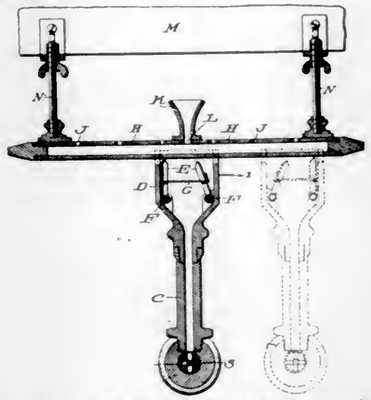
2. In the art of making glass bottles, the process of working the lower extremity of the molten glass in a pendent position to render the bottom-glass homogeneous and circumscribing a depending central portion of said bottom-glass with a shoulder by paddling, reversing or turning the circumscribed bottom-glass during the blowing operation, and finally completing the blowing of the bottle, substantially as hereinbefore specified.

656,288. SPRING SHADE-ROLLER. EDMUND F. HARTSHORN, Newark, N. J., assignor to the Stewart Hartshorn Company, of New Jersey. Filed July 18, 1899. Serial No. 724,227. (No model.)



Claim.—In a spring shade-roller, a spear, stamped up from metal, consisting of the piece *a* having a shank rectangular in cross-section, wherewith the spear engages with the spindle and with the ratchet-hub and washer, and a flattened outer end, provided with the inner shoulders *e* and edge *b*, adapted to engage with the bracket; the ratchet-hub *c*; and the washer *d*, the hub and washer having central holes rectangular in shape to engage with the shank of the piece *a*, whereby the parts are connected together, substantially as described.

656,289. CROSS-HEAD-PIN OILER. WILLIAM J. HARVEY, Philadelphia, Pa., assignor of one-half to William H. Wheaton, same place. Filed May 21, 1900. Serial No. 17,351. (No model.)



Claim.—1. A lubricator or oiler for a cross-head pin consisting of a body provided with a chamber, wipers movably mounted therein and means for conveying the lubricant or oil from said chamber to said pin, said wipers being connected by a short member, whereby one of the wipers is maintained close to an oil-distributing device and the other one is lowered therefrom.

2. A lubricator for a cross-head pin having an oil-distributing device, a traveling chamber adapted to receive a supply of oil therefrom and provided with a discharge-duct and oscillating wipers mounted on said chamber, which latter is movable with a cross-head.

3. In a lubricator or oiler for a cross-head pin, a body provided with a chamber having movable wipers mounted therein and an oil-distributing device above said wipers, the latter being connected by a link which permits one wiper to assume a perpendicular position and the other wiper to assume an inclined position relative to the direction of throw of the cross-head.

4. In a lubricator or oiler for a cross-head pin, a distributer having ports therein, a pair of movable wipers carried by the cross-head and movable therewith, said wipers being connected by a member, whereby by the throw of the cross-head one wiper is placed in perpendicular position and the other wiper is placed in inclined position relatively to the direction of motion of said cross-head.

5. A pin for a cross-head, a sleeve or bearing in which the same is mounted, a tubular column rising from said sleeve, a plurality of movable wipers mounted in the upper part of said column, a connection for said wipers, a distributer for oil having an outlet-port to the side thereof, means for supplying said distributer and means for supporting said distributer above the cross-head, said connection being of such length that one wiper is adapted to be placed in perpendicular position to sweep the oil or lubricant from the surface of the distributer without necessarily contacting with the surface of said distributer, and the other wiper is placed in an inoperative position, said wipers being influenced in their positions by the throw of the cross-head.

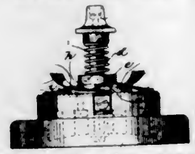
6. In a lubricator or oiler for a cross-head pin, an oil-distributing device consisting of a tube having openings in its top, whereby the oil overflows from said tube at said top and runs over the side of the tube to the bottom, the bottom of the tube being closed, a traveling oil-receiving chamber provided with a discharge-duct, and a wiping device, the latter being mounted on said chamber adjacent to the closed bottom of said oil-distributing device.

656,290. TOOL FOR FINISHING BOOTS OR SHOES. ANDREW HERMAN, Cheyenne, Wyo., assignor to Fred William Tatchell, same place. Filed Oct. 17, 1899. Serial No. 733,914. (No model.)



Claim.—A tool for finishing boots and shoes comprising a handle having a lower elongated head of approximately-elliptical form and provided with lower bearing-shoulders formed on different planes, a longitudinal slot being formed in the bottom of said head intermediate of said shoulders, a reversible scraping-tool located in said slot and having each of its faces provided with a filing and a scraping surface of different widths and separated by a groove or depression, and binding-screws working in opposite sides of said head and engaging said tool, substantially as set forth.

656,291. SWITCH. ERNST W. G. C. HOFFMANN, Charlottenburg, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Sept. 2, 1899. Serial No. 729,326. (No model.)



Claim.—1. The combination with a contact-spring supported at one end and having a free end, of a second contact opposed to the free end of the said spring, a rotatable contact-spring-actuating member adapted to bring the free end of the contact-spring into engagement with the opposed contact, the said contact-spring being arranged in a plane transverse to the axis of rotation of the said actuating member, a shaft with which the actuating member is adapted to rotate and upon which it is adapted to move, and a coiled spring for thrusting the actuating member into engagement with the contact-spring, substantially as described.

2. The combination with two sets of contact-springs, each spring being anchored at one end and having a free end, the free ends of the springs being normally separated from and opposed to the anchored ends of the springs, of a rotatable actuating member adapted for successive engagement with the said springs to effect engagement between opposed springs, substantially as described.

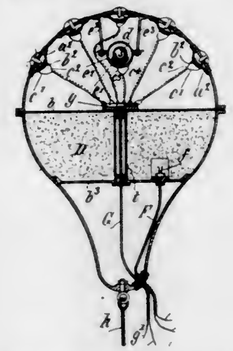
3. The combination with two sets of contact-springs, each spring being anchored at one end and having a free end, the free ends of the springs being normally separated from and opposed to the anchored ends of the springs, of a rotatable actuating member adapted for successive engagement with the said springs to effect engagement between opposed springs, a shaft with which the actuating member is adapted to rotate and upon which it is adapted to move, and a coiled spring for thrusting the actuating member into engagement with the contact-springs, substantially as described.

4. The combination with a spring supported at one end and having a free end, of a second contact opposed to the free end of the said spring, a rotatable contact-spring-actuating member adapted to bring the free end of the contact-spring into engagement with the opposed contact, the said contact-spring being arranged in a plane transverse to the axis of rotation of the said actuating member, and ratchet mechanism for limiting the shaft to one direction of rotation, substantially as described.

5. The combination with a contact-spring supported at one end and having a free end, of a second contact opposed to the free end of the said spring, a rotatable contact-spring-actuating member adapted to bring the free end of the contact-spring into engagement with the opposed contact, the said contact-spring being arranged in a plane transverse to the axis of rotation of the said actuating member, a shaft with which the actuating member is adapted to rotate and upon which it is adapted to move, a coiled spring for thrusting the actuating member into engagement with the contact-spring, and ratchet mechanism for limiting the shaft to one direction of rotation, substantially as described.

6. The combination with two sets of contact-springs, each spring being anchored at one end and having a free end, the free ends of the springs being normally separated from and opposed to the anchored ends of the springs, of a rotatable actuating member adapted for successive engagement with the said springs to effect engagement between opposed springs, and ratchet mechanism for limiting the shaft to one direction of rotation, substantially as described.

656,292. ELECTRICALLY-OPERATED SUBMARINE TORPEDO. PETER C. F. HOFFMANN, Kiel, Germany. Filed Apr. 30, 1898. Serial No. 679,327. (No model.)



Claim.—1. The combination with a torpedo, electric metallic contacts studding its surface, a chamber containing the explosive charge of signal-circuits closed by the contacts on the surface of the torpedo, an igniter in the chamber containing the charge and its electric circuit, an electric-motor circuit and a driven mechanism, a magnetically-operated detent for said mechanism, the signal, firing and detent operated circuits in parallel and independent of the motor-circuit.

2. In a torpedo, a shell divided into three chambers, the central chamber containing an explosive charge and an electric igniter in said charge, a set of metallic contacts arranged to project from said shell and be moved toward the interior thereof, a second set of contacts within the shell, a pair of terminals insulated from one another within the shell, a gravity-contact on one of said terminals arranged to close circuit between them, said contacts and terminals connected in parallel and adapted to close circuit through a pair of wires to a distant signal, substantially as set forth.

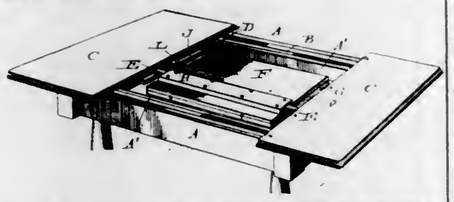
3. The combination with a floating torpedo, of concentric contacts $e' e^2$ arranged axially therein near its head, a gravity or ball contact d in the inner shallower contact e', and an electric circuit including the said contacts; of an alarm-bell at a station distant from the anchorage of the torpedo, included in the circuits of the aforementioned contacts, for the purpose set forth.

4. The combination with a floating torpedo, of concentric contacts $e' e^2$ arranged axially therein near its head, a gravity or ball contact d in the inner shallower contact e' and an electric circuit including said contacts; of an alarm-bell at a station distant from the anchorage of the torpedo included in the circuit of the aforementioned contacts and an electrical firing-circuit controllable from said station, for the purpose set forth.

5. In a torpedo, a shell divided into three superposed chambers, the central chamber containing the explosive charge, an electric igniter therein and a conductive cable connected with said igniter, a second cable passing through the charge-chamber, a set of contacts projecting beyond the surface of the torpedo and a second set of contacts within the upper chamber of the torpedo, each of the first set of contacts arranged to be moved into the shell and contact with one of the second set of contacts, a pair of concentric cups insulated from one another, a ball in the inner cup adapted to close circuit between them when displaced, the contacts arranged in parallel to and closing circuit through the second cable, substantially as set forth.

656,293. EXTENSION-TABLE. CHRISTIAN HORN, Philadelphia, Pa. Filed Apr. 9, 1900. Serial No. 12,051. (No model.)

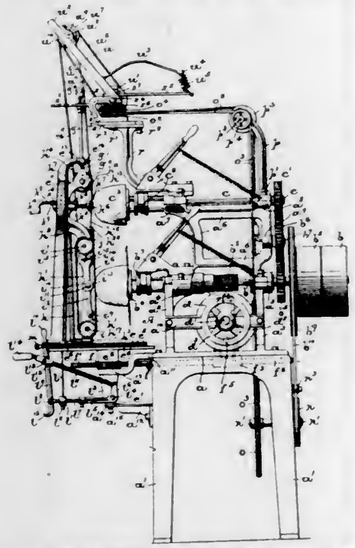
Claim.—1. An extension-table having leaves hinged together in the longitudinal direction thereof, beveled tongues on the end sections of the table adapted to pass under the sagged sides of said leaves aside of the central joint thereof and automatically raise said sides when the end sections are moved toward said leaves.



2. An extension-table having leaves hinged together in the longitudinal direction thereof, beveled tongues on the end sections of the table, said tongues having shoulders at the tops thereof, said tongues being adapted to pass under the sagged sides of said leaves aside of the central joint thereof and thereby raise said sides and place them upon said shoulders flush with said end sections when the latter are moved toward said leaves.

3. In an extension-table, leaves hinged together, a fixed journal for one of said leaves, a sliding bearing for the other leaf, a cleat on which said bearing is movably sustained, end sections and tongues on the latter provided with beveled faces and shoulders, whereby when the leaves are unfolded, and the end sections moved toward said leaves, said tongues automatically raise the sides of the leaves at the central joint thereof and place them upon said shoulders sustaining the leaves flush with the end sections.

656,294. HAT-POUNCING MACHINE. GEORGE F. LARKIN, Newark, N. J. Filed Nov. 3, 1899. Serial No. 735,666. (No model.)



Claim.—1. In a hat-machine, the combination, with a machine-frame, of a pair of horizontal spindles or shafts, and means for rotating the same, a hat-block on one of said spindles, a dummy-block on the other of said spindles, a pouncing mechanism in operative contact with said hat-block, and an oscillating guiding means connected with said pouncing mechanism having a rock motion in a horizontal plane, whereby said guiding means is in operative contact with said dummy-block at the tip and sides of said block, and whereby the pouncing means can be brought in operative contact with the tip and sides of the hat-block, substantially as and for the purposes set forth.

2. In a hat-machine, the combination, with a machine-frame, of a pair of horizontal spindles or shafts, and means for rotating the same, a hat-block on one of said spindles, a dummy-block on the other of said spindles, a pouncing mechanism in operative contact with said hat-block, consisting, essentially, of a standard or support, a pouncing-belt frame pivotally connected with said standard or support, pulley-wheels in said belt-frame, a pouncing-belt on said pulley-wheels, means for operating said pulley-wheels, and a guiding means connected with said pouncing-belt frame in operative contact with said dummy-block, substantially as and for the purposes set forth.

3. In a hat-machine, the combination, with a machine-frame, of a pair of horizontal spindles or shafts, and means for rotating the same, a hat-block on one of said spindles, a dummy-block on the other of said spindles, a pouncing mechanism in operative contact with said hat-block, and a guiding means connected with said pouncing mechanism, consisting, of a frame having bearing portions, and a roller journaled in said bearing portions, in operative contact with said dummy-block, substantially as and for the purposes set forth.

4. In a hat-machine, the combination, with a machine-frame, of a pair of horizontal spindles or shafts, and means for rotating the same, a hat-block on one of said spindles, a dummy-block on the other of said spindles, a pouncing mechanism in operative contact with said hat-block, and a guiding means connected with said pouncing mechanism, consisting, of a frame having bearing portions, slidably and adjustably secured to said pouncing mechanism, a means of adjustment connected therewith, and a roller journaled in said bearing portions in operative contact with said dummy-block, substantially as and for the purposes set forth.

5. In a hat-machine, the combination, with the machine-frame, of a spindle bearing a hat-block, a pouncing mechanism in operative contact with said hat-block, consisting, essentially, of a standard or support, a pouncing-belt frame comprising the frame portions h and h' pivotally supported in said standard, a pair of spindles in said frame portion h', pulley-wheels on said spindles, a pouncing-belt on said pulley-wheels, means for operating the same, one of said spindles and pouncing-belt pulleys being spring-actuated and adjustable in said frame portion h', and means for causing an operative contact of said pouncing-belt with said hat-block, substantially as and for the purposes set forth.

6. The combination, in a hat-machine, with the machine-frame, of a pair of horizontal spindles or shafts, a hat-block on one of said spindles, a dummy-block on the other of said spindles, a pouncing mechanism in operative contact with said hat-block, consisting, essentially, of a standard or support, a pouncing-belt frame comprising the frame portions h and h' pivotally supported in said standard, a pair of spindles in said frame portion h', pulley-wheels on said spindles, a pouncing-belt on said pulley-wheels, means for actuating the same, and a guiding means connected with said frame portion h in operative contact with said dummy-block, substantially as and for the purposes set forth.

7. The combination, in a hat-machine, with the machine-frame, of a pair of horizontal spindles or shafts, a hat-block on one of said spindles, a dummy-block on the other of said spindles, a pouncing mechanism in operative contact with said hat-block, consisting, essentially, of a standard or support, a pouncing-belt frame comprising the frame portions h and h' pivotally supported in said standard, a pair of spindles in said frame portion h', pulley-wheels on said spindles, a pouncing-belt on said pulley-wheels, means for actuating the same, one of said spindles and pouncing-belt pulleys being spring-actuated and adjustable in said frame portion h' and a guiding means connected with said portion h, in operative contact with said dummy-block, substantially as and for the purposes set forth.

8. In a hat-machine, the combination, with a machine-frame, of a spindle bearing a hat-block, and means for rotating the same, a table or disk oscillating in a horizontal plane, mechanism for operating the same, a reciprocating bed-plate on said table or disk, and a pouncing mechanism, consisting, essentially, of a standard or support arranged on said bed-plate, a pouncing-belt frame pivotally connected with said standard or support, pulley-wheels in said belt-frame, and a pouncing-belt on said pulley-wheels, substantially as and for the purpose set forth.

9. In a hat-machine, the combination, with a machine-frame, of a pair of horizontal spindles or shafts, and means for rotating the same, a hat-block on one of said spindles, and a dummy-block on the other of said spindles, a table or disk oscillating in a horizontal plane, mechanism for operating the same, a reciprocating bed-plate on said table or disk, a pouncing mechanism on said bed-plate, and a guiding means connected with said pouncing mechanism in operative contact with said dummy-block, substantially as and for the purposes set forth.

10. In a hat-machine, the combination, with a machine-frame, of a pair of horizontal spindles or shafts, and means for rotating the same, a hat-block on one of said spindles, and a dummy-block on the other of said spindles, a table or disk oscillating in a horizontal plane, mechanism for operating the same, a reciprocating bed-plate on said table or disk, a pouncing mechanism on said bed-plate, consisting, essentially, of a standard or support, a pouncing-belt frame pivotally connected with said standard or support, a pouncing-frame pivotally connected with said standard or support, pulley-wheels in said belt-frame, a pouncing-belt on said pulley-wheels, means for operating said pulley-wheels, and a guiding means connected with said pouncing-belt frame, in operative contact with said dummy-block, substantially as and for the purposes set forth.

11. In a hat-machine, the combination, with a machine-frame, of a pair of horizontal spindles or shafts, and means for rotating the same, a hat-block on one of said spindles, and a dummy-block on the other of said spindles, a table or disk oscillating in a horizontal plane, mechanism for operating the same, a reciprocating bed-plate on said table or disk, a pouncing mechanism on said bed-plate, and a guiding means connected with said pouncing mechanism, consisting, of a frame having bearing portions, and a roller journaled in said bearing portions in operative contact with said dummy-block, substantially as and for the purposes set forth.

12. In a hat-machine, the combination, with a machine-frame, of a spindle bearing a hat-block, and means for rotating the same, a pouncing mechanism, and means for actuating said pouncing mechanism, comprising, a pulley-wheel connected with said pouncing mechanism, a pulley-wheel operated from the main driving-shaft of the machine, an oscillating and vibrating belt-frame on the said machine-frame, pulley-wheels on said oscillating and vibrating belt-frame, and belt connections, connecting said pulley-wheel operated from the main driving-shaft, and said pulley-wheel of the pouncing mechanism, with the pulley-wheels of said oscillating and vibrating belt-frame, substantially as and for the purposes set forth.

13. In a hat-machine, the combination, with a machine-frame, of a spindle bearing a hat-block, and means for rotating the same, a pouncing mechanism, and means for actuating said pouncing mechanism, comprising a pulley-wheel connected with said pouncing mechanism, a pulley-wheel operated from the main driving-shaft of the machine, a yoke-frame secured to said machine-frame, bearing portions connected with said yoke-frame, a spindle or shaft in said bearing portions, a vibrating belt-frame on said spindle or shaft, pulley-wheels on said vibrating belt-frame, a belt passing over said pulley-wheels, means for driving said spindle or shaft of said vibrating belt-frame from the main driving-shaft of the machine, and a belt connection between said vibrating frame and the pulley-wheel of the pouncing mechanism, substantially as and for the purposes set forth.

14. In a hat-machine, the combination, with a machine-frame, and a support r thereon, of a spindle bearing a hat-block, and means for rotating the same, a pouncing mechanism, and means for actuating said pouncing mechanism, comprising, a pulley-wheel connected with said pouncing mechanism, a pulley-wheel operated from the main driving-shaft of the machine, a yoke-frame pivotally arranged on said support r so as to swing horizontally thereon, a pulley-wheel and miter-gear connected with a plate r' on said support r, bearing portions on said yoke-frame, a spindle in said bearing portions, a miter-gear on said spindle in mesh with said miter-gear on said plate r', a vibrating belt-frame on said spindle, pulley-wheels on said vibrating belt-frame, a belt passing over said pulley-wheels, a pulley-wheel u^{10} on said vibrating belt-frame, a belt passing over said pulley-wheel u^{10} and the pulley-wheel connected with said pouncing mechanism, and a belt passing over the pulley actuated from said main driving-shaft and the pulley-wheel connected with said plate r', substantially as and for the purposes set forth.

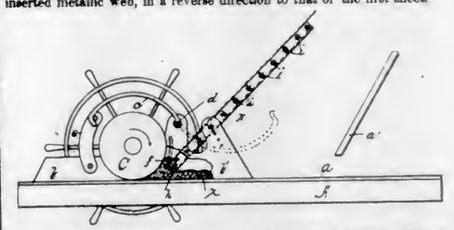
15. In a combined hat pouncing and ironing machine, a pair of horizontal spindles or shafts, and means for rotating the same, a block b^4 on one of said spindles, and a block c^3 on the other of said spindles, a pouncing mechanism in operative contact with said hat-block b^4, a combined ironing and guide-roller connected with said pouncing mechanism in operative contact with said block c^3, and means connected with said combined ironing and guide roller for heating the same, substantially as and for the purposes set forth.

16. In a hat-machine, the combination, with a machine-frame, of a pair of horizontal spindles or shafts, and a means for rotating the same, a hat-block on one of said spindles, and a dummy-block on the other of said spindles, a table or disk oscillating in a horizontal plane, mechanism for operating the same, a reciprocating bed-plate on said table or disk, a pouncing mechanism on said bed-plate, a guiding means connected with said pouncing mechanism, consisting, essentially, of a slidably and adjustably arranged frame having a pair of bearing portions, a means of adjustment connected with said frame, and a roller journaled in said bearing portions in operative contact with said dummy-block, substantially as and for the purposes set forth.

17. In a combined hat pouncing and ironing machine, a pair of horizontal shafts or spindles, and means for rotating the same, a block b^4 on one of said spindles, and a block c^3 on the other of said spindles, a pouncing mechanism in contact with said block b^4, a guiding means connected with said pouncing mechanism, consisting, of a frame having bearing portions, a hollow ironing and guide roller journaled in said bearing portions in operative contact with said block c^3, and means connected with said combined ironing and guide roller for heating the same, substantially as and for the purposes set forth.

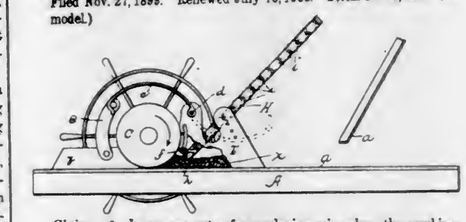
656,295. MANUFACTURE OF WIRE-GLASS. JOSEPH LOCKE, Pittsburg, Pa., assignor to the Davis Glass Company, same place. Filed Nov. 27, 1899. Renewed July 16, 1900. Serial No. 23,822. (No model.)

Claim.—1. The herein-described improvement in method or process for producing plates of wire-glass, which consists in, first, forming a mass of glass into a sheet or layer, and inserting in said sheet a metallic web, and finally, forming a second sheet or layer of glass, on the first sheet and inserted metallic web, in a reverse direction to that of the first sheet.



2. The herein-described improvement in method or process for producing plates of wire-glass, which consists in, first, forming a mass of glass into a sheet or layer and simultaneously with the forming thereof inserting therein a metallic web, and finally, forming a second sheet or layer of glass, on the first sheet and inserted metallic web, in a reverse direction to that of the first sheet.

656,296. APPARATUS FOR PRODUCING WIRE-GLASS. JOSEPH LOCKE, Pittsburg, Pa., assignor to the Davis Glass Company, same place. Filed Nov. 27, 1899. Renewed July 16, 1900. Serial No. 23,823. (No model.)



Claim.—1. In an apparatus for producing wire-glass, the combination of a table, a compressing-roll, a small feed-roll arranged in close proximity to said compressing-roll, and guides arranged on opposite sides of said compressing-roll, substantially as set forth.

2. In an apparatus for producing wire-glass, the combination of a table, a compressing-roll, a small feed-roll arranged in close proximity to said compressing-roll, and guides arranged on opposite sides of said compressing-roll, the said guides being detachably connected, substantially as set forth.

3. In an apparatus for producing wire-glass, the combination of a table, a compressing-roll, a small roll arranged in close proximity to said compressing-roll and adapted to feed and guide a web of wire beneath said compressing-roll, a chute adapted to support said web of wire, and guides arranged on opposite sides of said compressing-roll, substantially as set forth.

4. In an apparatus for producing wire-glass, the combination of a table, a compressing-roll, a small roll arranged in close proximity to said compressing-roll, a chute adapted to support a web of wire, and guides arranged on opposite sides of said compressing-roll the said guides being detachably connected, substantially as set forth.

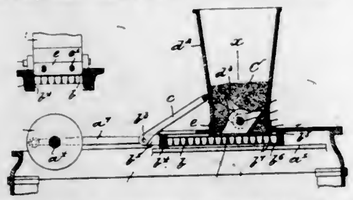
5. In an apparatus for producing sheets of glass having a metallic web inserted, the combination of a table, a compressing-roll, means to move said roll, a small roll arranged in close proximity to said compressing-roll and adapted to feed and guide a web of wire beneath said compressing-roll, and guides arranged on opposite sides of said compressing-roll and detachably connected, substantially as set forth.

656,297. GRANULATING-MACHINE. ABRAHAM R. MORRIS, Philadelphia, Pa., assignor to the Morris Tablet Machine Company, same place and Camden, N. J. Filed Jan. 22, 1900. Serial No. 2,272. (No model.)

Claim.—1. A mechanical granulator for plastic or similar material, comprising a hopper or receptacle having an open base, a bed upon which the base of the hopper is supported, an open-meshed sieve, means for maintaining said sieve in substantially-flat condition in said bed and across the base of the hopper, means for reciprocating said sieve in said bed across the open base of the hopper, and means located within the hopper for feeding and forcing the material in the hopper toward and through the meshes of the sieve during the reciprocation of said sieve, substantially as and for the purposes described.

2. In a mechanical granulator of the character described, an open-meshed sieve, a grated body upon which said sieve is supported, said body

comprising cross-bars having upper knife-like edges adapted to rest under the strands of the sieve, and a frame adapted to clamp the sieve down upon said body, substantially as and for the purposes described.



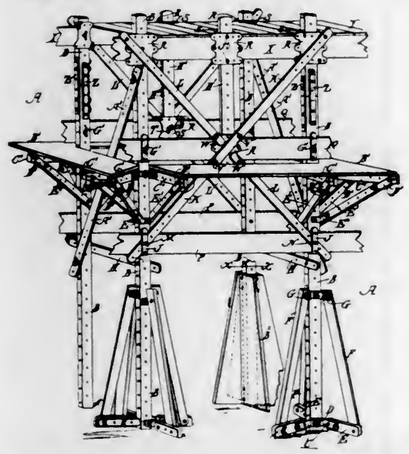
3. In a mechanical granulator of the character described, a combined feeding and forcing mechanism, in combination with a reciprocatory open-meshed sieve, and means for reciprocating said sieve, said feeding and forcing mechanism adapted to present and force the material to and through the meshes of the sieve, during the reciprocation of said sieve, substantially as and for the purposes described.

4. In a mechanical granulator, a reciprocatory open-meshed sieve, an open-ended hopper across the open base whereof the sieve is adapted to be reciprocated, a feeding mechanism having two faces adjacent to and normally arranged at an angle to the sieve, and means for oscillating the feeding mechanism so as to cause each face to alternately approach the sieve, substantially as and for the purposes described.

5. In a mechanical granulator, a feeding mechanism having two angular under faces, a hopper wherein said feeding mechanism is pivotally supported, means for oscillating said feeding mechanism in said hopper to alternately bring an under face toward the base of said hopper, a sieve, and means for reciprocating said sieve across the base of said hopper and in a direction opposite to the direction of travel of the feeding mechanism, substantially as and for the purposes described.

6. In a mechanical granulator, a combined feeding, pressing and disintegrating mechanism, comprising an oscillating body having two angular under faces and upwardly-projecting fingers, substantially as and for the purposes described.

656,298. SCAFFOLDING. JOHN T. O'BRIEN, Philadelphia, Pa. Filed Nov. 28, 1899. Serial No. 738,532. (No model.)



Claim.—1. A scaffolding consisting of a series of uprights, ledgers and braces, feet for said uprights formed of base-bars extending laterally from the uprights, lower angle-irons common to said uprights and base-bars and to which the latter are pivotally connected, braces pivoted to the outer portion of said base-bars and inclining upward and inward, upper angle-irons to which the upper ends of said braces are pivoted connecting them to the uprights, said upper and lower angle-irons being adjustable relatively to each other along the uprights.

2. A scaffolding consisting of a plurality of uprights, feet therefor, parallel ledgers, arranged on opposite sides of said uprights, brackets secured to said uprights, said ledgers being supported in said brackets binding-ties secured to substantially the central portion of every alternate one of said ledgers, braces diagonally arranged and engaging said binding-ties, the lower extremity of said braces being secured to said brackets while the upper extremity of said braces is secured to binding-ties arranged in substantial alinement with said brackets and means for holding the parts in assembled position.

3. A scaffolding consisting of uprights, ties extending in one direction thereof, ledgers extending at a right angle to said ties, brackets secured to said uprights, diagonal braces and binding-ties therefor, certain of said ledgers and braces being supported in said brackets.

4. A scaffolding consisting of a plurality of uprights, feet therefor, ties for said uprights, brackets supported upon the latter a plurality of ledgers secured in said brackets, a platform supported across certain of said ledgers, diagonal braces for said ledgers, certain of said braces extending diagonally across the scaffold, the opposite diagonal braces terminating at substantially the center of said scaffolding binding-ties common to said ledgers and braces, and fastening devices therefor.

5. A scaffolding consisting of a plurality of uprights, feet therefor, ties and ledgers for said uprights, trusses supported upon said uprights, arms projecting from the latter, clamps common to said arms and trusses, and an outer platform supported upon said arms, in combination with brackets secured to said uprights, said ledgers being supported in said brackets, binding-ties located at the center and outer portions of said ledgers, a brace extending at an angle from one of the lower brackets across a central binding-tie, and having its upper extremity secured to an outer binding-tie, and sectional braces extending at an angle to said first-mentioned brace and fastening devices for holding said parts in assembled position.

6. A scaffolding consisting of a plurality of uprights, ties and ledgers therefor, diagonal braces common to said ledgers and uprights, brackets secured to the latter and adapted to support said ledgers and braces a platform supported on certain of said ledgers, trusses secured to said uprights, arms projecting from the latter, clamps common to said arms and trusses, and an outer platform supported upon said arms.

7. In a scaffolding, a plurality of uprights, feet therefor, a plurality of ledgers, brackets extending from said uprights and supporting said ledgers, the intermediate portion of every alternate ledger having a binding-tie secured thereto, a diagonal brace extending from the lower bracket across said central binding-tie and having its upper end secured to an upper binding-tie, a lower sectional brace extending at an angle from a lower bracket and terminating at said central binding-tie, an upper sectional brace extending in line with said last-mentioned brace, and having its lower end secured on said central binding-tie, and its upper end secured to an outer binding-tie, outer braces A′ secured to said uprights, and transverse ties H, extending at an angle to said ledgers.

8. In a scaffolding, a plurality of uprights, feet for the lower portion of said uprights, said feet being formed by the base-bars E, angle-irons C common to said base-bars and uprights, braces F extending from said base-bars to said uprights, angle-irons G common to said braces and uprights, brackets J attached to the latter, ledgers P and Q, supported in said brackets, an upper set of ledgers X, binding-ties for holding said ledgers in position, diagonal braces K extending from the lower of said brackets to the upper of said binding-ties, sectional braces L extending across said first-mentioned brace, outer braces A′ and transverse ties H, extending at an angle to said ledgers.

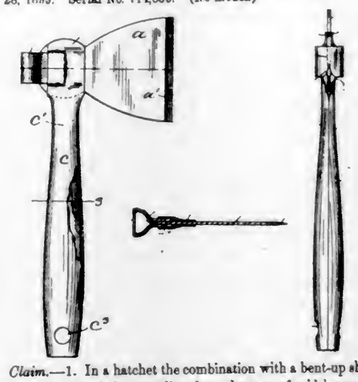
9. In a scaffolding, a plurality of uprights, feet therefor, brackets J attached to said uprights, ledgers supported in said brackets, ties H secured to said uprights, and extending at an angle to said ledgers, outer braces A′, diagonal braces K and L, binding-ties therefor, certain of said latter braces being supported in said brackets fastening devices for holding said braces in position, trusses E′ secured to said uprights, arms extending from said uprights and supported upon said trusses, a platform supported upon said arms, and a platform supported upon said upper ledgers.

10. In a scaffolding, a plurality of uprights, brackets thereon, ledgers supported in said brackets, the intermediate ledger being made in sections, the juxtaposed ends thereof meeting at substantially the center of said scaffolding, binding-ties R and S located adjacent said ends, means for holding said ties in position, and diagonal braces for said scaffolding.

11. In a scaffolding, a plurality of uprights, ledgers supported thereon, binding-ties R and S for intermediate ledgers, means for holding said ties in position, diagonal braces, means for securing said braces to said binding-ties, and means for securing the outer portions of said braces in proximity to said uprights.

12. A scaffolding consisting of a series of uprights, brackets secured to the latter, ledgers supported upon said uprights, diagonal braces for said uprights, certain of said braces being supported in said brackets, feet for said uprights formed of base-bars extending laterally from the uprights, lower angle-irons common to said uprights and base-bars and to which the latter are pivotally connected, braces pivoted to the outer portion of said base-bars and inclining upward and inward, upper angle-irons to which the upper ends of said braces are pivoted connecting them to the uprights, said upper and lower angle-irons being adjustable relatively to each other along the uprights.

656,299. METALLIC HATCHET. JOSEPH R. PAYSON, Jr., Chicago, Ill., assignor of one-half to Carrie B. Kennedy, same place. Filed Apr. 28, 1899. Serial No. 714,839. (No model.)



Claim.—1. In a hatchet the combination with a bent-up sheet-metal hammer part, of a blade extending from the rear of said hammer part, a metal handle on the outside of the said hammer part and blade and common rivets adapted to securely fasten the blade, the hammer part and the handle together substantially as described.

2. In a hatchet the combination with a two-piece head composed of a hammer part and a blade secured to said hammer part and extending from the rear of said part, of a handle secured to said hammer part and overlapping said blade to form with said blade a wedge, substantially as described.

3. In a hatchet the combination with a sheet-metal head composed of a bent-up sheet-metal hammer part, and a blade attached thereto, of a metal handle overlapping said hammer part on the outside thereof and attached to said head only through said hammer part, substantially as described.

4. In a hatchet the combination with a hatchet-head formed of a cutting-blade and an overlapping separate sheet-metal hammer part, of a metallic handle provided with a slot into which the head is inserted and fastened, substantially as described.

5. In a hatchet the combination with a blade, a bent-up sheet-metal hammer part overlapping said blade and secured thereto, of a hollow two-piece metal handle provided with a slot in one end and between said pieces to surround the juncture of said hammer part and blade and means for securely fastening said handle to the hatchet-head whereby the blade and hammer part and handle are all securely joined together, substantially as described.

6. In a metallic hatchet, the combination with a blade, of a sheet-metal hammer part provided with rearwardly-converging projections extending from the sides of the hammer-surface to the said blade, and a sheet-metal handle overlapping said hammer-part projections, substantially as described.

7. In a metallic hatchet, the combination with a blade, of a metal hammer part, projections on said hammer part adapted to extend rearwardly from the sides of said hammer-surface on each side of said blade and a metal handle overlapping said projections and secured thereto, substantially as described.

8. In a metallic hatchet the combination with a blade of a hammer part composed of a hammer-surface and projections extending rearwardly from the edges of said hammer-surface to each side of the blade, a metal handle overlapping said projections and rivets to pass through said handle, said projections and said blade to fasten same all together, substantially as described.

656,300. DENTAL ROOT-CANAL DRIER. DAVID PERRY, St. Paul, Minn. Filed Nov. 22, 1898. Serial No. 697,126. (No model.)



Claim.—A head having a screw-threaded bore therein, a probe having its inner end occupying said bore and seated on a shoulder thereon and a handle having a bur which engages with the threads of said bore, said end, shoulder and bur forming a ball-and-socket joint for said probe, said head having in its side a slot which communicates with said bore and is adapted to have the shank of the probe therein, the portion of said handle rearward of said bur being removed from the remaining wall of said bore.

656,301. WINDOW-CLEANER. LOUIS E. PFEIFFER, Philadelphia, Pa., assignor to Helen W. Pfeiffer, same place. Filed Nov. 27, 1899. Serial No. 738,304. (No model.)

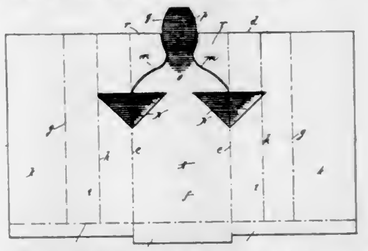


Claim.—1. In a washer, a hollow head adapted to be connected with a water-supply, a detachable cap having its base mounted on the outer rim of said head, means on said cap for carrying washing material, and devices on said base and rim for interlocking said cap and head.

2. In a carriage, window or other washer, a head adapted to be connected with a water-supply, an inwardly-projecting flange on said head, pins supported upon said flange, a frame having an inwardly-projecting flange provided with openings engaging said pins, and an inwardly-projecting toothed or serrated portion adapted to engage a piece of washing material.

3. A washer of the character stated, consisting of a hollow head, a cap having a base adapted to be seated upon the rim of said head and provided with inwardly-projecting teeth adapted to hold washing material and devices on said base and rim for interlocking said cap with said head.

656,302. PAPER BAG. MARTIN D. POLHEMUS, Dobbs Ferry, N. Y. Filed Feb. 6, 1900. Serial No. 4,172. (No model.)



Claim.—1. An improved bag of the class described composed of a blank having the top of one of its side portions provided with a tongue or flap adapted to be turned over the top of the folded blank in forming the bag, and with side flaps arranged at the sides of and independent of said tongue or flap and adapted to be folded downwardly with relation thereto and to be sealed thereto in closing the bag, and reinforcing-strips secured to the blank at the opposite sides and bottom of the tongue or flap, substantially as shown and described.

2. An improved paper bag of the class described, having the top part of one of its side portions provided with a tongue or flap adapted to be turned down over the top portion of the folded bag, said tongue or flap being centrally arranged, and with side flaps occupying a position at opposite sides of said main tongue or flap and connected with the body-sheet of the bag at their outer edges with respect to said main tongue or flap, substantially as and for the purpose set forth.

3. An improved paper bag of the class described, having the top part of one of its side portions provided with slits extending from the top edge downwardly and outwardly to the side edges or edge crease-lines and dividing said top part into a central main tongue or flap and two side flaps the outer edges of which are connected with the body-sheet of the bag, substantially as set forth.

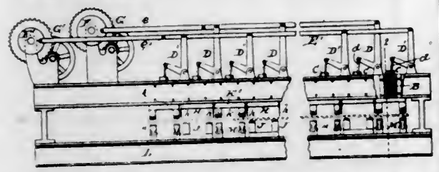
4. An improved paper bag of the class described, comprising the body-sheet forming the side portions and having one of said side portions provided with a tongue or flap adapted to fold down over the top of the folded bag and with flaps at opposite sides of said tongue, said side flaps being connected with the body-sheet at their upper portions and said in-

termediate main tongue or flap and side flaps being arranged to extend below the top edge of said body-sheet.

5. In an improved paper bag of the class described, the combination, with the body-sheet forming the sides of the bag and having the top part of one of said side portions slitted to form a tongue or flap and flaps at the side of said main tongue or flap, of reinforces connected with the body-sheet at the lower terminus of the slit.

6. An improved paper bag of the class described, having the top part of one of its side portions provided with a tongue or flap and with supplementary flaps arranged at the sides of said main tongue or flap and free therefrom and having their outer edges connected with the body-sheet of the bag, substantially as set forth.

656,303. MACHINE FOR CONNECTING WEBS OF FABRIC. GEORGE K. RICH, Philadelphia, Pa., assignor to the Farr & Bailey Manufacturing Company, Camden, N. J. Filed May 31, 1900. Serial No. 18,552. (No model.)



Claim.—1. In a machine for temporarily connecting the two ends of two pieces of webbing, the combination of cutting devices for forming through the overlapped webs a series of parallel slits, with two sets of former-jaws adapted to operate upon the webs from opposite sides one set of former-jaws acting upon the webbing between every alternate pair of slits and the other set acting upon the remaining portions between said slits, whereby the alternate portions are pushed in opposite directions to form a transverse passage-way through which a locking bar or rod may be passed.

2. In a machine for temporarily connecting the two ends of two pieces of webbing, the combination of cutting devices for forming through the overlapped webs a series of parallel slits, with two sets of former-jaws adapted to operate upon the webs from opposite sides one set of former-jaws acting upon the webbing between every alternate pair of slits and the other set acting upon the remaining portions between said slits, whereby the alternate portions are pushed in opposite directions to form a transverse passage-way through which a locking bar or rod may be passed and automatic lifting devices for supporting the webbing clear of the former-jaws when they are separated.

3. In a machine for temporarily connecting the two ends of two pieces of webbing, the combination of cutting devices for forming through the overlapped webs a series of parallel slits, with two sets of former-jaws adapted to operate upon the webs from opposite sides one set of former-jaws acting upon the webbing between every alternate pair of slits and the other set acting upon the remaining portions between said slits, whereby the alternate portions are pushed in opposite directions to form a transverse passage-way through which a locking bar or rod may be passed the said two sets of former-jaws having their operating ends pointing in opposite directions and consisting of inwardly-directed fingers or operating parts separated at their free ends.

4. In a machine for temporarily connecting the ends of two webs of fabric consisting of two main frames arranged so as to have a space between them through which the webs may be passed, a series of reciprocating stabbing-blades carried by one of the frames and adapted to perforate the webs in a series of parallel slits, a series of stationary former-jaws on the other frame adapted to operate upon the web between every alternate pair of slits, a reciprocating series of former-jaws carried by the frame supporting the stabbing-blades and adapted to act upon the webbing between the alternate pairs of slits unacted upon by the other series of jaws and from the opposite side thereof, and devices for operating the stabbing-blades and reciprocating former-jaws.

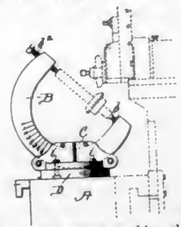
5. In a machine for temporarily connecting the ends of two webs of fabric consisting of two main frames arranged so as to have a space between them through which the webs may be passed, a series of reciprocating stabbing-blades carried by one of the frames and adapted to perforate the webs in a series of parallel slits, a series of stationary former-jaws on the other frame adapted to operate upon the web between every alternate pair of slits, a reciprocating series of former-jaws carried by the frame supporting the stabbing-blades and adapted to act upon the webbing between the alternate pairs of slits unacted upon by the other series of jaws and from the opposite side thereof, spring-supports for the webbing carried by the same frame with the stationary jaws and located in alinement with the reciprocating former-jaws, and independent devices for operating the stabbing-blades and reciprocating former-jaws.

6. In a machine for temporarily connecting the ends of two webs of flexible material, the combination of the main frame A L, a series of guides B secured to the frame A, reciprocating plungers movable in said guides, a series of bell cranks D connected with and operating alternate plungers, a series of bell-cranks D′ connected with and operating the remaining plungers, separate devices for rocking each series of bell-cranks D and D′ independently, stabbing-blades *h*, *h* connected to the set of plungers operated by the bell-cranks D, depressing former-jaws K connected to and operated by the other set of plungers actuated by the bell-cranks D′, and fixed former-jaws J secured to the frame L below the spaces intermediate of each two stabbing-blades taken as pairs and occupying spaces intermediate of the depressing former-jaws K.

7. In a machine for temporarily connecting the ends of two webs of flexible material, the combination of the main frame A L, a series of guides B secured to the frame A, reciprocating plungers movable in said guides, a series of bell-cranks D connected with and operating alternate plungers, a series of bell-cranks D′ connected with and operating the remaining plungers, separate power devices for rocking each series of bell-cranks D and D′ independently, stabbing-blades *h*, *h* connected to the set of plungers operated by the bell-cranks D, depressing former-jaws K connected to and operated by the other set of plungers actuated by the bell-cranks D′, fixed former-jaws J secured to the frame L below the spaces intermediate of each two stabbing-blades taken as pairs and occupying spaces intermediate of the depressing former-jaws K, and a series of spring-actuated pivoted arms M for lifting the webs clear of the former-jaws J arranged below the former-jaws K.

8. In a machine for temporarily connecting the two ends of two pieces of webbing, the combination of cutting devices for forming through the overlapped webs a series of parallel slits, with two sets of former-jaws adapted to operate upon the webs from opposite sides one set of former-jaws acting upon the webbing between every alternate pair of slits and the other set acting upon the remaining portions between said slits, whereby the alternate portions are pushed in opposite directions to form a transverse passage-way through which a locking bar or rod may be passed and means independent of the two sets of jaws for raising the webbing clear of both sets of former-jaws when they are moved relatively apart.

656,304. GEAR-CUTTING MACHINE. JOHN SOMMER, Peoria, Ill. Filed Aug. 26, 1899. Serial No. 728,545. (No model.)



Claim.—1. In a gear-cutting machine, the combination, with the plate D, and the clamping-jaws C C, of the semicircular protractor provided with the fixed spur *b*, and the adjustable spur b^3, carrying a revoluble spindle adapted to receive and hold a gear-blank, all substantially as described and shown.

2. In a gear-cutting machine, the combination, of the following elements, namely: a reciprocating tool-head mounted to slide in a suitable frame and suitably driven and carrying a cutting-tool, a peripherally-supported semicircular protractor marked with a scale on one side and provided with suitable spurs at its ends purposed to engage and hold a revoluble spindle adapted to receive and hold a gear-blank in the path of movement of the said cutting-tool, a pair of clamping-jaws adapted to engage and hold the protractor at the desired angle, all substantially as described and shown.

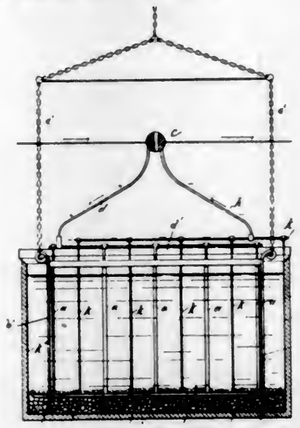
3. In a gear-cutting machine, the combination, with the jaws C C, mounted upon the horizontally-adjustable plate D, of the semicircular peripherally-supported adjustable protractor B, having at one end the fixed spur *b*, and at the other end the adjustable spur b^3, whereby a revoluble spindle is held between the ends of the protractor at any desired angle adapted to receive and hold a gear-blank in the path of movement of a cutting-tool, all substantially as described and shown.

4. A gear-cutting machine, consisting, of a vertically-adjustable bed-frame A, the horizontally-adjustable plate D, the jaws C C, the semicircular, adjustable protractor B, supported at its rim portion in jaws C C, and provided with the fixed spur *b*, and the adjustable spur b^3, adapted to hold a revoluble spindle at any desired angle upon which is purposed to be supported a gear-blank, and a reciprocating tool-head mounted to slide in a suitable frame, all substantially as described and shown.

5. In a gear-cutting machine, the combination, of the horizontally-adjustable plate D, mounted upon the vertically-adjustable bed-frame A, and provided with the locking-key F, the jaws C C, pivotally supported upon plate D, by means of bolt E, the semicircular, adjustable protractor B, provided with a scale on the side and also provided with the fixed spur *b*, and the adjustable spur b^3, adapted to support a revoluble spindle-carrying gear-blank, and a reciprocating tool-head mounted to slide in a suitable frame and carrying a cutting-tool, all substantially as described and shown.

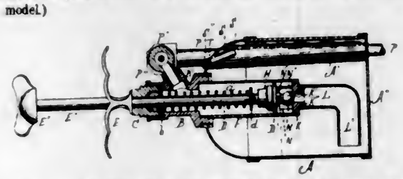
6. In a gear-cutting machine, the combination, with a vertically and horizontally adjustable plate D, and a reciprocating tool-head carrying a tool, of the clamping-jaws C C, and the semicircular protractor B, provided with spurs adapted to engage a gear-blank-carrying spindle, substantially as specified.

656,305. PROCESS OF ELECTROLYTICALLY EXTRACTING ZINC FROM ORES. WILHELM STRODA, Falenze, Germany. Filed Jan. 20, 1899. Serial No. 702,872. (No specimens.)



Claim.—The process of electrolytically extracting zinc from its ores which consists in placing the disintegrated or pulverized ore in its natural state in an electrolytic vat containing an aqueous alkali-metal solution capable of dissolving the ore with production of a zincate and in direct contact with the cathode, and closing the circuit through the vat, thereby precipitating zinc and the alkali metal at the cathode, the alkali metal reacting with the water to regenerate the solvent solution, substantially as described.

656,306. OIL-CAN. DAVID TRUE, Amesbury, Mass., assignor to Alice True, same place. Filed Jan. 28, 1899. Serial No. 703,696. (No model.)



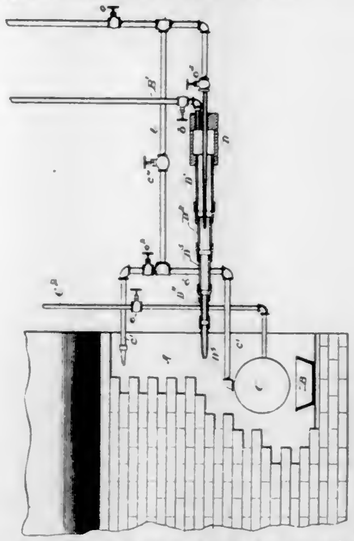
Claim.—1. In an oil-can of the character described, in combination, the body portion or reservoir A provided with a groove extending lengthwise or vertically the entire height of the vertical side of the can next in the path of the nozzle, said groove being open at both ends; and the long nozzle I′ secured to the upper portion of the can and adapted to swing down into said groove and out therefrom, substantially as set forth.

2. In an oil-can of the character described, the well F supported within the body of the can; the disk or plug K secured to and constituting the bottom of the well and provided with the port K′; the piston and piston-rod D′ D, means for lifting the same and a spring for holding the same normally down; and a valve intermediate with the piston and said disk or plug, said valve being held on its seat and closing said port by the power of the spring acting on the piston-rod, whereby siphonic action through the nozzle is prevented when the parts are in their normal position, substantially as described.

3. In an oil-can of the character described, the well F supported within the body of the can; the disk or plug K secured to and constituting the bottom of the well and provided with the port K′; the piston and piston-rod D′, D, means for lifting the same and a spring for holding the same normally down; the ball-valve N intermediate with the piston and said disk or plug K and larger in diameter than the port therein; the posts N′ extending upward from said disk and constituting a cage for the ball; and a rigid projection extending downward from the valve D′ normally onto the ball between said posts, whereby the ball is held normally on its seat closing said port, substantially as set forth.

4. In an oil-can of the character described, the well F supported within the body of the can; the disk or plug K secured to and constituting the bottom of the well and provided with the port K′; the piston and piston-rod D′, D, means for lifting the same and a spring for holding the same normally down; the ball-valve N intermediate with the piston and said disk or plug K and larger in diameter than the port therein; the posts N′ extending upward from said disk and constituting a cage for the ball, a sufficient number of said posts being provided with the heads N″ of greater diameter than the posts to limit the vertical movement of the ball; and a rigid projection extending downward from the valve D′ normally onto the ball between said posts, whereby the ball is held normally on its seat closing said port, substantially as described.

656,307. OIL AND GAS BURNER FOR FURNACES. JOSEPH TYLER, Pittsburg, Pa., assignor of one-half to Cornelius Collins, same place. Filed June 7, 1897. Serial No. 639,790. (No model.)



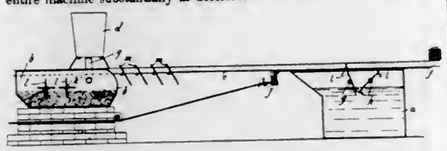
Claim.—1. An oil or gas burner for furnaces composed of a series of tubular sections, each section being of substantially-uniform diameter throughout its length and the successive sections being of gradually-decreasing diameter, the section entering the furnace being of least diameter and the outermost section of greatest diameter, the latter being closed at its outer end, reducing-couplings connecting the several sections together, a steam-supply pipe extending through said closed end into the burner, and a fuel-supply pipe also extending through said closed end to deliver fuel to the rear end of the burner, substantially as set forth.

2. The combination with a furnace, of a cylinder supported within the furnace, an oil-pan having an absorbent, refractory lining, said pan being supported within the furnace and below the cylinder to preliminarily heat the latter, a water-supply pipe leading to the cylinder, a burner extending into the furnace, an oil-pipe leading to the burner, a steam-pipe leading from the cylinder and discharging into the furnace above the burner, and a branch pipe leading from said pipe into the burner, substantially as set forth.

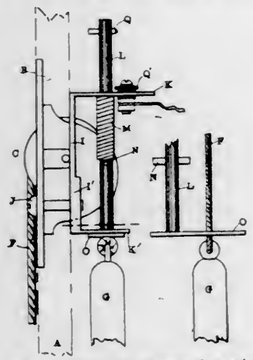
656,308. AUTOMATIC MACHINE FOR MANUFACTURING BRICKS OR ARTIFICIAL STONE. ROELOF VAN DEN BERG and GERRIT JANSEN, Druten, Netherlands. Filed Apr. 21, 1899. Serial No. 713,863. (No model.)

Claim.—An automatic machine for rinsing and distributing sand on

molds for making bricks and artificial stone, consisting of a water rinsing apparatus, a sand-distributing apparatus, sand-reservoir, the bridge for the passage of the molds and the feeder for moving the molds throughout the entire machine substantially as described.



656,309. ELECTRIC BURGLAR-ALARM. PAUL V. VANDEVELDE, New York, N. Y. Filed Feb. 16, 1900. Serial No. 5,472. (No model.)



Claim.—1. The combination of a sash-weight, a window adapted to move up and down, a sash-cord connecting the said window to said weight, a rod L, a support in which said rod is free to move up and down, a retractile spring tending to hold the said rod in its downward position, one electric terminal on said rod, and another on said support in the path of the first, an arm provided with a hole extending from said rod, said cord passing through said hole, and said arm being in the path of said weight.

2. In an electrical alarm for windows, the combination with the pulley-block for the sash cord and weight, of a squared U-shaped frame, a rod movably supported in said frame, an electric terminal on said rod, a stationary electric terminal in the path of the first terminal, an arm extending from said rod and provided with a hole through which passes the cord, and adapted jointly with said rod to be moved up and down by the action of said weight, a helical spring surrounding said rod between one of the arms of said U-shaped frame, and a pin passed through said rod, said frame being located within the window-frame and secured to the latter.

3. The combination with a panel A, of a window-frame, a sash-weight G adapted to move up and down, a window, a cord supporting said weight and fastened to said window, a support H, having a thickened portion I', and secured to the inside of the said panel at said thickened portion, arms K and K', extending from said support, a rod L, extending through and movable up and down through said arms, and carrying an electric terminal Q', which is upon and insulated from said arm K, and located in the path of the terminal Q, a spring M, tending to hold the rod L, in its lowest position, and an arm O, rigidly secured to said rod, and having a hole through which passes said cord, said weight being attached to said cord, and bearing against said arm, O, and holding it in a raised position, in the normally-closed condition of the window.

656,310. BEARING FOR SHAFTS. FREDERIC J. WARBURTON, Newcastle-upon-Tyne, England. Filed Dec. 8, 1899. Serial No. 739,848. (No model.)

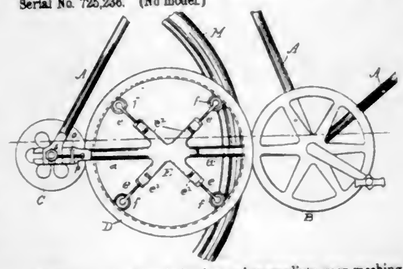
Claim.—1. In a bearing for shafts having vibratory movement, the combination with a shaft, of a bearing therefor, yielding devices for supporting and centering the bearing and means for cushioning said bearing independent of said yielding devices.

2. The combination with a shaft having vibratory movement, of a bearing therefor, resilient devices for centering said shaft, and means for providing a liquid cushion for said bearing.

3. A bearing for shafts or spindles comprising the combination of a bush revolving upon antifriction-balls, an open-ended cylinder or sleeve encircling same and provided with external flanges, a ring establishing with the cylinder and flanges a space connecting with the bush and with another space in one of the flanges, a casing in which the cylinder or sleeve and ring are inserted, and elastic contrivances in the casing for supporting the cylinder, substantially as described.



656,311. BICYCLE. FRIEDRICH WEBER, Cleveland, Ohio, assignor of one-half to William Creedman, same place. Filed July 27, 1899. Serial No. 725,236. (No model.)



Claim.—1. In a bicycle having an intermediate gear meshing with gears on the pedal-crank shaft and on the rear-wheel axle, the combination of a hollow-armed spider upon the rear fork, adjusting-nuts seated in the spider-arms, threaded supporting-arms seated in the spider-arms engaging the adjusting-nuts and having check-nuts thereon, flanged rollers supported on the ends of said supporting-arms and engaging the inner periphery of the intermediate gear, whereby the latter is adjusted, laterally supported and kept in alinement, and can be interchangeably replaced by gears of different diameters, substantially as described.

2. The combination of the bent fork *a*, the spider E, arms e^3, arms *e*, nuts *g* and *k*, rollers *f*, and gear D, in combination with the gears B and C of a bicycle, substantially as described.

656,312. MANUFACTURE OF STEREOTYPE-PLATES. FERDINAND J. WENDELL, New York, N. Y. Filed Jan. 29, 1900. Serial No. 3,065. (No model.)



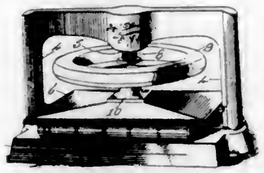
Claim.—1. The combination of a stereotype casting-box, with a matrix, said box and said matrix being provided with interlocking devices arranged within the area of one of the mold-faces of said box and of said matrix, midway of the edges of the matrix.

2. The combination of a stereotype casting-box, with a matrix, said box and said matrix being provided with interlocking devices arranged within the area and at or near the longitudinal center of one of the mold-faces of said box and of said matrix.

3. The combination of a stereotype casting-box, with a matrix, said box and said matrix being provided with interlocking devices arranged within the area and at or near the longitudinal center of one of the mold-faces of said box and of said matrix, and means for disengaging the said interlocking devices to allow the matrix with the casting formed to be withdrawn from the box longitudinally.

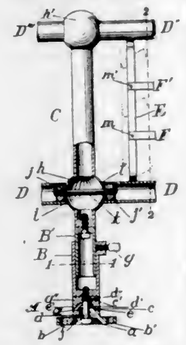
4. The combination of a stereotype casting-box provided with a stationary and a movable projection within the area of one of the mold-faces, with a matrix provided with two recesses one open to an edge of the matrix, the said recesses adapted to engage said projections, substantially as and for the purposes set forth.

656,313. COPYING-PRESS. LEONARD BAILEY, Wethersfield, Conn. Filed Sept. 26, 1899. Serial No. 731,709. (No model.)



Claim.—In a copying-press, a flat and horizontal base, a horizontal arch, having a central vertical hole with internal screw-thread, and mounted over such base by means of two vertical legs, all being a rigid frame, of a single piece of metal, a horizontal platen, which is movable toward and from the base between the legs of the arch as guides, and a right-and-left rotary screw, which is provided with a central hand-wheel between the arch and the platen, and, engaging said internal screw-thread, works wholly below the top of the arch, in combination with a separately-formed nut, which accommodates the lower portion of said screw, and is attached rigidly to the middle of the platen, substantially as and for the purpose specified.

656,314. FENCE. GEORGE M. BEERBOWER, New York, N. Y., assignor to the New York Zoological Society, same place. Filed Apr. 11, 1900. Serial No. 12,492. (No model.)



Claim.—1. In a fence, the combination with the flange-plate *a* having the annular rabbet *c* and the hole *d*, of the beveled adjusting-plate *a'* having the annular flange *e*, the semiconical hole *d'* and the annular rabbet *c'* all substantially as and for the purposes set forth.

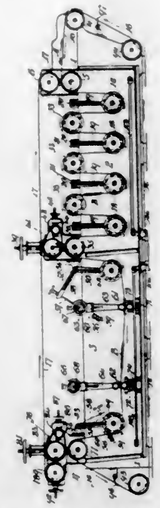
2. In a fence, the combination of the beveled adjusting-plate *a'* having the annular rabbet *c'*, the hole *d'* and the annular flange *e* with the beveled adjusting-plate *a''* on which is formed the annular flange *e'*, all as described.

3. The combination, in a fence, of the flange-plate *a* having the annular rabbet *c* and hole *d*; the beveled adjusting-plate *a'* having the annular flange *e*, the annular rabbet *c'* and the semiconical hole *d'*; the beveled adjusting-plate *a''* on which is formed the annular flange *e'* and the bolt *f* with the member B of the base, all as described and for the purpose specified.

656,315. APPARATUS FOR MORDANTING, &c. THOMAS R. BOTTOMLEY, JESHURUN LONGTHORPE, and WALTER DARGUE, Copley, England. Filed Dec. 18, 1899. Serial No. 740,782. (No model.)

Claim.—1. The combination, with a tank for liquid, and a series of guide-rollers; of two carriers passing over the said rollers and inclosing the yarn, and means for imparting a reciprocatory motion to certain of the said guide-rollers in the tank, substantially as set forth.

2. The combination, with a tank for liquid, and a series of guide-rollers; of two carriers passing over the said rollers and inclosing the yarn, pivoted arms supporting certain of the said guide-rollers in the tank, and means for imparting a reciprocatory motion to the said arms, substantially as set forth.



3. The combination, with a tank for liquid, and a series of guide-rollers, certain of the said rollers being arranged in the tank and provided with openings for the liquid to pass through; of two endless carriers passing over all the said rollers and inclosing the yarn, and means for imparting a reciprocatory motion to the said guide-rollers in the tank, substantially as set forth.

4. The combination, with a tank for liquid, and tension-rollers arranged in the said tank; of two carriers passing over the said rollers and inclosing the yarn, and means for oscillating the said carriers vertically between the said rollers, substantially as set forth.

5. In a machine for washing, scouring, washing off, cleansing, and mordanting, hanks, the combination, with tanks or cisterns placed end to end, of the separate series of endless ropes or cords, 16 and 17, meeting each other at the feeding end of the machine and embracing the fibers fed thereto and holding them firmly in their traverse through the machine, the said series of ropes or cords taking into alternate grooves in the lower receiving-roller and the bottom rollers of the pairs of squeezing-rollers at the rear ends of each tank, and separating at the last pair of squeezing-rollers and passing around separate grooved guiding-rollers which guide the ropes back to the feeding end of the machine, the said pairs of squeezing-rollers, means for imparting pressure to the upper roller of each pair of squeezing-rollers, the series of "lantern" or skeleton rollers 18 and 33 for guiding the endless ropes through the first tank containing the scouring liquor, some of which rollers are oscillated, means for imparting oscillatory motion to such rollers, the tension and "rabbling" rollers located in the second tank or washing-off cistern, said "rabbling-rollers" having a vertical reciprocatory motion imparted thereto by eccentrics 65 and 66, and the means for giving motion to the several parts for traversing the endless ropes through the machine substantially as set forth.

6. In machines for washing, scouring, and cleansing or mordanting, hanks or skeins of yarn or slubbing, the combination with two endless series or sets of ropes or cords, the series of rollers for guiding same through the tanks or cisterns and back again outside the machine along separate paths to the receiving-rollers, and grooved rollers, into the grooves of which the ropes or cords enter and are maintained in their relative positions, of endless sheets of india-rubber or like flexible material passing around the upper rollers of each pair of squeezing-rollers and around small laterally-adjustable rollers, and the means for imparting pressure to said upper squeezing-rollers substantially as set forth.

7. The combination with eccentrics operating on or working within metal straps surrounding same, of annular channels formed in the projecting edges of the metal strap to collect lubricant dropping from the eccentric and convey it to a chamber in the base of the strap to prevent waste of same and the contamination of the water in the tank, substantially as set forth and shown.

8. In machines for washing, cleansing, and scouring or mordanting fabrics or fibers, the employment of two sets of endless traveling ropes or cords, 16 and 17, which run in grooves in the rollers 5 and 35, the grooves in roller 35 being farther apart than the grooves in roller 5, whereby the

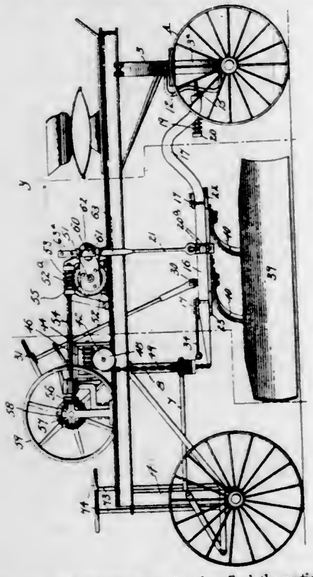
said cords diverge and thus stretch the hanks or fibers lying therebetween as described herein.

656,316. EYEGLASSES. LUCIAN W. BUGBEE, Southbridge, Mass., assignor to the Southbridge Optical Company, same place. Filed Mar. 17, 1900. Serial No. 9,057. (No model.)



Claim.—In an eyeglass, the combination with the lens-frames and bow carrying the nosepieces, of the threaded stem having the threaded lower reduced end and the upper enlarged threaded head, and the locking-nut for engaging said enlarged threaded head to lock the same.

656,317. ROAD-GRADING MACHINE. ROBERT E. BURKE, Anderson, Ind. Filed June 7, 1899. Serial No. 719,637. (No model.)



Claim.—1. In a machine of the class described, the vertically-adjustable support, the scraper-blade secured to said support, and means for vertically adjusting said support and blade consisting of gear mechanism having forwardly-extending rods carrying worms, a transverse shaft having worm-wheels at opposite end portions thereof, gearing with said worms, crank-arms at the extremities of said shaft, joint members pivoted to said arms, joint members pivoted to said first-named joint members, and having each a projection, and upwardly-extending rods pivoted to said support and having each a plurality of perforations adapted to adjustably engage said projection, substantially as specified.

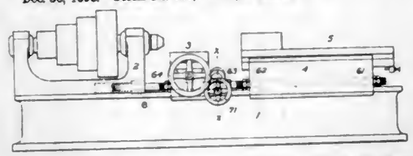
2. In a machine of the class described, the vertically-adjustable support, the scraper-blade secured to said support, and means for vertically adjusting said support and blade, consisting of gear mechanism, having a transverse shaft, the gear-wheels at opposite ends of said shaft, the crank-arms of said shaft, bolted to said wheels, the U-shaped joint members pivoted to said arms, the joint members pivoted to said first-named members, and having projections, the upwardly-extending rods pivoted to said support, and having perforations therein adapted to adjustably engage said projections, substantially as specified.

3. In a machine of the class described, the combination with the support pivoted at its forward end to the machine, and carrying the scraper-blade, of means for laterally adjusting said support and blade, comprising the transverse shaft, a gear-wheel mounted centrally thereon, a second gear-wheel meshing with said first-named wheel and having a short shaft, a hand-wheel upon said shaft, pulleys at the ends of said transverse shaft, idlers below said pulleys, and chains or the like connected to said pulleys at one end and passing vertically downward around said idlers and connected to opposite sides of the rear end of said support at their opposite ends, substantially as specified.

4. In a machine of the class described, the rear axle, formed of the extensible interfitting U-shaped channel-bars, substantially as specified.

5. In a machine of the class described, the rear axle, formed of the extensible interfitting U-shaped channel-bars the toothed rack-bars in the channels thereof, and the hand-wheel shafts having pinions which engage the teeth of said bars, substantially as specified.

656,318. LATHE. WALTER L. CHENEY, Meriden, Conn. Filed Dec. 30, 1898. Serial No. 700,776. (No model.)



Claim.—1. In a lathe in combination two longitudinally-adjustable tool-carrying portions, a stop by which the movement of one of said portions is limited and means as a rod for adjustably coupling together as to longitudinal movement said stop and the other of said tool-carrying portions, substantially as described.

2. In a lathe in combination two longitudinally-adjustable tool-carrying portions, a stop by which the movement of one of said portions is limited and means as a detachable threaded rod provided with nuts for adjustably coupling together as to longitudinal movement said stop and the other of said tool-carrying portions, substantially as described.

3. In a lathe in combination a cross-slide, a second tool-carrying slide adapted to manual longitudinal adjustment, a stop by which the forward movement of said second slide is limited, means as a rod for adjustably coupling together said cross-slide and said stop and means substantially as described for the longitudinal adjustment of said coupled portions.

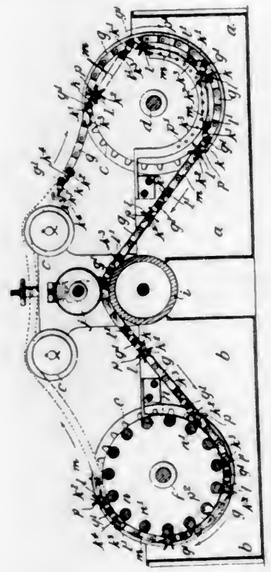
4. In a lathe in combination a cross-slide, a second tool-carrying slide adapted to manual longitudinal adjustment, a stop by which the forward movement of said second slide is limited, means as a detachable threaded rod provided with nuts for adjustably coupling together said cross-slide and said stop and means substantially as described for the longitudinal adjustment of said coupled portions.

5. In a lathe in combination a cross-slide, a turret, a slide-base on which said turret is mounted, means as a detachable rod for adjustably coupling said cross-slide and said slide-base and means substantially as described for the manual longitudinal adjustment of said coupled portions.

656,319. MERCERIZING APPARATUS. JAMES F. COPLEY, PERCY S. MARSHALL, and RICHARD HEATON, Huddersfield, England. Filed Dec. 5, 1899. Serial No. 739,229. (No model.)

Claim.—1. The combination, in machines for mercerizing hanks of yarn, of a set of chain-wheels dipping into, or partly submerged in a tank containing mercerizing liquid, endless chains taking onto the teeth of said chain-wheels and traveling part way around therewith, hooked adjustable fingers carried by cross-rods attached at suitable distances apart to said endless chains and adapted to receive and hold hank-carrying rods in pairs one following the other the hanks being threaded on said pairs of hank-rollers and being held slack or at their normal length as they travel around with the chain-wheels and being stretched or extended on leaving the chain-wheels, and taking the straight path traversed by the chains, a second pair of chain-wheels dipping into or partly submerged in a second tank containing liquid for washing-off purposes, a guide-roller intermediate of the two tanks for guiding the endless chains from the first into the second tank, a squeezing-roller pressing upon the periphery of the said guide-roller to express the liquid out of the hanks and the means described for turning the hanks on the hank-rods as they travel around with the chain-wheels, substantially as set forth.

2. In a machine for mercerizing hanks of yarn, the combination of tanks *a b*, sets of chain-wheels *c c c c* dipping into or partly submerged in said tanks, a winch or lantern-roller *n* intermediate of the set of chain-wheels *c c* and fast on the axle *f* carrying same, endless chains *g g* passing around and driven by the two sets of chain-wheels and traversed through tanks *a b* in succession, cross-rods *g'* secured to the endless chains at suitable distances apart, right and left hand adjustable fingers hinged to said cross-rods and pairing with opposing fingers on adjacent cross-rods, said fingers having their extremities hook-shaped or provided with open bearings, hank-carrying rods adapted to be registered and held in said bearings at the ends of the adjustable fingers one of each pair of said rods having a star-wheel on one end thereof for turning the hank-rod in its bearings and changing the position of the hanks about each pair of rods, fixed segmental racks concentric with the axles *d f* and lying in the path of the star-wheels for rotating same, rollers *i j* for guiding the endless chains from tank *a* to tank *b* and expressing excess liquid out of the hanks, and guide-rollers for guiding the endless chains back over the machine from the second to the first pair or set of chain-wheels, substantially as set forth.



3. The combination, with a tank for mercerizing liquid, and a tank for water; of carrier-wheels in the said tanks, driving-shafts journaled in the sides of the tanks and having the said wheels secured on them, means for revolving the said driving-shafts simultaneously, an endless carrier passing over the said wheels, guides for supporting the said carrier between the tanks, and means for supporting the hanks of yarn attached to the said carrier, substantially as set forth.

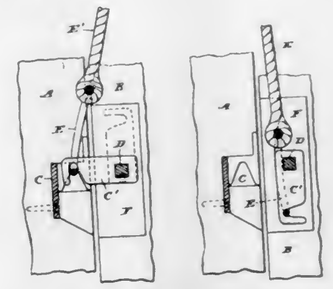
4. The combination, with a tank for mercerizing liquid, and a tank for water; of carrier-wheels in the said tanks, means for revolving the said wheels simultaneously, an endless carrier passing over the said wheels, guides for supporting the said carrier between the tanks, fingers pivoted to the carrier and provided with cross-rods for supporting the hanks of yarn, said fingers being free to move toward the center of the carrier-wheels in the mercerizing-tank while passing around them, and means for preventing the said fingers from moving toward the center of the carrier-wheels in the water-tank while passing around them thereby holding the hanks stretched, substantially as set forth.

5. The combination, with a tank for mercerizing liquid, and a tank for water; of carrier-wheels in the said tanks, means for revolving the said wheels simultaneously, an endless carrier passing over the said wheels, guides for supporting the said carrier between the tanks, cross-rods for the hanks of yarn supported from the said carrier, toothed wheels secured on certain of the said rods, and a stationary toothed rack supported in the mercerizing-tank for the said toothed wheels to engage with as they pass under the carrier-wheels in it, whereby the said rods are revolved and the positions of the hanks are changed, substantially as set forth.

656,320. SASH-CORD FASTENER. ARTHUR H. FISHER, Melbourne, Victoria. Filed June 8, 1900. Serial No. 19,534. (No model.)

Claim.—The combination with the upper and lower sashes and sash-cords, of socket-plates carried by the sashes, loops carried by the cords adapted to engage the sockets, a rock-shaft, arms carried thereby, means carried by the shaft for rocking the same whereby said arms will engage said loops and free the same from the sockets, means for locking the shaft to hold the loops in position to reengage with said socket, substantially as described.

656,320.



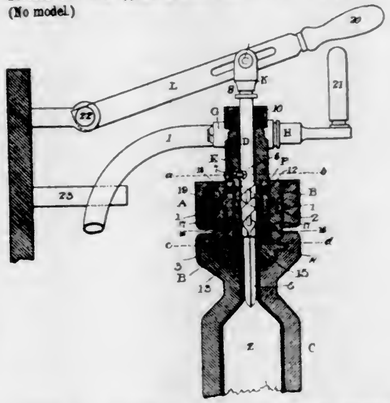
656,321. TOOL-HANDLE. LUDWIG GROTE, London, England. Filed Nov. 9, 1899. Serial No. 736,420. (No model.)



Claim.—1. A wooden file or other tool haft or handle consisting of a paper-cased reed core-piece or nucleus surrounded by a wooden shell adapted to firmly retain in position the file or other tool shank or tang at both ends and to prevent its becoming loose in the reed, ratan, bamboo or the like of its own accord while at the same time protecting the wooden shell or handle from cracking, splitting or warping.

2. A tool haft or handle consisting of a paper-cased reed core-piece or nucleus, surrounded by a wooden shell, and rounded off at the end wherein the extremity of the tang or shank of the tool is embedded, for the purpose of affording better protection to that end of the handle-core, and also for securing the tang from concussion and its consequent loosening through the violent contact of the handle with the article operated upon at the time.

656,322. GLASS-BOTTLE-BLOWING MACHINE. LUDWIG GROTE, London, England, assignor to the Grote Bottle Machine Company, Jersey City, N. J. Original application filed Mar. 5, 1900, Serial No. 7,376. Divided and this application filed July 17, 1900. Serial No. 23,982. (No model.)

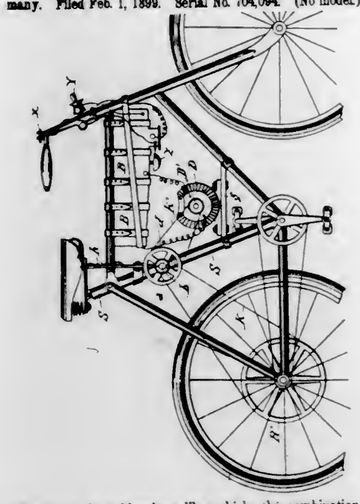


Claim.—1. In a glass-bottle-blowing machine, the combination of a plunger having a flattened point, means for reciprocating and rotating the same, a plunger-casing, a ferrule-shaped attachment to said casing, through which said point reciprocates and which is rotatable therewith and turned thereby, a rotatable neck-mold turned by said attachment, and a finishing-mold alined with said neck-mold and within which the bottle is turned by said neck-mold.

2. In a glass-bottle-blowing machine, the combination with a face-plate, a casing carried by said face-plate, and an air-conduit communicating with said casing, of a rotatable plunger arranged to slide in said casing, a ferrule-shaped attachment rotatably mounted upon said casing and fitted to said plunger to turn therewith, a neck-mold inclosing said attachment

and secured thereto, a support for said neck-mold carried by said face-plate and embracing the neck-mold, another mold arranged in line with the plunger and neck-mold, and means for reciprocating and rotating said plunger, substantially as hereinbefore specified.

656,323. ELECTRIC BICYCLE. ALBERT HÄNSEL, Zeitz, Germany. Filed Feb. 1, 1899. Serial No. 704,094. (No model.)



Claim.—1. In a bicycle or like vehicle, the combination with the frame, of an electric motor and a storage battery secured to said frame, a shaft mounted on the frame, gearing for transmitting rotation of the drive-wheel to said shaft, gearing between the shaft of the electric motor and the aforesaid shaft, and means for throwing the shaft of the motor into and out of gear with the other shaft.

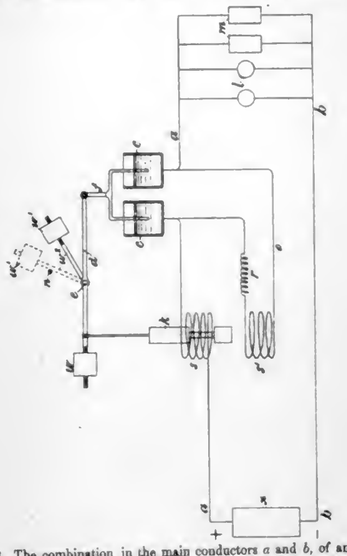
2. In a bicycle or like vehicle, the combination with the bicycle-frame, of an electric motor and a storage battery suitably secured to said frame, and means for directly actuating said electric motor by the movement of the drive-wheel of the machine, substantially as set forth.

3. In a bicycle or like vehicle, the combination with the bicycle-frame, of an electric motor and a storage battery supported on said frame, a gear-wheel secured on the pedal-axle and meshing with a toothed pinion secured on a shaft mounted on the lower fork of the bicycle and carrying a suitably-grooved wheel engaging the drive-wheel of the machine, said shaft furthermore carrying two loose pulleys connected with two suitable pulleys of different diameters secured on the motor-shaft of the electric motor, and means for readily engaging and disengaging said loose pulleys with said journal at any desired moment, substantially as set forth and for the purpose specified.

656,324. CONTROLLING ELECTRICAL CURRENTS. ARTHUR B. HOLMES, Liverpool, England. Filed Apr. 11, 1899. Serial No. 712,665. (No model.)

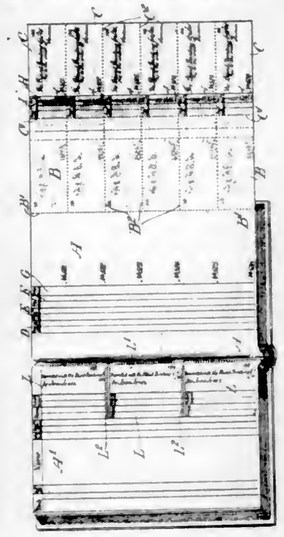
Claim.—1. In an electric circuit, a circuit opening and closing device, adapted automatically to normally close and keep closed the main circuit; an electromagnetic device connected with said opening and closing device, and operated by the current passed through the main-current wires, and adapted to actuate said device and open the main circuit when an excess of current takes place, and a branch circuit connecting the two ends of the line on either side of the point at which the circuit is closed and broken, and through which the whole current is adapted to pass when the said main circuit-line is opened, a resistance on said branch circuit, and an electromagnetic device on and operated by the current passed through said branch circuit, and directly connected with the said circuit opening and closing device in the main circuit-conductor, and adapted to keep the said main circuit open by its action on said circuit opening and closing device, while an excess of current continues, substantially as described.

2. In an electric circuit, comprising supply and return conductors *a* and *b*, an electricity-supply source *x*, and an electricity-consuming apparatus—as *l m*—on the said circuit; a circuit opening and closing device on the conductor *a*; a solenoid *s* on the conductor *a* between the source *x* and said opening and closing device; a core *k* connected with said opening and closing device, and operated by the solenoid *s*, to open the said circuit; a branch circuit *o* connecting the two parts of the main conductor *a* on either side of the terminals of the opening and closing device; a resistance *r* on the branch circuit *o*; a solenoid *s'* on said circuit, adapted to influence the core *k* in the same direction as the solenoid *s* to open the main circuit; and a weight or spring connected with the opening and closing device, and acting in a contrary direction to the solenoids, and normally adapted to close the said circuit and keep it closed; substantially as set forth.



3. The combination in the main conductors *a* and *b*, of an electric circuit, of the solenoid *s* on the conductor *a*; contact-terminals *c*; connecting and disconnecting device *f* working in connection with *c*; a core *k* working in connection with the solenoid *s* to open the main circuit by withdrawing the contacts *c*; a lever *d* connecting the core *k* and contact device *f*; a weight *w'* connected with the lever *d* and tending normally to operate the connecting device *f*, and to close the circuit; the branch circuit *o*; a resistance *r* thereon; and solenoid s^3 adapted to operate on the core *k* in the same direction as the solenoid *s*, as set forth.

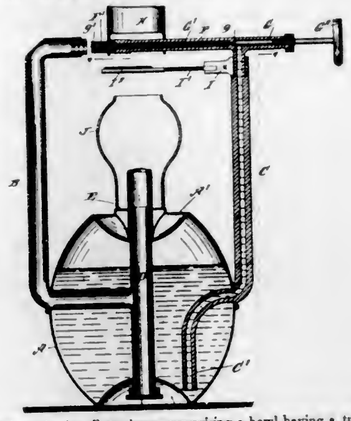
656,325. CHECK OR DIVIDEND-WARRANT AND BANK-TRANSACTIONS BOOK. THOMAS MCCULLOCH, Huddersfield, England. Filed Apr. 2, 1900. Serial No. 11,186. (No model.)



Claim.—1. In a blank-book, the combination, with a series of leaves having permanent parts A and detachable parts C which fold over the right-hand portions of the parts A leaving the left-hand portions uncovered, of a series of leaves L narrower than the parts A of the aforesaid leaves and bound in between them and divided into separable portions, substantially as set forth.

2. In a blank-book, a series of leaves having permanent parts A and detachable parts B and C which fold over each other and over the right-hand portions of the parts A leaving the left-hand portions uncovered, the said parts A and C being printed upon one side and the parts B upon the reverse side, substantially as set forth.

656,326. OIL-GAS LAMP. ALBERT S. NEWBY, Kansas City, Mo., assignor to himself, and Barron G. Collier, Memphis, Tenn. Filed Apr. 12, 1899. Serial No. 712,745. (No model.)



Claim.—1. An oil-gas lamp, comprising a bowl having a tube extending entirely through the same, and adapted to receive a burner at one end and a cap at the other, a mixing-tube having one end connected with the first-named tube and its other end extending above and partially over the bowl, a generator in front of the upper end of the mixing-tube, and means for delivering oil from the bowl to the generator, substantially as described.

2. An oil-gas lamp, comprising a bowl having a concavity in its top and another in its bottom, a tube extending through the bowl and terminating in said lower concavity, the upper end of said tube being adapted to receive a burner and the lower end to receive a cap, and a mixing-tube having its inner end connected with said first-named tube, within the bowl, substantially as described.

3. An oil-gas lamp, comprising a bowl adapted to receive and retain an internal pressure, an oil-supply pipe and a mixing-tube entering opposite sides of the bowl, the oil-supply pipe extending to the bottom of the bowl, and the mixing-tube having within the bowl, a vertical portion projecting through the top and bottom of the bowl, the lower end of said vertical portion being provided with a cap and the upper adapted to receive a burner, and a generator connected with the oil-supply pipe and extending over the burner, the mixing-tube opening in front of the generator-discharge, substantially as described.

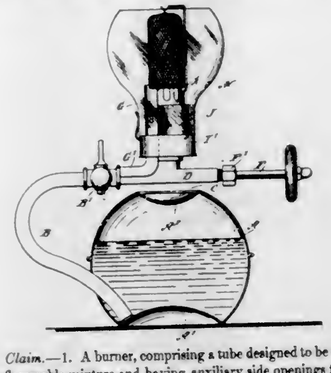
4. An oil-gas lamp, comprising a bowl adapted to receive an internal pressure, an oil-supply pipe leading from the lower part of the bowl out through the same and extending upwardly, a generator connected with the upper end of the supply-pipe and projecting over the bowl, a central tube within the bowl and having its upper and lower ends projecting through the top and bottom of the same, the lower end of said tube being closed and the upper end adapted to receive a burner, and a mixing-tube leading into the bowl and having its inner end connected with said central tube, the outer end of the mixing-tube extending upwardly and having a horizontal section opening in front of the generator, substantially as described.

5. An oil-gas lamp comprising a bowl having concavities in its top and bottom, a vertical tube passing through the bowl, the lower end of the tube being provided with a cap and its upper end adapted to receive a burner, an oil-supply pipe leading from the lower part of the bowl out through the same and extending upwardly, a generator secured to the upper end of the supply-pipe and extending horizontally over the burner, and a mixing-tube leading into the bowl and connected with the vertical tube at about the center of its length, the outer end of the mixing-tube projecting upwardly and having a horizontal section opening in front of the generator, substantially as described.

6. In an oil-gas lamp, the combination with a burner, and a generator arranged above the same, of a torch mounted to swing beneath the generator, said torch comprising a socket-piece pivoted to swing horizontally, and a holder having a shank adapted to be inserted or removed from the socket-piece, substantially as described.

7. In an oil-gas lamp, the combination with a burner, and a generator arranged above the same, of a hood mounted to swing upon the generator and of a length to extend from the generator to within a short distance of the chimney of the burner, substantially as described.

656,327. OIL-GAS LAMP. ALBERT S. NEWBY, Kansas City, Mo., assignor to himself and Barron G. Collier, Memphis, Tenn. Filed Apr. 12, 1899. Serial No. 712,746. (No model.)



Claim.—1. A burner, comprising a tube designed to be supplied with an inflammable mixture and having auxiliary side openings for the escape of the mixture, a slide covering said openings and having holes adapted to register with said openings, a bar insulated from the tube and extending in front of the openings thereof and heated by the flames therefrom, and a generator heated by said bar and discharging into the burner.

2. A burner, comprising a tube designed to be supplied with an inflammable mixture, said tube having its upper end reduced and provided with openings, a ring of gauze in the reduced end of the tube and covering the openings thereof and a cap mounted to rotate on the reduced upper end of the said tube, said cap having a gauze-covered top and provided with openings adapted to register with the openings of the said tube, substantially as described.

3. An oil-gas lamp, comprising a generator, a burner having auxiliary combustion-openings, a bar in front of said auxiliary openings and heated by the flame thereof, said bar extending to and in contact with the generator and an insulating-ring between the burner and bar.

4. In an oil-gas lamp, a generator comprising a straight tube having a perforated partition designed to act as a valve-seat, a plug filling the tube on the supply side of said partition, and extending from the partition to the end of the tube and having a peripheral groove communicating at one end with the oil-supply and at the other end with the opening in the partition, a valve stem or needle within the opposite end of the tube and adapted to close the opening in the partition, a lateral extension on said tube and communicating therewith on the valve side of the partition, a tip in said extension and a burner-tube supported on said extension.

5. In an oil-gas lamp, a generator comprising a straight tube provided with an apertured partition and with a lateral extension at one side of the partition, said extension carrying a burner, and a burner-tube support, a plug in the tube on one side of the partition and extending from the partition to the end of the tube, said plug fitting snugly in the tube and provided with a peripheral longitudinal groove, and a rod in the tube on the side of the partition opposite the plug and having a pointed end adapted to close the aperture of the said partition, substantially as described.

6. In an oil-gas lamp, the combination with a generator-tube, of a burner-tube supported on the generator-tube, said tube having openings at its upper and lower ends and provided above the lower openings with a disk having a downwardly-projecting marginal flange, and a bar curved in cross-section and having its lower end resting upon the generator-tube and extending up through the disk on a level with the upper end of the burner-tube and opposite the openings therein, substantially as described.

7. In an oil-gas lamp, the combination with a generator-tube having a lateral apertured extension carrying a burner-tip, of a collar secured on the extension of the generator-tube and provided with an annular flange near its upper end, and a burner-tube supported on the flange of the col-

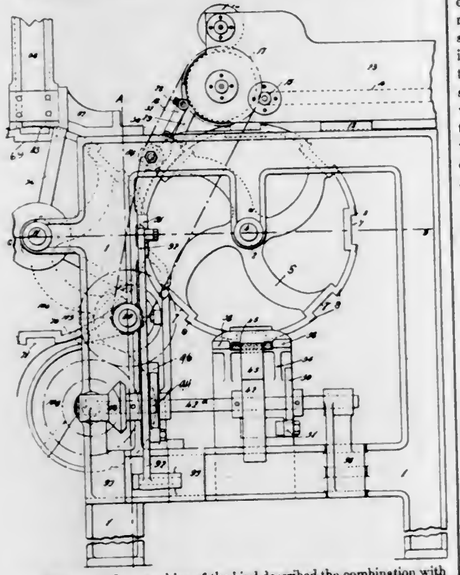
lar, said tube being provided with openings at its lower end and above said openings with a disk having a downwardly-projecting marginal flange, substantially as described.

8. In an oil-gas lamp, the combination with a generator having a laterally-projecting collar, of a burner-tube supported upon the said collar, said tube having upper and lower openings and provided above the lower openings with a disk having a downwardly-projecting marginal flange, a perforated cap for the tube, a bar extending upward from the generator through the disk of the tube and in front of the openings at its upper end, and a ring of asbestos surrounding the tube and resting upon the disk of the same, said ring being provided with projections, substantially as described.

9. In an oil-gas lamp, a horizontally-arranged generator-tube provided with a lateral extension adapted to carry a burner, and a bowl or fount arranged below the generator-tube and having a concavity in its upper face, whereby the concavity is made to serve as a receptacle for an absorbent pad and also as a means whereby the generator-tube may be placed close to the bowl or fount and at the same time permit its ready removal, as set forth.

10. In an oil-gas lamp, a bowl or fount having a concavity in its top and bottom and provided with a pipe having its inner end projecting into the bowl or fount and extending close to the bottom thereof, the outer end of the pipe being curved outward and upward and then inward partially over the bowl or fount and carrying a valve-casing to which a generator-tube is adapted to be connected, substantially as described.

656,328. **MACHINE FOR FILLING BOXES.** EDWARD T. POLLARD, London, England. Filed Dec. 24, 1898. Serial No. 700,222. (No model.)



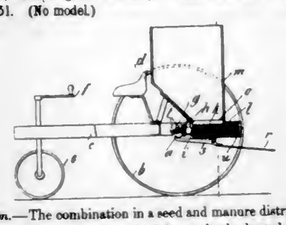
Claim.—1. In a machine of the kind described the combination with a hopper for holding the collapsed outer cases, of a rotary drum having a plurality of pockets in its periphery adapted to aline successively with said hopper, means for transferring the collapsed outer cases from said hopper to the recesses and opening them therein, means for imparting to said drum an intermittent rotary movement, and means for inserting into said outer cases the filled inner cases or slides, substantially as described.

2. In a machine of the kind described, the combination with the rotating drum having recesses for the inner slides of the boxes with means for imparting an intermittent rotary motion to said drum, of a hopper for the cigarettes, a rotary wheel therein having a plurality of pockets for picking up the cigarettes from the hopper, a chute extending from said hopper into proximity to the drum and arranged to receive the cigarettes from the pockets of the feed-wheel, and means for closing the mouth of the chute and opening it when a predetermined number of cigarettes have accumulated therein, substantially as described.

3. In a machine of the kind described, a drum having a series of recesses for holding the inner slides, a second drum having a similar series of recesses for the outer cases, said drums being arranged with their peripheries overlapping, means for feeding the inner and outer cases to the respective drums, means for imparting an intermittent rotary movement to said drums to cause the respective recesses to successively aline, and a hollow guide arranged to enter the open end of the outer slide to insure the proper insertion of the inner slide with means for operating said guide, substantially as described.

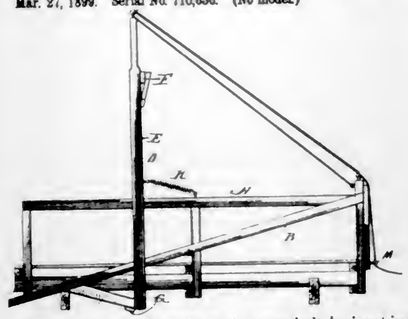
4. In a machine of the kind described, the combination with the hopper for holding a supply of outer cases, and the rotating drum having a plurality of recesses arranged to aline successively with said hopper, of the means effecting the removal of the lowermost case from the hopper into the recess of the drum comprising rocking arms located on opposite sides of the hopper, plates carried by said arms adapted to enter the hopper from said opposite sides, and means for alternately rocking said arms, substantially as described.

656,329. **MANURE AND SEED DISTRIBUTER.** RUDOLF SCHULTE-BLOMK, Sieveringsen, Germany. Filed Sept. 30, 1899. Serial No. 732,251. (No model.)



Claim.—The combination in a seed and manure distributing machine of a three-wheeled vehicle, the third front wheel adapted to be steered by means of a hand-rod from the driver's seat, a seed or manure receptacle situated behind the driver's seat on the vehicle-frame and fitted with openings in the bottom, casings surrounding these openings so as to receive the seed or manure through them, conveyer-worms situated in the aforesaid casings, said conveyer-worms driven from the vehicle-axle by bevel-wheel gearings, the free ends of the conveyer-worm casings fitted with a three-armed frame in the center of which one extremity of the conveyer-worm shaft is journaled and a rocking plate beneath the conveyer-worm casings, said plate rocked by projections on the vehicle-axle, substantially as described and shown and for the purpose indicated.

656,330. **HAY-LOADER.** ALBERT E. SMITH, Potwin, Kans. Filed Mar. 27, 1899. Serial No. 710,636. (No model.)

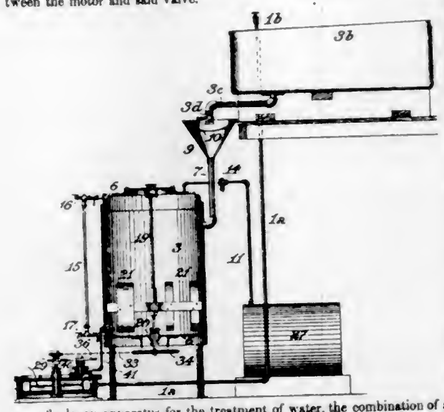


Claim.—A hay-loader consisting of a wagon-body having strips secured diagonally across its sides, an arch composed of side and cross pieces, arms pivoted to the strips near the rear end of the wagon-body and to the lower end of the arch, the said arch having suitable braces, one of which is adapted to support a hay-fork, of spiral springs connecting the arch and wagon-body, and of suitable rigging secured to the said arch and wagon-body for operating the arch, substantially as shown and described.

656,331. **APPARATUS FOR PURIFYING WATER.** HOWARD STILLMAN, Sacramento, Cal. Filed Mar. 28, 1900. Serial No. 10,476. (No model.)

Claim.—1. In an apparatus for the treatment of water, the combination of a motor-casing interposed in the water-main, a motor therein, a chemical-tank, a connection between said tank and the motor-casing, and a valve in said connection operatively connected to the motor.

2. In an apparatus for the treatment of water, the combination of a motor-casing interposed in the water-main, a motor therein, a chemical-tank, a connection between said tank and the motor-casing, a rotary valve alternately opening and closing said connection, and operative means between the motor and said valve.



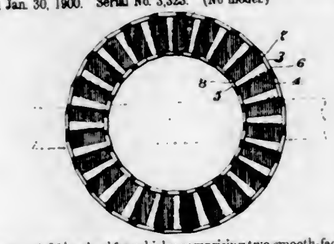
3. In an apparatus for the treatment of water, the combination of a water-main, a chemical-tank, a connection between said main and tank, a compressed-air reservoir communicating with said tank to subject the contents thereof to pressure, and means controlled by the water-current in said main for alternately opening and closing said connection.

4. In an apparatus for the treatment of water, the combination of a water-supply main, a chemical-tank, a stirrer fitted to rotate in said tank, an automatic feed-regulator controlling communication between the chemical-tank and water-supply main, a motor impelled by the current of water in the supply-main, and operative connections between the motor-shaft and the stirrer and feed-regulator respectively.

5. In an apparatus for the treatment of water, the combination of a water-supply main, a chemical-tank, a stirrer fitted to rotate in said tank, an automatic feed-regulator controlling communication between the chemical-tank and water-supply main, a motor-case having lateral passages each communicating with a section of the supply-main, an impact water-motor fixed on a shaft journaled in said casing, and operative connections between the motor-shaft and the stirrer and feed-regulator respectively.

6. In an apparatus for the treatment of water, the combination of a water-supply main, a chemical-tank, means for effecting a regulated supply of solution from the chemical-tank to the water-supply main, a circulating-tank connected at one end with the supply-main, partitions dividing the circulating-tank into separate compartments, pipes establishing communication between said compartments and provided with oppositely-extending nozzles, and a discharge-main leading from the end of the circulating-tank opposite that to which the supply-main is connected.

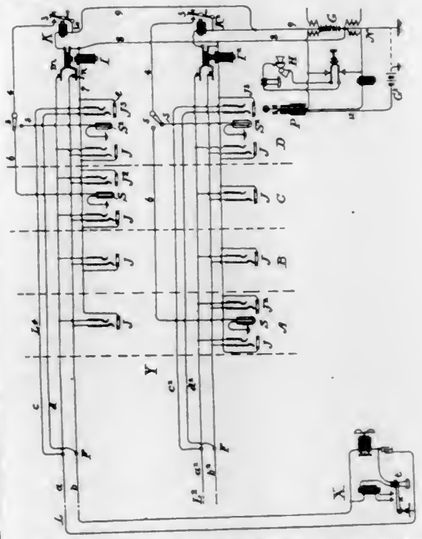
656,332. **FIFTH-WHEEL.** CLAUDE L. TOWNSEND, Scranton, Pa. Filed Jan. 30, 1900. Serial No. 3,323. (No model.)



Claim.—A fifth-wheel for vehicles comprising two smooth-faced rings placed one above the other and in the same vertical plane, and spool-rollers between said rings, said rollers each consisting of a smooth-faced tapered stem in contact with the upper face of the lower ring and the under face of the upper ring, and end flanges at each end of said stem in contact with and overhanging respectively the inner and outer peripheries of both rings, the rollers being free to roll upon one ring when the outer ring is rotated, substantially as described.

656,333. **TELEPHONE-SWITCHBOARD APPARATUS.** THOMAS C. WALES, Jr., Newton, Mass., assignor to the American Bell Telephone Company, Boston, Mass. Filed Nov. 7, 1899. Serial No. 736,149. (No model.)

Claim.—1. A telephone-line extending from a substation to a central station, and provided at the latter with a jack or switch device at each of the regular sections or operators' positions of a multiple switchboard: an answering-jack and associated call-signal device at one of the said sections; an auxiliary answering-jack and associated call device at a special section of said switchboard; and means for alternatively connecting either call-signal device with the said telephone-line; whereby the substation calls may be received either at the regular or special answering-sections, as desired.



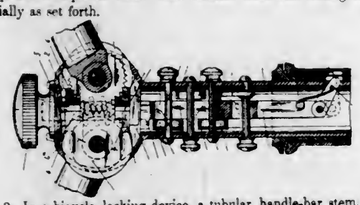
2. The combination in a telephone-exchange of a multiple switchboard comprising a number of regular sections or operators' positions, and a special section; with a subscriber's line branching to a line-jack at each of the said sections, and to an answering-jack at the special section, and one of the regular sections; a call-signal-receiving device associated with each answering-jack; and means for transferring the connection of said line from either call-signal device to the other; whereby the substation call-signals may be answered at the regular answering-section or at the special section, alternatively; substantially as set forth.

3. The combination in a telephone-exchange, of a multiple switchboard comprising a number of regular sections or operators' positions, and a special section; with a telephone-line extending from a substation to said switchboard, and having a switch device for answering calls from the said substation at the said special section, and at one of the said regular sections, and a line-switch device at each of the other regular sections of said switchboard; a call-receiving relay connected with the said telephone-line; a local circuit controlled thereby, and having alternative branches leading to the said special and regular answering switchboard-sections respectively; local call-receiving devices one for each of the said answering-sections, associated each with the answering-switch device of its own section, and respectively connected in the said local circuit branches; and a switch for directing the local circuit controlled by the said relay through either of the said local call devices to the exclusion of the other, as described.

4. In a telephone-exchange, the combination at a central station, of a multiple switchboard comprising a number of regular sections or operators' positions, and a special section; a number of subscribers' lines all having an answering-jack or switch device and an associated call-signal device at some one and a line or connecting jack at each of the other regular sections, and a portion having an auxiliary answering-jack and call-signal device at the special section also; a local circuit for each line of the said portion controlled by a relay in the main circuit of said line, and having alternative branches containing respectively the regular and auxiliary call-signal devices of such line; and a switch adapted to close the said relay-controlled local circuit through either of the said signal devices, according as it may be desired to receive the calls of a substation-line at the regular or special answering-section.

656,334. **BICYCLE LOCKING DEVICE.** ADOLF WESSNICK and ADAM GUTOWSKI, Nuremberg, Germany. Filed Sept. 16, 1899. Serial No. 730,758. (No model.)

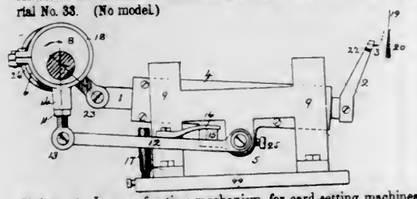
Claim.—1. In a bicycle-locking device, a tubular handle-bar stem, handle-bars pivoted therein and having disks secured to their inner ends, said disks provided with engaging and non-engaging teeth, movable plates adapted to engage and to release said disks, a vertically-moving bolt for forcing said plates in engagement with said disks, and a spring between said plates to separate them when released from said forcing-bolt, substantially as set forth.



2. In a bicycle locking device, a tubular handle-bar stem, handle-bars pivoted therein and having disks secured to their inner ends, said disks having engaging and non-engaging teeth, movable plates adapted to engage said disks and hold them in position, a bolt for forcing said plates in engagement with said disks, a spring between said plates to separate them when released, means for raising and locking said bolt in position, and means for permitting and preventing the operation of said raising and locking means, substantially as set forth.

3. In a bicycle locking device, a tubular handle-bar stem, handle-bars pivotally mounted therein and having toothed inner end portions, a vertically-adjustable bolt arranged in said handle-bar stem, means for effecting the adjustment of said bolt, a bar or rod secured to said bolt and having pins extending therefrom, rotatable bolts passing through the shank of the handle-bar stem and carrying means for engaging and releasing said pins, plates mounted on said vertically-adjustable bolt and adapted to hold said inner end portions in position, and a spring for separating said plates, substantially as set forth.

656,335. PERFORATING MECHANISM FOR CARD-SETTING MACHINES. OLIVER ARNOLD, Leicester, Mass. Filed Jan. 2, 1900. Serial No. 33. (No model.)



Claim.—1. In a perforsting mechanism for card-setting machines, the circular eccentric cam 6, its ring or strap 26 having the connecting-arm 24, in combination with the endwise-movable bar 1 pivotally attached to said arm at one end, and carrying the needle-holding head 2 on its other end, the perforating-needles on said head, a movable guide for said bar, and means for moving said guide to raise and depress the needle-holders, substantially as set forth.

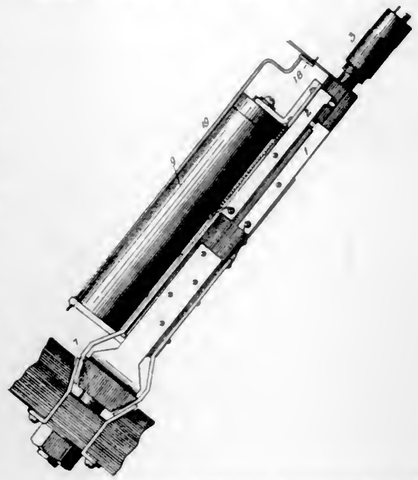
2. In a perforating mechanism for card-setting machines, the circular eccentric cam 8, its ring or strap 18 having the connecting-arm 14 and a lever pivotally attached to said arm; in combination with the needle-operating bar, a rocking guide therefor, and a coupling device connecting said guide and said lever for operation, substantially as set forth.

3. A perforating mechanism for card-setting machines; comprising in combination with the frame and operating-shaft, two circular eccentric cams 6 and 8, ring-straps for said cams each having an arm, the oscillating guide or cradle mounted on an axis in the frame, the endwise-movable perforator-bar slidably supported within or upon said guide and connected to the cam-actuated arm of cam 6, said arm approaching the plane of the bar at an angle of about forty-five degrees, more or less, a head or arm provided with needle-holding devices fixed on said bar, the perforating-needles secured in said holder, a lever operatively connected with said oscillating guide, the end of said lever pivoted to the cam-actuated arm of cam 8, the arm and lever being at about right angles in relation to each other, and a stop-rest beneath the end of said oscillating guide, for the purposes set forth.

4. A perforating mechanism for card-setting machines, comprising a tubular oscillating guide, an endwise-movable bar supported non-rotatably within and by said guide and carrying a needle-holding head at one end, an operating-shaft having two circular eccentric cams thereon, one cam provided with a strap or arm pivotally attached to said bar, the other cam provided with a strap and arm having a connection therefrom for rocking said guide, substantially as set forth.

5. In combination with the supporting-frame, the rocking guide-cradle pivoted on a transverse axis for vertical oscillative action, and supported laterally between the frame sides, a reciprocating bar mounted in said cradle and carrying an upwardly-inclined head with point-holding clamp thereon, a lever pivoted or fulcrumed on the axis-shaft, a coupling-stud uniting for operation said guide-cradle with said lever, a spring yieldingly confining said coupling-stud upon said lever, the operating-shaft, a pair of eccentric circular cams fixed on said shaft, ring-straps for said cams, one connected with said reciprocating bar, the other connected with said lever, and a limiting-stop for the swing of said cradle-guide, all substantially as and for the purposes set forth.

656,336. SWITCHBOARD FOR TELEPHONES. MILTON I. BAIRD, Glenfield, Pa. Filed Mar. 1, 1900. Serial No. 6,914. (No model.)



Claim.—1. In a telephone-switchboard, the combination of a jack or socket, a plug, means for shifting the plug, and means for checking the outward movement of the plug and holding the same in two or more positions, substantially as set forth.

2. In a telephone-switchboard, the combination of a jack or socket, a plug, means for shifting the plug, mechanism for holding the plug in normal or non-operative position and mechanism for holding the plug in talking position, substantially as set forth.

3. In a telephone-switchboard, the combination of a jack or socket, a plug, means for shifting the plug, and means for holding the plug in called or supervisory and talking positions, substantially as set forth.

4. In a telephone-switchboard, the combination of a jack or socket, a plug, means for shifting the plug, means controlled by the subscriber for holding the plug in normal, called or supervisory and talking positions, substantially as set forth.

5. In a telephone-switchboard, the combination of a jack or socket, a spring-actuated rod for shifting the plug, means for checking the movements of the push-rod and holding the same in two or more positions and a magnet in a circuit controlled by the subscriber for controlling the detent mechanisms, substantially as set forth.

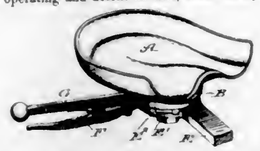
6. In a telephone-switchboard, the combination of a socket or jack, a spring-actuated rod for shifting the plug, a series of two or more shoulders or abutments on the push-rod, and an electrically-controlled tooth for engaging said shoulders or abutments, substantially as set forth.

7. In a telephone-switchboard, the combination of a socket or jack, a plug, means for shifting the plug, means for checking the movements of the plug, and means for regulating the rate or speed of the plug movements, substantially as set forth.

8. In a telephone system, the combination of two sockets or jacks, means in each jack or socket for shifting the plugs, detent mechanisms controlling the plug-actuating mechanisms and arranged to hold the plugs in normal, supervisory and talking positions, a plug provided with a stop or shoulder to prevent its movement beyond talking position and a plug constructed to enter the socket beyond supervisory position, substantially as set forth.

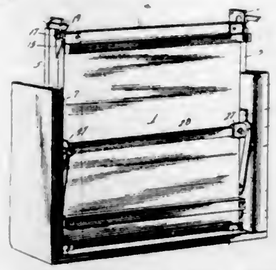
656,337. MOWING-MACHINE SEAT. NATHAN BAUGHMAN, Hammersley Fork, Pa. Filed Oct. 9, 1899. Serial No. 733,058. (No model.)

Claim.—1. The combination of the seat pivotally supported so it can be rocked from side to side and provided with a depending transverse rib or bearing extending on both sides of its pivot, and a horizontally-movable cam engaging said rib or bearing on opposite sides of the pivot of the seat, and operating and detent devices, substantially as set forth.



2. The improved seat herein described comprising the seat proper pivoted on an axis extending from front to rear and having a transverse bearing extending at right angles to said axis, and the cam extending on opposite sides of the pivot of the seat and engaging the transverse bearing whereby the cam may rock the seat from side to side but will not tilt it from front to rear.

656,338. END-GATE. ALBERT E. BRALL, Clinton, Iowa, assignor to J. K. Milner & Co., same place. Filed Apr. 3, 1900. Serial No. 11,369. (No model.)



Claim.—1. In a device of the class described, the combination with a wagon-body provided with slots extending inward and upward and having supporting-shoulders between their ends, an end-gate having pivots arranged in the said slots and adapted to engage the said shoulders when the end-gate is raised, and means for locking the pivots in engagement with the said shoulders, substantially as described.

2. In a device of the class described, the combination with a wagon-body, and an end-gate provided with a headed pivot, of a bearing-plate having an approximately L-shaped slot to receive the pivot and provided at the inner portion of the slot with a recess for the reception of the head of the pivot, said recess forming shoulders for supporting the said head, and a latch mounted on the bearing-plate and engaging the head of the pivot, substantially as described.

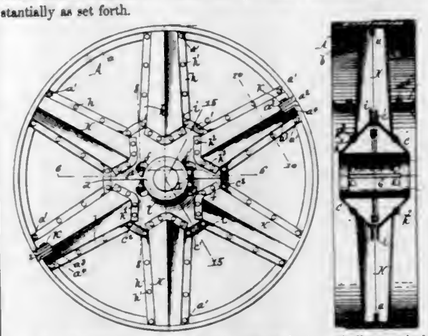
3. In a device of the class described, the combination with a wagon-body and an end-gate having a headed pivot, of a bearing-plate provided with an approximately L-shaped slot to receive the pivot and recessed at the upper portion of the slot to receive the head of the pivot, said recess forming lower inclined and horizontal shoulders and an upper inclined shoulder, and a pivoted latch mounted on the recessed portion of the plate and having its movement limited by the lower horizontal shoulders and the upper inclined shoulders, substantially as described.

4. In a device of the class described, the combination of a wagon-body, a support, an end-gate provided with upper and lower pivots, a lower bearing mounted on the support and receiving the lower pivot of the end-gate, an upper bearing receiving the upper pivot, a latch for detachably locking the upper pivot in the upper bearing, and the inner and outer links connected with the end-gate and with the support and adapted to lock the end-gate in a vertical position to support the same in an inclined position, and to form a lever for lifting the end-gate to engage the upper pivot with the upper bearing, substantially as described.

656,339. PULLEY. CHARLES H. BICALKY, Buffalo, N. Y. Filed Oct. 18, 1899. Serial No. 733,982. (No model.)

Claim.—1. The combination with a hub, of arms projecting from the hub and provided in their outer ends with transverse notches or recesses, and a transversely-split rim having its sections provided at their meeting ends with inwardly-extending lips which engage in said notches or recesses, substantially as set forth.

2. The combination with a transversely-split rim having its sections provided at their meeting ends with inwardly-extending flanges which are provided in their inner edges with notches or recesses, of arms connecting the hub and the rim and provided at their outer ends with transverse notches which receive the notched portions of said rim-flanges, substantially as set forth.



3. The combination with a hub composed of two hollow conical or concavo-convex sections secured together base to base, of arms provided in their inner ends with V-shaped recesses which receive the peripheral portion of the hub, the portions of each arm which are separated by said recesses bearing against the conical sides of the hub and terminating in flanges which are secured to the hub, substantially as set forth.

4. The combination with a hub composed of two hollow conical sections arranged base to base, of arms provided with longitudinal flanges and having their inner portions divided and secured to opposite sides of the hub and the inner portions of their flanges secured between the base portions of the conical hub-sections, substantially as set forth.

5. The combination with a hub composed of two hollow conical sections arranged base to base, of hollow arms composed of sections provided at their meeting edges with connecting-flanges having their inner ends clamped between said conical hub-sections, substantially as set forth.

6. The combination with a hub composed of two hollow conical or concavo-convex sections secured together base to base, of arms extending outwardly from the marginal portion of the hub, substantially as set forth.

7. The combination with a rim and a hollow hub composed of conical or concavo-convex sections secured together base to base, of connecting-arms which are hollow throughout their length and which abut at their outer ends against the inner side of the rim, substantially as set forth.

8. The combination with a hub composed of two hollow conical or concavo-convex sections secured together base to base, and provided with axial shaft-openings, of a transverse bracing sleeve or thimble bearing against the inner sides of said hub-sections and coinciding with their shaft-openings, substantially as set forth.

9. The combination with a hub composed of two hollow conical or concavo-convex sections secured together base to base and provided with axial shaft-openings, of a transverse, axial bracing-sleeve bearing against the inner sides of said hub-sections, and radial bracing webs or partitions extending from the outer side of said sleeve to the surrounding wall of the hollow hub, substantially as set forth.

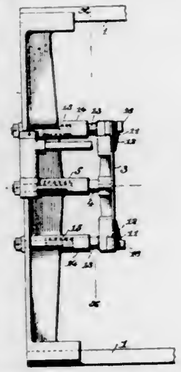
10. A wheel-hub composed of similar conical sections having axial shaft-openings and each provided around the edge of its opening with an inwardly-extending collar or flange, and a thimble arranged between said conical sections and surrounding said collars or flanges, substantially as set forth.

11. The combination with a wheel-hub composed of two divided conical sections which are provided at their straight edges with inwardly-extending flanges, of a divided thimble arranged axially between said conical sections and having its sections provided at their straight edges with outwardly-extending wings or flanges which bear against the inner side of the flanges of said conical sections, and fastening bolts or rivets passing through the flanges of said hub and thimble sections, substantially as set forth.

12. The combination with a split, hollow wheel-hub composed of similar conical or concavo-convex sections placed base to base and provided with axial shaft-openings, of a bracing-sleeve arranged axially between said sections, and connecting-bolts passing through the adjoining portions of said hub-sections and arranged between the outer side of said sleeve and the inner side of said hub-sections, substantially as set forth.

13. The combination with a wheel-hub composed of divided conical sections placed base to base and provided at their apexes with bolt-holes and shoulders, of a divided thimble arranged axially between said hub-sections and having its sections provided opposite said bolt-holes with external lugs or shoulders, and connecting-bolts passing through the holes of said hub-sections and bearing with their heads and nuts against the shoulders of said hub and thimble sections, substantially as set forth.

656,340. BAG-MACHINE. HUGO BILGRAM, Philadelphia, Pa., assignor to the Eastern Paper Bag Company, of Connecticut. Filed Dec. 22, 1899. Serial No. 741,216. (No model.)



Claim.—1. In flattening devices for bottom-formers of paper-bag machines, the combination of a flattening-plate against which the paper is adapted to be pressed, with guiding-fingers arranged at the sides thereof and adapted to guide the projecting edges of the paper down upon said plate.

2. In flattening devices for bottom-formers of paper-bag machines, the combination of a flattening-plate against which the paper is adapted to be pressed, with guiding-fingers having inwardly-inclined faces arranged at the sides thereof and adapted to guide the projecting edges of the paper down upon said plate.

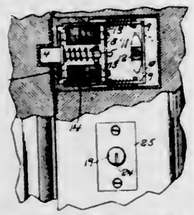
3. In flattening devices for bottom-formers of paper-bag machines, the combination of a flattening-plate against which the paper is adapted to be pressed, with independently-yielding guiding-fingers arranged at the sides thereof and adapted to guide the projecting edges of the paper down upon said plate.

4. In flattening devices for bottom-formers of paper-bag machines, the combination of a flattening-plate against which the partially-formed bottom of the bag is adapted to be pressed, with independently-yielding guiding-fingers arranged at the sides thereof and having inwardly-inclined faces 12 and projecting heads 16, substantially as and for the purpose described.

5. The combination with the flat yielding plate 3, of the independently-yielding guiding-fingers 11, 11, arranged at the sides thereof, substantially as and for the purposes described.

6. The combination with the flat yielding plate 3, of the independently-yielding guiding-fingers 11, 11, arranged at the sides thereof and provided with inclined faces 12 and projecting heads 16, substantially as and for the purposes described.

656,341. LOCK-CONTROLLING DEVICE. HENRY G. CARLETON, New York, N. Y., assignor to the Carleton Electric Company, same place. Filed Nov. 9, 1899. Serial No. 736,367. (No model.)



Claim.—1. The combination with a series of electrically-operated locks, of suitable circuit connections, a circuit-controlling device by which all the locks may be operated simultaneously, suitable circuit connections and a circuit-controlling device located near each lock whereby any lock may be operated independently of the other locks, substantially as described.

2. The combination with a series of locks, of an electrically-operated controlling mechanism for each lock, circuit connections including all the controlling mechanisms, a circuit-controller for said circuit connections, whereby all the locks may be operated simultaneously, independent circuit connections for each lock, and a circuit-controller for each of said connections located near each lock whereby it may be operated independently, substantially as described.

3. The combination with a series of locking-bolts, of a series of lock-controlling magnets, one for each bolt, means controlled from a common point for energizing all the magnets simultaneously, and means located near each magnet for energizing it separately, substantially as described.

4. The combination with a series of locks, of means whereby all the locks may be operated simultaneously, means whereby any lock may be operated independently of the other locks, a series of alarm mechanisms, and means whereby the alarm mechanisms are operated when all the locks are operated simultaneously, substantially as described.

5. The combination with a series of electrically-operated locks, of suitable circuit connections and devices whereby all the locks may be operated simultaneously, a series of alarm mechanisms in said circuit, and suitable circuit connections and devices whereby any lock may be operated independently of the other locks, substantially as described.

6. The combination with a series of locks, of an electrically-operated controlling mechanism for each lock, circuit connections including all the controlling mechanisms, a series of alarms in said circuit connections, a circuit-controller for said circuit connections, whereby all the locks may be operated simultaneously, independent circuit connections for the controlling mechanism of each lock, and a circuit-controller for said connections whereby each lock may be operated independently, substantially as described.

7. The combination with a series of bolts, of a series of controlling-magnets one for each bolt, said magnets operating to place the bolts in condition for movement when energized, a circuit connection for energizing all the magnets simultaneously, a series of alarm mechanisms in said circuit connections, and circuit connections for controlling each magnet independently of the other magnets, substantially as described.

8. The combination with a series of electric locks, of suitable circuit connections, whereby all the locks may be simultaneously operated, and a series of alarm mechanisms located in said connections, substantially as described.

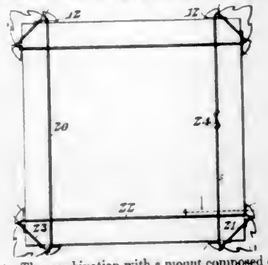
9. The combination with a series of locks, each lock including a controlling-magnet, circuit connections including magnets of all the locks, a common controlling circuit device for these circuit connections, circuit connections for each of the locks, and a key-operated circuit-controlling device for each of these connections, substantially as described.

10. In a hotel or other similar building having a fire-escape accessible from different rooms thereof, the combination with the doors of the rooms, of a series of locks, one for each door, electric controlling devices for the locks, suitable circuits and a circuit-closing device whereby all the controlling devices may be operated from a common point, and a suitable circuit and a circuit-closing device near each lock whereby each of the controlling devices may be separately operated, substantially as described.

11. In a hotel or other similar building having a fire-escape accessible through different rooms thereof, the combination with the doors of the rooms, of a series of electric locks, circuit connections including all the locks, means for controlling the circuit connections from a common point, alarm mechanisms in said circuit connections whereby the locks may be all operated and the alarms sounded from a common point, and means for operating each of the locks independently of the other locks and the alarm mechanisms, substantially as described.

12. In a hotel or other similar building having a fire-escape accessible from different rooms, the combination with the doors of the rooms, of a series of electric locks, circuit connections including all the locks, a circuit-controller for these connections, a series of alarm mechanisms in the circuit connections, circuit connections for each of the locks, and a key-operated controlling device for each of said circuit connections, substantially as described.

656,342. PICTURE-FRAME. ROBERT CARLTON, Jonesborough, Ark. Filed Jan. 31, 1900. Serial No. 3,509. (No model.)



Claim.—1. The combination with a mount composed of a number of layers, of a plurality of individual corner members disposed against the front face and the edges of the mount, and a binder extending over the back of the mount and connected to the several corner members in a plane intermediate of the front and back of the mount, whereby the tightening of the binder serves to draw the layers of the mount together and to draw the members into close contact with the edges thereof.

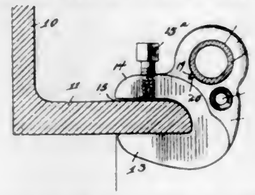
2. The combination with a mount composed of a number of layers, of a plurality of corner members disposed against the front face of the mount and having bearing-flanges disposed against the edges thereof, and a continuous binder extending over the back of the mount and connected to the members in a plane between the front and back of said mount.

3. The combination with a mount composed of a number of layers, of individual corner members disposed against the front face of the mount and comprising angularly-related flanges, hooks carried by the flanges and disposed in different directions, and a binder passed over the back of the mount and engaging with the hooks in a plane intermediate of the front and back of said mount.

4. A corner member of the character described, comprising a plate, angularly-related bearing-flanges extending from one face of the plate and removed from the edges thereof, and hooks carried by and extending upon one side only of said flanges.

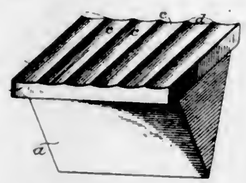
5. A corner member of the character described comprising an ornamental plate, angularly-related bearing-flanges extending at right angles to said plate and removed from the adjacent edges thereof, and hooks carried by said flanges and extending only upon the outer side thereof, to remove said hooks and a binder secured thereto from contact with the edges of a mount when the corner member is in use.

656,343. AWNING-FIXTURE. HENRY F. CONDON, De Kalb, Ill. Filed Mar. 25, 1899. Serial No. 710,443. (No model.)



Claim.—As a new article of manufacture, an awning-fixture comprising two horizontally-extending clamping-jaws, having between them a space to receive a projecting flange from the building, and an upwardly-extending lug provided with an aperture which is transverse relatively to and is located above the jaws and adapted to receive the top rod or bar of the awning, and a set-screw threaded through the upper jaw to clamp the fixture on the flange, substantially as described.

656,344. VAULT-LIGHT. ROBERT M. COX, Philadelphia, Pa. Filed July 5, 1900. Serial No. 22,493. (No model.)

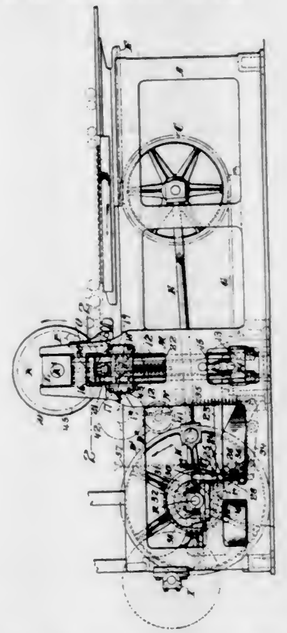


Claim.—1. A vault-light of translucent material, consisting of a single elongated prism depending from a flat top portion which is provided with a series of relatively-small concave grooves meeting in a series of angular ribs, said ribs presenting a roughened foot-surface and protecting the faces of the concave grooves from contact with the feet of pedestrians.

2. A vault-light of translucent material, consisting of a single elongated prism depending from a flat top portion which is provided with a series of relatively-small concave grooves extending at an angle to the direction of the single depending prism and meeting in a series of angular ribs, said ribs presenting a roughened foot-surface and protecting the faces of the concave grooves from contact with the feet of pedestrians.

3. A vault-light of translucent material, consisting of a light-refracting portion depending from a flat top portion which is provided with a series of relatively-small concave grooves meeting in a series of angular ribs, said ribs presenting a roughened foot-surface and protecting the faces of the concave grooves from contact with the feet of pedestrians.

656,345. BED-AND-CYLINDER PRINTING-MACHINE. LUTHER G. CROWELL, New York, N. Y., assignor, by direct and mesne assignments, to Robert Hoe and Charles W. Carpenter, same place. Filed Apr. 28, 1898. Serial No. 679,087. (No model.)



Claim.—1. In a bed-and-cylinder printing-machine, means whereby the bed is driven at varying speeds, means whereby the cylinder is driven in synchronism with the bed during a part of its stroke, mechanism for driving the cylinder at a constant speed which is substantially equal to the printing speed when it is not driven in synchronism with the bed, and a clutch mechanism for connecting the cylinder to and disconnecting it from the constant-speed mechanism, said clutch mechanism being constructed to be released by the increased speed of the cylinder when it is driven in synchronism with the bed and to be reëngaged when the speeds of the bed and the constant-speed mechanism become equal, substantially as described.

2. In a bed-and-cylinder machine, a power-wheel rotating at a constant speed, mechanism whereby the bed is driven from said wheel at varying speeds, means whereby the cylinder is driven in synchronism with the bed during a part of its stroke, mechanism operated from the power-wheel for driving the cylinder at a constant speed which is substantially equal to the printing speed when it is not driven in synchronism with the bed, and a clutch for connecting the cylinder to and disconnecting it from the constant-speed mechanism, said clutch being constructed to be released by the increased speed of the cylinder when it is driven in synchronism with the bed and to be reëngaged when the speeds of the bed and the constant-speed mechanism become equal, substantially as described.

3. In a bed-and-cylinder machine, mechanism whereby the bed is driven at varying speeds, means whereby the cylinder is driven by the bed during a part of its stroke, mechanism for driving the cylinder at a constant speed which is substantially equal to the printing speed when it is not driven by the bed, and a clutch for connecting the cylinder to and disconnecting it from the constant-speed mechanism, said clutch being constructed to be released by the increased speed of the cylinder when it is driven by the bed and to be reëngaged when the speeds of the bed and the constant-speed mechanism become equal, substantially as described.

4. In a bed-and-cylinder machine, mechanism whereby the bed is driven at varying speeds, means whereby the cylinder is driven by the bed during a part of its stroke, mechanism for driving the cylinder at a constant speed which is substantially equal to the printing speed when it is not driven by the bed, raising and lowering devices for connecting the cylinder to and disconnecting it from the bed, and a clutch for connecting the cylinder to and disconnecting it from the constant-speed mechanism, said clutch being constructed to be released by the increased movement of the cylinder when it is driven by the bed and to be reëngaged when

the speeds of the bed and the constant-speed mechanism become equal substantially as described.

5. In a bed-and-cylinder machine, a power-wheel running at a constant speed, mechanism whereby the bed is driven from said wheel at varying speeds, means whereby the cylinder is driven by the bed during a part of its stroke, mechanism operated from the power-wheel for driving the cylinder at a constant speed which is substantially equal to the printing speed when it is not driven by the bed, and a clutch for connecting the cylinder to and disconnecting it from the constant-speed mechanism, the said clutch being constructed to be released by the increased speed of the cylinder when driven by the bed and to be reëngaged when the speeds of the bed and the constant-speed mechanism become equal, substantially as described.

6. In a bed-and-cylinder machine, a power-wheel running at a constant speed, mechanism whereby the bed is driven from said wheel at varying speeds, means whereby the cylinder is driven by the bed during a part of its stroke, mechanism operated from the power-wheel for driving the cylinder at a constant speed which is substantially equal to the printing speed when it is not driven by the bed, a clutch for connecting the cylinder to and disconnecting it from the constant-speed mechanism, the said clutch being constructed to be released by the increased speed of the cylinder when driven by the bed and to be reëngaged when the speeds of the bed and the constant-speed mechanism become equal, and raising and lowering devices whereby the cylinder is connected to and disconnected from the bed, substantially as described.

7. In a bed-and-cylinder machine, the combination with mechanism whereby the bed is driven at varying speeds, of a rack on the bed meshing with a gear on the cylinder for driving the cylinder during a part of the stroke of the bed, gearing rotating at a constant speed for driving the cylinder when it is not driven by the bed, devices for raising and lowering the cylinder to move its gear into and out of mesh with the rack on the bed, and a clutch for connecting the cylinder to and disconnecting it from the constant-speed gearing, said clutch being constructed to be released by the increased speed of the cylinder when its gear is in mesh with the rack on the bed and to be reëngaged when the speeds of the bed and the constant-speed mechanism become equal, substantially as described.

8. In a bed-and-cylinder machine, the combination with the bed and mechanism for reciprocating it at varying speeds, of a constant-speed mechanism operating at a speed which is substantially equal to the printing speed, a cylinder adapted to be operated by both mechanisms, and a clutch operating to lock the cylinder to the constant-speed mechanism, the said clutch being constructed to be released by the increased speed of the cylinder under the influence of the bed-reciprocating mechanism and to be reëngaged when the speeds of the bed and the constant-speed mechanism become equal, substantially as described.

9. In a bed-and-cylinder printing-machine, the combination with a cylinder, of a disk connected to the cylinder, a constant-speed mechanism, devices acting in conjunction with the disk to connect the cylinder to and disconnect it from said mechanism, and a locking device, substantially as described.

10. In a bed-and-cylinder printing-machine, the combination with the cylinder, of a disk having a plurality of notches connected to the cylinder, a constant-speed mechanism and devices acting in conjunction with the notched disk to connect the cylinder to and disconnect it from said mechism, substantially as described.

11. In a bed-and-cylinder printing-machine, means for reciprocating the bed at varying speeds, means whereby the cylinder is driven by the bed during a part of its stroke, mechanism for driving the cylinder at a constant speed when it is not driven by the bed, a disk connected to the cylinder, means acting in conjunction with the disk whereby the cylinder is connected to and driven by the constant-speed mechanism when it is not driven by the bed, the transfer from the bed to the constant-speed mechanism being made while the bed is running at a considerable speed and before it reaches the end of its stroke, whereby the cylinder is kept running at a speed which is substantially equal to the printing speed, substantially as described.

12. In a bed-and-cylinder printing-machine, means for reciprocating the bed at varying speeds, means whereby the cylinder is driven by the bed during a part of its stroke, mechanism for driving the cylinder at a constant speed when it is not driven by the bed, a disk having a plurality of notches connected to the cylinder and means acting in conjunction with the notched disk whereby the cylinder is connected to and driven by the constant-speed mechanism when it is not driven by the bed, substantially as described.

13. In a bed-and-cylinder printing-machine, means for reciprocating the bed at varying speeds, means whereby the cylinder is connected to and driven by the bed during a part of its stroke, devices for raising and lowering the cylinder to connect it to and disconnect it from the bed, a constant-speed mechanism, a disk connected to the cylinder, and means acting in conjunction with the disk whereby the cylinder is connected to and driven by the constant-speed mechanism when it is not driven by the bed, substantially as described.

14. In a bed-and-cylinder printing-machine, means for reciprocating the bed at varying speeds, means whereby the cylinder is connected to and driven by the bed during a part of its stroke, devices for raising and lowering the cylinder to connect it to and disconnect it from the bed, a constant-speed mechanism, a disk having a plurality of notches connected to the cylinder, and means acting in conjunction with the notched disk whereby the cylinder is connected to and driven by the constant-speed mechanism when it is not driven by the bed, substantially as described.

15. In a bed-and-cylinder machine, the combination with a cylinder, of a disk having a plurality of notches fast on the cylinder-shaft, a loosely-mounted gear, means for driving the gear at a constant speed, and means for connecting the gear to and disconnecting it from the disk at specified times, substantially as described.

16. In a bed-and-cylinder machine, the combination with the cylinder, of a disk having a plurality of notches fast on the cylinder-shaft, a loosely-mounted gear, means for driving the gear at a constant speed, means for driving the cylinder at varying speeds, and means for connecting the gear to and disconnecting it from the notched disk, said means being constructed to be released when the speed of the cylinder under the influence of the varying-speed mechanism is greater than the speed of the gear, substantially as described.

17. In a bed-and-cylinder machine, the combination with the cylinder, of a notched disk fast on the cylinder, a loosely-mounted gear, means for driving the gear at a constant speed, means for driving the cylinder at varying speeds, means for connecting the gear to and disconnecting it from the disk when the speed of the cylinder under the influence of the varying-speed mechanism is greater than the speed of the gear, and a locking device for holding the said connecting means in engaging position, substantially as described.

18. The combination with a variable-speed mechanism, of a disk, connections between the variable-speed mechanism and the disk, a constant-speed mechanism having a rate of speed which is less than the greatest speed of the variable-speed mechanism and greater than the least speed of said mechanism, and an automatic clutch operating to connect the disk to and disconnect it from the constant-speed mechanism at times when its speed coincides with the speed of the variable-speed mechanism, substantially as described.

19. The combination with a variable-speed mechanism, of a disk, connections whereby the disk may be rotated from the variable-speed mechanism, a constant-speed mechanism, a carrier rotated thereby, and means on the carrier for connecting the carrier to and disconnecting it from the disk at substantially the times when the speeds of the variable-speed mechanism and the constant-speed mechanism coincide, substantially as described.

20. The combination with a variable-speed mechanism, of a disk, connections whereby the disk may be rotated from the variable-speed mechanism, a constant-speed mechanism, a carrier rotated thereby, means on the carrier for connecting it to and disconnecting it from the disk at specified times, and a locking device for holding the said means in engagement with the disk, substantially as described.

21. The combination with a variable-speed mechanism, of a disk, connections whereby the disk may be rotated from the variable-speed mechanism, a constant-speed mechanism, a carrier rotated thereby, means on the carrier for antomatically connecting it to and disconnecting it from the disk at specified times, and a locking device for holding the said means in engagement with the disk, substantially as described.

22. The combination with a variable-speed mechanism, of a disk rotated thereby, a constant-speed mechanism having a greater speed than the least speed of the variable-speed mechanism, and a less speed than the greatest speed of the variable-speed mechanism, a carrier rotated by said constant-speed mechanism, and means on the carrier for automatically connecting it to the disk made effective by the disk, the said means being automatically disconnected from the disk when the speed of the disk is increased beyond that of the carrier under the influence of the constant-speed mechanism and reëngaged when the speeds of the disk and carrier again coincide, substantially as described.

23. The combination with a variable-speed mechanism, of a disk having a plurality of notches, connections whereby the notched disk is rotated by the variable-speed mechanism, a constant-speed mechanism, a carrier rotated thereby, and pawl-arms on the carrier, the said pawl-arms operating to connect the carrier to and disconnect it from the notched disk at specified times, substantially as described.

24. The combination with a variable-speed mechanism, of a notched disk, connections whereby the notched disk is rotated by the variable-speed mechanism, a constant-speed mechanism, a carrier rotated thereby, pawl-arms on the carrier, the said pawl-arms operating to connect the carrier to and disconnect it from the notched disk at specified times, and a locking device, substantially as described.

25. The combination with a variable-speed mechanism, of a notched disk, connections whereby the disk is rotated from the variable-speed mechanism, a constant-speed mechanism, a carrier rotated thereby, pawl-arms on the carrier coöperating with the notched disk and acting to connect the carrier to and disconnect it from the disk at specified times, and a locking device having high and low cam parts, means for rotating the locking-disk at a different speed to that of the carrier whereby its high and low parts will successively operate to lock the arms to the disk and permit them to be disengaged therefrom, substantially as described.

26. The combination with a notched disk, of means for rotating it at a variable speed, means for connecting the disk to and disconnecting it from said variable-speed mechanism, a constant-speed mechanism, a carrier operated thereby, pawl-arms on the carrier operating to connect the carrier to and disconnect it from the notched disk, a locking-disk, and means for rotating it from the constant-speed mechanism but at a speed different from that of the carrier whereby the pawls are locked to and disengaged from the notched disk, substantially as described.

27. The combination with a notched disk, of a variable-speed mechanism, connections whereby the disk may be rotated therefrom, a constant-speed mechanism, a carrier rotated thereby, pawl-arms on the carrier coöperating with the notched disk whereby the carrier and disk are connected to and disconnected from each other, and a cam mechanism operating to hold the pawl-arms in engagement and permit their disengagement, substantially as described.

28. The combination with the cylinder of a printing-machine, of a disk having a plurality of notches rigidly mounted on the cylinder-shaft, a loosely-mounted pawl-carrier, pawl-arms on the carrier, means for driving the pawl-carrier at a constant speed, means whereby the cylinder may be driven during a part of its cycle at a varying speed, the cylinder being disconnected from the varying-speed mechanism during the remainder of the cycle, and being then driven at a constant speed by the engagement of the disk and pawls, substantially as described.

29. The combination with the cylinder of a printing-machine, of means for driving the cylinder at varying speeds, a notched disk rigidly mounted on the cylinder-shaft, a loosely-mounted pawl-carrier, pawl-arms on the carrier, means for driving the carrier at a constant speed, the pawl-arms being arranged to engage the notched disk when the cylinder is disengaged from the varying-speed mechanism, and locking devices for holding the pawls in engagement, substantially as described.

30. In a bed-and-cylinder printing-machine, the combination with mechanism for reciprocating the bed at varying speeds, of means whereby the cylinder is driven by the bed during a part of its stroke, of constant-speed mechanism for driving the cylinder when it is not driven by the bed, a notched disk secured to the cylinder-shaft, a loosely-mounted pawl-carrier connected with the constant-speed mechanism, spring-pawls for engaging the notches on the disk, and a locking device for holding the pawls in engagement with the disk, substantially as described.

31. In a bed-and-cylinder printing-machine, the combination with mechanism for reciprocating the bed at varying speeds, means whereby the cylinder is driven by the bed during a part of its stroke, raising and lowering devices for connecting the cylinder to and disconnecting it from the bed, a constant-speed mechanism for driving the cylinder when it is not driven by the bed, a notched disk secured to the cylinder-shaft, a loosely-mounted pawl-carrier connected with the constant-speed mechanism, spring-pawls for engaging the notches on the disks, and a locking device for holding the pawls in engagement with the disk, substantially as described.

32. The combination with a cylinder, of a notched disk secured to the cylinder-shaft, a loosely-mounted gear-wheel adjacent the notched disk, said gear-wheel carrying pawl-arms, means for rotating the pawl-carrying gear at a constant speed, a gear having internal high and low parts also loosely mounted with relation to the notched disk, means for rotating this gear at a constant speed, the speed being different from that at which the pawl-carrying gear is rotated, means for rotating the cylinder at varying speeds during a part of its cycle, the cylinder being rotated during the remainder of the cycle by the engagement of the pawls on the pawl-carrying disk with the notched disk, and a locking-disk acting to hold the pawls in engagement with the notched disk and to permit them at the proper times to be disengaged therefrom, substantially as described.

33. In a bed-and-cylinder machine, the combination with a power-wheel running at a constant speed, means for driving the bed from said power-wheel at varying speeds a train of gearing operated from the power-wheel, a pawl-carrier operated from said gearing at a constant speed, a locking-disk also operated from said gearing at a constant speed but at a rate different from that at which the pawl-carrier is operated, a printing-cylinder, means whereby it is driven from the bed during a part of its stroke, a notched disk rigidly mounted on the shaft of the cylinder, the cylinder being driven during the time when it is not driven by the bed by the engagement of the pawls with the notched disk and the operation of the locking device being such as to hold the pawls in engagement with the notched disk and permit their disengagement therefrom, substantially as described.

34. In a bed-and-cylinder machine, the combination with a power-wheel running at a constant speed, means for driving the bed from said power-wheel at varying speeds a train of gearing operated from the power-wheel, a pawl-carrier operated from said gearing at a constant speed, a locking-disk also operated from said gearing at a constant speed but at a rate different from that at which the pawl-carrier is operated, a printing-cylinder, means whereby it is driven from the bed during a part of its stroke, raising and lowering devices for connecting the cylinder to and disconnecting it from the bed, a notched disk rigidly mounted on the shaft of the cylinder, the cylinder being driven during the time when it is not driven by the bed by the engagement of the pawls with the notched disk and the operation of the locking device being such as to hold the pawls in engagement with the notched disk and permit their disengagement therefrom, substantially as described.

35. The combination with a printing-cylinder, of a notched disk rigidly mounted on the shaft thereof, a pawl-carrier loosely mounted with respect to the notched disk, spring pawl-arms pivoted on said carrier, and a loosely-mounted and suitably-driven locking-disk for holding the pawl-arms in engagement with the notched disk and permitting their disengagement therefrom, substantially as described.

36. The combination with a cylinder, of a notched disk rigidly mounted on the shaft thereof, a pawl-carrier loosely mounted with respect to the notched disk, spring-pawls on the carrier, a locking-gear also loosely mounted with respect to the notched disk and having high and low parts coöperating with the pawls, and means for driving the disk, carrier, and locking-gear constantly but at different rates of speed when the disk and carrier are disconnected from each other, substantially as described.

37. In a bed-and-cylinder machine, the combination with the cylinder, of a notched disk loosely mounted on the cylinder-shaft, a pawl-carrier loosely mounted with respect to the notched disk, spring-pawls carried by the carrier, a disk also loosely mounted on the disk and having interior high and low parts, mechanism for operating the pawl-carrying disk at a constant speed, mechanism for operating the locking-disk at a constant speed but at a speed different to that of the pawl-carrying disk, and mechanism for operating the cylinder and notched disk at varying speeds, the parts being so arranged that when the speed of the cylinder and notched disk under the influence of the varying-speed mechanism coincides with the pawl-carrying disk operated by the constant-speed mechanism, the pawls will drop into the notches of the notched disk, and the locking-disk will be then operated to retain them there, substantially as described.

38. The combination with a bed-and-cylinder machine, of a crank mechanism for driving the bed at varying speeds, a constant-speed gearing, a rack on the bed, a gear on the cylinder, a raising and lowering device for the cylinder whereby it is moved into and out of mesh with the rack of the bed, a notched disk rigidly connected to the cylinder-shaft, a locking-gear meshing with the constant-speed gearing, a pawl-carrying gear loosely mounted with respect to the locking-gear and meshing with the constant-speed gearing, the parts being so arranged that when the cylinder is raised out of mesh with the rack, it will be locked to the constant-speed mechanism by means of the notched disk, pawl-carrying disk and locking-gear, and when it is lowered into mesh with the bed, it will be released from the constant-speed mechanism, through the increased speed given it by the bed, substantially as described.

39. In a bed-and-cylinder machine, a mechanism for driving the bed at a varying speed, a constant-speed mechanism, a cylinder adapted to be operated by both mechanisms, a device for positively locking the cylinder to the constant-speed mechanism, the locking device being so constructed that it will be automatically released when the cylinder is connected to both mechanisms and its speed is increased under the influence of the varying-speed mechanism beyond that of the constant-speed mechanism, substantially as described.

40. In a bed-and-cylinder machine, the combination with a gear rotating at a constant speed, a crank mechanism operated by the gear and reciprocating the bed at a varying speed, a rack-and-gear connection between the bed and the cylinder whereby the cylinder is operated by the bed during a portion of its stroke, a train of gearing in mesh with the gear rotating at a constant speed, a locking mechanism for positively locking the cylinder to and releasing it from the gearing, the locking mechanism being constructed so as to positively lock the cylinder to the gearing when the cylinder and the bed are rotating at the same speed and thereafter slip so as to release the cylinder from the constant-speed mechanism when under the influence of the bed its speed increases beyond that of the constant-speed mechanism, substantially as described.

41. In a bed-and-cylinder machine, the combination with a bed reciprocating at varying speeds, a cylinder driven by the bed during a part of its stroke, a constant-speed mechanism for driving the cylinder when it is not driven by the bed, auxiliary intermediate devices operating at substantially the times when the speeds of the bed and the constant-speed mechanism coincide to connect the cylinder to and disconnect it from the

constant-speed mechanism, and means between the bed and the cylinder operating to correct any irregularity in the motion of the parts and properly position the bed and cylinder when the two come into driving relation, substantially as described.

42. In a bed-and-cylinder machine, the combination with a bed reciprocating at varying speeds, a cylinder driven by the bed during a part of its stroke, a constant-speed mechanism for driving the cylinder when it is not driven by the bed, auxiliary intermediate devices acting at substantially the times when the speeds of the bed and constant-speed mechanism coincide, to connect the cylinder to and disconnect it from the constant-speed mechanism, and a bowl and cam carried by the bed and cylinder and operating to correct any irregularity in the motion of the parts and properly position the bed and cylinder when the two come into driving relation, substantially as described.

43. In a bed-and-cylinder machine, the combination with a bed reciprocating at varying speeds, a cylinder driven by the bed during a part of its stroke, raising and lowering devices for bringing the cylinder into and removing it from its driving relation with the bed, a constant-speed mechanism for driving the cylinder when it is not driven by the bed, auxiliary intermediate devices acting at substantially the times when the speeds of the bed and constant-speed mechanism coincide, to connect the cylinder to and disconnect it from the constant-speed mechanism, and a bowl and cam carried by the bed and cylinder and operating to correct any irregularity in the motion of the parts and properly position the bed and cylinder when the two come into driving relation, substantially as described.

44. The combination with the cylinder and reciprocating bed having an intermeshing rack and segment, of means for raising and lowering said cylinder, and means for causing the lowering devices to impart a partial downward movement when the cylinder is tripped, substantially as described.

45. The combination with the cylinder and reciprocating bed having an intermeshing rack and segment, of means for raising and lowering said cylinder, and tripping mechanism for said cylinder embracing a dog having two acting shoulders producing different positions of the cylinder, substantially as described.

46. The combination with the bed and cylinder having intermeshing devices, of means for raising and lowering the cylinder and means causing the lowering devices to lower the cylinder into position insuring engagement of the intermeshing devices but without causing other contact during the time the cylinder is tripped and moving with the bed, substantially as described.

47. In a bed-and-cylinder machine, the combination with the cylinder, of means for raising and lowering the cylinder and operating devices for said means, connections between the operating devices and the raising and lowering means, said connections being constructed so that the downward movement of the cylinder may be varied, and controlling devices for said connections which permit them to be operated only at predetermined intervals, substantially as described.

48. In a bed-and-cylinder machine, the combination with the cylinder, of means for raising and lowering the cylinder, a cam, a rocking lever operated by the cam, pins at varying distances from the center of motion of the rocking lever, and means for connecting either of the pins to the raising and lowering devices, substantially as described.

49. In a bed-and-cylinder machine, the combination with a cylinder, of means including a toggle for raising and lowering the cylinder, a gab-hook connecting with the toggle having recesses on its opposite side, a pivoted lever carrying upper and lower pins, mechanism for rocking the lever, and devices for positioning the gab-hook so that it will operate in connection with either the upper or the lower stud, substantially as described.

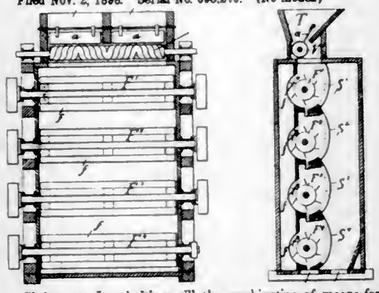
50. In a bed-and-cylinder machine, the combination with mechanism for raising and lowering the cylinder, the same including a toggle, a gab-hook connected with the toggle, a locking-lever carried by the upper and lower pins, devices for positioning the gab-hook so that it will engage with either pin, means for rocking the lever, and means for preventing the operation of the gab-hook-shifting device except at specified times, substantially as described.

51. In a bed-and-cylinder machine, the combination with a toggle and connections whereby it may raise and lower the cylinder, of a gab-hook extending from the toggle, a rocking lever bearing upper and lower pins, devices for positioning the gab-hook so as to engage the lever-pins, a cam for operating the rocking lever, a cam projection carried on the gab-hook, and a cam constructed to engage either side of the cam projection according to the position of the gab-hook whereby to prevent the gab-hook from being operated except at specific times, substantially as described.

52. In a bed-and-cylinder machine, the combination with a cylinder having a gear, of a bed carrying a rack, devices for raising and lowering the cylinder, and means whereby the said devices may be controlled in the lowering operation so as to bring the cylinder down sufficiently to engage it with the rack on the bed and yet permit it to be off the impression, substantially as described.

53. In a bed-and-cylinder machine, the combination with a cylinder carrying a gear and a bed carrying a rack, of devices for raising and lowering the cylinder, the same including a rocking lever, means for giving a constant throw to the lever, connections whereby the constant throw of the lever is caused to lower the cylinder different distances, and controlling devices for said connections which permit them to be operated only at predetermined intervals substantially as described.

656,346. BOLTING-MILL. HERMANN DIETZ, Leipsic, Germany. Filed Nov. 2, 1898. Serial No. 695,279. (No model.)



Claim.—1. In a bolting-mill, the combination of means for evenly distributing the flour to be bolted over the entire width of the mill, a fan (one or more) consisting of a series of blades projecting from a drum on a rotating shaft, each fan inclosed by a casing provided with a supply-opening at the top, a discharge-opening for the coarse particles at the bottom, and a stationary sieve located away to one side of the fan in the direction of motion of its upper periphery, and a receptacle for the sifted flour on the outer side of the screen or screens provided with a discharge opening or chute at the bottom, whereby the flour fed in at the top is caused to fall between the blades at the top of the fans and is thrown against the sieve, through which the fine flour passes, while the coarse flour passes out from the bottom, substantially as specified.

2. In a bolting-mill, the combination of a hopper extending over the entire width of the mill, a distributing-roller arranged at the lower end of the hopper, said roller being provided with grooves or ribs running spirally in opposite directions, a gate extending over the distributing-roller, a fan (one or more) located beneath the distributing-roller, each fan inclosed by a casing with a supply-opening at the top, a discharge-opening for the coarse particles at the bottom, and a stationary sieve located away to one side of the fan in the direction of motion of its upper periphery, and a receptacle for the sifted flour on the outside of the sieve or sieves provided with a discharge opening or chute at the bottom, substantially as and for the purpose specified.

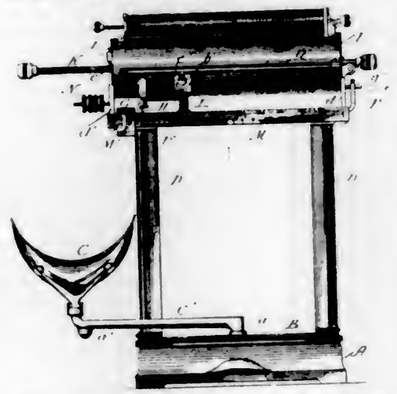
656,347. PLOW ATTACHMENT. GEORGE A. FLANDERS, Chetek, Wis. Filed Dec. 16, 1899. Serial No. 740,617. (No model.)



Claim.—1. The combination with a beam and plow, of a roller mounted closely within the rear portion of the plow and projecting laterally corresponding to the moldboard projection, and hangers attached to the beam and the said roller and provided with a scraper.

2. The combination with a plow-beam and plow, of a truck adjustably mounted on the front extremity of the beam having a pair of wheels disposed on opposite sides of the plane of the beam, and a roller hung from the beam within the rear portion of the plow and extending transversely of the latter, the said roller having a lateral projection nearly equal to that of the moldboard.

656,348. COMPUTING-SCALE. AUSTIN B. HAYDEN, Chicago, Ill. Filed Sept. 8, 1899. Serial No. 729,877. (No model.)



Claim.—1. In a computing-scale, the combination with a base and beam-standard, of a computing-beam pivotally supported on said standard, a weighing-platform connected with said beam, a rotatable computing-cylinder provided with computations and rotating between fixed transverse planes, a longitudinally-movable poise-rod passing through horizontal perforations in adjacent ends of said beam and cylinder, and connecting means between the lateral or cylindrical surface of said rod and beam and said rod and cylinder for effecting a turning of the cylinder when the rod is moved longitudinally, substantially as and for the purpose set forth.

2. In a computing-scale, the combination with a base, a beam-standard, and a weighing-platform, of a computing-beam pivotally supported on said standard and provided with a horizontally-disposed price-index, a computing-cylinder journaled in said beam and provided with computations, a poise-rod passing through perforations in the ends of said cylinder and beam and provided with a spiral groove, means on said beam for engaging said groove to cause said rod to rotate when it is moved longitudinally, and connecting means between rod and cylinder permitting relative longitudinal movement and preventing relative angular movement of said parts, whereby a rotary movement is imparted to the cylinder when the rod is moved longitudinally, substantially as and for the purpose set forth.

3. In a computing-scale, the combination with the base beam-standard and weighing-platform, of a computing-beam pivotally supported on said standard, comprising a cylindrical casing provided with a price-index and with central perforations at its ends, a roller journaled at one end of said casing, a poise-rod extending through said perforations provided with a spiral groove resting on said roller, a computing-cylinder provided on its cylindrical surface with computations and at its ends with perforations receiving said poise-rod, and connecting means between poise-rod and computing-cylinder for turning the cylinder as the poise-rod is turned by said roller-and-groove connection in the longitudinal movement of the poise-rod, substantially as and for the purpose set forth.

4. In a computing-scale, the combination with the base beam-standard and weighing-platform, of a computing-beam pivotally supported on said standard, comprising a cylindrical casing provided with a price-index and with central perforations at its ends, a roller journaled at one end of said casing, a poise-rod extending through said perforations provided with a spiral groove resting on said roller, a computing-cylinder provided on its cylindrical surface with computations and at its ends with perforations receiving said poise-rod, longitudinal rods h^3 fixed within the computing-cylinder, and a cross-rod h^3 fixed to the poise-rod and slidably connected with said longitudinal rods, substantially as and for the purpose set forth.

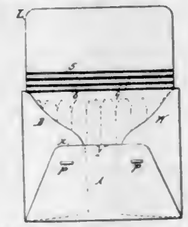
5. In a computing-scale, the combination with the base beam-standard and weighing-platform, of a beam, a rotatable computing-cylinder journaled on said beam, a longitudinally-movable poise-rod provided with spirally-arranged indentations corresponding to the weight-graduations, and a pin connected with said beam for engaging said spirally-arranged indentations, substantially as and for the purpose set forth.

6. In a computing-scale, the combination with a base beam-standard and weighing-platform, of a beam pivotally connected with said standard, a rotatable computing-cylinder journaled in said beam, and a longitudinally-movable poise-rod connected with said cylinder and provided with hollow removable handles for the purpose of adjusting and sealing the scale, substantially as and for the purpose set forth.

7. In a scale, the combination with base, beam-standard, beam and beam-poise, of a weighing-platform connected with said beam, a swinging arm pivotally connected at one end with said platform, and a scale-pan supported on said arm, substantially as and for the purpose set forth.

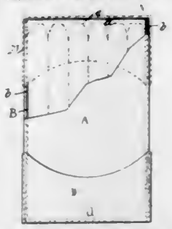
8. In a scale, the combination with base, beam-standard, beam and beam-poise, of a weighing-platform connected with said beam, a horizontally-disposed arm pivotally connected at one end with said platform and provided toward its free end with a rest, and a scale-pan supported on said arm, substantially as and for the purpose set forth.

656,349. CIGAR-CASE. EDWARD HILSON, New York, N. Y. Filed Oct. 14, 1899. Serial No. 733,683. (No model.)



Claim.—The herein-described cigar-case, the same consisting of the back H, front E formed by the end flaps D W and bottom flap A, the latter folded over the former and fastened thereto at N N', O O' by metal fasteners *p p* that hold the said parts together firmly and thus give a spring to the front that causes it to press on the contents of the case and hold them in the same, a pocket Y between the part *x* of the flap A, and the flaps D, W, the sections R D' between the end flaps D W and back H, and the section I between the closing-flap L and the back H, the creased lines 9 in said sections that permit them to expand, and the closing-flap L, substantially as specified.

656,350. CIGARETTE-BOX CAP. EDWARD HILSON, New York, N. Y. Filed Dec. 14, 1899. Serial No. 740,250. (No model.)



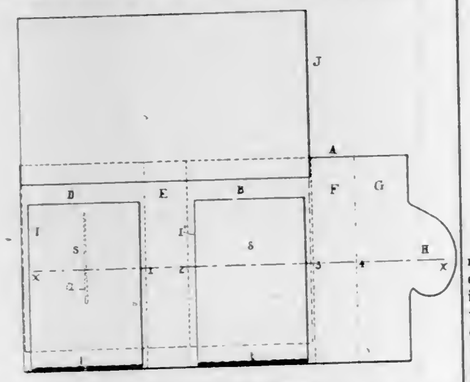
Claim.—1. The combination with the inner sliding tray B having its upper end open, and the outer tube A also having its upper end open of a cap D made in a single piece from paper, and consisting of the back E, front F with the flap K connected therewith, the ends G G', top H, tucking-flap I turn-over flaps J J' separated from the top H but connected with the ends G G' the flap K being connected with the end G, substantially as specified.

2. A cap for closing the open end of cigarette-boxes made in a single piece from paper, and consisting of the back E, front F with the flap K connected therewith, the ends G G', top H, tucking-flap I, turn-over flaps J J' separated from the top H but connected with the ends G G' the flap K being connected with the end G, as and for the purpose specified.

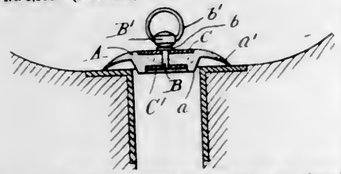
656,351. CIGAR-CASE. EDWARD HILSON, New York, N. Y. Filed Jan. 25, 1900. Serial No. 2,751. (No model.)

Claim.—In a cigar-case the combination of a case or cover cut to form the sides E F front B, back D flap G and locking-tongue H, and

creased or scored on the lines 1 2 3 4 to adapt the parts E, F B D G H to be bent to bring them into their proper relative positions, a slit *a* in the back D to receive the tongue H, expansible compartmented cigar-holders S S connected with the front B and back D respectively of the case or cover, and having cells to receive the cigars and separate them from each other, and a fly-leaf of paraffin-paper pasted to the upper edge of the cover across the back D side E and front B and adjacent to the open ends of the holders S S and adapted to be folded in over the open ends of the holders to protect the ends of the cigars, substantially as specified.



656,352. **BASIN-STOPPER.** WILLIAM HOLMES, Chicago, Ill., assignor to the Morgan & Wright, same place. Filed Jan. 31, 1900. Serial No. 3,396. (No model.)



Claim.—A rubber basin-stopper molded with a boss adapted to project within the basin-outlet and a thin, flexible flange dished on its under side and adapted to bear upon the surface surrounding said opening, two metal plates arranged at top and bottom of said rubber stopper, a stem or post extending through said plates and the intervening rubber and having a shoulder which bears upon the upper plate, a collar or head rotatably secured upon the upper portion of said stem or post, and a ring secured to said collar or head, substantially as and for the purpose set forth.

656,353. **ALKALINE-EARTH SILICID.** CHARLES B. JACOBS, Ampere, N. J., assignor to the Ampere Electro-Chemical Company, same place. Filed Oct. 31, 1899. Serial No. 735,422. (No specimens.)

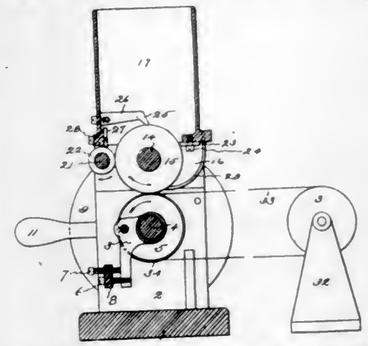
Claim.—1. The chemical compound consisting of silicon combined with an alkaline-earth metal, in the proportion represented by the formula RSi_2, R representing the alkaline-earth metal, the same being white or bluish-white substances of metallic appearance, having a crystalline fracture, oxidizing slowly in the air to silicon dioxid and an alkaline-earth-metal oxid, and decomposed by pure water with the formation of the alkaline-earth-metal hydrate, silica and free hydrogen.

2. The chemical compound consisting of silicon combined with barium, in the proportion represented by the formula $BaSi_2$, the same being a white or bluish-white substance of metallic appearance, having a crystalline fracture, oxidizing slowly in the air to silicon dioxid and barium oxid, and decomposed by pure water with the formation of barium silicid, silica and free hydrogen.

656,354. **COMPOUND OF SILICON AND HYDROGEN.** CHARLES B. JACOBS, East Orange, N. J., assignor to the Ampere Electro-Chemical Company, Ampere, N. J. Filed Jan. 12, 1900. Serial No. 1,180. (No specimens.)

Claim.—The compound consisting of silicon and hydrogen, combined in equal molecular proportions, the same being a yellow crystalline non-explosive compound, insoluble in water and in acids, and soluble in caustic alkali solutions.

656,355. **PASTING-MACHINE.** ARTHUR L. JACOBS, Hartford, Conn., assignor to the Smyth Manufacturing Company, same place. Filed Apr. 7, 1900. Serial No. 12,010. (No model.)



Claim.—1. A pasting-machine having a bed with standards, a paste-receptacle with an opening in its bottom, removably supported by the standards, a distributing-roll and a spreading-roll located in the opening in the bottom and supported by the walls of the receptacle, a feed-roll with feed-surfaces and apron-surfaces, the feed-surfaces having a greater diameter than the apron-surfaces, located below and adjacent to the distributing-roll and supported by the standards, mechanisms for rotating the rolls, an apron-roll located at a distance from the feed-roll, an apron passing around the feed-roll on the apron-surfaces below the feed-surfaces and around the apron-roll, and fingers attached to the removable paste-receptacle and extending therefrom into contact with the distributing-roll, substantially as specified.

2. A pasting-machine having a bed with standards, a paste-receptacle with an opening in its bottom, removably supported by the standards, a distributing-roll and a spreading-roll in the opening in the bottom of the receptacle, brackets pivotally attached to the inside of the standards, a feed-roll supported by the brackets below and adjacent to the distributing-roll, mechanism for adjusting the brackets, and mechanism for rotating the rolls, substantially as specified.

3. A pasting-machine having a bed with standards, a paste-receptacle with an opening in its bottom, removably supported by the standards, a distributing-roll and a spreading-roll in the opening in the bottom of the receptacle, brackets pivotally attached to the inside of the standards, a feed-roll supported by the brackets below and adjacent to the distributing-roll, mechanisms for adjusting the brackets, mechanisms for rotating the rolls, an apron-roll located at a distance from the feed-roll, and an apron passing around the feed-roll that is supported by the adjustable brackets and around the apron-roll that is located at a distance, substantially as specified.

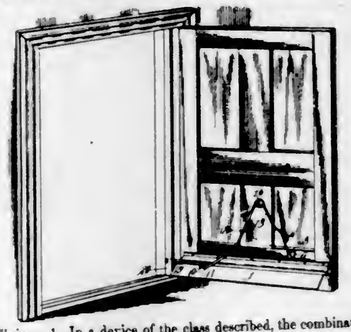
4. A pasting-machine having a paste-receptacle with an opening in its bottom, a distributing-roll and a spreading-roll in the opening in the bottom of the receptacle, a gate extending along and out of contact with the distributing-roll, a scraper inside of the receptacle extending along and in contact with the distributing-roll, a scraper extending along and in contact with the spreading-roll, a feed-roll below the distributing-roll and mechanisms for rotating the distributing-roll and spreading-roll in the same direction, substantially as specified.

5. A pasting-machine having a paste-receptacle with an opening in its bottom, a distributing-roll and a spreading-roll in the opening in the bottom of the receptacle, a gate extending along and out of contact with the distributing-roll, a scraper inside the paste-receptacle extending along and in contact with the distributing-roll, a scraper extending along and in contact with the spreading-roll, a feed-roll below the distributing-roll, mechanisms for rotating the distributing-roll and the spreading-roll in the same direction, an apron-roll and an apron passing around the feed-roll and the apron-roll, substantially as specified.

6. A pasting-machine having a base with upright standards, a removable paste-receptacle with an opening in its bottom, and legs at its ends, the said standards and legs being tongue-and-grooved so as to slide together horizontally, means for holding the legs and standards fixed horizontally with relation to each other, a distributing-roll and a spreading-roll in the opening in the bottom of and removable with the receptacle, a feed-roll below the distributing-roll and supported by the standards, and mechanisms for rotating the distributing-roll and the feed-roll in the same direction, substantially as specified.

7. A pasting-machine having a base with upright standards, a removable paste-receptacle with openings in its bottom and legs at its ends, the said standards and legs being tongue-and-grooved so as to slide together horizontally, means for holding the legs and standards fixed horizontally with relation to each other, a distributing-roll and a spreading-roll in the opening in the bottom of the receptacle, a feed-roll below the distributing-roll and supported by the standards, mechanisms for rotating the rolls, an apron-roll and an apron passing around the feed-roll and apron-roll, substantially as specified.

656,356. **WEATHER-STRIP.** CHARLES H. KEDING, Waverly, Iowa. Filed June 29, 1900. Serial No. 22,061. (No model.)

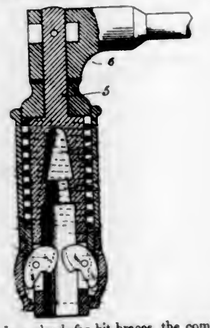


Claim.—1. In a device of the class described, the combination of a hinged strip designed to be mounted on a door and capable of a limited longitudinal movement, and the substantially V-shaped spring adjustably secured at its apex and at one side to the door and having its other side connected with the hinged strip, whereby the latter is lifted automatically when the door opens and is caused to swing downward when the door closes, substantially as described.

2. In a device of the class described, the combination of a hinged strip provided at its upper edge with oppositely-curved intermediate and end flanges, a pintle engaged by the flanges, said pintle being of greater length than the intermediate flange and provided with means for engaging the door, a fixed strip extending over the upper portion of the hinged strip, an arm arranged on the exterior of the hinged strip, and a spring adjustably mounted on the door and connected with the exterior arm, substantially as described.

3. In a device of the class described, the combination of a hinged strip provided at its upper edge with oppositely-disposed intermediate and end flanges, a pintle engaged by the flanges, said pintle being of greater length than the intermediate flange to permit the hinged strip to move longitudinally, and a spring connected with the hinged strip, substantially as described.

656,357. **CHUCK FOR BIT-BRACES.** LOUIS F. KRAMER, Oklahoma, Okla. Filed June 13, 1900. Serial No. 20,178. (No model.)



Claim.—1. In a chuck for bit-braces, the combination of the head secured to the bit-brace and cored out and provided with elongated openings as described, the jaws pivoted within said openings, the sleeve loosely surrounding said head and having a recess on its inside near its front end into which recess the outer portions of the jaws extend, the end walls of said recess being beveled, and the coil-spring surrounding said head and operating to normally project said sleeve whereby the jaws are thrown into clamping position, substantially as set forth.

2. In a chuck for bit-braces, the combination of the head recessed to accommodate the bit-shank, the jaws pivoted within said head, the sleeve loosely surrounding said head and jaws and having beveled portions above and below said jaws, and the coil-spring surrounding said head and operating to normally project said sleeve whereby the jaws are thrown into clamping position, substantially as set forth.

3. In a chuck for bit-braces, the combination of the head cored out to receive the bit-shank, the jaws pivoted to said head and having their inner ends extending toward each other within the cored-out portion, and a resiliently-acting sleeve loosely surrounding said head and capable of a free sliding movement and provided with shouldered portions which strike against said jaws whereby the latter are thrown into clamping position or released, substantially as set forth.

4. In a chuck for bit-braces, the combination of the head cored out to receive the bit-shank, the jaws pivoted within said head and having their inner contact edges extended within said cored-out portion and disposed in the arcs of circles, and the resiliently-acting sleeve surrounding said head and capable of free sliding movements and provided with shouldered portions which operate to clamp and release said jaws, substantially as set forth.

656,358. **WHEEL FOR CASTERS, &c.** WILLIAM LIVINGSTONE, New York, N. Y., assignor to Robert Murray, trustee, same place. Filed Jan. 24, 1900. Serial No. 2,662. (No model.)

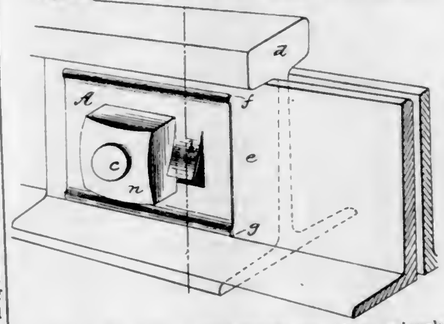


Claim.—1. A caster or hanger wheel consisting of two half-shells with perforations in their sides and a strengthening-ring provided with prongs in such position and of such dimensions as to correspond with and pass through and extend beyond the perforations of the half-shell to permit the same to be clenched and riveted against the sides of the half-shells and hold the same firmly together.

2. As a new and useful article of manufacture, a hollow caster or hanger wheel consisting of two cup-shaped half-shells having their peripheral edges toward each other and having central eyes or hubs projecting inwardly, the outer ends of which eyes or hubs are conically enlarged, a central tube T passing through the eyes or hubs and having its ends inwardly tapering at the place where the eyes or hubs taper for a sufficient distance to form conical bearings adapted to receive projections on the horns of a caster, and a cylindrical portion intervening between the conical enlargements, whereby there will be provided conical enlargements at the ends of the tube conformably to and corresponding with the conical projections of the caster-horn, thereby providing conical end bearings for the wheel directly upon the projections of the horn without strain upon the wheel-pin.

3. A hollow caster or hanger wheel consisting of two half-shells with their peripheral edges in contact and having inwardly-extending eyes or hubs with tapering bores adapted to receive and retain the cylindrical tube T having tapered ends, each of the said half-shells having perforations in its sides to receive lugs and a lugged strengthening member R located within the caster-wheel and having its lugs pass through the apertures in the sides of the half-shells and upset against the outer faces thereof.

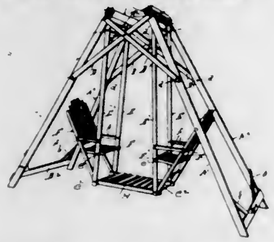
656,359. **NUT-LOCK.** JOHN D. MARSHALL and MENZO LOUCKS, Pawtucket, R. I. Filed Jan. 25, 1900. Serial No. 2,787. (No model.)



Claim.—The herein-described nut-lock comprising a spring-plate having its top and bottom edges curved inwardly, said plate having a reg-

istering opening and provided with an integral locking-tongue formed by splitting the plate between the edge of said opening and edge of said plate, as shown and described.

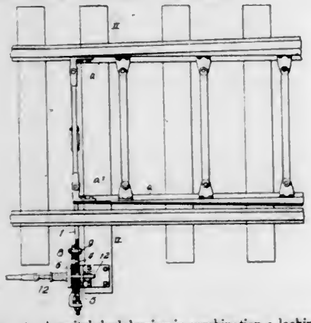
656,360. PORTABLE SWING. GLEN G. MEAD, Erie, Pa. Filed Apr. 11, 1900. Serial No. 12,429. (No model.)



Claim.—1. The combination in a portable swing, of standards having open slots in the upper ends thereof, cross-braces centrally pivoted together and pivoted at their lower ends at fixed points to the standards, rods connecting the upper ends of each pair of said braces and adapted to rest in the open slots in the tops of the standards and swing-frames pivoted upon said rods and supported thereby, substantially as and for the purpose set forth.

2. The combination in a portable swing, of standards having open slots in the upper ends thereof, cross-braces pivoted at their lower ends to said standards and pivoted together where they cross each other, rods securing the upper ends of each pair of braces together and adapted to rest in the open slots in the tops of the standards, swing-frames pivoted upon and supported from said rods, seats secured to the lower parts of said swing-frames, and a detachable platform between the lower ends of said swing-frames, substantially as and for the purpose set forth.

656,361. SWITCH-LOCK. HENRY D. MILES, Detroit, Mich., assignor to the Union Switch and Signal Company, Swissvale, Pa. Filed June 2, 1900. Serial No. 18,895. (No model.)



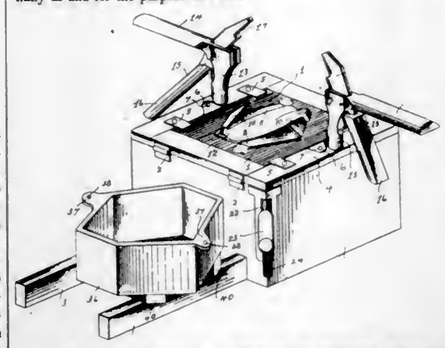
Claim.—1. A switch-lock having in combination a locking-pin, and a locking-bar adjustably connected to the switch-rails, and consisting of two parts or members adjustable relative to each other and to the locking-pin, each of said parts or members being provided with means for engaging the locking-pin, substantially as set forth.

2. A switch-lock having in combination a movable locking device and means adjustably connected to the switch-rails for engaging the locking device, substantially as set forth.

3. A switch-lock having in combination a locking-pin, a locking-bar adjustably connected to the switch-rails and provided with two holes or openings, one of which is elongated in the direction of the movement of the switch-rails, a plate adjustably mounted on the locking-bar and provided with openings or holes similar to those in the locking-bar, but oppositely arranged, substantially as set forth.

656,362. MOLDING-MACHINE. JOHN W. MURRAY and CYRUS W. FIELD, Toledo, Ohio. Filed Apr. 2, 1900. Serial No. 11,047. (No model.)

Claim.—1. In a molding-machine, a casing, having projecting supports for a flask, a match-plate hinged to the top of the casing and normally supported thereon, adapted to open toward the supports, duplicate patterns formed on the upper face of the match-plate, orifices cut through the match-plate, draw-plates having pattern portions adapted to be projected through the orifices in the match-plate and form inclined projections of the patterns, and having body portions within the casing, provided with supports and movable in inclined ways in their supports, orifices in the body portions of the draw-plates, a draw-bar having its ends in engagement with the draw-plates through the orifices in their body portions, a lever secured to the draw-bar between the draw-plates, having one end pivotally secured within the casing, and the other end free and extended through the casing, adapted, as depressed, to move the draw-bar and thereby withdraw the projecting pattern portions of the draw-plates within the casing, and, as raised to a horizontal position, to move the draw-bar to project them through the match-plate and complete the patterns, substantially as and for the purpose described.



2. In a molding-machine, a casing, having projecting supports for a flask, a match-plate hinged to the top of the casing and normally supported thereon, adapted to open toward the supports, duplicate patterns formed on the upper face of the match-plate, orifices cut through the match-plate, draw-plates having pattern portions adapted to be projected through the orifices in the match-plate and form inclined projections of the patterns, and having body portions within the casing, provided with supports and movable in inclined ways in their supports, mechanical means to move the draw-plates along the ways to project their pattern portions through the orifices in the match-plate and set them in position to complete the patterns on the plate, and withdraw them therefrom, a mold-flask section adapted to be seated on the match-plate around the patterns and to be secured against movement thereon, provided with a top plate adapted to close the flask and compress the sand when filled therewith, handles secured to the match-plate, provided with grips adapted to grip the top of the flask, whereby the match-plate and the flask may be turned over together until the flask rests inverted on the flask-supports, and the match-plate lifted therefrom to draw the patterns from their molds in the sand, substantially as and for the purpose described.

3. In a molding-machine, a casing, having projecting supports for a flask, a match-plate hinged to the top of the casing and normally supported thereon, adapted to open toward the supports, duplicate patterns formed on the upper face of the match-plate, orifices cut through the match-plate, draw-plates having pattern portions adapted to be projected through the orifices in the match-plate and form inclined projections of the patterns, and having body portions within the casing provided with supports and movable in inclined ways in their supports, orifices in the body portions of the draw-plates, a draw-bar having its ends in engagement with the draw-plates through the orifices in their body portions, a lever secured to the draw-bar between the draw-plates, having one end pivotally secured within the casing and the other end free and extended through the casing, adapted, as depressed, to move the draw-bar and thereby withdraw the projecting pattern portions of the draw-plates within the casing, and, as raised to a horizontal position, to move the draw-bar to project them through the match-plate and complete the patterns, a handle for the lever provided with a spring-latch, adapted to engage a ledge on the casing and lock the lever in a horizontal position, a spring-latch pivotally secured to the top of the casing, adapted to normally lock the match-plate to the casing, provided with a lever to open the latch, having means connecting it with the draw-bar lever, whereby, when the draw-bar lever is depressed, the lever is simultaneously moved to open the latch, a mold-flask section adapted to be seated on the match-plate around the patterns and to be secured against movement thereon, provided with a top-plate adapted to close the flask and compress the sand when filled therewith, handles secured to the match-plate, provided with grips adapted to grip the top of the flask, whereby the match-plate and the flask may be turned over together until the flask rests inverted on the flask-supports, and the match-plate lifted therefrom to draw the patterns from their molds in the sand, substantially as and for the purpose described.

656,363. MOWING-MACHINE KNIFE. ALEXANDER C. MCCOY, Service, Pa. Filed Mar. 23, 1900. Serial No. 9,887. (No model.)



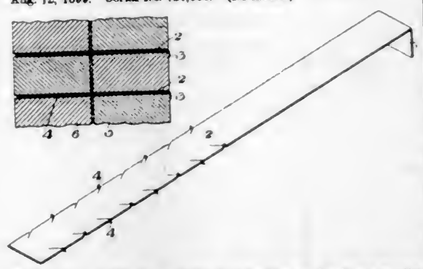
Claim.—1. A cutter-bar for mowing or reaping machines provided with headed rivets extending above the upper face of the bar, each rivet having an enlarged portion between the face of the bar and the rivet-head, of such length as to hold the knives firmly against the bar, in combination with a set of knives each of which has keyhole-slots for engagement with the projecting ends of corresponding rivets and means for locking the knives in operative position, substantially as set forth.

2. A cutter-bar for mowing or reaping machines provided with headed rivets extending above the upper face of the bar, each rivet having an enlarged portion between the face of the bar and the rivet-head, of such length as to hold the knives firmly against the bar, in combination with a set of knives provided with keyhole-slots for engagement with the projecting ends of corresponding rivets, a stationary guard-plate, and a laterally-sliding wedge-plate between said guard-plate and the end knife for locking the knives in operative position, substantially as set forth.

3. A cutter-bar for mowing or reaping machines provided with headed rivets extending above the upper face of the bar, in combination with a set of knives provided with keyhole-slots for engagement with the projecting ends of corresponding rivets, a stationary guard-plate, a longitudinally-sliding locking-plate, and a wedge-plate for moving said locking-plate longitudinally to clamp the knives in position.

4. A cutter-bar for mowing or reaping machines provided with headed rivets extending above the upper face of the bar, in combination with a set of knives having keyhole-slots for engagement with the projecting ends of corresponding rivets, a stationary guard-plate, a laterally-sliding wedge-plate and a locking-pin for said wedge-plate, said wedge-plate being also provided with an end recess for the insertion of a loosening device.

656,364. WALL-TIE. JOHN G. MCDOWELL, Pittsburg, Pa. Filed Aug. 12, 1899. Serial No. 727,006. (No model.)



Claim.—1. A brick-tie consisting of a metal strip, having upwardly and downwardly projecting teeth, struck from the same portion thereof and provided at one end with a securing-lug; substantially as described.

2. A brick-tie having at one end a securing-lug or similar device, and provided with upwardly and downwardly projecting teeth which are inclined toward said end: substantially as described.

3. A brick-tie having a securing-lug or similar device at one end and provided with upwardly and downwardly projecting teeth cut from its edges and inclined toward the said end; substantially as described.

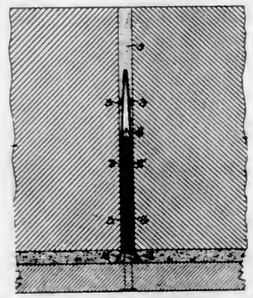
656,365. WALL-PLUG. JOHN G. MCDOWELL, Pittsburg, Pa. Filed Jan. 18, 1900. Serial No. 1,880. (No model.)

Claim.—1. A wall-plug comprising metal plates adapted to be set between adjacent bricks and to afford an intermediate space for a nail said plates having outwardly-bent prongs arranged to engage the bricks; substantially as described.

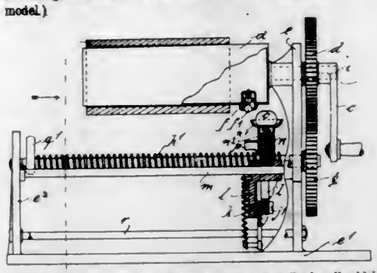
2. A wall-plug comprising metal plates adapted to be set between adjacent bricks and to afford an intermediate space for a nail, said plates being connected at their inner ends and having sharp prongs bent outwardly therefrom; substantially as described.

3. A wall-plug comprising metal plates arranged to be set between adjacent bricks and to afford an intermediate space for a nail, said plates having outwardly-inclined prongs arranged to engage the bricks, and being provided with flanges at their outer ends; substantially as described.

656,365.



656,366. PHONOGRAPH ERASING DEVICE. RUDOLF NELLES, Hamburg, Germany. Filed Jan. 22, 1900. Serial No. 2,347. (No model.)



Claim.—1. In a device of the character described, a liquid-holding cylinder adapted to receive the record, means for permitting the escape of the liquid from said cylinder in small quantities, means for receiving and applying said liquid to the surface of said record, substantially in the manner and for the purpose set forth.

2. In a device of the character described, a rotatably-mounted liquid-holding cylinder having means for permitting the escape of the liquid therefrom and adapted to receive a phonograph-record, in combination with an absorbent pad or the like, adapted to receive the liquid from said cylinder and to apply same to said record, and means for reciprocating said pad, substantially as described.

3. In a device of the character described, a rotatably-mounted liquid-holding cylinder having a valve therein, and adapted to receive a phonograph-record, in combination with a reciprocating absorbent pad adapted to receive the liquid from said cylinder and apply same to the said record, and also adapted to automatically open said valve, and common means for rotating said cylinder and reciprocating said pad, substantially in the manner and for the purpose set forth.

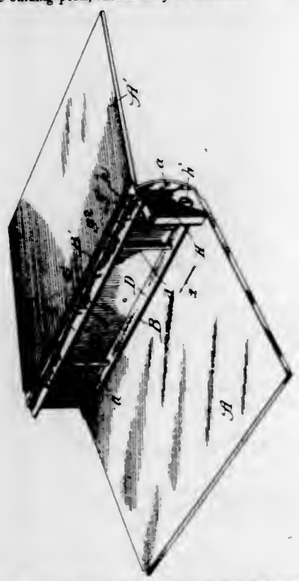
4. In a device of the character described, a rotatably-mounted liquid-holding cylinder having a valve therein and adapted to receive a phonograph-record, a resiliently-mounted pad adapted to receive the liquid from said cylinder and to apply it to said record, means for opening said valve, and means for rotating said cylinder, as set forth.

5. In a device of the character described, a rotatably-mounted liquid-holding cylinder having a valve therein, and adapted to receive a phonograph-record, a resiliently-mounted pad adapted to receive the liquid from said cylinder and apply it to said record and also adapted to automatically open said valve, means for reciprocating said pad in contact with said record.

656,367. TEMPORARY BINDER. WILLIAM P. NORTHCOTT, Chicago, Ill. Filed Jan. 20, 1898. Serial No. 667,969. (No model.)

Claim.—1. In a temporary binder, the combination of a back plate, a continuous binding-strip projecting inwardly from and having a fixed relation to one edge of the back plate, two binding-posts fixed to and extending from the fixed continuous binding-strip adjacent to and by the side of the back plate, each binding-post having its free end projected beyond the free edge of the back plate with an annular groove in the body forming an end head and neck integral with the body, a second continuous binding-strip pivotally attached to the free edge of the back plate and having holes for passing the end heads and necks of the binding-posts when the pivoted continuous binding-strip is swung or turned inwardly parallel with the fixed continuous binding-strip, and a single fastening

means carried by and operative on the pivoted continuous binding-strip and adapted to be engaged with and to be disengaged from the end heads and necks of the binding-posts, substantially as described.



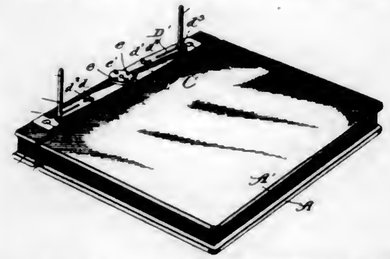
2. In a temporary binder, the combination of a back plate, a continuous binding-strip projecting inwardly from and having a fixed relation to one edge of the back plate, two binding-posts fixed to and extending from the fixed continuous binding-strip adjacent to and by the side of the back plate, each binding-post having its free end projected beyond the free edge of the back plate with an annular groove in the body forming an end head and neck integral with the body, a second continuous strip pivotally attached to the free edge of the back plate and having holes for passing the end heads and necks of the binding-posts when the pivoted continuous binding-strip is swung or turned inwardly parallel with the fixed continuous binding-strip, and a securing-strip carried by and sliding on the pivoted binding-strip and adapted to be engaged with and to be disengaged from the end heads and necks of both binding-strips by its endwise movements, substantially as described.

3. In a temporary binder, the combination of a rigid back, a rigid metallic back plate, a continuous binding-strip projecting inwardly from and having a fixed relation to one edge of the rigid metallic back plate, two binding-posts fixed to and extending from the fixed continuous binding-strip adjacent to and by the side of the back plate, each binding-post having its free end projected beyond the free edge of the back plate with an annular groove in the body forming an end head and neck integral with the body, a second continuous binding-strip pivotally attached to the free edge of the rigid metallic back plate and having holes for passing the end heads and necks of the binding-posts when the pivoted continuous binding-strip is swung or turned inwardly parallel with the fixed continuous binding-strip, and securing means carried by and operative on the pivoted binding-strip for interlocking such binding-strip to the binding-post by engagement of the securing means with the heads and necks of the binding-posts, substantially as described.

4. In a temporary binder, the combination of a metallic back plate, a continuous binding-strip formed with or affixed to one edge of the back plate, at least two binding-posts secured to such affixed binding-strip and having the projected free ends of the posts extend beyond the opposite edge of the back plate and notched at or near such ends, a second continuous binding-strip pivotally secured to the back plate and provided with perforations adapted to engage with the ends of the binding-posts when the parts are in position, a securing-strip carried by and sliding on the pivoted binding-strip and provided with slots adapted to engage with the notched ends of the binding-posts and fasten such posts and pivoted strip together, and a lock having a bolt engaging with the securing-strip when interlocked with the binding-posts and retaining the securing-strip against withdrawal, substantially as described.

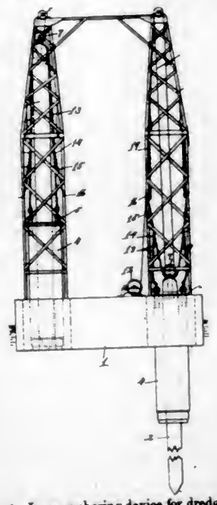
5. In a temporary binder, the combination of a rigid back, a metallic back plate, a continuous binding-strip formed with or secured to one edge of the back plate to have a fixed relation, two binding-posts extending from the fixed continuous binding-strip adjacent to and by the side of the rigid metallic back plate, each binding-post having its free end projected beyond the free edge of the back plate with an annular groove in the body forming an end head and neck integral with the body, a second continuous metal binding-strip pivotally attached to the free edge of the rigid metallic back plate and having holes for passing the end heads and necks of the binding-posts when the pivoted continuous binding-strip is swung or turned inwardly parallel with the fixed continuous binding-strip, a metal strip provided with slots and slidably mounted on the pivoted binding-strip for its movements to cause the slots to be engaged with and to be disengaged from the heads and necks of the binding-posts, metallic wing portions pivotally secured to the rigid metallic back and cover portions secured to the wing portions, substantially as described.

656,368. **TEMPORARY BINDER.** WILLIAM P. NORTHCOTT, Chicago, Ill. Filed Feb. 1, 1898. Serial No. 668,706. (No model.)



Claim.—In a temporary binder, the combination of a back or cover portion provided with at least two binding-posts, a second cover portion provided with a metallic base-plate or strip having perforations adapted to engage with the binding-posts, two locking-strips slidingly mounted on the base-plate and provided with slotted ends adapted to engage with or be disengaged from the posts and slot-and-pin mechanism to hold them in engagement with the base-plate, and a vibrating disk pivotally secured to the locking-strips and adapted to operate the same, substantially as described.

656,369. **ANCHORING DEVICE FOR DREDGES.** RALPH R. OSGOOD, Lansingburg, N. Y. Filed May 31, 1900. Serial No. 17,334. (No model.)



Claim.—1. In an anchoring device for dredges and the like, the combination with a reciprocatory spud; of a reciprocatory-spud-reinforcing sleeve mounted upon the body of the dredge.

2. In an anchoring device for dredges and the like, the combination with a reciprocatory spud; of a reciprocatory-spud-reinforcing sleeve, mounted upon the body of the dredge and means for raising and supporting said sleeve and spud respectively.

3. In an anchoring device for dredges and the like, the combination with a spud-well; and a framework erected above said well; of a spud-supporting sleeve reciprocatory in said well; a spud reciprocatory in said sleeve and well; and spud raising and supporting mechanism mounted upon said framework, substantially as described.

4. In an anchoring device for dredges and the like, the combination with a reciprocatory spud; of a reciprocatory-spud-supporting sleeve; means for raising and supporting said spud; and mechanism connected with said spud for raising and supporting said sleeve during the latter part of the rising movement of the spud.

5. In an anchoring device for dredges and the like, the combination with a reciprocatory spud; of a reciprocatory-spud-inclosing sleeve shorter than said spud; means for raising and supporting said spud; and a chain or cable connecting the upper ends of the spud and sleeve respectively and approximately equal to the difference in length of said spud and sleeve, substantially as described.

6. In an anchoring device for dredges and the like, the combination with a spud-well; of a spud-sleeve reciprocatory in said well; a spud reciprocatory in said sleeve and well and of greater length than said sleeve; a framework erected above said well; means for raising and supporting said spud; a chain or cable connecting the upper ends of the spud and sleeve respectively and of a length approximately equal to the difference in length of said spud and sleeve; and a flexible connection between said framework and an intermediate portion of said chain or cable adapted to support the slack of the latter when the spud is lowered into the sleeve, substantially as described.

7. In an anchoring device for dredges and the like, and in combination, a spud and a plurality of spud-inclosing sleeves arranged to telescope one within another; means for raising said spud; and connecting mechanism whereby said spud and sleeves are successively raised, substantially as described.

656,370. **WORK-CLAMP FOR BUTTONHOLE-SEWING MACHINES.** WILLIAM N. PARKER, New York, N. Y. Original application filed Sept. 12, 1898, Serial No. 690,777. Divided and this application filed Oct. 10, 1899. Serial No. 733,227. (No model.)



Claim.—1. A work-carrier comprising two extending ends of a flat spring, two shoes, connections between said shoes and said extending ends, two transverse shoes, and means supported by the aforesaid flat spring for yieldingly holding the said transverse shoes in position.

2. A work-carrier comprising a yielding device for holding the work longitudinal of the buttonhole, a second device for holding the work transverse of the buttonhole, said first and second devices being constructed and adapted to form a longitudinal opening for the stitching mechanism to operate through in stitching buttonholes, and yielding means supported by the first device adapted to carry the said second device and yieldingly press the same into engagement with the work.

3. A work-carrier comprising a yielding device for holding the work longitudinal of the buttonhole, a second yielding device carried by the first device for holding the work transverse of the buttonhole, and means for separately adjusting each of the said devices.

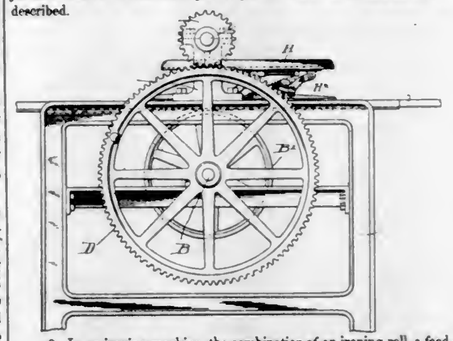
4. In a work-carrier having an upper member, two separate shoes adapted to engage the work one on each side of the buttonhole, said shoes carried by the upper member of the work-carrier, two flat springs and means for supporting the same, two separate shoes adapted to engage the work at each end of the buttonhole carried by the said flat springs, and means adapting the aforesaid upper member of the work-carrier to yieldingly bring all of the said shoes into engagement with the work.

5. A work-clamp comprising two separate shoes adapted to engage the work, one on each side of the buttonhole, two separate studs, one centrally located in the back of each of the said shoes, a separate spring mounted on each of the said studs, two shoes adapted to engage the work at the ends of the buttonholes, a connection between each of the ends of the said springs and the said shoes at the ends of the buttonholes.

6. A work-clamp comprising four separate shoes adapted to engage the work, one at each side and one at each end of the buttonhole, a device adapted to carry and press the said shoes into engagement with the work, a plurality of springs adapted to connect and separately depress the shoes at the ends of the buttonholes, means for carrying the said springs, and means in connection with the aforesaid device adapted to regulate the pressure of the said springs.

656,371. **IRONING-MACHINE.** GEORGE G. PLACE, Chicago, Ill. Filed May 9, 1898. Serial No. 680,123. (No model.)

Claim.—1. In an ironing-machine, the combination of an ironing-roll having a fixed relation, a plate or bed having a straight-line reciprocation in a fixed horizontal plane beneath the ironing-roll, and a spring-controlled ironing-board mounted on the plate or bed and vertically adjustable thereon in horizontal planes parallel therewith, substantially as described.



2. In an ironing-machine, the combination of an ironing-roll, a feed-roll, a plate or base having a straight-line reciprocation in a fixed horizontal plane, and an ironing-board mounted on the plate or base and vertically adjustable thereon in horizontal planes parallel therewith, substantially as described.

3. In an ironing-machine, the combination of an ironing-roll having a fixed relation, a plate or base having a straight-line reciprocation in a fixed horizontal plane beneath the ironing-roll, an ironing-board, and a spring-controlled support mounted on the plate or base and carrying the ironing-board for vertically adjusting the board in a horizontal plane parallel with the base and maintaining the ironing-board at its outer limit of movement and under tension, substantially as described.

4. In an ironing-machine, the combination of an ironing-roll, a feed-roll, a plate or base, and an ironing-board vertically adjustable in horizontal planes parallel with the plane of the plate or base and removably mounted on the plate or base, substantially as described.

5. In an ironing-machine, the combination of a reciprocating plate or base, an ironing-board, swinging bars pivotally secured to the plate or base and the ironing-board for raising and lowering the board in planes parallel with the plane of the plate or base, and means for maintaining the ironing-board at its outer limit of motion and under tension, substantially as described.

6. In an ironing-machine, the combination of a reciprocating plate or base, an ironing-board, swinging bars pivotally secured to the plate or base and ironing-board for raising and lowering the board in planes parallel with the plane of the plate or base, and a helical coiled spring connected to one of the swinging bars and to the plate or base for maintaining the ironing-board at its outer limit of motion and under tension, substantially as described.

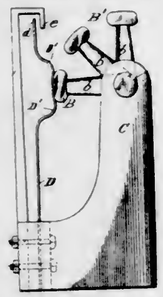
7. In an ironing-machine, the combination of a supporting-plate or base-board, an ironing-board, swinging bars pivotally secured to the upper side of the base-board and to the under side of the ironing-board, and a resistance-spring secured at one end to one of the swinging bars and adjustably secured at the other end to the base-board for the spring to operate and hold the ironing-board at its outer limit of motion and under tension, substantially as described.

8. In an ironing-machine, a shirt-holder composed of a base-board, a supporting-plate, swinging bars pivotally connected to the supporting-plate and the base-board, an ironing-board removably mounted on the supporting-plate and spring mechanism secured to one of the swinging bars and the base-board for keeping the ironing-board at its outer limit of motion and under tension, substantially as described.

9. In an ironing-machine, a shirt-holder composed of a base-board, an ironing-board, swinging bars pivotally connecting the ironing and base boards together, stop mechanism for limiting the movement of the ironing-board, and a helical coiled spring connected to one of the swinging bars and adjustably connected to the base-board for holding the ironing-board at one limit of motion and under tension, substantially as described.

10. In an ironing-machine, the combination of a frame, a feed-roll and an ironing-roll, both rotatably mounted in fixed bearings on the frame, driving-gear transmitting power and motion from one roll to the other, a plate or base having a straight line of reciprocation in a fixed horizontal plane from the feed-roll, and an ironing-board mounted on the plate or base and vertically adjustable thereon in planes parallel therewith and maintained above the base under tension for the plate or base and the ironing-board to reciprocate as one between the feed and the ironing rolls, substantially as described.

656,372. GUARD FOR CONTROLLER-BRUSHES. ANDREW L. RIKER, New York, N. Y. Filed Jan. 8, 1900. Serial No. 760. (No model.)

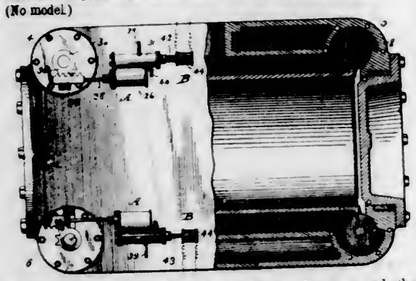


Claim.—1. The combination with a controller-brush and its controller-segment, of a guard for the former that keeps it from interfering with the latter, substantially as described.

2. The combination with a controller-brush and a controller-segment, of a guard suitably held in front of the upper portion of the former to prevent it from flying into the path of the latter, substantially as described.

3. The combination with a controller-brush and a controller-segment, of a guard for the former consisting of a plate extending behind said brush and presenting a depending lip in front of the upper portion thereof, whereby said brush is kept from interfering with said segment, substantially as described.

656,373. MEANS FOR OPERATING AND GOVERNING ENGINES. CYRUS ROBINSON, Pittsburg, Pa., assignor to the Westinghouse Machine Company, same place. Filed Nov. 28, 1899. Serial No. 738,572. (No model.)



Claim.—1. In a means for operating and governing steam and other engines, the combination, with an admission-valve of said engine, of a rotary part such as a drum or wheel, having an electric conducting-surface, a brush for contacting with the latter, a governing or controlling device on the same axis as said drum for varying the operative or effective length of said surface, suitable circuit connections including said brush and surface when they are in contact, an electromagnetic device in the circuit, and means for causing the operation of said valve from said electromagnetic device, substantially as set forth.

2. In a means for operating and governing steam and other engines, the combination, with a valve of said engine, of a rotary part such as a drum or wheel, having an electric conducting-surface, a brush for contacting with the latter, a centrifugal governing device on the same axis as said drum for varying the operative or effective length of such surface, suitable circuit connections including said brush and surface when they are in contact, an electromagnetic device in the circuit, and means for causing the operation of the valve from said electromagnetic device, substantially as set forth.

3. In a means for operating and governing steam and other engines, the combination, with a valve of such engine, of a rotary part such as a drum or wheel having an electric conducting-surface consisting of a series of individually-insulated conducting blocks or pieces said series extending in directions transverse to the axis of said drum, a brush for contacting with the latter, a governing device adapted to effect the electrical connection of more or less of said pieces according to the speed of the engine, suitable circuit connections adapted to include said brush and the pieces so connected by the governing device, an electromagnetic device in the circuit, and means for causing the operation of the valve from said electromagnetic device, substantially as described.

4. In a means for operating and governing steam and other engines, the combination, with a valve of said engine, of a rotary part such as a drum or wheel having a surface consisting of a series of individually-insulated conducting pieces or segments, a brush for contacting with the latter, a second series of individually-insulated conducting pieces or segments, each connected electrically with one of the segments of the first series, a governing device adapted to effect the electrical connection of more or less of said segments composing the second series, according to the speed of the engine, suitable circuit connections adapted to include said brush and segments, an electromagnetic device in the circuit, and means for causing the operation of the valve from said electromagnetic device, substantially as described.

5. In an engine, the combination with the several steam and exhaust valves and means for actuating the same, of electromagnetic devices for causing the operation of said actuating means, an electric circuit and a single electrical generator in said circuit for energizing said devices, electrical contacts in said circuit, one or more of which is actuated by the engine, and a governing means operated by the engine for determining and varying the duration of electrical contact, substantially as set forth.

6. In an engine, the combination, with the rotary valve or valves, of fluid-pressure-operating devices, mechanism whereby said devices are connected with the valves, electromagnetic devices for causing the operation of said fluid-pressure devices, an electric circuit and source of electrical force for energizing said electromagnetic devices, electrical contacts in said circuit, and a governing means operated by the engine for determining and varying the duration of electrical contact, substantially as set forth.

7. In a means for operating steam and other engines, the combination, with a valve, or valves of said engine, of fluid-pressure-operating devices connected with the same, a rotary part such as a drum or wheel having an electric conducting-surface, a brush for contacting with the latter, means for varying the operative or effective length of said surface, comprising an electric contact movable in directions transverse to the axis of the drum, suitable circuit connections adapted to include said brush and surface, and electromagnetic devices in the circuit adapted to cause the operation of said fluid-pressure-operating devices, substantially as set forth.

8. In a means for operating and governing steam and other engines, the combination, with a valve or valves of said engine, of a fluid-pressure-operating device connected with the valve eccentrically to rotate the same, and having a controlling-valve, an electromagnetic actuating device controlling the latter valve, an electric circuit including said electromagnetic device, and means for opening and closing said circuit, substantially as set forth.

9. In a valve operating or controlling mechanism, the combination, with a valve, of a fluid-pressure-operating device connected with the valve eccentrically to rotate the same, and having a controlling-valve, an electromagnetic actuating device controlling the latter valve, an electric circuit including said electromagnetic device, means for opening and closing said circuit, and a centrifugal governing device for determining the duration of the closing of said circuit, substantially as set forth.

10. In a means for operating and governing steam and other engines, the combination, with a valve or valves of said engine, of a fluid-pressure-operating device connected with the valve eccentrically to rotate the same and having a controlling-valve, an electromagnetic actuating device controlling the latter valve, an electric circuit including said electromagnetic device, a rotary part such as a wheel or drum actuated by the engine, and having an electric conducting-surface, a brush for contacting with the latter, and a centrifugal governing device for determining the operative or effective length of said surface, substantially as set forth.

11. In a valve-operating mechanism for steam-engines and other purposes, the combination of a main valve, a cylinder having a piston connected with said valve, an unbalanced controlling-valve governing the admission to and exhaust from said cylinder, and held normally by the actuating fluid-pressure to cut off the admission to said cylinder and open the latter to the exhaust, means for returning said piston when the controlling-valve is in the latter position, and means for actuating the controlling-valve to cut off the exhaust and admit fluid-pressure to the cylinder, substantially as set forth.

12. In a valve-operating mechanism for steam-engines and other purposes, the combination of a main valve, a cylinder having an unbalanced piston connected with said valve, an unbalanced controlling-valve governing the admission to and exhaust from said cylinder, and held normally by the actuating fluid-pressure to cut off the admission to said cylinder and open the latter to the exhaust, means for causing the actuating fluid-pressure to act on the side of less area of said piston, and means for actuating the controlling-valve to cut off the exhaust and admit fluid-pressure to the cylinder, substantially as set forth.

13. In a means for operating and governing steam and other engines and devices, the combination, with a valve or valves of said engine, of a rotary part such as a drum or wheel having an electric conducting-surface, a brush for contacting with the latter, suitable circuit connections including said brush and surface when they are in contact, an electromagnetic device in the circuit, and means connected eccentrically with the valves for causing the rotation of the same from said electromagnetic device, substantially as set forth.

14. In a valve-controlling mechanism, the combination with an engine and its valve, of an electric circuit, an electromagnetic valve-operating device in said circuit and connected with the valve, eccentrically to rotate the same and means for making and breaking said circuit operated by said engine.

15. The combination of a steam-engine having a steam-controlling valve, an electromagnetic device controlling said valve, an electric circuit including said electromagnetic device, and a current-controller for said circuit actuated by said engine.

16. In an engine, the combination with a cylinder, and valve for the same, of a fluid-pressure-valve-operating device connected with the valve eccentrically to rotate the same, and means for causing the operation of said fluid-pressure device.

17. In a valve-controlling mechanism, the combination, with an engine and its valve, of an electric circuit, an electromagnetic valve-operating device in said circuit and connected with the valve, means operated by the said engine for making and breaking said circuit, and an adjusting means for determining the time of making said circuit comprising a rotary contact-drum, a governor rotary in planes transverse to the axis of said drum, and an electric contact moved relative to the drum by said governor.

18. In a valve-controlling mechanism, the combination, with an engine and its valve, of an electric circuit, an electromagnetic valve-operating device in said circuit and connected with the valve, and means for making and breaking said circuit comprising a rotary or other movable part in said circuit operated in proper time with the engine and a brush or contact adjustable parallel with the movement of said movable part.

19. In a valve-actuating mechanism the combination with a valve, of a fluid-pressure-operating device connected with the valve, and having a cylinder, one end of which is normally open to the exhaust to effect the closure of said valve, means for admitting fluid-pressure to the same end of said cylinder to open the valve, and an electromagnetic device controlled by the engine and controlling said admitting means.

20. In a valve-actuating mechanism the combination with a valve, of a fluid-pressure-operating device connected with the valve, a controlling-valve for said fluid-pressure device, an electromagnetic device for moving said controlling-valve in one direction and means for causing a fractional part of the normal live-steam pressure to move said valve in the other direction.

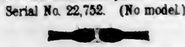
21. In a valve-actuating mechanism the combination with a valve, of a fluid-pressure-operating device connected with the valve, a controlling-valve 32 for said fluid-pressure device having the parts 34, 37 of different area, a corresponding valve-casing, and an electromagnetic device connected with the controlling-valve and controlled by the engine.

22. In a valve-governing mechanism for engines the combination with a valve, of an electromagnetic device for operating the same, an electric circuit including said electromagnetic device, and a governor having electric contacts rotating therewith, one of which is movable relative to the governor-shaft according to the speed of rotation, said rotary contacts being included in said circuit.

23. The combination with a drum or disk having an electric contact, of a centrifugal governing device on said disk, and an electric contact carried with said disk and movable relative to the first-mentioned contact, and actuated by said governing device according to the speed of revolution of the disk.

24. The combination with the engine, and a valve thereof, of a centrifugal governor, a movable electric contact thereon connected with the centrifugal weight of the governor and shifted thereby, an electric circuit including suitable contacts and including said movable contact on the governor, and an electromagnetic device in said circuit and controlling said engine-valve.

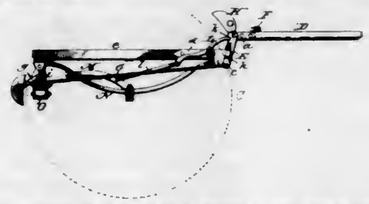
656,374. ROTARY BRUSH. WILLIAM H. ROBINSON, Alameda, Cal., assignor to S. M. Robinson, same place. Filed May 9, 1899. Renewed July 6, 1900. Serial No. 22,752. (No model.)



Claim.—In the manufacture of circular brushes, a central tube; a flange or disk on one end of the tube; a layer of fibers arranged lengthwise around said tube and bound around their middles to said tube; a centrally-perforated disk adapted to slide on the opposite end of said tube and force the ends of the fibers outward radially between said disks, the end of the tube being clenched for securing the disks together after the fibers are doubled and clamped between them, substantially as described.

656,375. VEHICLE-BRAKE. JOSEPH W. ROGERS, Collomsville, Pa. Filed May 9, 1900. Serial No. 16,019. (No model.)

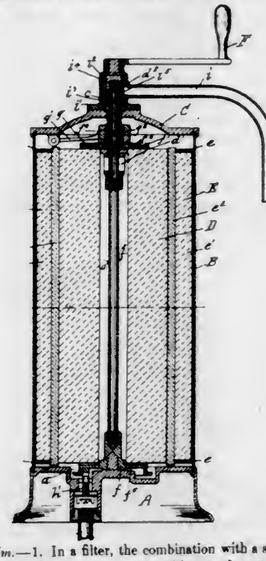
Claim.—1. In a vehicle-brake, brackets pivotally connecting the shafts with the frame of the running-gear of the vehicle, curved arms connected to the brackets, and brake-shoes connected to the arms, said arms projecting from the sides of the pivoted brackets, substantially as and for the purpose set forth.



2. A vehicle-brake, consisting of suitable pivoted brackets connecting the shafts with the frame or running-gear of the vehicle and formed with notches, curved arms with cranks and brake-shoes on the ends of the arms, and a transverse rod having push-arm to engage the notches in the pivoted brackets, and means for operating the rod, substantially as and for the purpose described.

3. A vehicle-brake, consisting of suitable brake-shoes, curved arms provided with cranks connecting with the shoes, lever-rods connecting the cranks with each other, pivoted brackets connecting the shafts with the frame or platform-gear of the vehicle and also connecting with the curved arms at the front thereof, said brackets having notches, and a transverse pivoted rod with push-arms connected thereto and having cranks at its ends, a suitable foot or other lever and a link connection between the lever and cranks, substantially as and for the purpose specified.

656,376. FILTER. JACOB SCHINNELLER, Pittsburg, Pa. Filed July 24, 1899. Serial No. 724,940. (No model.)



Claim.—1. In a filter, the combination with a stationary casing, of a tubular filtering-body, a scraper working on the outer face of the filtering-body, the scraper or filtering-body being revoluble the one with relation to the other, an outwardly-opening inlet-valve and means carried by the revoluble member for opening said valve.

2. In a filter, the combination with a stationary casing, of a tubula filtering-body, a scraper working on the outer face of the filtering-body the scraper or filtering-body being revoluble one with relation to the other, an outwardly-opening inlet-valve and a cam-face carried by the revoluble member for opening said valve.

3. In a filter, the combination with a stationary casing, of a tubular filtering-body, a scraper working on the outer face of the filtering-body, the scraper or filtering-body being revoluble one with relation to the other, a downwardly-opening inlet-valve in the base of the casing and a cam-face carried by the revoluble member for operating said valve.

4. In a filter, the combination with a stationary casing, of an out-

wardly-opening inlet-valve and a rotating member within the casing having a cam-face adapted to push upon and open said valve.

5. In a filter, the combination with a stationary casing, having an inwardly-opening waste-valve having a laterally-projecting lip, of a rotating member within the casing carrying a flange or apron adapted to engage said lip and withdraw the valve from its seat.

6. In a filter, the combination with a stationary casing having an inwardly-opening waste-valve provided with an inclined laterally-projecting lip and a rotating member within the casing having a flange extending part way only around same and adapted to engage the lip and withdraw the valve.

7. In a filter, the combination with a stationary casing having a base provided with an annular central recess, of a waste-valve in said base having its valve-chamber extending partly beyond said recess, a valve in said valve-chamber having flanges bearing upon the outer wall of said recess, and a rotating member within the casing adapted to engage with and open the valve.

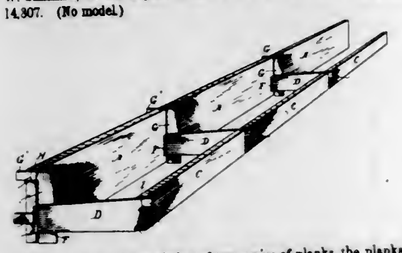
8. In a filter, the combination with a stationary casing having a cover and a base and bolts connecting the same, a revoluble tubular filtering-body and a scraper mounted upon one of said bolts and bearing upon the filtering-body.

9. In a filter, the combination with a stationary casing having a cover and a base and bolts connecting the same, a revoluble filtering-body and a scraper mounted upon one of said bolts and bearing upon the filtering-body, said scraper having a frame carrying a scraping-face and a spring engaging with the frame and the outer shell of the stationary case, substantially as set forth.

10. In a filter, the combination with a stationary casing, of a revoluble tubular filtering-body clamped between disks mounted within the casing and having a hollow tubular extension passing through the top thereof, a stuffing-box fitting around said tubular extension and having a discharge-pipe leading from the side thereof and openings in the tubular extension communicating with the interior of the filtering-body and with said discharge-pipe and means for turning the tubular extension.

11. In a filter, the combination with a stationary casing, of a revoluble tubular filtering-body clamped between disks mounted within the casing and having a hollow tubular extension passing through the top thereof, a stuffing-box fitting around said tubular extension and having a discharge-pipe leading from the side thereof and openings in the tubular extension communicating with the interior of the filtering-body and with said discharge-pipe and means for turning the tubular extension, said stuffing-box having packing-rings above and below the outlet and the discharge-pipe and a spring between said packing-rings.

656,377. MOLD FOR CEMENT CURBS AND GUTTERS. EDWARD W. SEAMANS, Grand Rapids, Mich. Filed Apr. 30, 1900. Serial No. 14,307. (No model.)



Claim.—1. A mold consisting of two series of planks, the planks of each series being arranged end to end, dowel-pins connecting the ends of the planks, and a series of thin plates extending between the ends of the planks and having downwardly-open recesses engaging the dowel-pins, substantially as described.

2. A mold consisting of two series of planks of different widths, a series of curb-plates detachably secured to the wider planks, and a series of gutter-plates connecting the respective series of planks, and vertically adjustable relative to the wider planks, substantially as described.

3. A mold consisting of two series of planks arranged end to end, and a series of plates extending between the abutting ends of the planks, and detachably secured thereto and having an outline corresponding to the cross-section of a curb and gutter, substantially as described.

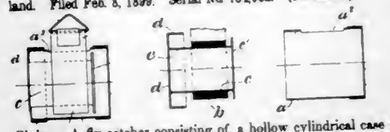
4. A mold consisting of two series of planks arranged parallel and connected with dowel-pins, plates having recesses to engage the upper dowel-pins and extending between the adjacent ends of the planks, and vertically removable from between the same, substantially as described.

5. The combination of a series of planks connected by dowel-pins at their adjacent ends, a series of thin metallic plates arranged at right angles thereto, and having extensions at their upper ends adapted to pass between the adjacent ends of the planks, and provided with recesses to engage the upper dowel-pins, substantially as described.

6. The combination of two series of planks of different widths connected at their adjacent ends by dowel-pins, curb-plates having lateral extensions at their upper ends to pass between the adjacent ends of the wider planks and having recesses to engage the dowel-pins, gutter-plates vertically adjustable and provided with means for clamping the same to the wider planks and having extensions to pass between the narrower planks, and provided with recesses to engage the dowel-pins connecting the planks, substantially as described.

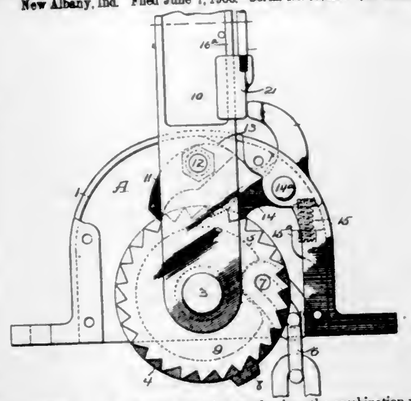
7. The combination of a series of wide planks connected at their adjacent ends by dowel-pins, a series of curb-plates having rear extensions at their upper ends to pass between the planks, and provided with recesses at their under side to engage the pins, clamping-plates engaging the inner surfaces of the planks and having openings and supporting the curb-plates, gutter-plates having tenons passing through the clamping-plates, wedges passing through the tenons, a series of narrow planks connected by dowel-pins, and extensions on the gutter-plates passing between the said planks and having recesses to engage the dowel-pins, substantially as described.

656,378. FLY-CATCHER. GEORGE SENIOR, Manchester, England. Filed Feb. 8, 1899. Serial No. 704,962. (No model.)



Claim.—A fly-catcher consisting of a hollow cylindrical case *a*; a lid *d* fitting over one end of said case, and having upon it a barrel c projecting into the interior of the case; a thin and relatively-broad tape *b*, for catching the flies, fixed to and adapted to wind on and off said barrel; and an opening or slot a^2 in the case, through which the fly-catching tape passes, and the material of the case about which is adapted to act as a scraper for removing the flies, when the barrel c is wound up; substantially as set forth.

656,379. BRAKE. GEORGE E. SEYMOUR and FERDINAND KAHLER, New Albany, Ind. Filed June 7, 1900. Serial No. 19,459. (No model.)

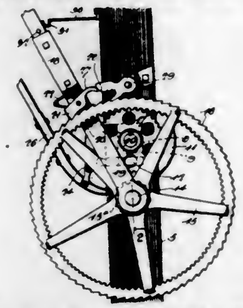


Claim.—1. In a brake-operating mechanism, the combination with a drum and a ratchet-wheel adapted to revolve with the same, of a lever, a pawl on said lever adapted to engage the ratchet-wheel, a pawl independent of the lever and adapted to engage the ratchet-wheel and means carried by the lever for releasing said last-mentioned pawl from the ratchet-wheel.

2. In a brake-operating mechanism, the combination with a housing, of a drum in said housing, a brake-operating chain or cable secured to said drum, a ratchet-wheel adapted to move with the drum, a lever fulcrumed at its end on the drum-support, a pawl on the lever to engage the ratchet-wheel, an enlargement in the housing adapted to release said pawl from the ratchet-wheel when the lever is moved to its normal position, a spring-pressed pawl in said housing in engagement with said ratchet-wheel, a sliding block on said lever normally out of the path of said last-mentioned pawl and adapted when depressed to release the last-mentioned pawl from the ratchet-wheel simultaneously with the release of the first-mentioned pawl.

3. In a brake-operating mechanism, the combination with a housing, a drum mounted therein, a chain or cable attached to the drum and a ratchet-wheel movable with the drum, of a lever, a pawl carried by the lever to engage the ratchet-wheel, means on the housing for moving said pawl out of engagement with the ratchet-wheel, a spring-pressed pawl pivoted to the housing and adapted to engage the ratchet-wheel and means carried by the lever for moving the last-mentioned pawl out of engagement with the ratchet-wheel.

656,380. POWER-TRANSMITTER. GEORGE P. SMITH, Jerseyville, Ill. Filed Feb. 8, 1900. Serial No. 4,536. (No model.)



Claim.—1. The combination with a ratchet, of a bodily-movable pawl for engagement with the ratchet to operate it, said pawl having an engaging portion, and a second pawl disposed for engagement with the ratchet to hold it from return movement, the second pawl having an engaging portion for engagement by the engaging portion of the first pawl to move both pawls from the ratchet.

2. The combination with a ratchet, of a pawl-carrying device, a pawl upon the carrying device and adapted to engage the ratchet, a cam in the path of movement of the pawl in one direction for engagement thereby to move the pawl from engagement with the ratchet, and a latch for engagement by the pawl-carrier to hold the carrier with the pawl in engagement with the cam.

3. The combination with a drum-shaft, of a winding-drum mounted thereon and provided with a brake-drum, a pinion upon the drum-shaft, an internal gear engaged with the pinion and having a ratchet, a pivoted lever having a pawl for engagement with the ratchet, said pawl having an extension, and a cam adapted for engagement by the extension of the pawl to raise the pawl and hold it from engagement with the ratchet, and a brake-band operatively connected with the brake-drum.

4. The combination with a drum-shaft, of a winding-drum mounted thereon and provided with a brake-drum, a pinion upon the drum-shaft, an internal gear engaged with the pinion and provided with a ratchet, a pivoted lever having a pawl for coöperation with the ratchet, said pawl having an extension, a cam adapted for engagement by the extension of the pawl to move the pawl from engagement with the ratchet, a latch for engagement by the lever to hold it with the pawl in engagement with the cam, and a brake engaged with the brake-drum.

5. The combination with uprights having slots, of bearing-blocks within the slots and adapted for adjustment, wedges for holding the blocks at different points of their adjustment, a drum-shaft mounted in the blocks and provided with a pinion, a stub-shaft mounted adjacent the first-named shaft, an internal gear-wheel mounted upon the stub-shaft, a gear upon the hub of the internal gear and adapted to receive the pinion of the drum-shaft interchangeably with the internal gear, a ratchet carried by the internal gear, and a pivoted lever provided with a pawl for engagement with the ratchet to rotate the internal gear.

6. The combination with a ratchet-wheel, of a lever, a pawl carried by the lever for engagement with the ratchet, said pawl having an extension, and a second pawl disposed for engagement with the ratchet, said second pawl having a portion disposed for engagement by the extension of the first pawl to disengage both pawls from the ratchet when the lever is moved to the limit of its motion in one direction.

7. The combination with a ratchet-wheel of a pivoted lever, a spring-pressed pawl pivoted to the lever for engagement with the ratchet said pawl having an extension, a second pawl pivoted for engagement with the ratchet and lying in the path of movement of the extension of the first pawl when the lever is moved in one direction to disengage both pawls from the ratchet, and a brake mechanism operatively connected with the ratchet.

656,381. ANTIVIBRATING CAR-TRUCK. LUTHER C. THOMPSON, Cuyahoga Falls, and FRANK KIRK, Akron, Ohio. Filed Oct. 19, 1899. Serial No. 734,133. (No model.)

Claim.—1. In a car running-gear, a pair of four-wheel trucks pivoted to the car supporting the car on rollers that interpose between the truck-frame and the car, having duplex reaches that support the frame and rollers in position, as shown and described.



2. In a car running-gear, a pair of four-wheel trucks, connected by a pair of reaches to receive the vibratory shock of the motors and wheels, as shown and described.

3. In a car running-gear, the combination of a pair of frames with a pair of reaches having depression-springs to receive the vibratory shock of the armatures and car-wheels permitting of an adjustment of the car-truck frame in unison with the curves of the track, as shown and described.

4. In an electric-car running-gear, having a pair of four-wheel trucks united by a pair of reaches that are connected to the transoms of each truck-frame and having a bearing upon the end beams at the rub-irons to receive the vibratory shock of the motors and car-wheels and to prevent a derailment of the guide-wheels, as shown and described.

5. In a car running-gear, the combination of a pair of reaches with a pair of four-wheel car-truck frames having transoms that brace and support a pair of reaches and the antifriction-roller that interpose between the car-truck frames and the car for the purpose of severing the circuit of vibration and preventing the same from entering the car, as shown and described, and for the purpose set forth.

6. In a car running-gear, the combination of the duplex reaches, as constructed and connected with a pair of four-wheel car-truck frames having depression-springs and rub-irons that provide a tension-pressure on the cross-beams to prevent a derailment of the wheels and supporting the antifriction-roller in position under the car, as shown and described.

7. In a car running-gear having frames connected by transoms and end beams rigidly bolted or riveted to the side sections of the frames supporting the weight of the car on the motor drive-wheel, and retaining the guide-wheels upon the track by means of a pair of reaches having depression-springs that receive the motor strain and vibratory shocks resulting from the rapid revolving motion of the armatures and car-wheels as shown and described.

8. In a car running-gear for railroads, the combination of a pair of four-wheel trucks supported by a pair of reaches that receive the vibratory shock from the motors supporting the guide-wheels upon the rails and retaining the antifriction-rollers in position to support the car upon the radial centers, as shown and described.

9. In a car running-gear, the combination of a pair of four-wheel trucks connected by a pair of reaches, having depression-springs that receive the vibratory shock, having said springs retained in position by bolts that pass through said reaches, and connecting the springs in position to afford a depression upon the upper section of the reach, having a slot in the end of the reach-sections to permit of a reciprocating motion at the bolt connections when passing around curves in the track receiving the vibratory shock when starting or reversing the power and preventing the same from entering the car, as shown and described.

10. In a car running-gear for railroads, the combination of a pair of four-wheel trucks supported by a pair of reaches that receive the vibratory shock from the motors supporting the guide-wheels upon the rails and retaining the antifriction-rollers in position to support the car upon the radial centers, as shown and described.

656,382. RAILWAY-BRAKE. HENRY H. WESTINGHOUSE, Pittsburg, Pa. Filed Nov. 1, 1898. Serial No. 695,236. (No model.)

Claim.—1. In a railway-car brake apparatus, the combination with mechanism for applying the brakes and holding the same applied, of means for augmenting the force of the application by the action of inertia and additional means for maintaining the application of the augmenting force.

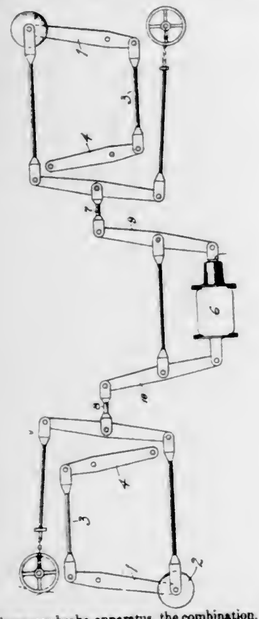
2. In a car-brake apparatus, mechanism for applying the brakes, means for holding the brakes applied, an inertia device operated by the brake-applying mechanism for augmenting the force with which the brake-shoes are applied and additional means for maintaining the continued application of the augmenting force.

3. In a car-brake apparatus, the combination, with mechanism for applying the brakes by the action of fluid-pressure, an inertia device for augmenting the force of the application, means for holding the brakes applied and additional means for maintaining the application of the augmenting force.

4. In a railway-car brake apparatus, the combination, with mechanism for applying the brakes, of means for augmenting the force of the application by the action of inertia and means separate from the brake-applying mechanism for maintaining the application of the additional force.

5. In a railway-car brake mechanism, the combination, with mech-

anism for applying the brakes, of an inertia device, for augmenting the force of the application, and means for locking the inertia device in position.



6. In a railway-car brake apparatus, the combination, with mechanism for applying the brakes, of an inertia device for augmenting the force of the application, and a yielding connection between the inertia device and the mechanism.

7. In a railway-car brake apparatus, the combination with mechanism for applying the brakes, of an inertia device for augmenting the force of the application, a yielding connection between the inertia device and the mechanism, and means for locking the inertia device in position when the brakes are applied.

8. The combination, in a brake mechanism, of a brake-actuating device and a yielding connection between the brake-actuating device and a part of the mechanism which is movable relatively thereto by the action of inertia.

9. The combination, in a brake mechanism, of a brake-actuating device, a yielding connection between the brake-actuating device and a part of the mechanism which is movable relatively thereto by the force of inertia, whereby the yielding connection may be subjected to strain by the force of inertia, and means for continuing the strain.

10. The combination, with a brake mechanism including means for applying the brakes, of an inertia device, a yielding connection between the mechanism and the inertia device, which is subject to strain by the action of inertia, and means for continuing the strain.

11. In a brake mechanism, the combination with a brake-actuating device, of an inertia weight adapted to be moved thereby, a spring connection between the inertia weight and a part of the brake-actuating device whereby the spring may be subjected to strain by the force of inertia and means for continuing the strain.

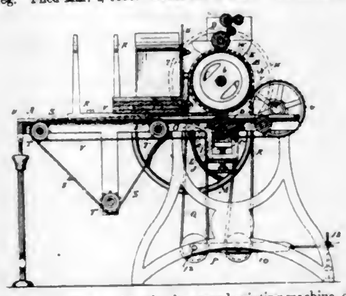
12. In a brake mechanism, the combination with a brake-actuating device, of an inertia weight adapted to be moved thereby, a spring connection between the inertia weight and a part of the brake-actuating device whereby the spring may be subjected to strain by the force of inertia and a pawl for maintaining the spring under strain.

13. In a brake mechanism, the combination with a fluid-pressure brake-actuating device, of an inertia-weight adapted to be moved thereby, a spring connection between the inertia weight and a part of the brake-actuating device whereby the spring may be subjected to strain by the force of inertia, and means automatically operated by fluid-pressure for holding and releasing the strain of the spring.

14. In a brake apparatus, the combination with a brake-actuating device, of a pivoted arm carrying an inertia weight adapted to be moved thereby, a spring connection between the pivoted arm and a part of the brake-actuating device whereby the spring may be subjected to strain by the force of inertia and means for maintaining the spring under strain.

15. In a car brake apparatus, means for applying the brakes and additional means comprising an inertia device which is put in operation by the brake-applying means for augmenting the pressure with which the brake-shoes are applied.

656,383. BOX-PRINTING MACHINE. JOHN F. AMES, Portland, Oreg. Filed Mar. 4, 1899. Serial No. 707,696. (No model.)



Claim.—1. The combination in a wood-printing machine, of a roller carrying the type or printing-surface, a means for applying ink thereto, a second roller having each end journaled and tornable in independent and elastic bearings whereby it is movable to and from the first-named roller, and one end is capable of a vertical yield independent of the other end to compensate for different thickness in the board from side to side, means for intermittently passing the boards to be printed between the rollers, and means for transmitting power to rotate the rollers in unison, consisting of a pulley mounted upon the shaft of the upper roller, a second pulley monnted upon the shaft of the lower roller, idler-pulleys journaled at a distance from both the pulleys and upon each side of a line passing through their axes, and a rope or belt passing around the idlers, thence returning to the pulley of the lower roller whereby its length allows it to yield sufficiently to permit the adjustment of the lower roller.

2. The combination in a wood-printing apparatus, of a roller, type or printing-surfaces fixed thereto, and mechanism by which the roller is rotated, a second roller having its journal-boxes supported upon independent elastic bearings whereby each end of the roller is capable of an independent yield and both ends are capable of yielding in unison so that the roller is automatically adjustable to and from the printing-surface to admit boards of varying thickness longitudinally and transversely, and a means for transmitting power from the type-carrying roller thereto, and allowing said adjustment, consisting of a rope, a pulley fixed upon the shaft of the printing-roller around which the rope passes, a second pulley fixed upon the shaft of the adjustable roller, and guide-pulleys situated at a distance beyond the second pulley and upon each side of a line drawn through the axis of the two pulleys over which the rope passes whereby the rope has a length sufficient to allow it to yield to permit of the adjustments of the lower roller.

3. The combination in a box or wood printing machine, of a revoluble roller carrying the type or printing-surface, an opposing roller having its journal-boxes supported by independent elastic bearings whereby the roller is movable to or from the impression-roller, and one end of the roller is capable of yielding independent of the other end to compensate for different thickness in the board from side to side, and a means for transmitting motion from one roller to the other, consistiug of grooved pulleys fixed upon the shafts of said rollers, other pulleys journaled in the lower portion of the frame and disposed one upon each side of a line drawn through the axis of the first-named rollers, and a rope passing from the driver over said pulleys thence returning to the driven pulley.

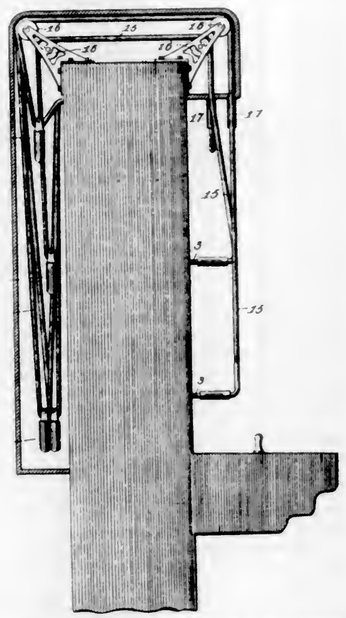
656,384. SWITCHBOARD FOR TELEPHONES. MILTON I. BAIRD, Glenfield, Pa. Filed Dec. 1, 1899. Serial No. 738,836. (No model.)

Claim.—1. In a telephone-switchboard, the combination of a socket, a plug, mechanism for forcing the plug out of the socket, and means for regulating the outward movement of the plug-ejector, substantially as set forth.

2. In a telephone-switchboard, the combination of a socket, a plug, mechanism for forcing the plug out of the socket, means for controlling the action of the ejector, and a catch controlled by the subscriber for holding the plug in the socket, substantially as set forth.

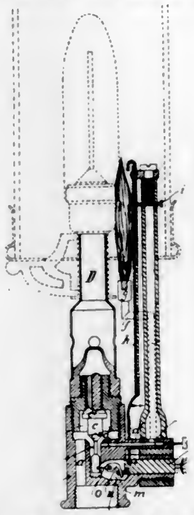
3. In a telephone-switchboard, the combination of a socket, a mechanism for forcing the plug out of the socket, means for regulating the outward movement of the plug-ejector and automatic means for shifting the released plug to one side of the switchboard, substantially as set forth.

4. In a telephone-switchboard, the combination of a plug-receiving socket, a spring-actuated rod arranged in the socket, a cylinder provided with ports, and having its piston connected to the push-rod, and a catch controlled by the subscriber for holding the plug in the socket, substantially as set forth.



5. In a telephone-switchboard, the combination of contacts forming terminals of circuits, a plug for connecting said contacts with another circuit, means for changing the position of the plug with relation to said contacts, and means for regulating such movement.

656,385. SELF-IGNITING GAS-BURNER. RICHARD BEESE, Dresden, Germany. Filed June 27, 1899. Serial No. 722,031. (No model.)



Claim.—1. In a new and improved self-igniting gas-burner, the combination of a head provided with openings, a burner secured thereto, a double valve working in said head, a self-igniting mass, means for carrying a gas-current from said head to said mass, a compound metal plate adjacent to said mass and adapted through the unequal expansion of its plates to deviate from its normal position a plunger actuated by said deviation, a bell-crank lever in connection with said plunger and adapted to so operate said valve as to simultaneously open said burner and close said current to said mass, substantially as described.

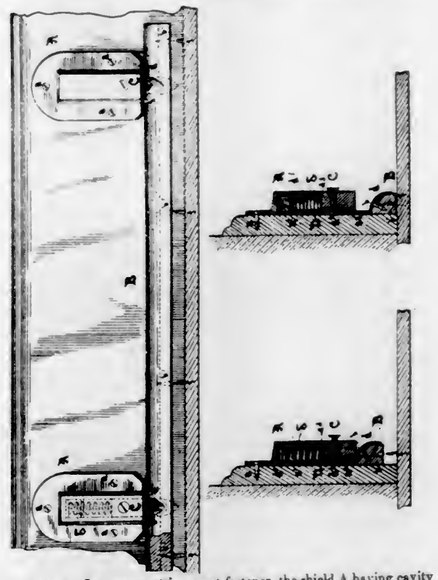
2. In a new and improved self-igniting gas-burner, the combination of a head provided with openings, a burner secured thereto, a double valve working in said head, a self-igniting mass, means for carrying a gas-current from said head to said mass, a compound metal plate adjacent to said mass and adapted through the unequal expansion of its plates to deviate from its normal position, a plunger actuated by said deviation, a bell-crank lever in connection with said plunger and adapted to so operate said valve as to simultaneously open said burner and close said current to said mass, a button in connection with said plunger to reignite by means of the small flame the light-flame unintentionally extinguished while the compound plate is yet deviated.

656,386. WARP-BEAM FOR LOOMS. JOSEPH BETSCH, Woonsocket, R. I. Filed May 4, 1900. Serial No. 15,451. (No model.)



Claim.—A warp-beam for looms consisting of a pair of metal heads having broad collars around their center openings, set-screws fitted to screw through said collars, a center roll of wood to hold said heads, longitudinal grooves made in said wooden roll and metallic bushings fitted in said grooves to receive the ends of the set-screws, a key cast on the inside of collars, and grooves made in said wooden roll to receive them, all in combination substantially as described.

656,387. CARPET-FASTENER. SIMON BOLLINGER, South Whitley, Ind. Filed Apr. 4, 1900. Serial No. 11,560. (No model.)

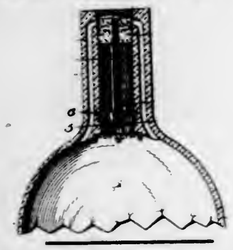


Claim.—In a corner-strip carpet-fastener, the shield A having cavity *a'*, the carpet-strip B having the vertical hole *b'* to fit over a floor projection *f*, and the spiral spring E, in combination with the presser D having curved foot *d* at bottom, and the horizontal top flange *d''* to bear on the spring, all substantially as shown and described, for the purpose set forth.

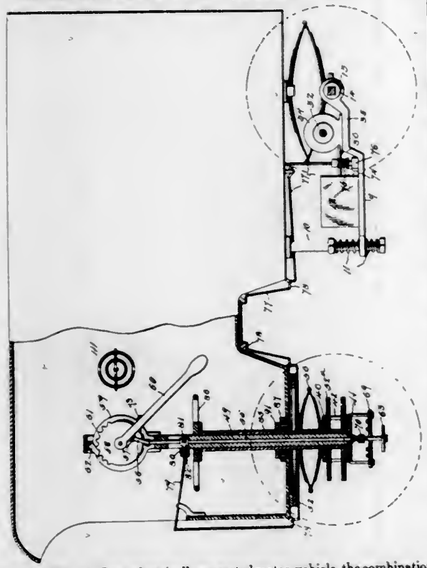
656,388. NON-REFILLABLE BOTTLE. ELI CINDEL, McKees Rocks, Pa. Filed Dec. 13, 1899. Serial No. 740,182. (No model.)

Claim.—In a non-refillable bottle, the combination of the neck portion provided with an opening extending entirely therethrough and a series

of outlet-passages opening at their lower end into the body portion of the bottle and at their upper ends into the opening of the neck near the top thereof, an annular ridge or shoulder formed in the wall of the opening of the neck near the lower end thereof, a wedge-shaped stopper adapted to be mounted in the upper end of the opening of the neck portion and adapted to seal the upper end of said passages, a stem connected to said stopper and extending downwardly in said opening of the neck, a disk secured to the lower end of said stem, and a series of radially-extending fastening-springs of unequal length formed integral with said disk and adapted to engage said shoulder and the lower end of the neck portion to prevent the sealing of the upper end of said passage by said stopper after the same has been forced past said upper end of said passages, substantially as described.



656,389. **MOTOR-VEHICLE.** PATRICK J. COLLINS, Scranton, Pa., assignor to the Collins Electric Vehicle Company, same place. Filed Dec. 18, 1899. Serial No. 740,715. (No model.)



Claim.—1. In an electrically-operated motor-vehicle, the combination with the fixed axle having a pair of independent driving-wheels journaled thereon, of a support suspended beneath the body of the vehicle and hinged at one end to said shaft, a pair of worm-wheels and independent shafts therefor mounted upon said support, said shafts being geared to the driving-wheels, independent armatures upon the support for operating said worm-wheels, and means for relatively varying the speeds of said armatures.

2. In an electrically-propelled motor-vehicle, the combination with a fixed axle having a pair of independent driving-wheels journaled thereon, of a support suspended beneath the body of the vehicle and hinged at one end to said shaft, a pair of worm-wheels and independent shafts therefor mounted upon said support, said shafts being geared to the driving-wheels, a motor upon said support, said motor having two independent armatures the shafts of which are arranged to operate the worm-wheels, and means for relatively varying the speeds of said armatures.

3. In a motor-vehicle, the combination with the body of an axle-casing by which said body is supported, said casing being movable relatively to the body, of a pair of wheels having their axles pivoted to the casing and movable relatively thereto, a steering-post for moving said axles, a sleeve fixed to the casing and surrounding the steering-post, said sleeve being adapted to turn the casing, and means for locking said sleeve to the body of the carriage.

4. In a motor-vehicle, the combination with the forward wheels mounted upon independent axles and a casing for said axles pivoted beneath the body of the vehicle, of motors arranged to operate said wheels, means for automatically connecting the motors operatively to the wheels when said motors are running and for disengaging the motors from the wheels when said motors are stopped.

5. In a motor-vehicle, the combination with a wheel journaled upon an axle, and a motor arranged to operate said wheel, of means for automatically connecting said motor to said wheel when the motor is in operation and for disconnecting said motor from said wheel when the motor stops.

6. In a motor-vehicle, the combination with a vehicle-wheel and a motor arranged to operate said wheel, of means for automatically disconnecting said motor from the wheel when the motor is stopped.

7. In a motor-vehicle, the combination with a vehicle-wheel and a motor arranged to operate said wheel, of means for automatically connecting said motor to said wheel after the motor is started into operation.

8. In a motor-vehicle, the combination with a vehicle-wheel, a motor adapted to operate said wheel and worm-gearing interposed between said motor and wheel, of means for automatically disconnecting said gearing from said wheel when the motor is stopped.

9. In a motor-vehicle the combination with the axle-casing supported by the axles of the forward wheels, of a body supported above said casing, a hand-wheel connected to said casing and adapted to move said casing relatively to the body, and motors arranged to operate the forward wheels.

10. The combination with the independently-driven rear wheels, of the forward wheels mounted upon independent axles, a casing for said axles pivoted beneath the body, and motors for operating said forward wheels.

11. In an electrically-propelled vehicle the combination with the independent axles having the forward wheels journaled thereon, and a casing within which said axles are pivoted, of a hollow steering-post arranged to swing said axles upon their pivots, a sleeve attached to the axle-casing and surrounding said steering-post, said sleeve being adapted to turn the casing, a handle pivoted at the upper end of said post, a rod extending through the post and connected to said handle, a controller operated by the vertical movement of said rod, and a steering-switch operated by the rotary movement of the rod.

12. In an electrically-propelled motor-vehicle the combination with the rear wheels and independent armatures arranged to operate the same, of the forward wheels mounted upon independent pivoted axles, a rotatable steering-post operatively connected with said axles, a steering-head upon said post, a vertically-movable handle connected to said steering-head, a rod extending through the post and connected with said handle, a controller operated by the vertical movement of said rod, and a steering-switch operated by the rotary movement of said rod and adapted to vary the speeds of said armatures relatively to each other.

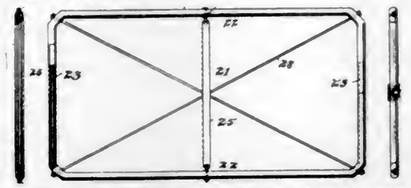
13. In an electrically-propelled motor-vehicle, the combination with the rear wheels and independent armatures arranged to operate the same, of the forward wheels mounted upon independent axles, a rotatable steering-post operatively connected with said axles, a vertically-movable handle upon said post, a rod extending through the post and connected with said handle, a controller and brake-shoe operated by the vertical movement of said rod, and a steering-switch operated by the rotary movement of said rod and adapted to vary the speed of said armatures relatively to each other.

14. In an electrically-propelled vehicle the combination with the forward wheels mounted upon pivoted axles, and a steering-post arranged to turn said axles about their pivotal points to steer the vehicle, of the rear wheels journaled upon a fixed axle, an armature geared to each rear wheel, field-windings for each armature, and a suitably-connected steering-switch arranged to be operated by the movement of the steering-post to vary the speeds of said armatures relatively to each other when said steering-post is moved to turn the forward axles.

15. In an electrically-propelled motor-vehicle, the combination with the rear wheels and independent armatures arranged to operate the same, of the forward wheels mounted upon independent pivoted axles, a rotatable steering-post arranged to turn said axles about their pivotal points, a vertically-movable handle connected to said post, a controller and brake-shoe operated by the vertical movement of the handle, and a switch operated by the rotary movement of the post to vary the speeds of the armatures relatively to each other.

16. In an electrically-propelled motor-vehicle, the combination with the rear wheels, and independent armatures arranged to operate the same, of the forward wheels mounted upon independent pivoted axles, a rotatable steering-post arranged to turn said axles about their pivotal points, a vertically-movable handle connected to said post, a controller operated by the vertical movement of the handle, and a switch operated by the rotary movement of the post to vary the speeds of the armatures relatively to each other.

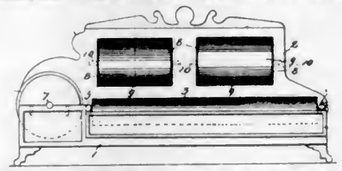
656,390. **GATE.** HENRY F. CONDON, De Kalb, Ill. Filed Feb. 28, 1898. Serial No. 672,054. (No model.)



Claim.—1. A gate-frame constructed in two sections of pipe, each bent to form one-half of the frame, and tubes or rods fitting within the open meeting ends of said sections and serving to unite the same, substantially as described.

2. A gate-frame, comprising two similar sections formed of pipe, each bent to form one-half of the frame, tubes or rods over which the meeting ends of said sections fit, and means connecting said sections and adapted to draw and hold them together, substantially as described.

656,391. **UPHOLSTERED FURNITURE.** JOHN B. CONRAD, San Antonio, Tex. Filed Feb. 19, 1900. Serial No. 5,758. (No model.)



Claim.—A lounge comprising a bed portion both sides of which are upholstered, pins projecting from the opposite ends of the same, and adapted to be received by bearings, a frame to which the latter are secured, a suitable back, cushions pivotally secured to the same, a head-rest circular in cross-section and pivotally secured to the said frame, one of the pins projecting from the said bed portion being square and received by a correspondingly-shaped bearing, the latter being composed of a plate fixed to the frame, a screw-threaded pin projecting from the same, a clip hinged to the said plate, a nut screwed on said pin, and a coil-spring encircling the latter and interposed between the nut and plate and encircling said pin, as and for the purpose described.

656,392. **DISH-MOLD.** JOSEPH COOK, Akron, Ohio. Filed Dec. 15, 1899. Serial No. 740,423. (No model.)



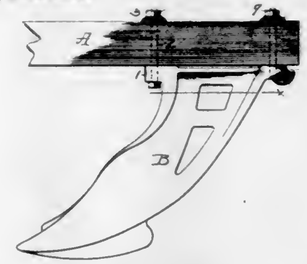
Claim.—1. An improved mold-shell for forming earthenware dishes consisting of upper and lower metallic shells having a top and bottom respectively with pouring and vent holes in said bottom and top, and guide-pins about one shell arranged to fit the other, one of said pins being different from the others and a socket in the opposite shell adapted to receive it, substantially as shown and described.

2. An improved mold for forming earthenware dishes consisting of upper and lower metallic shells having a top and bottom respectively with pouring and vent holes in said bottom and top and means for securing registration of said shells, and plaster-molds inclosed in said shells, substantially as shown and described.

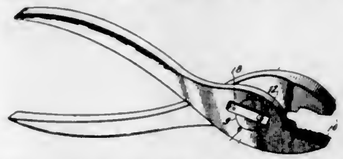
656,393. **PLOW.** CALVIN R. DAVIS, South Bend, Ind., assignor to the South Bend Iron Works, same place. Filed Apr. 6, 1900. Serial No. 11,861. (No model.)

Claim.—1. The combination with a plow-beam and a standard having a seat at its upper end against the under face of the beam, of a bolt pivotally connecting the rear portion of the standard to the beam and a bolt weaker than the standard securing the forward portion of said standard to the beam.

2. The combination with a plow-beam and a standard seated at its upper end against the bottom face of said standard, and perforated lugs projecting forwardly and rearward from the respective ends of the seat portion of the standard, of a bolt passing through the rear end of the standard and having a hook depending from the beam and engaging the rear lug of the standard to pivotally connect the latter to the beam and a breakable bolt passing downwardly through the beam and through the forward lug of the standard.



656,394. **PLIERS.** HARRY A. DEITERS and EDWARD L. BILL, Spencer, W. Va. Filed Feb. 20, 1900. Serial No. 5,939. (No model.)



Claim.—1. A device of the class described comprising a jaw member having a perforation, a disk rotatably mounted in the perforation, a pivot-pin mounted in the disk and eccentric thereto, a second jaw member mounted upon the pivot-pin, a spring-finger carried by the disk, and a pin upon the finger adapted to engage the first member and hold the disk at different points of its rotatable movement.

2. A device of the class described comprising a jaw member having a perforation therein, a rotatable disk mounted in the perforation, a spring-finger mounted upon the disk and adapted for engagement with the member to hold the disk at different points of its rotation, a pivot-pin carried by the disk, eccentric thereto, and a second jaw member mounted upon the pivot-pin.

3. A device of the class described comprising a jaw member having a perforation therein, a rotatable disk mounted in the perforation, said perforation having a peripheral groove and passages leading thereto, lugs upon the disk adapted to enter the passages and engage the groove, a pivot-pin carried by the disk eccentric thereto, a spring-finger mounted upon the disk and having a pin for engagement with perforations in the member to hold the disk at different points of its rotation, and a second jaw member mounted upon the pivot-pin.

656,395. **PROCESS OF LEACHING ORES OR TAILINGS.** EDWARD H. DICKIE, Bodie, Cal., assignor of one-third to James Kane, same place. Filed Apr. 2, 1900. Serial No. 11,244. (No specimens.)

Claim.—1. The improvement in the process of leaching ores or tailings with a solution which dissolves the precious metals, which consists in adding to the solution an agent composed of an acetate of an alkali metal or of alkali-earth metal which is capable of readily uniting with and forming acetates of the base metals, and which has little or no affinity for the precious metals thereby enabling the solvent to act directly upon the latter, and then leaching the ores.

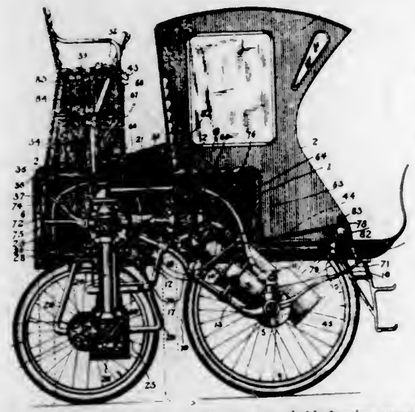
2. The improvement in the process of leaching ores or tailings with cyanid solutions, which consists in adding to such solutions an agent composed of calcium acetate which unites with and forms acetates of the base metals thereby enabling the solution to act directly upon the precious metals, and then leaching the ores.

3. The improvement in the process of leaching ores or tailings with cyanid solutions, consisting in adding to such solutions calcium acetate in proportions of approximately five parts of potassium cyanid to one part of acetate, and then leaching the ores.

656,396. **MOTOR-VEHICLE.** JOHN W. EISENHUTH, New York, N. Y., assignor, by mesne assignments, to the Eisenhuth Horseless Vehicle Company, same place. Filed Sept. 8, 1899. Serial No. 729,842. (No model.)

Claim.—1. A motor-vehicle comprising a suitable framing, a housing secured to the said framing, a steering-head supporting said housing,

a power-communicating shaft having one end projecting into the said housing and the other end extending through the said steering-head, the said shaft forming the pivoted pin or king-bolt of the vehicle, means for communicating power to the end of the said shaft which is located in the said housing, and means connecting the other end of the said shaft with the shaft of the guiding-wheels of the vehicle, the structure being such that the guiding-wheels of the vehicle may be driven by the power thus communicated to the said shaft without interfering with the guiding operation of the said wheels, substantially as described.



2. In a motor-vehicle, the combination of a suitable framing, one end of said framing resting upon one axle of the vehicle, a housing formed upon the other end of the said framing, a steering-head supporting the said housing, a shaft having bearings, both in the said housing and in the said steering-head for pivotally connecting the two together, a motor mounted upon the framing of the vehicle, gearing connecting the said motor with the end of the shaft which is in the housing and gearing connecting the other end of the said shaft with the axle of the steering-wheels, whereby the said shaft can communicate propelling power to the guiding-wheels without interfering with their steering operation, substantially as described.

3. In a motor-vehicle, the combination of a suitable frame formed of tubing suitably braced, the said tubing being supported at its forward end upon the forward axle of the vehicle, the rear tubing engaging a housing, arranged above the steering-head of the vehicle, a steering-head supporting the said housing, and mounted upon the axle of the guiding-wheels gearing connecting a suitable power mechanism with the said guiding-axle, part of the shafting carrying the said gearing extending through the steering-head, so that its axis coincides with the axis of the steering-head, whereby the vehicle may be propelled, as well as guided by the steering-wheels, substantially as described.

4. A motor-vehicle comprising a suitable framing, composed of a central arch and side arches, the said arches being supported at their forward ends upon the forward axle of the vehicle, and the rear ends of the said arches converging to a common housing, a steering-head secured to the axle of the guiding-wheels, and supporting the said housing, shafting extending through the said housing and the said steering-head provided with suitable gearing, shafting leading from the said housing to a power mechanism mounted upon the frame, whereby power may be communicated to the axle of the guiding-wheels for propelling the vehicle, substantially as described.

5. A motor-vehicle comprising a frame carrying suitable power mechanism, a power-shaft actuated by the same, spiral gearing connecting the said power-shaft with the horizontal shaft, a vertical shaft mounted in the steering-head of the vehicle, spiral gearing connecting the horizontal shaft with the vertical shaft, and spiral gearing connecting the said vertical shaft with the rear axle of the vehicle, whereby motive power can be communicated from the power mechanism to the said rear wheels, a steering-head mounted upon the said rear axle and supporting the rear end of the frame, and means for turning the steering-head, whereby the vehicle may be guided by the rear wheels as well as propelled by the same, substantially as described.

6. A motor-vehicle comprising a suitable framing, a steering-head supporting the said framing, a segmental gear secured to said steering-head, a reciprocating rack engaging the said gear and a lever for moving the said reciprocating rack, whereby the steering-head may be turned to control the direction of the vehicle, substantially as described.

7. A motor-vehicle comprising in its construction suitable framing, gearing mounted on the said framing for propelling the vehicle, a steering-head supporting the said framing, a segmental gear secured to the said steering-head having a projecting flange beneath it, a reciprocating rack resting upon the said flange and engaging the said segmental gear, a yoke carrying the said rack, antifriction-rollers for directing the movement of the rack, and a lever connected with the said yoke by a pivot-and-slot connection, whereby the direction of the cab is controlled by moving the reciprocating rack, substantially as described.

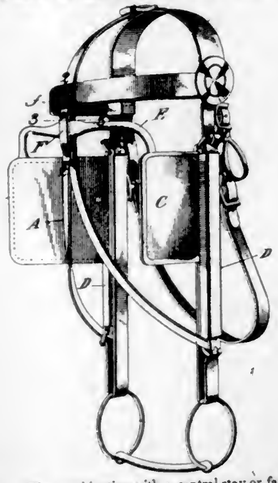
8. A motor-vehicle comprising in its construction a framing, resting at its forward end upon a fixed axle its rear end being mounted upon a turning axle, power mechanism mounted upon the same framing, shafting and gearing connecting the power mechanism with the turning or guiding axle, an inclined shaft connected with the said shafting and extending to the forward axle, a universal joint interposed between the shafting and the inclined shaft, and a clutch mechanism for drawing the said inclined shaft into and out of engagement with the said power-actuating shaft, the construction being such that the forward wheels may be used to assist in propelling the vehicle when desired, substantially as described.

9. A motor-vehicle comprising a suitable framing, a steering-head supporting one end of said framing, shafting connecting the rear or steering axle with power mechanism mounted upon the said framing, an inclined shaft connecting the power-actuating shafting with the forward axle, a universal joint interposed between the two, one member of the said universal joint being provided with a tapering bearing engaging a tapering socket formed in the inclined shaft, clutch members secured to the said parts, and a series of levers and links connected with the said clutch members and extending to within easy reach of the operator of the vehicle, whereby the forward axle of the vehicle may be used to assist in propelling the same as may be desired.

10. A motor-vehicle comprising in its construction a suitable framing, resting upon the forward axle at one end and upon a steering-head at the rear end, means for operating the steering-wheels to propel the vehicle, supporting-springs secured to the said framing, a removable body portion mounted upon the said springs and partially covering the said springs, propelling mechanism, seats, and an inclosing cab, formed upon the said boxing, and means for controlling the operating mechanism extending within easy reach of one of the seats, the structure being such that the vehicle may be operated from the seat, and, when desired, the body portion may be removed from the said frame to inspect the propelling mechanism, substantially as described.

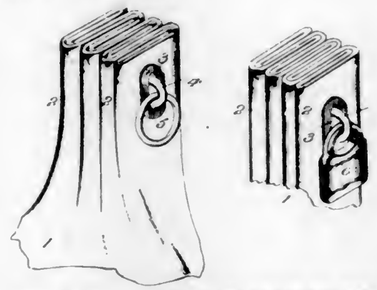
11. A motor-vehicle comprising a suitable framing, a suitable power mechanism mounted upon the said framing, one end of the said framing resting upon one axle of the vehicle, a steering-head mounted upon the other side of the vehicle and supporting the housing upon the end of the framing, a shaft pivotally connecting the steering-head with the housing, gearing connecting one end of the shaft with the power mechanism, gearing connecting the other end of the said shaft with the guiding-wheels of the vehicle, and means connecting the said power mechanism with the fixed wheels of the vehicle, substantially as described.

656,397. BRIDLE-BLIND BRACE. IRVIN H. ELLSWORTH, Oak Harbor, Ohio. Filed Apr. 26, 1900. Serial No. 14,434. (No model.)



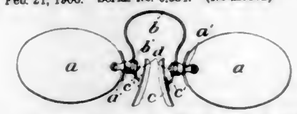
Claim.—The combination with a central stay or face-piece attached at its ends to be incapable of sidewise movement, of blinds and a brace connecting the blinds and having centrally thereof a vertical opening slidably receiving the stay or piece and stops on the latter to limit vertical movement thereof.

656,398. MAIL-BAG CLOSURE. JOHN W. FAIRFAX, Freestone Point, Va., assignor to Henry Fairfax, Aldie, Va. Filed Apr. 27, 1900. Serial No. 14,603. (No model.)



Claim.—In combination with a mail-sack adapted to close by a series of comparatively-narrow folds, the latter having centrally-disposed slots extending lengthwise of the folds and sack, an open link of oblong form adapted to pass through the registering slots of the folds, a ring fitted to the link and freely movable therein from end to end to admit of either end of the link passing through the folds when placing the fastening in position, and a padlock to engage the end of the link passed through the said folds, substantially as described.

656,399. EYEGLASSES. POLK H. FLOWERS, Centreville, Tenn. Filed Feb. 21, 1900. Serial No. 6,051. (No model.)



Claim.—1. In eyeglasses, the combination of the lenses having the studs, the spring having the end eyes seated against said studs, the nose-guards having connecting-arms provided with eyes seated against said spring-eyes, the clamping-screws passing through said eyes into the studs, said spring and guards being independently movable axially on said screws, said eyes and studs provided with locking means, substantially as described.

2. In combination, the lenses having the studs formed with notched ends, the spring having eyes formed with notched faces seated against said notched stud ends, the nose-guards having connecting-arms provided with end eyes seated against said spring-eyes and having corresponding notches, and the clamping pivot-screws passing through said eyes into the studs, substantially as described.

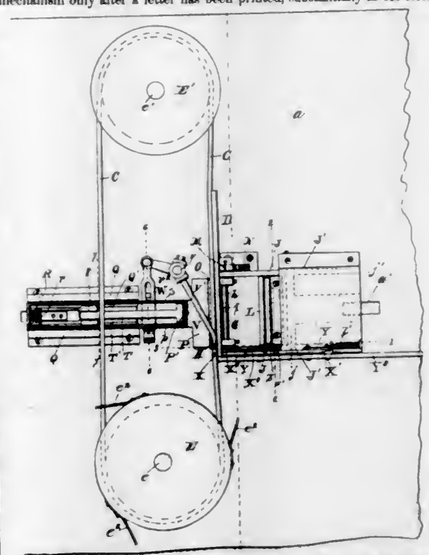
3. In eyeglasses, the combination of lens studs or supports, the connecting-spring, nose-guards having supporting-arms, and pivot clamping-screws locking said arms, spring and lens-supports together, said spring having eyes through which said screws pass, the parts being so constructed and arranged as to permit rocking of the spring independently of the lens-supports and nose-guards, when the screws are loosened, substantially as described.

656,400. STAMP-CANCELING AND PRINTING MACHINE. CHARLES V. FYKE, Kansas City, Mo., and JOHN H. BARR, Kansas City, Kans. Filed Apr. 27, 1898. Serial No. 679,009. (No model.)

Claim.—1. In a machine for canceling or printing, the combination of means for advancing the letters or other articles, movable printing and platen mechanisms, a stop movable with the printing mechanism for holding the article stationary in the printing position, and a trip actuated by the letter or other article to control the movement of the platen mechanism, substantially as set forth.

2. In a machine for canceling or printing, the combination of means for advancing the letters or other articles, rectilineally-reciprocating printing mechanism, rectilineally-reciprocating platen mechanism, a stop movable with the printing mechanism for holding the article stationary in the printing position, and a trip actuated by the letter or other article to control the movement of the platen mechanism, substantially as set forth.

3. In a machine for canceling or printing, the combination of means for advancing the letters or other articles, reciprocating printing mechanism, a stop movable with said printing mechanism but normally disengaged therefrom, and means operated by the letters for connecting the two whereby said stop will be withdrawn by the reciprocation of the printing mechanism only after a letter has been printed, substantially as set forth.



4. In a machine for canceling or printing, the combination of means for advancing the letters or other articles, a stop normally lying in the path of travel of said articles to retain them in the printing position, reciprocating printing and impression mechanisms, and means operated by the advance of the articles to the impression position for causing the withdrawal of said stop after each article has been printed, substantially as set forth.

5. In a machine for canceling or printing, the combination of the means for advancing the letters, the movable stop for the letters, the printing mechanism, and the tripping device actuated by the letters for causing the stop to be moved out of the letter-path, substantially as set forth.

6. In a machine for canceling or printing, the combination of the means for advancing the letters, the stop for the letters, the printing mechanism, the means for withdrawing the stop from the letter-path, and devices actuated by the advancing letter for connecting the stop to the stop-withdrawing devices, substantially as described.

7. In a machine for canceling or printing, the combination of the printing mechanism, the letter-advancing mechanism moving the letters from the receiving side of the machine to the delivery side, and an intermittingly-acting letter-stop on the delivery side of the printing mechanism, substantially as set forth.

8. In a machine for canceling or printing, the combination of the printing mechanism, the letter-advancing mechanism moving the letters from the receiving side to the delivery side of the printer, an intermittingly-acting letter-stop, on the delivery side of the printer, a letter-actuated mechanism for bringing into action the stop-withdrawing devices, substantially as set forth.

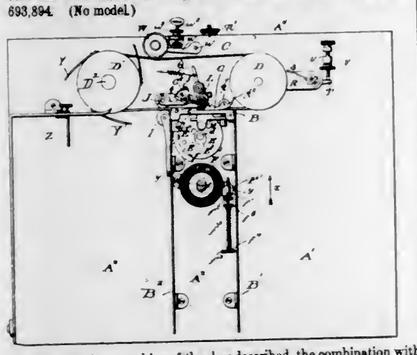
9. In a machine for canceling or printing, the combination of the reciprocating printer, the letter-advancing means for moving the letters from the receiving side to the delivery side of the printer, and an intermittingly-acting stop on the delivery side of the printer, substantially as set forth.

10. In a machine for canceling or printing, the combination of the reciprocating printer, the opposing platen or impression mechanism, means for moving the impression mechanism toward and from the printer, and and an intermittingly-acting stop on the delivery side of the printer, substantially as set forth.

11. In a machine for canceling or printing, the combination of the reciprocating printer, the letter-advancing devices for carrying the letters from the receiving side to the delivery side of the printer, the letter-controlled impression-receiving device movable toward and from the letter-path, and the letter-controlled stop on the delivery side of the printer, substantially as set forth.

12. In a machine for canceling or printing, the combination of the reciprocating printing mechanism, the opposing letter-controlled impression-receiving mechanism, and the letter-controlled stop, substantially as set forth.

656,401. STAMP-CANCELING AND POSTMARKING MACHINE. CHARLES V. FYKE, Kansas City, Mo. Filed Oct. 18, 1898. Serial No. 693,894. (No model.)



Claim.—1. In a machine of the class described, the combination with the printing device, and the letter-advancing mechanism, of a stationary wall forming a guide for the letters to and from the impression-point said wall having formed thereon a stop projecting across the letter-path, and an automatically-acting releasing device which pushes the letter away from said stop, substantially as set forth.

2. In a machine of the class described, the combination with the printing device, and the letter-advancing mechanism, of a stationary wall forming a guide for the letters to and from the impression-point said wall having formed thereon a stop projecting across the letter-path, and an automatically-acting releasing device reciprocating through the said wall to push the letter away from said stop, substantially as set forth.

3. In a machine of the class described, the combination with the printing device, and the letter-advancing mechanism, of a stationary wall forming a guide for the letters to and from the impression-point, said wall formed into a stop across the letter-path, and an automatically-acting pusher carrying a plurality of presser-plates adapted to reciprocate through apertures in the said wall to push the letters away from the stop thereon, substantially as set forth.

4. In a machine of the class described, the combination with the letter-advancing mechanism, of a stationary wall forming a guide for the letters to and from the impression-point, said wall having formed thereon a stop projecting across the letter-path, an automatically-acting pusher adapted to reciprocate through the said wall to push the letters away from the stop thereon, and a printing device also passing through an aperture in said wall to contact with the letters, substantially as set forth.

5. In a machine of the class described, the combination with the letter-advancing mechanism, of a stationary wall forming a guide for the letters to and from the impression-point, said wall formed into a stop across the letter-path, an automatically-acting pusher carrying a plurality of presser-plates adapted to reciprocate through apertures in the said wall to push the letters away from the stop thereon, and a printing device also passing through an aperture in said wall to contact with the letters, substantially as set forth.

6. In a machine of the class described, the combination of the printing device on one side of the letter-path, the letter-advancing device on the other side of the letter-path, the stationary stop on the same side of the letter-path as the printing device, and the pressure-plate on the same side of the letter-path as the feeding device, and adapted to move bodily toward and from the latter-path and also adapted to have either end move toward and from the letter-path more or less independently of the other end, substantially as set forth.

7. In a machine of the class described, the combination with the printing device, the letter-advancing mechanism, and a stationary stop in the letter-path, of a yielding pressure-plate adapted to bear throughout its length against one face of the letter, said plate terminating at the stationary stop and adapted to normally lie within the detaining-face of said stop, and a releasing device adapted to bear against the opposite face of the letter and push it out of the line of said stop, substantially as set forth.

8. In a machine of the class described, the combination with a letter-advancing belt, of a stationary wall against which the letter is forced by said belt, said wall projecting above said belt and having formed thereon a fixed stop projecting across the path of travel of said belt and above the same, a pusher adapted to reciprocate through the said wall to push the letters away from the stop thereon, and a printing device also passing through an aperture in said wall to contact with the letters, substantially as set forth.

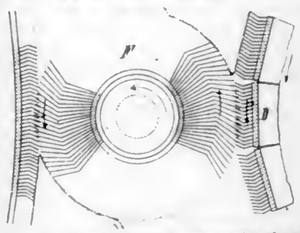
9. In a machine of the class described, the combination with the printing device, and the letter-advancing mechanism, of a stationary wall opposed to the letter-advancing mechanism and provided with a passage-way, said wall having formed thereon a stationary stop projecting across the letter-path, and a letter-releasing device arranged to move through the said passage-way in said wall to push the letter away from said stop, substantially as set forth.

10. The combination of the printing device, the letter-advancing device, the stationary wall opposed to the letter-advancing device and provided with a series of slots or passages, the stationary stop in the letter-path and the releasing device having a series of letter-engaging fingers or plates movable through the said slots or passages, substantially as set forth.

11. In a machine of the class described, the combination with the printing device, and the letter-advancing mechanism, of a yielding pressure-plate adapted to bear against one face of the letters, and a carrier-arm on which said plate is pivotally mounted intermediate its length, said carrier-arm being pivoted to the machine-frame and spring-pressed toward the path of the letters, substantially as set forth.

12. In a machine of the class described, the combination with the printing device, and the letter-advancing mechanism, of a yielding pressure-plate adapted to bear against one face of the letters, a carrier-arm pivoted to the machine-frame and on which said plate is pivotally mounted intermediate its length, a spring exerting its tension on said carrier-arm toward the path of the letters, and a segment-plate with which the free end of said spring is adjustably engaged to vary the tension on said carrier-arm, substantially as set forth.

656,402. CARDING-ENGINE. ERNST GESSNER, Aue, Germany; David Gessner administrator of said Ernst Gessner, deceased. Filed Mar. 26, 1895. Serial No. 543,205. (No model.)



Claim.—1. In a carding-engine, the combination of a moving card-surface having teeth which are rearwardly directed with respect to their direction of motion, a comb-roller consisting of a roller having teeth sloping in a direction rearward with regard to their direction of motion, said comb-roller being arranged close to the said moving card-surface so that its teeth shall penetrate the said card-clothed surface, means for driving the comb-roller and the card-clothed surface in such directions that the penetrating teeth of the comb-roller shall be moved opposite to those of the card-clothed surface at their contacting point and at the same or nearly the same surface speed, to strip the material from the said card-clothed surface in an unbroken coherent layer, thereby continuously cleaning the working parts of all waste and dirt.

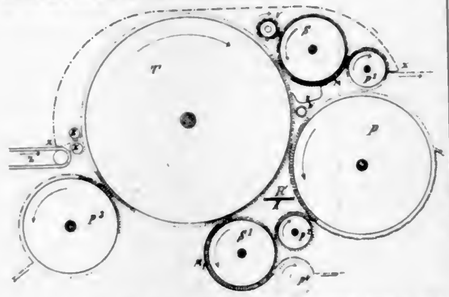
2. In a carding-engine, the combination of a moving card-surface and means for moving the same, of a comb-roller having teeth sloping rearwardly with respect to their direction of motion, the teeth of the comb-roller penetrating the said card-clothed surface and means for driving the comb-roller and card-clothed surface at substantially the same rate of speed and in directions opposite to each other at the point of contact of the said comb-roller and card-clothed surface, whereby the material will be stripped from the card-clothed surface in an unbroken coherent layer, thereby continuously cleaning the working parts of all waste and dirt.

656,403. APPARATUS FOR CARDING WOOL. ERNST GESSNER, Aue, Germany; David Gessner administrator of said Ernst Gessner, deceased. Filed Mar. 30, 1895. Serial No. 543,787. (No model.)

Claim.—1. In a carding-engine, the combination of a drum or swift adapted to carry a stock of fleece to be carded, with means for effecting the removal of the surface of said stock, comprising a superficially-operating fly-roller operating to remove the fly-wool in a fleece with means for driving said fly-roller at a considerably-greater surface speed than the surface speed of the drum and effective to remove the surface only of the stock from the drum in a fleece substantially greater in amount than the fly-waste thrown off by the ordinary fancy, and a doffer arranged to subsequently operate upon the said stock whereby a plurality of layers of fleece may be separately removed from the drum for subsequent manipulation.

2. In a carding-engine, the combination of a swift or drum, a plurality of doffers one of which works in and receives the fleece directly from the drum, and a superficially-operating fly-roller operating to remove

the surface only of the stock on the drum in a fleece substantially greater in amount than the fly-waste thrown off by the ordinary fancy and to transfer the said surface-layer to the other doffer.



3. In a carding-engine, the combination of a main drum or swift with fancy rolls and workers therefor, a plurality of doffers, some of which doffers work in and receive the fleece direct from the drum, and a superficially-operating fly roller or rollers operating to remove the surface only of the stock on the drum in a fleece substantially greater in amount than the fly-waste thrown off by the ordinary fancy and to transfer the same to certain of the doffers.

4. In a carding-engine, the combination of a traveling card-carrying surface adapted to carry a stock of fleece to be carded, with means for effecting the removal of the surface of said stock, comprising a superficially-operating fly-roller with means for driving the same at a greater surface speed than the surface speed of the card-carrying surface, the said fly-roller being effective to remove the surface only of the stock from the said card-carrying surface in a fleece substantially greater in amount than the fly-waste thrown off by the ordinary fancy.

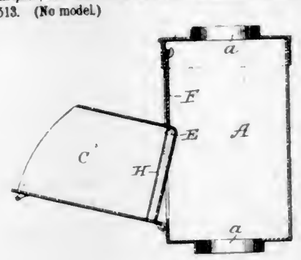
5. In a carding-engine, the combination of a card-carrying surface with means for moving the same, of a fly-roller coöperating therewith and means for driving the fly-roller at such a high rate of speed as to suck from the card-clothed surface by the gust of air produced by the rotation of the said fly-roller a fleece substantially greater in amount than that thrown off by the ordinary fancy as fly-waste.

6. In a carding-engine, the combination of a card-carrying surface with means for moving the same, a fly-roller coöperating therewith and driven at a greater surface speed than the card-carrying surface and a mantle M coöperating with the said fly-roller, whereby a gust of air is produced capable of sucking off the fleece from the card-carrying surface and depositing it upon the fly-roller.

7. In a carding-engine, the combination of a drum or card-carrying surface with means for driving the same, the said drum or card-carrying surface having its teeth forwardly directed with respect to its direction of rotation, a fly-roller and a mantle therefor, whereby an air-current is produced capable of sucking off a fleece from the drum or card-carrying surface.

8. In a carding-engine, the combination of a drum or card-carrying surface with means for driving the same, the said drum or card-carrying surface having its teeth forwardly directed with respect to its direction of rotation, a fly-roller and a mantle therefor, whereby an air-current is produced capable of sucking off a fleece from the drum or card-carrying surface and a plurality of doffers coöperating with the drum or card-carrying surface, whereby the outer layer or fleece will be sucked off by the fly-roller and the fleece will be lifted after the manner of an ordinary fancy and subsequently removed in layers by the plurality of doffers.

656,404. DOMESTIC GARBAGE-BURNER. CHARLES R. HARRIS, Williamsport, Pa. Filed Oct. 29, 1897. Renewed Jan. 23, 1900. Serial No. 2,513. (No model.)

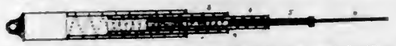


Claim.—1. In a domestic garbage-burner the combination with a casing having flue-openings therein, of a movable hopper located within the casing and an apron for closing the hopper-opening when the latter is open but which never closes the hopper.

2. In a domestic garbage-burner the combination with a casing constituting a part of a stovepipe, said casing having an opening in one side, of a hopper adapted to be inserted and removed through said opening and fully close the opening when in its normal position and partly close it when drawn out, and a hanging apron extending normally part way only across the open upper end of the hopper and which apron closes the portion of the opening not closed by the hopper when the latter is drawn out.

3. In a domestic garbage-burner, the combination with a casing having flue-openings therein, of a tilting hopper pivoted to the casing and a swinging apron for closing the hopper-opening when the latter is open said apron normally resting upon the upper edge of the hopper and being of less width than the width of the hopper whereby to admit the free circulation of combustion products through the hopper.

656,405. HARNESS-SUPPORT. WILLIAM R. HEWITT, San Francisco, Cal. Filed Nov. 15, 1899. Serial No. 737,009. (No model.)



Claim.—1. In a hanger for suspending harness and the like, a series of telescoping tubes and a spring in each tube whereby said tubes are independently spring-supported.

2. A harness-hanger consisting of a series of successively-smaller telescoping slidable tubes having flanges upon their upper ends and caps at their lower ends, springs surrounding each interior tube with the ends abutting against said flanges and caps whereby the springs are compressed and shortened when a weight is hung from the device, and are extended and act to shorten and telescope the tubes when relieved of weight.

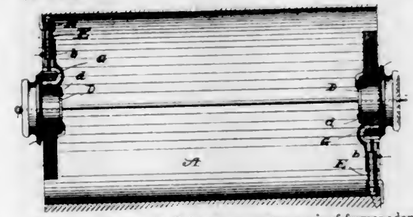
3. A harness-hanging device consisting of a series of successively-smaller slidable telescopic tubes with interposed spiral springs, bushings connected with tubes and slidable in unison therewith so as to cushion upon the contained air.

4. An apparatus for suspending harness and the like comprising tubes adapted to slide one within the other, a spring within each tube and yieldingly supporting the same, and hangers attached to and movable with the lowermost tube.

5. An apparatus for suspending harness comprising tubes adapted to slide one within the other, an independent spring in each tube and suspending the same, hangers carried by the lowermost tube and adapted for connection with the harness, and a flexible joint between the hanger and the lowermost tube.

6. An apparatus for suspending harness and the like consisting of a series of successively-smaller telescoping tubes slidable one within the other, spiral springs acting between each contiguous section to telescope and shorten the device, bushings carried by the sections and movable to act as cushions against the column of contained air, said bushings being adjustable to regulate the speed of movement.

656,406. APPARATUS FOR LINING ENGINES. CHARLES H. HOPKINS, Manchester, N. H. Filed Aug. 2, 1899. Serial No. 725,856. (No model.)



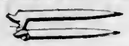
Claim.—1. In an engine lining-up apparatus, a pair of frames adapted for adjustment within a cylinder one at each end, a cord adapted for attachment to the center of one frame and to pass loosely through the center of the other, and means comprising pointers pivotally attached to the last-named frame and adapted for movement by said cord for determining when the cord assumes a position accurately central therein.

2. In an engine lining-up apparatus, a pair of frames one for the interior of each end of a cylinder, three or more extensible arms secured therein, means in each frame for simultaneously moving all said arms for contact with the interior of said cylinder, a cord attached to the center of one frame and passing loosely through the other, pointers pivotally attached to the last-named frame and adapted for movement by said cord,

and suitable marks for determining the normal position of said pointers and the central position of the cord within the cylinder.

3. In an engine lining-up apparatus, a pair of frames one for the interior of each end of a cylinder, three or more radially-extensible arms secured therein and provided with extensions for contact with the end of said cylinder, a cord attached centrally to one of said frames and passing loosely through the center of other frame which is provided with suitable pivoted arms or pointers and marks showing the normal position of the latter, the said pointers adapted for movement by said cord, and means for simultaneously operating said radial arms for engaging or disengaging the cylinder.

656,407. **BUTTON.** CHARLES M. HORTON, Portsmouth, N. H., assignor to the Morley Button Manufacturing Company, Saco, Me., and Boston, Mass. Filed June 2, 1900. Serial No. 18,825. (No model.)



Claim.—1. A fastener for cushion-buttons and like articles consisting of a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table and clenching-spurs bent upward from said wing portions.

2. A fastener for cushion-buttons and like articles consisting of a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table at diagonally-opposite corners thereof, and clenching-spurs bent upward from said wing portions.

3. A fastener for cushion-buttons and like articles consisting of a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table at diagonally-opposite corners thereof, and clenching-spurs bent upward from said wing portions, and the two spurs lying in substantially the same plane.

4. A fastener for cushion-buttons and like articles consisting of a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table and clenching-spurs bent upward from said wing portions, the said spurs being oppositely beveled, substantially as described.

5. A fastener for cushion-buttons and like articles consisting of a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table at diagonally-opposite corners thereof, and clenching-spurs bent upward from said wing portions, the said spurs being oppositely beveled, substantially as described.

6. A fastener for cushion-buttons and like articles consisting of a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table at diagonally-opposite corners thereof, and clenching-spurs bent upward from said wing portions, and the two spurs lying in substantially the same plane, the said spurs being oppositely beveled, substantially as described.

7. A fastener for cushion-buttons and like articles consisting of a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table, and clenching-spurs tapering on the outside toward their points, bent upward from the said wing portions.

8. A fastener for cushion-buttons and like articles consisting of a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table, and clenching-spurs tapering on the outside toward their points and oppositely beveled on their sides.

9. A fastener for cushion-buttons and like articles consisting of a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table at diagonally-opposite corners thereof, and clenching-spurs, tapering on the outside toward their points, bent upward from the said wing portions.

10. A fastener for cushion-buttons and like articles consisting of a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table at diagonally-opposite corners thereof, and clenching-spurs, tapering on the outside toward their points, and oppositely beveled on their sides, bent upward from the said wing portions.

11. A button, consisting of a solid head of penetrable material and a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table, and clenching-spurs bent upward from said wing portions, said clenching-spurs being embedded in the button-head.

12. A button consisting of a solid head of penetrable material and a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table, and clenching-spurs bent upward from said wing portions at diagonally-opposite corners thereof, said clenching-spurs being embedded in the button-head.

13. A button consisting of a solid head of penetrable material and a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table at diagonally-opposite corners thereof, and clenching-spurs bent upward from said wing portions, and the two spurs lying in substantially the same plane, said clenching-spurs being embedded in the button-head.

14. A button consisting of a solid head of penetrable material and a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table and clenching-spurs bent upward from said wing portions, the said spurs being oppositely beveled, the said clenching-spurs being self-deflected and embedded in the button-head.

15. A button consisting of a solid head of penetrable material and a one-piece sheet-metal staple provided with two parallel legs, wing portions extending laterally from the table and clenching-spurs bent upward from said wing portions, the said spurs being oppositely beveled, the said clenching-spurs being self-deflected and embedded in the button-head, and the said table sunk flush with the lower surface of the button-head.

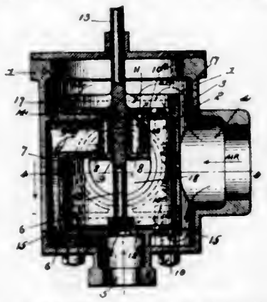
16. A button composed of a solid head of penetrable material and a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table and clenching-spurs, beveled on the outside toward their points, bent upward from the said wing portions, and embedded in the material of the button-head, subtantially as described.

17. A button, consisting of a solid head of penetrable material and a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table and clenching-spurs, beveled on the outside toward their points, bent upward from the said wing portions and oppositely beveled on their sides, and embedded in the material of the button-head, substantially as described.

18. A button, consisting of a solid head of penetrable material and a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table at diagonally-opposite corners thereof, and clenching-spurs, beveled on the outside toward their points, bent upward from the said wing portions, and embedded in the material of the button-head, substantially as described

19. A button, consisting of a solid head of penetrable material and a one-piece sheet-metal staple provided with two parallel legs, a table joining the legs, wing portions extending laterally from the table at diagonally-opposite corners thereof, and clenching-spurs, tapering on the outside toward their points, bent upward from the said wing portions, and oppositely beveled on their sides, and embedded in the material of the button-head substantially as described.

656,408. **GAS-ENGINE GOVERNOR-VALVE.** JOHN W. LAMBERT, Anderson, Ind., assignor to the Buckeye Manufacturing Company, same place. Filed May 2, 1899. Serial No. 715,319. (No model.)



Claim.—1. In a gas-engine governor-valve, the combination of a mixing-chamber formed with perforated heads, means for admitting air and gas into the mixing-chamber through each of said perforated heads, perforated valves adapted to fit close against the heads of the mixing-chamber, the perforations in the valves being out of line with the perforations in the heads, a valve-stem carrying the valves, and a means connected to the valve-stem for moving said valves perpendicularly to the plane of the valve-seats to vary the capacity of the valve.

2. In a gas-engine governor-valve, the combination of a casing, a mixing-chamber therein formed with perforated heads, means for admitting air and gas into the mixing-chamber through each of said perforated heads, perforated valves adapted to fit close against the heads of the mixing-chamber but normally held away from said heads, the perforations of said valves being out of line with the perforations of the heads, a valve-stem carrying the valve-disks, and a governor connected to the valve-stem and adapted to reciprocate it.

3. In a gas-engine governor-valve, the combination of a mixing-chamber formed with a perforated head, a perforated valve adapted to fit close against the perforated head of the mixing-chamber, the perforations in said valve being out of line with the perforations in the head, means for reciprocating said valve, and a continuous wall around the edge of said valve to form a tubular part in which said valve reciprocates, said wall preventing the free passage of fluid around the edge of said valve.

4. In a gas-engine governor-valve, the combination of a mixing-chamber formed with a perforated head, a perforated valve adapted to fit close against the perforated head of the mixing-chamber, the perforations in the valve being out of line with the perforations in the head, means for reciprocating said valve and means for preventing the free passage of fluid around the edge of the valve when said valve is raised from the perforated head of the mixing-chamber.

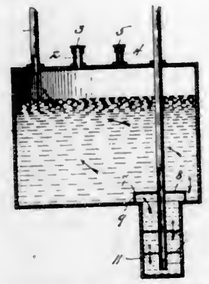
5. In a gas-engine governor-valve, the combination of a casing having an air-inlet, a mixing-chamber in said casing, said chamber being formed with the air and gas ports in each of its ends, a perforated valve near each of the ends of the chamber, the perforations in said valves being out of line with the perforations in the ends of the mixing-chamber, a governor connected to said valves and adapted to normally hold them away from the ends of the mixing-chamber, a gas-admission port 5 at one end of the casing, a gas-chamber 8 within the mixing-chamber, and a gas-passage 6 connecting the gas-inlet 5 with the chamber 8.

6. In a gas-engine governor-valve, the combination of a casing formed with an air-inlet, a mixing-chamber within the casing and formed with air and gas ports in each of its ends, means for conveying gas to said gas-ports, a vertical annular flange extending upward from the top of the mixing-chamber, a perforated valve on top of the chamber and closely fitting within the flange, a perforated valve within the mixing-chamber, a valve-stem connecting said valves together, a speed-governor connected to said stem and adapted to reciprocate it and normally holding the valves away from the chamber ends.

7. In a gas-engine governor-valve, the combination of a casing having an air-inlet, a mixing-chamber 3 therein, said chamber being formed with the flange 17 and with the air and gas admission ports in each of its ends, a perforated valve within the chamber near the lower end and normally held away from said end, a perforated valve surrounded by flange 17 and normally held away from the top of the casing, a gas-chamber 8 within the mixing-chamber at its upper end and formed with an opening communicating with the space between the upper valve and the upper end of the chamber, a gas connection to the chamber 8 and to the space between the lower perforated valve and bottom of the mixing-chamber, a stem connecting the valves together, and a governor device connected to the valve-stem.

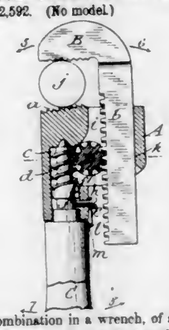
8. In a gas-engine governor-valve, the combination of a mixing-chamber having a plurality of perforations formed in its head through which the explosive mixture passes, a valve formed with a plurality of openings, the perforations in the valve being out of line with those in the mixing-chamber head whereby when the two parts are brought together the valve will be closed, a governor connected to the valve and normally holding it away from the perforated head to form a space between the two perforated parts, said governor being adapted to reciprocate the valve and to move it against the perforated head of the mixing-chamber to close the passages into said chamber, whereby fluid passing into the mixing-chamber through the two perforated parts will be divided into a plurality of streams and will be diverted from a straight course in the space between said perforated parts, and the governor will vary said space between said parts as the speed of the engine varies.

656,409. **CARBURETER.** FREDRICK A. LARAWAY and JOHN W. HOOKER, Cleveland, N. Y. Filed July 31, 1899 Serial No. 725,661. (No model.)



Claim.—A gas-generator comprising a closed carbureting tank or vessel provided at the bottom thereof with a depending oil well or trap, an air-supply pipe depending within said well or trap to a point near its bottom, a plurality of screens arranged in the well or trap above the plane of the lower end of the air-supply pipe, and an air-distributing hood covering the upper end of the oil well or trap, said hood receiving therein the pipe, and consisting of a flat horizontal imperforate top plate, and a foraminous wall extending entirely across the interval between said top plate and the main bottom of the tank or vessel, substantially as described.

656,410. **WRENCH.** NILS LARSEN, New York, N. Y. Filed Jan. 24, 1900. Serial No. 2,592. (No model.)

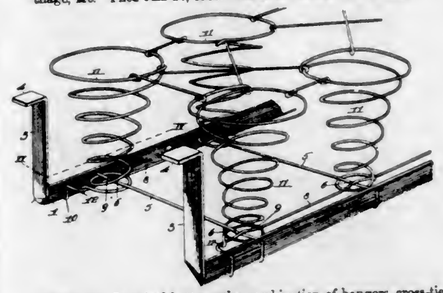


Claim.—1. The combination in a wrench, of a stock on which is a fixed jaw, an adjustable jaw having an attached toothed rack which works through said stock, a handle turning in said stock and carrying a screw, and a pinion which is located within and journaled in said stock and the teeth of which engage both with the screw on the handle and with the teeth of the rack of the adjustable jaw, substantially as herein described.

2. The combination in a wrench, of a stock on which is a fixed jaw, an adjustable jaw having an attached toothed rack which works through said stock, a handle turning in said stock and carrying a screw, and a pinion which is located within the stock between said screw and the teeth of the rack and in engagement with both and the journals of which fitted to bearings in the sides of the stock have shoulders overlapping the sides of the rack for retaining the pinion in place, substantially as herein described.

3. The combination of the stock A having the fixed jaw *a* thereon, the adjustable jaw B having the attached toothed rack *b* which passes through said stock, the handle C carrying the screw *d* and having in it a circumferential groove *f* and a communicating longitudinal groove *f'*, the pinion E journaled in the stock between said screw and toothed rack and engaging with both, the retaining-pin *e* in the stock engaging with said grooves *f f'*, the spring index-pawl *l* attached to the stock and the inclined projection *m* on the handle for engaging with and lifting said pawl, substantially as herein described.

656,411. **SECTIONAL BED-BOTTOM.** JOSEPH P. LEGGETT, Carthage, Mo. Filed Jan. 27, 1900. Serial No. 2,952. (No model.)

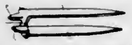


Claim.—1. In a bed-bottom, the combination of hangers, cross-ties connecting said hangers, longitudinal ties connected to the hangers and extending transversely of said cross-ties, and springs seated upon said ties at the intersections thereof, substantially as described.

2. In a bed-bottom, the combination of drop-hangers, cross-ties threaded through said hangers and looped thereabout, longitudinal ties threaded through said hangers and looped thereabout, and extending transversely of said cross-ties, and springs connected to and seated upon said ties at the intersections thereof, substantially as described.

656,412. **BUTTON.** SHERBURN M. MERRILL, Brookline, Mass., assignor to the Morley Button Manufacturing Company, Saco, Me., and Boston, Mass. Filed June 2, 1900. Serial No. 18,800. (No model.)

Claim.—1. A fastener for cushion-buttons and like articles consisting of a one-piece staple provided with a table portion, legs depending therefrom and clenching-spurs ascending therefrom.



2. A fastener for cushion-buttons and like articles consisting of a one-piece staple provided with a table portion, legs depending therefrom and clenching-spurs ascending therefrom, said clenching-spurs being beveled on one side.

3. A fastener for cushion-buttons and like articles consisting of a one-piece staple having a table portion, legs depending therefrom, and clenching-spurs cut V-shaped from the legs adjacent to the table portion and bent upward from the table portion.

4. A button consisting of a solid head of penetrable material, and a one-piece staple, the said staple provided with a table portion, legs depending therefrom and clenching-spurs ascending therefrom, the said clenching-spurs embedded in the material of the button-head.

5. A button consisting of a solid head of penetrable material and a one-piece staple, the said staple provided with a table portion, legs depending therefrom and bevel-pointed clenching-spurs ascending therefrom, the said clenching-spurs being embedded and self-deflected in the button-head.

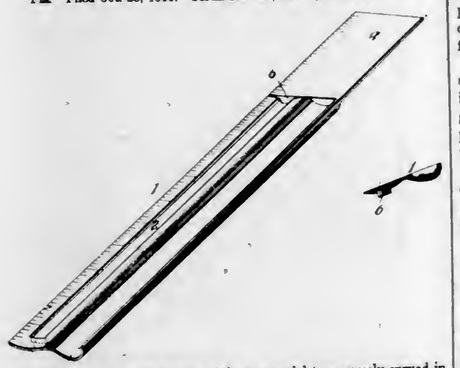
6. A button consisting of a solid head of penetrable material and a one-piece staple, the said staple provided with a table portion, legs depending therefrom, and clenching-spurs cut V-shaped from the legs adjacent to the table portion and bent upward from the table portion, the said clenching-spurs embedded in the material of the button-head.

7. A button consisting of a solid head of penetrable material, and a one-piece staple, the said staple provided with a table portion, legs depending therefrom and clenching-spurs ascending therefrom, the said clenching-spurs embedded in the material of the button-head and the said table portion sunk flush with the under surface of the button-head.

8. A button consisting of a solid head of penetrable material and a one-piece staple, the said staple provided with a table portion, legs depending therefrom and bevel-pointed clenching-spurs ascending therefrom, the said clenching-spurs being embedded and self-deflected in the button-head, and the said table portion sunk flush with the under surface of the button-head.

9. A button consisting of a solid head of penetrable material and a one-piece staple, the said staple provided with a table portion, legs depending therefrom, and clenching-spurs cut V-shaped from the legs adjacent to the table portion and bent upward from the table portion, the said clenching-spurs embedded in the material of the button-head, and the said table portion sunk flush with the under surface of the button-head.

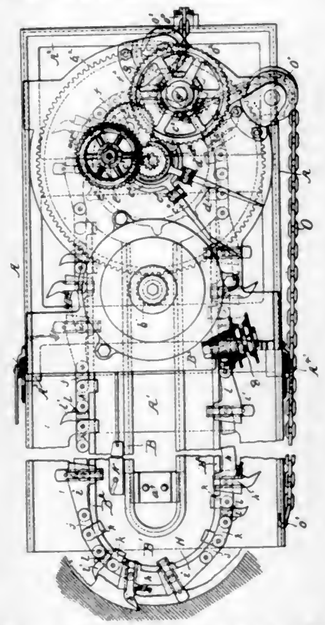
656,413. ACCOUNTANT'S RULER. CHARLES O. MEUX, Pensacola, Fla. Filed Oct. 23, 1899. Serial No. 734,504. (No model.)



Claim.—1. A ruler formed of sheet material transversely curved in opposite directions from an intermediate line, one of the curved portions being longitudinally slotted to form a plurality of directing edges, and rests at the ends of the slot formed by pressing portions of the material downward, substantially as described.

2. A sheet-metal ruler transversely curved in opposite directions from an intermediate line and having one of the curved portions longitudinally slotted and the hollow side of the other portion forming a pen-rest, rests at the ends of the longitudinal slot formed by pressing portions of the material downward, one end of the ruler being extended beyond the adjacent extremities of the slot and pen-rest to receive matter upon its top and bottom sides, substantially as described.

656,414. MINING-MACHINE. JONAS L. MITCHELL, Galesburg, Ill., assignor to the Sullivan Machinery Company, Chicago, Ill. Filed Mar. 7, 1899. Serial No. 708,084. (No model.)



Claim.—1. In a mining-machine, a cutter-chain, cutters fitting in dovetailed seats formed on the upper and lower faces on the links, a key having a groove therein coinciding with said seats, and means for tightening said key, substantially as set forth.

2. In a mining-machine, a cutter-chain, cutters fitting in dovetailed seats formed on the upper and lower faces on the links, a key having a groove therein coinciding with said seats, and a set-screw adapted to tighten said key up against said cutters, substantially as set forth.

3. In a mining-machine, a cutter-chain, cutters projecting out from the upper and lower portions of certain of the links, and a raker-cutter in a link following the one carrying said cutters and projecting out in a plane intermediate between the first-mentioned cutters, the upper and lower cutters projecting beyond the intermediate raker-cutter, substantially as set forth.

4. In a mining-machine, a cutter-chain, a cutter-bar around which said chain travels, said cutter-bar having a flange extending out around its outer edge, and links in said chain having projections adapted to engage said flange, whereby the chain is held from rising from said bar, said projections being of less width than the link-bodies and having curved faces, substantially as set forth.

5. In a mining-machine, the combination of a cutter-bar, a cutter-chain carrying a series of cutters and guards carried by said chain and adapted to contact with the wall and hold the chain in line, substantially as set forth.

6. In a mining-machine, a cutter-bar, mechanism for advancing and withdrawing same, a cutter-chain engaging said bar, and movable guards on said cutter-chain, and mechanism for throwing said guards out against the wall, substantially as set forth.

7. In a mining-machine, a cutter-bar, mechanism for advancing and withdrawing same, a cutter-chain engaging said bar, and movable guards on said cutter-chain, and a guide adapted to throw out said guard, substantially as set forth.

8. In a mining-machine, a cutter-bar, mechanism for advancing and withdrawing same, a cutter-chain engaging said bar, and movable guards on said cutter-chain, said cutter-bar having cam-slots formed therein, and a longitudinally-movable guide engaging said slots and adapted to throw out said guards, substantially as set forth.

9. In a mining-machine, a cutter-bar, mechanism for advancing and withdrawing same, a cutter-chain engaging said bar, and movable guards on said cutter-chain, stops on said guards and mechanism for throwing said guards out, substantially as set forth.

10. In a mining-machine, a cutter-bar, mechanism for advancing and withdrawing same, a cutter-chain, guards fitting in seats in links of said chain and slidable back and forth therein, the inner ends of said guards having projections thereon adapted to engage said cutter-bar, and mechanism for throwing out said guards, substantially as set forth.

11. A mining-machine, having cutting mechanism and means for operating the same, in combination with a bed adapted to support the machine, said bed being formed of sections, and means for detachably locking said sections together, whereby the machine may be shortened at will, substantially as set forth.

12. In a mining-machine, the combination of a bed or support formed in sections, a traveling carriage resting on the bed and having a power-driven sprocket-wheel thereon, and a chain connected to the forward end of the forward section and to the opposite end of the rear section and passing around the sprocket-wheel to move the carriage upon the bed, substantially as set forth.

13. A mining-machine, having cutting mechanism and means for operating the same, in combination with a bed adapted to support the machine, said bed being formed of detachable sections, a link engaging a cam on one section, and a projection on the adjoining section, and means for turning said cam, whereby the sections are securely joined together, substantially as set forth.

14. A mining-machine, having cutting mechanism, and chain-feeding mechanism, in combination with a fixed support on the front or feed side and a fixed support on the rear or exit side of the machine, and a chain secured to said supports and engaging with the chain-feeding mechanism, said chain passing from the front support around a fulcrum-bearing whereby the machine may be held up to the coal-face and its position therewith regulated.

15. The combination with a mining-machine having cutting mechanism, and chain-feeding mechanism, the entrance and exit wheels whereof are supported in upright bearings, of a fixed support on the feed or front side of the machine and a fixed support beyond the exit side of the machine, and a chain secured to said supports and engaging with said chain-feeding mechanism, substantially as set forth.

16. The combination with a mining-machine having cutting mechanism, and chain-feeding mechanism, the entrance and exit wheels whereof are supported in upright bearings, of a fixed support on the feed or front side of the machine and a fixed support beyond the exit side of the machine and a chain secured to said supports and engaging with said chain-feeding mechanism, and chain-adjusting mechanism in one of said supports.

17. The combination with a mining-machine, having cutting mechanism, and chain-feeding mechanism, the entrance and exit wheels whereof are supported in upright bearings, of a fixed support on the feed or front side of the machine and a fixed support beyond the exit side of the machine and a chain secured to said supports and engaging with said chain-feeding mechanism, the rear fixed support having chain-adjusting mechanism.

18. The combination with a mining-machine having cutting mechanism and having an idle guide-wheel at the forward end of the machine, chain-feeding mechanism operating in the body of the machine, and an idle guide-wheel at the rear end of the machine, of a fixed support at the feed or front side of the machine and a fixed support beyond the rear side of the machine, and a feed-chain secured to said supports and passing around said idle guide-wheels and engaging with the chain-feeding mechanism.

19. The combination with a mining-machine adapted to travel along the face of the coal, and having cutting mechanism, and chain-feeding mechanism, of an anchor having a foot at one end adapted to engage the front wall of coal and a foot at the other end adapted to bear against the side wall, and a chain secured to said anchor and engaging with the chain-feeding mechanism of the mining-machine.

20. The combination with a mining-machine having cutting mechanism and carrying guide-rollers forming a course at right angles to the line of cut and a driving-sprocket, of a fixed support at the feed or forward side of the machine and a feed-chain secured thereto and extending first around one guide-roller of the machine and thence backwardly substantially at right angles to another guide-roller and around the driving-sprocket.

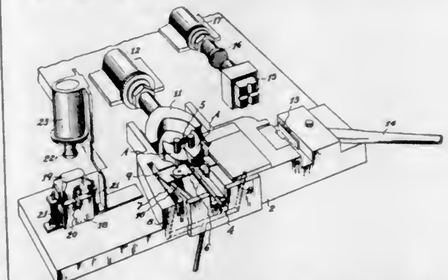
21. The combination with a mining-machine having cutting mechanism and carrying guide-rollers forming a course at right angles to the line of cut and a driving-sprocket, of a fixed support at the feed or forward side of the machine and a feed-chain secured thereto and extending first around one guide-roller of the machine and thence backwardly substantially at right angles to another guide-roller and around the driving-sprocket, and thence backwardly around another guide-roller at the rear of the machine and passing to a fixed support in line with the rear of the machine.

22. The combination with a mining-machine having cutting mechanism, and chain-feeding mechanism, of fixed supports, one on the feed or front side of the machine and close to the mine-wall and the other beyond the rear side of the machine and substantially in line with the rear end thereof, a feed-chain secured to said supports, guide-rollers on the machine for said chain, one on the feed side and close to the front end and one at the rear end in line with the rear support, substantially as set forth.

23. The combination with a mining-machine having cutting mechanism, of fixed supports, one on the feed or front side of the machine and close to the mine-wall and the other beyond the rear side of the machine and substantially in line with the rear end thereof, a feed-chain secured to said supports, guide-rollers on the machine for said chain, one on the feed side near the forward end, one on the feed side near the rear end and one on the rear end, and chain-feeding mechanism whereby the chain passes from the forward end toward the rear end substantially at right angles to the line of cut.

24. The combination with a mining-machine having a power-driven cutter-chain traveling backwardly toward the machine along the face of the coal, of fixed supports, one on the feed or forward side of the machine, one beyond the rear side thereof, a feed-chain secured to said fixed supports, and chain-feeding mechanism on the machine having rollers engaging with the chain on the feed and delivery sides, said rollers being mounted in vertical bearings.

656,415. MACHINE FOR SPREADING, TRUING, AND GAGING DRILLS. DAVID G. MORGAN, Quartz Mountain, Cal., assignor of one-half to Richard H. McNamara, same place. Filed Apr. 16, 1900. Serial No. 13,031. (No model.)



Claim.—1. A machine of the character described consisting of separable channeled jaws, means for holding the drill in contact with said jaws and operating them to spread the bits, a die by which the ends of the bits are squared or straightened after being spread, and a gage and sizer into which the bits are successively inserted, and hammers actuated by fluid-pressure to complete the operation at a single heat.

2. In a machine of the character described, a channeled base, levers fulcrumed to open and close horizontally having grooves formed in the ends adjacent to the channel, clamps by which the drill is held with the horizontal bits engaging the grooves, and a slidable hammer having converging openings to engage the outer ends of the levers whereby the grooved ends act to spread the bits of the drill which lie therein.

3. In a machine of the character described, hinged adjustable clamps and mechanism by which they are closed to grip the drill-shank between them, spring-pressed lever-arms having grooves in the ends within which grooves the horizontal bits of the drill are fitted, a hammer having a converging channel adapted to engage and close the outer ends of the levers and to correspondingly spread the grooved ends and extend the bits.

4. The combination in a machine of the character described, of grooved spreading-levers, jaws for adjustably holding the drill with its bits in contact therewith, carriers for the jaws, means for moving the carriers, and a hammer and actuating mechanism for the spreading-levers.

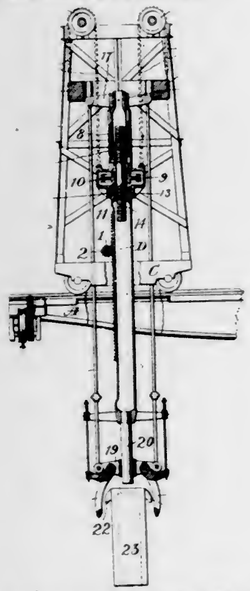
5. A machine of the character described comprising grooved spreading-levers, jaws for holding the drill with its bits in contact with the levers, carriers for the jaws and means for moving the carriers, a hammer and means for operating the spreading-levers, means for truing the bits of the drill, and means for sizing and gaging the bits.

6. The combination of grooved spreading-levers, movable jaw-carriers, jaws pivotally secured to the carriers whereby they adjust themselves to the drill-shank, means for adjusting and locking the carriers, a hammer for actuating the spreading-levers, and means for actuating the hammer.

7. A machine of the character described including mechanism for holding and spreading the drill-bits; mechanism for holding and truing said bits; mechanism for sizing and gaging the bits; and power devices for operating each of said mechanisms whereby the operation is completed at a single heat.

656,416. INGOT-EXTRACTING APPARATUS. WILLIAM H. MORGAN and CLARENCE L. TAYLOR, Alliance, Ohio; said Taylor assignor to the Morgan Engineering Company, same place. Filed Sept. 1, 1899. Serial No. 729,247. (No model.)

Claim.—1. In an ingot-extractor the combination with a rack-bar carrying a plunger, means for moving the rack-bar longitudinally, a screw movably mounted in the rack-bar, a nut on the screw and means for rotating the screw, of mold-stripping devices having means for engaging the molds and means connecting the devices and nut.



2. In an ingot-extractor, the combination with a vertically-movable bar, means for moving it vertically, and a plunger secured to the lower end thereof, of a screw movably mounted in the upper end of the rack-bar, a nut engaging the screw, means for rotating the screw, mold-stripping levers having means for engaging the molds, and means connecting the nut and mold-stripping levers.

3. In an ingot-extractor, the combination with a traveling bridge and a traveling trolley thereon, of a bar carried by the trolley, means carried by said trolley for moving the bar vertically, mold-stripping devices having means for engaging the mold, a screw movably mounted in the upper end of said bar, a nut on the screw, means for rotating the screw and means connecting the nut and mold-stripping devices.

4. In an ingot-extractor the combination with a traveling trolley, a rack-bar carried thereby and means on the trolley for moving the rack-bar vertically, of a screw loosely carried by the rack-bar, means for rotating the screw, a nut mounted on the screw, mold-stripping devices guided by the rack-bar and having means for engaging the mold, and means connecting the nut and mold-stripping devices.

5. In an ingot-extractor, the combination with a traveling trolley, a rack-bar carried thereby, means carried by the trolley for moving the rack-bar vertically and a counterweight for said rack-bar, of a screw pivotally mounted in the bar, a nut on the screw, means for rotating the screw, mold-stripping levers having means for engaging the mold, and means connecting the nut and mold-stripping levers.

6. In an ingot-extractor the combination with a rack-bar, means for moving the rack-bar vertically, a screw mounted in said bar, means for rotating the screw, a nut on the screw, and a cross-head carried by the nut, of mold-stripping levers having means for engaging the molds and means for connecting the cross-head and mold-stripping levers.

7. In an ingot-extractor, the combination with a rack-bar, means for moving same vertically, an ingot-holding plunger on the lower end of said bar, a screw mounted to rotate in the upper end of said bar, and means for rotating the screw, of a nut on the screw, a cross-head secured to the nut, rods depending from said cross-head, mold-stripping levers having means for engaging the mold and means connecting the levers and rods.

8. In an ingot-extractor, the combination with a rack-bar, means for moving same vertically, an ingot-holding plunger on the lower end of said bar, a screw mounted to turn in the upper end of said bar, and means for rotating the screw, of a nut on the screw, a cross-head mounted to slide on the plunger, rods connecting the nut and cross-head, and mold-stripping levers carried by the cross-head, the said mold-stripping levers having means for engaging the mold.

9. In an ingot-extractor the combination with a rack-bar, means for moving same vertically, an ingot-holding plunger secured to the lower end of the bar, a screw mounted to rotate in the upper end of said bar, and means for rotating the screw, of a cross-head mounted to slide on the plunger, a cross-head carried by the nut, rods connecting the two cross-heads, and ingot-stripping levers carried by the lower cross-head, the said levers having means for engaging the mold.

10. In an ingot-extractor the combination with a bar, means for moving same vertically and a counterweight for said bar, of a screw mounted to rotate in the upper end of said bar means for rotating the screw, a nut on the screw, mold-stripping devices having means for engaging the mold and means connecting the nut and mold-stripping devices.

11. In an ingot-extractor, the combination with a rack-bar having an ingot-holding plunger at its lower end, means for moving the rack-bar longitudinally, a screw mounted in the upper end of said rack-bar, a toothed wheel connected to said screw so that the latter may move longitudinally but without rotation therein, and means for rotating the toothed wheel, of a nut mounted on the screw, mold-stripping levers adjacent to the plunger on the rack-bar and means connecting the mold-stripping levers and nut.

12. In an ingot-extractor, the combination with a rack-bar having an ingot-holding plunger at its lower end, means for moving said rack-bar longitudinally, a pinion mounted in the upper end of said rack-bar, a double screw mounted at one end in a threaded bearing in said rack-bar and having sliding connection with the pinion and a nut mounted on the upper end of said screw, of mold-stripping levers and means connecting the nut and levers.

13. In an ingot-extractor, the combination with a rack-bar having an ingot-holding plunger at one end, means for moving said rack-bar longitudinally and a screw at its other end, the said screw being threaded at both ends, one screw-threaded end of the screw engaging a member having female threads at the upper end of the rack-bar, of a toothed wheel embracing the screw and connected thereto by a spline, a nut mounted on the upper screw-threaded end of the screw, mold-stripping devices having means for engaging the mold and means connecting said nut and levers.

14. In an ingot-extractor, the combination with a rack-bar, means for moving same longitudinally, a double screw-shaft one end of which is mounted in a screw-threaded bearing in the upper end of the bar, a pinion having a spline-and-groove connection with said shaft, a square shaft, means for rotating same, a pinion slidingly mounted on said square shaft and engaging the pinion on the screw-shaft, and a nut carried on the upper end of the screw-shaft, of mold-stripping devices having means for engaging the molds and means connecting the mold-stripping devices and nut.

15. In an ingot-extractor, the combination with a rack-bar having an ingot-holding plunger at its lower end and casing at its upper end and means for moving said rack-bar longitudinally, of a double screw-shaft carried by a threaded bearing in the upper end of the rack-bar, a pinion located within the casing and having a groove-and-spline connection with the screw-shaft, a nut mounted on the upper end of the screw-shaft and adapted to be moved thereby, a pinion carried by the rack-bar and meshing with the pinion on the screw-shaft and a square shaft for imparting motion to said latter pinion, of mold-stripping devices having means for engaging the mold and means connecting the nut and molding-stripping levers.

16. In an ingot-extractor the combination with a rack-bar, means for moving same longitodinally, and an ingot-holding plunger at its lower end, of a cross-bar sliding on the plunger, bell-crank levers carried by said cross-bar, rods connected at their lower ends to said cross-bar, and means carried by the rack-bar and capable of vertical movement independent of the movement of the rack-bar, for moving said rods.

17. In an ingot-extractor, the combination with a rack-bar, means for moving same longitudinally, a bracket carried by the lower end thereof and an ingot-holding plunger depending from the lower end of the rack-bar, of a cross-head sliding on the plunger, rods connected to the cross-head, bell-crank levers depending from the cross-head for moving the latter vertically, lever-releasing rods carried by the bracket and engaging the levers and springs interposed between the bracket and upper ends of the releasing-rods.

656,417. DISPENSING-CAN. FRANK R. MCINTYRE, New York, N. Y., assignor, by direct and mesne assignments, to Robert Hoe and Charles W. Carpenter, same place. Filed Dec. 14, 1899. Serial No. 740,264. (No model.)

Claim.—1. In a dispensing-can, the combination with the spout, of a spring-seated stopper normally closing the opening therein, of an operating-wire rigidly secured to the stopper, said wire extending down along one side only of the spout and close thereto, and being bent to form a finger-hold lying above the breast of the can, substantially as described.

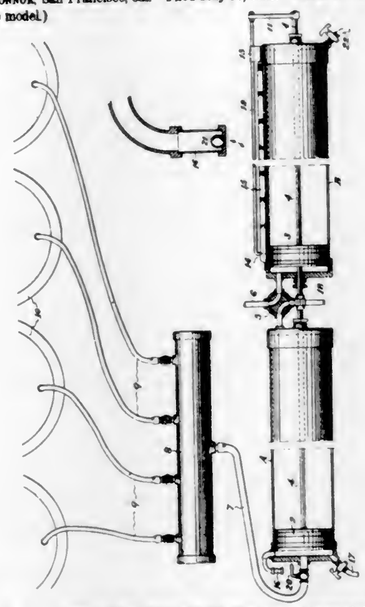
2. In a dispensing-can, the combination with the spout, of a spring-seated stopper normally closing the opening therein and protruding through said opening, of an operating-wire rigidly secured to the stopper, said wire extending down along one side only of the spout and close thereto, and being bent to form a finger-hold lying above the breast of the can, substantially as described.



3. In a dispensing-can, the combination with the spout, of a spring seated stopper normally closing the spout, an operating-wire rigidly secured to the stopper, said wire extending down along one side only of the spout and close thereto, and being bent to form a finger-hold lying upon the breast of the can, and a guide secured to the side of the spout through which the wire passes, substantially as described.

4. In a dispensing-can, the combination with the spout, of a spring-seated stopper normally closing the spout and protruding through the opening therein, an operating-wire rigidly secured to the stopper, said wire extending down along one side only of the spout and close thereto, and being bent to form a finger-hold lying above the breast of the can, and a guide secured to the side of the spout through which the wire passes, substantially as described.

656,418. DEVICE FOR DRAWING STEAM-BEER, &c. JAMES O'CONNOR, San Francisco, Cal. Filed May 17, 1900. Serial No. 16,961. (No model.)



Claim.—1. The combination with casks or receptacles containing beer or liquid under pressure of an equalizing-chamber, connections between a plurality of the containing-casks and said chamber, a cylinder, a piston movable therein and connections between the equalizing-chamber and said cylinder whereby the liquid is delivered into the cylinder, means for indicating the amount of liquid delivered to the cylinder, and means for controlling the liquid supplied to the cylinder.

2. The combination with casks or the like containing beer under pressure of an equalizing and distributing chamber, pipes connecting the casks with said chamber, a cylinder having a piston movable therein and a gage or indicator carried by the piston, a pipe connecting the equalizing-chamber with the cylinder, and a controlling-cock whereby an amount indicated by the gage can be delivered into the cylinder.

3. The combination with casks or the like containing beer under pressure of an equalizing and distributing chamber, pipes connecting a plurality of the casks therewith, a cylinder and a valve-controlled connection between said cylinder and the equalizing-chamber whereby liquid may be admitted into the cylinder, a gage or register connecting with the movable piston to indicate the amount thus admitted, and a cock through which the contents of the cylinder may be withdrawn.

4. The combination with one or more casks containing beer under pressure of a cylinder having a piston movable therein, a pipe having a valve or cock through which beer may be admitted into the cylinder and the piston moved toward the opposite end, an indicator carried by the piston to show the amount admitted to the cylinder, a cock by which the contents of the cylinder can be withdrawn after the admission-cock has been closed, and an inwardly-opening valve through which air may be admitted to the cylinder.

5. The combination with one or more casks containing beer under pressure, of a cylinder having a piston movable therein, a pipe through which liquid may be admitted from the cask to the cylinder, a controlling-valve by which the supply is cut off, means cooperating with the piston and indicating the amount of liquid delivered to the cylinder, a cock through which the beer within the cylinder may be drawn, and a valve through which water under pressure may be admitted to the opposite side of the piston to return it to its normal position.

6. The combination with one or more casks containing beer under pressure, of a cylinder having a piston movable therein, a pipe with an admission-cock through which beer is allowed to enter the cylinder and move the piston toward the rear, a second cylinder axially in line with the first-named cylinder having a piston fixed upon the piston-rod common to both whereby the pistons move in unison, a gage and an indicator carried by said second piston to indicate the amount of liquid delivered to the first-named cylinder, a four-way cock through which water under pressure is admitted to the second cylinder to move it in unison with the movements of the piston in the first cylinder, and means for reversing the valve to allow the water to escape through said cylinder and to return the first piston to its normal position.

7. The combination with one or more casks containing beer under pressure of cylinders standing in line with each other having pistons fixed to a piston-rod common to both whereby the pistons move in unison, connections between the beer-casks and one of the cylinders, and a cock by which beer under pressure may be admitted and the piston in said cylinder forced backwardly, a four-way cock with passage which is turned to admit water into the second cylinder while its piston is moving in unison with that of the first cylinder, a four-way cock to admit water into the rear of the first cylinder to move its piston after the beer has been withdrawn from the cylinder, and a second passage which connects either of the cylinders with a discharge-pipe.

8. The combination with casks containing beer under pressure of cylinders standing in line, pistons movable in said cylinders and connected by a piston-rod common to both, a pipe by which beer from the casks may be admitted to the end of one of the cylinders, and a controlling-cock therefor, means including an indicator and gage cooperating with one of the pistons to indicate the amount of liquid delivered to the first-named cylinder, a four-way cock intermediate between the cylinders and adapted to deliver water under pressure into the first cylinder upon the opposite side from the beer-chamber, or into the second cylinder whereby the pressure in the beer-chamber may be regulated, and a draw-off cock connected with the beer-chamber of said cylinder.

656,419. BUTTON. FREDERICK OLDFIELD, Portsmouth, N. H., assignor to the Morley Button Manufacturing Company, Saco, Me., and Boston, Mass. Filed June 2, 1900. Serial No. 18,803. (No model.)



Claim.—1. A fastener for cushion-buttons and like articles consisting of a one-piece staple provided with a table portion, legs depending at intervals from the periphery of the table portion and clenching-spurs bent upward from the table portion with their bases at the periphery thereof in the intervals between the legs.

2. A fastener for cushion-buttons and like articles consisting of a one-piece staple provided with a square table, long legs bent downward from opposite sides of the table and short clenching-spurs bent upward from the other two sides of the table.

3. A fastener for cushion-buttons and like articles consisting of a one-

piece staple provided with a table portion, legs depending at intervals from the periphery of the table portion and clenching-spurs bent upward from the table portion with their bases at the periphery thereof in the intervals between the legs, said clenching-spurs being each beveled on one side.

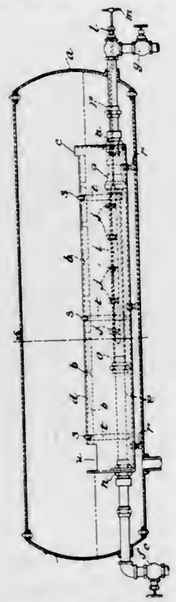
4. A button, consisting of a solid head of penetrable material and a one-piece staple provided with a table portion, legs depending at intervals from the periphery of the table portion and clenching-spurs bent upward from the table portion with their bases at the periphery thereof in the intervals between the legs, said clenching-spurs being embedded in the button-head.

5. A button, consisting of a solid head of penetrable material and a one-piece staple provided with a square table, long legs bent downward from opposite sides of the table and short clenching-spurs bent upward from the other two sides of the table said clenching-spurs being embedded in the button-head.

6. A button, consisting of a solid head of penetrable material and a one-piece staple provided with a table portion, legs depending at intervals from the periphery of the table portion and clenching-spurs bent upward from the table portion with their bases at the periphery thereof in the intervals between the legs said clenching-spurs being each beveled on one side, the said clenching-spurs being self-deflected and embedded in the button-head.

7. A button, consisting of a solid head of penetrable material and a one-piece staple provided with a table portion, legs depending at intervals from the periphery of the table portion and clenching-spurs bent upward from the table portion with their bases at the periphery thereof in the intervals between the legs said clenching-spurs being each beveled on one side, the said clenching-spurs being self-deflected and embedded in the button-head and said table being sunk flush with the lower surface of the button-head.

656,420. WATER-PURIFIER FOR STEAM-BOILERS. FRANK PYE, Philadelphia, Pa. Filed Jan. 2, 1900. Serial No. 49. (No model.)



Claim.—1. In a boiler feeder and purifier, in combination, a boiler, a sediment-collecting box within said boiler open at the top, a feed-water pipe within said box furnished with openings along its top, and means carried by said pipe and operated from without said boiler whereby said openings may be freed from obstructions at will.

2. In combination a boiler, a sediment-collecting box, within said boiler, open at its top, a feed-water pipe within said box furnished with openings on its top, a rod within said box, extending out of said boiler and fingers carried by said rod entering the holes in said feed-pipe.

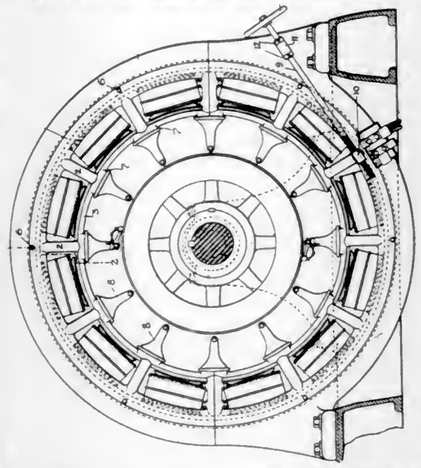
3. In combination, a boiler, a sediment-collecting box within said boiler and open at its top, a feed-water pipe within said box furnished with openings on its top, some of which are staggered, a gland on said pipe without the boiler, a rod passing through said gland, fingers carried by said rod and passing through said openings in said pipe, and pins passing through said fingers and resting on top of said pipe.

4. In a water-purifier for steam-boilers the combination with the finger-carrying rod, the perforated feed-pipe, and the gland on said pipe through which said rod passes, of a seat on said gland, a disk carried by said rod adapted to rest on said seat, and a disk on said rod separate from and inside said first disk, all substantially as and for the purposes set forth.

5. In combination, a boiler, a sediment-collecting box within said boiler open at its top, notched flanges secured along the sides of said opening, movable stays passing across and secured to the sides of said opening, and a feed-pipe within said box furnished with a telescopic joint to permit expansion and contraction.

6. In combination, a boiler, a sediment-collecting box, oval in cross-section, within said boiler and furnished with a longitudinal opening along its top and with an opening connected with, but lower than said longitudinal opening, legs supporting said box, a feed-pipe within said box furnished with openings along its top, a rod passing from the outside of said boiler into said feed-pipe, fingers on said rod passing through the openings in said pipe, glands carried by the ends of said box through which said pipe passes and telescopic joints on said pipe to permit expansion and contraction.

656,421. BRUSH-HOLDER RING. HENRY G. REIST, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Aug. 5, 1898. Serial No. 687,820. (No model.)



Claim.—1. In a dynamo-electric machine, the combination of a field-magnet and a brush-holder ring having a continuous bearing in the body of the field-magnet.

2. The combination of a field-magnet having an annular groove therein, and a brush-holder ring movable in said groove.

3. In a dynamo-electric machine, the combination of a field-magnet and a brush-holder ring forming part of the magnetic circuit.

4. In a dynamo-electric machine, the combination of a field-magnet having an undercut annular groove formed therein, and a brush-holder ring having its bearing in said groove.

5. The combination of a field-magnet, a brush-holder ring having its bearing in the body of the field-magnet, and means for preventing the disengagement of said magnet and ring.

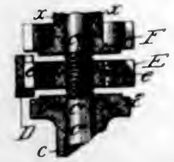
6. The combination of a separable field-magnet having an undercut annular groove formed therein, a split ring movable in said groove, and a brush-holder ring carried by said split ring.

7. The combination of a field-magnet having an undercut annular groove formed therein, an annular projecting ledge concentric with said groove, and a ring confined within said groove and bearing against said ledge.

8. In a dynamo-electric machine the combination of a brush-holder ring and a support therefor having an annular bearing-surface.

656,422. MEANS FOR MAINTAINING A GIVEN DIRECTION OF ROTATION OF SHAFTS. HARRY F. ROACH, St. Louis, Mo. Filed June 5, 1899. Serial No. 719,488. (No model.)

Claim.—1. In a device of the character described, the combination of a gear D susceptible of rotation in either of two directions, a member designed to rotate in one direction only, a shaft concentric with the axis of said member, a clutch-gear on said shaft, means for imparting lateral movement to said clutch-gear on said shaft, said clutch-gear being constantly in mesh with said first-mentioned gear, and means coöperating with said clutch-gear for causing said member to rotate in the same direction irrespective of the direction of rotation of said gear D, substantially as described.



2. In a device of the character described, the combination of the shaft B, which is susceptible of rotating in either of two directions, a hollow shaft *c* which is designed to rotate in one direction only, a shaft *c'* located within said hollow shaft, a clutch-gear provided with a bore, a female screw-thread formed in the bore of said clutch-gear, a male screw-thread formed on a shaft *c'*, for coöperation with the female screw-thread of the clutch-gear, a spur-gear on the shaft B constantly in mesh with said clutch-gear, a flange arranged on the hollow shaft *c*, said flange forming one member of a clutch, the other member of said clutch being that side of the clutch-gear next adjacent to said flange, whereby, when said clutch-gear is forced against said flange, a clutch will have been established, a spur-gear F, mounted upon the shaft *c'*, one side of said spur-gear F serving as one member of a clutch, the other member of said clutch being that side of the clutch-gear next adjacent to said spur-gear F, and gearing coöperating with said spur-gear F and said hollow shaft *c*; substantially as, and for the purpose specified.

3. In a device of the character described, the combination with a shaft or axle B, of a spur-gear D arranged on said axle, a clutch-gear E in mesh with said spur-gear, a screw-threaded bore formed in said clutch-gear, a shaft *c'*, a screw-thread formed on said shaft *c'*, designed to mate and coöperate with the screw-threaded bore of said clutch-gear, a hollow shaft *c* surrounding said shaft *c'*, a spur-gear F arranged on said hollow shaft *c*, a spur-gear J arranged on said shaft *c*, a shaft *h*, a spur-gear H, arranged on said shaft *h*, a spur-gear I arranged on said shaft *h*, said spur-gear I being in mesh with the spur-gear J, and an intermediate spur-gear G, suitably mounted, and in mesh with the spur-gears F and H, all substantially as, and for the purpose specified.

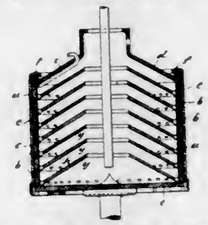
4. In combination with the frame of a vehicle, an axle B, which is susceptible of rotating in either of two directions, a hollow shaft *c* which is designed to rotate in one direction only, a shaft *c'* located within said hollow shaft, a clutch-gear provided with a bore, a female screw-thread formed in the bore of said clutch-gear, a male screw-thread formed on the shaft *c'*, for coöperation with the female screw-thread of the clutch-gear, a spur-gear constantly in mesh with said clutch-gear, a flange arranged on the hollow shaft *c*, said flange forming one member of a friction-clutch, the other member of said friction-clutch being that side of the clutch-gear next adjacent to said flange, whereby, when said clutch-gear is forced against said flange, a friction-clutch will have been established, a spur-gear F, loosely mounted upon the shaft *c'*, one side of said spur-gear F serving as one member of a friction-clutch, the other member of said friction-clutch being that side of the clutch-gear next adjacent to said spur-gear F, and gearing coöperating with said spur-gear F and said hollow shaft *c*; substantially as, and for the purpose specified.

5. In combination with the frame of a vehicle, an axle B, a spur-gear D arranged on said axle, a clutch-gear E in mesh with said spur-gear, a screw-threaded bore formed in said clutch-gear, a shaft *c'*, a screw-thread formed on said shaft *c'*, designed to mate and coöperate with the screw-threaded bore of said clutch-gear, a hollow shaft *c* surrounding said shaft *c'*, a spur-gear F arranged on said shaft *c'*, a spur-gear J arranged on said shaft *c*, a shaft *h*, a spur-gear H, arranged on said shaft *h*, a spur-gear I arranged on said shaft *h*, said spur-gear I being in mesh with the spur-gear J, and an intermediate spur-gear G, suitably mounted, and in mesh with the spur-gears F and H, all substantially as, and for the purpose specified.

6. The herein-described clutch mechanism, consisting of the following elements, a shaft *c'*, a screw-thread formed on said shaft, a clutch-gear provided with a screw-threaded bore designed to coöperate with the screw-thread formed on the shaft *c'*, a hollow shaft *c*, surrounding said shaft *c'*, a flange formed on said hollow shaft, a spur-gear F arranged on said shaft *c'*, said flange and said spur-gear F being arranged on opposite sides of said clutch-gear, means for rotating said clutch-gear, which rotation, through the instrumentality of the screw-threaded bore, and the screw-thread on the shaft *c'*, causes lateral movement of said clutch-gear, and causes the same to contact with either the flange on the hollow shaft or the spur-gear F, thereby effecting a friction-clutch and causing either said flange or said spur-gear F to rotate in the same direction as does said clutch-gear, and means coöperating with said spur-gear F and said hollow shaft for causing said hollow shaft to rotate in the same direction when the clutch-gear contacts with the spur-gear F, as does the hollow shaft when said clutch-gear contacts with the flange on said hollow shaft; substantially as described.

7. In a device of the character described, the combination of a gear susceptible of rotation in either of two directions, a member designed to rotate in one direction only, a shaft concentric with the axis of rotation of said member, a clutch-gear on said shaft, coacting parts on said shaft and clutch-gear for imparting lateral movement to said clutch-gear on said shaft, said clutch and first-mentioned gear being constantly in mesh, a part adapted to be engaged by said clutch-gear when rotated in one direction to rotate said member in the same direction, a gear adapted to be engaged by said clutch-gear when rotated in the opposite direction, and gear connections between said last-mentioned gear and said member for rotating the member in a direction opposite to the direction of rotation of said clutch-gear, substantially as described.

656,423. CENTRIFUGAL CREAM-SEPARATOR. ERIK G. N. SALENIUS, Albano, Sweden, assignor to the Aktiebolaget Radiator, same place. Filed Dec. 29, 1897. Serial No. 664,420. (No model.)



Claim.—1. In a centrifugal vessel, the combination with a relatively-thin outer drum *a*, of uniform thickness from top to bottom, of a series of rings *b* which fit into said drum and are superposed, extending from the bottom to the cover of the drum and forming an inner reinforcing-wall therefor, the plates *g* on said rings, packing between said rings, and means for pressing the rings *b* firmly together, substantially as set forth.

2. In a centrifugal vessel, the combination with the relatively-thin drum *a*, having a wall of substantially-uniform thickness from top to bottom, of the rings *b*, fitting into said drum and superposed, the plates *g* on said rings, the packing *c* between said rings, the cover *d*, having a ring-flange which rests on the top ring *b*, and the clamping-screws *f*, which are driven down through inturned flanges on the drum onto said ring-flange of the cover, substantially as set forth.

3. In a centrifugal vessel, the combination with a relatively-thin drum *a*, of substantially-uniform thickness from top to bottom, and having inturned flanges at its top to receive the screws *f*, the said screws, the cover *d*, and the removable bottom *e*, of the series of rings *b*, superposed within the drum and extending therein from the bottom to the cover so as to form a reinforcing-wall for the drum, and the plates *g*, carried by said rings, substantially as set forth.

656,424. COLLAPSIBLE POST, BEAM, &c. JEAN SANDMAYER, Saarburg, Germany. Filed May 1, 1899. Serial No. 715,183. (No model.)

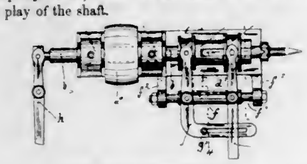


Claim.—A collapsible post formed of two or more sections slidably secured together by tongue-and-grooved connections, and provided with means for locking said sections in operative position consisting of a metal box provided with a cylindrical opening, and a spring-actuated pin adapted to work in said opening against one section, as set forth.

656,425. APPARATUS FOR ENLARGING AJUTAGES OF METAL TUBES. FRITZ SCHILLING and JOHANN SCHURZ, Nuremberg, Germany. Filed Oct. 2, 1899. Serial No. 732,374. (No model.)

Claim.—1. The combination of the longitudinally-adjustable rotating shaft, the tool-carrier with its angular heel pivoted in the end thereof, the conical calibrating-expander carried thereby, the spring acting on the heel of the expander-carrier, to force it toward an axial position, the sliding collar arranged to hold the expander in axial line with the shaft when over the pivot of its carrier, and means for shifting said collar to throw the expander out eccentrically.

2. The combination of the longitudinally-adjustable rotating shaft, the tool-carrier, with its angular heel, pivoted in the end thereof, the conical calibrating-expander carried thereby, the spring acting on the heel of the expander to force it toward an axial position, the sliding collar arranged to hold the expander in axial line with the shaft during its incipient entering and spreading movement, a hand-lever for shifting said collar, and a stop adjustable to limit the movement of said hand-lever under the forward play of the shaft.



656,426. RHODOLALKYLETHERESTER. ALBRECHT SCHMIDT, Höchst-on-the-Main, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed Dec. 6, 1899. Serial No. 739,370. (Specimens.)

Claim.—As new products, the rhodolalkyletheresters, being greenish yellow-red powders, soluble in water and alcohol and undergoing hydrolysis and separation of the rhodolether when boiled with soda-lye, substantially as set forth.

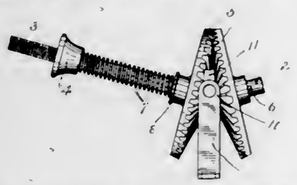
656,427. FELLER FOR SEWING-MACHINES. JAMES T. SHAW, Philadelphia, Pa., assignor to The Singer Manufacturing Company, of New Jersey. Filed Dec. 4, 1899. Serial No. 739,073. (No model.)



Claim.—1. A lap-seam feller comprising upper and lower folders, the said lower folder being provided with an outwardly and forwardly projecting tongue, as *e*, extending beyond the main body of the feller so that its forward end will be close to one of the needles of a two-needle sewing-machine.

2. A lap-seam feller the lower folder of which is provided with a forwardly-projecting tongue, as *e*, extending beyond the main body of the feller so that its forward end will be close to one of the needles of a two-needle sewing-machine, the outer edge of said tongue being in line, or approximately so, in the direction of the feed of the work, with the outer edge of the forward end of the passage-way for the lower ply of fabric.

656,428. TWINE-TENSION DEVICE. WILLIAM S. SHERD, Belview, Minn. Filed May 18, 1900. Serial No. 17,081. (No model.)



Claim.—1. A twine-tension device comprising a pair of intermeshing beveled gears, and guides for directing the twine between the intermeshing gear-teeth, substantially as described.

2. A twine-tension device, comprising a pair of intermeshing bevel-gears, guides for directing the twine between said gears, a spring pressing said gears together, and means for varying the tension of said spring, substantially as described.

3. In a twine-tension device, the combination with the support 1 having the projecting shafts 2 and 3, of the guides 9, 10, the intermeshing beveled gears 5, one on each shaft 2, 3, and the spring 7 and nut 4 on the shaft 3, said parts operating substantially as described.

656,429. BALING-PRESS. PLIN C. SOUTHWICK, Sandwich, Ill. Filed Sept. 21, 1898. Serial No. 690,208. (No model.)



Claim.—1. In a baling-press, the combination with a trunk inclosing a baling-chamber, and having an openable bulkhead at its end, of means for compressing the material against the resistance of the bulkhead, and yielding detents for retarding the advance of the forming bale upon the discharge of a completed bale.

2. In a baling-press, the combination with a horizontal trunk inclosing a baling-chamber and having a lateral feed-aperture, of a removable bulkhead at the end of the baling-chamber, and spring-extended fingers projecting laterally into the baling-chamber for yieldingly resisting the advance of the forming bale.

3. In a baling-press, the combination with a trunk, a plunger reciprocating within the trunk, a toggle for actuating the plunger, and a rock-shaft for carrying the short arm of the toggle and being in fixed relation therewith, of a pair of crank-arms fixed upon the rock-shaft, and cushioning-springs connecting the crank-arms with the trunk.

4. In a baling-press, the combination with a trunk having a lateral feed-aperture, and with a plunger and pitman reciprocating within the trunk, of a door for the aperture, a rocking lever pivoted to the trunk back of the door-hinges, a flexible connection between the outer end of the lever and the door, and a loop rising from the pitman for engaging the lower end of the lever and rocking it upon its pivot as the plunger advances.

5. In a baling-press, the combination with a reciprocating plunger and a toggle for actuating it, of an oscillating cam fixed to the short arm of the toggle and having a face eccentric to its center of oscillation, a chain attached to the cam at its short radius and being laid over its eccentric face, and means for applying power to the chain to oscillate the cam for flexing the toggle.

6. In a baling-press, the combination with a reciprocating plunger and a toggle for actuating it, of an oscillating cam fixed to the short arm of the toggle and having a face eccentric to the center of its movement, a chain for retracting the plunger fixed to the cam at its short radius and being laid over its eccentric face, a rotative power mechanism, an oscillating cam mounted on the frame of the power and having a face eccentric to the center of its movement, the remote end of the chain being attached to the last-named cam at its short radius, and being laid over its eccentric face, and means for intermittently connecting the rotative parts of the power with the last-named cam to oscillate it.

7. In a baling-press having a reciprocating plunger and a toggle for actuating the same, of a rotative power mechanism for actuating the toggle, a chain for connecting the power with the toggle, an eccentric cam carried by the shaft of the power, a single-acting pawl carried by the cam for intermittently engaging the chain, and fixed cams for positively retracting and projecting the pawl to disconnect and reconnect it with the chain.

8. In a power mechanism, the combination with a rotatable cam-hook, a single-acting reciprocating pawl carried by the hook, and a power-transmitting chain or the like adapted for alternate engagement and release by the pawl, of a dog for arresting the chain when released by the pawl.

9. In a power mechanism, the combination with a rotatable cam-hook, a single-acting reciprocating pawl adapted to play in and out across the periphery of the cam, and with a chain or the like for transmitting power and having an engaging hook in sliding engagement with the periphery of the cam, of a dog for arresting the engaging hook when released by the pawl, and means for advancing and retracting the dog.

10. In a power mechanism, the combination with a rotatable cam-hook, a power-transmitting hook in sliding engagement with the periphery of the cam, and a pawl, of a dog, and means for advancing the pawl and the dog into and withdrawing them from the path of the hook in alternation.

11. In a power mechanism, the combination with a rotatable cam having a peripheral groove, a power-transmitting engaging hook running within the groove, and a pawl reciprocating into and out of the groove, of a dog pivoted to the cam so that its nose may be thrown into the groove, the heel end of the dog being in engagement with the pawl, whereby the movement of the pawl throws the dog in the opposite direction.

12. In a power mechanism, in combination, a rotatable cam-hook, a hook in sliding engagement with the periphery of the cam, a pawl carried by the cam and having a reciprocating movement across the path thereon of the hook once each rotation of the cam, a dog adapted to be thrown into the path of the hook as the pawl is retracted, and to be withdrawn therefrom as the pawl is extended.

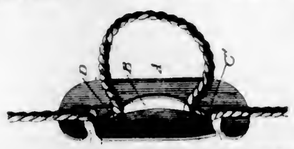
656,430. HAIR-FASTENER. CHARLES STARR, Mount Vernon, Ill. Filed June 13, 1900. Serial No. 20,204. (No model.)



Claim.—1. A hair-pin comprising a head portion, legs depending from the head portion, a wire clamp lying within the head portion, the clamp being of the shape of the letter m having its extremities passed through the perforation in the head portion and a central bend in each of the legs adjacent the extremities of the clamp.

2. A hair-pin comprising a hollow head portion, legs depending from the head portion, perforations through the base of the head portion exteriorly of the legs, arc-shaped recesses in the legs, and a wire clamp bent into the shape of the letter m, said clamp having its extremities passed through the perforations in the head and lying adjacent the recesses of the legs and having its central bend secured within the head portion.

656,431. CORD-ADJUSTER FOR ELECTRIC LIGHTS. FRANK H. STEWART, Camden, N. J. Filed May 9, 1900. Serial No. 16,007. (No model.)



Claim.—1. A cord-adjuster for an electric light consisting of a plate having throats in the upper and lower portions thereof and a mouth intermediate of said throats, the corners of said mouth being adjacent to said throats, and said mouth and throats being separated by necks in said plate between said parts.

2. In a cord-adjuster for an electric light, a plate provided with open throats in the upper and lower portions thereof and a vertically-arranged mouth in the plate intermediate of said throats, the corners of said mouth being adjacent to said throats and being reduced forming biting edges for the suspension-cord of the light.

3. In a cord-adjuster for the purposes set forth, a plate provided with a mouth therein, the ends or corners of the same having biting edges for said cord, and supplemental throats adjacent to said edges, a separating-neck existing between each end of the mouth and the adjacent throat.

656,432. SHUTTLE-DRIVING MECHANISM FOR LOOMS. ERNST SUTER, Paterson, N. J. Filed Apr. 16, 1900. Serial No. 12,983. (No model.)

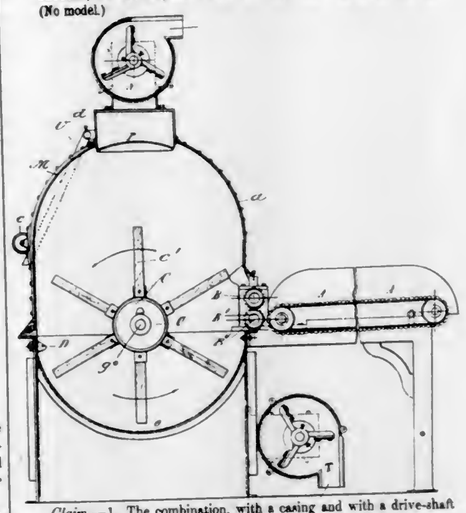
Claim.—1. In a loom, the combination, with a frame and the main driving-shaft and batten, of a shuttle carried by said batten, a screw or worm revolubly mounted on said batten and adapted to operatively engage said shuttle to drive the same, a sprocket journaled in said batten and operatively connected to said screw or worm, treadle-levers fulcrumed in said frame, a sprocket-chain engaging said sprocket and having its ends respectively connected to said levers, and means, operated from the main driving-shaft, for operating said treadle-levers, substantially as described.



2. In a loom, the combination, with a frame and the main driving-shaft and batten, of a shuttle or shuttles carried by said batten, a shaft journaled on said batten, screws or worms mounted on said last-named shaft and adapted to drive said shuttle or shuttles, a sprocket journaled in said batten, gearing connecting said sprocket and said last-named shaft, treadle-levers fulcrumed in said frame, a sprocket-chain engaging said sprocket and having its ends respectively connected to said levers, and means, operated from the main driving-shaft, for operating said treadle-levers, substantially as described.

3. In a loom, the combination with the frame and the main driving-shaft and with the batten operated therefrom, of a shuttle carried by said batten and provided at or near each end with a rearwardly-projecting pin, a shaft revolubly mounted on the batten and parallel with the same, an endless screw or worm secured on said shaft and adapted to engage the projecting pins of the shuttle, treadle-levers fulcrumed in the loom-frame, a sprocket journaled in said batten, gearing connecting said sprocket and the worm-carrying shaft, a sprocket-chain engaging said sprocket and having its ends respectively connected to said levers, and means operated from the main driving-shaft for operating said treadle-levers, substantially as described.

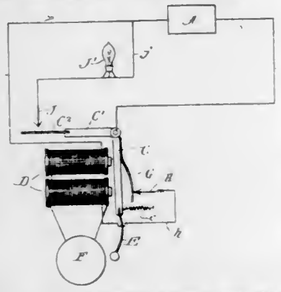
656,433. MIXING-MACHINE FOR HAIR, &c. GUSTAVE VERBRUGGEN, Tamise, Belgium. Filed Nov. 24, 1899. Serial No. 738,140. (No model.)



Claim.—1. The combination, with a casing and with a drive-shaft journaled therein, of a series of radial arms or strikers carried by the shaft within said casing, a revoluble disk, said disk having projections, the one on its periphery and the other on one of its faces, gearing connecting said shaft and the disk, revoluble feed-rollers journaled in operative proximity to said arms or strikers, a shaft carrying one of said rollers, a hinged door for said casing, a system of levers controlling said door and adapted to be engaged by said last-named projection to actuate said door, a compensating mechanism for said system of levers, gearing between said disk and said last-named shaft, one of the members thereof being loosely mounted on said shaft, a clutch mechanism adapted to connect said loose member of the gearing and said roller-carrying shaft, a fulcrumed fork connected to the movable member of said clutch mechanism, a suitably-fulcrumed lever adapted to be engaged at one of its ends by the peripheral projection of said disk, and a link connecting the other end of said lever and the fork, substantially as described.

2. The combination with the casing and with the main driving-shaft penetrating the same, of a series of radially-arranged strikers or arms in said casing and carried by said shaft, corrugated feed-rollers in close proximity to said arms or strikers, and a gear-wheel loosely mounted on the shaft of one of the feed-rollers, a clutch mechanism also mounted on said last-mentioned shaft and adapted to unlock and lock said gear-wheel to its supporting-shaft, a second gear-wheel in mesh with the first-mentioned gear-wheel, a shaft supporting said second gear-wheel, a disk mounted on said last-mentioned shaft and provided with a cam, means controlled by said cam for operating the clutch mechanism, a train of gears transmitting motion from the main driving-shaft to the second-mentioned gear, a hinged lid arranged on the casing, means controlled by the second-mentioned gear for automatically opening said lid while the clutch is being operated to stop the rotation of the feed-rollers, and a compensator for controlling the closing of said lid, all said parts substantially as and for the purposes described.

656,434. COMBINED VISIBLE AND AUDIBLE SIGNAL. EUGENE W. VOGEL, Chicago, Ill., assignor to David S. Wegg, same place. Filed July 7, 1899. Serial No. 723,024. (No model.)

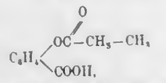


Claim.—In a combined audible and visible signal, the combination with a source of electrical supply, of a bell located in a circuit and a lamp located in another circuit, and switch mechanism acting automatically to alternately throw a current through the bell and through the lamp, substantially as described.

656,435. PROPIONYL-SALICYLIC ACID AND PROCESS OF MAKING SAME. OTTO BONHOEFFER, Elberfeld, Germany, assignor to the Farbenfabriken of Elberfeld Company, of New York. Filed Oct. 23, 1899. Serial No. 734,544. (Specimens.)

Claim.—1. The process for the production of propionylsalicylic acid which process consists in, first, allowing propionic anhydride to act on salicylic acid; secondly, isolating the so-formed propionylsalicylic acid, substantially as hereinbefore described.

2. As a new article of manufacture the propionylsalicylic acid having the formula

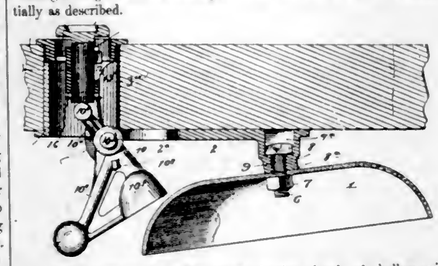


forming white glittering leaves melting at 95° centigrade, being soluble in water with difficulty, soluble in alcohol, benzene, ether and chloroform, being split by a prolonged heating with water into its two component parts, being likewise decomposed by a treatment with alkalies, giving contrary to salicylic acid no violet color when its watery solution is mixed with ferric chlorid and representing a valuable medicine for gouty rheumatism, substantially as hereinbefore described.

656,436. ALARM-GONG. JOHN A. BRILL, Philadelphia, Pa. Filed Jan. 31, 1899. Serial No. 703,969. (No model.)

Claim.—1. The combination of a gong, a plate or frame and a hammer, said plate or frame having a shell-like socket provided with edges 11ª that are normally extended inwardly, with a plunger and a guide for the same having a head adapted to fit within the socket and of greater corresponding diameter than the distance between the edges 11ª of the socket, whereby said edges will be spread apart when the head is forced between the same into the socket, substantially as described.

2. In a plunger mechanism for operating gongs, the combination with a portable guide socket or housing, and a plunger vertically movable and rotatable therein, and means carried by the housing adapted to allow of a vertical movement of the plunger and a partial rotation thereof, further means to lock the plunger in the housing when so rotated, and means for preventing the complete separation of the plunger and housing, the said housing having means for securing it to a car-platform or the like, substantially as described.



3. The combination with a plunger having a head; of a hollow guide therefor having a recess adapted to receive the head of said plunger; means for normally allowing a limited longitudinal movement to the plunger; and means for locking the plunger in the said guide when the head of the said plunger lies substantially flush with the top of the said guide, substantially as described.

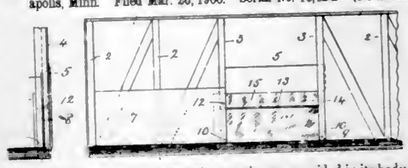
4. In a gong, the combination with a plunger having a head; a hollow guide for said plunger having a recess adapted to receive the head of the plunger; and means for normally allowing a limited longitudinal movement to the plunger; of a pivoted weighted hammer or striker having an arm extending above its pivotal point, said arm bearing against the end of said plunger; and means for locking the said plunger in the said guide when the head of the plunger lies substantially flush with the top of the said guide, substantially as described.

5. The combination with a plunger having a head; of a hollow guide therefor having a recess adapted to receive the head of said plunger; a key securing the said plunger in said guide and allowing normally a limited longitudinal movement to the plunger, said guide having a longitudinal slot provided with a lateral offset; and a lug on the said plunger arranged to work in the said slot when the plunger is free, and adapted to be caused to enter said offset and lock the plunger against longitudinal movement when the latter is partially rotated in its depressed position, and the head of said plunger is substantially flush with the top of the guide, substantially as described.

6. The combination with the cylindrical plunger; of the hollow cylindrical guide-socket, said guide-socket having a longitudinal slot, and a lateral offset from said slot, a raised portion or step at the bottom of the rear of said offset, a shoulder at the upper side of said offset somewhat nearer the longitudinal slot than the said step or raised portion; and a radial lug or projection on the said plunger arranged to work freely in the said slot, and adapted to be caused to enter the said offset upon the plunger being partially rotated, the shoulder in the said offset serving as a stop to retain the said lug within said offset, substantially as described.

7. The combination in a gong, of a supporting-plate having depressions opening outwardly; a hammer having outwardly-extending gudgeons detachably secured in said bearings in the top of the plate; oppositely-extending stops on the said hammer and stops depending from the said plate upon opposite sides of the said hammer arranged to engage the stops on the hammer, substantially as described.

656,437. GRAIN-CAR DOOR. WILLIAM P. BROWN, Jr., Minneapolis, Minn. Filed Mar. 26, 1900. Serial No. 10,124. (No model.)



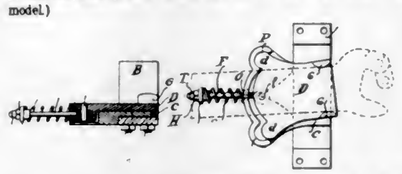
Claim.—1. A sliding door for a grain-car, provided in its body portion with a longitudinal slot having suitably-located upward extensions, and provided in its lower edge with notches, ways for guiding its movements, a device engaging in said slot on which the door slides in opening and closing it, and devices engaging in said notches to lock the door in its extreme positions, substantially as set forth.

2. The combination with a car-door frame having guideways, of a grain-door having notches in its lower edge near the ends, and devices in said ways for engaging in said notches to prevent lengthwise movement of the door, substantially as set forth.

3. The combination with a door-frame having guideways, of a grain-door having notches in its lower edge near the ends, and having in its body a longitudinal slot with upwardly-extending notches vertically over the notches in the lower edge, and devices in said ways for engaging in said slot and notches, substantially as set forth.

4. A sliding door for a grain-car, having a longitudinal slot the ends of which extend upward, notches in the lower edge of the door, guide-slots therefor provided in the door-frame, and pins in said slots, substantially as set forth.

656,438. CENTERING DEVICE FOR CAR-COUPLINGS. EDWARD F. CHAFFEE, Albany, N. Y. Filed May 31, 1900. Serial No. 18,497. (No model.)



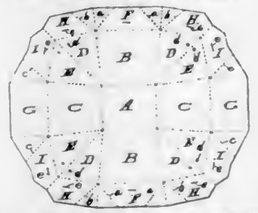
Claim.—1. A centering device for a car-coupler consisting of a stationary bed-plate; a movable plate mounted thereon and adapted to turn on a curve with the coupler in either direction; and a spring connecting said movable plate with said bed-plate and adapted to return said movable plate into position when turned in either direction, substantially as described.

2. In a centering device for a car-coupler, a stationary bed-plate mounted upon a hanger under a car; a movable plate mounted thereon adapted to be turned on a curve horizontally a limited distance in either direction upon said bed-plate; a spring attached to said movable plate and bearing against said bed-plate, adapted to return said movable plate into position when turned in either direction, in combination with a car-coupler mounted upon said movable plate and adapted to turn said plate, substantially as described and for the purposes set forth.

3. In a centering device for a car-coupler, a stationary bed-plate mounted upon and secured to a hanger under a car, said bed-plate having curved recesses at its rear corners; a movable plate or table mounted upon said bed-plate, said movable plate having projections or buffers on each side and curved rear corners adapted to fit into the curved recesses at the corners of the bed-plate, said top plate or table being adapted to turn a limited distance in either direction upon said curved corners as pivots; a spring connecting said movable top plate with said stationary bed-plate, and adapted to hold said curved corners of said top plate into the curved recesses of the bed-plate, and when the said plate is turned upon one of said curved corners as a pivot to return said plate again to position and a car-coupler adapted to rest upon said top plate between said projections or buffers, substantially as described and for the purposes set forth.

4. In a centering device for a car-coupler, a hanger under a car adapted to support a car-coupler; a stationary bed-plate in said hanger; a movable plate mounted on said bed-plate and adapted to hold said coupler thereon and to turn in either direction of the said coupler; a spring connecting said movable plate with said bed-plate and adapted to return said movable plate into position when moved in either direction, and means for adjusting said spring to any desired tension, substantially as described and for the purposes set forth.

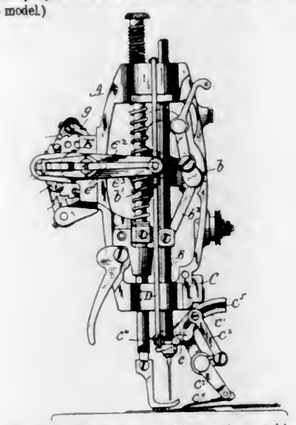
656,439. PAPER VESSEL. JOHN N. DAVIS, Dayton, Ohio, assignor to the Weston Paper and Manufacturing Company, same place. Filed June 11, 1900. Serial No. 19,813. (No model.)



Claim.—1. A paper vessel, formed from a single blank of paper, having bottom, sides and ends, side and end extensions with extension folds between them, the side extensions and the adjacent extension folds being turned over at the corners outwardly, and the extension folds adjacent the end extensions folding inwardly on a diagonal line, said blank being folded into shape in the manner described, in which the side extension portions are folded inward with the end extensions overlapping on the outside, and means for locking together the overlapping end extensions to close the vessel, substantially as shown and described.

2. A paper vessel, formed from a single blank of paper, having bottom, sides, and ends, with side folds between the sides and ends, side and end extensions with end extension folds between them, the side extensions and the adjacent extension folds being turned over at the corners outwardly, and the extension folds adjacent to the end extensions folding inwardly on a diagonal line, said blank being folded into shape in the manner described, in which the side extension portions are folded inward with the end extensions overlapping on the outside, and strips of tin passing through the side extension portions, clenched on the inside and lying flat along the outside, whereby when the side extension portions are folded in and the end extensions overlap, the strips may be bent over the overlapping portion, to close the vessel, substantially as shown and described.

656,440. RUFFLING SEWING-MACHINE. PHILIP DIEHL and MARTIN HEMLER, Elizabeth, N. J., assignors to The Singer Manufacturing Company, of New Jersey. Filed June 26, 1899. Serial No. 721,918. (No model.)



Claim.—1. The combination with a sewing-machine ruffling or plaiting attachment provided with an actuating-lever, of an operating device, independent of said attachment, for said lever, an actuating mechanism for said operating device, and automatic mechanism for connecting and disconnecting said actuating mechanism and operating device.

2. The combination with a sewing-machine ruffling or plaiting attachment provided with an operating-lever, of an independent operating-bar for said lever, an actuating mechanism for said operating-bar, and automatic means for connecting and disconnecting said actuating mechanism and operating-bar.

3. The combination with a sewing-machine ruffling or plaiting attachment provided with an operating-lever, of an operating-bar connected with said lever, a rotating pattern-wheel for controlling the movements of the ruffling or plaiting blade of said attachment, a vibrating arm for actuating said bar, and a coupling device, controlled by said pattern-wheel for connecting and disconnecting said arm and bar.

4. The combination with a sewing-machine ruffling or plaiting attachment provided with an operating-lever, of a vertically-reciprocating bar in the head of the machine and independent of the needle-bar, and connected with and serving to operate said lever.

5. The combination with a sewing-machine ruffling or plaiting attachment provided with an actuating-lever, as c', of the independent operating-bar D connected with said lever, a vibrating arm for operating said bar, and automatic means for connecting and disconnecting said arm and bar.

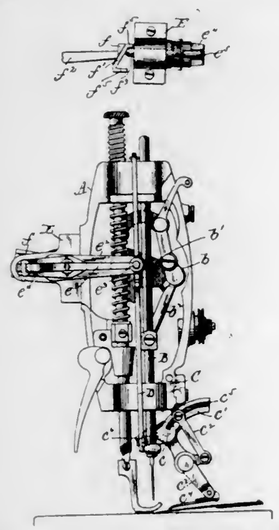
6. The combination with a ruffling or plaiting attachment, of an operating-bar therefor, a rock-shaft having an arm connectible with said bar, means for operating said rock-shaft, and automatic means for connecting and disconnecting said arm and bar.

7. The combination with a sewing-machine ruffling or plaiting attachment, of an operating-bar therefor, a rock-shaft having an arm connectible with said bar, means for operating said rock-shaft, a rotating pattern-wheel, and means, controlled by said pattern-wheel, for connecting and disconnecting said arm and bar.

8. The combination with a sewing-machine ruffling or plaiting attachment, of the notched operating-bar D therefor, the rock-shaft e' having the arm e^3, the sliding coupling-pin e^5 carried by said arm and adapted to enter the notch of said bar, means for operating said rock-shaft, the rotating pattern-wheel, and means, controlled by said pattern-wheel, for coupling and uncoupling said pin and bar.

9. The combination with a sewing-machine ruffling or plaiting attachment, of the notched operating-bar D, the rock-shaft c' having the arm c^2 provided with the sliding coupling-pin c^3, means for operating said rock-shaft, the rotating pattern ratchet-wheel having projecting pins, the slide-rod f^3 to be engaged by said pins, the spring c^4 and the lever c^5 mounted on said arm, said lever engaging said coupling-pin c^3.

656,441. **RUFFLING SEWING-MACHINE.** PHILIP DIEHL and MARTIN HEMLER, Elizabeth, N. J., assignors to The Singer Manufacturing Company, of New Jersey. Filed June 26, 1899. Serial No. 721,919. (No model.)



Claim.—1. The combination with a sewing-machine ruffling or gathering attachment, of a bar for operating said attachment, an actuating device for said bar, coupling mechanism for connecting and disconnecting said actuating device and operating-bar, said coupling mechanism comprising a lever having a portion which is inclined relative to the direction of movement of said lever, a sliding rod operated by the inclined portion of said lever, and means for holding said sliding rod in contact with said inclined portion: whereby the attendant may throw the said attachment into or out of operation while the machine is running.

2. The combination with a sewing-machine ruffling or gathering attachment, of a notched, operating-bar for said attachment, independent of the needle mechanism of the machine, a constantly-vibrating arm carrying a sliding coupling-pin adapted to engage the notch of said bar, and a lever controlled by the attendant and provided with a portion which is inclined relative to the line of movement of said lever, which latter is connected with the said coupling-pin to control the movements of said pin in coupling and uncoupling said operating-bar and vibrating arm.

3. The combination with a sewing-machine ruffling or gathering attachment, of a notched operating-bar D therefor, a constantly-operating vibrating arm carrying a coupling-pin adapted to engage the notch of said bar, a spring-lever carried by said arm and engaging said pin, a slide-rod to operate said lever, and a movable incline, controlled by the attendant, to actuate said slide-rod and throw the said attachment into or out of operation while the machine is running.

4. The combination with a sewing-machine ruffling or gathering attachment, of an operating-bar therefor, a constantly-moving rock-shaft having a vibrating arm provided with a coupling-pin to engage said bar, a lever provided with an incline, a slide-rod controlled by said incline, connections between said slide-rod and coupling-pin, and means whereby said lever may be actuated by the attendant while the machine is running to cause the said coupling-pin to be engaged with or disengaged from said operating-bar.

5. The combination with a sewing-machine ruffling or gathering attachment, of a bar for operating said attachment, an actuating device for said bar, coupling mechanism for connecting and disconnecting said actuating device and operating-bar, said coupling mechanism comprising a lever having an incline, stops for limiting the movement of said lever in either direction, a sliding rod operated by said lever, and means for holding said sliding rod in contact with said incline; whereby the attendant may throw the said attachment into or out of operation while the machine is running, and whereby, also, the movement of the said lever by the attendant, will be limited.

656,442. **RUBBER TYPE.** JOSEPH S. DUNCAN, Chicago, Ill., assignor to the Addressograph Company, same place. Filed Nov. 20, 1899. Serial No. 737,583. (No model.)



Claim.—1. A solid homogeneous type composed entirely of rubber and consisting of an elastic printing-face and a less-elastic soft body inseparably connected together by vulcanization.

2. The herein-described process of making type composed entirely of rubber and having an elastic printing-face and a comparatively-inelastic body which consists in providing a blank sheet of unvulcanized rubber composed of two layers placed one upon the other and adhering together, one of said layers consisting of a comparatively-elastic grade of rubber for the face of the type and the other layer consisting of a comparatively-inelastic grade of rubber for the body of the type; arranging the blank sheet with the elastic face thereof against a form and applying heat and pressure to produce the type characters in the sheet and vulcanize the rubber of both sheets and unite the two grades of rubber inseparably together; and finally separating the individual types of the sheet, substantially as described.

3. The herein-described process of making type composed entirely of rubber and having an elastic printing-face and a comparatively-inelastic body which consists in providing a blank sheet of unvulcanized rubber composed of a comparatively-elastic layer of rubber for the face of the type and a comparatively-inelastic layer of rubber for the body of the type; arranging the blank sheet with the elastic face thereof against a form and applying heat and pressure to produce the type characters in the sheet and vulcanize the rubber of both sheets and unite the two grades of rubber inseparably together; then cutting the sheet across the lines of type and between the type characters thereon and finally separating the lines of type, substantially as described.

656,443. **TYPE-HOLDER.** JOSEPH S. DUNCAN, Chicago, Ill., assignor to the Addressograph Company, same place. Filed Nov. 20, 1899. Serial No. 737,584. (No model.)



Claim.—1. A combined link and type-holder provided with a type-groove to receive and hold the type and hinging devices for connecting two or more holders together, a spring locking-tongue on one side of the holder and an opening in the other side thereof to receive the tongue of another holder, substantially as described.

2. A combined link and type-holder provided with a type-groove to receive and hold the type and hinging devices for connecting two or more holders together, a longitudinally-extending spring-tongue on one side of the holder and an opening in the other side thereof to receive the tongue of another holder, substantially as described.

3. A combined link and type-holder provided with a type-groove to receive and hold the type and hinging devices for connecting two or more holders together, an opening in one side of the holder and a longitudinally-extending and outwardly-projecting spring-tongue on the other side of the holder adapted to enter the opening of another holder and lock the two holders together by engaging the end wall of the opening, substantially as described.

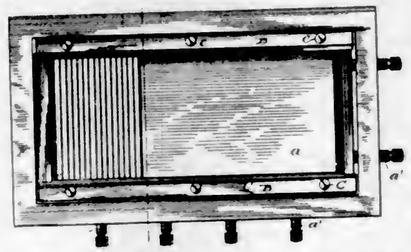
4. A combined link and type-holder having one plane side and a curved side forming a groove in which the type are held, hinging devices for connecting two or more holders together, a spring locking-tongue on the plane side and an opening in the curved side to receive the tongue of another holder, substantially as described.

5. A combined link and type-holder provided with a plane side and a curved side forming a groove in which the type are held and a recess adjacent to said groove, and devices on the holder for linking two or more holders together after the type have been arranged in the groove, said devices operating in the recess without interfering with or being affected by the type in the groove, substantially as described.

6. A combined link and type-holder provided with a groove in which the type are held, linking projections on one side of the holder and corresponding openings on the other side thereof to receive the projections of another holder before or after the type have been arranged in the groove, and a spring-tongue for locking two holders together, substantially as described.

7. A combined link and type-holder having a plane side and a curved side forming a groove with a lateral extension to receive and hold the type and a recess adjacent to the extension of the groove, linking projections on the plane side adapted to be passed through openings in the curved side of another holder before or after the type have been arranged in the groove and operating in said recess without interfering with the type to link the holders together, substantially as described.

656,444. **MOLD FOR MAKING RUBBER TYPE.** JOSEPH S. DUNCAN, Chicago, Ill., assignor to the Addressograph Company, same place. Filed Mar. 12, 1900. Serial No. 8,293. (No model.)



Claim.—1. A mold for making rubber type in sheets comprising a frame having a bottom, matrix-bars arranged side by side in the frame, a metal strip between each pair of matrix-bars and projecting above the faces thereof to form slits in the type-sheet between the lines of type thereon and partially through the sheet, and means for securing the bars and strips rigidly in place in the frame, substantially as described.

2. A mold for making rubber type in sheets comprising a frame, matrix-bars arranged side by side in said frame, a metal strip secured between each pair of matrix-bars and projecting above the faces thereof to form slits partially through the type-sheet and between the lines of type thereon, and spacing-bars arranged around the matrix-bars and strips and having their upper faces in a plane above the matrix-bars, substantially as described.

3. The combination with a mold-frame, of matrix-bars arranged therein, and a metal strip between each pair of matrix-bars provided with a beveled upper edge, substantially as and for the purpose described.

4. The combination with a mold-frame, of base-bars arranged within the frame, a metal strip between each pair of base-bars, and matrix-bars on the base-bars, substantially as and for the purpose described.

5. The combination with a mold-frame, of spacing-bars arranged within the frame and provided with inclines on their upper faces, substantially as and for the purpose described.

6. The combination with a mold-frame, of spacing-bars arranged within the frame and provided on their upper faces with a depression to receive the surplus material during the molding operation, substantially as described.

7. The combination with a mold-frame, of spacing-bars arranged within the frame, the inner edges of said bars being higher than the outer edges thereof, substantially as and for the purpose described.

8. The combination with a mold-frame, of side spacing-bars arranged within the frame, and provided with ribs on their inner sides, substantially as and for the purpose described.

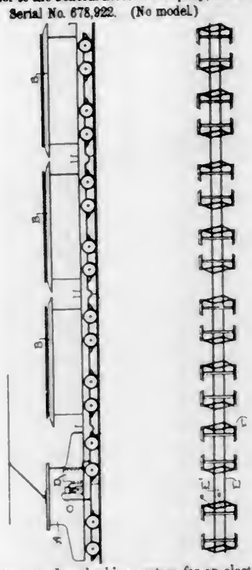
9. The combination with a mold-frame, of side spacing-bars arranged within the frame, and ribs on the inner sides of the spacing-bars at the upper edge thereof and having inclined upper faces, substantially as and for the purpose described.

10. The combination with a mold-frame, of spacing-bars arranged within the frame, base-bars between the spacing-bars, matrix-bars on the base-bars, and metal strips alternating with the base-bars and projecting above the matrix-bars, substantially as described.

11. The combination with a mold-frame, of side spacing-bars arranged within the frame, ribs on said bars, and matrix-bars provided with recessed ends to fit under the ribs on the spacing-bars, substantially as described.

12. The combination with a mold-frame, of side spacing-bars arranged within the frame, ribs on said bars, base-bars provided with recessed ends to fit under the ribs on the side spacing-bars, matrix-bars on the base-bars, and a metal strip between each pair of base and matrix bars and projecting above the matrix-bars, substantially as and for the purpose described.

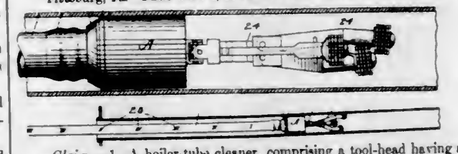
656,445. **COOLING BRAKES.** AXEL EKSTRÖM, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Apr. 27, 1898. Serial No. 678,922. (No model.)



Claim.—1. In a braking system for an electrically-propelled car or train, the combination of electric brake-shoes and devices for applying them, magnetic coils controlling said shoes, a system of main pipes running through the train, auxiliary pipes connected therewith for cooling each shoe, and means for circulating a cooling fluid through the pipes.

2. In a car-braking system, the combination of brake-shoes and means for applying them, with a system of pipes for absorbing the heat of the shoes, extending to the end of the car and provided with fluid-tight coupling devices, and means for circulating a cooling fluid from a reservoir or pump through the pipes at desired times.

656,446. **TUBE-CLEANING APPARATUS.** WILLIAM S. ELLIOTT, Pittsburg, Pa. Filed Nov. 4, 1898. Serial No. 695,448. (No model.)



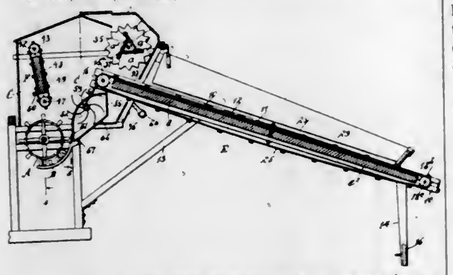
Claim.—1. A boiler-tube cleaner, comprising a tool-head having a smaller diameter than the interior of the tube and having pivoted thereto a freely-swinging arm provided with a scale-removing peripheral cutter, a rotary fluid-actuated motor adapted to travel through the tube, said motor and said tool-head each having a meeting portion disposed in the longitudinal central line of the motor and head, and each of said meeting portions formed as a member of a universal coupling whereby the head is both rotated and caused to gyrate independently and uncontrolled within the tube.

2. A boiler-tube cleaner comprising a tool-head having a smaller diameter than the interior of the tube and having pivoted thereto a series of freely-swinging arms provided with scale-removing peripheral cutters, a rotary fluid-actuated motor adapted to travel through the tube, said motor and said tool-head each having a meeting portion disposed in the longitudinal central line of the motor and head, and each of said meeting portions formed as a member of a universal coupling whereby the head is both rotated and caused to gyrate independently and uncontrolled within the tube.

3. The combination of a fluid-actuated motor, having a scale-removing tool connected to and driven thereby, and a conductor-pipe secured to the motor and provided with graduating-marks to indicate the position of the tool in the tube being cleaned; substantially as described.

4. The combination of a fluid-actuated motor, having a scale-removing tool connected thereto, a gage-ring secured to the motor and a conductor-pipe extending to the motor and provided with graduating-marks to locate the position of the tool in the tube; substantially as described.

656,447. BAND-CUTTER AND FEEDER. JOHN ERICKSON and JAMES M. EDMONDSON, Gardner, N. D., assignors, by direct and mesne assignments, to John Martin, same place. Filed Oct. 18, 1897. Serial No. 655,577. (No model.)



Claim.—1. In a band-cutter, feeder, and threshing-cylinder, the combination, with the cylinder, band-cutters, and a grain-carrier located between the cylinder and band-cutters, the inner or delivery end of the carrier being arranged to deliver material at the front upper portion of the cylinder, of a retarding device for the grain, journaled between the cylinder and the delivery end of the carrier, the said retarding device consisting of a box-shield having a slotted convexed face, a shaft journaled in the shield, hubs secured to the shaft, and curved spokes secured to the shield, the spokes being arranged to extend over the openings in the shield, and a movable stop located over the cylinder, facing the retarding device and carrier, for the purpose set forth.

2. In a band-cutter, feeder, and threshing-cylinder, the combination, with the cylinder, band-cutters, and a grain-carrier between the cylinder and cutters, of a retarding device for the grain located between the cylinder and the delivery end of the carrier, the said retarding device comprising an adjustable hollow shield having a slotted convexed surface facing the cylinder, a shaft journaled in the said shield, hubs secured to the said shaft, spokes secured to the said hubs, extending through the openings in the shield, a perpendicular stop located above the cylinder in front of the shield and carrier, consisting of an endless apron mounted to rotate, means for adjusting the stop to and from the shield, a concave, and a connection between the interior of the shield and concave, as specified.

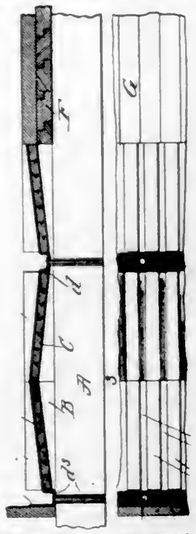
3. In a band-cutter and feeder, the combination, with a cylinder and a concave, and a straw-carrier having its delivery end above the cylinder, of a pivoted shield provided with an interior chamber and slots in its face opposite the cylinder, the chamber of the shield being provided with an outlet at its lower edge leading to the concave of the cylinder, and retarding-wheels mounted to revolve in the chamber of the shield and extending out through the slots in the shield, each of said retarding-wheels consisting of a hub and a series of hook-like spokes, a latch device carried by the shield and arranged for locking engagement with the concave, and means for locking the shield in a position which will expose the concave and cylinder, for the purpose set forth.

4. In a band-cutter and feeder, a combined cutter and beater, consisting of a shaft, three plates triangularly arranged around the shaft, one plate extending beyond the other at a longitudinal edge, and disk cutters secured to the said plates in a detachable manner, each cutting-disk being constructed in three sections, each section being independently secured to one of the said plates, the sections of the cutting-disks also extending beyond the plates, the extending portions of the disk-sections having irregular abutting edges, as and for the purpose specified.

5. In a band-cutter, feeder, and threshing-machine cylinder, the combination, with the cylinder, band-cutters and a grain-carrier carried between the cylinder and band-cutters, the inner or delivery end of the carrier being arranged to deliver material at the front upper portion of the cylinder, of a retarding device for the grain, mounted between the cylinder and the delivery end of the carrier, the said retarding device consisting of a box-shield having a slotted convexed face presented to the cylinder, and a closed back and open lower edge, a shaft journaled in the said box-shield, hubs secured to the shaft and arranged to revolve in said box-shield and spokes attached to the hubs and extending through the openings in the box-shield, a concave for the cylinder, communication substantially as described, between the open edge of the box-shield and the concave, and a grain-stop located over the cylinder.

6. In a band-cutter and feeder and threshing-cylinder, the combination, with the threshing-cylinder the concave and band-cutters, and a grain-carrier having its delivery end located between the band-cutters and the cylinder, of an adjustable grain-stop located over the cylinder, opposite the delivery end of the grain-carrier, a pendent grain-guide mounted to swing and located between the delivery end of the grain-carrier and the concave, the delivery end of the grain-carrier extending beyond the upper end of the grain-guide, retarding devices located within the grain-guide, portions of the retarding device extending through openings in said grain-guide, a latch carried by the lower end of the grain-guide, which latch is adapted for engagement with a keeper on the concave, and a second latch device carried by the frame of the machine and adapted for engagement with the lower end of the grain-guide when said grain-guide is carried to a substantially-horizontal position between the grain-carrier and the concave and cylinder, thus enabling access to be gained to the concave and cylinder, as set forth.

656,448. BAGGAGE-CAR FLOOR. THOMAS EUBANK, St. Louis, Mo., assignor to the American Car and Foundry Company, same place. Filed May 14, 1900. Serial No. 16,608. (No model.)



Claim.—1. The combination with an inclined subfloor, of a sheet-metal covering therefor, and slats arranged on said sheet-metal covering, said slats being wedge-shaped and disposed longitudinally the incline, whereby their upper edges present substantially a horizontal tread; substantially as described.

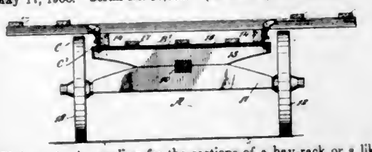
2. The combination with an inclined subfloor, of a sheet-metal covering therefor provided with troughs at the bases of the inclinations, and slats arranged on said covering; substantially as described.

3. The combination with wedge-shaped shims, of a flooring, a metallic covering, and wedge-shaped slats arranged on said metallic covering; substantially as described.

4. The combination with wedge-shaped shims, of a flooring, a metallic covering formed with troughs, said covering being bent up at the end and side walls of the car, wedge-shaped slats arranged on said covering, and down-spouts leading from said troughs; substantially as described.

5. In a car, the combination with the double flooring F G arranged in the middle portion of the car, of inclined floor-panels arranged at the ends of the car, a sheet-metal covering for said inclined panels, and slats arranged on said inclined panels; substantially as described.

656,449. HAY-RACK. ALEXANDER FERGUSON, Odell, Ill. Filed May 17, 1900. Serial No. 17,035. (No model.)

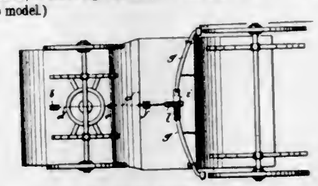


Claim.—1. A coupling for the sections of a hay-rack or a like device, comprising an upper and a lower bracket, the upper bracket being provided with a horizontal extension having a slot therein and recesses in its upper face at the side portions of the slot, and a lower bracket having horizontal extensions, a bolt passed through the extensions of the lower bracket and provided with a head adapted to pass through the slot in the upper bracket and enter the recesses therein, and a locking device for the bolt, as specified.

2. A coupling for the sections of a hay-rack or a like device, comprising an upper and a lower bracket, the upper bracket being provided with a horizontal extension having a slot therein and recesses in its upper face at the side portions of the slot, and a lower bracket having horizontal extensions, a bolt passed through the extensions of the lower bracket and provided with a head adapted to pass through the slot in the upper bracket and enter the recesses, and a locking device for the bolt, the lower bracket being also provided with a fastening device adapted to enter a portion of a rack and support the same, and the slot in the upper bracket having its lower portion enlarged and tapered, as described.

3. In a hay-rack, the combination, with a body including sills and a floor-section, of brackets secured to the main portions of the body, each bracket having a horizontal extension, which horizontal extension is provided with a longitudinal slot having an enlarged and tapering bottom portion, the said extension being also provided with recesses in its upper face at the side portions of the slot therein, brackets adapted for attachment to the sills, which sill-brackets are provided with a plurality of horizontal extensions, a bolt held to slide in the side extensions of the sill-brackets, the bolt being provided with a threaded lower end, and a head having a tapering upper surface, a nut located upon the threaded portion of the bolt, a check or stop device for the nut, and a supporting connection between the sill-brackets and the bottom or floor portion of the rack, as set forth.

656,450. BRAKE MECHANISM FOR CARRIAGES. GUSTAV FISCHER, Schöneberg, Germany. Filed Apr. 4, 1900. Serial No. 11,470. (No model.)



Claim.—1. In a brake mechanism for carriages and other vehicles, the combination with the frame and wheels of the carriage, of two brake-levers fulcrumed to the under side of the carriage-frame and carrying suitable brake-shoes, a link-bar pivotally connected to the inner ends of the brake-levers, an adjustable plate adjustably secured to said link-bar, a transmission-chain, or equivalent, attached to said adjustable plate and extending under the carriage to the driver's seat, a chain-wheel rotatably mounted near the driver's seat, said chain, or equivalent, extending around and secured to the chain-wheel, a suitable foot-lever adapted to rotate said chain-wheel and arranged within reach of the driver's foot, and means for normally holding the various parts in their inoperative position, substantially as set forth.

2. In the improved brake mechanism as set forth, the combination with the fulcrumed brake-levers g, g, of a link-bar pivotally connected with the inner ends of said levers, a bolt secured on said lever, a perforated plate the perforations of which are adapted to be engaged by said bolt, a suitable nut screwed on said bolt to hold the perforated plate in position, a chain, or its equivalent, attached to the perforated plate, means for drawing said chain from the seat of the carriage, and means for normally holding the various parts in their inoperative position, substantially as set forth.

656,451. AUTOMATIC CIRCUIT-INTERRUPTER. LIONEL FLEISCHMANN, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed July 12, 1899. Serial No. 723,536. (No model.)



Claim.—1. An automatic cut-out, comprising a gas-tight inclosure containing an explosive gaseous body and a thin conductor within the inclosure, and terminals connected with the conductor extending outside of the inclosure.

2. An automatic cut-out comprising a gas-tight inclosure containing an explosive gaseous body, a fuse within the inclosure, and terminals extending through the walls of the inclosure to permit inclusion of the fuse within an electric circuit.

3. An automatic cut-out comprising a gas-tight inclosure containing a combustible gaseous body, and a fuse extending through the inclosure having terminals extending air-tight through its walls.

4. An automatic cut-out comprising a gas-tight inclosure containing two gases capable of chemical combination under heat, and a thin conductor having terminals extending gas-tight outside of the inclosure.

5. An automatic cut-out comprising a gas-tight inclosure containing two gases capable of chemical combination under heat, and a fuse within the inclosure and having terminals extending gas-tight through its walls.

6. An automatic cut-out comprising a gas-tight inclosure, a fuse within the inclosure having terminals extending gas-tight through its walls, a liquid-receptacle within the inclosure, a liquid within the same and two conductors extending from without into said receptacle, as and for the purpose described.

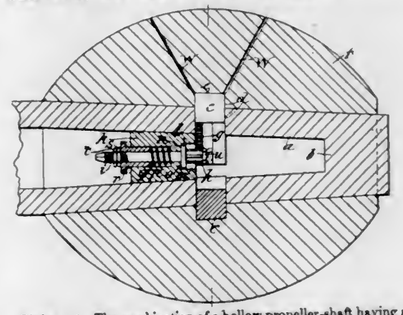
7. An automatic cut-out comprising a gas-tight inclosure, a fuse within the inclosure having terminals extending gas-tight through its walls, a liquid-receptacle within the inclosure, two conductors extending from without into said receptacle, and an electrolyte decomposable into gases within said receptacle.

8. An automatic cut-out comprising a gas-tight inclosure, a fuse within the inclosure having terminals extending gas-tight through its walls, a liquid-receptacle within the inclosure, two conductors extending from without into said receptacle, and an electrolyte decomposable into oxygen and hydrogen within said receptacle.

9. An automatic cut-out comprising a glass inclosure containing a fuse having terminals extending outside of the inclosure and sealed into its walls, said inclosure containing an explosive gaseous body.

10. An automatic cut-out comprising a glass tube, metallic caps at the ends of the tube, a fuse within the tube having terminals sealed into its end walls, and an explosive gas within the tube.

656,452. MEANS FOR SECURING SHIPS' SCREW-PROPELLERS UPON THEIR SHAFTS. JOHN W. FOWLER, Auckland, New Zealand. Filed Dec. 26, 1899. Serial No. 741,648. (No model.)



Claim.—1. The combination of a hollow propeller-shaft having a radial slot, a propeller-boss fitting on said shaft and having recesses to register with the slot, a key sliding radially in the slot having an inwardly-projecting tailpiece provided with rack-teeth, and a spindle within the hollow shaft having a pinion engaging with the teeth, whereby the key may be projected into the recess in the boss to lock the same on the shaft, or may be withdrawn therefrom.

2. The combination of the hollow propeller-shaft a having radial slots d, keys c slidable radially in said slots, propeller-boss f having recesses e registering with said slots d, rack-formed tailpieces g on the keys, pinion h on spindle i gearing with said racks, a bush k in which the spindle has its bearings and is capable of sliding longitudinally, a locking-collar l having a projecting pin engaging with holes in the sleeve, and a spring p pressing the spindle endwise in locking engagement with the sleeve, substantially as described.

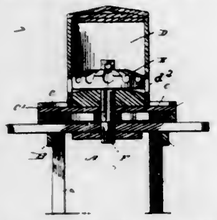
3. The combination of the radially-slotted hollow-shaft a, recessed boss f fitting thereon, radially-slidable keys c having inwardly-projecting racks g, rotatable and longitudinally slidable spindle i having pinion h meshing with said racks, means for locking the spindle against rotation when pressed longitudinally in one direction, a spring p pressing the spindle endwise into locked position, and a sleeve r and nut s on the spindle to receive and regulate the spring-pressure as explained.

656,453. SALT-FEEDER FOR STOCK. DIEDRICH FRESE, Fontanelle, Iowa. Filed Feb. 6, 1900. Serial No. 4,205. (No model.)

Claim.—1. In a salt-feeder for stock, the combination of a trough, a hopper, a feed device within the hopper, and operating means for said feed device, extending laterally beyond said trough, in a position to be engaged by an animal approaching the trough, substantially as described.

2. In a salt-feeder for stock, the combination of a trough, a hopper above the trough having feed-openings to direct the material from the hopper to the trough, a feed device in said hopper, and operating means for said feed device extending laterally beyond the trough beneath the same, substantially as described.

3. In a salt-feeder for stock, the combination of a trough, supporting means therefor, a hopper above the trough adapted to supply the material thereto, a feeding device within said hopper, an operating-shaft therefor extending below the trough, an arm secured to said shaft and projecting laterally beyond the trough below the same, in position to be engaged and operated by stock approaching the trough, substantially as described.



4. In a salt-feeder for stock, the combination of a hopper, a feed device for feeding material from the bopper, an operating device therefor and yielding means adapted to limit the movement of said operating device, substantially as described.

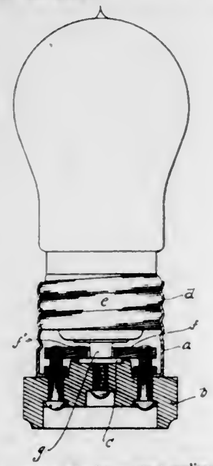
5. In a salt-feeder for stock, the combination of a hopper, a feed device for feeding material from the bopper, an operating device for said feed device, a spring-pressed stop with which said operating device is adapted to engage, substantially as described.

6. In a salt-feeder for stock, the combination of a hopper, a feeding device for feeding material from the hopper, an operating-arm therefor, and a spring-pressed plunger on each side of said arm with which the same is adapted to engage, substantially as described.

7. In a feeder for stock, the combination of a trough, a hopper located centrally thereon and provided with feed-openings, a feed device within said hopper, a vertical shaft connected to said feed device and extending below the trough, and one or more lateral arms fixed to said shaft below the trough and extending laterally beyond the trough, substantially as described.

8. In a salt-feeder for stock, the combination of a trough, a support therefor, a hopper above said trough, a feed device within the hopper for feeding the salt to said trough, an operating-shaft for said device extending below said trough, an operating-arm secured to said shaft and projecting laterally beyond the trough, and a spring-pressed plunger supported by said support and with which said arm is adapted to engage, substantially as described.

656,454. **SYSTEM OF NON-INTERCHANGEABLE ELECTRICAL CONTACT PARTS.** MORIZ FRÖSCHL, Vienna, Austria-Hungary, and RUDOLF HUNDHAUSEN, Wilmersdorf, Germany, assignors to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Mar. 6, 1899. Serial No. 708,015. (No model.)

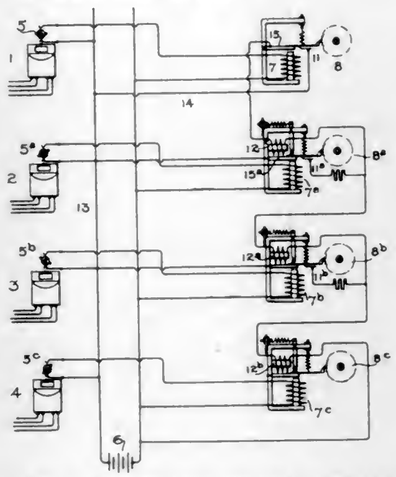


Claim.—1. In a system of safety contact appliances of the class described, the combination with stems or tips each forming one terminal contact part, the same being proportioned to correspond generally in size to the respective capacities of the connected electrical devices, of coacting contact parts with which the same are adapted to be engaged and complete the circuit, and insulating guard-plates associated to exclude therefrom terminal tips corresponding in size to devices of greater capacity than said plates are designed to receive said guard-plates being secured in position by means of screws inserted from the rear of the supporting parts, said screws holding contact parts in place thereby preventing their ready removal, substantially as described.

2. In a device of the class described, the combination with a terminal sleeve *d*, of a contact part *c*, the same being respectively connected with the energizing-circuit, of a base adapted to be inserted within the sleeve, a coacting tip *g* corresponding in size to the capacity of the connected translating device or fuse, and a guard-plate *f* disposed before the contact part *c* having an opening therein adapted to receive said tip and exclude those of larger size, said guard-plate being threaded, whereby it may be screwed securely in position within the terminal sleeve, and a fastening device adapted to secure both the guard-plate and the sleeve in position, substantially as described.

3. In a system of non-interchangeable electrical contact appliances, the combination with contact-sockets, of contact-making bases or parts adapted to fit therein, contact-tips corresponding in size to the capacity of the connected device, each of said tips forming one circuit-terminal, coacting contact parts adapted to be engaged thereby, and insulating guards or shields associated therewith having openings adapted to receive the corresponding contact-tips and prevent the establishment of circuit connections between said contact parts and tips of larger size, said guard-plates being threaded and secured in position within their respective sockets by means of screws inserted from the rear said screws also serving to hold the sockets in place, substantially as described.

656,455. **SUMMATION-METER.** JESSE HARRIS, Lynn, Mass., assignor to the General Electric Company, of New York. Filed July 17 1899. Serial No. 724,041. (No model.)



Claim.—1. A summation-meter comprising a plurality of actuating devices for a register common to all, a lock for the actuating devices set when two or more meters act simultaneously, and interconnections permitting the lock to be removed from the several actuating devices in sequence.

2. A summation-meter provided with a plurality of actuating devices operated by several independent meters and acting upon a common register, a magnetic lock for arresting the movement of all but one actuating device when two or more meters act simultaneously, and means for releasing the actuating devices in sequence.

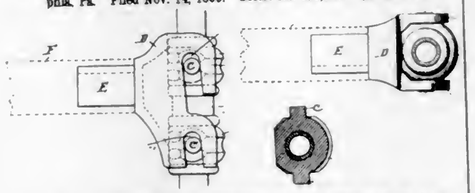
3. A summation-meter comprising a plurality of actuating devices governed respectively by independent meters, a register common to the several actuating devices, a magnetic lock for arresting all but one actuating device when two or more are impelled concurrently, the several magnetic locks being in series relation to a common source of energy, and branch connections between the controlling-magnets of the lock and said source, including a circuit-closer governed by the movement of the summation-register.

4. A summation-meter comprising a register, operating devices therefor controlled by a plurality of meters, a locking-circuit for said operating devices including parallel branches governed by the respective meters, and locking-magnets in said circuit between the several branches.

5. A summation-meter, comprising a register, actuating devices therefor controlled independently by a plurality of meters, a locking-circuit including magnetically-controlled locking devices arresting the movement of all but one actuating device when two or more are impelled concurrently, and parallel branches between the several locking-magnets, including circuit-closers operated by the several meters.

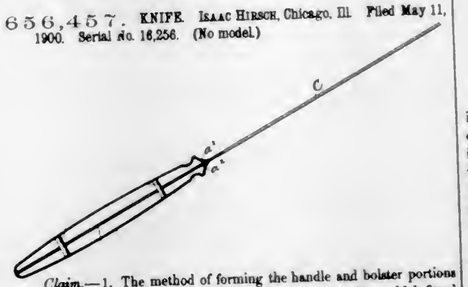
6. A summation-meter comprising a register, actuating devices therefor controlled independently by a plurality of meters, a locking-circuit including in series magnetically-controlled locking devices for arresting the movement of all but one actuating device when two or more are impelled concurrently, and parallel branches between the several locking-magnets, including circuit-closers operating by the several meters, said branches including resistances in circuit.

656,456. **BEDSTEAD-FASTENER.** HIRAM H. HIRSCH, Philadelphia, Pa. Filed Nov. 14, 1899. Serial No. 736,923. (No model.)



Claim.—In a bed, the combination of a bedstead-post having enlargements polygonal in cross-section thereon, pins projecting from the enlargements, fasteners for a side rail each comprising two sides adapted to embrace the enlargements of the posts, the wall of the fastener between the sides being angular to correspond with the angles of the enlargements of the posts, said sides having inclined slots to receive the pins of the enlargements, whereby the angular surfaces of the posts and fasteners are brought into contact.

656,457. **KNIFE.** ISAAC HIRSCH, Chicago, Ill. Filed May 11, 1900. Serial No. 16,256. (No model.)



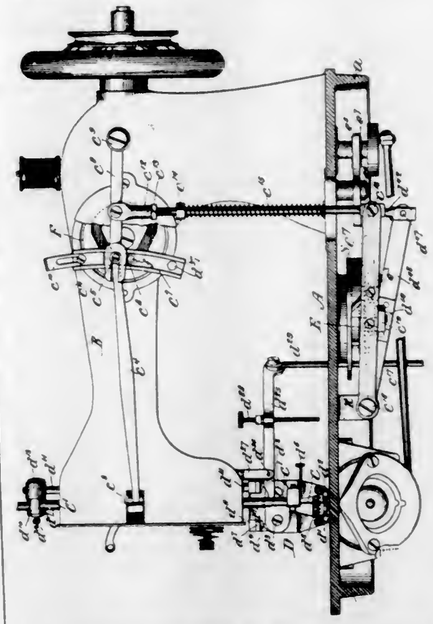
Claim.—1. The method of forming the handle and bolster portions of an article of cutlery which consists in stamping two scales, which fitted together form said portions, out of sheet metal, forming the cutlery-blade with a flat tang of the width and outline of the inner edges of the scales, fastening the scales against opposite sides of the blade, to house and contact with the edges of the tang, and then securing the parts together and hermetically sealing all the joints between them with molten metal, substantially as set forth.

2. The method of forming the handle and bolster portions of an article of cutlery which consists in stamping two scales, which fitted together form said portions, out of sheet metal, forming the cutlery-blade with a flat tang of the width and outline of the inner edges of the scales, fastening the scales against opposite sides of the blade, to house and contact with the edges of the tang, providing a vent-opening in the bolster portion, securing the parts together and hermetically sealing all the joints between them with molten metal, and then plugging said vent-opening, substantially as set forth.

3. As a new article of manufacture, an article of table-cutlery having a blade and flat tang formed integral, and a handle and bolster portion formed of sheet-metal scales fitting against opposite sides of the blade and housing and contacting with the edges of the tang, all the parts being secured together and the joints between them hermetically sealed with molten metal, substantially as described.

656,458. **MACHINE FOR SEWING BUTTONS TO FABRICS.** JAMES T. HOGAN, Jersey City, N. J., assignor to the National Machine Company, Troy, N. Y. Filed Dec. 29, 1897. Serial No. 664,186. (No model.)

Claim.—1. In a button-sewing machine, the combination of sewing mechanism comprising a needle-bar and button-holder, said needle-bar and holder being each supported so as to be capable of a to-and-fro movement, means for producing such to-and-fro movements of the button-holder and needle, and means for alternating such to-and-fro movements of the needle and button-holder, the latter being at rest during the to-and-fro movement of the needle, substantially as described.



2. In a button-sewing machine the combination of sewing mechanism comprising a needle-bar, means for imparting to said bar a reciprocating and also a to-and-fro movement, a button-holder, means for imparting to said holder a to-and-fro movement, a cam and means to actuate the same, and means actuated by said cam for positioning the parts so that the to-and-fro movement of the needle and button-holder will be alternated and the button-holder brought to a position of rest during the to-and-fro movement of the needle and the to-and-fro movement of the needle suspended during the to-and-fro movement of the button-holder, substantially as described.

3. In a button-sewing machine, the combination of a button-holder, and a needle and concomitant parts, of means in connection with said button-holder and needle for producing relative to-and-fro movements between them, first a movement of the needle relatively to the button-holder the latter being at rest during such time and secondly of the button-holder relatively to the needle and in a direction transverse to the first movement so as to produce two sets of stitches crossing each other and extending diametrically of the button, substantially as specified.

4. In a button-sewing machine, the combination of a button-holder and a needle each supported so as to be capable of relatively-transverse to-and-fro movement, levers for producing said to-and-fro movements, rods intermediate said levers and the parts they move, and a cam for alternately shifting said rods into operative coaction with said levers, substantially as specified.

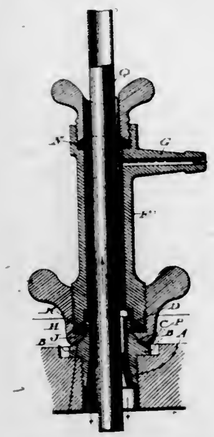
5. In a button-sewing machine, the combination of sewing mechanism and a button-holder, said sewing mechanism comprising a needle-bar; a rock-shaft, two levers affixed to said shaft, means to actuate said levers, a rod intermediate of the needle-bar and one of said levers, a rod intermediate of the button-holder and the other of said levers, each rod being connected with its lever so as to be capable of adjustment thereon to a position coincident with the rock-shaft, and means for alternately adjusting the point of connection between the rods and their respective levers, substantially as described.

6. In a button-sewing machine, the combination of sewing mechanism and a button-holder, said sewing mechanism comprising a needle-bar; a rock-shaft, two levers affixed to said shaft, means to actuate said levers, a rod intermediate of the needle-bar and one of said levers, a rod intermediate of the button-holder and the other of said levers, each rod being connected with its lever so as to be capable of adjustment thereon to a

position coincident with the rock-shaft, a cam for alternately adjusting the point of connection between the rods and their respective levers, and means to cause the button-holder to vibrate at an angle to the direction of vibration of the needle-bar, substantially as described.

7. In a button-sewing machine, the combination of sewing mechanism and a button-holder, said sewing mechanism comprising a needle-bar; a rock-shaft, two levers affixed to said shaft, means to actuate said levers, a rod intermediate of the needle-bar and one of said levers, a rod intermediate of the button-holder and the other of said levers, each rod being connected with its lever so as to be capable of adjustment thereon to a position coincident with the rock-shaft, a cam for alternately adjusting the point of connection between the rods and their respective levers, means to vary the amplitude of the movements of the needle-bar and work-holder, and means to cause the button-holder to vibrate at an angle to the direction of vibration of the needle-bar, substantially as described.

656,459. BUNG AND TAP. GEORGE W. JACKSON, Philadelphia, Pa. Filed June 20, 1899. Serial No. 721,192. (No model.)



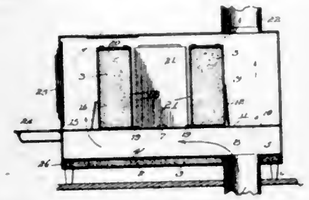
Claim.—1. A bung provided with a nipple, a circumferential flange at the base of said nipple and a circumferential bead on the head of the same, a threaded tapping-tube, a threaded collar which engages with said tube and is formed with a heel which is adapted to ride on said flange in the rotation of said collar, and packing interposed between said tube and collar and engaging with said bead, the latter being set back from the outer edge of said nipple and forming the seat of said packing.

2. A bung, a nipple thereon, the latter being provided with a flange and bead at opposite ends, said bead being set back from the outer edge of said nipple, a tapping-tube with a conical depression in the inner end thereof, a collar with an inturned shoulder near the end of the same and a heel on said end, said collar engaging said tube and having its heel adapted to ride on said flange, a gasket encircling said nipple and engaging said bead and being confined between said shoulder and the wall of said depression.

3. In a bung and tap, a bung provided with a nipple, a flange on said nipple on the inner end thereof, a bead on the head end of the same set back from the outer edge of said nipple, a tapping-tube having a conical depression in its inner end, a screw-collar fitted on the inner end of said tube having an inturned flange near its end opposite to said depression and a heel on said end opposite to said flange adapted to ride on the flange of the nipple, a gasket interposed between said flange and the wall of said depression and bearing against the bead of said nipple back of the outer edge of said nipple, and a collar on the outer end of said tube with a conical depression in its inner end and a gasket seated between a shoulder on the interior of said tube and the wall of the depression in said last-named collar.

4. In a bung and tap, a tapping-tube, a bung, a nipple projecting outwardly from the latter, a bead on said nipple, a screw-collar fitted on said tube and provided with an inturned flange and a gasket around said nipple between said shoulder and the end of said tube, said collar having a rounded heel and said flange having a rounded face, said heel being adapted to ride on said face in the rotation of the collar, said bead being back of the outer edge of said nipple and having said gasket adapted to be tightened against the same.

656,460. HEATING-DRUM. MARGARET KENNEDY and ANN E. KENNEDY, Mexico, Mexico. Filed Mar. 22, 1900. Serial No. 9,796. (No model.)

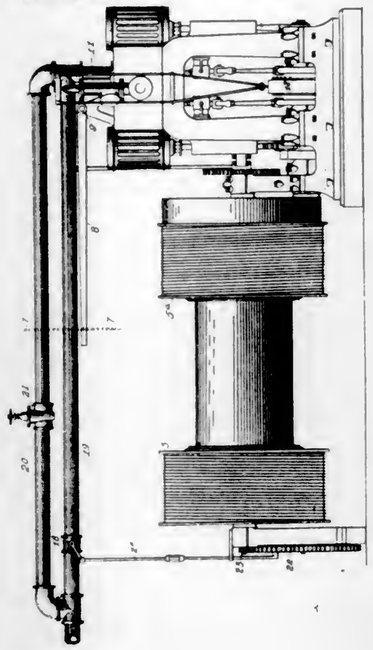


Claim.—1. In a heating-drum having an inlet and an outlet, the combination with the casing, of a partition therein intermediate the inlet and outlet and having openings therein, dampers to said openings whereby the products of combustion may be permitted to flow directly to the outlet or caused to flow indirectly thereto, receptacles detachably secured upon the partition, and heat-retaining material within said receptacles.

2. In a heating-drum having an inlet and an outlet, the combination with the casing, of a partition therein intermediate the inlet and outlet and having openings therein, dampers to said openings whereby the products of combustion may be permitted to flow directly to an outlet or caused to flow indirectly thereto, powdered or granular heat-retaining material upon the bottom of the casing, a cover therefor, receptacles detachably secured upon the partition adjacent to the sides and to the dampered opening, removable lids to the receptacles, and a powdered or granular heat-retaining material within said receptacles.

3. In a heating-drum having an inlet and an outlet, the combination with the casing, of a partition therein intermediate the inlet and outlet and having openings therein near each end, one of said openings in alinement with the inlet and outlet, a door adjacent to the second opening, dampers to the openings whereby the products of combustion may be permitted to flow directly to the outlet or caused to flow indirectly thereto, powdered or granular heat-retaining material upon the bottom of the casing, a cover therefor, receptacles detachably secured upon the partition adjacent to the sides and to the dampered openings, a removable lid for each receptacle, and a powdered or granular heat-retaining material within the receptacles.

656,461. HOISTING APPARATUS FOR BLASTING-FURNACES. WALTER KENNEDY, Allegheny, Pa. Filed Sept. 1, 1899. Serial No. 729,154. (No model.)



Claim.—1. In a hoisting mechanism, the combination of a car, mechanism for moving said car, means for stopping said car at the ends of its traverse and automatic means independent of the stopping means for changing the rate of movement of the car as it reaches certain predetermined points in its traverse, substantially as set forth.

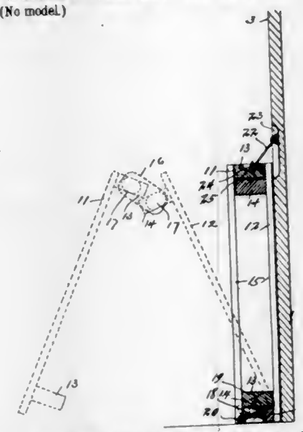
2. In a hoisting mechanism, the combination of a car, mechanism for moving said car, automatic means for changing the rate of movement of the car from slow to fast and from fast to slow as it reaches certain predetermined intermediate points in its traverse, and means for automatically stopping the car at the ends of its traverse, substantially as set forth.

3. In a hoisting mechanism, the combination of a car, a motor for moving said car, a connection from the motor to the generator, said connection being automatically controlled to effect a change of speed of the motor as the car reaches certain predetermined points in its traverse, and a normally-operative connection from the generator to the motor, substantially as set forth.

4. In a hoisting mechanism, the combination of a car, a hoisting-engine for moving the car, a main supply-pipe provided with a valve, a normally-open by-pass around the valve in the main supply-pipe, and automatic means for opening and closing the valve in the main supply-pipe as the car reaches certain predetermined points in its traverse, substantially as set forth.

5. In a hoisting mechanism, the combination of a car, mechanism for moving said car and automatic means for changing the rate of movement of the car from slow to fast and from fast to slow as it reaches certain predetermined intermediate points in its traverse, substantially as set forth.

656,462. REFRIGERATOR-CAR. THOMAS B. KIRBY, Chicago, Ill., assignor to Armour & Co., same place. Filed Jan. 29, 1900. Serial No. 3,160. (No model.)



Claim.—1. As a new article of manufacture, a supporting-rack for cars, comprising a plurality of hinged sections, each comprising a plurality of longitudinally-arranged supporting-pieces and a plurality of transversely-arranged slats secured thereon, flexible hinge connections connecting said rack-sections, the longitudinal supporting members of the rack-sections being arranged to nest together when the rack-sections are folded.

2. As a new article of manufacture, a supporting-rack for cars, comprising a plurality of hinged sections, each section comprising a plurality of longitudinally-arranged supporting-pieces and a series of transversely-arranged slats secured thereon and flexible hinge connections connecting said rack-sections, comprising links loosely encircling the proximate longitudinal supports of each pair of rack-sections, said longitudinal supports being suitably spaced apart to enable them to nest together when the rack-sections are folded with the longitudinal supports facing inwardly.

3. The combination with a freight-car, of a supporting-rack therefor, comprising a plurality of hinged sections, each comprising a plurality of longitudinally-arranged supporting-pieces and a plurality of transversely-arranged slats secured thereon and flexible hinge connections connecting said rack-sections, securing devices flexibly connecting said rack to the body of the car adjacent to one of the side walls thereof, and a retaining device for securing said rack in vertical position against said side wall, the hinge connections between said rack-sections being arranged to permit the longitudinally-supporting members of sections to nest together when folded with the latter facing inwardly.

4. The combination with a freight-car, of a supporting-rack therefor, comprising a plurality of hinged sections, each section comprising a plurality of longitudinally-arranged supporting-pieces and a series of transversely-arranged slats secured thereon, flexible hinge connections connecting said rack-sections, comprising links loosely encircling the proximate longitudinal supports of each pair of rack-sections, link-and-staple connections connecting one edge of said rack to the floor of the car adjacent to the side wall thereof and hook-and-staple connections for securing said rack in folded position against said side wall, the hinge connections between said rack-sections being adapted to permit the rack-sections to nest together when folded up against the side wall of the car, substantially as described.

5. The combination with a refrigerator freight-car, having a receptacle located in one end thereof and arranged to overhang the floor so as to leave a space thereunder, of a movable rack hinged to the overhanging portion of said receptacle and adapted to depend therefrom to partition off the space between the receptacle, said hinge connection consisting of a plurality of eyes secured to one edge of the rack-section and eye-bars secured to the overhanging portion of the receptacle parallel with each other, one end of each eye-bar being extended beneath the receptacle, whereby the rack-section is adapted to be carried bodily into said space beneath the receptacle so as to partition off a part only of the space, and means for detachably securing said rack in folded-up position against the side of the receptacle, substantially as described.

6. The combination with a refrigerator-car having an ice-receptacle located in one end thereof, arranged in the upper portion of the car so as to overhang the floor and leave an open recess thereunder, of a movable rack adapted to form an open flooring for the space within said recess, comprising a plurality of longitudinally-extending supports and a series of transversely-arranged slats secured thereon and means for flexibly hinging said rack to the body of the car, so as to permit it to be tilted up into vertical position against the end wall of said recess, comprising a plurality of eyepieces, secured to one edge of the rack, corresponding link-bars, secured to the structure of the car, adjacent to the end wall of the recess and parallel with each other, links connecting said eyepieces with the link-bars and means for detachably securing said rack in vertical position against the end wall of the recess, substantially as shown and described.

7. The combination with a freight-car, of a set of supporting-racks therefor, comprising a plurality of racks secured along each side wall of the car, adjacent to or upon the floor thereof, each consisting of a plurality of sections of equal width hinged together to fold one upon the other with their end surfaces face to face along lines extending longitudinally of the car, the combined width of the two series of racks hinged to the opposite sides of the car being substantially equal to the width of the car so as to practically cover the floor thereof when unfolded, and means for securing said racks in folded-up position against the side walls of the car, substantially as described.

8. A sectional supporting-rack for cars, having a section thereof hinged at the angle of the side wall and floor of the car and an extensible section loosely hinged to said wall-section and adapted to be extended outwardly in prolongation thereof toward the opposite side of the car, said hinged connections adapting the supporting sill members of the wall and extension-sections to nest or interfold.

656,463. TETRAOXYANTHRAQUINONE DISULFONIC ACID AND PROCESS OF MAKING SAME. HEINRICH LAUBMANN, Höchst-on-the-Main, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed Apr. 12, 1898. Serial No. 677,346. (Specimens.)

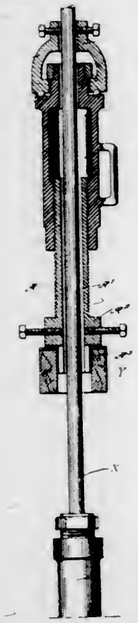
Claim.—1. The herein-described process for the manufacture of a new tetraoxyanthraquinonedisulfonic acid from an anthraflavic acid, which consists in transforming an anthraflavic acid into disulfonic acid by means of fuming sulfuric acid, producing the dinitrodisulfonic acid by nitration of the disulfonic acid thus obtained, reducing the dinitrodisulfonic acid with reducing agents to diamidodisulfonic acid and transforming the diamidoanthraflavicdisulfonic acid into a tetraoxyanthraquinonedisulfonic acid by treatment with appropriate oxidizing agents, substantially as set forth.

2. As a new product, the tetraoxyanthraquinonedisulfonic acid derived from diamidoanthraflavicdisulfonic acid, in the form of its acid alkaline salt soluble in cold and more easily soluble in hot water with a red-yellow color, in the form of its neutral alkaline salt soluble in water with a red color, in concentrated sulfuric acid with a yellowish-red color, dyeing cotton in an acid bath yellowish-brown to orange-brown, and the acid dye of which may be shaded by treatment with metallic salts, whereby violet tints are produced upon applying chromium fluorid and red tints upon applying alum, substantially as set forth.

656,464. ADJUSTABLE SCREW-JACK. JOHN C. F. LONG and JAMES N. BISE, St. Mary's, Ohio. Filed Jan. 6, 1900. Serial No. 614. (No model.)

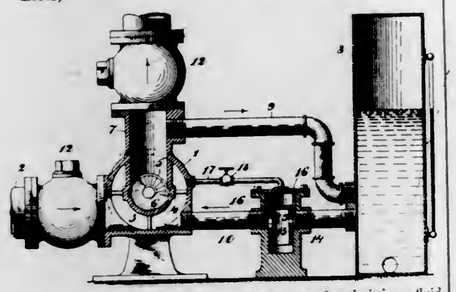
Claim.—1. A screw-jack for oil and Artesian wells, comprising a hollow screw-rod, a head on said screw-rod and having an offset thereon for

holding the screw-rod from turning, a set-screw in said head, a nut screwing on said screw-rod, a swivel mounted to turn on said nut and provided with a head having a bore in alinement with the bore in the head of the nut and that in the screw-rod, and a set-screw in the swivel-head, substantially as shown and described.



2. A screw-jack for oil and Artesian wells, comprising a hollow screw-rod, a head on said screw-rod and having an offset thereon for holding the screw-rod from turning, a set-screw in said head, a nut screwing on said screw-rod, a swivel mounted to turn on said nut and provided with a head having a bore in alinement with the bore in the head of the nut and that in the screw-rod, a set-screw in the swivel-head, and means for holding the swivel against displacement on the head of the nut, as set forth.

656,465. **TURBINE PUMPING MECHANISM.** FRANZ MARBURG, Jr., New York, N. Y. Filed Apr. 30, 1900. Serial No. 14,848. (No model.)



Claim.—1. A pump having controllable means for admitting a fluid under pressure or head to its induction side to wholly or partially counterbalance the normal excess of back pressure at the eduction side thereof.

2. A pump having automatically-controllable means for admitting a fluid under pressure or head to its induction side to wholly or partially counterbalance the normal excess of back pressure at the eduction side thereof.

3. A turbine pumping mechanism having controllable means for admitting a fluid under pressure or head to its induction side to wholly or partially counterbalance the normal excess of back pressure at the eduction side thereof.

4. A turbine pumping mechanism having automatically-controllable means for admitting a fluid under pressure or head to its induction side to wholly or partially counterbalance the normal excess of back pressure at the eduction side thereof.

5. An axial-flow turbine pumping mechanism having controllable means for admitting a fluid under pressure or head to its induction side to wholly or partially counterbalance the normal excess of back pressure at the eduction side thereof.

6. A turbine pumping mechanism having an inlet-pipe for admitting fluid under head or pressure to its induction side and distinct from the normal induction-inlet, and a controlling-valve in said pipe adapted for shutting off the influx when a current shall have been established through the apparatus.

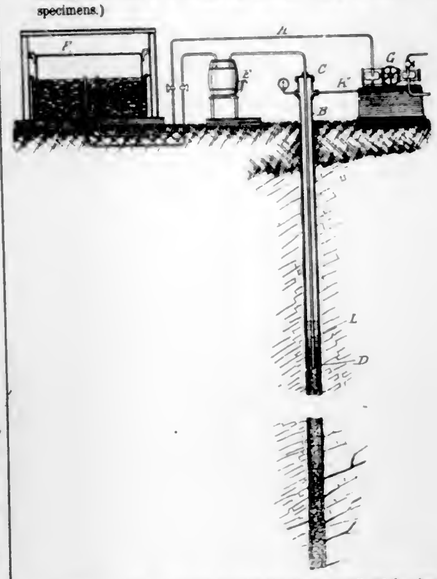
7. A turbine pumping mechanism having an inlet-pipe, distinct from the normal induction-inlet, for admitting a fluid under pressure to its induction side, and a normally-open automatic controlling-valve in said pipe adapted to close when a current shall have been established through the apparatus.

8. The combination with the pump, of a pressure-tank connected with both the induction and eduction sides of the pump, and a controlling-valve between the said tank and the induction side of the pump, whereby the flow from the tank may be cut off at the proper time, substantially as set forth.

9. The combination with the pump, of a pressure-tank connected with both the induction and eduction sides of the pump, and an automatic controlling-valve between the said tank and the induction side of the pump, whereby the flow from the tank may be cut off at the proper time, substantially as set forth.

10. A turbine pumping mechanism having controllable means for admitting a fluid under pressure or head to its induction side to wholly or partially counterbalance the normal excess of back pressure at the eduction side thereof, and having also an automatic relief-valve on its eduction side.

656,466. **ART OF IMPROVING MINERAL WELLS.** JOHN C. MINOR, New York, N. Y. Filed Apr. 30, 1900. Serial No. 14,972. (No specimens.)



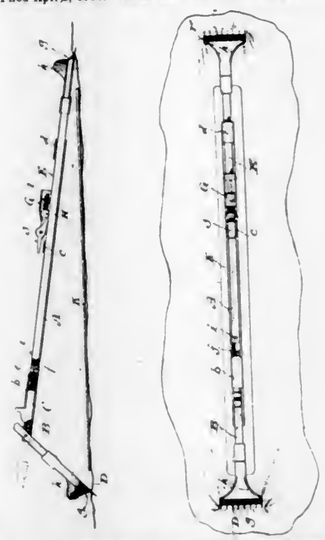
Claim.—1. The method of improving mineral wells of the class described, which consists in causing the water to redissolve deposits, or maintain salts in solution, by charging it with carbon dioxid, substantially as described.

2. The method of improving mineral wells of the class described, which consists in forcing the water out of the well and simultaneously charging it, by means of carbon-dioxid gas under pressure, substantially as described.

3. The method of improving mineral wells of the class described, which consists in forcing the water out of the well and simultaneously charging it, by means of carbon-dioxid gas under pressure, and thereby causing it to redissolve certain salts, or to maintain them in solution, substantially as described.

4. The method of improving mineral wells of the class described, which consists in forcing the water out of the well and in causing it to dissolve certain salts, by charging the water in the well with carbonic-dioxid gas under pressure, substantially as described.

656,467. **GARMENT-STRETCHER.** JOSEPH MIOTKE, Milwaukee, Wis. Filed Apr. 5, 1900. Serial No. 11,617. (No model.)

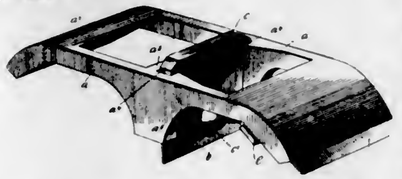


Claim.—1. A dressmaker's tool comprising a channel-bar stock having cover-plates at intervals of its length, a fork having its shank in pivotal union with the stock at one end of same, a fork-shank latch retractive in said stock, a spiral spring intermediate of the latch and an inturned lip of one of said cover-plates, another fork having its shank in sliding engagement with the aforesaid stock, and means for preventing automatic retraction of the latter fork from adjusted position.

2. A dressmaker's tool comprising a channel-bar stock having cover-plates at intervals of its length, a fork having its shank in pivotal union with the stock at one end of same, a fork-shank latch retractive in said stock, a spiral spring intermediate of the latch and an inturned lip of one of said cover-plates, another fork having its shank in sliding engagement with the aforesaid stock, means for preventing automatic retraction of the latter fork from adjusted position, and a stop-lug arranged on the shank of this fork to come against another of the aforesaid cover-plates.

3. A dressmaker's tool comprising a stock, a fork having its shank in sliding engagement with the stock, a housing on the stock having inclination of top, a friction-disk intermediate of the fork-shank and inclination of the housing, a spiral spring in said housing opposed to the friction-disk, a lever arranged to move said disk against resistance of the spring, another fork having its shank in pivotal union with the stock at the end of same farthest from the fork aforesaid, and a latch arranged to lock the pivoted fork in the plane of said stock.

656,468. **SCRAPER.** MICHAEL MULLIN, ISAAC N. WATSON, and JOHN A. HALL, Columbus, Ohio. Filed Apr. 19, 1900. Serial No. 13,493. (No model.)



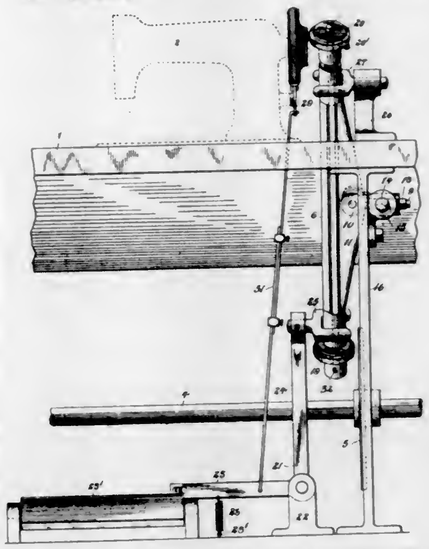
Claim.—1. A scraper, comprising a stock or body, a blade held thereon intermediate its ends, and a second blade carried at one end of the stock or body, the other end of the stock or body serving as a gage to the action of the first-named or middle blade.

2. A scraper, having a stock or body, a blade secured to the same intermediate its ends, and a second blade carried at one end of the stock or body.

3. A scraper, having a stock which comprises sides and ends and an intermediate or cross plate adjacent to vertical guides in the sides of the stock, and a blade secured in said vertical guides and lying against the intermediate or cross plate.

4. A key for holding the blades of scrapers or like devices, the key being wedge-shaped and having a knob on its lower or thin edge, for the purpose specified.

656,469. **POWER-TRANSMITTER FOR SEWING-MACHINES.** WILLIAM MCHAFFIE, New York, N. Y. Filed Feb. 21, 1900. Serial No. 6,021. (No model.)



Claim.—1. The combination, with driving and driven disks or wheels, of a power-transmitter arranged intermediate of said disks, comprising a pivotally-supported frame or bracket, a shaft supported in bearings in said frame or bracket and provided with a friction-disk at or adjacent to each end, one being adapted to engage with one face of the driving-disk and the other to engage with the opposite face of the driven disk, and means for rocking said frame or bracket to simultaneously move the friction-disks either into, or away from, engagement with the said driving and driven disks, for the purpose set forth.

2. The combination, with driving and driven disks or wheels, of a power-transmitter arranged intermediate of said disks, comprising a pivoted rocking frame or bracket, a revolving shaft supported wholly by said frame or bracket and provided with friction-disks at or adjacent to its opposite ends, and means for shifting said frame or bracket to move the friction-disks either into, or away from, engagement with the said driving and driven disks, for the purpose set forth.

3. The combination, with driving and driven disks or wheels, of a power-transmitter arranged intermediate of said disks, comprising a revolving shaft having friction-disks thereon for engagement with the said driving and driven disks respectively, one of the friction-disks being adjustable on its shaft to opposite sides of the center of the engaging disk, for the purpose set forth, and means for supporting said shaft.

4. The combination, with driving and driven disks or wheels, of a power-transmitter arranged intermediate of said disks, comprising a pivoted rocking frame or bracket, a shaft carried by said frame or bracket and having friction-disks thereon, means for adjustably supporting said frame or bracket with the parts carried thereby, and means for shifting said frame or bracket to move the friction-disks either into, or away from, engagement with the said driving and driven disks, for the purpose set forth.

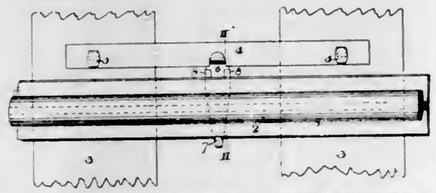
5. The combination, with driving and driven disks or wheels, of a power-transmitter arranged intermediate of said disks, comprising a centrally-pivoted frame or bracket, a revolving shaft carried by said frame or bracket and being provided with friction-disks thereon, one of said disks being adjustable on the shaft and in a radial direction relative to the driving-disk, whereby it will transmit different speeds from the latter.

and means for rocking said frame or bracket to move the friction-disks either into, or away from, engagement with the said driving and driven disks, for the purpose set forth.

6. The combination, with driving and driven disks or wheels, of a power-transmitter arranged intermediate of said disks, comprising a frame or bracket provided with a supporting arm or pin, a vertically and horizontally adjustable bracket-arm having an opening which receives said arm or pin in adjustable connection therewith, a shaft carried by said frame or bracket and having friction-disks thereon, and means for shifting said frame or bracket to move the friction-disks either into, or away from, engagement with the said driving and driven disks, for the purpose set forth.

7. The combination, with driving and driven disks or wheels, of a power-transmitter arranged intermediate of said disks, comprising a frame or bracket provided with a pivotally-connected arm or pin, a bracket-arm provided with an opening which receives said pivoted arm or pin in adjustable connection therewith, a shaft carried by said frame or bracket and having friction-disks thereon, and means for shifting said frame or bracket to move the friction-disks either into, or away from, engagement with the said driving and driven disks, for the purpose set forth.

656,470. DEVICE FOR PREVENTING CREEPING OF RAILS. JOHN L. POPE, Cleveland, Ohio. Filed Mar. 26, 1900. Serial No. 10,134. (No model.)



Claim.—1. A device for preventing creeping of rails, comprising a cross-bar extending transversely under the rail, and having rigid abutments thereon bearing against the opposite edges of the rail-flange and adapted to clamp the same; substantially as described.

2. A device for preventing creeping of rails, comprising a holder extending under the rail and bearing against the opposite edges of the rail-flange, said holder being set between the ties and having a connection extending laterally therefrom to a tie; substantially as described.

3. A device for preventing creeping of rails comprising a holder connected with the rail between the ties, a bar or shank which is fixed to the tie, and a connection between the holder and the bar; substantially as described.

4. A device for preventing creeping of rails comprising a holder connected with the rail between the ties, a bar or shank which is fixed to the tie, and a connection between the holder and the bar, said connection being constituted by a shoulder on the holder fitting a notch on the bar; substantially as described.

5. A device for preventing creeping of rails, comprising a holder extending under the rail and having two rigid abutments against the flange at one side of the rail, and a rigid abutment against the flange at the other side of the rail; substantially as described.

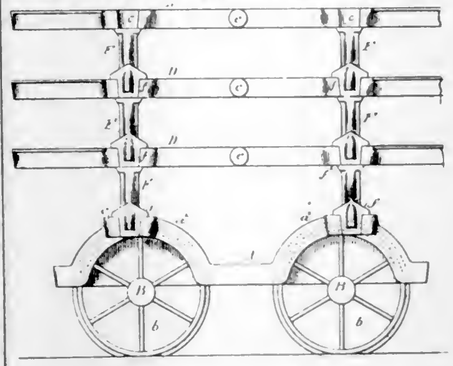
6. A device for preventing creeping of rails, comprising a cross-bar extending transversely under the rail, and having rigid abutments thereon bearing against the opposite edges of the rail-flange and adapted to clamp the same, one at least of said abutments being fitted in a notch in the rail-flange; substantially as described.

656,471. CORE-DRYING CAR. THOMAS I. RANKIN, Philadelphia, Pa., assignor to the Abram Cox Stove Company, same place. Filed Jan. 8, 1900. Serial No. 721. (No model.)

Claim.—1. The combination of a core-car, a series of core-plates, dovetailed recesses in the frame of the car and in the edges of the plates, and distance-pieces having one end constructed to fit said recesses, and the other end constructed to engage the ribs on the inner side of the plate immediately above it, thereby supporting said plates rigidly when they are arranged in a tier, substantially as described.

2. The combination of a carriage, axles thereon, wheels on the axles, tapered sockets in the carriage-frame, perforated cast core-plates, a tapered socket in each core-plate, detachable distance-pieces having tapered foot-sections adapted to the sockets, said distance-pieces being mounted between the plates so as to separate them and protect the cores, substantially as described.

3. The combination of a core-carriage, wheels thereon, distance-pieces projecting from the carriage, perforated core-plates on which the cores are directly mounted, ribs on the under side of the said plates, tapered sockets in the edges of the plates, distance-pieces having tapered foot-sections adapted to the sockets and offset at the upper end to engage the ribs on the under side of the core-plate, so that one core-plate can be mounted above another, the whole forming a rigid structure, substantially as described.

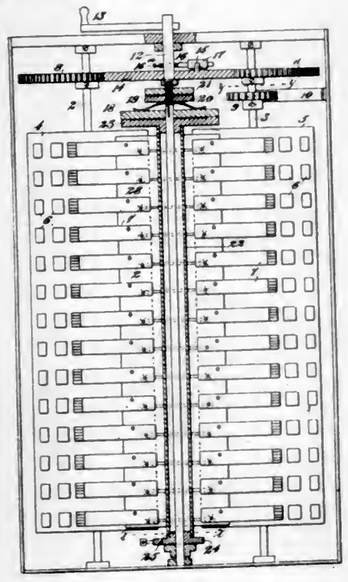


656,472. CUSHION-SHOE. ADAM REED, St. Joseph, Mo. Filed Mar. 8, 1900. Serial No. 7,926. (No model.)



Claim.—The herein-described shoe comprising the leather insole having the groove in its upper side adjacent to its edge, the cushion arranged on the insole within the groove the cushion-covering arranged on the cushion and insole and extending down into and beyond the groove in the latter, the tap-sole, the upper or vamp having its edges interposed between the insole and tap-sole, and stitches extending through and connecting the cushion-covering, the insole, the vamp or upper and the tap-sole, and resting in the groove in the insole whereby the cushion-covering is drawn down into said groove, substantially as specified.

656,473. ELECTRIC CONTROLLER. CHARLES J. REED, Philadelphia, Pa. Filed Jan. 13, 1899. Serial No. 702,040. (No model.)



Claim.—1. An electric controller or switching device, comprising a plurality of brushes constituting the terminals of translating devices, sources of energy or component parts of operative electric circuits, in combination with two separate systems of contact-plates arranged in sets or groups and means for causing said brushes to engage successively several sets of contact-plates of one system in a fixed order and subsequently to engage successively several sets of contact-plates of the other system in a fixed order, and for causing each system of contact-plates to return to its initial or out-of-circuit position during the engagement of the other system with the brushes.

2. An electric controller or switching device, comprising a plurality of brushes, constituting the terminals of translating devices, sources of energy or component parts of operative electric circuits, in combination with two separate systems of contact-plates arranged in sets or groups and means for causing said brushes to engage successively several sets of contact-plates of one system in a fixed order and subsequently to engage successively several sets of contact-plates of the other system in a fixed order and for causing the initial relative position of the brushes and one system of contact-plates to be restored during the engagement of the brushes with the other system.

3. In an electric controller, the combination with a plurality of contact fingers or brushes, of two drums provided with suitable interconnected and arranged contact pieces or plates, an operating shaft and handle, gearing between said shaft and said drums and means operated by the rotation of said shaft to produce a relative movement of the brush and drum supports, whereby an engagement between the brushes and one drum and disengagement of the brushes and the other drum are effected prior to any movement of rotation of the drums upon their axes.

4. In an electric controller, the combination with a plurality of double contact brushes or fingers, of a pair of drums provided with sets of contact-pieces suitably arranged and connected, an operating shaft and handle, gearing between said shaft and said drums and a means actuated by the rotation of said shaft to produce an initial relative movement of the brush and drum supports for effecting an engagement between the brushes and one drum and a disengagement of the brushes and the other drum, the drum which is brought into engagement with the brushes being determined by the direction of rotation of the shaft.

5. In an electric controller, the combination with a plurality of brushes mounted upon a support adapted to have a limited rotary movement, of a pair of drums provided with contact-pieces suitably arranged and interconnected, an operating shaft and handle, gearing between said shaft and said drums, and a friction-clutch mechanism between said shaft and said brush-support, whereby the brushes are moved into engagement with one drum when the shaft is rotated in one direction and into engagement with the other drum, when the shaft is oppositely rotated.

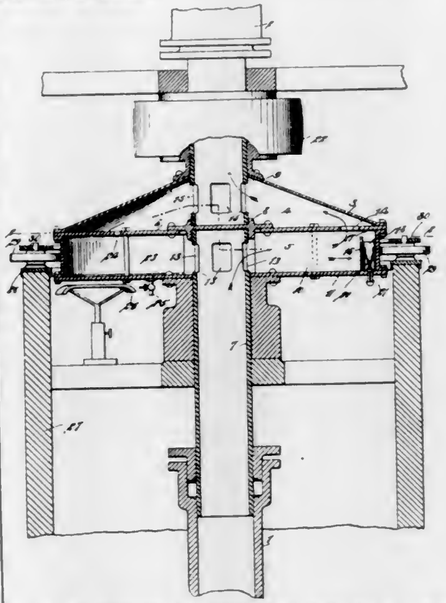
6. In a controller for electric motors, the combination with a plurality of terminal brushes or fingers and a movable support therefor, of a pair of drums provided with interconnected contact-pieces, an operating shaft and handle geared to said drums and a yielding friction-clutch connection between the shaft and the brush-support, whereby the brushes are initially moved into engagement with the one or the other drum according to the direction of rotation of the operating-shaft.

656,474. CENTRIFUGAL WATER-CLARIFIER. FRANK H. RICHARDSON, Pueblo, Colo. Filed Dec. 7, 1899. Serial No. 739,523. (No model.)

Claim.—1. An apparatus for clarifying liquids, comprising a casing mounted to rotate, a partition dividing said casing into upper and lower compartments, a pipe having communication with the lower compartment, a pipe having communication with the upper compartment, radially-disposed partitions forming side walls of chambers in the lower portion of the device, perforated plates near the outer ends of said chambers, and a casing movable adjacent to each plate and having perforations, substantially as specified.

2. A device for clarifying liquids, comprising a casing mounted to rotate, a partition in said casing dividing the same into upper and lower compartments, a pipe having communication with the lower compartment, a pipe having communication with the upper compartment, chambers in the lower compartment, perforated plates near the outer ends of said chambers, a casing having a perforated wall and arranged adjacent to each plate, and valves carried by said casings for controlling openings through the bottom wall of the clarifier, substantially as specified.

3. A device for clarifying water, comprising a casing mounted to rotate relatively to main or supply-pipes, a partition dividing said casing into upper and lower compartments, the said compartments communicating one with the other through ports formed in the partition, pipes communicating with the said upper and lower compartments, radially-disposed partitions in the lower compartment forming side walls of the water-receiving chambers, a perforated plate near the outer end of each of said chambers, there being a space between the upper end of the plate and the partition, a casing movable adjacent to each of said plates and having a perforated wall, a plug-valve carried by each of said casings for controlling an opening through the bottom wall of the clarifier, and means for opening said valves, substantially as specified.



4. The combination with a water-main or supply-pipe, of a casing mounted to rotate relatively to said pipes, the said casing being divided into upper and lower compartments, water-receiving chambers in the lower compartment, and valves for controlling openings in the bottom wall of the casing, and means for automatically moving said valves to open position, substantially as specified.

5. A device for clarifying liquid, comprising a casing mounted to rotate relatively to a main or supply-pipe, automatically-actuated valves for permitting the escape of separated material, a well in which the device is arranged, and rollers on the top of the well-wall with which the periphery of the casing may engage to prevent vibration thereof, substantially as specified.

656,475. FASTENER FOR GLOVES, &c. WILLIAM S. RICHARDSON, Boston, Mass., assignor to the Ball and Socket Fastener Company, same place and Nashua, N. H. Filed July 21, 1897. Serial No. 645,361. (No model.)



Claim.—1. A ball-piece for forming a yielding ball member of a fastener, the same having the preformed flange a, the shank a', the separate sides a^4 in substantial contact with each other and the integral connection a^3, as and for the purposes set forth.

2. A ball-forming piece or part having the preformed sectional flange a and sectional shank a', the separate sides a^4 in substantial contact with each other and integral top a^3, as and for the purposes set forth.

3. A ball-forming piece or part having the preformed sectional flange a, the sectional shank a', the sides a^4 and integral top a^3, the sides and sections of the shank and flange being slightly separated from each other.

4. A ball-forming piece or part having the preformed sectional flange a, each section of which is provided with a shoulder, the sectional shank a', the independent sides a^4 and the integral top a^3, as and for the purposes set forth.

5. A yielding ball member of a ball-and-socket fastener having a flange a, a shank a', separate sides a^4 and an integral top a^3, said sides a^4 connecting said shank and said integral top and bulging outwardly, whereby the horizontal diameter of said ball member is greater through said sides than through said shank.

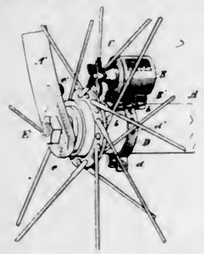
6. A yielding ball member of a ball-and-socket fastener having an integral top, a shank, an integral under flange and bulging yielding sides connecting said shank and said top, as and for the purposes set forth.

7. A yielding ball member of a ball-and-socket fastener having an integral top, a shank, a preformed flange, outwardly-yielding sides connecting said shank and said top, in combination with a washer located about the junction of the shank and sides and held in place by said bulging sides, as and for the purposes set forth.

8. A ball member of a ball-and-socket fastener having a sectional under flange, a sectional shank which is adapted to extend through a hole in the material to which the member is secured, an upper washer and rounded sides above the washer, the said sides, members of the sectional shank and sectional flange being separated by relatively-narrow spaces, whereby provision for contraction of the sides, shank and flange in the act of engaging and disengaging the ball portion from the socket member is obtained.

9. The ball member made from a single blank or piece of metal having a sectional under flange, a sectional shank a', a sectional enlargement a^3 to form a shoulder and crease a^4, and a sectional enlargement above said crease.

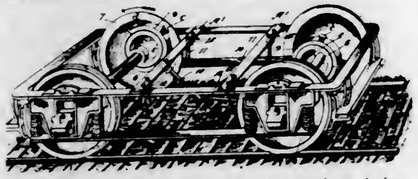
656,476. CYCLOMETER ATTACHMENT. ALBERT F. ROCKWELL, Bristol, Conn., assignor to the New Departure Bell Company, same place. Filed Apr. 26, 1899. Serial No. 714,494. (No model.)



Claim.—1. The combination of a bicycle-wheel, a cyclometer actuated by a rotating shaft, said cyclometer being located within the spokes of the wheel upon the hub thereof and revolving therewith and thereupon, the actuating-shaft lengthened to project beyond the case of the cyclometer and between and outside of the spokes of the wheel, and means to actuate said shaft fixed to a non-moving part of the bicycle and connecting with a revolving element at the end of the shaft, substantially as described.

2. A cyclometer with projecting axle and collar, having ribs upon its base, in combination with a double-ended clamp to engage said ribs, a band connecting said clamp firmly to the hub of the bicycle and a trip attached to a non-moving part of the bicycle to engage the star-wheel upon the extremity of said collar, substantially as described.

656,477. AUXILIARY CAR-MOVER. PATRICK RYAN, New York, N. Y., assignor of one-half to Thomas F. Duffy, same place. Filed Dec. 29, 1899. Serial No. 741,922. (No model.)

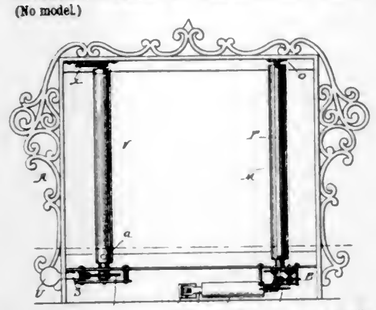


Claim.—1. The combination with a truck-frame, a car-axle thereon, car-wheels on said axle, an eccentric fast on the inner side of each car-wheel, and two eccentrics on the car-axle, of an eccentric-strap loosely mounted upon each eccentric on the car-wheels and upon the axle, and a pusher-bar secured upon each eccentric-strap.

2. In a device of the character described, the combination with a pusher-bar held to rock on an eccentric, of a hanger for supporting the free end portion of the pusher-bar, comprising a hook-limb whereon a hook is bent at the lower end laterally and then upwardly, a spring guard-piece formed on the upper end of the hook-limb so as to depend therefrom, said guard-piece having a laterally-bent member which normally projects above the upright portion of the hook, but from its resilience is adapted to be drawn laterally so as to permit said hook to receive the pusher-bar, and a clip-piece whereon the upper end of the joined hook-limb and guard-piece are pivoted.

3. In a device of the character described, the buffer-piece carried upon a cross-bar of the truck-frame above a pusher-bar, and adapted to cushion the upward movement of said pusher-bar.

656,478. MUSIC-HOLDER. LEWIS C. SCHAFFER and EDWIN F. WHARTENBY, Philadelphia, Pa. Filed Nov. 6, 1899. Serial No. 735,959. (No model.)

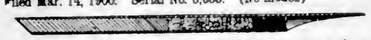


Claim.—1. The herein-described combination of two rolls, a music-bobbin fitting on one roll and having a notch in its end to engage a pin of the roll whereby said roll is made to rotate with the bobbin, a ratchet on one end of the roll and a spring-actuated pintle protruding from the opposite end, a pawl adapted to engage the ratchet, a train of gearing suitably actuated connected to the other roll, a music-strip extending from one of the rolls to the other whereby said rolls move in unison.

2. In a music-holder, a frame, rolls journaled in the frame, a ratchet-wheel on the end of one roll and a spring-actuated pintle on the opposite end, a train of gearing for rotating the other roll, a ratchet-wheel, a ratchet-bar adapted to engage the ratchet-wheel, a spring for holding the ratchet-bar in contact with the ratchet-wheel, a block, a rod on which the block is slidable and a spring encircling the rod contacting with the block.

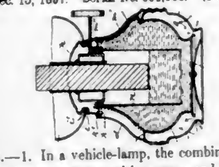
3. In combination with the rolls of a music-holder, a train of gearing for rotating one of the rolls, a ratchet-wheel, a ratchet-bar for actuating the ratchet-wheel, a guideway for the ratchet-bar, means for holding the ratchet-bar and ratchet-wheel in engagement, a sliding block, a rod acting as a guide for the block, a spring encircling the rod and pressing against the block, and a thumb-knob on the sliding block projecting from the frame.

656,479. TOOTHPICK. GEORGE W. SCHELLENBACH, Joplin, Mo. Filed Mar. 14, 1900. Serial No. 8,633. (No model.)



Claim.—A toothpick, having a hollow tubular body such as a quill, one end of which is closed and the other end of which is formed with a point for engagement with the teeth, and a quantity of flavoring or medicinal substance or substances contained within the hollow body directly adjacent to the point, so that when using the toothpick on the teeth, the said flavoring or medicinal substances will be brought into use.

656,480. VEHICLE-LAMP. GUSTAVE SCHMIDT, Newark, N. J. Filed Dec. 15, 1897. Serial No. 661,968. (No model.)



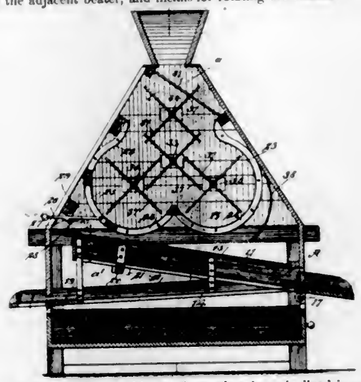
Claim.—1. In a vehicle-lamp, the combination with the body and oil-cup of an incasement comprising upper and lower members d, d', the upper member having a T-shaped aperture in its side to permit of the passage of the wick-spindle and its finger-piece and the lower member having its upper edges bent inward and notched or perforated and threaded to screw onto said upper member, substantially as set forth.

2. In a vehicle-lamp, the combination of the oil-cup incasement surrounding the oil-cup and holding it in position and having in its side an aperture to permit of the passage of the wick-spindle, and said oil-cup having a projection adapted to cover and tightly close said aperture from the inside when said oil-cup is in place within the incasement, substantially as set forth.

3. The combination with an oil-cup incasement having in its side an aperture for the passage of the wick-spindle, of an oil-cup having on one side a projection adapted to fit against the inner surface of said incasement around said aperture and close the same, substantially as set forth.

656,481. TOBACCO-SEPARATING MACHINE. LUIS R. SCHOLTZ, Caracas, Venezuela. Filed Feb. 16, 1900. Serial No. 5,466. (No model.)

Claim.—1. In a separating-machine, reciprocating sieves arranged to deliver material one to the other, a foraminated cage, a plurality of beaters operating in said cage with the arms of one passing between the arms of the adjacent beater, and means for rotating the beaters.



2. In a separating-machine, reciprocating sieves inclined in opposite directions and arranged to deliver material one to the other, a receptacle located beneath the lowermost sieve, a fixed foraminated cage located above the upper screen, beaters mounted to rotate in the said cage, and feed-regulators located above the uppermost beaters, as and for the purpose specified.

3. In a separating-machine, the combination, with a casing, sieves mounted to reciprocate in the said casing, extending out therefrom in opposite directions and having opposite inclination, one sieve being adapted to deliver material to the other and to retain certain material, of a foraminated cage located above the upper sieve, adapted to deliver material thereto, a door for the cage, arranged to open over the upper sieve, a locking device for the door, shafts mounted to revolve within the said cage, arms radiating from said shafts, the arms of one shaft being adapted to pass the arms of the adjacent shaft, a hopper located above the cage, and feed-bars diagonally placed below the outlet of the hopper, the arms of the uppermost shaft being arranged to pass within the spaces between the feed-bars, for the purpose specified.

4. In a separating-machine, the combination, with a casing, sieves mounted to reciprocate in said casing, extending out therefrom in opposite directions and having opposite inclination, one sieve being coarser than the other whereby it is adapted to deliver material to the other and to retain certain material, of a foraminated cage located above the upper sieve, adapted to deliver material thereto, a door for the cage, arranged to open over the upper sieve, a locking device for the door, shafts mounted to revolve within said cage, arms radiating from the shafts, the arms of one shaft being adapted to pass the arms of the adjacent shaft, a hopper located above the cage, feed-bars diagonally placed below the outlet of the hopper, the arms of the uppermost shaft being arranged to pass within the spaces between the feed-bars, a guard located at the rear of said cage, arranged to direct material from the back of the cage to the uppermost sieve, and a reciprocating connection between one of said shafts and the sieves, for the purpose described.

5. In a tobacco-separating machine, the combination with a casing, and rotary beaters mounted therein, of a foraminated cage below the beaters and having a door, and means for operating the door from the outside of the casing, substantially as described.

6. In a tobacco-separating machine, the combination with a casing, and rotary beaters therein, of a foraminated cage below the beaters and having a hinged door, a rod secured to the free edge of the door and extending out through the casing, and provided with a latch, and a keeper through which said rod passes, substantially as described.

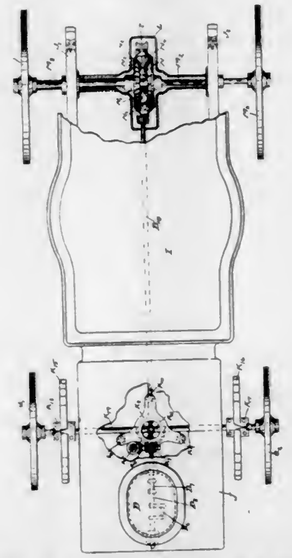
7. In a tobacco-separating machine, the combination with a casing having an inlet-opening at its top, of rods extending diagonally across the casing below the inlet-opening thereof, and a plurality of beaters mounted in the casing, the arms of one of the beaters passing between the said rods, substantially as described.

656,482. METHOD OF MAKING BICYCLE HANDLE-BAR HEADS. JOSEPH P. SCHOWALTER, GEORGE A. ROSENBAUER, and JOSEPH MIOTKE, Milwaukee, Wis., assignors to the Sanger Handle Bar and Plating Company, same place. Filed July 13, 1899. Serial No. 723,665. (No model.)

Claim.—A method of making a bicycle handle-bar head from a primarily-flat sheet-steel blank or headpiece having a central narrow portion, narrow ends and ears extending laterally in opposite directions from said end adjacent to the widest portions of the headpiece; said method consisting in first striking up the ends and ears of the headpiece to a half-round, then swaging the ears back flush with the longitudinal edges of the now half-round ends to form angular shoulders, thereafter punching the widest portions of the headpiece to form bolt-apertures and circular series of radial wedge-ribs around certain of said apertures, hardening the ribbed portion of the headpiece and finally bending said headpiece to form an angular shell, the central narrow portion of the headpiece becoming the top of the shell parallel with the angular-shouldered portions of said headpiece brought together on a horizontal plane to form an apertured split bottom of said shell, the half-round ends of the headpiece meeting to form a split stem depending from said bottom, and the widest portions of said headpiece being parallel vertical sides of said shell with the aforesaid ribs upon the inner surface of one of said sides.



656,483. MOTOR-VEHICLE. WALTER SCOTT, Plainfield, N. J. Filed Feb. 25, 1898. Serial No. 671,579. (No model.)



Claim.—1. The combination in a motor-vehicle, having its rear-end springs seated on an axle, of an engine and operating-levers at its front end, a driving-shaft reaching to and engaging with the rear axle by means of worm and worm-wheel, a frame to support the same connected with the axle-frames holding the axle in position laterally and allowing it to move perpendicularly in relation to the body substantially as described.

2. The combination in a motor-vehicle of a fifth-wheel having a worm-gear segment thereon, a loose disk sliding inside of said worm-gear, bolts secured to the fifth-wheel moving in grooves located in the loose disk, a spring device attached to said loose disk acting in combination with the worm-gear, substantially as described.

3. The combination of a vehicle with its body mounted on springs, a motor in the front end of the body, a driving-shaft extending below the body connecting the motor and the axle of the rear wheels, a crank-shaft supported in the engine-shell, spur-gears intermeshing between said crank-shaft and the driving-shaft, a worm and worm-gear intermediate between the driving-shaft and the rear axle, substantially as described.

4. The combination in a motor-driven vehicle of a body mounted on springs, a motor and steering-gear in front, a driving-shaft extending backward to engage and drive the rear axle, a fixed wheel attached to one end of the axle, a wheel having a sleeve inclosing the axle, a compensating gear operating intermediate the sleeve and axle, a worm-gear rotating on

the axle located around the compensating gear meshing with the worm on the driving-shaft, substantially as described.

5. The combination in a motor-driven vehicle of a body mounted on springs, a motor and steering-gear in front, a shaft extending backward to engage and drive the rear axle, a fixed wheel on one end of the axle, a wheel having a sleeve inclosing the axle, a worm-gear circumventing the compensating gear driven by a worm, a frame for said gearing on the axle connected with the body to prevent its rotation, substantially as described.

6. The combination of a motor-driven vehicle having the motor on its front end and its rear end mounted on springs, a shaft with a yielding joint extending backward to the rear axle and driving same by means of gearing, a frame for said gearing attached to the axle and its journal-boxes on their sides and moving perpendicularly with it but not rotating, substantially as described.

7. The combination in a motor-driven vehicle of a body mounted on springs of the rear axle, guides to allow of the vertical motion of the axle, drive-wheels on the axle, a worm-wheel on the axle, a worm-drive connecting with the worm-wheel mounted on a frame on the axle, a pin on said frame coacting with a socket on the body, substantially as described.

8. The combination in a motor-driven vehicle of a steering apparatus having swiveled wheels, each swiveling portion having a segment of gear attached, and both segments turned by worms engaging therewith to turn the wheels in one direction, substantially as described.

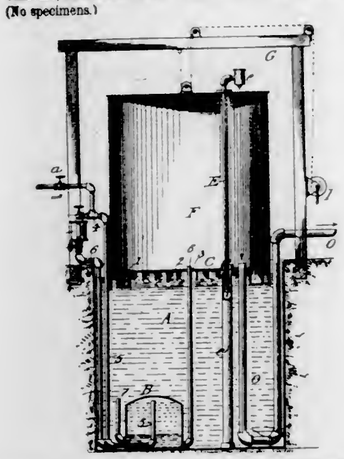
9. The combination in a motor-driven vehicle of two swiveling wheels with their axles, a segment on each axle, a worm for each segment mounted on a shaft, an upright shaft and gearing connecting the shafts, and a hand-wheel or crank, substantially as described.

10. The combination in a motor-driven vehicle of two swiveled wheels, a gear-segment mounted on the swiveling portion of each axle, a shaft and worm connecting said segments, an upright shaft and connecting-gears and a hand-wheel moving its front edge in the direction it is desired to turn the vehicle, substantially as described.

11. In the combination of the driving-shaft with the revoluble axle of a motor-driven vehicle, a bush supported loosely on the axle having arms supporting the gearing for transmitting motion from the driving-shaft to the driven shaft, a pin projecting from said bush, a socket attached to the body of the vehicle containing said pin substantially as described.

12. A combination in a vehicle, whose direction is guided by its front wheels, a suitable hand wheel or lever for steering the vehicle, gearing for connecting such steering-wheel and the axle of the front wheels, and a compensating spring or springs connected with said gearing and located between the steering-wheel and the axle of the running-wheels.

656,484. PROCESS OF CARBURETING AIR OR GAS. JOSEPH E. SHERRER, Chico, Cal., assignor to John C. Burdon, same place, and John Granville, Sacramento, Cal. Filed Nov. 11, 1899. Serial No. 736,608. (No specimens.)

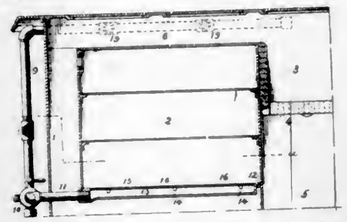


Claim.—1. In a process for making gas, the method of supplying oil to a carbureter floating upon a body of water, which consists in forcing oil into a tank immersed in said body of water, cutting off the oil-supply, displacing oil from said tank and raising it above the water-level by admitting water to said tank, and then feeding said oil by gravity to said carbureter.

2. The process of making gas, which consists in supplying oil of specific gravity inferior to water to a tank immersed in water, causing the pressure of such water to displace and elevate oil from such tank to a height above the water-level, then feeding such oil by gravity to a carbureter at the water-level, producing a vacuum above the water-level and thereby drawing air into said carbureter and over the body of oil contained therein.

3. The process of making gas, which consists in forcing oil of specific gravity inferior to water into a tank immersed in a body of water and accessible thereto, cutting off the oil-supply, so as to permit the back pressure of water into said tank to displace and elevate oil therefrom to a height above the water-level, then feeding such oil by gravity to a carbureter at the water-level, producing a vacuum above the water-level, and thereby drawing air into said carbureter and over the body of oil contained therein.

656,485. GAS AND COAL RANGE. HOWARD R. SHEPPARD, Philadelphia, Pa. Original application filed Aug. 27, 1898, Serial No. 689,670. Divided and this application filed Apr. 27, 1900. Serial No. 14,604. (No model.)



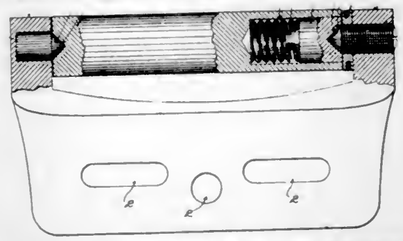
Claim.—1. The combination in a range, of an oven, the bottom of said oven having a recess formed therein, a gas-pipe communicating with said recess, a loose burner-plate fitting within the recess, said plate being flush with the upper surface of the bottom plate of the oven, substantially as described.

2. The combination in a range, of an oven, the bottom plate of said oven having an elongated recess formed therein, a gas-pipe communicating with said recess, a loose burner-plate fitting within the recess, said plate being flush with the upper surface of the bottom plate of the oven, substantially as described.

3. The combination in a range, of an oven, the bottom plate of said oven having an elongated recess at the center of the plate, lugs projecting from the walls of the recess, a loose burner-plate resting within the recess, and upon the lugs, slots in each side of the burner-plate, and a gas-pipe communicating with one end of the recess, substantially as described.

4. The combination in a range, of an oven having an elongated recess, lugs projecting from the side walls of the recess, a gas-pipe communicating with the recess, a loose burner-plate mounted in the recess and resting upon the lugs, so as to be flush with the top of the bottom plate of the oven, said plate having a series of perforations at the center and notched at each side, substantially as described.

656,486. ROLLER CHAFE-IRON. ALBA P. SMITH, Jr., Brockton, Mass. Filed Jan. 3, 1900. Serial No. 201. (No model.)

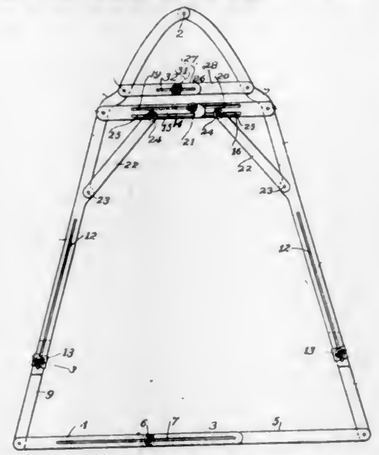


Claim.—1. A roller chafe-iron for vehicles having in combination a roll, a frame having bearings for the roll, a socket in one end of the roll which receives one of the bearings which projects from the frame, a socket in the other end of the roll, a spring in said socket, a disk seated on said spring and having a socket therein, a screw-plug set in said frame which fits in the socket of the disk and forms the second bearing, substantially as described.

2. A roller chafe-iron for vehicles having in combination, a roll, a frame for the roll, bosses on the frame which hold the bearings for the roll, a plug in one of said bosses having a cone-bearing for one end of the roll, a socket in the other end of the roll, a spring in said socket, a disk seated on said spring and having a conical socket therein, a screw-plug in the second of said bosses on the frame having a cone-bearing which fits in the cone-socket of the disk, substantially as described.

3. A roller chafe-iron for vehicles having in combination, a roll, a frame, to which the roll is journaled, a plug inserted in one of the bearing-supports of the frame having a conical end which forms a bearing which fits in a conical recess in one end of the roll, a screw-plug which is mounted in a screw-hole in the other bearing-support of the frame having a conical end which forms the second bearing for the roll, a check-nut on said screw-plug, a socket in the end of said roll, a spring in said socket and a disk seated on said spring having a conical recess which receives said second bearing, substantially as described.

656,487. SKIRT-HANGER. LUCY M. SMITH, Lynn, Mass. Filed Jan. 15, 1900. Serial No. 1,478. (No model.)



Claim.—1. A skirt-hanger comprising side bars having substantially-straight body portions which diverge downwardly from the upper end of the hanger, and inwardly-curved end portions the extremities of which are hinged together to permit the bars to swing toward and from each other to vary the angle of divergence of the body portions, said end portions constituting a loop for engagement with a support, and a cross-bar adjustable in length and connecting the straight body portions and holding them at the desired angle of divergence.

2. A skirt-hanger comprising side bars having substantially-straight body portions which diverge downwardly from the upper end of the hanger, and inwardly-curved end portions, the extremities of which are hinged together to permit the bars to swing toward and from each other to vary the angle of divergence of the body portions, said end portions constituting a loop for engagement with a support, and a cross-bar adjustable in length and connecting the straight body portions and holding them at the desired angle of divergence, the side bars having shoulders 36 between the body portions and the curved end portions.

3. A skirt-hanger comprising side bars arranged in downwardly-divergent form and in parallel planes, adjustable spacing means located between said bars and in planes parallel therewith, and a skirt-distending member at the upper portion of the hanger and projecting from one side thereof.

4. A skirt-hanger comprising side bars arranged in downwardly-divergent form and in parallel planes, adjustable spacing means located between said bars and in planes parallel therewith, a skirt-distending member at the upper portion of the hanger and projecting from one side thereof, and skirt-supporting shoulders 36 formed on the upper portions of the side bars above the skirt-distending member.

5. A skirt-hanger comprising side bars arranged in downwardly-divergent form, a rearwardly-bowed cross-bar attached near the upper ends of said side bars, and diagonal braces connecting said cross-bar with the side bars.

6. A skirt-hanger comprising side bars arranged in downwardly-divergent form, a rearwardly-bowed cross-bar attached near the upper ends of said side bars, diagonal braces connecting said cross-bar with the side bars, means to vary the distance between the side bars, and means to adjust said braces along the cross-bar.

7. A skirt-hanger comprising side bars arranged in downwardly-divergent form, a cross-bar rigidly uniting the upper ends of said side bars, means to vary the length of said cross-bar, a rearwardly-projecting skirt-distending member attached to the side bars in the vicinity of said cross-bar, and means for adjusting said member in a direction crosswise of the side bars.

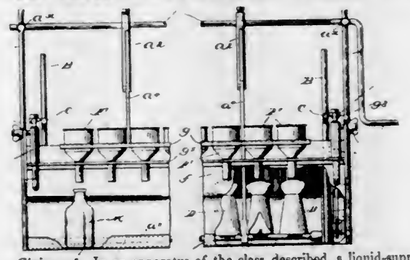
8. A skirt-hanger comprising two bars pivoted together at their upper ends and arranged at an angle, a cross-bar rigidly connecting said two bars near their upper ends, means to vary the length of said cross-bar, a rearwardly-projecting skirt-distending member attached to the two bars in the vicinity of said cross-bar, and means for adjusting said member in a direction crosswise of the two bars.

656,488. MANUFACTURE OF BOXES. ALBERT H. STEVENSON and FELIX MAGINN, Manchester, England. Filed Apr. 24, 1899. Serial No. 714,312. (No model.)



Claim.—The method of applying lace-paper or similar fancy edging to boxes, which consists in applying glue to the entire back of the covering-strip and at the same time to a portion of the face of the lace or edging along the plain edge thereof; then moving the lace or edging strip over upon the face of the covering-strip and applying said glued portion of the lace strip to the face of the covering-strip; then applying the covering-strip, with the lace strip attached, to the outside of the box; then turning one edge thereof over into and securing it to the inside of the box to the width of the portion of the lace or edging glued thereon; and finally cutting the said lace or edging at the angles of the box and turning the same over into the box; substantially as described.

656,489. APPARATUS FOR CHARGING RECEPTACLES WITH MEASURED QUANTITIES OF LIQUID. HERMAN STRATER, Boston, Mass. Filed Mar. 22, 1900. Serial No. 9,637. (No model.)



Claim.—1. In an apparatus of the class described, a liquid-supply tank, a liquid-conveyer, a vertically-movable funnel under the lower end of which the vessel to be filled is placed, means to lower the conveyer into the tank, to be filled, and to thereafter lift the filled conveyer and tip it to discharge its contents into the funnel, and a controlling device governed by said means, to lower automatically the end of the funnel into the mouth of the vessel to be filled, and to thereafter lift the funnel into normal position.

2. In apparatus of the class described, a liquid-supply tank, a support for the vessels to be filled, a corresponding number of funnels, a series of open-mouthed, connected conveyers, means to carry the conveyers into the tank to be filled and thereafter to lift and tip them to discharge their contents into the funnels, and a controlling device for the funnels, governed by said means, to lower the ends of the funnels into the mouths of the vessels to be filled prior to the tipping of the conveyers.

3. In apparatus of the class described, a liquid-supply tank, a series of connected, open-mouthed conveyers, a support for the vessels to be filled, and means, including a rotatable actuator and connections including longitudinally-rigid links between it and the conveyers, to carry the latter into the tank to be filled, move them into position above the vessels to be filled, and to tip the conveyers to discharge their contents.

4. In apparatus of the class described, a liquid-supply tank, a support for the vessels to be filled, a series of vertically-movable funnels mounted above the support, a series of conveyers, means to lift them from the tank when filled into position higher than the mouths of the funnels, and thereafter to tip the conveyers to discharge their contents into the funnels, and a device to lower said funnels into the mouths of the vessels to be filled before the conveyers have discharged their contents.

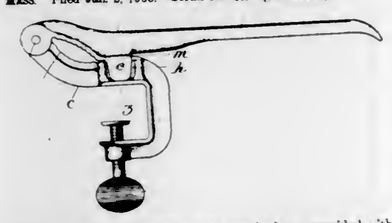
5. In apparatus of the class described, a liquid-supply tank, upright guide-rods, sleeves longitudinally movable thereon, a transverse support pivotally mounted on said sleeves and having a series of rigidly-attached conveyers, a traveler rigidly secured to said support, a directing-cam for the traveler, to maintain the conveyers substantially upright when in the tank and to tip said support and conveyers when lifted, and actuating means connected with the support, to raise and lower the same, the sleeves and guide-rods directing such movement of the support.

6. In apparatus of the class described, a liquid-supply tank, a series of connected measuring-conveyers for the liquid, means to individually vary the capacity of the said conveyers, and means to place the conveyers in the tank to be filled, to lift them and tip them to discharge their contents, said means including an actuator rotatable in one direction to lift and tip the conveyers, opposite rotation of said actuators returning them to substantially-upright position and placing them in the tank.

7. In apparatus of the class described, a liquid-supply tank, a support for the vessels to be filled, a plurality of open-mouthed conveyers to convey liquid from the tank to such vessels, a common support to which said conveyers are rigidly attached, means to move said support into position to fill the conveyers and to thereafter lift the support and tip the same, to discharge the contents of the conveyers into the vessels to be filled, and detachable connections between said support and the actuating means therefor.

8. In apparatus of the class described, a liquid-supply tank, a plurality of rigidly-connected, open-mouthed conveyers, a corresponding number of funnels, to direct the liquid into the vessels to be filled, a normally-elevated funnel-support, means to lower the conveyers into the tank to be filled and thereafter to lift and tip them, to discharge their contents into the funnels, and a controlling device for the funnel-support, to lower the latter and place the spouts of the funnels into receiving vessels placed beneath them as the filled conveyers are lifted.

656,490. TINE-SPREADER. CLARENCE E. THURLOW, Brookline, Mass. Filed Jan. 2, 1900. Serial No. 40. (No model.)



Claim.—1. A tine-spreader made up of a lever provided with lugs adapted to enter between and wedge apart the tines of a fork or like instrument; and a base member for supporting the fork; said base member being provided with a projecting portion for holding the tines apart during the wedging action of the lugs.

2. A tine-spreader made up of a lever provided with lugs adapted to enter between and wedge apart the tines of a fork or like instrument; and a base member for supporting the fork; said base member being provided with corrugations for engaging and supporting the ends of the tines during the longitudinal straightening of said tines; and with a projecting portion for holding the tines apart during the wedging action of the lugs.

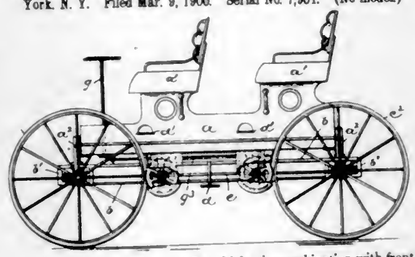
3. A tine-spreader made up of a lever provided with lugs adapted to enter between and wedge apart the tines of a fork or like instrument; a base member for supporting the fork; said base member being provided with a projecting portion for holding the tines apart during the wedging action of the spreaders; and means for securing the tine-spreader to a suitable support.

4. The herein-described combined tine-spreader and nut-cracker made up of a lever provided with lugs adapted to enter between and wedge apart the tines of a fork or like instrument; and a base member for supporting the fork; said base member being provided with corrugations for engaging and supporting the ends of the tines during the longitudinal straightening of said tines; and with a projecting portion for holding the tines apart during the wedging action of the lugs; the said lever being curved to form a nut-cracker as shown and described.

5. The herein-described combined tine-spreader and nut-cracker made up of a lever provided with lugs adapted to enter between and wedge apart the tines of a fork or like instrument; a base member for supporting the fork; said base member being provided with corrugations for engaging and supporting the ends of the tines during the longitudinal straightening of said tines; and with a projecting portion for holding the tines apart during the wedging action of the lugs; the said lever being curved to form a nut-cracker as shown and described; and means for securing the tine-spreader to a suitable support.

6. A tine-spreader made up of a supporting base member and a movable member secured thereto provided with lugs which engage between the tines of a fork or like instrument and spread apart the tines.

656,491. AUTOMOBILE VEHICLE. WALDO W. VALENTINE, New York, N. Y. Filed Mar. 9, 1900. Serial No. 7,951. (No model.)



Claim.—1. In an automobile vehicle, the combination with front and rear axles having hinged end sections and running wheels pivoted thereon, of a transversely-slidable frame between said front and rear axles, driving-shafts having bearings on said frame, driving-wheels upon said shafts and engaging the running wheels, means for rotating said shafts and means for sliding the said frame, substantially as set forth.

2. In an automobile vehicle, the combination with an axle and running wheels pivoted thereon, of a sliding frame arranged parallel to the axle, means for sliding said frame in the direction of the length of the axle, a driving-shaft having bearings on said frame and carrying driving-wheels engaging the running wheels to transmit motion thereto, and means for rotating said shaft, substantially as set forth.

3. In an automobile vehicle, the combination with a transverse axle, and running wheels pivoted thereon, of a transversely-sliding frame, a driving-shaft having bearings in said frame, and driving-wheels on said shaft engaging the running wheels, substantially as set forth.

4. In an automobile vehicle, the combination with a transverse axle having pivoted end sections and running wheels thereon, of a transversely-sliding frame adjacent to said axle, a driving-shaft having bearings on said frame and carrying driving-wheels engaging the running wheels, and steering-levers extending from the said pivoted end sections of the axles to the said sliding frame, substantially as set forth.

5. In an automobile vehicle, the combination with a transverse axle having pivotal end sections and running wheels thereon, of a transversely-sliding frame, a driving-shaft having bearings on said frame, driving-wheels upon said shaft and engaging the running wheels to transmit motion thereto, steering-levers rigidly connected to said pivotal end sections of the axles and pivotally connected to the sliding frame, and springs pressing said axle toward the sliding frame, substantially as set forth.

6. In an automobile vehicle, the combination with the framework, of a transversely-sliding frame having bearings thereon, a rotary shaft journaled on said frame, driving-wheels fast on said shaft and engaging the running wheels of the vehicle, a power-pulley keyed to said rotary shaft upon a long spline permitting longitudinal movement of the shaft independent of the pulley, a forked stay holding said pulley in place, and means for sliding the frame, substantially as set forth.

7. In an automobile vehicle, the combination with a transverse axle and running wheels thereon, of a transversely-sliding frame, a driving-shaft journaled upon said frame and having driving-wheels transmitting motion to said running wheels, and means for forcing the axle away from the frame as said frame is slid transversely, substantially as set forth.

8. In an automobile vehicle, the combination with a transverse axle and running wheels thereon, of a transversely-sliding frame, a driving-shaft journaled on said frame and having driving-wheels transmitting motion to said running wheels, and levers extending from said sliding frame to the axle and being operated by the sliding frame to push the axle away from the frame and carry the running wheels and driving-wheels out of engagement, substantially as set forth.

9. In an automobile vehicle, the combination with a transverse axle having pivotal end sections and running wheels thereon, of a transversely-sliding frame carrying a driving-shaft and driving-wheels transmitting motion to said running wheels, steering-levers extending from said pivotal end sections of the axles to the sliding frame and spreading means whereby as the sliding frame is operated to steer the vehicle the axle is forced away from the frame at the side of the vehicle toward which the turn is being made, substantially as set forth.

10. In an automobile vehicle, the combination with a transverse axle and running wheels thereon, of a transversely-sliding frame carrying a driving-shaft with driving-wheels thereon adapted to engage the running wheels, a spreading-lever extending from the axle to a point near the

frame, and said frame being provided at its adjacent side with a projecting surface adapted to engage and operate said lever as the frame is slid, substantially as set forth.

11. In an automobile vehicle, the combination with a transverse axle and running wheels thereon, of a transversely-sliding frame, a driving-shaft upon said frame and driving-wheels normally engaging said running wheels, spreading-levers extending from said axle to said frame, and beveled projections near the opposite ends of said frame, one of which is adapted to engage a spreading-lever as the frame is slid in the direction of the other beveled surface, substantially as set forth.

12. In an automobile vehicle, the combination with front and rear axles and springs pressing said axles toward one another, of an intermediate sliding frame carrying a driving-shaft and driving-wheels, said frame being wider at its opposite ends than at the middle parts, and spreading-levers extending from said axles toward the said slidiog frame, and adapted to be engaged and forced apart by the said wider ends as the frame is slid, substantially as set forth.

13. In an automobile vehicle, the combination of the running wheels, the driving-shaft, driving-wheels upon said shaft engaging the peripheries of the running wheels, a frame supporting said driving-shaft and being adapted to slide transversely and provided with rack-teeth, a steering-shaft having fixed bearings, pinions upon said steering-shaft engaging said rack-teeth, and means for rotating said steering-shaft, substantially as set forth.

14. In an automobile vehicle, the combination of transversely-slidable frames each carrying a driving-shaft and driving-wheels thereon engaging the peripheries of running wheels of the vehicle, a longitudinal steering-shaft having fixed bearings on the vehicle, pinions upon said shaft and racks upon the sliding frames, said racks being engaged by said pinions as the steering-shaft is turned, whereby the frames are all moved simultaneously, and an upright hand-shaft and cooperating bevel-gears for turning the steering-shaft, substantially as set forth.

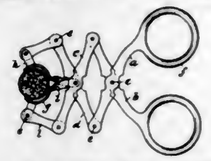
15. In an automobile vehicle, the combination with running wheels having their rims radially perforated and said perforations flaring from the middle toward each end, of driving-wheels adapted to peripherally engage said running wheels and having radially-projecting pins adapted to enter the perforations in the running wheels, and means for driving said driving-wheels, substantially as set forth.

16. In an automobile vehicle, the combination of running wheels, a transversely-sliding frame, a driving-shaft journaled on said frame, a driving-wheel on said shaft adapted to peripherally engage a running wheel, a guard or shield carried by said frame and protecting the driving-wheel, and a mud-scraper carried by said guard and adapted to engage the periphery of the running wheel, substantially as set forth.

17. In an automobile vehicle, the combination of a driving-wheel peripherally engaging the periphery of a running wheel to transmit motion thereto, and a scraper adapted to engage each point of the periphery of the running wheel after it leaves the ground and before it engages the driving-wheel, whereby a clean contact-surface is secured, substantially as set forth.

18. In an automobile vehicle, the combination with front and rear axles having running wheels, of transversely-slidable frames arranged one in front of the front axle and one behind the rear axle, driving-shafts and driving-wheels upon said sliding frames for transmitting motion to the running wheels, and means for simultaneously sliding said frames to steer the vehicle, substantially as set forth.

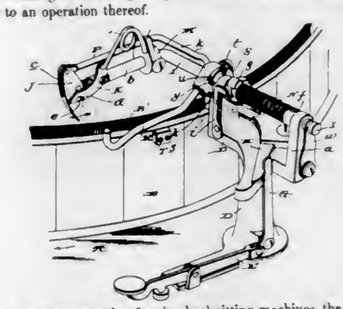
656,492. HOLDER FOR ASPARAGUS, &c. WILLIAM VOGEL, Patterson, N. J., assignor, by mesne assignments, to William Fischer, Sr., William Fischer, Jr., Frank Fischer, and August Fischer, same place. Filed May 21, 1900. Serial No. 17,335. (No model.)



Claim.—In a table implement, the combination of a pair of lazy-tongs having handles at one end, a pair of coacting curved plates having arms, one arm of each plate being pivotally connected to said lazy-tongs at the fulcruming-point of the adjacent levers thereof, and links, said links being pivotally connected to the other arms of the plates and the extremities of said levers, substantially as described.

656,493. STOP-MOTION FOR CIRCULAR-KNITTING MACHINES. WILLIAM P. WEST and BRIGHAM PAYNE, Woonsocket, R. I. Filed Feb. 23, 1900. Serial No. 6,284. (No model.)

Claim.—1. In a stop-motion for circular-knitting machines, the combination of a shipping-lever, a shaft having an arm, a presser-foot mounted to rock on said arm, means intermediate of the shipping-lever and the presser-foot whereby the latter is enabled to control the operation of the former, and a spring-pressed device on the arm of the shaft for automatically resetting or returning the presser-foot to its normal position subsequent to an operation thereof.



2. In a stop-motion for circular-knitting machines, the combination of a shipping-lever, a shaft having an arm, a presser-foot mounted to rock on said arm, means intermediate of the shipping-lever and the presser-foot whereby the latter is enabled to control the operation of the former, and a spring-pressed latch on the arm of the shaft for holding the presser-foot against casual movement and resetting or returning it to its normal operative position subsequent to an operation.

3. In a stop-motion for circular-knitting machines, the combination of a shipping-lever, a shaft having an arm, a presser-foot mounted to rock on the arm of the shaft and having a lateral lug, means intermediate of the shipping-lever and the presser-foot whereby the latter is enabled to control the operation of the former, and a spring-pressed latch fulcrumed on the arm of the shaft and having a seat in its lower edge to receive the lateral lug of the presser-foot, substantially as specified.

4. In a stop-motion for circular-knitting machines, the combination of a shipping-lever, a shaft having an arm, a presser-foot mounted to rock on the arm of the shaft and having a lateral lug, means intermediate of the shipping-lever and the presser-foot whereby the latter is enabled to control the operation of the former, a latch fulcrumed at an intermediate point of its length on the arm of the shaft and having a seat in the lower edge of one of its arms to receive the lug of the presser-foot, and a spring connected at one end to the other arm of the latch and having its other end connected to an adjustable collar on the arm of the shaft, substantially as specified.

5. In a stop-motion for circular-knitting machines, the combination of a shipping-lever, a bell-crank lever, means intermediate of the shipping-lever and one arm of the bell-crank lever whereby the latter is enabled to control the operation of the former, a rock-shaft having an arm, a presser-foot fulcrumed at an intermediate point of its length on the arm of the shaft, a rod connected to the upper end of the presser-foot and having an arm arranged to engage the other arm of the bell-crank lever, and automatic means for resetting or returning the presser-foot to its normal position subsequent to an operation thereof, substantially as specified.

6. In a stop-motion for circular-knitting machines, the combination of a shipping-lever, a bell-crank lever, means intermediate of the shipping-lever and one arm of the bell-crank lever whereby the latter is enabled to control the operation of the former, a rock-shaft having an arm, a presser-foot fulcrumed at an intermediate point of its length on the arm of the shaft, a rod connected to the upper end of the presser-foot and having an arm arranged to engage the other arm of the bell-crank lever, a spring-pressed latch mounted on the arm of the shaft and engaging the presser-foot, and a spring for holding the presser-foot down to its work, substantially as specified.

7. In a stop-motion for circular-knitting machines, the combination of a shipping-lever, a shaft having an arm, a presser-foot fulcrumed at an intermediate point of its height on the arm of the shaft, an automatic spring-pressed device for holding the presser-foot against casual movement and resetting or returning the same to its normal position subsequent to an operation thereof, a rod connected to the upper end of the presser-foot and having an arm, a bell-crank lever having one of its arms arranged to be engaged by the arm of said rod, means intermediate of the other arm of the bell-crank lever and the shipping-lever whereby the operation of the latter is controlled by the former, and a coiled spring surrounding and connected to the shaft for holding the presser-foot to its work, substantially as specified.

8. In a stop-motion for circular-knitting machines, the combination of a shipping-lever, a suitable support, a rock-shaft journaled in the support and having an arm, a presser-foot carried by the arm of the rock-shaft,

means intermediate of the shipping-lever and the presser-foot whereby the operation of the former is controlled by the latter, automatic means for resetting the presser-foot subsequent to an operation thereof, a ratchet-wheel loose on the shaft, a coiled spring surrounding the shaft and connected at one end to the same and at its opposite end to the ratchet-wheel, and a spring-pawl connected to the support and engaging the ratchet-wheel, substantially as specified.

9. In a stop-motion for circular-knitting machines, the combination of a shipping-lever, a suitable support, an endwise-movable rock-shaft journaled in the support and having an arm, a presser-foot mounted to rock on the arm of the shaft, means intermediate of the shipping-lever and the presser-foot whereby the operation of the former is controlled by the latter, automatic means for resetting the presser-foot subsequent to an operation thereof, a spring connected to the shaft for holding the presser-foot to its work, a spring for moving the shaft in an endwise direction, a keeper fixed on the support and having a notch and a beveled forward end, an arm fixed on the shaft and having a lug to engage said notch and beveled end of the keeper, and means on the cylinder of the machine for engaging and raising said arm, substantially as specified.

10. In a stop-motion for circular-knitting machines, the combination of a shipping-lever, a suitable support, a rock-shaft journaled in the support and having an arm, a presser-foot mounted to rock on the arm of the shaft, means intermediate of the shipping-lever and the presser-foot whereby the operation of the former is controlled by the latter, automatic means for resetting the presser-foot subsequent, to an operation thereof, a spring connected to the shaft for holding the presser-foot to its work, and suitable means for securing the shaft when the same is rocked to raise its arm, substantially as specified.

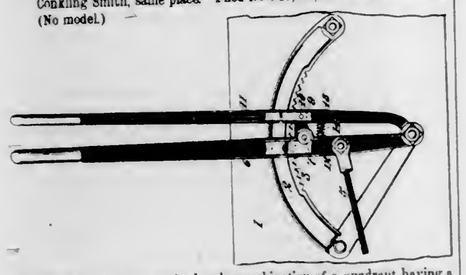
11. In a stop-motion for circular-knitting machines, the combination of a suitable support, a keeper fixed to the support, a rock-shaft journaled in the support and having an arm, a presser-foot on said arm adapted to control the operation of the shipping-lever of the machine, a coiled spring connected to the shaft for holding the presser-foot to its work, an arm fixed on the shaft and adapted to engage the keeper, and means on the cylinder of the machine for engaging said arm, substantially as specified.

12. In a stop-motion for circular-knitting machines, the combination of a suitable support, a keeper fixed to the support and having its forward end beveled and also having a notch, an endwise-movable rock-shaft journaled in the support and having an arm, a presser-foot on said arm adapted to control the operation of the shipping-lever of the machine, a coiled spring connected to the shaft for holding the presser-foot to its work, an arm fixed on the shaft and having a lug to engage the keeper, a spring for moving the shaft endwise and holding the lug of the handle in engagement with the keeper, and means on the cylinder of the machine for engaging said arm, substantially as specified.

13. In a stop-motion for circular-knitting machines, the combination of a shifter adapted to throw the driving mechanism of the machine out of gear, a suitable support, a presser-foot movable on said support, means whereby the presser-foot is enabled to control the operation of the shifter, and a spring-pressed latch for holding the presser-foot against casual movement, and resetting or returning it to its normal operative position subsequent to an operation.

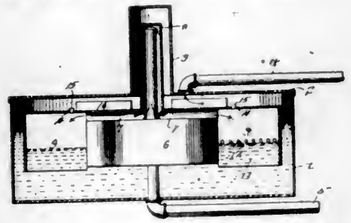
14. In a stop-motion for circular-knitting machines, the combination of a shifter adapted to throw the driving mechanism of the machine out of gear, a suitable support, a shaft journaled in the support, and having an arm, a presser-foot movable on said arm of the shaft, means whereby the presser-foot is enabled to control the operation of the shifter, an automatic device on the arm of the shaft for resetting the presser-foot subsequent to an operation thereof, a spring for holding the presser-foot to its work, and means for securing the shaft when the same is rocked to raise its arm.

656,494. WAGON-BRAKE. JESSE WHEELER, St. Louis, Mo., assignor of one-half to Lucius M. Conkling, Thomas H. Conkling, and Emma Conkling Smith, same place. Filed Nov. 15, 1899. Serial No. 737,042. (No model.)



Claim.—In a wagon-brake, the combination of a quadrant having a rack, a main lever, a pin secured to said main lever, an auxiliary lever, said two levers having a common pivot, a dog pivoted to said auxiliary lever and provided with a slot oblique to the radius extending from said common pivot, and in which said pin is adapted to ride and operate said dog, and a spring adapted to keep said levers separated, substantially as described.

656,495. CARBURETER. JAMES P. ANDERSON, Anamosa, Iowa. Filed May 22, 1900. Serial No. 17,585. (No model.)



Claim.—1. A carbureting apparatus comprising a tank, an air-inlet pipe having a vertical terminal arm extending upward from the bottom of the tank, a float revoluble on said arm of said pipe and having the pipe 8 on its upper side, around the said arm of said air-pipe, the latter discharging into said pipe 8, a series of radially-disposed carbureting-chambers on the said float, air-pipes 7 connecting pipe 8 with said carbureting-chambers, and a service-pipe leading from the said tank at a point above the said float, substantially as described.

2. In a carbureting apparatus, the combination with a closed tank for liquid hydrocarbon, of a float revoluble therein, carbureting-chambers carried by said float and immersed in the liquid hydrocarbon, means to force air through said carbureting-chambers into the liquid hydrocarbon, and a fan on the upper side of the revoluble float within the gas-space of the tank, substantially as described.

3. In a carbureting apparatus, a tank for liquid hydrocarbon, a float revoluble therein, and having carbureting-chambers divided into communicating sections, said sections having openings on their upper sides, and removable closures for said openings, means to force air through said carbureting-chambers, into the hydrocarbon in which they are immersed, and a service-pipe leading from the said tank, substantially as described.

656,496. OPTICAL DEVICE. GEORGE F. APPLETON, Haverstraw, N. Y. Filed Dec. 4, 1899. Serial No. 739,077. (No model.)



Claim.—An optical device of the class described, comprising a casing consisting of two telescoping members, the lower of which is provided at its lower end with an obliquely-arranged mirror, the upper of which is provided at its upper end with a parallel member, said upper member being provided with an aperture at one side opposite the mirror mounted therein, and said lower member being provided at one side with a sight-opening opposite the mirror mounted therein, the upper end of said lower member being beveled to cover said mirror in said upper member, when said members are telescoped to close said aperture, substantially as shown and described.

656,497. PROCESS OF TREATING ZINC-BEARING COMPLEX ORES FOR RECOVERY OF ZINC OR OTHER METALS THEREFROM. GUY DE BECHI, Paris, France. Filed May 1, 1899. Serial No. 715,231. (No specimens.)

Claim.—1. The method of treating complex zinc ores for the recovery therefrom of copper, zinc and lead, consisting in separately roasting the ore and an alkali chlorid in the presence of air and steam, conveying the sulfurous and sulfuric vapors thus derived from the ore over and in contact with the said chlorid during the roasting to obtain hydrochloric-acid fumes, condensing the acid fumes, lixiviating the roasted ore with the acid liquor thus obtained to produce a solution of metallic chlorids, and successively precipitating the metals of the metallic chlorids as hydrates by successive additions of alkali, substantially as described.

2. The method of treating complex zinc ores for the recovery therefrom of copper, zinc and lead, consisting in roasting the ore in the presence of air and steam with a quantity not exceeding ten per cent. by weight of an alkali chlorid, and separately roasting a further quantity of said chlorid, conducting the fumes from the roasted ore over and in contact with the chlorid during the roasting to obtain hydrochloric-acid fumes, condensing the acid fumes, lixiviating the ore with the acid liquor thus obtained to produce a solution of metallic chlorids, and successively precipitating the metals of the metallic chlorids as hydrates by successive additions of alkali, substantially as described.

3. The method of treating complex zinc ores for the recovery therefrom of copper, zinc and lead, consisting in separately roasting the ore and an alkali chlorid in the presence of air and steam, conveying the sulfurous and sulfuric vapors thus derived from the ore over and in contact with the said chlorid during the roasting to obtain hydrochloric-acid fumes; condensing the acid fumes, lixiviating the roasted ore with the acid liquor thus obtained to produce a solution of metallic chlorids, and successively precipitating the metals of the metallic chlorids as hydrates by successive additions of lime, substantially as described.

4. The method of treating complex zinc ores for the recovery of copper, zinc and lead, consisting in roasting the ore mixed with pyrites, and separately roasting an alkali chlorid in the presence of steam and air, conveying the sulfurous and sulfuric vapors thus derived from the ore over and in contact with the chlorid during the roasting to obtain hydrochloric-acid fumes, condensing the acid fumes, lixiviating the roasted ore with the acid liquor thus obtained to produce a solution of metallic chlorids, and successively precipitating the metals of the metallic chlorids as hydrates by successive additions of lime, substantially as described.

5. The method of treating complex zinc ores for the recovery therefrom of copper, zinc and lead, consisting in separately roasting the ore and an alkali chlorid in the presence of air and steam, conveying the sulfurous and sulfuric vapors thus derived from the ore over and in contact with the said chlorid during the roasting to obtain hydrochloric-acid fumes, condensing the acid fumes, eliminating any sulfuric acid from the acid liquor thus obtained, eliminating any soluble sulfate from the roasted ore, lixiviating the roasted ore with the acid liquor thus obtained to produce a solution of metallic chlorids, and successively precipitating the metals of the metallic chlorids as hydrates by successive additions of alkali, substantially as described.

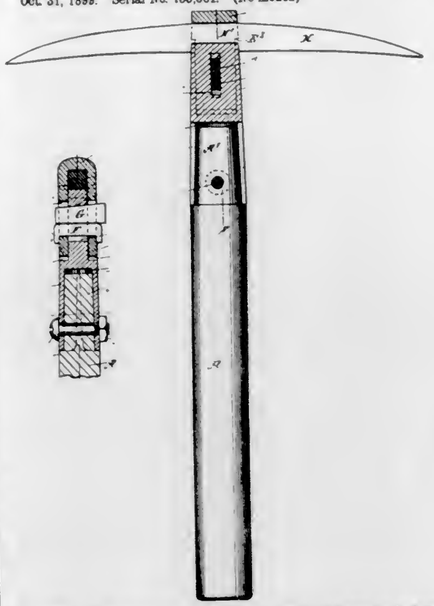
6. The method of treating complex zinc ores for the recovery therefrom of copper, zinc, and lead, consisting in separately roasting the ore and an alkali chlorid in the presence of air and steam, conveying the sulfurous and sulfuric vapors thus derived from the ore over and in contact with the said chlorid during the roasting to obtain hydrochloric-acid fumes, condensing the acid fumes in water, eliminating any sulfuric acid from the acid-water and eliminating any soluble sulfate from the roasted ore as insoluble calcium sulfate by the addition of a solution of calcium chlorid, lixiviating the ore with the acid liquor to obtain a solution of metallic chlorids, and successively precipitating the metals of the metallic chlorids as hydrates by successive additions of lime, substantially as described.

7. The method of treating complex zinc ores for the recovery therefrom of copper, zinc and lead, consisting in separately roasting the ore and an alkali chlorid in the presence of air and steam, conveying the sulfurous and sulfuric vapors thus derived from the ore over and in contact with the said chlorid during the roasting to obtain hydrochloric-acid fumes, condensing the acid fumes in water, eliminating any sulfuric acid from the acid-water and eliminating any soluble sulfate from the roasted ore as insoluble calcium sulfate by the addition thereto of a solution of calcium chlorid, lixiviating the ore with the acid liquor to obtain a solution of metallic chlorids, precipitating any silver from the solution as insoluble silver sulfid by the addition of lime and calcium sulfid, precipitating any iron from the solution as insoluble hydrated ferric oxid by the addition of some fresh-roasted zinc ore, and then precipitating first the copper and then the zinc from the chlorid solution as hydrates, by the successive additions of lime, substantially as described.

8. The method of treating complex zinc ores for the recovery therefrom of copper, zinc, and lead, consisting in separately roasting the ore and an alkali chlorid in the presence of air and steam, conveying the sulfurous and sulfuric vapors thus derived from the ore over and in contact with the said chlorid during the roasting to obtain hydrochloric-acid fumes, condensing the acid fumes in water, eliminating any sulfuric acid from the acid-water and eliminating any soluble sulfate from the roasted ore as insoluble calcium sulfate by the addition thereto of a solution of calcium chlorid, lixiviating the ore with the acid liquor to obtain a solution of metallic chlorids, and successively precipitating the metals of the metallic chlorids as hydrates by successive additions of lime, heating the zinc hydrate thus obtained in presence of air to drive off any combined chlorin, compressing the calcined residue of zinc oxid and retorting the same in the presence of carbon, substantially as described.

9. The method of treating complex zinc ores for the recovery therefrom of copper, zinc, and lead, consisting in separately roasting the ore and an alkali chlorid in the presence of air and steam, conveying the sulfurous and sulfuric vapors thus derived from the ore over and in contact with the said chlorid during the roasting to obtain hydrochloric-acid fumes, condensing the acid fumes in water, eliminating any sulfuric acid from the acid-water and eliminating any soluble sulfate from the roasted ore as insoluble calcium sulfate by the addition thereto of a solution of calcium chlorid, lixiviating the ore with the acid liquor to obtain a solution of metallic chlorids, and successively precipitating the metals of the metallic chlorids as hydrates by successive additions of lime, heating the zinc hydrate thus obtained in presence of air to drive off any combined chlorin, condensing any zinc that may be driven off with the chlorin, mixing the residue of calcined zinc oxid with carbon and compressing the mixture to increase its density, and then retorting the compressed mixture, substantially as described.

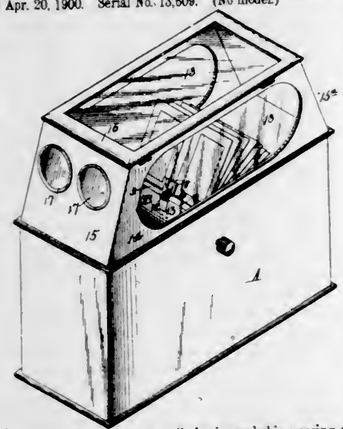
656,498. PICK. WILLIAM P. BEVINGTON, Escondido, Cal. Filed Oct. 31, 1899. Serial No. 735,381. (No model.)



Claim.—The combination of the handle, the head having at its lower end a split socket for the reception of the handle, and at its upper end a solid portion I-shaped in horizontal cross-section, forming longitudinal channels in opposite sides of the head, said channels being connected by an aperture extending through the central member of the I-shaped sec-

tion, the bolt passing through the handle and through the split socket, the U-shaped clamp the side members of which slide in said channels and have cross-apertures registering with that of the head, and shoulders projecting over the parallel end members of the I-shaped section, the pick held between the upper end of the head and the central member of the clamp, a key extending through the apertures of the clamp and head and having bent ends engaging the clamp members exteriorly, and a wedge extending through the same apertures and engaging the key and the head.

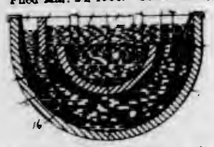
656,499. STEREOSCOPE. JONAS O. BODEN, Youngstown, Ohio. Filed Apr. 20, 1900. Serial No. 13,609. (No model.)



Claim.—1. In a stereoscope, a cylinder journaled in a casing, picture-frames mounted in pairs on common shafts journaled in said cylinder, and a curved spring arranged to extend between said pairs of frames and engage in succession said shafts to retard said frames and hold them in viewing position as the cylinder is revolved.

2. In a stereoscope, a cylinder, a support for said cylinder, a double picture-frame mounted on a shaft supported by said cylinder, said shaft, and a curved spring adapted to engage said shaft to retard said frames and retain them momentarily in viewing position.

656,500. GALVANIZING APPARATUS. EDWARD I. BRADDOCK, Winchester, Mass., assignor to the New Process Coating Company, Portland, Me. Filed Mar. 24, 1900. Serial No. 9,983. (No model.)

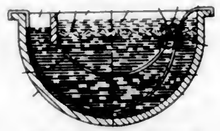


Claim.—1. An apparatus for galvanizing strips, sheets, &c., comprising an outer kettle, a smaller inner kettle located within the outer kettle below the upper edge thereof, and means within the outer kettle between it and the inner kettle and extended above and below the upper edge of the inner kettle but below the upper edge of the outer kettle to form a substantially-narrow outlet passage-way for the strip, sheet, &c., substantially as described.

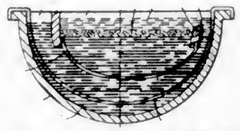
2. An apparatus for galvanizing strips, sheets, &c., comprising an outer kettle, a smaller inner kettle located within the outer kettle below the upper edge thereof, and a cut-off box within the outer kettle and below the upper edge thereof and forming an outlet passage-way for the metal strip, sheet, &c.

656,501. GALVANIZING APPARATUS. EDWARD I. BRADDOCK, Winchester, Mass., assignor to the New Process Coating Company, Portland, Me. Original application filed Mar. 24, 1900, Serial No. 9,983. Divided and this application filed June 11, 1900. Serial No. 19,831. (No model.)

Claim.—An apparatus for galvanizing strips, sheets, &c., comprising a substantially-wide kettle or vat, means within it at one side thereof to form a substantially-narrow entrance-chamber for the said sheets, &c., and a substantially-wide chamber, means within the wide chamber near the opposite side of the kettle but below the upper edge thereof and at a substantially-wide distance from the said narrow chamber to form a narrow outlet passage-way for the said sheets closed at its sides and ends, and guides intermediate of the said entrance-chamber and said outlet passage-way arranged to direct the metal sheets, &c., continuously or in one direction through the kettle and into said outlet passage-way, substantially as and for the purpose specified.

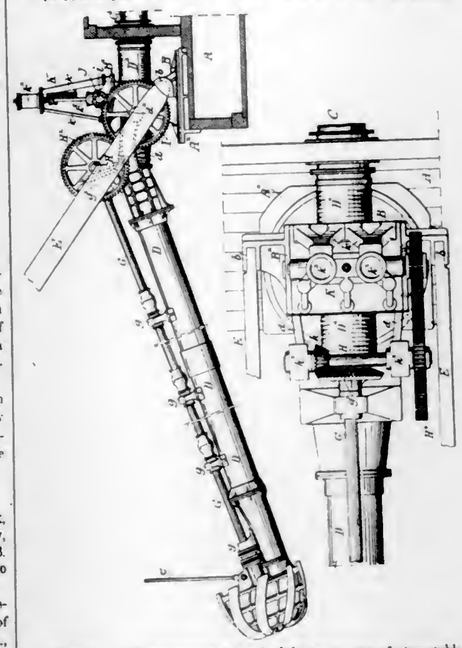


656,502. GALVANIZING APPARATUS. EDWARD I. BRADDOCK, Winchester, Mass., assignor to the New Process Coating Company, Portland, Me. Original application filed Mar. 24, 1900, Serial No. 9,983. Divided and this application filed June 11, 1900. Serial No. 19,832. (No model.)



Claim.—An apparatus for galvanizing strips, sheets, &c., comprising a substantially-wide kettle or vat, means within it at one side thereof to form a substantially-narrow entrance-chamber for the said sheets, &c., and a substantially-wide chamber, means within the wide chamber near the opposite side of the kettle but below the upper edge thereof and at a substantially-wide distance from the said narrow chamber to form a narrow outlet passage-way for the said sheets closed at its sides and ends, and guides intermediate of the said entrance-chamber and said outlet passage-way arranged to direct the metal sheets, &c., continuously or in one direction through the kettle and into said outlet passage-way, substantially as and for the purpose specified.

656,503. HYDRAULIC DREDGING APPARATUS. WILLIAM J. BRADLEY, Philadelphia, Pa., assignor to the American Dredging Company, same place. Filed Apr. 28, 1900. Serial No. 14,730. (No model.)



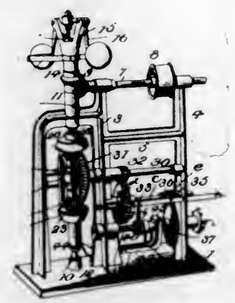
Claim.—1. The combination in a dredging apparatus, of a turn-table, a suction-pipe pivoted to the turn-table, a shaft mounted on the suction-pipe, a cutter-head carried by said shaft, a gear-wheel in line with the pivots of the suction-pipe, an engine mounted on the frame and geared to the gear-wheel, said gear-wheel in turn being geared to the cutter-head shaft, substantially as described.

2. The combination in a dredging apparatus, of a base-plate secured to the deck of the dredge, a turn-table mounted so as to turn on the base-plate, an engine or motor carried by the turn-table, a suction-pipe pivoted to the frame of the turn-table, a shaft having its bearing on the suction-pipe, a cutter-head on one end of said shaft, a gear-wheel in line with the pivot of the suction-pipe and geared to the engine and to the cutter-head shaft, the movable suction-pipe being connected to the fixed suction-pipe on the dredge, substantially as described.

3. The combination of a base-plate, a turn-table mounted so as to turn thereon, a suction-pipe pivoted to the frame of the turn-table, a shaft mounted in bearings on the suction-pipe, a cutter-head mounted on one end of the shaft, bevel-gear at the other end of the shaft, a cross-shaft having a pinion meshing with the bevel-gear, a gear-wheel on said shaft, a gear-wheel mounted on the turn-table at the pivot-point of the suction-pipe, and meshing with the aforementioned gear-wheel, and an engine or motor mounted on the turn-table, a pinion on the driving-shaft of said engine or motor meshing with the gear-wheel, substantially as described.

4. The combination of the base-plate, a turn-table mounted on said base-plate, said turn-table having an open center and having a platform at the top, an engine or motor mounted on said platform, a suction-pipe pivoted to the turn-table and having a flexible extension passing through the open center of the turn-table under the platform and connected to the suction-pipe of the dredge, a cutter-shaft, and a cutter on the end of said shaft, said cutter-shaft being geared to the engine on the platform, substantially as described.

656,504. GOVERNOR FOR WATER-WHEELS. CHARLES P. BRADWAY, Stafford, Conn. Filed Dec. 21, 1899. Serial No. 741,166 (No model.)

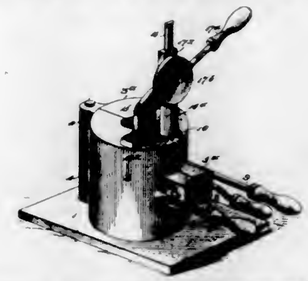


Claim.—1. In governor mechanism, the combination with the vertical shaft, governor-arms coöperating therewith, and a horizontal shaft adapted to be driven in reverse directions by means of said vertical shaft and having a threaded portion, a trip mounted upon the threaded portion of the horizontal shaft, a lever having one end operatively related with reference to the vertical shaft and having its opposite end independent of and projected in the path of the aforementioned trip, and means between the said trip and lever to prevent relative rotation of the trip upon its shaft, substantially as set forth.

2. In governor mechanism, the combination with the vertical shaft, governor-arms coöperating therewith, and a horizontal shaft adapted to be driven in reverse directions from the vertical shaft and having a threaded portion, a lever having one end in engagement with the vertical shaft and having its opposite end portion longitudinally slotted and bent to embrace opposite sides of the aforementioned horizontal shaft, a connecting device joining the terminal portions of the spaced parts of the lever and located in the path of the trip, and a pin projecting from the trip and entering the slotted end of the lever, as and for the purpose set forth.

3. In governor mechanism, the combination with the vertically-movable shaft, the governor-arms, a driven shaft geared to the vertical shaft, and adapted to be rotated in reverse directions, clutches coöperating with the vertical shaft and gearing, and a gate-controlling shaft geared to the driven shaft, of a shipper-bar for throwing the gate-controlling and driven shafts into and out of gear and having a stop, a trip connected by screw-thread with the gate-controlling shaft, a lever adapted to be operated by means of the trip to throw the clutches out of action, and an arm applied to the trip and movable therewith and adapted to strike the stop of the shipper-bar, substantially as described.

656,505. COMBINED MOLD AND PRESS. JOHN J. BRANNAGAN, Steubenville, Ohio, assignor of one-half to F. W. Klages, Pittsburg, Pa. Filed Oct. 25, 1899. Serial No. 734,702. (No model.)



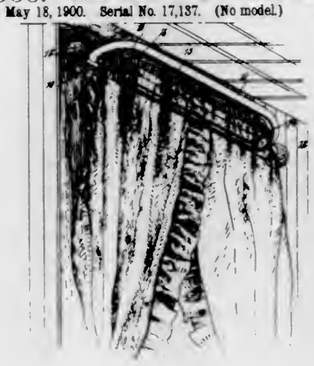
Claim.—1. In a mold as described, the combination of a mold formed of two sections hinged together, said mold having a supplemental receiving-pocket, communicating with the main pocket or forming-chamber, and a closure member formed separately of the mold proper and having no fixed connection therewith, said closure member having portions to fit over the discharges of the supplemental mold-section and having a handle adapted to project through the supplemental receiving-pocket above the top of the mold when said closure member is placed in an operative position as specified.

2. In a mold as described; the combination of a mold formed of hinged sections adapted to close against each other each section having a semi-part of the supplemental receiving-pocket, said receiving-pocket having openings 19 19ª, communicating with the main pocket or forming-chamber, and an independent device for closing off the said supplemental pocket from the main chamber, said independent closure device being adapted to fit within the supplemental pocket and having portions for covering the openings 19ª, said closure device being held to its operative position by closing the two mold-sections against it as specified.

3. The combination with the hinged main mold-sections having the main mold-cavities to receive the blown glassware, said sections having a supplemental mold-cavity communicating with the main mold chamber or cavity; said sections having a molten-glass-receiving chamber; a throat connecting the said chamber with the supplemental mold-cavity; of a closure member comprising a shank terminating in curved ends having a contour to fit the supplemental cavity and having its end provided with closure members adapted to close that part of the supplemental cavity communicating with the main mold-cavity, the stem of said closure member being arranged to project up through the molten-glass-receiving chamber, substantially as shown and for the purposes described.

4. The combination with the hinged mold-sections having a mold or cavity for the reception of the blown material, the two sections having portions forming a supplemental mold, said supplemental mold communicating with the main molding compartment or cavity; a molten-glass-receiving chamber formed in the mold-sections, said molten-glass-receiving compartment having a throat communicating with the main mold-section and a plunger mechanism comprising a standard, a vertically-reciprocating plunger, and a cam-disk for engaging with the stem of the plunger and adapted to reciprocate the same, said cam-disk having an operating-handle, all being arranged substantially as shown and described.

656,506. CURTAIN-POLE. KATE R. BROADSTREET, Grenada, Miss. Filed May 18, 1900. Serial No. 17,137. (No model.)



Claim.—1. A curtain-pole consisting of a back bar and a front bar connected with the back bar, the back bar being provided with parallel slots therein and the front bar with a slot extending from end to end thereof, each end portion of the slot in the front bar or member connecting with a slot in the back bar or member, as set forth.

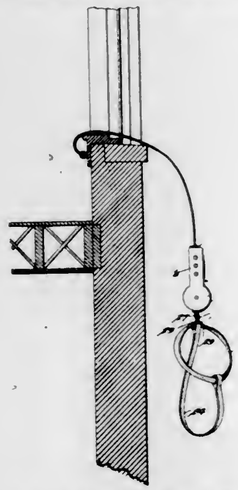
2. A curtain-pole comprising a back bar, and a front bar extending from the back bar, the two bars being tubular and the back bar having parallel slots made therein having their terminals at different end portions of the back bar, the front bar being likewise provided with a longitudinal slot, one end of the said slot of the front bar constituting a continuation of one slot in the back bar, the other slot in the back bar constituting a continuation of the opposite end of the said slot in the front bar, for the purpose specified.

3. A curtain-pole comprising a back bar and a front bar extending from the back bar, the two bars being tubular and the back bar having parallel slots made therein having their terminals at different end portions of the back bar, the front bar being likewise provided with a longitudinal slot, one end of the said slot of the front bar constituting a continuation of one slot in the back bar, the other slot in the back bar constituting a continuation of the opposite end of the said slot in the front bar, a partition located in the back bar between the two slots therein, and curtain-hangers consisting of a member adapted for attachment to a curtain, a shank connected with the said member and adapted to pass through the slots in the curtain-pole, and heads at the inner ends of the said shanks, which heads are adapted when the hangers are in place on the curtain-pole, to remain in the chambers of the said pole, for the purpose set forth.

4. A curtain-pole comprising a front bar and a rear bar connected therewith, and each provided with a guideway for curtain-hangers, the guideway of the front bar being continuous with that of the rear bar.

5. A curtain-pole comprising a front bar, having a longitudinal slot for the guidance of curtain-hangers, and a rear bar having two longitudinal slots, one in advance of the other, the slot of the front bar communicating at its ends, with different slots of the rear bar.

656,507. FIRE-ESCAPE. THOMAS T. BROWN, Euclid, Minn., assignor of nineteen twenty-fifths to Harvey C. Misner, Jackson S. Chapin, and Edwin A. Fisk, same place, and John F. Montgomery, Angus, Minn. Filed Nov. 27, 1899. Serial No. 738,336. (No model.)



Claim.—1. In a fire-escape, the combination with a casing, of a member revolubly mounted therein and adapted to have a rope move over it, a spur or escapement wheel driven by said member, a rocking escapement-pawl driven by the spur or escapement wheel, a friction-bar connected with the pawl to be moved thereby and means pressing the friction-bar against a part of the casing.

2. In a fire-escape, the combination with a casing, of a member revolubly mounted therein and adapted to have a rope passed over it, a spur or escapement wheel, a rocking escapement-pawl driven by the spur or escapement wheel, and a friction device connected with the pawl, to be moved thereby.

3. In a fire-escape, the combination with a casing, of a member mounted to turn therein and to be engaged by a rope, friction-bars mounted in the casing and engaging opposite walls thereof, a rod extending between the friction-bars, a spring carried on the rod and pressing the bars against the casing, and means for driving the friction-bars from the said revoluble member, to retard the movement of the revoluble member.

4. In a fire-escape, the combination with a casing, of a plurality of rollers mounted therein, gearing connecting the rollers to move in unison, a spur or escapement wheel attached to one of the rollers and driven thereby, an escapement-pawl rocked by the spur or escapement wheel, a friction-bar mounted in engagement connected with the pawl to be moved thereby, and means pressing the friction-bar against the casing.

5. A fire-escape, comprising a casing, parallel rollers mounted therein, over which a rope is rove in a plurality of runs, and bars or pins mounted rigidly in the casing between the rollers, to separate the runs of the rope and prevent their interference with each other.

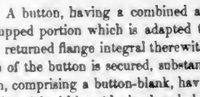
6. In a fire-escape, the combination with a casing, of a plurality of rollers mounted to turn therein, a rope rove over the rollers gearing connecting the rollers to turn in unison, and a friction device connected with the rollers and mounted in engagement with one of the walls of the casing to retard the movement of the rollers.

7. In a fire-escape, the combination with a casing, of three rollers mounted therein and adapted to have a rope rove around them, gearing connecting the rollers to turn in unison a spur or escapement wheel attached to and turning with one roller, an escapement-pawl mounted to rock on the journal of an adjacent roller and driven by the escapement-wheel, a friction-bar mounted to rock on the journal of the third roller and driven by the pawl, and means pressing the friction-bar against a part of the casing to retard the movement of the rollers.

8. A fire-escape, provided with a casing, frictional devices mounted therein, and an adjustable spring-brake mounted in the casing and having a handle portion projecting beyond the same, the brake serving as an adjunct in the said frictional devices.

9. A fire-escape, having a casing, means mounted in the casing to retard the passage of a rope through the same, and a spring-brake mounted in the casing to engage the rope in addition to said means, the brake having a handle portion projected through a slot in the casing, one wall of such slot being ratcheted to engage the handle of the brake.

656,508. TACK-FASTENED BUTTON. CHARLES A. BRYANT, Wakefield, Mass., assignor to The Scovill Manufacturing Company, Waterbury, Conn. Filed June 12, 1900. Serial No. 20,038. (No model.)



Claim.—1. A button, having a combined anvil and hub-reinforce composed of a cupped portion which is adapted to upset and retain the tack-point, and a returned flange integral therewith, between which parts the shank or hub of the button is secured, substantially as described.

2. A button, comprising a button-blank, having a bottomless shank or hub, an anvil located within such shank or hub and having an integral flange externally embracing such shank or hub, the outer end of the shank or hub and the anvil and its flange being contracted so as to form a tack-point passage into a clenching-chamber within the anvil, substantially as described.

3. A tack-fastened button, including a shank or hub, and a combined anvil and hub-reinforce applied to such shank or hub, and having its tack receiving and clenching portion located within the shank or hub, and a returned flange arranged outside of the shank or hub, the said shank or hub and the combined anvil and hub-reinforce being united by pressure and the outer end contracted to form a tack-entrance and a clenching-chamber above such entrance, substantially as described.

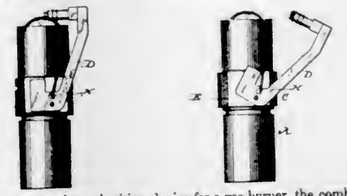
656,509. MARINE DUMPING VESSEL. FRANKLIN H. BULLIS, New York, N. Y. Filed Apr. 3, 1900. Serial No. 11,335. (No model.)

Claim.—1. A dumping vessel, provided on its deck with two receptacles having their backs abutting, and mounted to swing transversely in opposite directions from a loading to a dumping position, and vice versa, means for simultaneously imparting a swinging motion to said receptacles, segmental racks carried by said receptacles at their inner ends, sets of pinions engaging said racks, the pinions of one set being in mesh with the pinions of the other set, a shaft carrying a set of said pinions, and a power-transmitter for rotating said shaft, substantially as shown and described.

2. A dumping vessel, provided on its deck with two receptacles having their backs abutting, and mounted to swing transversely in opposite directions from a loading to a dumping position, and vice versa, the upper edges of the backs being beveled inward and downward, to prevent accumulation of matter when filling the receptacles, substantially as shown and described.



656,510. IGNITING DEVICE FOR GAS-BURNERS. CLARENCE L. BURGER, New York, N. Y. Filed May 13, 1899. Serial No. 716,641. (No model.)



Claim.—1. In an igniting device for a gas-burner, the combination, with the bracket or bearing, the igniting-body and the lever pivoted to said bearing to carry the igniting-body to and from the jet, of a composite thermostatic strip connected to swing by its flexure said pivoted lever and igniting-body to and from the jet.

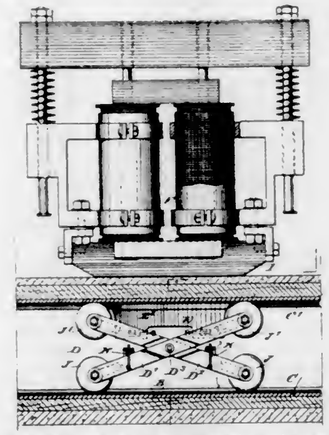
2. In an igniting device for a gas-burner, the combination, with the bracket or bearing, the igniting-body and the lever pivoted to said bearing to carry the igniting-body to and from the jet, of a bent or curved composite thermostatic strip having one end fixed to said bearing, its free end connected to said lever, and a medial part in or near the jet.

656,511. ELECTRIC-RAILWAY SYSTEM. GEORGE L. CAMPBELL, New York, N. Y., assignor to the International Electric Traction Company, same place. Filed Dec. 15, 1899. Serial No. 740,445. (No model.)

Claim.—1. In an electric-railway system, a conduit having a main conductor, a trolley mounted to travel in said conduit in contact with said conductor, and carrying an armature for the magnets on a moving car, to move the trolley in said conduit, a surface conductor separated from and external to said conduit and electrically connected with the main conductor in the interior of the conduit, and a contact-piece on the car for contact with the said surface conductor, substantially as shown and described.

2. In an electric-railway system, a conduit containing a main conductor consisting of two separated members, one of which is connected with a source of electricity, a trolley mounted to travel on the members of the said main conductor, to electrically connect the members, a surface conductor at one side of the said conduit and electrically connected with the other member of the main conductor, and a contact-piece moving with the car and in engagement with the said surface conductor, substantially as shown and described.

3. In an electric-railway system, a conduit having a main conductor, a trolley mounted to travel in said conduit in contact with said conductor and carrying an armature for the magnets on a moving car, the said trolley being capable of opening up or folding to establish or break connection with the members of the main conductor in the conduit when the trolley is under magnetic influence or not, a surface conductor separated from and external to said conduit and electrically connected with the main conductor in the interior of the conduit, and a contact-piece on the car for contact with the said surface conductor, substantially as shown and described.



4. In an electric-railway system, a conduit carrying a main conductor, a trolley mounted to travel therein and capable of opening up or folding, to establish or break connection with the members of the main conductor in the conduit when the trolley is under magnetic influence or not, and a trolley-support for the said trolley and thrown into action when the trolley folds up, to support the trolley in an upright position in the conduit, substantially as shown and described.

5. In an electric-railway system, a trolley capable of making connection between two conductors when the trolley is under magnetic influence and arranged to break connection between the conductors when the magnetic influence ceases, and means for supporting the trolley in the upright position when connection between the conductors is broken, substantially as described.

6. In an electric-railway system, a trolley capable of making connection between two conductors when the trolley is under magnetic influence, and arranged to break connection between the conductors when the magnetic influence ceases, said trolley having members comprising bars pivotally connected with each other at or near their middle by a transverse pivot and adapted to open up or fold, substantially as set forth.

7. In an electric-railway system, a trolley capable of making connection between two conductors when the trolley is under magnetic influence, and arranged to break connection between the conductors when the magnetic influence ceases, said trolley having members pivotally connected with each other to open or fold, and a trolley-support carried by one of the members, and adapted to be actuated by the other member when the members fold, to hold the trolley in an upright position.

8. In an electric-railway system, a conduit having internal conductors, a trolley in said conduit, and mounted to travel in said conduit, said trolley having pivoted members adapted to open up to establish connection between said conductors and to fold up or close to break the connection between said conductors, and a support for the trolley fulcrumed on the frame and moved into active position by the closing of the trolley members, substantially as shown and described.

9. In an electric-railway system, a conduit having internal conductors, a trolley in said conduit and mounted to travel in said conduit, said trolley having pivoted members adapted to open up to establish connection between said conductors and to fold up or close to break the connection between said conductors, and a support carried by one of the members, and adapted to be actuated by the other member on the closing of the trolley, to bring the support in engagement with the inner surface of the conduit, to support the trolley in an upright position when folded and out of engagement with one of the conductors, substantially as shown and described.

10. In an electric-railway system, a trolley comprising a frame having pivoted members, bottom and top wheels on said members, and an armature slidably mounted on said members, substantially as shown and described.

11. In an electric-railway system, a trolley comprising a frame having two members pivotally connected with each other at or near their middle, wheels journaled on the ends of said members, and an armature

carried by the upper portions of the members, substantially as shown and described.

12. In an electric-railway system, a trolley comprising a frame having two members pivotally connected with each other at or near their middle, wheels journaled on the ends of said members, and an armature carried by the upper portions of the members, the armature having a sliding connection with said portions, substantially as shown and described.

13. In an electric-railway system, a trolley comprising a frame having two members pivotally connected with each other at or near their middle, wheels journaled at the ends of the said members, and a support for the trolley and carried by said frame, and adapted to be moved into an active position when the two pivoted frame members close, substantially as shown and described.

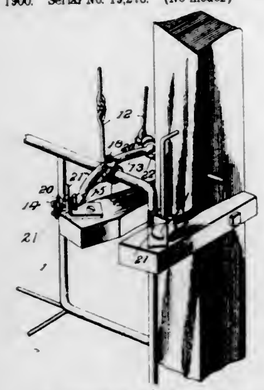
14. In an electric-railway system, a trolley comprising a frame having two members pivotally connected with each other at or near their middle, wheels journaled at the ends of the said members, and a support for the trolley and carried by said frame, and adapted to be moved into an active position when the two pivoted frame members close, said support consisting of levers pivoted to the lower portions of the frame members, and extending with one end into the path of the upper frame members, substantially as shown and described.

15. In an electric-railway system, a conduit carrying a conductor, a trolley arranged to travel in said conduit and comprising a frame having pivoted members free to swing into an open or closed position, and an armature for the magnets on the car, the said armature being carried by the upper portion of the members of the trolley-frame and having side flanges, substantially as described.

16. In an electric-railway system, a conduit containing a main conductor comprising upper and lower members, each having a longitudinal groove in its inner face, a trolley comprising a frame having pivoted members, bottom and top wheels on said members and adapted to travel in the groove in the conductor, and an armature carried by the members of the trolley-frame the said armature being formed on its top with a central portion fitting loosely in the groove of the upper member of the conductor, and also having side flanges extending to the sides of the said member of the conductor, whereby the armature presents a large top surface to the influence of the magnets on the car, substantially as described.

17. In an electric-railway system, a conduit carrying a conductor, a trolley arranged to travel in the conduit and having members pivotally connected with each other to open or close, and a trolley-support consisting of levers fulcrumed on the lower portions of the members to swing in a transverse direction, the upper or inner ends of said levers extending in the path of the corresponding upper portion of the frame members and adapted to be engaged thereby to swing the levers outward when the frame members close, the outer or free ends of said levers being adapted to engage the sides of the conduit when the levers are swung outward, substantially as described.

656,512. **GATE.** SOLON O. CAMPBELL, East Peru, Iowa. Filed June 6, 1900. Serial No. 19,278. (No model.)



Claim.—1. In combination with a swinging gate and a swing-beam fitted thereto and having offstanding terminal portions, bracket-guides located upon opposite sides of the plane of the gate and comprising spaced hooked extensions to coöperate with the terminal portions of the said beam, and actuating means for operating the swing-beam to effect an opening and a closing of the gate, substantially as set forth.

2. In combination with a swinging gate, a swing-beam having offstanding terminal portions and fitted to said gate, and actuating mechanism for the swing-beam to effect an opening and a closing of the gate, bracket-guides located at opposite sides of the plane of the gate, each having spaced hooked extensions of different lengths the upper ends of which are made divergent, substantially as specified.

3. In combination with a swinging gate, a swing-beam fitted thereto and actuating mechanism therefor, bracket-guides located at opposite sides of the plane of the gate, each provided with spaced hooked extensions to coöperate with the swing-beam, and which have their upper portions upwardly and oppositely inclined, as and for the purpose set forth.

4. In combination with a swinging gate, a swing-beam fitted thereto and having offstanding terminal portions, spaced collars fitted to the said terminal portions and having their inner sides outwardly flaring, bracket-guides located at opposite sides of the plane of the gate, each provided with spaced hooked extensions to coöperate with the terminal portions of the said swing-beam, and actuating mechanism for the swing-beam to effect an opening and a closing of the gate, substantially as specified.

5. In combination with a swinging gate, a longitudinally-curved swing-beam having divergent terminal portions and fitted centrally to a portion of the gate, bracket-guides located at opposite sides of the plane of the gate, each provided with spaced hooked extensions to coöperate with the terminal portions of the swing-beam, and actuating mechanism for operating the swing-beam, substantially as set forth.

656,513. **METHOD OF AND MEANS FOR WIRING BOTTLES.** PATRICK F. CASSIDY, Boston, Mass., assignor of one-half to Neil F. Doherty, same place. Filed June 26, 1899. Serial No. 721,865. (No model.)



Claim.—1. The method herein described of wiring bottles, consisting of bending a wire and twisting the two sections at their centers, forming a loop and two free ends, placing the loop around a bottle-neck, elongating the loop endwise, at one side of the bottle-neck, passing the free ends of the wire up the other side of the bottle-neck, then over the stopper and then down at the side of location of, and into engagement with, the elongated loop, and then twisting or winding together the loop and the said free ends of the wire, as set forth.

2. As an article of manufacture, a bottle-stopper fastener consisting of a single wire bent back upon itself to form a loop and two parallel ends, the two sections of the wire being twisted together, forming a common center, said twisted portion being designed to fit against one side of the neck of a bottle inserted through the loop, the free ends of the wire being extended upwardly and downwardly to accommodate and engage a bottle-stopper, and means for uniting together said free ends and the loop at the side of the bottle-neck opposite to that with which the twisted portion is in engagement.

3. As an article of manufacture, a bottle-stopper fastener consisting of a single wire bent back upon itself to form a loop and two parallel ends, the two sections of the wire being twisted together, forming a common center, said twisted portion being designed to fit against one side of the neck of a bottle inserted through the loop, the free ends of the wire being extended upwardly and downwardly to accommodate and engage a bottle-stopper, and means for uniting together said free ends and the loop at the side of the bottle-neck opposite to that with which the twisted portion is in engagement, and a ring formed by the wire at the end of the twisted portion of the loop and the free ends, as set forth.

656,514. **BOTTLE-WIRING TOOL.** PATRICK F. CASSIDY, Boston, Mass., assignor of one-half to Neil F. Doherty, same place. Filed Apr. 5, 1900. Serial No. 11,749. (No model.)



Claim.—1. A bottle-wiring device comprising a rod, means for axially turning said rod, and a wire-engaging tool carried by said rod constructed and adapted to engage one portion of the wire and hold another portion or portions of such wire for twisting together all of said portions of the wire during the turning of the rod, as set forth.

2. A bottle-wiring device comprising a rod, means for axially turning said rod, and a wire-engaging tool carried by said rod having a rounded portion and a diametrical slot, the former for engaging a loop in the wire and the latter for receiving the ends of such wire, as set forth.

3. A bottle-wiring device comprising a tool having a hollow rounded portion for engaging a wire loop and a slot for receiving the ends of the wire, means for rotating said tool, a cutter having an axial movement coincident with said rounded portion, and means for moving said cutter across said slot for severing the wire as the tool is rotated, substantially as set forth.

4. A bottle-wiring device comprising a rod, means for axially turning such rod, a wire-engaging tool carried by said rod, means also carried by the said rod for cutting the wire, and means for operating the cutting means as the rod is turned.

5. A bottle-wiring device comprising a rod, means for axially turning such rod, a tool carried by said rod for engaging a loop in the fastening-wire and holding the ends of the latter, a cutter within said tool, and means for operating the cutter during the turning of the rod.

6. A bottle-wiring device comprising a rod, means for axially turning such rod, a tool carried by such rod comprising a barrel for engaging a loop in the fastening-wire and holding the ends of the latter, a cutter within the barrel, and means for operating the cutter during the turning of the rod.

7. A bottle-wiring device comprising a rod, means for axially turning such rod, a wire engaging and holding tool carried by such rod having a slot therein for receiving the ends of the wire, a cutter, and means for moving such cutter across said slot for severing the wire as the rod is turned, as set forth.

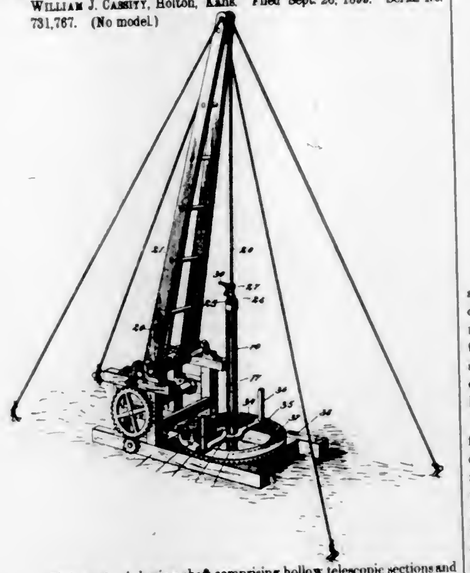
8. A bottle-wiring device comprising a rod, means for axially turning such rod, a tool carried by such rod comprising a barrel for engaging a loop in the fastening-wire and having a diametrical slot for receiving the ends of such wire, a cutter within the barrel, and means for operating the cutter during the turning of the rod, substantially as set forth.

9. A bottle-wiring device comprising a rod, means for axially turning such rod, a wire-engaging tool and a wire-cutter carried by said rod, a spring acting on such cutter, a lever extending from the latter, and a cam independent of said rod with which the lever is designed to engage for effecting the cutting operation, substantially as set forth.

10. A hand device of the character described comprising a handle, a sleeve, a spiral rod designed to fit in said sleeve, means for axially turning said rod as it or the said handle is moved longitudinally, a tool carried by said rod for engaging the loop of a fastening-wire and holding the ends of such wire, a cutter, a lever therefor, and a cam on said sleeve with which such lever engages as the rod is turned, substantially as set forth.

11. The combination with the spiral rod, the inclosing sleeve therefor, cams on said sleeve, and means for axially turning said rod, of a tool on one end of said rod comprising a hollow barrel having a slot therein, a cutter-blade within said barrel, a spring tending to hold said cutter-blade across said slot, a lever for said cutter-blade, and stops for limiting the lateral movements of said lever, substantially as set forth.

656,515. **TELESCOPIC DRILL-SHAFT.** ISAAC N. CASSITY and WILLIAM J. CASSITY, Holton, Kans. Filed Sept. 26, 1899. Serial No. 731,767. (No model.)



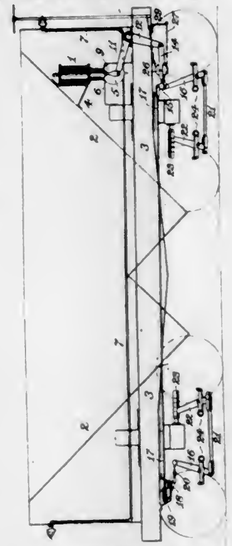
Claim.—1. A boring-shaft comprising hollow telescopic sections and a drill-rope passed through the sections and connected with the lowermost section, to support the shaft, to adjust the sections with respect to each other and to raise and lower the shaft bodily.

2. A boring-shaft comprising hollow sections telescopically connected, means for preventing rotation of the sections with respect to each other throughout their mutual adjustments, and a single rope passed through the sections and connected with the lowermost section and means for clamping the rope to the uppermost section, whereby the several sections may be adjusted with respect to each other, the shaft may be supported and the shaft may be bodily adjusted.

3. A boring-shaft comprising telescopic sections all of which are hollow, means for preventing rotation of the sections with respect to each other at all points of their telescopic adjustment, a single rope passed through all the sections and connected with the lowermost section, and a clamp carried by the uppermost section and adapted to clamp the rope thereto, whereby said rope may be employed for raising and lowering the shaft, for adjusting the sections with respect to each other and for supporting the entire shaft.

4. A boring-shaft comprising hollow telescopic sections, means for the attachment of a bit to the lowermost section, means for the attachment of a rope to the lowermost section a single rope passed through the sections and connected with the lowermost section through the medium of the attaching means, means for holding the sections against rotation with respect to each other through their telescopic movements, a rope-clamp carried by the uppermost section for engaging the rope to permit adjustment of the sections, to permit bodily movement of the shaft upwardly and downwardly and to support the shaft, and means slidably connected with the uppermost section for rotating the shaft.

656,516. **AIR-BRAKE.** FRANCIS L. CLARK, Pittsburg, Pa., assignor to the Westinghouse Air Brake Company, same place. Filed May 23, 1899. Serial No. 717,974. (No model.)



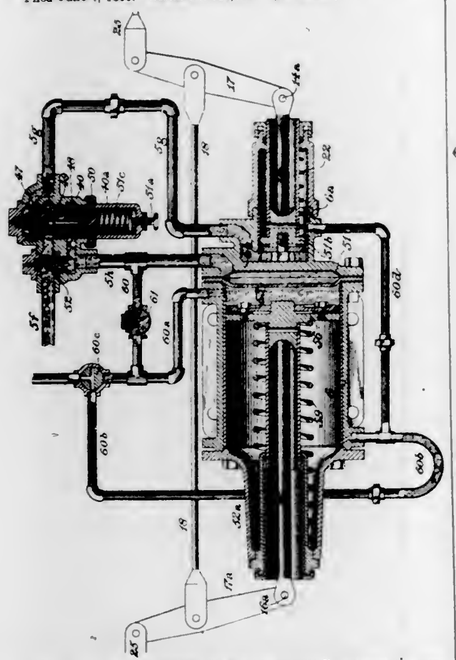
Claim.—1. In an air-brake apparatus, the combination, substantially as set forth, of a brake-cylinder adapted to be fixed vertically to the inclined end of a car-body, above the sills thereof, a bell-crank lever journaled horizontally below said cylinder and having its upper arm coupled to the piston-rod thereof, a double-armed equalizing-lever located below said cylinder, a link coupling the lower arm of the bell-crank lever to the equalizing-lever, a brake-applying lever coupled directly to the equalizing-lever, and a brake beam and shoes connected to the brake-applying lever.

2. In an air-brake apparatus, the combination, substantially as set forth, of a brake-cylinder adapted to be fixed vertically to the inclined end of a car-body, above the sills thereof, a bell-crank lever journaled horizontally below said cylinder and having its upper arm coupled to the piston-rod thereof, a double-armed equalizing-lever located below said cylinder, a link coupling the lower arm of the bell-crank lever to the equalizing-lever, a sheave journaled in said link, a hand-brake shaft journaled on the car-frame, a stop fixed to the car-frame, a chain passing around the sheave and connected to the hand-brake shaft and stop, a brake-applying lever coupled directly to the equalizing-lever, and a brake beam and shoes connected to the brake-applying lever.

3. In an air-brake apparatus, the combination, substantially as set forth, of a brake-cylinder adapted to be fixed vertically to the inclined end of a car-body, above the sills thereof, a bell-crank lever journaled hori-

zontally below said cylinder and having its upper arm coupled to the piston-rod thereof, equalizing-levers, each located above one of the car-trucks and coupled to a brake-applying lever of said truck, a link coupling the lower arm of the bell-crank lever to the equalizing-lever of the adjacent truck, a connecting-rod coupling said equalizing-lever to the equalizing-lever of the farther truck, and brake beams and shoes connected to the brake-applying levers.

656,517. HYDRAULIC BRAKE. FRANCIS L. CLARK, Pittsburg, Pa., assignor to the Westinghouse Air Brake Company, same place. Filed June 7, 1899. Serial No. 719,667. (No model.)

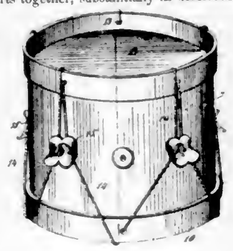


Claim.—1. In a mechanism for applying hydraulic pressure, the combination, substantially as set forth, of two cylinders, of different areas of transverse sections, pistons fitted therein, two movable pressure members, connections coupling the pistons one to the other and to the pressure members, a pipe for the supply and release of liquid under pressure, a valve-casing communicating therewith, a piston fitting therein and having an internal passage communicating with the larger cylinder, a diaphragm secured peripherally in the casing and connected to said piston, a spring bearing on said diaphragm, a valve controlling communication between the liquid supply and release pipe and the smaller cylinder, a valve of smaller diameter connected thereto and adapted to control the internal passage of the piston, and a release check-valve controlling communication between the larger cylinder and the liquid supply and release pipe.

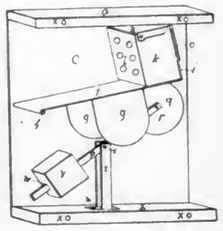
2. In a brake apparatus, the combination, substantially as set forth, of a larger and a smaller brake-cylinder connected by an interposed cylinder-head, pistons fitted in said cylinder, connections coupling said pistons one to the other and to brake-operating levers, a flexible diaphragm and a perforated stop-plate, each fixed peripherally to the larger cylinder adjacent to the interposed cylinder-head, a liquid supply and release pipe, pipes leading therefrom to the smaller cylinder and to the space between the flexible diaphragm and the adjacent cylinder-head, a valvular mechanism, actuated by oppositely-exerted liquid and spring pressures, through which valvular mechanism and passages controlled thereby liquid under pressure is delivered to the smaller cylinder and to the space between the diaphragm of the larger cylinder and the adjacent cylinder-head, and a release check-valve controlling communication between said space and the liquid supply and release pipe.

656,518. TOY DRUM. MORTON E. CONVERSE, Winchendon, Mass. Filed May 14, 1900. Serial No. 16,644. (No model.)

Claim.—A drum comprising a cylindrical body, metallic heads having rigid cylindrical flanges projecting toward each other and surrounding the ends of the body, and rigid plane annular flanges extending outwardly from the free or inner ends of said cylindrical flanges, hoops surrounding said cylindrical flanges and resting on the annular flanges, and means for fastening the parts together, substantially as described.



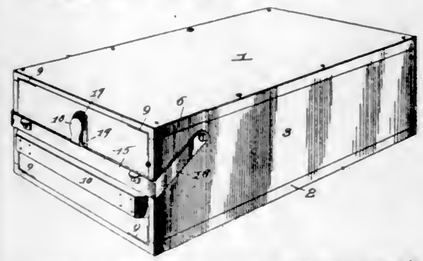
656,519. ANIMAL-TRAP ATTACHMENT. WILLIAM H. CROSS, Chicago, Ill. Filed Apr. 16, 1900. Serial No. 13,165. (No model.)



Claim.—1. In an animal-trap, the combination with a casing, of a tilting plate therein carrying a depending door, for the purpose set forth, said plate being pivoted at its forward end and provided at its rear end with a perforated bait-receptacle, as and for the purpose set forth.

2. An animal-trap comprising a casing, a pivoted tilting plate therein carrying a depending door for closing an opening in the side of the casing, an upright mounted in the trap and serving as a support for a lever which is pivoted thereon, said lever carrying a weight at one end and a wheel at its opposite end, said tripping-plate being pivoted above said lever and operated thereby, substantially as set forth.

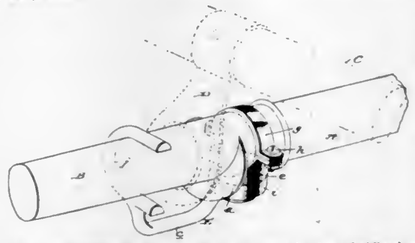
656,520. AMMUNITION-BOX. HENRY W. DALY, U. S. Army. Filed Aug. 7, 1899. Serial No. 726,388. (No model.)



Claim.—An ammunition-box having an open end, grooves in the sides, top and bottom within said box and extending rearwardly from said open end, a rectangular section for closing said open end, straps attached to said section and extending rearwardly in said box and within the said grooves, a plate carried by the rear ends of said straps, and a means for holding the said rectangular section rigidly in position on the end of the box, substantially as specified.

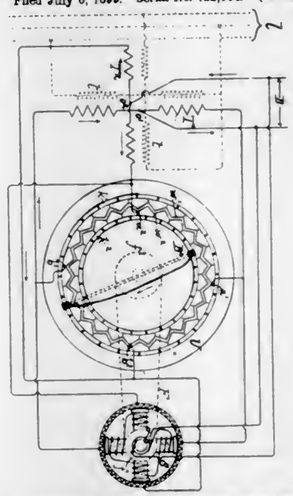
656,521. NECK-YOKE-CENTER-LOCKING DEVICE. CHARLES F. DEPLANTY, Coffeyville, Kans., assignor to Joseph W. Uncapher and Elmer E. Wilson, same place. Filed Dec. 30, 1899. Serial No. 742,094. (No model.)

Claim.—1. An attachment for pole-tips or tongues comprising a clip one of the members of which has a reduced, circular projection, a swinging keeper having a casing at one end pivotally mounted on the circular projection of the clip member, and also having a yoke adapted to straddle a pole-tip or tongue, and a coiled spring surrounding the projection of the clip member and connected to the said member and the keeper, substantially as specified.



2. The combination with a pole-tip or tongue having a holdback or lip; of an attachment comprising a clip fixed on said tip in rear of the holdback or lip; one of the clip members having a reduced, circular projection, a swinging keeper having a casing at one end pivotally mounted on the circular projection of the clip member, and also having a yoke adapted to straddle the pole-tip or tongue, and a coiled spring surrounding the projection of the clip member and connected to said member and keeper, substantially as specified.

656,522. APPARATUS FOR CONVERTING ALTERNATING CURRENTS INTO CONTINUOUS CURRENTS. MAX DERI, Vienna, Austria-Hungary. Filed July 6, 1899. Serial No. 722,904. (No model.)

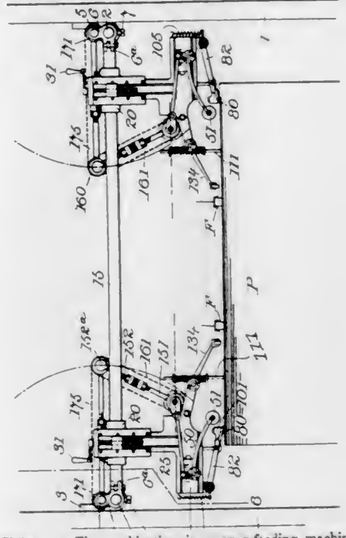


Claim.—1. Apparatus for converting alternating currents into continuous current, comprising a stationary magnet-core having two separate winding systems similar to the armature-winding of a dynamo, each provided with a commutator and each connected with a separate group of conductors supplying, from generators or transformers, alternating currents which in the magnet produce fields, the magnetic flux of which common to both windings flows entirely through iron, in combination with short-circuited brushes revolving synchronously with said fields and connecting together those parts of the said two commutators which have in the one system the highest positive and in the other system the highest negative potential, and terminals for the continuous current connected to fixed points of the two separate supplying and exciting circuits, substantially as described.

2. Apparatus for converting alternating currents into continuous current, comprising a stationary magnet-core having two separate winding systems similar to the armature-winding of a dynamo, and provided with commutators, and connected to two separate groups of feed-conductors producing in the magnet, fields, the magnetic flux of which common to both windings, flows entirely through iron, in combination with short-circuited brushes revolving synchronously with said fields and connecting together those parts of the said two commutators which have in the one system the highest positive, and in the other system the highest negative potential, and terminals for the continuous current connected each to a fixed point of the two magnet-windings, substantially as described.

3. Apparatus for converting polyphase alternating currents into continuous current, comprising a stationary magnet-core having two separate winding systems similar to the armature-winding of a dynamo, and provided with commutators, and connected to two separate groups of polyphase feed-conductors, producing in the magnet rotary fields, the magnetic flux of which common to both windings flows entirely through iron, in combination with short-circuited brushes revolving synchronously with the rotary fields and connecting together those parts of the said two commutators which have in the one system the highest positive, in the other system the highest negative potential, and terminals for the continuous current which are connected each to a fixed point of the two magnet-windings, substantially as described.

656,523. PAPER-FEEDING MACHINE. TALBOT C. DEXTER, Pearl River, N. Y. Filed Aug. 5, 1898. Serial No. 687,880. (No model.)



Claim.—1. The combination, in a paper-feeding machine, of suitable sheet-buckling mechanisms, an operating-shaft, and extensible driving mechanism operatively connecting the buckling mechanisms with the operating-shaft, substantially as set forth.

2. The combination, in a paper-feeding machine, of a support for a pile of sheets, sheet-buckling mechanism adjustable up and down with relation to the pile, an operating-shaft, and extensible driving mechanism operatively connecting the buckling mechanism with the operating-shaft, substantially as set forth.

3. The combination, in a paper-feeding machine, of a support for a pile of sheets, sheet-buckling mechanism adjustable transversely with relation to the pile, an operating-shaft, and extensible driving mechanism operatively connecting the buckling mechanism with the operating-shaft, substantially as set forth.

4. The combination, in a paper-feeding machine, of a support for a pile of sheets, sheet-buckling mechanism adjustable up and down and transversely with relation to the pile, an operating-shaft, and extensible driving mechanism operatively connecting the buckling mechanism with the operating-shaft, substantially as set forth.

5. The combination, in a paper-feeding machine, of a support for a pile of sheets, two independent sheet-buckling mechanisms suitably supported above the pile of sheets and independently adjustable up and down with relation to the pile, and independent extensible driving mechanisms operating the independent buckling mechanisms, substantially as set forth.

6. The combination, in a paper-feeding machine, of a support for a pile of sheets, means for automatically elevating the pile-support to retain the top of the pile at the proper level, two independent sheet-buckling mechanisms suitably supported above the pile of sheets and independently adjustable up and down with relation to the pile, and independent extensible driving mechanisms operating the independent buckling mechanisms, and means for operating the independent driving mechanisms, substantially as set forth.

7. The combination, in a paper-feeding machine, of a support for a pile of sheets, two independent sheet-buckling mechanisms suitably supported above the pile of sheets and independently adjustable up and down with relation to the pile, two independent operating-shafts suitably driven

by the machine, and the independent extensible driving mechanisms operatively connecting the independent buckling mechanisms with said shafts, substantially as set forth.

8. The combination, in a paper-feeding machine, of a support for a pile of sheets, two independent sheet-buckling mechanisms suitably supported above the pile of sheets and independently adjustable up and down with relation to the pile, a main operating-shaft extending transversely across the machine, the independent operating-shafts extending longitudinally of the machine and suitably geared to the main operating-shaft, and the independent extensible driving mechanisms operatively connecting the buckling mechanisms with said shafts, substantially as set forth.

9. The combination, in a paper-feeding machine, of a support for a pile of sheets, the longitudinally-extending buckler-supporting bars suitably supported from the main frame, the transverse bar supported upon the longitudinal bars and longitudinally adjustable thereon, sheet-buckling mechanism supported upon the transverse bar and adjustable vertically and transversely thereon, and means for operating the sheet-buckling mechanism, substantially as set forth.

10. The combination, in a paper-feeding machine, of a support for a pile of sheets, the longitudinally-extending buckler-supporting bars suitably supported from the main frame, the transverse bar supported upon the longitudinal bars and longitudinally adjustable thereon, independent sheet-buckling mechanisms supported upon the transverse bar and adjustable vertically and transversely thereon, a main operating-shaft, the independent operating-shafts extending longitudinally of the machine parallel with the longitudinal buckler-supporting bars, gearing between the main shaft and longitudinal shafts, and extensible driving mechanisms operatively connecting the buckling mechanisms with the longitudinal shafts and adjustable longitudinally with the transverse bar supporting the buckling mechanisms, substantially as set forth.

11. In a paper-feeding machine, the combination of a support for a pile of sheets, with an adjustable buckling mechanism supported above the pile of sheets, an operating-shaft, and two operating connecting members operatively and pivotally joined at their ends and operatively and pivotally connected respectively to the operating-shaft and buckling mechanism, whereby the buckling mechanism can be operated in any adjusted position, substantially as set forth.

12. In a paper-feeding machine, the combination of a support for a pile of sheets, an adjustable sheet-buckling mechanism supported above the pile of sheets, an operating-shaft, a pair of struts or braces pivoted to the operating-shaft and buckling mechanism and pivotally connected at their ends, and a suitable extensible buckler-operating mechanism supported by said pair of struts or braces and transmitting motion from the operating shaft to the sheet-buckling mechanism, substantially as set forth.

13. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable adjustable buckling mechanism supported above the pile of sheets, an operating-shaft, a pair of struts or braces journaled respectively upon the operating-shaft and sheet-buckling mechanism and journaled to each other, and a pair of sprocket-chains and their supporting and operating sprockets supported by said adjustable struts or braces and transmitting motion from the operating-shaft to the adjustable sheet-buckling mechanism, substantially as set forth.

14. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable adjustable buckling mechanism supported above the pile of sheets, an operating-shaft, a pair of struts or braces journaled respectively upon the operating-shaft and sheet-buckling mechanism and journaled to each other, means for adjusting the length of the adjustable struts or braces, and a pair of sprocket-chains and their supporting and operating sprockets supported by said adjustable struts or braces and transmitting motion from the operating-shaft to the sheet-buckling mechanism, substantially as set forth.

15. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable adjustable buckling mechanism supported above the pile of sheets, an operating-shaft, a pair of struts or braces journaled respectively upon the operating-shaft and frame of the sheet-buckling mechanism and journaled to each other, sprocket-wheels journaled concentrically to the journals of the struts or braces, and a pair of sprocket-chains supported upon and operated by the sprocket-wheels and transmitting motion from the operating-shaft to the sheet-buckling mechanism, substantially as set forth.

16. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable adjustable buckling mechanism supported above the pile of sheets, an operating-shaft, a pair of struts or braces journaled respectively upon the operating-shaft and frame of the sheet-buckling mechanism and journaled to each other at their adjacent ends, a sprocket-wheel upon the operating-shaft, a sprocket-wheel upon the journal of the strut or brace upon the frame of the buckling mechanism, a pair of sprocket-wheels upon the journal connecting the pair of struts or braces, and a pair of sprocket-chains mounted upon the sprocket-wheels whereby the buckling mechanism is operated from the shaft, substantially as set forth.

17. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable adjustable buckling mechanism supported above the pile of sheets, an operating-shaft, a pair of struts or braces journaled respectively upon the operating-shaft and sheet-buckling mechanism and journaled to each other, means for adjusting the length of the adjustable struts or braces, and suitable extensible buckler-operating mechanism supported by said adjustable struts or braces and transmitting motion from the operating-shaft to the sheet-buckling mechanism, substantially as set forth.

18. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable sheet-buckling mechanism supported above the pile of sheets, an operating-shaft, and a pair of angularly-disposed operating and connecting members operatively connected with the operating-shaft and sheet-buckling mechanism and with each other, substantially as set forth.

19. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable sheet-buckling mechanism supported above the pile of sheets, an operating-shaft, and a pair of angularly-disposed sprocket-chains operatively connected with the operating-shaft and sheet-buckling mechanism and with each other, substantially as set forth.

20. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable adjustable buckling mechanism supported above the pile of sheets, an operating-shaft, a pair of angularly-disposed struts or braces journaled respectively upon the operating-shaft and sheet-buckling mechanism and journaled to each other, means for adjusting the length of the adjustable struts or braces, and a pair of angularly-disposed sprocket-chains and their supporting and operating sprockets supported by said adjustable struts or braces and transmitting motion from the operating-shaft to the sheet-buckling mechanism, substantially as set forth.

21. The combination, in a paper-feeding machine, of a support for a pile of sheets, a buckler-frame suitably supported above the pile, a bracket or frame mounted on the buckler-frame and capable of vertical movement thereon, suitable sheet-buckling devices mounted upon the vertically-movable bracket, and supported thereby in operative relation to the pile, means for operating the buckling devices, and means for adjusting the bracket or frame up and down, substantially as set forth.

22. The combination, in a paper-feeding machine, of a support for a pile of sheets, a buckler-supporting frame including a transverse bar, a suitable supporting casting or bracket mounted upon the transverse bar and adjustable thereon transversely of the pile, a bracket or frame mounted and vertically adjustable upon the transversely-adjustable casting or bracket, suitable sheet-buckling devices mounted upon the vertically-adjustable bracket or frame, means for operating the sheet-buckling devices, and means for adjusting the supporting-bracket with the buckling devices up and down with relation to the pile, substantially as set forth.

23. In a paper-feeding machine, the combination of a support for a pile of sheets, with sheet-buckling mechanism comprising suitable longitudinally-extending rigid bars secured to the frame of the feeding-machine, a transverse buckler-supporting bar adjustably secured to the longitudinally-extending supporting-bars upon which it is adjustable longitudinally of the machine, a casting or bracket mounted upon said transverse bar and adjustable thereon transversely of the machine, the buckler-supporting bracket or frame vertically adjustable upon the casing or bracket, suitable sheet-buckling devices mounted upon the buckler-supporting bracket or frame, means for operating said devices, and means for adjusting the bracket or frame and supported buckling devices vertically, substantially as set forth.

24. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable longitudinally-extending rigid bars secured to the machine-frame, brackets adjustable longitudinally upon said bars, a transverse bar secured at its ends to said bracket by loose joints, and suitable sheet-buckling mechanism supported upon said transverse bar, substantially as set forth.

25. In a paper-feeding machine, the combination of a support for a pile of sheets, an operating-shaft, suitable adjustable sheet-buckling mechanism, a pair of struts or braces journaled to each other and respectively to the operating-shaft and frame of the buckling mechanism, a rotary operating member on the buckler-frame operatively connected with the buckling instruments and journaled concentrically to the journal of the strut or brace journaled thereto, and extensible operating mechanism operatively connecting said rotary operating member of the buckler with the operating-shaft, substantially as set forth.

26. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable adjustable sheet-buckling mechanism including a reciprocating buckling-finger, a rotary crank connected with the buckling-finger, an operating-shaft, and extensible driving mechanism communicating motion from the operating-shaft to the rotary crank, substantially as set forth.

27. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable adjustable buckling mechanism supported above the pile of sheets, and including a vertically-movable horizontally-reciprocating sheet-buckling finger, a rotary operating member carrying a rotary crank suitably connected with the buckling-finger, an extensible driving mechanism communicating motion from the operating-shaft to the rotary operating member, substantially as set forth.

28. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable sheet-buckling mechanism including a buckling-finger, a rotary operating member having a crank, a pitman connecting said crank to the buckling-finger, an operating-shaft, and means for transmitting motion from the operating-shaft to the rotary operating member, whereby the buckling-finger will be moved into and out of engagement with the sheet and be reciprocated for buckling the sheet, substantially as set forth.

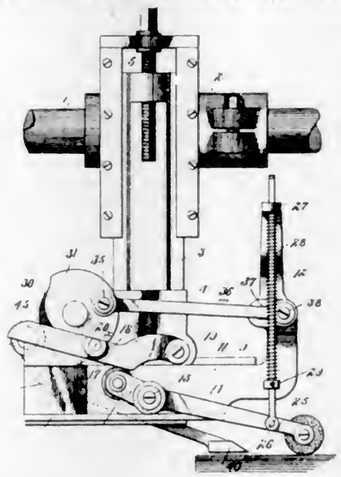
29. In a paper-feeding machine, the combination of a support for a pile of sheets, with suitable sheet-buckling mechanism comprising a horizontally-reciprocating buckler-carriage, a spring-pressed buckling-finger journaled upon said carriage, a holding-down clamp or finger engaging the pile, a spring for holding the clamp into engagement with the pile, a rock-arm connected with the clamp, a rotary operating member provided with a crank which is suitably connected with the buckler carriage and finger for operating them, a cam upon said rotary operating member engaging the rock-arm of the spring-pressed clamp, and means for operating said rotary member, substantially as set forth.

30. In a paper-feeding machine, the combination of a support for a pile of sheets, and an operating-shaft, with suitable sheet-buckling mechanism comprising a reciprocating carriage, an oscillating buckling-finger journaled upon the carriage, a rock-arm engaging the buckling-finger, a rotary operating member provided with a crank, a pitman connecting the crank with the rock-arm, a spring-pressed holding finger or clamp normally in engagement with the pile of sheets, a rock-lever connected with said holding finger or clamp, and a cam upon the rotary operating member engaging said rock-lever, substantially as set forth.

31. In a paper-feeding machine, the combination of a support for a pile of sheets, and an operating-shaft, with suitable sheet-buckling mechanism comprising a reciprocating carriage, an oscillating buckling-finger journaled upon the carriage, a rock-arm engaging the buckling-finger, a rotary operating member provided with a crank, a pitman connecting the crank with the rock-arm, a spring-pressed holding finger or clamp normally in engagement with the pile of sheets, a rock-lever connected with said holding finger or clamp, and a cam upon the rotary operating member engaging said rock-lever, an intermittently-operating tail-gripper mounted upon a suitable rock-shaft, a rock-arm keyed to said rock-shaft, and a second cam upon the rotary operating member engaging the rock-arm and operating the tail-gripper, substantially as set forth.

32. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable sheet-buckling mechanism, means for operating the sheet-buckling mechanism, a device arranged in front of the buckling-finger in constant engagement with the pile of sheets against which the sheet is buckled, said device being adapted to prevent the forward movement of any under sheets with the top sheet, substantially as set forth.

656,524. PAPER-FEEDING MACHINE. TALBOT C. DEXTER, Pearl River, N. Y. Filed Nov. 14, 1899. Serial No. 736,946. (No model.)



Claim.—1. The combination, in a paper-feeding machine, of a support for a pile of sheets, with a rectilinearly-reciprocating sheet-buckling finger, a buckling-finger support adjustably swiveled upon an axis which is vertical with relation to the pile of sheets, and a universally-adjustable driving mechanism connected with the buckling-finger, whereby the buckling-finger can be adjusted in a horizontal plane to work at any desired horizontal angle upon the pile, substantially as set forth.

2. The combination, in a paper-feeding machine, of a support for a pile of sheets, with suitable sheet-buckling mechanism including a holding-down foot or clamp and a rectilinearly-reciprocating buckling-finger, a support for said buckling mechanism, a vertical swivel adjustably connecting the buckling mechanism with the support, and suitable universally-adjustable driving mechanism for the buckler mechanism, whereby the buckling mechanism can be adjusted to cause the buckling-finger to operate at any desired horizontal angle over the pile, substantially as set forth.

3. The combination, in a paper-feeding machine, of a support for a pile of sheets, with suitable sheet-buckling mechanism adjustably mounted upon a vertical swivel and provided with a holding-down foot or clamp and a rectilinearly-reciprocating buckling-finger, and a driving-shaft having universal-joint connection with the buckling mechanism, substantially as set forth.

4. The combination, in a paper-feeding machine, of a support for a pile of sheets, with suitable sheet-buckling mechanism adjustably mounted upon a vertical swivel, and including a holding-down foot or clamp and a rectilinearly-reciprocating buckling-finger, and a sectional telescoping shaft one section of which has universal-joint connection with the buckling mechanism, substantially as and for the purpose set forth.

5. The combination, in a paper-feeding machine, with a support for a pile of sheets, of a buckler-supporting frame mounted above said pile-support, a bracket adjustable upon said frame transversely of the pile, a slide vertically adjustable in said bracket, suitable sheet-buckling mechanism vertically swiveled to said slide and adjustable to any desired horizontal angle, and universally-adjustable driving mechanism for said sheet-buckling mechanism, substantially as set forth.

6. The combination, in a paper-feeding machine, with a support for a pile of sheets, of a buckler-supporting frame mounted above said pile-support, a bracket adjustable upon said frame transversely of the pile, a slide vertically adjustable in said bracket and formed of upper and lower sections, a vertical swivel adjustably securing together the upper and lower sections of said slide, suitable sheet-buckling mechanism mounted upon the adjustable lower section of said slide, and a driving-shaft having universal-joint connection with the buckling mechanism, substantially as set forth.

7. In a paper-feeding machine, the combination of a support for a pile of sheets, with a buckler-supporting frame, a rotary shaft journaled in said frame, a reciprocating buckler-carriage mounted in said frame, a buckler-finger journaled upon said carriage, a holding-down foot or clamp mounted upon the frame, a crank upon the rotary shaft, a pitman connecting the crank with the buckler-carriage, means for operating said rotary shaft, and means controlling the buckling-finger, substantially as set forth.

8. In a paper-feeding machine, the combination of a support for a pile of sheets, with a buckler-supporting frame formed with a guideway or track, a buckler-carriage reciprocating in said guideway or track, a buckler-finger journaled upon the carriage, a shaft journaled in the supporting-frame, means for controlling the buckler-finger, a crank upon said shaft, a pitman journaled upon said crank at one end, and a stud adjustably mounted upon the carriage and having the other end of said pitman journaled to it, a holding-down foot or clamp, and means for operating said foot or clamp, substantially as set forth.

9. In a paper-feeding machine, the combination of a support for a pile of sheets, with a buckler-supporting frame formed with a guideway or track, a shaft journaled in said frame, a buckler-carriage reciprocating in said guideway or track, a buckler-finger journaled upon said carriage and formed with a heel projecting rearwardly from its journal, a lever journaled upon the buckler-supporting frame and adapted to intermittently engage the heel of the buckler-finger, a cam on said shaft adapted to intermittently engage said lever for operating it, a crank on said shaft, a pitman connected with said crank and adjustably connected with the carriage, and a spring device engaging the buckling-finger, substantially as set forth.

10. In a paper-feeding machine, the combination of a support for a pile of sheets, with a buckler-supporting frame, suitable sheet-buckling mechanism including a reciprocating carriage operating in the frame and a buckling-finger mounted upon the carriage a rotary crank, a pitman connected with said crank and having adjustable connection with the carriage, substantially as set forth.

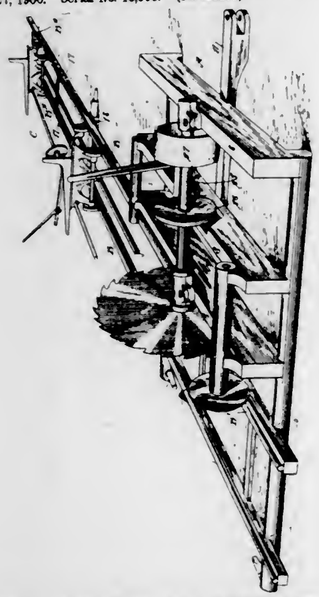
11. In a paper-feeding machine, the combination of a support for a pile of sheets, with a buckler-supporting frame, suitable sheet-buckling mechanism including a reciprocating carriage operating in the frame and a buckling-finger mounted upon the carriage, a rotary crank, a slot formed in the buckler-carriage, a stud adjustably mounted in said slot, and a pit-

man journaled at its opposite ends to the crank and said adjustable stud, substantially as set forth.

12. In a paper-feeding machine, the combination of a support for a pile of sheets, with a buckler-supporting frame, a buckler-carriage mounted in said frame, and carrying a buckling-finger, means for operating said carriage, a bracket-arm projecting from the carriage, and a spring device engaging the buckling-finger, and guided in said bracket-arm, substantially as set forth.

13. In a paper-feeding machine, the combination of a support for a pile of sheets, with a buckler-supporting frame, a buckler-carriage mounted in said frame, and carrying a buckling-finger, means for operating said carriage, a bracket-arm projecting from the carriage, a rod journaled to the buckling-finger and passing loosely through a guide-opening in said bracket-arm, and a spring confined upon said rod between said bracket-arm and a collar upon the rod, substantially as set forth.

656,525. SAWMILL. LEE W. DICKEY, Scottown, Ohio. Filed Mar. 27, 1900. Serial No. 10,353. (No model.)



Claim.—1. A sawmill, comprising a saw box or frame formed of joists and cross-beams extending between them at one end of the saw-box, journals projecting inwardly from the joists at the other end of the saw-box and adapted to carry wheels on which to mount the rear portion of the saw-box, and a reach attached to the beams and projecting forwardly to carry a wheeled axle to support the front of the saw-box, whereby to facilitate the transportation of the saw-box.

2. A sawmill, having a carriage-track formed of a middle or main section and end sections hinged thereto and arranged to fold inward, and means attachable to the middle or main section of the track, whereby to mount the same on wheels, to facilitate the transportation thereof.

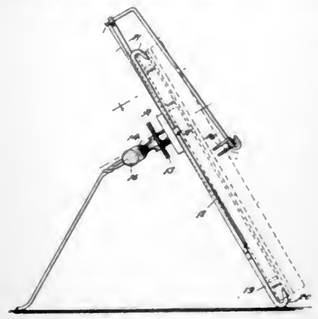
3. A sawmill, comprising a saw box or framing built up of joists and cross-beams, inwardly-projected journals fastened to the inner sides of the joists and adapted to carry wheels inside of the joists, and a reach fastened to the cross-beams and projecting beyond the saw-box, to carry a wheeled axle for supporting the side of the saw-box opposite the journals.

4. A sawmill, having a carriage-track formed of sections hingedly connected, and means attachable to one of said sections for mounting the track to facilitate the transportation thereof.

5. A sawmill, having a folding carriage-track, and a wheeled means adjustable thereto to facilitate the transportation thereof.

656,526. HOLDER FOR PICTURES, STATIONERY, OR OTHER ARTICLES. WILLIAM H. H. DICKINSON, Missoula, Mont. Filed Apr. 4 1899. Renewed Mar. 27, 1900. Serial No. 10,409. (No model.)

Claim.—1. A device for holding pictures, books and other articles, the device having a body-bar, clamp-bars adjustable upon said body-bar, means for securing the clamp-bars in adjusted position, and a support for the body-bar loosely connected therewith, said support consisting of a yoke-clamp, and legs carried by said yoke-clamp.



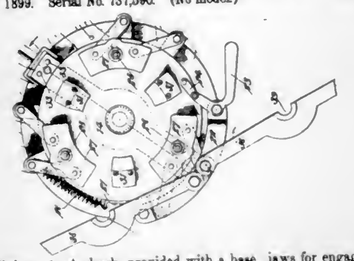
2. A holder for pictures, books, &c., consisting of a body-bar, a clamping-screw passed through the body-bar, adjustable clamping-bars passed through the head of the adjusting-screw, being adapted for engagement with the outer face of the body-bar, each clamping-bar terminating at one of its ends in a retaining member, means for retaining the clamping-screw in adjusted position, a yoke-clamp loosely mounted on the adjusting-screw, a support for the body-bar carried by the yoke-clamp, and means for securing said support in the position to which it may be adjusted, for the purpose specified.

3. In a holder, the combination of a body-bar, a headed screw passing through the body-bar and having an orifice in its head, clamping-bars extending through the orifice in the head of the screw, nuts working on the screw, a clamp held on the screw by the nuts thereof, and a support held by the clamp.

4. In a holder, the combination of clamping-bars, a headed screw having an orifice in the head through which orifice the clamping-bars are passed, a body-bar through which the screw is passed, a support, and means for connecting the support with the screw and body-bar.

5. In a holder, the combination of clamping-bars, a screw having an orifice therein through which the clamping-bars are passed, a body-bar, means for holding the screw on the body-bar, the screw being moved to engage the clamping-bars with the body-bar, whereby also to hold the clamping-bars, and a support in connection with the body-bar.

656,527. CHUCK. ANDREW DINKEL, Auburn, N. Y. Filed Nov. 20, 1899. Serial No. 737,590. (No model.)



Claim.—1. A chuck, provided with a base, jaws for engaging the work, means for operating the jaws, the jaws and said means being carried on the base and a bar mounted on the base and extending across the same in front of the jaws to guide the tool.

2. A chuck, having a base, jaws mounted on the base to engage and hold the work, and two bars mounted to swing on the base and provided with matching recesses which register to form a guide in which the tool may be held when the bars are thrown to engaged position.

3. The combination with a chuck, of a bar mounted to swing thereon and serving to guide a tool, a spring-pressed pin serving to engage the bar to hold the same in closed position, and means for withdrawing the pin to release the bar.

4. The combination with a chuck, of a bar mounted to swing thereon, the bar constituting a guide for the tool, a standard mounted on the chuck, a spring-pressed pin carried by the standard and serving to engage the bar to hold it in operative position, and a yoke mounted to swing on the standard and having connection with the pin to retract the same.

5. In a chuck, the combination of a base, a carrier mounted to oscillate thereon, jaws mounted to move radially on the carrier, and links extending between the jaws and the base to drive the jaws upon a relative movement of the base and carrier.

6. In a chuck, the combination of a base, a carrier mounted to move thereon, jaws carried by the carrier and movable thereon to engage and disengage the work, links extending between the jaws and the base to actuate the jaws, a spring extending between the carrier and the base, and a hand-lever in connection with the carrier and with the base, to move the carrier against the spring.

7. In a chuck, the combination of a base, a carrier mounted to oscillate thereon, inward of the outer edges of the base, jaws mounted and movable radially on the carrier, and links connected with the jaws and extending outwardly beyond the carrier and having connection with the base to drive the jaws from a relative movement of the base and carrier.

8. In a chuck, the combination of two relatively-turnable parts, jaws mounted in fixed guideways on one of said parts to move radially thereof, and links extending between the jaws and the other of such relatively-movable parts, to operate the jaws by a relative movement of said parts.

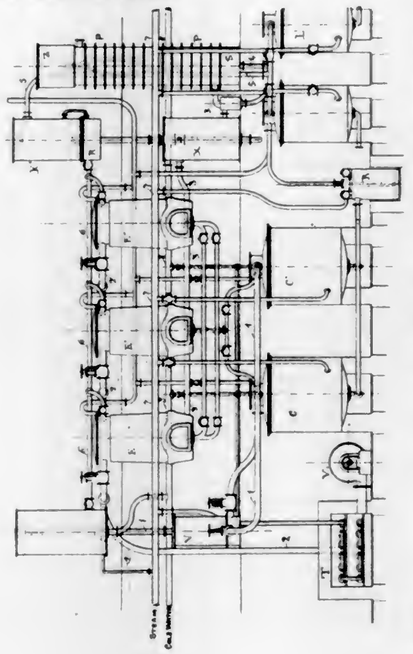
9. In a chuck, the combination of two relatively-turnable parts, jaws mounted on one of said parts to move radially thereof, links extending between the jaws and the other of said parts, to operate the jaws by a relative movement of said parts, and a spring working between the said relatively-turnable parts to throw the jaws into a certain position.

10. A chuck, comprising jaws to hold the work, and two parts mounted to move into engagement with each other adjacent to the jaws and formed with matching recesses which register to form a guide in which a tool may be held when the parts are thrown to engaged position.

11. In a chuck, the combination of two relatively-movable parts, jaws mounted to slide on one of said parts, links extending between the jaws and the other of said parts, the jaws being operative by a relative movement of the said relatively-movable parts, a spring working between the said relatively-movable parts, and means for moving said parts against the tendency of the spring.

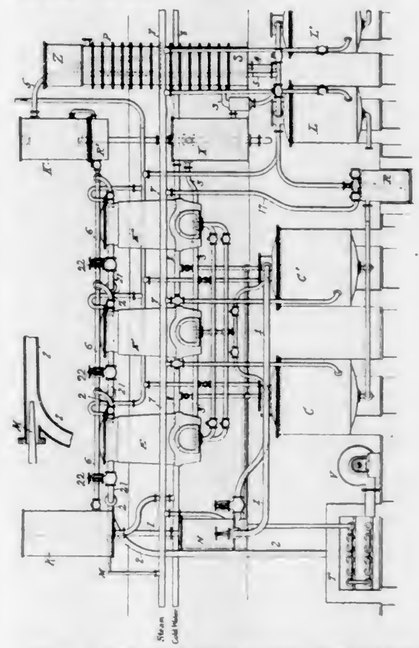
12. In a chuck, the combination of a base having a centrally-disposed orifice and also having a raised middle portion, a carrier having a centrally-disposed projection fitted to turn in the orifice of the base and also having a downwardly-disposed edge flange encircling the middle portion of the base, jaws mounted to move radially on the carrier, links extending between the jaws and the base, and means for turning the carrier on the base to actuate the jaws.

656,528. PROCESS OF REMOVING SOLVENT VAPORS FROM WOOL. EUGÈNE DONARD, Paris, France. Filed May 27, 1898. Serial No. 681,922. (No specimens.)



Claim.—In the degreasing of wool, &c., the herein-described process of freeing the wool from the solvent, consisting in subjecting the wool after degreasing to the action of a current of hot air and moisture formed by charging hot air with steam, the maximum temperature of the said saturated mixture being about 60° centigrade, substantially as described.

656,529. APPARATUS FOR EXTRACTING OIL. EUGÈNE DONARD, Paris, France. Original application filed May 27, 1898. Serial No. 681,922. Divided and this application filed June 14, 1900. Serial No. 20,323. (No model.)

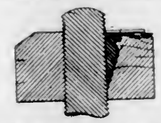


Claim.—1. The herein-described apparatus for degreasing wool, &c., comprising boilers C C', extractors E E', means for supplying hot air charged with steam to the extractors, a condenser X connected to the lower part of each extractor, and a recovery-column P, in combination with a boiler L connected with the said condenser and recovery-column, a condenser K' for the vapors from the said boiler, a receiver to separate the solvent from the water and piping 6 to return the solvent to the extractors.

2. The herein-described apparatus for degreasing wool, &c., comprising two boilers C and C', and three extractors E E' E'' and valved piping connecting the boilers and extractors, in combination with piping 1, leading from the boilers, a dephlegmator N and condenser K and piping connecting the latter with the upper parts of the extractors, substantially as described.

3. The herein-described apparatus for degreasing wool, &c., comprising boilers and extractors, in combination with an additional boiler L', a monte-jus R connected to the bottom of the first-named boilers and to the upper part of the boiler L' with a condenser K' and means for returning the recovered solvent to the extractors, substantially as described.

656,530. NUT-LOCK. HORATIO E. DOWNING and HARRY L. DORSETT, Seward, Okla. Filed May 17, 1900. Serial No. 17,043. (No model.)

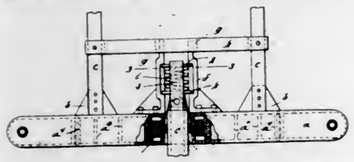


Claim.—1. A nut-lock, having a removable locking-slide in the nut, and extending along the bore thereof to engage the threads of the bolt, and a cover removably held on the nut, to hold the locking-slide in position, as set forth.

2. A nut-lock, having a nut formed with a recess extending along the bore of the nut, the bottom of the recess being inclined inwardly and downwardly, and a tapering locking-slide having an inner sharp corner and adapted to be driven home in the recess to force the said corner inward into the threads of the bolt, substantially as shown and described.

3. A nut-lock, having a nut formed with a recess extending along the bore of the nut, the bottom of the recess being inclined inwardly and downwardly, a tapering locking-slide having an inner sharp corner and adapted to be driven home in the recess to force the said corner inward into the threads of the bolt, and a cover removably held on the nut to hold the locking-slide in position in its recesses, as set forth.

656,531. LOCOMOTIVE BUFFER-BEAM. JAMES F. DUNN, Salt Lake City, Utah. Filed April 4, 1899. Serial No. 711,649. (No model.)



Claim.—1. A locomotive buffer-beam, having a transverse passage formed therein, the beam also having cavities respectively communicating with opposite sides of the passage, a box fastened to the inner side of the beam, a draw-head mounted in the passage and having spring connection with the box, an additional spring mounted in the aforesaid cavities and bearing against opposite sides of the draw-heads to yieldingly hold the draw-head against lateral movement.

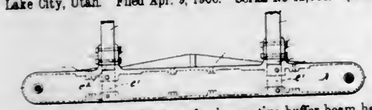
2. A locomotive buffer-beam, having a transverse passage formed therein and the beam also having cavities formed therein respectively on the sides of the transverse passage and communicating therewith, the said transverse passage serving to carry a draw-head, and the cavities serving to carry springs resisting the lateral movement of the draw-head.

3. The combination of a locomotive buffer-beam formed with a centrally-located transverse passage, engine frame-beams attached to the buffer-beam respectively at the sides of the transverse passage therein, a tail-brace extending transversely between the frame-beams, a box fastened rigidly to the rear side of the buffer-beam and extending to and fastened to the tail-brace, and a coupler draw-head mounted in the box and extending forwardly through the passage in the buffer-beam.

4. The combination of a locomotive buffer-beam formed with a passage extending transversely therethrough approximately at the middle thereof and with two lugs projecting rearwardly from the beam at the respective sides of the passage, engine frame-beams fastened to said lugs, a tail-brace extending between and fastened to the engine frame-beams, a box secured to the side of the buffer-beam and to the said brace and extending between the two, the box being in juxtaposition with the transverse passage in the buffer-beam, and a coupler draw-head mounted in the box and extended forwardly through the passage in the buffer-beam.

5. The combination of a locomotive buffer-beam formed with a transverse passage extending therethrough at approximately its middle, the buffer-beam also having cavities at each side of the passage and in connection therewith, a box mounted at the rear side of the buffer-beam, a coupler draw-head mounted in the box and extended forwardly through the transverse passage in the buffer-beam, and springs mounted in the cavities in the buffer-beam and bearing against opposite sides of the draw-head to resist the lateral movement thereof.

656,532. LOCOMOTIVE BUFFER-BEAM. JAMES F. DUNN, Salt Lake City, Utah. Filed Apr. 9, 1900. Serial No 12,088. (No model.)



Claim.—1. The combination of a locomotive buffer-beam having a transverse passage therein, an engine frame-beam having a forward and upward extension at its front end, the forward extension being fitted in the passage of the buffer-beam and the upward extension bearing against the rear face of the buffer-beam, and means for holding the engine frame-beam in position.

2. The combination of a locomotive buffer-beam adapted to have the coupler fastened to approximately the middle thereof, frame-beams fastened to the buffer-beam at opposite sides of the center thereof, and a strengthening-rib on the buffer-beam and extending longitudinally thereof from near one engine frame-beam to near the other.

3. A locomotive buffer-beam adapted to have the coupler fastened to approximately the middle of its front face, the beam having means at its rear side for fastening the engine frame-beams, such means being situated at opposite sides of the center of the beam, a rib formed on the beam and running longitudinally thereof between the said means for fastening the engine frame-beams, and additional or end ribs formed on the beam respectively outside of the said means for fastening the frame-beams.

4. The combination of a buffer-beam, engine frame-beams fastened thereto, boiler-braces bearing on top of the buffer-beam, and fastening devices extending through the boiler-braces, the buffer-beam, and the engine frame-beams.

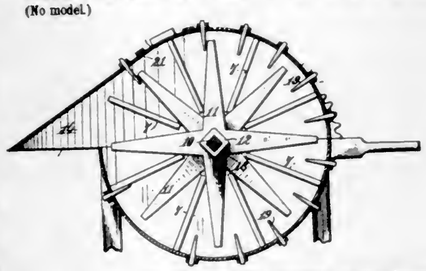
5. A locomotive buffer-beam having transverse passages formed therein adapted to receive the engine frame-beams, and lugs formed on the beam respectively adjacent to the transverse passages, the lugs being adapted to lie against the sides of the frame-beams and be fastened thereto.

6. The combination of a locomotive buffer-beam having a transverse passage therein, and an engine frame-beam having a front extension and an upward extension adjacent thereto, the front extension projecting into the transverse passage of the buffer-beam, and the upward extension lying against the rear face of the buffer-beam.

7. A locomotive buffer-beam formed of an integral mass of cast metal, having its middle rear portion provided with a longitudinally-disposed rib to receive the buffing strain on the beam at such point.

8. A locomotive buffer-beam formed of an integral mass of cast metal and adapted to have a coupler fastened to the front thereof at approximately its middle, and a longitudinally-disposed rib formed integrally with the beam and extending toward the ends thereof from the middle, such ribs serving to receive the strain exerted by the coupler.

656,533. PEA-SHELLER AND THRESHER. JOHN H. FARR and JAMES S. EVANS, Detroit, Ala. Filed Dec. 13, 1899. Serial No. 740,189. (No model.)



Claim.—1. In a combined shelling and threshing machine, the combination with a cylindrical casing having radial ribs fixed to its opposite inner sides, of a horizontal shaft journaled centrally in said casing, and two sets of flails removably mounted on said shaft in parallel planes, and adjustable on said shaft toward and from the center of the casing, substantially as described.

2. In a combined shelling and threshing machine, the combination with a cylindrical casing having radial ribs fixed to its opposite inner sides, of a horizontal shaft journaled centrally in said casing, two sets of flails removably mounted on said shaft in parallel planes, and adjustable on said shaft toward and from the center of the casing, and teeth removably fitted in the rim of the cylindrical casing and projecting radially into the casing between the two sets of flails, substantially as described.

3. In a combined shelling and threshing machine, the combination with a frame and a two-part cylindrical casing supported in said frame and comprising two semicylindrical sections, the upper half of said casing being removably secured on the lower half thereof, of a horizontal shaft removably journaled in half-bearings centrally fixed in the meeting edges of the two halves of the casing, and two sets of flails removably and adjustably mounted on said shaft, substantially as described.

4. In a combined shelling and threshing machine, the combination with a frame and a two-part cylindrical casing supported in said frame and comprising two semicylindrical sections, the upper half of said casing being removably seated on the lower half thereof, of standards fitted in sockets attached to the sides of the two halves of the casing, a horizontal shaft removably journaled in half-bearings centrally fixed in the meeting edges of the casing-sections, and flails removably and adjustably mounted on said shaft, substantially as described.

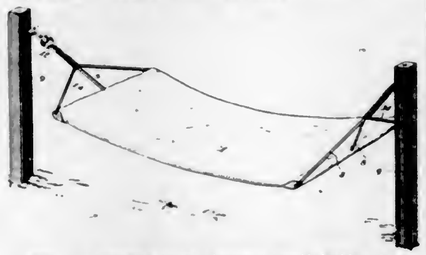
5. In a combined shelling and threshing machine, the combination with a frame and a two-part cylindrical casing supported in said frame, the upper half of said casing projecting horizontally at one edge beyond the corresponding edge of the lower half thereof to form a discharge-opening, a horizontal shaft journaled centrally between the meeting edges of the two halves of the said casing, and flails removably and adjustably mounted on said shaft, substantially as described.

6. In a combined shelling and threshing machine, the combination with a frame and a cylindrical casing supported therein, of a horizontal shaft journaled centrally in said casing, flails removably and adjustably mounted on said shaft, transverse slats attached to the perimeter of said casing and each centrally perforated, the perforations extending through the perimeter of the casing, and pins fitted in said perforations and extending radially between the flails, substantially as described.

7. In a combined shelling and threshing machine, the combination with a frame and a two-part cylindrical casing supported in the frame, the upper half of said casing projecting horizontally at one edge beyond the corresponding edge of the lower half thereof to form a discharge-opening, and provided with feed-openings, a horizontal shaft journaled centrally in the casing, flails mounted on said shaft, means for driving the shaft, a fan arranged at one side of the machine beneath the discharge-opening and arranged to deliver a blast of air beneath said opening transversely to the machine, and means for driving the fan from the flail-shaft, substantially as described.

8. In a combined shelling and threshing machine, the combination with a frame and a two-part cylindrical casing supported in the frame, of a horizontal shaft journaled centrally between the meeting edges of the sides of the two halves of the casing, flails mounted on said shaft, a longitudinally-movable side bar fixed to one side of the frame, two bearings carried by said side bar, a driving-shaft journaled in one of said bearings, gear-wheels of unequal size adapted to be interchangeably fixed on the driving-shaft, a gear-wheel fixed on the flail-shaft, and an intermediate gear-wheel adapted to be removably journaled in the other bearing carried by the side bar, substantially as described and for the purpose specified.

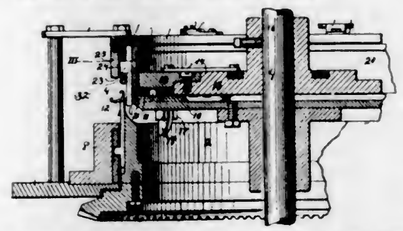
656,534. HAMMOCK. MOSES P. FISHBURN, Yellville, Ark. Filed Apr. 30, 1900. Serial No. 14,910. (No model.)



Claim.—1. A spreader-bar for a hammock provided with a wire suspending attachment having portions bent around the opposite extremities of the bar and extended outward and converged from the latter and intertwisted, the extremities of the wire being carried along close to the bar and connected at an intermediate point on the latter.

2. A spreader-bar for a hammock provided with a wire suspending attachment having portions bent around the bar near the outer ends of the latter and the outer extremities converged and intertwisted, the opposite extremities of the wire being extended along the bar toward the center of the latter and one projected therefrom to and held by the said intertwisted portions of the other extremities.

656,535. KNITTING-MACHINE. MICHEL J. FISHER, Utica, N. Y. Filed Mar. 13, 1899. Serial No. 708,834. (No model.)



Claim.—1. The combination with a circular-knitting machine, of the ordinary construction, having two sets of operating-needles, of a supplementary cylinder of smaller diameter than the main cylinder mounted above the dial and arranged to move therewith, said supplementary cylinder having peripheral grooves, sinkers arranged in said grooves, and means for elevating and depressing said sinkers, so as to engage and press down a supplementary thread to form loops on one surface of the fabric.

2. The combination with a circular-knitting machine, of the ordinary construction, having two sets of operating-needles, of a supplementary cylinder arranged above and connected to move with the dial, said supplementary cylinder being provided with peripheral grooves, individual sinkers arranged one in each of said grooves, and means for elevating and depressing said sinkers, so as to engage and press down a supplementary thread to form loops on the surface of the fabric.

3. The combination with a circular-knitting machine, of the ordinary construction, having two sets of operating-needles, of a supplementary cylinder arranged above the dial and connected thereto, said cylinder having substantially-vertical grooves, and sinkers operating in said grooves, between the dial-needles, to press an additional thread down between said dial-needles, so as to form loops protruding from the inner surface of the garment being knitted.

4. The combination with a circular-knitting machine of ordinary construction, of a supplementary cylinder arranged above the dial and connected thereto, said cylinder provided with peripheral grooves, sinkers arranged to operate in said grooves, and a supplementary cam-cylinder formed with a cam-groove for engaging the heels of said sinkers, so as to cause them to press down an additional thread between the dial-needles, whereby protruding loops are formed upon the inner faces of the fabric.

5. The combination with a circular-knitting machine of ordinary construction, of a supplementary cylinder of smaller diameter than the main cylinder, said supplementary cylinder arranged above the dial and connected to move therewith, grooves in the outer periphery of the supplementary cylinder, sinkers arranged in said grooves and adapted to operate in the spaces between the dial-needles and directly behind the main-cylinder needles, and a supplementary cam-cylinder provided with a cam-groove adapted to engage the heels of said sinkers and depress them, so as to engage and press down an additional thread between the dial-needles.

6. In combination with a rotary knitting-machine provided with a dial and cylinder carrying their respective sets of needles, and means for supporting and operating the parts in coöperation to knit the fabric, all of ordinary construction, a supplementary cylinder, smaller than the main cylinder, equal in diameter to the dial and set in a groove cut in the outer edge of said dial, in which said supplementary cylinder fits snugly securing it to the dial, grooves cut in the lower edge of said supplementary cylinder for the passage of the dial-needles, substantially-vertical grooves cut in the outer face of said supplementary cylinder alternately with said edge grooves, sinkers arranged in the latter grooves, a supporting-ring or annular plate supported on the frame of the machine above said supplementary cylinder, a smaller cam-cylinder made in sections secured to said annular plate, and cams arranged on the inner face of said small cam-cylinder forming a cam-groove to engage with the sinker-heels, adapted to press down said sinkers to engage with the extra thread and force it downwardly between the alternate dial-needles.

7. In combination with a rotary knitting-machine provided with a dial and cylinder carrying their respective sets of needles, and means for supporting and operating the parts in coöperation to knit the fabric, all of ordinary construction, a supplementary cylinder equal in diameter to the dial and set in a groove cut in the outer edge of said dial, grooves cut in the lower edge of said supplementary cylinder for the passage of the dial-needles, substantially-vertical grooves cut in the outer face of said supplementary cylinder alternately with said edge grooves, sinkers arranged in the latter grooves, a supporting-ring or annular plate supported on the frame of the machine above said supplementary cylinder, a smaller cam-cylinder made in sections secured to said annular plate, cams arranged on the inner face of said small cam-cylinder forming a cam-groove to engage with the sinker-heels, adapted to press down said sinkers to engage with the extra thread and force it downwardly between the alternate dial-needles, said cams being so arranged with reference to the cams operating the main-cylinder and dial needles that the sinkers are depressed when the dial-needles are moving out pressing the extra thread down over the open latches of said dial-needles and said cams formed with a horizontal portion to hold the sinkers at that level until the dial-needles have completed their outward movement and also their return movement, and a small incline to further depress the sinkers after the extra thread has been cast off over the needle-hooks to take up the slack and tighten said thread.

8. In a circular-knitting machine, the combination of a supplementary cylinder provided with sinkers for pressing down an additional thread, sinkers having a straight inner edge, an outwardly-extending heel formed near their upper end, a point rounded on its inner edge and ground down on each side thereof to form a substantially-thin edge to the point, a shoulder formed a short distance above the point, and a downwardly-open curved notch formed in the upper wall of said shoulder, as set forth.

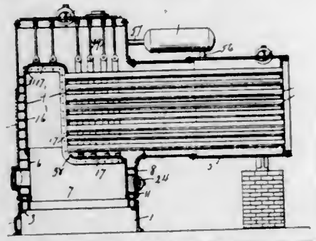
9. In a circular-knitting machine, a cylinder and dial of usual construction suitably supported and carrying respectively vertical and horizontal latch-needles, means for rotating the cylinder and dial, fixed cam-cylinder and cam-plate for operating said respective sets of needles, and,

in combination therewith, a smaller, supplementary cylinder arranged above the main cylinder on said shaft and fitted snugly to an annular groove cut in the edge of the dial, vertical grooves in said smaller cylinder arranged alternately with the horizontal grooves in the dial, said smaller-cylinder grooves being deeper above, the diameter of said cylinder diminishing toward its lower edges, sinkers arranged in said vertical grooves having on their outer edge, near their upper end heels, to engage with the cam-groove, and notches near their lower ends, and adapted to move down within the circle of the needles of the main cylinder and between the dial-needles to engage with a supplementary thread when they are depressed, forcing it over the dial-needle loops, forming slightly-loose loops therebetween, a fixed cam-cylinder having a cam-groove and adjustable cams for engaging the heels of said sinkers, an elastic steel band arranged around said sinkers and engaging with them beneath their heels, and an annular plate supported on the frame by arms and posts, to which plate the sections of said cam-cylinder are secured.

10. The combination with a rotary knitting-machine of ordinary construction, of a supplementary cylinder, mounted on the central shaft of the machine and connected to the dial, said supplementary cylinder having its lower edge grooved correspondingly with the dial for the free operation of the dial-needles, and its outer periphery provided with vertical grooves, sinkers arranged to operate in said vertical grooves, and a supplementary cam-cylinder provided with a cam-groove, adapted to engage and depress the sinkers, so as to cause said sinkers to engage and press down an additional thread between the dial-needles.

11. The combination with a rotary knitting-machine, of a supplementary cylinder, mounted on the central shaft of the machine and connected to the dial, said supplementary cylinder having its lower edge grooved correspondingly with the dial for the passage of the dial-needles, and its outer periphery provided with vertical grooves, sinkers arranged to operate in said vertical grooves, a supporting ring or annulus mounted upon the machine-frame, and a supplementary cam-cylinder, supported by the ring or annulus, provided with a cam-groove adapted to engage and depress the sinkers, as and for the purpose specified.

656,536. BOILER. DAVID FITZGIBBONS, Oswego, N. Y. Filed Dec. 28, 1899. Serial No. 741,782. (No model.)



Claim.—1. In combination in a steam-generator, an outer vertical cylindrical shell, a horizontal cylindrical shell connected to about the middle of the vertical shell and extending rearwardly therefrom, an inner shell arranged concentrically within the vertical shell, said inner shell having a lower cylindrical portion forming a fire-box and an upper substantially-semicylindrical portion forming a combustion-chamber, the crown-sheet of the fire-box and the rear plate of the combustion-chamber being formed of a single continuous sheet bent at right angles at the point 38, and fire tubes arranged in said horizontal shell and secured in said rear plate.

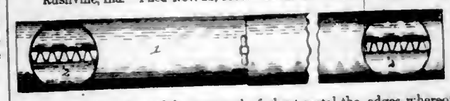
2. In a steam-generator having inner and outer shells and opening therethrough into the combustion-chamber closed by a fuel-door, a latch for locking said fuel-door, an air-door closing an air-opening hinged above said fuel-door, a rod secured to the fuel-door latch and engaging with said air-door to open the same when the latch is raised, a fixed cylinder, a piston fitting said cylinder and secured to said air-door, and means for permitting the air to escape from said cylinder.

3. In combination in a steam-generator, an outer cylindrical shell, an inner shell concentrically arranged within the outer, a corrugated steel ring secured between the lower edges of said shells and having depending edges, and a separate cylindrical ash-pit section having an inwardly-extending ledge fitted to receive said ring and support said shells.

4. In combination in a steam-generator, a separate cylindrical ash-pit section having an inwardly-extending horizontal ledge, an outer vertical cylindrical shell, substantially equal in diameter to the ash-pit section, an inner shell concentrically arranged within the outer, a corrugated steel ring secured between the lower edges of said shells and having a depending edge fitted to said ledge, said inner shell having a lower cylindrical portion forming a fire-box, and a contracted upper portion substantially semicircular in cross-section forming a combustion-chamber, a single sheet forming the upper plate of said fire-box and the rear plate of said combustion-chamber, a horizontal, cylindrical shell connected to said vertical shell at about its middle and extending rearwardly therefrom and a series of fire-tubes contained within said horizontal shell, extending rearwardly from the vertical shell, and forwardly into said vertical shell where they are secured to said plate.

5. In combination in a steam-generator, a separate cylindrical ash-pit section having an inwardly-extending horizontal ledge, an outer vertical, cylindrical shell, substantially equal in diameter to the ash-pit section, an inner shell concentrically arranged within the outer, a corrugated steel ring secured between the lower edges of said shells and having a depending edge fitted to said ledge, said inner shell having a lower cylindrical portion forming a fire-box, and a contracted upper portion substantially semicircular in cross-section forming a combustion-chamber, a single sheet forming the upper plate of said fire-box and the rear plate of said combustion-chamber, the upper portion of the front plate of said combustion-chamber being bent rearwardly to form a half-dome and being secured to said single sheet along the upper edges of both, a horizontal, cylindrical shell connected to said vertical shell at about its middle and extending rearwardly therefrom, a series of fire-tubes contained within said horizontal shell extending rearwardly from the vertical shell and forwardly into said vertical shell where they are secured to said plate, and a steam-drum arranged above and parallel to said horizontal tube-containing extension immediately behind the upper portion of said vertical shell and pipes connecting said drum both to the horizontal extension and to the upper portion of the vertical shell.

656,537. CONDUIT FOR DISTRIBUTING FLUIDS. ELGIE FOX, Rushville, Ind. Filed Nov. 22, 1899. Serial No. 737,882. (No model.)



Claim.—1. A conduit composed of sheet metal the edges whereof are folded around near together, and a corrugated strip inserted between said edges whereby numerous distribution-orifices are formed at said point.

2. A conduit composed of sheet metal folded around into substantially a balloon shape in cross-section, and a corrugated strip inserted between the edges of said sheet where they approach each other, whereby a tubular space for the passage of the fluid is formed with radial distribution-openings, substantially as shown and described.

3. A conduit composed of sheet metal the edges whereof are folded around near together, and a corrugated strip inserted between said edges and projecting beyond them, the spaces within the corrugations forming distributoin-openings, and said distribution-openings being thus separated to a point below the point of discharge, whereby a portion of the fluid is directed toward one side of the structure and another portion toward the other side, substantially as set forth.

4. A conduit composed of sheet metal the edges whereof are folded around near together and projected radially outward, a part inserted between the edges whereby they are separated and distribution-openings formed, and openings in the upper side of the conduit through which a fluid may be introduced, substantially as set forth.

5. The combination, in a conduit, of the outer shell composed of a sheet the edges whereof are brought near together, a corrugated part inserted between said edges thus forming distribution-openings, and gates inserted in said conduits at suitable points whereby the flow of fluid may be controlled, substantially as and for the purposes set forth.

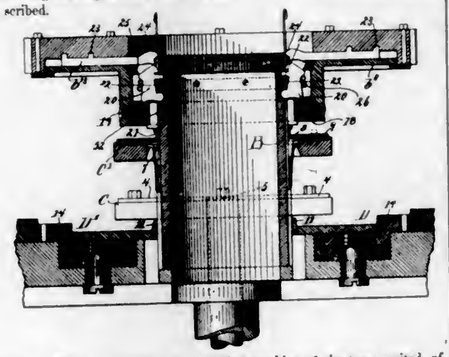
656,538. KNITTING-MACHINE. EMIL J. FRANCK, Philadelphia, Pa. Filed Apr. 28, 1898. Serial No. 679,068. (No model.)

Claim.—1. In a knitting-machine of the type recited, the combination with the spring-bits of the fashioning-needles, of, a needle-carrier having deep and shallow grooves for the reception of said bits, whereby the needles may accomplish full and partial strokes, substantially as described.

2. In a knitting-machine of the type recited, the combination with the spring-bits of the fashioning-needles, of, a needle-carrier having grooves the one above the other for the reception of said bits, and means for reciprocating the carrier vertically, substantially as described.

3. In a knitting-machine of the type recited, the combination of the spring-bits of the fashioning-needles, a needle-carrier having two grooves for the reception of said bits, and a needle-stripper having a finger for transferring the needle-bits from groove to groove, substantially as described.

4. In a knitting-machine of the type recited, the combination of the spring-bits of the fashioning-needles, the carrier provided with grooves for the reception of said bits, the finger for transferring the bits from groove to groove, the edge for lifting the bits out of both grooves, and means for shifting the finger and edge in respect to each other, substantially as described.



5. The combination in a knitting-machine of the type recited, of, the spring-bits of the fashioning-needles, the needle-carrier provided with grooves, the superposed segmental plates movable in respect to each other and to the bed of the machine and whereof one is provided with an edge and with a slot and whereof the other is provided with a finger projecting through said slot, and means for shifting the first-mentioned plate whereby the finger is caused to lie behind and beyond the edge to bring it out of and into range of the bits, substantially as described.

6. The combination in a knitting-machine of the type recited, of, the spring-bits of the fashioning-needles, the needle-carrier provided with grooves, the superposed segmental plates movable in respect to each other and to the bed of the machine and whereof one is provided with an edge and with a slot and whereof the other is provided with a finger projecting through said slot, means for shifting the first-mentioned plate whereby the finger is caused to lie behind and beyond the edge to bring it out of and into range of the bits, and a screw carried by the slotted plate and projecting into range of the finger to afford means for adjusting the relative movement of said plates, substantially as described.

7. The combination in a knitting-machine of the type recited, of, the spring-bits of the fashioning-needles, the grooves of the carrier, the ways on the bed-plate, the segmental plates movable in said ways and in respect to each other and respectively provided with a finger and an edge, and springs interposed between said ways and plates to prevent excessive movement of the latter, substantially as described.

8. The combination in a knitting-machine of the type recited, of, an axially-grooved needle-cylinder, a dished ring mounted on the webs of said cylinder, a sinker-bed applied to said dished ring, web-holders seated on said dished ring, and a spring encircling the web-holders whereby the sinker-bed may be removed without detaching the web-holders from the cylinder, substantially as described.

9. The combination in a knitting-machine of the type recited, of, an axially-grooved needle-cylinder of reduced diameter at its upper end, a dished ring 18, mounted on said cylinder, a web-holder guide-ring 22, mounted on the upper end of said cylinder, a presser-ring of which the teeth extend inward, web-holders working between the teeth of the presser-ring seated on the dished ring and guided by the ring 22, and springs encircling the web-holders, substantially as described.

10. The combination in a knitting-machine of the type recited, of, a presser-ring of which the teeth extend inward and upward, spring-needles whose beards coöperate with the inner ends of said teeth, web-holders working between said teeth, means for supporting the web-holders, sinkers working between the upwardly-extending parts of said teeth, and means for supporting said sinkers, substantially as described.

11. The combination in a knitting-machine of the type recited, of, an axially-grooved needle-cylinder provided with rings 18 and 22, a sinker-bed detachably applied to the ring 18, a presser-ring seated in the sinker-bed and provided with inwardly and upwardly extending teeth, web-holders guided by the rings 18 and 22, and working between the teeth of the presser-ring, springs encircling the web-holders, sinkers working between the upwardly-extending parts of the teeth of the presser-ring, and needles whose beards coöperate with the ends of the teeth on the presser-ring, substantially as described.

12. In a knitting-machine of the type recited, a presser-ring provided with inwardly and upwardly extending teeth, substantially as described.

13. In a knitting-machine of the type recited, a revoluble sinker-cam ring, sinkers, a sinker-cam radially adjustable in respect to the sinker-cam ring, and means for automatically shifting said cam while the sinker-cam ring is moving to increase and diminish the throw of the sinkers and thereby tighten and loosen the stitches and fashion tubular work, substantially as described.

14. In a knitting-machine of the type recited, a sinker-bed and its sinkers, a movable sinker-cam, a cam-carrier radially adjustable in respect to the sinker-bed and provided with a lip, a stop in range of the sinkers and carried by the cam-carrier, and mechanism substantially as described for operating on the lip and shifting the carrier.

15. In a knitting-machine of the type recited, a revoluble sinker-bed and its sinkers, a movable sinker-cam, a cam-carrier radially adjustable in respect to the sinker-bed, a spring for balancing centrifugal force exerted on the carrier and cam, and means substaintially as described for shifting the carrier.

16. In a knitting-machine of the type recited, a sinker-bed and its sinkers, a guide-block provided with a thread-carrier and attached to the bed, a U-shaped cam-carrier having its arms straddling said block, a cam carried by the carrier, and means substantially as described for shifting the carrier.

17. In a knitting-machine of the type recited, a sinker-bed and its sinkers, a guide-block attached to the bed, a U-shaped cam-carrier having its arms astride of said block, springs interposed between said block and arms, a cam carried by the carrier, and means substantially as described for shifting the carrier.

18. In a knitting-machine of the type recited, a revoluble sinker-bed and its sinkers, a sinker-cam movable radially in respect to the bed and connected with a lip, an arm provided with rollers or projections that coöperate with the lip, and means responding to changes in the pattern-chain and adapted to shift said arm, substantially as described.

19. The combination in a knitting-machine of the type recited, of, a revoluble sinker-bed and its sinkers, a sinker-cam movable radially in respect to the bed and connected with a lip, a socket supported on top of the machine, a bell-crank lever rotatably mounted in said socket and having one of its arms equipped with projections or rollers adapted to said lip and having the other of its arms attached to a link, and a pattern-chain and its accessories for shifting said link, subetantially as described.

20. The combination in a knitting-machine of the type recited, of, a revoluble sinker-bed and its sinkers, a sinker-cam movable radially in respect to the bed and connected with a lip, a socket supported on top of the machine, a bell-crank lever rotatably mounted in said socket and having one of its arms equipped with projections or rollers adapted to said lip and having the other of its arms attached to a link, means for adjusting said arms in respect to each other, and a pattern-chain and its accessories for shifting said link, substantially as described.

21. The combination in a knitting-machine of the type recited, of, a revoluble sinker-bed and its sinkers, a sinker-cam movable radially in respect to the bed and connected with a lip, a socket supported on top of the machine, a bell-crank lever rotatably mounted in said socket and having one of its arms equipped with projections or rollers adapted to said lip and having the other of its arms attached to a link, a screw, as 44, for limiting the range of motion of said lever, and a pattern-chain and its accessories for shifting said link, substantially as described.

22. The combination in a knitting-machine of the type recited, of, a revoluble sinker-bed and its sinkers, a sinker-cam movable radially in respect to the bed and connected with a lip, a socket supported on top of the machine, a bell-crank lever rotatably mounted in said socket and having one of its arms equipped with projections or rollers adapted to said lip and having the other of its arms attached to a link, a spring operating upon one of said arms and tending to shift the link in one direction, and a pattern-chain and its accessories for shifting the link in the other direction, substantially as described.

23. In a knitting-machine of the type recited, the combination of a drum, a reciprocating pawl, a cam on the drum, a spring for holding said pawl up to its work, and a pivoted bell-crank lever controlled by said cam and operating to press upon said spring to put said pawl into action and to release said spring to permit the pawl to work free, substantially as described.

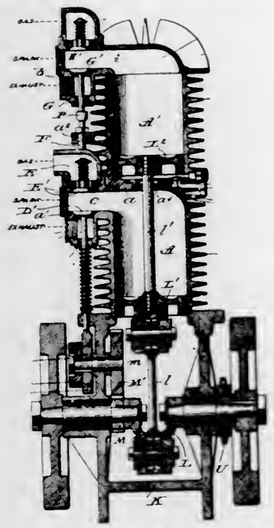
24. The combination in a knitting-machine of the type recited, of, a reciprocating pawl, a spring for controlling said pawl, a drum, a crown-cam on the end of said drum, a bell-crank lever operating upon said spring, and a shipper-lever coöperating with the cam and operating upon the bell-crank lever, substantially as described.

25. The combination in a knitting-machine of the type recited, of, an axially-grooved needle-cylinder having a cylindrical top of reduced diameter, a web-holder guide-ring applied to the top of the cylinder and having radial notches 52 in its under face, web-holders fitted in the notches 52, and a spring encompassing the web-holders, substantially as described.

656,539. MULTIPLE-CYLINDER GAS-ENGINE. RUSSELL A. PRIEBE, Middletown, Conn. Filed Dec. 19, 1899. Serial No. 740,889. (No model.)

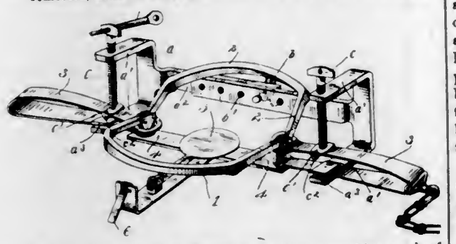
Claim.—1. In an engine of the character described, the combination, of a cylinder formed of a single casting with a single partition presenting two compartments or piston-chambers located on a line with each other,

said partition forming the head of the lower compartment, inlet and exhaust valves for the compartments, pistons located in the compartments and connected to each other and to the crank-shaft, the cylinder having openings leading into the lower part of the upper compartment above the partition or head, and opposing valves located in said openings, substantially as shown and for the purpose set forth.



2. In an engine of the character described, the combination, of a cylinder formed of a single casting and presenting two compartments or piston-chambers located on a line with each other, inlet and exhaust valves for the compartments, pistons located in the compartments or chambers and connected to each other, lateral webs formed on the cylinder, valved outlet-openings leading from the lower end of the upper compartment, valved inlet-openings also leading into the lower end of said upper compartment, a band around the outer ends of the webs, and openings leading through the webs to the valved inlet-openings, substantially as shown and for the purpose set forth.

656,540. TRAP-SETTING DEVICE. ALEXANDER GENEROUS, Princeton, Minn. Filed May 25, 1900. Serial No. 17,934. (No model.)



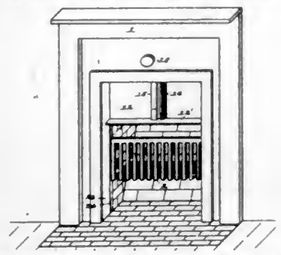
Claim.—1. A device for setting animal-traps, comprising a pair of prongs, and a clamping-screw working through one of the jaws of said prongs and adapted to compress the trap-spring against the other jaw, substantially as described.

2. A device for setting animal-traps, comprising the prongs a', the screws c working through the upper of said prongs a', and the clamping-feet c' swiveled to said screws c and provided with the downturned side prongs c^2, substantially as described.

3. The combination with the adjustably-secured sections a^2 having the pronged heads a', the lower prongs having the slits or seats a^3, of the screws c working through the upper prongs a' and having swiveled to their ends the clamping-heads c' with downturned side prongs c^2, said parts operating substantially as described.

656,541. BLOWER. EDGAR S. GRAY, Greenfield, Ohio. Filed Jan. 22, 1897. Serial No. 620,264. (No model.)

Claim.—1. The combination, with the front wall of the chimney, of a blower, a rack carried by said blower, a pinion meshing with said rack, the shaft of said pinion being mounted in said front wall, and a shaft or bar mounted in said front wall and having its inner end in engagement with the teeth of said pinion when the shaft or bar is pressed inward, so as to retain the blower at any desired height, substantially as set forth.



2. The combination, with the front wall of the chimney, of a blower, means for elevating and lowering the blower, a groove 24 in jamb 23, and the guide-pieces 22, to prevent lateral motion, substantially as set forth.

3. The combination, with the front wall of the chimney, of a blower, a rack carried by said blower, a pinion meshing with said rack, the shaft of said pinion being mounted in the front wall, and a guide or guides adjacent to said rack and parallel thereto, said guide or guides incasing said pinion, substantially as set forth.

4. The combination, with the front wall of the chimney, of a blower, a rack carried by said blower, a pinion meshing with said rack, the shaft of said pinion being mounted in the front wall, and a guide or guides adjacent to said rack and parallel thereto, a vertical bar partly incased by said guide or guides, whereby the blower is held against lateral motion, said bar having its base-piece anchored or secured in said front wall, substantially as set forth.

5. The combination, with the front wall of the chimney, of a blower, a vertical bar, a rack carried by said blower, a pinion meshing with said rack, and a guide or guides secured to said blower adjacent to said rack and parallel thereto, said vertical bar and said pinion being partly incased by said guide or guides, whereby the blower is held against lateral motion, substantially as set forth.

6. The combination, with the front wall of the chimney, of a blower, a vertical bar having its base-piece anchored or secured in said front wall, a rack carried by said blower, a pinion meshing with said rack, the shaft of said pinion being mounted in the front wall, and a guide or guides secured to said blower adjacent to said rack and parallel thereto, said vertical bar and pinion being partly incased by said guide or guides, whereby the blower is held against lateral motion, substantially as set forth.

7. The combination, with the front wall of the chimney, of a blower, a vertical bar having its base-piece anchored or secured in said front wall, a rack carried by said blower, a pinion meshing with said rack, the shaft of said pinion being mounted in the base piece of said vertical bar, and a guide or guides secured to said blower adjacent to said rack and parallel thereto, said guide or guides consisting of angle-plates whose edges approach but do not touch each other, the connecting portion between said base-piece and vertical bar, and the stem of said pinion, being between the edges of said guides, said vertical bar and pinion being partly incased by said guides, whereby the blower is held against lateral motion, substantially as set forth.

8. The combination, with the front wall of the chimney, of a blower, a vertical bar having its base-piece anchored or secured in said front wall, and vertical guide or guides secured to said blower, said guide or guides consisting of angle-plates whose edges approach but do not touch each other, the connecting portion between said base-piece and vertical bar being between the edges of said guides, said vertical bar being partly incased by said guides, whereby the blower is held against lateral motion, substantially as set forth.

9. The combination, with the front wall of the chimney, of a blower, a vertical bar having its base-piece anchored or secured in said front wall, a rack carried by said blower, a pinion meshing with said rack, the shaft of said pinion being mounted in the base-piece of said vertical bar, said blower having a suitable sliding engagement with said vertical bar, substantially as set forth.

10. The combination, with the front wall, of a blower, and a central vertical bar, said vertical bar having a base-piece set substantially at right angles to the bar, said base-piece being anchored or secured in said front wall, and said blower having a suitable sliding engagement with said vertical bar, substantially as set forth.

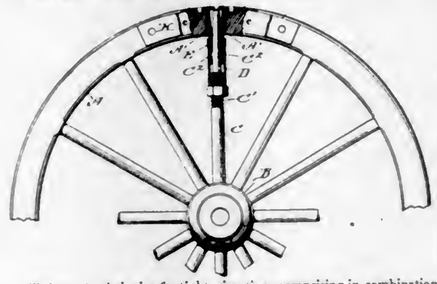
11. The combination, with the front wall, of a blower, and a central vertical bar, said vertical bar having a base-piece set substantially at right angles to said bar, the connecting portion between said bar and base-piece being adapted to receive the guide-pieces of the blower, said base-piece being anchored or secured in said front wall, and said blower having a suitable sliding engagement with said vertical bar, substantially as set forth.

12. The combination, with the front wall, of a blower 12, and a central vertical bar 7, said vertical bar having a base-piece 8 set substantially at right angles to said bar, the connecting portion 9 between said bar and base-piece being smaller or thinner vertically than either the bar or base-piece, in order to receive the guide-pieces 15 and 16 of the blower, said base-piece being anchored or secured in said front wall, and said blower having a suitable sliding engagement with said vertical bar, substantially as set forth.

13. The combination, with the front wall, of a blower, means for elevating and lowering said blower, and a guide-piece or guide-pieces secured to said blower, said guide-piece or guide-pieces having a suitable sliding engagement with said front wall, substantially as set forth.

14. The combination, with the front wall, of a blower, means for elevating and lowering said blower, a guide-piece or guide-pieces secured to said blower, a vertical bar secured to said front wall, said guide-piece or guide-pieces having a suitable sliding engagement with said vertical bar, substantially as set forth.

656,542. TIRE-TIGHTENER. JAMES L. HAM, Huddleston, Va. Filed Mar. 3, 1900. Serial No. 7,225. (No model.)

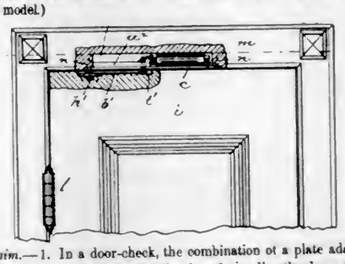


Claim.—1. A device for tightening tires, comprising in combination with the tire, the angle-irons secured to the ends thereof, the felly, the hub and metallic spoke secured thereto, the thimble and washer mounted on said spoke, and adapted to embrace said angle-irons, and a tightening-nut working on the threaded portion of the spoke, as set forth.

2. A device for tightening tires, comprising in combination with the tire, the angle-irons secured to the ends thereof, the hub and metallic threaded spoke, the ends of said angle-irons apertured and designed to engage over lugs on said spoke, and the thimble and washer, and the tightening-nut, as set forth.

3. In combination with the tire having concavo-convex angle-irons secured thereto, the felly having concaved ends and recessed as described, the metallic spoke, the thimble, washer and threaded nut, said angle-irons designed to embrace the tapered or contracted portion of the spoke as the thimble and washer are forced toward the felly, as set forth.

656,543. PNEUMATIC DOOR-CHECK. ENOS H. HARRISON and THOMAS LAWSON, Newark, N. J. Filed July 7, 1899. Serial No. 723,110. (No model.)

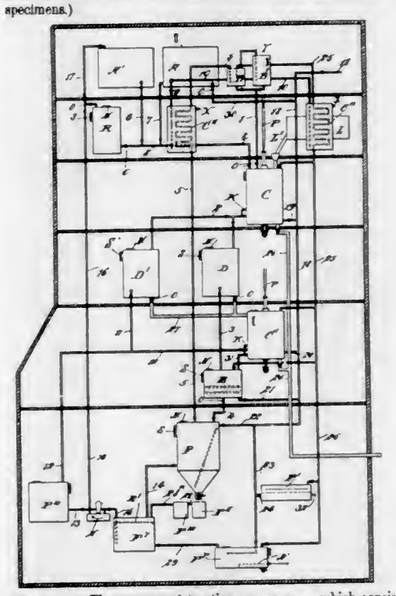


Claim.—1. In a door-check, the combination of a plate adapted to be sunk into a recess in the top of the door-frame directly above the door when in closed position, said plate being longitudinally slotted at one end and having at the opposite longitudinal sides of said slot upwardly-projecting ribs, said ribs forming at their edges slideways for a piston-slide and at their inner faces forming bearing-surfaces for a roller, a valved cylinder secured longitudinally upon the upper surface of the plate at the end opposite the said slot and adapted to lie in the recess in the door-frame, a piston working in said cylinder and having its outer end adjustably connected to a slide arranged on said slideways, a pin pivotally arranged in said slide and extending downward through the slot, a roller arranged on said pin in said slot, and an arm adapted to lie beneath the slotted portion of the plate when the door is closed and having its end next the cylinder pivoted on said pin and its opposite end pivoted to the door, substantially as set forth.

2. In a door-check, the combination of a plate slotted near one end and having a valved cylinder on the unslotted end arranged in line with the slot, a piston working in said cylinder, a slide at the outer end of said piston and reciprocating at the upper side of the slotted portion of the plate, a roller arranged in the slot, an arm beneath the plate and being connected at one end with the door, and a pivotal pin holding the other end of said arm and the said slide at opposite ends of the roller in operative position, substantially as set forth.

3. The improved door-check, comprising a plate longitudinally slotted and flanged on the inner side for a portion of its length and also having at its inner side a valved cylinder longitudinally disposed at the unslotted end of said plate, a piston working at one end in said cylinder and at the opposite end connected to a slide, said slide arranged on the inner edges of the flanges, a roller arranged between said flanges, an arm serving to connect the slide with the door and a pivotal pin connecting the arm, slide and roller and holding the same in operative position, substantially as set forth.

656,544. PROCESS OF TREATING GOLD AND SILVER ORES. HENRY HIRSCHING, Salt Lake City, Utah, assignor to the Mineral Union, Limited, Phœnix, Ariz. Filed May 19, 1899. Serial No. 717,478. (No specimens.)



Claim.—1. The process of treating copper ores, which consists in adding the comminuted ore gradually under agitation to an ammoniated solution, and then adding a diluting liquid to the mixture to obtain a highly-concentrated copper solution, substantially as described.

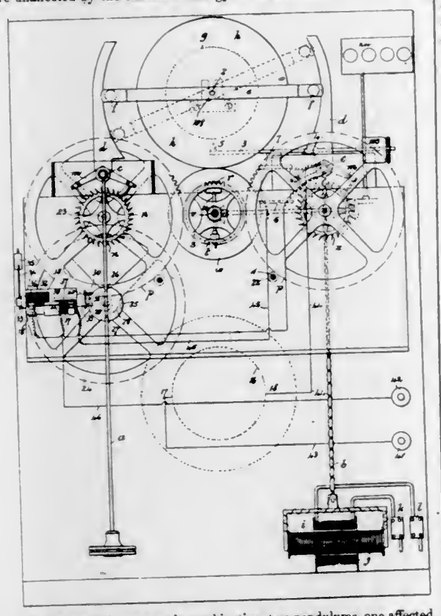
2. The process for treating copper ores, which consists in adding the comminuted ore gradually under agitation to an ammoniated solution, diluting the solution, separating it from the slimes, and washing or leaching the slimes separately.

3. The process for treating copper ores, which consists in adding the comminuted ore gradually under agitation to an ammoniated solution, diluting the solution, separating it from the slimes, washing or leaching the slimes separately, and subjecting the residue of the slimes to the action of steam to extract the ammonia therefrom.

4. The process for treating copper ores, which consists in adding the comminuted ore gradually under agitation to an ammoniated solution, diluting the solution, separating it from the slimes, washing or leaching the slimes separately, and heating the residue of the slimes to recover the ammonia therefrom.

656,545. ELECTRICITY-METER. GEORGE HOOKHAM, Birmingham, England. Filed July 9, 1900. Serial No. 23,027. (No model.)

Claim.—1. In electricity-meters in which two pendulums are compared, one being affected at periodic intervals by the current to be measured and the other beating normal time, a synchronizing device consisting of a balance-gear adapted to correct deviations from synchronism between the pendulums during alternate periods in which both pendulums are unaffected by the current or energy to be measured

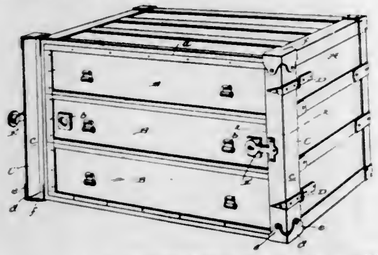


2. In electricity-meters, in combination, two pendulums, one affected, by the current or energy to be measured, the other unaffected and acting as a timekeeper, a driving-motor, switching means operated by the timekeeping pendulum at periodic intervals, and synchronizing means brought into operation at periods alternating with periods during which the current or energy affects one of the pendulums substantially as described.

3. In two-pendulum electricity-meters, a synchronizing device, consisting of a beam carrying springs, against which projections on the pendulums vibrate, and whose angular position is controlled at periodic intervals from the differential gear connecting the pendulums, for the purpose of automatically effecting an acceleration of the slow pendulum, and a retardation of the fast one, till synchronism is obtained substantially as described.

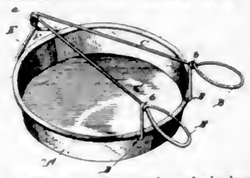
4. In electricity-meters in combination two pendulums one unaffected and acting as a timekeeper the other carrying a coil through which the series current passes, a driving-motor, switching means operated by the time-keeping pendulum at periodic intervals, and synchronizing means brought into operation at periods alternating with periods during which the current or energy affects one of the pendulums substantially as described.

656,546. TRUNK. GEORGE V. HOSSFELD, Topeka, Kans. Filed Dec. 18, 1899. Serial No. 740,754. (No model.)



Claim.—In a trunk comprising a case, open at one side, and slidable drawers arranged one above the other in said case and movable through the open side thereof, the combination with the case and drawers; of the vertically-disposed keepers comprising the bodies *c*, respectively formed of one piece of metal; the said bodies being of right-angle form in cross-section and of a length corresponding to the height of the case, and adapted when closed to rest against the end walls and front of the case so as to cover and protect the front corners of the same, and retain the drawers therein, and the bumpers *d* having ears connected to the upper and lower ends of the bodies, the hinges connecting keeper-bodies *c* to the end walls of the case, and means for locking the outer portions of the keeper-bodies to one of the drawers, substantially as and for the purpose set forth.

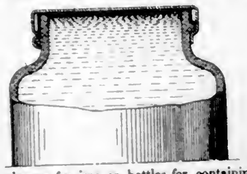
656,547. PAN-LIFTER. EDWIN HUDSON, Agosta, Ohio. Filed Apr. 30, 1898. Renewed June 8, 1900. Serial No. 19,633. (No model.)



Claim.—1. A pan-lifter made from a piece of wire bent to form an elongated loop E, with stems, vertically disposed, and adapted to receive a segment of the rim of a pan, means to secure said stems of the wire together immediately above the loop, said stems being bent at substantially a slight angle to the loop and diverging rearwardly therefrom, and the end portion of each stem bent to form a looped handhold B, then around the stem at the inner end of the handhold and extending downwardly at substantially a right angle to the stem and then inwardly to form the lifting-hooks D, substantially as, and for the purpose specified.

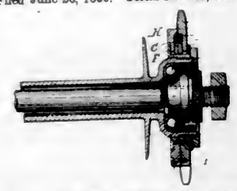
2. A pan-lifter made from a piece of wire bent to form the vertically-disposed, elongated loop E, the rearwardly-diverging stems C, leading from the loop at substantially right angles thereto, the loop-shaped handholds at the rear ends of the stems, and the lifting-hooks D, projecting downwardly from the inner ends of the handholds, combined with a wrapping-wire coiled around the two stems of the wire immediately above the loop E, one end of said wrapping-wire projecting toward the lifting-hooks D, and forming a supplemental lifting-hook, substantially as, and for the purpose specified.

656,548. JAR OR BOTTLE CLOSURE. HENRY A. HUGHES, Philadelphia, Pa. Filed Feb. 15, 1900. Serial No. 5,481. (No model.)



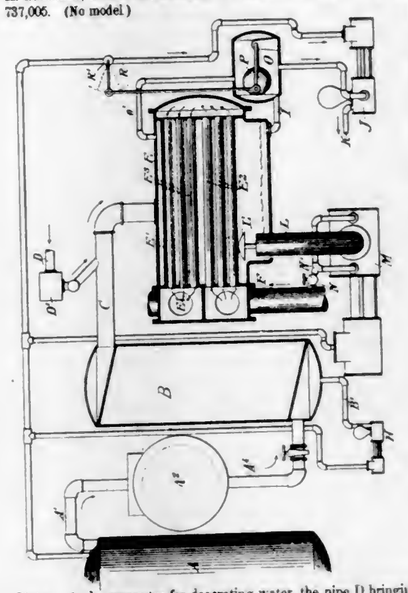
Claim.—A closure for jars or bottles for containing syrups, fruit juices, or other matter of a sticky, viscid nature, consisting of a waxed cloth adapted to extend over the mouth and around the edge of the jar or bottle and caused to adhere to the outer surface of the same by the external application of heat, in combination with a metallic cap detachably secured to the neck of the jar or bottle and serving to protect the waxed cloth sealing the same, substantially as described.

656,549. CLUTCH MECHANISM. HENRIQUE C. KENNEDY, Philadelphia, Pa. Filed June 26, 1899. Serial No. 721,985. (No model.)



Claim.—The combination with the hub having exterior threads, of the collar having a flange, an annular ratchet and an annular nnthreaded portion beyond the ratchet and interior threads to engage the threads of the hub, a ring fitted over said annular portion and bearing against the outer face of the ratchet, a sprocket-wheel having recesses in its inner face, spring-actuated pawls in said recesses to engage the ratchet, and a face-plate recessed upon one face opposite the recesses of the sprocket-wheel and on its other face provided with a rabbet, said face-plate being arranged over the recesses in the sprocket-wheel, said face-plate and sprocket-wheel being confined between the flange of the collar and said ring and fixedly secured together, and a jam-nut engaging the threads of the hub and bearing against said collar and ring, all substantially as shown and described.

656,550. APPARATUS FOR DEAERATING WATER. GEORGE M. KLEUCKER, Brunswick, Germany. Filed Nov. 14, 1899. Serial No. 737,005. (No model.)



Claim.—1. In apparatus for deaerating water, the pipe D bringing good water to be deaerated and the pipe C bringing steam from the exhaust-port of a steam engine or engines, in combination with a surface condenser and means as the pumps J, M, and connecting-pipes and the vessel O float P and valve R' for separately removing the air and the water after their separation in the condenser, all arranged for joint operation substantially as herein specified.

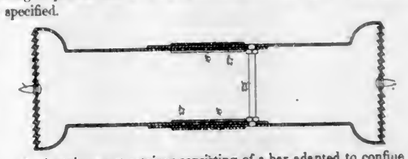
2. In apparatus for deaerating water, the pipe D bringing good water to be deaerated and the pipe C bringing steam from the exhaust-port of a steam engine or engines, in combination with a surface condenser E, having two sets of horizontal tubes through which the condensing-water is successively passed the warmer E^2 being above the colder E^3 and connecting-pipes for separately removing the air and the water after their separation in the condenser, all arranged for joint operation substantially as herein specified.

3. In apparatus for deaerating water, the pipe D bringing water to be deaerated from any convenient source and the pipe C bringing steam from the exhaust-port of a steam engine or engines, in combination with a surface condenser E, having two sets of horizontal tubes E^2 E^3, and means as the pumps J, M, and connecting-pipes for separately removing the air and the water after their separation in the condenser, and provisions as the branch pipe N, connecting with the supply of water, and controlling means N', for admitting a regulated quantity of water to the air-pump to seal the valve, all arranged for joint operation substantially as herein specified.

4. A deaerating apparatus comprising a strong vessel E, with provisions L, M, for maintaining a vacuum therein; means C for introducing water and steam at a high point and provisions as the scatter-plate E', and the horizontal tubes E^2, and E^3, for compelling the hot water to be spread in a thin laminæ for the escape of the air into the vacuum, combined substantially as herein specified.

656,551. STAIR-CARPET RETAINER. JOHN P. KNOBELOCH, Philadelphia, Pa. Filed Mar. 10, 1900. Serial No. 8,151. (No model.)

Claim.—1. A stair-carpet retainer consisting of a two-part expansible and contractible rod or bar, whereby it can confine the carpet between the tread of one step and the projecting tread of a step above it, each end of the bar having a series of teeth facing laterally outward and serving to prevent lateral inward movement of the carpet, substantially as specified.



2. A stair-carpet retainer consisting of a bar adapted to confine the carpet between the tread of one step and the projecting tread of a step above it, said bar having end portions for engaging the carpet, each of such engaging portions consisting of a series of teeth and a central pointed stud projecting beyond said teeth, substantially as specified.

3. A stair-carpet retainer consisting of a pair of U-shaped bars fitting one within the other, the outer bar having in its sides slots and notches and the inner bar having a transverse pin with projecting ends forming pawls for engagement with said notches, substantially as specified.

4. A stair-carpet retainer, consisting of a pair of U-shaped bars sliding telescopically one within the other, and a slide embracing said bars and having portions overlapping the same, and maintaining them in line with each other, substantially as specified.

5. In a stair-carpet retainer, the combination of two substantially U-shaped bars fitting one within the other, each bar constructed at its outer end to engage and retain the carpet, one of the bars having side walls provided with notches communicating with longitudinal slots closed at the ends and the other bar having side walls with projecting teeth or pawls for engaging with said notches, said pawls or teeth, when disengaged from the notches, lying within the longitudinal slots and preventing the separation of the bars from each other, substantially as described.

6. A stair-carpet retainer consisting of a pair of U-shaped bars sliding telescopically one within the other, means for holding said bars in various positions of longitudinal adjustment, and a slide embracing said bars and having portions overlapping the same, and maintaining them in line with each other, substantially as specified.

656,552. FILTERING MATERIAL. NICHOLAS LANSER, Allegheny, Pa. Filed Mar. 6, 1900. Serial No. 7,585. (No specimens.)

Claim.—1. As a new article of manufacture, a filtering material consisting of mineral felt and clay.

2. As a new article of manufacture, a filtering material consisting of mineral wool solidified in a porous manner, and a suitable quantity of clay added thereto.

3. The herein-described method of manufacturing a filtering material consisting of first taking a quantity of mineral wool and boiling the impurities therefrom, second solidifying the same in a porous manner and removing the water therefrom, third suitably adding thereto a quantity of clay, and fourth baking the said clay and mineral wool.

4. The herein-described method of manufacturing a filtering material consisting in first taking a quantity of mineral wool and removing the impurities therefrom, second solidifying the same in a porous manner, third adding thereto a quantity of clay, and fourth baking the said clay and wool.

5. The herein-described method of manufacturing a filteriug material consisting in first taking a quantity of mineral wool and removing the impurities therefrom, second solidifying the same in a porous manner, third adding thereto fifteen to twenty-five per cent. of clay, and fourth baking the said clay and wool.

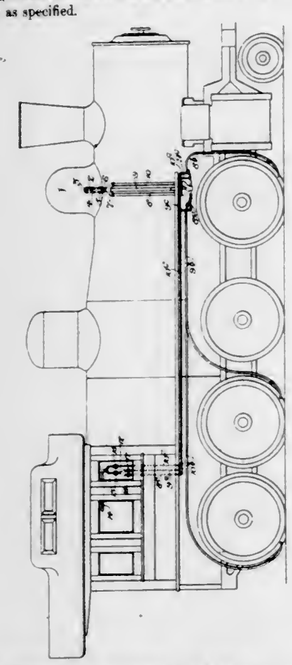
656,553. TRACK-SANDER FOR LOCOMOTIVES. HENRY L. LEACH, Cambridge, Mass., assignor to the American Locomotive Sander Company, Camden, N. J. Filed Aug. 31, 1899. Serial No. 729,021. (No model.)

Claim.—1. The combination in a pneumatic track-sander for locomotives, of a multiple ejector, a series of stand-pipes having a single connection with the sand-box, and so disposed as to maintain a column of sand above each chamber of the ejector so as to prevent blowing back of air into the sand-box when either of the sand-delivery pipes is obstructed, substantially as specified.

2. The combination in a pneumatic track-sander for locomotives, of a multiple ejector having a series of chambers each with cleaning-opening therein, and a single sand-supply pipe having branches communicating with said chambers of the ejector, said single pipe having a plugged opening whereby it may be obstructed and the flow of sand to all of the ejector-chambers thus cut off when it is desired to clean either of the same, substantially as specified.

3. The combination in a pneumatic track-sander for locomotives, of a multiple ejector having delivery-pipes discharging in front of two or more

of the driving-wheels, and in the rear of one or more of the driving-wheels, substantially as specified.



4. The combination in a pneumatic track-sander for locomotives, of an ejector having two chambers each with ejector-nozzle, and sand-delivery pipe, air-supply pipes for each of said nozzles, stop-cocks in each of said pipes, and a single valved connection whereby both of the pipes are placed in communication with the main air-supply pipe, subetantially as specified.

5. The combination in a pneumatic track-sander for locomotives, of an ejector having three chambers each with ejector-nozzle and sand-delivery pipe, the pipes of two of the chambers discharging in front of the driving-wheels of the engine, and that of the other chamber discharging in the rear of one of said wheels, two pipes for supplying air to the nozzles of the forward delivery-chambers, each of said pipes having a stop-cock and both communicating through a single valved pipe with the main air-pipe, and an air-supply pipe for the nozzle of the third ejector-chamber, said pipe being independently valved, subetantially as specified.

6. The combination in a pneumatic track-sander for locomotives, of an ejector structure communicating with the sand-box and having an air-jet nozzle and a sand-delivery pipe, and a check-valve located in the air-pipe behind the nozzle for preventing backflow of air and sand through the nozzle, said check-valve being provided with means for restricting its approach toward the nozzle, subetantially as specified.

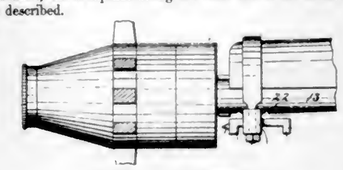
7. The combination in a pneumatic track-sander for locomotives, of an ejector structure having an air-jet nozzle and sand-delivery pipe, with a structure interposed between the nozzle and the air-supply pipe therefor and having contracted passages separated by screens from the air-supply pipe and nozzle, substantially as specified.

8. The combination in a pneumatic track-sander for locomotives, of a sand-delivery pipe having a horizontal run and downwardly-bent discharging end, with the ejector located below the sand-box so as to interpose a column of sand between the two, said ejector having its discharge-nozzle slightly below the horizontal run of the delivery-pipe whereby the latter must be bent downward when it approaches the ejector-casing so as to form a trap adjacent to said casing, substantially as specified.

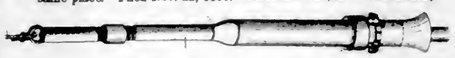
656,554. BOXING FOR VEHICLE-AXLES. GEORGE H. LEATHERS, Mount Vernon, Mo. Filed May 25, 1900. Serial No. 17,995. (No model.)

Claim.—1. An axle-box comprising a skein having a threaded boxing at its inner end, a sand-band surrounding the axle and connected to the boxing on the skein, a clip straddling the axle, the ends of the clip passing through a block, and a key seated on the block and having a point for engaging the sand-band, substantially as described.

2. An axle-box comprising a skein having a boxing at its inner end, a sand-band engaging said boxing, means for preventing the rotation of said sand-band, and a cap-nut fitting the outer end of the skein, substantially as described.



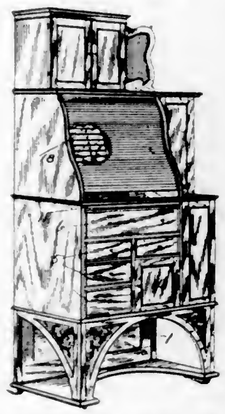
656,555. DRILL-GRAB. GEORGE I. LEWIS, Lawler, Iowa, assignor of two-thirds to Winfield W. Sanborn and Judson S. Stimson, same place. Filed Nov. 22, 1899. Serial No. 737,921. (No model.)



Claim.—1. A drill-grab comprising a tubular body portion having slots, a collar mounted upon the body portion and provided with ears, dogs pivoted to the ears and lying in the slots, a weight slidably mounted upon the body portion and adapted to rest upon the dogs to hold them in the slots, and means for raising and lowering the grab, the lower end of said body portion being adapted for interchangeably receiving terminal portions of various diameters.

2. A drill-grab comprising a tubular body portion having slots, a collar mounted upon the body portion and provided with ears, dogs pivoted to the ears and lying in the slots, a weight slidably mounted upon the body portion and adapted to rest upon the dogs to hold them in the slots, and means for raising and lowering the grab.

656,556. DENTAL CABINET. CHARLES H. LIND, Canton, Ohio assignor to Andrew M. McCarty, Albert Hoeffer, and Adam C. McDowell, same place. Filed Apr. 13, 1900. Serial No. 12,672. (No model.)



Claim.—1. The combination of a base, a section provided with a series of drawers, a pivoted tool-holding section located at one side of the series of drawers, said tool-holding section provided with a convexed face, a section located above the section having the drawers and the pivoted tool-holding section, a sliding case or housing, and independently-sliding drawers located therein, substantially as and for the purpose specified.

2. In a dental cabinet the combination of a series of sections one located above the other, the lower section provided with a sliding leaf located at its upper end, a slidable frame or housing, and independently-sliding drawers, and a roll-cover located as described, substantially as and for the purpose specified.

3. In a dental cabinet a series of sections mounted upon a base and located one above the other, the lower section provided with a pivoted tool-rack located at one side of the section, a sliding leaf located at one side of the pivoted tool-rack and drawers located in the section provided with the leaf, a section located above the section provided with a leaf, a sliding frame carrying a nest or set of independently-slidable drawers, said slidable drawers movable with the housing and a flexible cover, all arranged, substantially as and for the purpose specified.

4. In a dental cabinet the combination of a series of sections, one of said sections provided with a pivoted tool-rack having a convexed face, another of the cabinet-sections provided with a slidable housing and the slidable housing provided with drawers, and the drawers slidable independently one of the other and independent of the housing carrying said drawers, substantially as and for the purpose specified.

656,557. MATCH-BOX. JOHN G. LOCKE, New York, N. Y. Filed June 9, 1900. Serial No. 19,718. (No model.)



Claim.—1. A match-box comprising a central compartment the sides of which are roughened on their outer surfaces; and side compartments formed by the walls of the central compartment and outer sides, each consisting of an upper stationary portion and a lower movable resilient portion roughened on its inner surface.

2. The combination with a match-box consisting of a central compartment and a compartment on either side of said central compartment, of spacing and filling pieces arranged within the side compartment, each of said spacing and filling pieces projecting a suitable distance above the bottom of the box, substantially as described and for the purpose set forth.

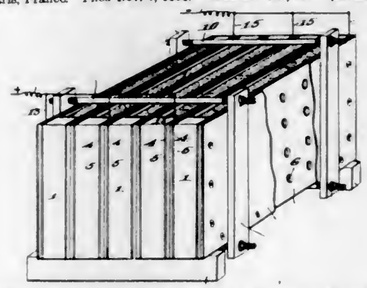
3. A match-box comprising an outer casing formed from a single strip of sheet metal having lateral end projections forming the upper portions of the sides of the box, and side extensions forming the lower movable portions of the sides of the box; in combination with a central compartment secured to the bottom of the box; and filling-pieces between the walls of the central compartment and the lower portions of the sides of the box.

4. A match-box comprising a blank of sheet metal bent to form the bottom, ends and sides of the box, in combination with a central compartment consisting of vertically-corrugated sides the spaces between said corrugated sides and the outer sides of the box forming side compartments.

5. A match-box comprising an outer casing, each of the sides of which consists of a stationary portion and a movable portion, the inner surface of the latter being roughened; in combination with a cover, and vertically-corrugated plates arranged parallel to the outer sides of the box and roughened on their outer surfaces, and filling-pieces arranged between the corrugated plates and the sides of the box.

6. A match-box, comprising a casing divided into two compartments by means of a roughened plate or plates, the sides of the casing each consisting of an upper stationary portion and a lower, movable, resilient portion roughened on its inner surface.

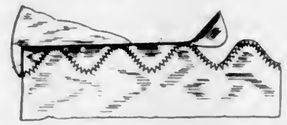
656,558. ELECTROLYTIC APPARATUS. GÉRÔME LOISELET, Paris, France. Filed Nov. 7, 1898. Serial No. 695,783. (No model.)



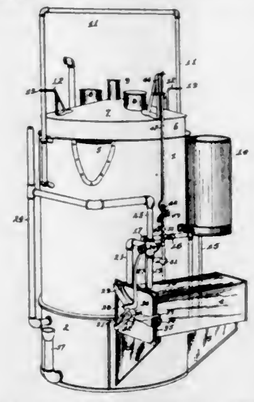
Claim.—In an electrolytic apparatus, the combination of a series of cells arranged side by side, each having its ends and bottom constructed of insulating or non-conducting material and having its sides each made of an inner strip of porous material, and an outer perforated metallic plate, the said strip and the said plate being secured to each other and to said ends and bottom, the adjacent plates of each cell lying in contact with each other without an intervening space, the alternate pairs or sets of plates at one end of the apparatus being connected with the positive pole of an electric generator, and the alternate sets or pairs of plates at the opposite end of the apparatus being connected with the negative pole of the electric generator, the sets or pairs of plates connected to the negative pole of the generator being located between the sets or pairs of plates connected to the positive pole of the generator.

656,559. GARMENT-TRIMMING. RICHARD G. MARSH, New York, N. Y. Filed Jan. 30, 1900. Serial No. 3,357. (No model.)

Claim.—As a new article of manufacture a fabric folded upon itself to form a plait, the folded parts being stitched together by a wave-like line of stitching, the portion between the stitching and the folded edge being removed forming a scalloped edge for the plait outlined by the stitching which serves to hold the plait in position over the body portion of the fabric, substantially as specified.

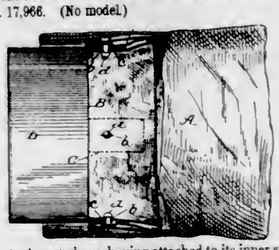


656,560. ACETYLENE-GAS GENERATOR. WILLIAM H. MITCHELL, St. Louis, and WILLIAM A. ARMSTRONG, Doniphan, Mo. Filed Oct. 2, 1899. Serial No. 732,318. (No model.)



Claim.—An acetylene-gas generator having a small water-tank, a suitably-bent seal-pipe leading from said tank, a valve in said pipe, arms integral with said valve, pins 50 carried by said arms, a rod 47 carried by the gasometer, said rod having an angle 48 and a slot 49 which are for the purpose of engaging the pins 50 thereby operating the valve 16 at suitable times as the said rod is elevated or lowered by the gasometer, substantially as specified.

656,561. APPAREL-COAT. DANIEL MURPHY, Richmond, Va., assignor of one-half to Francis J. Reilly, same place. Filed May 25, 1900. Serial No. 17,966. (No model.)



Claim.—1. A coat-sleeve having attached to its inner surface a transverse set of buttons and having also attached to the said sleeve just above the buttons a flap folding down and over said buttons substantially as described.

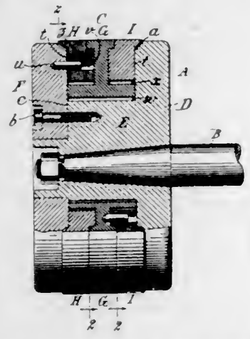
2. A coat-sleeve having attached to its inner surface a series of transversely-arranged buttons, and having also attached to the said sleeve just above the buttons a flap having buttonholes registering with the said buttons and arranged to fold down and over the said buttons substantially as described.

3. A coat-sleeve having attached to its inner surface near its lower end a set of button-retaining seats, detachable buttons retained therein, and a flap with buttonholes registering with said buttons, said flap being attached to the inner lining and folding down over the buttons substantially as and for the purpose described.

4. A coat-sleeve having attached to its inner lining a series of button-retaining seats composed of longitudinal strips stitched to the lining on the three sides, and open on the fourth, and having a buttonhole in the same, and a flap attached to the inner side of the sleeve above the said strips and having buttonholes registering with those of the strips substantially as described.

5. The combination of a cuff having a set of buttonholes along one edge, a coat-sleeve having buttons secured to the interior thereof and fastening to the edges of the cuff, and a flap attached to the inner side of the sleeve above the buttons, and having buttonholes registering with the said buttons and adapted to fold down over the upper edge of the cuff and to cover and retain the same by being fastened to the buttons substantially as and for the purpose described.

656,562. PACKING-RING FOR PISTONS. WILLIAM H. MYERS, New York, N. Y. Filed Dec. 21, 1899. Serial No. 741,113. (No model.)



Claim.—1. The combination with a piston having a peripheral groove, of a plurality of expansive packing-rings mounted in said groove, each having a subdividing-slit staggered in position relatively to that of the adjacent ring, and one having a laterally-extending face and the other having a reciprocal laterally-extending face, said faces engaging and preventing undue expansion of the one relatively to the other in use, and the one ring having a flange at its inner side extending laterally within the other ring, and a shoulder at its outer side overhanging the latter, said rings having a steam-space between the outer side of said flange and the adjacent side of the ring opposite said flange.

2. The combination with a piston having a peripheral groove, of a packing surrounding said piston consisting of a plurality of expansive rings mounted in said groove, each having a subdividing-slit staggered in its position relatively to the like slit of an adjacent ring, one having a shoulder overhanging the other to limit its outward expansion, and having a groove inwardly of such shoulder and the other free to contract independently of that having said shoulder, and having a body loosely entering said groove.

3. In piston-packings, the combination with a piston having a peripheral groove, of a packing-ring in said groove consisting of a plurality of expansive rings each having a subdividing-slit staggered in its position relatively to the like slit of an adjacent ring, the one having a body, an external shoulder, and a bearing-face beyond said shoulder, and the other having a body, an internal shoulder surrounding and engaging the external shoulder of the other for limiting its expansion, a bearing-face beyond said shoulder, and a flange crossing the inner side of said first-mentioned ring, said rings having a steam-space between the outer side of said flange and the inner side of the adjacent ring.

4. In packing for pistons, the combination with a piston having a peripheral groove, of a packing-ring consisting of a ring G having a central body and lateral flanges on its inner side fitting said groove, rings H and I fitting said groove between said body and the opposite sides of said groove respectively, interengaging provisions on said rings limiting relative expansion of said rings H and I respectively, and steam-chambers at the inner sides of said rings for expanding them independently.

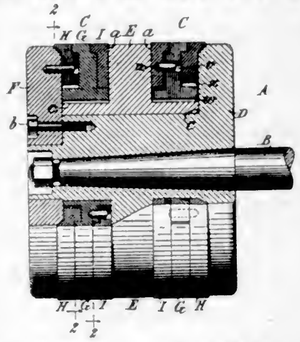
5. In a piston-packing, the combination with a grooved piston, of three expansive rings fitting in the groove thereof, each having a subdividing-slit staggered in its relation to that of another, and having communicating pressure-spaces within them for expanding said rings, the outer ones of said rings each having recesses crossing it laterally at opposite sides of its slit, and a member fitting said recesses, crossing such slit, and preventing outflow through the latter.

6. In packing-rings, a ring G having a narrow central body *e*, a wide projecting flange at each side of said body on its inner side, laterally-projecting inner flanges *h* and *i*, laterally-projecting outer flanges *j* and *k*, and side rings fitting against said central ring inwardly of said flanges *j* and *k* and outwardly of said flanges *h* and *i*, said rings having each a subdividing-slit staggered in its relation to that of an adjacent ring.

7. In piston-packings, the compound ring C consisting of expansive rings G H and I, the ring G having inner and outer projecting flanges, and the rings H and I having bodies fitting against the sides of the ring G and engaging the outer flanges thereon, said rings having outer bearing-faces of approximately-uniform width.

8. In piston-packings, the expansive ring G having body *e*, outer bearing-face *f*, internal shoulders *j k*, and inner flanges *h i*, in combination with expansive rings H and I each having shoulders *n* fitting under said shoulders *j* and *k*, bodies *l* of a width equal to that of the projecting inner flange of said ring G, and each having an outer bearing-face *o* of approximately the width of the bearing-face *f* of said ring G.

656,563. PISTON PACKING-RING. WILLIAM H. MYERS, New York, N. Y. Filed Dec. 21, 1899. Serial No. 741,114. (No model.)



Claim.—1. In packings, the combination with a piston having a peripheral groove, of a packing-ring in said groove consisting of a plurality of expansive rings each having a subdividing slit, that of one ring staggered in position relatively to that of an adjacent ring, one of said rings having a body, a projecting flange, an outer bearing-face, and an inner bearing-face, and the other of said rings having a body fitting against the body of said first-mentioned ring, a shoulder passing under the flange thereof, and a flange passing under and making intimate contact with the inner side thereof, substantially as and for the purpose set forth.

2. In packings, a piston having a peripheral groove, in combination with a packing-ring in said groove consisting of a plurality of split rings, one having a body *e*, a bearing-face *f* staggered relatively thereto, a shoulder *j*, and a projecting flange at its inner side, and the other having a body having a shoulder engaging said shoulder, an outer bearing-face, and an inner face opposite said projecting flange.

3. The combination with a piston having a peripheral groove, of a packing-ring consisting of a plurality of expansive split rings, the intermediate one having a body, and laterally-projecting flanges, and the side ones fitting against opposite sides of said body outwardly of said flange, said rings having respectively outer bearing-faces of approximately-uniform area, and interengaging provisions on two of said rings limiting expansion of one of the side rings relatively to the center ring.

4. For packings, a piston having a peripheral groove, in combination with a packing-ring consisting of three expansive rings, the one having a central body and projecting flanges, and the others fitting against opposite sides of the first, said rings each having a subdividing slit staggered in position relatively to that of the adjacent ring, and two of said rings having each an outer bearing-face staggered relatively to its body.

5. In packings, a piston having a peripheral groove, in combination with a packing-ring consisting of three expansive rings G, H and I, the ring G having a body *e*, outer face *f*, internal shoulder *j*, and inner face *g*, the ring H fitting within the shoulder *j* of the ring G, and having outer face *o* and inner face *m*, and the ring I fitting against the opposite side of the ring G, and having inner face *r* fitting against the adjacent flange of the ring G.

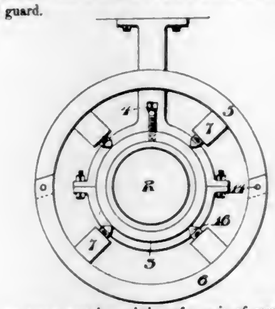
6. For expansive packings, the improved ring G having body *e*, flanges *h i*, bearing-face *f*, and internal shoulder *j*, and rings fitting against the opposite sides of said ring G.

7. For packings, the improved ring H having bearing-face *o*, shoulder *n*, flat side walls, and inner face *m* adapted to fit within a reciprocal ring, in combination with such reciprocal ring.

8. The improved ring-packing consisting of the split rings G, H and I, the ring G having lateral flanges *h* and *i*, and the rings H and I fitting against opposite sides of the ring G outwardly of said flanges, and means limiting the outward expansion of one of said side rings relatively to said ring G.

656,564. COLLAR FOR SHAFTING AND PULLEYS. WILLIAM MCCABE, Pittsburg, Pa. Filed Apr. 2, 1900. Serial No. 11,112. (No model.)

Claim.—1. A set-screw guard consisting of a pair of semicircular sections suitably connected together and adapted to surround a stop-collar and its screws, a series of sleeves formed integral with the inner face of said sections, and means arranged in said sleeves for adjusting the position of said guard.



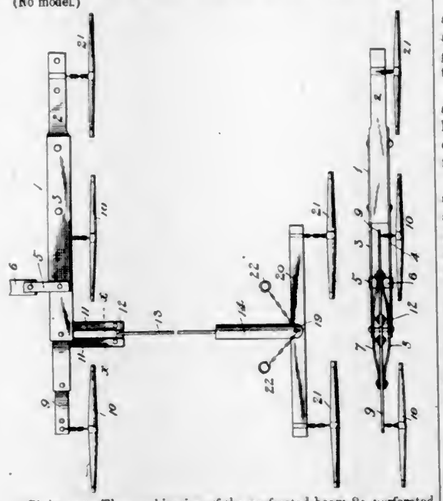
2. A set-screw guard consisting of a pair of semicircular sections suitably connected together and adapted to surround a stop-collar and its set-screws, a series of sleeves formed integral with the inner face of said sections, and a set-screw arranged in each of said sleeves and adapted to engage the stop-collar for adjusting the position of said guard.

3. A set-screw guard consisting of a pair of semicircular sections one of which is provided with bifurcated ends and the other of which has a pair of openings, means for securing said sections together, and means carried by said sections for adjusting the position of said guard.

4. A set-screw guard consisting of a pair of semicircular sections one of which is provided with bifurcated ends and the other of which has a pair of openings, means for securing said sections together, a series of sleeves formed integral with the inner face of said sections, and means arranged in said sleeves for adjusting the position of said guard.

5. A set-screw guard consisting of a pair of semicircular sections one of which is provided with bifurcated ends and the other of which has a pair of openings, means for securing said sections together, a series of sleeves formed integral with the inner face of said sections, and a set-screw arranged in each of said sleeves and adapted to engage the stop-collar for adjusting the position of said guard.

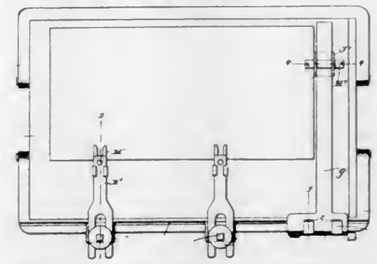
656,565. DRAFT-EVENER FOR GANG-PLOWS. RICHARD C MCCORMICK, Graceville, Minn. Filed Jan. 24, 1900. Serial No. 2,653. (No model.)



Claim.—1. The combination of the perforated beam 2; perforated plates 3 and 4, secured to the upper and lower faces of said beam, strips 5 and 6, pivoted near the right-hand ends of said strips; the doubletree, consisting of the upper and lower bowed pieces 7 and 8, pivoted between the right-hand ends of said strips 3 and 4, levers 9, one pivoted between each end of said doubletree, strips 11, one secured to each of the inner ends of said levers; perforated cross-piece 12, pivoted between the front ends of said strips 11; tube 14, provided with a short tube 17, and perforated lips 19; rod 13, one end working in the perforation of strip 12 and the other in the tube 14; washer 15, and nut 16, working on the front end of said tube; spiral spring 18, working around rod 13 and in tube 14, and between washer 15 and short tube 17; doubletree 20, pivoted between lips 19, the beam 1, levers 9 and doubletree 20, adapted to carry singletrees, substantially as shown and described and for the purposes set forth.

2. The combination of the perforated beam 2; perforated plates 3 and 4, secured to the upper and lower faces of said beam, strips 5 and 6, pivoted near the right-hand ends of said strips; the doubletree, consisting of the upper and lower plates 7 and 8, pivoted between the right-hand ends of said strips 3 and 4; levers 9, one pivoted between each end of said doubletree, singletrees 10, one secured to the outer ends of said levers 9; strips 11, one secured to each of the inner ends of said levers; perforated cross-piece 12, pivoted between the front ends of said strips 11; tube 14, provided with a short tube 17 and perforated lips 19; rod 13, one end working in the perforation of strip 12 and the other in the tube 14; washer 15 and nut 16, working on the front end of said tube; spiral spring 18, working around rod 13 and in tube 14, and between washer 15 and short tube 17; doubletree 20, pivoted between lips 19, singletrees 21, one secured to each end of said doubletree 20 and breast-chains 22, secured to the upper faces of one of the lips 19, substantially as shown and described and for the purposes set forth.

656,566. TYMPAN-GAGE. BERNARD MCGINTY, Doylestown, Pa. Filed Feb. 15, 1900. Serial No. 5,362. (No model.)



Claim.—1. As an improved article of manufacture, a tympan-gage comprising an arm formed of resilient metal and having a fixed stop at its inner side; the said arm being slitted transversely and longitudinally whereby it is provided at one edge with a spring-tongue, substantially as specified.

2. As an improved article of manufacture, a tympan-gage having an arm, a stop slidable on said arm, and a spring-tongue arranged in the stop and bearing on the arm of the gage whereby it is enabled to serve as a gage and also to hold the stop against casual movement thereon, substantially as specified.

3. As an improved article of manufacture, a tympan-gage having an arm, an adjustable stop arranged at the inner side of the arm and having lateral, apertured ears, and an adjustable spring-tongue arranged in the apertured ears of the stop and bearing on the gage-arm, substantially as specified.

4. As an improved article of manufacture, a tympan-gage having a stop-lug J on the inner side of its arm, at a point adjacent to the free end and intermediate of the width thereof, and a slidable tongue comprising a plate having lips grasping the edges of the arm, and also having a resilient, bifurcated portion straddling the stop-lug of the arm and adapted to extend beyond the end of said arm, substantially as specified.

5. In a tympan-gage, the combination with a platen, and a platen-band having longitudinal grooves in the exposed sides of its cross-bar; of a gage having a clamp comprising a member provided with a projection adapted to enter one of the grooves of the platen, and a second member pivotally connected to the first-named member, and having a projection adapted to enter the other groove of the platen-band, substantially as specified.

6. In a tympan-gage, the combination with a platen, and a platen-band having longitudinal grooves in the exposed sides of its cross-bar; of a gage, and a clamp comprising an angular member fixed to the gage and having an opening, and a projection adapted to enter one of the grooves of the platen-band, and a second member pivotally connected to the angular member and having a projection adapted to work through the opening of said angular member and enter the other groove of the platen-band, substantially as and for the purpose set forth.

656,567. BICYCLE-SEAT-POST CLAMP. JOEL B. L. MCKENZIE, Rahway, N. J. Filed Feb. 6, 1900. Serial No. 4,252. (No model.)

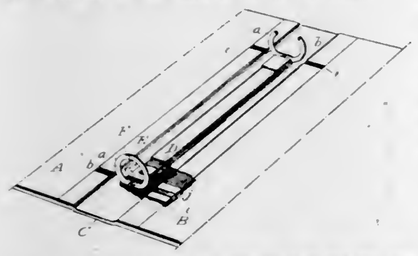
Claim.—1. In a seat-post clamp, the combination with a hollow

block having an interior shoulder provided with a lug, of a split ring disposed upon the shoulder and having a recess with which the lug is engaged to hold the ring from rotation, the upper portion of the ring being cylindrical and the lower portion thereof frusto-conical and the ring having a serrated inner face, a follower within the block and adapted to receive the frusto-conical portion of the ring to contract the latter, the split of the ring being disposed spirally from the upper edge thereof to the lower edge, and means engaged with the block for operating the follower.



2. In a seat-post clamp, the combination with a hollow block having an interior shoulder provided with a lug, of a split ring disposed upon the shoulder and having a recess with which the lug is engaged to hold the ring from rotation, the upper portion of the ring being cylindrical and the lower portion thereof frusto-conical and the ring having a serrated inner face, and a follower movable in the block and adapted to receive and impinge the frusto-conical portion of the ring to contract the latter, the split of the ring being spirally disposed from the upper euge thereof in the direction of rotation of the follower to compress the ring.

656,568. BINDER FOR LOOSE SHEETS. TRUMAN NOBLE, Ithaca, N. Y. Filed Sept. 30, 1899. Serial No. 732,194. (No model.)



Claim.—1. A loose-sheet binder, comprising a flat back and lids or covers flexibly connected therewith, and separable bails or impaling-wires carried by the back and wholly nnconnected with the lids or covers, said bails when closed presenting a retaining portion as great in extent on either side as the portion opposite the back, to permit the entire package of leaves to be carried toward and laid flat upon either lid or cover at will when the lids are opened apart or folded back.

2. A binder for loose sheets, having a rigid back, and lids or covers flexibly connected to said back and in common plane therewith on their inner and outer faces when opened ont flat; and bails or impaling devices carried by the back and unaffected by the opening of the lids or covers into plane with the back, but adapted to be separated at will.

3. In a binder for loose sheets, the combination of a back; lids or covers flexibly connected therewith; a filling-strip applied to the back and serving to bring its inner face into plane with the lids or covers; and bails or impaling-wires presenting when closed a retaining portion as great in extent on either side as the portion opposite the back, whereby the binder is adapted to permit the entire package of sheets or leaves to be thrown into flat-surface contact throughout with the back and either lid at will, when the binder is opened.

4. In a binder for loose sheets, the combination of a back; lids or covers hinged to said back; a filling-piece applied to the back and serving to bring its inner face into plane with the inner faces of the lids or covers; and bails or impaling devices carried by the back and wholly independent of the lids or covers, said bails presenting when closed a retaining portion as great in extent on either side as the portion opposite the back, whereby all the contained sheets or leaves may be thrown into flat-surface contact with either lid at will when the binder is opened.

5. In a binder for loose sheets, the combination of a back; bails or impaling devices carried thereby; and lids or covers flexibly connected to the back and recessed to permit the bails to extend into them beyond the plane or face of the main body of the cover, substantially as described and shown.

6. In a binder for loose sheets, the combination of a rigid back; lids or covers flexibly connected thereto; a filling-piece applied to the back to bring its inner face into plane with the lids or covers; and curved bails or loops carried by said filling-strip and each comprising two members adapted to be engaged and disengaged at their proximate ends, said bails when closed presenting a retaining portion as great in extent on either side as the portion opposite the back, to permit the entire package of leaves or sheets held by them to be carried into flat-surface contact with either lid at will, substantially as set forth.

7. In a binder for loose sheets, the combination of two lids or covers and an intervening back to which said covers are hinged having its inner and outer faces flush or in plane with the corresponding faces of the lids or covers when the latter are opened out flat; bails or impaling devices carried by the back and wholly independent of the lids or covers; and recesses formed in the lids or covers to accommodate the bails and permit the impaled leaves or sheets to come into surface contact with the lids or covers throughout.

8. In combination with the back C and lids or covers A, B, flexibly connected therewith and provided with recesses *i*, metal linings *j* applied to said recesses; and bails or impaling devices carried wholly by the back-section C and adapted to enter said recesses when the binder is closed and to withdraw therefrom when the binder is opened, without thereby opening the bails or impaling devices.

9. In a binder, the combination of a back; lids or covers flexibly connected thereto; clip or plate E carried by the back and having an upturned end; and interlocking impaling members *a*, *b*, independently pivoted to the upturned end of said clip E, the bail formed by said interlocking members presenting a retaining portion as great in extent on either side as the portion opposite the back, substantially as described and shown, whereby the leaves impaled thereon are adapted to lie flat upon the back and lids when the latter are opened outward.

10. The herein-described impaling or binding device, comprising a clip or plate E having an upturned end and provided with ears or spurs *g*, and wires or members *a*, *b*, independently pivoted to the upturned end of the clip and having their ends adapted to interlock, substantially as described and shown.

11. In a binder for loose sheets or leaves, the combination of a metal clip or plate having an upturned end; two curved bails each slotted and independently straddling said upturned end, and independently pivoted thereto, said bails being adapted to receive and hold loose sheets or leaves and to have their free ends engaged one with the other, substantially as and for the purpose set forth.

12. A binder comprising a back-section C provided with impaling or holding devices capable of movement and of separation independent of the back to permit the sheets to be divided or to be carried wholly to either side of the point of separation; and lids or covers flexibly connected with the back-section, but wholly independent of the impaling devices and provided with recesses into which the latter may enter when the cover is closed and from which they may withdraw without separation or opening.

656,569. EDUCATIONAL SYSTEM. ALBERT E. OSBORNE, New York, N. Y., assignor to Underwood & Underwood, same place. Filed Dec. 6, 1899. Serial No. 739,346. (No model.)

Claim.—1. A map having thereon provisions indicating which portion of the country may be included in a single view, substantially as set forth.

2. A map having thereon provisions indicating a point of view and which portion of the country is visible from such point, substantially as set forth.

3. A map having thereon provisions indicating which portions of the country may be included in a single view and also the point of observation for such view, substantially as set forth.

4. A map having thereon provisions indicating which portion of the country may be included in a single view, the point of observation, and the direction therefrom, of such view, substantially as set forth.

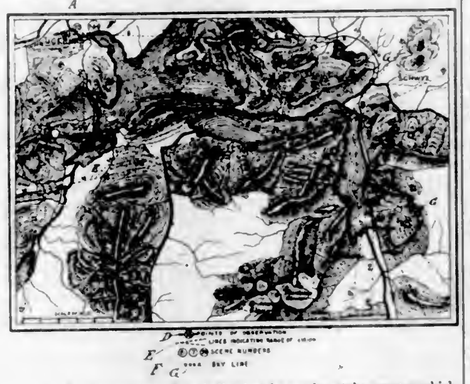
5. A map having thereon provisions indicating which portion of the country may be included in a single view, and the point of observation, the direction, and the extent of such view, substantially as set forth.

6. A map containing lines indicating the portion of the country which may be included in a single view, substantially as set forth.

7. A map containing a pair of lines indicating the portion of the country which may be included in a single view, substantially as set forth.

8. A map containing a pair of converging lines indicating the portion of the country which may be included in a single view, substantially as set forth.

A



D POINTS OF OBSERVATION
DIVERGING LINES INDICATING RANGE OF VISION
E SCENE NUMBERS
F SKY LINE
G

9. A map containing lines indicating the portion of the country which may be included in a single view, and an additional indicator of the point of observation of such view, substantially as set forth.

10. A map containing a pair of converging lines indicating the portion of the country which may be included in a single view, and an additional indicator of the point of observation for such view, substantially as set forth.

11. A graphical index for use in combination with descriptive matter, consisting of a map, provisions on said map for indicating which portions may be included in single views and reference characters on said indicators, substantially as set forth.

12. A graphical index, for use in combination with descriptive matter, consisting of a map, provisions on said map for indicating which portions may be included in single views and also the points of observation of said views, and corresponding reference characters on corresponding view-indicators and point-of-observation indicators, substantially as set forth.

13. In combination, matter descriptive of a subject, and a map of the same subject, said map containing provisions for indicating which portions may be included in single views, and corresponding reference characters on the descriptive matter and on the map indicating the views described in certain parts of the descriptive matter, substantially as set forth.

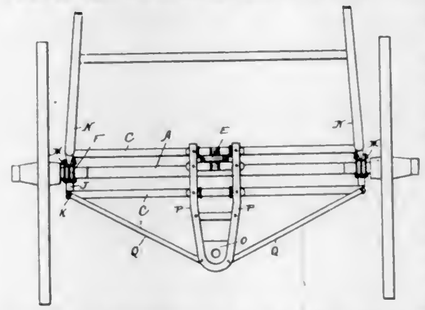
14. In combination, a set of "trip-pictures," a map of the country covered thereby, and corresponding provisions on said map and pictures indicating which portion is included in each of the several pictures, substantially as set forth.

15. In combination, a set of "trip-pictures," a map of the country covered thereby, and corresponding provisions on said map and pictures indicating which portions are included and the points of view in the several pictures, substantially as set forth.

16. A map having provisions indicating the portions constituting the sky-lines of views in predetermined directions.

17. The combination with a view of a country, of a map of such country having means indicating the sky-lines of such view.

656,570. SPRING-WAGON GEAR. SWEN F. PARSON, De Kalb, Ill., assignor to Madison D. Shipman, Charles E. Bradt, and Samuel R. Bradt, same place. Filed Nov. 8, 1899. Serial No. 736,297. (No model.)



Claim.—1. The combination with the springs C C and axle A, of heads J pivotally supported under the axle and swinging toward and from the axle, and each attached to the ends of both springs, substantially as specified.

2. The combination with the axle and accompanying springs arranged parallel to and each side of the axle, of heads J pivotally supported under the axle one at each end, and each supporting the ends of both springs, substantially as specified.

3. The combination with the springs, the axle and the swinging heads supporting the springs from the axle, of spring-braces, substantially as shown.

4. The combination with the springs, the axle and the swinging heads supporting the springs from the axle, of spring-braces bent in substantial conformity to the bend of the springs, substantially as specified.

5. In a wagon, the springs C and D supported upon swinging heads J, and the axles to which the heads are attached, in combination with spring-braces connecting said heads to the king-bolt and body, substantially as specified.

6. The combination with the axle A, springs C C, and swinging heads J supporting the springs at their ends, of the king-bolt and braces connecting said bolt to said heads, substantially as specified.

7. The combination with the body of the wagon, and axle and a spring at each side of the axle, of swinging heads J attached to the axle and supporting the springs at their ends, and spring-braces connecting said heads with the body, substantially as specified.

8. The combination with the springs and axle, of means for supporting the springs from the axle, consisting of the shackles secured to the axle, and the swinging heads pivoted to said shackles under the axle and attached to the ends of the springs, substantially as specified.

9. The combination with the axle, the springs, the pivoted hanger to which the springs are attached, and the thills, of shackles F supported upon and rigidly attached to the axle, and serving as means for the attachment to the axle of both hangers and the thills, substantially as specified.

10. The combination of the axle, the shackles engaging the axles and having an extension on each side below the axle provided with means for securing the swinging heads as J to said axle, and the springs attached to said heads, substantially as specified.

11. The combination with the axle, of a swinging head as J, having supporting-arms extending at right angles to and in a plane below the axle, and a shackle secured to the axle, to which shackle said head is hung, substantially as set forth.

12. The combination of the cranked axle, the shackles secured to each end of the axle, and the swinging heads supported by the shackles, in a plane below the axle, with duplex springs supported on the swinging heads, and the body supported on the spring, substantially as specified.

656,571. CONTROLLER FOR ELECTRIC MOTORS. THOMAS S. PERKINS, Idlewood, Pa., assignor to the Westinghouse Electric and Manufacturing Company, of Pennsylvania. Filed Jan. 13, 1900. Serial No. 1,365. (No model.)

Claim.—1. In a controller for electric motors, the combination with a movable member having suitably arranged and connected contact-pieces, of coöperating contact-fingers, one or more electromagnets, and arc-shields provided with magnetic-flux conductors, which project between adjacent fingers and into proximity to the pole-pieces of the magnet or magnets.

2. In a controller for electric motors, the combination with a movable member having suitably arranged and connected contact-pieces, of cooperating contact-fingers, one or more electromagnets, and arc-shields having magnetic-flux conductors embedded therein, which project between adjacent fingers and into proximity to the pole-pieces of the magnet or magnets.

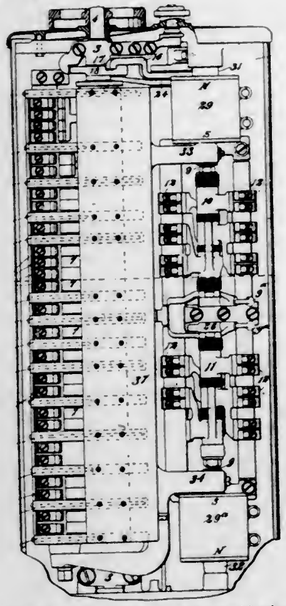
3. In a controller for electric motors, the combination with a movable member having suitably arranged and connected contact-pieces, of cooperating contact-fingers, one or more electromagnets having a plurality of open magnetic circuits, and arc-shields having embedded magnetic-flux conductors located in such circuits, in position to direct the flux transversely across the paths of the arcs and longitudinally of the controller-drum.

4. In a controller for electric motors, the combination with a movable member having suitably arranged and connected contact-pieces, of cooperating contact-fingers, one or more electromagnets, and arc-shields provided with magnetic-flux conductors which project between adjacent fingers and alternately into proximity to opposite pole-pieces of the magnet or magnets.

5. In a controller for electric motors, the combination with a movable member having suitably arranged and connected contact-pieces, of cooperating contact-fingers, one or more electromagnets, and arc-shields alternately provided with long and short iron plates, which respectively project from points between adjacent fingers to opposite pole-pieces of the magnet or magnets.

6. In a controller for electric motors the combination with a movable member having suitably arranged and connected contact-pieces, of co-

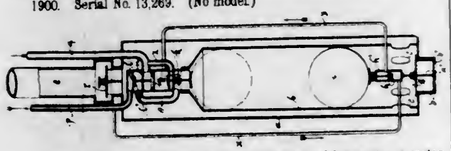
operating fingers, one or more electromagnets, and arc-shields of refractory, non-conducting material provided with embedded flux-conductors which project between adjacent fingers and alternately into proximity to opposite pole-pieces of said magnet or magnets.



7. In a controller for electric motors, the combination with a movable member having suitably arranged and connected contact-pieces, of cooperating contact-fingers, one or more electromagnets having pole-pieces which extend substantially the length of the movable member of the controller, and arc-shields projecting between adjacent fingers and having embedded therein iron plates that alternately project into proximity to opposite pole-pieces of said magnet or magnets.

8. In a controller for electric motors, the combination with a drum and cooperating contact-fingers, of one or more electromagnets having pole-pieces extending longitudinally of the drum and arc-shields projecting between adjacent fingers and provided with magnetic-flux conductors which alternately project from points adjacent to the contact portions of the fingers to opposite pole-pieces of the magnet or magnets, whereby the arc-intercepting paths of the flux are longitudinal of the drum and the arcs are blown outward and away from the adjacent parts of the controller.

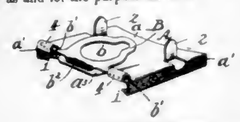
656,572. APPARATUS FOR RAISING WATER BY COMPRESSED AIR. JULIUS PETERMANN, Crimmitzschau, Germany. Filed Apr. 17, 1900. Serial No. 13,269. (No model.)



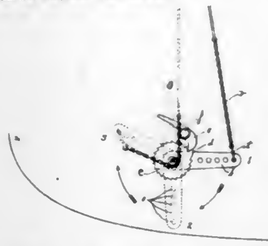
Claim.—In combination in an apparatus for raising water, a water-chamber, a discharge-pipe for the water leading therefrom, air inlet and outlet pipes *p*, *q*, a combined inlet and outlet valve *l'* having a piston and controlling the passage of the air through both of said pipes, a second valve *k* for controlling the position of the valve *l'*, an air-pipe leading to the space between the piston of the valve *l'* and the valve *k*, an outlet *z* leading from said space and controlled by the valve *k* said outlet *z* connecting with the outlet-pipe *q*, and a pipe *o* connecting the space between the air-inlet valve *l'* and the air-outlet pipe with the water-chamber, substantially as described.

656,573. NECKTIE-FASTENER. ALBERT L. SHANTZ, Reading, Pa. Filed Feb. 27, 1900. Serial No. 6,729. (No model.)

Claim.—A necktie-fastener to be secured between the bow, and the pasteboard base of such tie, comprising one plate *a*, of resilient sheet metal, formed with tines 2, prongs a^2, tongue a^3, wings *a'* and serrated edges 1, all integral parts of said plate, the wings *a'*, and the serrated edges 1, bent so that the said serrated edges will be embedded in the loop of said bow, the tines 2, bent, passed through said pasteboard base and clenched as specified, to secure said plate to the necktie, and prongs a^2 bent to form tubular hinge-sections 4, and another plate B, also of resilient sheet metal, formed with the opening *b*, and the prongs *b'*, and tongue b^2, both integral with said plate B, the tongue b^2 bent to form a check-spring resting on the tongue a^3, and said plate B, pivotally connected to the said plate *a*, by the prongs *b'*, and the tubular hinge-sections 4, and said plate B, arranged to lie between, said necktie, and a shirt-collar, to engage a collar-button with the opening *b*, and hold said necktie in place, all substantially as and for the purpose set forth.



656,574. BRAKE. HUGH H. ABERNATHY, Chicago, Ill., assignor of one-half to L. P. Ingersoll, New York, N. Y. Filed Nov. 29, 1899. Serial No. 738,676. (No model.)



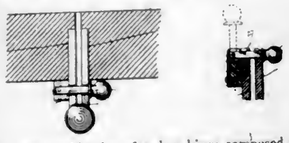
Claim.—1. In a winding device, the combination of a revolving spindle or drum, an arm projecting from the surface of said spindle or drum a flexible connection adjustably attached to said projecting arm, a ratchet-wheel having an enlarged tooth *d*, said ratchet-wheel being so attached to said spindle that when said enlarged tooth is in engagement with its dog *e* the projecting arm *b* shall make any desired angle to the direction of the required application of force, substantially as described.

2. In a winding device, the combination of a revolving spindle or drum, an arm projecting from the surface of said spindle or drum, a flexible connection attached to said projecting arm, a ratchet-wheel with an enlarged tooth suitably attached to said spindle, a dog engaging with said ratchet-wheel, said dog being held in desired position by a spring *g* substantially as described.

3. In a braking device, the combination of a hand-crank, a brake-staff, a projecting arm attached near the lower end of said staff, a flexible connection adjustably attached to said arm, a ratchet-wheel with an enlarged tooth suitably attached to said staff, so that when enlarged tooth is in engagement with its dog, the said attached arm shall make any desired angle with the line of required application of force, substantially as described.

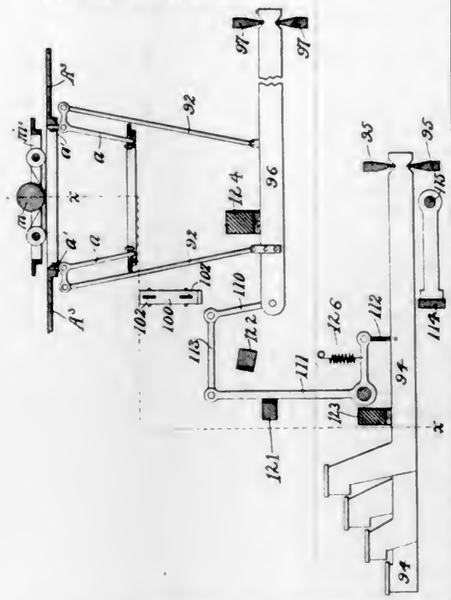
4. In a braking device, the combination of a hand-crank, a brake-staff, a pinion attached to the lower end of said staff, a gear-wheel engaging in said pinion, a spindle supporting said gear-wheel, a projecting arm attached to said spindle, a flexible connection adjustably attached to said arm, a ratchet-wheel having an enlarged tooth mounted upon said spindle in such a manner that when a dog engages with said enlarged tooth, the attached arm shall make any desired constant angle with the line of required application of force, substantially as described.

656,575. HINGE-LOCK. HESTER M. BAYLY, Denver, Colo. Filed Dec. 15, 1899. Serial No. 740,484. (No model.)



Claim.—The combination of a door-hinge composed of two plates connected by a hinge-pin, the said plates being provided with notches arranged to register when the door is closed, a dog pivotally mounted on one hinge-plate and adapted to engage the registering notches of both plates, and a leaf-spring engaging the extremity of the dog and having a tendency to hold it in either the locking or unlocked position.

656,576. TYPE-WRITING MACHINE. THADDEUS CAHILL, New York, N. Y., assignor to himself, Amos J. Cummings, George F. Cahill, Arthur T. Cahill, and E. Hilton Jackson, trustees. Original application filed Jan. 4, 1896, Serial No. 574,359. Divided and this application filed Aug. 3, 1896. Serial No. 601,520. (No model.)



Claim.—1. In combination in a type-writing machine having a main keyboard, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a single motor device common to said type-bars for giving movement to said type-bars from their normal positions to the printing-center, each as required; said motor device being normally inactive and said type-bars being normally disconnected therefrom; (*c*) keys of said main keyboard, for controlling with a single action the type-bars aforesaid, each as required; (*d*) means controlled by said keys acting, when a key is depressed, to connect the appropriate type-bar with the motor device aforesaid so that it can receive movement therefrom, and also operating to bring said motor device into action so that it impels said type-bar as aforesaid.

2. In combination in a type-writing machine, (*a*) a plurality of type-bars, striking to a common printing-center; (*b*) a motor device, common to said type-bars, for giving movement to said type-bars, each as required; said motor device being normally inactive and said type-bars being normally disconnected therefrom; (*c*) keys, at the keyboard of said type-writing machine, corresponding to the type-bars aforesaid, a key for each of the type-bars actuated by the motor device aforesaid; and (*d*) means, controlled by said keys, acting, when a key is depressed, to connect the corresponding type-bar with the motor device aforesaid, so that it can receive movement therefrom, and also operating to bring said motor device into action, so that it impels said type-bar, throwing the type carried by said type-bar from its normal position toward the printing-center.

3. In combination in a type-writing machine or other similar instrument, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a motor device common to said type-bars, for actuating said type-bars, each as required; said motor device being normally at rest, and said type-bars being normally disconnected therefrom; (*c*) keys, corresponding to the type-bars aforesaid, a key for each of the type-bars that is actuated by the motor device aforesaid; (*d*) mechanical connections intermediate the keys aforesaid and the type-bars aforesaid, whereby each key, when depressed, brings the corresponding type-bar into relation with the motor device aforesaid, to receive movement therefrom; said keys being connected to control said motor device; whereby, when a key is depressed, the corresponding type-bar is actuated and the type carried by said type-bar thrown from its normal position to the printing-center by a force other than that exerted by the operator upon the key; the touch made to be light, and the strength of the printing made to be independent of the pressure exerted by the operator upon the key.

4. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a motor device common to said type-bars, for giving movement to said type-bars, each as required; (*c*) movement-receiving members, suitably connected with said type-bars, (*d*) keys corresponding to the movement-receiving members aforesaid, a key for each movement-receiving member; said keys being each connected with the movement-receiving member to which it corresponds, and giving movement thereto in such manner that it actuates always that same movement-receiving member, to bring said movement-receiving member when said key with which it is connected is depressed, into relation with the motor device aforesaid, to receive movement therefrom; each of said keys serving also, when depressed, to bring the motor aforesaid into action, so that it actuates the type-bar corresponding to said key depressed.

5. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a motor device common to said type-bars, for giving movement to said type-bars, each as required; said motor device being normally at rest and said type-bars being normally disconnected therefrom; (*c*) movement-receiving members suitably connected with the type-bars aforesaid; (*d*) keys at the keyboard of said type-writing machine, corresponding to said movement-receiving members; (*e*) a motor-controlling device, common to a plurality of the keys aforesaid; each of said keys acting, when depressed, to bring the corresponding movement-receiving member into relation with the motor aforesaid, to receive movement therefrom; said key acting also, when depressed, to control the motor-controlling device aforesaid; said motor-controlling device serving, when one of the keys controlling it has been depressed, and is at rest in its depressed position, to bring the motor aforesaid into action; whereby, when a key is depressed, the corresponding type-bar is actuated and the type thrown from its normal position toward the printing-center by a force other than that exerted by the operator upon the key; the touch made to be light, and the strength of the printing made to be independent of the pressure exerted by the operator upon the key.

6. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a motor device common to said type-bars, for actuating said type-bars, each as required; said motor device being normally inactive, and said type-bars being normally disconnected therefrom; (*c*) swinging, movement-receiving members; (*d*) pivotal connections between said members and said type-bars; (*e*) keys for controlling the swinging movement-receiving members aforesaid to bring said members each as required, into relation with the motor device aforesaid, to receive movement therefrom; and (*f*) means, controlled by the keys aforesaid, acting, when a key is depressed, to bring the motor aforesaid into action, so that it gives movement to the swinging movement-receiving member controlled by the key depressed, thereby to actuate the corresponding type-bar.

7. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a single motor for actuating said type-bars, each as required; (*c*) a pivoted movement-receiving member for each type-bar, suitably connected with said type-bar and serving to receive movement from the motor aforesaid; said member being normally disconnected from said motor; (*d*) keys corresponding to the type-bars aforesaid and each acting, when depressed, to give movement to the movement-receiving member connected with the type-bar to which said key corresponds, to throw said movement-receiving member into operative relation with the motor aforesaid to receive movement therefrom; and (*e*) a motor-controlling device, common to a plurality of the keys aforesaid, and operated by them, each key acting, when depressed, upon said motor-controlling device to bring the motor aforesaid into action, for the impelling of the corresponding type-bar.

8. In combination in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys, corresponding to said type-bars, and equal in number thereto; (*c*) a single motor device, common to a plurality of the type-bars aforesaid, for actuating said type-bars, each as required; said motor device being normally inactive, and said type-bars being normally disconnected therefrom; (*d*) means, controlled by the keys, corresponding to the type-bars to which the motor device aforesaid is common, serving when any of said keys is depressed, to connect the corresponding type-bar with the motor device aforesaid, and to bring said motor device into action, so that it impels said type-bar, throwing the type carried by said type-bar from its normal position to the printing-center.

9. A type-writing machine, including in combination, (*a*) an alphabet of type-bars, striking to a common printing-center; (*b*) keys, corresponding to said type-bars, and equal in number thereto; (*c*) a single motor device for actuating a plurality of said type-bars, said motor device being normally inactive and said type-bars being normally disconnected from said motor device; (*d*) devices, corresponding to the type-bars actuated by the motor device aforesaid, a device for each such type-bar, operated by the corresponding one of the keys aforesaid, for bringing said

type-bar into operative relation with the motor device aforesaid when said key is depressed; and (*e*) means, operating when a key corresponding to one of the type-bars actuated by the motor device aforesaid is depressed, to bring said motor device into action so that it impels the type-bar corresponding to the key depressed, throwing the type carried by said type-bar from its normal position to the printing-center, whereby the printing is effected by means of a force other than that applied by the operator to the key, and the strength of the printing made to be independent of the force exerted by the operator upon the key.

10. A type-writing machine, including in combination, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys, corresponding to said type-bars, a key for each type-bar; (*c*) a single motor device for actuating a plurality of said type-bars, each type-bar as required; said motor device being normally inactive and said type-bars being normally disconnected therefrom; (*d*) movement-receiving members connected with the type-bars that are actuated by the motor device aforesaid, a movement-receiving member for each such type-bar; and (*e*) a controlling device for the motor aforesaid, common to a plurality of the keys aforesaid and operated thereby; each of the keys that operates said motor-controlling device acting, when depressed, both to control the movement-receiving member connected with the type-bar corresponding to said key to bring said movement-receiving member into relation with the motor device aforesaid to receive movement therefrom, and also to operate the motor-controlling device aforesaid to bring the motor aforesaid into action, so that it gives movement to said movement-receiving member and the corresponding type-bar; whereby, when a key is depressed, the type-bar corresponding thereto is actuated, and the type thrown from its normal position to the printing-center by means of a force other than that exerted by the operator upon the key; the touch made to be light, and the strength of the printing made to be independent of the force exerted by the operator upon the key.

11. In combination, in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys, equal in number to said type-bars, a key for each type-bar; (*c*) a single motor, common to the alphabet of type-bars aforesaid, for actuating all said type-bars, to throw said type-bars each as required, from its normal position to the printing-center; said motor device being normally inactive, and said type-bars being normally disconnected therefrom; and (*d*) a single motor-controlling device, operated by all the keys aforesaid, each key acting, when depressed, upon said motor-controlling device to bring the motor aforesaid into action for the impelling of the corresponding type-bar.

12. In combination, in a type-writing machine, (*a*) keys, corresponding to the letters of the alphabet, a key for each letter; (*b*) type-bars, corresponding to said keys; said type-bars striking to a common printing-center; (*c*) a single motor device, common to said keys and type-bars, for actuating all said type-bars, each as required, to throw the type from its normal position toward the printing-center; said motor device being normally inactive; (*d*) movement-receiving members, suitably connected with the type-bars aforesaid, a movement-receiving member for each type-bar; said movement-receiving members serving each to receive movement from the moter device aforesaid for the impelling of the type-bar with which it is connected; said movement-receiving members being normally disconnected from the motor device aforesaid; each of the keys aforesaid serving when depressed, to bring the movement-receiving member connected with the corresponding type-bar, into operative relation with the motor aforesaid, to receive movement therefrom; and (*e*) a motor-controlling device, common to a plurality of the keys aforesaid, and operating, when any of said keys is depressed, to bring the motor aforesaid into action so that it gives movement to the movement-receiving member controlled by the key depressed, thereby to actuate the corresponding type-bar.

13. In combination, in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys, equal in number to said type-bars; (*c*) a single motor for actuating all said type-bars, to throw said type-bars, each as required, from its normal position toward the printing-center; said motor being normally inactive and said type-bars being normally disconnected therefrom; (*d*) devices corresponding to said type-bars, a device for each type-bar, actuated by the corresponding key, for bringing said type-bar into operative relation with the motor aforesaid to receive movement therefrom; and (*e*) a single frame, operated by all the keys aforesaid; said frame being connected to control the motor aforesaid, and acting when a key is depressed, to bring the motor aforesaid into action for the impelling of the corresponding type-bar.

14. In combination, in a type-writing machine, (*a*) a plurality of type-bars, striking to a common printing-center; (*b*) a vibratory frame, for giving movement to said type-bars, to throw said type-bars each as required, from their normal positions to their printing-center; said frame being normally at rest, and said type-bars being normally disconnected therefrom; (*c*) keys at the keyboard of said type-writing machine, equal in number to the type-bars actuated by the vibratory frame aforesaid and corresponding to said type-bars, a key for each such type-bar; and (*d*) means, acting, when a key is depressed, to connect the type-bar corresponding to such key with the vibratory frame aforesaid whereby said type-bar is actuated and the type carried thereby thrown from its normal position toward the printing-center.

15. In combination in a type-writing machine having a main keyboard, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a vibratory frame for giving movement to said type-bars to throw said type-bars, each as required, from their normal positions to their printing-center; said frame being normally at rest and said type-bars being normally disconnected therefrom; (*c*) a motor device for actuating said vibratory frame; (*d*) keys of said main keyboard; and (*e*) means controlled by said keys acting, when the key is depressed both to connect the appropriate type-bar with the vibratory frame aforesaid so that it can receive movement therefrom, and to bring the motor device aforesaid into action to operate said vibratory frame and the type-bar connected therewith; whereby when a key is depressed the appropriate type-bar is actuated and the type carried thereby thrown from its normal position toward the printing-center by a force other than that exerted by the operator upon the key, the touch made to be light, and the strength of the printing made to be independent of the pressure exerted by the operator upon the key.

16. In combination, in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a vibratory frame for giving movement to said type-bars, to throw said type-bars, each as required, from their normal positions to their printing-center; said frame being normally at rest; and said type-bars being normally disconnected therefrom; (*c*) keys at the keyboard of said type-writing machine, equal in number to the type-bars actuated by the vibratory frame aforesaid; a key for each such type-bar; (*d*) a device for each type-bar, controlled by the corresponding key, acting when said key is depressed, to connect said type-bar with the vibratory frame aforesaid to receive movement therefrom; (*e*) a motor for actuating the vibratory frame aforesaid, and (*f*) a motor-controlling device, common to a plurality of the keys aforesaid, operated thereby, and acting, when any of said keys is depressed, to bring the motor aforesaid into action, so that it gives movement to the vibratory frame aforesaid, whereby when a key is depressed, the type-bar corresponding to such key is actuated, and the type carried thereby thrown from its normal position to the printing-center by a force other than that exerted by the operator upon the key, the touch made to be light, and the strength of the printing made to be independent of the force exerted by the operator upon the key.

17. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a vibratory frame for giving movement to said type-bars, each as required; said frame being normally at rest and said type-bars being normally disconnected therefrom; (*c*) movement-receiving members suitably connected with the type-bars for the actuating of which the vibratory frame aforesaid serves, a movement-receiving member for each such type-bar; said movement-receiving members being normally disconnected from the vibratory frame aforesaid, and (*d*) keys, at the keyboard of said type-writing machine, equal in number to the movement-receiving members, aforesaid, a key for each movement-receiving member, each key controlling the corresponding movement-receiving member and acting, when depressed, to give movement to said movement-receiving member, to bring said member into operative relation with the vibratory frame aforesaid to receive movement therefrom, for the impelling of the type-bar with which such movement-receiving member is connected.

18. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a vibratory frame for giving movement to said type-bars, each as required; said frame being normally at rest, and said type-bars being normally disconnected therefrom; (*c*) swinging movement-receiving members; (*d*) pivotal connections between said members and the type-bars that are actuated by the vibratory frame aforesaid; (*e*) keys controlling the movement-receiving members aforesaid and each acting when depressed to swing the appropriate movement-receiving member into operative relation with the vibratory frame aforesaid to receive movement therefrom; and (*f*) a motor-controlling device common to a plurality of the keys aforesaid, operated thereby, and acting when a key is depressed, to bring the motor device aforesaid into action; whereby when a key is depressed, the corresponding type-bar is actuated and the type carried thereby thrown from its normal position to the printing-center by a force other than that exerted upon the key, the touch made to be light, and the strength of the printing made to be independent of the pressure exerted by the operator upon the key.

19. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a vibratory frame, for actuating said type-bars, each as required; said frame being normally at rest and said type-bars being normally disconnected therefrom; (*c*) levers, corresponding to the type-bars aforesaid a lever for each type-bar; (*d*) links, connecting said levers with said type-bars, a link for each type-bar and the corresponding lever; (*e*) movement-receiving members pivoted to said levers, one for each lever; (*f*) keys, at the keyboard, corresponding to said type-bars, a key for each type-bar; said keys each acting, when depressed, to give movement to the movement-receiving member connected with the corresponding type-bar, to bring said member into operative relation with the vibratory frame aforesaid to receive movement therefrom; and (*g*) a motor, controlled by the keys aforesaid, and acting when one of said keys is depressed, to operate the vibratory frame aforesaid, whereby the type-bar aforesaid is actuated.

20. In combination in a type-writing machine, a plurality of type-bars striking to a common printing-center, and a type-bar-controlling mechanism, including, (*a*) a vibratory frame, normally at rest, to throw said type-bars each as required, from their normal positions to their printing-center; the type-bars aforesaid being normally disconnected from said frame; (*b*) a plurality of movement-receiving members normally disconnected from the frame aforesaid; said movement-receiving members serving to receive movement from said frame, for the impelling of the type-bars aforesaid; (*c*) keys corresponding to the movement-receiving members aforesaid, and equal in number thereto, a key for each movement-receiving member, said keys each acting, when depressed, to bring the corresponding movement-receiving member into operative relation with the vibratory frame aforesaid to receive movement therefrom, for the impelling of a type-bar.

21. In combination in a type-writing machine, a plurality of type-bars striking to a common printing-center, and a type-bar-controlling mechanism including (*a*) a vibratory frame, normally at rest, to throw said type-bars each as required, from their normal positions to their printing-center; the type-bars aforesaid being normally disconnected from said frame; (*b*) a plurality of movement-receiving members normally disconnected from the frame aforesaid; said movement-receiving members serving to receive movement from said frame for the impelling of the type-bars aforesaid; (*c*) keys corresponding to the movement-receiving members aforesaid, and equal in number thereto, a key for each movement-receiving member, said keys each acting, when depressed, to bring the corresponding movement-receiving member into operative relation with the vibratory frame aforesaid to receive movement therefrom, for the impelling of a type-bar; (*d*) a motor device, for actuating the vibratory frame aforesaid; and (*e*) a controlling device for said motor common to a plurality of the keys aforesaid, said controlling device acting, when any of the keys to which it is common is depressed, to bring the motor aforesaid into action to operate the vibratory frame aforesaid, thereby to impel a type-bar.

22. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) an electromagnet for actuating said type-bars, each as required; (*c*) keys for controlling with a single action the type-bars aforesaid, each type-bar as required; and (*d*) means controlled by said keys acting, when one of said keys is depressed to bring the type-bar controlled by said key into operative relation with the electromagnet aforesaid to receive movement therefrom and to bring said magnet into action to operate said type-bar, the keys aforesaid acting solely, when depressed, to connect the type-bars with the magnet and to bring said magnet into action, said magnet thereupon operating to impel the type-bar from its normal position to the printing-center, independently of the force exerted by the operator upon the key, whereby when a key is depressed the appropriate type-bar is actuated and the type carried thereby thrown from its normal position toward the printing-center by means of a force other than that exerted by the operator upon the key, the touch is made to be light, and the strength of the printing made to be independent of the pressure exerted by the operator upon the key.

23. In combination in a type-writing machine, (*a*) a plurality of type-bars, striking to a common printing-center; (*b*) an electromagnet for actuating said type-bars, to throw said type-bars, each as required, from their normal positions to their printing-center; said electromagnet being normally inactive and said type-bars being normally disconnected therefrom; (*c*) keys, corresponding to the type-bars actuated by the electromagnet aforesaid, a key for each such type-bar; and means controlled by said keys, acting when one of said keys is depressed, to bring the type-bar with which such key corresponds into operative relation with the electromagnet aforesaid to receive movement therefrom, and to bring said magnet into action to operate said type-bar; whereby, when a key is depressed the corresponding type-bar is actuated, and the type carried thereby thrown from its normal position toward the printing-center by a force other than that exerted upon the key, the touch made to be light, and the strength of the printing made to be independent of the pressure exerted by the operator.

24. In combination in a type-writing machine, (*a*) a plurality of type-bars, striking to a common printing-center; (*b*) an electromagnet for actuating said type-bars, to throw said type-bars, each as required, from their normal positions to their printing-center; said electromagnet being normally inactive and said type-bars being normally disconnected therefrom; (*c*) keys, corresponding to the type-bars actuated by the electromagnet aforesaid, a key for each such type-bar; and means controlled by said keys, acting when one of said keys is depressed both to connect the appropriate type-bar with the vibratory frame aforesaid so that it can receive movement therefrom and to bring the electromagnet aforesaid into action to operate the vibratory frame aforesaid and the type-bar connected therewith; the keys aforesaid serving solely when depressed, to connect the type-bars with said vibratory frame and to bring the magnet aforesaid into action, said magnet thereupon operating said frame to impel the trolling device common to a plurality of the keys aforesaid, operated by them, and acting, when any of said keys is depressed, to bring the electromagnet aforesaid into action to operate the type-bar corresponding to the key depressed, whereby said type-bar is actuated and the type thrown from its normal position toward the printing-center by means of a force other than that exerted by the operator upon the key; the touch made to be light, and the strength of the printing made to be independent of the pressure exerted upon the key.

25. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) an electromagnet for actuating said type-bars, each as required; said magnet being normally inactive and said type-bars being normally disconnected therefrom; (*c*) keys each acting when depressed, to bring one of the type-bars aforesaid into operative relation with the electromagnet aforesaid to receive movement therefrom; (*d*) a circuit-closing device, common to a plurality of the keys aforesaid, said circuit-closing device including a pair of circuit-terminals, each of said keys to which said circuit-closing device is common, serving, when depressed, to press upon said circuit-closing device, thereby to positively press the circuit-terminals aforesaid into contact with one another, to close the circuit of the electromagnet aforesaid; said electromagnet therenpon acting, when the key is at rest in its depressed position, to actuate the type-bar corresponding thereto to throw the type from its normal position to the printing-center, whereby the printing is effected by means of a force other than that applied by the operator upon the key; the touch made to be light and the strength of the printing made to be independent of the force exerted by the operator upon the key.

26. In combination, in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) an electromagnet for actuating all said type-bars, to throw said type-bars, each as required, from its normal position to the printing-center; (*c*) movement-receiving members for the type-bars actuated by the electromagnet aforesaid, a movement-receiving member for each such type-bar, suitably connected with said type-bar, and serving to receive movement from the electromagnet aforesaid for the impelling of said type-bar; said movement-receiving member being normally disconnected from the electromagnet aforesaid; (*d*) keys, corresponding to the type-bars aforesaid, a key for each type-bar, and each acting, when depressed, to cause the movement-receiving member connected with the type-bar corresponding to such key, to come into operative relation with the electromagnet aforesaid, to receive movement therefrom; and (*e*) a circuit-controlling device, operated by a plurality of the keys aforesaid, serving to control the electromagnet aforesaid.

27. In combination in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys, corresponding to said type-bars, and equal in number thereto; (*c*) an electromagnet, common to all said type-bars, for actuating said type-bars, to throw said type-bars each as required, from their normal positions to the printing-center; and (*d*) means, acting when a key is depressed, to bring the type-bar corresponding to such key into operative relation with the magnet aforesaid, to receive movement therefrom, and to bring said magnet into action for the impelling of said type-bar, to throw its type from its normal position to the printing-center, so that it prints.

28. In combination, in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys corresponding to said type-bars, a key for each type-bar; (*c*) an electromagnet for actuating all said type-bars, to throw said type-bars, each as required, from its normal position to the printing-center so that it prints; and (*d*) a single circuit-controlling frame operated by all the keys aforesaid, and acting to control the electromagnet aforesaid.

29. In combination, in a type-writing machine, (*a*) an alphabet of type-bars, striking to a common printing-center; (*b*) keys, equal in number to said type-bars; (*c*) an electromagnet for actuating all said type-bars, to throw said type-bars, each as required, from its normal position to the printing-center, so that it prints; (*d*) devices corresponding to said type-bars, a device for each type-bar, receiving movement from the corresponding key, and serving to bring the corresponding type-bar into operative relation with the electromagnet aforesaid, to receive movement therefrom; and (*e*) a single circuit-controlling device, operated by all the keys aforesaid, and acting to control the electromagnet aforesaid.

30. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a vibratory frame for impelling the type-bars aforesaid, each as required; said frame being normally at rest and said type-bars being normally disconnected therefrom; (*c*) an electromagnet for actuating said frame; (*d*) keys; and (*e*) means controlled by said keys acting, when a key is depressed both to connect the appropriate type-bar with the vibratory frame aforesaid so that it can receive movement therefrom and to bring the electromagnet aforesaid into action to operate the vibratory frame aforesaid and the type-bar connected therewith; the keys aforesaid serving solely when depressed, to connect the type-bars with said vibratory frame and to bring the magnet aforesaid into action, said magnet thereupon operating said frame to impel the

type-bar from its normal position to the printing-center, independently of the force exerted by the operator upon the key; whereby when a key is depressed the appropriate type-bar is actuated and the type carried thereby thrown from its normal position toward the printing-center by a force other than that exerted by the operator upon the key, the touch made to be light and the strength of the printing made to be independent of the pressure exerted by the operator upon the key.

31. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a vibratory frame, normally at rest, for impelling the type-bars aforesaid, each as required; said type-bars being normally disconnected from said vibratory frame; (*c*) an electromagnet for actuating said frame; (*d*) movement-receiving members connected with the type-bars actuated by the frame aforesaid, a movement-receiving member for each such type-bar; (*e*) keys at the keyboard, corresponding to the type-bars aforesaid, a key for each type-bar; each of said keys acting, when depressed, to give movement to the movement-receiving member connected with the type-bar to which said key corresponds, to bring said movement-receiving member into operative relation with the vibratory frame aforesaid to receive movement therefrom; said keys controlling the electromagnet aforesaid; said magnet serving, when one of said keys has been depressed and is at rest in its depressed position, to give movement to the movement-receiving member controlled by such key depressed, and to the type-bar with which said movement-receiving member is connected, to throw the type from its normal position toward the printing-center; whereby the type-bar is actuated and the printing effected by a force other than that exerted upon the key, the touch made to be light, and the strength of the printing made to be independent of the force exerted upon the key.

32. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a vibratory frame, normally at rest; (*c*) an electromagnet for actuating said frame; (*d*) movement-receiving members connected with the type-bars aforesaid, a member for each type-bar; (*e*) keys at the keyboard, corresponding to the type-bars aforesaid, a key for each type-bar; each of said keys acting, when depressed, to give movement to the movement-receiving member connected with the type-bar to which said key corresponds, to bring said movement-receiving member into operative relation with the vibratory frame aforesaid to receive movement therefrom; (*f*) a circuit-controlling device for the electromagnet aforesaid; said circuit-controlling device being common to a plurality of the keys aforesaid, each of said keys to which said circuit-controlling device is common serving, when depressed, to operate said circuit-controlling device; whereby the electromagnet aforesaid is brought into action to operate the type-bar corresponding to the key depressed, to throw the type from its normal position toward the printing-center, the printing effected by means of a force other than that exerted by the operator upon the key, the touch made to be light, and the strength of the printing made to be independent of the force exerted by the operator upon the key.

33. In combination in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys corresponding to said type-bars, a key for each type-bar; (*c*) a type-bar-impelling frame for giving movement to a plurality of the type-bars aforesaid, to throw said type-bars, each as required, from their normal positions to the printing-center; (*d*) an electromagnet for actuating said frame; and (*e*) a circuit-controlling frame common to a plurality of the keys aforesaid, controlled by said keys and controlling the circuit of the electromagnet aforesaid.

34. In combination in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) a frame for giving movement to a plurality of the type-bars aforesaid, each as required; said type-bars being normally disconnected from said frame; (*c*) an electromagnet for actuating said frame; (*d*) a movement-receiving member connected with each of the type-bars aforesaid, that is actuated by the frame aforesaid, to receive movement from said frame; (*e*) keys corresponding to the type-bars aforesaid, a key for each type-bar, a plurality of said keys serving each, when depressed, to give movement to the movement-receiving member connected with the type-bar to which such key corresponds, to throw such movement-receiving member into operative relation with the frame aforesaid to receive movement therefrom; and (*f*) a circuit-closing device, common to a plurality of the keys last aforesaid, and acting, when any of said plurality of keys is depressed, to bring the magnet aforesaid into action to impel the frame aforesaid and the type-bar connected with the movement-receiving member that is brought into operative relation with said frame by the key depressed.

35. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) levers, corresponding to said type-bars; (*c*) links, connecting said levers each with the type-bar to which it corresponds; (*d*) a frame, for actuating all the type-bars aforesaid, each as required; said frame being normally inactive, and said type-bars being normally disconnected therefrom; (*e*) movement-receiving members, pivoted to the type-bar-corresponding levers aforesaid, a movement-receiving member for each type-bar-corresponding lever; (*f*) keys, corresponding to the type-bars aforesaid, a key for each of the type-bars that is actuated by the frame aforesaid; said keys each serving, when depressed, to bring the movement-receiving member corresponding to the type-bar to which such key corresponds, into operative relation with the frame aforesaid to receive movement therefrom; (*g*) an electromagnet acting, when one of the keys aforesaid is depressed, to give movement to the frame aforesaid, thereby to actuate the type-bar corresponding to the key depressed.

36. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) levers, corresponding to said type-bars; (*c*) links, connecting said levers each with the type-bar to which it corresponds; (*d*) a frame for actuating all the type-bars aforesaid, said frame being normally inactive, and said type-bars being normally disconnected therefrom; (*e*) movement-receiving members, pivoted to the type-bar-corresponding levers aforesaid, a movement-receiving member for each type-bar-corresponding lever; (*f*) keys, corresponding to the type-bars aforesaid, a key for each of the type-bars that is actuated by the frame aforesaid; said keys each serving, when depressed, to bring the movement-receiving member corresponding to the type-bar to which such key corresponds, into operative relation with the frame aforesaid to receive movement therefrom; (*g*) a motor for actuating the frame aforesaid, and (*h*) a motor-controlling device, common to a plurality of the keys aforesaid, and serving when one of said keys is depressed, to bring the motor aforesaid into action to operate the frame aforesaid, thereby to actuate the type-bar corresponding to the key depressed.

37. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) levers corresponding to said type-bars; (*c*) links, connecting said levers each with the type-bar to which it corresponds; (*d*) a frame for giving movement to the type-bars aforesaid, each as required; (*e*) movement-receiving members, pivoted to the type-bar-corresponding levers aforesaid, a movement-receiving member for each type-bar-corresponding lever; (*f*) keys, corresponding to the type-bars aforesaid, a key for each of the type-bars that is actuated by the frame aforesaid; said keys each serving, when depressed, to bring the movement-receiving member corresponding to the type-bar to which such key corresponds, into operative relation with the frame aforesaid to receive movement therefrom; (*g*) an electromagnet acting, when one of the keys aforesaid is depressed, to give movement to the frame aforesaid, thereby to actuate the type-bar corresponding to the key depressed.

38. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) levers, corresponding to said type-bars; (*c*) links, connecting said levers each with the type-bar to which it corresponds; (*d*) a frame for actuating the type-bars aforesaid, each as required; (*e*) movement-receiving members, pivoted to the type-bar-corresponding levers aforesaid, a movement-receiving member for each type-bar-corresponding lever; (*f*) keys, corresponding to the type-bars aforesaid, a key for each of the type-bars that is actuated by the frame aforesaid; said keys each serving, when depressed, to bring the movement-receiving member corresponding to the type-bar to which such key corresponds, into operative relation with the frame aforesaid to receive movement therefrom; (*g*) an electromagnet for actuating the type-bar-impelling frame aforesaid; and (*h*) a circuit-controlling device common to a plurality of the keys aforesaid, and serving when one of said keys is depressed, to bring the electromagnet aforesaid into action to operate the frame aforesaid and the type-bar corresponding to the key depressed.

39. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) levers corresponding to said type-bars; (*c*) links, connecting said type-bar-corresponding levers each with the type-bar to which it corresponds; (*d*) a type-bar-impelling frame, pivoted to oscillate and serving to give movement to all the type-bars aforesaid, each as required; (*e*) movement-receiving members, hinged to the type-bar-corresponding levers aforesaid, a movement-receiving member to each such lever; (*f*) keys, corresponding to the type-bars aforesaid, a key for each type-bar; said keys each controlling one of the movement-receiving members aforesaid, and serving, when depressed, to bring said movement-receiving member into operative relation with the type-bar-impelling frame aforesaid to receive movement therefrom; and (*g*) means for actuating the type-bar-impelling frame aforesaid.

40. In combination, in a type-writing machine having a main keyboard, (*a*) a type-bar; (*b*) a single motor device, for actuating said type-bar, to throw the type from its normal position to the printing-center; said motor device being normally inactive, and said type-bar being normally disconnected therefrom; and (*c*) a key, at said main keyboard of said type-writing machine, and means controlled by said key, acting when said key is depressed, both to cause the type-bar aforesaid to be connected with the motor device aforesaid, and to bring said motor device into action; said motor device thereupon operating to impel said type-bar from its normal position to the printing-center, so that it prints; whereby the operator is relieved from actuating the type-bar and the type-bar impelled in its successive printing actions, with a uniform force, notwithstanding variations in the force with which the key may be depressed by the operator.

41. In combination in a type-writing machine, (*a*) a type-bar; (*b*) a single motor device for actuating said type-bar, to throw the type from its normal position to the printing-center; said motor device being normally inactive and said type-bar being normally disconnected therefrom; (*c*) a key, corresponding to said type-bar, and connected always therewith in such manner that said key controls always, whenever it is depressed, that same type-bar only, to bring said type-bar into operative relation with the motor device aforesaid, to receive movement therefrom; and (*d*) motor-controlling means operated by the key aforesaid, and serving, when said key is depressed, to bring the motor device aforesaid into action; said motor thereupon operating to impel the type-bar aforesaid from its normal position toward the printing-center.

42. In combination in a type-writing machine, (*a*) a type-bar; (*b*) a single motor device for giving movement to said type-bar to throw the type from its normal position to the printing-center; said motor device being normally inactive and said type-bar being normally disconnected therefrom; (*c*) a movement-receiving member connected with said type-bar; (*d*) a key, connected with the movement-receiving member aforesaid in such manner that it serves always when depressed, to control that same movement-receiving member; said key acting, when depressed, both to bring said movement-receiving member into operative relation with the motor aforesaid, and also to bring said motor device into action, to impel said movement-receiving member and the type-bar with which it is connected.

43. In combination, in a type-writing machine, (*a*) a type-bar; (*b*) a single motor device, for giving movement to said type-bar to throw the type from its normal position to the printing-center; said motor device being normally inactive and said type-bar being normally disconnected therefrom; (*c*) a movement-receiving member connected with said type-bar; (*d*) a controlling device for the motor aforesaid; (*e*) a key corresponding to said type-bar, and acting, when depressed, to give movement to the movement-receiving member aforesaid to bring the same into operative relation with the motor device aforesaid; said key, when depressed, operating also the motor-controlling device aforesaid, thereby to bring the motor aforesaid into action; the key aforesaid acting solely, when depressed, to bring the movement-receiving member aforesaid into operative relation with the motor device aforesaid, and to bring said motor device into action; said motor device serving, when the key aforesaid has been depressed and is at rest in its depressed position, to give movement to the movement-receiving member aforesaid and the type-bar connected therewith, to throw the type carried by said type-bar from its normal position to the printing-center, whereby the printing is effected by means of a force other than that applied by the operator to the key, and the strength of the printing made to be independent of the force exerted by the operator upon the key.

44. In combination in a type-writing machine, (*a*) a type-bar; (*b*) a motor device for giving movement to said type-bar; said motor device being normally inactive, and said type-bar being normally disconnected therefrom; (*c*) a swinging, movement-receiving member; (*d*) a pivotal connection between said member and said type-bar; (*e*) a key at the keyboard of said type-writing machine, corresponding to said type-bar and acting, when depressed to give movement to the movement-receiving member aforesaid, to swing said movement-receiving member into operative relation with the motor device aforesaid, to receive movement therefrom; and (*f*) means, acting when said key is depressed, to bring the motor device aforesaid into action upon the movement-receiving member aforesaid, to give movement to the type-bar aforesaid.

45. In combination in a type-writing machine, (*a*) a type-bar; (*b*) a motor device for giving movement to said type-bar; said motor device being normally inactive, and said type bar being normally disconnected therefrom; (*c*) a lever, corresponding to said type-bar; (*d*) a link connecting said lever with said type-bar; (*e*) a movement-receiving member, pivoted to said lever; (*f*) a key at the keyboard, corresponding to the movement-receiving member aforesaid, and (*g*) a controlling device, for the motor aforesaid; the key aforesaid serving when depressed, both to give movement to the movement-receiving member aforesaid to swing said movement-receiving member into relation with the motor device aforesaid to receive movement therefrom, and also to operate said motor-controlling device, thereby to bring the motor aforesaid into action upon the movement-receiving member aforesaid to actuate the type-bar aforesaid; whereby, when the key is depressed, the type-bar corresponding thereto is actuated by a force other than that exerted by the operator upon the key, and the type carried by said type-bar thrown to the printing-center with a uniform force in its successive printing actions, notwithstanding variations in the pressure exerted by the operator upon the key.

46. In combination in a type-writing machine, (*a*) a type-bar; (*b*) a motor for giving movement to said type-bar; said motor being normally inactive, and said type-bar being normally disconnected therefrom; (*c*) a pivoted, movement-receiving member, suitably connected with said type-bar; (*d*) a key at the keyboard; (*e*) a bell-crank lever, corresponding to said key, and controlled thereby; (*f*) a link, connecting said bell-crank lever with the movement-receiving member before mentioned, whereby, when the key aforesaid is depressed, the movement-receiving member aforesaid is swung into operative relation with the motor aforesaid; and (*g*) means, acting when said key is depressed, to bring the motor aforesaid into action upon the movement-receiving member aforesaid, to actuate the type-bar aforesaid.

47. In combination in a type-writing machine, (*a*) a type-bar; (*b*) a motor for giving movement to said type-bar; said motor being normally inactive, and said type-bar being normally disconnected therefrom; (*c*) a lever, corresponding to said type-bar; (*d*) a link connecting said lever with said type-bar; (*e*) a movement-receiving member, pivoted to said lever; (*f*) a bell-crank; (*g*) a link, connecting said bell-crank with the movement-receiving member aforesaid; (*h*) a key at the keyboard acting, when depressed, to give movement to the bell-crank aforesaid, thereby to swing the pivoted movement-receiving member before mentioned into operative relation with the motor aforesaid; and (*i*) means, controlled by the key aforesaid, and acting, when said key is depressed, to bring the motor aforesaid into action upon the movement-receiving member aforesaid to actuate the type-bar aforesaid.

48. In combination in a type-writing machine, (*a*) a type-bar; (*b*) a vibratory frame, for giving movement to said type-bar; said frame being normally at rest and said type-bar being normally disconnected therefrom; (*c*) a movement-receiving member, connected with said type-bar, (*d*) a key, permanently connected with the movement-receiving member aforesaid, so that it serves always, whenever it is depressed, to bring said movement-receiving member into operative relation with the vibratory frame aforesaid to receive movement therefrom, for the impelling of the type-bar aforesaid.

49. In a type-writing machine, (*a*) a type-bar; (*b*) a vibratory frame, normally at rest; (*c*) a single motor for actuating said frame, to give movement to the type-bar; (*d*) a controlling device for said motor; (*e*) a movement-receiving member connected with the type-bar aforesaid; (*f*) a key at the keyboard, corresponding to the type-bar aforesaid, and acting, when depressed, to give movement to the movement-receiving member before mentioned, to bring the same into operative relation with the vibratory frame aforesaid to receive movement therefrom; said key, when depressed, also operating the motor-controlling device aforesaid; the key aforesaid acting solely, when depressed, to bring the movement-receiving member aforesaid into operative relation with the vibratory frame aforesaid, and to operate the motor-controlling device aforesaid; the motor aforesaid serving, when said key has been depressed and is at rest in its depressed position, to give movement to the movement-receiving member aforesaid and the type-bar connected therewith, to throw the type from its normal position to the printing-center; whereby the type-bar is actuated and the printing effected by means of a force other than that exerted by the operator upon the key, the touch made to be light, and the strength of the printing made to be independent of the force exerted by the operator upon the key.

50. In combination in a type-writing machine having a main keyboard, (*a*) a type-bar; (*b*) an electromagnet for actuating said type-bar, to throw the type from its normal position toward the printing-center; said type-bar being normally disconnected from said electromagnet; (*c*) a key, at the keyboard of said type-writing machine; and (*d*) means, acting, when said key is depressed, to bring the type-bar aforesaid into operative relation with the magnet aforesaid to receive movement therefrom, and to bring said magnet into action, to impel said type-bar from its normal position toward the printing-center.

51. In combination in a type-writing machine, (*a*) a type-bar; (*b*) an electromagnet for actuating said type-bar to throw the type from its normal position to the printing-center; said type-bar being normally disconnected from said electromagnet; (*c*) a key, permanently connected with the type-bar aforesaid so that said key always, whenever it is depressed, brings said type-bar into operative relation with the electromagnet aforesaid to receive movement therefrom; said key also controlling said magnet; said magnet acting, when said key is depressed, to impel the type-bar aforesaid independently of the force exerted upon the key, whereby the operator is relieved from the labor of actuating said type-bar and said type-bar impelled with a uniform force in its successive printing actions, notwithstanding variations in the force with which the key controlling it may be depressed.

52. In combination, in a type-writing machine, having a main keyboard, (*a*) a type-bar; (*b*) an electromagnet for actuating said type-bar to throw the type from its normal position to the printing-center; said type-bar being normally disconnected from said magnet; (*c*) a key at the keyboard of said type-writing machine; (*d*) means, receiving movement from said key; for bringing said type-bar, when said key is depressed, into operative relation with the electromagnet aforesaid, to receive movement therefrom; (*e*) a circuit-closing device operated positively by the key aforesaid when said key is depressed, and upon which said key, when at the limit of its downward movement, exerts a pressure to close the circuit of

the magnet aforesaid; said magnet thereupon acting, when said key is at rest in its depressed position, to actuate the type-bar, as aforesaid; whereby the printing is effected by means of a force other than that applied by the operator to the key, the touch made to be light, and the strength of the printing made to be independent of the force exerted by the operator upon the key.

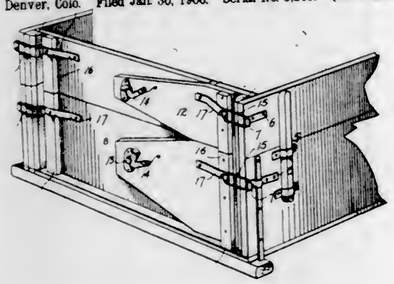
53. In combination, in a type-writing machine, (*a*) a type-bar; (*b*) a vibratory frame, normally at rest; (*c*) an electromagnet for actuating said frame; (*d*) a movement-receiving member, connected with the type-bar aforesaid; (*e*) a key, acting, when depressed, to give movement to the movement-receiving member before mentioned, to bring the same into operative relation with the vibratory frame aforesaid to receive movement therefrom; said key controlling the circuit of the electromagnet aforesaid; the key aforesaid acting solely, when depressed, to bring the movement-receiving member aforesaid into operative relation with said vibratory frame, and to control the circuit of the electromagnet aforesaid; said magnet serving, when said key is depressed, to give movement to the movement-receiving member aforesaid and the type-bar connected therewith, to throw the type from its normal position to the printing-center; whereby the type-bar is actuated and the printing effected by a force other than that exerted upon the key, the touch made to be light, and the strength of the printing made to be independent of the force exerted by the operator upon the key.

54. In combination in a type-writing machine, (*a*) a type-bar; (*b*) a swinging, movement-receiving member; (*c*) pivotal connections between said member and said type-bar; (*d*) an electrically-operated device for giving movement to said swinging movement-receiving member to impel the type-bar with which said member is connected; said electrically-operated device being normally inactive, and said movement-receiving member being normally disconnected therefrom; and (*e*) a key controlling both the movement-receiving member aforesaid and the electrically-operated device aforesaid, and serving when depressed, to give movement to said movement-receiving member, to bring the same into operative relation with the electrically-operated device aforesaid, to receive movement therefrom; said key serving, also, when depressed, to bring the electrically-operated device aforesaid into action upon the movement-receiving member aforesaid to give movement to the same for the impelling of the type-bar aforesaid.

55. In combination in a type-writing machine, (*a*) a type-bar; (*b*) a lever corresponding to said type-bar; (*c*) a link connecting said lever with said type-bar; (*d*) a movement-receiving member pivoted to said lever; (*e*) an electrically-operated device for giving movement to said pivoted movement-receiving member to impel the type-bar with which said member is connected, said electrically-operated device being normally inactive and said movement-receiving member being normally disconnected therefrom; and (*f*) a key controlling both the movement-receiving member aforesaid and the electrically-operated device aforesaid, and serving when depressed, to give movement to said movement-receiving member, to bring the same into operative relation with the electrically-operated device aforesaid, to receive movement therefrom; said key serving, also, when depressed, to bring the electrically-operated device aforesaid, into action upon the movement-receiving member aforesaid to give movement to the same for the impelling of the type-bar aforesaid.

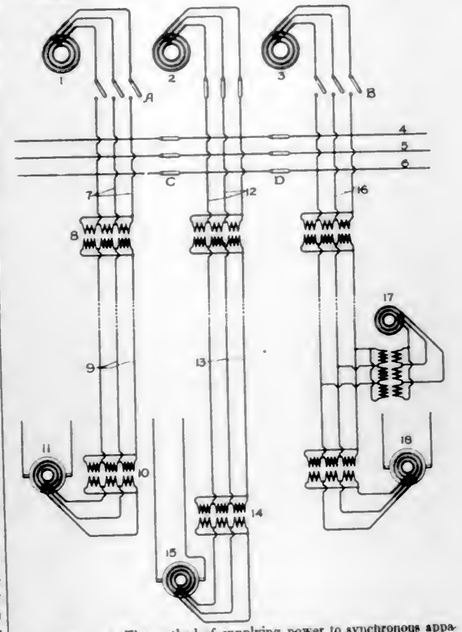
56. In combination, in a type-writing machine, (*a*) a type-bar; (*b*) a swinging, movement-receiving member; (*c*) a pivotal connection between said member and said type-bar; (*d*) a pivoted, oscillating type-bar-impelling frame; said frame being normally at rest, and the movement-receiving member aforesaid being normally disconnected therefrom; (*e*) a key, acting when depressed, to give movement to the swinging, movement-receiving member connected with the type-bar aforesaid, to throw said movement-receiving member into operative relation with the frame aforesaid, to receive movement therefrom; and (*f*) a motor device, controlled by said key, for operating the type-bar-impelling frame aforesaid.

656,577. END-GATE FOR WAGON-BODIES. WILLIAM CHATER, Denver, Colo. Filed Jan. 30, 1900. Serial No. 3,265. (No model.)



Claim.—The combination with a wagon-body, of an end-gate composed of two hinged parts, one of which is provided with an extension overlapping the other, means for locking the extension to the adjacent part, the said parts being provided with exterior cleats or projections, and links passing over said projections, and hooks attached to the sides of the wagon-bed on the outside and coöperating with the links for the purpose set forth.

656,578. SYSTEM OF ELECTRICAL DISTRIBUTION. WILLIAM J. DAVIS, Jr., Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed June 29, 1900. Serial No. 22,044. (No model.)



Claim.—1. The method of supplying power to synchronous apparatus, which consists in operating the machines in multiple at light loads, and independently at heavy loads.

2. The method of supplying power to rotary converters or other synchronous apparatus, which consists in operating the machines in multiple when the hunting tendency of the machines is negligible, and at other times operating the machines independently.

3. The method of operating a rotary converter or other synchronous machine which consists in running it in multiple with other synchronous apparatus, and at times running it independently.

4. The method of operating a rotary converter or other synchronous machine which consists in supplying it from a source of power common to other synchronous apparatus, and at times supplying it from an independent source of power.

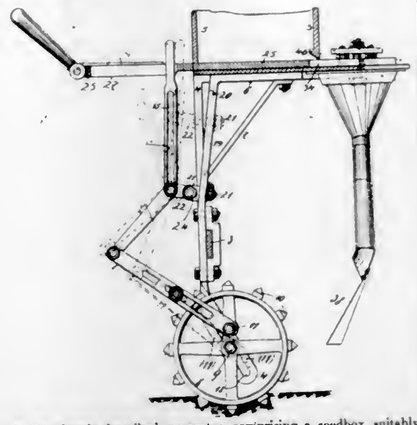
5. The method of operating a rotary converter or other synchronous machine which consists in supplying it from a source of current common to other synchronous apparatus, and at times supplying it from an independent source of current.

6. The method of operating a plurality of feeder-circuits supplying current to synchronous machines, which consists in supplying each heavily-loaded feeder-circuit or group of circuits from a source of power separate from the source or sources of supply of the lightly-loaded feeder circuit or circuits.

7. The method of operating a synchronous machine which consists in running it in multiple with other machines when its hunting tendency is negligible, and at other times running it independently.

656,579. SEEDING ATTACHMENT FOR PLOWS. FRANZ FLICH and ANTON FIRLINGER, Neunkirchen, Austria-Hungary. Filed Jan. 30, 1900. Serial No. 3,309. (No model.)

Claim.—1. The herein-described apparatus, comprising a seedbox suitably supported on a steering-wheel, and provided with openings, a seed-distributer extending from the said box, a slide guided in said box and provided with an opening for registering with aforesaid opening, and means connecting the steering-wheel with said slide for causing the reciprocation of the slide, such means comprising a lever mounted on an adjustable pivot, and acting at one end of said slide, and an extensible connecting-rod between the other end of the lever and the steering-wheel, substantially as set forth.



2. The herein-described apparatus, comprising a seedbox suitably mounted on a steering-wheel, a seed-distributer extending from said box, a slide guided in the box, said box and slide having registrable openings, and the rear end of said slide having a slot, a suitably-mounted lever, one end of which enters said slot, means for connecting the lever with the steering-wheel, and means for closing said slot so that said lever may reciprocate the slide, substantially as set forth.

3. The herein-described apparatus, comprising a seedbox suitably mounted, a slide guided in said box, the box and slide having registrable openings, and said slide having a slot in its rear end, a lever, one end of which enters said slot, means for oscillating said lever, and a flap hinged to the slide and adapted to close said slot so that the lever may reciprocate the slide, substantially as set forth.

4. The herein-described apparatus, comprising a seedbox suitably supported on a steering-wheel, and provided with an opening, a seed-distributer extending from the said box, a slide guided in said box and provided with an opening for registering with aforesaid opening, said slide having a slot in its rear end, a lever mounted on an adjustable pivot, and its upper end entering said slot, a connecting-rod between the other end of said lever and the steering-wheel, and means for closing said slot so that said lever may reciprocate the slide, substantially as set forth.

656,580. CALCINING OR ROASTING FURNACE. ALFRED E. JOHNSON, Victor, Colo. Filed Mar. 26, 1900. Serial No. 10,139. (No model.)

Claim.—1. In a calcining or roasting furnace, the combination with a suitable hearth, of means for introducing air thereto intermittently at suitable points whereby the ore is caused to travel longitudinally over the hearth.

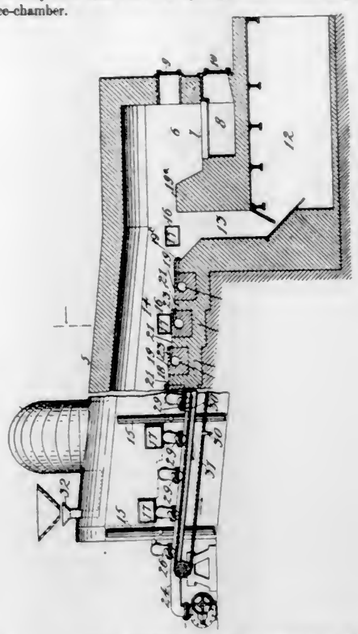
2. In a calcining or roasting furnace, the combination of a suitable hearth provided with parallel transverse openings located at suitable intervals and provided with a series of ducts leading forwardly from each transverse opening and communicating with the furnace-chamber, and means for introducing air under pressure intermittently to the various transverse openings whereby the ore or other material is caused to travel over the hearth.

3. In a calcining or roasting furnace, the combination of a stepped hearth, and means for introducing air under pressure and in a series of jets at each step or level whereby the material under treatment is made to travel over the hearth.

4. In a calcining or roasting furnace, the combination of a stepped hearth, and means for introducing air under pressure successively at the different steps whereby the material under treatment is made to travel over the hearth.

5. In a calcining or roasting furnace, the combination of a stepped hearth, each step having a transverse opening and a series of forwardly-extending ducts communicating therewith and with the furnace-chamber, and means for introducing air under pressure to the said transverse openings of the hearth whereby the material under treatment is made to travel over the hearth.

6. In a calcining or roasting furnace, the combination of a stepped hearth, an air-conduit located outside the furnace, a pressure source connected with said conduit, transverse openings formed in the bed of the hearth and communicating with said conduit, and a series of ducts leading forwardly from each transverse opening and communicating with the furnace-chamber.



7. In a calcining or roasting furnace, the combination of a stepped hearth, an air-conduit located outside the furnace, a pressure source with which the said conduit is connected, and branch pipes connected with said conduit, the wall and the hearth being provided with transverse openings leading from the branch pipes to the various steps each of which is provided with a series of ducts leading forwardly from said opening.

8. In a calcining or roasting furnace, the combination of a stepped hearth, an air-conduit located outside the furnace, a pressure source with which the said conduit is connected, branch pipes connected with said conduit, the wall and the hearth being provided with openings leading to the various steps and with which the branch pipes are connected, valves located in said branch pipes, valve-spindles, cranks mounted on the spindles and normally holding the valves closed, and exterior means arranged to engage the cranks and open the valves at suitable intervals.

9. In a calcining or roasting furnace, the combination of a stepped hearth, an air-conduit located outside the furnace, a pressure source with which said conduit is connected, branch pipes connected with said conduit, the wall and the hearth being provided with openings leading to the various steps and with which the branch pipes are connected, valves located in said branch pipes, valve-spindles, cranks fast on the spindles and normally holding the valves closed, and an exteriorly-located endless chain provided with one or more trips arranged to engage the cranks and open the valves.

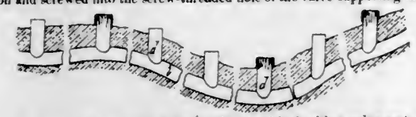
10. In a calcining or roasting furnace, the combination with the outer walls, of a hearth composed of a series of steps, each step being composed of a number of fire-clay brick arranged side by side and provided with registering openings, and passages leading forwardly from said openings.

11. In a calcining or roasting furnace, the combination with the outer walls, of a hearth composed of a series of steps, each step being composed of a number of fire-clay brick arranged side by side and provided with registering openings, passages leading forwardly from said openings, and suitable means connected with said openings for introducing air under pressure to said hearth-steps.

656,581. IRRIGATING WATER-GATE. WILLIAM H. KILER, Pomona, Cal. Filed June 4, 1900. Serial No. 19,073. (No model.)

Claim.—1. A water-gate comprising a ring furnished with a valve-seat on its upper face and furnished with a valve-supporting bar extending across the opening of the ring below the plane of the valve-seat and

provided with a screw-threaded hole to receive a threaded bolt; a valve-plate furnished with a perforation for a bolt; a valve-carrying bolt furnished on its upper end with a head for turning the bolt and inserted through the opening in the valve-plate and furnished with a shoulder to support the valve-plate; said bolt being screw-threaded at its lower portion and screwed into the screw-threaded hole of the valve-supporting bar.



2. A water-gate comprising a ring furnished with a valve-seat on its upper face and with a collar around the valve-seat, thus to form a sand-box between the valve-seat and the collar; said ring being furnished with a valve-supporting hanger-bar extending below the valve-seat and provided with a screw-threaded hole to receive a threaded bolt; a valve-plate furnished with an upwardly-flaring perforation for a bolt; a valve-carrying bolt furnished upon its upper end with a head for turning the bolt and inserted through the opening in the valve-plate and furnished with a shoulder to support the valve-plate; said bolt being screw-threaded at its lower portion and screwed into the screw-threaded hole of the valve-supporting bar; and a packing around the bolt at the said perforation.

3. In a water-gate, the combination of a ring furnished with a valve-seat on its upper face, and furnished with a valve-supporting bar extending across the opening of the ring; a valve-plate furnished with a perforation for a bolt; a valve-carrying bolt furnished on its upper end with a head and inserted through said opening and screw-threaded below said valve-plate; and a nut screwed onto the screw-threaded portion of said bolt to support the valve-plate; said bolt being screwed into the screw-threaded hole in the valve-supporting bar.

4. The combination of an open-ended pipe; a ring fitted in said pipe and provided on one face with a valve-seat and with a collar around the valve-seat to form a sand-box between the valve-seat and the collar, and said ring being provided on the opposite side with a valve-supporting bar having a screw-threaded hole for the bolt; cement on the opposite sides of said ring to secure said valve-ring to the pipe; a valve-plate; a screw-threaded bolt passing through the valve-plate and screwed into the bolt-hole in the bar; and provided with means for holding the valve-plate substantially as set forth.

5. In a water-gate, the combination of a plate furnished with an upwardly-flaring hole for a bolt; a valve-ring furnished with a valve-seat on one side and a cross-bar on the other side extending across the opening of the ring and furnished with a screw-threaded hole; a bolt having a head on one end and being screw-threaded at the other end and inserted through the flaring hole and screwed into the screw-threaded hole; packing around the bolt in the flaring hole; and a nut screwed upon the bolt to hold the valve-plate and packing in place.

656,582. DRY DOCK. FREDERICK C. LANG, Hoboken, N. J. Filed Mar. 21, 1900. Serial No. 9,554. (No model.)

Claim.—1. A floating, wooden dry dock, having transverse deck-beams, longitudinal bottom-beams, deck-planking extending longitudinally bottom-planking extending transversely, and transverse trusses with continuous members between the deck and bottom beams.

2. A floating, wooden dry dock, having deck and bottom beams, a longitudinal, axial bulkhead, transverse foot-beams, and transverse arches with the crown at the axis of the dock under the deck and their feet stepped in the respective foot-beams.

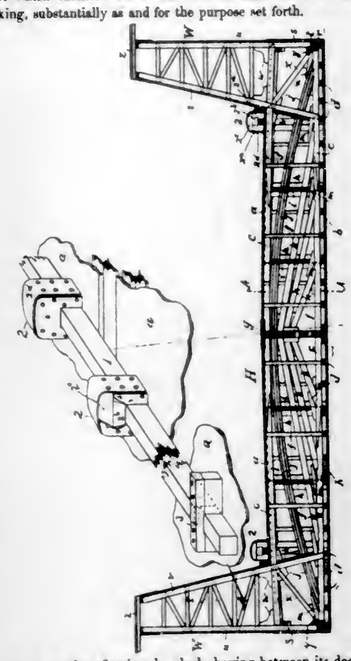
3. A floating, wooden dry dock, having deck and bottom beams, longitudinal bulkheads, laminated transverse arches having their crowns under the deck at the axis of the dock and their feet stepped in transverse foot-beams near the respective sides of the dock.

4. A floating, wooden dry dock, having deck and bottom beams, foot-beams, an axial, longitudinal bulkhead, transverse arches having their crowns under the deck at the axis of the dock and their feet stepped in said foot-beams near the respective sides of the dock, and braces *k*, inclined at different angles, said braces abutting to the central bulkhead at their upper ends and stepped at their lower ends in said foot-beam.

5. A floating, wooden dry dock, having deck and bottom beams, foot-beams, arches extending transversely and stepped in the foot-beams near the respective sides of the dock, inclined braces *k*, and upright stanchions *f*, having gains in their sides to receive the transverse truss members.

6. The combination with the water-tight deck and bottom of the dock, of the upper, transverse deck-beams, the foot-beams beneath the respective deck-beams, the transverse, laminated arches stepped in the respective foot-beams, and the series of inclined braces *k* under the respective arches and also stepped in the foot-beams, of the stanchions *f*, gained to take in the transverse members, substantially as set forth.

7. A wooden, floating dry dock, having its deck-beams extending transversely, its bottom-beams extending longitudinally, its bottom-planking extending transversely, and having transverse bulkheads the planking of which extends down flush with the outer surface of the bottom-planking, substantially as and for the purpose set forth.



8. A wooden, floating dry dock, having between its deck and bottom a series of transversely-extending trusses, and stanchions arranged alternately on opposite sides of each truss, said stanchions being gained to receive the truss members, substantially as set forth.

9. A wooden, floating dry dock having transverse trusses with continuous members to resist tensile strains, wings at its respective sides, and longitudinal bulkheads bracing said continuous members, substantially as set forth.

10. A wooden, floating dry dock, having longitudinally-extending bulkheads, a foot-beam, truss-braces stepped in said foot-beam under the respective bulkheads, and anchor stocks or blocks *m*, over the stepped foot of said braces, substantially as set forth.

11. A keeper for a locking-log of a sectional dock, formed of the wooden members 2^a, 2^b, 2^c, and inclosed in a metal casing, substantially as set forth.

12. A keeper for a locking-log of a sectional dock, comprising the fixed blocks 2^a, the dovetail bridge-piece 2^b, the cap 2^c, and the metal casing 2^d, substantially as set forth.

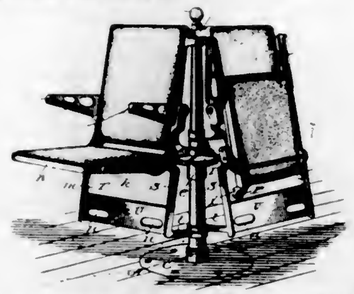
13. In a sectional dock, the combination to form a coupling-section for the pumping-shafts, of a tubular member having a square, sectional sleeve and coupled to the shaft by a universal joint, and another member having a square section which fits telescopically into the said sleeve and is coupled to its shaft-section by a universal joint, substantially as set forth.

14. A sectional dock, having a pump-shaft mounted in bearings on the wing thereof and provided with a disk 9 fixed thereon, and a block 7, fixed rigidly to the platform of the wing and having in it an oil-recess with shoulders to embrace said disk and prevent end thrust, substantially as set forth.

15. A wooden, sectional dry dock, having its bottom end sill *o* gained with the bottom side sill *r* and extending below the same to the extent of the thickness of the transverse bottom-planking, *b*, the said planking, the upper end sill *p*, gained at its end to receive the side planking and flush at its outer face with the sill *o*, and the upper side sill *l*, gained with the sill *p* and its outer face flush with the inner face of the side planking, and the said planking.

656,583. PORTABLE FOLDING CHAIR. ADOLPH L. LEVIN, Denver, Colo. Filed Nov. 13, 1899. Serial No. 736,875. (No model.)

Claim.—1. In a portable chair, the combination with a supporting-standard provided with a surrounding platform having radial depressions or grooves in its upper surface terminating at their outer extremities in notches formed in the periphery of said platform, a chair whose back is provided with a hinge member surrounding the standard adjacent the platform, the lower edge of the hinge member being adapted to engage the radial depressions in the platform, and a folding seat connected with the chair-back and provided with a lock-bar adapted to engage the notches at the extremities of the platform-grooves.



2. In a portable chair the combination with a supporting-standard, of a socketed foot-plate for the reception of said standard, and a screw-nut connecting said standard and foot-plate and provided with reverse threads engaging corresponding threads formed on the connected parts, substantially as described.

3. In a portable chair the combination with a supporting-standard, of a socketed foot-plate for the reception of said standard, and a screw-nut having internal and external reverse threads connecting said standard and foot-plate for the purpose of separating them, substantially as described.

4. In a portable chair, the combination with a tapering supporting-standard, of a corresponding socket for the reception of said standard, a screw-nut located between the standard and socket, a chair-back revolubly mounted on the standard and provided with a depending bracket having an angular strap which loosely encircles the standard below the seat, a folding seat pivoted upon the chair-back, and arms adapted to fold with the seat substantially as described.

5. In a portable chair the combination with a supporting-standard and a socketed floor-plate in taper fit, of a lifting-nut upon said standard, a chair-back revolubly mounted upon the standard, and provided with a depending bracket having an angular strap which loosely encircles the standard, a folding seat pivoted upon the chair-back, and arms likewise pivoted having longitudinal channels in their inner faces adapted to be engaged by studs upon the chair-seat when folded, substantially as described.

6. In a portable chair, the combination with a supporting-standard of a folding chair having a back, hinge members connected with the back whereby the latter is rotatably mounted on the standard and provided with a depending bracket having an angular extension which loosely encircles the standard, and a platform surrounding the standard having a series of radial depressions for engaging one hinge member of the chair to retain it in a predetermined position substantially as described.

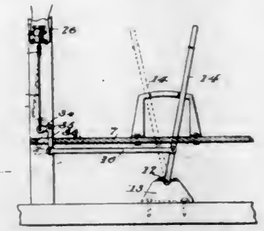
7. In a portable duplex chair, the combination with a supporting-standard, of folding chairs having backs, hinge members connected with each back whereby the latter is rotatably mounted on the standard, each back being provided with depending brackets, one of which is provided with an angular extension which loosely encircles the standard, foot-rests supported by said brackets, a platform surrounding the standard having a series of radial depressions for engaging one hinge member of each chair, and suitable cushions in said depressions substantially as described.

8. The combination of a chair-back, a folding seat supported thereon and provided with studs, and arms pivoted on the back and provided with longitudinal channels formed in their inner faces and arranged to be engaged by the studs of the seat as the latter is raised and lowered whereby corresponding movements are respectively imparted to the arms, the said channels being open at their outer extremities to permit the entrance and escape of the studs.

9. The combination of a chair-back, a folding seat supported thereon and provided with studs, and arms pivoted on the back and provided with longitudinal channels formed in their inner faces, said channels being bounded by walls on opposite sides, and open at their outer extremities to permit the entrance and escape of the actuating seat-studs.

656,584. SIGNALING APPARATUS. CASCIUS R. PERRINE, Goldfield, Colo. Filed Apr. 10, 1899. Serial No. 712,358. (No model.)

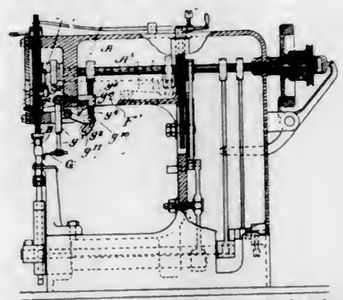
Claim.—1. In a switch, the combination of a closed casing having a detachable cap, and provided with a two-part lining of insulating material, an insulating-disk located in said casing between the two lining parts, metal sleeves passing through the disk, two contacts attached to said sleeves and mounted on the disk, circuit-wires passing through the sleeves and suitably connected thereto, a rod passing through the disk between the contacts, a bridge-piece attached to said rod and arranged to close the circuit by engaging the contacts, a spring surrounding the rod, one extremity of the spring engaging a stop on the rod while the other extremity bears against the casing and normally holds the bridge-piece in the open-circuit position.



2. In a switch, the combination of a closed casing having a detachable cap, and provided with a two-part lining composed of insulating material, an insulating-disk located in said casing between the two lining parts, metal sleeves passing through the disk, two contacts mounted on the disk and attached to said sleeves, circuit-wires passing through the sleeves and suitably connected thereto, a rod passing through the disk between the two contacts, two pins slidingly mounted on the disk and having stops to limit their movement, a bridge-piece attached to said pins and made fast to the rod, and arranged to close the circuit by engaging the contacts, a spring surrounding the rod and having one of its extremities engaging the stop on the rod while the other extremity bears against the casing and normally holds the bridge-piece in the open-circuit position.

3. In a switch, the combination of a closed casing having a detachable cap, and provided with a two-part lining composed of insulating material, an insulating-disk located in said casing between the two lining parts, metal sleeves passing through the disk, two contacts mounted on the disk and attached to said sleeves, circuit-wires passing through the sleeves and suitably connected thereto, a rod passing through the disk between the two contacts, two pins slidingly mounted on the disk and having stops to limit their movement, a bridge-piece attached to said pins and made fast to the rod, and arranged to close the circuit by engaging the contacts, a spring surrounding the rod and having one of its extremities engaging the stop on the rod while the other extremity bears against the casing and normally holds the bridge-piece in the open-circuit position, an insulating pull-cord connected with the rod, and suitable means connected with the cord for actuating the bridge-piece to close the circuit.

656,585. LOOPER MECHANISM FOR SEWING-MACHINES. HERBERT C. PETERS, Boston, Mass. Filed Nov. 18, 1896. Renewed Jan. 17, 1900. Serial No. 1,758. (No model.)



Claim.—1. In a sewing-machine, the combination of a hooked or barbed needle and its operating mechanism with a driving-shaft; an endwise and laterally movable bar operatively connected with said driving-shaft; a rocking thread-guide support; a thread-guide loosely jointed to said rocking support; and a link from said thread-guide to said bar.

2. In a sewing-machine, the combination of a hooked or barbed needle and its operating mechanism with a driving-shaft; an endwise and laterally movable bar operatively connected with said driving-shaft; a rocking thread-guide support; a thread-guide loosely jointed to said rocking support; and a link loosely jointed to said thread-guide and adjustably connected to said bar.

656,586. BURGLAR-ALARM AND DOOR-CHECK. WILLIAM H. REIFF, Philadelphia, Pa., assignor of one-half to Harry C. Radcliffe, same place. Filed Jan. 3, 1900. Serial No. 226. (No model.)



Claim.—1. In a burglar-alarm, a shoe, a firing-pin, a guide therefor on said shoe, a projecting member on said pin, a lever adapted to be brought into engagement with said projection, whereby said pin is rotated, and means on said guide for the play of said projecting member, said lever being pivoted at one end on said shoe and guided on the upper wall thereof and having a recessed nose in which said projecting member is freely seated.

2. A shoe, a rising-and-falling lever mounted thereon, a firing-pin having a member adapted to be engaged by said lever, a guide for said pin, and a spring for impelling said pin, said guide having a deflected slot for the passage therein of said member of said pin.

3. A burglar-alarm having a wedge-shaped shoe, a firing-pin, a guide with means for primarily engaging said pin, a rising-and-falling lever adjacent to said pin adapted to rotate the same, and means for impelling said pin when released of said engaging means, said shoe having a slot therein, and said lever freely occupying the same.

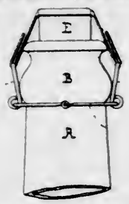
4. In a burglar-alarm, a firing-pin with a projecting member thereon, a guide for said pin provided with a deflected slot, in either limb of which said member may be disposed, a shoe carrying said parts and a rising-and-falling lever mounted on said shoe for removing said member from one of said limbs to the other, whereby the pin is free to be impelled against a detonating device.

5. In a burglar-alarm, a shoe, a movable plate mounted on said shoe and having cartridge-receiving openings of different sizes, and constructed to place either opening in the path of the firing-pin of the alarm.

6. In a burglar-alarm, a shoe, a firing-pin, a guide for said pin on said shoe, means for retaining and releasing said pin, and a plate opposite to the head end of said pin provided with cartridge-receiving openings of different sizes, said plate being movably mounted on said shoe.

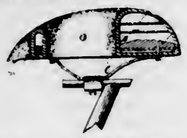
7. A burglar-alarm consisting of a shoe, a firing-pin, a slotted guide for said pin, a projection on said pin adapted to play in the slot of said guide, a lever pivotally mounted on one end of said shoe and engaging said projection, and a movable cartridge-holder with different-sized openings therein on the other end of the shoe.

656,587. BOTTLE-STOPPER FASTENING. ALBERT SHARK, Baltimore, Md., assignor of one-half to Henry B. Geddes, same place. Filed May 9, 1900. Serial No. 16,048. (No model.)



Claim.—In combination with a bottle having a head, a ring situated under the head, a pair of bails hinged to the said ring, a cap adapted to be placed over a stopper while the same is in the mouth of the bottle, the said cap having extended ties which are adapted to be passed through the hinged bails and to have their ends turned upward, substantially as, and for the purpose specified.

656,588. BICYCLE-SADDLE. WILLIAM M. STARR, Washington, D. C., assignor of one-half to Rollo W. Browne, same place. Filed Sept. 29, 1898. Serial No. 692,193. (No model.)

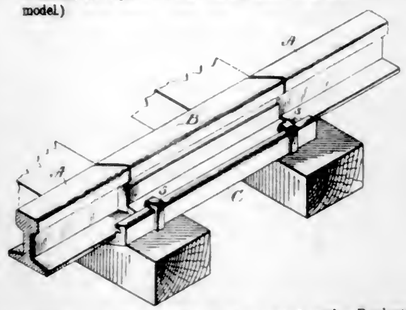


Claim.—1. In a bicycle-saddle, the combination of a pneumatic bicycle-seat, provided with lateral, longitudinal and oblique elastic braces, suitably secured thereto, a sealing material secured to the inner face of the flat wall of the pneumatic seat, bolts for securing the saddle-bearing springs passing through said wall, and arranged to be sealed by said material, substantially as described.

2. The combination in a bicycle-saddle of a pneumatic bicycle-seat, provided with a flange and with lateral, longitudinal and oblique elastic braces, secured at their ends to opposing walls within the air-cushion, of a base provided with suitable clamping-bolt holes, of a clamping-plate provided with projections, which are adapted to receive stud-bolts to secure the air-cushion to the base, of spring-holding bolts, and an automatically-sealing material over said bolts, substantially as described.

3. In a bicycle-saddle, the combination of an air-cushion, a base and a clamping plate, all hollowed out to form a semicircular recess in the front of the saddle, bolts for securing the springs to said plate and means for sealing same, substantially as described.

656,589. RAIL-JOINT. DANIEL STEPHENS, Pottsville, Pa., assignor of three-fourths to Richard J. Holahan, Edward A. Moyer, and Clinton D. Rishel, same place. Filed June 2, 1900. Serial No. 18,877. (No model.)

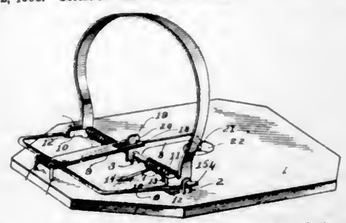


Claim.—1. A rail-joint embodying the tread portion B adapted to embrace the ends of the webs of the rails, and the side clamps C adapted to embrace the edges and clamp together the flanges of both rails and the part B, and spikes as the securing devices, substantially as set forth.

2. The combination of the rails having the tread cut away at the ends, the portion B formed with a groove to fit over the ends of the web of said rails and with a top of a form to supply the cut-out portion of the tread and having flanges extending out over the rail-flanges to their edges, and the side clamps embracing the edges of said rail and tread-portion flanges, and spikes for securing them together, subtantially as set forth.

3. In a rail-joint, the combination, of the rails with the ends of the tread cut away, the portion B formed to fit onto the projecting webs and supply the cut-away portion of the tread, and having flanges extending out over the rail-flanges, the side clamping-plates engaging with and clamping together both of said flanges to bind them together and extending under the rail, notches being formed in the edges of said several parts which register, and spikes engaging with said notches in said parts, and the ties, all substantially as set forth.

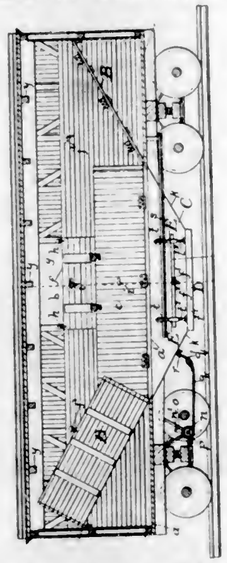
656,590. ANIMAL-TRAP. CHAUNCEY B. TRUMBLE, Groton, N. Y., assignor to Hiram G. Moe, same place. Filed Nov. 11, 1899. Renewed July 2, 1900. Serial No. 22,320. (No model.)



Claim.—1. A trap comprising a base, a transverse pintle, a movable jaw mounted on the pintle and provided at opposite sides with short arms having inwardly and outwardly extending lugs, springs engaging the inner lug, a bail or lever engaging the outer lugs and means for setting and tripping the bail or lever, substantially as described.

2. A trap comprising a base, a transverse pintle, a movable jaw mounted on the pintle and provided at opposite sides with short arms having inwardly and outwardly extending lugs, a bail or lever mounted on the pintle and engaging the outer lugs, springs disposed on the pintle and having arms engaging the inner lug, a bait-lever fulcrumed on the pintle, and a trigger hinged at its outer end and adapted to engage the bail or lever and the bait-lever, substantially as described.

656,591. RAILWAY FREIGHT-CAR. CHRISTOPHER B. WEST, Baltimore, Md., assignor of one-third to Arthur H. Blackburn, same place. Filed June 25, 1900. Serial No. 21,403. (No model.)



Claim.—1. In a railway freight-car provided with a hopper-bottom, the combination of a slide for closing the discharge-opening of said hopper-bottom; and a sealing-tray for covering said discharge-opening, as set forth.

2. A railway freight-car, provided with a hopper-bottom and a horizontal floor on each side of said hopper-bottom; two floor-sections hinged to the side of the car to swing in a vertical plane; and a flap hinged to the free edge of each hinged floor-section, as set forth.

3. A railway freight-car, provided with a hopper-bottom and a horizontal floor on each side of said bottom; inclines hinged along the sides of the car and adapted to form continuations of the ends of the said hopper-bottom; two floor-sections hinged along the sides of the car over said hopper-bottom; a door-flap hinged to the free edge of each hinged floor-section; latches adapted to hold said flaps and floor-sections in vertical position; and means for holding said door-flaps folded underneath said floor-sections, as set forth.

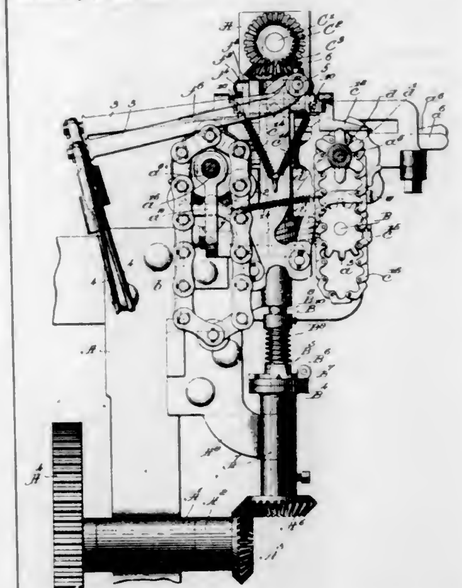
4. A railway freight-car provided with a hopper-bottom; a slide adapted to close the discharge-opening of said hopper-bottom; rails along the sides of said hopper-bottom; a sealing-tray supported by and movable along said rails; and means for raising and lowering said tray, as and for the purpose set forth.

5. A railway freight-car, provided with a hopper-bottom; means for closing the discharge-opening of said hopper-bottom; rails along the sides of said hopper-bottom; roller-hangers mounted on said rails and having screw-threaded lower ends; a sealing-tray provided with upwardly-extending screw-threaded arms; and turnbuckles connecting said arms with said hangers, as set forth.

6. A railway freight-car, provided with a hopper-bottom; means for closing the discharge-opening of said bottom; rails along the sides of said bottom; roller-hangers mounted on said rails; a sealing-tray; turnbuckles adjustably connecting said tray and hangers; and a rod adapted to be inserted through said turnbuckles and sealed, as set forth.

656,592. LOOM. HORACE WYMAN, Worcester, Mass., assignor to the Crompton & Knowles Loom Works, same place. Filed Nov. 29, 1897. Serial No. 660,095. (No model.)

Claim.—1. In an organized loom, the following instrumentalities, viz: a shuttle-box pattern-surface; a multiplying mechanism coöperating therein; a pattern-surface to determine the order of forming sheds; a rotating shaft provided with endless screw or worm surfaces; and worm-toothed gears arranged on opposite sides of said worm-surfaces and driven thereby to actuate the pattern-surface of the shed-forming mechanism, the shuttle-box pattern-surface, and said multiplying mechanism, means for rotating said shaft and a yielding clutch between said means and shaft, substantially as described.



2. In a loom, a shuttle-box pattern-surface; a multiplying mechanism coöperating therewith; a pattern-surface to determine the order of forming sheds; a rotating shaft provided with endless screw or worm surfaces; worm-toothed gears arranged on opposite sides of and driven by one of said screw or worm surfaces, and clutches intermediate the said shuttle-box pattern-surface and multiplying mechanism and two of said worm-toothed gears, to move said shuttle-box pattern-surface and said multiplying mechanism alternately, and to also move the pattern-surface of the shed-forming mechanism, substantially as described.

3. In a loom, the following instrumentalities, viz: a shuttle-box pattern-surface; a multiplying mechanism coöperating therewith; two worm-toothed gears, means to enable the said worm-toothed gears to engage and turn said shuttle-box pattern-surface or the said multiplying mechanism at desired intervals; a shaft provided with an endless screw or worm arranged between said gears constructed with a dwell and an actuating portion, to produce a dwell alternately in the movement of each of said worm-toothed gears actuated thereby for the purposes set forth.

4. In a loom, a shuttle-box pattern-surface, a multiplying mechanism coöperating therewith, a pattern-surface to determine the order of forming sheds, a rotating shaft provided with a plurality of worms, one of said worms engaging a worm-toothed gear to actuate the pattern-surface of the shed-forming mechanism; two clutches, one coöperating with the shuttle-box pattern-surface and the other with the multiplying mechanism, each having as a part thereof a worm-toothed gear, the second worm on said shaft having a dwell portion and arranged between and engaging and rotating both the worm-toothed gears coöperating with the said clutches to move the said gears alternately, substantially as described.

5. In a loom, a shuttle-box pattern-surface, a multiplying mechanism coöperating therewith, a pattern-surface to determine the order of forming sheds, a rotating shaft provided with a plurality of worms, one of said worms engaging a worm-toothed gear to actuate the pattern-surface of the shed-forming mechanism; and two clutches, each having as a part thereof a worm-toothed gear, the second worm on said shaft arranged between and engaging and rotating both said worm-toothed gears and the said clutches, and means to automatically move said rotating clutches to effect the starting or stopping of either the said shuttle-box pattern-surface or said multiplying mechanism at predetermined times, substantially as described.

6. In a loom, a shuttle-box pattern-chain, means to support it, a coöperating worm-toothed gear; the chain of a multiplying mechanism, means to support it, and a coöperating worm-toothed gear; and a pattern-chain to determine the order of forming sheds, a support for it, and a co-

operating worm-toothed gear, the centers about which said chains turn being out of line; combined with a rotating shaft provided with a plurality of worm-surfaces, one of said worm-surfaces engaging the worm-toothed gear coöperating with the shed-forming pattern-chain; and the other of said worm-surfaces engaging and rotating both the two worm-toothed gears coöperating respectively with the shuttle-box pattern-chain and the chain of the multiplying mechanism, substantially as described.

7. In a loom, a shuttle-box pattern-chain, a sleeve supporting it provided with a hand-wheel, and a coöperating worm-toothed gear; the chain of a multiplying mechanism, and a sleeve to support it having a hand-wheel coöperating with it; combined with a rotating shaft provided with a worm-surface between and to engage and rotate both of said worm-toothed gears alternately, and clutches carried by said worm-toothed gears and engaging at intervals the supports of said chains, substantially as described.

8. A shuttle-box pattern-chain, means to support it, a coöperating worm-toothed wheel; the chain of a multiplying mechanism, means to support it, and a coöperating worm-toothed wheel; a rotatable shaft, having a worm provided for portions of its periphery with dwell teeth and with inclined teeth, the inclined teeth being a continuation of the dwell teeth, said worm occupying a position intermediate said worm-toothed gears and engaging the teeth of the latter; clutches intermediate said worm-toothed gears and said chain-supporting means; and two levers, each of which is acted upon by the indicators of one of said pattern-chains to control the period of operation and of rest of the clutch coöperating with the other of said pattern-chains, substantially as described.

9. In a loom, the following instrumentalities, viz: a shuttle-box pattern-surface having a row of indicators to determine the movement of a multiplying mechanism; a multiplying mechanism having indicators to determine the movement of the shuttle-box pattern-surface; a worm having a dwell portion, worm-toothed gears actuated thereby and moved alternately, and controlling the movement of the pattern-surface and multiplying mechanism, clutches driven by said worm-toothed gears; mechanism intermediate said two clutches and said shuttle-box pattern-surface and multiplying mechanism whereby the shuttle-box pattern-surface is enabled to control the clutch for stopping and starting the multiplying mechanism, and the multiplying mechanism is enabled to control the clutch for starting and stopping of the shuttle-box pattern-surface, substantially as described.

10. The sliding collar forming part of a clutch mechanism; means for rotating said collar, a pattern-surface, and a lever intermediate said pattern-surface and collar, and engaging the latter, combined with a shoe pivoted on said lever and adapted to rest on said pattern-surface, and a spring interposed between said lever and said shoe, substantially as described.

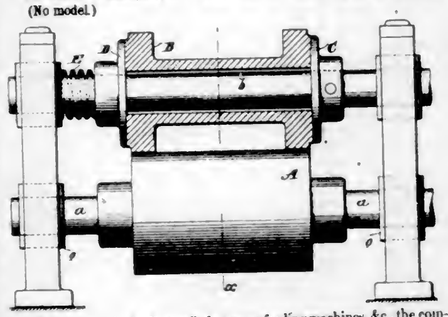
11. In a loom, a two-part power-operated shaft, a clutch intermediate said parts, two worm-surfaces and a bevel-gear C^3, carried by the upper part of said power-operated shaft; a shaft carrying the shed-forming pattern-chain and a worm-gear thereon operated by one of said worm-surfaces; a sleeve having a cylinder carrying a shuttle-box pattern surface or chain, means to support said sleeve; a second sleeve having a cylinder carrying the chain of a multiplying mechanism, means to support said sleeve out of line with relation to the shaft carrying the shed-forming pattern-chain and the sleeve carrying said shuttle-box pattern-surface; the two sleeves each having an attached worm-gear, both of such gears being actuated by one of said worms; clutches to effect the engagement of said sleeves with or their disengagement from said shuttle-box pattern-surface and said multiplying mechanism; and a shaft having a gear C^2 engaging the gear C^3 and adapted to be rotated by hand in either direction when the lower part of said power-operated shaft is held at rest and the loom stopped, whereby the upper part of said power-operated shaft and the parts actuated by its attached worm-surfaces may be turned in unison in either direction at will, substantially as described.

12. In a loom, the following instrumentalities, viz: a shuttle-box pattern-surface, a worm-toothed gear, means connecting said gear and said pattern-surface; a shed-forming pattern-surface to determine the order of forming sheds, a worm-toothed gear in operative connection therewith; a rotatable shaft provided with two worm-surfaces, one of said worm-surfaces engaging the worm-toothed gear coöperating with the shuttle-box pattern-surface being provided with dwell and inclined teeth, substantially as described, to enable said shuttle-box pattern-surface to be moved from one to the next series of indicators and remain at rest, the operation of the other worm-surface and worm-toothed gear coöperating with the shed-forming pattern-surface to move the latter for a distance equal to two series of its indicators before the shuttle-box pattern-surface is again moved, substantially as described.

13. In a loom, the following instrumentalities, viz: a shuttle-box pattern-surface, a coöperating worm-toothed gear; a multiplying mechanism including a worm-toothed gear; a pattern-surface to determine the order of forming sheds, a worm-toothed gear in operative connection therewith; a rotatable shaft disposed between the two first-mentioned toothed gears and provided with two worm-surfaces, the worm-surfaces coöperating with the two toothed gears of the shuttle-box pattern-surface, and the multiplying mechanism being constructed to present dwell and inclined teeth to enable the said worm-surfaces to move alternately the said two worm-toothed gears for one step to actuate the shuttle-box pattern-surface or the multiplying mechanism alternately from one to the next indicator of its chain, while the worm-toothed gear of the pattern-surface determining the order of forming sheds is moved for a distance to effect the opening of two sheds, substantially as described.

14. Two pattern surfaces or chains, supports for the same; studs about which said surfaces or chains may rotate; two worm-toothed gears; a shaft having a worm-surface between and in engagement with both said gears, the teeth of the said worm being constructed with a dwell and active portion to provide for a dwell alternately and successively in the rotation of each of said worm-toothed gears; clutch-surfaces rotating with said worm-toothed gears and each controlled by one of said pattern-surfaces, whereby one of said surfaces controls the movement of the clutch to start and stop the other pattern-surface, substantially as described.

656,593. FEED-ROLLS FOR PAPER-FEEDING MACHINES. HUGO BILGRAM, Philadelphia, Pa. Filed Dec. 22, 1899. Serial No. 741,215. (No model.)



Claim.—1. In feeding-rolls for paper-feeding machines, &c., the combination with the roll-shaft, of a roll fitting loosely thereon with provision for transverse movement with reference thereto, and a yielding frictional connection between the end faces of said roll and its shaft, whereby the roll may move or yield transversely with respect to its shaft and said frictional action.

2. In feeding-rolls for paper-feeding machines, &c., the combination with a roll-shaft, of a roll having an internal bore of a greater diameter than the diameter of the roll-shaft and a yielding connection between the end faces of said roll and the roll-shaft.

3. In feeding-rolls for paper-feeding machines, &c., the combination with a roll-shaft, of a roll having an internal bore of greater diameter than the diameter of the roll-shaft, clamping-disks carried by the roll-shaft in frictional contact with said roll, and a spring acting on one of the said disks and holding it in yielding frictional contact with the roll.

4. In feeding-rolls for paper-feeding machines, &c., the combination of a roll-shaft, a roll fitting loosely thereon with provision for transverse movement with reference thereto, and a yielding disk held in frictional contact with an end face of said roll and forming a yielding frictional connection between the roll and shaft with provision for transverse movement of the roll with respect to its shaft.

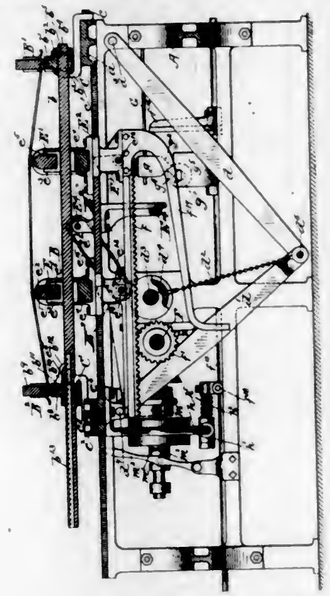
5. In feeding-rolls for paper-feeding machines, &c., the combination of a roll-shaft, clamping-disks carried by said shaft, a roll fitting loosely on said shaft between said clamping-disks with provision for transverse movement with respect to its shaft between said disks, and means to hold said disks in yielding frictional contact with the end faces of said roll.

656,594. MACHINE FOR STRETCHING LEATHER. FRANK A. BRADFORD, Boston, and MERTON A. HOLMES, Newton, Mass., assignors to Harriet E. Holmes, Lena B. Holmes, and Merton A. Holmes, Boston, Mass. Filed Sept. 16, 1899. Serial No. 730,760. (No model.)

Claim.—1. In a machine of the character specified, holding and stretching clamps, hand means for separating them, reciprocating rubbing-blades each independently adjustable and movable vertically, and means for lifting each rubbing-blade to working position and for holding them lifted during their reciprocating movement, as set forth.

2. In a machine of the character specified, holding and stretching clamps, reciprocating rubbing-blades and means applied to each blade whereby it is lifted to a working position and is held lifted during their reciprocating movements, as set forth.

3. In a machine of the character specified, holding and stretching clamps, hand means for separating the clamps, devices for holding them separated, rubbing-blades, means for reciprocating them between the clamps and hand means applied to each blade separately for lifting it to working position and for holding it lifted during its rubbing operation, as set forth.



4. In a machine of the character specified, holding and stretching clamps, reciprocating rubbing-blades, means applied to each blade to lift it and bring its working edge to a working position above the level of the ends of the material held by the clamps and for holding it in said position during its reciprocating movement, as set forth.

5. In a machine of the character specified, a removable holding and stretching frame comprising a clamp-support, two clamps mounted thereon, adapted to be separated to stretch the material held by them, and means for locking them in their separated position, frame-holders to engage the clamps of the frame also separable in relation to each other, means for moving one of the holders to separate the clamps, the rubbing-blades, devices for lifting them and for holding them lifted and means for reciprocating them in their lifted position.

6. In a stretching and rubbing machine a removable holding and stretching frame comprising a clamp-support, two clamps mounted thereon adapted to be separated to stretch the material held by them and means for locking them in their separated position, frame-holders to engage the clamps of the frame, also separable in relation to each other, means for moving one of the holders to separate the clamps, the detachable rubbing-blades extending across the clamp-support between it and the said material held by the clamps, holders upon each side of said support for holding the said blades by their ends, devices for lifting said holders to said blades and for then slightly lifting the blades and holding them lifted, and means for reciprocating the blade-holders and said blade-lifting devices.

7. In a machine of the character specified, a holding and stretching frame comprising a clamp-support, two clamps mounted thereon adapted to be separated step by step to stretch the material held by them, means for locking them apart as they are separated, frame-holders to engage the clamps of the frame also separable in relation to each other, means for moving one of the holders continuously by hand to separate the clamps and afterward by power with a step-by-step movement, the rubbing-blades, devices for holding and lifting them and for holding them lifted prior to their reciprocation, and means for reciprocating them in their lifted position.

8. In a machine of the character specified, a holding and stretching frame comprising a clamp-support, two clamps mounted thereon adapted to be separated to stretch the material held by them, means for locking them in their separated position, frame-holders to engage the clamps of the frame also separable in relation to each other, a device for moving one of said holders, the rubbing-blades, a reciprocating carriage upon which they are mounted and means connecting the carriage with the device for moving one of the frame-holders, whereby the said device is caused to be operated by the carriage.

9. In a machine of the character specified, a reciprocating carriage, blade-holders mounted thereon, rubbing-blades having their ends in said holders, means upon said carriage in line with said blade-holders adapted to be simultaneously operated to lift the blade-holders simultaneously.

10. In a machine of the character specified the combination of the blade-holders, the rubbing-blades carried thereby, cams for lifting the blade-holders and means for adjusting the height of the blade-holders in relation to the cams.

11. In a machine of the character specified, the combination of a holding and stretching device having two clamps adapted to be separated to stretch the material held by them, means for locking them in their separated position, holders to engage the clamps also separable in relation to each other and reciprocating rubbing-blades and means for varying automatically the length of stroke of said rubbing-blades as said material is stretched at one end.

12. In a machine of the character specified, holding and stretching clamps adapted to be separated to stretch the material held by them, means for locking them apart as they are separated, holders to engage the clamps separable in relation to each other by a step-by-step movement, reciprocating rubbing-tools and means whereby a change in position of the clamps with relation to each changes the length of the stroke of the rubbing-tools automatically.

13. In a machine of the character specified, a holding and stretching frame comprising a clamp-support, two clamps mounted thereon adapted to be separated to stretch the material held by them, means for locking them in their separated position, frame-holders to engage the clamps of the frame also separable in relation to each other, means for moving one of the holders to separate the clamps comprising the ratchet-wheel D, its shaft, a winding-drum mounted thereon, the toggle-links d, d' pivoted together, one of which is also pivoted to the machine-frame and the other to the holder-slide, a winding-chain, connecting the toggles with the drum and a locking-dog to lock the ratchet-wheel.

14. In a machine of the character specified a holding and stretching frame comprising a clamp-support, two clamps mounted thereon, adapted to be separated to stretch the material held by them and adapted to be locked in their separated position, frame-holders also separable in relation to each other, means for moving one of the holders to separate the clamps by a step-by-step movement, comprising a ratchet-wheel D, its shaft, a winding-drum thereon, the toggle members d, d' connected with each other, the frame and the slide carrying the holder, a reciprocating dog I to engage the teeth of the ratchet-wheel near the end of a full reciprocation and a locking-dog to engage the teeth of the ratchet-wheel to hold it stationary while the reciprocating dog is out of engagement with its teeth.

15. In a machine of the character specified, a holding and stretching frame comprising a clamp-support, two clamps mounted thereon adapted to be separated to stretch the material held by them, means for locking them in their separated position, frame-holders to engage the clamps of the frame also separable in relation to each other, means for moving one of the holders to separate the clamps and devices for disconnecting said means from said holder in combination with reciprocating rubbing-blades.

16. In a machine of the character specified, holding and stretching clamps adapted to be separated to stretch the material held by them, means for locking them in their separated positions, frame-holders to engage the clamps also separable in relation to each other, a reciprocating carriage, rubbing-blades carried by said carriage, mechanism for moving the carriage, and fixed and variable reversing devices for reversing the movement of said mechanism, the variable reversing device being automatically controlled by the movable clamp.

17. In a machine of the character specified, the combination of a movable clamp, a reciprocating carriage having a variable extent of movement, rubbing-tools mounted upon the carriage and means whereby the movement of the clamp controls the extent of movement of the said carriage.

18. In a machine of the character specified, a holding and stretching frame comprising a clamp-support, two clamps mounted thereon adapted to be separated to stretch the material held by them, and means for locking them in their separated position, frame-holders to engage the clamps of the frame also separable in relation to each other, and one of which is pivoted to move upon a horizontal arc.

19. In a machine of the character specified, holding and stretching clamps adapted to be separated to stretch the material held by them, means for locking them in their separated position, holders to engage the clamps also separable in relation to each other, a reciprocating carriage, rubbing-blades mounted thereon to be reciprocated thereby, the carriage-rack f, the gears f' meshing therewith mounted on the shaft F, the bevel-gear f^2 at the end of said shaft, the power-shaft f^7, the bevel-gears f^3, f^4 and their respective clutch members f^5, f^6 mounted thereon to mesh with the teeth of the bevel-gear f^2, the clutch member f^6 movable on the power-shaft f^7, having the clutch-sections f^8, f^{10}, the clutch-lever f^{11}, the dog-rod f^{12}, connected with said clutch-lever, the stationary dog f^{16}, the automatically-movable dog f^{18} on said dog-rod and the reciprocating dogs mounted

upon said carriage to engage respectively the stationary dog and the movable dog, and means for moving the movable dog adapted to be actuated by the movement of the clamp.

20. In a machine of the character specified, a carriage, rubbing-blades mounted thereon, means for reciprocating the carriage, the movement of which is adapted to be reversed, and reversing devices actuated by the carriage, in combination with independent means for also actuating said reversing devices, whereby the movement of said carriage in each direction is stopped and a reverse movement is given it, as set forth.

21. In a machine of the character specified, clamps for holding the material to be stretched, means for separating the clamps to stretch the material, devices for automatically governing the extent or duration of said stretching action, and reciprocating rubbing-blades.

22. In a machine of the character specified, clamps for holding the material, means for automatically separating the clamps, reciprocating rubbing-blades the length of the stroke of which is automatically increased, and automatic means for discontinuing during the operation of the machine the separation of the clamps and the increase in the length of the stroke of the rubbing-tools.

23. In a machine of the character specified, a detachable stretching-frame comprising a support, clamps mounted thereon adapted to be separated from each other and held in their separated positions, and rubbing-blades held upon the support by the stretched material, the rubbing-surfaces of said blades being upon a level above that of the ends of the stretched material held by the clamps.

24. In a machine of the character specified, a stretching-frame consisting of a support and stretching-clamps mounted thereon, one of which is adapted to be moved with respect to the other and to be automatically locked to said support at the end of each movement, frame and clamp holders for holding the frame and engaging the clamps of said frame and for moving one of them, blades adapted to be mounted upon the support of the frame, blade-holders vertically movable first to engage the ends of the blades and then to lift the blades slightly above said frame-support and means for reciprocating the blades while removed and for moving the clamp.

25. In a machine of the character specified, a removable stretching-frame comprising a support and clamps separable with respect to each other, means for separating the clamps by hand and automatically and for locking the clamps apart, rubbing-blades above the support of said frame, blade-holders vertically movable before they are reciprocated to engage said blades and to slightly lift them above the frame-support, means for reciprocating the blades and for lengthening automatically the stroke thereof, as and for the purposes described.

26. In a machine of the character specified, holders for a stretching-frame which are adapted to be automatically separated, holders for the rubbing-blades adapted to be moved vertically and to be horizontally reciprocated, said frame-holders and said blade-holders being constructed and located with respect to each other, as described, whereby engagement will be permitted between the material held by said stretching-frame and the blades carried by said holders, as and for the purposes set forth.

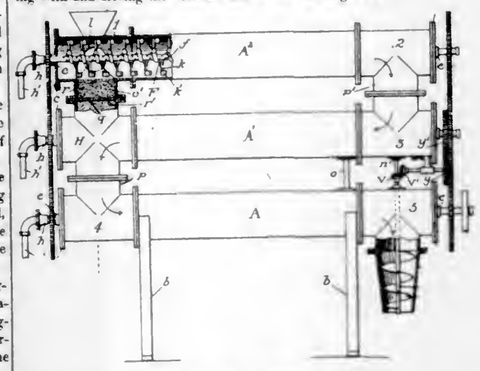
27. In a machine of the character specified, a blade-holder extending across the machine, having a depressed central section, also having recesses at or near each end open at their top for the reception of the blade and a removable blade the ends of which are held in said recesses and the central portion of which extends over the depressed section of the holder, whereby a space is provided between its lower edge and the depressed section of the holder, as and for the purposes set forth.

28. The combination in a machine of the character specified of a stretching-frame, supports for holding it by its ends in a stationary position, a blade-holder having blade-holding recesses on each side of said frame, and a depressed connecting-section beneath said frame, a rubbing-blade extending over said frame, the ends of which are engaged by the said holder and held in its end recesses and means for lifting said blade-holder and for reciprocating the same.

656,595. **APPARATUS FOR MAKING FERTILIZERS.** JOSEPHUS F. BUSSELLS, Irvington, Va., assignor to the American Process Company, New York, N. Y. Filed Oct. 5, 1898. Serial No. 692,668. (No model.)

Claim.—1. An apparatus for processing vegetable or animal matter comprising a plural number of cylinders, one above the other and communicating with each other so as to form a continuous passage-way through the several cylinders; a revoluble agitator within each cylinder: a horizontal tapered feed-neck having its small end entering the topmost cylinder; a tapered compressing-screw in said horizontal feed-neck; and a hopper or funnel attached to the large end of said horizontal neck.

2. An apparatus for processing matter for fertilizers comprising in combination a plural number of horizontal cylinders one above the other; a tubular joint communicating from the side of an upper cylinder at one end to the side of the cylinder next below; a depending tapered discharge-neck at one end of the lowermost cylinder; a vertical shaft which passes diametrically through the lowermost cylinder and extends down the said discharge-neck and has a compressing-screw in said neck; a revoluble shaft in each cylinder and the projecting ends of the shafts connected by gears; and a short shaft gearing with said gears and also gearing with and driving the vertical shaft in the discharge-neck.



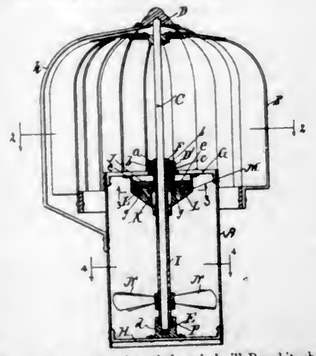
656,596. **DETACHABLE ARTIFICIAL TOOTH.** ROBERT E. CAMPBELL, San Francisco, Cal., assignor of one-half to T. R. Edwards, same place. Filed July 24, 1899. Serial No. 724,996. (No model.)



Claim.—1. In a detachable artificial tooth, the combination of a porcelain front and a metal backing, having vertical coengaging surfaces, the upper or biting end of said tooth having baked thereinto a metallic piece forming a transverse abutment against which the transverse edge of the backing abuts, said metallic piece having its rearmost edge extended downward and passing behind and below the abutting edge of the backing, thereby forming a locking-joint against strain in a direction perpendicular to the plane of the tooth, and independent means for securing together the lower portions of said vertical coengaging surfaces against strain in the said perpendicular direction, substantially as described.

2. In a detachable artificial tooth, the combination of a porcelain front and a metal backing, having vertical coengaging surfaces, the upper or biting end of said tooth having baked thereinto a metallic piece forming a transverse abutment against which the transverse edge of the backing abuts, said metallic piece having its rearmost edge extended downward and passing behind and below the abutting edge of the backing, thereby forming a locking-joint against strain in a direction perpendicular to the plane of the tooth, and a dovetail attachment for the lower portions of said vertical coengaging surfaces, substantially as described.

656,597. **VENTILATOR.** OSBORNE H. CHAMPAGNE, Providence, R. I., assignor of one-half to John Ba. Tanguay, same place. Filed June 5, 1900. Serial No. 19,175. (No model.)



Claim.—1. The combination of the windmill B and its shaft C, with the flue-pipe A, provided with the bearing cross-bars G and H, and ball-bearings D and E, the tubular shaft I, and its ball-bearing P, the inclosing case M, the intermediate gear L, the internal gear J, secured to the shaft C, the pinion K, secured to the shaft I, and the sets of fan-blades N N, arranged at opposite sides of the shaft I, with the vacant spaces O O, between the opposite sets of blades, substantially as described.

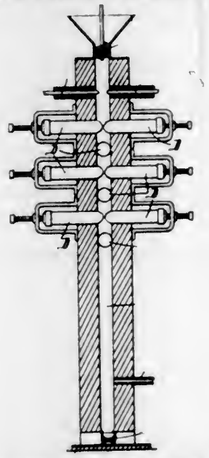
2. The combination of the windmill B, and its shaft C, with the flue-pipe A, provided with the bearing cross-bars G and H, the tubular shaft I, the multiplying-gears between the shaft C, and the shaft I, and the separated sets of fan-blades secured to the shaft I, substantially as described.

656,598. **STUD.** GEORGE R. CLARKE, Providence, R. I., assignor to the Charles E. Hancock Company, of Rhode Island. Filed July 12, 1900. Serial No. 23,297. (No model.)



Claim.—As an improved article of manufacture, a stud comprising a slotted barrel having one of its ends closed and beveled, a head provided with a shank slidably mounted in said barrel and having a base disposed therein and extending at right angles to the shank, said shank being grooved at opposite sides for receiving the edges of the slot of the barrel, a rod carried by said base and projecting therefrom, a plug arranged in the other end of said barrel and having an outwardly-projecting point provided with an annular groove, a spring arranged in said barrel and interposed between said base and said plug, the ends of said spring being connected to the ends of said base and said plug, and a shell mounted upon the projecting point of said plug and swaged in the groove thereof, whereby said shell is held upon said point.

656,599. **PROCESS OF MANUFACTURING CARBIDS.** REUBEN DOOLITTLE, Chicago, Ill., assignor to Mary V. Doolittle, same place. Filed Oct. 16, 1896. Serial No. 609,116. (No specimens.)



Claim.—1. The herein-described process of manufacturing carbids, consisting in first mixing together pulverized carbon and a suitable base in suitable proportions, second, passing the mixture in a shower through a flame, third, passing the heated mixture and accompanying gases through a zone of increasing temperature including an electric furnace where the mixture becomes transformed into a carbid, and, fourth, drawing off the superheated gases and permitting the carbid to cool, the whole constituting a continuous process.

2. The herein-described process of manufacturing carbids, consisting in first mixing together pulverized carbon and lime in suitable proportions, second, passing the mixture in a shower through a flame, third, passing the heated mixture and accompanying gases through a zone of increasing temperature including an electric furnace where the mixture becomes transformed into a carbid, and fourth, drawing off the superheated gases and permitting the carbid to cool, the whole constituting a continuous process.

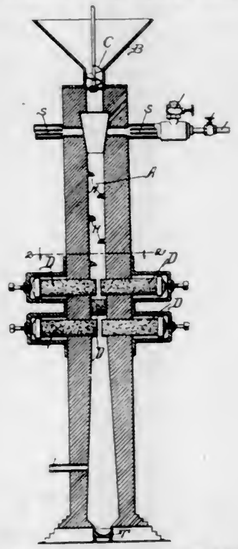
3. The herein-described process of manufacturing carbids, consisting in first mixing together pulverized carbon and a calcium-bearing materia in suitable proportions, second, passing the mixture in a shower through a flame, third, passing the heated mixture and accompanying gases through a zone of increasing temperature including an electric furnace where the mixture become transformed into a carbid, and, fourth, drawing off the superheated gases and permitting the carbid to cool, the whole constituting a continuous process.

4. The herein-described process of manufacturing carbids, consisting in first mixing together finely-divided carbon and an alkaline substance in suitable proportions, second subjecting the said mixed carbon and alkaline substance to the direct action of a flame, third passing the heated mixture and accompanying gases through arcs of increasing temperature sufficient to transform the mixture into a carbid and fourth, drawing off the heated gases and permitting the carbid to cool, the whole constituting a continuous process.

5. The herein-described process of manufacturing carbids, consisting first in mixing together finely-divided carbon and an alkaline material, second passing said mixture in a freely-moving stream successively through arcs of increasing temperature whereby the temperature of the mixture and accompanying gases is gradually increased to a degree of heat sufficient to effect the formation of carbid, and third, drawing off the heated gases and permitting the carbid to cool, the whole constituting a continuous process.

6. The herein-described process of manufacturing carbids consisting in subjecting a moving body of carbid-producing material to the action of heat, passing the material successively through arcs of increasing temperature until a temperature is reached which is sufficient to effect the formation of carbid and finally permitting the same to cool.

656,600. **MEANS FOR MANUFACTURING CARBIDS.** REUBEN DOOLITTLE, Chicago, Ill., assignor to Mary V. Doolittle, same place. Original application filed Oct. 16, 1896. Serial No. 609,116. Divided and this application filed Oct. 20, 1899. Serial No. 734,228. (No model.)



Claim.—1. A smelting-furnace consisting of the following elements in combination, a structure inclosing a vertical shaft, electrodes arranged to form an electric furnace, means near the top of the shaft for feeding the material to be treated into the shaft in a freely-passing shower of fine particles substantially as described, means for directing a flame into the shaft above the electrodes through which the material passes, a draft-pipe below the electrodes for causing a downdraft and for drawing off the gases, and means for removing the smelted material, substantially as described.

2. A smelting-furnace, consisting of a vertical shaft provided with electrodes arranged to form an electric furnace between the top and bottom of the shaft, means for adjusting the electrodes and a draft-pipe below the electrodes in combination with means for feeding the material to be treated into the shaft above the electrodes in a continuous stream or shower of freely-passing fine particles, means for directing a flame into the shaft above the electrodes through which flame the material passes, and means for removing the smelted material, substantially as described.

3. A smelting-furnace consisting of the following elements in combination, a structure incasing a shaft provided with means for feeding the material to be treated into the shaft near its top at will in a shower of freely-passing fine particles, means near the top of the shaft for direct-

ing a flame into the shaft in the path of the falling material, electrodes arranged below the flame to form an electric furnace and a draft-pipe below the electrodes, substantially as described.

4. A smelting-furnace, consisting of the following elements in combination, a structure inclosing a shaft or chamber, means for feeding the material to be treated into the chamber near its top at will, electrodes arranged to form an electric furnace between the extremes of the chamber for subjecting the falling material to a high temperature, a draft-pipe below the electric furnace for drawing off the gases, a cooling-jacket inclosing the lower part of the chamber and a pipe adapted to direct a blast upon the material to further cool it and deliver it in a granular form.

5. A smelting-furnace, consisting of the following elements in combination, a vertical shaft provided with means for feeding the material to be treated into the shaft near its top at will, means near the top of the shaft for directing a flame into the shaft in the path of the falling material, electrodes arranged in a plurality of superimposed couples to form arcs of increasing temperature, a draft-pipe below the electrodes for drawing off the gases, and means for removing the smelted material.

6. A smelting-furnace, consisting of the following elements in combination, a vertical shaft provided with means for feeding the material to be treated into the shaft near its top at will, means near the top of the shaft for directing a flame into the shaft in the path of the falling material, electrodes arranged to form an electric furnace below the flame, a draft-pipe below the electrodes for drawing off the gases, means for cooling the material in transit near the bottom of the shaft and means for directing a blast upon the material to further cool it and deliver it in granular form.

7. A smelting-furnace, consisting of the following elements in combination, a vertical shaft provided with means for feeding the material to be treated into the shaft near its top at will, means near the top of the shaft for directing a flame into the shaft in the path of the falling material, electrodes arranged to form an electric furnace below the flame, a draft-pipe below the electrodes for drawing off the gases, a cooling-jacket inclosing the lower part of the chamber and a pipe adapted to direct a blast upon the material to further cool it and deliver it in a granular form.

8. A smelting-furnace, consisting of the following elements in combination, a vertical shaft provided with means for feeding the material to be treated into the shaft near its top at will, means near the top of the shaft for directing a flame into the shaft in the path of the falling material, electrodes arranged to form an electric furnace below the flame, a draft-pipe below the electrodes for drawing off the gases, means for dividing the falling material into small streams or parts, a cooling-jacket inclosing the lower part of the chamber, and a pipe adapted to direct a blast upon the material to further cool it and deliver it in granular form.

9. A smelting-furnace for the purpose set forth comprising the following elements in combination, a structure inclosing a shaft, a burner for directing a flame into said shaft, an electric furnace below said burner, and means for feeding the material in a freely-passing shower or stream through said flame and electric furnace, substantially as described.

10. A smelting-furnace for the purpose set forth, comprising the following elements in combination, a structure inclosing a vertical shaft, electrodes arranged to form an electric furnace between the top and bottom of said shaft, means for feeding the material in a freely-passing shower or stream through said electric furnace, and a draft-pipe below the electric furnace for causing a downdraft through the electric furnace, substantially as described.

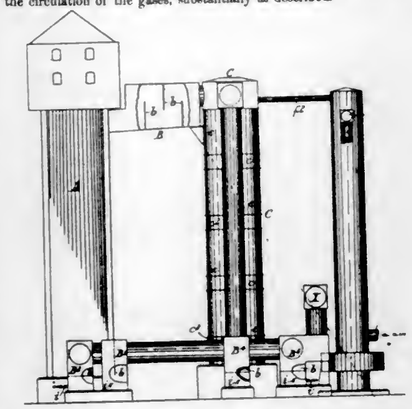
656,601. APPARATUS FOR PURIFYING GAS. EDWARD J. DUFF, Liverpool, England, assignor of one-half to the United Alkali Company, Limited, same place. Filed Feb. 16, 1900. Serial No. 5,518. (No model.)

Claim.—1. The combination with gas-producers of an interchanger of heat through which the gases from the producer are passed and through which water is also passed so that the water abstracts heat from the gases, and means for bringing the water, thus heated into contact with air to produce a mixture of air and water-vapor, and means for passing the said mixture to the gas-producer, substantially as hereinbefore described.

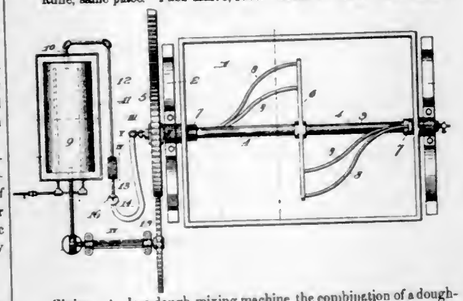
2. In combination with gas-producers of an interchanger for cooling the gases therefrom consisting of alternately-arranged chambers, the alternate ones of which are provided with tubes in communication with intervening chambers provided with a passage for water, into, and from, the first-named chambers, and with deflectors to cause the water to pass around the tubes through which the gases pass, substantially as hereinbefore described.

3. The combination with an absorption-tower through which gases from a producer are adapted to be circulated, a cooling-tower having a plurality of contiguous passages for the gas and water respectively, a passage connecting the upper ends of the gas-passages with the outlet from the absorption-tower, and a mixing-tower having an air-inlet at its lower end, and a water-inlet at its upper end connected by a passage with the upper ends of the water-passages of the cooling-tower, substantially as described.

4. The combination with an absorption-tower through which gases from a producer are adapted to be circulated, a cooling tower having a plurality of contiguous passages for the gas and water respectively, a passage connecting the upper ends of the gas-passages with the outlet from the absorption-tower, a mixing-tower having an air-inlet at its lower end, and a water-inlet at its upper end connected by a passage with the upper ends of the water-passages of the cooling-tower, by-passages from the gas-inlet pipe to the absorption-tower, to the upper ends of the gas-passages through the cooling-tower, and to the gas-outlet passage from the cooling-tower, and means at the junctions of the connecting-passages between the towers and in the passage from the upper end of the absorption-tower to the cooling-tower, whereby said passages may be closed and the absorption-tower, or both the absorption-tower and the cooling-tower, cut out of the circuit for the circulation of the gases, substantially as described.



656,602. DOUGH-MIXING MACHINE. JOHN R. FARMER, St. Louis, Mo., assignor of two-thirds to Adolph Boettler and Henry F. W. Ruhe, same place. Filed Mar. 6, 1900. Serial No. 7,609. (No model.)



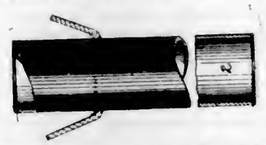
Claim.—1. In a dough-mixing machine, the combination of a dough-pan, a hollow perforated shaft arranged therein, beaters carried by said shaft, means for operating the shaft, means for supplying air to said shaft to be ejected therefrom into the dough-pan, and means for heating said air, substantially as described.

2. In a dough-mixing machine, the combination of a dough-pan, a hollow perforated shaft arranged in said pan, beaters carried thereby, means for operating said shaft, an air-box, a jacket surrounding said air-box, a hot-air chamber within said jacket, a burner in said hot-air chamber, and an air-conducting pipe leading from said air-box to said hollow shaft, substantially as described.

3. In a dough-mixing machine, the combination of a dough-pan, a hollow perforated beater-shaft arranged to operate in said pan, means for driving said shaft, means for conveying air to the interior of said shaft, and an air-pump having driving connection with said shaft-operating means, substantially as described.

656,603. TUBULAR BELL FOR CHIMING CLOCKS. ALLEN W. HARRINGTON, New York, N. Y., assignor to Harris & Harrington, same place. Filed June 27, 1900. Serial No. 21,768. (No model.)

Claim.—1. In a musical sounding apparatus of the class described, a suspended tube adapted to be struck by a hammer and caused to vibrate to produce by its vibration a musical sound of a certain pitch, combined with one or more stiffening devices secured upon and transversely disposed relatively to the annular end of the tube, substantially as described.



2. In a musical sounding apparatus of the class described, a tube adapted to be struck by a hammer, and caused to vibrate to produce by its vibration a musical sound of a certain pitch, combined with a perforated diaphragm secured upon the annular end of the tube, substantially as described.

3. In a musical sounding apparatus of the class described, a suspended tube adapted to be struck by a hammer, and caused to vibrate to produce by its vibration a musical sound of a certain pitch, combined with a perforated diaphragm secured upon the annular end of the tube, substantially as described.

4. In a musical sounding apparatus of the class described, a suspended tube adapted to be struck by a hammer, and caused to vibrate to produce by its vibration a musical sound of a certain pitch, combined with perforated diaphragms secured upon the annular ends of the tube and exterior to its bore, the aperture in the diaphragm most closely adjacent the point of support of the tube being of lesser diameter than that of the diaphragm more removed from the point of support, substantially as described.

5. A tubular bell having a metallic disk or diaphragm secured at its longitudinal surface to the annular end of the tube, and exterior to the bore, substantially as described.

6. A tubular bell having its annular end fitted very firmly to the longitudinal surface of the metallic disk or diaphragm, substantially as described.

7. A tubular bell having a metallic diaphragm at its annular end, said metallic diaphragm fitting in intimate and molecular contact therewith, substantially as described.

8. A tubular bell having a metallic diaphragm secured to the annular end of the tube exterior to its bore, and transversely thereof, said metallic diaphragm fitting in intimate molecular contact with the said end of the tube, substantially as described.

9. A tubular bell having an annular end, and a metallic diaphragm having an annular portion of its longitudinal surface secured to the annular end of the tube, in intimate, solid and molecular contact, substantially as described.

10. In a tubular bell, the combination with the annular end of the tube, and a transversely-disposed diaphragm, of the intervening solid and annular connection, substantially as described.

11. In an article of the class described, the combination of the tube having the exterior of its annular end roughened, a diaphragm having a roughened surface adjacent its periphery, and a solid annular connection interposed between the said roughened surfaces, firmly connecting the tube and diaphragm together, substantially as described.

12. The combination with the tube, of the diaphragm transversely disposed in relation to the tube, an aperture formed in said tube, and a molecular connection established between the annular end of the tube and the surface of the diaphragm, substantially as described.

13. The combination with the tube, and means for supporting the same located adjacent its upper end, a transversely-disposed diaphragm secured to the annular end of the tube by molecular union, and a diaphragm likewise disposed and secured to the lower annular end of the tube by molecular union, both of said diaphragms being centrally apertured, the upper diaphragm having a smaller aperture, substantially as described.

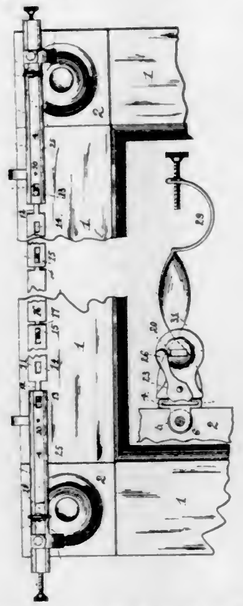
14. The combination with a tube, of a plurality of stiffening devices intercepting the bore of said tube, and openings formed in said stiffening devices of varying diameter, substantially as described

15. The combination with the tube, of a plurality of stiffening devices secured to said tube by molecular union, and intercepting the bore of said tube, and openings in said stiffening devices of varying diameter, substantially as described.

656,604. CURTAIN-FIXTURE. FRANK HYSERT, Buffalo, N. Y., assignor of one-half to James Alexander Clark, same place. Filed Apr 12, 1900. Serial No. 12,583. (No model.)

Claim.—1. A combined window-shade and curtain fixture, consisting essentially, of two similar guide-plates having raceways as described, projecting bosses having fastening-screws said bosses being located at the back of said guide-plates, hooks pivotally secured to said guide-plates, and shade-roller brackets adapted to slide in said raceways and to be adjustably secured therein, as set forth.

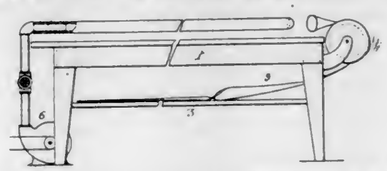
2. A combined window-shade and curtain fixture, consisting, essentially, of two similar guide-plates having raceways as described, suitable fastening-screws on said guide-plates, oblong openings in said guide-plates one or more extension-bars having a hook on one end and a series of oblong openings as set forth, and an intermediary bar having hooks on both ends adapted to engage the oblong holes in said extension-bars and the guide-plates and suitable brackets to support the shade-roller and curtain-pole respectively, as described.



3. In a curtain-fixture, a guide-plate having a raceway as described, a boss on the back and on one end of said guide-plate, a fastening-screw in said boss, a pivoted hook at the opposite end of said guide-plate, a shade-roller bracket having a base adapted to slide in the raceway, and a double-cam lever pivoted to the side of said bracket and adapted to bear upon the ledges of the said raceway to adjustably secure said bracket to said guide-plate, as specified.

4. In a curtain-fixture, a guide-plate consisting of a sheet-metal strip having its longitudinal edges folded over to form a raceway, a boss on one end of said guide-plate, a fastening-screw in said boss, a pivoted hook at the opposite end of said guide-plate, and an oblong opening in said guide-plate near the opposite end of said plate, and suitable brackets to support the shade-roller and the curtain-pole, as set forth.

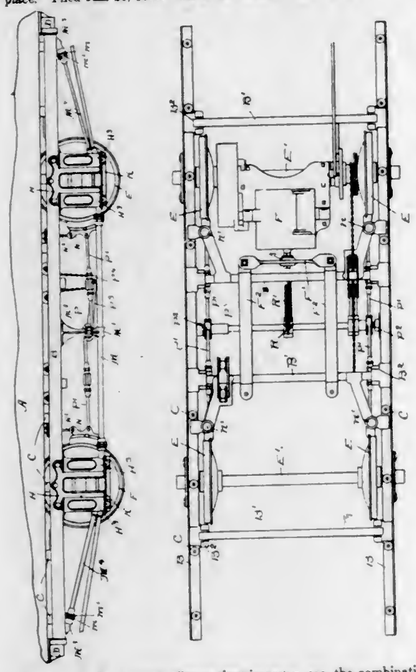
656,605. APPARATUS FOR PLACING INNER TUBES OF PNEUMATIC TIRES ON MANDRELS. STEPHEN S. MILLER, Akron, Ohio. Filed May 15, 1899. Serial No. 716,895. (No model.)



Claim.—1. The combination with a pipe having an open end, and means of forcing a blast of air through said pipe, of a hollow mandrel to enter the inner tube of a rubber tire, having one end adapted to fit on said pipe, and the other rounded and perforated substantially as shown and described and for the purpose specified.

2. The combination with a supporting-table of a pipe open at one end, extending over one end of the table, a roller at the opposite end around which to draw inner tubes for pneumatic tires, and a hollow mandrel adapted to enter said inner tube, having one end adapted to form a detachable connection with said pipe, and with the other end rounded, and means for forcing a current of air through said pipe and mandrel, substantially as shown and described.

656,606. **MOTOR-CAR TRUCK.** CHARLES E. MOORE, Chicago, Ill., assignor, by direct and mesne assignments, to Elmyr A. Laughlin, same place. Filed Jan. 26, 1899. Serial No. 703,445. (No model.)



Claim.—1. In a street-railway electric-motor car, the combination with the car-body of a motor-truck frame, slotted longitudinally-adjustable retaining-castings secured to the car-body, and having recesses or sockets to receive the ends of the truck-sills, and cupped rubber cushions compressed between the car-body and truck-frame and securing the car-body and truck-frame together by suction, vacuum or atmospheric pressure without bolts or direct connections and insulating the car-body from sound or vibration transmission from the motor-truck, and permitting the ready removal of the car-body from the truck, substantially as specified.

2. In a motor-car, the combination with a car-body, of a motor-truck and cupped rubber cushions inserted and compressed between the car-body and truck-frames to secure the same together by suction or atmospheric pressure without bolts, and insulate the car-body from sound-transmissions from the motor-truck, substantially as specified.

3. In a car, the combination with a car-body, of a truck upon which the car-body rests, rubber cushions inserted and compressed between the car-body frame and truck-frame and serving to secure said frames together by suction or atmospheric pressure without bolts and to insulate the car-body from sound-transmissions from the truck, said rubber cushions having normally or before compression cup-shaped upper and lower surfaces, substantially as specified.

4. In a motor-car, the combination with a car-body, of a motor-truck, longitudinally-adjustable retaining-castings secured to the car-body, and provided with sockets or pockets to receive the ends of the truck-sills, and permitting the car-body to be removed from the truck by loosening a bolt and slipping the retaining-casting in the direction of the car-sill, substantially as specified.

5. In a motor-car, the combination with a car-body, of a motor-truck, longitudinally-adjustable retaining-castings secured to the car-body, and provided with sockets or pockets to receive the ends of the truck-sills, and permitting the car-body to be removed from the truck by loosening a bolt and slipping the retaining-casting in the direction of the car-sill, and cushions of rubber or other material inserted between the ends of the truck-sills and the retaining-castings, substantially as specified.

6. In a motor-car, the combination with a car-body having serrated plates secured to the under faces of the car-body sills, of longitudinally-adjustable angle-shaped retaining-castings, each having a serrated upper face to engage said serrated plate, and a slot for the bolt to pass through and provided with a recess or pocket to receive the end of the truck-sill, substantially as specified.

7. In a motor-car, the combination with a car-body having serrated plates secured to the under faces of the car-body sills, of longitudinally-adjustable angle-shaped retaining-castings, each having a serrated upper face to engage said serrated plate, a slot for the bolt to pass through and provided with a recess or pocket to receive the end of the truck-sill, and cushions inserted and compressed between the car-body and truck-sills, substantially as specified.

8. In a motor-car, the combination with a car-body having serrated plates secured to the under faces of the car-body sills, of longitudinally-adjustable angle-shaped retaining-castings, each having a serrated upper face to engage said serrated plate, a slot for the bolt to pass through and provided with a recess or pocket to receive the end of the truck-sill, cushions inserted and compressed between the car-body and truck-sills, and cushions inserted between the ends of the truck-sills and said retaining-castings, substantially as specified.

9. In a motor-car, the combination with the car-body, of a motor-truck having a long wheel-base, substantially as described, to prevent tilting or teetering motion of the car-body, and provided with a swing-motion truck-frame in respect to the wheel-axles, and with a motor-frame having a sliding or swing motion connection with the truck-frame to permit the long-wheel-base motor-truck to pass freely aronnd sharp curves without side thrust, binding, strain or friction, said motor-truck having parallel axles and fixed pedestals secured to the truck-frame in which the journals of the axles fit to maintain the axles parallel, substantially as specified.

10. In a motor-car, the combination with a car-body, of a long-wheel-base motor-truck having a swing-motion truck-frame in respect to the axles, and a swing-motion motor-frame in respect to the truck-frame, said motor-truck having parallel axles and fixed pedestals secured to the truck-frame in which the journals of the axles fit to maintain the axles parallel, substantially as specified.

11. In a motor-car, the combination with the car-body, of a motor-truck, upon the frame of which the car-body is mounted, a pedestal secured to the under side of the truck-sill and provided with a central hole for the pedestal-bolt in its upper plate furnished with a square slot to admit the square shoulder of the pedestal-bolt, a pedestal-bolt having a round head with square shoulder and a top spring-washer resting against the upper side of the pedestal-plate, and having a projection reaching over and fitting into the round pedestal-bolt hole in the pedestal-plate, whereby the pedestal-bolt is held firmly in place and at the same time enabled to be removed without inconvenience or lifting of the car-body, substantially as specified.

12. In a motor-car, the combination with the car-body, of a motor-truck having a long wheel-base and a swing-motion truck-frame, in respect to the axles, and a swing-motion motor-frame in respect to the truck-frame, and fixed pedestals secured to the truck-frame, parallel wheel-axles, axle-boxes G', spring-seat plates G^2 carried by the pedestals, links G, said spring-seat plates G^2 provided with slots g for links G to pass through, and a shoe g' inserted between said links and said spring-seat plates, substantially as specified.

13. In a motor-car, the combination with the car-body, of a motor-truck having a long wheel-base and a swing-motion truck-frame, fixed pedestals secured to the truck-frame, parallel wheel-axles, axle-boxes G', spring-seat plates G^2 provided with slots g, and links G adapted to pass through said slots, a shoe g' inserted between said links and said spring-seat plates, and a motor-frame having a swing motion in respect to said truck-frame, substantially as specified.

14. In a motor-car, the combination with the motor-truck frame with the pedestals secured thereto, and a binder secured to the pedestal-jaws, the pedestal-jaws and binder being provided with wedge-shaped projections and recesses and a pedestal-bolt securing the binder to the pedestal, said wedge-shaped projections and recesses preventing the binder from working loose and assisting the pedestal-bolt in securing a perfect union and rigidity between pedestal-jaws and binder, substantially as specified.

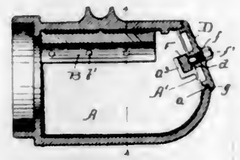
15. The combination with a pedestal, of a binder provided with a recess to receive and protect the pedestal-bolt and nut, substantially as specified.

16. In a truck, the combination with pedestal-jaws having sockets to receive the ends of the truss-rod, a truss-rod provided with threaded ends and furnished with nuts to bear against said sockets, and a central support for the truss-rod having a flaring or bell-shaped sleeve to receive the truss-rod and permit the same to be slipped and tilted to disengage one end of the rod from the socket on the pedestal when the nuts are properly turned, and thus enable the truss-rod to be removed without loosening or removing the pedestal-jaws or truss-rod support, substantially as specified.

17. In a truck, the combination with the longitudinal sills of the frame, of the cross-sills, each slightly notched into the longitudinal sills, the notched ends of the cross-sills projecting under the longitudinal sills, with the shoulders of the notches abutting against the sides of said longitudinal sills, and box-shaped connecting-castings bolted to the longitudinal sills, provided with flanges fitting above and below the longitudinal sills and embracing the same and having a recess or socket to receive the end of the cross-sill, thus securing a rigid joint without impairing the strength of the longitudinal sill, substantially as specified.

18. In a car-truck, the combination with the truck-frames and pedestals provided with sockets to receive the ends of the truss-rods, truss-rods having threaded nuts m m on the opposite ends thereof abutting against said sockets, and jam-nuts m' m' on the opposite ends of the truss-rods furnished each with a sleeve m^2 at its rear side to surround and protect the threads on the truss-rod from bruising and to receive a protecting material against rust, substantially as specified.

656,607. **CAR-AXLE-BOX LID.** CHARLES E. MOORE, Chicago, Ill., assignor, by direct and mesne assignments, to Elmyr A. Laughlin, same place. Original application filed Feb. 20, 1899, Serial No. 703,445. Divided and this application filed Dec. 23, 1899. Serial No. 741,364. (No model.)



Claim.—1. The combination with the car-axle box, of a cover therefor, a clamp-bolt having a center bearing on the cover and furnished with a nut, a bar inside the cover carrying said bolt and engaging the rim of the box, the rim of the box being provided with sockets to receive the bar carrying the bolt, substantially as specified.

2. The combination with the car-axle box having a rim surrounding its opening furnished with internally-projecting flanges, a removable cross-bar fitting inside the cover and against said internally-projecting flanges of said rim, a removable cover, and a clamp-bolt attached to said cross-bar and extending centrally through said cover to give the cover a center bearing and form a tight closure, and a nut for the clamp-bolt, the rim of the box having sockets to receive the ends of the bar carrying the clamp-bolt, substantially as specified.

3. The combination with the car-axle box A having a rim a furnished with a socket a^3 and an open socket a^3, a removable cross-bar F fitting at its ends in said sockets, a clamp-bolt, a nut therefor and a cover D having a central hole through which said bolt extends, substantially as specified.

4. The combination with the car-axle box, having a cover-opening and a rim surrounding the same furnished with sockets, of an exteriorly-fitting cover therefor, a bar inside the cover and engaging the rim of the cover-opening, and connecting means between said bar and cover for centrally clamping said exteriorly-fitting cover to the rim of the box, substantially as specified.

656,608. **BRAKE MECHANISM.** CHARLES E. MOORE, Chicago, Ill., assignor, by direct and mesne assignments, to Elmyr A. Laughlin, same place. Filed Dec. 23, 1899. Serial No. 741,365. (No model.)

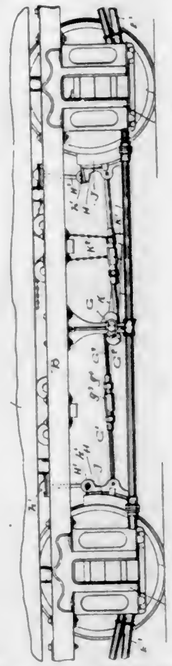
Claim.—1. The combination with a brake-shoe head, of a hanger for supporting or suspending the same furnished with a ball-and-socket joint to give the head a free and unrestricted motion in all directions and permit the brake-shoe to properly fit and bear against the wheel at all times when applied thereto and compensate for wear or lack of proper adjustment of parts, substantially as specified.

2. The combination with a brake-shoe head, of a hanger for suspending or supporting the same provided with a ball-and-socket connection between said hanger and brake-shoe and a ball-and-socket connection at the upper end of said hanger between the same and the truck-frame, each of said ball-and-socket connections comprising a ball and a two-part socket surrounding the ball, substantially as specified.

3. In a truck, the combination with a brake-shoe head, of a hanger for suspending or supporting the same having a ball-and-socket joint, the socket of said joint consisting of two parts or members secured together by bolts and provided with a packing of yielding material between to compensate for wear by tightening the bolts, substantially as specified.

4. In a truck, the combination with the brake-shoe heads, of hangers for independently supporting the brake-shoe heads, each having a ball-and-socket joint, the brake-shaft, connecting rods and levers between the brake-shaft and brake-shoe heads, and slotted supports for the ends of the brake-shaft to insure a perfect equalization of pressure between the brake-shoes and wheels, substantially as specified.

5. The combination with the brake-shaft, of the brake-lever, an inner collar or sleeve fitting on the brake-shaft and provided with serrations on its outer surface, and an outer collar or sleeve integral with or secured fixedly to the brake-lever and provided with integral serrations on a short section of its inner periphery to adjust the brake-lever, substantially as specified.



6. In a truck, the combination with the brake-shaft, of the brake-lever, an inner collar or sleeve fitting on the brake-shaft and provided with serrations on its outer surface, an outer collar or sleeve secured to the brake-lever and provided with serrations on a short section of its inner periphery to adjust the brake-lever, a kick-spring lever, a collar on the brake-shaft having serrations on its outer periphery, and an outer collar secured to the kick-spring lever and provided with serrations on a segment of its inner periphery, substantially as specified.

7. The combination with brake-shaft, of a kick-spring lever, a serrated collar, and a segmental serrated collar for adjustably connecting the kick-spring lever to the brake-shaft, substantially as specified.

8. In a truck, the combination with the brake-shaft, of slotted supports for the ends of the brake-shaft, the brake-shoes and heads, connecting rods and levers between the brake-shoe heads and brake-shaft, and a brake-lever having an adjustable connection with the brake-shaft, hangers for suspending or supporting the brake-shoes, and ball-and-socket connections between said hangers and the brake-shoes, substantially as specified.

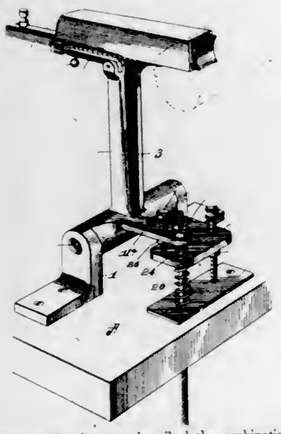
9. In a truck, the combination with the brake-shaft, of slotted supports for the ends of the brake-shaft, the brake-shoes and heads, connecting rods and levers between the brake-shoe heads and brake-shaft, and a brake-lever having an adjustable connection with the brake-shaft, hangers for suspending or supporting the brake-shoes, and ball-and-socket connections between said hangers and the brake-shoes, said hangers having also ball-and-socket connections with the truck-frame, substantially as specified.

10. In a truck, the combination with the brake-shaft, of slotted supports for the ends of the brake-shaft, the brake-shoes and heads, connecting rods and levers between the brake-shoe heads and brake-shaft, and a brake-lever having an adjustable connection with the brake-shaft, hangers for suspending or supporting the brake-shoes, and ball-and-socket connections between said hangers and the brake-shoes, said hangers having also ball-and-socket connections with the truck-frame, and a kick-spring lever adjustably connected to the brake-shaft, substantially as specified.

656,609. **BURNISHING-WAX HOLDER AND FEEDER.** EDWARD H. MCHALE, Louisville, Ky., assignor of one-half to William D'Oench, Jr., and James M. Hays, same place. Filed Jan. 27, 1900. Serial No. 2,954. (No model.)

Claim.—1. A burnishing-wax holder and feeder comprising a wax-holding box, means for advancing and retracting the wax-holding box, and means for intermittently feeding the wax controlled by the means for operating the wax-holding box.

2. In a device of the character described, the combination of a wax-holding box, a feeding-follower located in said box, means on which said box is supported, means for imparting movement to the box and means for imparting movement to said follower controlled by said means for imparting movement to the box, substantially as described.



3. In a device of the character described, the combination of a wax-holding box, a rocker, on which said box is mounted, a follower in said box, a second rocker through the medium of which said follower is moved, and means for operating said rockers, substantially as described.

4. In a device of the character described, the combination of a wax-holding box, a rocker on which said box is mounted, a follower arranged in said box, a second rocker, means for operating said rockers, and means for limiting the movement of said rockers, substantially as described.

5. In a device of the character described, the combination of a wax-holding box, a rocker on which said box is mounted, a follower movably arranged in said box, a second rocker, a pawl carried by said second rocker adapted to cause the movement of said follower, and means for operating said rockers, substantially as described.

6. In a device of the character described, the combination of a wax holding box, a rocker on which said box is mounted, a slide movably arranged in said box, a follower carried by said slide, rack-teeth on said slide, a second rocker, a pawl carried by said second rocker adapted to engage said rack-teeth, and means for operating said rockers, substantially as described.

7. In a device of the character described, the combination of a wax-holding box, a rocker on which said box is mounted, a slide movably arranged therein, a follower carried by said slide, a guide-pin arranged in engagement with said slide, rack-teeth on said slide, a second rocker, a pawl carried by said second rocker adapted to engage said rack-teeth, and means for operating said rockers, substantially as described.

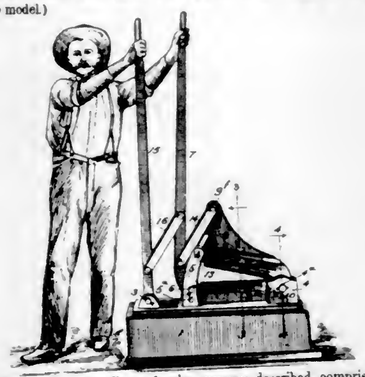
8. In a device of the character described, the combination of a wax-holding box, a rocker on which said box is mounted, a slide movably arranged in said box, a follower carried by said slide, a friction-pin carried by said box adapted to bear against said slide, rack-teeth on said slide, a second rocker, a pawl carried by said second rocker adapted to engage said rack-teeth, and means for operating said rockers, substantially as described.

9. In a device of the character described, the combination of a wax-holding box, a rocker on which said box is mounted, an arm projecting from said rocker, an adjustment-screw for limiting the throw of said rocker, a follower movably arranged in said box, and means for moving said follower, substantially as described.

10. In a device of the character described, the combination of a wax-holding box, a rocker on which said box is mounted, an arm projecting from said rocker, means for limiting the movement of said arm, a follower arranged in said box, a slide by which said follower is carried, a second rocker by which said slide is moved, an arm projecting from said second rocker, a spring located beneath the arm of said first-named rocker, and a spring of greater strength than said first-named spring located between said rocker-arms, substantially as described.

11. In a device of the character described, the combination of a wax-holding box, a rocker on which said box is mounted, an arm projecting from said rocker, an adjustment-screw for limiting the movement of said arm, a spring located beneath said arm, a follower-slide located in said box, a second rocker, a pawl carried by said second rocker adapted to engage said slide, an arm projecting from said second rocker, an adjustment-screw in said last-named arms, a pull-rod extending through said arms, and a spring located between said arms, substantially as described.

656,610. LEVER-OPERATED CUTTER MECHANISM. WILLIAM O. ORR, Pioneer, Tex., assignor of two-thirds to J. S. Whitacre and William T. Carlton, same place. Filed May 11, 1900. Serial No. 16,361. (No model.)



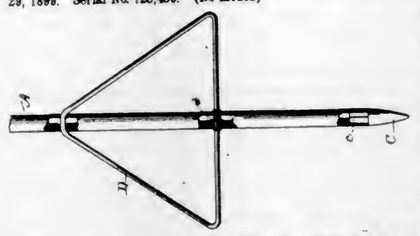
Claim.—1. An appliance for the purposes described, comprising a suitable supporting base or bed-plate, having an upwardly-projecting portion formed with a horizontally-extending seat, the outer end of said vertical portion having a fulcrum-aperture and the opposite end having a pair of upwardly-projecting members curved on an arc with the fulcrum as the center, a lever adjustably pivoted between the lower ends of the curved members, a swinging jaw having a fulcrum engaging the aperture in the end of the upwardly-extending portion of the base, the front end of said jaw being movable between the curved members of the base, said jaw carrying a cutter held to coöperate with the fixedly-held cutter-base member, the front end of said swinging jaw having a slot curved on an arc with the pivot-pin of the jaw as the center, a stud-bolt mounted in the upper ends of the curved members of the base and passing through the slot in the said jaw, and the link-arms connecting the jaw and the lever, all being arranged substantially as shown and described.

2. In an appliance for the purposes described, the combination of the base, said base having an upwardly-extending curved guide at the front end, a fulcrum-aperture at the other end, and a cutting-blade fixedly held in a seat formed in the said base, of the swinging member 9, pivotally connected at one end to the base, its forward end moving in a circle in a plane with the upwardly-curved member of the base, said forward end having a curved slot, a stud-bolt secured to the upper end of the upwardly-curved member and projected through said slot, said swinging member 9, having a blade-receiving seat, a blade detachably held in said seat with its cutting edge arranged to coöperate with the fixedly-held blade, the lever 7, fulcrumed at its lower end at a point in advance of the front end of the cutter-blades, and below the lower cutter-blade, and the link-arm 14, connecting said lever 7 and the member 9, all being arranged substantially as shown and for the purposes described.

3. In a cutting mechanism of the character described, the combination with the base and the fixedly-held knife, of the casting 9, pivotally connected to the base, lever mechanism for moving the casting 9 with a shearing action down over the base, said casting 9 having a seat 9^b, whose upper edge is undercut or beveled upwardly, and a shearing-knife, said knife having its upper and lower edges formed with beveled cutting edges, said knife being adapted to fit the seat in the member 9, with its upper edge projected into the undercut portion of the said seat, and means for securing the said blade to the casting 9, all being arranged substantially as shown and for the purposes described.

4. The combination with the base 2, having an upwardly integrally projecting portion 2^a, provided on its upper inner face with a seat extended lengthwise thereof, the knife 8, fitting the said seat, and means for detachably connecting the said knife to the member 2^a, said member 2^a, having a bifurcated rear end and having its upper end formed with upwardly-extending integral arms 5, said arms being curved inward, the member 9, pivotally connected to the outer end of the base 2^a, said member 9, having an upwardly-projecting portion 9^a, and an enlarged portion 9^d, upon its rear side, said portion 9^a, being formed with a seat 9^b, terminating with the undercut upper portion 9^c, a double-edged knife 11, detachably and reversibly held in the seat 9^b, the member 9, having a slot 9^e, the stud-bolt 13, passing through the slot, and engaging the upper ends of the members 5, the lever 7, fulcrumed at the point below the lower cutting-knife, the lever 15, fulcrumed on the base at a point below the lower cutting-knife, and the link-arms 16, connecting the two levers 7 and 15, and arms 13, connecting the lever 7 and the portion 9^f, of the member 9, all being arranged substantially as shown and for the purposes described.

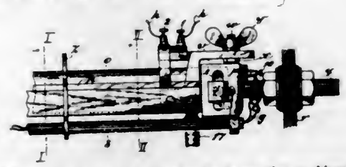
656,611. FENCE-POST. WILLIAM L. PENNEY, Foxborough, Mass., assignor of one-half to Albert H. Spencer, Boston, Mass. Filed July 29, 1899. Serial No. 725,459. (No model.)



Claim.—1. The improved fence-post described, consisting of the tubular body A, adapted to be driven into the ground and provided with the metallic brace-rod D, approximately triangular in outline and passing twice through the body A and thus permanently secured thereto, substantially as set forth.

2. The braced fence-post herein described, comprising the tubular metallic body A, in combination with a triangular metallic brace D passing centrally through said body, bent to extend obliquely downward at each side thereof, and then horizontally inward, the braced ends being abutted within the post and rigidly joined thereto in a horizontal line, substantially as set forth.

656,612. WARP STOP MECHANISM FOR LOOMS. WILLIAM H. BAKER, Central Falls, R. I., and FREDERIC E. KIP, Montclair, N. J. Filed Nov. 2, 1899. Serial No. 735,569. (No model.)



Claim.—1. In a warp stop-motion for looms, the combination with a warp-support mounted in the loom-frame and having upright screws w and nuts y, of two saddle-pieces v, having holes which take over the respective screws w, and two compound terminals secured rigidly at their respective ends to said saddle-pieces.

2. In a warp stop-motion, the combination with the compound terminals and the saddle-pieces rigidly connecting the ends of the same, said saddle-pieces having each two pendent lugs to which the terminals are secured, substantially as set forth.

3. In a warp stop-motion, the combination with the yokes p, each provided with means for securing it rigidly in the loom-frame, and the warp-support mounted adjustably in said yokes, of the saddle-pieces v, mounted removably on the respective yokes and each having a part which projects over the yoke and pendent portions to receive the compound terminals, and the said terminals secured to the respective pendent portions of the yokes.

4. In a warp stop-motion, the combination with the compound terminals of the saddle-pieces rigidly connecting the same, said saddle-pieces having each an attaching portion by which it is secured and two pendent portions to which the terminals are secured, and means for securing said saddle-pieces adjustably and removably with respect to the loom-frame.

5. In a warp stop-motion, the combination with the compound terminals, of the saddle-pieces rigidly connecting the ends of the same, and the binding-posts mounted on one of said saddle-pieces, said posts being electrically connected to the respective terminals, substantially as set forth.

6. The combination with the compound terminals, each consisting of an electrode m, and a narrower electrode n, mounted in the upper edge thereof, of the saddle-pieces rigidly connecting the ends of said compound terminals, the binding-post 1, electrically connected with the electrode m, the binding-post 2, and the conductors 3, connecting said post with the electrode n, substantially as set forth.

7. The combination with the warp-support, having upright screws w, of the compound terminals, the saddle-pieces connecting them at their ends and having apertures through which pass the said upright screws, and the nuts on said screws.

8. The combination with the warp-support, having upright screws w, of the compound terminals, the saddle-pieces connecting them at their ends and having apertures through which pass the said upright screws, the adjusting-nuts x on said screws under the saddle-pieces, and the clamping-nuts on said screws.

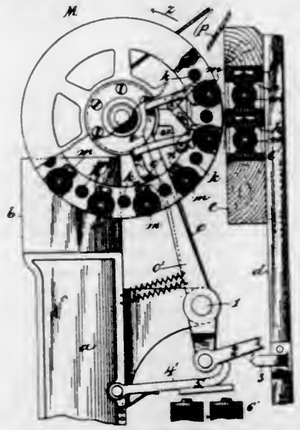
9. The combination with the support o, and the yokes p, at the respective ends of said support, of the tube 8, mounted in bearings in said yokes, substantially as and for the purposes set forth.

10. The combination with the warp-support, and means for securing it in the loom-frame, of the compound terminal mounted on said support, the tube 8, carried by said support, the binding-posts, and the conductors extending through said tube and connected with said posts.

11. In an electrical warp stop-motion for looms, the combination with a terminal extending transversely of the loom, and the hollow or tubular warp-support o, extending across the loom alongside of said terminal, said support having in it lateral jet-apertures, of means for forcing air into the hollow of said support, substantially as set forth.

12. In an electrical warp stop-motion for looms, the combination with the tubular warp-support o, having lateral jet-apertures at both sides, and the pair of compound terminals extending transversely of the loom and adjacent to said support, of means for forcing air into the hollow of said support.

656,613. LOOM. WILLIAM H. BAKER, Central Falls, R. I., and FREDERIC E. KIP, Montclair, N. J. Filed Apr. 27, 1900. Serial No. 14,544. (No model.)



Claim.—1. In a loom, the combination with two superposed shuttle-boxes, and shuttles, both adapted to receive and discharge weft-holders laterally, and means for picking the shuttles from said boxes simultaneously, of a magazine comprising a rotatable carrier provided with means for supporting weft-holders concentrically arranged about the axis of the carrier, means for moving said carrier, a detent for holding said carrier against movement normally with weft-holders opposite the superposed shuttle-boxes, two drivers for driving the weft-holders from the carrier into the respective boxes, means for actuating said drivers at proper times, and means controlled by the presence or absence of weft or filling in the respective shuttles for setting said drivers in operation.

2. In a loom, the combination with two superposed shuttle-boxes, and shuttles, both adapted to receive and discharge weft-holders laterally, and means for picking the shuttles from said boxes simultaneously, of a magazine comprising a rotatable carrier provided with means for supporting weft-holders concentrically arranged about the axis of the carrier, means for moving said carrier, a detent for holding said carrier against movement normally with weft-holders opposite the superposed shuttle-boxes, two drivers for driving the weft-holders from the carrier into the respective boxes, means for actuating said drivers at proper times, and electromagnetic means controlled by the presence or absence of weft or filling in the respective shuttles for setting said drivers in operation.

3. In a double-shuttle loom, the combination with means for picking the shuttles through two warp-sheds, a movable magazine or feeder, for weft-holders, having devices for supporting a plurality of weft-holders arranged concentrically about the axis of the magazine, means for transferring as required either one or two weft-holders at the same time, from the said magazine to either or both of the shuttles in play, the time of operation of said supplying mechanism being controlled by the presence or absence of weft or filling in the shuttles in play.

4. In a double-shuttle loom, the combination with means for picking

the shuttle through two warp-sheds, a movable magazine or feeder for weft-holders, having devices for supporting a plurality of weft-holders arranged concentrically about the axis of the magazine, means for transferring, as required, one or two weft-holders at the same time from the said magazine, to either or both of the shuttles in play, means for controlling the times of operation thereof, said means consisting of an electric circuit connected with said supplying mechanism and made inoperative and operative, respectively, by the presence or substantial absence of weft or filling in the shuttles in play.

5. In a loom, the combination of two superposed shuttle-boxes, of means for picking two shuttles through two warp-sheds about the same time, a rotatable magazine, having means for carrying bobbins or weft-holders concentrically arranged about the axis of the magazine, means for supplying from said magazine to either or both of said shuttles, a weft-holder containing a supply of weft or filling in place of that substantially exhausted, the times of operation of said supplying mechanism being controlled by the presence or substantial absence of weft or filling in the shuttles in play.

6. In a loom, the combination of two superposed shuttle-boxes, of means for picking two shuttles through two warp-sheds at about the same time, a rotatable magazine, having means for carrying bobbins or weft-holders concentrically arranged about the axis of the magazine, means for supplying from said magazine to either or both of said shuttles, a weft-holder containing a supply of weft or filling in place of that substantially exhausted, and means for controlling the times of operation thereof, said means consisting of an electric circuit connected with said supplying mechanism and made inoperative or operative, respectively, by the presence or substantial absence of weft or filling in the shuttles in play.

7. In a weft-supplying mechanism, the combination with means for picking shuttles through two warp-sheds, at about the same time, a rotatable feeder or magazine adapted to carry reserve supply of weft-holders concentrically arranged about the axis of the magazine, two drivers adapted to drive or push, as required, either or both of the weft-holders at the delivery-point into their respective shuttles during the same pick of the loom, and means connected with said feeder or magazine for always presenting to the proper delivery position two weft-holders, independent of whether one or both of said weft-holders have been previously transferred from said magazine to the shuttles, the time of operation thereof being controlled by the presence or substantial absence of weft or filling in the shuttles in play.

8. In a weft-supplying mechanism, the combination with means for picking shuttles through two warp-sheds at about the same time, a rotatable feeder or magazine adapted to carry reserve supply of weft-holders concentrically arranged about the axis of the magazine, two drivers adapted to drive or push as required, either or both of the weft-holders at the delivery-point into their respective shuttles during the same pick of the loom, means connected with said feeder or magazine for always presenting to the proper delivery position both weft-holders, independent of whether one or two of said weft-holders have been previously transferred from said magazine to the shuttles, and means for controlling the times of operation of the supplying mechanism, said means consisting of an electric circuit connected with said supplying mechanism and made inoperative by the presence, and operative by the substantial absence, of weft or filling in the shuttles in play.

9. In a weft or filling supplying mechanism for looms, the combination with means for traversing two shuttles, through two warp-sheds at each pick of the loom, a rotatable feeder or magazine containing a reserve supply of weft or filling in the form of concentrically-arranged weft-holders, means for rotating said magazine, a restraining device preventing, periodically, said rotation, said restraining device being made operative when two of the said weft-holders engage it, and inoperative on either one or both of said weft-holders being removed from said engagement, and means for transferring the weft-holders at the delivery-point to their respective shuttles, substantially as set forth.

10. In a weft or filling supplying mechanism for looms, the combination with means for traversing two shuttles through two warp-sheds at each pick of the loom, a rotatable magazine containing a reserve supply of weft or filling in the form of concentrically-arranged weft-holders, means for rotating said magazine and a restraining device preventing periodically said rotation, said restraining device being made operative when two of the said weft-holders engage it, and inoperative on either one or both of said weft-holders being removed from said engagement, combined with drivers adapted to transfer said weft-holders from the magazine to the shuttles in play, means for controlling the time of operation thereof, said means consisting of an electric circuit connected with said supplying mechanism and made inoperative and operative, respectively, by the presence or absence of weft or filling in the shuttles in play.

11. In a weft or filling supplying mechanism, the combination with means for traversing two shuttles through two warp-sheds at each pick of the loom, a rotatable feeder or magazine containing a reserve supply of weft or filling in the form of concentrically-arranged weft-holders adapted to be driven or pushed into shuttles, means for always maintaining two of said weft-holders at the delivery-point adjacent to the said shuttles, means for driving or pushing during the same pick of the loom, either or both of the said weft-holders into the shuttles in play, substantially as set forth.

12. In a weft or filling supplying mechanism, the combination with means for traversing two shuttles through two warp-sheds at each pick of the loom, a rotatable feeder or magazine containing a reserve supply of weft or filling in the form of concentrically-arranged weft-holders adapted to be driven or pushed into shuttles, means for always maintaining two of said weft-holders at the delivery-point adjacent to the said shuttles, means for driving or pushing during the same pick of the loom, either or both of the said weft-holders into the shuttles in play, the time of operation thereof being controlled by the presence or substantial absence of weft or filling in the shuttles in play.

13. In a weft or filling supplying mechanism, the combination with means for traversing two shuttles through two warp-sheds at each pick of the loom, a rotatable feeder or magazine containing a reserve supply of weft or filling in the form of concentrically-arranged weft-holders adapted to be driven or pushed into shuttles, means for always maintaining two of said weft-holders at the delivery-point adjacent to the said shuttles, means for driving or pushing, during the same pick of the loom, either or both of the said weft-holders into the shuttles in play, and means for controlling the time of operation of said supplying mechanism, said means consisting of an electric circuit connected with the same and made inoperative by the presence and operative by the substantial absence of weft or filling in the shuttles in play.

14. In a double-shuttle loom, having means for picking two shuttles through two warp-sheds, a weft or filling replenishing mechanism comprising a rotatably-mounted magazine, having means for carrying bobbins or weft-holders arranged concentrically on the magazine, means tending to rotate said magazine, a restraining device that periodically restrains said rotation, means for rendering said restraining device inoperative to permit the magazine to rotate to the extent of the space occupied by one bobbin or weft-holder when a weft-holder is supplied to the upper shuttle, and inoperative to the extent of the space occupied in the magazine by two bobbins or weft-holders when a weft-holder is supplied to either the lower or both the lower and the upper shuttles, the times of operation thereof being controlled by the presence or substantial absence of weft or filling in the shuttles in play, and means for transferring the weft-holders from the magazine to the respective shuttles.

15. In a double-shuttle loom having means for picking two shuttles through two warp-sheds, a weft or filling replenishing mechanism comprising a rotatably-mounted magazine having means for carrying concentrically-arranged bobbins or weft-holders, means tending to rotate said magazine and a restraining device that periodically restrains said rotation, means for rendering said restraining device inoperative to permit the magazine to rotate to the extent of the space occupied in the magazine by one bobbin or weft-holder when a weft-holder is supplied to the upper shuttle, and inoperative to the extent of the space occupied in the magazine by two bobbins or weft-holders when a weft-holder is supplied to either the lower or both the lower and the upper shuttles, and means for controlling the times of operation thereof said means consisting of an electric circuit connected with said replenishing mechanism, same being made inoperative and operative, respectively, by the presence or substantial absence of weft or filling in the shuttle in play.

16. In a loom having two shuttles traversing the two warp-sheds, and two superposed shuttle-boxes, means for picking the said shuttles, a weft or filling mechanism comprising a magazine or holder for a reserve supply of weft or filling, said magazine being rotatively mounted and having an axial boss, a single head or end, arms on said head and extending therefrom, and concentrically-arranged clips for supporting weft-holders therein, means for effecting, when required, on the same pick of the loom, the transfer of either one or two weft-holders from said magazine to either or both of the shuttles in play, and exhaustion-indicating devices controlling the times of operation of said transferring mechanism.

17. In a loom having two shuttles traversing the two warp-sheds and two superposed shuttle-boxes, means for picking the said shuttles, a weft or filling replenishing mechanism comprising a magazine or holder for a reserve supply of weft or filling, said magazine being rotatively mounted and having an axial boss, a single head or end, arms on said head and extending therefrom, and concentrically-arranged clips for supporting weft-holders therein, means for effecting, when required, on the same pick of the loom, the transfer of either one or two weft-holders from said magazine to either or both of the shuttles in play and electro-mechanical means for controlling the times of operation of said mechanism.

18. In a double-shuttle loom, a weft-replenishing device comprising a magazine rotatably mounted and having means for securing in it the weft-holders arranged concentrically with the center of rotation, the axis of said magazine being substantially on a level with a point midway between the two superposed shuttle-boxes, and the space between adjacent bobbins in the magazine being substantially equal to that between the shuttles in the respective boxes, means tending constantly to rotate said magazine, a detent device to prevent rotation of the magazine, means for driving weft-holders from the magazine into the shuttles at the delivery-point, and exhaustion-indicating devices controlled by the presence or absence of weft or filling in the respective shuttles in play, for setting in action said driving mechanism.

19. In a weft-supplying mechanism for looms, the combination with the rotatively-mounted magazine, provided with concentrically-arranged means for securing weft-holders therein, means for rotating said magazine, and means for arresting the rotation of said magazine, of two drivers extending into said magazine and adapted for driving out laterally two contiguous weft-holders therefrom, means for operating said drivers independently, and exhaustion-indicating devices controlled by the presence or absence of weft or filling in the respective shuttles for setting in operation said supplying mechanism.

20. In a weft-replenishing mechanism for looms, the combination with the rotatively-mounted weft-holding magazine, means tending to rotate said magazine, and means for driving from said magazine two contiguous weft-holders, of a compound detent for arresting the rotation of the magazine, said device comprising the two pivotally-mounted detents *n*, *n'* so spaced as to bear on contiguous or next adjacent weft-holders in the magazine, the link connecting said detents at opposite sides of their pivotal points, and means to prevent an excess of movement of said detents.

21. In a double-shuttle loom having two superposed shuttle-boxes, a weft-supplying mechanism having a rotatively-mounted magazine comprising a sleeve-like boss *j*, a head *i*, a ring *l*, securing devices on said head and ring for a concentrically-arranged series of weft-holders, and bars *k*, connecting said head and ring, in combination with means tending to rotate said magazine, a compound, vibratable detent device within said magazine and tending to prevent its rotation, and means for transferring either or both of the weft-holders at the delivery-point into their respective shuttles.

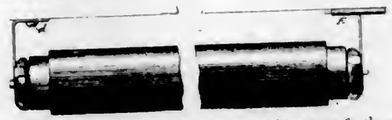
22. In a loom, the combination with a device for supporting the weft, said device comprising a spindle provided with a spring-indicator, and a butt-cop or weft-holder adapted to fit on said spindle, of a shuttle to receive said weft-supporter and provided with means for grasping and holding the same firmly but detachably in place therein.

23. In a loom, the combination with a device for supporting weft or filling, said device comprising a spindle provided with a spring-indicator, and a weft-holder adapted to fit on said spindle, said weft-holder having in it a slot to receive said indicating device, of a shuttle adapted to receive said weft-supporter, and provided with means for grasping and holding the same firmly but detachably in place therein.

24. The combination with a laterally-compressible metal spindle provided with a slotted head, a metal contact-piece bridging said slot, and a spring-indicator extending through said slot under said contact-piece, of a weft-holder adapted to slip over said spindle and to be held thereon frictionally, said weft-holder having in it a slot to receive the said indicator.

25. In a weft-supplying mechanism for looms having means for picking two shuttles through two warp-sheds, the combination with the rotatively-mounted weft-holding magazine, means for driving, as required from said magazine, on the same pick of the loom, either one weft-holder or two contiguous weft-holders, into the respective shuttles, of a device for arresting the rotation of the magazine, said device comprising two stops, so spaced as to bear on contiguous or next adjacent weft-holders in the magazine, and an exhaustion-indicating device made inoperative and operative, respectively, by the presence or substantial absence of weft or filling in the shuttles in play, which control the times of operation of said mechanism.

656,614. FIXTURE FOR SHADE-ROLLERS. JAMES E. DARBY and CHARLES A. BAKER, Waukesha, Wis. Filed May 26, 1900. Serial No. 18,029. (No model.)



Claim.—1. A fixture for shade-rollers, comprising a cap for the end of the roller, a bracket for said end, bearing-balls interposed between said cap and said bracket, and means for retaining said balls in position upon one of said parts.

2. A fixture for shade-rollers, comprising a cap for the end of the roller, a bracket for said end, bearing-balls interposed between said cap and said bracket, and a plate having flanges for retaining said bearing-balls in position upon one of said parts.

3. A fixture for shade-rollers, comprising a cap for the end of the roller, a bracket for said end, bearing-balls interposed between said cap and said bracket, and an intermediate annular ball-holding plate or cage provided with flanges for retaining the balls in position.

4. A fixture for shade-rollers, comprising a cap for the end of the roller, a bracket for said end, bearing-balls interposed between said cap and said bracket, and a ball-holding plate or cage connected to said bracket and provided with oppositely-disposed flanges for retaining the balls in position.

5. A fixture for shade-rollers, comprising a cap for the end of the roller, a bracket for said end, bearing-balls interposed between said cap and said bracket, said bracket being provided with inwardly-turned flanges and a ball-holding plate or cage having an annular channel engaged by the flanges of the bracket.

6. A fixture for shade-rollers, comprising a cap for the end of the roller, a bracket for said end, bearing-balls between said cap and said bracket, said cap and said bracket being provided one with means for retaining the balls in position thereon and the other with an annular grooved track whereon said balls will bear.

7. A fixtnre for shade-rollers, comprising a cap for the end of the roller, a bracket for said end, bearing-balls interposed between said cap and said bracket, means for retaining said balls in position in one of said parts, said bracket having its inner end bent at substantially right angles to the body of the bracket and a flanged bearing-plate adapted to sustain said bracket, whereby the bearing of the balls may be readily adjusted.

8. A fixture for shade-rollers, comprising a cap for the end of the roller, a bracket for said end, bearing-balls interposed between said cap and said bracket, means for retaining said balls in position in one of said parts, said bracket being adjustably supported, whereby the pressure upon the bearing-balls may be varied.

656,615. CLOTH-CUTTER. WILLIAM E. CALDWELL, Dayton, Ky. Filed Aug. 25, 1899. Serial No. 728,409. (No model.)



Claim.—1. In combination with the standard of an electric cloth-cutter, a journal-bolt provided with a flanged head, the said bolt tapping the standard, a bushing having a flanged head coincidently mounted on said bolt, a gear-wheel mounted on the bushing having a shoulder on its inner face abutting the bushing-head, a disk seating on said shoulder and means for securing the said parts together whereby they revolve as a unit on the journal-bolt, substantially as described.

2. In combination with the standard of an electric cloth-cutter, a journal-bolt provided with a flanged head, a journal-bearing adjacent to said head, the other end of said bolt being of reduced diameter and screw-threaded engaging into the standard the end of the journal-bearing portion of the bolt forming a square shoulder abutting the standard, a bushing having a flanged head coincidently mounted on the journal-bearing of said bolt, a gear-wheel mounted on the bushing, a shoulder on the inner face abutting the bushing-head, a disk on said shoulder, and a pin uniting the said gear, disk and bushing, substantially as described.

656,616. FEED-VALVE FOR LUBRICATORS. GEORGE S. WEBSTER, Minneapolis, Minn. Filed Apr. 13, 1900. Serial No. 12,700. (No model.)



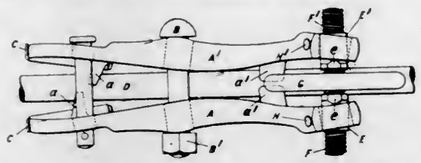
Claim.—In a lubricator or similar device, the combination with a body having a feed-passage, of a valve controlling said feed-passage, provided with a two-part stem, the exterior member of which stem is in the form of a sleeve having screw-threaded engagements with the interior stem-section and with said body, and movable with respect to the feed-passage in said body which is controlled by said valve, and which exterior or sleeve member acts as a stop to variably limit the opening movement of said valve with respect to said feed-passage.

656,617. HAULAGE-CLIP. JAMES W. SMALLMAN, Camp Hill Grange, near Nuneaton, England. Filed Dec. 28, 1897. Serial No. 663,947. (No model.)

Claim.—1. In a haulage-clip, the combination of two side pieces, a transverse bolt and nut loosely connecting said side pieces, right-hand and left-hand screws and a hand-wheel for causing the screws to act on the tops of the side pieces, substantially as set forth.

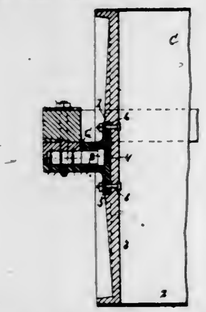
2. In a haulage-clip, the combination of two side pieces the upper portions of which extend forward, a transverse bolt and nut loosely con-

necting said side pieces, nuts held by the said side pieces, right-hand and left-hand screws engaging with the nuts held by the said side pieces, and a hand-wheel united to the screws, substantially as set forth.



3. In a haulage-clip, the combination of two side pieces A and A', a transverse bolt B and nut B', nuts E and E', right-hand and left-hand screws F and F', a hand-wheel G, and projections *a* and *a'*, substantially as set forth.

656,618. **LAND-ROLLER.** ANDREW W. ACKER, Lansing, Mich. Filed Sept. 25, 1899. Serial No. 731,549. (No model.)

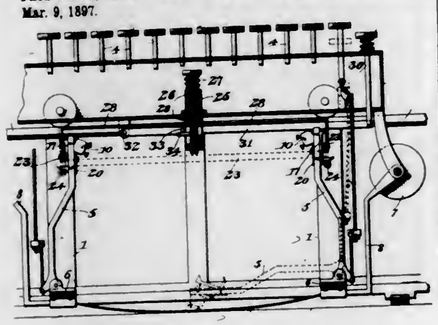


Claim.—1. In a roller, the combination of a roller-frame, a roller provided with a head, a hub provided with an axle projecting therefrom removably engaged with said head, and a bearing formed of a lower and an upper portion to receive the opposite end of the axle, screws to unite said portions, and a clip to secure said bearing underneath the adjacent extremity of said frame, the head of the roller recessed to receive the adjacent end of the hub and provided with a flange or shoulder about the adjacent end of the hub, substantially as set forth.

2. In a roller, the combination of a roller-frame, a roller provided with a recessed head, a hub and its axle removably engaged with said recessed head, a bearing for the opposite end of the axle formed of a lower and an upper portion, screws passing through the upper portion into the lower portion to unite said portions, a clip to engage the bearing underneath the adjacent extremity of the frame, ball-bearings located intermediate of the ends of the bearing about the adjacent end of the axle, and additional ball-bearings between the end face of the hub and the adjacent end face of the bearing, as set forth.

REISSUES.

11,848. **TYPE-WRITING MACHINE.** ROBERT J. FISHER, Athens, Tenn., assignor to the Fisher Typewriter Company, of Tennessee. Filed Mar. 8, 1899. Serial No. 708,288. Original No. 578,554, dated Mar. 9, 1897.



Claim.—1. In a type-writing machine, the combination with a pivotal type-bar, of a type head or carrier movably supported thereon, the same being movable to its adjusted position by centrifugal force, when the type-bar is moved to the printing position, substantially as specified.

2. In a type-writing machine, the combination with a pivotal type-bar, of a type head or carrier movably supported thereon, means carried by the type-bar for holding the type head or carrier in its normal position, and manually-operated mechanism for actuating the said means by direct engagement therewith, to provide for the release of the type head or carrier.

3. In a type-writing machine, the combination with a pivotal type-bar, of a type head or carrier movably supported thereon, a locking device carried by the type-bar for holding the type head or carrier in its normal position, and manually-operated means adapted to directly engage with said locking device to release it from the type head or carrier, said means being permanently located outside of the path of the type-bars.

4. In a type-writing machine, the combination with a pivotal type-bar, of a type head or carrier movably supported thereon, a locking device carried by the type-bar for holding the type head or carrier in its normal position, and a key-actuated trip adapted to directly engage with the locking device to release it from the type head or carrier, the trip being permanently located outside of the path of the type-bar and shiftable to and away from a position for coöperating with the locking device.

5. In a type-writing machine, the combination with a pivotal type-bar, of a type head or carrier movably supported thereon, a locking device carried by the type-bar and normally arranged in engagement with the type head or carrier to maintain it in its normal position, and a key-actuated trip yieldingly held out of and adapted to be moved into the path of a trip-arm forming a part of said locking device, substantially as specified.

6. In a type-writing machine, the combination with a pivotal type-bar, of a type head or carrier movably supported thereon, a locking device carried by the type-bar for securing the type head or carrier in its normal position, and fixed and movable trips for coöperating with a trip-arm forming a part of said locking device, the fixed trip being permanently arranged in the path of the trip-arm, and the movable trip being capable of adjustment into and out of the path of the trip-arm, substantially as specified.

7. In a type-writing machine, the combination with a pivotal type-bar, of a pivotal type head or carrier, a locking device carried by the type-bar for securing the type head or carrier in its normal position, said locking device including a trip-arm, a stationary trip arranged permanently in the path of said trip-arm for moving the locking device into engagement with the type head or carrier, and a key-actuated movable trip yieldingly held out of and adapted to be adjusted into the path of the trip-arm to provide for disengaging the locking device from the type head or carrier, substantially as specified.

8. In a type-writing machine, the combination with a pivotal type-bar, of a pivotal type head or carrier, a locking device carried by the type-bar for engagement with the type head or carrier to secure it in its normal position and yieldingly held in either its operative or inoperative position, and stationary and movable trips for actuating said locking device, the former being permanently arranged in operative position and the latter being adjustable into and out of operative relation with the locking device, substantially as specified.

9. In a type-writing machine, the combination with a pivotal type-bar, of a pivotal type head or carrier, a pivotal trigger adapted to be arranged in engagement with the type head or carrier to secure it in its normal position and having a trip-arm, and fixed and movable trips for engagement with said trip-arm, the former being permanently in operative position and the latter being spring-actuated and adapted for movement into and out of engagement with the trip-arm, substantially as specified.

10. In a type-writing machine, the combination with a pivotal type-bar, of a pivotal type head or carrier, a pivotal trigger carried by the type-bar to maintain the type head or carrier in its normal position and having a trip-arm, a brake-spring arranged in contact with a friction-surface of the trigger to hold the latter in either its operative or inoperative position, and fixed and movable trips for coöperation with said trip-arm, the latter being adjustable into and out of operative position, substantially as specified.

11. In a type-writing machine, the combination with a pivotal type bar, a type-carrier movably supported thereon, and means, as a trigger, for normally holding the type-carrier in one position, a trip for engagement with the trigger and mounted for movement into and out of operative relation with a trip-arm carried by the trigger, and means for actuating said trip, including a spider, a sliding spring-returned stud carrying the spider, and a case-key lever operatively connected with said stud, substantially as specified.

12. In a type-writing machine, the combination with the type-bar carrying the movable type-head, of a device also carried by the type-bar and having a locking engagement with a type-head, and a trip arranged to engage directly with said device.

DESIGNS.

33,094. **HOSE-SUPPORTER.** SURRY L. GREEN, Fort Worth, Tex., assignor of one-half to Charles T. Bell, same place. Filed Apr. 16, 1900. Serial No. 13,150. Term of patent 7 years.



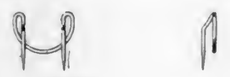
Claim.—The design for a hose-supporter, as herein shown and described.

33,095. **SHOE-SCRAPER.** SAMUEL T. ATKIN, Georgetown, Tex. Filed July 21, 1900. Serial No. 24,452. Term of patent 7 years.



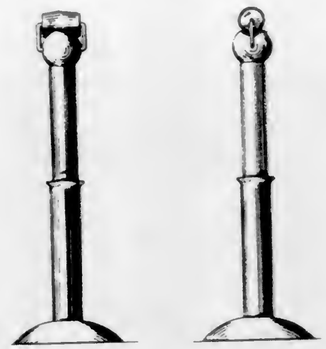
Claim.—The design for a shoe-scraper, substantially as herein shown and described.

33,096. **PIN.** JOSEPH COHEN, New York, N. Y. Filed July 13 1900. Serial No. 23,549. Term of patent 7 years.



Claim.—The design for a pin, as herein shown and described.

33,097. **ENVELOP-SEALER.** CHARLES L. VOSE, Westerly, R. I. Filed Apr. 30, 1900. Serial No. 15,007. Term of patent 7 years.



Claim.—The design for an envelop-sealer, substantially as shown and described.

33,098. **PEN-WIPER.** FRANK GURLEY, High Point, N. C. Filed July 18, 1900. Serial No. 24,112. Term of patent 14 years.



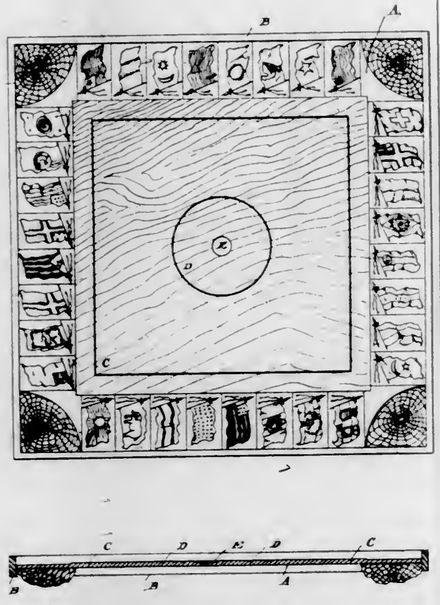
Claim.—The design for a pen-wiper, as herein shown and described.

33,099. **PUZZLE-BOARD.** JOHN FRITSCHE, Philadelphia, Pa. Filed July 18, 1900. Serial No. 24,115. Term of patent 3½ years.



Claim.—The design for a puzzle-board substantially as shown and described.

33,100. GAME-BOARD. EDGAR L. WILLIAMS, Peoria, Ill., assignor to the Archarena Company, same place. Filed Apr. 23, 1900. Serial No. 13,814. Term of patent 14 years.



Claim.—The design for a game-board as herein shown and described.

33,101. BOTTLE-STOPPER. JOHN C. CORCORAN, St. Paul, Minn. Filed May 21, 1900. Serial No. 17,493. Term of patent 7 years.



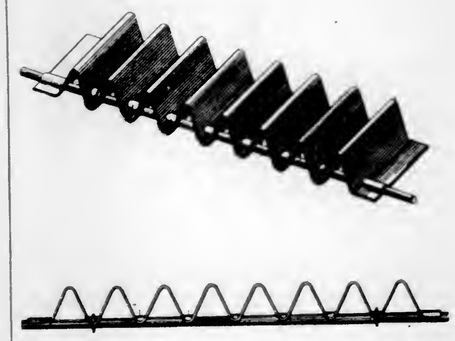
Claim.—The design for a bottle-stopper, as herein shown and described.

33,102. WATER-BOTTLE. ANTON C. EGGERS, New York, N. Y., assignor to the Goodyear's India Rubber Glove Manufacturing Company, same place. Filed June 2, 1900. Serial No. 18,904. Term of patent 7 years.



Claim.—The design for a water-bottle, as shown and described.

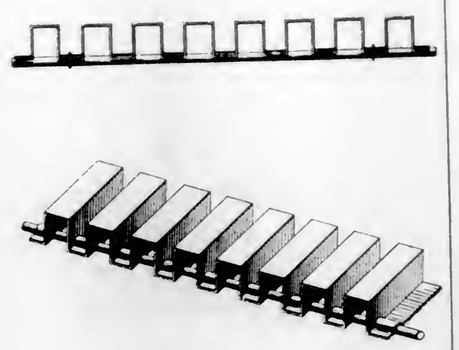
33,103. CHAFFER OR SIEVE SLAT. BENJAMIN F. MARTIEN, Ashland, Ohio. Filed July 18, 1900. Serial No. 24,113. Term of patent 14 years.



Claim.—The design for a chaffer or sieve slat, as herein shown and described.

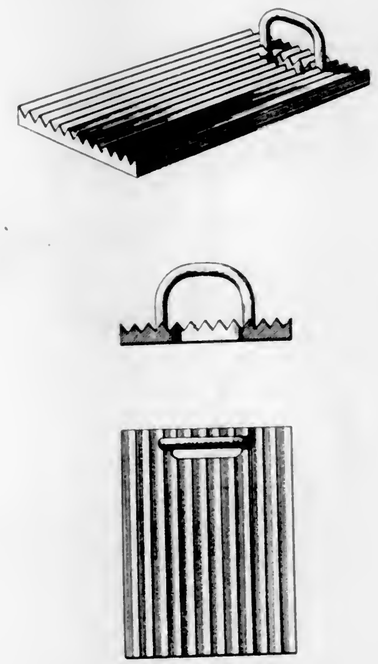
33,104. CHAFFER OR SIEVE SLAT. BENJAMIN F. MARTIEN, Ashland, Ohio. Filed July 18, 1900. Serial No. 24,114. Term of patent 14 years.

33,104.



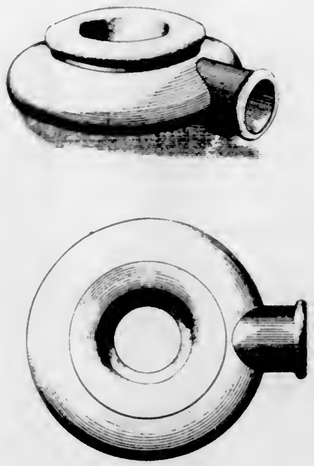
Claim.—The design for a chaffer or sieve slat, as herein shown and described.

33,105. BROILER. ASA MOODY, Hawarden, Iowa. Filed July 14, 1900. Serial No. 23,680. Term of patent 7 years.



Claim.—The design for a broiler, substantially as herein shown and described.

33,106. GAS-BURNER. LEWIS S. BROWN, Columbus, Ohio, assignor to Lewis S. Brown and William W. Buckley, same place. Filed July 3, 1900. Serial No. 22,455. Term of patent 14 years.



Claim.—The design for a gas-burner, as herein shown and described.

33,107. FASTENER FOR HARNESS-NETS. WILLIAM A. WHITE, Phelps, N. Y. Filed June 29, 1900. Serial No. 22,081. Term of patent 14 years.



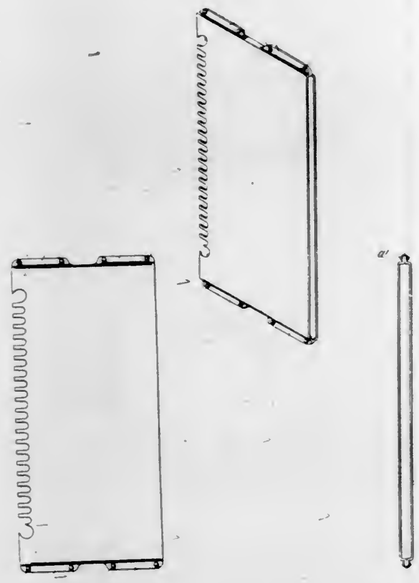
Claim.—The design for a fastener for harness-nets substantially as herein shown and described.

33,108. LACING-HOOK. HARRISON H. EATON, Cleveland, Ohio. Filed Aug. 9, 1899. Serial No. 726,723. Term of patent 14 years.



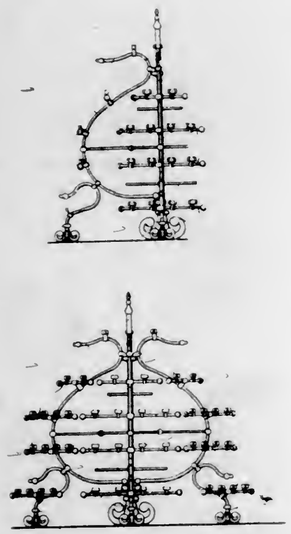
Claim.—The design for a lacing-hook, substantially as herein shown and described.

33,109. SCALE-POISE. EDWIN FINN, Elkhart, Ind. Filed June 4, 1900. Serial No. 19,081. Term of patent 14 years.



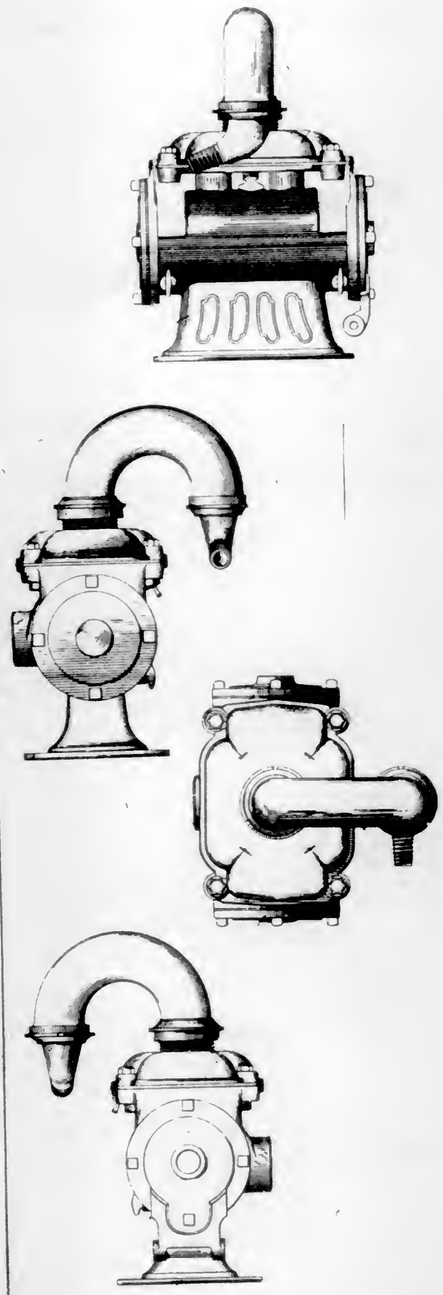
Claim.—The design for a scale-poise, herein shown and described.

33,110. DISPLAY-FRAME. THOMAS J. LESHER, Lansing, Mich., assignor to the Norwich Nickel and Brass Company, Norwich, Conn. Filed July 17, 1900. Serial No. 23,977. Term of patent 3½ years.



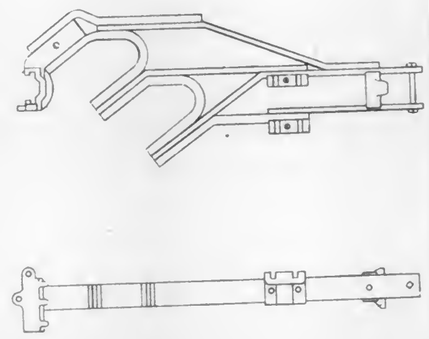
Claim.—The design for a display-frame as herein shown and described.

33,111. PUMP-BODY. PHILIP A. MYERS, Ashland, Ohio, assignor to F. E. Myers & Bro., same place. Filed June 6, 1900. Serial No. 19,329. Term of patent 14 years.



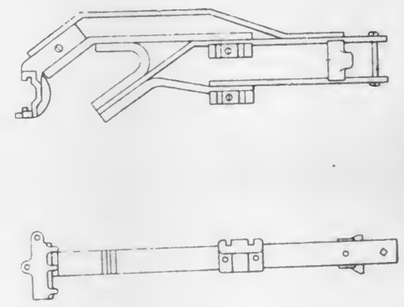
Claim.—The design for a pump body and casing as herein shown and described.

33,112. PLOW-BEAM FOR TRIPLE-DISK PLOWS. WALTER PRESTON HENDON, Dallas, Tex. Filed May 17, 1900. Serial No. 17,070. Term of patent 14 years.



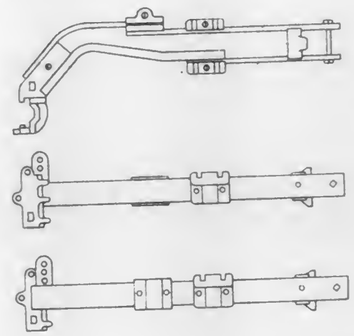
Claim.—The design for a plow-beam for triple-disk plows as herein shown and described.

33,113. PLOW-BEAM FOR DOUBLE-DISK PLOWS. WALTER PRESTON HENDON, Dallas, Tex. Filed May 17, 1900. Serial No. 17,071. Term of patent 14 years.



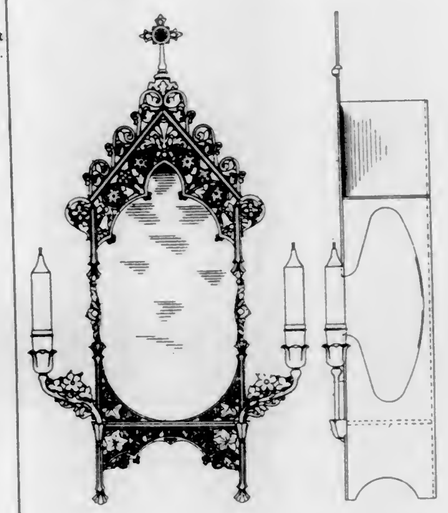
Claim.—The design for a plow-beam for double-disk plows as herein shown and described.

33,114. PLOW-BEAM FOR DISK PLOWS. WALTER PRESTON HENDON, Dallas, Tex. Filed May 17, 1900. Serial No. 17,072. Term of patent 14 years.



Claim.—The design for a plow-beam for disk plows as herein shown and described.

33,115. HOME-ALTAR. SETH H. LEAVENWORTH, Cincinnati, Ohio, assignor to the Homan Silver Plate Company, same place. Filed July 23, 1900. Serial No. 24,612. Term of patent 7 years.



Claim.—The design for a home-altar substantially as shown and described.

TRADE-MARKS

REGISTERED AUGUST 21, 1900.

34,999. CIGARETTES AND SMOKING AND CHEWING TOBACCO.
THE AMERICAN TOBACCO COMPANY, Newark, N. J., and New York, N. Y.
Filed June 7, 1900.

W DUKE SONS&CO

Essential feature.—The words, character, and abbreviations "W. DUKE SONS & CO." Used since 1878.

THE NORRIS PETERS CO. PHOTO-LITH. WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE CHRISTENSEN.

Decided August 1, 1900.

1. DECISION OF EXAMINERS-IN-CHIEF—RECOMMENDATIONS NOT BINDING ON EXAMINER.

Rulings and recommendations made by the Examiners-in-Chief on matters not strictly and regularly before them for decision should be very persuasive upon the Examiner and should be followed where any doubt exists in his mind; but they are not absolutely binding upon him to such an extent that he must follow them without exercising his discretion, as in the case of the matter directly before them for decision. (*Painter* v. *Hall*, 80 O. G., 1124.)

2. SAME—RES ADJUDICATA—QUESTION OF EVIDENCE.

A patent cited as a reference is merely a piece of evidence, and statements made by the Examiners-in-Chief in regard to it in a decision do not make the construction to be placed upon it *res adjudicata*, and it is not believed that it is to the interest of good practice for the Examiners to feel themselves bound to follow such statements without exercising discretion in all cases that thereafter arise involving in any way the question what that patent shows.

3. SAME—SAME—CONSTRUCTION OF A REFERENCE.

Where on appeal to the Examiners-in-Chief they stated that the device shown in a reference cited operated in a certain way, *Held* that the Examiner is not bound by that interpretation of the reference in another case presenting different claims where he is honestly of the opinion that the statement was made under a misapprehension and would not be adhered to if the matter again came before them.

ON petition.

AUTOMATIC GOVERNOR FOR FLUID-COMPRESSORS.

Application of Niels A. Christensen, filed November 20, 1899, No. 737,645.

Messrs. Coburn, Hibben & McElroy for the applicant.

CHAMBERLIN, *Acting Commissioner:*

This is a petition from the action of the Primary Examiner rejecting claims 1, 2, and 11 in the above-entitled case upon a patent granted to Reynolds, No. 160,956.

It appears that the claims of a prior application filed by the petitioner were rejected upon the patent to Reynolds among others and that upon appeal it was held by the Examiners-in-Chief that the device of the Reynolds patent did not operate in the manner stated by the Examiner and did not anticipate the claims appealed. It is contended by the petitioner and is practically admitted by the Examiner that substantially the same question as to the operation of the Reynolds device is presented in the present case as was considered in the prior case, and the petitioner contends that the question is *res adjudicata* by reason of the decision of the Examiners-in-Chief. He argues that the Examiner is bound to accept in this case the statement of the Examiners-in-Chief in the other case as to the operation of the Reynolds device, whereas the Examiner insists that although he is bound by the actual decision of the Examiners-in-Chief he is not bound by the reasons given as grounds for the decision in another case presenting different claims where he is satisfied that the statements of the Examiners-in-Chief were based upon a misapprehension.

This question whether the Examiner was right in rejecting the claims relates to the merits and under the rules is properly appealable to the Examiners-in-Chief; but since the principal question raised in this case is how far the Examiner is bound by the decision of the Examiners-in-Chief it is thought best to reiterate at this time the proper practice on that question as laid down in *Painter* v. *Hall*. (80 O. G., 1124.)

It is of course well settled that the Examiner is bound by the actual decision of the Examiners-in-Chief in a case properly appealed to them and cannot refuse to carry it into effect whatever individual opinion he may have as to the correctness of the decision. It is also settled that he cannot disregard rulings and recommendations made by them even on matters not strictly and regularly before them for decisions, but must give them due weight and respect. (*Painter* v. *Hall*, *supra*; *ex parte Letellier*, 81 O. G., 1611.) He is not, however, bound absolutely by such rulings and recommendations, but only by the decision on the particular matter before them. This is evident from Rule 139, which provides that the Examiners-in-Chief may make recommendations as to matters not strictly before them and that appeals may be taken from the *adverse* decision of the Examiner on such matters. (See also *ex parte Williamson*, 56 O. G., 1060.) This is also in accordance with the principles of law governing the doctrine of *res adjudicata*. The decision makes the matter in dispute *res adjudicata;* but not the other matters in reference to which statements are made in the decision. For instance, the court in reaching its conclusion on the matter before it may announce its opinion as to certain matter introduced in evidence; but that does not make their conclusion as

to that piece of evidence *res adjudicata* in a subsequent suit. As was said by the Supreme Court of New Hampshire in *King* v. *Chase*, (15 N. H., 15:)

It appears that the title set up in that case was by a mortgage. In finding that the plaintiff had no title, the jury must have been of opinion that the mortgage was fraudulent. * * * The title however which has been tried was only his title to the oats. The question whether the mortgage was fraudulent came up only incidentally by reason of his relying on that as his title. But the mortgage was not a matter in issue. And while the finding is conclusive on the question of his title to the oats, it is neither conclusive nor evidence upon anything else, because nothing else was in issue.

In the prior decision referred to by the petitioner in the present case the only thing before the Examiners-in-Chief was the patentability of the appealed claims, and the question as to the operation of the Reynolds device came up only incidentally. That patent was merely a piece of evidence, and the statements made by them in regard to it do not render the construction to be placed upon it *res adjudicata* and binding upon the Examiner from whom the appeal was taken, as well as all the other Examiners in all cases that thereafter arise involving in any way the question of what that patent shows. The Examiner is not technically bound by the statements of the Examiners-in-Chief on that question, and it is not believed that it is to the interest of good practice or the proper performance of the work of the Office for him to feel himself bound to follow the rulings on such questions in other cases without exercising his own discretion. Rulings and statements by the Examiners-in-Chief even on matters not strictly in issue, as well as on references cited, are entitled to respect and due consideration and should be *very* persuasive upon the Examiner and where any doubts exist in his mind should be followed; but they do not preclude him from exercising his discretion in a proper case. As was said in *Painter* v. *Hall*, cited above:

An offensive disregard of the decision of the higher tribunal would be met, not by denying the right, but by preventing the abuse.

If the construction by the Examiners-in-Chief of a reference was held to be *res adjudicata*, except in the particular case before them, it might pre vent the citation of that reference in some application where the resulting patent might be litigated and the interpretation of the court be obtained on the reference.

I have examined the patent to Reynolds and the decision of the Examiners-in-Chief, in connection with the Examiner's statement of the case, sufficiently to be satisfied that there has been no offensive disregard of the decision or abuse of discretion by him. He seems to be honestly satisfied that the Examiners-in-Chief were under a misapprehension as to the operation of the Reynolds device and that their conclusion will be different on that question if it is brought before them in the present case involving the patentability of different claims.

The Examiner's action having been regular and having been a rejection of the claims, the petitioner's remedy is by an appeal to the Examiners-in-Chief on the question of the patentability of the claims.

The petition is denied.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Second Circuit.

FULLER *v.* HUFF *et al.*

Decided July 5, 1900.

1. TRADE-MARK—"HEALTH FOOD"—DESCRIPTIVE.

The term "Health Food" means healthy food or health-producing food, is therefore descriptive of quality, and cannot be a technical trade-mark, either with or without the word "Company," any more than the words "Nutritious Wine" could be a valid trade-mark.

2. TRADE-NAME—UNFAIR COMPETITION.

The law of unfair competition is that when a mark, name, or phrase has been so used by a person in connection with his business or articles of merchandise as to become identified therewith and indicate to the public that such articles emanate from him the law will prohibit others from so using it as to lead purchasers to believe that the articles they sell are his or as to obtain the benefit of the market he has built up thereunder.

3. SAME—SAME—LONG-CONTINUED USE.

The courts in considering the use by competitors of the name under which a rival has previously gained a business reputation, although the name is not strictly a trade-mark, have attached great importance to long-continued and exclusive priority of use and have demanded a high order of commercial integrity and have frowned upon all filching attempts to obtain the reputation of another.

4. SAME—DIFFERENT STYLE OF PACKAGE.

If a trade-name has been so identified with the business of a manufacturer as to inform the public that the name upon goods means that they are the product of that person and another adopts and displays the name, it is not material that he has not also adopted the particular dress in which his predecessor has presented his goods.

5. UNFAIR COMPETITION—CONTINUANCE AFTER NOTICE.

Although the intent of the defendant when it commenced the use of the name may have been innocent, the continuance after it had learned of the complainant's prior use indicates its deliberate intention to use the name without reference to the complainant's possible prior rights.

6. TRADE-NAME—"HEALTH FOOD COMPANY" AND "SANITARIUM HEALTH FOOD COMPANY"—LIABILITY TO DECEIVE.

The use by the defendant upon goods of the name "Sanitarium Health Food Company," although in connection with the words "Battle Creek, Michigan," is likely to deceive purchasers and make them believe that they are obtaining the goods of the complainant sold under the name "Health Food Company," and therefore an injunction will be granted. It is not necessary to show that a purchaser had actually been deceived where a manifest liability to deception exists.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

Before WALLACE, LACOMBE, and SHIPMAN, Judges.

Mr. Charles G. Coe for the appellant.
Mr. Thomas B. Kerr for the appellees.

SHIPMAN, *J.*:

The complainant, Frank Fuller, a citizen of New Jersey, commenced in the year 1875, under the name of Health Food Company, to sell in the city of New York cereal products prepared for food and has continued to the present time in that business and in the use of the same name, under which he has extensively advertised his goods by circulars and in newspapers and magazines at a cost of from $75,000 to $100,000. He has established agencies in Brooklyn, Chicago, Boston, Washington, Philadelphia, St. Louis, and Oakland. The name Health Food Company is displayed prominently upon the packages in which the various articles are presented to the consumers. About fifty different articles have been thus placed upon the market. The business has become large and the name is unquestionably valuable to the complainant.

In October, 1876, John H. Kellogg took charge and has continued to be in charge of the institution popularly known as the Battle Creek Sanitarium, but incorporated in pursuance of the laws of the State of Michigan in 1867 under the name of the Health Reform Institute. This corporation is the owner of a large sanitarium having branch institutions at various places and has established in this country and elsewhere suborganizations for the promotion of charitable and missionary work. The Battle Creek Sanitarium recommended to its patients particular kinds of cereal foods and entered upon the business of manufacturing and selling these articles under the name of "Sanitarium Foods." In 1881 nineteen different articles were made. In 1888 the business of food manufacture was made a separate department under the name of Sanitarium Food Company, which advertised itself in April, 1893, as Sanitarium Health Food Company. The reason for this and a subsequent change of name which preserved the words "Health Food Company" is stated by Kellogg in his deposition as follows:

In April, 1893, our advertisement appears in *Good Health* over the business name of Sanitarium Health Food Company. This name we were led to adopt by the action of one of our old employees, who, leaving the institution, set up in business in the same town, advertising himself under the name of the Battle Creek Health Food Company. As quite a large proportion of our mail had for years been addressed to us as the Battle Creek Health Food Co., we found this action a serious annoyance and objected to it, with the result that an arbitration was agreed upon, the result of which was that the party referred to was required to change his name, which he did, adopting the title the Battle Creek Bakery Company. We then added the word "Health" to our business announcement, making it Sanitarium Health Food Company. Our salesmen, however, in introducing our foods, so constantly made use of the term Battle Creek Sanitarium in describing our foods to distinguish between our institution and numerous other sanitariums, we finally, some two or more years ago still further extended the business title of our food department to its present form, the Battle Creek Sanitarium Health Food Company. Our purpose in adopting the words "Health Food" in our name was to protect ourselves against parties who sought to pirate the extensive business which we had built up by assuming a name similar to ours and making similar goods in the same town.

Their packages and cartons have the name "Health Food Co." in conspicuous type, prefixed by the word "Sanitarium," and in smaller type the words "Battle Creek, Michigan," under the name. The packages do not imitate or resemble in external appearance the dress of the packages of the complainant.

In October, 1896, a retail-grocers' food exhibition was held at the Grand Central Palace in New York city. The complainant exhibited his products at a booth under the prominently-displayed name Health Food Company. About fifteen or twenty feet distant the defendant, Barton Huff, a citizen of the State of New York, as agent of the Health Reform Institute, exhibited its wares, and upon its booth was a placard containing the words "Health Food Company," in large letters, under the words "Battle Creek Sanitarium." The complainant remonstrated with Huff against the use of "Health Food Company" as an infringement of the complainant's right and threatened a suit. Huff said that he would bring the representation to the attention of the officers of the Health Food Department; but the use of the name did not cease.

The food business of the defendant under its last name is extensively advertised and when the testimony was being taken was said to amount to from $260,000 to $300,000 annually.

The circuit court dismissed the bill upon the ground that the defendant's name was clearly distinguishable from the complainant's business-name and was not an unlawful appropriation.

The term "Health Food" means healthy food or health-producing food, is therefore descriptive of quality, and cannot be a technical trade-mark, either with or without the word "Company," any more than the words "Nutritious Wine" could be a valid trade-mark. If a case against the defendant exists, it is one of unfair competition, and the law upon the subject of the adoption by a competitor of names or words descriptive of quality which have previously become trade-names and which adoption will constitute unfair competition is correctly stated by the counsel for the defendant as follows:

When such a mark, name or phrase has been so used by a person in connection with his business or articles of merchandise as to become identified therewith, and indicate to the public that such articles emanate from him, the law will prohibit others from so using it as to lead purchasers to believe that the articles they sell are his, or as to obtain the benefit of the market he has built up thereunder.

The same statement of the law is contained in the case of *Reddaway* v. *Banham*, (App. Case, 199,) decided by the House of Lords in 1896, in which it was held that—

one person was not entitled to pass off his goods as those of another by selling them under a name likely to deceive purchasers, whether immediate or ultimate, into the belief that they were buying the goods of the former, although the name was, in its primary sense, merely a true description of the goods.

The subject of the unlawful use by competitors of the name under which a rival has previously presented himself to the public and has gained a business reputation, although the name is not strictly a trade-mark and is either geographical or descriptive of quality, has been frequently of late before the courts, which have demanded a high order of commercial integrity and have frowned upon all filching attempts to obtain the reputation of another. (*Lee* v. *Haley*, L. R., 5 Ch., App. 155; *Manchester Brewing Co.* v. *The Cheshire and Manchester Brewing Co.*, L. R., 1899, App. 83; *City of Carlsbad* v. *Kutnow*, 71 Fed. Rep., 167; *American Waltham Watch Co.* v. *U. S. Watch Co.*, 173 Mass., 85; *Block* v. *Standard & Distilling, etc., Co.*, 95 Fed. Rep., 978.)

The question, therefore, is, is the real defendant's use (for it is manifest that the Michigan corporation is the real defendant) of the words "Health Food Company," in connection with the words used as a prefix and suffix, such a use as is likely to deceive consumers into the belief that they were buying the complainant's goods. It is to be observed that the frequent insignia of an intent to deceive—viz., the copy or the imitation, more or less close, of the dress of the competitor's packages—

are absent in this case; but if a trade-name has been so identified with the business of a manufacturer as to inform the public that the name upon goods means that they are the product of that person and another subsequently adopts and displays the name it is not material that he has not also adopted the particular dress in which his predecessor has presented his goods. (*Hier* v. *Abrahams*, 82 N. Y., 519.)

The complainant had used the name for eighteen years before the defendant assumed it, had acquired an extensive business under it, had established agencies for his goods in six or seven eastern and western cities, while all that the consumer knew of the complainant's goods was that they were presented to him as the products of the Health Food Company. The defendant announced its goods in 1881 as "Sanitarium Foods," advertised them also as "invalid foods," and waited until 1893 before they were presented as the products of the Sanitarium Health Food Company. The reason for the adoption of this name was a desire to forestall its use by any one else, thus recognizing the benefit from the name and the advantage from priority in its use.

Three years after it knew that it had long been prominently used by and was the sole business-name of the complainant. The defendant now so coveted the name as to determine not to relinquish it and continued its use despite remonstrance. The benefit to the corporation was derived from the familiarity with the name on the part of that portion of the public which used this class of goods.

It is said, however, and the circuit court yielded to the defense, that the name is presented to the public with such accompanying assertions in regard to the manufacturer of the goods and the place of the manufacture that the consumer need not be deceived. In the class of cases in which a manufacturer is using his own name or the name of another person which has become generic this defense is of great value, because it is the duty of the user to make any inevitable harm as light as possible. (*Singer Mfg. Co.* v. *June Mfg. Co.*, 75 O. G., 1703; 168 U. S., 169.) The question in this case is, however, whether the simple use of the name, although with prefixes or suffixes, is not "likely to deceive purchasers." The history is significant in regard both to the motive of the Michigan corporation in retaining its occupancy of the name and the probable effect of a permanent retention. After it had presented its goods to the public for years under the name "Sanitarium Foods" and "Invalid Foods" there was no necessity for an abandonment of the former names under which it had confessedly obtained success and by which it was well and favorably known by its customers. The adherence to the new name to the extent of guaranteeing productions to its purchasers against suits indicates the pecuniary benefit which was expected to ensue from the adoption of a name to which consumers had long been accustomed, and the persistence in the use also indicates the pecuniary injury which was liable to come upon the complainant. The case is not one where the Michigan corporation must use to a certain extent the name of the complainant, and it is not, therefore, one of *damnum absque injuria*. It is the case of an unnecessary use of a name long previously used by another in the same business, and in the recent decisions, by courts of last resort, upon the right to the use of trade-names, although geographical or descriptive in their primary meaning, great importance is given to mere long-continued and exclusive priority of use. (*Manchester Brewing Co.* v. *No. Cheshire and Manchester Brewing Co., supra; Amr. Waltham Watch Co.* v. *U. S. Watch Co., supra.*) It was not necessary for the complainant to attempt to discover whether a purchaser had been actually deceived, for a manifest liability to deception exists. (*Vulcan* v. *Myers*, 139 N. Y., 304; *Amoskeag Manufacturing Co.* v. *Trainer*, 17 O. G., 1217; 101 U. S., 51; *National Biscuit Co.* v. *Baker*, 95 Fed. Rep., 135.)

Although the intent of the defendant's principal when it commenced to use the name Health Food may have been innocent, the continuance after it had learned of the complainant's prior use indicates its deliberate intention to use the name without reference to the complainant's possible prior rights. (*Or. Ewing Co.* v. *Johnston Co.*, 13 Ch. Div., 434.)

The decree of the circuit court is reversed, with costs, and the cause is remanded to that court, with instructions to enter a decree for injunction against the defendant, Barton Huff, in accordance with the prayer of the bill, with costs.

Patents No. 656,619 to 657,073.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

Vol. 92.—No. 9. TUESDAY, AUGUST 28, 1900. Price—$5 per year.

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Disclaimer.

626,808.—*Charles Roe* and *Henry Roe*, of Aston, and *Horace Knight*, of Coventry, England. IMPROVEMENT IN POWER-TRANSMITTING MECHANISM FOR MOTOR-VEHICLES. Patent dated May 30, 1899. Disclaimer filed by patentees August 18, 1900.

Enter this disclaimer—

To that part of claim 1 in said specification which is in the following words, to wit:

"At two speeds."

Complete Applications.

It is hereby ordered that applications shall not be given serial numbers as complete applications and forwarded to the examining divisions for examination (1) when the petition has not been signed by the inventor; (2) when the specification and claims have not been signed by the inventor and the signature attested by two witnesses; (sec. 4888, Rev. Stats.;) (3) when the drawing has not been signed by the inventor or his attorney in fact and the signature attested by two witnesses; (sec. 4889, Rev. Stats.;) and (4) when the oath to the application does not fill the requirements of sections 4887 and 4892, Revised Statutes.

The requirements of section 4896, Revised Statutes, respecting the right of executor or administrator to make application for a patent for the invention of a deceased person must also be observed before the application will be considered as complete and forwarded for examination. The legal requirements in cases where the application is made by a foreign administrator are stated in *ex parte Ransome*, (C. D., 1870, 143.)

* * * * * * * * *

This order, so far as applicable, relates to applications for the registration of trade marks, labels, and prints, which must in all respects comply with the requirements of the statutes.

Close of Weekly Issue of Patents.

The weekly issue of patents will close on Thursday, and the patents of that issue will bear date as of the third Tuesday thereafter.

CERTIFICATES OF REGISTRATION ISSUED AUGUST 28, 1900.

Labels.

7,750.—Title: "STAY THERE." (For Buckles.) *Ike W. Levi*, Syracuse, N. Y. Application filed August 6, 1900.

7,751.—Title: "THE EQUALITY." (For Shoes.) *Direct Shoe Co.*, Boston, Mass. Application filed July 17, 1900.

7,752.—Title: "HUYLER'S AMERICAN DROPS." (For Candy.) *Huyler's*, New York, N. Y. Application filed August 7, 1900.

7,753.—Title: "C. W. C. GINGER ALE." (For Ginger-Ale.) *John D. Gorman*, Jersey City, N. J. Application filed August 6, 1900.

7,754.—Title: "RIVER MILLS." (For Rye Whisky.) *I. A. Rosenheim*, Parkersburg, W. Va. Application filed July 2, 1900.

7,755.—Title: "RED TOP RYE." (For Whisky.) *Ferdinand Westheimer & Sons*, Cincinnati, Ohio. Application filed July 21, 1900.

7,756.—Title: "DUROY BRAND." (For Fruit Syrups and Juices.) *The Duroy & Haines Company*, Sandusky, Ohio. Application filed July 11, 1900.

7,757.—Title: "THE HALLWOOD." (For Cigars.) *Hallwood Cash Register Company*, Jersey City, N. J. Application filed June 20, 1900.

7,758.—"GOLD SEAL." (For Cigarettes.) *Knubel Tobacco Company*, New York, N. Y. Application filed August 7, 1900.

7,759.—Title: "JEWELER'S LUSTRE." (For a Preparation for Polishing Metals, Glass, &c.) *Augustus S. Marsilliot*, Des Moines, Iowa. Application filed July 25, 1900.

7,760.—Title: "APPOLLOTONIC." (For a Hair-Tonic.) *Century Chemical Company*, New York, N. Y. Application filed August 2, 1900.

7,761.—Title: "VAXO." (For a Medical Compound.) *Delbert A. Strock*, Buffalo, N. Y. Application filed August 7, 1900.

7,762.—Title: "MADAM SHERMAN'S VEGETABLE COMPOUND." (For a Medicine.) *Worlds Electro-Medical Institute*, Columbus, Ohio. Application filed August 3, 1900.

7,763.—Title: "ANTI-GON." (For a Medicine.) *Winn & Hubbard*, New York, N. Y. Application filed July 10, 1900.

7,764.—Title: "DR. KAY'S UTICURE." (For a Medicine.) *Dr. B. J. Kay Medical Company*, Saratoga Springs, N. Y. Application filed August 4, 1900.

7,765.—Title: "HOUSE'S BABY MIXTURE." (For a Medicine.) *Robert T. Smoot*, Paris, Tex. Application filed April 2, 1900.

Print.

255.—Title: "WHO NOSE ME." (For a Game.) *Orin B. Du Bois*, Jersey City, N. J. Application filed June 15, 1900.

256.—Title: "CARBOLO." (For an Antiseptic and Germicide.) *Carey & Co.*, New York, N. Y. Application filed June 12, 1900.

257.—Title: "MALT CREAM." (For Malt Cream.) *The American Malt Cream Company*, Mishawaka, Ind. Application filed June 18, 1900.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business August 21, 1900.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. of applications awaiting action.
	In arrears—Under one month.			
217	XXXIII. *Designs, †Trade-Marks, ‡Labels and Prints, Optics.	.....	Aug. 17	23
250	VIII. Furniture, Beds, Store Furniture, etc.	Aug. 16	Aug. 14	102
106	II. Farm Stock, Products, etc.	Aug. 13	Aug. 13	72
111	XXXII. Bottles and Jars, Carbonating Beverages, Refrigeration, Shipping and Storing Vessels, etc.	Aug. 3	Aug. 7	201
255	XII. Mechanical Engineering, Store-Service, etc.	Aug. 1	Aug. 7	117
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	July 28	Aug. 4	83
240	VII. Velocipedes, Games, and Toys.	July 28	Aug. 2	157
38	XXXV. Advertising, Baggage, Buckles, Buttons, and Clasps, Packing and Storing Vessels, etc.	July 27	July 30	128
30	IV. Civil Engineering, Fire-Proof Buildings, Bridges, Water Distribution, etc.	July 26	Aug. 8	140
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	July 26	Aug. 7	145
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	July 25	Aug. 8	144
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	July 24	Aug. 9	123
39	XXXI. Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	July 24	Aug. 7	140
253	X. Carriages and Wagons	July 24	Aug. 4	75
246	I. Tillage and Fences	July 23	Aug. 8	151
122	XXIV. Sewing-Machines, Apparel, and Toilet.	July 23	Aug. 8	87
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	July 23	Aug. 2	123
221	XXIII Registers, Fluid-Meters, and Acoustics, etc.	July 23	July 30	120
93	XXI. Textiles, etc	July 23	July 28	93
102	XIX. Stoves and Furnaces	July 23	July 19	254
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	July 22	Aug. 7	215
	Between one and two months.			
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	July 21	July 24	166
120	IX. Hydraulics, Fire-Extinguishers, etc.	July 19	July 5	175
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	July 17	Aug. 1	123
215	XVII. Printing, Type-Writing Machines, and Linotyping.	July 16	Aug. 6	134
248	XVIII. Steam-Engineering, etc	July 16	July 30	159
105	XI. Boots and Shoes, Harness, Hose and Belting, and Leather-Working Machinery.	July 14	July 19	120
261	XXXVI. Weighing and Measuring Devices, Driers, and Drafting.	July 13	Aug. 4	93
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	July 9	July 24	122
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	July 9	July 10	250
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	July 7	July 9	264
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	July 6	July 21	152
35	XXVIII. Pneumatics, Air and Gas Engines, etc.	July 6	July 3	264
	Between two and three months.			
95	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	June 21	July 21	197
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 21	July 19	209
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	June 14	July 23	323

Total number of applications awaiting action.....5,444

Applications Under Examination—Continued.

Under one month.			
*Designs	Aug. 18	.....	3
Between one and two months.			
†Trade-Marks	July 6	July 6	463
Under one month.			
‡Labels and Prints	.....	.....	.....

ISSUE OF AUGUST 28, 1900.

Patents	455—No. 656,619 to No. 657,073,	inclusive.
Designs	34—No. 33,116 to No. 33,149,	inclusive.
Trade-Marks	None.	
Labels	16—No. 7,750 to No. 7,765,	inclusive.
Prints	3—No. 255 to No. 257,	inclusive.
Reissues	1—No. 11,849.	
Total issue	509	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	.....	Nevada	.....	.....
Arizona Territory	.....	.....	New Hampshire	2	.....
Arkansas	2	.....	New Jersey	21	3
California	3	.....	New Mexico Territ'y	.....	.....
Colorado	5	.....	New York	82	8
Connecticut	12	.....	North Carolina	1	.....
Delaware	.....	.....	North Dakota	1	.....
District of Columbia	4	.....	Ohio	34	3
Florida	1	.....	Oklahoma Territ'y	2	.....
Georgia	5	.....	Oregon	2	.....
Hawaii	.....	.....	Pennsylvania	45	.....
Idaho	1	.....	Rhode Island	6	.....
Illinois	49	.....	South Carolina	1	.....
Indian Territory	.....	.....	South Dakota	2	.....
Indiana	9	1	Tennessee	4	.....
Iowa	7	1	Texas	9	1
Kansas	4	.....	Utah	1	.....
Kentucky	3	.....	Vermont	2	.....
Louisiana	3	.....	Virginia	1	.....
Maine	1	.....	Washington	.....	.....
Maryland	3	.....	West Virginia	1	1
Massachusetts	27	1	Wisconsin	7	.....
Michigan	25	.....	Wyoming	.....	.....
Minesota	9	.....	U. S. Army	.....	.....
Mississippi	1	.....	U. S. Navy	.....	.....
Missouri	21	.....			
Montana	2	.....	Total to citizens of the United States	426	19
Nebraska	4	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Italy	.....	.....
Australia	.....	.....	Japan	.....	.....
Austria-Hungary	1	.....	Java	.....	.....
Barbadoes	.....	.....	Mexico	.....	.....
Belgium	2	.....	Netherlands	1	.....
Bermuda	.....	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	.....	.....
Canada	7	.....	Norway	.....	.....
Chile	.....	.....	Queensland	.....	.....
China	.....	.....	Russia	1	.....
Costa Rica	.....	.....	Scotland	.....	.....
Cuba	.....	.....	South African Republic	.....	.....
Denmark	.....	.....	South Australia	.....	.....
Egypt	.....	.....	Spain	.....	.....
England	13	.....	Sweden	.....	.....
Finland	.....	.....	Switzerland	1	.....
France	7	.....	Venezuela	.....	.....
Germany	29	.....	Victoria	1	.....
Guatemala	.....	.....			
Haiti	.....	.....	Total to citizens of foreign countries	68	.....
India	.....	.....			
Ireland	.....	.....			

PATENTS

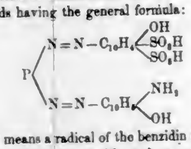
GRANTED AUGUST 28, 1900.

656,619. **BLUE TETRAZO DYE AND PROCESS OF MAKING SAME.** JOHANN BAMMANN and ERNST DAVIDIS, Elberfeld, Germany, assignors to the Farbenfabriken of Elberfeld Company, New York, N. Y. Filed Dec. 4, 1899. Serial No. 739,151. (Specimens.)

Claim.—1. The process for producing new tetrazo dyestuffs by first combining one molecule of a tetrazotized paradiamin with one molecule of an alpha-naphthol disulfonic acid, secondly coupling the resulting intermediate product with one molecule of 2.7-amidonaphthol and finally isolating the dyestuffs thus produced, substantially as hereinbefore described.

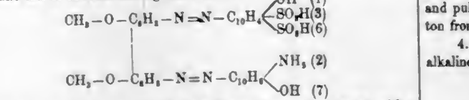
2. The process for producing a new tetrazo dyestuff by first combining one molecule of tetrazotized dianisidin with one molecule of 1-naphthol 3.6-disulfonic acid, secondly coupling the intermediate product thus obtained with one molecule of 2.7-amidonaphthol and finally isolating the resulting dyestuff, substantially as described.

3. As new articles of manufacture the new tetrazo dyestuffs being alkaline salts of acids having the general formula:



in which formula P means a radical of the benzidin series, which dyestuffs are dark powders, soluble in water with a color varying from reddish-violet to blue, rediazotizable on the fiber, dyeing unmordanted cotton bright from reddish-violet to blue shades, substantially as described.

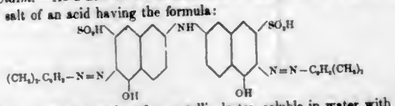
4. As a new article of manufacture the specific dyestuff being an alkaline salt of the acid having the formula:



which is a dark bronzy-colored powder, easily soluble in water with a bluish-violet color soluble in concentrated sulfuric acid with a greenish-blue color which turns into deep blue on adding a small quantity of ice while a bluish-violet precipitate is obtained on the addition of a larger quantity of ice to the sulfuric acid solution, soluble in alcohol with a violet color, in ammonia with a bluish-violet color, dyeing unmordanted cotton blue shades, yielding reddish-blue shades fast to washing when rediazotized on the fiber and further coupled with beta-naphthol, substantially as hereinbefore described.

656,620. **BLUE-RED SUBSTANTIVE DYE.** JOHANN BAMMANN, ERNST DAVIDIS, and WALTER VORSTER, Elberfeld, Germany, assignors to the Farbenfabriken of Elberfeld Company, New York, N. Y. Filed Apr. 4, 1900. Serial No. 11,455. (No specimens.)

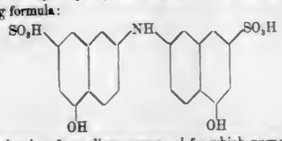
Claim.—As a new article of manufacture the dyestuff being an alkaline salt of an acid having the formula:



which is a brown powder of a metallic luster, soluble in water with a bluish-red color, soluble in concentrated sulfuric acid with a blue color which turns into reddish-violet on adding a small quantity of ice, while a dark precipitate is obtained on the addition of a larger quantity of ice to the sulfuric-acid solution, soluble in alcohol as well as in ammonia with a red color, dyeing unmordanted cotton in alkaline baths clear bluish-red fast shades, substantially as hereinbefore described.

656,621. **AZO DYESTUFF AND METHOD OF MAKING SAME.** JOHANN BAMMANN, ERNST DAVIDIS, and WALTER VORSTER, Elberfeld, Germany, assignors to the Farbenfabriken of Elberfeld Company, New York, N. Y. Filed Apr. 4, 1900. Serial No. 11,456. (No specimens.)

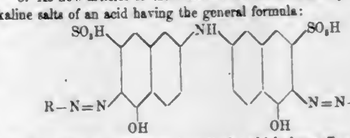
Claim.—1. The process for producing new azo dyestuffs by first combining the dioxydinaphthylamin disulfonic acid having in a free state the following formula:



with two molecules of any diazo compound for which purpose also molecular proportions of different diazo compounds may be employed, secondly precipitating and finally isolating the dyestuffs thus produced, substantially as hereinbefore described.

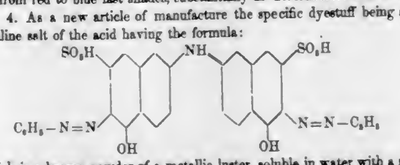
2. The process for producing a new azo dyestuff by first combining two molecules of diazobenzene chlorid with one molecule of the above-defined dioxydinaphthylamin disulfonic acid, secondly precipitating and finally isolating the dyestuff thus produced, substantially as hereinbefore described.

3. As new articles of manufacture the new disazo dyestuffs, being alkaline salts of an acid having the general formula:



R and R_1 meaning any aromatic radicals, which dyestuffs are, when dry and pulverized, dark powders, soluble in water, dyeing unmordanted cotton from red to blue fast shades, substantially as hereinbefore described.

4. As a new article of manufacture the specific dyestuff being an alkaline salt of the acid having the formula:



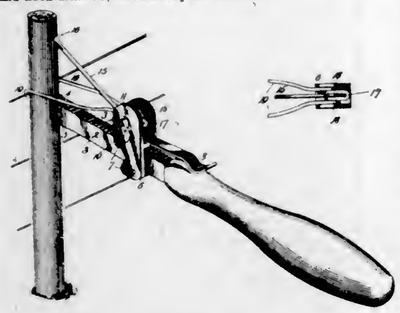
which is a brown powder of a metallic luster, soluble in water with a red color, soluble in concentrated sulfuric acid with a blue color which turns into reddish blue on adding a small quantity of ice, while a dark precipitate is obtained on the addition of a larger quantity of ice to the sulfuric-acid solution, soluble in alcohol and in ammonia with a red color, dyeing unmordanted cotton in alkaline baths clear red fast shades, substantially as hereinbefore described.

656,622. **COMBINATION-TOOL.** WILLIS J. BARNES, Milan, Kans., assignor to E. A. Phillippi, L. B. Phillippi, B. E. Phillippi, and F. Brown, same place. Filed Mar. 30, 1900. Serial No. 10,773. (No model.)

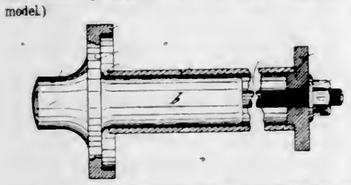
Claim.—1. In an implement of the character described, a shank serrated at its upper and lower sides, a sleeve 6, mounted slidingly thereon, and provided with cross-pins 7, at diagonally-opposite points, a spring 8 having one end fitting in the sleeve and riveted thereto as at 9, a pivot-bolt mounted in the sleeve above the spring, a nut engaging said bolt and countersunk in the sleeve, a collar or sleeve 14, upon the bolt and bearing endwise against sleeve 6, and an arm pivotally mounted on said collar or sleeve within sleeve 6, all arranged substantially as described.

2. In a tool of the character described, a shank serrated at its upper and lower sides, a sleeve mounted slidingly thereon, and provided with diagonally-opposite cross-pins, a spring secured to the sleeve and adapted to cant the same and hold said cross-pins in engagement with certain of said serrations, a bolt bridging the sleeve above said spring, a brace pivoted on the bolt and adapted to bite against a fence-post, and a double hook pivoted on the bolt and formed of a single wire, by bending the lat-

ter at its middle, as at 17, and near said bend forming double loops or coils 18, and hook-arms 19, substantially as described.

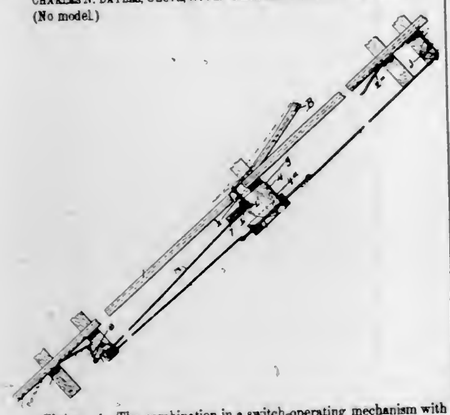


656,623. DEVICE FOR FLANGING TUBES. FRIEDRICH W. BARTHELS, Hamburg, Germany. Filed Feb. 8, 1900. Serial No. 4,580. (No model.)



Claim.—In a device for forming flanges on tubes, the combination of a mandrel having a recessed collar or head formed thereon, a threaded rod or stem at the opposite end of the mandrel, a cap loosely fitted on said rod, and a threaded nut traveling on said rod whereby said collar may be forced toward the recessed collar, substantially in the manner and for the purpose set forth.

656,624. OPERATING MECHANISM FOR RAILWAY-SWITCHES. CHARLES N. BAYLES, Uneva, W. Va. Filed Jan. 27, 1900. Serial No. 3,055. (No model.)



Claim.—1. The combination in a switch-operating mechanism with a switch-rail, a pivoted member, connection between the same and said switch-rail, a longitudinally-movable engaging member for engaging and moving said pivoted member said pivoted member releasably engaging the same, means for moving said engaging member, and means for moving the engaging member to cause the same to disengage said pivoted member after the latter has been moved, substantially as described.

2. The combination with a switch-rail, of operating mechanism therefor, comprising a pivoted member connected to said switch-rail, a longitudinally-movable member in proximity to the said pivoted member and releasably engaging the same, and means for moving said longitudinally-movable member and causing it to release said pivoted member, a lock device adapted to be moved into engagement with said pivoted member, and connections whereby the movement of said longitudinal member after disengagement operates said lock device, substantially as described.

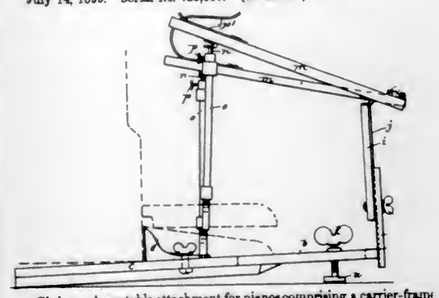
3. The combination with a switch-rail, of operating mechanism therefor comprising a pivoted member having an upwardly-projecting rib or flange, a longitudinally-movable member located adjacent said pivoted member and having a part adapted to engage said rib or flange, means for causing said longitudinal member to disengage said flange, a lock device, and connections between the several parts whereby said lock device is caused to engage said pivoted member after the same has reached the limit of its movement, and means for moving the several parts, substantially as described.

4. The combination with a switch-rail, operating mechanism therefor comprising an operating device adapted to be engaged by a device carried by a car, a bell-crank lever connected to said operating device, a pivoted member, a connection from the latter to said switch-rail, a rib or flange on said pivoted member, a longitudinally-movable member adjacent said pivoted member and having a part engaging said rib or flange, means for causing the disengagement of said longitudinally-movable member from said rib or flange after it has moved the pivoted member, a connection from said longitudinally-movable member to said bell-crank lever, a movable lock device adapted to be moved into engagement with said pivoted member, and a connection from said lock device to said bell-crank lever, substantially as described.

5. The combination with a switch-rail, operating mechanism therefor comprising an operating device adapted to be engaged by a device carried by a car, a bell-crank lever connected to said operating device, a pivoted member, a connection from the latter to said switch-rail, a rib or flange on said pivoted member, a longitudinally-movable member adjacent said pivoted member and having a part engaging said rib or flange, means for causing the disengagement of said longitudinally-movable member from said rib or flange after it has moved the pivoted member, a connection from said longitudinally-movable member to said bell-crank lever, a movable lock device adapted to be moved into engagement with said pivoted member, a connection from said lock device to said bell-crank lever, a second oppositely-arranged operating device adapted to be engaged by a device carried by a car, a bell-crank lever, a connection from the same to said second operating device, and a connection from said second bell-crank lever to said longitudinally-movable member, substantially as described.

6. In an operating mechanism for a switch-rail, a bent-lever operating device pivoted to swing in a horizontal plane adjacent the track-rail, and one arm of said lever adapted to lie beneath an upper flange or part of the rail, and the other arm adapted to extend at an angle to said rail, substantially as described.

656,625. AUXILIARY PEDAL ATTACHMENT FOR PIANOS. WILLIAM BOHRER and THEOBALD MESSNER, Montreal, Canada. Filed July 14, 1899. Serial No. 723,869. (No model.)

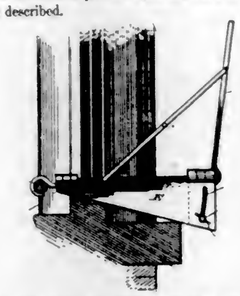


Claim.—A portable attachment for pianos comprising a carrier-frame consisting of a vertical portion and a portion to extend beneath the foot of the piano; a vertically-adjustable bracket-piece carried by said vertical portion; a pair of auxiliary pedals hinged at their heels to said bracket-piece; a pair of extensible rods pivotally connected at their ends to the toes of said pedals and having their lower ends forked; a pair of blocks carried by and adjustable longitudinally of the horizontally-extending portion of said carrier-frame; a pair of vertical screws carried by said horizontal portion and projecting downwardly therethrough and a pair of bearing-blocks rotatably carried by the lower ends of said screws, substantially as described and for the purpose set forth.

656,626. WINDOW-CHAIR. PETER C. CAMPBELL, New York, N. Y. Filed Dec. 30, 1899. Serial No. 742,028. (No model.)

Claim.—1. In a window-chair, the combination with the seat, of supporting-plates pivotally secured to the sides thereof at its front end, and adjustably secured thereto at its rear end, substantially as described.

2. In a window-chair, the combination with the seat, of flaps hinged to the sides thereof at its front and rear ends, and supporting-plates pivotally secured to the front flaps and adjustably secured to the rear flaps, substantially as described.



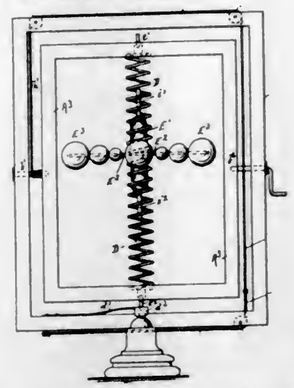
3. In a window-chair, the combination with the seat, of front and rear flaps hinged to its sides, supporting-plates pivoted to the front flaps and provided with curved slots near their rear ends, bolts projecting from the rear flaps through said slots, and securing-nuts, substantially as described.

4. In a window-chair, the combination with the seat of supporting-plates pivotally connected to the sides thereof to permit of their folding under the seat, and pivoted at their front ends to permit of their pivotal movement in planes at right angles to those of the folding movement, substantially as described.

5. A window-chair provided with a seat adjustable in length and folding adjustable side supporting-plates, substantially as described.

6. A window-chair provided with a folding back, a seat adjustable in length, and folding side supporting-plates adjustable to level up the seat, substantially as described.

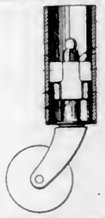
656,627. TOY. JOSEPH A. CHAPMAN, Bay City, Wis. Filed Nov. 7, 1899. Serial No. 736,139. (No model.)



Claim.—1. In a toy, an outer frame supported in a vertical position, an inner frame pivoted within said outer frame and adapted to revolve vertically therein, a wire coil secured by its ends vertically within said inner frame, a traveler within said coil and provided with weighted arms projecting outward through said coil, whereby said traveler in moving downward within said coil will be revolved by the action of said projecting arms, means for revolving said inner frame within said outer frame, means for holding said inner frame vertically within said outer frame, and means whereby the vertical movement of said traveler will release the holding means of said inner frame, substantially as shown and described.

2. In a toy, an outer frame supported in a vertical position, an inner frame pivoted within said outer frame and adapted to revolve vertically therein, a wire coil secured by its ends vertically within said inner frame, a traveler within said coil and provided with weighted arms projecting outward through said coil, whereby said traveler in moving downward within said coil will be revolved by the action of said projecting arms, said traveler having pins projecting from its ends, pins projecting from the end members of said inner frame, a yielding stop having inclined projection and attached to said outer frame in the path of the pins on said inner frame, a spring connected to one of the pivots of said inner frame and adapted to rotate said frame, substantially as shown and described.

656,628. CASTER-SUPPORT. GEORGE D. CLARK, Plainville, Conn. Filed May 22, 1900. Serial No. 17,531. (No model.)



Claim.—1. A caster-support adapted to be inserted in a hollow leg, said support being shaped from a single strip of sheet metal folded over upon itself, said folded-over portions being dished in the same direction so that each forms a partial tube running transversely of the fold and a wing or wings projecting outwardly from each partial tube, said folded-over portions abutting against each other so that said dished portions form a single tube for supporting part of a caster with wings extending outwardly therefrom to engage the inside of the hollow leg.

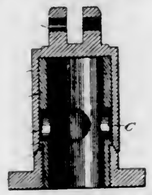
2. A caster-support adapted to be inserted in a hollow leg, said support being shaped from a single strip of sheet metal folded over upon itself, said folded-over portions being dished in the same direction from edge to fold so that each forms a partial tube running transversely of the fold, and a wing or wings projecting outwardly from each partial tube to engage the inside of a hollow leg.

3. A caster-support adapted to be inserted in a hollow leg, said support being shaped from a single strip of sheet metal folded over upon itself, said folded-over portions being dished in the same direction so that each forms a half-tube running transversely of the fold and a wing or wings projecting outwardly from each half-tube, said folded-over portions abutting against each other so that said dished portions form a single tube for supporting part of a caster with wings extending outwardly therefrom to engage the inside of a hollow leg.

4. A caster-support adapted to be inserted in a hollow leg, said support being shaped from a single strip of sheet metal folded over upon itself and slitted part way along said fold, said folded-over portions being dished in the same direction from the edges of the strip to the slit in the fold so that each forms a half-tube having integral therewith a wing projecting outwardly from and running longitudinally of each partial tube on the same side, said folded-over portions and wings abutting against each other to form a single tube open at each end for supporting a part of a caster and having a wing of double thickness extending outwardly therefrom to engage the inside of a hollow leg.

5. A caster-support consisting of a single strip of sheet metal folded over upon itself, said strip being slitted part way along said fold but not to either edge of the strip, and said portions being dished in the same direction transversely of said fold on each side of and from said slot so that each forms a partial tube open at either end with a wing extending outwardly therefrom at each side running from said fold downwardly along said dished portion.

656,629. LOCOMOTIVE-TENDER VALVE. FRANK P. COTTER, Augusta, Ga. Filed July 5, 1900. Serial No. 22,586. (No model.)

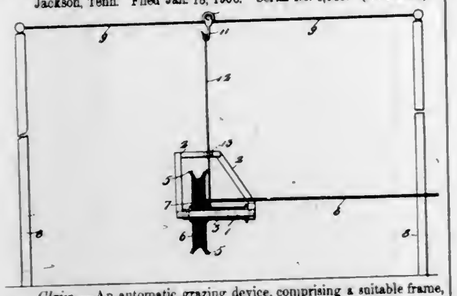


Claim.—1. In a valve for locomotive-tender tanks, the combination with a base having a central upwardly-extending tubular projection with exit-apertures in its sides at an intermediate point but near the bottom and an inclined annular valve-seat below the bottom of said exit-apertures and of greater diameter than the tubular projection, of a dome closed at the top and having a central bore fitting the tubular projection on the base and with its lower edge formed into an inclined valve-seat corresponding and adapted to cooperate with the valve-seat surrounding the base of the tubular projection with means for attaching a manually-operated controlling mechanism to said dome; substantially as described.

2. In a valve for the tanks of locomotive-tenders, the combination with an extended base having a central upwardly-extending tubular projection open at the top with circular exit-apertures located on opposite

sides of said tubular extension slightly above its lower end and an annular valve-seat having an inclined upper surface surrounding and of larger diameter than the base of said tubular projection, of a dome having a central cylindrical bore fitting the tubular projection of the base and closed at the upper end, and an inclined valve-seat at the lower edge of said dome adapted to coöperate with the valve-seat on the base with means whereby said dome may be moved vertically; substantially as described

656,630. AUTOMATIC GRAZING DEVICE. GEORGE W. DAVAULT, Jackson, Tenn. Filed Jan. 18, 1900. Serial No. 1,913. (No model.)



Claim.—An automatic grazing device, comprising a suitable frame, an extension forming a part of the latter, and projecting upwardly at a right angle therefrom, a shaft mounted within said frame, arms projecting radially from said shaft, forks forming the free ends of said arms, a grazing-line, one end of which is attached to the reel thus formed, the opposite end of which is adapted to be attached to the animal, a guide attached to one end of said frame, through which the said grazing-line passes, a rope, one end of which is attached to said shaft, upon which the same is adapted to be wound, and passing through a suitable opening formed in the extension, said opening and guide being ninety degrees from each other, and suitable means to which the last-named rope is attached for suspending the frame, as and for the purpose described.

656,631. VIOLET COTTON-DYE AND PROCESS OF MAKING SAME. ROBERT DEMUTH, Elberfeld, Germany, assignor to the Farbenfabriken of Elberfeld Company, New York, N. Y. Filed June 15, 1899. Serial No. 720,670. (Specimens.)

Claim.—1. The process for the production of new dyes giving violet shades on unmordanted cotton which process consists in subjecting at elevated temperatures amido-1.9-dioxynaphthalenesulfo acids to the action of an alkaline sulfid-carrying compound and zinc which may be also employed in the form of a zinc compound substantially as described.

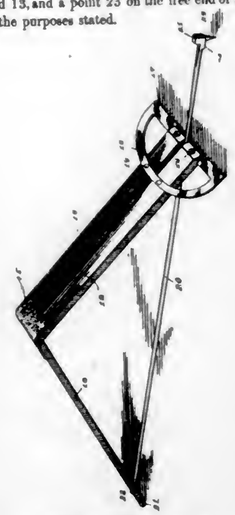
2. The process for producing a new dye giving bluish-violet shades in baths containing common salt and sodium carbonate, which process consists in subjecting at elevated temperatures amido-1.8-dioxynaphthalene-2.4-disulfo acid to the action of alkaline sulfid, sulfur and zinc chloride substantially as described.

3. As new articles of manufacture the violet cotton-dyes obtainable from amido-1.8-dioxynaphthalenesulfo acids by the action of alkaline sulfid-carrying compounds and zinc which may be also employed in the form of a zinc compound at elevated temperatures, forming blackish powdery masses, for the greatest part soluble in hot water, in hot dilute soda-lye, in hot dilute sodium carbonate solution and in concentrated sulfuric acid (66° Baumé) with a reddish-violet color, being precipitated from their solutions in water by the addition of mineral acids, sulfureted hydrogen being set free at the same time, producing on unmordanted cotton in boiling baths containing common salt and sodium carbonate violet shades fast to the action of alklies and sufficiently withstanding the action of light, substantially as described.

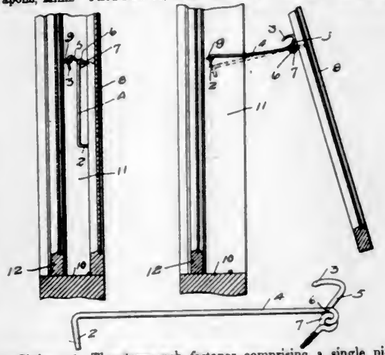
4. As a new article of manufacture the specific dye obtainable from amido-1.8-dioxynaphthalene-2.4-disulfo acid by the action of alkaline sulfid-carrying compounds and zinc chloride at elevated temperatures forming a blackish powdery mass, for the greatest part soluble in hot water, in hot dilute soda-lye, in hot dilute sodium carbonate solution and in concentrated sulfuric acid (66° Baumé) with a reddish-violet color, being precipitated from its solution in water by the addition of mineral acids, sulfureted hydrogen being set free at the same time, dyeing unmordanted cotton in baths containing common salt and sodium carbonate bright bluish-violet shades fast to the action of alkalies and sufficiently withstanding the action of light, substantially as described.

656,632. CARPET-STRETCHER. EDMUND W. DOOLITTLE, Des Moines, Iowa. Filed Oct. 30, 1899. Serial No. 735,228. (No model.)

Claim.—An improved carpet-stretcher, comprising in combination, a strip 10, having a groove 11 therein, two parallel strips 12 and 13 hinged to the end of the strip 10, opposite from said groove, with a slight space between them, a carpet-engaging frame fixed to the remaining ends of said strips 12 and 13, said frame comprising the arch 16 and the teeth 17, and a rod in the groove 11 at the free end of the strip 10 and projecting through the carpet-engaging frame between the arch and teeth thereof, of a length greater in the combined lengths of the strips 10 and the parallel strips 12 and 13, and a point 23 on the free end of said rod, substantially as and for the purposes stated.



656,633. STORM-SASH FASTENER. ELLIS R. DUTTON, Minneapolis, Minn. Filed Dec. 11, 1899. Serial No. 739,895. (No model.)



Claim.—1. The storm-sash fastener comprising a single piece of wire having hooks at its ends, and having an intermediate curl for a pivotal fastening.

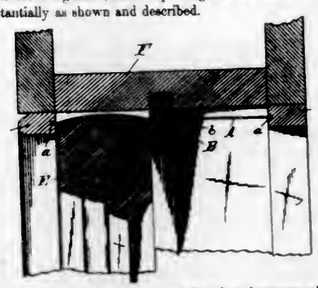
2. The storm-sash fastener, comprising the hooks 2 and 3 extending in the same direction, the long and the short shanks thereof, respectively, the curl 6, and the screw-eye provided therein, substantially as described.

3. The combination, with the window-frame, of the storm-sash the fastener comprising the integral short and long hooks, the pivotal fastening intermediate thereof upon the storm-sash, the fastening upon the window-frame, said short hook adapted to engage the storm-sash and compelling the flexing or bending of the long hook in order to fasten the same.

4. The combination, of the window-frame, with the window-sash and the storm-sash, and the fastener comprising the long and short hooks formed integrally and having a single fastening upon the storm-sash and a single fastening upon the window-frame, and said long hook preventing the disengagement of the short hook while the window-sash is closed, substantially as described.

656,634. WEATHER-STRIP. JAMES H. FOOTE, Cincinnati, Ohio. Filed Apr. 26, 1897. Serial No. 633,934. (No model.)

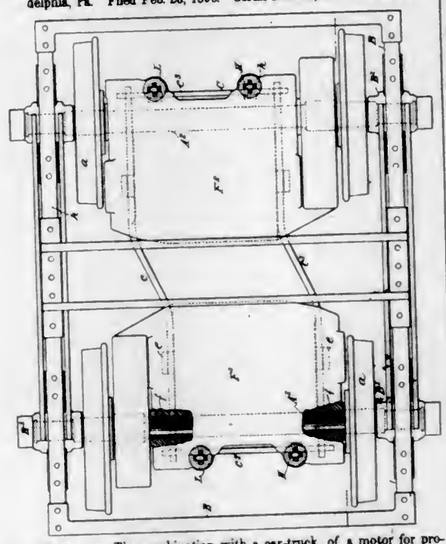
Claim.—1. In a window, the combination, with sash and runway, of a resilient metallic strip, with longitudinal grooves in bead and parting-strip for confining same, said strip being free to move at either side edge, substantially as shown and described.



2. In a window, the combination, with sash and runway, of a resilient metallic strip, with longitudinal grooves in bead and parting-strip for confining same, said strip having bearings for the ends thereof at headpiece and sill of the frame and being free to move at either side edge, substantially as shown and described.

3. In a window, the combination, of sash and runway, of a resilient metallic strip, with longitudinal grooves in bead and parting-strip for confining same, the groove in the parting-strip being nearer to the pulley-stile than the groove in the bead, said strip being free to move at either side edge to exert spring-pressure on the bearing portion of the sash and to bring same in close contact with the parting-strip, substantially as shown and described.

656,635. ELECTRIC-MOTOR SUSPENSION. GEORGE GIBBS, Philadelphia, Pa. Filed Feb. 28, 1898. Serial No. 672,011. (No model.)



Claim.—1. The combination with a car-truck, of a motor for propelling the same journaled upon the axle and geared thereto and having its field-magnet upon one side thereof, an extension from said motor, or its casing, upon the other side of said axle, a cradle for the motor, and a spring suspension for supporting the other end of said cradle from said extension.

2. The combination of an electric-car truck, two motors having their field-magnets between the axles of the truck and respectively sleeved upon said axles, and a cradle for said motors flexibly supported at its respective ends from extensions of said motors outside the axles.

3. The combination of an electric motor, a car-axle upon which the same is journaled, a supporting frame or cradle therefor, one or more extensions of said motor or its frame, outside the axles, hangers for supporting one end of the frame or cradle carried by said extension or extensions, and springs supporting said hangers from said extensions substantially as described

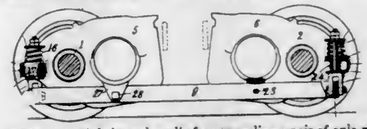
4. The combination of an electric motor, a car-truck upon one of the axles of which the motor is sleeved, one or more supporting-bars connected to said motor, spring suspensions for the bars from the axle to which the motor is sleeved through an extension of the motor on the side opposite the field-magnet of the motor and supports for the other ends of said bars from the other axle.

5. The combination of a pair of axles, motors journaled therein, and a skewed frame supported by the motors at each side of each end, the corresponding sides of the opposite ends of the frame being supported in different longitudinal planes, and the point on each motor from which the frame is supported having smaller vertical motion than the side thereof which is supported by the frame, substantially as described.

6. The combination of a pair of axles, a motor journaled on one of the axles, and a frame which supports the armature end of the motor, and is supported at one end by the motor at one side of the pivotal point of the latter and at the opposite end from the other axle, substantially as described.

7. The combination of a pair of axles, motors journaled thereon, and a frame supporting the armature end of the motors and supported by the motors to one side of the pivotal points thereof, the point on each motor from which the frame is supported having smaller vertical motion than the point at which the motor is supported by the frame, substantially as described.

656,636. ELECTRIC-MOTOR SUSPENSION. GEORGE GIBBS, Philadelphia, Pa. Filed May 11, 1900. Serial No. 16,329. (No model.)

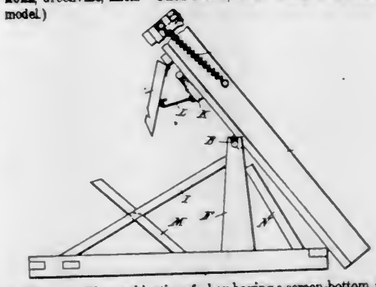


Claim.—1. A balanced cradle for suspending a pair of axle-mounted car-motors, consisting of a quadrilateral frame on which the motor-bodies normally rest, the frame being connected at the middle of two of its opposite sides to the rear or outer ends of the motors through the medium of springs acting in opposite directions.

2. The combination with a pair of car-motors sleeved to the truck-axles, of a balanced cradle flexibly connected to the rear or outer ends of the motors at opposite ends of the cradle and midway of said ends.

3. The combination with a pair of car-motors sleeved to the truck-axles, and respectively having bearings on the axles at or near the sides of the motors, of a balanced cradle flexibly connected to the rear or outer ends of the motors at points equidistant from the bearings.

656,637. POTATO SORTER AND CLEANER. WILLIAM H. GILMORE, Greenville, Mich. Filed Feb. 5, 1900. Serial No. 3,952. (No model.)



Claim.—1. The combination of a box having a screen-bottom, a frame pivotally supporting the box near the middle thereof, a hook attached to one end of the box and engaging a portion of the frame to hold the box in an inclined position, and a pivoted frame to engage the other end of the box and support the same in an oppositely-inclined position, and to release the same and permit the box to assume a greater inclination, substantially as described.

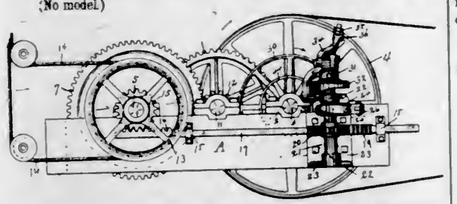
2. The combination of a box having a screen-bottom, a frame pivotally supporting the box near the middle thereof, a cross-bar on the frame, a hook pivoted to the box and engaging the cross-bar, a lever pivoted to the box, and a rod connecting the lever and the hook, substantially as described.

3. The combination of a box having a screen-bottom and pivotally supported near the middle, means for holding the box in an inclined position, an end wall hinged to the box and adapted to swing vertically to a reversed position, and a contractile spring pivotally attached at its respective ends to the box and end, substantially as described.

4. The combination of a box having a bottom formed of parallel slats, a frame pivotally supporting the box near the middle thereof, props and a cross-bar on the frame, a hook on the box to engage the cross-bar, a lever pivoted on the box, a rod connecting the lever and hook, a pivoted frame, adapted to engage and support the box in an inclined position, and an end wall hinged to the box, substantially as described.

5. The combination of a box having a bottom composed of parallel slats, and also having trunnions near the middle, and a hinged end wall adapted to turn to reverse position, a spring pivotally connected to the box and end wall, a base-frame having posts recessed at the top, braces, props, and a cross-bar on the base-frame, at one end thereof, and a pivoted frame on the other end of the base-frame, a hook pivoted on the box and engaging the cross-bar, a lever pivoted to the box, and a rod connecting the hook and lever, substantially as described.

656,638. AUTOMATIC ELEVATOR-REGULATING BRAKE. HIRAM GRAVES, St. Paul, Minn. Filed July 26, 1899. Serial No. 725,133. (No model.)



Claim.—1. In an elevator of the class described, the combination, with the main shaft, of a wheel operatively connected therewith, a brake-supporting plate adjacent to said wheel, a plunger slidably supported upon said plate and carrying at its lower end a movably-mounted brake-roller resting against said plate, and mechanism connected with the hand-ropes for actuating said plunger to thrust said roller into, and raise it out of, contact with said wheel.

2. In an elevator of the class described, the combination, with the main shaft, of a wheel operatively connected therewith, a brake-plate adjacent to said wheel, a plunger carrying at its lower end a brake-roller movable in the plane of rotation of said wheel and working upon said plate, and mechanism for actuating said plunger to lower said roller into, and raise it out of, contact with said wheel.

3. In an elevator of the class described, the combination, with the main shaft, of a wheel operatively connected therewith, a brake-plate adjacent to said wheel, a plunger carrying at its lower end a brake-roller movable in the plane of rotation of said wheel and working against said plate, and mechanism for raising and lowering said plunger consisting of a lever connected at one end with said plunger, a cam engaging the other end of said lever and mechanism connected with the hand-ropes for turning said cam.

4. In an elevator of the class described, the combination, with the main shaft, of a wheel operatively connected therewith, a brake-plate adjacent to said wheel, a plunger provided with U-shaped arms, a brake-roller journaled in longitudinal slots in said arms, and working upon said plate, and mechanism for lowering said roller into, and raising it out of, engagement with said wheel.

5. In an elevator of the class described, the combination, with the main shaft, of a wheel carried thereby, an automatic brake consisting of a back plate, a sleeve or guide carried by said back plate, a brake-stem slidably supported in said guide and provided with slotted U-shaped arms, a brake-roller loosely journaled in the slots in said arms and bearing against said back plate, and mechanism for lowering said roller into engagement with said wheel when the elevator is actuated to ascend, and raising it out of such engagement when the elevator is actuated to descend.

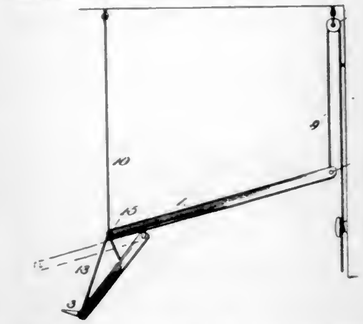
6. In an elevator of the class described, the combination, with the main shaft of a wheel carried thereby, an automatic brake, consisting of an inclined back plate adjacent to said wheel and formed with a sleeve or guide, a brake-stem slidably supported in said guide and provided with longitudinally-slotted U-shaped arms and a brake-roller loosely journaled in said slots and bearing against said back plate, and means for lowering and raising said roller into and out of engagement with said wheel consisting of a brake-supporting lever, a cam engaging with the end of said lever and mechanism connected with the hand-ropes for turning said cam as the elevator is stopped or started.

7. In an elevator of the class described, the combination, with the main shaft and hand-ropes, of a wheel carried by said shaft, a brake device consisting of an inclined back plate provided with a sleeve or guide, a brake-stem slidably supported in said guide and provided with longitudinally-slotted U-shaped arms, and a brake-roller loosely journaled in said slots and resting against said back plate, and means to actuate said roller to move into and out of engagement with said wheel consisting of a rotatable shaft, mechanism connected with said hand-ropes to rotate said shaft as the elevator is stopped or started, a cam mounted upon said shaft, and a lever engaging at one end with said brake-stem and at the other end with said cam.

8. In an elevator of the class described, the combination with the main shaft, and main elevator-brake, of a wheel operatively connected with said main shaft, a stationary plate adjacent to said wheel, a brake-roller interposed between said plate and wheel and adapted to work upon the surface of said plate, a lever connected with said roller for thrusting it into, or raising it out of, engagement with said wheel, and means substantially as described for operating said lever and main brake in unison.

9. In an elevator of the class described, the combination with the main shaft, and main elevator-brake, of a wheel operatively connected with said main shaft, a stationary plate adjacent to said wheel, a brake-roller interposed between said wheel and plate and having yielding engagement with said wheel as the main shaft is rotated to raise the elevator and wedging engagement therewith when the rotation of said shaft is reversed, and means substantially as described for lowering said roller into, or raising it out of, engagement with said wheel and operating said main brake, in unison.

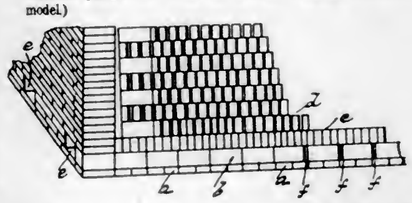
656,639. HAMMOCK. HENRY GUNDLACH, La Crosse, Wis. Filed June 8, 1900. Serial No. 19,587. (No model.)



Claim.—1. A hammock comprising a body portion, relatively-fixed supports for the lower end of the hammock, a leg-section hingedly connected to the lower portion of the body-section a short distance from the lower extremity thereof, guides at the ends of the body portion, elevated pulleys, and ropes secured at one end to the leg-section between its ends and passing through the guides at opposite ends of the body portion, thence upwardly over the said elevated pulleys and secured at their opposite ends, substantially as set forth.

2. A hammock comprising a rectangular-shaped frame, a leg-section of approximately-rectangular form and hingedly connected with the lower portion of the body-section, a textile attached at its extremities to the terminal cross-bars of the said frames and passing over the lower cross-bar of the main frame, relatively-fixed supports for the lower end of the main frame, guides at the ends of the body-section, elevated pulleys, and ropes secured at one end to the leg-section between its ends and passing through the guides at opposite ends of the body-section, thence upwardly over the said elevated pulleys and secured at their opposite ends, substantially as specified.

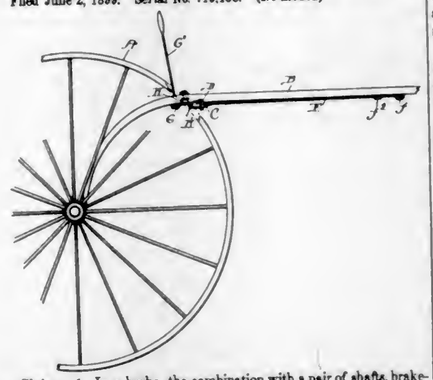
656,640. BRICK-KILN. JAMES M. GUNKLE, Denver, Colo., assignor of one-third to Harry H. Gunkle, same place, and John H. Means, Colorado Springs, Colo. Filed Mar. 28, 1900. Serial No. 10,580. (No model.)



Claim.—In a brick-kiln, the same constructed with its foundation course *a*, arranged transversely and close to one another; the second course *b*, being upon edge and parallel with the face of the kiln, the ends abutting one another near the corner of the kiln, and at a greater distance

separated to leave draft-openings *f*; the third course *c* arranged upon their edges and transversely to and upon the second course, and the remaining courses *d*, having spaces between each brick, all as shown and described.

656,641. VEHICLE-BRAKE. FORD T. HARRINGTON, Bushnell, Ill. Filed June 2, 1899. Serial No. 719,138. (No model.)



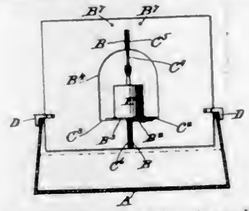
Claim.—1. In a brake, the combination with a pair of shafts, brake-levers transversely carried and fulcrumed on a common center, push-rods carried longitudinally beneath the shafts, and provided with bifurcated ends and suitably fastened to the brake-rods, of a transversely-carried rod journaled beneath the shafts and thereto at the rear of said brake-levers, and of means carried thereby for engaging said levers substantially to hold the brake-shoes in contact with the wheels or from the same as desired.

2. In a brake, the combination with a pair of shafts, and brake-levers suitably fulcrumed to the crosstree, brake-shoes laterally adjustable thereon, reciprocating push-rods having bifurcated rear ends suitably fastened to said levers, of a rod journaled at the rear of said levers and provided with a lever for actuating said rod, laterally-extended fingers or arms adjustable on said rod, provided with depending lugs or stops forming pockets for the engagement of said levers to cause a firm engagement of the brake-shoes with the wheels, means for holding the brake-shoes normally off of the wheels, or to set the same against action by the reciprocated rods, all substantially as and for the purpose set forth.

3. In a brake, the combination with a pair of shafts, brake-levers pivoted to the crosstree thereof and suitable push-rods for actuating said brake-levers, of a rod journaled beneath said shaft and provided with laterally-adjustable arms having graduated means for engaging said levers whereby the pressure of the brake-shoes on the wheels may be varied as they are actuated through suitable means, and of the means for actuating said rod, all substantially as described.

4. In a brake, in combination with a pair of shafts, the levers C, provided with adjustable brake-shoes D, and the springs c, push-rods F, having bifurcated rear ends pivotally secured to said brake-levers C, of the rod G, operating-lever G', and the adjustably-secured arms H, actuated by the movement of said rod G, and provided with the depending fingers H', forming pockets H^3, for the purpose set forth, and in the provision of the lug I, all substantially as shown.

656,642. MOTH-CATCHER. SEWARD A. HASELTINE, Springfield, Mo. Filed May 10, 1900. Serial No. 16,245. (No model.)



Claim.—1. A moth-catcher consisting of an ordinary pan or tub provided with water and coal-oil, two reflectors crossing each other, one of said reflectors B being provided with supports B^3, B^3, cut and bent in opposite directions, and holes B^7 for a wire hoop or ring; the other reflector, C, having supports D for securing the same to the tub or pan and having an opening at its center having parts C^3, C^3, turned out from the center in opposite directions for holding a lamp, and for permitting the same to be folded, and holes C^9 provided with a wire ring, and a lamp or torch in the center of said reflectors all substantially as shown and described.

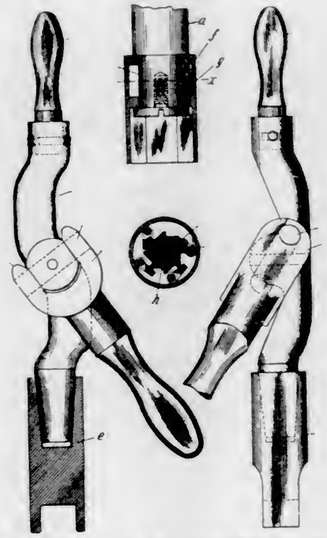
2. In a moth-catcher a pan or tub, A, made narrower at the top than at the bottom and being provided with water and coal-oil, combined with two plates B, and C, forming reflectors, reflector B, having supports D, and a central opening for a torch; reflector, C, having supports, D, and a central opening for a lamp or torch and slots C^8, C^8, for receiving reflector, B, all substantially as shown and described for the purpose specified.

3. In a moth-catcher, two cross-plates B, and C, one of said plates having an opening C, with slots C^8, C^8, and projections turned in opposite directions C^3, C^3, and a plate B, having an opening B^4, with two parts B^3, B^3, turned in opposite directions substantially as shown and described.

4. In a moth-catcher, a tub, A, partly filled with water, said water being covered with coal-oil, combined with plates B and C set across each other as specified, having fastenings at the outer ends and a central opening having the parts B^3, B^3, and C^3, C^3, cut and turned out in directions to form a bottom for a torch and to permit the reflectors to fold, holes B^7 and C^9, in the said reflectors for a ring; and a central torch, E, all substantially as shown and described for the purpose specified.

5. A moth-catcher consisting of a tub, A, partly filled with water and coal-oil, two reflectors crossing each other at the center, having supports at the outer ends and a central opening for holding a torch, said reflectors being formed to fold together, and a torch made to fit the central opening, all substantially as shown and described.

656,643. WRENCH. HORACE G. HOADLEY, Waterbury, Conn. Filed June 22, 1898. Renewed Mar. 6, 1900. Serial No. 7,592. (No model.)



Claim.—1. The rotatory shaft combined with the vibratory lever pivotally attached thereto on an axis at other than right angles to the axis of said shaft, all substantially as described and for the purposes set forth.

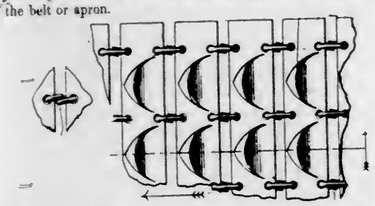
2. In combination, the rotatory shaft, the bearing-handle for that shaft and the vibratory lever pivotally attached to said rotatory shaft on an axis at other than right angles to the axis of said shaft, all substantially as described and for the purposes set forth.

3. In combination, the bearing-handle, the reversely-offset rotatory shaft, and the vibratory lever pivotally attached to said shaft on an axis at other than right angles to the axis of said shaft, all substantially as described and for the purposes set forth.

4. In combination, the rotatory shaft, the vibratory lever pivotally attached to said shaft on an axis at other than right angles to the axis of said shaft, the socket-piece borne on said shaft and the pawl-and-ratchet arrangement intermediate of said shaft and said socket all substantially as described and for the purposes set forth.

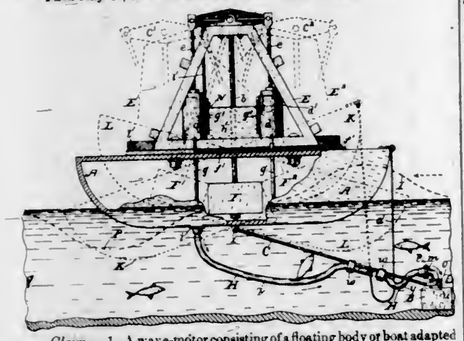
656,644. ENDLESS FEED BELT AND APRON AND CARRYING-SHAFT FOR SAME. LOUIS HOLLAND-LETZ, Crown Point, Ind. Filed Feb. 23, 1899. Serial No. 706,495. (No model.)

Claim.—1. In combination, a conveying belt or apron formed of a plurality of transversely-arranged sheet-metal strips and links for uniting adjacent strips, a roller for carrying such belt or apron and comprising a shaft and a plurality of disks mounted thereupon, the belt or apron bearing upon the peripheries of such disks, the disks being provided with axially-arranged studs adjacent to their peripheries for engaging the links of the belt or apron.



2. In a roller, the combination with a shaft, of a plurality of disks mounted upon the shaft and adapted to bear upon their peripheries a belt or apron, such disks having axially-arranged studs located adjacent to their peripheries.

656,645. WAVE-MOTOR. GEORGE W. HOFF, Rochester, N. Y. Filed May 17, 1900. Serial No. 17,023. (No model.)



Claim.—1. A wave-motor consisting of a floating body or boat adapted to be tilted by the action of the supporting-water, provided with a pendulous weight and force-pumps, and a rod for connecting said weight directly to a rock-shaft, and the latter to the pumpe, substantially as shown and described.

2. A wave-motor consisting of a floating body adapted to be rocked by the supporting-water, provided with a pendulous weight disposed within the boat below the deck thereof, in combination with a series of pumps, a rock-shaft actuated by the weight, a rod rigidly connected with the weight and to said rock-shaft and mechanism connecting said rock-shaft and the pumps, substantially as and for the purpose set forth.

3. The combination, in a wave-motor, of a boat, a frame on the boat, a shaft held by the frame, a weight suspended from the shaft and having its rod rigidly secured thereto, said weight being disposed below the deck of the boat, pumps on the boat and beams on the shaft connected with the pumps, substantially as specified

4. A device for utilizing the power in sea-waves, consisting of a boat and pumps carried thereon, in combination with a pendulous weight suspended from the boat and adapted to swing within the boat, a rod rigidly connected to said weight, a rock-shaft to which said rod is connected, and mechanism connecting said rock-shaft and the pumps, substantially as shown and described.

5. A device of the kind described, consisting of a boat, pumps on the boat, and a movable weight to operate the pumps, in combination with an anchor-block, a submerged swiveled main pipe held by the anchor-block, and a cable connecting the boat and the anchor-block, and pipe connections for the pumps and said main pipe, substantially as specified.

6. In a wave-motor, a boat, an anchor-block, a conduit cast therein, a pipe swiveled in said block, a movable part or holder supported by the anchor-block and adapted to turn thereon, and a cable connecting the boat and said holder, substantially as shown and for the purpose specified.

7. In a wave-motor, a boat, pumps thereon and means to operate them, and an anchor-block, and a holding-body resting movably thereon, a main pipe held by the anchor-block, a pipe swiveled in said block and connections for the boat and said holding-body, and for said pumps and the main pipe, substantially as and for the purpose specified.

8. In a wave-motor, a boat, pumps on the boat and means to operate them, an anchor-block and a holding-body movable thereon and embracing the same and seated in a recess therein, a main pipe or conduit held by the anchor-block, a cable connecting the boat with said holding-body, and connecting-pipes for the pumps and said conduit, a section of said connecting-pipes and the cable being held together side by side, substantially as shown and described.

9. In a wave-motor, a boat, pumps on the boat and means to operate them, and a submerged anchor-block and a holding-body movable thereon, in combination with a main pipe or conduit held by the anchor-block, a pipe swiveled in said block at right angles to said conduit, a cable connecting the boat with said holding-body, and connecting-pipes for the pumps and said conduit, a section of said connecting-pipes and the cable being held together side by side, there being a slack or loose part of said pipe-section at either end of the cable, substantially as and for the purpose specified.

10. In a wave-motor, a boat, pumps thereon and means to operate them, and outflow-pipes leading from the pumps out of the boat, in combination with an anchor-block and a conduit held thereby, a swivel-pipe held by the anchor-block and piercing the conduit and adapted to turn in its seat, a cable connecting the boat and the anchor-block and pipe connection between said outflow-pipes and the swivel-pipe, substantially as shown.

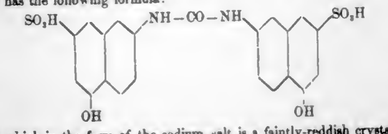
11. In a wave-motor, a boat, pumps thereon and means to operate them, and outflow-pipes leading from the pumps out of the boat, in combination with an anchor-block, a conduit held thereby, a sleeve in said anchor-block, a swivel-pipe held in said sleeve and opening into said conduit and adapted to turn in said sleeve, a connection for the boat and said anchor-block, and pipe connection between said outflow-pipes and the swivel-pipe, substantially as specified.

12. A wave-motor comprising a boat, pumps on the boat and means to operate them, an anchor-block and an air-conduit, a cable connecting the boat and the anchor-block, and pipe connection between the boat and the conduit, said pipe being secured to the boat back of the fastenings of the cable, substantially as and for the purpose set forth.

656,646. UREA DERIVATIVE OF AMIDONAPHTHOL SULPONIC ACID AND METHOD OF MAKING SAME. ADOLF ISRAEL and RICHARD KOTHE, Elberfeld, Germany, assignors to the Farbenfabriken of Elberfeld Company, New York, N. Y. Filed Apr. 2, 1900. Serial No. 11,239. (No specimens.)

Claim.—1. The process for producing a new urea derivative of amidonaphthol sulfonic acid by first dissolving a mixture of beta$_1$-amido-alpha$_2$-naphthol-beta$_4$-sulfonic acid and sodium carbonate in water, secondly introducing into the solution thus obtained a current of gaseous phosgene ($COCl_2$), and finally isolating the resulting urea derivative, substantially as hereinbefore described.

2. As a new article of manufacture the urea derivative of beta$_1$-amido-alpha$_2$-naphthol-beta$_4$-sulfonic acid which in the form of the free acid has the following formula:



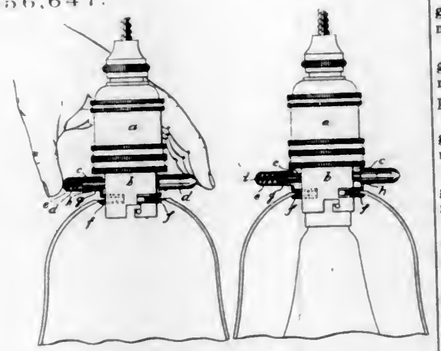
and which in the form of the sodium salt is a faintly-reddish crystalline powder being capable of combining with one and likewise with two molecules of diazo compounds, being readily soluble in water, very difficultly in alcohol, and which on boiling for some hours with the twenty-fold quantity of hydrochloric acid of twenty per cent. is decomposed and beta$_1$-amido-alpha$_2$-naphthol-beta$_4$-sulfonic acid is regenerated, substantially as hereinbefore described.

656,647. LAMP-SHADE HOLDER. ALBERT E. KEARSLEY and HENRY C. BOWMAN, Manchester, England. Filed Oct. 10, 1899. Serial No. 733,163. (No model.)

Claim.—1. In combination an electric-incandescent-lamp holder, studs at opposite points on the outer periphery of said holder with laterally-projecting pin, a thimble-like presser over each stud with small slot into which the pin on the stud projects, a spring within each presser and between the closed end of the presser and the end of the stud, and segmental grips of channel formation attached to each presser, substantially as and for the purposes set forth.

2. In combination, an internally-screw-threaded ring, a stud at opposite points on the outer periphery of such ring with laterally-projecting pin, a thimble-like presser on each stud with small slot into which the pin on the stud projects, a spring within each presser and between the closed end of the presser and the end of the stud, and segmental grips of channel formation attached to each presser, substantially as and for the purposes set forth.

656,647.



656,648. TREATMENT OF SILK RAGS. GUSTAV KRETER, Luckenwalde, Germany. Filed Apr. 18, 1898. Serial No. 677,942. (No specimens.)

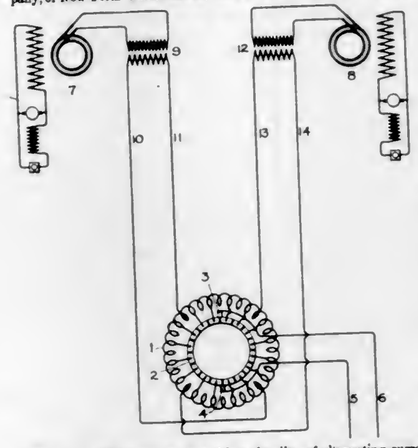
Claim.—In converting silk rags into silk waste by means of the opening-machine or devil the process of preventing the formation of electric sparks, which consists in treating the silk rags with a solution of oleine, alum and black oxid of manganese powder and smearing same with soft soap essentially as and in the proportions described.

656,649. FILTER-CARTRIDGE FOR TOBACCO-PIPES, &c. EMIL LANDFRIED, Meran, Austria-Hungary. Filed Mar. 9, 1899. Renewed July 25, 1900. Serial No. 24,810. (No specimens.)

Claim.—1. As a means of destroying the nicotine in tobacco-smoke, without attacking the aroma-forming substances, a charge containing acid salts of molybdenum, substantially as described.

2. The improved smoke-filter, consisting of a cartridge of absorbent material impregnated with acid salts of molybdenum, as set forth.

656,650. SYSTEM OF ELECTRICAL DISTRIBUTION. ALEXANDER D. LUNT, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed June 30, 1900. Serial No. 22,116. (No model.)



Claim.—1. The combination with a plurality of alternating-current dynamo-electric machines free to adjust their phase relations to each other, of a synchronous receiving-machine having a number of phases different from that of any of the first-mentioned machines.

2. The combination of a plurality of alternating-current generators of a given number of phases held in displaced-phase relation to each other by operative connections to a rotary converter of a different number of phases.

3. The combination of a plurality of alternating-current generators of a given number of phases, held in displaced-phase relation to each other by operative connections to a synchronous receiving apparatus of a greater number of phases.

4. The combination of a plurality of single-phase alternating-current generators held in displaced-phase relation to each other by operative connections to a synchronous receiving apparatus.

5. The combination of a plurality of single-phase alternating-current generators held in displaced-phase relation to each other by operative connections to a synchronous receiving apparatus of a greater number of phases.

6. The combination of a plurality of single-phase alternating-current generators held in displaced-phase relation to each other by operative connections to a quarter-phase synchronous receiving apparatus.

7. The combination of a plurality of single-phase alternating-current generators held in displaced-phase relation to each other by operative connections to a quarter-phase rotary converter.

8. The combination of a direct-current system of distribution, a multiphase rotary converter connected thereto, and single-phase dynamo-electric machines connected to said rotary converter.

9. The combination of a direct-current distribution system, a rotary converter of a given number of phases connected to said distribution system, and dynamo-electric machines of a different number of phases connected to said rotary converter.

656,651. METHOD OF TREATING POROUS MATERIAL USED FOR ELECTRICAL PURPOSES. WILLIAM A. MARKEY, Saginaw, Mich., assignor to Emmet T. Bowen. Filed Jan. 15, 1900. Serial No. 1,550. (No specimens.)

Claim.—1. The step in a method of treating porous material used for electrical purposes which consists in uniting the particles of material with silver.

2. The method of treating porous material used for electrical purposes which consists in cementing the material particles with silver and applying an external coat of silver.

3. The method of treating porous material used for electrical purposes which consists in immersing the material in an aqueous solution of silver nitrate, then drying at a moderate heat and subsequently heating the material to a temperature sufficient to reduce the silver nitrate to metallic silver.

4. The method of treating porous material used for electric purposes, which consists in uniting the particles of such material with silver and adding an external deposit of other metal or metals.

656,652. CARBON BRUSH. WILLIAM A. MARKEY, Saginaw, Mich., assignor to Emmet T. Bowen. Filed Mar. 30, 1900. Serial No. 10,731. (No model.)



Claim.—1. An electrical conductor made from porous material and a conducting medium in the pores of such material, such medium forming zones of varying conductivity, substantially as set forth.

2. An electrical conductor made from porous material and a conducting medium in the pores of such material, such medium forming a zone of high and a zone of low conductivity, substantially as set forth.

3. An electrical conductor characterized by zones of varying conductivity, the conductivity in a plane passing transversely through planes parallel with a given plane, increasing in one direction from said given plane and decreasing in the opposite direction, the degree of conductivity at points in said transverse plane varying as their distance from said given plane, substantially as set forth.

4. An electrical conductor made from porous material and a conducting medium in the pores thereof and distributed therein in a manner such that the conductivity in a plane passing transversely through planes parallel with a given plane increases in one direction from said given plane and decreases in the opposite direction, the degree of conductivity at points in said transverse plane varying as the distance from said given plane, substantially as set forth.

5. An electrical conductor having zones of varying conductivity and an external coating of a material of high conductivity, substantially as set forth.

6. An electrical conductor having a zone of high and a zone of low conductivity, and an external coating of a metal or of metals of high conductivity, substantially as set forth.

7. A brush for electrical purposes consisting of a carbon body and a metal non-uniformly distributed throughout the pores of such body, substantially as set forth.

8. A brush for electrical purposes consisting of a carbon body and silver distributed throughout the pores of such body, substantially as set forth.

9. A brush for electrical purposes consisting of a carbon body and a metal distributed throughout its pores so as to produce layers of varying conductivity, substantially as set forth.

10. A brush for electrical purposes consisting of a carbon body and a metal distributed throughout its pores non-uniformly and so as to produce layers of varying conductivity, substantially as set forth.

11. A brush for electrical purposes consisting of a carbon body and a metal distributed throughout the carbon pores forming zones of varying conductivity, and having an external coating of metal, substantially as set forth.

12. A brush for electrical purposes consisting of a carbon body and metallic silver distributed throughout the pores of such body, substantially as set forth.

13. In a brush for electrical purposes, the combination with a block of porous material having a conducting medium in the pores of such material forming zones of varying conductivity, of a second block of such material of low conductivity as compared with said first block, substantially as set forth.

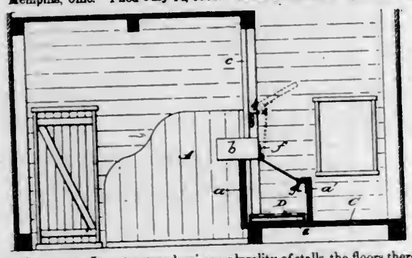
14. In a brush for electrical purposes, the combination with a block of porous material having a medium of high conductivity distributed throughout its pores, of a second block of low conductivity as compared with said first block, substantially as set forth.

15. In a brush for electrical purposes, the combination with a block of porous material having a medium of high conductivity distributed throughout its pores, of a second block free from such medium, substantially as set forth.

16. In a brush for electrical purposes, the combination with a carbon body having metallic silver distributed throughout its pores, of a second block of carbon having a high resistance as compared with said first block, substantially as set forth.

17. In a brush for electrical purposes, the combination with a carbon body having metallic silver distributed throughout its pores, of a second such body free from such silver, substantially as set forth.

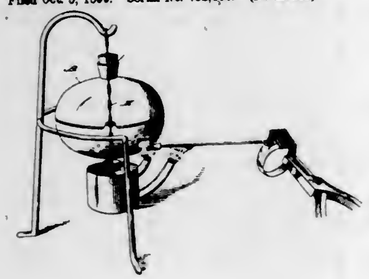
656,653. **MANGER FOR FEEDING LIVE STOCK.** ISAIAH MORRIS, Memphis, Ohio. Filed July 14, 1900. Serial No. 23,614. (No model.)



Claim.—1. In a structure having a plurality of stalls, the floors thereof being below the level of an adjacent floor, a fixed board constituting one side of a manger, and a board hinged to assume a position parallel with the fixed board when lowered to form the opposite side of the manger and to assume an upwardly-inclined position when raised, substantially as shown and for the purpose set forth.

2. A manger comprising a fixed board which forms one side of the same and separates the same from the stall, a board supported by hinges to have its downward movement limited by engagement with a floor which floor forms the bottom of the manger, substantially as shown.

656,654. **JEWELER'S BRAZING-LAMP.** HERMOND L. MCCORMACK, Menard, Ill., assignor of one-half to William A. Storm, Neoga, Ill. Filed Oct. 5, 1899. Serial No. 732,666. (No model.)

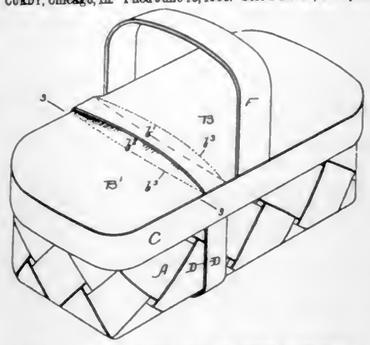


Claim.—1. In a brazing-lamp, the combination, with a stand provided with three legs, the upper ends of two of which are provided with a substantially-semicircular support, and the other leg secured to the intermediate portion of said support and extended above the same, of a receptacle upon the support the bottom of which is provided with an outlet, and means for supporting a lamp below the receptacle in position to cause its flame to impinge upon said outlet, substantially as described.

2. In a brazing-lamp, the combination with a rear rod, the upper end of which is provided with an opening, of a support secured thereto, said support being semicircular and having its ends bent at an angle to form legs, and means for supporting a receptacle and a lamp thereon.

3. In a brazing-lamp, the combination, with a rear rod, the upper end of which is provided with an opening, of a support secured to the intermediate portion of the rod, said support being semicircular and having its ends bent at an angle to form legs, a base-plate secured to said legs and to the rear rod near the lower ends thereof, a receptacle upon the support provided with a bead and a nozzle, and a lamp under the nozzle, substantially as described.

656,655. **FROG-BASKET FOR FISHERMEN.** BENJAMIN F. MCCURDY, Chicago, Ill. Filed June 16, 1900. Serial No. 20,508. (No model.)



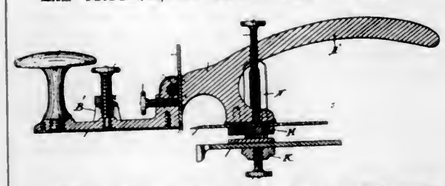
Claim.—1. A fisherman's frog or bait basket, comprising a body and a thin, flexible, porous cloth top, secured thereto and made in two parts or sections, the meeting edges of which overlap each other, said overlapping meeting edges of said sections being provided with elastics extending across the top of the basket to form a normally-closed opening through which the hand may be inserted, substantially as specified.

2. The frog or bait basket, comprising in combination a body A, and a two-part thin, flexible, porous cloth top B, B', the marginal edges *b* of which are secured to the sides of the basket, and the meeting edges *b'* *b²* of which overlap each other and are furnished with elastic bands D D extending around the basket and across the top thereof, substantially as specified.

3. The frog or bait basket, comprising in combination a body A, and a two-part thin, flexible, porous cloth top B, B', the marginal edges *b* of which are secured to the sides of the basket, and the meeting edges *b'* *b²* of which overlap each other and are furnished with elastic bands D D extending around the basket and across the top thereof, and a tape band C surrounding the basket and glued over the marginal edges *b* of said cloth top, substantially as specified.

4. A fisherman's frog or bait basket, provided with a thin, porous cloth top, having an opening extending across the same, said opening consisting of overlapping meeting edges of the cloth top furnished with elastics to hold the same closed, substantially as specified.

656,656. **VENEER-TRIMMER.** AXEL NELSON, Grand Rapids, Mich. Filed Dec. 16, 1899. Serial No. 740,518. (No model.)



Claim.—1. The combination of a frame having a suitable handle, a grooving-tool inserted in the frame, a flexible plate attached to the frame, a transverse bar connected at its ends to the respective sides of the plate, and a screw engaging a threaded opening in the bar, substantially as described.

2. The combination of a frame having a handle at one end and a knob at the other end, a vertically-adjustable grooving-tool in the frame and provided with a rack, a pinion rotative in the frame and engaging the rack in the tool, a flexible plate attached to the frame at right angles to the grooving-tool, a transverse bar above the plate, straps hinged to the plate and engaging the ends of the bar, a vertical screw rotative in the frame and engaging a screw-threaded opening in the bar, substantially as described.

3. The combination of a frame having a handle, and a horizontal surface to traverse the surface of the work, a cutting-blade in the plane of the horizontal surface and attached to the frame, and a gage to engage the edge of the work, substantially as described.

4. The combination of a frame having a handle, a flexible plate attached to the frame to traverse the surface of the work, means for bending said plate, a blade attached to the frame, and having its cutting edge in the plane of the surface of the flexible plate, and a gage to traverse the edge of the work, substantially as described.

5. The combination of a frame having a handle at one end and a knob at the other end, a horizontal flexible plate attached to the frame, means for bending said plate, a horizontal blade attached to the frame and having its cutting edge in the plane of the under surface of the flexible plate, and a vertically and horizontally adjustable gage beneath the cutting-blade to engage the edge of the work, substantially as described.

6. The combination of a frame having a handle at one end and a knob at the other end, a flexible plate attached to the frame, a transverse bar attached to the respective edges of the plate, a screw engaging a threaded opening in the bar, a horizontal blade having its cutting edge in the plane of the under surface of the flexible plate and adjustably secured to the frame, and a vertically-adjustable head having a horizontally-adjustable gage attached thereto, substantially as described.

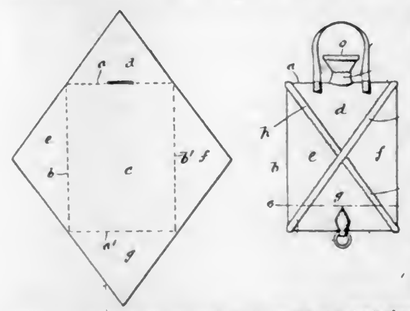
7. The combination of a frame having a handle and a knob, a horizontal plate attached to the frame, a vertical grooving-tool near the edge of the plate and vertically adjustable, a horizontal blade having its cutting edge in the plane of the under surface of the plate and longitudinally adjustable, a removable block beneath the blade, and an adjustable gage detachably secured to the frame, substantially as described.

8. The combination of a frame having a handle at one end and a knob at the other end, a horizontal flexible plate attached to the frame, a transverse bar above the plate, straps hinged to the opposite sides of the plate and engaging the ends of the bar, a screw rotative in the frame and engaging a threaded opening in the bar, a vertically-adjustable grooving-tool in the frame having a rack, a pinion engaging the rack, a horizontal blade in the plane of the flexible plate, a removable block and a set-screw to hold the blade, a head having parallel slotted plates to engage grooves in the frame and adjustably secured thereto, and a gage adjustable in the head, substantially as described.

9. The combination of a frame having a handle, and a horizontal under surface, a vertically-adjustable grooving-cutter having a rack in its side, and a pinion rotative in the frame and engaging the rack, and also having a flattened side to release the tool, substantially as described.

10. The combination of a frame having a handle, a vertical and a horizontal cutting-tool interchangeably secured in the frame, and a gage attached to the frame and interchangeable with the horizontal cutting-tool, substantially as described.

656,657. **INDIA-RUBBER WATER-BAG.** JOHN PARETTE, Montreal, Canada. Filed Oct. 24, 1898. Serial No. 694,469. (No model.)



Claim.—1. A water-bag having its body formed of a single sheet of rubber of diamond, or rhomboidal shape, with straight edges, folded upon itself from opposite sides, and having its straight meeting edges abutting one another and joined so as to form a water-tight bag without seam or joint along all its edges as set forth.

2. A water-bag having its body formed of a sheet of rubber of diamond, or rhomboidal shape, with straight edges, folded upon itself from opposite sides upon lines extending at right angles to one another, the apices of said angles bisecting the sides of the diamond-shaped sheet so that when folded its straight meeting edges will abut and not overlap each other, and means for joining said abutting edges to form a water-tight bag without seam or joint along its edges but having a slit in one of the folded edges to form an opening to the neck of the bag as set forth.

3. A water-bag having its body formed of a sheet of rubber having straight edges and folded upon itself along four lines at right angles to each other, the apices of said angles bisecting the sides of said sheet, so that when folded its straight meeting edges will abut and not overlap each other, means for joining said abutting edges to form a water-tight bag without seam or joint along its folded side edges but having a slit in one of the folded edges to form an opening to the neck of the bag, as set forth.

4. A water-bag having its body formed of a sheet of rubber of diamond or rhomboidal shape with straight edges and folded upon itself from opposite sides upon lines at right angles to one another, the apices of said angles bisecting the sides of the diamond-shaped sheet so that when folded its straight meeting edges will abut and not overlap each other, seam-strips overlapping and joining such abutting edges, so as to render the bag water-tight, without seam or joint along its folded side edges but having a slit in one of the folded edges to form an opening to the neck of the bag, as shown and described.

5. A water-bag formed of a sheet of rubber of diamond or rhomboidal shape with straight edges and folded upon itself to present a central rectangular portion and four triangular sections, the straight edges of each of which latter are in line with the straight edges of each adjoining section and the apices of the angles of the central rectangular portion bisecting the sides of the diamond so that when the sheet is folded upon the lines of the rectangular portion the straight edges will abut and not overlap each other, seam-strips overlapping and joining the meeting and abutting edges of the triangular sections together so as to render the bag water-tight, and a neck with mouthpiece and handle, as shown and described.

6. A water-bag formed of a sheet of rubber of diamond shape with straight edges and folded upon itself to present a central rectangular portion and four triangular sections the straight free edges of each of which latter are in line with the straight free edges of each adjoining section and the apices of the angles of the central rectangular portion bisecting the sides of the diamond so that when the sheet is folded upon the lines of the rectangular portion the straight edges will abut and not overlap each other, seam-strips overlapping and joining the meeting and abutting edges of the triangular sections together so as to render the bag water-tight, a reinforcing-yoke for strengthening the upper end of the body, and a neck with mouthpiece and handle, as shown and described.

7. The combination of a water-bag having its body formed of a single sheet of rubber of diamond or rhomboidal shape with straight edges folded upon itself from opposite sides, and having its straight meeting edges abutting one another and joined so as to form a water-tight bag without seam or joint along all its edges, and corner-strengthening portions, as set forth.

8. A water-bag having its body formed of a sheet of rubber of diamond, or rhomboidal shape with straight edges folded upon itself from opposite sides upon lines extending at right angles to one another, the apices of said angles bisecting the sides of the diamond-shaped sheet so that when folded its straight meeting edges will abut and not overlap each other, corner-strengthening portions, and means for joining said abutting edges to form a water-tight bag without seam or joint along its edges but having a slit in one of the folded edges to form an opening to the neck of the bag as set forth.

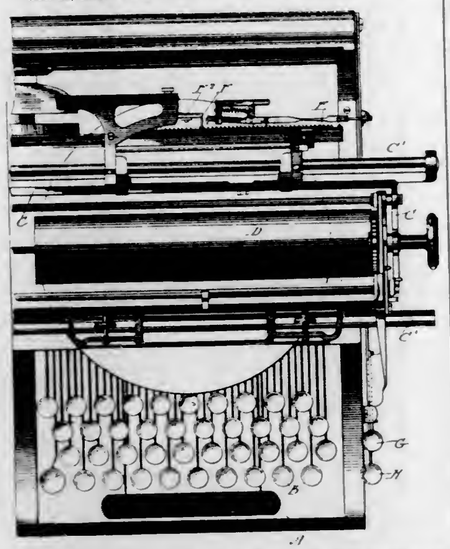
9. A water-bag having its body formed of a sheet of rubber having straight edges and folded upon itself along four lines at right angles to each other, the apices of said angles bisecting the sides of said sheet, so that when folded its straight meeting edges will abut and not overlap each other, corner-strengthening portions, means for joining said abutting edges to form a water-tight bag without seam or joint along its folded side edges but having a slit in one of the folded edges to form an opening to the neck of the bag, as set forth.

10. A water-bag having its body formed of a sheet of rubber of diamond or of rhomboidal shape with straight edges and folded upon itself from opposite sides upon lines at right angles to one another, the apices of said angles bisecting the sides of the diamond-shaped sheet so that when folded its straight meeting edges will abut and not overlap each other, seam-strips overlapping and joining such abutting edges, so as to render the bag water-tight, without seam or joint along its folded side edges but having a slit in one of the folded edges to form an opening to the neck of the bag, and the ends of said seam-stripe being extended and folded over to form strengthening portions for the corners of said bag, as shown and described.

11. A water-bag formed of a sheet of rubber of diamond or rhomboidal shape with straight edges and folded upon itself to present a central rectangular portion and four triangular sections, the straight edges of each of which latter are in line with the straight edges of each adjoining section and the apices of the angles of the central rectangular portion bisecting the sides of the diamond so that when the sheet is folded upon the lines of the rectangular portion the straight edges will abut and not overlap each other, seam-strips overlapping and joining the meeting and abutting edges of the triangular sections together so as to render the bag watertight, and the ends of said seam-strips being extended and folded over to form strengthening portions for the corners of said bag, and a neck with mouthpiece and handle, as shown and described.

12. A water-bag formed of a sheet of rubber of diamond shape with straight edges and folded upon itself to present a central rectangular portion and four triangular sections the straight free edges of each of which latter are in line with the straight free edges of each adjoining sections and the apices of the angles of the central rectangular portion bisecting the sides of the diamond so that when the sheet is folded upon the lines of the rectangular portion the straight edges will abut and not overlap each other, seam-strips overlapping and joining the meeting and abutting edges of the triangular sections together so as to render the bag watertight, and the ends of said seam-strips being extended and folded over to form strengthening portions for the corners of said bag, a reinforcing-yoke for strengthening the upper end of the body, and a neck with mouthpiece and handle, as shown and described.

656,658. **TYPE-WRITER.** JAMES H. PHELPS, Sharon, Wis. Filed Dec. 23, 1899. Serial No. 741,375. (No model.)



Claim.—1. The combination with the paper-carriage of a type-writer, of means for imparting a step-by-step movement from left to right to the carriage, a key or lever for causing single-space movements and a key for causing double-space movements by the carriage, substantially as specified.

2. The combination with the paper-carriage and its locking rack and dog, of a pawl engaging said rack and having an arm extending at right angles from its base, a stationary support for said pawl, a movable bar to which the pawl is pivoted, means for actuating said bar, and a spring attached to said arm and support and acting to throw the pawl against the rack, substantially as specified.

3. The combination with a type-writer of two reverse-keys, and mechanism connecting them to the paper-carriage, one of said keys acting to cause a backward movement by the carriage equal to a single character-space, and the other acting to cause a similar movement equal to two character-spaces, substantially as specified.

4. The combination with a reverse-key and the paper-carriage, of a pawl engaging the carriage-rack and having an arm extending at right angles from its base, a supporting-frame J^4 J^5, having a slot J^{10}, a projection J^{11} on the pawl-arm, means for actuating the pawl and a spring acting to throw the pawl into engagement, substantially as specified.

5. The combination with the paper-carriage and mechanism for reversing it, of two keys, one for moving the carriage a single space and the other for moving it two spaces, the two-space key being connected to said mechanism and the one-space key being pivoted upon the two-space key and imparting a partial stroke to the latter, substantially as specified.

6. The combination with the paper-carriage and the mechanism for reversing it, of two keys for imparting one-space and two-space reverse movements, the one-space key being pivotally secured to the other and operating it through a partial stroke, and a stop for limiting the stroke of the one-space key, substantially as specified.

7. The combination with the paper-carriage and the mechanism for reversing it, of two keys for imparting one-space and double-space reverse movements, the double-space key being connected to the reversing mechanism, and the single-space key being short and pivoted upon and operating the double-space key and having a stop limiting its stroke, substantially as specified.

8. The combination with the paper-carriage and the mechanism for reversing it, of two keys for imparting one-space and double-space reverse movements, the double-space key being connected to the reversing mechanism, and the single-space key being attached to the double-space key and operating said reversing mechanism through the latter, and a stop for limiting the stroke of the single-space key, substantially as specified.

9. The combination with the paper-carriage and its reversing mechanism of both a single-space reverse-key and a double-space key, operable independently at will, but connected together so that one operates the reversing mechanism through the other, substantially as specified.

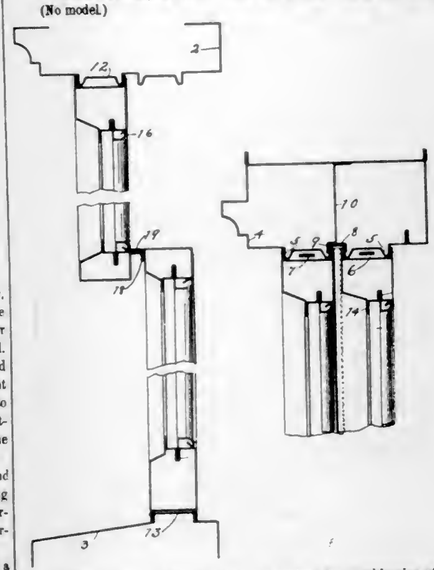
10. The combination with the paper-carriage and its reversing mechanism, of a key for causing a double-space reverse movement connected to and operating said mechanism, and a key for causing a single-space reverse movement operating said mechanism through the first-mentioned key, substantially as specified.

11. The combination with the paper-carriage and its reversing mechanism, of a key for causing a double-space reverse movement connected to and operating said mechanism, and a key for causing a single-space reverse movement imparting a partial stroke to said first-mentioned key and thus operating said mechanism, substantially as specified.

12. The combination with the paper-carriage and its reversing mechanism, of a key for causing a double-space reverse movement connected to and operating said mechanism, and a key for causing a single-space reverse movement attached to and imparting a partial stroke to said first-mentioned key and thus operating said mechanism, substantially as specified

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656,659. **METALLIC WINDOW FRAME AND SASH.** CLARENCE D. PRUDEN, Minneapolis, Minn. Filed Nov. 6, 1899. Serial No. 735,958. (No model.)

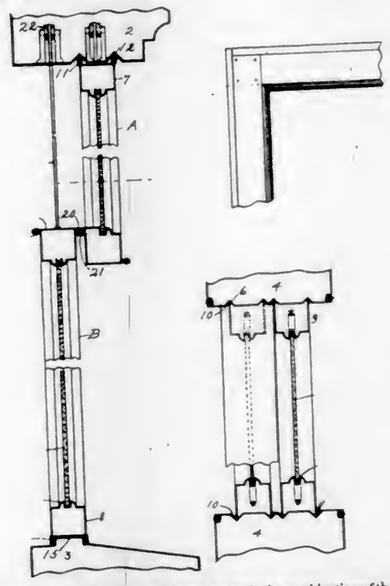


Claim.—1. In a window frame and casing, the combination of the vertical stiles of the frame-body, provided with outwardly-projecting ribs, and a depressed portion between said ribs, and the sash provided with flanges or ribs adapted to fit over the ribs of said stiles.

2. A sheet-metal sash provided with an inwardly-extending flange against which the glass abuts, and formed with a groove adjacent to said flange to receive a detachable securing-strip.

3. A sheet-metal sash provided with an inwardly-extending flange against which the glass abuts, and a removable metal securing-piece adapted to be arranged in a groove adjacent to said flange to hold the glass against said flange.

656,660. **METALLIC WINDOW FRAME AND SASH.** CLARENCE D. PRUDEN, Minneapolis, Minn. Filed Feb. 9, 1900. Serial No. 4,593. (No model.)



Claim.—1. In a window frame and sash, the combination of the vertical stiles, the side walls of each stile being unconnected at their outer edges, and the frame formed with a series of grooves sunken below the general plane of the face of the frame into which grooves the outer edges of said side walls separately fit, and which prevent lateral movement of said walls.

2. In a window sash and frame, the combination of the vertical stiles of the sash, the outer edges of the side walls of the stiles being unconnected, an adjacent frame formed with angular grooves, and flanges upon the outer edges of the side walls of said stiles, fitting in said grooves.

3. The combination of the frame formed with V-shaped grooves, the side walls of the vertical sash-stiles being unconnected at their outer edges and formed with flanges fitting in said grooves.

4. In a window-sash of the class described, the stiles thereof having their side walls unconnected at their outer edges, and flanges projecting from the outer edges of said walls at an angle therewith

5. In a window frame and sash, the combination of the vertical stiles, an adjacent frame formed with grooves, and flanges upon the outer edges of the side walls of each stile fitting in said grooves.

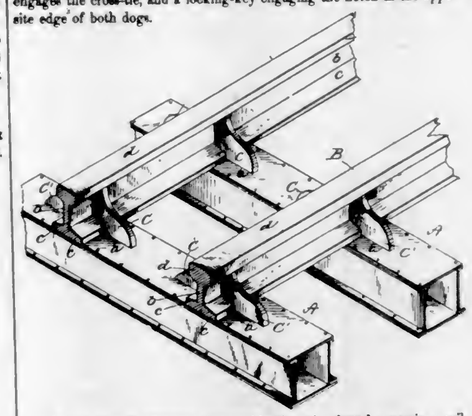
6. In a window-sash of the class described, each stile thereof having flanges projecting from the outer edges of its side walls at an angle therewith.

7. In a window frame and sash, the combination of the vertical stiles, the side walls of each stile being unconnected at their outer edges, and the frame formed with a series of grooves sunken below the general plane of the face of the frame shaped to receive the outer edges of the side walls, and into which the edges of said walls project.

656,661. **RAILROAD-TRACK FASTENING.** LEANDER D. RALSTON, North Lawrence, Ohio. Filed July 9, 1900. Serial No. 22,980. (No model.)

Claim.—1. In a track-fastening, the combination of a slotted cross-tie, a rail, a pair of clamping-dogs having grooves in their adjacent edges and engaging said slots, the cross-tie and the rail; and a locking-key engaging the groove in both dogs.

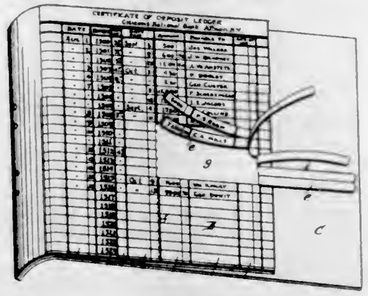
2. In a track-fastening, the combination of a slotted cross-tie, a rail, a pair of clamping-dogs having notches in both their edges, one of which engages the cross-tie, and a locking-key engaging the notch in the opposite edge of both dogs.



3. In a track-fastening, the combination of a slotted cross-tie, a rail, a pair of clamping-dogs having notches in both their edges, a locking-key engaging the notches in one edge of both dogs; and a retaining-spring for the key.

4. In a track-fastening, the combination of a slotted cross-tie, a rail, a pair of clamping-dogs extending through the top of the tie and having a notch in the outer edge engaging the tie, a notch on the inner edge of the dogs, and a locking-key yieldingly secured in engagement with the notches in the adjacent edges of the dogs.

656,662. **ACCOUNT-BOOK.** JAMES H. RAND, Tonawanda, N. Y. Filed Nov. 23, 1899. Serial No. 738,023. (No model.)



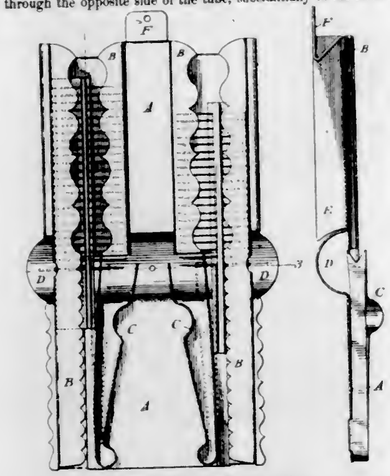
Claim.—1. An account-book having leaves which are ruled into suitable spaces and which are provided with a plurality of reversible account-slips arranged one below another and registering with said spaces, each of said slips having its outer end attached to the leaf near the outer end of the leaf, whereby each slip may be turned so as to project beyond the end of the leaf for indicating one condition of an account, or returned to its normal position against the front side of the leaf for indicating another condition of the account, substantially as set forth.

2. An account-book having leaves which terminate at some distance from the ends of the covers and which are provided with a plurality of reversible account-slips arranged one below another and each having its outer end attached to the leaf near the outer end of the leaf, whereby the slips project beyond the outer end of the leaf, when reversed, and division-plates arranged between said leaves and extending beyond the outer ends thereof, for retaining the reversed slips in a flat condition, substantially as set forth.

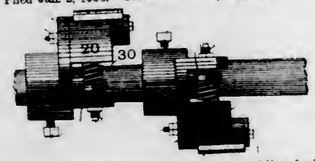
3. An account-book having leaves provided with a comparatively-stiff backing, said leaves being ruled into suitable columns or spaces and having reversible account-slips which normally form one or more of said columns and which are permanently attached to said leaves only at the outer ends of the slips, and adapted to be gummed at their free ends to said backing, when turned to their original position, substantially as set forth.

656,663. **PIN-HOLDER.** AMASA A. RICHARDSON, Oregon, Mo., assignor of one-half to Henry C. Schmidt, same place. Filed Feb. 26, 1900. Serial No. 6,780. (No model.)

Claim.—A combined pin holder and extractor consisting of a base-piece on which a pin-holder is fastened, the said holder consisting of a flattened tube of a somewhat larger diameter at one end than at the other, the large end being of a size sufficient to receive a row of pins on a paper and having an opening sufficient to expose the whole row of pins, the small end having an opening sufficient to receive the paper after the pins have been extracted and means located between the large and small parts of the holder C which control the discharge of a single pin from the paper through the opposite side of the tube, substantially as set forth.



656,664. GRINDING-MACHINE. EDWARD B. ROTH, St. Louis, Mo. Filed Jan. 2, 1900. Serial No. 51. (No model.)



Claim.—1. In a grinding-machine, a cylinder-holding device, a grinding device bearing against the interior of the cylinder held by said cylinder-holding device, one of said devices being mounted to automatically yield, means for rotating one of said devices, and means for feeding one of said devices longitudinally.

2. In a grinding-machine, a cylinder-holding device, a grinding device mounted to bear against the interior cylinder held in said cylinder-holding device and to automatically yield, means for rotating one of said devices, and means for feeding one of said devices longitudinally.

3. In a grinding-machine, a cylinder-holding device, a grinding device mounted to bear against the interior of a cylinder held by said cylinder-holding device, and to yield automatically, means for rotating said grinding device, and means for feeding said grinding device longitudinally.

4. In a grinding-machine, a shaft, a member carried by said shaft, a grinding-stone yieldingly mounted in said member, means for holding a cylinder around said shaft, and means for rotating said shaft.

5. In a grinding-machine, a shaft, a member mounted on said shaft, a grinding-stone slidingly mounted in said member, springs for forcing said grinding-stone out radially, and means for varying the pressure of said spring.

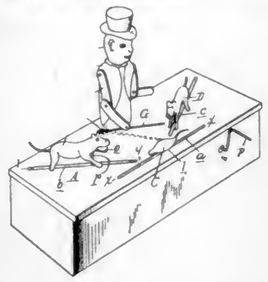
6. In a grinding-machine, a shaft, a grinding-tool slidingly mounted on said shaft to rotate therewith, means for feeding said grinding-tool longitudinally, means for rotating said shaft, and a grinding-stone carried by said grinding-tool.

7. In a grinding-machine, a sleeve, means for rotating said sleeve, a grinding-tool slidingly mounted on said sleeve to rotate therewith, and a threaded rod within said sleeve and adapted to actuate said grinding-tool.

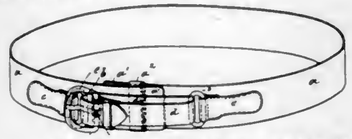
8. In a grinding-machine, a shaft, a grinding-tool slidingly mounted on said shaft to rotate therewith, means for feeding said grinding-tool longitudinally, means for rotating the said shaft, and a grinding-stone mounted in said grinding-tool to yield radially.

656,665. MECHANICAL TOY. RICHARD H. SARVIS, London, Canada. Filed Jan. 22, 1900. Serial No. 2,377. (No model.)

Claim.—A mechanical toy, comprising a hollow base or box, a figure representing the body of a man mounted centrally of said box, carriers within the box one being arranged longitudinally thereof and two others being arranged at opposite angles to the first, arms connected to said carriers projecting upward through slots in the top of the box, figures connected thereto the figure connected to the longitudinal carrier representing a rat, and the other two figures representing dogs, an operating-crank connected to a crank-shaft within the box, pulleys on said crank-shaft connected to said carriers, a second crank having a drive connection with said crank-shaft, a pivotal arm connected to the head of the man and extending down within the box, a rock-arm connected to a jointed arm on the figure of the man and extending transversely of the box and a pitman connecting with said pivotal arm and rock-arm and at its opposite end to said second crank, substantially as and for the purpose described.

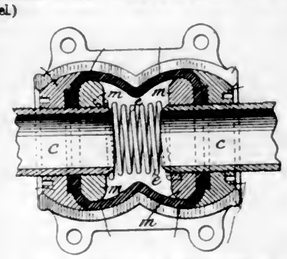


656,666. APPAREL-BELT. MAX SCHEUER, New York, N. Y. Filed June 16, 1900. Serial No. 20,522. (No model.)



Claim.—A belt provided with a pair of straps secured to the face of the belt at a distance from its ends, eyes attached to the straps, a looped closing-strap drawn through the eyes, and a buckle for connecting the ends of said closing-strap, substantially as specified.

656,667. FLEXIBLE METAL PIPE-COUPLING. WOLFGANG SCHMID, Munich, Germany. Filed Nov. 27, 1899. Serial No. 738,488. (No model.)



Claim.—1. The combination in a pipe-coupling, of a pair of pipes having flanges on their extremities, said pipes having external threads in proximity to said flanges, a nut on each pipe engaging said threads, a flexible pipe-section having each end attached to one of said pipes and secured between said flange and said nut, and a sectional casing engaging said pipe members.

2. The combination in a pipe-coupling, of a pair of pipes having flanges on their extremities, said pipes having external threads in proximity to the flanges, a nut on each pipe engaging said threads, a flexible pipe-section having each end attached to one of said pipes and secured between said flange and said nut, and a transversely-bisected casing engaging said pipe members.

3. The combination in a pipe-coupling, of a pair of pipes having flanges on their extremities, said pipes having external threads in proximity to their flanges, a nut on each pipe engaging said threads, a flexible pipe-section having each end attached to one of said pipes and secured between

said flange and said nut, a sectional casing engaging said pipe members, and means connected with each pipe member tending to force them apart.

4. The combination in a pipe-coupling, of a pair of pipes having flanges on their extremities, said pipes having external threads in proximity to their flanges, a nut on each pipe engaging said threads, said nuts having concave faces on the sides opposing said flanges, a flexible pipe-section having each end attached to one of said pipes and secured between said flange and said nut, and a sectional casing engaging said pipe members.

5. The combination in a pipe-coupling, of a pair of pipes having flanges on their extremities, said pipes having external threads in proximity to their flanges, a nut on each pipe connecting said threads, said nuts having concave faces on the sides opposing said flanges, said flanges having convex faces on the sides opposing said nuts, a flexible pipe-section having each end attached to one of said pipes and secured between said flange and said nut, and a sectional casing engaging said pipe members.

6. The combination in a pipe-coupling, of a pair of pipes having flanges on their extremities, said pipes having external threads in proximity to their flanges, a nut on each pipe engaging said threads, said nuts having concave faces on the sides opposing said flanges and having convex peripheries, said flanges having convex faces on the sides opposing said nuts, a flexible pipe-section having each end attached to one of said pipes and secured between said flange and said nut, and a sectional casing engaging said pipe members.

7. The combination in a pipe-coupling, of a pair of pipes having flanges on their extremities, said pipes having external threads in proximity to their flanges, a nut on each pipe engaging said threads, said nuts having concave faces on the sides opposing said flanges and having convex peripheries, said flanges having convex faces on the sides opposing said nuts, a flexible pipe-section having each end attached to one of said pipes and secured between said flange and said nut, and a transversely-bisected casing engaging said pipe members by the said convex peripheries of the nuts.

8. The combination in a pipe-coupling, of a pair of pipes having flanges on their extremities, said pipes having external threads in proximity to said flanges, a nut on each pipe engaging said threads, a flexible pipe-section having each end attached to one of said pipes and secured between said flange and said nut, a sectional casing engaging said pipe members, and a pipe-section of non-conducting material lining the exposed inner surface of said flexible pipe-section.

656,668. BLUE ANTHRARUFIN DYE AND PROCESS OF MAKING SAME. ROBERT E. SCHMIDT, Elberfeld, Germany, assignor to the Farbenfabriken of Elberfeld Company, New York, N. Y. Filed Aug. 15, 1899. Serial No. 727,257. (Specimens.)

Claim.—1. The process for producing a new benzylated derivative from diamidoanthrarufindisulfonic acid which process consists in first heating a mixture prepared from a watery solution of diamidoanthrarufindisulfonic acid and benzyl chlorid, secondly precipitating the new dyestuff from the reaction mixture and finally isolating the same, substantially as hereinbefore described.

2. As a new article of manufacture the new benzylated anthrarufin dyestuff being when dry and pulverized a blue powder soluble in water with a blue color from which solution on the addition of strong hydrochloric acid the dyestuff is precipitated the color of the solution being, however, not changed into violet, easily soluble in alcohol, being dissolved by concentrated sulfuric acid with a yellow color which is changed into green on the addition of boric acid, dyeing unmordanted wool bright-blue shades, yielding on chrome-mordanted wool greenish-blue shades, substantially as hereinbefore described.

656,669. BLUE CHRYSAZIN DYE AND PROCESS OF MAKING SAME. ROBERT E. SCHMIDT, Elberfeld, Germany, assignor to the Farbenfabriken of Elberfeld Company, New York, N. Y. Filed Aug. 15, 1899. Serial No. 727,258. (Specimens.)

Claim.—1. The process for producing a new benzylated dyestuff from diamidochrysazindisulfonic acid, which process consists in first heating a mixture prepared from a watery solution of diamidochrysazindisulfonic acid and benzyl-chlorid, secondly precipitating the new dyestuff thus produced from the reaction mixture and finally isolating the same, substantially as hereinbefore described.

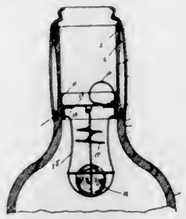
2. As a new article of manufacture the new benzylated chrysazin dyestuff, being when dry and pulverized a blue powder soluble in water with a blue color, from which solution the dyestuff is again precipitated by the addition of strong hydrochloric acid, soluble in a dilute soda-lye with a blue color, being dissolved by concentrated sulfuric acid with a yellow color which is changed into reddish yellow on the addition of boric acid, dyeing unmordanted wool in acid-baths pure-blue shades, yielding on chrome-mordanted wool greenish-blue shades, substantially as hereinbefore described.

656,670. BLUE ANTHRARUFIN DYE AND PROCESS OF MAKING SAME. ROBERT E. SCHMIDT and PAUL TUST, Elberfeld, Germany, assignors to the Farbenfabriken of Elberfeld Company, New York, N. Y. Filed Aug. 25, 1899. Serial No. 728,398. (Specimens.)

Claim.—1. The process for producing a new blue dyestuff being a monobromdiamidoanthrarufinmonosulfonic acid, which process consists in first heating a mixture prepared from monobromdinitroanthrarufinmonosulfonic acid, stannous chlorid and hydrochloric acid, secondly isolating the dyestuff thus produced by filtration and finally drying the same, substantially as hereinbefore described.

2. As a new article of manufacture the new dyestuff being a monobromdiamidoanthrarufinmonosulfonic acid, which when dry and pulverized is a dark-blue powder, difficultly soluble in water with a blue color, soluble in dilute alkalies with a color varying from blue to greenish blue, being dissolved by concentrated sulfuric acid with a yellow color which on the addition of boric acid changes first into red and then after a while into blue, dyeing unmordanted wool in acid-baths bright-blue shades, while it yields on chrome mordanted wool bright and fast greenish-blue shades, substantially as hereinbefore described.

656,671. NON-REFILLABLE BOTTLE. AUGUST SOMMERFELD, St. Louis, Mo. Filed Feb. 3, 1900. Serial No. 3,845. (No model.)



Claim.—1. A non-refillable attachment for bottles comprising a suitable ring, an outwardly-opening valve mounted therein, a spring for retaining the hinge in a normally-closed position, a cage depending from the ring, a marble or ball confined within the cage, a spring interposed between the ball and the under side of the valve, the whole being adapted to be inserted into the neck of the bottle, the parts operating substantially as and for the purpose set forth.

2. In combination with a non-refillable attachment for bottles, a suitable inner neck-section adapted to receive said attachment, an angular channel formed in the outer surface of said section, an outer section having a contracted mouth or opening adapted to be passed over the inner section, a peg carried by the inner wall of the outer section and adapted to be received by the channel of the inner section, the outer section having an opening adapted to come opposite the channel after the same has been turned to bring the peg to the end of the horizontal arm of the channel, for introducing suitable cement into the channel and binding the parts permanently together, substantially as set forth.

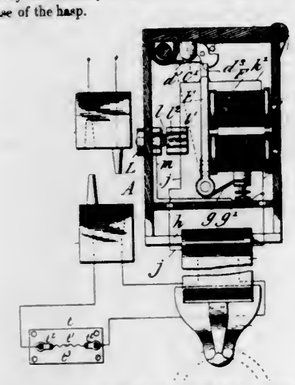
3. A non-refillable attachment for bottles, comprising a suitable ring, an annular ledge formed along the inner surface thereof, a hinge-valve adapted to close against said ledge, a spring having one end secured to the ring and the opposite bearing against the outer surface of the valve, a depending cage carried by the ring, a marble confined in said cage, a spring interposed between the marble and the under side of the hinge, the resiliency of the two springs being substantially equal, the whole being adapted to be inserted into, and secured within the neck of a bottle, the latter having an outer neck-section with a contracted mouth to prevent the withdrawal of the attachment, the parts operating substantially as and for the purpose set forth.

656,672. ANIMAL-RELEASING DEVICE. FRANK A. SPRENGER, Chicago, Ill. Filed Sept. 30, 1899. Serial No. 732,175. (No model.)

Claim.—1. An animal-releasing device comprising a casing having a socket to receive the halter-ring, a pivoted hasp confining the ring in the socket, an armature normally attracted by an electric magnet, a spring-controlled trigger moved by the armature to engage the hasp and hold it in locking position, and means for depriving the magnet of current to effect the release of the armature and permit movement of the trigger to release the hasp.

3. An animal-releasing device comprising a casing having a socket to receive the halter-ring, a movable hasp confining the ring in the socket and provided with a catch, a spring-controlled trigger, an armature adapted when attracted by an energized magnet to move the trigger into engagement with the catch to lock the hasp, and means for depriving the magnet of current.

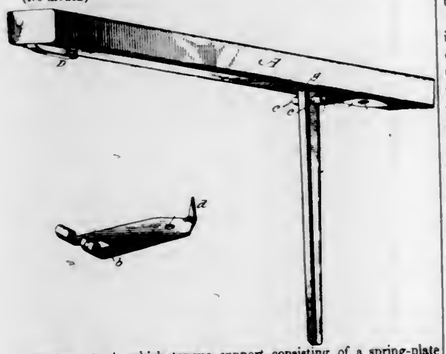
3. An animal-releasing device comprising a casing having a socket to receive the halter-ring, a pivoted hasp confining the ring in the socket, magnets connected with an electric circuit, an armature, means actuated by the armature when attracted to engage and hold the hasp in locking position, and hand-switch and a thermostat in the circuit whereby the magnet may be manually or automatically deprived of current to effect the release of the hasp.



4. An animal-releasing device comprising a casing carrying a pivoted hasp normally confining the halter-ring, a spring-controlled trigger adapted to engage a catch on the hasp, magnets connected with an electric circuit, an armature in operative relation to the trigger, a spring connected with the armature, an adjusting-screw for the spring, and means for depriving the magnets of current.

5. An animal-releasing device comprising a casing carrying locking means for confining a halter-ring, magnets connected with an electric circuit, an armature operatively connected with the locking means, a push-button switch carried by the casing and electrically connected with the circuit to shunt the magnets, a strap fixed to the casing and carrying the wires of the circuit, and a thermostat in the circuit.

656,673. VEHICLE-TONGUE SUPPORT. OLIVER STATON and CARLE STATON, Gadsden, Ind. Filed July 2, 1900. Serial No. 22,304. (No model.)

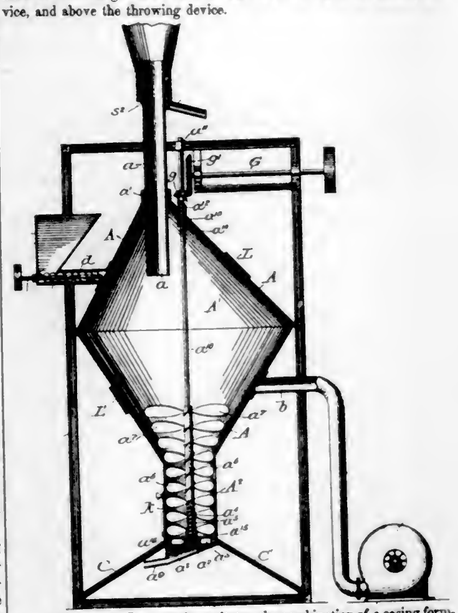


Claim.—1. A vehicle-tongue support consisting of a spring-plate having a perforation for a screw or other like fastening and terminating in a spur disposed at an angle to the plane of the plate and entering the tongue to anchor said plate, and a supporting-arm pivotally connected to the plate, substantially as and for the purpose specified.

2. A vehicle-tongue support consisting of a spring-plate having a perforation and spur at its rear end at an angle to the plane of the plate and entering the tongue to anchor said plate, and at its front end terminating in arms with sleeves, a supporting-arm having its end located between the arms of the plate and pivotally connected thereto by means of a pin extending through the sleeves and through the end of the supporting-arm, substantially as and for the purpose set forth.

656,674. ORE-CONCENTRATING AGITATOR. ALBERT H. STEBBINS, Little Rock, Ark. Filed Oct. 2, 1899. Serial No. 732,320. (No model.)

Claim.—1. In an ore-concentrating agitator, the combination of a casing forming an agitating-chamber, a throwing device mounted in the lower part of said chamber, the latter being enlarged above the throwing device, an exit-pipe leading from said chamber, a feeding device, an air-inlet for conducting a blast of air into said chamber below the feeding device, and above the throwing device.



2. In an ore-concentrating agitator, the combination of a casing forming an agitating-chamber, a throwing device mounted in the lower part of said chamber, the latter being enlarged above the throwing device, an exit-pipe leading from the chamber and extending thereinto, means for feeding ore to said chamber, and an air-inlet for conducting a blast of air into said chamber below the feeding means, and below the lower end of the exit-opening.

3. In an ore-concentrating agitator, the combination of a casing having an enlarged central portion forming an agitating-chamber, a throwing device mounted in the lower part of said chamber for throwing material upward, an exit-pipe for the lighter particles of ore leading from and extending into said chamber, means for feeding ore to said chamber, means for creating an air-blast and an inlet for conducting the blast of air into said chamber below the feeding means.

4. In an ore-concentrating agitator, the combination of a casing having an enlarged central portion forming an agitating-chamber, a throwing device mounted in the lower part of said chamber for throwing material upward, a discharge-chute below said throwing device, and forming practically a closed bottom for the casing, an exit-pipe leading from and extending into said chamber opposite the said throwing device, a feeder and an air-inlet for conducting a blast of air into said chamber below the feeder.

5. In an ore-concentrating agitator, the combination of a casing having an enlarged portion forming an agitating-chamber and provided with a reduced and practically-closed lower portion, a throwing device comprising a series of revolving blades practically occupying the cross-area of the lower portion, an exit-pipe leading from said chamber, a feeder and an air-inlet for conducting a blast of air into said chamber below the feeder.

6. The combination of a casing forming an agitating-chamber, having an enlarged central portion and a reduced bottom portion, a throwing device comprising a revolving shaft having a series of blades occupying said reduced portion and extending upward into the enlarged portion, an exit-pipe for the light material, a feeder and an air-blast inlet below the exit-opening.

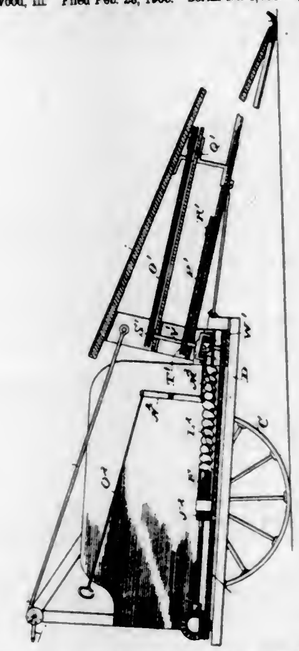
7. A casing having an enlarged central portion and a reduced lower portion constituting a chamber for the rarefaction and recondensation of the ascending air-currents, an exit in the upper part of the chamber for the lighter particles of ore, an air-blast inlet leading into the chamber below the exit-opening, a feeder above the air-blast inlet, and a revolving shaft with agitating-blades located in the reduced lower portion of the chamber and extending up into the enlarged central portion thereof, said blades in the central portion being of increased length.

8. In an ore-concentrating agitator, the combination of a casing having an enlarged central portion constituting an agitating-chamber, an exit-pipe leading from said chamber and extending thereinto, a throwing device in the lower part of said chamber, a feeder, an air-inlet for conducting a blast of air into said chamber below the feeder and above the throwing device and a door in the lower part of the casing opposite the throwing device.

9. In an ore-concentrating agitator, the combination of a casing forming an agitating-chamber, and having a reduced lower portion, a stud projecting upward from the bottom of the said lower portion, a shaft seated on said stud, and carrying throwing-blades fitted to the said reduced lower portion, and other throwing-blades of larger size above the reduced lower portion, a feeding device, an air-inlet, an exit-pipe leading from and extending into the agitating-chamber and means for operating the said shaft.

10. In an ore-concentrating agitator, the combination of a casing forming an agitating-chamber, a feeding device, an air-blast inlet leading to said chamber from the side thereof and below the feeding device to produce a circulation of air-currents in the agitating-chamber, and an exit-pipe fitted adjustably into the casing whereby it may be extended more or less into the said agitating-chamber.

656,675. CORN-HARVESTING MACHINE. AUGUST STEINER, Homewood, Ill. Filed Feb. 28, 1900. Serial No. 6,781. (No model.)



Claim.—1. In a corn-harvesting machine, a main frame, an axle journaled therein and carrying traction-wheels, a snapping-frame, ear-detaching devices carried thereby, said frame being hinged at its rear end upon said main frame and independently of the axle, means for adjustably supporting the front end of said snapping-frame, in combination with gathering devices pivotally supported upon such snapping-frame, as and for the purpose set forth.

2. In a corn-harvesting machine, a main frame, an axle journaled therein and carrying traction-wheels, a snapping-frame, ear-detaching devices carried thereby, said snapping-frame being pivotally mounted at its rear end upon said main frame and independently of said axle, an adjusting-block connected to the front end of said snapping-frame, an adjusting-screw for raising and lowering said adjusting-block, in combination with gathering devices pivotally supported upon said snapping-frame, as and for the purpose set forth.

3. In a corn-harvesting machine, a main frame, an axle journaled therein and carrying traction-wheels, a snapping-frame, ear-detaching devices carried thereby, said frame being pivotally connected at its rear end to said main frame and independently of said axle, an adjusting-block connected to said snapping-frame at the front end thereof, an adjusting-screw arranged to engage said block, whereby said snapping-frame may be raised and lowered, a guiding-plate connected to said main frame and engaging said adjusting-block to guide the same, in combination with gathering devices pivotally supported upon said snapping-frame, as and for the purpose set forth.

4. In a corn-harvesting machine, a main frame, a traction-wheel mounted therein, an axle for said wheel, a driving-shaft journaled in said main frame to the rear of said traction-wheel axle and arranged to be driven therefrom, a snapping-frame journaled upon said driving-shaft and carrying ear-detaching devices, means for adjustably supporting said snapping-frame at a point in front of said traction-wheel, in combination with gathering devices pivotally supported upon said snapping-frame, as and for the purpose set forth.

5. In a corn-harvesting machine, a main frame, a traction-wheel journaled therein, an axle for said wheel, a driving-shaft journaled in said main frame parallel with and to the rear of said traction-wheel axle and arranged to be driven therefrom, a snapping-frame sleeved upon said driving-shaft and carrying ear-detaching devices, an adjusting-block connected to said snapping-frame at the front end thereof and in advance of said traction-wheel, an adjusting-screw engaging said block for raising and lowering said frame about its pivotal axis, in combination with gathering devices pivotally supported upon said snapping-frame, as and for the purpose set forth.

6. In a corn-harvesting machine, a snapping-frame carrying snapping-rolls, said frame being pivotally mounted at its rear end, and means for vertically adjusting the front end thereof in combination with gathering-frames pivotally mounted upon horizontal axes at the front end of said snapping-frame, said gathering-frames extending forwardly from said snapping-frame, gathering devices carried by said gathering-frames, connections for said gathering-frames, and means for actuating said connections for swinging said gathering-frames about their pivotal axes, as and for the purpose set forth.

7. In a corn-harvesting machine, a snapping-frame, ear-detaching devices carried thereby, said frame being pivotally mounted at its rear end, and means for vertically adjusting the front end thereof, gathering-frames pivotally mounted at their rear ends upon the front end of said snapping-frame, said gathering-frames extending forwardly from the front end of said snapping-frame, and means for rocking said gathering-frames to raise and lower the front ends thereof, as and for the purpose set forth.

8. In a corn-harvesting machine, a snapping-frame, said frame being pivotally mounted at its rear end, and means for vertically adjusting the front end thereof, gathering-frames independently pivoted at their rear ends upon the front end of said snapping-frame, connections connected to each of said gathering-frames, and an operating-shaft to which said connections are connected, whereby said gathering-frames may be rocked about their pivots, as and for the purpose set forth.

9. In a corn-harvesting machine, a snapping-frame, said frame being pivotally mounted at its rear end, and means for vertically adjusting the front end thereof, gathering-frames pivotally mounted on said snapping-frame at the front end thereof and extending forwardly therefrom, said gathering-frames being arranged in parallel relation and slightly diverging from each other throughout the greater portion of their length, and widely diverging from each other at their front extremities, and gathering devices carried by said gathering-frames, and means for actuating said gathering devices, as and for the purpose set forth.

10. In a corn-harvesting machine, a frame, pivotally mounted at the rear end, and means for vertically adjusting the front end thereof, gathering-frames hinged to said first-mentioned frame at the front end thereof and extending forwardly therefrom in parallel relation, said gathering-frames slightly diverging to a point adjacent to their front ends, and widely diverging at their front ends, gathering devices carried by said gathering-frames and extending to the point of wide divergence of said frames, and means for rocking said gathering-frames about their pivotal support, as and for the purpose set forth.

11. In a corn-harvesting machine, pivotally-mounted gathering-frames extending in parallel relation, gathering devices carried by said frames, a driving-shaft for the gathering devices of each of said frames, one of said shafts forming a pivotal axis for one of said frames, and a universal joint interposed between the driving-shaft and the carrying-chains of the other of said frames, and means for rocking said frames about their pivots, as and for the purpose set forth.

12. In a corn-harvesting machine, the combination with ear-detaching devices, of a wiper arranged in advance of said ear-detaching devices, and means for actuating said wiper for clearing the throat or entrance to said ear-detaching devices, as and for the purpose set forth.

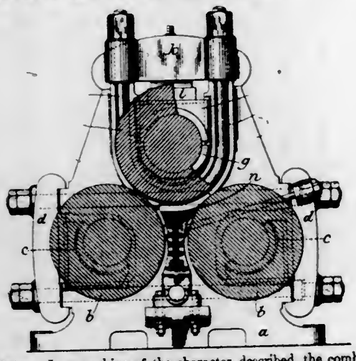
13. In a corn-harvesting machine, snapping-rolls and means for actuating the same, in combination with a wiper arranged at the front end of said rolls, and means for actuating said wiper, as and for the purpose set forth.

14. In a corn-harvesting machine, the combination of snapping-rolls arranged parallel to each other, said rolls being provided respectively with

right and left corrugations adapted, when said rolls are rotated in opposite directions, to effect a feeding action upon the stalks of corn between such rolls from the receiving toward the delivery ends thereof, and spiral ribs formed on said rolls, the rib on each roll being arranged in reverse order with respect to, and of greater pitch than, the corrugations of such roll, the ribs on the respective rolls being arranged to coöperate with each other to form angles with each other when said rolls are relatively rotated in opposite directions, the apex of the angle formed by those portions of such ribs which are on the upper surfaces of said rolls being presented toward the delivery ends of said rolls, as and for the purpose set forth.

15. In a corn-husking machine, spirally-corrugated snapping-rolls arranged parallel to each other, and means for rotating said rolls in opposite directions, in combination with spiral ribs formed on said rolls, said ribs coöperating to form angles with each other, the apex of the angle formed by those portions of such ribs which are on the upper surfaces of said rolls being presented toward the delivery ends of said rolls, as and for the purpose set forth.

656,676. CANE-MILL. OSCAR R STILLMAN, New York, N. Y. Filed May 18, 1900. Serial No. 17,144. (No model.)



Claim.—In a machine of the character described, the combination with the upper and lower rolls, movable bearing-blocks for the upper roll and the housing, of a cap for the bearing-blocks of the upper roll and a U-bolt securing said cap in place, the housing having a recess into which the U-bolt is let, substantially as shown and described.

656,677. CHAIN. HERBERT J. STRAKER, Attleborough, Mass., assignor to George K. Webster, same place. Filed Jan. 3, 1900. Serial No. 232. (No model.)



Claim.—1. A chain having links composed of two concavo-convex longitudinal link-sections, each section struck up with a half-twist having their respective adjacent edges united by solder, as and for the purpose set forth.

2. A chain having links composed of two concavo-convex longitudinal link-sections, each section struck up with a half-twist and one of said sections having its edges bounded by a continuous flange and both sections joined by solder as and for the purpose set forth.

656,678. SMOKELESS POWDER. JOHN A. STRANSKY, Pukwana, S. D. Filed Feb. 27, 1900. Serial No. 6,743. (No specimens.)

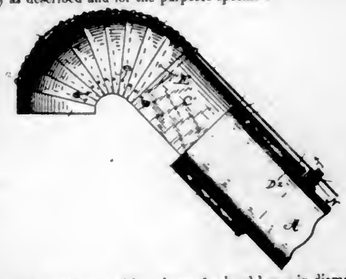
Claim.—1. A compound for smokeless powder consisting of potassium chlorate, sugar, powdered alum, sulphur and alcohol.

2. A compound for smokeless powder comprising potassium chlorate, sugar, alum, and sulphur.

3. A compound for smokeless powder consisting of the ingredients and proportions substantially as follows; potassium chlorate twenty ounces, sugar sixteen ounces; alum one dram; sulphur one dram and alcohol.

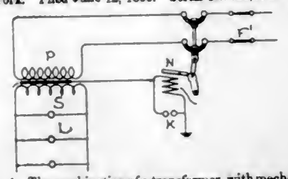
656,679. HOOD FOR PNEUMATIC-STACKER CHUTES. GEORGE SWEET, Indianapolis, Ind. Filed Apr. 20, 1898. Serial No. 678,263. (No model.)

Claim.—1. The combination with a tubular chute of a hood having an annular portion greater in diameter than the chute and into which the end of the chute is projected and means for fastening the two parts equidistant from each other with an annular space between the hood and chute whereby a back discharge of the air from the hood will be permitted substantially as described and for the purposes specified.



2. The combination with a chute of a hood larger in diameter than the chute and corrugated and secured thereto with air-outlets between the corrugations of the hood and chute substantially as described and specified.

656,680. SYSTEM OF ELECTRICAL DISTRIBUTION. ELIHU THOMSON, Swampscott, Mass., assignor to the General Electric Company, of New York. Filed June 12, 1899. Serial No. 720,294. (No model.)



Claim.—1. The combination of a transformer, with mechanical means for opening the primary circuit, brought into action by the puncture of the transformer insulation.

2. The combination with a transformer, of an electromagnetic circuit-breaker in the primary circuit for opening the primary lines, and a connection from the transformer to ground including the coils of the circuit-breaker, said connection being closely related to the primary circuit but normally insulated therefrom.

3. The combination with a transformer, of an electromagnetic circuit-breaker, the coil of which is included in a circuit between the transformer and ground disconnected from the primary, and contacts operated by the circuit-breaker for opening the primary circuit.

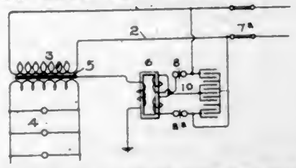
4. The combination with the grounded sheath of a transformer, of a circuit-breaker for opening the primary leads, the operating-coil of which is included in the grounded connection.

5. The combination with the primary lines leading to a transformer, of a common means for opening the primary circuit operated by either the puncture of the transformer insulation or a ground in the secondary distribution.

6. The combination with a transformer or other translating device, of a circuit-breaker in the supply-circuit, and a coil controlling said circuit-breaker in a branch circuit, normally open at a point closely related to the winding of the translating device, so as to be energized upon rupture of the insulation.

7. The combination with the transformer or other translating device, of a circuit-breaker in the supply-circuit, and a coil controlling said circuit-breaker in a ground branch normally open at a point closely related to the winding of the translating device, so as to be energized upon rupture of the insulation.

656,681. CIRCUIT-BREAKER. ELIHU THOMSON, Swampscott, Mass., assignor to the General Electric Company, of New York. Filed June 12, 1899. Serial No. 720,295. (No model.)



Claim.—1. In a system of alternating-current distribution, the combination of two circuits insulated from one another, one including a source of current and the other consumption devices, a thermal cut-out in the supply-circuit, and a magnetic operating device determining the operation of the cut-out actuated upon failure of the insulation.

2. In a system of alternating-current distribution, the combination of a transformer the primary circuit of which includes a thermal cut-out and the secondary translating devices, a leakage branch, and magnetic means controlled thereby to admit an operating current through the cut-out.

3. In a system of alternating-current distribution, the combination of a transformer, the primary of which includes a thermal cut-out, and the secondary translating devices, a leakage branch, and magnetic means controlled thereby to admit an operating-current through the cut-out upon extraordinary rise of potential in the secondary system.

4. In a system of alternating-current distribution, the combination of a transformer, the primary of which includes a thermal cut-out, a leakage branch from the transformer fed with current upon a failure of insulation, an auxiliary transformer having its primary in said branch and its secondary controlling the cut-out.

5. In a system of alternating-current distribution, the combination of a transformer, the primary of which includes a thermal cut-out, a leakage branch from the transformer rendered active upon a failure of insulation, an auxiliary transformer having its primary in said branch and its secondary adapted to short-circuit the primary mains of the cut-out.

6. The combination with a translating device of a ground branch normally completed from a metallic part of said device but insulated from the supply-circuit adapted to be energized upon a failure of insulation in said device, and a current-interrupter controlled by said branch.

7. The combination with a translating device, of a leakage branch for current operating upon the failure of insulation in the said device, a transformer fed by such leakage-currents, the secondary winding of which is connected with the supply-circuit through a spark-gap and controlling a thermal cut-out in the supply-circuit.

8. The combination with a translating device, of a ground branch protecting the same, energized upon a breaking down of the insulation, a transformer having its primary in said branch, and a split secondary differentially connected with the supply-circuit to neutralize the effect of the several sections upon said circuit, a spark-gap between the transformer secondary and the supply-circuit, and a thermal cut-out in the supply-circuit controlled by said secondary.

9. The combination with a translating device, of a ground branch energized upon a failure of insulation in said device, a circuit-breaker in the supply-circuit, and a spark-gap in a branch of the supply-circuit controlled by said ground branch.

10. The combination with a translating device, of a ground branch protecting the same and adapted to be energized upon a failure of the insulation in the device, a transformer controlled by said ground branch, and a circuit-interrupter actuated by said transformer.

11. The combination with a translating device, of a branch connection open at a point closely related to its winding so as to complete a leak upon rupture of the insulation, and a circuit-interrupter for the supply-circuit operated by said branch.

12. The combination with a translating device, of a branch connection open at a point closely related to its winding so as to complete a leak upon rupture of the insulation, a thermal cut-out in the supply-circuit, and means controlled by the branch when energized to direct an operating-current through the cut-out.

13. The combination with a translating device, of a branch connection open at a point closely related to its winding so as to complete a leak upon rupture of the insulation, a fuse in the supply-circuit, and means for directing current through the fuse sufficient to blow it when the branch is energized.

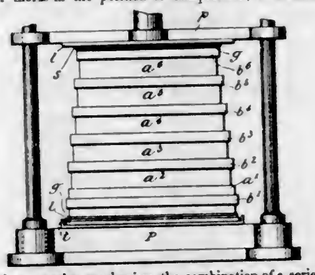
14. The combination with a translating device, of a branch connection open at a point closely related to its winding so as to complete a leak upon rupture of the insulation, a circuit-interrupter in the supply-circuit operating upon determinate increased current-flow, a short circuit including said interrupter and a spark-gap, an electromotive device controlled by the leak branch for bridging the spark-gap, and a condenser around the spark-gap.

15. In an alternating-current system, the combination of a supply-circuit, consumption devices inductively fed thereby, a cut-out, and a circuit controlling its operation energized on a failure of insulation between the supply-circuit and the circuit including the consumption devices.

16. In an alternating-current system, the combination of a supply-circuit, a transformer connected therewith, a cut-out controlled by a circuit including a spark-gap, a differential transformer feeding the spark-gap, and means for energizing the differential transformer upon a failure of insulation of the distributing-transformer.

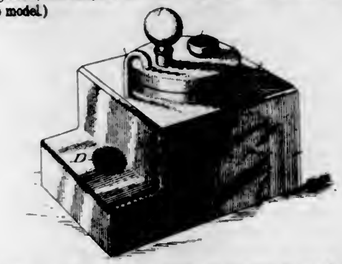
656,682. APPARATUS FOR COMPRESSING PULP. JAMES WESTAWAY, London, England. Filed Apr. 20, 1900. Serial No. 13,627. (No model.)

Claim.—1. In compressing mechanism, the combination of a series of superposed telescopic molds regularly increasing in size with locking bars or rings b' individually surrounding them, perforated locking-plates l arranged at the top and bottom of the series, the base and frame of the press, the movable platen p arranged to bear on the top of the series and bolts adapted to pass through the perforations in the said plates and fasten the series of molds in the position of compression, substantially as set forth.



2. In compressing mechanism, the combination of a series of superposed telescopic molds regularly increasing in size with locking bars or rings b' individually surrounding them, perforated locking-plates l arranged at the top and bottom of the series, the base and frame of the press, the movable platen p arranged to bear on the top of the series and bolts adapted to pass through the perforations in the said plates and fasten the series of molds in the position of compression, the said locking plates and molds being grooved to allow the escape of expressed liquid and each of the said molds being provided with upper and lower grooved plates g and interposed upper and lower layers of wood on end fiber and a spring blade or plate s being applied on top of the uppermost mold.

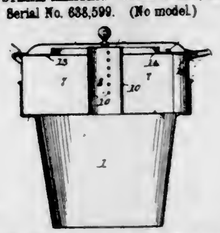
656,683. INKSTAND. SAMUEL T. WHITAKER, West Point, Ga., assignor of one-half to Zachariah Hagedorn, same place, and John J. Hagedorn, Philadelphia, Pa. Filed Apr. 25, 1900. Serial No. 14,225. (No model.)



Claim.—1. A well having a vertical passage in one of the walls thereof, a dip-cup at the side of said well, in communication with the bottom of said passage, a gooseneck having one limb entering said well and the other limb occupying said passage, and an air-pressure device in communication with said well.

2. A well, a dip-cup at the side of said well, a vertical passage in one of the walls of said well in communication with said cup, a closing-cap for said well, a gooseneck having one limb entering said well, and fitted in said cap, and the other limb entering the top of said passage, and an air-pressure device in communication with said well, the parts named being combined forming an improvement in inkstands.

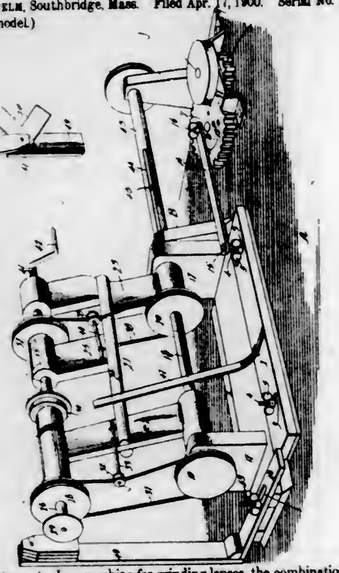
656,684. STEAM-HEATER. DORA WILEY, Dublin, Tex. Filed May 28, 1897. Serial No. 638,599. (No model.)



Claim.—A steam-heater comprising a hot-water receptacle provided at an intermediate point in its height with a flange and seat, a steamer

adapted to rest on said seat, a struck-up cover provided at its edge with an annular inwardly-extending flange, the inner edge of which is upturned to form an annular condensation-chamber, a central tube extending from the bottom of the steamer upward into the cover and arranged centrally of the condensation-chamber, and radial partitions extending from the tube to the outer wall of the steamer, the central tube being provided in its upper portion with openings leading to the compartments formed by the radial partitions, substantially as described.

656,685. MACHINE FOR GRINDING EDGES OF LENSES. LOUIS WILHELM, Southbridge, Mass. Filed Apr. 17, 1900. Serial No. 13,264. (No model.)



Claim.—1. In a machine for grinding lenses, the combination with a work-head having a bearing-cam, of a gage having a series of sizer-plates imposed upon each other and against which said cam is adapted to bear, substantially as described.

2. In a machine for grinding lenses, the combination with a work-head having a bearing-cam, of an adjustable gage having a series of sizer-plates imposed upon each other against which said cam is adapted to bear, substantially as described.

3. In a machine for grinding the edges of lenses and the like, the combination of a sliding base, guideways therefor, and means to impart reciprocating motion thereto, a power-shaft in bearings on the base-plate, said power-shaft having pulleys, a gage secured to the base-plate and having a standard, a swinging head pivoted on said power-shaft, shafts having their bearings in said swinging head, and provided with heads to clutch and rotate a lens, said shafts having pulleys, and one of said shafts having a cam adapted to coact with the standard, and endless cords connecting the pulleys on the respective shafts, substantially as described.

4. In a machine for grinding the edges of lenses and the like, the combination of a sliding base, guideways therefor, a revoluble element, a pitman attached to said base-plate and adjustably connected to said revoluble element, a power-shaft in bearings on the base-plate, said power-shaft having pulleys, a gage secured to the base-plate and having a standard, a swinging head pivoted on said power-shaft, shafts having their bearings in said swinging head and provided with heads to clutch and rotate a lens, said shafts having pulleys, and one of said shafts having a cam adapted to coact with the standard, and endless cords connecting the pulleys on the respective shafts, substantially as described.

5. In a machine for grinding the edges of lenses and the like, the combination of a sliding base, guideways therefor, and means to impart reciprocating motion thereto, a power-shaft in bearings on the base-plate, said power-shaft having pulleys, an adjustable gage secured to the base-plate and having a standard, a series of sizer-plates imposed upon each other and carried by said standard, a swinging head pivoted on said power-shaft, shafts having their bearings in said swinging head and provided with heads to clutch and rotate a lens, said shafts having pulleys and one of said shafts having a cam adapted to coact with the sizer-plates on the standard, and endless cords connecting the pulleys on the respective shafts, substantially as described.

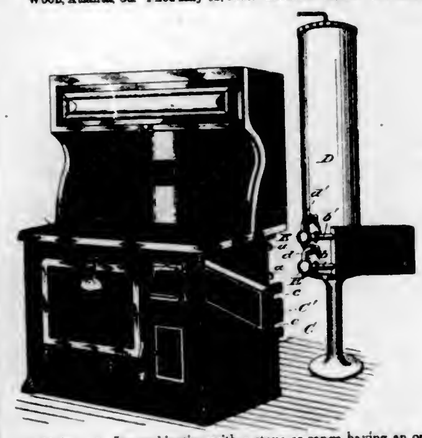
656,686. STREET-BROOM. JULIUS WOLF, New York, N. Y. Filed Oct. 5, 1899. Renewed July 2, 1900. Serial No. 22,307. (No model.)



Claim.—1. The combination with the broom-head and the handle, of a tang for the handle having a foot-piece provided with one or more stud-pins on its bearing-face, a washer-plate secured to the broom-head by spurs adapted to prevent it from turning thereon, and having one or more holes for the stud-pins of the foot-piece, and a clamping bolt and nut securing the foot-piece to the washer-plate and the broom-head.

2. The combination with the broom-head and handle, of a tang for the handle having a foot-piece provided with one or more stud-pins on its bearing-face, a bolt and nut for securing the foot-piece to the broom-head, a scraper having a slotted tongue-flange adapted to be inserted under the foot-piece and secured by the bolt and nut, and provided with a hole for a stud-pin of the foot-piece, and one or more flanges adapted to be bolted to the sides of the broom-head.

656,687. WATER-BACK FOR STOVES OR RANGES. WALTER J. WOOD, Atlanta, Ga. Filed May 12, 1900. Serial No. 16,451. (No model.)



Claim.—1. In combination with a stove or range having an opening through one of the side walls thereof, a door for closing the opening, a stand-boiler having a water-back connected directly thereto by swinging couplings so as to be moved into the fire-pot of the stove, the door being adapted to close the opening through the wall of the stove and when the water-back is removed from the fire-pot to form one of the walls thereof, substantially as set forth.

2. The combination with a stove or range and its fire-pot, of a water-back, stand-boiler, and means for connecting the water-back to the stand-boiler said means comprising pipes and interposed swing-couplings, an opening through an exterior wall of the stove of a size to admit the entrance of the water-back to the fire-pot, a door secured to the stove adjacent to the opening, said door serving to hold the water-back in the fire pot and form one of the walls of the fire-pot when the water-back is swung beyond the stove, substantially as shown.

3. In combination with a stove or range having an opening through one of the outer walls thereof, a door attached to the stove to close the opening and serve as one of the walls of the fire-pot, of a water-back having pipes and swing-couplings, the pipes being of such a length and the couplings being so positioned with respect to the fire-pot and the opening through the wall of the stove that the water-back may be swung into the fire-pot or entirely beyond the stove, substantially as shown.

4. In combination with a stove or range, having an openong through one of the exposed walls thereof which opening is adjacent to the fire-pot, a door for closing said opening and when closed providing a wall for the fire-pot, of a stand-boiler and water-back connected to each other by pipes and swing-couplings as shown, the length of the pipes and position of the swing-couplings being such that the water-back may be swung horizontally into the fire-pot or entirely beyond the stove or range, for the purpose set forth.

5. The combination with a stove or range, having an opening through one of its exposed walls, a door therefor hinged to the stove said door having a fire-wall, of a stand-boiler, water-back, pipes and swing-couplings with cut-offs for connecting the water-back with the boiler, the swing-couplings being so positioned that the water-back may be swung horizontally into the fire-pot of the stove and be retained therein when the door is closed or swung beyond the stove, one position of the water-back when beyond the stove cutting off the water-supply, other positions permitting a circulation of water between the stand-boiler and the water-back, substantially as set forth.

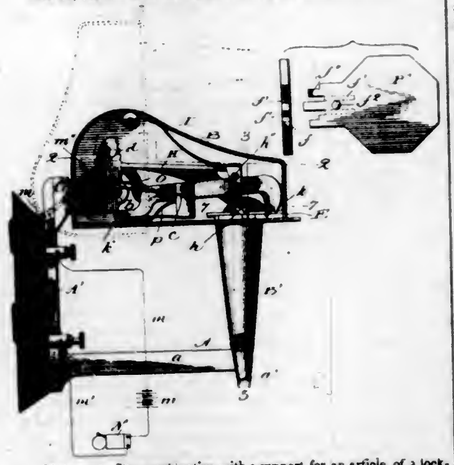
6. The combination in a stove or range having an opening in one of its exposed walls, a door hinged to the stove and adapted to close the opening said door having a concave plate which serves as a wall for the fire-pot, of a stand-boiler and water-back connected by pipes and swing-couplings so that the water-back may be swung through the opening into the fire-pot and when therein will be engaged by the plate attached to the door, substantially as shown and for the purpose set forth.

7. In combination with a stove or range having an opening through one of the side walls thereof and adjacent to said opening a slide with tongues, a door hinged to the stove said door having a projecting end portion with recesses, of a stand-boiler and a water-back connected thereto by pipes and swing-couplings so that the water-back may be swung into the fire-pot of the stove, the recesses in the projecting portion of the door partially surrounding the inlet and outlet pipes of the water-back, the tongues of the slide filling the recesses when the water-back is positioned beyond the stove and the door is closed, substantially as shown.

8. In combination with a stove or range having an opening through one of the side walls thereof, a door hinged to the stove for closing the opening, said door on the end opposite the hinges having a projecting portion with recesses, a stand-boiler having a water-back connected directly thereto by swinging couplings so as to be moved horizontally in the arc of a circle into the fire-pot of the stove, the door being adapted to close the opening through the wall of the stove and retain the water-back in the stove, substantially as shown and for the purpose set forth.

9. In combination with a stove or range having an opening through one of the side walls thereof, of a stand-boiler and a water-back connected to each other the connecting means including swinging couplings, whereby the water-back may be swung into the fire-pot or beyond the stove, a door hinged to the stove to close the opening leading to the fire-pot said door having a portion which projects at right angles and is recessed to partially surround the inlet and outlet pipes of the water-back, substantially as shown.

656,688. LOCKING COAT-HOOK. JOHN C. BACKUS, Smethport, Pa., assignor of one-half to William H. Hungerford, same place. Filed June 13, 1899. Serial No. 720,392. (No model.)



Claim.—1. The combination with a support for an article, of a locking device therefor, a signal, and means operated by the article being supported for controlling the signal, substantially as set forth.

2. The combination with a support for an article, of a locking device therefor, an electric signal, and means operated by the article being supported for controlling the circuit in which the said signal is arranged, substantially as set forth.

3. The combination with a support for an article, of a movable locking device for confining the article on such support, an electric signal, a circuit in which the signal is included, and means operated by the article being supported for controlling the circuit, the said means being brought into operative relation when the locking device is moved into position to hold the article, whereby should the article be disturbed while the locking device is in such position, a signal will be made, substantially as set forth.

4. The combination of a support adapted to receive a garment, of a locking device for such support to confine the garment thereon, an electric signal, and means controlled by the garment and brought into operation when the locking means are in proper position for confining the garment upon the support, for controlling the circuit of the signal, such means being arranged to be operated to give a signal should the garment be removed without first properly unlocking the said locking device, substantially as set forth.

5. The combination with a support for an article, of a locking device for confining it on such support, an electric signal, a circuit in which the said signal is located, a contact making and breaking device for the electric circuit, a spring for operating the said device in one direction, and means controlled by the article being held for operating it in the opposite direction, substantially as set forth.

6. The combination with a support adapted to receive a garment or the like, a movable case containing a locking device adapted to hold the article upon the support, an electric signal, a circuit in which the signal is included, a circuit-breaker within the said case arranged to be held in position to break the circuit under normal conditions, and means for automatically making contact and completing the circuit, thereby giving a signal, under abnormal conditions, substantially as set forth.

7. The combination with a support for an article, of a lock therefor, means for retaining the key in the lock when the latter is in normal condition of disuse, an electric signal, and means for causing the signal to operate when the key is removed from the lock under abnormal conditions that is to say, without the lock being brought into locking position, substantially as set forth.

8. The combination with a lock, of an electric signal, a circuit in which the signal is situated, and means, arranged within the case of the lock, situated in the path traversed by the key when being inserted into the lock, and arranged to be moved to control the circuit by the insertion and removal of the key which operates the lock, substantially as set forth.

9. The combination with a lock, of an electric signal, a circuit in which the signal is situated, and a spring-actuated, circuit-closing means situated within the case of the lock, and tending normally to close the circuit and operate the signal, and arranged to be moved by the key whenever inserted into the lock to break the circuit, substantially as set forth.

10. The combination with a lock, of an electric signal, a circuit in which said signal is situated, and a circuit-closing lever arranged within the case of the lock adapted to close and open the circuit of the said signal situated in front of the key-opening, and in the path of the key and arranged to be operated by the normal insertion and removal of the key into and from the lock, substantially as set forth.

11. The combination with a lock mechanism, a casing therefor mounted upon a pivotal support about which it is adapted to turn, an electric circuit, a device for opening and closing the said circuit substantially concentric with the pivotal support of the lock-case, and arranged to be operated by the key of the lock, substantially as set forth.

12. The combination with the casing, and the lock mechanism mounted therein, of an electric circuit having its terminals within the casing, a lever, O, mounted within the casing and arranged to open and close the circuit, the said lever extending into the path of the key, whereby it is engaged and operated when the key is inserted into the lock, and a spring for operating the said lever, substantially as set forth.

13. The combination of a casing pivoted to a fixed support about which it is adapted to move, a lock mechanism mounted therein, an electric circuit having one terminal supported by the fixed support of the lock-casing, and the other carried by the lock-casing, and a contact-making lever, O, having an end, o', substantially concentric with the pivot of the casing and arranged to make contact with the fixed terminal of the circuit, the lever also having an arm or portion adapted to be operated by the key, substantially as set forth.

14. The combination with a support for an article, of a locking device therefor, a signal, an electric circuit for operating the signal, means operated by the article being supported for controlling the circuit in which the said signal is arranged, and means operated by the key of the locking device for controlling the circuit, substantially as set forth.

15. The combination with a support for an article, of a locking device therefor, a casing inclosing the locking device, a signal, an electric circuit for operating the signal, means situated within the said casing and operated by the key of the locking device for controlling the said circuit, and means outside of the said casing and adapted to be operated by the article being supported for controlling the circuit, substantially as set forth.

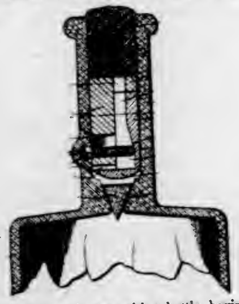
16. The combination with a support for an article, of a locking mechanism, a pivoted case in which the same is mounted, a hollow projection

carried by the case and adapted to confine an article upon the said support, an electric signal, a circuit in which the signal is included, means within the casing for closing and opening the circuit, and a rod for operating such means extending through the said projection and adapted to engage with the article being held, substantially as set forth.

17. The combination of a bracket or lug, C, provided with a projection, D, a case, B, pivoted to the said bracket or lug so as to inclose such projection whatever be the positions into which the case may be moved, and a pivoted locking-bolt, H, arranged within the casing and adapted to engage with the said projection of the bracket or lug to which the case is pivoted, substantially as set forth.

18. The combination of a pivoted locking-bolt, a key-confining lever K, a contact-lever, O, the said parts being arranged to be engaged by a key, a casing inclosing the said parts, an abutment with which the said locking-bolt engages, and an electric contact with which the said lever O engages, substantially as set forth.

656,689. BOTTLE-STOPPER. NATHANIEL G. BALDWIN, Washington, Pa. Filed Feb. 7, 1900. Serial No. 4,385. (No model.)



Claim.—1. The combination with a bottle, having a valve-seat in the neck thereof, of a valve loosely seated upon the valve-seat, a sectional protecting-plug received within the neck, and a locking device engaging both plug-sections and also having an interlocked connection with the neck of the bottle.

2. The combination with a bottle, having a valve-seat in the neck thereof, of a valve loosely seated therein, a sectional protecting-plug received within the neck, and a locking-pin engaging both plug-sections and also received within a socket formed in the bottle-neck.

3. The combination with a bottle, having a valve-seat in the neck thereof, and a valve loosely seated therein, of a sectional protecting-plug, one of the sections having a longitudinal groove, and the other section having a transverse slot, and a locking-pin extending transversely through the slot, having one end received within the groove of the other section, and its opposite end received within a socket formed in the bottle-neck.

4. The combination with a bottle, having a valve-seat in the neck thereof, and a valve loosely seated therein, of a sectional protecting-plug, one of the plug-sections having a longitudinal groove, provided with an enlargement, the other plug-section having a transverse slot communicating with the groove, and a locking-pin extending in opposite directions through the slot, the inner end of the pin being received within the enlargement of the groove, and the opposite outer end being received within a socket formed in the bottle-neck.

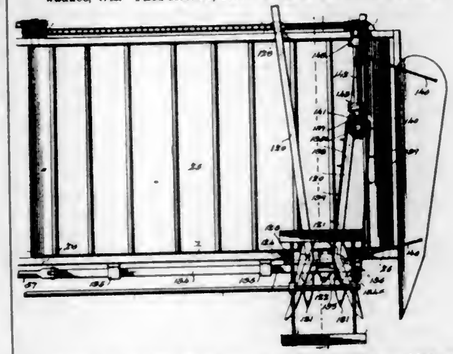
5. The combination with a bottle, having a valve-seat formed in the neck thereof, and a valve loosely mounted upon the valve-seat, of a protecting-plug, comprising longitudinal sections, one of the latter having a longitudinal groove in its inner face, and the other section having a head overlapping the outer end of the former section, and having an opening alined with the outer end of the groove.

6. The combination with a bottle, having a valve-seat formed in the neck thereof, and a valve loosely mounted in said seat, of a protecting-plug, comprising longitudinal sections, one of the latter having a transverse foot at its inner end, said foot being provided with an opening or perforation, and the inner face of the section having a longitudinal groove, the other section having a transverse head resting upon the outer end of the former section, and also terminating short of the foot thereof, the head having an opening or perforation alined with the outer end of the groove.

7. The combination with a bottle, having a valve-seat formed in the neck thereof, and a valve loosely fitting said seat, of a protecting-plug, comprising a pair of longitudinal sections, one section having a longitudinal groove formed in its inner face and provided with an enlargement at its lower end, and a lateral foot provided with a perforation or opening, the other section having a lateral head resting upon the outer end of the former section, said head having an opening alined with the outer end of the groove, and said section also having a transverse slot communicating with the enlarged portion in the groove, and a locking-pin extending in opposite directions through the slot, the inner end of the pin being received within the enlargement of the groove, and the outer end of the pin being received within a socket formed in the bottle-neck.

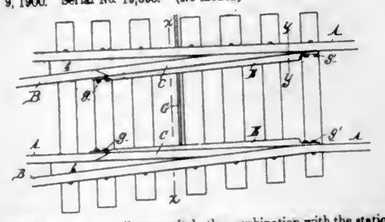
8. The combination with a bottle, having a valve-seat in the neck thereof, of a valve for the valve-seat, a sectional protecting-plug, and a weighted locking-pin engaging both sections of the plug, the weighted end of the pin being seated within a socket formed in the bottle-neck.

656,690. HARVESTING-MACHINE. HENRY BRACKEBUSH, Pack waukee, Wis. Filed Mar. 20, 1900. Serial No. 9,427. (No model.)



Claim.—A corn-harvesting attachment for harvesting-machines of the class designed for harvesting wheat and the like grain, said corn-harvesting attachment comprising a pair of rearward-diverging frames having forward-diverging guide-arms at their proximate front ends, a plate connecting the front portion of said frames and adapted to be secured on the front side of the platform-frame of the harvester, a cutting mechanism carried by said plate, said cutting mechanism being adapted to be connected to and actuated by the pitman of the harvester, a plate connecting the rear portion of the harvester-attachment frames, said plate being adapted to be secured to the rear side of the harvester-platform frame, an endless traveling feed-chain and operating mechanism therefor, carried by one of the frames of said corn-harvesting attachment and an operating-shaft for said endless traveling feed-chain, said shaft being mounted on said frame and adapted to be connected to and receive power from a shaft of the harvester, substantially as described.

656,691. RAILWAY-SWITCH. THORN COPEMAN, Edgar Mills, Canada, assignor of one-third to Joseph Waite, same place. Filed June 9, 1900. Serial No. 19,695. (No model.)



Claim.—1. In a railway-switch, the combination with the stationary rails of a main line and siding, of vertically-movable switch-point rails held in vertical guide-bearings in line with the inner rails at their junction with the outer rails, cam-rollers interposed between the same and the ties in alternate positions to support said switch-point rails, one at the level of the stationary rails and one below, and means for simultaneously revolving said cam-rollers, each cam-roller being coextensive with the switch-point rail and seated against a continuous bearing formed on the under side of the switch-point rail free to be revolved on said bearing from one position into an alternate position.

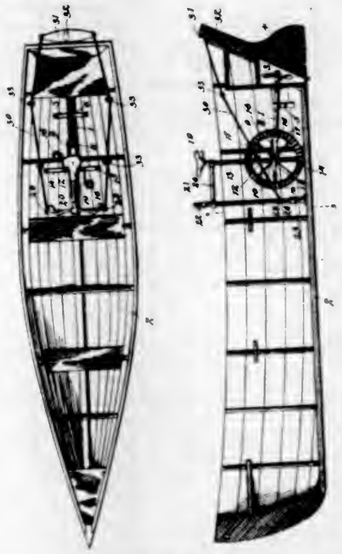
2. In a railway-switch, the combination with the stationary rails of a main line and siding, of vertically-movable switch-point rails held in vertical guide-bearings in line with the inner rails at their junction with the outer rails, cam-rollers interposed between the same and the ties and forming continuous bearing or seat for the switch-point rails, one beneath

one switch-point rail in position to support the same at the level of the stationary rails and the other in alternate position beneath the other switch-point rail and supporting the same at a lower level, each cam-roller having a circular roller portion and each switch-point rail having a continuous seat formed on the under side for said roller portion on which the cam-roller is adapted to be rotated, both cam-rollers being connected for simultaneous operation by the switch-rod.

3. In a railway-switch, the combination with the stationary rails of a main line and siding, of the vertically-movable switch-point rails C, held in vertical guide-bearings in line with the inner rails, one at the level of the stationary rails and one at a lower level, the cam-rollers D eccentrically journaled to the under side of said switch-point rails and supporting the same directly upon the ties, in alternate positions of said cam-rollers, the arms F on the cam-rollers connected to the switch-operating rod, and the housing-plates E having the ribs *f* adapted to operate as a fulcrum for the cam-rollers, all substantially as described.

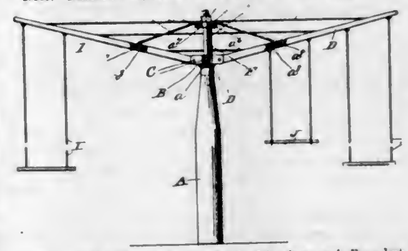
4. In a railway-switch, the combination with the stationary rails A, B, of the vertically-movable switch-point rails C, the cam-rollers D upon which said switch-point rails are mounted free to rotate said cam-rollers to support the switch-point rails upon the ties in alternate positions of said cam-rollers, one level with the stationary rails and the other below said level, the arms F on said cam-rollers, the switch-rod to which they are connected, and the housings E provided with the ribs *f*, the aforesaid cam-rollers composed of the roller portions *a* and cam portions *b* forming between them a longitudinal groove into which said ribs *f* project to operate as a fulcrum in rotating the cam-rollers.

656,692. BOAT PROPELLING AND STEERING MECHANISM. ROBERT S. DICKINS, Enterprise, Fla. Filed Oct. 30, 1899. Serial No. 735,251. (No model.)



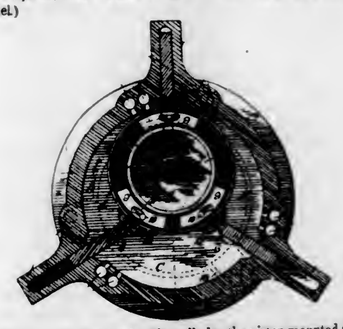
Claim.—In a device of the class described, the combination of a boat provided at the lower portion of its stern with an inwardly-extending recess, the upper portion of the stern being arranged at a slight inclination, a rudder having an inclined inner edge fitting against the inclined upper portion of the stern and connected to the latter at the top and bottom thereof, the forked standard provided with diverging lower portions and having upturned outwardly-inclined terminals secured to the boat at opposite sides thereof, a steering-post located in advance of the standard, the horizontal brace 20 connecting the upper portions of the standard and the post, the substantially V-shaped front bearing supporting the lower portion of the post and having upturned inclined terminals secured to the sides of the boat, the V-shaped rear bearing provided at its apex with a bearing-opening and having upturned inclined terminals secured to the boat, the propeller-shaft arranged in the rear bearing and extending through the lower portion of the stern of the boat and provided with a propeller located in the said recess, a crank-shaft journaled in suitable bearings of the forked portion of the standard, gearing connecting the shafts, and connections between the rudder and the steering-post, substantially as described.

656,693. CLOTHES-DRIER. SANFORD V. DOUGLAS, Bloomington, Nebr. Filed Feb. 14, 1900. Serial No. 5,181. (No model.)



Claim.—In a clothes-drier, a standard having a spindle, a hub provided with pivoted arms, and having a recess on its upper surface; a plate provided with holes, and having a recess on its under surface, said hub and plate both mounted on said spindle, a detachable rod one end adapted to be seated in the recess of the hub, and the opposite end in the recess of the plate, braces connecting the pivoted arms with the plate and a nut adapted to be secured on the top of said spindle to hold the ends of said rod in the recesses of the plate and hub, substantially as shown and described.

656,694. ROTARY ENGINE. JAMES M. EVANS, Marquette, Mich. Filed Apr. 25, 1899. Renewed Jan. 31, 1900. Serial No. 3,519. (No model.)



Claim.—1. In combination, the cylinder, the piston mounted therein, the sliding partitions, the blocks carried by said piston, said piston being movable independently thereof and the loose connection between said partition and said blocks to permit the inner ends thereof to move longitudinally of said blocks.

2. In combination, the cylinder, the piston mounted therein, the blocks carried by said piston, said piston moving independently of the same, the partition guided in the cylinder-wall, and the pin-and-slot connection between said partitions and said blocks.

3. In combination, the cylinder, the piston mounted therein, the block carried by said piston, said piston moving independently of the same, the partitions, the shoes having a pivotal connection to said partition and a bearing on said piston, said blocks having curved slots therein and pins extending from said partition into said slots.

4. In combination, the cylinder, the piston mounted therein, the block carried by said piston, the partitions guided in said cylinder having legs extending on each side of the piston, a bearing-shoe pivotally connected between said legs to said partitions and pins extending inwardly from said legs engaging said block.

5. In combination, the cylinder, the piston mounted therein, the plurality of blocks slidable in a recess in the piston, the partitions and the connection between the same and the blocks, said blocks moving independently of each other.

6. In combination, the cylinder, the piston mounted therein having an annular recess in each face thereof, a packing-ring fitted to each of said recesses having an annular recess in the same, blocks held in said recesses in the packing-ring, the partitions, shoes carried thereby bearing on said piston and pins also carried by said partitions having a loose engagement with said blocks.

7. In combination, the cylinder, the piston, the inlet and exhaust ports, the steam-chest secured to each cylinder-head and the extension therefrom projecting beyond the periphery of the same inclosing and communicating with said ports.

8. In combination, the cylinder, the piston, the plurality of inlet and

exhaust ports in the cylinder-wall, the steam-chest secured to each head within the compass of said ports and the series of independent extensions leading from each chest and communicating with and inclosing the adjacent ports, substantially as described.

9. In combination, the cylinder, the crank-shaft, the piston, the ports leading through the cylinder, the steam-chest communicating with the same and the valves carried by said shaft located outside of the steam-chests in between the front plates thereof and the cylinder-heads adapted to control the communication between the chests and said ports.

10. In combination, the cylinder, the piston, the ports leading through the cylinder-wall, the steam-chests communicating with the same and the rotary valve located outside of the steam-chest, said valve being interposed between said chest and the cylinder-head adapted to control said communication.

11. In combination, the cylinder, the piston, the ports leading through the cylinder-wall, steam-chests having openings in alinement with each of said ports, rotary disk valves controlling said openings and ports and contacting plates located contiguous to said openings and ports adapted to make a steam-tight fit around said ports and openings between the steam-chests and cylinder-heads and the valves with means for maintaining a constant pressure on said plates.

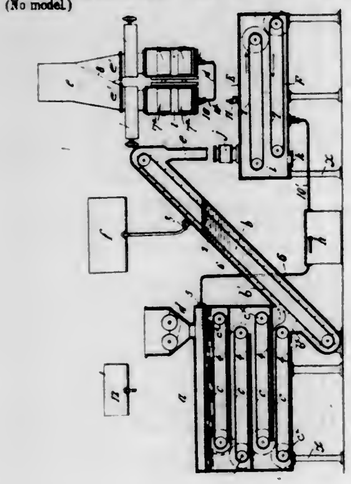
12. In combination, the cylinder, the piston journaled therein, the steam-chest secured to each head of said cylinder, ports in said cylinder and alining openings in said steam-chest, a rotary disk valve interposed between the cylinder-heads and the steam-chests, contacting plates carried by the chest and head, flexible diaphragm adapted to control said plates and means for maintaining pressure on said diaphragm.

13. In combination, the cylinder, the piston journaled therein, the steam-chest secured to each head of said cylinder, ports in the cylinder and openings in the steam-chests alining therewith, a rotary disk valve interposed between the cylinder-heads and the steam-chests, a flexible diaphragm carried by the chest and cylinder-head, contacting plates controlled by said diaphragms and nipples carried by said plates extending through the diaphragms and forming steam-ducts between their peripheries and the wall of said steam-ports and openings, said ducts leading to the rear of said diaphragms.

14. In combination, the cylinder, the piston having an annular recess in each face thereof, a packing-ring seated in each recess, a steam-port leading from the periphery of the piston radially a short distance within the periphery thereof and branch ports leading from said radial port to each recess in the rear of the packing-ring therein and a valve controlling said radial port located at the junction of the branch port therewith.

15. In a rotary steam-engine and in combination, a cylinder having a central shaft, a circular revolving piston mounted upon the crank of the shaft within said cylinder, and arranged to bear upon the inner periphery of the cylinder in the revolution of the shaft, a plurality of sliding partitions subdividing the steam-space between the piston and the walls of the cylinder, inlet and exhaust ports for each subdivision formed by said partitions and valve mechanism, all substantially as set forth.

656,695. APPARATUS FOR DEGREASING WOOL. MAXIMILIEN A. JACQUES, Salome, France. Filed Feb. 24, 1900. Serial No. 6,389. (No model.)



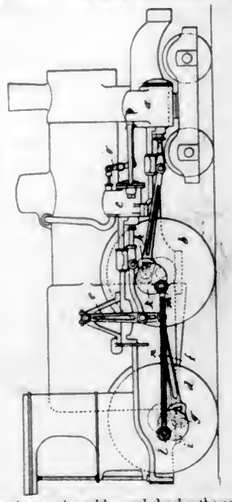
Claim.—In combination in an apparatus for scouring wool, a washing vessel *a*, carrier-belts therein moving in opposite directions, baffle-plates between the belts, a pair of vessels to which the material is passed from the washing vessel, a casing and a carrier arranged between the said washing vessel and the pair of vessels, said casing terminating in a funnel, and a hinged register in the said funnel by which the casing and carrier can be placed in communication with either one of the pair of vessels, substantially as described.

656,696. ARTIFICIAL STONE. JESSE W. JOHNSON, Buffalo, and ALBERT S. HENDRIX, Thornton, Tex.; said Hendrix assignor to said Johnson. Filed Oct. 21, 1899. Serial No. 734,361. (No specimens.)

Claim.—1. The process of manufacturing artificial stone having an ornamental surface, which consists in molding part of a body portion of Portland cement and coarse flint-sand in a plastic condition; completing the molding of the body portion of Portland cement and fine flint-sand in a plastic condition; then striking off the exposed surface of the last-molded portion, upon which the ornamentation is to be produced, and allowing the material to set; subsequently engraving the characters forming the ornamentation in the surface of the last-molded portion and allowing the stone to harden; subsequently applying to the unornamented surfaces of the stone a liquid coating of Portland cement and air-slaked lime and finally applying to the entire surface of the stone, a mixture comprising flake zinc ground in oil, and linseed-oil.

2. The process of manufacturing artificial stone, which consists in molding part of a body portion of Portland cement and flint-sand; completing the molding of the body portion with a surface layer of Portland cement and flint-sand wherein the proportion of cement is greater and of sand is less than in the first-named mixture; then smoothing the surface of the last-named mixture and allowing the same to set; then engraving the ornamentation in the surface of the last-molded portion and subsequently, after allowing the stone to set, applying a liquid coating of cement and air-slaked lime to the unornamented portions, and finally applying a coating to all surfaces of oil and a pigment.

656,697. FOUR-CYLINDER LOCOMOTIVE-ENGINE. ANATOLE MALLET, Paris, France. Filed Jan. 9, 1900. Serial No. 861. (No model.)



Claim.—In a locomotive with coupled axles, the combination of four cylinders, all placed on the outside and arranged in two groups, each arranged to actuate a different axle, the two cylinders at each side of the engine being arranged one before the other at different heights and having their axis on the same vertical plan, an ordinary pitman connecting the front cylinder *a* to its axle *b* and a connection from piston of the rear cylinder *c* to its axle *d* comprising a lever of the third order *e*, which brings the piston-rod of this cylinder over the revolving parts of the front driving-axle, while the two driving-axles at either side may have their cranks keyed at any position in relation to each other, as described.

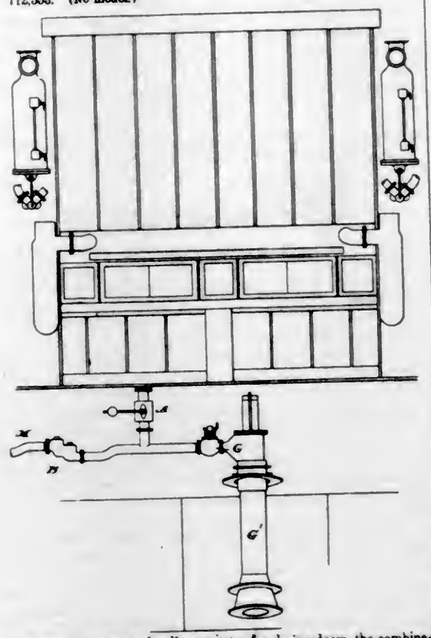
656,698. BOTTLE-STOPPER. CHARLES MARCHAND, New York, N. Y. Filed May 22, 1900. Serial No. 17,592. (No model.)

Claim.—1. In combination with a bottle, a bottle-stopper consisting of an elastic body having a central cavity, a closing-wall for said cavity, integral with said body and having its bottom rectangular to its sides, the periphery of said wall being constructed to be wholly supported by the neck of said bottle and having a puncture through said wall, with the flat-top stopper-head extended horizontally beyond the body of said stopper substantially as described.



2. The combination of a bottle, and a bottle-stopper consisting of an elastic body having a central cavity closed by a wall having a puncture therethrough, the periphery of said wall bearing wholly against the interior surface of the neck of said bottle, and a head extending around said body, and projections upon said head; with a plug within the cavity of the stopper, and having its head resting upon the top projections of the elastic head, substantially as described.

656,699. HYDRAULIC DOOR-SHUTTING DEVICE. MACARIUS PAIDASSY, St. Petersburg, Russia. Filed Apr. 10, 1899. Serial No. 712,553. (No model.)



Claim.—1. In a hydraulic apparatus for closing doors, the combination with the operating-cylinder and the source of supply with a main pipe connecting said source and cylinder, of means for filling up said pipe before communicating the pressure from said source of supply, substantially as described.

2. In a hydraulic apparatus for closing doors, the combination with a door, of an oscillating hydraulic cylinder operatively connected thereto, a plurality of cylinders carried by said door, flexible connections between said cylinders and the forward end of the door-operating cylinder, and locking-bolts operatively connected with the pistons of said cylinders on the doors, substantially as described.

656,700. BATTERY-BOX. LEON W. PULLEN, Camden, N. J., assignor to the Pullen Battery and Electrical Manufacturing Company, of New Jersey. Filed Sept. 16, 1899. Serial No. 730,668. (No model.)

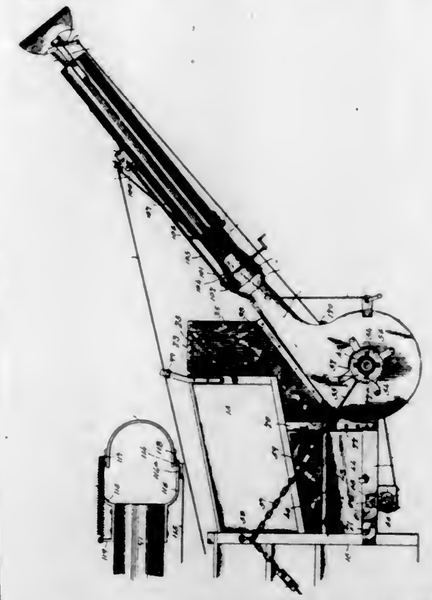
Claim.—1. A battery-box consisting of a box-shaped body structure constructed of asbestos in a previously-formed sheet and impregnated and completely coated with an insulating compound of asphaltum.



2. A battery-box consisting of a box structure having its walls built up of a thin sheet of asbestos completely coated on both sides and impregnated with asphaltum or equivalent insulating and waterproof substance and wrapped upon itself in tubular form, whereby the body of the completed box is several plies in thickness and coated both on inside and outside with an insulating and waterproof compound.

3. As a new article of manufacture, a battery-box consisting of a tubular-shaped structure formed of an asbestos sheet and having the bottom slit and closed by overlapped extended lower ends, and the entire asbestos structure impregnated and coated with an insulating compound.

656,701. PNEUMATIC STRAW-STACKER. WILLIAM J. RANDOLPH, Jennings, La. Filed Oct. 20, 1899. Serial No. 734,249. (No model.)



Claim.—1. In a pneumatic straw-stacker, the combination with a casing or hood, of a shaft carrying the fans and a beater, and suspension devices connected with the shaft-bearings and provided with take-up devices adapted to relieve the stacker casing or hood from the weight and strain of said shaft, substantially as described.

2. In a pneumatic straw-stacker, the combination with a threshing-machine or separator, of a stacker casing or hood attached to said thresher or separator and having the beater and fan casings, a shaft journaled in the fan-casings and carrying the beater and the fans, and suspension devices connected to the thresher or separator and the shaft-bearings, said suspension means having extensible take-up devices, whereby the stacker casing or hood is relieved of the weight and strain of the shaft and the beater and fans thereon, substantially as described.

3. In a pneumatic straw-stacker, the combination with a threshing-machine or separator, of a stacker casing or hood attached to said thresher and having a fan-casing, a fan-shaft, shaft-bearings on the fan-casing, and suspension devices fastened adjustably to the thresher or separator and connected with said shaft-bearings, for the purpose described, substantially as set forth.

4. In a pneumatic straw-stacker, the combination with a stacker or separator, of a stacker casing or hood attached thereto and having a fan-casing, shaft-bearings fast with the fan-casing, extensible suspension devices connected to the shaft-bearings and attached to the thresher or separator, and a shaft mounted in said bearings, substantially as described.

5. In a pneumatic straw-stacker, the combination with a thresher or separator, of a stacker frame or hood attached to the thresher or separator and having fan-casings, sleeve-bearings provided with enlargements and passing through the fan-casings, a shaft fitted to said sleeve-bearings, a pair of plates fixed to each fan-casing and embracing the enlargement of the sleeve-bearings, rods each clamped between a pair of said plates, and extensible suspension devices attached to the rods and to the thresher, substantially as described.

6. In a pneumatic straw-stacker, the combination of the fan-casings, pairs of plates secured to opposite sides of said casings, a shaft, bearing-sleeves fitted to the shaft and confined within said pairs of plates, suspension-rods held between said pairs of plates, and extensible connections from said rods to a thresher or separator, substantially as described.

7. In a pneumatic straw-stacker, the combination of a stacker casing or hood having the fan-curbs, a fan-shaft, bearings for said shaft secured to the fan-curbs, suspension-rods attached to the bearings, and suspension-chains having adjustable connection with said rods, substantially as described.

8. In a pneumatic straw-stacker, the combination with a thresher or separator, and a cleaning-shoe, of a bottomless casing or hood, the spaced fan-casings, a horizontal beater-casing connecting said fan-casings, the shaft carrying the fans and a beater, a chaffing-tray disconnected from said cleaning-shoe and discharging to the beater-casing, and means for supporting and operating said chaffing-tray independently of the cleaning-shoe, said chaffing-tray and its supporting devices being removable from the bottomless casing or hood, substantially as described.

9. In a pneumatic straw-stacker, the combination with a thresher or separator, and a cleaning-shoe, of a bottomless casing or hood, the spaced fan-casings, a horizontal beater-casing connecting said fan-casings, a shaft carrying the fans and a beater, a chaffing-tray supported removably at one end by the casing or hood and having its other end slidably fitted to the beater-casing, and connections between the fan-shaft and the chaffing-tray to vibrate the latter, said chaffing-tray and its supporting devices being removable through the bottomless casing or hood, substantially as described.

10. In a pneumatic straw-stacker, the combination of a bottomless casing or hood, the spaced fan-casings, a horizontal beater-casing connecting said fan-casings, a shaft carrying a beater and the stacker-fans, alined shaft-bearings secured removably to the bottomless casing or hood, a chaffer-shaft journaled in said bearings and removable therewith from the casing or hood, a chaffing-tray supported at one end by the beater-casing and connected near its other end with the chaffer-driving shaft to be supported and actuated thereby, and connections between the fan-shaft and the chaffer-shaft, substantially as described.

11. In a pneumatic straw-stacker, the combination with a stacker casing or hood, of a fan-casing having an extended lip, a fan-shaft, a chaffer-driving shaft supported by the stacker casing or hood, and a chaffer-tray slidably fitted at one end on the lip of the fan-casing and connected operatively at its other end to the chaffer-driving shaft to be supported and actuated thereby, substantially as described.

12. In a pneumatic straw-stacker, the combination of a bottomless casing or hood, the alined fan-casings, a beater-casing connecting said fan-casings, a shaft having a beater and the fans, hanger-bearings attached to the casing or hood, a chaffer-shaft journaled in said hanger-bearings and provided with eccentrics, a chaffer-tray arranged to deliver to the beater-casing, eccentric blocks secured to the chaffer-tray and embracing the eccentrics of said shaft, and connections between the fan-shaft and the chaffer-shaft, substantially as described.

13. In a pneumatic straw-stacker, the combination of a stacker casing or hood having the side doors and supporting the fan casings or curbs, hanger-bearings secured removably to the stacker-casing, a chaffer-tray resting at one end on the fan-casing, a shaft journaled in the hanger-bearings for removal therewith, and connections between said shaft and the tray for shaking the latter, substantially as described.

14. In a pneumatic straw-stacker, a bottomless hood or casing comprising the sills, the posts, a skeleton front frame having the cross-bars, the side and front curtains, and the door at the front of the hood and confined by the cross-bars of said frame, in combination with fan and beater casings attached to the posts and skeleton frame, a shaft carrying a beater and a fan, a chaffing-tray closing the bottom of the hood between the sills, and extensible suspension devices connected with bearings of the fan-shaft, substantially as described.

15. In a pneumatic straw-stacker, the combination with a beater-casing, oppositely-located fan-casings, and a shaft having fans within said fan-casings, of a beater located between the fans and provided with blades having propelling-surfaces which face toward the oppositely-located fans, substantially as described.

16. In a pneumatic straw-stacker, the combination with oppositely-located fans, and a shaft, of a beater carried by the shaft between the fans and having its blades provided with straw-propelling surfaces which face toward the oppositely-located fans, substantially as described.

17. In a pneumatic straw-stacker, the combination with a beater-casing and fan-curbs, of a shaft having fans located in said curbs, and a beater carried by the shaft and having its blades provided with curved propelling-surfaces which face toward the oppositely-located fans, substantially as described.

18. In a pneumatic straw-stacker, the combination with a shaft, and oppositely-located fans, of a beater carried by said shaft between the fans and having sets of blades arranged at different angles with relation to each other and having propelling-surfaces which overlap and face toward the oppositely-located fans, substantially as described.

19. In a pneumatic straw-stacker, the combination with a shaft, and oppositely-located fans, of a beater carried by said shaft between the fans and comprising sets of blades arranged in different angular positions on the shaft and having the inner ends thereof overlapping one another, the inner ends of the blades of each set being curved outwardly from the shaft and forming propelling-surfaces which face toward one fan, substantially as described.

20. In a pneumatic straw-stacker, the combination with a shaft and oppositely-located fans having the spiders thereof provided with extended lugs, of a beater carried by said shaft and having a plurality of blades grouped in pairs and in overlapping order at their inner ends, the outer ends of said blades being fastened to the spider-lugs and the inner ends thereof curved laterally to the plane of the shaft, substantially as described.

21. In a pneumatic straw-stacker, a telescopic stacker-tube comprising a non-slidable section, a telescopic section provided with a longitudinal slot, a bearing-plate fastened to the non-slidable section and passing through said slot, an adjusting-shaft, a guide on the bearing-plate, and an endless connection between said guide and the adjusting-shaft and provided with an arm which is fastened to the slidable section of the stacker-tube, substantially as described.

22. In a pneumatic straw-stacker, a telescopic stacker-tube having one member thereof provided with a longitudinal slot and a stiff flap fastened to the slotted tube for normally closing the slot therein, in combination with means for adjusting the slotted member endwise with relation to the non-slidable member, substantially as described.

656,702. CUE-TIP. THEODORE REMINGER, New Washington, Ohio. Filed Mar. 6, 1900. Serial No. 7,547. (No model.)



Claim.—1. The combination with a cue-stick, of an open-ended sleeve fitted to and exposing one end of the stick, and also having a longitudinally-adjustable connection therewith, a tip carried by the sleeve and normally located in frictional engagement with the said exposed end of the stick, and means for permitting of a lateral detachment of the tip when the latter is out of engagement with the cue-stick.

2. The combination with a cue-stick, of a removable sleeve, a laterally-removable tip carried by the sleeve, and also provided with a perforation or socket, and a pin projecting at the adjacent end of the cue-stick and for engagement with the perforation or socket in the tip.

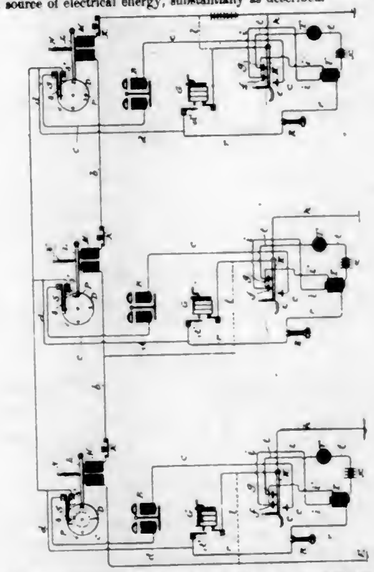
3. The combination with a cue-stick, of a removable sleeve, having a pair of opposite jaws at the outer end thereof, and a tip, which is laterally removably held between the jaws, and an interlocked connection between the tip and the adjacent end of the cue-stick, and to prevent lateral displacement in opposite directions at substantially right angles to the jaws.

4. The combination with a cue-stick, of a sleeve, which is open at opposite ends, removably fitted to one end of the cue-stick, and provided at its outer end with a pair of opposite jaws, a cue-tip laterally removably held between the jaws, and provided in its inner end with a central perforation or socket, and a pin projecting centrally outward from the adjacent end of the cue-stick and fitting the perforation or socket in the tip.

5. The combination with a cue-stick, having an exteriorly-screw-threaded stem, of an interiorly-screw-threaded sleeve removably fitted to the stem, open at opposite ends thereof, and provided with opposite fixed jaws at its outer end, each jaw having a lateral inwardly-directed flange at its outer end, a pin projecting outwardly at the adjacent end of the cue-stick and through the outer open end of the sleeve, and a tip, having opposite slots or grooves to receive the respective flanges, the inner portion of the tip being reduced in width to fit snugly between the jaws, and also provided with a central perforation for the reception of the pin.

656,703. TELEPHONE SYSTEM. FRANK G. RUGH, Briar Bluff, Ill., assignor of one-fourth to Wilson W. Adams, Atkinson, Ill. Filed June 28, 1899. Serial No. 722,172. (No model.)

Claim.—1. In a telephone system, a normally-closed main circuit a normally-open main circuit and a plurality of stations thereon, in combination with a signal at each station on the normally-open circuit, a telephone-receiver and an induction-coil in a shunt from the normally-open circuit at each station, a circuit containing a telephone-transmitter passing through the primary winding of each induction-coil, a selective mechanism and a circuit-breaker on the normally-closed circuit at each station, and a source of electrical energy, substantially as described.

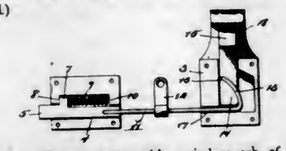


2. In combination with a rotatable disk, an escapement mechanism operated by an electromagnet for rotating said disk, a normally-closed circuit passing through the electromagnet, a circuit-breaker in the normally-closed circuit, a normally-open circuit containing a signal-bell and adapted to be closed by the rotary movement of the disk, an induction-coil, a telephone-receiver and the secondary winding of the induction-coil in a shunt from the normally-open circuit, a telephone-transmitter and the primary winding of the induction-coil in a local circuit, and a source of electrical energy, substantially as described.

3. The combination of a normally-closed electric circuit, a series of telephone-stations each containing a selective mechanism on the said circuit, a normally-open electric circuit, a series of circuit-closers on the open circuit adapted to be closed each by one of the selective mechanisms, a shunt-circuit from the closed circuit through a telephone-transmitter and the primary winding of an induction-coil at each station, a shunt-circuit from the closed circuit to the open circuit around each selective mechanism, a signal-bell circuit at each station adapted to form a part of the main open circuit, and a battery for furnishing energy to the several circuits.

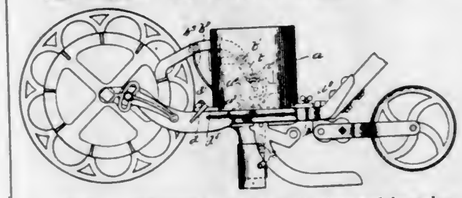
4. A telephone system having a plurality of stations, a normally-closed circuit and a normally-open circuit passing through said stations, a selective mechanism on the closed circuit at each station, a circuit-breaker or key also on the closed circuit at each station for operating the several selective mechanisms, a circuit-closer at each station operated by the selective mechanism for closing the normally-open circuit, a signal-bell at each station and a generator in the normally-open circuit, an induction-coil at each station, a telephone-transmitter and a battery in circuit with the primary winding of each induction-coil, a telephone-receiver and the secondary winding of each induction-coil in a shunt from the normally-open circuit, and a battery, substantially as described.

656,704. COMBINED SASH FASTENER AND LIFT. WILLIAM D. SNYDER, Gracedale, Pa. Filed Jan. 13, 1900. Serial No. 1,357. (No model.)



Claim.—The combination with a window-sash, of a combined fastener and lifter, comprising a casing secured to the lower rail of the sash and formed with a bolt-recess, and with shoulders 8 and 10; a second casing secured to the sash formed with a vertical recess 16 and a lateral recess 17; a bolt within the recess of the first-named casing formed with a projecting lug; a spring between said lug and the shoulder 10; a rod secured at one end to said bolt, and having its other end extended into the adjacent casing and bent to hook form; a movable finger-piece supported in the recess 16 and having a curved projection which is engaged by the hooked end of the rod; and a fixed thumb-piece overhanging the finger-piece.

656,705. SEED-PLANTER. CHARLES W. WARNER, Melrose, Mass. Filed Oct. 12, 1898. Serial No. 693,329. (No model.)



Claim.—1. In a planter, a frame, a headed bolt secured thereto having on it a shoulder above the frame, a seed-hopper mounted on said frame, having at one side an open slotted ear which astrides said shoulder, and having at the opposite side an ear, and a bolt passing through said ear having on it a thumb-nut, substantially as described.

2. In a planter, a headed bolt passing through the frame having on it a shoulder above the frame, a seed-hopper mounted on the frame having at one side an open slotted ear which astrides said shoulder, and having at its opposite side a perforated ear, and a seed-conducting shoe located beneath said frame having an open slotted ear at one side which astrides said bolt and having a perforated ear at the opposite side, and a bolt passing through the frame and through the perforated ears on the seed-hopper and a seed-conducting shoe, substantially as described.

3. In a planter, a frame, a bolt secured to said frame having on it a shoulder located beneath the frame, a seed-conducting shoe located beneath said frame having an open slotted ear at one side which astrides said shoulder and having a perforated ear at the opposite side, and a bolt passing through the perforation of said ear having on it a thumb-nut, substantially as described.

4. In a planter, a seed-hopper having an exit, a feed-regulating plate turning beneath said hopper having a number of different-sized holes through it adapted to be brought beneath the exit of the hopper, teeth formed on said plate and a pivoted sector engaging said teeth, substantially as described.

5. In a planter, a seed-hopper having an exit, a feed-regulating plate turning beneath said hopper having a number of differently-sized holes through it adapted to be brought beneath the exit of the hopper, teeth formed on said plate and a pivoted sector engaging said teeth having characters thereon adapting it to serve as an indicator, substantially as described.

6. In a planter, a seed-hopper having an exit, a perforated feed-regulating plate beneath said hopper, a pivoted sector engaging said plate having a slot, and a thumb-screw for holding said sector in any desired position to vary the size of the exit, substantially as described.

7. In a planter, a seed-hopper, an agitating-finger within it, a support therefor and means for securing said support to the side wall of the hopper and for adjusting it to different elevations, substantially as described.

8. In a planter, a seed-hopper, an agitating-finger within it, a support therefor adjustable to different elevations and also adjustable laterally, substantially as described.

9. In a planter, a seed-conducting shoe composed of two parts movable one with relation to the other to lengthen and shorten the shoe, and means for securing the movable member of said shoe in different positions consisting of a yoke or frame attached to said movable member having inwardly-projecting studs which follow in grooves formed in the stationary member and a set-screw passing through said yoke or frame which engages said stationary member, substantially as described.

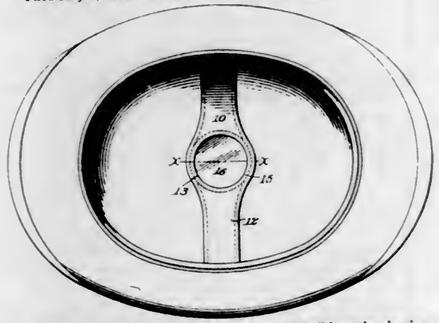
10. In a planter, a frame having two arms, a long bolt passing through said arms, a divided bushing i^7, i^7 on said bolt between said arms and bushings i^7 on the projecting ends of said bolt, substantially as described.

11. In a planter, a frame having two arms, a long bolt passing through said arms, a divided bushing i^7, i^7, on said bolt between said arms, each part of said divided bushing having on it a boss i^{10}, and bushings i^7 on the projecting ends of said bolt, substantially as described.

12 In a planter, a seed-hopper having an exit, a plate b^3 attached to an actuating-lever for opening and closing said exit, said plate having a

hole through it corresponding to the exit of the hopper, and a guideway in which said plate works extending beyond the rear of the exit and having imperforate top and bottom walls, substantially as described.

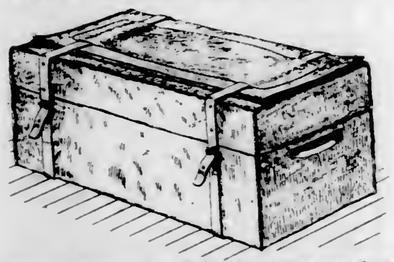
656,706. HAT-TIP. LEO WEISENBURGER, Mount Vernon, N. Y. Filed May 4, 1900. Serial No. 15,531. (No model.)



Claim.—1. A mirror-holder, comprising a flexible casing having a pocket open at its outer side and closed at the back, a mirror held within said pocket and exposed through the open side thereof, and a flat spring housed within said casing and extending from end to end thereof, said spring being arranged to extend across and bear against the closed back of the pocket, substantially as described.

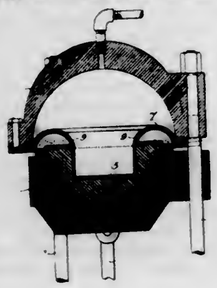
2. A mirror-holder, comprising two strips of flexible material secured together along their edges, forming a casing, one of said strips being provided with an opening, a backing arranged behind the opening and secured to the strip having said opening, whereby a pocket is formed, a mirror arranged within said pocket, and a spring housed within said casing and extending across the back of the pocket, substantially as described.

656,707. TRUNK-COVER. ANNIE M. WELSHE, Auburn, N. Y. Filed Nov. 13, 1899. Serial No. 736,869. (No model.)



Claim.—The combination with a trunk, of a cover fitting the trunk, and having a supplemental flap or cover secured along the rear edge of the top of the cover, and comprising two thicknesses or layers of material, the inner one of which is slitted, and means for securing the flap in position upon the trunk-lid, so that said flap may be raised without raising the lid.

656,708. HAT-SHAPING MACHINE. CHARLES W. YOUNG, Milford, Mass. Filed Jan. 15, 1900. Serial No. 1,413. (No model.)



Claim.—1. In a hat-pressing machine, the combination with a hat die, of a hydraulic head provided with a hat-bag and a brim-protecting flange, substantially as described.

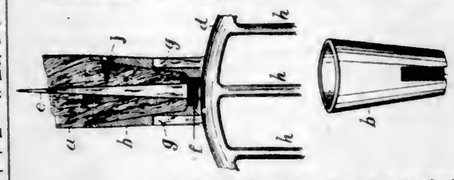
2. In a hat-pressing machine, the combination with a hat-die, of a hydraulic head provided with a hat-bag and a brim-protecting flange, said flange having a flexible washer around the opening therein, substantially as described.

656,709. EYEGLASSES. LEO F. ADT, Troy, N. Y. Filed Mar. 10, 1900. Serial No. 8,145. (No model.)



Claim.—In eyeglasses, the combination with the lenses, of nose-guards, and a bow-spring provided with loop ends and a central portion arranged in front of the plane of said lenses, and extending horizontally, said loop ends extending beyond the inner ends of said lenses, substantially as shown and described.

656,710. JOINT FOR TOOL-HANDLES. CHARLES W. ALLEN, Manasquan, N. J. Filed Jan. 20, 1900. Serial No. 2,111. (No model.)



Claim.—1. In a tool-handle joint, the combination, with the shank of the tool, of a tang for insertion in the wood of the handle, and a prong for engagement with the ferrule of the handle.

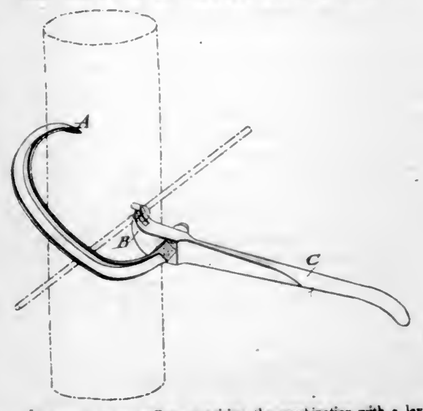
2. In a tool-handle joint, the combination, with the handle having a ferrule with grooves at opposite sides, of a tool-shank having a tang and prongs at opposite sides of the tang to engage the grooves in the ferrule.

3. In a tool-handle joint, the combination, with the handle having a ferrule with grooves at opposite sides, and a polygonal hole in the end, of a tool-shank having a tang with polygonal base and prongs at opposite sides of the tang to engage the grooves in the ferrule.

4. In a tool-handle joint, the combination, with the handle having a ferrule with dovetail grooves at opposite sides, of a tool-shank having a tang and dovetail prongs at opposite sides of the tang to engage the grooves in the ferrule.

5. In a tool-handle joint, a tang having a cross-bar d' at its base, with prongs g projected from the opposite ends of the cross-bar parallel with the tang, as and for the purpose set forth.

656,711. STAPLE-PULLER. ANDREW AXELTON, Graettinger, Iowa. Filed Apr. 23, 1900. Serial No. 14,033. (No model.)



Claim.—A staple-puller comprising the combination with a lever having at one end staple-engaging claws of a curved bar one end of which is pointed and the other end of which forms a pivot for said lever the curved bar lying in a plane at right angles to the plane in which the lever operates on such point.

656,712. METHOD OF MAKING FORKED EYEBARS. WILLIAM S. BIDLE, Cleveland, Ohio. Filed Apr. 25, 1900. Serial No. 14,281. (No model.)

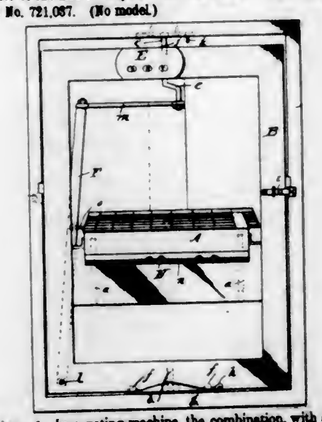


Claim.—1. An improvement in the manufacture of eyebars herein described, consisting in forging a blank into the form of a bar provided with head-forming ends and thicker centrally between the head-forming ends, then severing the bar centrally and transversely of the central and thicker portion of the bar, then assembling the resulting halves or pieces with their offset or thicker portions abutting each other and with their head-forming ends in registry, and then welding together the said abutting ends of the assembled sections, substantially as and for the purpose set forth.

2. The method herein described of converting a billet into a forked eyebar, consisting in rolling a billet into the form of a blank having its ends terminating in heads connected by a web enlarged in thickness centrally between the heads, then forging and elongating the blank so as to form a bar having head-forming ends and thicker centrally between the heads, then severing the said bar transversely centrally of the thicker portion of the bar, then assembling the resulting sections or pieces with their head-forming ends in registry and with their offset or thicker ends abutting each other, and then welding together and elongating the abutting ends of the assembled sections, substantially as and for the purpose set forth.

3. The formation of a forked eyebar from a billet a, by, firstly, rolling the billet into a blank b having each end terminating in a head b' and having a web b^2 connecting the heads and enlarged in thickness centrally; secondly, forging the said blank into a bar c having its end portions thinner than its central portion and terminating in circular heads c' provided with the indentations c^2; thirdly, severing the said bar centrally and transversely; fourthly, assembling the resulting sections with their thicker ends abutting each other and with their indented heads in registry; fifthly, welding the said thicker ends together and thereby forming the shank of the eyebar, and enlarging the indentations of the heads into perforations that register with each other and thereby completing the formation of the eyes of the eyebar, substantially as set forth.

656,713. VOTING-MACHINE. FRANK M. BORING, Dayton, Ohio, assignor of one-half to Leopold Rauh, same place. Filed June 19, 1899. Serial No. 721,057. (No model.)



Claim.—1. In a voting-machine, the combination, with a swinging door, and a case mounted thereon, with registering apparatus in said case, of means for actuating the registry apparatus, and connecting mechanism intermediate the frame and actuating device whereby the movement of the door will effect the registration.

2. In a voting-machine, the combination, with a swinging door, and a case mounted thereon, with registering apparatus in said case, of means for actuating the registry apparatus, with bar connected therewith pivoted to the door at one end and secured to the door-frame at the other eccentrically of the door-pivot whereby the movement of the door will shift said bar to actuate the registering mechanism.

3. In a voting-machine, a door for closing the booth, pivotally mounted at its middle line in the door-frame, a plurality of adding-wheels mounted in the door and an undulating track upon which said door rides, with pawl on the door-frame to contact with said adding-wheels when the door is raised by said track as the door is rotated, substantially as described.

4. In a voting-machine, a plurality of pivoted levers, a sliding plate upon which said levers are mounted, a plurality of fixed registering devices, one for each lever, with arms on said lever set to engage said registry devices by the movement thereof, and means for sliding said plate to actuate the registry devices, substantially as shown and described.

5. In a voting-machine, the combination, with a swinging door and a case for the voting apparatus mounted thereon of a plurality of pivoted levers in the case sliding plate upon which said levers are mounted, a plurality of fixed registry devices, one for each lever, with arms on said levers set to engage said registry devices by the movement thereof, and connecting mechanism intermediate the frame and sliding plate whereby the movement of the door in the frame will actuate said plate to effect the registration, substantially as described.

6. In a voting-machine, a plurality of pivoted levers, a sliding plate upon which said levers are mounted, a plurality of fixed registering devices, one for each lever, with arms on said levers set to engage said registry devices by the movement thereof, and a supplemental sliding plate, engaged by said levers and carrying stope to block the pathway of the levers and to permit the movement of only one at a time, substantially as described.

7. In a voting-machine, a plurality of pivoted levers, a sliding plate upon which said levers are mounted, a plurality of fixed registry devices and sliding type-bars, one for each lever with arms on said levers set to engage said registry devices and type-bars simultaneously by the movement of the levers with roll of paper to receive the impression from the type-bars and means for sliding said plate to actuate the registry devices and type-bars, substantially as shown and described.

8. In a voting-machine, a plurality of pivoted levers, a sliding plate upon which said levers are mounted, a plurality of fixed registry devices, one for each lever, with arms on said levers set to engage said registry devices by the movement of said levers, cam-surfaces interposed in the pathway of said arms with springs to keep said arms in contact therewith, and means for sliding said plate to actuate the registry devices and bring said arms into engagement with said cam-surfaces to return same and the pivoted levers to their normal position, substantially as described.

9. In a voting-machine, a plurality of pivoted levers, a sliding plate upon which said levers are mounted, fixed partition underneath said sliding plate provided with a plurality of irregular openings, a plurality of registry devices one for each lever secured to said plate with one tooth of each registry device extending into its corresponding irregular opening, arms on the pivoted levers each extending through its corresponding irregular openings and held on either side edge thereof by springs and means for sliding said plate to actuate the registry devices and return said arms and levers to their normal position, substantially as described.

10. In a voting-machine a series of cells one for each candidate, a sliding plate provided with a series of openings for the passage of ballot-balls, a series of brackets to receive the balls one for each cell mounted on arms, registry devices actuated by the movement of said arms, said brackets being open at one side with flanges on the sliding plate to close said open side and means for sliding said plate to actuate the registry device and weight for returning said brackets to normal position to release said balls, substantially as described.

11. In a voting-machine, a plurality of pivoted levers for straight-ticket voting, a series of registry devices for each individual candidate and a set of interfering blocks in each horizontal row to permit the registration of but one selection at a time in any one row, and an L-shaped plate actuated by the straight-ticket levers to contact with said blocks and prevent any voting for individual candidates when a straight ticket is voted, substantially as described.

12. In a voting-machine, a plurality of pivoted levers for straight-ticket voting and a series of registry devices for each individual candidate and a set of interfering blocks in each horizontal row to permit the registration of such plurality of candidates as may be desired, and an L-shaped plate actuated by the straight-ticket levers, a supplemental block in line with said interfering blocks and a connecting-lever to fulcrum same at various points on said L-shaped plate whereby the movement of the plate will shift the supplemental block the proper distance to close the row against further voting, substantially as described.

13. In a voting-machine, a plurality of pivoted levers, provided with flat shanks, a series of interfering blocks mounted between said flat shanks, with space to rotate one of said levers at a time, but to block the movement of the balance of said series, substantially as shown and described.

14. In a voting-machine, the combination, with a plurality of pivoted levers and a series of voting devices for individual candidates, of an L-shaped plate in connection with said levers and shifted by the move-

ment thereof, with connecting mechanism between the side extension of said plate and the individual-voting devices, whereby when any of said levers are operated said individual-voting devices will be locked from use, substantially as described.

656,714. CORN-HARVESTER. ERNEST S. BOWKER, Chicago, Ill. Filed Oct. 23, 1899. Serial No. 734,480. (No model.)



Claim.—1. The combination with a wheel of a wagon and a spindle extending laterally from said wheel and concentric with the axle, of a frame carried by said spindle, rotatable breaking and husking rolls mounted upon said frame, gearing between the spindle and the said rolls, a shaft rotatably supported by the wagon-box, an arm upon said shaft connected to the forward end of the frame and an operating-lever fast upon said shaft and adapted by its oscillation to raise or lower the forward end of the same; substantially as described.

2. The combination with a wagon, a spindle supported upon one of the wheels of the wagon and extending laterally therefrom in line with the axle, of a frame mounted upon said spindle, a pair of rotatably-mounted breaking-rolls upon the forward end of the frame, two pairs of rotating husking-rolls, each pair having a limited oscillation, a conveyer running between said husking-rolls and adapted to carry ears of corn from the breaking-rolls and between the husking-rolls and a second conveyer adapted to receive the ears of corn from the first-named conveyer and deposit them into the wagon-box; substantially as described.

3. The combination with a wagon-wheel, a spindle secured thereon and extending laterally therefrom, concentric with the axle, of a frame mounted upon said spindle, a pair of breaking-rolls mounted upon said frame, a pair of shafts journaled upon the frame and engaging the breaking-rolls, two oscillating frames journaled upon said shafts and yieldingly connected together, a pair of husking-rolls journaled in each of said frames, gears upon the shafts meshing with each other, pinions connected to the lower husking-rolls in mesh with said gears, a miter-gear upon one of said shafts, a miter-gear journaled upon the frame and in mesh with said first-named miter-gear, a sprocket-wheel connected to said second-named miter, a sprocket-wheel upon the wagon-wheel spindle and a sprocket-chain connecting said sprocket-wheels; substantially as described.

4. The combination with the frame of a corn-husking machine, of a pair of breaking-rolls rotatably mounted upon the forward portion of the frame, a pair of shafts journaled upon said frame and engaging the breaking-rolls, two oscillating frames mounted upon said shafts, two pairs of husking-rolls journaled in said oscillating frames, suitable gearing between said shafts and the lower husking-rolls, a conveyer running between the husking-rolls, a track supported upon the shafts and carrying the conveyer-chain, a sprocket-wheel for rotating said sprocket-chain, a miter-gear connected with the sprocket-wheel, a second miter-gear upon one of the shafts in mesh with said first-named miter-gear and suitable gearing for rotating said shaft; substantially as described.

5. The combination with a wagon-wheel and a spindle secured thereon and extending laterally therefrom concentric with the axle, of a frame supported upon said spindle, breaking-rolls rotatably mounted upon the forward end of the frame, a pair of shafts journaled upon said frame and engaging the breaking-rolls, two oscillating frames mounted upon said shafts, two pairs of husking-rolls journaled in said frames, suitable gearing between the wagon-wheel, said breaking-rolls and husking-rolls to rotate them in the proper directions, a conveyer-chain running between said husking-rolls, a second conveyer adapted to receive the husked corn from the first-named conveyer, a sprocket-wheel mounted upon one of said shafts, a sprocket-wheel connected to the second-named conveyer and a sprocket-chain connecting said sprockets and adapted to drive the conveyer; substantially as described.

6. The combination with a wheel of a wagon, of a spindle secured upon said wheel concentric with the axle thereof, a corn-harvester supported upon said spindle, mechanism upon said corn-harvester for engaging the stalks of corn to break the ears therefrom and to remove the husk from the ears, and suitable gearing between said spindle and said mechanism for driving the latter; substantially as described.

7. The combination with a wheel of a wagon, of a spindle secured upon said wheel concentric with the axle thereof, a corn-harvester mounted upon said spindle, rotatable breaking-rolls and husking-rolls mounted upon said corn-harvester, suitable gearing between the spindle and said breaking and husking rolls and suitable devices connecting the forward end of the corn-harvester with the wagon-body adapted to raise or lower said forward end of the corn-harvester; substantially as described.

8. In a corn-harvester, the combination with a wagon and a harvester-frame adapted to be supported by a wheel thereof, of a pair of tapering breaking-rolls mounted upon said frame and capable of a slight amount of oscillation at their forward ends and formed with non-circular sockets in their rear ends, a pair of shafts geared together and engaging the sockets in the rolls and suitable gearing between one of said shafts and the wagon-wheel adapted to rotate the breaking-rolls; substantially as described.

9. The combination with a wagon-wheel, of a spindle secured upon said wheel concentric with the axle thereof, a harvester-frame supported upon said spindle, a pair of breaking-rolls mounted upon said frame and having square sockets in their rear ends, a pair of shafts journaled upon the frame and having square ends engaging the sockets in the breaking-rolls, gear-wheels upon said shafts, meshing with each other, two pairs of husking-rolls, pinions upon the lower members of each pair meshing with the gears upon the shafts and suitable gearing between one of said shafts and the spindle, of the wagon-wheel rotating the rolls; substantially as described.

10. The combination with the wheel of a wagon, of a spindle secured upon said wheel, concentric with the axle thereof, a corn-harvester supported upon said spindle, mechanism upon said corn-harvester for engaging the stalks of corn to break the ears therefrom and suitable gearing between the spindle and said mechanism for driving the latter; substantially as described.

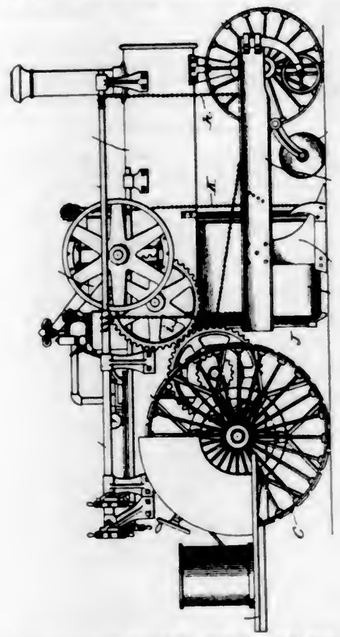
656,715. AUTOMOBILE DITCHING AND GRADING MACHINE. MORTON G. BUNNELL, Chicago, Ill., assignor of forty-nine one-hundredths to Josiah Cratty, same place. Filed June 20, 1900. Serial No. 20,969. (No model.)

Claim.—1. A steam-excavator comprising a horizontally-disposed boiler mounted upon front steering-wheels and rear traction-wheels, a plow arranged at one side of said boiler and suspended from adjusting mechanism or devices mounted thereon and operable from a point at the rear of said boiler, a transversely-disposed belt conveyer supported from the under side of said boiler and arranged to receive the soil from said plow, adjusting devices mounted upon said boiler and suitably connected with said conveyer, said devices for adjusting the conveyer being operable from a point at the rear of the boiler, and an engine mounted upon said boiler and having power-transmitting connection with said traction-wheels.

2. A steam-excavator comprising a horizontally-disposed boiler mounted upon front steering-wheels and rear traction-wheels, an engine mounted upon said boiler and gear-connected with one or both of said traction-wheels, a plow arranged in advance of one of said traction-wheels and suspended from adjusting devices mounted upon said boiler, a combined draft and balance bar connecting said plow with said boiler, a draft-chain connecting said bar with the king-bolt, a belt conveyer supported from the boiler and arranged to receive the soil from said plow, and adjusting devices mounted upon said boiler and suitably connected with said conveyer, said means for adjusting the plow and carrier being operable from a point at the rear of said boiler.

3. A steam-excavator comprising a horizontally-disposed boiler mounted upon front steering-wheels and rear traction-wheels, a plow supported from the boiler at a point in advance of one of said traction-wheels and having a draft connection with the forward running-gear, a conveyer supported by the boiler and arranged to receive the soil from said plow, and an engine mounted upon said boiler and gear-connected with one or both of said traction-wheels.

4. A steam-excavator comprising a boiler mounted upon wheels, an engine mounted upon said boiler and gear-connected with one or both of the rear wheels, a plow arranged at one side of said boiler and having a draft connection with the running-gear, a belt conveyer supported transversely below the boiler and arranged to receive the soil from said plow, longitudinally-arranged shafts mounted in bearings on said boiler and provided at their rear ends with hand-wheels, and chains connecting said shafts with said plow and conveyer, substantially as and for the purpose set forth.



5. A steam-excavator comprising a boiler supported upon wheels, an engine mounted upon said boiler and gear-connected with one or more of said wheels, a plow having a swinging connection with said boiler and a draft connection with the king-bolt, a belt conveyer supported from the boiler and arranged to receive the soil from said plow, and suitable power-transmitting connection between said conveyer and said engine.

6. A steam-excavator comprising a horizontally-disposed boiler mounted upon wheels, an engine mounted upon said boiler and gear-connected with one or more of said wheels, a plow arranged at one side of said boiler, a shaft and sleeve therefor mounted in bearings on said boiler and provided at their rear ends with suitable hand-wheels, chains connecting said shaft and sleeve with the beam of said plow, a belt conveyer hung from said boiler and arranged to receive the soil from said plow and power-transmitting connection between said conveyer and said engine.

7. A steam-excavator comprising a horizontally-disposed boiler supported upon front steering-wheels and rear traction-wheels, a bracket depending from said boiler, a plow arranged at one side of said boiler and having a swinging connection with said bracket, bracket-bearings projecting from the side of said boiler, a shaft and sleeve mounted in said bearings, chains connecting said shaft and sleeve with the beam of said plow, a belt conveyer hung from said boiler and arranged to receive the soil from said plow, hand-wheel shafts mounted in bearings on said boiler, and chains connecting said shafts with said conveyer, substantially as and for the purpose set forth.

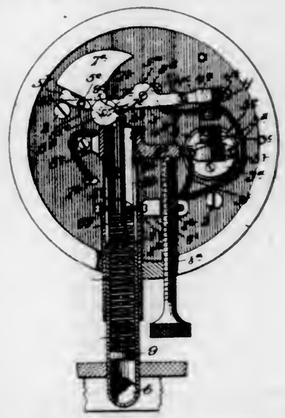
8. A steam-excavator comprising a horizontal boiler provided at its rear end with a fire-box and platform, the same being supported upon front steering-wheels and rear traction-wheels, a plow arranged in advance of one of said traction-wheels, adjusting mechanism mounted upon said boiler and operable from said platform, chains connecting said mechanism with the said plow, a belt conveyer hung transversely from the boiler at a point forward of said fire-box and arranged to receive the soil from said plow, an engine mounted upon said boiler and gear-connected with one or more of said traction-wheels, a draft connection between said plow and the forward running-gear, and power-transmitting connection between said engine and conveyer, substantially as and for the purpose set forth.

9. The combination of a horizontal boiler supported upon wheels, a driving-engine mounted upon said boiler, an excavating-plow suspended from the forward portion of said boiler, a belt conveyer hung transversely from the middle portion of said boiler, means for raising and lowering said plow and conveyer, and means for connecting said engine with said conveyer and also with one or more of said wheels.

10. The combination of a horizontal boiler mounted upon front steering-wheels and rear traction-wheels, a plow arranged in advance of one of said traction-wheels and having its beam extending alongside of one of said steering-wheels, bracket-bearings secured to the boiler and projecting laterally therefrom, a shaft and sleeve mounted in said bearings and provided with hand-wheels, chains connecting said shaft and sleeve with said plow, a draft connection between said plow and the forward running-gear, a belt conveyer hung from the middle portion of said boiler and arranged to receive the soil from said plow, hand-wheel shafts mounted in bearings on said boiler and having chain connections with said conveyer, and an engine mounted upon said boiler and having power-transmitting connections with said conveyer and one or more of said traction-wheels.

11. An automobile grading and ditching machine comprising in combination a boiler and engine supported upon traction and steering wheels, a plow arranged immediately in advance and more or less outside of one of said traction-wheels, a belt conveyer hung beneath said boiler and extending from said plow to a point some distance from the machine, and suitable power-transmitting connections between the engine and conveyer and one or more of said traction-wheels.

656,716. FLUID-OPERATED ELECTRIC SWITCH. CHARLES A. ECK, Newark, N. J., assignor to the Auto-Electric Air Pump Company, New York, N. Y. Filed Feb. 12, 1900. Serial No. 4,872. (No model.)



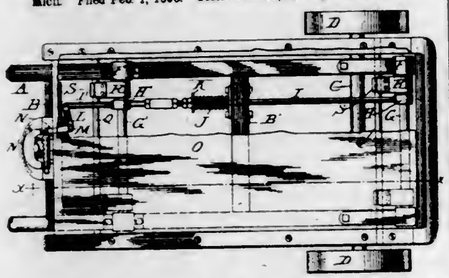
Claim.—1. In an electric switch, the combination of a stationary electrode, with a movable electrode, an arm, carrying said movable electrode, loosely pivoted, a tilting weight attached at the same point as the arm, a fluid-actuated mechanism adapted to tilt said weight back and forth to effect the movement, on a quick action, of the movable electrode to and from the stationary electrode, and means whereby the arm carrying the movable electrode is locked when acted upon by the tilting weight to assume its open position, and to be released when the tilting weight acts upon the arm aforesaid to close the circuit, substantially as described.

2. In an electric switch, the combination of a stationary electrode, with a movable electrode, an arm carrying said movable electrode loosely pivoted, a tilting weight attached at the same point as the arm and carrying a transverse pin, a vertical tube, a reciprocating piston working in said tube operated by fluid-pressure, means for obtaining a predetermined but adjustable mechanical pressure on said piston acting against said fluid-pressure, and a piston-rod on said piston formed with two shoulders or ledges adapted to coact with the transverse pin on the tilting weight to effect the tilting of said weight, for the purposes as set forth, substantially as described.

3. In an electric switch, a fluid-actuating mechanism for operating same comprising a vertical tube formed with a plurality of vertical slots and a horizontal lug, a reciprocating piston having a piston-rod surrounded by a coiled spring working in said tube, in combination with a guiding-sleeve adapted to travel vertically on the tube aforesaid and carrying a plurality of horizontal pins extending through the vertical slots of the tube to press against the coiled spring surrounding the piston-rod, and having further a horizontal lug with a screw-cut hole, and a hand-operated feed-screw operating in said screw-cut hole and bearing against the horizontal lug of the vertical tube, and adapted to operate to effect the vertical move-

ment of the guiding-sleeve upon the vertical tube to regulate the pressure of the coiled spring, substantially as described.

656,717. WEIGHING-TRUCK. JOHN G. EMERY, Jr., Muskegon, Mich. Filed Feb. 1, 1898. Serial No. 668,755. (No model.)



Claim.—1. In combination with a hand-truck provided at one end with wheels and at the other end with handles, a weighing-lever system mounted in the frame of said truck; flexible suspending straps or bands hung from the weighing-levers; and a platform having depending arms directly connected with the free ends of the suspending bands or straps, substantially as shown and described, whereby the platform is enabled to rise and fall freely when in any position from horizontal to an inclination of approximately forty-five degrees.

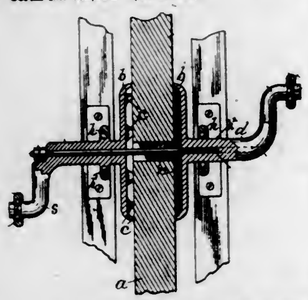
2. In combination with a hand-truck frame provided at one end with handles and at the other end with wheels and adapted to be moved to varying inclinations or angles; weighing mechanism carried thereby and provided with sector-shaped levers; flexible straps or bands carried by said levers and bearing upon the peripheral faces thereof; and a platform carried by the free ends of said bands, and free to rise and fall regardless of the inclination of the frame.

3. In a truck, the combination of a frame; a platform; a spring; shafts interposed between the truck and the platform and provided with sector-shaped levers; connections between the shafts and the spring; and flexible bands or straps connecting the platform and the sectors and arranged to bear upon the peripheral faces of the latter, substantially as described.

4. In combination with a supporting-frame, shafts provided with sector-shaped levers, and connected to move in unison; a spring or counterbalance tending to resist rotation of said shafts; a platform; and flexible load-carrying bands or straps secured to the sector-shaped levers, and arranged to bear upon the peripheral faces thereof, substantially as described.

5. In combination with a hand-truck frame; shafts G, G′ journaled therein; arms H, H′ secured to said shafts; rod I connecting said arms; a spring J tending to resist rotation of the shafts in one direction; levers R having peripheral faces concentric with the shafts G G; a platform O; rods or supports Q carried by said platform; flexible bands or straps S connecting the rods and the levers R; and an indicating device connected with one of the moving parts above recited, substantially as and for the purpose described.

656,718. SHAFTING FOR MACHINERY. SIDNEY S. FLETCHER, Chicago, Ill., assignor to James S. Fletcher, same place. Filed Oct. 2, 1899. Serial No. 732,284. (No model.)



Claim.—1. The combination with independent shaft parts, each axially bored and provided with a disk and a crank, of an axial connecting-rod having means for fixedly connecting said shaft parts, substantially as specified.

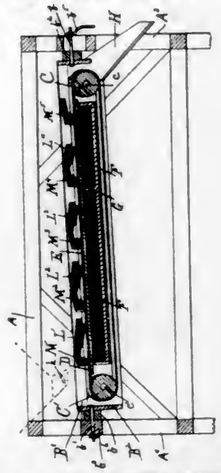
2. The combination with axially-bored shaft parts, each provided with a shaft-bearing, a disk, and a crank, of an axial connecting-rod having means for fixedly connecting said shaft parts, substantially as specified.

3. The combination with independent, end-flanged, axially-bored and cranked shaft parts, of an axial rod, fixed at one end, in one of said shaft parts, having means to hold and adjust said parts together, substantially as specified.

4. The combination with a revoluble disk having an axial eye or opening, of end-flanged, cranked, shaft parts, each provided with a bearing, and means, reaching from flange to flange, to fixedly connect said shaft parts, substantially as specified.

5. The combination with a revoluble disk having an axial eye, of end-flanged, cranked, shaft parts, each provided with a bearing, a plastic, self-hardening material in said eye and to said disks, and means, reaching from flange to flange, to fixedly connect said shaft parts, substantially as specified.

656,719. SEPARATOR. GARDNER A. GIBBS, Livonia, N. Y. Filed Mar. 14, 1898. Serial No. 673,839. (No model.)



Claim.—1. In a separator, the combination of a movable carrier having a plane surface with a fixed path, said carrier being inclined transversely to its line of travel, and guiding means set diagonally to said line of travel and adapted to prevent objects on the carrier from passing under said guiding means, whereby objects capable of rolling roll on the transverse downward incline of said carrier and off the same and other objects are carried farther forward on said carrier along said guiding means and are then discharged from the carrier, substantially as described.

2. In a separator, the combination of a movable carrier having a plane surface with a fixed path, said carrier being inclined transversely to its line of travel, and non-yielding guiding means set diagonally to said line of travel and adapted to prevent objects on the carrier from passing under said guiding means, whereby objects capable of rolling roll on the transverse downward incline of said carrier and off the same and other objects are carried farther forward on said carrier along said guiding means and are then discharged from the carrier, substantially as described.

3. In a separator, the combination of a movable carrier having a plane surface with a fixed path, said carrier being inclined transversely to its line of travel, and guiding means set diagonally to said line of travel and adapted to prevent objects on the carrier from passing under said guiding means, whereby objects capable of rolling roll on the transverse downward incline of said carrier and off the same and other objects are carried farther forward on said carrier along said guiding means, said guiding means having such length that the objects so carried farther forward pass said guiding means on said carrier and are then discharged therefrom, substantially as described.

4. In a separator, the combination of an endless belt having a plane surface with a fixed path, said belt being inclined transversely to its line of travel, means for operating said belt, and guiding means set diagonally to said line of travel and adapted to prevent objects on the belt from passing under said guiding means, whereby objects capable of rolling roll on the transverse downward incline of said belt and off said belt and other objects are carried farther forward on said belt along said guiding means and are then discharged from the belt substantially as described.

5. In a separator, the combination of an endless belt having a plane surface with a fixed path, said belt being inclined transversely to its line

of travel, means for operating said belt, and non-yielding guiding means set diagonally to said line of travel and adapted to prevent objects on the belt from passing under said guiding means, whereby objects capable of rolling roll on the transverse downward incline of said belt and off the same and other objects are carried farther rearward on said belt along said guiding means and are then discharged from the belt, substantially as described.

6. In a separator, the combination of an endless belt having a plane surface with a fixed path, said belt being inclined transversely to its line of travel, means for operating said belt, and guiding means set diagonally to said line of travel and adapted to prevent objects on the belt from passing under said guiding means, whereby objects capable of rolling roll on the transverse downward incline of said belt and off the same and other objects are carried farther forward on said belt along said guiding means, said guiding means having such length that the objects so carried farther forward may pass said guiding means on said belt and are then discharged therefrom, substantially as described.

7. In a separator, the combination of a movable carrier having a plane surface with a fixed path, said carrier being inclined transversely to its line of travel and a series of stationary guides arranged in zigzag form and set diagonally to said line of travel and adapted to prevent objects on the carrier from passing under said guiding means, each guide having a passage at or near the end thereof nearest to the discharge end of the separator, whereby objects capable of rolling roll on the transverse downward incline of said carrier and off the same and other objects are carried farther forward on said carrier along said guiding means and through said passages and are then discharged from the carrier, substantially as described.

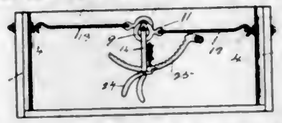
8. In a separator, the combination of a stationary frame, a tilting frame pivoted therein, a roller journaled in each end of said tilting frame, an endless belt upon said rollers, and guiding means set diagonally to the line of travel of said belt and adapted to prevent objects on the belt from passing under said guiding means, whereby objects capable of rolling roll on the transverse downward incline of said belt and off the same and other objects are carried farther forward on said belt along said guiding means and are then discharged from the belt, substantially as described.

9. In a separator, the combination of a stationary frame, a frame pivoted therein and adapted to be tilted both longitudinally and transversely, a roller journaled in each end of said tilting frame, an endless belt upon said rollers, and guiding means set diagonally to the line of travel of said belt and adapted to prevent objects on the belt from passing under said guiding means, whereby objects capable of rolling roll on the transverse downward incline of said belt and off the same and other objects are carried farther forward on said belt along said guiding means and are then discharged from the carrier, substantially as described.

10. In a separator, the combination of an endless belt having a plane surface with a fixed path, said belt being inclined transversely to its line of travel, rollers for said belt, a table for supporting said belt between the rollers, and guiding means set diagonally to said line of travel and adapted to prevent objects on the belt from passing under said guiding means, whereby objects capable of rolling roll on the transverse downward incline of said belt and off the same and other objects are carried farther forward on said belt along said guiding means and are then discharged from the belt, substantially as described.

11. In a separator, the combination of the stationary frame A; the tilting frame B; rollers C C′; table D; belt E; platform F, having the partition G across its surface; and the consecutive alternating guides L M having the notches *l*, *m*, adapted respectively to receive the guides M and L, whereby the angle of the guides L is changed with reference to the line of movement of the belt.

656,720. END-GATE FASTENER. HENRY KELLER, Fort Wayne, Ind. Filed Dec. 1, 1899. Serial No. 738,798. (No model.)



Claim.—1. An end-gate-fastening device consisting of a double eccentric pivotally mounted on the end-gate midway its ends; rings arranged on said eccentric and which are moved in opposite directions by the turning of the double eccentric; rods pivoted in said rings and provided upon their outer ends with a hook adapted for a holding engagement with eyes in the wagon-body; a curved rack-bar arranged as described; an operating-lever whose upper end is fixed in the face of said eccentric and adapted to oscillate the same and provided with means for forming a locked engagement thereto.

2. In an end-gate fastener, the combination of a double eccentric pivotally mounted as shown; a pair of rings arranged on said eccentric and which are moved in opposite directions by the turning of the double eccentric; rods connected with said rings and adapted to holdingly engage the wagon-body; a curved rack-bar arranged as shown; an operating-lever fixed to said eccentric and in cooperative arrangement with said rack-bar, and provided with a spring-pressed pawl adapted to normally engage said rack-bar, all substantially as described.

3. The combination in an end-gate-fastening device, of a double pivoted eccentric; rings arranged on said eccentric and provided with apertured ears and which rings are moved in opposite directions; rods secured in said ears for the purpose specified; a curved rack-bar as shown; a pendent hand-lever having its upper end fixed in the said eccentric and adapted to oscillate the same; a spring-pressed pawl or latch mounted on said lever and adapted for a holding engagement with said rack-bar; and means for releasing the said pawl from its engagement.

4. In an end-gate-fastening device, a double eccentric, formed in a single part, and which are out of line with each other, the rings applied to the said double eccentric and which are moved in opposite directions thereby, the outer one of the two eccentrics being provided with lugs, and the rods which are connected to the outer ends of the rings, combined with a lever which is secured to the pivot upon which the two eccentrics turn, and which catches between the two lugs, the spring-actuated catch secured to one edge of the lever, the lever for operating said catch, and a curved rack-bar secured to the tail-board, and with which the said spring-actuated catch engages, substantially as shown and described.

5. In an end-gate-fastening device, a double eccentric formed in a single part, the outer one of which is provided with lugs 7, having inclined faces 16, the pivotal bolt upon which the two eccentrics move, the rings applied to the said eccentrics, and which are moved in opposite directions, and the rods connected to the outer ends of the rings, combined with the lever provided with lateral lugs 15, to engage with the faces 16, upon the lugs 7, and which lever is secured to the pivotal bolt upon which the eccentrics turn, and catches between the lugs 7, a spring-actuated catch secured to the lever, a lever for operating said spring-actuated catch, and also pivoted upon the lever, and a curved rack-bar secured to the tail-board, and with which the spring-actuated catch engages, substantially as described.

656,721. PIN-TICKET. FREDERICK KOEHLE and JOHN P. KUHNS, Dayton, Ohio, assignors to John P. Kuhns and Joseph N. Boesch, same place. Filed Oct. 24, 1898. Serial No. 694,405. (No model.)



Claim.—1. In a pin-ticket, the combination of an oblong rectangular blank, a staple passed through said blank at a point adjacent to the center thereof, the said blank being bent or folded in the center to inclose the head of said staple, and the parts united as described to form a ticket of uniform thickness throughout, the end of said ticket in which the staple is placed being formed by the bend in the blank and the head of the staple being concealed at the folded end, as herein shown and described.

2. A pin-ticket, comprising an oblong blank, a staple passed through said blank near the center thereof, the said blank being folded in the center to make two equal parts which are folded against each other and united as described to form a ticket of uniform thickness throughout, one end of which is formed by the bend in the blank, and the said end being that in which the staple is placed, as herein shown and described.

656,722. TOOTH FOR HARROWS. JOHANN KRAUS, Schwabmünchen, Germany. Filed Feb. 4, 1899. Serial No. 704,492. (No model.)



Claim.—1. A harrow-tooth having one of its cross diameters broad and the other narrow, and with oppositely-disposed longitudinal grooves forming cutting edges or blades on said tooth, substantially as set forth.

2. A harrow-tooth having one of its cross diameters broad and the other narrow, and with oppositely-disposed longitudinal grooves forming cutting edges or blades, and a shoulder and an extension at the upper end of the tooth, substantially as set forth.

656,723. DISPLAY-RECEPTACLE. HARRY T. LOOMIS, New York, N. Y. Filed Apr. 26, 1900. Serial No. 14,438. (No model.)



Claim.—1. A display-box open at the top and at one end, and the bottom of which is provided at said end with an extension which is adapted to be folded upwardly over the box so as to partially close the top thereof, whereby when said extensible member is in extended position, the article to be displayed will appear at full length, and when said extensible member is folded the article to be displayed will be similarly folded, substantially as shown and described.

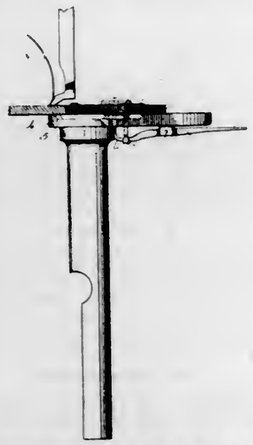
2. A display-box open at the top and at one end, and the bottom of which is provided at said end with an extension which is adapted to be folded upwardly over the box so as to partially close the top thereof, said box being also provided at both sides and at the closed end with inwardly-directed flanges at the top thereof, substantially as shown and described.

656,724. CLOTHES-PIN. JAMES F. MATTHEWS, El Reno, Okla. Filed May 15, 1900. Serial No. 16,766. (No model.)



Claim.—A clothes-pin consisting of spring-wire bent to form hinge-coil 1, the arms 3 diverging from said coil, the hinge-coils 2 at the opposite ends of said arms and normally abutting against each other, and the curved arms 4 projecting from hinge-coils 2 toward the hinge-coil 1 and intersecting each other, said arms providing between them the elongated opening 5, closed at its upper end by the intersecting arms and at its lower end by the abutting coils 2 when the pin is not in use, substantially as described.

656,725. WORK-GAGE. EDWIN F. MOWER, Boston, Mass., assignor, by direct and mesne assignments, to the United Shoe Machinery Company, Paterson, N. J. Filed June 15, 1899. Serial No. 720,675. (No model.)



Claim.—1. The combination with a tool or tools for operating upon a shoe-sole, of a gage actuated by contact of the moving shoe therewith to vary the path of operation of said tool on the sole, substantially as described.

2. The combination with a work bed or table provided with a throat through which a tool or tools operate, of a gage actuated by contact of the moving shoe therewith to vary the position of the work relatively to the throat of the work-plate, substantially as described.

3. The combination with a tool or tools operating upon a shoe-sole, of a gage comprising an eccentric disk actuated by contact of the moving shoe therewith to vary the path of operation of said tool on the sole, substantially as described.

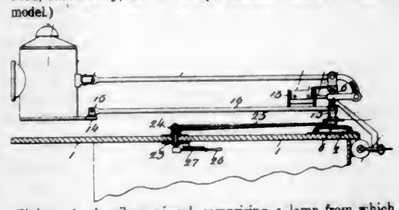
4. The combination with a tool or tools operating upon a shoe-sole, of a gage comprising an eccentric disk having a milled or roughened periphery whereby the contact of the moving shoe therewith serves to turn said gage, substantially as described.

5. The combination with a tool or tools for operating upon a shoe-sole, of a gage comprising an eccentric disk, actuated by contact of the moving shoe therewith, a spring to return said disk to its normal position when released by the shoe and a suitable locking device to maintain said disk in its normal position, substantially as described.

6. A gage for shoe-machines, comprising an eccentrically-pivoted disk having a portion of its periphery milled or roughened to afford a frictional engagement therewith of the shoe-sole, whereby said disk will be turned as the sole is moved along in contact therewith, and having a portion of its periphery smooth, whereby the turning of the gage will cease when the smooth portion thereof is brought in position to engage the sole, substantially as described.

7. The combination with a work bed or plate having a throat or passage, of a gage comprising an eccentric disk, a slide carrying the gage and being adjustable toward and from the throat or passage and means to maintain the slide in its adjusted position, substantially as described.

656,726. NIGHT-SIGNAL FOR RAILWAY-TRAINS. EDWIN B. POPE, Shrewsbury, Mo. Filed Apr. 23, 1900. Serial No. 13,931. (No model.)



Claim.—1. A railway-signal, comprising a lamp from which rays of light are adapted to issue, and means attached thereto for raising and lowering the same and bodily moving the lamp to either side of the train, whereby the light is visible from a point directly in rear or on either side of the train, substantially as described.

2. A railway-signal, comprising a lamp, means for raising, lowering and bodily moving the same to either side of the train, whereby the light issuing from the lamp is visible from a point directly in rear or on either side of the train, and suitable mechanism for operating said lamp independently of the first-named movements, as and for the purpose described.

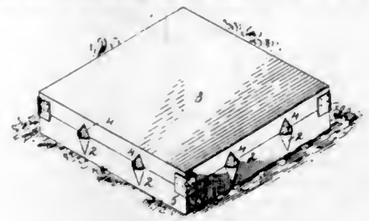
3. A railway-signal, comprising a movable post, a lever hinged to the upper end of the same, a lamp, a universal connection for attaching one end of said lever to said lamp, means coöperating with the short end of said lever, whereby the long end thereof is elevated, parallel connecting-bars having one of their ends attached to said lamp below the said lever by universal connections, a movable bar located about said post, to the ends of which the opposite ends of the said parallel bars are attached by universal connections, and means for turning said post, as and for the purpose described.

4. A railway-signal, comprising a lamp, parallel bars, one end of each of which is secured to the lamp, a pivoted transverse bar to which the opposite ends of the parallel bars are secured whereby the lamp is bodily moved to either side of the train, a lever, one end of which is attached to said lamp, and means for operating said lever, whereby the lamp is raised and lowered, substantially as described.

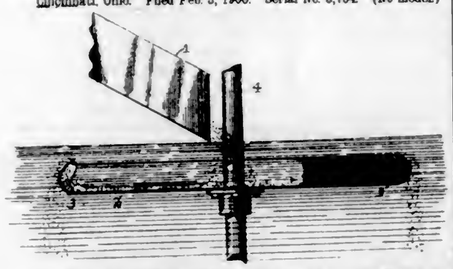
5. A railway-signal, comprising a cap secured to the roof of the locomotive, a plate secured to the same, a disk located between said cap and plate and mounted upon balls, a post secured to said plate and freely passing through the cap, a fork forming the upper end of said post, a lever hinged to said fork, the long end of which is attached to a suitable lamp by universal connection, the short arm of said lever extending downwardly, means attached to said short end for elevating the opposite end of the lever, a transverse bar movable upon said post, parallel bars, one end of each of which is attached to the ends of said bar, and having their opposite ends movably attached to the lamp on either side of the lever, an arm, one end of which is secured to said post, means coöperating with the lower end of said arm for turning said post, a shaft journaled in the roof of the cab of the locomotive, a lever secured to the upper end of the same, a hand-lever fixed to the lower end of said shaft, suitable mechanism for holding said shaft in any position, cross-bars, one end of each of which is movably attached to the ends of the last-named lever, and having their opposite ends movably attached to the transverse bar to which the parallel bars are attached, as and for the purpose described.

656,727. TANK FOR WATERING POULTRY. JOSEPH RAY, Emery, Ill. Filed May 31, 1900. Serial No. 18,437. (No model.)

Claim.—A device for watering poultry comprising a tank and a lid or cover therefor; the sides of the tank jutting at intervals beyond the lid and the sides of the lid being notched coincident with the juts of the tank

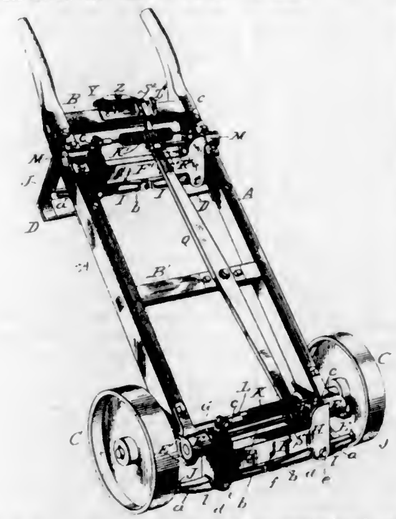


656,728. PROCESS OF SEPARATING ORES. HARRY C. ROBINSON, Cincinnati, Ohio. Filed Feb. 3, 1900. Serial No. 3,784. (No model.)



Claim.—The process of separating the heavier from the lighter materials of a conglomerate and consisting in rotating the materials on a submerged horizontally-rotating surface at a speed sufficient to develop centrifugal force only slightly in excess of that necessary to overcome the inertia of the heavier material resting on the support whereby the conglomerate is subjected to a prolonged, but gentle disintegrating action by the comparatively-still water by which the lighter is lifted and carried off the support and the heavier is gradually driven toward the periphery of the rotating support, a soft bank of sand being maintained at said periphery under which the heavier material sinks and is then protected from currents tending to lift it off of the support, substantially as described.

656,729. WEIGHING-TRUCK. HARRY SAWYER, Muskegon, Mich. Filed Jan. 26, 1898. Serial No. 668,039. (No model.)



Claim.—1. In a weighing hand-truck, the combination of a main frame; a platform; levers upon which said platform is supported; and pendulous frames carried by the main frame and in turn supporting the levers, said frames being free to swing in the direction of the length of the truck, whereby the levers are caused to maintain at all times their correct weighing position.

2. In a weighing hand-truck, the combination of a main frame; pendulous frames carried by said main frame and free to swing lengthwise thereof; levers fulcrumed in the pendulous frames; connections between said levers whereby they are caused to move in unison; a platform carried by said levers; a counterbalance acting upon the levers in opposition to the platform; and an indicating device connected with the levers and serving to indicate the load carried by the platform.

3. In combination with a main truck-frame; pendulous frames F and F′ carried thereby; levers I I and I′ I′ fulcrumed in said frames; springs K and K′ connecting the levers of the respective frames; lever Q connected with one lever of each frame; pointer X connected with lever Q; and dial Y located in reading relation to the pointer X, substantially as shown.

4. In combination with main frames; pendulous frames carried thereby; connected levers I I fulcrumed in the pendulous frames; a platform supported by said levers; a spring connecting said levers; an indicator; and a lever connected with said indicator and also connected with a lever of one of the pendulous frames at a point in axial alinement with the journals or supports of said frame, whereby the movements of the lever may be transmitted to and shown by the indicating device regardless of the raising or lowering of the main frame.

5. The herein-described weighing-truck, comprising the following elements in combination: a main frame; pendulous frames F and F′ carried thereby and provided respectively with levers I I and I′ I′ connected in pairs; springs K and K′ connecting the levers of each pair; lever Q fulcrumed upon the main frame; rods R and R′ connecting the lever Q with one lever of each pair; an indicator connected with and adapted to be actuated by the lever Q; and a platform N resting upon the levers, substantially as set forth.

6. In a weighing hand-truck, the combination of a main frame; pendulous frames F and F′; levers carried by said pendulous frames; a counterbalance and an indicator connected with said levers; and a platform mounted upon said levers and adapted to rock thereon as the frame is raised or lowered.

7. In combination with a truck adapted to be raised and lowered at one end at will, a lever system pendulously supported therein and free to assume and to maintain at all times a vertical position regardless of the inclination of the main frame; and a platform carried by said lever system, movable relatively to the truck-frame, and free to rise and fall under variations of load, substantially as set forth.

8. In combination with a main truck-frame; pendulous lever-frames carried thereby; a pair of balance or weighing levers carried by each of said frames; springs connected with the levers of each pair; a lever fulcrumed at a point between the two frames and connected with a lever of each pair at points in axial alinement with the pivots of said frame; and a platform carried by the weighing-levers.

9. In combination with a truck and a weighing-lever system comprising two swinging lever pairs, substantially such as described; a lever Q connecting the two sets of levers; a casting U provided with stops T′ and T² to limit the movements of said lever Q, and with a graduated dial Y; and a pointer X connected with lever Q, and movable over said dial.

10. In combination with a truck having a main frame provided with a double weighing-lever system and having a transmitting-lever Q extending from one pair of levers to the other and to the rear of the main truck-frame; a rod or slide S² connected with said lever Q; a toothed sleeve V secured upon said rod; a dial Y; and a pointer X having a toothed hub or pinion W to mesh with the toothed sleeve V, substantially as and for the purpose set forth.

11. In combination with levers I, I; pendulous supporting-frames for said levers; platform N carried by said levers; spring K connecting the levers; and an adjusting device L interposed between the levers and the spring and movable with said levers, substantially as and for the purpose set forth.

12. In combination with a hand-truck and with levers I, I, and I′, I′, their pendulous supports, and their springs K and K′, intermediate lever Q connecting levers of the two pairs and in plane with the axis of the pendulous support, substantially as described, whereby the four levers are caused to move in unison, regardless of tipping or inclination of the truck.

13. In combination with a truck-frame; pendulous frames supported in said frame; weighing-levers fulcrumed in said pendulous frames; and a platform provided with legs or castings having openings P to receive the ends of the weighing-levers and with seats for the bearing-points of said levers.

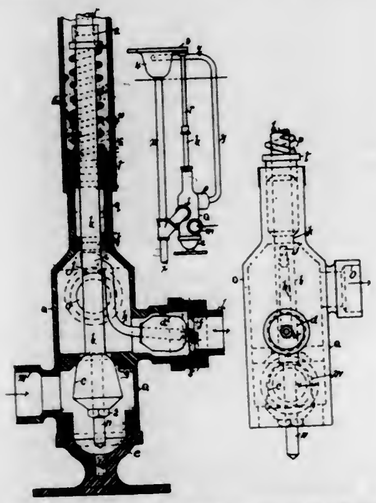
14. In combination with levers I, I, having arms *a*, *b*, and *c*; a platform supported upon the arms *a*; a pin or coupling connecting the arms *b*; and a spring connecting the arms *c*, all substantially as described and shown.

656,730. BLUE CHRYSAZIN DYE AND PROCESS OF MAKING SAME. ROBERT R. SCHMIDT and PAUL TUST, Elberfeld, Germany, assignors to the Farbenfabriken of Elberfeld Company, New York, N. Y. Filed Aug. 25, 1899. Serial No. 728,397. (Specimens.)

Claim.—1. The process for producing a new blue dyestuff being a monobromdiamidochrysazin monosulfonic acid, which process consists in first heating a mixture prepared from monobromdinitrochrysazin monosulfonic acid, stannous chlorid and hydrochloric acid, secondly isolating the dyestuff thus produced and finally drying the same, substantially as hereinbefore described.

2. As a new article of manufacture the new dyestuff being a monobromdiamidochrysazin monosulfonic acid which when dry and pulverized is a dark-blue powder, easily soluble in hot water with a blue color, soluble in dilute alkalies with a pure-blue color, being dissolved by concentrated sulfuric acid with a yellow color which on the addition of boric acid changes into a pale red, dyeing unmordanted wool in acid-baths bright-blue shades, while it yields on chrome-mordanted wool bright and fast greenish-blue shades, substantially as hereinbefore described.

656,731. NON-FREEZING VALVE. WILLIAM SCHMITT and DAVID L. MCGINNIS, Paterson, N. J. Filed May 3, 1900. Serial No. 15,410. (No model.)



Claim.—1. A noiseless, non-freezing, valve consisting of chamber in which there are three waterways, one for receiving, *m*, the other for supplying to closets, &c., *o*, and the third for emptying the chamber, *b*; the valve-seats *g*, and *f*, the stem with the rubber *c* secured to it, and the piece *h* with the rubber *d* secured to it by the nut *w* as set forth and described in the annexed drawing and specification.

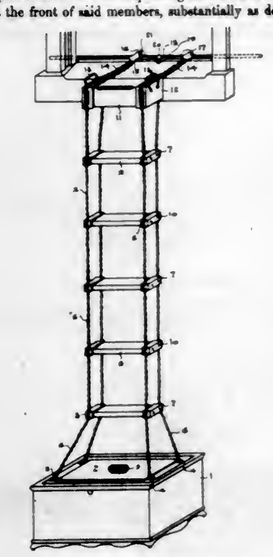
2. In a non-freezing valve the chamber supported by the base *e*, the stem *b*, the piece *h*, and the valve *d*, the slot *j* in the stem, the space for packing, the gland *t*, the coupling *u*, for the purpose of connecting the stem *b* and the rod *r* and forms the connection between the spring *p* and the stem *b*; the spring *p* for the purpose of closing the valve at *g* and opening the valve at *f*, through the connection between the piece *h* and the slot *j* in the stem as set forth and described.

3. In a non-freezing valve, the case and valves contained therein, the stem *b* and the piece *k* with the rubber pieces *c* and *d*, the gland, the spring and the incasing pipe 6 for the purpose of protecting the spring and gland, &c., as set forth and described.

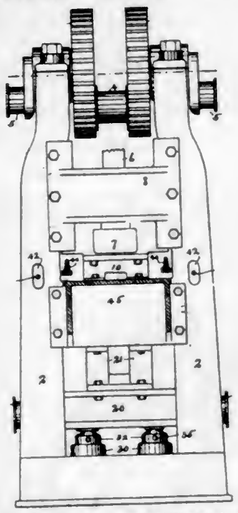
4. In a non-freezing valve, the body, the two valves contained therein and the apparatus for opening and closing the same, the base and the incasing pipe 6 in combination with means for operating the said valve in connection with said closet or hydrant, as set forth and described.

656,732. PORTABLE FIRE-ESCAPE. JOHN C. SCOTT, Chicago, Ill. Filed Mar. 5, 1900. Serial No. 7,426. (No model.)

Claim.—A device of the class described, comprising a cabinet open at the top; a flexible ladder secured to said cabinet in suitable manner for suspending same in an upright position and adapted to be folded into the cabinet; and the members 16 and 17 pivoted together, having the rear abutting shoulders and rear depending hooks and being attached to the ladder at the front of said members, substantially as described.



656,733. BRICK-PRESS. PETER L. SIMPSON and CASPER L. REDFIELD, Chicago, Ill.; said Redfield assignor to said Simpson. Filed Sept. 20, 1897. Serial No. 652,333. (No model.)



Claim.—1. In a brick-press, upper and lower plungers adapted to act upon opposite faces of a brick, coincident cranks having different lengths, connections from said cranks to said plungers for moving them, and means for stopping the movement of one plunger while its crank continues to move.

2. In a brick-press, an upper plunger adapted to act upon the upper face of a brick, a lower plunger adapted to act upon the lower face of a brick, differential cranks, connections from the longer crank to the upper plunger and from the shorter crank to the lower plunger, means for holding the lower plunger stationary while its crank continues to move, and devices for moving material into and out of said press while said lower plunger is held stationary.

3. In a brick-press, a mold-box, upper and lower plungers adapted to compress a brick in said box, springs for determining the maximum pressure applied to such brick, devices for operating said plungers so as to move said brick in said box, and means for causing a part of such movement of said brick to occur while under its maximum pressure.

4. In a press, connected cranks of different lengths, said cranks being placed with the shorter having a slight advance over the longer, a mold-box, an upper plunger movable downward against the upper face of material in said box, a lower plunger movable upward against the lower face of such material, and connections from said cranks to said plungers to move them so as to compress such material.

5. In a brick-press, a mold-box, upper and lower plungers entering said box from opposite sides, a shaft provided with cranks of different lengths, connecting-rods from said cranks to said plungers, and means for stopping the lower plunger while the cranks continue their movement.

6. In a brick-press, connected cranks of different lengths and mechanism for moving them, said cranks being in a coincident position with each other, upper and lower plungers, a rigid connection between the longer of said cranks and the upper plunger, and a yielding connection between the shorter of said cranks and the lower plunger.

7. In a press, the combination of upper and lower plungers for compressing material within a mold-box in said press, the mold-box, a differential crank movement, a rigid connection between the longer crank and the upper plunger, a yielding connection between the shorter crank and the lower plunger, and means for stopping the movement of the lower plunger while its crank is in motion.

8. In a press, top and bottom plungers, differential cranks for operating the plungers, a connection between the longer crank and the top plunger, a yielding connection between the shorter crank and the bottom plunger, and means for stopping the movement of the bottom plunger without stopping the crank.

9. In a press, upper and lower plungers, cranks to operate the same and connections between the plungers and cranks, a spring in the connection between the lower plunger and its crank for determining the normal pressure applied by said plungers, and a spring-supported abutment upon which said lower plunger rests at its lowest normal position.

10. In a machine for re-pressing bricks, plungers and means for operating them, springs connected to one of said plungers for determining the normal pressure applied thereby, and additional and independent springs located in the path of said plunger for applying a greater pressure when the material in said bricks exceeds the normal amount.

11. In a machine for re-pressing bricks, the combination of a crank, a plunger and a yielding connection between the two, of a spring-supported abutment upon which said plunger rests at its lowest normal position, and means for permitting the adjustment of said abutment.

12. In a press, upper and lower plungers, a shaft for moving them, a yielding connection between said shaft and the lower plunger, and a slotted connection between said shaft and the upper plunger.

13. In a machine for pressing bricks, a mold-box and a plunger entering said box from beneath, a rotatory crank and connections for moving said plunger, means for holding said plunger at its highest position and on a level with the top of said mold-box while said crank is making part of its revolution, a device for pushing away the brick discharged from said box and supplying its place by a new and unpressed brick, and means for operating said device by the movement of said crank.

14. In a brick-press the combination with a mold-box, a plunger, a rotatory crank, and connections between said plunger and said crank, of a feeding device, a lever therefor, and means for operating said lever by the lateral movement of the connection between said crank and said plunger.

15. In a brick-press, a feeding device consisting of a slide, a connection from said slide to a lever, means for operating said lever so as to move said slide, and means for adjusting the length of movement of said slide.

16. In a brick-press provided with plungers and cranks and connections for moving them, a reciprocating feed device, means for operating said feed device from the connections between said plungers and cranks, and means for varying the length of travel of said feed device.

17. In a machine provided with plungers adapted to operate in a mold-box, coincident and connected cranks for moving them, means for holding one of said plungers stationary while its crank is moving, a feeding device, and means for moving said feeding device quickly while said plunger is being held stationary by connections to the same crank that moves the said plunger.

18. In a brick-press, a mold-box, a plunger adapted to be moved therein and to discharge compressed material therefrom, a crank and connections between said crank and said plunger for moving the latter, a table, a feeding device movable thereon, and means for operating said feeding device from the connections between said crank and said plunger.

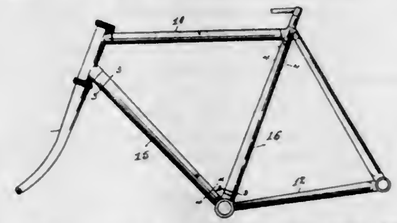
19. In a brick-press, a plunger adapted to discharge compressed material from a mold-box, a crank, connections between said crank and said plunger for moving the latter, a feeding device, an adjustable device for varying the travel of said feeding device, and means for operating said adjustable device from the connection between said plunger and said crank.

656,734. BARREL-BUNG. HENRY STROTHENKE, St. Louis, Mo., assignor of one-half to Charles F. Busse, same place. Filed Nov. 20, 1899. Serial No. 737,629. (No model.)



Claim.—A barrel-bung, comprising a thimble, an annular flange forming a part of the same, and providing a shoulder or seat, a reducing-washer located within said thimble, a suitable washer interposed between the reducing-washer and seat of the thimble, a screw-threaded collar cooperating with the inner screw-threaded portion of the thimble, and a diaphragm interposed between said screw-threaded collar and reducing-washer, as and for the purpose described.

656,735. BICYCLE-FRAME. FRANK A. WILMOT, Bridgeport, Conn., assignor to the Wilmot & Hobbs Manufacturing Company, same place. Filed June 11, 1900. Serial No. 19,818. (No model.)

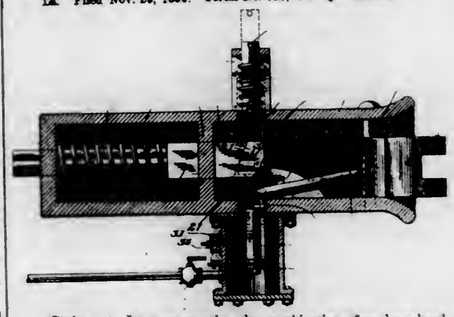


Claim.—1. A bicycle-frame including a seat-post tube as a member thereof, said tube being formed with its smallest diameter at the upper end and the greatest diameter at the lower end and an intermediate taper, the metal thereof being of practically-uniform thickness throughout, substantially as described.

2. A bicycle-frame including a lower tube as a member thereof, said tube being formed with its smallest diameter at the lower end and greatest diameter at the upper end and an intermediate taper, the metal thereof being of practically-uniform thickness throughout, substantially as described.

3. A bicycle-frame having a lower tube with its smallest diameter at the lower end and greatest diameter at the upper end and a taper between said points and a seat-post tube with its smallest diameter at the upper end and its greatest diameter at the lower end and a taper from approximately the upper end to the lower end, said tubes forming members of the frame itself, whereby a maximum strength of frame is secured at the points which take the greatest strain in use, substantially as described.

656,736. CAR-COUPLING. WILLIAM E. ALEXANDER, Langston, La. Filed Nov. 29, 1899. Serial No. 738,715. (No model.)



Claim.—1. In a car-coupler, the combination of a draw-head, a knuckle pivotally mounted therein, a link movably connected to the knuckle, a shoulder for engagement with the link, a latch-bar adapted to be operated in one direction by air-pressure, and a keeper cooperating with the latch-bar.

2. In a car-coupler, the combination of a draw-head having a shoulder therein, a knuckle pivotally mounted in the draw-head, a link movably connected to the knuckle and adapted to engage the said shoulder and means for locking and releasing the link.

3. In a car-coupler, the combination of a draw-head having a pro-

jection therein, a knuckle pivotally mounted in the draw-head, a link loosely connected to the knuckle and adapted to engage the said projection, a vertically-movable latch-bar under pneumatic control for locking and releasing the link, a keeper moving in a plane at right angles to the latch-bar and coöperating therewith to release the link and means for controlling the said latch-bar and keeper.

4. In a car-coupler, the combination of a draw-head having a projection therein, a knuckle pivotally mounted and freely movable in the draw-head, a horizontally-disposed link, having its front extremity loosely connected to and mounted in a portion of the rear end of the knuckle, and adapted to removably engage the projection in the draw-head, means for automatically moving the link downwardly over said projection, and power means for elevating the link above said projection.

5. In a car-coupler, the combination of a draw-head having a projection therein, a knuckle pivotally mounted in the draw-head, a link loosely connected to the rear of the knuckle and adapted to engage the said projection, a vertically-movable latch-bar for controlling the release and securement of the link, said latch-bar having a piston connected to the lower end thereof, a spring bearing upon the upper part of the latch-bar and a cylinder in which the said piston operates.

6. In a car-coupler, the combination of a draw-head having a projection therein, a knuckle pivotally mounted in the draw-head, a link movably connected to the knuckle and adapted to engage the said projection, a vertically-movable latch-bar having a seat-recess in the front and notches in the rear, a keeper having a front bifurcated end adapted to coöperate with said latch-bar, and means for operating the said latch-bar.

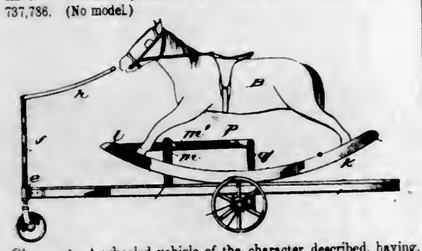
656,737. **FEED ADJUSTMENT FOR LUBRICATORS.** JAMES C. BECKERLEG, Chicago, Ill. Filed Sept. 5, 1899. Serial No. 729,470. (No model.)



Claim.—1. The combination with a controlling-valve, provided with a gland and valve-stem, of a collar secured to the gland-cap and formed with an opening in its side greater in diameter than the valve-stem and less than the diameter of the gland, and a movable stop carried by the valve-stem, substantially as set forth.

2. The combination with a controlling-valve provided with a gland and valve-stem, of a collar secured to the gland-cap and formed with an opening in its side greater in diameter than the valve-stem and less than the diameter of the gland and a movable stop carried by the valve-sten the same comprising an open-sided yoke-piece, a removable cross-pin closing said open side and an attaching set-screw, substantially as set forth.

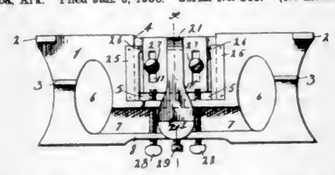
656,738. **COMBINED HOBBY-HORSE AND INVALID'S CHAIR.** ALVIN J. BRANHAM, Springfield, Mo. Filed Nov. 21, 1899 Serial No 737,786. (No model.)



Claim.—1. A wheeled vehicle of the character described, having, in combination, a frame or carriage, a drive-shaft journaled therein and carrying drive-wheels, a rocker mounted on the frame, a rock-shaft also mounted on the frame and having a crank portion, a rocking lever connected at its front end to the rocker and mounted centrally upon said crank portion of the rock-shaft which forms a shifting fulcrum therefor, and connections between the rear end of the lever and drive-shaft for communicating motion to the latter, substantially as described.

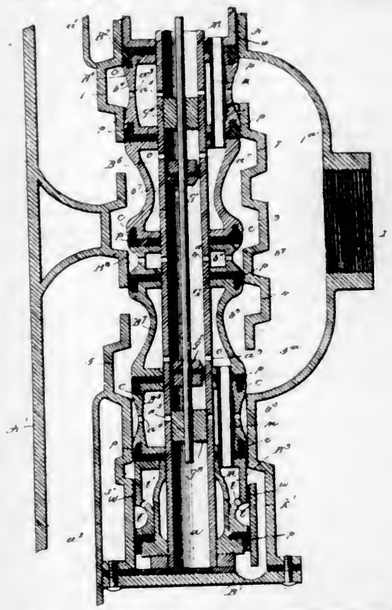
2. A wheeled vehicle of the character described, having, in combination, a frame or carriage, a drive-shaft journaled therein and carrying drive-wheels and a gear, a rocker mounted on the frame, a rock-shaft also mounted on the frame and having a crank portion, a rocking lever connected at its front end to the rocker and mounted centrally upon said crank portion of the rock-shaft which forms a shifting fulcrum therefor, and a rack-bar pivoted at its upper end to the rear end of the lever and having its lower end adapted to engage and operate said gear, substantially as described.

656,739. **RAKER-GAGE AND SAW-JOINTER.** JAMES A. EASLEY, Genoa, Ark. Filed Jan. 6, 1900. Serial No. 568. (No model.)



Claim.—A saw-gage, jointer and side dresser comprising the frame 1, having lugs 2, and 3; recesses 4, 5, and 7; oval perforations 6, longitudinal bars 8, square perforation 9, and flange 10; with raker-tooth plate 11, having a horizontal part 12, provided with a slot 13, vertical part 14, having recesses 15, scales 16, slots 17, and 18, and in its lower edge, dovetail slots 19; bars 25, each provided with a finger 26, secured to the face of the frame and extending over the edges of the vertical part of the plate 11; screws 28, working through threaded perforations in the bars 8, their upper ends, fitting in the dovetail slots 19, and adapted to move said plate up and down; screws 27, adapted to hold said plate in place; clamp-bar 20, provided with a foot 21, shoulder 21', lug 22, working in slot 18, of plate 11, and perforated lug 23, working in square perforation 9, of the frame; said clamp-bar 20, being adapted to be moved upwardly by the screw 29; substantially as shown and described and for the purposes set forth.

656,740. **VALVE FOR HYDRAULIC MOTORS.** JOHN W. JOHNSON, Leavenworth, Kans., assignor of one-half to Carl Hoffman, Kansas City, Mo. Filed Nov. 21, 1899. Serial No. 737,788. (No model.)



Claim.—1. A valve for a hydraulic motor, comprising a central tube having substantially-open ends and a port near its middle, also two inner and two outer ports, one of each pair being on each side of said middle port, a rod passing into said tube, two pistons on said rod adapted to put the middle port into communication with the inner ports alternately, and two other pistons on said rod arranged to alternately close the outer ports and open them to the ends of the tube, and a series of hollow valve-sections mounted on said tube, and each communicating with one of the ports in said tube.

2. A valve for a hydraulic motor, comprising a tube open at each end, and having a port near its middle, also an inner pair of ports on each side of the middle port and an outer pair of ports nearer the ends of the tube, seven hollow valve-sections mounted on the tube, the middle one communicating with the middle port, and having openings in its walls, the sections on each side of the middle one communicating with the inner pair of ports and having imperforate walls, the next pair of sections communicating with the outer pair of ports and having openings in their walls, end sections having openings in their outer walls, and passage-ways connecting each end section with the one next to the middle one.

3. A valve for a hydraulic motor, comprising a casing having internal circumferential grooves, the middle one being the exhaust-port, the adjacent ones the cylinder-ports and the outer pair the supply-ports, a central tube, and hour-glass-shaped hollow valve-sections mounted on said tube, the middle one being always in communication with the exhaust-port, and the adjacent sections controlling the supply and exhaust alternately, and end sections controlling the exhaust of pressure from the ends of the casing.

4. A valve for a hydraulic motor, comprising the combination with a casing A, having the supply-ports 1, 5, the cylinder-ports 2, 4, the exhaust-port 3, the grooves $j j'$, and the passages $k k'$ connecting said grooves with the ends of the casing, of a central tube a, containing ports a^4, a^5, a^7, a^8, and b^{13}, the rod G carrying pistons g^4 g' g^5 g^3, the valve-sections B^2 B^3 B^4 B^5 B^6 B^7 B^8, containing respectively the ports l, l', a^3, a^6, b^{11}, and the tubes n connecting the sections B^2 B^4 and B^3 B^7, the sections B^2 B^3 being slightly smaller than the casing and having grooves l' communicating by the ports l' with the interior of said sections.

5. The combination with a valve-chest or casing A, having an annular groove j and a passage k connecting the same with the end of the casing, of an abutment closing said groove on one side of said passage, a screw controlling said groove on the other side of said passage, a valve having a groove l' communicating with the exhaust, and a passage-way to connecting the grooves after they have passed out of alinement, substantially as described.

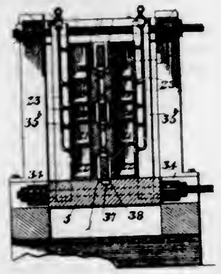
656,741. **DOOR.** JAMES M. LEAVER, Bay Mills, Mich., assignor to Lewis A. Hall and Robert H. Munson, same place. Filed Nov. 8, 1899. Serial No. 736,276. (No model.)



Claim.—1. A door, shutter, or analogous article, consisting of a core-frame having openings therein, and plain reinforce-slabs centered in said openings and forming duplicate pulp-receiving recesses upon opposite sides thereof, and a body of pulp material pressed upon both sides of the core and into said recesses, the exposed faces of the pulp-body having ornamented panel portions around and within said recesses.

2. A door, shutter, or analogous article, consisting of a core provided with openings, and reinforce-slabs partly filling the said openings and forming pulp-receiving recesses at opposite sides of the core, and a body of pulp material pressed about the core, into the said recesses, and through the interstices or spaces between said slabs.

656,742. **APPARATUS FOR MANUFACTURING ARTICLES FROM PULP MATERIALS.** JAMES M. LEAVER, Bay Mills, Mich., assignor to Lewis A. Hall and Robert H. Munson, same place. Filed Nov. 8, 1899. Serial No. 736,277. (No model.)



Claim.—1. In an apparatus for manufacturing articles from pulp materials, a mold-box, a pair of upright movable platens arranged in spaced parallel planes, and working within the box over and upon the floor thereof, said platens carrying dies upon their opposing faces, supporting means, carried by the mold-box, for holding the interior core of the article between the platens for receiving its envelop of pulp material, and means for simultaneously moving both platens in opposite directions.

2. In an apparatus for manufacturing articles from pulp materials, a mold-box having a flat floor, a pair of upright movable platens arranged in parallel planes and working within the mold-box, upon the flat floor thereof, said platens carrying dies upon their opposing faces, means for applying heat to the platens, and supporting means, carried by the mold-box, for holding the interior core of the article in position for receiving its envelop of pulp material, substantially as set forth.

3. In an apparatus for manufacturing articles from pulp materials, an open-top mold-box having a flat floor, a pair of upright movable platens arranged in parallel planes with their lower edges working upon and over the flat floor of the box, said platens having interior heating-chambers, and dies upon their opposing faces, supporting means, carried by the mold-box, for holding the interior core of the article in position, for receiving its envelop of pulp material, and means for simultaneously moving the platens in opposite directions, substantially as set forth.

4. In an apparatus for manufacturing articles from pulp materials, a mold-box having a flat floor, a pair of upright movable platens arranged in spaced parallel relation within the box and working upon and over the flat floor thereof, said platens carrying upon their opposing faces dies, core-centering screws mounted within the end walls of the box and projecting into the space between the platens to temporarily support the core of the article in position for receiving its envelop of pulp material, and means for simultaneously moving both platens in opposite directions, substantially as set forth.

5. In an apparatus for manufacturing articles from pulp materials, a mold-box provided in the floor thereof with a longitudinal waste-channel, and in its opposite end walls with vertically-disposed waste-channels in communication with the channel in the floor of the box, and movable platens arranged to work within the box respectively at opposite sides of the vertical plane of the communicating waste-channels.

6. In an apparatus for manufacturing articles from pulp materials, a mold-box, having end doors and also provided with screened waste-channels in its floor and also in the inner faces of said doors, said waste-channels being in communication with each other, and movable platens arranged to work within the box respectively at opposite sides of the vertical plane of the communicating waste-channels, substantially as set forth.

7. In an apparatus for manufacturing articles from pulp materials, a mold-box provided in the floor thereof with a screened waste-channel declining toward both ends of the box and open throughout its length, said mold-box being further provided in the end walls thereof with vertically-disposed screened waste-channels, in communication with the open waste-channel in the floor of the box, and a pair of platens working within the box respectively at opposite sides of the vertical plane of the communicating waste-channels, said platens being provided at their ends with yielding packing slidably contacting with said end walls, substantially as set forth.

8. In an apparatus for manufacturing articles from pulp materials, a mold-box having door-inclosed openings at its ends, a pair of platens arranged within the box and carrying dies upon their opposing faces, and means for moving said platens toward and away from each other, substantially as specified.

9. In an apparatus for manufacturing articles from pulp materials, a mold-box having end doors, fasteners for said doors, a pair of platens arranged within the box and carrying dies upon their opposing faces, and and means for moving said platens toward and away from each other, substantially as specified.

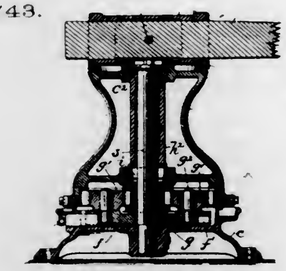
10. In an apparatus for manufacturing articles from pulp materials, a mold-box having end access-openings, swinging doors arranged to cover and uncover said openings, rock-shafts fitted to the ends of the box and carrying a plurality of swing-bolts engaging with the doors, a pair of platens arranged within the box and carrying dies, and means for moving the platens toward and away from each other, substantially as specified.

11. In an apparatus for manufacturing articles from pulp materials, a mold-box, a pair of platens arranged within the box, and carrying dies, carrier-bars attached to the platens, and provided in their ends with threaded openings, and suitably-operated screws mounted within the mold-box and having right and left threaded portions engaging with said threaded openings of the carrier-bars, substantially as specified.

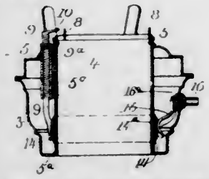
656,743. **CAPSTAN.** FRANK S. MANTON, Providence, R. I. Filed Apr. 24, 1899. Serial No. 714,179. (No model.)

Claim.—In a multiple-power capstan, the combination of a base, a barrel, having an annular flange, means to support said barrel upon said base, and a T-shaped head having also an annular flange lapping the aforesaid flange, and an integral tubular downward extension or spindle, with its inner upper end provided with a depressed annular seat, the transverse portion of said head forming a housing through which is passed a sweep or draft-bar, a shaft stepped into said base, and passed through said tubular extension, and a cap or collar secured to said shaft and let into said seat, substantially as set forth.

656,743.



656,744. DEVICE FOR LIGHTING LAMPS BY ELECTRICITY. SVEND M. METER, New York, N. Y. Filed Mar. 3, 1898. Serial No. 672,436. (No model.)



Claim.—1. In a device for lighting oil-lamps by electricity, the combination of the wick-tube 4, having a plurality of contact-points 8, the chimney-gallery 5, capable of concentric rotation around the wick-tube, insulated contact-point 8, carried by the rotatable chimney-gallery and engaging with either of the contact-points 8 by the rotation of said chimney-gallery, and a suitable source of electricity having its poles connected with the contact-points 8 and 10 respectively; substantially as described.

2. A device for lighting lamps by electricity comprising a tube 4 having one or more contact-points 8 in electrical connection with one pole of a suitable source of electricity, a shell 5 capable of concentric movement relatively to the tube 4, a conducting-band 14 carried by the shell 5, and insulated from the tube 4, a post 9 connected to the band 14 and carrying a contact-point 10 adapted to engage with the point or points 8 by the rotation of the shell 5, and a contact-spring 15 bearing on the band 14 and connected by a conductor 18 with the other pole of the source of electricity, substantially as explained.

3. The combination of the tube 4 and chimney-gallery 5 capable of relative concentric rotation and having contact-points 8 and 10, partaking of such relative concentric rotation, connected respectively with opposite poles of a suitable source of electricity and adapted to make and break the electric circuit by such concentric rotation as explained.

656,745. APPARATUS FOR MOLDING AND CUTTING BUTTER. LOUIS L. MIVELAZ, Memphis, Tenn. Filed Dec. 2, 1899. Serial No. 738,990 (No model.)

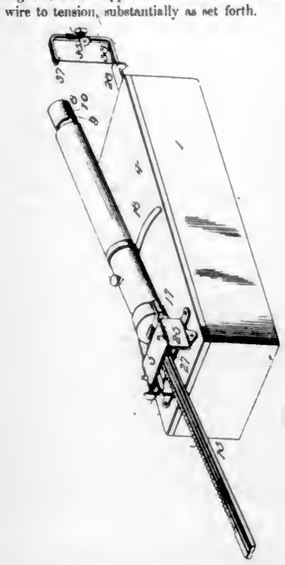
Claim.—1. In a device for molding and cutting butter or the like into prints or pads, a cylinder, a tube loosely and detachably fitted within the cylinder and containing the commodity to be formed into prints, a feeding mechanism for forcibly expelling the said commodity from the tube, and a molding cap or former having detachable and positive interlocking connection with the cylinder and having a portion to extend across the front end of the tube and hold the latter within the cylinder against the action of the feeding mechanism, substantially as set forth.

2. In a device of the character set forth, an oscillatory cylinder, a plunger adapted to operate within the cylinder and having a series of teeth along one side, means for engaging the teeth of the plunger-rod to advance the latter as the cylinder is oscillated, and adjusting means for changing the relation of the feed device to vary the movement thereof without altering the amplitude of movement of the cylinder, substantially as set forth.

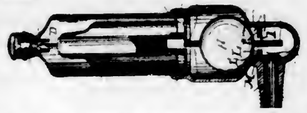
3. In a device of the nature specified, an oscillatory cylinder, a plunger adapted to operate in said cylinder and provided with a rod toothed at one side, a pawl disposed for conjoint use with the toothed plunger-rod, and means for changing the relation of the pawl so as to vary the feed of the plunger without affecting the amplitude of movement of the cylinder, substantially as set forth.

4. In a device substantially as described, a cylinder, a tube removably inserted in the cylinder and having its terminal portions outwardly flared, and a plunger disposed to operate in the said tube and having an end portion beveled, substantially as set forth.

5. In a device of the nature specified, a cylinder, and feeding mechanism coöperating therewith, in combination with a guide, a frame of approximately bow form having an arm extended to be adjustably connected with said guide, a wire applied to the said frame, and means for subjecting the wire to tension, substantially as set forth.



656,746. COMBINED AIR, WATER, AND CHECK VALVE. DOCTOR F. MORGAN, Chicago, Ill. Filed June 13, 1899. Serial No. 720,368. (No model.)



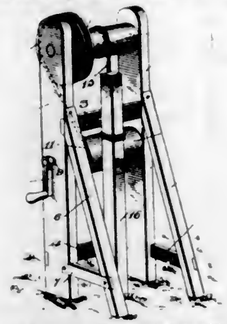
Claim.—1. In a combined air and check valve, the combination of a shell attachable to a radiator, such shell provided with an inlet from the radiator and an outlet, with a float-valve seating to close the inlet, whereby water in the shell may flow into the radiator and air in the shell is prevented from flowing into the radiator, an additional float provided with a valve-stem seating to close the outlet from the shell and an expansible member arranged to seat, when expanded by heat, the valve-stem on the second-named float, whereby air may flow from the outlet and water and steam are prevented from flowing therefrom; substantially as described.

2. In a combined air, steam and check valve having a shell attachable to a radiator, such shell provided with an inlet from the radiator, and an outlet, the combination of a float, constituting a valve member seating to close the inlet and movable by pressure from the radiator to open the inlet, and the float-valve member opening the inlet by the raising of the float, by means of water of condensation contained in the shell, a second float, an expansible member, and a second valve member, such second valve member seated by the raising of the second-named float and by the movement of the expansible member to close the outlet; substantially as described.

3. In a combined air and check valve, a shell attachable to a radiator and provided with an inlet from the radiator having a valve-seat at the discharge end thereof, and an outlet, in combination with a float in the shell, such float constituting a valve member seating to close the inlet, such valve member movable by pressure from the radiator to open such inlet, and also movable by water of condensation in the shell to open such inlet; such outlet of the shell provided with a valve-seat, a valve coöperating with such valve-seat, and an expansible member arranged to seat such valve, when expanded by heat; substantially as described.

656,747. FENCE-POST EXTRACTOR. FRANK MORGENTHALER, Riesel, Tex. Filed Apr. 27, 1900. Serial No. 14,601. (No model.)

Claim.—1. In a fence-post extractor, the combination with a frame comprising parallel uprights, and supports extending from one side only of said uprights, of a pair of horizontal drums carried by the uprights in vertical alinement, means for operating said drums, and a cable carried by one of said drums and designed to be attached to a fence-post.



2. In a fence-post extractor, the combination with a frame comprising a pair of parallel uprights, and supports extending from one side only of said uprights, of an operating-drum and an extracting-drum journaled in the uprights and located in vertical alinement, a sheave carried by the extracting-drum, an operating-cable passed around the operating-drum and extending from the periphery of said drum at the rear of said frame to the periphery of the sheave at the front of the frame, an extracting-cable passed around the extracting-drum and extending from the periphery thereof at the rear of the frame, and a crank operatively connected to the operating-drum, whereby the rotation of the latter effects the opposite rotation of the extracting-drum to pull the post in a direct vertical line and in contact with both drums which serve as guides for maintaining the vertical position of said post.

3. In a fence-post extractor, the combination with a frame comprising a pair of uprights supported from one side only, of a pair of horizontal drums journaled in the uprights and located in vertical alinement, means for operating said drums, gearing intermediate of said drums, and an extracting-cable wound upon the upper drum, said upper drum being of slightly-less diameter than the lower drum in order to make the combined diameter of the upper drum and the rope wound thereon substantially equal to the diameter of the lower drum.

656,748. SOIL CRUSHER OR PULVERIZER. CASPER J. PULT, Tonawanda, N. Y. Filed Sept. 5, 1899. Serial No. 729,527. (No model.)

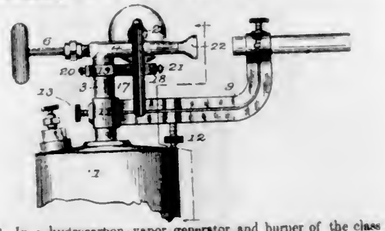


Claim.—The herein-described soil crusher or pulverizer, comprising a hopper provided with a single row of straight pins projecting inwardly from one side thereof and a double row of straight pins projecting inwardly from the other side thereof, a drum constructed in a single, integral solid piece and of a material adapted to have pins or teeth driven thereinto, radially-disposed pins driven into the drum and held by friction and projecting therefrom in position for interaction with the rows of pins on the sides of the hopper, whereby provision is made for different degrees of disintegration of the material fed into the hopper by rotating the drum in opposite directions, independent or separate caps fitted over the ends of the drum and secured thereto which have right and left hand screw-threaded apertures, respectively, a shaft extending through the drum and caps and having screw-threaded portions to engage the threads in the caps, and a handle for turning said drum in either direction.

656,749. GENERATING APPARATUS FOR HYDROCARBON-LAMPS. ALVAH C. ROEBUCK and FRANK MCMILLAN, Chicago, Ill., assignors to the Enterprise Optical Manufacturing Company, same place. Filed Aug. 16, 1899. Serial No. 727,442. (No model.)

Claim.—1. In a hydrocarbon-vapor generator and burner of the class described, the combination of a retort having an outlet-jet, a horizontal commingling-tube in line therewith, and means for effecting a combined vertical and longitudinal adjustment of the commingling-tube, substantially as set forth.

2. In a hydrocarbon-vapor generator and burner of the class described, the combination of a retort having an outlet-jet, a horizontal commingling-tube in line therewith, and means for effecting a vertical adjustment of the commingling-tube, the same comprising a bracket carrying said tube and having vertical movement on a post of the apparatus and an adjusting-screw screwing into the bracket and having abutment against the top of the reservoir, substantially as set forth.



3. In a hydrocarbon-vapor generator and burner of the class described, the combination of a retort having an outlet-jet, a horizontal commingling-tube in line therewith, and means for effecting a combined vertical and longitudinal adjustment of the commingling-tube, the same comprising a bracket formed with a holding-sleeve in which such tube is adjustable in a longitudinal direction, and adapted to have vertical movement on a post of the apparatus, and an adjusting-screw screwing into the bracket and having abutment against the top of the reservoir, substantially as set forth.

4. In a hydrocarbon-vapor generator and burner of the class described, the combination of a retort having an outlet-jet, a horizontal commingling-tube in line therewith, and an auxiliary heater comprising a vapor-jet, a segmental commingling-tube and a tray-shaped bracket supporting said tube, substantially as set forth.

5. In a hydrocarbon-vapor generator and burner of the class described, the combination of a retort having an outlet-jet, a horizontal commingling-tube in line therewith, and an auxiliary heater comprising a vapor-jet, a segmental commingling-tube and a tray-shaped bracket supporting said tube and means for effecting a swinging adjustment of such tray-shaped bracket in a horizontal plane, substantially as set forth.

6. In a hydrocarbon generator and burner of the class described, the combination of a retort having an outlet-jet, a horizontal commingling-tube in line therewith, and an auxiliary heater comprising a vapor-jet, a segmental commingling-tube and a tray-shaped bracket supporting said tube, and means for effecting a combined vertical and swinging adjustment in a horizontal plane to such tray-shaped bracket, substantially as set forth.

7. In a hydrocarbon-vapor generator and burner of the class described, the combination of a retort having an outlet-jet, a horizontal commingling-tube in line therewith, and an auxiliary heater comprising a vapor-jet, a segmental commingling-tube and a tray-shaped bracket supporting said tube in a manner to permit of an adjustment in a circular plane, substantially as set forth.

656,750. GENERATING APPARATUS FOR HYDROCARBON-VAPOR LAMPS. ALVAH C. ROEBUCK and FRANK MCMILLAN, Chicago, Ill., assignors to the Enterprise Optical Manufacturing Company, same place. Filed Sept. 2, 1899. Serial No. 729,365. (No model.)

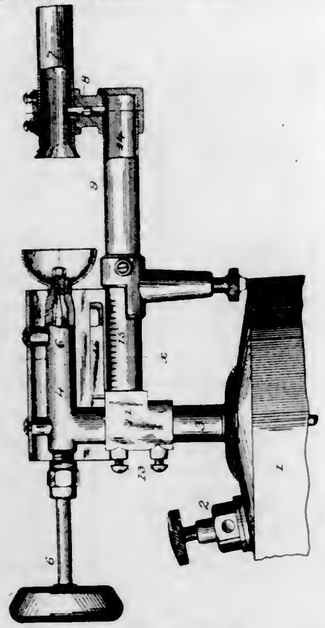
Claim.—1. In a hydrocarbon-vapor generator and burner of the class described, the combination of a horizontally-arranged retort having an outlet-jet at one end, a horizontal commingling-tube in line therewith, and a supporting-bracket for the commingling-tube formed with a horizontal passage connected at one end with the commingling-tube, and at the other end provided with a series of transverse burner-slits located beneath the retort, substantially as set forth.

2. In a hydrocarbon-vapor generator and burner of the class described, the combination of a horizontally-arranged retort having an outlet-jet at one end, a horizontal commingling-tube in line therewith, a supporting-bracket for the commingling-tube formed with a horizontal passage connected at one end with the commingling-tube, and at the other end provided with a series of transverse burner-slits located beneath the retort, and a confining-hood secured to the retort and inclosing the burner portion of horizontal burner portion of the bracket, substantially as set forth.

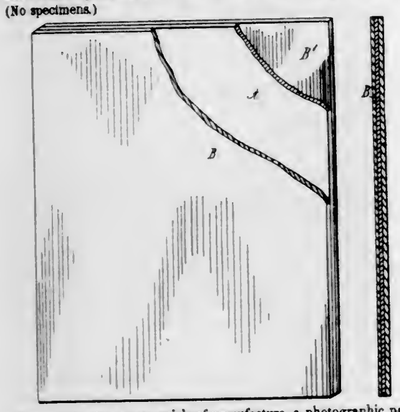
3. In a hydrocarbon-vapor generator and burner of the class described, the combination of a horizontally-arranged retort having an outlet-jet at one end, a horizontal commingling-tube in line therewith, a supporting-bracket for the commingling-tube formed with a horizontal passage connected at one end with the commingling-tube, and at the other end provided with a series of transverse burner-slits located beneath the retort, and means for effecting a vertical adjustment of the commingling-tube and the tubular return-bracket, substantially as set forth.

4. In a hydrocarbon-vapor generator and burner of the class described, the combination of a horizontally-arranged retort having an outlet-jet at one end, a hood or shield for such jet, a horizontal commingling-tube in

line therewith, and a supporting-bracket for the commingling-tube formed with a horizontal passage connected at one end with the commingling-tube, and at the other end provided with a series of transverse burner-slits located beneath the retort, substantially as set forth.



656,751. SENSITIZED PHOTOGRAPHIC PAPER. ARTHUR SCHWARZ, Steglitz, Germany. Filed Aug. 9, 1899. Serial No. 726,717. (No specimens.)

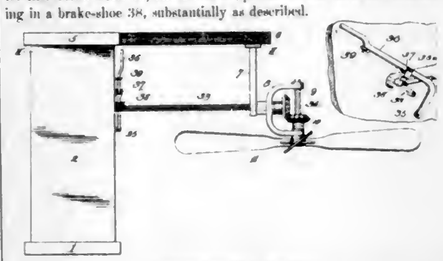


Claim.—1. As a new article of manufacture, a photographic paper having both faces sensitized, the coating on one face being more sensitive to light than that on the opposite face, for the purpose set forth.

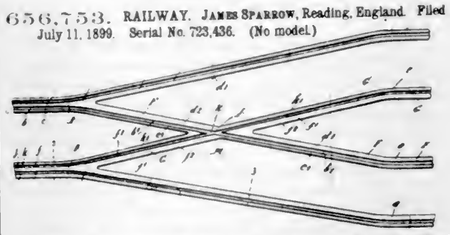
2. As a new article of manufacture, a photographic paper naturally transparent and substantially grainless having its opposite faces sensitized, the coating on one face being more sensitive to light than that on the opposite face, for the purposes set forth.

656,752. FAN-MOTOR. HEINRICH SOMMERFELD, Canton, Kans., assignor of one-half to Justus Schroeder, Kansas City, Mo. Filed July 11, 1899. Serial No. 723,456. (No model.)

Claim.—The combination of a motor-supporting case 1, containing a suitable motor, a carrying-beam 6, extending from said case, a depending arm 7 rigidly secured to said beam, a yoke 8, secured at its closed end to arm 7, a shaft 33, actuated by said motor and journaled near its outer end in the closed portion of yoke 8, a vertical shaft 9 journaled in the arms of said yoke, bevel gear-wheels 10 and 34 secured on shafts 9 and 33 respectively, a bent brake-lever 36, pivotally secured to the motor-case below shaft 33, and a link 37, pivoted to said lever and terminating in a brake-shoe 38, substantially as described.



656,753. RAILWAY. JAMES SPARROW, Reading, England. Filed July 11, 1899. Serial No. 723,436. (No model.)



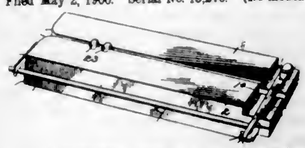
Claim.—A railway-rail provided with two parallel longitudinal grooves and three longitudinal operative bearing-shoulders arranged respectively at either side of and intermediate said grooves, the said intermediate shoulder being provided with a pair of divergent extensions constituting secondary bearing-shoulders springing from the end thereof, and the other bearing-shoulders being extended and curved to parallel each the next adjacent secondary bearing-shoulder, substantially as shown and described.

656,754. CORSET-COVER. HARRY G. STEELY, Piqua, Ohio. Filed May 21, 1900. Serial No. 17,497. (No model.)



Claim.—The herein-described cut knit waist garment consisting of two parts, a front and rear portion, the front portion of said garment comprising a transverse section of tubular fabric knitted in two stitches, a tuck or double stitch, and a plain stitch, said section being cut open longitudinally to form the front portion of the garment, the rear portion of said garment being formed from a transverse section of tubular fabric knitted in plain stitch and cut open longitudinally, whereby the entire garment is elastic, but the breast portion of the front is more elastic being formed by the line of tuck or double stitches, as set forth.

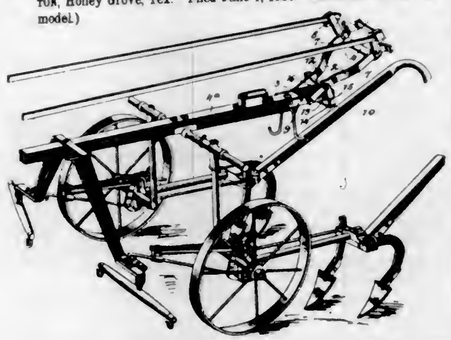
656,755. PIPE-CLAMP. WARREN W. STEWART, Sterling County, Tex. Filed May 2, 1900. Serial No. 15,270. (No model.)



Claim.—1. A pipe-clamp, comprising opposite members, which are hingedly connected at one end of the clamp, and have their inner sides provided with corresponding notches for the reception of a pipe, a slotted link loosely embracing the free ends of the members, one end of the link being pivotally connected to one of the members, and the opposite end thereof projecting outwardly beyond the other member, a cam-lever fulcrumed upon the outer side of said other member, and having one end located within and pivotally connected to the projecting end of the link, the lever lying longitudinally at the outer side of the adjacent clamp member in the closed position of the device, and means for locking the free end of the lever against the adjacent clamp member.

2. A pipe-clamp, comprising opposite hingedly-connected members, which have their inner sides provided with corresponding notches for the reception of a pipe, a slotted link loosely embracing the free ends of both members, one end of the link being pivotally connected to one of the members, and the opposite end projecting transversely beyond the other member, a longitudinally-disposed cam-lever, having a bowed end, which is fulcrumed upon the outer side of the said other member, and its cam or bowed end being located within the projecting end of the link and also provided with a notch pivotally receiving the adjacent end portion of the link, and a hook carried by the other member and arranged to hold the free end of the lever against said member.

656,756. REIN-HOLDER FOR CULTIVATORS. JAMES S. STOCKTON, Honey Grove, Tex. Filed June 1, 1900. Serial No. 18,776. (No model.)



Claim.—1. A rein-holder for plows, cultivators and the like, comprising a pivoted frame arranged to swing longitudinally of a cultivator or plow and provided at opposite sides with outwardly and upwardly extending arms adapted to receive the reins, and means for holding the pivoted frame in its adjusted position, substantially as described.

2. A rein-holder for plows, cultivators and the like provided with laterally-extending arms for supporting the reins and having upwardly-extending arms terminating in hooks arranged to engage the upper edges of the reins to retain the latter on the supporting-arms, substantially as described.

3. A rein-holder for plows, cultivators and the like provided with a rein-supporting frame composed of sides having outwardly-extended terminals forming rein-supporting arms, means for connecting the sides of the frame, and the upwardly-extending arms located in advance of the rein-supporting arms and terminating in outwardly-extending hooks for engaging the upper edges of the reins, substantially as described.

4. A rein-holder for plows, cultivators and the like, comprising a support, a pivoted rein-supporting frame mounted on the said support and provided with rein-receiving arms, and a brace connecting the supporting-frame with the support, and pivoted to one of the parts and detachably interlocked with the other, substantially as described.

5. A rein-holder for plows, cultivators and the like comprising a supporting-frame adapted to receive the reins and capable of being raised and lowered, a support having the supporting-frame pivotally mounted on it, projections extending from opposite sides of the support, and the substantially-rectangular brace or stirrup pivoted to the supporting-frame and extending rearward from the support, and provided with recesses to receive the said projections, substantially as described.

6. A rein-holder for plows, cultivators and the like comprising a substantially-rectangular frame provided at the upper edges of its sides with recesses, a rein-supporting frame pivotally mounted on the said frame and provided with rein-supporting arms, a transverse rod extending across and projecting from the rectangular frame, and a brace pivoted to the rein-supporting frame and arranged on the exterior of the rectangular frame and engaging the said rod, substantially as described.

7. A rein-holder for plows, cultivators and the like, comprising a pivoted frame arranged to swing upward and downward longitudinally of a plow or cultivator, said pivoted frame being provided with means for supporting the reins, and a pivoted brace arranged to support the frame in its several positions and adapted to permit the same to be readily raised and lowered, substantially as described.

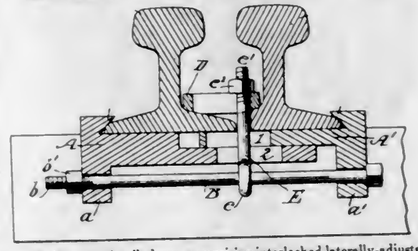
656,757. FASTENER FOR DRIVING BELTS OR STRAPS. FREDRIC E. WHITHAM, Sowerby Bridge, England. Filed May 29, 1900. Serial No. 18,365. (No model.)



Claim.—1. The combination, with a curved frame provided with cross-bars at its ends and an intermediate cross-bar provided with upper and lower studs, of the end portions of a belt passing under the end cross-bars and over the intermediate cross-bar and having holes which engage with the upper stud, and a cover-plate secured to the lower stud with its end portions bearing on the belt below the end cross-bars, substantially as set forth.

2. The combination, with a curved frame provided with a longitudinal middle bar, cross-bars at its ends, and an intermediate cross-bar provided with upper and lower studs; of the end portions of a belt provided with slots which engage with the said middle bar, said end portions being passed under the said end cross-bars and over the intermediate cross-bar and having holes which engage with the upper studs, and a cover-plate secured to the lower studs with its end portions bearing on the belt below the end cross-bars, substantially as set forth.

656,758. RAIL-CLAMP. AMOS C. WILLIAMS, Tuckahoe, N. Y., assignor of one-half to Carmi N. Sedore, same place. Filed Nov. 13, 1899. Serial No. 736,775. (No model.)



Claim.—1. A rail-clamp, comprising interlocked laterally-adjustable base-sections and jaws, and rods for adjusting said sections, and a plate for engagement between rail-sections, and eyebolts engaging the said rods, the said sections and plate being slotted for engagement with the eyebolts, substantially as shown and described.

2. As a rail-clamp, the combination of two interlocked sections having jaws thereon, a slotted plate for engaging rail-flanges, and cross-rods and eyebolts connected thereto for connecting said parts to each other, substantially as shown and described.

3. As a rail-clamp, the combination of two interlocked base-sections having jaws thereon, a slotted plate arranged above the said sections for engagement between rail-sections, threaded rods for adjusting the said base-sections and eyebolts engaging said threaded rods and adapted to clamp the said slotted plate between rail-sections, substantially as shown and described.

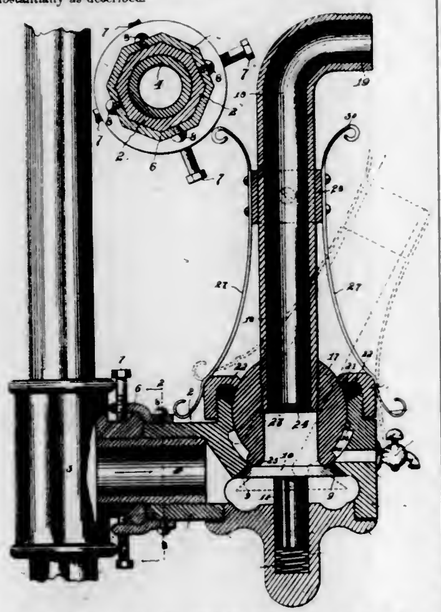
4. A rail-clamp, comprising a base embodying interlocked laterally-adjustable sections and jaws, and threaded rods for adjusting said sections, and a centrally-located slotted plate, and eyebolts extended through this plate and engaging around the said adjusting-rods, substantially as shown and described.

656,759. AUTOMATIC HOSE-VALVE. REUBEN D. WIRT, Independence, Mo. Filed Dec. 11, 1899. Serial No. 739,982. (No model.)

Claim.—1. A device of the class described comprising a casing designed to be connected with a water-supply and having a socket, a valve arranged within the casing and held normally closed, and a movable tubular arm mounted in the socket and adapted to have a hose attached to it, said arm being adapted to be operated by pulling upon the hose, whereby when the latter is unreeled, the water may be instantly started, substantially as described.

2. A device of the class described comprising a casing having a valve-seat and designed to be connected to a supply-pipe, a movable arm mounted on the casing, a spring-actuated valve arranged on the valve-seat and adapted to be opened by the movable arm, and means for detachably interlocking the arm with the casing for holding it normally out of engagement with the valve, substantially as described.

3. A device of the class described comprising a casing having a valve-seat and provided with a partial socket having its walls recessed, a valve engaging the seat, and a movable arm mounted in the socket and having a projecting portion arranged in the recess of the walls of the socket and adapted to engage and open the valve when the arm is moved, substantially as described.



4. A device of the class described comprising a casing having a valve-seat and provided with a socket, a tubular arm having a ball arranged in the socket and provided with a projecting portion, a valve arranged on the seat and adapted to be engaged by the projecting portion of the said arm, and a collar or section mounted on the casing and forming a continuation of the socket and retaining the ball therein, substantially as described.

5. A device of the class described comprising a casing having a valve-seat, a nut or cap located below the valve-seat and having a socket, a valve engaging the seat and provided with a stem fitting in the socket of the cap or nut, a spring interposed between the stem and the bottom of the socket, a tubular arm having a ball mounted in the casing above the valve and provided with a projecting portion to engage the said valve, and a collar retaining the ball in the casing, substantially as described.

6. A device of the class described comprising a casing having a valve-seat, a nut or cap arranged at the bottom of the casing and provided with a socket, a spring-actuated valve fitting against the valve-seat and having a stem extending into the said socket, and a movable arm mounted in the upper portion of the casing and provided with means for engaging the valve to open the same, substantially as described.

7. A device of the class described comprising a casing designed to be connected with a water-supply, a valve arranged within the casing, a tubular arm adapted to receive a hose and mounted on the casing and provided with means for engaging and opening the valve, and springs mounted on the arm and having their free ends engaging the casing, whereby the arm is held out of engagement with the valve, substantially as described.

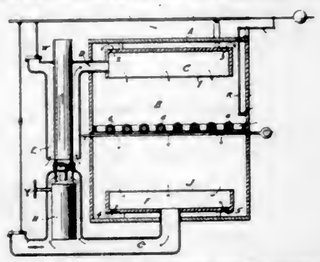
8. A device of the class described comprising a casing provided with a valve-seat, a valve engaging the seat, a tubular arm designed to be connected with the hose and arranged to open the valve, and a drip-cock communicating with the interior of the casing at a point adjacent to the arm, substantially as described.

9. A device of the class described comprising a casing having a polygonal extension, interiorly threaded and adapted to receive a pipe, a sleeve having an inner polygonal portion to fit the said extension and provided with an outer enlarged portion adapted to receive a coupling, fastening devices mounted on the inner and outer portions of the sleeve, a valve arranged within the casing, and a tubular arm provided with means for engaging the valve to open the same, substantially as described.

10. A device of the class described comprising a casing designed to be connected with a water-supply, a spring-pressed valve arranged within the casing and normally held closed, and a movable tubular arm, adapted to have a hose attached to it and capable of being operated by pulling upon the hose, said arm being arranged to force the valve open against the action of the spring, whereby the water is started when the hose is pulled, substantially as described.

11. A device of the class described comprising a casing designed to be connected with a water-supply, a spring-actuated valve arranged within the casing and normally held closed, and a movable tubular arm directly engaging the valve and capable of opening the same, said arm being adapted to receive a hose, whereby the water may be started by simply pulling upon the hose, substantially as described.

656,760. INCUBATOR. Granville T. Woods, New York, N. Y. Filed May 25, 1900. Serial No. 18,013. (No model.)



Claim.—1. A machine of the character described consisting of a reception or hatching chamber, an air-inlet chamber having an air-distributing, porous diaphragm through which air is slowly and evenly delivered into the reception or hatching chamber, the said air-inlet chamber being arranged near the upper wall of said reception or hatching chamber, means for heating said air, an outlet-chamber having a porous diaphragm through which air is slowly and evenly exhausted from said reception or hatching chamber, said outlet being at or near the bottom of said reception or hatching chamber, and means for automatically regulating the temperature of said reception or hatching chamber, substantially as set forth.

2. A machine of the character described, consisting of a reception or hatching chamber devoid of supplied moisture, an air inlet or chamber having an air-distributing porous diaphragm through which air is delivered into said reception or hatching chamber, the said air inlet or chamber being near the upper wall of said reception or hatching chamber, means for heating said air, an outlet or exhaust chamber having a porous diaphragm through which air is evenly and slowly exhausted from said reception or hatching chamber, said outlet being at or near the bottom of said reception or hatching chamber, means for automatically regulating the temperature of said reception or hatching chamber, and a pipe or duct arranged substantially as described, so that a tubular connection is maintained between the said outlet or exhaust chamber and the heater, whereby a slow downward air movement is maintained within said reception or hatching chamber.

3. A machine of the character described, consisting of a reception or hatching chamber, an air inlet or chamber through which air is slowly delivered into said reception or hatching chamber, means for heating said air, an outlet or chamber having a porous diaphragm which assists in maintaining a slow and even bodily air movement, within said hatching-chamber, and through which the air is exhausted from said reception or hatching chamber and means for automatically regulating the temperature of said reception or hatching chamber.

4. A machine of the character described, consisting of a reception or hatching chamber, an independently-constructed air-inlet chamber having an air-distributing porous diaphragm through which air is evenly delivered into said hatching-chamber, the said air-inlet being near the upper wall of said hatching-chamber, means whereby said air is heated, an independently-constructed air outlet or exhaust chamber having means through which air is evenly and slowly exhausted from said reception or hatching chamber, said outlet being at or near the bottom of said hatching-chamber, means for automatically regulating the temperature of the air in said hatching-chamber, a pipe connected to said exhaust-chamber, and a valve connected to said pipe whereby the amount of air drawn from said hatching-chamber, may be regulated.

5. A machine of the character described, consisting of a plurality of reception or hatching chambers, each having an independent temperature-regulator, an independent air-inlet, and an independent air-outlet, the said inlets and outlets being obstructed by porous diaphragms, a source of heat common to and supplying all of said chambers, and means whereby a slow air movement is maintained simultaneously in all of said chambers, for the purpose set forth.

6. A machine of the character described, consisting of a plurality of

reception or hatching chambers each having an independent air-inlet, an independent air-outlet and an independent temperature-regulator, a single heating device having a tubular communication with all of said chambers, and means actuated by the heat from said device whereby a slow, even movement of the heated air is maintained, simultaneously, in all of the said chambers, substantially as set forth.

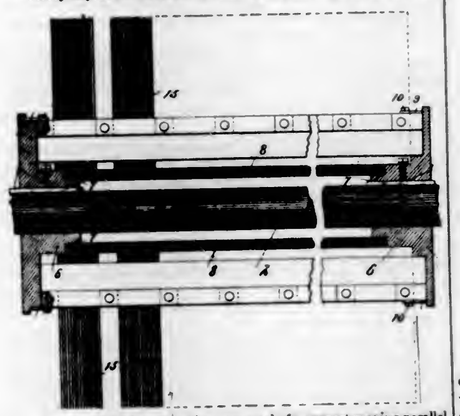
7. The combination of a plurality of reception or hatching chambers, each provided with an independent air-inlet, an independent air-outlet and an independent thermostat, a heater common to and supplying all of said chambers and a pipe or tube common to all of the air-outlets of said chambers, and leading therefrom to the fire in said heater, whereby a slow, bodily movement of the heated air is maintained, simultaneously in all of said chambers, substantially as set forth.

8. A machine of the character described, consisting of a reception or hatching chamber, an air-inlet communicating with the interior of said chamber, through an air-spreading horizontally-arranged minutely-apertured diaphragm, a second minutely-apertured diaphragm horizontally arranged between the interior of said chamber and the air-outlet for the same, the second diaphragm being adapted to assist the first diaphragm to spread the air evenly throughout the said chamber, and to retard the air movement therein, means whereby said air is heated, and means whereby the temperature thereof is regulated, said temperature-regulating means consisting of two valves having suitable thermostatic connections which are adapted to operate said valves differentially, substantially as and for the purpose set forth.

9. A machine of the character described, consisting of a reception or hatching chamber devoid of supplied moisture, an independently-constructed air-inlet chamber having an air-distributing porous diaphragm through which air is evenly delivered into said hatching-chamber, the said air-inlet being near the upper wall of said hatching-chamber, means whereby said air is heated, an independently-constructed air outlet or exhaust chamber having a porous diaphragm through which air is evenly and slowly exhausted from said reception or hatching chamber, said outlet being at or near the bottom of said hatching-chamber, means for automatically regulating the temperature of the air in said hatching-chamber, and an upwardly-extending pipe or flue, leading from said exhaust-chamber, through the heater whereby a slow downward draft is maintained through said hatching-chamber, for the purpose set forth.

10. A machine of the character described consisting of a reception or hatching chamber, an air-inlet chamber communicating with the interior of said hatching-chamber, through an air-spreading, horizontally-arranged, minutely-apertured diaphragm, a second minutely-apertured diaphragm horizontally arranged between the interior of said hatching-chamber and an air-outlet chamber, the second diaphragm being adapted and arranged to assist the first-mentioned diaphragm to spread the air evenly throughout the said hatching-chamber, and to retard the air movement therein, means whereby the said air is heated, means whereby the temperature thereof is regulated and means whereby a slow downward draft is maintained throogh said hatching-chamber, for the purpose set forth.

656,761. SECTIONAL ROTARY SWEEPER. Harry H. Adams, Jersey City, N. J. Filed Dec. 7, 1899. Serial No. 739,473. (No model.)



Claim.—1. A broom-section composed of a support running parallel with the axis of said broom, broom material attached to and carried by said support, in independent bunches, spacing-blocks secured to said supports for spacing the broom material and binding-strips on both sides of said supports engaging with all of the spacing-blocks on their respective sides, and forming with the spacing-blocks, spaces fitting the several broom-bunches independently of one another.

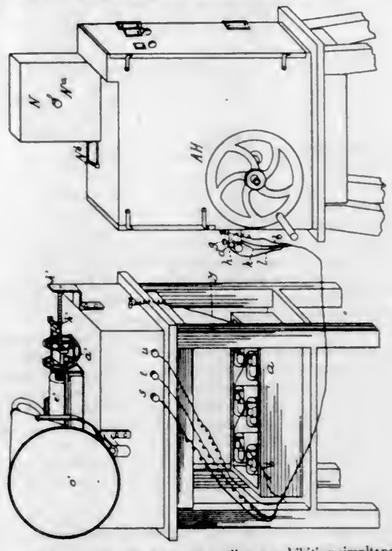
2. In a rotary broom-head, plates or spiders adapted to be mounted on a broom-shaft, said heads having lugs or projections on one side extending radially from the center toward the outer edge, but not to said outer edge, said lugs or projections being provided with slots extending from the outer edge of same toward the center of the plate or spider and adapted to receive broom-sections, and with recesses near the extremities of said slots, toward the center, adapted to receive means for backing broom material, and clamps adapted to be attached to said broom-head for securing said broom-sections, substantially as shown and for reasons set forth.

3. In a sectional rotary broom, the combination of a broom-shaft, having heads or spiders mounted thereon, having a plurality of radial slots in the opposite faces and adapted to receive the broom-sections, and a plurality of recesses near the inner extremities of said slots adapted to receive means for backing the broom material, means for backing the broom material supported in said recesses and carried by said broom-heads, sections composed of supports with broom material mounted thereon adapted to be carried in said slots in broom-heads, and clamps attached to said broom-heads adapted to secure said supports or sections in place.

4. A rotary broom composed of heads and a plurality of sections extending parallel with the axis of said broom, each section comprising a beam or support, spacing-blocks secured to said support for spacing broom material, side strips outside of said spacing-blocks, broom material bent around the under side of said support between the support, the side strips and the blocks, and supports carried by said heads and engaging beneath said broom material to hold said broom material in place.

5. In a rotary broom, the combination of broom-heads suitably mounted on a broom-shaft, a plurality of radial slots or recesses in said broom-heads corresponding to the number of sections used, circular recesses in radial line with said slots also corresponding to the number of sections, backing-rods carried by the broom-heads and supported in last-named recesses and running parallel with said broom-shaft, broom-sections composed of broom material mounted on a suitable support and carried in said radial slots, the broom material of said sections coming in contact with and being prevented from shifting by said backing-rods, clamps attached to said broom-heads and securing said sections in their proper place.

656,762. APPARATUS FOR TAKING AND REPRODUCING ANIMATED SCENES AND SOUNDS. Auguste Baron, Asnières, France. Filed Oct. 31, 1898. Serial No. 695,024. (No model.)



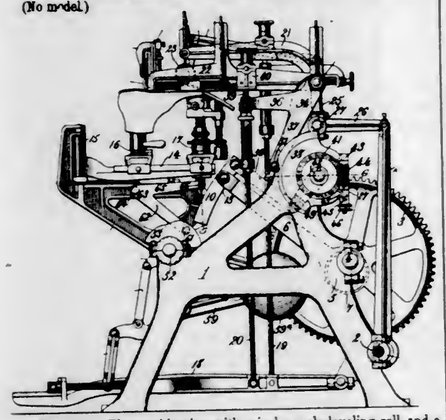
Claim.—In an apparatus for recording or exhibiting simultaneously occurring visible and audible effects, the combination of a phonograph with electrical means for driving the same, a kinetographic camera, a current-distributing commutator operated by the kinetographic camera apparatus and circuit connections intervening between the current-distributing commutator and the electrical means for driviog the phonograph so as to effect the operation of the phonograph in synchronism with the kinetographic camera.

656,763. COMBINATION-CHAIR. MOSES BELISLE, Ware, Mass. Filed Mar. 5, 1900. Serial No. 7,308. (No model.)



Claim.—A combination-chair, comprising a seat having arms carried thereby, a foot-rest swingingly connected to the forward part of the seat, and forming the front legs of the chair, a pair of legs carrying the back movably secured to the rear of the seat, and two series of levers and links one series adapted to be upon each side of the chair, each series consisting of three similarly-shaped members connected in a chain, the central one being pivoted at its center to the seat, and the extreme ends of the others being connected to the foot-rest and back, respectively.

656,764. MACHINE FOR LEVELING SHOE-SOLES. HARRY E. CILLEY and CHARLES S. GOODING, Boston, Mass.; said Gooding assignor to Edward C. Judd, same place. Filed July 12, 1899. Serial No. 723,587. (No model.)



Claim.—1. The combination with a jack, a sole-leveling roll, and a spring-rod for yieldingly depressing the role upon the shoe-sole, of automatically-actuated devices independent of the spring in, or forming a part of said spring-rod, operating to positively raise the leveling-roll at intervals from contact with the shoe-sole during the leveling operation.

2. The combination with a movable jack, and a sole-leveling roll, of devices operated by the jack and automatically raising the roll at predetermined or recurring intervals.

3. The combination with a jack, a fore-part-leveling roll, a shank-leveling roll, frames carrying said rolls, spring-rods connected with said frames, and a treadle for pulling the spring-rods downward, of automatically-actuated devices independent of the spring in, or forming part of, the spring-rod for depressing the shank-roll-carrying frame, operating to raise the shank-leveling roll at intervals from contact with the shoe-sole during the leveling operation.

4. The combination with a rocking jack, and a sole-leveling roll, of mechanism actuated at intervals by the rocking jack to raise the roll from the sole being operated on.

5. The combination with a jack, and a sole-leveling roll, of a movable cam, means for moving the cam, and devices automatically actuated by the cam and operating to positively raise said roll at intervals from the shoe-sole during the leveling operation.

6. The combination with a jack, a sole-leveling roll, a spring-rod, and a treadle for depressing the spring-rod and leveling-roll, of automatically-actuated devices independent of the spring in, or forming part of said spring-rod, operating to positively raise the roll at intervals from contact with the shoe-sole during the leveling operation, and devices for varying the extent to which said roll is raised.

7. The combination with a jack, and a sole-leveling roll, of a movable cam, means for moving the cam, devices automatically actuated by the cam and operating to positively raise said roll at intervals from the shoe-sole during the leveling operation, and devices for varying the time at, and extent to, which the roll is raised.

8. The combination with a rocking jack, and a sole-leveling roll, of devices operated by the jack and automatically raising the roll at intervals, and devices for varying the time at, and extent to, which the roll is raised.

9. The combination with a movable jack, a sole-leveling roll, and a vertically-movable frame sustaining the roll, of a cam moved by the jack, and a device actuated at intervals by the cam to raise said frame and roll.

10. The combination with a movable jack, a sole-leveling roll, and a vertically-movable frame sustaining the roll, of a cam moved by the jack, a device actuated at intervals by the cam to raise said frame and roll, and means for varying the time at which the cam acts on said device to raise the frame and roll.

11. The combination with a movable jack, a roll and a vertically-movable frame sustaining the roll, of a cam moved by the jack, a lever actuated at intervals by the cam to raise the frame and roll, means for adjusting the cam to vary the time at which said frame and roll are raised, and a device carried by the lever to vary the extent to which the frame and roll are raised.

12. The combination with a movable jack, a roll, and a vertically-movable frame sustaining the roll, of a cam moved by the jack, a lever acted on at intervals by the cam to raise the frame and roll, and a worm-gear and a worm for turning the cam to vary the time it operates the lever to raise said frame and roll.

13. The combination with a movable jack, a roll, and a vertically-movable frame sustaining the roll, of a cam, means for moving the cam, a bell-crank lever having one arm provided with an adjustable screw bearing against said frame and the other arm arranged to be operated by the cam, and a worm-gear and a worm for adjusting the cam.

14. The combination with a movable jack, a shank-roll, and a frame sustaining the roll, of a rock-shaft, a link connecting the jack with the rock-shaft, a worm-gear on the shaft, a cam on the worm-gear, a worm connected with the cam and engaging the worm-gear, a lever acted on at intervals by the cam to raise said frame and roll, and means for varying the extent to which the lever raises the frame and roll.

15. The combination with a rocking jack, and a shank-roll, of a rock-shaft, a link connecting the jack with the rock-shaft, a worm-gear on said shaft, a cam on the worm-gear, a worm connected with the cam and engaging the worm-gear, and devices operated at intervals by the cam to raise said roll.

16. In a sole-leveling machine, a shank-leveling roll mounted to swing in a plane parallel with the shank-face of the last, substantially as described.

17. The combination of a horizontally-swinging carrier, segmentally-slotted plates swinging horizontally with said carrier, adjusting devices for securing the slotted plates in their adjusted position, and a leveling-roll carried by said plates.

18. The combination with a vibratory frame, a vertical pintle or pivot-pin thereon, a horizontally-swinging carrier engaged with the pintle or pivot-pin, a vertically-rocking plate pivotally mounted on said carrier, adjustable roll-holding plates mounted on the rocking plate, and a leveling-roll carried by the adjustable plates.

19. The combination with a jack-frame, and a movable shoe-supporting arm or frame mounted thereupon, of a locking device for engaging and locking the arm or frame to the jack-frame, a cam, means for shifting the cam, and means operated by the cam to disengage the locking device from said arm or frame.

20. The combination with a rocking jack-frame, a movable shoe-supporting arm or frame mounted thereupon, and a jack-frame shaft, of a locking device for engaging and locking the arm or frame to the jack-frame, a cam on the jack-frame shaft, a treadle for shifting the cam, and means operated by the cam for disengaging the locking device from said arm or frame.

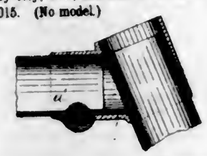
21. The combination with a movable jack-frame, and a movable shoe-supporting arm or frame mounted thereupon, of a locking device for engaging and holding the arm or frame to the jack-frame, a treadle and means thrown into action by the treadle to disengage the locking device from said arm or frame.

22. The combination with a movable jack-frame, and a movable shoe-supporting arm or frame on the jack-frame, of a locking device for engaging and disengaging said arm or frame, a cam, and a lever engaged with said cam and with said locking device and actuated by the jack-frame and cam to disengage the locking device from the arm or frame.

23. The combination with a movable jack, and a movable shoe-supporting arm or frame on the jack, of a locking device for engaging and disengaging said arm or frame, a lever connected with the locking device, a cam engaging the lever, and a treadle connected with the cam.

24. The combination with the fore-part roll, the shank-roll, and carriers for the rolls, of a sole-leveling machine, of a single bell-crank lever having one arm provided with two bearings connected respectively with said carriers, and means for vibrating said lever and thereby vibrating both rolls.

656,765. MECHANICAL JOINT FOR VEHICLE-FRAMES. JAMES S. COPELAND, Hartford, Conn., assignor to the American Bicycle Company, Jersey City, N. J., and New York, N. Y. Filed Oct. 4, 1897. Serial No. 654,015. (No model.)

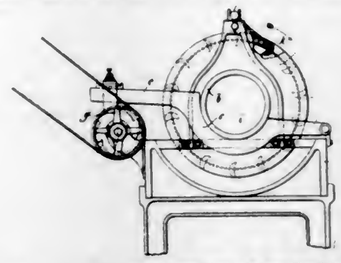


Claim.—1. In combination in a vehicle-frame having separable members, a main frame member having near its end a transverse socket, a bracket member having a tang with a transverse socket, and a removable pin in the transverse sockets of the main frame member and the bracket member comprising two separable sections adapted to be inserted from opposite sides of the transverse opening whereby the said members are separably secured together, all substantially as described.

2. In combination in a vehicle-frame having separable members, a bracket member having a hollow tang with a transverse pin-socket, a main frame member with its end adapted to fit closely within the hollow tang and having near its end a transverse socket or indentation, and a removable transverse pin fitting within the sockets of the tang and frame parts, said transverse pin composed of two sections provided with oppositely-disposed tapered surfaces, and adapted when inserted in the transverse opening to separably bind together the frame member and the bracket member, all substantially as described.

3. In combination in a vehicle-frame comprising separable members, a bracket member having a tang with a lengthwise socket and a transverse pin-socket, a main frame member with its end adapted to fit closely within the lengthwise socket and provided at or near its end with a transverse socket or indentation, and a locking-pin adapted to be inserted in the transverse opening of the bracket and tube members and comprising two sections each provided with a serrated beveled surface.

656,766. PULP-STRAINER. ROBERT DIETRICH, Merseburg, Germany. Filed Nov. 29, 1899. Serial No. 738,688. (No model.)



Claim.—1. A pulp-strainer comprising, in combination with the strainer-cylinder, an ejection-pipe having its opening extending at an angle to the cylinder and in the direction of rotation thereof, and transverse devices arranged on the surface of the cylinder and suitably shaped to receive the impact of the water from the ejection-pipe on their sides presented toward the ejection-opening, in order to cause rotation of the strainer-cylinder without the use of gearing.

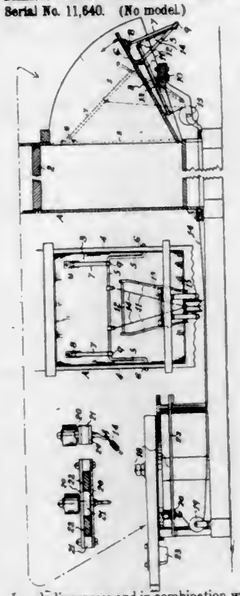
2. A pulp-strainer comprising, in combination with the strainer-cylinder, an ejection-pipe having its opening extending at an angle to the cylinder and in the direction of rotation thereof, and transverse devices arranged on the surface of the cylinder and formed as blades to receive the impact of the water from the ejection-opening.

3. A pulp-strainer comprising, in combination with the strainer-cylinder an ejection-pipe having its opening extending at an angle to the cylinder and in the direction of rotation thereof, and transverse devices arranged on the surface of the cylinder and adapted to receive the impact of the water from the ejection-opening, said devices consisting of half-round bars with blade-strips fastened to them on the impact-receiving side.

4. A pulp-strainer comprising, in combination with the strainer-cylinder, an ejection-pipe having its opening extending at an angle to the cylinder and in the direction of rotation thereof, and transverse devices arranged on the surface of the cylinder and adapted to receive the impact of water from the ejection-opening, said devices consisting of half-round bars with blade-strips fastened to them on the impact-receiving side and said blade-strips being partly straight and partly curved, substantially as set forth.

5. A pulp-strainer comprising, in combination with the ejection-pipe, a strainer-cylinder having transverse strips arranged to receive the impact of water from such pipe, and end disks on said cylinder, forming in conjunction with said transverse strips, buckets to hold the water and cause the weight of the latter to aid the rotation of the cylinder.

656,767. BALING-PRESS. CHARLES DODGE, Davisville, Cal. Filed Apr. 5, 1900. Serial No. 11,640. (No model.)



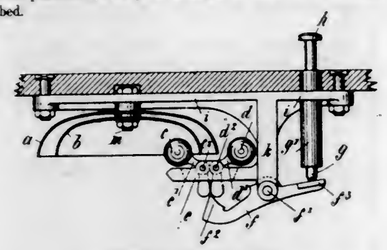
Claim.—1. In a baling-press and in combination with the press-box, and the hinged swinging door thereof, links having one end fulcrumed to stationary points, other links pivoted to the free ends thereof and having their opposite ends pivoted to the door, a lever fulcrumed intermediate of its ends, a chain passing over said lever to the source of power, having its outer end connected with the fulcrum-bar of the links whereby the latter is raised above the plane of the fixed pivots, and then drawn into line with the links to close the door.

2. In a baling-press, a vertical press-box, a door hinged at its lower edge, so that the upper edge swings outwardly and downwardly, segmental sides between which said door is movable, links pivoted to each of said sides, other links having one end pivoted to the door, and the others connecting with the outer ends of the first-named links, a chain connected with the fulcrum-bar of said links, a fulcrumed lever over which the outer end of said chain passes, a pulley located with relation to the inner end of the lever and around which the chain leads to the source of power whereby the pull upon the chain first tilts the lever about its fulcrum, raises the hinge-joint of the links to a point above their fixed fulcrum, so that the chain can exert a direct pull upon the link-joint to bring it into the line of the links and to close the door.

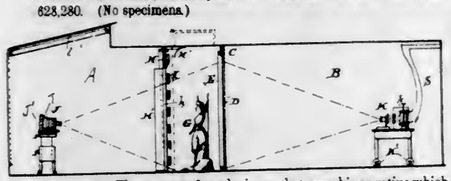
3. A baling-press having a vertical press-box, a door having its lower edge hinged and the upper edge turnable outwardly and downwardly to open the side of the box, links pivoted respectively to fixed points and to the door and having their opposite ends pivoted together so as to fold upon each other when the door is opened, a lever fulcrumed intermediate of its ends, a chain passing over said lever connecting with the fulcrum-joint of the links, and leading over a pulley from the inner end of the lever whereby the latter is moved to raise the links above their fixed fulcrum to allow the chain to exert a direct pull upon the joint, a slide with which the opposite end of the chain is connected, guides upon which the slide is movable, and means for applying power to move the slide and pull upon the chain.

656,768. SIGNAL-BELL. CARL J. E. FLECK, Hamburg, Germany. Filed Feb. 8, 1900. Serial No. 4,551. (No model.)

Claim.—A signal or call bell comprising two concentrically-arranged bells, bell-crank hammer or clapper levers *c' d'*, the actuating-lever *f* and the push-rod *h*, said parts arranged for operation substantially as described.



656,769. ART OF PRODUCING PHOTOGRAPHIC NEGATIVES. RUDOLPH M. HUNTER, Philadelphia, Pa. Filed Mar. 19, 1897. Serial No. 628,280. (No specimens.)



Claim.—1. The process of producing a photographic negative which consists in subjecting a sensitized plate or film to the reflected light from an object, then enveloping the object in darkness, and subsequently subjecting the plate or film to a second exposure while maintaining an illuminated background, and finally developing and fixing said plate or film, whereby the composite negative will have a background perfectly blended with the foreground.

2. The process of producing a photographic negative which consists in subjecting a sensitized plate or film to the reflected artificial concentrated light from an object, while maintaining a black or dark background, then enveloping the object in darkness, and subsequently while retaining the object in the same position subjecting the plate or film to a second exposure while maintaining an illuminated background, and finally developing and fixing said plate or film, whereby the composite negative will have a background perfectly blended with the foreground.

3. The process of producing a composite photographic negative which consists in focusing a camera upon an object and a background, then subjecting a sensitized negative plate or film in the camera to two exposures, while so focused, one of which receives the impression of the object and the other of the background with the object in position and shielded from light in front whereby it acts as a silhouette to shield a corresponding portion of the background, and finally developing and fixing the negative plate or film.

4. The process of producing a composite photographic negative which consists in focusing a camera upon an object and a background, then subjecting a sensitized negative plate or film in the camera to two exposures, one of which receives the impression of the object and the other of the background and in which the object and background are alternately thrown into darkness, and finally developing and fixing the negative plate or film.

5. The art of producing a composite negative which consists in arranging an object and background in focus of a camera, and while maintaining them in the same relative position to the camera and exposed negative alternately illuminating said object and background whereby when photographing the background the object will blot out or shield the proper amount thereof so as not to overlap the impression of the object, and finally developing and fixing said negative plate or film.

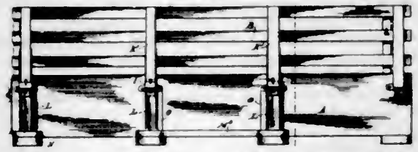
6. The art of producing a photographic print which consists in first forming a composite negative by arranging an object and background in focus of a camera, and while maintaining them in the same relative position to the camera and exposed negative alternately illuminating said object and background whereby the object when photographing the background will blot out or shield the proper amount thereof so as not to overlap the impression of the object, then developing and fixing said negative plate or film, and finally printing the negative upon a sensitized sheet or surface.

7. The art of producing a composite negative which consists in arranging an object and background in focus of a camera, and while maintaining them in the same relative position to the camera and exposed negative alternately illuminating said object and background whereby the object when photographing the background will blot out or shield the proper amount thereof so as not to overlap the impression of the object, and finally developing and fixing said negative plate or film, then printing from the composite negative so produced upon a sensitized sheet or surface, and subsequently forming a second negative for photoengraving or half-tone process by photographing the print through a screen upon a second sensitized plate or film.

8. In the art of photography, the method of producing a composite pictore which consists in subjecting a sensitized plate to two exposures in rapid succession of illuminated objects one overlapping the other in the line of vision, and in which one of the exposures has the rear object partly blotted out by the other or front object, developing and fixing the negative, and finally printing the said negative upon a sensitized paper or film.

9. The process of producing a composite negative which consists in focusing the light from an object and background upon a sensitized plate or film through a screen to obstruct a portion of the rays of light, then subjecting the sensitized negative plate or film rapidly to two exposures without moving the plate one of which receives the impression of the object and the other of the background with the object in position to shield a corresponding portion of the background, and finally developing and fixing the negative plate or film.

656,770. COMBINED HAY AND STOCK RACK. JOHN H. KING, Deckerville, Mich. Filed May 18, 1900. Serial No. 17,156. (No model.)



Claim.—1. In a convertible hay and stock rack, the combination with a body portion, of sides hingedly secured thereto, means for locking the sides in vertical position, means for supporting or bracing the sides when in lowered position, and means for locking said braces from swinging movement when the sides are in elevated position comprising means carried by the sides adapted to detachably engage the braces, substantially as described.

2. In a convertible hay and stock rack, the combination with a body portion, of sides, hinges for connecting said sides to said body portion, comprising loops or brackets on the sides of said body, perforated strap members on the sides and adapted to project through the loops or brackets, pins projecting outwardly from the sides of the body portion adapted to engage and retain in proper position the strap members carried by the sides when the sides are in their lowered positions, substantially as described.

3. In a convertible hay and stock rack, the combination with a body portion, of sides pivotally secured thereto, pivoted brace-rods secured to said sides, hooks at the lower portion of said brace-rods adapted to project into apertured plates carried by the body portion, a U-shaped band connecting the said brace-rods, and a catch adapted to engage said band to lock the said brace-rods from swinging movement, substantially as described.

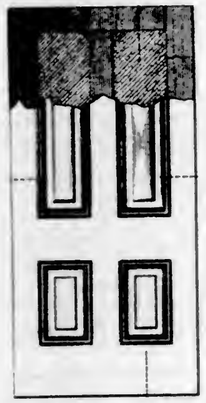
4. In a convertible hay and stock rack, the combination with a body portion, of sides pivotally connected thereto, brace-rods capable of independent swinging movement for the said sides when in their lowered positions, fingers on said brace-rods adapted to project into apertured plates carried by the body, guides for the edges of said rods to prevent lateral movement thereof when in operative position, and means on the sides for confining said rods to the sides when the sides are elevated, substantially as described.

656,771. TOP. PHILIP L. KOSCIALOWSKI, Rochester, N. Y., assignor to Frank Favour and Harold C. Mitchell, same place. Filed Jan. 12, 1900. Serial No. 1,242. (No model.)



Claim.—A spinning-top comprising, in combination, a straight metal spindle having a perforation to receive a cord, a threaded end, and two spinning-points, a head screwed upon the threaded end of the spindle, a body through the axis of which the other end of the spindle passes, a sleeve loosely mounted on the spindle between the head and body and having a transverse opening extending entirely through it, the perforation in the spindle being arranged within said opening, the spinning-points of the spindle projecting slightly beyond said head and body, and a cord connected to the spindle at the perforation therein, substantially as described.

656,772. DOOR. JAMES M. LEAVER, Bay Mills, Mich., assignor to Lewis A. Hall and Robert H. Munson, same place. Filed Nov. 8, 1899. Serial No. 736,275. (No model.)



Claim.—1. A door, shutter, or analogous article, consisting of a core having panel-openings, and a body of pulp material pressed about the core and having solid homogeneous panel portions completely filling the said openings of the core.

2. A door, shutter, or analogous article, consisting of a core having panel-openings conforming to the size, shape, and disposition of the panels, and a body of pulp material pressed upon both sides of the core and having solid homogeneous panel portions completely filling the openings thereof.

3. A door, shutter, or analogous article, consisting of a skeleton wooden core having panel-openings therein, and a body of pulp material pressed upon both sides of the core and having solid homogeneous panel portions filling the panel-openings thereof.

4. A door, shutter, or analogous article, consisting of a core having openings, and a body of pulp material having adhesive material incorporated therein and pressed upon both sides of the core, said body having solid homogeneous portions filling the openings of the core.

5. A door, shutter, or analogous article, consisting of a core having openings therein, a body of pulp material pressed upon both sides of the core and having solid homogeneous portions filling the openings thereof, and an adhesive substance or compound, in addition to the pulp material, for causing the firm adherence of the latter to the core.

6. A door, shutter, or analogous article, consisting of a core having panel-openings, and anchor-recesses upon its faces, and a body of pulp material pressed about the core and filling said panel-openings and anchor-recesses thereof.

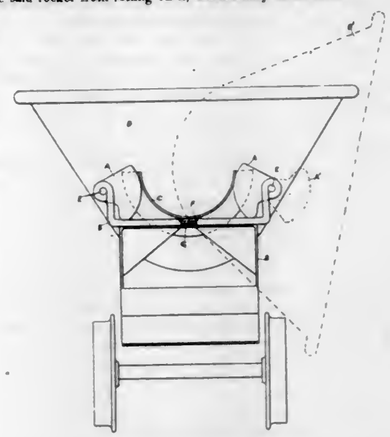
7. A door, shutter, or analogous article, consisting of a core having openings, and anchor-recesses upon its faces, and a body of pulp material pressed about the core and filling the openings and anchor-recesses thereof.

656,773. TIPPING WAGON. CHARLES W. LYON, Thornhill-Lees, near Dewsbury, England. Filed May 8, 1900. Serial No. 15,935. (No model.)

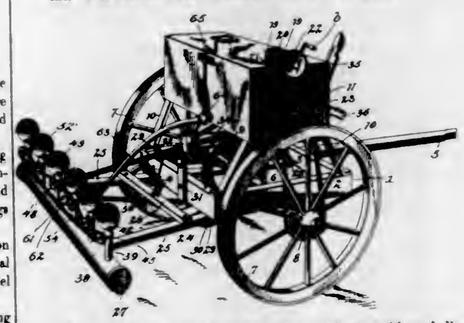
Claim.—1. In a side-tipping wagon, the transversely-swinging blocks or cams A carried by the standard B so as to secure and release at will the tipping rocker C, substantially as shown and described.

2. In a tipping wagon, the combination, with a supporting-standard having an upwardly-projecting eye at one end thereof, of a wagon-body provided with a curved rocker which rolls on the said standard, and a block pivoted to the said eye and bearing against the face of the end portion of the said rocker and normally preventing it from rolling, substantially as set forth.

3. In a tipping wagon, the combination, with a supporting-standard provided with a central recess, of a wagon-body provided with a curved rocker which rolls on the said standard, a lug provided with a projecting lip and secured to the middle part of the said rocker and engaging with the said recess, and a block pivoted to the said standard and normally preventing the said rocker from rolling on it, substantially as set forth.



656,774. INSECT-DESTROYER. CHARLES R. MOORE, Rochester, Ind. Filed Dec. 30, 1899. Serial No. 742,109. (No model.)



Claim.—1. In a spraying apparatus, the combination with a spindle-tube of a sprayer-head revoluble thereon, a feed-cap secured to and removable from said head and having downturned arms to discharge onto the face of the head, a feed-disk, seated in a joint between said feed-cap and said sprayer-head, and a valve seated in an opening in said feed-disk, substantially as described.

2. In a spraying apparatus, the revoluble head in combination with the spindle-tube on which it rotates and the feed-cap having the reversely-disposed arms discharging onto the face of the removable sprayer-head, substantially as described.

3. The combination, in a spraying device, of the centrifugal head, the fixed tube to deliver water thereto and the foraminous cap on said head, substantially as described.

4. The spraying device, comprising the centrifugal sprayer-head, in combination with the fixed T-tube to deliver water to said sprayer-head, and having the valve to regulate the supply of water, substantially as described.

5. The combination, in a spraying device, of the spindle-tube, the sprayer-head revoluble thereon, and having the gear-wheel, and an actuating gear-wheel supported by said spindle-tube and engaging the gear-wheel of the sprayer-head, substantially as described.

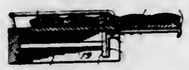
6. The combination, in a spraying-machine, of the water-tube, having the spindle-tubes, the spraying-heads mounted on said spindle-tubes, the gears to rotate said sprayer-heads, actuating connections for said gear and the fountain or tank to supply the water-tube, substantially as described.

7. In a spraying-machine, the combination with the truck having the fountain-tank and the power-wheel 9, of the vertically-movable frame hinged to the truck, and having the spraying apparatus provided with the revoluble sprayer-heads, the wheel 57 in bearings carried by said frame, and connections, substantially as described, between said wheel and the sprayer-heads, to rotate the latter, and the endless chain or belt connecting said wheel to the power-wheel 9, substantially as described.

8. In a spraying-machine, the water-tube 38 having the centrifugal spraying devices, substantially as described, and the separable extension-tubes carrying such spraying devices, and adapted to be coupled to said tube 38, for the purpose set forth, substantially as described.

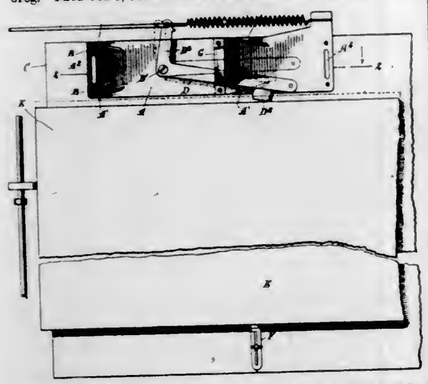
9. In a spraying device, the combination with the spindle-tube, of the revoluble head thereon, the feed-cap, secured thereto and removable therefrom, the feed-disk seated in the joint between said feed-cap and said sprayer-head, and the valve seated in an opening in said feed-disk, substantially as described.

656,775. VEHICLE-SEAT. CHARLES B. MOORE, Rochester, Ind. Filed Jan. 12, 1900. Serial No. 1,214. (No model.)



Claim.—An attachment for buggy-seats, comprising a U-shaped plate having its extremities turned outwardly in opposite directions and adapted for attachment to the under side of a buggy-seat and form a guideway between the under side of the seat and the bight of the plate, a flange upon the bight of the plate and extending downwardly therefrom, said flange having perforations therein, parallel rods engaged with the perforations and adapted to engage perforations in a depending portion of the buggy-seat, and a seat-plate slidably disposed upon the bight of the U-shaped plate and between the arms thereof, said seat-plate having its rear end bent downwardly and perforated and receiving the rods in its perforations, whereby the seat-plate may be held in its operative relation to the first-named plate.

656,776. GAGED FEEDING-JOGGER. ROSS H. PRATT, Portland, Oreg. Filed Oct. 5, 1899. Serial No. 732,628. (No model.)



Claim.—1. A press, provided with a jogger-arm mounted to swing, and an extension jogger-arm held on said first-named jogger-arm, substantially as shown and described.

2. The combination with a press having its feed-board or platen provided with a gage for engaging one side of a sheet, of a pivoted angular jogger-arm mounted upon the feed-board or platen opposite the gage and provided at one end with a jogger for engaging the opposite side of the sheet to move said sheet against the said gage, means for automatically moving the jogger outward, and a spring secured to the jogger and to a fixed support for moving the jogger inward, substantially as described.

3. A press, provided with a jogger-arm mounted to swing, and an extension jogger-arm held on said first-named jogger-arm, said extension jogger-arm being made in sections adjustable upon one another, as set forth.

4. A press, provided with a plate, a jogger-arm pivoted thereon, a cord engaging an angular arm on said jogger-arm and connected with a movable part of the press, a spring connected with said angular arm, and a jogger held on the free end of said jogger-arm, substantially as shown and described.

5. A press, provided with a plate, a jogger-arm pivoted thereon, a cord engaging an angular arm on said jogger-arm and connected with a movable part of the press, a spring connected with said angular arm, a jogger held on the free end of said jogger-arm, and a bearing for said jogger-arm on said plate, to limit the movement of the arm, as set forth.

6. A feeding-jogger for printing-presses, comprising a plate adapted to be secured to the feed-board or platen, and a pivoted and spring-pressed angular jogger-arm mounted on the plate and provided at the free end of one of its members with a jogger, the other member of the jogger-arm being adapted to be connected with a movable part of a press, substantially as described.

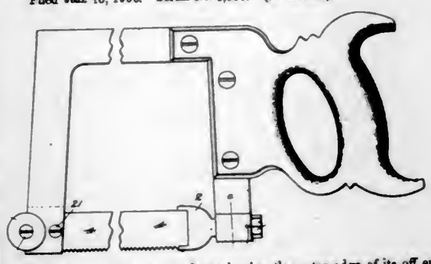
7. A feeding-jogger for printing-presses, comprising a plate adapted to be secured to the feed-board or platen of a press, an angular jogger-arm pivoted to the said plate and having a jogger on one member, a guideway on the plate in which the member of the arm carrying the jogger works, and a spring secured to the other member of the jogger-arm and to the said plate, the member of the said arm to which the spring is connected being adapted to be connected with a movable part of the press, substantially as described.

656,777. COVER-FASTENING FOR FRUIT-JARS. WILLIAM ROBSON, Toronto, Canada, assignor to William W. Pierce, Buffalo, N. Y. Filed July 31, 1899. Serial No. 725,614. (No model.)



Claim.—The combination with a jar or similar vessel and its cover, one of said parts being provided with a locking bead or rim, and the other part with a lug having horizontal sockets, of a vertically-swinging locking-clip bent from a single piece of wire and consisting of two members arranged side by side and provided at their inner disconnected ends with horizontal pivots which are journaled in the sockets of said lug, and connected at their opposite ends by a cross-bar, each of said members being provided in rear of said cross-bar with an inward bend which is arranged substantially at right angles to the adjacent portion of the member and which is adapted to be sprung over said locking bead or rim, substantially as set forth.

656,778. HANDSAW. CHARLES H. WILSON, New York, N. Y. Filed Jan. 15, 1900. Serial No. 1,533. (No model.)



Claim.—1. In a saw, a frame having the outer edge of its off end, formed with a concave recess, separate binder parts on each side of the blade forming supporting-bearings therefor and having a contour conforming to and abutting upon the concave walls of the frame and means for clamping the binder parts upon the blade concentric with the concave frame-walls, whereby the strain upon the parts is distributed upon the binders and the frame concentric with said clamping-screw.

2. In a saw and in combination with the blade and a frame having its off end split and formed on its outer edge with a concave recess, means for fastening the off end of the blade to the frame within the split consisting of a pair of separate circular binder-plates seated on the concave edges, a screw engaging one of the binders and clamping the saw-blade between them, and means whereby the handle end of the blade is adjustably secured to the frame.

3. In a saw and in combination with the blade and a frame having its off end split and formed on its outer edge with a concave recess, means for fastening the off end of the blade, to the frame within the split consisting of a pair of separate circular binder-plates clamped on the blade and seated on the concave edge, a screw central with and engaging one of the binders clamping the saw-blade between them, and a screw engaging one of the split parts clamping the blade between them and means whereby the handle end of the blade is adjustably secured to the frame.

4. In a saw and in combination with a frame having its handle end formed with a square opening, means for connecting and supporting the blade therein consisting of a buckle having a part formed with a set-pin and a square shank having a screw-threaded hole, and a part of less length formed with a corresponding square shank having a screw-thread forming an extension of the threaded hole, and a recess adapted to engage the set-pin, a screw for engaging the screw-threaded shank parts within the square frame-opening, and means whereby the screw is fastened within said opening.

5. In a saw and in combination with a frame having a concave recess in its off end and the blade having convex bearing circular binder parts centrally clamped to and engaging the concave edge of the frame, and an adjustable connection engaging the other end of the blade with the frame.

6. In a saw and in combination with a frame having its off end split and formed with concave edge recesses, its handle end having a square opening, a buckle of two clamping parts each part engaged with and clamped upon the blade, means whereby both parts are interlocked and connected together within the square opening and means whereby the off end of the blade is seated within and upon the edge recess.

7. In a saw and in combination with the frame having a horizontal square opening in its handle end and the blade, a buckle of two members one part interlocking the blade with the other part and both parts having shanks meeting and abutting within the frame-opening, and a screw secured to the frame and engaging both the shank parts within the said frame-opening.

8. In a saw and in combination with the frame and the blade, a buckle of two members pivoted together and connected to the blade at the pivoted end, the other end of one member terminating in a square shank pierced with a screw-threaded hole, the other member of less length terminating in a corresponding square shank and having a screw-threaded recess forming an extension of the threaded hole, means for interlocking and clamping the blade between the members and an adjusting-screw engaging the frame and both the said buckle members.

9. In a saw and in combination with the frame and the blade, the off end of the frame split and formed with edge concave recesses, a binder-bearing for the blade comprising a pair of separate plates one on each side of the blade each having cylindrical peripheries and seated within the concave edge recesses, a central clamping-screw engaging one of the binder-plates and a screw engaging one of the split frame parts whereby the split parts and the binder-plates are clamped together and upon the saw-blade.

10. In a saw and in combination with the frame and the blade, the latter rounded at both ends having a hole at its handle end and a pair of holes at its off end, a buckle of two members one of which has a set-pin engaging the blade-hole, the other member has a recess engaging the set-pin, means for connecting the members together at both ends and means for adjustably securing the connected members together in the frame-opening, a pair of circular binders for the off end of the blade each having a bearing upon the frame, a clamp-screw passing through the binders and the blade and a screw clamping the split parts.

11. In a saw and in combination with a frame and the blade, a fastening for the handle end of the latter consisting of two members one of which has a surface cylindrical set-pin, an oblique shoulder-forming surface part and a square shank having a screw-threaded hole, the other part being of less length and having a circular recess adapted to engage the set-pin, an oblique shouldered part, a square shank, and a screw-threaded recess forming an extension of the threaded hole, both parts hinged together, their meeting faces intermatching upon the saw-blade, their shank parts secured together within a frame-opening, an adjusting-screw engaging the frame and the buckle members and means for fastening the off end of the blade.

12. In a saw and in combination with a frame and the blade, a fastening device for the handle end of the frame comprising a buckle of two members pivoted together at the blade-connecting end means whereby their other ends are adjustably secured to the frame, and means whereby the blade is fastened between the buckle parts between their pivoted ends and the frame connections.

13. In a saw and in combination with a frame and the blade, a buckle-fastening for the handle end of the blade consisting of two parts, their meeting faces having shouldered seats for the blade, and oblique interlocking surface parts, a set-pin on one of said parts engaging a hole in the blade and a corresponding recess in the other clamping part, each part terminating in abutting square shanks having screw-threads in alinement and pivoted together at their blade-connected ends, their other ends bound together within the walls of an opening in the frame, and a screw-bolt engaging the frame and the buckle screw shank parts.

14. In a saw and in combination with the blade and a frame having a horizontal square opening in its handle end, a buckle-clamp of two parts, each having a square shank meeting in alinement, a screw secured to the frame and engaging both shank parts within said frame-opening, and a cylindrical bearing between the clamp parts engaging them and the blade and a pin pivoting the ends of the clamp parts between said blade-bearing and the off end of the frame.

15. In a saw and in combination with the frame having a horizontal square opening in its handle end and the blade, a buckle device of two members, one of which has a cylindrical bearing-pin for engaging a hole in the blade, the other a recess for engaging the pin and the blade, means whereby the members are connected at their inner ends, their outer ends terminating in square shanks within the walls of the frame-opening, and means for adjustably securing the shanks therein to the frame.

16. In a saw and in combination with a frame having an angular opening in its handle end, and the blade, a fastening device for the blade comprising a buckle of two members pivoted together at their blade-connected ends, means whereby their other ends are connected and secured within said frame-opening, and means whereby the blade is fastened to and between the buckle members between their pivot and their frame-connected ends.

17. In a saw and in combination with the frame and the blade, a circular bearing of separate plates, a screw centrally clamping them to the blade at the off end of the frame, a buckle fastening part, having a cylindrical bearing connection for the blade at the handle end of the frame and to the buckle part, and means connected to the frame for securing and adjusting it.

18. In a saw and in combination with a frame having a split off end and an open concave recess in the outer edge of each split part, and the blade, of circular binder parts seated within the recess upon the frame and upon the blade, and means for clamping them together centrally upon the blade and concentric with the frame-recess.

19. In combination with the saw-blade and the frame having a split off end, of circular binder parts for the blade seated upon the split parts, means for clamping the binder parts upon the frame and the blade a fastening device for the handle end of the blade, having an angular seating in the frame and a bearing engaging the blade between the frame-fastenings.

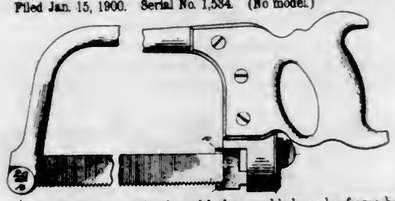
20. In a saw and in combination with the frame and the blade, circular bearing parts a screw centrally clamping them to the blade, a seating in the off frame end concentric with said clamping-screw against and upon which the circular bearing parts abut, a buckle-clamp of two parts engaging the blade between them and engaging each other, means connecting the clamp with the handle end of the frame, and means whereby the clamp is adjusted in the frame.

21. In a saw and in combination with the blade and a frame having a split off end, and a square opening in its handle end of separate binder parts seated in the separate split parts and means whereby the binder parts are centrally clamped together upon the blade, and a buckle-clamp connecting the other end of the blade and frame for drawing the binder parts against the frame consisting of a screw secured to the frame and engaging the buckle-clamp within said square frame-opening.

22. As a means for fastening the off end of the blade to the split end of the frame, the screw passing through the split parts and clamping the blade between them in combination with circular bearing binder-plates, and a screw centrally clamping them to the blade and forming the center of the bearing on the frame for the clamped plates, the frame-clamping screw passing through but not engaging the blade.

23. In a saw, a U-frame having its off end split and a concave recess in its outer edge at the split, its handle end having a horizontal square opening closed at its outer end, in combination with the blade, a pair of circular binder-plates engaging the frame concave recess, a screw centrally clamping the binder-plates to the blade, a screw clamping the split parts upon the blade, a buckle-clamp engaging the handle end of the blade, and the walls of the frame-opening, and an adjusting-screw engaging the frame and the buckle.

656,779. HANDSAW. CHARLES H. WILSON, New York, N. Y. Filed Jan. 15, 1900. Serial No. 1,534. (No model.)



Claim.—1. In combination with the saw-blade and a frame having the corner at its inner edge at the handle end recessed, at right angles to said edge, an opening in said recessed part below the horizontal wall thereof, a clamp for the blade arranged within said angular corner space or recess and within said frame-opening, and a screw secured to the frame within said opening engaging the clamp whereby the clamp is housed within the corner space at the inner edge of the frame, the upper edge of the clamp abutting said horizontal wall.

2. For fastening the handle end of the saw, the frame having its inner-edge corner at the handle end recessed, at right angle to said edge, an opening in said recessed part below the horizontal wall thereof, a clamp of two parts for the blade, means for engaging the blade and interlocking the clamp parts thereon, means consisting of clamp-shanks whereby said clamp is secured within the frame corner recess and means consisting of a screw fastened to the frame for securing and adjusting the clamp within the frame-opening.

3. In a saw and in combination with the frame and the blade, a fastening device for the off end of the blade consisting of beveled bearing-plates and a clamp-screw, a fastening device at the handle end of the blade consisting of a clamp having a cylindrical pin and shank parts engaging the frame and an adjusting-screw engaging the frame and the clamp-shanks.

4. In a saw and in combination with the frame and the blade, a clamp device of two members, one of which has a cylindrical bearing-pin for engaging a hole in the blade, the other a recess for engaging the pin on the other side of the blade, an inclined sink in one of the members and the corresponding swell in the other member whereby the end of the blade is bent out of line, between the meeting faces of the clamp, means whereby the members are connected at each end, and clamped upon the blade and means whereby the clamped members are adjustably secured to the handle end of the frame.

5. In combination with the blade, a frame having in its handle end an opening of angular cross-section, means secured therein connecting and clamping the blade, a screw engaging said means, a plate through which the screw passes, secured to the frame over the outer end of said angular opening, and a pin passing through the screw-stem at the inner wall of said plate, whereby the screw is locked against endwise movement within the frame-opening.

6. For fastening the off end of the saw, the end of the frame split and formed at its outer edge with a recess at the split parts, a clamp of two parts each constructed with a surface part for engaging the outside walls of the frame, and a surface part for engaging the blade and means passing through the blade and engaging the clamp parts upon the blade and upon the frame.

7. For fastening the off end of the saw, the end of the frame split and formed at its outer edge with a concave recess, beveled toward the split on each side of the frame, a clamp of two parts the edges whereof are the counterpart of and seated upon the beveled edges of the recess and means passing through the blade and engaging the clamp parts with a clamping function upon the blade and upon the frame.

8. In a saw and in combination with the blade and the frame having its off end split, its outer edge formed with a concave recess, at the split parts and beveled around the outer sides toward the split, of circular binder parts beveled around their edges and means whereby they are clamped within the recess upon the beveled frame and upon the blade.

9. In a saw and in combination with the blade and a frame having its off end split, and formed at its outer edge with a concave recess, beveled around the outer sides toward the split, of circular binder parts beveled around their edges, one of which has a screw-threaded hole, the other a screw-stem for engaging the threaded hole whereby to bind the beveled parts together upon the beveled frame and upon the blade within the recess of each split part.

10. The saw-frame having its off end split, formed with a concave recess on its outer edge beveled inward around its edge, the handle end of the frame formed at its inner edge with a corner right-angled recess or space and an opening in said recessed part below the horizontal wall thereof, in combination with the blade, beveled bearing clamping-plates for the off end of the blade, a clamp-screw for said beveled plates, a buckle-clamp having a mounting-pin for the blade, and secured within the frame-opening and within the corner recess, and a screw secured to the frame and to the buckle-clamp.

656,780. LIGHTNING-ARRESTER. WILLIAM E. ATHEARN, New York, N. Y. Filed Feb. 16, 1898. Serial No. 670,596. (No model.)

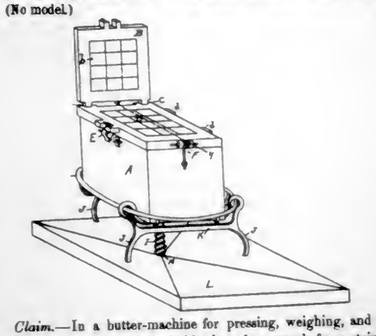


Claim.—1. A lightning-arrester comprising a block of non-conductivity having elongated ends bearing connections for the line and fuses, a central portion to which the ground-plate and ground connection are secured, and intermediate sections wound with coils of wire that constitute part of the line-circuit, and a ground-plate secured to the said central portion and extending contiguous to the said coils to each of the said end sections, substantially as herein shown and described.

2. The combination in a lightning-arrester of an non-conducting block having sections *a*, *a'*, provided with binding connections for the line and fuses, screw-holes for securing the block to a base, the central section for the support of the ground-plate having its top surface on the plane of the notches in the end sections, and the intermediate spirally-grooved sections, with the binding-posts, fuses, and coils forming a part of the line, and the ground-plate and connection, substantially as herein shown and described.

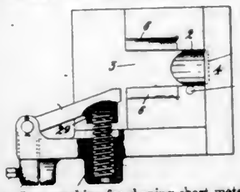
3. A lightning-arrester comprising a block of non-conductivity having elongated ends with connections for the line and fuses, a recess in the end for the depression therein of the fuse, a central portion to which the ground-plate and connection are secured, and intermediate sections wound with coils of wire that constitute part of the line-circuit and a ground-plate supported on the central portion and notches in the end portions, substantially as shown and described.

656,781. MACHINE FOR PRINTING BUTTER, &c. ALFRED C DODGE, Binghamton, N. Y. Filed Mar. 14, 1898. Serial No. 673,884. (No model.)



Claim.—In a butter-machine for pressing, weighing, and printing butter, a rectangular or other suitable-shaped receptacle for containing butter, provided with refrigerating air-chambers, retaining doors or lids, for holding the butter under pressure at the top, printing-plates to form designs attached thereto, cutting-dies engaging said plates to separate the butter into certain shapes, sizes, and weights, a pressure-screw and wheel and a vertical plunger operated thereby, and engaging said dies, and a frame with base to sustain and hold said press and its operating parts; as described and specified.

656,782. HEADING-MACHINE. CHARLES W. DURCHSCHLAG, Cleveland, Ohio, assignor to the Acme Machinery Company, same place. Filed Nov. 14, 1899. Serial No. 736,973. (No model.)



Claim.—1. In a machine for shaping short metal objects, the combination with a stationary die and a movable die and a plunger operating endwise into the joint die-cavity formed by said dies, of a blank-support arranged beneath the inner portion of said cavity to disappear in and enter the face of one of said dies, and a movable blank-supporting platform at the outer end of the die-cavity and constructed to be moved out of the way of the plunger by the latter, substantially as set forth.

2. In a machine for shaping short metal objects, the combination with a stationary die and a movable die and a plunger operating endwise into the joint die-cavity formed by said dies, of a blank-supporting pin sliding through the face of one die beneath the inner portion of said cavity against the face of the opposed die and having means for forcing it outward, and a movable blank-supporting platform at the outer end of the die-cavity having an inclined face to be engaged and depressed by the advancing plunger and means for again raising it, substantially as set forth.

3. In a machine for shaping short metal objects, the combination with a die structure and a plunger operating endwise into the die-cavity of said structure, of a movable blank-supporting platform at the entrance to said die-cavity having an inclined face to be engaged and depressed by the advancing plunger and means for again raising it, substantially as set forth.

4. In a machine for shaping short metal objects, the combination with a stationary die and a moving die, having vertically-opposed faces, of a blank-support arranged to project horizontally beneath the die-cavity and constructed to disappear in and enter the face of one of said dies, substantially as set forth.

5. In a machine for shaping short metal objects, the combination with a die structure and a reciprocating plunger operating endwise into the die-cavity of said structure, of a platform-arm fulcrumed to incline upward toward the end of the die-cavity to be struck and depressed by the advancing plunger, and having means for again raising it, substantially as set forth.

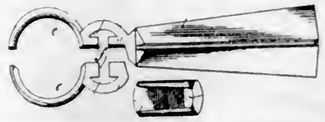
6. In a machine for shaping short metal objects, the combination with a die structure and a reciprocating plunger operating endwise into the die-cavity of said structure, of a platform-arm fulcrumed to incline upward toward the end of the die-cavity to be struck and depressed by the advancing plunger and having means for again raising it, and an adjustable stop device for controlling the upward movement of the platform-arm, substantially as set forth.

7. In a machine for shaping short metal objects, the combination with a die structure and a reciprocating plunger operating endwise into the die-cavity of said structure, of a platform-arm fulcrumed to incline upward toward the end of the die-cavity to be struck and depressed by the advancing plunger, a spring bearing upward against the free end of said arm, a stop-arm projecting from the fulcrum of the platform-arm, an adjusting stop-screw through said stop-arm, and a rigid stop opposed to the end of said screw, substantially as set forth.

8. In a machine for shaping short metal objects, the combination with a stationary die and a movable die and a reciprocating plunger operating into the joint die-cavity of said dies, of a spring-actuated blank-supporting pin sliding through the face of the stationary die beneath the inner portion of its die-cavity and engaged and forced back by the face of the moving die, and a movable blank-supporting platform fulcrumed to incline upward toward the outer end of the under side of the die-cavity to be depressed by the advancing plunger and having a spring for again raising it and an adjustable stop device for controlling the upward movement of the platform, substantially as set forth.

9. In a machine for shaping clevises, the combination with a stationary and a movable die, the joint cavity of said dies having a cylindrical inner portion and a beveled end and flat cheek-forming portions, and a reciprocating plunger having a tongue formed with a rounded forward edge and concave segmental shoulders, of a spring-actuated pin sliding through the face of the stationary die beneath the cylindrical portion of its die-cavity and engaged and forced back by the face of the moving die, and a movable blank-supporting platform fulcrumed to incline upward toward the outer end of the under side of the die-cavity to be depressed by the advancing plunger and having a spring for again raising it and an adjustable stop device for controlling the upward movement of the platform, substantially as set forth.

656,783. PIPE CLAMPING AND SUPPORTING DEVICE. OTTO EGGERT, Königsberg, Germany. Filed Dec. 23, 1899. Serial No. 741,456 (No model.)

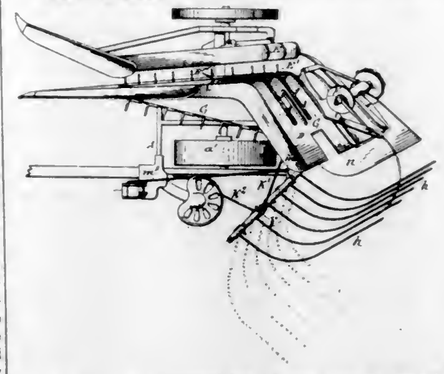


Claim.—1. The combination in a pipe clamping and supporting device of a shaft to be inserted in the wall at the required place, a center portion and a ring, said center portion and ring made in two parts, the two parts of the center portion provided with segment-shaped openings communicating with each other by a channel, and a key having lateral flanges approaching each other toward the rear end, said key adapted to close the ring by the insertion in the openings in the two parts of the center portion, substantially as described and shown.

2. In combination with a pipe clamping and supporting device having a shaft to be inserted in the wall at the required place, a center portion and a ring made in two parts, the two parts of the center portion provided with segment-shaped openings communicating with each other by a channel; a key provided with an aperture *k* and with lateral flanges approaching each other toward the rear end, said flanges adapted to press against the two base-surfaces of the segment-shaped openings in the two parts of the center portion to close the ring, substantially as described and shown.

3. The combination in a pipe clamping and supporting device of a shaft to be inserted in the wall at the required place, a center portion and a ring, said center portion and ring made in two parts, the two parts of the center portion provided with segment-shaped openings communicating with each other by a channel, and having the meeting surfaces of one half beveled off while the meeting surfaces of the other half are correspondingly recessed to insure a tight fitting together of the two parts, and a key having lateral flanges approaching each other toward the rear end, said key adapted to close the ring by the insertion in the openings in the two parts of the center portion, substantially as described and shown.

656,784. BUNDLE-CARRIER FOR HARVESTERS. GEORGE A. FARRALL and CHRISTIAN MAUL, Batavia, N. Y., assignors to the Johnston Harvester Company, same place. Filed Dec. 29, 1899. Serial No. 741,906. (No model.)



Claim.—1. The combination with the main frame, the supporting and driving wheels, and the binder mechanism arranged on the frame in rear of said wheels, of a bundle-carrier arranged to receive the bundles from the binder mechanism and inclining stubbleward and forwardly and upward, toward the axis of said wheels, substantially as set forth.

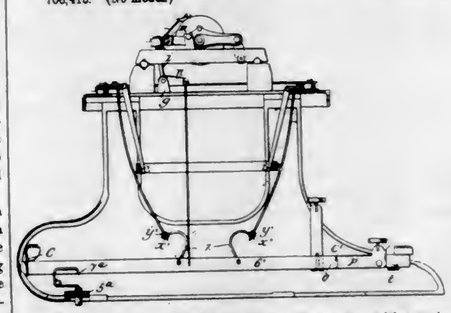
2. The combination with the main frame, the supporting and driving wheels, and the binder mechanism arranged on the frame in rear of said wheels, of a bundle-carrier composed of a rock-shaft journaled on the frame adjacent to the binder mechanism and inclining forwardly and upward toward the axis of said wheels and tines secured to said shaft and projecting stubbleward and rearwardly, substantially as set forth.

3. The combination with the main frame, and the supporting and driving wheels, of a conveyer-platform arranged lengthwise of the frame and inclining stubbleward and upward, a binder-deck extending stubbleward from the platform in rear of the axis of said wheels and inclining stubbleward and forwardly and upward, and a bundle-carrier composed of a rock-shaft arranged adjacent to said deck and inclining stubbleward forwardly and upward and tines secured to said shaft and projecting stubbleward and rearwardly, substantially as set forth.

4. The combination with the hollow rock-shaft of the bundle-carrier, of a step-bearing on which said shaft rests, and a connecting-hook pivotally arranged in said bearing and engaging with said rock-shaft, substantially as set forth.

5. The combination with the shaft of a bundle-carrier having two sets of perforations, of a tine having a return-bend which bears against one side of said shaft between said perforations, the tine passing through one set of perforations and the end portion of the return-bend through the other, and a fastening device applied to the end of the return-bend on the opposite side of the shaft, substantially as set forth.

656,785. TYPE-WRITING MACHINE. WILLIAM R. FOX, GLENN J. BARRETT, and ALBERT D. RAY, Grand Rapids, Mich., assignors to the FOX Machine Company, same place. Filed Mar. 9, 1899. Serial No. 708,418. (No model.)



Claim.—1. In combination, a type-lever hanger comprising a plate having one end thereof turned back upon the face of said plate and the bearings for the lever located at the turned-over portion of the plate, substantially as described.

2. In combination, a type-lever hanger comprising a doubled plate having the sockets for the type-lever bearing located at the turned-over portion of the plate, and means for drawing the doubled-over portion of the plate toward the main portion thereof to adjust the socket, substantially as described.

3. In combination, a type-bar hanger comprising a doubled-over plate having sockets bored at the turned-over portion of the plate to provide bearings and an adjusting-screw for adjusting said turned-over portion to open or contract the socket.

4. In combination, a type-bar hanger comprising a doubled-over plate having sockets bored at the turned-over portion of the plate to provide bearings, and an adjusting-screw extending transversely through the turned-over portion of the plate centrally thereof threaded in the main portion of the plate, substantially as described.

5. A type-bar hanger comprising a slotted plate doubled intermediately of said slot to provide a yoke having bearings formed in each prong of the yoke at the turned-over portion and means for adjusting said sockets.

6. The combination with a type-writer having the type-levers arranged in basket form, of hangers for said levers comprising flat plates, a retaining-plate, bolts for clamping the plate, said hanger-plates having their main portions forked to straddle said bolts and the forward portion of yoke shape and doubled over with sockets or bearings formed by the bent-over end of each prong of the yoke, said lever resting between said prongs of the yoke, the yoked end of each alternate hanger overlapping the adjacent hanger.

7. The combination with a type-writing machine having the type-levers arranged in basket form, a retaining-plate, bolts for clamping said plate and hangers comprising flat plates having their rear ends slotted to straddle said bolts and their forward portions doubled over and forming a yoke, said lever being placed between the prongs of the yoke and the pivot-pins thereof finding bearings in the doubled ends of the prongs, each alternate hanger overlapping the adjacent hanger and space-blocks located between each alternate hanger and the frame.

8. A type-bar hanger comprising a plate having a slot confined within the edges of the plate, the plate being doubled over centrally of the slotted portion whereby a yoke is provided and bearings in each end of the yoke.

9. In combination, a type-bar hanger comprising a flat plate having a slot therein, a yoke formed in the plate, bearings in the end of said yoke, the yoke being formed by doubling the plate centrally of the slotted portion in a plane parallel with the axis of said bearings, substantially as described.

10. The combination in a type-writing machine, the type-lever hangers, each comprising a flat plate with adjustable bearings for the type-levers, retaining means for said hangers arranged above the same, and means for adjusting said bearings exposed above the face of the hangers so as to be readily accessible, substantially as described.

11. The combination with a pivoted type-bar lever having an opening through the end thereof, of a link having an angular end extending through said opening, a recess in said end and a split ring seated in said recess providing an enlargement to prevent the withdrawal of said end, substantially as described.

12. In combination in a type-writer, the key-levers, a bar extending transversely of the machine beneath said key-levers, an individual spring for each key-lever, and a socket for each spring adjustable in said transverse bar.

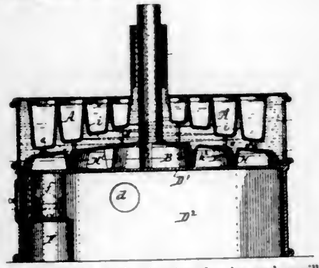
13. In combination, in a type-writer, the type-bars, the key-levers and the links connecting the same, each link comprising two sections, the upper section being formed of a rod secured at its upper end to its respective type-bar and the lower section being formed by a loop secured at one end to the lower end of said rod and at its opposite end to its respective key-lever at a point in direct line with the longitudinal axis of the lower part of said rod, the bail of the loop extending laterally of said axis, substantially as described.

14. In combination in a type-writing machine, the type-bar hangers arranged in staggered relation and an angular clip having the holding parts thereof bearing on said hangers in different planes.

15. In combination in a type-writing machine, the type-hangers arranged in pairs having the ends thereof secured to the machine-frame in different horizontal planes, a clip for holding a pair of hangers having an angular bend centrally thereof to bring the holding portions thereof in the planes of said ends to bear thereon, substantially as described.

656,786. MILK-PASTEURIZING APPARATUS. FRANK V. GIFFORD, Niagara Falls, N. Y. Filed Sept. 11, 1899. Serial No. 730,067. (No model.)

Claim.—1. The combination with a bottom plate, of a casing resting loosely on said bottom plate and provided near its lower end with a diaphragm, the space between said bottom plate and said diaphragm forming a heating-chamber, a milk-vat supported in said casing and having its bottom arranged at a distance from said diaphragm to form an intervening water-chamber, and a removable cover applied to the top of said vat and casing, substantially as set forth.

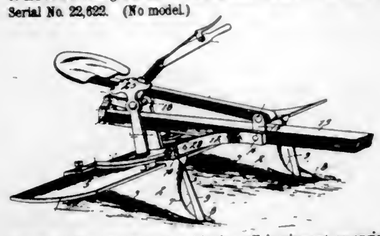


2. The combination with a heating-chamber and a milk trough or vat arranged above the same, of a water-chamber interposed between said heating-chamber and said trough and having a central feed-pipe which extends above said vat, and an upright chimney extending upwardly from said heating-chamber through said feed-pipe and separated from the latter by an intervening water-space, substantially as set forth.

3. The combination with a bent or spiral milk-trough having an inlet and an outlet at opposite ends thereof, of a heating-chamber arranged underneath said trough, and a heater applied to the portion of said heating chamber arranged under the outlet portion of said trough, substantially as set forth.

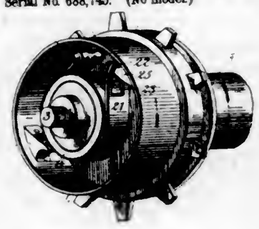
4. The combination with a main supply-tank having a laterally-projecting discharge-pipe provided with a vertical spout which extends above and below said pipe, of a piston-valve sliding in said vertical spout, adapted to cover or uncover the onter end of said pipe, and provided with an upwardly-extending stem, a vertically-movable tank arranged under the discharge-spout of the main tank and having a bail which is connected with the stem of said valve, and a suspension-spring connecting said bail with said main tank, substantially as set forth.

656,787. IMPLEMENT FOR LAYING OFF AND PULVERIZING GROUND. JOSEPH S. GRANGE, Orangeville, Utah, assignor of two-thirds to Ira R. Browning and Frank Carroll, same place. Filed July 5, 1900. Serial No. 22,622. (No model.)



Claim.—The pulverizing and laying-off implement comprising the platform, the plow-stocks adjustable laterally thereunder, said plow-stocks supporting said platform and having the lips or flanges engaging the upper side thereof, the braces secured on the platform and having the forward-extending arms, the tongue pivoted between said arms, the standards on the platform, the hand-lever fulcrumed on a bolt connecting said standards, the seat-bar, supported on said bolt and having its front end secured on the tongue, and the links connecting the hand-lever to the rear end of the tongue, substantially as described.

656,788. BACK-PEDALING BRAKE. WILLIAM E. HENRY, Washington, D. C., assignor to Charles M. Campbell, same place. Filed Aug. 10, 1898. Serial No. 688,745. (No model.)



Claim.—1. In a brake, the combination with a relatively-fixed part and a wheel-hub, of a driving-wheel mounted upon the hub, mechanism intermediate of the hub and wheel arranged to operatively connect said parts only when the driving-wheel is driven in one direction, a brake-band carried by the fixed element, and partially encircling the hub and adapted to oppose a resistance to the rotation of said hub, and mechanism carried by the driving-wheel arranged to operatively engage the free end of the brake-band, only when the driving-wheel is driven independently of the hub, substantially as specified.

2. In a brake the combination with a relatively-fixed part and a wheel-hub of a driving-wheel mounted upon the hub, pawl-and-ratchet mechanism intermediate of the hub and wheel designed to operatively connect said parts only when the driving-wheel is driven in one direction, a friction-drum mounted upon the hub, a brake-band carried by the fixed element and partially encircling the drum and a catch carried by the driving-wheel and arranged to engage the free end of the brake-band only when the driving-wheel is driven independently of the hub, substantially as specified.

3. In a brake the combination with driving and driven elements, of a brake-band in operative relation to the driven element provided with a slot adjacent to its free extremity and a catch carried by the driving element designed to engage in the slot of the brake-band when moved in one direction and to avoid engagement therewith when moved in the opposite direction, substantially as specified.

4. The combination with a fixed element and a wheel-hub, of a slotted brake-band secured at one end to the fixed element and partially encircling the hub, a driving-wheel, pawl-and-ratchet mechanism intermediate of the hub and wheel, an annular flange projecting from one face of the driving-wheel and a catch projecting from the inner face of the flange and designed when moved in one direction to engage a slot in the free end of the brake-band, substantially as specified.

5. The combination with a fixed part and hub, of a driving-wheel mounted upon the hub, intermediate pawl-and-ratchet mechanism, an annular flange projecting from one side of the driving-wheel and provided upon its inner face with a catch, a dust-case carried by the fixed part and comprising a disk and an annular flange extending therefrom and encircling the flange upon the driving-wheel, a friction-drum carried by the hub, a stud projecting from the disk of the dust-case, a friction-band secured at one end to said stud and partially encircling the drum, said brake-band provided with an aperture designed to be engaged by the catch when the driving-wheel is operated independently of the hub, substantially as specified.

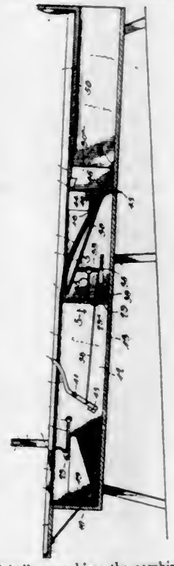
6. In a brake mechanism for velocipedes and the like, a member rotatable with the wheel, an annular plate secured to a relatively-fixed portion of the machine, a resilient brake-band supported upon said plate and partially encircling but normally out of engagement with the said rotatable member, a driving mechanism having direct and reverse movement for rotating the wheel during said direct movement and a projection on the driving member arranged to engage a part on said brake-band lying in the path of said projection and apply the brake to said rotatable member by said reverse movement of said driving mechanism, substantially as described.

656,789. LABELING-MACHINE. WALLACE C. JOHNSON, Bolivar, Mo., assignor of one-half to James H. Howe, same place. Filed Oct. 13, 1899. Serial No. 733,527. (No model.)

Claim.—1. In a can-labeling machine, the combination of an inclined runway, a paste-trough located beneath the runway, a vibrating arm carrying a paddle located in the path of the cans and adapted to be thrown by the same into the paste-trough said arm being provided with a bowed portion extending above the bottom of the runway and arranged to engage and increase the speed of the cans, and a counterpoise-arm connected with the vibrating arm and slightly overbalancing the same, substantially as and for the purpose described.

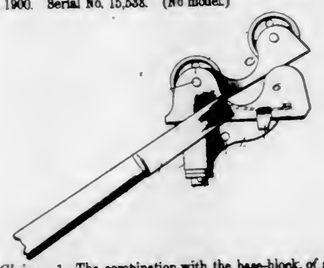
2. In a can-labeling machine, the combination of an inclined runway, a paste-trough arranged beneath the same, a vibrating arm 21 carrying a paddle and adapted to swing into the paste-trough, said vibrating arm being provided with a bowed portion extending above the bottom of the runway and arranged to engage and increase the speed of the cans, a weighted counterpoise-arm connected with the vibrating arm and overbalancing the same and normally resting upon and supported by the paste-trough, a movable label-carrier, a lever arranged in the path of the cans and located adjacent to the vibrating arm and adapted to be engaged by the cans immediately after their speed has been increased by the said vibrating arm, and mechanism positively connected with the lever and operated by the same for gradually raising the label-carrier, substantially as described.

3. In a can-labeling machine, a vertically-movable paste-receptacle having a slot in its bottom, a roller journaled in said receptacle and working freely in the slot, a bearing-lip arranged at one side of said roller and fixed to the bottom of the receptacle, and a guide-stem fastened to the receptacle and extending below the same, in combination with a runway, a can-pasting mechanism thereon, and a label-carrier having one end fitted beneath the movable paste-receptacle, substantially as described.



4. In a can-labeling machine, the combination of a runway, a vertically-movable label-carrier provided with a slot, a vertically-movable paste-receptacle supported by the label-carrier and adapted to rest upon the lower ends of the labels and open at its bottom, a guide-stem depending from the paste-receptacle and extending through the slot of the label-carrier, and a bearing-lip depending from the paste-receptacle and located in rear of the slot or opening of the same, substantially as described.

656,790. TROLLEY. MORRIS T. SCHAFFER, Bethlehem, Pa., assignor of one-half to Edwin J. Lichtenwalner, Allentown, Pa. Filed May 4, 1900. Serial No. 15,538. (No model.)



Claim.—1. The combination with the base-block, of a frame pivotally mounted thereon at one end, wheels supported by said frame, and a spring acting on the latter for holding it normally in an inclined position in relation to the base-block, as set forth.

2. The combination with the bracket, of the base-block mounted thereon and capable of limited lateral movements, a wheel-carrying frame pivotally mounted in said base-block, and means tending to hold said frame in an inclined position, as set forth.

3. The combination with the bracket, of the base-block pivotally mounted thereon, springs for holding said base-block in its normal position, stops for limiting the lateral movements of said base-block, a wheel-carrying frame mounted in said base-block, and means for holding said frame in a normally-inclined position, as set forth.

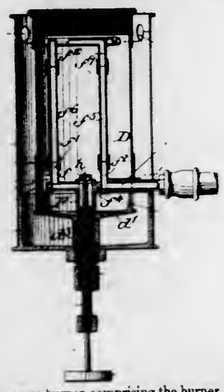
4. The combination with the bracket having a hollow boss, and a rearwardly-extended arm, of a base-block having a post fitted in said boss, lugs depending from said base-block for limiting the lateral movements thereof, springs for holding said base-block in its normal position, a wheel-carrying frame pivotally mounted in said base-block, and a spring for normally holding said frame in an inclined position, substantially as set forth.

5. The combination with the base-block pivotally mounted at one end and capable of being moved laterally, and stops for limiting such lat-

eral movements, of a frame pivotally mounted at one end on said base-block, a spring secured to the latter and engaging said frame for normally holding it in an inclined position, and wheels arranged in tandem and mounted in said frame, substantially as set forth.

6. The combination with the frame having a tubular sleeve, a hollow boss and an arm, of a base-block having a depending post held in said base, spring-arms secured to said base-block and engaging opposite sides of said sleeve, stops for limiting the lateral movements of the base-block, a frame swiveled at one end between the sides of said base-block, a spring normally holding said frame in an inclined position, and wheels, arranged in tandem, mounted in such frame, substantially as set forth.

656,791. VAPOR-STOVE. CHARLES J. SEARCH, New York, N. Y. Filed Aug. 18, 1899. Renewed July 14, 1900. Serial No. 23,676. (No model.)



Claim.—1. A vapor-burner comprising the burner proper, a hollow casing surrounding the burner having its bottom closed to form a cup for an auxiliary heating fluid, the upper portion of the casing being partially closed, the said hollow casing being further provided with air-inlet openings at points near the burner proper, and a damper for opening and closing the said air-inlet openings, substantially as set forth.

2. A vapor-burner comprising the burner proper, an inner hollow casing surrounding the burner having its bottom closed to form an auxiliary heating-fluid cup and its upper portion partially closed, the said inner casing being provided with air-inlet openings at points near the burner proper, a damper for opening and closing the said air-inlet openings and an outer hollow casing surrounding and spaced from the inner hollow casing, substantially as set forth.

3. A vapor-burner comprising the burner proper, an inner hollow casing surrounding the burner, the bottom of the said casing being closed to form a cup for receiving the auxiliary heating fluid, the said inner casing being provided with air-inlet openings at points near the burner proper and an outer hollow casing surrounding and spaced from the inner hollow casing, the said outer hollow casing being provided with air-inlet openings at points above the openings in the inner casing, substantially as set forth.

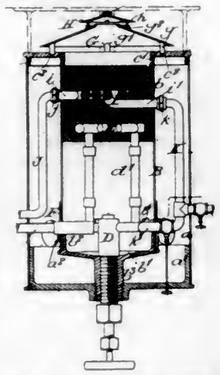
4. A vapor-burner comprising the burner proper, an inner hollow casing surrounding the burner proper, an outer hollow casing surrounding the inner casing and spaced therefrom, the inner casing being provided with air-inlet openings adjacent to the burner and the outer casing being provided with air-inlet openings at points above the openings in the inner casing and means extending to the exterior of the outer casing for regulating the amount of air to be supplied through the openings in the inner casing, substantially as set forth.

5. A vapor-burner comprising an inner hollow casing closed at its bottom, a perforated cage or cap forming an extension at the top of the casing, a burner proper and a vaporizer located within the casing and an outer casing surrounding and spaced from the inner casing, the said outer casing having a closed bottom and having its top closed between the top of the cage and the outer casing, the inner casing being provided with air-inlet openings adjacent to the burner proper and the outer casing being provided with air-inlet openings adjacent to the said cage, substantially as set forth.

656,792. VAPOR-STOVE. CHARLES J. SEARCH, New York, N. Y. Filed Feb. 27, 1900. Serial No. 6,670. (No model.)

Claim.—1. A vapor-burner comprising the burner proper, an inner hollow casing surrounding the burner having its bottom closed to form an auxiliary heating-fluid cup and its upper portion partially closed, the said inner casing being provided with air-inlet openings at points near the burner proper, a damper for opening and closing the said air-inlet openings and an outer hollow casing surrounding and spaced from the inner hollow casing, substantially as set forth.

2. A vapor-burner comprising the burner proper, an inner hollow casing surrounding the burner having its bottom closed to form an auxiliary heating-fluid cup and its upper portion partially closed, the said inner casing being provided with air-inlet openings at points near the burner proper, a damper for opening and closing the said air-inlet openings and an outer hollow casing surrounding and spaced from the inner hollow casing, the upper portion of the space between the inner and outer casings being closed, the said outer casing having air-inlet openings at or below the plane of the air-inlet openings of the inner casing, substantially as set forth.



2. In a vapor-burner a burner proper, an inner hollow casing surrounding the burner having air-inlet openings at or near the plane of the burner, the said inner casing having its upper portion perforated, an outer hollow casing surrounding and spaced from the inner casing, the upper part of the space between the inner and outer casings being closed, the said outer casing having air-inlet openings at or below the plane of the burner for feeding air through the openings in the inner casing adjacent to the burner and also through the perforated portion of the inner casing, substantially as set forth.

3. A vapor-burner comprising a hollow casing, a burner proper and a main vaporizer located within the hollow casing, a body located above the main vaporizer against which the flame is intended to impinge, an auxiliary vaporizer located intermediate of the main vaporizer and flame-impinged body, and independent of the main vaporizer, means for supplying liquid to the said vaporizers, and means for conveying the vapor from the auxiliary vaporizer to the point of combustion, substantially as set forth.

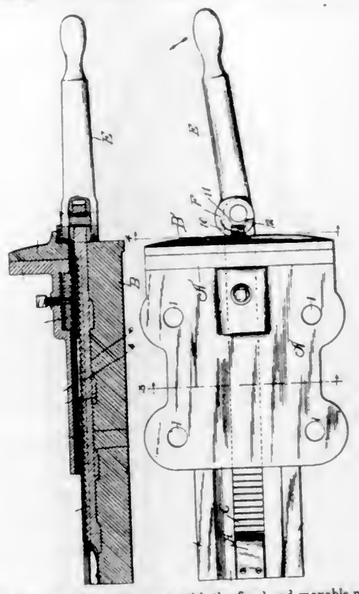
4. A vapor-burner comprising a hollow casing, a burner proper and a main vaporizer located within the hollow casing, a body located above the main vaporizer against which the flame is intended to impinge, an auxiliary vaporizer located intermediate of the main vaporizer and flame-impinged body, and independent of the main vaporizer, means for supplying liquid to the said vaporizers, and means for conveying the vapor from the auxiliary vaporizer to the point of combustion, the said auxiliary vaporizer being composed of a coil of pipe having thickened walls for retaining heat, substantially as set forth.

5. In a vapor-burner, a hollow casing closed at its bottom to form an auxiliary heating-fluid retainer, the said casing having an open top, a deflector located above and spaced from the top of the hollow casing, the said deflector having a central opening therein, and a second removable deflector located above and spaced from the opening in the first-named deflector whereby the last-named deflector may be removed for permitting the auxiliary heating fluid to be poured through the opening in the first-named deflector into the interior of the hollow casing, substantially as set forth.

6. In a vapor-burner, a burner proper, an inner hollow casing surrounding the burner having air-inlet openings at or near the plane of the burner, and having its upper portion perforated, an outer hollow casing surrounding and spaced from the inner casing and having air-inlet openings therein at or below the plane of the burner for feeding air through the openings in the inner casing adjacent to the burner and also through the perforated portion of the inner casing, the upper part of the space between the inner and outer casings being closed and a damper for opening and closing the openings in the inner casing for regulating the amount of air to be fed through the said openings and through the perforated portion of the inner casing, substantially as set forth.

656,793. BENCH-VISE. EDGAR H. SHELDON, Oak Park, Ill. Filed Jan. 9, 1899. Serial No. 701,634. (No model.)

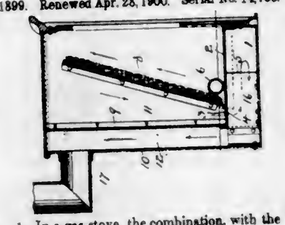
Claim.—1. In a vise, the combination the fixed and movable members respectively providing the fixed and movable jaws, of a longitudinally-movable slide carried by and arranged for movement relatively to, the movable member; a pair of coöperating engaging devices, one rigid with the fixed member, and the other carried by the movable slide; a swinging lever for causing a relative reciprocation between the slide and said movable member, said lever being pivotally connected to one of the same, and arranged to act upon the other; and means for causing the movable slide to shift laterally and bodily in its forward movement to an extent to cause the engagement of the engaging devices on it and on the fixed member.



2. In a vise, the combination with the fixed and movable members respectively providing the fixed and movable jaws, of a longitudinally-movable rack-bar carried by, and arranged for movement relatively to, the movable member, and extended forwardly through the movable jaw; inclines on the movable member and on the rack-bar for causing the bodily elevation of the latter when it is moved forwardly; a rack-section rigid with the fixed member, and positioned to engage the rack-bar when the latter is elevated; a hand-lever pivotally connected with the forward end of the rack-bar and constructed with a cam which is arranged to act against the front face of the movable jaw and is adapted to cause a relative longitudinal movement between the rack-bar and the movable member; and means for preventing the separation of the rack-bar and attached hand-lever from the movable member.

3. A bench-vise comprising fixed and movable members respectively providing fixed and movable jaws; a rack-bar arranged for longitudinal reciprocation within a guideway formed in the upper surface of the movable member; inclines on the floor of the guideway and on the bottom of the rack for causing the elevation of the latter when it is moved forwardly; a rack-section rigid with the fixed member, and positioned above the rack-bar so as to engage the same when it is elevated; a hand-lever pivotally connected with the forward end of the rack-bar and constructed with a cam which is arranged to act against the front face of the movable jaw, and is adapted to cause a relative longitudinal shifting movement between the rack-bar and the movable member; a guide or track arranged upon the upper face of said cam and constructed with an inclined surface; and a lug on the movable jaw, adapted to engage said guide or track; substantially as described and for the purpose set forth.

656,794. GAS-STOVE. HARRY P. SIMPSON, Pittsburg, Pa. Filed May 16, 1899. Renewed Apr. 28, 1900. Serial No. 14,760. (No model.)



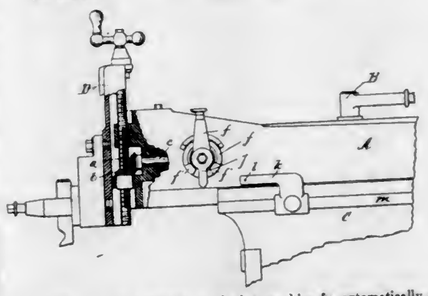
Claim.—1. In a gas-stove, the combination, with the body portion, of a burner, a flame-plate, a hollow heating-base on which the body portion rests, a downtake flue or passage in the body portion formed by the flame-plate and a partition-plate located between the flame-plate and the back of the body portion, said flue or passage in communication with ducts or passages formed in the hollow heating-base, a passage in the hollow base in communication with an uptake flue or passage, said uptake-passage formed by the partition-plate and the back of the stove-body, and an exit-passage, substantially as set forth.

2. In a gas-stove, the combination, with the body portion, of a burner, a flame-plate, a partition-plate between the back of the body portion and the flame-plate, a downtake flue or passage formed by the flame-plate and the partition-plate, a hollow heating-base, a top plate for the hollow heating-base having an extended part 3, walls 5, within the base and forming, in conjunction with the top plate and sides of the base, passages 14 and 15, an uptake flue or passage 12, and a central passage 16, in communication with passage 12, and with passages 14 and 15, substantially as set forth.

3. In a gas-stove, the combination with the body portion, of a burner, a flame-plate, a hollow heating-base having a top plate partially covering the hollow base, said base struck up or cast from a single piece of metal and provided with means for causing a circulation of the heated air and products of combustion throughout the base, a downtake flue or passage formed by the flame-plate and a partition-plate located between the flame-plate and the back of the body portion, an uptake flue or passage formed by the back of the body portion and the partition-plate, said downtake flue or passage in communication with passages in the hollow base and a passage leading from the hollow base to the uptake flue or passage, substantially as set forth.

4. In a gas-stove, the combination with the body portion, of a burner, a flame-plate, a hollow heating-base, a partition-plate between the flame-plate and the back of the body portion, a downtake flue or passage in communication with the hollow base and formed by the flame-plate and the partition-plate, and an uptake flue or passage in communication with the base and formed by the partition-plate and the back of the body portion, substantially as set forth.

656,795. SHAPING OR PLANING MACHINE. JAMES C. STEEN and CHARLES L. WARNER, Cincinnati, Ohio, assignors to the Cincinnati Shaper Company, same place. Filed May 9, 1900. Serial No. 16,018. (No model.)



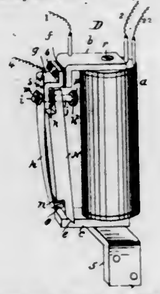
Claim.—1. In a shaping or planing machine for automatically operating the downfeed of the tool, a shaft, a rocker carried thereon, a pawl carried by said rocker, a ratchet-wheel keyed to said shaft, a sleeve partially covering said ratchet, mechanism whereby said rocker is oscillated at each reciprocation of the ram, and gearing intermediate said shaft and feed-screw whereby said feed-screw is operated, substantially as shown and for the purpose described.

2. In a shaping or planing machine for automatically operating the downfeed of the tool, a shaft with gearing intermediate said shaft and the feed-screw, a rocker carried by said shaft, a pawl carried by said rocker, a ratchet-wheel keyed to said shaft, a loose sleeve partially covering said ratchet, an arm loosely mounted on said shaft and engaging lugs on said rocker, in combination with a pin carried by an adjustable slide on the column of the machine, substantially as shown and described.

3. In a shaping or planing machine, the feed-screw *a*, shaft *e*, and gearing intermediate the two, the rocker *f*, the pawl *n*, the ratchet-wheel *n'*, the loose sleeve *i*, the dependent arm *j*, in combination with the bracket *k*, carrying the pin *l*, substantially as shown and for the purpose described.

656,796. SIGNAL-RECEIVING RELAY. GEORGE K. THOMPSON, Malden, and ERNEST C. ROBBS, Medford, Mass., assignors to the American Bell Telephone Company, Boston, Mass. Filed Mar. 12, 1900. Serial No. 8,339. (No model.)

Claim.—1. A relay comprising a vertically-mounted electromagnet having laterally-projecting pole-pieces; a gravity-retracted armature fulcrumed at one end in the lower pole-piece, and having its other end extended into the field of the upper pole-piece and adapted to swing between limiting-stops in said field; a conducting point or stop, and a non-conducting stop, mounted in juxtaposition to one another on said armature near its fulcrum, the latter being slightly longer than the former; and a spring bearing on the said stops alternatively, according as the armature is attracted or retracted, and thereby exerting constant pressure upon the said armature, regardless of the position thereof, in opposition to the retracting force, and in reinforcement of the attracting force; the said spring and conducting-stop constituting mutually-complementary terminals of a controlled circuit, substantially as set forth.



2. The combination in a relay adapted for sluggish operation, of a single-coil electromagnet having laterally-projecting pole-pieces, one turned at an angle into a plane parallel to the magnet, and the other straight; a gravity-retracted normally-unbalanced armature fulcrumed at one end in the straight pole-piece, and having its other end between limit-stops in the field of force of the angular pole-piece to be attracted thereby into a more nearly balanced position when the magnet is excited; a contact-point, and a non-conducting pin, both mounted on the said armature near its fulcrum; and an insulated spring having one end fixed and its other end pressing upon the non-conducting pin when the armature is in its normal position, and upon the contact when the said armature is in its operative position, and thereby exerting a constant force upon the said armature antagonistic to the retractive force of gravity; the said insulated spring and contact-point constituting the local circuit-controlling relay-points; substantially as herein described.

3. The combination in a relay designed for sluggish operation, of the single-coil vertically-mounted electromagnet *a*, having the polar extensions *b*, *c*; with the unbalanced gravity-retracted bar-armature *N*, fulcrumed in the pole-piece *c* and subject to the attractive force of the pole-piece *b* when the same is excited; the independently-supported bolt or stud *j* extending through a hole in the armature toward the magnet *a*, and carrying the cushioned limit-stops k k^2 for the said armature; the contact-point *o* and non-conducting stop *n* both mounted on the armature near its fulcrum; and the constant-pressure contact-spring *h* fixed at one end near the pole-piece *b* and pressing alternatively upon the stop *n* or the point *o* according as the armature is at the back or forward limit of its swing, and adapted thereby to maintain an electric circuit open or closed, and to increase the inertia of the said armature in its forward position; substantially as and for the purposes specified.

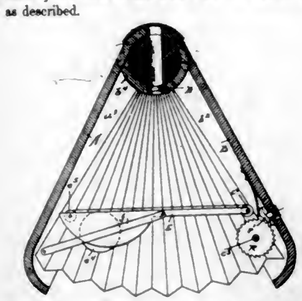
656,797. VEHICLE-BRAKE. CURTIS WIGG, New York, N. Y. Filed Dec. 18, 1899. Serial No. 740,748. (No model.)



Claim.—In a brake for rubber-tired vehicle-wheels, the herein-described brake-shoe, the same being provided with means by which it may be secured to the brake-rod, and having a curved face concentric with the peripheries of the flanges of the rim, in which is formed the groove 12, having inwardly-inclined side walls 14, substantially as, and for the purpose set forth.

656,798. PHOTOGRAPHIC CAMERA. CHARLES A. WILEY, Miles City, Mont. Filed Aug. 5, 1899. Serial No. 726,281. (No model.)

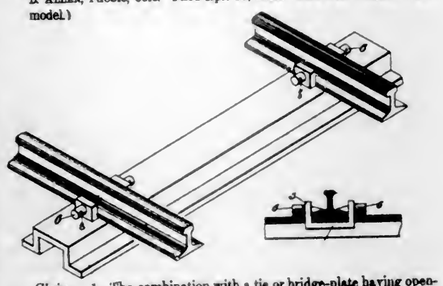
Claim.—1. A camera comprising hinged sides, a portion of a cylinder secured to one of said sides at the hinge, said cylinder having an aperture for the lens extending through said cylinder approximately at right angles to the axis thereof, said aperture being so located as to approximately bisect the angle between said sides when the camera is open, and so that it shall be closed by the other of said sides when the camera is closed, substantially as described.



2. A camera comprising hinged sides, one of said sides being extended and curved to form a portion of a cylinder at the hinge, and having an aperture for the lens extending through said cylinder approximately at right angles to the axis thereof, said aperture being so located as to approximately bisect the angle between said sides when the camera is open, and so that it shall be closed by the other of said sides when the camera is closed, substantially as described.

3. A camera comprising hinged sides, a portion of a cylinder secured to one of said sides at the hinge and having an aperture for the lens extending through said cylinder approximately at right angles to the axis thereof, said aperture being so located as to approximately bisect the angle between said sides when the camera is open, and so that it shall be closed by the other of said sides when the camera is closed, and a shutter formed to fit on the surface of said cylinder and to slide longitudinally thereon, substantially as described.

656,799. METALLIC CROSS-TIE AND RAIL-FASTENING. AARON B. ALLEN, Pueblo, Colo. Filed Apr. 25, 1899. Serial No. 714,445. (No model.)



Claim.—1. The combination with a tie or bridge-plate having openings, of securing-ears, a portion of which is adapted to be received by said openings, said ears having a threaded aperture in combination with a threaded bolt fitting said aperture provided with a head circular in cross-section and with a conical end, the latter being adapted to bear directly against the flange of the rail and thereby hold the same when disposed between two of said ears, substantially as specified and for the purpose set forth.

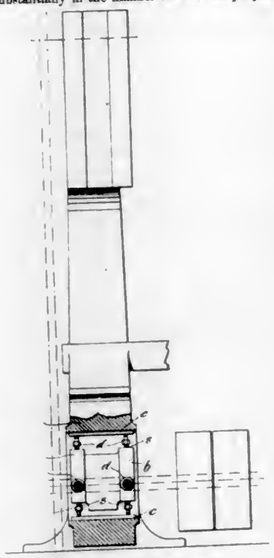
2. In cross-ties, and rail-fastenings, a securing-ear having a threaded stem, a cross-tie having threaded apertures and a bolt having a tapered end substantially as set forth.

3. In rail-fastenings, an ear having a threaded aperture carried directly by the cross-tie and a threaded bolt fitting said aperture and provided with a conical end adapted to engage the flange of the rail whereby when the rail is placed between two of said ears it may be securely held by said bolts, as and for the purpose set forth.

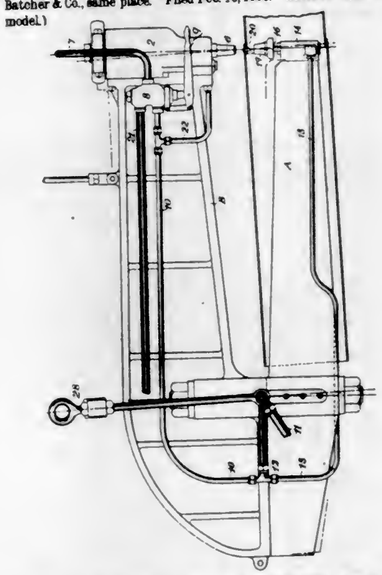
4. In cross-ties and rail-fastenings, a securing-ear having a threaded aperture and a threaded stem; a threaded bolt having a tapered end adapted to fit said aperture, in combination with a tie having an aperture adapted to receive said stem, whereby one of said ears may be located on either side of the rail and thus secure it in place upon the tie as and for the purpose set forth.

656,800. ADJUSTABLE AXLE-BEARING FOR BAND-SAWS. ANDREAS ARNOLD, Munich, Germany. Filed Nov. 6, 1899. Serial No. 735,949. (No model.)

Claim.—A bearing-block having a plurality of threaded openings therein, screws fitted to said openings and having their outer ends pointed, and said screws having squared portions whereby they may be grasped from the side, substantially in the manner and for the purpose set forth.



656,801. HYDRAULIC PLATE CLOSING AND RIVETING DEVICE. JOHN H. BATCHER, Sacramento, Cal., assignor to Schaw, Ingram, Batcher & Co., same place. Filed Feb. 16, 1900. Serial No. 5,523. (No model.)



Claim.—1. A hydraulic riveting and plate-closing apparatus consisting of a ram and its cylinder with pipes by which fluid under pressure is admitted thereto, a mandrel and a rivet-head-forming tool opposed to the ram, a sleeve loosely surrounding the rivet-heading tool, hydraulic pressure-plungers and a head transversely connecting the upper end thereof and supporting said sleeve and by which said sleeve is forced upwardly to form a support for the meeting pipe-sections whereby the pressure of the ram first closes the sections together, and afterward forces the support backwardly to allow the rivet to be headed.

2. A plate closing and riveting device, consisting of a fluid-pressure cylinder, a ram movable therein and a riveting-plunger actuated by said ram, a mandrel over which the pipe-sections extend, a head fitted to the end of the mandrel and formed with a plurality of parallel vertically-disposed cylinders with plungers movable therein, a ring or head connecting the upper ends of the plungers transversely and a sleeve supported upon said ring or head, a head-forming stem intermediate of the cylinders and supported within said sleeve, means for applying hydraulic pressure to the plungers whereby the sleeve is held in position to receive and resist the first pressure upon the pipe-sections whereby they are closed together, said sleeve afterward yielding to allow all parts to advance until the inner end of the rivet contacts with and is upset by the action of the head-former within the sleeve.

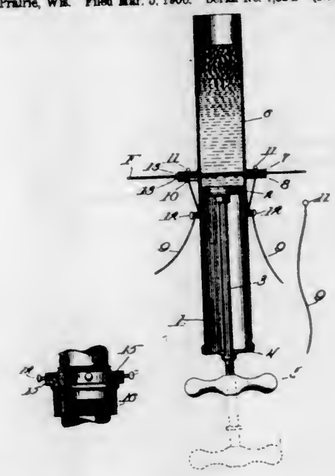
3. A hydraulic riveting apparatus consisting of a suspended upper section and mandrel, a cylinder and ram carried by the upper section, a head fitted to the end of the mandrel and formed with a plurality of vertical parallel cylinders with plungers, a head or ring transversely connecting the upper ends of the plungers and a sleeve actuated thereby, a head-former intermediate of the cylinders and over which the sleeve is slidable, pipes by which fluid-pressure is transmitted simultaneously from a common source to the ram and to the sleeve-actuating plungers whereby a yielding pressure of less force is opposed to that of the ram, and the plates or pipe-sections are first closed together, and the parts afterward moved by the superior pressure of the ram until the end of the rivet is headed by the head-former.

4. A plate closing and riveting device including an upper section and a mandrel united at the inner ends, heads detachably fitted to said section and mandrel and provided with riveting-tools, fluid-pressure devices actuating said tools from a common source, one of said heads formed with a plurality of cylinders and connected plungers movable therein, and plate-closing means actuated by the plungers.

5. A hydraulic plate closing and riveting apparatus consisting of a suspended upper section having a hydraulic ram and riveting tool, a mandrel and a plate-closing hydraulic-pressure device carried thereby, and a rivet-heading tool concentric therewith, a lever suspended between its ends having one end fulcrumed and the other serving as a handle, by which the parts are brought into line with the rivet-holes of the pipe-sections, and a valve-actuating lever by which water is admitted to actuate the ram whereby the pipe-mandrel and parts carried thereby are movable in unison with the movements of the ram to bring them into contact with the interior of the pipe whereby the plates or pipe-sections are first closed together, and the rivet introduced and the head formed thereon.

6. A hydraulic plate closing and riveting apparatus consisting of a mandrel and upper section united at one end and divergent outwardly therefrom, a ram-cylinder fixed to the end of the section and plate-closing pressure cylinders and plungers connected with the mandrel, a swivel-jointed pipe through which water from an accumulator or pressure apparatus is brought to the riveter, branches extending respectively along the upper section and mandrel, one connecting with the ram, and the other with the plate-closing cylinders.

656,802. GREASE-SPOT REMOVER. JOHANNA M. BATZ, Sun Prairie, Wis. Filed Mar. 5, 1900. Serial No. 7,324. (No model.)



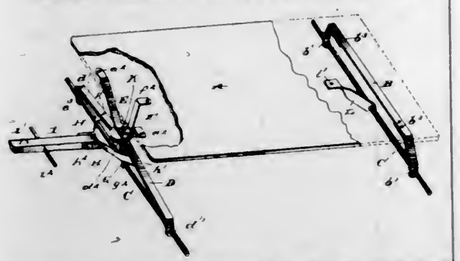
Claim.—1. A device for cleaning fabrics comprising a pump, a reservoir-chamber communicating with the pump-chamber, and means for detachably clamping the two chambers together upon opposite sides of the fabric to be cleaned, substantially as described.

2. A device for cleaning fabrics comprising a pump, a reservoir communicating with the pump-chamber, coacting flanges upon their meeting ends, needle-pointed wires 9, and means for tightening said wires to clamp the flanges together upon an intervening fabric to be cleaned, substantially as described.

3. A device for cleaning fabrics comprising a pump, a reservoir communicating therewith, coacting flanges on their meeting ends, clamping-wires 9 and studs 12, substantially as described.

4. A fabric-cleaning device comprising a pump and a separable reservoir-chamber in communication with the pump-chamber, flanges 7 and 8 at their meeting ends, provided with registering holes 10 and interfitting projections and depressions 14, and needle-pointed wires threaded through said holes and provided with heads 11, and wire-engaging studs 12, substantially as described.

656,803. **RUNNING-GEAR FOR WAGONS.** ANTON BOEKER, St. Louis, Mo. Filed Nov. 20, 1899. Serial No. 737,717. (No model.)

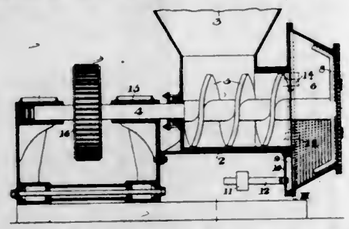


Claim.—1. In a steel running-gear for wagons the combination of the back axle C, having indentations, and the back knees having holes for the said axles to pass through them and remain at said points of indentations, while the metal of the knees is forced into the indentations in the axles securing the two firmly together, also the brace L, around the axle and bolted to the bottom board as described and specified.

2. In a steel running-gear for wagons as a means for securing the front bolster to the front axle, indentations in the axle and holes in the ends of the bolster to receive the axle at the indentations and the metal of the bolster forced into the said indentations as shown and described.

3. In a steel running-gear for wagons a tongue attachment to the bolster consisting of a right-and-left tongue-strap H, H, riveted to the bolster at the one end and formed with a twist and a bend so that the other ends form a hinge between which the end of the tongue is pivoted as pointed out and described.

656,804. **STONE-SEPARATOR.** LOUIS C. BONNOT, Canton, Ohio. Filed Apr. 25, 1900. Serial No. 14,234. (No model.)



Claim.—1. In a stone-separator, the combination with a case, of a feed device arranged to force the material through the case, a larger perforated chamber into which the case discharges, said chamber having a downwardly-inclined portion leading to an opening in the chamber, and an outlet-door arranged to close the opening; substantially as described.

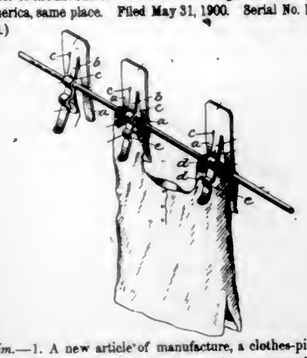
2. In a stone-separator, a cylinder containing a screw, an enlarged perforated chamber into which the cylinder opens and having an outer head screwed thereto, and a yielding discharge-door in the lower portion of the chamber-head; substantially as described.

3. In a stone-separator, a horizontal case, a horizontal screw therein, a stationary enlarged funnel-shaped chamber into which the cylinder discharges, said chamber having perforations, scrapers arranged to rotate within the chamber, and an outlet-door in the lower portion of the larger head of the chamber; substantially as described.

4. In a stone-separator, a case having a feed device, an enlarged funnel-shaped chamber at the end of the case, and having perforations in its outer head and sides, and scrapers secured to the shaft and arranged to move over the outer head and a portion of the sides, said chamber having a yielding outlet-door in the lower portion of its rear head; substantially as described.

5. In a stone-separator, the combination with a case, of a feed device thereon arranged to force the material through the case, a larger perforated chamber of funnel form into which the case discharges, and an outlet-door in the larger head of said chamber and to which the lower inclined side of the chamber leads; substantially as described.

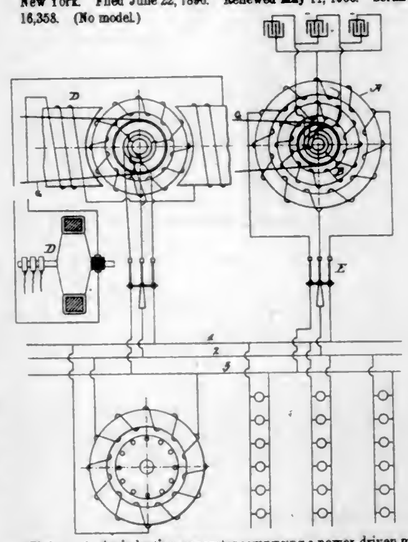
656,805. **CLOTHES-PIN.** CHARLES M. BOWMAN, Lebanon, Pa., assignor to the Inventors and Investors League of the United States of America, same place. Filed May 31, 1900. Serial No. 18,544. (No model.)



Claim.—1. A new article of manufacture, a clothes-pin made from sheet metal and having two plain side bars and a transversely-corrugated tongue intermediate the bars, and in the same vertical plane, the bars and the tongue curved in opposite directions at their free ends, and the tongue extending beyond the ends of the bars.

2. A new article of manufacture, a clothes-pin made from sheet metal and having two side bars curved in the same direction at their free ends; and a transversely-corrugated tongue intermediate the bars and curved in the opposite direction at its free end, said bars and tongue being in the same vertical plane.

656,806. **ALTERNATING-CURRENT GENERATOR.** CHARLES S. BRADLEY, Avon, N. Y., assignor to the General Electric Company, of New York. Filed June 22, 1896. Renewed May 11, 1900. Serial No. 16,358. (No model.)



Claim.—1. An induction-generator comprising a power-driven member magnetized by a rotary field and including a condenser in the circuit, and a generating member in inductive relation to said power-driven member.

2. An induction-generator of alternating currents provided with a rotary-field winding on one element and a consonous winding on the other element.

3. An induction-generator of alternating currents provided with rotary-field windings on both elements, one winding having an inductance capacity product to produce electrical consonance at the desired speed and the other provided with terminals for inclusion in a polyphase exciting-circuit.

4. An induction-generator of alternating currents having a rotary-field winding on one element and terminals for connecting with an exciting-generator, and a polyphase winding on the other element including a condenser in each circuit.

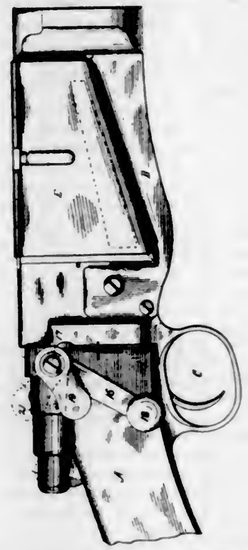
5. In an alternating-current system, the combination with a circuit including induction-motors, of a generator having one member connected with said circuit, an exciter in said circuit and a coöperating member or element including condensers in circuit, and means for driving the generator above synchronism with the rate supplied to the induction-motors.

6. An induction-generator having a magnetizing-circuit on one element supplied by an alternating-current exciter, and a coöperating element containing condensers in circuit.

7. An induction-generator having a magnetizing-circuit on one element supplied by an alternating-current exciter, and a coöperating element containing a condenser in circuit, in combination with a distribution-circuit including one or more induction-motors.

8. An induction-generator having a magnetizing-circuit on one element supplied by an alternating-current exciter, a coöperating element containing a condenser in its circuit, and means for driving the generator above synchronism with the exciter.

656,807. **MAGAZINE-GUN.** BETHEL BURTON, New York, N. Y., assignor to Winfield G. Burton and Henry C. Burton, same place. Filed Sept. 24, 1898. Serial No. 691,788. (No model.)



Claim.—1. In a firearm, the combination, with a frame having a side opening, of a magazine; a cartridge-carrier in said frame; a lever to which said carrier is pivoted, said lever having a projecting arm; a bolt having screw-threads adapted to engage with similar threads in the frame, and also having a groove with a lateral extension having inclined walls, the pitch of which is different from that of the screw-threads; and means for actuating said bolt, whereby when the same is closed the inclined walls of said lateral extension will positively force the cartridge-carrier to its retracted position and will lock it in such position.

2. In a firearm, the combination of the frame thereof having segments of screw-threads, of a cartridge-carrier in said frame, a lever having a projecting arm to which said carrier is connected; a reciprocatory bolt having segments of screw-threads at each end and also having a longitudinal groove for receiving the end of said arm; a cam-surface coöperating with said groove and adapted to actuate the carrier-lever when the bolt is turned; and means for actuating said bolt.

3. In a firearm, the combination with a cartridge-carrier, and with means for actuating the same, of a reciprocatory bolt having threaded surfaces and also having a cam-surface for coöperating with the carrier-actuating means to force said carrier to its retracted position and to lock it positively in such position; and threaded seats in the frame for engaging the threaded surfaces of the bolt.

4. In a firearm, the combination with the receiver having sets of screw-threads, of a longitudinally-grooved bolt having sets of screw-threads for engagement with those of the receiver; a cartridge-lifter; a pivoted lever connected with said cartridge-lifter and having an arm extending into the groove of the bolt; a lateral extension communicating with said groove and having inclined walls; and means for reciprocating the bolt, and for turning the same to cause the screw-threaded segments thereon to intermesh with the similar segments of the receiver, and also to cause the walls of the extension of the groove to engage the arm of the lever of the cartridge-carrier to force said carrier to its retracted position and to lock the same in such position.

5. In a firearm, the combination, with a reciprocatory bolt, of a bolt-cover movable with said bolt; means for removably connecting the bolt and cover; a collar on the bolt at the rear of said means; and means for actuating the bolt.

6. In a firearm, the combination with a reciprocatory bolt, of a bolt-cover; ways in the receiver for guiding said cover, a sleeve to which said cover is attached loosely surrounding the bolt; and means carried by the bolt at the rear of the sleeve for holding said sleeve in position on said bolt.

7. In a firearm, the combination with a bolt and receiver having sections of screw-threads, of a bolt-cover having a longitudinal reciprocation in the arm; a sleeve removably connected to said cover and permitting a rocking movement of the bolt therein; and a collar attached to the bolt at the rear of the sleeve.

8. In a firearm, the combination with the receiver, having separated sets of screw-threads, of a bolt having sets of screw-threads; a reciprocatory bolt-cover; a sleeve removably connected to said bolt-cover and loosely surrounding the bolt; a collar on the bolt in proximity to said sleeve; a lever fulcrumed on said pintle; and a collar secured to the bolt and having a projection engaging a socket in the lever, whereby an initial movement of the lever partially rotates the bolt and a continuation of this movement withdraws the same.

10. In a firearm, the combination with a bolt, of a sleeve held against rotation with the bolt; a lever connected to the sleeve and engaging the bolt to partially rotate the same, said bolt having a longitudinal groove with a side extension; a cartridge-carrier; and an arm connected with said carrier and entering the groove of the bolt.

11. In a firearm, the combination with the frame or receiver having a side opening, of a magazine detachably connected to said frame and having an opening communicating with said opening in the frame; a carrier-lever pivoted in the rear of the receiver; a cartridge-carrier pivoted to said lever and extending in front thereof; abutments in the frame engaging the front extension of the carrier-arm; and a reciprocatory bolt having a groove with a lateral extension having inclined walls on its under side, whereby said cartridge-carrier is depressed by the bolt on the extreme forward movement thereof and is locked in such depressed condition.

12. The combination, with a receiver, of a bolt; means for causing said bolt, when turned, to engage the receiver; a sleeve carried by the bolt; a two-armed lever pivoted to the sleeve; and means connecting an arm of said lever with the bolt, whereby the bolt is turned to release it from, or connect it with, the receiver when said lever is actuated.

13. The combination, with a receiver having sections of screw-threads, of a bolt having sections of screw-threads coöperating with those in the receiver, a sleeve carried by the bolt and fixed against rotation therewith; said sleeve having a projection; a two-armed lever pivoted on said projection, one of the arms of said lever having a socket; and a collar fixed to the bolt and having a projection with which the socket in the arm of said lever engages.

14. In a firearm, the combination, with a bolt, of a striker-head having an adjustable cam at its rear face; and a firing-pin head having a cam in engagement with said cam on the striker-head, whereby the firing-pin may be retracted by a partial rotation of one of said cams and thus be held in "safety" position.

15. In a firearm, the combination with the bolt, of a striker-head movable with said bolt and having a cam at its rear face; a firing-pin head having a cam in engagement with the cam on the striker-head; and

means for rotating one of these parts with respect to the other, whereby the firing-pin may be retracted by a partial rotation of its cam-faced head and thus be held in "safety" position.

16. In a firearm, the combination, with a bolt, of a striker-head carried by such bolt; a screw in the striker-head having a cam on its rear face; a cam on the firing-pin head engaging the cam on said screw; and a turning-lever connected to the firing-pin head and serving to adjust the position of the cams and to indicate the "safe" position of said firing-pin.

17. In a firearm, the combination, with the receiver having sets of screw-threads near both ends, one set being larger in diameter than the other set, of a bolt having corresponding sets of screw-threads, the front set being of the same diameter as the bolt and the rear set of larger diameter than said bolt.

18. In a firearm, the combination, with a receiver having a mutilated screw-thread in its portion adjacent to the barrel and a mutilated screw-thread of larger diameter, of a locking-bolt having locking-threads corresponding to said threads in the receiver.

19. In a firearm, the combination, with a receiver provided with a locking-seat at its front end near the barrel, and a screw locking-seat of larger diameter, of a bolt having threaded locking-sections adapted to engage the locking-seats of the receiver, and having an intermediate portion and an operating-handle.

20. In a firearm, the combination, with a bolt having a generally-cylindrical body, a forward portion of decreased diameter having a mutilated screw-surface and an intermediate portion of enlarged diameter also provided with a mutilated screw-surface, of a receiver having locking-seats corresponding to the locking portions of the bolt; and a pivoted handle for actuating said bolt.

21. In a firearm, the combination, with breech-closing mechanism, of a firing-pin; a striker-head; a screw-threaded sleeve having a cam-surface at one end adjustably mounted in said striker-head; a cam-head on the firing-pin; an extension on the striker-head; and a sear for engaging said extension to retain the firing-pin.

22. In a firearm, the combination, with the barrel thereof, of a bolt; a sleeve attached to said bolt and having a projection; a second sleeve having a pintle; and a two-armed lever pivoted on said pintle, one of the arms of said lever having a socket to receive said projection, the parts of said lever being so disposed that when the lever is thrown up to turn and release the bolt, the longer arm thereof will be substantially in line with the longitudinal axis of said bolt.

23. In a firearm, the combination, with a reciprocatory bolt, of a sleeve surrounding said bolt; a bolt-cover attached to said sleeve; and means connected with the sleeve for rocking the bolt and for reciprocating the same.

24. In a firearm, the combination, with a reciprocatory bolt, of a sleeve mounted on said bolt and carrying a pintle; a second sleeve attached to the bolt and having a projection; a lever pivoted to said pintle and connected with said second sleeve; a striker-head also carried by the bolt and having a forward extension; a sear; and a firing-pin carried by the striker-head and adapted to be released by the sear.

25. In a firearm the combination, with a bolt, of a firing-pin located therein; a striker-head carried by the bolt and having an adjustable extension through which the firing-pin passes; cam-surfaces on the ends of the firing-pin head and said striker-head extension; and means whereby the firing-pin may be set to a "safe" position.

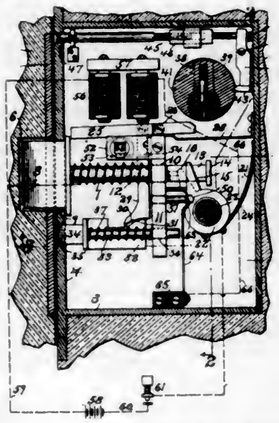
656,808. LOCK. HENRY G. CARLETON, New York, N. Y., assignor to the Carleton Electric Company, same place. Filed Feb. 10, 1900. Serial No. 4,709. (No model.)

Claim.—1. In a lock, the combination with the movable engaging part, of a locking member therefor, controlling means for the locking member including a part extending outside the lock-casing, means independent of the controlling means for operating the locking member, and a magnet for also operating the locking member, substantially as described.

2. In a lock, the combination with the movable engaging part, of a locking member therefor, controlling means for the locking member including a part extending outside the lock-casing, a withdrawing mechanism for the movable member, a releasing device for the locking member operated from the withdrawing mechanism, and a magnet for also operating the locking member, substantially as described.

3. In a lock, the combination with the bolt, of a striker-plate, a locking member for the bolt, a slide projecting from the lock-casing in position to be operated by the striker-plate, means intermediate the locking member and the slide whereby the position of the slide determines the position of the locking member, and a magnet for operating the locking member, substantially as described.

4. In a lock, the combination with the bolt, of a striker-plate, a locking member for the bolt, a slide projecting from the lock-casing in position to be operated by the striker-plate, means intermediate the locking member and the slide whereby the position of the slide determines the position of the locking member, key-operated means for operating the locking member, and a magnet for operating the locking member, substantially as described.



5. In a lock, the combination with the bolt, of a striker-plate, a locking member for the bolt, a slide projecting from the lock-casing in position to be operated by the striker-plate, means intermediate the locking member and the slide whereby the position of the slide determines the position of the locking member, key-operated means for operating the locking member, a withdrawing mechanism for the bolt, a releasing device for the locking member operated by the withdrawing mechanism, and a magnet for also operating the locking member, substantially as described.

6. In a lock, the combination with the bolt, of a striker-plate, a locking member for the bolt, a slide projecting from the lock-casing in position to be operated by the striker-plate, means intermediate the locking member and the slide whereby the position of the slide determines the position of the locking member, key-operated means for operating the locking member, a withdrawing mechanism for the bolt, a releasing device for the locking member operated by the withdrawing mechanism, a magnet for also operating the locking member, and means for temporarily suspending the operation of the locking member, substantially as described.

7. In a lock, the combination with the bolt, of a pivoted locking member therefor, a striker-plate, a cam-slide projecting from the lock-casing in position to be operated by the striker-plate, an arm connected with the locking member in the path of the slide, a withdrawing mechanism for the bolt, and a releasing-pin operated by the withdrawing mechanism, substantially as described.

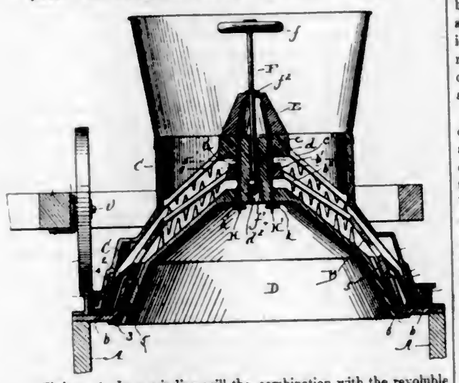
8. In a lock, the combination with the bolt, of a pivoted locking member therefor, a striker-plate, a cam-slide projecting from the lock-casing in position to be operated by the striker-plate, an arm connected with the locking member in the path of the slide, a withdrawing mechanism for the bolt, a releasing-pin operated by the withdrawing mechanism, and key-operated means for operating the pivoted locking member, substantially as described.

9. In a lock, the combination with the bolt, of a striker-plate, a magnet, a pivoted locking member for the bolt which forms the armature of the magnet, a striker-plate, a cam-slide projecting from the lock-casing in position to be operated by the striker-plate, an arm connected with the locking member in the path of the slide, a withdrawing mechanism for the bolt, a releasing-pin operated by the withdrawing mechanism, and key-operated means for operating the locking member, substantially as described.

10. In a lock, the combination with a striker-plate, of a sliding bolt which engages the striker-plate, a locking member for the bolt, controlling means for the locking member, said means including a slide projecting from the lock-casing in position to be engaged by the striker-plate, and means whereby the striker-plate is caused to move the bolt before it moves the slide, substantially as described.

11. In a lock, the combination with a striker-plate, of a slide-bolt having that face which comes in contact with the striker-plate as the lock is closed lying at an angle to the opposite side, a locking member for the bolt, means for operating the locking member including a slide which projects from the lock-casing in position to be engaged by the striker-plate, said slide having the side which comes in contact with the striker-plate arranged at an angle to its opposite side, said angle being more obtuse than the angle of the face of the locking-bolt, whereby the striker-plate operates the bolt before it operates the slide, substantially as described.

656,809. GRINDING-MILL. THOMAS CASCADEN, Jr., Waterloo, Iowa, assignor to the Davis Gasoline Engine Works Company, same place. Filed Sept. 2, 1899. Serial No. 729,292. (No model.)



Claim.—1. In a grinding-mill the combination with the revoluble bur and with the sweep-frame connected therewith, of a carrying-wheel attached to the sweep-frame at a point adjacent the base of the mill and acting as a fulcrum by which the sweep partly counterbalances the revoluble bur.

2. In a grinding-mill the combination with the revoluble bur and with the sweep-frame connected therewith, of a track extending around the base of the mill and a carrying-wheel attached to the sweep-frame adjacent the mill and adapted to travel on said track.

3. In a grinding-mill the combination with the revoluble bur and with the sweep-frame connected therewith, of a track extending around the base of the mill, a carrying-wheel attached to the sweep-frame and adapted to travel on said track and a journal-bracket for said carrying-wheel pivotally connected to the sweep-frame and having a part to support the sweep-frame and limit its downward movement.

4. In a duplex grinding-mill, the combination with a vertically-disposed stationary cone-shell, an inner revoluble cone, an outer revoluble shell, said several parts being provided with grinding-burs and means common to both sets of grinding-burs for delivering thereto the material to be ground, of means whereby one of said revoluble parts may be adjusted with respect to said stationary cone-shell, and means whereby the other of said revoluble parts may be independently adjusted with respect to said stationary cone-shell and with respect to said first-mentioned revoluble part.

5. In a duplex grinding-mill comprising an outer revoluble shell, an inner revoluble cone and an intermediate stationary cone-shell having a central hub encircling the post of the inner cone, by which parts the grinding-burs are carried, the combination with the stationary cone-shell and its central hub, of a bearing-piece engaging said hub and adjusting mechanism between said bearing-piece and one of the revoluble bur-carrying parts, whereby the bur carried by said revoluble part can be adjusted toward its companion stationary bur.

6. In a duplex grinding-mill comprising an outer revoluble shell, an inner revoluble cone, an intermediate stationary cone-shell by which parts the grinding-burs are carried and means common to both sets of grinding-burs for delivering thereto the material to be ground, the combination with the stationary cone-shell, of a bearing-piece connected therewith and adjusting mechanism between said bearing-piece and one of the revoluble bur-carrying parts, whereby the bur carried by said revoluble part can be adjusted toward its companion stationary bur, and independent adjusting mechanism whereby the other revoluble bur-carrying part may be adjusted toward said stationary cone-shell.

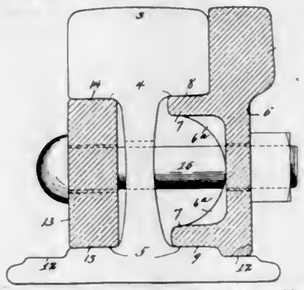
7. In a duplex grinding-mill comprising an outer revoluble shell, an inner revoluble cone and an intermediate stationary cone-shell by which parts the grinding-burs are carried, the combination with the stationary cone-shell, of a non-revoluble bearing-piece and adjusting mechanism between said bearing-piece and one of the revoluble bur-carrying parts, whereby the bur carried by said revoluble part can be adjusted toward its companion stationary bur.

8. In a duplex grinding-mill comprising an inner cone, an outer shell and a stationary intermediate cone-shell by which parts the grinding-burs are carried, the combination with the cone-shell, of a bearing-piece engaging its hub, adjusting-screw mechanism connected to said bearing-piece and extending through one of the adjacent revoluble parts and means whereby said screw mechanism may be adjusted to bring the part through which it passes in closer proximity to the cone-shell.

9. In a duplex grinding-mill the combination with an inner revoluble cone having a cone-post, an outer revoluble shell, an intermediate stationary cone-shell by which parts the grinding-burs are carried and means common to both sets of grinding-burs for delivering thereto the material to be ground, said cone-shell having a hub encircling said cone-post, of a bearing-piece encircling said cone-post and engaging the hub of the cone-shell, adjusting-screw mechanism connected to said bearing-piece and leading through one of the adjacent bur-carrying parts whereby said bur-carrying part can be adjusted toward the cone-shell, and means whereby the other of said bur-carrying parts can be independently adjusted toward and from the stationary cone-shell.

10. In a duplex grinding-mill the combination with an inner revoluble cone having a cone-post, an outer revoluble shell, an intermediate stationary cone-shell by which parts the grinding-burs are carried and means common to both sets of grinding-burs for delivering thereto the material to be ground, said cone-shell having a hub encircling said cone-post, of a bearing-piece encircling said cone-post and engaging the hub of the cone-shell, adjusting-screw mechanism connected to said bearing-piece and leading through the top of the cone whereby said cone may be adjusted toward the cone-shell, and a temper-screw having a bearing on the hub of the outer shell and adjustably connected to the cone-post whereby the outer shell may be forced toward the cone-shell.

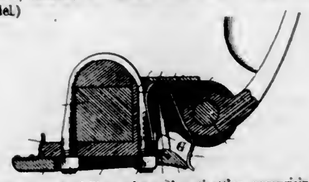
656,810. RAILWAY-RAIL JOINT. HENRY A. CHRISTY, Chicago, Ill., assignor of one-half to Sanger Brown, same place. Filed July 3, 1899. Serial No. 722,635. (No model.)



Claim.—1. A railway-rail joint comprising in combination a main rail having horizontal bearing-shoulders on the under side of its head and the upper side of its base parallel to its tread-surface, a combined fish-plate and joint-rail having a vertical web with lateral flanges provided with horizontal shoulders, respectively adapted to the upper and lower shoulders of the main rail, and a head contacting with the side of the head of the main rail and projecting into the plane of the tread thereof, substantially as described.

2. A railway-rail joint, comprising, in combination, a main rail having horizontal shoulders on the under side of its head, a plurality of parallel horizontal shoulders on the upper side of its base, and the combined fish-plate and joint-rail having a vertical web, lateral flanges provided with shoulders adapted to those of the main rail, and a head projecting into the plane of the tread-surface thereof, substantially as described.

656,811. THILL-COUPLING. WILLIAM G. CLINE and WILLIAM R. HANDY, Gallatin, Mo. Filed Mar. 26, 1900. Serial No. 10,246. (No model.)



Claim.—1. A thill-coupler and antirattler, comprising a clip having a rigid arm and a hinged arm and pin carried by said rigid arm, a plate having flanged ends held on the upper edges of said arms, a member having a spring-catch having pivoted-link connection with said plate, said catch designed to engage over a projecting portion of the clip and an antirattler-spring held by said member, as set forth.

2. A thill-coupler and antirattler, comprising in combination with the clip having the rigid and hinged arms the pin and thill-iron carried

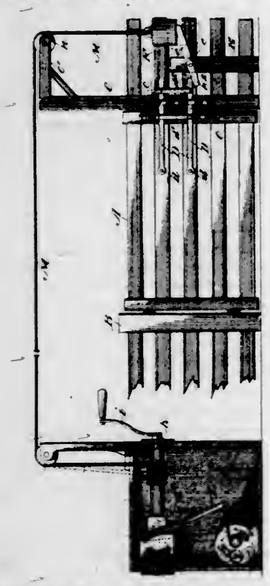
thereon, the ribs and pin on the inner faces of arms and clip, the antirattler-spring held in place by said ribs and pin, the flanged plate, the links secured to said plate, and engaging the opposite edges of said antirattler-spring, the member pivoted to the lower ends of said links, the catch at the opposite end of the member, adapted to engage a projecting portion of the clip, as set forth.

3. A combined thill-coupler and antirattler, comprising in combination with the clip the arms and flanged plate as described, the links secured to the latter, the hooked member pivoted to said links, the antirattler-spring having notches on its opposite edges and engaged by said links, the nose of said hooked member, adapted to bear upon the antirattler-spring as said member is swung into a locked relation, and a catch for locking the latter to the under face of the clip, as set forth.

4. A combined thill-coupler and antirattler, comprising a clip having the arms and pin as described, the antirattler-spring, the flanged plate, the links secured thereto, the hooked member pivoted near its hooked end to said links, the curved nose on said member adapted to engage the rear face of the antirattler-spring, the hook to engage a projection on the clip, and a spring-catch at the opposite end of the member which catch is designed to engage a rearwardly-projecting portion of the clip, as set forth.

5. A combined thill-coupler and antirattler comprising a clip having the arms and pin as described, the antirattler-spring, the plate and links secured thereto, the hooked member pivoted to the lower ends of said links, the hooked portion of said member adapted to engage over a projection on the forward portion of the clip, the nuts on the clip-retaining bolt held in an apertured portion of said member, and a spring-catch at the end of the latter engaging a portion of said clip, as set forth.

656,812. APPLIANCE FOR AUTOMATICALLY ACTUATING FARM-GATES AT PREDETERMINED INTERVALS. WALTER G. COCKERILL, Greenfield, Ohio. Filed Jan. 9, 1900. Serial No. 852. (No model.)



Claim.—1. In combination with a farm-gate provided with a latching device for keeping the gate normally in a fixed position, a releasing device arranged in position to engage said latching device, a locking device located at a distance from said releasing device and flexibly connected therewith for sustaining it normally in an inactive position, and mechanism for automatically unlocking or releasing said locking device at a predetermined period of time and paying out said flexible connection under the stress of said releasing device, whereby the gate is automatically unlocked at such predetermined period of time, substantially as described.

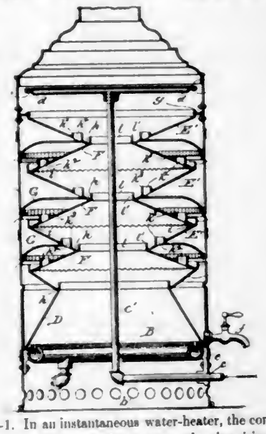
2. In combination with a suitably-hinged gate provided with a latching device for holding it normally in a closed position, a windlass located at a distance from said gate, a cord extending from the windlass and having a weight suspended from its free end adjacent to said latching device so as to disengage the latch when the weight descends, means for normally holding said windlass against rotation, and mechanism for automatically releasing said rotary element at a predetermined period of time; whereby when the windlass is released the weight will descend and unlatch the gate to permit the gate to be opened, substantially as described.

3. In combination with a farm-gate provided with a pivoted latch and a keeper for the same, a rocking lever arranged to lift said latch when the lever is rocked, a windlass having a suitable handle, a cord passing from said windlass over antifriction-rollers into close proximity to said gate and provided with a weight adapted to actuate said rocking lever and unlatch the gate when the weight descends, a pendent arm normally engaging said windlass to prevent rotation thereof, and mechanism for disengaging the arm from the windlass at a predetermined period of time, whereby the gate will be automatically unlatched at predetermined intervals, substantially as described.

4. An appliance for automatically unlatching a farm-gate or the like, comprising a latch for holding the gate closed, a rocking lever adapted to lift said latch when the lever is rocked, a windlass located at a distance from said gate having a polygonal stop-engaging surface, a pivoted arm or stop normally engaging said surface to prevent rotation of the windlass, mechanism adapted to move said stop at a predetermined interval of time and permit rotation of the windlass by the weight, and a cord extending from said windlass and carrying a weight suspended in proximity to said lever to rock the latter when the weight descends, substantially as described.

5. In combination with a suitably-hinged gate or the like, and a latching device for keeping it normally in a fixed position, mechanism for unlatching the gate, comprising a releasing device arranged in position to engage said latching device, a locking device located at a distance from said releasing device and flexibly connected therewith for sustaining it normally in an inactive position, and means for automatically unlocking or releasing said locking device at a predetermined period of time and paying out said flexible connection under the stress of said releasing device, whereby the gate may be automatically unlatched at such predetermined period of time.

656,813. INSTANTANEOUS WATER-HEATER. MORRIS I. COHEN, Chicago, Ill. Filed Jan. 17, 1900. Serial No. 1,814. (No model.)



Claim.—1. In an instantaneous water-heater, the combination with the casing containing a burner, of a water-supply pipe rising in the casing, a water-spraying head in the upper part of the casing and to which said pipe leads, and a stack of annular alternately upwardly and downwardly flaring pans rising in the casing about said pipe between the burner and head and resting one upon the other, and open at their bases to the flow of water between them, substantially as described.

2. In an instantaneous water-heater, the combination with the casing containing a burner, of a water-supply pipe rising in the casing, a water-spraying head in the upper part of the casing and to which said pipe leads, and a stack of annular alternately upwardly and downwardly flaring pans rising in the casing about said pipe between the burner and head and resting one upon the other and corrugated at their bases, substantially as described.

3. In an instantaneous water-heater, the combination with the casing containing a burner, of a water-supply pipe rising in the casing, a water-spraying head in the upper part of the casing and to which said pipe leads, and a stack of annular alternately upwardly and downwardly flaring pans rising in the casing about said pipe between the burner and head and resting one upon the other, said pans being corrugated at their bases and having flanged openings in their body portions for the passage through them of the products of combustion from the burner, substantially as described.

4. In an instantaneous water-heater, the combination with the casing containing a burner, of a water-supply pipe rising in the casing, a water-spraying head in the upper part of the casing and to which said pipe leads, an annular trough supported in the casing about the burner and having an outlet, and a stack of annular alternately upwardly and downwardly flaring pans supported in said trough to rise in the casing about said pipe, said pans resting one upon the other and being open at their bases to the flow of water between them into said trough, substantially as described.

5. In an instantaneous water-heater, the combination with the casing containing a burner, of a water-supply pipe rising in the casing, a water-spraying head in the upper part of the casing and to which said pipe leads, and a stack of annular alternately upwardly and downwardly flaring pans rising in the casing about said pipe between the burner and head and resting one upon the other, said pans being spaced from the casing and open at their bases to the flow of water between them, said head having outer openings for discharging water against the inner side of the casing and inner openings for discharging water upon said pans, substantially as described.

6. In an instantaneous water-heater, the combination with the casing containing a burner, of a water-supply pipe rising in the casing, a water-spraying head in the upper part of the casing and to which said pipe leads, an annular trough supported in the casing about the burner and having an outlet, a stack of annular alternately upwardly and downwardly flaring pans supported on the trough to rise in the casing about said pipe, said pans resting one upon the other and being open at their bases and spaced from the casing, and said head having outer openings for discharging water against the inner side of the casing and inner openings for discharging water upon said pans, and one or more water-spreading rings inclining downwardly toward the shell from between said pans, substantially as described.

7. In an instantaneous water-heater, the combination with the shell containing a burner near its base and in its upper portion a water-supplying head connected with a water-supply pipe, of a stack of annular alternately upwardly and downwardly flaring pans imposed one upon the other and rising in the shell between said burner and head, said pans being corrugated at their bases, and one or more circumferentially-corrugated water-spreading rings inclining downwardly toward the shell from between said pans, substantially as described.

8. In an instantaneous water-heater, the combination with the shell containing a burner near its base and in its upper portion a water-supplying head connected with a water-supply pipe, of a stack of annular alternately upwardly and downwardly flaring pans imposed one upon the other and rising in the shell between said burner and head, said pans being corrugated at their bases, and one or more water-spreading rings inclining downwardly toward the shell from between said pans, each ring having a circumferential corrugated flange, substantially as described.

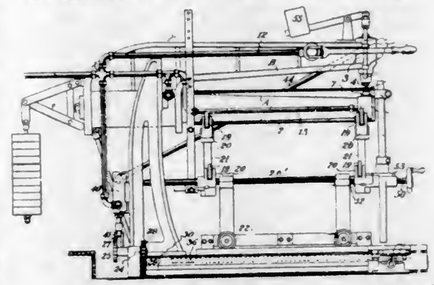
9. In an instantaneous water-heater, the combination with the shell containing a burner near its base and in its upper portion a water-supplying head connected with a water-supply pipe, of a trough in the shell extending above the plane of the heater and having a discharge-spout leading from it, and a stack of annular flaring pans E, F, E' rising in the shell from said trough, said pans F, E' having flanged openings about their open centers, and the central openings in said pans decreasing in diameter upward through the stack, substantially as described.

656,814. SKIRT. EDWARD E. ELLIOTT, Chicago, Ill., assignor to Marshall Field & Co., of Illinois. Filed Oct. 4, 1899. Serial No. 732,446. (No model.)



Claim.—As a new article of manufacture, a skirt having the skirt portion A extended continuous to the top without gathers or openings, except a placket, the waistband B permanently attached upon the outside of the waist portion of said skirt and divided into a plurality of separate sections the aggregate length of said band-sections being considerably less than the circumferential length of the said continuous waist portion of the skirt, and means for adjustably securing the ends of said band-sections together, substantially as described.

656,815. HYDRAULIC RIVETING APPARATUS. STANTON FOREMAN, Sacramento, Cal., assignor to Schaw, Ingram, Batcher & Co., same place. Filed Feb. 23, 1900. Serial No. 6,251. (No model.)



Claim.—1. In a hydraulic riveting-machine, the combination of a mandrel and an upper section united at the rear said mandrel adapted to receive pipe-sections, a fluid-pressure ram carried by the upper part of the yoke, a plate-closing pressure device carried by the mandrel and rivet-heading tools acting in unison therewith for first closing the plates together and afterward heading the rivet therethrough, passages through which fluid is supplied to the ram and pressure devices from a common source, a feed-carriage and a pawl-and-ratchet mechanism actuated by the movement of the riveting mechanism for operating the carriage.

2. In a hydraulic riveting-machine, the combination with means for supporting the pipe-sections, means for riveting said sections, fluid-pressure connections for operating the riveting mechanism, a feed-carriage, and a pawl-and-ratchet mechanism actuated by the fluid-pressure connections for operating the carriage step by step.

3. In a hydraulic riveting apparatus, the upper section and pipe-carrying mandrel, a fluid-pressure ram carried upon one section, a plate-closing device carried upon the other section and having pressure applied thereto in opposition to that of the ram, means through which fluid is supplied to the ram and opposing plungers from a common source, a socket-piece carried by the ram-plunger and carrying the upper riveter, said socket-piece having its face transversely concaved and having a radius corresponding to that of the pipe, an inner socket-piece or sleeve through which the inner riveter is movable, said socket-piece having its face correspondingly convex transversely whereby the pipe is compressed between said two faces previous to the rivet being headed, a feed-carriage for advancing the pipe and a pawl-and-ratchet-mechanism connection with the carriage and actuated by the fluid-pressure devices, for operating said carriage.

4. In a hydraulic riveting-machine, a mandrel and upper section united at their rear, a fluid-pressure ram carried by one part, a yielding pressure device carried by the other and operating in opposition to the pressure of the ram and in a less degree whereby the plates are closed together before the rivet is headed, passages through which fluid is supplied to the ram and opposing plungers from a common source, concave and convex socket-pieces carried respectively by the ram and the interior plate-closer, guides whereby the parts are retained in their line of reciprocation when in operation, a feed-carriage for advancing the pipe and a pawl-and-ratchet mechanism connected with the carriage and with the fluid-pressure devices for operating the carriage step by step.

5. In a hydraulic riveting apparatus, a mandrel over which the pipe-sections are fitted, an upper part forming a yoke therewith, one part carrying a fluid-pressure ram with socket-piece and riveting-head, the other part carrying a yielding plate-closer and a correspondingly-curved socket-piece with the other riveting-head, supports for pipe consisting of adjustable yokes, a longitudinally-movable carriage upon which said yokes are supported so that a pipe can be moved along the mandrel during the process of riveting, and a pawl-and-ratchet mechanism connected with the carriage and with the fluid-pressure devices for operating the carriage.

6. A hydraulic riveting-machine consisting of a mandrel and upper section, a fluid-pressure ram and a yielding plate-closing device with rivet-forming heads carried respectively by the ram and mandrel, and a pawl-and-ratchet mechanism connected therewith and with the fluid-pressure

devices whereby the pipe is automatically advanced a distance equal to that between the rivet-holes after the setting of each rivet.

7. In a hydraulic pipe-riveting machine, a mandrel, a carriage upon which the pipe is supported and movable with relation to the mandrel, a fluid-pressure ram and heads whereby the rivets are set, a ratchet-wheel mounted upon a shaft, a pawl actuated by the movements of the riveting mechanism to rotate said shaft, gears connected with the shaft and a rack and pinion through which motion is transmitted to advance the pipe-supporting carriage the required distance at each movement.

8. The combination with a hydraulic riveting-machine of a pawl-and-ratchet mechanism, rack-pinion and intermediate gearing whereby the pipe-supporting carriage is advanced a distance equal to that between the rivet-holes after the setting of each rivet, and mechanism by which the movement of the carriage is reversed after one line of rivets has been set and the pipe returned beneath the riveter to set the second line of rivets.

9. In a hydraulic riveting-machine, a supporting-standard including an upper section, a mandrel carried thereby, a fluid-pressure ram fixed to the outer end of the section, a socket-piece and riveting-tool carried thereby, an opposing plate-closer and riveting-tool against which the rivet is set, and a counterweighted lever and connections between it and the plunger of the ram whereby the latter is raised when the fluid-pressure above its plunger is relieved.

10. In a hydraulic riveting-machine, a standard including an upper section, a mandrel, a fluid-pressure cylinder at the outer end of the section, a plunger movable therein, a socket-piece and riveting-tool having the lower ends concaved coincident with the curvature of the pipe, a pipe and valve connections through which fluid-pressure is admitted above the plunger of the ram to force the riveting-tool downward, a counterweighted lever by which the plunger is returned, and a transverse bar or rod connecting the plunger-rod and socket-piece with guided slidable rods whereby the parts are prevented from turning in their reciprocations.

11. In a hydraulic riveting-machine, a fluid-pressure cylinder with a plunger movable therein, a socket-piece and riveting-tool carried by the plunger-rod having the lower face curved to coincide with the curvature of the pipe, means for supplying fluid-pressure above the plunger to depress it and the riveting-tool, a counterweighted lever fulcrumed with relation to the cylinder, rods slidable through guides upon each side of the cylinder having a yoke connection with the weighted lever and a transverse connection between the lower ends of said rods and the plunger-rod or socket-piece whereby the latter is prevented from turning during its reciprocations.

12. In a hydraulic riveting-machine, the standard including the upper section, the mandrel, a fluid-pressure cylinder fixed to the outer end of the section having the plunger and plunger-rod, a socket-piece and riveting-tool carried thereby and shaped to fit the exterior of the pipe with guides to prevent their turning, a yielding plate-closer and a riveting-tool carried by the outer end of the mandrel, curved to fit the interior of the pipe, a plunger and means for applying fluid-pressure in unison with the pressure upon the upper riveting-tool whereby the plate-closing socket-piece is forced upward to close the plates between itself and the upper socket-piece, said inner socket-piece yielding to the superior pressure from above to allow the closed plates to descend and the rivet to be headed, and a guide-bar extending transversely through a slot in the movable plunger whereby the parts are prevented from turning.

13. In a hydraulic riveting-machine, a supporting-standard including an upper section, a mandrel, a fluid-pressure cylinder with pistoo or plunger movable therein, a socket-piece and riveting-tool carried by the plunger-rod, a second riveting-tool mounted upon the outer end of the mandrel and a yielding fluid-pressure plunger and plate-closing socket-piece carried thereby, a carriage upon which the pipe is supported, and means for moving it in the line of the rivet-holes consisting of a rack fixed to the carriage, gear and reversible mechanism by which it may be moved in either direction, a ratchet fixed upon the shaft through which motion is transmitted to the gear and rack, a pawl engaging the teeth of the ratchet, a fluid-pressure cylinder having a plunger and connections with the source of pressure-supply whereby pressure is alternately applied to the upper and lower surfaces of the plunger and connections between the plunger-rod and the pawl-carrying mechanism whereby the latter is reciprocated to turn the ratchet.

14. In a hydraulic riveting-machine, mechanism adapted to set the rivets along the line of holes in the overlapping plates of a pipe, a carriage upon which the pipe is supported, mechanism by which the carriage is advanced a distance equal to that between the rivet-holes, and clamps by which the ends of the pipe are locked to the carriage during the setting of each line of rivets.

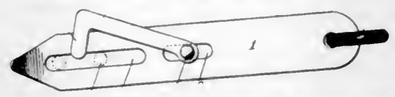
15. In a hydraulic riveting-machine, mechanism by which the overlapping plates of the pipe are closed and lines of rivets are set in holes therethrough, a carriage and clamping mechanism by which the pipe-sections are fixed thereto, mechanism by which the carriage is advanced a distance approximately equal to the distance between the rivet-holes in the interval between the setting of each rivet and the next, and a supplemental adjusting mechanism connected with the carriage whereby the pipe is movable independently thereof for slight adjustments.

656,816. TOBACCO-MOISTENER. JOHN D. GRIFFEN, New York, N. Y. Filed May 7, 1898. Serial No. 680,020. (No model.)



Claim.—A hollow cover for cigar-boxes having an inwardly-indented perforated portion on its under side, a moistening-pad supported within the cover on said indented portion, and means for movably connecting the cover to one side of an ordinary cigar-box to permit the under side of the cover to engage the upper edges of all the sides of the box to form a closure for the box and support the moistening-pad above the said edges, substantially as set forth.

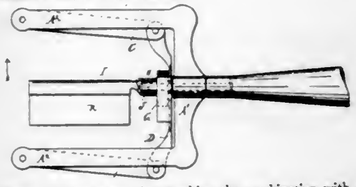
656,817. HASP. WALTER K. HILTON, Moscow, Idaho. Filed Sept. 7, 1899. Serial No. 729,736. (No model.)



Claim.—1. As an article of manufacture, a hasp consisting of a single piece of metal having a longitudinal slot in one end and in the middle portion, and a hook adjustably pivoted in said middle slot and adapted to cooperate with the end slot, as and for the purpose set forth.

2. The herein-described hasp, comprising a single piece of material having elongated middle and end openings and a hook movably pivoted in the middle opening, whereby the hook will have a movement relative to one of said end openings and thus compensate for the varying position of the staple received by said end opening, as specified and for the purpose set forth.

656,818. STROPPING-MACHINE. FREDERICK KAMPFE, RICHARD KAMPFE, and OTTO KAMPFE, New York, N. Y. Filed Aug. 17, 1899. Serial No. 727,548. (No model.)



Claim.—1. In a stropping-machine, the combination with a frame, of a link pivoted to the same, a blade-holder mounted in said frame to turn axially and means for turning said blade-holder axially from the pivoted link at the beginning of each stroke of the machine on a strop, substantially as herein shown and described.

2. In a stropping-machine, the combination with a frame, of links pivoted to the same, a cross-bar pivoted to said links, a blade-holder mounted in the frame to turn axially and means for turning said holder from the said cross-bar, substantially as herein shown and described.

3. In a stropping-machine, the combination with a frame, of links pivoted to the same, a slotted cross-bar pivoted to the links, a blade-holder mounted to turn axially on the frame and passing through said slot and means for turning said blade-holder from the slotted cross-bar, substantially as herein shown and described.

4. In a stropping-machine, the combination with a frame, of a blade-holder mounted to turn axially on a pin on said frame, links pivoted on the frame, a cross-bar pivoted to said links and means for turning the holder from said cross-bar, substantially as herein shown and described.

5. In a stropping-machine, the combination with a frame, of a link pivoted to the upper end of the same, a cross-bar connected with the swinging end of said link, a blade-holder mounted on the frame to turn axially and means for turning said holder from the cross-bar, substantially as herein shown and described.

6. In a stropping-machine, the combination with a frame, of links pivoted to the upper end of the frame, a cross-piece having a slotted and flanged wing, a blade-holder mounted to turn on the frame and passing through the slot and means for turning the holder from said flange, substantially as herein shown and described.

7. In a stropping-machine, the combination with a frame, of a blade-holder mounted to turn axially on said frame, means for turning said holder, a projection on said frame and having a threaded bore in its free end, a handle having a recess in its upper end and a screw held on the handle and extending into said recess from the lower end thereof, substantially as herein shown and described.

8. In a stropping-machine, the combination with a frame-piece, of a blade-holder mounted to turn axially thereon and means for turning it, a tapering projection on the frame, and provided with a threaded bore in its free end, a handle having a tapering recess in its upper end for receiving the tapering projection on the frame and a screw fixed in the bottom of said recess and adapted to be screwed into the threaded bore of the projection on the frame, substantially as herein shown and described.

9. In a stropping-machine, the combination with a frame to rest flat upon the strop of swinging members pivoted on the frame to swing in a plane parallel with the frame, a blade-holder mounted to turn axially on said frame, means for turning said holder from said swinging members and a friction layer on said swinging members, substantially as herein shown and described.

656,819. SKATE. EDWIN R. KNAPP, Red Bank, N. J. Filed Apr 12, 1900. Serial No. 12,551. (No model.)



Claim.—1. In a skate, the combination with the runner, the foot-plate pivotally connected with said runner, the heel and sole clamps, and the operating mechanism for said clamps, of a projection formed at the rear end of the runner, a spring-plate adapted to engage with said projection, and a releasing-lever pivoted to the rear end of said runner in a position to engage with and throw out the spring-plate, when turned downwardly, substantially as described.

2. In a skate, the combination with the runner, the foot-plate pivotally connected with said runner, and the heel and sole clamps, of an operating-lever pivoted to the forward end of the runner and provided with an upwardly-projecting clamp adapted to engage the heel of the shoe, a sliding connection between the foot-plate and said operating-lever, an extension on said operating-lever, a projection formed at the rear end of the runner with which said extension is adapted to engage, and a releasing-lever pivoted to the rear end of said runner in position to engage with and throw out or release the extension and consequently the operating-lever, substantially as described.

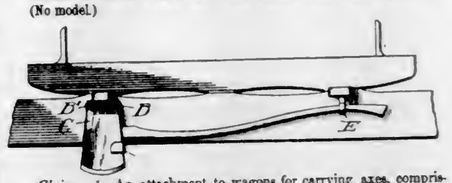
3. In a skate, the combination with the runner, of a sole-plate pivoted to the runner, a heel-plate slidably connected with the sole-plate, toe-clamps connected with a pivot passing through slots in the overlapping portions of the sole and heel plates, means connected with said pivot and adjustably with the heel-plate, heel-clamps attached to the heel-plate, a lever provided at its free end with a front heel-clamp and pivoted at its other end to the runner, and an extension on said lever adapted to engage with the runner to lock the foot-plate to the runner, substantially as described.

4. In a skate, the combination with the runner, of a sole-plate pivoted to the runner, a heel-plate slidably connected with the sole-plate, toe-clamps attached to a pivot passing through slots in the overlapping portions of the sole and heel plates, heel-clamps attached to the heel-plate, a lever provided at its free end with a front heel-clamp and pivoted at its other end to the runner, a projection formed at the rear end of the runner, an extension on the free end of the lever adapted to engage with said projection on the runner, a releasing-lever pivoted to the rear end of the runner in a position to engage with and throw out the extension when turned downwardly, and a spring grip-plate attached to said pivot and provided with a transverse slot through which the heel-plate extends for locking said plate to the pivot, substantially as described.

5. In a skate, the combination with the runner and the sole and heel plates slidably connected, of a grip-plate consisting of a spring-plate connected at one end with the pivot of the toe-clamps and having its other end turned upwardly and provided with a slot through which the forward portion of the heel-plate passes, the latter being thereby held against outward movement, while when the upwardly-turned end of the grip-plate is forced forward, the heel-plate can be moved relatively to the joining-pivot of the toe-clamps for the adjustment of the several clamps, substantially as described.

6. In a skate, the combination with the runner and the sole-plate, of movable heel and toe clamps, a spring grip-plate permanently attached at one end to one set of clamps and having at its other end a transverse slot for adjustably gripping the inserted plate of the second set of clamps, substantially as described.

656,820. WAGON ATTACHMENT FOR CARRYING AXES. GEORGE W. LEPTS, Adrian, Mo. Filed Feb. 23, 1900. Serial No. 6,299. (No model.)

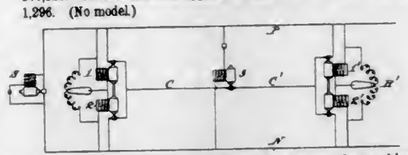


Claim.—1. An attachment to wagons for carrying axes, comprising a boxing made of a single piece of metal having two of its edges bent at right angles to each other, and a curved projection to confine the head of an ax, said device being secured vertically to the axle of a wagon, as set forth.

2. An attachment to wagons for carrying axes, comprising a metallic plate having right-angled extensions on opposite ends bent in opposite directions, and apertured to be fitted to the axle of a wagon, one of the longitudinal edges of said plate being bent at right angles to the body portion, and the upper part of said edge being inwardly bent, a projecting portion at the lower corner of the plate being curved to fit over the ax below the handle as shown and described.

3. An attachment to wagons for carrying axes, comprising a metallic plate having right-angled extensions on opposite ends, bent in opposite directions, and apertured to be fitted to the axle of a wagon, one of the longitudinal edges of said plate being bent at right angles to the body portion, and the upper part of said edge being inwardly bent, an integral hook-shaped portion at the lower corner of the plate engaging over the head of the ax below the handle, and a hook for supporting the free end of the handle, and in which hook said handle is designed to be sprung.

656,821. MEANS FOR CONTROLLING ENERGY DELIVERED TO ELECTRICAL TRANSLATING DEVICES. HARRY W. LEONARD, New York, N. Y. Original application filed Jan. 31, 1896, Serial No. 577,520. Divided and this application filed Jan. 13, 1900. Serial No. 1,296. (No model.)



Claim.—1. In a system of electrical distribution, the combination with a main source of supply and a circuit extending therefrom, of two dynamo-electric machines, the armatures and field-magnets of which are independently connected in series across the circuit, an intermediate conductor extending from the armature-circuit of said machines from a point intermediate the two armatures, a translating device connected in a circuit extending from said intermediate conductor to one of the conductors extending from the source of supply, and a rheostat shunted around the field-magnets of the two dynamo-electric machines, by the adjustment of which the strength of each of said field-magnets is varied to vary the potential upon the intermediate conductor, substantially as set forth.

2. In a system of electrical distribution, the combination with a main source of supply and a circuit extending therefrom, of two dynamo-electric machines, the armatures of which are mechanically connected together and electrically connected in series across the circuit, and an independent connection across the circuit containing the field-magnets of said

machines in series, an intermediate conductor extending from the armature-circuit of said machines from a point intermediate between the two armatures, a translating device connected in a circuit extending from said intermediate conductor to one of the conductors extending from the source of supply, and a rheostat shunted around the field-magnets of the two dynamo-electric machines, by the adjustment of which the strength of each of said field-magnets is varied to vary the potential upon the intermediate conductor, substantially as set forth.

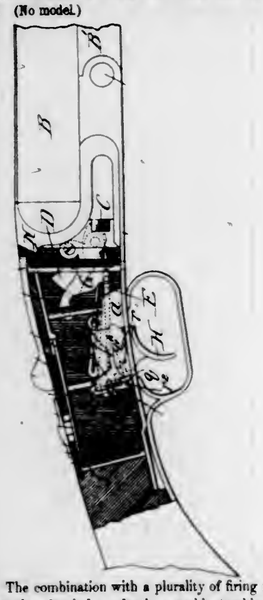
3. The combination of a main source of supply, a circuit extending therefrom, two sources of electromotive force connected therewith, an intermediate conductor extending from each of said last-named sources, and a translating device connected between said latter conductors, substantially as set forth.

4. The combination of a main source of supply, a circuit extending therefrom, two sources of electromotive force connected therewith, an intermediate conductor extending from each of said last-named sources, a translating device connected between said latter conductors, and means for varying the electromotive force on said last-named conductors, substantially as set forth.

5. The combination of a main source of supply, a circuit extending therefrom, two sources of electromotive force connected therewith, an intermediate conductor extending from each of said sources, a translating device connected between said conductors, and means for adjusting said two sources of electromotive force to vary the potential upon each of said conductors from that of the positive potential of the supply-circuit to that of the negative potential of the supply-circuit, substantially as set forth.

6. The combination of a main source of supply, a circuit extending therefrom, two sources of electromotive force connected across said circuit, each source consisting of two dynamo-electric machines, the armatures and field-magnets of which are independently connected in series across the circuit, an intermediate conductor extending from the armature-circuit of each of said sources of electromotive force from a point intermediate the two armatures, a translating device connected between said conductors, and a rheostat shunted around the field-magnets of each pair of dynamo-electric machines comprising the two sources of electromotive force, by the adjustment of which the strength of each of said field-magnets is varied to vary the potential upon the intermediate conductors, substantially as set forth.

656,822. SINGLE-TRIGGER MECHANISM FOR BREAKDOWN GUNS. William M. Levy, St. Louis, Mo. Filed Mar. 22, 1900. Serial No. 9,730. (No model.)



Claim.—1. The combination with a plurality of firing mechanisms of a single trigger therefor, independently-operable tumblers interposed between said trigger and said firing mechanisms, a shiftable device in engagement with the trigger and in position to engage at least one of said tumblers at all times, and mechanism for moving the trigger to an abnormal forward position upon the operation of one of said tumblers, substantially as described.

2. The combination with a plurality of firing mechanisms in which are included hammers and sears, of a single trigger common to all of said mechanisms, independently-operable tumblers for operating the different sears, means for engaging the single trigger successively with the different tumblers, and means for moving the trigger to an abnormal forward position upon the operation of one of said tumblers, substantially as described.

3. The combination with a plurality of firing mechanisms in which are included hammers and sears, of a single trigger common to all of said mechanisms, independently-operable tumblers coöperating with said sears and said trigger, an adjustable safety-stud coöperating with one of said tumblers, and a rocking frame coöperating with the other of said tumblers, said rocking frame being in the path of said safety-stud, whereby, when said safety-stud is moved to rock said frame it releases the tumbler formerly locked by said frame, said safety-stud remaining in coöperative relation with its respective tumbler, and locking the same against movement; substantially as described.

4. The combination with a plurality of firing mechanisms in which are included hammers and sears, of a single trigger common to all of said mechanisms, independently-operable tumblers coöperating with said sears and said trigger, a shiftable device in engagement with the trigger and in position to engage at least one of said tumblers at all times, a rocking frame coöperating with said shiftable device, and a safety-stud for coöperating with one of said tumblers and said rocking frame, whereby, when said safety-stud is out of engagement with said tumbler the successive operation of the trigger will successively operate the different firing mechanisms, and when said safety-stud is in engagement with its respective tumbler and the rocking frame, the said tumbler and its associate firing mechanism are locked against movement, and the remaining tumbler is released, so that its associate mechanism may be operated; substantially as described.

5. In a breakdown gun, the combination with the barrel-locking mechanism, of a slide which is capable of being thrown out of engagement with said mechanism, a stud or projection carried by said slide, a plurality of independently-movable tumblers formed with shoulders or recesses, with one of which tumblers said slide stud or projection coöperates, a single trigger, a rocking frame, and a roller mounted in said trigger provided with a spindle for coöperating with said rocking frame and said tumblers, substantially as described.

6. The combination with a hammer carrying means for elevating the rear end of its sear, of a sear, a tumbler for disengaging the sear from the hammer, a spring for holding the tumbler in an elevated position after the sear trips the hammer, a trigger, a shiftable device carried by said trigger for engaging the trigger with the tumbler, a rocking frame with which said shiftable device coöperates a secondary tumbler which is designed to be engaged by the shiftable device after the first tumbler is operated, and means on the rocking frame for locking the secondary tumbler against movement during the operation of the first tumbler, substantially as described.

7. The combination with a slotted trigger, of a roller mounted in the slot thereof, a slotted rocking frame for embracing said roller and through the slot in which the spindle of said roller passes, tumblers provided with shoulders with which the spindle of said roller coöperates, and firing mechanisms controlled by said tumblers, substantially as described.

8. The combination with a firing mechanism, of a trigger, a tumbler common to said trigger and said firing mechanism, and a shiftable device carried by the trigger for coöperating with said tumbler, said tumbler being provided with shoulders r' and r^2, coöperating with the said shiftable device; substantially as described.

9. The combination with a firing mechanism, of a trigger for operating the same, a tumbler common to said trigger and said firing mechanism, a shiftable device carried by said trigger for coöperating with said tumbler, a rocking frame with which said shiftable device also coöperates, said tumbler being provided with shoulders s and s' for coöperating with said shiftable device, and a projection on the rocking frame for coöperating with a locking-finger s^2 on the tumbler, substantially as described.

10. The combination with a plurality of firing mechanisms including hammers and sears, of means for holding one of said sears after its actuating mechanism has been released in a position different from that occupied by said sear before its actuating mechanism was released, so that another firing mechanism can be operated only after the sear reaches its last-mentioned position, a single-trigger mechanism common to all of said firing mechanisms, and means for moving the single trigger to an abnormal forward position to operate said last-mentioned firing mechanism successively, substantially as described.

11. The combination with a plurality of firing mechanisms including hammers and sears, of independently-operable tumblers movable with the different sears, means for holding one of said sears and its coöperating tumbler in a position after the release of the firing mechanism controlled thereby different from that occupied by said sear and tumbler before said mechanism was released, whereby the other mechanism can be fired only after the sear and tumbler first mentioned are operated and their position changed, a single trigger coöperating with said tumblers and their associate sears, and means for moving said trigger to an abnormal forward position after the operation of the first firing mechanism and into position to operate the second-mentioned firing mechanism, substantially as described.

12. The combination with a plurality of firing mechanisms, of independently-operable tumblers for controlling the same, manually-operable devices for locking one of said tumblers in position and releasing the other of said tumblers, a trigger, and a shiftable device carried by the trigger and designed to engage the released tumbler only when the trigger is moved to an abnormal position to the rear, substantially as described.

13. The combination with a single trigger, of a shiftable device carried thereby, a rocking frame in engagement with said shiftable device, independently-operable tumblers adapted to be engaged by said shiftable device, and manually-operable means for locking one of said tumblers in position and engaging said rocking frame to release the other tumbler and place the shiftable device of the trigger in position to operate said released tumbler, substantially as described.

14. In a single-trigger mechanism, the combination with a plurality of independently-operable tumblers, of a single trigger, devices carried by said trigger for successively engaging said tumblers, means for moving the trigger to an abnormal forward position when one of said tumblers has been operated, and means for preventing said trigger from occupying an operative relation to the last tumbler to be operated until said trigger has reached the limit of its abnormal forward movement, substantially as described.

15. The combination with a plurality of independently-operable tumblers, of a single trigger, a shiftable device on said trigger for successively engaging the tumblers, and means for moving the trigger to an abnormal forward position after the first of said tumblers has been operated, said means releasing the other of said tumblers and causing the shiftable device on the trigger to assume a position to directly engage the released tumbler upon the next pull on the trigger when in its abnormal forward position, substantially as described.

16. In a breakdown gun, the combination with the barrel-locking mechanism, of a plurality of firing mechanisms, a plurality of independently-operable tumblers, a single trigger, a shiftable device engaging the trigger and designed to engage all of the tumblers at different times, means operated by the barrel-locking mechanism for locking all of the tumblers and single trigger against movement, and a manually-operable device for unlocking one of the tumblers and the single trigger, substantially as described.

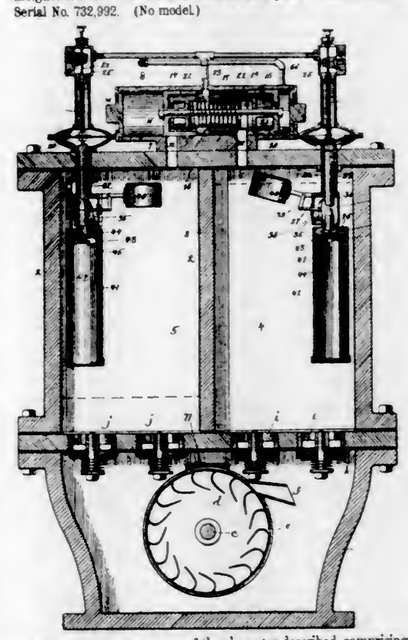
17. In a breakdown gun, the combination with the barrel-locking mechanism, of a plurality of firing mechanisms, a plurality of independently-operable tumblers, a single trigger, a shiftable device engaging the trigger and designed to engage all of the tumblers at different times, a rocking frame coöperating with the shiftable device on the trigger, means on said frame for locking one of said tumblers against movement, and means operated by the barrel-locking mechanism for locking the other of said tumblers and single trigger against movement, substantially as described.

18. In a breakdown gun, the combination with the barrel-locking mechanism, of a plurality of firing mechanisms, a plurality of independently-operable tumblers, a single trigger, a shiftable device engaging the trigger and designed to engage all of the tumblers at different times, a rocking frame coöperating with the shiftable device on the trigger, means on said frame for locking one of said tumblers against movement, and means operated by the barrel-locking mechanism for locking the other of said tumblers and single trigger against movement, said means also coöperating with the rocking frame to actuate the same to release the single trigger and the tumblers theretofore locked by said rocking frame, said means still locking the other tumbler against movement, substantially as described.

19. In a breakdown gun, the combination with the barrel-locking mechanism, of a plurality of firing mechanisms in which are included hammers and sears, a single trigger common to all of said mechanisms, independently-operable tumblers for operating the different sears, means for engaging the single trigger successively with the different tumblers, means for moving the trigger to an abnormal forward position upon the operation of one of said tumblers, and mechanism operated by the barrel-locking mechanism for restoring the trigger from its abnormal forward position to its normal position, substantially as described.

20. In a breakdown gun, the combination with the barrel-locking mechanism, of a plurality of firing mechanisms in which are included hammers and sears, a single trigger common to all of said mechanisms, independently-operable tumblers for operating the different sears, means for engaging the single trigger successively with the different tumblers, means for moving the trigger to an abnormal forward position upon the operation of one of said tumblers, and mechanism operated by the barrel-locking mechanism for restoring the trigger from its abnormal forward position to its normal position, said mechanism also locking the several tumblers and trigger against movement, substantially as described.

656,823. AIR OR GAS ENGINE. Robert H. Little, Chicago, Ill., assignor of one-half to Simon W. Straus, same place. Filed Oct. 9, 1899. Serial No. 732,992. (No model.)



Claim.—1. An apparatus of the character described, comprising the combination of two compartments for holding fluid under pressure, a chamber also for holding fluid under pressure intermediate said compartments and provided with ports opening directly into the latter, channels for the admission and exhaust of air or gas under pressure to and from each of said compartments, to force the liquid therein back and forth between said compartments and said intermediate chamber, a pressure-motor in said intermediate chamber to receive the force of the liquid as it is expelled from either of said compartments through said intermediate chamber and into the other of said compartments, suitable valve mechanism for controlling admission or exhaust of air or gas to and from each of said compartments, and valves for the ports between said compartments and said intermediate chamber for controlling the flow of liquid between said compartments and chamber.

2. An apparatus of the character described, comprising the combination of two compartments for holding fluid under pressure, a chamber also for holding fluid under pressure divided into opposite sides by a partition and provided at each of its opposite sides with inlet and discharge ports opening into one of said compartments, channels for the admission and exhaust of air or gas under pressure to and from each of said compartments, to force the liquid therein back and forth between said compartments and through said intermediate chamber, a pressure-motor between the opposite sides of said intermediate chamber to receive the force of the liquid as it is expelled from either of said compartments through said chamber into the other of said compartments, suitable valve mechanism for controlling the alternate admission and exhaust of air or gas to and from each of said compartments, and valves in said ports between said compartments and said intermediate chamber for controlling the flow of liquid between said compartments and chamber.

3. An apparatus of the character described, comprising the combination of plural compartments for holding liquid under pressure, channels for the admission and discharge of air or gas under pressure to said compartments, valve mechanism for controlling the alternate admission and escape of air or gas to said compartments, a motor for receiving the force of liquid as it is expelled from said compartments, a chamber wherein said motor is contained, inlet and discharge ports and valves between said compartments and said motor-chamber, mechanism for locking the inlet-valves of each chamber during the time that the liquid is being expelled

therefrom, said locking mechanism comprising diaphragm-chambers connected on one side with the liquid-holding compartments and upon the opposite side with the air-supply, and diaphragms within said diaphragm-chambers connected to said locking mechanism.

4. An apparatus of the character described, comprising the combination of plural compartments for holding liquid under pressure, channels for admitting air or other gas under pressure to said compartments, valve mechanism for controlling the admission and discharge of air through said channels to said compartments, a motor for receiving the force of the liquid as it is expelled from said compartments, a chamber wherein said motor is located, inlet and discharge ports and valves between said compartments and said motor-chamber, latch mechanism for locking the air-controlling mechanism in position, floats within each of said compartments serving to unlock said air-controlling valve mechanism, and means serving to effect the shift of said air-controlling valve mechanism.

5. An apparatus of the character described, comprising the combination of plural compartments for holding liquid under pressure, channels for admitting air or other gas under pressure to said compartments, valve mechanism for controlling the admission and discharge of air through said channels to said compartments, a motor for receiving the force of the liquid as it is expelled from said compartments, a chamber wherein said motor is located, inlet and discharge ports and valves between said compartments and said motor-chamber, locking mechanism within said compartments for holding the air-controlling valve mechanism in position and plural floats within each of said compartments, one of the floats within each compartment serving to effect the shift of the air-controlling valve mechanism and the other of said floats within each compartment serving to unlock said air-controlling valve mechanism.

6. An apparatus of the character described, comprising the combination of plural compartments for holding liquid under pressure, channels for admitting air or other gas under pressure to said compartments, a movable valve and valve-casing for each compartment and whereby the admission and discharge of air to and from said compartments are controlled, a spring-actuated plunger connected with each of said air-controlling valves, lock mechanism for engaging said plunger, a float within each compartment for controlling the corresponding lock mechanism, a diaphragm-chamber and a diaphragm therein connected to said plunger and in communication with its corresponding compartment, a float and valve for controlling the admission of air to the corresponding diaphragm-chamber, a motor for receiving the force of the liquid as it is expelled from said compartments, a chamber wherein said motor is located and inlet and discharge ports and valves between said compartments and said motor-chamber.

7. An apparatus of the character described, comprising the combination of plural compartments for holding fluid under pressure, channels for the admission and discharge of gas or air under pressure to and from said compartments, valve mechanism for controlling the alternate admission and discharge of air or gas to and from said compartments comprising an individual movable valve for each compartment, a spring-actuated diaphragm connected with each of said valves, a chamber for said diaphragm connected with the interior of the corresponding compartment, a plunger leading from said diaphragm into said compartment, a latch for engaging said plunger when it is forced outward, a float for effecting the release of said latch, a valve for controlling the admission of air or gas from said compartment to said diaphragm-casing, a float within said compartment for controlling said valve, a motor for receiving the force of liquid as it is expelled from said compartments, a chamber wherein said motor is contained, and inlet and discharge ports and valves between said compartments and said motor-chamber.

8. An apparatus of the character described, comprising the combination of plural compartments for holding fluid under pressure, channels for the admission and escape of air or gas under pressure to and from said compartments, a motor for receiving the force of the fluid as it is expelled from said compartments, a chamber for said motor, suitable ports and valves intermediate said compartments and said motor-chamber, valve mechanism for controlling the alternate admission of air or gas to said compartments comprising an inlet-cylinder having pistons therein for controlling the channels that admit air to said compartments, an exhaust-cylinder having pistons for controlling the channels through which air escapes from said compartments and supplemental valve mechanism for controlling the admission of air to and from said inlet and exhaust cylinders and means within each of said compartments for actuating said supplemental valve mechanism.

9. An apparatus of the character described comprising the combination of plural compartments for holding fluid under pressure, channels for the admission and escape of air or gas under pressure to and from said compartments, a motor for receiving the force of the fluid as it is expelled from said compartments, a chamber for said motor, suitable ports and valves intermediate said compartments and said motor-chamber, valve mechanism for controlling the alternate admission of air or gas to said compartments comprising an inlet-cylinder having pistons therein for controlling the channels that admit air to said compartments, a spring for effecting the shift of said pistons to cause it to close said admission-channels, an exhaust-cylinder having pistons for controlling the channels through which air escapes from said compartments and supplemental valve mechanism for controlling the admission of air to and from said inlet and exhaust cylinders and means within each of said compartments for actuating said supplemental valve mechanism.

10. An apparatus of the character described, comprising the combination of plural compartments for holding fluid under pressure, channels for the admission and escape of air or gas under pressure to and from said compartments, a motor for receiving the force of the fluid as it is expelled from said compartments, a chamber for said motor, suitable ports and valves intermediate said compartments and said motor-chamber, valve mechanism for controlling the alternate admission of air or gas to said compartments comprising an inlet-cylinder having pistons therein for controlling the channels that admit air to said compartments, a spring within said inlet-cylinder, a stationary casing for holding said spring also within said cylinder, means whereby the pistons may oppositely compress said spring, said spring serving to cause the pistons to close the inlet-channels, an exhaust-cylinder having pistons for controlling the channels through which air escapes from said compartments and supplemental valve mechanism for controlling the admission of air to and from said inlet and exhaust cylinders and means within each of said compartments for actuating said supplemental valve mechanism.

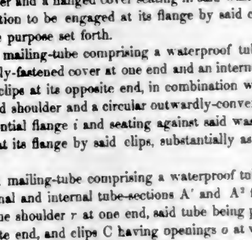
11. An apparatus of the character described, comprising the combination of plural compartments for holding fluid under pressure, channels for the admission and escape of air or gas under pressure to and from said compartments, a motor for receiving the force of the fluid as it is expelled from said compartments, a chamber for said motor, suitable ports and valves intermediate said compartments and said motor-chamber, valve mechanism for controlling the alternate admission of air or gas to said compartments comprising an inlet-cylinder having pistons therein for controlling the channels that admit air to said compartments, an exhaust-cylinder having pistons for controlling the channels through which air escapes from said compartments, suitable pipes connecting said inlet and said exhaust cylinders whereby air is delivered from the inlet-cylinder to the exhaust-cylinder to shift the pistons of said latter cylinder.

12. An apparatus of the character described, comprising the combination of plural compartments for holding fluid under pressure, channels for the admission and escape of air or gas under pressure to and from said compartments, a motor for receiving the force of the fluid as it is expelled from said compartments, a chamber for said motor, suitable ports and valves intermediate said compartments and said motor-chamber, valve mechanism for controlling the alternate admission of air or gas to said compartments comprising an inlet-cylinder having pistons therein for controlling the channels that admit air to said compartments, an exhaust-cylinder having pistons for controlling the channels through which air escapes from said compartments and supplemental valve mechanism for controlling the admission of air to and from said inlet and exhaust cylinders comprising valve-chambers having ports communicating with the atmosphere, pipes connecting said chambers with the exhaust-cylinder, and means within each of said compartments for actuating said supplemental valve mechanism.

13. An apparatus of the character described, comprising the combination of plural compartments for holding fluid under pressure, channels for the admission and escape of air or gas under pressure to and from said compartments, a motor for receiving the force of the fluid as it is expelled from said compartments, a chamber for said motor, suitable ports and valves intermediate said compartments and said motor-chamber, valve mechanism for controlling the alternate admission of air or gas to said compartments comprising an inlet-cylinder having pistons therein for controlling the channels that admit air to said compartments, spring mechanism within said inlet-cylinder for effecting the cut-off of the air-supply through said channels to admit air to said compartments, an exhaust-cylinder having pistons for controlling the channels through which air escapes from said compartments, pipes connecting the opposite ends of said inlet and exhaust cylinders, supplemental valve mechanism for controlling the admission of air to and from said inlet and exhaust cylinders comprising valve-casings and valves therein, said valve-casings having ports leading to the atmosphere and pipes connecting said valve-casings with the inlet-cylinder, and means within each of said compartments for actuating said valves.

656,824. AUTOMATIC CAR-COUPLING. JAMES MUNTON, Maywood, Ill. Filed May 10, 1899. Serial No. 716,211. (No model.)

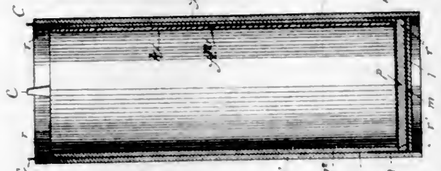
Claim.—1. In an automatic car-coupler, the combination with a pivoted knuckle, of a forked draw-head having a passage-way for a gravity locking pin or block, furnished with a shoulder or ledge to engage a corresponding shoulder or ledge on the locking pin or block, and a gravity locking pin or block composed of two parts or members having a wedging or inclined connection between the two, the upper part or member of said locking pin or block having a shoulder or projection adapted to fit under and engage said shoulder or ledge on the draw-head, substantially as specified.



2. In an automatic car-coupler, the combination with a pivoted knuckle, of a forked draw-head having a passage-way for a gravity locking pin or block, furnished with a shoulder or ledge to engage a corresponding shoulder or ledge on the locking pin or block and a gravity locking pin or block composed of two parts or members having a wedging or inclined connection between the two, the upper part or member of said locking pin or block having a shoulder or projection adapted to fit under and engage said shoulder or ledge on the draw-head, the lower part or member of said locking-pin having a projection at its lower end adapted to engage the forward rear corner of the tail of the knuckle when the lock is lifted and tilted forward, thus forming the lock-set, substantially as specified.

3. In an automatic car-coupler, the combination with a forked draw-head having a recess in its pivot-arm forming a shoulder or ledge for engagement with a hook on the knuckle-tail, of a pivoted knuckle having a hook or projection on its tail adapted to fit against said shoulder or ledge in the pivot-arm of the draw-head, and a two-part wedge-acting locking pin or block adapted to be lifted freely by its upper member, and incapable of being moved upward by force applied to its lower member, the upper member of said locking-pin having a shoulder or projection fitting under and adapted to engage a shoulder or ledge on the draw-head, substantially as specified.

656,825. MAILING-TUBE. GEORGE P. MCINTYRE, Chicago, Ill. Filed Jan. 29, 1900. Serial No. 3,144. (No model.)



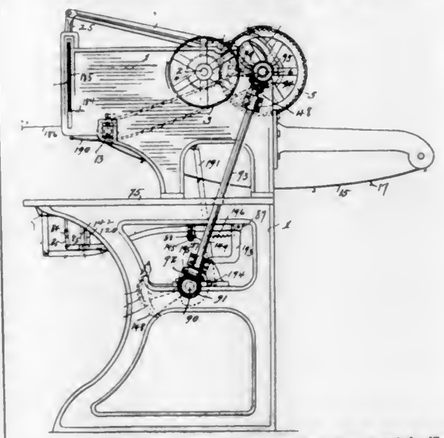
Claim.—1. A mailing-tube comprising a tubular body having a permanently-fastened cover at one end and an internal shoulder and flexible metal clips at its opposite end, in combination with a washer seating against said shoulder and a flanged cover seating in said washer against the shoulder in position to be engaged at its flange by said clips, substantially as and for the purpose set forth.

2. A mailing-tube comprising a waterproof tubular body having a permanently-fastened cover at one end and an internal shoulder and flexible metal clips at its opposite end, in combination with a washer seating against said shoulder and a circular outwardly-convex cover B having the circumferential flange *i* and seating against said washer in position to be engaged at its flange by said clips, substantially as and for the purpose set forth.

3. A mailing-tube comprising a waterproof tubular body formed of the external and internal tube-sections A′ and A² fastened together and forming the shoulder *r* at one end, said tube being permanently closed at its opposite end, and clips C having openings *o* at which they are keyed between said tube-sections to extend beyond said shoulder, in combination with a flanged cover B seated against said shoulder in position to be engaged by said clips, substantially as and for the purpose set forth.

4. A mailing-tube comprising, in combination, a waterproof tubular body A formed of the external and internal tube-sections A′ and A² fastened together and forming the internal shoulders *r* and *r′* at its opposite ends, a head *p* permanently seated against the shoulder *r′* and having a cover *m* extending over it, clips C having openings *o* at which they are keyed between said sections at the end of the tube adjacent to the shoulder *r* to extend beyond it, a washer *h* seated against the shoulder *r* and a cover B provided with a circumferential flange *i* and seating against said washer in position to be engaged by said clips, substantially as and for the purpose set forth.

656,826. WRAPPING-MACHINE. FRANK M. PETERS, Chicago, Ill. Filed July 1, 1899. Serial No. 722,587. (No model.)



Claim.—1. In a machine for packing crackers, biscuit and the like, the combination, with a folding-table to receive a box-blank, of a conveyer adapted to supply the crackers in groups containing a predetermined quantity, and a carrier adapted to receive the crackers from the conveyer, to carry them to the folding-table and to hold them in position thereon said carrier constituting with the crackers a form around which the box-blank is folded, substantially as described.

2. In a machine for packing crackers, biscuit and the like, the combination, with a folding-table to receive a box-blank, of a conveyer adapted to supply the crackers in groups containing a predetermined quantity, and a carrier adapted to receive the crackers from the conveyer, to carry them to the folding-table and to hold them in position thereon, said carrier constituting with the said crackers or the like a form around which the sides of the box-blank are folded, and said table being provided with automatic folding devices to fold the box-blank, substantially as described.

3. In a machine for packing crackers, biscuit and the like, the combination, with a conveyer adapted to supply the crackers in groups containing a predetermined quantity, of a folding-table adapted to receive a box-blank and provided with automatic mechanism for folding said blank, and a carrier movable between the conveyer and folding-table and adapted to receive the crackers from the conveyer and carry them to the folding-table and to hold them in position thereon and constituting with said crackers or the like a form around which the box-blank may be folded, and automatic means for actuating said carrier to move it from the conveyer to the folding-table and to withdraw it from the folding-table to the conveyer after the operation of the folding mechanism, substantially as described.

4. In a machine of the character described, the combination, with a folding-table and a hollow carrier adapted to receive the crackers and deliver them to the folding-table, of an endless conveyer adapted to supply the crackers in groups containing a predetermined quantity, and a sliding plate intermediate the conveyer and carrier and adapted to receive the crackers from the conveyer and move with them to the carrier, substantially as described.

5. In a machine of the character described, the combination, with a conveyer adapted to supply the crackers in groups containing a predetermined quantity, a folding-table and a hollow carrier adapted to receive the crackers and deliver them to the folding-table, and a pusher located intermediate the conveyer and carrier and adapted to engage the crackers and move them into the carrier, substantially as described.

6. In a machine of the character described, the combination, with a vertically-movable carrier and an endless conveyer, of a sliding plate located between the conveyer and carrier and adapted to move from the former under the latter and back again, and a reciprocating pusher also intermediate the conveyer and carrier and adapted to reciprocate between the two so as to engage the crackers as they move forward and assist the sliding plate in delivering them into the carrier, substantially as described.

7. In a machine of the character described, the combination, with a hollow carrier, a conveyer and a movable plate reciprocating between the two, of a pusher also reciprocating between the two, and means for lifting said pusher during its return stroke to cause it to clear the incoming group of crackers, substantially as described.

8. In a machine of the character described, the combination, with a folding-table, a carrier and a conveyer, of a pusher intermediate the carrier and conveyer and provided with a yielding pushing-plate to bear against

the crackers during the forward movement of the pusher, substantially as described.

9. In a machine of the character described, the combination, with a conveyer comprising a fixed bed, endless chains connected at intervals by cross-bars which travel over the bed, and means for actuating said chains, of a sliding plate forming a forward extension of the bed, a carrier located in front of the bed, and means for moving said sliding plate forward under the carrier during the passage of each one of the cross-bars around the front edge of the bed and returning said sliding plate to its normal position after such passage, substantially as described.

10. In a machine of the character described, the combination, with a folding-table and a conveyer, of a combined carrier and former, movable between the two and comprising a hollow body open at the rear to receive the crackers from the conveyer and provided with gripping devices and with means for actuating said gripping devices to seize the crackers after they are received from the conveyer and to release them after they are delivered to the folding-table, substantially as described.

11. In a machine of the character described, the combination, with a folding-table and a conveyer, of a combined carrier and former, reciprocating between the two and comprising a hollow body, pivoted gripping-plates located at the lower portion of the ends thereof, a spring for normally moving said gripping-plates to engage the crackers, a locking device for holding said gripping-plates away from the crackers, means for releasing said locking device after the crackers have been delivered from the conveyer to the carrier, and means for returning said gripping-plates to their release position and reëngaging the locking device therewith at the end of the movement of the carrier toward the folding-table, substantially as described.

12. In a machine of the character described, the combination, with a hollow carrier, provided with spring-actuated gripping-plates and a locking device for holding them in inoperative position, of a conveyer, and a pusher intermediate the conveyer and carrier and provided with a projection to engage and free the locking device to permit the gripping-plates to act, substantially as described.

13. In a machine of the character described, the combination, with a folding-table and a conveyer having its discharge-terminal located above said table, of a hollow carrier provided with gripping-plates and vertically reciprocating between the conveyer and table, said carrier being open at the rear to receive the crackers, mechanism for transferring the crackers in groups from the conveyer to the carrier and for causing the gripping devices to act to hold the crackers after such transfer, and means for releasing the gripping devices when the carrier reaches the folding-table substantially as described.

14. In a machine for packing crackers and the like, the combination, with a fixed horizontal plate on which the bottom portion of the box-blank may rest, of movable plates hinged to the side and end margins of said fixed plate and lying normally in the same plane therewith, means for moving said hinged plates into positions at right angles to the fixed plate to fold up the sides and ends of the box-blank, and a carrier for the crackers adapted to deliver the crackers upon the box-blank and to hold them in position therein and constituting with the crackers a form around which the sides of the box-blank are folded, substantially as described.

15. In a machine of the character described, the combination, with a fixed horizontal plate of substantially-rectangular form on which the bottom of the box-blank may rest, of four normally-horizontal plates respectively hinged to the four edges of said fixed plate, the front and rear hinged plates being provided at their lateral ends with pivoted wings or extensions, the pivotal axes of which are at right angles with those of the plates to which they are hinged, and means for moving said hinged plates into a position at right angles to the fixed plate and for moving said pivoted wings or extensions into positions at right angles to the plates to which they are hinged, substantially as described.

16. In a machine of the character described, the combination, with a fixed horizontal plate on which the bottom of the box-blank may rest, of normally-horizontal movable plates hinged to the margins of said fixed plate, one of said hinged plates being provided at its ends with pivoted wings or extensions having projections to engage the box-blank and open the slits thereof, and another of said hinged plates being provided at its ends with pivoted wings or extensions having yielding fingers to guide the tongues of the box-blank into the slits, and means for actuating said hinged plates and their extensions, substantially as described.

17. In a machine of the character described, the combination, with a fixed horizontal plate to receive the box-blank and a lining-sheet thereon, and the folding-plates pivoted to the front and end edges thereof, of a two-part folding-plate pivoted to the rear edge of said fixed plate, each of said parts having pivoted extensions or wings, those of one plate being provided with yielding guide-fingers and those of the other plate being provided with gripping devices to hold the lining-sheet in position, and means for actuating the several movable parts, substantially as specified.

18. In a machine of the character described, the combination, with the fixed bottom plate and its front and lateral folding devices, of a plate pivoted to the rear edge of said fixed plate and comprising a lower and an upper part, the former movable through a lesser angle and having pivoted end wings or extensions, and the latter movable through a greater angle, first in unison with the lower plate and then independently, and provided with pivoted end wings or extensions having gripping devices and a sliding connection with the wings or extensions of the lower plate and means for first lifting both plates and simultaneously bringing the wings or extensions to position at right angles to said plates and actuating the gripping devices, and for then moving forward the upper plate independently and releasing the gripping devices at the end of the forward movement of the upper plate, substantially as described.

19. In a machine of the character described, the combination, with the two rear folding-plates, each provided with end wings or extensions, one of each pair whereof has a curved slot terminating in a straight portion, while the other has a projection to engage said slot, of a spring acting to move said plates toward each other, and means for first simultaneously raising both plates, then continuing the upper motion of the upper plate and finally returning said plates to their normal position, substantially as described.

20. In a machine of the character described, the combination, with a vibrating folding-plate, having end wings or extensions, of gripping-fingers pivotally connected to said end wings or extensions and lying with their gripping edges normally in a common plane therewith, means for moving said folding-plate, simultaneously causing the wings or extensions thereof to move into positions at right angles thereto, mechanism whereby this latter movement causes the gripping-fingers to project over the edges of the extensions and press against the faces thereof, and means for releasing said gripping-fingers when said movement of the folding-plate is completed, substantially as described.

21. In a machine for simultaneously folding a box-blank and the loose lining thereof, the combination, with pivoted folding-plates, of gripping devices carried by said plates to hold the lining in position thereon and means for releasing said gripping devices at the conclusion of folding operations of the plates, substantially as described.

22. In a machine for simultaneously folding a box-blank and the loose lining thereof, the combination, with a fixed plate having hinged folding-plates connected therewith and automatic mechanism for operating said folding-plates, of a carrier movable toward and from said fixed plate, and yielding fingers carried by said carrier and adapted to project over the edges of the lining during the operation of the folding-plates, substantially as described.

23. In a machine for simultaneously folding a box-blank and a loose lining therefor, the combination, with folding devices and a carrier movable toward and from the same, of yielding fingers pivotally mounted above said devices, means for swinging said yielding fingers into vertical position alongside the carrier while it is depressed, and means for returning said yielding fingers to their normal position after the operation of the folding devices, substantially as described.

24. In a machine for simultaneously folding a box-blank and a loose lining therefor, the combination, with folding devices having gripping-fingers to hold the lining-sheet in position, of a carrier movable toward and from said folding devices and provided with yielding fingers to extend over the edges of the lining-sheet, and pivoted yielding fingers provided with mechanism for moving them into a vertical position alongside the carrier when depressed, and for returning them to their normal horizontal position after the operation of the folding devices, substantially as described.

25. In a machine of the character described, the combination, with a hollow box-like carrier for holding and carrying the crackers or other articles to be packed, of a fixed plate toward and from which said carrier is movable, and on which the bottom portion of a box-blank may rest, and folding-plates pivotally connected to said fixed plate and adapted to operate to fold the box-blank around the sides of the carrier and around the crackers contained therein, substantially as described.

26. In a machine of the character described, the combination, with a hollow carrier provided with gripping-plates to receive and hold a group of crackers, of a fixed plate on which a box-blank may rest, and folding-plates pivoted to the margins of said fixed plate, means for moving said carrier toward the fixed plate, means for actuating said folding-plates to fold the box-blank around the carrier, means for releasing the gripping-plates, and means for withdrawing the carrier and thereby leaving the crackers in the box, substantially as described.

27. In a machine for packing crackers, biscuit and the like, the combination, with a folding-table having a fixed plate and normally horizontally folding-plates pivoted to the margins thereof, of automatic mechanism for actuating said folding-plates, a conveyer adapted to supply the crackers in groups containing a predetermined quantity, a carrier and former of hollow box-like form, adapted to receive the crackers from the conveyer, means for moving said carrier to the fixed plate of the folding-table, whereon the box-blank is folded around said carrier and its contents, said carrier and former being provided with gripping devices to hold the crackers during their transit from the conveyer to the folding-table, automatic means for releasing said gripping devices after such transit, and automatic means for withdrawing said carrier after the operation of the folding devices, whereby the crackers are left in the box just formed, substantially as described.

28. In a machine for packing crackers, biscuit and the like, a carrier adapted to receive the articles to be packed, to carry them to the folding or packing table and to hold them in position thereon and constituting with such crackers a form around which the sides of the blank are folded, substantially as described.

29. In a machine for packing crackers, biscuit and the like, the combination, with a folding table or support for a box-blank, of a hollow carrier adapted to contain the articles to be packed, and said table or support and said carrier having relative movement whereby the articles may be brought into position to be inclosed or infolded by the blank, said carrier constituting with its contents, a form around which the sides of the blank are folded, substantially as described.

30. In a machine for packing biscuit, crackers and the like, the combination, with a folding table or support for a box-blank, of a hollow carrier adapted to contain the articles to be packed, and said table or support and said carrier having relative movement whereby the articles may be brought into position to be inclosed when infolded by the blank and said carrier and the articles to be packed constituting a form, and automatically-operating folding means for folding the sides of the blank around said form, substantially as described.

31. In a machine for packing biscuit, crackers and the like, the combination, with a folding table or support for a box-blank, of a hollow movable carrier adapted to contain the articles to be packed and to be moved with its contents to the blank, whereby the articles may be brought into position to be inclosed or infolded by the blank and constituting with its contents a form around which the sides of the blank are folded, substantially as described.

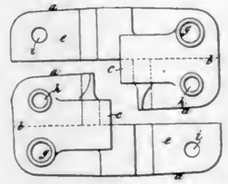
32. In a machine for packing biscuit, crackers and the like, the combination, with a folding table or support for a box-blank, of a hollow movable carrier adapted to contain the articles to be packed, whereby the articles may be brought into position to be inclosed or infolded by the blank and constituting with said articles a form around which the sides of the blank may be folded, and automatically-operating means for folding said sides, substantially as described.

33. In a machine for packing crackers, biscuit and the like, the combination, with a folding table or support for a box-blank, of a movable hollow carrier for containing the articles to be packed and carrying them into position to be infolded by the box-blank, said carrier and the articles carrier thereby constituting a form around which the sides of the blank are folded, and means for charging the articles into the carrier, substantially as described.

34. The combination, with a bottomless, hollow, reciprocating carrier having an opening in its side, of a sliding plate for carrying articles into said carrier, and means for moving the parts in due order and relation, whereby to first charge the articles into said carrier and then to move the latter with its contents, substantially as described.

35. The combination, with a hollow carrier, of folding mechanism comprising folding-wings, and actuating mechanism whereby the carrier is caused to move into position over the folding devices, and the latter actuated to infold the articles to be packed while in the carrier, and means for moving the latter away, leaving the articles wrapped upon the folding-table, substantially as described.

656,827. **CHAIR FOR RAILWAYS.** WILLIAM H. PLEWMAN and JOHN GRAHAM, Bedford, England. Filed Feb. 15, 1900. Serial No. 5,291. (No model.)



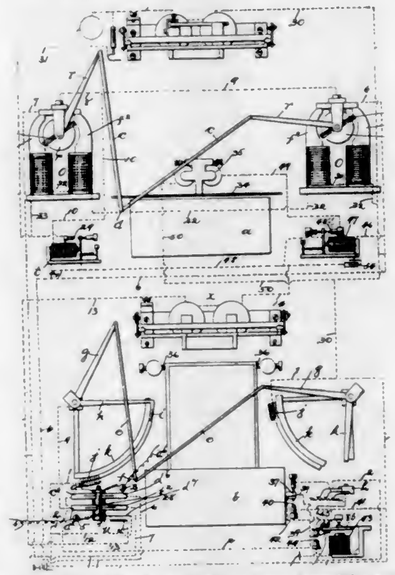
Claim.—1. A chair formed of two symmetrical members each comprising a base-plate the upper part of which is wholly on one side of the rail and has a complete jaw for holding the rail and whose under face is recessed or cut away as at *f*, and a tongue on the other side of the rail which passes under the base-plate of the opposite member and fits in its recessed or cut-away under face, substantially as set forth.

2. A chair formed of two symmetrical members each having a rail-seat, a jaw located at one side of the seat, a base-plate located on the same side below the plane of the seat, and a tongue or part on the other side of the seat which passes under the base-plate of the other member.

3. A chair formed of two symmetrical members each having a rail-seat, a jaw located at one side of the seat, a base-plate located on the same side below the plane of the seat, and a tongue or part on the other side of the seat which passes under the base-plate of the other member and has a plane or unobstructed surface whereby the two members may be interlocked in position under the rail by moving them toward each other transversely to the length of the rail, and bolt-holes in the respective base-plates and tongues.

4. The combination with a chair formed of two symmetrical parts each consisting of a base-plate having a jaw for holding the rail and a tongue which passes under the base-plate of the other part of a third part between the other parts and having jaws on each of its sides for holding the rails in coöperation with the jaws on the other parts.

656,828. **TELAUTOGRAPHIC APPARATUS.** FOSTER RITCHIE, London, England. Filed Jan. 29, 1900. Serial No. 3,066. (No model.)



Claim.—1. In a telautographic apparatus, transmitting appliances including a tracer, receiving appliances arranged at a distant station, a line-wire connecting these appliances, a rheostat comprising resistance-coils, said coils being arranged in series in said line-circuit, an arm connected to move with said tracer and carrying a brush arranged to move over said rheostat, whereby the line-current is varied in strength, paper-shifting mechanisms at the receiving and transmitting stations, and means whereby said mechanisms are inactive during the writing operation, and means arranged at the receiving-station, and actuated by the variations in strength of the line-current for actuating the receiving appliances, as and for the purpose set forth.

2. In a telautographic apparatus, a transmitting-tracer, a receiving-pen, line-wires connecting the same, a rheostat comprising resistance-coils arranged in series in the line-circuits, brushes connected to move coincidently with the tracer over said rheostat, whereby the strength of the line-current is varied when said tracer is moved, an electrical apparatus arranged to actuate the receiving-pen, said electrical apparatus arranged in the line-circuit and affected by the variations in current strength, paper-shifting mechanisms at the receiving and transmitting stations, and means whereby said mechanisms are inactive during the writing operation, as and for the purpose set forth.

3. In a telautographic apparatus, a transmitting-tracer, a receiving-pen, line-wires connecting the same, jointed rods to which said tracer is connected, arms connected to said rods and carrying brushes, resistances arranged in series in the line-circuits, and over which said brushes operate, in combination with means operated by the variations in current strength thus sent to line for duplicating in the receiving-pen the movements of said tracer, paper-shifting mechanisms at the receiving and transmitting sta-

tions, and means whereby said mechanisms are inactive during the writing operation, as and for the purpose set forth.

4. In a telautographic apparatus, a transmitting-tracer and a receiving-pen, line-wires connecting the same, means actuated by the movements of said tracer for varying the strength of the current sent to the line, rocking coils connected to said receiving-pen for actuating the same, magnetic fields in which said coils operate, said coils being included in the line-circuits, paper-shifting mechanisms at the receiving and transmitting stations, and means whereby said mechanisms are inactive during the writing operation, as and for the purpose set forth.

5. In a telautographic apparatus, a sending-tracer, a receiving-pen, line-wires connecting the same, jointed rods connected to said pen, pivotally-mounted coils having arms respectively connected to said rods, said coils being respectively arranged in the line-circuits, fields for each of said coils, and means actuated by the movements of said tracer for varying the strength of the line-currents, as and for the purpose set forth.

6. In a telautographic apparatus, a sending-tracer, a receiving-pen, line-wires connecting the same, pivotally-mounted coils respectively arranged in the line-circuits and respectively connected to the receiving-pen, and coöperating to effect the movements of said pen, means for yieldingly maintaining said coils in one limit of their rocking movements, magnetic fields for said coils, and means actuated by the movements of said sending-tracer for varying the strength of the currents sent to the line-wires, as and for the purpose set forth.

7. In a telautographic apparatus, a sending-tracer, a receiving-pen line-wires connecting the same, pivotally-mounted coils respectively arranged in the line-circuits and respectively connected to the receiving-pen, and coöperating to effect the movements of the pen, springs arranged to normally hold said coils in one limit of their movement, magnetic fields for said coils, and means actuated by the movements of said sending-tracer for varying the strength of the currents sent to the line-wires, as and for the purpose set forth.

8. In a telautographic apparatus, a sending-tracer, a receiving-pen, line-wires connecting the same, pivotally-mounted coils respectively arranged in the line-circuits and respectively connected to the receiving-pen, and coöperating to effect the movement of said pen, magnetic fields for said coils, means actuated by the movements of said tracer for varying the strength of currents sent to the line-wires, and means for retarding the rocking movements of said coils, as and for the purpose set forth.

9. In a telautographic apparatus, a sending-tracer, a receiving-pen, line-wires connecting the same, pivotally-mounted coils arranged in the line-circuits and connected to the receiving-pen, magnetic fields for said coils, means actuated by the movements of said tracer for varying the strength of currents sent to the line-wires, and a dash-pot arranged to retard the rocking movement of said coils, as and for the purpose set forth.

10. In a telautographic apparatus, a sending-tracer, a receiving-pen, line-wires connecting the same, stationarily-mounted iron cores, magnets having pole-pieces surrounding said cores, coils pivotally mounted and interposed between said cores and pole-pieces, said coils being arranged in the line-circuits and connected to the receiving-pen, and means actuated by the movements of the sending-tracer for varying the strength of currents sent to the line-wires, as and for the purpose set forth.

11. In a telautographic apparatus, a sending-tracer, a receiving-pen, line-wires connecting the same, rheostats comprising insulated plates connected up in series and arranged in the line-circuits, brushes connected to move with said tracer and operating over said plates, to complete circuit therethrough, whereby the line-current is varied, paper-shifting mechanisms at the receiving and transmitting stations, means whereby said mechanisms are inoperative during the writing operation, and means actuated by such variations in the line-current for actuating said receiving-pen in synchronism with the movements of the tracer, as and for the purpose set forth.

12. In a telautographic apparatus, a sending-tracer, a receiving-pen, a line-wire connecting the same, a rheostat arranged in the line-circuit, and comprising a support, a series of insulated plates connected in series by high resistances, said plates having projections arranged to be received in seats in said support, and a bar for clamping said projections in said seat, in combination with a brush connected to move with said tracer and operating over said plates, and means arranged in the line-circuit and actuated by the variations in line-current for operating the receiving-pen in synchronism with the movements of the tracer, as and for the purpose set forth.

13. In a telautographic apparatus, a tracer, a receiving-pen, a line-wire connecting the same, a rheostat arranged in the line-circuit, and comprising a support having a dovetailed seat, insulated plates having dovetailed projections adapted to be received in said seats, said plates being connected in series by high resistances, in combination with a brush connected to move with said tracer and operating over said plates, and means arranged in the line-circuit and actuated by the variations in line-current for operating the receiving-pen in synchronism with the movements of the tracer, as and for the purpose set forth.

14. In a telautographic apparatus, a tracer, a receiving-pen, a line-wire connecting the same, a rheostat comprising insulated plates, each having a projection, said projections arranged in staggered relation with respect to each other, the projections of adjacent plates being connected in series by a high resistance, in combination with a brush connected to move with said tracer, and means arranged in the line-circuit and actuated by variations in the line-current for operating the receiving-pen in synchronism with the tracer, as and for the purpose set forth.

15. In a telautographic apparatus, a paper-shifting mechanism, including a swinging frame, clamping-jaws carried thereby and arranged to grasp the edges of the paper, and electromagnetic means for swinging said frame and opening and closing said jaws, as and for the purpose set forth.

16. In a telautographic apparatus, a paper-shifting mechanism including a swinging frame having lugs, clamp-arms coöperating with said lugs to grasp the edges of the paper therebetween, and electromagnetic means for swinging said frame and rocking said arms, as and for the purpose set forth.

17. In a telautographic apparatus, a paper-shifting mechanism comprising an electromagnet, a swinging frame carrying the armature of said magnet, said armature being pivotally mounted in said frame and carrying clamp-arms for engaging and gripping the edges of the paper, and means for energizing said magnet, whereby said armature is rocked to clamp the edges of the paper, and said frame is swung to advance the paper, as and for the purpose set forth.

18. In a telautographic apparatus, a paper-shifting mechanism comprising an electromagnet, a pivotally-mounted armature for said magnet, a swinging support in which said armature is pivotally mounted, clamp-arms carried by said armature and arranged to engage and release the edges of the paper, means for normally holding said clamp-arms released and said support retracted, and means for energizing said magnet, as and for the purpose set forth.

19. In a telautographic apparatus, a paper-shifting mechanism comprising an electromagnet, a swinging frame, an armature for said magnet, pivotally mounted in said frame, stops between which said frame swings, means for normally maintaining said frame in one limit of its movement, clamping-jaws actuated by the rocking movement of said armature, and means for energizing said magnet, as and for the purpose set forth.

20. In a telautographic apparatus, a paper-shifting mechanism comprising an electromagnet, a swinging frame, an armature for said magnet, pivotally mounted in said frame, said armature having clamping-arms arranged to clamp the edges of the paper, a spring connected to said armature to hold the same in position to release the paper and said frame in retracted position, and means for energizing said magnet, as and for the purpose set forth.

21. In a telautographic apparatus, a paper-shifting mechanism comprising an electromagnet, a curved pole-piece therefor, a movable armature arranged to be attracted toward and to move over said pole-piece, clamping devices actuated by said armature and adapted to engage the paper to be shifted, and means for energizing the electromagnet, as and for the purpose set forth.

22. In a telautographic apparatus, a paper-shifting mechanism comprising an electromagnet having a curved pole-piece, a swinging frame, an armature pivotally mounted in said frame and having clamping-jaws arranged to engage and grip the edges of the paper, means for normally holding said frame retracted with said armature over the smaller part of said pole-piece, whereby said clamping-jaws are released, and means for energizing said magnet, as and for the purpose set forth.

23. In a telautographic apparatus, a sending-tracer, a receiving-pen, and a line-circuit connecting the same, in combination with a main switch for controlling said circuit, comprising a rocking piece having insulated metal plates connected to the line-wires, contact springs or fingers arranged to engage said plates, and means actuated by the tracer for controlling the movements of said rocking piece, as and for the purpose set forth.

24. In a telautographic apparatus, a sending-tracer, a receiving-pen, and a line-circuit connecting the same, in combination with a main switch comprising a movable piece having contact-plates, fixed fingers or springs, into engagement with which said contact-plates may be moved, a projection carried by said movable piece, an auxiliary contact arranged to be engaged thereby, a paper-shifting mechanism, a circuit therefor, said circuit arranged to be controlled by said projection and auxiliary contact, and means actuated by the tracer for operating said switch, as and for the purpose set forth.

25. In a telautographic apparatus, a movable receiving-pen, in combination with an independent inking device therefor, comprising a reservoir, a basin communicating therewith, whereby the ink is maintained at a uniform level therein, said pen arranged to be moved into and out of said basin, as and for the purpose set forth.

26. In a telautographic apparatus, a receiving-pen comprising a bowl and a stem having a fine orifice communicating therewith, and means for movably supporting said pen, in combination with an ink-reservoir, a basin communicating therewith, said pen arranged to be moved into and out of said basin, as and for the purpose set forth.

27. In a telautographic apparatus, a receiving-pen, a platen upon which said pen operates, electromagnetic means whereby said pen may be brought into contact with the surface of the paper resting on said platen or raised therefrom, a circuit for said means, a relay for controlling the circuit of said means, and a condenser arranged in the circuit of said relay, as and for the purpose set forth.

28. In a telautographic apparatus, a receiving-pen, a platen therefor, a sending-pen and a platen therefor, electrical devices for controlling movements of said receiving-pen toward its platen, a relay for controlling the circuit of said electrical devices, a condenser arranged in the circuit of said relay, and means actuated by the pressure of the sending-pen on its platen for controlling the circuit of said relay, as and for the purpose set forth.

29. In a telautographic apparatus, a receiving-pen or pen-arms, containing or carrying magnetic material, normally out of contact with its record-paper, a magnet arranged adjacent to the record-paper, and a circuit therefor, whereby when said magnet is energized said pen is attracted to contact with its record-sheet, as and for the purpose set forth.

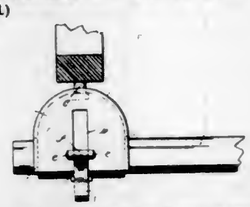
30. In a telautographic apparatus, a transmitting-pen, a receiving-pen, line-wires connecting the same, platens upon which said pens operate, said receiving-pen containing or carrying magnetic material and normally out of contact with its platen, an iron core arranged behind said platen, a coil therefor, a circuit for said coil, and means actuated by the pressure of the transmitting-pen on its platen for completing the circuit of said coil, as and for the purpose set forth.

31. In a telautographic apparatus, a transmitting-pen, a receiving-pen, and line-wires connecting the same, electrical devices for causing said receiving-pen to contact with its record-paper, a relay controlling the circuit of said electrical devices, an induction-coil having its secondary winding arranged to bridge said line-circuit, and means actuated by the pressure of the transmitting-pen on its record-paper for completing the circuit of the primary of said induction-coil, as and for the purpose set forth.

32. In a telautographic apparatus, a transmitting-pen, a receiving-pen, line-wires connecting the same, electrical devices for controlling the approach of the receiving-pen to its record-paper, a relay arranged to control the circuit of said electrical devices, an induction-coil having its secondary winding arranged to bridge said line-circuit, a condenser arranged in said secondary circuit, and means actuated by the pressure of the transmitting-pen on its record-paper for completing the circuit of the primary of said induction-coil, as and for the purpose set forth.

33. In a telautographic apparatus, a paper-shifting mechanism at the sending-station and a paper-shifting mechanism at the receiving-station, a line-circuit connecting the stations, a local circuit for each paper-shifting mechanism, a relay arranged in the line-circuit for controlling the circuit of the paper-shifting mechanism at the receiving-station, and a switch arranged at the sending-station for simultaneously breaking the line-circuit and making the local circuit of the paper-shifting mechanism at the sending-station, as and for the purpose set forth.

656,829. COUPLING FOR VEHICLES, WAGONS, &c. BENJIMAN K. THOMAS, Alexandria, Nebr. Filed Feb. 20, 1900. Serial No. 5,892. (No model.)



Claim.—1. The combination with a suitable suspending device, of a coupler swiveled thereon and comprising a movable jaw, provided with means for engaging and holding a tongue, and a locking device for said jaw, substantially as described.

2. The combination with a suspending device, of a coupler-head movably held thereon having bearing-sockets for a pole, a jaw movably connected with said coupler-head and adapted to support the tongue in said bearing-sockets, and a lock device for said jaw, substantially as described.

3. In a coupler for the purpose described, the combination of a head having suitable bearings for a tongue, a jaw pivoted to said head and adapted to lie on the side of the tongue opposite said bearings, the jaw being provided with suitable means for engaging and holding the tongue in the head, and a lock device for holding said jaw in closed position, substantially as described.

4. In a coupler for the purpose described, a head having suitable bearings for a tongue or the like, a jaw pivoted thereto and adapted to swing in a vertical plane and provided with suitable means for engaging and holding said tongue in the head, and a lock device for holding said jaw in closed position, substantially as described.

5. In a coupler for the purpose described, the combination of the head having in its opposite ends bearing-sockets for a pole or the like, a jaw pivoted to said head and adapted when closed to lie on the side of the pole opposite said bearing-sockets, and a lock device acting automatically upon the closing of the jaw to hold the same in closed position, substantially as described.

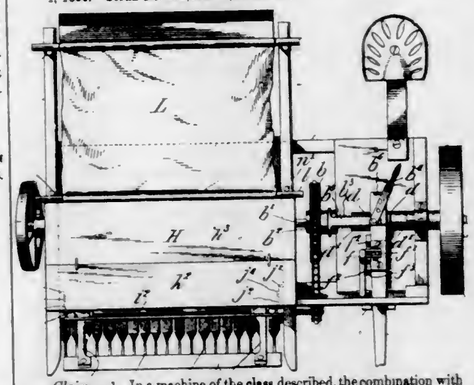
6. In a coupler for the purpose described, a head having in its opposite ends bearings for a tongue or the like, a jaw pivoted to said head and adapted when closed, to lie on the side of the tongue opposite said bearings, a lock device for said jaw, and coöperating portions on said jaw and head adapted to engage and relieve said lock device and jaw-pivot from strain, substantially as described.

7. In a coupler for the purpose described, the combination of a coupler-head having bearing-sockets in opposite ends, a jaw pivoted to one side of said coupler, a weighted lever connected to said jaw and adapted to swing through an opening in the coupler-head side and adapted to occupy a position within the head when the jaw is open, and a lock device for said jaw, substantially as described.

8. In a coupler for the purpose described, the combination with a coupler-head having an upper curved or arched part provided with an opening by which the coupler-head is suspended from above, the opposite ends of said coupler-head having bearing-sockets for a pole or the like, a jaw pivoted to the side of said coupler-head, a weighted lever secured to said jaw and adapted to pass through an opening in the side of the coupler-head, and a lock device for holding said jaw in closed position, substantially as described.

9. In a coupler for the purpose described, the combination of a head having an arched top provided with an elongated slot in which a suspending means is adapted to engage, the opposite ends of said head having bearing-sockets for a pole or the like, a lever pivoted to the side of said coupler-head, a jaw curved in cross-section and having an opening therein secured to said lever, said lever being weighted at one end and adapted to pass through a hole in the coupler-head side, a hook on said jaw, and a spring-plate secured to said coupler-head having shoulders with which said hook is adapted to engage, substantially as described.

656,830. HARVESTER FOR PEAS, BEANS, &c. CHARLES H. WHITNEY, Cookeville, and SHELBY F. GLENN, Cassville, Tenn. Filed Dec. 1, 1899. Serial No. 738,835. (No model.)



Claim.—1. In a machine of the class described, the combination with picker-fingers, of a stripping-reel carrying radially-adjustable knives said knives having integral cutting edges approximately at a right angle to the body portions and formed by beveling at the inner sides, and multiplying-gearing between the drive-wheel and reel for imparting a velocity to the latter in excess of the rate of travel of the machine.

2. In a machine of the class described, picker-fingers having at their upper rear side flanges which are juxtaposed, to form channels for the vines, and having inclined approaches to said flanges, and curved abutments k^2 below the flanges.

3. In a machine of the class described, the combination with picker-fingers, of outwardly-curved abutments k^2 at the inner end of the channels between the fingers.

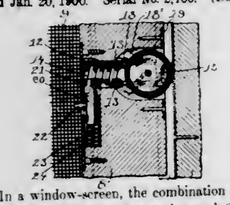
4. In a machine of the class described, a picker-finger having at its upper rear side above the plane of the finger-point side flanges which extend beyond the end of the finger for attachment to the frame, an inclined approach to said flange, and an extension of the finger at a right angle thereto affording the other point of attachment to the frame.

5. In a machine of the class described, the combination with stripper mechanism, of a pouch having a mouth at one end and removably attached at the lower edge of its mouth, and supported at its top by rods removably resting on bars, and pins on the bars affording abutments for the rods.

6. In a machine of the class described, the combination with stripper mechanism, of a casing partially inclosing said mechanism, a pouch having a mouth at one end and stiffening-rods at the top and bottom of its mouth and a rod at its upper rear end, hooks for securing the lower mouth side, bars extending from the upper end of the casing affording supports for the upper rods, pins on the bars for engagement with the rods, and plates on the inner sides of the casing for confining the sides of the pouch-mouth.

7. In a machine of the class described, the combination with a wheeled frame, a pouch suspended from the frame, and an apron or drag hinged to the rear of the frame to rest on the ground and to afford a support for the pouch, the outer end of the apron or drag being upwardly curved.

656,831. WINDOW-SCREEN. GEORGE A. YOULDEN, Providence, R. I. Filed Jan. 20, 1900. Serial No. 2,106. (No model.)



Claim.—In a window-screen, the combination with the frame 8, of the guide-tube 12 inserted into the frame, the notch 21 in the guide-tube, the roller 15 pivotally secured in one end of the guide-tube, the coiled spring 14 secured to the guide-tube by the tongues 13, the tongues 13, the slotted plate 19 secured to the frame, the spring-pressed bolt 20 cooperating with the notch in the guide-tube, and the plate 24; whereby when the roller is pressed inward the end of the spring-pressed bolt will enter the notch in the guide-tube and hold the same in the locked position, as described.

656,832. TELEGRAPHY. HENRY D. BARTHOLOMEW, Newark, Ohio. Filed Oct. 12, 1899. Serial No. 733,447. (No model.)

Claim.—1. In a superposed-current telegraph, a transmitting-coil in the line for sending alternating impulses out on the line, a pair of key-contacts connected therewith, a key, and a battery connected to the coil and key, substantially as described.

2. In a superposed-current telegraph, a transmitting-coil, key-contacts connected to terminals of the coil, a key and a battery having its poles connected to an intermediate point of the coil and to the key respectively, substantially as described.

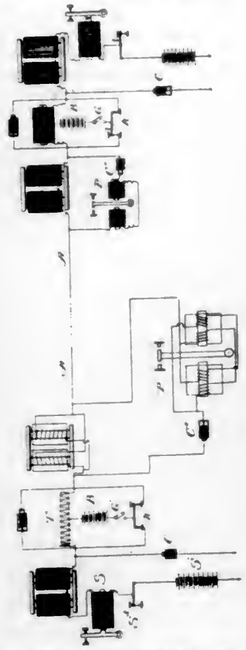
3. In a superposed-current telegraph, a transmitting-coil in the main line having its terminals connected to front and back key-contacts, a key cooperating with the contacts and a battery having its poles connected to the key and to an intermediate point of the coil respectively, whereby operation of the key in one direction sends an impulse of a given polarity to line, and operation of the key in the opposite direction sends an impulse of the opposite polarity to line, substantially as described.

4. In a superposed-current telegraph, the combination of a main line, a diverting-coil therein, and a condenser and polarized receiving-relay having steel cores in shunt of the diverting-coil, substantially as described.

5. In a superposed-current telegraph, the combination of a main line, Morse transmitting and receiving apparatus therein, a transmitter for putting high-tension alternating currents upon the line and a polarized receiving-relay having steel cores, said relay being irresponsive to the Morse currents but responsive to the high-tension alternating currents, substantially as described.

6. A superposed-current telegraph comprising the combination of Morse transmitting and receiving apparatus, a retarding-coil in the line and condensers in ground-taps of the line for prolonging the Morse current, a transmitting-coil connected to the front and back contacts of a key-lever which in turn is connected through a battery to an intermediate point of the coil, and a polarized receiving-relay and condenser in shunt of a diverting-coil in the line, substantially as described.

7. In a superposed-current telegraph, the combination of a main line, Morse transmitting and receiving apparatus therein, a transmitter for putting high-tension alternating currents upon the line, and a condenser and polarized receiving-relay having steel cores in shunt of the line, said relay being thus irresponsive to the Morse currents but responsive to the high-tension alternating currents, substantially as described.



8. A polarized relay having an armature positively moved in each of two directions by the magnetisms engendered by opposite polarities of current, said relay having steel cores to make it responsive to high-tension alternating currents but irresponsive to unidirectional low-tension currents, substantially as described.

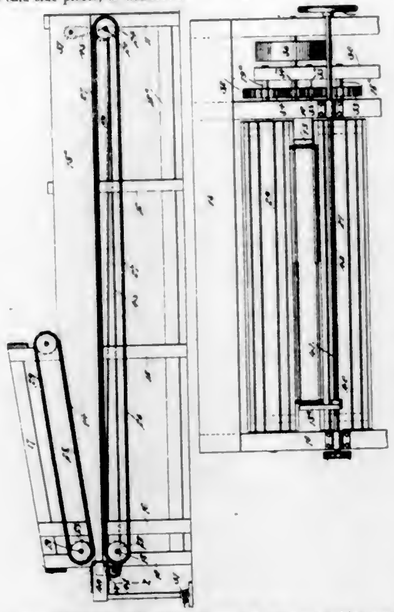
9. A polarized relay having an armature positively moved in each of two directions by the magnetisms engendered by opposite polarities of current, said relay having steel cores wound with pairs of coils in parallel with each other, whereby it responds to high-tension alternating currents but does not respond to unidirectional low-tension currents, substantially as described.

656,833. MATTRESS-FILLING MACHINE. FRANK J. BEAL, Orford, N. H., assignor to Elizabeth L. Beal, same place. Filed Dec. 15, 1898. Serial No. 699,354. (No model.)

Claim.—1. In a mattress-filling machine, the combination, with a frame, a side board fixed to the said frame, adjusting-shafts located at the front and rear of the said frame, the adjusting-shafts being provided with threaded surfaces, a movable side board through which the adjusting-shafts pass, the movable side board being provided with interiorly-threaded surfaces adapted to engage with the threaded surfaces of the adjusting-shafts, both of the side boards being downwardly inclined at their upper edges in direction of the delivery end of the machine, and a belt connection between the adjusting-shafts, of endless belts located below the side boards, lags connecting the endless belts, compressing-belts located at an angle to and above the lower belts, the compressing-belts being connected also by lags, the inclination of the compressing-belts being the same as the inclination of the upper surfaces of the side boards, carriers for the upper and lower belts, a driving mechanism for the said carriers, an adjustable ticking support or table located at the delivery end of the machine, and means for securing the ticking support or table in adjusted position, as described.

2. In a mattress-filling machine, a ticking support or table, consisting of side sections, telescopic rollers carried by the side sections, standards attached to the side sections of the ticking support or table, a shaft upon which the standards are pivoted and upon which said standards are adapted to slide, and locking devices for the standards, as described.

3. A ticking support or table consisting of a series of connected side pieces placed at angles to one another and provided with a series of openings where they connect, telescopic rollers arranged in pairs, the pairs of rollers being located between corresponding side pieces, standards connected with the side pieces at their point of connection, a support upon which the standards are pivoted and laterally adjustable, and latches carried by the standards, adapted to enter apertures located at the junction of the said side pieces, as described.



4. In a mattress-filling machine, a ticking support or table, comprising side bars, standards supporting the side bars, and telescopic rollers extending between the side bars at one end of the table and adapted to have the ticking passed between them when being filled the side bars serving to be inclosed by the ticking before the filling thereof.

5. A mattress-filling machine, comprising a ticking support or table having side bars adjustable toward and from each other and adapted to be received within the ticking, to carry the ticking before the filling thereof, and telescopic rollers extending between the side bars at the feed end of the table and adapted to have the ticking passed between them when the ticking is being filled.

6. A mattress-filling machine, having a ticking support or table comprising side bars, standards to which the side bars are attached and by which they are supported, the standards and side bars being adjustable toward and from each other, and telescopic rollers extending between the side bars at the feed end of the table.

7. A mattress-filling machine, having a ticking support or table, comprising side bars supported in approximate parallelism with each other, and rollers extending between the side bars at one end of the table and adapted to have the ticking passed between them when the ticking is being filled.

8. In a mattress-filling machine, a ticking support or table having side portions, and means extending between the side portions at one end of the table, between which means the ticking is passed when being filled, the side portions serving to be received in the ticking, to carry the ticking before the filling thereof.

9. A mattress-filling machine, having a frame, a carrier mechanism mounted to move the mattress-filling material to one end of the frame, and a ticking support or table mounted at said end of the frame, and comprising side portions with rollers extending between them, the side portions carrying the ticking and the rollers serving to have the ticking passed between them as it is filled by the carrier mechanisms.

10. In mattress-filling devices, the combination of a ticking-support, and means for directing the filling toward said support, one end of the support receiving the closed end of the ticking when turned inside out and said end facing the means for directing the filling.

11. The combination of a ticking-support, and means for directing the filling to the support, the support having a passage therethrough and the said means directing the filling into said passage, the inner end of the support being juxtaposed to the discharge end of the said means for directing the filling, and such inner end of the support being surrounded by a free space to permit the ticking to be slipped over said end, the support serving to hold the ticking with its closed end over the said inner end of the support so as to turn the ticking into the passage of the support and force the ticking through the same.

12. In a mattress-stuffing machine, the combination of means for feeding the filling material, and a ticking-support mounted at the discharge end of said means and capable of moving toward and from the same.

13. A mattress-filling machine, having a frame comprising uprights, and transverse braces extending between the same, a rigid side board at one side of the frame, an adjustable side board at the other side of the frame, a threaded shaft having connection with the adjustable side board to move the same, carrier mechanisms mounted on the frame and leading the mattress-filling to one end thereof, and a ticking support or table located at said end of the frame and movable toward and from the delivery end of the carrier mechanisms.

14. A mattress-filling machine, having a ticking-support capable of being inclosed by the ticking before the filling thereof, the support having a passage through the same which permits the ticking when being filled to turn into and pass through the passage of the support as the filling material is pressed into the ticking.

15. A mattress-filling machine comprising mattress-filling means, and mechanism for presenting a tick in an inside-out condition to the filling means and for securing the reversal of said tick during the filling operation.

16. A mattress-filling machine, comprising mattress-filling means, and mechanism for presenting a tick in an inside-out condition and for automatically reversing the tick during the filling operation.

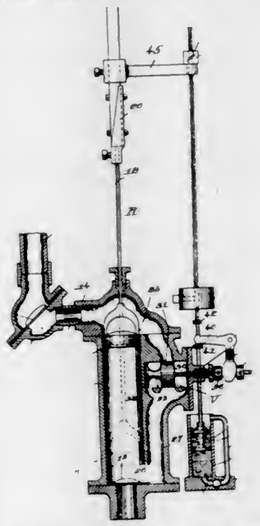
17. A mattress-filling machine, comprising mattress-filling means, and a support for holding the tick in an inside-out condition, said support having means to automatically effect the reversal of the tick during the filling operation.

18. In a mattress-filling machine, mechanism for presenting a tick in an inside-out condition to filling means, and for securing the reversal of said tick during the filling operation.

19. A mattress-filling machine, comprising a tick-support having side pieces and guides united to said side pieces, the support being adapted to receive a tick in an inside-out condition and the guides being arranged to receive between them the tick as the filling operation progresses, and means to present the filling material to the tick.

20. A tick-support comprising side pieces adapted to receive a tick in an inside-out condition, and two superposed guides cooperative with the side pieces and arranged to receive between them the tick as the filling operation progresses.

656,834. PUMP. FREDERIC W. BLANCHARD, Holbrook, Mass. Filed Nov. 13, 1899. Serial No. 736,761. (No model.)



Claim.—1. A pump-barrel having a piston, a governor, a conduit communicating with the barrel, a relief-valve controlling said conduit, mechanism actuated by the piston-rod to close said relief-valve at or before the beginning of each stroke, and means acting in opposition to said mechanism and controlled by said governor and serving to open said valve when the speed of the piston goes below the normal.

2. A pump-barrel having a piston, a conduit communicating with the barrel, a relief-valve controlling said conduit, a weighted rod, means connected with the piston and acting against the weighted rod to elevate the same when the speed of the piston is at its normal, and means between the weighted rod and the relief-valve whereby said rod can actuate the valve.

3. A pump-barrel having a piston, a conduit communicating with the barrel, a relief-valve controlling said conduit, mechanism actuated by the piston-rod to close said relief-valve when the speed of the piston is at its normal, valve-opening means acting in opposition to said mechanism and controlled by the piston, and a governor cooperative with the valve-opening means and serving to retard the action thereof.

4. A pump-barrel having a piston, a conduit communicating with the barrel, a relief-valve controlling said conduit, an automatic actuator provided with means for moving the same normally in one direction, means connected with the piston-rod to operate said actuator to move it in the opposite direction and to hold it in its retracted position when the speed of the piston is at its normal, a governor serving to retard the operation of the actuator as it moves in a direction to open the valve, and connections between said actuator and the valve.

5. A pump-barrel having a piston, a conduit communicating with the barrel, a relief-valve controlling said conduit, an automatic actuator provided with means for moving the same normally in one direction, means connected with the piston-rod to operate said actuator to move it in the opposite direction and to hold it in its retracted position, a governor serving to retard the operation of the actuator as it moves in a direction to open the valve, a plurality of remotely-disposed projections upon the actuator, and means to be alternately engaged by said projections, serving to actuate the valve.

6. A pump-barrel having a piston, a conduit communicating with the barrel, a relief-valve controlling said conduit, a rod provided with a plurality of projections, means to move said rod in a direction to open the valve, a lever to alternately engage said projections, and serving to actuate the relief-valve, means upon the piston-rod to lift said rod, and a governor to retard the descent of said rod.

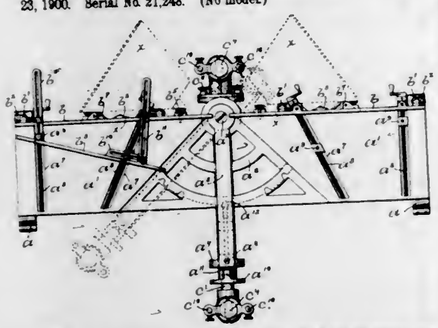
7. A pump-barrel having a piston, a conduit in communication with the barrel, a piston relief-valve, a piston-rod provided with an arm having an opening, a weighted relief-valve actuator extending freely through said opening and having a projection disposed in the path of said arm and governing means for said actuator.

8. A pump-barrel having a piston, a conduit in communication with the barrel, a relief-valve controlling said conduit, a piston-rod, an automatic valve-actuator controlled by the piston-rod, a fluid-containing cylinder and a governor in said cylinder connected with the actuator.

9. A pump-barrel having a piston, a conduit in communication with the barrel, a relief-valve for said conduit, a piston-rod, projections on the stem of the relief-valve, a lever, one arm of which is disposed between said projections, an actuating-rod having projections adapted to receive the other arm of said lever and controlled automatically by the piston-rod and governing means for said actuating-rod.

10. A pump-barrel having a piston, a conduit communicating with the pump-barrel at points beyond the piston when the same is at the limits of its respective strokes, a relief-valve in said conduit, automatic means for positively closing said relief-valve at or before the beginning of each stroke, and regulatable means for opening said relief-valve at each stroke of the piston that is slower than the predetermined speed.

656,835. **MITER-BOX.** JOSEPH T. BOUFFORD, Uxbridge, Mass., assignor of one-half to Napoleon Boufford, Taunton, Mass. Filed June 23, 1900. Serial No. 21,248. (No model.)



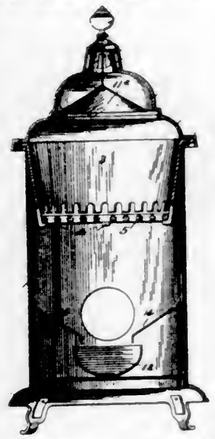
Claim.—1. In a miter-box, the combination with the horizontal plate and standards supporting the horizontal plate, of two vertical plates pivotally connected with one side of the horizontal plate, brackets on the vertical plate, and screws for securing the brackets to the horizontal plate, whereby the vertical plate may be folded on the horizontal plate for more convenient storage, as described.

2. In a miter-box, the combination with the horizontal plate and the standards supporting the horizontal plate, of a rock-shaft, a bracket pivotally supported under the horizontal plate, saw-guides supported on the rock-shaft, and plates secured to one side of and at a right angle to the horizontal plate, said plates being divided on oblique lines and hinged together, whereby the saw guided in the guides may cut oblique vertical lines, as described.

3. In a miter-box, the combination with the horizontal and the vertical plates, of telescopic saw-guides consisting of the sleeves c^2 and c^3, the two-part sleeves c^5 c^6, the posts c^4, the clamp brackets c^9, and the rods c^{10}, whereby the depth of the saw-cut may be regulated, as described.

4. In a miter-box, the combination with the horizontal plates a' a', the triangular frame a^2, the plates b b, the telescopic saw-guides, and means for adjusting the saw-guides to the required angle, of the grooves a^7 in the plates a', the screws a^8, the socket-blocks a^9, the plate b^9, and means for securing the plate at the required angle to the plate b, as described.

656,836. **STOVE.** EDWARD R. BRYER, Roanoke, Va. Filed July 19, 1899. Serial No. 724,386. (No model.)



Claim.—1. A heating-stove having a downdraft, comprising a base, a drum, a fire-pot carried thereby, a smoke-outlet below said pot, a removable top, air-inlets therein and a diaphragm carried by said top located below said openings forming an air-superheating chamber, said diaphragm being removable with said top to completely expose said grate, substantially as described.

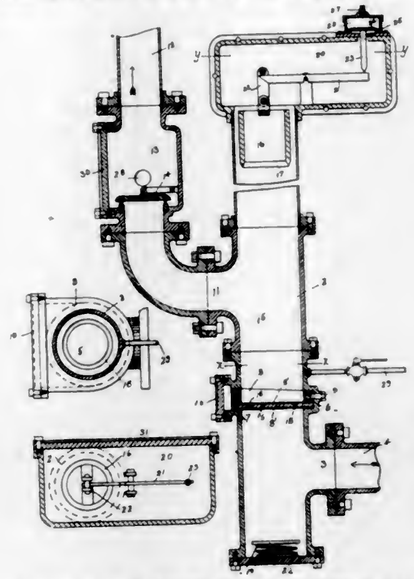
2. A heating-stove having a downdraft, comprising a base, a drum, a fire-pot resting upon the upper edge thereof and depending within the same, a casting forming a part of the top bolted to said pot, a removable top supported by said casting and a diaphragm carried by the removable top having an air-space between the same and the top and an air-passage between its edge and said top, said top having inlet-openings therein above said diaphragm, substantially as described.

3. In combination in a stove, a drum, a fire-pot supported in the upper part thereof, an ash-pan in the bottom part of the same extending across the drum, synclinal deflecting-plates fitting the drum and having their inner edges arranged parallel with and overhanging the edges of the ash-pan, and a smoke-outlet in the drum just above the edge of the ash-pan between the deflecting-plates.

656,837. **DRY-PIPE FIRE-EXTINGUISHING APPARATUS.** JOHN H. DERBY, Brookline, Mass. Filed Dec. 22, 1899. Serial No. 741,271. (No model.)

Claim.—1. In a device of the character described, a frangible device located between the supply system and the sprinkling-pipe system and normally holding in check water under pressure contained in said supply system, in combination with means for breaking said frangible device, said means being operative upon a reduction of pressure in the sprinkling-pipe system.

2. In a device of the character described, the combination of a pipe having connections with the supply system and with the sprinkling-pipe system, a frangible device contained in said pipe and normally separating said systems, a check-valve located above said frangible device and providing a chamber under normal atmospheric pressure, and means contained in said chamber for breaking said frangible device, and arranged to operate upon a reduction of pressure in the sprinkling-pipe system.



3. In a device of the character described, the combination of a frangible device located between the supply system and the sprinkling-pipe system, a tubular weight normally suspended above said device, and means for automatically releasing said weight upon a reduction of pressure in the sprinkling-pipe system.

4. In a device of the character described, the combination of a vertical pipe having connections with the supply system and with the sprinkling-pipe system, a frangible plate contained in said pipe and normally separating said systems, a ring-shaped wedge whereby said plate is removably clamped in place, a weight normally suspended above said plate, and means for releasing said weight upon the reduction of pressure in the sprinkling-pipe system.

5. In a device of the character described, the combination of a frangible plate weakened on a circular line, a hollow pipe normally suspended above said plate and having substantially the same diameter as said circle, and means for automatically releasing said pipe.

6. In a device of the character described, the combination of a pipe provided with an inlet and an outlet, a frangible device through the instrumentality of which said pipe is kept closed between said inlet and outlet, a valve upon which the air-pressure in the sprinkling-pipe system is operative, and means controlled by said valve for breaking said frangible device.

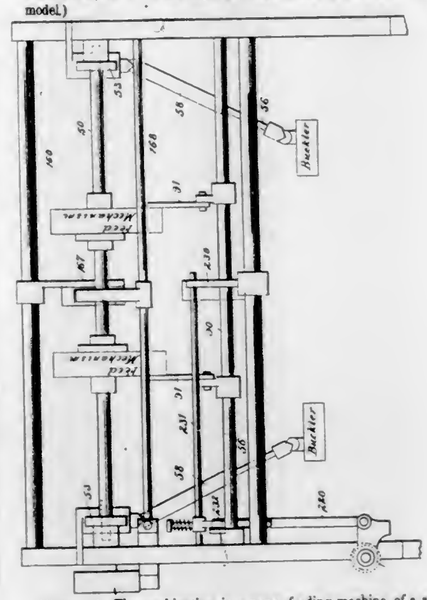
7. The combination of a vertical pipe provided with an inlet and an outlet, a frangible plate closing said pipe between said inlet and outlet, a weight normally suspended above said plate, a weight-releasing device, and a valve controlling said device and normally subject to compressed-air pressure.

8. In a device of the character described, the combination of a pipe normally closed by a frangible device, valves 14 and 24 providing an intermediate chamber between said device and the sprinkling-pipe system pipe connections between the top of said valve 24 and the sprinkling-pipe system, and means controlled by said valve for automatically breaking said frangible device.

9. In a device of the character described, the combination with a frangible plate separating the supply system and the sprinkling-pipe system, of a weight normally suspended above the same, and means for automatically releasing said weight, comprising a lever on one end of which said weight is suspended, a valve provided with a spindle bearing against the opposite end of said lever, and pipe connections between the top of said valve and the sprinkling-pipe system.

10. The combination of a vertical pipe 2 containing a frangible plate 5, a weight 16 normally suspended above the same, a chamber 13 communicating with the sprinkling-pipe system and containing a check-valve 14, and suspending and releasing mechanism for said weight, comprising a lever 21, a valve 24 controlling the movement of the same, and pipe connections between the top of said valve 24 and the sprinkling-pipe system.

656,838. **PAPER-FEEDING MACHINE.** TALBOT C. DEXTER, Pearl River, N. Y. Filed Sept. 21, 1899. Serial No. 731,203. (No model.)



Claim.—1. The combination, in a paper-feeding machine, of a support for a pile of sheets, with suitable adjustable sheet-buckling mechanism, including a buckling-finger and a holding-down foot or clamp, a driving-shaft and a connecting-shaft having universal-joint connections with the driving-shaft and the sheet-buckling mechanism, substantially as set forth.

2. The combination, in a paper-feeding machine, of a support for a pile of sheets, with suitable sheet-buckling mechanism adjustable vertically with relation to the pile and including a buckling-finger and a holding-down foot or clamp, a driving-shaft, and a connecting-shaft having universal-joint connections with the driving-shaft and the sheet-buckling mechanism, substantially as set forth.

3. The combination, in a paper-feeding machine, of a support for a pile of sheets, with suitable sheet-buckling mechanism adjustable transversely with relation to the pile and including a buckling-finger and a holding-down foot or clamp, a driving-shaft, and a connecting-shaft having universal-joint connection with the driving-shaft and the sheet-buckling mechanism, substantially as set forth.

4. The combination, in a paper-feeding machine, of a support for a pile of sheets, with suitable sheet-buckling mechanism adjustable longitudinally with relation to the pile and including a buckling-finger and a holding-down foot or clamp, a driving-shaft, and a connecting-shaft having universal-joint connection with the driving-shaft and the sheet-buckling mechanism, substantially as set forth.

5. In a paper-feeding machine, the combination of a support for a pile of sheets, with suitable sheet-buckling mechanism, a driving-shaft, and a telescoping sectional connecting-shaft having suitable connections with the driving-shaft and sheet-buckling mechanism, substantially as set forth.

6. In a paper-feeding machine, the combination of a support for a pile of sheets, with suitable sheet-buckling mechanism, a driving-shaft, a telescoping sectional connecting-shaft, and universal-joint connections between the sections of said connecting-shaft and the driving-shaft and buckling mechanism respectively, substantially as set forth.

7. In a paper-feeding machine, the combination of a support for a pile of sheets, with suitable sheet-buckling mechanism, a driving-shaft, an auxiliary shaft having gear connection with the driving-shaft, and a telescoping sectional shaft the sections of which have universal-joint connections with the auxiliary shaft and buckling mechanism respectively, substantially as set forth.

8. In a paper-feeding machine, the combination of a support for a

pile of sheets, an adjustable buckler-supporting frame adjustable longitudinally of the machine, and sheet-buckling mechanism transversely adjustable upon said supporting-frame and including a buckling-finger and a holding-down foot or clamp, a driving-shaft, an auxiliary shaft, and a telescoping sectional connecting-shaft having universal-joint connections with the auxiliary shaft and buckling mechanism, substantially as set forth.

9. In a paper-feeding machine, the combination of a support for a pile of sheets, with a buckler-supporting frame, a rotary shaft journaled in said frame, a reciprocating buckler-carriage mounted in said frame, a buckling-finger mounted upon said carriage, a holding-down foot mounted upon said frame, a link journaled upon said frame and suitably connected with the buckler-carriage, means controlling the buckler-finger, a crank upon said rotary shaft suitably connected with said link, means for operating said rotary shaft, substantially as set forth.

10. In a paper-feeding machine, the combination of a buckler-supporting frame, a buckler-carriage reciprocating in said frame, a buckling-finger journaled upon said carriage and formed with a heel projecting rearwardly from its journal, a lever journaled upon the buckler-supporting frame and adapted to intermittently engage the heel of the buckling-finger, and means for operating said lever, substantially as set forth.

11. In a paper-feeding machine, the combination of a support for a pile of sheets, buckler-supporting frame, a reciprocating buckler-carriage, mounted therein, a buckling-finger journaled upon the carriage and formed with a heel projecting rearwardly from its journal, an antifriction-roller journaled in said heel, a lever journaled upon the buckler-frame and formed with a straight face adapted to engage the antifriction-roller of said heel, and a rotary cam adapted to intermittently engage said lever for throwing it into effective engagement with said antifriction-roller substantially as and for the purpose set forth.

12. In a paper-feeding machine, the combination of a buckler-supporting-frame, a rotary shaft journaled in said frame, means for operating said shaft, a cam upon said shaft, a link-pivoted upon said frame, means for oscillating said link from said shaft, a reciprocating buckler slide or carriage mounted in said supporting-frame, a spring-pressed buckler-finger journaled upon said slide or carriage and formed with a heel projecting rearwardly from its journal, an antifriction-roller mounted upon said heel, a buckler-finger-controlling lever journaled upon the supporting-frame and formed with a straight face which engages the antifriction-roller of the buckling-finger heel, and an antifriction-roller upon said lever which is intermittently engaged by said cam, substantially as set forth.

13. In a paper-feeding machine, the combination of a feeder-frame and a support for a pile of sheets, with a reciprocating feeding-carriage, feed-fingers movably mounted on said carriage, and means for simultaneously raising the fingers upon and with relation to the carriage and the carriage within the feeder-frame, substantially as set forth.

14. In a paper-feeding machine, the combination of a support for a pile of sheets, with a vertically-movable frame, means for operating said frame, feed-fingers movably mounted upon said feeder-carriage, and means for elevating the fingers upon the carriage thrown into operation by the vertical movement of the frame, substantially as set forth.

15. In a paper-feeding machine, the combination of a support for a pile of sheets, with a vertically-reciprocating frame carrying a horizontal track-bar, means for operating said frame, a carriage reciprocating upon said track-bar, means for operating said carriage, feed-fingers movably mounted upon said carriage, a stationary bar, and means upon the carriage connected with the feed-fingers adapted to be engaged by said stationary bar when the frame is moved upwardly to cause the feed-fingers to be elevated upon the carriage at the same time, substantially as set forth.

16. In a paper-feeding machine, the combination of a support for a pile of sheets, with a vertically-movable carriage-supporting frame, a feed-carriage mounted upon said frame, a carriage-operating device, a sheet-actuated tripping device adapted to disengage the operating device from the carriage, a feed-finger movably mounted upon the carriage, and means, operated by the upward movement of the carriage-supporting frame, for raising the feed-finger upon and with relation to the carriage, substantially as set forth.

17. In a paper-feeding machine the combination of a support for a pile of sheets, with a vertically-reciprocating frame supporting a horizontal track-bar, a carriage mounted upon said track-bar, a carriage-operating device, a sheet-actuated tripping device adapted to disengage the operating device from the carriage, feed-fingers movably mounted upon the carriage, a stationary bar, and means upon the carriage connected with the feed-fingers and adapted to be engaged by said stationary bar when the frame is moved upwardly to cause the feed-fingers to be raised upon the carriage at the same time, substantially as set forth.

18. In a paper-feeding machine, the combination of a support for a pile of sheets, with a vertically-movable carriage-supporting frame having a horizontal track-bar, means for intermittently raising and lowering said frame, a carriage mounted upon said track-bar, a carriage-operating device, means for automatically disengaging the operating device, from the carriage, feed-fingers journaled upon said carriage, a lever journaled upon said carriage and suitably connected with the feed-fingers, and a stationary bar adapted to engage said lever when the carriage-supporting frame is elevated, substantially as and for the purpose set forth.

19. In a paper-feeding machine, the combination of a support for a pile of sheets, with two sheet-feeding mechanisms arranged transversely of the machine and operating in parallel lines longitudinally of the machine, two independent sheet-actuated tripping devices controlling said sheet-feeding mechanisms and adapted to independently arrest their feeding operation without disengaging them from the sheet, and means for simultaneously elevating said feeding mechanisms out of engagement with the sheet after the feeding operation of both of said mechanisms has been arrested, substantially as and for the purpose set forth.

20. In a paper-feeding machine, the combination of a support for a pile of sheets, two vertically-movable carriage-supporting frames, reciprocating feed-carriages mounted upon said frames, feed-fingers movably mounted upon said carriages, means, controlled by the sheet fed from the machine, for independently arresting the operation of said feed-carriages, means for simultaneously raising the carriage-supporting frames, and means, operated by the upward movement of said supporting-frames, for elevating the feed-fingers upon the carriages, substantially as and for the purpose set forth.

21. In a paper-feeding machine, the combination of a support for a pile of sheets, with a feeding-carriage, a feed-finger mounted upon said carriage, and a friction-pad loosely journaled upon the end of said finger, so as to have free lateral movement enabling it to automatically adjust itself to the surface of the pile, substantially as set forth.

22. In a paper-feeding machine, the combination of a support for a pile of sheets, with a feeding-carriage, a feed-finger mounted upon said carriage, a friction-pad and a pin or screw passing through a perforation in said pad and into the feed-finger to secure the pad loosely upon the finger, as set forth.

23. In a paper-feeding machine, the combination of a support for a pile of sheets, with a feeder-carriage, a feed-finger mounted upon said feeder-carriage, and formed with an angular shoulder at its free end, a plate secured to said shoulder, a friction-pad supported between said plate and the end of the finger, and a screw or pin passing through the plate into the finger and loosely engaging the friction-pad to support it yieldingly in position, as set forth.

24. In a paper-feeding machine, the combination of a support for a pile of sheets, with a feeder-carriage, a feed-finger mounted upon said feeder-carriage, a friction-pad formed with a plurality of holes or openings, and a pin or screw passing loosely through one of said holes or openings to support the pad loosely in the desired position upon the finger, substantially as set forth.

25. In a paper-feeding machine, the combination of a support for a pile of sheets, a transversely-adjustable sheet-feeding mechanism, a sheet-actuated tripping device mounted upon the support of the feeding mechanism, a transversely-adjustable delivery-roller with which the tripping device coöperates, and means connecting the support of the feeding mechanism with said delivery-roller, whereby it can be adjusted simultaneously with the feeding mechanism and tripping device, as set forth.

26. In a paper-feeding machine, the combination of a support for a pile of sheets, a transversely-adjustable carriage-supporting frame, a feeding-carriage mounted upon said frame, a feed-controlling sheet-actuated tripping device also mounted upon the carriage-supporting frame, a transversely-adjustable grooved delivery-roller with which the tripping device coöperates, and an arm projecting from the carriage-supporting frame and engaging a groove of said delivery-roller, substantially as and for the purpose set forth.

27. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable sheet-feeding mechanism, a transversely-adjustable elongated sheet-delivery roller, and a drop-roller coöperating therewith, whereby the delivery-roller may be adjusted without the necessity of adjusting the drop-roller, substantially as set forth.

28. In combination with a paper-feeding machine, a sheet-calipering device comprising two movable members between which the successive sheets pass, one of which members is capable of movement toward the other to cause said other to move when a sufficient thickness of sheets has been interposed between the members, means for moving said first-named member toward said other member, suitable throw-out mechanism for arresting the operation of the machine, an arm or lever connected with and operating said throw-out mechanism, and an arm projecting from said other calipering member and normally engaging and sustaining said throw-out-operating arm or lever in inoperative position, substantially as and for the purpose set forth.

29. In combination with a paper-feeding machine, a sheet-calipering device comprising two movable members between which the successive sheets pass, one of which members is capable of movement toward the other to cause said other to move when a sufficient thickness of sheets has

been interposed between the members, means for moving said first-named member toward said other member, suitable throw-out mechanism for arresting the operation of the machine, an arm or lever connected with and operating said throw-out mechanism, an arm projecting from said other calipering member and normally engaging and sustaining said throw-out-operating arm or lever in inoperative position, and means adapted to temporarily sustain said throw-out-operating arm or lever, when it is released by the arm of the calipering member, and allow it to operate at the proper time to actuate the throw-out mechanism, substantially as and for the purpose set forth.

30. In combination with a paper-feeding machine, a sheet-calipering device comprising two movable members between which the successive sheets pass, one of which members is capable of movement toward the other, to cause said other to move when a sufficient thickness of sheets has been interposed between the members, means for moving said first-named member toward said other member, suitable throw-out mechanism for arresting the operation of the machine, an arm or lever connected with and operating said throw-out mechanism, an arm projecting from said other calipering member and normally engaging and sustaining said throw-out-operating arm or lever in inoperative position, and a cam device adapted to engage said throw-out-operating lever and time its operation after it is released by the arm of the calipering member, substantially as and for the purpose set forth.

31. In combination with a paper-feeding machine, a sheet-calipering device comprising two movable members between which the successive sheets pass, one of which members is capable of movement toward the other to cause said other to move when a sufficient thickness of sheets has been interposed between the members, means for moving said first-named member toward said other member, suitable throw-out mechanism, an antifriction-roller upon said arm or lever, a cam engaging said antifriction-roller, means for giving said arm or lever a downward tendency, and an arm projecting from said other calipering member and normally engaging and sustaining said throw-out arm or lever, substantially as set forth.

32. In combination with a paper-feeding machine, a sheet-calipering device comprising two movable members between which the successive sheets pass, one of which members is capable of movement toward the other to cause said other to move when a sufficient thickness of sheets has been interposed between the members, means for moving said first-named member toward said other member, suitable throw-out mechanism for arresting the operation of the machine, an arm or lever connected with and operating said throw-out mechanism, an arm projecting from said other calipering member and normally engaging and sustaining said throw-out arm or lever in inoperative position, springs holding said calipering members in operative relation, and means for adjusting the relation of said members, substantially as set forth.

33. In combination with a paper-feeding machine, a sheet-calipering device comprising two movable members between which the successive sheets pass, one of which members is capable of movement toward the other to cause said other to move when a sufficient thickness of sheets has been interposed between the members, means for moving said first-named member toward said other member, suitable throw-out mechanism for arresting the operation of the machine, an arm or lever connected with and operating said throw-out mechanism, said first-named calipering member being formed of a horizontally-projecting foot, and an upright arm, means for retaining the calipering members normally in operative position, and an arm or lever connected with the throw-out mechanism and normally engaged and sustained by the upright arm of the calipering member, substantially as and for the purpose set forth.

34. In combination with a paper-feeding machine, a sheet-calipering device comprising two movable members between which the successive sheets pass, one of which members is capable of movement toward the other to cause said other to move when a sufficient thickness of sheets has been interposed between the members, means for moving said first-named member toward said other member, suitable throw-out mechanism for arresting the operation of the machine, said first-named calipering member being formed of a horizontally-projecting foot, and an upright arm, which are adjustable relatively, means for securing said parts in the desired adjusted relation, means for retaining the calipering members normally in operative position, and an arm or lever connected with the throw-out mechanism and normally engaged and sustained by the upright arm of the calipering member, substantially as and for the purpose set forth.

35. In combination with a paper-feeding machine, a sheet-calipering device comprising two movable members between which the successive sheets pass, one of which members is capable of movement toward the other to cause said other to move when a sufficient thickness of sheets has been interposed between the members, suitable throw-out mechanism controlled by said calipering device for arresting the operation of the machine, and a detecting-arm arranged adjacent to the path of the sheets, and adapted, when operated by the presence of a crumpled sheet, to actuate one of the calipering members for arresting the machine, as set forth.

36. In combination with a paper-feeding machine, suitable throw-out mechanism therefor, an operating arm or lever for the throw-out mechanism and a sheet-calipering device including a member formed with an arm which normally engages and sustains the said throw-out-operating arm or lever in inoperative position, substantially as set forth.

37. In combination with a paper-feeding machine, suitable throw-out mechanism therefor, an operating arm or lever for the throw-out mechanism, a controlling-arm normally engaging and sustaining said throw-out-operating arm or lever in inoperative position, and a rumpled-sheet-detecting arm supported adjacent to and approximately parallel with the path of the sheets and adapted to engage and actuate said controlling-arm, substantially as and for the purpose set forth.

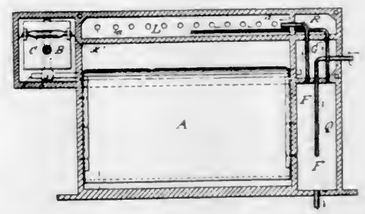
38. In combination with a paper-feeding machine, a suitable throw-out mechanism therefor, an operating arm or lever for the throw-out mechanism, a controlling-arm normally engaging and sustaining said throw-out-operating arm or lever in inoperative position, means temporarily sustaining and timing the operation of said throw-out-operating arm or lever when it is disengaged from the controlling-arm, and a rumpled-sheet-detecting arm supported adjacent to and approximately parallel with the path of the sheets and adapted to engage and actuate said controlling-arm, substantially as and for the purpose set forth.

39. In a paper-feeding machine, the combination of a support for a pile of sheets, and suitable feeding devices, with a main driving-shaft, a power-gear loosely journaled thereon, a clutch member formed on or connected with said gear, an arm keyed to said shaft, a clutch-dog journaled upon said arm, an angular lug upon said dog, a spring secured upon said arm, and engaging the angular lug to hold the dog in either locked or unlocked position, and means for operating said dog, substantially as and for the purpose set forth.

40. In a paper-feeding machine, the combination of a support for a pile of sheets, with suitable elevating mechanism therefor comprising an elevating-shaft, a ratchet-wheel upon said shaft, an oscillating arm carrying a pawl which operates said ratchet-wheel, a reciprocating rod or bar connected with said arm, a spring tending to hold said rod or bar in retracted position, a rock-arm adapted to engage said rod or bar and force it forward against the action of its spring, a dog adapted to engage said rod or bar and hold it in its forward position, and a pile-gaging arm connected with said dog and adapted to move it into and out of engagement with the rod or bar, substantially as set forth.

41. In a paper-feeding machine, the combination of a support for a pile of sheets, with suitable elevating mechanism therefor, including an elevating-shaft, a ratchet-wheel upon said shaft, an oscillatory pawl-carrying arm, a pawl journaled upon said arm, a stop for limiting the outward movement of said pawl upon the arm, a spring-rod passing through a guide upon said arm and journaled to the pawl at such a point that the pawl will be held into engagement with the ratchet or with the limiting-stop, and means for operating said pawl-supporting arm, substantially as and for the purpose set forth.

656,839. OVEN-DOOR. FRANK EBERHART and CHARLES A. SCHUBERT, New York, N. Y. Filed June 20, 1898. Serial No. 684,028. (No model.)

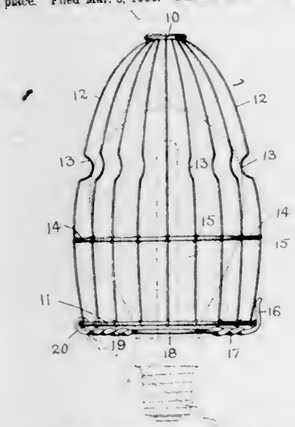


Claim.—1. In an oven, the combination with a steam-separator located at one side of the oven-door, of a distributing-chamber above the oven-door, and having a series of perforations through which the steam is discharged to the oven-chamber, of steam-conducting pipes communicating with the two chambers, one of said pipes discharging near the center of the chamber, and the other near its end, whereby the entire chamber is filled with steam before the steam enters the oven.

2. In an oven, the front wall of which is provided with an opening extending into the oven, combined with a sliding sight, and means for cleaning such sight, substantially as described.

3. An oven provided with a front plate having a groove, and an opening, and a wiper embedded within the groove at one end of the opening, combined with a bar sliding in the groove and carrying a sight, said sight adapted to aline with the opening when in a normal position and contacting with the wiper when reciprocated in the slot.

656,840. PROTECTOR FOR ELECTRIC LAMPS. FRANK B. GARRETSON, Worcester, Mass., assignor to himself and William J. Gindele, same place. Filed Mar. 8, 1900. Serial No. 7,769. (No model.)



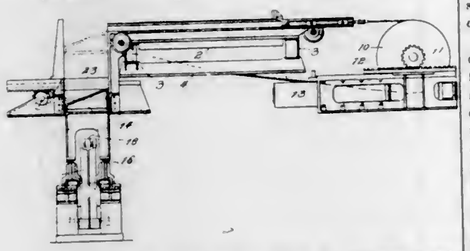
Claim.—1. As an article of manufacture, a protector for electric lamps comprising a frame having spring-wires with bent-in portions for engaging the outer portion of an electric-lamp globe, and a catch having a socket for engaging the neck of the electric-lamp globe hinged to the frame, whereby the protector may be secured on an electric-lamp globe without connection with the lamp-socket or other support, substantially as described.

2. As an article of manufacture, a protector for electric lamps comprising a frame consisting of an end washer, a base-ring, spring-wires connected to the base-ring and end washer, and having bent-in portions for engaging the outer part of an electric-lamp globe, and a spreading-ring connected to the spring-wires, and a catch having a socket for engaging the neck of the electric-lamp globe hinged to said frame, whereby the protector may be secured on an electric-lamp globe without connection with the lamp-socket, substantially as described.

3. As an article of manufacture, a protector for electric lamps comprising a frame having spring-wires with bent-in portions for engaging the outer part of an electric-lamp globe, and a catch consisting of a single piece of wire bent to form a latch at one end, a socket for engaging the neck of the lamp-globe with twisted sections at each side thereof, the ends of the wire being hinged to the frame, substantially as described.

4. As an article of manufacture, a protector for electric-lamp globes comprising an end washer 10, a base-ring 11, spring-wires 12 having bent-in portions 13 for engaging the outer part of the lamp-globe, a spreading-ring 14 connected to the spring-wires, and a catch consisting of a single piece of wire bent to form a latch 16, a socket 18 having twisted portions 17 and 19 at each side thereof with the ends of the wire hinged to the base-ring 11, substantially as described.

656,841. MECHANISM FOR PILING PLATES OR BARS. SIGMUND V. HUBER, Pittsburg, Pa. Filed June 13, 1900. Serial No. 20,668. (No model.)

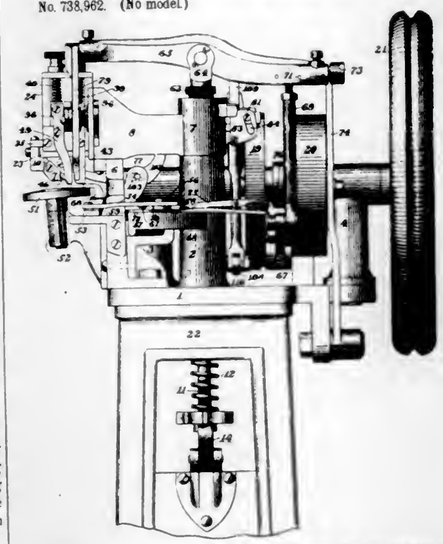


Claim.—1. A bar-piling machine having in combination a feed-table, means for shifting plates or bars off of the table, vertically-movable blocks for receiving the plates from the table and adjustable retaining posts or standards, substantially as set forth.

2. A bar-piling machine having in combination a feed-table, means for shifting plates or bars off of the table, vertically-movable blocks for receiving the plates from the table and adjustable retaining posts or standards arranged intermediate of the receiving-blocks, substantially as set forth.

3. A bar-piling machine having in combination a feed-table, means for shifting plates or bars off of the table, vertically-movable receiving-blocks having their upper surfaces inclined and adjustable retaining posts or standards arranged intermediate of the receiving-blocks, substantially as set forth.

656,842. INSOLE-CHANNELING AND LIP-SETTING MACHINE. ALBERT E. JOHNSON, Brockton, Mass., assignor to the Economy Machine Company, same place and Portland, Me. Filed Dec. 2, 1899. Serial No. 738,962. (No model.)



Claim.—1. In a machine for preparing insoles, the combination of a lip-opening plowshare; a vibrating and endwise-reciprocating lever; a hammer-head or setting-tool carried by said lever and provided with an operating-lip constructed and arranged to act upon the inner surface of the upturned channel-lip, in a direction parallel to the surface of the sole; means for imparting to said setting-tool a slight vibration toward and from the surface of the sole, and an endwise-reciprocating movement, in a direction parallel to the plane in which lies the tread-surface of the sole, when being acted upon; and means for intermittently feeding the sole in a direction at right angles or nearly so to the plane of reciprocation of said setting-tool.

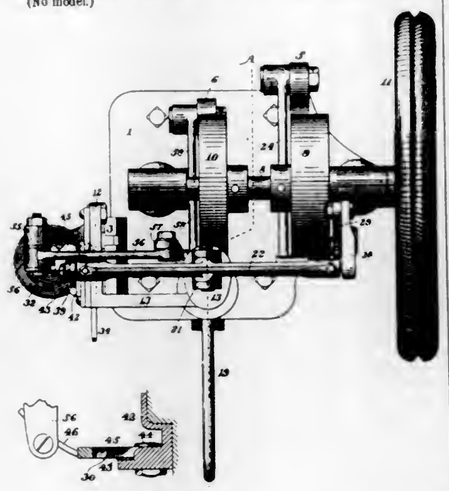
2. An insole-channeling machine comprising the following means for setting the channel-lip, viz., the lever 102 provided with the slot 77 and the hammer-lip 80, and mounted upon a fixed fulcrum-pin; the truck 82 carried by said lever; the link 108 provided with the slot 107 in its upper end to receive the inner end of the lever 102; the cam-plate 83 having the inclined slot 84 which receives and acts upon said truck 82 to move said lever 102 endwise; the spring 116 set in the slot 107 beneath said lever 102; and means for imparting to said link 108 a vertical reciprocation.

3. In an insole-channeling and lip-setting machine, the combination of a work-feeding mechanism; a channel-cutting tool provided with means for turning the channel-lip upward, a lip-setting tool constructed and arranged to be slightly vibrated toward and from the bottom of the sole-channel, and to be reciprocated in a direction substantially at a right angle to its vibratory movement, to set said lip in a position at a right angle, or nearly so, to the surface of the sole; an abutment in near proximity to said channel-cutting tool, and having its operating-face in a plane parallel to the line of feed, and at a right angle, or nearly so, to the plane in which lies the tread-surface of the sole, and arranged and adapted to limit the movement of said channel-lip, when struck by said setting-tool; and means for imparting to said lip-setting tool a slight vibration toward and from the bottom of the sole-channel, and a reciprocation toward and from said abutment in a direction parallel to the plane in which lies the tread-surface of the sole.

4. In an insole-channeling machine the combination of a work-support; a work-feeding mechanism; a channel-cutting tool, constructed and arranged to cut a channel and turn the channel-lip upward; the lever 53 pivotally connected at one end to a fixed part of the machine; a gage carried by said lever and projecting over the upper surface of the work-support; an oscillating cam mounted upon a fixed axis; means connecting said cam with said lever 53; a hand-lever connected to said cam for oscillating it; a fixed segmental lip partially surrounding said cam and provided with a plurality of detent-notches; and a locking-lever carried by said hand-lever and constructed and arranged to engage said detent-notches to lock said cam in its different adjusted positions.

5. In an insole-channeling and lip-setting machine, the combination of a work-feeding mechanism; a channel-cutting tool provided with means for turning the channel-lip upward; a lip-setting tool constructed and arranged to be slightly vibrated toward and from said work-support and to be reciprocated substantially at a right angle to its vibrating movement to set the lip in an upright position; a vertical abutment or anvil in near proximity to said channel-cutting tool arranged and adapted to limit the movement of said channel-lip when struck by said setting-tool; and means for imparting to said setting-tool a slight vibration toward and from said work-support, and a reciprocating movement substantially at a right angle to its vibratory movement.

656,843. MACHINE FOR REINFORCING INSOLES. ALBERT E. JOHNSON, Brockton, Mass., assignor to the Economy Machine Company, same place and Portland, Me. Filed Dec. 2, 1899. Serial No. 738,963. (No model.)



Claim.—1. In a machine for reinforcing insoles the combination of a work-support; a gage to locate the sole upon said support, means for pressing the reinforcing material into firm contact with the bottom of the channel and the inner surface of the channel-lip and into the acute angle of said channel; a fixed cutting-blade 43; the pivoted cutter-blade 45; and means for imparting to said pivoted blade an intermittent vibratory motion with a period of rest after each vibration.

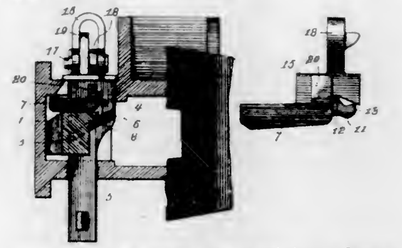
2. In a machine for reinforcing insoles the combination of a work-support; a work-locating gage; a vertically-reciprocating and laterally-vibrating presser-plate constructed and arranged to press the reinforcing material into firm contact with the bottom of the channel and with the inner surface of the channel-lip; a fixed shear-blade; a pivoted shear-blade constructed and arranged to coöperate with said fixed blade to sever a section of the reinforcing material at each vibration of said pivoted blade; a cam; a lever operated by said cam; and means connecting said lever and pivoted blade whereby an intermittent vibration is imparted to said pivoted blade with a period of rest after each vibration.

3. In a machine for applying a reinforcing textile fabric to a channeled insole, the combination of a work-support; a gage arranged above the upper surface of said work-support; a vertically-reciprocating and laterally-vibrating presser-plate provided at its lower end with an acute-angled inwardly-projecting lug constructed and arranged to fit the inclined bottom and acute angle of said channel; means for imparting to said presser-plate a vertically-reciprocating and laterally-vibrating movement in one direction to feed the work; means for vibrating said presser-plate in a plane at right angles to the line of feed of the material to press the reinforcing material into the acute angle of the channel and cause it to adhere to the inner surface of the channel-lip; a fixed cutting-blade; a pivoted and vibratory cutting-blade constructed and arranged to coöperate with said fixed cutter; the lever 56; the push-bar 46 carried by said lever 56 and engaging said pivoted blade; the spring 47; the cam-path 60; and means intervening between said cam and lever whereby an intermittent vibration is imparted to said pivoted cutter-blade with a period of rest after each vibration.

4. In a machine for applying a reinforcing material to a channeled insole, the combination of a work-support; a vertically-reciprocating and laterally-vibrating presser feed-plate; a fixed shear cutting-blade; a pivoted vibrating shear-blade coöperating with said fixed blade; means for imparting to said presser feed-plate an intermittent vertical reciprocation with a period of rest after each downward movement; means for intermittently moving said pivoted shear-blade, and the lower end of said presser feed-plate inward, or toward said fixed blade, in two steps, with a standstill between said two steps; and means for laterally vibrating said presser-plate to feed the work between the two steps of the inward movement of said pivoted blade and presser feed-plate.

5. In a machine for applying a reinforcing fabric to insoles, the combination of a work-support; a vertically-reciprocating and laterally-vibrating presser feed-plate; a fixed shear cutting-blade; the pivoted shear-blade 45 provided with the lug 25 and edge surface 26; the lever 56; the push-bar 46 carried by said lever and arranged to act upon said shear-blade 45; the spring-rod 62 also carried by said lever 56 and arranged to act upon said presser feed-plate; means for intermittently moving said lever 56 about its axis in one direction in two steps, with a standstill after each of said steps, and a movement in the opposite direction in a single step; and mechanism for imparting to said presser feed-plate an intermittent vertical reciprocation, with a period of rest after each downward movement; and means for imparting to said feed-plate a lateral movement to feed the work between the two steps of the first movement of said lever 56.

656,844. CAR-COUPLING. JOSEPH KELSO, Pittsburg, Pa., assignor to the McConway & Torley Company, same place. Filed Aug. 1, 1899. Serial No. 725,743. (No model.)



Claim.—1. In a car-coupler of the vertical-plane or Janney type, the combination of a vertically-moving locking-pin, a post or latch so connected to the pin as to swing to a vertical position onto the tailpiece of the knuckle when the locking-pin is raised and to a horizontal position when the locking-pin is dropped, and means for locking the post or latch in such horizontal position, substantially as set forth.

2. In a car-coupler of the vertical-plane or Janney type, the combination of a vertically-moving locking-pin or block, a movable post or latch adapted in one position to support the pin in unlocked position and to be shifted by the tail of the knuckle and when shifted to lock the pin in locking position, and means for locking the post or latch in locking position, substantially as set forth.

3. In a car-coupler of the vertical-plane or Janney type, the combination of a locking-pin or block automatically movable to locking position, a post or latch automatically movable on the shifting of the pin from engagement with the tail of the knuckle to a position where it will hold the pin or block out of engagement with the tailpiece and movable by the tailpiece when the knuckle is closed to a position where it will hold the locking-pin or block in engagement with the tailpiece, substantially as set forth.

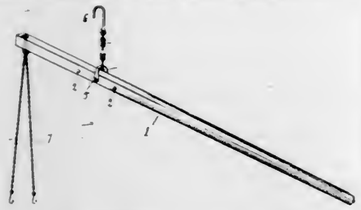
4. In a car-coupler of the vertical-plane or Janney type, the combination of a vertically-moving locking-pin, a post or latch 7 pivotally connected to the locking-pin, and a gravity-block for holding the latch in locking position, substantially as set forth.

5. In a car-coupler of the vertical-plane or Janney type, the combination of a vertically-moving locking-pin, a post or latch 7 pivoted to the locking-pin, a toothed arm connected to the post or latch and a gravity-block provided with a tooth for engagement with said arm, substantially as set forth.

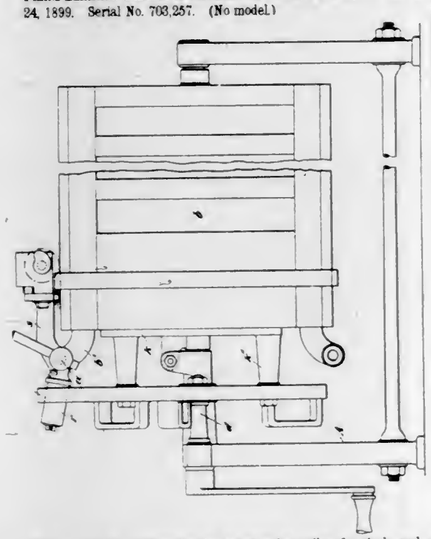
656,845. HOISTING DEVICE. JENS LAURSEN, Hamilton, Ill. Filed May 2, 1900. Serial No. 15,193. (No model.)

Claim.—The combination in a hoisting device of a portable hand-

lever provided with means for the suspension thereof at its point of fulcrum, and provided further with means for engaging wagon-boxes and similar bodies for the purpose of lifting the same; a framework having supporting cross-pieces at each end thereof, and longitudinal cross-pieces at each side thereof; and movable cross-pieces adapted to be held by such longitudinal cross-pieces and furnish a means of support for the wagon-box, or similar body, when elevated; substantially as set forth.



656,846. MACHINE FOR MEASURING AND MARKING CLOTH. FRANZ LEHMANN and ANTON VAN KEMPEN, Berlin, Germany. Filed Jan 24, 1899. Serial No. 703,257. (No model.)



Claim.—1. In combination in a measuring-roller for cloth and a marking or stamping device moving in unison with the roller with means for operating the stamping device at certain points in the revolution of the roller, said stamping device overhanging the outside of the roller and movable toward and from the outer surface thereof, substantially as described.

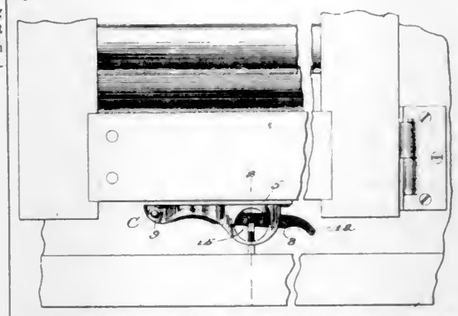
2. In combination, a polygonal roller, and a stamping device revolving around the roller-axis in unison therewith and means for moving the marking device toward and from the same point on the roller, said stamping device being supported from the end of the roller and overhanging the outer face of the same, substantially as described.

3. In combination, the roller, a stamping device revolving therewith and moving toward and from the roller and a pin or pins carried by the roller with means for projecting it through the cloth, said stamping device being arranged outside of the roller and operating in printing inwardly while the pins act in the opposite direction, substantially as described.

4. In combination, the roller, the stamping device moving about the axis in unison with the roller and a pin with means for projecting it through the cloth adjacent to the stamping device, said stamping device being arranged outside of the roller and operating in printing inwardly while the pins act in the opposite direction, substantially as described.

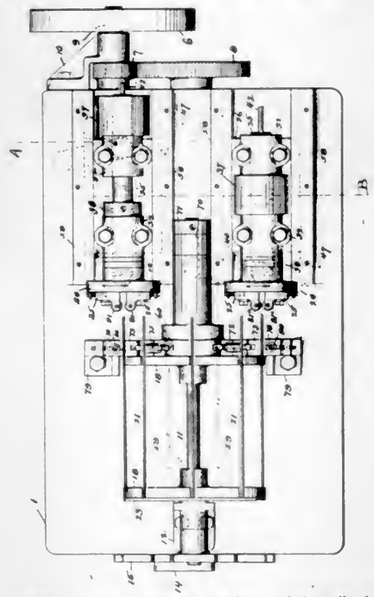
656,847. BLIND-FASTENER. SAMUEL A. LEWIS, Salem, Mass. Filed May 5, 1900. Serial No. 15,584. (No model.)

Claim.—1. In a blind-fastener, a body provided with parallel flanges having openings, a latch supported between said flanges, a keeper adapted to project through said openings and to be engaged by the latch and serving to engage the flanges, thereby to hold a shutter on its hinges, and a connection between the flanges to uphold the latch when the blind is open.



2. In a blind-fastener, a body provided with parallel flanges perpendicular thereto, said flanges having alined keeper-receiving openings, a latch pivoted between said flanges and its free end extending beyond the same, and a connection uniting the flanges to uphold the latch

656,848. THREADING-MACHINE. JAMES H. MACLAUCHLAN, Waterbury, Conn., assignor to the Waterbury Machine Company, same place. Filed Oct. 7, 1899. Serial No. 732,853. (No model.)



Claim.—1. In a screw-cutting machine, pointing-rolls, threading rolls, each of said rolls being adjustably fixed to a rotary shaft, which shafts are parallel with each other and journaled in movable heads; means for imparting a reciprocating movement to said heads, the said means comprising rotary cams and lever mechanism actuated by said cams and having a connection with said heads; carrier mechanism for presenting the rod-blanks to the said rolls, and means for holding said blanks rigid during the threading operation, the said means comprising rigid gripper-blocks, and toggle-actuated gripper-slides movable toward and away from the said gripper-blocks, substantially as described.

2. In a gripping mechanism, the combination of the rigid gripper-block 78; gripper-slide 73 movable upon a rigid member; oscillating toggle-block 60; adjustable connections between said gripper-slide and said toggle-block; rotary cam 64; and connections between said cam and said toggle-block whereby an oscillatory movement is imparted to said toggle-block from said cam, substantially as described.

3. In a machine of the character described, the combination with an intermittently-rotatable carrier mechanism, comprising disks having radial slots therein, within which the rod-blanks are held by spring-fingers; and a stop-plate fixed to one of said disks whereby the several rod-blanks will project outward from said disks a uniform distance; pointing and threading rolls rotatably mounted in roll-frames fixed to rotary shafts and adjustable in a plane at right angles to the axis thereof; movable heads within which the said rotary shafts are journaled, means, as independently-actuated cam and lever mechanism, for imparting a longitudinal movement to both of the said movable heads toward and away from the said carrier mechanism at one and the same time; a gripper mechanism for holding the rod-blanks rigid when the carrier mechanism is at rest and comprising a cam-actuated toggle located midway between the lines of said rotary shafts; gripper-slides actuated by said toggle and movable in a horizontal plane toward and away from the lines of said shafts, and rigid gripper-blocks opposite the said gripper-slides, substantially as described.

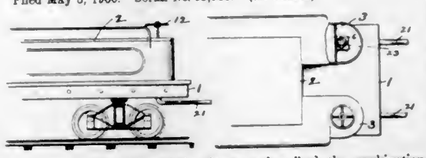
4. In a machine of the character described, having rotary threading-tools, the combination therewith of a carrier mechanism for presenting the rod-blanks to the said threading-tools, the said mechanism comprising carrier-disks fixed upon an intermittently-rotatable shaft, and having radial slots in the periphery thereof, and means, as a spring-finger fixed within each of said radial slots, for retaining the said rod-blanks therein, substantially as described.

5. In a machine of the character described, having rotary threading-tools, the combination therewith of a carrier mechanism for presenting the rod-blanks to the said threading-tools, the said mechanism comprising carrier-disks fixed upon an intermittently-rotatable shaft, and having radial slots in the periphery thereof, and means, as a spring-finger fixed within each of said radial slots, for retaining the said rod-blanks therein, and means, as a stop fixed to said carrier mechanism, for holding the said rod-blanks against endwise movement within the said carrier-disks, substantially as described.

6. In a machine of the character described, in combination with the intermittently-rotatable shaft 11; of the carrier-disks 18, secured thereto and having radial slots 19 therein; of spring-fingers 20 fixed at one end within said slots and engaging with one of the sides of the said radial slots at the opposite end; and means, as the stop-plate 23, for preventing endwise movement of the rod-blanks within the carrier-disks, all constructed and operating substantially as described.

7. In a machine of the character described, the combination with the rotary and longitudinally-movable shaft 35, of the roll-plate 28 secured thereon; roll-frames 25 25 adjustable radially upon the face of said roll-plate; screws 30 30 threaded into said roll-frames and held against endwise movement; a pair of rolls having toothed annular grooves therein; and screws 24 24 threaded into said roll-frames and rotatably supporting the said rolls, all constructed and operating substantially as described.

656,849. TANK-VALVE. JAMES E. MINOR, New Haven, Conn. Filed May 8, 1900. Serial No. 15,968. (No model.)



Claim.—1. In a valve of the character described, the combination with an inverted-cup-shaped valve, adapted to be moved vertically, means, as guide-pins, for holding said valve against lateral movement, a base-plate having a hole therethrough concentric to said valve, and a perforated strainer surrounding the said valve and secured to the said base-plate, substantially as described.

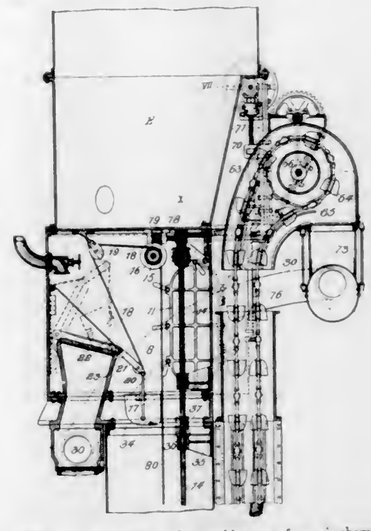
2. In a valve of the character described, the combination with the base-plate 6 having the aperture 8 therethrough; of the inverted-cup-shaped valve 9 having a vertical movement upon guide-pins 13; a strainer 23 surrounding the said valve 9, and a swash-board 16, all constructed and operating substantially as described.

3. In a tank-valve of the character described, the combination with a tank; of a cup-shaped valve held against lateral movement; means for moving said valve toward and away from its seat; and a well secured to said tank in a line with said valve, substantially as described.

4. In a tank-valve of the character described, the combination with the tank having a valve-port therethrough; of a cup-shaped valve movable within said tank toward and away from said valve-port; and a well secured to said tank in line with the said valve-port and valve, substantially as described.

5. In a tank-valve of the character described, the combination with a tank having a valve-port, as 5, therethrough; of a cup-shaped valve 9 having a movement upon guides, as the pins 13, toward and away from said valve-port; a strainer 23 surrounding said valve; and a well 18 secured to said tank adjacent to said valve-port and having an outlet 20 therefrom, substantially as described.

656,850. CAISSON. WILLIAM H. MCFADDEN, Pittsburg, Pa. Filed June 27, 1900. Serial No. 21,748. (No model.)



Claim.—1. In a caisson, the combination of an air-chamber provided with an air-lock, an open-ended working chamber, a tubular shaft or tunnel connecting the air and working chambers, formed of separable sections, and a submerging-tank arranged on the air-chamber, substantially as set forth.

2. In a caisson, the combination of an air-chamber, a working chamber, tubular shaft or tunnel connecting the air and working chambers, and a water-sealed discharge-opening from the air-chamber, substantially as set forth.

3. In a caisson, the combination of an air-chamber, a working chamber, a tubular shaft or tunnel connecting the air and working chambers, a discharge-box in the air-chamber and extending through the wall thereof, a pipe or tube for water under pressure intersecting the discharge end of the box, substantially as set forth.

4. In a caisson, the combination of an air-chamber, a working chamber, a tubular shaft or tunnel connecting the air and working chambers, a discharge-box in the air-chamber and extending through the wall thereof, the outer end of said box terminating in a pipe or tube for conducting a stream of water under pressure, and a sealing lid or cover for said box, substantially as set forth.

5. A caisson, having in combination, a working chamber having an open lower end, and a water-sealed U-shaped discharge-conduit having one arm opening within the working chamber and the other arm extending from the working chamber to a point above the level of the water, substantially as set forth.

6. A caisson, having in combination, a working chamber having an open lower end, a water-sealed conduit extending from the working chamber to a point above the level of the water and means for varying the height of the water column controlling the water seal, substantially as set forth.

7. A caisson, having in combination, a working chamber having an open lower end, a discharge-conduit extending from the working chamber to a point above the level of the water and provided, within the working chamber, with a receiving branch having an open upper end and means for maintaining the water within the conduit at a height not less than the level of water outside of the conduit, substantially as set forth.

8. A caisson, having in combination, a working chamber having an open lower end, a discharge-conduit extending from the working chamber to a point above the level of the water and provided with a receiving branch, a turning head, a conveyer connected to said head, said parts being so arranged that the material from the conveyer will be discharged into the branch in all positions of the turning head, substantially as set forth.

9. A caisson, having in combination, an air-chamber, a working chamber, a tubular shaft or tunnel connecting the air and working cham-

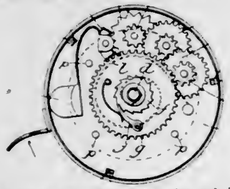
bers, a discharge-conduit extending from the working chamber to a point above the level of the water, a conduit-head movably mounted on the air-chamber, an endless chain provided with brackets arranged within the conduit and head, a receiving branch having an open upper end connected to the conduit within the working chamber, and a digging mechanism movably mounted on the receiving branch, substantially as set forth.

10. A caisson, having in combination, an air-chamber, a working chamber, a tubular shaft or tunnel connecting the air and working chambers, formed of separable sections, a discharge-conduit formed of separable sections extending from the working chamber to a point above the level of the water, and provided with a receiving branch within the working chamber, a digging mechanism within the working chamber, a power-shaft extending from the air-chamber to the working chamber formed of separable sections mounted in suitable bearings within the sections of the tubular shaft or tunnel, substantially as set forth.

11. A caisson, having in combination, an air-chamber, a working chamber, a tubular shaft or tunnel connecting the air and working chambers, a submerging-tank arranged on the air-chamber, a discharge-box arranged within the air-chamber and extending through the wall thereof, and a pipe or tube extending from the submerging-tank and intersecting the discharge end of the box, substantially as set forth.

12. The combination of a float or scow provided with guiding posts or supports, a caisson arranged between said supports, means for raising the caisson and supports movably mounted on the float for holding the caisson in raised position, substantially as set forth.

656,851. ALARM-BELL. EZRA A. NEWHALL, Portland, Me. Filed Apr. 16, 1900. Serial No. 13,048. (No model.)



Claim.—1. In an alarm-bell for bicycles and the like, the combination of the crown, a fixed post, a ratchet-wheel secured to the post, a gear-wheel journaled on the post, a plate carrying a clapper and pinions meshing with said gear, and a spring tending to revolve the plate, the gear and the pinions in one direction, the gear having a pawl engagement with the ratchet, whereby it will be held stationary by the ratchet when the spring is wound up, but will revolve with the pinions around the ratchet when the spring is released.

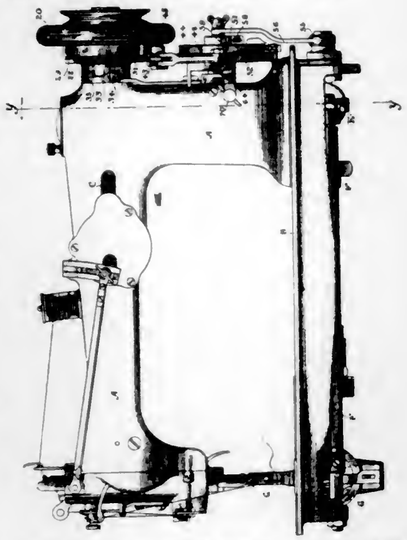
2. In an alarm-bell for bicycles and the like, the combination of the crown, a fixed post, a ratchet-wheel fixed to the post, a gear-wheel journaled on the post, a cup under the crown, a clapper and operating-pinions carried by said cup, connections between said ratchet and gear to hold the latter stationary and cause the pinions and clapper to operate when the cup is manually turned, and a spring for returning the parts to their normal position.

3. In an alarm-bell for bicycles and the like, the combination of the crown, a fixed post, a ratchet-wheel secured to said post, a gear-wheel journaled on the post, a cup under the bell having a thumb-piece connected thereto, a clapper and train of operating-pinions carried by the cup and connected to the gear, a pawl connection between the ratchet and gear to hold the latter fixed when the cup is manually rotated, and a spring for returning the parts to their normal position.

4. In an alarm-bell for bicycles and the like, the combination of the crown, a fixed post, a ratchet-wheel secured to the post, a gear-wheel journaled on the post and having a spring-pawl connecting it with the ratchet-wheel, a cup under the bell having a thumb-piece for turning it in one direction around the post and a spring for returning it to position, a fixed stop against which the spring holds the cup, a plate or frame secured to the cup and carrying a clapper and train of operating-gears in mesh with the first-mentioned gear.

656,852. OVERSEAMING SEWING-MACHINE. DONALD NOBLE, Bridgeport, Conn., assignor to The Wheeler & Wilson Manufacturing Company, same place. Filed Nov. 10, 1899. Serial No. 736,465. (No model.)

Claim.—1. In a device of the character described, the combination with stitch forming and feeding mechanism, of a shaft for operating said mechanisms, clutch and brake mechanism including a disk 22 fixed to said shaft and having on its periphery a cam-incline, an oscillatory laterally-movable brake-disk, an operating-lever having a cam-slot, a brake-lever to which the brake-disk is connected one arm of said brake-lever being provided with a roller 45 adapted to engage the cam-incline and the other with a roller 46 engaging the cam-slot, the arm carrying the roller 46 being also provided with a dog 50, and a counting mechanism including a disk having in its periphery a recess adapted to receive dog 50 when roller 46 is in the stopping position in the cam-slot.



2. In a device of the character described, the combination with stitch forming and feeding mechanism, of a shaft for operating said mechanisms, clutch mechanism including a disk 22 fixed to said shaft and having on its periphery a cam-incline, an oscillatory laterally-movable brake-disk, an operating-lever having a cam-slot, a brake-lever to which the brake-disk is connected one arm of said brake-lever being adapted to engage the cam-incline and the other to engage the cam-slot and having also a dog 50 and a counting mechanism including a disk having in its periphery a recess which receives dog 50 when roller 45 is in engagement with the cam-incline and the operating-lever is oscillated to stop the machine.

3. In a device of the character described, of shaft C, a driving-pulley loose thereon, an oscillatory laterally-movable brake-disk, clutch and brake mechanism intermediate said shaft and the driving-pulley, the brake-lever having dog 50, the operating-lever, shaft D carrying an eccentric 55, means for actuating shaft D, a counting-disk having a recess in its periphery adapted to receive dog 50 and an adjustable friction-feed intermediate the eccentric and the counting-disk whereby the latter may be rotated to place the recess in alinement with the dog by any required number of actuations.

4. In a device of the character described, the combination with stitch forming and feeding mechanism and operating connections therefor, of shaft D having eccentric 55, means for actuating shaft D, brake and clutch mechanism, the operating-lever having a cam-slot and the brake-lever coacting with the brake and clutch mechanism and engaging the cam-slot and having a dog 50, the counting-disk having a recess in its periphery adapted to receive the dog, a friction-feed whereby the counting-disk is actuated and which is provided with an arm having an arc-shaped groove, a block adjustable in said groove and a rod pivoted to said block and actuated by said eccentric so that by adjustment of said block in the groove the counting-disk may be rotated to place the recess in alinement with the dog by any required number of actuations of the friction-feed.

5. In a device of the character described the combination with stitch forming and feeding mechanism, of a shaft for operating said mechanisms, a disk 22 fixed to said shaft and having on its periphery a cam-incline, an oscillatory laterally-movable brake-disk, clutch and brake mechanism, a brake-lever to which the brake-disk is connected one arm of said brake-lever carrying a roller 45 adapted to engage the cam-incline and the other arm carrying a roller 46 and having a dog 50, an operating-lever having a cam-slot engaged by roller 46, said cam-slot having operating and stopping positions for said roller, a counting mechanism including a disk whose periphery is engaged by dog 50 when the parts are in the operating position and which is provided with a recess adapted to receive the dog when the parts are in the stopping position and a spring 60 normally acting to hold the operating-lever in the stopping position and the dog in engagement with the recess.

6. In a device of the character described the combination with stitch forming and feeding mechanism, of a shaft for operating said mechanisms, a disk 22 fixed to said shaft and having on its periphery a cam-incline, an oscillatory laterally-movable brake-disk and clutch and brake mechanism, an operating-lever having a cam-slot, a brake-lever to which the brake-disk is connected, one arm of said brake-lever being adapted to engage the cam-incline and the other arm engaging the cam-slot and having a dog 50, a spring 60 normally acting to hold the operating-lever in the stopping position, a rotating counting-disk normally acting to retain the operating-lever and the brake-lever in the operating position and having a recess which receives the dog in the stopping position and mechanism for rotating the counting-disk by any required number of actuations, whereby the number of rotations of disk 22 between stops is determined.

7. In a device of the character described the combination with stitch forming and feeding mechanism, of shaft C, shaft D driven therefrom, a disk 22 on shaft C having on its periphery a cam-incline, a loose driving-pulley, an oscillatory laterally-movable brake-disk and clutch and brake mechanism intermediate the brake-disk and the driving-pulley, an operating-lever having a cam-slot, a brake-lever to which the brake-disk is connected one arm of said brake-lever being adapted to engage the cam-incline and the other arm engaging the cam-slot and having a dog 50, a spring 60 normally acting to hold the operating-lever in the stopping position, a counting-disk normally acting to retain the operating-lever and the brake-lever in the operating position, and having a recess which receives the dog in the stopping position, a friction-feed actuated from shaft D and operatively connected to the counting-disk and means for adjusting said friction-feed so that the recess will be placed in alinement with the dog and spring 60 will actuate the operating-lever to stop said shafts after a desired number of rotations.

8. In a device of the character described the combination with shaft C, stitch-forming mechanism driven therefrom, shaft D, feeding mechanism driven therefrom, and an independent driving-pulley, a disk 22 fixed to shaft C and having on its periphery a cam-incline, an oscillatory laterally-movable brake-disk and clutch and brake mechanism intermediate the brake-disk and the driving-pulley, of an operating-lever having a cam-slot, a brake-lever to which the brake-disk is connected, one arm of said brake-lever being adapted to engage the cam-incline and the other arm engaging the cam-slot and having a dog 50, a spring 60 normally acting to hold the operating-lever in the stopping position, a rotating counting-disk normally acting to retain the operating-lever and the brake-lever in the operating position and having a recess which receives the dog in the stopping position, mechanism intermediate shaft D and the counting-disk for rotating said disk to place the recess in alinement with the dog by any required number of actuations, an expanding barring-cam K rotating with the counting-disk and mechanism intermediate said barring-cam and the feeding mechanism for throwing the feeding mechanism out of action during a required number of actuations.

9. In a device of the character described the combination with a driving-pulley, shafts C and D, stitch forming and feeding mechanism respectively actuated therefrom, and clutch and brake mechanism intermediate shaft C and the driving-pulley, of an oscillating operating-lever, connecting mechanism intermediate the operating-lever and the clutch and brake mechanism, counting-disk 52 whereby the number of stitches between stops is determined, an expanding barring-cam K and means for actuating said disk and cam, whereby the feeding mechanism may be suspended during a required number of actuations of shaft D, substantially as and for the purpose set forth.

10. In a device of the character described the combination with a driving-pulley, shaft C, stitch forming and feeding mechanism and clutch and brake mechanism intermediate said shaft and the driving-pulley, of an oscillating operating-lever, connecting mechanism intermediate the operating-lever and the clutch and brake mechanism, and a counting mechanism including a disk 52 whereby the number of stitches between stops is determined, substantially as shown, for the purpose specified.

11. The combination with stitch forming and feeding mechanism, of the expanding barring-cam K consisting of inner and outer oscillatory plates having oblique slots which cross each other, the outer plate having a recess 79 surrounding the slot, a nut in said recess, a screw-bolt which passes through the slots and engages the nut, means for actuating said cam and means operated by said cam for placing the feeding mechanism out of operation, substantially as shown, for the purpose specified.

12. In a device of the character described the combination with stitch forming and feeding mechanism, of the counting-disk 52 which regulates the number of stitches between stops and which is provided with a radial slot, the expanding barring-cam K consisting of inner and outer oscillatory plates having radial slots which cross each other, the outer plate having a recess 79 surrounding the slot, a nut in said recess and a screw-bolt which passes through the slots in the counting-disk and the plates and engages the nut, means for actuating said cam and means operated by said cam for placing the feeding mechanism out of operation, substantially as shown, for the purpose specified.

13. In a device of the character described the combination with counting-disk 52 which regulates the number of stitches between stops, barring-cam K which determines the number of barring-stitches and means for actuating said disk and cam, of stitch forming and feeding mechanism, a driving-pulley, an operating-lever and mechanism whereby the machine is stopped after the desired number of stitches have been made.

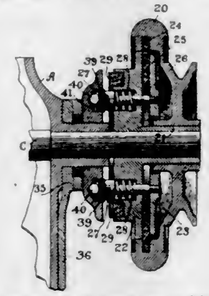
14. In a device of the character described the combination with a driving-pulley, stitch forming and feeding mechanism and a stitch-regulator, of counting-disk 52, for the purpose set forth, barring-cam K which acts in connection with the stitch-regulator to determine the number of barring-stitches, means for actuating said disk and cam, an operating-lever and mechanism whereby the machine is stopped after a required number of barring and regular stitches have been made.

15. In a device of the character described the combination with a driving-pulley, stitch forming and feeding mechanism and a stitch-regulator having a roller 63, of counting-disk 52, for the purpose set forth, barring-cam K which acts in connection with the stitch-regulator to determine the number of barring-stitches, means for actuating said disk and cam, an operating-lever and mechanism intermediate the driving-pulley and the operating-lever whereby the machine is stopped after a required number of stitches have been made, said barring-cam being so adjusted relatively to the counting-disk that at each stop roller 63 will be in engagement with the center of the operative portion of said cam so that half of the barring-stitches will be made immediately after starting and before said roller passes off from the cam and the other half will be made after said roller again engages the cam and immediately before stopping.

16. In a device of the character described the combination with a driving-pulley, stitch forming and feeding mechanism and a stitch-regulator having a roller 63, of counting-disk 52, for the purpose set forth, barring-cam K which when engaged by roller 63 places the feeding mechanism out of action, means for actuating said disk and cam, an operating-lever and clutch, brake and connecting mechanism intermediate the driving-pulley and the operating-lever, substantially as and for the purpose set forth.

17. In a device of the character described the combination with a driving-pulley, stitch forming and feeding mechanism and a stitch-regulator, of counting-disk 52, barring-cam K having an operative portion adapted to be engaged by the stitch-regulator to place the feeding mechanism out of action, means for actuating said disk and cam, an operating-lever, and clutch, brake and connecting mechanism intermediate the driving-pulley and the operating-lever, substantially as and for the purpose set forth.

656,853. FRICTION-CLUTCH. DONALD NOBLE, London, England, assignor to The Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Original application filed Nov. 10, 1899, Serial No. 736,465. Divided and this application filed Mar. 21, 1900. Serial No. 9,529. (No model.)



Claim.—1. A friction-clutch comprising a driving-pulley having a friction-ring, clutch-disks on opposite sides of said friction-ring, bolts by which one of said clutch-disks is carried and which pass through the other clutch-disk, means whereby said clutch-disks are caused to grip the friction-ring and an oscillatory laterally-movable disk adapted to engage the bolts whereby the clutch-disks are caused to release the friction-ring.

2. A friction-clutch comprising a driving-pulley having a friction-ring, clutch-disks on opposite sides of said friction-ring, bolts by which one of said clutch-disks is carried and which pass through the other clutch-disk, springs which normally cause the clutch-disks to grip the friction-ring and an oscillatory laterally-movable disk adapted to engage the bolts whereby the clutch-disks are caused to release the friction-ring.

3. A friction-clutch comprising a loose driving-pulley having a friction-ring, clutch-disks on opposite sides of said friction-ring, one of which is fixed to the shaft to be carried and the other carried by bolts passing through the fixed clutch-disk, springs which normally cause the movable clutch-disk to grip the friction-ring and an oscillatory laterally-movable

disk adapted to engage the bolts whereby the clutch-disks are caused to release the friction-ring.

4. A friction-clutch comprising a driving-pulley having a friction-ring, clutch-disks on opposite sides of the friction-ring, one of which is movable relatively to the other, springs which normally cause the clutch-disks to grip the friction-ring, an oscillatory laterally-movable disk by which the clutch-disks are caused to release the friction-ring and which is provided on its outer face with inclines, fixed inclines corresponding therewith and means for oscillating said laterally-movable disk.

5. A friction-clutch comprising a driving-pulley having a friction-ring, fixed and movable clutch-disks on opposite sides of said ring, springs which cause the clutch-disks to grip the friction-ring, an oscillatory laterally-movable disk 31 by which the clutch-disks are caused to release the friction-ring and which is provided with inclines, a disk 35 provided with corresponding inclines, means for adjusting said disk to compensate for wear and means for oscillating disk 31.

6. A friction-clutch comprising a driving-pulley having a friction-ring, fixed and movable clutch-disks on opposite sides of the friction-ring, said fixed clutch-disk having on its outer face a brake-ring, means for causing the clutch-disks to grip and release the friction-ring, and an oscillatory laterally-movable brake-disk which engages the brake-ring to stop the rotation of the clutch-disks when said disks release the friction-ring.

7. A friction-clutch comprising a driving-pulley having a friction-ring, clutch-disks on opposite sides of the friction-ring, one of which is movable relatively to the other, the outer clutch-disk having on its outer face a brake-ring, springs which normally cause the clutch-disks to grip the friction-ring and an oscillatory laterally-movable brake-disk by which the clutch-disks are caused to release the friction-ring and which engages the brake-ring to stop the rotation of the clutch-disks when the friction-ring is released.

8. A friction-clutch comprising a driving-pulley having a friction-ring, clutch-disks on opposite sides of the friction-ring, the inner clutch-disk being movable relatively to the outer, and the latter having on its outer face a brake-ring, springs which normally cause the clutch-disks to grip the friction-ring, a brake-disk having inclines upon its outer face, corresponding fixed inclines engaged thereby and means for oscillating the brake-disk whereby the clutch-disks are caused to release the friction-ring and their rotation is stopped by engagement of the brake-disk with the brake-ring.

9. A friction-clutch comprising a driving-pulley having a friction-ring, a clutch-disk 22 lying on the outer side of the friction-ring, a movable clutch-disk on the inner side of the friction-ring, bolts by which the movable clutch-disk is carried and which pass the friction-ring and engage the fixed clutch-disk and are provided with heads 27, springs bearing against said heads and the fixed clutch-disk whereby the friction-ring is normally gripped between the clutch-disks and an oscillatory laterally-movable disk lying in contact with said heads whereby the movable clutch-disk is caused to release the friction-ring.

10. The combination with a shaft and a driving-pulley loose thereon and having a friction-ring, of fixed and movable clutch-disks both of which are carried by the shaft, said fixed clutch-disk having on its outer face a brake-ring and said movable clutch-disk being carried by bolts which pass the friction-ring and engage the fixed clutch-disk, springs bearing against the bolt-heads and the fixed clutch-disk and an oscillating laterally-movable brake-disk which by engagement with the bolt-heads causes the movable clutch-disk to release the friction-ring and an instant later by engagement with the brake-ring stops the rotation of the fixed clutch-disk and the shaft.

11. The combination with a shaft, a driving-pulley loose thereon and carrying a friction-ring, a clutch-disk fixed to the shaft, a movable clutch-disk lying on the opposite side of the friction-ring and bolts by which the movable clutch-disk is carried, of a brake-disk adapted to engage the bolt-heads, for the purpose set forth, a ring 39 between the bolt-heads and the brake-disk and a ball-race and balls which support ring 39.

12. The combination with a shaft, a driving-pulley loose thereon and fixed and movable clutch-disks which lie on opposite sides of the pulley and both of which move with the shaft, of a brake-disk and means for imparting oscillatory and lateral movement thereto whereby the driving-pulley may be gripped and released and the rotation of the shaft stopped.

13. The combination with a driving-pulley having a friction-ring, clutch-disks 22 and 25, said clutch-disk 22 having on its periphery a cam-incline, and springs which normally cause the clutch-disks to grip the friction-ring, of an oscillatory laterally-movable disk 31 by which the clutch-disks are caused to release the friction-ring and which is provided with an arm 43, an operating-lever having a slot 47 and a brake-lever pivoted to arm 43, one arm of said brake-lever being adapted to be engaged by the cam-incline and the other to engage slot 47.

14. The combination with a driving-pulley having a friction-ring, clutch-disks 22 and 25 on opposite sides of the friction-ring, said clutch-disk 22 having on its periphery a cam-incline and on its outer face a brake-ring and springs which normally cause the clutch-disks to grip the friction-ring, of oscillatory laterally-movable disk 31 having an arm 43, an operating-lever having a slot 47 and a brake-lever pivoted to arm 43, one arm of said brake-lever being adapted to be engaged by the cam-incline and the other to engage slot 47, whereby when the operating-lever is in such position that the brake-lever will engage one end of the slot the other arm of said brake-lever will be retained out of engagement with the cam-incline and the clutch-disks will grip the friction-ring, and when the operating-lever is oscillated to place the brake-lever in engagement with the other end of the slot the other arm of said brake-lever will be placed in position to be engaged by the cam-incline, which imparts a toggle movement to the brake-lever and an oscillatory and lateral movement to disk 31 and causes the clutch-disks to release the friction-ring and stops the rotation of the clutch-disks by engagement with the brake-ring.

15. The combination with a shaft, a driving-pulley loose thereon, clutch-disk 22 fixed to the shaft and having on its periphery a cam-incline, an oscillatory brake-disk having an arm 43 and inclines 33, fixed inclines corresponding therewith, and devices coacting with disk 22 and the brake-disk to connect and disconnect the shaft and driving-pulley and to stop the rotation of the shaft when released, of an operating-lever having a cam-slot, a brake-lever to which arm 43 is pivoted and one arm of which is provided with a roller 45 adapted to engage the cam-incline and the other with a roller 46 engaging the cam-slot, so that when roller 46 is in the engaging position in the cam-slot roller 45 will be out of the path of the cam-incline and when roller 46 is in the releasing position in the cam-slot roller 45 will be in position to be engaged by the cam-incline, the action of the operating-lever when moved in either direction being to actuate the brake-lever with a toggle movement which in turn oscillates the brake-disk

16. The combination with a disk 22 having on its periphery a cam-incline, an oscillatory laterally-movable brake-disk, an independent driving-pulley and clutch and brake mechanism controlled by the brake-disk, of an operating-lever having a cam-slot, and a brake-lever to which the brake-disk is connected, one arm of said brake-lever being adapted to engage the cam-incline and the other to engage the cam-slot, oscillation of the operating-lever in either direction imparting a toggle movement to the brake-lever and oscillating the brake-disk, so that clutch-disk 22 and the driving mechanism are connected and disconnected and said disk is stopped when released.

17. The combination with a disk 22 having on its periphery a cam-incline and an oscillatory laterally-movable brake-disk, of an operating-lever having a cam-slot, a brake-lever to which the brake-disk is connected, one arm of said brake-lever being adapted to engage the cam-incline and the other to engage the cam-slot and clutch and brake mechanism intermediate the brake-disk and disk 22, substantially as and for the purpose set forth.

18. The combination with a disk 22 having on its periphery a cam-incline, an oscillatory laterally-movable brake-disk and clutch and brake mechanism intermediate the brake-disk and disk 22, of a brake-lever to which the brake-disk is connected, one arm of said brake-lever carrying a roller 45 adapted to engage the cam-incline and the other arm carrying a roller 46, an operating-lever having a cam-slot engaged by roller 46, said cam-slot having engaging and releasing positions for said roller and a spring 60 normally acting to hold the operating-lever in such a position that roller 46 will be in the releasing position in the cam-slot.

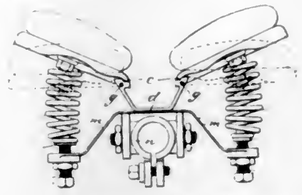
19. In a device of the character described the combination with a shaft and a driving-pulley loose thereon and having a recess in its inner face and a friction-ring extending into said recess, of fixed and movable clutch-disks carried by the shaft, an oscillating laterally-movable brake-disk and connections intermediate the movable clutch-disk and the brake-disk for the purpose set forth.

20. In a device of the character described the combination with a shaft, a driving-pulley loose thereon and carrying a friction-ring and a clutch-disk fixed to the shaft, one side of which carries a brake-ring the other lying in contact with the friction-ring, of a movable clutch-disk lying on the opposite side of the friction-ring, a brake-disk, connections intermediate the brake-disk and the movable clutch-disk and means for actuating the brake-disk so that the friction-ring will be alternately gripped and released and when released rotation will be stopped by engagement of the brake-disk with the brake-ring.

656,854. CYCLE-SADDLE. JULIUS NORD, Amerafort, Netherlands. Filed Mar. 18, 1899. Serial No. 709,563. (No model.)

Claim.—In a bicycle-saddle the combination of two seat-halves with two hinges for fixing each of the said halves to stationary axles, parallel to the longitudinal axis of the saddle and lying in the same plane with the adjacent edges of the said halves, and springs supporting each of said halves separately and being adjustable independently, for the purpose of being able to regulate the resiliency of the seat.

656,854.

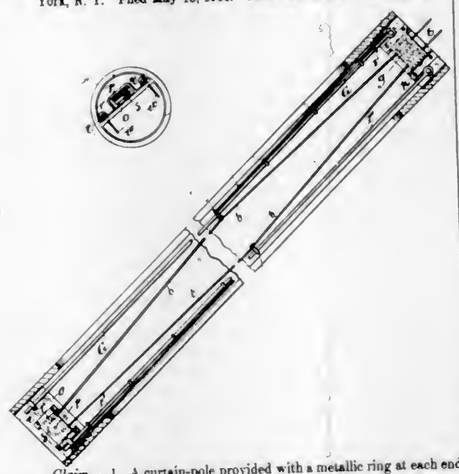


656,855. COVER FOR COOKING UTENSILS. CHARLES H. PINLOTT, Johnstown, Pa., assignor of one-half to Joseph Reese, same place. Filed Mar. 12, 1900. Serial No. 8,303. (No model.)



Claim.—As a new article of manufacture, a metallic cover for skillets or like vessels, comprising a concavo-convex body portion, and a series of circumferentially-arranged supporting-brackets secured to the convex face of said body portion for supporting the same, each of said supporting-brackets consisting of a corrugated metallic strip, substantially as herein shown and described.

656,856. CURTAIN-POLE ATTACHMENT. EMILIK PLATTE, New York, N. Y. Filed May 15, 1900. Serial No. 16,714. (No model.)



Claim.—1. A curtain-pole provided with a metallic ring at each end thereof said rings having bridges with guides for a cord, in combination with supporting-rods and means on said bridges for receiving the ends of said rods and securing the same in place substantially as described.

2. A curtain-pole provided with a metallic ring at each end thereof, said rings having bridges carrying pulleys adapted to guide a cord, in combination with supporting-rods, eye connections on one bridge for receiving one end of the rods, pins on the other bridge adapted to enter a hole in the other end of the rods, whereby the same may be secured in place substantially as described.

656,857. YELLOW DYE AND PROCESS OF MAKING SAME. FRANZ SCHOLL, Höchst-on-the-Main, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed June 23, 1900. Serial No. 21,299. (Specimens.)

Claim.—1. As a new product, the new yellow dyestuff obtained by combining one molecular proportion of diazotized primulin with one molecular proportion of 1-phenyl-3-methyl-5-pyrazolone, being a yellow-brown powder, easily soluble in hot water, soluble with difficulty in cold water with a light-yellow color, fairly soluble in alcohol, insoluble in ether, petroleum and benzene, on the addition of mineral acids separating from its aqueous solution in the form of a gelatinous mass, soluble in concentrated sulfuric acid with a yellow color, and dyeing unmordanted cotton in a neutral and alkaline bath pure yellow, substantially as set forth.

2. The herein-described process of manufacturing an azo dyestuff directly dyeing cotton yellow, which consists in allowing diazotized primulin sulfonic acid to act upon 1-phenyl-3-methyl-5-pyrazolone, substantially as set forth.

656,858. ORANGE DYE AND PROCESS OF MAKING SAME. FRANZ SCHOLL, Höchst-on-the-Main, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed June 23, 1900. Serial No. 21,300. (Specimens.)

Claim.—1. As a new product, the new orange dye-stuff obtained by combining one molecular proportion of diazotized primulin sulfonic acid with one molecular proportion of 1-para-sulfophenyl-5-pyrazolone-3-carbonic acid, being an orange-red powder, easily soluble in cold water with an orange-yellow color, almost insoluble in alcohol, insoluble in ether, benzene and petroleum, soluble in concentrated sulfuric acid with a red-dish-yellow color, separating from its aqueous solution on the addition of mineral acids in the form of orange-yellow flakes, and directly dyeing cotton in a neutral and alkaline bath orange, substantially as set forth.

2. The herein-described process of manufacturing an azo dyestuff directly dyeing cotton orange, which consists in allowing diazotized primulin sulfonic acid to act upon 1-para-sulfophenyl-5-pyrazolone-3-carbonic acid, substantially as set forth.

656,859. YELLOW AZO DYE AND PROCESS OF MAKING SAME. FRANZ SCHOLL, Höchst-on-the-Main, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed June 23, 1900. Serial No. 21,301. (Specimens.)

Claim.—1. As a new product, the new yellow dyestuff obtained by combining one molecular proportion of diazotized primulinsulfonic acid with one molecular proportion of 1-para-sulfophenyl-3-methyl-5-pyrazolone, being an orange-yellow powder easily soluble in cold water with a reddish-yellow color, soluble with difficulty in alcohol, insoluble in benzene, petroleum and ether, separating from its aqueous solution on addition of mineral acids in the form of yellow flakes, and dyeing cotton in a neutral or alkaline bath yellow, substantially as set forth.

2. The herein-described process of manufacturing an azo dyestuff directly dyeing cotton yellow, which consists in allowing diazotized primulinsulfonic acid to act upon 1-para-sulfophenyl-3-methyl-5-pyrazolone, substantially as set forth.

656,860. CAR-DOOR FASTENER. ROBERT D. SMITE and FREDERIC A. DELANO, Chicago, Ill. Filed Apr. 25, 1900. Serial No. 14,218. (No model.)



Claim.—1. In mechanisms of the class described, a staple having a base portion adapted to be secured to the door of the car and an upwardly and downwardly extending portion forming the loop proper provided with an extending-lug portion A^2 arranged at right angles therewith between which and the loop portion a hasp may be pivotally secured, substantially as described.

2. In mechanisms of the class described, a staple portion provided with a flat base portion having an inwardly-projecting lip and an upwardly and downwardly projecting loop or staple portion proper the free end of which is provided with an extending-lug portion and a hasp provided with an elongated opening where it engages with the staple portion, substantially as and for the purposes set forth.

656,861. KITCHEN-CABINET. WILLIAM G. STEINICKE and ANDREW P. BAUER, St. Louis, Mo. Filed Feb. 12, 1900. Serial No. 4,972. (No model.)



Claim.—In combination with a flour-bin, an extension forming the lower or discharge end of the same, flanged plates secured within said extension, a screen or netting located below said plates, pointed rods adapted to be passed through suitable openings formed in the opposite sides of

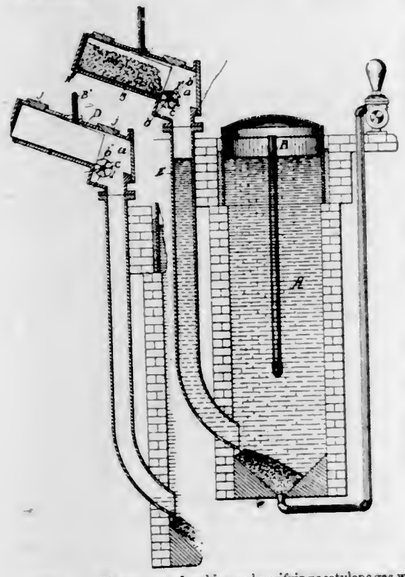
said extension, and normally in contact with the lower surface of said screen for removably holding the latter in its proper position, said openings through which the rods are passed being larger than the rods, an agitator, comprising a central operating-bar, the ends of which extend beyond the opposite walls of said extension, one of said walls being provided with a circular opening through which the bar of the agitator passes, and the opposite or front-wall provided with a slot with inclined walls, having an upper circular extension, within which the forward end of the bar of the agitator is normally located, as and for the purpose described.

656,862. CORN-SHIELD. MARCUS STRAUSSBERG, Newark, N. J. Filed May 12, 1900. Serial No. 16,447. (No model.)



Claim.—The improved corn-protector, comprising a perforated piece of felt, having adhesive matter on one side and on the opposite side having a rigid concavo-convex piece, the edge of the latter extending around the perforation and bearing on the felt on the side opposite the adhesive matter and means for fastening the edges down on the face of said felt, substantially as set forth.

656,863. PROCESS OF MAKING ACETYLENE GAS. EDWARD S. TITUS, Hempstead, N. Y. Filed Nov. 16, 1899. Serial No. 737,182. (No specimens.)

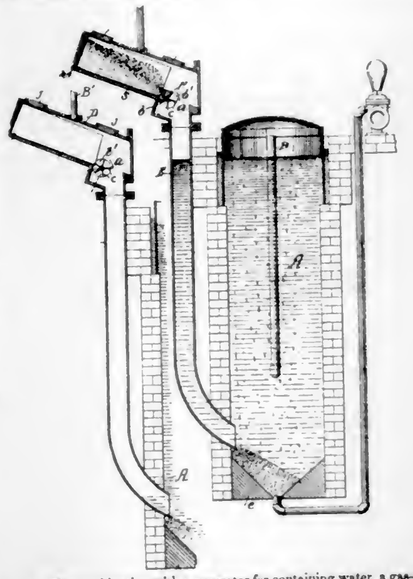


Claim.—1. The process of making and purifying acetylene gas which consists in first forming a volume of acetylene gas within a closed chamber which contains carbid of calcium, and then passing carbid of calcium through the volume of gas into a volume of water at a substantial distance below the surface of the water without passing said carbid from the surface of the water downward, and collecting the washed or purified gas from said surface, substantially as herein set forth.

2. The process of making acetylene gas which consists in forming a volume of acetylene gas in a closed space which contains water at its lower and carbid of calcium at its upper part, thereby expelling the water from said space, and then passing carbid of calcium through the acetylene gas which has expelled the water and into and through a further volume of water solely at the lower portion thereof for the further production of gas, substantially as herein set forth.

656,864. ACETYLENE-GAS GENERATOR. EDWARD S. TITUS, Hempstead, N. Y. Filed Nov. 16, 1899. Serial No. 737,183. (No model.)

Claim.—1. In an apparatus for producing acetylene gas, the combination with a generator for containing water, and a gas-tight feed-box for containing a supply of carbid of calcium, of a gas-chamber constructed and arranged for the transmission of carbid from the feed-box to the lower part of the generator, means for measuring the quantity of carbid fed intermittently being located within the gas-tight feed-box at the discharge end thereof, substantially as herein described.



2. The combination with a generator for containing water, a gas-tight feed-box for containing a supply of carbid, and a gas-chamber for transmitting carbid from the feed-box to the lower part of the generator, a feed mechanism for feeding the carbid from the feed-box to and through the gas-chamber, and mechanism for automatically controlling the feed mechanism from a generator, the means for measuring the quantity of carbid fed intermittently being located within the gas-tight feed-box at the discharge end thereof, substantially as herein described.

3. The combination with a generator for containing water, an inclined gas-tight feed-box for supplying carbid of calcium, a feed-wheel placed at the depressed end of the feed-box, a vertical gas-chamber communicating at its upper end with the depressed end of the feed-box and at its lower end with the lower part of the generator, a gasometer, and mechanism interposed between the crown of the gasometer and the axle of the feed-wheel to actuate the feed-wheel from the gasometer, substantially as herein set forth.

4. The combination with a generator for containing water, and a gas-chamber arranged for transmission of carbid of calcium therethrough to the lower part of the generator, of an inclined gas-tight feed-box constructed with a sheet-metal lining and arranged to contain carbid and supply it through the gas-chamber to the generator, said gas-tight box also containing means for controlling the feed of carbid intermittently located at its discharge end substantially as described.

5. The combination with a generator for containing water and a gas-chamber arranged for the transmission of carbid of calcium therethrough to the lower part of the generator, of an inclined gas-tight feed-box for supplying carbid of calcium, a feed-wheel placed at the depressed end of the feed-box, and a sheet-metal lining within the feed-box extended to the feed-wheel to facilitate the operation thereof in feeding carbid to and through the gas-chamber, substantially as herein set forth.

6. The combination with a generator for containing water and a gas-chamber arranged for the transmission of carbid of calcium therethrough to the lower part of the generator, a gas-tight feed-box for supplying carbid of calcium, and a feed-wheel for feeding the carbid from the feed-box to the gas-chamber, and a ratchet-wheel on the axle of the feed-wheel, of a gasometer, mechanism for automatically actuating said ratchet-wheel, and a strap extended from said mechanism to the movable crown of the gasometer for actuating said mechanism from said crown, substantially as herein set forth.

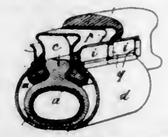
7. The combination with a generator for containing water, a gas-tight feed-box for supplying carbid, a gas-chamber for transmitting carbid from the feed-box to the lower part of the generator, and a feed mechanism for feeding the carbid, of a gasometer, a service-pipe, a pipe and cock for withdrawing gas from the gas-chamber to the gasometer preliminary to recharging the feed-box, substantially as herein set forth.

8. The combination with a generator for containing water, a gas-tight feed-box for supplying carbid, a gas-chamber for transmitting carbid from the feed-box to the lower part of the generator, and a feed-wheel for feeding the carbid, of a lining loose in the feed-box and having its lower edge projected into the path of the floats of the feed-wheel, substantially as herein set forth.

9. The combination with a generator for containing water, a gas-tight feed-box for supplying carbid, a gas-chamber for transmitting carbid from the feed-box to the lower part of the generator, and a feed-wheel for feeding the carbid, of a sheet-metal lining loose within the feed-box, pivoted to the latter at its end portion remote from the feed-wheel and with its bottom at its lower end projected into the path of the floats of the feed-wheel, substantially as herein set forth.

10. The combination with a generator for containing water, a feed-box for supplying carbid of calcium, a gas-chamber for the transmission of carbid from the feed-box to the generator, a feed-wheel for feeding the carbid, and a gasometer for receiving the gas from the generator, of a ratchet-wheel fast upon the axle of the feed-wheel, a secondary sprocket-wheel loose on said axle and having on one face a laterally-extended stud and at the other a pawl which engages with the ratchet-wheel, a loaded sprocket-chain provided to said sprocket-wheel, a sprocket-wheel also loose upon the said axle and having a pawl which coöperates with the stud aforesaid, a loaded sprocket-chain provided to the said sprocket-wheel, and a strap extended from said sprocket-chain to the crown of the gasometer, substantially as herein set forth.

656,865. ELASTIC TIRE FOR WHEELS. ALFRED TOELKE and HENRI SAMUEL, Paris, France. Filed May 8, 1900. Serial No. 15,885. (No model.)



Claim.—1. An elastic covering or tire having an inner pneumatic device, comprising an inner pneumatic device complete, with air-chamber, a fabric covering or facing, and a rubber coping or casing, arranged within a hollow rim, in the opening in which are able to slide in a radial direction a series of pieces or parts forming a tread part or band, which pieces or parts are provided with plane parallel cheeks, pressed laterally outward, and having heels or flanges preventing the same from being torn out of the rim, and having also outer flanges, the said pneumatic device having an outer cross-section, when inflated, smaller than the inner cross-section of the said rim, substantially as described.

2. An elastic covering or tire having an inner pneumatic device, comprising a hollow rim, a pneumatic device complete, with air-chamber, a fabric covering or facing, and a rubber coping or casing, arranged within the said rim, and a tread part or band formed by a series of cheeks connected together, in pairs, by means of pins and guide-sockets by a continuous rubber circle in which are embedded the said pins and sockets, and by metal soles covering the periphery of the rubber circle, substantially as described.

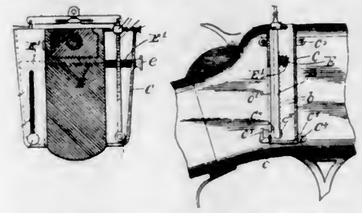
3. An elastic covering or tire having an inner pneumatic system or device, comprising a hollow rim, a pneumatic device complete, with air-chamber, a fabric covering or facing, and a rubber coping or casing, arranged within the said rim, with empty spaces remaining between the said pneumatic device and the walls of the rim, a continuous rubber band, sockets embedded in the said band, rigid cheeks provided with pins engaged in the said sockets, and with inner flanges engaging under the edges of the rim, and metal soles covering the periphery of the rubber band, substantially as described.

4. An elastic covering or tire having an inner pneumatic device, comprising a hollow rim having one or more lateral doored openings, a pneumatic device complete, with air-chamber, a fabric covering or facing, and a rubber coping or casing, arranged within the said rim, and a tread-band formed by a rubber circle and by cheeks held parallel two by two by guide-sockets and pins, the said cheeks being able to slide in a radial direction between the edges of the said rim, substantially as described.

656,866. GUN-SIGHT. EDGAR B. TOLMAN, Chicago, Ill. Filed Aug. 14, 1899. Serial No. 727,206. (No model.)

Claim.—1. A rear sight for firearms comprising a horizontal sight-bar which is maintained uniformly perpendicular to the vertical plane which intersects the axis of the bore of the gun and the center of the front sight, means for elevating and depressing said sight-bar, and means acting on the sight-bar while being elevated or depressed to shift said bar laterally a distance sufficient to compensate for the effect of wind upon the projectile at the range appropriate to each and every elevation of the sight.

2. A rear sight for firearms, comprising a horizontal sight-bar which is maintained uniformly perpendicular to the vertical plane which intersects the axis of the bore of the gun and the center of the front sight, means for elevating and depressing said sight-bar and means acting on the sight-bar while being elevated or depressed to shift said bar laterally a distance sufficient to compensate for wind and "drift" upon the projectile at the range appropriate to each and every elevation of the sight.



3. A rear sight for firearms comprising a horizontal sight-bar, means for elevating and depressing the same, and means acting on said sight-bar while being elevated or depressed to deflect said sight-bar in a laterally-curved path to correspond with the curved path of the projectile (laterally considered) due to the effect of wind.

4. A rear sight for firearms comprising a horizontal sight-bar legs pivoted to the opposite ends of said sight-bar, means for elevating and depressing said legs and bar and shiftable guiding means for said legs.

5. A rear sight for firearms comprising a horizontal sight-bar, legs pivoted to the opposite ends of said sight-bar, rack-teeth on said legs, a rotative gear engaging said rack and shiftable guiding means for said legs.

6. A rear sight for firearms comprising a horizontal sight-bar, legs pivoted to the opposite ends of said bar, means for elevating and depressing said legs and the bar and guiding means engaging the upper end of one of the legs said guiding means being adapted to be shifted laterally toward and from the vertical plane of the gun.

7. A rear sight for firearms comprising a horizontal sight-bar, legs pivoted to the opposite ends of said bar, means for elevating and depressing said legs and bar, a laterally-shiftable guide engaging the upper end of one of said legs, and vertical guides controlling the movement of the lower ends of said legs.

8. A rear sight for firearms comprising a horizontal sight-bar, legs pivoted to the opposite ends of said bar, means for elevating and depressing said legs and bar, a laterally-shiftable guide engaging the upper end of one of said legs vertical guides controlling the movement of the lower ends of said legs, and means for locking said legs in their adjusted positions.

9. A rear sight for firearms comprising a horizontal sight-bar, legs pivoted to the opposite ends of said bar, rack-teeth on said legs, a rotative shaft provided with gear-teeth adapted for engagement with said rack-teeth, a shiftable guide engaging the upper end of one of said legs and vertical guides controlling the movement of the lower ends of said legs.

10. A rear sight for firearms comprising a horizontal sight-bar, legs pivoted to the opposite ends of said bar, parallel vertical guides controlling the movement of the lower ends of said legs a laterally-shiftable guide engaging the upper end of one of said legs and means for synchronously elevating and depressing said legs.

11. A rear sight for firearms comprising a horizontal sight-bar, legs pivoted to the ends of said bar, and depending on each side of the gun, a casing inclosing the leg on each side of the gun, said casings being provided with parallel guide-slots with which the lower ends of said legs are pivotally connected, a laterally-shiftable guide engaging the upper end of one of said legs, and means for synchronously elevating and depressing said legs.

12. A rear sight for firearms comprising a sight-bar, means for elevating and depressing the same, and guiding means controlling the movement of said bar while being elevated or depressed which causes said sight-bar in the one part of its upward movement to move laterally in a curved path and in another part of said movement to move laterally in a right line.

13. A rear sight for firearms comprising a horizontal sight-bar, legs pivoted to the opposite ends of said bar, guide-bars engaging said legs which guide-bars are pivoted at their lower ends, and means for elevating and depressing said legs.

14. A rear sight for firearms comprising a horizontal sight-bar, legs pivoted to the opposite ends of said bar, guide-bars engaging said legs which guide-bars are pivoted at their lower ends and have a limited vertical movement, and means for elevating and depressing said legs and sight-bar.

15. A rear sight for firearms comprising a horizontal sight-bar, legs pivoted to the opposite ends of said bar, guide-bars which frictionally en-

gage said legs, said guide-bars being pivoted at their lower ends to studs which engage guide-slots which are of less length than the maximum elevation of the sight-bar.

16. A rear sight for firearms comprising a horizontal sight-bar, legs pivoted to the opposite ends of said bar, guide-bars which frictionally engage said legs, said guide-bars being pivoted at their lower ends to studs which engage guide-slots which are of less length than the maximum elevation of the sight-bar, and means for locking said guide-bars intermediate their limits of movement.

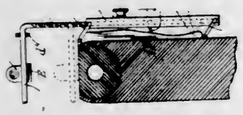
17. A rear sight for firearms comprising a horizontal sight-bar which is capable of being elevated and depressed, a spirit-level carried by and movable with said sight-bar and guiding means controlling the movement of said bar while being elevated or depressed which gives lateral movement thereto in a manner to compensate for the effect of wind upon the path of the projectile at the range appropriate to each and every elevation of the sight.

18. A rear sight for firearms embracing a horizontal sight-bar consisting of connected top, front and rear walls, and spirit-level inclosed between said front and rear walls, said rear wall being cut away at a point opposite to the bubble of the spirit-level.

19. A rear sight for firearms comprising a horizontal sight-bar, legs pivoted to the opposite ends of said bar, means for elevating and depressing said legs and bar, a guide engaging the upper end of one of said legs, a rotative endwise-immovable screw-shaft, a block having screw-threaded engagement with said shaft, and swivel connections between said block and guide.

20. A rear sight for firearms comprising a horizontal sight-bar, legs pivoted to the opposite ends of said bar, means for elevating and depressing said legs and bar, a shiftable guide engaging one of said legs, a windgage scale and an index or mark on said leg which cooperates with said scale, said scale being endwise movable to enable its adjustment to compensate for "drift."

656,867. **REAR SIGHT FOR FIREARMS.** EDGAR B. TOLMAN, Chicago, Ill. Filed Feb. 27, 1899. Serial No. 706,996. (No model.)



Claim.—1. A rear sight for firearms, comprising a guide adapted to be attached to the side of the gun, a sight-bar engaging the guide and provided at its upper end with an arm adapted to project laterally above the level of the barrel of the gun to which the sight is attached, an eyepiece on said arm, and a part having an inclined surface adapted to be affixed to the side of the gun, between the gun and sight-bar, and engaging said sight-bar, whereby when the sight-bar is being elevated or depressed the eyepiece will be caused to move laterally with respect to the vertical plane of the axis of the gun-barrel.

2. A rear sight for firearms, comprising a guide adapted to be attached to the side of the gun, a sight-bar engaging the same and provided at its upper end with a lateral arm adapted to project over the gun-barrel, an eyepiece on said arm, and a part adapted to be attached to the said gun between the sight-bar and the gun and separable from the guide, said part being provided with an inclined surface engaging the sight-bar.

3. A rear sight for firearms, comprising a sight-bar which is capable of being elevated or depressed and which carries at its upper end an eyepiece, a guide therefor, and means connected with the guide for laterally deflecting the eyepiece when the sight-bar is being elevated or depressed, said deflecting means being capable of assuming two positions in the guide, whereby the device may be used on either side of the gun and for guns having right or left drift.

4. A rear sight for firearms, comprising a vertically-movable sight-bar carrying an eyepiece at its upper end, a guide for said bar and a part having an inclined surface engaging said bar, said part being reversible, whereby the eyepiece may be moved laterally, past either side of the plane of the gun when the bar is being elevated or depressed.

5. A rear sight for firearms, embracing a sight-bar adapted to be secured to the side of the gun and provided at its upper end with an arm which is adapted to project over the gun-barrel, an eyepiece on said arm, and a reversible part having an inclined surface adapted to be affixed to the side of the gun and engaging said sight-bar, whereby when the sight-bar is being elevated or depressed the upper end thereof will be caused to move laterally with respect to the vertical plane of the axis of the gun-barrel.

6. A rear sight for firearms, comprising a vertically-movable sight-bar carrying an eyepiece at its upper end, a vertical guide for said bar, and a reversible part which is made separate from said guide and which is provided with an inclined surface adapted for engagement with said sight-bar.

7. A rear sight for firearms, comprising a vertically-movable sight-bar, a vertical guide therefor, a reversible part which is made separate from said guide which is provided with an inclined surface adapted for engagement with said sight-bar, a lateral arm on the upper end of said sight-bar, and an eyepiece movably affixed to said arm.

8. A rear sight for firearms, comprising a sight-bar which is capable of being depressed and elevated, an eyepiece carried by the upper end thereof, and a part engaging said sight-bar with respect to which the sight-bar is movable and which is irregularly shaped to correspond with the laterally-deflected path of the projectile due to "drift" and like constant causes, whereby when the sight-bar is elevated or depressed the eyepiece is moved laterally in an irregularly-curved path with respect to the vertical plane of the axis of the gun-barrel, to compensate for "drift."

9. A rear sight for firearms, comprising a sight-bar which is capable of being depressed and elevated, a horizontal arm on the upper end of said bar which projects laterally over the gun-barrel, an eyepiece carried by said arm, and a part engaging said sight-bar, with respect to which the sight-bar is movable and which is irregularly shaped to correspond with the laterally-deflected path of the projectile due to "drift" and like constant causes, whereby when the sight-bar is elevated or depressed the eyepiece is moved laterally in an irregularly-curved path with respect to the vertical plane of the axis of the gun-barrel to compensate for "drift."

10. A rear sight for firearms, comprising a vertically-movable sight-bar, a guide therefor adapted to be attached to the side of the gun, a part having an inclined surface associated with said guide which is located between the bar and the gun and engaging said sight-bar, a lateral arm on the upper end of the bar, and an eyepiece movable laterally on said arm, said arm being disposed at such angle to the sight-bar as to be at right angles to the vertical plane which intersects the axis of the bore of the gun-barrel and the center of the front sight, so as to enable the marksman to "plumb" his gun.

11. A rear sight for firearms, comprising a vertically-movable sight-bar adapted to be attached to the side of the gun, a vertical guide therefor, a part having an inclined surface associated with the guide which is located between the bar and the gun and engaging said sight-bar, a lateral arm on the upper end of the bar, an eyepiece movable on said arm, said arm being disposed at such angle to the sight-bar as to be at right angles to the vertical plane which intersects the axis of the bore of the gun-barrel and the center of the front sight, and a spirit-level secured to and movable with said eyepiece.

12. A rear sight for a rifle comprising a horizontal member, an eyepiece movable thereon, a recess in said eyepiece, an elongated opening through the rear wall of said recess, a spirit-level located in said recess, a spring in said recess against which one end of the spirit-level rests, and a screw-plug closing the other end of said recess whereby said spirit-level may be centered or adjusted, and also held removably in position in said recess.

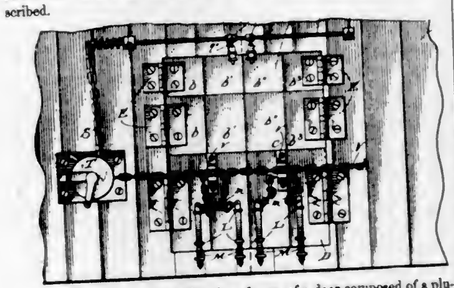
13. The combination with a horizontal sight-arm, of an eyepiece movable laterally on the arm and having a sight notch or aperture, and a spirit-level connected with said eyepiece below said sight-notch so as to move synchronously with the eyepiece when the latter is adjusted, and so located with respect to the notch or aperture that when the eyepiece is adjusted laterally on the bar and the plane which intersects the axis of the bore of the gun-barrel and the center of the front sight is truly perpendicular, the center of the bubble of the spirit-level will be in the same vertical plane as the center of the sight aperture or notch.

14. A rear sight for firearms comprising a part having an inclined surface secured to the rifle, a guide movably secured to the rifle, a sight-bar the vertical member of which is adapted to move in said guide and which is deflected laterally by said part and means for actuating the sight-bar whereby the curved line of flight of the projectile when not affected by the wind is caused to intersect the line of sight of the gun at any desired distance.

15. A rear sight for a rifle comprising a vertical and a horizontal member, the latter being provided with gradnations to correct for lateral deviation due to wind, with an eyepiece movably secured thereto and with a spirit-level removably and adjustably secured to the eyepiece, the vertical member being provided with graduations to correct for elevation, a guide movably mounted at the side of the rifle and adapted for the vertical movement of the sight-bar therein, a cam-surface on the rifle, means for engaging the vertical member of the sight-bar with said cam-surface whereby the vertical adjustment of the sight-bar to correct for elevation at a given range will automatically and simultaneously cause the curved line of flight of the projectile when not affected by wind to intersect the line of sight of the gun at such distance, thereby correcting for drift, substantially as described.

656,868. **CAR-DOOR.** JAMES VAN SLYKE, Shell Rock, Iowa. Filed June 11, 1900. Serial No. 19,857. (No model.)

Claim.—1. The combination with a door-frame, of a door composed of a plurality of horizontally-disposed sections, each section composed of a plurality of hinged panels, means for holding the upper section, means for holding the lower section, and means for securing together on the inside of the door one of the door-sections to the other, substantially as described.



2. The combination with a door-frame, of a door composed of a plurality of horizontally-disposed sections hinged to the frame, means for holding the upper section, means for holding the lower section, and a common device for operating the holding means, substantially as described.

3. The combination with a door-frame, of a door composed of a plurality of sections, a rock-shaft mounted on the door-frame, locking devices connected to said rock-shaft and adapted to be moved thereby to lock or release one section a chain secured to the door-frame and adapted to lie across the other door-section, a windlass or the like for operating said chain, and a connection from said windlass to said rock-shaft for operating the latter, substantially as described.

656,869. **ARTIFICIAL LEATHER.** WILLIAM WALDEN, New York, N. Y. Filed Mar. 5, 1900. Serial No. 7,349. (No specimens.)

Claim.—1. An improved artificial leather having a surface representing split sole-leather, comprising a flexible base or body impregnated with a waterproof adhesive substance to render the same water-repellent, and a layer or coating of sole-leather dust affixed to one surface of the base or body over the said waterproof adhesive substance, said sole-leather dust being partially embedded in the interstices of the base or body to cause the same to adhere firmly thereto and providing an outer finishing layer in imitation of split sole-leather, said layer being absorbent, for the purpose specified.

2. An improved artificial leather having a surface in imitation of split sole-leather, comprising a flexible base or body impregnated and coated on one side with a composition mixture of sole-leather dust and waterproof adhesive substance to render the base or body water-repellent, said mixture or coating being partially embedded in the interstices of the base or body to cause the same to firmly adhere thereto, and an outer finishing layer or coating of dry sole-leather dust affixed to said first-named coating to produce a surface in imitation of split sole-leather.

3. An improved artificial leather having a surface finished to imitate split sole-leather, comprising a flexible base or body impregnated with a waterproof adhesive substance to render the same water-repellent, and a layer or coating of sole-leather dust affixed to the base or body, over the said waterproof adhesive substance, said layer of sole-leather dust being partially embedded in the interstices of the base or body to cause the same to firmly adhere thereto and to produce a finished surface in imitation of split sole-leather, said layer or coating of sole-leather dust being absorbent, and a suitable waterproofing and stiffening agent upon the reverse side of the base or body, substantially as described.

656,870. **ELECTRIC SWITCH.** REINHOLD H. WAPPLER, New York, N. Y., assignor to the Wappler Electric Controller Company, same place. Filed Dec. 8, 1899. Serial No. 739,596. (No model.)



Claim.—1. The combination in an electric switch, with a foundation of insulating material and metal conductors connected thereto and spaced apart, of a rotary circuit-closing metal roller having a raised flat surface normally in contact with the surface of one conductor and which, by a partial rotation of the roller, shifts the same surface also into simultaneous contact with the other metal conductor to complete the circuit, substantially as set forth.

2. In an electric switch, the combination with a foundation of hard rubber or other suitable insulating material and metal conductors in the form of bars connected thereto and spaced apart at their adjacent ends, of a roller pivoted to the foundation and located between the foundation and the metal conductors with the face thereof adjacent to the metal conductors and formed of segmental surfaces in parallel planes whereby one segmental surface is in contact with one metal conductor in a normal position, and in contact with both metal conductors upon giving a partial rotation to the roller, substantially as and for the purposes set forth.

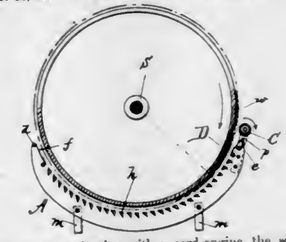
3. In an electric switch, the combination with a foundation of insulating material and metal conductors in the form of bars connected thereto and spaced apart at their adjacent ends, of a roller pivoted to the foundation and occupying a position between the same and the said conductors, the face of the roller next to the conductors having a raised segmental surface, a stop upon the surface of the said roller, and means for pressing the said raised surface of the roller against the metal conductors, whereby in one position the raised segmental face is normally in contact with one metal conductor and may be given a partial rotation to bring the same into contact with both metal conductors, substantially as and for the purposes set forth.

4. The combination in an electric switch with a foundation of insulating material, of a roller and an axis therefor connecting the roller to the foundation, and upon which the roller is adapted to turn, said roller having a segmental metal surface upon the face thereof, metal conductors narrower than the diameter of the roller and extending across the face thereof with the respective ends spaced apart to one side of the center with one conductor in contact with the segmental surface and the end thereof approximately in line with the straight edge of the segmental surface in a normal condition, a stop upon the surface of the roller to limit the movement thereof, the said segmental surface lying against the surface of one metal conductor in the normal position and against the surface of both metal conductors after a partial rotation has been imparted thereto, substantially as and for the purposes set forth.

5. The combination in an electric switch with a foundation of insulating material and metal conductors connected thereto and spaced apart, of a rotary circuit-closing roller pivotally connected to the said foundation and having its periphery projecting beyond the surface of the insulating-material foundation to be operated by the finger in making and breaking the circuit, substantially in the manner and for the purposes set forth.

6. The combination in an electric switch with a foundation of insulating material and metal conductors connected thereto and spaced apart, of a rotary circuit-closing roller pivotally connected to the said foundation and having a raised segmental surface next to and normally in contact with one metal conductor and having its periphery projecting beyond the surface of the insulating-material foundation to be operated by the finger in making and breaking the circuit, substantially in the manner and for the purposes set forth.

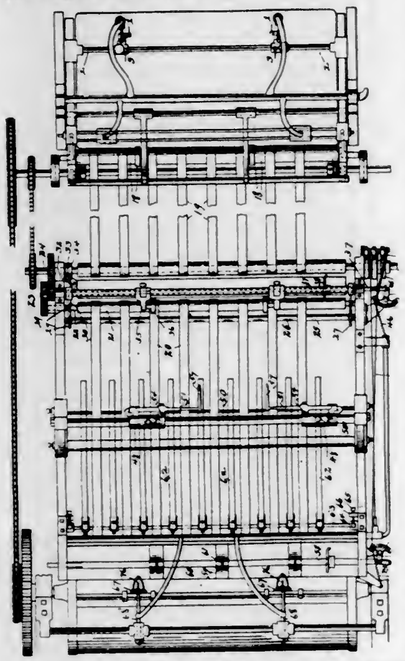
656,871. **UNDER SCREEN FOR CARDING-ENGINES.** JOHN F. WHITE, Providence, R. I., assignor, by direct and mesne assignments, to Walter Rushton, same place, and Albert E. Carroll, Boston, Mass. Filed Mar. 11, 1898. Serial No. 673,529. (No model.)



Claim.—1. In combination with a card-engine, the screen A provided with a truss-bar *e* of an acute-angular form in cross-section, a rotatable cylinder C adjustably secured over the apex of the truss-bar, the brackets *k k* for supporting said cylinder in position, and the pulley *r* keyed to the cylinder-shaft and receiving transmitting motion from the machine, substantially as set forth.

2. A screen for carding-engines, comprising the supporting-walls curved concentrically with the card-cylinder of the engine, two series of hollow angular bars *h* permanently fixed and having their front faces in radial planes centering in the axis of the card-cylinder, the small cylinder C mounted over the front edge of the screen and provided with a keyed pulley having power-transmitting connection from the machine to rotate said cylinder, and the brackets *k k* bolted to the side wall of the screen and provided with slots for giving adjustment to the cylinder C, substantially as and for the purpose described.

656,872. AUTOMATIC MECHANISM FOR FEEDING SHEETS OF PAPER. GEORGE R. WILLIAMS and WILLIAM C. WILLIAMS, New York, N. Y., assignors, by mesne assignments, to B. V. Becker. Filed Jan. 5 1900. Serial No. 464. (No model.)



Claim.—1. In a machine of the character described, a pneumatic-suction-cup bracket comprising a base having vertical ways, a bracket proper mounted to slide on said ways and carrying the suction-cup, and means for adjusting the bracket proper relatively to said base, substantially as described.

2. In a machine of the character described, a pneumatic-suction-cup bracket comprising a base having vertical ways, a bracket proper carrying the suction-cup and adapted to slide on said ways, a feed-screw for adjusting the bracket proper on said ways, and means for securing the bracket proper after adjustment, substantially as described.

3. In a machine of the character described, the combination, with a suction-cup bracket, of an arm secured to said bracket at one end, carrying the cup at its other end, and provided with an intermediate joint and clamping means whereby the angle of the cup may be varied, substantially as described.

4. In a machine of the character described, the combination, with a suction-cup bracket having a horizontal socket, of an arm adjustable both longitudinally and angularly in said socket, said arm carrying the suction-cup and being provided with a joint and clamping devices whereby the two sections of said arm may be adjusted at varying angles, substantially as described.

5. In a machine of the character described, a suction-cup bracket comprising a base, and a bracket proper vertically adjustable thereon, said bracket proper being provided with a horizontal socket, in combination with a jointed arm longitudinally and angularly adjustable in said socket and having its two sections angularly adjustable relatively to each other, and the outermost or free end being provided with a suction-cup, substantially as described.

6. In a machine of the character described, the combination, with a press or folding-machine, a suction mechanism for lifting the sheet from the pile and its delivery-rollers, of sheet-transferring tapes intermediate said devices divided into two sections having different speeds, that section adjacent to the lifting mechanism having a speed equal to the delivery thereof and that section adjacent to the press or folding-machine having a slower speed, substantially as described.

7. In a machine of the character described, the combination, with a press or folding-machine and a pneumatic lifting mechanism and its delivery-rollers, of a sheet-transferring mechanism intermediate the two consisting of two sections having differing speeds, that one adjacent to the lifting mechanism having a speed equal to that of its delivery and the other section a slower speed, and stop mechanism for arresting the sheet before its delivery from the first section to the second section, substantially as and for the purpose described.

8. In a machine of the character described, the combination, with a transferring mechanism comprising two sections or sets of tapes of different speed, of stops for arresting the sheet at the end of the first section, means for shifting the sheet laterally while thus arrested and means for delivering the laterally-shifted sheet to the second or slower-moving section, substantially as described.

9. In a machine of the character described, means for shifting the sheet laterally comprising a shifting-bar, a lever having a link connection with said bar and provided with a transverse-arm, and an operating-rod having an adjustable connection with said lever, whereby its point of attachment may be shifted from one side of the pivot to the other to reverse the direction of movement of the shifting-bar, substantially as described.

10. In a machine of the character described, delivery-calipers comprising a fixed arm and a movable arm pivotally connected therewith and provided with an adjusting-screw bearing on the fixed arm, substantially as described.

11. In a machine of the character described, delivery-calipers comprising a fixed arm, a movable arm pivotally connected therewith and provided with an adjusting-screw bearing on the fixed arm and with a vertical open-mouthed slot, and a clamping-screw passing through said slot into the fixed arm, substantially as described.

12. In a machine of the character described, the combination, with a transverse plate and a shifting-bar movable therein, of bridge-pieces secured to and moving with the shifting-bar and having their surfaces elevated above said plate, substantially as described.

13. In a machine of the character described, the combination, with a transverse plate and a shifting-bar movable therein, of bridge-pieces having their central portions depressed and secured to the shifting-bar and their body portions adjacent thereto elevated above the plate and inclined downward toward the surface of the same in each direction, substantially as described.

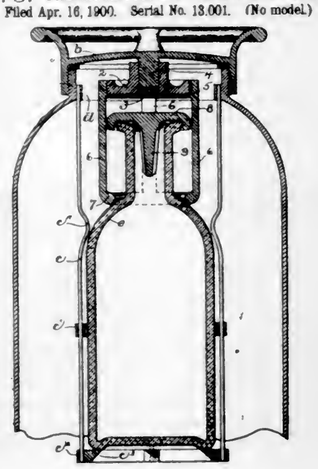
14. In a machine of the character described, the combination, with the transfer-tapes, of intermediate stationary slats and means for adjusting said slats relatively to the plane of the tapes to relieve the tapes of more or less of the weight of the sheets, substantially as described.

15. In a machine of the character described, the combination, with the transfer-tapes, of intermediate slats, a transverse rock-shaft to which said slats are secured at one end, and means for angularly adjusting said rock-shaft, substantially as described.

16. In a machine of the character described, the combination, with the transfer-tapes, of intermediate slats, a rock-shaft to which said slats are secured at one end, said rock-shaft being provided with a radial arm, and an adjusting-screw bearing against said arm, substantially as described.

17. In a machine of the character described, the combination, with a press or other mechanism to be fed having an adjustable front guide, of a sheet-feeding mechanism for feeding the sheets against said guide, and a stop-motion-controlling device mounted on said guide and adjustable along with the same, substantially as described.

656,873. FIRE-EXTINGUISHER. ARTHUR C. BADGER, Boston, Mass. Filed Apr. 16, 1900. Serial No. 13,001. (No model.)



Claim.—1. A fire-extinguisher comprising a casing having a neck and a detachable cap or cover therefor, a bottle-holder attached to the neck of the casing independently of the cover, a gravity-stopper adapted to close the neck of a bottle in said holder, a stopper-guide, and adjustable connections between the guide and cover whereby the guide may be adjusted toward and from the bottle-neck, and made operative with bottles of different sizes.

2. A fire-extinguisher comprising a casing having a neck and a detachable cap or cover therefor, a bottle-holder attached to the neck of the casing, a screw-threaded coupling or connecting member on the cover, and a stopper-guide having a complemental screw-threaded coupling or connecting member formed to engage the member on the cover, said members permitting the adjustment of the stopper-guide.

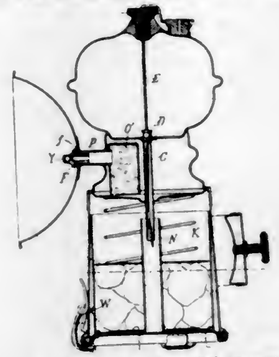
3. A fire-extinguisher comprising a casing having a neck and a detachable cap or cover therefor, a bottle-holder attached to the neck of the casing, a screw-threaded coupling or connecting member on the cover, and a stopper-guide having a complemental screw-threaded coupling or connecting member formed to engage the member on the cover, said members permitting the adjustment of the stopper-guide, said guide having means such as a ring or a series of shoulders for exerting downward pressure on the bottle.

4. A fire-extinguisher comprising a casing having a neck and a detachable cap or cover therefor, a bottle-holder attached to the neck of the casing, a screw-threaded coupling or connecting member on the cover, and a stopper-guide composed of an externally-threaded head having a threaded coupling member to engage the coupling member on the cover an internally-threaded ring to engage the external thread on the head, stopper-guiding arms on said ring, and a bottle-confining ring on the lower ends of said arms.

5. A fire-extinguisher comprising a casing having a neck and a detachable cap or cover therefor, a bottle-holder attached to the neck of the casing, a gravity-stopper adapted to close the neck of a bottle in said holder, and a stopper-guide supported by said cover and having means for retaining the stopper when the cover is removed from the casing.

6. A fire-extinguisher comprising a casing having a neck and a detachable cap or cover therefor, a bottle-holder attached to the neck of the casing, a gravity-stopper adapted to close the neck of a bottle and projecting outside of said neck, and a stopper-guide attached to the cover and having stopper-guiding arms and a stopper-retaining ring at the lower ends of the arms, formed to engage the projecting portion of the stopper.

656,874. ACETYLENE-GAS LAMP. FREDERIC E. BALDWIN, New York, N. Y. Filed Oct. 18, 1899. Serial No. 733,973. (No model.)



Claim.—1. In a lamp of the kind described, the combination with a water-reservoir, a carbid-compartment and a tube leading from the reservoir into the carbid-compartment, of a plug closing and opening into the reservoir, a stem carried by the plug and extending through the reservoir and water-tube and a valve secured to, or carried by, the stem and controlling the passage from the reservoir into the said tube, as set forth.

2. In a lamp of the kind described, the combination with a water-reservoir, a carbid-compartment and a tube leading from the reservoir into the carbid-compartment, of a valve controlling the passage from the reservoir to the tube, and a valve-stem extending through the reservoir and water-tube, the said stem being fashioned or bent so as to bear against the inner wall of the tube and thereby act as a brake to prevent the stem from turning, as set forth.

3. In a lamp of the kind described, the combination with a water-reservoir, a carbid-compartment and a tube leading from the reservoir into the carbid-compartment, of a valve controlling the passage from the reservoir to the tube, and a valve-stem extending through the reservoir and water-tube and fashioned or bent so as to bear against the inner surface of the tube at the end of the same, to act as a cleaner to remove deposits thereon. when the stem is rotated, as set forth

4. In a lamp of the kind described the combination with a water-reservoir, a carbid-compartment and a tube leading from the reservoir into the carbid-compartment, of a valve controlling the passage from the reservoir into the tube, and a valve-stem prolonged below the valve and extending through the water-tube, said stem being adapted to bear against the inner wall of the tube and thereby act as a brake to prevent rotation of the valve on its seat, as set forth.

5. In a lamp of the kind described, the combination with a water-reservoir, a carbid-compartment and a tube leading from the reservoir into the carbid-compartment, of a valve controlling the passage from the reservoir to the tube, a valve-stem prolonged below the valve and extending through the tube and adapted to bear upon the inner surface of the latter at the end of the same and thereby serve as a cleaner to remove deposits thereon, when the stem is rotated, as set forth.

6. In a lamp of the kind described, the combination with a water-reservoir, a carbid-compartment and a tube leading from the reservoir into the carbid-compartment, of a screw-plug closing and opening in the reservoir, a stem carried by the plug, a valve on the stem controlling the passage from the reservoir to the tube, the stem being prolonged below the valve and extending through the tube and fashioned or bent so as to bear against the inner wall of the tube whereby it serves as a brake to prevent rotation of the stem, as set forth.

7. In a lamp of the kind described, the combination with a water-reservoir, a carbid-compartment and a tube leading from the reservoir into the carbid-compartment, of a plug closing an opening into the reservoir, a stem carried by the plug and extending through the reservoir and through and beyond the tube and formed at its end in a point, and a valve secured to, or carried by, the stem and controlling the passage from the reservoir into the said tube, as set forth.

8. In a lamp of the kind described, the combination of a water-reservoir, a carbid-compartment and a tube leading from the reservoir to the carbid-compartment, of a valve controlling the passage from the reservoir to the tube, a stem prolonged below the valve and extending through and beyond the tube, the said stem being fashioned or bent so as to bear on the inner wall of the tube at one or more points, and pointed at its end, as set forth.

9. In a lamp of the kind described, the combination with a water-reservoir, a carbid-compartment and a tube leading from the reservoir into the carbid-compartment, a valve controlling the passage from the reservoir to the tube and having an elastic facing, the seat for said valve being formed with a tapering groove extending from the opening or orifice in the seat, as set forth.

10. In a lamp of the kind described, the combination of a water-reservoir, a closed carbid-compartment, a tube leading downward from the reservoir into the carbid-compartment, and a valve controlling the passage from the reservoir to the tube, the length of the tube being fixed with reference to the mean height of the water in the reservoir so that the height of the water-column in the reservoir and tube may afford a pressure approximately equal to the gas-pressure for which the lamp is adapted, as set forth.

11. In a lamp of the kind described, in which the upper portion of the carbid-compartment is exposed to the cooling action of the air or of the water-reservoir and not to the heat produced by the flame, the combination with the carbid-compartment of a receptacle for the carbid contained within the said compartment, a disk or plate covering the mass of carbid in the receptacle, a second disk or plate covering the upper end of the compartment, but so as to leave a free space between itself and the said end, the disk or plate having a central opening and fitting loosely against the upper end of the compartment, a spring interposed between the two disks or plates and acting to maintain them in position, and a gas pipe or outlet leading from the space above the upper disk or plate and having its orifices out of line with the passages through and around the same, as set forth.

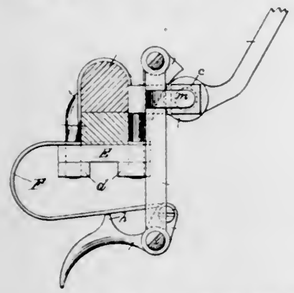
12. In a lamp of the kind described, the combination with the carbid-receptacle, of a foraminous tube open at both ends, secured to a bottom disk or flange having perforations therein, and adapted to stand in the receptacle and distribute water to the surrounding and superposed mass of carbid, as set forth.

13. In a lamp of the kind described, the combination with the lamp-case of a carbid-receptacle adapted to enter the open lower end of the case, but of smaller diameter than the case, the receptacle and case being formed or provided with flanges, clamps for engaging and binding together the said flanges, and studs or projections on the receptacle for centering it in the case, as set forth.

14. The valve device for lamps of the kind described, comprising in combination a plug adapted to close an opening in the water-reservoir, a valve-stem passing freely through said plug, a spring interposed between

the plug and the stem and acting to force the stem down so that the valve is pressed against its seat, a cam on the lamp-case, and an arm on the valve-stem bearing thereon, whereby the stem is raised or lowered according to the position of said arm on the cam, as set forth.

656,875. THILL-COUPLING. CHARLES A. BEHLEN, Cincinnati, Ohio. Filed May 25, 1900. Serial No. 17,908. (No model.)



Claim.—1. In a thill-coupling, a combination with the clip, and its forwardly-extending ears, the thill-iron and bolt for coupling the thill-iron to the clip, of an unyielding wedge-block inserted between the clip and the head of the thill-iron, a tension-spring secured to the axle at one end, and links pivotally connecting the wedge-block to the free end of said spring and a clamping-lever for compressing the spring to bring pressure to bear on the wedge-block, substantially as shown and described.

2. In a thill-coupling the combination, with the clip, and its forwardly-projecting ears, the thill-iron, and bolt for coupling the thill-iron to the clip, of an unyielding wedge-block inserted between the clip and the head of the thill-iron, a tension-spring secured to the axle at one end, and an angular clamping-lever, to one arm of which the free end of said spring is pivoted and links pivotally, connecting the knuckle of said lever with said wedge-block, whereby the operation of said lever will compress the spring to bring pressure to bear on the wedge-block, substantially as shown and described.

656,876. PROCESS OF MANUFACTURING BOTTLES, FLASKS, &c. CLAUDE BOUCHER, Aîné, Cognac, France. Original application filed Feb. 21, 1899, Serial No. 706,374. Divided and this application filed Jan. 2, 1900. Serial No. 157. (No specimens.)

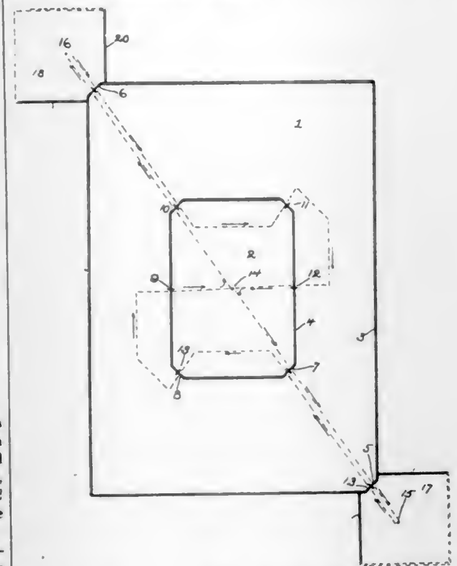
Claim.—1. The process of mechanically producing hollow glass articles, consisting in first forming a charge of molten glass into a solid mass of suitable shape, then molding said charge to impart a definite shape to the bottom and sides or a portion of the sides thereof while expanding and rendering the same hollow by the action of internal fluid-pressure, and then further molding the blank thus formed to the shape of the finished article while expanding the same under action of further internal fluid-pressure.

2. The process of mechanically producing hollow glass articles consisting in first forming a charge of molten glass into a solid mass of suitable shape, then molding said charge while expanding and rendering the same hollow by the action of internal fluid-pressure, and then further molding the blank thus formed to the shape of the finished article while expanding the same under the action of further internal fluid-pressure, at the same time imparting movement to the blank for preventing the formation of ridges or fins thereon.

656,877. GAME. MELLEN BRAY, Newton, Mass. Filed Feb. 10 1900. Serial No. 4,755. (No model.)

Claim.—1. A game apparatus comprising an inner series of ball-caroming rails arranged to form an inner inclosed court having a wicket giving access in either direction to and from said court, and an outer series of ball-caroming rails arranged to form an outer inclosed court surrounding the inner court, the outer series of rails being separated from the inner series by a continuous unobstructed space through which a ball may be driven in any direction and against any rail of either series, the rails of both inner and outer series being substantially straight.

2. A game apparatus comprising an inner series of ball-caroming rails arranged to form an inner inclosed court having a wicket giving access in either direction to and from said court, and an outer series of ball-caroming rails arranged to form an outer inclosed court surrounding the inner court and having a wicket giving access in either direction to and from the outer court, the outer series of rails being separated from the inner series by a continuous unobstructed space through which a ball may be driven in any direction and against any rail of either series, the rails of both inner and outer series being substantially straight.



3. A game apparatus comprising an inner series of ball-caroming rails arranged to form an inner inclosed court having a plurality of wickets giving access in either direction to and from said court, and an outer series of ball-caroming rails arranged to form an outer inclosed court surrounding the inner court and having a plurality of wickets giving access in either direction to and from the outer court, the outer series of rails being separated from the inner series by a continuous unobstructed space through which a ball may be driven in any direction and against any rail of either series, the rails of both inner and outer series being substantially straight.

4. A game apparatus comprising an inner series of ball-caroming rails arranged to form an inner inclosed court having a wicket giving access in either direction to and from said court, an outer series of ball-caroming rails arranged to form an outer inclosed court surrounding the inner court, an end court outside said outer court, and a wicket connecting the outer court with the end court, the rails of both series being substantially straight, and the spaces forming both courts being practically free from obstructions.

5. A game apparatus comprising an inner series of ball-caroming rails arranged to form an inner inclosed court having a wicket giving access in either direction to and from said court, an outer series of ball-caroming rails arranged to form an outer inclosed court surrounding the inner court, an end court outside said outer court, a wicket connecting the outer court with the end court, and a stake in the end court, the rails forming the inner and outer courts being substantially straight, and the space between the inner and outer series of rails being unobstructed.

6. A game apparatus comprising an inner series of ball-caroming rails arranged to form an inner inclosed court having a wicket giving access in either direction to and from said court, an outer series of ball-caroming rails arranged to form an outer inclosed court surrounding the inner court, end courts at opposite ends of the outer court, one of said courts being a starting and the other a turning court, wickets connecting the end courts with the outer court, and stakes on the said end courts, the rails forming the inner and outer courts being substantially straight, and the space between the inner and outer series of rails being unobstructed.

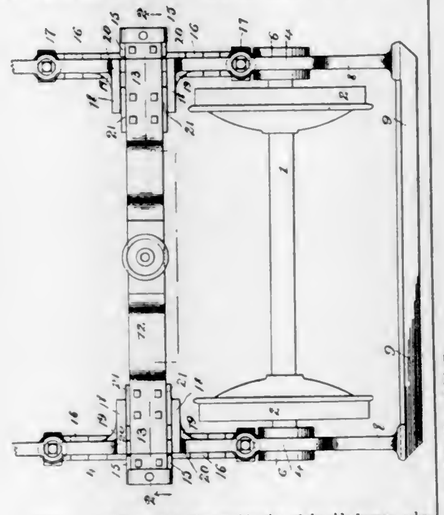
7. A game apparatus comprising ball-caroming rails arranged to form an inclosed court and having a wicket giving access to and from said court, said wicket being an opening between the adjacent ends of two rails, and a rotative obstruction or turnstile in said opening comprising a hub rotatable in either direction, and a plurality of arms connected with the hub and movable in the path of the ball through said opening, the arms being rotatively supported by the hub and adapted to be rotated in unison in either direction by a ball passing through the opening, so that any arm may be left after the passage of a ball, in position to become an obstruction or hazard for a succeeding ball.

8. A game apparatus comprising a floor-space bounded by a caroming-railing and having a wicket or opening, said railing forming a deflecting-wall for a ball directed through said wicket, and having an elevated horizontally-projecting edge adapted to prevent the ball from jumping over the railing.

9. A game apparatus comprising floor-spaces separated by a caroming-railing having an opening or wicket, said railing forming a deflecting-wall for a ball, and having elevated horizontally-projecting edges adapted to prevent the ball from jumping over the railing.

10. A game apparatus comprising floor-spaces separated by a caroming-railing having an opening or wicket, and a turnstile in said opening having lower radial arms and upper radial arms of greater width than the lower arms to prevent a ball from jumping over the turnstile.

656,878. CAR-TRUCK. JOHN A. BRILL, Philadelphia, Pa. Original application filed May 15, 1899, Serial No. 716,884. Divided and this application filed Dec. 18, 1899. Serial No. 740,637. (No model.)



Claim.—1. In a car-truck, the combination of the side frames, axles and wheels, and axle-boxes, the side frames having axle-box pedestals, arms extending from the pedestals beyond the wheels, cross-bars connecting the arms transversely outside of the wheels, the paired brackets 18 extending inwardly from the side frames, and transversely disconnected from each other, and a bolster movably suspended in part within said brackets.

2. In a car-truck, the combination of the side frames having inwardly-extending spaced brackets, such as 18, and a bolster movably suspended between and guided by said brackets, substantially as described.

3. In a car-truck, the combination of the side frames having inwardly-extending spaced brackets, such as 18, a bolster having pendent elements thereon, and located between said brackets, and means for movably supporting said bolster, substantially as described.

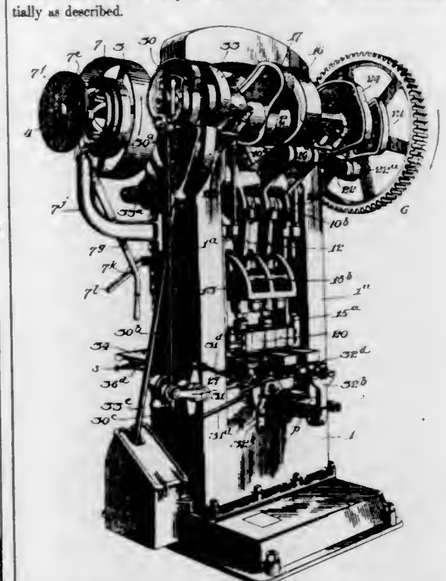
4. In a car-truck, the combination of the side frames having the side bars 4, the brackets 18, extending inwardly from the side bars, a bolster, paired inner and outer brackets, 14, 15, disposed at each side of the bar 4, said brackets being secured to the bolster above said bar 4, means for supporting said brackets from the bar 4, the inner bracket 14 lying between the brackets 18, which latter act as transoms for said inner brackets, substantially as described.

5. In a car, the side frames having the paired and alined lugs 20, the brackets 18, extending inwardly from said lugs, and a bolster movably supported between and guided by said brackets, substantially as described.

656,879. RE-PRESS BRICK-MACHINE. CYRUS CHAMBERS, JR., Overbrook, and HOWARD K. KING, Philadelphia, Pa., assignors to the Chambers Brothers Company, Philadelphia, Pa. Filed May 31, 1898. Serial No. 682,125. (No model.)

Claim.—1. In a machine of the character described, the combination with the feed-table, of the lateral roller, or rollers, having the upper surface projecting above the top of said table, substantially as and for the purpose specified.

2. In a machine of the character described, the combination with the feed-table, of the lateral roller, or rollers, having their upper surface projecting above the top of the said table, and means for effecting adjustments of said rollers to vary the extent of their said projection, substantially as described.



3. In a machine of the character described, the combination with the feed-table, of the lateral roller, or rollers, having the upper surface projecting above the top of said table, and means for applying oil to said roller or rollers, substantially as and for the purpose specified.

4. In a machine of the character described, the combination with the feed-table, of the lateral roller, or rollers, having the upper surface projecting above the top of said table, and the guide-stop at right angles to and adjacent to the end of said roller, substantially as and for the purpose specified.

5. In a machine of the character described, the combination with the feed-table, of the lateral roller, or rollers, having the upper surface projecting above the top of said table, and the guide-bar projecting above the top of said table, and parallel with said roller, or rollers, substantially as and for the purpose specified.

6. In a machine of the character described, the combination with the feed-table, of the lateral roller, or rollers, having the upper surface projecting above the top of said table, the guide-stop at right angles to and adjacent to the end of said roller, and the guide-bar projecting above the top of said table, and parallel with said roller or rollers, substantially as and for the purpose specified.

7. In a machine of the character described, the combination of the mold, the plunger, and means for operating the same respectively, the anvil, and the delivery-plate whose width is less than that of the smallest bricks which the machine is adapted to make, and having also the end portions below the plane of the top of the body of the plate, whereby the lower edges of the brick will be out of contact with the plate, together with mechanism for carrying the latter beneath the said plunger and mold-box and retracting the same, substantially as and for the purpose specified.

8. In a machine of the character described, the combination of the mold-box, the plunger, the anvil provided with the vent-holes, means for actuating said mold-box and plunger respectively, means for opening and closing said vent-holes at predetermined times, the delivery-plate located relatively to the plunger, mold-box and anvil, as shown and described, and having the cutting edge, 32^{l}, and means for reciprocating said plate, all constructed and adapted to operate substantially as and for the purpose set forth.

9. In a machine of the character described, the combination of the mold-box, the plunger, the anvil provided with the vent-holes, means for actuating said mold-box and plunger respectively, means for opening the exits of said vent-holes at predetermined times, the delivery-plate located relatively to said plunger, mold-box and anvil, and having the openings, *h*, and the cutting edge, *e*, together with means for reciprocating said plate, all constructed and adapted to operate substantially as and for the purpose set forth.

10. In a machine of the character described, the combination of the

mold-box, the plunger, the anvil provided with the vent-holes, means for actuating said mold-box and plunger respectively, means for opening the exits of said vent-holes at predetermined times, the delivery-plate located relatively to the plunger, mold-box and anvil, and having the cutting edge, 32^{f}, the openings, *h*, and the cutting edge, *e*, together with means for reciprocating said plate, all constructed and adapted to operate substantially as and for the purpose set forth.

11. In a machine of the character described, the combination of the anvil, the mold-box, the cross-head, the plunger movably connected to the latter, the spring tending to depress the plunger, the stop for limiting the depression of the latter with relation to the cross-head, the bolts connected to the cross-head, and having hooks engaging the ends of said spring, and means for adjusting said bolts, whereby the tension of the spring may be varied, substantially as and for the purpose set forth.

12. In a machine of the character described, the combination of the mold-box and the plunger adapted to reciprocate therein, and having the detachable steel linings, their upper portion being offset, and secured to the body part of the plunger by means of screws or the like, extending through said offset portion, substantially as and for the purpose specified.

13. In a machine of the character described, the combination of the mold-box, the plunger therein, the mechanism for reciprocating said mold-box and plunger respectively, the wings on said mold-box, the rods connecting the latter with its actuating mechanism, the flanges on the ends of said rods, and the bolts, connecting said wings and flanges, passed through apertures in the wings respectively, of larger diameter than that of the bolts, whereby the mold-box may be laterally adjusted with relation to the plungers, substantially as and for the purpose set forth.

14. In a machine of the character described, the combination of the anvil having the vent-holes, the plunger, the mold-box, means for actuating said plunger and box respectively, the vent-hole valve having the apertures therein, and means for actuating said valve, at predetermined times to bring the apertures into and out of registry with said vent-holes, substantially as and for the purpose set forth.

15. In a machine of the character described, the combination of the anvil, having the vent-holes, the plunger, the mold-box, means for actuating said plunger and mold-box respectively, the cylindrical vent-hole valve beneath the anvil and having the apertures therein, and mechanism, substantially as described, for rocking said valve, at predetermined times to bring the said apertures into and out of registry with the vent-holes, substantially as and for the purpose specified.

16. In a machine of the character described, the combination of the anvil, the plunger, the mold-box having the lateral extensions, and means for actuating said plunger and mold-box respectively, substantially as and for the purpose set forth.

17. In a machine of the character described, the combination of the anvil, the plunger, the mold-box having the lateral extensions, and the forward-end extension, the feed-bar, the cross-bar carried thereby, means for operating said feed-bar, means for actuating the mold-box, and means for actuating the plunger, all at predetermined relative times substantially as and for the purpose set forth.

656,880. RE-PRESS BRICK-MACHINE. CYRUS CHAMBERS, Jr., Overbrook, Pa., assignor to the Chambers Brothers Company, Philadelphia, Pa. Filed Mar. 15, 1899. Serial No. 709,122. (No model.)

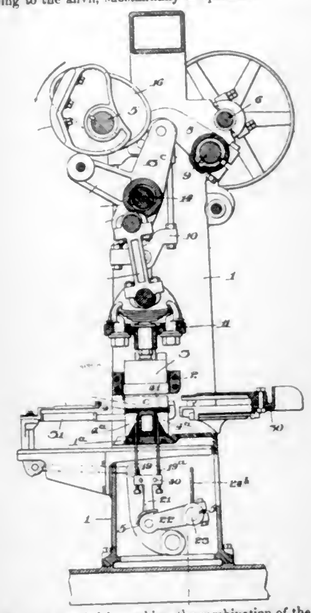
Claim.—1. In a re-press brick-machine, the combination of the mold-box, the vent-holes therein, the plunger adapted to work in said mold-box, the pins in registry with said vent-holes, and means for actuating said pins to cause them to enter said holes at a predetermined time during the compression of the clot and force back the clay then occupying said holes into the body of the clay contained in the mold-box, substantially as and for the purpose set forth.

2. In a re-press brick-machine, the combination of the mold-box having the vent-holes therein, the plunger adapted to work in said box, the pins in registry with said holes, and means for actuating said pins to cause the same to enter said holes at a predetermined time and force back the clay therein into the body of the compressed clay within the mold-box, and means whereby the clay issuing from the vent-holes is deflected out of the path of the pins, substantially as and for the purpose set forth.

3. In a re-press brick-machine, the combination of the mold-box having vent-holes therein, the plunger adapted to work in said mold-box, an anvil having guide-holes, the vertically-disposed pins in corresponding guide-holes of the anvil in registry with the vent-holes, the upper portion of said guide-holes opening outwardly as shown, and means for imparting vertical reciprocations to said pins to cause them to enter and retract from said vent-holes, at predetermined times, substantially as and for the purpose set forth.

4. In a re-press brick-machine of the character recited, the combination of the anvil, its removable lining, and the removable flanged plug or bushing having the vent-holes and secured to the anvil, whereby said lining is maintained in place, substantially as described.

5. In a re-press brick-machine, of the character recited, the combination of the anvil, its removable lining, and the removable plug or bushing having vent-holes therein, the flanged head seated in a socket in said lining and its shank screwed into an aperture in the anvil, whereby the device serves the twofold function of a vent-plug and a means for securing the lining to the anvil, substantially as specified.



6. In a re-press brick-machine, the combination of the stationary anvil having the vent-holes, the open mold-box, the plunger adapted to work therein, means for actuating said mold-box and plunger respectively, the vertically-movable pins in registry with the said vent-holes, and means for causing said pins to enter said holes at the hereinbefore-stated predetermined time, during the operation of compressing the clot within the mold-box, substantially as and for the purpose described.

7. In a re-press brick-machine, the combination of the mold-box, the plunger adapted to work therein, the anvil or bottom of the mold-box having the vent-holes therein, the pins in registry with said holes, means for actuating said pins, and means for adjusting the latter longitudinally, substantially as and for the purpose set forth.

8. In a re-press brick-machine, the combination of the mold-box, the plunger adapted to work therein, the anvil or bottom of the mold-box having the vent-holes therein, the pins in registry with said holes, mechanism, substantially as described, for actuating said pins, and means for adjusting said mechanism whereby the timing of the movements imparted to said pins may be varied as required, as and for the purpose set forth.

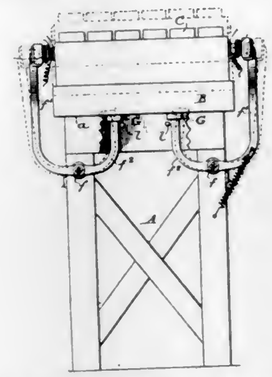
9. In a re-press brick-machine, of the character described, the combination of the mold-box and plunger, the anvil or bottom of the mold-box having the vent-holes therein, the rock-shaft, the pins connected with said shaft and in registry with said vent-holes, the arm on said shaft, the rotatable cam, 28, the rod connecting said arm and cam, and means, substantially as described, for effecting rotative adjustments of said cam, substantially as and for the purpose set forth.

656,881. EYEGLASSES. JOSEPH J. CLAIRMONT, New York, N. Y. Filed Jan. 26, 1899. Serial No. 703,406. (No model.)



Claim.—The combination with a pair of eyeglasses and a mounting therefor, of nose-clips, each consisting of a continuous substantially ring-like base-piece of pliable metal, means for detachably fastening said base-piece at one side directly to the mounting so that substantially all of the clip is located to one side of the plane of the eyeglasses, and a separate pliable ring-like pad-piece secured to the base-piece and covering the surface thereof, said base and pad pieces being so shaped as to form a broad substantially-continuous bearing-surface presenting in every direction two separated broad bearing-surfaces substantially as described.

656,882. CHARGING-STAND AND CONTACT FOR STORAGE BATTERIES. GEORGE H. CONDICT, New York, N. Y., assignor to the Electric Vehicle Company, same place. Filed July 18, 1898. Serial No. 686,231. (No model.)



Claim.—1. In combination with a storage battery including a tray, contacts therefor, a movable member comprising a contacting portion and a battery-engaging portion said engaging portion lying in the path of the battery and adapted when engaged by the battery to cause positive engagement of the contacting portion and battery-contact.

2. The combination with a suitable support, of moving contact-carrying levers connected to a charging-circuit and normally out of operative position, a tray adapted to contain storage batteries to be charged and provided with fixed contact-pieces in the path of the moving contacts and means operated by the tray for moving the said levers and bringing their contact-pieces against the contact-plates on the tray and for releasing the same when the tray is removed.

3. The combination with a suitable support of contact-carrying levers attached thereto, connections from a charging-circuit to the contacts carried by the levers, a tray containing storage batteries to be charged, stationary contact-plates upon the tray adapted to register with those carried by the levers, extensions connected with the levers and adapted to be engaged by the tray when in position upon the table and to actuate the levers and bring their contacts into electrical connection with the plates upon the tray by the movement of the tray, thereby closing the charging-circuit.

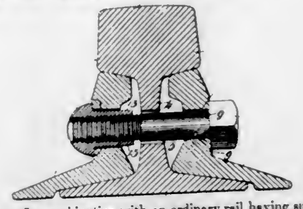
4. In combination with a table or support, a tray adapted to contain storage batteries to be charged and provided with fixed contact-plates, a double-arm contact-carrying lever pivotally attached to the support, an insulated contact device attached to one of the arms of the lever, the other arm thereof being arranged to project above the top of the support and to be depressed by the weight of the tray of batteries when placed upon the support, thereby rocking the lever and forcing the contact device carried by the other arm into engagement with the contact-plate upon the tray.

5. In combination with a support or table adapted to receive storage batteries to be charged, a pivotally-mounted contact-carrying lever one extremity of which normally extends above the top of the table and its other extremity provided with a contact device adapted to normally extend away from the table.

6. The combination with a table or support of a double-arm carrying-lever having one arm longer than the other, an insulated contact device attached to the longer arm and a weight, as a tray of batteries to be charged, adapted to engage the shorter arm and force the said longer arm into operative position.

7. The combination with a tray adapted to contain storage batteries to be charged and provided with fixed contact-plates, of a support therefor, a rocking contact-carrying lever attached thereto and having a part arranged in the path of the tray, and adapted when engaged thereby to be brought into contact with the contact-pieces upon the tray.

656,883. RAIL-JOINT. CHARLES B. EAMES, St. Louis, Mo. Filed Jan. 26, 1900. Serial No. 2,929. (No model.)

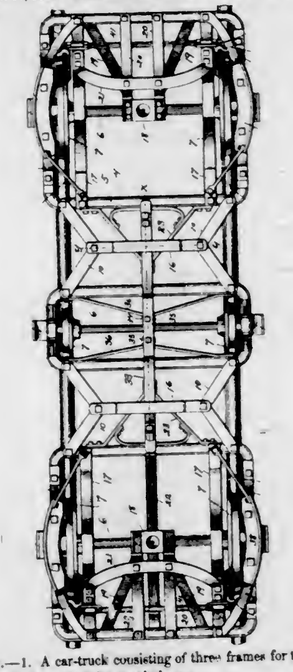


Claim.—In combination with an ordinary rail having suitable openings formed in the web portion thereof, of angle-bars located on either side of the rail, each of said angle-bars being provided with openings, the openings in one of said angle-bars being rectangular in shape, nuts having enlarged heads normally in contact with the outer surface of said angle-bars, rectangular-shaped extensions forming a part of said nuts, and having inclined sides, the said extensions adapted to be received by the rectangular-shaped openings formed in one of the angle-bars, and extending beyond the inner surface of the same, and bolts, the screw-threaded ends of which are adapted to be received by screw-threaded openings formed in said nuts, and extensions thereof, as and for the purpose described.

656,884. ADHESIVE PRODUCT. GEORG EICHELBAUM, Königsberg, Germany, assignor to Friedrich Hornig, Taucha, Germany. Filed June 12, 1899. Serial No. 720,196. (No specimens.)

Claim.—An adhesive substance obtained from beet-root chips, in which the levogyrate kind of gum is prevalent over the dextrogyrate kind and of which adhesive substance a solution in water will immediately become gelatinous by adding alkali or ammonia.

656,885. RADIAL CAR-TRUCK. JOHN P. FAYE, Binghamton, N. Y., assignor to the National Car Truck Company, Port Byron, N. Y. Filed Mar. 17, 1898. Renewed Jan. 26, 1900. Serial No. 2,914. (No model.)



Claim.—1. A car-truck consisting of three frames for the axles and wheels connected together by toggle-levers.

2. A car-truck comprising three frames for the axles and wheels connected together by toggle-levers and a bar connecting said toggle-levers between the truck-frames.

3. A car-truck comprising three frames for the axles and wheels con-

nected together by toggle-levers, two of which are adapted for swiveling connection to a car-body and the other to have a transverse motion relative the body of the car.

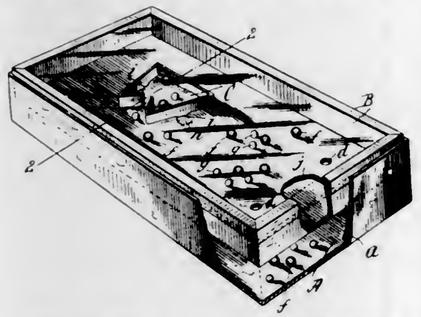
4. A car-truck comprising three frames for the axles and wheels, toggle-levers connecting said frames, bars connecting said toggle-levers, and a reach carried by the middle frame embracing the frames of the end frames.

5. The combination in a car-truck, of three frames for the axles and wheels connected together by toggle-levers, a reach carried by the middle frame adapted to embrace the end frames, and yoke-irons pivotally connected with said reach.

6. A car-truck comprising three sections or frames each of which is adapted for an axle and pair of wheels, toggle-levers connecting said frames, transverse bars connecting said levers, a reach carried by the middle section or frame and yoke-irons secured to the end frames and pivotally connected to the reach.

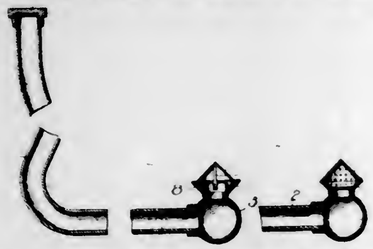
7. A car-truck comprising three frames each adapted for an axle, a reach secured to the middle frame and adapted to loosely engage the end frames, yoke-irons secured to the end frames one of which is pivotally connected to the reach and the other pivotally connected therewith and longitudinally movable thereon, and means for loosely or flexibly connecting the end frames to the middle frame.

656,886. **GAME OR PUZZLE.** THEODOR R. GEISEL, Springfield, Mass. Filed Feb. 12, 1900. Serial No. 4,344. (No model.)



Claim.—In a game or puzzle, the combination with the lower tray A, of the upper tray supported therewithin with its bottom above the bottom of the lower tray, and having one or more holes D through its bottom, and having an inclosure C nearly surrounded by an edgewise-applied strip suitably bent to form the boundaries of the inclosure and which has tongues which project downwardly through slots or slits which are formed in the bottom of said upper tray, and which are underturned and engaged against the bottom of said tray, substantially as described.

656,887. **ROOT-IRRIGATING DEVICE.** JEROME A. GOLIBART, Sykesville, Md. Filed Apr. 9, 1900. Serial No. 12,187. (No model.)



Claim.—1. A root-irrigating device comprising a conduit beneath the surface of the ground and adjacent to the roots, said conduit having a deflected end terminating in a discharge-nozzle disposed at an angle to said end.

2. A root-irrigating device comprising a conduit beneath the surface of the ground and adjacent to the roots, said conduit having a laterally-deflected end terminating in a discharge-nozzle disposed substantially in the direction of the main portion of the conduit.

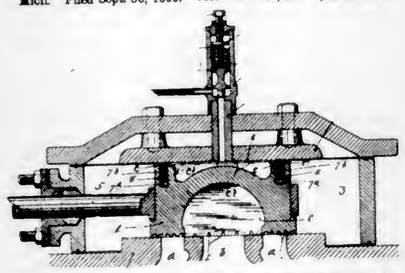
3. A root-irrigating device comprising a tube having a laterally-deflected end provided with an angular extremity forming a discharge-nozzle disposed substantially parallel to the main portion of the tube, and detachable means for closing the receiving end of said tube.

4. A root-irrigating device comprising a tube having a deflected lower end terminating in an upwardly-disposed discharge-nozzle and a protective device disposed above said nozzle.

5. An irrigating device comprising a tube having a deflected end and a conical protecting-cap carried by the tube and located beyond its end.

6. A root-irrigating device comprising a condnit having a reservoir located therein, and having a deflected lower end terminating in a discharge-nozzle disposed at an angle to said end.

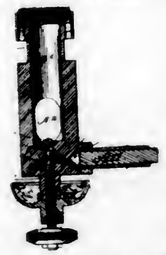
656,888. **ENGINE-VALVE.** WINFIELD S. HAINES, Gladstone, Mich. Filed Sept. 30, 1899. Serial No. 732,254 (No model.)



Claim.—1. In a balanced slide-valve, the combination with the valve and the balancing-plate, of packing-strips having pits or cups in their faces open to steam-pressure, whereby the strips are lubricated and are partly balanced, substantially as described.

2. In a balanced slide-valve, the combination with the valve and the balancing-plate, of the packing-strips carried by the valve and the springs for preventing the strips from falling away from the surfaces which they are intended to pack when the steam is turned off, whereby the said packing-strips will always be forced into proper packing position when the steam is turned on, substantially as described.

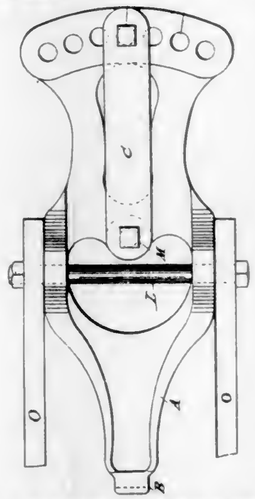
656,889. **HYDROCARBON-LAMP.** WILLIAM HAWES, Chicago, Ill., assignor to Thomas B. Jeffery and Charles F. Stokes, same place. Filed Mar. 22, 1900. Serial No. 9,724. (No model.)



Claim.—1. A lamp-body for hydrocarbon-burners, composed of an integral piece of metal of hollow, cylindrical form, having a closed lower end and an open upper end, openings on opposite sides of the lamp-body for admitting air to the interior thereof, two transverse grooves in the walls of said body portion on opposite sides thereof, and an opening in the upper side wall of each of said grooves, communicating between the interior of said body portion and said groove; a stem at the closed lower end of said cylinder, which stem has a longitudinal opening internally screw-threaded to receive the needle-valve stem; the body portion also having an opening threaded to receive the hydrocarbon-supply pipe, an opening for receiving the supply-valve, and ducts extending from the supply-pipe opening to the supply-valve opening and from the latter to the needle-valve opening.

2. In a hydrocarbon-lamp, a lamp-body composed of an integral piece of metal of hollow, cylindrical form, having a closed lower end and an open upper end, openings on opposite sides of the lamp-body for admitting air to the interior thereof, two transverse grooves in the walls of said body portion on opposite sides thereof, and an opening in the upper side wall of each of said grooves, communicating between the interior of said body portion and said groove; a stem at the closed lower end of said cylinder, which stem has a longitudinal opening internally screw-threaded to receive the needle-valve stem; the body portion also having an opening threaded to receive the hydrocarbon-supply pipe, an opening for receiving the supply-valve, and ducts extending from the supply-pipe opening to the supply-valve opening and from the latter to the needle-valve opening: in combination with a needle-valve having a screw-threaded stem, a closure-face, and a needle-point of uniform diameter extending from said closure-face; a hydrocarbon-supply pipe; and a supply-valve.

656,890. **CLEVIS.** WALTER P. HENDON, Dallas, Tex., assignor to E. Bement's Sons, Lansing, Mich. Filed Nov. 9, 1899. Serial No. 736,342. (No model.)

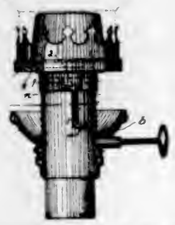


Claim.—1. A clevis having a vertical series of holes at its middle portion and a rack at its posterior extremity adapted to engage a corresponding rack on the draw-bar of the implement to which it is attached, substantially as described.

2. A clevis having a vertical series of holes through its middle portion and a rack at its posterior extremity adapted to engage a corresponding rack on the draw-bar of the implement to which it is attached and a forwardly-extending projection containing holes adapted to receive a whiffletree-bolt, substantially as described.

3. In a clevis having anterior and posterior projections, the latter being formed into a rack, and a vertical series of holes in combination with the rack G and strap C and means for securing the said clevis and strap in position substantially as described.

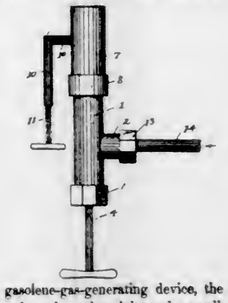
656,891. **CHIMNEY-RAISING DEVICE.** WILLIAM M. HOERLE, Allegheny, Pa., assignor to the Pittsburgh Lamp and Brass Company, Pittsburg, Pa. Filed June 30, 1899. Serial No. 722,361. (No model.)



Claim.—1. In chimney-raising devices, the combination with an outer wick-tube having depressed bayonet-joint guideways formed in its main body portion, of a wick-sleeve moving within the outer wick-tube, and guided by the bayonet-joint guideways, and a chimney-gallery provided with a collar fitting over the outer wick-tube, and carrying lugs adapted to engage with the said bayonet-joint guideways; substantially as described.

2. The combination of an outer wick-tube having a main body portion and above the same a cylindrical lip of smaller diameter than the main body portion and having depressed bayonet-joint guideways formed in the main body portion, a wick-sleeve moving within the outer wick-tube and guided by the bayonet-joint guideways, and a chimney-gallery adapted to engage with the bayonet-joint guideways.

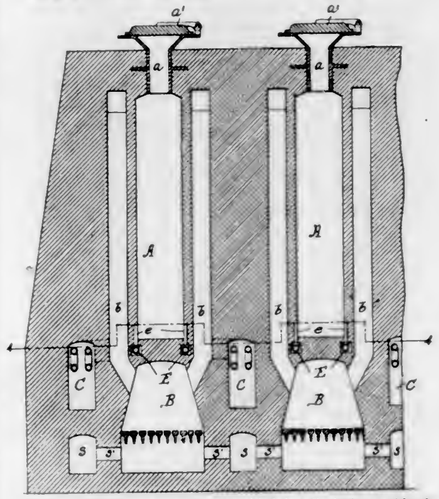
656,892. **GASOLENE-GAS-GENERATING DEVICE.** SHELDON JOSEPH, Columbus, Ohio. Filed Feb. 7, 1900. Serial No. 4,323. (No model.)



Claim.—1. In a gasolene-gas-generating device, the combination with the tube 1 having a lateral gasolene-inlet and a needle-point valve-opening at the upper end of its central passage, the upper end of said tube having a groove leading from said valve-opening to a vertical groove in the periphery of said tube and a needle-point valve passing through said tube and controlling said needle-point opening therein, of a cap 7 surrounding the upper portion of said tube and detachably connected therewith, said cap having an angular tubular arm 10 projecting therefrom and communicating with the side groove of said tube, a needle-point valve-opening in said angular arm and a needle-valve controlling the same, substantially as specified.

2. In a gasolene-gas-generating device, the combination with a main tube 1 having a lateral inlet 2, said tube having its central passage terminating in a needle-point valve-opening, the latter communicating with a groove formed in said tube and leading down the side thereof, and a needle-valve extending through the central passage of said tube 1 and controlling said needle-point opening, of a cap 7 surrounding and detachably connected with the upper portion of said tube 1, a packing-ring adjustably secured on said tube 1 and having the upper portion of its inner side recessed to receive the lower end of said cap and a lateral outlet-tube formed with said cap and communicating with the side groove of said tube 1, substantially as specified.

656,893. **APPARATUS FOR TREATING COAL AND ORES.** JEANNOT W. KENEVEL, Chicago, Ill., assignor to the Tennessee Coal, Coke and By Product Company, Harriman, Tenn. Filed May 20, 1899. Serial No. 717,637. (No model.)



Claim.—1. In an apparatus of the kind described, the combination of a horizontally-arranged retort having means for charging and discharging the same, a combustion-chamber beneath the retort, a substantially-

vertical flue communicating with the combustion-chamber and arranged at the side of the retort for heating the same, an elongated horizontal flue C located adjacent said retort and combustion-chamber and communicating by means of a return-flue with said vertical flue, a steam-heating pipe in said flue C, and connection from the same into the retort, substantially as described.

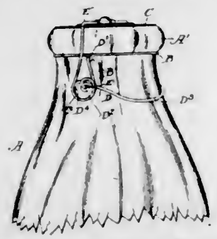
2. In an apparatus of the kind described, the combination of a horizontally-arranged elongated retort having means for charging and discharging the same, a combustion-chamber beneath the retort, an elongated horizontal flue C located adjacent said retort and combustion-chamber, a plurality of vertical flues communicating with the combustion-chamber and arranged at the side of the retort, a plurality of return-flues arranged at the side of the retort substantially the same distance therefrom as said vertical flues and communicating with said vertical flues and said horizontal flue C, a steam-pipe located in said flue C, and connection from the same into the retort, substantially as described.

3. In an apparatus of the kind described, the combination of a plurality of horizontal elongated retorts arranged side by side and having means for charging and discharging the same, a combustion-chamber beneath each retort, a plurality of horizontal flues C arranged between the retorts and combustion-chambers on a horizontal plane substantially at the base of the retorts, a plurality of vertical flues *b* arranged at opposite sides of each retort and communicating with the combustion-chamber beneath the retort, a plurality of return-flues *b'* communicating with the flues *b* and arranged at opposite sides of each retort, the flues *b'* on one side of the retort communicating with one flue C and the flues *b'* on the other side of the retort communicating with another flue C, steam-heating pipes located in said flues C, and connection from the steam-pipes into said retorts, substantially as described.

4. In an apparatus of the kind described, the retort A, provided with means for charging and discharging the same and also with the escape-port I', the hydraulic main G, and means for directing the discharge of the gases and volatile elements from the retort through either the main or the port I', in combination with the branch gas-pipes 5 and the burners 6, arranged substantially as described, the flues *b b'*, the horizontal superheating-flue C, and steam-pipe located in the flue C and arranged to discharge steam in the charge in the retort at a plurality of points, substantially as described.

5. In an apparatus of the kind described, the retort A provided with means for charging and discharging the same and also with the escape-port I', the hydraulic main G, and means for directing the discharge of the gases and volatile elements from the retort through either the main or the port I', in combination with the combustion-chamber B, provided with ports *s'*, the flue S provided with branch flues with which latter said ports connect, the gas-supply pipe 1 provided with branch pipes 5, located in the flues *s*, and burners 6 arranged substantially as described, the flues *b, b'*, the superheating-flue C, steam-pipes located in said flue C and arranged to discharge steam into the retort at a plurality of points, and a fluid-receptacle arranged to deliver a fluid into the steam-pipes at will, substantially as described.

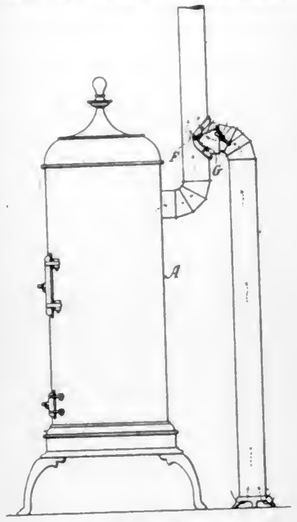
656,894. **ELASTIC MILK-BOTTLE FASTENER.** JOHN B. KIMBER, Middletown, N. Y., assignor to Annie M. Kimber, same place, and Charles H. C. Beakes, New York, N. Y. Filed Feb. 26, 1900. Serial No. 6,446. (No model.)



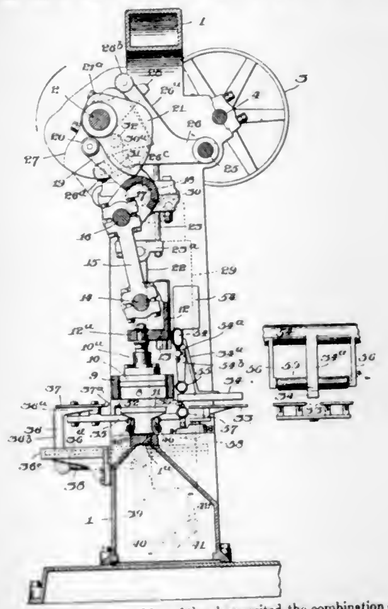
Claim.—In a fastener for a milk-bottle or like receptacle, the lever, D, having the volute curves, D^4, interposed between the fulcrum and the bearing, D^2, for the bail, in combination with the bail E, having the volute curves E' interposed between the top, E, and the pivots, E^2, the curves, D^4, and E' being in opposite directions so that the wires cross each other and avoid engagement, substantially as herein specified.

656,895. **COMBINED DAMPER-REGULATOR AND VENTILATOR.** FREDERICK L. KING, Philadelphia, Pa. Filed Dec. 20, 1899. Serial No. 740,989. (No model.)

Claim.—A flue, a damper pivoted at the bottom thereof, a crank-shaft, the radial arm of which extends upwardly, and a connecting-link pivotally attached to the damper and to said upwardly-extending arm, said parts being so constructed and arranged that the damper is closed and held closed when the arm is thrown to one side of the pivotal shaft and is opened when the arm is moved in the opposite direction.



656,896. **RE-PRESS BRICK-MACHINE.** HOWARD K. KING, Philadelphia, Pa., assignor to the Chambers Brothers Company, same place. Filed Aug. 27, 1897. Serial No. 649,703. (No model.)



Claim.—1. In a machine of the class recited, the combination of the anvil, the mold-box whose internal length and breadth are slightly greater than the corresponding dimensions of the anvil, the plunger within the mold-box; means for effecting a downward movement of the mold-box to incase a clot suitably placed upon the anvil and to cause the lower ends of the said box to pass below the anvil; means for effecting a substantially-simultaneous upward movement of the plunger; means for effecting a substantially-simultaneous upward movement of the mold-box and plunger, and means for effecting an upward movement of the mold-box, the said several movements being successively effected substantially as and for the purpose set forth.

2. In a machine of the class recited, the combination of the anvil, the mold-box whose internal length and breadth are slightly greater than the corresponding dimensions of the anvil, the plunger within the mold-box means for effecting a downward movement of the mold-box to incase a clot suitably placed on the anvil and to cause the lower ends of the said box to pass below the anvil, means for effecting a downward movement of the plunger, means for effecting a substantially-simultaneous upward movement of the mold-box and plunger, means for effecting an upward movement of the mold-box, means for effecting a slight downward movement of the plunger simultaneously with the last-mentioned upward movement of the mold-box, substantially as and for the purpose set forth.

3. In a machine of the class recited, the combination of the anvil, the mold-box suspended above the same, the plunger fitted to said mold-box, mechanism for imparting the vertical reciprocations to said mold-box and plunger, respectively, the table located relatively as shown, the feed-bar having the cross-bar projecting above the plane of said table, the delivery-plate mounted on said feed-bar in a plane above the top of the anvil together with mechanism for reciprocating said feed-bar at predetermined intervals, substantially as and for the purpose set forth.

4. In a machine of the class recited, the combination of the anvil, the mold-box suspended above the same, the plunger fitted to said mold-box, mechanism for imparting the vertical reciprocations to said mold-box and plunger respectively, the feed-bar, the off-bearing plate mounted thereon in a plane above that of the top of the anvil, and having the upward projection or flange, and means for reciprocating said bar, whereby the said plate is brought into position beneath the mold-box and over the top of the anvil, and retracted therefrom, substantially as and for the purpose set forth.

5. In a machine of the class recited, the combination of the anvil, the table located with relation to the anvil as shown, the mold-box suspended above the latter, the plunger fitted thereto, mechanism for imparting the vertical movements to said mold-box and plunger with relation to the anvil, the feed-bar having the cross-bar projecting above the plane of the anvil, and means for reciprocating said feed-bar; together with the spring-controlled or yielding stop located relatively to the mold-box and the feed-bar substantially as and for the purpose shown, all constructed and adapted to operate as and for the purpose set forth.

6. In a machine of the class recited, the combination of the anvil, the mold-box, the plunger fitted thereto, mechanism for imparting the reciprocations to said plunger and mold-box, respectively, the vent-holes through the anvils adapted to communicate with the interior of the mold-box, and means for closing and opening the exits of said vent-holes at predetermined intervals, substantially as and for the purpose set forth.

7. In that class of brick-machines, wherein clay is formed into the shape of bricks by means of a mold, and a plunger adapted to reciprocate therein, the combination with the mold-box of vent-holes through the anvil, adapted to communicate with the interior of said mold-box; together with means for closing and opening said holes at predetermined intervals, substantially as and for the purpose set forth.

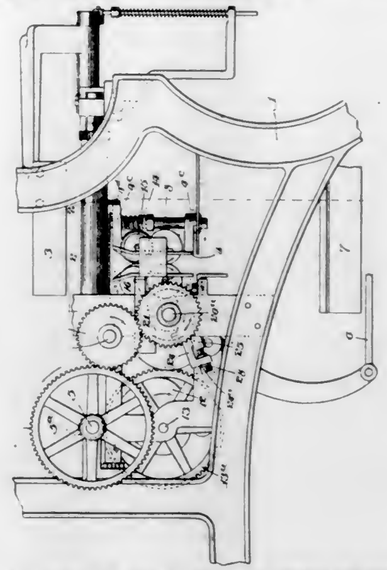
8. In a machine of the character described, the combination of the anvil, the mold-box suspended above the same, the plunger fitted to the mold-box, mechanism for imparting the vertical reciprocations to said mold-box and plunger respectively, the vent-holes extending substantially vertically through the anvil, and means for closing and opening the lower ends of said holes, at predetermined intervals, substantially as and for the purpose set forth.

9. In a machine of the character described, the combination of the anvil, the mold-box suspended above the same, the plunger fitted to said mold-box, means for imparting vertical reciprocations to said mold-box and plunger, respectively, substantially as described, the vent-holes in the anvil, the rock-shafts having pins or the like thereon, and means for actuating said shafts at predetermined times, whereby said pins are caused to close and open the exits of said holes, respectively, substantially as and for the purpose set forth.

10. In a machine of the class recited, the combination of the stationary anvil, the mold-box, the plunger fitted to said box, mechanism for imparting the vertical reciprocations to said box and plunger, respectively, the feed-table, the feed-bar having the cross-bar projecting above the plane of said table, mechanism for reciprocating said feed-bar, and off-bearing plate mounted on the latter in a plane above the top of the anvil, substantially as and for the purpose described.

656,897. **PAPER-FOLDING MACHINE.** HOWARD K. KING, Philadelphia, Pa., assignor to the Chambers Brothers Company, same place. Filed Apr. 11, 1900. Serial No. 12,402. (No model.)

Claim.—1. In a shoo-fly for folding-machines, the combination of the transfer-box, two opposed sets of freely-revoluble wheels or disks, journaled to said box and projecting into the same, and the positively-driven wheel against which one of the first-mentioned wheels is adapted to impinge when the transfer-box is swung into position over the packing-trough, substantially as and for the purpose set forth.

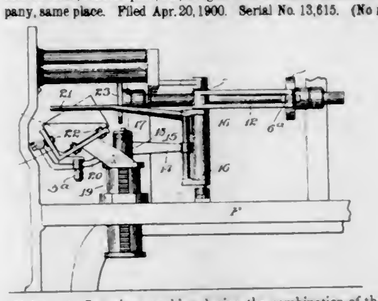


2. In a shoo-fly for folding-machines, the combination of the transfer-box, the freely-revoluble momentum-wheel and a disk or wheel opposed thereto, the two opposed sets of freely-revoluble wheels or disks, subjacent to said wheel and first-mentioned wheels, said several wheels being journaled to the transfer-box and projecting into the same, together with the positively-driven wheel against which one of the lower wheels or disks, when the transfer-box is swung into position over the packing-trough, substantially as and for the purpose set forth.

3. In a shoo-fly for folding-machines, the combination of the transfer-box, the revoluble momentum-wheel, the revoluble disk opposite thereto, said disk and salient peripheral part of said wheel being staggered, the two sets of revoluble disks subjacent to the said wheel and first-mentioned disk, and relatively staggered, and the positively-driven wheel against which one of said subjacent disks is adapted to impinge when the transfer-box is brought into position over the packing-trough, substantially as and for the purpose set forth.

4. In a shoo-fly for folding-machines, the combination of the transfer-box, the revoluble grooved momentum-wheel, the revoluble disk, 16, said wheel and disk being arranged relatively as shown, the two lower sets of revoluble disks, arranged relatively to each other and to the said wheel and disk as shown, and means for longitudinal adjustment of the disks of one of said sets, with relation to those of the other set, substantially as and for the purpose set forth.

656,898. **PACKING DEVICE FOR FOLDING-MACHINES.** HOWARD K. KING, Philadelphia, Pa., assignor to the Chambers Brothers Company, same place. Filed Apr. 20, 1900. Serial No. 13,615. (No model.)



Claim.—1. In a sheet-packing device, the combination of the packing-trough, the reciprocatory plunger therein, the oscillatory arm, means for actuating said arm substantially simultaneously with the movement of the

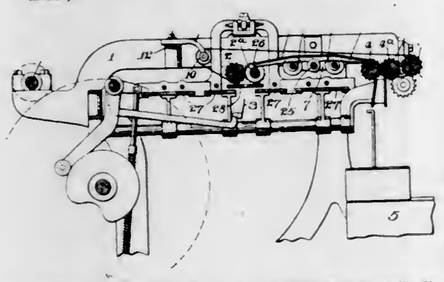
plunger, but in the opposite direction, substantially as and for the purpose set forth.

2. The combination of the folding devices, the packing-trough, the plunger therein, the oscillatory arm, said arm and plunger being arranged with relation to each other and the said folding devices substantially as shown, means for actuating the plunger to pack the sheets alternately in opposite directions, and means for actuating said arms correspondingly with the movement of the plunger, but in opposite directions, substantially as and for the purpose set forth.

3. In a sheet-packing device, the combination of the packing-trough, the reciprocating plunger therein, a movable arm or the like, extending above the latter, means for causing said arm to impinge against and support the pack of sheets when the plunger is retracted therefrom, and for carrying said arm out of the path of the sheet to be packed on the forward reciprocation of the plunger, substantially as set forth.

4. In a sheet-packing device, the combination of the packing-trough, the reciprocating plunger therein, the oscillatory arm, and means for actuating said arm and plunger simultaneously in parallel horizontal planes and in opposite directions, substantially as and for the purpose set forth.

656,899. DEVICE FOR CONVEYING SHEETS OF PAPER. HOWARD K. KING, Philadelphia, Pa., assignor to the Chambers Brothers Company, same place. Filed Apr. 20, 1900. Serial No. 13,616. (No model.)



Claim.—1. The combination of two parallel rollers, a suitable distance apart, a freely-rotatable roller intervening between said rollers and having the upper part of its periphery in a plane above that of the said rollers, the series of driven tapes passing over said several rollers, together with the series of bars extending between the said first-mentioned rollers, and adjacent to and in a plane below that of the said tapes, substantially as and for the purpose set forth.

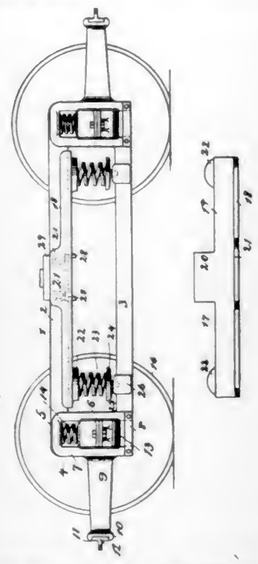
2. The combination of a set of contiguous rollers, a positively-driven roller parallel with and in advance of said rollers, freely-rotatable rollers located between the first-mentioned rollers and said positively-driven roller, and with the upper part of their peripheries in a plane above that of the upper part of the peripheries of said other rollers, the tapes arranged with relation to said several rollers respectively, substantially as shown and described, and the bars in a plane below and adjacent to that part of said tapes between said contiguous rollers and said positively-driven roller, substantially as and for the purpose set forth.

3. The combination of the set of contiguous folding-rollers, the set of contiguous positively-driven rollers parallel with and in advance of the said first set, the freely-rotatable rollers located between the said two sets of rollers, and having the upper part of their peripheries in a plane above that of the corresponding part of the peripheries of said two sets of rollers, the series of driven tapes passing under the first roller of the set of folding-rollers, over the second one of said rollers, over and upon the said freely-rotatable rollers, over the first one of said set of positively-driven rollers, and under the second one of the last-mentioned set, together with the bars extending from the second one of the folding-rollers to the first one of the said positively-driven rollers, in a plane below and adjacent to that of the said tapes, substantially as and for the purpose set forth.

656,900. CAR-TRUCK. JOSEPH L. LEVY, New York, N. Y., assignor to John A. Brill, Philadelphia, Pa. Filed Sept. 14, 1897. Serial No. 651,597. (No model.)

Claim.—1. The combination in a car-truck, of the truck-frame, springs pivotally supported at their lower terminals on the truck-frame, spreaders resting on said springs and adapted to swing independently of the truck-frame, and a bolster resting on said spreaders, substantially as described.

2. The combination in a car-truck, of the truck-frame, springs pivotally supported on the truck-frame, longitudinally-disposed spreaders supported on the springs and adapted to swing independently of the truck-frame, a bolster resting on said spreaders and tying them together transversely, and thrust-springs interposed between the spreaders and truck-frame, substantially as described.



3. The combination in a car-truck, of the truck-frame having upper and lower chords, springs pivotally supported on the lower chord, longitudinally-disposed spreaders resting on said springs below said chord and movably engaging the upper chord, and a transverse bolster tying the spreaders together, substantially as described.

4. The combination in a car-truck, of the truck-frame having parallel upper and lower chords, springs supported on the lower chords, spreaders supported on the springs and movably engaging the upper chords, and a bolster secured to said spreaders, substantially as described.

5. The combination in a car-truck, of the truck-frame having upper and lower chords, springs supported on the lower chords, the longitudinally-disposed spreaders supported on the springs, projections from the spreaders extending inwardly below the top chords, and a bolster secured on said projections and tying the spreaders transversely, substantially as described.

6. The combination with the car-truck, having upper and lower chords, springs supported on the lower chords, longitudinally-disposed spreaders supported on said lower chords below the upper chords, and a bolster secured to said spreaders and tying the same transversely, substantially as described.

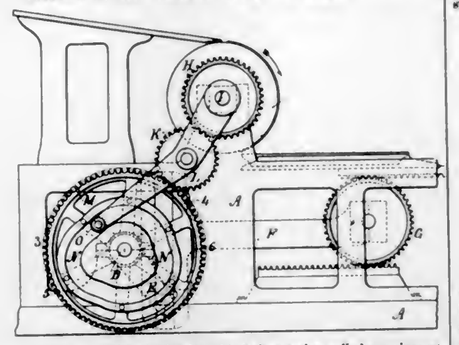
7. In a car-truck, the combination with the springs supported on the truck-frame, of the longitudinally-disposed spreaders supported by said springs, a bolster transversely tying the spreaders together, and means interposed in the support of said spreaders on the truck-frame allowing of a transverse swinging movement of the bolster and spreaders in unison, substantially as described.

8. The combination with the truck-frame having upper and lower chords, the springs 23 pivotally supported on the lower chords, the spreaders 17 having an upright flange 18 located outside of the top chord, and a horizontal flange 19 extending under the top chord, and the bolster transversely tying the spreaders together, substantially as described.

9. In a car-truck, the combination with the truck-frame, the horizontally-disposed spreaders, a bolster tying the spreaders together, springs for supporting the spreaders, means for pivotally supporting the spreaders on the truck-frame, and thrust-springs interposed between the spreaders and the truck-frame, substantially as described.

10. The combination, in a truck-frame having upper and lower chords, the springs 23 pivotally supported on the lower chords, the horizontally-disposed spreaders supported on said springs and having the upright webs 18, said webs being located outside of the upper chord, a lug 21 extending upwardly above said webs, a bolster secured to and tying said spreaders transversely, and springs 32 interposed between said lugs 21 and the top chords, substantially as described.

656,901. PRINTING-PRESS. GEORGE A. MAIN, Plainfield, N. J. Filed June 12, 1899. Serial No. 720,149. (No model.)



Claim.—1. The combination with the impression-cylinder, reciprocating bed and gearing for driving the bed and for revolving the impression-cylinder, of a gear-wheel between the gear on the shaft of the impression-cylinder and the gear on the crank or other shaft and a lever and stud for carrying the intermediate gear, such lever having the shaft of the impression-cylinder as its pivot, and a cam for giving motion to such lever, substantially as set forth.

2. The combination with the impression-cylinder, reciprocating bed and gearing for driving the bed and for revolving the impression-cylinder, of a gear-wheel between the gear on the shaft of the impression-cylinder and the gear on the crank or other shaft, and mechanism for carrying the intermediate gear and a cam on the crank or other shaft for giving motion to such mechanism, and carrying the intermediate gear bodily in one direction or the other direction to augment or retard the speed communicated through the gearing to the impression-cylinder and thereby render the surface speed of the impression-cylinder the same as the speed of movement of the type and bed, substantially as set forth.

3. The combination with the impression-cylinder, reciprocating bed, means for revolving the impression-cylinder and for actuating the reciprocating bed, of a gear upon the shaft of the impression-cylinder, an adjacent intermediate gear meshing therewith and a pivoted lever carrying said intermediate gear, a driving gear-wheel on the power-shaft for driving the impression-cylinder and meshing with the intermediate gear, the teeth of said driving gear-wheel that give motion to the impression-cylinder while the impression is being taken, being nearer to the axis of rotation than the other teeth so that the gears may be in operative contact both when the impression-cylinder is raised and when lowered, substantially as set forth.

4. The combination with the impression-cylinder reciprocating bed and gearing for driving the bed and for revolving the impression-cylinder, of a gear-wheel between the gear on the shaft of the impression-cylinder and the gear on the crank or other shaft and a lever and stud for carrying the intermediate gear, such lever having the shaft of the impression-cylinder as its pivot, and a grooved cam and a roller fitting the same and supported on the lever so as to carry the intermediate gear in one direction or the other and augment or retard the revolving motion of such impression-cylinder and cause the surface speed thereof to correspond to the surface speed of the bed and type, substantially as set forth.

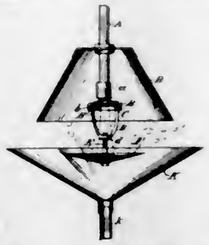
5. The combination with the type-bed and mechanism for reciprocating the same and an impression-cylinder, of a gear-wheel upon the shaft of the impression-cylinder and a driving gear-wheel and an intermediate gear for giving motion to the impression-cylinder, a lever carrying the intermediate gear and a cam acting upon the lever for giving to the gear on the shaft of the impression-cylinder the proper movement corresponding to the speed of movement of the printing-surface, substantially as set forth.

656,902. HUMIDIFIER. WILLIAM W. MOORE and ROBERT D. JONES, Rock Hill, S. C., assignors to John R. Barron, same place. Filed May 28, 1900. Serial No. 18,249. (No model.)

Claim.—1. In a humidifier, the combination with a supply-pipe, of a nozzle member consisting of a hollow head, and a removable perforated disk, a breaking-plate below having upwardly and outwardly inclined deflecting-flanges, a hood and a drip-pan, substantially as described.

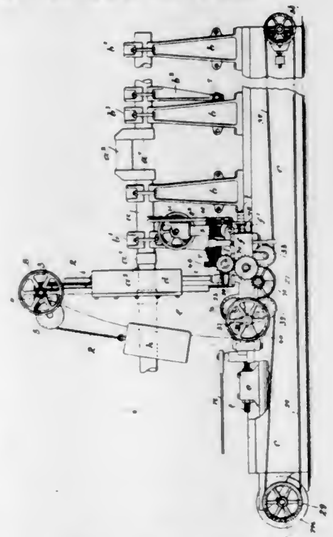
2. In a humidifier, the combination with a supply-pipe, of a spraying-nozzle thereon, a breaking-plate below the nozzle and carried by and adjustably connected to the pipe, a hood having its edges above the plane of the plate, and a drip-pan below the plate, substantially as described.

3. In a humidifier, the combination with a pipe, of a head therein, a conical disk removably secured in the head, and having a series of perforations therein, a breaker-plate adjustably secured to and located below the head, a hood above the plate, and a drip-pan below the same, substantially as described.



4. In a humidifier, the combination with a head, of a concavo-convexed perforated plate removably secured in the head, a hood, a breaking-plate having a series of inclined flanges struck up therefrom and arranged in line with the apertures in the plate, and a drip-pan, substantially as described.

656,903. QUARTERING AND TURNING MACHINE FOR CRANK-PINS AND ECCENTRICS. LEWIS H. MORGAN, Plainfield, N. J. Filed Mar. 5, 1900. Serial No. 7,258. (No model.)



Claim.—1. The combination in a turning and quartering machine, with the bed and movable rests for supporting the crank-shaft and in which rests the cranks are fixed and their position accurately determined, of a series of revolving cutter-rings, means for imparting to said rings vertical, longitudinal and lateral movements, and means for calculating and adjusting the said cutter-rings to a predetermined position whereby the cranks can all be turned without disturbing or shifting the same and their shaft, substantially as set forth.

2. The combination with the main bed having a longitudinal slideway, of rests fitting and movable in said slideway and adapted to receive and support the said crank-shaft, of clamps connected to the said rests for securing the shaft and an adjusting-arm clamped to the crank-shaft, and means for holding and moving the same to slightly swing the shaft and bring the same into an accurate predetermined position, substantially as set forth.

3. The combination in a turning and quartering machine with a revolving cutter-ring surrounding and operating upon the fixed crank-pin, a vertically and laterally movable head having a hollow extension for the cutter-ring, a section separable and removable from the hollow extension of the said head and means for securing the same in place, a ring removable from one side of the hollow extension and head and a section separable laterally from the cutter-ring whereby the removal of said sections provides for the insertion of the crank-pin, substantially as specified.

4. The combination with the bed and movable rests for supporting

the crank-shaft and to which the same is clamped, of a revolving cutter-ring surrounding and operating upon the fixed crank-pin, a movable support for the cutter-ring, means for passing the said support and cutter-ring over the crank-pin, teeth surrounding the periphery of the cutter-ring, a worm-wheel meshing with said teeth, a shaft on which the said worm-wheel is mounted, a horizontal shaft adjacent to the lower end of the aforesaid shaft, spiral gears connecting the two shafts and power devices for rotating the latter shaft and revolving the cutter-ring, substantially as set forth.

5. The combination with the bed and movable rests for supporting the crank-shaft and to which the same is clamped, of a revolving cutter-ring surrounding and operating upon the fixed crank-pin, a movable support for the cutter-ring, means for passing the said support and cutter-ring over the crank-pin, teeth surrounding the periphery of the cutter-ring, a worm-wheel meshing with said teeth, a shaft on which the said worm-wheel is mounted, a horizontal shaft adjacent to the lower end of the aforesaid shaft, spiral gears connecting the two shafts and power devices for rotating the latter shaft and revolving the cutter-ring, a gear upon the end of the latter shaft, gears meshing with the said gear, pulleys upon the shaft of one of the gear-wheels and a belt operated by a source of power for effecting the movement of the said parts and through them revolving the cutter-ring, substantially as set forth.

6. The combination with the bed and movable rests for supporting the crank-shaft and to which the same is clamped, of a movable column, a support therefor and means for progressively moving the said column, a head, a revolving cutter-ring connected thereto, the said head being on one side of the column, a counterbalance-weight on the other side of the column, a chain and sheaves upon the top of the column around which the chain passes in connecting the head and the counterbalance-weight, and means for raising and lowering the head and cutter-ring, substantially as set forth.

7. The combination with the bed and movable rests for supporting the crank-shaft and to which the same is clamped, of a movable column, a support therefor and means for progressively moving the said column, a head, a revolving cutter-ring connected thereto, the said head being on one side of the column, a counterbalance-weight on the other side of the column, a chain and sheaves upon the top of the column around which the chain passes in connecting the head and the counterbalance-weight, a screw-rod passing through the head and through part of the column, a horizontal shaft in bearings on the top of the column and a hand-wheel thereon, and bevel-wheels connecting the said shaft and the said screw-rod for raising and lowering the head and revolving cutter-ring by hand, substantially as set forth.

8. The combination with the column, its support and means for moving the same, of the head *d* having a ring-like extension and sliding upon one face of the column, means for balancing and for moving the said head vertically, a cutter-ring revolubly mounted in the extension of the said head, said cutter-ring having a gap and a removable section and a removable section to the extension of the head, a sliding tool-rest and a slideway therefor in the gap of the revolving cutter-ring and means for moving the said tool-rest in opposite directions along the said slideway and for holding the same in place, substantially as set forth.

9. The combination with the column, its support and means for moving the same, of the head *d* having a ring-like extension and sliding upon one face of the column, means for balancing and for moving the said head vertically, a cutter-ring revolubly mounted in the extension of the said head, said cutter-ring having a gap and a removable section and a removable section to the extension of the head, a sliding tool-rest and a slideway therefor in the gap of the revolving cutter-ring and means for moving the said tool-rest in opposite directions along the said slideway and for holding the same in place, a split sleeve connected to the supporting-base of the column and an adjustable post passing through the split sleeve and adapted to come against the under surface of the extension to the movable head, substantially as set forth.

10. The combination in a turning and quartering machine, with the crank-shaft and its supports, of a vertically-movable head having a hollow ring-like extension, a revoluble cutter-ring mounted in said extension, a removable section to the said cutter-ring and a removable section to the extension of the said movable head, the said cutter-ring having a gap, a slideway in said gap, a movable tool-rest and tool-support, a screw-shaft and worm-wheels for feeding the same, whereby the said sections and the tool-rest may be removed for passing the crank-pin to be turned to the axial center of the revoluble wheel and the parts replaced, substantially as set forth.

11. The combination in a turning and quartering machine with the column, its support and a means for moving the same, of a vertically-movable head, a ring-like extension thereto having a removable section and a flange on one side, a removable ring forming a flange on the other side of the said extension, a cutter-ring mounted revolubly in the said extension and traveling between the said flanges, the said ring having an open center gap and a removable section, teeth upon the periphery of the said cutter-ring and its removable section, a shaft passing vertically through the movable head, a worm-wheel on said shaft engaging the peripheral teeth of the revoluble cutter-ring, a sliding tool-rest and ways therefor in the gap of the revoluble cutter-ring, and means for moving the same, substantially as set forth.

12. The combination in a turning and quartering machine, with the column, its support, and a means for moving the same, of a vertically-movable head, a ring-like extension thereto having a removable section and a flange on one side, a removable ring forming a flange on the other side of the said extension, a cutter-ring mounted revolubly in the said extension and traveling between the said flanges, the said ring having an open center gap and a removable section, teeth upon the periphery of the said cutter-ring, and its removable section, a shaft passing vertically through the movable head, a worm-wheel on said shaft engaging the peripheral teeth of the revoluble cutter-ring, a sliding tool-rest and ways therefor in the gap of the revoluble cutter-ring, means for moving the same, and spring-actuated devices in the said cutter-ring acting against the advancing face of the tool-rest as end thrusts to maintain the tool-rest positively in position, substantially as set forth.

13. The combination in a turning and quartering machine, with the movable column, of a movable head sliding upon one face thereof and having a ring-like extension with side flanges, and means for moving the said head vertically on the face of the said column and for counterbalancing the same, a shaft passing vertically through the said movable head, and means for rotating the shaft, a worm-wheel surrounding the shaft and a spline connecting the shaft and the worm-wheel and providing for the vertical movement of the head and worm-wheel, a cutter-ring revolubly mounted in the extension of the said movable head and between the flanges thereof and having peripheral teeth meshing with the teeth of the worm-wheel, a removable section to the said cutter-ring also having teeth, the said cutter-ring having a gap for receiving the work, and ways in the opposite faces thereof, a sliding tool-rest on said ways, a tool-clamp thereon, a screw-shaft passing through the tool-rest and engaging threaded devices connected therewith, a hand-operated shaft passing across through the removable section of the cutter-ring and having a worm thereon in the said removable section, a worm-wheel on the screw-shaft engaging the said worm and received in a cavity in the said removable section, a removable disk surrounding the said screw-shaft and connected with the removable section and nuts on the screw-shaft for clamping the same to the removable disk, the nuts being on one side of the disk and a worm-wheel on the opposite side, substantially as set forth.

14. The combination in a turning and quartering machine, with the movable column and the bed having a longitudinal slideway, of a base having a slideway for the movable column, and means for moving the base longitudinally of the bed, a screw-shaft 37 at one end passing through part of the said base and also passing through a threaded portion of the base of the movable column, a hand-operated wheel, a gear on the shaft of said wheel and a gear on the screw-shaft meshing therewith for moving the column transversely of the base-support therefor, substantially as set forth.

15. The combination in a turning and quartering machine, with the movable column, of a base having a slideway for the movable column, a screw-shaft at one end passing through part of the said base and also passing through a threaded portion of the base of the movable column, a hand-operated wheel, a gear on the shaft of said wheel and a gear on the screw-shaft meshing therewith for moving the column transversely of the support therefor, a dial upon the face of the gear of the screw-shaft, and a pointer connected to the support of the column and extending over the gear with its point in proximity with the dial forming a vernier for indicating to a nicety the extent of movement of the said column by the said screw-shaft, substantially as set forth.

16. The combination in a turning and quartering machine, with the base *f* having a transverse slideway in its upper surface, of the column *e* resting upon the base and adapted to move in the slideway thereof, a sleeve upon the base of the column, nuts in the said sleeve, a screw-shaft passing through the said sleeve and nuts and at one end through a bearing formed in the base *f*, a gear on the outer end of the said shaft and nuts on the said shaft on the opposite sides of its bearing in the base *f*, a short shaft and a hand-operated wheel mounted thereon, a gear on the short shaft meshing with the gear on the screw-shaft whereby with the turn of the screw-shaft by the hand-wheel, the column *e* is moved transversely of the base *f*, substantially as set forth.

17. The combination in a turning and quartering machine, with the bed having a slideway and a rack n^2 upon the vertical face at one side of the slideway, of a base *f* fitting the said slideway and movable longitudinally of the bed of the machine, a tubular part connected to the said movable base, a shaft passing through the same, a pinion on the lower end of the shaft meshing with the teeth of the rack and a ratchet-lever *n* on the upper end of the shaft for turning the shaft and pinion in either direction for moving the base forward and backward on the bed, substantially as set forth.

18. The combination in a turning and quartering machine, with the bed having a longitudinal slideway and a central dovetailed slideway therein, of the head o and means for clamping the same to the bed at any desired place, a lead-screw shaft passing through the said head, a movable base *f* adapted to fit upon the bed and to be moved along the said slideway, a yoke-frame standard connected to said movable base, a gear upon the end of the said lead-screw shaft distant from the head o, and means for engaging the said gear and rotating the said lead-screw shaft for progressively feeding along the movable base, substantially as set forth.

19. The combination in a turning and quartering machine, with the bed having a longitudinal slideway and a central dovetailed slideway therein, of the head o and means for clamping the same to the bed at any desired place, a lead-screw shaft passing through the said head, a movable base *f* adapted to fit upon the bed and to be moved along the said slideway, a yoke-frame standard connected to said movable base, a gear upon the end of the said lead-screw shaft distant from the head *o*, a shaft passing vertically through the yoke-frame standard, a bevel-wheel on the lower end of the shaft, a short shaft connected to the base *f*, a gear thereon meshing with the gear on the lead-screw shaft, a bevel-wheel also on the said short shaft meshing with the bevel-wheel at the lower end of the shaft passing vertically through the yoke-frame, a horizontal shaft on the upper end of the yoke-frame, a hand-wheel thereon and bevel-wheels connected respectively to the shaft of the hand-wheel and to the shaft passing vertically through the yoke-frame whereby a feed of the base *f* along the slideway is progressively effected, substantially as specified.

20. The combination in a turning and quartering machine, with the bed having a longitudinal slideway and a central dovetailed slideway therein, of the head o and means for clamping the same to the bed at any desired place, a lead-screw shaft passing through the said head, a movable base *f* adapted to fit upon the bed and to be moved along the said slideway, a yoke-frame standard connected to said movable base, a gear upon the end of the said lead-screw shaft distant from the head o, a short shaft in the movable base *f*, a gear thereon meshing with the gear on the end of the lead-screw shaft, a bevel-wheel also upon the said short shaft, a shaft passing horizontally across through the base of the yoke-frame standard, a clutch surrounding the said shaft and movable upon a spline therein, clutch-faces and bevel-wheels surrounding the said shaft at opposite sides of the said clutch, a lever for moving the said clutch in either direction for connecting the same with either bevel-wheel, means substantially as specified for rotating the said horizontal cross-shaft, the said bevel-wheels on the cross-shaft meshing with the bevel-wheels on the short shaft of the movable base for operating the lead-screw shaft through the devices set forth in either one direction or the other, substantially as set forth.

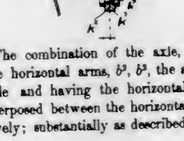
21. The combination in a turning and quartering machine, with the bed having a longitudinal slideway, a base *f* fitting the bed and movable along the said slidway, of a yoke-frame standard connected to the movable base, a short shaft connected to the said base and having thereon a gear and a bevel-wheel, the bevel-wheel coming adjacent to the yoke-frame standard, a lead-screw shaft in line with the slideway of the bed and passing through the movable base *f*, a gear on one end of the lead-screw shaft meshing with the gear on the short shaft in the movable base, means connected with the bed at the other end of the lead-screw shaft and through which the same moves, a shaft 50 passing horizontally across through the yoke-frame standard, sleeves with clutch-faces surrounding the shaft and passing through the said standard and bevel-wheels surrounding the said clutch-sleeves, the bevel-wheels meshing with the bevel-wheels upon the short shaft in the base *f* and the bevel-wheels and clutch-sleeves surrounding the shaft 50 and loose thereon, a spline centrally on the shaft 50 and a clutch slidable thereon and means for operating the same, and means connected to the shaft 50 and interposed between the same and the power devices for effecting a variable speed of the shaft 50, substantially as and for the purposes set forth.

22. The combination in a turning and quartering machine with the bed having a longitudinal slideway, a base *f* fitting the bed and movable along the said slideway, of a yoke-frame standard connected to the movable base, a short shaft connected to the said base and having thereon a gear and a bevel-wheel, the bevel-wheel coming adjacent to the yoke-frame standard, a lead-screw shaft in line with the slideway of the bed and passing through the movable base *f*, a gear on one end of the lead-screw shaft meshing with the gear on the short shaft in the movable base, means connected with the bed at the other end of the lead-screw shaft and through which the same moves, a shaft 50 passing horizontally across through the yoke-frame standard, sleeves with clutch-faces surrounding the shaft and passing through the said standard and bevel-wheels surrounding the said clutch-sleeves, the bevel-wheels meshing with the bevel-wheel upon the short shaft in the base *f* and the bevel-wheels and clutch-sleeves surrounding the shaft 50 and loose thereon, a spline centrally on the shaft 50 and a clutch slidable thereon, and means for operating the same, a set of pull spline-gears, a worm and worm-wheel connecting the same to the shaft 50, a power-belt and gears therefrom and a shaft from the last of the gears and worm-wheel connecting the same to the pull spline-gears, whereby the power is communicated and transferred in a variable ratio to the shaft 50, substantially as set forth.

23. The combination in a turning and quartering machine, with the column, its support and means for moving the same transversely of the support, of a vertically-movable head, a ring-like extension thereto, a cutter-ring revolubly mounted in the said head, and means for raising and lowering the said head upon the column, a vernier at the base of the column for accurately measuring the transverse movement of the column upon the base, and a vernier upon the upper portion of the column for accurately measuring the rise and fall of the vertically-movable head, substantially as set forth.

24. The combination in a turning and quartering machine with the revolving cutter-ring, of a support therefor, means for raising and lowering the cutter-ring and means for moving the same lengthwise of the machine and transversely of the machine and means for calculating and accurately gaging the movements imparted to the said cutter-ring so as to determine the respective positions thereof, substantially as set forth.

656,904. CAPO TASTO. THOMAS M. PLETCHER, Indianapolis, Ind. Filed Dec. 1, 1899. Serial No. 738,765. (No model.)



Claim.—1. A capo tasto consisting of a string pressure-bar provided at one end with a depending integral arm and at the opposite end with an apertured clasp hinged thereto, and a binder hinged to the depending arm.

2. A capo tasto consisting of three members, two of which are hinged to opposite ends of the third member and having their free ends adapted to interlock one with the other.

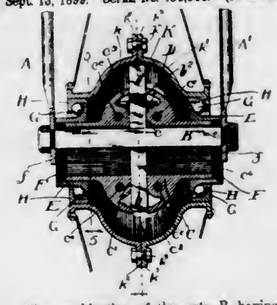
3. A capo tasto consisting of a string pressure-bar, a clasp hinged thereto and adapted to fold over against the pressure-bar, and a binder hinged to the opposite end of the pressure-bar and adapted to also fold over against the pressure-bar.

4. In a capo tasto, the combination with the pressure-bar, of a clasp hinged at one end thereof and provided with a series of apertures therethrough, and a spring-binder having parallel oblong plane faces and adapted to engage the apertures in the clasp.

5. In a capo tasto, the combination with the pressure-bar, of an oblong spring-binder having parallel plane faces throughout and hinged at one end thereof, and a clasp hinged at the opposite end of the pressure-bar adapted to engage the free end of the binder.

6. In a capo tasto, the combination of the pressure-bar provided with the depending integral arm having the part of a hinge at the end thereof, the binder consisting of an oblong spring-steel plate having substantially-parallel plane faces and an eye at one end thereof and hinged to said hinge portion of the pressure-bar and provided at its opposite end with the reduced turned-down portion forming a catch, a clasp hinged at the opposite end of the pressure-bar and provided with the apertures adapted to receive said catch, and the pad attached to said pressure-bar, substantially as set forth.

656,905. BICYCLE HUB AND AXLE. FRANK SCHMITT, Chicago, Ill. Filed Sept. 13, 1899. Serial No. 730,308. (No model.)



Claim.—1. The combination of the axle, B, having the vertical arms, *b*, *b'*, and the horizontal arms, b^3, b^3, the axle-box, provided with guides for the axle and having the horizontal arms, c^7, c^7, and the springs, D, D', interposed between the horizontal arms of the axle-box and axles respectively; substantially as described.

2. In a device of the class described, the combination of a hub, an axle-box journaled therein, a vertically-movable axle within the axle-box, a spring between the axle and the axle-box and a vertical arm secured to the axle and guided in the axle-box, whereby relative oscillation of the axle and axle-box in a vertical plane is prevented; substantially as described.

3. The combination with the axle, B, having the vertical arms, *b*, *b'*, of the axle-box, C, containing guides for said arms, a spring interposed between the axle-box and the axle and the removable plate, c^4, forming one of the walls of said guides; substantially as described.

4. The combination with the axle, B, having the vertical arms, *b*, *b'*, of the axle-box, C, having the yokes, c^3, c^3, containing guides for said arms and a suitable spring interposed between the axle-box and the axle; substantially as described.

656,906. SEAL. ALBERT B. SCHOFIELD, New York, N. Y. Filed Dec. 1, 1899. Serial No. 738,868. (No model.)



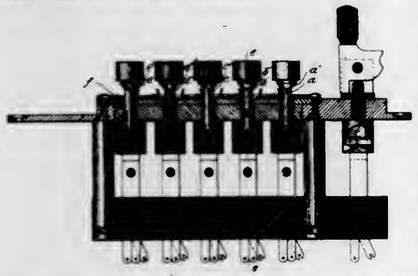
Claim.—1. The combination with a bail provided with an elongated opening extending through it, of a soft-metal tie or rivet carried by the said bail and provided with a stem or shank elongated in cross-section to correspond to the elongated opening in the bail, the inner or under face of the head of said rivet being flat and unobstructed from the stem or shank to its outer edge, substantially as set forth.

2. The combination with a bail provided with elongated openings, of a soft-metal tie or rivet provided with a stem or shank elongated in cross-section, the said elongated shank being provided with a depression and the wall of the opening in the bail being provided with a projection to correspond with the depression in the shank, substantially as set forth.

3. The combination with a bail provided with openings therethrough and a soft-metal rivet fitted to said openings, of a flat plate or washer provided with an opening therethrough for the reception of the shank or stem of the rivet, the said washer being located between the ends of the bail and forming a presser-plate and guard, substantially as set forth.

4. The combination with the bail provided with openings therethrough, of a soft-metal rivet having a wire cast therein, the shank or stem of the said rivet being shaped in cross-section to correspond to the openings in the bail and the ends of the wire being extended into the flange of the head of the rivet and the bight of the wire extending along the shank of the rivet in position to be upset with the stem on the outer face of the bail, substantially as set forth.

656,907. TELEPHONE SIGNALING APPLIANCE FOR PARTY TELEPHONE-LINES. JOSEF STEINER and WILLIAM H. TUCK, New York N. Y., assignors to the Western Electric Company, Chicago, Ill. Filed Jan. 8, 1900. Serial No. 666. (No model.)



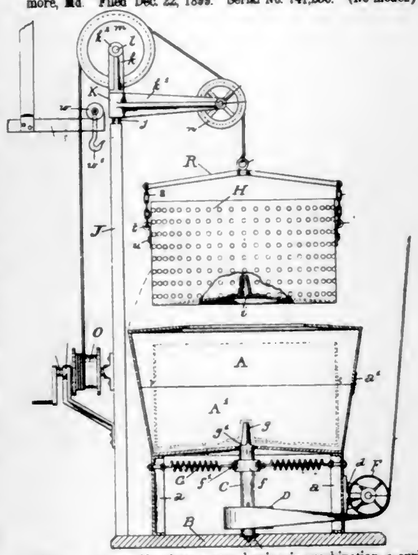
Claim.—1. The combination with a plurality of keys or plungers disposed one behind the other, of a row of target-concealing shields *g g* and a bed wherein said shields are adapted to slide, underlying targets normally covered by said shields, and means, operated by each plunger when depressed, for opening the row of shields at a point adjacent to the depressed plunger, whereby the underlying target is displayed, substantially as set forth.

2. A party-line ringing appliance for telephone-switchboards, comprising a series of keys or plungers disposed one behind the other in a row, of switches operated by said plungers when depressed, a bed-plate and a series of shields adapted to slide to and fro in said bed-plate, each plunger passing through one of said shields, and means, operated by each plunger when depressed, for moving the shields apart and causing a gap or opening to be made in the row of shields, to indicate the identity o the plunger which has been depressed, substantially as set forth.

3. The combination with a plurality of keys or plungers disposed one behind the other and adapted to be manually depressed, of a frame wherein said plungers are mounted, said frame having a bed formed therein in which the plungers are disposed in a row, a series of target-concealing shields, one for each plunger, adapted to slide to and fro in said bed, each of the plungers passing through an opening in the shield associated therewith, and tongues carried by said shield adapted to be engaged by wedge-shaped portions of said plungers, whereby said shields may be moved to and fro in the bed, each of said plungers being adapted, when depressed, to separate the shields at a point adjacent thereto, creating an opening or gap which serves to indicate the identity of the plunger which has been depressed, substantially as set forth.

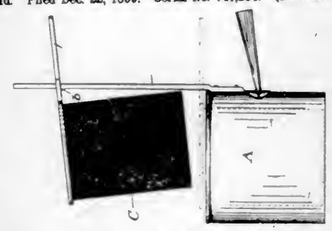
4. The combination with a plurality of keys or plungers disposed one behind another in a row, and adapted to be manually depressed, of a row of shields *g g* and a bed wherein the same are adapted to slide to and fro, each of said shields having an underlying target portion normally overlapped or concealed by the rear of the shield next ahead in the series, and means, operated by each plunger when depressed, for moving two adjacent shields apart to display the underlying target portion of one of them, substantially as and for the purpose set forth.

656,908. CENTRIFUGAL MACHINE. LAUREN J. TAYLOR, Baltimore, Md. Filed Dec. 22, 1899. Serial No. 741,230. (No model.)



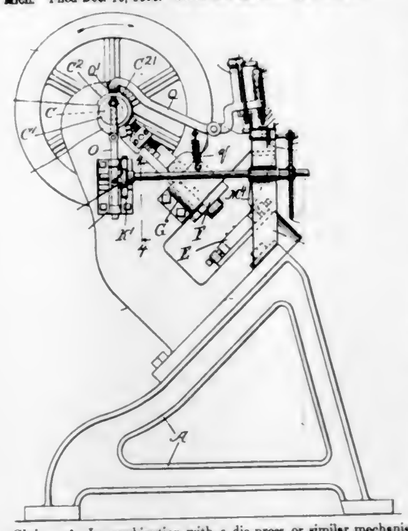
Claim.—A centrifugal separator having in combination a curb or shell comprising two halves or cylindric sections—a stationary lower section and a removable upper section; means for securing said two sections together so as to permit the removal of the upper section; a central vertical shaft having a squared upper end which projects through the bottom of the lower section; a perforated receptacle inclosed within the said two sections and having in its bottom a squared socket which fits down over the squared end of said shaft making a rigid connection therewith; and means for revolving said central shaft.

656,909. KITCHEN UTENSIL. LAUREN J. TAYLOR, Baltimore Md. Filed Dec. 22, 1899. Serial No. 741,231. (No model.)



Claim.—A kitchen utensil for frying oysters, comprising a receptacle for holding hot lard and which is provided with a standard having a lip projecting on its side over the receptacle, and a basket or colander adapted to be placed in said receptacle, said basket having a handle projecting from its side and which is provided with a slot to take over and slide up and down on the standard and pass the lip and which when the basket is above the lip and tilted will rest on the said lip and allow the basket to be suspended over the receptacle.

656,910. PRESS FEED MECHANISM. EMIL TYDEN, Hastings, Mich. Filed Dec. 16, 1898. Serial No. 699,485. (No model.)



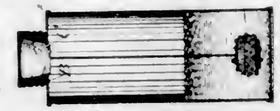
Claim.—1. In combination with a die-press or similar mechanism adapted to operate upon blanks delivered to it, a race for conducting the blanks to the die; suitable pick-up and dropper mechanism for delivering blanks onto such race; a tester constructed and arranged to operate on the blanks while on the race; a trap-door or switch in the race; and connections by which the tester, when actuated by the encounter with excessive blanks on the race, sets the trap-door or switch in position to discard such blanks.

2. In a die-press or similar mechanism adapted to operate upon blanks delivered to it, a race for conducting the blanks to the die; suitable mechanism for delivering blanks onto the race; a feeding device for advancing the blanks along the race; and mechanism having movements timed synchronously with the press for giving such feeding device step-by-step movement with rest intervals; a tester located opposite a rest position of the blanks on the race; mechanism timed synchronously with the feeding mechanism to advance the tester to encounter with such blanks during the rest interval of the feeding movement; a trap-door or switch in the race; and mechanism for opening the same, constructed and arranged to be actuated to open it when the tester is actuated excessively by the encounter with an excessive blank or blanks on the race.

3. In combination with a die-press or like mechanism for operating upon blanks delivered to it; a race along which the blanks are conducted toward the die; feeding mechanism for advancing the blanks along the race step by step; actuating mechanism for said feeding mechanism timed synchronously with the movements of the press; a tester and mechanism for operating it to cause it to encounter the blanks in the race at their rest position and interval; a trap-door in the race beyond said rest position; and mechanism connected with the tester for causing it to open the trap-door when it encounters an excessive blank or blanks in the race; and devices for holding the trap-door open during the next feeding movement of the mechanism and for allowing it to close during the rest interval.

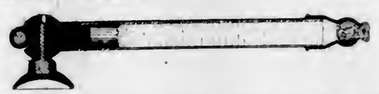
4. In combination with a die-press or similar mechanism adapted to operate upon blanks delivered to it, a race along which the blanks move toward the die; suitable mechanism for delivering blanks at intervals onto the race; a tester constructed and arranged to operate on the blanks while they are on the race; a trap-door or switch in the race beyond the position at which the blanks are operated on by the tester; and connections by which the tester, when actuated by encounter with excessive blanks, sets the trap-door or switch in position to discard such blanks; and mechanism for holding the trap-door open for a suitable interval to allow the blanks to reach it from the tester and for closing it before the next action of the tester.

656,911. SCREW-CAP SHEET-METAL CAN. HENRY J. VOGEL, New York, N. Y., assignor to William Vogel & Brothers, same place. Filed Dec. 15, 1899. Serial No. 740,426. (No model.)



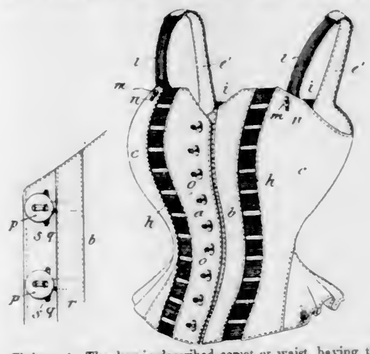
Claim.—A sheet-metal can, consisting of a body portion provided with a screw-neck, an interior nozzle portion of frusto-conical shape, surrounded by and projecting into the neck from the outer end thereof, the bend at the top of the neck and nozzle portion being in the nature of a fold, a screw-cap, and a tapering cork fitted in and projecting upwardly from the nozzle portion, said cork being pressed to its seat by the said cap, substantially as set forth.

656,912. DEVICE FOR MOISTENING AND SEALING ENVELOPS. CHARLES L. VOSE, Westerly, R. I. Filed June 21, 1899. Serial No. 721,312. (No model.)



Claim.—In a device for moistening and sealing envelops and the like, a combined reservoir and handle in the form of a tube having an open end, a plug fitting in and closing the end of the tube, said plug having a concavity in its end, a roller, and U-shaped bearings by which the roller is journaled in the concavity of the plug, substantially as described.

656,913. APPAREL-CORSET. ALZIRA H. WADE, Minneapolis, Minn. Filed Apr. 12, 1899. Serial No. 712,754. (No model.)



Claim.—1. The herein-described corset or waist, having the front sections *a* and *b*, and the body-sections *c*, *c*, an opening in each half of the corset or waist between said sections running from the top of the corset centrally through the breast portions toward the waist, and elastic connections between the edges of these openings, substantially as and for the purpose specified.

2. The herein-described corset or waist, having the front sections *a* and *b*, and the body-sections *c*, *c*, an opening in each half of the corset or waist between said sections running from the top of the corset centrally through the breast portion toward the waist, and elastic connections between the edges, the said elastic connections being arranged irrelatively to the corset or waist fastenings, and means to fasten the garment about the person, substantially as specified.

3. The herein-described corset or waist, having the front sections *a* and *b* and the body-sections *c*, *c*, an opening in each half of the corset or waist between said sections running from the top of the corset or waist, centrally through the breast portions toward the waist, elastic connections between the edges of these openings arranged irrelatively to the corset or waist fastenings, back sections *e*, *e*, and backs *f*, *f*, also separated by openings, elastic strips connecting said back sections and backs, and means to fasten the garment about the person, substantially as and for the purpose specified.

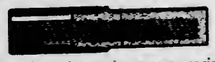
4. A reversible corset or waist, adapted to be worn either side out, fastening devices applied to the meeting edges of the garment, and openings in the garment through which one of the complemental members of the said fastening devices may be passed so as to present said members

on that side or face of the garment which for the time being is the outside, thereby to adapt the other members of the fastening devices for cooperation therewith, substantially as described.

5. A reversible corset or waist, provided with fastening devices consisting of buttonholes on one side of the opening in the garment, buttons secured to the other side of the garment by means of tabs, and buttonholes arranged adjacent to said buttons and through which the said buttons may be projected, the said buttons being adapted to engage the buttonholes on the other side, whether the said buttons stand off from the buttonholes made in the section to which they are applied or be projected through such buttonholes to the opposite side of the side of the garment to which they are applied, substantially as described.

6. A corset-section, provided with a front portion having an opening running from its top centrally through the breast portion toward the waist and with elastic connections between the edges of this opening, substantially as described.

656,914. VACCINE-POINT CARRIER. RALPH WALSH, Washington, D. C. Filed Mar. 30, 1900. Serial No. 10,819. (No model.)



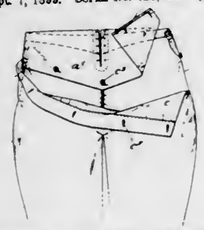
Claim.—A vaccine-point carrier or case consisting of a body or case proper for receiving the charged ends of the points, a cap filling the open end of said body and having an aperture formed therein through which the uncharged ends of said points protrude, a removable cover for said protruding ends, and an aseptic expansible packing filling the box or case around the points therein, substantially as and for the purposes hereinbefore set forth.

656,915. END-GATE. MATHIAS WARNER, Jonesburg, Mo. Filed June 23, 1900. Serial No. 21,290. (No model.)



Claim.—In an end-gate for vehicles, bins and the like, the combination, with the side-boards thereof, of wear-plates upon the inner faces of said side-boards and carrying distance-pieces, retaining-plates secured centrally to said distance-pieces and having free side edges spaced apart from the wear-plates and forming in connection therewith longitudinal grooves, an end-gate, and locking-plates arranged in bearings at each end of the gate and provided with inwardly-projecting tongues to slide within said grooves, substantially as described.

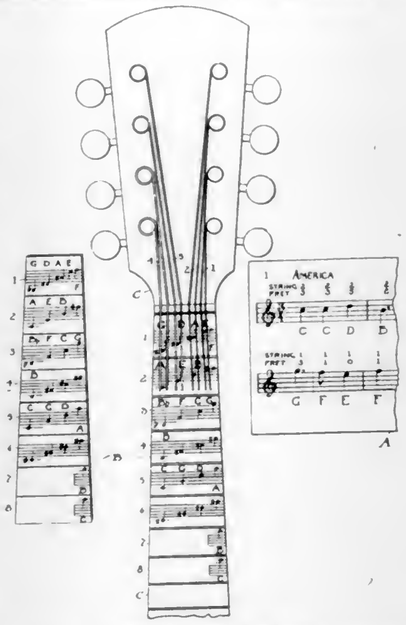
656,916. APPAREL-DRAWERS. JOSEPH R. WHITE, St. Joseph, Mo. Filed Sept. 7, 1899. Serial No. 729,726. (No model.)



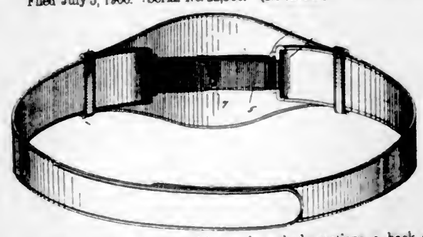
Claim.—A garment, having a body and a waistband, the latter lying snugly around the waist of the wearer, with its upper portion beneath the corset, and the body of the garment being formed at each side with approximately-vertical slits producing a rear flap, the upper edge of the rear flap terminating at the lower edge of the waistband, so as to leave said flap free of the corset and permit the flap to be released without disturbing the waistband, and fastening devices for removably joining the upper edge of said rear flap to the rear portion of the lower edge of the waistband, as described.

656,917. FINGER-GUIDE FOR MUSICAL INSTRUMENTS. WILLIAM WICHT, Cleveland, Ohio. Filed July 11, 1899. Serial No. 723,515. (No model.)

Claim.—As a new article of manufacture, a finger-guide for mandolins and like instruments, consisting of a flat rigid plate adapted to be removably placed on the neck of the instrument and having on its outer surface a series of subdivisions corresponding to the frets of the instrument and the frets thereon forming the lines of said subdivisions, transverse musical staffs in said subdivisions, and notes on said staffs and characters above each staff in each subdivision in line with the notes below to indicate the particular note to be played, substantially as described.



656,918. APPAREL-BELT. AMAND WIGHARD, Jersey City, N. J. Filed July 5, 1900. Serial No. 22,566. (No model.)



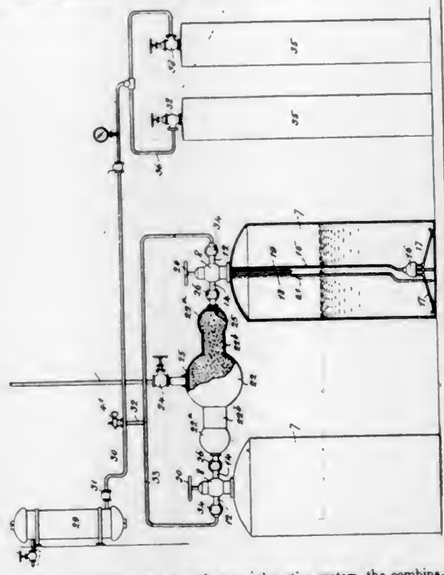
Claim.—1. A belt, comprising main or body sections, a back section relatively to which the first-named sections are adapted to slide, flexible connections between said body-sections and the back section, and means for limiting the stretching movement of said flexible connections, substantially as specified.

2. A belt, comprising main or body sections, a back section adapted to slide relatively to the main or body sections, an elastic material connected to the rear ends of the body-sections and also connected to said rear section, and a ribbon or tape connected to the rear ends of said body-section, substantially as specified.

3. A belt, comprising two main or body sections, a rear section having loops at its ends through which the main or body sections may slide, clips on the rear ends of said body-sections, an elastic attached to said clips and also attached to the said rear section, and a ribbon or the like also connected to the said clips and to said rear section, the ribbon being between the elastic and the rear section, substantially as specified.

656,919. APPARATUS FOR IMPREGNATING WATER WITH GAS. EDWIN C. WORMS, New York, N. Y., assignor of one-half to Arthur M. Gerow, same place. Filed Mar. 22, 1897. Serial No. 628,743. (No model.)

Claim.—1. In an apparatus for aerating or carbonating waters, the combination of a reservoir adapted to contain water and gas under pressure, an outlet-pipe leading from the reservoir and extended below the water-line, and a gas-pipe located above the water-line and communicating with the outlet-pipe, the gas-pipe having a bore reduced sufficiently to permit the escape of a portion only of the gas in the reservoir, thus dispensing the waters with a large proportion of gas without destroying the operating pressure within the reservoir.



2. In an apparatus for aerating or carbonating waters, the combination with a reservoir adapted to contain water and gas under pressure, of an outlet-pipe leading from below the water-line, a gas-pipe located above the water-line and passing into the outlet-pipe, the gas-pipe having a minute bore to take off only a portion of the gases, and a valved overflow-pipe leading from the reservoir at a point above the water-line.

3. In an apparatus for carbonating or aerating waters, the combination of two reservoirs adapted to contain the water and gas, an auxiliary aerating-chamber situated between the reservoirs and having enlarged end portions communicating respectively with the reservoirs, the chamber also having an enlarged middle portion with extensions communicating with the end portions, and means for carrying the water off from the middle portions of the chambers.

4. An apparatus for containing aerated or carbonated waters, the apparatus comprising a reservoir adapted to contain the water and gas under pressure, and means for carrying off the water, such means comprising a pipe leading downward below the water-line and having an orifice therein above the water-line, said orifice admitting a portion of the gas within the reservoir to pass out through the water.

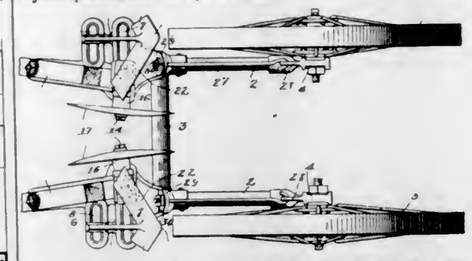
5. In an apparatus for carbonating or aerating waters, the combination of a reservoir adapted to contain water and gas, an auxiliary aerating-chamber forming an outlet-passage for the waters from the reservoir and having an enlarged end portion communicating with the reservoir, the chamber also having a contracted extension communicating with the reservoir, and an enlarged portion opposite the said enlarged end portion and communicating with the extension, such auxiliary aerating-chamber serving to carry fragmentary material and offering an alternately enlarged and contracted passage for the aerated waters.

6. An apparatus for dispensing carbonated or aerated waters, the apparatus comprising means for conducting the aerated waters to the point of discharge, and a gas-supply device communicating with said means and serving to supercharge with gas the aerated waters therein.

7. An apparatus for dispensing aerated or carbonated waters, the apparatus comprising a reservoir in which the waters are aerated, means serving to conduct the aerated waters from said reservoir, and a gas-supply device communicating with the reservoir and with said means, and serving to supercharge with gas the waters in said conducting means.

656,920. CULTIVATOR. LAURENCE C. YOUNG, Goose Creek, Ky. Filed June 28, 1900. Serial No. 21,929. (No model.)

Claim.—1. In a cultivator, the combination with a wheeled frame, of two rotary-disk fenders arranged to straddle a row of plants, means for adjusting the angle of said disk fenders relatively to the line of draft, hoes or cultivator-blades arranged opposite the outer sides of said disk fenders, and means for laterally adjusting said hoes or blades toward and from the outer sides of the disk fenders and rigidly fixing them in their adjusted position, substantially as described.



2. In a cultivator, the combination with a wheeled frame, of two rotary-disk fenders arranged to straddle a row of plants, means for adjusting the angle of said disk fenders relatively to the line of draft and for adjusting them laterally toward and from each other, hoes or cultivator-blades arranged opposite the outer sides of said disk fenders, and means for laterally adjusting said hoes or blades toward and from the outer sides of the disk fenders and rigidly fixing them in their adjusted position, substantially as described.

3. In a cultivator, the combination with a wheeled frame, of two concavo-convex rotary-disk fenders arranged to straddle a row of plants, means for adjusting said disk fenders laterally toward and from each other and for adjusting the angle of said disk fenders in such manner as to present either side thereof to the line of draft whereby the earth may be thrown either toward or from the plants, hoes or cultivator-blades adjustable toward and from the outer sides or faces of the disk fenders, and means for rigidly fixing said hoes or blades in their adjusted positions, substantially as described.

4. In a cultivator, the combination with a wheeled frame, of two disk fenders arranged to straddle a row of plants, means for adjusting said disk fenders at varying angles to a perpendicular position, and hoes or cultivator-blades arranged opposite the outer sides or faces of the disk fenders, substantially as described.

5. In a cultivator, the combination with a wheeled frame, provided with suitable brackets, of rigid pendent arms each carrying a rotary-disk fender at its lower end and provided at its upper end with a laterally-projecting and slotted curved flange, headed bolts passing through said slotted flanges and through the brackets, and approximately-semicircular bearing-blocks fitted on the bolts between the curved flanges and brackets, whereby said disk fenders may be adjusted at varying angles to a perpendicular position, substantially as described.

6. In a cultivator, the combination with a wheeled frame provided with suitable laterally-slotted brackets, of rigid pendent arms each carrying a rotary-disk fender at its lower end and provided at its upper end with a laterally-projecting and slotted curved flange, headed bolts passing through said slotted flanges and through the slotted brackets, approximately-semicircular bearing-blocks fitted on the bolts between the curved flanges and brackets, and nuts screwed on the bolts above the brackets, the arrangement being such that by loosening the nuts the disks may be adjusted at varying angles to a vertical position, at different angles to the line of draft and toward and from each other, and may be rigidly fixed in their several adjusted positions by tightening up said nuts, substantially as described.

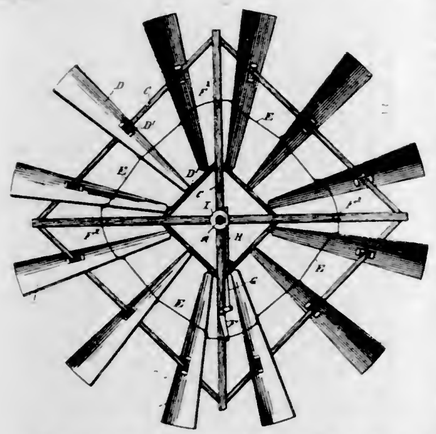
656,921. WINDMILL-WHEEL. JOHN E. ALBERS, Wisner, Nebr. Filed Apr. 14, 1900. Serial No. 12,858. (No model.)

Claim.—1. In a wind-wheel, the combination of a shaft, a skeleton frame secured on the shaft, wings pivoted on said frame, links connecting the wings with each other, a sleeve slidable on the shaft, a bell-crank lever engaging the sleeve, a second bell-crank lever connected with the links of the wings and with the first-named bell-crank lever, a pivoted arm having its free end forked and engaging the sleeve on the side opposite that engaged by the bell-crank lever, and a weighted lever provided with a foot engaging the said arm, substantially as described.

2. In a windmill, the combination with a bearing, a wind-wheel mounted in said bearing and provided with pivoted wings having a link connection with each other, a sleeve slidable on the wind-wheel shaft, and means for operating the wings from the said sleeve, of an arm pivoted to the bearing and engaging the sleeve, and a weighted lever pivoted to the bearing and provided with a footpiece working in a guideway of said bearing and adapted to engage the said arm, substantially as described.

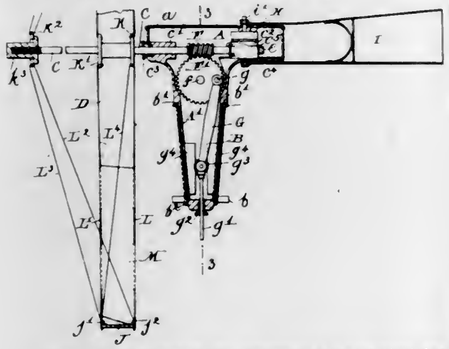
3. A wind-wheel, comprising a wind-wheel shaft, a skeleton frame

secured on said shaft, wings pivoted on said skeleton frame, links connecting said wings with each other, a bell-crank-lever connection with said links, a sleeve slidable on the shaft and engaging said bell-crank-lever connection, a pivoted arm engaging the sleeve and a weighted lever provided with a projection engaging the arm to press the sleeve with more or less force in contact with said bell-crank lever, substantially as shown and described.



4. A wind-wheel, comprising a shaft, a skeleton frame secured to the shaft and provided with friction-rollers, wings pivoted on said frame, links connecting the wings with each other, sundry of the links passing over the friction-wheels of the frame, a bell-crank lever pivoted on the frame and pivotally connected with one of the links of the wings, a second bell-crank lever pivoted on the frame and connected by a link with the first-named lever, a sleeve slidable on the shaft and with which the second bell-crank lever engages, a pivoted arm having a forked end engaging the sleeve on the side opposite that engaged by the bell-crank lever, and a weighted lever provided with an inclined foot engaging the said arm, substantially as herein shown and described.

656,922. WINDMILL. CHARLES F. ALGER, Melbourne, Victoria. Filed Apr. 27, 1900. Serial No. 14,607. (No model.)



Claim.—1. In a windmill, the combination of a wind-wheel shaft, a sliding bearing therefor, a cross-head fixed to said sliding bearing, a vane or tail geared to said sliding bearing, and springs connected to said cross-head and holding said sliding bearing in its normal position, substantially as set forth.

2. In a windmill, the combination of a wind-wheel shaft having worm and gear wheel connection with the pitman, a cross-head fixed to said sliding bearing, a vane or tail geared to said sliding bearing, and springs connected to said cross-head and holding said sliding bearing in its normal position, substantially as specified.

3. In a windmill a wind-wheel shaft (as C) mounted in a sliding bearing (as c^2) fitted with a rack (as H) in combination with a pinion upon the spindle of the steering vane or rudder of the mill substantially as and for the purposes herein described.

4. In a windmill a wind-wheel having a worm (as F) mounted upon its shaft or spindle in combination with a worm-wheel (as F') mounted in suitable bearings within the casing or other support and a spring-controlled bearing carrying said shaft or spindle substantially as and for the purposes herein described.

5. In a windmill, a wind-wheel shaft mounted in and carried by a longitudinally-sliding bearing, held in normal position by springs, and a tail or vane geared to said sliding bearing, substantially as set forth.

6. In a windmill the combination with a wind-wheel shaft of a longitudinally-sliding bearing, antifriction-balls being inserted between a collar or collars on said shaft and the face of said bearing and a tail or vane geared to said sliding bearing, substantially as and for the purposes herein described.

7. In a windmill a wind-wheel mounted upon a longitudinally-sliding shaft or spindle in combination with springs and a sliding bearing carrying said shaft and acted upon by said springs for retaining said wind-wheel and shaft in their normal position substantially as and for the purposes herein described.

656,923. CABLE-HANGER. CLEMENT E. BEARD, Columbiana, Ohio. Filed July 6, 1900. Serial No. 22,687. (No model.)

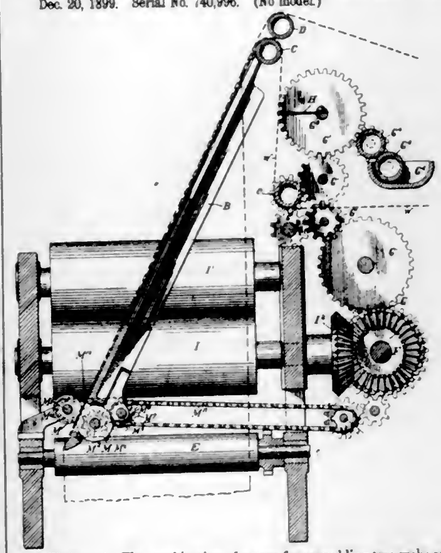


Claim.—1. A cable-hanger, comprising two members pivotally connected with each other and having prongs for engaging a cable, and hooks for engaging the hanger-support, as set forth.

2. A cable-hanger, comprising two members pivotally connected with each other and having prongs for engaging a cable, and hooks for engaging the hanger-support, said hooks being arranged to overlap one another when the hanger is closed, as set forth.

3. A cable-hanger, comprising two members having semicircular prongs adapted to inclose the cable, and shanks having hooks arranged to overlap one another when the members are in a closed position, as set forth.

656,924. PAPER FOLDER AND PASTER. HENRY F. BECHMAN, Battle Creek, Mich., assignor to Edwin C. Nichols, same place. Filed Dec. 20, 1899. Serial No. 740,996. (No model.)



Claim.—1. The combination of means for assembling two webs and folding the same longitudinally; and means for applying paste transversely to one of the webs before the same are assembled and folded; with means for applying paste a second time to the webs and transversely thereof after the webs have received their first fold, and means for thereafter severing the webs, substantially as described.

2. In web folding and pasting mechanism, the combination of means for assembling two webs and folding the same longitudinally, and means for thereafter severing the webs into sheet lengths; with means for applying paste transversely to one of the webs before the same are assembled and folded, and means for applying paste to an inner fold of the webs after the same have received their first fold and prior to the severance thereof substantially as described.

3. The combination of mechanism for assembling and folding webs longitudinally and means for applying paste to the webs prior to the assembling and folding thereof; with means for separating the folds of the webs; means for applying a line of paste to one of the separated folds and means for reuniting the separated folds.

4. The combination of mechanism for assembling and folding webs longitudinally, means for applying a line of paste transversely to one of the webs prior to the assembling and folding thereof; with means for separating the folds of the webs after they have been folded, means for applying a line of paste to one of the separated folds transversely thereof, and means for reuniting the separated folds and severing the same into sheet lengths, substantially as described.

5. In a web folding and pasting mechanism, the combination of means for assembling two webs and folding the same longitudinally, and means for thereafter severing the webs into sheet lengths; with means for applying a line of paste to one of the webs transversely to the direction of movement thereof and prior to the assembling and folding of the webs, means for separating the folds of the webs after they have been folded to page widths and means for applying a line of paste to one of the separated folds of the web transversely to the line of movement thereof, and means for reuniting the separated folds prior to the severance of the webs, substantially as described.

6. In a web folding and pasting mechanism, the combination of means for imparting a longitudinal fold to a web, means for splitting the web longitudinally after it is folded, and means for separating the divided portions of the web, mechanism for applying paste transversely to one of the divided portions of the web, means for subsequently reuniting the divided portions of the web, and mechanism for thereafter cutting the same into sheet lengths, substantially as described.

7. The combination of means for assembling and imparting a longitudinal fold to webs of paper, means for separating the folds of the web and mechanism for applying a line of paste to the separated folds of the webs, and means for thereafter reuniting the separated folds of the webs, substantially as described.

8. The combination of means for assembling and imparting a longitudinal fold to webs of paper, mechanism for separating the longitudinal folds of the webs, means for applying a line of paste to one of the separated folds of the webs transversely to the length or line of movement thereof, means for reuniting the separated folds of the webs, and means for severing the same into sheet lengths, substantially as described.

9. In web folding and pasting mechanism, the combination of means for assembling and imparting a longitudinal fold to webs of paper, means for longitudinally splitting the folded webs, means for separating the opposite folds of the split webs, mechanism for applying a line of paste to the separated folds of the web, and means for thereafter reuniting the separated folds of the split webs substantially as described.

10. In web folding and pasting mechanism, the combination of means for assembling and imparting a longitudinal fold to webs of paper, means for longitudinally splitting the folded web, means for separating the opposite folds of the split webs, mechanism for applying a line of paste to one of the separated folds of the web transversely to the length thereof, and means for thereafter reuniting the separated folds of the split webs, and means for severing the same into sheet lengths, substantially as described.

11. In web folding and pasting mechanism, the combination of means for assembling two webs and folding the same longitudinally, means for longitudinally splitting the folded webs, and means for thereafter severing the webs into sheet lengths; with means for applying paste to one of the webs before the same are assembled and folded, means for separating the opposite folds of the split webs, and means for applying paste to a fold of the web while separated and prior to the severance of the webs into sheet lengths, and means for reuniting the separated webs, substantially as described.

12. The combination of the former and a pair of rolls coacting therewith, means for directing a pair of webs to said former, mechanism for applying paste to one of the webs prior to its passage over the former, mechanism for slitting the folded webs longitudinally, means for dividing or separating the folds of the slitted web, means for applying paste to one portion of the slitted and separated webs, and cutting-cylinders for severing the reunited portions of the webs into sheet lengths, substantially as described.

13. In web folding and pasting mechanism, the combination of means for assembling two webs and folding the same longitudinally, means for longitudinally splitting the folded webs, and means for thereafter severing the webs into sheet lengths; with means for applying paste transversely to one of the webs before the same are assembled and folded, means for separating the opposite folds of the split webs, and means for applying paste to the inner fold of the webs and transversely to the length thereof while separated, after the same have received their first fold, and prior to the severance of the webs into sheet lengths, substantially as described.

14. The combination of the former and a pair of rolls coacting therewith, means for directing a pair of webs to said former, a pasting mechanism for applying paste to one of the webs prior to its passage over the former, mechanism for slitting the folded webs longitudinally, a second pasting mechanism, guide-rollers by which one half of the slitted web is led around the second pasting mechanism, means for reuniting the separated webs, and cutting-cylinders between which the reunited slitted portions of the webs are led and severed into sheet lengths, substantially as described.

15. The combination of the former, the rolls at the apex thereof and coacting therewith, cutting-cylinders at one side of the former, a pasting mechanism at the opposite side of the former, mechanism for slitting the folded web, means for directing one portion of the slitted web directly to the cutting-cylinders, and means for directing the other portion of the slitted web past the paster and thence to the cutting-cylinders, substantially as described.

16. The combination of the former, the rolls at the apex thereof and coacting therewith, a secondary pasting mechanism beside the former, means for directing a pair of webs to and over the former, a primary pasting mechanism adapted to apply paste to the webs before they reach the former, mechanism for slitting the folded webs, means for directing one portion of the slitted webs directly to the cutting-cylinders and for directing the other portion of the slitted webs past the secondary pasting mechanism, substantially as described.

17. The combination of the former, the rolls at the apex thereof and coacting therewith, cutting-cylinders at one side of the former, a secondary pasting mechanism at the opposite side of the former, means for directing a pair of webs to the former, and mechanism for applying a line of paste to one of the webs transversely to the line of movement thereof before it reaches the former; with mechanism for slitting the folded web, means for directing one portion of the slitted web directly to the cutting-cylinders and for directing the other portion of the slitted web past the secondary pasting mechanism and thence to the cutting-cylinders, substantially as described.

18. The combination of the former, the rolls at the apex thereof and coacting therewith, cutting-cylinders at one side of the former, and a secondary transversely-operating pasting mechanism at the opposite side of the former, means for directing a pair of webs to the former, and mechanism for applying a line of paste to one of the webs transversely to the line of movement thereof before it reaches the former, and means at the apex of the former for slitting the web longitudinally; with means for directing one portion of the slitted web directly to the cutting-cylinders and a set of guide-rollers for looping the other portion of the slitted web around the secondary pasting mechanism and thence to the cutting-cylinders, all substantially as and for the purpose set forth.

656,925. CARD-CASE. HARRY BICK, New York, N. Y. Filed Dec. 30, 1899. Serial No. 742,038. (No model.)

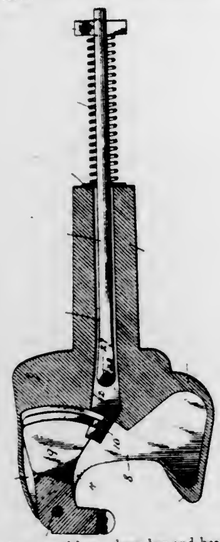


Claim.—In a card-case, a box having a spring-actuated false bottom and an inwardly-projecting finger c, adapted to engage the cards when the box is open, combined with a slotted lid having a feed-dog, and a pair of depending bars b^3, that are adapted to engage the cards when the box is closed, substantially as specified.

656,926. CAR-COUPLING. CHARLES BICKMEIER, Bellaire, Ohio. Filed Oct. 5, 1899. Serial No. 732,639. (No model.)

Claim.—1. In a car-coupler the combination with a draw-head, knuckle pivoted thereto, and segment on the knuckle, of a retaining member on the head, movable to and from the path of movement of the segment, corresponding recesses in the side of the retaining member and edge of the segment, respectively, whereby the knuckle may be securely withheld from opening before it is completely closed, and an inclined projection upon the forward edge of the segment and a corresponding recess in

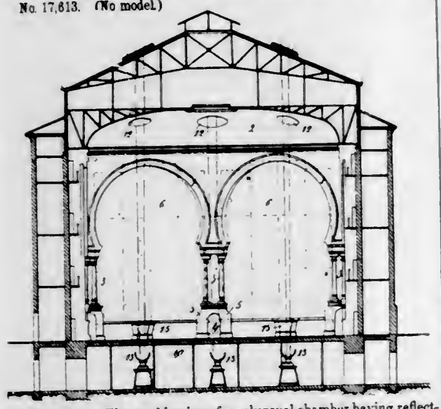
the retaining member, said projection and recess cooperating to prevent the rising of the retaining member when the knuckle is completely closed, substantially as set forth.



2. A car-coupler comprising a draw bar and head provided with a longitudinal passage through the same, of an emergency-bar working in the passage, and a coupling-pin in the head adapted to secure the emergency-bar thereto, substantially as set forth.

3. A car-coupler comprising a draw bar and head provided with a longitudinal passage through the same, of an emergency-bar working in the passage, and a coupling-pin in the head adapted to secure the emergency-bar thereto, said emergency-bar projecting in the rear of the draw-bar, and there provided with a coiled spring working between fixed limits thereon, substantially as set forth.

656,927. **CHAMBER WITH MIRROR WALLS.** MATHIAS A. BIVER and ALFRED E. HENARD, Paris, France. Filed May 22, 1900. Serial No. 17,613. (No model.)

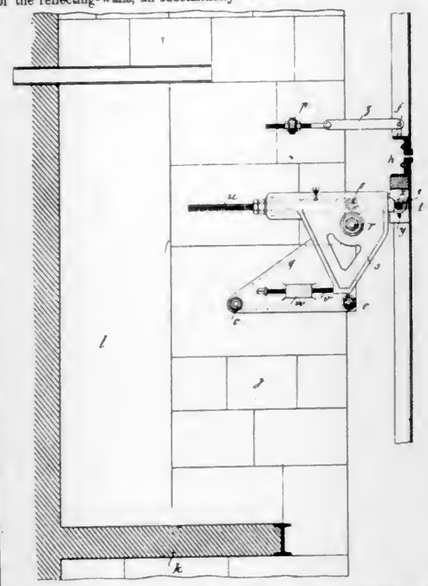


Claim.—1. The combination of a polygonal chamber having reflecting-walls with means for producing vertical luminous beams upon the lines bisecting the angles of the reflecting-walls, at equal distances from the center of the chamber, as and for the purpose described.

2. A polygonal chamber having reflecting-walls and a floor and ceiling with corresponding openings with projectors below the openings in the floor, substantially as described.

656,928. **MIRROR-SUSPENDING DEVICE.** MATHIAS A. BIVER and ALFRED E. HENARD, Paris, France. Filed May 22, 1900. Serial No. 17,614. (No model.)

Claim.—1. A polygonal chamber with reflecting-walls, each one composed of any number of mirrors, each in a special frame, in combination with means for suspending and attaching each frame independently of the others at its corners, and devices for adjusting each frame in three directions perpendicular to one another to change the verticality and plane of the reflecting-walls, all substantially as described.



2. A polygonal chamber having reflecting-walls consisting of a series of framed mirrors with suspending devices for each mirror, consisting of pairs of brackets movable about a horizontal axis parallel to the plane of the mirror, said brackets carrying sliding arms provided with hooks, and adjustable in a direction perpendicular to the mirror, and a supporting-bolt adjustable on the frame in a direction parallel to the plane of the mirror, in combination with a rod of adjustable length, provided to hold the mirror at its lower corners, substantially as described.

3. A polygonal chamber with reflecting-walls, composed of framed mirrors, each frame consisting of a rigid framework provided, at its edges, with a casing such as *h*, and carrying at its upper corners bolts *e* threaded to be adjustable in a direction parallel to the plane of the mirror, and at its lower corners with hooks *f*, substantially as described.

656,929. **TOY.** THALRON BLAKE, Philadelphia, Pa. Filed May 17, 1900. Serial No. 17,000. (No model.)

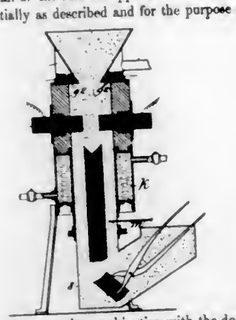


Claim.—1. A toy, having a barrel or body, one end of which is adapted to carry a picture, a wheel mounted in the barrel or body and having a non-continuous web, so that the picture is visible when the wheel turns, a stick or stem secured to the barrel or body and having a passage therein through which a blast of air may be passed, the passage in the stick communicating with an opening in the barrel, from which opening the blast of air passes to the wheel, to turn the same.

2. A toy, having a barrel or body adapted to carry a picture, a wheel mounted in the barrel or body and having a non-continuous web to expose the picture as the wheel turns, a wing or wings carried by the wheel, and means for assisting the application of a blast of air to the wings of the wheel, to turn the same.

656,930. **ELECTRIC FURNACE.** WILHELM BORCHERS, Aix-la-Chapelle, Germany. Filed Apr. 12, 1900. Serial No. 12,625. (No model.)

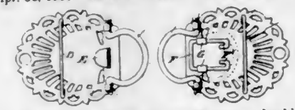
Claim.—1. In an electric furnace, the combination with the furnace and the oppositely-disposed electrodes arranged therein, of the water-jacket on the discharge end of the furnace, and a chisel movably arranged transversely in the wall of the furnace opposite the discharge end of the water-jacket, substantially as described and for the purpose specified.



2. In an electric furnace, the combination with the downwardly-extending furnace and the oppositely-disposed electrodes arranged therein, of the water-jacket on the discharge end of the furnace, a toothed roller arranged transversely to the discharge end of the water-jacket, a conveyer for conveying off the products fed thereto by the toothed roller and a chisel movably arranged transversely in the wall of the furnace for breaking up the carbid after it leaves the roller and before it is discharged by the conveyer, substantially as described.

3. In an electric furnace, the combination with the inclined furnace and the oppositely-disposed electrodes arranged laterally in the walls of the furnace, of the water-jacket on the discharge end of the furnace, a toothed roller arranged transversely to the discharge end of the water-jacket, and means for controlling the movement of the roller, substantially as described.

656,931. **COMBINATION PULLEY AND SASH BUCKLE.** JULIUS BROWER, New York, N. Y., assignor to Weiller & Sons, same place. Filed Apr. 30, 1900. Serial No. 14,871. (No model.)



Claim.—1. As a new article of manufacture, a buckle having its body members provided with guides or pulleys, and with means for fastening the inner ends of the members close together, whereby the buckle can be converted from a pulley-buckle to a sash-buckle or vice versa.

2. As a new article of manufacture a buckle comprising two body members provided with means for forming with the members a pulley-buckle the said members being also provided with means for forming with the members a sash-buckle, substantially as shown and described.

3. As a new article of manufacture a buckle comprising two body members provided with means for forming with the members a pulley-buckle, and also provided with means for forming with the members a sash-buckle, the means being movable to allow of adjusting the same upon the back of the members into an inactive position, or to project the same into an active position, as set forth.

4. As a new article of manufacture a buckle, comprising two body members having movable guides, a movable eye, and a fixed hook, as set forth whereby the buckle can be converted from a sash-buckle to a pulley-buckle and vice versa.

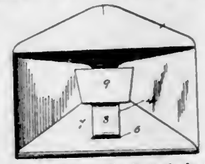
5. As a new article of manufacture, a buckle comprising two body members provided with cross-bars for connection with a belt or sash, the said members being also provided with hinged guides, one of said members having a hook and the other member having an eye slidable thereon and adapted to engage said hook, the said hook and eye lying within the said guides in either an extended or folded position, as set forth.

6. As a new article of manufacture a convertible sash and pulley buckle, comprising separable body members provided with guides to receive the connecting-strap when the buckle is used as a pulley-buckle, and with clasp devices to connect the body members when the buckle is used with a sash, said clasp devices and guide devices being movable, whereby the guide devices may be adjusted out of the way of the clasp devices and vice versa.

656,932. **ENVELOP.** BERRY A. BROWN, Franklin, Ohio. Filed Jan. 10, 1900. Serial No. 917. (No model.)

Claim.—1. An envelop provided with slits in its body forming a retaining-strap and a sealing-tongue doubled upon itself and having its doubled end passed around one edge of the strap.

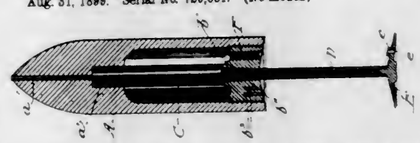
2. An envelop having a retaining-strap and a sealing-tongue having double and single ends folded upon said strap in opposite directions.



3. An envelop provided with slits in its body forming a retaining-strap, and a sealing-tongue doubled upon itself, the doubled end being passed under the strap and folded back thereon, the single end of the tongue being folded over the strap in the opposite direction, and having its extremity passed into the envelop.

4. An envelop having a retaining-strap and a keeper-slit formed in its body and a sealing-tongue doubled upon itself, passed under the strap and folded back thereon and having its single end folded back over the strap in the opposite direction and passed into the keeper-slit.

656,933. **PROJECTILE.** CHARLES M. BROWN, Chicago, Ill. Filed Aug. 31, 1899. Serial No. 729,061. (No model.)



Claim.—1. A projectile having a body portion, a vane located in rear thereof and adapted to move relatively thereto, and a longitudinally-movable stem carrying the vane and having at its forward portion a tapering enlargement, the body of the projectile being provided with a socket occupied by the stem, the rear portion of the socket being contracted upon a taper corresponding with that of the stem, whereby when the tapering surfaces are in engagement the stem will be rigidly held against lateral movement relatively to the body of the projectile, substantially as set forth.

2. A projectile having a body portion provided with a contracted bore *a* at the point thereof, a larger bore *a'*, and a still larger bore *a''* in rear of the point, a plug closing the rear end of the bore *a''* having a tapering opening, a tube fitting the bore *a'*, and extending through the bore *a''* to the plug, a vane adapted to seat against the rear end of said body portion, a longitudinally-movable stem carrying the vane and occupying the central opening of the plug B and the tube C, the forward portion of the stem being provided with a tapering enlargement adapted to engage the seat formed by the tapering opening of the plug, substantially as set forth.

3. A projectile having a body portion provided with a charge-chamber, a plug closing the rear end of said chamber and having a fuse-opening disposed eccentrically with relation thereto, a vane adapted to seat against the rear end of the body portion and adapted also to move away therefrom, said vane having an eccentrically-located opening corresponding with the fuse-opening, and means for limiting the movement of the vane away from the rear end of the projectile, the vane being balanced, substantially as set forth.

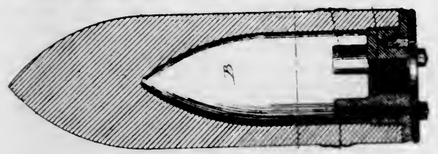
4. A projectile having a body portion provided with a charge-chamber, and a fuse-opening located at the rear end of the body portion and to one side of the center thereof, a vane consisting of a disk adapted to seat against and practically cover the rear end of the body portion and adapted also to move away therefrom, said vane having an opening corresponding with the fuse-opening, and a flange surrounding said opening and adapted to enter the fuse-opening, said flange being of the same weight as the metal displaced to form the opening which it surrounds, and means for limiting the movement of the vane away from the rear end of the projectile, substantially as set forth.

5. A projectile having a body portion provided with a charge-chamber, and a plug closing the rear end of said chamber and having a fuse-opening, a portion of the metal of the plug being removed at a point diametrically opposite the fuse-opening for the purpose of balancing the plug, substantially as set forth.

656,934. **PROJECTILE.** CHARLES M. BROWN, Chicago, Ill. Filed Jan. 22, 1900. Serial No. 2,320. (No model.)

Claim.—1. A projectile having a body, a vane or tailpiece consisting of a disk adapted to seat against the rear end of the body, and means for connecting the vane or tailpiece with the body and allowing the vane

or tailpiece to move a limited distance in rear thereof, the outer margin of the vane or tailpiece being chamfered, substantially as set forth.



2. A projectile having a body, a vane or tailpiece, a chamber in one of them, means for developing pressure in said chamber for displacing the vane or tailpiece after the projectile leaves the gun, and means for connecting the vane of tailpiece with the body and permitting it to move a limited distance in rear thereof, substantially as set forth.

3. A projectile having a body, a vane or tailpiece adapted to seat against the rear end of the body, means for connecting the vane or tailpiece with the body and allowing the vane or tailpiece to move a limited distance in rear thereof, and a chamber adapted to contain an explosive charge for moving the vane or tailpiece away from the body, substantially as set forth.

4. A projectile having a body, a vane or tailpiece, means for connecting the vane or tailpiece with the body and permitting it to move a limited distance in rear thereof, the body being provided with a chamber for containing an explosive charge which when fired will exert pressure upon the vane or tailpiece and move it away from the body, substantially as set forth.

5. A projectile having a body, a vane or tailpiece adapted to seat against the rear of the body, means for connecting the vane or tailpiece with the body and permitting it to move a limited distance in rear thereof, the body being provided with a chamber adapted to contain an explosive charge and the vane or tailpiece being provided with an opening through which said charge is ignited by the explosion of the projecting charge, substantially as set forth.

6. A projectile having a body, a vane or tailpiece in the nature of a disk adapted to seat against the rear end of the body, said vane or tailpiece having an opening for the passage of air, and means for connecting the vane or tailpiece with the body and permitting it to move a limited distance in rear thereof, substantially as set forth.

7. A projectile having a body, a vane or tailpiece adapted to seat against the rear of the body, said vane or tailpiece consisting of an annular disk or ring, and means for connecting the vane or tailpiece with the body and permitting it to move a limited distance in rear thereof, substantially as set forth.

8. A projectile having a body provided with a charge-chamber, a centrally-located fuse-opening at the rear end of the body, a vane or tailpiece consisting of an annular disk, the central opening of which registers with the fuse-opening aforesaid, and means for connecting said vane or tailpiece with the body and permitting it to move a limited distance in rear thereof, substantially as set forth.

9. A projectile having a body provided with a charge-chamber and a plug closing the rear end of said chamber, said plug having a centrally-located fuse-opening, a vane or tailpiece consisting of an annular disk, the central opening of which registers with the fuse-opening aforesaid, and means for connecting said vane or tailpiece with the body and permitting it to move a limited distance in rear thereof, substantially as set forth.

10. A projectile having a body, a tailpiece adapted to seat against the rear end of the body, means for connecting the tailpiece with the body and permitting it to move a limited distance in rear thereof, and means for holding the tailpiece against the rear end of the body before it is fired, said holding means being such that its holding power is destroyed by the heat generated by the explosion of the projecting charge, substantially as set forth.

11. A projectile having a body, a vane or tailpiece adapted to seat against the rear end thereof, means for connecting the vane or tailpiece with the body and permitting it to move a limited distance in rear thereof, and an adhesive substance uniting the vane or tailpiece and the body, said adhesive substance being such that its holding power is destroyed by the heat developed in the explosion of the projecting charge, substantially as set forth.

656,935. FARE-REGISTER. WILLIS L. BROWNELL, Elizabeth, N. J., assignor to the Brooklyn and New York Railway Supply Company, same place. Filed Nov. 12, 1897. Serial No. 658,333. (No model.)

Claim.—1. The combination with the bell within a fare-register, of a pawl-carrier, a spring-pressed pulling-pawl moving therewith, a ratchet-wheel rotated step by step by said pawl, means for locking said ratchet-wheel against retrogression, and a distinct bell-lever that remains at rest during the registering movement and the return movement of said pawl-carrier and is acted on by said pawl in the final act of dropping into a fresh interdental notch after such return movement is fully completed.



2. The combination with a ratchet-wheel, within a register, of a spring-pressed pulling-pawl and a spring-pressed detent-pawl in mesh with said wheel, and a distinct and normally-stationary bell-lever carrying the bell-hammer and acted on by said pawl to retract said hammer after the registering and return movements of said pawl-carrier are both completed and in the final act of dropping into a fresh interdental notch, and a distinct striking-spring acting on said bell-lever.

3. The combination, in a register, of a ratchet-wheel and means for locking it against retrogression after each registering movement, means for turning said wheel step by step including a spring-pressed pulling-pawl constructed with a bell-ringing projection, a distinct and normally-stationary bell-lever acted on by said projection as the pawl drops into a fresh interdental notch, and a striking-spring acting on said bell-lever.

4. The combination, in a register, of a ratchet-wheel and means for locking it against retrogression after each registering movement, a pulling-pawl, means for pressing the head of said pawl against the ratchet-teeth and into the successive interdental notches, and a distinct bell-lever acted on by said pulling-pawl during the act of pressing said head into a fresh interdental notch after the registering and return movements are both completed.

5. The combination, in a register, of a ratchet-wheel and means for locking it against retrogression after each registering movement, a pulling-pawl, a pawl-pressing spring, a pawl-lever transmitting pressure from said spring to the head of said pawl, and a distinct bell-lever acted on by said pulling-pawl during the act of pressing said head into a fresh interdental notch of said ratchet-wheel.

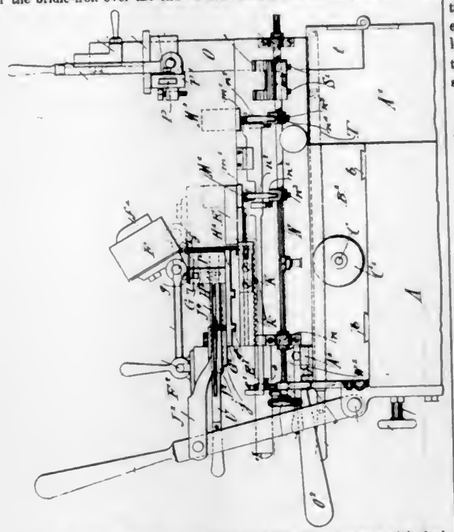
6. The combination, in a register, of a ratchet-wheel and means for locking said wheel against retrogression, a "bell-guard" detent-pawl, a pulling-pawl, a pawl-pressing spring, a pawl-lever transmitting pressure from said spring to the head of said pulling-pawl and locked by the upper end of said detent-pawl, and a distinct bell-lever actuated by said pulling-pawl in its act of dropping into a fresh interdental notch in said ratchet-wheel.

656,936. MACHINE FOR BENDING BRIDLE-IRONS. JEREMIAH BUCKLEY, New York, N. Y., assignor of one-half to Michael O'Donoghue, St. Louis, Mo. Filed Jan. 26, 1900. Serial No. 2,718. (No model.)

Claim.—1. The combination, in a machine for bending bridle-irons, of the bed, transversely-movable blocks, a supporting-rail between the blocks, an adjustable anvil mounted on said rail and projecting always above the said blocks, means for bending the head or loop of the bridle-iron around said anvil, and means for bending the hooks of the bridle-iron over the ends of said blocks, substantially as set forth.

2. The combination, in a machine for bending bridle-irons, of the bed, transversely-movable blocks, a supporting-rail between the blocks, an adjustable anvil on said rail, a separable top section coöperating with said anvil to increase its height, means for bending the head or loop of the bridle-iron around said anvil, and means for bending the hooks of the bridle-iron over the ends of the said blocks, substantially as set forth.

3. The combination, in a machine for bending bridle-irons, of the bed, transversely-movable blocks, a supporting-rail between the blocks, an adjustable anvil mounted on said rail, slide-plates movable longitudinally of said blocks, a top plate fixed against transverse movement and movable longitudinally, with said slide-plates, a pair of pivoted jaws coöperating with said anvil to bend the loop of the bridle-iron upon the same, said jaws being mounted on said top plate, and means for bending the hooks of the bridle-iron over the ends of said blocks, substantially as set forth.



4. The combination, in a machine for bending bridle-irons, of the bed, transversely-movable blocks, an adjustable anvil, means for supporting the same, a top plate fixed against transverse movement and movable longitudinally of the machine, a separable anvil-section, a pair of jaws, said anvil-section and jaws being pivotally mounted on said top plate and coöperating with the anvil, and means for bending up the hooks of the bridle-iron, substantially as set forth.

5. The combination, in a machine for bending bridle-irons, of the bed, adjustable blocks mounted thereon, an anvil suitably fixed, means for bending up the loop of the bridle-iron around said anvil, pivoted retainers on said blocks and lying normally in recesses in the blocks, and means for bending the hooks of the bridle-iron over the ends of said blocks, substantially as set forth.

6. The combination, in a machine for bending bridle-irons, of the bed, adjustable blocks mounted thereon and provided with recessed ends, a suitably-fixed anvil, means for bending up the loop of the bridle-iron around said anvil, and a pair of parallel, pivoted jaws coöperating with the recessed ends of said blocks, for bending up the hooks of the bridle-iron, substantially as set forth.

7. The combination, in a machine for bending bridle-irons, of the bed, blocks mounted thereon and provided with recessed ends, a suitably-fixed anvil, means for bending up the loop of the bridle-iron around said anvil, a fixed guide-post, a pair of parallel jaws, and a support guided on said post and to which said jaws are pivoted so as to coöperate with the recesses of the blocks to form the hooks of the bridle-iron, substantially as set forth.

656,937. BAND OR CORD TIE. EDWARD C. BURNETT, Carmichaels, Pa. Filed June 7, 1900. Serial No. 19,458. (No model.)



Claim.—1. A device of the class described, comprising a split ring, having substantially-parallel overlapped end portions, extending in opposite directions and projecting beyond the outer margin thereof, and a flexible cord or band secured to the ring opposite the overlapped portions thereof.

2. A device of the class described, comprising a split ring, having substantially-parallel overlapped end portions, which project in opposite directions beyond the margin thereof, and a flexible cord or band, having one end connected to the body of the ring, adapting the opposite free end of the cord to be looped transversely across the inner side of the inner projecting end, thence transversely inward across the overlapped portions of the ring, and finally looped transversely outward across the inner side of the opposite projecting end portion.

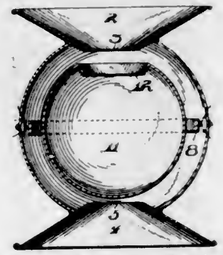
3. A device of the class described, comprising an elongated or elliptical ring, formed from a single length of stiff spring-wire, the opposite end portions thereof being substantially parallel and overlapped for one longitudinal side of the ring, and projected in opposite directions beyond the latter, and a flexible cord or band secured to the ring at a point opposite the overlapped portions thereof.

656,938. HARNESS-SNAP. ADDISON B. CAMERON, Cameron, Mont. Filed May 23, 1899. Serial No. 717,973. (No model.)



Claim.—A snap-hook, comprising a shank, having a bill, and a longitudinal slot, a tongue coöperating with the bill, pivotally mounted within the slot, and provided with a socket or recess formed in its inner side, and a coiled spring housed within the socket or recess and encircling the pivot of the tongue, and provided with forwardly and rearwardly extending arms, the forward arm engaging the outer side of the shank immediately in advance of the slot, and the rear arm engaging the tongue at the rear side of the socket and said arms also extending in opposite directions from the pivot of the tongue.

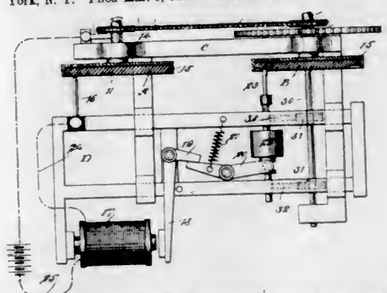
656,939. CUSPIDOR. ROBERT CARSON, Etna, Pa., assignor to William Wilson, Sharpsburg, Pa. Filed Feb. 5, 1900. Serial No. 4,040. (No model.)



Claim.—1. In a cuspidor, the combination of an outer casing provided with an upper and lower bell-shaped mouth having openings therein communicating with said casing, an interior ring pivotally secured in said casing, and an interior vessel pivotally connected to said ring, all parts being arranged and operating substantially as herein shown and described.

2. In a cuspidor, the combination of an outer casing, an inner casing having an opening secured therein, an upper and lower bell-shaped mouth communicating with said casing, and means whereby when said cuspidor is reversed the opening of the inner casing will register with the upper or lower bell-shaped mouth of the outer casing, substantially as described.

656,940. ENGRAVING-MACHINE. CHARLES CHEVALIER, New York, N. Y. Filed Mar. 9, 1900. Serial No. 8,046. (No model.)

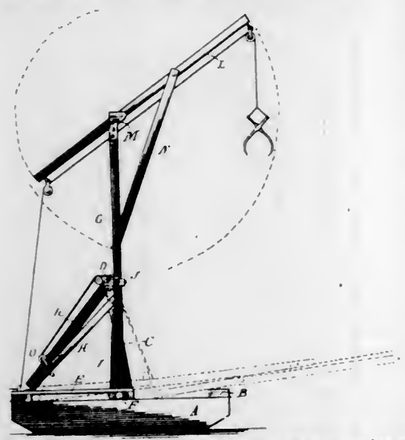


Claim.—1. An apparatus for reproducing patterns, comprising a pattern-head, a work-holding head, a connection whereby said heads are caused to move in unison, a shaft carrying pinions and operatively con-

nected with said heads, a frame mounted to slide in a direction parallel with the faces of the heads and provided with longitudinal racks engaged by said pinions, a reproducing-tool mounted to slide in the frame transversely, that is, toward and from the work, said tool having an annular groove, a lever fulcrumed on the frame about an axis ranging transversely of the direction in which the tool slides, a projection on said lever engaging the annular groove of the tool, a spring connected with said lever to lift the tool off the work, an armature-lever fulcrumed on the frame about an axis parallel with that of the tool-lever, said armature-lever and tool-lever engaging each other, an electromagnet carried by the frame adjacent to the armature-lever and arranged to attract the latter so as to force the tool toward the work, and a circuit including the pattern-head, the tracer and the electromagnet.

2. An apparatus for reproducing patterns, comprising a pattern-head and a work-holding head connected to move in unison, a frame movable parallel with the faces of said heads, a tracer secured to the frame and arranged to engage the surface of the pattern, a reproducing-tool mounted to slide in the frame transversely, that is, toward and from the work, said tool having an annular groove, a lever fulcrumed on the frame about an axis ranging transversely of the direction in which the tool slides, a projection on said lever engaging the annular groove of the tool, a spring connected with said lever to lift the tool off the work, an armature-lever fulcrumed on the frame about an axis parallel with that of the tool-lever, said armature-lever and tool-lever engaging each other, an electromagnet carried by the frame adjacent to the armature-lever and arranged to attract the latter so as to force the tool toward the work, and a circuit including the pattern-head, the tracer and the electromagnet.

656,941. **FOLDING HAY-DERRICK.** DAVID H. CLARK, Catlin, Ind. Filed Mar. 10, 1900. Serial No. 8,243. (No model.)



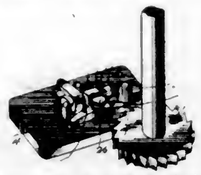
Claim.—1. A derrick consisting of a base, a frame mounted on said base and having a ladder secured thereto, guide-bars secured to said base, a post having a roller at its base movable in said guides a crane-arm on said post and suitable pulleys and ropes secured to said arm and frame for hoisting a load.

2. A derrick having a foundation, a frame having braces hinged to said foundation, a post rotatable in said frame, guide-bars on said foundation a roller movable in said guideways and a ladder hinged to said foundation and secured to a cross-bar on said frame.

3. A derrick having a foundation consisting of longitudinal beams and cross-bars a frame having braces hinged to said foundation, guide-bars secured to said foundation a post rotatably mounted in a cross-bar in said frame a ladder connected with upper cross-bar of said frame, a roller movable in ways formed by said guide-bars, braces secured to said roller and to the cross-bar of the frame, a crane-arm with pulleys mounted thereon and a hoisting-cable with windlass substantially as described.

656,942. **RATCHET-BRAKE.** JAMES CLARK, Colorado Springs, Colo., assignor of one-half to A. B. Clark, Clarinda, Iowa. Filed Feb. 28, 1900. Serial No. 6,838. (No model.)

Claim.—1. A ratchet-controlling mechanism for brakes comprising a pivoted pawl, a weighted lever for engaging one end of the said pawl, and a foot-lever engaging the other end of said pawl, means connecting the foot-lever with the weighted lever, the construction being such that the foot-lever may be actuated to move the pawl or to move the weighted lever so as to throw the latter back and forth and thereby hold the pawl into or out of engagement with the ratchet of a brake, substantially as described.



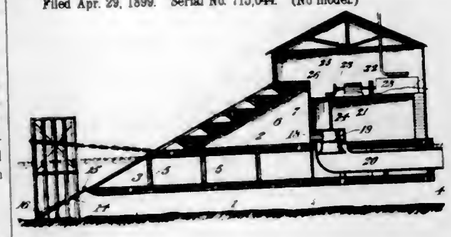
2. A ratchet-controlling mechanism for brakes comprising a base-plate, a pawl pivotally mounted thereon, a weighted lever adapted to engage the top and side of the said pawl, a foot-lever for throwing the said weighted lever back and forth whereby the said lever will alternately engage the top and side of the pawl to hold it in or out of engagement with the ratchet-wheel of a brake, substantially as described.

3. A mechanism for controlling brakes comprising a base-plate, a housing mounted thereon, a pawl pivoted in said housing and projecting upon either side thereof, a pivot-rod also mounted in the said housing, a weighted lever loosely mounted on the said pivot-rod and having projections for engaging the top and side of the said pawl, a foot-lever also mounted upon the said pivot-rod and adapted to partially rotate the same, the said foot-lever also engaging one end of the pawl whereby upon depressing the foot-lever the weighted lever will be thrown to one side or the other and the pawl may be moved back and forth, substantially as described.

4. A ratchet-controlling mechanism for brakes comprising a base-plate, a housing formed thereon, standards having journal-bearings, a ratchet-engaging pawl mounted in said housing, a pivot-rod mounted in the said housing and supported at its ends in the bearings of said standards, the said pivot-rod being provided with a locking-lug adapted to pass through an enlargement of one of the bearings, a weighted lever loosely mounted upon one end of said pivot-rod, a lug formed upon the said lever engaging the locking-lug on the pivot-rod, a foot-lever mounted upon the other end of the rod and having a flat surface adapted to engage a flattened portion of said rod whereby upon depressing the foot-lever the rod will be rotated, and projections on the weighted lever for engaging the pawl upon its top and side, a projection upon the foot-lever for engaging the said pawl, a limiting-lug also formed upon the said foot-lever, the said foot-lever being adapted to enter a recess formed in the base-plate in order that the locking-lug may be passed through the enlargement in the bearing, the construction being such that upon depressing the foot-lever the pawl will be thrown one way or the other according to the position of the weighted lever, substantially as described.

5. A ratchet-controlling mechanism for brakes comprising a base-plate, a housing mounted thereon, a pawl pivoted in the said housing, a pivot-rod also mounted in the said housing, a weighted lever loosely mounted in the pivot-rod, a foot-lever also mounted on the said rod and adapted to rotate the same, a pivot-pin for holding the pawl in position in the housing the said pin having a flattened head, a shoulder upon the housing for engaging the said flattened portion to prevent the pin from turning, and a cotter-pin for locking the said pivot-pin in position, the construction being such that the said cotter-pin, through the agency of the pivot-pin and the pawl operates to lock all the parts in place, substantially as described.

656,943. **WAVE-POWER.** THOMAS C. CLARKE, New York, N. Y. Filed Apr. 29, 1899. Serial No. 715,044. (No model.)



Claim.—1. The combination with a buoyant structure or pontoon, of a supply-tank provided with wave-entrapping mechanism adapted to create a head of water for driving a motor, substantially as set forth.

2. The combination with a buoyant structure or pontoon, of a supply-tank thereon for creating a head of water for operating a motor, and an inclined side on one side of the supply-tank and motor, and wave-entrapping mechanism communicating through the inclined side with the supply-tank, substantially as set forth.

3. The combination with a buoyant structure or pontoon of a supply-tank thereon provided with wave-entrapping mechanism, an inclined side on one side of the supply-tank and pontoon, and a hinged apron constituting a movable extension of the inclined side, substantially as set forth.

4. The combination of a floor sustained above the level of the bed of the sea, a supply-tank thereon provided with wave-entrapping mechanism, an inclined side where the wave-entrapping mechanism is located, and a hinged extension of said inclined side, substantially as set forth.

5. In a wave-power, the combination with a supply-tank of wave-entrapping mechanism adapted to create a head of water for the purpose of operating a motor, said wave-entrapping mechanism consisting of horizontal platforms and hinged gates working between the same, substantially as set forth.

6. In a wave-power, the combination with a supply-tank of wave-entrapping mechanism adapted to create a head of water for the purpose of operating a motor, said wave-entrapping mechanism consisting of horizontal platforms and inclined hinged gates working between the same, substantially as set forth.

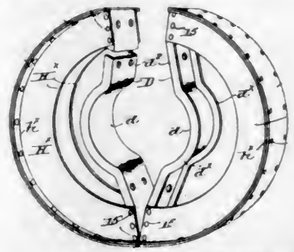
7. The combination with a buoyant structure or pontoon, of a supply-tank thereon provided with wave-entrapping mechanism, a water-motor in operative relations with the supply-tank, and means upon the pontoon for disposing of the waste water from said motor, substantially as set forth.

8. The combination with a buoyant structure or pontoon, of a supply-tank thereon, provided with wave-entrapping mechanism, a water-motor in operative communication with the supply-tank, and a tail-race communicating with the motor and adapted through the buoyant support of the pontoon to carry off and discharge the waste water from the motor, substantially as set forth.

9. The combination with a buoyant structure or pontoon, of a supply-tank thereon provided with wave-entrapping mechanism, and a power-house also carried on the pontoon, substantially as set forth.

10. The combination with a movable structure provided with a supply-tank and wave-entrapping mechanism adapt to create and store a head of water, of mechanism upon said structure for shifting the location thereof from place to place, substantially as and for the purpose specified.

656,944. **SPLIT PULLEY.** WILLIAM A. CLARK, Boston, Mass. Filed Dec. 7, 1899. Serial No. 739,477. (No model.)



Claim.—1. A split pulley comprising a one-piece, transversely-divided face portion, two opposite, semicircular sheet-metal supporting-webs flanged along their outer edges and connected throughout their length with the face portion, and two separable arms connected at their ends with the face portion and also attached to the ends of the webs.

2. A split pulley comprising a one-piece, transversely-divided face portion, two opposite, semicircular supporting-webs connected throughout their length with the face portion, and two separable sheet-metal arms connected at their ends with the face portion and also attached to the ends of the webs, each arm having a stiffening-flange, extended from one to the other end thereof.

3. A split pulley comprising a transversely-divided face portion, two opposite, semicircular supporting-webs connected throughout their length with the face portion, and two separable arms connected at their ends with the face portion, each arm having a stiffening-flange extending from one to the other end thereof, and the ends of the supporting-webs being attached to said stiffening-flanges.

4. A metallic split pulley comprising a one-piece, transversely-divided sheet-metal face portion, two opposite, semicircular supporting-webs connected throughout their length with the face portion, and two separable arms rigidly secured at each end to the face portion and also to the ends of the said webs.

5. A split pulley comprising a transversely-divided face portion, two opposite semicircular supporting-webs, flanged along their outer edges and connected thereat with the face portion, and two longitudinally-flanged, separable arms connected with the semicircular supporting-webs.

6. A split pulley comprising a one-piece, transversely-divided face portion, two opposite semicircular supporting-webs connected throughout their length with the face portion, and two separable arms having oppositely-concaved seats and connected at their ends with the face portion the ends of the supporting-webs being also attached to said arms.

7. A metallic split pulley comprising a transversely-divided sheet-metal face portion, two opposite, semicircular supporting-webs connected throughout their length with the face portion, and two separable arms having outwardly-bent transverse flanges at their ends to which the face portion is attached, each arm having a longitudinal stiffening-flange on its outer face.

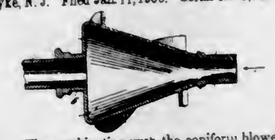
8. A split pulley comprising a one-piece, transversely-divided sheet-metal face portion, two sheet-metal arms having central, oppositely-concaved seats and straight ends, rigidly secured at each end directly to the face portion, the arms diverging from their straight ends to the seats, and semicircular supporting-webs interposed between the face portion and the arms and attached to each.

9. A split pulley comprising a transversely-divided sheet-metal face portion, two spring-arms rigidly connected at both of their ends with the face portion and having oppositely-concaved seats, and a semicircular supporting-web interposed between each arm and the face portion, each web being flanged along its outer edge and attached to the face portion throughout the length of the flange.

10. A split pulley comprising a transversely-divided sheet-metal face portion, two spring-arms rigidly connected at both of their ends with the face portion and having oppositely-concaved seats the arms diverging toward said seats, a semicircular sheet-metal supporting-web interposed between each arm and the face portion and attached to the latter throughout the length of the web, and means mounted upon the divergent portions of the arms to draw them together and thereby clamp the pulley upon a shaft or other support.

11. A split pulley comprising a face or belt-receiving portion disconnected at its ends, a plurality of pairs of semicircular supporting-webs secured to the two halves of the face portion, and arms provided with seats and rigidly connected with the face portion and the pairs of supporting-webs, an arm and its attached pair of webs together with the corresponding half of the face portion of the pulley constituting substantially a box-truss.

656,945. **STEAM-JET FLUE-CLEANER.** HOOKER I. COGGESHALL, Wortendyke, N. J. Filed Jan. 11, 1900. Serial No. 1,142. (No model.)



Claim.—1. The combination with the coniform blower-head, and a plurality of spirally-disposed and equally-spaced wings thereon, of a blower-pipe at the larger end of the coniform blower-head, and a cylindrical nozzle projected from the smaller end of said blower-head, having less internal diameter than the blower-pipe for the purpose set forth.

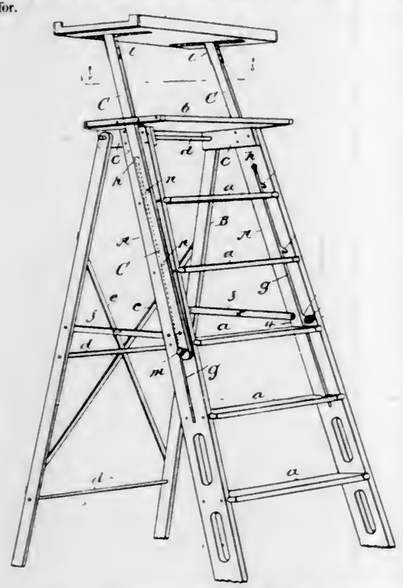
2. The combination with a blower-pipe, and a hollow coniform blower-head securable thereon at the larger end of said blower-head, the side wall of the latter being thin to adapt it to heat quickly when steam passes therethrough, of a plurality of spirally-disposed wings on the exterior of the blower-head equally spaced apart and trending in the same direction, and a jet-nozzle extending from the smaller end of the blower-head, having less internal diameter than that of the blower-pipe, for the purpose specified.

656,946. **STEP-LADDER.** FRANK H. CORDUAN, New York, N. Y., assignor of one-third to Hubert A. Banning, same place. Filed Jan. 11, 1900. Serial No. 1,033. (No model.)

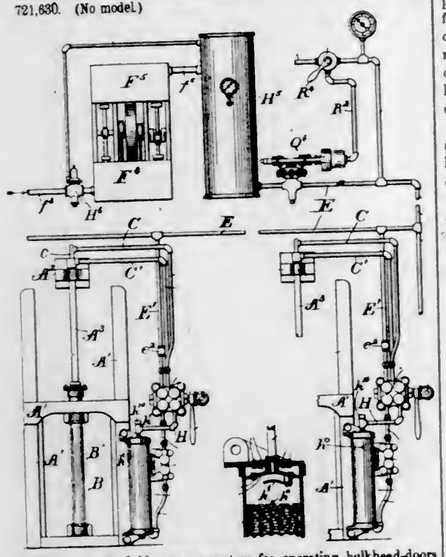
Claim.—1. A step-ladder having a suitably-guided movable hand-rail alongside each of the main side pieces thereof and a receptacle secured to the upper end of said rails, the side pieces and adjacent hand-rails being provided, one of each with a pin and the others with recesses for receiving such pins, whereby said hand-rails and receptacle may be elevated and supported at a given height by bringing the pins by a lateral movement into the recesses.

2. A step-ladder having a movable hand-rail alongside one of the main side pieces thereof, said rail and side piece being provided, one with a pin, and the other with a slot for the same and also with one or more recesses receding from said slot, whereby the hand-rail may be guided by the pin and slot while being raised or lowered, and also supported at a

given height by bringing the pin by a lateral movement into a recess therefor.



656,947. APPARATUS FOR OPERATING BULKHEAD-DOORS. WILLIAM R COWLES, Cleveland, Ohio. Filed June 23, 1899. Serial No. 721,630. (No model.)



Claim.—1. A fluid-pressure system for operating bulkhead-doors or other reciprocating devices, comprising a reservoir for compressed air, a fluid-pressure main leading therefrom, a double-pressure-reducing valve interposed between said reservoir and said main, a plurality of reciprocating devices all operated automatically by the pressure in said main at high pressures, and means controlled by hand for operating the several doors or other reciprocating devices separately by means of said pressure, and a hand-pump and liquid-supply for operating each of said reciprocating devices independently of said compressed air, substantially as described.

2. A fluid-pressure system for operating bulkhead-doors or other reciprocating devices, comprising a reservoir for compressed air, means for automatically controlling the pressure of the air in said reservoir, a fluid-pressure main leading therefrom, a double-pressure-reducing valve interposed between said reservoir and said main, a plurality of reciprocating devices all operated automatically by the pressure in said main at high pressures, and means controlled by hand for operating the several doors or other reciprocating devices separately by means of said pressure, and a hand-pump and a liquid-supply for operating each of said reciprocating devices independently of said compressed air, substantially as described.

3. A fluid-pressure system for operating bulkhead-doors, comprising a reservoir for compressed air, a fluid-pressure main leading therefrom, a double-pressure-reducing valve interposed between said reservoir and said main, a bulkhead-door operated antomatically by the pressure in said main, and means controlled by hand for operating the door by means of said pressure, and a hand-pump and water-tank for operating said door independently of said compressed air, substantially as described.

4. A fluid-pressure system for operating bulkhead-doors, comprising a reservoir for compressed air, means for automatically controlling the pressure of the air in said reservoir, a fluid-pressure main leading therefrom, a double-pressure-reducing valve interposed between said reservoir and said main, a bulkhead-door operated automatically by the pressure in said main, means controlled by hand for operating the door by means of said pressure, and a hand-pump and water-tank for operating said door independently of said compressed air, substantially as described.

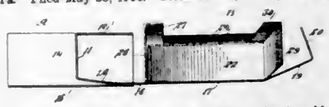
5. A fluid-pressure system for operating bulkhead-doors or other reciprocating devices, comprising a reservoir for compressed air, a fluid-pressure main leading therefrom, a double-pressure-reducing valve interposed between said reservoir and said main, and normally admitting reduced pressure to said main, with means operated by hand for opening said valve and suddenly increasing said pressure, a plurality of reciprocating devices all operated automatically by the pressure in said main at high pressures, and means controlled by hand for operating the several doors or other reciprocating devices separately at both pressures, and a hand-pump and liquid-supply for operating each of said reciprocating devices independently of said compressed air, substantially as described.

6. A fluid-pressure system for operating bulkhead-doors or other reciprocating devices, comprising a reservoir for compressed air, means for automatically controlling the pressure of the air in said reservoir, a fluid-pressure main leading therefrom, a double-pressure-reducing valve interposed between said reservoir and said main, a plurality of reciprocating devices all operated automatically by the pressure in said main at high pressures, and means controlled by hand for opening said valve and suddenly increasing the said pressure, a plurality of reciprocating devices all operated automatically by the pressure in said main at high pressures, means controlled by hand for operating the several doors or other reciprocating devices separately at both pressures, and a hand-pump and a liquid-supply for operating each of said reciprocating devices independently of said compressed air, substantially as described.

7. An apparatus of the character described, comprising a pneumatic system operated either locally or at a distance, and a local hand-operated hydraulic system operating through the same mechanism but independently of said pneumatic system, substantially as described.

8. An apparatus of the character described, comprising a bulkhead-door and a cylinder and piston for operating the same, a pneumatic system for normally supplying pressure to said cylinder and a hand-operated hydraulic system for supplying pressure when said pneumatic system is not in operation, substantially as described.

656,948. PAPER BOX. JOSEPH T. CRAW, Jersey City, N. J., assignor of one-half to Robert P. Brown and Edward L. Bailey, Philadelphia, Pa. Filed May 23, 1900. Serial No. 17,660. (No model.)



Claim.—1. In folding boxes, a body, and a tray having side and end members and held to slide in the body, the tray being continuous with a member of the body and the connection between the tray and the body being such that the tray may be withdrawn its full length from the body and its contents be fully exposed.

2. In a paper box, a body and a tray mounted to slide in the body, the tray and body being constructed of one piece of material, the said tray having side and end members and having a folding connection with a member of the body, the side and end members of the tray being arranged to spread apart when the tray is withdrawn from the body, as set forth.

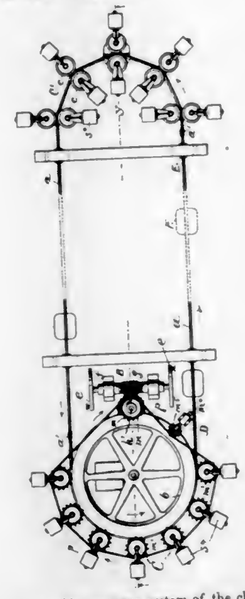
3. In a paper box, a body and a tray adapted to slide in the body, which tray and body are constructed from one continuous piece of material, the direct connection between the tray and body being at one surface and free of opposing side surfaces of the body, the said tray being capable of extending its full length beyond the body, and the connection between the tray and body being such that a portion of the body folds within the same, when the tray is withdrawn, as set forth.

4. In a paper box, a body, and a tray held to slide in the body, both the body and the tray being made from a single piece of material, the connection between the tray and the body being at the top of the latter between its ends and said connecting medium being free from attachment to the side portions of the body, the said tray having a bottom, side sections free to fold outward and provided with inwardly-extending flaps, and flaps likewise free to fold outward carried by said sections and having auxiliary flaps adapted to extend over the material within the tray, and an end panel forming a continuation of the bottom and provided with a locking-flap adapted to enter the body when the tray is in position therein, for the purpose described.

5. A paper box comprising a body, a tray adapted to slide in the said body, which tray and body are constructed from a single piece of material, the tray having a folding connection with the body at a point between its ends, the said tray being likewise adapted to be drawn its full length from the body, and side and end sections of the tray having movement in an outward or inward direction, as set forth.

6. In a paper box comprising a tube or body and a sliding tray, a blank comprising end panels and flaps 10, 11, 12, 13, 14, 15 and 16, tray panels and flaps 17, 18, 19, and 20, 21, 22, 23, 24, 25, 26, 29 and 30, the flaps 25 and 26 being separated from the panels 13 and 14 and likewise the flaps 27, the flaps 27 and 30 being separated from the flaps 23 and 24, and the flaps 28 being separated from the panel 19, as described.

656,949. CABLE CONVEYER. DAVID B. CRUICKSHANK, Providence, R. I., and GARDNER C. LUTHER, Swansea, Mass. Filed May 14, 1900. Serial No. 16,560. (No model.)



Claim.—1. In a cable conveyer system of the class described, the combination with the endless suitably-supported cable and a mounted and actuated main driving drum or sheave arranged to carry and propel the cable, of an auxiliary cable-driving device, the same consisting of a yieldingly-mounted positively-driven sheave arranged with respect to the rim of the main sheave, and having the cable interposed between and in frictional engagement with the peripheral faces of said sheaves, whereby the latter is capable of propelling the cable without slip while at the same time the auxiliary sheave member is adapted to yield laterally so as to permit the passage of the cable coupling or connection between said faces.

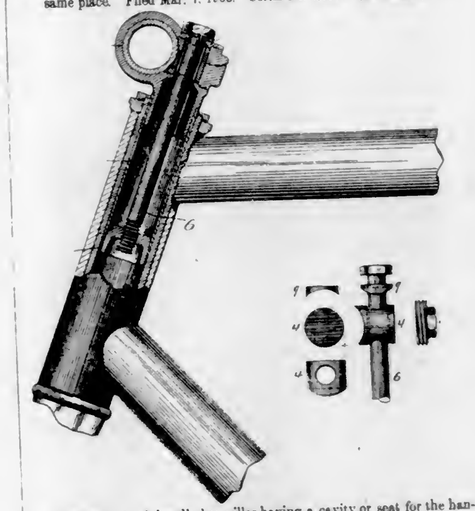
2. The combination of a mounted cable-carrying driving-sheave, a series of auxiliary sheaves, located around the periphery of said driving-sheave and arranged to receive a cable between the adjacent faces or surfaces of the driving and auxiliary sheaves, and a driving-chain or flexible connection arranged to actuate the several auxiliary sheaves simultaneously, substantially as described.

3. In a cable conveyer system, the auxiliary driving device, substantially as hereinbefore described, the same consisting of the sheave member having its rim or face adapted to receive a cable, a driving-shaft having the sheave secured thereto, bearings for said shaft, a bracket or casting member having said bearings slidably mounted therein, and springs interposed between the bearings and said bracket, whereby the sheave is capable of yielding in a lateral direction, for the purpose specified.

4. In a cable conveyer system, the combination with the main driving sheave or pulley *b* arranged to revolve in a horizontal plane, the endless conveyer cable *a* mounted on and actuated by said sheave, and a chain-driving wheel *m*, the series of yieldingly-mounted auxiliary driving devices C' arranged around the periphery of and cooperating with said sheave in actuating the cable, chain-wheels *m'* forming a part of said devices C, and an endless chain *p* mounted on the said wheels for transmitting power from the wheel *m* to the auxiliary driving devices simultaneously, substantially as described.

5. In a cable conveyer system, a cable-supporting device consisting of a pair of pulleys or sheaves having their axes inclined toward each other, a bracket or casting provided with bearings having said sheaves revolubly mounted therein, springs interposed between the hubs of the sheaves and the ends of the bearings, whereby the faces of the sheaves are kept in the normal working position, and means for controlling the tension of said springs.

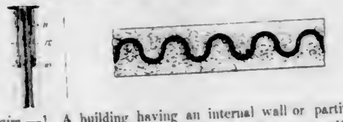
656,950. HANDLE-BAR PILLAR FOR BICYCLES. JOSEPH S. DIKEMAN, Torrington, Conn., assignor of one-half to Charles S. Dikeman, same place. Filed Mar. 7, 1900. Serial No. 7,659. (No model.)



Claim.—1. A handle-bar pillar having a cavity or seat for the handle-bar, a loose sliding block mounted in said pillar and having an opening through same, a screw-cap for forcing said sliding block against the handle, a screw-bolt of smaller diameter than the opening in the block and passing through said opening and means actuated by said screw-bolt for locking the pillar-stem to the fork-stem.

2. The combination with handle-bar pillar having a seat or cavity for the handle-bar, and a slitted and internally-tapered lower end, of a sliding block located within a cavity in the handle-bar pillar in rear of the handle-bar, and provided with an opening passing vertically through same, adjustable means for locking said block against the handle-bar, a screw-bolt of less diameter than the opening in the block and passing through said opening and means carried by said screw-bolt for expanding the slitted lower end of the pillar.

656,951. BUILDING. CHARLES F. W. DOEHRING, Philadelphia, Pa. Filed Apr. 13, 1900. Serial No. 12,756. (No model.)



Claim.—1. A building having an internal wall or partition suspended from a transverse beam or girder, substantially as specified.

2. A building having an internal wall or partition composed of vertically-corrugated sheet metal, said partition being suspended from a transverse beam or girder, substantially as specified.

3. A building having an internal wall or partition suspended from a

transverse beam or girder, and having a floor structure hung upon it, substantially as specified.

4. A building having an internal wall or partition consisting of vertically-corrugated sheet metal, and bars or strips extending transversely of said corrugations, and secured to said sheet-metal structure, so as to form a beam or girder from which the partition is suspended, substantially as specified.

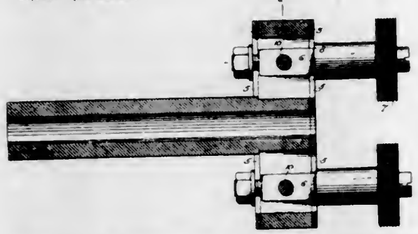
5. A building having an internal wall or partition consisting of vertically-corrugated sheet metal, said partition having secured to its opposite sides metal strips or bars extending transversely of the corrugations and forming a beam or girder from which the partition is suspended, substantially as specified.

6. A building having a ceiling structure composed of metallic laths with inturned flanges for retaining the plaster, the spaces between said laths being filled with plastic masses of waterproof composition, substantially as specified.

7. A building having a ceiling structure composed of spaced furring-strips secured to the under side of the floor-beams, and metallic lathing-strips binding the spaces between said furring-strips and secured to the latter, the spaces between said metallic laths being filled with waterproof plastic composition, substantially as specified.

8. A building having a continuous partition composed of vertically-corrugated sheet metal, and a floor structure hung upon said partition and likewise composed of corrugated sheet metal, substantially as specified.

656,952. NURLING-DIE HOLDER FOR SCREW-MACHINES. PAUL E. DORNHEIM, Philadelphia, Pa. Filed Apr. 18, 1900. Serial No. 13,339. (No model.)



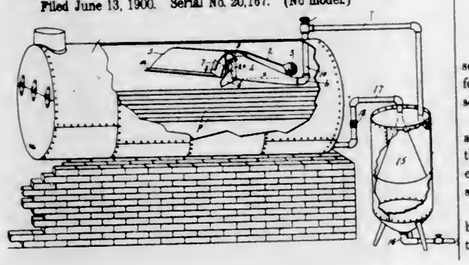
Claim.—1. The combination of a nurling-die, a shouldered stem carrying the same, a slotted head or carrier providing a bearing for said stem, and a locking-nut, whereby the stem can be adjusted to different positions and secured in position after adjustment, substantially as specified.

2. The combination of the slotted head, with a nurling-die, a stem carrying the same and adjustable from and toward the center of the head, a mandrel carrying said head and having a central opening for the reception of the bolt or screw whose head is to be acted upon, and a screw-stem having a nut with a portion engaging the stem of the die so as to effect adjustment of the latter by turning the screw-stem, substantially as specified.

3. The combination of the slotted head, a nurling-die, a stem carrying said die and passing through said slotted head and having a shoulder and a nut whereby it may be clamped thereto, and a screw-stem having a nut with portion engaging the stem of the die, whereby adjustment of the latter may be effected by turning the screw-stem, substantially as specified.

4. The combination of the nurling-dies and their stems, the slotted head, the screw-stem and its nuts, and a detachable cap-plate having filling-pieces for the slots through which said stem is introduced into the head, substantially as specified.

656,953. BOILER-CLEANER. PARKER A. DOUGHTY, Omaha, Nebr. Filed June 13, 1900. Serial No. 20,167. (No model.)



Claim.—In a mechanical boiler-cleaner, the combination with a housing of decreasing capacity toward its exit end, the lowest point of said intake-opening being higher than the highest point of said exit-opening, wings adjustably secured adjacent the intake-opening of said housing, and an automatically-operated gate to close and open the lower portion of said intake-opening.

656,954. SPINNING APPARATUS. GEORGE O. DRAPER, Hopedale, Mass., assignor to the Draper Company, same place and Portland, Me. Filed Oct. 23, 1899. Serial No. 734,425. (No model.)



Claim.—1. In yarn-spinning apparatus, a fixed standard, a removable yarn-carrier rotatable thereon, having a tapering lower end and an adjacent annular groove for the driving-band, and the driving-band to engage said groove and rotate the carrier and also sustain it vertically.

2. A yarn-carrier for spinning apparatus, having an integral whirl, and a tapering end below the whirl, and rotating means to engage the whirl and also to sustain the carrier vertically.

3. An upright standard, a removable yarn-carrier adapted to be axially supported thereby and rotated thereon and having an annular groove for the driving-band, and a band-guide, the yarn-carrier being sustained vertically by the tension of the driving-band.

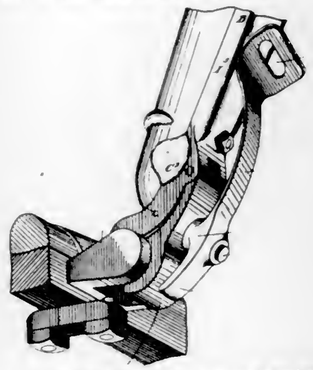
4. A cylindrical standard, a support therefor having an upturned band-guide, and a removable yarn-carrier adapted to be rotated on the standard and provided with an annular groove for the driving-band, the tension of the band supporting the yarn-carrier vertically.

5. Spinning apparatus comprehending a fixed upright standard or axial support, a yarn-carrier rotatable thereon and having a contained bearing to travel upon the standard, and rotating and vertically-supporting means for and applied directly to the yarn-carrier, said means also providing the vertical support for the latter.

6. Spinning apparatus comprehending a fixed standard or axial support, a supporting-stand therefor having a band-guide, and a yarn-carrier adapted to receive the yarn directly thereupon and to rotate directly on and in engagement with the standard, said yarn-carrier containing bearings and having an integral band-receiving portion.

7. Spinning apparatus comprehending a rotatable yarn-carrier, an axial support therefor, and rotating means to directly engage the yarn-carrier and also sustain it vertically.

656,955. THILL-COUPLING. RICHARD ECCLES, Auburn, N. Y. Filed June 15, 1900. Serial No. 20,451. (No model.)



Claim.—1. In a shaft-shackle having an eye formed with a hinged section, a bolt, and a nut screwing on the bolt and having spring-arms for engagement with the eye portion of the hinged section and the fixed section, as set forth.

2. In a shaft-shackle having an eye formed with a hinged section, a bolt, and a nut screwing on the bolt and engaging the hinged section, the said nut having spring-arms extending in opposite directions, one for engaging the eye portion of the hinged section and the fixed section, substantially as shown and described.

3. A shaft-shackle, comprising an eye having a movable section, a bolt pivoted on the fixed section and extending through the movable section, and a nut screwing on the bolt and adapted to be seated on said

movable eye-section, and having arms extending in opposite directions, one for engagement with the eye portion of the movable section and the other for engagement with the eye-strap, as set forth.

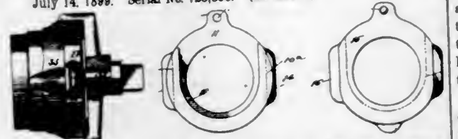
4. A shaft-shackle, comprising an eye having a hinged section, a bolt pivoted on the fixed section and extending through the movable eye-section, and a lever-nut screwing on said bolt and having spring-arms, one for engagement with the eye portion of the eye-section and the other for engagement with the eye-strap, as set forth.

5. A shaft-shackle having a bolt and nut for closing the movable section of the eye, the nut having integral arms extending in opposite directions from opposite sides of the nut, one of the arms being formed with a loop at its outer end, as set forth.

6. A shaft-shackle having a bolt and nut for closing the movable section of the eye, the nut having integral arms extending in opposite directions from opposite sides of the nut, one of the arms having an offset with a concave surface for engagement with a convex portion of the shaft-shackle, as set forth.

7. In a shaft-shackle, the combination of a shaft-strap having an eye at one end, said eye having a hinged section, a bolt hinged to the strap and extending through the hinged section of the eye, and a nut on the bolt and adapted to be seated on the hinged eye-section, said nut having oppositely-projecting arms, one engaging the eye portion of the hinged section and the other the strap, the end engaging the strap being formed with a loop, substantially as described.

656,956. PIPE-COUPLING. CARL EIBEK, New York, N. Y. Filed July 14, 1899. Serial No. 723,838. (No model.)

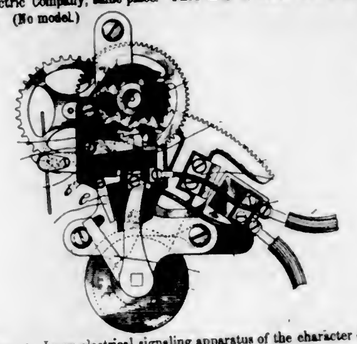


Claim.—1. The combination of a coupling-section, and a mating section having a transverse tongue-and-grooved connection, one of said parts having an exterior projecting surface adapted for use when the sections are to be uncoupled, one of said sections being also provided with exterior surfaces to be engaged by a yoke, for the purpose set forth.

2. The combination of a coupling-section and a mating section, said parts having a transverse tongue-and-grooved connection, the section provided with the tongue having an offset bottom surface adapted for use when the sections are to be uncoupled, the other section having offset faces adapted to be engaged by a clamping device and a latch connection between the two sections, as and for the purpose specified.

3. The combination, with a coupling-section and a mating section, said parts having a transverse tongue-and-grooved connection, one of the said parts having an exteriorly-projected surface adapted for use when the sections are to be uncoupled, of a releasing device consisting of a ring-body fitted to the section mating with that having the said exteriorly-projected surface, and an arm connected with the body, provided with a socket to receive said exteriorly-projected surface, together with a screw carried by the said arm and arranged for engagement with the said projected surface of the coupling-section, for the purpose specified.

656,957. ELECTRIC SIGNALING APPARATUS. EDWARD B. ELLICOTT and LOUIS R. OHNRING, Chicago, Ill., assignors to the Western Electric Company, same place. Filed May 2, 1899. Serial No. 715,281. (No model.)



Claim.—1. In an electrical signaling apparatus of the character described, the combination with a pair of line-circuit terminals having contacts associated therewith, of a contact-spring extending from one to the other and adapted to make and break electrical connection between them, means for normally maintaining said spring out of engagement with its coacting contact a pivoted lever upon which said spring is mounted, and a rotating disk having teeth upon its periphery for engaging said lever and causing the same to oscillate, whereby the condition of the circuit is altered at each oscillation of the lever, substantially as described.

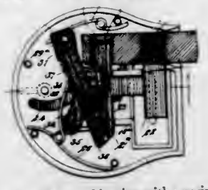
2. In an electrical signaling apparatus of the character described, the combination with a pair of line-circuit terminals having contact-points associated therewith, a U-shaped contact-spring, each arm whereof is adapted to engage one of said contact-points to complete the circuit between them through said spring, a rotating disk having teeth upon its periphery, and a lever engaging with said teeth and with one arm of the spring, whereby such arm is caused to make and break the circuit between said terminals as the disk rotates, substantially as described.

3. In an electrical signaling apparatus of the character described, the combination with a pair of line-circuit terminals having contact-points associated therewith, a U-shaped contact-spring, each arm whereof is adapted to engage one of said contact-points to complete the circuit between them through said spring, a rotating disk having teeth upon its periphery and means for breaking the contact between one arm of said spring and its associated contact-point as each tooth upon said disk reaches a given position, substantially as described.

4. In an electrical signaling apparatus of the character described, the combination with a pair of line-circuit terminals having contact-points associated therewith, a U-shaped contact-spring, each arm whereof is adapted to engage one of said contact-points to complete the circuit between them through said spring, a rotating disk having teeth upon its periphery, a gear-train for rotating the said disk, means for breaking the contact between said spring and one of said contact-points as the gear-train comes to rest after transmitting a signal, and a heavy-current switch operated by said gear-train adapted simultaneously to close a short circuit between the line-terminals, substantially as described.

5. In an electrical signaling apparatus, the combination with a pair of line-circuit terminals, of contact-points associated therewith, a contact-spring extending from one contact-point to the other and adapted to make and break electrical connection between them, means for normally maintaining said spring out of engagement with its coacting contact a notched rotating disk and means for causing said disk as it rotates to break the contact between said spring and one of said contact-points, a gear-train for rotating said disk, and a heavy-current switch operated by said gear-train and adapted to close a short circuit around said contact-points and spring as the device comes to rest after transmitting a signal, substantially as described.

656,958. LOCK. WALTER E. EMERY, West Chicago, Ill. Filed Jan. 15, 1900. Serial No. 1,469. (No model.)



Claim.—1. In a lock, the combination with a casing, of a bolt mounted therein, a tumbler working with the bolt, a keeper-plate fastened over the tumbler and having a stud, a chock-bar pivotally mounted on the bolt and limited in its swinging movement by the stud of the keeper-plate, and springs for actuating the mobile parts.

2. A lock having a bolt, a tumbler having connection with the bolt and adapted to be struck by the hasp, and a chock-bar pivoted on the bolt and spring-pressed to engage the hasp, to hold the bolt in open position at certain periods of the operation of the lock.

3. A lock, having a bolt, and a chock-bar pivoted on and moving with the bolt, the chock-bar serving to engage the hasp to hold the bolt open during certain periods of the operation of the lock.

4. A lock, having a bolt adapted to be engaged and thrown by the key, a tumbler serving to hold the bolt in closed position, the tumbler being also actuated by the key, and a chock-bar mounted on and carried by the bolt and serving to engage the hasp, to hold the bolt open during certain periods of the operation of the lock.

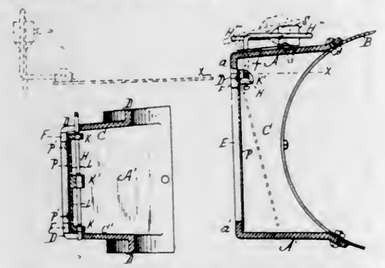
5. A lock, having a bolt adapted to be thrown by the key, a tumbler serving to hold the bolt in closed position and also adapted to be thrown by the key to release the bolt, a chock-bar serving to hold the bolt in open position during certain periods of the operation of the lock, and a keeper-plate fastened adjacent to the chock-bar, to limit the movement thereof.

6. A lock, having a bolt adapted to be engaged by the key, to throw the bolt to open position, a tumbler serving to hold the bolt in closed position, the tumbler being arranged in the path of the hasp, to be struck thereby to release the bolt, and a chock-bar carried by the bolt and adapted to engage the hasp to hold the bolt in open position during certain periods of the operation of the lock.

7. A lock, having a bolt, and a chock-bar mounted on and carried by the same, the chock-bar serving to engage the hasp to hold the bolt in open position during certain periods of the operation of the lock.

8. A lock, having a bolt, a chock-bar pivotally mounted on and carried by the bolt and serving to engage the hasp to hold the bolt open during certain periods of the operation of the lock, and means for limiting the movement of the chock-bar to permit the movement of the hasp out of engagement with the chock-bar.

656,959. DRAFT-REGULATOR. WALTER B. FOWLER, Lawrence, Mass. Filed Feb. 16, 1900. Serial No. 5,471. (No model.)



Claim.—In a draft-regulator of the character described, the frame A, A', C, C' formed with the inwardly-extending flanges E, E' said frame being provided with the substantially-horizontal slots D; the blind P; the horizontal bar L rigidly secured to the upper end of the rear surface of the blind and provided with suitable ears; and the horizontal rod or pivot l1 supported in said slots D and rigidly secured in said ears and thus offset from the plane of the rear face of the blind, whereby said blind is confined in the frame when in any other than a horizontal position but adapted to be removed therefrom when swung into a horizontal position without the necessity for removing bolts, screws or any other contrivance for confining the blind, substantially as described.

656,960. HORSE-CHECK. ROBERT T. GEER, New York, N. Y. Filed May 3, 1900. Serial No. 15,360. (No model.)

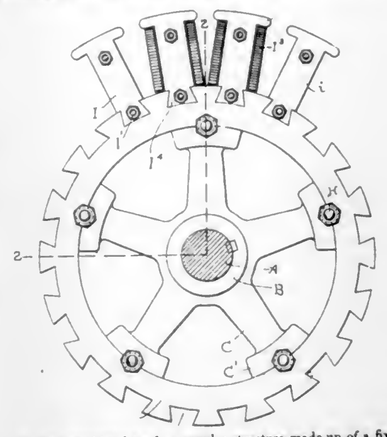


Claim.—A horse-check, comprising a bracket-strap, and a checkrein, the bracket-strap having a main or middle portion adapted to lie directly under the top strap of the bridle and provided with means for fastening it to the top strap of the bridle, and the end portions of the bracket-strap being extended slightly rearward of the bridle, and the checkrein having one end attached to one end of the bracket-strap, the checkrein being slidably engaged with the other end of the bracket-strap, for the purpose specified.

656,961. MEANS FOR SECURING POLE-PIECES. HENRY GEISENHONER, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Oct. 6, 1898. Serial No. 692,773. (No model.)

Claim.—1. The combination with a rotatable member adapted to detachably receive independent members, and provided with one or more bolt-holes, of a movable ring fitting said rotatable member and also provided with one or more bolt-holes offset from the bolt-holes of said rotatable member, independent members attached to said rotatable member and to said ring, and tapered bolts adapted to be forced through said bolt-holes to move said ring circumferentially and lock it to clamp said independent members rigidly to said rotatable member

2. The combination with a rotatable member adapted to detachably receive independent members, of a movable ring fitting said rotatable member and adapted to detachably receive independent members, independent members attached to said rotatable member and to said ring, and means for moving said ring circumferentially and locking it in the position to which it may have been moved.



3. The combination of an annular structure made up of a fixed and a movable element, grooves extending continuously across the periphery of the movable and the stationary elements, detachable pieces having projections mounted in the grooves, and means for moving one of the elements circumferentially with respect to the other.

4. The combination of an annular structure made up of a fixed and a movable element, dovetail grooves extending continuously across the periphery of the movable and the stationary elements, detachable pieces having dovetail projections mounted in the grooves, and means for moving one of the elements circumferentially with respect to the other to grip the detachable pieces.

5. The combination of a spider having any number of rings secured thereto, a movable ring supported by the spider in proximity to the stationary rings, slots formed in and extending continuously across all the rings, detachable pieces mounted in the slots, and means for moving the movable ring circumferentially against said pieces and for securing it in the position into which it has been moved.

6. In a dynamo-electric machine, the combination of a support, fixed rings moving with the support, a loose ring mounted upon the support, dovetail slots in both the moving and fixed rings, detachable pole-pieces mounted in the slots, and means for adjusting the loose ring circumferentially to grip the pole-pieces.

7. In a dynamo-electric machine, the combination of a spider, a support, a pair of rings movable with respect to each other carried by the support, dovetail slots in the two rings, detachable pole-pieces mounted in the slots, and a taper bolt or wedge for moving the two rings with respect to each other.

8. In a dynamo-electric machine, the combination of a spider, a pair of fixed rings shrunk on the spider, a movable ring mounted between the fixed rings, and taper bolts so situated between the spider and the rings as to prevent independent movement thereof and also to adjust the moving ring with respect to the stationary rings.

9. The combination with a wheel adapted to detachably receive independent members on its periphery, of the pole-pieces for an electric machine attached to the periphery of said rotatable member, and means for simultaneously clamping all of said pole-pieces to the periphery of said rotatable member.

10. In a dynamo-electric machine, the combination of a support, a plurality of detachable pole-pieces mounted in retaining-slots in the support and capable of being withdrawn laterally, and a single device for simultaneously clamping all of the pole-pieces against lateral movement in either direction.

11. In a dynamo-electric machine, the combination of a rotatable spider, a support mounted thereon, detachable pole-pieces, and a single means for securing the support to the spider and simultaneously clamping all of the pole-pieces against lateral movement in either direction.

12. In a dynamo-electric machine, the combination of two rings which form a support for the pole-pieces and are included in the magnetic circuit, detachable pole-pieces attached to the rings, a third ring located between the first-named rings and forming a part of the magnetic circuit, and means for adjusting the third ring circumferentially with respect to the other rings.

13. The combination with a wheel adapted to detachably receive independent members on its periphery, and having one or more bolt-holes, of a movable ring also adapted to detachably receive independent members and provided with one or more bolt-holes offset from the bolt-holes in said wheel, a number of pole-pieces for an electric machine attached to the periphery of said wheel and to said movable ring, and tapered bolts adapted to be forced through said bolt-holes to move said ring circumferentially and to lock it to clamp said pole-pieces rigidly to said wheel.

14. The combination with a rotatable member adapted to detachably receive independent members, of a movable ring fitting said rotatable member and adapted to detachably receive independent members, independent members attached to said rotatable member and to said ring, and means for moving said ring circumferentially and locking it in the position to which it may have been moved.

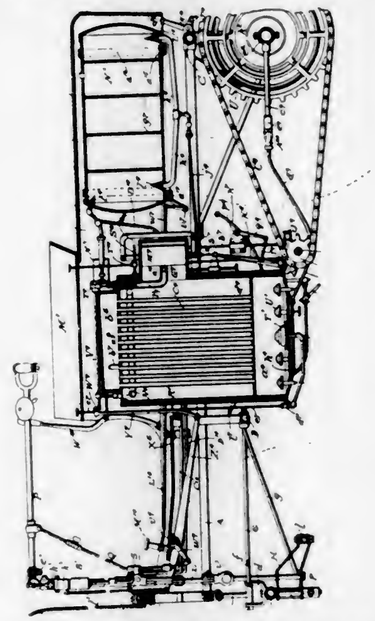
15. The combination with a rotatable structure having a number of grooves, of independent members detachably mounted in the grooves, and a ring mounted on said structure and adapted to be moved circumferentially to lock said independent members in position in their respective grooves.

16. In an electric machine, the combination with a grooved field-magnet support, of pole-pieces detachably mounted upon said support and retained by said grooves, and means for simultaneously clamping said pole-pieces in position.

17. The combination with the spider having enlarged ends, of the ring mounted thereon, the pole-pieces mounted on the rings, and the bolts preventing the rings from moving circumferentially on the spider-arms.

18. The combination with a support formed with grooves, of pole-pieces detachably mounted in said grooves, and means for pressing all the pole-pieces simultaneously against the walls of the grooves to retain them in position therein.

656,962. MOTOR-VEHICLE. CHARLES D. P. GIBSON, Jersey City, N. J. Filed Feb. 8, 1897. Serial No. 622,571. (No model.)



Claim.—1. In a motor-vehicle, the combination with a propelling mechanism, a device for controlling the same and a steering wheel or wheels; of a handle arranged to oscillate and rock, a connection between said handle and the steering wheel or wheels whereby the vehicle is steered when the handle is oscillated and a connection between said handle and the propulsion-controlling device whereby the propelling mechanism is started or stopped when the handle is rocked; said latter connection comprising two reciprocatory sections connected in a swiveled manner whereby the connection with the propulsion-controlling device is prevented from interfering with the oscillatory movements of the handle, substantially as specified.

2. In a motor-vehicle, the combination with a propelling mechanism, a device for controlling the same, a device for reversing the direction of movement of the propelling mechanism and a steering wheel or wheels; of a handle arranged to oscillate or swing in two different planes and also arranged to rock, a connection between said handle and the steering wheel or wheels whereby the vehicle will be steered when the handle is oscillated or swung in one plane, a connection between the handle and the device for reversing the direction of movement of the propelling mechanism whereby such mechanism will be reversed when the handle is oscillated or swung in the other plane, and a connection between the handle and the propulsion-controlling device whereby the propelling mechanism will be started or stopped when the handle is rocked, substantially as specified.

3. In a motor-vehicle, the combination of a propelling mechanism, a device for controlling the same, a steering wheel, or wheels, a rock-shaft connected with the steering wheel or wheels, a reciprocating sleeve surrounding the rock-shaft and connected with the propulsion-controlling device, and a handle connected with the rock-shaft and adapted to be oscillated to rock the same and also having a connection with the sleeve and adapted to be rocked or turned to move the same and operate the propulsion-controlling device, substantially as specified.

4. In a motor-vehicle, the combination of a propelling mechanism, a device for controlling the same, a device for reversing the direction of movement of the propelling mechanism, a steering wheel, or wheels, a rock-shaft connected with the steering wheel or wheels, a reciprocating sleeve surrounding the rock-shaft and connected with the propulsion-controlling device, a handle pivotally connected with the rock-shaft, and movable in one plane with the rock-shaft and in another plane on said shaft and having a connection with the sleeve and adapted to be rocked or turned to move the same, and a connection between the handle and the device for reversing the propulsion-controlling device whereby said device will be operated when the handle is moved on the rock-shaft, substantially as specified.

5. In a motor-vehicle, the combination of a propelling mechanism, a device for controlling the same, a steering wheel, or wheels, an upright, tubular post, a rock-shaft loosely arranged in said post and connected with the steering wheel, or wheels, a reciprocatory sleeve loosely mounted on the post and connected with the propulsion-controlling device, and a handle connected with the rock-shaft and adapted to be oscillated to rock the same and also having a connection with the sleeve and adapted to be rocked or turned to move the same and operate the propulsion-controlling device, substantially as specified.

6. In a motor-vehicle, the combination of a propelling mechanism, a device for controlling the same, a device for reversing the direction of movement of the propelling mechanism, a steering wheel, or wheels, an upright tubular post, a rock-shaft loosely arranged in said post and connected with the steering wheel, or wheels, a sleeve loosely mounted on the post and connected with the propulsion-controlling device, a handle pivotally connected with the rock-shaft and adapted to be moved in a horizontal plane to rock the same and also adapted to be moved in a vertical plane on the shaft and having a connection with the sleeve and adapted to be rocked or turned to move the same and operate the propulsion-controlling device, and a connection between the handle at an intermediate point of its length and the device for reversing the propelling mechanism, whereby, when said handle is moved in a vertical plane, the propelling mechanism will be reversed, substantially as specified.

7. In a motor-vehicle, the combination of a propelling mechanism, a device for controlling the same, a steering wheel, or wheels, a rock-shaft connected with the steering wheel, or wheels, a reciprocatory sleeve surrounding the rock-shaft and comprising a lower section connected with the propulsion-controlling device and an upper section so connected with the lower section that it is adapted to move lengthwise with the lower section and to turn on the rock-shaft independent of the said lower section, and a handle connected with the rock-shaft and adapted to be oscillated to rock the same and also having a connection with the upper section of the sleeve and adapted to be rocked or turned to move the same, substantially as specified.

8. In a motor-vehicle, the combination of a propelling mechanism, a device for controlling the same, a device for reversing the propelling mechanism, a steering wheel, or wheels, a rock-shaft connected with the steering wheel, or wheels, a reciprocatory sleeve surrounding the rock-shaft and comprising a lower section connected with the propulsion-controlling device and an upper section so connected with the lower section that it is adapted to move lengthwise with the lower section and to turn on the rock-shaft independent of the same, a handle comprising a male section pivotally connected with the rock-shaft so as to permit of it being swung in a vertical plane and a female section loosely receiving the male section and adapted to be turned thereon and having a connection with the upper section of the reciprocatory sleeve, and a rod connected with the device for reversing the propelling mechanism and having a sleeve loosely receiving the female section of the handle, substantially as specified.

9. In a motor-vehicle, the combination of a propelling mechanism, a device for controlling the same, a steering wheel or wheels, a handle having an oscillatory movement and comprising a male section and a female section; said female section being adapted to rock or turn on the male

section, a connection between the male section of the handle and the steering wheel or wheels for steering the vehicle when the handle is oscillated, and a connection between the female section of said handle and the propulsion-controlling device for stopping and starting the propelling mechanism when the female handle-section is rocked; said latter connection comprising a lower section connected with the propulsion-controlling device and an upper section connected with the female handle-section and so connected with the lower section that it is adapted to move lengthwise with the lower section and to turn independent of the said lower section, substantially as specified.

10. In a motor-vehicle, the combination of a main frame, a spring-supported body on said frame, a tubular post mounted on said body the axletree or frame connected to the main frame, the independent wheel-journals pivotally connected to the ends of the axletree or frame and having the rearwardly-extending arms, wheels on said journals, a rod connecting the arms of the journals, the arm loosely connected to said rod adjacent to the middle thereof, a steering rock-shaft arranged in the tubular post on the spring-supported body, a handle connected to the upper end of the rock-shaft and having a portion bearing on the tubular post, and a connection between said steering-shaft and the arm comprising the "diamond" having the four pivotally-connected members, and the rod M, depending from the diamond and fixed to the arm said "diamond" being adapted to compensate for the vertical movements of the spring-supported body so that the connection between the steering-shaft and the arm will not be effected thereby, substantially as specified.

11. In a motor-vehicle, a horizontal tank for gasolene or other hydrocarbon, and a pipe arranged below the tank and connected at its ends to opposite ends of said tank and pitched downwardly to its middle and having an outlet at said middle, substantially as specified.

12. The combination of a gasolene-tank divided into two compartments by a transverse partition and having such compartments connected by an aperture in the partition, a hydrocarbon-burner, and a conduit connecting one compartment of the tank and said burner, substantially as specified.

13. In a motor-vehicle, the combination of a steam-generator, a horizontal tank for gasolene or other hydrocarbon, one or more hydrocarbon-burners arranged in the fire-box of the steam-generator, a pipe arranged below the gasolene-tank and connected at its ends to opposite ends of said tank and pitched downwardly to its middle, and a pipe connecting the middle of the aforesaid pipe and the burners, substantially as specified.

14. In a motor-vehicle, a horizontal tank for gasolene or other hydrocarbon divided into compartments by a partition and having such compartments connected by an aperture in the partition, one or more hydrocarbon-burners, and a pipe connected with the hydrocarbon burner or burners and also connected with the gasolene-tank at opposite sides of the partition therein, substantially as specified.

15. In a motor-vehicle, the combination of a propelling-engine, a steam-generator, a carbonic-acid-gas tank or cartridge, and valve-controlled connections between the steam-generator and the engine and between the carbonic-acid-gas tank or cartridge and said engine, whereby the engine may be actuated by steam alone or by steam and carbonic-acid gas; the steam serving to assist in actuating the engine and also as a means for heating the cylinder, or cylinders, of the engine to expand the carbonic-acid gas when it enters the same, substantially as specified.

16. In a motor-vehicle, the combination of a propelling-engine, a steam-generator, a carbonic-acid-gas tank or cartridge, and valve-controlled connections between the steam-generator and the engine and between the carbonic-acid-gas tank or cartridge and said engine, whereby the engine may be actuated by steam alone, by steam and carbonic-acid gas, or by carbonic-acid gas alone with steam as a medium for heating the piston cylinder or cylinders of the engine, substantially as specified.

17. In a motor-vehicle, the combination with a propelling mechanism, a device for controlling the same, a device for reversing the direction of movement of the propelling mechanism, and a steering wheel or wheels; of a handle arranged to oscillate or swing in two different planes and also arranged to rock on its axis, a connection between said handle and the steering wheel or wheels whereby the vehicle will be steered when the handle is oscillated or swung in one plane, a connection between the handle and device for reversing the direction of movement of the propelling mechanism whereby such mechanism will be reversed when the handle is oscillated or swung in the other plane, and a connection between said handle and the propulsion-controlling device whereby the propelling mechanism is started or stopped when the handle is rocked; said latter connection comprising two reciprocatory sections connected in a swiveled manner whereby the connection with the propulsion-controlling device is prevented from interfering with the oscillatory movements of the handle, substantially as specified.

18. In a motor-vehicle, the combination of a body, a shaft carrying a traveling wheel or wheels and also carrying a gear-wheel, a crank or other drive-shaft provided with a gear-wheel, a belt connecting the gear-wheels on the said shafts, a steam-generator adjustably connected with the body whereby it is adapted to be adjusted on the body and with respect to the shaft carrying the traveling wheel or wheels, an engine carried by the generator and connected with the drive-shaft, a water-tank adjustably fixed on the body and connected and movable with the generator, and a fuel-tank also adjustably fixed on the body and connected and movable with the generator, substantially as specified.

19. In a motor-vehicle, the combination of a main frame; a spring-supported body on the frame; a vertically-arranged steering-shaft carried by the body; a steering wheel or wheels carried by the main frame; means for controlling the steering wheel or wheels, comprising a rod normally substantially in alinement with the steering-shaft; and a "diamond" consisting of members or bars pivotally connected at their ends arranged in a vertical plane and connected by its upper joint to the lower end of the steering-shaft and by its lower joint to the upper end of the rod of the controlling means of the steering wheel or wheels.

20. In a motor-vehicle, the combination of a main frame, a spring-supported body on the frame; a vertically-arranged steering-shaft carried by the body; a steering wheel or wheels carried by the main frame; means for controlling the steering wheel or wheels, comprising a rod normally substantially in alinement with the steering-shaft; four bars or links pivoted together at their ends to form a "diamond" and arranged in a vertical plane between the steering-shaft and the rod; a link having right-angled pivotal connections with the lower end of the steering-shaft and the upper pivotal joint of the "diamond;" and another link connecting the lower joint of the "diamond" and the upper end of the rod.

21. In a motor-vehicle, the combination with a main frame and a body supported thereon, of an axletree carrying steering-wheels at its ends and having central horizontal bearing connections with the main frame; means for controlling the steering wheel or wheels, comprising a rod normally substantially in alinement with the steering-shaft; and a "diamond" consisting of members or bars pivotally connected at their ends arranged in a vertical plane and connected by its upper joint to the lower end of the steering-shaft and by its lower joint to the upper end of the rod of the controlling means of the steering wheel or wheels.

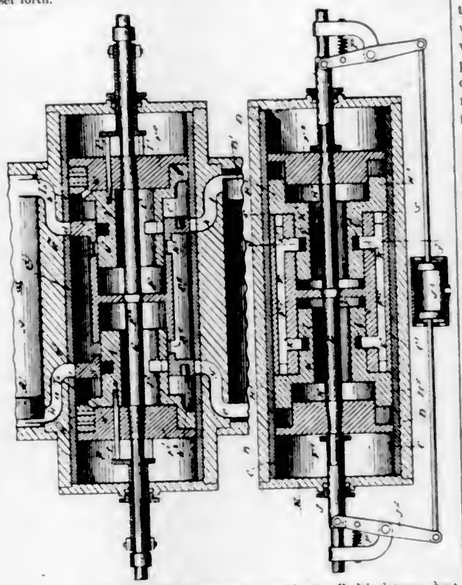
22. In a motor-vehicle, the combination with a main frame and a body supported thereon, of an axletree carrying steering-wheels at its ends; braces connected to the axletree near its ends and extending rearwardly to the central line of the main frame, said rearward ends of the braces being provided with a horizontal bearing connection with the main frame, and a horizontal bearing connection between the central part of the axletree and the forward part of the main frame, the axis of which is in line with the axis of the bearing at the rear end of the braces; means for controlling the steering wheel or wheels, comprising a rod normally substantially in alinement with the steering-shaft; four bars or links pivoted together at their ends to form a "diamond" and arranged in a vertical plane between the steering-shaft and the rod; a link having right-angled pivotal connections with the lower end of the steering-shaft and the upper pivotal joint of the "diamond;" and another similar link connecting the lower joint of the diamond and the upper end of the rod.

656,963. VALVE. DAVID GILCHRIST, Concord, N. H. Filed Feb. 15, 1900. Serial No. 5,347. (No model.)

Claim.—1. A valve for expansion-engines, comprising a steam-chest connected with the ports of both the high and low pressure cylinders, a main valve reciprocating in said steam-chest, and arranged to control the admission of the motive agent to the high-pressure cylinder, and an intercepting-valve under the control of the operator and operating in unison with said main valve, to control the exhaust of both the high-pressure and the low-pressure cylinders, and to control the admission of the live motive agent to the low-pressure cylinder, the said intercepting-valve being adjustable on the main valve, as set forth.

2. A valve for expansion-engines, comprising a steam-chest connected with the ports of both the high and low pressure cylinders, a main valve reciprocating in said steam-chest, and arranged to control the admission of the motive agent to the high-pressure cylinder, an intercepting-valve under the control of the operator and operating in unison with said main valve, to control the exhaust of both the high-pressure and the low-pressure cylinders, and to control the admission of the live motive agent to the low-pressure cylinder, the said intercepting-valve being adapted to be shifted on the main valve and means under the control of the operator for shifting the said intercepting-valves into an active or inactive position on said main valve, as set forth.

3. A valve for expansion-engines, comprising a steam-chest connected with the ports of both the high and low pressure cylinders, a main valve reciprocating in said steam-chest, and arranged to control the admission of the motive agent to the high-pressure cylinder, and intercepting-valves moving with said main valve and operating in conjunction therewith, to control the exhaust of both the high and low pressure cylinders and the admission of motive agent to the low-pressure cylinder, the said intercepting-valves being mounted to slide toward and from each other in the main valve and means under the control of the operator, for shifting the said intercepting-valves on the said main valve to an active position, as set forth.



4. A valve for expansion-engines comprising a cylindrical steam-chest connected by ports with the ports of both the high and low pressure cylinders and a main valve reciprocating in said steam-chest, and having end sections and a middle section all secured on the valve-stem, the said middle section dividing the middle portion of said steam-chest into two compartments one of which is connected with an inlet-port for the steam-supply and the other with an exhaust-port, the said middle section of the main valve being provided with flanges controlling the said ports connecting the steam-chest and cylinders, substantially as described.

5. A valve for expansion-engines, comprising a steam-chest connected with the ports of both the high and low pressure cylinders, a main valve reciprocating in the steam-chest and arranged to control the admission of the motive agent to the high-pressure cylinder, the said valve having a middle section and end sections, the middle section forming two compartments in the steam-chest connected respectively with an inlet-port for the steam-supply and an exhaust-port, and an intercepting-valve under the control of the operator, and mounted to slide in the middle section of the main valve, the said intercepting-valve operating in unison with said main valve, for the purpose set forth.

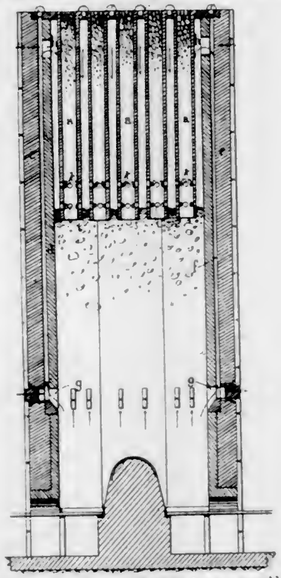
6. A valve for expansion-engines, comprising a steam-chest connected with the ports of both the high and low pressure cylinders, a main valve reciprocating in said steam-chest and forming two compartments thereir connected respectively with an inlet-port for the steam-supply and an exhaust-port, the said valve being arranged to control the admission of the motive agent to the high-pressure cylinder, an intercepting-valve fitted to slide in the main valve and operating in unison therewith to control the exhaust of both the high-pressure and the low-pressure cylinders, and to control the admission of the live motive agent to the low-pressure cylinder, and means under the control of the operator for shifting the said intercepting-valve, substantially as set forth.

7. A valve for expansion-engines, comprising a steam-chest connected with the ports of both the high and low pressure cylinders, a main valve reciprocating in said steam-chest and arranged to control the admission of the motive agent to the high-pressure cylinder, an intercepting-valve mounted to slide in the main valve, and operating in unison therewith to control the exhaust of both the high-pressure and the low-pressure cylinders and to control the admission of the live motive agent to the low-pressure cylinder, rods secured to the intercepting-valve and fitted to slide in the main valve, and means under the control of the operator and connected with said rods for shifting the intercepting-valve, as set forth.

8. A valve for expansion-engines, comprising a steam-chest connected with the ports of both the high and low pressure cylinders, a main valve reciprocating in said steam-chest, and arranged to control the admission of the motive agent to the high-pressure cylinder, intercepting-valves mounted to slide in the main valve and operating in unison therewith to control the exhaust of both the high-pressure and the low-pressure cylinders, and to control the admission of the live motive agent to the low-pressure cylinder, rods fitted to slide in the ends of the main valve and to which the said intercepting-valves are secured, sleeves fitted to slide in the ends of the steam-chest and connected with the said rods, the main valve-stem passing through the said sleeves, levers pivotally connected with the outer ends of said sleeves, a cylinder, and piston-rods carrying pistons mounted to reciprocate in said cylinder, the said piston-rods being connected with the said levers, the said cylinder being connected with a motive-agent supply under the control of the operator, for the purpose set forth.

9. A valve for expansion-engines comprising a cylindrical steam chest having ports connected with the ports of both the high and low pressure cylinders, a main valve reciprocating in said steam-chest and having end sections and a middle section, the middle section dividing the middle portion of the steam-chest into a live-steam compartment and an exhaust-compartment connected respectively with an inlet-port for the steam-supply and an exhaust-port, the middle valve-section being provided with flanges controlling the ports connecting the steam-chest and the cylinders, and the said middle section having a central transverse partition, hollow intercepting-valves extending within the middle section of the main valve and provided with flanges located between the flanges on the middle section and flanges on the end sections of the main valve, the said reciprocating valve moving with the main valve and adapted to be shifted thereon, the middle section of said main valve and the intercepting-valve being provided with ports or passages, and the said intercepting-valve operating in unison with said main valve, for the purpose set forth.

656,964. KILN, BLAST-FURNACE, &c. EMILE GOBBE, Jumet, Belgium. Filed Dec. 27, 1899. Serial No. 741,748. (No model.)

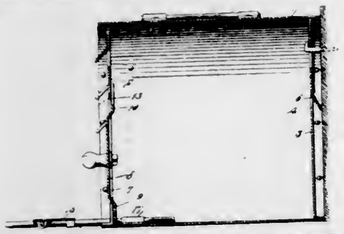


Claim.—The herein-described kiln or furnace provided with a refractory lining and with vertical flues located between said lining and the furnace-walls, said flues being in communication with the interior of the kiln or furnace above its grate-bars, and tubes suspended within the furnace or kiln and communicating therewith at their lower ends, as and for the purposes specified.

656,965. POULTRY NEST AND HOVER. JOHN N. GREEN, Newtown, Ky. Filed Jan. 11, 1900. Serial No. 1,111. (No model.)

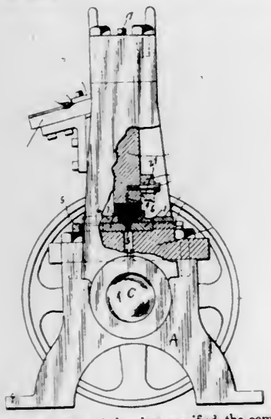
Claim.—1. A nest and hover, having a doorway-opening, through one of its walls, and a door having a greater length than width and having end pieces adapted to engage against the inner side of the hover-wall and side portions adapted to engage the outer surface of said wall, the said door being free and adapted to be placed lengthwise or crosswise of the opening so that an opening is provided above the door, when crosswise, substantially as specified.

2. A nest and hover, having a doorway-opening through one of its walls, and a door having depressed ends for engaging against the inner surface of the wall and portions for engaging against the outer surface of said wall, the said door having an opening at one end, substantially as specified.



3. A nest and hover, having a doorway-opening in one of its walls, and a perch consisting of a platform, rods on which the platform is mounted, the said rods being movable through openings in the wall of the nest and hover, and guides arranged on the floor of the nest and hover through which said rods are movable, substantially as specified.

656,966. MACHINE FOR FORMING AND ATTACHING METAL EDGES. CORNELIUS W. GREGORY, Chicago, Ill., assignor to John L. Jackson and M. E. Rasmussen, same place. Filed Oct. 9, 1899. Serial No. 732,997. (No model.)



Claim.—1. In a machine of the class specified, the combination of a reciprocating plunger having one end provided with a blade and its other end provided with a crimping-die; a seat for the blanks, having a crevice through which the blade can force the blanks; and a stationary crimping-die cooperating with the die on the plunger.

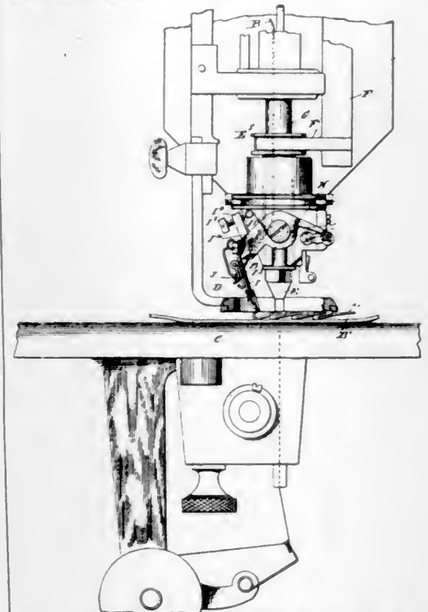
2. In a machine of the class specified, the combination with means for bending the blanks; of a plurality of devices for attaching the same; and mechanism for operating both the bending means and the plurality of attaching devices.

3. A machine of the class specified, comprising a frame having its bed provided with a pair of laterally-adjustable blocks which serve as a seat and provide a crevice between their edges; a reciprocating plunger having its lower edge provided with a blade capable of entering the crevice between said blocks, and having its upper edge provided with a crimping-die; a stationary crimping-die held in position above the die on the plunger and adapted to cooperate therewith; a rotary shaft provided with crank or eccentric portions; and a couple of links connecting said crank or eccentric portions of the shaft with the reciprocating plunger.

4. In a machine of the class specified, the combination with the seat having a crevice, of a reciprocating plunger having one edge provided with a blade capable of entering said crevice and also with a crimping-die, and having the other edge also provided with a crimping-die; stationary crimping-dies adapted to cooperate with the ones on the plunger; and mechanism for reciprocating the plunger.

656,967. ATTACHMENT FOR EMBROIDERING-MACHINES. JOSEPH GRUBMAN, New York, N. Y. Filed Mar. 10, 1900. Serial No. 8,169. (No model.)

Claim.—1. An embroidering attachment for sewing-machines, comprising a sleeve mounted to turn on a reciprocating needle-bar, a carrier pivoted on said sleeve, a reciprocating nipple, and a cam mounted to turn on said sleeve and actuated by the reciprocating nipple, to impart an intermittent rotary motion to the said cam and cause a swinging of said carrier, substantially as shown and described.



2. An embroidering attachment for sewing-machines, having a pivoted carrier, a cam-shaft carrying a cam for imparting a swinging motion to said carrier, a star-wheel on said cam-shaft, a reciprocating nipple and a slide on the nipple and having a pawl for engaging said star-wheel, to impart an intermittent rotary motion to the cam-shaft and an intermittent swinging motion to said carrier, as set forth.

3. An embroidering-machine, comprising a reciprocating needle-bar and nipple, a sleeve mounted to turn and arranged concentric to said needle-bar, a spring-pressed carrier pivoted on said sleeve, and having guideways for the embroidering material, a cam-shaft journaled on said sleeve and having a cam and a star-wheel, of which the cam is adapted to engage said carrier to swing the latter forward and downward, and a slide carried by said nipple, and having a pawl for engaging said star-wheel, substantially as shown and described.

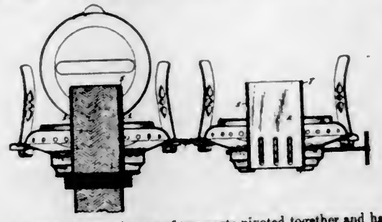
4. An embroidering-machine, comprising a reciprocating needle-bar and nipple, a sleeve mounted to turn and arranged concentric to said needle-bar, a spring-pressed carrier pivoted on said sleeve, means for swinging the carrier forward and downward against the tension of the spring, and a stop for limiting the upward swinging motion of the carrier, substantially as described.

5. An embroidering-machine comprising a reciprocating needle-bar, a reciprocating nipple through which the needle passes, the said nipple having a tubular shank, a sleeve mounted to turn and arranged concentric to said needle-bar, the shank of said nipple and the said sleeve having openings for the passage of the embroidering material, a spring-pressed carrier pivoted on said sleeve and having guideways for the embroidering material, and means for swinging said carrier, substantially as described.

6. An embroidering attachment for sewing-machines, having a carrier provided with an opening for the passage of the embroidering material, and a tension device on the back of the carrier below said opening, the said carrier being formed with a guideway below said opening for guiding the material to the needle, the said guideway having a cut-out portion for the passage of the needle, as set forth.

656,968. LAMP-BURNER. FREDERICK W. GRUNDMAN, St. Louis, Mo., assignor to the Star Lamp Company, same place. Filed Oct. 2, 1899. Serial No. 732,330. (No model.)

Claim.—1. A separable lamp-burner, having a separable wick-tube of two parts one of which is rigidly attached to each part of said burner, one of said parts having hooks or clasps for encircling the wick and holding the same in position when the said burner is opened, and the other of said parts being arranged to inclose the said hooks, substantially as specified.



2. A separable lamp-burner of two parts pivoted together and having a non-separable screw-threaded base integral with one of said parts for attaching said burner to the top of the supporting attachment, substantially as and for the purpose described.

3. A separable lamp-burner, comprising two separable parts pivoted together and having a non-separable screw-threaded base integral with one of said parts and hooks or clasps on the under side of the other of said parts for attaching said part to said non-separable screw-threaded base when said burner is closed, substantially as and for the purpose specified.

4. In a separable lamp-burner, of two parts pivoted together, a non-separable screw-threaded base integral with one of said parts for attaching said burner to the top of the lamp, and hooks or clasps on the other part of said burner for attaching said movable portion to said integral non-separable screw-threaded base, substantially as specified.

5. In a separable lamp-burner, a supporting attachment comprising two hinged threaded rings, one of which is composed of two parts pivoted together, substantially as specified.

656,969. STAGE MACHINERY. CLAUDE L. HAGEN, New York, N. Y. Filed Jan. 31, 1900. Serial No. 3,454. (No model.)



Claim.—1. The combination with a support, of a vertically-revoluble drum, an arm mounted to swing around the axis of said drum, a rod attached to the outer portion of the arm and having connection with the support to swing on the same with the arm, whereby to suspend the arm, a drum carried by the outer portion of the arm, the two drums serving to carry an endless apron, an endless track mounted to swing around the axis of the first-named drum and situated at the upper end of the same, a rod connected with the outer portion of the endless track and with the support to swing on the support with the track, the upper portion of the second-named drum being mounted in the outer portion of the track, and hangers adapted to run on the track and to carry the outer edge of the endless apron.

2. In a stage appliance, a scenic panorama, comprising the combination of means serving to carry in vertical position a main or middle endless scenic apron, an additional means located at each end of the first-named means and serving each to carry in vertical position a side or flanking scenic apron, such additional means being capable of swinging toward and from the main apron to adjust the said side or flanking aprons, means for driving the main or middle apron, and gearing at each end of the main or middle apron respectively for driving the side or flanking aprons uniformly and in the same direction of the movement of the main or middle apron.

3. In a stage appliance, a scenic panorama, comprising a vertically-disposed revolubly-driven drum, a support for the upper end thereof, a frame mounted to turn around the axis of the drum, a drum carried in and moving with the outer portion of the frame, a scenic apron carried by and moving over the drums, and supporting-rods mounted to swing on the said support for the upper end of the first-named drum and coincident with the axis thereof, the supporting-rods respectively extending to and being fastened at the upper and lower portions of the frames adjacent to the second-named drum.

656,970. BADGE. BENJAMIN HARRIS, New York, N. Y. Filed May 16, 1900. Serial No. 16,857. (No model.)



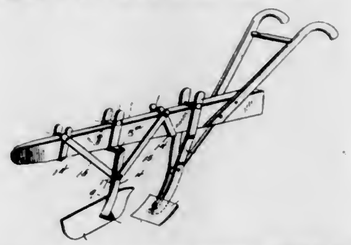
Claim.—1. As a new article of manufacture, a pin and a ribbon-supporting rod for badges and the like, comprising a rod, a transverse pivot portion at one end of the rod, a longitudinal intermediate portion approximately parallel with the rod and extending from the other end of the pivot portion in the direction of the free end of the rod, another pivot portion extending from the other end of the intermediate portion away from the rod, and a pin approximately parallel with the rod and extending in the direction of the free end of the rod.

2. A badge having a ribbon-supporting rod pivoted thereto at one end of the badge, a fastening-pin parallel with the said rod and pivoted to the badge between the pivot of the rod and the opposite end of the badge, and a connection between the pin and the rod.

3. A badge, comprising a front and back plate, the end portions of the former of which are turned back behind the back plate, and lips formed on the back plate and engaged with the ends of the front plate to secure them together.

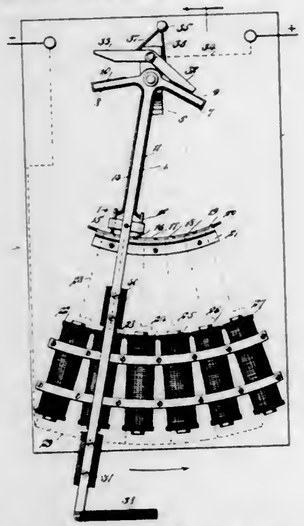
4. A badge, comprising front and back plates or sections, the front plate having its end portions turned back behind the back plate, and a pin, one end of which is carried on one end portion, the other end portion having a keeper to be engaged by the end of the pin.

656,971. COTTON-SCRAPER. NEWTON C. HARRIS, Knights, Ala. Filed June 23, 1900. Serial No. 21,298. (No model.)



Claim.—In a cotton-scraper, the combination, with a beam or stock, of a standard or hanger consisting of a band or strap doubled upon itself to form parallel arms having their upper ends spaced apart to form a clip to engage the beam, the arms thence being bent laterally and downwardly and united at their rear ends by a return portion forming a socket and bent or twisted at a diagonal angle, a bolt passed through the upper ends of the clip portion to secure it to the beam, a scraper secured by a bolt passed through the said socket portion of the hanger and adapted to extend at a diagonal angle to the clip portion thereof and to the beam, cuffs applied to the beam at the front and in rear of the hanger, and diagonal braces secured at their upper ends by the securing-bolts of the cuffs and united at their lower ends to the hanger and to each other by a common fastening passed therethrough, substantially as described.

656,972. ELECTRIC MOTOR. EDWARD A. HENRY, Crestline, Kans., assignor to Edward A. Henry and J. Lewis Griswold, same place. Filed Mar. 21, 1900. Serial No. 9,583. (No model.)



Claim.—1. In an electric motor, a series of electromagnets arranged in the arc of a circle, a pendulum-arm, an armature carried by said arm for coacting with the electromagnets, circuit-closers carried by said arm, and a circuit-controller for engaging with said arm to close the circuit alternately at opposite sides, substantially as specified.

2. An electric motor, comprising a series of electromagnets arranged in the arc of a circle, contact-plates arranged in the arc of a circle and having connection with the electromagnets, a pendulum-arm, an armature carried by said arm for coacting with the electromagnets, a circuit-controller adapted for engagement with contact-plates carried by the arm and having electrical connection with circuit-closers, the said controller being arranged in the electric circuit, and a counterbalance for said controller, substantially as specified.

3. An electric motor, comprising a series of electromagnets, contact-plates having electrical connection with the electromagnets, a swinging arm having opposite extensions at its upper end, contact-plates on said extensions, brushes carried by the arm, the said brushes engaging with the contact-plates first mentioned and having electrical connection with the contact-plates on the extensions, a circuit-controller in the form of an angle-lever arranged in the electric circuit, and a counterbalance-weight for operating said controller, substantially as specified.

4. An electric motor, comprising a series of electromagnets arranged in the segment of a circle, a pendulum-arm, two armatures carried by said pendulum-arm for coacting with the opposite ends of the electromagnets, a series of contact-plates having connection with the electromagnets, brushes carried by the pendulum-arm and adapted for engagement with said contact-plates, contact-plates mounted on extensions at the upper end of said arm and having electrical connection with the brushes, and a rocking circuit-controller having engagement with the contact-plates mounted on the extensions, substantially as specified.

656,973. BILLIARD-CUE-TIP FASTENER. WILLIAM HESS, New York, N. Y. Filed Mar. 12, 1900. Serial No. 8,369. (No model.)

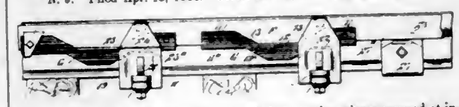


Claim.—1. A billiard-cue, having a stick, a plate secured on the end thereof and having an opening formed centrally therein, a second plate adapted to lie on top of the first-named plate and having a blade therein, the end portions of which respectively project beyond the faces of the plate, and the lower end portion of the blade passing through the slot in the first-named plate and into the stick, a tip engaged with the top of the second-named plate and having the upper end portion of the blade fastened therein, fastening devices extending from the first-named plate through the second-named plate and into the tip, and additional fastening devices extending from the second-named plate into the tip.

2. A billiard-cue-tip fastener, comprising a plate adapted to be fastened permanently to the end of the cue-stick, and formed with a centrally-disposed opening therein, a second plate, and a blade fastened rigidly in the center thereof and having its end portions projected beyond the side faces of the second plate, the lower end of the blade being passed through the opening in the first-named plate and into the stick to secure the second plate, and the upper end portion of the blade being driven into the tip to secure the same.

3. A billiard-cue-tip fastener, comprising a plate, and a blade fastened rigidly in the center thereof and having its end portions projected respectively beyond the faces of the plate, the lower end portion of the blade being adapted to enter the billiard-cue stick to hold the plate in place and the upper end portion of the blade being driven into the tip to secure the same.

656,974. DETECTOR-BAR. WILLIAM H. HIGGINS, Jersey City, N. J. Filed Apr. 13, 1900. Serial No. 12,705. (No model.)



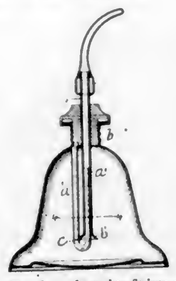
Claim.—1. A detector-bar for switches, motion-plates secured at intervals to the detector-bar, which motion-plates have central sections that extend below the lower edge of the detector-bar, the upper and lower edges of the depressed sections of the motion-plates having horizontal and inclined surfaces, and clips each provided with a recess having its bottom formed with oppositely-inclined side surfaces and at its top with a projection, for the purpose specified.

2. A detector-bar, motion-plates attached to the detector-bar, which motion-plates have central sections extending below the lower edge of the detector-bar, the upper and lower edges of the central sections of the motion-plates being formed with intersecting horizontal and oblique surfaces, and clips through which the detector-bar and motion-plates pass, the clips serving as guides for said parts, each clip having at its bottom horizontal and oblique intersecting surfaces adapted for engagement with the bottom edges of the motion-plates, and a guide-surface at its top adapted for engagement with the upper edges of the motion-plates, as and for the purpose specified.

3. A clip recessed to receive and guide a detector-bar, and provided with a base having an apertured lug and with a horizontal opening above the base, a shoe having one end bent up to fit over the base of a rail and its other end apertured and projecting into the opening of the clip, and a key fitting in the apertures of the lug of the base and the shoe, substantially as described.

4. The combination with a detector-bar, motion-plates secured to the detector-bar and having horizontal and oblique surfaces, and guide-clips for the motion-plates, of stops adapted to be secured to the rail and each having its side walls inclined in opposite directions from a central straight surface, substantially as and for the purpose set forth.

656,975. OILER. LUDWIG HIRSCH, New York, N. Y. Filed June 22, 1899. Serial No. 721,428. (No model.)



Claim.—1. A stuffing-box adapted to fit into an oiler, having a shifting spout movable therein, a valve for said spout supported within the oiler in line with the shifting spout and a guide for said spout supported from the stuffing-box and adapted to engage with the spout while the spout is being pushed inward or pulled outward, whereby axial rotation of the spout will be prevented.

2. A stuffing-box adapted to fit into an oiler, having a shifting spout movable therein, a valve for said spout supported within the oiler in line with the shifting spout and a guide for said spout supported from the stuffing-box and adapted to engage with the spout while the spout is being pushed inward or pulled outward, whereby axial rotation of the spout will be prevented.

3. A stuffing-box adapted to fit into an oiler, having a shifting spout movable therein, a guide for said spout supported from the stuffing-box and adapted to engage with the spout to prevent axial rotation of the latter while the latter is being pushed inward or pulled outward, and a valve for said spout supported from the stuffing-box in line with the shifting spout substantially as set forth.

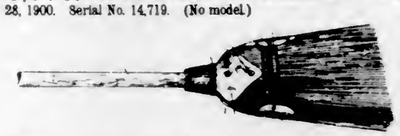
4. A stuffing-box adapted to fit into an oiler, having a shifting spout movable therein, and an interior U-shaped guide-pin, one of the legs of the guide-pin being attached to the stuffing-box and the other leg being in line with the shifting spout and adapted to engage therewith to close the discharge-orifice from the oiler, substantially as set forth.

5. A stuffing-box adapted to fit into an oiler, having a shifting spout movable therein, a guide for said spout supported from the stuffing-box and adapted to engage with a part of the spout to prevent axial rotation of the latter; an elongated valve for said spout supported from the stuffing-box in line with this shifting spout, substantially as set forth.

6. An oiler, composed of a suitable body, a shifting spout or tube guided in a stuffing-box of the body and provided with a recessed mouth at its inner end, and an interior U-shaped guide-pin, one of the said legs of the guide-pin being attached to the stuffing-box and the other leg being in line with the spout, the recess of the mouth engaging with the first-mentioned leg and preventing the axial rotation of the spout, substantially as set forth.

7. An oiler, composed of a suitable body, a shifting spout or tube guided in a stuffing-box of the body and provided with a flaring and recessed mouth at its inner end, and an interior U-shaped guide-pin, having legs of unequal length, the longer one of said legs being attached to said stuffing-box and the shorter leg in line with the spout, the recess of the mouth engaging said longer leg and preventing the axial turning of the spout, substantially as set forth.

656,976. BROOM. HOMER W. HODGE, Atlanta, Ga. Filed Apr. 28, 1900. Serial No. 14,719. (No model.)



Claim.—1 A broom having face-shields secured to the opposite faces at the upper end of the broom-head, said shields having separated ears at the upper end, said ears being curved outwardly, and bound to the head by a binder extending around the ears and the upper end of the head.

2. A broom having shoulder-shields at the side edges of the broom-head and a tie uniting the shields, the tie having ends passing through the broom.

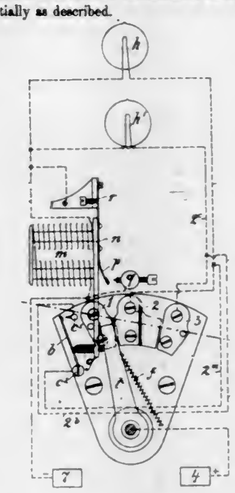
3. A broom having shoulder-shields at the side edges of the broom-head, said shields being U-shaped, and a tie connecting the shields and passing by its ends through both sides of each shield and through the broom-head.

656,977. ELECTRIC LAMP FOR MINERS' USE. LEO HORWITZ, Berlin, Germany. Filed Feb. 21, 1899. Serial No. 706,398. (No model.)

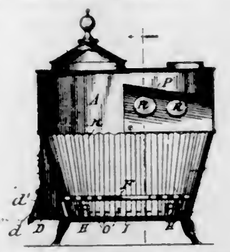
Claim.—1. In a portable electric lamp, the combination with a switch-lever in the main circuit of an automatic switching device, comprising an electromagnet energized by the main current controlled by said switch-lever and including a glow-lamp, of a spring-actuated armature automatically opening and closing a shunt-circuit and provided with an extension to be engaged by said switch-lever, a second glow-lamp in the shunt-circuit and connected with another shunt-circuit controlled by the said switch-lever and allowing either lamp to be thrown into circuit by the operator, and a battery for supplying the main circuit, substantially as described.

2. A miner's lamp, comprising two glow-lamps, a hand-switch, a battery, a casing therefor, contacting strips for the battery and casing, and an automatic switching device comprising an electromagnet the armature of which actuates a contacting device switching in or out either lamp, the contacting strips of the battery and casing being arranged in such a manner that after each fresh charge of the battery the latter may be placed in the apparatus so that one pair of strips on the battery comes in contact with a different pair of strips on the casing whereby the direction of the current is reversed and any residual magnetism in the apparatus is neutralized, substantially as described.

3. In a miner's lamp, the combination with two glow-lamps, of a hand-switch, a battery, circuits and connections substantially as described, and an automatic switching device comprising an electromagnet the armature of which actuates the contacts controlling the circuits in such a manner that when one lamp goes out the other one is successively and alternately switched in and out of the circuit so as to cause this lamp to flicker, substantially as described.



656,978. HEATING-STOVE. LINCOLN HOWARD, St. Joseph, Mo. Filed Jan. 5, 1900. Serial No. 495. (No model.)



Claim.—1. A heating-stove comprising in combination an inverted frusto-conical combustion-chamber, a partition or lining within said combustion-chamber and spaced therefrom to form a heating-chamber, said partition having openings at its top adjacent to the wall of the combustion-chamber and openings at its bottom adjacent to the floor of the combustion-chamber, substantially as described.

2. A heating-stove comprising in combination a combustion-chamber, a heating-drum supported thereon and having a flue connection at one end thereof, a perforated check-damper spanning the portion of the drum adjacent to the flue connection and secured to the base of the drum, substantially as described.

3. A heating-stove comprising in combination an inverted frusto-conical combustion-chamber, a corrugated floor set in the base thereof, said corrugations forming air-spaces between the floor and the casing beneath, substantially as described and for the purpose specified.

4. A heating-stove comprising in combination an inverted conical combustion-chamber, a vertically-corrugated partition having a flanged top and located within said combustion-chamber and spaced therefrom to form a heating-chamber, substantially as described.

5. In a heating-stove, the combination with an inverted frusto-conical combustion-chamber, of a corrugated floor whose corrugations constitute air-spaces between said floor and the bottom casing, and a vertically-corrugated partition supported by said floor and within said combustion-chamber and spaced therefrom to form a heating-chamber, substantially as described.

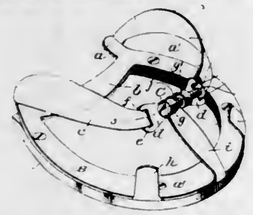
6. A heating-stove comprising in combination an inverted conical casing inclosing a combustion-chamber, a corrugated floor, said corrugations forming air-spaces between said floor and the base-casing of the stove, a vertically-corrugated partition within said chamber supported by said corrugated floor, said partition being provided with openings at its

top adjacent to the wall of the combustion-chamber and at its bottom adjacent to said corrugated floor, together with the necessary flue, and draft vents, substantially as described.

7. A heating-stove comprising in combination an inverted conical combustion-chamber, a vertically-corrugated partition within said combustion-chamber spaced therefrom to form a heating-chamber and having inlets adjacent to the floor and provided with a flanged top the furrows of the corrugations therein contacting with the casing the receding ridges forming openings in the top of said heating-chamber, the perforations in said partition and the damper set horizontally opposite said perforations, substantially as described.

8. In a heating-stove the combination of an inverted conical combustion-chamber, a vertically-corrugated partition having a flanged top and located within said combustion-chamber and spaced therefrom to form a heating-chamber, the damper in the front of said stove and the perforations in said partition opposite thereto, substantially as described.

656,979. NAILLESS HORSESHOE. JOHN V. HUGHES, Dallas, Tex. Filed May 24, 1900. Serial No. 17,869. (No model.)



Claim.—1. A nailless horseshoe, comprising a shoe proper, outwardly-curved straps connected to the shoe proper at points adjacent to the ends thereof and extending upwardly and forwardly therefrom, coupling-sections connected to the upper, forward ends of the straps and having rounded lugs at their inner ends, a bolt bearing in the lugs of the said sections and adjustably and detachably connecting the same, and the longitudinal central arm connected to the toe or longitudinal central forward portion of the shoe proper and extending upwardly therefrom, and having the curved upper end adapted to engage the rounded lugs of the coupling-sections, substantially as and for the purpose set forth.

2. A nailless horseshoe comprising a shoe proper, a plate arranged on and detachably connected to the shoe proper, and having the integral, outwardly-curved straps extending upwardly and forwardly from the outer edges of its end portions and also having the integral, longitudinal central arm rising from its toe and terminating at its upper end in a curved portion, coupling-sections connected to the upper forward ends of the straps and having rounded lugs at their inner ends adapted to be engaged by the curved portion of the arm of the plate, and a bolt bearing in the lugs of the said sections and adjustably and detachably connecting the same, substantially as specified.

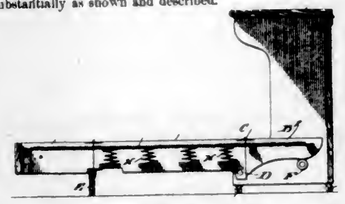
3. A nailless horseshoe comprising a shoe proper, a plate arranged on and detachably connected to the shoe proper and having its ends extended beyond and curved upwardly from the ends of the shoe proper and also having the integral cross-bar *b*, the integral, outwardly-curved straps extending upwardly and forwardly from the outer edges of its end portions, and the integral, longitudinal central arm rising from its toe and terminating at its upper end in a curved portion, and an adjustable and detachable connection interposed between the upper and forward ends of the straps and seated in the curved portion of the upwardly-extending arm, substantially as specified.

4. A nailless horseshoe comprising a shoe proper, outwardly-curved straps connected to the shoe proper at points adjacent to the ends thereof and extending upwardly and forwardly therefrom, a longitudinal central arm connected to and rising from the toe or longitudinal central forward portion of the shoe proper and terminating at its upper end in a curved portion, and an adjustable and detachable connection interposed between the forward and upper ends of the straps and seated in the curved portion of the arm, substantially as specified.

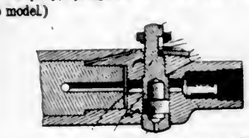
656,980. FOLDING BED. LEWIS B. JEFFCOTT, New York, N. Y. Filed Jan. 30, 1900. Serial No. 3,313. (No model.)

Claim.—1. A folding bed, comprising a casing, a bed proper having a section pivoted to the casing at one end, and near the bottom thereof, an end section hinged to the first-named section and extending into the casing, said last-named section having cam-faces, and rollers journaled in the casing for engaging the cam-faces of the end section, substantially as specified.

2. A folding bed comprising a casing, a bed proper having a middle section pivoted to the casing at one end and near the bottom thereof, end sections hinged to the ends of the middle section at the top thereof, one end section extending in the casing, and having cam-faces and friction-rollers journaled in the casing and engaging the cam-faces on the end section, substantially as shown and described.



656,981. THROTTLE-VALVE FOR FLUID-OPERATED TOOLS. CHARLES H. JOHNSON, Chicago Heights, Ill., assignor to the Johnson, Parfitt Tool Company, Springfield, Ill. Filed Feb. 2, 1900. Serial No. 3,727. (No model.)



Claim.—1. In a throttle-valve, the combination of a differential piston-valve, a casing corresponding therewith, provided with a port for varying the pressure upon that head of the piston-valve which has the greatest area, and means for manually operating the piston-valve in one direction, substantially as and for the purposes specified.

2. In a throttle-valve, the combination with a piston-valve having heads of unequal area, of a suitable casing therefor, said casing provided with an air-port in the end which corresponds with that head of the piston-valve which has the greatest area, substantially as and for the purposes specified.

3. In a throttle-valve, the combination with a suitable casing and provided with an induction-port and an eduction-port, of a differential piston-valve which projects through the casing at one end, said casing having an air-port at the end opposite to that through which the piston-valve projects, substantially as and for the purposes specified.

4. In a throttle-valve, the combination with a suitable casing having induction and eduction ports, of a differential piston-valve which projects through the casing at one end, and an adjustable collar on the projecting end of the piston-valve, substantially as and for the purposes specified.

5. In a throttle-valve, the combination with a suitable casing having induction and eduction ports, of a differential piston-valve threaded upon one end and having a longitudinal recess adjacent to its threaded portion, a pin which projects into the casing and enters the recess in the piston-valve, and a ratchet-nut on the threaded end of the piston-valve, substantially as and for the purposes specified.

6. In a throttle-valve, the combination with a suitable casing having induction and eduction ports of a differential piston-valve which projects through the casing at one end, and a plug or cap having an air-port, said plug or cap adjustably fitted within that end of the casing opposite to the end through which the piston-valve projects, substantially as and for the purposes specified.

656,982. ELECTROLYTICALLY TREATING SCRAP-TIN. EDWARD D. KENDALL, New York, N. Y. Filed Nov. 20, 1899. Serial No. 737,676. (No specimens.)

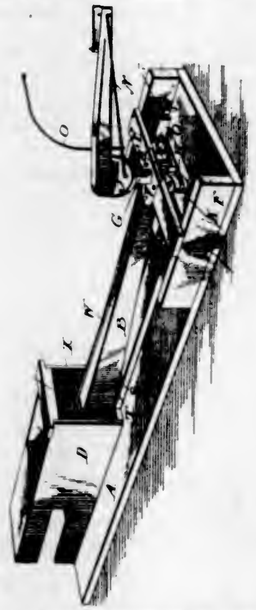
Claim.—1. The improvement in the art of electrolytically dissociating the iron and tin of so-called "scrap tin-plate," which consists in the preparation of an electrolyte composed of an aqueous solution of a nitrate of an alkali metal, or a nitrate of an alkaline-earth metal; the introduction into said electrolyte of an anode consisting of a mass of scrap tin-plate; the electrical connection of said mass with one terminal of a charged electric circuit and the establishment in contact with said electrolyte, of a suitable cathode electrically connected with the other terminal of said charged electric circuit.

2. The improvement in the electrolytic treatment of scrap tin-plate, which consists in the preparation of an electrolyte composed of an aqueous solution of a nitrate of an alkali metal, or a nitrate of an alkaline-earth metal; the introduction into said electrolyte of an anode consisting of a mass of scrap tin-plate; the electrical connection of said mass with one terminal of an electric circuit; the arrangement in contact with said electrolyte of a suitable cathode electrically connected with the other terminal of said electric circuit, and the establishment and maintenance in said circuit of an electric current until the iron constituent of the anode is completely freed from the tin constituent thereof, preparatory to the separate recovery of the thus-purified iron and tin.

3. The improvement in the art of electrolytically treating so-called "scrap tin-plate," which consists in submerging an anode composed of said scrap tin-plate in an electrolyte composed of an aqueous solution of a nitrate of an alkali metal or a nitrate of an alkaline-earth metal; the electrical connection of said anode with one terminal of a charged electric circuit; the establishment of a suitable cathode electrically connected with the other terminal of said charged electric circuit whereby the nitrate originally present is transformed into a nitrite; the addition of sodium or other nitrate to the solution from time to time as required, and finally, the collection and evaporation of the resulting strong solution for the recovery of the salt therefrom in a solid form.

4. In the electrolytic treatment of scrap tin-plate, consisting in the submergence of an anode composed of scrap tin-plate in an electrolyte composed of an aqueous solution of sodium or other suitable nitrate, and in contact with a suitable cathode, the said anode and cathode electrically connected respectively with the opposite terminals of a charged electric circuit; the introduction into the said electrolyte from time to time, as required, of additional quantities of said sodium or other nitrate, and the concentration by evaporation of the resulting strong solution for the recovery of the nitrite therefrom.

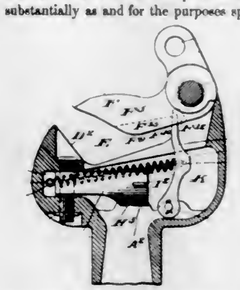
656,983. BALING-PRESS. JAMES KERR, Celina, Ohio, assignor of one-half to William S. Doron and Aaron L. Doron, same place. Filed May 22, 1900. Serial No. 17,568. (No model.)



Claim.—In a baling-press, the combination with a plunger and longitudinally-movable beam secured thereto, which beam has a lateral movement as it is driven forward, of a vertical rotary post and sweep secured thereto, a crank-arm secured to and rotating with said post, an antifriction-roller mounted at the end of said arm, a hook on the edge of the arm adjacent to said antifriction-roller, the free end of said hook bent toward the fixed end of the arm, of the plate secured to the outer end of the plunger-beam, bent at right angles at the opposite edges of the beam, one end of said plate extended beyond the end of the beam and in alinement with one of the longitudinal edges of the beam, a portion of the plate extending over the edge of the beam on the opposite side, and having its end outwardly bent and slightly curved to coöperate with said hook on the crank-arm, and means for returning the plunger to its starting position, as set forth.

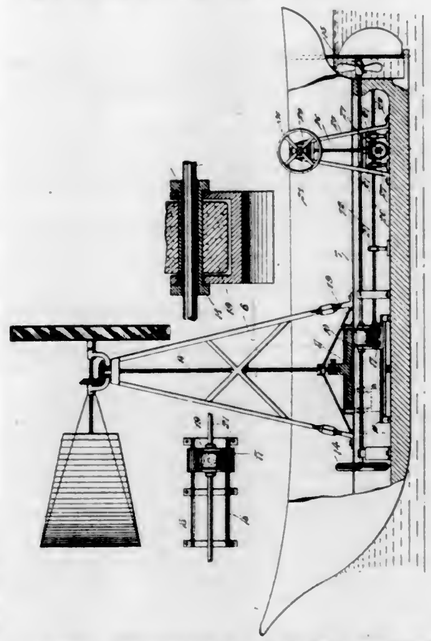
656,984. CAR-COUPLING. THEODOR KLEINEIER, Covington, Ky. Filed Jan. 29, 1900. Serial No. 3,082. (No model.)

Claim.—1. In a draw-head having a knuckle, a pivoted locking-piece for locking the knuckle, and a lever and spring for automatically opening the knuckle, when the latter is unlocked, the spring strained between the lever and a pin, a connection of the spring slipped over the pin, the pivot of the locking-piece holding the latter at all times close to the spring so that the latter cannot leave the pin, until the removal of the locking-piece, substantially as and for the purposes specified.



2. In a draw-head having a locking knuckle, a lever and spring for automatically opening the knuckle when unlocked, the groove in the rear side of the tailpiece of the knuckle and the added recess therein at F^{12} to receive the free end of the lever and which, while enabling the latter to actuate the tailpiece, will limit the throw of the lever toward the spring, substantially as and for the purposes specified.

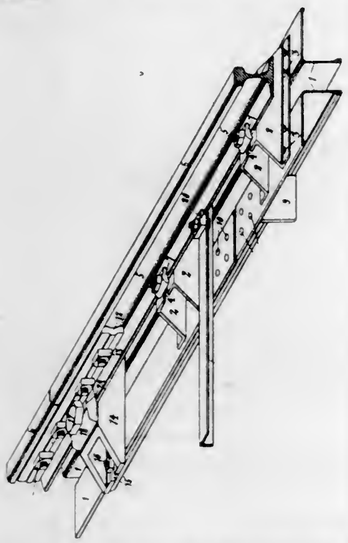
656,985. DRIVING APPARATUS. WALTER J. LE BARRON, Barre, Vt. Filed Oct. 24, 1899. Serial No. 734,666. (No model.)



Claim.—1. The combination of a driven shaft, a friction-wheel splined on the said shaft, a carriage having connection with the friction-wheel, to move the same longitudinally of the shaft, a track on which the carriage runs, means for transmitting movement to the carriage, a frictional driving-wheel engaged by the first-named friction-wheel, the first-named friction-wheel being movable along the face of the driving-wheel, to regulate the movement imparted to the driven shaft, and means connected with the driving-wheel, to propel the same.

2. In a driving apparatus, the combination of rails, a carriage mounted to slide thereon, a friction-wheel having a hollow axle, the ends of which are mounted to turn in the carriage, and a frictional driving-wheel engaged with the first-named friction-wheel, such first-named friction-wheel being movable with the carriage along the face of the driving-wheel, for the purpose described.

656,986. CONSTRUCTION OF RAILROAD-TRACKS. GUSTAV LINDENTHAL, New York, N. Y. Filed July 20, 1899. Serial No. 724,474. (No model.)



Claim.—1. Longitudinal sleepers for railroad-tracks consisting of successive sections and of splice-plates joining the sections longitudinally and having ends bent downward and transversely to the line of the longitudinal sleepers.

2. A rail-track foundation consisting of continuous longitudinal metallic sleepers, composed of sections and of splice-plates joining the sections longitudinally and having flanges bent downwardly and transversely to the line of the longitudinal sleepers, rail-chairs secured thereto and of means for securing the rails to the rail-chairs.

3. A rail-track foundation consisting of longitudinal metallic sleepers composed of sections and of splice-plates joining the sections and having flanges bent transversely to the line of the sleepers, slotted cross-ties secured to the sleepers independently of the rails and of means for securing the rails to the cross-ties.

4. A railroad-track foundation consisting of longitudinal metallic sleepers composed of parallel sections and of splice-plates joining the sections and having flanges bent transversely to the line of the sleepers, rail-chairs set transversely upon the sections and adjustably secured thereto and of means for securing rails to the chairs.

5. A rail-track foundation consisting of continuous longitudinal metallic sleepers, composed of parallel sections and of splice-plates joining the sections longitudinally, slotted rail-chairs set transversely upon the sections and secured thereto, and of means for securing rails to the chairs.

6. A railroad-track foundation consisting of longitudinal metallic sleepers composed of parallel sections, rail-chairs provided with slots to admit of lateral adjustment of the rails, affixed to the parallel sections independently of the rails and of means for securing thereto of rails.

7. A railroad-track foundation consisting of longitudinal metallic sleepers, rail-chairs affixed thereto and provided with slots admitting of lateral adjustment of the rails, bolts fitted into the slots and wedge-blocks set on the bolts and adapted to engage with and secure the rails to the chairs.

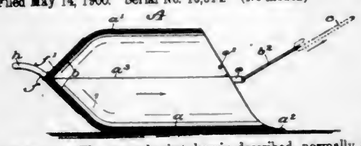
8. A rail-track foundation consisting of longitudinal metallic sleepers composed of parallel sections and of rail-chairs composed of two Z-irons set transversely upon the sections opposite each other and so that a slot is left between their upper flanges, adapted to receive the shanks of bolts for securing the rails thereto.

9. The combination with longitudinal sleepers, of rail-chairs composed of two pieces of Z-irons secured to the sleepers opposite each other in such position that a slot is left between their upper flanges adapted to receive the shanks of bolts for securing the rails to the chairs.

10. The combination of longitudinal sleepers composed of sections and of splice-plates joining the sections longitudinally, rail-chairs provided with transverse slots secured to the sleepers, rails set approximately in line with the longitudinal sleepers upon the rail-chairs, means for securing the rails to the rail-chairs and means for securing the rails in alinement.

11. A rail-track, consisting of longitudinal sleepers of rolled iron or steel shapes, arranged parallel to each other; each sleeper consisting of sections and of splice-plates joining the sections and having flanges bent transversely to the line of the sleepers, rail-chairs having slots admitting lateral adjustment of the rails, set in intervals across the sections of the sleepers and uniting them; rails mounted on the rail-chairs, and secured thereto, and cross-rods connecting the rails of the track at intervals.

656,987. SCOOP-BUCKET. GARDNER C. LUTHER, Swansea, Mass. Filed May 14, 1900. Serial No. 16,614. (No model.)

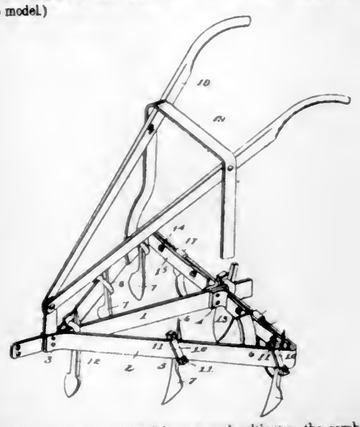


Claim.—1. The scoop-bucket herein described, normally closed at the bottom and open at the top end, the same consisting of the side or body members, *a*, *a'*, hinged together at the top, a scoop or cutting extension a^2 formed on the forward or top end of the member *a*, and a catch or locking device arranged to keep the bucket normally closed, substantially as set forth.

2. The scoop-bucket A hereinbefore described, the same consisting of the stationary body member *a* having a scoop extension a^2 at its forward or filling end, the swinging member *a'* hinged to the member *a*, a spring-catch or locking device adapted to keep the bucket normally closed, and means whereby the bucket may be detachably secured to a conveyer-cable or other analogous hauling mechanism.

3. A scoop-bucket comprising stationary and swinging members *a a'* hinged together at the forward or filling end, a scoop or extension a^2 integral with said member *a*, means for keeping the bucket normally closed, and guides *g* secured to the member *a* for maintaining the other member *a'* in position laterally, substantially as hereinbefore described.

656,988. COMBINED HARROW AND CULTIVATOR. JEFFERSON D. MAGEE, Bassfield, Miss. Filed Jan. 12, 1900. Serial No. 1,244. (No model.)

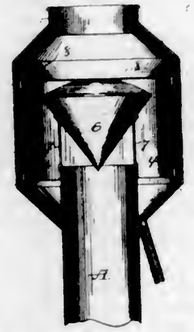


Claim.—1. In a combined harrow and cultivator, the combination with a triangular frame comprising a central drag-bar and two triangular metallic straps attached respectively at their forward and rear ends to said drag-bar and each having attached thereto cultivator-teeth, of cultivator-shovels carried by the rear end of said frame and each provided at its upper end with a flange overhanging the upper edge of the said rear end of the frame, and a metallic strap bolted to the rear end of the frame and operating to clamp the cultivator-shovels thereto, substantially as described.

2. In a combined harrow and cultivator, the combination with a triangular frame comprising a central drag-bar and two triangular metallic straps attached respectively at their forward and rear ends to the drag-bar and each carrying harrow-teeth and shovels, said drag-bar projecting beyond the rear end of said frame and having detachably connected thereto a combined harrow-tooth and shovel, substantially as described.

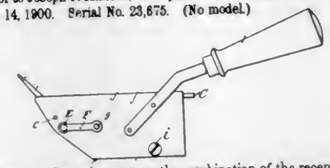
656,989. EXHAUST-HEAD. FRANK MARANVILLE and WILLIAM WARDEN, Akron, Ohio. Filed Feb. 24, 1900. Serial No. 6,416. (No model.)

Claim.—1. In an exhaust-head, the combination with a casing and a steam-pipe projecting through and terminating above the lower end of the casing, of a deflector or condensing-wall within the casing and spaced inwardly from the wall thereof and terminating at its lower end below the upper end of the steam-pipe, an inclined deflector-ring overhanging the annular space between said deflector or condensing-wall and the wall of the casing, and a conical deflector disposed over and supported by the steam-pipe, the wall of said conical deflector being approximately in line with said inclined deflector-ring, and an outlet at the lower end of said casing.



2. An exhaust-head comprising an approximately-cylindrical casing contracted at its upper and lower ends, a steam-pipe projecting into the lower contracted end of the casing, a sleeve or partition-wall in said casing and spaced therefrom, an inclined separator-ring secured in said casing above the partition-wall, a conical deflector above the steam-pipe and adapted to deflect the steam against the separator-ring, another separator-ring in the upper contracted end of the casing and projecting down therein and an outlet-spout communicating with the lower contracted end of said casing.

656,990. INSECT-TRAP. FRANK MARSH, Providence, R. I., assignor to Joseph P. Manton, same place. Filed May 4, 1898. Renewed July 14, 1900. Serial No. 23,675. (No model.)

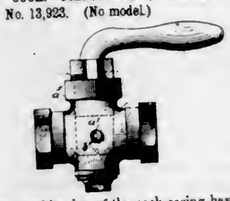


Claim.—1. In an insect-trap, the combination of the receptacle provided with the cover, and the spring-bottom, with the pivoted comb, and means for locking the comb for the use of either one of its edges, substantially as described.

2. In an insect-trap, the combination of the receptacle provided with the cover, and the slit spring-bottom with the inclined comb, substantially as described.

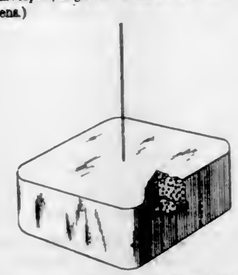
3. In an insect-trap, the combination of the receptacle provided with the cover, and the spring-bottom, with a comb arranged at the free end of the spring-bottom, substantially as described.

656,991. COCK. JOHN MORRISON, Dubuque, Iowa. Filed Apr. 23, 1900. Serial No. 13,923. (No model.)



Claim.—The combination of the cock-casing having a passage and provided with projections, with the cap surrounding said projections and arranged to engage the casing with its edge, the cap having an interior lug adapted to engage the said projections, and an opening of non-circular shape, and a plug mounted to turn in the casing and controlling the passage thereof, said plug having a portion passing through the opening of the cap and of the same outline therewith, the plug being securable to the cap in two different positions.

656,992. DISINFECTANT. JAMES L. MORTIMER and JOHN H. WILLIAMS, Liverpool, England. Filed Nov. 9, 1897. Serial No. 657,965 (No specimens.)

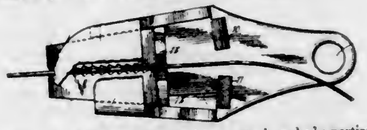


Claim.—1. As a new article of manufacture, a hard block composed of fragments of an alkaline permanganate bound together by naphthalin, substantially as described.

2. As a new article of manufacture, a hard block composed of fragments of an alkaline permanganate bound together by naphthalin and camphor, substantially as described.

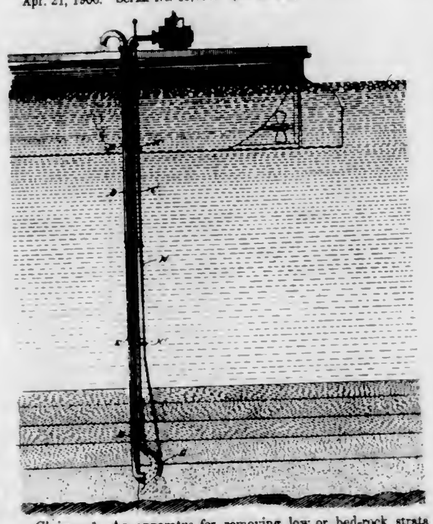
3. As a new article of manufacture, the combination of a slowly-soluble disinfectant-block composed of an alkaline permanganate bound together by naphthalin and camphor and formed around the end of a cord firmly and securely embedded therein, substantially as described, whereby the block can be suspended in a cistern and quickly removed therefrom, substantially as described.

656,993. WIRE-GRIP. HARRY A. MOSSMAN, Manderson, S. D. Filed May 2, 1900. Serial No. 15,226. (No model.)



Claim.—A wire-gripper, comprising a stock or body portion, convergent cheek-plates on opposite edges of the stock, jaws movable against said cheek-plate, guide-plates extended from the cheek-plates over the jaws, and a stop-plate extended from one of the guide-plates over the two jaws and terminating forward of the other guide-plate, substantially as specified.

656,994. APPARATUS FOR REMOVING MATERIAL FROM BELOW THE SURFACE. HERBERT F. MUNN, New York, N. Y. Filed Apr. 21, 1900. Serial No. 13,736. (No model.)

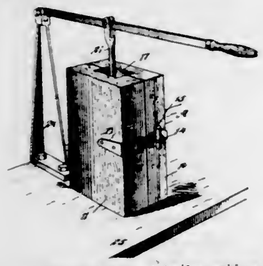


Claim.—1. An apparatus for removing low or bed-rock strata of material, comprising a pipe connected at one end with a supply of fluid

under pressure, a nozzle at the lower end of said pipe and movable relatively thereto, and a discharge-pipe arranged for operation in conjunction with said nozzle, to force the loosened material through the discharge-pipe, substantially as shown and described.

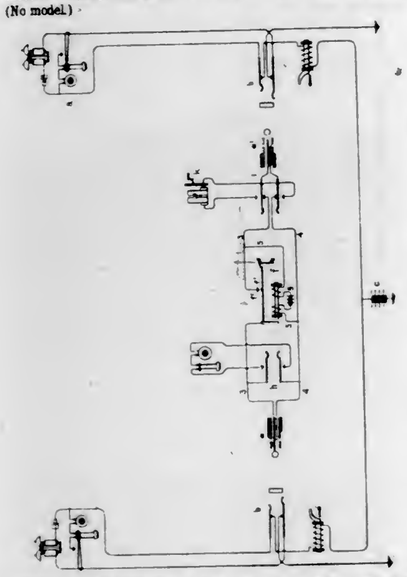
2. An apparatus for removing low or bed-rock strata of material, comprising a pump, a pipe connected therewith, for forcing a fluid under pressure by the pump through the pipe into the material to be loosened, a nozzle pivoted on the lower end of the pipe and under the control of the operator, and adapted to discharge the fluid under pressure into the material to be treated, to loosen the same, and a discharge-pipe having an entrance-mouth extending into the material, said nozzle being arranged to operate in conjunction with said mouth, to force the loosened material up through the discharge-pipe, as set forth.

656,995. **DEVICE FOR FILLING AND SHAPING CUSHIONS.** FANNIE L. MYERS, New York, N. Y. Filed May 22, 1900. Serial No. 17,572. (No model.)



Claim.—In a device for filling and shaping cushions, a shaping-block consisting of two sections, each section of the block having a recess in its inner face adapted to receive a cushion, an opening in an end wall leading into said recess, the said opening being tapered and of less diameter or area than the opening formed by the combined recesses, thus providing an end wall around the inner end of said opening, means for securing the sections together, a plunger arranged to enter the opening, and a lever connected to the plunger, substantially as specified.

656,996. **SUPERVISORY SIGNAL FOR TELEPHONE-SWITCH-BOARDS.** FRANK R. MCBERTY, Evanston, Ill., assignor to the Western Electric Company, Chicago, Ill. Filed July 25, 1898. Serial No. 686,821. (No model.)



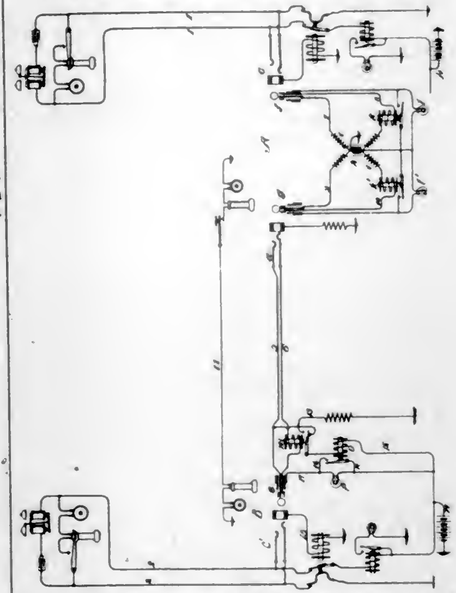
Claim.—1. The combination with two telephone-lines united by conductors into a continuous circuit and a telephone-switch at each station for closing the line during the use of the telephone, the circuit of said united lines being broken at one point, of an electromagnet in a closed circuit together with a source of current in one of the lines, a supervisory signal controlled by the electromagnet, and switch-contacts of the magnet closed when the magnet is excited adapted to complete the break in the circuit, as described.

2. The combination with telephone-lines, a switch at each station adapted to complete the corresponding line-circuit in the use of the telephone, and link conductors for conductively uniting the lines into a continuous circuit, of an electromagnetic signal together with a source of current in a bridge of said link conductors, a normal break in one of said conductors, and switch-contacts of the electromagnet closed when the magnet is excited controlling the said break, as described.

3. The combination with a calling and a called line, a telephone-switch at the station of each line for closing the line-circuit in the use of the telephone, and plugs and a plug-circuit for uniting the calling with the called line, of a magnet of high impedance together with the source of current in a bridge of the plug-circuit, a signal-indicator controlled by the magnet, and switch-contacts of the magnet controlling a break in a conductor of the plug-circuit between said bridge and the calling station, substantially as described.

4. The combination with two telephone-lines, a switch at the station of each line for controlling current in the line in the use of the telephone, link conductors for uniting the lines, of a bridge of the link conductors and a source of current therein, an electromagnet in the path of current from said source to the called station, and a supervisory signal controlled by the magnet, said magnet being normally unresponsive to current in the other line, and means actuated by the magnet when excited adapted to bring it under the control of current in the calling line, substantially as described.

656,997. **SIGNAL FOR TELEPHONE TRUNK-LINES.** FRANK R. MCBERTY, Evanston, Ill., assignor to the Western Electric Company, Chicago, Ill. Filed Jan. 29, 1900. Serial No. 3,071. (No model.)



Claim.—1. The combination with a trunk-line between A and B offices, a subscriber's line connected with the B terminal of the trunk-line, a switch at the substation controlling current in the line and a source of current in the trunk-line, of a clearing-out signal at the B terminal of the trunk-line, a magnet in a branch from the trunk-line controlling said clearing-out signal, and a magnet in series in the trunk-line in the path of current controlled at the telephone-station also controlling said clearing-out signal, said last-mentioned magnet being adapted to break the said branch when excited, substantially as described.

2. The combination with a trunk-line and a telephone-line connected with the B terminal thereof, a telephone-switch at the telephone-station controlling the line-circuit, and a source of current in the trunk-line, a signal at the B terminal and a magnet in a branch from the trunk-line controlling the signal, said branch forming a part of an operative circuit controlled at the A terminal, a magnet serially in the trunk-line in the path of current controlled by the telephone-switch, said last-mentioned magnet being adapted to disconnect the branch through the other magnet from the trunk-line when excited, substantially as described.

3. The combination with a trunk-line between A and B offices, and a telephone-line connected at the B terminal of the trunk-line having a telephone-switch for closing the line-circuit in the use of the telephone, a clearing-out signal at the B terminal of the trunk-line in a circuit controlled at the A terminal and formed in part of a line conductor of the trunk-line and a branch therefrom, and a magnet serially in the trunk-line in the path of current controlled at the telephone-station, said last-mentioned magnet being adapted when excited to disconnect the branch from the trunk-line and complete a local circuit through said branch, as described.

4. The combination with a metallic-circuit trunk-line united with a telephone-line at its B terminal, and a telephone-switch for controlling the circuit of the telephone-line, a clearing-out signal at the B terminal of the trunk-line, a ground branch from the trunk-line at the B terminal including a magnet adapted to control the display of said signal, and another magnet serially in the trunk-line in the path of current controlled by the telephone-switch also adapted for the independent control of said clearing-out signal, said last-mentioned magnet being adapted to break the branch through the other magnet, and means for applying current to the trunk-line at the A terminal for exciting either of said magnets, substantially as described.

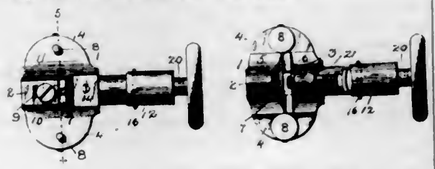
656,998. **BICYCLE ATTACHMENT FOR LEADING BICYCLES.** WINFIELD S. MCDONALD and JOHN B. DAVIS, Dayton, Ohio, assignors of one-third to Jno. F. Brinkman, Terre Haute, Ind. Filed July 2, 1900. Serial No. 22,263. (No model.)



Claim.—1. An attachment for leading bicycles in the rear of a vehicle, consisting of a fork, and a cross-bar, the former being adapted to be attached to the steering-fork of a bicycle on each side of the front wheel, the cross-bar having outwardly-curved ends adapted to be secured to the rear shaft of a vehicle and a flexible connection between the steering-head of the bicycle, and said cross-bar, substantially as shown and described.

2. In an attachment for leading a bicycle in the rear of a vehicle, the combination with the front forks of a bicycle, of a fork inclosing the front wheel of the bicycle, the said fork being attachable to the front fork of a bicycle on both sides of the steering-wheel, an extension 7, a cross-bar 8 to which said extension is attached, the said cross-bar having its ends curved outwardly, straps secured to the ends of said cross-bar and adapted to be secured to the rear shaft of a vehicle, a spring connected to the steering-head of the bicycle, and a flexible connection between said spring and the cross-bar 8 on each side of the extension 7, substantially as shown and for the purposes specified.

656,999. **SAW-SET.** THOMAS MCKELVEY, Trail, Canada. Filed Apr. 23, 1900. Serial No. 14,027. (No model.)

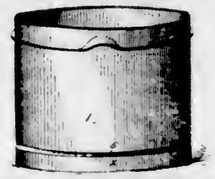


Claim.—1. A saw-set comprising a head having laterally-extending wings; an anvil located therein; a longitudinally-movable set, held against rotary movement, extending therein and adapted to coact with said anvil; means for holding said set against rotary movement, said means also serving to limit the longitudinal movement of said set; a removable screw for imparting a forward movement to said set, said screw moving adjustably and being held in its adjusted positions; and means for returning said set to an inoperative position.

2. A saw-set comprising a head having laterally-extending wings; an anvil located therein; a casing extending rearwardly therefrom and having a longitudinal opening; a longitudinally-movable set located within said casing, the front end of said set coacting with said anvil; a pin removably mounted in said set and extending through slots in the sides of said casing, said pin preventing the rotation of said set and also limiting its longitudinal movement; a screw mounted in said opening and adapted to impart longitudinal movement to said set in one direction; and a spring for returning said set to an inoperative position.

3. A saw-set comprising the head 1, having wings 4, and also having the opening 7; supports 8 carried by said wings; the anvil 10; the casing 12, having the opening 13; the set 14 removably located in said opening 13, said set being removable only through the rear end of said opening; the pin 16 carried by said set, said pin holding said set from rotation and also limiting the movement of said set; the spring 19; and the screw 20, substantially as and for the purposes set forth.

657,000. **METALLIC MEASURING VESSEL.** GEORGE W. MCKIM, Martin's Ferry, Ohio. Filed June 19, 1900. Serial No. 20,849. (No model.)



Claim.—1. A metallic vessel the side walls of which are made of a single sheet of metal having one of its ends folded over inwardly as at 2, said end being folded down adjacent the rim part of the chime end as at 2^a, its free end being turned up between the folds 2 2^a to form a reinforce 3, the folded parts 2 2^a being compressed together at a point above the upper edge of the reinforce-fold 3 and the bottom member 4, substantially as shown and described.

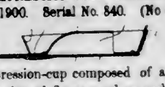
2. As a new article of manufacture, a metallic vessel the side walls of which are made of a single sheet of metal having its lower end turned downwardly and outwardly to form a fold 2^a, and then upward between the folds 2 2^a, to a point nearly midway thereof, the contiguous portions of the folds 2 3 2^a being closely compressed and formed with an annular groove or depression at a point over the end of the reinforce portion 3, the upper end of the folds 2 2^a, being curved inwardly to form an annular rest member Y, the bottom 4, the body of the vessel having an annular inwardly-projecting swaged flange for holding the bottom 4 upon the annular seat portion Y, all being arranged substantially as shown and for the purposes described.

657,001. **COMPOSITION OF MATTER FOR BLACKBOARDS, &c.** LUCIUS O'BRIEN, Crookston, Minn. Filed Apr. 5, 1900. Serial No. 11,783. (No specimens.)

Claim.—1. A composition of matter designed for use in the production of blackboards and like surfaces, the same consisting, essentially, of putty-lime, sand, lampblack, vinegar, Portland cement, plaster-of-paris, and water, combined substantially in the manner and proportions specified.

2. A blackboard composition which contains vinegar as an essential ingredient to render the composition spongy and springy, substantially as described.

657,002. **DENTAL IMPRESSION-CUP.** HERMAN D. OSGOOD, Concord, Mass. Filed Jan. 9, 1900. Serial No. 840. (No model.)



Claim.—1. A dental impression-cup composed of a body portion having a bottom plate and a U-shaped flange, and an arched plate having a seat formed to bear upon the bottom plate of the body portion and a flange formed to coöperate with the ends of the U-shaped flange, said arched plate having an opening which forms the mouth of a chamber or cavity when the two parts are assembled, the said parts being separable.

2. A dental impression-cup comprising a body portion having a bottom plate, a U-shaped flange, and pins or lugs projecting inwardly from the flange over the bottom plate, and an arched plate having a marginal portion formed to bear upon the said bottom plate and engage the said pins, said arched plate having a flange and an opening, substantially as described.

3. A dental impression-cup comprising a bottom plate having a vent-opening and a U-shaped flange, and an arched plate cooperating with said bottom plate in forming a chamber or cavity which communicates with the vent-opening, said arched plate having a flange and an opening which constitutes the mouth of said cavity.

657,003. GLYCERINIZED VACCINE LYMPH. EDWARD M. PARKER, Washington, D. C. Filed Feb. 5, 1900. Serial No. 3,989. (No specimens.)

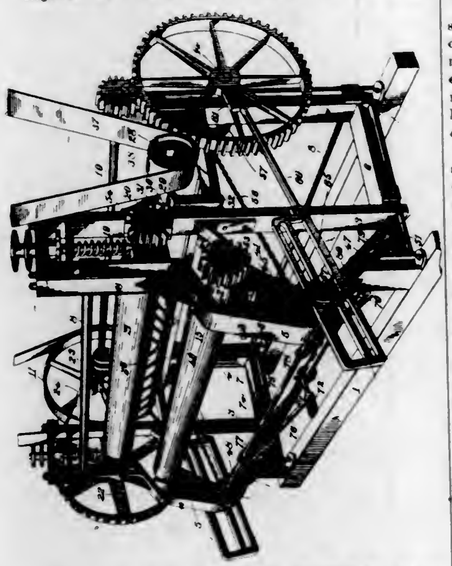
Claim.—A new composition of matter obtained by the admixture with glycerinized vaccine lymph of a sterile albuminous drying element, substantially as hereinbefore set forth.

657,004. IGNITING-BODY FOR AUTOMATIC IGNITION OF COMBUSTIBLE GASES. LÉON PIERRON, Brussels, Belgium. Filed Oct. 7, 1898. Serial No. 692,938. (No specimens.)

Claim.—1. A compound body for the ignition of gases, consisting of a base of metal of the platinum group, and pure acid oxids in a finely-divided or porous condition and having the metal combined therewith, substantially as and for the purposes described.

2. In a compound body for the ignition of gases, a supporting element for the igniting element, the same consisting of acid oxid in an absolutely pure condition, to prevent the agglomeration of the igniting element, said oxids being mingled with an organic compound to form a paste capable of being molded, dried and calcined, substantially as described.

657,005. LEATHER-WRINGING MACHINE. EMIL J. F. QUIRIN, Tioga Centre, N. Y. Filed Apr. 2, 1900. Serial No. 11,207. (No model.)



Claim.—1. In a wringing-machine the combination with a frame, driving-shaft, and compression-rollers, one of which is movable to and from the other, of toggle-lever mechanism carrying said movable roller, a pitman operatively connecting the driving-shaft and the toggle-lever mechanism, and means for causing said pitman to actuate the said toggle-lever mechanism in one direction or the other for actuating the movable roller as required, substantially as set forth.

2. In a wringing-machine the combination with a frame, driving-shaft, and compression-rollers, one of which is movable to and from the other, of toggle-lever mechanism carrying the said movable roller, and a pitman provided with disalined communicating tracks adapted to accommodate a coöperative member of the toggle-lever mechanism, shoulders in said tracks adapted to actuate said member in opposite directions, and means for bringing one shoulder or the other into coöperation with said member as required, substantially as set forth.

3. In a wringing-machine the combination with a frame driving-shaft, and compression-rollers, one of which is movable to and from the other, of toggle-lever mechanism carrying the said movable roller, and a pitman provided with disalined communicating tracks adapted to accommodate a coöperative member of the toggle-lever mechanism, a transverse track establishing communication between the tracks previously mentioned, and means for shifting the position of the members of the toggle-lever mechanism from one to the other of the first-named tracks, through the transverse track, substantially as set forth.

4. In a wringing-machine the combination with a frame driving-shaft, and compression-rollers, one of which is movable to and from the other, of means for raising and lowering the movable roller, comprising boxes near the opposite extremities of the roller-shaft, and brackets supporting and guiding the downward movement of the boxes, substantially as set forth.

5. In a wringing-machine the combination with a frame, driving-shaft, and compression-rollers, one of which is movable to and from the other, of means for raising and lowering the movable roller, comprising boxes near the opposite extremities of the roller-shaft, brackets supporting and guiding the downward movement of the boxes, and adjustable buffers adapted to receive the impact of the boxes, substantially as set forth.

6. In a wringing-machine the combination with a frame, driving-shaft, and compression-rollers, one of which is movable to and from the other, of a pair of toggle-levers supporting the movable roller near its opposite extremities, means for operatively connecting the toggle-lever with the driving-shaft and uprights and breast-pieces in the frame for limiting the movement in opposite directions of the toggle-levers, substantially as set forth.

7. In a wringing-machine the combination with a frame, driving-shaft, and compression-rollers, one of which is movable to and from the other, of counterweighted toggle-lever mechanism supporting the movable roller, and means connected with the driving-shaft for operating the toggle-lever mechanism in opposite directions, substantially as set forth.

8. In a wringing-machine the combination with a frame, driving-shaft, and compression-rollers, one of which is movable to and from the other, of a pair of toggle-levers supporting the opposite extremities of the movable roller, pitmen provided with disalined communicating tracks, operatively uniting the driving-shaft and a member of the toggle-levers respectively, a rod movable endwise of the lower member of the toggle-levers adapted to engage the said pitmen and means for raising and lowering the rod, substantially as set forth.

9. In a wringing-machine the combination with a frame, driving-shaft, and compression-rollers, one of which is movable to and from the other, of a pair of toggle-levers supporting the opposite extremities of the movable roller, pitmen provided with disalined communicating tracks operatively uniting the driving member and a member of the toggle-levers respectively, a rod movable endwise of the lower member of the toggle-levers, adapted to engage the said pitmen and means for raising and lowering the rod, said means comprising a rock-shaft and foot-lever, a pinion on the rock-shaft and a frame provided with a rack engaging with the pinion, said frame supporting the pitmen-actuating rod, substantially as set forth.

10. In a wringing-machine the combination with a frame and its compression-rollers, of a smoothing-roller provided with a shaft mounted in swiveled boxes, trunnioned in yielding frames upon the main frame, substantially as and for the purpose specified.

657,006. MANUFACTURE OF STUCCO FLOWERS. THERESE REINHERR, Munich, Germany. Filed Aug. 23, 1897. Serial No. 649,258. (No specimens.)



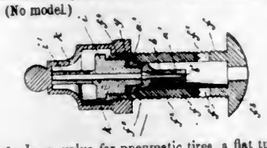
Claim.—1. The process herein described of manufacturing stucco ornaments, the same consisting in applying to the backs of natural objects, such as leaves, flowers, and the like, a stiffening-paste, and then dipping the objects into a shellac solution.

2. The process herein described of manufacturing stucco ornaments, the same consisting in applying to the backs of natural objects, such as leaves, flowers, and the like, a stiffening-paste, then applying a fabric backing, then removing the fabric backing then dipping the objects into a shellac solution, and finally dipping or brushing over the object with a stiffening-paste.

3. The process herein described of manufacturing stucco ornaments, the same consisting in applying to the backs of natural objects, such as leaves, flowers, and the like, a stiffening-paste, then applying a fabric backing, and then stripping or separating the object from said fabric backing substantially as and for the purposes set forth.

4. The process herein described of manufacturing stucco ornaments, the same consisting in applying to the backs of natural objects, such as leaves, flowers, and the like, a stiffening-paste, then applying a fabric backing, then stripping or separating the object from said fabric backing, then dipping the same into a shellac solution, and finally applying a stiffening-paste to the surface.

657,007. VALVE FOR PNEUMATIC TIRES OF BICYCLES. FRANZ RICHTER, Cologne, Germany. Filed Oct. 28, 1899. Serial No. 735,099. (No model.)



Claim.—1. In a valve for pneumatic tires, a flat tube *a'* provided with an elliptic hole *b* in the direction of its longitudinal axis, said hole lying eccentrically with regard to the axis of the tube *a'*, so that at the bottom part *b'* of said flat tube two lips are formed, the one *c* being thick and almost rigid, the other *c'* thin and flexible, substantially as described and for the purpose specified.

2. In a valve for pneumatic tires, a flat tube *a'*, a boss *a* adjacent to the tube *a'*, a ring a^3 on the top of the boss *a* and an elliptic hole lying eccentrically with regard to the axis of the tube *a'*, said hole being narrower at the lower part than at the upper part of the tube *a'*, substantially as set forth.

3. In a valve for pneumatic tires, the combination of the tube *a'* provided with an elliptic hole *b'* lying eccentrically with regard to the axis of said tube *a'*, the socket *f* on which the tube *a'* rests, the ring *g* resting on the upper part of the tube *a'*, and the nut *i* screwed into the socket *f*, substantially as set forth.

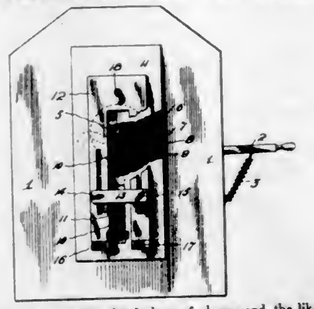
4. In a valve for pneumatic tires, the combination of the tube *a'* adjacent to the boss *a* and to the ring a^3, the tube *a'* being provided with an elliptic hole *b'* lying eccentrically with regard to the axis of said tube *a'*, the socket *f* on which the ring a^3 of the tube *a'* rests, the tube *g* resting on the upper part of the tube *a'*, and the nut *i* screwed into the socket *f*, substantially as set forth.

5. A valve, comprising a casing, and a collapsible tube having opposing walls, one of which is of less stiffness than the other.

6. A valve, comprising a collapsible tube having opposing walls, one of which is of less stiffness than the other.

7. A valve, comprising a flat collapsible tube, one side wall of which is of less stiffness than the side opposite.

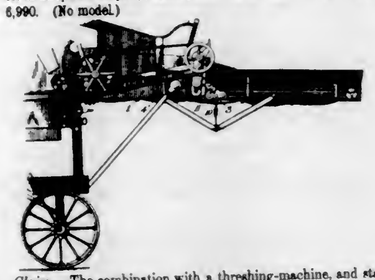
657,008. CHURN. EZARIAH RISTER and WILLIAM A. WOOD, Omaha, Ill. Filed Mar. 29, 1900. Serial No. 10,664. (No model.)



Claim.—1. In a motor for the dashers of churns and the like, the combination, with a frame, and a driven wheel, of a brake-lever pivotally mounted upon a fulcrum extending parallel with the axis of the wheel to swing in a vertical plane and provided at its inner end with a lateral brake-shoe to bear upon one side or face of said wheel, an expanding spring acting upon the inner end of the lever to hold the brake-shoe in engagement with the wheel, a retracting spring acting on the outer end of the lever to withdraw the brake-shoe, and a rack on the frame adapted to be engaged by the lever to maintain the brake-shoe in engagement with the wheel against the tension of said retracting spring, substantially as set forth.

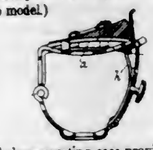
2. In a motor for the dashers of churns and the like, the combination of a frame having a guideway, spring-motor mechanism arranged in said frame and having a driven shaft projecting into the guideway, means operated by said shaft for imparting reciprocatory motion to a dasher-rod, and means for clamping and holding the churn body and cover in place, the same comprising a bifurcated slide-frame provided with longitudinal slots in the legs thereof and presser-feet on the lower ends of said legs, a cross-piece extending across the bifurcation, thumb-screws connecting said cross-piece to the guideway and extending through said slots, and a knob or finger-piece for adjusting the slide-frame up or down when said set-screws are loosened, substantially as set forth.

657,009. FEEDER ATTACHMENT FOR THRESHING-MACHINES. THOMAS H. ROLFE, Battle Creek, Mich., assignor to the Nichols & Shepard Company, same place. Filed Mar. 1, 1900. Serial No. 6,990. (No model.)



Claim.—The combination with a threshing-machine, and stationary and folding feeder-sections thereon having a shouldered engagement with each other which limits the upward movement of the folding section, of toggle-links connecting said sections, and an extensible connection between the machine and the pivot which connects the toggle-links, said connection having a detachable engagement with the pivot of the toggle-links, substantially as described.

657,010. SAFETY-RAZOR. AUGUST W. SCHEUBER, New York, N. Y., assignor to Mary Zinn, same place. Filed Dec. 29, 1899. Serial No. 741,959. (No model.)



Claim.—1. A blade-supporting case provided with a pivoted tongue adapted to engage the blade, and a spring for holding said tongue either in contact with, or away from said blade, substantially as described.

2. A blade-supporting case having a spring-actuated tongue for holding the blade forward, said tongue being hinged at the angle at the top and rear portions of the case substantially as described.

3. A blade-supporting case having a spring-actuated tongue for holding the blade forward, said tongue being provided with pintles located at the angle between the top and rear portions of the case and said pintles being made to strike the rear of the case to limit the forward motion of the tongue substantially as described.

4. A blade-supporting case having a spring-actuated tongue for holding the blade forward, said tongue being provided with pintles located at the angle between the top and rear portions of the case and said pintles being made to strike the top and rear of the case for limiting the backward and forward motion of the tongue substantially as described.

5. A blade-supporting case having a tongue for moving the blade forward, said tongue being provided with a tail or projection, and a spring engaging said projection for holding said tongue either in contact with or away from said blade, substantially as described.

6. A blade-supporting case having a blade-holding tongue hinged to the case, and a spring for the tongue, said spring having a supporting-lug for the tongue substantially as described.

657,011. MANICURE-TOOL. MARY E. SCHILS, Philadelphia, Pa. Filed Feb. 19, 1900. Serial No. 5,765. (No model.)



Claim.—1. As a new article of manufacture, a manicure-tool having a holder shaped at one end to form a curved slot and having a detachable metallic tool shaped to conform to the slot and having a rounded end, substantially as described.

2. As a new article of manufacture, a manicure-tool having a holder, a curved slot in one end, a stop, and a detachable metallic tool curved in cross-section and rounded at the end, substantially as described.

3. As a new article of manufacture, a manicure-tool having a holder, and a rounded and curved tool at one end, a detachable brush at the opposite end, and means for securing the brush to the holder, substantially as described.

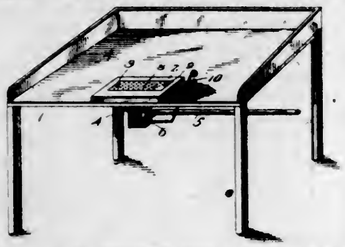
657,012. APPARATUS FOR ELECTROLYSIS. PAUL SCHOOP, Wildegg, Switzerland. Filed Aug. 17, 1899. Serial No. 727,586. (No model.)



Claim.—1. An apparatus for electrolyzing solutions, comprising a base of insulating material having a series of long narrow channels therein through which the solution to be electrolyzed is caused to flow, the said channels being arranged parallel to each other and close together, double electrodes each extending from one channel into the next adjacent one and electrical connections with the electrodes at the ends of the apparatus from opposite poles of an electric generator.

2. An apparatus for electrolyzing solutions, comprising a base of insulating material having a series of long narrow channels B therein arranged parallel to each other and close together, means for supplying and discharging liquid to and from opposite ends of each of said channels, double electrodes C, S-shaped in cross-section, and provided with a notched part C', one part of each of said electrodes being located in one of said channels, while the other notched part C' projects over into the next adjacent channel, and electrical connections with the electrodes at the ends of the apparatus from opposite poles of an electric generator.

657,013. CIGAR-ROLLING BOARD. SILAS A. SHELLY, Harrisburg, Pa. Filed Apr. 19, 1900. Serial No. 13,501. (No model.)



Claim.—1. In a cigar-rolling board, the combination of a rolling-board having an aperture, the wall of which is provided at its upper edge with a surrounding ledge, a suction-chamber fitting within said aperture and adapted to be applied and removed through the top thereof, said chamber being provided at its upper edge with flanges resting upon the ledge and having flaring walls extending below the board and forming a contracted bottom, a valve-chamber applied to the said contracted bottom, a valve in said chamber, means for operating the valve, an exhaust-pipe connected to the valve-chamber, a perforated plate seated upon the flanges of the suction-chamber, and fastening devices common to said flanges and perforated plate for securing the same to the ledge, substantially as set forth.

2. In a cigar-rolling board, the combination, with a work-table provided with an opening, and a rolling-board located adjacent to said opening and provided with an aperture, of a suction-chamber seated within said aperture and provided at its lower end with a central valve-chamber, a perforated plate secured to the rolling-board at the top of the aperture, a valve in said valve-chamber, and a rod connected with said valve and having an upwardly-extending portion projecting through said opening in the table and terminating in a handle, substantially as set forth.

657,014. CURTAIN-FIXTURE. HENRY M. STEVENSON, Barnet, Vt. Filed Jan. 30, 1900. Serial No. 3,367. (No model.)

Claim.—1. The combination with suspending-tapes provided with holes in their ends, of stirrups having hooks to engage in said holes and each provided with a circular body portion forming a journal-bearing for a shade-roller, and a movable band on each stirrup between the hook and body portion, substantially as specified.

2. The combination with suspending-tapes provided with holes in their free ends, of stirrups having hooks to engage in said holes and each provided with a circular body portion forming a journal-bearing for a shade-roller, a short terminal shank, and a slidable guard embracing said terminal shank and the shank of the hook, substantially as and for the purpose specified.



3. The combination with flexible tapes, of shade-roller-supporting stirrups connected to the free ends of the tapes and each comprising a circular body portion forming a journal-bearing for the shade-roller, an attaching-hook arranged in the same plane as the body portion, and a band or guard adapted to pass over the hook and encircle the shank of the hook and the extremity of the body portion and adjustable toward and away from the point of the hook, substantially as specified.

657,015. GARMENT-HOOK. LAURA V. STICKNEY, Atlantic City, N. J. Filed July 11, 1900. Serial No. 23,247. (No model.)

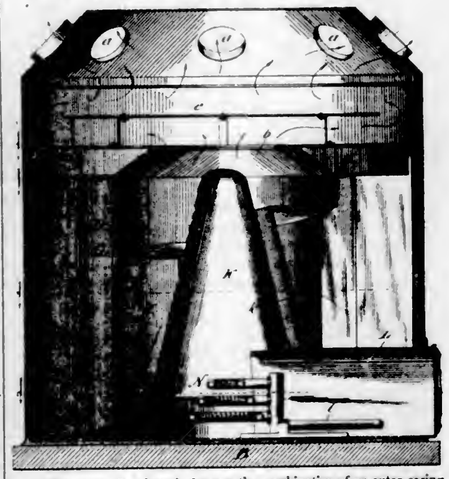


Claim.—1. A garment-hook comprising parallel pin-points connected together by a cross-bar, a plate adapted to embrace said hook and secure the same to a fabric, and clamping-prongs carried by the said plate to engage the cross-bar and prevent a vertical movement of said hook; substantially as specified.

2. A securing-plate for a garment-hook provided with oppositely-disposed side prongs, a downwardly-extending securing-prong at an angle to said side prongs and parallel depending clamping-prongs; substantially as specified.

3. A garment-hook comprising shank portions connected by a cross-bar, a securing-plate for said hook having at opposite sides prongs adapted to embrace said shank portions and pass through an adjacent fabric, a central depending prong from said plate adapted to embrace the cross-bar of said hook and pass through said fabric, and clamping-prongs at each side of said central prong adapted to be bent downward upon said cross-bar to hold the same against vertical movement upon said plate; substantially as specified.

657,016. HOT-AIR FURNACE. GEORGE THOMSON, Chicago, Ill. Filed Sept. 25, 1899. Serial No. 731,615. (No model.)



Claim.—1. In a hot-air furnace, the combination of an outer casing, shells therein forming a preliminary-heating chamber and an inner air-chamber and forming with said casing an outer air-chamber through which and said preliminary-heating chamber course, respectively, the air to be heated and the products of combustion for heating it, said inner air-chamber communicating with said outer air-chamber through an opening in said preliminary-heating chamber, a shell in said inner air-chamber forming a combustion-chamber, an annular shell forming a heating-chamber surmounting said chambers and communicating with said combustion and preliminary-heating chambers, and a dome covering said annular shell, substantially as described.

2. In a hot-air furnace, the combination of an outer casing, shells therein forming a preliminary-heating chamber and an inner air-chamber and forming with said casing an outer air-chamber through which and said preliminary-heating chamber course, respectively, the air to be heated and the products of combustion for heating it, said inner air-chamber communicating with said outer air-chamber through an opening in said preliminary-heating chamber, a shell in said inner air-chamber forming a combustion-chamber, an annular shell forming a heating-chamber surmounting said chambers and containing a transverse partition from opposite sides of which it communicates, respectively, with said combustion-chamber and said preliminary-heating chamber, and a dome covering said annular shell, substantially as described.

3. In a hot-air furnace, the combination of an outer casing, shells therein forming a preliminary-heating chamber and an inner air-chamber and forming with said casing an outer air-chamber through which and said preliminary-heating chamber course, respectively, the air to be heated and the products of combustion for heating it, said inner air-chamber communicating with said onter air-chamber through an opening in said preliminary-heating chamber, a shell in said inner air-chamber forming a combustion-chamber, a diaphragm disposed about said combustion-chamber in said inner air-chamber and extending from one side of said opening, an annular shell forming a heating-chamber surmounting said chambers and communicating with said combustion and preliminary-heating chambers, and a dome covering said annular shell, substantially as described.

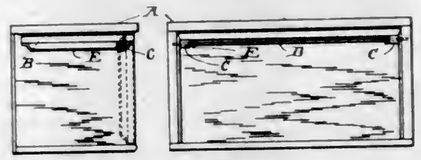
4. In a hot-air furnace, the combination of an outer casing, shells therein forming a preliminary-heating chamber and an inner air-chamber and forming with said casing an outer air-chamber through which and said preliminary-heating chamber course, respectively, the air to be heated and the products of combustion for heating it, said inner air-chamber communicating with said outer air-chamber through an opening in said preliminary-heating chamber, a conical shell in said inner air-chamber forming a combustion-chamber, a diaphragm spirally disposed about said combustion-chamber in said inner air-chamber and extending from one side of said opening, an annular shell forming a heating-chamber surmounting said chambers and communicating with said combustion-chamber at its smaller end and with said preliminary-heating chamber, and a dome covering said annular shell, substantially as described.

5. In a hot-air furnace, the combination of an outer casing, shells therein forming a preliminary-heating chamber and an inner air-chamber and forming with said casing an outer air-chamber through which and said preliminary-heating chamber course, respectively, the air to be heated and the products of combustion for heating it in relatively-contrary directions, said heating-chamber having an opening extending through it and being closed by end walls at said opening, through which said inner and outer air-chambers communicate, a partition extending at one side of said opening across said outer air-chamber, a shell in said inner air-chamber forming a combustion-chamber, a partition extending from the opposite side of said opening to said combustion-chamber, a diaphragm extending from said opening about the shell in said inner air-chamber, an annular shell forming a heating-chamber surmounting said chambers and communicating with said combustion and preliminary-heating chambers, and a dome covering said annular shell, substantially as described.

6. In a hot-air furnace, the combination of an outer casing, shells therein forming a preliminary-heating chamber and an inner air-chamber and forming with said casing an outer air-chamber through which and said preliminary-heating chamber course, respectively, the air to be heated and the products of combustion for heating it, said heating-chamber having an opening extending through it connecting said inner and outer air-chambers to cause the air to be heated to course through them successively, a dome covering said chambers, and an annular shell forming a heating-chamber surmounting said chambers, with its opening over the inner air-chamber, said annular chamber discharging into said preliminary-heating chamber, substantially as described.

657,017. DOOR-EQUALIZER. FRED W. TOBEY, Cincinnati, Ohio, assignor to the Globe-Wernicke Company, same place. Filed May 23, 1900. Serial No. 17,776. (No model.)

Claim.—1 In combination with a bookcase-section, or like article of furniture, a door adapted to be raised to a horizontal position and moved into said case or section, a shaft journaled in said case and carrying rotary bearings adapted to facilitate the sliding or moving of the door in its horizontal position, and rods, one at each end of the door, adapted to limit, or serve as stops for the outward movement of the door, substantially as specified.



2. In combination with a case or section a shaft supported therein, a pinion at each end of the said shaft, rigid therewith, a door provided with a rack at either end adapted to engage with said pinions as the door is moved out of or into the case, and rods, one at each end of the door, adapted to limit, or serve as stops for, the outward movement of said door, substantially as described.

3. In combination with a case or section a shaft supported thereon, pinions F, F, secured to the shaft, one at either end, a door, a rack G at either end of the door and secured thereto, a rod F at either end of the door, all constructed substantially as and for the purpose described.

657,018. ENVELOP. HENRY TRENCHARD, Jr., New York, N. Y. Filed June 28, 1900. Serial No. 21,879. (No model.)



Claim.—In an envelop, a fastening device comprising a disk, a tubular rivet passing through said disk and through one side of the envelop, a washer surrounding the inner end of said rivet, and a cap formed integral with the washer, by a narrow neck portion and adapted to extend over the inner end of the rivet and to be secured to the washer, the said washer and cap being both of the same shape and size, substantially as specified.

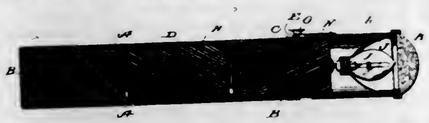
657,019. TOBACCO-PIPE. HENRY B. BARTON, St. Louis, Mo. Filed Aug. 28, 1899. Serial No. 728,702. (No model.)



Claim.—1. In a tobacco-pipe, the combination with the bowl formed with a smoke-duct leading therefrom, of a stem formed with a smoke-duct substantially in axial alinement with the smoke-duct from the bowl, the vacuum-chamber into and from which said ducts lead, a pocket-duct leading from the bottom of the vacuum-chamber, and arranged at an angle to the axis of the ducts first mentioned, a removable cap or cover for closing the lower end of said pocket-duct, and a teat or nozzle formed on the inner end of the stem and projecting into the vacuum-chamber, said teat being formed with a portion of the smoke-duct of the stem, which at this point, is curved so that at the extremity of said teat, said duct is in axial alinement with the pocket-duct and adjacent thereto, whereby, in one operation the duct in the stem is used as a draft-duct, and in another, as an injector for injecting the material from the smoke-duct of the bowl and stem into said pocket-duct, said blast being conducted into and through the pocket-duct; substantially as described.

2. In a tobacco-pipe, the combination of a bowl, a stem having a smoke-duct leading from the bowl to an enlarged vacuum-chamber c'' in the stem, a pocket-duct extending downwardly from said vacuum-chamber, a removable closure closing the lower end thereof, and a teat or nipple extending into said vacuum-chamber opposite the smoke-duct from the bowl and having a duct connecting with a duct in the mouth end of the stem and terminating at a point directly opposite and adjacent to said pocket-duct, and directed in line therewith whereby when said closure is removed and a blast produced in the stem an injector effect is produced drawing matter from the bowl end of the smoke-duct and forcing the same through the pocket-duct, substantially as described.

657,020. PORTABLE ELECTRIC LAMP. FRANKLIN W. BROOKS, Washington, D. C. Filed June 9, 1900. Serial No. 19,667. (No model.)

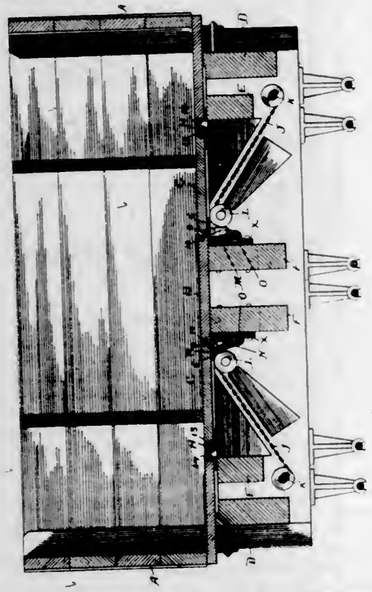


Claim.—1. A portable electric lamp embodying a non-conducting battery-case A, provided with an electrical conductor B terminated at one end in contact with a metallic band C and with its opposite end adapted to contact with one pole of a battery, a ring or band F, secured around the forward end of the case and formed with interlocking devices G, one or more batteries H located within the case A, and a lamp-holder L, provided with a reflector, lens and lamp, and provided with a switch N and means for interlocking with the devices G, on the band F, substantially as and for the purposes hereinbefore set forth.

2. The non-conducting battery-case A, provided with the conductor B, and metallic band F, the latter provided with interlocking devices G; in combination with a removable lamp-holder provided with a lamp, and with means for interlocking with the locking devices G, on the band F, and removable batteries H, arranged within the battery-case A and adapted to contact with the conductor B, and the lamp, substantially as and for the purposes set forth.

3. In combination with the non-conducting battery-case A, constructed as described and provided with the metallic band C, having a radial stud E; and a band F, provided with diametric radial stud G, the lamp-holder L, provided with diametric bayonet sockets or gates M, and having a vibrating switch N, and thumb-piece O; whereby the switch may be operated to produce either a continuous or a flash light, substantially as hereinbefore set forth.

657,021. FREIGHT-CAR. WILLIAM A. CASWELL, Chicago, Ill. Filed Apr. 30, 1900. Serial No. 14,830. (No model.)



Claim.—1. The combination with a trap-door and its supporting latch or arm N, of a movable lifter R, interposed between the latch and the door, substantially as specified.

2. The combination with a trap-door and a supporting arm or latch N movable under the door and supported upon the car-sill, and a lifter R pivoted to the sill and swinging with said arm, substantially as specified.

3. The combination with the trap-door and its supporting latch or arm N, of a lifter R pivoted stationarily and swinging into position between the arm and the door, substantially as specified.

4. The combination with the trap-door and its supporting-arm N, of a pivoted lifter controlled by the arm and movable into position between the arm and door, substantially as specified.

5. The combination with the trap-door, of swinging latches setting under the swinging edge of the door, and lifters moved into position by the latches and serving to raise the door to its proper normal level, substantially as specified.

6. The combination with the trap-door, of a swinging latch setting under the swinging edge of the door, and a lifter pivoted stationarily and having an inclined surface R' in contact with which the latch moves and whereby it is enabled to raise the door to its proper position, substantially as specified.

7. The combination with the trap-door, of a swinging latch setting under the swinging edge of the door, and a lifter pivoted stationarily and having an inclined surface R' and a hook W, substantially as specified.

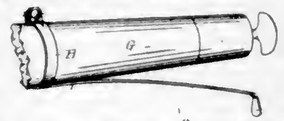
8. The combination of latches N made U-shaped with lifters R swinging into the open spaces of the latches, substantially as specified.

9. The trap-door having a bottom plate 6, in combination with lifter R and the latch-arms operating said lifter, substantially as specified.

10. The trap-door for dumping-cars having the inserted projecting rubber 9, and the metal flanged bottom plate 6, the flange of the plate supporting the rubber, substantially as specified.

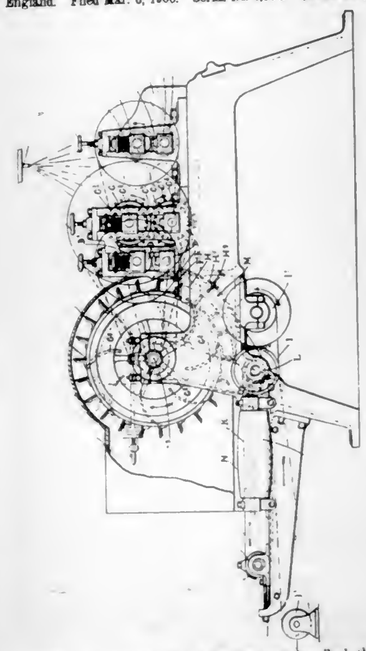
11. The dump-car provided with a trap-door hinged to its floor by hinges, the leaves of which are provided with barrels 13 inclosing the pintle, and risers 14 countering the barrels, both the barrels and risers coming flush with the car-floor, substantially as specified.

657,022. ADJUSTABLE TRACE-LOCK. FRED W. CRAFTS, Devils Lake, N. D. Filed Mar. 9, 1899. Serial No. 708,313. (No model.)



Claim.—A trace-lock, consisting of a spring-clamp having a clip upon its end and formed with the split collar B, for engaging the whiffletree, for the purposes specified.

657,023. SCUTCHING-MACHINE. CHARLES J. DEAR, London, England. Filed Mar. 6, 1900. Serial No. 7,554. (No model.)



Claim.—1. In a machine of the character described, the combination of a curved hopper for primarily receiving and bending the fiber, pairs

of rollers arranged in succession to receive the fiber from the hopper, each pair revolving faster than the preceding pair, and a scutching-drum for beating the fiber after it has passed through the said rollers, substantially as described.

2. In a machine of the character described, the combination of a curved hopper for primarily receiving and bending the fiber, pairs of rollers arranged in succession to receive the fiber from the hopper, each pair revolving faster than the preceding pair, a scutching-drum for beating the fiber after it has passed through the said rollers, and a curved apron arranged near the periphery of the said drum, substantially as described.

3. In a machine of the character described, the combination of a curved hopper for primarily receiving and bending the fiber, pairs of rollers arranged in succession to receive the fiber from the hopper, each pair revolving faster than the preceding pair, a scutching-drum for beating the fiber after it has passed through the said rollers, a curved apron arranged near the periphery of the said drum, a chamber in the said apron, and vents communicating with the said chamber for the passage of fluid therefrom, substantially as described.

4. In a machine of the character described, the combination of a curved hopper for primarily receiving and bending the fiber, pairs of rollers arranged in succession to receive the fiber from the hopper, each pair revolving faster than the preceding pair, a scutching-drum for beating the fiber after it has passed through the said rollers, fans within the said scutching-drum for creating a centrifugal draft, and a curved apron arranged near the periphery of said drum, substantially as described.

5. In a machine of the character described, the combination with pairs of rollers arranged in succession, each pair revolving faster than the preceding pair, a scutching-drum for beating the fiber as it passes from the said rollers, and fans within said scutching-drum for creating a centrifugal draft of air; of a band conveyer to receive and carry off the refuse, and a pair of conveyers arranged to travel at different rates of speed to receive the fiber; substantially as described.

657,024. FEED-ROLL. FRIEDRICH GOETZ, Indianapolis, Ind. Filed June 11, 1900. Serial No. 19,814. (No model.)

Claim.—1. The combination with a drive-shaft, of a pair of rolls mounted thereon, and fixed against rotary motion thereon but capable of axial movement, connections between the two rolls, and a single means for clamping said rolls in any desired axial position upon said shaft.

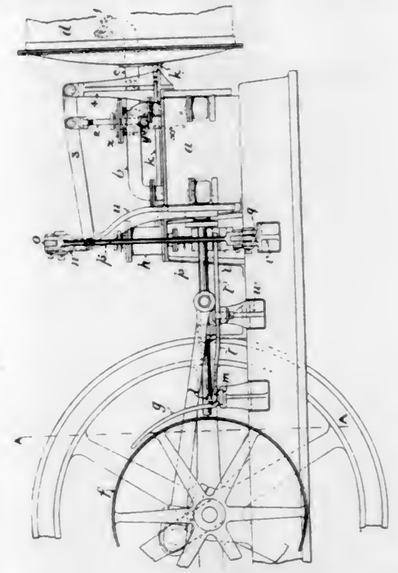
2. The combination with a shaft having a keyway formed therein, of a roll mounted thereon, a key secured to said roll and axially movable in the keyway, a second roll keyed upon said key but longitudinally movable thereon, and means carried by said second roll for engaging said key and thereby clamping the two rolls in any desired axial position upon the shaft.

3. The combination with a shaft having a keyway formed therein, of a roll mounted thereon, a key secured to said roll and longitudinally movable in said keyway, a second roll keyed upon said key, and a clamping-sleeve connected to said second roll but rotatable thereon, said clamping-sleeve encircling the shaft and being provided with an interior cam-face adapted to engage said key and thereby clamp the two rolls upon the shaft.

657,025. AIR-COMPRESSOR. EDWARD HULN, Trowbridge, England, assignor to Joseph Poynton Haden, same place. Filed June 1, 1900. Serial No. 18,760. (No model.)

Claim.—1. In air-compressors in which the power is automatically thrown out of gear when the pressure in the receiver reaches a predetermined magnitude, the combination with the delivery-pipes such as *b b* and *c* leading from the compressor to the receiver of a relief-valve *y* in the delivery-pipe connected to the automatic throwing-out mechanism to be operated thereby and a check-valve 1 at the end of the delivery-pipe, substantially as set forth.

2. In air-compressors in which the power is automatically thrown out of gear by a controlling-cylinder communicating with the receiver and having a loaded piston, the combination with the delivery-pipes such as *b b* and *c* of a check-valve 1 a relief-valve *y* valve-rod 2 lever 3 cylinder *k* loaded piston and rod *j* and pipe *k*, substantially as set forth.



657,026. SAFETY DEVICE FOR ELEVATORS. THOMAS LEBIEDZINSKI, Chicago, Ill. Filed July 2, 1900. Serial No. 22,344. (No model.)

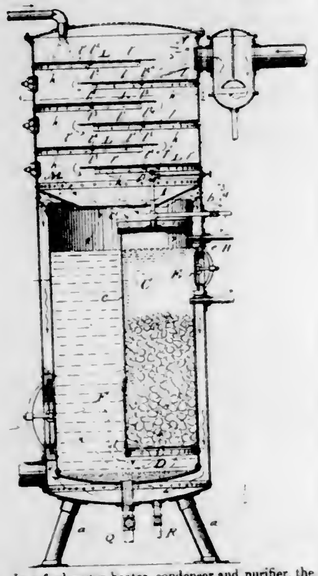


Claim.—1. The combination with side racks in an elevator-shaft, of an elevator-car, pinions on the car engaging said racks, pawls connected to the hoisting-cable, adapted to engage one of said pinions when the cable slackens, and while the cable is tight, held thereby normally out of engagement with said coacting pinion, gravity-pawls engaging another of said pinions when the car ascends and means to disengage said gravity-pawls therefrom when the car descends, substantially as described.

2. The combination with side racks in an elevator-shaft, of an elevator-car, pinions on the car engaging said side racks, pawls connected to the hoisting-cable, adapted to engage one of said pinions when the cable slackens, and while the cable is tight, held thereby normally out of en-

gagement with said pinion, gravity-pawls engaging another of said pinions when the car ascends and a cord connected to said gravity-pawls and adapted to disengage the same from the pinions when the car descends substantially as described.

657,027. FEED-WATER HEATER. JOHN MERTES, Milwaukee, Wis. Filed May 21, 1900. Serial No. 17,432. (No model.)



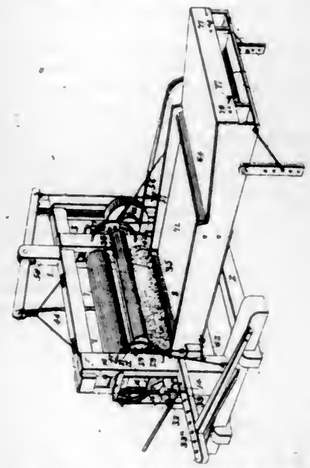
Claim.—In a feed-water heater, condenser and purifier, the vertical closed shell resting upon legs, an open tank suspended therein of less diameter than the said shell; a portion of said tank being partitioned off closed at its top and sides and open at its bottom to form a filter-chamber; a screen loosely fitted in said bottom a pipe extending from the top of said filter-chamber and normally open to steam-pressure in the closed shell; a downwardly-inclined circular hood fast to the wall of the aforesaid closed shell above the filter-chamber, and top of said open tank, baffle-plates horizontally disposed above the inclined annular hood, each of the baffle-plates being in two or more sections, locked together and resting upon ribs made fast to the vertical closed outer shell, an inlet water-pipe, and a steam-inlet above said baffle-plates; hand-holes interposed in the wall of the closed shell and between said baffle-plates, a steam-outlet near the bottom of said closed shell, and a manhole connection between outer shell and the open tank, whereby the various loose parts in said feed-water heater, condenser and purifier may be easily removed, substantially as set forth.

657,028. COTTON-PRESS. RICHARD R. PACK, Homer, La. Filed Mar. 30, 1899. Serial No. 711,100. (No model.)

Claim.—1. In a cotton-compress, a pair of relatively fixed and movable compression-rolls, said movable compression-rolls having sliding supports, means for exerting a downward tension on the movable compression-rolls, a revoluble core-rod interposed between the said rolls and regularly tapered from one end toward the other and adapted to be withdrawn from the completed bale through one side of the machine before said bale is removed, and a drive-shaft having an interlocking connection with the said core-rod and also movable in unison with the latter in a vertical direction.

2. In a cotton-compress, an upright frame, a lower fixed compression-roll journaled in the frame, an upper movable compression-roll having sliding supports working in the frame, said sliding supports being provided at their outer sides with cross-arms, pendent weight-yokes suspended from said cross-arm, removable pressure-weights mounted on said yokes, and a withdrawable core-rod, substantially as set forth.

3. In a cotton-compress, a frame having a plurality of slotted uprights, a pair of relatively fixed and movable compression-rolls, the movable compression-rolls having sliding supports working in the uprights, core-supporting slide-boxes mounted in the slotted uprights, a drive-shaft having one end journaled in one of said slide-boxes, and a withdrawable core-rod having an intermediate detachably-interlocking connection with the said drive-shaft, a portion of said rod opposite to that having the interlocking connection with the drive-shaft also having an adjustable engagement with an adjacent leverage-support.



4. In a cotton-compress, the press-frame having a plurality of slotted uprights, a pair of relatively fixed and movable compression-rolls, core-supporting slide-boxes mounted in a pair of the slotted uprights, a supplemental slide-box mounted in one of the uprights, a drive-shaft journaled in said supplemental slide-box and the adjacent core-supporting slide-box, and a withdrawable core-rod having a detachable interlocking connection with the drive-shaft said shaft being movable in unison with the core-rod, substantially as set forth.

5. In a cotton-compress, the press-frame having a plurality of uprights, one of which is provided with a graduated scale, a pair of relatively fixed and movable compression-rolls, a revoluble core-rod having sliding supports mounted in a pair of the uprights, a supplemental slide-box mounted in the upright having the scale, an indicating-pointer fitted to said supplemental slide-box and movable therewith, and a drive-shaft journaled in said supplemental slide-box and the adjacent core-rod support said shaft being movable with the core-rod, substantially as set forth.

6. In a cotton-compress, the frame, a pair of relatively fixed and movable compression-rolls, a revoluble and withdrawable core-rod interposed between said rolls, and provided contiguous to one end with an annular groove, a pivotal locking dog or arm mounted on one of the core-rod supports and adapted to be moved into and out of engagement with said groove, and a core-extracting device arranged contiguous to one end of the core-rod, substantially as set forth.

7. In a cotton-compress, the frame having a stationary offstanding bracket provided with a plurality of bearing-openings therein, the compression-rolls, the core-rod provided at one end with a loop or eye, and an extracting-lever provided with a fulcrum pin or stud adapted to be inserted in the openings of the bracket, and with a hook adapted to engage with the loop or eye of the core-rod, substantially as set forth.

8. In a cotton-compress, the press-frame having extended from opposite sides thereof offstanding semicircular guide-yokes, a pair of upper and lower relatively fixed and movable compression-rolls mounted within the frame, a slidable self-adjusting bearing-frame arranged at each side of the press-frame and consisting of a pair of oppositely-located segmental bearing-shoes slidably engaging the semicircular guide-yokes, and a tie-rod connecting said shoes and extending beyond the outer sides thereof, a side pressure-roll journaled in each of said slidable bearing-frames, and pressure-weights having flexible connections passed around the extended ends of said tie-rods, substantially as set forth.

9. In a cotton-compress, the press-frame having extended from opposite sides thereof offstanding semicircular guides, a pair of upper and lower relatively fixed and movable compression-rolls, a slidable self-adjusting bearing-frame slidably working within the semicircular guides at each side of the press-frame, a side pressure-roll journaled in each of said bearing-frames, and pressure devices connected with each bearing-frame, substantially as set forth.

10. In a cotton-compress, the press-frame having offstanding supporting-pins at the rear side thereof, a pair of upper and lower relatively fixed and movable compression-rolls, self-adjusting bearing-frames arranged respectively at opposite sides of the press-frame and each carrying a pressure-roll, flexible connections with the supports for the movable compression-roll and with the bearing-frame for the pressure-roll at the rear side of the machine, and a lifting-lever common to both sets of connections and adapted to successively elevate to inactive positions the said bearing-frame for the rear pressure-roll, and said movable compression-roll, substantially as set forth.

11. In a cotton-compress, a frame having a stationary offstanding bracket provided with a plurality of bearing-openings therein, compression-rolls, a core-rod provided at one end with a loop or eye, and an extracting-lever provided with a fulcrum pin or stud adapted to be inserted in the openings of the bracket, and a hook to engage the loop or eye of the core-rod.

12. In a cotton-compress, the combination of coacting compression-rolls arranged to form an intermediate bale-forming pocket, the lower roll having a fixed plane of rotation, and the upper one vertically movable in an automatic manner proportionately to the increase in size of the bale being formed and exerting its weight on the formed bale by gravity, side pressure-rolls on opposite sides of said compression-rolls and having a normal tendency in a downward direction toward the bale-forming pocket therebetween and automatically movable outward from said pocket regularly in arc-shaped paths proportionate to the increase in the size of the bale and exerting their weight-pressure at substantially-invariable opposite points on the bale, the upper compression-roll and the said side compression-rolls acting against the resistance of the lower compression-roll having a fixed plane of rotation, means for guiding the said side compression-rolls in arc-shaped paths and means limiting the travel of the side pressure-rolls in upward and outward paths.

13. In a cotton-compress, the combination of compression-rolls arranged in a common vertical plane and providing an intermediate bale-forming pocket, the lower compression-roll having a fixed plane of rotation and the upper one automatically movable in a vertical direction away from and toward its lower companion roll, a core-rod disposed axially in said bale-forming pocket between the compression-rolls, a drive-shaft connected to and movable in unison with the core-rod, side pressure-rolls on opposite sides of the said compression-rolls and having movement in upward and outward paths relatively to the plane of the core-rod, and means for limiting the travel of the side pressure-rolls in their upward and outward movement.

14. In a cotton-compress, the combination of compression-rolls arranged in a common vertical plane and providing an intermediate bale-forming pocket, individually-counterpoised side pressure-rolls on opposite sides of said compression-rolls and movable normally toward the plane of the bale-forming pocket therebetween, and means limiting said side pressure-rolls to movement in arc-shaped paths upward and outward above the axis of the bale-forming pocket between said side compression-rolls, substantially as described.

15. In a cotton-compress, the combination of a pair of upper and lower relatively fixed and movable compression-rolls, a pair of self-adjusting oppositely-located side pressure-rolls, a core-rod removably and rotatably mounted in the pocket between the said rolls, a drive-shaft interlocked and movable in unison with the said core-rod in a vertical direction, a supplemental upright standard, a box mounted in said supplemental standard and having a vertical sliding movement, the said drive-shaft having bearing in the said box in the supplemental standard, an indicator fixed to the outer portion of the said vertically-movable box in the supplemental standard, and means for raising the said box, the indicator coacting with scale-marks on the outer side of the supplemental standard.

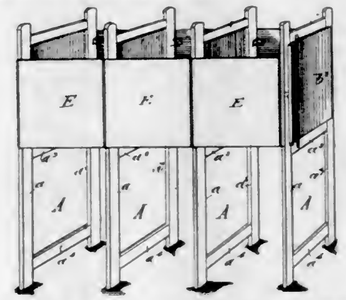
16. In a cotton-compress, the combination with coacting compression-rolls, of fixed arched guides, independently-movable frames fitted loosely on said guides to move freely with relation to the compression-rolls, side pressure-rolls journaled in said frames and adapted to travel therewith and to rotate freely therein by frictional contact with a bale, and independent pressure devices connected with said frames, substantially as described.

17. In a roller-compress, the combination with coacting compression-rolls, of fixed arched guides on opposite sides thereof, independently-movable frames fitted to said guides, side pressure-rolls journaled individually in said frames, separate pressure devices for the frames, and means for adjusting and confining one frame and its roll in inoperative relation to the compression-rolls, substantially as described.

657,029. VOTING-BOOTH. JOHN H. RAFTER, Jersey City, N. J. Filed May 19, 1900. Serial No. 17,276. (No model.)

Claim.—1. A voting-booth structure, consisting of a frame having a closed upper portion, a shelf hinged to said frame and folding adjacent to said upper portion, a back piece hinged to the rear edge of said frame and folding over the shelf at one side of the frame, and a door hinged to the front edge of the frame and folding against the opposite side of the same adjacent to said upper portion, substantially as set forth.

2. A voting-booth structure, consisting of a frame having a closed upper portion, a shelf hinged to said frame and folding adjacent to said upper portion, a back piece hinged to the rear edge of said frame and folding over the shelf at one side of the frame, a door hinged to the front edge of the frame and folding against the opposite side of the frame adjacent to said upper portion, and means for retaining said back piece and door respectively in folded position, substantially as set forth.



3. A voting-booth structure, consisting of a frame having a closed upper portion, a socket applied to said frame, a shelf hinged to said frame and provided at its end with an angle-iron for engaging the socket of an adjacent similar structure, a back portion hinged to said frame and provided with a backwardly-bent flange for engaging said adjacent structure, and a door hinged to said frame, substantially as set forth.

4. A voting-booth structure, consisting of a frame having a closed upper portion, a shelf hinged to said frame and provided at its outer end with a fastening device, a back piece hinged to said frame and having a backwardly-bent flange and fastening devices at its outer end, and a cleat on said frame, at the rear edge of the same, for receiving the flange of the back piece of a similar structure, substantially as set forth.

5. A voting-booth, consisting of two structures, each consisting of a frame having an upper closed portion, a shelf hinged to said frame, a back piece hinged to the rear edge of the frame and extending from the same in one direction, and a door hinged to the front edge of the frame and extending from the same in the opposite direction, the shelf and back piece of the first structure being connected with the second structure, and the door of said second structure abutting against the frame of the first and serving as the door of the booth, substantially as set forth.

657,030. PROCESS OF EXTRACTING BISMUTH FROM ORES CONTAINING BISMUTH OXIDS, &c. JOHN RANALD, London, England. Filed Oct. 2, 1899. Serial No. 732,375. (No specimens.)

Claim.—1. The process of extracting bismuth from ores containing bismuth oxid or bismuth oxid and sulfid, said process consisting in subjecting crushed ore to the action of a solution of ferric chlorid at about boiling temperature, then precipitating the bismuth by means of iron, and then oxidizing the resulting ferrous chlorid to transform it into ferric chlorid.

2. The process of extracting bismuth from ores containing bismuth oxid or bismuth oxid and sulfid, said process consisting in subjecting crushed ore to the action of a solution of ferric chlorid at about boiling temperature, then precipitating the bismuth by means of iron, and then treating the resulting ferrous chlorid with potassium chlorate for converting it into ferric chlorid.

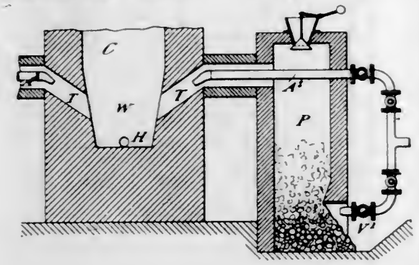
3. The process of extracting bismuth from ores containing bismuth oxid or bismuth oxid and sulfid, said process consisting in subjecting crushed ore to the action of a solution of ferric chlorid at about boiling temperature, then precipitating the bismuth by means of iron, then treating the resulting ferrous chlorid with potassium chlorate and finally separating the ferric hydrate which forms.

4. The process of extracting bismuth from ores containing bismuth oxid or bismuth oxid and sulfid, said process consisting in subjecting crushed ore to the action of a solution of ferric chlorid at about boiling temperature, then precipitating the bismuth by means of iron, then treating the resulting ferrous chlorid with potassium chlorate, and finally converting the ferric hydrate which forms into ferric chlorid by means of hydrochloric acid.

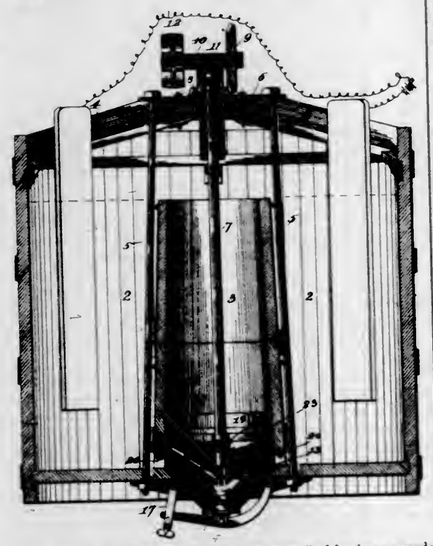
657,031. BLAST AND CUPOLA FURNACE. ALLEYNE REYNOLDS, Sheffield, England. Filed Dec. 7, 1898. Serial No. 698,556. (No model.)

Claim.—In an apparatus for treating ores, the combination with a furnace of blast or cupola type formed with twyers sloping inwardly and downwardly to the inner wall of the furnace; with an apparatus for producing gas located one at each side of the furnace, and communicating with the furnace-twyers by pipes, a compressed-air supply, a branched pipe for conducting such compressed-air supply under pressure both to the

gas-producer and inclined twyers to commingle with the hot gases as they enter the furnace; one of said pipes supplying air to the lower part of the gas-producer and the other of said pipes extending through the upper part of the gas-producer and partially into the twyer, whereby the generated gas and the partly-heated air produce a flame which is directed into the furnace; of regulating-valves in said branched pipes at each side of the main pipe, and check-valves in each of said branched pipes for supplying the air whereby backflow of gas, by which explosive mixtures might be formed in the pipes or receptacles, is prevented, all constructed and arranged to operate substantially as and for the purpose set forth.



657,032. APPARATUS FOR ELECTROLYZING ORES. ALBION M. ROUSE, Denver, Colo., assignor of one-half to William G. Shedd and Frank Brooks, same place. Filed Nov 1, 1899. Serial No. 735,476. (No model.)

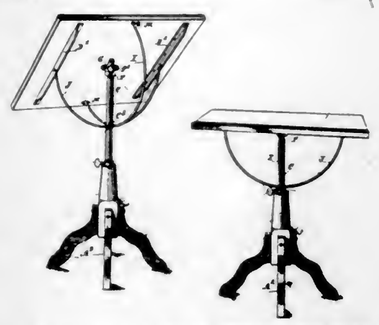


Claim.—1. In an apparatus of the class described having an anode and a cathode suitably arranged therein, the combination of a tank having an outer compartment, a tube located within said tank having an open upper end and provided at its lower end with communication from said compartment, a driving-shaft projecting within said tube, inner and outer cups carried by said shaft and wings arranged intermediate of said cups, substantially as described.

2. In an apparatus of the class described having an anode and a cathode suitably arranged therein, the combination of a tank having an outer compartment, a tube located therein having an open upper end and provided at its lower end with openings forming communication from said compartment, a driving-shaft projecting within said tube, an inner cup carried by said shaft, wings carried by said cup, an outer cup carried by said wings, a discharge-duct, and a valve arranged to close said duct, substantially as described.

657,033. TABLE. CHARLES H. SANFORD, Cedar Rapids, Iowa. Filed May 19, 1900. Serial No. 17,307. (No model.)

Claim.—1. In a table, the combination of a table-top, a semicircular bail attached to the under side thereof, a shaft to support the table-top and forming an abutment against the periphery of the bail, a screw engaging the upper end of said shaft, and a universal-joint connection of the screw with the under side of the table-top central to the circle of which the bail forms a part.



2. The combination of a table-top, a supporting-shaft therefor, a screw connecting the table-top and shaft by a universal joint, a semicircular bail attached to the under side of the table concentric to said joint and in the plane of the shaft, abutments on the shaft to engage the periphery of the bail, and braces at right angles to said bail pivoted to the under side of the table-top.

3. The combination of a table-top, a central shaft to support the same, provided with bail-holes, and adjusting-screw in the top of said shaft connecting with the under side of the table by a universal joint, and a pair of semicircular bails pivoted to the under side of the table-top, concentric with said joint, and passing through holes in said shaft.

4. The combination of a table-top, a pair of semicircular bails pivoted to the under side thereof, a supporting-shaft through which said bails pass, threaded in its upper end and a winged bolt or screw in the threaded upper end of said shaft, and a ball-and-socket connection of said screw with the table-top central to the circles partially described by said bails.

5. The combination of a table-top, a pair of bails depending therefrom, a shaft to support said table-top, through which said bails pass, said shaft being tubular and provided with a screw-threaded hole at its upper end, a screw fitted therein, and having a universally-jointed connection with the table-top, and a plug mounted in the shaft between the end of said screw and said bails, whereby they may be fastened in any desired position, as described.

6. The combination of a table-top, a shaft to support the same, a bolt screwed into the upper end of said shaft and connecting with the table-top by a universal joint, a semicircular bail attached to the under side of the table-top concentric to said joint, an abutment on the shaft to bear against the periphery of the bail, and means substantially as described for fastening the bail against slipping along said abutment.

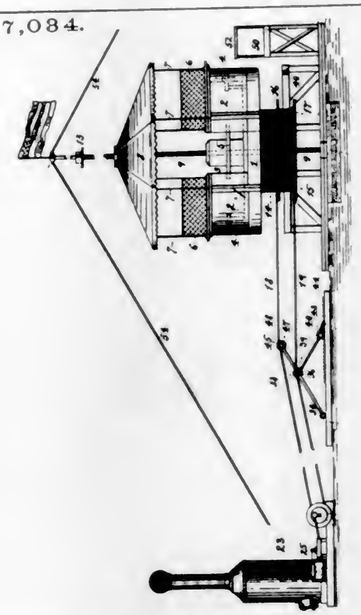
7. The combination of a table-top, a central shaft screw-threaded in its upper end to support the same, a screw connecting the upper end of the shaft with the table-top by a universal joint, a pair of semicircular bails pivoted to the table-top concentric to said joint, and engaging said shaft, a hollow base-column to receive said shaft, and means for adjusting the elevation of the table and the securing of the same in any desired position, substantially as described.

657,034. REVOLVING ASCENDING AND DESCENDING OBSERVATORY-PLATFORM. HENRY SHUART, Buffalo, N. Y., assignor of one-half to Austin E. Shuart, same place. Filed June 5, 1900. Serial No. 19,124. (No model.)

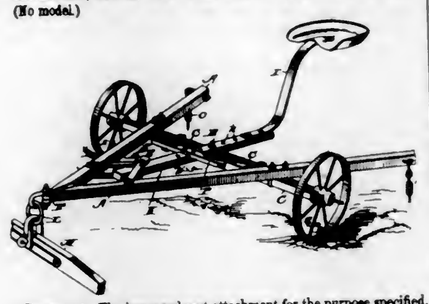
Claim.—1. A revolving ascending and descending observatory-platform consisting, essentially, of a vertical fixed screw, a platform surrounding said screw and having a nut engaging therewith, a two-section rope-drum beneath said platform, ropes upon said drum, suitable mechanism for revolving said platform, and suitable means for guiding said ropes upon the said platform-drums, as specified.

2. In a revolving ascending and descending observatory-platform having rope-driving mechanism for revolving the same, the device for guiding the ropes to the platform-drums consisting, essentially, of a foundation-frame, two uprights pivoted at their lower ends to pivot-plates secured to said frame, two rods connecting said uprights, guide-sheaves upon said rods, brace-bars pivoted to said uprights at one end and having a rod connecting their lower ends, and suitable means for moving the brace-rods, as stated.

657,084.



657,085. SEAT ATTACHMENT FOR HARROWS. OTTO W. SKORKOWSKY, Harrah, Okla. Filed May 19, 1900. Serial No. 17,251. (No model.)



Claim.—1. The improved seat attachment for the purpose specified, comprising frame-bars secured together at an angle, an axle and wheels, a seat proper, a seat-supporting bar secured upon the axle, and hinged bars pivoted to the frame-bars, and between which the seat-bar projects, as shown and described.

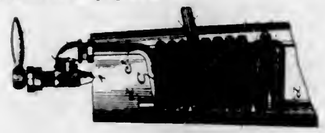
2. The improved seat attachment, comprising two bars hinged together at their front ends, and fixed to an axle which is adjustable in length, wheels for said axle, a seat proper, and a seat-supporting bar which is secured to the axle, substantially as shown and described.

3. The improved seat attachment comprising two bars hinged together at their front ends, and fixed to an axle which is formed of two lapped parts adapted to slide upon each other, a seat proper, a seat-supporting bar, and a bolt passing through the latter and the axle, and serving to secure the axle parts and seat-bar in any adjustment, as shown and described.

4. The improved seat attachment, comprising two frame-bars arranged at an angle and hinged together at the apex, a clevis attached to said apex, for engagement with and support of a cultivating implement, the two slidable parts composing the axle, to which parts the frame-bars are respectively secured, running-wheels applied to said axle, the seat-supporting bar provided with alined holes to provide for adjustment, a bolt securing the same to the axle parts which are provided with vertical semicircular grooves in their meeting sides, said grooves, when in coincidence, forming holes to receive said bolt, as shown and described.

657,036. CACTUS-BURNER. LEWIS W. SNOWDEN, Tilden, Tex. Filed Oct. 21, 1899. Serial No. 734,311. (No model.)

Claim.—1. In a cactus-burner, a vaporizing-coil formed of a doubled piece of tubing, one end of said tubing extending from the coil approximately at right angles to the axis thereof, and the other end being coiled above the first-named end, the tubing being spaced apart at its bend at the lower end of the coil and receiving another bend of the tubing therebetween, as and for the purpose set forth.



2. In a cactus-burner, a vaporizing-coil formed of a doubled piece of tubing, one end of said tubing extending from the coil approximately at right angles to the axis thereof, and the other end being coiled above the first-named end with its terminal extending parallel with the axis of the coil, as set forth.

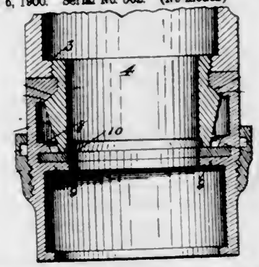
3. In a cactus-burner, a vaporizing-coil consisting of tubing formed with double convolutions for a portion of its length and one terminal extending from the upper end of the double convolutions, the other end of the tubing being coiled singly above the double convolutions and forming the other terminal, as set forth.

4. In a cactus-burner, a vaporizing-coil having double convolutions for a portion of its length and a terminal extending out from the coil at upper termination of said convolutions, the other terminal forming the remainder of the coil and extending upwardly, and a burner-nozzle secured on the latter terminal, as set forth.

5. In a cactus-burner, a vaporizing-coil whose one terminal extends out from a convolution near the middle of the coil and whose other terminal extends upwardly above the coil, a burner-nozzle on said latter terminal, and a split hood open at both top and bottom and having an aperture in its side near its middle in which the first-named terminal is adapted to be inserted, said tube being formed with interlocking edges, and L-shaped longitudinally-extending ribs secured in the head and adapted to space the latter from the coil, as set forth.

6. In a cactus-burner, the combination with a tank and a delivery-tube connected therewith and forming a handle-rod, of a vaporizing-coil formed of a doubled piece of tubing one end of said tubing extending out from the coil at right angles to the longitudinal axis thereof and being coupled to the handle-rod, the other end of said tubing being coiled above the first-named end and extended upwardly parallel with the longitudinal axis of the coil, a burner-nozzle having a lateral nipple secured by an elbow to the upwardly-extending end of the coil, and having its outlet pointing toward the coil, and a hollow needle-valve screwing in said nozzle and having a handle at its upper end, as and for the purpose set forth.

657,037. HOSE-COUPLING. ASA M. SPICKELMIER, Tualitin, Oreg., assignor of one-half to George W. Owings, Woodville, Oreg. Filed Jan. 6, 1900. Serial No. 562. (No model.)

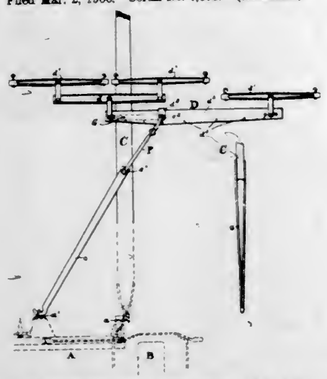


Claim.—1. In a hose-coupling, the combination with the section formed with an extension cut away on inclined lines at the outer edge, and formed with a lug and with interior screw-threads and the nipple having a beveled peripheral shoulder connected with said section, of the section cut away to conform to the contour of said extension, formed with an interior flange adapted to engage with said shoulder and the screw-threaded rotatable ring or band formed with an interior groove with which said lug is adapted to engage, substantially as described.

2. In a hose-coupling, the combination with the section formed with an extension cut away on inclined lines at the outer edge and formed with a lug and interior screw-threads and the nipple having a beveled shoulder connected with said section, of the section cut away to conform to the contour of the said extension formed with an interior flange adapted to engage with said shoulder and also formed with flanges intermediate the

ends, the washer interposed therebetween and the rotatable ring or band having an interior circular groove with which said lug is adapted to engage, substantially as described.

657,038. THREE-HORSE EQUALIZER. JOHN F. STEWARD, Chicago, Ill. Filed Mar. 2, 1900. Serial No. 7,093. (No model.)

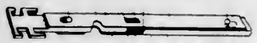


Claim.—1. In a draft-equalizer in combination with a draft-tongue, the support E, the equalizer-bar D and the stopping-link G pivotally connected to the bar at one end and to a fixed point at its other end, substantially as described.

2. A draft-equalizer consisting of a metallic plate bent transversely into U shape in cross-section, a core, the edges of the said bar secured by rivets, said rivets passing through the core, substantially as described.

3. In a draft-equalizer, the equalizer-bar D, the outreaching arm E adapted to form a support for the same at its pivotal point, an arm extending beyond the other side of the draft-tongue and provided with a slot e^4, and the link G, all combined, substantially as described.

657,039. SPACING OR JUSTIFYING DEVICE FOR TYPE-BAR OR MATRIX MACHINES. ROSWELL H. ST. JOHN, Cleveland, Ohio, assignor to Joseph J. Little, Edward D. Appleton, and Homer Eaton, trustees, New York, N. Y. Filed July 30, 1898. Serial No. 601,051. (No model.)



Claim.—1. The spacer consisting of two loosely-connected sections and a spring portion on each, at opposite sides and ends respectively, and loose spreaders intermediate of said sections, substantially as described.

2. A spacer formed of two sections connected to slide longitudinally in respect to each other and having each a spring portion overlapping a rigid portion of the opposite section, and a spreader arranged at an inclination transversely between said sections, substantially as described.

3. A compound spacer consisting of two sections slidably connected near their ends, and a plurality of spreaders loosely engaged between said sections at or near their middle and adapted to spread the sections when either one is moved longitudinally, substantially as described.

4. A spacer for type-bars consisting of two sections longitudinally adjustable on each other and each section having a rigid and a spring portion, and a set of spreaders engaged between the opposite adjacent ends of the spring portions of said sections, substantially as described.

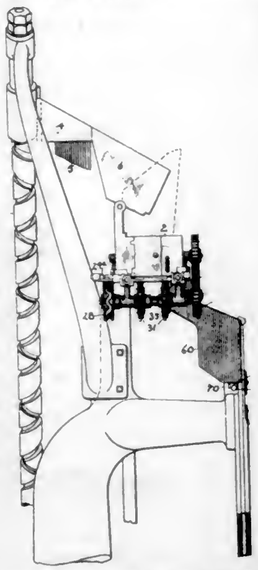
5. A spacer for type-bar machines, consisting of two substantially-equal sections having each a rigid portion overlapped by a spring portion of the opposite section, a recess between the adjacent ends of the rigid portions, and a loose spreader engaged in said recess, substantially as described.

6. A spacer for type-bar machines formed in two sections longitudinally, and a set of loose spreaders between said sections having projections on opposite edges engaged in said sections, substantially as described.

657,040. TYPE-BAR MACHINE. ROSWELL H. ST. JOHN, Cleveland, Ohio, assignor to Joseph J. Little, Edward D. Appleton, and Homer Eaton, trustees, New York, N. Y. Filed Oct. 11, 1898. Serial No. 693,230. (No model.)

Claim.—1. In a type-bar machine having a flat straight horizontal distributing-surface, distributing mechanism constructed to carry the matrices singly and flatwise over said distributing-surface parallel to each other and to drop each matrix in its own place, substantially as set forth.

2. In distributing mechanism for matrices, a distributing-trough with parallel sides having a series of inward projections along one edge and intervening spaces alternately, and said projections having diversified lugs on their edges substantially as described.



3. The matrix-distributing trough having a straight unbroken ledge along one edge and separate inward projections along the other ledge having variously-distributed lugs out of register with each other, substantially as described.

4. A matrix-distributing trough having parallel sides, a ledge along one side to carry the heads of the matrices and spaced inward projections along the other side to carry the opposite ends of the matrices, provided with suitable selecting means and means to slide the matrices flatwise successively along over said ledge and projections, substantially as described.

5. The matrix-distributing trough having a continuous ledge along one side and a series of inwardly-projecting parts along the other side having variously-scattered lugs at their edges, and carrying mechanism for the matrices constructed to take one matrix at a time and move it along over said ledge and projections to its destination, substantially as described.

6. The distributing mechanism consisting of the trough with parallel sides having a series of flat strips extending inward from one side and provided with lugs at their edges in different positions one from the other, relatively, so that no two strips are alike, and a continuous ledge to support the heads of the matrices, in combination with means to engage both ends of the matrices and distribute them, substantially as described.

7. The means for carrying the matrices consisting of a trough with parallel sides and parallel spacing-strips transversely of said sides at regular intervals arranged to allow the matrices to drop flatwise between them, one of said sides having a continuous support to carry the heads of the matrices, in combination with flexible endless carriers to engage the matrices and slide them along, substantially as described.

8. The matrix-distributing trough constructed at its bottom to drop the matrices into their magazine-channels, in combination with means to move the matrices singly on their sides over said bottom to their several channels, and means to bear on one end of each matrix as it reaches its place and cast it to its chamber, substantially as described.

9. A distributing-trough for matrices having its bottom constructed to permit passage of the matrices, a carrier to move the matrices singly on their sides along to their destination, and a spring-pressed device adapted to bear on one end of each matrix and assist in its discharge, substantially as described.

10. In a matrix-distributing mechanism, a suitable trough having openings in its bottom for the matrices to drop through, in combination with an endless carrier to convey the matrices and a spring-pressed device on said carrier constructed to bear on the heads of the matrices, substantially as described.

11. The distributing mechanism for the matrices comprising a distributing-trough having its bottom constructed to drop the matrices to their proper channels, in combination with matrices arranged transversely of said trough across its bottom, and an endless carrier to engage each end of each matrix and slide it along to its destination, substantially as described.

12. In matrix-distributing mechanism, a chain for engaging the heads of the matrices singly having projections to bear against the edges of the matrices and carry them along, a spring-pressed foot to lie flat upon each matrix and tilt it to its channel, and means to liberate the small end of each matrix, substantially as described.

13. The support for the matrices provided with a ledge at one side and a series of lugged projections at the other side and openings between said projections through which the small end of the matrix is adapted to drop, in combination with endless carriers for the matrices one of which has a spring-pressed part to bear on the head of the matrix, and channels for the matrices arranged along beneath said spring-pressed parts into which the matrices are thrown, substantially as described.

14. In a distributing mechanism for matrices constructed at its bottom to move the matrices horizontally to their destination, a set of traveling carriers arranged to engage the ends of the matrices and one of said carriers having spring-pressed members to bear upon one side of the heads of the matrices to tilt them into their channels, in combination with a series of channels having engaging edges onto which the heads of the matrices are swung when released, substantially as described.

15. The endless carrier for the heads of matrices, and a series of spring-pressed members successively on its side to bear on the matrix-heads, said members having a straight engaging portion along their edges farthest from the carrier, in combination with a continuous ledge over which said heads slide and means to release the small ends of the matrices, substantially as described.

16. The carriers for the matrices substantially as described consisting each of a series of links having projections to bear against the edges of the matrices at both their ends and supports for the matrices having a smooth upper surface over which the matrices are adapted to slide flatwise to their destination, said supports provided with a series of openings to drop the matrices through, substantially as described.

17. A matrix-distributing mechanism comprising a distributing-box to receive the matrices in bulk, mechanism to release the matrices separately therefrom, and carrier-chains to distribute the matrices singly and successively to separate channels, in combination with said channels having exposed edges to engage the heads of the matrices as they are dropped, and said carriers bearing against both ends of the matrices, substantially as described.

18. The matrix-distributing box and mechanism to discharge the matrices singly flatwise from said box, carrier-chains to convey the matrices to their respective magazine-channels and means to transfer the matrices from the said box to said chains, in combination with a trough over which the matrices are carried to their channels provided with openings in its bottom, and means to momentarily detain the heads of the matrices after the small ends have been dropped, substantially as described.

19. In a matrix-distributer, a distributing-box constructed to hold matrices in bulk flatwise on each other, traveling distributing-chains to engage both ends of the matrices, and means to release single matrices at different points from said chains, substantially as described.

20. In a matrix-distributer, a distributing-box constructed to hold matrices in bulk and separate channels to receive said matrices, in combination with distributing-chains beneath said box, means to feed the matrices singly from said box to said chains, and carrier-chains above said distributing-chains to slide the matrices horizontally to their respective channels, substantially as described.

21. A matrix-distributing mechanism consisting of a distributing-box to supply the matrices singly and successively, upper and lower distributing-chains arranged to overlap each other, channels to receive the matrices and supports for the matrices beneath the feed-chains constructed to govern their discharge to said channels, substantially as described.

22. A matrix having a substantially T-shaped head, a distributing-box constructed to support the matrix horizontally, means to thrust the lower matrix in the box endwise to release it from said box, and endless chains to engage the ends of the matrix to carry it to its destination, substantially as described.

23. The distributing-box to hold the matrices in bulk having one end constructed to receive T-headed matrices, and means at the other end of the box to slide one matrix at a time lengthwise and release it at both ends from the bottom of said box, substantially as described.

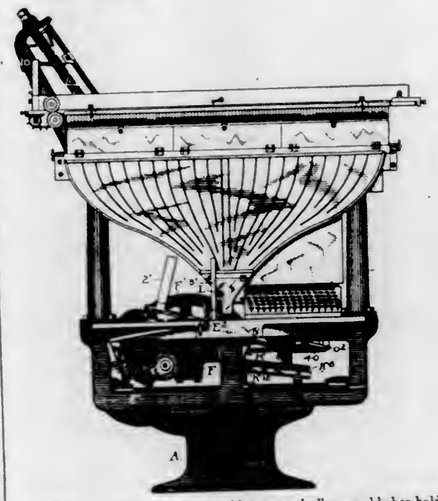
24. The double set of matrix-carrier chains, one overlapping the other, a series of spring-pressed members on the upper of said chains, and a track constructed to raise each of said spring-pressed members as it comes around to hold it from engagement with a matrix temporarily, substantially as described.

25. The distributing-box and the endless chains beneath the same, and the distributing-trough having a track part way along one side thereof, in combination with two matrix-carrying chains one over the other, and spring-pressed members on one of said chains constructed to be temporarily held by said track out of contact with the matrices, substantially as described.

26. In a type-bar machine using T-headed matrices, a series of matrix magazine-channels having each two guideways to engage the heads of the matrices and conduct them to their rest, and means to bear upon the heads of the matrices and tilt them onto said guideways, substantially as described.

27. The distributing-trough for the matrices having an unbroken ledge along one edge and openings along the other edge to drop the small ends of the matrices, in combination with channels for the matrices having their mouths extending outward beyond said ledge and spring-pressed means over said ledge to tilt the matrices and throw them into their channels, substantially as described.

657,041. TYPE-BAR MACHINE. ROSWELL H. ST. JOHN, Cleveland, Ohio, assignor to Joseph J. Little, Edward D. Appleton, and Homer Eaton, trustees, New York, N. Y. Filed May 24, 1899. Serial No. 718,085. (No model.)



Claim.—1. In a type-bar machine, a vertically-movable bar-holder and a horizontally-movable head opposite the same, in combination with a rotatable shaft, and connections between shaft and head to move the head back and forth, substantially as described.

2. The type-bar holder and the compression-plunger, the sliding head opposite the plunger to receive the thrust thereof, a rotatable shaft, and adjustable connections between said head and shaft, substantially as described.

3. The type-bar holder having a depending portion and adapted to slide up and down, a shaft and an eccentric or cam on said shaft arranged to engage said depending portion to lower and raise said holder, substantially as described.

4. The composing-chamber for the matrices, and grooved parts to suspend the matrices from their upper ends, and a rotatable member to press the matrices forward in line as they assemble, substantially as described.

5. The matrix-chamber and the grooved tracks at its top to carry the matrices, and a revolving wheel with a projection to press against one side of a matrix and carry it out of the way of the next succeeding matrix, substantially as described.

6. The matrix-assembling chamber constructed along its top to suspend the matrices from their heads, in combination with a toothed wheel revolving at the front of said chamber to feed the matrices forward as they descend, and means to turn said wheel aside out of its working position to allow the matrices to pass out, substantially as described.

7. The matrix-composing chamber and the means to suspend the matrices in line therein, a rotatable device to press the matrices forward as assembled and a shaft carrying said device and arranged to slide, substantially as described.

8. The composing-chamber and the tracks for the matrices, a device between said tracks to press the matrices forward in line as they are assembled, and a shaft and mechanism to move said device out of the way of the matrices for distribution, substantially as described.

9. The composing-chamber, the star-wheel to press the matrices for-

ward as assembled, a shaft carrying said wheel and slidable axially to get the wheel out of the way of the matrices for distribution, and means to carry the matrices past said wheel, substantially as described.

10. The composing-chamber and the tracks at the top thereof for the matrices, and means to carry a line of matrices bodily along on said tracks from the composition-chamber for distribution, the same comprising a sliding rod and rotatable arm, substantially as described.

11. The supports for the assembled matrices having a space between them to move a line of matrices along for distribution, and means to engage said matrices constructed to slide and rotate and consisting of a rod and an arm thereon, substantially as described.

12. The machine having a composing-chamber, a wheel to press the matrices forward in said chamber, as they are delivered, mechanism to move said wheel into and out of working position, and means to remove a line of type out of said chamber past said wheel when temporarily withdrawn, substantially as described.

13. The composing-chamber and the wheel to feed the matrices forward, a shaft carrying the wheel and a bell-crank engaging said shaft and gear mechanism to rotate it, substantially as described.

14. The bar-holder having a transverse slot for the bar, a plunger to enter said slot behind the bar, and a device beneath said plunger to strike the matrices from the type-bar, substantially as described.

15. The composing-chamber, and an arm having a serrated face arranged beneath said chamber in position to strike the depending portions of the spacers and force them upward and means to actuate the arm, substantially as described.

16. The composing-chamber, and the means for locking a line of matrices and spacers therein, in combination with a pivoted member having a serrated head beneath the spacers and means to cause said head to strike the spaces with a blow, substantially as described.

17. The composing-chamber, and the line of matrices and spacers therein, and means to lock them together, said spacers having depending portions, in combination with a pivoted arm having a serrated face to engage the ends of the spacers, and spring-actuated mechanism to force said arm into action, substantially as described.

18. The composing-chamber, and the pivoted arm to raise the spacers into locking position, in combination with means to tilt said arm and hold it out of engaging position, and releasing mechanism for the arm and a spring to give it force when released, substantially as described.

19. The bar-holder and the abutting head opposite the same forming a composing-chamber between them, in combination with a pivoted member to engage against one side of an assembled line of matrices and press them together, and mechaniam to press against said member, substantially as described.

20. The composing-chamber for a line of matrices, a pivoted arm to bear against the inner side of said line, and a locking-bolt to bear against said arm, substantially as described.

21. The composing-chamber and the pivoted arm at the inner open edge, a sliding member to bear against said arm, means to withdraw said sliding member and means to swing said arm out of working position, substantially as described.

22. The composing-chamber and the pivoted arm having a lug near its pivot, and a sliding lock provided with a roller bearing on said arm and arranged to engage the said lug to withdraw the arm, substantially as described.

23. The bar-holder, a carrying-frame therefor, and the means to raise and lower the same, in combination with the galley for the finished matrices and the device to feed the matrices forward in the galley operatively connected with the means to raise and lower the bar-holder, substantially as described.

24. The bar-holder and the abutting head opposite the same, and a bolt actuated by said head and engaging in the bar-holder to bring it always to the same working position, substantially as described.

25. The abutting head opposite the bar-holder and a shaft and connecting-rod to operate said head, and mechanism for rocking said shaft constructed to afford lost motion, substantially as described.

26 The abutting head, the rock-shaft and the connections therewith to operate said head, a connecting-rod sleeved on said shaft and stops rigid with the shaft between which said rod is free to turn, substantially as described.

27. The abutting head and its shaft, and connections to rock the shaft and actuate the head, in combination with an arm to close one end of the composing-chamber, a slide to actuate said arm and connections thence to the aforesaid shaft whereby the matrices are locked on the side and end at the same time, substantially as described.

28. The main plunger and the bar-holder and the shaft and connections to actuate the said plunger, in combination with a controlling-lever, a cam-clutch to engage said shaft temporarily and a line of mechanism connecting said clutch and lever comprising a rock-shaft, substantially as described.

29. The means for taking an impression from an assembled line of matrices comprising the bar-holder, the main plunger and the power connections therefor, and the abutting head, in combination with mechanism to set the main plunger in motion consisting of a rock-shaft and the controlling-lever connected therewith, and a clutch operatively connected with said rock-shaft, substantially as described.

30. The bar-holder and the main plunger, the abutting head and the shaft and pitman to operate the same, in combination with the centering-bolt between the abutting head and bar-holder and the lock for the matrices at the inner end of the line, substantially as described.

31. The main plunger and its shaft, a gear-wheel sleeved on said shaft and a clutch-wheel fixed on said shaft, clutch mechanism to lock said wheels together and turn the shaft, and a cam to throw said mechanism out of locking engagement on a complete rotation of the shaft, substantially as described.

32. The main plunger-shaft and a gear free thereon, a secondary shaft and a free gear thereon meshing with the gear on the plunger-shaft, and separate clutch mechanism for each of said gears, in combination with the main plunger, the controlling-lever and the line of mechanism connecting said lever operatively with the clutch on the plunger-shaft, substantially as described.

33. The main plunger-shaft and a cam rotated thereby, a releasing-plunger for the matrices and a pivoted member connected therewith and engaged by said cam, substantially as described.

34. The machine having a matrix composing-chamber, means to support matrices therein, and means for striking the matrices from a finished bar, substantially as described.

35. The plunger for striking the matrices from the type-bar, the bar-holder, and a pivoted spring-pressed plate in said holder engaged by said plunger, substantially as described.

36. The bar-holder and the spring-pressed plate in its face, in combination with the releasing-plunger and a pivot-link therefor at its outer end, and a device to engage said link and press the plunger inward, substantially as described.

37. In a type-bar machine using cold blanks to form a bar, a holder for the blanks, in combination with a plunger to engage said blanks in the holder, an abutting head opposite the plunger to take the thrust, and operatively-connected power mechanism to cause both plunger and head to move simultaneously, substantially as described.

38. In a type-bar machine, a holder adapted to receive a set of blanks to form a finished type-bar, a plunger to press against the blanks in the holder, an abutting head on the opposite side of the holder to take the thrust, power-controlled mechanism actuating said plunger and head, and a single lever to throw said operating parts into action, substantially as described.

39. In a type-bar machine adapted to form a finished bar from blanks by a cold process, a blank-holder and a plunger and head, respectively, on opposite sides of the holder, separate shafts controlling said plunger and head and power connections between said shafts, and mechanism for automatically returning both plunger and head to starting position, substantially as described.

657,042. TYPE-BAR MACHINE. ROSWELL H. ST. JOHN, Cleveland, Ohio, assignor to Joseph J. Little, Edward D. Appleton, and Homer Eaton, trustees, New York, N. Y. Filed Aug. 14, 1899. Serial No. 727,150. (No model.)

Claim.—1. As a new article of manufacture, a spacer having a T-shaped head and a projection above its T-head adapted to be engaged by a carrying mechanism, substantially as described.

2. In a type-bar machine, a spacer with an eye in its head, in combination with a spacer-carrier having a needle fixed thereto at one end and mechanism for threading the spacers onto the needle, substantially as described.

3. In a type-bar machine, a spacer with an eye in its upper end to be engaged by a needle, a carrier and a needle fixed thereto at one end to engage the spacer and lift it out of a line of matrices and carry it away for distribution, and means to tilt the carrier, substantially as described.

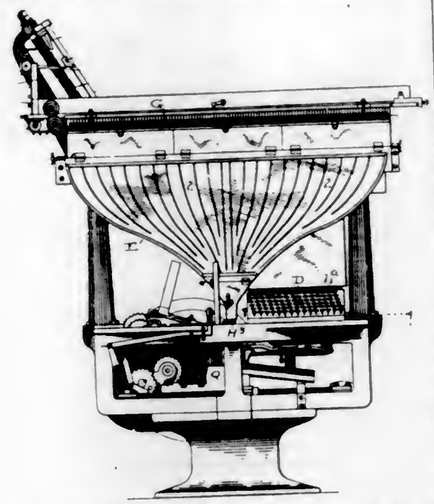
4. In a machine substantially as described, a carrier and a needle to gather up the spacers fixed thereon, a screw-shaft, and an elevator to which the carrier is attached riding on said shaft, substantially as described.

5. The spacer-elevator and the threaded shaft therefor, a carrier pivoted on said elevator, a needle on the carrier to take up the spacers and spacers having eyes to be threaded, substantially as described.

6. The elevator-shaft and the elevator thereon, in combination with a carrier pivoted on the elevator and a needle rigid with the carrier to engage and convey the spacers, substantially as described.

7. The elevator screw-shaft and the elevator thereon, a carrier on the elevator and a needle to lift the spacers fixed to said carrier, in combination with a magazine to receive the spacers and means to discharge them from said needle into the magazine, substantially as described.

8. A magazine to receive the spacers having means along its top and sides to engage the heads thereof, in combination with spacers having substantially T-shaped heads projecting laterally beyond the edges of the spacer, an elevator and a carrier, and means on the carrier to engage the upper ends of the spacers and deliver them to said magazine, substantially as described.



9. A magazine to receive the spacers having means along both sides of its top to engage the heads thereof, in combination with spacers having substantially T-shaped heads projecting laterally beyond the edge of the spacer, an elevator and a carrier thereon, and means on the carrier to engage the upper ends of the spacers and deliver them to said magazine, substantially as described.

10. A magazine for the spacers and the spacers having their heads constructed to be engaged at both sides for carrying them in the magazine, in combination with elevator and carrier mechanism for said spacers, means on the carrier to engage the heads of the spacers, and means to tilt the carrier, substantially as described.

11. The means substantially as described for separating the spacers from a line of matrices consisting in a track supporting said line, means to move the line along on the track and means to engage the upper ends of the spacers and withdraw them from the line, said means comprising a carrier and a needle secured to the carrier adapted to thread into the spacers, substantially as described.

12. The machine having a track for a line of matrices and spacers, and the spacers projecting above the matrices and constructed to be engaged for withdrawal, in combination with means to convey the line forward on said track, and lift mechanism to take the spacers out of the line while it is in movement, said mechanism comprising a carrier and a needle to thread the spacers on, substantially as described.

13. The track, the line of matrices and spacers thereon, and means to slide the line on the track, the said spacers projecting above the matrices and constructed to be engaged at their top, in combination with lift mechanism in line with said upper ends of the matrices and constructed to engage and carry the same, whereby the spacers are picked out of the line while the matrices are traveling along to their destination, substantially as described.

14. The means to take a line of assembled matrices and spacers from the composing-chamber for distribution, comprising a track from which said line is suspended and a device to push the line along on the track, in combination with lift and conveying mechanism for the spacers between the ends of the track, and elevator mechanism at the end of the track to receive the matrices, substantially as described.

15. The line-carrying track having two parallel sides, in combination with a line of matrices and spacers having substantially T-shaped heads resting on said track and the spacers having projections above their T-heads to be engaged by lift mechanism, in combination with said lift mechanism constructed to withdraw the spacers bodily, and means to receive the matrices at the end of said track and to distribute the same, substantially as described.

16. In a type-bar machine, a set of line-carrying tracks, in combination with means to move a line of matrices along on said track consisting of a carriage, a rotatable shaft thereon, and an arm on the shaft to engage the line, and means to rotate said shaft at predetermined points, substantially as described.

17. A type-bar machine having tracks for carrying a line of matrices, a carriage and a reversely-threaded shaft on which it travels, and means on the carriage to engage said line of matrices, substantially as described.

18. A combined elevator and carrier constructed to carry a line of T-headed matrices, in combination with a reversely-threaded screw to carry the same, and a feather in the elevator to change the direction of travel, substantially as described.

19. The reversely-threaded screw, the elevator thereon having a feather adapted to change the direction of travel, and the carrier pivoted on said elevator and constructed to convey a series of matrices in a suspended position, substantially as described.

20. In a matrix-machine, a matrix-elevator, and a reversely-threaded screw to carry the same, in combination with a receiving-box into which the matrices are delivered from the elevator, substantially as described.

21. The matrix-elevator and a reversely-threaded screw on which it travels, in combination with a pivoted transfer-box to receive the matrices from the said elevator constructed to liberate the matrices by gravity, substantially as described.

22. The matrix-elevator comprising a reversely-threaded screw and a matrix-carrier thereon, and the magazine from which the matrices are distributed one at a time through the bottom, in combination with an intermediate tilting transferring device, substantially as described.

23. The matrix-elevator, a reversely-threaded screw carrying the same, and the magazine to receive the matrices, in combination with a tilting matrix-transferring device between said parts and means to automatically reverse the position of the said transferring device, substantially as described.

24. The matrix-distributing magazine, a transferring-box to drop the matrices therein together, and mechanism to liberate the matrices one at a time flatwise from the bottom of said box, substantially as described.

25. The line-tracks, the carriage and a rotatable shaft and arm thereon, a pinion on the shaft, a rack engaging the pinion and means to operate the rack as the carriage reaches the ends of its travel, substantially as described.

26. The line-tracks, the carriage and the shaft thereon having an arm at one end and a pinion at the other, a rack to operate said pinion, a roller on the rack and parallel channels for said roller on different planes and deflectors for the roller from one channel to the other, substantially as described.

27. The means for elevating a line of matrices for distribution consisting of an elevator-screw, an elevator thereon, a matrix-carrier pivotally supported on said elevator and constructed to carry the matrices in suspended position, substantially as described.

28. The line-carrying tracks constructed to support matrices with T-shaped heads, and means to move the line along on said tracks, in combination with an elevator-screw and elevator thereon, and a matrix-carrier on said elevator, substantially as described.

29. The magazine from which the matrices are distributed in combination with a tilting transferring-box, and movable means in the bottom of said box constructed to liberate the matrices when the box is turned to discharge into the magazine, substantially as described.

30. The reversely-threaded elevator-screw and the matrix-elevator thereon, and the tilting transferring-box having each inclined tracks along their top to receive T-headed matrices, means to liberate the matrices into said box, and means to reverse the elevator on said shaft, substantially as described.

31. In a type-bar machine, a matrix-elevator and a reversely-threaded shaft to raise and lower the elevator, and means at the top of the shaft to momentarily detain the elevator before it descends, thereby giving time for the discharge of the matrices, substantially as described.

32. In a type-bar machine, a matrix-elevator and a reversely-threaded shaft on which it travels up and down, a stop to hold the elevator at the end of its upward trip, and means connected with said shaft to release said stop and allow the elevator to descend, substantially as described.

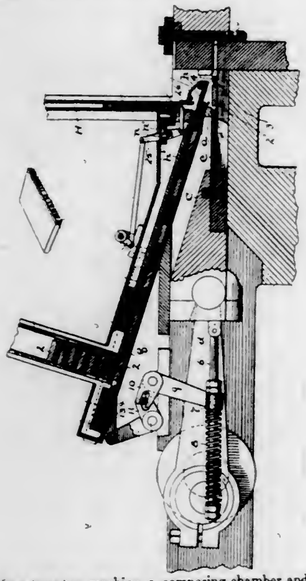
33. The reversely-threaded shaft and the matrix-elevator thereon, a temporary detaining mechanism for the elevator at the end of its upward travel, and the said shaft having a separate thread engaged by said detaining mechanism, thereby fixing the limit of detention, substantially as described.

657,043. TYPE-BAR MACHINE. ROSWELL H. ST. JOHN, Cleveland, Ohio, assignor to Joseph J. Little, Edward D. Appleton, and Homer Eaton, trustees, New York, N. Y. Filed Aug. 14, 1899. Serial No. 727,151. (No model.)

Claim.—1. In a type-bar machine using a set of cold blanks to make a bar, magazines to hold the blanks and means for feeding the blanks to the machine comprising separate releasing and delivering mechanism for each blank, substantially as described.

2. In a machine for making type-bars of cold blanks, a plunger to

force the blanks against the matrices, and separate operating mechanism to deliver each blank to the machine in front of the plunger, substantially as described.



3. In a type-bar machine, a composing-chamber and a plunger to carry the bar forming blanks forward to said chamber, separate magazines for said blanks, and mechanism to liberate one blank of each kind at a time and to hold back the unused blanks, said mechanism comprising separate releasing and feeding devices for each blank successively, substantially as described.

4. A type-bar machine having a plunger, a set of magazines for the blanks and separate channels from which the blanks are delivered in front of said plunger, in combination with a separate set of releasing and feeding mechanisms for each magazine, and connections between said mechanisms and operating parts of the machine, substantially as described.

5. Means to supply blanks to a type-bar machine, comprising a magazine for each set of blanks, and each magazine having a bottom outlet, a channel for each blank leading to the delivery-point, separate mechanisms at the bottom of each magazine to deliver one blank at a time, and connections between said mechanisms whereby they are conjointly operated, substantially as described.

6. The machine with a matrix-chamber and plunger to form the type-bar, in combination with magazines for the bar-blanks and inclined channels therefrom over which the blanks are delivered, in front of said plunger, substantially as described.

7. In a type-bar machine using blanks, a matrix-assembling chamber and a plunger, in combination with a separate supply-channel for each kind of blank, and mechanism operatively connected with the plunger-actuating mechanism to feed said blanks forward, substantially as described.

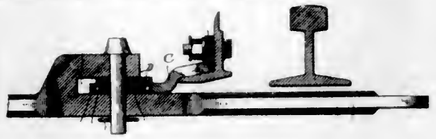
8. The magazines for the blanks, a channel therefrom for each blank, a set of rocking shafts and arms with links and sliding parts to liberate one blank of each kind at a time and detain the others, the main plunger and connections between the plunger and the said mechanisms for controlling the feed of the said blanks, substantially as described.

9. The magazines for the blanks, and an inclined path from each magazine to the delivery-point of the blank, in combination with a single sliding member to control the liberation of one set of blanks and operating connections between said mechanisms, substantially as described.

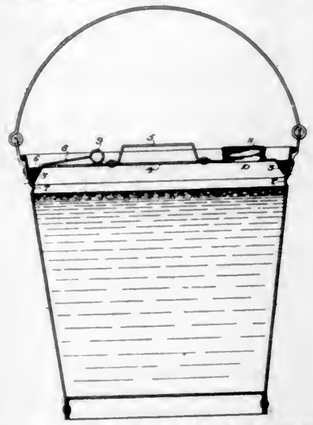
657,044. RAILWAY-SWITCH. AXEL A. STROM, Austin, Ill., assignor to the Strom Manufacturing Company, Chicago, Ill. Filed July 11, 1900. Serial No. 23,215. (No model.)

Claim.—1. The combination with a switch-rail and its tie-bar, of means for adjustably connecting the rail and bar comprising a clip having an opening and provided about said opening with a series of holes, and an eccentric adjustably seated in said opening and pivotally connected with the tie-bar and carrying one or more studs for engaging said holes to lock the eccentric in its position of adjustment within said opening.

2. The combination with a switch-rail and a tie-bar therefor provided with a jaw, of means for adjustably connecting the rail and bar comprising a clip having an opening and provided about said opening with a series of holes, a flanged eccentric adjustably seated in said clip-opening and confined therein by being embraced by said jaw and having pivotal connection with the tie-bar, and studs depending at intervals from the flange of the eccentric to enter said holes in the clip and lock the eccentric in its position of adjustment within said clip-opening.



657,045. CLOSURE FOR BUCKETS OR PAILS. DAVID E. TRAINER and PAUL B. M. TRAINER, Philadelphia, Pa., assignors to Olive I. Trainer and Paul B. M. Trainer, same place, and Harry I. Trainer, New York, N. Y. Filed May 25, 1899. Serial No. 718,181. (No model.)



Claim.—The combination of a pail or bucket, having an inwardly-projecting rib below the top, with lid or cover having a flange with its thin edge only bearing upon said rib and forming with the portion of the bucket above said rib a tapering or V-shaped groove for the reception of a sealing agent, so that an extended sealing-surface between the lid or cover and the bucket is prevented, and a releasing-wire located at the base or apex of said groove and having a portion projecting through the seal so that it can be grasped in order to pull out the wire, whereby the lid or cover may be readily pulled from the pail upon the withdrawal of the wire, substantially as specified.

657,046. MULTIPLE-MOTOR SYSTEM FOR AUTOMOBILES. JOHN TRIER, Chicago, Ill., assignor, by mesne assignments, to Donald Grant. Filed Apr. 26, 1900. Serial No. 14,395. (No model.)

Claim.—1. In a multiple-motor system for automobiles, an axle having a traction-wheel mounted thereon, a shaft, a plurality of motors carried by said shaft for rotating the same, and gearing connecting said shaft and axle, as and for the purpose set forth.

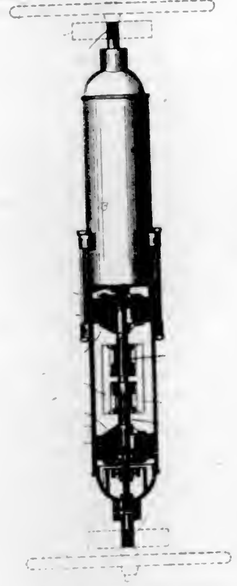
2. In a multiple-motor system for automobiles, an axle having a traction-wheel mounted thereon, a shaft having two or more motor-armatures thereon each adapted to rotate said shaft, a field for each motor-armature, and gearing connecting said shaft and axle, as and for the purpose set forth.

3. In a multiple-motor system for automobiles, a pair of traction-wheels, an axle for each wheel, a driving-shaft geared to each axle, and a plurality of motors for rotating each shaft, as and for the purpose set forth.

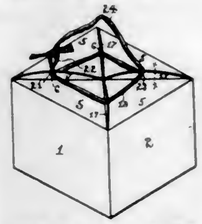
4. In a multiple-motor system for automobiles, a pair of traction-wheels, an independent axle for each wheel, an independent driving-shaft for each axle, a plurality of motors for driving each shaft, and an inclosing casing for said motors, as and for the purpose set forth.

5. In a multiple-motor system for automobiles, traction-wheels, an independent driving-shaft for each wheel, a plurality of motors for rotating each driving-shaft, and means for varying the circuit connections of said motors, whereby said motors may be connected up in suitable relation, as and for the purpose set forth.

657,046.



657,047. PAPER BOX. JOHN A. WAGNITZ, Dayton, Ohio. Filed May 31, 1900. Serial No. 18,506. (No model.)



Claim.—1. A paper box and the cover therefor, constructed of a single blank of sheet of paper with upright walls, and having a square form in cross-section, the cover consisting of four triangular flaps folding over from opposite sides of the box and having strengthening-ribs that extend inwardly from each corner of the box which maintain said triangular cover-flaps in a level position.

2. A paper box and the cover therefor, constructed of a single blank or sheet of paper with upright walls, and having a square form in cross-section, triangular cover-flaps folding over from four opposite sides, the adjacent edges of said cover-flaps being provided with oblique score-lines to provide four strengthening-ribs which extend from the corners of the box inwardly, and a tape for drawing the said cover-flaps over the mouth of the receptacle and maintaining them closed, said tape also providing a handle for said box, substantially as described.

3. A paper box and cover, constructed of a single blank or sheet of paper, and being of a square form in cross-section, the four walls consisting of a single thickness of paper, the bottom being formed from square and triangular flaps, the cover being formed of uniformly-rounded flaps with oblique score-lines which provide four triangular flaps, the said score-lines providing strengthening-ribs which extend from the four corners of the box, and the edges of said strengthening-ribs being rounded, and means for securing the bottom-flaps and the cover-flaps, substantially as shown and described.

4. A blank for a paper receptacle, the same being cut to provide four upright side walls or panels of uniform dimensions, and bottom and cover flaps of different dimensions, the cover-flaps being uniformly rounded, the rounded edges of each of said cover-flaps being separated by two oblique score-lines upon which said cover-flaps are bent to provide strengthening-ribs at the adjacent edges of said flaps when they are folded over to inclose the mouth of the receptacle.

5. A blank for a paper receptacle and cover, the same being cut to provide four side walls or panels with extensions or bottom and cover flaps, the innermost two of the bottom-flaps overlapping their edges, and the outermost two of said bottom-flaps inclosing the two innermost flaps, eyelets formed in said bottom-flaps, the cover-flaps being uniformly rounded and provided with oblique score-lines which extend from the corners of the side panels and intersect at the outer central edges of said cover-flaps, and eyelets formed in said cover-flaps between the rounded edges thereof and the said oblique score-lines, and means for securing said bottom and cover flaps, substantially as and for the purposes specified.

6. A hat-box, constructed from a single blank of material and being of square form in cross-section and having four upright walls, the bottom formed by four flaps folding inwardly from four directions and secured at their meeting edges, the cover formed by four flaps folding inwardly, the adjacent edges of said cover-flaps terminating in upturned flanges which form supports for said flaps when they are closed, and the inner portions of said cover-flaps terminating in points whereby said flaps may occupy a level position when closed, with their pointed ends meeting at a common central point.

7. A blank for a hat box, the same having four panels 1 1 and 2 2 which form upright side walls, two longitudinal score-lines 12 and 13 which provide flaps 3 and 4 which form the bottom of the box, and flaps 5 which form the cover of said box, the latter flaps having score-lines 15 which provide upturned flanges which support the said cover-flaps in a level position when closed over the mouth of the box.

657,048. ENDLESS CONVEYER. ALFRED M. ACKLIN and WILLIAM J. PATTERSON, Pittsburg, Pa. Filed Nov. 23, 1899. Serial No. 738,018. (No model.)



Claim.—1. The combination with sprocket-wheels and a frame having bearings therefor at or near its ends, of a chain passing around said sprocket-wheels and provided with wheels or rollers and upper and lower tracks for said wheels or rollers, the latter of which tracks has a gap to permit expansion and contraction of the chain, said chain being free to move into and out of said gap as it expands and contracts.

2. The combination with an endless chain provided with receptacles and bearing-rollers, of means for driving said chain, an uninterrupted outgoing track for said rollers and a return track therefor having a gap for permitting expansion and contraction of the chain, said chain being free to move into and out of said gap as it expands and contracts.

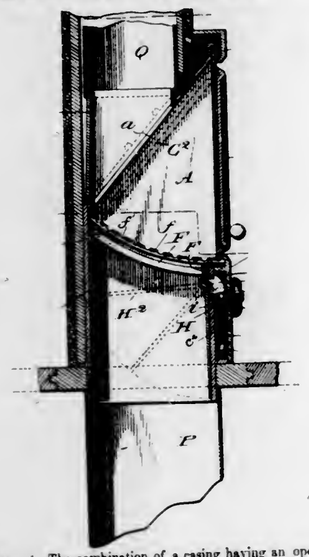
3. The combination with a chain and driving-wheels therefor, of wheels or rollers on said chain, upper and lower supporting and guide tracks for said wheels or rollers, the lower track having means for permitting expansion and contraction of the chain.

4. In conveying mechanism, the combination with a suitable frame, of an endless chain provided with receptacles and supporting-wheels, and outgoing and return tracks for said wheels, the latter having a gap to per-

mit expansion and contraction of the chain, said chain being free to move into and out of said gap as it expands and contracts.

5. In conveying mechanism, the combination with an endless chain provided with receptacles and with wheels or rollers, of means for driving said chain and upper and lower tracks for said wheels or rollers, each of which comprises an approximately-horizontal portion and an inclined portion and one of which is provided with means for permitting expansion and contraction of the chain.

657,049. HOT-AIR REGISTER. GEORGE AUER, Toledo, Ohio. Filed Mar. 29, 1900. Serial No. 10,670. (No model.)



Claim.—1. The combination of a casing having an opening in its front side, and an adjustable swinging door adapted to close said opening or to be adjusted inwardly so as to direct or deflect more or less air into the room; with the adjustable swinging valve in the casing below said door, and means for adjusting said valve, substantially as described.

2. The combination of a casing having an opening in its front, a grate located in said casing at the lower edge and in rear of said opening, and a door adapted to close said opening or to be adjusted inwardly over and supported by said grate so as to direct or deflect more or less air into the room; with the valve in the casing below said grating, and means for adjusting said valve, substantially as and for the purpose described.

3. The combination of the casing having an opening in its front; with an adjustable door-damper for closing said opening, an upwardly-curved flange fixed within the casing having a series of notches adapted to engage the lower edge of the door and hold the same more or less open when swung inward over the flange, and a regulating-valve below the front opening and means for adjusting said valve.

4. The combination of the casing having an opening in its front, a door for closing said opening, and a grate located within the casing at the lower edge of said opening and extending across the casing, provided with a curved flange having a series of notches adapted to be engaged by the lower end of the door and hold the same more or less open with a regulating-valve below the grating, and means for adjusting said valve, substantially as and for the purpose set forth.

5. In a hot-air register, the combination of the casing having a sloping top, an opening in said top communicating with a superimposed flue, an opening in the front wall of the casing, a grating extending from the lower edge of said front opening to the rear side of the casing and provided with a notched flange, a frame fitted around the front end of the casing, and an adjustable door having its upper end loosely engaged in a recess between the upper end of the casing and the frame, its lower edge being adapted to engage any of the notches in the flange for the purpose of adjusting the door, substantially as and for the purpose described.

6. In a hot-air register, the combination of the casing having a sloping top, an opening in said top communicating with a superimposed flue, an opening in the front wall of the casing, a grating extending from the lower edge of said front opening inwardly and upwardly to the rear side of the casing and provided with a notched flange, a frame fitted around the front end of the casing, and an adjustable door having its upper end loosely engaged in a recess between the upper end of the casing and the frame, its lower edge being adapted to engage any of the notches in the flange for the purpose of adjusting the door; with a valve in the casing below the grate, and means for operating said valve, and a ventilating air-chamber between the frame and the casing below the front opening in the latter, and air-spaces at the sides of the casing communicating with said ventilating-chamber, all substantially as described.

7. In a hot-air register, the combination of the casing having an opening therein at the front, and an adjustable door-damper for closing said opening; with a grating in the casing having a curved flange provided with a series of notches adapted to be engaged by the lower edge of the door when the latter is swung inward and hold the door more or less open and support the same, substantially as and for the purpose described.

8. In a hot-air register, the combination of the casing having an opening in its front, an adjustable swinging door for closing said opening, and a grating located at the lower edge of said opening and extending across the interior of the casing, provided with a curved flange on one end having a series of notches adapted to be engaged by the lower end of the door to support the latter and hold the same more or less open, substantially as described and for the purpose set forth.

9. In a hot-air register, the combination of the casing having an opening in its front, an adjustable inwardly-swinging door-damper for closing said opening, a regulating-valve below the opening, and means for adjusting said valve; said casing being provided with air-spaces at each side and an air-space below the opening therein communicating with the room and with said side air-spaces, for the purpose of ventilating the room, substantially as and for the purpose described.

10. In a hot-air register, the combination of the casing having an opening in its front, an adjustable swinging door for closing said opening, an air-chamber below the opening communicating with the room and with air-spaces at each side of the casing, and a grating located at the lower edge of said opening and extending across the casing, provided with a flange on one end having a series of notches adapted to be engaged by the lower end of the door and support the latter and hold the same more or less open; with the regulating-valve below the grate and means for adjusting said valve, substantially as and for the purpose described.

657,050. ORNAMENTAL OBJECT. EMILE BICK and CHARLES H. HAHN, New Haven, Conn. Filed June 27, 1899. Serial No. 722,044. (No specimens.)



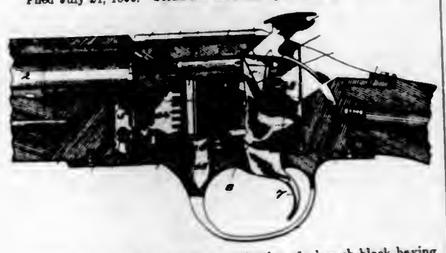
Claim.—As an improved article of manufacture, a backing or support whose side is covered exteriorly with a thick body of plastic, adhesive material, a series of plugs simulating limbs of trees which are embedded deeply in and supported by said material and inclined upward, as specified, the plastic material being extended to surround and conceal the sides of the plugs and thickened at the base, the whole surface of the plastic covering being scored and colored in imitation of the bark of a natural-tree trunk or limb, as shown and described.

657,051. STOPPER FOR MUCILAGE-BOTTLES. CHARLES W. BLAGG, Sioux City, Iowa. Filed Apr. 23, 1900. Serial No. 13,952. (No model.)



Claim.—The combination with a liquid-receptacle having an inwardly-extending flange at its upper end, of a hollow stopper or cork of impervious, severable material having an integral, closed upper end, the said stopper or cork extending into said receptacle through the opening in the upper end thereof, and terminating at a point adjacent to the bottom thereof, as and for the purpose set forth.

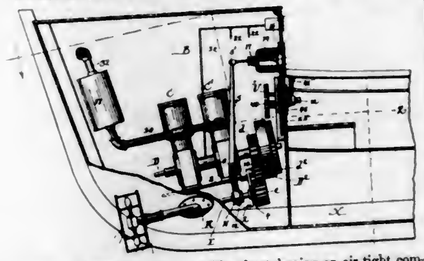
657,052. FIREARM. WILLIAM V. BLEHA, St. Louis, Mo., assignor of two-thirds to Otto F. Stifel and Gustav A. Pleus, same place. Filed July 21, 1899. Serial No. 724,604. (No model.)



Claim.—1. In a firearm, the combination of a breech-block having a guide-pin formed with a longitudinal groove, a hammer, a connection between the hammer and the breech-block, means for automatically raising the breech-block, and a trigger-guard having a closed socket in which the guide-pin is fitted; the groove in the pin forming a vent for the compressed air within the socket; substantially as described.

2. In a firearm, the combination of a breech-block, a hammer, and a connection between the hammer and the breech-block whereby the latter is moved by the cocking of the hammer; said connection consisting of a spring-actuated pin connected to one side of the breech-block and a fixed pin connected to the other side of the breech-block, one of said pins being adapted to be engaged by the back of the hammer, and said hammer being grooved to permit the passage of the pins when the breech-block is raised and when the hammer is lowered, substantially as set forth.

657,053. MECHANISM FOR PROPELLING BOATS. CARL H. BLOMSTROM, Marquette, Mich., assignor to the Lake Shore Engine Works, same place. Filed Oct. 26, 1899. Serial No. 734,804. (No model.)



Claim.—1. The combination with a boat having an air-tight compartment, of an engine located within said compartment and whereby the boat is propelled and mechanism extending outside said compartment and whereby the operation of the engine is controlled.

2. The combination with a boat having an air-tight compartment, of an engine located within said compartment and whereby the boat is propelled, a propeller-shaft driven by said engine, a shifter for varying the angle of the propeller-blades located within said compartment and a rod connected to said shifter and extending outside said compartment.

3. The combination with a boat having an air-tight compartment, of an engine located within said compartment and whereby the boat is propelled, a shifting-lever located within said compartment and engaging a movable part of the engine, a shifting-rod connected to said shifting-lever and extending outside the compartment and a cup-shaped chamber attached to the wall of said compartment and through which chamber said shifting-rod passes.

4. The combination with a boat having an air-tight compartment, of an engine located within said compartment and whereby the boat is propelled, a longitudinally-movable propeller-shaft extending from said engine outside said compartment, a shifting-lever within the compartment having one end connected to said longitudinally-movable propeller-shaft, and a shifting-rod connected to the opposite end of said shifting-lever and extending outside said compartment.

5. The combination with a boat having an air-tight compartment, of an engine located within said compartment and whereby the boat is propelled, a lubricator located outside said compartment and a tube leading from said lubricator to a journal of the engine within the compartment.

6. The combination with a boat having an air-tight compartment, of an engine located within said compartment and whereby the boat is propelled, a propeller-shaft driven by said engine, a shifter connected with said propeller-shaft, a shifting-rod connected to said shifter and extending outside said compartment and a cup-shaped chamber attached to the wall of said compartment and provided with a stuffing-box through which said rod passes.

7. The combination with a boat having an air-tight compartment, of a liquid-fuel engine located within said compartment and whereby the boat is propelled and an air-delivery pipe having an upturned end and having its lower end communicating with an air-port in the wall of said compartment.

8. The combination with a boat having an air-tight compartment, of a liquid-fuel engine located within said compartment and whereby the boat is propelled, a pipe for products of combustion connected with said engine at one end and having its opposite end suitably connected with an exhaust-port formed in the wall of said compartment.

9. The combination with a boat having an air-tight compartment, of a liquid-fuel engine located within said compartment and whereby the boat is propelled, and an exhaust-pipe for prodnets of combustion connected at one end to said engine and having its opposite end connected with branch pipes that are coupled to exhaust-ports located upon opposite sides of said compartment.

10. The combination with a boat having an air-tight compartment, of a liquid-fuel engine located within said compartment and whereby the boat is propelled, an exhaust-pipe for products of combustion connected at one end to said engine and having its opposite end connected with branch pipes that are coupled to exhaust-ports located upon opposite sides of said compartment, and a muffle-chamber located within said compartment and interposed in said exhaust-pipe.

11. The combination with a boat having an air-tight compartment, of an engine located within said compartment and whereby the boat is propelled, and a base for supporting said engine having standards secured to the keel of the boat and provided with lateral extensions secured to the sides of the bull of the boat.

12. The combination with a boat having an air-tight compartment, a starting-gear within said compartment for imparting initial movement to said engine, a shaft extending through the wall of said compartment, and a handle located upon the outer end of said shaft and whereby revolution may be imparted to said shaft to start the engine.

13. The combination with a boat having an air-tight compartment, of an engine located within said compartment and whereby the boat is propelled, a gear-wheel located within said compartment for starting the engine, a shaft connected to said gear-wheel and extending outside the compartment, an eccentric block or bearing whereby said gear-wheel may be thrown into and out of action and means for turning said eccentric bearing to bodily shift said gear-wheel.

14. The combination with a boat having an air-tight compartment, of an engine located within said compartment and whereby the boat is propelled, starting mechanism for said engine comprising a gear-wheel located within the compartment, a shaft connected to said gear-wheel and extending outside said compartment, means whereby said shaft may be turned, an eccentric bearing or block extending through said compartment and whereby said gear-wheel may be thrown into and out of engagement, and an arm or extension whereby said eccentric block may be turned.

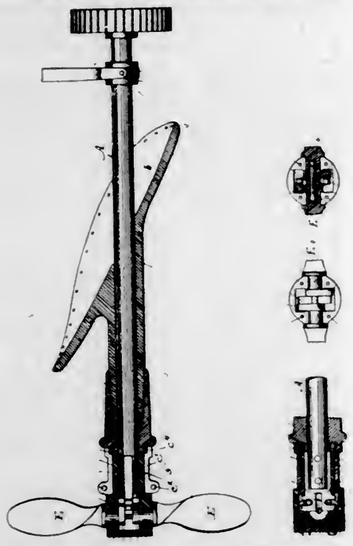
15. The combination with a boat having an air-tight compartment, of an engine located within said compartment and whereby the boat is propelled, starting-gear mechanism for said engine comprising a gear-wheel connected with the engine, a second gear-wheel located within said compartment, a shaft connected to said second gear-wheel extending outside said compartment, an eccentric block or bearing through which said gear-wheel shaft passes, an arm or extension for turning said eccentric block in order to throw said gears into and out of engagement, a crank for turning said shaft and a bearing-sleeve for said eccentric bearing or block fastened to the wall of said compartment.

657,054. PROPELLING MECHANISM FOR BOATS. CARL H. BLOMSTROM, Marquette, Mich., assignor to the Lake Shore Engine Works, same place. Filed Jan. 27, 1900. Serial No. 2,933. (No model.)

Claim.—1. Propeller mechanism for boats comprising a revoluble hub and a bearing for holding it against longitudinal movement, propeller-blades journaled in said hub and provided at their inner ends with cranks, a propeller-shaft provided at its outer end with a plate or extension keyed to said hub but longitudinally movable with respect thereto, said extension being also connected to the cranks of the propeller-blades whereby said blades may be shifted.

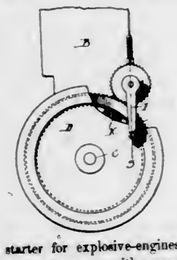
2. Propeller mechanism for boats comprising propeller-blades provided at their inner ends with stems or journals and with cranks, a revo-

luble hub wherein said blades are journaled, said hub having a removable cap for holding said journals in place, a longitudinally-movable shaft connected to the cranks of said blades and keyed to said hub but longitudinally movable with respect thereto, and a bearing wherein said hub is revolubly mounted and whereby it is held against longitudinal movement.



3. Propeller mechanism for boats comprising propeller-blades provided at their inner ends with stems or journals and with cranks, a pin extending into and between the stems of the propeller-blades, a longitudinally-movable shaft provided at its outer end with an extension having a slot through which said pin passes, said extension being connected with the cranks of the propeller-blades and a hub wherein said propeller-blades are journaled and a suitable bearing for said hub.

657,055. STARTING MECHANISM FOR EXPLOSIVE-ENGINES. CARL H. BLOMSTROM, Marquette, Mich., assignor to the Lake Shore Engine Works, same place. Filed Jan. 27, 1900. Serial No. 2,934. (No model.)

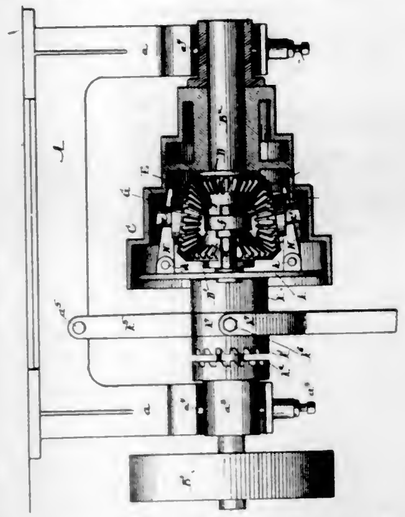


Claim.—1. A starter for explosive-engines comprising a pinion adapted to be thrown into engagement with a gear permanently connected to the engine, an eccentric-bearing for sustaining said pinion and suitable means whereby said eccentric-bearing may be turned in order to shift said pinion, and a crank-handle for turning said pinion-shaft

2. A starter for explosive-engines comprising a gear suitably connected with the fly-wheel or shaft of the engine, a pinion for engaging said gear, a shaft whereon said pinion is mounted, an eccentric whereby said shaft is sustained, a suitable support for said eccentric, means whereby said eccentric may be turned to throw said pinion into and out of engagement with said gear and a handle for imparting revolution to said pinion.

3. A starter for explosive-engines comprising a gear suitably connected with the fly-wheel or shaft of the engine, a pinion for engaging said gear, a shaft whereon said pinion is mounted, an eccentric whereby said shaft is sustained, a suitable support for said eccentric, means whereby said eccentric may be turned to throw said pinion into and out of engagement with said gear, a suitable locking device for holding said eccentric in either of several positions and a handle whereby revolution may be imparted to said pinion.

657,056. REVERSING-GEAR MECHANISM. CARL H. BLOMSTROM, Marquette, Mich., assignor to the Lake Shore Engine Works, same place. Filed Feb. 26, 1900. Serial No. 6,469. (No model.)



Claim.—1. A gear mechanism for uniting a driving shaft or part and a driven part comprising a beveled gear united to the driving shaft or part, a beveled gear of smaller diameter united to the driven part, a coupling-gear connecting said beveled gears, a hub or support having an inclined axle for said coupling-gear and means for connecting and disconnecting said coupling-gear and said hub.

2. A gear mechanism for uniting a driving shaft or part and a driven part, comprising a beveled gear united to the driving shaft or part, a beveled gear of smaller diameter united to the driven part, a coupling-gear connecting said beveled gears, a hub or support for said coupling, means for connecting and disconnecting said coupling-gear and said hub and means for holding said hub or support against revolution when the coupling-gear is free to revolve.

3. A gear mechanism for uniting a driving shaft or part and a driven part, comprising a beveled gear united to said driving shaft or part, a beveled gear united to the driven part, a coupling-gear connecting said beveled gears, a hub or support for said coupling-gear and whereon said coupling-gear is axially movable, a wedge for effecting the locking of said coupling-gear to the hub or support, and means for shifting said wedge.

4. A gear mechanism for uniting a driving shaft or part and a driven part, comprising a beveled gear united to said driving shaft or part, a beveled gear united to the driven part, a coupling-gear connecting said beveled gears, a hub or support for said coupling-gear and whereon said coupling-gear is axially movable, a wedge for effecting the locking of said coupling-gear to the hub or support, a revoluble sleeve to which said wedge is connected and means for shifting said sleeve.

5. A gear mechanism for uniting a driving shaft or part and a driven part, comprising a beveled gear united to said driving shaft or part, a beveled gear united to the driven part, a coupling-gear connecting said beveled gears, a hub or support for said coupling-gear and whereon said coupling-gear is axially movable, a wedge for effecting the locking of said coupling-gear to the hub or support, a revoluble sleeve whereby said wedge is shifted, a clutch for holding said revoluble sleeve against revolution and means for shifting said sleeve into and out of engagement with said clutch.

6. A gear mechanism for uniting a driving shaft or part and a driven part, comprising a beveled gear united to the driving shaft or part, a beveled gear united to the driven part, a beveled coupling-gear connecting said beveled gears, a hub or support provided with a slotted axle whereon said coupling-gear is mounted in manner free to slide, a wedge-shaped arm passing through said slotted axle and arranged to lock said coupling-gear to said hub or support, and means for shifting said wedge-shaped arm to lock or free said coupling-gear.

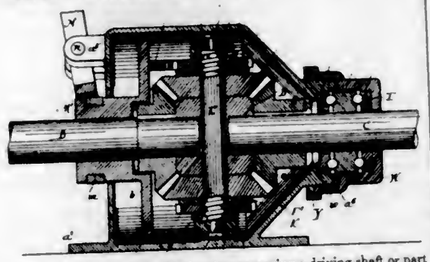
7. A gear mechanism for uniting a driving shaft or part and a driven part, comprising a gear-wheel united to the driving shaft or part, a gear-wheel united to the driven part, two oppositely-disposed coupling-gears connecting said above-mentioned gears, a hub or support interposed between said coupling-gears and whereby said coupling-gears are pivotally sustained, movable wedges for moving said coupling-gears axially to lock them in said hub or support, shifting mechanism to which said wedges or cams are connected and whereby they are operated.

8. A gear mechanism for uniting a driving shaft or part and a driven part, comprising a gear-wheel united to the driving shaft or part, a gear-wheel united to the driven part, two oppositely-disposed coupling-gears connecting said above-mentioned gears, a hub or support interposed between said coupling-gears and whereby said coupling-gears are pivotally sustained, movable wedges for moving said coupling-gears axially to lock them in said hub or support, shifting mechanism to which said wedges are connected and whereby they are operated, said shifting mechanism comprising a clutch-sleeve connected to said wedges or cams and also connected to said hub or support, and a clutch for arresting the movement of said clutch-sleeve.

9. A gear mechanism for uniting a driving shaft or part and a driven part, comprising a gear-wheel united to the driving shaft or part, a gear-wheel united to the driven part, a coupling-gear connecting said above-mentioned gears, a hub interposed between said above-mentioned gears and whereon said coupling-gear is mounted, a drive-shaft to which one of said gears is keyed, a revoluble sleeve or part to which the other of said gears is keyed, a hollow pulley mounted upon said sleeve and inclosing said gears and means for connecting and disconnecting said coupling-gear and said hub or support.

10. In apparatus of the character described, the combination of a main drive-shaft, a beveled gear-wheel keyed to said shaft, a sleeve mounted upon said shaft, a pulley mounted on said sleeve, a beveled gear-wheel keyed to said pulley, a coupling-gear connecting said above-mentioned beveled gears, a hub mounted upon said drive-shaft and arranged between said gears, an axle carried by said hub and whereon said coupling-gear is mounted in manner free to move in axial direction, a wedge-shaped arm for connecting and disconnecting said coupling-gear and said hub or support, a clutch-sleeve provided with an extension to which said wedge-shaped arm is attached, said extension being suitably connected with said hub or support, and means for shifting said clutch-sleeve and arrest its movement.

657,057. GEAR MECHANISM. CARL H. BLOMSTROM, Marquette, Mich., assignor to the Lake Shore Engine Works, same place. Filed Feb. 26, 1900. Serial No. 6,470. (No model.)



Claim.—1. A gear mechanism for connecting a driving shaft or part and a driven shaft or part, comprising a gear-wheel united to the driving shaft or part, a gear-wheel united to the driven shaft or part, a coupling-gear connecting said above-mentioned gear-wheels, a hub or support interposed between said driving and said driven shafts or parts and whereby said coupling-gear is sustained, mechanism for directly locking said coupling-gear to said hub or support to prevent the revolution of said gear about its own axis and for freeing said coupling-gear whereby said driving and said driven shafts or parts may be caused to revolve or not to revolve in the same direction.

2. A gear mechanism for connecting a driving shaft or part and a driven shaft or part, comprising a gear-wheel united to the driving shaft or part, a gear-wheel united to the driven shaft or part, two oppositely-disposed coupling-gears connecting said above-mentioned gears, a hub or support interposed between said coupling-gears and between said driving and said driven shafts or parts, and whereby said coupling-gears are pivotally sustained, mechanism for directly locking said coupling-gears to said hub or support to prevent their revolution about their own axes and for freeing said coupling-gears in order to allow them to revolve.

3. A gear mechanism for connecting a driving shaft or part and a driven shaft or part, comprising a gear-wheel united to the driving shaft or part, a gear-wheel united to the driven shaft or part, a coupling-gear connecting said above-mentioned gear-wheels, a hub or support interposed between said driving and said driven shafts or parts and whereby said coupling-gear is sustained, mechanism for directly locking said coupling-gear to said hub or support to prevent the revolution of said gear about its own axis and for freeing said coupling-gear, and for directly locking said hub or support against revolution.

4. A gear mechanism for connecting a driving shaft or part and a driven shaft or part, comprising a gear-wheel united to the driving shaft or part, a gear-wheel united to the driven shaft or part, a coupling-gear connecting said above-mentioned gear-wheels, a hub or support interposed between said driving and said driven shafts or parts and whereby said coupling-gear is sustained, said hub or support being provided with one or more movable shoes, a stationary brake member adapted to be engaged by said shoe or shoes, mechanism for locking said coupling-gear to said hub or support to prevent the revolution of said gear about its own axis, and for releasing said coupling-gear and for moving said brake shoe or shoes against said brake member to arrest the movement of said hub or support.

5. A gear mechanism for connecting a driving shaft or part and a driven shaft or part, comprising a gear-wheel united to the driving shaft or part, a gear-wheel united to the driven shaft or part, a coupling-gear connecting said above-mentioned gear-wheels, a hub or support interposed between said driving and said driven shafts or parts and whereby said coupling-gear is sustained, said hub or support being provided with an axle whereon said coupling-gear is pivotally mounted and upon which axle said coupling-gear is mounted in manner free to slide into and out of engagement with said hub or support, a movable brake-shoe carried by said hub or support and mechanism for locking said coupling-gear to said hub and for releasing said coupling-gear from engagement with said hub or support and for checking the movement of said brake-shoe.

6. A gear mechanism for connecting a driving shaft or part and a driven shaft or part, comprising a beveled gear-wheel united to the driving shaft or part, a beveled gear-wheel united to the driven shaft or part, said gear-wheels being mounted to revolve in parallel planes, two coupling-gears connecting said above-mentioned gear-wheels, a hub or support interposed between said gear-wheels and said coupling-gears and provided with axles whereon said coupling-gears are journaled in manner free to revolve and to slide lengthwise thereof, means for locking said coupling-gears to said hub or support and for releasing said coupling-gears therefrom, and means for arresting the motion of said hub or support while allowing the coupling-gears to revolve upon their own axes.

7. A gear mechanism for connecting a driving shaft or part and a driven shaft or part, comprising a gear-wheel united to the driving shaft or part, a gear-wheel united to the driven shaft or part, a coupling-gear connecting said above-mentioned gear-wheels, a hub or support interposed between said driving and said driven shafts or parts, said hub or support being provided with a screw-threaded shaft or axle whereon said coupling-gear is mounted in manner free to revolve and to move lengthwise thereof, a screw-threaded wheel mounted upon said axle and means for revolving said screw-threaded wheel in order to shift said coupling-gear upon its axle to effect the locking of said coupling-gear to said hub or support.

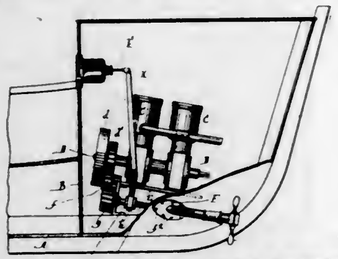
8. A gear mechanism for connecting a driving shaft or part and a driven shaft or part, comprising a gear-wheel united to the driving shaft or part, a gear-wheel united to the driven shaft or part, a coupling-gear connecting said above-mentioned gear-wheels, a hub or support interposed between said driving and said driven shafts or parts, said hub or support being provided with a screw-threaded axle or shaft whereon said coupling-gear is mounted in manner free to revolve and to move lengthwise thereof, a screw-threaded pinion mounted upon said threaded axle, a rack-bar engaging said pinion, and shifting mechanism for operating said rack-bar and pinion in order to move said coupling-gear into and out of engagement with said hub or support.

9. A gear mechanism for connecting a driving shaft or part and a driven shaft or part, comprising a gear-wheel united to the driving shaft or part, a gear-wheel united to the driven shaft or part, a coupling-gear connecting said above-mentioned gear-wheels, a hub or support interposed between said driving and said driven shafts or parts, said hub or support being provided with a threaded axle whereon said coupling-gear is mounted in manner free to revolve and to slide lengthwise thereof, a screw-threaded pinion carried by said axle, a brake-shoe connected to said pinion, a shiftable rack for turning said pinion in order to effect the engagement and disengagement of said coupling-gear with said hub or support, and a stationary brake member against which said brake-shoe may be forced by said pinion.

10. A gear mechanism for uniting a driving shaft or part and a driven shaft or part comprising two beveled gear-wheels arranged to revolve in parallel planes and connected respectively to the driving and the driven shafts or parts, two beveled coupling-gears uniting said gear-wheels, a hub or support arranged between said gear-wheels and said coupling-gears and provided with a threaded axle or shaft whereon each of said coupling-gears is revolubly and axially movable, screw-threaded pinions mounted upon said shaft outside of said gears and whereby said gears will be shifted, brake-shoes connected to said pinions, a stationary brake member with which said brake-shoes may engage, rack-bars engaging said pinions and a revoluble shifting device carrying said rack-bars and connected with said hub or support.

11. A gear mechanism for uniting a driving shaft or part and a driven shaft or part, comprising two beveled gear-wheels arranged to revolve in parallel planes and connected respectively to the driving and the driven shafts or parts, two beveled coupling-gears uniting said gear-wheels, a hub or support arranged between said gear-wheels and said coupling-gears and provided with a threaded axle or shaft whereon each of said coupling-gears is revolubly and axially movable, screw-threaded pinions mounted upon said shaft outside of said coupling-gears and whereby said gears will be shifted, brake-shoes connected to said pinions, a stationary brake member with which said brake-shoes may engage, rack-bars engaging said pinions and a revoluble shifting device carrying said rack-bars and connected with said hub or support, said shifting device comprising a slidable sleeve mounted upon the driving-shaft and provided at its inner end with a lateral disk or extension carrying said rack-bars.

657,058. **MECHANISM FOR PROPELLING BOATS.** CARL H. BLOMSTROM, Marquette, Mich., assignor to the Lake Shore Engine Works, same place. Filed Mar. 28, 1900. Serial No. 10,449. (No model.)

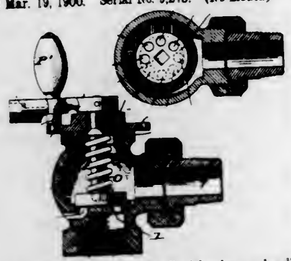


Claim.—1. The combination with a boat and with an engine therefor located in the stern and having a crank-shaft, of two propeller-shafts parallel to said crank-shaft, located upon opposite sides of said engine, and extending through the stern of the boat, said propeller-shafts having propeller-wheels at their outer ends and having their inner ends operatively connected with the forward end of said engine crank-shaft.

2. The combination with an engine having a crank-shaft, of two propeller-shafts located on opposite sides of said engine, said propeller-shafts having their inner ends suitably connected to the crank-shaft and provided at their rear ends with propeller-wheels having revoluble blades and suitable means whereby the angles of the propeller-blades may be independently shifted to vary the direction of travel of the boat.

3. The combination with an engine having a crank-shaft provided with a gear-wheel, of two propeller-shafts located upon opposite sides of said engine, means whereby said propeller-shafts may be shifted in longitudinal direction, propeller-wheels at the outer ends of said propeller-shafts and provided with revoluble blades, and gear-wheels at the inner ends of said propeller-shafts suitably connected with the gear-wheel of the crank-shaft.

657,059. **VALVE.** ALBERT P. BROOMELL, York, Pa. Original application filed Feb. 5, 1900, Serial No. 4,046. Divided and this application filed Mar. 19, 1900. Serial No. 9,275. (No model.)



Claim.—1. The valve herein described having a plurality of ports and movable whereby the said ports may be adjusted successively into feed position combined with the valve-seat having a port opening to the atmosphere with which one of the ports of the valve may register when the valve is adjusted to close the feed-ports.

2. The combination in a valve of the casing having sockets for the stop-pins, the valve-seat having feed and air ports, the valve having openings arranged for registration with said ports, the valve-stem extended through the casing and arranged to operate the valve, the valve-arm, the handle carried by the arm and a stop-pin carried by the handle and arranged to engage the sockets in the casing.

3. The combination of the valve-casing having its head provided with a series of sockets for the stop-pins and with an opening for the valve-stem, the valve-seat having feed and air ports, the valve having a plurality of ports arranged for registration with those of the valve-seat, the valve-stem having the packing portion or disk and movable longitudinally independently of the valve, the spring between said packing portion and said valve, the valve-arm, and the handle and stop-pin substantially as set forth.

4. The valve-casing having sockets for the stop-pin, the valve-arm, the handle movable longitudinally therein and having the stop-pin to enter the sockets in the casing, and means for limiting the movement of the stop-pin, substantially as set forth.

5. The combination of the valve-casing having the sockets for the stop-pin, the valve-arm, the handle movable longitudinally in the said arm and having the stop-pin, the screw for locking the handle from endwise movement, and means for limiting the endwise movement of the handle, substantially as set forth.

6. The combination of the valve-casing having a series of feed-ports and a vent-port, and the valve having a series of ports one of which registers with the vent-port when the valve is closed and the ports of the valve being arranged for successive registration with those of the seat, substantially as set forth.

7. The valve-seat having feed-ports, and an outlet or exhaust port, and the valve having ports corresponding in number with the feed-ports of the seat and movable into full register with the feed-ports in the feeding position of the valve and having one of said valve-ports movable into register with the exhaust-port when the valve is adjusted to close the feed-ports of the valve-seat, the construction being such that all the feed-ports are closed when the exhaust-port is open.

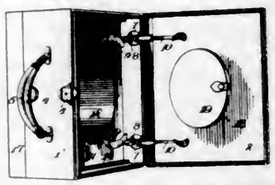
657,060. **VALVE-ATTACHING DEVICE FOR BICYCLE-TIRES.** ROBERT J. BURNS, Avon, Mass., assignor, by direct and mesne assignments, of five-eighths to Leslie H. Hall, same place, and Frank C. Granger, Randolph, Mass. Filed Dec. 5, 1899. Serial No. 739,230. (No model.)



Claim.—1. As a means of securing the valve-casing in a rubber air-inlet tube of a bicycle-tire, a metal sleeve made tapering and threaded upon its exterior and split entirely through, longitudinally, on one side, and nearly through upon the opposite side, and approximately fitting the exterior of said rubber inlet-tube in its normal condition; and a nut fitted to said sleeve and arranged to compress said sleeve to clamp it upon said tube, and said tube to the valve-casing.

2. In combination with a pneumatic tire provided with a rubber air-inlet tube, and a valve-casing inserted in said inlet-tube, the sleeve 5 provided with the slits 6 and 7, and annular bead 9, and having a screw-thread formed upon its tapering exterior; and the nut 8, the threaded perimeter of which is fitted to the smaller end of said sleeve, and adapted to compress said sleeve as it is screwed toward the larger end thereof, and cause it to clamp said rubber tube firmly to said valve-casing.

657,061. **HAT-BOX.** JOHN J. CANNAN, Rochester, N. Y. Filed Apr. 16, 1900. Serial No. 13,075. (No model.)



Claim.—1. In a hat-box, the combination with the casing open at opposite sides and removable covers for said sides, hat-supporting devices located in the casing, of a tray removable from the casing and independent of the hat-support, and provided with a well surrounding a hat held upon the support.

2. In a hat-box, the combination with a casing having the covers arranged upon its opposite sides, and hat-supporting devices located within the casing, of the stops located in the casing, the removable tray provided with the well separate from said holding devices, and having the sides exterior of the well and adapted to engage the cover when the latter is closed.

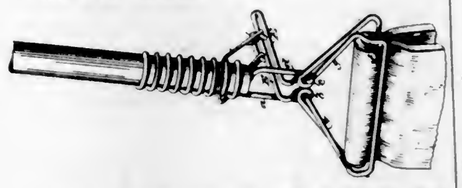
3. In a hat-box, the combination with a casing having the covers arranged upon opposite sides thereof, and hat-holding devices secured to the case and adapted to support a hat by engagement upon opposite sides of the brim, of the tray provided with the well removable from the casing, and having the side walls extending above the sides of the case and adapted to engage with one of the covers to hold the tray in position.

4. In a hat-box, the combination with a casing, the covers thereon arranged upon opposite sides thereof, and removable hat-holding devices secured to the case, of a tray provided with the well mounted in said case and arranged independent of said supports, and also having the sides fitting within the sides of the casing and extending above the latter, and the stops on the case limiting the inward movement of the tray.

5. In a hat-box, the combination with a casing, the covers arranged upon opposite sides thereof, and the removable hat-holding devices secured to the side of the case, adapted to support the hat by engaging opposite sides of the brim, of the removable tray provided with the well, having the side walls fitting within the sides of the casing and extending above the latter and engaging the cover, and the stops on the casing for limiting the inward movement of the tray.

6. In a hat-box, the combination with a casing, hat-holding devices therein, a removable tray independent of said holding devices, having the sides, and stops on the casing for limiting the inward movement of the tray, of the cover upon the front of the casing provided with the receptacle adapted to fit within the hat, having the cover upon its inner face, and the cover arranged upon the rear of the case permitting access to the tray, and engaging the latter, when closed, to secure it against the stops.

657,062. **MOP-HOLDER.** CHARLES M. CHAPMAN, Fort Edward, N. Y., assignor, by direct and mesne assignments, of two-thirds to Patrick Murry and Mary Murray, same place. Filed Jan. 10, 1900. Serial No. 940. (No model.)



Claim.—1. A brush or mop holder consisting of a stationary clamping-jaw and a movable clamping-jaw pivoted thereto between which jaws the brush or mop is held, a suitable handle and a spiral wire coil extending around the same to connect the jaws with the handle and also serving as a rack-bar, and a suitable pawl connecting with the movable clamping-jaw and adapted to engage the wire coil, substantially as and for the purpose described.

2. A brush or mop head consisting of a stationary jaw constructed of wire, eyes and shanks upon said jaw, one of said shanks terminating in a coiled rack-bar with which the handle of the brush or mop head engages, and a movable jaw pivoted to the other jaw with pawl to engage the rack-bar, substantially as and for the purpose specified.

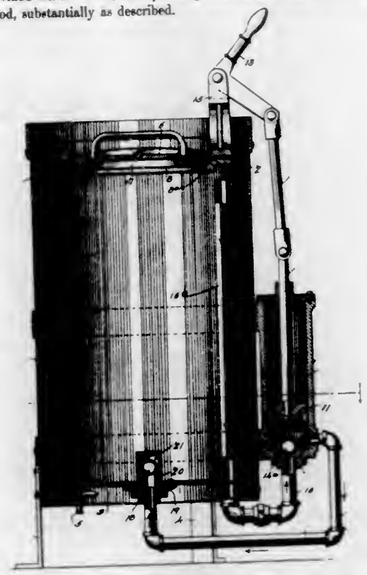
3. In a brush or mop head, a stationary jaw provided with eyes and shanks, one of said shanks terminating in a coiled-wire rack-bar, and a movable jaw the arms of which engage with the eyes of the shanks and terminate in levers, and a U-shaped pawl loosely connected to the levers and adapted to engage the coiled rack-bar, substantially as and for the purpose set forth.

657,063. **WASHING-MACHINE.** WILLIAM J. GEORGE, Johnstown, Pa. Filed Jan. 26, 1900. Serial No. 2,893. (No model.)

Claim.—1. A washing-machine comprising a receptacle provided with a lid or cover, an air-pump mounted on the exterior of the receptacle, an exhaust-pipe extending from the air-pump to the upper portion of the receptacle, and a discharge-pipe extending from the air-pump to the bottom of the receptacle, substantially as described.

2. A washing-machine comprising a receptacle provided with a lid or cover, an air-pump mounted on the exterior of the receptacle, an exhaust-pipe extending from the air-pump to the upper portion of the receptacle, a discharge-pipe extending from the air-pump to the bottom of the receptacle, an L-shaped operating-lever fulcrumed at its angle on the receptacle at the top thereof, and a pitman connecting the lever with the piston-rod of the air-pump, substantially as described.

3. A washing-machine comprising a receptacle, a vertical cylinder mounted on the exterior of the receptacle and provided at its bottom with a valve, a piston operating in the cylinder and having a vertical piston-rod, an exhaust or suction pipe extending from the bottom of the cylinder through the bottom of the receptacle to a point near the top thereof, a discharge-pipe extending from the cylinder to the bottom of the receptacle and provided with a valve, and operating mechanism connected with the piston-rod, substantially as described.



657,064. **BROWN DYE.** WILHELM HERBERG and OTTO HANSMANN, Berlin, Germany, assignors to the Actien-Gesellschaft für Anilin Fabrikation, same place. Filed June 28, 1900. Serial No. 21,986. (Specimens.)

Claim.—The brown dye produced by combining diazotized picramic acid with chloro-meta-phenylenediamin ($Cl:NH_2:NH_2=1:2:4:$); the sodium salt of the dye being soluble in water with yellowish-red coloration which on addition of sodium carbonate or caustic-soda lye turns slightly more yellowish; the dye being precipitated from this aqueous solution by means of acetic acid in the form of a dark-red powder; the dye being hardly soluble in alcohol with yellowish-red coloration; easily soluble in concentrated sulfuric acid forming a magenta-red solution which on addition of ice-water turns yellowish, and on continued dilution separates brownish-yellow flakes; the dye producing on chromium-mordanted wool fine brown shades of great intensity and of an extraordinary fastness to milling and to light.

657,065. **REDDISH-BROWN DIE.** WILHELM HERBERG and OTTO HANSMANN, Berlin, Germany, assignors to the Actien-Gesellschaft für Anilin Fabrikation, same place. Filed June 28, 1900. Serial No. 21,987. (Specimens.)

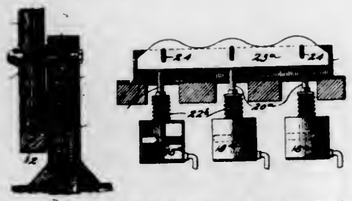
Claim.—The reddish-brown dye produced by combining diazotized picramic acid with chloro-phenylenediamin ($Cl:NH_2:NH_2=1:3:5$); the sodium salt of said dye being soluble in water with reddish-yellow coloration, which on addition of sodium carbonate or caustic-soda lye remains unchanged; the dye being precipitated from the aqueous solution by means of acetic acid in the form of brown flakes; the dye being hardly soluble in alcohol with red coloration; being easily soluble in concentrated sulfuric acid, forming an orange-red solution, which on addition of ice-water turns yellow, on continued dilution separates brown flakes; the dye producing on chromium-mordanted wool reddish-brown shades.

657,066. **PNEUMATIC SAFETY-GATE.** WILBUR F. HORN, Carlisle, Pa. Filed Nov. 11, 1899. Serial No. 736,682. (No model.)

Claim.—1. In a pneumatic safety-gate, a hollow swinging beam formed with a lateral opening communicating with the atmosphere and adapted to permit of the passage of currents of air, and a pneumatic appliance arranged to force air through said opening, as set forth.

2. In a pneumatic safety-gate substantially as described, a hollow gate-beam formed with a lateral opening in each side on opposite sides of its axis, and a pneumatic appliance having a continuous and uninter-

rupted connection with the beam, whereby it is adapted to force air through said openings, as set forth.

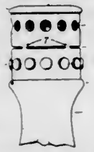


3. In a pneumatic safety-gate, a standard, a hollow trunnion in said standard arranged for connection with a pneumatic pressure appliance and formed with ports, and a hollow beam mounted on said trunnion and formed with openings in its sides to permit the passage of currents of air as set forth.

4. In a pneumatic railway-gate, a gate-beam, air-pumps operatively connected with said gate-beam, springs tending to move the pump-pistons in one direction, and a pressure-bar connected with said pistons to move them in the opposite direction, said pressure-bar being arranged alongside the railroad-rail and formed with a plurality of corrugations adapted for engagement by a car-wheel, as and for the purpose set forth.

5. In a railway safety-gate, the combination with the gate-beam, of a pneumatic pressure appliance consisting of an air-pump, a casing located alongside the railroad-rail, springs in said casing connected with the piston of said pump, and a pressure-bar fitted to move vertically in said casing and arranged to compress said springs, said bar being formed on its upper surface with a plurality of corrugations each of which normally projects above the rail and which are adapted to be engaged in succession by a car-wheel, as set forth.

657,067. BOTTLE-SEAL. ALFRED N. HOUGHTON, Boston, Mass. Filed Oct. 23, 1899. Serial No. 734,477. (No model.)



Claim.—1. The combination with a container adapted to be made partially soft or ductile, of the annular metallic band applied about the neck of the same with its upper section extended above the mouth thereof; and a stopper closing said mouth; said band being adapted to be suitably bent at certain parts and to thereby lock said stopper in place; and said container-neck being intimately secured to said band by being forcibly expanded when in its temporary soft condition into permanent engagement with said band, substantially as described.

2. The combination with the container, of the annular metallic band having the openings therein whereby the material composing the container can be made when plastic to permanently secure the band in place, said band having its upper section extended above the mouth of the container; a stopper closing said mouth; and means for enabling said extended upper section of the band to lock said stopper in place, substantially as described.

3. The combination with a bottle, of a metallic band having openings whereby the material composing the bottle-neck can be made when plastic to permanently secure the band in place, said band having its upper edge extended above the bottle-mouth; a stopper introduced through said upper part of the band and adapted to close the bottle-mouth; and means for enabling said extended band edge to lock said stopper in place, said band being partially severed above said mouth, substantially as described.

4. The combination with a bottle, of an annular metal band firmly secured to the bottle when the latter is plastic, and having a portion thereof projecting above the bottle-mouth and partially severed near such point; a stopper introduced through the upper end of said band and closing the bottle-mouth; and means for locking said stopper in place by an inward bend of said band, substantially as described.

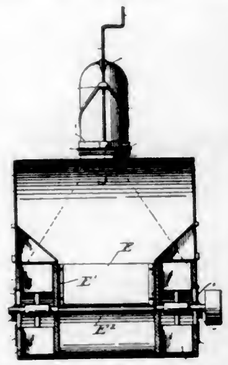
5. In a bottle-seal, the combination with the bottle, of a thin metal annular collar or band having a portion thereof projecting above the mouth of said bottle and permanently secured to the latter, said collar or band being partially severed immediately above said bottle-mouth, a stopper inserted into the bottle-mouth through said collar or band, a cap covering said stopper and means whereby the projecting upper part of said collar or band is adapted to lock said cap in place, substantially as set forth.

6. In a bottle-seal, the combination with the bottle, of a thin metal annular collar or band having a portion thereof projecting above the mouth of said bottle and permanently secured to the latter, said collar or band being partially severed immediately above the bottle-mouth, a stopper inserted into the bottle-mouth through said collar or band, a cap covering said stopper and having the annular groove, and means for enabling the said projecting portion of said collar or band to engage said groove and lock said cap in place, substantially as set forth.

7. In a bottle-seal, the combination with the bottle, of a thin metal annular collar or band having a portion thereof projecting above the mouth of said bottle and permanently secured to the latter, said collar or band being partially severed immediately above the bottle-mouth, a stopper inserted into the bottle-mouth through said collar or band and having the annular groove and the flange or shoulder jutting over the edge of said collar or band, and means for forcing said collar or band into said groove, substantially as set forth.

8. In a bottle-seal, the combination with the bottle, of the sheet-metal annular collar or band projecting above the bottle-mouth and having the series of openings into which the material composing the bottle-neck is forced when plastic, the stopper introduced into said bottle-mouth through the upper portion of said collar or band, the cap fitting upon said stopper, and means for enabling the upper part of said collar or band to lock said cap in place, substantially as set forth.

657,068. PNEUMATIC STRAW-CONVEYER. ANDREW H. OSTREM and OLE O. HATLELI, Fosston, Minn., assignors of one-third to Herman J. Ostrem, same place. Filed Apr. 24, 1900. Serial No. 14,157. (No model.)



Claim.—1. A pneumatic straw-elevator, comprising in combination with the casing, the fans mounted to rotate therein, a swinging board mounted between said fans, a telescoping and rotary elbow and mechanism for rotating same, as set forth.

2. In a pneumatic conveyer, the combination with the casing, the operating-shaft journaled in the end walls of said casing and fans rotating with said shaft, a swinging board E carrying a hinge, which is journaled on said shaft, and a flange at the end of said board, which is designed to be adjustably held in different locations to the inner wall of said casing, as set forth.

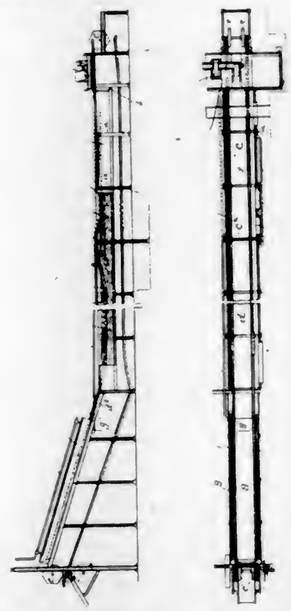
657,069. CASTING METAL. WILLIAM J. PATTERSON, Pittsburg, Pa. Filed July 31, 1899. Serial No. 725,604. (No specimens.)

Claim.—1. The herein-described method of casting metals, consisting in pouring the metal into an endless connected series of traveling molds and submerging the molds and their contents in and moving them through a body of water in a state of ebullition.

2. The herein-described method of casting metals, consisting in pouring the metal into an endless connected series of traveling molds, subjecting the molds to the cooling action of water and then submerging the molds and their contents in and moving them through a body of water in a state of ebullition.

3. The herein-described method of casting metals, which consists in pouring metal into an endless connected series of traveling molds, cooling the metal by partially submerging the molds in water, and then submerging the molds and their contents entirely in a body of water in a state of ebullition.

4. The herein-described method of casting metal, which consists in pouring the metal into an endless connected series of traveling molds, moving the molds containing the metal through a body of water the temperature of which is below the boiling-point, and then moving the molds through a body of boiling water.



5. The herein-described method of casting metal, which consists in pouring the metal into an endless connected series of traveling molds, submerging the molds containing the metal in a body of water at such temperature that it will be caused to boil by the heat of the metal.

6. The herein-described method of casting metal, which consists in pouring the metal into an endless connected series of traveling molds, partially submerging the molds containing the metal in water whereby the metal is partially cooled and the temperature of the water raised, and then completely submerging the molds containing the metal in a body of water in a state of ebullition, and at the same time adding to said body of water a supply from the body of water the temperature of which was raised by the partial submergence of the molds.

7. The herein-described method of casting metal, which consists in pouring the metal into an endless connected series of traveling molds, cooling the metal by first partially submerging the molds containing the same in water, then submerging the molds in a body of water in a state of ebullition, and then spraying the metal when still in the molds, collecting the water used in the spraying operation, conducting it into contact with the partially-submerged molds whereby its temperature is raised to a suitable point for complete submergence of the molds therein.

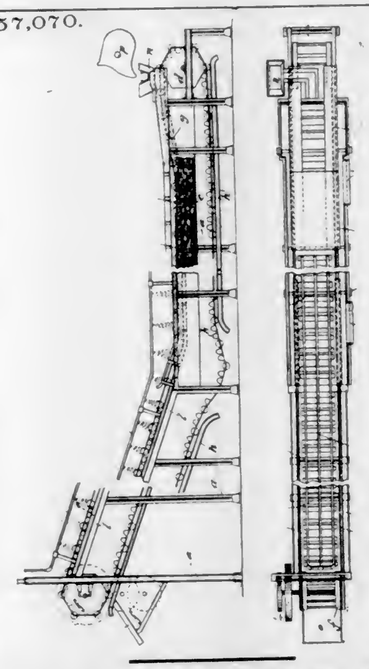
657,070. CASTING METAL. WILLIAM J. PATTERSON, Pittsburg, Pa. Filed July 31, 1899. Serial No. 725,605. (No specimens.)

Claim.—1. The herein-described method of casting metals which consists in pouring the metal into an endless connected series of traveling molds, partially submerging the loaded molds in a body of water and at the same time keeping the contents of the molds out of contact with water until the metal is sufficiently set, and subsequently spraying the metal with water while it is still contained within the molds.

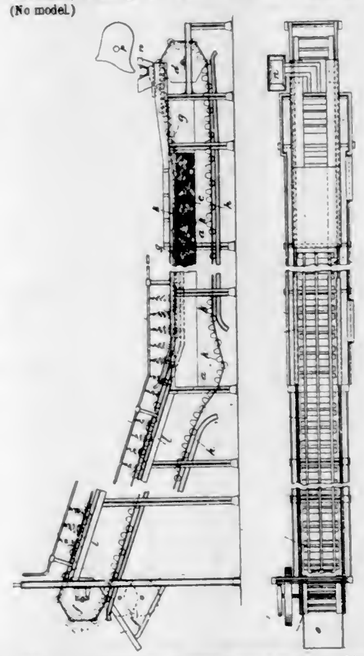
2. The herein-described method of casting metals which consists in pouring the metal into an endless connected series of traveling molds, partially submerging the loaded molds in a body of water and at the same time keeping the contents of the molds out of contact with water until the metal is sufficiently set, and subsequently spraying the metal with water when the molds are so partially submerged.

3. The herein-described method of casting metals which consists in pouring the metal into an endless connected series of traveling molds, partially submerging the loaded molds in a body of water and at the same time keeping the contents of the molds out of contact with water until the metal is sufficiently set, subsequently spraying the metal with water while the molds are partially submerged, drawing the molds from the body of water and continuing the spraying of the metal therein.

657,070.



657,071. APPARATUS FOR CASTING METAL. WILLIAM J. PATTERSON, Pittsburg, Pa. Filed Oct. 16, 1899. Serial No. 733,764. (No model.)



Claim.—1. In pig-metal-casting apparatus, the combination with a suitable water-tank, having a substantially-horizontal track extending therethrough at a substantially-uniform level, of an endless connected series of molds passing into the tank and along the track, means for main-

taining the water in the tank in contact with the molds but at a lower level than the tops of the molds, and spray-pipes extending over the rear portion only of said tank.

2. In pig-metal-casting apparatus, the combination with a suitable frame, of an endless connected series of traveling molds passing around the same, a water-tank, an inclined trough extending upwardly from the rear end of said tank, tracks extending through said tank at a substantially-uniform level and over said inclined trough, along which tracks the molds travel, means for maintaining the water in the tank in contact with the molds but below their upper edges, and spray-pipes extending over such inclined trough, above the line of travel of the molds and over the rear portion only of the tank.

3. In pig-metal-casting apparatus, the combination with a suitable frame, of an endless connected series of traveling molds passing around the same, a water-tank, an inclined trough extending upwardly from the rear end of said tank, tracks extending through said tank and over said inclined trough, along which tracks the molds travel, spray-pipes extending over such inclined trough and above the line of travel of the molds, and a water-overflow at the forward or opposite end of the tank.

4. In pig-metal-casting apparatus, the combination with a suitable frame, of an endless connected series of traveling molds passing around the same, a water-tank, an inclined trough extending up from the rear end of said tank, tracks extending into said tank and above said inclined trough, along which tracks the molds travel, spray-pipes extending above such inclined trough and above the course of the molds thereon, a water-overflow at the forward or opposite end of the tank, and an overflow between the ends of the tank.

5. In pig-metal-casting apparatus, the combination with a suitable frame, of an endless connected series of traveling molds passing around the same, a water-tank, an inclined trough extending up from the rear end of said tank, tracks extending into said tank and above said inclined trough, along which tracks the molds travel, and spray-pipes extending above such inclined trough and above the course of the molds thereon, said spray-pipes also extending forward above the rear portion of said tank.

657,072. APPARATUS FOR CASTING METAL. WILLIAM J. PATTERSON, Pittsburg, Pa. Original application filed July 31, 1899, Serial No. 725,604. Divided and this application filed Dec. 6, 1899. Serial No. 739,386. (No model.)



Claim.—1. In pig-metal-casting apparatus, the combination with a suitable frame, of an endless connected series of traveling molds passing around the same, and two water-compartments arranged in line and provided with tracks for said traveling molds, the tracks passing upwardly over a partition between the compartments.

2. In pig-metal-casting apparatus, the combination with a suitable frame, of an endless connected series of traveling molds passing around the same, and two water-compartments arranged in line and provided with tracks for said traveling molds, the tracks being arranged to carry the molds partially submerged through one compartment and wholly submerged through the other compartment.

3. In pig-metal-casting apparatus, the combination with a suitable frame, of an endless connected series of traveling molds passing around the same, two water-compartments arranged in line and provided with tracks for said traveling molds, and water-supply connections to said compartments for maintaining the bodies of water therein at different heats.

4. In pig-metal-casting apparatus, the combination with a suitable frame, of an endless connected series of traveling molds passing around the same, two water-compartments arranged in line and provided with tracks for said traveling molds, and an inclined trackway in line with and back of said compartments having spray-pipes over the same.

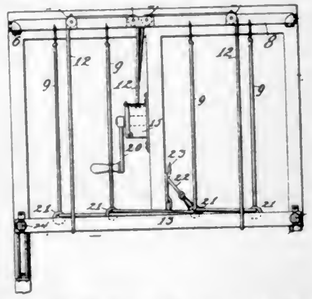
5. In pig-metal-casting apparatus, the combination with a suitable frame, of an endless connected series of traveling molds passing around the same, two water-compartments arranged in line and provided with tracks for said traveling molds, an inclined trackway in line with and back of said compartments having spray-pipes over the same, a trough under the inclined trackway and water connections therefrom to the front compartment.

6. In pig-metal-casting apparatus, the combination with a suitable frame, of an endless connected series of traveling molds passing around the same, two water-compartments arranged in line and provided with tracks for said traveling molds, an inclined trackway in line with and back of said compartments having spray-pipes over the same, a trough under said inclined track having a basin at the base thereof, and a connecting-pipe extending from said basin to the front compartment.

7. In pig-metal-casting apparatus, the combination with a suitable frame, of an endless connected series of traveling molds passing around the same, two water-compartments arranged in line and provided with tracks for said traveling molds, and water connections providing for the flow of the water from the front compartment into the rear compartment.

8. In pig-metal-casting apparatus, the combination with a suitable frame, of an endless connected series of traveling molds passing around the same, and two water-compartments arranged in line and provided with tracks for said traveling molds, the tracks in the front compartment providing for the partial submerging of the molds and the tracks in the rear compartment providing for the complete submerging of the molds.

657,073. AWNING. GUSTAVE SALQUIST, Denver, Colo. Filed Dec. 7, 1899. Serial No. 739,538. (No model.)



Claim.—An awning provided with one or more cords located outside and one or more cords located inside the canvas, the one set of cords being employed to raise the awning-frame and the other set to raise the canvas, and the two sets of cords being capable of independent movement.

REISSUES.

11,849. BRANDING COMPOSITION. HARRISON GIBSON, Ngaire, New Zealand, assignor to the Gibson Patent Brand Company, Limited, New Plymouth, New Zealand. Filed Nov. 6, 1899. Serial No. 736,068. Original No. 614,544, dated Nov. 22, 1898.

Claim.—1. A composition for marking animals, consisting of a depilatory substance properly thinned, and a material (such as tar) to give the said depilatory substance consistency and adhesion, whereby it may be applied by a branding or inprinting tool, substantially as described.

2. The improved branding composition consisting of sulfid of barium and coal-gas tar mixed together in the proportions substantially as and for the purposes set forth herein.

3. The improved branding composition consisting of a depilatory sulfid and coal-gas tar mixed together in the proportions substantially as and for the purposes set forth herein.

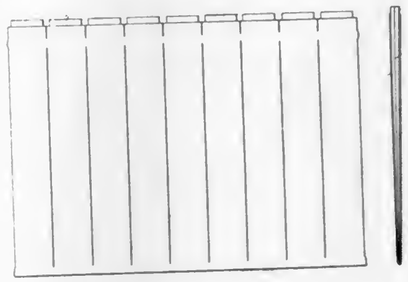
4. The improved branding composition consisting of sulfid of barium, coal-gas tar, American potash, water and spirits of turpentine mixed together in the proportions substantially as and for the purposes set forth herein.

5. The improved branding compound consisting of sulfid of barium and coal-gas tar in equal quantities by weight, American potash and water in quantities equal to each other by measure and spirits of turpentine equal in quantity by measure to the quantities of potash and water taken together, substantially as described.

6. The improved branding composition consisting of a depilatory sulfid, coal-gas tar, American potash, water and spirits of turpentine mixed together, substantially in the proportions specified.

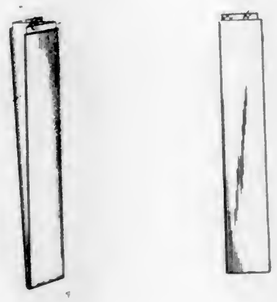
DESIGNS.

33,116. MULTIPLE WRAPPER. HUGH E. SHEDD, Red Wing, Minn., assignor to Racine Paper Goods Co., Racine, Wis. Filed June 16, 1900. Serial No. 20,598. Term of patent 7 years.



Claim.—The design for a multiple wrapper, substantially as shown and described.

33,117. WRAPPER. HUGH E. SHEDD, Red Wing, Minn., assignor to Racine Paper Goods Co., Racine, Wis. Filed June 16, 1900. Serial No. 20,599. Term of patent 7 years.



Claim.—The design for a wrapper, substantially as described.

33,118. SHOE. JAMES H. SPARKS, Chicago, Ill. Filed Aug. 7, 1900. Serial No. 26,200. Term of patent 14 years.





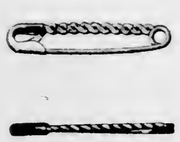
Claim.—The design for a shoe, as herein shown and described.

33,119. SKIRT-SUPPORTING BELT. MARGARET L. SHEPARD, Watertown, N. Y. Filed June 28, 1900. Serial No. 21,941. Term of patent 7 years.



Claim.—The design for a skirt-supporting belt, substantially as shown and described.

33,120. SAFETY-PIN. WILLIAM H. BITTNER, Bloomfield, N. J., assignor to the Consolidated Safety Pin Company, same place. Filed June 27, 1900. Serial No. 21,850. Term of patent 14 years.



Claim.—The design for a safety-pin, substantially as shown and described.

33,121. BACK FOR BRUSHES OR SIMILAR ARTICLES. HENRY A. WEIHMAN, Philadelphia, Pa., assignor to Simons Bro. & Co., same place. Filed Aug. 1, 1900. Serial No. 25,597. Term of patent 3½ years.



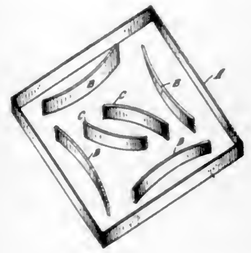
Claim.—The design for backs of brushes and similar articles, as herein shown and described.

33,122. HANDLE FOR SPOONS OR SIMILAR ARTICLES. HENRY A. WEIHMAN, Philadelphia, Pa., assignor to Simons Bro. & Co., same place. Filed June 7, 1900. Serial No. 19,466. Term of patent 14 years.



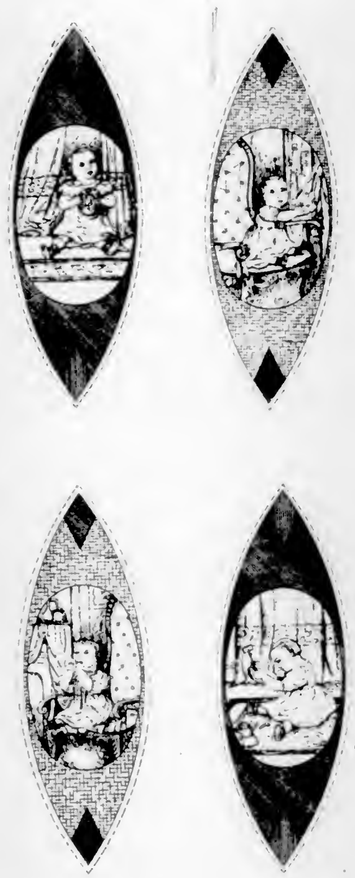
Claim.—The design for a handle for spoons or similar articles as herein shown and described.

33,123. PUZZLE-BOARD. AMBROSE KINNICUTT, Albany, N. Y. Filed July 23, 1900. Serial No. 24,613. Term of patent 7 years.

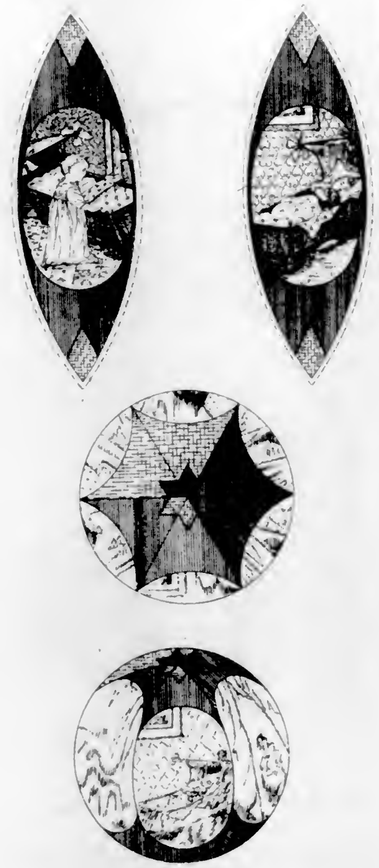


Claim.—The design for a puzzle-board as herein shown and described.

33,124. BABY'S BALL-PATTERN. EDGAR G. NEWELL, Glen Ridge, N. J. Filed May 28, 1900. Serial No. 18,334. Term of patent 7 years.

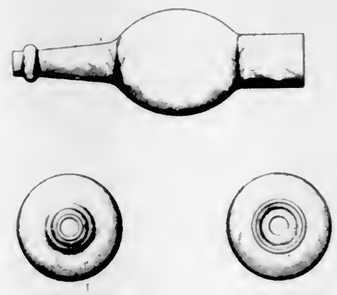


33,124.



Claim.—The design for a baby's ball-pattern substantially as herein shown and described.

33,125. INHALER. HIRAM L. TRUE, McConnellsville, Ohio. Filed July 14, 1900. Serial No. 23,678. Term of patent 14 years.



Claim.—The design for an inhaler, substantially as specified.

33,126. ATOMIZER-CASING. ISAAC Q. GURNEE, Butler, N. J., assignor to the American Hard Rubber Company, of New York. Filed Dec. 7, 1899. Serial No. 739,578. Term of patent 14 years.



Claim.—The design for an atomizer-casing, substantially as shown and described.

33,127. PICTURE-FRAME. WILLIAM H. HOLTZ, New York, N. Y. Filed Aug. 1, 1900. Serial No. 25,596. Term of patent 7 years.



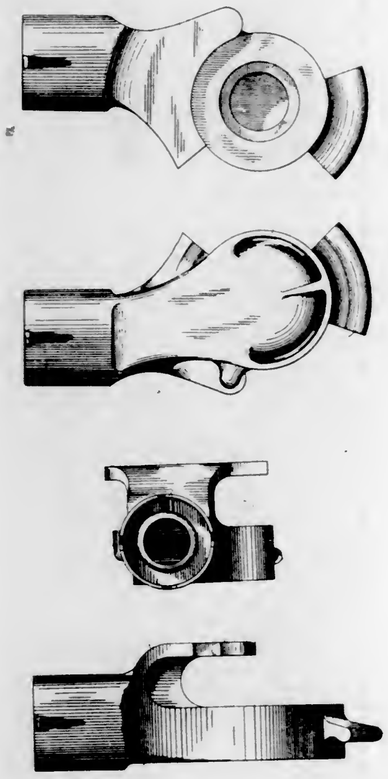
Claim.—The design for a picture-frame, as herein shown and described.

33,128. ORNAMENTAL FRAME. DANIEL PIERSOL, Lancaster, Pa. Filed Dec. 2, 1899. Serial No. 739,045. Term of patent 3½ years.



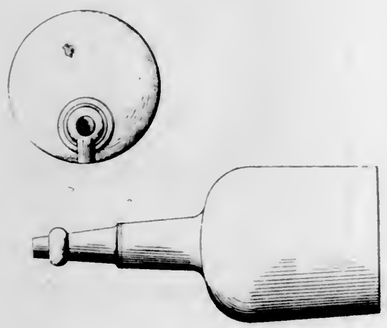
Claim.—The design for an ornamental frame, as herein shown and described.

33,129. MEMBER FOR AN AIR-BRAKE COUPLING. MARK S. LEVERING, Philadelphia, Pa., assignor to the Standard Hose Mender and Pipe Coupler Company, Camden, N. J. Filed July 18, 1900. Serial No. 24,109. Term of patent 14 years.

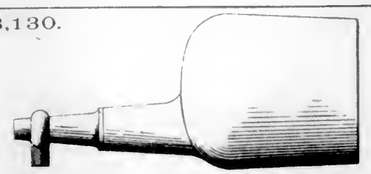


Claim.—The design for a member of an air-brake coupling, substantially as herein shown and described

33,130. LIQUID CONTAINER OR VESSEL. JOHN H. LOUCH, Lithia Springs, Ga. Filed June 28, 1900. Serial No. 22,000. Term of patent 14 years.

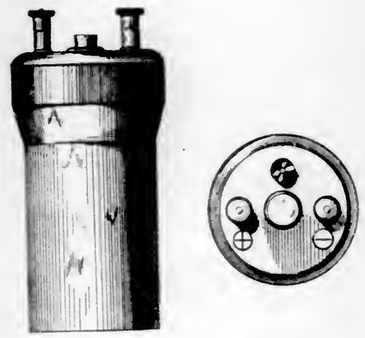


33,130.



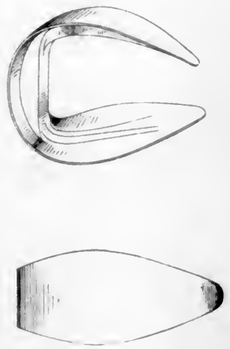
Claim.—The design for a liquid container or vessel substantially as herein shown and described.

33,131. BATTERY-CELL. DAVID H. DARLING, Jr., Rye, N. Y., assignor to the United States Battery Company, New York, N. Y. Filed July 19, 1900. Serial No. 24,230. Term of patent 14 years.



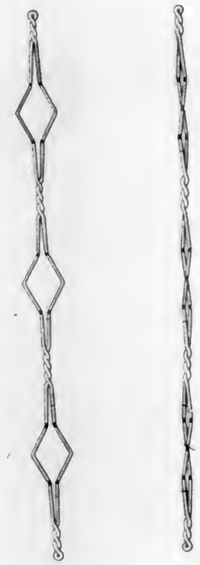
Claim.—The design for a battery-cell, as herein shown and described.

33,132. COBBLER'S LAST. RICHARD S. SOWLEY, Essex, Canada. Filed May 21, 1900. Serial No. 17,361. Term of patent 14 years.



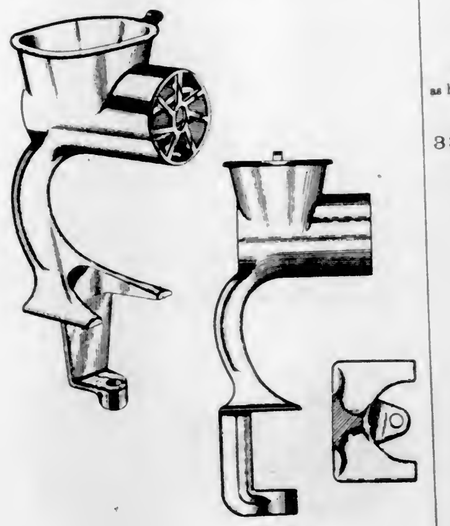
Claim.—The design for a cobbler's last as herein shown and described.

33,133. CLOTHES-LINE SECTION. HENRY M. VINSON, Thornton, Tex. Filed July 5, 1900. Serial No. 22,644. Term of patent 7 years.



Claim.—The design for a clothes-line section as herein shown and described.

33,134. FOOD-CHOPPER FRAME. HUBERT K. WOOD, Hartford, Conn. Filed July 2, 1900. Serial No. 22,382. Term of patent 7 years.



Claim.—The design for a food-chopper frame, substantially as shown and described.

33,135. STANDARD FOR FRUIT-CUTTERS. JOHN BEDFORD FARISS, Greensborough, N. C. Filed Nov. 18, 1899. Serial No. 737,531. Term of patent 14 years.



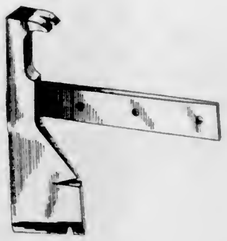
Claim.—The design for a fruit-cutter standard, as herein shown and described.

33,136. MEMBER FOR A COW-TAIL HOLDER. EDGAR STEPHEN GEER, Dixborough, Mich. Filed July 9, 1900. Serial No. 23,056. Term of patent 14 years.



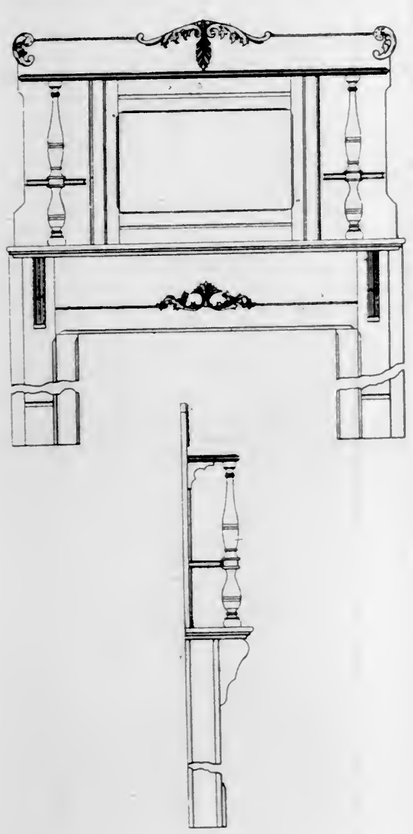
Claim.—The design for a member of a cow-tail holder, substantially as herein shown and described.

33,137. HATCHET-HEAD. JAMES F. DUFFY, Chicago, Ill. Filed July 23, 1900. Serial No. 24,611. Term of patent 7 years.



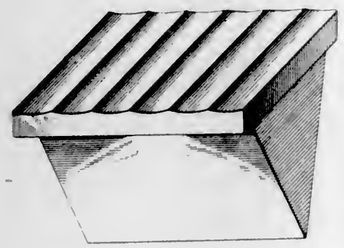
Claim.—The design for a hatchet-head, substantially as shown and described

33,138. MANTEL. THOMAS R. PRICE, Knoxville, Tenn. Filed July 23, 1900. Serial No. 24,615. Term of patent 3½ years.



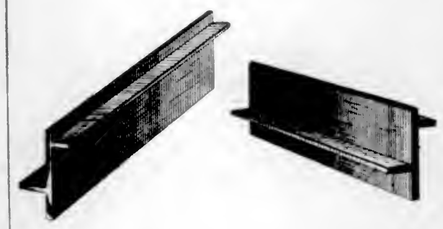
Claim.—The design for a mantel, as herein shown and described.

33,139. VAULT-LIGHT. ROBERT M. COX, Philadelphia, Pa. Filed July 5, 1900. Serial No. 22,839. Term of patent 14 years.



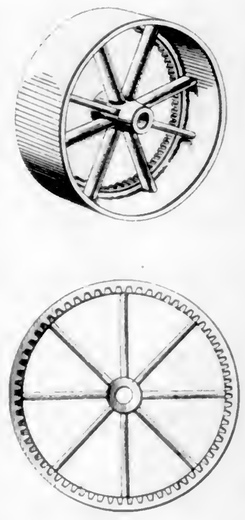
Claim.—The design for a vault-light substantially as described and as shown in the accompanying drawing.

33,140. CURB AND GUTTER BLOCK. STEPHEN B. MORSS, Rahway, N. J. Filed Apr. 24, 1900. Serial No. 14,193. Term of patent 14 years.



Claim.—The design for a curb and gutter block, substantially as shown and described.

33,141. ROAD-ROLLER WHEEL. GEORGE F. CONNER, Port Huron, Mich. Filed July 12, 1900. Serial No. 23,424. Term of patent 14 years.



Claim.—The design for a road-roller wheel, as herein shown and described.

33,142. BELL. FREDERICK A. SCRANTON, East Hampton, Conn. Filed July 27, 1900. Serial No. 25,058. Term of patent 14 years.



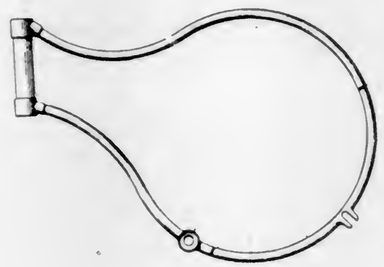
Claim.—The design for a bell as herein shown and described.

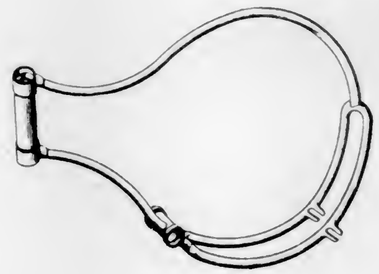
33,143. BICYCLE-PEDAL RUBBER. FRANK A. WILCOX, Erie, Pa. Filed June 20, 1900. Serial No. 21,020. Term of patent 3½ years.



Claim.—The design for a bicycle-pedal rubber, substantially as shown and described.

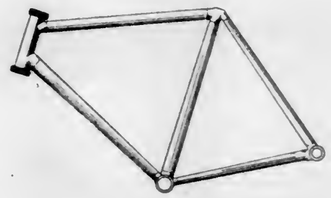
33,144. BICYCLE-FRAME. CHARLES W. H. SMITHERS, Fond du Lac, Wis., assignor of one-half to William F. Georg, same place. Filed Nov. 16, 1899. Serial No. 737,246. Term of patent 14 years.





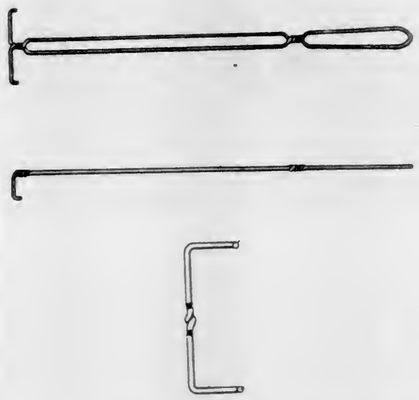
Claim.—The design for a bicycle-frame, substantially as herein shown and described.

33,145. BICYCLE-FRAME. FRANK A. WILMOT, Bridgeport, Conn., assignor to the Wilmot & Hobbs Manufacturing Company, same place. Filed June 11, 1900. Serial No. 19,965. Term of patent 7 years.



Claim.—The design for a bicycle-frame, substantially as herein shown and described.

33,146. BODY MEMBER FOR A PLATE-LIFTER. CLIFFORD COUNCIL, Williamsville, Ill. Filed June 26, 1900. Serial No. 21,688. Term of patent 7 years.



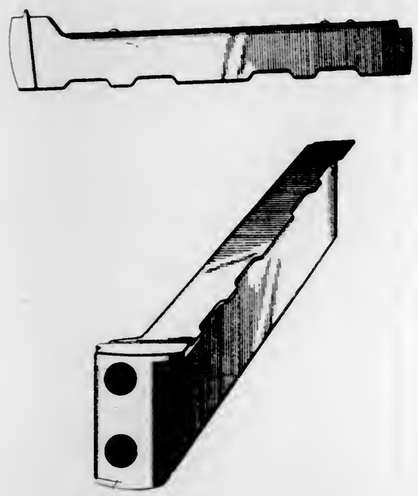
Claim.—The design for a body member of a plate-lifter substantially as shown and described.

33,147. STOVE-LID LIFTER. WILLIAM J. KENNEDY, Pottsville, Pa. Filed July 26, 1900. Serial No. 24,946. Term of patent 7 years.



Claim.—The design for a stove-lid lifter as herein shown and described.

33,148. WATER-FRONT FOR STOVES. JAPEW S. VAN BUREN, Albany, N. Y. Filed July 27, 1900. Serial No. 25,065. Term of patent 14 years.



Claim.—The design for a water-front for stoves, as herein shown and described.

33,149. HEATING-STOVE. HENRY P. COPE, Detroit, Mich., assignor to The Gem City Stove Company, Dayton, Ohio. Filed July 30, 1900. Serial No. 25,368. Term of patent 7 years.



Claim.—The design for a heating-stove substantially as herein shown and described.

THE NORRIS PETERS CO. PHOTO-LITH WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

VALIQUET *v.* JOHNSON.

Decided May 5, 1900.

1. INTERFERENCE IN FACT—DIFFERENT INVENTIONS.

Where the record of the cases, taken in connection with the prior art, shows that the parties started from different positions in the art, were working on different lines, and the features of novelty in the devices produced are different, there can be no interference in fact between the two inventions.

2. SAME—SAME.

Where J's whole idea was to so support his diaphragm that it could vibrate substantially equally throughout its area, and this he accomplished by supporting the diaphragm from the middle and leaving it practically free at the periphery from a gasket on either side, and where V's invention contemplates only a structure wherein the periphery of the diaphragm is held against a gasket by the stylus-bar, and consequently the diaphragm does not vibrate equally throughout its entire area, *Held* that there is no interference in fact between the inventions.

3. SAME—SAME.

Where J's construction differs from that of Patent No. 450,740 only in supporting the diaphragm from its center on the stylus-bar, and he expressly disclaims any attempt to cover the construction of Patent No. 394,105, whereas V's construction is built squarely upon and differs from Patent No. 394,105 merely in adding a loose gasket, *Held* that there is no interference in fact.

4. PATENTABILITY OF THE ISSUE—QUESTION CONSIDERED.

The question as to whether either or both parties are entitled to claims as broad as the issue would ordinarily be left to the Examiner, but where the conclusions on the question of interference in fact regularly appealed necessarily involve the question of the right of either applicant to make the claims, *Held* that the question will be considered.

5. ISSUE UNPATENTABLE—EXAMINER DIRECTED TO REJECT CLAIMS.

Where the issue is in effect broadly for a loose gasket and a patented structure, when operated as the patentee clearly intended that it should be, produces a loose gasket, *Held* that the issue is not patentable and the case remanded to the Examiner, with instructions to reject the claims of the parties involved. (*Bender v. Hoffman*, 85 O. G., 1737.)

APPEAL on motion.

SOUND-REPRODUCER.

Application of Louis P. Valiquet, filed December 19, 1898, No. 699,636. Application of Eldridge R. Johnson filed June 1, 1897, No. 639,028.

Mr. A. Parker-Smith and *Messrs. Watson & Watson* for Valiquet.

Mr. Horace Pettit for Johnson.

CHAMBERLIN, *Assistant Commissioner:*

This is an appeal from the decision of the Primary Examiner refusing to dissolve the interference. Three grounds of appeal are alleged, the first one being that there is no interference in fact.

The issues in interference are as follows:

1. In a sound recorder, or reproducer, the combination of a sound-box, the diaphragm therein, a gasket-retainer, and the gasket of non-sonorous material between the retainer and the diaphragm, said gasket being of a thickness less than the distance between the inner face of the retainer and the adjacent face of the diaphragm.

2. In a sound-reproducer the combination of a sound-box, the diaphragm therein, the retaining-ring therefor overhanging the edges of the diaphragm but so located as to leave a free space between it and said diaphragm, and the loose gasket of non-sonorous material between the two, said gasket being of a thickness less than the space left between the diaphragm and retaining-ring whereby it is free from compression.

The first question to be decided is, are the two applications for the same invention?

Johnson filed his application June 1, 1897. It shows and describes a graphophone-diaphragm supported from its center by the stylus-bar, the latter being carried by a spring h^2, extending from the supporting part, which in this case is the sound-box itself. On each side of the periphery of the diaphragm is a gasket, and the original specification states:

To obtain the best results and to reproduce pure and musical notes loud, distinct and clear, the diaphragm should move as a whole in both recording and reproducing, and not be rigidly confined at its peripheries in such a manner as to make it simply a round spring in which the vibratory movement is greatest at the stylus-contact or the center. This purely center vibration is a great disadvantage in both recording and reproducing, and as the recording is caused by the sound-waves action on the surface of diaphragm it is clear that if the whole surface responds to the action of the waves it will give a much more powerful movement to the stylus-bar, thereby assisting to make a more perfect record, as it will to a much greater extent overcome the resistance to the stylus caused by friction or resistance in cutting or marking the record of the sound-waves.

Claim 3 of Johnson's original application is as follows:

3. In a sound recording and reproducing machine, a diaphragm loosely mounted or held at its periphery in such manner that the impulses in the recording or reproduction of sound-waves will cause an even vibration of such diaphragm at all points throughout its area.

It will thus be seen that Johnson's invention consisted in providing a diaphragm which should be supported from its center only and that he had no thought or intention of having the periphery of the diaphragm held positively against the gasket. His original drawings contained a figure on a large scale (Fig. 5) which was an attempt to show this, but did not show it very clearly, and the Examiner subsequently suggested (and I believe properly) that the figure be amended to its present form, which shows the periphery of the diaphragm free and clear from the gasket on both sides.

In addition to this the original drawings showed the diaphragm of such size and in such position relatively to the casing or sound-box that the edges

were a distance from the casing, so that the diaphragm was unsupported except by the stylus-bar and was free to vibrate and to shift along a line parallel with its face to a slight extent. The original specification says:

A further difficulty found in the ordinary machines is that no allowance is made for the lateral shifting movement of the diaphragm. Where no such movement is provided for, in cases where the stylus-bar is attached at one end to the center of the diaphragm a slight jar laterally upon the stylus will tend to break the connection between the stylus and the diaphragm; provision for the lateral movements tends to obviate this. Further the diaphragm at the periphery should be practically free to obtain the best results and secure from the full surface of the diaphragm the full force and effect of the sound-waves.

Nothing in the prosecution of the case warrants the belief that Johnson had any idea of supporting his diaphragm in any other manner than that indicated above—viz., with the stylus-bar attached to the center and free at its periphery both adjacent to the two faces and to the edge, so that the vibration throughout the area of the diaphragm would be substantially even.

The function of the gaskets on each side of the periphery was obviously to form stops or cushions to prevent an abnormal movement of the diaphragm, and in order that the range of movement might be regulated Johnson made the gasket-retaining plate adjustable, so that the gasket between the diaphragm and the retaining-plate could be moved toward and from the diaphragm.

In the original action on the case the Examiner cited the patent to Edison, No. 450,740, dated April 21, 1891, in which the diaphragm is clamped at its periphery between two gaskets and is held thereby, the gasket-retaining plate being adjustable, so that the degree of clamping pressure could be regulated. In overcoming this reference Johnson stated that in his case the diaphragm was supported from the middle (by the stylus) and was not clamped at the periphery. If, therefore, there is any invention in the Johnson structure over the Edison patent, it lies in the supporting of the diaphragm from the middle rather than from the periphery.

In the further prosecution of the application the patent to Edison, No. 394,105, dated December 4, 1888, was cited, and in his argument as to this reference Johnson calls attention to the fact that the patent, page 1, line 52, says:

The other end of the lever, p^3, extends beyond the indenting-point, p^4, and receives the inward pressure from a spring, q^3, which is secured to the rim of the plate, N, opposite to the block, q, and presses the lever, p^3, and the indenting-point inwardly, so as to give the center of the diaphragm a slight inward bend, producing an initial strain upon the diaphragm.

Johnson then goes on to say:

This in connection with the whole general description of this Edison invention shows that the device is materially different from that claimed in our present amended claims, and from the spirit of our invention.

In the present applicant's case the diaphragm is practically free to obtain the best results and to secure from the full surface of the diaphragm the full force and effect of the sound-waves. When a diaphragm is thus loose and free it is necessary in order to return it to its normal position in its casing, when not in action, that a spring be employed as a substitute for the lost resiliency present in a confined diaphragm which operates to return the diaphragm to its normal position when not in action. In the Edison No. 394,105, the diaphragm although stated to be free at its edges is not free in the sense in which the present applicant's is, as he (Edison) occasions by the construction of his spring a slight inward strain upon the center of the diaphragm, which, it is true, holds it in position, but at the same time does that which our invention is designed especially to avoid—*i. e.*, it places the diaphragm under a tension and tends to prevent the accomplishment of the effect produced by a loosely-mounted diaphragm free to move throughout its entire area under the impulse of the sound-waves.

From the above statements it will be seen that Johnson's whole idea was to so support his diaphragm that it could vibrate substantially equally throughout its area, and this he accomplished by supporting the diaphragm from the middle and leaving it practically free at the periphery from a gasket on either side or with the edge touching the casing. If the limitation as to the manner of supporting his diaphragm is omitted from his claims, they cover nothing more than the structure of Edison's Patent No. 450,740 with the parts loosened.

In other words, Johnson's claims must be predicated upon a structure in which the diaphragm is supported from the middle and is free to vibrate equally throughout its area.

Valiquet filed his application December 19, 1898, and he shows clearly and describes fully a structure in which the diaphragm is held by the stylus-bar against a gasket lying between the diaphragm and the sound-box, the stylus-bar being mounted on a spring and exerting a constant tension against the middle of the diaphragm to hold it against the gasket. Around the periphery of the diaphragm and on the opposite side thereof from the gasket mentioned is another gasket considerably thinner than the space between the diaphragm and the retaining-plate. This gasket is shown in the drawing as lying against the diaphragm, and the specification states that—

the gasket 13 should not be clamped between the diaphragm and the retaining-ring, but should lie there loosely.

It will thus be seen that Valiquet's construction is substantially the same, so far as the mounting and operation of the diaphragm is concerned, as the structure shown in Edison, No. 394,105, with the exception that Valiquet has added to the Edison construction the loose gasket.

In other words, Valiquet admits that he has nothing over the Edison Patent No. 394,105 except the loose gasket; that his invention contemplates only a structure wherein the periphery of the diaphragm is held against a gasket by the stylus-bar, and consequently the diaphragm does not vibrate equally throughout its entire area, and that his improvement is built squarely on the said Edison patent. Johnson, on the other hand, was building on entirely different lines, and, as above explained, he expressly disclaimed any attempt to cover the structure of the Edison patent. The conclusion is obvious, therefore, that the two men were working in different lines and started from different positions in the art, Johnson with the structure of the Edison Patent No. 450,740 for a basis and Valiquet with the structure of the Edison Patent No. 394,105 for a basis. This being true, there can of course be no interference in fact between the two inventions.

This conclusion necessarily brings up for consideration the question as to whether either or both parties are entitled to claims as broad as the issues. This question would ordinarily be left to the Examiner; but the case has properly come to me on an appeal as to the question of interference in fact,

and as my conclusions on that question necessarily involve the question of the right of either applicant to make the claims I will consider the latter.

An examination of the first issue shows that it is in effect broadly, although not in so many words, for a loose gasket. But bearing in mind that the structure of Edison, No. 450,740, is for a phonograph-recorder in which the position of the recorder is such that the weight of the parts is carried by the point of the stylus-bar and that the moment the ring marked D is loosened to the slightest extent the gasket between the diaphragm and the ring A becomes a loose gasket, or, to quote from the issue, a—

gasket * * * of a thickness less than the distance between the inner face of the diaphragm and the adjacent face of the retainer—

it will be at once seen that without some limitation as to the manner of supporting the diaphragm a claim based on the issue would be met by Edison, No. 450,740. This opinion is confirmed when it is considered that if either of the contestants in this case was successful and took a patent with a claim containing the issue that claim would dominate the Edison structure provided the user of the Edison structure did what the patent clearly contemplated—viz., unscrew the ring D and thus loosen the gasket. In *National Meter Co.* v. *Thomson Meter Co.* (70 O. G., 925) the court says:

He would be entitled to all the necessary and legitimate results obtained by his invention, including even such as were unexpected.

This Office cannot now properly issue a patent that would prevent Edison from using his patented structure.

What has been said as to the first issue applies equally to the second issue.

It will thus be seen that claims equal in extent to the issues herein are not allowable in either case.

This case is remanded to the Primary Examiner, with instructions to dissolve the interference and reject the claims of both parties involved herein. This is done on the authority of *Bender* v. *Hoffmann* (85 O. G., 1737) and the cases therein cited, and both parties herein can, if they choose, follow the remedy therein suggested.

EX PARTE OSBORNE.

Decided August 3, 1900.

1. REJECTION OF CLAIMS UPON ALLOWED APPLICATION—APPEAL.
   It is proper under certain circumstances to reject the claims in an application on an allowed application filed by the same party, and in case of such rejection the applicant's remedy is by an appeal to the Examiners-in-Chief and not by petition.
2. CLAIMS—REFERENCE-LETTERS.
   A claim should itself clearly set forth the structure which it is intended to cover, and not merely by the use of reference-letters refer to the drawing and specification for a disclosure of it. A claim which relies entirely upon reference-letters to indicate structure is objectionable.

ON petition.

EDUCATIONAL SYSTEM AND MAP.

Application of Albert E. Osborne filed April 2, 1900, No. 11,098.

Messrs. A. C. Fraser & Co. for the applicant.

CHAMBERLIN, *Acting Commissioner:*

This is a petition from the action of the Primary Examiner rejecting certain claims upon a prior allowed application filed by the same applicant and from his action in objecting to claims 15, 16, 17, 22, 23, 24, 26, and 27 as vague and indefinite.

It is well settled that it is proper under certain circumstances to reject the claims in an application on an allowed application filed by the same party. (*Ex parte Feister*, 53 O. G., 1089; 61 O. G., 152; *ex parte Cahill*, 63 O. G., 1815.) Such allowed application is not a reference in the same sense and to the same extent as a prior patent to another, where mere disclosure constitutes an anticipation and a bar; but it is a bar to the allowance of the subsequent application where the two applications cover the same invention or there is no proper line of division between them. Where the Examiner holds that there is no proper line of division and rejects a claim upon the allowed case, the question whether his holding is correct relates to the merits and is appealable to the Examiners-in-Chief. It will not be reviewed on petition. (*Ex parte Wellman*, 86 O. G., 1986.)

The Examiner holds that the claims to which objection has been made are indefinite, since they set forth no definite structure, but rely on reference-letters to determine their scope. The reference-letters included in the claims should not be considered as limiting them to the particular structure which those letters are used on the drawing to represent, since the structure which the claim is intended to cover should be clearly set forth in the claim itself. The law requires that a party shall "particularly point out" the part or improvement which he claims as his invention or discovery, and this requirement is not complied with by merely using in the claims signs or symbols, such as reference-letters, which have no meaning within themselves. A claim which relies entirely upon reference-letters to indicate structure is objectionable and could not be allowed any more than a claim for "the device shown and described;" but the use of reference-letters in a claim which otherwise sets forth a definite structure is not objectionable. They do not limit the claim and may make its meaning more clear when it is read in connection with the disclosure.

Considering the claims in the present case to which objection has been made, claim 22 is found to cover—

the improved map having thereon provisions E.

The "provisions" included in this claim are found upon reference to the specification to mean signs or symbols of some kind. The claim therefore covers, broadly, a map having signs or symbols of any kind on it, since the letter "E" does not limit it to any particular signs or symbols. The claim therefore although broad sets forth a definite structure even when the reference-letter included is disregarded. The claim would be somewhat clearer if the word "signs" or the word "symbols" were substituted for the word "provisions," but in its present form it is sufficiently definite.

Upon an inspection of the claims it appears that, with the exception of the reference-letters, claims 15, 16, and 17 are identical, that claims 22, 23, and 24 are identical, and that claims 26 and 27 are identical. The Examiner has not objected to these claims as covering the same thing, but attention is called to the fact that the claims should be distinguished from each other by statements of structure and not merely by the use of reference-letters.

The petition in so far as it relates to the rejection of the claims is dismissed and in so far as it relates to the objection to the form of the claims is granted.

EX PARTE WADSWORTH.

Decided August 6, 1900.

1. UNNECESSARY DESCRIPTION—CANCELLATION.
   It is the well-settled practice of the Office to require unnecessary description and illustration to be canceled.
2. SAME—HISTORY OF PRIOR ART.
   A party may in his specification distinguish between what is old and what is new, but there is no warrant for permitting a party to recite the history of the art as he understands it, together with statements as to the disadvantages of the several old forms and the advantages of his invention thereover, or to illustrate in his drawings the old devices which he regards as constituting the prior art.

ON petition.

ILLUMINATING STRUCTURES.

Application of Frank L. O. Wadsworth filed October 28, 1898, No. 694,830.

Messrs. Foster & Freeman for the applicant.

CHAMBERLIN, *Acting Commissioner:*

This is a petition from the action of the Primary Examiner requiring the cancellation of certain figures of the drawings and the description relating to them in the specification.

The applicant's invention relates to what is known as "prism-glass." In addition to illustrating the construction invented by him the applicant's drawings contain five figures illustrating forms of prism-glass which he states are old in the art, and much of his specification consists in a description of these old forms and statements as to wherein his invention differs therefrom and what advantages it possesses thereover. Such description and illustration might very properly be made a part of an argument in the case on the question of the patentability of the invention, but it has no proper place in the specification and drawings which are to become parts of the patent. Under Rule 36 a party may and should in his specification distinguish between what is old and what is new in the device which he discloses; but there is no warrant in that rule for permitting a party to recite the history of the art as he understands it, together with statements as to the disadvantages of the several old forms and the advantages of his invention thereover, or to illustrate in his drawings the old devices which he regards as constituting the prior art. Such specific and detailed description is not necessary in order to disclose the invention—

> in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound and use the same—

as provided in section 4888 of the Revised Statutes. This section of the statute provides that the description shall be concise, and Rule 36 provides that—

> the description and the drawings, as well as the claims, should be confined to the specific improvement and such parts as necessarily coöperate with it.

The old forms of devices shown and described by the applicant clearly do not coöperate in any way with his invention, but are disclosed merely for the purpose of contrast.

The petitioner contends that the illustration and description assist in distinguishing his invention from what is old and in disclosing the scope of his invention. Even if this is true, however, it does not warrant their retention in the case, for the invention can be made perfectly clear to those skilled in the art without the inclusion of so much unnecessary matter. Those skilled in the art are supposed to have some knowledge of the old devices, and therefore detailed description and illustration of them are not necessary. If a party is to be permitted to devote five figures of his drawings and three pages of his specification to a disclosure of the prior art as he understands it, it would seem that there is nothing to prevent his inserting any amount of irrelevant matter and that it would be impossible to require applicants to confine their specifications and drawings within reasonable limits.

It is the well-settled practice of the Office to require unnecessary description and illustration to be canceled. (See, in addition to the decision cited by the Examiner, *ex parte Simonds*, 44 O. G., 449; C. D., 1888, 89; *ex parte Johnston*, 60 O. G., 295; C. D., 1892, 150; *ex parte Griffin*, 85 O. G., 454; C. D., 1898, 224.)

The petition is denied.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

Vol. 92.—No. 10. TUESDAY, SEPTEMBER 4, 1900. Price—$5 per year.

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., August 28, 1900.

SIR: The Secretary of the Interior has ordered that Jeremiah Gatton, of Chicago Junction, Ohio, be not recognized after this date as attorney or agent in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,

EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

Registration of American and Spanish Patents in Cuba.

The Military Governor of Cuba, upon the recommendation of the Secretary of Agriculture, Commerce, and Industries, directs the publication of the following order:

I. Notice is hereby given to all persons in legal possession of Letters Patent registered in Madrid, Spain, and extended to the Island of Cuba to exhibit the duplicates of models, plans, and specifications of their patents or an authenticated copy of the same, together with a certificate that they are in force in Spain, in accordance with section 5 of the Royal Decree of May 14, 1880, within six months from the date of this order, in order to protect them from pending infringements.

II. American patents already forwarded for registration and those that may hereafter be forwarded will at once be entered in the special register in the office of the Secretary of Agriculture, Commerce, and Industries conditionally, reserving the decision in regard to the definite inscription or absolute rejection of such as are determined to be infringements in accordance with the proofs obtained within the period of six months, as provided in paragraph I of this order, upon the expiration of which period the inscription will be made in full, leaving to the parties concerned after that date the right of settling their differences before courts of justice.

Amendments to Allowed Applications.

Hereafter all amendments proposed to allowed applications and all petitions and requests relating thereto shall be filed with the docket clerk, Mr. J. M. Emory, and transmitted by him to the Primary Examiner for report. If the Examiner shall report favorably to the admission of such amendment, the matter will be laid before the Commissioner for immediate determination. If the Examiner shall report unfavorably, the case will be docketed and will be heard and decided by the Commissioner in regular course, unless good reasons shall appear for immediate action. (Order 629 amended October 15, 1898.)

CERTIFICATES OF REGISTRATION ISSUED SEPTEMBER 4, 1900.

Labels.

7,766.—Title: "SUNNYSIDE SOAP." (For Soap.) *The National Soap Works*, Titusville, Pa. Application filed August 10, 1900.

7,767.—Title: "SANG-A-LEE." (For a Flavor.) *Confectioners and Bakers Supply Company*, Chicago, Ill. Application filed July 28, 1900.

7,768.—Title: "NORTH STAR ROLLED OATS." (For Rolled Oats.) *The Northwestern Cereal Company*, Minneapolis, Minn. Application filed August 10, 1900.

7,769.—Title: "MINNESOTA ROLLED WHITE OATS." (For Rolled White Oats.) *The Northwestern Cereal Company*, Minneapolis, Minn. Application filed August 10, 1900.

7,770.—Title: "ACME ROLLED WHITE OATS." (For Rolled White Oats.) *The Pillsbury-Washburn Flour Mills Company, Limited*, Minneapolis, Minn. Application filed August 10, 1900.

7,771.—Title: "GOLD SEAL." (For Canned Tomatoes.) *Robinson & Crawford*, Philadelphia, Pa. Application filed July 17, 1900.

7,772.—Title: "PEARCE'S OLD STYLE WATER GROUND MEAL." (For Cornmeal.) *City Mills Company*, Columbus, Ga. Application filed August 13, 1900.

7,773.—Title: "MILLER'S BUFFET." (For Bottled Beer.) *The Fred Miller Brewing Company*, Milwaukee, Wis. Application filed August 13, 1900.

7,774.—Title: "BEST CIGARETTE PASTELESS TUBES." (For Cigarette-Tubes.) *Russian American Tube Co.*, New York, N. Y. Application filed August 2, 1900.

Print.

258.—Title: "COLONIAL." (For Stomach-Bitters.) *The McCart-Christy Company*, Cleveland, Ohio. Application filed August 11, 1900.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business August 28, 1900.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. of applications awaiting action.
	In arrears—Under one month.			
217	XXXIII. *Designs, †Trade-Marks, ‡Labels and Prints, Optics.	.....	Aug. 17	15
250	VIII. Furniture, Beds, Store Furniture, etc.	Aug. 22	Aug. 21	88
106	II. Farm Stock, Products, etc.	Aug. 20	Aug. 20	57
111	XXXII. Bottles and Jars, Carbonating Beverages, Refrigeration, Shipping and Storing Vessels, etc.	Aug. 10	Aug. 14	193
253	X. Carriages and Wagons	Aug. 6	Aug. 17	80
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	Aug. 4	Aug. 11	112
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30	IV. Civil Engineering, Fire-Proof Buildings, Bridges, Water Distribution, etc.	Aug. 1	Aug. 16	152
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215	XVII. Printing, Type-Writing Machines, and Linotyping.	July 19	Aug. 6	146
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35	XXVIII. Pneumatics, Air and Gas Engines, etc.	July 9	July 9	201
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Total number of applications awaiting action.....5,613

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Under one month.			
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ISSUE OF SEPTEMBER 4, 1900.

Patents	430—No. 657,074 to No. 657,503, inclusive.	
Designs	30—No. 33,150 to No. 33,179, inclusive.	
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Labels	9—No. 7,766 to No. 7,774, inclusive.	
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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	.....	Nevada	1	.....
Arizona Territory	.....	.....	New Hampshire	16	.....
Arkansas	1	.....	New Jersey	.....	.....
California	13	.....	New Mexico Territ'y	77	1
Colorado	3	.....	New York	1	.....
Connecticut	9	.....	North Carolina	.....	.....
Delaware	2	.....	North Dakota	31	1
District of Columbia	2	.....	Ohio	.....	.....
Florida	.....	.....	Oklahoma Territ'y	2	.....
Georgia	4	1	Oregon	41	2
Hawaii	.....	.....	Pennsylvania	9	.....
Idaho	1	.....	Rhode Island	2	.....
Illinois	43	1	South Carolina	.....	.....
Indian Territory	.....	.....	South Dakota	4	.....
Indiana	14	.....	Tennessee	5	.....
Iowa	18	.....	Texas	2	.....
Kansas	7	.....	Utah	1	.....
Kentucky	3	.....	Vermont	1	.....
Louisiana	2	.....	Virginia	5	.....
Maine	2	.....	Washington	1	.....
Maryland	7	.....	West Virginia	14	1
Massachusetts	39	.....	Wisconsin	1	.....
Michigan	9	.....	Wyoming	.....	.....
Minnesota	7	3	U. S. Army	.....	.....
Mississippi	1	.....	U. S. Navy	.....	.....
Missouri	7	.....	Total to citizens of the United States	413	10
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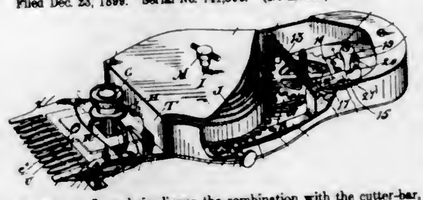
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Italy	.....	.....
Australia	.....	.....	Japan	.....	.....
Austria-Hungary	2	.....	Java	.....	.....
Barbadoes	.....	.....	Mexico	.....	.....
Belgium	.....	.....	Netherlands	.....	.....
Bermuda	.....	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	.....	.....
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Chile	1	.....	Queensland	1	.....
China	.....	.....	Russia	3	.....
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Cuba	1	.....	South African Republic	.....	.....
Denmark	.....	.....	South Australia	.....	.....
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England	.....	.....	Sweden	.....	.....
Finland	2	.....	Switzerland	.....	.....
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Germany	.....	.....	Victoria	1	.....
Guatemala	.....	.....	Total to citizens of foreign countries	47	.....
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India	.....	.....			
Ireland	.....	.....			

PATENTS

GRANTED SEPTEMBER 4, 1900.

657,074. HAIR-CLIPPER. DAVID J. ARCHER, Toronto, Canada. Filed Dec. 23, 1899. Serial No. 741,390. (No model.)



Claim.—1. In a hair-clipper the combination with the cutter-bar, knife, means for supporting the said parts and the casing, of a spring-driven wheel, a pivoted reciprocating arm connected to the said bar for operating the same, gearing interposed between the said wheel and the said arm for reciprocating the latter, a retracting-spring acting on the said arm, a device for locking the said arm against reciprocation and means for freeing the said pivoted arm from engagement with the said locking device and allowing it to operate the cutter-bar, substantially as set forth.

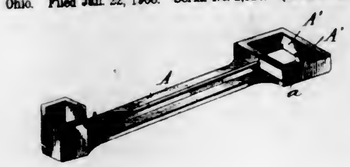
2. In a hair-clipper the combination with the cutter-bar, knife, means for supporting the said parts and the casing, of a spring-driven wheel, a pivoted reciprocating arm connected to the said bar for operating the same, gearing interposed between the said wheel and the said arm for reciprocating the latter, a retracting-spring acting on the said arm, a device fixed to the said casing for locking the said arm against reciprocation and means extending through the said casing for freeing the said pivoted arm from engagement with the said locking device and allowing it to operate the cutter-bar, substantially as set forth.

3. In a hair-clipper the combination with the cutter-bar, knife, means for supporting the said parts and the casing, of a spring-driven wheel, a pivoted reciprocating arm connected to the said bar for operating the same, and pivoted on the other side of the said wheel, gearing interposed between the said wheel and the said arm for reciprocating the latter, a retracting-spring acting on the said arm, a device fixed to the said casing for locking the said arm against reciprocation and a compression-lever extending through the said casing for freeing the said pivoted arm from engagement with the said locking device and allowing it to operate the cutter-bar, substantially as set forth.

4. In a hair-clipper the combination with the cutter-bar, knife, supporting parts thereof, and the casing, of the drive-spring, stud for same, drive-wheel and its connected parts, the driven wheel, stud for same, pinion, stud for same, cam, reciprocating arm, slots in same, spring-controlled pivoted lever, slot in end of said lever, compressing-lever for said pivoted lever, pivoted dog 15, depending pin in same operating in slot in said pivoted lever, shoulder on said dog, and the arm 19 supported as described, all arranged as set forth and for the purpose specified.

5. The combination with the cutter-bar, knife provided with slot e^4, and means for supporting said cutter-bar and knife, of the reciprocating arm R provided with the depending piece U which enters the said slot and suitable means for operating said reciprocating arm, as set forth and for the purpose specified.

657,075. NUT-LOCK WRENCH. WILLIAM E. BALL, Zanesville, Ohio. Filed Jan. 22, 1900. Serial No. 2,326. (No model.)



Claim.—As an improved article of manufacture, a nut-lock wrench having a square-apertured end, an integral lug A′ extending the width of the wall of said aperture, the inner face of the lug being flush with one of the inner walls of said aperture and the outer face of the lug being convexed and merging at its lower end into and flush with the outer face of the wrench, as shown and for the purpose set forth.

657,076. CARRIER FOR PNEUMATIC TUBES. BIRNEY C. BATCHELLER, Philadelphia, Pa. Filed June 16, 1898. Serial No. 683,549. (No model.)



Claim.—1. A carrier for pneumatic tubes having at its front end a spring-actuated latching device in combination with a contact-plate adapted to be engaged and locked on the front end of the carrier by said latching device.

2. A carrier for pneumatic tubes having at its front end a spring-actuated latching device in combination with a contact-plate adapted to be engaged and locked on the front end of the carrier by said latching device, and a keyhole leading to the latching device whereby a key can be inserted to unlock it.

3. A carrier for pneumatic tubes having at its front end an opening for the insertion of the shank of a contact-plate and a spring-actuated latch adapted to engage said shank in combination with a contact-plate having a shank adapted to enter said opening and engage said latch, and a keyhole formed through it whereby a key can be inserted to disengage the latch.

4. A carrier for pneumatic tubes having at its front end a socket, as $O O^3$, having an elongated opening O^3, circular space O^4 and spring-chamber O′, in combination with a latch P′ having a head P^4 lying in space O^4 and slot P^4 formed in said head to lie transversely to the opening O^3, a spring arranged to press said latch outward, a contact-plate and a shank

S having a cross-piece S^3 at its end for securing the plate in the socket as described.

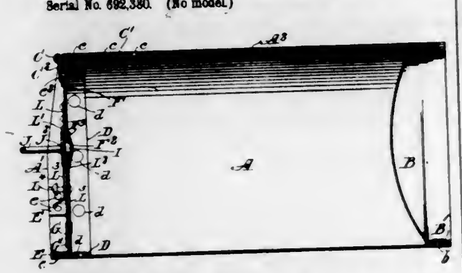
5. A carrier for pneumatic tubes having at its front end a fixed plate N forming a tight joint with the sides of the carrier and formed with a perforation n^3, in combination with a socket O O^2 extending through said perforation and secured to the inside of the plate N as by nut O^4, an end pad as Q secured to the outer end of the socket, an elastic padding T between the end pad and the plate N, and a tight cap N^4 secured on the inside of the plate N as and for the purpose specified.

6. A carrier for pneumatic tubes having a conical lid-seat in combination with a lid having a conical flange as F′ with outwardly-extending packing-retaining flanges F^2 F^3 and an elastic packing-ring situated on flange F′ between flanges F^2 F^3, a hinge-bar as E′ and hinges E, E^3, connecting said bar with the side of the carrier and with the lid respectively.

7. A lid for pneumatic carriers having a substantially-central pivot, as K, in combination with a plate J pivoted thereon at one end and having a series of bolts M M, &c., pivotally connected thereto and a slot as J′ formed in the other end of plate J, a pin H secured eccentrically to the lid so as to turn therein, an eccentric I secured on said pin so as to lie in and engage slot J′ and a handle H′ secured to said pin H as described and so as to lie within the periphery of the carrier only when turned to a position in which the bolts M M, &c., are shot.

8. A lid for pneumatic carriers having outwardly-extending walls F and a substantially-central pivot, as K, in combination with a plate J pivoted thereon at one end and having a series of bolts M M, &c., pivotally connected thereto and a slot as J′ formed in the other end of said plate J, a pin H secured eccentrically to the lid so as to turn therein, an eccentric I secured on said pin so as to lie in and engage slot J′ and a spring-handle H′ secured to said pin H as described and so as to lie within and below the periphery of the walls F′ only when turned to a position to shoot the bolts M M, &c.

657,077. CARRIER FOR PNEUMATIC TRANSMISSION SYSTEMS. BIRNEY C. BATCHELLER, Philadelphia, Pa. Filed Oct. 1, 1898. Serial No. 692,380. (No model.)

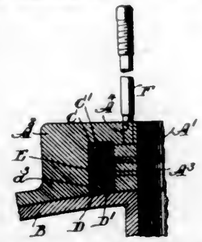


Claim.—1. A carrier for pneumatic transit-tubes having a lid-seat D situated within and at a short distance from the open end of the carrier and inwardly-projecting lugs E secured to the end of the carrier so as to overlap the lid-seat, in combination with a lid adapted to seat itself on the seat D inside of the lugs E, said latch having notches F′ in its edges to enable it to clear the lugs E, a locking-bar H centrally pivoted on the outer face of the lid and adjustable on its pivot from a position in which it clears the lugs E in opening and closing to a position in which its peripheral edges lie beneath said lugs and lock the lid in place, and a spring-catch for holding the locking-bar in locked position.

2. A carrier for pneumatic transit-tubes having a lid-seat D situated within and at a short distance from the open end of the carrier and inwardly-projecting lugs E secured to the end of the carrier so as to overlap the lid-seat, in combination with a lid adapted to seat itself on the seat D inside of the lugs E, a locking-bar H centrally pivoted on the outer face of the lid and adjustable on its pivot from a position in which it clears the lugs E in opening and closing to a position in which its peripheral edges lie beneath said lugs and lock the lid in place, a handle J hinge-connected to the locking-bar, and a spring-catch for holding the locking-bar in locked position.

3. A carrier for pneumatic transit-tubes having a lid-seat D situated within and at a short distance from the open end of the carrier and inwardly-projecting lugs E secured to the end of the carrier so as to overlap the lid-seat in combination with a lid adapted to seat itself on the seat D inside of the lugs E, said lid having recesses F′ formed in its edge corresponding in position and size to the lugs E, a locking-bar and segment H H′ centrally pivoted on the outer face of the lid and formed with recesses H^3 in its periphery spaced and proportioned to correspond with recesses F′, said bar and segment being adjustable from a position in which its recesses register with recesses F′ to a position in which the unrecessed portions of its periphery lie inside of the lugs E and over recesses F′ and a spring-catch for securing the locking-bar in its last-mentioned position.

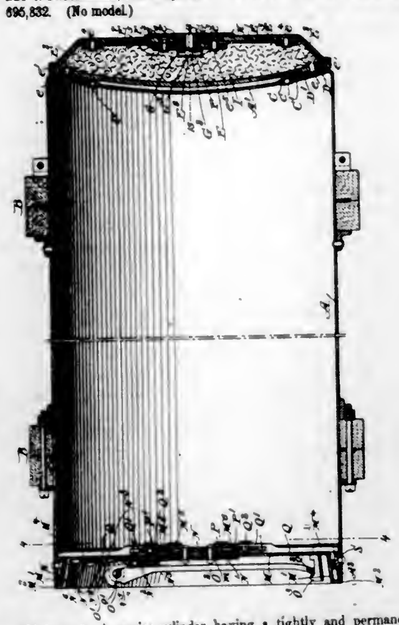
657,078. PACKING DEVICE FOR ANNULAR JOINTS. BIRNEY C. BATCHELLER, Philadelphia, Pa. Filed Oct. 1, 1898. Serial No. 692,331. (No model.)



Claim.—1. A packing device for annular joints between relatively-movable surfaces consisting of an annular chamber, as A^3, formed in one surface to face the other, a joint-ring, as D, fitting loosely in said chamber, and adapted to fit against the opposite surface, said ring having an annular inner shoulder D′, a second annular ring C adapted to fit in chamber A^3 above ring D, a packing-ring E adapted to rest on the upper end of ring D and surround shoulder D′ and means for pressing ring C downward to cause it to press against ring E and force said ring into close contact with the head and flange of ring D and with the wall a^3 of chamber A^3.

2. A packing device for annular joints between relatively-movable surfaces consisting of an annular chamber, as A^3, formed in one surface to face the other, a joint-ring, as D, fitting loosely in said chamber and adapted to fit against the opposite surface, said ring having an annular inner shoulder D′, a second annular ring C adapted to fit in chamber A^3 above ring D and having an outer annular shoulder C′, a packing-ring E adapted to rest on the upper end of ring D and surround shoulder D′ and means for pressing ring C downward to cause its flange C′ to press against ring E and force said ring into close contact with the head and flange of ring D and with the wall a^3 of chamber A^3.

657,079. CARRIER FOR PNEUMATIC TRANSIT-TUBES. BIRNEY C. BATCHELLER, Philadelphia, Pa. Filed Nov. 8, 1898. Serial No. 695,832. (No model.)



Claim.—1. A carrier-cylinder having a tightly and permanently closed front end in combination with cushion-holding devices secured permanently to said closed end, a cushion and means for attaching the cushion secured to it and adapted to engage with the cushion-holding devices on the carrier.

2. A carrier-cylinder having a tightly and permanently closed front end formed integral with the wall of the carrier in combination with cushion-holding devices secured permanently to said closed end, a cushion and means for attaching the cushion secured to it and adapted to engage with the cushion-holding devices on the carrier.

3. A carrier-cylinder having a tightly-closed front end in combination with a ring, as C, secured on said front end and having an upwardly-projecting flange, as C′, cut away at one point, as C^2, a cushion and a ring, as D, secured to the inner face of said cushion having an inwardly-projecting flange, as D′, cut away at one point, as D^2, and adapted to engage with flange C′ as described.

4. A carrier-cylinder cushion formed of two sections E and E′ of leather or similar material secured together at their edges and packed with elastic compressible material in combination with a plate E^2 of metal or similar material secured on the inside of the outer leather section, and means for securing a selecting-plate at the center of the onter layer of the cushion.

5. In combination with a carrier-cylinder, means for securing a selecting-plate in position thereon consisting of a plate, as E^5, secured on the front of the carrier and having a threaded perforation, a plate E^7 having a groove E^8 secured on the inside of plate E^5, a threaded stud G adapted to screw into the threaded perforation in plate E^5, said stud having an angular perforation G^3, a flange G′ and a transverse slot G^2 across its inner end and a spring F lying in groove E^8 in position to enter and engage slot G^2 when not depressed as by a key.

6. In combination with a carrier-cylinder having a closed and an open end, a lid for closing its open end, a chain hinge having two or more links interposed between the inside of the open end of the cylinder and the inner face of the lid, and locking mechanism for fastening the lid on the open of the cylinder.

7. In combination with a carrier-cylinder and a lid adapted to close the same, a bolt or bolts secured on the lid and adapted to lock it in place on the cylinder, a plate revolubly secured on the lid and arranged when moved to actuate said bolts, a locking pawl or pawls secured on the lid and arranged to engage and lock the revoluble plate in fixed position when the bolts are withdrawn, a pawl-actuating rod or rods having its or their ends projecting beyond the edge of the lid and a rod-actuating incline secured on the end of the carrier-cylinder and arranged to actuate the rod or rods to release the pawl or pawls when the lid is properly seated on the carrier.

8. In combination with a carrier-cylinder and a lid adapted to close the same, a bolt or bolts secured on the lid and adapted to lock it in place on the cylinder, a cam-plate revolubly secured on the lid and arranged when moved to actuate bolts, a locking pawl or pawls secured on the lid and arranged to engage and lock the cam-plate in fixed position when the bolts are withdrawn, a pawl-actuating rod or rods having its or their ends projecting beyond the end of the lid and a rod-actuating incline secured on the end of the carrier-cylinder and arranged to actuate the rod or rods to release the pawl or pawls when the lid is properly seated on the carrier.

9. In combination with a carrier-cylinder and a lid adapted to close the same, a bolt or bolts secured on the lid and adapted to lock it in place on the cylinder, a plate revolubly secured on the lid and arranged when moved to actuate the bolts, a bolt-actuating lever pivotally secured to the plate on the outside of the lid and so as to turn on its pivot from operative to non-operative position, and a locking device arranged to prevent rotative movement of the plate and lever when the bolts are moved to locking position and the lever to non-operative position and to prevent the movement of the lever to its non-operative position in any other position of the rotatable plate than that corresponding to the locking position of the bolts.

10. In combination with a carrier-cylinder and a lid adapted to close the same, a bolt or bolts secured on the lid and adapted to lock it in place on the cylinder, a plate revolubly secured on the lid and arranged when moved to actuate said bolts, a bolt-actuating lever pivotally secured to the plate on the outside of the lid and so as to turn on its pivot from operative to non-operative position, said lever being arranged to project beyond the edge of the carrier-cylinder when in operative position and to fold down over the lid in non-operative position, and a locking device arranged to prevent rotative movement of the plate and lever when the bolts are moved to locking position and the lever to non-operative position and to prevent the movement of the lever to its non-operative position in any other position of the rotatable plate than that corresponding to the locking position of the bolts.

11. In combination with a carrier-cylinder and a lid adapted to close the same, a bolt or bolts secured on the lid and adapted to lock it in place on the cylinder, a plate revolubly secured on the lid and arranged when moved to actuate the bolts, a bolt-actuating lever pivotally secured to the plate on the outside of the lid and so as to turn on its pivot from operative to non-operative position, said lever having a head, as O′, with a notch o′, a ledge as N^7 secured on the lid and extending from a point, as N^8, lying clear of the head O′ when in locking position in the direction of movement of said head when moving to withdraw the bolts, said ledge being arranged to, as described, prevent the rotative movement of the lever and plate to which it is attached in all positions of the lever except when turned on its pivot to operative position and to prevent the turning of the lever to non-operative position in all positions except that corresponding to the locked position of the bolts.

12. In combination with a carrier-cylinder and a lid adapted to close the same, a bolt or bolts secured on the lid and adapted to lock it in place on the cylinder, a plate revolubly secured on the lid and arranged when moved to actuate the bolts, a locking pawl or pawls secured on the lid and arranged to engage and lock the revoluble plate in fixed position when the bolts are withdrawn, a pawl-actuating rod or rods having its or their ends projecting beyond the edge of the lid, a rod-actuating incline secured on the end of the carrier-cylinder and arranged to actuate the rod or rods to release the pawl or pawls when the lid is properly seated on the carrier, a bolt-actuating lever pivotally secured to the rotatable plate on the outside of the lid and so as to turn on its pivot from operative to non-operative position and a locking device arranged as specified to prevent rotative movement of the plate and lever when the bolts are moved to locking position and the lever to non-operative position and to prevent the movement of the lever to non-operative position in any other position of the rotatable plate than that corresponding to the locking position of the bolts.

13. In combination with a carrier-cylinder, a conical lid-seat, as K, a lid having a conical peripheral flange, as M′, a chain hinge having two or more links intervening between the lid and carrier-cylinder and a gasket, as S, having a subetantially-round section of less diameter than the conical faces K and M′ situated on the flange M′ and adapted to intervene between it and seat K when the lid is closed.

14. In combination with a carrier-cylinder a lid M having a central circular opening *m* in combination with a plate M^5 having a central opening and guide-slots M^6 formed in its outer edge said plate being secured to the inside of the center of lid M, a disk-shaped plate N situated in the circular central openings of lid M and plate M^5, a cam-plate P secured to inside of plate N, a ring M^2 having guideways M^4 secured to the outer edge of the lid, bolts Q operatively connected to the cam-plate and having their outer ends ways guided in ways M^4 and their inner ends guided in slots M^6 and a plate, as N′, secured on the outside of the lid to plate N and by means of which said plate and the cam-plate are rotated.

657,080. TELLTALE-FUNNEL. WILLIAM C. BELDEN, Ioamoss, Cal. Filed June 21, 1900. Serial No. 21,043. (No model.)



Claim.—1. In an alarm-funnel, the combination, substantially as set forth, of a funnel having a nose-tube, and an air-tube having its discharge end located within said nose-tube and having its inlet end normally open to the atmosphere.

2. In an alarm-funnel, the combination, substantially as set forth, of a funnel having a nose-tube provided with a stricture, and an air-tube having its outlet end located within said nose-tube in the neighborhood of said stricture and having its inlet end normally open to the atmosphere.

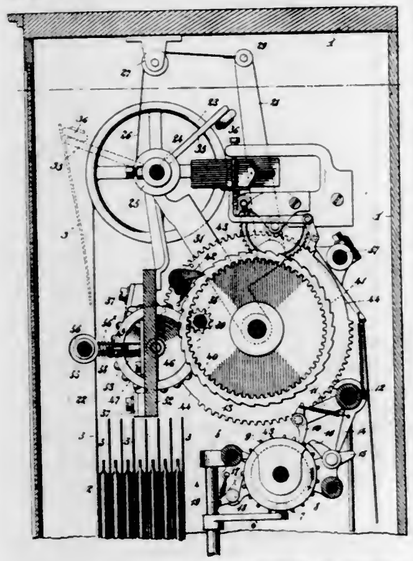
3. In an alarm-funnel, the combination, substantially as set forth, of a funnel having a nose-tube, and an air-tube having its outlet end disposed within said nose-tube and having its inlet end exterior to said nose-tube and at a point below the outlet end of the air-tube.

4. In an alarm-funnel, the combination, substantially as set forth, of a funnel having a nose-tube, an air-tube having its outlet end disposed

within said nose-tube and having its inlet end disposed exterior to the nose-tube and below the outlet end of the air-tube, and a neck-collar adapted to engage a vessel-neck and support the funnel therein.

5. In an alarm-funnel, the combination, substantially as set forth, of a funnel having a nose-tube, an air-tube having its outlet end disposed within said nose-tube and having its inlet end disposed exterior to said nose-tube and below the outlet end of the air-tube, and a vertical partition disposed between the lower ends of the nose-tube and air-tube.

657,081. **MECHANICAL MUSICAL INSTRUMENT.** GUSTAV A. BRACHHAUSEN, Rahway, N. J. Filed Apr. 4, 1900. Serial No. 11,417. (No model.)



Claim.—1. In a mechanical musical instrument the combination of a note-sheet-driving wheel adapted to engage and transmit motion to a note-sheet, means for transmitting motion to said driving-wheel and means adapted to enter into locking engagement with the driving-wheel and to lock it against movement.

2. In a mechanical musical instrument the combination of a note-sheet-driving wheel, automatic means for intermittently transmitting motion thereto and means for automatically and intermittently entering into locking engagement with the driving-wheel to lock said driving-wheel against movement.

3. In a mechanical musical instrument the combination of a spring-motor, a note-sheet-driving wheel, automatic means operable from said motor for intermittently transmitting motion to the driving-wheel and means for automatically and intermittently locking said driving-wheel against movement, said locking means being controlled by the motor.

4. In a mechanical musical instrument the combination of a note-sheet-driving wheel, means for operating said driving-wheel, means for conveying separate note-sheets to and from operative position in the instrument, mechanism for clamping a note-sheet in operative position and means cooperating with the clamping mechanism for locking the driving-wheel out of action.

5. In a mechanical musical instrument the combination of a note-sheet-driving wheel, means for automatically and intermittently operating said driving-wheel, means for automatically conveying separate note-sheets to and from operative position in the instrument, mechanism for automatically clamping a note-sheet in operative position and means controlled by the clamping mechanism for locking the driving-wheel out of action.

6. In a mechanical musical instrument the combination of a note-sheet-driving wheel, means for operating said driving-wheel, means for conveying separate note-sheets to and from operative position in the instrument, mechanism for clamping a note-sheet in operative position and a locking-abutment carried by a fixed portion of the instrument, which locking-abutment is in engagement with the driving-wheel to maintain the same against movement when the clamping mechanism is ineffective to maintain a note-sheet in operative position.

7. In a mechanical musical instrument the combination of a note-sheet-driving wheel, means for automatically and intermittently operating said driving-wheel, means for automatically conveying separate note-sheets to and from operative position in the instrument, mechanism for automatically clamping a note-sheet in operative position, a locking-abutment carried by a fixed portion of the instrument which locking-abutment is in engagement with the driving-wheel to maintain the same against movement when the clamping mechanism is ineffective to maintain the note-sheet in operative position and is out of engagement therewith when the clamping mechanism is effective to maintain the note-sheet in operative position and automatically-operated means controlled by the clamp mechanism for effecting the locking and release of the driving-wheel.

8. In a mechanical musical instrument the combination of a note-sheet-driving wheel adapted to engage and transmit motion to a note-sheet, said driving-wheel having a locking-recess therein, a locking-abutment adapted to be received in said recess and to be withdrawn therefrom and means for automatically bringing the locking-abutment and locking-recess into engagement to lock the driving-wheel against rotation.

9. In a mechanical musical instrument the combination of a note-sheet-driving wheel, a pinion for said driving-wheel and a mutilated driving-gear adapted to mesh with said pinion to transmit intermittent motion to the driving-wheel.

10. In a mechanical musical instrument the combination of a note-sheet-driving wheel, a pinion for said driving-wheel, a mutilated driving-gear adapted to mesh with said pinion and to transmit motion to the driving-wheel and means for locking the driving-wheel against rotation when the pinion thereof is out of mesh with the driving-wheel and for unlocking the driving-wheel when the pinion thereof is in mesh with the driving-wheel.

11. In a mechanical musical instrument the combination of means for conveying separate note-sheets to and from operative position in the instrument, means for clamping a note-sheet in operative position, a note-sheet-driving wheel, a pinion for said driving-wheel and a mutilated driving-gear adapted to mesh with said pinion to transmit motion to the driving-wheel when the clamping mechanism is effective to maintain the note-sheet in operative position and to be out of mesh with said pinion when the clamping mechanism is ineffective to clamp a note-sheet in operative position.

12. In a mechanical musical instrument the combination of means for conveying separate note-sheets to and from operative position in the instrument, means for clamping a note-sheet in operative position, a note-sheet-driving wheel, a pinion for said driving-wheel, a mutilated driving-gear adapted to mesh with said pinion to transmit motion to the driving-wheel when the clamping mechanism is effective to maintain a note-sheet in operative position and to be out of mesh with said pinion when the clamping mechanism is ineffective to clamp a note-sheet in the operative position and means for locking the driving-wheel against rotation when the pinion thereof is out of mesh with the driving-wheel.

13. In a mechanical musical instrument the combination of means for conveying separate note-sheets to and from operative position, means for clamping a note-sheet in operative position, a note-sheet-driving wheel having a locking-recess therein, a pinion for said driving-wheel, a mutilated driving-gear adapted to mesh with said pinion to transmit an intermittent motion to the driving-wheel and a pivoted locking latch or abutment adapted to engage in recess of the driving-wheel and to be controlled in its movement by the clamping mechanism.

14. In a mechanical musical instrument the combination of means for conveying separate note-sheets to and from operative position in the instrument and a guiding-arm connected to rotate with a part of the conveying means in a path traversing the path of the note-sheets so as to contact with and deflect the note-sheets laterally in their movement to the operative position in the instrument and to be withdrawn from contact with the sheets in their movement from the operative position.

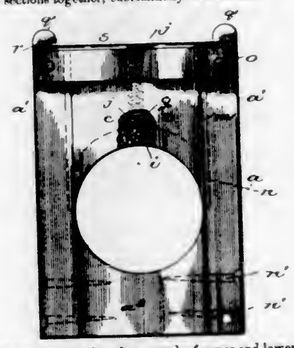
657,082. **DUST-GUARD FOR JOURNAL-BOXES.** PERRY BROWN, Wilmington, Del. Filed Sept. 13, 1899. Serial No. 730,328. (No model.)

Claim.—1. The combination in a dust-guard, of upper and lower sections, one section having side arms and the other sliding between said arms, a spring arranged to press the two sections toward each other, and a bar cooperating with said upper section and the arms of the lower section and preventing the said upper section from rising above the said arms, substantially as described.

2. The combination in a dust-guard, of upper and lower sections, one section having side arms and the other sliding between said arms, a spring arranged to press the two sections toward each other, and a bar connecting the top of said arms and having sides acting as guides for said upper section, the said bar preventing the said upper section from rising above said arms, substantially as described.

3. The combination in a dust-guard, of upper and lower sections, one section having side arms and the other sliding between said arms, a bar coacting with said section, said sliding section having a recess therein, and

a spring in said recess acting between said bar and said sliding section and pressing the sections together, substantially as described.



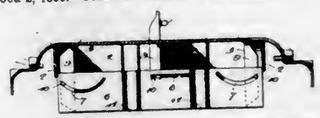
4. The combination in a dust-guard, of upper and lower sections, one section having side arms and the other sliding between said arms, in said sliding section having recesses therein, a spring in one of said recesses pressing the sections together, and packing in the other recess, substantially as described.

5. The combination in a dust-guard, of upper and lower sections, one section having side arms and the other sliding between said arms, a spring arranged to press the two sections toward each other, a bar cooperating with said upper section and the arms of the lower section and preventing the said upper section from rising above the said arms, ears projecting above said bar, and means for connecting said bar to said ears, substantially as described.

6. The combination in a dust-guard, of upper and lower sections, one section having side arms and the other formed of the two parts *c*, *d*, one having lugs and ribs adapted to fit into corresponding recesses in the opposite part, substantially as described.

7. The combination in a dust-guard, of upper and lower sections, one having arms and the other sliding between said arms and formed of two parts *c*, *d*, one having lugs and ribs adapted to fit into corresponding recesses in the opposite part, a bar and a spring coacting with said bar and sliding section, substantially as described.

657,083. **REGISTER.** WILLIAM L. CARTER, Cedar Falls, Iowa. Filed Oct. 2, 1899. Serial No. 732,378. (No model.)



Claim.—1. In a register, the combination with the register-frame, of a flange at the inner side thereof, shutters pivotally mounted within the flange, each provided at one end with a stud, an operating-plate provided with segmental slots the side walls of which are concentric, and an intermediate straight slot, the said slots being adapted to receive the studs on the shutters, and positive means for causing said plate to move in a path at right angles to the plane of the shutter-pivots, substantially as described.

2. In a register, the combination with an inclosing frame, and a flange secured to the rear side thereof, of shutters pivoted within the flange and having pins provided upon one end thereof, a slidable plate having segmental slots and one straight slot opposite the shutters, studs on the shutters working in the respective slots, and guides on the plate and on the flange for limiting the plate to movement in a plane at right angles to the shutter-pivots, the shutters being opened or closed by operating one of them, substantially as shown and described.

3. A register comprising an offset frame, the shutters, a flange within said frame and forming a support for the shutter-pivots, an opening in the offset of the frame above the flange, a tray supported by the flange and insertible or withdrawable through the opening in the frame, and a ventilating-grating connected to the frame and covering the opening therein, substantially as described.

4. A register comprising a frame, the shutters a flange secured to the rear side thereof and forming a support for the shutter-pivots, the frame having an opening formed through the upper side thereof and adapted to receive a water-pan, the top of the flange forming a support for said pan, and a grating or perforated door pivoted to the frame and closing the opening therein, substantially as shown and described.

5. In a register, the combination with an inclosing frame and a flange secured to the rear side thereof, of shutters pivoted within the flange, the middle shutter being centrally pivoted and having a stud on its upper end and near one of its side edges, the other shutters being pivoted at or near their side edges and each provided with a stud upon its upper edge, a plate arranged to rest upon the top of the shutter and having slides engaging guides on the upper portion of the flange, to limit the plate to movement in a plane at right angles to the shutter-pivots, said plate having a segmental slot at each end, receiving the studs on the end shutters, respectively, and also provided with a straight slot between the segmental slots and extending from the axis of the middle shutter to one side thereof to receive the stud on the middle shutter, and a handle on the middle shutter, substantially as shown and described.

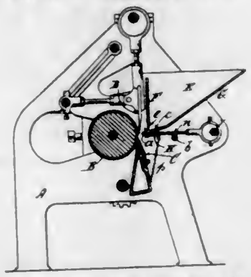
6. In a register, the combination with an inclosing frame and a flange at the rear side thereof, of shutters pivoted within the flange, each shutter having a stud at its upper end, the middle shutter being centrally pivoted and the end shutters eccentrically pivoted in the upper and lower portions of the flange, the lower pintles resting upon a support below the flange, a sliding plate resting upon the upper ends of the shutters and located beneath the upper portion of the flange, the said plate having a pair of segmental slots to receive the studs of the end shutters and an intermediate straight slot to receive the stud of the middle shutter, the latter having an operating-handle, slides on the upper face of the sliding plate, yoke-guides on the lower face of the upper portion of the flange, and cooperating with the plate slides to limit the latter to movement to a path at right angles to the shutter-pivots, the upper side of the frame having an opening above the flange to receive a water-pan which rests upon the upper side of the flange, and a grating adapted to close said opening, substantially as shown and described.

7. In a register, the combination with a frame, of pivoted shutters, a plate slidably confined on said frame and connected with all the shutters, and means for moving the plate positively at right angles to the plane, of the shutter-pivots and thereby actuating the shutter simultaneously to open or close the same, as set forth.

8. In a register, the combination with a frame, of centrally-pivoted shutters, an eccentrically-pivoted shutter, a slidable plate having operative connection with each shutter, means for limiting said plate to movement in a path at right angles to the plane of the shutter-pivots, and an operating device for the eccentrically-pivoted shutter, adapted to actuate the plate, and thereby to open or close the centrally-pivoted shutters, substantially as described.

9. In a register, the combination of a frame, a stationary flange projecting from the rear side thereof, a stop-flange below the stationary flange, the shutters having pintles journaled in the stationary flange and with the lower pintles resting on the stop-flange, a plate slidably confined on the frame and operatively connected with the shutters, and means for moving the plate positively in a path at right angles to the plane of the shutter-pivots, substantially as described.

657,084. **FEED FOR COTTON-GINS.** JAMES E. CHEESMAN, New York, N. Y. Filed Feb. 23, 1899. Serial No. 706,606. (No model.)



Claim.—1. A feed for cotton-gins consisting of the combination of a hopper having an opening at the bottom and also having a back board with a downwardly-projecting series of fingers and a piece carrying an upwardly-projecting series of fingers actuated by an eccentric, and causing the second series of fingers to grasp the cotton and carry it between the fingers of the first series.

2. A feed for cotton-gins consisting of the combination of a hopper having a back board with a series of downwardly-projecting fingers, a piece carrying an upwardly-projecting series of fingers and actuated by an eccentric; the back board of the hopper being movable up and down so as to raise or lower its series of fingers.

3. A feed for cotton-gins consisting of the combination of a hopper having as its floor a series of fingers projecting toward the gin, having

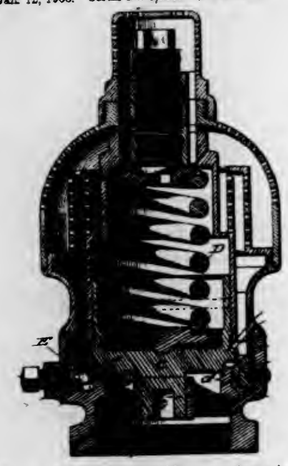
also, a back board with a downwardly-projecting series of fingers, with a piece carrying an upwardly-projecting series of fingers, actuated by an eccentric, to cause the last-mentioned series of fingers to pass between the fingers and the other two series.

657,085. TONGUE-PIECE FOR SHOES. EMILIE H. CHRISTENSEN, New York, N. Y. Filed Feb. 2, 1898. Serial No. 668,831. (No model.)



Claim.—The combination with the upper of a shoe or the like, said upper having an opening therein, of a tongue-piece for closing said opening, said tongue-piece comprising a front portion, intermediate folds connected to the sides of said front portion and extending in rear of said front portion to a line intermediate the said edges, and rear folds connected to the contiguous edges of said intermediate folds and extending outwardly therefrom, the portions of the upper, at the sides of the opening, being connected to the front of the said rear folds, and the said front portion of the tongue lying entirely outside of the upper, whereby when the shoe is closed the edges of the upper, at the sides of the said opening, lie between the said intermediate folds and the rear folds, and means for securing the shoe in closed position; substantially as described.

657,086. SAFETY-VALVE. JOSEPH M. COALE, Baltimore, Md. Filed Jan. 12, 1900. Serial No. 1,239. (No model.)



Claim.—1. The combination with a pop safety-valve and its casing, of a sectional ring forming the outer wall of the pop-chamber, and means for moving one or more of said sections radially.

2. The combination with a pop safety-valve and its casing, of a sectional ring forming the outer wall of the pop-chamber, means for moving one of said sections radially, and means for holding another section immovable.

3. The combination with a pop safety-valve and its casing, the latter having an annular well surrounding the valve-seat, of a sectional ring forming the outer wall of the pop-chamber and seated on the bottom of said well, and means for moving one or more of the sections radially.

4. The combination with a pop safety-valve having the outer upper edge of the pop-chamber beveled, of a ring forming the outer wall of said chamber, having a countersink with an upper edge lying in the plane of the upper corner of said beveled edge.

5. The combination with a pop safety-valve, of a ring forming the outer wall of the pop-chamber, said ring having two countersinks, the lower forming the pop-chamber and the upper the outlet from said chamber.

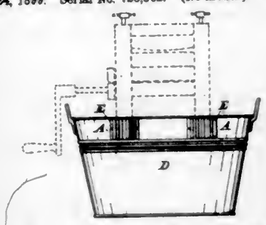
6. The combination with a pop safety-valve, of a ring forming the outer wall of the pop-chamber, said ring being made in sections, and provided with two countersinks, and means for moving one or more sections radially.

7. The combination with a pop safety-valve, of a ring forming the outer wall of the pop-chamber, said ring being made in halves, means for separating said halves, and means for retaining them in line.

8. The combination with a pop safety-valve, of a ring forming the outer wall of the pop-chamber and made in halves, each provided with a rib at the meeting end, tangent pins fixed in one rib of each pair and passing freely through the other, and means for separating said halves of the ring.

9. The combination with a pop safety-valve, of a ring forming the outer wall of the pop-chamber, said ring being made in halves, one or both of which has a socket, and a radially-arranged screw having a head engaging with said socket.

657,087. METALLIC WASHTUB. SUMNER S. COBB, Rochester, N. Y., assignor to the Metallic Basket Company, same place. Filed Aug. 24, 1899. Serial No. 728,302. (No model.)



Claim.—In combination with a washtub, a wringer attachment comprising metal plates fixed to the tub, said plates being thickened by transverse projections formed in the metal.

657,088. SAFETY-PIN. JACOB D. CONOVER, Middletown, N. J. Filed Apr. 19, 1899. Serial No. 713,560. (No model.)



Claim.—A safety-pin embodying a body portion formed of spring-wire bent upon itself to form diverging or angularly-disposed members, a shield secured to one member, the end of the opposite member being pointed, and a combined sheet-metal guard and fulcrum swaged upon and embracing the entire bent portion, extending forward along the members and across the space between the members, and acting to normally maintain the members in their angular relation to each other substantially as described.

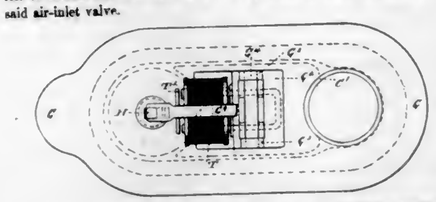
657,089. EGG-TRAY FOR INCUBATORS. JASON L. COUSINS, Warren, Pa. Filed Sept. 7, 1899. Serial No. 729,746. (No model.)



Claim.—In an incubator, a tray, a series of disks pivoted to the tray, an operating-bar pivoted to each of the disks, flanges formed with the disks, wire-netting secured to the flanges in such manner as to form a trough, the cross-section of which is approximately the shape of the small end of an egg, strips secured at each end to the flanges bent to form L-shaped upper edges for the shelves, with the edges of the wire-netting of the shelves clamped between the folds of the strips, substantially as described.

657,090. PNEUMATIC-DESPATCH-TUBE APPARATUS. JAMES T. COWLEY, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, Newark, N. J. Filed Mar. 23, 1899. Serial No. 710,155. (No model.)

Claim.—1. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, mechanism for closing said valve, an air-inlet, a valve controlling said air-inlet, mechanism normally holding said valve to close said air-inlet, mechanism for opening said air-inlet valve and arranged to be operated by compressed air from said source, means for establishing communication between said source and said mechanism to open said valve, means for controlling the flow of air from said source to said valve-opening mechanism, means for holding said air-inlet valve open, an electric circuit, circuit-closing means located in the path of the traveling carrier and arranged to be operated thereby, and an electromagnet included in said circuit and energized upon the closing of said circuit by the traveling carrier to release said air-inlet-valve-holding means to allow the closing of said air-inlet valve.



2. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, mechanism for closing said valve, an air-inlet, a valve controlling said air-inlet, mechanism normally holding said valve to close said air-inlet, mechanism for opening said air-inlet valve and arranged to be operated by compressed air from said source, means for establishing communication between said source and said mechanism to open said valve, means controlling the flow of compressed air to said valve-opening mechanism, mechanism for operating said air-controlling means to allow the passage of compressed air, a yielding connection between said mechanism closing the valve of the carrier-inlet and the mechanism which operates the air-controlling means, means for holding said air-inlet valve open, an electric circuit, circuit-closing means located in the path of the traveling carrier and arranged to be operated thereby, and an electromagnet included in said circuit and energized upon the closing of said circuit by the traveling carrier to release said air-inlet-valve-holding means to allow the closing of said air-inlet valve.

3. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carrier, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet, a valve controlling said air-inlet, mechanism normally holding said valve to close said air-inlet, mechanism for opening said air-inlet valve and arranged to be operated by compressed air from said source, means for establishing communication between said source and said mechanism to open said valve, means controlling the flow of compressed air to said valve-opening mechanism, means for holding said air-inlet valve open, and mechanism located in the path of the traveling carrier and operated thereby to release said air-inlet-valve-holding means to allow the closing of said air-inlet valve.

4. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a lever for closing said valve, a shaft on which said lever is mounted, and a handle fast on said shaft for operating said lever to close said valve.

5. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a lever for closing said valve, a shaft on which said lever is mounted, a handle fast on said shaft and adapted to be moved to operate said lever to close said valve, a source of compressed air, an air-inlet, a valve controlling said air-inlet, mechanism normally holding said valve to close said air-inlet; mechanism for opening said air-inlet valve and arranged to be operated by compressed air from said source, means for establishing communication between said source and said mechanism to open said air-inlet valve, a lever carried by said shaft to operate the means for establishing communication between the source of compressed air and the mechanism for opening the air-inlet valve, means for holding said air-inlet valve open, and mechanism located in the path of the traveling carrier and operated thereby to release said air-inlet-valve-holding means to allow the closing of said air-inlet valve.

6. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for the compressed air, a valve controlling said air-inlet, means for moving said valve to close said air-inlet, a pocket, a hollow stem supporting said valve controlling the air-inlet and forming a passage between said source of compressed air and said pocket, and a plunger mounted in said pocket having an area larger than that of said valve controlling the air-inlet and connected with said stem and adapted to be moved by the pressure of air in said pocket to open said valve controlling the air-inlet.

7. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for the compressed air, a valve controlling said air-inlet, means for moving said valve to close said air-inlet, a pocket communicating with said source of compressed air, and a plunger mounted in said pocket and connected with said valve controlling the air-inlet and having an area larger than that of the valve controlling the air-inlet and adapted to be moved by the introduction of compressed air into said pocket to open said valve controlling the air-inlet.

8. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for the compressed air, a valve controlling said air-inlet, means for moving said valve to close said air-inlet, a pocket communicating with said source of compressed air, a plunger mounted in said pocket and connected with said valve controlling the air-inlet and having an area larger than that of the valve controlling the air-inlet and adapted to be moved by the introduction of compressed air into said pocket to open said valve controlling the air-inlet, and means for regulating and controlling the flow of compressed air into said pocket.

9. In a pneumatic-despatch-tube apparatus, a carrier-tranmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for the compressed air; a valve controlling said air-inlet, a pocket, a hollow stem supporting said valve controlling the air-inlet and forming a passage between said source of compressed air and said pocket, a plunger carried in said hollow stem for regulating and controlling the passage of air through said stem, means for moving said plunger, and a second plunger mounted in said pocket having an area larger than that of the valve controlling the air-inlet and connected with said stem and adapted to be moved by the pressure of air in said pocket to open said valve controlling the air-inlet.

10. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for said compressed air, a valve controlling said air-inlet, mechanism normally holding said valve to close said air-inlet, mechanism for opening said valve and arranged to be operated by compressed air from said source, means for establishing communication between said source and said mechanism to open said valve, means controlling the flow of compressed air to said valve-opening mechanism, and mechanism located in the path of the traveling carrier and operated thereby to allow the closing of said air-inlet valve.

11. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for said compressed air, a valve controlling said air-inlet and provided with a hollow stem open to said compressed air and with a plunger mechanism normally holding said valve to close the air-inlet of greater area than the valve, a plunger movable in said hollow stem and having passages for leading the compressed air to one side of the said plunger of greater area than the valve to open said valve by the pressure acting on said plunger of greater area, mechanism for closing said carrier-inlet valve and for moving said plunger in said stem to establish the said communication for the compressed air, means for holding said plunger located in the hollow stem to maintain said communication for the compressed air to hold said air-inlet valve open, mechanism located in the path of travel of the carriers and operated by the latter to release the air-inlet valve from the mechanism holding it open, and means for returning said plunger to its normal position.

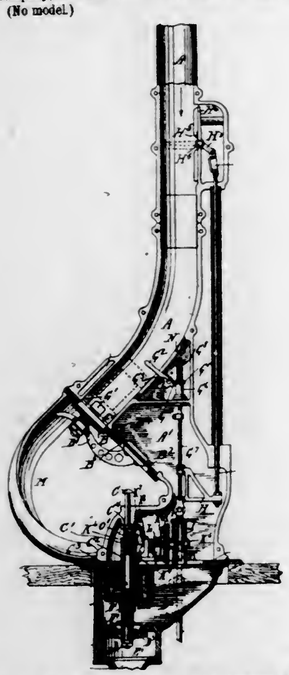
12. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for the compressed air, a valve controlling said air-inlet and provided with a hollow stem open to the said compressed air and with a plunger of greater area than the valve, mechanism normally holding said valve to close the air-inlet; a plunger movable in said hollow stem and having passages for leading the compressed air to one side of the plunger of greater area than the valve to open said valve by the pressure acting on said plunger of greater area, mechanism for closing said carrier-inlet valve and for moving said plunger in said stem to establish the said communication for the compressed air, means for holding said plunger located in said hollow stem to maintain said communication for the compressed air to hold said air-inlet valve open, an electric circuit, circuit-closing means located in the path traveled by the carriers and operated by the latter, an electromagnet included in said circuit and adapted to be energized upon the closing of

said circuit to release said air-inlet-valve-holding means to allow the closing of said air-inlet valve, and means for returning said plunger to its normal position.

13. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, an air-inlet, a valve controlling said air-inlet, mechanism normally holding said valve to close the air-inlet; a source of compressed air, mechanism operated by compressed air for opening said air-inlet valve, means controlling the flow of compressed air to said valve-opening mechanism, means for holding said air-inlet valve open, an electric circuit, circuit-closing means located in the path traveled by the carriers and operated by the latter, an electromagnet included in said circuit and adapted to be energized upon the closing of said circuit to release said air-inlet-valve-holding means to allow the closing of said air-inlet valve, and means for returning said circuit-closing means into the path of the carrier for breaking said electric circuit.

14. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an iulet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, an air-inlet, a valve controlling said air-inlet, mechanism normally holding said valve to close said air-inlet; a source of compressed air, mechanism for opening said air-inlet valve and arranged to be operated by compressed air from said source, means for establishing communication between said source and said mechanism to open said valve, means controlling the flow of compressed air to said valve-opening mechanism, means for holding said air-inlet valve open, an electric circuit, a circuit-closing means located in the path traveled by said carriers and operated by the latter, an electromagnet included in said circuit and energized upon the closing of said circuit by the traveling carrier to release said air-inlet-valve-holding means to allow the closing of said air-inlet valve, and a spring for automatically returning said circuit-closing means into the path of the carrier and for breaking said electric circuit.

657,091. PNEUMATIC-DESPATCH-TUBE APPARATUS. JAMES T. COWLEY, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, Newark, N. J. Filed Dec. 21, 1899. Serial No. 741,111. (No model.)



Claim.—1. In a pneumatic-despatch-tube apparatus, a carrier transmission-tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for said compressed air, a valve normally closing said air-inlet means for opening said air-inlet valve, means operated by compressed air for holding said air-inlet valve open, mechanism in the path of the traveling carriers adapted to be operated by the traveling carriers to release the air-pressure on said air-inlet-valve-holding means and thereby release the same to allow the closing of said air-inlet valve, and mechanism operated by air-pressure in the transmission-tube for allowng the escape of the compressed air from the air-inlet-valve-holding means.

2. In a pneumatic-despatch-tube apparatus, a carrier transmission-tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for said compressed air, a valve normally closing said air-inlet, means for opening said air-inlet valve, means operated by compressed air for holding said air-inlet valve open, mechanism in the path of the traveling carriers to release the air-pressure on said air-inlet-valve-holding means and thereby release the same to allow the closing of said air-inlet valve, mechanism operated by air-pressure in the transmission-tube for allowing the escape of the compressed air from the air-inlet-valve-holding means, and yielding means acting on said air-inlet-valve-holding means for releasing the same upon the release of the compressed air from said air-inlet-valve-holding means.

3. In a pneumatic-despatch-tube apparatus, a carrier transmission-tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for said compressed air, a valve normally closing said air-inlet, means for opening said air-inlet valve, means operated by compressed air for holding said air-inlet valve open, mechanism in the path of the traveling carriers to release the air-pressure on said air-inlet-valve-holding means and thereby release the same to allow the closing of said air-inlet valve, mechanism operated by air-pressure in the transmission-tube for allowing the escape of the compressed air from the air-inlet-valve-holding means, and a spring acting on said air-inlet-valve-holding means for releasing the same upon the release of the compressed air from said air-inlet-valve-holding means.

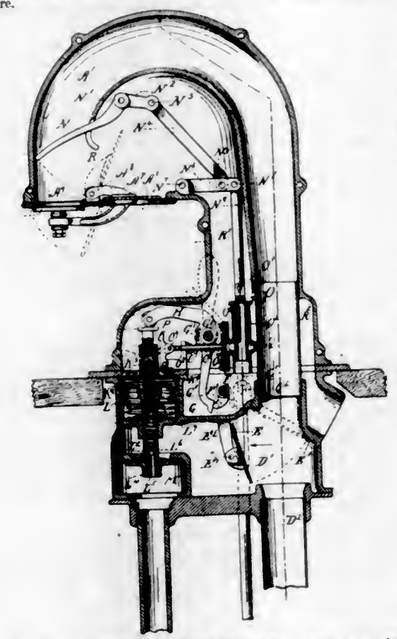
4. In a pneumatic-despatch-tube apparatus, a carrier transmission-tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for said compressed air, a valve normally closing said air-inlet, a plunger manually operated to open said air-inlet valve, a catch for holding said air-inlet valve open, a diaphragm operated by compressed air for operating said catch to hold the air-inlet valve open, a valve for controlling the exhaust of air from said diaphragm, mechanism in the path of the traveling carriers for operating said valve, and mechanism operated by air-pressure in the transmission-tube for holding said exhaust-valve open.

5. In a pneumatic-despatch-tube apparatus, a carrier transmission-tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for said compressed air, a valve normally closing said air-inlet, a plunger manually operated to open said air-inlet valve, a catch for holding said air-inlet valve open, a diaphragm operated by compressed air for operating said catch to hold the air-inlet valve open, a valve for controlling the exhaust of air from said diaphragm, mechanism in the path of the traveling carriers for operating said valve, mechanism operated by air-pressure in the transmission-tube for holding said exhaust-valve open, and a spring acting on said catch for releasing the same upon the release of the compressed air from the diaphragm.

657,092. PNEUMATIC-DESPATCH-TUBE APPARATUS. JAMES T. COWLEY, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, Newark, N. J. Filed May 8, 1899. Renewed Mar. 12, 1900. Serial No. 8,398. (No model.)

Claim.—1. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for said compressed air, a valve normally closing said air-inlet, means for opening said air-inlet valve adapted to be operated to open said valve upon the closing of the valve controlling said carrier-inlet, means operated by compressed air for holding said air-inlet valve open, and mechanism in the path of the traveling carriers adapted to be operated by the carriers to release the air-pressure on said air-inlet-valve-holding means and thereby release the same to allow the closing of said air-inlet valve.

2. In a pneumatic-despatch-tube apparatus a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for said compressed air, a valve normally closing said air-inlet, means for opening said air-inlet valve adapted to be operated to open said valve upon the closing of the valve controlling said carrier-inlet, means operated by compressed air for holding said air-inlet valve open, mechanism in the path of the traveling carriers adapted to be operated by the carriers to release the air-pressure on said air-inlet-valve-holding means and thereby release the same to allow the closing of said air-inlet, and yielding means acting on said air-inlet-valve-holding means for preventing the same from holding said air-inlet valve open upon the release of said air-pressure.



3. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said outlet after the insertion of the carriers, a lever for closing said valve, a shaft on which said lever is loosely mounted, a handle fast on said shaft adapted to be moved to operate said lever to close said valve, a yielding connection between said shaft and said operating-lever, a source of compressed air, an air-inlet for the compressed air, a valve normally closing said air-inlet, mechanism for opening said air-inlet valve adapted to be actuated to open said valve upon the closing of the valve controlling said carrier-inlet, means operated by compressed air for holding said air-inlet valve open, and mechanism in the path of the traveling carriers adapted to be operated by the carriers to release the air-pressure on said holding means and thereby release said air-inlet valve to allow the closing of said air-inlet.

4. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for the compressed air, a valve normally closing said air-inlet and provided with a hollow stem open to said compressed air and with a piston-plunger of greater area than said valve, mechanism for opening said air-inlet valve, means operated by compressed air for holding said air-inlet valve open, means for establishing communication between said source of compressed air and one side of the piston-plunger to open said air-inlet valve by the air-pressure acting on said piston-plunger, mechanism adapted to be operated by the traveling carriers for breaking said communication by releasing the air-pressure on said air-inlet-valve-holding means and thereby release the same to allow the closing of said air-inlet, and means for returning said piston-plunger to its normal position.

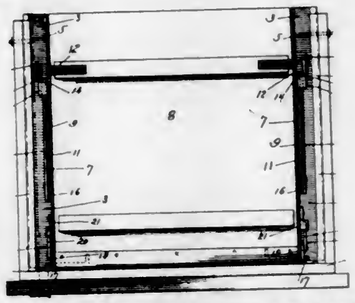
5. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for said compressed air, a valve normally closing said air-inlet and provided with a hollow stem open to said compressed air and with a piston-plunger of greater area than the valve, mechanism for opening said air-inlet valve, means operated by compressed air for holding said air-inlet valve open, a plunger movable in said hollow stem and having passages for leading the compressed air to one side of the piston-plunger of greater area than the valve to open said valve by the pressure acting on said plunger of greater area, mechanism for closing said carrier-inlet valve and for moving said plunger in said stem to establish the said communication for the compressed air, means operated by compressed air for holding said plunger in said hollow stem to maintain said communication for the compressed air to hold said air-inlet valve open, and mechanism in the path of the traveling carriers adapted to be operated by the carriers to release the air-pressure on said air-inlet-valve-holding means and thereby release the same to allow the closing of said air-inlet valve.

6. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for said compressed air, a valve normally closing said air-inlet, means for opening said air-inlet valve adapted to be operated to open said valve upon the closing of the valve controlling said carrier-inlet, means operated by compressed air for holding said air-inlet valve open, a valve for controlling the escape of the compressed air acting on said air-inlet-valve-holding means, and mechanism in the path of the traveling carriers adapted to be operated by the carriers to move said valve to release the air-pressure on said air-inlet-valve-holding means and thereby release the same to allow the closing of the said air-inlet valve.

7. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for said compressed air, a valve normally closing said air-inlet, means for opening said air-inlet valve adapted to be operated to open said valve upon the closing of the valve controlling said carrier-inlet, means operated by compressed air for holding said air-inlet valve open, and mechanism for releasing the air-pressure on said air-inlet-valve-holding means to release the same to allow the closing of the air-inlet valve.

8. In a pneumatic-despatch-tube apparatus, a carrier-transmitting tube having an inlet and an outlet for the carriers, a valve for closing said inlet after the insertion of the carriers, a source of compressed air, an air-inlet for said compressed air, a valve normally closing said air-inlet, means operated by compressed air for opening said air-inlet valve upon the closing of the valve controlling said carrier-inlet, means controlling the flow of compressed air to said valve-opening means, means operated by compressed air for holding said air-inlet valve open, and mechanism for releasing the air-pressure on said air-inlet-valve-holding means to release the same to allow the closing of the said air-inlet valve.

657,093. END-GATE OR SHOVELING-BOARD. HENRY K. CRISSEY, Iowa Falls, Iowa. Filed Dec. 30, 1899. Serial No. 742,093. (No model.)



Claim.—1. The combination of a wagon-body, an end-gate, a pair of folding braces connecting the end-gate near its upper end to the wagon-body, each of said braces consisting of an inner member and an outer member, the outer member being pivoted at its upper end to the end-gate and the inner member being pivotally supported at its upper end by the wagon-body, said members crossing each other and having their upper pivots in substantially-axial line with each other, the lower ends of said members being pivoted together.

2. The combination of a wagon-body, a pair of end-gate-supporting posts removably connected therewith, an end-gate fitting between said posts, a pair of folding locking-braces connecting the end-gate near its upper end to said posts, each of said braces consisting of an inner member and an outer member pivoted together at their lower ends, the upper end of the outer member being pivoted to the end-gate, and the upper end of the inner member being pivoted to the adjacent post, one of said members extending across the rear edge of the other member and the upper pivots of the braces being axially in line with each other.

3. The combination of a wagon-body, an end-gate, a pair of folding locking-braces connecting the end-gate at its upper end to the wagon-body, each of said braces consisting of two rigid members pivoted together at their lower ends, the upper end of one member being pivoted to the end-gate and the upper end of the other member being pivotally supported by the wagon-body, one of said members in its normal position preventing the rearward movement of the upper end of the member which is pivoted to the end-gate, said braces forming non-yielding pivotal supports

for the end-gate when the said braces are in their normal position, and means for detachably pivoting the lower edge of the end-gate.

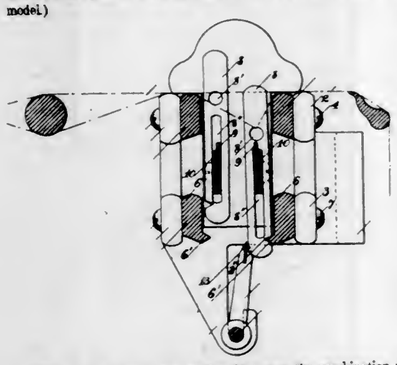
4. The combination of a wagon-body, a pair of end-gate-supporting posts removably connected thereto, a pair of folding braces connecting the upper end of the end-gate to the posts, the upper ends of said braces forming pivotal supports for the upper end of the end-gate, pivots carried by the end-gate at its lower end, and a latch device carried by each of the supporting-posts at their lower ends to detachably secure the pivots carried by the end-gate to the said posts.

5. The combination of a wagon-body, an end-gate, a pair of folding braces connecting the end-gate to the wagon-body, each of said braces consisting of an inner rigid member and an outer rigid member pivoted together at their lower ends, the upper end of the outer member being pivoted to the end-gate and the upper end of the inner member being pivotally supported by the wagon-body, one of said members in its normal position preventing the rearward movement of the upper end of the other member, said braces in their normal folded position extending forward of their upper pivotal points, and means for detachably securing the lower edge of the end-gate to the wagon-body, whereby when said lower edge of the end-gate is released and swung rearward the folded braces will form non-yielding pivotal supports for the end-gate.

6. The combination of a wagon-body, a pair of supporting-posts detachably connected to the wagon-body, an end-gate adapted to fit between said posts, means for detachably connecting the lower edge of the end-gate to the lower ends of the posts, a pair of folding braces connecting the end-gate near its upper edge to the posts, said braces each consisting of two members pivoted together at their lower ends and crossed near their upper ends, one member being pivoted at its upper end to the end-gate and the other to the adjacent post, said braces extending forward of their pivots, whereby when the lower edge of the end-gate is swung rearward, the braces will form non-yielding pivotal supports for the end-gate.

7. The combination of a wagon-body, an end-gate, means for securing the lower edge of the end-gate to the wagon-body, a pair of folding braces connecting the end-gate near its upper edge to the wagon-body, each of said braces consisting of an inner and an outer rigid member, whose lower ends are pivoted together, the upper end of the inner member being pivotally supported by the wagon-body and the upper end of the outer member being secured to the end-gate, said members being each formed of one piece, one of said members being bent laterally across the rear edge of the other member.

657,094. **WARP STOP-MOTION FOR LOOMS.** RANDOLPH CROMPTON, Worcester, Mass., assignor to the Crompton & Knowles Loom Works, same place. Filed Apr. 23, 1900. Serial No. 13,834. (No model.)

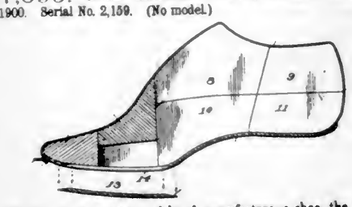


Claim.—1. In a warp stop-motion for looms, the combination with a series of drop devices, supported in their normal position by the warp-threads, and each device having a recess in one of its vertical edges, of a vibrating feeler-plate to engage the drop device when in its lowered position, and a transverse bar having a projection thereon to enter the recess in the drop device when in its lowered position, substantially as shown and described.

2. In a warp stop-motion for looms, a series of drop devices, independent of the shedding mechanism, each device provided with an elongated opening, and a warp-eye, and an angular recess in one edge, in combination with a transverse guiding-bar passing through the elongated opening, a vibrating feeler-plate to engage the drop device when in its lowered position, and a transverse bar having an angular projection thereon to extend into the angular recess in the drop device, substantially as shown and described.

3. In a warp stop-motion for looms, the combination with a series of drop devices, supported in their normal position by the warp-threads, and each device having an elongated opening therethrough, of a transverse guiding-bar having a toothed or serrated upper edge, extending through the elongated opening, and one or more adjustable bars also extending through said opening, substantially as shown and described.

657,095. **SHOE.** RALPHAEL DE LEO, Lynn, Mass. Filed Jan. 20, 1900. Serial No. 2,159. (No model.)



Claim.—1. As a new article of manufacture, a shoe, the upper of which is formed from a single piece of material, and the insole is provided with a removable portion, and the outer sole is secured to the welt of the upper in position to hold the removable portion of the insole in place, substantially as described.

2. As a new article of manufacture, a shoe, the upper of which is formed from a single piece of material and the insole is provided with a removable portion, the edges of which are beveled, and the outer sole is secured to the welt of the upper in position to hold said removable portion in place, substantially as described.

657,096. **STAR-WHEEL MECHANISM FOR MUSIC-BOXES.** GUSTAV DIETZMANN, Hoboken, N. J., assignor to F. G. Otto & Sons, Incorporated, Jersey City, N. J. Filed Dec. 8, 1899. Serial No. 739,592. (No model.)



Claim.—1. A star-wheel element for music-boxes, comprising a frame or body portion provided with a plurality of projecting fixed heads, a shaft passed through said heads, a plurality of loosely-mounted star-wheels imposed upon said shaft intermediate of said fixed heads, and a plurality of spring-heads imposed upon said shaft, two of said star-wheels being arranged in each space between the several fixed heads, and two of said spring-heads being interposed between each pair of star-wheels and each laterally bent to bear thereon, substantially as shown and described.

2. A star-wheel element for music-boxes, comprising a frame or body portion provided with a plurality of projecting fixed heads, a shaft passed through said heads, a plurality of loosely-mounted star-wheels loosely imposed upon said shaft intermediate of said fixed heads, and a plurality of spring-heads imposed upon said shaft, two of said star-wheels being arranged in each space between the several fixed heads, and two of said spring-heads being interposed between each pair of star-wheels and each laterally bent to bear thereon, each of said spring-heads being provided with means for connection with said frame or body portion, substantially as shown and described.

3. A star-wheel element for music-boxes, comprising a frame or body portion provided with a plurality of projecting fixed heads, a shaft passed through said heads, a plurality of loosely-mounted star-wheels imposed upon said shaft intermediate of said fixed heads, and a plurality of spring-heads imposed upon said shaft, two of said star-wheels being arranged in each space between the several fixed heads, two of said spring-heads being interposed between each pair of star-wheels and each laterally bent to bear thereon, and a felt or similar washer imposed between each two adjacent spring-heads within each of said spaces, between said fixed heads, substantially as shown and described.

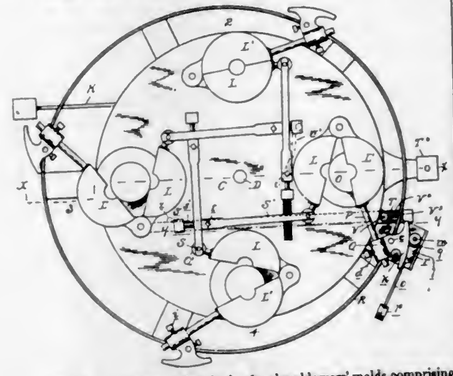
4. A star-wheel element for music-boxes, comprising a frame or body portion provided with a plurality of fixed heads, a shaft passed through said heads, a plurality of star-wheels loosely mounted upon said shaft, and a plurality of spring-heads imposed upon said shaft and arranged to bear upon said star-wheels, each of said spring-heads being provided with a neck in the end of which is formed a recess, said frame being provided with a plurality of lugs which fit said recesses and by means of which said heads are prevented from rotation, substantially as shown and described.

5. A star-wheel element for music-boxes, comprising a shaft, a plurality of star-wheels arranged thereon, a pair of spring-heads arranged non-rotatably upon said shaft between two of said star-wheels and bent laterally to frictionally engage said star-wheels, and a compressible washer arranged upon said shaft between said spring-heads, substantially as shown and described.

6. A star-wheel element for music-boxes, embodying a shaft, a star-wheel loosely mounted thereon, and a spring-head mounted upon said shaft and provided with a laterally-bent portion which bears frictionally upon said star-wheel.

7. A star-wheel element for music-boxes, embodying a shaft, a star-wheel loosely mounted thereon, a spring-head loosely mounted upon said shaft and provided with a laterally-bent portion which bears frictionally upon said star-wheel and means for maintaining said spring-head in fixed position.

657,097. **GLASS-BLOWER'S MACHINE.** CLEMENT A. DUNBAR, Detroit, Mich. Filed Mar. 5, 1900. Serial No. 7,383. (No model.)



Claim.—1. An operating device for glass-blowers' molds comprising in combination with a carrier, and a multiple of molds thereon, of means by which the operator may close the mold at the blowing-point, and mechanism by which an operator may move the carrier and thereby open a mold containing a blown article.

2. An operating device for glass-blowers' molds comprising in combination with an endless carrier, and a mold thereon, of means by which the operator may close the mold at the blowing-point, and mechanism by which an operator may actuate the carrier to move the filled mold away from the blower and for opening the mold during such movement.

3. In a glass-blower's machine, a traveling sectional mold, means for actuating one section of the mold from its open to its closed position, in moving to the blowing-point, and separate, operator-controlled means for closing the other section.

4. In a glass-blower's machine, means for raising a mold-section, and means for separating the sections after such raising.

5. In a glass-blower's machine, means for performing the following operations successively for raising a mold-section, then slightly opening the same so as to admit a film of air around the article on one side, and then to gradually open the mold.

6. In a glass-blower's machine, means for raising one section of a sectional mold, means for slightly opening the same, and means for then gradually opening both mold-sections.

7. In a glass-blower's machine, a traveling sectional mold, means operating during the travel to vertically separate the mold and article, and then to gradually open the mold-sections.

8. In a glass-blower's machine, a traveling sectional mold, means operating during the travel of the mold to first separate a mold-section from the article by a vertical movement, means for then slightly opening the said section, and means for then opening the mold gradually, to its "open" position.

9. In a glass-blower's machine, a movable mold-carrier, a mold thereon having movable mold-sections, means for opening both sections and for closing one section during the travel of the mold, and means under the control of the operator for closing the other section at the "blowing-point."

10. In a glass-blower's machine, a sectional mold movable to and from the blowing-point, means for actuating one mold-section to its closed position in moving to the blowing-point, the other mold-section being free, and operator-controlled devices for closing said free section.

11. In a glass-blower's machine, a mold-carrier, a sectional mold thereon, a stationary cam, means connecting a mold-section therewith, such connection comprising a vertical and horizontal adjustment.

12. In a glass-blower's machine, a mold-carrier, a sectional mold thereon, a cam adjacent to the carrier, a connection between the mold-section and cam comprising the block Q connected to the mold-section, the roller *h* connected to the block Q and engaging the cam, the inclined head *k* on the block Q, the counterweighted roller adapted to be struck by the head *k*, and the plate *r* over which said roller travels for the purpose described.

13. In a glass-blower's machine, a movable mold-carrier, a multiple of molds thereon, an arm connected to each mold through which it may be closed, and a common mechanism controlled by the blower into operative relation with which the arm of each mold comes successively.

14. In a glass-blower's machine, a mold-carrier, the molds thereon, an actuating device for the carrier, a mold-closing device, and connections between the two whereby they are required to be successively operated and whereby the operation of one resets the other.

15. In a glass-blower's machine, a rotating mold-carrier, sectional molds thereon, the cam around the carrier, a connection from the outer mold-section to said cam, said cam being shaped to first open, and then to close said mold-section, in the revolution of the carrier, an operating connection to the inner mold-section, for opening said section in the revolution of the carrier, and means by which the operator may close the inner section at the blowing-point.

16. In a glass-blower's machine, a movable mold-table, sectional molds thereon, means by which the operator may move it through fractional parts of a revolution, means for holding the mold closed during the first operation, and for opening the mold having the blown article therein, during the succeeding operation, said means comprising devices for first separating the article and mold vertically, then opening the mold-sections successively.

17. In a glass-blower's machine, a movable sectional mold, successively-operating mechanism for first opening both sections, for next closing one section during the movement of the mold and means by which the operator may subsequently close the mold.

18. In a glass-blower's machine, a sectional mold, mechanism for positively opening and closing one section of the mold and mechanism for opening the other section simultaneously with the opening of the first section during the movement thereof, and independent means under the control of the operator for closing said second section after the first section is closed.

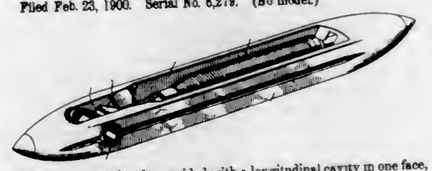
19. In a glass-blower's machine, a sectional mold, means for opening the same comprising devices for initially opening one section to admit a thin film of air around one side of the article, and devices for thereafter opening the mold to permit the article to be withdrawn.

20. In a glass-blower's machine a sectional mold, means by which the operator can move the mold away from the blowing-point to the opposite side of the machine where the article may be removed, means for opening the mold during such movement, means at the "taking-out" point by which the operator may return the mold to the blowing-point, devices for closing one section during such movement; and devices by which the "blower" can close the other section.

21. In a glass-blower's machine, a sectional mold, operating-cams for actuating the mold-sections, connecting means between the cams and mold-sections comprising a vertical and horizontal adjustment.

22. In a glass-blower's machine, a sectional mold, its handles, such as P, of a bracket adjustable longitudinally thereon, and an actuating-cam connection with such bracket comprising a vertical adjustment.

657,098. **LOOM-SHUTTLE.** NORBERT DURAND, Range, Wis., assignor of one-half to George Gamache and Hugh Phillips, Amery, Wis. Filed Feb. 23, 1900. Serial No. 6,279. (No model.)



Claim.—1. A shuttle provided with a longitudinal cavity in one face, a delivery-eye extending transverse to the cavity, and a finger-opening located in the same side of the shuttle as the longitudinal cavity and communicating with the eye, whereby the yarn may be drawn across the finger-opening and may be depressed into the finger-opening and through the eye by the finger of the operator.

2. A loom-shuttle having a longitudinal bobbin-cavity and provided with a transverse finger-socket of sufficient size to admit of the insertion of the operator's finger therethrough, said socket being laterally intersected by the bobbin-cavity and terminating at one end in the delivery-eye of the shuttle.

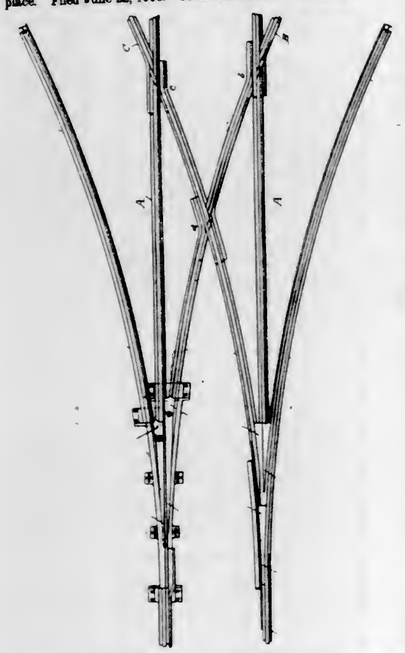
3. A loom-shuttle having a longitudinal bobbin-cavity and provided with a finger-socket one end of which forms the delivery-eye of the shuttle and the other end of which is closed, said socket communicating laterally with the bobbin-cavity.

4. A loom-shuttle having a longitudinal bobbin-cavity and provided with a transverse finger-socket of sufficient size to admit of the insertion of the operator's finger therethrough, said socket being laterally intersected by the bobbin-cavity and terminating at one end in the delivery-eye of the shuttle, a guide-eye at the entrance to the finger-socket, and a guide-block for directing the thread into the eye as it is drawn from the bobbin.

5. A loom-shuttle having a longitudinal bobbin-cavity, and provided with a transverse finger-socket which is laterally intersected by the bobbin-cavity and which terminates at one end in the delivery-eye of the shuttle, and a socket-tube inserted in said finger-socket and cut away at one side to admit of the insertion of the finger.

6. A loom-shuttle having a longitudinal bobbin-cavity and provided with a transverse finger-socket which is laterally intersected by the bobbin-cavity and which terminates at one end into the delivery-eye of the shuttle, a socket-tube set into said finger-socket and cut away at one side to form a finger-notch, the said tube being further provided with a guide-eye which communicates with the finger-notch.

657,099. RAILWAY-SWITCH. GEORGE H. FAIRCHILD, San Francisco, Cal., assignor to the Market Street Railway Company, same place. Filed June 22, 1900. Serial No. 21,133. (No model.)



Claim.—1. A double switch for three-way tracks, consisting of a main or straight track, branch tracks springing from the same, or approximately the same, line, independent switch-tongues, one for each branch, lying in juxtaposition between the same, or approximately the same, vertical planes, and a suitable and correspondingly-located mate in the other side of said branches.

2. A double switch for three-way tracks, consisting of a main or straight track, branch tracks springing from the same, or approximately the same, line, and having uniform curves on opposite sides of the main or straight track, independent switch-tongues, one for each branch, lying in juxtaposition between the same or approximately the same, vertical planes, and a suitable and correspondingly-located mate in the other side of said branches.

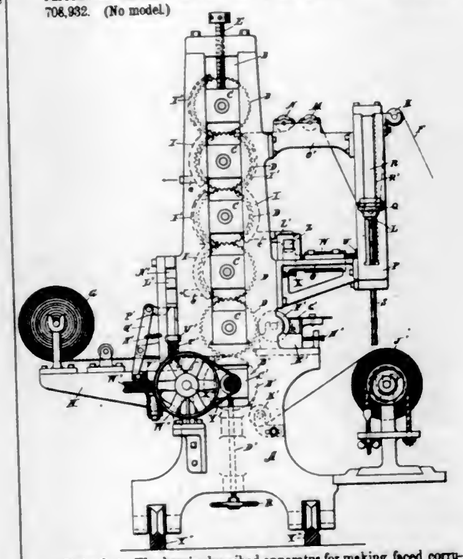
3. A double switch for three-way tracks, consisting of a main or straight track, branch tracks therefrom, independent switch-tongues, one tongue being in the outside rail of one branch and the other tongue in the inside rail of the other branch, and a suitable mate in the other side of said branches.

4. A double switch for three-way tracks, consisting of a main or straight track, branch tracks springing from the same, or approximately the same, line, independent switch-tongues, one tongue being in the outside rail of one branch and the other tongue in the inside rail of the other branch, said tongues lying in juxtaposition between the same, or approximately the same, vertical planes, and a suitable and correspondingly-located mate in the other side of said branches.

5. A double switch for three-way tracks, consisting of a main or straight track, branch tracks springing from the same, or approximately the same, line, and having uniform curves on opposite sides of the main or straight track, independent switch-tongues, one tongue being in the outside rail of one branch and the other tongue in the inside rail of the other branch, said tongues lying in juxtaposition between the same, or approximately the same, vertical planes, and a suitable and correspondingly-located mate in the other side of said branches.

6. A double switch for three-way tracks, consisting of a main or straight track, branch tracks springing from the same, or approximately the same, line, a switch-casting carrying independent switch-tongues, one tongue for each branch, said tongues lying in juxtaposition between the same, or approximately the same, vertical planes, and a suitable and correspondingly-located mate in the other side of the branches.

657,100. APPARATUS FOR MAKING CORRUGATED PAPER. JEFFREY T. FERRIS, Anderson, Ind. Filed Mar. 13, 1899. Serial No. 708,932. (No model.)



Claim.—1. The herein-described apparatus for making faced corrugated paper, comprising a vertical stack of intermeshing corrugating-rolls D resting one upon the other, whereby the moist strip of paper pressing through said rolls is subjected to a gradually-increasing pressure as it becomes gradually dried and strengthened, and a plain roll beneath the lowermost corrugating-roll, substantially as described.

2. The herein-described apparatus for making faced corrugated paper, consisting of a vertical stack of intermeshing corrugating-rolls D resting one upon the other, and each supporting the weight of the roll or rolls above it, a plain roll below the lowermost corrugating-roll, shields applied to said rolls, and means connected with said shields for passing currents of air between the shields and rolls, for the purpose described.

3. The combination, with a train of intermeshing corrugating-rolls D, of shields I arranged upon opposite sides of the rolls in alternate order and each applied to two rolls and composed of a part I′ conforming to but separated from the side of one roll and a part I″ fitting snugly against the surface of the paper upon the side of the adjacent roll and provided with the grooves *b*, means connected with said shields for passing currents of air between the shields and rolls, for the purpose described.

4. The combination, with a train of intermeshing corrugating-rolls D, of shields I, each consisting of the part I′ and the part I″ provided with the diagonal ribs *a* forming the grooves *b* having the outlets *d* and the flange *c*, and means connected with said shields for passing currents of air between the shields and rolls, for the purpose described.

5. The combination, with the train of intermeshing corrugating-rolls

D provided with non-registering circumferential grooves K, of the shields I applied in alternate order to the opposite sides of said rolls and provided with the fingers J fitting in the grooves K thereof, for the purpose described.

6. The combination of the uprights A provided with slots, the vertical stack of intermeshing corrugating-rolls D and plain roll journaled in boxes guided vertically in the slots in the uprights, the double shields I applied in alternate order to the opposite sides of the rolls D, and means connected with the shields for passing air between the same and the rolls, substantially as described.

7. The combination, with the vertical stack of intermeshing corrugating-rolls D, each supporting the weight of those above it, of the paste-roll F′ and plain pressure-roll B′ coöperating with the lowermost roll D and adapted to press together a plain strip and a corrugated strip passing between the plain roll and the lowermost roll D for the purpose of applying a facing-strip to the corrugated strip formed by the rolls D.

8. The combination, with the vertical stack of intermeshing corrugating-rolls D, each supporting the weight of the rolls above it, of the shields I applied in alternate order to the opposite sides of said rolls, means for passing air between the shields and the rolls, and the paste-roll F′ and pressure-roll B′ coöperating with the lowermost roll D, for the purpose described.

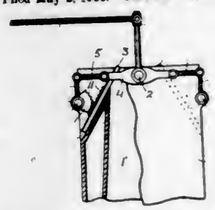
9. The combination, with a corrugating-machine adapted to receive a strip of plain paper from a suitable supply, and a taper pulley over which the driving-belt for the corrugating-machine passes, of a roller suspended in a depending loop of the strip of paper passing from the supply to the corrugating-machine and adapted to be lifted by the tightening of said paper and lowered by the slackening thereof, and a shifter for the driving-belt of the corrugating-machine actuated by the raising and lowering of said roller to regulate the speed of the corrugating-machine in accordance with the delivery of the paper strip to it by the supply.

10. The combination of upright P, the train of corrugating-rolls D, the taper driving-pulley A′ and driving-belt Z″ for said rolls, the rollers K M over which the paper strip F supplied to the corrugating-rolls passes and between which it forms a depending loop, the roller L suspended in said loop, boxes Q vertically guided in the uprights P and in which said roller L is journaled, the shifter Z′ for the driving-belt Z″, and connections between one of the boxes Q of the roller L and said shifter for operating the latter by the raising and lowering of the roller L due to tightening and slackening of the paper strip F.

11. The combination of upright P, the train of corrugating-rolls D, the taper driving-pulley A′ and driving-belt Z″ for said rolls, the rollers K M over which the paper strip F supplied to the corrugating-rolls passes and between which it forms a depending loop, the roller L suspended in said loop, boxes Q vertically guided in the uprights P and in which said roller L is journaled, the pinion T mounted beneath one of the boxes Q of the roller L, the screw-rod S depending from said box and passing through said pinion, the sliding rack-bar Z geared to the pinion T, and the shifter Z′ operated by the bar Z and coöperating with the driving-belt Z″, substantially as and for the purpose described.

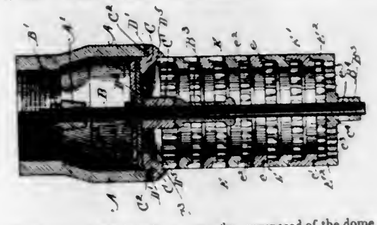
12. The combination of upright P, the train of corrugating-rolls D, the taper driving-pulley A′ and driving-belt Z″ for said rolls, the rollers K M over which the paper strip F supplied to the corrugating-rolls passes and between which it forms a depending loop, boxes Q vertically guided in slots R in the uprights P, a spindle journaled in said boxes, the roller L suspended in said loop and loosely mounted upon said spindle, pinions R″ fast upon opposite ends of said spindle, racks R′ on the uprights P with which said pinions mesh, the beveled pinion T mounted in the framework below one of the boxes Q, the screw-rod S depending from said box and passing through the pinion T, the shaft V, the pinion U fast on shaft V and meshing with the pinion T, the spur-pinion X fast on the shaft V, and the sliding rack-bar Z meshing with the pinion X and provided with the shifter Z′ coöperating with the driving-belt Z″, substantially as and for the purpose described.

657,101. EXHAUST-NOZZLE. WILLIAM R. FREDERICK, Fort Wayne, Ind. Filed May 2, 1900. Serial No. 15,180. (No model.)



Claim.—In an exhaust-nozzle, in combination, a chute, sliding gates ranging oppositely in diverging planes and adapted to partially close the mouth of said chute, oscillating shafts having gear connections with said gates, a tilting bar having toggle-arms connecting its ends with said oscillating shafts respectively, and suitable means for actuating said tilting bar, substantially as shown and described.

657,102. PUMP. GEORGE G. GUY, Batavia, Ill., assignor to the United States Wind Engine and Pump Company, same place. Filed Oct. 6, 1898. Serial No. 692,839. (No model.)



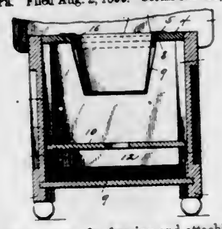
Claim.—1. A strainer for pumps, &c., composed of the dome A the spider C for the valve-seat secured to the under side of the dome A, the disk E^2 beneath said spider, the overlapping annuli E′ having the notches e^2 in the edges deeper than the overlapping portion, all these parts overlapped and coöperating to form a rigid perforated tube of which the dome A is the top and the disk E^2 the bottom, and rigid connections between the spider C and the disk E^2, substantially as shown and described.

2. A strainer for pumps, &c., composed of a dome the spider for the valve-seat secured to the under side of the dome, the spider forming the upper end of the tube, with the disk forming the lower end of the tube, the annuli having their edges notched substantially as shown and interposed between the spider and the disk, all the parts overlapped and cooperating to form a rigid perforated tube, and the bolt connecting the spider and the disk and clamping the annuli in place.

3. In a pump, the combination of the dome A having the cross-piece A^3 therein, with the valve-spider C having the shoulder C^2 upon its upper side forming a seat for the dome and the interior shoulder C^3 on its lower side forming a seat for the uppermost annulus E′, the annuli E′ cooperating to form a perforated cylinder, and bolts for connecting the spider to the dome and to the annuli, substantially as shown and described.

4. In a pump, the combination of the dome A having the cross-piece A^3 therein, with the valve-spider C having the shoulder C^2 upon its upper side forming a seat for the dome and the interior shoulder C^3 on its lower side forming a seat for the uppermost annulus E′, the annuli E′ cooperating to form a perforated cylinder, a perforated disk E^2 forming the bottom of said cylinder, and bolts for connecting the spider with the cross-piece A^3 and the disk E^2, substantially as and for the purpose described.

657,103. COMMODE ATTACHMENT. JACOB A. HACKENBERG, Phœnixville, Pa. Filed Aug. 2, 1899. Serial No. 725,901. (No model.)



Claim.—1. As a means for forming and attaching a soil-bag to a commode, the combination of a seat adapted to receive a bag-blank, a former coöperating with the seat in the formation of a soil-bag from the blank thereon, and a clamping-ring of a size exceeding the former and fitted on and movable with said former into coöperative relation to the seat, said former and clamp acting successively on the blank to produce the bag and clamp the same to the seat, as set forth.

2. As a means for forming and attaching a soil-bag to a commode, the combination with the seat adapted to receive a bag-blank, of a former provided at its upper end with a projection forming a clamp-stop and said former coöperating with the seat by passing therethrough to form a soil-bag from said blank, and a clamp fitted on the former to contact the stop thereon and movable with said former into coöperative relation to the seat and to the bag produced by the former, said clamp acting on the bag subsequent to the action of the former, as set forth.

3. As a means for producing a soil-bag and attaching the same to a

commode, the combination with the seat adapted to receive a bag-blank, of a former provided at its upper end with an annular bead forming a clamp-stop, and a clamping-ring conforming to the former and fitted loosely thereon in engagement with the annular bead, said ring being movable with the former and both the former and ring coöperating with the seat successively in the formation and clamping of a soil-bag from a blank, said former being withdrawable freely from the ring subsequent to the engagement of the latter with the bag, as set forth.

657,104. METHOD OF STRINGING OR SUPPORTING ELECTRICAL CONDUCTORS. LOUIS HACKETHAL, Hanover, Germany. Original application filed Dec. 20, 1898, Serial No. 699,320. Divided and this application filed Apr. 20, 1900. Serial No. 13,614. (No model.)

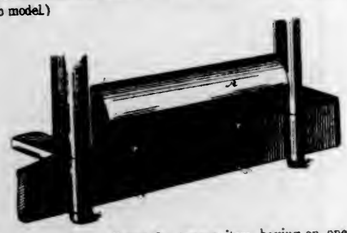


Claim.—1. A series of single insulators and a pair of conducting-wires each supported by one side or the other of each single insulator, and each pair of wires crossed between adjacent insulators in the series, substantially as described.

2. A series of single insulators and a pair of insulating conducting-wires each passing around and supported by the opposite sides respectively of each single insulator of the series, and each pair of wires crossed between adjacent insulators of the series, substantially as described.

3. A series of single insulators and a pair of insulating conducting-wires, each supported by the opposite sides respectively of each single insulator of the series and each pair of wires crossed between the adjacent insulators in the series, and a mechanical connection for securing the wires together at the crossing-points, substantially as described.

657,105. PENCIL-TRAY ATTACHMENT FOR TYPE-WRITERS. EDITH L. HAMILTON, Fresno, Cal. Filed June 23, 1899. Serial No. 721,549. (No model.)

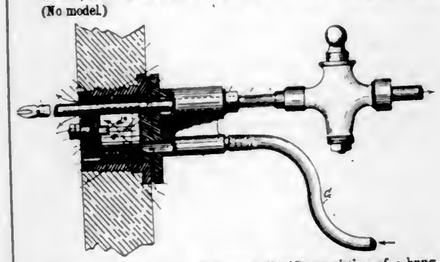


Claim.—1. A pencil-tray for type-writers, having on one edge a bead and perforated hinge-lugs, clamps each comprising a head and two legs projecting from the under side thereof, the upper side of the head being provided with a transverse groove near one end and a projection, the top of which is inclined on one side of the groove, the top of the head upon the opposite side of the groove being provided with two upwardly extending lugs to form a hinge with the lug upon the tray, substantially as set forth.

2. In a pencil-tray, the combination with two clamps, of a curved-bottom tray hinged thereto, each of the clamps comprising a head, the lower side of which is provided with two legs and the upper surface is grooved transversely near one end, a projection at that end of the head on one side of the groove, the top of which is inclined, and the top of the head upon the other side of the groove is provided with upwardly-extending perforated lugs, and the tray being open at the front end and closed at the rear and having its inner edge provided with a bead and perforated projections to fit between the lugs of the clamp, and pintles through said projections and lugs, the bottom of the tray being adapted to rest upon the inclined projection of the head when the tray is in its open position.

3. The combination, with two clamps adapted to be removably secured to one side of a type-writer, the top of each clamp being grooved transversely for the reception of the edge of the tray and provided with a projection on one side of the groove and with hinge members upon the other, of a tray pivotally secured to the clamps, one end of which is open and the other end is closed, and one edge is provided with projections in position to fit between the hinge members of the clamp, the tray resting upon the projections of the clamps when open and standing above the side of the machine when closed.

657,106. DEVICE FOR DRAWING LAGER-BEER. LUCIEN H. HANDY, San Francisco, Cal. Filed Apr. 11, 1900. Serial No. 12,443. (No model.)



Claim.—1. A device for drawing liquids, consisting of a bung, a valve therein, adapted to open and close communication between the liquid-receptacle and the bung, a key, adapted to be fitted to the bung, and to operate the valve thereof, a slip-pipe, carried by the key, and adapted to pass through the communication opened by the key, into the liquid-receptacle, and an air-passage in said key, adapted to be connected by the operation of the key with the open communication into said liquid-receptacle.

2. A device for drawing liquids, consisting of a bung, a valve therein, adapted to open and close communication between the liquid-receptacle and the bung, a key, adapted to be fitted to the bung, and having a hollow inner end, adapted to engage and operate the valve, a slip-pipe, carried by the key, and adapted to pass appreciably loosely through the communication opened by the key, into the liquid-receptacle, and an air-passage in said key, communicating with its hollow inner end, whereby the air may enter the open communication to the liqnid-receptacle, by passing around the slip-pipe.

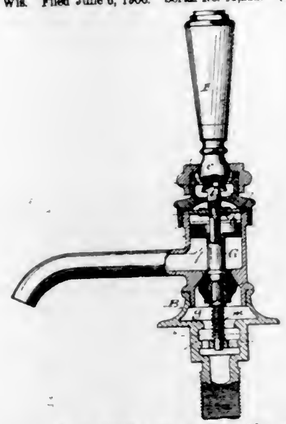
3. A device for drawing liquids, consisting of a bung, having a ported inner end wall, an oscillating valve seated upon the face of said end wall, inside the bung, and having a port, adapted to open and close communication between the liquid-receptacle and the bung, a key, adapted to be fitted to the bung, and to operate the valve thereof, a slip-pipe, carried by the key, and adapted to pass through the communication opened by the key, into the liquid-receptacle, and an air-passage in said key, adapted to be connected by the operation of the key with the open communication into said liquid-receptacle.

4. A device for drawing liquids, consisting of a bung, having a ported inner end wall, an oscillating valve seated upon the face of said end wall, inside the bung, and having a port, adapted to open and close communication between the liquid-receptacle and the bung, a key adapted to be fitted to the bung, and having a hollow inner end, adapted to engage and operate the valve, a slip-pipe, carried by the key, and adapted to pass appreciably loosely through the communication opened by the key, into the liquid-receptacle, and an air-passage in said key, communicating with its hollow inner end, whereby the air may enter the open communication to the liquid-receptacle, by passing around the slip-pipe.

5. A device for drawing liquids, consisting of a bung, a valve therein, adapted to open and close communication between the liquid-receptacle and the bung, a key, adapted to be fitted to the bung, and having a hollow inner end, adapted to engage, and operate the valve, a guide-socket, and a separate air-passage socket, carried by the key, and both opening into the hollow inner end of said key, and a slip-pipe, carried in the guide-socket, and adapted to pass into and through the hollow end of the key, and to pass appreciably loosely through the communication opened by the key, into the liquid-receptacle.

6. A device for drawing liquids, consisting of a bung, having a ported inner end wall, an oscillating valve seated upon the face of said end wall, inside the bung, and having a port, adapted to open and close communication between the liquid-receptacle and the bung, a key adapted to be fitted to the bung, and having a hollow inner end, adapted to engage, and operate the valve, a guide-socket, and a separate air-passage socket carried by the key, and both opening into the hollow inner end of said key, and a slip-pipe, carried in the guide-socket, and adapted to pass into and through the hollow end of the key, and to pass appreciably loosely through the communication opened by the key, into the liquid-receptacle.

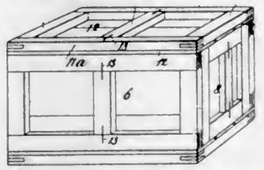
657,107. FAUCET. MICHAEL J. HANNIFIN and ALBERT HUCK, Milwaukee, Wis. Filed June 6, 1900. Serial No. 19,222. (No model.)



Claim.—1 A faucet having a cap provided with a cup-like extension in turn provided with a concave inwardly-extending flange, a supplementary cap in screw-thread connection with the main-cap extension, and a handle having a concave end and spherical bulb within the confines of the supplementary cap and said main-cap extension, and a reciprocative valve having a rounded stem extremity opposing the concave end of the handle.

2. A faucet comprising a valve having a hollow stem, a piston on the stem movable in the spout-section of the faucet-shell, a flexible diaphragm between said spout-section of said shell and its cap, a cup-like extension on the cap having a concave inwardly-extending rim-flange, a supplementary cap in screw-thread connection with the main-cap extension, a handle having a concave end and spherical bulb within the confines of the supplementary cap and said main-cap extension, another stem guided in the hollow main-valve stem and engaged with the diaphragm, a round-end thimble in screw-thread connection with the auxiliary stem to oppose the concave end of the handle, and a valve on said auxiliary stem governing said hollow main-valve stem.

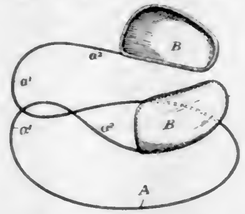
657,108. PACKING-BOX. JOSEPH H. HARRINGTON, Troy, N. Y. Filed Jan. 21, 1898. Serial No. 667,397. (No model.)



Claim.—1. A panel constituting a side, an end, top or bottom of a packing-box comprising four strips suitably framed together, facing-boards tongue-and-grooved into each other and fastened to said strips, a brace connecting two of the framing-strips intermediate of their ends, and wire staples having outwardly-flaring tangs said brace being secured to each of the two said strips by means of said staples all substantially as specified.

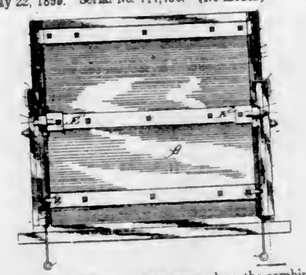
2. A packing-box having its sides, ends, top and bottom each consisting of a panel comprising four strips suitably framed together, facing-boards tongue-and-grooved into each other and fastened to said strips, a brace connecting two of the framing-strips intermediate of their ends, and wire staples having outwardly-flaring tangs, said brace being secured to each of the two said strips by means of said staples, said sides, ends, top and bottom all adapted to be suitably secured together substantially as specified.

657,109. EAR-MUFF. WILLIAM H. HARTMANN, Chicago, Ill. Filed Jan. 17, 1900. Serial No. 1,722. (No model.)



Claim.—As a new article of manufacture, the ear-muffs, B, provided with a spring-wire, A, secured thereto at its ends, having a middle portion adapted to conform to the lower portion of the interior of the hat and rest between the same and the sweat-band thereof and end portions extending upward from this middle portion and returning alongside of the same to support the ear-muffs within the hat and to allow them to be drawn downward into position for use against the tension of the wire; substantially as described.

657,110. SHOVELING-BOARD. EUGENIO K. HAYES, Galva, Ill. Filed May 22, 1899. Serial No. 717,756. (No model.)



Claim.—1. As an attachment to a wagon-box, the combination of a shoveling-board, pivoted and detachably-mounted swivel-blocks, and rods pivotally attached at one end and passing loosely through holes in the swivel-blocks at the other end, whereby the shovel-board is attached and detached by means of the swivel-blocks, substantially as described.

2. As an attachment to a wagon-box, the combination of a shoveling-board, means for attaching the shoveling-board to the wagon-box, pivoted and detachably-mounted swivel-blocks, rods pivotally attached at one end and passing loosely through holes in the swivel-blocks at the other end and means for locking the shoveling-board in its up or closed position, substantially as described.

3. As an attachment to a wagon-box, a shoveling-board, brackets provided with projecting studs having laterally-projecting lugs thereon, pivoted swivel-blocks provided with holes for mounting them on the studs of the brackets and having laterally-projecting slots to permit the holes to be inserted upon the studs, rods pivotally attached at one end and passing loosely through holes in the swivel-blocks at the other end and holding the swivel-blocks when in use in positions where the slot in the holes and the lugs on the studs are out of register, substantially as described.

4. As an attachment to a wagon-box, the combination of a shoveling-board, supports for attaching the shoveling-board to the wagon-box, means adjustable to the height of different boxes for securing the supports to the box, pivoted and detachably-mounted swivel-blocks on the shoveling-board, and rods pivotally attached at their upper ends to the supports and passing loosely through holes in the swivel-blocks at their lower ends, substantially as described.

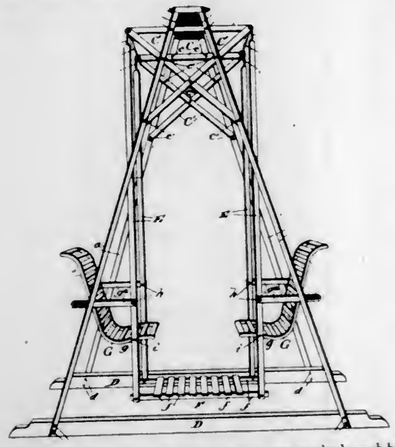
5. As an attachment to a wagon-box, the combination of a shoveling-board, supports for attaching the shoveling-board to the wagon-box, means for securing the supports to the wagon-box, open slots near the lower ends of the supports, means for pivoting the lower end of the shoveling-

board in the open slots, pivoted swivel-blocks on the shoveling-board, and rods pivotally attached at their upper ends to the supports and passing loosely through holes in the swivel-blocks at their lower ends, substantially as described.

6. As an attachment to a wagon-box, the combination of a shoveling-board, supports for attaching the shoveling-board to the wagon-box, a top clamp adjustable up and down the supports to make it operative with wagon-boxes of different heights, and having spring action for clamping side-boards of different thicknesses, means for supporting the shoveling-board in its down or open position, and means for locking the shoveling-board in its up or closed position, substantially as described.

7. In a wagon-box, the combination of an end-board, an upright or support on each side of the wagon-box at the end, a hook on each side of the end-board each hook having at its free end an eye to engage with and form a separable pivotal connection between the upper end of the uprights or supports and the end-board, a vertical slot in each upright or support near its lower end with an outward opening or passage at the top of each slot, a pin on each side of the end-board entering the open slot of the upright or support through the outward opening or passage and forming a separable pivotal connection for the end-board with the lower end of the uprights or supports and rods pivotally attached at one end and passing loosely through pivoted and detachably-mounted swivel-blocks on the sides of the end-board for attaching and detaching the end-board and enabling it to be swung outward at both top and bottom and change its operation, substantially as described.

657,111. SWING. EUGENIO K. HAYES, Galva, Ill. Filed Sept. 23, 1899. Serial No. 731,413. (No model.)



Claim.—1. In a swing, the combination of two standards, each having a body of right-angle shape in cross-section bent into a yoke or U form to have side pieces or legs and a cross-piece or top, a bridge for the top of the standards, and a base for the bottom of the standards for the bridge and base to set and hold the standards at an inclination, substantially as described.

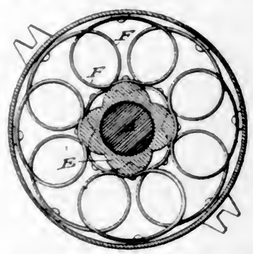
2. In a swing, the combination of two standards, each having a body of right-angle shape in cross-section bent into a yoke or U form to have side pieces or legs and a cross-piece or top, a bridge for the top of the standards, a base for the bottom of the standards, and a head supported at the upper end of the standards, substantially as described.

3. In a swing, the combination of two standards, each having a body of right-angle shape in cross-section bent into a yoke or U form to have side pieces or legs and a cross-piece or top, a transverse bridge for the top of the standards, a base for the bottom of the standards, a head supported at the upper end of the standards with its ends projected beyond the standards, and a swing-frame carried by the head, substantially as described.

4. In a swing, the combination of two standards, each having a body of right-angle shape in cross-section bent into a yoke or U form to have side pieces or legs and a cross-piece or top, a bridge for the top of the standards, a base for the bottom of the standards, and cross-arms and diagonal supports secured to the standards at the upper end and forming a head for the swing-frame, substantially as described.

5. In a swing, the combination of two standards or supports set at an inclination and transversely bridged at the top, and a head secured to the upper part of the standards or supports and consisting of cross-arms projected at each end beyond the standards or supports and diagonal supports extending from the ends of the cross-arms and across each other and attached to the standards, substantially as described.

657,112. RESILIENCY DEVICE FOR WHEELS. GEORGE HAYES, Mount Vernon, N. Y. Filed Jan. 17, 1900. Serial No. 1,810. (No model.)



Claim.—1. The herein-described sectional box, or casing, containing series of metal springs secured to the casing, and also to a sectional axle-block formed with ridged and grooved exterior surface and hollow center, the springs each of one piece of metal, semi-elliptical with the face of each next the axle-block indented to fit the curve of the ridge, constituting the face portion of the axle-block to which it is attached, essentially as set forth.

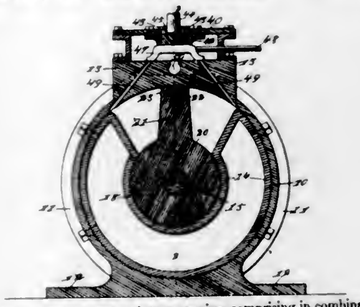
2. The ridged and grooved axle-block formed of three sections united, the ridges and grooves longitudinal, and those of the middle section of the axle-block breaking joint with the two end sections, essentially as set forth.

3. The metal shell herein described, composed of three cylindrical parts fitted together, to each of which is interiorly attached springs also secured to the exterior of a tubular center-block, or axle-block, adapted to fit upon the axle of a vehicle, essentially as set forth.

4. The combination of the elastic and resilient device herein described with the ball-bearing device fitting upon a revolving axle, the axle passing through the ball-bearings, and the elastic and resilient device connected with the body of the vehicle by rigid braces, all constructed and arranged essentially as set forth.

5. A casing of three parts fitted together, a grooved and ridged sectional axle-block, three sets of springs arranged around the axle-block and within the casing, and between every two springs of each set a reinforcement-spring; all constructed, arranged and combined in manner and for the purpose set forth.

657,113. STEAM-ENGINE. LARS N. HOLM, Des Moines, Iowa. Filed Feb. 2, 1900. Serial No. 3,698. (No model.)



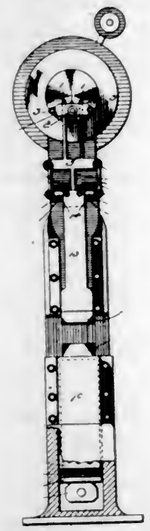
Claim.—1. An improved steam-engine, comprising in combination, a cylinder, a shaft to pass centrally through the cylinder, a hub rigidly mounted on one end of the shaft, an extension on the said hub, projected through the cylinder-head, a piston formed on or fixed to the hub, a disk-shaped partition formed on or fixed to the central portion of the shaft, a hub rotatably mounted upon the other end of the shaft within the cylinder, an extension on the hub projected through the other cylinder-head, a piston on the said latter hub, and two abutments fixed in the interior of the cylinder on opposite sides of the central partition, and means for controlling the steam induction and exhaust from the steam-chambers, substantially as, and for the purposes stated.

2. An improved steam-engine, comprising in combination, a cylinder, a shaft rotatably mounted in the cylinder, a hub formed in or fixed to the shaft, a piston on the hub, a disk-shaped partition formed on or fixed to the hub, a crank detachably fixed to the hub, a second hub rotatably mounted on said shaft, a piston on said hub, two separate abutments fixed in the cylinder, and means for controlling the passage of steam to and from the cylinder on the opposite sides of said partition.

3. An improved steam-engine, comprising in combination, a cylinder, detachable cylinder-heads thereon, a shaft to pass centrally through the cylinder, a hub formed on or fixed to one end of the shaft, an extension on the said hub to pass through cylinder-head, a crank-arm detachably fixed to said extension, a piston formed on or fixed to the hub, a disk-shaped partition formed on or fixed to the central portion of the shaft, a hub rotatably mounted upon the other end of the shaft, an extension on the hub to project through the other cylinder-head a crank-arm detachably secured to said extension, a piston formed on or fixed to said latter hub, and two abutments 14 fixed to the interior of the cylinder on opposite sides of the central partition, and means for controlling the admission of steam to and from the steam-chambers, thus formed, substantially as, and for the purposes stated.

4. In a steam-engine, the combination of a steam-chest, a central partition 41 in the steam-chest, a D-valve on each side of said partition, a block 42 having the passage-ways 46 therein, detachably secured to the top of the central portion of the steam-chest, a detachable plate 45 in the top of the steam-chest secured to said block 42, and a steam-induction pipe in the said plate 45, substantially as, and for the purposes stated.

657,114. POWER-HAMMER. LEONARD D. HOWARD, St. Johnsbury, Vt. Filed Feb. 24, 1900. Serial No. 6,415. (No model.)



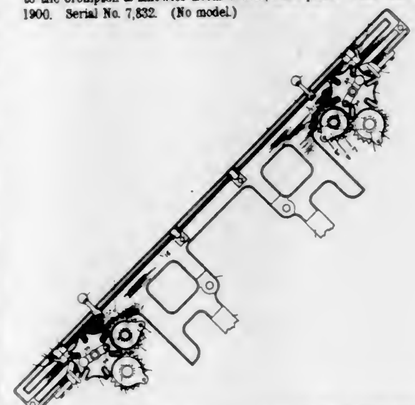
Claim.—1. In a power-hammer, the combination of a hammer, actuating mechanism and a sectional pitman connecting said hammer and actuating mechanism, one section comprising a cross-head-like portion, with parallel upward-extending arms and a central pendent arm, links connected to the ends of said cross-head-like portion, springs arranged between said links and said central pendent arm, and tie-bars connected to said links and to the hammer-head, respectively, and arranged laterally of said springs, substantially as set forth.

2. In a power-hammer, the combination of a hammer, actuating mechanism, and a sectional pitman connecting said actuating mechanism and hammer, one section comprising a cross-head-like portion having a central pendent arm, links connected to the ends of said cross-head-like portion, springs arranged between said links and arm, a screw carried by said arm and adapted to compensate tension of said springs, and the other section of said pitman comprising tie-bars connected to said links and to the hammer-head, and arranged laterally of said springs, substantially as described.

3. In a power-hammer, the combination of a hammer, actuating mechanism and a sectional pitman comprising links, and springs adapted to bear upon said links, and tie-bars connected to said links and arranged laterally of said springs, and the hammer-head having its arms provided with reduced or stepped upper end portions, said tie-bars having lateral studs connected to said reduced or stepped portions of the hammer-head, substantially as set forth.

4. In a power-hammer, the combination of a hammer, actuating mechanism, and a sectional pitman, adapted to connect said hammer and actuating mechanism, one section comprising a cross-head-like portion having upward-extending parallel arms, parallel contacting slotted plates adapted to receive between them said parallel arms and carried by said actuating mechanism, links connected to said cross-head-like portion, and springs adapted to bear upon said links, and tie-bars connecting links to to the hammer-head, substantially as set forth.

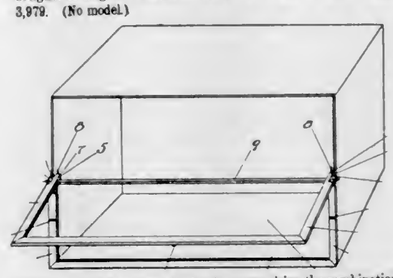
657,115. LOOM. GEORGE F. HUTCHINS, Worcester, Mass., assignor to the Crompton & Knowles Loom Works, same place. Filed Mar. 8, 1900. Serial No. 7,832. (No model.)



Claim.—1. In a loom, the combination of a plurality of head-motions, each provided with pin-wheels revolving in opposite directions and a star-wheel adapted to be operated by each of said pin-wheels, mechanism intermediate said head-motions for simultaneously moving the star and pin wheels of each head-motion into and out of engagement to communicate a simultaneous forward-and-backward movement to said head-motions.

2. In a loom provided with two head-motions, each head-motion having two pin-wheels revolving in opposite directions, and a star-wheel adapted to be engaged and revolved by the pin-wheels, the combination with the star-wheel of each head-motion, of intermediate mechanism for simultaneously moving both star-wheels out of engagement with two of the pin-wheels, and into engagement with the other two pin-wheels, to communicate a forward or backward motion to the pattern-chain cylinder-shaft of each head-motion simultaneously, substantially as shown and described.

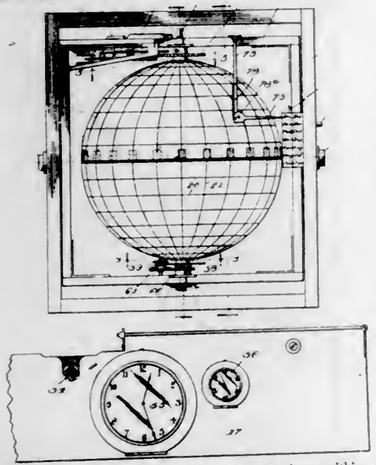
657,116. DISPLAY-BOX. WALTER S. IVINS, Philadelphia, Pa., assignor to Eugene Ivins, same place. Filed Feb. 5, 1900. Serial No. 3,979. (No model.)



Claim.—1. A front for a display-box comprising the combination of a stationary member and a hinged member, both consisting of frames fitted with plates of glass, said frames being composed of wooden strips arranged around three sides of the plates and whereof the two side strips are cut away so as to overlap, slotted metal tubes for the fourth side of each of said plates whereof one extends through the said overlapping portions of the strips, and springs attached to the stationary member and cooperating with the ends of the strips for holding the hinged member at rest in open or closed position with respect to the stationary member, substantially as described.

2. A front for a display-box comprising the combination of a stationary member and a hinged member, both consisting of frames fitted with plates of glass, said frames having their end strips provided with projections adapted to overlap and underlie each other, respectively, and split tubular members, forming the adjoining edges of the frames and whereof one extends through the said projections and constitutes a hinge, and springs attached to the stationary member and adapted to abut the projections of said hinged member, substantially as described.

657,117. GEOGRAPHICAL CLOCK. SIMOND JOHNSON and KELLY JAMESON, Spanish Fork, Utah. Filed Oct. 21, 1899. Serial No. 734,337. (No model.)



Claim.—1. The combination with a globe, of a frame within which the globe is journaled at its pole, a case in which the frame is journaled in line with the equatorial diameter of the globe, a plate on the casing having the months indicated thereon, and a pointer carried by the swinging frame and movable over said plate when the frame is moved on its equatorial journals to indicate when the globe is at the proper inclination from the horizontal for each successive month, substantially as described.

2. The combination with the casing, of the frame swung therein on equatorial journals, the globe mounted in the frame on polar journals, the month-plate secured to the casing at one of its sides in line with the journals of the frame and curved on the arc of a circle having the frame-axis as a center, a longitudinal arm secured to the end of the frame and longitudinally overhanging the globe, and a rigid finger or pointer projecting laterally from said arm and adapted to indicate on the month-plate when the globe-frame is swung on its equatorial journals, substantially as described.

3. The combination with the casing, of the frame swung therein on an equatorial axis, the globe swung in the frame on a polar axis or shaft, a clock mechanism outside the globe and connected up therewith to actuate the globe on its polar axis, a spring inside the globe to drive the clock mechanism, and means at the south pole of the globe to prevent backward rotation thereof, substantially as described.

4. The combination with the casing, of the frame swung therein on an equatorial axis, the globe swung in the frame on a polar axis or shaft, a clock mechanism outside the globe and connected up therewith to actuate the globe on its polar axis, a spring inside the globe to drive the clock mechanism, figures arranged around the equator of the globe to indicate the hours of the day and night, a cover for the casing, a transparent pane in the top thereof, and a meridian-line thereon, immediately over the polar axis of the globe, substantially as described.

657,118. FRUIT-GATHERER. JOHN KEEFER and HENRY H. KARR, Farmer City, Ill.; said Karr assignor to said Keefer. Filed Feb. 27, 1899. Serial No. 706,947. (No model.)

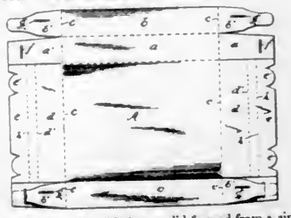
Claim.—A fruit-gatherer comprising a staff, a jaw having a top, a bottom and three sides and rigidly affixed on the upper end of said staff, a movable jaw hinged to the bottom of the fixed jaw and having top, bottom and three sides, the two jaws being arranged with their open sides adjacent, springs on the rigid jaw acting on the under side of the movable jaw, cutting-blades on the adjacent edges of the jaws at their outer ends, a lever pivotally mounted on the staff, and means connected with the lever, passed through the staff and connected with the lower portion of the movable jaw upon the side opposite that which is hinged and upon the opposite side of the staff to that upon which the said lever is pivoted, substantially as shown and described.



657,119. PROCESS OF REFINING COPPER FROM SOLUTIONS CONTAINING ANTIMONY AS AN IMPURITY. FRANK KLEPETKO and JOHN T. MORROW, Great Falls, Mont. Filed Jan. 18, 1898. Serial No. 667,095. (No specimens.)

Claim.—The process of purifying copper from solutions containing copper with some antimony as an impurity, consisting in introducing woodtea into the solution and then subjecting the solution to electrolysis and depositing the copper in a purified state, substantially as set forth.

657,120. PAPER BOX OR LID. FRANK KNOBELOCH, Dayton, Ohio, assignor to the Kinnard Manufacturing Company, same place. Filed Aug. 3, 1899. Serial No. 725,946. (No model.)



Claim.—1. In a collapsible box or lid formed from a single blank of cardboard or other suitable material, the combination of bottom, sides, and ends, the sides and ends cut and scored to fold upon themselves, said ends provided with tongues, with corner-flaps integral with the sides and arranged to be infolded by the ends, said flaps having slots, one of which is arranged to receive the end of the adjacent flap, and the other arranged to receive the end of the tongue on the overlapping end, substantially as shown and in the manner described.

2. In a collapsible box or lid, the combination of bottom, sides and ends, the sides and ends cut and scored to fold upon themselves, said ends provided with tongues, with corner-flaps cut and scored to be infolded by the ends, one flap provided with a slot for the insertion of the end of the other flap, and said other flap provided with a slot for the insertion of the tongues on the overlapping ends, substantially as shown and in the manner described.

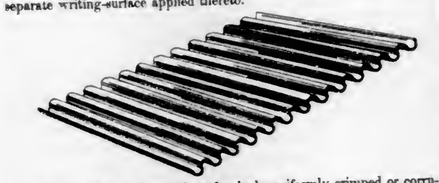
657,121. PLATEN FOR TYPE-WRITING MACHINES. CHARLES F. LAGANKE, Athens, Tenn., assignor to the Fisher Typewriter Company, same place. Filed Sept. 5, 1899. Serial No. 729,506. (No model.)

Claim.—1. A rigid platen for type-writing machines, consisting of a body-plate having raised portions and depressions, and a separate writing-surface applied to said body-plate.

2. A rigid platen consisting of a body-plate provided with raised portions and depressions, and sound-deadening material applied to the body-plate and filling the depressions thereof.

3. A rigid platen consisting of a crimped body, and a separate writing-surface applied to said body.

4. A rigid platen consisting of a continuously-crimped body, and a separate writing-surface applied thereto.



5. A rigid platen consisting of a body uniformly crimped or corrugated, and a separate writing-surface applied to said body.

6. A rigid platen consisting of a body-plate having regularly-alternating rounded ridges and depressions, and a separate writing-surface applied to said body.

7. A rigid platen having a crimped body and a flat writing-surface.

8. A rigid platen having a body crimped or corrugated throughout, and a flat writiog-surface.

9. A rigid platen having a body crimped or corrugated throughout, and a separate writing-surface fastened to one side of said body.

10. A rigid platen consisting of a body crimped or corrugated throughout, and a writing-surface sheet attached to the ridges at one side of the plate.

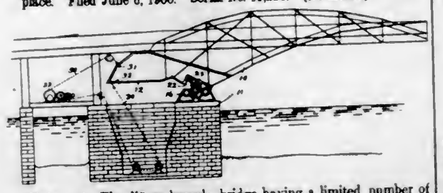
11. A rigid platen consisting of a body crimped or corrugated throughout, a writing-surface sheet attached to the ridges at one side of the body, and a separate filling for the depressions beneath said writing-surface sheet.

12. A rigid platen consisting of a body-plate having raised portions and depressions, and auxiliary braces for reinforcing said plate.

13. A rigid platen consisting of a crimped or corrugated body-plate, and auxiliary braces for reinforcing said plate in the direction contrary to the reinforcement by the crimps or corrugations.

14. A rigid platen consisting of a body-plate having raised portions and depressions, a flat writing-surface applied to the body-plate, and auxiliary braces for reinforcing the plate in the direction contrary to the reinforcement by the raised portions and depressions.

657,122. LIFT-BRIDGE. FRANCOIS LA POINTE, Chicago, Ill., assignor of two-thirds to Albert G. Scherer and William Bretsnyder, same place. Filed June 6, 1900. Serial No. 19,220. (No model.)



Claim.—1. The lift or bascule bridge having a limited number of widely-separated centers upon which it is supported and swings in succession while being opened and closed, substantially as specified.

2. The lift or bascule bridge having a limited number of widely-separated centers upon which it is supported and swings in succession while being opened and closed, such centers being provided with antifriction-rollers, substantially as specified.

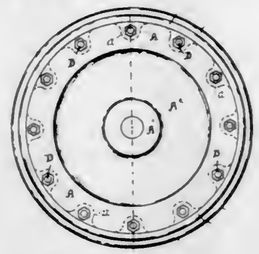
3. The lift or bascule bridge having a limited number of widely-separated centers upon which it is supported and swings in succession while being opened and closed, such centers being located at different levels, substantially as specified.

4. The lift or bascule bridge having three centers on which it swings in succession, the center pivot being raised above the others, substantially as specified.

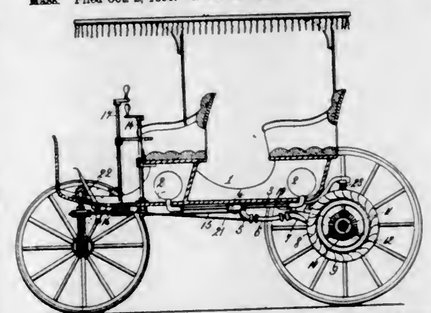
5. The lift or bascule bridge having a limited number of widely-separated centers upon which it is supported and swings in succession whil being opened and closed, and also having a corresponding number of ope sockets with which the several centers may successively engage, substar tially as specified.

657,123. CAR-WHEEL. HOSEA W. LIBBEY, Boston, Mass. Filed July 27, 1899. Serial No. 725,281. (No model.)

Claim.—A car-wheel consisting of a body having recesses in the periphery thereof extending from one side edge of said body to a point intermediate its side edges forming a substantially smooth or cylindrical portion on one side of the periphery, and further provided with transverse openings in line with said recesses, an elastic tire having a projecting annular rib on one side and having inwardly-extending lugs corresponding in shape and position with the recesses in said body and adapted to fit within said recesses, the said lugs extending from one side edge of said tire to a point intermediate the side edges thereof and thereby forming an overlapping portion which lies against the smooth, cylindrical portion of the periphery of said body, the said lugs being further provided with transverse openings in line with the transverse openings in said body, and a flange which projects beyond the periphery of said body and tire, is provided with an annular groove in which the annular rib on said tire fits and is further provided with transverse openings in line with the transverse openings through said body and tire, the said openings in said body, tire and flange being provided for the reception of bolts for securing the several parts of the wheel together.



657,124. AUTOMOBILE VEHICLE. HOSEA W. LIBBEY, Boston, Mass. Filed Oct. 2, 1899. Serial No. 732,401. (No model.)



Claim.—1. In an automobile vehicle, the combination of a storage-reservoir for compressed or liquefied air or gas, carried on said vehicle, a motor-wheel on the vehicle-axle and provided with vanes or buckets, a pivotally-supported nozzle to discharge against the buckets or vanes of said motor-wheel, a reducing-valve connected with said reservoir, and a flexible connection between said nozzle and valve, whereby the position of the nozzle relative to the motor-wheel is not affected by movement of the vehicle-body on its springs, substantially as described.

2. In an automobile vehicle, the combination of a storage-reservoir for compressed or liquefied air or gas, carried on the vehicle, a motor-wheel mounted on the vehicle-axle, a reducing-valve connected with said reservoir, a nozzle to discharge against said motor-wheel, pivotal supports for the nozzle, a flexible connection between said nozzle and valve, whereby the position of the nozzle relative to the motor-wheel is not affected by movement of the vehicle-body on its springs, and mechanism for operating said valve to control the discharge through said nozzle, substantially as described.

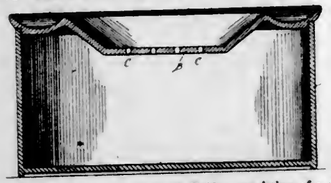
3. In an automobile vehicle, the combination of a divided axle, a motor-wheel connected with the two halves of said axle through differential gearing, vehicle-wheels on the ends of said axle, a storage-reservoir for compressed or liquefied air or gas, carried by the vehicle, a reducing-valve connected with said reservoir, a nozzle for discharging a jet against the periphery of the motor-wheel, pivotal supports for said nozzle, and a flexible connection between said nozzle and valve, substantially as described.

4. In an automobile vehicle, the combination of storage-reservoirs for compressed or liquefied air or gas, one of said reservoirs being located under each seat of the vehicle, a reducing-valve supplied from said reservoirs, a motor-wheel mounted on the vehicle-axle and having its periphery provided with buckets or vanes, a nozzle to discharge compressed or liquefied air or gas against the buckets or vanes of said motor-wheel, pivotal supports for said nozzle, and a flexible connection between the said valve and nozzle, substantially as described.

5. In an automobile vehicle, the combination of a vehicle-body provided with a number of seats, storage-reservoirs for compressed or liquefied air or gas, each located under one of said seats, a reducing-valve supplied from said reservoirs, a motor-wheel mounted on the vehicle-axle, a nozzle to discharge against the periphery of said wheel, pivotal supports for said nozzle, flexible connections between said reducing-valve and nozzle, and operating mechanism for the reducing-valve to control the discharge of a jet of compressed or liquefied air or gas against the motor-wheel, substantially as described.

6. In an automobile vehicle, the combination of a vehicle-body, a storage-reservoir for compressed or liquefied air or gas, a motor-wheel on the rear axle, a yoke pivoted on the rear axle and straddling said motor-wheel, a link between the vehicle-body and the upper end of said yoke, a discharge-nozzle mounted on said yoke, a reducing-valve connected with the storage-reservoir, and a flexible connection between said nozzle and the reducing-valve, substantially as described.

657,125. EGG-SEPARATOR. ALEXANDER LINDSAY, Wheeling, W. Va. Filed Nov. 18, 1899. Serial No. 737,492. (No model.)



Claim.—1. An egg breaker and divider, consisting of a saucer-like construction, provided with a depressed slotted center, and raised ribs between the depression and the periphery of the divider, substantially as described.

2. An egg breaker and divider consisting of a saucer-like construction provided with a depressed slotted center and a rim with a curved depression therein, substantially as described.

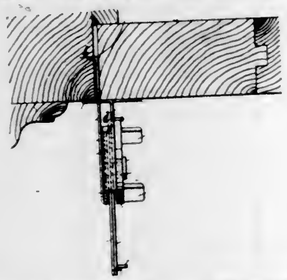
3. An egg breaker and divider consisting of a saucer-like construction provided with a depressed slotted center, and a depression between the central depression and the periphery and having a ribbed bottom, substantially as described.

4. An egg breaker and divider consisting of a saucer-like construction provided with a depressed slotted center, and a depression between the central depression and the periphery and having raised edges, substantially as described.

5. An egg breaker and divider consisting of a saucer-like construction provided with a depressed slotted center, and a depression between the central depression and the periphery and having raised edges and ribbed bottom, substantially as described.

6. An egg-breaker consisting of a saucer-like construction, provided with a depressed, slotted center and a rim with a curved depression therein, and also with a depression having a raised edge and a ribbed bottom, substantially as described.

657,126. PORTABLE DOOR-FASTENER. CHARLES I. LINGLE, Belcherville, Tex. Filed Apr. 23, 1900. Serial No. 13,898. (No model.)



Claim.—1. As a door-fastener, the combination of a plate with a flanged serrated edge for engagement with a door-frame, a base-plate hinged thereto and a slotted slide mounted on a stationary spindle and having transversely-extended projections for respectively engaging the door and frame, and means for moving said slide whereby its projections may be forced against the surface of a door and its frame, when the two plates are folded on each other, substantially as shown and described.

2. As a door-fastener, the combination of the two plates hinged to each other, the slide with projections and the parallel slotted slides mounted upon a spindle of one of the said plates, and a cam pivoted to the said spindle for operating the slide carrying the projections, whereby the said projections may be forced against the surface of a door and frame, substantially as shown and described.

3. As a door-fastener, the combination of the plate having a flanged serrated edge, the base-plate hinged thereto, the slotted slides mounted on the base-plate and adapted for engagement between the door and its frame, the slotted slide with its oppositely-extended projections for engagement respectively with the door and frame and the cam for moving the said slide, substantially as shown and described.

657,127. VAPOR-BURNING LAMP. WILLIS MITCHELL, Malden, Mass., assignor, by mesne assignments, to the Mitchell Gas Generator and Burner Company, of New Jersey. Filed Apr. 5, 1899. Renewed July 20, 1900. Serial No. 24,333. (No model.)



Claim.—1. In combination with a mixing-chamber having inlets for air and vapor and an outlet for the same when mixed, a generator surrounding the said chamber and supplying it through one of the said inlets, an alcohol-cup below the said chamber, a cover for the said cup provided with a central cylindrical hollow upward extension surrounding the said generator, and a wire-gauze or perforated burner covering the top of the said chamber, substantially as set forth.

2. In combination with a mixing-chamber having inlets for air and vapor and an outlet for the same when mixed, a generator surrounding the said chamber and supplying it through one of the said inlets, an alcohol-cup below the said chamber, a cover for the said cup provided with a central, cylindrical, hollow, upward extension surrounding the said generator, a wire-gauze or perforated burner covering the top of the said chamber and fastened on the same, and a deflector suspended from the said burner over the outlet of the said mixing-chamber, substantially as set forth.

3. In combination with a mixing-chamber having inlets for air and vapor and an outlet for the same when mixed, a generator consisting of a fine, tubular wire coil about one-sixteenth of an inch in diameter wound around the said mixing-chamber and discharging into the same, an alcohol-cup below the said mixing-chamber and generator, and a cover for the said cup having a cylindrical upward extension surrounding the said generator and closed at its upward end by a horizontal annular extension of the top of the said mixing-chamber, substantially as set forth.

4. In combination with a mixing-chamber having inlets for air and vapor and an outlet for the same when mixed, a generator surrounding the said chamber and supplying it through one of the said inlets, a cup adapted to receive alcohol and arranged below the said chamber to heat the said generator when the liquid contained in said cup is ignited, a burner supplied by the said chamber, a cover for the said cup provided with a central cylindrical hollow upward extension external to the said generator, means for supplying liquid to the said cup and the said generator, and two concentric casings arranged outside of the said cylindrical extension, each having an interval between it and the part next within, substantially as set forth.

5. In combination with a mixing-chamber for air and vapor, having an opening for the admission of air, a base for the said chamber having a small, central bore and a branch passage therefrom, a generating-coil which is wound about the said chamber and has its discharging end fitted into the said branch passage, a needle-valve working up and down in the said bore, means for supplying gasolene to the said generator, mechanism for raising and lowering the said needle-valve, guideways for the said valve and an alcohol-cup provided with supports for the said mixing-chamber and the said guideways, substantially as set forth.

6. In combination with a mixing-chamber, a burner supplied thereby and a generator supplying vapor to the said chamber, an alcohol-cup arranged to heat the said generator and cause it to supply the said chamber with vapor, a cover for said cup, feet or brackets for said cover which are notched or recessed to fit on the edge of the said cup and adapted to support a shade-frame and means for supplying liquid to the said cup and generator, substantially as set forth.

7. In combination with a mixing-chamber, burner and generator arranged substantially as described, an alcohol-cup arranged below them to heat the generator and supply the chamber, and provided with a downwardly-extending stem having a central bore, a recessed and bored coupling-block screwing on the said stem, a tube fitting into the lower end of the said coupling-block, a tubular column supporting the said cup, arranged concentric with the said tube and exterior to the said coupling-block, a base having a raised tubular part which fits between the said column and the said tube, and conduits for the alcohol and the liquid which supplies the generator, extending up within the said column, substantially as set forth.

657,128. SPACER-BAR FOR WIRE FENCES. WILLIAM MCCLOSKEY, Windsor, Canada. Filed Feb. 21, 1900. Serial No. 6,054. (No model.)



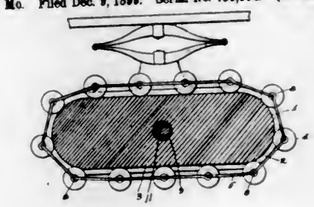
Claim.—1. The spacing-bar formed with a jaw at its upper end composed of the upper end of the bar as the stationary member and of a lever pivotally secured thereto and forming with its upper arm the movable member adapted to be extended rearwardly beneath the top wire of the fence and to be locked in position against the stationary member to confine the top wire between the members of the jaw, said lever extending with its lower arm in front of the bar and having a handle for operating it, and an automatically-operating locking-latch for said lever adjacent to said handle.

2. The spacing-bar formed with a jaw at its upper end composed of the upper end of said bar as the stationary member and of a lever pivotally secured thereto and forming with its upper arm the movable member adapted to be extended rearwardly below the top wire of the fence, a handle on said lever extending in front of the spacing-bar, an automatic locking-latch for locking said lever to the bar when the jaw is closed, and means on said lever adjacent to the top wire of the fence for holding the end of the stay-wire in position when the lever is locked and to release the same by the operation of said lever.

3. In a spacing device, the combination with the spacing-bar and its wire-guides for spacing the fence-wires thereon, of the jaw on the upper end of the spacing-bar, and the shoulder *c* on the lower end thereof opposite the lower wire-guides, said jaw and shoulder cooperating to hold the bar removably in position on the fence irrespective of the wire-guides.

4. In a spacing device, the combination of the bar A, the lever B pivotally secured to the upper end of the bar and forming in connection therewith means for engaging and locking the bar to the top wire, the wire-guides formed of the straight pins *a* and bent pins *b*, and the shoulder *c* on the bar opposite the lowest wire-guide.

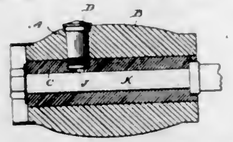
657,129. ROLLER-TRUCK. BENJAMIN F. MCCOLLISTER, California, Mo. Filed Dec. 9, 1899. Serial No. 739,854. (No model.)



Claim.—1. The herein-described roller-truck, comprising the plate 1, the rounded sides 2 detachably secured to said plate 1, there being an aperture through the said sides and plate, a bolster 11 rotatably journaled in the said aperture, a plurality of rollers 4 mounted around the said roller-plate, and rods 5 extending through each of said rollers, each of said rods being secured to the rod carried by the preceding roller, substantially as specified.

2. In a device of the class described, a roller-frame, a suitable track around said frame, a plurality of rollers within said track, a tube 6 through each of the rollers, an apertured plate 7 secured upon each end of the said roller, a rod 5 projecting through the said tube, and plates within each of the rollers, the said rods being bent at right angles and having loops formed on their forward ends, to which the rod on the next adjacent roller is secured, substantially as specified.

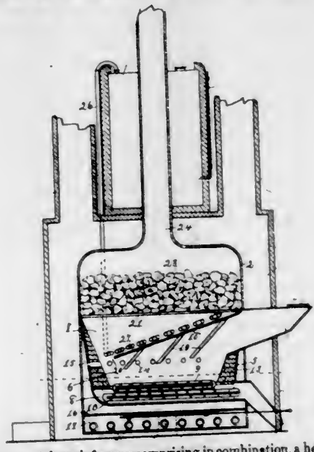
657,130. VEHICLE-AXLE LUBRICATOR. WILLIAM A. OLMSTED, Bala, Pa. Filed Sept. 29, 1899. Serial No. 732,067. (No model.)



Claim.—1. In an axle-lubricating device, the combination of the independent bushing F provided with external and internal flanges and placed loosely in the axle-box, the packing G located in said bushing and supported by the inner flange thereof, and the capped casing A secured in said box and retaining said bushing in position by means of contact between the external flange of said bushing and the lower rim of said casing substantially as described.

2. In an axle-lubricating device, the combination of the bushing F provided with an external flange and adapted to be loosely placed in the axle-box, the capped casing A adapted to be secured in said box to bear upon the external flange of said bushing, thereby retaining said bushing in position, and the packing G located in said bushing, substantially as described.

657,131. HOT-AIR FURNACE. CHRISTIAN OLSTED, Lawrence, Kans. Filed Sept. 20, 1899. Serial No. 731,046. (No model.)



Claim.—1. A hot-air furnace comprising in combination, a heater consisting of a fuel and combustion chamber provided with draft-openings at a distance from the bottom, and an ash-pit under and communicating with the fuel-chamber having an imperforate bottom, an air-tight ash-chute communicating with the ash-pit, for removal of the ashes therefrom, a grate mounted under the fuel-chamber and arranged to convey the fuel therein, and a grate mounted in the ash-pit and arranged to convey the ashes to the ash-chute, means for operating said grates in opposite directions, a hot-air chamber surrounding said fuel and combustion chamber and ash-pit and communicating with said combustion-chamber through said draft-openings, a cold-air chamber under said hot-air chamber communicating therewith through suitable dampered draft-openings, and an air-

heating chamber surrounding said heater and provided with a connected cold-air box and distribution-pipes, substantially as set forth.

2. In a heating-furnace a heater consisting of the combination of a fuel and combustion chamber provided with draft-openings at a distance from its bottom, an ash-pit having imperforate sides and bottom under said fuel-chamber, an ash-chute having imperforate sides communicating with said ash-pit for the removal of the ashes therefrom, a grate mounted under the fuel-chamber and arranged to convey the fuel across the same, a grate mounted in the ash-pit and arranged to convey the ashes to the ash-chute, a series of baffle-plates mounted diagonally across the fuel and combustion chamber, a hot-air chamber surrounding said fuel and combustion chamber and ash-pit, and communicating with said combustion-chamber through said draft-openings, and a cold-air chamber under said hot-air chamber, and communicating therewith through dampered draft-openings, substantially as set forth.

3. In a heating-furnace, the combination with a heater consisting of an outer casing forming the body of the heater and provided with a pipe for conveying away the waste products of combustion, and an inner casing forming a fuel and combustion chamber having an imperforate bottom and provided with draft-openings at a distance from its bottom, of a water-reservoir mounted upon and arranged to be heated by the heater, a steam-coil arranged in the combustion-chamber, a pipe communicating with said reservoir and with said steam-coil, a series of pipes having jet-openings in their upper sides mounted in said outer casing and arranged to form a grating over said combustion-chamber, and communicating with said steam-coil, and a bed of refractory material in lumps carried on said grating, substantially as set forth.

4. In a heating-furnace the combination with a heater consisting of an outer casing forming the body of the heater and provided with a pipe for conveying away the waste products of combustion, and an inner casing forming a fuel and combustion chamber having an imperforate bottom and provided with draft-openings at a distance from its bottom, of a water-reservoir mounted upon and arranged to be heated by the heater, a steam-coil arranged in said combustion-chamber, a pipe communicating with said steam-coil and with said reservoir, a series of pipes having jet-openings in their upper sides mounted in said outer casing and arranged to form a grating over said combustion-chamber, and communicating with said steam-coil, a bed of refractory material in lumps carried on said grating, and a hot-air chamber surrounding said heater having an inlet for the cold air, and pipes for the distribution of heated air therefrom, substantially as set forth.

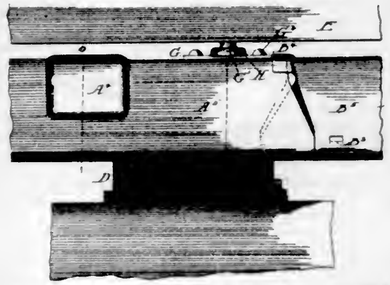
5. In a heater for a hot-air furnace, an outer casing forming the body of the heater and provided with a pipe for conveying away the waste products of combustion, an inner casing forming a fuel and combustion chamber and provided with draft-openings at a distance from the bottom, an ash-pit formed also by said inner casing and having imperforate sides and bottom, a grate mounted in said inner casing below said draft-openings, a series of water-pipes having jet-openings mounted in said outer casing and forming a grating over said combustion-chamber and a bed of refractory material in lumps carried upon said grating, substantially as set forth.

6. In a heater for a hot-air furnace, an outer casing forming the body of the heater, and provided with a pipe for conveying away the waste products of combustion, an inner casing forming a fuel and combustion chamber and provided with draft-openings at a distance from the bottom, an ash-pit formed also by said inner casing and having imperforate sides and bottom, a grate mounted in said inner casing below said draft-openings, a plate mounted upon said inner casing and extending across said combustion-chamber, and a series of baffle-plates mounted upon said plate; substantially as set forth.

7. In a heater for a hot-air furnace, an outer casing forming the body of the heater, an inner casing forming the fuel and combustion chamber and provided with draft-openings at a distance from the bottom, an ash-pit formed also by said inner casing and having imperforate sides and bottom, a plate mounted upon said inner casing and extending across the combustion-chamber, a series of baffle-plates mounted upon said plate, a series of water-pipes having jet-openings mounted in said outer casing and forming a grating over said fuel and combustion chamber, and a bed of refractory material in lumps carried upon said grating, substantially as set forth.

8. In a heater for a hot-air furnace the combination with an inner casing forming a fuel and combustion chamber having an imperforate bottom and provided with draft-openings at a distance from its bottom, an outer casing forming with said inner casing a hot-air chamber surrounding said fuel and combustion chamber and communicating therewith through said draft-openings, and a series of baffle-plates mounted upon said inner casing and extending across said fuel and combustion chamber, of series of pipes having jet-openings in their upper sides mounted within said outer casing and arranged to form a grating over said combustion-chamber, a steam-coil arranged in said combustion-chamber communicating with said pipes, a water-reservoir mounted over said heater and arranged to be heated therefrom, a pipe communicating with said reservoir and with said steam-coil, and an air-chamber surrounding said heater, arranged to be heated therefrom and provided with a cold-air inlet and pipes for distributing the heated air therefrom, substantially as set forth.

657,132. TROLLEY-TRACK. THEODORE C. PROUTY, Midland, Mich. Filed June 5, 1900. Serial No. 19,183. (No model.)



Claim.—1. A trolley-track consisting essentially of two parallel sides having their lower edges bent inward, upward and outward, to form upwardly-projecting ledges to serve as tracks for carrier-wheels.

2. A trolley-track, of inverted-U shape in cross-section, having its edges bent inward, upward and outward, to form elevated wheelways, substantially as and for the purpose specified.

3. A joint, consisting of sections of a trolley-track U-shaped in cross-section and having their contiguous edges in place thereof on a bias, so that the points of connection between the two wheelways of said track shall lie obliquely to each other, substantially as and for the purpose specified.

4. A joint for a double-way trolley-track consisting of two sections, one having a hood overlapping the top and sides of the other section, whereby the connecting end of the hooded portion is supported by said hood resting on the contiguous section without employing separate means of support.

5. A track-joint consisting of two sections, each section formed with parallel ledges, dowels identical in cross-section with the interiors of said ledges and of such dimensions as to telescope thereinto, said dowels being secured into the ledges, in one section of the track, so as to project therefrom into, and form a support and guide for, the abutting ledges of the next member thereof, substantially as described.

6. A double-track joint consisting of two sections each having the edge of one track thereon cut bias with the other track thereon, one of said sections having a hooded portion formed on its top and sides and projecting over said joint and embracing its connecting member, thus forming a guide and support for its hooded section, dowels corresponding in cross-section to the ledges on the track and telescoping the same, said dowels being permanently secured in and extending from the abutting end of one section of track into the adjacent end of a contiguous member thereof, said staggered joint, projecting hood, and dowel connections constituting a complete joint, substantially as described.

7. A trolley-track, of inverted-U shape in cross-section, having ribs expanded out of the material composing such track, said ribs being integral with the body of the track and serving as braces to maintain the sides thereof parallel to each other, substantially as and for the purpose specified.

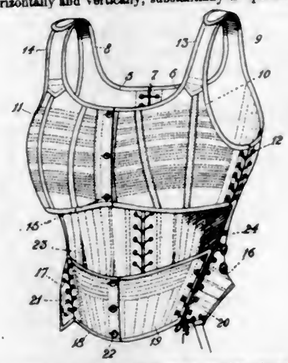
657,133. APPAREL-CORSET. JENNIE A. REDICK, St. Louis, Mo. Filed May 2, 1900. Serial No. 15,171. (No model.)

Claim.—1. In a corset, a back portion, hose-supporting straps extending forwardly and downwardly from said back portion, and abdominal supporting-pieces adjustably attached to said straps by lacing on diagonal lines, as required to adjust the said supports horizontally and vertically, substantially as specified.

2. In a corset, a back portion, bust-supporting pieces connected to the back portion, and the hose-supporting straps 16 and 17 extending forwardly and downwardly from the lower end of the back portion, as required to put the weight of the hose upon the hips and across the back, substantially as specified.

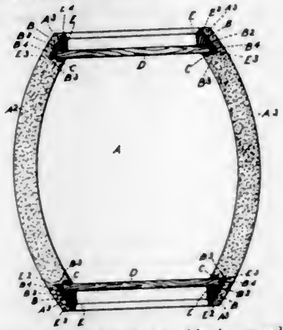
3. In a corset, a back portion, bust-supporting pieces connected to the back portion, hose-supporting straps extending forwardly and downwardly from the lower end of said back portion, and abdominal supporting-pieces adjustably attached to said straps by lacing on diagonal lines, as required to adjust said abdominal supporting-pieces horizontally and vertically, substantially as specified.

4. In a corset, a back portion in two pieces laced together, elastic sections inserted horizontally into the lower part of the back portion, bust-supporting pieces connected to the back portion, hose-supporting straps extending downwardly and forwardly from the lower end of said back portion, and abdominal supporting-pieces adjustably attached to said straps by lacing on diagonal lines, as required to adjust said abdominal supporting-pieces horizontally and vertically, substantially as specified.



5. In a corset, a back portion, bust-supporting pieces connected to the back portion, the elastic sections 23 and 24 inserted horizontally into the slits formed from the lower edge of the back portion and hose-supporting straps extending forwardly and downwardly from the lower end of the back portion, as required to put the weight of the hose upon the hips and across the back, said elastic sections being in the line of the strain of the hose, substantially as specified.

657,134. CASK, BARREL, OR KEG. GEORGE H. RICKE, Cincinnati, Ohio, assignor of two-thirds to Michael Durner, same place, and Frank P. Thomas, Evanston, Ohio. Filed May 21, 1900. Serial No. 17,466. (No model.)



Claim.—1. The combination of a barrel having an end interior recess B having a wall B^2, a bottom B^3, a head D resting on the said bottom B^3, and forming a subrecess B^4 connected to the rest of the recess B, and a locking device consisting of the annular part E, made of a plastic material, and compressed into the subrecess B^4, forming a main portion E resting in part upon the head and a key or locking part E^2 connected thereto, substantially as and for the purposes specified.

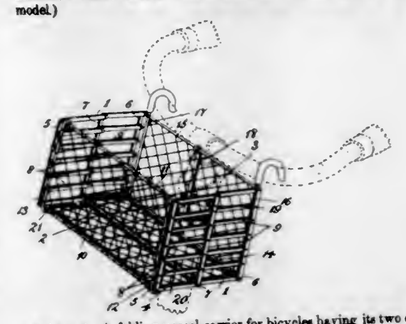
2. The combination of a barrel having an end interior annular recess B, formed with a wall B^2, and a bottom or ledge B^3, and a locking device made of plastic material compressed upon the head and into the subrecess B^4 at the peripheral edge of the head, and a packing for rendering the junction of the parts fluid-tight, substantially as and for the purposes specified.

3. The combination of a barrel having an end interior annular recess B, formed with a wall B^2, and a bottom or ledge B^3, and an annular recess C in such ledge or bottom, a packing present in such recess, a head resting on the said bottom, and forming a subrecess B^4, connected to the recess B, and a locking device made of plastic material compressed upon the head and into the recess B^4, forming a locking ring B^5, B^2, substantially as and for the purposes specified.

4. A barrel whose main portion is composed of plastic material, compressed to shape, and provided at end with an annular recess, and a head adapted to rest upon the bottom thereof and form a sublocking recess, and an annular recess for packing, the packing, and a plastic ring compressed onto the head and into the recess and sublocking recess, substantially as and for the purposes specified.

5. As a new article of manufacture, a barrel composed of compressed pulp and provided at the end with an annular recess adapted to receive a head admitted through the end of the barrel and resting upon the bottom of this recess, the latter extending upward and inward toward the chime, and at its base of a diameter greater than the head and leaving a space wherein a ring of plastic material may be pressed, and lock the head in and to the barrel, substantially as and for the purposes specified.

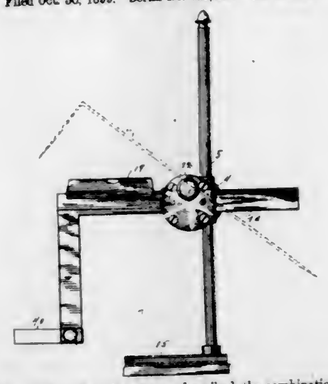
657,135. PARCEL-CARRIER FOR BICYCLES. JOHN R. ROTHKERMEL, Toronto, Canada. Filed Jan. 10, 1900. Serial No. 966. (No model.)



Claim.—1. A folding parcel-carrier for bicycles having its two ends formed of a number of bars loosely riveted together and constructed and adapted to remain fixed in a wholly or partially opened or folded position; the front and rear sides being formed of a suitable material, the bottom side of said carrier being formed in two parts, the inner sides of each part being suitably hinged on a support common to both and carried by the said ends, the outer side of one part being hinged to the front side of the carrier, and the outer side of the second part being hinged to the rear side of the carrier, and means for adjustably attaching said carrier to the bicycle.

2. A parcel-carrier for bicycles having two ends 1, 1, of same formed by a number of bars 8 and 9 and the bars 5, 6, 7, all said bars being loosely riveted together; said carrier having its front and rear sides formed of a suitable material; the bottom side of said carrier being formed in two parts, the inner side of each part being suitably hinged on a support common to each part and carried by the said ends, the outer side of one part being hinged to the front side 2 of the carrier and the outer side of the second part being hinged to the rear side 3 of the carrier; the rear side of said carrier having extensions from same terminating in hooks; and an adjustable fastening device to encircle the head-post of the bicycle said adjustable fastening device being itself adjustable in its connection to the rear end of the carrier.

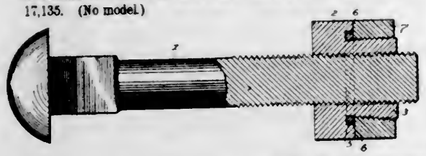
657,136. COMBINATION-TOOL. AUGUST L. SCHULTE, Cleveland, Ohio. Filed Oct. 30, 1899. Serial No. 735,208. (No model.)



Claim.—In a tool for the purpose described, the combination of two adjacent disks graduated upon their peripheries, one of said disks being provided with a rectangular opening and the other with a clamping-lug

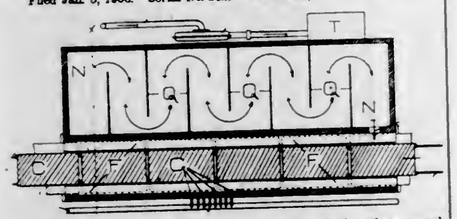
to secure accessory tools thereto, with a square adapted to pass through said opening, a clamping-screw therefor, a slotted sleeve about said screw adapted to receive a needle-gage, and a central clamping-screw for the disks, substantially as described.

657,137. NUT-LOCK. MARTIN L. SHIVELY, Helena, Ohio, assignor of one-half to Titus Garn, same place. Filed May 18, 1900. Serial No. 17,135. (No model.)



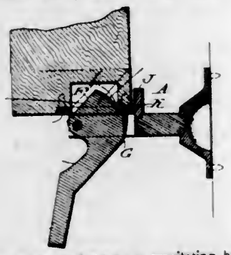
Claim.—As a new article of manufacture, the nut-lock comprising the nut 2, having the centrally-disposed boss or extension on one side thereof, said boss or extension being flared outward, externally, split to form diverging spring-fingers, and having reversely-disposed interior and exterior screw-threads, and said nut 2 having the annular groove 5 in its outer face, the spring-washer, disposed in said groove, and the binding-nut 7, the latter being screwed on the threaded boss or extension of nut 2, normally in contact with said nut, and having the counterflared threaded bore, adapted to the flared boss or extension, all constructed and adapted to operate substantially as described.

657,138. FURNACE. WILLIAM SMETHURST, Dolgelly, England. Filed Jan. 3, 1900. Serial No. 282. (No model.)



Claim.—In combination, a tunnel-furnace chamber, hearths mounted on truck-frames, a rail-track through the tunnel-furnace carrying said trucks, adjustable sliding doors to close the furnace ends, side apertures above the hearths, twyers or nozzles in part of the side apertures for the supply of combustible gases, an intermediate collecting-chamber above said tunnel-furnace and connecting therewith at one end, a second collecting-chamber adjacent to the intermediate chamber and connecting therewith at the opposite end, baffle-partitions in said second collecting-chamber, an aspirating-fan connected to said second collecting-chamber, a water-tank, and a pipe connection from said fan to said tank for discharging the gases into said tank, substantially as described.

657,139. SHUTTER-FASTENER. WILLIAM D. STANSBURY, Jenkintown, Pa. Filed Dec. 29, 1899. Serial No. 741,910. (No model.)

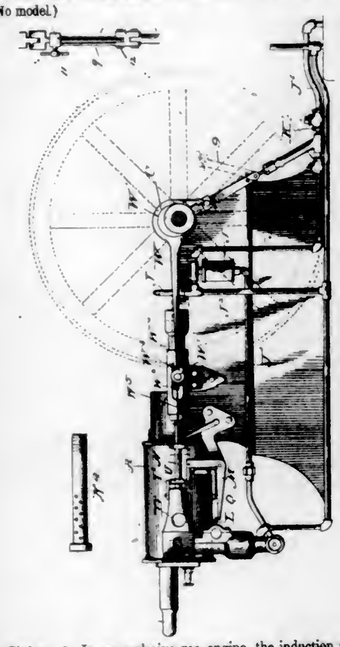


Claim.—1. In a shutter-fastener, a gravitating head, an ear on which said head is eccentrically mounted, a securing-shank carrying said ear, a weighted arm pendent from said head, an angular nose projecting upwardly from said head, the rear upper face of said nose being segmental, and a horizontal shoulder at the base of said rear upper face.

2. In a shutter-fastener, a gravitating head, an upwardly-projecting nose thereon, a horizontal shoulder at the base of the rear upper face of said nose, a shank on which said head is mounted and a shoulder on said shank rearward of said shank on the head.

3. A shutter-fastener consisting of a gravitating head, an upwardly-projecting nose thereon, a weighted arm pendent from said head, an ear on which said head is eccentrically mounted, a securing-shank carrying said ear, a shoulder rising from said shank and a shoulder on said nose at the base of the rear upper face thereof.

657,140. EXPLOSIVE-GAS ENGINE. GEORGE W. STARR and JOHN H. COGSWELL, Havana, Ill. Filed Dec. 23, 1899. Serial No. 741,376. (No model.)



Claim.—1. In an explosive-gas engine, the induction and exhaust valves and stems thereto, an oscillating angle-lever, a pivoted pawl carried by one arm of the latter end serving, in cooperation with a collar on the exhaust-stem, as a means for preventing the exhaust-valve from seating, a tilting lever having free ends, one of which serves to hold the induction-valve seated as the opposite end is engaged by an arm of said angle-lever, governor-actuated mechanism for raising said pawl independently of the angle-lever as the revolutions of the engine become above normal.

2. In an explosive-gas engine, the induction and exhaust valves and stems thereto, an oscillating angle-lever, a pivoted pawl carried by one arm of the latter and serving as a stop to prevent the exhaust-valve from seating, a tilting lever having free ends, one of which serves to hold the induction-valve seated, and the gasolene-feeding duct closed as the opposite end of said free-ended lever is actuated by an arm of the angle-lever, and the governor-actuated mechanism for raising said pawl independently of the angle-lever as the revolutions of the engine become above normal.

3. In an explosive-gas engine, the cylinder, combustion-chamber, operating-shaft, piston, eccentric and eccentric-rod, the exhaust valve and stem actuated by said eccentric-rod, a tilting lever having one end extending through an aperture in the stem of the induction-valve, an angle-lever pivoted to the engine, one arm of said angle-lever engaging with the tilting lever, and a pawl carried by an arm of said angle-lever for preventing the exhaust-valve from seating, and a governor-actuated member for operating said levers, as set forth.

4. In an explosive-gas engine, the cylinder, piston combustion-chamber, induction-valve, and apertured stem, a tilting lever one end of which passes through said stem, the exhaust valve and stem, a collar on the latter, an angle-lever, a pivoted pawl on one arm thereof, the other arm of the angle-lever adapted to tilt the exhaust-stem-engaging lever, the eccentric and rod connected thereto, and the governor-actuated wedge-shaped member for tilting the angle-lever, whereby the induction-valve will be held seated, and the exhaust-valve prevented from being seated.

5. In an explosive-gas engine, the cylinder, combustion-chamber, operating-shaft, eccentric and rod connected therewith, the piston, the induction-valve and apertured stem, a tilting lever having one end passing through said aperture, an angle-lever having an arm engaging with and designed to actuate said tilting lever, and a spring-actuated plunger bearing against the second arm of the angled lever whereby the induction-valve is seated, as set forth.

6. In an explosive-gas engine, the combination of the cylinder, piston, operating-shaft, eccentric and rod, connected thereto, the combustion-chamber, the induction-valve seated in a suitable shell, a stem to said valve, an exhaust valve and stem, a tilting lever one end of which passes through an aperture in the stem of the induction-valve, an angled lever pivoted to the engine, a spring-actuated plunger bearing against an arm of said angled lever, a set-screw carried by the latter, and a stationary member against which said screw bears to limit the throw of the induction-valve, as set forth.

7. In combination with the cylinder, the piston, operating-shaft, eccentric and rod connected thereto, the combustion-chamber, the induction-valve and stem, the tilting lever mounted in the casing surrounding the induction-valve and stem, one end of said lever engaging in an aperture of said stem, the pivoted angle-lever, one arm of which engages the outer end of said tilting lever, the spring-actuated plunger bearing against one arm of the angled lever, the pawl pivoted to one end of the angle-lever, the spring-actuated plunger and wedge-shaped governor-actuated member on which the latter rests, the cap bearing against said pawl, the exhaust valve and stem, the collar having flattened upper and lower edges and notched to receive the free end of said pawl, as shown and described.

8. In combination with the cylinder and combustion-chamber, the exhaust valve and stem, the flattened-edged collar abutting against a shoulder on said stem, the induction valve and stem, the angled lever and tilting lever, the pawl, the spring-actuated cap, and plunger and governor-actuated wedge-shaped member, and the guide-bar secured to the wall of the combustion-chamber, and extending over said collar, as shown and described.

9. In an explosive-gas engine, the combination with the cylinder, combustion-chamber and exhaust-valve, and means for operating same, the induction-valve having a stem which is hollow at its lower end, a supply-pipe over which the lower end of said hollow stem is adapted to be seated, and means for holding said stem with its lower end seated over the supply-pipe, and the exhaust-valve from seating when the engine runs above a normal speed, as set forth.

10. In combination with the cylinder, the combustion-chamber, the exhaust-valve, the induction-valve and hollow and apertured stem, the gasolene-supply pipe over which the lower hollow end of the stem is adapted to be seated, a pivoted lever passing through the aperture in said stem, and means for tilting said lever, to hold the lower end of the hollow valve-stem seated over the gasolene-inlet, and the induction-valve seated, while the exhaust-valve is held from seating as the speed of the engine rises above normal, as set forth.

657,141. INCANDESCENT MANTLE. ORLANDO M. THOWLESS, Newark, N. J. Filed June 24, 1899. Serial No. 721,792. (No model.)

Claim.—1. A reinforced incandescent mantle having for its basic structure an ordinarily-formed mantle, and covered with a coating of collodion or similar substance holding in mechanical combination therewith particles of material similar in composition to those forming the light-giving portion of the mantle.

2. A reinforced mantle for incandescent burners, having besides its regular oxid or similar structure, an additional layer of oxid deposited thereon from a mechanical combination of a combustible solid and of oxids adapted to form the light-giving portion of said mantle.

3. A reinforced mantle for incandescing burners, having for its light-giving portion a layer of refractory oxids increasing in density from the top downward, and adapted to present to the flame at its hottest portion a suitably-reinforced thickness of the light-giving refractory substances, substantially as set forth.

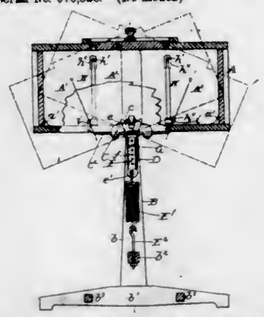
657,142. METHOD OF REINFORCING INCANDESCENT GAS-MANTLES. ORLANDO M. THOWLESS, Newark, N. J. Original application filed June 24, 1899, Serial No. 721,792. Divided and this application filed Aug. 26, 1899. Renewed July 24, 1900. Serial No. 24,717. (No specimens.)

Claim.—1. The method of reinforcing incandescent mantles, which consists in impregnating a readily-combustible liquid capable of quickly becoming solid, with particles of light-giving material of the same nature as that forming the mantle, and immersing the mantle in said liquid.

2. The method of reinforcing incandescent mantles which consists in the following steps: first, impregnating a liquid, which when dry is combustible, with the oxids of thorium and similar metals; second, immersing the mantle in said liquid; third, drying the mantle; fourth, burning off the oxid-carrying substance, substantially as described.

3. The method of reinforcing incandescent mantles, which consists in immersing the mantle in a combustible liquid, holding in mechanical combination oxids of the same nature as those forming the light-giving surface of the mantle, so suspending the moist mantle as to allow the oxid-carrying coating to become thicker at the bottom, removing by combustion the said oxid-carrying covering, and thereby depositing on the mantle an auxiliary covering increasing in thickness from the top downward, substantially as described.

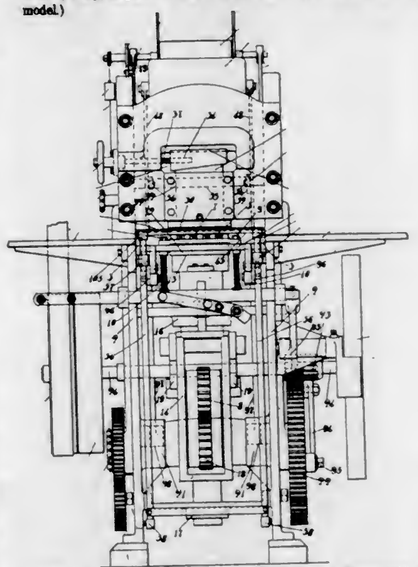
657,143. CHURN. ROMEY P. TOMPKINS, Albany, N. Y. Filed Apr. 5, 1898. Serial No. 676,528. (No model.)



Claim.—1. The combination with a supporting-frame, a horizontally-oscillating vessel, fulcrums secured to the sides of said vessel and bearing-seats provided with the upper end of said frame, of a pendent arm D secured to the lower side of the vessel and a reacting spring having a joint-form connection with said frame and a link F between said reacting spring and said pendent arm and having a loose-joint connection with each, substantially as and for the purposes set forth.

2. The combination with a supporting-frame, a horizontal oscillating vessel, fulcrums secured to the sides of said vessel and bearing-seats provided with the upper end of said frame, of a pendent arm secured to the said vessel and provided with two or more pivot-holes *d*, a reacting spring having a joint-form connection with the frame, a link provided with two or more pivot-holes *f f*, and having a joint-form connection with the upper end of said spring and two pivot-pins adapted to be used simultaneously, substantially as and for the purposes set forth.

657,144. RELIEF STAMPING AND PRINTING MACHINE. FRED WAITE, Otley, England. Filed Feb. 20, 1900. Serial No. 5,949. (No. model.)



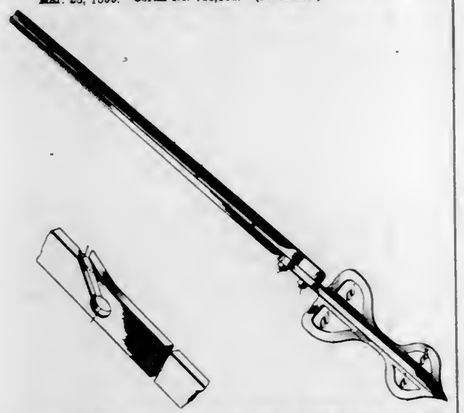
Claim.—1. In combination, the impression-plate, a die movable toward and from the same, inking means for the die and a wiper having a convexly-curved face, means for operating the die and means for giving

the wiping device, a rocking movement to present different surfaces to the die substantially as described.

2. In combination, a platen, a die, means for bringing said parts together and separating them, means for inking the die, a wiping-pad, a pivoted frame carrying the same, said frame having bearings for a paper-supply roll, the paper from which is directed about the wiper, and paper-feeding means comprising a roller journaled on the pivot of the said frame, substantially as described.

3. In a relief-printing press the combination of a liftable die, a rising and falling feed-table made with an opening large enough for the die to pass through, an impression-plate, said feed-table being adapted to receive the sheets as fed and support them independently of the die and impression-plate, substantially as herein shown and described.

657,145. **FENCE-POST.** JOHN L. WIGGINS, Duluth, Minn. Filed Mar. 28, 1899. Serial No. 710,801. (No model.)



Claim.—The fence-post herein described consisting of a lower portion and an upper portion, the latter having ribs upon opposite sides and slots extending at an angle of about forty-five degrees to the perpendicular through the post and communicating with enlarged openings at the center of the portion in which they are formed, the tongues thus formed being bent to one side of the perpendicular through the post and extended beyond the edge, with the entrance to the slot and its opposite walls at an acute angle to the edge of the post, the said upper section being formed of malleable iron, substantially as and for the purpose specified.

657,146. **APPARATUS FOR FILTRATION.** JAMES E. WILLIAMSON, New York, N. Y., assignor to Henry R. Anderson, same place. Filed Feb. 13, 1899. Serial No. 706,379. (No model.)

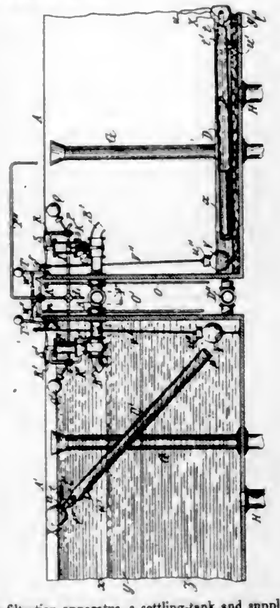
Claim.—1. In filtration apparatus, the combination with a settling-tank, and supply and discharge mains therefor, of a quick-acting supply-valve controlling feed to said tank, and means moving said valve, and means operated by the rise of level in said tank, controlling the closing of said valve and permitting its rapid closure at a predetermined level.

2. In filtration apparatus, a settling-tank, and supply and discharge mains therefor, in combination with a supply-valve for said tank, means holding said valve closed during emptying of the tank, and automatically-operated means quickly opening said valve at a predetermined level of the charge in said tank.

3. In filtration apparatus, a settling-tank, and supply and discharge mains therefor, in combination with a supply-valve for said tank, hydraulic means operating said valve, a controlling-valve for said hydraulic means, a float operating said controlling-valve and at a predetermined time moving it to the position for closing said supply-valve, means holding said controlling-valve in such position during emptying of the tank, a float releasing said controlling-valve at a predetermined level, and means throwing the controlling-valve to a position for quickly opening said supply-valve when the controlling-valve is so released.

4. In filtration apparatus, a settling-tank and supply and discharge mains therefor, in combination with a supply-valve, a piston operating such valve, a cylinder for such piston, fluid-pressure pipes for said cylinder, a controlling-valve for directing pressure into said cylinder at one side or the other of said piston, and means automatically operating said controlling-valve at predetermined levels of the charge in the tank, whereby said supply-valve is automatically quickly opened and closed.

5. In filtration apparatus, a settling-tank and supply and discharge mains therefor, in combination with a supply-valve C, quick-acting means for operating said valve, a float Q controlling closing of said valve, a holder R controlling opening of said valve, a catch S engaging said holder when the latter is in position for maintaining said valve closed, and a float operating said catch for releasing said holder at a predetermined fall of the level of the charge in the tank.



6. In filtration apparatus, a settling-tank and supply and discharge mains therefor, in combination with a supply-valve, means for operating said valve, means for holding said valve in closed position, a catch controlling said means, a trip T for controlling said catch, movable to an inactive position at one side of its dead-center and falling to an active position at the other side thereof, and a float moving said trip across its dead-center.

7. In filtration apparatus, a settling-tank, and supply and discharge mains therefor, in combination with a supply-valve, means for holding such valve closed, a catch for releasing such means, a trip operating said catch, a float operating said trip, and a lost-motion connection between said float and trip, permitting independent movement of the one relatively to the other.

8. In filtration apparatus, a settling-tank and supply and discharge mains therefor, in combination with a supply-valve C, cylinder I, piston J connected to said valve for operating it, controlling-valve K, float Q for moving said valve K, holder R for holding said valve K in one position, catch S engaging said holder, trip T for operating said catch, float V for operating said trip, and a lost-motion connection between said float and trip, permitting independent motion of said parts.

9. In filtration apparatus, a settling-tank and supply and discharge mains therefor, in combination with a valve for said tank, quick-acting mains operating said valve, a controlling device for said means, a float in said tank operating said controlling device and a lost-motion connection between said float and said controlling-valve for shifting the latter quickly upon a predetermined descent of the float.

10. In filtration apparatus, the combination with a settling-tank and supply and discharge mains therefor, of a discharge-valve for the tank, a float in the tank controlling the closing of said valve, quick-acting means operating said valve, a controlling-valve for said means, a trip connected to said controlling-valve and operated by said float, and a lost-motion device between said trip and controlling-valve permitting independent movement of the trip to a predetermined extent.

11. In filtration apparatus, a settling-tank and supply and discharge mains therefor, in combination with a discharge-valve for the tank, a float in the tank controlling closing of said valve, means operating said valve, means controlling said operation, a gravity-trip connected to said controlling means and movable from one to the other side of its dead-center, and a lost-motion connection between said float and said trip for moving the latter and for permitting it to fall by gravity at a predetermined time.

12. In filtration apparatus, a settling-tank, and supply and discharge mains therefor, in combination with a discharge-valve, means for closing said valve, a float in said tank, a controlling device for said valve-closing means, a trip for operating said controlling device, a lost-motion connection between the latter and said trip, and a lost-motion connection between said trip and float.

13. In filtration apparatus, a settling-tank and supply and discharge mains therefor, in combination with a discharge-valve, a piston J connected thereto, a cylinder I″ for said piston, fluid-pressure pipes communicating with opposite ends of said cylinder, a valve K″ controlling flow through said pipes, an arm W for said valve, a trip T, a link W′, connecting said arm and trip for operating said valve K″, and a float V in said tank for operating said trip.

14. In filtration apparatus, a settling-tank, supply and discharge mains therefor, in combination with a supply-valve, quick-operating means therefor, a controller for said means, a float operating said controller at a predetermined charging of the tank for quickly closing said valve, means preventing opening said valve during emptying of the tank, a discharge-valve, quick-acting means closing said discharge-valve, a controller for said means, holding said valve open during emptying of the tank, and a second float operating said controller and throwing the latter to position for closing the discharge-valve at a predetermined level in the tank, and releasing the controlling means of said supply-valve, and permitting the latter to open upon the closing of the discharge-valve.

15. In filtration apparatus a settling-tank and supply and discharge valves therefor, in combination with means automatically operating said valves controlled by the level of the charge in the tank, and closing the discharge-valve and opening the supply-valve at substantially the same time, and independent means automatically closing the supply-valve independently of the discharge-valve, and while the latter is closed, at a predetermined charging of the tank, whereby charging of the tank may begin immediately its discharge-valve is closed, and the contents of the fully-charged tank may come to rest and sedimentation may start before the discharge-valve is again opened.

16. In filtration apparatus a settling-tank and supply and discharge valves therefor, in combination with means automatically operating said valves controlled by the level of the charge in the tank, and closing the discharge-valve and opening the supply-valve at substantially the same time, and independent means automatically closing the supply-valve independently of the discharge-valve, and while the latter is closed, at a predetermined charging of the tank, whereby charging of the tank may begin immediately its discharge-valve is closed, and the contents of the fully-charged tank may come to rest and sedimentation may start before the discharge-valve is again opened, and independent means for opening said discharge-valve.

17. In filtration apparatus, a settling-tank and supply and discharge valves therefor, in combination with means for closing the discharge-valve and opening the supply-valve, and means automatically operating first the means for closing the discharge-valve and then the means for opening the supply-valve in succession.

18. In filtration apparatus, a settling-tank and supply and discharge mains and valves, in combination with a pipe conducting liquid under pressure from a source of fluid-pressure, a controlling-valve communicating with said pipe, a piston connected to the supply-valve, a cylinder for said piston, pipes communicating between said controlling-valve and opposite ends of said cylinder, and means automatically operating said controlling-valve with variations in level of the charge in said tank.

19. In filtration apparatus, a settling-tank and supply and discharge mains and valves therefor, in combination with a pipe conducting liquid from a source of fluid-pressure, a controlling-valve, a piston connected to the discharge-valve, a cylinder for said piston, pipes communicating between the controlling-valve and said cylinder, means automatically throwing said controlling-valve to position for closing said discharge-valve at a predetermined level of the charge in said tank.

20. In filtration apparatus, a plurality of settling-tanks and supply and discharge mains therefor, a supply-valve for each tank, means operating by the level of the charge in the tank for closing its supply-valve, a discharge-valve for each tank, means operated by the level of the charge in one tank for opening the discharge-valve of the other tank and closing its own discharge-valve, and means opening the supply-valve of a tank upon the closing of its discharge-valve.

21. In filtration apparatus, a plurality of tanks, and supply and discharge mains therefor, in combination with independent supply-valves for said tanks, means for operating said valves to alternately charge said tanks, discharge-valves for said tanks, and means simultaneously closing the discharge-valve of an empty tank and opening that of a charged tank.

22. In filtration apparatus, a plurality of settling-tanks and supply and discharge mains therefor, in combination with supply-valves for said tanks, means automatically closing said valves, discharge-valves for said tanks and means automatically opening the discharge-valve of a charged tank and the supply-valve of an empty tank at approximately the same time.

23. In filtration apparatus, a plurality of settling-tanks and supply and discharge mains therefor, in combination with independent supply-valves for said tanks, discharge-valves for said tanks, a connection between said discharge-valves, means automatically closing said supply-valves and a float in each tank operating at a predetermined fall in the level of the charge thereof, opening the discharge-valve of the other tank and opening its own supply-valve.

24. In filtration apparatus, a plurality of settling-tanks in combination with means quickly filling and holding at rest the charge of one tank during the emptying of another tank, means quickly filling and then holding at rest the charge of the latter tank during the emptying of the first tank, and means automatically reversing the operation of said tanks coincident with the lowering of the level of the charge in the one being emptied to a predetermined point.

25. In filtration apparatus, two settling-tanks and supply and discharge valves therefor, in combination with means for controlling said valves, two trips, each movable across its dead-center, for operating said controlling means, lost-motion connections between said trips respectively and said means, and floats in said tanks for operating said trips, the float in one tank permitting one trip to fall and shift said controlling means at a predetermined level of the charge in the tank, and the float in the other tank maintaining the other trip in inactive position pending the emptying of its tank.

26. In filtration apparatus, two settling-tanks and supply and discharge valves therefor, in combination with the controlling-valve K″ for said discharge-valves, trips T′ T″, lost-motion connections W′ W″ between said trips and said controlling-valve, and floats V V′ in said tanks respectively for operating the respective trips, substantially as and for the purposes set forth.

27. In filtration apparatus, two tanks and supply and discharge valves therefor, in combination with automatic means closing said supply-valves, holders for holding said means in position for closing said valves, catches for said holders, means controlling the positions of the discharge-valves, trips for shifting the latter means from the position for closing one valve to that for closing the other, and floats in said tanks respectively for operating said trips, the float of an emptying tank moving its trip to position for closing its discharge-valve and opening that of the other tank, lost-motion connections between said floats and trips, and said trips and the means for controlling said discharge-valves, each of said trips when operating said controlling-valve also releasing the catch of the supply-valve of the emptied tank, whereby opening of this valve and recharging of the tank commences approximately at the same time that closing of its discharge-valve is effected.

28. In filtration apparatus, a settling-tank in combination with a movable discharge-pipe therefor having an outlet-orifice near the surface of the charge in the tank and movable downwardly with the lowering of such surface during emptying of the tank, with an increasing proximity to such surface throughout its downward movement.

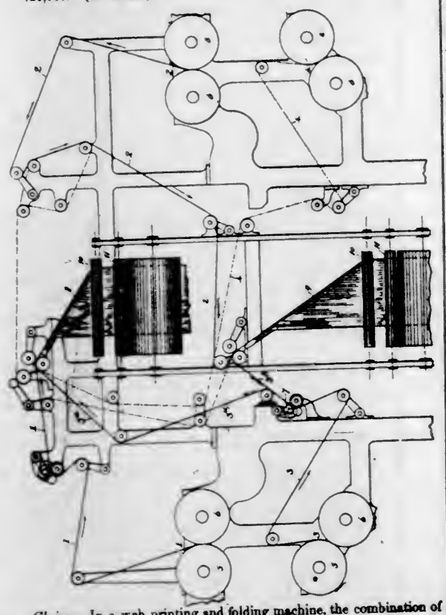
29. The improved discharge-pipe for settling-tanks and the like consisting of a tube *p* having an outlet-orifice *t* and a float X at one end and a swivel connection *r* at its other end.

30. In filtration apparatus, a plurality of settling-tanks and supply and discharge mains therefor, in combination with means for successively filling said tanks, means for successively emptying said tanks, and discharge-pipes for said tanks having downwardly-moving outlet-orifices, and means for lowering the orifice of each pipe with the descent of the level of the charge in its tank, whereby the charge of one tank may be withdrawn from a predetermined stratum near its surface while another tank is being charged and precipitation therein being inaugurated, and upon the emptying of one tank it can be recharged and the charged tank can be emptied by withdrawing from the stratum of clear liquid above the descending precipitate within it.

31. In filtration apparatus, a plurality of settling-tanks, and means for supplying solution thereto, in combination with means for discharging from each tank successively at the upper portion of the charge in the tank above the stratum of descending precipitate therein and during the descent of such precipitate, whereby precipitation and discharge can proceed simultaneously in one tank while charging and the inauguration of precipitation are being effected in another tank.

32. In filtration apparatus, two tanks and supply and discharge mains therefor, in combination with means automatically discharging first from one of said tanks and then from the other of said tanks at a predetermined speed of discharge, of means automatically feeding solution first to one tank and then to the other at a greater speed than said speed of discharge, and feeding to one tank during a portion of the time while the other is discharging, and to the other tank during a portion of the time while that previously fed is discharging, said feeding means adapted to charge an emptied tank during the first portion of the emptying of a filled tank, whereby during the completion of the emptying of a filled tank the contents of the charged tank may come to rest and sedimentation may be inaugurated therein.

657,147. PRINTING, FOLDING, AND DELIVERY MECHANISM. GEORGE R. WILLIS, Brighton, England. Filed Sept. 9, 1899. Serial No. 729,903. (No model.)



Claim.—In a web printing and folding machine, the combination of a pair of printing mechanisms at one side or end of the machine, another pair of printing mechanisms at the other side or end of the machine, and a pair of "former" folding mechanisms arranged one above the other, and between the two pairs of printing mechanisms, the said "formers" having their center lines coincident with the center lines of the webs of paper, each being provided with further folding and delivery mechanisms of suitable character substantially as described.

657,148. APPARATUS FOR HANDLING LOCOMOTIVES OR OTHER HEAVY BODIES. WILLIAM R. WOOD, St. Paul, Minn. Filed Nov. 15, 1897. Renewed July 21, 1900. Serial No. 24,415. (No model.)

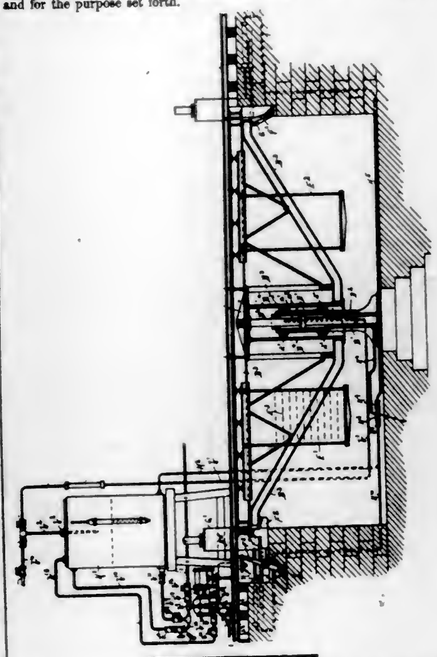
Claim.—1. In an apparatus for handling locomotives or other heavy bodies, the approach, one or more sections of track adapted to register with said approach and mounted upon a frame, a hydraulic "jack" mounted to elevate or depress said track-section frame, a series of hydraulic "jacks" mounted to elevate and depress the article being handled by said apparatus, a supply-tank for the compressed liquid, or air, piping connecting said supply-tank with said track-section "jack," piping said supply-tank with said load-lifting "jacks," and valves connected into said piping, whereby the liquid or air under pressure may be conducted to either one of said series of "jacks," or between said series of "jacks" independently of said supply-tank, and means thereby provided for utilizing the load to assist in the operation, substantially as set forth.

2. In an apparatus for handling locomotives and other heavy bodies, the approach, one or more sections of track adapted to register with said approach and mounted upon a frame, and means whereby said frame may be adjusted vertically, a shoe having an inclined surface and adapted to support the end of said track-section, a section of said approach being adjustable and adapted to be adjusted by said shoe, to keep said approach and track-section at a uniform level, substantially as set forth.

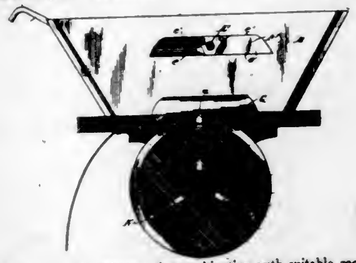
3. In an apparatus for handling locomotives or other heavy bodies, a table to receive the locomotive or other object to be handled, a series of hydraulic or pneumatic "jacks" adapted to elevate and depress said table, said "jacks" having an enlarged bore at the upper part and a piston-head fitting said enlarged bore, means for supplying compressed liquid or air below said piston, and means for supplying compressed liquid or air above the piston, substantially as set forth.

4. In an apparatus for handling locomotives or other heavy bodies, the approach, two sections of track arranged at right angles and mounted to be revolved, and means whereby said frame may be adjusted vertically, and counterpoises adjustably connected to one or both of said track-sections, substantially as set forth.

5. In an apparatus for handling locomotives or other heavy bodies, the approach provided with a track, one or more sections of track adapted to register with the track-rails on said approach, and mounted upon a frame, a hydraulic "jack" mounted to elevate or depress said track-section frame, a series of hydraulic "jacks" mounted to elevate and depress the article being handled by said apparatus, said series of "jacks" being adjustable longitudinally of the tracks, a supply-tank for the compressed air, piping connecting said supply-tank with said track-section "jack," piping connecting said supply-tank with said load-lifting "jacks," and valves connected into said piping, whereby the liquid or air under pressure may be conducted to either one of said series of "jacks," or between said series of "jacks" independently of said supply-tank, and means provided for utilizing the load to assist in the operation, and the load-lifting "jacks" adapted to be adjusted to the length of the article being handled, substantially as and for the purpose set forth.



657,149. COMBINED PLANTER AND FERTILIZER-DISTRIBUTER. AUGUSTUS H. WOOTTEN, Louisville, Ga. Filed June 2, 1900. Serial No. 18,871. (No model.)



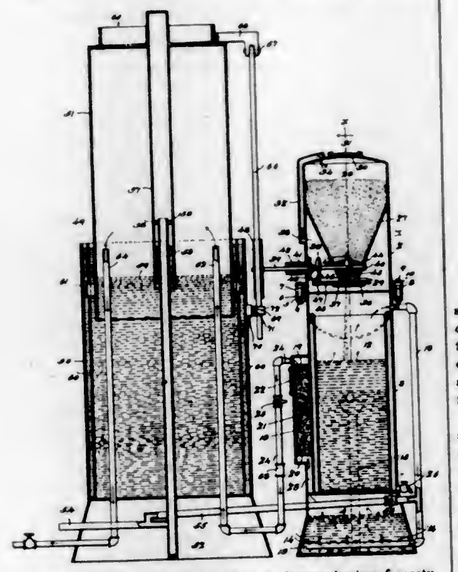
Claim.—1. In a planter, the combination with suitable receptacles having discharge-openings in their bottoms, of means for conveying the material from said receptacles to the ground comprising a driving-wheel having a projected portion adapted to contact with the ground and reduced side portions provided with pockets adapted to receive the material from the receptacles, substantially as described.

2. In a planter, the combination with a suitable receptacle, means for conveying the material from the receptacle to the ground, and an agitator-blade in said receptacle having oppositely-disposed sharp and dull edges adapted to be rotated, and an inclined portion in said receptacle adapted to be engaged by said agitator, substantially as described.

3. In a planter, the combination with a suitable receptacle, a supporting and driving wheel located beneath said receptacle and provided with a series of pockets in its periphery, plungers located in said pockets, and means adapted to adjust and regulate the movement of said plungers in the pockets, to regulate the size of the pockets for the reception of the material from the receptacle, substantially as described.

4. In a planter, the combination with a suitable receptacle having guideways A formed in its bottom, of a driving and feed wheel located beneath the receptacle having a projected portion adapted to contact with the ground and prevented from lateral movement by the guideways in the bottom of the receptacle, and reduced portions in the side of the wheel provided with suitable pockets for the reception of material from the receptacle, substantially as described.

657,150. ACETYLENE-GAS GENERATOR. JOSEPH E. WORMALD and ORVILLE W. AMES, Spokane, Wash., assignors of one-third to Joseph S. Frye, same place. Filed Jan. 8, 1900. Serial No. 746. (No model.)



Claim.—1. The combination, in carbid-feeding mechanisms for acetylene-gas generators, of the feed-slide, the worm to actuate said slide, the gas-pressure-actuated bell, and connections between the latter and the worm, for the purpose set forth, substantially as described.

2. In carbid-feeding mechanism for acetylene-gas generators, the combination of the feed-slide, the worm to actuate the same, and the revoluble stirring devices in the throat or discharge of the hopper, substantially as described.

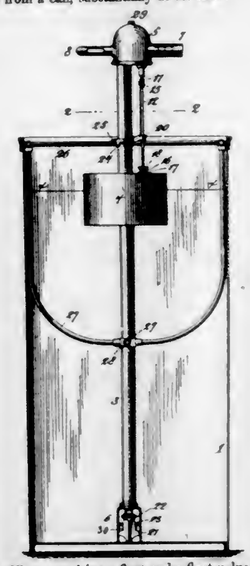
3. The combination, in acetylene-gas-generating apparatus, of the gas-pressure-actuated bell, the hinged rack-bar carried thereby and the yoke-bar adapted to bear against said rack-bar, with the carbid-feeding mechanism having the gear engaging said rack-bar, for the purpose set forth, substantially as described.

4. In an acetylene-gas generator, the combination of the feed-slide, the feed-shaft connected to and actuated by a gas-pressure-actuated bell, said shaft having the worm to actuate said feed-slide, and stirring devices actuated by said shaft, for the purpose set forth, substantially as described.

5. In an autom atically-operated carbid-feeding mechanism for acetylene-gas generators, the combination with the gas-holder, of the feed-carbid receptacle having the port 29, the slide-valve 35, the feed-shaft 39, operated by the gas-holder, the worm 38 on said shaft, and adapted to actuate said slide, and the feed-worm 45 actuated by said shaft, substantially as described.

657,151. CAN-FILLER. JOSEPH E. AUE, New York, N. Y., assignor to the De La Vergne Refrigerating Machine Company, same place. Filed Mar. 10, 1899. Serial No. 708,508. (No model.)

Claim.—1. A can-filler comprising a float, and a float-valve constructed to open against the fluid-pressure and actuated by the float so that the buoyant action of the float closes the float-valve and the weight of the float tends to open the float-valve against the fluid-pressure, means for assisting the weight of the float to open the float-valve, and means for maintaining the fluid-passage through the filler full of fluid when the filler is removed from a can, substantially as set forth.



2. A can-filler comprising a float and a float-valve connected thereto so that the buoyant action of the float closes the float-valve and the weight of the float tends to open the float-valve, and means for retaining fluid in the filler in advance of the float-valve when the filler is removed from a can, the float-valve being constructed so as when closed to permit the passage therethrough of a small quantity of fluid, whereby the weight of the float is permitted to open the float-valve, substantially as set forth.

3. A can-filler comprising a float and a float-valve actuated thereby so that the buoyant action of the float closes the float-valve and the weight of the float tends to open the float-valve, and a valve constructed to be opened when the filler is placed in a can and closed when the filler is removed from the can, the latter valve being located in proximity to the exit end of the filler and the float-valve being constructed so as when closed to permit the passage therethrough of a small quantity of fluid, whereby the weight of the float is permitted to open the float-valve, substantially as set forth.

4. In a can-filler, in combination, a fluid-actuated device and the valve actuated thereby so that the valve is closed by the fluid-actuated device when the can is filled to a predetermined point, said valve being constructed so as when closed to permit the passage therethrough of a small quantity of fluid, whereby the weight of the fluid-actuated device is permitted to open said valve, and means for maintaining the fluid-passages full of fluid when the filler is removed from the can, substantially as set forth.

5. In a can-filler, in combination, a fluid-actuated device and a valve connected thereto so that the valve is closed by the fluid-actuated device when the can is filled to a predetermined height, said valve being constructed so as when closed to permit the passage therethrough of a small quantity of fluid, whereby the weight of the fluid-actuated device is permitted to open the valve, and a foot-valve constructed so as to be automatically opened when the filler is placed in a can and automatically closed when the filler is removed from the can, whereby the fluid-passage is maintained full of fluid when the filler is removed from the can, substantially as set forth.

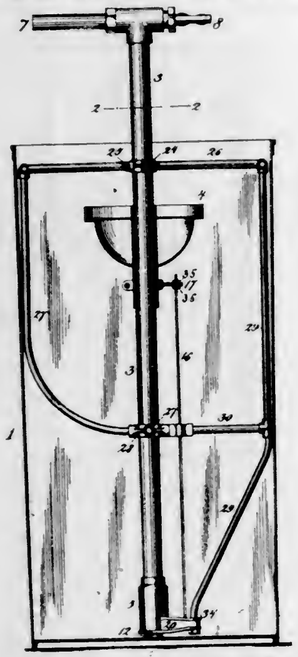
6. A can-filler comprising fluid-actuated means and a valve connected thereto, said valve having a leak-orifice therethrough, and means for maintaining the fluid-passage full of fluid when the filler is removed from a can, substantially as set forth.

7. A can-filler comprising fluid-actuated means, a foot-valve constructed to maintain the fluid-passage full of fluid when the filler is withdrawn from a can, and another valve located in rear of the foot-valve and connected to the fluid-actuated means, the latter valve having a leak-orifice therethrough, substantially as set forth.

8. In a can-filler, in combination, the main tube 3, the inlet-casing 5 connected thereto, the float 4 guided on the main tube, the float-valve 9, 10, having a leak-orifice therein, the float-valve stem 11, the float-adjusting rod 12, loosely coupled to the valve-stem and having a nut thereon

engaging the float, the guide 20 for the float-adjusting rod, and means for maintaining the fluid-passage full of fluid when the filler is withdrawn from a can, substantially as set forth.

657,152. CAN-FILLER. JOSEPH E. AUE, New York, N. Y., assignor to the De La Vergne Refrigerating Machine Company, same place. Filed Sept. 29, 1899. Serial No. 732,041. (No model.)



Claim.—1. A can-filler comprising a valve controlling the fluid-passage of the filler, fluid-actuated means connected to the valve, and tending by its weight to hold the valve open, and automatic means constructed to overcome the weight of the fluid-actuated means and close the valve when the filler is removed from a can and to be overcome by the weight of the filler and to permit the fluid-actuated means to open the valve when the filler is placed in a can, the automatic means and fluid-actuated means being arranged to permit the fluid-actuated means to control the valve after the valve has been thus opened, substantially as set forth.

2. A can-filler comprising a valve controlling the fluid-passage of the filler and a foot for the valve, the valve being detachably connected to the foot so as to be closable independently thereof when the foot is raised, and fluid-actuated means permanently connected to the valve so as to close the same when the can has been filled to a predetermined point, substantially as set forth.

3. In a can-filler, in combination, a valve controlling the fluid-passage of the filler, fluid-actuated means connected to the valve in all positions of the valve and a foot for the valve provided with means normally connected to the valve but disengaged therefrom when the foot is raised, substantially as set forth.

4. A can-filler comprising a valve controlling the fluid-passage of the filler, fluid-actuated means connected thereto and a foot for the valve, such foot being provided with a latch, and the valve and fluid-actuated means including a part normally engaging the latch, but clear thereof when the foot is raised, substantially as set forth.

5. In a can-filler, in combination, a valve controlling the fluid-passage through the filler, fluid-actuated means connected to the valve and tending by its weight to hold the valve open, and automatic means constructed to overcome the weight of the fluid-actuated means when the filler is removed from a can and to be overcome by the weight of the filler when the filler is placed in a can, such automatic means including means normally connected to the valve but disconnected therefrom when the filler is placed in a can, substantially as set forth.

6. In a can-filler, in combination, a valve controlling the fluid-passage of the filler, fluid-actuated means permanently connected to the valve and including a rock-lever, and a foot for the valve provided with a part normally engaging the rock-lever but clear thereof when the foot is raised, substantially as set forth.

7. In a can-filler, in combination, a valve located in proximity to the exit end of the filler, a float permanently connected to the valve, and a foot for the valve provided with means normally connected to the valve but disengaged therefrom by the upward movement of the foot, substantially as set forth.

8. In a can-filler, in combination, a valve located in proximity to the exit end of the filler, a foot for the valve, the valve being detachably connected to the foot so as to be closable independently thereof when the foot is raised, and fluid-actuated means permanently connected to the valve so as to hold the valve open until the can is filled to a predetermined point and then to close the valve, substantially as set forth.

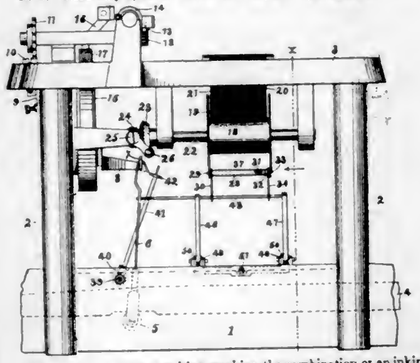
9. In a can-filler, in combination, a valve located in proximity to the exit end of the filler, a float, a rock-lever permanently connected to the float and engaging the valve, and a foot for the valve provided with a part normally engaging the rock-lever but clear thereof when the foot is raised, substantially as set forth.

10. A can-filler comprising a valve located in proximity to the exit end of the filler, a float, a rock-lever connected to the float and engaging the valve, a foot for the valve and a latch upon the foot, the latch normally engaging the rock-lever but clear thereof when the foot is raised, substantially as set forth.

11. A can-filler provided with an outlet-casing having a valve therein, a foot engaging the stem of the valve, a foot-spring tending to hold the foot in lower position and the valve closed, a float, a rock-lever connected to the float and engaging the stem of the valve, and a latch on the foot normally engaging the rock-lever but clear thereof when the foot is raised, substantially as set forth.

12. In a can-filler, in combination, the main tube 3, the outlet-casing 5 at the lower end thereof, the valve 6 in said casing having the stem 11, the foot 12 engaging the valve-stem, the foot-spring 13 tending to hold the foot in lower position and the valve closed, a float fitted loosely upon the main tube 3 and a float-rod extending downwardly therefrom, a rock-lever having an arm 18 connected to the float-rod and an arm 21 engaging the valve-stem, and the latch 22 carried by the foot 12 and normally engaging the rock-lever arm 21 but clear thereof when the foot is raised, substantially as set forth.

657,153. TYPE-WRITING MACHINE. WALTER J. BARRON, New York, N. Y., assignor to the Densmore Typewriter Company, Syracuse, N. Y. Filed July 1, 1899. Serial No. 722,487. (No model.)



Claim.—1. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, an arm or device on and movable relatively to the spool and held in an inactive position by the ribbon and adapted to move to an active position when released by said ribbon, and means for locking the keys actuated by said arm when in its active position.

2. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, an arm or device on and movable radially of the spool and held inward or toward the spool-core by the ribbon and movable outwardly when released by the unwinding ribbon, and mechanism for locking the keys and actuated by said arm during the rotation of the spool when the arm is in its outer or active position, substantially as described.

3. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool having radial guides at its ends, a bar guided by and held against turning motion in said guides, an arm on said bar pointing away from the center of the spool, said bar being held inwardly of the spool by the ribbon and movable outwardly when released by the ribbon, and mechanism for locking the keys and actuated by said arm when the bar and arm are in their outer positions.

4. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, an arm or device on and movable relatively to the spool and held in an inactive position by the ribbon and moved to an active position when released by said ribbon, a key-locking mechanism, a movable rod or bar in the path of said spool-arm when the latter is in its active position and actuated thereby, and connections whereby said rod or bar actuates the key-locking devices.

5. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, an arm or device on and movable relatively to the spool and held in an inactive position by the ribbon and moved to an active position when released by said ribbon, a key-locking mechanism, and a movable bar or rod provided with a cam portion for actuating said locking mechanism, and said bar or rod being in the path of and actuated by said spool-arm when the latter is in its active position.

6. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, an arm or device on and movable radially of the spool and held in an inactive position by the ribbon and moved radially to an active position when released by said ribbon, a key-locking mechanism, a movable rod or bar adapted to be actuated by said spool-arm when the latter is in its active position, and connections between said bar or rod and the locking mechanism whereby the latter is operated.

7. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool provided with guides at its ends, a bar movable in said guides and prevented from turning therein and held inwardly by the wound ribbon, an arm connected with said bar, a key-locking mechanism, and means for operating said mechanism and extending into the path of and operated by said arm when the latter and its bar are released by the ribbon and are in their outer positions away from the center of the spool.

8. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool having radial slots at its ends, a bar movable along and prevented from turning by said guides, an arm on said bar extending outwardly or away from the spool's axis, a key-locking mechanism, a rod extending in the direction of the axis of the spool and in the path of and moved by said arm when the arm and its carrier-bar are in their outer positions, and connections between said rod or bar and the locking mechanism for actuating the latter.

9. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, key-levers, a vibratory bar connected to and actuated by the key-levers, a locking-arm for coaction with said vibratory bar to prevent motion of the latter and the keys, an arm or device on and movable relatively to the spool and held in an inactive position by the ribbon and movable to an outer or active position when released by the ribbon, and means for operating said locking bar or arm and actuated by said ribbon-spool arm or device when the latter is in its active position and during the rotation of the spool.

10. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, key-levers, a vibratory bar connected to and operated by the key-levers, a locking-arm adapted to coact with said vibratory bar to lock the same and the key-levers against motion, an arm or device on and movable radially of the spool and held in an inner or inactive position by the ribbon and moved to an outer or active position when released by the ribbon, and means for actuating said locking-arm and adapted to be operated by the said spool-arm when the latter is in its outer or active position and during the rotation of the spool.

11. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, a radial arm on and movable radially of the spool and held in an inner or inactive position by the ribbon and moved to an outer or active position when released by said ribbon, key-levers, a vibratory bar connected to and operated by said key-levers, a locking-arm adapted for coaction with said vibratory bar to lock the same and the levers against motion, and means for actuating said locking-arm and extending into the path of said spool-arm when the latter is in its outer or active position and actuated thereby during the rotation of the spool.

12. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, key-levers, a vibratory bar connected to and actuated by the key-levers, a movable stop-arm adapted to coact with said vibratory bar to lock the same and the key-levers against motion, a cam for actuating the stop-arm, and mechanism for actuating said cam when the ribbon is unwound to a predetermined extent or distance.

13. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, key-levers, a vibratory bar connected to and actuated by the key-levers, a movable stop-arm adapted to coact with said vibratory bar to lock the same and the key-levers against motion, a cam for actuating the stop-arm, an arm or device on and movable relatively to the spool and held in an inactive position by the ribbon and moved to an active position when released by said ribbon, and means for actuating said cam and extending into the path of said arm when the latter is in its active position.

14. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, key-levers, a vibratory bar connected to and actuated by the key-levers, a movable stop or lock arm adapted to coact with said vibratory bar to lock the same and the key-levers against motion, a cam for actuating the stop-bar, an arm or device on and movable radially of the spool and held in an inner or inactive position by the ribbon and moved to an outer or active position when released by the ribbon, and a movable bar carrying said cam and actuated by the said radial arm when the latter is in its outer position.

15. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, key-levers, a vibratory bar connected to and actuated by the key-levers, a pivoted lock or stop arm adapted to coact with said vibratory bar to lock the same and key-levers against motion, a pivoted rod or bar connected with said lock-arm to actuate the same, and an arm or device on and movable relatively to the spool and held in an inactive position by the ribbon and moved to an active position when released by said ribbon and adapted to actuate said pivoted bar or rod when the arm is in an active position.

16. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, key-levers, a vibratory bar connected with and actuated by said key-levers, a pivoted stop or lock arm adapted to coact with the said vibratory bar to lock the same and the key-levers against motion, a rod or bar parallel or substantially parallel with the spool's axis and connected with the lock-arm to actuate the same, and an arm on and movable radially of the spool and held in an inner or inactive position by the ribbon and movable to an outer or active position in which it coacts with said movable rod or bar to actuate the same and the lock-arm during the rotation of the spool.

17. In a type-writing machine, the combination of a ribbon-spool having parallel flanges or ends provided with guide-slots, telescoping tubes slidable in and out of the spool in and held from turning by said slots, an arm or arms on said tubes radial to the spool, and keyboard locking mechanism connected to be actuated by said arm or arms when the tubes are released by the unwinding ribbon and move or drop outwardly of the spool.

18. In a type-writing machine, the combination of a ribbon-spool having guide-slots in its ends or heads, telescoping tubes slidable in and out of the spools in and held from turning by and spring-pressed into engagement with said slots, an arm or arms on the tubes, a movable cam-bar adapted to be actuated by the said arm or arms when the tubes are released by the unwinding ribbon and move or drop outwardly of the spool, and key-locking mechanism actuated by said cam-bar.

19. In a type-writing machine, the combination of a ribbon-spool having guide-slots in its ends or heads, telescoping tubes slidable in and out of the spool in and held from turning by and spring-pressed into engagement with said slots, an arm or arms on the tubes, pivoted arms, a cam-bar carried thereby and adapted to be actuated by the said arm or arms when the tubes are released by the unwinding ribbon and move or drop outwardly of the spool, and key-locking mechanism actuated by said cam-bar.

20. In a type-writing machine, the combination of a ribbon-spool having guide-slots in its ends or heads, a bar supported in said slots, an arm or arms on said bar, arms pivoted on the frame of the machine, a cam-bar borne by said pivoted arms and adapted to be actuated by said bar arm or arms when the bar is released and moves or drops outwardly of the spool, key-levers, a vibratory bar connected to the escapement and operated by the key-levers, and a pivoted arm adapted to be moved by the cam-bar into engagement with said vibratory bar to lock the same and the key-levers.

21. In a type-writing machine, the combination of a ribbon-spool having slots 27 in its ends, a bar 37 engaging said slots, arms 30 and 34 on said bar, pivoted arms 46, 47, cam-bar 43 on said arms 46, 47, spring 50 coacting with said arms 46, 47, escapement vibratory bar 7, key-levers 4, universal bar 5, and connections 6 between bars 5 and 7.

22. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, an arm or device on and movable relatively to the spool and detachable therefrom and held in an inactive position and adapted to move to an active position when released by said ribbon, whereby the said arm or device may be set to be released when any desired length of the ribbon is unwound from the spool, and means for locking the keys actuated by said arm or device when in its active position.

23. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, an arm or device detachably connected to and movable radially of the spool and held inward or toward the spool-core by the ribbon and movable outwardly when released by the unwinding ribbon, whereby the said arm or device may be set to be released when any desired length of the ribbon is unwound from the spool, and mechanism for locking the keys and actuated by said arm or device during the rotation of the spool when it is in its outer or active position.

24. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool having radial guides at its ends, a bar comprising relatively-movable sections guided by and held against turning motion in and

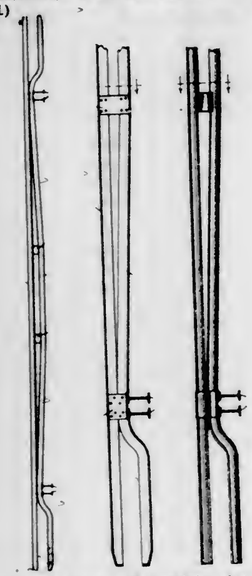
detachable from said guides, an arm on said bar radial to the spool, said bar being held inwardly of the spool by the ribbon and movable outwardly when released by the ribbon, and mechanism for locking the keys and actuated by said arm when the bar and arm are in their outer positions.

25. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool having radial guides at its ends, a telescoping bar guided by and held against turning motion in and detachable from said guides, an arm on said bar radial to the spool, said bar being held inwardly of the spool by the ribbon and movable outwardly when released by the ribbon, and mechanism for locking the keys and actuated by said arm when the bar and arm are in their outer positions.

26. In a type-writing machine, the combination of an inking-ribbon, a ribbon-spool, key-levers, means adapted to lock said levers, and connections intermediate said means and the spool including an actuator detachably connected to the spool and moved independently by the ribbon to an inactive or inoperative position, whereby the said actuator may be set to be released at any point by the unwinding ribbon to actuate the means for locking the keys.

27. In a type-writing machine and in a mechanism for locking the printing mechanism when the ribbon should be reversed, an actuator carried by a ribbon-spool and adapted to be set or adjusted to lock the printing mechanism at any desired point in the longitudinal travel of the ribbon.

657,154. SILL FOR UNDERFRAMES OF CARS. WILLIAM P. BETTENDORF, Davenport, Iowa. Filed Mar. 15, 1899. Serial No. 709,124. (No model.)



Claim.—1. A sill for car-bodies consisting of two continuous members arranged one above the other, extending from end to end of the car and above the car-bolsters, said members being separated between the said bolsters to form a truss, and brought into direct contact and union at points above the car-bolsters, and again separated beyond such bolsters.

2. A sill for underframes of cars consisting of two continuous members arranged one above the other, extending from end to end of the car above the car, bolsters, the upper of said members being straight from end to end, and the lower member being united with said upper member at points above the bolsters, and bent down between said points of union to form a truss, and again bent downward at points beyond said bolsters.

3. A sill for car-bodies consisting of two members arranged one above the other and extending from end to end of the car, said members being centrally separated to form a truss, and united at points intermediate their ends, and having their free ends beyond said points of union separated in a vertical plane, to leave an unobstructed opening therebetween.

657,155. SAW-BLADE. HIRAM H. BICKFORD, Elmira, N. Y. Filed Jan. 11, 1900. Serial No. 1,114. (No model.)

Claim.—1. A one-piece saw-blade, having alternate transverse sections thereof tempered or otherwise hardened, as and for the purpose set forth.

2. A saw-blade for stone-cutting comprising a flat straight-edged strip of iron or steel composed of alternate hard and soft sections running transversely across the blade.



657,156. LIFE-PRESERVER. LEWIS S. BICKLEY, London, England, assignor to the Buoyant Clothing Syndicate, Limited, same place. Filed Sept. 16, 1899. Serial No. 730,713. (No model.)



Claim.—A buoyant or life-saving dress, comprising buoyant elements suspended from the shoulders and depending upon the body, in combination with buoyant cuffs separate from the dress, and tapes or the like for attaching said cuffs to the body-dress, preferably at the shoulder.

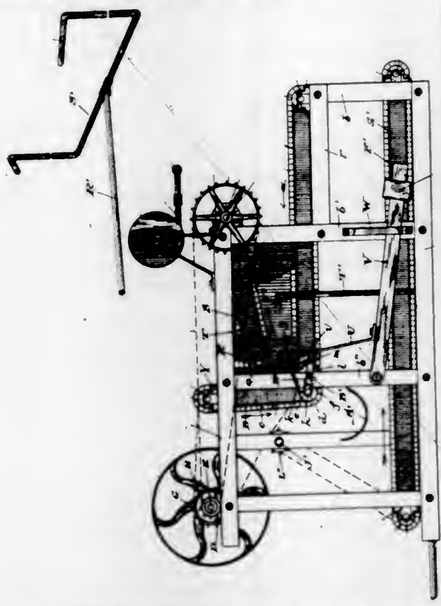
657,157. MACHINE FOR MAKING STRAW OR PEAT FUEL. HARMAN BUNKER, Barrie, Canada, and GEORGE R. HORN, Cavalier, N. D. Filed Mar. 2, 1900. Serial No. 7,138. (No model.)

Claim.—1. A machine for making straw and peat or other fuel embracing in its construction a frame, a substantially-horizontal conveyer-belt, a butting-belt opposed to the inner end of the conveyer-belt the lower end of which is outwardly movable, a compressor-belt above the conveyer-belt, and means for imparting a rotary motion to the belts, substantially as specified.

2. A machine for making straw and peat or other fuel embracing in its construction a frame, a substantially-horizontal conveyer-belt, a butting-belt opposed to the inner end of the conveyer-belt the lower end of which is outwardly movable, a compressor-belt above the conveyer-belt, means for imparting a rotary motion to the belts, a water-tank supported above the conveyer-belt provided with a spraying apparatus to discharge its contents on the material carried by the conveyer-belt, and a steam-pipe having upwardly-extending branches at each end to direct a jet of steam on the material being formed by the belts, substantially as specified.

3. A machine for making straw and peat or other fuel embracing in its construction a frame, a substantially-horizontal conveyer-belt, a butting-belt opposed to the inner end of the conveyer-belt the lower end of which is outwardly movable, a compressor-belt above the conveyer-belt, means for imparting a rotary motion to the belts, and receivers connected to the frame below the inner end of the conveyer-belt to receive the fuel after its formation, substantially as specified.

4. A machine for making straw and peat or other fuel embracing in its construction a frame, a substantially-horizontal conveyer-belt, a butting-belt opposed to the inner end of the conveyer-belt, a shaft within the butting-belt, springs connected to the shaft and to the frame, a compressor-belt, shafts for the compressor-belt one of which is vertically movable in its bearings and the other of which is stationary, means for imparting motion to the belts, an arm depending from the end of the movable shaft, a lever pivoted to the lower end of the arm and connected to the shaft within the butting-belt, a second arm depending from the movable shaft connected to a lever one end of which is pivoted to the frame the other end of which is weighted, receivers connected to the frame below the inner end of the conveyer-belt, a water-tank mounted on the frame above the conveyer-belt, a spray for the water-tank to dampen the material passing over the conveyer-belt, and a steam-pipe to throw a jet of steam on the materials during its formation by the belts, substantially as specified.



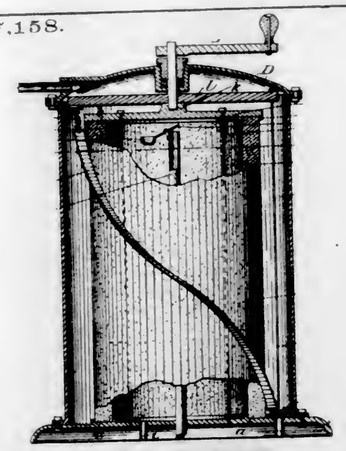
5. A machine for making straw and peat or other fuel embracing in its construction a frame, a substantially-horizontal conveyer-belt passing around shafts journaled in the frame, a butting-belt passing around a shaft journaled in the frame the lower end of the butting-belt being opposed to the inner end of the conveyer-belt, a shaft within the butting-belt, a collar mounted on the shaft in the butting-belt, a spring connected to the collar and to the frame, a compressor-belt passing around shafts one of which is vertically movable in the frame the other of which is stationary, means for imparting motion to the belts, an arm depending from the end of the movable shaft, a lever pivoted to the lower end of the arm and connected to the shaft within the butting-belt, a second arm depending from the movable shaft connected to a lever one end of which is pivoted to the frame the other end of which is weighted, receivers connected to the frame below the inner end of the conveyer-belt, a water-tank mounted on the frame above the conveyer-belt, a spray for the water-tank to dampen the material passing over the conveyer-belt, a steam-pipe to throw a jet of steam on the materials during its formation by the belts, and a return-belt below the conveyer-belt to return any of the material falling from the conveyer-belt to the front of the machine, substantially as specified.

657,158. FILTER. JOHN DAVIS, Pittsburg, Pa. Filed Feb. 26, 1900. Serial No. 6,587. (No model.)

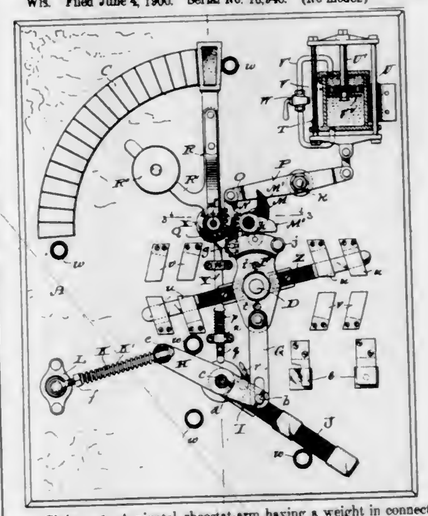
Claim.—1. A filter having a cylindrical filtering-body, an annular water-chamber, and a concentric water-chamber within the filtering-body; in combination with scrapers surrounding the filtering-body, extending from the upper to the lower end thereof, and a device for cleaning the bottom of the annular chamber and connected to the scrapers.

2. A filter having a cylindrical filtering-body, an annular water-chamber, and a water-storage chamber within the filtering-body; in combination with spirally-arranged scrapers connected at their upper and lower ends and extending half-way around said body in opposite directions from the upper to the lower end, and a brush engaging the bottom of said annular chamber and connected to the lower ends of said scrapers.

657,158.



657,159. RHEOSTAT-CONTROLLER. JOHN DILLON, Milwaukee, Wis. Filed June 4, 1900. Serial No. 18,940. (No model.)



Claim.—1. A pivotal rheostat-arm having a weight in connection therewith, a governor mechanism in gear with the arm against power of its weight, a main switch-lever, gear-control mechanism operative in conjunction with the main switch-lever to permit gravity throw of the rheostat-arm subsequent to a circuit-closing operation of said lever but which restores said arm to normal position previous to a circuit-opening operation of the aforesaid lever, a reversing switch-bar, and means in connection with the gear-control mechanism for actuating said bar.

2. A pivotal rheostat-arm having a weight in connection therewith, a governor mechanism in rack-and-pinion gear with the arm, a pivotal cam in pinion connection with the rack of the aforesaid gear, a cam-controlling swing-plate, a link in union with the plate, and a spring-controlled switch-lever having loose-play connection with the link.

3. A pivotal rheostat-arm having a weight in connection therewith, a governor mechanism in rack-and-pinion gear with the arm, a pivotal two-arm cam in pinion connection with the rack of the aforesaid gear, a swing-plate movable in either direction from normal position to clear both cam-arms but operative on return movement upon one or the other of said arms, a link in union with the plate, a spring-controlled switch-lever having loose-play connection with the link, and a reversing switch-bar controlled by said plate.

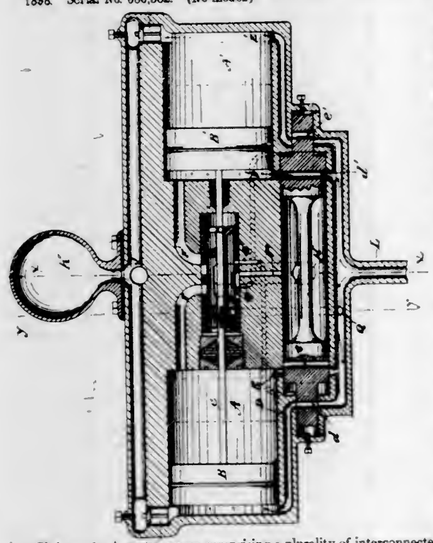
4. A pivotal rheostat-arm having a weight in connection therewith, a governor mechanism in rack-and-pinion gear with the arm, a pivotal cam in pinion connection with the rack of the aforesaid gear, a cam-controlling swing-plate, a link in union with the plate, a spring-controlled

switch-lever having loose-play connection with the link, a spring-controlled latch for locking the rheostat-arm on full resistance, and a branch of said switch-lever operative to retract the latch.

5. A pivotal rheostat-arm having a weight in connection therewith, a governor mechanism in rack-and-pinion gear with the arm, a pivotal two-arm cam in pinion connection with the rack of the aforesaid gear, a swing-plate movable in either direction from normal position to clear both cam-arms but operative on return movement upon one or the other of said arms, a link in union with the plate, a spring-controlled switch-lever having loose-play connection with the link, a reversing switch-bar controlled by said plate, a spring-controlled latch for locking the rheostat-arm on full resistance, and a branch of the aforesaid switch operative to retract the latch.

6. A pivotal rheostat-arm, a main switch-lover, means in connection with the arm and lever for operating the former, a balanced reversing switch-bar, and means whereby the throw of said bar is had when the main switch is open either previous to closing circuit or subsequent to opening of same.

657,160. MOTOR-PUMP. WILLIAM H. EADS, St. Louis, Mo., assignor of one-half to Harold M. Plaisted, same place. Filed July 19, 1898. Serial No. 686,382. (No model.)



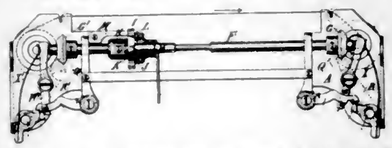
Claim.—1. A motor-pump comprising a plurality of interconnected pistons and their cylinders, each provided with inlet-openings on opposite sides of the respective piston, and a discharge-opening on one side of said piston, a supply-pipe communicating with water under pressure, a port-valve communicating with said supply-pipe and admitting water to said inlet-openings alternately, a cut-off valve for said discharge-openings alternately, and interconnections between said cut-off valve and said pistons adapted to operate the former near the end of each stroke of said pistons, and suitable inlet and outlet passages for said cut-off valve.

2. A motor-pump comprising a pair of connected pistons and their cylinders, each piston provided with inlet-ports on opposite sides of the piston, a discharge-opening at one side of each piston and a valve-closed outlet at the opposite side thereof, a supply-pipe to water under pressure, an interposed port-valve communicating with said supply-pipe and with corresponding inlet-ports for said cylinders alternately, a cut-off valve for said discharge-openings, connecting means between said cut-off valve and said pistons to operate the former near the end of the stroke of the latter, and means for operating said port-valve by the movement of said cut-off valve.

3. In a motor-pump, a pair of connected pistons and their cylinders, each cylinder provided with a discharge for waste water at one side of the piston and a valvular exit at the other side of the piston, and with suitable inlet-ports at opposite ends of each cylinder, and means to open and close said ports alternately, and open and close said waste-discharge openings, whereby the full amount of water admitted to the pistons is used to force substantially half of the water to double the height, while wasting substantially half or the balance of said amount.

4. A motor-pump comprising the pistons B B', a connecting-rod C, the inclosing cylinders A A', provided with the discharge-passages F F' and the valve-closed openings opposite said discharge-openings, and each cylinder provided with inlet-ports at each end, a port-valve for said ports, a supply-pipe communicating with said valve, and a cut-off valve for said discharge-passages and for operating said port-valve, substantially as described.

657,161. RIBBON-FEED FOR TYPE-WRITERS, HAND-STAMPS, &c. WILLIAM J. ENGLISH, New York, N. Y., assignor to James S. MacCoy, same place. Filed Oct. 14, 1899. Serial No. 733,579. (No model.)



Claim.—1. In a reversing-gear for ribbon-feed, the combination of the reels upon which the ribbon is wound and between which it passes, independent reversing-levers bearing upon the ribbon wound upon the two reels, respectively, means for holding the said reversing-levers in engagement with the ribbon on the reels independently one of the other, mechanism for rotating the reels to feed the ribbon from one reel to the other, a shifting mechanism for connecting the said rotating mechanism with one or the other of the reels, and means for locking the said shifting mechanism, the said locking means being operated by the reversing-levers whereby the reversal of the ribbon-feed may be determined by the decrease in the bulk of the ribbon upon one of the reels, substantially as set forth.

2. In a reversing-gear for ribbon-feed, the combination of the reels upon which the ribbon is wound and between which it passes, reversing-levers arranged to bear upon the ribbon as it is wound upon the reels, independent springs for holding the reversing-levers yieldingly in engagement with the ribbon on the said reels, respectively, mechanism for rotating the reels adapted to be engaged with one or the other thereof, shifting mechanism for said rotating mechanism whereby the latter is brought into operative connection with one or the other of the reels, independent springs for giving motion to the shifting mechanism, connections between the said springs and the reversing-levers whereby the springs are put under tension as the reversing-levers are moved by the ribbon accumulating upon the reel, means for locking the shifting mechanism, and independent tripping devices for the locking means operated by the reversing-levers, substantially as set forth.

3. In a reversing-gear for ribbon-feed, the combination of two independent and disconnected reversing-levers operated respectively by the variation in the bulk of ribbon upon the ribbon-reels, locking mechanism for the feed operatively connected with the said reversing-levers, respectively, rocking levers normally engaged by the said locking mechanism, independent springs for pressing the said rocking levers in opposite directions against the sliding shaft of the reel-rotating mechanism, and means for increasing and diminishing the pressure of said springs according as the reversing-levers are moved, substantially as set forth.

4. In a reversing-gear for ribbon-feeds, the combination of the ribbon-reels, rollers bearing against the portions of the ribbon wound upon the said reels, respectively, rock-shafts provided with arms in which the said rollers are mounted, trips carried by the said rock-shafts, locking-levers arranged to be operated by the trips, rocking levers connected with the shifting operating devices for the reels arranged to bear thereupon in opposite directions, and springs bearing against the said rocking levers, the tension of the springs being varied as the position of the rollers bearing upon the ribbon wound on the reels varies, substantially as set forth.

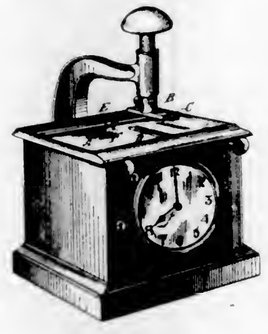
5. In a reversing-gear for ribbon-feeds, the combination of a rock-shaft carrying suitable arms upon which is mounted a roller spring-pressed against one of the ribbon-reels, a trip operated by said rock-shaft, a lock adapted to be opened by said trip, and means independent of the means for spring-pressing the roller against the ribbon-reel for shifting the operating-shaft of the ribbon-feed when said lock is open, substantially as described.

6. In a ribbon-feed for type-writers, &c., the combination of two ribbon-reels, a main operating-shaft, connections at each end of said operating-shaft for rotating one of said ribbon-reels, and independent and disconnected means which are held in spring engagement with the ribbon-reels and are controlled by a predetermined decrease in the bulk of the ribbon upon one of said reels for shifting the said operating-shaft out of connection with that reel and into connection with the reel at the opposite end of the shaft, substantially as and for the purposes described.

7. In a reversing-gear for ribbon-feeds, the combination of the ribbon-reels, rocking frames carrying rollers adapted to bear upon the ribbon wound upon the reels, the springs for holding the rollers in engagement with the ribbon on the reels, a reversing-shaft for giving motion to the ribbon-reels, a lock for holding the shaft in working connection with the reel it is driving, a trip for operating such lock, the trip being operated by predetermined positions of the roller-carrying rocking frames, and springs, independent of the springs for holding the rollers against the ribbon on the reels, carried by the said rocking frames and arranged to move the reversing ribbon-driving mechanism when the trip is released, substantially as set forth.

8. In a reversing-gear for ribbon-feeds, the combination of the ribbon-reels, a reversing-lever operated by a predetermined variation in the bulk of ribbon upon one of the ribbon-reels, the sliding and operating shaft of the ribbon-feed mechanism, a rocking lever connected with the said sliding shaft, a lock for the said rocking lever, and a trip for said lock carried by the reversing-lever, substantially as set forth.

657,162. TIME-RECORDING SYSTEM. PETER G. GIROUD, Newark, N. J., assignor to James S. MacCoy, New York, N. Y. Filed July 19, 1899. Serial No. 724,401. (No model.)



Claim.—1. In a time-stamp, the combination of a casing provided with a printing slit or opening and a fixed stop mounted upon said casing at a certain distance from said opening for engaging with the serrated edge of a time-card, said card being provided with corresponding divisions upon its opposite sides, each division upon one side being separated longitudinally from its fellow on the opposite side by a distance equal to that between said stop and said opening, substantially as and for the purposes described.

2. In a time-stamp, the combination of a casing provided with a printing slit or opening and a stop mounted upon said casing at a fixed distance from said opening for engaging with a time-card, said card being provided upon both sides with day-spaces, the corresponding day-spaces on the opposite sides of the card being separated longitudinally by a distance equal to that between said stop and said opening, substantially as and for the purposes described.

3. In a time-stamp, the combination of a casing provided with a printing slit or opening, an alining device mounted upon said casing and a fixed stop for engaging with the serrated edges of a time-card provided upon both sides with corresponding day-spaces, each of said day-spaces being subdivided into time periods or divisions, as and for the purposes described.

4. In a time-stamp, the combination of a casing provided with a printing slit or opening, an alining device, and a stop for engaging with the serrated edge of a time-card which has its face suitably divided into time periods and its back provided with means for determining the proper longitudinal adjustment of the card for printing upon any one of said time periods, substantially as and for the purposes described.

5. A time-card divided on each side into a series of day-spaces, each subdivided into a number of time periods, all of the day-spaces and time periods upon one side having the same relative longitudinal positions with respect to their correspondents upon the other side, said card having upon one or more longitudinal edges indentations spaced to correspond to said time periods, substantially as and for the purposes described.

6. A time-card divided on both sides into a number of corresponding day-spaces, each day-space on one side being at a fixed longitudinal distance from its fellow on the other, and being subdivided into a number of time periods, spaced to correspond to a series of indentations upon one edge of the time-card, substantially as and for the purposes described.

7. A time-card divided on both sides into a number of spaces each representing a day, the space for each day on one side being at a fixed distance from the corresponding space upon the other side.

657,163. PIPE FOR BLOWING AND PROPELLING BUBBLES. FRANK L. HIGGINS, Toronto, Canada. Filed Dec. 12, 1899. Serial No. 740,122. (No model.)



Claim.—1. The combination with a pipe for inflating soap-bubbles, of another pipe adapted for driving into the air the released bubbles, the exit ends of the respective pipes being bent or curved in different directions, each pipe having a mouthpiece one within the other, and one projecting beyond the other.

2. In combination of two pipes, one for inflating and the other for propelling bubbles, each having a mouthpiece, and independent flexible tubes severally connecting each pipe with its respective mouthpiece.

3. The combination of an inflating with a propelling pipe, each having a mouthpiece, intermediate flexible tubes disposed one within the other, said mouthpieces being also one within the other, whereby either mouthpiece at option may be used, or both may be used and operated at the same time.

4. In combination with the inflating-pipe having a small bore and a flaring mouthpiece, of the driving-pipe having a bore larger than that in the inflating-pipe and terminating with a narrowed exit, the exit ends of the respective pipes being bent or curved in substantially different directions.

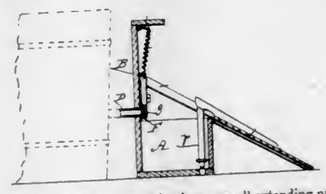
5. In combination with a bubble-inflating pipe having a small bore and a flaring bowl or mouth, of a driver-pipe not communicating with the inflating-pipe and having a bore larger than that in the inflator-pipe and terminating with a narrowed exit, and inlet-tubes located one within the other and severally serving each for its respective pipe.

6. In combination with inflating and driving pipes disposed side by side of each other, and with their respective flexible tubes parallel with each other, of the two mouthpieces one within the other and severally serving each to connect its own respective pipe and tube, and these pieces projecting one beyond the other.

7. In combination, inflating and driving pipes side by side, each having an independent inlet and outlet, and two flexible tubes one within the other, and connecting independently with its respective pipe, all substantially as set forth.

8. In combination, the pipe A a B, pipe C D d, the flexible tubes F G, and the mouthpieces I K, all substantially as and for the purposes set forth.

657,164. AUTOMATIC HOG-WATERING TROUGH. THOMAS HORTON, Groveland, Iowa. Filed June 29, 1900. Serial No. 22,046. (No model.)



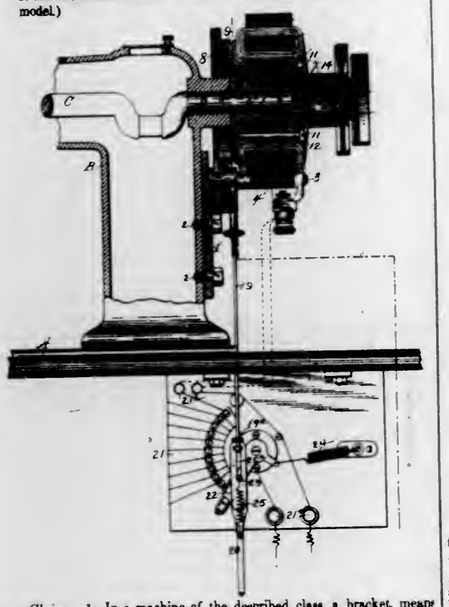
Claim.—1. In a trough for watering hogs, a wall extending upward from the rear side of the trough, a supply-pipe fixed in said wall, a lever pivoted to the face of said wall and provided with packing on its end for closing the end of said pipe and an inclined platform in front of the trough pivotally connected with said lever, arranged and combined to operate in the manner set forth, for the purposes stated.

2. In a trough for watering hogs, a wall extending upward from the rear side of the trough, a supply-pipe fixed in said wall, a lever pivoted to the face of said wall and provided with packing on its end for closing the end of said pipe, an inclined platform in front of the trough pivotally connected with said lever, an aperture in the bottom of the trough, and a plug-valve carried by the said platform to open and close said aperture, arranged and combined to operate in the manner set forth for the purposes stated.

3. An automatic trough for watering animals, comprising an oblong trough, a wall extending upward at the rear side of the trough, a board fixed on top of said wall to project forward, two levers pivoted to the front face of the wall, an inclined platform in front of the trough and provided with fixed arms at its ends and said arms pivotally connected with the outer ends of said levers, a supply-pipe fixed in the wall, packing fixed to the end of one of said levers for closing said supply-pipe, springs fixed to the wall and to said levers, an aperture in the bottom of the trough and a valve carried by the inclined platform for closing said aper-

tore, all arranged and combined to operate in the manner set forth for the purposes stated.

657,165. SEWING-MACHINE MOTOR ATTACHMENT. FRANCIS P. HOUCK, Swanton, Ohio. Filed June 7, 1900. Serial No. 19,378. (No model.)



Claim.—1. In a machine of the described class, a bracket, means for detachably securing the same to a sewing-machine arm, an electric motor mounted upon said bracket, and means for detachably securing the armature of said motor upon the shaft of such sewing-machine.

2. In a machine of the described class, a bracket, means for detachably securing the same to a sewing-machine arm, a motor mounted upon said bracket, an extension-sleeve adapted to be detachably secured to the shaft of such sewing-machine and means for detachably engaging the driving mechanism of the motor with said sleeve.

3. In a machine of the described class, a bracket, and means for detachably securing the same to the arm of the sewing-machine, a motor mounted on said bracket, a sleeve, means for rigidly securing the sleeve to the shaft of the sewing-machine, another sleeve on said latter sleeve engaged with the driving mechanism of said motor, and means for engaging and disengaging said two sleeves, whereby they may be caused to revolve in unison, or whereby the outer sleeve may revolve loosely upon the inner sleeve.

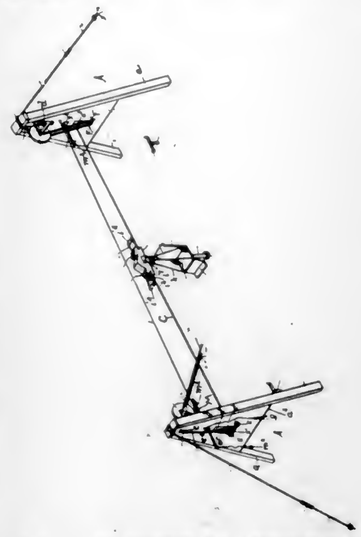
4. In a machine of the described class, a motor adapted and arranged to be detachably engaged directly with the shaft of the sewing-machine, a clutch mechanism for engaging and disengaging the motor with the shaft, a bobbin-winder and means for throwing the bobbin-winder into and out of operative connection with the motor, whereby the sewing-machine and the bobbin-winder may be operated independently of each other.

5. In a machine of the described class, a motor, means for connecting the same directly to the shaft of a sewing-machine, a rheostat, a brake mechanism for said motor, a pedal-rod connecting the brake mechanism and the rheostat, whereby, by the movement of said rod, the brake and rheostat are controlled in harmony.

6. In a machine of the described class, a motor, means for detachably securing the same directly to the shaft of a sewing-machine, a clutch mechanism for throwing the motor into and out of operative engagement with the said shaft, a two-step wheel upon said motor, a brake mechanism connected with one of said steps, a bobbin-winder, and means for throwing said winder into and out of engagement with the other step of said wheel.

7. In a machine of the described class, a bracket, a motor thereon, a sleeve adapted to be engaged with the shaft of a sewing-machine, another sleeve upon said first-mentioned sleeve concentric therewith, a swelled conical portion on the inner sleeve, a corresponding portion upon the interior of the outer sleeve, connections between the outer sleeve and the driving mechanism of the motor, and means for securing the longitudinal movement of the outer sleeve upon the inner sleeve.

657,166. ELEVATED TROLLEY-WAY. EDWARD C. JONES, Kansas City, Mo., assignor of one-half to Annie Means Morgan and Arthur G. Barnhart, same place. Filed Sept. 19, 1899. Serial No. 731,081. (No model.)



Claim.—1. The combination with a suitably-supported vibrating track of fixed standards at each end of said track having guides for the vibrating ends thereof antifriction devices at the upper ends of said standards, brackets upon the front side of said standards and a wheel journaled in each bracket, an elevating-rope connected at one end with the periphery of each wheel and extending over the antifriction devices on said standards and connected with the outer ends of said vibrating track a suitable carriage on said track and levers connected rigidly at one end with said wheels and having the other ends extending in the direction of said track and in the path of said carriage.

2. In elevated trolley-ways the combination with the trolley-cable of fixed standards at each end of said cable having antifriction devices at their upper ends, brackets upon the front side and at the upper ends of said standards, and a wheel journaled on each bracket, sliding connections with each end of said cable on the rear side of each standard, an elevating-rope connected at one end with the periphery of each wheel and having the other end extending over the antifriction devices in the upper ends of said standards and connected with the sliding connections to the cable on each standard, a trolley on said cable and a lever rigidly connected with each wheel on said brackets at one end, and having the other end extending in the direction of said cable and in the path of said trolley.

3. In a portable trolley-way, the combination with the trolley-cable, of separate movable frames, having suitable guys or supports and openings extending vertically in said frames, rollers on the rear sides of each frame, and on opposite sides of said slot in said frame, with which the respective ends of the cable are connected, a roller in the upper part of said frames above said cable, brackets upon the side of each frame, opposite to each other in position, and an elevator-rope connected with the periphery of said wheel at one end, and the other end extending over the roller in the upper part of said frame, and connected with the said rollers on the end of said cable, and levers rigidly connected with the opposite sides of each wheel at one end, the other end extending on opposite sides of said cable in the path of the said trolley.

4. In an elevated trolley-way, a cable having suitable supporting-standards at each end, means for raising and lowering the ends of said cable alternately, and a trolley upon said cable, and a seat connected with said trolley, and means for reversing said seat automatically.

5. In an elevated trolley-way, a cable having suitable supporting-standards at each end of said cable, means for raising and lowering the ends of said cable, and a trolley and a seat connected with said trolley, and reversing devices upon the ground in the path of the said seat.

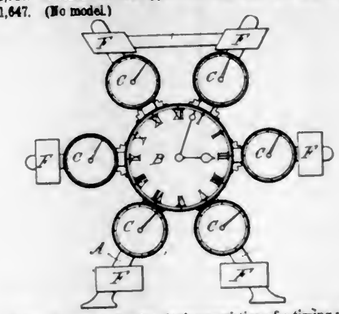
6. In an elevated trolley-way, a cable having suitable supporting-standards at each end of said cable, and sliding connections with each end of said cable upon said standard, an elevator upon each standard for raising one or the other end of said cable, a trolley upon said cable, a seat connected with said trolley, a post upon said seat, and a stationary roller upon said post, and a stationary post having a friction-plate in the path of the stationary roller on the said seat.

7. In elevated trolley-ways, a cable having suitable supporting-standards at each end of said cable, sliding connections with each end of said cable upon said standards, brackets upon the side of said standards, opposite in position to each other, and an antifriction-roller upon said standards above the said brackets, a wheel journaled in each bracket upon the standards, and an elevator-rope connected with the periphery of said wheel and extending over the said antifriction-roller and connected with the sliding connections upon the end of said cable, a lever rigidly connected with each wheel at one end and having the other end extending in the direction of said cable, and in the path of said trolley, and a catch upon said standards for retaining the trolley in position.

8. In an elevated trolley-way, a cable having suitable supporting-standards at each end of said cable, sliding connections with each end of said cable on said standards, brackets upon the side of said standards opposite in position to each other, and an antifriction-roller upon said standards above the said brackets, a wheel journaled in each bracket upon the standards, and an elevator-rope connected with the periphery of said wheel, and extending over said antifriction-roller and connected with the sliding connections upon the end of said cable, a lever rigidly connected with each wheel at one end, and having the other end extending in the direction of said cable and in the path of said trolley, a rope connected with one of said levers upon one standard at one end and with the other lever upon the other standard at the other end, and clips upon the side of said standards adapted to retain the lower ends of said levers.

9. In a trolley-cableway, a cable and a trolley-carriage, a hanger on said carriage, a seat and a swiveled connection of said seat with said hanger pivoted to each other, and a pin at right angles to and upon the pivot, and means substantially as described for stopping the movement of said pivot in its circuit upon the hanger.

657,167. TIME-INDICATING DEVICE. HENRY KING, St. Leonards-on-Sea, England. Original application filed Dec. 7, 1898, Serial No. 698,510. Divided and this application filed Sept. 25, 1899. Serial No. 731,647. (No model.)



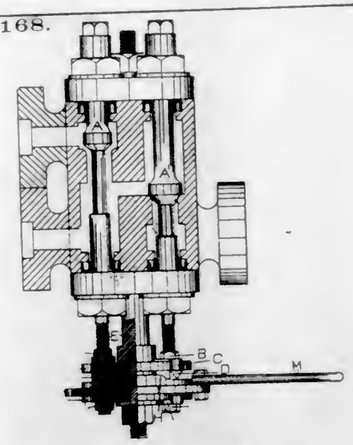
Claim.—A time-indicating device consisting of a timing mechanism, in combination with a cruciform frame, a sleeve on each arm of said frame and adapted to slide thereon, a dial carried on said sleeve, an indicator for said dial, and gearing mounted on the sleeve for operating the indicator, whereby any set of gearing can be engaged with the timing mechanism by sliding its sleeve along the arm

657,168. HYDRAULIC OR OTHER VALVE. FRANCIS L. LANE and WILLIAM RAINFORTH, Leeds, England. Filed Feb. 6, 1900. Serial No. 4,256. (No model.)

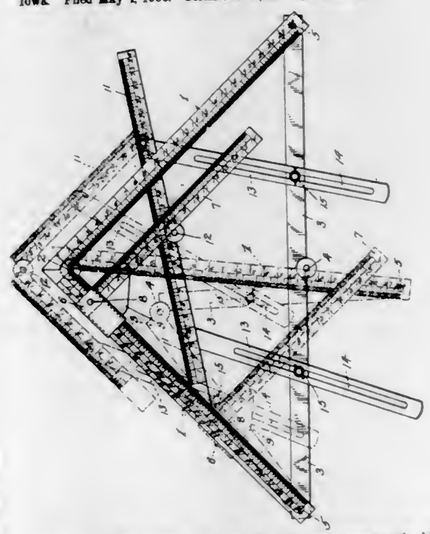
Claim.—1. The combination with a valve having two or more spindles to which an alternative or intermittent action is to be applied, of a plate movable transversely to said spindles, having slots through which said spindles pass and inclined surfaces on each side of said slots, one or more rigid guide-plates having holes through which the spindles pass and serving as a support for the movable plate, and sleeves adjustable lengthwise on said spindles and provided with inclined faces to be acted on by the inclined surfaces of said plate and with flattened sides engaging with the holes in the guide-plate.

2. The combination with a valve having two or more spindles to which an alternative or intermittent action is to be applied, of a support concentric with said spindles, rigid guide-plates carried by said support and having holes through which the spindles pass, sleeves adjustable lengthwise on said spindles, having flattened sides engaging with the holes in the guide-plates and inclined faces projecting on each side, and a rotary plate journaled on said support between the guide-plates, and carrying inclined surfaces to engage with the faces on the sleeves.

657,168.



657,169. CARPENTER'S SCALE. CHRIS LARSEN, Council Bluffs, Iowa. Filed May 4, 1900. Serial No. 15,441. (No model.)



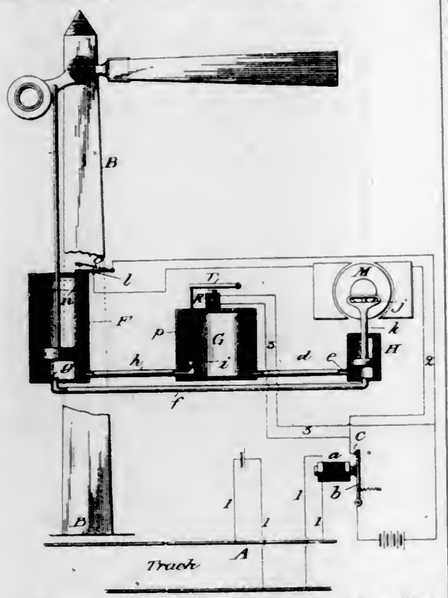
Claim.—1. The combination with the graduated square 1, the legs of which are pivoted at 2, of the hinged spacing-bar 3 connecting the legs of said square, the hinged and graduated rule 11 adjustably connected to said spacing-bar by the slotted links 13 and the sliding block 6 adjustable on one leg of said square and provided with a graduated rule 7, said parts operating substantially as described.

2. The combination with the graduated square 1, the legs of which are pivoted at 2, of the hinged spacing-bar 3, connecting the legs thereof, the hinged rule 11 adjustably connected to said bar 3 by the slotted links 13, the sliding block 6 on one leg of said square, and the graduated rule 7 pivoted to said block 6 and provided with the projection 9 for limiting its movement in one direction, substantially as described.

657,170. AUTOMATIC RAILWAY-SIGNAL SYSTEM. JACOB W. LATTIG, West Bethlehem, Pa. Filed June 6, 1900. Serial No. 19,307. (No model.)

Claim.—1. In an automatic railway-signal system, the combination with an insulated track-section or block, a track-circuit and a relay included therein, of a signal, actuating mechanism for said signal including a fluid-pressure cylinder and piston, a pump for supplying said cylinder with fluid, an electric motor to actuate said pump, an electric circuit including said motor and two sets of contacts in said motor-circuit controlled

the one by the track-relay and the other by means actuated by or from the signal-actuating mechanism, substantially as set forth.



2. In an automatic railway-signal system, the combination substantially as hereinbefore set forth of the following elements: an insulated track-section or block, a track-circuit and a track-relay included therein; a signal, and signal-actuating mechanism including a fluid-pressure cylinder and piston; a pump for supplying fluid to said cylinder; an electric motor to actuate said pump; a motor-circuit and two sets of contacts therein controlled the one by the track-relay and the other by means actuated by or from the signal-actuating mechanism; a valve controlling the outlet from the fluid-pressure cylinder; a magnet, armature and connections for controlling said valve; a pressure-controlling circuit including said magnet; and contacts in said last-named circuit controlled by the track-relay.

657,171. FABRIC FOR COLLAR-STIFFENERS. ALFRED MANN and PAUL STUMPE, Barmen, Germany. Filed May 2, 1900. Serial No. 15,245. (No specimens.)

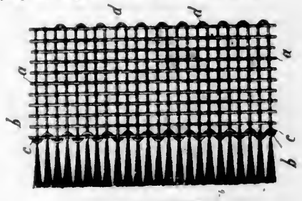


Claim.—1. As a new article of manufacture, a stiff fabric of open texture, in which adjacent weft-threads are bound together in pairs by the succeeding loops of each warp-thread, and each warp-thread binds together in each loop two weft-threads which are not bound together in the loops of the preceding or succeeding warp-thread, substantially as and for the purpose set forth.

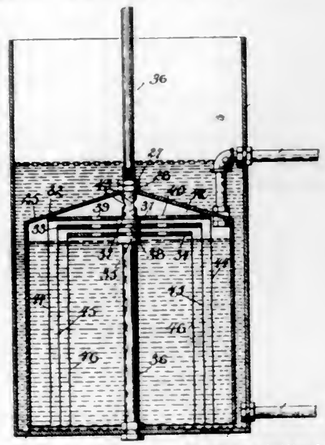
2. As a new article of manufacture, a stiff fabric of open texture, consisting of weft-threads 1, 2, 3, 4, 5, 6, 7 and 8, and warp-threads, *a*, *b*, *c*, *d*, *e*, *f* and *g*, said warp and weft threads lying respectively side by side and said warp-threads being provided with successive loops so arranged that warp-threads *a*, *c*, *e* and *g* bind together in pairs in their corresponding loops, weft-threads 1 and 2; 3 and 4; 5 and 6; and 7 and 8, and warp-threads *b*, *d* and *f* similarly bind together weft-threads 2 and 3; 4 and 5, and 6 and 7, substantially as and for the purpose set forth.

657,172. DRESS-PROTECTOR. ALFRED MANN and PAUL STUMPE, Barmen, Germany. Filed May 2, 1900. Serial No. 15,246. (No model.)

Claim.—In a plush or velours dress-protector the combination of the ordinary warp and weft threads *a* and *d* respectively with a special sling-thread *c*, which binds each one of the weft-threads directly to the last of the warp-threads at the intersection of the said weft-thread and warp-thread in such a manner that the latter cannot be unraveled or pulled out at the open plush side of the fabric, as described and shown on the accompanying drawing and for the purpose set forth.



657,173. GAS-HOLDER. THOMAS W. MARSDEN, Ilion, N. Y. Filed June 26, 1899. Serial No. 721,901. (No model.)



Claim.—1. The combination in an acetylene-gas-holding device consisting of a water-tank an inverted stationary tank within the water-tank, a gas-inlet pipe opening into the inverted stationary tank, a gas-exit pipe connected to said inverted stationary tank, a disk supported in the inverted stationary tank and a strainer secured to said disk, the strainer and disk being interposed between the gas-inlet pipe and the gas-exit pipe for purifying the gas, combined, substantially as set forth for the purposes stated.

2. In an acetylene-gas generator, a gas-holding device consisting of a water-tank, an inverted stationary tank within said water-tank, the inverted tank being surrounded by water, a gas-inlet into the inverted stationary tank, a gas-exit pipe connected with and leading out of the inverted stationary tank, a series of disks and a series of strainers attached to said disks, the disks and strainers interposed between the gas-supply pipe, combined substantially as set forth for the purposes stated.

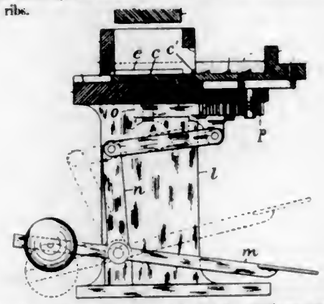
3. In a gas-holder, the combination of a water-tank, a submerged tank therein having a gas-inlet and a gas-outlet, a support in said submerged tank, and a woven-fabric strainer interposed between the gas inlet and outlet and depending from said support into the water in the tank, substantially as described.

4. In combination, in a gas-holder, a water-tank, a vertical gas-take-off pipe therein, an inverted tank in said tank and secured on said pipe, said pipe having a gas-outlet from the upper portion of the interior of said inverted tank, a gas-inlet into the upper portion of the interior of said inverted tank, a support on said pipe within the upper portion of the interior of said inverted tank, and a depending fabric strainer hanging into the water from said support and located between said gas inlet and outlet, substantially as described.

657,174. MANUFACTURE OF DOVETAILED TILES. WILLIAM P. MEEKER, Newark, N. J. Filed Jan. 4, 1900. Serial No. 367. (No model.)

Claim.—1. In a tile-press, a stationary mold-bed having dovetail ribs upon its upper surface, and provided with means for drawing the molded tile laterally from the mold, to clear such dovetail ribs.

2. In a tile-press, the combination, with a stationary mold-bed having dovetail ribs upon its upper surface, of a mold fitted to such mold-bed, means for clearing the mold from the edge of the tile when molded, and means for drawing the molded tile laterally from the mold, to clear the dovetail ribs.



3. In a tile-press, the combination, with a stationary mold-bed having dovetail ribs fixed upon its upper surface, of draw-bars fitted to grooves in such bed parallel with the ribs and formed with projections to engage the tile when molded to draw it laterally from such ribs.

4. In a tile-press, the combination, with a stationary mold-bed having dovetail ribs upon its upper surface, of a mold fitted to such mold-bed with one side movable as set forth, and draw-bars fitted within the mold-bed and provided with projections to engage the tile when molded to draw it laterally from the dovetails.

5. In a tile-press, the combination, with a stationary mold-bed having dovetail ribs upon its upper surface, of a mold fitted to such mold-bed and formed with lateral aperture at one end of such ribs, and a removable block in the aperture whereby the tile when molded may be displaced laterally from the dovetail ribs.

6. In a tile-press the combination, with a mold-bed having dovetail ribs upon its upper surface, of a mold fitted to such mold-bed and formed with lateral aperture at one end of such ribs, and draw-bars fitted within the mold-bed and provided with block to close such aperture, and with projections to engage the tile when molded to draw it laterally from the dovetails.

7. In a tile-press, the combination, with a stationary mold-bed having dovetail ribs upon its upper surface, of a mold fitted to such mold-bed, means for clearing the mold from the edge of the tile when molded, draw-bars fitted within the mold-bed and formed with projections to engage the tile when molded, and a treadle with connections to such draw-bars for retracting the tile from the dovetails.

8. In a tile-press, the combination, with a mold-bed having dovetail ribs upon its upper surface, of a mold fitted to such mold-bed and formed with lateral aperture at one end of such ribs, draw-bars fitted within the mold-bed and provided with block to close such aperture, and with projections to engage the tile when molded, a treadle with connections to such draw-bars adapted to lock the block within such aperture, and the treadle having a weight to normally move the block into such aperture.

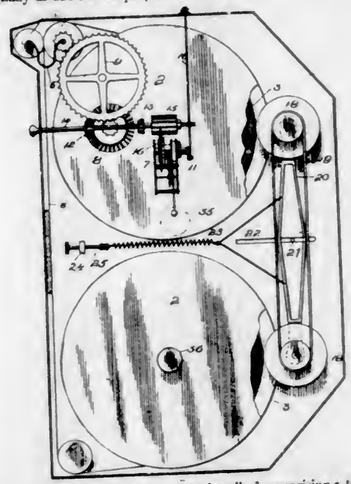
9. In a tile-press, the combination, with the stationary mold-bed having dovetail ribs fixed to its upper surface, of a mold fitted to such mold-bed, and means for clearing the mold from the edge of the tile when molded, whereby the tile may be removed laterally from the stationary dovetail ribs.

10. In a tile-press, the combination, with the mold, of a stationary mold-bed having dovetail ribs fixed immovably upon its upper surface, whereby the mold must be cleared from the tile and the tile slid laterally from the dovetail ribs.

657,175. STREET AND STATION INDICATOR. HARVEY R. MILLER, Bloomington, Ill. Filed Jan. 17, 1900. Serial No. 1,786. (No model.)

Claim.—1. An indicator of the character described, comprising a tape, cylinders spaced apart upon fixed axes and upon which the tape is wound, means for driving one of the tape-cylinders, and a frictional surface-contact driving connection between the two cylinders, comprising a pair of friction-rollers bearing against the tape wound upon the respective cylinders, a belt connecting the axles of said rollers, and means for holding said rollers in contact with their respective cylinders.

2. An indicator of the character described, comprising a tape, cylinders upon which the ends of the tape are wound, spaced apart upon fixed axes, a motor for driving the tape, a reversing connection between said motor and said tape-driving means, and a frictional surface-contact device making driving connection between the surfaces of the two cylinders, consisting of a pair of rollers, means for holding said rollers in contact with their respective cylinders, and a belt connecting the axles of said rollers, substantially as and for the purpose set forth.



3. An indicator of the character described comprising a tape, cylinders spaced apart upon fixed axes, and upon which the tape is wound, suitable means for driving the tape, and a frictional surface-contact driving connection between the two cylinders comprising a pair of connected friction-rollers bearing against the tape wound upon the respective cylinders, and a pivotal frame upon which said rollers are mounted; substantially as and for the purpose set forth.

4. An indicator of the character described comprising a tape, cylinders spaced apart upon fixed axes, and upon which the tape is wound, suitable means for driving the tape, and a frictional surface-contact driving connection between the two cylinders comprising a pair of connected friction-rollers bearing against the tape wound upon the respective cylinders, a frame in which said rollers are journaled and which is mounted upon a pivot movable to and from the plane of the cylinders' axes, and means for holding said rollers in contact with their respective cylinders; substantially as and for the purpose set forth.

5. An indicator of the character described comprising a tape, cylinders spaced apart upon fixed axes, and upon which the tape is wound, suitable means for driving the tape, a pair of connected friction-rollers bearing against the tape wound upon the respective cylinders, a frame in which said rollers are journaled, a pivot for said frame movable to and from the plane of the cylinders' axes, and a spring moving said pivot for holding said rollers in contact with their respective cylinders; substantially as and for the purpose set forth.

6. In an indicator, the combination of a pair of winding-cylinders, a tape wound alternately from one cylinder to the other, and means for driving the tape alternately in opposite directions; said tape having arranged upon it in reverse order two identical series of names or the like, with the names of each series alternating in position, said driving connection being adjusted to shift the tape a distance from one name to another in either series, skipping over the intermediate name of the other series, and the cylinders being provided with means for adjusting them so as to start with either series; substantially as set forth.

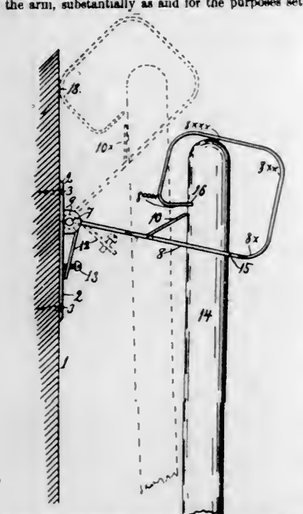
7. An indicator of the character described comprising a tape, cylinders upon which the tape is wound, a tape-driver, a motor having a limited movement, means for actuating said motor, a reversing connection between said motor and tape-driver, and a frictional surface-contact driving connection between the two cylinders; substantially as and for the purpose set forth.

8. In an indicator of the character described, the combination of the winding-cylinders, having driving connection with each other, a tape-driver, a motor and a reversing connection between the tape-driver and the motor comprising the axially-adjustable shaft having constant connection with one of said parts, the bevel-gears upon said shaft, and a bevel-wheel connected with the other of said parts, said shaft projecting in position to be manipulated, as explained.

657,176. BROOM-HOLDER. JAMES T. MUMFORD, Cromwell, Iowa. Filed Jan. 24, 1900. Serial No. 2,584. (No model.)

Claim.—1. A holder for suspending brooms and like implements by the free end of the handle, the same consisting of a bracket or plate secur-

able to a wall or other rigid object, a normally horizontally disposed arm pivoted with one end to said plate to swing upward, and having an aperture or opening adapted to receive the end of the broom-handle in a vertical position and hold it by frictional contact when the arm swings partly downward, and a guard above said opening made integral with the swinging arm and adapted to limit the upward movement of the handle and to raise the arm, substantially as and for the purposes set forth.



2. A holder for suspending brooms and similar implements by the free end of the handle, the same consisting of a bracket or plate securable to a wall or other rigid object, a normally horizontally disposed arm pivoted with one end to said plate to swing upward, and having an aperture or space adapted to receive the broom-handle and by frictional contact hold it when the arm swings downward toward its normal position, and a guard limiting the upward passage of the handle, and forming a hook which engages one side of the handle to assist in holding it, substantially as shown and described.

657,177. REPEATING ACTION FOR GRAND PIANOS. ADAM NICKEL, New York, N. Y. Filed June 6, 1900. Serial No. 19,205. (No model.)

Claim.—1. In a grand-piano action, a jointed jack having an upper elbow, a lever to which the elbow is pivoted, and a hammer actuated by the lever, substantially as specified.

2. In a grand-piano action, a jointed jack having an upper elbow, a lever to which the elbow is pivoted, a hammer actuated by the lever, an escapement-stop adapted to engage the elbow, and a block-stop adapted to engage the lever substantially as specified.

3. In a grand-piano action, a jointed jack having an upper elbow, a lever having a knuckle and pivotally connected to the elbow, and a hammer-shank having a knuckle that engages the lever-knuckle, substantially as specified.

4. In a grand-piano action, a jointed jack having an upper elbow, a lever having a knuckle and pivotally connected to the elbow, a hammer-shank actuated by the lever, and an escapement-stop that is adapted to engage the elbow, substantially as specified.

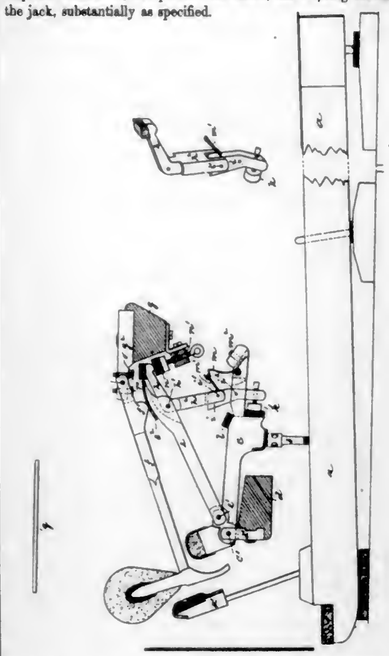
5. In a grand-piano action, a jointed jack having an upper elbow, a lever to which the elbow is pivoted, an escapement-stop adapted to be engaged by the upper side of the elbow, a second stop adapted to be engaged by the lower side of the elbow, and a spring that influences the jack, substantially as specified.

6. In a grand-piano action, a jointed jack composed of an upper elbow and a lower link, combined with a lever to which the elbow is pivoted, and a support to which the link is pivoted, substantially as specified.

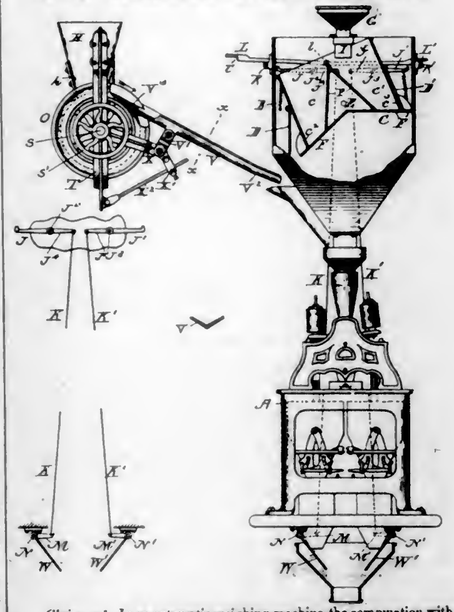
7. In a grand-piano action, a jointed jack composed of an upper elbow and a lower link, combined with a lever to which the elbow is pivoted, a support to which the link is pivoted, an escapement-stop adapted to engage the elbow, and a spring that influences the jack, substantially as specified.

8. In a grand-piano action, a jointed jack composed of an upper elbow and a lower link, combined with a lever to which the elbow is pivoted, a support to which the link is pivoted, and a regulating-button carried by the link and adapted to engage the support, substantially as specified.

9. In a grand-piano action, the combination of the following elements: a jointed jack composed of an upper elbow and a lower link, a lever to which the elbow is pivoted, an escapement-stop above the elbow, a block-stop above the lever, a stop below the elbow, and a spring that influences the jack, substantially as specified.



657,178. APPARATUS FOR AUTOMATIC WEIGHING. WILLIAM E. NICKERSON, Cambridge, Mass., assignor, by mesne assignments, to the New England Automatic Weighing Machine Company, Portland, Me. Filed Jan. 27, 1896. Serial No. 577,083. (No model.)



Claim.—1. In an automatic weighing-machine, the combination with a movable meter having a plurality of separately-dischargeable chambers,

of automatic weighing mechanism having a plurality of buckets loadable respectively by the respective chambers of said meter, and means operative in conjunction with the weighing mechanism for controlling the action of said meter.

2. In an automatic weighing-machine, the combination with a movable meter having a plurality of separately-dischargeable chambers, of automatic weighing mechanism having a plurality of buckets loadable respectively by the respective chambers of said meter, means for supplying a supplemental quantity of material to the weighing mechanism, and means operative in conjunction with the weighing mechanism for controlling the action of said meter.

3. In an automatic weighing-machine, a twin-bucket weighing-machine proper, a meter provided with two chambers arranged to discharge respectively into the respective buckets of the weighing-machine proper, and means operative in conjunction with the weighing mechanism for controlling the action of said meter.

4. In an automatic weighing-machine, a twin-bucket weighing-machine proper, a meter provided with two chambers arranged to discharge respectively into the respective buckets of the weighing-machine proper, means for supplying a supplemental quantity of material to the weighing mechanism, and means operative in conjunction with the weighing mechanism for controlling the action of said meter.

5. In an automatic weighing-machine, in combination, a twin-bucket weighing-machine proper, an oscillating meter having two chambers adapted to discharge respectively into the respective buckets of said weighing-machine proper, means for locking said meter in its extreme positions, means for supplying a supplemental quantity of material to the weighing mechanism, and means operative in conjunction with the weighing mechanism for releasing said meter.

6. In an automatic weighing-machine, in combination, an automatic weighing-machine proper having a plurality of buckets, a meter adapted to load said buckets successively, means for supplying a continuous supplemental stream of material, and means for shifting said stream successively into the respective buckets of the weighing-machine proper.

7. In an automatic weighing-machine, a twin-bucket weighing-machine proper, an oscillating meter having two compartments adapted to discharge respectively into the respective buckets of said weighing-machine proper, means for adding to the weighing apparatus a continuous supplemental supply of material, and means for shifting said supplemental supply from one bucket to the other of the weighing-machine proper.

8. In an apparatus for the automatic weighing of material, a weighing-machine, and a mechanism adapted to feed to said machine a small continuous stream of material; in combination with a supplementary-supply bucket having two compartments, each compartment having a discharge-aperture, and said bucket being adapted to oscillate under the end of a supply-pipe, in such a manner that the flow through the said supply-pipe is stopped by the filling up of the material against the end of the pipe when the compartment presented is full, substantially as described, and remains stopped until an oscillation of the bucket presents the other compartment to the pipe, and said bucket having latches adapted to hold it with the full compartment uppermost until released, and mechanism connecting the latches with said weighing-machine and adapted to release said latches at each discharge of the weighing-machine substantially as and for the purpose set forth.

9. In an apparatus for the automatic weighing of material, the combination of the weighing-machine A, having the wing-pieces W W', said wing-pieces being adapted to receive the impact of the material discharged from said weighing-machine, the supplementary-supply bucket C having the latches L L', mechanism for connecting said wing-pieces with said latches, and means for delivering to said weighing-machine a small continuous stream of material, substantially as and for the purpose set forth.

10. In an apparatus for the automatic weighing of material, the grooved wheel O and the hopper H; in combination with the trough V having the tongue V^2 all operating as described, to feed a regular stream of material, substantially as and for the purpose set forth.

11. In an apparatus for feeding granular material to a weighing-machine, the grooved wheel O and the hopper H; in combination with the inclined trough V of V-shaped cross-section, said trough having a less angle of inclination at its lower part, whereby unevenness of the stream of material is prevented, substantially as and for the purpose set forth.

12. In an apparatus for the automatic weighing of material, the grooved wheel O, the hopper H and the trough V; in combination with the yoke X pivoted upon the same axis as the said wheel O, and adapted to support the said trough in an adjustable manner, and mechanism for connecting said trough with said yoke, and for fixing said yoke in any desired position, substantially as and for the purpose set forth.

657,179. PROCESS OF MAKING INK. DAVID J. OGILVY, Cincinnati, Ohio. Filed Sept. 25, 1897. Serial No. 653,071. (No specimens.)

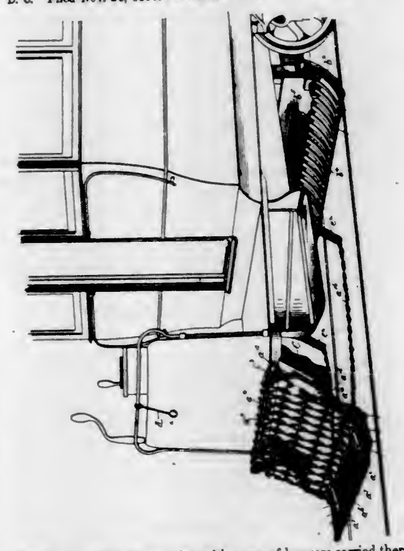
Claim.—1. The process of manufacturing printers' ink and paint, which consists in heating the mixture of the required proportions of pigment and vehicle in a proper vessel to a sufficiently-high degree for the purpose specified agitating the mass while the temperature is maintained and then straining same in said heated condition, substantially as described.

2. The process of manufacturing printers' ink and paint, which consists in heating the ingredients separately to a sufficiently-high degree for the purpose specified, then mixing same in the proper proportions in a suitable vessel, agitating the mixture while the temperature is maintained, and then straining the same in said heated condition, substantially as described.

3. The process of manufacturing printers' ink and paint, which consists in heating the mixture of the required proportions of pigment and vehicle in a proper receptacle, in connection with some medium substantially as described to prevent caking and hardening of the mass, agitating the mixture when a sufficiently-high degree of temperature is attained for the purpose specified, then straining the same in a heated condition, substantially as described.

4. The process of manufacturing printers' ink and paint, which consists in heating the mixture of the required proportions of pigment and vehicle in a proper receptacle, in connection with some readily-fusible alloy as described, to prevent caking or hardening of the mass, agitating the mixture when a sufficiently-high degree of temperature is attained for the purpose specified, and then straining the same in said heated condition, substantially as described.

657,180. CAR-FENDER. RICHARD F. PREUSSER, Washington, D. C. Filed Nov. 20, 1899. Serial No. 737,661. (No model.)



Claim.—1. The combination with a car, of hangers carried thereby, a resiliently-supported fender having arms working in the hangers, the end of each arm terminating in a hook, a friction-roller carried by each hanger against which the upper surface of each arm bears, and a pin below each roller, adapted to be engaged by the hooks on the fender-arm, whereby to constitute a hinge-like joint, when the fender is turned back, the fender-arms being normally out of contact with the pin, whereby to reduce friction and cause the fender to be readily responsive to its depressing mechanism, substantially as described.

2. The combination with a car, of hangers carried thereby, a resiliently-supported fender having arms working in the hangers, the end of each arm terminating in a hook, a friction-roller carried by each hanger, against which the upper surface of each arm bears, a pin below each roller, adapted to be engaged by the hooks on the fender-arm, whereby to constitute a hinge-like joint when the fender is turned back, and means for keeping the fender-arms out of contact with the pins, substantially as described.

3. The combination with a car, of hangers carried thereby, a resiliently-supported fender having arms working in the hangers, the end of each arm terminating in a hook, a friction-roller carried by each hanger, against which the upper surface of each arm bears, a pin below each roller

adapted to be engaged by the hooks on the fender-arms, whereby to constitute a hinge-like joint when the fender is turned back, pivoted brackets carried by the hangers, a top bar supported by the brackets, a net connecting the top bar and a fixed part of the fender, and chains connecting the top bar and the fender-frame, the chains and top bar serving to support the fender, and the chains serving also to keep the fender-arms out of contact with said pins, substantially as described.

4. The combination with a car, of hangers carried thereby, a resiliently-supported fender having arms working in the hangers, the end of each arm terminating in a hook, a friction-roller carried by each hanger, against which the upper surface of each arm bears, a pin below each roller adapted to be engaged by the hooks on the fender-arm, whereby to constitute a hinge-like joint, when the fender is turned back, the fender-arms being kept, at all times, out of contact with the pins, to reduce friction, and cause the fender to be readily responsive to its depressing mechanism, and springs carried by the fender-arms and bearing against the hangers, substantially as described.

5. The combination with a car, of hangers carried thereby, a resiliently-supported fender having arms working in the hangers, the end of each arm terminating in a hook, a friction-roller carried by each hanger, against which the upper surface of each arm bears, a pin below each roller adapted to be engaged by the hooks on the fender-arms, whereby to constitute a hinge-like joint when the fender is turned back, pivoted brackets carried by the hangers, a top bar supported by the brackets, a net connecting the top bar and a fixed part of the fender, chains connecting the top bar and the fender-frame, the chains and the top bar serving to support the fender, and the chains serving, also, to keep the fender-arms out of contact with said pins, a wheel-guard having its arms projected to the rear of their pivotal points, a rock-shaft journaled intermediate of the fender and the wheel-guard, two downward and forward projecting levers carried by the shaft, and connections between the levers and the fenders, two upward and rearward projecting levers also carried by the shaft, links connecting the latter levers with the arms of the wheel-guard, a slotted arm carried by the shaft, a foot-lever projecting above the car-floor and having its lower end working in the said slot, friction-rollers carried by the foot-lever and bearing upon the said slotted arm, and a pin for keeping the lever in operative position, substantially as described.

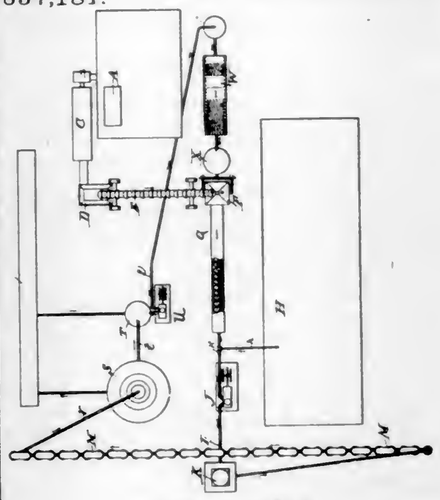
6. The combination with a car, of hangers carried thereby, a resiliently-supported fender-frame having arms working in the hangers, the end of each arm terminating in a hook, a friction-roller carried by each hanger, against which the upper surface of each hanger bears, a pin below each roller adapted to be engaged by the hook on the fender-arm to constitute a hinge-like joint when the fender is turned back, pivoted brackets carried by the hangers, the brackets being provided with a toe or the like for engaging stops on the hangers, whereby to limit their range of movement in one direction, a top bar supported by the brackets, a net connecting the top bar and a fixed part of the fender, chains connecting the top bar and the fender-frame, the chains and the top bar serving to support the fender, and the chains serving further, to keep the fender-arms out of contact with the said pins, a wheel-guard having its arms projected to the rear of their pivotal points, a rock-shaft journaled intermediate of the fender and the wheel-guard, two downward and forward projecting levers carried by the shaft, chains connecting with the said levers and having their free ends provided with hook-bearing plates, the hooks of which engage a fixed part of the fender, guides on the fender in which the said plates are held, two upward and rearward projecting levers also carried by the shaft, links connecting the latter levers with the arms of the wheel-guard, a slotted arm carried by the shaft, a foot-lever projecting above the car-floor and having its lower end working in the said slot, friction-rollers carried by the foot-lever and bearing upon the slotted arm, and a pin for keeping the lever in operative position, substantially as described.

7. The combination with a rock-shaft carrying levers and a fender having a scoop constructed substantially as described, of chains connecting with the levers, and means for attaching the chains to the fender, said means comprising plates carrying hooks to engage with a bar of the scoop, the plates conforming to the curve of the scoop-bottom, and rings by which the hooks may be moved out of engagement with the said bar, substantially as specified.

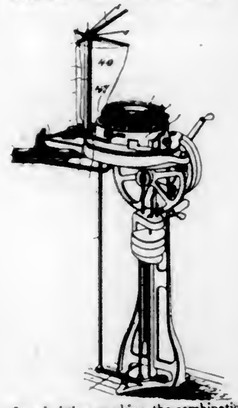
657,181. PROCESS OF SEPARATING PRECIOUS METALS FROM THEIR ORES. HARALD DE RAASLOFF, New York, N. Y. Filed Jan. 18, 1900. Serial No. 1,836. (No specimens.)

Claim.—The continuous process of treating ores of precious metals hereinbefore described, and consisting in mixing the finely-divided ore with a suitable solvent for the precious metals, inducing the mixture to flow continuously from and back to the point of admixture, while so flowing introducing liquid oxygen or liquefied air into the mixture, then causing the mixture to flow with sudden variations of velocity to agitate it, then separating the solution from the base earthy mineral matter, and sending it continuously through an electrodepositing-bath, where the precious metal is deposited, and thus in continuous ordered succession.

657,181.



657,182. CIRCULAR-KNITTING MACHINE. BERNARD T. STIEBER, Utica, N. Y. Filed Feb. 7, 1900. Serial No. 4,376. (No model.)



Claim.—1. In a knitting-machine, the combination of reciprocating needles having comparatively-long heels, means for movably supporting the same, a traveling cam for reciprocating the said needles, and means for engaging the operating-heels of the needles intermediate their lengths for throwing a predetermined number of said needles out of the path of the cam simultaneously, substantially as described.

2. In a knitting-machine, the combination with a rotating cam, of a series of reciprocating needles having comparatively-long heels adapted to be operated by said cam, means for engaging the operating-heels of the needles for throwing a predetermined number of the said needles simultaneously out of the path of the cam comprising a movable piece adapted to engage the heels of the needles at an intermediate point between their shanks and the ends of the heels, and means for moving said movable piece, substantially as described.

3. In a knitting-machine the combination with a rotating actuating cam-cylinder, of a series of needles adapted to be actuated thereby, means for directly engaging the operating-heels of said needles for raising a predetermined number of the same above the path of the cam and thereby throwing them out of operation simultaneously, the said means comprising a horizontal piece independent of the cam-cylinder and adapted to extend beneath and engage the under sides of the heels of the said needles at a point between the ends of the said heels and the shanks of the needles, and means for raising or lowering the same, substantially as described.

4. In a circular-knitting machine, the combination of a needle-cylinder, a cam-cylinder carrying cams for engaging the heels of the said needles to operate them, means for engaging the actuating-heels of said needles for raising a number of the said needles simultaneously so as to be out of the path of the cam comprising a segmental piece independent of the moving cam-cylinder and arranged between the needle-cylinder and the said cam-cylinder, a rod carrying the said piece and extending downwardly through the bed-plate to a point in suitable proximity to the floor, a foot-treadle for operating the said rod, the construction being such that by placing the foot upon the said treadle a number of the needles may be raised out of operation, substantially as described.

5. In a knitting-machine, the combination with a moving cam, of a series of reciprocating needles adapted to be operated thereby, means independent of the cam for engaging the working heels of the needles inside the cam-cylinder and between their shanks and their outer guided ends for raising the needles out of reach of the cam, first one upon one side and then one upon the other side of the machine successively until the desired number of needles have been thrown out of action, and means for returning them into action again, substantially as described.

6. In a knitting-machine, the combination with a movable cam, of a series of reciprocating needles adapted to be operated thereby, means independent of the cam for engaging the guided heels of the needles intermediate their length for raising a predetermined number of the said needles simultaneously out of the path of the cam, and means independent of the said cam for raising other needles out of action, one at a time, first upon one side of the machine and then one upon the other side of the machine for altering the shape of the fabric being knitted, substantially as described.

7. In a knitting-machine, the combination with a rotating cam-cylinder, of a series of reciprocating needles adapted to be operated thereby, means for engaging the heels of said needles between their shanks and their outer guided ends for raising some of the said needles out of reach of the cam, one at a time, comprising a lever adapted to extend interiorly of the cam-cylinder and to engage the heels of the said needles from beneath so as to lift them, and means for operating the said lever, substantially as described.

8. In a knitting-machine, the combination with a rotating cam-cylinder, of reciprocating needles having heels engaging the said cam-cylinder, means for raising a series of the said needles out of action, one at a time, comprising a pivoted lever, the free end of which is adapted to engage the ends of the needles, a rod connected with said lever at one end and adapted to be struck by a projection on the cam-cylinder at the other end for operating said lever and raising the needles, substantially as described.

9. In a knitting-machine, the combination with a rotating cam-cylinder, of reciprocating needles having heels for engaging the cam-cylinder, means for raising some of the said needles, one at a time, comprising a pivoted lever, a slide carrying the said lever, a rod for actuating the said lever, a rack mounted upon the bed-plate of the machine, and pawls upon the said lever, a slide for feeding the lever forward with a step-by-step movement so as to bring its free end under the heels of the successive needles, whereby the knitting of the fabric may be varied as desired substantially as described.

10. In a knitting-machine, the combination with a rotating cam-cylinder, of a series of reciprocating needles having horizontal heels engaging the said cam-cylinder, means for raising some of the said needles successively out of action, comprising a lever and slide pivotally carrying the same, a rod connected with said lever and extending into the path of a projection on the cam-cylinder, limiting-lugs on the said slide for determining the extent of movement of the said lever, a rack mounted on the bed-plate of the machine, a pawl on the said slide for holding the slide from slipping away from the machine, a pawl upon the said lever also engaging the said rack for feeding the carriage forward one step upon each movement of the lever, and a spring for holding the lever normally in its lowered position, substantially as described.

11. In a knitting-machine, the combination with a rotating cam-cylinder, of needles adapted to be operated thereby, means for raising needles out of action, first upon one side of the machine and then upon the other side of the machine successively, comprising pivoted levers having their free ends extending up through slots in the bed-plate of the machine so as to be beneath the heels of the needles, actuating-rods pivoted to the said levers and projecting into the path of lugs upon the cam-cylinder, the construction being such that upon rotating the cylinder in first one direction and then the other the levers will be alternately actuated, and means for feeding the levers forward with a step-by-step movement to bring their alternating ends beneath the heels of successive needles upon each side of the machine, substantially as described.

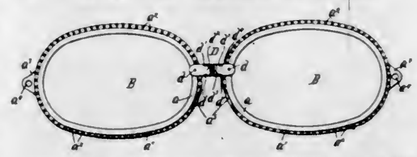
12. In a knitting-machine, the combination with a rotating cylinder, of a cam mounted thereon for actuating the needles of the machine, the said cam comprising upper and lower paths for engaging the heels of the needles, switches mounted upon the cylinder and adapted to engage the ends of the needles to raise some of the needles out of operation while the others are knitting and to return the said inactive needles to operation while the others are raised out of operation, whereby a ribbed fabric is produced, and means extending upward interiorly of the cylinder and engaging the heels of the operating-needles intermediate their length for raising some of the needles out of operation simultaneously, and some of the needles out of operation successively, one at a time, for altering the shape of the fabric and without interfering with the operative mechanism of the machine, substantially as described.

13. In a knitting-machine, the combination of a series of reciprocating needles, a needle-cylinder directing the shanks of said needles and a guide cage or cylinder for directing the ends of the needle-heels and a cam engaging the ends of their heels for operating the same, the said cam comprising upper and lower paths and switches for directing the needles to each, whereby the mesh of the fabric knitted may be varied, and means for engaging the heels of the needles between the needle-cylinder and the guide cage or cylinder located near their outer ends for raising some of the needles simultaneously out of action, and some of the needles successively out of action for varying the form of the fabric knitted, substantially as described.

14. In a knitting-machine, the combination with reciprocating needles of a cam-cylinder for actuating the same, some of the needles having long heels and some short heels, the said cam having an upper and a lower cam-path, switches extending through the side of the cylinder, some of the said switches extending far enough to engage the long-heeled needles, and some of the switches extending in sufficiently far to engage the short-heel needles, a switch-bolt for raising the long-heeled needles for engaging the first switch-block, a sliding switch-bolt for closing the cam-path when all the needles are knitting, the structure being such that the needles may be operated alternately or all together for producing a ribbed or a plain fabric, and means for raising some of the needles entirely out of operation simultaneously, and means for raising some of the needles out of operation successively, whereby the form of the fabric knitted may be varied, substantially as described.

15. A knitting-machine, comprising a series of reciprocating needles, a revolubie cam-cylinder having cams thereon for engaging the said needles, means for raising some of the said needles successively to remove them from action, comprising levers, operating-rods connected with said levers, the outer ends of the said operating-rods being arranged one in a higher plane than the other, actuating-lugs mounted upon the cam-cylinder, one higher than the other, to engage the ends of the said operating-rods, the construction being such that each lug will only engage its own operating-rod and will not affect the other as the cylinder is rotated, substantially as described.

657,183. EYE-PROTECTOR. EDWARD G. STEVENS, New York, N. Y. Filed Apr. 11, 1898. Serial No. 677,136. (No model.)



Claim.—1. As an improved article of manufacture, an eye-protector of the class described comprising the frames essentially rigid in their main portion and rendered flexible at their outer ends by the slits a^3, the transparent plates carried thereby, the lower edge flange a', carried by said frames and arranged to form a flexible portion adapted for contact with the face, and means for connecting said rigid frames, substantially as shown and described.

2. In an eye-protector, the combination of the frames essentially rigid in their main portion, the transparent plates carried thereby, the hinge connecting said frames and having a pivotal connection therewith and embodying means for limiting the movement of the frames with respect to the hinge members, substantially as shown and described.

3. In an eye-protector, the combination of the frames essentially rigid in their main portion and rendered flexible at their outer ends by the slits a^3, the flexible flanges carried by said rigid frames, a portion of said flanges being cut away to prevent abrasion of the skin of the nose, a hinge connecting said rigid frames and operating in conjunction with the flexible flanges to prevent abrasions, the leaves of said hinge being flexible, substantially as shown and described.

4. In an eye-protector, the combination of the frames essentially rigid in their main portion, flexible flanges carried by said rigid frames, and the series of slits a^3, extending transversely across the outer end walls of said frames, substantially as shown and described.

5. In an eye-protector, the combination of frames essentially rigid in their main portion and having openings in their walls, flexible flanges carried by said rigid frames, transparent plates carried by the frames, auxiliary transparent strips encircling the walls of the frames and closing the

openings therein, a hinge connecting said rigid frames, substantially as shown and described.

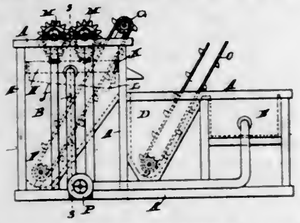
6. In an eye-protector, the combination of frames essentially rigid in their main portion and having openings in their walls, flexible flanges carried by said rigid frames, transparent plates extending across the frames, auxiliary transparent strips encircling the frames within the walls thereof and closing the openings therein, a hinge pivoted to the frames and located above the horizontal center of the longest diameter of said frames and having stops bearing against said frames, substantially as shown and described.

7. In an eye-protector of the class described, a frame essentially rigid in its main portion and having walls carrying at their edge a metallic perforated flange for contact with the face, substantially as set forth.

8. In an eye-protector of the class described, a metallic contact-flange formed of a curved metallic strip rendered flexible by the continuous series of openings formed through said flange, and extending longitudinally around the same, substantially as set forth.

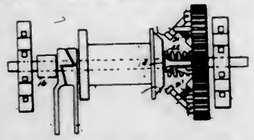
9. In an eye-protector, a frame embodying walls having openings, and a transparent strip encircled by said walls of the frame and closing said openings, substantially as set forth.

657,184. COAL-WASHER. ELWOOD A. STEWART, Cincinnati, Ohio. Filed Feb. 19, 1900. Serial No. 5,844. (No model.)



Claim.—The combination in a coal-washer of a vertically-reciprocating jig H, provided with a perforated bottom J, metallic sliding joints S T on its sides, water-tank C, with inclined bottom, perforated bucket elevator G, tank D, elevator O, tank E, centrifugal pump P, tank B, opening Q between tanks B and C, valve R to close opening Q, substantially as described.

657,185. FRICTION-CLUTCH. JAMES L. TAYLOR, Royal Centre, Ind. Filed Apr. 16, 1900. Serial No. 12,998. (No model.)



Claim.—1. The combination with a spur-gear, its shaft, a drum, means revolubly mounted on the drum-shaft for moving the drum endwise of friction-arms pivotally mounted on said spur-gear, and springs interposed between the face of the gear and said arms to hold them at the desired angle relatively to the face of the gear, as set forth.

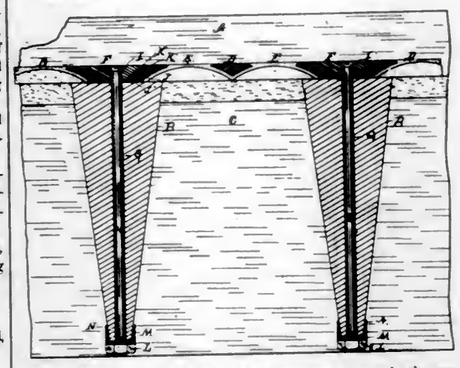
2. The combination with a drum, its shaft, and means revolubly mounted on said shaft for moving the drum lengthwise thereon a spur-gear, of friction-arms pivotally connected therewith at one end and their other ends concaved, and springs acting on the said arms to hold them normally at an angle to the face of the gear, as set forth.

3. The combination with a shaft and a gear fast thereon, of a drum revolubly mounted on the shaft and having a convex friction-surface at the end adjacent the gear, means on the drum-shaft for moving it lengthwise of its shaft and spring-held friction-arms mounted on the gear and having concaved outer ends, as set forth.

4. The combination with a shaft and a gear fast thereon arms pivotally mounted on said gear and springs for holding them at an angle to the gear, of a drum revolubly mounted on the shaft and provided with a friction-surface adjacent the gear, and means for moving the drum lengthwise of the shaft, as set forth.

5. The combination with a shaft having a collar fast thereon, of a drum revolubly mounted on the shaft and having at one end a friction-surface, a spur-gear fast on the shaft pivotally-mounted spring-held friction-arms carried by said gear, a spring interposed between the gear and drum, and levers revolubly mounted on the shaft between the said drum and collar and having tapered adjacent faces, substantially as and for the purpose specified.

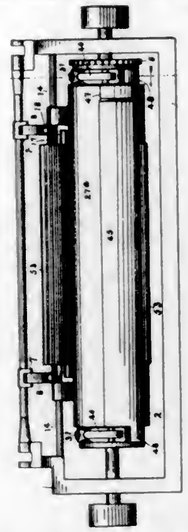
657,186. VAT FOR SCREENING PAPER-PULP. HARRY E. WARBOLD, Appleton, Wis. Filed Jan. 16, 1900. Serial No. 1,594. (No model.)



Claim.—1. In a vat for filtering and screening paper-pulp, the combination of a series of screen-plates having beveled edges; a series of locking-plates having inversely-beveled edges, the opposing surfaces of said screen and locking-plates having interlocking flanges and grooves, the edges of said screen and locking-plates interlocking together; and means for securing said locking-plates in place upon the beveled edges of the screen-plates, substantially as and for the purpose specified.

2. In a vat for filtering and screening paper-pulp, the combination, of a series of screen-plates having beveled interlocking edges; a series of locking-plates provided with bolt-holes for the reception of retaining-bolts, and having beveled interlocking edges; a series of bed-pieces longitudinally arranged beneath said locking-plates; and a series of bolts passing through said locking-plates and secured at their lower ends to said longitudinal bed-pieces, all substantially as and for the purpose specified.

657,187. TYPE-WRITING MACHINE. GEORGE B. WEBB, Westfield, N. J., assignor to The Wyckoff, Seamans & Benedict, Ilion, N. Y. Filed June 24, 1899. Serial No. 721,685. (No model.)



Claim.—1. The combination of a platen, spring-catches secured thereto, a card-holder provided with notched ends or arms, and levers connected to said spring-catches for opening and closing the same.

2. The combination of a platen, movable spring-catches secured thereto, a card-holder provided with notched ends or arms and cam-levers for operating said catches.

3. The combination of a platen, movable plate-springs each secured at one end to the platen and having its free end turned inwardly to form a catch, and a card-holder having blocks with adjacent inclined and stop faces whereby the inturned ends of the said springs coact with said stop and inclined faces to force the holder to and retain it in position on the platen.

4. The combination of a platen, movable plate-springs each secured at one end to the platen and having its free end turned inwardly to form a catch, a card-holder having ends provided with radial stop-faces and outer faces inclining inwardly to said stop-faces and forming notches whereby the inturned ends of said springs and said radial and inclined faces coact to force the holder into and to retain the same in position, and cam-levers connected to and operating said springs to lift said ends out of engagement with said notched ends of the holder.

5. The combination of a platen, spring-catches secured to the ends thereof, cam-levers for moving the free ends of said catches away from said platen, and a card-holder provided with projecting cam-blocks adapted to coact with said catches in locking the holder to the platen.

6. The combination of a platen, plate-springs adjustably secured to the ends thereof and having inturned catches at their own free ends and also having each a slot near the said catches, and the side bars at said slots being formed with bearings, cam-levers having fulcrum or pivot pins adapted to said bearings, and a card-holder having notched blocks connected thereto and adapted to coact with said catches in locking the holder to the platen.

7. The combination of a platen having reduced ends, segmental plates having inwardly-projecting bosses or hubs, both plates and hubs being let into said ends, means for attaching said plates to said ends, slotted plate-springs, screws passing through said slots and adjustably securing the springs to said plates and hubs, and said springs also having U-shaped slots with transverse bearings in the outer bars thereof, cam-levers, pins thereon adapted to rest and to be held by the tongues of the U-slots in said bearings, catches at the free ends of said slotted plates, a card-holder, and notched blocks connected with said holder and adapted to coact with said catches to retain the holder in place on the platen.

8. The combination of a platen having reduced ends, plate-springs secured each near or at one end to said reduced ends and provided each with a U-shaped slot near its free end so as to produce a spring-tongue, bearings in the side bars of the U-slots, cam-levers adapted to coact with said reduced ends to lift said springs and journaled in said bearings and having flattened parts coacting with the spring-tongues of the U-slots, and a card-holder having ends adapted to coact with the ends of said springs in detachably securing the holder on the platen.

9. The combination of a platen having reduced ends, plate-springs secured each at one end to said reduced platen ends and having their free ends turned inwardly and provided with U-shaped slots near said free ends, bearings in the side bars of said slot, cam-levers provided with parallel lugs or ears having inner faces concentric with said reduced ends and adapted to straddle the tongues of said slots, pins passing through and projecting beyond said lugs and journaled in said bearings and having each a flattened side between said lugs for coaction with said spring-tongue, and a card-holder having notched ends for coaction with the said inturned spring ends.

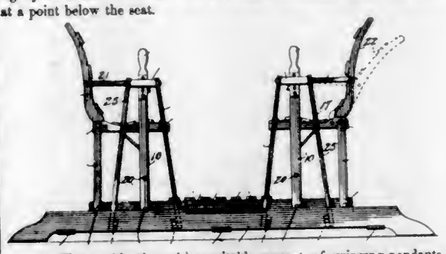
10. The combination of a platen having reduced ends, plate-springs secured each at one end to said reduced platen ends and having their free ends turned inwardly and provided with U-shaped slots near said free ends, bearings in the side bars of said slots, cam-levers provided with parallel lugs or ears having inner faces concentric with said reduced ends and adapted to straddle the tongues of said slots, pins passing through and projecting beyond said lugs and journaled in said bearings and having each a flattened side between said lugs for coaction with said spring-tongue, and a card-holder having ends provided with radial stop-faces and blocks connected to said ends and having outer faces inclining inwardly to said stop-faces, whereby said inturned spring ends and said inclined faces coact to force the holder into and to retain it in position when the cam-levers are released or turned inward.

11. The combination of a platen, spring-catches secured thereto, a card-holder provided with notched ends or arms, and levers pivoted between their ends on said spring-catches and adapted to bear at their inner ends on the ends of the platen.

12. The combination of a platen, spring-catches secured thereto, a card-holder provided at its ends with means to engage said spring-catches, and levers connected to said spring-catches and adapted to lift the same by bearing upon the platen and having their handle portions arranged exteriorly of said spring-catches and so shaped or formed as substantially to match and lie close to the same when in normal position.

657,188. CHAIR-SWING. WILLIAM S. WITTER, Ridott, Ill. Filed Mar. 22, 1900. Serial No. 9,712. (No model.)

Claim.—1. A swing comprising a stationary base, standards pivotally connected to the base, pendants pivotally connected to the upper ends of the standards, a seat, and pivoted seat-supports, one of which latter is rigidly connected to the seat and is pivotally connected to the pendants at a point below the seat.



2. The combination with a suitable support, of swinging pendants, a platform carried by the pendants, pivoted seat-supports, one of which latter is rigidly connected to the seat and is pivotally connected to a pendant at a point below the seat, and operating means located above the seat and operatively connected with one of the pendants.

3. A swing comprising a support, swinging pendants carried thereby, one of said pendants being extended above its point of suspension to form an operating-handle, a movable platform supported by the pendants, a seat, and means operatively connecting the seat with the pendants and platform, respectively.

4. The combination with a suitable support, swinging pendants, and a platform carried by the pendants, of a seat having front and rear supports pivotally connected to the pendants and platform respectively, and an operating-handle operatively related to one of the pendants.

5. The combination with a supporting-pendant, of a seat, a seat-support pivotally connected to the pendant below and extended above the seat and connected to the seat adjacent to its front edge, an arm-rest carried by the extended upper end of the support, and means for supporting the rear edge of the seat.

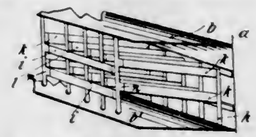
6. The combination with a base and vibrating standards, of pendants suspended from the upper ends of the standards and extended above their points of suspension to form operating-handles, a platform carried by the pendants, a seat provided with a relatively-rigid front support pivotally connected to the pendants above the platform and with a relatively-movable rear support pivoted to the platform.

7. In a swing of the class described, the combination with the base, of movable standards connected with the base and arising therefrom, swinging pendants pivotally suspended from said standards and extending thereabove to form operating-handles, a platform sustained by said swinging pendants, and oppositely-arranged seats provided with depending front and rear supports of different lengths, the front supports of the seats being pivotally connected to the pendants, and the rear supports thereof being pivotally connected with the platform, substantially as set forth.

8. The combination with a pendant, a seat-support pivoted thereto, and a seat connected to said support, of an arm-rest pivoted at one end to the seat-support, a back pivotally connected at an intermediate point to the opposite end of the arm-rest, and means for adjustably connecting the back with the seat.

9. The combination with a pendant-support, of a seat, a seat-support rigidly connected to the seat and pivotally connected to the pendant below said seat, an arm-rest connected to the seat-support above the seat, a back pivotally connected to the opposite end of the arm-rest, and means for effecting a detachable pivotal connection between one edge of the back and the seat.

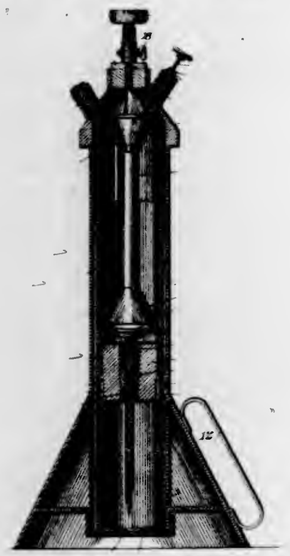
657,189. CATTLE-PEN, &c. HENRY WOOD and ALFRED S. WILLIAMS, London, England. Filed July 3, 1899. Serial No. 722,737. (No model.)



Claim.—1. In a cattle-pen for use on ships and other vessels the combination of stanchions *d d* permanently secured to the deck-beams at their upper ends and to the deck-planking at their lower ends and having sockets *m m n n* thereon, uprights *h h* secured to the side of the vessel removable boards *i i* and *k k* supported by the said stanchions, stanchions *f f f* intermediate between the stanchions *d d* hinged at their upper end to the deck-beams and provided with slots at their lower ends to receive a bolt *r*, sockets *g g g* secured to the deck *b* and provided with recesses *r'* to receive the bolts *r* uprights *h h h* and removable boards *l l* supported by the stanchions *f f f* and uprights *h h h* all substantially as set forth.

2. In a cattle-pen for use on board ships and other vessels the stanchions *f f f* of channel-section hinged to the deck-beams at one end and provided with stop-pieces *p p* and havings slots at the lower ends thereof to receive bolts *r* the said bolts being adapted to engage with recesses in sockets *g g g* all substantially as and for the purpose specified.

657,190. ACETYLENE-GAS GENERATOR. WILLIAM M. CROW, Lakeview, Cal. Filed Nov. 11, 1899. Serial No. 736,631. (No model.)



Claim.—1. An acetylene-gas generator, comprising a gas-tight column or outer case, the carbid-receptacle and the water-receptacle therein, the latter above the former, the feed-wick extending through an opening between said carbid-receptacle and said water-receptacle, a spring to raise said wick and the valve to lower the same, and hence vary the area thereof in contact with the water in the water-receptacle, and means for controlling the movement of the valve, substantially as described.

2. In an acetylene-gas generator, the combination with the water-receptacle and carbid-receptacle, the former disposed above the latter, of a pendent water-feed wick in an opening between said receptacles a spring to raise said wick and a valve to lower the same, and hence vary the area thereof in contact with the water in the water-receptacle, and means for controlling the movement of the valve, substantially as described.

3. In an acetylene-gas generator, the combination with the water-receptacle, and the carbid-receptacle below it, of the vertically-adjustable seepage-wick in the water channel or opening between said receptacle, and depending in the carbid-receptacle, whereby the area of said seepage-wick in contact with the water in the water-receptacle may be varied, for the purpose set forth, and means for adjusting said wick, substantially as described.

4. In an acetylene-gas generator, the outer inclosing case forming the gas-holder, and the separable water and carbid receptacles disposed one above the other and both contained in the said outer case, said water and carbid receptacles having the plug 26 connecting their meeting ends and said plug having the water-channel adapted for the reception of a vertically-movable seepage-wick, and means for adjusting said wick, substantially as described.

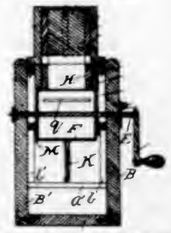
5. In an acetylene-gas generator, the outer inclosing case forming the gas-holder, the water and carbid receptacles therein and disposed one above the other and having a communicating channel or opening, the vertically-movable seepage-wick in said opening or channel, the spring to elevate said wick, the valve on the upper end of said wick, whereby the area of the latter in contact with the water in the water-receptacle may be varied to regulate the quantity of water fed to the carbid, and means for moving the valve, all in combination, substantially as described.

6. In an acetylene-gas generator, in combination with the outer inclosing case forming the gas-holder, the separable water and carbid receptacles located therein, the plug between said receptacles, having the gas-channels that register with gas-escape openings in the carbid-receptacle, the vertically-movable seepage-wick in an opening or channel in said plug, communicating with said water and carbid receptacles, the valve on the upper end of said wick, for the purpose set forth, and means for moving said valve, substantially as described.

7. In an acetylene-gas generator, in combination with the outer inclosing case, forming the gas-holder, the water and carbid receptacles therein, and disposed one above the other, the vertically-adjustable seepage-wick in an opening or channel between said receptacles, the spring to elevate said wick, the valve on said wick, the intermediate valve-rod bearing on said rod, and the adjusting-screw extending through one side of the inclosing case, or gas-holder, and bearing on the said intermediate valve-rod, for the purpose set forth, substantially as described.

8. The pendent, adjustable seepage-wick 35, having the weight-tip at its lower end, substantially as described.

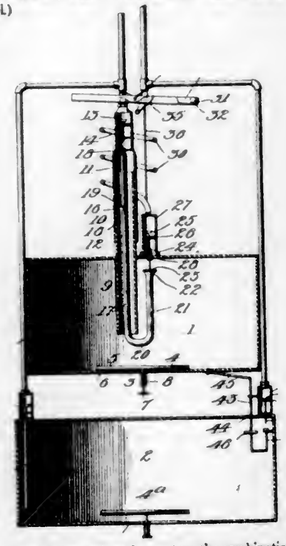
657,191. GRATER. EMMANUEL CRUPP, San Francisco, Cal. Filed Dec. 8, 1899. Serial No. 739,455. (No model.)



Claim.—1. In a device of the class described the combination with a rotary grater provided with a shaft having fixed bearings, a feeder about said grater and means for forcing said feeder against said grater, and a series of telescoping sections within said feeder and adapted to be separately fastened together to adjust the operative area of said feeder, substantially as and for the purpose set forth.

2. In a device of the class described the combination with a sliding feeder, a rotary removable grater within said feeder, a shaft removably attached to said grater, slots in said feeder and through which said shaft protrudes, a stationary guide for said feeder, said shaft having fixed bearings in said guide, and a series of telescoping sections within said feeder, said sections being adapted to be separately fastened together for the purpose set forth.

657,192. COMPRESSED-AIR WATER-ELEVATOR. THOMAS J. DEMOREST, Garfield, Wash. Filed Nov. 27, 1899. Serial No. 738,404. (No model.)



Claim.—1. In a liquid-elevating system, the combination with a vertically-movable tank, and means for intermittently supplying aeriform fluid thereto, of a liquid-eduction pipe, and a telescopic connection between said eduction-pipe and the tank and having members provided with vent-

ports, one of said members being shiftable with the tank to alternately bring the vent-ports into registration and disalined relation, substantially as described.

2. In a liquid-elevating system, the combination with a vertically-movable tank, and means for intermittently supplying aeriform fluid thereto, of a liquid-eduction pipe, a telescopic connection between said eduction-pipe and the tank and including members provided with eduction-ports, and a separate valved vent-pipe sustained independently of the tank and discharging into the telescopic connection, substantially as described.

3. In a liquid-elevating system, the combination with a vertically-movable tank, and means for intermittently supplying aeriform fluid thereto, of a liquid-eduction pipe, a telescopic connection between said eduction-pipe and the tank and including members provided with eduction-ports, a vent-pipe sustained independently of the tank and discharging into the telescopic connection, and air inlet and exhaust valves operable to alternately control the admission of air to the tank and the exhaust of air therefrom through the vent-pipe, substantially as described.

4. In an apparatus of the class described, a vertically-movable receiving-tank having a bottom valved liquid-inlet, a liquid-discharge pipe extending within the tank and having an exterior telescopic joint provided with air-exhausting ports, and means, controlled by the movement of the tank for automatically providing for the supply of air to the tank and the exhaust thereof through said exhausting-ports, substantially as set forth.

5. In an apparatus of the class described, a buoyant liquid-receiving tank provided with a bottom valved inlet, a discharge-pipe extending within the tank and provided with an exterior telescopic pipe-joint having air-exhausting ports, a vent-tube communicating with the telescopic joint of the discharge-pipe and with the interior of the tank, and means, controlled by the movement of the tank, for automatically providing for the supply of compressed air thereto and the exhaust of the air through the vent-tube, substantially as set forth.

6. In an apparatus of the class described, a vertically-movable submerged receiving-tank provided at the bottom with a valved liquid-inlet, a discharge-tube extending within the tank, and provided exterior thereof with a telescopic joint having air-exhausting ports, a compressed-air-supply pipe having a connection with the tank, a vent-tube communicating respectively with the interior of the discharge-pipe and the top portion of the receiving-tank, and air cut-off and exhaust valves automatically adjusted by the movement of the tank to provide for controlling the supply of compressed air and the exhaust thereof through the vent-tube, substantially as set forth.

7. In an apparatus of the class described, a vertically-movable receiving-tank provided at the bottom with a valved liquid-inlet, a discharge-pipe extending within the tank and provided exterior thereof with a telescopic joint having air-exhausting ports adapted to aline and disaline, the fixed section of the telescopic joint having an interior check-valve and a connection with the delivery-pipe, an air-inlet chamber in communication with the tank at the top and provided with an interior valve-seat, a compressed-air-supply pipe connected with said air-inlet chamber, a vent-tube suspended within the discharge-pipe from the fixed section of the telescopic joint and provided with a vent-opening and having an inlet-limb extending upward within the tank to a point near the top, and a movable valve-stem carrying at its upper end a cut-off valve cooperating with the seat within the air-inlet chamber, and at its lower end an exhaust-valve working over the opening at the inlet end of the vent-tube, substantially as set forth.

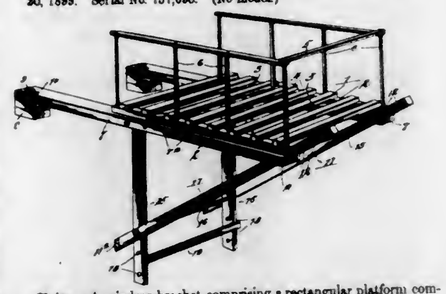
8. In a liquid-elevating system, the combination with a vertically-movable tank, and an eduction-pipe having a compensating connection therewith, of a vent-pipe sustained independently of and suspended partly in the tank and having an upturned limb provided with a valve-seat, an air-inlet valve, an exhaust-valve adapted to the seat of the vent-pipe, a stem connecting the two valves, and a valve-seat carried by said tank and adapted for the inlet-valve, substantially as described.

9. In a liquid-elevating system, the combination of a vertically-movable tank, an eduction-pipe, an air-supply chamber carried by the tank and having a valve-seat, a supply-pipe to said chamber, a stationary vent-pipe suspended in the tank and having a valve-seat in alinement with the seat of the air-supply chamber, and the connected inlet and exhaust valves adapted respectively to the seats of said chamber and the vent-pipe by the rise and fall of the tank, substantially as described.

10. In a liquid-elevating system, the combination of the air-supply and eduction pipes, a vertically-movable tank, individual compensating connections between said pipes and the tank, means for controlling the admission of air to and exhaust from the tank, a support fixed to and upheld by said pipes over the tank, an oscillatory lever pivoted centrally to said support, a weight movable freely on the lever, and a rod connected with the tank and to the lever at one side of its pivot to shift the latter on the rise and fall of the tank, substantially as described.

11. In a compressed-air water-elevator, the combination of a floatable tank having a valved inlet, a stationary tank also provided with a valved inlet and arranged below the floatable tank, a pressure-supply pipe, a compensating valved connection between said pressure-pipe and the floatable tank, a separate valved exhaust from the floatable tank and controlled by the travel of the tank itself, a branch connection from the pressure-pipe to a supply-chamber on said stationary tank, a valve in said chamber, a rod operatively related to the valve and connected to the movable tank, and an eduction-pipe having a compensating connection with the movable tank and a branched valved connection with the stationary tank, substantially as described.

657,193. WINDOW-BRACKET. WILLIAM R. FOOCH, Tipton, Ind., assignor of one-half to George Martin Twilling, same place. Filed Nov. 20, 1899. Serial No. 737,695. (No model.)



Claim.—A window-bracket comprising a rectangular platform composed of parallel side bars 2, the transverse bars 4 arranged at intervals at the upper faces of the side bars, and the crossed diagonal braces 3 let into the side bars 2, at the upper and lower faces thereof, the railing 5 consisting of side posts mounted upon the side bars at the upper faces thereof, and the horizontal side and end bars secured to the upper ends of the posts, the horizontal supporting-bars secured to the lower faces of the side bars of the platform and provided at their inner ends with hooks for engaging the sill of a window, and having the perforations 7ª at points between their ends, the said hooks being adapted to be engaged with the inner edge of the window-sill from the exterior of the building, the inclined legs 11 located at the inner edges of the horizontal supporting-bars and extending from the outer ends thereof to the building and provided at their upper ends with perforations, the outwardly-extending inclined braces 15, located between the legs and offset from the lower ends thereof, and provided at their lower ends with perforations arranged at intervals, and the transverse rods adjustably connecting the lower portions of the legs and the braces and similarly securing the upper ends of the same to the supporting-bars, all of the parts being arranged within the planes of the outer edges of the horizontal supporting-bars, whereby the window-bracket may be placed in position from the interior or exterior of a building, substantially as described.

657,194. FASTENING DEVICE FOR TYPE-WRITER COVERS. WILLIAM B. FOX, Grand Rapids, Mich., assignor to the FOX Machine Company, same place. Filed Feb. 25, 1899. Serial No. 706,839. (No model.)



Claim.—1. A locking-bar having upturned ends, with bolts thereon, one bolt projecting inward and the other outward, combined with a base having a seat in the under side adapted to receive said bar and permit it to slide therein, and a slot at one end adapted to receive the upturned end of the bar carrying the outward-extending bolt, and combined also with a cover having bolt-holes therein, the parts being proportioned and arranged substantially as described.

2. A locking-bar having upturned ends, with bolts thereon, one bolt projecting inward and the other outward, and laterally bent to form a loop, combined with a base having a seat in the under side adapted to receive said bar and permit it to slide therein and a slot at one end adapted to receive the upturned end of the bar carrying the outward-extending bolt, and combined also with a cover having bolt-holes therein, the parts being proportioned and arranged substantially as described.

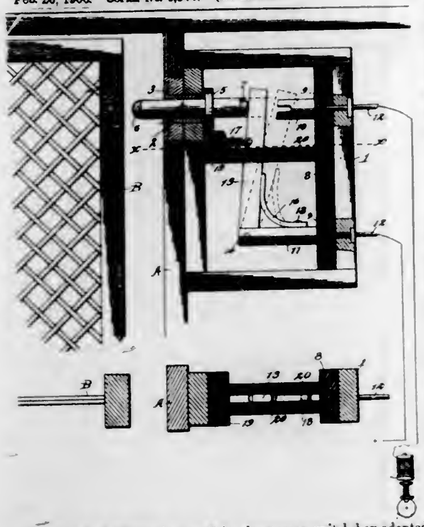
3. A locking-bar having upturned ends, with bolts thereon, one bolt projecting inward and the other outward and laterally bent to form a loop, combined with a rabbeted base having a seat in the under side adapted to receive said bar and permit it to slide therein, and a slot at one end adapted to receive the upturned end of the bar carrying the outward-ex-

tending bolt, and combined also with a cover having bolt-holes therein the parts being proportioned and arranged substantially as described.

4. In combination, the cover, the base-board having rabbets or projections to prevent the cover from passing entirely over the base-board and the single locking-bar therefor extending across said board parallel with said rabbets, substantially as described.

5. In combination, the cover, the base-board having a locking-bar, said base-board having rabbets or projections near its bottom side to prevent the cover from passing entirely over the base-board, said locking-bar extending across the board parallel with said projections, and bolts at each end of said bar in a higher plane than said rabbets adapted to engage the cover, substantially as described.

657,195. **AUTOMATIC SAFETY CUT-OFF FOR ELEVATORS.** GEORGE G. GUENTHER and ARTHUR G. GUENTHER, Orange, Cal. Filed Feb. 26, 1900. Serial No. 6,577. (No model.)



Claim.—In an automatic cut-off for elevators, a switch-box adapted to be attached to the casing of an elevator-shaft, a tubular socket sunk in the door-jamb and projecting through one side of the casing, an endwise-movable operating-pin, guided in said tubular socket and having the stop 5 to engage the inner end of said socket, an insulating-base in the side of the switch-box opposite said socket, a pair of parallel insulating guide-bars extending across the casing from said base, a pair of electrodes secured to said base, and a spring-pressed switch-bar pivoted to one of said electrodes, adapted to contact with the other, guided between the parallel guide-bars and bearing against the inner end of the operating-pin, substantially as described.

657,196. **SUBMARINE CABLE.** THEODORE GUILLEAUME, Mülheim-on-the-Rhine, Germany. Filed Oct. 19, 1899. Serial No. 734,072 (No model.)

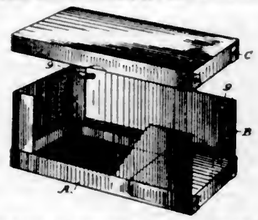


Claim.—1. A flexible conductor for submarine cables wherein a number of iron and copper wires are arranged alternately, either singly or in groups, and laid up around a core-wire of high conductivity, substantially as herein described.

2. An electric conductor for submarine cables having a central conducting-wire and, laid up around the same, a number of wires of iron or other magnetic metal arranged, either alternately or in groups, with a number of wires of copper or other metal of high conductivity, substantially as and for the purposes set forth.

657,197. **COLLAPSIBLE LUNCH-BOX.** LAWRENCE J. HILLS, Fruitvale, Cal. Filed Jan. 11, 1900. Serial No. 1,057. (No model.)

Claim.—1. A collapsible box comprising a tray-bottom having a standing rim, foldable sides and ends attached to the standing rim by hinge-joints to fold into the tray-bottom, means for fastening the sides and ends together in upright position at their meeting angles, and a cover having a rim adapted to fit over the sides and ends of the body.

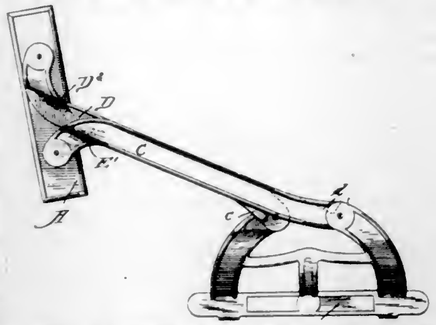


2. A collapsible box comprising a bottom having a standing rim, foldable side pieces and end pieces forming perpendicular extensions of the sides and ends of the standing rim and adapted to fold down into the said bottom, means for fastening the said side pieces and end pieces together at the corners in upright position, and a cover having a rim adapted to fit over the sides and ends.

3. A collapsible box comprising a bottom having a permanent standing rim, foldable side pieces and end pieces attached to the standing rim by joints which allow said pieces to fold down into the bottom, rigid wings on the end pieces standing at right angles thereto, means for detachably fastening the side pieces and end pieces together at the meeting angles when in upright position, and a cover having a deep rim adapted to fit over the standing rim of the bottom when the sides and ends are folded into the rim.

4. A blank for forming a collapsible box-body, consisting of the bottom 1, sides and ends 2 2, 3 3 forming a standing rim to the bottom, the flaps 4, side pieces 7 7 and end pieces 8 8, having wings or lateral extensions 6 6.

657,198. **STRIKER-ARM FOR CAR-SEATS.** JOHN S. JOHNSTON, New York, N. Y., assignor to the Pottier & Stymus Company, same place. Filed Jan. 20, 1900. Serial No. 2,203. (No model.)



Claim.—In combination with the standard and seat-back, two substantially-symmetrical connecting-arms of uniform thickness throughout, the arm C having one end formed with a bent or curved portion to bring its point of pivotal connection in the same plane with the corresponding end of the other arm, stops on the inner face of the arm C adjacent to each end of the same and reversely-arranged stops on the under face of the inner arm D, substantially as described.

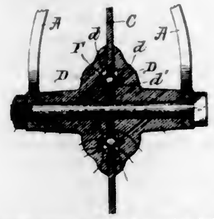
657,199. **ELECTRIC LAMP FOR DENTAL PURPOSES.** BYRON E. LAWTON, Providence, R. I. Filed Oct. 23, 1899. Serial No. 734,560. (No model.)



Claim.—In an electric lamp for dental purposes, the combination of the bowl and the electric lamp contained in the bowl, with a mirror and a space for the passage of the rays of light from the lamp in the bowl past the edge of the mirror to light up the mouth when operating upon the teeth, substantially as described.

657,200. **ROLLING COLTER.** CHARLES H. MELVIN, Moline, Ill., assignor to the Deere & Company, same place. Filed June 12, 1900. Serial No. 20,047. (No model.)

Claim.—1. A rolling colter comprising a non-rotating hub composed of separable parts and a rotary cutting-disk having the form of an annulus with a cutting edge confined between said parts and having a bearing centrally thereof around their inner adjoining ends to permit free rotation of the disk, substantially as described.



2. A rolling colter comprising a non-rotating hub composed of separable parts, and an interposed rotary cutting-disk in the form of an annulus having a bearing centrally of said parts to permit free rotation of the disk, together with means for securing the parts of the hub together and rotatively confining the disk between them, substantially as described.

3. A rolling colter comprising a non-rotating hub composed of separable parts having a centrally-apertured cutting-disk loosely confined between the same, a stationary bearing-ring or annular bearing-surface concentric with the disk and within the aperture therein, and a series of antifriction devices encircling said annular bearing-surface on which the apertured portion of the disk has its bearings, substantially as described.

4. In a rolling colter, the combination of a centrally-apertured cutting-disk, a bearing-ring therefor, suitable antifriction devices interposed between said disk and bearing-ring, and non-rotative elements secured on opposite sides of said bearing-ring having confronting disk-like portions which sustain the cutting-disk rotatively on its bearings between them and prevent the entrance of dust and dirt to the bearings; substantially as described.

5. In a rolling colter, the combination of a centrally-apertured cutting-disk, a bearing-ring therefor, suitable antifriction devices between said ring and disk, an interposed spacing-ring for holding said antifriction devices in proper position and at suitable distances apart, and non-rotative elements secured on opposite sides of said bearing-ring which guide the cutting-disk between their confronting faces so as to permit free rotation thereof on its bearings; substantially as described.

6. In a rolling colter, the combination of a centrally-apertured cutting-disk, a bearing-ring therefor, an annular series of antifriction devices interposed between said ring and disk, non-rotative elements secured on opposite sides of said bearing-ring having disk-like portions which guide the cutting-disk rotatively between their confronting faces, said disk-like portions being formed with confronting annular grooves which inclose said annular series of antifriction devices; substantially as described.

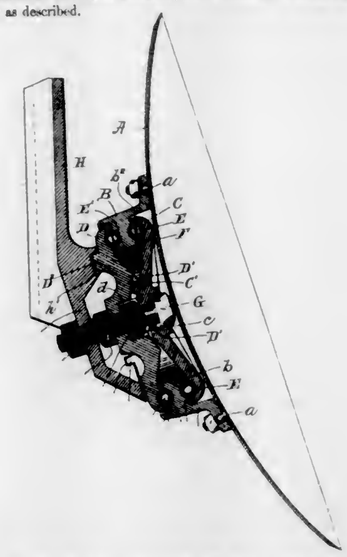
7. In a rolling colter, the combination of a centrally-apertured cutting-disk, a bearing-ring therefor, antifriction-balls interposed between said disk and bearing-ring, and a spacing-ring for spacing and holding said balls in position, stationary hub-like portions secured on opposite sides of said bearing-ring having confronting flanges which cover the bearings and guide the rotary cutting-disk between them, and means for securing the ball-spacing ring in position to hold the balls in proper alinement between said flanges; substantially as described.

8. In combination with the hub composed of separable parts or hub-sections and the cutting-disk rotatively confined between said hub-sections, the yoke having a lug thereon abutting the surface of one of said hub-sections to prevent the latter from turning, substantially as described.

657,201. **DISK-BEARING.** CHARLES H. MELVIN, Moline, Ill., assignor to the Deere & Company, same place. Filed June 12, 1900. Serial No. 20,048. (No model.)

Claim.—1. A composite antifriction-bearing for disk plows and the like, comprising a plurality of relatively-fixed parts or supports, each having an annular depression in one face or side thereof, a bearing-ring carried by or revolving with the disk rotatively arranged between said fixed parts and having in each side thereof an annular depression confronting a corresponding depression in the adjacent fixed part, a series of balls located in each of the races formed by the confronting depressions in said bearing-ring and supports, and means for securing said supports and the bearing-ring rotatively mounted thereon to a standard or other suitable support, whereby the strain in every direction is sustained by the double series of balls, substantially as described.

2. In a rotary-disk plow, the combination with the standard or hanger, of a pair of circular bearing-plates secured thereto, and means for rotatively shifting the positions of said plates independently of each other, a rotary disk carrying a bearing-ring rotatively arranged between said bearing-plates and having on each side thereof an annular depression confronting a corresponding depression in the adjacent bearing-plate, and a series of balls confined in the races formed by said confronting depressions, substantially as described.



3. In a disk plow, a composite antifriction-bearing for the rotary disk, comprising a pair of relatively-fixed parts or supports about which the disk may rotate, a rotary element carried by or revolving with the disk rotatively arranged between said relatively-fixed parts or supports, an annular series of antifriction devices interposed between confronting bearing-surfaces on said rotary element and the adjacent fixed part or support, and means for securing said fixed parts and rotary element together and to a plow-standard or other suitable support therefor, substantially as described.

4. In a disk plow, a composite antifriction-bearing for the rotary disk, comprising a pair of relatively-fixed parts or supports about which the disk may rotate, a rotary element carried by or revolving with the disk rotatively arranged between said fixed parts, and a series of balls interposed between an annular bearing-surface at each side of said rotary element and a corresponding bearing-surface on the confronting face of one of said fixed parts, substantially as described.

5. In a disk plow, a composite antifriction-bearing for the rotary disk, comprising a pair of relatively-fixed parts or supports about which the disk may rotate, a rotary element carried by or revolving with the disk rotatively arranged between said fixed parts and a series of balls interposed between an annular bearing-surface at each side of said rotary element and a corresponding bearing-surface on the confronting face of one of said fixed parts, together with means for adjusting and securing said fixed parts to a plow standard or hanger, so as to shift the positions of the bearing-surfaces thereon and of the balls in their respective races in such manner as to cause those parts that are least exposed to wear to take the position of excessively-worn portions, substantially as described.

6. In combination with the rotary disk having the annular bearing plate or ring thereon, two circular bearing plates or disks, between which said bearing plate or ring is rotatively arranged, each having an annular depression therein confronting a corresponding depression in said bearing-plate, and balls working in the races formed by the confronting depressions, together with means for securing said circular plates to a standard or support in different positions, so as to change the positions of excessively-worn bearing-surfaces of the balls and their races, substantially as described.

7. In combination with the rotary disk, the circular ball-bearing plates having annular depressions or recesses in their confronting faces and an interposed bearing ring or annulus having corresponding depressions in opposite sides thereof confronting the depressions in said plates, a series of balls seated in the races formed by said depressions, interlocking lugs and recesses for holding said circular plates in different positions, and means for securing said plates together and holding them in fixed positions relatively to the cutting-disk rotatively mounted thereon, substantially as described.

8. In a disk plow, the combination with a pair of relatively-fixed parts or supports and a rotary element confined between said parts and carried by or secured to the disk, a series of balls interposed between confronting faces of said relatively-fixed parts and opposite sides of the interposed rotary element, substantially as described.

9. In a disk plow, the combination with a pair of relatively-fixed parts or supports and a rotary element confined between said parts and carried by or secured to the disk, a series of balls interposed between confronting faces of said relatively-fixed parts and opposite sides of the interposed rotary element, together with means for holding said balls at suitable distances apart in their respective courses or races, substantially as described.

10. In a disk plow, a composite antifriction-bearing for the disk, comprising a pair of relatively-fixed parts or supports about which the disk may rotate, a ball-bearing element arranged to rotate between said relatively-fixed parts and secured to or arranged to rotate with the disk, and an annular series of balls interposed between bearing-surfaces on said relatively-fixed parts confronting corresponding surfaces on opposite sides of said rotary element, whereby the latter is confined between said relatively-fixed parts in rotative engagement with a double series of balls adapted to sustain the strain in all directions, substantially as described.

11. In a disk plow, a composite antifriction-bearing comprising a pair of relatively-fixed parts or supports about which the disk may rotate, a rotary element arranged between said relatively-fixed parts and having on opposite sides thereof annular bearing-surfaces each confronting a corresponding annular bearing-surface on one of said relatively-fixed parts, thus forming a ball-race at each side of said rotary element, together with a series of balls in each of said races, and spacing-rings apertured at intervals to receive and hold said balls at prescribed distances apart in their respective races, substantially as described.

12. In a disk plow, the combination with the plow standard or support, and a pair of circular disks or bearing-plates secured thereto, means whereby either of said disks may be rotated and secured in a fixed position upon the standard independently of the other, a rotary element carried by or revolving with the rotary cutting-disk, arranged between said bearing-plates, and having a bearing-surface at each side thereof confronting a similar bearing-surface in the face of the adjoining bearing-plate, and a series of balls fitted in the races formed between said rotary element and the confronting faces of said bearing-plates, substantially as described.

13. In a disk plow, the combination with the plow standard or support, and a pair of circular disks or bearing-plates secured thereto, means whereby either of said disks may be rotated and secured in a fixed position upon the standard independently of the other, a rotary element carried by or revolving with the rotary cutting-disk, arranged between said bearing-plates, and having a bearing-surface at each side thereof confronting a similar bearing-surface in the face of the adjoining bearing-plate, and a series of balls fitted in the races formed between said rotary element and the confronting faces of said bearing-plates, together with means for holding said balls at prescribed distances apart in their respective races, substantially as described.

14. In a disk plow, the plow standard or hanger, the ball-bearing plates or disks adjustably secured thereto by a suitable fastening-bolt, and having recesses on one of said parts to receive an interlocking lug or lugs on the adjacent part, whereby the bearing-plates may be rotated about the fastening-bolt and secured in different positions, in combination with a rotary element carried by or revolving with the cutting-disk and a double series of balls on which said rotary element has its bearings, each series of balls being confined between confronting bearing-surfaces of said rotary element and one of said bearing-plates, substantially as described.

15. In a disk plow, the plow standard or hanger, and a pair of bearing-plates adjustably secured thereto by a suitable fastening-bolt and recesses on one of said parts to receive an interlocking lug or lugs on an adjacent part, whereby the bearing-plates may be rotated about the fastening-bolt and secured in different positions, in combination with an annulus or bearing-ring carried by or revolving with the cutting-disk and arranged between said bearing-plates, the latter having an annular bearing-surface on each confronting a similar bearing-surface on said bearing-plate, and a series of balls confined at intervals in the races formed between said bearing-surfaces, substantially as described.

16. In combination with the rotary cutting-disk, and a relatively-fixed part or support therefor, a rotary element carried by and adapted to revolve with the disk, and a series of antifriction devices interposed between said rotary element and said support, in rolling contact therewith at a point intermediate the center and circumference of the disk, whereby the disk is supported and has its bearings on said antifriction devices some distance from its center.

17. In combination with the rotary cutting-disk, and a relatively-fixed part or support therefor, a rotary element carried by and adapted to revolve with the disk, and a duplex series of antifriction devices interposed between said rotary element and said support, in rolling contact therewith, whereby the disk is supported and has its bearings on said antifriction devices between the circumferential portion of the disk and its center.

18. In combination with the rotary cutting-disk, and a relatively-fixed part or support therefor, a rotary element carried by and adapted to revolve with the disk, a series of antifriction devices interposed between said rotary element and said support in rolling contact therewith, and means for rotatively adjusting said support so as to change the position of the bearing-surfaces, substantially as described.

19. In combination with the cutting-disk, a pair of relatively-fixed parts or supports, an annulus carried by or secured to the disk rotatively fitted and confined between said parts and a series of antifriction devices interposed between confronting bearing-surfaces on said relatively-fixed parts and the opposite sides of said annulus, substantially as described.

20. A rotary cutting-disk having a smooth and unobstructed front or working face, in combination with a relatively-fixed part or support on which the disk has its bearings, and means for securing said parts to a standard or hanger without any bolt or projection penetrating the center of the disk.

21. A rotary cutting-disk having a smooth and unobstructed front or working face with a non-perforated central portion, and rotatably mounted on a suitable bearing therefor, at the back of the disk, without any bolt or projection penetrating the central portion of the disk, substantially as described.

22. In combination with the rotary disk, and an annular series of antifriction devices, such as balls or rollers, a flat spacing-ring having a series of apertures therein to receive and hold said antifriction devices apart in rotary contact with opposing bearing-surfaces between which the antifriction devices are confined, substantially as described.

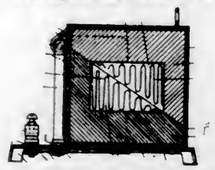
23. In combination with the rotary cutting-disk, a composite antifriction-bearing therefor comprising a relatively-fixed part or support about which the disk may rotate and on which the disk has its bearings at a point between its circumferential portion and its center, a rotary element carried by or revolving with the disk, and a double annular series of antifriction devices in rolling contact with confronting bearing-surfaces between said rotary element and the circumferential portion of said fixed part or support.

24. In combination with the rotary cutting-disk, a composite antifriction-bearing therefor comprising a relatively-fixed part or support about which the disk may rotate, a rotary element carried by or revolving with the disk, and a double annular series of antifriction devices in rolling contact with confronting bearing-surfaces between said rotary element and said fixed part or support, together with means for adjusting said fixed part or support so as to change the positions of the bearing-surfaces thereof and of the antifriction devices in such manner as to cause those parts that are least exposed to wear to take the position of excessively-worn portions, substantially as described.

25. A disk-bearing comprising a suitable support, means for securing the disk in rotative engagement with said support, and antifriction devices arranged in annular series between confronting bearing-surfaces on said support and disk outside of the central portion of the latter, whereby the disk has its bearings on said annular series of antifriction devices located between its center and circumference, substantially as described.

26. A disk-bearing comprising a suitable support and means for securing the disk in rotative engagement therewith, together with antifriction devices on which the disk has its bearings at a point between its center and circumference; said antifriction devices being arranged between confronting bearing-surfaces on said support and disk, at the back of the latter, substantially as described.

657,202. ELECTRIC FURNACE. HENRY C. MCBRAIR, Middletown, N. Y. Filed May 13, 1899. Serial No. 716,780. (No model.)



Claim.—1. In an electrically-heated furnace the combination of two hinged parts, an electric heating-circuit in each part, and insulated electric connections between said circuits, said connections consisting of contact parts which move on each other, when the hinged parts are operated, and maintain a continuous electrical connection between said circuits.

2. In an electrically-heated furnace, the combination of two hinged parts; a refractory, non-conducting lining in each part, an electric heating-circuit in each part embedded in said lining; an internal cavity in each of said parts, said heating-circuits lying near the sides of said cavities; and insulated electric connections between said circuits, said connections consisting of contact parts which move on each other, when the hinged parts are operated, and maintain a continuous electrical connection between said electric circuits.

3. In an electrically-heated furnace, the combination of two parts that are connected in a horizontal hinged joint and meet in an inclined plane parallel to said horizontal hinged joint; an electric heating-circuit in each of said parts; and means for maintaining a continuous electrical connection between said heating-circuits when one of said parts is turned on said hinged joint.

4. In an electrically-heated furnace, the combination of two parts that are connected with a horizontal hinged joint, and meet in an inclined plane, parallel to said horizontal hinged joint; an electric heating-circuit in each of said parts; means for maintaining a continuous electrical connection between said heating-circuits when one of said parts is turned on said hinged joint; and a controllable source of electricity for continuously supplying an electric current to both of said heating-circuits, whether said parts are close together or whether they are separated by the turning of one of the said parts on said hinges.

5. In an electrically-heated furnace, the combination of two hinged parts; an insulated electric circuit in each part; and insulated, electrical contact parts, on or near the hinges connecting said parts together, the points, or surfaces, of contact of said electrical contact parts movable on each other when said hinged parts are operated, thereby maintaining a continuous electrical connection between said electric circuits whether said furnace is open or closed.

6. In an electrically-heated furnace, the combination of an upper and lower part; two hinges connecting said parts together; a bushing of refractory and non-electrical conducting material in each of said hinges; a metallic pin in each of said bushings; an insulated electric conductor in each of said parts; an electrical connection between each of said pins and one end of said electric circuit in said upper part; a metallic spring pressing against each of said pins; an electrical connection between each of said springs and one end of the electric conductor in said lower part; and a controllable source of electricity to supply an electric current to said electric conductors, substantially as described.

7. In an electric furnace having hinged parts the combination of an insulated electric circuit, a portion of which lies in each of said hinged parts; and electrically-insulated points or surfaces of contact, forming a continuous electrical connection between the portions of said electric circuit and movable on each other when the said hinged parts are operated.

657,203. VETERINARY FORCEPS. WILLIAM NEUMEIER, Jr., Muscatine County, Iowa. Filed May 29, 1900. Serial No. 18,418. (No model.)

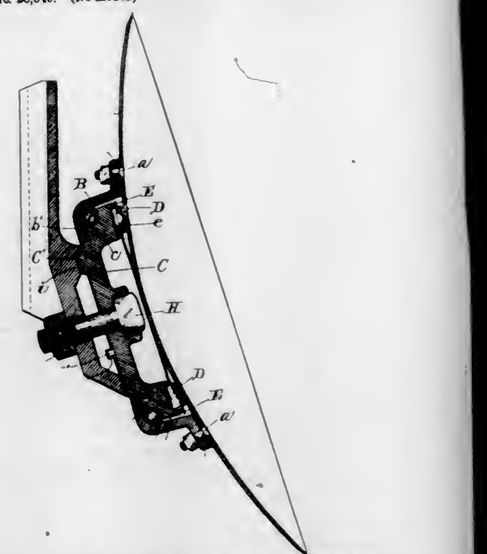


Claim.—1. In a forceps of the character set forth, the combination of a frame comprising side rods connected by end bars, the one end bar having a central eye and the proximal extremities of the side rods doubled and extended laterally to form grips and the adjacent end bar provided with a loop with a screw-center in line with a similar device on the said latter bar, a longitudinally-movable spreading-rod mounted in the said central eye and having its opposite extremity provided with screw-threads to engage the screw-centers, means confined by the said loop for operating the spreading-rod, and jaws pivoted to the said side rods and movably connected to the spreading-rod.

2. In a forceps, the combination of a frame comprising side rods spaced apart from each other in parallel relation and having opposite connecting end bars, one of the latter having an eye at the center and the other provided with a loop, jaws having contracted portions embracing and pivotally connected to the side rods in rear of the front end bar, a longitudinally-movable spreading-rod mounted in the central eye of the one end bar and having a screw-threaded extremity movable through the opposite end bar and the loop thereof, the front end of the spreading-rod having a transversely-extending head, crossed connecting-rods movably attached at opposite ends to the said head and the inner portions of the jaws, a disk engaging the spreading-rod and located between the loop and the adjacent end bar, and means for indicating the degree of expansion of the jaws.

3. In a forceps, the combination of a frame comprising side rods or bars connected by end bars, jaws movably attached to the front extremities of the side rods, a spreading-rod longitudinally movable through the said end bars and connected at its front extremity to the said jaws, a laterally-projecting pointer fixed on the spreading-rod and simultaneously movable with the latter, and a laterally-projecting gage-plate on the one side bar of the frame over which the pointer is free to move for the purposes set forth.

657,204. DISK-BEARING. STALEY D. POOLE, Moline, Ill., assignor to the Deere & Company, same place. Filed June 12, 1900. Serial No. 20,048. (No model.)



Claim.—1. In a disk plow, the combination with a relatively-fixed part or support and a disk rotatably secured thereto, of a series of antifriction devices interposed between the back of the disk and a confronting bearing-surface on said support, and a series of antifriction devices interposed between confronting bearing-surfaces on the opposite side of said support and a rotary element carried by or revolving with the disk, substantially as described.

2. In a disk plow, a composite antifriction-bearing for the disk, comprising a relatively-fixed part or support about which the disk may rotate, an annular series of rollers interposed between confronting bearing-surfaces on said support and the disk and an annular series of balls interposed between confronting bearing-surfaces on the opposite side of said support and a rotary element carried by or revolving with the disk, substantially as described.

3. In a disk plow, a composite antifriction-bearing for the rotary disk, comprising a relatively-fixed part or support about which the disk may rotate, an annular series of antifriction devices interposed between the back of the disk and a confronting bearing-surface on said support, and an annular series of antifriction devices interposed between confronting bearing-surfaces on the opposite side of said support and a rotary element carried by or revolving with the disk, together with means for adjusting and securing said fixed part or support so as to shift the positions of the bearing-surfaces thereon and of the antifriction devices in such manner as to cause those parts that are least exposed to wear to take the position of excessively-worn portions, substantially as described.

4. In a disk plow, a composite antifriction-bearing for the rotary disk, comprising a relatively-fixed part or support about which the disk may rotate, an annular series of conical rollers interposed between confronting bearing-surfaces on said support and the back of the disk, and an annular series of balls interposed between confronting bearing-surfaces on the opposite side of said support and a rotary element carried by or revolving with the disk, together with means for adjusting and securing said fixed part or support so as to shift the positions of the bearing-surfaces thereon and of the antifriction devices in such manner as to cause those parts that are least exposed to wear to take the position of excessively worn portions, substantially as described.

5. In a disk plow, the combination with a relatively-fixed part or support and a disk rotatably secured thereto, of a series of antifriction devices interposed between the back of the disk and a confronting bearing-surface on said support, and a series of antifriction devices interposed between confronting bearing-surfaces on the opposite side of said support and a rotary element carried by or revolving with the disk, and means for holding said antifriction devices at suitable distances apart in their respective courses or races, substantially as described.

6. In a disk plow, a composite antifriction-bearing for the disk, comprising a relatively-fixed part or support about which the disk may rotate, an annular series of rollers interposed between confronting bearing-surfaces on said support and the back of the disk, and an annular series of balls interposed between confronting bearing-surfaces on the opposite side of said support and a rotary element carried by or revolving with the disk, and means for holding said rollers and balls at suitable distances apart in their respective courses or races, substantially as described.

7. In a disk plow, a composite antifriction-bearing for the rotary disk, comprising a relatively-fixed part or support about which the disk may rotate, an annular series of antifriction devices interposed between the back of the disk and a confronting bearing-surface on said support, an annular series of antifriction devices interposed between confronting bearing-surfaces on the opposite side of said support and a rotary element carried by or revolving with the disk, and means for holding said antifriction devices at suitable distances apart in their respective courses or races, together with means for adjusting and securing said fixed part or support so as to shift the positions of the bearing-surfaces thereon and of the antifriction devices in such manner as to cause those parts that are least exposed to wear to take the position of excessively-worn portions, substantially as described.

8. In a disk plow, a composite antifriction-bearing for the disk, comprising a relatively-fixed part or support about which the disk may rotate, an annular series of rollers interposed between confronting bearing-surfaces on said support and the disk, and an annular series of balls interposed between confronting bearing-surfaces on the opposite side of said support and a rotary element carried by or revolving with the disk, together with spacing-rings apertured at intervals to receive and hold said rollers and balls at prescribed distances apart in their respective courses or races, substantially as described.

9. In a disk plow, a composite antifriction-bearing for the disk, comprising a relatively-fixed part or support about which the disk may rotate, an annular series of rollers interposed between confronting bearing-surfaces on said support and the disk, and an annular series of balls interposed between confronting bearing-surfaces on the opposite side of said support and a rotary element carried by or revolving with the disk, together with spacing-rings apertured at intervals to receive and hold said rollers and balls at prescribed distances apart in their respective courses or races, and means for changing the position of said support so as to cause the bearing-surfaces thereon and of the antifriction devices that are least exposed to wear to take the position of excessively-worn portions, substantially as described.

10. In a disk plow, the plow standard or hanger, and the bearing-plate adjustably secured thereto by a suitable fastening-bolt, and recesses on one of said parts to receive an interlocking lug or lugs on the other part, whereby the bearing-plate may be rotated about the fastening-bolt and secured in different positions; in combination with a composite antifriction-bearing for the rotary disk, comprising a series of antifriction devices interposed between the back of the disk and a confronting bearing-surface on said bearing-plate, and an annular series of antifriction devices interposed between confronting bearing-surfaces on the opposite side of said support and a rotary element carried by or revolving with the disk, substantially as described.

11. In a disk plow, the plow standard or hanger, and the bearing-plate adjustably secured thereto by a suitable fastening-bolt, and recesses on one of said parts to receive an interlocking lug or lugs on the other part, whereby the bearing-plate may be rotated about the fastening-bolt and secured in different positions; in combination with a composite antifriction-bearing for the rotary disk, comprising a series of antifriction devices interposed between the back of the disk and a confronting bearing-surface on said bearing-plate, and an annular series of antifriction devices interposed between confronting bearing-surfaces on the opposite side of said support and a rotary element carried by or revolving with the disk; and flat rings apertured at intervals to receive and hold said antifriction devices at suitable distances apart in their respective races, substantially as described.

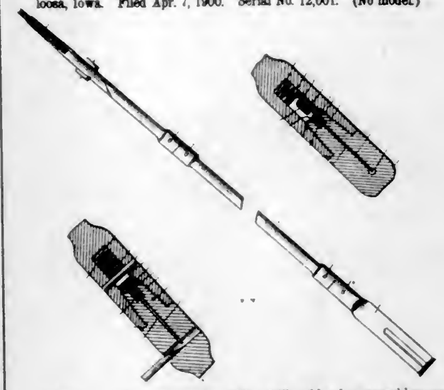
12. In combination with the rotary disk, and an annular series of antifriction devices, such as balls or rollers, a flat spacing-ring having a series of apertures therein to receive and hold said antifriction devices apart in rotary contact with opposing bearing-surfaces between which the antifriction devices are confined, and protuberances thereon for holding the spacing-ring between confronting surfaces in alinement with the centers of the antifriction devices, substantially as described.

13. The combination with the rotary cutting-disk, of a relatively-fixed part or support to which the disk is rotatably secured, a series of rollers interposed between confronting bearing-surfaces on said fixed part and the back of the disk, at a point between the center and circumference of the disk considerably removed from its center, and a similarly-arranged series of balls interposed between confronting bearing-surfaces on the opposite side of said fixed part and a member carried by or revolving with the disk, substantially as described.

14. The combination with a rotary cutting-disk, of a relatively-fixed part or support to which the disk is rotatably secured, a series of conical rollers interposed between the back of the disk and a confronting bearing-surface on said support at a point between the center and circumference of the disk, and a series of balls interposed between confronting bearing-surfaces on the opposite side of said support and an element carried by or revolving with the disk, substantially as described.

15. The combination with a rotary cutting-disk, of a relatively-fixed part or support to which the disk is rotatably secured, an annular series of rollers interposed between the back of the disk and a confronting bearing-surface on said fixed part at a point between the center and circumference of the disk, a series of balls interposed between confronting bearing-surfaces on the opposite side of said support and a member carried by or revolving with the disk, and means for loosely confining said rollers and balls at prescribed distances apart between said bearing-surfaces, substantially as described.

657,205. DRILL-JAR AND COUPLING. THOMAS SEEVERS, Oskaloosa, Iowa. Filed Apr. 7, 1900. Serial No. 12,001. (No model.)



Claim.—1. The combination with a drill-rod having spaced lugs and additional lugs below and in line with the interspaces, of a tubular jar having striking-lugs on its inner face, said striking-lugs being adapted to pass between the first-named lugs of the rod and engage the second lugs for movement by the latter to lie beneath the first lugs.

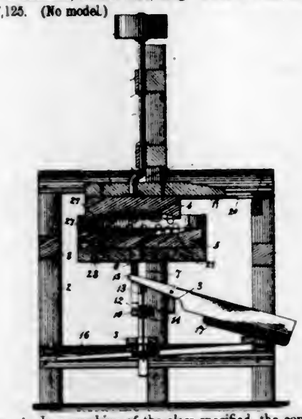
2. The combination with a drill-rod having spaced lugs thereon and guides below the lugs and in line with the interspaces between the lugs, of a tubular jar having lugs on its inner face, said lugs being proportioned and positioned to pass through the interspaces and move along the guides to lie below the lugs on the rod, whereby the lugs on the jar may be raised into engagement with the lugs on the rod.

3. A drill-jar comprising a tubular body portion adapted to receive a drill-rope and having an upwardly-directed stem for attachment of a rope, said body having a rope-entering slot disposed helically thereof, to permit entering of the drill-rope when slack and to prevent its displacement when taut.

4. The combination with a drill-rod having triangular, spaced lugs thereon, of a drill-jar comprising a tubular body adapted for attachment of a rope thereto, said body having a slot formed at an angle to the axis of the body for the insertion of the drill-rope, and inverted, triangular lugs at diametrically-opposite points of the inner face of the body, for engagement with the corresponding lugs upon a drill-rod.

5. A drill-rod comprising sections one of which is provided with a terminal socket the lower portion of which is threaded and the upper portion of which has a spring-pressed clutch member, the second section having a threaded projection for engagement with the socket and a serrated upper end for engagement by the clutch member, a recess in the second section and extending longitudinally thereof, a transverse recess communicating with the first recess, a reciprocatory rod in the first recess and disposed to lie with its lower end in the second recess, said rod at its opposite end projecting above the second section, and a packing in the longitudinal recess and engaging the rod therein, the second recess being adapted to receive a wedge to engage and force the rod upwardly.

657,206. FIBER-FORMING MACHINE. CLARK M. TERRELL and OLIVER C. TERRELL, Grants Pass, Oreg. Filed Nov. 15, 1899. Serial No. 737,125. (No model.)



Claim.—1. In a machine of the class specified, the combination of two grinding members provided with the opposing concave working surfaces and having teeth arranged to clear each other, and means for imparting a gyratory movement to one of said grinding members, substantially as described.

2. In a machine of the class specified, the combination of two grinding members, means for imparting a gyratory movement to one of said grinding members, and means for effecting a positive movement of one member vertically and to an inoperative position with respect to the other member, substantially as described.

3. In a machine of the class specified, the combination of two grinding-disks having the convave working surfaces in opposing relation, and means for imparting a gyratory movement to one of said disks, substantially as described.

4. In a machine of the class specified, the combination of two grinding members, one of which is movable with a gyratory motion in a horizontal plane, means connected operatively with the other grinding member for positively moving the same vertically with respect to the first-named member, and means tending normally to maintain the laterally-moving grinding member in operative opposing relation to the gyratory movable member, as and for the purposes set forth.

5. In a machine of the class specified, the combination with two grinding members, of means for imparting a gyratory movement to one of said members, and a reciprocative device for supporting the other grinding member, substantially as described.

6. In a machine of the class specified, the combination with two grinding members, of means for imparting a gyratory movement to one of said members, a reciprocative device for supporting the other grinding member, and an operating-lever connected to said reciprocative device for lowering the same, substantially as described.

7. In a machine of the class specified, the combination with two grinding members, of means for imparting a gyratory movement to one of said members, a reciprocative device for supporting the other grinding member, an operating-lever connected to said reciprocative device for lowering the same, and means acting in opposition to said lever for elevating said reciprocative device thereby to hold the grinding member carried thereby in working relation with its mate, substantially as described.

8. In a machine of the class specified, the combination with two grinding members, of means for imparting a gyratory movement to one of said members, a reciprocative device for supporting the other grinding member, a weighted lever, a foot-lever, and means connecting both levers with said reciprocative device, substantially as described.

9. In a machine of the class specified, the combination with upper and lower grinding members, of means for imparting gyratory movement to the upper grinding member, an auxiliary reciprocative frame including two rods connected by cross-bars and said rods being supported by the main frame, and one of the cross-bars being adapted to support the lower grinding member, two levers fulcrumed upon the framework and one of them being weighted, and means connecting both of said levers to said auxiliary frame, substantially as described.

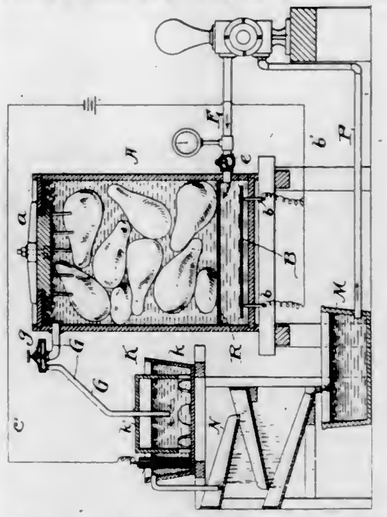
10. In a machine of the class specified, the combination of two grinding-disks having concave working surfaces in opposing relation, U-shaped teeth fitted into the working faces of said grinding-disks, and said teeth arranged in different planes on the respective disks to clear each other, and means for imparting a gyratory movement to one of said disks, substantially as described.

11. In a machine of the class specified, the combination with two grinding members both of which are concave, and both of which are provided with teeth upon their working surfaces, of means for imparting a gyratory motion to one of said grinding members, substantially as described.

12. In a machine of the class specified, a grinding mechanism comprising disks provided with concave working surfaces in opposing relation, one of said disks being smaller than the other, teeth projecting from the concave working surfaces of said disks and arranged to clear each other, and a boundary wall circumscribing one member and extending therefrom in overlapping relation to the other member, in combination with means for imparting gyratory motion to the smaller grinding member, and means for adjusting the larger grinding member laterally with respect to the other grinding member to which the gyratory motion is applied, substantially as described.

657,207. APPARATUS FOR CURING MEAT. GEORGE A. WASHBURN, Cleveland, Ohio, assignor to E. B. Quinn, trustee, same place. Filed Aug. 18, 1898. Serial No. 688,943. (No model.)

Brief.—The operation consists in submerging the meat in a curing solution in a vat adapted to be closed, causing the solution to circulate under pressure through said vat and around said meat, and in passing an electric current through the curing solution between two electrodes, of which the negative electrode is submerged in the solution, while the positive electrode is contained in a porous cup which sits in the solution.



Claim.—1. In an apparatus for curing meat and the like, the combination of a vessel to contain the meat and a curing solution, electrodes

and electrical connections including the solution, means for causing a circulation of the solution in the circuit and means for protecting the curing solution from contamination by the disintegration of the positive electrode.

2. In an apparatus for curing meat and the like, the combination of a vessel to contain the meat and a curing solution, means for causing a continuous circulation of the solution through the vessel, electrodes and electrical connections including the solution in the circuit, and means for protecting the curing solution from contamination by the disintegration of the positive electrode.

3. In an apparatus for curing meat and the like, the combination of a vessel to contain the meat and a curing solution, means for causing a circulation of the solution under pressure, electrodes and electrical connections including the solution in the circuit, and a protecting-container surrounding the anode.

4. In an apparatus for curing meat and the like, the combination of a vessel to contain the meat and a curing solution, means for causing a circulation of the solution, electrodes and electrical connections including the solution in the circuit, a supplementary tank through which the curing solution passes, and a protecting-container in the supplementary tank surrounding the anode.

5. In an apparatus for curing meat and the like, a vat adapted to contain the meat and a curing solution and mechanism for causing the continuous circulation of the solution through said vat, combined with a negative electrode submerged in the solution, a porous cup which sits in the solution, a positive electrode in said porous cup, an electric generator and electrical connections between said generator and electrodes, substantially as specified.

6. In an apparatus for curing meat and the like, the combination of a vessel to contain the meat and a curing solution, having an inlet and an outlet opening, an external fluid-conductor connected with the said openings, means for inducing the circulation of a curing solution through the vessel and through the fluid-conductor, an electrode in the vessel submerged in the curing solution, a porous container submerged in the solution, an electrode in the porous container and electric connections and an electric generator, substantially as described.

7. In an apparatus for curing meat and the like, the combination with a vessel for containing the meat and a curing solution, having an inlet and an outlet opening, a negative electrode in the vessel, an external fluid-conductor connected with the said openings comprising means for breaking the continuity of the column of the fluid, a pump connected with the fluid-conductor on one side of the break, a porous container immersed in the curing solution on the opposite side of the break, a positive electrode in the porous container, electric connections and an electric generator, substantially as described.

8. In an apparatus for curing meat, a vat containing a curing solution and adapted to contain the meat to be cured, combined with a negative electrode submerged in said solution, a porous cup which sets in the solution, a positive electrode in said porous cup, an electric generator, and electrical connections between said generator and electrodes, substantially as specified.

9. In an apparatus for curing meat, the combination of a vat adapted to be tightly closed, and a supplemental tank, with means for causing a curing solution to circulate through said vat and thence to the supplemental tank and back into the vat, a plate constituting a negative electrode in said vat, a porous cup sitting in the supplemental tank, a plate constituting a positive electrode contained in said cup, an electrical generator, and electrical connections between said generator and electrodes, substantially as specified.

10. In an apparatus for curing meat, the combination of a vat adapted to be closed tightly and made of or lined with insulating material which will not be disintegrated by the curing solution or by the electrolytic action, an outlet-pipe near the upper end of said vat, and a supplemental tank into which said pipe discharges; said tank and pipe being made of material which will not be disintegrated by the curing solution or the electrolytic action, with a negative electrode contained in the vat near the lower end thereof, a porous cup sitting in the supplemental tank, a positive electrode in said porous cup, an electric generator, electrical connections between the generator and said electrodes, a pump, a pipe connecting the same to the vat near its lower end, means for conducting the curing solution from the supplemental tank, in a broken column, to the pump, and a curing solution contained in the parts named, substantially as specified.

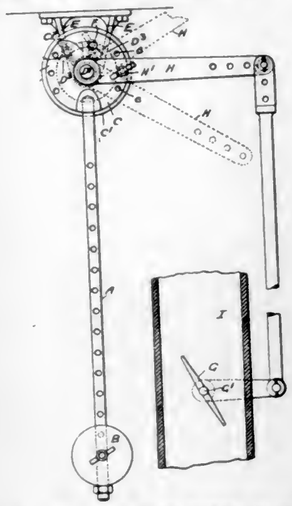
11. In an apparatus for curing meat, the combination of a vat having a perforated partition near its lower end and adapted to be tightly closed, an outlet-pipe near its upper end, a supplemental tank into which the said outlet-pipe discharges, a pump, a pipe connecting the pump with the vat at a point below the perforated partition, and means for conducting the curing solution from the supplemental tank to the pump in a broken column, with a negative electrode contained in the vat below the perforated partition, a porous cup sitting in the supplemental tank, a positive electrode in said porous cup, and connections between said electrodes and a suitable generator, substantially as specified.

12. In an apparatus for curing meat, the combination of a vat adapted to be tightly closed, and having suitable inlet and outlet pipes at opposite extremities, a pump connected with the inlet-pipe, a supplemental tank consisting of an outer receptacle having an outlet-pipe, and an inverted inner receptacle into which the outlet-pipe of the vat discharges, there being free communication between this inner receptacle and the outer receptacle, with means for conducting the curing fluid from the outer receptacle of said supplemental tank to the pump, with a negative electrode submerged in the vat, a porous cup sitting in the outer receptacle of the supplemental tank, a positive electrode in said porous cup, and electrical connections between said electrodes and a suitable generator, substantially as specified.

13. In an apparatus for curing meat, the combination of a vat adapted to be tightly closed, having an inlet-pipe near its lower end and an outlet-pipe near its upper end, a supplemental tank into which said pipe discharges, a negative electrode contained in the vat, a porous cup sitting in said supplemental receptacle, a positive electrode in said porous cup, an electric connection between said electrodes and a suitable generator, with a series of oppositely-inclined plates arranged one below the other, over which the fluid discharged from the supplemental tank successively flows, a suction-tank into which the lower of said plates discharges, a pipe from said suction-tank, and a pump connected with said pipe and with the inlet-pipe to the vat, substantially as specified.

14. In an apparatus for curing meat, the combination of a vat, adapted to be tightly closed, having an inlet-pipe and an outlet-pipe at opposite extremities of the vat, the outlet-pipe containing the pressure-regulating valve, and a supplemental tank into which said outlet-pipe discharges—said vat, outlet-pipe and supplemental tank, being made of or lined with insulating material—a negative electrode in the vat, a porous cup in the supplemental tank, a positive electrode in said porous cup, and electrical connections between said electrodes and a suitable generator, with a series of oppositely-inclined plates arranged to discharge one upon another, an outlet-pipe to the supplemental tank discharging onto the upper of said plates, a suction-tank into which the lower of said plates discharges, a suction-pipe connected with said tank, and a pump connected with said suction-pipe and with the inlet-pipe to the vat, substantially as specified.

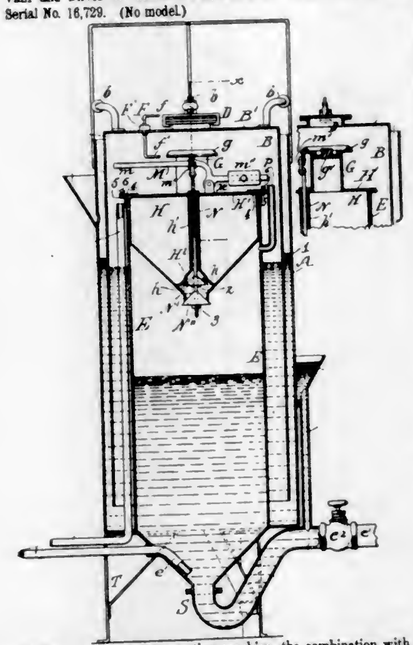
657,208. MARINE-ENGINE GOVERNOR. JAMES WEIR, Paisley, Scotland. Filed May 15, 1900. Serial No. 16,769. (No model.)



Claim.—1. In a marine-engine governor, the combination with a stationary disk secured upon a fixed center, of a weighted pendulum attached to a disk or strap fitted to turn about the axis of the stationary disk and having secured upon its axis a lever connected to the throttle-valve spindle of the engine.

2. In a marine-engine governor, the combination with a stationary disk secured to a carrying-bracket, of a pivoted disk fitted to turn about the axis of the fixed disk and carrying a weighted pendulum, a slot in the fixed disk, stop-pins adapted to be secured in any position in said slot, a web in the pivoted disk designed to limit the extreme travel of the pivoted disk by contact with said pins, and a lever adjustably secured to the pivoted disk and connected to the throttle-valve spindle of the engine.

657,209. ACETYLENE-GAS GENERATOR. GOODWIN A. BLAUVELT and DAVID W. CRANSTON, Nyack, N. Y. Filed May 15, 1900. Serial No. 16,729. (No model.)



Claim.—1. In a gas-generating machine, the combination with an outward gasometer constructed, arranged, and adapted to move upward and downward as specified, and a revoluble bent rod mounted in the top of said gasometer, of a generating-tank, within the said gasometer, a lever pivoted on the top thereof, a counterpose-weight upon one end of said lever, the other end of said lever extended so as to be capable of engaging the bent end of the rod aforesaid, another rod carrying valves at its lower end, and attached by a short rod to said lever at its upper end, a receptacle for gas-generating chemicals within said generating-tank, means for depositing such materials in said chamber, valve-seats in the bottom of said chamber, upon which work the valves aforesaid, to regulate the passage of chemical material from said receptacle into said generating-tank, and a tubular guide in which said last-named rod moves, all substantially as and for the purpose set forth.

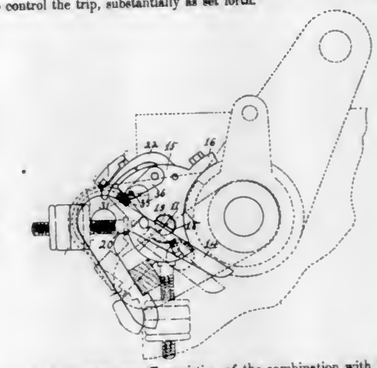
2. In a gas-generating machine, the combination with a gasometer adapted to move upward and downward, a revoluble stop journaled through the top wall of said gasometer, an outer water-tank surrounding the gasometer, an inner generating-tank, a superimposed receptacle, for containing gas-producing chemicals, means for inlet and outlet of chemicals, valves for opening and closing the outlet of said receptacle, and a weighted rod-and-lever mechanism for operating the said valves, the said revoluble stop adapted to be arbitrarily turned for contact with the lever of the closing mechanism, substantially as shown and described.

657,210. TRIPPING CUT-OFF. WILLIAM F. BRADBURY, Kansas City, Kans., and DIXON E. WASHINGTON, Kansas City, Mo. Filed Oct. 2, 1899. Serial No. 732,324. (No model.)

Claim.—1. A tripping cut-off consisting of the combination with the valve-operating mechanism, of a weighted trip mounted on the bell-crank sleeve and arranged to be operated by the momentum imparted by the oscillations of the bell-crank to trip the crab-claw at a certain predetermined speed limit, a catch connected with said trip, and a latch mounted on the bell-crank sleeve and arranged to engage said catch to control the trip until such speed limit is reached; substantially as set forth.

2. A tripping cut-off consisting of the combination with the valve-operating mechanism, of a weighted trip mounted on the bell-crank sleeve and arranged to trip the crab-claw, a catch connected with said trip, and a spring-controlled latch mounted on the bell-crank sleeve and arranged to engage said catch to control the trip, substantially as set forth.

3. A tripping cut-off consisting of the combination with the valve-operating mechanism, of a trip mounted on the bell-crank sleeve and arranged to trip the crab-claw, a weight connected with said trip, a catch-plate provided with a suitable catch connected with the weight, and a latch mounted on the bell-crank sleeve and arranged to engage said catch to control the trip, substantially as set forth.



4. A tripping cut-off consisting of the combination with the valve operating mechanism, of a trip mounted on the bell-crank sleeve and arranged to trip the crab-claw, a weight adjustably connected with said trip, a catch-plate provided with a suitable catch connected with the weight, and a spring-controlled latch mounted on the bell-crank sleeve and arranged to engage said catch to control the trip, substantially as set forth.

5. A tripping cut-off consisting of the combination with the valve-operating mechanism, of a block mounted on the bell-crank sleeve, a trip mounted in said block arranged to trip the crab-claw, a weight connected with said trip, a catch-plate provided with a suitable catch connected with the weight, a latch mounted in said block and arranged to engage said catch, and a spring mounted in said block and arranged to bear on said latch, to control the trip, substantially as set forth.

6. A tripping cut-off consisting of the combination with a recessed block mounted on the bell-crank sleeve, a weighted trip mounted in said block arranged to trip the crab-claw, and a catch connected with said trip, of a ⊃-shaped latch-lever pivotally mounted on said block, one arm of said lever extending through a recess in said block and the other arm provided with a latch arranged to engage said catch, and a spring mounted in a recess in said block, and arranged to bear against said latch to control the trip, substantially as set forth.

7. A tripping cut-off consisting of the combination with a block mounted on the bell-crank sleeve, a weighted trip mounted in said block arranged to trip the crab-claw and a catch connected with said trip, of a spring-controlled ⊃-shaped latch-lever mounted in said block and provided with a latch arranged to engage said catch to control the trip, substantially as set forth.

8. In a tripping cut-off a recessed block mounted on the bell-crank sleeve, and a ⊃-shaped latch-lever mounted in said block, one arm of said lever extending through a recess in said block, and the other arm provided with a latch, substantially as set forth.

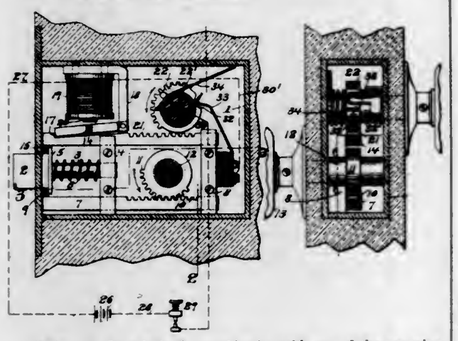
9. In a tripping cut-off a recessed block mounted on the bell-crank sleeve, a ⊃-shaped latch-lever mounted in said block, a screw-stud mounted in said block, a stem on said stud, a sleeve telescoping with said stem, a collar on said sleeve, a pin connected with said collar, and arranged to engage said latch-lever, and a spring mounted between said stud and said collar, substantially as set forth.

10. In a tripping cut-off, a recessed block mounted on the bell-crank sleeve, a ⊃-shaped latch-lever mounted in said block, a grooved screw-stud mounted in said block, a stem on said stud, a sleeve telescoping with said stem, a collar on said sleeve, a pin connected with said collar and arranged to engage said latch-lever, a spring mounted between said stud and said collar, and a spring-actuated pin mounted in the block and arranged to engage the grooves in said stod, substantially as set forth.

11. A tripping cut-off consisting of the combination with the valve-operating mechanism, of a block mounted on the bell-crank sleeve, a trip mounted in said block arranged to trip the crab-claw, a weight connected with said trip, a latch connected with said trip, a latch-lever mounted on said block provided with a latch arranged to engage said catch, a spring mounted in said block and engaging said latch-lever to control the trip, and means for regulating the tension of said spring, substantially as set forth.

12. A tripping cut-off consisting of the combination with the valve-operating mechanism, of weighted trips mounted on the bell-crank sleeves and arranged to trip the crab-claws, catches connected with said trips, spring-controlled latch-levers mounted on the bell-crank sleeves, provided with latches arranged to engage said catches, and means for regulating the tension of the latch-springs whereby said trips are caused to operate to trip the crab-claws at successively-higher speeds, substantially as set forth.

657,211. ELECTRIC LOCK. HENRY G. CARLETON, New York, N.Y., assignor to the Carleton Electric Company, same place. Filed Jan. 13, 1900. Serial No. 1,297. (No model.)



Claim.—1. In a lock, the combination with one of the engaging parts, of a slide for withdrawing the same a controller stationary with respect to the slide and normally engaging the same, and a magnet the attractive force of which operates the controller to release the slide when the lock is to be opened, substantially as described.

2. In a lock, the combination with one of the engaging parts, of a withdrawing mechanism including a withdrawing-slide, a magnet located near the slide, a controller stationary with respect to the slide and normally engaging it, said controller forming the armature of the magnet and operating when attracted by the magnet to release the slide when the lock is to be opened, substantially as described.

3. In a lock, the combination with one of the engaging parts, of two slides, means whereby each of the slides may be caused to move the engaging part, actuating devices for the slides operable from opposite sides of the lock, a magnet, a controller stationary with respect to the slides and engaging one of them, the parts being arranged so that the attractive force of the magnet operates the controller to release the slide, substantially as described.

4. In a lock, the combination with one of the engaging parts, of a withdrawing mechanism for operating the same including a slide, a controller stationary with respect to the slide and normally engaging it, a magnet for operating the controller, a circuit for the magnet and circuit-closing devices lying within the lock-casing and operated by the withdrawing mechanism, substantially as described.

5. In a lock, the combination with one of the engaging parts, of a withdrawing mechanism for operating the same including a slide, a controller stationary with respect to the slide and normally engaging it, a magnet for operating the controller of which the controller forms the armature, a circuit for the magnet, and circuit-closing devices lying within the lock-casing and operated by the withdrawing mechanism, substantially as described.

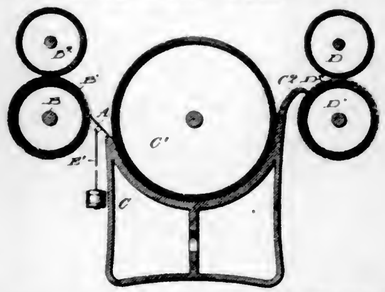
6. In a lock, the combination with the movable bolt, of a slide for withdrawing the same, means for operating the slide, a controller located over the slide and normally engaging the same to prevent its movement, and a magnet of which the controller forms the armature, said magnet operating to cause the controller to release the slide when the lock is to be opened, substantially as described.

7. In a lock, the combination with a movable engaging part, of a withdrawing mechanism including a slide substantially parallel with the engaging part, a controller located over the slide, said controller being stationary with respect to the slide and normally caused to engage the same by gravity, a magnet for which the controller forms the armature, the attractive force of the magnet operating to lift the armature out of engagement with the slide, substantially as described.

8. In a lock, the combination with a movable engaging part, of a withdrawing mechanism including moving connections, a controller located over the connections, said controller being stationary with respect to the connections and normally caused to engage the same by gravity, a magnet the attractive force of which operates the controller to release the connections, a suitable circuit for the magnet, and circuit-closing devices operated by the withdrawing mechanism, substantially as described.

9. In a lock, the combination with a movable engaging part, of a withdrawing mechanism including moving connections, a controller located over the connections, said controller being stationary with respect to the connections and normally caused to engage the same by gravity a magnet of which the controller forms the armature, the attractive force of the magnet operating to lift the armature out of engagement with the connections, a suitable circuit for the magnet and circuit-closing devices operated by the withdrawing mechanism, substantially as described.

657,212. DOFFER-BLADE. ALLEN CONKLING, Chicago, Ill. Filed Sept. 8, 1899. Serial No. 729,857. (No model.)



Claim.—1. The combination with a roll, of a doffer-blade pivoted below the horizontal plane of the axis thereof and adapted to yieldingly and automatically engage the periphery of said roll above the said horizontal plane and at an angle thereto; substantially as specified.

2. The combination with a roll, of a doffer-blade pivoted below the horizontal plane of the axis thereof and adapted to yieldingly and automatically engage the periphery of said roll above the said horizontal plane and at an angle thereto, and means suspended from said blade for exerting pressure thereon; substantially as specified.

3. A flexible doffer-blade having a contact edge and a supporting edge and provided with separate lugs upon its under surface; substantially as specified.

4. In a mangle, the combination with a clothed roll, of a doffer-blade pivoted below the horizontal plane of the axis of said roll and engaging the roll at an angle to and above said horizontal plane, and means for exerting pressure upon said blade; substantially as specified.

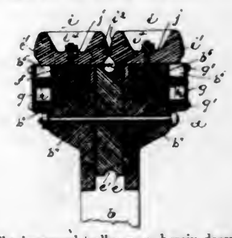
5. In a mangle, the combination with a clothed roll, of a pivoted doffer-blade engaging said roll at an angle to and above the horizontal plane of the axis thereof, and a weight pivotally suspended from the under face of said blade; substantially as specified.

6. In a mangle, the combination with a clothed roll, of a doffer-blade engaging said roll at an angle to and above the horizontal plane of the axis thereof, a weight pivotally suspended from the under face of said blade, and a pivoting-angle upon said blade resting on a fixed support; substantially as specified,

7. The combination with a clothed roll, of a flexible pivoted doffer-blade adapted to contact with said roll throughout its length and above the horizontal plane of the axis thereof; substantially as specified.

8. In a mangle, the combination with a clothed roll and a steam-chest and drum, of a flexible doffer-blade having an edge or angle adapted to rest in a groove in said steam-chest and provided with a contact edge to engage said clothed roll, lugs extending from the under surface of said blade, and weights pivotally suspended from said lugs; substantially as specified.

657,213. TROLLEY. JOSEPH E. CONNOLLY, Newark, N. J. Filed Dec. 5, 1899. Serial No. 739,308. (No model.)



Claim.—1. The improved trolley-arm, herein described, having at its upper end a head providing bearings for a main contact-wheel *e*, and supplemental contact-wheels, *i*, the said supplemental contact-wheels being disposed to rotate in a horizontal plane and overhang the periphery of the main wheel tangent thereto and closely adjacent, the peripheries only being presented to the power-wire and said peripheries being shaped to form with the main contact-wheel a passage-way for the power-wire, substantially as set forth.

2. In a trolley-arm, the combination of a main contact-wheel pivoted to turn in a vertical plane and peripherally grooved to engage a power-wire, and supplemental contact-wheels pivoted upon sliding blocks to turn in a horizontal plane tangent to the main wheel and having their peripheries closely approaching each other above the grooved periphery of the main wheel, and recessed directly above the groove in said main contact-wheel to form therewith a passage-way for the power-wire, substantially as set forth.

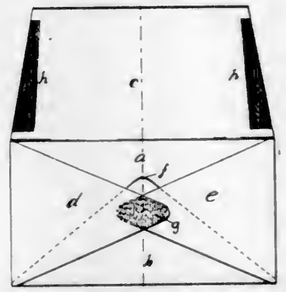
3. In a trolley-arm, the combination of a main contact-wheel adapted to engage a power-wire and pivoted to rotate in a vertical plane, and laterally-adjustable supplemental contact-wheels pivoted to rotate in a horizontal plane tangent to the main wheel, said supplemental wheels having their peripheries oppositely rounded and normally contiguous to each other directly above the main wheel, said oppositely-rounded contiguous peripheries of the supplemental wheels forming in edge view a narrow opening gradually flaring at the top to facilitate the entrance of the power-wire and more abruptly flaring downward at the lower side to engage the sides of the power-wire and hold it upon the periphery of the main wheel, substantially as set forth.

4. In a trolley-arm, the combination of a forked head *b*, a main contact-wheel pivoted therein, spring-controlled slides working in said head on each side of said wheel, and supplemental contact-wheels pivoted on said slides, the peripheries of all said wheels closely approaching one another at a point and forming between themselves a passage-way for a power-wire, substantially as set forth.

5. In a trolley-arm, the combination of the forked head *b*, providing rearwardly-curving guiding-horns, main wheel *e*, vertically pivoted in said head, slides *f*, working horizontally at the sides of said wheels, and supplemental wheels *i*, horizontally pivoted upon said slides, said supplemental wheels lying behind the guiding-horns and peripherally approaching each other and the main wheel, substantially as set forth.

6. In a trolley-arm, the combination with a head and a main contact-wheel vertically pivoted therein, of supplemental contact-wheels horizontally pivoted with their lower sides tangent to the main contact-wheel and adapted to peripherally engage the sides of the power-wire, said supplemental wheels being pivoted upon horizontally-movable slides and being recessed or cup-shaped at the top to receive lubricants, substantially as set forth.

657,214. ENVELOP. DENNIS M. EMORY, Syracuse, N. Y.; Thomas Emory administrator of said Dennis M. Emory, deceased. Filed Dec. 14, 1899. Serial No. 740,259. (No model.)

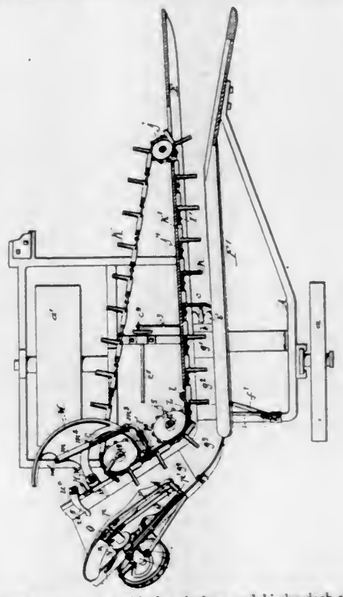


Claim.—An envelop provided with the end flaps *d*, *e*, which have their ends sealed together, the side flap *b* which is closed down under the two flaps *d*, *e*, and which side flap has an end *f* turned upward and made to project beyond the edges of the end flaps *d*, *e*, and the side flap *c* which is gummed at its edges and is adapted to be turned down over the tops of the other three flaps, substantially as shown and described.

657,215. CORN-HARVESTER. GEORGE A. FARRALL and CHRISTIAN MAUL, Batavia, New York, assignors to the Johnston Harvester Company, same place. Filed Aug. 25, 1899. Serial No. 728,477. (No model.)

Claim.—1. The combination with the platform, the binder-deck and a conveyer-belt arranged on said platform and binder-deck and provided with folding teeth, of a guide-bar for said teeth arranged in the binder-deck and pivoted at its front end, a rigid shifting device engaging said guide-bar near its free end, and a rock-shaft for said shifting device arranged near the free end of said guide-bar, said shifting device standing substantially at right angles to the free end of the guide-bar when the latter is swung into the binder-deck for supporting the teeth, thereby holding the latter firmly against the pressure of the stalks, substantially as set forth.

2. The combination with the platform and binder-deck and a conveyer-belt provided with folding teeth, of a guide-bar for said teeth arranged in the binder-deck and pivoted at its front end, a rocking shifting arm arranged below the binder-deck and bearing against the free rear end of said guide-bar, the needle mechanism, and means whereby said shifting arm is actuated from the needle mechanism, substantially as set forth.



3. The combination with the platform and binder-deck and a conveyer-belt provided with folding teeth, of a guide-bar for said teeth arranged in the binder-deck and pivoted at its front end, a rock-shaft arranged below the binder-deck, a shifting arm secured to said rock-shaft and bearing against the free rear end of said guide-bar, an actuating-arm secured to said rock-shaft, a needle, and a slotted bar connecting the needle with said actuating-arm, substantially as set forth.

4. The combination with the rotary driving-arm, the driving-wheel of the binder mechanism, the coupling-dog mounted on said wheel, and the compressor shaft and arm, of a trip-lever whereby the coupling-dog is held out of engagement with the driving-arm and which is provided with an actuating-shoulder and a bar which is actuated from the compressor-shaft and which bears again. said shoulder for moving the trip-arm to release the coupling-dog and which has a sliding connection with the trip-arm which permits the bar and the compressor-shaft to continue their movement after the trip-lever has been released from the coupling-dog, substantially as set forth.

5. The combination with the rotary driving-arm, the driving-wheel of the binder mechanism, and the coupling-dog mounted on said wheel, of a driven wheel meshing with said driving-wheel and making a greater number of turns than said driving-wheel, a tappet on the driven wheel, a trip-lever which is adapted to hold the coupling-dog out of engagement with the driving-arm and which is prevented from engaging with the coupling-dog by said tappet when the latter strikes said trip-lever, and means whereby said trip-lever is disengaged from the coupling-dog by the movement of the compressor-shaft, substantially as set forth.

6. The combination with the breastplate, and the supporting-standard about the axis of which the plate is swung in adjusting it toward and from the binder-deck, of an adjusting-arm connected at its free end with the breastplate and at its opposite end with the standard by a pivotal connection arranged concentric with the axis of the standard, and an adjustable attaching device connecting said arm with the standard, whereby in adjusting the arm by the attaching device the arm is enabled to turn about the standard without binding, substantially as set forth.

7. The combination with the breastplate and the supporting-standard about the axis of which the plate is swung in adjusting it toward and from the binder-deck, and which is provided with fastening-arms on opposite sides, of an adjusting-arm connected at its free end with the breastplate and at its opposite end with the standard by a pivotal connection arranged concentric with the axis of the standard, an adjustable bolt connecting said adjusting-arm with one of the fastening-arms of the standard, and a bolt-and-slot connection whereby the other fastening-arm of the standard is connected with said adjusting-arm, substantially as set forth.

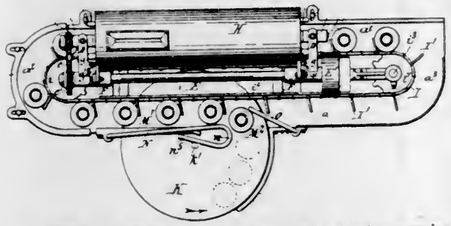
8. The combination with the finger-bar, of a reciprocating cutter-bar carrying the knives, guard-caps which are secured to said cutter-bar and

project rearwardly over the finger-bar and forwardly under the overhanging portion of the fingers, and rollers which are arranged on the lower side of these caps and bear against the front side of the finger-bar, substantially as set forth.

9. The combination with the longitudinal platform and the binder mechanism, of a throat-bottom having its rear part, adjacent to the binder mechanism, connected near its rear end to an adjusting mechanism which is controlled by the driver and having in front of said rear part a vertically-adjustable part to which said rear part is pivoted, substantially as set forth.

10. The combination with the inclined binder-deck, and the throat-bottom arranged on the upper side of the binder-deck and having its rear part vertically adjustable, of a vertically-movable hand-lever arranged on the lower side of the binder-deck, and a connecting-rod extending from said hand-lever downwardly on the lower side of the binder-deck and around the lower edge of the latter to the throat-bottom, substantially as set forth.

657,216. CAN-WIPING MACHINE. MILLARD J. HAWKINS, Hoopeston, Ill. Filed Feb. 12, 1900. Serial No. 4,846. (No model.)



Claim.—1. The combination with a wiping-brush and a conveying mechanism whereby the cans are carried past said brush, of a horizontal feed-table rotating toward the conveying mechanism and adapted to receive a number of cans at a time, and means whereby the cans are caused to move singly from said table to the conveying mechanism, substantially as set forth.

2. The combination with the wiping-brush, and the conveyer whereby the cans are carried to the brush, of a rotary feed-table projecting with its delivery portion underneath said conveyer, substantially as set forth.

3. The combination with the wiping-brush and the conveyer whereby the cans are carried to said brush, of a rotary feed-table projecting with its delivery portion underneath said conveyer, and guides arranged at the delivery side of the feed-table and forming a throat through which the cans are moved singly by the feed-table to the conveyer, substantially as set forth.

4. The combination with the wiping-table, the wiping-brush, and the conveyer whereby the cans are carried to the brush, of a rotary feed-table projecting with its delivery portion underneath said conveyer, a side guide arranged along the periphery of the feed-table at the delivery side thereof, and a longitudinal guide projecting over the feed-table toward said side guide, substantially as set forth.

5. The combination with a wiping-brush and a conveying mechanism whereby the cans are carried past said brush, of a horizontal, rotary feed-table which is arranged adjacent to the receiving portion of said conveying mechanism, a side guide which confines the cans to the feed-table on the delivery side thereof, and a movable longitudinal guide arranged over the feed-table with its free end near said side guide and having its free end movable toward and from said conveying mechanism, substantially as set forth.

6. The combination with a wiping-brush and a conveying mechanism whereby the cans are carried past said brush, of a horizontal, rotary feed-table arranged adjacent to the receiving portion of said conveying mechanism, a side guide which confines the cans to the feed-table on the delivery side thereof, a guide-arm arranged above the feed-table and pivoted to swing toward and from said conveying mechanism, and a spring which presses said arm toward the conveying mechanism, substantially as set forth.

7. The combination with a wiping-brush and a conveying mechanism provided with laterally-projecting flights whereby the cans are carried past said brush, of a horizontal, rotary feed-table arranged adjacent to the receiving portion of said conveying mechanism, guides forming a throat over the feed-table through which the cans pass to the conveying mechanism, and a movable controller-arm which is shifted by the flights of the conveying mechanism to obstruct said throat when a flight is opposite the same, substantially as set forth.

8. The combination with the wiping-table, the wiping-brush, and the conveyer provided with flights whereby the cans are carried to the brush, of a rotary feed-table arranged adjacent to the conveyer, a side guide arranged along the delivery side of the feed-table, a pivoted longitudinal guide overlying the opposite side of the feed-table and separated from the side guide by a throat through which the cans are carried by the feed-table to the conveyer, and a pivoted controller-arm arranged adjacent to said side guide and adapted to be engaged by the flights of the conveyer and shifted across said throat, substantially as set forth.

9. The combination with a wiping-brush, and a conveyer whereby the cans are carried past said brush, of a bottom guide adapted to engage with the lower part of the cans on one side thereof, and a tilting-guide adapted to engage with the upper part of the cans on the opposite side thereof, substantially as set forth.

10. The combination with the wiping-brush, and the conveyer whereby the cans are carried past the brush, of a longitudinal bottom guide-rail arranged on one side of the can-channel and adapted to engage with the lower part of the cans on one side thereof, and a longitudinal top guide-rail arranged on the opposite side of the can-channel and adapted to engage with the upper part of the cans on the opposite side thereof, the horizontal distance between the faces of said rails being less than the diameter of a can, substantially as set forth.

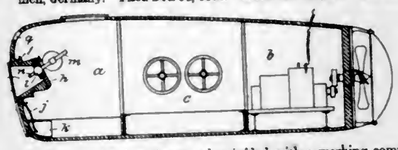
11. The combination with the wiping-brush, and the conveyer whereby the cans are carried past the brush, of a bottom guide-rail arranged to engage with the lower part of the cans on one side thereof, a top retaining-rail arranged above said bottom rail and adapted to support the upper part of the cans on the same side, and a tilting top rail arranged on the opposite side of the can-channel and adapted to engage with the upper part of the cans on the opposite side thereof, substantially as set forth.

657,217. SIGN. WILLIAM HERRER, Pittsburg, Pa. Filed July 27, 1897. Serial No. 646,065. (No model.)



Claim.—The herein-described method for manufacturing signs which consists in first providing a metallic plate with a suitable open design and coating one of its faces with an adhesive material then placing the same on a heated block, second applying to the coated face thereof a celluloid wafer, third applying to the back face of the celluloid wafer a thin sheet of rubber, fourth applying to the sheet of rubber a suitable backing of a flexible metallic plate and fifth in compressing the said parts together to force a portion of said celluloid into the open design to form the finished sign, substantially as and for the purpose set forth.

657,218. SUBMARINE APPARATUS. AUGUST VON HOFFMANN, Munich, Germany. Filed Dec. 31, 1898. Serial No. 700,821. (No model.)



Claim.—1. A submarine vessel provided with a working compartment having a chamber adapted for communication with the surrounding water, a universal support for a wrecking-tool or other device mounted in said chamber, a tank, and water connections between the tank and chamber.

2. A submarine vessel provided with a working compartment having a chamber, a door closing the chamber from the surrounding water, a door also closing the chamber from said compartment, a tank, and water connections between the tank and the said chamber.

3. A submarine vessel provided with a working compartment having a chamber, a door closing the chamber from the surrounding water, a hinged door closing the chamber from the compartment, and a universal support for a wrecking-tool or other device mounted in said latter door.

4. A submarine vessel provided with a working compartment having a chamber setting in from the wall thereof, means for closing the chamber from the working compartment, a sliding door for closing the chamber from the surrounding water, a frame for guiding the sliding door and

means for clamping the said frame against the vessel to secure the door tightly against the side of the vessel.

5. A submarine vessel provided with a working compartment having a chamber setting in from the wall thereof, means for closing the chamber from the working compartment, a sliding door for closing the chamber from the surrounding water, a frame hinged to the outside of the vessel for guiding the sliding door, and a screw projecting through the vessel and engaging the free end of the hinged frame to cause the frame to tightly secure the sliding door against the side of the vessel, substantially as set forth.

6. A submarine vessel provided with a working compartment having a chamber, a door closing the chamber from the surrounding water, a door closing the chamber from the compartment, a universal support for a wrecking-tool or other device mounted in said latter door, and a rotatable longitudinally-movable tube held in said support.

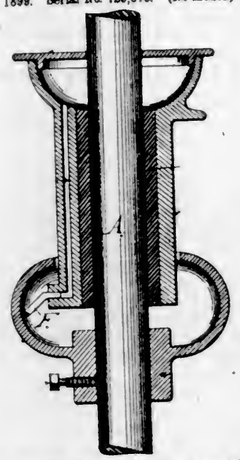
7. A submarine vessel provided with a working compartment having a chamber, a door closing the chamber from the surrounding water, a door closing the chamber from the compartment, a universal support for a wrecking or other implement mounted in the latter door, a rotatable longitudinally-movable tube held in said support, and a rotatable longitudinally-movable rod supported in the tube.

8. A submarine vessel provided with a working compartment having a chamber, a door closing the chamber from the surrounding water, a door closing the chamber from the compartment, a universal support for a wrecking or other implement mounted in said latter door, a rotatable longitudinally-movable tube held in said support, a rotatable longitudinally-movable rod in the tube, and means on the tube for operating the rod.

9. A submarine vessel provided with a working compartment having a chamber, a door closing the chamber from the surrounding water, a door closing the chamber from the compartment, a universal support for a working implement mounted in the latter door, a rotatable longitudinally-movable implement-holder working in said support, and means for elevating and lowering the position of said holder.

10. A submarine vessel provided with a working compartment having a chamber setting in from the wall thereof, a door closing the chamber from the surrounding water, a door closing the chamber from the compartment, a universal support for a working implement mounted in the latter door, a rotatable longitudinally-movable implement-holder working in said support, and a rack and pinion for elevating and lowering the position of said holder.

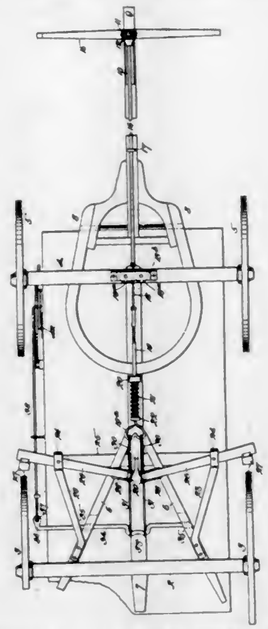
657,219. LUBRICATOR. BYRON JACKSON, San Francisco, Cal. Filed Sept. 7, 1899. Serial No. 729,676. (No model.)



Claim.—An improved lubricator including a revoluble shaft, a flange or collar secured thereto and formed with a cup having a rounded interior and having one end open, a second cup surrounding the shaft and a bearing formed rigid therewith and entering the open end of the first-named cup, but without contacting therewith, and having a passage through it, an annular loose cover for the second cup through which the shaft loosely passes, and a bent tube having its open end lying close to the inner wall of the first-named cup.

657,220. SELF-OPERATING WAGON-BRAKE. EDY JENKINS, Cullison, Kans. Filed Mar. 20, 1900. Serial No. 9,354. (No model.)

Claim.—1. A device of the character described, comprising a bar extending transversely of and upon the reach and rear hounds of the wagon, a pair of brackets secured to said hounds and provided with loops at their front ends secured to and embracing the ends of said bar, a pair of brake-beams extending through and pivoted in the loops of said brackets, and provided with shoes at their outer ends, a lever mounted on the tongue and carrying the neck-yoke bar, a pull-rod connected to said lever, a pull-rod 19 connected to the first-named pull-rod, links connecting the inner ends of the brake-beams with said pull-rod 19, a spring engaging pull-rod 19 and holding the brake-shoes away from the wheels, and means for locking the brake-shoes away from the wheels, substantially as described.



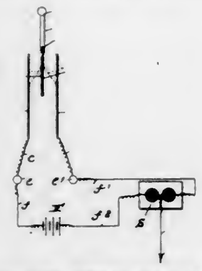
2. A device of the character described, comprising a bar extending transversely of and upon the reach and rear hounds of the wagon, a pair of brackets secured to said hounds and provided with loops at their front ends secured to and embracing the ends of said bar, a pair of brake-beams extending through and pivoted in the loops of said brackets, and provided with shoes at their outer ends, a lever mounted on the tongue and carrying the neck-yoke bar, a pull-rod connected to said lever, a pull-rod 19 connected to the first-named pull-rod, links connecting the inner ends of the brake-beams with said pull-rod 19, a spring engaging pull-rod 19 and holding the brake-shoes away from the wheels, a crank-shaft linked to the brake-beams, a lever pivoted to the wagon and connected to the crank-shaft, and means for locking said lever with the brakes released or applied, substantially as described.

3. A device of the character described, comprising a cross-bar secured to the reach and rear hounds of the wagon, brackets secured to said hounds and provided with loops embracing the ends of said bar, brake-beams extending through the pivoted end of said brackets and provided with brake-shoes, a pull-rod linked to the brake-beams, a spring normally holding the said pull-rod at its rearmost limit of movement, a pull-rod slidably carried by the tongue, a flexible connection between said pull-rods, guide-pulleys for said flexible connection, a lever pivoted to and fitting over the tongue and connected to the front end of the last-named pull-rod, and provided at its upper end with an elongated loop 13, and the neck-yoke bar extending through said loops and loosely suspended from the lever, substantially as described.

657,221. STATIC RELAY. ISIDOR KITSEE, Philadelphia, Pa., assignor to Charles E. Wilson, same place. Filed May 20, 1899. Renewed Mar. 17, 1900. Serial No. 9,109. (No model.)

Claim.—1. In electricity a relay consisting of conducting-leaves in juxtaposition to conductors connected with the interposition of a battery to an electromagnetic device and to the ground, said conducting-leaves

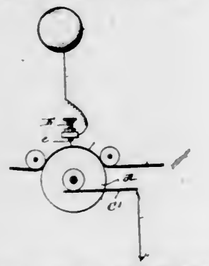
being provided with means for connecting the same to one terminal of the receiving-circuit.



2. In electricity a relay consisting substantially of an electroscope provided with conductors in juxtaposition to the conducting-leaves, said conductors being electrically connected to a local circuit containing a generator of electricity and an electromagnetic device said circuit being also connected to the ground.

3. In electricity, a relay consisting of conducting foil or leaves inserted in a partially-exhausted tube, said leaves being provided with means to connect the same with the terminal of a circuit, in combination with conductors placed in juxtaposition to said foil or leaves, the conductors being connected to a local circuit including a battery and electromagnetic device.

657,222. WIRELESS OR SPACE TELEGRAPHY. ISIDOR KITSEE, Philadelphia, Pa., assignor to Charles E. Wilson, same place. Filed May 20, 1899. Renewed Mar. 12, 1900. Serial No. 8,399. (No model.)

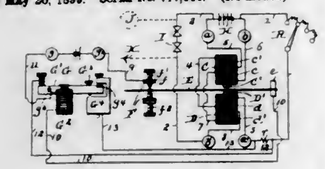


Claim.—1. In space telegraphy a receiving instrument consisting of a chemically-prepared paper resting on a metallic support connected to the ground in combination with the terminal of the aerial conductor secured in juxtaposition to, but not in actual contact with, said paper, and means for carrying successively, successive parts of said paper between said support and aerial conductor.

2. In telegraphy a receiving instrument consisting of a chemically-prepared paper in electrical contact with one terminal of the receiving-circuit, the other terminal of the receiving-circuit being separated from said chemically-prepared paper by the interposition of a non-conducting body, one terminal of the receiving-circuit being connected to the air-line and the other terminal of the receiving-circuit being connected to the ground.

3. A receiving instrument for current-waves of high intensity consisting of a chemically-prepared paper and metallic support connected to one terminal of the receiving-circuit, an adjustable screw connected to the other terminal of the receiving-circuit and means for carrying the paper between said support and screw, said paper being in contact only with one terminal of said circuit, the terminals being connected, one to the aerial conductor and one to the ground

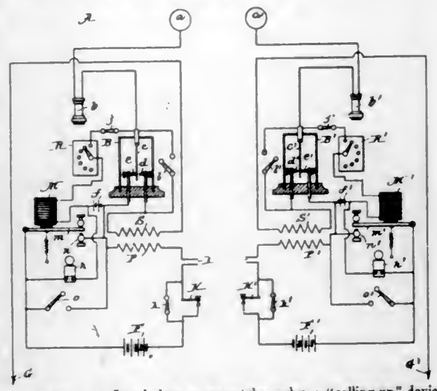
657,223. RECEIVING DEVICE FOR TELEGRAPHY. ISIDOR KITSEE, Philadelphia, Pa., assignor to Charles E. Wilson, same place. Filed May 20, 1899. Serial No. 717,616. (No model.)



Claim.—1. In wireless telegraphy, a receiving instrument consisting of a polarized and differential relay, one of the circuits of which is provided with microphonic material, the other circuit of which is provided with an adjustable resistance, a local circuit, an electromagnetic device placed therein, and a resistance in the latter relay-circuit adapted to be shunted through the action of the electromagnetic device, said local circuit being adapted to be closed through the action of said polarizing differential relay.

2. In space telegraphy, a receiving instrument consisting of a polarized and differential relay containing in one of its balances a device the resistance of which is decreased through the action of the incoming high-tension impulses of electricity, in combination with a local sounding device adapted to be actuated by the armature of said relay, said sounding device being adapted to open and close a shunt-circuit containing a resistance, and thereby restore the balance of said relay, the aerial conductor as well as the ground-wire being connected to said relay.

657,224. WIRELESS OR SPACE TELEGRAPHY. ISIDOR KITSEE, Philadelphia, Pa., assignor to Charles E. Wilson, same place. Filed Sept. 18, 1899. Serial No 730,876. (No model.)



Claim.—1. In wireless or space telegraphy, a "calling-up" device consisting of a movable conductor and two contact-points forming part of the receiving-circuit, one contact-point being also connected to a local battery and an electromagnetic device, the other pole of which is connected to the movable conductor, the second contact-point being connected to the ground.

2. In wireless or spaced telegraphy, a system consisting of two or more stations, provided each with means for automatically answering the call of the station transmitting.

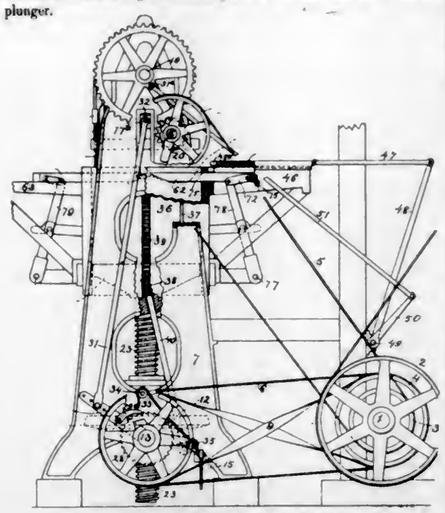
657,225. COTTON-COMPRESS. CHARLES E. MALLETT, New York, N. Y., assignor of one-half to Edmund Urquhart, same place, and Chas. T. Harbeck, Islip, N. Y. Filed Sept. 22, 1898. Renewed Jan. 23, 1900. Serial No. 2,512. (No model.)

Claim.—1. In a cotton-compress, the combination with the platen, the reciprocating plunger, and mechanism for laying the cotton between the platen and plunger, of a retaining device, movable laterally between the platen and plunger, means for holding said device positively against movement away from the platen, and operating mechanism connected to said retaining device for withdrawing and inserting said device between the platen and plunger.

2. In a cotton-compress, the combination with the platen, the reciprocating plunger, and mechanism for laying the cotton between the platen and plunger of a retaining-frame comprising a series of fingers movable laterally between the platen and plunger, means for holding said frame positively against movement away from the platen, and operating mechanism connected to said frame for withdrawing and inserting said fingers between the platen and plunger.

3. In a cotton-compress, the combination of the platen, the reciprocating plunger and its operating mechanism, and the inclosing box, of a retaining device movable laterally between the platen and plunger, means for holding said retaining device positively against movement away from the platen, and mechanism connected to the plunger-operating mechanism and to the retaining device, for withdrawing and inserting said device between the platen and plunger while the plunger is depressed, and holding it there while the plunger is raised.

4. In a cotton-compress, the combination of the platen, the reciprocating plunger and its operating mechanism, and the inclosing box, of a retaining device movable laterally between the platen and plunger, means comprising antifriction-rolls bearing against the retaining device, for holding said retaining device positively against movement away from the platen, and mechanism connected to the plunger and to said retaining device, for withdrawing and inserting said device between the platen and plunger.



5. In a cotton-compress, the combination of the platen, the reciprocating plunger, the box, and the pusher device supported on and sliding over the box, and adapted to lay and fold the cotton therein, of a cotton-retaining comb-frame sliding under the path of the pusher device, and provided with positive supports to prevent its movement toward the plunger, and operating mechanism connected to the plunger, the pusher device and the retaining comb-frame, to advance the pusher device over the box, thus laying a fold of cotton while the plunger is withdrawn from the platen, to withdraw the pusher device as the plunger is approached to the platen, and to withdraw and reinsert the retaining devices when the plunger is approached to the platen, and to hold said comb-frame over the cotton in the box while the plunger is raised.

6. In a cotton-compress, the combination with the platen, the plunger, the box surrounding the platen, mechanism for longitudinally moving the box, a cotton-retaining frame supported in guides on the box and movable laterally into and out of the box and mechanism for operating such frame, comprising a detachable connection, substantially as set forth.

7. In a cotton-compress, the combination with the platen, the reciprocating plunger provided with grooves, retaining-frames having fingers movable laterally between the plunger and platen and engaging in the aforesaid grooves, and operating mechanism connected to the plunger and to the said retaining-frames, and acting to insert the fingers in the grooves of the plunger when the latter is depressed.

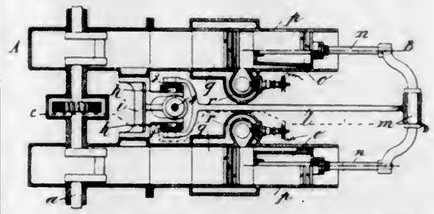
8. In a cotton-compress, the combination with the platen, the reciprocating plunger and the pusher device for folding the bat, reciprocating between the platen and plunger of a device for holding the fold of the bat as it is left by the pusher device, consisting of a drop-frame, and a trip-support for same carried by the plunger and engaging with the said drop-frame when the plunger is lifted, and engaged by said pusher device to trip and release the drop-frame.

9. In a cotton-compress, the combination with the platen, the reciprocating plunger and the pusher device for folding the bat, reciprocating between the platen and plunger of a device for holding the fold of the bat as it is left by the pusher device, consisting of a drop-frame carrying pins, and a trip-support for said frame, carried by the plunger and engaging with the said drop-frame when the plunger is lifted, and engaged by said pusher device to trip and release the drop-frame.

10. In a cotton-compress, the combination with the reciprocating plunger, of the platen movable in line with the motion of the plunger, a screw-post and gearing for operating said platen, means for operating said gearing, reversing and release mechanism for said operating means, ratchet mechanism connected with the said gearing, means for operating said ratchet mechanism in accordance with the motions of the plunger, and a disconnecting means for said ratchet mechanism connected to the aforesaid reversing and release mechanism, substantially as and for the purpose set forth.

11. In a cotton-compress, the combination with the reciprocating plunger and plunger-operating mechanism, of the platen movable in line with the motion of the plunger, manually-controlled operating mechanism independent of the plunger-operating mechanism for moving the platen, means controlled by the movement of the plunger away from the platen to effect movement of the platen away from the plunger, and means for disconnecting the operating connection between the plunger and platen when the manual controlling mechanism for the platen is brought into operation.

657,226. MULTIPLE-PISTON EXPLOSION-MOTOR. MARIUS F. MARMONIER, Lyons, France. Filed Aug. 31, 1899. Serial No. 729,084. (No model.)



Claim.—1. The combination with an explosion-motor having one or more cylinders and having variable admission and expansion, of a second piston in each cylinder, connected by means of a connecting-rod to a link provided with a screw-nut through which passes a screw provided with a Cardan joint, an axle carrying a pinion-wheel, a slide-block, a connecting-rod suitably attached to said slide-block and provided with a groove, and a friction-roller which travels in the groove, of a cam which turns only half so fast as the axle of the motor and the groove upon which half of its circumference is concentric with and upon the other half is inclined toward the center of the axle.

2. The combination with an explosion-motor having one or more cylinders and having variable admission and expansion, of a second piston in each cylinder connected by means of a connecting-rod to a link provided with a screw-nut through which passes a screw provided with a Cardan joint, an axle provided with a screw which engages with a toothed sector, a lever mounted upon the same axle, and a connecting-rod joining said lever to the igniting device.

3. The combination with an explosion-motor having one or more cylinders and having variable admission and expansion, of a second piston in each cylinder, connected by means of a connecting-rod to a link provided with a screw-nut through which passes a screw provided with a Cardan joint, an axle provided with a conical wheel gearing with another conical wheel upon the axle of which is mounted a friction-roller, which is intermittently controlled by means of two other conical friction-wheels mounted upon a tube which is shifted in axial direction by a regulator.

4. The combination with an explosion-motor having one or more cylinders and having variable admission and expansion, of a second piston in each cylinder connected by means of a connecting-rod to a link, a slide-block the upper extremity of which is connected by means of a connecting-rod to a lever which by means of a small connecting-rod controls a piston of a pump for pumping liquid hydrocarburet which is provided with a second piston controlled by a small connecting-rod, a lever, and a link which is connected to the rod of the auxiliary piston.

5. The combination with an explosion-motor having one or more cylinders and having variable admission and expansion, of a second piston in each cylinder connected by means of a connecting-rod to a link provided with a screw-nut through which passes a screw provided with a Cardan joint, an axle provided with a pinion-wheel, a slide-block, a link suitably attached to said slide-block and provided with a groove and a roller which travels in the groove of a cam upon the axle of which is mounted another cam which controls two levers placed at a right angle, one of which is connected to an angle-lever, and above one of its extremities is arranged a discharge-valve in a valve-chest, the second lever actuating another lever, the axis of which, where it enters the valve-chest, carries a lever connecting by means of a socket with the rod of the discharge-valve, a spring being placed between said socket and a washer fixedly secured upon the end of the valve-rod.

6. The combination of a motor-shaft *a*, a gear-wheel thereon, a shaft *b*, a gear thereon meshing with the first gear-wheel and of twice the circumference of the first gear-wheel, a disk *c* on shaft *b* having a cam-groove *g* one half of which is concentric with shaft *b*, the other half bending in toward shaft *b*, link *f*, a pivot *h* therefor, a block movable in the link, a nut connected to said block, a screw *l* for moving said nut, the screw being adapted to swing with the link, means for turning the screw, arm *e* connected to the link, block *d* carried by arm *e* and extending into

cam-groove *g*, said groove controlling arm *e* and link *f*, one or more motor-cylinders *p*, a main piston *q* and an auxiliary piston *o* for each cylinder, a piston-rod *n* for each auxiliary piston, a rod *l* between the piston rod or rods *n* and the slide-block *j*, for transferring motion from the link to rod or rods *n* and piston or pistons *o*, the extent of such movement depending on the adjustment of block *j*, a valve-chest for each cylinder and communicating therewith between the main and auxiliary pistons, admission and exhaust valves in the valve-chests, and means for controlling said valves.

7. The combination of a motor-shaft *a*, a gear-wheel thereon, a shaft *b*, a gear thereon meshing with the first gear-wheel and of twice the circumference of the first gear-wheel, a disk *c* on shaft *b* having a cam-groove *g* one half of which is concentric with shaft *b*, the other half bending in toward shaft *b*, link *f*, a pivot *h* therefor, a block movable in the link, a nut connected to said block, a screw *t* for moving said nut, the screw being adapted to swing with the link, means for turning the screw, arm *e* connected to the link, block *d* carried by arm *e* and extending into cam-groove *g*, said groove controlling arm *e* and link *f*, one or more motor-cylinders *p*, a main piston *q* and an auxiliary piston *o* for each cylinder, a piston-rod *n* for each auxiliary piston, a rod *l* between the piston rod or rods *n* and the slide-block *j*, for transferring motion from the link to rod or rods *n* and piston or pistons *o*, the extent of such movement depending on the adjustment of block *j*, a valve-chest for each cylinder and communicating therewith between the main and auxiliary pistons, admission and exhaust valves in the valve-chests, means for controlling said valves, an ignition device, and means for adjusting it operated automatically by the means which turn screw *t* to adjust nut *k*.

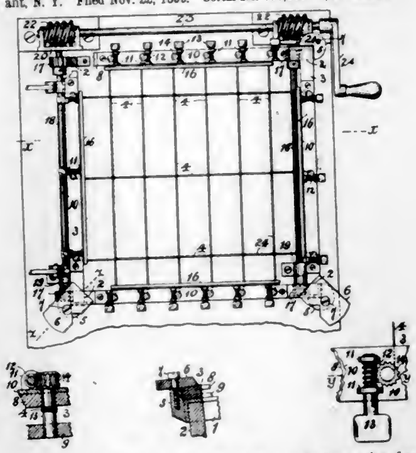
8. The combination of a motor-shaft *a*, a gear-wheel thereon, a shaft *b*, a gear thereon meshing with the first gear-wheel and of twice the circumference of the first gear-wheel, a disk *c* on shaft *b* having a cam-groove *g* one half of which is concentric with shaft *b*, the other half bending in toward shaft *b*, link *f*, a pivot *h* therefor, a block movable in the link, a nut connected to said block, a screw *t* for moving said nut, the screw being adapted to swing with the link, means for turning the screw, arm *e* connected to the link, block *d* carried by arm *e* and extending into cam-groove *g*, said groove controlling arm *e* and link *f*, one or more motor-cylinders *p*, a main piston *q* and an auxiliary piston *o* for each cylinder, a piston-rod *n* for each auxiliary piston, a rod *l* between the piston rod or rods *n* and the slide-block *j*, for transferring motion from the link to rod or rods *n* and piston or pistons *o*, the extent of such movement depending on the adjustment of block *j*, a valve-chest for each cylinder and communicating therewith between the main and auxiliary pistons, admission and exhaust valves in the valve-chests, means for controlling said valves, an ignition device, and means for adjusting it consisting of shaft *s*, means for turning said shaft, sector *b'*, arm *d'*, rod *e'*, operated automatically by the means which turn screw *t* to adjust nut *k*.

9. The combination of a motor-shaft *a*, a gear-wheel thereon, a shaft *b*, a gear thereon meshing with the first gear-wheel and of twice the circumference of the first gear-wheel, a disk *c* on shaft *b* having a cam-groove *g* one half of which is concentric with shaft *b*, the other half bending in toward shaft *b*, link *f*, a pivot *h* therefor, a block movable in the link, a nut connected to said block, a screw *t* for moving said nut, the screw being adapted to swing with the link, means for turning the screw, arm *e* connected to the link, block *d* carried by arm *e* and extending into cam-groove *g*, said groove controlling arm *e* and link *f*, one or more motor-cylinders *p*, a main piston *q* and an auxiliary piston *o* for each cylinder, a piston-rod *n* for each auxiliary piston, a rod *l* between the piston rod or rods *n* and the slide-block *j*, for transferring motion from the link to rod or rods *n* and piston or pistons *o*, the extent of such movement depending on the adjustment of block *j*, a valve-chest for each cylinder and communicating therewith between the main and auxiliary pistons, admission and exhaust valves in the valve-chests, means for controlling said valves, an ignition device, and means for adjusting it operated automatically by the means which turn screw *t* to adjust nut *k*, pump i^3 having a piston h^3, means for reciprocating it a fixed distance, a second piston o^3, and means for moving it a variable distance.

10. The combination in an explosion-motor of cylinders *p*, a shaft *a* having cranks, pistons *q*, rods between said pistons and cranks, auxiliary pistons *p* in the cylinders, inlet-valves for the explosive material communicating with cylinders *p* between the main and auxiliary pistons, shaft *b*, cams *h'* thereon, lever *m'* bearing on said cam and by suitable intermediate parts controlling the inlet-valve, an exhaust-valve *l'*, angle-lever *j'* one arm of which coöperates with the exhaust-valve rod, rod *i'*, angle-lever *f'* one end of which is connected to rod *z'*, the other end of which bears on cam *h'*, an ignition-cam on shaft *b*, rod *e*, segment *b'*, link *f* pivoted intermediate its ends, adjustable block *j* carried by the link, means for adjusting block *j*, piston-rods *n* for the auxiliary pistons, a cross-bar *m*, connecting-rod *l* pivoted to the cross-bar and to block *j*, a disk with cam-groove *g* on shaft *b*, said groove for half its length being concentric with shaft *b* near the periphery of the disk, the groove for the other half bending in toward the shaft *b* being nearest the shaft at the middle of this half of the groove, arm *e* at one end pivoted to link *f*, at the other end having an elongated slot through which shaft *b* passes, and block *d* secured to rod *e* and extending into groove *g*, said groove being so located that during the first or suction stroke of the pistons *q* block *d* moves through one-quarter of the groove to the part nearest the shaft *b*, whereby it will be in position to move outward and forward in the next quadrant of the groove during the compression-stroke, and to enter the concentric part of the groove for the explosion and the exhaust strokes.

11. The combination in an explosion-motor having one or more cylinders and variable admission and expansion, of a working piston for each cylinder, a second piston in each cylinder, a rod for each of the second pistons, a connecting-rod *l*, a pivoted link, a slide-block therefor to which rod *l* is connected, an axle *a*, and means operated by rotation of said axle to swing said link.

657,227. BUTTER-CUTTER. RICHARD F. STEWART, Mount Pleasant, N. Y. Filed Nov. 22, 1899. Serial No. 737,860. (No model.)



Claim.—1. A butter-cutter comprising a vertically-moving frame carrying cutting-wires across its top, having mechanism by which the frame is drawn down on the butter, whereby the wires are caused to pass through the butter, and cut the latter into vertical strips, and a horizontally-moving frame, connected to and moving with the vertical cutting-frame, and carrying a cutting-wire, and arranged and adapted to be drawn across the block of butter and cut the latter, substantially as described.

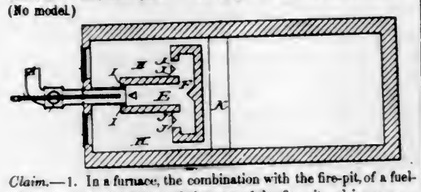
2. In a butter-cutter, in combination, a vertically-moving frame, having cutting-wires across the top; mechanism by which the frame is drawn down whereby the wires are forced vertically through the butter; a horizontally-moving frame, having a cutting-wire, and arranged and adapted to be drawn across the vertically-moving frame whereby the butter is cut horizontally; and means by which the horizontally-moving frame is held on and secured to the vertically-moving frame, substantially as described.

3. In a butter-cutter, in combination, the vertically-moving frame 1, connected at each corner with the upright standards 2; detachable frame 3 provided with cutting-wires, and arranged to be secured to the frame 1; and mechanism whereby the standards 2 are drawn down with the frames 1 and 3, and the cutting-wires forced vertically through the butter, substantially as described.

4. In a butter-cutter, in combination, a vertically-moving frame; mechanism by which the frame is drawn down; a second frame detachably secured to the first frame, and provided with cutting-wires, whereby as the frame is drawn down, the wires are forced vertically through the butter; a horizontally-moving frame, provided with a cutting-wire, and arranged and adapted to be drawn across the vertically-moving frames, whereby the wire is forced horizontally through the butter; and means by which the horizontally-moving frame is held on and secured to the vertically-moving frames, substantially as described.

5. In a butter-cutter; in combination, the vertically-moving frame 1; the second frame 3; having the wires 4 secured thereto by the key-screws 12, whereby the wires are drawn tight across the frame; means by which the frame 3 is detachably secured to frame 1; mechanism connected to frame 1 whereby the frames are drawn down, and the wires 4 forced vertically through the butter; frame 26 hinged to frame 1 and arranged to rest horizontally on the latter frame, and frame 38, provided with the wire 42, and connected to and adapted to be drawn horizontally across the frame 26 whereby the wire 42 is forced in a horizontal direction through the butter, substantially as described.

657,228. BURNING PULVERIZED AND LIQUID HYDROCARBONS FOR FUEL AND HEATING. SAMUEL M. TRAPP, Tacoma, Wash., assignor of three-fourths to W. H. Remington, Chester Thorne, and Amos E. Brown, same place. Filed Aug. 16, 1899. Serial No. 727,415 (No model.)



Claim.—1. In a furnace, the combination with the fire-pit, of a fuel-flue leading from the front toward the rear of the fire-pit and in communication with the fire-pit for the intake of an igniting agent from the pit into the flue to ignite the fuel in the flue, and a deflector at the discharge end of the flue located to direct the flame from the flue toward the front of the pit, substantially as described.

2. In a furnace, the combination with the fire-pit, of a fuel-flue leading from the front toward the rear of the pit, the rear of the flue having laterally-extending portions formed with ports for directing the flame from the flue toward the front of the pit, and means for drawing an igniting agent from the fire-pit into the portion of the flue in advance of its laterally-extending portions, substantially as described.

3. In a furnace, the combination with the fire-pit, of a fuel-flue leading from the front toward the rear of the pit and at the rear portion having discharge-ports opening toward the front of the pit to direct the flame from the flue, toward the front of the pit, said flue having at its forward portion inlet-openings communicating with the fire-pit for creating an inward suction from the fire-pit into said flue, substantially as described.

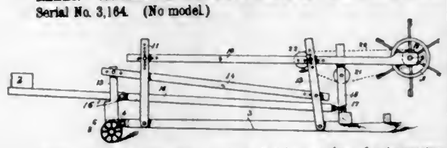
4. In a furnace, the combination with the fire-pit, of a fuel-flue leading from the front toward the rear of the pit, said flue having inlet-openings at its forward portion communicating with the fire-pit to create a suction from the pit into the flue and provided at its rear portion with flame-discharge ports, substantially as described.

5. In a furnace, the combination with the fire-pit, of a fuel-flue leading from the front toward the rear of the pit, said flue having inlet-openings at its forward portion communicating with the fire-pit to create a suction from the pit into the flue and provided at its rear portion with flame-discharge ports, and means for directing an air-blast into the flue, substantially as described.

6. In a furnace, the combination with a fuel-flue in communication with the fire-pit, of a pulverizing-mill communicating with the fuel-flue, said mill being provided with a damper to regulate the flow of the material and having a rotary feed-wheel above the damper, substantially as described.

7. In a furnace, the combination with a fuel-flue in communication with the fire-pit, of a pulverizing-mill communicating with the fuel-flue, said mill being provided with a damper to regulate the flow of the material and a pulverized-fuel-containing chamber above the damper provided with an overflow-opening for the discharge of excess of fuel, substantially as described.

657,229. AUTOMATIC ADJUSTMENT FOR HARVESTER-REELS. SHADRACH M. WARDER, Winters, Cal. Filed Jan. 29, 1900. Serial No. 3,164. (No model.)



Claim.—1. The combination with a header portion of a harvester mechanism of a reel, of a frame within which the reel is journaled and mechanism by which the reel is raised and advanced in unison with the raising of the header-frame, said mechanism including pivoted links at the rear end and between the front and rear ends of the reel-frame and means for operating the links.

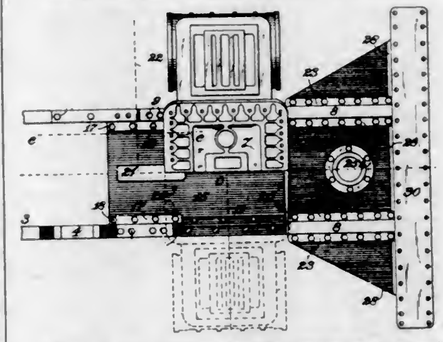
2. In combination with a header, of a reel adapted to sweep the standing grain toward the sickle, a reel-frame, pivoted links connecting the frame with the header, and means connecting the links and having a fixed fulcrum whereby the raising and lowering of the header acts to raise and advance or lower and retract the reel in unison.

3. The combination with the header portion of a harvesting apparatus, and means by which the sickle-bar thereof is raised or depressed, of a reel adapted to sweep the grain toward the sickle-bar, reel-timbers to the front end of which the reel-shaft is journaled, links supporting said reel-timbers at the rear and at points intermediate between the rear and front ends, and bars having their rear ends fulcrumed upon the stationary part, their front ends connected with the forward supporting-links of the reel-frame.

4. The combination with a header adapted to be raised and lowered to suit different heights of grain, of a reel, rearwardly-extending timbers in the front end of which the reel-shaft is journaled, links pivoted to the header-frame extending upwardly and having the reel-frame timbers pivoted thereto, bars having their rear ends pivoted to the header-frame support and the front end connected with a pair of the reel-frame-supporting links whereby the reel is thrown upward and forward with the raising of the header-frame, and downward and backward when it is lowered.

5. In combination with a header-frame adapted to be raised and lowered, of a reel, rearwardly-extending frame-timbers in the front of which said reel is journaled, links pivoted to the header-frame timbers in pairs, one pair being pivotally and adjustably connected with the rear of the reel-frame, and the other pair pivotally and adjustably connected with the reel-frame intermediate between its front and rear ends, bars fulcrumed at one end to the header-frame and having the other ends connected with one pair of the reel-frame, supporting-links whereby the latter are tilted about their pivot-points and move the reel-frame upward and forward, or downward and backward in unison with the movements of the header-frame.

657,230. LOCOMOTIVE-FRAME. DANIEL A. WIGHTMAN, Pittsburg, Pa. Filed June 28, 1900. Serial No. 21,884. (No model.)



Claim.—1. In a locomotive-frame, the combination of two main frame side members, a pair of cylinders having interposed saddles, a transverse cylinder-frame brace extending below the saddles, from the front thereof to or near the forward pedestals of the frame, connections securing the cylinder-frame brace to the side frame members, and connections independently securing the cylinder-frame brace to the saddles.

2. In a locomotive-frame, the combination of two main-frame side members, a pair of cylinders having interposed saddles, a transverse cylinder-frame brace located adjacent to the horizontal plane of the axes of the cylinders and extending from the front of the saddles to or near the forward pedestals of the frame, connections securing the cylinder-frame brace to the side frame members, and connections independently securing the cylinder-frame brace to the saddles.

3. In a locomotive-frame, the combination of two main-frame side members, two forward frame bars or rails, and a transverse cylinder-frame brace, interposed at its sides between, and connected to, the main-frame side members and the forward frame-bars, and extending from the plane of the front of the saddles to or near the forward pedestals of the frame.

4. In a locomotive-frame, the combination of two main-frame side members, each having a lower horizontal flange on its inner side, two forward frame bars or rails, each having an upper horizontal flange on its inner side, and a transverse cylinder-frame brace interposed at its sides between, and connected to, the flanges of the main-frame side members and of the forward frame-bars.

5. In a locomotive-frame, the combination of two main-frame side members, upper and lower forward frame bars or rails, secured to the side frame members and having horizontal flanges on their adjacent faces, and a transverse front brace-plate, interposed at its sides between, and secured to, the flanges of the forward frame-bars, and extending from the front ends thereof to or near the plane of the front of the saddles.

6. In a locomotive-frame, the combination of two main-frame side members, upper and lower forward frame bars or rails secured to the side

frame members, a transverse front brace-plate interposed at its sides between, and secured to, the forward frame-bars, and extending from the front end thereof to or near the plane of the front of the saddle, a bumper-beam composed of two channel members and interposed distance-blocks, and angle-bars secured to the front brace-plate and to the adjacent channel member of the bumper-beam.

7. In a locomotive-frame, the combination of an upper main-frame bar or rail, downwardly-depending jaws or pedestals, a vertical saddle-bearing projecting downwardly from the upper main-frame bar, at the forward end thereof, and a lower frame bar or rail connecting the lower end of the saddle-bearing with the adjacent jaw.

8. In a locomotive-frame, the combination of an upper main-frame bar or rail, downwardly-projecting jaws or pedestals, a lower main-frame bar or rail projecting in advance of the forward jaw, and a vertical member interposed between and connecting the forward ends of the upper and lower main-frame bars, and forming therewith and with the forward jaw, an integral rectangular structure.

657,231. FIFTH-WHEEL. FRANK E. WILCOX, Mechanicsburg, Pa. Filed June 28, 1900. Serial No. 21,926. (No model.)



Claim.—1. The combination in a fifth-wheel, of a top plate; a bottom plate in connection with the axle; a coupling comprising a cylindrical portion with an integral radial flange at one end thereof; and means adjustably holding the parts together; the cylindrical portion of the said coupling passing through one of the plates and engaging the other plate, and the flange of the coupling bearing against the surface of one of the plates.

2. The combination in a fifth-wheel, of a top plate; a bottom plate in connection with the axle; a coupling comprising a cylindrical portion with an integral radial flange at one end thereof; and a bolt for holding the parts together; the cylindrical portion of the said coupling passing through one of the plates and engaging the other plate, and the flange of the coupling bearing against the surface of one of the plates.

3. The combination in a fifth-wheel, of a top plate; a bottom plate in connection with the axle; a coupling comprising a cylindrical portion with a radial flange at one end thereof; and means for holding the plates and coupling united; the cylindrical portion of the said coupling passing through the bottom plate and engaging the top plate, and the flange of the coupling frictionally bearing against the surface of the bottom plate.

4. The combination in a fifth-wheel, of a top plate; a bottom plate having a circular groove in its under surface; and a cylindrical coupling passing through the bottom plate and engaging the top plate and having a circular flange fitting the groove in the bottom plate.

5. The combination in a fifth-wheel having its center of rotation back of the axle, of a top plate; a bottom plate; and a cylindrical coupling passing through one of the plates and frictionally engaging the other plate; one of said plates having recesses each side of the center of rotation, and the other plate having lugs adapted to fit and move within the said recesses.

6. The combination in a fifth-wheel, of a top plate; a bottom plate; and a coupling; said coupling interlocking with one of the plates by means of a dowel pin or pins.

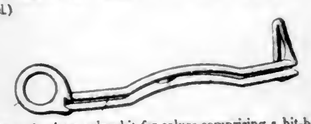
7. The combination in a fifth-wheel, of a top plate; a bottom plate; a cylindrical coupling passing through one of the plates and frictionally engaging the other plate and having a threaded bore; and a threaded binding-bolt.

8. The combination in a fifth-wheel, of a top plate; a bottom plate; a cylindrical coupling passing through one of the plates and frictionally engaging the other plate; a binding-bolt; and a spring or spring-washer to take up the wear of the parts and prevent rattling.

9. The combination in a fifth-wheel, of a top plate; a bottom plate; a coupling; a binding-bolt; and a spring or spring-washer surrounding the binding-bolt and located within a seat made in one of the plates.

10. The combination in a fifth-wheel having its center of rotation back of the axle, of a top plate having a seat for the end of the coupling; a bottom plate having a central hole or passage; and a cylindrical coupling having an enlarged head with a bearing-surface; said coupling being inserted through the bottom plate and engaging the seat in the top plate to which it is adjustably secured; the arrangement being such that the cylindrical coupling holds the top and bottom plates in frictional contact and the enlarged head of the coupling provides a bearing-surface for the under surface of the bottom plate.

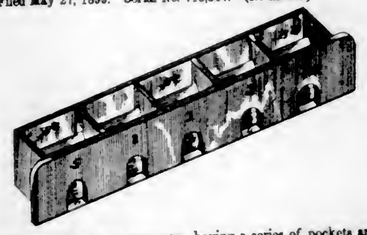
657,232. DEVICE FOR WEANING CALVES. HARRY ZIMMERMAN, Frederick, Md. Filed Nov. 17, 1899. Serial No. 737,351. (No model.)



Claim.—1. A weaning-bit for calves comprising a bit-bar having a longitudinal opening coextensive with the length of the bar and extending from its front to its rear side and eyes at the opposite ends of the said bar, substantially as described.

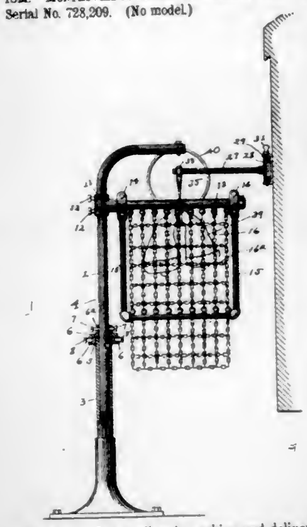
2. A weaning-bit for calves comprising a bit-bar having eyes at its opposite ends, said bit-bar comprising parallel members, separated to leave an opening between them, the opening being coextensive with the length of the bar and extending from its front to its rear side, the bit-bar being formed in a single rigid casting, substantially as described.

657,233. GAME APPARATUS. GEORGE E. ALLEN, Buffalo, N. Y. Filed May 27, 1899. Serial No. 718,507. (No model.)



Claim.—In a game apparatus having a series of pockets arranged side by side, each provided in the lower portion of its front wall with an aperture for the admission of a marble, the combination with the pocket, of a trap-door arranged lengthwise in the pocket and pivoted transversely in a line higher than the bottom of said entrance-aperture, said trap-door being overbalanced at its front end and supported normally in a position in which it ascends rearwardly from the bottom of the entrance-aperture and being tilted rearwardly by the marble passing upon the rear portion of the door and held in a backwardly-descending position by the marble resting against the rear portion of the door, substantially as set forth.

657,234. MAIL-SACK CATCHING AND DELIVERING MECHANISM. MONTROVILL D. CUMMINGS, Columbus, Ohio. Filed Aug. 23, 1899. Serial No. 728,209. (No model.)



Claim.—1. In a mail-sack catching and delivering mechanism, the combination with a car, brackets on opposite sides of the car-doorway, a lever fulcrumed in said doorway and a rotatable arm jointedly connected with said lever, of a rod 27 having a pivotal connection with said arm and adapted to have one of its ends detachably connected with one of said car-brackets and a supporting device on the outer end of said rod 27 whereby a mail-sack may be removably suspended, substantially as specified.

2. In a mail-sack catching and delivering mechanism, the combination with a car, brackets on opposite sides of the car-doorway, a lever fulcrumed in said doorway and a rotatable arm jointedly connected with said lever, of a rod 27 having a pivotal connection with said rotatable arm and adapted to have one of its ends detachably connected with either of said brackets, a recessed block pivoted in said rod 27 and a trigger fulcrumed to and depending from said block, said trigger having hook-fingers adapted to temporarily retain a sack-holding ring in said block-recess, substantially as specified.

3. In a mail-sack catching and delivering mechanism, the combination with a car having a sack supporting and receiving arm, of a rotary crane, a frame-arm 13 supported therefrom, a U-frame having a retarded swinging support from said arm and chain-sections depending from the arm 13 and connected with the lower arm of the U-frame, substantially as specified.

4. In a mail-sack catching and delivering mechanism, the combination with a car having a sack catching and supporting device, of a crane-socket standard, a crane rotatably supported therein and brake-blocks adapted to retard the rotary movement of said crane, substantially as specified.

5. In a mail-sack catching and delivering mechanism, the combination with a car having a sack catching and supporting device, of a crane-socket standard, a crane rotatably supported therein, a collar 6* united with the crane-arm, said collar having clamp extensions, brake-blocks between said extensions and said socket-standard and set-screws extending through screw-holes in said clamp extensions and contacting with said brake-blocks, substantially as specified.

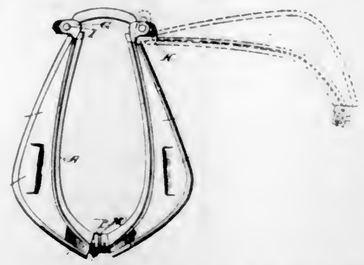
657,235. REFRACTORY INCANDESCENT MANTLE OR HOOD. GUSTAVE DAUBENSPECK, London, England. Filed Apr. 13, 1900. Serial No. 12,769. (No model.)

Claim.—1. The improved process of manufacturing an incandescent mantle or hood consisting in dipping a filament or framework of filaments in a solution of a salt of calcium; drying the same; then dipping the same in a superacidified solution of salts of aluminium and magnesium; drying the same; and finally subjecting the mantle or hood to the heat of a powerful flame for the completion of the reaction of the free acid of said superacidified solution on said salts of calcium aluminium and magnesium, and the combustion of the organic and carbonaceous matter of the framework of filaments.

2. In the manufacture of an incandescent mantle or hood, the treatment of a filament or framework of filaments already covered by a deposit of a calcium salt by dipping the same in a superacidified solution composed of approximately seventy-four parts of nitrate of aluminium, twenty-three parts of nitrate of magnesium, and three parts of hydrochloric acid, drying the same, and finally heating the whole in a powerful flame until the salts of calcium, aluminium and magnesium are converted into an oxid or oxids in the presence of the free acid of said superacidified solution.

3. An incandescent mantle or hood formed of a salt of calcium treated in the manner set forth with a superacidified solution of salts of aluminium and magnesium, and composed exclusively of oxids of calcium, aluminium and magnesium, substantially as hereinbefore specified.

657,236. HORSE-COLLAR. CHARLES A. FRENCH, Madison, Wis., assignor to W. D. Curtis, same place. Filed Sept. 13, 1898. Renewed Mar. 9, 1900. Serial No. 8,077. (No model.)



Claim.—1. A metallic horse-collar having its shoulder-pads formed of sheet metal with the edges drawn back out of position to contact with the horse's shoulder and front plates uniting the edges of the shoulder-pad, the inner edges of said front plates being bent forwardly to form a fore-wale: substantially as described.

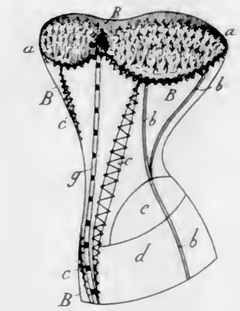
2. A horse-collar having its shoulder-pads formed of sheet metal with the edges drawn back out of position to contact with the horse's shoulder, and front plates having their inner edges bent forwardly to form the fore-wale, the outer edges of the front plates and shoulder-pads being rolled together in the form of a rigid bead, and the inner edges of the shoulder-pads being connected with the base of the fore-wale; substantially as described.

3. In a horse-collar the combination with the shoulder-pads having the upwardly-extending ears at the front side and pins carried in said ears, of the upwardly-extending ears at the rear side having the transversely-extending slots therein for confining the rear ends of the pins and the plates connecting said pins; substantially as described.

4. In a horse-collar the combination with the shoulder-pads or sections having the upwardly-extending ears, pins mounted in said ears, pivotal plates of substantially U shape in cross-section fitting one within the other, said plates having a series of registering apertures and a connecting-bolt having a head provided with projections for entering apertures adjacent to said bolt; substantially as described.

5. In a fastener for horse-collars, the combination with the two collar-sections of a socket formed in one section, provided with a dovetail recess and a projection formed on the coöperating section adapted to enter said socket, a transversely-moving pivoted latch adapted to unite said sections, provided with a dovetail projection on its inner side, adapted to enter the dovetail recess in the socket for relieving the strain on the pivot of the latch; substantially as described.

657,237. APPAREL-CORSET. CHARLES GUILLOT, Paris, France. Filed Jan. 19, 1900. Serial No. 2,012. (No model.)



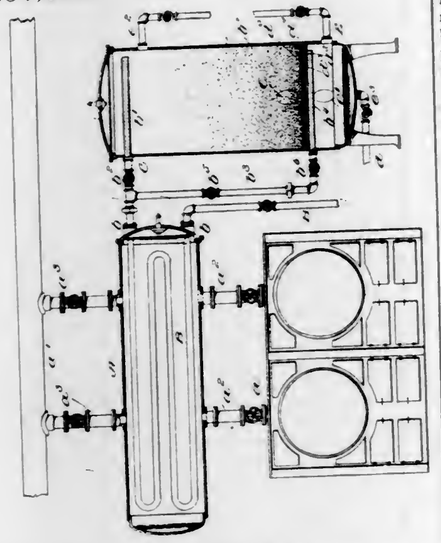
Claim.—An improved bodice, composed of a back portion cut bias and provided with four bones, side portions continuous with the back portion and each provided with two bones, elliptical side pieces *e* below the side portions, strips *d* below the side pieces, adapted to be drawn tightly around the hips, one of the bones on each side running down across the piece *e* and strip *d* over the hips, a front portion made in two parts each carrying one part of a busk extending down as low as the lower edge of the strip *d*, and lacings extending continuously between the side portions and strips *d* and the adjacent part of the front portion, whereby the waist will be drawn in in front, the size of the hips lessened, the abdomen supported, and elegance and suppleness imparted to the figure of the wearer.

657,238. FEED-WATER HEATER AND PURIFIER. THOMAS GUNNING, Pittsburg, Pa. Filed Jan. 13, 1900. Serial No. 1,310. (No model.)

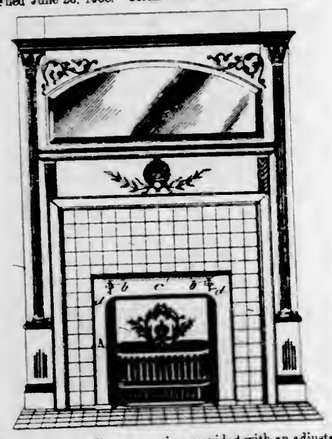
Claim.—1. The combination with a boiler or boilers, and an overhead steam-main, of a steam-chamber horizontally disposed above said boiler or boilers and intermediate of the latter and said main, pipes connecting said steam-chamber with said boiler or boilers, pipes connecting said steam-chamber with said steam-main, and a feed-water pipe extending into said steam-chamber and arranged tortuously therein, substantially as set forth.

2. The combination with a boiler or boilers, and an overhead steam-main, of a steam-chamber horizontally disposed above said boiler or boilers and intermediate of the latter and said main, pipes connecting said steam-chamber with said boiler or boilers, pipes connecting said steam-chamber with said steam-main, a feed-water pipe extending into and passed through said steam-chamber, a filter into which said feed-water pipe opens at one end, a filtering-bed located therein, and a pipe leading from the other end of said filter to said boiler or boilers, substantially as set forth.

657,238.



657,239. GRATE-FRAME. WILLIAM G. HARLOW, Yazoo City, Miss. Filed June 26, 1900. Serial No. 21,675. (No model.)



Claim.—1. A grate frame or casing provided with an adjustable tile-support.

2. In combination with a grate frame or casing, a tile-support at or near its upper end, and means for varying the vertical position of said support.

3. In combination with a grate frame or casing, a tile-support located at or near the upper end thereof upon its inner face, and means connected to said frame or casing for raising and lowering said support.

4. In combination with a grate frame or casing, a support e extending across the inner face thereof near its upper end, lugs extending inwardly from said face, and adjustable connections intermediate said lugs and the support.

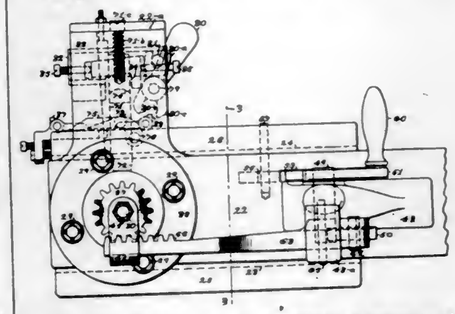
657,240. PROCESS OF TREATING INDIA-RUBBER, GUTTA-PERCHA, AND THEIR COMPOSITIONS. EUGEN HORNUNG and STEFAN HAMEL, Vienna, Austria-Hungary. Filed May 8, 1897. Serial No. 635,642. (No specimens.)

Claim.—1. The process, which consists in mixing a vulcanized oil of the fatty series with a gelatinous or glutinous substance insoluble in water, freeing the mixture from moisture, mixing therewith rubber or a compound thereof and subjecting the composition of matter to a vulcanizing temperature, for the purpose set forth.

2. The process, which consists in swelling a vulcanized oil of the fatty series with a volatile hydrocarbon, mixing the same with a gelatinous or glutinous substance insoluble in water, evaporating the hydrocarbon and moisture from the compound, mixing therewith rubber or a compound thereof and subjecting the composition of matter to a vulcanizing temperature, for the purpose set forth.

3. The herein-described composition of matter, consisting of rubber or a rubber compound, a gelatinous or glutinous substance insoluble in water, and a vulcanized oil of the fatty series, said compound free from water and containing no free sulfur, substantially as set forth.

657,241. DEVICE FOR AUTOMATICALLY CLAMPING AND LOCKING TURRETS TO SLIDES OF SCREW-MACHINES. JULIUS JETTER, Hartford, Conn. Filed Nov. 23, 1899. Serial No. 738,511. (No model.)



Claim.—1. In a machine of the class specified, in combination, the reciprocating slide, the turret, the locking-bolt borne in the slide, the rigid stop 84 adapted to engage and rest on the locking-bolt during the reciprocation of the slide and while the tools are in operation upon the work, and means for engaging and disengaging the stop from the locking-bolt at predetermined intervals substantially as described.

2. In a machine of the class specified, in combination, the reciprocating slide, the turret, the locking-bolt borne in the slide, means for effectively withdrawing the locking-bolt, the spring to return the same into the socket of the turret, and the solid stop to rigidly hold and press the locking-bolt in that position during the reciprocation of the slide and while the tools are in operation upon the work, substantially as described.

3. In a machine of the class specified, in combination, the reciprocating slide, the turret, the locking-bolt borne in the slide, means for effectively withdrawing the locking-bolt, the spring to return the same into the socket of the turret, the independent, rigid stop to effectively hold the bolt in operative engagement during the reciprocation of the slide, and while the tools are in operation upon the work, and means for engaging and disengaging the stop at predetermined intervals, substantially as described.

4. An attachment for screw-machines, in combination, the slide, the turret mounted on the slide, the locking-bolt carried in the slide and adapted to engage the turret, mechanism adapted to operate the locking-bolt, the auxiliary slide, the adjustable stop carried by the auxiliary slide, whereby the pressure of the stop upon the locking-bolt may be adjusted while the tools are in operation upon the work, and means for operating the auxiliary slide to engage and disengage the stop from the locking-bolt, substantially as described.

5. An attachment for screw-machines, in combination, the slide, the turret mounted on the slide, the locking-bolt carried in the slide and adapted to engage the turret, mechanism adapted to operate the locking-bolt, the auxiliary slide, the stop mounted in the auxiliary slide, and means whereby the stop may be adjusted to bear the greater or less pressure on the locking-bolt, substantially as set forth.

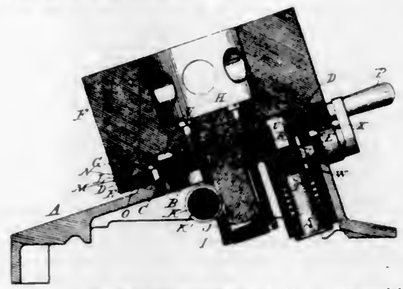
6. An attachment for turret-machines, in combination, the slide, the turret mounted thereon, automatic turret-clamping mechanism, whereby the turret is clamped at predetermined positions to the slide and independently from the turret-locking mechanism, consisting of the auxiliary slide having a rigid stop 84, substantially as described.

7. In a screw-machine, the combination of the slide, the turret mounted on the slide, the locking-bolt borne in the slide, the auxiliary slide mounted on the slide and provided with a stop, means for effectively moving the auxiliary slide at predetermined intervals, and means for automatically clamping the turret to the slide, substantially as described.

8. In a screw-machine, the combination of the slide, the turret mounted on the slide, the locking-bolt borne in the slide, the auxiliary slide mounted on the slide and provided with a stop, means for effectively moving the auxiliary slide at predetermined intervals, the turret-clamping mechanism whereby the turret is clamped at predetermined positions to the slide and independently of the turret-locking mechanism, substantially as described.

9. In a screw-machine, the combination of the block, the slide, the turret, the bracket, the shifters 52 and 53, pivotally mounted in the bracket, the dogs 54 and 55, the connecting-rod, the gear, and the sleeve, all so combined and operating, substantially as described, that the turret is locked when the slide is moved forward, and released when the slide is moved backward.

657,242. TURRET-LATHE. CARL A. JOHNSON, Madison, Wis. Filed Apr. 21, 1899. Serial No. 713,908. (No model.)



Claim.—1. In a lathe, the combination of a slide; a turret revolubly mounted thereon and free to be rotated in either direction when unlocked; a locking-pin carried by one member and adapted to enter a seat or recess formed in the opposite member; mechanism independent of said pin for clamping the turret and slide together; and means independent of the turret and the operative portions of the lathe for positively and simultaneously operating the locking-pin and the clamping mechanism.

2. In a turret-lathe, the combination of a suitable slide provided with a bearing-face; a turret revolubly mounted upon said bearing-face and free to be rotated in either direction when unlocked; a locking-pin carried by the slide and adapted to enter a recess or seat formed in the turret; mechanism independent of said pin for clamping the turret and slide together; and means independent of the turret and the operative portions of the lathe for positively and simultaneously releasing said clamping mechanism and withdrawing the locking-pin.

3. In a turret-lathe, the combination of a suitable slide provided with a bearing-face; a pin mounted in said slide; means for elevating said pin; a turret revolubly mounted upon the bearing-face and free to be rotated in either direction when unlocked; a series of recesses formed in the under face of said turret; means independent of the pin for clamping the turret and slide together; and mechanism independent of the turret and the operative portions of the lathe, serving to release the clamping means and to positively and simultaneously lower the pin.

4. In a turret-lathe, the combination of a suitable slide provided with a bearing-face; a turret mounted thereon and adapted to rest upon said face; a locking-pin carried by the slide and adapted to enter one of a series of recesses formed in the turret; a clamping-ring extending around the turret and connected to the base; and connections between said ring and the pin independent of the turret and the operative portions of the lathe for positively lowering the pin as the ring is rotated to release the turret.

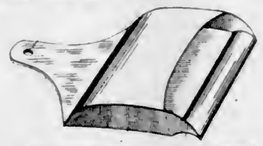
5. In a turret-lathe, the combination of a suitable slide provided with a bearing-face; a turret mounted thereon and provided with a series of seats or recesses in its under face; a clamping-ring carried by the turret; connections substantially as described between said ring and the slide; a locking-pin mounted in the slide in line with the recesses in the turret; means for normally holding said pin in its elevated position; and means adapted to be operated upon by the ring as it is rotated to unclamp the turret to positively lower the pin out of engagement with the recesses.

6. In a turret-lathe, the combination of a suitable slide provided with a bearing-face; a turret mounted thereon and provided with a series of recesses in its under face; a clamping-ring carried by the turret; a threaded connection between said ring and the slide; a pin mounted in the slide in line with the recesses in the turret; means for normally holding said pin in its elevated position; a pinion meshing with a rack formed upon said pin; a shaft connected with the pinion; an arm carried by the other end of said shaft; and means carried by the ring serving to depress said arm as the ring is rotated to unclamp the turret.

7. In a turret-lathe, the combination of a suitable slide provided with a bearing-face; a turret mounted thereon and provided with a series of recesses in its under face; a clamping-ring M carried by said turret; a threaded connection between said ring and the slide; a pin mounted in the slide; a spring for normally holding the pin in its elevated position; an arm X, and connections between said arm and the pin; a bolt or stud Q carried by the clamping-ring in line with the upper end of the arm X; and a lever for operating the ring.

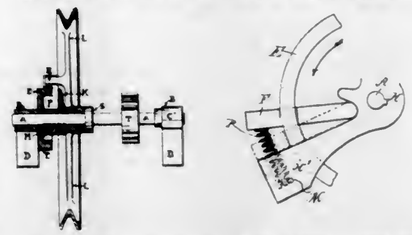
8. In a turret-lathe, the combination of a slide A; a bearing-plate B secured thereto, and provided with an inclined or beveled face D and a threaded portion E adjacent thereto; a turret provided with a bearing-face G adapted to rest upon the inclined face D; a series of recesses formed in the under face of the turret; a clamping-ring M carried by the turret and provided with a threaded portion adapted to engage with the threaded portion of the bearing-plate; a stud Q carried by said ring; a lever P also carried by said ring; a pin R mounted in the bearing-plate; a spring serving to hold said pin in its elevated position; a rack formed upon said pin; a pinion meshing with said rack; a shaft connected to said pinion and mounted in suitable bearings in the slide; and an arm X carried by the outer end of said shaft in line with the stud Q.

657,243. DUST-PAN. ALFA R. LEIB, Anderson, Ind., assignor of one-half to D. C. Chipman and Katherine A. Chipman, same place. Filed Oct. 23, 1899. Serial No. 734,471. (No model.)



Claim.—A dust-pan, having its bottom formed with a transverse bead at its forward edge, and a handle extension at its rear end portion, said bottom being arched continuously from said bead to the rear extremity of said extension, and the rear wall connected to said bottom at points near the greatest height of the arch thereof, whereby pressure may be exerted upon said handle extension at points near the greatest height of the arch of said bottom, to effect a more direct and positive downward pressure of the forward edge of said bead, and to better secure the pan against accidental displacement, substantially as specified.

657,244. CLUTCH. WILLIAM K. LIGGETT, Columbus, Ohio, assignor, by direct and mesne assignments, to the Kinkade & Liggett Company, same place. Filed June 30, 1898. Serial No. 684,817. (Model.)



Claim.—1. The combination of a driven member, a clutch-spider carried thereby, two clutch members carried on said spider, a fixed clutch-rim with which said clutch members are adapted to engage to hold the driven member, a driving member, and a part carried by the same located between said clutch members and adapted to engage one clutch member and release it from the clutch-rim when the driving member is moved in one direction and to engage the other clutch member and release it when the driving member is moved in the opposite direction, substantially as described.

2. The combination of a driven member, a clutch-spider carried thereby, a fixed clutch-rim, a clutch member, means for normally holding said clutch member in engagement with said rim to hold the driven member, a driving member, a part operated by the same adapted to engage said clutch member and release the same from engagement with the clutch-rim, substantially as described.

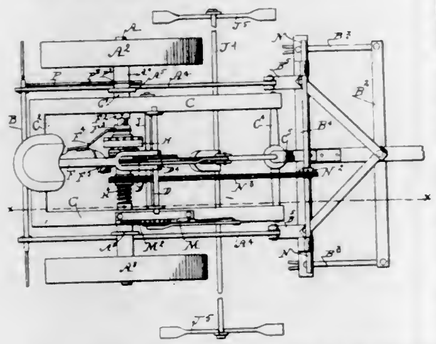
3. The combination of a driven member, a clutch-spider carried thereby, clutch members movable on said spider, a fixed clutch-rim with which said clutch members are adapted to engage to hold the driven member, a driving member and a part carried by the same adapted to engage one of said clutch members when the driving member is moved in one direction and the other clutch member when the driving member is moved in the other direction and through the same and said clutch-spider operate the driven member, substantially as described.

4. The combination of a driven member, a driving member, a fixed clutch-rim, a clutch-spider fixed to the driven member, movable clutch-blocks carried by said clutch-spider and adapted to engage said clutch-rim, springs acting to force said clutch-blocks toward each other, a part carried by the driving member between said clutch-blocks said part adapted to engage one clutch-block when moved in either direction and disengage the same from said clutch-rim, substantially as described.

5. The combination of the shaft A, the driving-wheel L loosely mounted thereon and having the projection R, the fixed clutch-rim E, the hub H fast upon the shaft A and having the divergent arms H′ H′, the clutch blocks or dogs F F seated in the hub H and provided with the notches embracing the fixed clutch-rim, and the springs P P interposed between the arms H′ H′ and dogs F F, substantially as described.

6. The combination of the shaft A, the driving-wheel L loose thereon and provided with the projection R, the fixed clutch-rim E, the hub H fast upon the shaft A and provided with the divergent arms H′ H′ and connecting web or flange K, the clutch blocks or dogs F F seated in the hub H and supported at one side by the web K and provided with the notches embracing the clutch-rim, and the springs P P seated in the housings M M on the outer ends of the arms H′ H′ and bearing against the dogs F F, substantially as described.

657,245. **CHECK-ROW CORN-PLANTER.** LEROY J. LINDSAY, Seymour, Iowa, assignor of one-half to J. T. Phillips, same place. Filed Feb. 15, 1900. Serial No. 5,312. (No model.)



Claim.—1. In a corn-planter the combination of a carriage-frame composed of twe mating side bars having coinciding slots to admit an axle and connected by a cross-bar at their rear ends, a rotatable axle extended through said slots and slidably and pivotally connected with said mating bar and the cross-bar of a frame fixed to runners hinged to the front ends of the mating side bars, to operate in the manner set forth for the purposes stated.

2. In a corn-planter, the combination of a carriage-frame composed of two mating side bars connected by a cross-bar at their rear ends, a rotatable axle slidably and pivotally connected with said mating bars and the cross-bar of a frame fixed to runners hinged to the front ends of the mating side bars, and an auxiliary frame pivotally connected with the axle, to operate in the manner set forth for the purposes stated.

3. In a corn-planter, the combination of a carriage-frame composed of two mating side bars connected by a cross-bar at their rear ends, a rotatable axle pivotally connected with said mating bar and the cross-bar of a frame fixed to runners hinged to the front ends of the mating side bars and an auxiliary frame pivotally connected with the axle and means for raising and lowering the runner-frame relative to the carriage-frame, to operate in the manner set forth for the purposes stated.

4. In a corn-planter, a carriage-frame pivotally connected with a rotatable axle, a traction-wheel fixed to one end of the axle, a mating wheel mounted loosely on the other end of the axle, an auxiliary frame pivotally and slidingly connected with said axle, a frame on runners hinged to the front ends of the side bars of the carriage-frame, a rock-shaft mounted on the side bars of the auxiliary frame, a hand-lever pivoted to the rock-shaft, an arm extended forward from the lever and connected with the frame on runners, and means for retaining the lever and rock-shaft stationary, arranged and combined to operate in the manner set forth for the purposes stated.

5. In a corn-planter, an auxiliary frame consisting of two mating side bars made of angle-iron having coinciding elongated openings for the passage of a carriage-axle and connected at their front and rear ends, a carriage-frame and a rotatable axle mounted in bearings fixed to the carriage-frame and extended through said openings in the side bars of the auxiliary frame, arranged and combined to operate in the manner set forth for the purposes stated.

6. In a corn-planter, a carriage-axle, a clutch member fixed to one end portion of the axle, a mating clutch member slidingly and rotatably connected with the axle, an internally-toothed ratchet-wheel fixed to said sliding clutch member, a sleeve having two fixed sprocket-wheels slidingly and rotatably mounted on the axle, a pawl-carrier fixed to the end of said sleeve, a coiled spring and a fixed collar on the axle, arranged and combined as shown and described simultaneously operating seed-dropping and marking mechanisms in the manner set forth for the purposes stated.

7. In a corn-planter, a carriage-axle, a clutch member fixed to one end portion of the axle, a mating clutch member slidingly and rotatably connected with the axle, an internally-toothed ratchet-wheel fixed to said sliding clutch member, a sleeve having two fixed sprocket-wheels slidingly and rotatably mounted on the axle, a pawl-carrier fixed to the end of said sleeve and a coiled spring on the axle in engagement with the end of said sleeve and a fixed collar on the axle, a carriage-frame and wheels to support the axle, a rock-shaft in bearings fixed to the frame in front of the axle, a shaft-bearer fixed to the rock-shaft, a rotatable shaft carried by the free end of said bearer, markers on the ends of the shaft a sprocket-wheel fixed to the center of the shaft and a chain on said wheel and one of the sprocket-wheels on the sleeve on the carriage-axle, all arranged and combined as shown and described for the purposes stated.

8. In a corn-planter, a carriage-axle, a clutch member fixed to one end portion of the axle, a mating clutch member slidingly and rotatably connected with the axle, an internally-toothed ratchet-wheel fixed to said sliding clutch member, a sleeve having two fixed sprocket-wheels slidingly and rotatably mounted on the axle, a pawl-carrier fixed to the end of said sleeve and a coiled spring on the axle in engagement with the end of said sleeve and a fixed collar on the axle, a carriage-frame and wheels to support the axle, a rock-shaft in bearings fixed to the frame in front of the axle, a shaft-bearer fixed to the rock-shaft, a rotatable shaft carried by the free end of said bearer, markers on the ends of the shaft, a sprocket-wheel fixed to the center of the shaft, and a chain on said wheel and one of the sprocket-wheels on the sleeve on the carriage-axle, and means for raising and lowering the shaft carrying the markers, all arranged and combined as shown and described for the purposes stated.

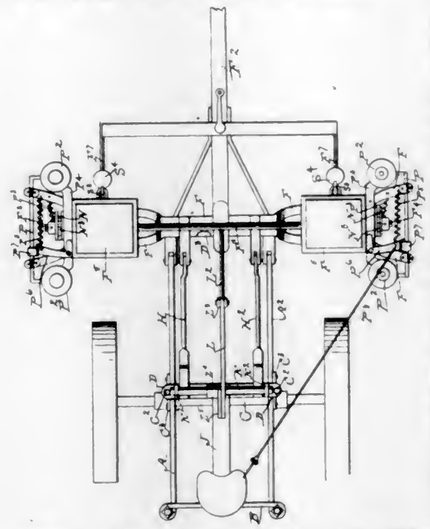
9. In a corn-planter, a carriage-axle, a clutch member fixed to one end portion of the axle, a mating clutch member slidingly and rotatably connected with the axle, an internally-toothed ratchet-wheel fixed to said sliding clutch member, a sleeve having two fixed sprocket-wheels slidingly and rotatably mounted on the axle, a pawl-carrier fixed to the end of said sleeve, and a coiled spring on the axle in engagement with the end of said sleeve and a fixed collar on the axle, a carriage-frame and wheels to support the axle, a rock-shaft in bearings fixed to the frame in front of the axle, a shaft-bearer fixed to the rock-shaft, a rotatable shaft carried by the free end of said bearer, markers on the ends of the shaft, a sprocket-wheel fixed to the center of the shaft and a chain on said wheel and one of the sprocket-wheels on the sleeve on the carriage-axle, means for raising and lowering the shaft carrying the markers and means for operating the sliding clutch member on the carriage-axle, all arranged and combined as shown and described for the purposes stated.

10. In a corn-planter, a carriage-frame, an axle rotatably connected with the frame, an auxiliary frame slidingly connecting the axle and the carriage-frame, a sprocket-wheel loosely mounted on the axle, a rock-shaft in bearings on the parallel sides of the auxiliary frame, a shaft-bearer fixed to said rock-shaft, a shaft having a fixed sprocket-wheel at its center and markers at its ends mounted on the free end of said bearer, a chain connecting the sprocket-wheel on the shaft with the sprocket-wheel on the axle, a lever fixed to the end of said shaft, a rack fixed to the said frame to be engaged by a pawl carried by the lever, all arranged and combined to operate in the manner set forth for the purposes stated.

11. In a corn-planter, a carriage-frame mounted on an axle and wheels, a rock-shaft mounted on the rear end of the frame, wheel-scrapers on the ends of the rock-shaft, a bar having hooks at its end portions adapted to engage the carriage-axle pivotally connected with one of the scrapers on the end of the rock-shaft, and adapted to be adjustably connected with the axle in the manner set forth for the purposes stated.

12. In a corn-planter, a carriage-frame mounted on a rotatable carriage-axle, a runner-frame hinged to the front ends of the parallel sides of the carriage-frame, a rotatable shaft having a fixed sprocket-wheel mounted on the runner-frame for operating seed-dropping mechanism, an auxiliary frame slidably connected with the carriage-axle, two sprocket-wheels fixed on a sleeve on the axle, a rock-shaft on the auxiliary frame, a shaft-bearer fixed to the rock-shaft, a shaft having markers on its ends and a sprocket-wheel at the center carried by said bearer, clutch mechanism on the carriage-axle to engage said sleeve, means for operating the sliding member of the clutch on the axle and a chain connecting the sprocket-wheel on the sleeve on the axle with the sprocket-wheel on the shaft on the runner-frame, all arranged and combined to operate in the manner set forth for the purposes stated.

657,246. **AUTOMATIC CHECK-ROW CORN-PLANTER.** LEROY J. LINDSAY, Seymour, Iowa, assignor of one-half to J. T. Phillips, same place. Filed Apr. 9, 1900. Serial No. 12,076. (No model.)



Claim.—1. A flexible carriage-frame for corn-planters composed of two mating side bars having hinge members at their rear ends and a cross-bar having hinge members at its ends connected with the said hinge members of the side bars by means of bolts, and bolts extended through the overlying hinge members in the manner set forth for the purposes stated.

2. A flexible carriage-frame for corn-planters composed of two mating side bars having hinge members at their rear ends and a cross-bar having hinge members at its ends connected with the said hinge members of the side bars by means of bolts, bolts extended through the overlying hinge members, axle-bearers swiveled to the mating side bars and a rotatable carriage-axle in said bearers, arranged and combined in the manner set forth for the purposes stated.

3. In a corn-planter, a flexible carriage-frame composed of two mating side bars and a cross-bar having a hinged connection with their rear ends, axle-bearers swiveled to the said side bars, a rotatable carriage-axle in said bearers, a runner-frame and the front ends of said side bars hinged to the cross-bar of the runner-frame, arranged and combined to operate in the manner set forth for the purposes stated.

4. In a corn-planter, a flexible carriage-frame composed of two mating side bars and a cross-bar having a hinged connection with their rear ends, axle-bearers swiveled to the said side bars, a rotatable carriage-axle in said bearers, a runner-frame and the front ends of said side bars hinged to the cross-bar of the runner-frame and cross-bar pivotally connected with the tops of said swiveled axle-bearers, arranged and combined to operate in the manner set forth for the purposes stated.

5. In a corn-planter, a flexible carriage-frame composed of two mating side bars and a cross-bar having a hinged connection with their rear ends, axle-bearers swiveled to the said side bars, a rotatable carriage-axle in said bearers, a runner-frame and the front ends of said side bars hinged to the cross-bar of the runner-frame, a cross-bar pivotally connected with the tops of said swiveled axle-bearers, a rock-shaft mounted on said pivoted cross-bar, mating bars fixed to the cross-bar at their rear ends and hinged at their front ends to a bolster and seedbox-support, a bolster and seedbox-support pivoted to the cross-bar of the runner-frame, and means for raising and lowering the runner-frame relative to the flexible carriage-frame, all arranged and combined to operate in the manner set forth for the purposes stated.

6. In a corn-planter, a flexible carriage-frame hinged at its front end to the cross-bar of a runner-frame, axle-bearers swiveled to the side bars of the carriage-frame, a cross-bar pivoted at its ends to the swiveled axle-bearers, a bolster pivoted to the cross-bar of the runner-frame, mating bars fixed at their rear ends to said pivoted cross-bar on the swiveled axle-bearers and hinged at their front ends to the said bolster, a rock-shaft mounted on said pivoted cross-bar, a hand-lever fixed to the rock-shaft to project vertically and a second lever fixed to the rock-shaft to extend forward, a coupling-bolt in the runner-frame having an arm extending rearward and a link connecting it with the front end of said forwardly-extended lever, all arranged and combined to operate in the manner set forth for the purposes stated.

7. In a corn-planter, the rock-shaft K, the lever L, the collar L^4 having an arm L^5 and the rear end and short arm of said lever adjustably connected with the end of said arm in the manner set forth for the purposes stated.

8. In a corn-planter, a rock-shaft mounted on a flexible carriage and hinged to a runner-frame, a lever fixed to said rock-shaft and connected with the runner-frame and extended rearward from the rock-shaft, a collar on the rock-shaft having an arm extended rearward, a bolt connected with the rear end of said arm and the rear portion of said lever, a coil-spring in the bolt and means for operating the rock-shaft, arranged and combined in the manner set forth for the purposes stated.

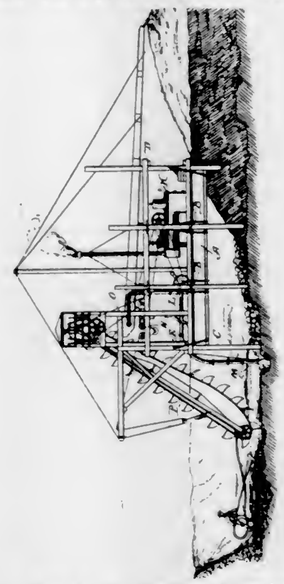
9. In a corn-planter, a flexible carriage-frame, consisting of two rigid mating side bars and a rigid cross-bar pivotally mounted on their rear ends, axle-bearers swiveled to the side bars of the frame, a cross-bar pivotally connected with said axle-bearers, a seat-support fixed to said cross-bar, a seat fixed to the top of said support, a second seat-support fixed to the seat and pivotally connected with the rear cross-bar of the flexible frame, arranged and combined as shown and described for the purposes stated

10. In a corn-planter, a pivoted bolster having bifurcated ends, seed-boxes fixed on said ends of the bolster, a rotatable shaft having fixed toothed wheels at its end portions for operating rotatable disks in seedboxes, a spring-actuated lever pivotally connected with each end of the shaft and bifurcated at its lower end, a rock-shaft in bearings fixed to the bifurcated ends of the pivoted bolster and seedbox-supports, arms on the ends of the rock-shaft, direction-pulleys on the ends of said arms, a spring-actuated latch pivoted to the seedbox-support, a catch on the rock-shaft, and means for operating the latch connected with the latch and a driver's seat, arranged and combined as shown and described for the purposes stated.

11. In a corn-planter, a seed-conveyer fixed under a seedbox, a valve pivoted in the conveyer, an arm extending from the valve and a weight on the end of the arm for retaining the valve normally in a closed position, as shown and described.

12. In a corn-planter, a seed-conveyer fixed under a seedbox, a valve pivoted in the conveyer, an arm extending from the valve and a weight on the end of the arm for retaining the valve normally in a closed position, a rotatable shaft extended through the top of the conveyer and cams on the shaft to engage the top of the valve, arranged and combined as shown and described.

657,247. **DREDGING APPARATUS.** ALEXANDER MCDOUGALL, Duluth, Minn. Filed Jan. 2, 1900. Serial No. 53. (No model.)



Claim.—1. Means for mining comprising in combination, a scow adapted to be used in a pit or excavation, means for supporting the scow above the bottom of the pit, a pump on the scow for draining the pit, connection from said pump adapted to draw from a reservoir, a flume or

chute connecting the reservoir and scow, a second pump on the scow, a flexible pipe or pipes connected to said second pump, by means of which the entire bottom of the pit may be washed, and the pit may be flooded and drained at will, substantially as described.

2. Means for mining comprising in combination, a scow adapted to be used in a pit or excavation, an excavator thereon, for removing the front wall of the pit, means for supporting the scow above the bottom of the pit, a pump on the scow for draining the pit, a connection from said pump adapted to draw from a reservoir, a sluice adapted to connect the excavator with the rear wall of the pit, a flume or chute adapted to connect the reservoir and scow, a second pump on the scow, a flexible pipe or pipes connected to said second pump by means of which the entire bottom of the pit may be washed, and the pit may be flooded and drained at will, substantially as described.

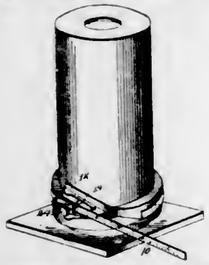
657,248. BUFFER-BLOCK FOR ILLUMINATING-PROJECTILES. RICHARD T. PHILLIPS, Baltimore, Md., assignor of one-half to Ernst J. Knabe, Jr., same place. Filed Dec. 8, 1899. Serial No. 739,620. (No model.)



Claim.—1. A buffer-block for projectiles to be fired from a gun, comprising two cylindrical members each having on their adjoining faces an annular groove—one of said members provided on its end with a rim-flange, *g*, which forms a cavity; a ring of elastic material fitted in said grooves and between said members; and means to connect the two members so as to allow one to yield relative to the other.

2. The combination of an illuminating-projectile having burners projecting from one end; a buffer-block comprising two cylindric independent members with elastic material interposed between them, and one of said members provided on its end with a rim-flange, *g*, which forms a cavity and takes over the end of the projectile and protects the burner from injury when the projectile is fired from the gun.

657,249. MEASURING DEVICE. ALBERT B. PRATT, Somerville, Mass. Filed Mar. 21, 1900. Serial No. 9,594. (No model.)



Claim.—1. A measuring device of the class described comprising a measuring-tape, a work-receiving cap designed to receive the work between its walls, and independent clamps mounted on the cap and adapted to respectively hold the cap on the work, and adjustably confine the tape with relation to the cap, substantially as and for the purposes set forth.

2. A measuring device of the class described comprising a box-like cap constructed to fit the beveled end of a packing, means for holding said cap against displacement on the packing, a pliable tape adapted to be fitted to the cap, and means for clamping the tape at any point of adjustment with relation to the cap, as and for the purposes set forth.

3. A measuring device of the class described comprising a box-like cap having the convergent walls and an offset arm, a clamp carried by the cap and adapted to project into the opening or space thereof, a measuring-tape slidably fitted between the offset arm and a portion of the cap, and means for clamping the tape adjustably to the cap, substantially as set forth.

4. A measuring device of the class described comprising a cap having suitable clamping devices, a measuring-tape fitted to the cap, and an end piece provided with an angular scoring edge, as and for the purposes set forth.

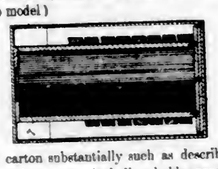
5. In a measuring device of the class described, a measuring-tape, and an end piece carried by the tape and provided with a finger having an angular scoring edge, combined with means for adjustably holding the measuring-tape with relation to the work, as set forth.

6. In a measuring device of the class described, a tapered cap, and the sectional clamp mounted thereon and having means adapted to engage with the work, in combination with the measuring-tape, and a clamp independent of the first-named clamp and engaging with said tape for holding the latter adjustably on the cap, as set forth.

7. In a measuring device of the class described, a tapered cap provided with transverse openings near its closed end, an offset arm parallel to one side of the cap, a two-part clamp mounted exteriorly on the cap and having beaks arranged to pass through the openings in the cap, and a binding-screw mounted in said arm, combined with a measuring-tape insertible in the space between the cap and the arm, whereby the tape may be clamped between the cap and the binding-screw, substantially as set forth.

8. A work-receiving cap for measuring devices, said cap comprising angularly-related integral walls, each of said walls being provided with an independent clamp.

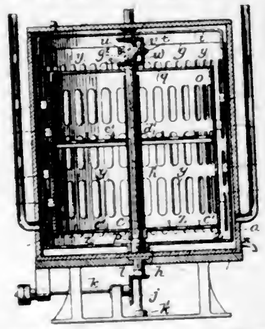
657,250. CARTON OR SHIPPING-PACKAGE FOR PISTON-PACKINGS. ALBERT B. PRATT, Somerville, Mass. Filed Mar. 21, 1900. Serial No. 9,595. (No model.)



Claim.—1. A carton substantially such as described, comprising a case having a removable cover, and a hollow holder provided at the lower end of its stem with an enlarged base, and at the upper end of said stem with a centrally-apertured plate constituting a finger-hold, said base fitting snugly within the case to restrain the holder from turning therein, and the entire holder with its load being readily withdrawn from the case, as set forth.

2. A carton of the character described comprising a case having an angular cross-sectional contour, a removable cover for the case, and a hollow cylindrical holder provided at its lower end with an enlarged angular base fitting snugly within the case to restrain the holder from turning therein, and provided at its top with a centrally-apertured plate constituting a finger-hold by means of which the holder may be removed from the case.

657,251. DISH-WASHING MACHINE. EDWARD SANDSTROM, Wilmington, Del. Filed Nov. 7, 1899. Serial No. 736,200. (No model.)



Claim.—1. In a dish-washing machine, the combination of the stationary tub, reversely-rotating cans located within the tub and one within the other and having the slots and perforations for the circulation of water or air, paddle-flanges of the respective cans intermediate of the cylinders of the said cans, means for rotating the cans, and the stand-pipe connected in the sides of the tub for circulation of air.

2. In a dish-washing machine, the combination of the stationary tub, reversely-rotating cans located within the tub and one within the other, stand-tube on which said cans are centered, driving-shaft located in the stand-tube and connected at the top with the outer can for rotating it, the gear-train of bevel-wheels and the intermediate wheel-supporting sleeve on the stand-tube connecting the inner tank with the driving-shaft, and means for actuating said driving-shaft.

3. In a dish-washing machine, the combination of the stationary tub, reversely-rotating cans located within the tub and one within the other, stand-tube on which said cans are centered, driving-shaft located in the stand-tube, and connected at the top with the outer can for rotating it, the gear-train of bevel-wheels and the intermediate wheel-supporting

sleeve on the stand-tube connecting the inner tank with the driving-shaft, means for actuating the driving-shaft, and the paddle-flanges of the cans intermediate of the respective cylinders of the cans, said cans having the slots and perforations for the circulation of the water.

657,252. PRINTER'S QUOIN. WILLIAM G. SLAUSON, Olean, N. Y. Filed May 25, 1899. Serial No. 718,163. (No model.)



Claim.—1. In a quoin, two metallic body-pieces having oppositely-inclined inner faces, a rolling spreader between such inclined faces and bearing on the same, means for moving the spreader lengthwise of the quoin, and springs connecting the body-pieces to each other, in combination substantially as described.

2. In a quoin, the body-sections having overhanging ends, springs connected to both of the body-sections between these overhangs, and a spreader between and operating to expand the body-pieces, all combined substantially as described.

3. In a quoin, the body-pieces having inclined inner faces and a longitudinally-moving rolling spreader between the same, laterally-projecting guides from one body-piece engaging the other piece, and means for closing the body-pieces onto the spreader, all combined.

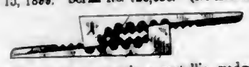
4. In a quoin, the body-sections having each an upper and a lower inclined bearing-surface, and a rolling spreader having cylindrical surfaces of unequal diameter engaging such bearing-surfaces, said spreader having means for forcing it lengthwise of the inclined bearing-surfaces to spread the sections apart, substantially as described.

5. In a quoin, the body portions each having a plurality of inclined bearing-surfaces extending in opposite directions, a spreader having bearing surfaces of different diameter engaging said bearing-surfaces, and means for holding the body portions in relative position, substantially as described.

6. A printer's quoin consisting essentially of two metallic body-pieces yieldingly connected near their ends, and having their proximate faces relatively inclined when the outer faces are parallel, combined with a roller-spreader interposed between said proximate faces in position to spread the body-pieces by longitudinal movement, and to permit a rocking of the body-pieces about said spreader, substantially as described.

7. A printer's coin consisting essentially of two body-pieces oppositely beveled in the direction of their length and yieldingly connected together, one of said pieces having a longitudinal rack, and a generally-cylindrical spreader-piece interposed between the beveled surfaces and having teeth engaging the rack, whereby the rotation of the spreader causes it to move lengthwise of the rack, thus spreading the body-pieces but permitting their inclined relation to each other or a rocking on the spreader, substantially as described.

657,253. PRINTER'S QUOIN. WILLIAM G. SLAUSON, Olean, N. Y. Filed June 15, 1899. Serial No. 720,638. (No model.)



Claim.—1. In a printer's quoin a metallic wedge-piece provided with notches in the edge to afford a key-seat, as usual, said wedge having a rib at one edge, which rib has notches of unequal width, to afford unequally-spaced receptacles for a locking-pin, substantially as described.

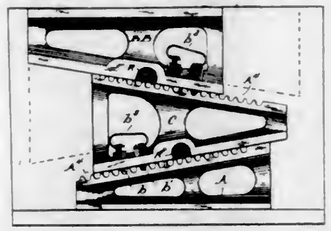
2. In a quoin, a plurality of wedge-pieces and means for sliding one on the other, of unequally-spaced notches arranged in proximation, so that a number of key-spaces of different size are always accessible to the key, and a key to enter one of the spaces formed by said notches.

3. In a quoin as described, two metallic wedge-sections having each guide-grooves and a longitudinal rib, both said ribs having vernier or unequally-spaced notches, and a locking-key adapted to fit one pair of the notches while other notches form openings of unequal cross-section, all combined substantially as described.

657,254. PRINTER'S FURNITURE. WILLIAM G. SLAUSON, Olean, N. Y. Filed Nov. 10, 1899. Serial No. 736,516. (No model.)

Claim.—1. A set of furniture for printers' use consisting essentially of disconnected pieces free for arrangement in various relative positions, the primary set consisting of two pieces beveled on one side only, and a piece beveled on both sides for use between the two, and positive locking means engaging adjacent pieces to prevent endwise movement, whereby the combined width of the adjusted set may be maintained until the pieces are unlocked, substantially as described.

2. A combination printers' furniture consisting of separate and unattached pieces, one of said pieces being wedge-shaped and having a rack on one edge, another piece being wedge-shaped and provided with a spring-bolt projecting at one edge in position to engage said rack on the companion piece, said spring-bolt having one beveled face, whereby the two pieces may be locked as against longitudinal movement, but either may be lifted free from the other, substantially as described.



3. In printers' furniture a metallic wedge-shaped piece with generally-vertical edges and having a recess near one edge, of nearly semicylindrical form, serving as a wrench-socket, and having a spring-bolt with beveled end projecting from its side, the piece being adapted for manipulation independently, but specially intended for use in combination with other pieces, substantially as described.

4. In printers' furniture, a metallic piece having two mortises containing spring-actuated bolts, the ends of said bolts being connected by a clasp serving as a handle by which they may be withdrawn, substantially as described.

657,255. BLIND-STITCH SEWING-MACHINE. MAURICE SPITZER, Albany, N. Y. Filed Jan. 17, 1900. Serial No. 1,770. (No model.)



Claim.—1. A blind-stitch sewing-machine having a needle and related mechanism forming stitches, and a work-clamp movable transversely to the line of action of the needle and having plates adapted to hold two pieces of work while one piece is doubled over the edge of one of said plates, thereby causing the needle to pass but partly through said doubled piece at its bend; said clamp-plates being inclined toward the needle and the plate over which the work is doubled having a thinned edge thereby assuring minimum facial needle penetration at the bend of the work, and means feeding the work-clamp relatively to the needle during stitching of the seam, substantially as described.

2. A blind-stitch sewing-machine having a needle and related mechanism forming stitches, a work-clamp movable transversely to the line of action of the needle and having plates adapted to hold two pieces of work while one piece is doubled over the edge of one of said plates, thereby causing the needle to pass but partly through said doubled piece at its bend, means feeding the work-clamp relatively to the needle during stitching of the seam, and means adapted to move the work-clamp toward or from the line of action of the needle thereby permitting adjustment to accommodate varying thicknesses of the work while assuring proper facial needle penetration at the bend of the work, substantially as described.

3. A blind-stitch sewing-machine having a needle and related shuttle or looper mechanism forming stitches, a work-clamp movable transversely to the line of action of the needle and having plates adapted to hold two pieces of work while one piece is doubled over the edge of one of said plates, thereby causing the needle to pass but partly through said doubled piece at its bend, means feeding the work-clamp relatively to the needle during stitching of the seam, and a needle-guide moving with the shuttle or looper and causing true entrance of the needle into the work, substantially as described.

4. A blind-stitch sewing-machine having a needle and related mechanism forming stitches, a track laterally adjustable on the machine-frame

toward and from the needle, a carriage and work-clamp movable on said track transversely to the line of action of the needle and having plates adapted to hold two pieces of work while one piece is doubled over the edge of one of said plates, and means feeding the carriage and work-clamp relatively to the needle during stitching of the seam, substantially as described.

5. A blind-stitch sewing-machine having a needle and related mechanism forming stitches, a track, a carriage movable on said track, a work-clamp comprising plates adapted to hold two pieces of work while one piece is doubled over the edge of one of the plates; said clamp-plates being together pivoted at one end to the carriage and having fastenings at their free ends permitting passage of the work endwise within the clamp and subsequent clamping of the work, and means feeding the carriage and work-clamp relatively to the needle during stitching of the seam, substantially as described.

6. A blind-stitch sewing-machine having a needle and related mechanism forming stitches, a track, a carriage movable on said track, a work-clamp comprising elastic plates held together and to the carriage at one end and normally separating at their free ends and adapted to hold two pieces of work while one piece is doubled over the edge of one of the plates, fastenings adapted to hold the plates to the work and to the carriage, and means feeding the carriage and work-clamp relatively to the needle during stitching of the seam, substantially as described.

7. A blind-stitch sewing-machine having a needle and related mechanism forming stitches, a track, a carriage movable on said track, a work-clamp comprising elastic plates held together at one end and pivoted thereat to the carriage for outward swinging to facilitate insertion of the work, said plates normally separating at their free ends and adapted to hold two pieces of work while one piece is doubled over the edge of one of the plates, fastenings adapted to hold the plates to the work and to the carriage, and means feeding the carriage and work-clamp relatively to the needle during stitching of the seam, substantially as described.

8. The work-clamp comprising a carriage and plates adapted to hold two pieces of work while one piece is doubled over the edge of one of the plates, said plates being held to each other at one end where they are also held to the carriage, and fastenings at the free ends of the plates adapted to clamp the plates on the work and hold them to the carriage, substantially as described.

9. The work-clamp comprising a carriage and plates having work-retaining pins and adapted to hold two pieces of work while one piece is doubled over the edge of one of the plates, said plates being held to each other at one end where they are also held to the carriage, and fastenings at the free ends of the plates adapted to clamp the plates on the work and hold them to the carriage, substantially as described.

10. The work-clamp comprising a carriage and plates adapted to hold two pieces of work while one piece is doubled over the edge of one of the plates, said plates being held to each other at one end where they are also pivoted to the carriage for outward swinging to facilitate insertion of the work, and fastenings at the free ends of the plates adapted to clamp the plates on the work and hold them to the carriage, substantially as described.

11. The work-clamp comprising a carriage and elastic plates adapted to hold two pieces of work while one piece is doubled over the edge of one of the plates, said plates being held to each other at one end where they are also held to the carriage and normally separating by their elasticity at their free ends, and fastenings at the free ends of the plates adapted to clamp the plates on the work and hold them to the carriage, substantially as described.

12. The work-clamp comprising a carriage and elastic plates adapted to hold two pieces of work while one piece is doubled over the edge of one of the plates, said plates being held to each other at one end where they are together pivoted to the carriage for outward swinging to facilitate insertion of the work, and fastenings at the free and normally-separated ends of the plates adapted to clamp said plates on the work and hold them to the carriage, substantially as described.

13. The work-clamp comprising a carriage and plates adapted to hold two pieces of work while one piece is doubled over the edge of one of the plates, said plates being held to each other at one end where they are also held to the carriage, and fastenings at the free ends of the plates adapted to clamp the plates to the work and hold them to the carriage; the plate over which the work is doubled being projected edgewise beyond the coöperating clamp-plate and carriage, substantially as described.

14. The work-clamp comprising a carriage and plates adapted to hold two pieces of work while one piece is doubled over the edge of one of the plates, said plates being held to each other at one end where they are also held to the carriage, and fastenings at the free ends of the plates adapted to clamp the plates on the work and hold them to the carriage; said clamp-plates being inclined toward one edge and the plate over which the work is doubled having a thinned edge thus assuring minimum facial penetration of the sewing-needle at the doubled portion of the work, substantially as described.

15. The work-clamp comprising a carriage and three clamp-plates held to each other at one end where they are also held to the carriage, and fastenings at the free ends of the plates adapted to clamp the plates on the work and hold them to the carriage, substantially as described.

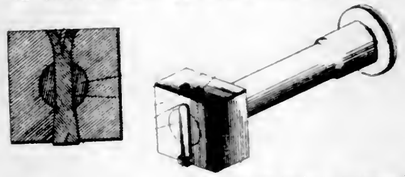
16. The work-clamp comprising a carriage and three clamp-plates held to each other at one end where they are also held to the carriage, and fastenings at the free ends of the plates adapted to clamp the plates on the work and hold them to the carriage; the two upper plates being elastic and normally separating from each other and the lower plate at their free ends to facilitate insertion of the work, substantially as described.

17. The work-clamp comprising a carriage and three clamp-plates, said plates being held to each other at one end where they are together pivoted to the carriage for outward swinging to facilitate insertion of the work, and fastenings at the free ends of the plates adapted to clamp the plates on the work and hold them to the carriage, substantially as described.

18. The work-clamp comprising a carriage and three clamp-plates, said plates being held to each other at one end where they are together pivoted to the carriage for outward swinging to facilitate insertion of the work, and fastenings at the free ends of the plates adapted to clamp the plates on the work and hold them to the carriage; the two upper plates being elastic and normally separating from each other and the lower plate at their free ends further to facilitate insertion of the work, substantially as described.

19. In a blind-stitch sewing-machine, the combination, with the needle, the shuttle or looper, and a transversely-movable work-clamp having plates adapted to hold two pieces of work while one piece is doubled over the edge of one of said plates, thereby causing the needle to pass but partly through said doubled piece at its bend, of a needle-guide moving with the shuttle or looper and having a tapering slot providing a contracted needle-guiding throat, substantially as described.

657,256. NUT AND BOLT LOCK. CHARLES M. TIPTON, Rapidan, Va. Filed Feb. 2, 1900. Serial No. 3,743. (No model.)



Claim.—1. In a nut and bolt lock, a nut having a transverse key-seat intersecting with the bolt-opening and provided at one end with a spreader, and a key adapted to be fitted into said seat and having a terminal portion cleft and constructed to be spread by engagement with the said spreader when driving the key home, substantially as set forth.

2. In a nut and bolt lock, a nut, having a transversely-disposed key-seat intersecting with the bolt-opening and having an end portion terminating in divergent passages, and a key having a terminal portion cleft, said key being adapted to be forced into the key-seat and to have the cleft portions spread by entering the divergent passages of the key-seat, substantially as set forth.

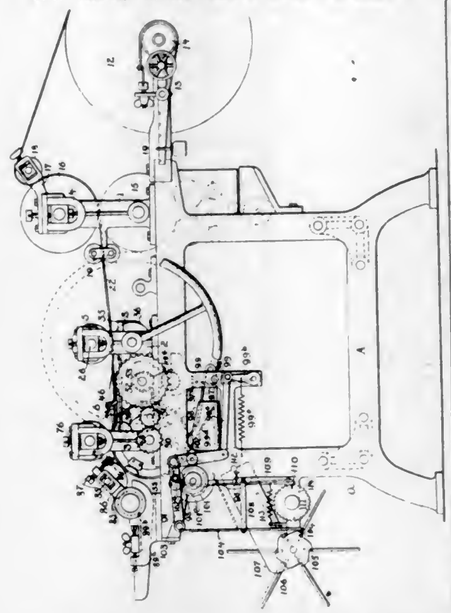
3. In a nut and bolt lock, a nut having a transverse key-seat undercut at one end and divergent at the opposite end, a spreader at said divergent end of the key-seat, and a key having one end of approximately wedge form and its opposite end cleft and adapted to be separated by engagement with the spreader, substantially as set forth.

4. In a nut and bolt lock, a nut having a transversely-disposed key-seat intersecting with the bolt-opening, one end of the seat terminating in divergent passages and the opposite end being of approximately wedge form and opening through the outer face of the nut, and a key having a terminal portion cleft and having its opposite end portion of approximately wedge form and provided with an offstanding portion, substantially as set forth.

5. In a nut and bolt lock, a nut having a transversely-arranged key-seat intersecting with the bolt-opening, and provided at one end with divergent passages and at its opposite end with a wedge-shaped portion, and a key having an end portion reduced and cleft, the outer end of the cleft being flared, and having the opposite end of the key constructed of wedge form and provided with an offstanding portion, substantially as and for the purpose set forth.

6. In combination with a bolt having a groove or seat in its threaded end, a nut having a transverse key-seat to register with the groove of the nut, one end of the seat being divergent and provided with a spreader, and a key adapted to be fitted into the registering seats of the bolt and nut and having a cleft terminal portion, substantially as and for the purpose set forth.

657,257. BAG-MACHINE. MATTHEW VIERENGEL, New York, N. Y. Filed Sept. 15, 1898. Serial No. 691,039. (No model.)



Claim.—1. In a bag-machine the combination with suitable cutting creasing and seam-folding mechanism of a plurality of rotary carriers, a plurality of laterally and vertically operated grippers mounted upon parallel reciprocating and vertically-movable bars connected with the rotary carriers, and stationary cams for giving the two motions to the bars and grippers, substantially as specified.

2. In a bag-machine the combination of a rotary blank-carrier having a pair of grippers for gripping the forward corners of the seamed part of the blank, a cutting-off cylinder provided with a notched cutter-blade, arranged to coact with grooves in the blank-carrier, to partly sever the blank in the cylinder from the blank immediately behind it, and spring-pins in the cutting-cylinder to catch the end of the following blank and hold it against the carrier until caught by the grippers, substantially as specified.

3. In a bag-machine the combination of a rotary blank-carrier having a set of two pairs of laterally and vertically operated grippers for gripping the four corners of the seamed sides of the blank, a cutting-off cylinder provided with a notched cutting-blade to partly sever the blank on the cylinder from the blank immediately behind it, and spring-pins on the cutting-off cylinder for catching the end of the following blank and holding it until caught by the grippers, substantially as specified.

4. In a bag-machine the combination of a printing attachment, cutting and creasing mechanism to cut out the side seams of the blank and form the creased-bottom-folding line, folders for folding over the side seams against the part of the blank to which they are attached, a rotary carrying-cylinder having grippers in pairs, for gripping the corners of the seamed part of the blank to hold the blank while being cut off, gummed and folded, and a cylinder coacting with the rotary carrying-cylinder and provided with a notched knife for partly severing the blank on the cylinder from the following blank and spring-pins for holding the end of the following blank until caught by the grippers, substantially as specified.

5. In a bag-machine the combination of cutting and creasing mechanism to cut out the side seams of the blank and form the creased-bottom-folding line, folders for folding over the side seams on the part of the blank to which they are attached, a carrying-cylinder provided with grooves that coact with the cutting-off blade, and grippers for gripping the blank to hold it while being cut off, gummed and folded, a cutting-off cylinder having a cutting-blade constructed to partly sever the following blank from the preceding blank, and fingers, and mechanism for operating the same, arranged to be thrust through holes in the cylinder against the part of the blank in advance for the purpose of breaking the remaining connections between the forward end of that part of the blank and the rear end of the preceding blank, substantially as specified.

6. In a bag-machine the combination of a carrying-cylinder provided with grippers for gripping the seamed part of the blank to the cylinder, suitable gumming mechanism, fingers for throwing the forward end of the blank off the cylinder and over to the back of the folding-cylinder, a suitable folding-cylinder, a delivery cylinder or roll coacting with the folding-cylinder to deliver the completed bag, a revolving collector divided by pins into compartments, located behind the delivery-cylinder, a trough at the lower end of which the said collector is placed so that its pins will pass between the sides of the trough, and suitable mechanism for operating the said collector whereby when the proper number of bags have been deposited in one of its compartments, the collector is turned to carry the filled compartment out of the trough and bring an empty one in place to receive the bags, substantially as specified.

7. In a bag-machine the combination with the carrying-cylinder, folding-cylinder and delivery-cylinder, of a platform made of rods supported under the carrying-cylinder and with the ends of the rods projecting between the folding and delivery cylinders, plates on each side of the said platform, and fingers projecting up between the rods forming the platform and mechanism for vibrating the said fingers, whereby when the completed bags fall upon the platform, the said fingers thrust them back between the carrying-cylinder and the delivery-cylinder to adapt them to be caught between the said cylinders and delivered by them into the collector, substantially as specified.

8. In a bag-machine the combination with a revolving compartmented collector of a ratchet-wheel 105 on its shaft, a pawl 104 for operating the same, connected with an arm or lever 103 a cam for operating the said arm or lever, a link 108 connecting the pawl, with a spring-controlled arm 109 a ratchet-wheel 111 the teeth which correspond in number with the number of bags it is intended shall make a bundle, one of the said teeth being longer than the other, a pawl 110 also connected with the arm 103 and a set-screw 112 on the arm 109 the point of which bears against the shank of pawl 110, and thus holds the pawl 104 out of engagement with the ratchet-wheel 105 until the pawl reaches the longer tooth of the ratchet-wheel 111 whereupon the pawl 110 moves farther toward the center of the ratchet-wheel thereby allowing the arm 109 to be drawn back by the spring, and the pawl 104 to move against the ratchet and engage one of the teeth, so that when the cam lifts the arm or lever 103 the said pawl turns the ratchet and moves the filled compartment of the collector out of the trough and brings an empty one into position to receive the bags, substantially as specified.

9. In a bag-machine the combination with a printing mechanism for printing the blanks and a carrying-cylinder for carrying the printed blanks to the gumming, folding and delivery mechanism, of a cleansing-cylinder, a trough for the cleansing fluid, a roller intermittently operated by a pawl for supplying the cleansing fluid to the cylinder, and means for rotating the cleansing-cylinder against the surface of the carrying-cylinder and in the opposite direction thereto for the purpose of removing the "offset" from the surface of the carrying-cylinder, substantially as specified.

10. In a bag-machine the combination of a blank-carrying cylinder, seam-folders having a folder-plate hung under the folder-flanges, gumming devices for applying gum to the seams of the blanks, means for throwing the gumming devices out of contact with the blank-carrier rods placed under the folder-plate with their points under the openings in the said plates and mechanism connecting the said rods with the means by which the gumming devices are placed out of contact with the blank-carrier, the construction being such that when the paper is passing under the folder-plate and over the points of the rods, the rods are held down and the gumming devices are retained in position to apply gum to the seams, but when no paper is passing under the plate the points are thrown up through the openings in the plate and through the connecting mechanism, cause the gumming devices to be moved away from the carrier-cylinder, substantially as specified.

11. The combination of a blank-carrying cylinder, flap-folders, a folder-plate hung under the flanges of the flap-folder, rods hung under the said plate and having their points under openings in the plate, a belt-shifter, a cam for operating the belt-shifter, and mechanism supported between the rods under the folder-plate and the cam, whereby when no paper passes under the folder-plate, the points of the fingers are thrown up through the openings in the said plate and thereby through the interposed mechanism they cause the belt-shifter to shift the belt from the fast to the loose pulley and stop the machine, substantially as specified.

12. The combination in a bag-machine of a printing attachment to print from a web of paper, an adjustable splitting device behind the printing attachment to divide the paper into two parts, and two sets of cutting and creasing mechanism mounted on the same shafts, consisting of adjustable disks carrying transverse and semicircumferential cutting-blades and creasing-blades so arranged with respect to each other that two blanks of equal or unequal width can be simultaneously formed substantially as specified.

13. The combination in a bag-machine of a printing attachment to print from a web of paper, cutting and creasing mechanism to form the

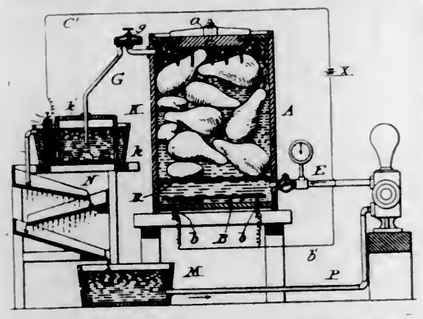
blanks for the bags, folders for turning the side seams over on the part of the blank to which they are attached, a rotary carrying-cylinder provided with sets of grippers to hold the corners of the blanks, cutting-off mechanism coacting with the carrying-cylinder to partly sever the blank on the cylinder from the following blank, and a gumming device for applying gum to the side seams of the blank, adapted to be thrown out of their gumming position automatically, to avoid putting the gum on the cylinder, substantially as specified.

14. The combination in a bag-machine of a rotary carrying-cylinder, grippers for holding the blank on the cylinder, parallel bars to which said grippers are attached that rotate with the cylinder, cams at the ends of the cylinder that coact upon the ends of the bars to give them a sliding motion in opposite directions to carry the points of the grippers over and away from the ends of the cylinders and cams and springs for moving the points of the grippers from and toward the surface of the cylinder, substantially as specified.

15. The combination in a bag-machine of a carrying-cylinder, sets of grippers for gripping the blank at the corners, fingers hung on rods inside of the cylinder, cranks on the rods, openings in the cylinder for the fingers to move through, cams to actuate the cranks to throw the fingers through the said openings, and springs for drawing them back within the cylinder substantially as specified.

16. In a bag-machine, the combination with a carrying-cylinder having sets of grippers for gripping the blank at the corners, and fingers for throwing the part of the blank in advance off the cylinder when released by its grippers, of a folding and pressing roll, which presses the part of the blank thrown off the carrying-cylinder against the seams and thereby folds the blank and causes the adhesion of the two parts together to form the bag, substantially as specified.

657,258. **PROCESS OF CURING MEAT.** GEORGE A. WASHBURN, Elyria, Ohio, assignor to E. B. Quinn, trustee, Cleveland, Ohio. Original application filed Aug. 18, 1898, Serial No. 688,943. Divided and this application filed Aug. 23, 1899. Serial No. 728,227. (No specimens.)



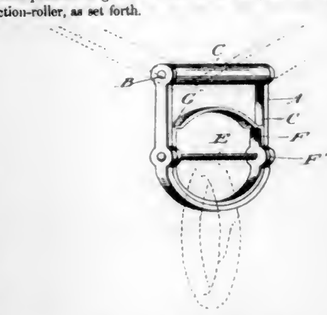
Claim.—1. The described process of curing meat and the like, which consists in immersing the same in a curing solution, in passing an electric current from the positive electrode through a fluid conductor and the curing solution, and in preventing said fluid conductor and the product of the electrolytic action therein from commingling with the curing solution.

2. The described process of curing meat and the like, which consists in immersing the same in a curing solution, causing the circulation of said solution over the meat, in passing an electric current from the positive electrode through a fluid conductor and the circulating curing solution, and in preventing the fluid conductor and the products of the electrolytic action therein from commingling with the curing solution.

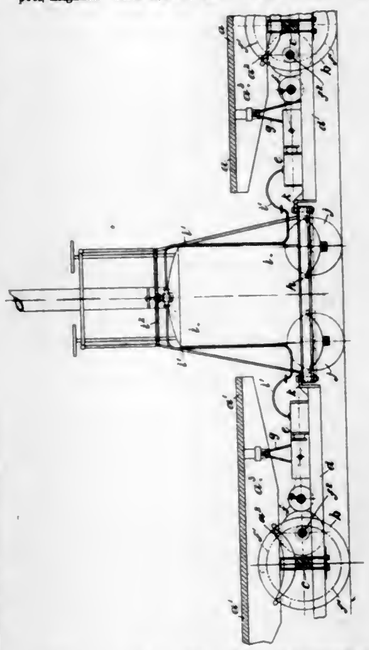
3. The described process of curing meat and the like, which consists in immersing the same in a curing solution, in passing an electric current from the positive electrode through a fluid conductor, the curing solution, and a porous partition which separates said fluid conductor and curing solution.

657,259. **REIN-GUIDE.** CHARLES E. WHITCOMB, South Granby, N. Y. Filed Dec. 29, 1899. Serial No. 741,995. (No model.)

Claim.—A rein-holder for harnesses, comprising a yoke substantially U-shaped, with apertured ends, a shaft mounted in said apertures, an anti-friction-roller mounted on said shaft, a spindle mounted in said yoke adjacent to its bent portion, a strap or band F mounted on said spindle, the lower portion of said strap or band F adapted to conform to the shape of the curved portion of the yoke, and its upper portion bent at right angles at G, thence upwardly curved, said strap F adapted to turn at right angles to receive the buckle end of the rein, and then to be returned to its normal position to guide the rein within the yoke and against the anti-friction-roller, as set forth.



657,260. **SELF-PROPELLED VEHICLE.** HENRY WILCKE, Liverpool, England. Filed Apr. 30, 1900. Serial No. 14,977. (No model.)



Claim.—1. In self-propelled rolling-stock or vehicles for use on common roads, the combination of two platforms or frames for carrying the load, each supported by a single pair of wheels, one pair being the propelling-wheels, and adapted to receive and carry the whole load, and a platform or frame between said two load platforms or frames, and supported by wheels constituting the steering-wheels of the rolling-stock or vehicles; substantially as set forth.

2. In self-propelled rolling-stock or vehicles for use on common roads, the combination of two platforms or frames for carrying the load, each supported by a single pair of wheels at the center, being the propelling-wheels, and adapted to receive and carry the whole load; a frame below each of said platforms or frames rigidly fixed to the axle, and carrying the motor machinery, the said machinery being geared directly to said driving-wheels, and a platform or frame between said two lower machinery-supporting frames supported by wheels constituting the steering-wheels of the rolling-stock or vehicles, and a loose hinge or joint connecting said latter frame, and a machinery-supporting platform or frame; substantially as set forth.

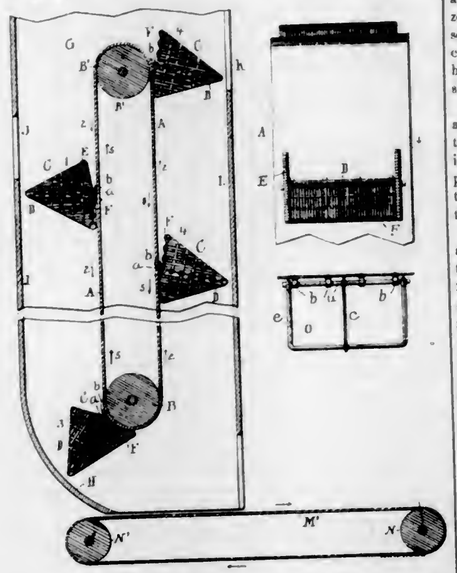
3. In self-propelled rolling-stock or vehicles for use on common roads, the combination of two load-platforms *a a'*; a single axle *c*, and driving-wheels *b* disposed under the center of said platforms; a lower platform *d* under each platform connected with the axle *c*; driving-motor machinery

e fixed on the under platforms *d*; an intermediate platform *h* provided with and supported upon the steering-wheels *j*; and a loose joint or hinge *k* coupling said frame *h* with a platform *d*; substantially as set forth.

4. In self-propelled rolling-stock or vehicles for use on common roads, the combination of two load-platforms *a a'*; a single axle *c*, and driving-wheels *b* disposed under the center of said platforms; a lower platform *d* under each platform rigidly connected with the axle *c*; driving-motor machinery *e* fixed on the under platform *d*; a support *g* with play in it, between the platform *a* and frame *d* for preventing the load-platform from tilting down or up; and an intermediate platform *h* carrying the generator *i*, provided with and supported upon the steering-wheels *j*; substantially as set forth.

5. In self-propelled rolling-stock or vehicles for use on common roads, the combination of a platform for carrying the load, supported by a single pair of wheels at or near the center, being the propelling-wheels, and adapted to receive and carry the whole load; a frame below said platform rigidly fixed to the axle, and carrying the motor machinery, and a front extended portion of the lower frame supported by wheels, constituting the steering-wheels, and carrying the generator; substantially as set forth.

657,261. **MEANS FOR COLLECTING, CONVEYING, AND DEPOSITING ARTICLES OR PACKAGES OF MERCHANDISE.** LAWRENCE ABRAHAM, New York, N. Y. Filed Feb. 8, 1900. Serial No. 4,508. (No model.)



Claim.—1. A device for collecting, conveying and depositing articles or packages of merchandise, having an endless revoluble belt, a shelf hinged to the outside of said belt, and provided with a projection extending from its hinged or inner portion, and said projection when below the shelf arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and said shelf being permitted to drop by gravity when not so held, whereby articles dropped upon the shelf may be held, and then conveyed and finally deposited.

2. A device for collecting, conveying and depositing articles or packages of merchandise, having an endless revoluble belt, shelves hinged to the outside of said belt, each shelf provided with a projection extending from its hinged or inner portion, and said projection when below the shelf arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and the shelf being permitted to drop by gravity when not so held, whereby articles dropped upon the shelf may be held, and then conveyed and finally deposited.

3. A device for collecting, conveying and depositing articles or packages of merchandise, having an endless revoluble belt, shelves hinged to the outside of said belt, each shelf provided with a projection extending from its hinged or inner portion, and said projection when below the shelf arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and the shelf being permitted to drop by gravity when not so held, whereby articles dropped upon the shelf may be held, and then conveyed and finally deposited, and a shaft surrounding said belt and shelves provided with a chute at its lower end, all as set forth.

4. A device for collecting, conveying and depositing articles or packages of merchandise, having an endless revoluble belt, shelves hinged to the outside of said belt, each shelf provided with a projection extending from its hinged or inner portion, and said projection when below the shelf arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and said shelf being permitted to drop by gravity when not so held, whereby articles dropped upon the shelf may be held, and then conveyed and finally deposited, and a shaft surrounding said belt and shelves and provided with a chute at its lower end having side openings, all as set forth.

5. A device for collecting, conveying and depositing articles or packages of merchandise, having an endless revoluble belt, a shelf hinged to the outside of said belt, and provided with a projection extending from its hinged or inner portion, and said projection when below the shelf arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and said shelf being permitted to drop by gravity when not so held, whereby articles dropped upon the shelf may be held, and then conveyed and finally deposited, in combination with a continuous conveyer below said belt for receiving and conveying the articles dropped from the shelf.

6. A device for collecting, conveying and depositing articles or packages of merchandise, having an endless revoluble belt, shelves hinged to the outside of said belt, each shelf provided with a projection extending from its hinged or inner portion, and said projection when below the shelf arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and the shelf being permitted to drop by gravity when not so held, whereby articles dropped upon the shelf may be held, and then conveyed and finally deposited, in combination with a continuous conveyer below said belt for receiving and conveying the articles dropped from the shelf.

7. A device for collecting, conveying and depositing articles or packages of merchandise, having an endless revoluble belt, a shelf hinged to the outside of said belt, and provided with a projection extending from its hinged or inner portion, said projection having its outer free extremity parallel with the shelf, and when below the shelf said extremity arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and said shelf being permitted to drop by gravity when not so held.

8. A device for collecting, conveying and depositing articles or packages of merchandise, having an endless revoluble belt, a shelf hinged to the outside of said belt, and provided with a rigid projection extending from its hinged or inner portion, and said projection when below the shelf arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and said shelf being permitted to drop by gravity when not so held, whereby articles dropped upon the shelf may be held, and then conveyed, and finally deposited.

9. A device for collecting, conveying and depositing articles or packages of merchandise, having an endless revoluble belt, a shelf hinged to the outside of said belt, and provided with a rigid projection extending from its hinged or inner portion, said projection having its outer free extremity parallel with the shelf, and when below the shelf said extremity arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and said shelf being permitted to drop by gravity when not so held.

10. A device for collecting, conveying and depositing articles or packages of merchandise, having an endless revoluble belt, a shelf hinged to the outside of said belt, and provided with a projection extending from its hinged or inner portion, and walls secured to both ends of the same, and said projection when below the shelf arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and said shelf being permitted to drop by gravity when not so held, whereby articles dropped upon the shelf may be held, and then conveyed, and finally deposited

11. A device for collecting, conveying and depositing articles or packages of merchandise, having an endless revoluble belt, a shelf hinged to the outside of said belt, and provided with a projection extending from its hinged or inner portion, and walls secured to both ends of the same, said projection having its outer free extremity parallel with the shelf, and when below the shelf said extremity arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and said shelf being permitted to drop by gravity when not so held.

12. A device for collecting, conveying and depositing articles or packages of merchandise, having an endless revoluble belt, a shelf hinged to the outside of said belt, and walls secured to both ends of the shelf and extending above and below the same, and the inner extremities of said walls on one side of the shelf connected by a tie and said tie when below the shelf arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and said shelf being permitted to drop by gravity when not so held.

13. In a device for collecting, conveying and depositing articles or packages of merchandise, an endless revoluble belt, in combination with

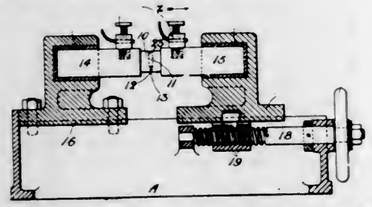
a shelf provided with a rigid frame, loops surrounding the inner bar of said frame and riveted to the belt, and serving as hinges for said frame and the shelf, a projection extending from said inner bar, and said projection when below the shelf arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and said shelf being permitted to drop by gravity when not so held.

14. A device for collecting, conveying and depositing articles or packages of merchandise, having an endless revoluble belt, a shelf hinged to the outside of said belt, and provided with a projection extending from its hinged or inner portion, and said projection when below the shelf arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and said shelf being permitted to drop by gravity when not so held, a plurality of continuous conveyers situated below said belt, and one under the other, whereby articles dropped upon the shelf may be held, then conveyed and deposited upon said continuous conveyers one under the other, and finally deposited at another locality.

15. In a device for collecting, conveying and depositing articles or packages of merchandise, an endless revoluble belt, in combination with a shelf provided with a rigid frame, loops surrounding the inner bar of said frame and riveted to the belt, and serving as hinges for said frame and the shelf, a projection extending from said inner bar, and said projection when below the shelf arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, and said shelf being permitted to drop by gravity when not so held, a plurality of continuous conveyers situated below said belt, and one under the other, pulleys over which said conveyers are arranged to rotate, and mechanism connecting said pulleys, whereby the rotation of one conveyer will rotate it and the others in unison, and whereby articles dropped upon the shelf may be held, then conveyed, and deposited upon said continuous conveyers one under the other, and finally deposited at another locality.

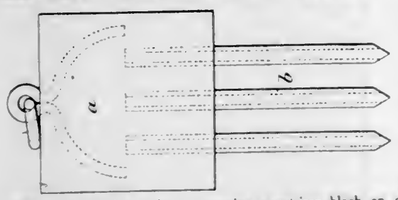
16. A device for collecting, conveying and depositing articles or packages of merchandise, having an endless revoluble belt, a shelf hinged transversely to the outside of the same and provided with a projection extending from its hinged or inner portion and said projection when below the shelf arranged to rest upon the belt and hold the shelf in a substantially-horizontal position, said shelf being permitted to drop by gravity when not so held, whereby the belt will constitute a back for said shelf and whereby articles dropped upon the shelf may be held and then conveyed, and deposited.

657,262. METHOD OF SETTING DIAMONDS, &c., IN METAL HOLDERS. GEORGE ANDERSON, Carnoustie, Scotland. Filed Aug. 29, 1899. Serial No. 728,890. (No specimens.)



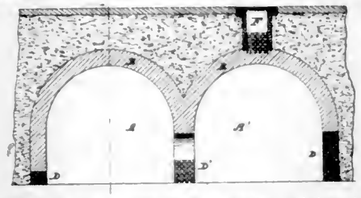
Claim.—The method of securing diamonds in metal holders, which consists in drilling a hole almost but not quite through said holder, inserting the diamond into said hole, then heating the holder to a welding heat and closing and welding the sides of the hole back of the diamond, and subsequently grinding away the metal so as to uncover a portion of the diamond, substantially as described.

657,263. MOORING-ANCHOR. EMIL T. BUHLE, Hong-Kong, China. Filed Nov. 13, 1899. Serial No. 736,741. (No model.)



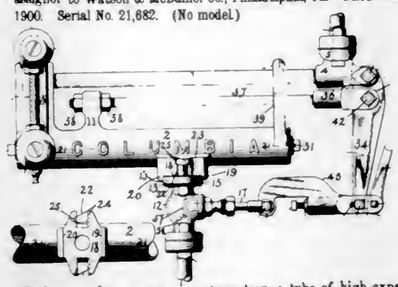
Claim.— A mooring-anchor, comprising a cast-iron block, an eye for a chain or rope and a series of wrought-metal pointed bars connected to the iron block and around which said block is cast, the eye projecting from the upper surface and the bars projecting downward from the under surface, substantially as specified.

657,264. CONSTRUCTION FOR SUBWAYS. HORACE E. CAMP, Akron, Ohio. Filed Apr. 2, 1900. Serial No. 11,086. (No model.)



Claim.—In subway construction, a plurality of independent perforated blocks forming an integral part of the wall thereof and so arranged that the perforations register and aline longitudinally and form continuous conduits lengthwise of the subway, with transverse openings in the wall interrupting the continuity of the conduits at suitable intervals, substantially as set forth.

657,265. STEAM-TRAP. JOSEPH L. CHAPMAN, Haddonfield, N. J., assignor to Watson & McDaniel Co., Philadelphia, Pa. Filed June 26, 1900. Serial No. 21,682. (No model.)



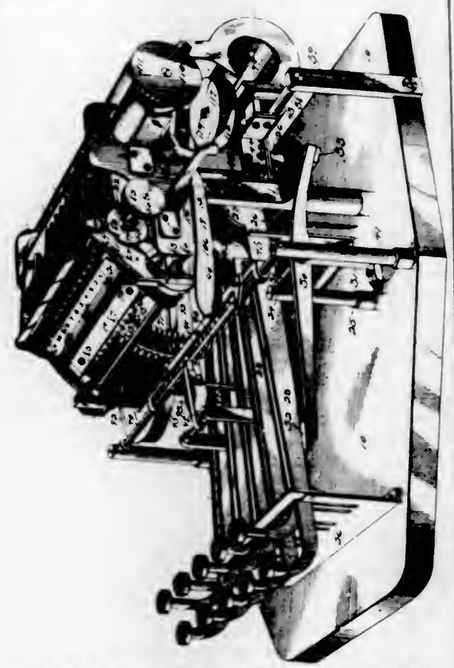
Claim.—1. In an expansion steam-trap, a tube of high expansive power, a tube of low expansive power, a connection for the tubes at one end and whereby they are rigidly held, an inlet to the high-expansion tube and a lever secured thereto at its short end, a fulcrum for the lever, a drain-valve flat-seated on the low-expansion tube, a stem for the valve, a yielding connection from the stem to the long end of the lever aforesaid, means to adjust the yielding connection and vary the pressure on the valve, and a hand-lever secured to the yielding connection in manner to force the valve open, for long or short periods of time.

2. In a steam-trap, a tube of high expansion, a tube of low expansion, means to connect the high-expansion tube to the low-expansion tube and drain it thereby, an inlet to the high-expansion tube connected thereto by flat-seated flanges and a compressible gasket, a lug upon the low-expansion tube, a fulcrum secured thereto, a lever secured to the fulcrum and to the high-expansion tube; a valve to drain the low-expansion tube, flat-seated thereon and having a compressible gasket, a stem for the valve, a yielding connection from the stem to the lever aforesaid, means to adjust the yielding connection, a hand-lever pivotally supported to the yielding connection and formed at its pivotal end to outwardly force the yielding connection, compress its yielding means, shorten the distance between the lever connected to the high-expansion tube and the valve, and open the valve when the hand-lever is moved down toward its horizontal position and when reaching its horizontal position hold and lock the valve open.

3. In an expansion steam-trap, a tube of high expansive power, a tube of low expansive power, each tube secured firmly at one end and thereby connected for expansion in a direct and parallel line, an inlet to the high-expansion tube, an outlet and a valve controlling the outlet from the low-expansion tube, a seat upon the tube formed in a manner to seat and secure the valve so that its stem shall be in parallel alinement horizontally and vertically to the center of the low-expansion tube, a lever attached at one end to the high-expansion tube, an adjustable fulcrum for the lever, a yielding and adjustable connection from the lever to the valve, and means for its adjustment, a hand-lever pivotally secured to the valve connection and having at its pivotal connection means to open the valve as the handle is moved down, and when at or below a line parallel to the center line of the low-expansion tube means to lock and hold the valve open until the handle is again lifted to its normal position.

657,266. TYPOGRAPHICAL ADDING-MACHINE. ADOLPHUS S. DENNIS, Des Moines, Iowa, assignor to the Bankers Adding and Recording Machine Company, Cleveland, Ohio. Filed Dec. 7, 1895. Renewed Mar. 31, 1898. Serial No. 676,006. (No model.)

Claim.—1. The combination in an adding-machine of a single peripherally-cogged adding-wheel, rotatably mounted, a ratchet-rim on one side of the adding-wheel, an arm rotatably mounted on the shaft of the adding-wheel, a spring-actuated detent in the outer end of said arm to engage the ratchet-rim, a series of nine key-levers, and means whereby a depression of any key will advance the adding-wheel a distance corresponding to the value of the number on the key depressed.



2. The combination, in an adding-machine, of an adding-wheel, rotatably mounted, a series of totalizing-wheels designed to be successively brought into engagement therewith, a plate rotatably mounted on the adding-wheel shaft, an arm extending outwardly from said plate, a ratchet device on the arm arranged to engage and rotate said adding-wheel when the plate is moved, and a series of key-levers, arranged to engage said plate at distances from the shaft proportionate to the value of the number marked thereon.

3. The combination, in an adding-machine, of a suitable shaft rotatably mounted and having a longitudinal groove, a series of totalizing-wheels rotatably mounted on said shaft and each having a cam on one side and a ratchet on the other, an internal spring-actuated detent in each totalizing-wheel, a series of arms to engage said cams, yielding pressure devices applied to said arms, a pawl pivoted to each arm to engage the ratchet on the adjoining totalizing-wheel, an arm projecting upwardly and then forwardly from each pawl, a flat bar eccentrically mounted above the totalizing-wheels to engage said arm and when turned on edge to hold the pawls out of engagement with the ratchets, an arm fixed to the bar, a plate pivoted to said arm, a spring-actuated pawl pivoted to the plate, a pin fixed to a stationary support to be engaged by said pawl when the plate is held in position with the bar on edge, a disk fixed to the shaft of the adding-wheels and a pin on said disk to release said pawl from its pin when the totalizing-wheels are returned to starting position and a spring for returning the flat bar to a horizontal position.

4. The combination, in an adding-machine, of a suitable shaft rotatably mounted and having a longitudinal groove, a series of totalizing-wheels rotatably mounted on said shaft and each having a cam on one side and a ratchet on the other, an internal spring-actuated detent in each totalizing-wheel, and a series of arms to engage said cams, yielding pressure devices applied to said arms, a pawl pivoted to each arm to engage the ratchet on the adjoining totalizing-wheel, an arm projecting upwardly and then forwardly from each pawl, a flat bar eccentrically mounted above the totalizing-wheels to engage said arm, and when turned on edge to hold the pawls out of engagement with the ratchets, an arm fixed to the bar a plate pivoted to said arm a spring-actuated pawl pivoted to the plate, a pin fixed to a stationary support to be engaged by said pawl when the plate is held in position with the bar on edge, a disk having a notch in its edge fixed to the shaft of the adding-wheels and a pin on said disk to release said pawl from its pin when the totalizing-wheels are returned to starting position a spring for returning the flat bar to a horizontal position, and a pin on the said plate so positioned as to enter said notch in the disk and prevent its further rotation, when the flat bar is returned to a horizontal position.

5. The combination, in an addding-machine, of a frame pivotally supported at its rear end, a series of totalizing-wheels rotatably mounted therein, a single adding-wheel, means for bringing any one of the totalizing-wheels into mesh with the adding-wheel, means for operating the adding-wheel, a shaft rotatably mounted in the front end of the said frame, one or more cams on said frame, a support for each cam, and a lever whereby the shaft may be rocked to elevate the totalizing-wheels.

6. The combination, in an adding-machine, of a frame pivotally supported at its rear end, a rock-shaft mounted in the forward end of said frame, one or more cams on said shaft, to rest upon a fixed support, means for rocking the shaft, a flat bar eccentrically pivoted on the frame, an arm on one end thereof, a plate for connecting the rock-shaft and said arm, a series of totalizing-wheels rotatably mounted within said frame, and each having a cam on one side and a ratchet on the other, a series of spring-actuated arms to engage said cams, a pawl pivoted to each arm to engage the adjoining ratchet, and an arm fixed to each pawl to overlap said flat bar, substantially as and for the purposes stated.

7. An adding-machine, comprising a suitable base, a series of nine key-levers of different lengths pivoted therein, means for equalizing the movements of the levers, a single peripherally-cogged adding-wheel rotatably mounted, a plate pivotally mounted at the side of the adding-wheel to be engaged by the key-levers, an arm fixed to the plate, a ratchet device in said arm to engage and actuate the adding-wheel, a carriage slidingly mounted, a yielding pressure device to move the carriage a rack on said carriage, a dog to engage said rack, means for actuating the dog upon a depression of any key, means for engaging and stopping the rotation of the adding-wheel upon the completion of the movement of any key, a frame pivoted at its rear end to the sliding carriage, a series of totalizing-wheels mounted in the carriage, means for rotating the next wheel to the left when any totalizing-wheel is rotated a complete revolution, means whereby the said frame may be elevated to throw the totalizing-wheels and adding-wheels out of gear and to simultaneously throw said totalizing-wheel-advancing means out of contact with the wheels, means for returning all of the totalizing-wheels to the starting-point, substantially as and for the purposes stated.

8. The combination, in a typographical adding-machine, of a sliding carriage, paper-holding mechanism thereon, a roller mounted on the carriage having a ratchet-faced disk fixed thereto, a second roller, yielding pressure devices for holding the rollers in contact, two ribbon-spools mounted for rotation in a horizontal plane, a ratchet-edged flange on one spool, a lever fulcrumed to the carriage, a spring-actuated pawl in its one end to engage the ratchet-rim on the roller and a spring-actuated pawl to engage the ratchet-edged flange.

9. The combination, in a typographical adding-machine, of a sliding carriage, paper-holding mechanism thereon, a roller mounted on the carriage having a ratchet-faced disk fixed thereto, a second roller, yielding pressure devices for holding the rollers in contact, two ribbon-spools mounted for rotation in a horizontal plane, a ratchet-edged flange on one spool, a lever fulcrumed to the carriage, a spring-actuated pawl in its one end to engage the ratchet-rim on the roller, a spring-actuated pawl to engage the ratchet-edged flange, a guide for limiting the movement of the lever and a spring for returning the lever.

10. In a printing-machine, the combination of a pivoted segmental printing-hammer, an arm adjacent to the hammer, means for elevating the arm, a spring on the arm to engage the hammer when elevated, a vertically-sliding upright on said arm, a trip device on the upright and a pin on the hammer, substantially as and for the purposes stated.

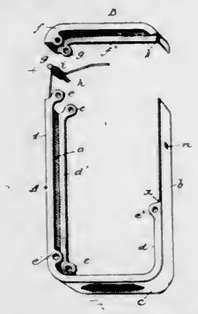
11. A typographical adding-machine, comprising a peripherally-cogged adding-wheel having a ratchet-rim at one side, and rotatably mounted, a type-bearing segment rotatably mounted on the shaft of the adding-wheel, a pawl thereon to engage said ratchet-rim, means for moving the type-bearing segment, a printing-hammer, means for operating the hammer, a sliding carriage, paper-holding mechanism mounted thereon, ribbon-holding mechanism on the carriage, means for advancing the paper and ribbon simultaneously, means for operating the carriage and the totalizing mechanism mounted on the carriage all arranged and combined substantially as and for the purposes stated.

12. The combination in a typographical adding-machine, of an adding-wheel, means for rotating the adding-wheel a distance corresponding to the value of the key depressed, a type-bearing segment pivoted to the same shaft, a ratchet device for moving the segment in unison with the adding-wheel in one direction, a spring for returning the segment and a printing-hammer substantially as and for the purposes stated.

13. The combination in a typographical adding-machine, of an adding-wheel rotatably mounted and having a ratchet-face on one side, a type-bearing segment rotatably mounted on the same shaft, a spring-actuated pawl in said type-bearing segment to engage said ratchet-face on the adding-wheel, means for rotating said segment the proper distance upon the depression of a key, and a suitable printing-hammer substantially as and for the purposes stated.

14. The combination, in an adding-machine, of an adding-wheel rotatably mounted, a series of totalizing-wheels designed to be successively brought into engagement therewith, a series of key-levers pivoted to a common fulcrum each having a number marked thereon and of a length from the pivotal point greater in proportion to the value of said number, means for limiting and equalizing the movement of the levers, a plate rotatably mounted on the axle of the adding-wheel, to be engaged by said key-levers, an arm connected with the plate, and a ratchet device on the arm to engage and actuate the adding-wheel.

657,267. **MATCH-BOX.** MORRIS EPSTEIN, New York, N. Y. Filed June 5, 1900. Serial No. 19,131. (No model.)



Claim.—1. In a match-box the combination of a frame consisting of front, back and bottom rims having flanges thereon, the flanges on the front rim terminated at a point between the top of the front rim and the bottom rim, a top for closing the box having flanges thereon, means for hinging the top to the back rim of the frame, and a hook formed on the free end of the top, and a spring-catch riveted to the front rim and having a catch to engage the hook at the top and a spring for opening the top when released from the catch, substantially as specified.

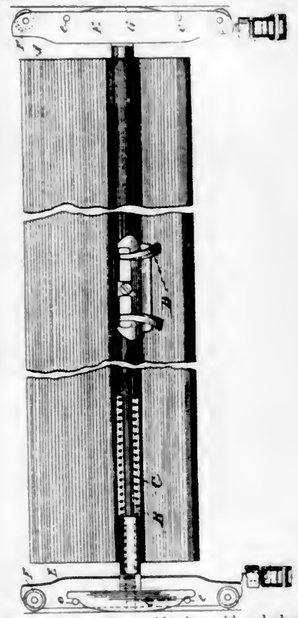
2. In a match-box the combination of the frame A made in a single piece consisting of the front, back and bottom rims *b a c* having flanges *d d* thereon, the flanges on the front rim extending to the point *x* only, and the rim having perforated ears *e e'* e^2 thereon, the top B made in a single piece and having flanges *f f* with perforated ears *g g* thereon at the rear end and a hook *k* at the front end, the ears *g g* being placed between the ears *e' e* of the frame and secured thereto by the pintle A, a spring wound around said pintle and having its ends bearing respectively against the top B and back rim *a*, the spring-catch D fastened to the front rim *b*, and the cover E inclosing the frame and top and connected with the frame by rivets, passed through the projections *e'* e^2, substantially as specified.

657,268. **SHADE-HOLDING MECHANISM.** GEORGE H. FORSYTH, Chicago, Ill., assignor, by mesne assignments, to the Curtain Supply Company, same place and Jersey City, N. J. Filed Dec. 5, 1898. Serial No. 698,336. (No model.)

Claim.—1. In a curtain-fixture, the combination with a shade-stick, of friction-shoes and antifriction devices at the ends of the stick, said friction-shoes being normally in holding contact with the casing and adapted to be released from holding contact when the stick is tilted and said antifriction devices being angularly adjustable to the stick and means whereby when the stick is tilted, the antifriction devices are thrust into contact with the casing, substantially as described.

2. In a curtain-fixture for spring-actuated shades, a curtain-stick having at its ends friction-shoes and antifriction-heads, a spring or springs adapted to hold the friction-shoes normally in contact with the window-frame, means for transferring the spring-pressure from the shoes to the heads and the latter being angularly adjustable with reference to the shade-stick, whereby when the latter is tilted, the heads may remain parallel to the casing, substantially as described.

3. A curtain-holding fixture comprising, in combination, heads carried by the shade and normally extending substantially parallel to the side margins thereof and provided with antifriction-surfaces near their ends, spring-pressed friction-shoes arranged to bear upon the window-frame and adapted when the margin of the shade is moved into an oblique position, to be withdrawn from contact and means adapted to simultaneously move the antifriction-surfaces at each end of each head into contact with the window-frame, substantially as described.



4. In a curtain-fixture, the combination, with a shade-stick having retractable spring-actuated rods, of heads loosely mounted thereon, antifriction-rollers journaled in the ends of said heads, and friction-blocks mounted on and retractable with said rods and normally contacting with the casing of the window, said blocks being adapted, when the stick is abnormally tilted, to bear upon said heads and thrust the same outwardly, so that the antifriction-rollers thereof bear simultaneously upon the casing, substantially as described.

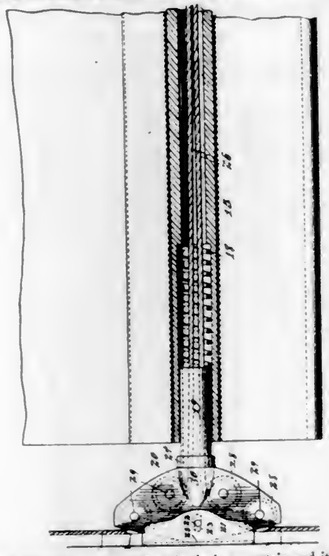
5. In a curtain-fixture device, a shade-stick, elongated heads loosely mounted thereon and adapted to traverse the grooves of the window-frame and having antifriction-rollers mounted therein normally inactive, and friction-shoes having a rocking bearing upon said heads and normally held in contact with the bottom of the groove and adapted to be rendered inactive by the tilting of the lower margin of the curtain to an oblique position and by bearing upon said heads to render the rollers thereof active to induce self-righting of the curtain, substantially as described.

657,269. **CURTAIN-FIXTURE.** GEORGE H. FORSYTH, Chicago, Ill., assignor, by mesne assignments, to the Curtain Supply Company, same place and Jersey City, N. J. Filed Jan. 26, 1899. Serial No. 703,441. (No model.)

Claim.—1. The combination with a flexible shade or curtain and its spring-actuated roller, of flexible guides adapted to maintain the lower edge of the shade in substantial parallelism with the roller, apertured heads carried by the shade and through which the flexible guides extend, a plurality of antifriction-rollers mounted in each head and over which the respective guides pass, and spring-pressed friction-shoes pivotally mounted upon said heads and adapted to contact with the window-frames, substantially as described.

2. The combination, with a flexible shade or curtain and its spring-actuated roller, of flexible guides adapted to maintain the lower edge of the shade in substantial parallelism with the roller, and spring-actuated friction-shoes carried by the curtain and adapted to contact with the window-frame and each comprising a head and a friction-shoe proper having a tilting or rocking connection with the head and free to move bodily toward and from the same, said head bearing on said shoe when in operative position, substantially as described.

3 The combination, with a flexible shade or curtain and its spring-actuated roller, of flexible guides adapted to maintain the lower edge of the shade in substantial parallelism with the roller, and spring-actuated friction-shoes carried by the curtain and adapted to contact with the window-frame and each comprising a head through which the flexible guides pass, and a friction-shoe which is bodily movable toward and from the head, whereby the space within the head may be increased to facilitate the insertion of the flexible guides, substantially as described.



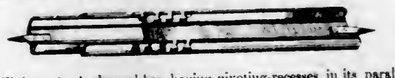
4. The combination with a flexible shade or curtain and its spring-actuated roller, of a tube mounted in the lower edge of said shade or curtain, heads carried by said tube and apertured in line with the bore thereof, a plurality of antifriction-rollers journaled in said heads on opposite sides of the apertures thereof, flexible guides passing over said rollers and through said heads and tube in opposite directions, friction-shoes mounted upon said heads and having a tilting or rocking connection therewith, said heads and said shoes being slidably mounted in the tube, and springs for pressing them outwardly, substantially as described.

5. The combination, with a flexible shade or curtain and its spring-actuated roller, of flexible guides adapted to maintain the lower edge of the shade in substantial parallelism with the roller, and spring-actuated friction-shoes carried by the curtain and adapted to contact with the window-frame and each comprising a head and a friction-shoe proper having a pin-and-slot connection with each other, and said head having a centrally-projecting portion to bear upon the back of the friction-shoe proper, substantially as described.

6. In a fixture of the character described, a combined head and shank consisting of two similar parts divided on a median plane, a ring or band fitting over the shank, and pins connecting the two parts and carrying guide-rollers, substantially as described.

7. The combination with a flexible shade or curtain and its spring-actuated roller, of flexible guides adapted to maintain the lower edge of the shade in substantial parallelism with the roller, and spring-actuated friction-shoes carried by the curtain and adapted to contact with the window-frame and each comprising a head and a friction-shoe pivotally mounted on the head, substantially as described.

657,270. **STAIR-CARPET FASTENER.** JOHN S. JARDINE, Philadelphia, Pa., assignor to Edward O. Bayles, Aberdeen, Md. Filed June 19, 1899. Serial No. 721,153. (No model.)



Claim.—1. A channel-bar having pivoting-recesses in its parallel side walls and provided with a securing-point at one end, and an extension-bar provided with pivoting-lugs engaging said recesses and a securing-point at its free end; substantially as specified.

2. A channel-bar having slots and enlarged recesses in its parallel side walls and provided with a securing-point at one end, an extension-bar lying within said channel-bar and having outwardly-extending lugs engaging said recesses, and a securing-point at the opposite end of said extension-bar; substantially as specified.

3. A stair-carpet fastener comprising a channel-bar having parallel side walls disposed at an angle to the face of the bar and provided with inwardly-extending slots terminating in an enlarged pivoting-recess, a securing-point located at one end of said bar, an extension-bar provided with parallel side walls disposed at an angle to the main face of said bar and adapted to lie within the side walls of the main channel-bar, elongated pivoting-lugs upon one end of said extension-bar and engaging said recesses, and a securing-point at the opposite end of said extension-bar; substantially as specified.

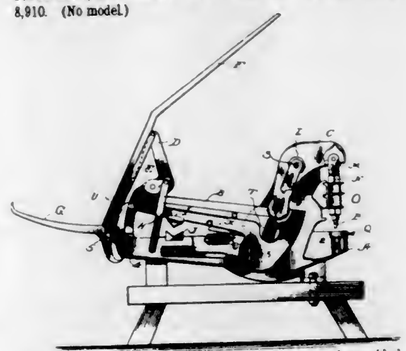
657,271. **BUTTON.** RUSSELL H. LEWIS, Providence, R. I., assignor to the S. & B. Lederer Company, of Rhode Island. Filed May 31, 1900. Serial No. 18,516. (No model.)



Claim.—1. As an improved article of manufacture, a button provided with a tubular post having an annular shoulder at its exterior and intermediate its ends, a disk surrounding said post and seated upon said shoulder, said disk being provided with oppositely-projecting tongues, and means arranged in said tubular post and adapted to expand the latter for securing the disk upon said shoulder.

2. As an improved article of manufacture, a button provided with a tubular post having an annular shoulder at its exterior and intermediate its ends, a disk surrounding said post and seated upon said shoulder, said disk being provided with oppositely-projecting tongues, and a plug arranged in said tubular post and adapted to expand the latter for securing the disk upon said shoulder.

657,272. **PUNCHING, SHEARING, AND SHAPING MACHINE.** PETER LORD, New Bedford, Mass. Filed Mar. 16, 1900. Serial No. 8,910. (No model.)



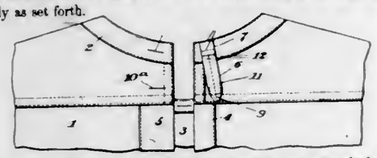
Claim.—1. A body, a lever B pivoted thereto and provided with suitable operating mechanism, a cam-lever pivoted upon the outer free end of the lever B, and the operating hand-lever to which the cam-lever is connected by suitable connecting-links, combined with a lever C which has its lower end bearing upon the lever B, the die Q upon the body and a suitable punch connected to the lever C, whereby all of the operating parts of the machine are moved simultaneously, substantially as shown.

2. In a combined shearing, shaping and punching mechanism, the body A provided with an anvil, and a vertical extension at one end, a suitable guiding means at the other, a lever B pivoted to the body A, a cam-lever pivoted upon the outer free end of the lever D, connecting-links connected to the cam-lever D at one end and to the body A at the other, the connecting-links E pivoted to the cam-lever D, the hand-lever F pivoted upon the body A, and to which the lower ends of the connecting-links are pivoted, and the lever C pivoted to the extension G, and having its lower end bearing upon the inner end of the lever B, combined with a suitable punching mechanism which is connected to the lever C, substantially as described.

657,273. **APPAREL-SHIRT.** CHARLES F. MILLER, Cincinnati, Ohio, assignor to Charles Arthur Petters, Ebenezer W. Lewis, and Hans Walter Dierecke, same place. Filed Dec. 7, 1899. Serial No. 739,472. (No model.)

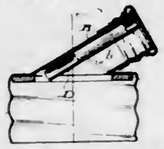
Claim.—1. A shirt or other garment having a band provided at one

end with a buttonhole, and at its other end with a tongue secured at one extremity to said band and having its opposite end free from the garment and adapted to be passed through said buttonhole, said tongue having wings secured at the central part of one of its surfaces and adapted to be folded flat against the surface of the tongue to which they are secured to permit the free passage of the tongue through the buttonhole and also adapted to project from the surface of the tongue for engagement with the edges of the buttonhole when the tongue is passed through the same, substantially as set forth.



2. A shirt or other garment having a securing device attached to a band of the garment and formed of a strip of textile material folded to form two plies secured together by stitches passed centrally along the strip, one ply being of less length than the other and having its edge portions free from the longer ply, and adapted to project therefrom to form wings for engagement with the edges of a buttonhole, substantially as set forth.

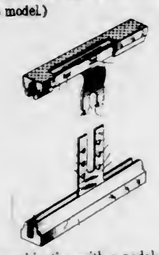
657,274. VENT-NOZZLE. AUGUST N. RITZ, Milwaukee, Wis. Filed May 31, 1900. Serial No. 18,514. (No model.)



Claim.—1. A vent-nozzle consisting of a cap having a central top slot and elevated ears between which the slot is located, a tubular inclined spout soldered to the cap-top and its ears in register with said slot, the inner end of this spout being undercut in an oblique direction; and a pipe located in the upper portion of the spout parallel therewith to extend approximately the whole length of same, the inner end of this pipe being considerably in rear of the forward extremity of the undercut of the aforesaid spout.

2. A vent-nozzle consisting of a cap having a central top slot and elevated ears between which the slot is located, a tubular inclined spout soldered to the cap-top and its ears in register with said slot, the inner end of this spout being undercut in an oblique direction; a detachable cover for the mouth end of the spout, and a pipe located in the upper portion of said spout parallel therewith to extend approximately the whole length of same, the inner end of this pipe being considerably in rear of the forward extremity of the undercut of the aforesaid spout.

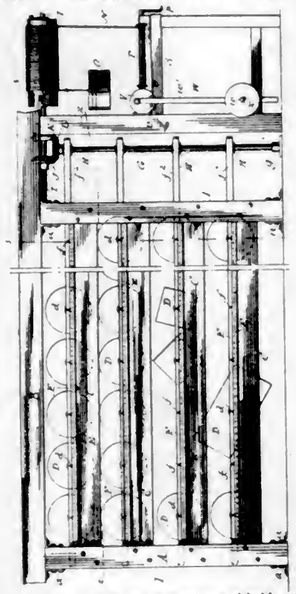
657,275. PEDAL-RUBBER. FRANK T. ROBINSON, Chicago, Ill., assignor to Louis J. Kreller, same place. Filed July 24, 1899. Serial No. 724,895. (No model.)



Claim.—1. The combination with a pedal of two pedal-rubbers engaging opposite sides of the pedal-blade and each provided with a tongue one of which has support against the pedal-blade and the other of which overlaps the first and is in contact therewith along its length, said tongues being provided with interlocking devices, substantially as set forth.

2. The combination with a pedal-blade having two pedal-rubbers arranged on opposite sides thereof and each having a clip fitting over one edge of the pedal-blade and each of said clips being formed rigidly with a tongue one of which is elastic resting flat against the side of the pedal, the other tongue overlying and in contact with the first along its length and one of said tongues being provided with a hook or lug and the other with a series of perforations or sockets for engaging and holding said hook or lug; whereby the pedal-rubbers will be adjustable to various sizes of pedals and at the same time will be held rigidly on the pedal and prevented from turning off by the pressure of the foot or being knocked off by a blow, substantially as set forth.

657,276. APPARATUS FOR PRESERVING. WILLIAM A. SHELDON, Chicago, Ill. Filed May 4, 1899. Serial No. 715,608. (No model.)



Claim.—1. An apparatus for preserving perishable articles, consisting of rotatable packing-cases adapted to inclose the perishable articles, means for imparting a rotary and linear movement to the cases, and means for regulating the speed of the rotary and linear movement of the cases, substantially as described.

2. An apparatus for preserving perishable articles, consisting of rotatable packing-cases having trunnions, supports upon and over which said trunnions may travel, means for imparting a rotary and linear movement to the cases, and means for regulating the speed of said rotary and linear movement, substantially as described.

3. A support for cases, cases having trunnions by means of which they are supported thereon, notched bars adapted to engage with the trunnions and roll the cases, means for imparting a backward-and-forward movement to the notched bars, and means for regulating the speed of rotation of the cases, substantially as set forth.

4. A support for cases, cases having trunnions by means of which they are supported thereon, notched bars adapted to engage with the trunnions and roll the cases, a mutilated-gear mechanism for giving the notched bars a to-and-fro movement, means for operating the mutilated gearing, and a speed-regulating device, substantially as set forth.

5. A support for cases, cases supported thereon by means of trunnions, notched bars in engagement with the trunnions, a mutilated-gear mechanism adapted to reciprocate the notched bars, a cord and weight adapted to operate the mutilated gearing, and a pendulum-regulating device also operated by the cord and weight, substantially as set forth.

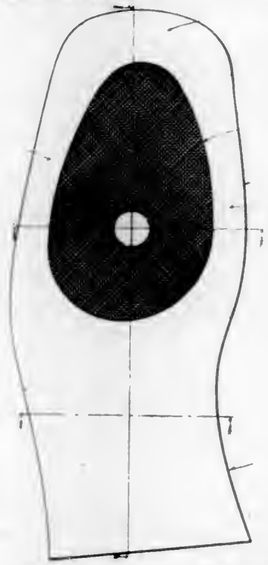
6. An apparatus for preserving perishable articles, consisting of rotatable packing-cases, and means for imparting a rotary and linear movement to said cases and holding them a predetermined distance apart, substantially as described.

7. An apparatus for preserving perishable articles, consisting of rotatable packing-cases, and means for imparting a rotary and linear back-and-forth movement to said cases and holding them a predetermined distance apart, substantially as described.

8. An apparatus for preserving perishable articles, consisting of rotatable packing-cases, means for rolling said cases in a linear direction and keeping them spaced apart, and means for regulating the speed of the rolling means, substantially as described.

9. In an apparatus for preventing the deterioration of perishable substances, in combination with holding-cases, and mechanism for operating said cases, of a shaft, gearing on the shaft for driving said mechanism, a bevel-gear on said shaft, a shaft I, two mutilated bevel-gears oppositely fixed on said shaft I and adapted to alternately drive the aforesaid bevel-gear and automatically change the direction of rotation of the holding-cases, and means for driving the shaft I, substantially as set forth.

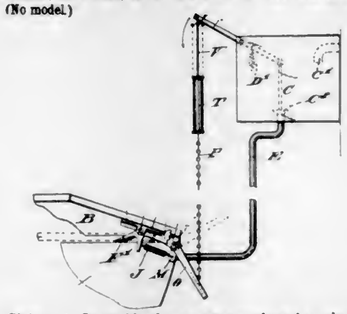
657,277. RUBBER SOLE. FRANK W. WHITCHER, Boston, Mass., assignor to Frank W. Whitcher & Co., same place. Filed Nov. 28, 1898. Serial No. 697,620. (No model.)



Claim.—1. The improved rubber tap-sole for application to the leather sole of an ordinary boot or shoe, slightly dished or curved and thereby adapted to be fitted smoothly and without cockles or crinkles to the surface of the said leather sole, and having the patch or field of corrugations or roughenings, and the plain trimming-margin around and out side of said patch or field, substantially as described.

2. The improved rubber tap-sole for application to the leather sole of an ordinary boot or shoe, slightly dished or curved and thereby adapted to be fitted smoothly and without cockles or crinkles to the surface of said leather sole, having the wide shank portion, the patch or field of corrugations or roughenings, and the plain trimming-margin around and outside of said patch or field, substantially as described.

657,278. AUTOMATIC FLUSHING APPARATUS. ABNER W. BARTON, New York, N. Y. Filed Oct. 4, 1899. Serial No. 732,444. (No model.)



Claim.—1. In combination, a water-supply and a valve therefor, a hinged seat, a lever-rack pivoted to the seat, one arm of said rack bearing upon the stationary support, another lever-rack engaging with the first-mentioned rack and pivoted to a portion carried by and moved by said seat, and connection between the water-supply valve and lever-arm of said last-mentioned rack.

2. In combination, a hinged seat, a lever-rack carried by said seat, another rack engaging therewith and pivoted to an extension of said seat, a lever moved by the last-mentioned rack, and a spring to elevate the hinged seat.

3. In combination, a hinged seat, a lever-rack carried by said seat, another rack engaging therewith and pivoted to an extension of said seat, a lever moved by the last-mentioned rack, and means to move said racks relatively to each other and elevate said seat slightly.

4. An automatic flushing device, comprising a lever-rack adapted to be carried by a tilting water-closet seat, another rack engaging with the first-mentioned rack and carried by an extension adapted to be carried by said seat, a lever moved by the last-mentioned rack, and means to move said racks relatively with respect to each other, and an extensible link connection adapted to couple the last-mentioned lever with a valve whereby a water-supply for flushing the water-closet is controlled.

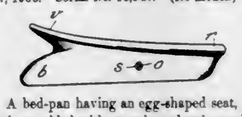
5. An automatic flushing device comprising a lever-rack adapted to be carried by a tilting water-closet seat, another rack engaging therewith and pivoted to an extension adapted to be carried by said seat, a lever moved by the last-mentioned rack, means to move said racks relatively to each other, and an extensible link adapted to connect the last-mentioned lever with a valve whereby a water-supply for flushing the water-closet is controlled, a resistance means whereby the elongation of said extensible link may be retarded, and automatic means whereby said extensible link may be contracted.

6. In an automatic flushing device, a lever-rack adapted to be carried by a tilting water-closet seat, another rack engaging with the first-mentioned rack and pivoted to an extension also adapted to be carried by said seat, a lever moved by the last-mentioned rack and means to move said racks relatively with respect to each other, an extensible link adapted to connect the last-mentioned lever with a valve in a suitable water-supply tank, said extensible link being elongated by the action of said valve, and contracted by means of a spring, and means whereby the elongation of said extensible link is partially resisted.

7. In an automatic flushing device, a water-supply and a valve therefor, a hinged seat, a lever-rack pivoted to said seat, one arm of said rack bearing upon a stationary support, another lever-rack engaging with the first-mentioned rack and pivoted to an extension carried by and moved by said seat, and a connection between the water-supply valve and the lever-arm on the last-mentioned rack, and means whereby said connection may be automatically lengthened and shortened.

8. In an automatic flushing apparatus, a water-supply, a valve therefor, a hinged seat, a lever-rack pivoted to said seat, one arm of said rack bearing upon a stationary support, another lever-rack engaging with the first-mentioned rack and pivoted to an extension carried by and moved by said seat, and a connection between the water-supply valve and the last-mentioned lever, means whereby said connection may be automatically lengthened and shortened, and a resistance device whereby the lengthening of said connection means may be retarded.

657,279. BED-PAN. ROSA BLANK, Vienna, Austria-Hungary. Filed Mar. 27, 1900. Serial No. 10,347. (No model.)



Claim.—1. A bed-pan having an egg-shaped seat, the front or narrow end of which is provided with an enlarged and rounded overhanging brim, *r*, to support the front of the body, said brim diminishing in thickness and roundness toward the rear or wider end of the bed-pan, where it is flattened out at *v* to support the rear of the body, substantially as set forth.

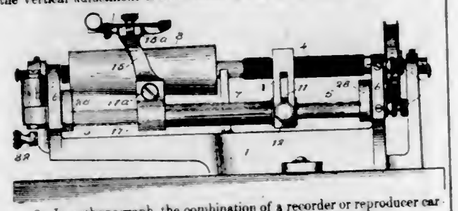
2. A bed-pan having a hollow projection or enlargement at the base of its rear end and having the upper brim of said rear end flattened and widened out and gradually ascending to overhang said projection and form a support for the body, substantially as set forth.

657,280. PHONOGRAPH. WILLIAM BOHNE, Toronto, Canada. Filed Mar. 20, 1900. Serial No. 9,467. (No model.)

Claim.—1. In a phonograph, the combination of a rotating support adapted to receive phonogram-cylinders of different diameter, a recorder or reproducer carrying arm, a vertically-adjustable guide-rod, a sleeve traveling longitudinally on said guide-rod and supporting said arm, a vertically-adjusted feed-arm supported on said sleeve, and means for supporting the free end of said arm and at different elevation to correspond with the vertical adjustment of said guide-rod, substantially as set forth.

2. In a phonograph, the combination of a rotating support adapted to receive phonogram-cylinders of different diameter, a recorder or reproducer carrying arm, an eccentrically-pivoted guide-rod carrying a longitudinally-traveling sleeve, means for maintaining said guide-rod at its different elevations, said sleeve supporting said arm and a vertically-adjust-

able feed-arm, means for maintaining said feed-arm vertical when adjusting and at different elevations when adjusted, and a plurality of supports for the free end of said arm and of different elevations to correspond with the vertical adjustment of said sleeve, substantially as set forth.

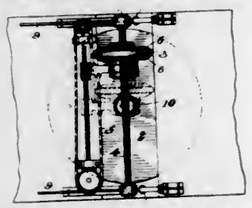


3. In a phonograph, the combination of a recorder or reproducer carrying arm adapted to travel longitudinally over the phonogram-cylinders, tracks of different elevations for supporting the free end of said arm, the upper track hinged and swinging into a vertical position over the lower track, means for retaining the said upper track in a vertical position over the lower track, whereby the arm is adjusted for cylinders of different diameters, substantially as set forth.

4. In a phonograph, the combination of a movable arm traveling longitudinally over the phonogram-cylinders, an independent recorder or reproducer holder supported by said arm, said holder fulcrumed on said arm, a pin screw-threaded at its upper end and passing freely through the said holder, but fastened to the said arm, a nut screwing on the threads of the said rod and bearing on the top of the said holder to adjust the vertical, pivotal position of the latter, and a spring interposed between the said arm and holder, whereby any difference in the thickness of phonogram-blanks is compensated for, and whereby the point of the recorder or reproducer is maintained at the proper angle of contact, substantially as set forth.

5. In a phonograph, the combination of a rotating mandrel for phonogram-cylinders of small diameter, a cylindrical bushing enveloping the said mandrel for phonogram-cylinders of large diameter, an internal annular flange adapted to support the cylindrical bushing upon said mandrel, a threaded projection extending from the small end of said mandrel, a threaded opening in said annular flange corresponding with the threaded projection on said mandrel, substantially as shown and described.

657,281. VEHICLE DRIVING MECHANISM. WILLIAM BUTTLER, Redkey, Ind. Filed July 11, 1900. Serial No. 23,195. (No model.)



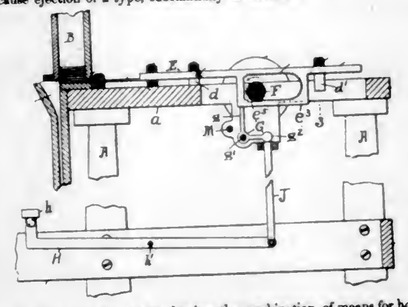
Claim.—1. The combination with a driving-disk having a gear-wheel in one part thereof, of a friction-disk arranged to engage the driving-disk and having teeth to engage the gear-wheel of the driving-disk when in proper position; substantially as described.

2. A friction driving-disk having an annular row of teeth near its center, a friction-disk arranged to engage the driving-disk and having side teeth, and mechanism for shifting the position of the friction-disk and forcing it into engagement with the driving-disk; substantially as described.

657,282. EJECTING MECHANISM FOR TYPE MACHINERY. FRANCIS B. CONVERSE, Jr., Louisville, Ky., assignor to the Converse Manufacturing Company, Cleveland, Ohio. Filed Dec. 30, 1899. Serial No. 742,042. (No model.)

Claim.—1. The combination, with means for holding type, of a toothed wheel adapted to be continuously revolved, and an ejecting member having internal teeth which are adapted to engage opposite sides of the wheel, and means for causing such engagement successively whereby the rotation of the wheel causes the reciprocation of the ejecting member thus ejecting type, substantially as described.

2. In combination, means for supporting type, a rotatable toothed wheel, a yoke having internal teeth adapted to engage with opposite sides of said wheel, means for causing relative movement between the yoke and wheel to bring them into engagement, means for automatically changing the relative position of the yoke and wheel to shift the engagement of the yoke from one side of the wheel to the other, and a connection between the yoke and supply of type whereby the movement of the yoke is adapted to cause ejection of a type, substantially as described.



3. In a type-ejecting mechanism, the combination, of means for holding type, a yoke having internal teeth placed on three sides of an opening, a wheel having external teeth within the yoke, a connection between the yoke and a supply of type, and means for maintaining the teeth on the yoke out of engagement with the toothed wheel but adapted to allow them to come into such engagement, substantially as described.

4. In an ejecting mechanism, in combination, a toothed wheel adapted to be continuously rotated, a yoke extending both above and below the wheel and having internal teeth adapted to engage with the upper side or the lower side or the rear side of said wheel, means for supporting the yoke normally out of engagement with the teeth on the wheel, and means for withdrawing such support and allowing the teeth on the yoke above the toothed wheel to drop into engagement therewith, whereby the toothed wheel causes the advancement of the yoke then its elevation and then its retraction, substantially as described.

5. In combination, a toothed wheel, a yoke extending onto opposite sides thereof, and having two reaches of internal teeth on opposite sides of the toothed wheel and internal teeth placed in a curve and connecting the two reaches of teeth, means for maintaining said yoke out of engagement with the toothed wheel, means for allowing it to move into such engagement whereby the continuous rotation of the toothed wheel gives a reciprocation to the yoke, there being provided means whereby the yoke at the completion of each stroke automatically maintains itself out of engagement with the toothed wheel, substantially as described.

6. In ejecting mechanism, a toothed wheel, an ejector extending loosely around said wheel on the three sides thereof and having internal teeth, means for allowing the ejector to pass into engagement with the wheel whereby it is moved forward, elevated and moved rearward, in combination with means for holding type, and a connection between such type and the ejector whereby the movement of the latter may eject type, substantially as described.

7. In combination, means for holding a supply of type, a bar adapted to shove type from the supply, a yoke pivoted to said bar, said yoke having internal teeth occupying three sides of an opening, a wheel adapted to be continuously rotated and occupying said yoke normally out of engagement therewith, means for allowing the yoke to swing on its pivot into engagement with said wheel whereby the yoke is advanced and retracted and the type ejected, substantially as described.

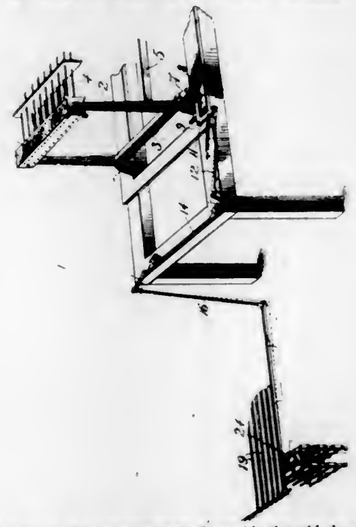
8. In combination, means for holding a supply of type, an ejector adapted to shove type therefrom, said ejector carrying an internal toothed yoke, a toothed wheel loosely occupying said yoke, a bar supporting said yoke out of engagement with said wheel, a finger-key and a connection between the same and said bar whereby the actuation of the key moves the bar to allow the yoke to pass into engagement with the wheel, substantially as described.

9. In combination, a toothed wheel, an internal toothed yoke lying above and below and on the rear side of the wheel, and a bar supporting said yoke out of engagement with said wheel, means for moving said bar out from under the yoke and allowing the latter to drop by gravity into engagement with the wheel whereby the yoke is advanced, the parts being so arranged that as the yoke arrives at its extreme forward position the bar passes beneath the yoke and maintains it in engagement with the wheel during its retractive movement, substantially as described.

10. The combination of a toothed wheel, a yoke having internal teeth in the form of a letter U which lie above, below and at the rear of said wheel, a bell-crank lever having one arm engaging with the under side of the yoke and holding it out of contact with the wheel, a finger-key and a connection between it and the other arm of the bell-crank lever whereby the actuation of the finger-key tips the other arm forward from beneath the yoke, allowing the latter to drop into engagement with the wheel, means for giving said bell-crank lever a tendency to return to its normal position whereby when the yoke arrives at its forward movement the bell-crank lever does so return and supports the yoke in engagement with the wheel during the retractive movement, substantially as described.

11. In an ejecting mechanism, the combination of a wheel having ratchet-teeth on its periphery, an ejector extending loosely around said wheel on three sides thereof and having internal ratchet-teeth facing in the opposite direction to those on the wheel, means for allowing the ejector to pass into engagement with the wheel whereby it is moved forward, elevated and moved rearward, and means for holding type adapted to be ejected by the forward movement, said wheel passing out of engagement with the retracting-teeth at the end of the rearward movement, substantially as described.

657,283. ATTACHMENT FOR LOOMS. JOHN W. DAWSON, Scranton, Pa. Filed Nov. 1, 1899. Serial No. 735,521. (No model.)



Claim.—1. In a loom attachment, the combination with the pattern-cylinder movable transversely and longitudinally of the needles and adapted to receive pattern-cards provided with perforations corresponding to two patterns, of the shuttle-box chain having indicators thereon arranged to represent the desired changes in the patterns, and a lever connected to the pattern-card cylinder and adapted to be moved by said indicators, whereby when the lever is moved, the cylinder will be shifted to change the pattern.

2. In a loom, the combination with the pattern-cylinder movable transversely and longitudinally of the needles and adapted to receive pattern-cards provided with perforations corresponding to two patterns, of the box-chain having indicators arranged to represent the desired changes in the patterns, a shoe adapted to be moved by said indicators, said shoe being arranged to bridge the distance between two successive indicators, and connections between said shoe and pattern-card cylinder whereby when the shoe is moved by the indicators, the cylinder will be shifted to change the pattern.

657,284. GRAIN-SACK HOLDER. IRA A. EDDY, Burlington, Mich., assignor of one-half to Joseph Seeman, same place. Filed Feb. 23, 1900. Serial No. 6,153. (No model.)



Claim.—1. In a grain-sack holder, the hopper A comprising the flattened parabola-shaped back *d*, and having a D-shaped mouth, the lower end of said hopper terminating below and disposed outward from said back, and a bail E hung to the upper edge of said hopper between its front and back portions and at points parallel with said back, in combination with the neck B rigidly secured to the lower edge of said hopper and provided with hooks *c*, *c*, *c*, substantially as specified and for the purposes described.

2. The combination of a hopper A comprising a flattened parabola-shaped back *d* and having a D-shaped mouth the curve of said mouth trending below the upper edge of the back portion, the lower end of said hopper falling below and disposed outward from its back portion and terminating in a neck B provided with hooks *c*, *c*, *c*, and a bail E hung to the upper edge of said hopper between its front and back portions and at points parallel with said back, substantially as specified and for the purposes set forth.

657,285. EGG-CASE FILLER. WILLIAM H. HASKELL, Philadelphia, Pa. Filed June 21, 1900. Serial No. 21,029. (No model.)



Claim.—1. In an egg-case filler, a series of parallel strips of cardboard or other pliable material connected together at intervals by a series of short spacing-strips attached to opposite faces of any two adjacent continuous strips, and in which the transverse connecting spacing-strips between one pair of parallel continuous strips is staggered with relation to the transverse spacing-strips between the next adjacent pair of continuous strips whereby a series of rectangular staggered compartments are secured.

2. In an egg-case filler, a series of parallel strips of cardboard or other pliable material connected together at intervals by a series of short spacing-strips attached to opposite faces of any two adjacent continuous strips, and in which the transverse connecting spacing-strips between one pair of parallel continuous strips is staggered with relation to the transverse spacing-strips between the next adjacent pair of continuous strips whereby a series of rectangular staggered compartments are secured, and in which the transverse connecting-strips are of less length than the distance between any two adjacent transverse strips in the same compartment, whereby the compartments are of greater length in one direction than the other.

3. In an egg-case filler, the combination of a series of parallel continuous strips of cardboard or other pliable material combined with a series of short hinged strips arranged end to end between each pair of adjacent longitudinal continuous strips and each of said hinged strips being attached on diagonally-opposite ends to the adjacent continuous strips and of such length including the spacing parts and pasted ends as to equal the distance between the adjacent spacing-strips when the filler is opened whereby the entire structure may be condensed to the greatest possible extent for packing in shipment and may be readily opened to form a series of rectangular compartments for receiving eggs.

4. An egg-case filler consisting of a series of parallel continuous strips of cardboard or other pliable material connected together at a width less than the diameter of the egg to be packed by a series of transverse spacing-strips, and in which the spacing-strips between one pair of continuous strips are staggered with relation to the similar spacing-strips between the next adjacent pair of continuous strips whereby the rectangular compartments in one row are staggered with the rectangular compartments in the next row and all of the compartments are equal in size.

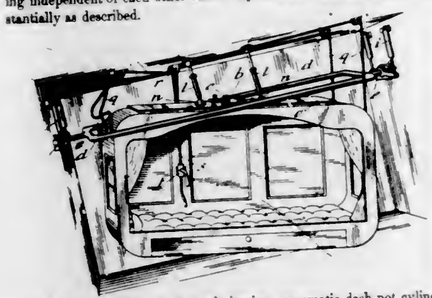
5. In an egg-case filler, the combination of a series of parallel continuous strips having their surfaces uninterrupted by transverse incisions or cuts, combined with a series of spacing hinged division-strips arranged between the several continuous strips and those between any two continuous strips lying in the same plane when the filler is condensed for shipment whereby a series of compartments of greater length than width are formed between each pair of continuous strips when the filler is opened and the entire structure is so formed that its several continuous strips may be folded down by the independent action of the several series of hinged strips without any of said hinged strips overlapping.

657,286. GIMBALED COT OR COUCH. HARRY J. HITCHINS and ATHOL MAYHEW, London, England. Filed Dec. 20, 1899. Serial No. 740,954. (No model.)

Claim.—1. The combination with a gimbaled cot or couch, of self-acting pneumatic dash-pot devices connected thereto, said devices being independent of any external source of power; substantially as described.

2. The combination with a gimbaled cot or couch, of self-acting pneu-

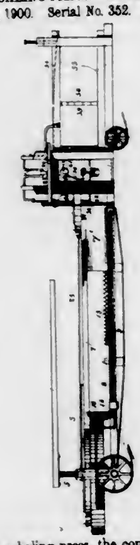
matic piston-and-cylinder dash-pots connected thereto, the cylinders being independent of each other and of any external source of supply; substantially as described.



3. A gimbaled cot or couch having pneumatic dash-pot cylinders connected thereto and provided with valve-controlled air-ports; substantially as described.

4. A gimbaled cot or couch, having a clamp secured thereto, and a set of cords leading in pairs from its ends over external guide-pulleys and thence to the clamp; substantially as described.

657,287. BALING-PRESS. CHARLES J. JOHNSON, Paso Robles, Cal. Filed Jan. 4, 1900. Serial No. 352. (No model.)



Claim.—1. In a baling-press, the combination of a frame having a press-box mounted upon one end, a follower adapted to operate therein, a plunger-beam connected with the follower and having an extension from its other end arranged out of line but parallel with its main portion, and means including axially-mounted cams to operate the plunger-beam, and means for operating the cams, said extension of the beam being slotted and guided on the axis of said cams.

2. In a baling-press, a horizontal framework having a press-box mounted upon one end, turnable cams mounted at the opposite end, a plunger-beam with antifrictional roller adapted to contact with the cams which act in line with the beam, a slotted guide-plate extending to one side and parallel with the plunger-beam and slidable upon a guide-shaft and a follower carried by the opposite end of the plunger-beam and reciprocated within the press-box.

3. In a baling-press, the combination of a portable, horizontal framework having a press-box at one end, a vertical shaft at the opposite end and a horizontal disk mounted on said shaft, cams carried by the disk, a follower to operate in the press-box, a plunger-beam having one end connected with the follower and the opposite end to be engaged by said cams, an extension of the beam arranged out of line but parallel with its main portion and slotted to receive said shaft whereby the beam is guided to maintain its direction of travel, and a spring by which the beam is retracted when the cams have passed the plunger-beam.

4. In a baling-press, the combination with a press-box, a follower, a yoke on the box, a rebounding plunger-beam, and means including a vertical shaft and cams carried thereby and adapted to operate the beam, said beam having an extension from one end arranged out of line but parallel with its main portion, and slotted and guided on the shaft, and having at its opposite portion a shoulder adapted to contact with said yoke.

5. In a baling-press, a horizontal frame with press-box at one end, a revoluble cam-carrying disk at the opposite end, a follower reciprocable in the press-box and a plunger-beam intermediate between it and the cams, hinged doors upon the top and one side, mechanism for opening said doors to admit the charge of material to be compressed, and mechanism for closing the doors after the charge has been introduced, shafts and rocker-arms at one end connected with said mechanism, and rocker-arms at the opposite end, and cams or lugs carried by the revoluble disk and engaging said rocker-arms.

6. In a baling-press, a framework having a press-box mounted at one end, a revoluble cam-carrying disk journaled at the opposite end, a follower movable within the press-box, a guided plunger-beam having one end connected therewith, and the opposite end acted upon by the cams to reciprocate the follower top and side doors upon the press-box adapted to be opened to receive charges of material, and thereafter closed before the advance of the follower, cranks and connecting-rods by which said movements are effected, shafts extending from the press-box to the cam-disks, lugs or cams carried by said disk and rocker-arms upon the shafts whereby the shafts are moved and the doors periodically opened and closed.

7. In a baling-press, a horizontal framework having a press-box upon one end, a power mechanism at the opposite end and hinged doors upon the top and one side of said box, connections including shafts and rocker-arms thereon between said power mechanism and the press-box whereby the doors of the box are automatically opened to receive the charge of material and closed thereafter and the follower moved to compress the charge thus received.

8. In a baling-press, a horizontal framework having the press-box at one end, said box having a hinged door upon the top and one side a horizontal revoluble cam-carrying disk at the opposite end through which power is applied to reciprocate the follower in the press-box, a series of alternately-placed lugs or cams carried by the disk, oscillating shafts extending from the disk to the press-box having rocker-arms at one end which are engaged alternately by the lugs upon the disk and rocker-arms at the opposite end, with connecting-rod and crank-shafts whereby power is alternately transmitted through the shafts and connected mechanism to open the doors of the press-box to receive a charge of material, and to close them after said charge has been introduced.

9. In a baling-press, a horizontally-disposed press-box, a follower movable therein and mechanism whereby said follower is reciprocated, a door hinged at one side of the top, a second door hinged at the bottom of one side so as to open outwardly from each other, said side door having a spring-pressed slidable extension which is projected when the door is opened to form a guide for the introduction of material, and mechanism by which said doors are closed in unison whereby the top door returns the extension of the side door in the action of closing.

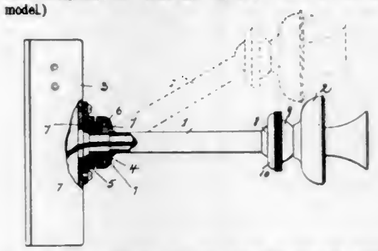
10. In a baling-press, a press-box having a follower reciprocable therein, a top door hinged near one side, a side door hinged at the bottom so that the two open outwardly from each other to receive charges of material, mechanism including oscillating shafts, rocker-arms thereon and a rotatable disk having means engaging said arms, by which the doors are automatically opened and closed, and spring-pressed latch-bolts by which they are retained when closed.

11. In a baling-press, a press-box, a follower and mechanism by which it is reciprocated horizontally within the box, doors hinged at the top and bottom of one side respectively so as to open outwardly to receive the charge of material to be pressed, mechanism by which the doors are closed, spring-pressed bolts by which the doors are locked when closed, pins slidable in the bolt-receiving sockets and in line with the bolts, levers acting against said pins, and a pin or lug carried by the follower and contacting with said levers, when the follower has reached the outward end of its stroke, whereby the door-bolts are retracted and the doors allowed to open.

12. In a baling-press, a press-box, a follower and mechanism by which it is reciprocated horizontally within the box, a top door hinged to one side and a side door hinged to the bottom of the box, and mechanism by which they are alternately opened to receive material and closed after the door has been introduced, locking-bolts, sockets into which the outer ends of said bolts pass to lock the doors, rotatable spring-pressed disks with which the inner ends of the bolts are connected, pins slidable in line with the outer ends of the bolts and levers contacting with the outer ends of said pins, a pin carried by the follower adapted to contact with said lever when the forward stroke of the follower is completed whereby the levers act through the pins to retract the locking-bolts and allow the doors to be opened.

13. In a baling-press, a frame having a press-box mounted at one end, a revoluble cam-carrying disk at the opposite end, a follower and a rebounding plunger-beam having a slotted extension from one end adapted to guide said beam in its movements, said beam actuated by the cams whereby the follower is reciprocated within the box, an extension through which the compressed material is forced to form the bale, said extension having a movable top plate and screws by which the outer end of said plate is adjusted to regulate the size of the discharge-opening and determine the amount of compression of the baled material.

657,288. TELEPHONE TRANSMITTER-ARM. GEORGE R. KENNEDY, Allegheny, Pa. Filed Apr. 12, 1900. Serial No. 12,588. (No model.)



Claim.—The combination of a tube having an open ball threadably attached to each end, a transmitter-cup 2 having a threaded opening formed through its rear wall, a cup threadably secured within the opening of said case to receive the ball at one end of said tube, a jam-collar threadably secured upon said cup to engage with and retain the ball in its seat, an induction-coil case 3 having an opening formed through its front wall, a cup secured upon the face of said case over the opening to receive the ball at the opposite end of the tube, and a jam-collar threadably secured to said cup to engage with and retain the ball in its seat, all arranged and combined with one another substantially as shown and set forth.

657,289. GRASS-CARRIER FOR LAWN-MOWERS. ROSWELL F. KRAUSE, Chicago, Ill., assignor to the Krause Manufacturing Company, same place. Filed Nov. 27, 1899. Serial No. 738,334. (No model.)



Claim.—1. A grass-carrier for lawn-mowers comprising a frame having a bottom of flexible material, a rigid strip secured to the open side of such bottom, the length of the strip being equal to the width of the bottom, and a connection between the side portions and the strip permitting such side portions to slide longitudinally of such strip.

2. A grass-carrier for lawn-mowers having an end, sides and a bottom of flexible material, a rigid strip on the open edge of such bottom, and loops on such strip, said sides engaging in and adjustable on such loops.

3. A grass-carrier for lawn-mowers comprising two sides, an end and a bottom of flexible material, a wire frame supporting the top edges of such sides, end and bottom and also the forward edges of the sides, such frame having eyes on its free ends, a strip on the front side of the bottom, loops on such strip engaged by such eyes, and means for securing the carrier to the mower.

4. A grass-carrier for lawn-mowers having two sides, an end, and a bottom of flexible material, a rigid supporting and protecting strip of separate material from the bottom but secured thereto, such strip extending from side to side on the front edge of such bottom and of permanent length, and a connection between the side portions and the strip permitting such side portions to slide longitudinally of such strip whereby such side portions may be adjusted to vary the width of the carrier to the cut of the mower.

5. A grass-carrier for lawn-mowers comprising a receptacle with sides, and with a bottom of flexible material, a rigid strip secured at its rear side to the bottom and forming the front edge of such bottom and means for attaching the carrier to the mower, the length of such strip being equal to the width of the bottom, and a connection between the side portions and the strip permitting such side portions to slide freely and longitudinally on the strip.

6. A grass-carrier for lawn-mowers comprising a receptacle having an end, two sides and a bottom, loops in the front edge of the bottom, and on the upper side thereof, the lower inner corners of the sides terminating in eyes encircling, and adjustable in, the said loops, and means for attaching the carrier to the mower.

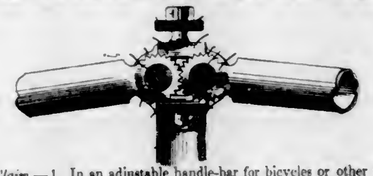
7. A grass-carrier comprising a bottom 1, sides 2, end 3, an upper frame consisting of a wire or rod with end portion 4, side portions 5 and downwardly-extending portions 6 with eyes 7 on their extreme ends, a lower wire frame consisting of an end and two side portions, a strip 9 on the front edge of the bottom 1, elongated loops 12 on the strip engaged by said eyes 7 and means for clamping the carrier to a mower-handle.

8. A grass-carrier, comprising a receptacle having sides, and a flexible bottom, a sheet-metal strip 9 whose front edge 10 is upwardly turned and whose rear edge 11 is folded over upon the edge of the flexible bottom, loops near either end of such strip and in which the sides are freely adjustable, and means for attaching the carrier to a mower.

9. A grass-carrier comprising a bottom 1, sides 2, end 3 of flexible material, an upper wire frame secured to the upper edges of the carrier and having downwardly-extending portions 6 secured to the front edges of the sides 2 and provided at their ends with eyes or hooks 7, a lower wire frame with an end portion and two parallel side portions secured at the juncture of the end and sides with the bottom, a rigid strip 9 secured to the front edge of the bottom and having at each end an elongated loop 12 engaged by such eyes 7 and movable therein and means for attaching the carrier to a mower.

10. A grass-carrier for lawn-mowers comprising a receptacle having sides, and a bottom of flexible material, and means for adjusting the distance between the sides adjacent to the mower without changing the width of the bottom, said means comprising loops arranged on the front edge of the bottom, in which loops the said sides engage and slide.

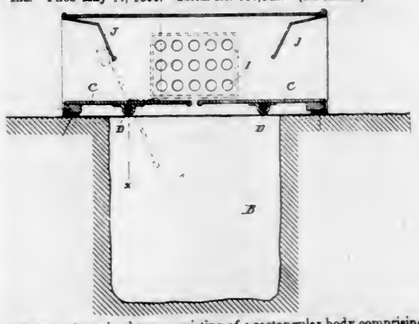
657,290. ADJUSTABLE HANDLE-BAR. EDWARD M. LANDIS, Toledo, Ohio. Filed Mar. 18, 1899. Serial No. 709,627. (No model.)



Claim.—1. In an adjustable handle-bar for bicycles or other vehicles, handle-bar sections having intermeshing members on the adjacent ends thereof, bolts passing through said members and serving as hinges therefor, a handle-bar post, having a forked end to receive said intermeshing members and in which are rigidly secured said bolts; dogs engaging said members, a right and left hand threaded screw-stem to bring said dogs in engagement with said members, and grooves on said members, acting as a guide to said screw-threaded stem, substantially as shown and described.

2. In an adjustable bicycle handle-bar, the stem bifurcated at its upper end, a pair of bolts secured therein in parallel relation, the handle-bar sections pivoted upon said bolts and provided upon their adjacent ends with intermeshing teeth and alined grooves, an upper and a lower locking-dog, provided with serrations adapted to engage the teeth of the handle-bar sections, a locking-stem, provided with a left-hand thread of large diameter and a right-hand thread of smaller diameter adapted to enter interiorly-threaded perforations in the dogs, so as to bring them into locking engagement with the handle-bar sections, said stem being located in the opening formed by the alined grooves, substantially as shown and described.

657,291. ANIMAL-TRAP. WILLIAM H. LARIMER, Terre Haute, Ind. Filed May 17, 1899. Serial No. 717,142. (No model.)



Claim.—An animal-trap consisting of a rectangular body comprising top and side sections, the said side sections being perforated, bait-boxes

secured on the outer surfaces of the sides inclosing said perforations, cross-strips at the lower corners, transversely of the body, the ends and bottom of said body being open, shields extending inwardly on an incline from the ends and having depending extremities, whereby the movement of the doors is limited and the animal is prevented from retreating, platforms hinged on transverse rods, and weights on the outer ends of the platforms.

657,292. **HAND-STAMP.** JOHN F. LEHNER, Baltimore, Md. Filed Apr. 19, 1899. Serial No. 713,625. (No model.)



Claim.—1. In a hand-stamp, the combination with a casing having opposing longitudinal openings in its sides, of a printing-strip having thickened portions held frictionally within said casing, and thumb-pieces extending into the openings, substantially as described.

2. In a hand-stamp, the combination with a casing having opposing longitudinal openings in its sides, of a printing-strip having thickened ends held frictionally within said casing, and thumb-pieces connected with said ends and projecting through the openings, substantially as described.

3. In a hand-stamp, the combination with a casing having opposing pairs of longitudinal openings in its sides, of a plate within said casing and printing-strips, one for each pair of openings, extending around the lower end of said plate and having thickened portions frictionally held between said plate and the casing, substantially as described.

4. In a hand-stamp, the combination with a casing having opposing pairs of longitudinal openings in its sides, of a plate longitudinally adjustable within said casing and printing-strips, one for each pair of openings, extending around the lower end of said plate and having thickened ends frictionally held between said plate and the casing, and thumb-pieces connected with said ends and extending through the openings, substantially as described.

5. In a hand-stamp, the combination with a casing having longitudinal side openings, internal guideways and a tubular head, of a plate movable in said guideways and having a threaded socket, an adjusting-rod extending through said head and having a screw-threaded portion engaging the threaded socket in the plate and type-carrying strips extending longitudinally of said plate provided with thumb-pieces extending through the longitudinal side openings, substantially as described.

6. In a hand-stamp, a printing-strip of flexible material having raised impression characters thereon, and thickened end portions, substantially as described.

7. In a hand-stamp, a printing-strip of flexible material having raised impression characters on one side, thickened end portions extending outwardly beyond said characters, and guide-pieces projecting from said end portions, substantially as described.

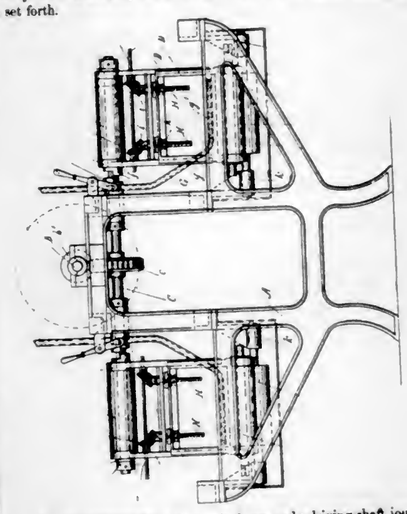
8. In a hand-stamp, the combination of a base having an aperture, a casing having elongated openings formed in opposite sides, a flexible type-carrying strip so arranged within the casing that the type thereon will extend through the aperture in the base, thumb-pieces connected with the ends of said strip and extending through the elongated openings in the sides of the casing, and type stationarily secured to the lower face of the stamp-base, substantially as described.

9. In a hand-stamp, a printing-strip of flexible material having raised impression characters thereon, separated one from another by transverse-extending grooves or indentations, and having at the ends laterally-projecting guides.

10. In a hand-stamp, the combination of a casing having slots formed in opposite walls, and a flexible printing-strip having raised impression characters thereon and having laterally-projecting guides extending into the slots in said casing.

657,293. **DYEING-MACHINE.** JESSE T. MORGAN and WILLIAM MENZIES, Wilkes-Barré, Pa. Filed July 20, 1900. Serial No. 24,320. (No model.)

Claim.—1. The combination, with a main frame, and a shaft journaled therein; of a series of roll-shafts having their middle parts journaled in the main frame and arranged crosswise of the driving-shaft, driving mechanism connecting the said roll-shafts with the driving-shaft, and extension-frames provided with rolls for supporting hanks of yarn and carried by the overhanging end portions of the said roll-shafts, substantially as set forth.



2. The combination, with a main frame, and a driving-shaft journaled thereih; of a series of roll-shafts journaled in the main frame crosswise of the driving-shaft, driving mechanism constantly connecting the said roll-shafts with the driving-shaft, extension-frames provided with rolls for the yarn and carried by the said roll-shafts, and clutch mechanism for connecting one of the rolls of each said extension-frame with the roll-shaft to which it pertains, substantially as set forth.

3. The combination, with a main frame, and a driving-shaft journaled therein; of a series of roll-shafts having their middle parts journaled in the main frame and arranged crosswise of the driving-shaft, driving mechanism constantly connecting all the said roll-shafts with the driving-shaft, extension-frames provided with rolls for the yarn and carried by the overhanging end portions of the said roll-shafts, and clutch mechanism for connecting one of the rolls of each said extension-frame with the roll-shaft to which it pertains, substantially as set forth.

4. The combination, with a roll-shaft, and means for revolving it; of a roll mounted on the said shaft and provided with a clutch member at one end, a slidable clutch member which revolves with the said shaft, an extension-frame pivoted concentric with the said roll, and a roll journaled in the lower part of the said frame, substantially as set forth.

5. The combination, with a roll-shaft, and means for revolving it; of a roll mounted on the said shaft and provided with hubs at its ends one of which has a clutch member, a slidable clutch member which revolves with the said shaft, an extension-frame pivoted on the said hubs, and a roll journaled in the lower part of the said frame, substantially as set forth.

6. The combination, with an upper roll, and means for revolving and supporting it; of an extension-frame pivoted concentric with the said upper roll, two screws journaled in the upper part of the extension-frame one near each end thereof and engaging with the lower part of the said frame, a shaft for operating the extension-frame journaled in the upper part thereof, two pairs of beveled toothed wheels connecting the said shaft with the said screws, and a roll journaled in the lower part of the said frame, substantially as set forth.

7. The combination, with an upper roll, and means for revolving and supporting it; of a frame pivoted concentric with the upper roll, a roll journaled in the lower part of the said frame, a presser-roll journaled on one side of the said lower roll, and means for holding the said lower roll in operative relation with the presser-roll when the frame is moved pivotally toward it, substantially as set forth.

8. The combination, with an upper roll, and means for revolving and supporting it; of an extension-frame pivoted concentric with the upper roll, driving devices for sliding the lower part of the extension-frame in its upper part, a roll journaled in the lower part of the extension-frame, a presser-roll journaled on one side of the said lower roll, and means for holding the said lower roll in operative relation with the presser-roll when the frame is moved pivotally toward it, substantially as set forth.

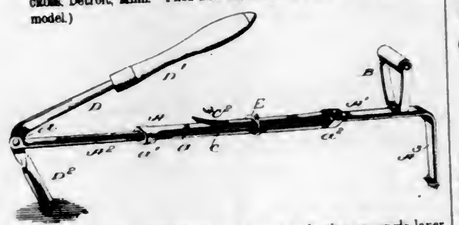
9. The combination, with a frame, a roll in the upper part of the frame, and means for supporting the said frame and roll and revolving the roll; of a lower roll journaled in the lower part of the said frame, a spray-pipe arranged between the said rolls, and means for pressing the yarn as it passes over the said lower roll, substantially as set forth.

10. The combination, with an upper roll, and means for revolving and supporting it; of a frame pivoted concentric with the upper roll, a lower roll journaled in the said frame, a presser-roll journaled on one side of the said lower roll, a laterally-movable spray-pipe arranged over the lower roll, and means for holding the said lower roll in operative relation with the presser-roll, substantially as set forth.

11. The combination, with an upper roll, and means for supporting and revolving it; of a frame pivoted concentric with the upper roll, a shaft journaled in the lower part of the said frame and provided with means for moving it on its axis, a lower roll journaled on the said shaft, a presser-roll journaled on one side of the said lower roll, an eccentric secured on the said shaft, and a hook pivoted on the said eccentric and operating to connect the lower roll with the presser-roll, substantially as set forth.

12. The combination, with an upper roll, and means for revolving and supporting it; of a frame pivoted concentric with the upper roll, a lower roll journaled in the said frame, a presser-roll journaled on one side of the said lower roll, a pivoted catch for holding the said lower roll and presser-roll in operative relation, and an eccentric supporting the said catch and affording a means for adjusting the pressure between the said lower roll and the presser-roll, substantially as set forth.

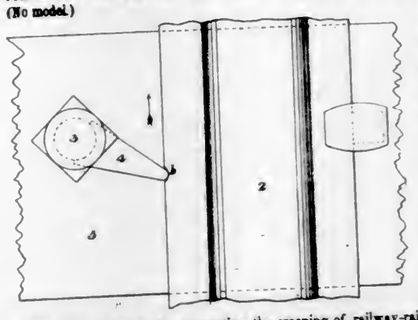
657,294. **DEVICE FOR HANDLING BRICKS.** WILLIAM A. NORCROSS, Detroit, Minn. Filed Dec. 28, 1899. Serial No. 741,866. (No model.)



Claim.—1. The combination with a bar A^3 having an angle-lever pivoted at one end thereof, of an angle-bar A′ slidably connected to the bar A^3, a handle rigidly secured to the angle-bar A′, and a spring-arm having one end secured to the inner end of one of the bars A′ or A^3 and the other end of said spring-arm provided with a pin adapted to enter corresponding holes in said bars A′ and A^3, whereby the bars are locked together, as set forth.

2. The combination of the bar A^3 having an angle-lever pivoted at one end and the slidable angle-bar A′ provided with a rigidly-attached handle said bars slidably connected by encircling collars, with a spring-arm having one end attached to one of said collars and the other end provided with a pin adapted to engage corresponding holes in the bars A′, A^3, and a slidable band or collar for holding said spring-arm in locked engagement with the bars, as set forth.

657,295. **DEVICE FOR PREVENTING CREEPING OF RAILS.** JOHN L. POPE, Cleveland, Ohio. Filed Apr. 19, 1900. Serial No. 13,447. (No model.)



Claim.—1. A device for preventing the creeping of railway-rails consisting of a rigid cam-acting pawl or dog which bears against one edge of the rail-flange, and an abutment on the other edge thereof against which the rail is forced by the pawl or dog; substantially as described.

2. A device for preventing the creeping of railway-rails, consisting of a rigid cam-acting pawl or dog, bearing at one portion against the rail-flange and at another portion pivoted to an abutment; substantially as described.

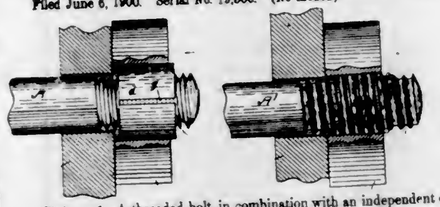
3. A device for preventing creeping of railway-rails consisting in a rigid dog interposed between the rail-flange and an abutment or stop, and having the points of contact at the rail and abutment or stop on a line inclined to the rail; substantially as described.

4. A device for preventing creeping of railway-rails, consisting in a rigid dog interposed between the edge of the rail-flange and an abutment or stop, and having two points of contact at one of its ends; substantially as described.

657,296. **METHOD OF MAKING ARTIFICIAL STONE.** SÖREN SCHOUGAARD, Copenhagen, Denmark. Filed May 31, 1900. Serial No. 18,526. (No specimens.)

Claim.—The method of making artificial stone consisting in dissolving animal glue, alum and gum-arabic in water in about the proportions stated, adding to this mixture so much double-burnt gypsum as to produce a pappy mass of convenient consistency, mixing therewith a color soluble in water and molding the mass in the shapes in which it is to harden.

657,297. **THREADED COUPLING-BOLT.** GEORGE P. SEXFIELD, Rochester, N. Y., assignor of one-half to Lilian B. Holling, same place. Filed June 6, 1900. Serial No. 19,306. (No model.)



Claim.—1. A threaded bolt, in combination with an independent or detachable spiral thread-piece longitudinally compressible, and a detachable body controlling and inclosing the thread-piece, the contiguous surfaces of the thread-piece and controlling-body being tapered, substantially as and for the purpose specified.

2. The combination with a threaded bolt, of a thread-piece of spirally-wound wire tapered and longitudinally compressible, and fitted to the threads of the bolt to project beyond the periphery of the bolt, and a separate body for inclosing and controlling the thread-piece, said body having a tapered opening corresponding to the taper of the thread-piece and the whole adapted to serve substantially as herein shown and described.

657,298. **SPRING-TREAD HORSESHOE.** OTTO W. SIEBENAAR, Ladoga, Wis. Filed June 25, 1900. Serial No. 21,542. (No model.)



Claim.—1. A composite horseshoe comprising a foot member having inner and outer flanges, a tread member detachably connected with the foot member and having its toe portion deflected away from the plane of the foot member and formed with inner and outer clips, and an elastic block located between the toe portions of the two members and held in place by the flanges and clips thereof, substantially as set forth.

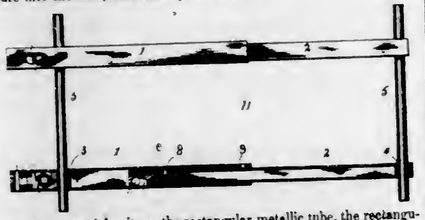
2. The herein-described composite horseshoe comprising a foot member having inner and outer flanges and a series of nail-openings adjacent to the outer flange, a tread member having its heel and toe portions oppositely deflected and flanged and having the intermediate portion thick and cut away at its outer edge to clear the nail-holes of the foot member, fastenings detachably connecting the foot and tread members, and elastic blocks of wedge form secured in the angular spaces formed between the toe and heel portions of the members and prevented from casual displacement by the corresponding flanges thereof, substantially as set forth.

657,299. **PRINTER'S FURNITURE.** WILLIAM G. SLAUSON, Middletown, N. Y. Filed June 4, 1898. Serial No. 682,595. (No model.)

Claim.—1. In printers' furniture, the block composed of parallel extensible telescopic bars and means to hold them extended, and parallel cross-rods passing through holes near the ends of said bars, substantially as described.

2. In printers' furniture, a rectangular metallic tube of a size to be inclosed within a form, an extension-slide telescopically connected to such tube, and a locking-detent to hold such slide extended, substantially as described.

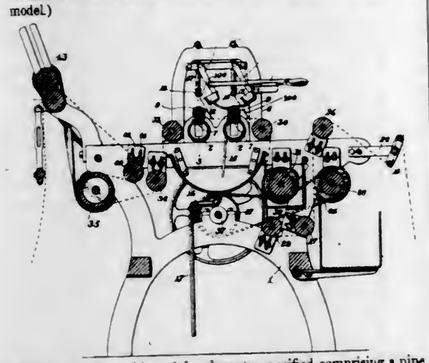
3. The extension-bar for printers' furniture consisting essentially of a rectangular tube, a slide-piece closing into such tube, and means for locking the slide to the tube in an extended position, to prevent further closure into the tube, substantially as described.



4. In printers' furniture, the rectangular metallic tube, the rectangular slide entering one end of said tube and having a notch in its edge, and a fastening-piece engaging said notch to hold the slide extended, all combined substantially as described.

5. The combination with a chase and form, of an extensible furniture-block consisting essentially of a rectangular tube, a slide-piece telescoping within one end of the tube, means for holding the telescopic piece extended, and an extensible locking-quoin at the end of the tube remote from the slide-piece, all substantially as described.

657,800. PNEUMATIC CLOTH-FINISHING MACHINE. FRANK STINER, Lawrence, Mass. Filed May 28, 1900. Serial No. 18,245. (No model.)



Claim.—1. A machine of the character specified comprising a pipe or chamber having a slot or opening, means for exhausting air from said pipe or chamber, means for guiding fabric in contact with said pipe or chamber and across said slot or opening, and means for pressing on the surface of the fabric adjacent to said slot or opening and on the side opposite that which bears against said pipe or chamber.

2. A machine of the character specified comprising a pipe or chamber having a slot or opening, means for exhausting air from said pipe or chamber, means for guiding fabric in contact with said pipe or chamber and across said slot or opening, means for sprinkling the fabric prior to its passage across the slot or opening of said pipe or chamber, and means for pressing on the surface of the fabric adjacent to said slot or opening and on the side opposite to that which bears against said pipe or chamber.

3. A machine of the character specified comprising a plurality of slotted suction-pipes having liquid-receiving openings, means for exhausting air from said pipes common to said pipes, rolls located adjacent to said openings, and means for guiding fabric between said suction-pipes and rolls.

4. A machine of the character specified comprising a slotted suction-pipe, means for exhausting air therefrom, an elastic pressure-roll adjacent to the slot in said pipe, and means for guiding fabric between the suction-pipe and pressure-roll.

5. A machine of the character specified comprising a plurality of pipes or chambers having slots or openings, means common to said pipes or chambers for exhausting air therefrom, valves or gates whereby either pipe may be shut out of operation, means for guiding fabric in contact with said pipes or chambers and across the slots or openings thereof, and means for pressing on the surface of the fabric adjacent to said slots or openings and on the side opposite that which bears against said pipes or chambers.

6. A machine of the character specified comprising a slotted pipe, means for exhausting air therefrom, a pressure-roll located over the slot in said pipe, means for guiding fabric in contact with said pipe and across the slot, and a sprinkler-pipe arranged to deliver water on the face side of the fabric.

7. A machine of the character specified comprising a slotted suction-pipe, means for exhausting air therefrom, a pressure-roll adjacent to the slot in said pipe, means for guiding fabric between the suction-pipe and roll, a sprinkler-pipe arranged to deliver water on the fabric near the suction-pipe or roll, and a movable swab in said sprinkler-pipe.

8. An apparatus of the character specified comprising a slotted suction-pipe, means for exhausting air therefrom, a pressure-roll over the slot in said pipe, a sprinkler-pipe, means for admitting steam to the water supplied to the sprinkler-pipe, and means for guiding fabric between said suction-pipe and roll.

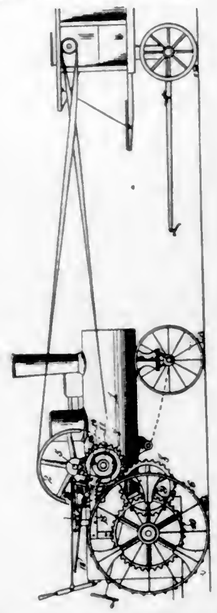
9. An apparatus of the character specified comprising a slotted suction-pipe, a pressure-roll adjacent to the slot in said pipe, a sprinkler-pipe, a system of piping arranged to supply the sprinkler-pipe, a steam-pipe connected with said system, means for exhausting air from said suction-pipe, and means for guiding fabric between said suction-pipe and roll.

10. An apparatus of the character specified, comprising a suction-pipe, a roll over the said pipe, a sprinkler-pipe, and a movable intercepting-trough adapted to be moved to position to catch the water from the sprinkler-pipe.

11. An apparatus of the character specified, comprising a suction-pipe having openings, means for exhausting air therefrom, a roll adjacent to the openings in said pipe, a sprinkler-pipe, a trough under the suction-pipe and sprinkler-pipe said trough having a waste-pipe, and means for guiding fabric between said suction-pipe and roll.

12. An apparatus of the character specified, comprising a supporting-frame, an air-exhausting mechanism, a pipe or chamber having a slot or opening, means for guiding fabric in contact with said pipe or chamber and across said slot or opening, means for exhausting air from said pipe or chamber, rolls supported by the frame and arranged to hold the piece or web of fabric while being subjected to the action of the exhaust, tension-bars arranged to act upon the fabric at the receiving end of the frame, means for adjustably supporting the tension-bars, and means for locking the tension-bars in any position to which they may be adjusted.

657,801. BELT-TIGHTENER. GEORGE E. TRAVIS, Henry, Ill. Filed Jan. 8, 1900. Serial No. 753. (No model.)



Claim.—1. In a belt-tightener of the character described, the combination with the traction-engine and its train of driving-gearing, of the idler gear-wheels, the pawl and dog engaging a ratchet-wheel fixed on said idler-wheel, the link and arm for throwing said pawl and dog into and out of gear, and the trip-lever for actuating said link and holding it locked against accidental movement, substantially as described.

2. In a belt-tightener of the class described, the combination with the traction-engine and its train of driving-gearing, of the idler gear-wheel, the pawl and dog engaging a ratchet-wheel fixed on said idler-wheel, an oscillating arm for throwing the pawl and dog into and out of engagement, a link connected to said arm, a trip-lever pivoted intermediate its ends to a fixed support and pivoted on one side of its fulcrum to said link, said trip-lever being provided at its opposite ends with lugs arranged to respectively engage the upper and under side of the link, and a coiled spring operating to draw the link down, substantially as described.

3. In a belt-tightener of the character described, the combination with the traction-engine, its train of driving-gearing and a friction-clutch on the engine-shaft for throwing said gearing into and out of gear, of the idler gear-wheel, the pawl and dog engaging a ratchet-wheel fixed on said idler-wheel, the link and arm for throwing said pawl and dog into and out of engagement, the trip-lever for actuating said link and holding it locked against accidental displacement, a pin on the link, and a safety-hook engaging the controlling-lever of the friction-clutch and having a slotted shank engaged by said pin, substantially as described.

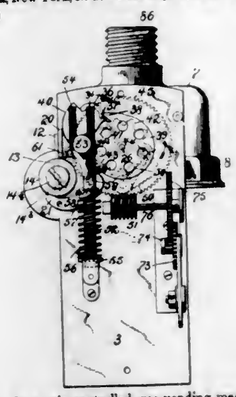
4. In a belt-tightener of the character described, the combination with the traction-engine and its train of driving-gearing, of the idler gear-wheel, the ratchet-wheel, a break-pin connecting said ratchet and gear wheel together, a pawl and dog arranged to engage the ratchet-wheel, a lever for actuating the pawl, and means for throwing the pawl and dog into and out of engagement with the ratchet-wheel, substantially as described.

657,802. GARMENT-SUPPORTER. JAMES V. WASHBURNE, Waterbury, Conn. Filed Oct. 26, 1898. Serial No. 694,622. (No model.)



Claim.—A garment supporter or clasp a skeleton suspension-socket consisting of a central tapering spine and two corresponding wings located on opposite sides of the spine, and formed with inclined openings through which the material clamped within the socket protrudes so as to increase the holding effect of the socket.

657,803. COIN-CONTROLLED GAS-VENDING MACHINE. WESLEY WEBBER, New York, N. Y. Filed Sept. 6, 1899. Serial No. 729,580. (No model.)



Claim.—1. In a coin-controlled gas-vending machine, a justifying disk or wheel attached to a shaft capable of rotation in both directions, in combination with a delivery-wheel adapted to rotate in one direction only and a justifying device arranged to engage with the justifying disk or wheel; substantially as and for the purposes set forth.

2. In a coin-controlled gas-vending machine, a wheel capable of rotation in two directions, formed with equidistant recesses in its periphery, in combination with a wheel driven by the power of the meter and capable of rotation in only one direction and bearing on its surface means for connecting it with the first wheel and means for shifting said first wheel relatively to the said connection from recess to recess; substantially as described.

3. In a coin-controlled gas-vending machine, a wheel connected with a valve-controlling projection and connected with coin-operated mechanism capable of rotation in two directions formed with justifying-recesses in its periphery, in combination with a delivery-wheel capable of rotation in one direction only and a spring-pressed lever connecting the said delivery-wheel with said first-mentioned wheel; substantially as described.

4. In a coin-controlled gas-vending machine, a justifying-wheel formed with equidistant recesses 47, shoulders 48, and cams 49, in combination with a delivery-wheel and a spring-pressed lever connecting said delivery-wheel with the justifying-wheel; substantially as described.

5. In a coin-controlled gas-vending machine, a justifying-wheel formed with equidistant recesses in its periphery, in combination with a delivery-wheel and a spring-pressed escapement device adapted to engage with the recesses of the justifying-wheel; substantially as described.

6. In a coin-controlled gas-vending machine, a delivery-wheel and a spring-pressed escapement device pivoted thereto, in combination with a justifying-wheel having equidistant recesses in its periphery; substantially as described.

7. In a coin-controlled gas-vending machine, a sliding bar adapted to be depressed by the coin, a spring applied to said bar, and a pawl pivoted to said bar, in combination with a notched wheel applied to a shaft and means for causing the pawl to engage with said notched wheel during a portion of the return movement of the said bar; substantially as described.

8. In a coin-controlled gas-vending machine, a main shaft, a notched wheel affixed thereto, and a coin-barrel, in combination with a sliding bar located between said shaft and said coin-barrel, and constructed to be depressed by a coin in said coin-barrel, a spring applied to said bar, a pawl pivoted on said bar and means for causing the said pawl to engage with said notched wheel during a portion of the return movement of said bar; substantially as described.

9. In a coin-controlled gas-vending machine, a rotary coin-barrel and a fixed eccentric for forcing the coin through said barrel, in combination with a spring-actuated sliding bar held adjacent to said coin-barrel, a shoulder on said bar for contact with the coin, and a pawl pivoted on said bar, and a valve-controlling projection moved by means actuated by said pawl; substantially as described.

10. In a coin-controlled gas-vending machine, a coin-barrel, a fixed eccentric for forcing the coin through said barrel, a spring-actuated sliding bar held adjacent to said barrel, a shoulder on said bar for contact with the coin, and a pawl pivoted on said bar and formed with a heel for causing the coin to rock the pawl; substantially as described.

11. In a coin-controlled gas-vending machine, a coin-barrel, a fixed eccentric for forcing the coin through said barrel, a spring-actuated sliding bar held adjacent to said barrel, a shoulder on said bar for contact with the coin, and a pawl pivoted on said bar and formed with a heel for causing the spring to rock the pawl; substantially as described.

12. In a coin-controlled gas-vending machine, a notched wheel, a spring-actuated sliding bar adjacent to said wheel, a pawl pivoted on said bar adapted to be rocked in one direction by the contact of the coin and in the other direction by a spring, and means for withdrawing the pawl from contact with the notched wheel before the limit of return of the sliding bar; substantially as described.

13. In a coin-controlled gas-vending machine, a rotatory slotted coin-barrel of less diameter than a coin proper to the machine, in combination with a fixed eccentric for forcing the coin through the barrel; substantially as described.

14. In a coin-controlled gas-vending machine, a rotatable slotted coin-barrel of less diameter than a coin proper to the machine, in combination with an eccentric for forcing the coin through the barrel and a guard or flange arranged at the point of greatest eccentricity; substantially as described.

15. In a coin-controlled gas-vending machine, a slotted rotatory coin-barrel of less diameter than a coin proper to the machine, a fixed eccentric for forcing the coin through the barrel, and a guard or plate adjacent to the barrel at a point where the coin when passing it does not protrude from the barrel; substantially as described.

16. In a coin-controlled gas-vending machine, a rotatory coin-barrel of less diameter than a coin proper to the machine with a slot therethrough whose length exceeds the diameter of such coin and a casing or flange partially inclosing said coin-barrel; substantially as described.

17. In a coin-controlled gas-vending machine, a lever pivoted at or near one end, two pawls attached to said lever at the same side of said pivot, a ratchet-wheel located between said pawls and a shaft journaled in the wall of the meter for said ratchet-wheel, in combination with a rod connecting the free end of said lever with one of the flags of the meter for reciprocating the lever by the power of the meter and gearing for transmitting the intermittent motion of the ratchet-wheel to the coin-controlled mechanism; substantially as described.

18. In a coin-controlled gas-vending machine, a valve and a seat therefor in a gasway leading to or from a meter, a shaft penetrating into said gasway or valve-chamber and provided within the same with an arm connected with said valve and provided outside of the gasway or valve-chamber with a counterweighted lever, the counterweight being so arranged as to lift the valve away from its seat, in combination with a projection rotated by the power of the meter mechanism and adapted to

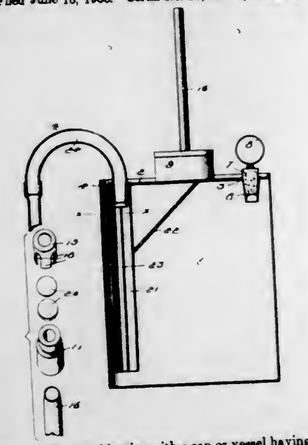
engage with the non-weighted end of said lever and, by partially rotating said shaft, to draw the valve to its seat, and means operated by the insertion of a coin in the mechanism to disengage the said projection from the said lever and allow the valve to be withdrawn from its seat; substantially as described.

19. In a coin-controlled gas-vending machine, the gasway 7 formed with a neck 89, and containing valve-seat 35 and upper and lower valve-stem guides 87 and 88, and the union 90, the lower half 91 of which is adapted to be screwed upon the neck 89, in combination with the valve 32, valve-stem 33, shaft 31, arm 34, projection 37 attached to said shaft and projection 38 controlled by the main shaft of the machine; substantially as described.

20. In a coin-controlled gas-vending machine, the delivery-wheel 45, gear-wheel 83, and pinion 84, in combination with the shaft 63, the spiral hoop-gear attached to said shaft and meshing with said wheel 83, the stuffing-box 62, and means for turning said shaft by thespower of the meter; substantially as described.

21. In a coin-controlled gas-vending machine, a valve and a seat therefor in a chamber in a gasway leading to or from a meter, a shaft penetrating into said valve-chamber or gasway and provided therewithir with an arm connected with said valve and provided outside of said gasway or valve-chamber with a lever, in combination with a main shaft connected with the meter mechanism so as to be rotated thereby in one direction and provided with means to be rotated in the other direction by the insertion of a coin into the machine and provided with two radial projections, separated by a space or recess, adapted to engage with said lever on opposite sides thereof, afford it clearance in said recess, and move it in either direction; substantially as described.

657,304. OIL-CAN. THEOPHILUS W. ALEXANDER, Burlington, Iowa. Filed June 18, 1900. Serial No. 20,715. (No model.)



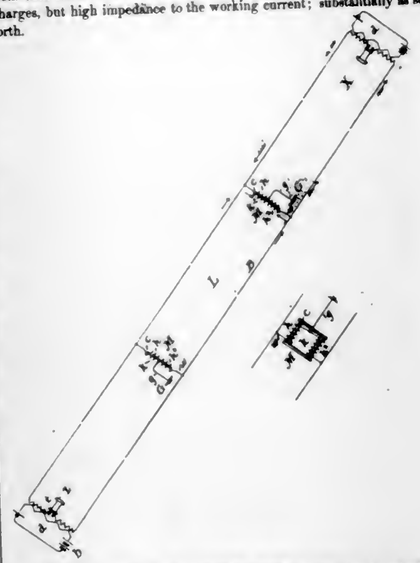
Claim.—1. The combination with a can or vessel having a discharge or eductng pipe, of a detachable cap, a tapering thimble, a tapering boss or ferrule having an annular groove, a valve-cage having spring fingers or arms for detachably securing the cage to said ferrule, and a blowpipe.

2. The combination with a pneumatic oil-can, of a detachable cap having a tapering thimble, a boss or ferrule having a longitudinal air-passage therein and an external annular groove, of a valve, a cage having an opening in its valve-seat and spring-arms for attaching the cap to said ferrule and to form air-passages from said cage to the interior of the can.

3. In a can, substantially such as herein shown and described, the combination with a thimble, of a discharge-pipe lapped upon itself and having a longitudinal rib the upper end of which serves as a brace between said pipe and the thimble.

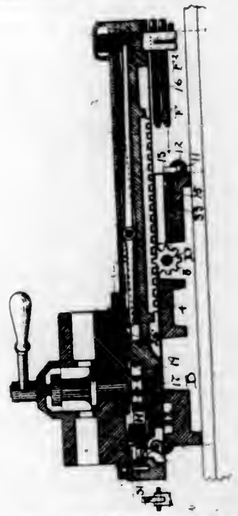
657,305. MEANS FOR RELIEVING TELEPHONE-LINES FROM DELETERIOUS ELECTRICAL CHARGES. CHESTER H. ARNOLD, Boston, Mass., assignor to the American Bell Telephone Company, same place. Filed Dec. 22, 1899. Serial No. 741,269. (No model.)

Claim.—1. The combination with a metallic-circuit telephone-line; of means for freeing the conductors of said line from intrusive and detrimental electrical charges, said means consisting of a bridge between the main conductors of said line containing only a single electromagnetic coil wound continuously in one direction, and a resistanceless ground connection centrally attached to the said coil; and constituting a leak to earth from both conductors at the same point, offering low impedance to the said charges, but high impedance to the working current; substantially as set forth.



2. In combination with a metallic-circuit or double-wire telephone-line; a bridge or cross conductor between the main conductors of said line; a single continuous electromagnetic coil or helix contained in the said bridge, and wound over a single or homogeneous iron core; and a resistanceless conductor extending between the center of said coil to earth; whereby the passage of detrimental charges from both line conductors is facilitated, without involving the escape of the working current, substantially as specified.

657,306. TURRET-LATHE. GEORGE C. BARDONS and GEORGE W. DRAKE, Cleveland, Ohio. Filed May 8, 1900. Serial No. 15,960. (No model.)



Claim.—1. In a turret-lathe, a turret-head and the slide therefor, notches eccentrically arranged in the bottom face of said head; adjustable stops for said slide, levers for each of said stops operatively engaged by said notches, means to operate said head and slide, and means to stop the travel of said slide by one of said stops, substantially as described.

2. In a turret-lathe, the turret-head and the eccentrically-arranged notches therein, the turret-slide and the levers and stops carried on said slide, means to rotate said turret-head and operate said slide, and mechanism to throw off the power by means of one of said stops and notches, substantially as described.

3. In a turret-lathe, a turret-head and a sliding support therefor, a series of notches eccentrically arranged in the bottom face of said head, pivoted levers on said slide having engaging end members for said notches and adjustable stops supported by said levers to limit the movement of said slide, substantially as described.

4. In a turret-lathe, a rotatable turret-head having a series of notches radially distributed and spirally and eccentrically arranged at its bottom, a sliding support for said head having engaging members arranged to enter said notches successively as said head is rotated, adjustable stops on each of said members to limit the movement of said slide-support, and mean to rotate said head and operate said sliding support, substantially as described.

5. In a turret-lathe, a rotatable turret-head and a supporting-slide therefor, a circular depending flange at the bottom of said head having notches therein, a sliding bolt mounted in said slide and having a spring to press said bolt into said notches from the inner side of said flanges, and a finger pivoted on said slide to engage both the frame of the lathe and the bolt to release said bolt from the notches, substantially as described.

6. In a turret-lathe, a rotatable turret-head, and a supporting-slide therefor, a circular depending and notched flange at the bottom and a series of notches or grooves arranged eccentrically and spirally in the bottom of said head, a locking-bolt having unlocking-fingers for said notched flange, a series of pivoted levers supporting adjustable stops at one end and engaging members for said grooves at the other end, means to rotate said head, and mechanism to operate said slide having throw-off connections engaged by said stops, substantially as described.

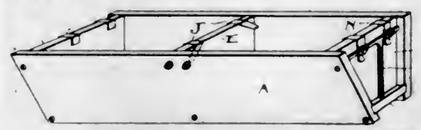
657,307. INDIGO-WHITE COMPOUND AND PROCESS OF MAKING SAME. MAX BAELER, Ludwigshafen, Germany, assignor to the Badische Anilin and Soda Fabrik, same place. Filed May 22, 1900. Serial No. 17,546. (No specimens.)

Claim.—1. The process of producing a stable indigo-white body, by treating indigo-white with phosgene.

2. The process of producing an indigo-white body by treating indigo-white with phosgene in the presence of caustic soda.

3. As a new product, the body which can be obtained by treating indigo-white with phosgene which is stable in the presence of air, is practically insoluble in dilute cold caustic-soda lye, which on warming with caustic-soda lye yields an indigo-white vat, and which on being heated with concentrated sulfuric acid and poured into water yields a blue solution, substantially as described.

657,308. STATIONARY WASHTUB FOR LAUNDRIES. EDWARD C. BRUNNER, Cleveland, Ohio. Filed Dec. 29, 1899. Serial No. 741,902. (No model.)



Claim.—1. In a stationary washtub, a tie-rod through the ends of the front and rear slabs beneath the bottom of the tub, a central substantially T-shaped member in one piece having its lower end through the bottom of the tub and engaged with said tie-rod, and the arms of said member uniting the front and rear slabs at the top of the tub outside the end thereof, all said connecting parts being wholly outside the end of the tub, substantially as described.

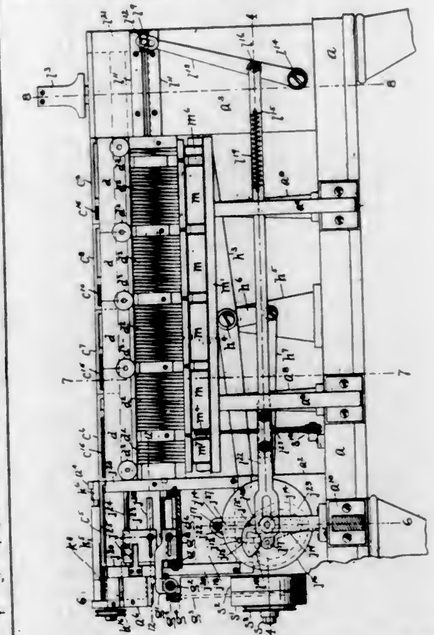
2. In a tub the tie-rods at the ends and top thereof, and protectors for the end walls of the tub to guard against injury by the wringer, said protectors engaged with said rods at their outer ends, substantially as described.

657,309. DISTRIBUTING-MACHINE. FRANCIS B. CONVERSE, Jr., Louisville, Ky., assignor to the Converse Manufacturing Company Cleveland, Ohio. Filed Jan. 13, 1900. Serial No. 1,272. (No model.)

Claim.—1. The combination, in a type-distributing machine, of means for holding a compacted line of successive type and means for removing type from points in the line intermediate of its ends, substantially as described.

2. In a type-distributing machine, in combination, means for holding a compacted line of successive type and means for removing type simultaneously from different points in the line, substantially as described.

3. The combination, in a type-distributing machine, of a carrier adapted to contain a plurality of contiguous type, means for removing type from intermediate points of the carrier, and means for advancing the carrier relatively to said removing means, substantially as described.



4. In a type-distributing machine, in combination, means for holding a plurality of type, means for removing intermediate type therefrom, and means for closing up the gap caused by such removal, substantially as described.

5. In a type-distributing machine, the combination, a carrier adapted to hold a line of type, means for advancing the carrier, means for successively removing type therefrom intermediate of the ends of the line, and means for continually collecting together the type remaining in the carrier after such removal, substantially as described.

6. In a type-distributing machine, in combination, a rigid carrier adapted to hold a line of type, a slidable block also held by the carrier and adapted to retain the type on their feet, means for removing type from the line at points intermediate of the ends thereof, means for advancing the carrier, and means for collecting together toward the rear end of the carrier the remaining type and said block, substantially as described.

7. In a type-distributing machine, in combination, a carrier adapted to hold a plurality of contiguous type, ejectors adapted to shove type from the carrier, means for causing relative movement in the direction from one type to another between the carrier and ejectors, and means for actuating the ejectors to shove type from different points of the carrier, substantially as described.

8. In a type-distributing machine, removing mechanism including wards adapted to be moved longitudinally to enter nicks in the type, provision for the movement of said wards laterally with the type when in said nicks, and means whereby said lateral movement of the wards actuates the removing mechanism, substantially as described.

9. The combination of means for holding characteristically-nicked type, a system of characteristically-placed wards adapted to enter the nicks of corresponding type, means for advancing the type relatively across the wards, means for removing the type, and means whereby the engagement of said wards by the part following the engaged type actuates said removing mechanism, substantially as described.

10. The combination of means for holding a line of characteristically-nicked contiguous types, a system of characteristically-placed wards adapted to enter the nicks of corresponding types, removing mechanism and means whereby it is actuated by the engagement of said wards with a succeeding type of different nicking, substantially as described.

11. In a type-distributing machine, in combination, means for holding a line of definitely-nicked type, means for advancing it, wards adapted to enter said nicks and shiftable in the direction of movement of said line, whereby when the wards enter a corresponding type the next succeeding

part of the line if of different nicking will shift the wards, and means whereby such shifting of the wards actuates removing mechanism, substantially as described.

12. In a type-distributing machine, an ejector having on its forward end wards adapted to enter nicks in suitably-held type, means for giving said ejector a tendency to move toward the type whereby the wards automatically enter the nicks of corresponding type when presented, said ejector being capable of a lateral shifting when the wards are in the nicks, mechanism actuated by such lateral shifting for causing a longitudinal movement of the ejector which movement shoves the type from the line, substantially as described.

13. In a type-distributing machine, in combination, means for holding a line of type, a pathway for said line in which each type travels alternately past points where it is confined in a pathway and where it is adapted to be removed therefrom, removing mechanism adapted to engage the type when it is in the confined position and adapted to be maintained in eagagement by the next succeeding type until the engaged type moves into an unconfined position, and means actuated by such movement for causing the removal of the type when it comes into this position, substantially as described.

14. In a type-distributing machine, in combination, a series of carriers in the form of frames, means for causing them to travel continuously through the machine, means for loading them with type, means for ejecting type from various points in the line as the carriers travel along, and means for continuously collecting together in the carrier the type remaining after such ejection, substantially as described.

15. In a type-distributing machine, in combination, a carrier consisting of a plate having a rectangular opening adapted to receive a line of type, means for moving said carrier through the machine, means for removing type from said carrier, said opening being longer than any line the machine receives, whereby type undistributed on one trip of the carrier may be added to a new line of type on a second trip, substantially as described.

16. In a type-distributing machine, in combination, a system of carriers adapted to travel repeatedly through the machine, means for feeding into such carriers a line of type to be distributed, means for removing such type from intermediate points in the carrier during its progress through the machine, means for collecting together the type remaining in the carrier after removal, and means governing the feeding of a new line into the carrier which is dependent upon the amount of type remaining in the carrier, substantially as described.

17. In a type-distributing machine, in combination, means for moving type to be distributed, a path for such movement one wall of which consists of alternate stops and openings, removing mechanism adapted to engage a type when it is opposite a stop and be shifted laterally by the advancing type until it is opposite an opening, substantially as described.

18. In a type-distributing machine, in combination, a carrier adapted to hold a line of type, means for advancing said carrier along a path therefor, one wall of said path consisting of alternate stops and openings, removing mechanism adapted to engage a type when it is opposite a stop and be shifted laterally by the advancing line until it is opposite an opening, and means for then actuating the removing mechanism to remove such type, substantially as described.

19. In a type-distributing machine, in combination, a system of ejectors, a path for the type in front of the ejectors, means for advancing the type along said path, the forward wall of said path consisting of alternate openings and stops, the ejectors being normally behind the stops, means whereby the presentation of the corresponding type to an ejector shifts it to a point opposite the adjacent opening, and means for then advancing the ejector to shove the type into the opening, substantially as described.

20. In a type-distributing machine, in combination, a path for a line of type, one side of which path is composed of alternate stops and openings, a system of ejectors on the opposite side of the path having wards adapted to enter nicks in the type on that side of said type and in line with the stops and adapted to be deflected until they are opposite the openings, and means for then causing the ejector to shove the type from the line into the opening, substantially as described.

21. In a type-distributing machine, in combination, means for holding suitably-nicked type, an ejector carrying wards adapted to enter the nicks of a corresponding type and carrying teeth on three sides of an opening, a revolubly-toothed cylinder lying normally loosely within said opening, and means actuated when the wards enter the nicks of a corresponding type which causes the engagement of said teeth with the cylinder, substantially as described.

22. In a type-distributing machine, in combination, means for holding a line of suitably-nicked type, a system of guide-plates having characteristic wards on their front ends adapted to enter correspondingly-nicked type, each of said plates carrying a yoke which presents internal teeth, a continuously-revolving toothed cylinder lying loosely within said teeth, and means whereby lateral shifting of the plate causes the yoke to engage with said teeth, substantially as described.

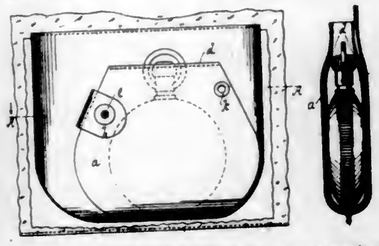
23. In a type-distributing machine, in combination, a series of longitudinally-movable plates having wards on their forward ends, yoke-pieces pivoted to said plates and presenting internal teeth on three sides of an opening, a toothed cylinder lying loosely in said opening adapted to be continuously revolved, a rigid stop or wall normally holding the yoke out of engagement with the gear-cylinder, said plate being capable of a lateral movement which disengages the yoke member from its retaining-stop and allows it to pass into engagement with the gear-cylinder whereby the plate is given a reciprocation, substantially as described.

24. In a type-distributing machine, in combination, a path in which a line of type is adapted to be fed, one wall of said path consisting of alternate stops and openings, longitudinally-movable plates on the opposite side of said path in line with the stops, means for giving said plates a movement toward the path, wards on the forward ends of said plates adapted to pass into nicks in corresponding type, there being provision for a lateral movement of said plates whereby a differently-nicked succeeding type may shift a plate to a position opposite an opening, a yoke-piece carried by the plate and having engageable teeth, a gear-cylinder adapted to engage said teeth but normally out of engagement therewith, means whereby when the plate is laterally shifted the yoke-piece comes into engagement, substantially as described.

25. In a type-distributing-machine, in combination, a system of longitudinally-movable plates e set on edge, a yoke-piece e' pivoted to said plates, each yoke-piece carrying internal teeth e^2 on three sides of an opening, a gear-cylinder adapted to be continuously revolved and extending loosely through the openings of different yokes, a series of stops e^{12} with the under side of which the forward end of the yoke-piece e' normally engages, there being provision for the lateral movement of the forward end of the plates e, an opening into which the forward ends of the yoke-pieces pass in said lateral movement whereby the yoke-piece is freed and its rear end passes into engagement with the gear-cylinder, substantially as described.

26. In a type-distributing machine, in combination, means for supporting a supply of undistributed type, a carrier adapted to receive a line of such type in a position out of alinement with the supply, a plate between the supply and carrier, extending across the carrier, and having an opening adapted to receive a line from the supply, means for placing such line in said opening, means for moving said plate with the line therein until the type in the opening come opposite the carrier, and means for moving the type from the opening into the carrier at this point, substantially as described.

657,310. GARMENT-POCKET. JOSEPH S. COYLE, New York, N. Y. Filed Jan. 13, 1900. Serial No. 1,363. (No model.)



Claim.—1. A safety-pocket having portions of the edges of its mouth provided with a projecting tongue constructed and arranged to fold over and lie upon the pocket-body to contract the mouth thereof, and a lock device for locking said tongue when folded over upon the pocket-body, substantially as described.

2. A safety-pocket having portions of the edges of its mouth provided with superimposed flaps forming a tongue arranged to fold over upon the pocket-body and contract the mouth thereof, and a lock device for locking the tongue when folded over upon the pocket-body, substantially as described.

3. A safety-pocket having perforations and portions of the edges of its mouth provided with a projecting tongue arranged to fold over upon the pocket-body and contract the mouth thereof, and a locking-stud attached to said tongue and having a ball-head constructed to engage said perforations and lock the tongue when folded over upon the pocket-body, substantially as described.

4. A pocket having a perforated side, a lock part at the side opposite the perforation, and a tongue provided with a second lock part made to pass through the perforation to engage the first-named lock part substantially as described.

5. A safety-pocket having opposite perforations and portions of the edges of its mouth provided with a projecting tongue to fold over upon the pocket-body, and contract the mouth thereof, and a lock-stud secured to said tongue and having a ball-shaped locking-head to engage said perforations and lock the tongue in its folded-over position, substantially as described.

6. A safety-pocket, consisting of opposite sides closed at the bottom, open at the top to form a mouth and provided near the edge portions of said mouth with a perforation, a locking part opposite the latter and projecting superimposed flaps constituting a tongue constructed to fold over upon the pocket-body, and a locking-stud secured to said tongue and having a locking-head to engage said perforation and locking part when the tongue is folded upon the pocket-body, to contract the mouth, substantially as described.

657,311. CLOSED-CONDUIT ELECTRIC RAILWAY. LEON DION, Boston, Mass. Filed Mar. 6, 1899. Serial No. 707,859. (No model.)



Claim.—1. In an electric-railway system, a closed conduit having an upper conductor located beneath the surface of the roadway, and a series of conductive members projecting from said conductor at intervals and having their ends located above the roadway-surface.

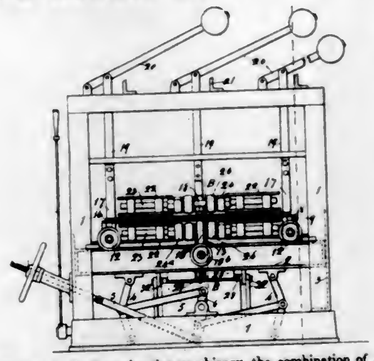
2. In an electric-railway system, a closed conduit having an upper conductor located beneath the surface of the roadway, and a series of conductive members projecting from said conductor at intervals and having their ends located above the roadway-surface, said members being composed of non-magnetic material.

3. In an electric-railway system, a closed conduit, a main conductor therein, and an auxiliary conductor composed of independent strips of magnetic material overlying the main conductor, and movable separating members interposed between the ends of said strips.

4. In an electric-railway system, a closed conduit, a main conductor therein, and an auxiliary conductor composed of independent strips of magnetic material overlying the main conductor and disconnected therefrom, and movable separating members interposed between the ends of said strips.

5. In an electric-railway system, a closed conduit having a sectional upper conductor composed of material not subject to magnetic attraction, and a series of conductive members projecting upwardly from said conductor at intervals.

657,312. MACHINERY FOR TRIMMING, DRESSING, AND PLANING STAVES. ALEXANDER DUNBAR, Liverpool, England. Filed May 24, 1898. Serial No. 681,545. (No model.)



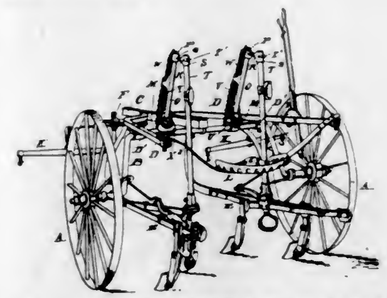
Claim.—1. In stave-dressing machinery, the combination of stave clamps or grippers holding the work at right angles to the travel of the cutter-carriage, and arranged to twist the stave axially, comprising movable tables under the ends of the staves and adjustable angularly, and pressers resting on the top of each side edge of the stave, and cutters arranged to act upon the stave; substantially as described.

2. In stave-dressing machinery, the combination of end clamps or grippers adapted to hold the work at right angles to the travel of the cutter, compressing vertically-movable pressers arranged to flatten the stave as it is forced up, a central adjustable arm arranged to straighten the stave, and cutters arranged to pass over the top and bottom of the stave; substantially as described.

3. In stave-dressing machinery, the combination of stave clamps or grippers holding the work at right angles to the travel of the cutter-carriage, and arranged to twist the stave axially, comprising movable tables under the ends of the staves and adjustable angularly, and pressers resting on the top of each side edge of the stave, and a cutter-carriage movable on wheels running on templets and carrying cutters for the staves; substantially as described.

4. In stave-dressing machinery, the combination of stave clamps or grippers arranged to hold the work at right angles to the travel of the cutters, comprising tables under the ends of the staves, and adjustable according to their section, and weighted pressers on each edge of the stave at the ends, a central adjustable arm, an upper presser arranged to act upon the central portion of the stave, and cutters arranged to cut the top and bottom of the stave; substantially as described.

657,313. CULTIVATOR. GEORGE E. EVANS, Peoria, Ill., assignor to the Kingman Plow Company, same place. Filed Apr. 2, 1900. Serial No. 11,113. (No model.)



Claim.—1. A cultivator having means for carrying its shovel-beams at their forward ends in pivotal manner, a support for the rear ends of said beams, such support being revolubly mounted on the frame in such manner as to cause said beams to swing in a horizontal plane.

2. A cultivator having mechanism for carrying the shovels thereof in a horizontal line when moved laterally, consisting of means revolubly mounted on the frame and adapted to move in a horizontal plane, and an arm or mast pivotally connected with such revoluble means for supporting the shovels.

3. A cultivator having means for carrying its shovels in a horizontal plane when swung laterally while at work in the ground, such means consisting of a horizontally-revoluble pivot located on the cultivator-frame and a shovel-beam hung loosely from such revoluble pivot.

4. A cultivator having means for carrying the cultivator-shovels in a horizontal line, when moved from side to side, which consists of an arm mounted on end on the implement-frame and adapted for a partial revoluble movement thereon as set forth, a shovel-beam hung from the implement-frame and having pivotal connection with the said revoluble arm for the purposes set forth.

5. In a cultivator, an arm, pivotally mounted on end on a revoluble base and adapted to have a partial revoluble movement by means of such base, a rod pivoted to the upper free end of the arm, and a shovel-beam pivotally attached to the lower end of said rod.

6. In a cultivator, an arm pivotally mounted on end on a revoluble base, and adapted to have a partial revoluble movement by means of such base, a rod, or support, pivoted to the upper free end of the arm, a shovel-beam pivotally attached to the said rod, and means for governing and limiting the downward movement of the said shovels for the purpose described.

7. A cultivator having a revoluble support adapted to swing in a horizontal plane, an upwardly-projecting arm pivoted to such support, a depending rod pivoted to the upper free end of such arm, a shovel-beam hung from the rod, means for sustaining and balancing the weight of the parts described, for the purposes set forth, and means for limiting the downward inclination of such parts.

8. In a cultivator, an arm mounted on end on a revoluble base or support on the cultivator-frame and adapted for a partial revoluble movement on said frame by means of such base or support such arm being adapted also to have a vertical pivotal movement on the base, a shovel-beam pivoted to the cultivator-frame and a hanging connection between the said arm and shovel-beam for carrying the latter by means of the former substantially as set forth and for the purposes described.

9. In a cultivator means for supporting the shovels thereof and compelling them to move in a horizontal line when swung laterally consisting of an arm, or mast, mounted on the cultivator-frame and partially revoluble thereon in a horizontal plane and adapted for movement in a vertical plane, a shovel-beam beneath connected to, and adapted to move

with said arm, a spring for supporting the mast and means for limiting the downward movement of the shovels substantially as described.

10. In a cultivator an arm, or mast, pivoted at one end on a revoluble support mounted on the implement, a spring for supporting the mast in a substantially-upright position, a shovel-beam pivoted at its forward end to the implement-frame ahead of the said arm or mast, a depending rod interposed between the arm and the rear end of the shovel-beam; said mast and rod adapted to collapse and lie substantially parallel with each other, the pivotal connection between them passing forward of the lower pivotal support of said arm and below the line of the said pivotal support and the pivotal connection of said rod with the shovel-beam, whereby the shovels are raised from the ground and sustained.

11. In an implement of the character described, an arm, or mast revolubly mounted on the implement-frame, substantially as described, a depending connection hung therefrom, a shovel-beam pivotally attached to the said connection, the mast and connection adapted to be thrown forward and locked ahead of the pivotal support of the arm, whereby the shovels are raised from the ground and held for the purpose described.

12. In a cultivator, the combination of the revoluble cup N^2 mounted on the frame, the mast O pivoted thereto, the depending rod T pivotally hung from the upper extremity of the mast, substantially as shown, a spring secured to the cup portion N^2 and the top of the mast, for the purpose described, means for limiting the downward movement of the mast, and a shovel-beam attached to the lower extremity of the rod T and pivotally hung at its forward end from the implement-frame substantially as described.

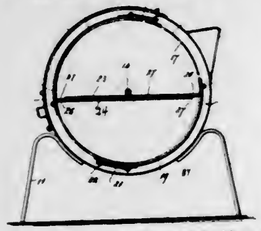
13. In a cultivator, the combination of the revoluble cup N^2, mounted on the implement-frame, the mast O pivoted thereto, the arm V pivoted to said cup, the arm X formed with the cup, a spring connected at one end to the said arm and at the other to the mast, a chain attached at one end to the said arm X and at the other to the arm V for the purposes described, the rod T pivoted to the upper end of the mast and the shovel-beam attached to the said rod all substantially as set forth and described.

14. In a cultivator, means for pivotally supporting the shovel-beam at its forward end which consists of a yoke adapted to rock in a vertical plane and arranged to receive the forward extremity of said shovel-beam and permit pivotal movement thereof in a plane at right angles to the movement of said yoke.

15. In a cultivator, a yoke F adapted to rock in a vertical plane, the shovel-beam carried in said yoke and adapted to have pivotal movement therein in a plane at right angles to the movement of such yoke and means for preventing separation of the yoke and beam substantially as set forth.

16. In a cultivator, the yoke F adapted to rock in a vertical plane, the shovel-beam carried in the extremities of said yoke and adapted for pivotal movement therein, projecting lug I on the yoke and a collar J secured to the beam for the purpose set forth and described.

657,314. WASHING-MACHINE. BERNARD FREEDMAN, New York, N. Y. Filed Dec. 28, 1899. Serial No. 741,777. (No model.)

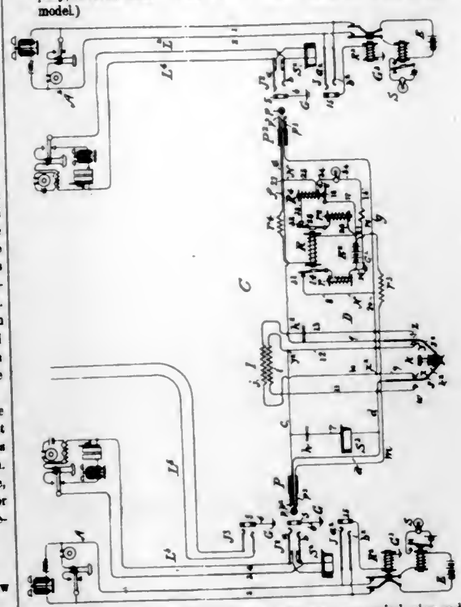


Claim.—1. A washing-machine provided with a cylindrical rotatable casing, having two outwardly-opening doors oppositely arranged, and two series of cleats or strips arranged parallelly within said casing and approximately in the transverse plane thereof in which an edge of each of said doors lie, each of said series of cleats or strips extending longitudinally of said casing at opposite sides thereof and transversely thereof at the ends thereof through a predetermined extent, the ends of said portions of said cleats or strips which extend transversely of said casing being slightly spaced from the sides of said casing, substantially as shown and described.

2. A washing-machine provided with a rotatable casing having oppositely-arranged hinged doors, two series of cleats or strips connected with said casing interiorly thereof and each extending longitudinally thereof at one side and transversely thereof at both ends, whereby the portion of each of said series which extends longitudinally of said casing is arranged adjacent one of said doors and constitutes a shelf above which a detachable partition may be passed between said series of cleats or strips, substantially as shown and described.

3. A washing-machine of the class described, comprising an outer cylindrical casing, provided with suitable supports, an inner cylindrical casing rotatably mounted therein and provided with oppositely-arranged hinged doors, said outer casing being provided with a hinged door into registration with which said doors of said inner casing are arranged to be brought, said inner casing being provided with two series of parallelly-arranged and slightly-spaced cleats or strips, a detachable partition which is inserted between said series of cleats or strips when either one of the doors of said inner casing and the door of said outer casing are opened in registration, and support devices connected with said outer casing and upon which the door thereof is rested in its open position, substantially as shown and described.

657,315. TELEPHONE SWITCHING APPARATUS. DAVID S. HULFISH, Chicago, Ill., assignor to the American Bell Telephone Company, Boston, Mass. Filed Apr. 12, 1900. Serial No. 12,603. (No model.)



Claim.—1. In a telephone switchboard apparatus a switch plug and cord circuit comprising two terminal switch-plugs, each having contact-surfaces adapted to register with corresponding contacts in the switch-sockets of substation-circuits; two switchboard-conductors normally uniting the corresponding main-circuit contact-surfaces of said two plugs; a repeating induction-coil; and a key or switch controlling the relation of said switch-cord conductors, with the terminals of the two windings of the said repeating-coil, and adapted when operated to sever the said conductors, and to connect them in two loops from the two plugs respectively, said loops containing respectively the windings of said repeating-coil, thus dividing the said plugs conductively, and uniting them inductively; substantially as set forth.

2. In a telephone switchboard apparatus, a switch plug and cord circuit comprising two terminal switch-plugs, each having contact-surfaces adapted to register with corresponding contacts in the switch-sockets of substation-circuits; two switch-cord conductors normally uniting the corresponding main-circuit contact-surfaces of the said two plugs; a repeating induction-coil; a key or switch controlling the relation of the winding-terminals thereof to the said conductors, and adapted to sever the latter, and interpose the repeating-coil in such manner that the two windings shall be brought into loops of the two plugs respectively, the said loops being conductively separated but inductively united; a supervisory signal controlled by a relay in a bridge of one of said loops; and a second supervisory signal and a condenser in a bridge of the other of said loops; substantially as described.

3. In a switch plug and cord circuit connection for a telephone-switchboard, the combination of two terminal switch-plugs each having two main contact-surfaces adapted to engage corresponding switch-socket contacts, and a local contact-surface adapted to engage a third or frame-piece contact of such switch-sockets; two switch-cord conductors normally uniting the corresponding main-circuit contact-surfaces of the said two

plugs; a repeating induction-coil; a key or switch for severing said cord-conductors and for uniting the two ends proceeding from the plugs with the two ends of the repeating-coil windings respectively, thus forming two divisions inductively united by said coil; a bridge between the conductors of one of said divisions containing a source of current and a signal-controlling relay; a signal device controlled by said relay; a bridge between the conductors of the other division containing an electromagnetic signal device; independent local-circuit conductors one for each of the said divisions, leading from the said source of current to the local contact-surface of the plug of its own division; and a relay in the local-circuit conductors of the first-named division, controlling the continuity of the bridge thereof, and the connection of the source of current contained therein; substantially as described.

4. In a telephone central-station switchboard apparatus, the combination with substation-circuits of two classes, one having its signaling appliances and telephones supplied with current from a central battery, and the other having substation call-generators and local transmitter-batteries, each circuit having a switch-socket at the central station; of a switch-cord circuit adapted to switch together any two circuits of either or both classes, comprising two terminal switch-plugs each having three contact-surfaces adapted to register with corresponding contacts in the switch-sockets of the said circuits, switch-cord conductors extending between said plugs and uniting the two forward contact-surfaces of each with the corresponding contact-surfaces of the other, a bridge containing the central source of current uniting the said switch-cord conductors, and means for maintaining the continuity and connection of said bridge when one or both plugs are inserted in the switch-sockets of circuits of the common-battery class, and for disconnecting the same from either plug or both plugs when inserted in the switch-sockets of circuits of the other class; substantially as described.

5. In a telephone switchboard apparatus, the combination with substation-circuits of two classes, one having switch-socket frames grounded or returned direct, and the other having switch-socket frames grounded, or returned through a cut-off relay or other high resistance; of a switch-cord circuit comprising two terminal switch-plugs each having two main contact-surfaces adapted to engage corresponding switch-socket contacts, and a local-circuit contact-surface adapted to engage the frame-contacts of said switch-sockets, two strand conductors uniting the corresponding main contact-surfaces of the two switch-plugs, a bridge uniting the said strand conductors, and containing a centralized source of current, and associated impedance-coils, a third strand conductor in a local circuit of said source leading through the local contact-surface of one of the switch-plugs, and when the said plug is inserted in a switch-socket, through the frame-contact thereof, and a relay in said local circuit controlling the continuity of said bridge, and adapted, when the said switch-plug is placed in a directly-grounded switch-socket, to be energized, and to open the circuit of said bridge; substantially as and for the purposes set forth.

6. In a telephone central-station switchboard apparatus, the combination of substation-circuits of two classes, one having directly-grounded switch-socket frames, and the other having switch-socket frames grounded through the electromagnet of the cut-off relay; with a switch-cord circuit comprising two terminal switch-plugs each having three contact-surfaces adapted to register with corresponding contacts in the switch-sockets of said circuits, two switch-cord conductors extending between said plugs and uniting the two forward contact-surfaces of each with corresponding ones of the other, a bridge uniting the said conductors, a centralized source of current, two impedance-coils one on each side of said source, and a signal-controlling relay all included in series in said bridge, a supervisory signal controlled by said relay, a third cord conductor in a local circuit of said source leading through the third contact-surface of one of the switch-plugs, and through the frame and return connection of a switch-socket wherein such plug may be inserted, and a relay in said local circuit controlling the continuity of said bridge and thereby the connection of the source of current, and the said signal and controlling-relay; substantially as specified.

7. In a telephone central-station switchboard apparatus, the combination of substation-circuits of two classes, one having directly-grounded switch-socket frames, and the other having switch-socket frames grounded through the resistance of the cut-off relay-exciting coils; with a switch-cord circuit comprising two terminal switch-plugs each having two main contact-surfaces adapted to engage corresponding switch-socket contacts, and a local-circuit contact-surface adapted to register with the frame-piece contact of said switch-contacts, two strand conductors normally uniting the corresponding main contact-surfaces of the two switch-plugs, a repeating induction-coil, a key controlling the terminals of the two windings thereof in relation to the said strand conductors and adapted when operated to sever the continuity of said conductors and to form them into loops extending from said plugs respectively, and containing the two windings respectively of said repeating-coil, a bridge conductor between the strand conductors of one of said loops, including in series a centralized source of current, impedance-coils and a signal-controlling relay, a supervisory signal controlled by said relay, a third strand associated with said loop and forming part of a local circuit of said source leading through the local contact-surface of the plug of said loop, and on the insertion of said plug in a switch-socket through the frame-piece contact thereof, and a relay in said local circuit controlling the continuity of said bridge, and thereby the connection of the source of current and the said signal and its controlling-relay; substantially as specified.

8. In a telephone central-station switchboard apparatus, the combination of substation-circuits of two classes, that is to say "common-battery" circuits, and "magneto-circuits;" with a switch-cord circuit arrangement comprising two terminal switch-plugs each having two main-circuit contact-surfaces adapted to register with corresponding contacts in switch-sockets of the said circuits, and a local-circuit contact-surface adapted to register with the frame-piece contact of said sockets, two strand conductors normally uniting the corresponding main-circuit contact-surfaces of the two plugs, a repeating induction-coil, means for severing the said conductors and for looping the ends of the two proceeding from each plug through the two repeating-coil windings respectively thereby forming the cord main circuit into two inductively-related divisions, a bridge between the conductors of one of the said divisions containing a central source of current, two impedance-coils one on each side of said source and a signal-controlling relay all in series, a supervisory signal responsive to said relay, a third strand conductor associated with said division and forming part of a local circuit of said source leading through the local-circuit contact of the plug of said division and through the frame-piece contact of a switch-socket wherein such plug may be inserted, a relay in said local circuit adapted to become operative and to disconnect said source of current and signal-relay when the said plug is inserted in a socket of a "magneto-line" but to maintain their connection when said plug is inserted in the socket of a "common-battery" line, and an electromagnetic signal device bridged with a condenser between the main conductors of said other division; substantially as and for the purposes set forth.

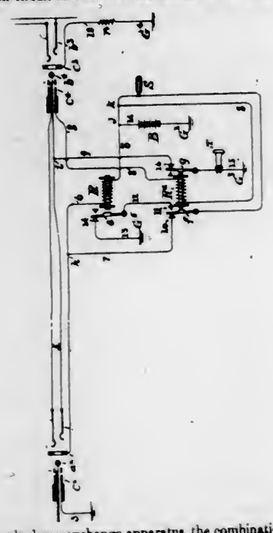
9. In a telephone central-station switchboard apparatus, the combination of substation-circuits of two classes, that is to say, "common-battery" circuits, and "magneto-circuits;" with a switch-cord circuit arrangement comprising two terminal switch-plugs each having two main-circuit contact-surfaces adapted to register with corresponding contacts in switch-sockets of the said circuits, and a local-circuit contact-surface adapted to register with the frame-piece contact of said sockets, two strand conductors normally uniting the corresponding main-circuit contact-surfaces of the two plugs, a repeating induction-coil, means for severing the said strand conductors and for looping the ends of the two proceeding from each plug through the two repeating-coil windings respectively thereby forming the cord main circuit into two inductively-related divisions, a bridge between the conductors of one of the said divisions containing a central source of current, two impedance-coils one on each side of said source, and a signal-controlling relay, all in series, a supervisory signal responsive to said relay, a third strand conductor associated with said division and forming part of a local circuit of said source leading through the local-circuit contact of the plug of said division and through the frame-piece contact of a switch-socket wherein such plug may be inserted, a relay in said local circuit adapted to become operative and disconnect said source of current and signal-relay when the said plug is inserted in a socket of a "magneto-line," but to maintain their connection when the said plug is inserted in the socket of a "common-battery" line, a third strand conductor forming part of a similar local circuit, associated with the other division of the said cord-circuit, and leading through the local-circuit contact-surface of the plug thereof, and any switch-socket wherein it may be placed, and an electromagnetic signal device bridged with a condenser between the main conductors of said other division; substantially as and for the purposes set forth.

657,316. TELEPHONE TRUNK-CIRCUIT. DAVID S. HULFISH, Chicago, Ill., assignor to the American Bell Telephone Company, Boston, Mass. Filed May 25, 1900. Serial No. 17,981. (No model.)

Claim.—1. In a telephone-exchange apparatus, the combination with a trunk-circuit extending between two switching-stations and provided at each with switch devices; of an independent signaling-circuit normally open at both stations, comprising a visual signal, a source of signaling-current, and two circuit-closing relays controlled by the said switch devices at the two switching-stations adapted to be operated serially by the said switch devices to, first, complete a circuit through one relay and the source of current and simultaneously therewith complete a second circuit through the source of current and cause the display of said signal; and second, to complete a circuit through the second relay and the source of current and open the signal-circuit, as set forth.

2. In a telephone-exchange apparatus, the combination with a trunk-circuit extending between two switching-stations and provided at each with switch devices; of an independent signaling-circuit normally open

at both stations, comprising a visual signal, a source of signaling-current, and two circuit-closing relays controlled by the said switch devices at the two switching-stations; and a busy-test circuit normally closed by one of said relays; the said relays adapted to be operated serially by the said switch devices to, first, complete a circuit through one relay and the source of current and simultaneously therewith complete a second circuit through the source of current and cause the display of said signal; and, second, to complete a circuit through the second relay and the source of current and open signal-circuit and also the test-circuit, as set forth.

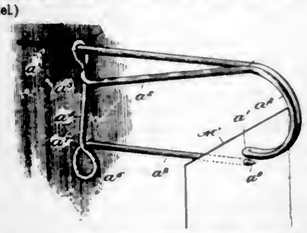


3. In a telephone-exchange apparatus, the combination with a trunk metallic circuit extending between two switching-stations and provided at each end with switch devices; of an independent signaling-circuit normally open in the switch-socket and plug terminals of the trunk-circuit at the said stations comprising a single conductor branching first through the windings of one relay to a source of current and ground, and second, through the switching-armature of a second relay, a visual signal and the source of current to ground; the windings of the second relay being in circuit with a contact-surface of the plug-terminal to ground through the source of current; and a test-circuit normally closed and grounded through the switching-armature of the second relay to the tip of the terminal plug, whereby when the switch-socket terminal is grounded the visual signal is lighted, and when the tip of the terminal plug is in touch with the test-ring of a telephone-circuit the test-circuit is completed, as set forth.

4. In a telephone-exchange apparatus the combination with a trunk metallic circuit extending between two switching-stations and provided at each end with switch devices; an independent signaling-circuit normally open in the switch-socket and plug terminals of the trunk-circuit at the said stations, comprising a single conductor branching first through the windings of one relay to a source of current and ground, and second, through the switching-armature of a second relay a visual signal and the source of current to ground; the winding of the second relay being in circuit with a contact-surface of the plug-terminal to ground through the source of current; and a test-circuit normally closed and grounded through the switching-armature of the second relay to the tip of the terminal plug; whereby when the switch-socket terminal is grounded the visual signal is lighted, and when the circuit of the second relay is grounded at the plug-terminal the signal is extinguished, as set forth.

5. In a telephone-exchange apparatus the combination with a trunk metallic circuit extending between two switching-stations and provided at each end with switch devices; an independent signaling-circuit normally open in the switch-socket and plug terminals of the trunk-circuit at the said stations, comprising a single conductor branching first through the windings of one relay to a source of current and ground, and second through the switching-armature of a second relay, a visual signal and the source of current to ground; the winding of the second relay being in circuit with a contact-surface of the plug-terminal to ground through the source of current; and a test-circuit normally closed and grounded through the switching-armature of the second relay to the tip of the terminal plug; whereby when the switch-socket terminal is grounded the visual signal is lighted, and when the circuit of the second relay is grounded at the plug-terminal the signal is extinguished, and when the ground is removed from the switch-socket terminal the visual signal is relighted, as set forth.

657,317. FILE-FOR PROOF, COPY, &c. CLARENCE E. N. LANCASTER, Boston, Mass. Filed Dec. 26, 1899. Serial No. 741,498. (No model.)



Claim.—1. A filing device made of a single piece of wire, bent upon itself and curved to form an arched guard, a straight prong having its outer end pointed and adjacent and protected by the guard, a supporting-brace connecting the inner end of the prong with the branch leading from the arched guard, and an attaching portion formed by the screw-threaded end of said branch extended beyond the brace.

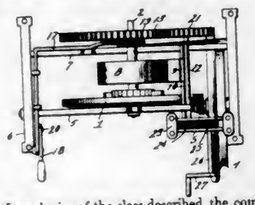
2. A filing device made of a single piece of wire and comprising a resilient prong, a guard for the free, pointed outer end thereof, a brace at the opposite end of the prong, connected also with the guard, and an integral attaching portion screw-threaded and extended beyond the brace, the point of the prong and the screw-threaded attaching portion being formed by the two ends of the single piece of wire.

3. A filing device formed of a single piece of wire, the ends being substantially parallel and oppositely extended, one end being screw-threaded and the other end pointed to form a prong, the wire being bent at the inner end of the latter to form a brace, and looped around the threaded end portion, said end portion and the part of the wire leading from the loop being curved toward the point of the prong to form a guard for the point thereof.

4. A filing device formed of a single piece of wire and comprising a straight, resilient prong bent at its inner end to form a closed loop and an adjacent brace substantially at right angles to said prong, the free end of the brace being formed into an open loop and then extended forward toward the free end of the prong and bent upon itself thereat to form a guard, the wire from the guard being carried back through the open loop of the brace and threaded beyond the same, to form an attaching portion.

5. A filing device made of a single piece of wire one end comprising a resilient prong, a guard for the free, pointed outer end thereof, the other end of the wire extending from the guard oppositely to the prong and forming an integral attaching portion for the device, and a brace formed by the wire between the inner end of the prong and the guard, the brace engaging the attaching portion between its extremity and the guard.

657,318. SPRING-MOTOR FOR SEWING-MACHINES. JAMES R. OLIVER, McMinnville, Tenn. Filed June 4, 1900. Serial No. 19,062. (No model.)



Claim.—1. In a device of the class described, the combination with a sewing-machine, of a horizontal main shaft, a spring connected therewith, bevel-gearing connecting the main shaft with the band-wheel of the machine, a rear gear-wheel having a clutch connection with the shaft, an operating device for throwing the rear gear-wheel into and out of engagement with the main shaft, and gearing meshing with the rear gear-wheel for winding the spring, substantially as described.

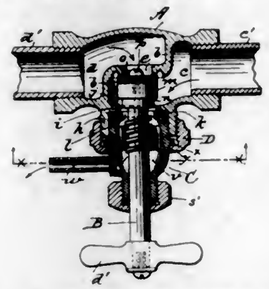
2. In a device of the class described, the combination with a sewing-machine, of a horizontal main shaft, a spring connected with the same, gearing connecting the main shaft with the band-wheel of the machine, a rear gear-wheel slidingly mounted on the main shaft and having a clutch connection with the same, an operating-lever arranged at the front of the machine, a sliding bar connected with the lever and with the rear gear-wheel, and winding mechanism meshing with the rear gear-wheel, substantially as described.

3. In a device of the class described, the combination with a sewing-machine, of a horizontal main shaft, a spring connected with the same, gearing connecting the main shaft with the band-wheel of the machine, a gear-wheel slidingly mounted on the main shaft and having a clutch connection with the same, a substantially L-shaped bar slidingly mounted on the frame of the machine and connected with the gear-wheel, and a lever fulcrumed at its lower end at the front of the machine and provided at its upper end with a handle and connected between its ends with the sliding bar, substantially as described.

4. In a device of the class described, the combination with a machine, of a main shaft 2, gearing connecting the main shaft with the band-wheel of the machine, a spring connected with the main shaft, a gear-wheel slidingly mounted on the main shaft and having a clutch connection with the same, a counter-shaft 22, a gear-wheel mounted on the counter-shaft and meshing with the said gear-wheel, front gearing connected with the front end of the counter-shaft 22, and a crank for operating the front gearing, substantially as described.

5. In a device of the class described, the combination of a machine having a frame provided with a horizontal bar supporting the band-wheel of the machine, a main shaft journaled on the frame and on the horizontal bar, gearing connecting the main shaft with the band-wheel, a spring connected with the main shaft, a counter-shaft, a rear pinion 21 mounted on the rear end of the counter-shaft, a rear gear-wheel 13 slidingly mounted on the main shaft and having a clutch connection with the same and meshing with the rear pinion 21, means for shifting the rear gear-wheel 13, a hanger supporting the counter-shaft 22, a pair of pinions mounted in the hanger and arranged at the front of the machine, one of the pair of pinions being mounted on the counter-shaft 22, and a crank connected with the other one of the pair of pinions, substantially as described.

657,319. STOP AND WASTE COCK. WILLIAM H. RAWE, Pawtucket, R. I. Filed Mar. 24, 1900. Serial No. 10,091. (No model.)



Claim.—1. In combination with a valve-case of a stop and waste cock, having a circular flanged hub integral therewith and provided with an exterior-screw-threaded surface, said hub having an interior flange, the axis of which is in alinement with the axis of the valve-seat, of a cylindrical sleeve-nut C mounted in said hub and having an exterior annular flange *x* of a lesser diameter than the diameter of the hub, said sleeve having an interior wall *t* provided with a centrally-screw-threaded opening, a series of longitudinal openings *u* in said wall and communicating with an outer chamber *v* in said sleeve, an outlet-pipe *w* communicating with said chamber, a packing-ring *k* interposed between the interior flange of the hub of said valve-case and the inner face of said sleeve-nut, a valve-rod B having an exterior-screw-threaded portion to engage with the screw-threaded opening in said sleeve-nut, said valve-rod having a circular enlargement *m* provided with a shoulder *n* adapted to bear against the face of said packing-ring when the valve is open, a valve-disk carried by said valve-rod, with a cap D having a central circular opening of a diameter to receive the exterior annular flange of said sleeve-nut, and its circumferential flange screw-threaded on the inside to engage with the screw-threaded end of the hub of the valve-case, as shown and described.

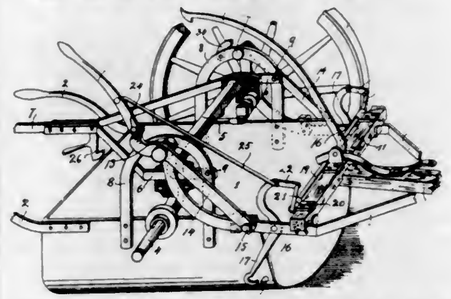
2. In a stop and waste cock, a valve-case having a circular flanged hub with an interior circular flange the axis of which is in alinement with the axis of the valve-seat, a sleeve-nut mounted in the aperture of said hub of the valve-case and provided with a waste-outlet as described, a packing-ring interposed between said sleeve-nut and the interior flange of said hub, and adapted, in coöperation with the valve, to close the waste-outlet, with means for securing said sleeve-nut to the hub of said valve-case, as shown and described.

657,320. STABLE INDIGO-WHITE AND PROCESS OF MAKING SAME. ARMAND J. STIEGLMANN, Ludwigshafen, Germany, assignor to the Badische Anilin and Soda Fabrik, same place. Filed May 21, 1900. Serial No. 17,472. (Specimens.)

Claim.—1. The process for the manufacture of a new indigo-white body, by treating indigo-white in a neutral medium with formaldehyde, substantially as described.

2. As a new product, the body which can be obtained by treating indigo-white in water with formaldehyde and which body has an empirical composition corresponding to that of hydroxy-methylene-indigo-white, which is stable in the presence of air and on treatment with caustic-soda solution in the presence of air yields indigo.

657,321. WHEELED SCRAPER. JESSE STUBBS, Mount Pleasant, Iowa. Filed July 12, 1900. Serial No. 23,810. (No model.)



Claim.—1. In a wheeled scraper, the combination with the axle and the scoop supported thereby, of a pair of draft-bars pivotally connected to the sides of said scoop above the level of the axle, substantially as described.

2. In a wheeled scraper, the combination with the axle and the scoop supported thereby, of a pair of draft-bars pivotally connected to the sides of said scoop above the level of the axle, and means for detachably connecting said draft-bars to the lower front end of the scoop, substantially as described.

3. In a wheeled scraper, the combination with the axle and the scoop suspended therefrom, said scoop having a pair of vertical extensions on its opposite sides rising above the axle, of a pair of draft-bars pivotally secured in said vertical extensions at or near their upper ends, substantially as described.

4. In a wheeled scraper, the combination with the axle and the scoop suspended therefrom, said scoop having a pair of vertical extensions on its opposite sides rising above the axle, of a pair of draft-bars pivotally secured in said vertical extensions at or near their upper ends, and detachable hooks pivoted to the draft-bars to engage the scoop near its front end during the loading operation, substantially as described.

5. In a wheeled scraper, the combination with the axle and the scoop suspended therefrom, of a pair of circle-irons secured in the opposite sides of the scoop and straddling the axle, and a pair of draft-bars pivotally secured in said circle-irons above the axle, substantially as described.

6. In a wheeled scraper, the combination with the axle and the scoop suspended therefrom, of a pair of circle-irons secured in the opposite sides of the scoop and straddling the axle, a pair of draft-bars pivotally secured in the tops of said circle-irons, a pair of connected lever-hooks pivoted in the draft-bars and adapted to engage and disengage projections on the sides of the scoop, and means for operating said lever-hooks, substantially as described.

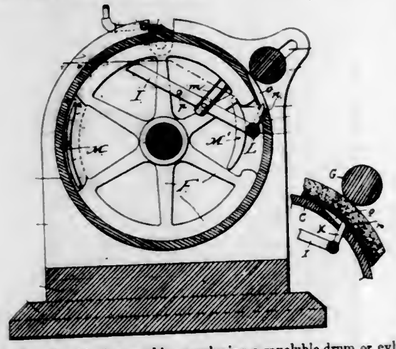
7. In a wheeled scraper the combination with the arched axle, of an operating-lever secured to the rectangular bends of the axle, a scoop pivotally suspended from the parallel arms of said operating-lever, a pair of circle-irons secured in the opposite sides of said scoop and straddling the axle, and a pair of draft-bars having upwardly-curved ends pivotally secured in the tops of said circle-irons, substantially as described.

8. In a wheeled scraper, the combination with the arched axle, of an operating-lever, secured to the rectangular bends of the axle, a scoop pivotally suspended from the parallel arms of said operating-lever, a pair of circle-irons secured in the opposite sides of said scoop and straddling the axle, a pair of draft-bars pivotally secured in the tops of said circle-irons, means for applying the draft from the draft-bars to the lower front end of the scoop during the loading operation, and means for securing the scoop in a substantially-horizontal position during the carrying operation, substantially as described.

657,322. FAT-SKINNING MACHINE. THOMAS W. TALIAFERRO, South Omaha, Nebr. Filed Apr. 2, 1900. Serial No. 11,173. (No model.)

Claim.—1. In a fat-skinning machine, the combination with a revoluble drum, a pressure device and a knife or cutter, of devices contained

within the drum and adapted to engage the skin side of the piece of meat and means for alternately projecting said devices beyond the perimeter of the drum and retracting them within it.



2. In a fat-skinning machine employing a revoluble drum or cylinder a pressure device and a knife or cutter, devices carried within the drum and engaging the skin from below, and means for alternately projecting and retracting the devices to cause them to be alternately projected and retracted, with relation to the periphery of the drum or cylinder.

3. In a fat-skinning machine and in combination with a revoluble drum or cylinder, a pressure-roller and a knife or cutter, means carried within the drum and operating upwardly for engaging the piece of meat from below, and means for retracting the engaging means and causing them to release the piece of meat and be retracted within the periphery of the drum.

4. A fat-skinning machine including a revoluble drum or cylinder, a pressure device, a knife or cutter and means carried within the perimeter of the drum and operating outwardly to engage the skin side of the meat.

5. A fat-skinning machine including a revoluble drum or cylinder, a pressure device, a knife or cutter, pointed pins or teeth carried by the drum, and means for projecting and retracting said pins or teeth with relation to the outer periphery of the drum whereby the piece of skin is engaged and released.

6. In a fat-skinning machine, the combination with a revoluble drum or cylinder and a pressure-roller between which and the drum the piece of meat passes, and a skinning-knife, of normally-retracted devices within the drum and means for projecting them upwardly into contact with the skin side of the piece of meat as they pass beneath the roller.

7. In a fat-skinning machine, the combination with a revoluble drum and a pressure device between which and the drum the piece of meat passes, and a skinning-knife, of pins or teeth carried by the drum and operating in opposition to the roller, and engaging the piece of meat from below, and means for retracting the pins or teeth below the surface of the drum and releasing the piece of skin.

8. In a fat-skinning machine, the combination of a revoluble drum or roller, a pressure-roller, alternately projecting and retracting pins or teeth carried by the drum, means for causing the pins or teeth to be projected and engage the skin of the meat as the former pass the roller, a knife, against which the piece of meat is carried while held by the pins or teeth, and means for causing the pins or teeth to release the piece of skin and be retracted within the periphery of the drum.

9. In a fat-skinning machine, the combination with a revoluble drum, a pressure device, and a knife or cutter fixed with relation thereto, of a rocking frame within the drum and carried thereby, and having pins or teeth normally retracted within the perimeter of the drum and lying in line with corresponding holes in the drum, and means fixed in the path of the rocking frame and actuating the latter to project the pins or teeth upwardly beyond the perimeter of the drum to enable said pins or teeth to engage the skin side of the meat.

10. In a fat-skinning machine, the combination with a revoluble drum, a pressure device, and stationary knife or cutter, of a rocking frame within the drum and carried thereby, pointed pins or teeth carried by the frame in line with holes in the rim of the drum, means for projecting the pins or teeth upwardly into engagement with the under or skin side of the meat, and other means for retracting the pins or teeth and thereby releasing their contact with the skin.

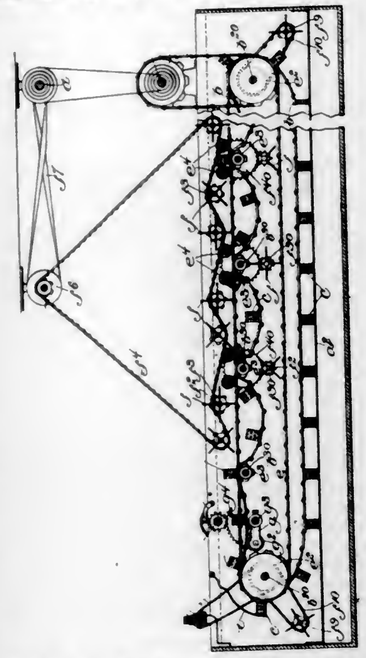
11. In a fat-skinning machine, the combination of a pressure-roller, a revoluble drum or cylinder having a transverse series of holes in its rim, lever-arms pivotally secured within the drum and a transverse bar or rod connecting said arms, pins or teeth on said bar or rod and each in line with and operating through one of said holes, stationary lugs or cams on the inner sides of the main frame or casing and in the path of a member of the rocking frame, adapted to operate the frame and thereby project the pins or lugs in one movement, to engage the skin, and retract them, in another movement, to release the skin, and a stationary knife against which the meat is carried and the skin severed from the fat.

12. In a fat-skinning machine, the combination with means for engaging and advancing the piece of meat, of a stationary knife and a means for discharging a heated fluid thereon whereby the knife is maintained both moist and warm.

13. In a fat-skinning machine, the combination with means for engaging and advancing the piece of meat, of a stationary knife, and a perforated steam-pipe in rear thereof and adapted to discharge jets of steam on the outside of the knife whereby said knife is kept both moist and warm.

14. In a fat-skinning machine, the combination of a revoluble drum means for engaging the piece of meat thereon, a stationary knife or cutter, a pressure-roller opposing the drum, and means including sleeves on the ends of the pressure-roller boxes or bearings having guided stems and springs engaging the stems, for supporting the roller and permitting it to yield in lines radial to the axis of the drum.

657,323. APPARATUS FOR DYEING. JOHN C. THICKINS, Pittsfield, Mass. Filed Jan. 8, 1900. Serial No. 717. (No model.)



Claim.—1. In a dyeing apparatus the combination with a vat to contain the dyeing liquid; of a wholly-submerged conveyer provided with retaining devices for the material to be dyed; means for causing the said conveyer to travel through the liquid; and agitating or stirring devices operating in the liquid to produce currents of liquid toward the said retaining devices at certain points in their travel, as set forth.

2. In a dyeing apparatus, the combination with the vat adapted to contain dyeing liquid; of an endless traveling conveyer wholly submerged in the said liquid; retaining devices connected with said conveyer; and means for producing a rocking or oscillating movement of said devices during the travel of said conveyer, as set forth.

3. In a dyeing apparatus, the combination with a vat containing dyeing liquid; of an endless conveyer wholly submerged in the said liquid; a series of supports for the upper part of the said conveyer which is arranged to hang slack between said supports; receptacles for the material to be dyed connected with said conveyer; and agitating devices adjacent to said supports and arranged to operate in the liquid and set up converging currents of liquid toward the said supports, substantially as described.

4. In a dyeing apparatus, the combination with an endless conveyer extending between a pair of driving-sprockets; a drive-chain for rotating said sprockets; supporting-sprockets for the upper portion of the conveyer which is arranged to hang slack between the said supporting-sprockets; and means for uniformly driving said supporting-sprockets from the drive-chain aforesaid, substantially as described.

5. In a dyeing apparatus, the combination with a pair of sprockets; of a conveyer-chain provided with retaining devices for the material to be dyed and hung loosely over the said sprocket; intermediate supporting-sprockets for the upper portion of the said conveyer-chain; means for uniformly driving all of said sprockets whereby the slack of the conveyer-chain is maintained uniform; and a support or track in the lower part of the vat for the lower portion of said conveyer-chain to prevent the same from sagging to the bottom of the vat and stirring up the sediment therein, substantially as described.

6. An apparatus for dyeing material such as yarn comprising a receptacle for the dyeing liquid; a conveyer for the material within the said receptacle and wholly submerged in the liquid; retaining devices or receptacles consisting of perforated boxes arranged to be opened for the reception and removal of the material, said boxes being connected with said conveyer; means for moving said conveyer out of the liquid to expose the boxes; and devices for automatically closing the lids of said boxes in the travel of the conveyer, substantially as described.

7. An apparatus for dyeing material such as yarn, comprising a receptacle for the dyeing liquid; a conveyer for the material within said receptacle and wholly submerged in the liquid, and means for moving said conveyer out of the liquid to expose the material at a predetermined point in the travel thereof, substantially as described.

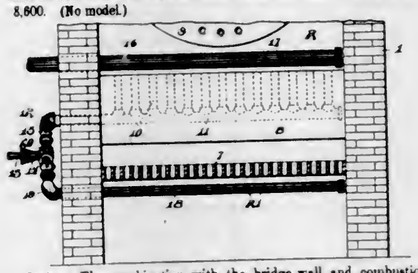
8. A dyeing apparatus comprising a tank or receptacle to contain the dyeing liquid; an endless conveyer normally wholly submerged in the liquid; and means for raising said conveyer above the level of the liquid at a predetermined point in the travel thereof, said conveyer being sufficiently slack to admit of being thus raised, substantially as described.

9. A dyeing apparatus comprising a tank or receptacle to contain the dyeing liquid; an endless conveyer normally wholly submerged in the liquid; means for raising said conveyer above the level of the liquid at a predetermined point in the travel thereof, said conveyer being sufficiently slack to admit of being thus raised; and a supplemental endless driving-chain, as and for the purpose set forth.

10. A dyeing apparatus comprising a tank or receptacle to contain the dyeing liquid; an endless conveyer normally wholly submerged in the liquid; and a vertically-movable support for said conveyer, substantially as described.

11. A dyeing apparatus comprising a tank containing dyeing liquid; a conveyer normally submerged in said liquid; a movable support for said conveyer; and means for locking said support after it has been moved, as set forth.

657,324. SMOKE-CONSUMING FURNACE. EDWARD THORNTON and GEORGE S. SMITH, Cottsville, Ohio. Filed Mar. 14, 1900. Serial No. 8,600. (No model.)

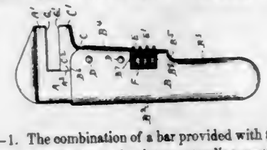


Claim.—The combination with the bridge-wall and combustion-chamber of a furnace, of a perforated pipe 18 extending across the ash-pit beneath the grate-bars for feeding steam to said combustion-chamber, a pipe 11 extending through the bridge-wall with a series of ejectors connected thereto with their outlets at the top of the bridge-wall, said pipe 11 and the pipe 18 connected to a common steam-supply, an air-supply for said pipes 11 and 18, and a perforated pipe 16 located above the bridge-wall for supplying cold air to the steam and hot air emitted from the injectors in the bridge-wall, as and for the purpose described.

657,325. METHOD OF MAKING OXYCHLORID OF MERCURY. ROSARIO TORCHIA, New York, N. Y. Filed Jan. 5, 1900. Serial No. 465. (No specimens.)

Claim.—The herein-described method of preparing oxychlorid of mercury which consists in mixing at boiling temperature three parts of a saturated solution of potassium hydrate and fifteen parts of corrosive mercuric chloride and evaporating to dryness by boiling, substantially as described.

657,326. WRENCH. JOHN E. WAKEFIELD, Worcester, Mass. Filed Aug. 3, 1897. Serial No. 646,882. (No model.)



Claim.—1. The combination of a bar provided with teeth on its front edge and having an upper jaw, of a sleeve extending continuously around said bar and inclosing a space between the front edge of said sleeve and the front edge of said bar to receive the lower jaw, a lower jaw having the body-space inclosed in said space and provided with a spindle C^4 and a shoulder C^5 and a rotating nut E carried on said spindle and bearing against said shoulder and engaging the teeth on said bar, and means for holding said jaw from longitudinal movement on said sleeve, substantially as described.

2. The combination with a bar and an upper jaw of a sleeve inclosing said bar having its rear edge in contact with the rear edge of said bar and having its front edge flaring to form a space in front of said bar to receive the tapering body-section of the lower jaw, a lower jaw provided with a tapering body-section fitting the flaring space in said sleeve, means for attaching said lower jaw to said sleeve and means for imparting a longitudinal movement to said bar, substantially as described.

3. In a wrench, the combination with a bar of the upper jaw, of a sleeve inclosing said bar and forming the handle of the wrench, said sleeve being drawn from a single piece of sheet metal, and having its end closed to form a closed pocket for the end of said bar, said sleeve having its upper portion engaged by an offset B^3 in its front edge in order to provide a flaring space for a separable lower jaw and the lower jaw having a tapering top fitting said space and means for attaching said jaw to said sleeve, substantially as described.

4. In a wrench, the handle B, consisting of an integral sleeve drawn from a single piece of sheet metal and adapted to inclose the bar of the wrench, said sleeve being closed at its lower end to form a closed pocket for the end of the bar and open at its upper end to receive a separable lower jaw, said sleeve having its rear edge B^2 and the lower portion of its front edge B^3 parallel with the edges of said bar and having an offset B^5 in its front edge, whereby the upper portion of said sleeve is increased in width to form a flaring space for a separable lower jaw combined with the separable lower jaw provided with a tapering body adapted to fit the flaring space in said sleeve, substantially as described.

657,327. BOTTLE-COLLAR. GEORGE W. WILLIAMS, New York, N. Y. Filed July 14, 1899. Serial No. 723,778. (No model.)



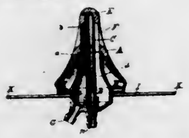
Claim.—1. A bottle-collar, consisting of a strip of bibulous or absorbent material, and devices upon one end portion thereof extending transversely thereto and adapted to engage and secure the other and overlapping end portion of the strip.

2. A bottle-collar, consisting of a strip of bibulous or absorbent material, and fastening devices at one end portion thereof extending transversely to said strips and consisting of laterally-projecting flexible tabs having their ends adapted to be bent over and clenched upon the other and overlapping end portion of the strip.

657,328. SYRINGE. WILLIAM P. ALLEN, Chicago, Ill. Filed Mar. 8, 1899. Serial No. 708,231. (No model.)

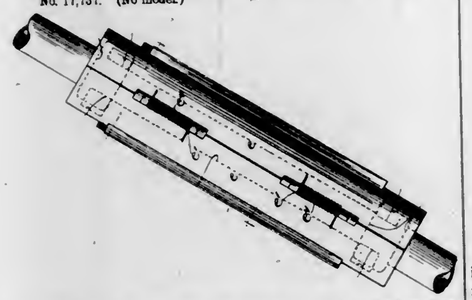
Claim.—1. In a vaginal syringe, the combination of a conical top having slotted discharge-openings therein opening into the chamber *d*, an approximately-cylindrical hollow base B, of approximately the mean diameter of the cone, having therein a discharge-opening G, said base be-

ing detachably secured to the under side of said conical top so as to form the chamber *d*, and a detachable tube adapted to conduct liquid through said chamber *d* into the vagina.



2. In a vaginal syringe, the combination of a conical top having slotted discharge-openings therein opening into the chamber *d*, an approximately-cylindrical hollow base B, of approximately the mean diameter of the cone, having therein a discharge-opening G, said base being detachably secured to the under side of said conical top so as to form the chamber *d*, a detachable tube adapted to conduct liquid through said chamber *d* into the vagina, arms extending forward and backward from said base B in contact with and adapted to support the edges of said conical top and means for securing straps to the ends of said arms.

657,329. GUARD FOR WATER-GAGES. WILLIAM H. BROOKS and HERMAN C. FISCHER, Cleveland, Ohio. Filed May 23, 1900. Serial No. 17,737. (No model.)



Claim.—1. A water-gage guard comprising a case composed of two sections arranged to embrace opposite sides, respectively, of the gage and hinged together by suitably-applied spring-hinges, and each of the said sections being provided with a window or sight-glass through which the glass of the gage is visible, and one of the said sections, at its free side edge, being provided with a groove extending longitudinally of the said section and engaged by the free side edge of the companion section in the closed position of the said sections.

2. A water-gage guard comprising a case composed of two sections arranged to embrace opposite sides, respectively, of the gage, and having the dimensions required to render them capable, when they are closed together, of surrounding the gage and forming a space between the exterior of the gage and the internal surface of the said sections, jaws formed internally of the said sections and arranged to snugly engage the gage in the closed or operative position of the said sections, and means acting to close the said sections together and thereby cause the aforesaid jaws to hold the guard to the gage.

3. A water-gage guard comprising a case composed of two sections arranged to embrace opposite sides, respectively, of the gage and having the dimensions required to render them capable, when they are closed together, of surrounding the gage and forming an annular chamber or space between the exterior of the gage and the internal surface of the said sections, suitably-applied spring-hinges forming a hinge connection between the said sections, and the jaws formed internally of the said sections and arranged to snugly engage the gage in the closed or operative position of the said sections and, in conjunction with the springs of the aforesaid hinges, holding the guard to the gage.

4. A water-gage guard comprising a case composed of two sections arranged to embrace opposite sides, respectively, of the gage, means acting to close the said sections together, a pair of jaws arranged to engage the upper head of the gage in the operative position of the said sections and formed internally of and upon the different sections, respectively, and another pair of jaws arranged to engage the lower head of the gage in the operative position of the said sections and formed internally of and upon the different sections, respectively, substantially as and for the purpose set forth.

5. A water-gage guard comprising a case composed of a plurality of sections arranged up and down the gage and together surrounding the gage, means acting to close the said sections together, and jaws formed internally of the sections and arranged to snugly engage the gage in the closed or operative position of the said sections, and means acting to close the aforesaid sections together, and, in conjunction with the aforesaid jaws, hold the guard to the gage.

6. A water-gage guard comprising a case composed of two sections arranged to embrace opposite sides, respectively, of the gage, suitably-applied spring-hinges forming a binge connection between the said sections, a pair of jaws arranged to engage the upper head of the gage in the operative position of the said sections and formed internally of and upon the different sections, respectively, and another pair of jaws arranged to engage the lower head of the gage and formed upon and internally of the different sections, respectively, all arranged and operating substantially as shown, for the purpose specified.

657,330. ELECTRIC RAILWAY. THEOPHILUS P. CHANDLER, Philadelphia, Pa. Filed July 27, 1900. Serial No. 24,984. (No model.)



Claim.—1. In an electric railway, the combination of two suspended insulated cables mechanically connected at intervals and supplying currents of opposite polarity, with an electrically-propelled truck having one or more grooved driving-wheels running upon the upper cable, an electric motor arranged within the rim of each driving-wheel and comprising field-magnets one of said parts being connected to and rotating with the driving-wheel, a depending frame connected with the other part of the motor and extending to a point below both suspended conductors, an insulated current-contact device carried by the depending frame making a traveling contact with the under side of the lower suspended conductor, and a receptacle for containing merchandise, &c., carried by the depending frame and located below both the suspended conductors.

2. In an electric railway, the combination of two suspended insulated cables mechanically connected at intervals and supplying currents of opposite polarity, with an electrically-propelled truck having one or more grooved driving-wheels running upon the upper cable, an electric motor arranged within the rim of each driving-wheel and comprising field-magnets and armature one of which parts is connected to and rotates with the driving-wheel, a depending frame connected with the other part of the motor and extending to a point below both suspended conductors, an insulated current-contact device carried by the depending frame making a traveling contact with the under side of the lower suspended conductor, a receptacle for containing merchandise, &c., carried by the depending frame and located below both the suspended conductors, an inclosing case for the field-magnets and armature of the electric motor connected with the depending frame, and antifriction-bearings between the said casing and the inner portion of the rim of the driving-wheel.

3. In an electric railway, the combination of two parallel suspended conductors connected together at intervals by insulating connections, an electrically-propelled vehicle having two driving-wheels arranged in alinement and running upon the upper of the suspended conductors, an electric motor arranged within each of the wheels and comprising field-magnets and armature one of which is directly connected with the driving-wheel, a frame connected with the other elements of the electric motors to hold them against rotation and depending to a point below both suspended conductors, a receptacle for carrying merchandise, &c., connected to the depending frame and located below the suspended conductors, and a current-collecting device making contact with the lower suspended conductor consisting of a grooved under-contact wheel and a spring-support therefor connected with the depending frame.

4. In an electric railway, the combination of two parallel suspended conductors connected together at intervals by insulating connections, an

electrically-propelled vehicle having two driving-wheels arranged in alinement and running upon the upper of the suspended conductors, an electric motor arranged within each of the wheels and comprising field-magnets and armature one of which is directly connected with the driving-wheel, a frame connected with the other elements of the electric motors to hold them against rotation and depending to a point below both suspended conductors, a receptacle for carrying merchandise, &c., connected to the depending frame and located below the suspended conductors, and a current-collecting device making contact with the lower suspended conductor consisting of a longitudinal insulated arm having vertical slots in its ends, boxes arranged in said vertical slots, springs to press the boxes upward, grooved collector-wheels journaled in the boxes and making a traveling contact with the under surface of the lower suspended conductor and located respectively below each of the driving-wheels, and an insulating connection between the longitudinal arm and the depending frame.

5. In an electric railway, the combination of two suspended conductors one above the other connected at intervals by insulating connections, two independent trucks each having two grooved wheels running upon the upper of the suspended conductors and also provived with a depending frame extending to a point below the lower suspended conductor, one or more electric motors on each truck having one of its elements connected with the driving wheel or wheels and the other element connected with the truck-frame, a longitudinally-arranged compartment or receptacle for merchandise, &c., arranged below the suspended conductors, pivotal connections between the said receptacle and the depending frames of the trucks whereby they may turn independently about vertical axes, and one or more contact devices carried by the depending frames making an underrunning contact with the lower suspended conductor for supplying current to the motor or motors.

6. In an electric railway, the combination of two suspended conductors one above the other connected at intervals by insulating connections, two independent trucks each having two grooved wheels running upon the upper of the suspended conductors and also provided with a depending frame extending to a point below the lower suspended conductor, one or more electric motors on each truck having one of its elements connected with the driving wheel or wheels and the other element connected with the truck-frame, a longitudinally-arranged compartment or receptacle for merchandise, &c., arranged below the suspended conductors, pivotal connections between the said receptacle and the depending frames of the trucks whereby they may turn independently about vertical axes, one or more contact devices carried by the depending frames making an underrunning contact with the lower suspended conductor for supplying current to the motor or motors, and an adjustable connecting tie-bar between the two trucks.

7. In an electric railway, the combination of the two suspended conductors arranged one above the other and connected at intervals by insulating connections and adapted to supply currents of opposite polarities, two trucks having supporting grooved wheels running upon the upper conductor and a pair of grooved collector-wheels running against the under surface of the lower suspended conductor, one or more electric motors carried upon each truck for propelling it, a long receptacle or compartment arranged below both of the suspended conductors, and loose connections between the trucks and the longitudinal compartment whereby the trucks may independently swivel in passing around curves.

657,331. GAGE-ILLUMINATOR. NIELS A. CHRISTENSEN, Milwaukee, Wis. Filed Aug. 21, 1899. Serial No. 727,990. (No model.)



Claim.—1. A gage-illuminator comprising, in connection with a gage and its casing, a lamp arranged in front of the dial of the gage and within the casing and a shade in front of such lamp and within the gage-casing for throwing the light on the front face of the dial.

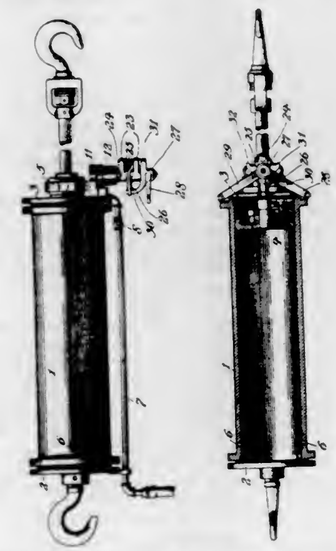
2. A gage-illuminator comprising, in combination with a gage and its casing, a block secured in front of the dial and within the casing, a lamp-socket mounted on the top of the block and interposed in an electric circuit, a small incandescent electric lamp arranged in the socket and in front of the dial of the gage and a shade secured to the socket and located within the gage-casing for throwing the light on the dial.

3. A gage-illuminator comprising, in connection with a gage and its casing, a small incandescent lamp arranged in front of the gage and within the casing, a lamp-socket within the casing for the lamp, and a substantially-cylindrical-shaped shade mounted on the socket within the casing and having one end cut on the bias for throwing the light over the whole face of the dial and also shielding the light from the eyes of the engineer or operator.

4. A gage-illuminator comprising, in connection with a gage and its casing having an extension in front of its dial, a block fitting upon and secured to the bottom of the casing and in front of the dial, a lamp-socket on the block, leading-in wires connected to said socket, an incandescent lamp arranged on the socket and in front of the dial of the gage and a shade secured to the socket and within the gage-casing for throwing the light on the dial and also shielding the light from the eyes of the engineer or operator.

5. A gage-illuminator comprising, in connection with a gage and its casing 1, a block 2 within the casing upon the bottom thereof in front of the dial of the gage, a lamp-socket 3 mounted on the block and having binding-screws, electrical terminals 4 and 5 attached to the socket, an incandescent lamp on the socket and in front of the dial, and a cylindrical shade 6 secured to the socket and having its upper end cut on the bias for shielding the eyes of the engineer or motorman but throwing the light on the whole face of the dial.

657,332. FLUID-PRESSURE HOIST. NIELS A. CHRISTENSEN, Milwaukee, Wis. Filed Aug. 21, 1899. Renewed June 25, 1900. Serial No. 21,502. (No model.)



Claim.—1. A fluid-pressure hoist comprising a cylinder, a valve governing the admission and release of pressure to and from the cylinder, and a single spring exerting its tension upon the valve to normally keep it in lap position and to restore it to such position after movement in one direction to application position or after movement in the opposite direction to release position.

2. A fluid-pressure hoist comprising a fluid-pressure-actuated piston traveling in a cylinder, a casing having a valve governing the admission and release of pressure to and from the cylinder and tension mechanism mounted on and extraneous of the casing and coöperating directly with such valve to normally keep it in lap position and restore it to that position after movement to a position on either side of lap position.

3. A fluid-pressure hoist comprising a fluid-actuated piston traveling in a cylinder, a valve governing the admission and release of pressure to and from the cylinder, a stem for such valve, and a spring having its two free ends coöperating directly with such stem and tending to resist movement thereof away from lap position.

4. A fluid-pressure hoist comprising a cylinder having a piston and provided with inlet, exhaust and supply ports, a valve governing said ports by connecting the inlet and supply ports in application position and the inlet and exhaust ports in release position, an operating-stem for the

valve provided with an arm or horn and a spring directly engaging such horn and exerting its tension against rotation of the stem.

5. A fluid-pressure hoist comprising a cylinder having a piston and provided with inlet and exhaust ports, a fluid-pressure-supply port, a valve governing said ports, an operating mechanism for such valve, a casing for said valve, and a spring mounted on and extraneous of the casing and bearing against said operating mechanism for normally maintaining the valve in lap position and adapted to antomatically restore the same after movement to application position or exhaust position.

6. A fluid-pressure hoist comprising a cylinder having a piston and provided with inlet and exhaust ports and also a supply-port, a valve governing said ports, a casing for said valve, operating mechanism for such valve, and a spring pivoted on the casing and having its ends bearing against such operating mechanism to keep the valve in lap position and restore the same after any movement out of such normal position.

7. A fluid-pressure hoist comprising a cylinder having a piston and provided with inlet and exhaust ports and also a supply-port, a valve governing said ports and having an operating-stem, a casing therefor, a hub secured to the stem and having lever-arms, a projection or horn from the hub intermediate of the arms, and a spring mounted on the casing and having its free ends bearing on either side of such horn to maintain the valve in normal position.

8. A fluid-pressure hoist comprising a cylinder having a piston and provided with inlet and exhaust ports and also a supply or reservoir port, a valve governing said ports and having an operating-stem, a casing therefor having a lug or projection on one side, a pin mounted on the outside of the casing opposite the lug, a spiral spring pivoted to such pin and having its free ends extending on either side of the casing and on either side of such lug, lever-arms secured to the valve-stem and a horn movable with said lever-arms and extending between the ends of such spring.

9. A fluid-pressure hoist comprising a cylinder having a piston and provided with inlet and exhaust ports and also a supply or reservoir port, a valve governing said ports and having an operating-stem, a casing therefor, a coiled spring pivoted on one side of the casing and having its free ends extending substantially parallel across the casing on either side thereof, a hub connecied to said valve-stem and having diverging lever-arms and also having a horn extending to between the free ends of the spring whereby the movement of the valve in either direction is against the tension of the spring.

10. A fluid-pressure hoist comprising a cylinder having a piston and provided with inlet and exhaust ports and also a supply-port, a valve governing said ports and having an operating-stem, a casing therefor, a hub secured to the stem and having actuating lever-arms, means for normally holding the valve in lap position and a pair of projecting arms on the hub adapted to contact the casing respectively in full-release and full-application position.

11. A fluid-pressure hoist comprising a cylinder having a piston and provided with inlet and exhaust ports and also a supply-port, a casing connected to the cylinder and having a chamber and a rotary valve therein for governing said ports, said chamber having a score on its inner wall communicating with one of said ports to drain away moisture.

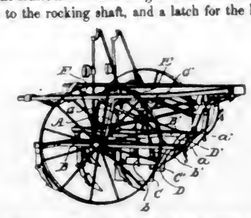
12. A fluid-pressure hoist compriaing a cylinder having a piston and provided with inlet and exhanst ports and also a supply-port, a valve device governing said ports and having an operating-stem, a casing therefor, a pin mounted on the outside of the casing, a spring coiled around the pin and having its free ends extending across the casing on either side, lever-arms secured to the stem, a horn also secured to the stem, movable therewith and extending between the ends of the spring and a pair of projecting arms also secured to the stem and contacting, and limited in motion by, the pin in the full-application and full-release position of the valve such pin forming a combined pivot-pin and a stop.

13. A fluid-pressure hoist comprising a cylinder having a piston and provided with a cylinder port or passage 10 and a reservoir port or passage 9, a base or valve-seat 11 secured to the cylinder and having ports 13 and 14 communicating with ports 9 and 10 respectively and an exhaust-port 15, a disk valve 12ª having on its inner face port connecting means and working on such seat to govern the ports, a stem for the valve, a casing 12 for such valve having lugs 23, a pin 24 arranged therebetween, a spring having an intermediate spiral portion coiled around the pin and having its ends curved around on either side of the casing and then having its extreme free ends extending parallel, a hub secured to the valve-stem and having lever-arms 28 and 29, and a projecting arm or horn 30 extending between the free ends of the spring intermediate of the lever-arms.

657,333. CLOD-FENDER ADJUSTER. SAMUEL E. CLAPP, Decatur County, Ind. Filed June 29, 1900. Serial No. 22,090. (No model.)

Claim.—1. In a cultivator, the combination of pivoted clod-fenders, a rocking shaft having lift-arms, links connecting the fenders with the lift-arms, a lever attached to the rocking shaft, and a latch for the lever.

2. In a cultivator, the combination with a frame thereof, of clod-fenders having each an arm pivoted at its free end to such frame, a rocking shaft having lift-arms, links connecting the lift-arms and the fenders, a lever attached to the rocking shaft, and a latch for the lever.



3. In a cultivator, the combination with pivoted clod-fenders carried at their forward ends by a frame of the cultivator, of a rocking shaft suitably supported and having lifting-arms, links connecting the lifting-arms and the fenders, a lever secured to the rocking shaft and having notches in the upper edge or face thereof, a pivoted latch riding at its free end upon the lever so that a notch may be engaged thereby, and a latch-lifter pivoted at one side of the lever whereby the free end of the latch may be carried while shifting the lever so that other notches may be engaged by the latch.

4. In a cultivator, the combination with the frames B, B', of the arms D, D'; the pivot-bolts *a*, *a'*, connecting said arms pivotally to said frames; the fenders rigidly attached to said arms; the housings suitably supported; the rocking shaft having the lift-arms and mounted in said housings; the links connected to said arms and to said fenders; the lever attached to said shaft; the latch engaging said lever; and the latch-lifter pivoted to said lever.

5. In a cultivator, the combination with the adjustable fenders and the cultivator-axle, of the detachable housings secured to said axle, the rocking shaft journaled in said housings, the forwardly-extending lift-arms secured to said shaft, the links connected at their upper ends to said arms and at their lower ends to said fenders, the rearwardly-extending lever secured to said shaft, the notches at the top of said lever, the latch pivoted to one of said housings and engaging either one of said notches, and the latch-lifter pivoted at one side of said lever and extending along the sides of said notches below the engaging end of said latch, substantially as set forth.

6. In a cultivator, the combination of the pivoted fenders, the housings, the rocking shaft, the lift-arms, the links connecting the lift-arms with the fenders, the notched operating-lever, the lever-latch having one end riding upon the lever, and the latch-lifter pivoted at the side of said lever and having the hook extending below and across the under side of said lever, substantially as set forth.

657,334. PACKING BAKING-POWDERS. WILLIAM P. CLOTWORTHY, Baltimore, Md. Filed Apr. 10, 1900. Serial No. 12,310. (No specimens.)



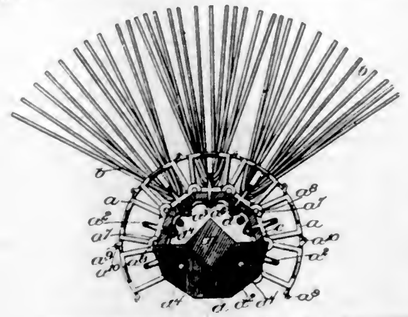
Claim.—1. In a baking-powder comprising acid and alkali constituents in such proportions that when the same are chemically combined they will form a neutral salt, the admixture with the said chemical constituents, separately, of an inert edible powder in such relative proportions as will bring the treated chemical elements to a common bulk, and the placing of the said treated elements in alternate layers in a packing-case, substantially as specified.

2. A package of baking-powder which consists of alternate layers of acid and alkaline elements the particles of which are invested with an inert edible powder, the relative proportions of the investing powder being such that the alternate layers will have a common depth, thickness or bulk, substantially as and for the purpose specified.

657,335. BRUSH. EDWARD C. COLLINS, Taunton, Mass. Filed Oct. 27, 1899. Serial No. 734,937. (No model.)

Claim.—1. The herein-described holder for broom material which comprises the frame *a* provided with the retaining member a^2 for the bent portion of the material; the members a^3 to laterally confine said material; and fastening devices whereby a line of holders secured to a single base may be connected together, as set forth.

2. A broom or brush comprising a series of holders to contain broom material, each holder having a cross member above the bottom to engage the bent portion of the broom material; and a supporting-frame for said holders comprising end members and one or more longitudinal members, the said longitudinal members being adapted to support the holders, as set forth.



3. A rotary brush comprising a frame having end members provided with surface channels; longitudinal members, the ends of which are adapted to be inserted in said channels; clamping-bolts extending from one end member to the other; and holders adapted to contain broom material, the said holders being fastened to said longitudinal members, as set forth.

4. A rotary brush comprising a frame having eod members provided with surface channels; longitudinal members, the ends of which are adapted to be inserted in said channels; clamping-bolts extending from one end member to the other; one or more clamping-bands embracing said longitudinal members between said end members; and means for securing broom material to said frame, as set forth.

5. A rotary brush comprising a support; a series of holders for broom material extending around said support, each holder having means for retaining a bunch of broom material; means for securing each of the said holders to the said support; and means independent of the broom-material-holding means for connecting adjacent holders with each other, as set forth.

6. A rotary brush comprising a support; a series of individual holders for the broom material surrounding said support, each holder having as a part thereof a retaining member above the bottom to overlie the bent portion of the broom material; and means for connecting together adjacent holders whereby the series of holders constitutes a substantially-continuous band extending around the said support, as set forth.

7. A broom-head comprising end members and longitudinal members the said end members being adapted to be connected together to position and support the longitudinal members; and one or more lines or series of holders for broom material, each line or series surrounding the said support with adjacent holders connected together, substantially as described.

8. A broom-head comprising a rotatable support and a set of holders for broom material surrounding said support, each holder having a retaining member above the bottom to engage the bent portion of the broom material; confining members at the top to engage the sides of said broom material; interlocking devices whereby adjacent holders are connected together; and means for fastening each holder separately to said support, as set forth.

657,336. SAW. RAYMOND DALE, New Castle, Colo. Filed Mar. 26, 1900. Serial No. 10,164. (No model.)



Claim.—1. A saw provided with cutting-teeth arranged in pairs, each tooth of a pair being reversely beveled and set, and each alternate pair being oppositely beveled, and intermediate pairs of clearance-teeth, each tooth of which has an inclined edge beveled on the same side of the blade, and plain inclined edges, and each alternate pair of said clearance-teeth being oppositely beveled, substantially as described.

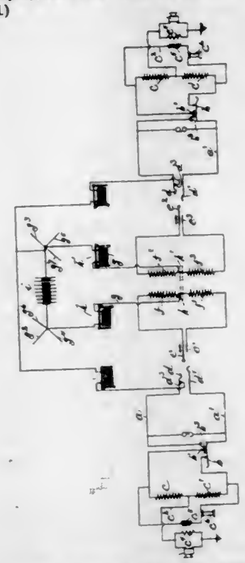
2. A saw provided with cutting-teeth disposed in pairs, each tooth in a pair being reversely beveled and set, and each alternate pair being oppositely beveled, and intermediate pairs of clearance-teeth, each tooth of which has an inclined edge beveled on the same side of the blade and plain or unbeveled inclined edges, each alternate pair of said clearance-teeth being oppositely beveled, and a A-shaped drag-tooth between each pair of clearance-teeth, substantially as described.

657,337. HAT-FASTENER. EDITH DASHWOOD, London, England. Filed June 3, 1899. Serial No. 719,251. (No model.)



Claim.—A fastener for hat or bonnet pins comprising among its members a hollow casing provided at one end with a pin-receiving aperture, of substantially the diameter of the pin and an aperture at the other end for the insertion of a filling, a filling of elastic material within said casing, a detachable cover for said filling-aperture, a pair of spring-arms secured to said casing adjacent to the pin-receiving aperture and adapted to frictionally engage an ordinary hat-pin, and a sliding clamping-ring engaging said arms to clamp them frictionally upon the pin whereby the fastener will be securely held to the pin even if the filling were worn, substantially as described.

657,338. CENTRAL-BATTERY TELEPHONE SYSTEM. WILLIAM W. DEAN, Chicago, Ill., assignor to the Kellogg Switch Board and Supply Company, same place. Filed Apr. 28, 1899. Serial No. 714,870. (No model.)



Claim.—1. The combination with a pair of telephone-lines, each having two limbs, of a third conductor connected with each telephone-line at the substation, and a source of electricity at the central station adapted to be connected to send current over a circuit including in series said third conductor and the two telephone-lines, substantially as described.

2. The combination with a pair of telephone-lines each having two limbs comprising a metallic talking-circuit, of a charging-circuit including in series a third conductor and one or both limbs of each of the tetephone-lines, and a source of electricity adapted to send current over said charging-circuit, substantially as described.

3. In combination, a common battery or source of current, a plurality of pairs of connected telephone-lines deriving current therefrom, one line of each connected pair being connected with one pole of said battery while the other line of the pair is connected with the opposite pole of the battery, said battery being adapted to send current over the connected lines in series, an induction or repeating coil adapted to be interposed between the two connected lines and a retardation or impedance coil connected between each telephone-line and the battery, substantially as described.

4. In combination, a plurality of telephone-lines, a plurality of cord connectors for connecting the lines together and a common battery or

source of current, one terminal of each cord connector being connected with one pole of the battery while the other terminal is connected with the opposite pole of the battery, said source of current being adapted to send current over the two connected lines in series, substantially as described.

5. In combination a plurality of telephone-lines, a plurality of cord connectors for connecting the lines together, an induction or repeating coil interposed between the terminals thereof, a common battery or source of current, one terminal of each cord connector being connected with one pole of the battery while the other terminal is connected with the opposite pole of the battery, said battery being adapted to send current over the two connected lines in series, substantially as described.

6. In combination, a plurality of telephone-lines, a plurality of cord connectors for connecting the lines together, an induction or repeating coil interposed between the terminals thereof, a common battery or source of current adapted to send current over the two connected lines in series, one terminal of each cord connector being connected with one pole of the battery while the other terminal is connected with the opposite pole of the battery, and a retardation or impedance coil between each terminal and the battery, substantially as described.

7. In combination, a plurality of telephone-lines each having a metallic talking-circuit and a transmitter-charging circuit comprising one or both limbs of the talking-circuit and a third conductor, a plurality of cord connectors for connecting the lines together, an induction or impedance coil interposed between the terminals thereof, a common battery or source of current adapted to send current over the two connected lines in series, one terminal of each cord connector being connected with one pole of the battery while the other terminal is connected with the other pole of the battery, and a retardation or impedance coil between each of said terminals and the battery, substantially as described.

8. In combination, a plurality of telephone-lines each having a metallic talking-circuit and a transmitter-charging circuit comprising one or both limbs of the talking-circuit and a third conductor, a plurality of cord connectors for connecting the lines together, an induction or repeating coil interposed between the terminals thereof, a common battery or source of current adapted to send current over the two connected lines in series, one terminal of each cord connector being connected with one pole of the battery while the other terminal is connected with the other pole of the battery, and a clearing-out annunciator between each of said terminals and the battery and possessing retardation or impedance, substantially as described.

9. In combination, a plurality of telephone-lines having a metallic talking-circuit and a transmitter-charging circuit comprising one or both limbs of the talking-circuit of each line and a third conductor, a plurality of cord connectors for connecting the lines together, induction or repeating coils interposed between the terminals thereof, the electrical centers of the windings of the induction or repeating coils being connected respectively with the opposite poles of a charging-battery or source of current, and a retardation or impedance coil connected in circuit between said windings and the battery, substantially as described.

10. The combination with a pair of telephone-lines, each having two limbs, of a third conductor connected with each telephone-line at the substation, a source of electricity, and connecting devices at the central station for connecting said source of electricity to send current over a circuit including in series said third conductor and the two telephone-lines, substantially as described.

11. The combination with a plurality of telephone-lines, each having two limbs, of a third conductor connected with each telephone-line at the substation, connecting devices for connecting the telephone-lines in pairs, and a source of electricity common to the plurality of telephone-lines and adapted to be connected to send current over a circuit including in series said third conductor and the two telephone-lines of a connected pair, the several connected pairs of lines being in parallel with each other, substantially as described.

12. The combination with a pair of telephone-lines, each having two limbs comprising a metallic talking-circuit, of a third conductor connected with each line at the substation, telephone apparatus associated with said metallic circuit to send talking-currents thereover, and a charging source of electricity adapted to be connected to send currents over a circuit including in series said third conductor and the two telephone-lines, substantially as described.

13. The combination with a pair of telephone-lines, each having two limbs, of a third conductor, connected with said telephone-lines at the substation, a source of electricity adapted to be connected to send currents over a circuit including in series said third conductor and the two telephone-lines, a microphone and primary of an induction-coil included in said series circuit, and the secondary of an induction-coil included in circuit with the two limbs, substantially as described.

14. The combination with a pair of telephone-lines, each having two limbs, of a third conductor connected with said telephone-lines at the substation, a source of electricity adapted to be connected to send current over a circuit including in series said conductor and the two telephone-lines, a microphone and the primary of an induction-coil in parallel with each other and included in said series circuit and the secondary of an induction-coil in circuit with the two limbs, substantially as described.

15. The combination with the two telephone-lines, each having two limbs, of a third conductor connected with each of said telephone-lines at the substation, the windings of an induction or repeating coil interposed between the limbs of said lines at the central station and a source of electricity connected at the electrical centers of said windings and arranged to send a current over a circuit including in series said third conductor and the two telephone-lines, substantially as described.

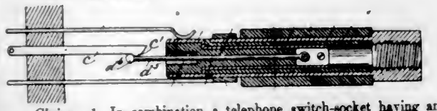
16. The combination with a plurality of telephone-lines, each having two limbs, of a third conductor connected with said telephone-lines at the substations, connecting devices for uniting said telephone-lines in pairs, a source of electricity common to the plurality of telephone-lines and adapted to send current over a circuit including in series said third conductor and the two lines of a connected pair, and means for preventing the variations of current on one of said connected pairs from affecting the other connected pairs, substantially as described.

17. The combination with a plurality of telephone-lines, each having two limbs, of a third conductor connected with said telephone-lines at the substations, means for connecting the same in pairs, a source of electricity adapted to be connected to send current over a circuit including in series said third conductor and the two lines of a connected pair, the several connected pairs being in parallel with each other, and a resistance interposed between each line and said source of electricity, substantially as described.

18. The combination with a plurality of telephone-lines, each having two limbs, of a third conductor connected with said telephone-lines at the substations, means for connecting the same in pairs, a source of electricity adapted to be connected to send current over a circuit including in series said third conductor and the two lines of a connected pair, the several connected pairs being in parallel with each other, and a retardation or impedance coil interposed between each line and said source of electricity, substantially as described.

19. The combination with a plurality of telephone-lines, each having two limbs for the talking-circuit, of a third conductor connected with each telephone-line at the substation, means for uniting the limbs of any two lines through a repeating-coil, a source of electricity adapted to send current over a circuit including in series said third conductor and the two telephone-lines of a connected pair, and a retardation or impedance coil interposed between each of said lines and said source of electricity, substantially as described.

657,339. **PLUG AND SOCKET FOR TELEPHONE SYSTEMS.** WILLIAM W. DEAN, Chicago, Ill., assignor to the Kellogg Switch Board and Supply Company, same place. Filed Apr. 28, 1899. Serial No. 714,872. (No model.)



Claim.—1. In combination, a telephone switch-socket having an opening for the insertion of the plug and provided with a central rigid terminal and a spring-terminal at one side thereof, and a plug having a portion to rest within the socket-opening and carrying a central spring rod or terminal to engage the rigid switch-contact and an outer terminal to engage the spring-contact of the switch, substantially as described.

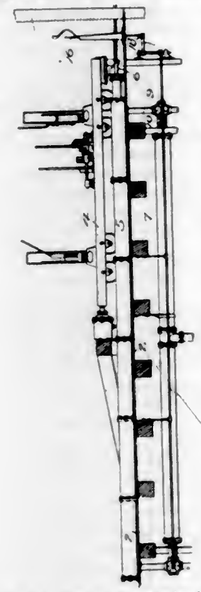
2. In combination, a telephone switch-socket having a spring-contact and a rigid central contact having a lateral extension on the end, and a plug having a contact to engage said spring-contact and a spring rod or terminal having a lateral extension on the end and adapted to engage said rigid contact, substantially as described.

657,340. **STEAM-FEED FOR SAWMILLS.** HERMANN G. DITTBENNER, Minneapolis, Minn. Filed Sept. 13, 1898. Serial No. 690,838. (No model.)

Claim.—1. The combination, with a sawmill-carriage and its steam-feed cylinder and piston, of a steam-reservoir arranged in close proximity to said cylinder, pipes leading from said reservoir to the opposite ends of said cylinder, valves, in said pipes and means for operating said valves, substantially as described.

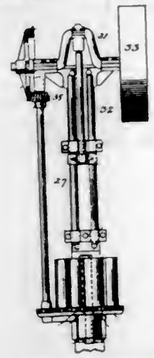
2. The combination, with a sawmill-carriage and its steam-feed cylinder and piston, of a steam-reservoir wherein a high pressure of steam may be maintained, said reservoir being of substantially the same length as said cylinder and located in proximity thereto, short pipes leading from the ends of said reservoir to said cylinder, valves arranged in said pipes and means for operating said valves, substantially as described.

3. The combination, with a sawmill-carriage and its steam-feed cylinder and piston, of a steam-reservoir wherein a high pressure may be maintained, said reservoir being arranged in close proximity to said steam-feed cylinder and parallel therewith, short pipes or ducts connecting the ends of said cylinder and said reservoir, longitudinally and circumferentially balanced, valves provided in said pipes, and a longitudinally-movable rod for operating said valves, substantially as described.



4. The combination, with the steam-feed cylinder of a steam-reservoir arranged in proximity to said cylinder and parallel therewith, short pipes or ducts connecting said reservoir with said cylinder, valves arranged in said pipes or ducts, bell-cranks having fixed bearings or pivots and connected with said valves by suitable link-rods, and a longitudinally-movable rod connecting said bell-cranks for operating said valves, substantially as described.

657,341. **APPARATUS FOR SEPARATING PITH AND FIBER OF CORNSTALKS.** SAMUEL DYER, Muncie, Ind., assignor of three-fifths to Rush E. Evans, same place. Filed Aug. 1, 1898. Serial No. 687,413. (No model.)



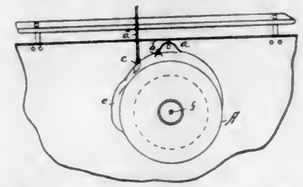
Claim.—1. An apparatus of the character described, comprising a vertically-arranged tubular knife or cutter adapted to operate between the pith and shell of a cornstalk, a carrier intermittently rotating around a vertical axis and having a plurality of tubular guiding-chambers which successively present the stalk-sections to the knives or cutters, and a vertically-reciprocating plunger for positively and successively forcing the stalk-sections from said chambers against the knife or cutter while the carrier is stationary, substantially as described.

2. An apparatus of the character described, comprising a vertically-arranged tubular knife or cutter adapted to operate between the pith and shell of a cornstalk, a horizontal table having an aperture registering with said knife, a carrier intermittently rotating around a vertical axis above said table and having a plurality of tubular guiding-chambers which successively register with said aperture, and a vertically-reciprocating plunger for positively and successively forcing the stalk-sections from said chambers through the said aperture against the knife or cutter while the carrier is stationary, substantially as described.

3. An apparatus of the character described, comprising a vertically-arranged tubular knife or cutter adapted to operate between the pith and shell of a cornstalk and to split the shell, a carrier intermittently rotating around a vertical axis and having a plurality of tubular guiding-chambers which successively present the stalk-sections to the knives or cutters, a vertically-reciprocating plunger for positively and successively forcing the stalk-sections from said chambers against the knife or cutter while the carrier is stationary, and a tube connected with the lower end of the tubular knife or cutter, whereby the pith is delivered into said tube and the split shell separately discharged from the machine by gravity, substantially as described.

4. An apparatus of the character described, comprising a plurality of vertically-arranged tubular knives or cutters adapted to operate between the pith and shell of a cornstalk, a carrier intermittently rotating around a vertical axis and having a plurality of tubular guiding-chambers which successively present the stalk-sections to said knives or cutters, and a plurality of vertically-reciprocating plungers corresponding in number to the knives or cutters and adapted to positively and successively force the stalk-sections against the knives or cutters while the carrier is stationary, substantially as described.

657,342. **TROLLEY-CATCHER.** FRANK J. FAIRCHILD, Wyandotte, Mich. Filed Oct. 12, 1899. Serial No. 733,348. (No model.)



Claim.—1. In a trolley-catcher, in combination with a reel and drum, a spring adapted to actuate the drum to wind the cord, a ratchet-wheel connected with the drum, a detaining-pawl pivoted to the casing and normally out of engagement with the ratchet-wheel and provided with an end arranged to normally rest on the ratchet-wheel and to be actuated by the revolution of the ratchet-wheel, means for yieldingly urging said end of said pawl toward said ratchet-wheel, and a set-screw, *b*, adapted to limit the movement of said end of said pawl toward the ratchet-wheel, substantially as and for the purpose described.

2. In a trolley-catcher, in combination with a winding-drum, a ratchet-wheel, a pawl arranged to be normally out of detaining engagement with the ratchet-wheel, but to be actuated and thrown into detaining engagement therewith, and means for adjusting the pawl, substantially as described.

3. In a trolley-catcher, in combination with a reel and drum, a heating appliance, substantially as described.

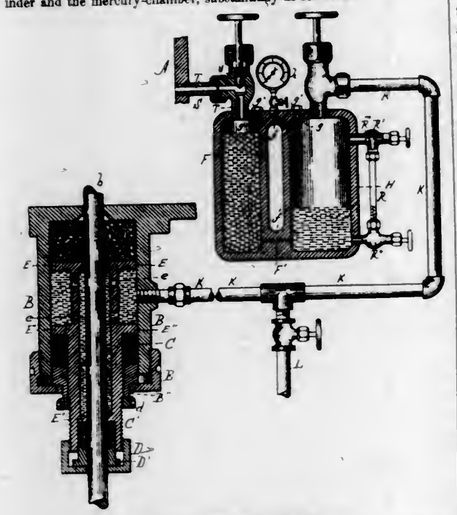
4. The combination of a reel and drum, an axle *f*, having a notch therein, said reel and drum being pivoted upon said axle, a spring one end of which engages with said reel and drum, and having its other end folded upon itself and bent into a hook adapted to catch in the notch in said axle, substantially as shown and described.

657,343. **STUFFING-BOX FOR AMMONIA-COMPRESSORS.** FREDERICK A. FISHER, Provincetown, Mass., assignor of one-half to Robert E. Conwell and Walter L. Conwell, same place. Filed Jan. 29, 1900. Serial No. 3,130. (No model.)

Claim.—1. In an apparatus of the character described, the cylinder; the tubes or chambers F, H rigidly connected together and provided with the connecting-passage F′ and suitable inlets, said tube F containing mercury and said tube H oil; a stuffing-box around the piston; a tubular connection between the oil-chamber H and the interior of the stuffing-box; and a tubular connection provided with a suitable valve between the mercury-chamber and the cylinder, substantially as described.

2. In an apparatus of the character described, the stuffing-box comprising the case B; the sleeve C, C″ provided with the inwardly and outwardly extending flange E, the inwardly-extending flange E′, the inwardly-extending flange E″ and the opening *e*; the gland B″ and follower B;

the gland D' and follower D; a mercury chamber or tube and an oil chamber or tube connected rigidly together and communicating with each other by a passage; a pipe connection between the interior of the stuffing-box and said oil-chamber; a cylinder; and a pipe connection between said cylinder and the mercury-chamber, substantially as set forth.



657,344. PNEUMATIC GUN. EDWIN M. GOLDSMITH, Philadelphia Pa. Filed Dec. 15, 1899. Serial No. 740,382. (No model.)



Claim.—1. In a pneumatic gun, an air-chamber at the breech thereof, an outlet for said chamber to the atmosphere, a piston, a lever for moving said piston forward of said chamber, and means for forcibly returning said piston rearwardly to said chamber, said outlet being at the breech of the barrel.

2. In a pneumatic gun, an air-chamber therein, a piston in said chamber, a lever for moving said piston forward of said chamber, a temporary covering for part of said chamber formed of material adapted to be fractured by the concussion of said air due to the return of the piston to said chamber and a trigger adapted to release said piston and means for returning the piston toward the breech.

3. A pneumatic gun having an air-chamber at the breech thereof, a piston, a lever for moving said piston forward of the breech, a trigger-rotating mechanism operated by said trigger for releasing said piston, and means for returning said trigger rearward to said chamber.

4. A pneumatic gun having an air-chamber at the breech thereof, an outlet for said chamber to the atmosphere, a collar around said outlet and a movable band exterior to said collar and concentric therewith for retaining a temporary cover over said outlet between said collar and band as described.

5. In a pneumatic gun having an air-chamber, an outlet for the latter to the atmosphere, a piston, means for moving the latter from and to said chamber, a sleeve with recesses therein, a plunger in said sleeve with recesses therein, a piston having a stem encircling said sleeve, an advancing dog, and a check-pawl on said stem adapted to enter the recesses of said sleeve and plunger respectively, means for holding said dog and pawl in said recesses, said sleeve having a longitudinally-extending slot for the nose portion of said dog, and means for rotating said sleeve, whereby the dog and pawl are removed from the sleeve and plunger and the piston is then controlled by its returning mechanism.

6. A pneumatic gun having an air-chamber, an outlet for said chamber to the atmosphere, a piston provided with a dog, a traveling rod or plunger adapted to be engaged by said dog, means for advancing said plunger from said chamber, a slotted sleeve intermediate of said plunger and the stem of said piston, means for rotating said sleeve and thereby removing said dog from engagement with said plunger, and a spring bearing against said piston for returning it to said chamber, whereby the air in the chamber is forcibly driven into the atmosphere.

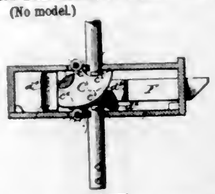
7. A pneumatic gun having an air-chamber, an outlet for said chamber to the atmosphere, a piston in said barrel, a dog on the stem of said piston, a plunger adapted to be engaged by said dog, means for advancing said plunger and thereby advancing said piston for said chamber, a rotary sleeve fitted on said plunger and inclosed by said stem, a trigger connected with said sleeve adapted to rotate the same in one direction, a check-pawl on the piston-stem adapted to engage said sleeve, the noses of said dogs being in the path of said sleeve in the direction of the rotation of the latter, and a spring bearing against said piston to return the same to the air-chamber.

8. A pneumatic gun having an air-chamber at the breech thereof, a piston, means for advancing said piston, from said chamber toward the muzzle, means for releasing said piston, means for returning said piston rearward to said chamber, and a temporary covering for said chamber.

9. A pneumatic gun having an air-chamber at the breech thereof, a piston, a lever for advancing said piston, toward the muzzle, a spring to operate said piston when released to return the same rearward to said chamber, and a temporary covering for part of said chamber formed of material adapted to be fractured by the concussion of the air due to the return of the piston, said chamber being open to the atmosphere at the breech of the gun.

10. In a pneumatic gun, an air-chamber therein at the breech thereof, an outlet for said chamber to the atmosphere at the breech, a piston in said chamber, and means for advancing said piston from said chamber, for holding it in its advanced position, for releasing it from its holding mechanism and for returning it rearwardly to the breech, and an immovable support for the portion of the mechanism within the barrel at the end toward the muzzle.

657,345. LATCH. WILLIAM F. HERDRICH, Chicago, Ill., assignor of one-half to Simon Lichtenstein, same place. Filed Apr. 18, 1900. Serial No. 13,295. (No model.)



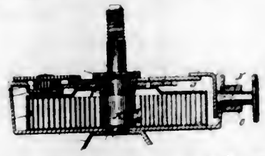
Claim.—1. In a door latch or catch, the combination of a casing, two pivoted dogs or tumblers each mounted on the casing, a reciprocating stem engaging both dogs or tumblers, and a retractable bolt in the casing contacted by both dogs or tumblers and retracted by the movement of a dog or tumbler in one direction from a straight draw or pull on the stem in either direction endwise, substantially as described.

2. In a door latch or catch, the combination of a casing having two face-plates, a pivoted dog or tumbler mounted on each face-plate, and a reciprocating stem engaging each dog or tumbler and operating for a straight draw or pull in one direction to move one dog or tumbler and for a straight draw or pull in the opposite direction to move the other dog or tumbler and have the movement of each dog or tumbler independent of the other, substantially as described.

3. In a door latch or catch, the combination of a casing having two face-plates, a pivoted dog or tumbler mounted on each face-plate, a reciprocating stem engaging each dog or tumbler and operating for a straight draw or pull in one direction to move one dog or tumbler and have a straight draw or pull in the opposite direction to move the other tumbler and have the movement of each dog or tumbler independent of the other, and a retractable bolt engaged by both dogs or tumblers for the movement of either dog or tumbler in one direction to retract the bolt, substantially as described.

4. In a door latch or catch, the combination of a casing having two face-plates, a pivoted dog or tumbler mounted on each face-plate, a reciprocating stem engaging each dog or tumbler and operating for a straight draw or pull in one direction to move one dog or tumbler and have a straight draw or pull in the opposite direction to move the other dog or tumbler and have the movement of each dog or tumbler independent of the other, a retractable bolt engaged by both dogs or tumblers for the movement of a dog or tumbler in one direction to retract the bolt, and a spring for returning the bolt to normal position after each retraction, substantially as described.

657,346. BICYCLE-BELL. NORMAN N. HILL, East Hampton, Conn. Filed Dec. 20, 1899. Serial No. 740,963. (No model.)



Claim.—1. In a bicycle-bell, the combination with a cup-shaped base or body, of a movement-plate secured thereto, a rotatable spring-barrel located within the said base, a rotatable post, a spring located within the said barrel and having its inner end connected with the post and its outer end connected with the barrel, and a loose hub forming a bearing for the said post, and supported in the center of the said plate and barrel.

2. In a bicycle-bell, the combination with a cup-shaped base or body, of a movement-plate secured thereto, a rotatable spring-barrel located within the said base or body, a rotatable post, a coiled spring having its inner end connected with the said post, and its outer end connected with the said barrel which it rotates, a gong applied to the said post, a rotary hammer mounted upon the post, an actuating-train connected with the said hammer, located partly above and partly below the said plate and including a first wheel secured to the said barrel, and a loose hub forming a bearing for the said post, and mounted in central perforations formed in the said plate, barrel and first wheel.

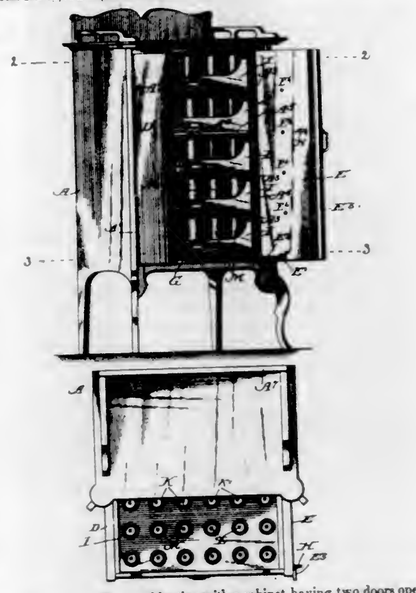
3. In a bicycle-bell, the combination with a cup-shaped base or body, of a disk-shaped plate secured thereto, a rotatable spring-barrel located within the said body, a rotatable post, a coiled spring located within the said barrel and having its inner end connected with the post and its outer end connected with the barrel, a gong applied to the said post, a rotary hammer mounted upon the post for rotation thereupon, and an actuating-train connecting the hammer and barrel and located partly above and partly below the said plate, which is cut and struck down to form a depressed arm which carries one member of the said train and its pinion which latter extends downward through the plate into position to be engaged by a member of the train located below the plate.

4. A bicycle-bell provided with a movement-plate struck up to form a depressed arm or bearing for carrying a member of the actuating-train of the bell and the pinion of the said member, the said pinion extending downward through the opening formed in the plate in the production of the said arm.

5. In a bicycle-bell, the combination with the body or base thereof, of a plate mounted in the said body, a rotatable post supported in the said body and plate, a gong applied to the said post, a hammer for sounding the bell, a rotatable spring-barrel located within the said body or base, a loose hub forming a bearing for the said post and supported in the center of the said plate and barrel, a spring located in the said barrel and having its inner end connected with the post and its outer end connected with the barrel which it rotates, a train connected with the barrel and with the hammer, and set in motion by the rotation of the barrel, a bell-crank lever mounted upon the said plate, and adapted at its inner end to restrain the actuation of the said train, and a push-button coacting with the outer end of the said lever for operating the same to release the train.

6. In a bicycle-bell, the combination with the body or base thereof, of a plate mounted in the said body, a rotatable post supported in the said body and plate, a gong applied to the said post, a rotary hammer mounted upon the said post and provided with a pinion, a rotatable spring-barrel located within the said body or base, a spring located in the said barrel and having its inner end connected with the post, and its outer end connected with the barrel which it rotates, an actuating-train connected with the barrel, and set in motion by the rotation thereof, and comprising a member which meshes into the said pinion of the hammer, whereby the same is rotated, a bell-crank lever mounted upon the said plate, and adapted at its inner end to engage with the said pinion with the creation of sufficient friction to restrain the actuation of the said train, and a push-button coacting with the outer end of the said lever which it swings to clear the inner end thereof from engagement with the pinion so as to release the train and permit the sounding of the gong.

657,347. CABINET. WILLIAM HOMAN, New York, N. Y., assignor to the Andrew Homan Company, same place. Filed May 7, 1900. Serial No. 15,714. (No model.)



Claim.—1. The combination with a cabinet having two doors opening outward to positions at right angles with the front, of a single turning piece G, pivoted in the cabinet, pivots on such piece arranged triangularly relatively to the fixed pivot, and links connecting the doors respectively with the two movable pivots, arranged to come to rest at the end of each motion with each nearly in line with the fixed pivot, adapted to serve substantially as herein specified.

2. The combination with a cabinet having two doors opening outward to positions at right angles with the front, of a single turning piece G, pivoted in the cabinet, pivots on such piece arranged triangularly relatively to the fixed pivot, and links connecting the doors respectively with the two movable pivots, arranged to come to rest at the end of each motion with each nearly in line with the fixed pivot, and with stops C', C^2, set in the cabinet to limit the motion of the turning piece, all adapted to serve substantially as herein specified.

3. The combination with a cabinet having two doors opening outward to positions at right angles with the front, of a single turning piece pivoted in the cabinet, and links connecting the doors respectively with pivots D^2 E^2 on such piece arranged triangularly relatively to the fixed pivot and with stops set in the cabinet to limit the motion of the turning piece and with means for adjusting the positions of the stops all substantially as herein specified.

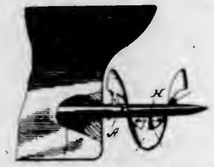
4. The combination with a cabinet having two doors opening outward to positions at right angles with the front, of means as shown for limiting the opening motion, short supports D^4 E^4 on the inner faces of the doors arranged to support the drawers in the drawn-out position, the vertical strips A^4 on the cabinet, and front stops carried on the rear of the several drawers arranged to engage said strips and to serve therewith as herein specified.

5. The combination with a cabinet having two doors opening outward to positions at right angles with the front, of means as shown for limiting the opening motion, short supports D^4 E^4 on the inner faces of the doors, arranged to support the drawers in the drawn-out position, of the vertical strips A^4 on the cabinet, and front stops carried on the rear of the several drawers such stops having smooth upper surfaces arranged to contact with guiding parts above and adapted to perform the double

function of contacting with the vertical strips A^4, to arrest the forward motion, and bearing against guiding parts above to maintain the level position when the drawers are severally pulled out, substantially as herein specified.

6. The combination with a cabinet having two doors opening outward to positions at right angles with the front, of means as shown for limiting the opening motion, short supports D^4 E^4 on the inner faces of the doors arranged to support the drawers in the drawn-out position, the vertical strips A^4 on the cabinet and front stops P P' pivoted near the backs of the drawers adapted to be easily turned to be out of use when required, all substantially as herein specified.

657,348. PROPELLER-WHEEL. CHARLES E. JOHNSON, Chicago, Ill. Filed June 26, 1899. Serial No. 721,841. (No model.)

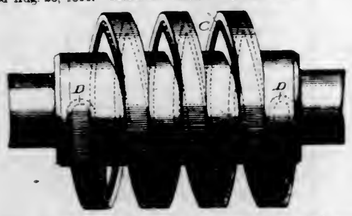


Claim.—1. A propeller consisting of a shaft, a spiral blade encircling the shaft but at some distance from it, and propeller-blades rigidly joining the leading end, the middle, and the following end, of the spiral blade to the shaft and themselves having equal angular spacing about the shaft.

2. A propeller consisting of an axial shaft, a spiral blade located as if wound upon a large cylinder having the same axis as the shaft and having its end portions approximately in planes perpendicular to said shaft, and propeller-blades rigidly joining the leading end, the middle, and the following end of the spiral blade to the shaft.

3. A propeller consisting of a shaft, a spiral blade located as if wound upon a large cylinder having the shaft as its axis and having its end portions bent into position approximately in planes perpendicular to the axis of the shaft, and propeller-blades, each having sharp edges meeting respectively the faces of the spiral blade, integrally connecting the leading end, the middle, and the following end, respectively, to said shaft.

657,349. WORM-GEARING. CHARLES M. JONES, Philadelphia, Pa. Filed Aug. 28, 1899. Serial No. 728,671. (No model.)



Claim.—A worm provided with continuous channels in opposite sides of the convolutions thereof and return-channels passing from one side to the other in the end convolutions near the terminals thereof, and antifriction devices in said channels.

657,350. TENSION FOR SEWING-MACHINES. LEE A. MILLER, Milwaukee, Wis., assignor to Samuel B. Fuller, Watertown, Wis.; Mary B. Fuller administratrix of said Samuel B. Fuller, deceased. Filed Sept. 25, 1899. Serial No. 731,589. (No model.)



Claim.—1. In a sewing-machine the arm thereof provided with an upper elongate forwardly-grooved socket-bracket, a bent spring-metal plate seated in the bracket and constituting a spool-thread pincer having the jaws thereof expansible in the bracket-groove, and means for regulating tension of the pincer.

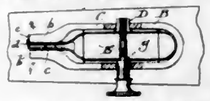
2. In a sewing-machine the arm thereof provided with an upper elongate forwardly-grooved socket-bracket, a bent spring-metal plate seated in the bracket and constituting a spool-thread pincer having the jaws thereof expansible in the bracket-groove, an inner bracket-lug opposing the pincer back of its jaws, and a pincer and bracket engaging screw having a shoulder opposing said pincer opposite said bracket-lug.

3. In a sewing-machine the arm thereof provided with an upper elongate forwardly-grooved socket-bracket, a bent spring-metal plate seated in the bracket and constituting a spool-thread pincer having its jaws expansible in the bracket-groove, means for regulating tension of the pincer, and other means operative in conjunction with the presser-foot lifter of the machine to automatically spread the pincer-jaws.

4. In a sewing-machine the arm thereof provided with an upper elongate forwardly-grooved socket-bracket, a bent spring-metal plate seated in the bracket and constituting a spool-thread pincer having the jaws thereof expansible in the bracket-groove, means for regulating tension of the pincer, a rocker trunnioned in a tubular vertical branch of said bracket and provided with a wedge-shaped spur arranged directly in rear of the pincer-jaws, a shank depending from the rocker, an angular lever fulcrumed inside the machine-arm and having one of its ends extending outward through a slot in said arm to come in the path of the presser-foot lifter of said machine when this lifter is swung up, and a link-rod connecting the rocker-shank and other end of said lever.

5. In a sewing-machine the arm thereof provided with a spool-thread spring-pincer adjustable as to tension, a rocker constituting a spreader for the pincer-jaws, a spool-thread guide forming part of the rocker, and means operative in conjunction with the presser-foot lifter of the machine to actuate said rocker.

657,351. TENSION FOR SEWING-MACHINES. LEE A. MILLER, Milwaukee, Wis., assignor to Samuel B. Fuller, Watertown, Wis.; Mary B. Fuller administratrix of said Samuel B. Fuller, deceased. Filed Jan. 29, 1900. Serial No. 3,094. (No model.)

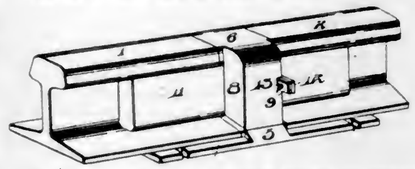


Claim.—1. In a sewing-machine, the arm thereof provided with an upper elongate forwardly-grooved socket-bracket, a bent spring-metal plate seated in the bracket to constitute a spool-thread pincer having the jaws thereof expansible in the bracket-groove, one of these jaws terminating in a flange that crossing the front of the other jaw is provided with an eye intercepted by an open slot, and means for regulating tension of the pincer.

2. In a sewing-machine, the arm thereof provided with an upper elongate forwardly-grooved socket-bracket, a bent spring-metal plate seated in the bracket and constituting a spool-thread pincer having the jaws thereof expansible in the bracket-groove, an angular nut loose in a corresponding angular opening in one side of said bracket back of the pincer-jaws, and a bracket, pincer and nut engaging screw having a shoulder opposing said pincer opposite said nut.

3. In a sewing-machine, the arm thereof provided with an upper elongate forwardly-grooved socket-bracket, a bent spring-metal plate seated in the bracket to constitute a spool-thread pincer having the jaws thereof expansible in the bracket-groove, one of these jaws terminating in a flange that crossing the front of the other jaw is provided with an eye intercepted by an open slot, an angular nut loose in a corresponding angular opening in one side of said bracket back of the pincer-jaws, and a bracket, pincer and nut engaging screw having a shoulder opposing said pincer opposite said nut.

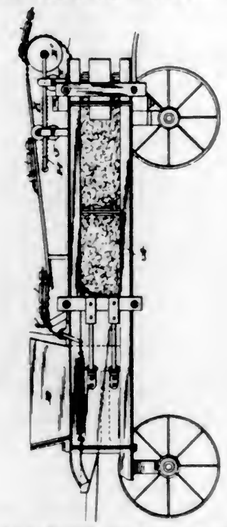
657,352. RAIL-JOINT. WILLIAM A. MORELAND, Pittsburg, Pa. Filed May 31, 1900. Serial No. 18,569. (No model.)



Claim.—1. In a device of the character described, the combination of a chair provided with a pair of diametrically-opposite wedge-shoulders, a joint interposed between a pair of rails and secured in position by said wedge-shoulders, a fish-plate formed integral with said joint and adapted to engage one side of the web of said rails, a fastening fish-plate extending through said joint and adapted to engage the opposite side of said rails, an apertured lug formed integral with said joint, an apertured lug formed integral with said fastening fish-plate and adapted to engage the apertured lug of the said joint, and means extending through the said apertured lugs for securing the said fastening fish-plate in position.

2. In a rail-joint, the combination with a railway-chair provided with a pair of diametrically-opposite wedge-shoulders, of a block interposed between two rails and secured between said wedge-shoulders, a fish-plate formed integral with one side of said block and adapted to engage one side of the web of said rails, an offset formed integral with the opposite side of said block in such a manner as to form an opening between the inner face of said offset and the web of said block, a fastening fish-plate mounted in said opening and adapted to engage the other side of the web of said rails, an apertured lug formed integral with said offset, an apertured lug formed integral with said fastening fish-plate, and means extending through the said lugs for securing the said fastening fish-plate in position.

657,353. BALING-PRESS. HENRY C. MOSHIER, Galesburg, Ill. Filed Feb. 1, 1900. Serial No. 3,630. (No model.)



Claim.—1. In a baling-press, the combination with a press-box, of an endless carrier threaded through said box, and a series of parting-boards attached to said carrier and means for moving said parting-boards into position for operation in the press-box at one operation of the plunger, substantially as described.

2. In a baling-press, the combination with a press-box, of an endless carrier threaded through said box, and a series of parting-boards loosely connected at one edge to said carrier and means for moving said parting-boards into operative position in the press-box in one operation of the plunger, substantially as described.

3. In a baling-press, the combination with a press-box and a platform or guide above the same, of an endless carrier arranged to travel through said box and over said platform or guides, and a series of parting-boards attached at one edge to said carrier and means for moving said parting-boards into operative position in the press-box in one operation of the plunger, substantially as described.

4. In a baling-press, the combination with a press-box and an endless carrier arranged to travel through said box, of a series of parting-boards attached to said carrier, and means for automatically flopping said boards just prior to entering the press-box, substantially as described.

5. In a baling-press, the combination with a press-box and a platform or guide above said box, of an endless carrier arranged to travel over said platform or guide and through the box, a series of parting-boards attached to said carrier, and means for automatically flopping said boards prior to entering the press-box, substantially as described.

6. The ccombination with a press-box and an endless carrier arranged to travel through said box, of a series of parting-boards attached to said carrier, a pivoted tilting platform near the forward end of said carrier, and a projection on said platform adapted and arranged to engage the forward edge of said parting-boards, whereby the latter will be flopped over, substantially as described.

7. The combination with a press-box and an endless carrier arranged to travel through said box, of a series of parting-boards attached to said carrier, a pivoted tilting platform near the forward end of said carrier, an angular projection on said platform arranged in the path of movement of the parting-boards and adapted to flop said parting-boards when the latter engage said projection, and means for returning the platform to its regular position after it has discharged the parting-board, substantially as described.

8. The combination with a press-box and an endless carrier, arranged to travel through said box, of parting-boards attached to said carrier, a pivoted tilting platform near the forward end of said carrier, and provided with a slot to receive the carrier, said platform being adapted to be engaged by the parting-board and tilted to flop over and discharge the parting-board, substantially as described.

9. The combination with an endless carrier, of parting-boards and chains fastened to the parting-boards and carrying rings on their free ends to receive the endless carrier whereby the parting-boards are loosely connected to the carrier, substantially as described.

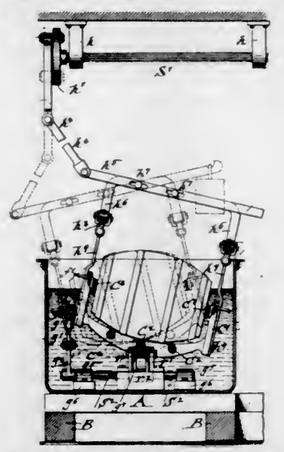
10. The combination with an endless carrier provided with buttons at suitable intervals, of parting-boards and chains connected to said parting-boards at one end and provided with rings on their other ends to receive the carrier and be engaged by the buttons thereon, substantially as described.

11. The combination with a press-box, an endless carrier, arranged to travel therethrough, and a series of parting-boards attached to said carrier, of a folder at one end of said press-box and provided with a slot and a pulley to receive the carrier, substantially as described.

12. The combination with a press-box, an endless carrier arranged to travel therethrough, and a series of parting-boards attached to said carrier, of a movable frame carrying a roller at one end of the press-box and adapted to maintain the carrier at an even tension, substantially as described.

13. The combination with a press-box, an endless carrier arranged to travel therethrough, and a series of parting-boards attached to said carrier, of a movable frame located at one end of said box and carrying a roller over which the carrier operates and which is adapted to maintain the carrier at an even tension, and a folder at the opposite end of said press-box provided with a slot and a pulley to receive the carrier, substantially as described.

657,354. BARREL-WASHING MACHINE. JACOB MÜLLER, New York, N. Y., assignor to Caroline H. Müller, same place. Filed Dec. 29, 1899. Serial No. 741,891. (No model.)



Claim.—1. The combination, with a washing-tank, of a cradle in said tank for receiving the barrels to be washed, and means for imparting a combined laterally-rocking and longitudinally-reciprocating motion to said cradle, substantially as set forth.

2. The combination, with a washing-tank, of a cradle in said tank for receiving the barrels to be washed, means for imparting a laterally-rocking motion, and means for imparting a simultaneously longitudinally reciprocating motion to said cradle, substantially as set forth.

3. The combination, with a washing-tank, of a cradle in said tank, for receiving the barrels to be washed, means at the bottom of the tank for supporting said cradle in the same, and means for imparting a combined laterally-rocking and longitudinally-reciprocating motion to said cradle, substantially as set forth.

4. The combination, with a washing-tank, of a cradle supported in said tank, for receiving the barrels to be washed, means for guiding the barrels in said cradle, and mechanism for imparting a combined laterally-rocking and longitudinally-reciprocating motion to said cradle, substantially as set forth.

5. The combination, with a washing-tank, of a cradle supported in said tank, means for conducting the barrels to the ingoing end of said cradle, means for imparting a combined laterally-rocking and longitudinally-reciprocating motion to said cradle, and a delivery mechanism for conducting the barrels from the cradle over the outgoing end of the tank, substantially as set forth.

6. The combination, with a washing-tank, of a cradle for receiving the barrels to be washed, means for supporting said cradle in said tank, means for conducting the barrels to the ingoing end of said cradle, guide-rails in said cradle for guiding the barrels, means for imparting a combined laterally-rocking and longitudinally-reciprocating motion to the cradle, and mechanism for delivering the barrels from the cradle over the outgoing end of the tank, substantially as set forth.

7. The combination of a washing-tank, supporting-rollers at the bottom of said tank, a cradle supported on said rollers, said cradle being composed of transverse U-shaped frames, longitudinal connecting-rods and guide-rails at opposite sides of said frames, and means connected with one of said frames for imparting a combined laterally-rocking and longitudinally-reciprocating motion to said cradle, substantially as set forth.

8. The combination of a washing-tank, a cradle supported in said tank, means for conducting the barrels to the ingoing end of said cradle, means on said cradle for guiding said barrels when passing through the cradle, means for imparting a combined laterally-rocking and longitudinally-reciprocating motion to said cradle, a delivery mechanism for conducting the barrels from the cradle over the outgoing end of the tank, and guide-rails on the delivery mechanism for guiding the barrels over the same, substantially as set forth.

9. In a machine for washing barrels, a cradle for receiving the barrels, composed of transverse U-shaped frames, longitudinal connecting-rods for said frames, and side guide-rails at the upper ends of said frames, substantially as set forth.

10. In a machine for washing barrels, a cradle for receiving the barrels, composed of transverse U-shaped frames, longitudinal rods connecting said frames, guide-rails on the sides of said frames, and means for adjusting said guide-rails laterally to different sizes of barrels, substantially as set forth.

11. In a barrel-washing machine, a cradle composed of transverse U-shaped frames, longitudinal connecting-rods for said frames, side guide-rails provided with fixed outwardly-extending brackets, straps connecting said brackets with said frame, pivot-links connecting said straps with the side rails, and clamping-bolts for connecting the brackets and straps, according as the side rails are to be adjusted for larger or smaller barrels, substantially as set forth.

12. The combination, with a washing-tank, of a cradle for receiving the barrels, said cradle consisting of transverse U-shaped frames, longitudinal connecting-rods, and side guide-rails, means for imparting laterally-rocking motion to said cradle, a universal joint connecting said actuating mechanism with the cradle, a rock-shaft supported in bearings on the bottom of the tank, means for connecting one of the frames of the cradle with said rock-shaft, cams on said rock-shaft, rollers on the bottom of the tank, said pieces engaging said clamps so as to impart longitudinally-reciprocating motion to the cradle simultaneously with the laterally-rocking motion, substantially as set forth.

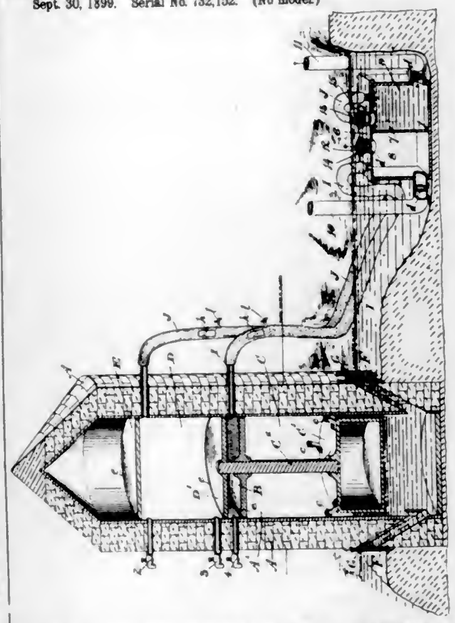
13. The combination, with a washing-tank, of a cradle in said tank, rollers for supporting said cradle on the bottom of said tank, means for imparting a laterally-rocking motion to said cradle, a transverse rock-shaft turning in bearings at the bottom of the tank, a crank-arm on said shaft, a universal joint connecting said crank-arm with the cradle, cams on said rock-shaft, and collars on the center rod of the cradle, said cams engaging said collars, so as to impart longitudinally-reciprocating motion to the cradle, simultaneously with the laterally-rocking motion, substantially as set forth.

14. The combination of a washing-tank, a cradle supported in said tank, means for imparting laterally-rocking and longitudinally-reciprocating motion to said cradle, a delivering mechanism for conducting the barrels from the cradle over the outgoing end of the tank, said delivery mechanism consisting of curved guide-rails, sprocket-wheels and chains, and transverse rods carried by said chains, said rods engaging the barrels as they are delivered from the cradle and conducting them over the outgoing end of the tank, substantially as set forth.

15. The combination, with a washing-tank, of a cradle in said tank, means for imparting a laterally-rocking and longitudinally-reciprocating motion to said cradle, a barrel-delivery mechanism arranged between the cradle and the outgoing end of the tank and consisting of curved bottom and side guide-rails, sprocket chains and wheels and transverse rods on said chains for engaging the barrels and conducting them over the outgoing end of the tank, substantially as set forth.

16. In a machine for washing barrels, the combination, with a washing-tank, of a barrel-delivery mechanism, consisting of rotary sprocket-chains, sprocket-wheels for driving said chains, transverse rods attached to said chains for taking up the barrels, curved bottom rails, curved side guide-rails, for conducting the barrels over the outgoing end of the tank, and guide and tension rollers for guiding said sprocket-chain relatively to said curved bottom and side rails, substantially as set forth.

657,355. TIDE-MOTOR. JOSEPH NAGLER, Toronto, Canada. Filed Sept. 30, 1899. Serial No. 732,152. (No model.)



Claim.—A tide-motor comprising a vertically-elongated hollow tower provided with a continuous cylindrical lining, closed at its lower end, and with the inclined water-inlet ducts which open through the outside of the tower substantially on the plane of the low-water line, a division-plate fixed within said cylindrical lining and dividing the latter into a lower power-chamber and an upper compression-chamber, a buoyant float in said lower power-chamber, a packed piston-head fitted tightly in the upper compression-chamber, a piston-rod slidably fitted in the division-plate and connected to the float and to the piston-head, a valved air-inlet 2 opening into the compression-chamber above the upper limit of the travel of the piston-head, another valved inlet 4 opening into the compression-chamber at a point below the lower limit of travel of said piston-head, a drain-cock 3 between the air-inlets, and eduction-pipes leading from the compression-chamber on the planes of the inlets 2, 4, respectively, substantially as described.

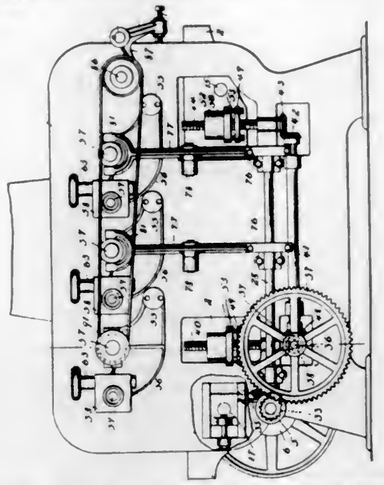
657,356. MAIL-BOX. OLIVER H. ORENDORFF, Blooming Grove, Ill. Filed Mar 17, 1900. Serial No. 9,289. (No model.)



Claim.—1. A telescopic mail-box consisting of an outer casing having closed side walls and top and an open bottom, an inner compartment having an aperture in its side, a closed bottom and an open top, stops passing through the wall of the outer casing and through the aperture in the inner casing to limit the outward movement of said inner compartment, and a gravity-latch for holding the two telescopic sections in closed position, substantially as described.

2. A mail-box comprising an outer casing, a telescopic inner compartment having an aperture in its side wall, stops to limit the outward movement of said inner compartment, a curved handle on the bottom of said compartment, a catch on said handle, and a gravity-latch pivoted at the top of the outer casing, extending down outside said casing and provided with a cross-bar latch adapted to engage the catch automatically when the inner compartment is pushed into the outer casing, substantially as described.

657,357. SANDPAPERING-MACHINE. JAMES L. PERRY, Smithville, N. J., assignor to the H. B. Smith Machine Company, same place. Filed Nov. 27, 1899. Renewed July 31, 1900. Serial No. 25,457. (No model.)



Claim.—1. In a machine of the character described, the combination with the sanding-drums, of a conveyer arranged to travel beneath said drums, said conveyer consisting of a base, a series of conical-shaped elastic cushions on the outside of said base and plates having orifices corresponding in number and arrangement to said cushions, said plates being secured to the base and said cushions projecting through said orifices and above said plates, substantially as described.

2. In a machine of the character described, the combination with the sanding-drums, of sprocket-wheels arranged below said drums, an endless sprocket-chain engaging said wheels, a series of sections secured to said chain, a series of conical-shaped elastic cushions on the outside of said sections, plates having orifices corresponding in number and arrangement to said cushions, said cushions being inserted into the orifices in said plates from the under face thereof, said plates being secured to said sections, and means for imparting a movement of rotation to one of said wheels, substantially as described.

3. In a machine of the character described, the combination with the sanding-drums, of a conveyer arranged to travel beneath said drums, a table upon which said conveyer travels, a plurality of supports for said table, vertically-adjusting mechanism connected with all of said supports adapted when operated to raise or lower all of said supports simultaneously, and independent leveling devices connected with each of said supports whereby each of said supports may be raised or lowered independently of the others, substantially as described.

4. In a machine of the character described, the combination with a driving-shaft, of a sleeve loose upon the shaft and having a clutch member, gearing between said shaft and sleeve whereby said sleeve is rotated oppositely to the shaft, a clutch member on said sleeve, a clutch member on said shaft, and a sleeve or clutch between said clutch members, said sleeve or clutch being movable laterally to engage either of said clutch members, a plurality of upright screw-shafts, a table for the work, lugs on said table connected respectively with said screw-shafts, whereby said table is raised or lowered by the rotation of said screw-shafts in one direction or the other, and gearing between said sleeve or clutch and said upright shafts, whereby said table may be raised or lowered by throwing said sleeve or clutch into engagement with one or the other of said clutch members, substantially as described.

5. In a machine of the character described, the combination with the sanding-drums, of a conveyer arranged to travel beneath said drums, a table upon which said conveyer travels and vertically-adjusting mechanism engaging said table and adapted to move said table vertically in a right line, substantially as described.

6. In a machine of the character described, the combination, with the sanding-drums, of a conveyer arranged to travel beneath said drums, a table upon which said conveyer travels, a plurality of upright screw-shafts arranged at each end of the length of the table and devices attached to said table and engaged by said screw-shafts whereby said table may be adjusted vertically, substantially as described.

7. In a machine of the character described, the combination, with the sanding-drums, of a conveyer arranged to travel beneath said drums, a table upon which said conveyer travels, a plurality of upright screw-shafts arranged at each end of the length of the table, lugs on said table, nuts on said screw-shaft, and springs interposed between said nuts and lugs, substantially as described.

8. In a machine of the character described, the combination, with the sanding-drums, of a conveyer arranged to travel beneath said drums, a table upon which said conveyer travels, a plurality of upright screw-shafts, lugs on said table, nuts on said screw-shaft, and springs and adjusting devices between said nuts and lugs, substantially as described.

9. In a machine of the character described, the combination with a driving-shaft, of a sleeve loose upon the shaft and having a clutch member, gearing between said shaft and sleeve whereby said sleeve is rotated oppositely to the shaft, a clutch member on said sleeve, a clutch member on said shaft, and a sleeve or clutch between said clutch members, said sleeve or clutch being movable laterally to engage either of said clutch members, a plurality of upright screw-shafts, a table for the work, lugs on said table connected respectively with said screw-shafts, whereby said table is raised or lowered by the rotation of said screw-shafts in one direction or the other, and gearing between said sleeve or clutch and said upright shafts, whereby said table may be raised or lowered by throwing said sleeve or clutch into engagement with one or the other of said clutch members, and leveling devices for adjusting each of said lugs independently of the corresponding screw-shaft and of the other lugs, substantially as described.

10. In a machine of the character described, the combination with the conveyer for the work, of a table for supporting the conveyer, lugs on said table, a nut for each lug, bolts connecting said lug and nut whereby said lug may be vertically adjusted positively in one direction, a spring between said lug and nut which when said bolts are loosened will move said lug vertically in the other direction, screw-threaded adjusting-shafts engaging said nuts, and mechanism connected with all of said shafts adapted to be connected with a source of power to rotate said shafts in either direction, thereby raising or lowering all of said nuts and lugs simultaneously, substantially as described.

11. In a machine of the character described, the combination with the conveyer for the work, of a table for supporting the conveyer, lugs on said table, a device connected with and supporting each of said lugs, adjusting means for raising or lowering each of said lugs with respect to its corresponding supporting device, and vertical adjusting mechanism connected to and supporting all of said devices whereby all of said lugs may be simultaneously raised or lowered, substantially as described.

12. In a machine of the character described, the combination, with a sanding-drum, of the drum-shaft, of arms pivoted opposite each end of said drum-shaft, each of said arms being pivoted at one end and having bearings between its ends for the reception of one end of the drum-shaft, and vertically-adjusting mechanism connected with the outer ends of both arms, whereby said shaft may be raised or lowered at both ends simultaneously, substantially as described.

13. In a machine of the character described, the combination, with a sanding-drum, of the drum-shaft, arms pivoted opposite each end of the drum-shaft, each of said arms being pivoted at one end and having bearings between its ends for the reception of one end of the drum-shaft, and vertically-adjusting mechanism connected with the outer ends of both arms, whereby said shaft may be raised or lowered at both ends simultaneously, and leveling means at the pivot of one of said arms for raising or lowering the pivot and thereby raising or lowering the corresponding end of the drum-shaft, substantially as described.

14. In a machine of the character described, the combination with a sanding-drum, of the drum-shaft, arms pivoted opposite each end of said drum-shaft, each of said arms being pivoted at one end and having bearings between its ends for the reception of one end of the drum-shaft, and vertically-adjusting mechanism connected with the outer ends of both arms, whereby said shaft may be raised or lowered at both ends simultaneously, and independent leveling means for raising or lowering the end of said drum-shaft, substantially as described.

15. In a machine of the character described, the combination, with the sanding-drum, of the drum-shaft, arms pivoted opposite each end of said drum-shaft, each of said arms being pivoted at one end and having bearings between its end for the reception of one end of the drum-shaft, a box on the outer end of one of said arms, a shaft one end in bearings in said box, the outer end of the other of said arms holding to the other end of said shaft, a block horizontally slidable upon the machine-frame, said block having an orifice, an eccentric on said shaft engaging said orifice and means to rotate said shaft, substantially as described.

16. In a machine of the character described, the combination, with the sanding-drum, of the drum-shaft, arms pivoted opposite each end of said drum-shaft, each of said arms being pivoted at one end and having bearings between its end for the reception of one end of the drum-shaft, a box on the outer end of one of said arms, a shaft one end in the bearings in said box, the outer end of the other of said arms holding the other end of said shaft, a block horizontally slidable upon the machine-frame, said block

having an orifice, an eccentric on said shaft engaging said orifice, a worm-wheel on said shaft within said box, and a worm engaging said worm-wheel, substantially as described.

17. In a machine of the character described, the combination, with a sanding-drum, of the drum-shaft, a pin opposite each end of said shaft, an arm pivoted to each pin, each arm having bearings between its ends for the reception of one end of the drum-shaft, one of said arms having an eccentric bearing upon its pin whereby it may be adjusted vertically independent of the other arm, and means for vertically adjusting both ends of said drum, substantially as described.

18. In a machine of the character described, the combination with the sanding-drum, of the drum-shaft, a pin opposite each end of said shaft, an arm pivoted to each pin, each arm having bearings between its ends for the reception of one end of the drum-shaft, one of said arms having an eccentric bearing upon its pin whereby it may be adjusted vertically independent of the other end, a box on the outer end of one of said arms, a shaft one end in bearings in said box, the outer end of the other arm holding the other end of said shaft, a block resting on and horizontally slidable upon, the machine-frame, said block having an orifice, an eccentric on said shaft engaging said orifice, and means to rotate said shaft, substantially as described.

19. In a machine of the character described, the combination with the sanding-drum, of the drum-shaft, a pin opposite each end of said shaft, an arm pivoted to each pin, each arm having bearings between its ends for the reception of one end of the drum-shaft, one of said arms having an eccentric bearing upon its pin whereby it may be adjusted vertically independent of the other end, a box on the outer end of one of said arms, a shaft, one end on bearings in said box, the outer end of the other arm holding the other end of said shaft, a block resting on and horizontally slidable upon, the machine-frame, said block having an orifice, an eccentric on said shaft engaging said orifice, a worm-wheel on said shaft within said box and a worm engaging said worm-wheel, substantially as described.

20. In a machine of the character described, the combination with the sanding-drums, of a conveyer arranged to travel beneath said drums, a table upon which said conveyer travels, a plurality of supports for said table, vertically-adjusting mechanism connected with all of said supports adapted to operate to raise or lower all of said supports simultaneously, independent leveling devices, connected with each of said supports whereby each of said supports may be raised or lowered independently of the others, vertically-adjusting mechanism for raising or lowering the drums, and leveling means for adjusting one end of each drum independently of the other end, substantially as described.

21. In a machine of the character described, the combination, with a sanding-drum, of the drum-shaft, a projection therefrom, capable of turning upon the shaft, but having no independent movement longitudinally thereof, a vibrator reciprocating longitudinally of the shaft, a spring arranged parallel with the shaft and between said projection and vibrator, and means for operating said vibrator, substantially as described.

22. In a machine of the character described, the combination, with a sanding-drum, of a vibrator reciprocating longitudinally of the shaft, and a spring arranged longitudinally of the shaft and interposed between the shaft and the vibrator, and means for operating said vibrator, substantially as described.

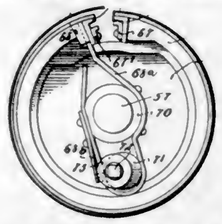
23. In a machine of the character described, the combination with a sanding-drum, of the drum-shaft, two fixed collars therenpon, a collar loose thereupon, and between the fixed collars, projections therefrom, pins extending from both sides of each projection and longitudinally of the shaft, a vibrator having a forked end, each fork having an inclosed end, springs interposed between the projections and the inclosed ends of the forks and surrounding said pins, and means for reciprocating said vibrator longitudinally of the shaft, substantially as described.

24. In a machine of the character described, the combination, with a sanding-drum, of a vibrator, a spring arranged longitudinally of the shaft, and interposed between the shaft and one end of the vibrator, said vibrator being pivoted between its ends on an axis transverse to the drum-axis, a box to which the other end of said vibrator is secured, a block adapted to slide vertically in said box, a driving-shaft, and an eccentric thereupon, said block having an orifice which said eccentric engages, substantially as described.

25. In a machine of the character described, the combination with a sanding-drum, of the drum-shaft, two fixed collars thereupon, a collar loose thereupon, and between the fixed collars, projections therefrom, pins extending from both sides of each projection and longitudinally of the shaft, a vibrator having a forked end, each fork having an inclosed end, springs interposed between the projections and the inclosed ends of the forks and surrounding said pins, said vibrator being pivoted between its ends on an axis transverse to the drum-shaft, a box to which the other end of said vibrator is secured, a block adapted to slide vertically in said box, a driving-shaft, and an eccentric thereupon, said block having an orifice which said eccentric engages, substantially as described.

26. In a machine of the character described, the combination, with the drums, the conveyer, and a table supporting the conveyer, of a brush, a shaft carrying same, arms pivoted thereto, a shaft to which said arms are secured, a projection extending from one of said arms, and an adjusting device engaging said projection and the frame of the machine, substantially as described.

657,358. SANDPAPERING-MACHINE. JAMES L. PERRY, Smithville, N. J., assignor to the H. B. Smith Machine Company, same place. Filed Dec. 23, 1899. Serial No. 741,370. (No model.)



Claim.—1. In a sanding-drum, the combination with the drum-shaft, of a hub, a periphery secured thereto, a portion of which is cut away clamping devices one of which is fixed and the other movable to and from the fixed clamping device, said movable clamping device being spring-supported and means to move said movable device positively toward the fixed device throwing the spring into tension.

2. In a sanding-drum, the combination with the drum-shaft, of a hub, a periphery secured thereto, a portion of which is cut away, clamping devices, one of which is fixed and the other movable to and from the fixed clamping device, means to move said movable clamping device to and from the fixed clamping device and a spring connection between the movable clamping device and said means whereby the movement toward the fixed clamping device throws the spring into tension.

3. In a sanding-drum, the combination with the drum-shaft, of a hub, a periphery secured thereto, a portion of which is cut away, clamping devices, one of which is fixed and the other movable to and from the fixed clamping device, a cam, a spring connection between the cam and the movable clamping device, the cam being adapted to act upon the spring connection to move the movable clamping device to and from the fixed clamping device.

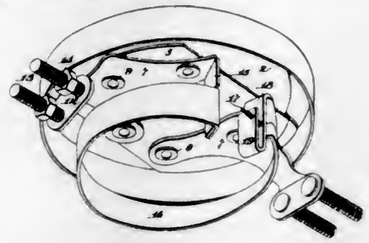
4. In a sanding-drum, the combination with the drum-shaft, of a hub, a periphery secured thereto, a portion of which is cut away, sandpaper engaging and fastening devices, one of which is secured at one side of the cut-away portion, the other of which is between the sides of the cut-away portion, a collar on said shaft, a tension device one end of which is connected with the last-named fastening device, said tension device being fastened to said collar at two points forming a loop between its points of attachment, an eccentric engaging said loop, and a shaft carrying said eccentric, substantially as described.

5. In a sanding-drum, the combination, with the drum-shaft, of a hub, a periphery secured thereto, a portion of which is cut away, angle-irons at one side of the cut-away portion, one of which is secured thereto, and has a bolt-and-slot connection with the other angle-iron, the sandpaper being adapted to be inserted between opposite flanges of the two angle-irons, whereby when the latter-named angle-iron is drawn longitudinally said flanges are brought toward each other to clamp the sandpaper, a block between the sides of the cut-away portion, angle-irons one of which is secured thereto and has a bolt-and-slot connection with the other angle-iron, the other end of the sandpaper being adapted to be similarly inserted and clamped between opposite flanges of the latter-named pair of angle-irons, a collar on said shaft, a tension device one end of which is connected with said block, said tension device being fastened to said collar at two points forming a loop between its points of attachment, an eccentric engaging said loop, and a shaft carrying said eccentric, substantially as described.

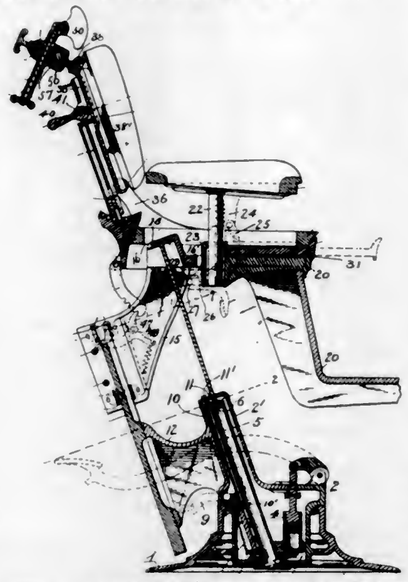
657,359. THERMOSTAT. HENRY E. REEVE, New York, N. Y., assignor to the Automatic Fire Alarm and Extinguisher Company, Limited, same place. Filed Nov. 15, 1899. Serial No. 737,027. (No model.)

Claim.—1. As a new article of manufacture, an improved thermostat comprising a shell, a metal disk within said shell having upturned feet which are secured to the shell, insulating-disks carried above and below said metal disk, two contact-plates carried beneath the bottom insulating-disk, rivets passing through the contact-plates, both insulating-disks and the metal disk, and a thermostatic device carried by said contact-plates and arranged to control an electric circuit when influenced by sufficient change in temperature, substantially as set forth.

2. As a new article of manufacture, an improved thermostat comprising a shell, a metal disk carried by said shell by means of lugs which are struck up from the metal disk and which pass through openings in said shell, an insulating-disk carried below said metal disk and an insulating-disk carried above said metal disk, two contact-plates carried beneath the first insulating-disk, washers carried above the last-mentioned insulating-disk, and rivets passing through said washers, both of the insulating-disks, the metal disk and the contact-plates, integral arms extending down from said contact-plates and with which circuit connections are made, and other arms depending from said contact-plates for carrying a thermostatic device adapted to control an electric circuit when influenced by sufficient change in temperature, substantially as set forth.



657,360. DENTAL CHAIR. FRANK RITTER, Rochester, N. Y. Filed June 17, 1898. Serial No. 683,712. (No model.)



Claim.—1. In a dental chair, the main seat-frame, the smaller supplemental seat-frame with upholstered seat, the intermediate frame supported upon the main frame to fill the space between the large and small seat-frames and support the latter, devices for elevating the supplemental seat-frame and seat, above the intermediate frame and means for supporting it in an elevated situation whereby the same upholstered seat can be conveniently used for a child or for an adult.

2. In a dental chair, the main seat-frame, the supplemental seat-frame and seat, devices for elevating the supplemental seat-frame and seat, means for supporting them in an elevated situation, said devices comprising a lever loosely connected to the supplemental frame and supported to move in contact with a part of the main frame, and said part.

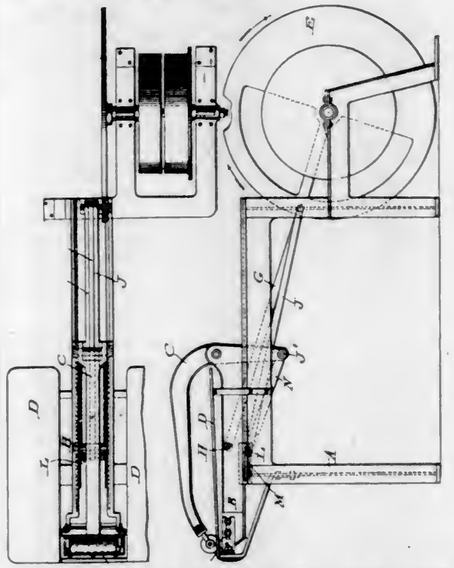
3. In a dental chair, the main seat-frame, the supplemental seat-frame and seat, devices for elevating the supplemental seat-frame and seat, means for supporting it in an elevated situation, said devices comprising a lever loosely connected to the supplemental frame and supported to run on a roller supported by the main seat-frame, the lever having a recess to receive the roller whereby it is held stationary, and the roller.

4. In a dental chair, the main seat-frame, a supplemental vertically-adjustable seat-frame and seat, and an extensible foot-rest, said main seat-frame having a recess to receive the rest when retracted and the walls of the recess adapted to support the rest when extended to an operative situation.

5. In a dental chair, a pedestal, a seat-frame, devices for raising and lowering the frame, rearwardly and downwardly inclined arms bearing on a part fixed to the pedestal to guide and steady the seat, said part, an adjustable back-frame having trunnions supported in the seat-frame, a rack 46 connected to the seat-frame, a holding-pawl pivotally connected to a rearwardly and downwardly inclined arm, a plunger, and means for operating the plunger, all substantially as set forth whereby the seat-frame and parts supported by it may be tilted and supported in various positions.

6. In a dental chair; a back-frame having a pivotal support, a rack and pin coöperating to hold the frame under any adjustment about said support, a lengthwise-adjustable back-frame extension, and a lever having an eccentrically-formed end adapted to cause the pin to engage the rack to hold the back, said lever-eccentric being also adapted to tighten the connection of the back and extension in the same operation.

657,361. LEATHER-STAKING MACHINE. HENRY ROEMER, Philadelphia, Pa., assignor to Emanuel Printz, same place. Filed June 8, 1900. Serial No. 19,541. (No model.)



Claim.—1. In a machine of the kind specified, a carriage provided with a movable arm, a driving member, and independent pitmen mounted concentrically on the driving member, one being connected with the carriage of the machine, and the other with the movable arm thereof, the pitman of the said member and arm having a sliding connection with said carriage.

2. In a machine of the kind specified, a carriage provided with a movable arm, a driving member, a pitman connected with the latter and with the carriage, and a pitman connected with said driving member concentrically with said first-mentioned pitman and with said movable arm, and consisting of jointed links, the pivot of said links being movable and guided upon said carriage.

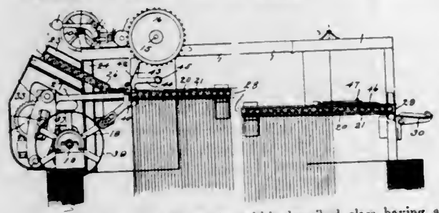
3. In a machine of the kind specified, a carriage provided with a movable arm, a driving member, and pitmen pivoted concentrically upon said driving member, one of said pitmen being connected with the carriage, the other pitman being connected with the movable arm and consisting of jointed links, the pivot of said links being movable and guided upon said carriage.

4. In a machine of the kind specified, a carriage provided with a movable arm, a driving member, and pitmen pivoted concentrically upon said rotatable member, one of said pitmen being connected with the carriage, the other pitman being connected with the movable arm and consisting of jointed links, the pivot of said links being movable and guided upon said carriage, the pitman and the link of the pitman connected with the driving member being of the same length.

5. In a machine of the kind specified, a carriage provided with a

movable arm, said carriage having guides extending parallel with the plane of its path, a driving member, and pitmen pivoted concentrically upon said driving member, one of said pitmen being connected with the carriage, the other pitman being connected with the movable arm and consisting of jointed links, the pivot of said links being mounted in said guides, and the pitman and the link of the pitman connected with the driving member being of the same length.

657,362. CHAINLESS CONTINUOUS-FABRIC STEAMER. ETHELBERT A. RUSDEN, Warren, R. I. Filed Dec. 14, 1899. Renewed July 30, 1900. Serial No. 25,338. (No model.)



Claim.—1. An apparatus of the within-described class having a chamber provided with a fabric-support inlet at one end and a fabric-support outlet at the opposite end with guideways for the supports declining from the inlet end to the outlet end of the chamber, substantially as specified.

2. An apparatus of the within-described class having a chamber provided with a sloping fabric-support inlet-passage at one end and a fabric-support outlet at a lower level at the opposite end with guideways for the supports declining from the inlet end to the outlet end of the chamber, substantially as specified.

3. An apparatus of the within-described class having a chamber provided with a fabric-support inlet at one end and a fabric-support outlet at the opposite end with guideways for the supports declining from the inlet end to the outlet end of the chamber, plungers for advancing the supports arranged to permit the entrance of a support when drawn outwardly and to obstruct the support-inlet when pushed inwardly, and mechanisms for reciprocating the plungers, substantially as specified.

4. An apparatus of the within-described class having a chamber provided with a fabric-support inlet at one end and a fabric-support outlet at the opposite end with guideways for the supports declining from the inlet end to the outlet end of the chamber, plungers for advancing the supports extending through the walls of the chamber and arranged to permit the entrance of a support when drawn outwardly and to obstruct the support-inlet when pushed inwardly, and mechanisms located without the chamber for reciprocating the plungers, substantially as specified.

5. An apparatus of the within-described class having a chamber provided with a fabric-support inlet at one end and a fabric-support outlet at the opposite end, guideways for the supports declining from the inlet end to the outlet end of the chamber, plungers for advancing the supports arranged to permit the entrance of a support when drawn outwardly and to obstruct the support-inlet when pushed inwardly, yokes attached to and movable with the ends of the plungers, and mechanisms for reciprocating the plungers, substantially as specified.

6. An apparatus of the within-described class having a chamber provided with a fabric-support inlet at one end and a fabric-support outlet at the opposite end, guideways for the supports declining from the inlet end to the outlet end of the chamber, plungers for advancing the supports arranged to permit the entrance of a support when drawn outwardly and to obstruct the support-inlet when pushed inwardly, pawls located adjacent to the ends of the guideways to prevent any rearward movement of the supports when the plungers are drawn backwardly, and mechanisms for reciprocating the plungers substantially as specified.

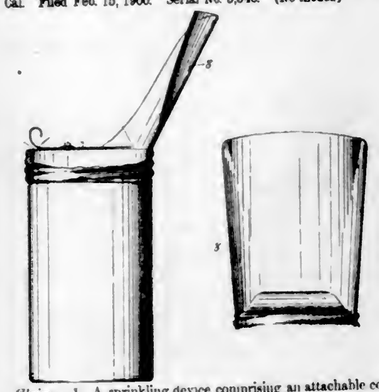
7. An apparatus of the within-described class having a chamber with a fabric-support inlet at one end and a fabric-support outlet at the opposite end with guideways for the supports declining from the inlet end to the outlet end of the chamber, plungers for advancing the supports arranged to permit the entrance of a support when drawn outwardly and to obstruct the support-inlet when pushed inwardly, mechanisms for reciprocating the plungers, and a shield with its lower edge adapted to rest upon the tube last advanced by the forward movement of the plungers, substantially as specified.

8. An apparatus of the within-described class having a chamber provided with a fabric-support inlet at one end and a fabric-support outlet at the opposite end with guideways for the supports declining from the inlet end to the outlet end of the chamber, plungers for advancing the supports arranged to permit the entrance of a support when drawn outwardly and to obstruct the support-inlet when pushed inwardly, mechanisms for reciprocating the plungers, and springs located adjacent to the guideways at the outlet end of the chamber and arranged to bear down upon the supports, substantially as specified.

9. An apparatus of the within-described class having a chamber provided with a fabric-support inlet at one end and a fabric-support outlet at the opposite end with guideways for the supports extending from the inlet end to the outlet end of the chamber, plungers extending through a wall of the chamber for advancing the supports and arranged to permit the entrance of a support when drawn outwardly and to obstruct the support-inlet when pushed inwardly, rocker-arms connected with the outer ends of the plungers, crank-pins for oscillating the rocker-arms, and gearing for revolving the crank-pins, substantially as specified.

10. An apparatus of the within-described class having a chamber provided with a fabric-support inlet at one end and a fabric-support outlet at the opposite end with guideways for the supports declining from the inlet end to the outlet end of the chamber, openings through the roof of the chamber near each end for the passage in and out of the fabric, rolls located adjacent to and parallel with the inlet-opening, gears connecting the shafts of said rolls, movable blocks for supporting said roll-shafts, angle-levers connected with the blocks supporting one of said shafts, weights mounted upon said levers, cams located beneath said levers, and a hand-wheel for rotating said cams, substantially as specified.

657,363. SPRINKLING DEVICE. JOHN W. SANDERSON, Oakland, Cal. Filed Feb. 15, 1900. Serial No. 5,340. (No model.)



Claim.—1. A sprinkling device comprising an attachable cover, for a receptacle, having a valve-controlled opening and a spout substantially conforming to the shape of the receptacle at its point of attachment and extending therefrom with changing contour developing into a reverse curve.

2. A sprinkling device comprising an attachable cover, for a receptacle, having a sliding-gate-controlled opening and a spout substantially conforming to the shape of the receptacle at its point of attachment and extending therefrom with changing contour developing into a reverse curve.

3. A sprinkling device comprising a receptacle having a valve-controlled opening and a spout substantially conforming to the shape of the receptacle at its point of attachment and extending therefrom with changing contour developing into a reverse curve.

4. A sprinkling device comprising a receptacle having a sliding-gate-controlled opening and a spout substantially conforming to the shape of the receptacle at its point of attachment and extending therefrom with changing contour developing into a reverse curve.

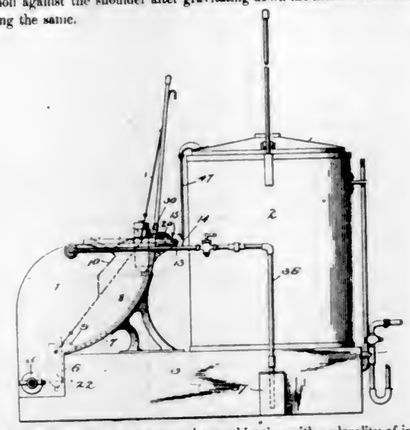
5. A sprinkling device comprising a threaded attachable cover, for a receptacle, having a valve-controlled opening and a spout substantially conforming to the shape of the receptacle at its point of attachment and extending therefrom with changing contour developing into a reverse curve.

6. A sprinkling device comprising a threaded attachable cover, for a receptacle, having a sliding-gate-controlled opening and a spout substantially conforming to the shape of the receptacle at its point of attachment and extending therefrom with changing contour developing into a reverse curve.

657,364. ACETYLENE-GAS GENERATOR. WILLIAM E. SCOFIELD, Augusta, Ga., assignor of two-thirds to Luther Purcell Powell and Jacob Wilson Thorne, same place. Filed May 22, 1899. Serial No. 717,796. (No model.)

Claim.—1. In an acetylene-generator, a tank having a mouth for the introduction of the carbid and an inclined side divided into a plurality of chutes or guideways, located adjacent the mouth and adapted to receive the carbid.

2. In an acetylene-gas generator, a tank having a mouth for the introduction of the carbid-cartridge and a side having an inclined portion leading from the mouth or adjacent thereto and terminating in an abrupt shoulder or upright portion in the lower part of the tank, said shoulder being separated from the side thereof to leave a space for the reception of the cartridges after gravitating down the inclined portion, a plurality of carbid-cartridges releasably held outside the mouth in position to gravitate down the inclined portion and means for holding them in upright position against the shoulder after gravitating down the inclined side and leaving the same.



3. In an acetylene-generator, the combination with a plurality of independent carbid-cartridges, of independent retaining mechanism for each cartridge consisting of a sliding catch-bolt and pivoted lever for operating the bolt, a shaft carrying a plurality of fingers corresponding to the levers and arranged to trip them in succession, and means for turning said shaft.

4. In an acetylene-generator, the combination with a carbid-cartridge, of mechanism for holding it in position consisting of a barrel, a bolt slidable in the barrel and provided with a trunnion, a lever pivoted to the barrel and having an arm loosely connected to the trunnion, a gasometer having a movable bell, a pawl connected to the bell, and a trip-finger, adapted for actuation by the pawl, which engages and moves the lever to release the cartridge.

5. In an acetylene-gas generator, the combination with a tank, of a frame having a plurality of guides, a plurality of carbid-cartridges having rods which slide in the respective guides and are provided with cross-heads bearing on the guides and with hooks for engaging the frame when the cartridges have been released, independent catch mechanisms for the respective cartridges, and means for releasing said catch mechanisms in succession at predetermined intervals.

6. In an acetylene-gas generator, the combination with a tank of a carbid-cartridge and means for holding it in suspended position outside the tank, and an independent retaining device bearing against the cartridge.

7. In an acetylene-gas generator, the combination with a tank, of a carbid-cartridge and means for holding it in position outside the tank, and an independent hinged frame bearing against the cartridge and retaining it in proper position for submersion in the tank.

8. In an acetylene-gas generator, the combination with a tank, of a carbid-cartridge, a rod connected thereto and suitably guided, means for holding the cartridge in position for submersion in the tank, and a retaining-frame on the tank which bears against the cartridge when the latter is raised and bears against the rod when the cartridge is lowered.

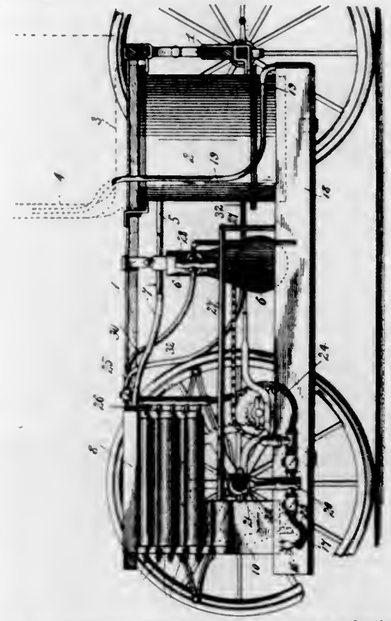
657,365. NUT-LOCK. JOHANN J. SIMONS, Aix-la-Chapelle, Germany. Filed Mar. 27, 1900. Serial No. 10,416. (No model.)



Claim.—A nut-lock consisting of two united bars of which those parts surrounding the nuts terminate in tapered projections which on their inner sides are undercut in order to facilitate the fastening of the lock upon the nuts as shown and described.

657,866. STEAM-CONDENSER AND FEED-WATER HEATER. RICHARD H. SMITH, Springfield, Mass. Filed Apr. 13, 1900. Serial No. 12,712. (No model.)

Claim.—1. The combination of a source of steam-supply, a source of water-supply, and a condenser comprising a series of condensing-tubes, having a large aggregate of radiating-surface arranged to have free and unobstructed access to the surrounding moving currents of air suitably connected with each other, spraying-tubes arranged to project spray into the condensing-tubes, and means to return the commingled spray-water and water of condensation to the source of water-supply, and suitable conduits connecting the steam-supply with the condenser, and the water-supply with the spraying-tubes, substantially as shown.



2. The combination of a steam-condenser comprising a chamber as 8, and a series of wide thin flat condensing-tubes arranged with air-passages therebetween, and a feed-water-heating coil as 31 located in said chamber and suitable conduits connecting said coil with the water-supply and boiler, and said chamber with the exhaust of a steam-motor.

3. A steam-condenser comprising a series of broad flat condensing-tubes adjacent to, but separated from, each other for passage of air therebetween, suitable conduits to conduct the steam into and water away from the condenser, and means to force air into the condenser.

4. The combination of suitable conduits, a steam-condenser comprising broad flat condensing-tubes, with air-passages therebetween, conduits for projecting spray and water into the condenser-tubes, and means to force water and air into said conduits respectively substantially as shown.

5. The combination of a suitable frame, wheels suitably mounted thereon, a water-supply tank comprising a multiplicity of narrow sections, suitably connected and arranged near each other but with air-spaces between their broad flat sides, the same being suitably supported on said frame, a steam-boiler, a motor, suitable connection between the motor and traction wheels, a steam-condenser comprising an upper chamber to receive the exhaust-steam and a series of thin flat steam-conduits alternating with a series of open air-passages arranged below said chamber, the upper conduit being connected with said chamber, and the others connected with each other to conduct the steam and water in a tortuous course to a hot-well located below the level of the condenser, means to convey the water from the hot-well to the water-tank and means to force water from the tank into the boiler and from the tank through the spray-tubes into the condenser substantially as shown.

6. The combination of a source of steam-supply, a water-supply tank, a steam-condenser, and a feed-water heater, the condenser consisting of a series of broad thin condensing-tubes alternating with a series of open air-passages, a chamber as 8, a feed-water coil arranged in the chamber 8, a series of spraying-tubes arranged to project the spray into the condenser-tubes, means to force water from the water-tank through the spraying-tubes, and means to force water from the water-tank through the heating-coil to the boiler, substantially as shown.

7. The combination of a source of steam-supply, a source of water-supply, and a condenser comprising a series of condensing-tubes, having a

large aggregate of radiating-surface arranged to have free and unobstructed access to the surrounding moving currents of air, suitably connected with each other, spraying-tubes arranged to project spray into the condensing-tubes, and arranged to project the spray in the direction of the flow of steam while passing through a portion of the condenser and to project spray against the flow of the steam during its passage through another portion of the condenser, means to return the comingled spray-water and water of condensation to the source of water-supply, and suitable conduits connecting the steam-supply with the condenser, and the water-supply with the spraying-tubes, substantially as shown.

8. The combination of a steam boiler or motor, a conduit for exhaust-steam, a storage water-supply, and a steam-condenser comprising one or more flattened tubes or conduits of large area located adjacent to but having the convolutions separated from each other by open passages for air and provided with suitable conduits connecting the adjacent tubes with each other, whereby the steam and products of condensation flow in a tortuous course and are exposed to a large area of radiating-surface and means to return the water of condensation to the water-supply and to the steam-boiler, substantially as shown.

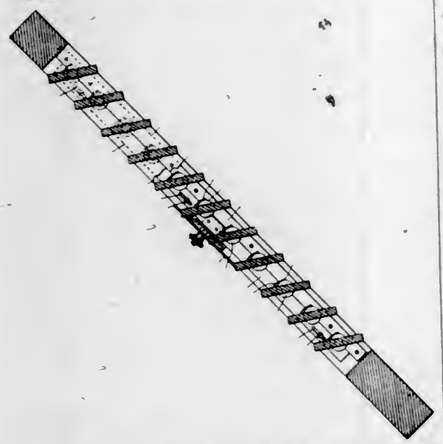
9. The combination of a source of steam-supply, suitable conduits, a source of water-supply, a condenser comprising one or more flattened condensing tubes or conduits of large area located adjacent to but with their convolutions separated from each other by open air-passages and provided with suitable conduits connecting the adjacent tubes with each other, whereby the steam and products of condensation flow in a tortuous course exposed to a large area of radiating-surface, spraying-tubes arranged in the condensing-tubes and means to return the comingled spray-water and the products of condensation to the water-supply, substantially as shown.

10. The combination of a steam-boiler, a steam-motor, a steam-condenser, suitable connections, and a water-supply tank consisting of two or more long narrow receptacles located adjacent to and substantially parallel with each other and with a space between them for the circulation of air for the purpose of cooling the water, substantially as shown.

11. In combination with a condenser a water-supply tank, comprising two or more narrow receptacles arranged substantially parallel and adjacent to each other, and having their lower edges V-shaped, substantially as shown.

12. The combination of a water cooling and supply tank consisting of two or more long narrow flat tubes connected in series and having their flat sides exposed to air-currents, a steam-generating apparatus and suitable conduits connected with the opposite ends of the said series of tubes, whereby the water is exposed to a large radiating-surface between its entry and discharge from the cooling and supply tank, substantially as described.

657,367. DEVICE FOR OPERATING SHUTTER-SLATS. PHILIP STARCK, New York, N. Y. Filed Apr. 20, 1900. Serial No. 13,588. (No model.)



Claim.—1. A window-shutter the slats of which are provided at one end with trunnions bearing a central pivot-pin, and two eccentric lugs or projections, the frame of said shutter being also provided with a stationary and a movable strip, the stationary strip being provided with pivot-recesses, and at each side thereof with deeper and converging recesses, and the movable strip being provided adjacent to the recesses in the stationary strip, with two recesses, and means for moving the movable strip and for locking it in position, substantially as shown and described.

2. A window-shutter the slats of which are provided at one end with a trunnion having a circular head provided centrally thereof with a pivot-pin, and at one side thereof with two lugs or projections, the shutter being also provided at said end of said slats with a vertically-arranged stationary strip, and with a movable strip adjacent thereto, said stationary strip being provided at the end of each slat with a pivot-recess, and at the sides thereof with converging, deeper recesses, and the movable strip being provided at the end of each slat with two recesses, the converging recesses in the stationary strip and the recesses in the movable strip being adapted to receive the lugs or projections on the head of the trunnions, and means for moving said movable strip, substantially as shown and described

3. A window-shutter the slats of which are provided at one end with a trunnion having a circular head provided centrally thereof with a pivot-pin, and at one side thereof with two lugs or projections, the shutter being also provided at said end of said slats with a vertically-arranged stationary strip, and with a movable strip adjacent thereto, said stationary strip being provided at the end of each slat with a pivot-recess, and at the sides thereof with converging, deeper recesses, and the movable strip being provided at the end of each slat with two recesses, the converging recesses in the stationary strip and the recesses in the movable strip being adapted to receive the lugs or projections on the head of the trunnions, and means for moving said movable strip, said shutter being also provided with detachable strips arranged to cover said trunnions and the heads thereof, substantially as shown and described.

4. A window-shutter the slats of which are provided at one end with a pivot, and lugs or projections arranged eccentrically to said pivot and on the same side thereof, said shutter being also provided at said end of said slot with a stationary and a movable strip, the stationary strip being provided with a pivot-recess, and said stationary and movable strips being provided with recesses adapted to receive said lugs or projections, substantially as shown and described.

5. In an apparatus of the class described, a rotatable member provided with a pivot-pin, and at one side thereof with two lugs or projections arranged eccentrically thereto, said rotatable member being mounted in a frame provided with a stationary and a movable strip, said stationary strip being provided with a pivot-recess, and at the opposite side thereof with other recesses adapted to receive said lugs or projections, and the movable strip being also provided with recesses adapted to receive said lugs or projections, substantially as shown and described.

6. In an apparatus of the class described, a rotatable member provided with a trunnion having a circular head, a pivot-pin arranged centrally of said head, and lugs or projections arranged eccentrically to said pin, and a support for the end of said rotatable member, said support being provided with a stationary and a movable strip, the stationary strip being provided with a pivot-recess to receive said pivot-pin, and said movable and stationary strips being provided with recesses adapted to receive said lugs or projections, substantially as shown and described.

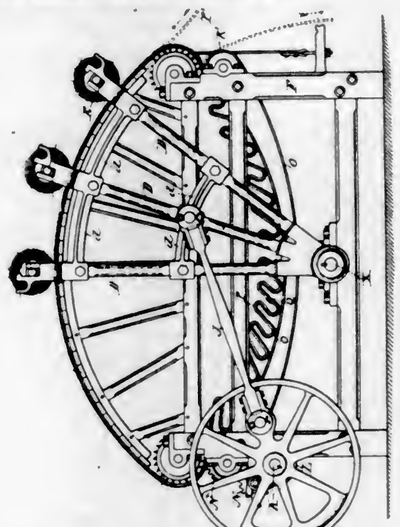
7. The herein-described devices for moving a rotatable member in a support and for locking said member in any desired position, consisting of a pivot-pin at one end of said rotatable member, and lugs or projections arranged eccentrically thereto, said support being provided with a stationary member and a movable member, the stationary member being provided with a recess to receive the pivot-pin, and at the opposite sides thereof with recesses to receive said lugs or projections, and the movable member adjacent to the stationary member being also provided with recesses to receive said lugs or projections, and devices for moving said movable member and for locking it in any desired position, substantially as shown and described.

8. In an apparatus of the class described, a support, a rotatable member mounted therein and provided at one end with a pivot-pin, and lugs or projections arranged eccentrically thereto, said support being provided with a recess to receive said pivot-pin, and with deeper recesses to receive said lugs or projections, and a movable strip connected with said support and provided with recesses which are also adapted to receive said lugs or projections, substantially as shown and described.

9. In an apparatus of the class described, a support, a rotatable member mounted therein and provided at one end with a pivot-pin, and lugs or projections arranged eccentrically thereto, said support being provided with a recess to receive said pivot-pin, and with deeper recesses to receive said lugs or projections, and a movable strip connected with said support and provided with recesses which are also adapted to receive said lugs or projections, and means for operating said movable strip, substantially as shown and described.

657,368. PILE-SPREADER. THOMAS J. STEARNS, Boston, Mass. Filed Apr. 5, 1900. Serial No. 11,591. (No model.)

Claim.—1. In a pile-spreading machine, a mass of wedging-needles, a surface opposed thereto and adapted to support a pile fabric, and means for reciprocally moving said needles upon and from the pile fabric in a direction substantially normal to the plane of the fabric.



2. In a pile-spreading machine, a mass of wedging-needles, a work-supporting surface opposed thereto, said mass of needles and opposed surface movable relatively to each other in such manner that the needles are reciprocally moved to and from said opposed surface in a direction substantially normal to the plane of said surface.

3. In a pile-spreading machine, a mass of wedging-needles and a carrier therefor, a surface opposed to said needles and adapted to support a pile fabric, means for reciprocally moving said needles upon and from the pile fabric in a direction substantially normal to the plane of the fabric, and means for feeding the pile fabric between the needles and the opposed supporting-surface.

4. In a pile-spreading machine, one or more rollers clothed with radially-projecting wedging-needles, a surface opposed thereto and adapted to support a pile fabric, and means whereby said roller or rollers may be rolled upon said surface.

5. In a pile-spreading machine, one or more rollers clothed with radially-projecting wedging-needles, a surface opposed thereto and adapted to support a pile fabric, and means whereby said roller or rollers may be rolled upon said surface, and means for drawing the pile fabric between said roller or rollers and said opposed supporting-surface.

6. In a pile-spreading machine, a mass of wedging-needles, means for pressing the needles into the pile fabric in a direction substantially normal to the plane of the fabric in such a manner that the threads of the pile-tufts are wedged apart from each other and broomed out into interlacing contact with the threads of adjacent tufts, and a surface opposed to said needles and adapted to support the pile fabric.

7. In a pile-spreading machine, one or more rollers clothed with radially-projecting needles, a work-supporting surface consisting of a segment of a cylinder and means for rolling said roller or rollers circumferentially upon said surface.

8. In a pile-spreading machine, one or more rollers clothed with radially-projecting needles, a work-supporting surface consisting of a segment of a cylinder and means for rolling said roller or rollers circumferentially upon said surface, and means for drawing the fabric over said surface and between the surface and the roller or rollers.

9. In a pile-spreading machine, one or more rollers clothed with radially-projecting needles and supported by a pivoted arm, a cylindrical surface opposed to said roller or rollers, the axis of said cylindrical surface coinciding with the axis of said arm, and means for vibrating said arm angularly about the central pivot.

10. In a pile-spreading machine, one or more rollers clothed with radially-projecting needles and supported by a pivoted arm, a cylindrical surface opposed to said roller or rollers, the axis of said cylindrical surface coinciding with the axis of said arm, and means for vibrating said arm angularly about the central pivot, and means for drawing the fabric over said surface, and between it and the needle roller or rollers.

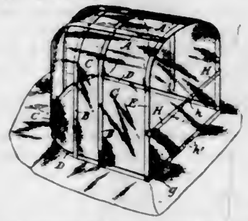
11. In a pile-spreading machine, a needle-roller supported by a vibrating arm, a work-supporting surface opposed to said needle-roller consisting of a segment of a cylinder whose axis coincides with the axis of said vibrating arm, means for vibrating said arm, a spiked roller adapted to draw a pile fabric over said surface and means for rotating said spiked roller.

12. In a pile-spreading machine, a needle-roller supported by a vibrating arm, a work-supporting surface opposed to said needle-roller consisting of a segment of a cylinder whose axis coincides with the axis of said vibrating arm, means for vibrating said arm, a spiked roller adapted to draw a pile fabric over said surface and means for rotating said spiked roller, and a traveling apron adapted to receive the fabric from and feed it toward said surface.

13. In a pile-spreading machine, a needle-roller supported by a vibrating arm, a work-supporting surface opposed to said needle-roller consisting of a segment of a cylinder whose axis coincides with the axis of said vibrating arm, means for vibrating said arm, a spiked roller adapted to draw a pile fabric over said surface and means for rotating said spiked roller and a tension-roller.

14. In a pile-spreading machine, a needle-roller supported by a vibrating arm, a work-supporting surface opposed to said needle-roller consisting of a segment of a cylinder whose axis coincides with the axis of said vibrating arm, means for vibrating said arm, a spiked roller adapted to draw a pile fabric over said surface and means for rotating said spiked roller, and a traveling apron adapted to receive the fabric from and feed it toward said surface, and a tension-roller.

657,369. PORTABLE MOSQUITO AND FLY GUARD FOR BEDS, &c. HENRIETTE A. STRAUSS, Melbourne, Victoria. Filed Jan. 17, 1900. Serial No. 1,862. (No model.)



Claim.—1. A mosquito and fly guard comprising flexible cross-strips A, B and end cross-strips secured together, such frame being covered with netting, means for securing the frame into dome form and of releasing same substantially as described.

2. A mosquito and fly guard comprising flexible strips A, A cross-strips B, B and end cross-strips C, D secured together forming a flat frame, a network-covering upon said frame, and means for fastening the adjacent end strips together to form a dome-like construction and of releasing same at will substantially as described

3. A mosquito and fly guard comprising flexible strips A, A transverse strips B, B and end cross-strips C, D, D, E respectively engaging each other, forming a flat frame, means for securing the end strips C and D together to form a dome and of securing the strip E in arch form and of releasing same at will, a network-covering inclosing the frame and having extended portions at the base thereof, as and for the purpose set forth.

657,370. PENHOLDER. GEORGE C. WARD, Fort Worth, Tex. Filed Aug. 18, 1899. Serial No. 727,663. (No model.)

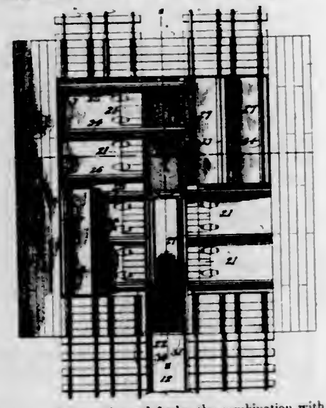


Claim.—1. A pencil or pen holder consisting of a staff or barrel formed at one end to receive a marking-point and at the opposite end provided with an elongated loop, the opposite walls of said loop diverging from each other next to the staff and then converging toward each other in the direction of the outer end of the loop, substantially as described.

2. As a new article of manufacture, a pencil or pen-holder consisting essentially of an elongated loop adapted to receive the forefinger, and a staff or barrel formed at one end to receive a marking-point, said barrel

being pivoted to one end of the loop so that when thrown outward the portion of the barrel beyond its pivotal connection to the loop will constitute a support for the forefinger passing through the loop and a bearing for the thumb and second finger in guiding the marking-point, substantially as described.

657,371. CARRIER AND FEEDER. DORIPOR WEBER, Vacherie, La. Filed Jan. 8, 1900. Serial No. 761. (No model.)



Claim.—1. In a carrier and feeder the combination with an excavated tunnel and carrier working longitudinally within the tunnel, of a platform built flush with the earth and opening into the tunnel from above, said platform adapted to accommodate a vehicle for loading the carrier, substantially as set forth.

2. In a carrier and feeder the combination with a platform built flush with the earth, an excavated tunnel, and a carrier working longitudinally therein, of a vehicle upon the platform, and means for discharging contents of the vehicle from above, upon the carrier, substantially as set forth.

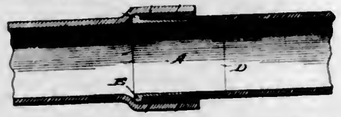
3. The combination with a platform, aperture therein, and carrier working in the aperture, of a plurality of rails upon the platform, including a medial rail and a broken lateral rail, a movable platform traveling upon said rails and adapted to be tilted on the medial rail into the aperture above the carrier, substantially as set forth.

4. The combination with a platform, aperture therein, and carrier working in the aperture, of a plurality of rails upon the platform, including a medial rail and a broken lateral rail, a movable platform traveling upon said rails and adapted to be tilted on the medial rail into the aperture above the carrier, and means for limiting said tilting movement, substantially as set forth.

5. In a carrier and feeder, the combination with a platform, depressed platform, tunnel therein, and carrier working longitudinally within the tunnel, of a movable platform upon the depressed platform and having its upper surface flush with the surface of the first-named platform, and means for discharging a load from the movable platform to the carrier, substantially as set forth.

6. The combination with a platform provided with one or more tracks, a depressed platform, aperture therein, and carrier working in the aperture, of a movable platform upon the depressed platform, whose surface is flush with that of the first-named platform, tracks upon the movable platform adapted to aline with each track upon the first-named platform, and means for discharging a load from the movable platform upon the carrier, substantially as set forth.

657,372. JOINT FOR PIPING. JOHN W. WIGGINS, Savannah, Ga. Filed May 17, 1900. Serial No. 17,063. (No model.)

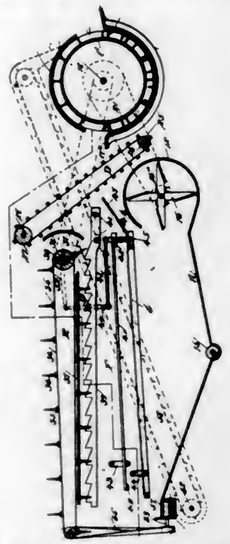


Claim.—1. A joint substantially as described comprising the pipe-sections, the ferrule tapered from end to end and having an end flange or shoulder and inserted in one of the pipe-sections and fitted therewith in the fitting of the other pipe-section, and the calking completing the joint substantially as set forth.

2. The joint herein described comprising the pipe-sections one of which has a fitting, the ferrule inserted in the end of the other pipe-section, tapered longitudinally on its outer side and having a flange or bead at its large end, a smooth ring C at its small end and longitodinal ribs between said ring and flange, and the calking completing the joint substantially as set forth.

3. A ferrule for pipe-joints having its exterior tapered longitudinally and provided with longitudinally-extended ribs substantially as set forth.

657,373. PEA THRESHER AND CLEANER. SAMUEL H. WILLIAMS, Barnardsville, Tenn. Filed July 15, 1899. Serial No. 723,887. (No model.)

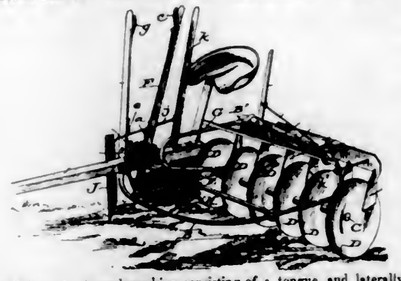


Claim.—1. In a pea thresher and cleaner, a concave and cylinder constructed in two unequal divisions, the larger division of the concave being provided with a front row of cutting-teeth for cutting the pea-vines and separating them from the pods, the remaining teeth being threshing-teeth to thresh the pods, the smaller division of the concave being provided with threshing-teeth only, the teeth of the smaller division of the concave being thinner and arranged closer together than the teeth of the larger division, a separating device to which the material is delivered to separate the vines from the shelled peas and pods, and remove the vines from the machine, and means for returning the unthreshed or partially-threshed pods to the smaller division of the concave, substantially as described.

2. In a pea thresher and cleaner, a threshing device, an elevator arranged to receive material from the threshing device, a fixed toothed grate located at the rear of the elevator, a traveling toothed separator located at the rear of the upper portion of the elevator and above the toothed grate, horizontally-extending guide-rails located between the toothed grate and the traveling separator for supporting the latter, the teeth of the separator passing between the guide-rails and between the toothed slats or bars of the grate, a curved partition located between the elevator and the forward end of the separator and above the forward end of the toothed grate, the concaved surface of the partition facing rearward, a reciprocating screen and sieve located beneath the grate, a conveyer for the shelled peas, a fan arranged to direct currents of air upon the falling shelled peas, and a conveyer for the material that will not pass through said screen and sieve, substantially as described.

3. In a pea thresher and cleaner, a cylinder and concave, an elevator arranged to receive material from the cylinder and concave, fixed toothed slats or bars located at the rear of the elevator and adapted to receive material therefrom, a traveling toothed separator acting in conjunction with the toothed slats, and a screening device located beneath the said toothed slats and comprising a screen consisting of slats or bars connected at their ends by cross-bars, and a sieve located beneath the screen, the said screen and sieve being supported at their rear ends by pivoted hangers, a lever fulcrumed at a point between the forward ends of the sieve and screen and attached at opposite sides of its pivot to said ends, the upper end of said lever extending above the screen, an eccentric actuated by a moving part of the machine, and connections between the eccentric and the upper end of said lever, substantially as described.

657,374. ROAD-MAKING MACHINE. SEPTIMUS T. WILLIAMS, Beaver Dam, Ky. Filed June 27, 1900. Serial No. 21,825. (No model.)

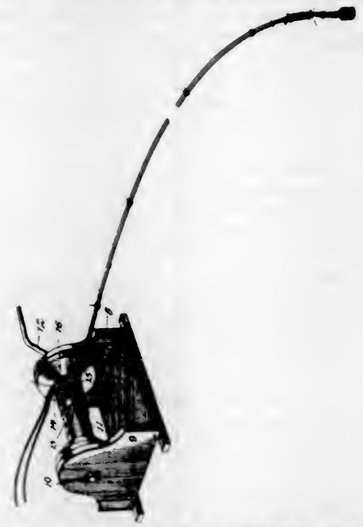


Claim.—1. A road-machine consisting of a tongue, and laterally-projecting framework, a gang of disk-shaped cutters journaled at the outer end in said framework, a swinging draft-bar, with locking and adjusting devices, attached to the inner end of the gang of cutters, and a forwardly-projecting pressure-bearing attached to the inner end of the gang of cutters and moving freely under a portion of the framework to hold the inner end of the cutters down to their work substantially as described.

2. A road-machine having a trailing scraper-blade fulcrumed about a vertical axis and having a hand-lever, with locking devices, connected to the front end of the scraper-blade for adjusting it to an angle to the line of draft substantially as described.

3. In a road-machine, the combination with the framework; of a gang of disk-shaped cutters made adjustable as to their angle of inclination to the line of draft, and a trailing scraper-blade fulcrumed about a vertical axis on the opposite side from the said gang and made adjustable as to inclination to the line of draft to neutralize the lateral thrust of the gang of disk cutters substantially as described.

657,375. LEAD-WIRE FOR BLASTING. WILLIAM H. WILLIAMS, Concord, N. H. Filed July 5, 1900. Serial No. 22,603. (No model.)



Claim.—1. The combination with a winding-drum of a plurality of conductors attached thereto and adapted to be wound thereon, said conductors being connected at intervals.

2. The combination with a winding-drum of a plurality of insulated conductors wound thereon and connected thereto at a point adjacent to one end, said conductors being connected at intervals and having their extremities free from insulation.

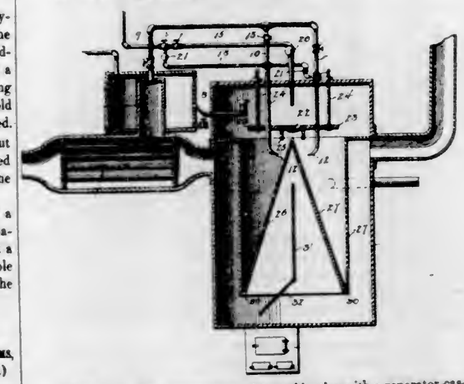
3. The combination with a winding-drum of a plurality of insulated conductors connected thereto adjacent to one end, the shorter end of the conductors at one side of their connection being free from insulation and adapted for attachment of a source of electricity, and the wires at the opposite side of the point of attachment to the drum being adapted to be wound upon the drum and having their extremities adapted for attachment to a cap.

4. The combination with a winding-drum of a plurality of insulated wires attached thereto and adapted to be wound thereon at one side of their point of attachment, said wires having a helical wrapping of wire over the insulation to protect the latter, the convolutions of the wrapping being separated to connect the wires at intervals.

5. A lead for blasting comprising two insulated wires connected at intervals to prevent tangling when wound upon or unwound from a drum.

6. A lead for blasting comprising two wires independently insulated and connected at intervals, said wires having their end portions free of insulation to permit connection with a blast and with a source of electricity.

657,376. GAS-GENERATOR. GRANT WOODS, Bakersfield, Cal., assignor to Mattie Trullinger, same place. Filed Oct. 30, 1899. Serial No. 735,207. (No model.)



Claim.—1. In a gas-generator the combination with a generator-casing, inclined generator-plates therein converging at their upper ends, and means for heating said plates, of means for delivering oil to said plates near their apex, and separate means for directing steam-jets against the surface of the plates.

2. In a gas-generator the combination with a generator-casing, inclined generator-plates converging at their upper ends, a vertically-disposed plate between said plates and heating means, of an oil-trough above the plates, means for supplying oil thereto, and means for directing steam-jets against the plates.

3. In a gas-generator the combination with a generating-casing, inclined generator-plates converging at their upper edges, an adjustable oil-trough above the plates, and means for supplying oil thereto, of means for directing steam-jets laterally against the plates, means for adjusting the trough, and means for enriching the steam-jets with oil.

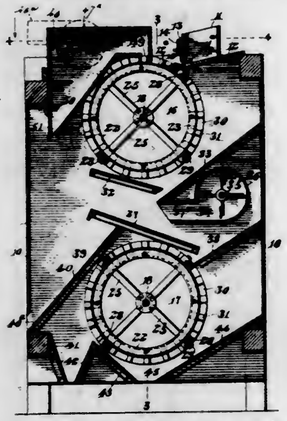
4. In a gas-generator the combination with a generator-casing, generator-plates therein, means for heating said plates, and means for supplying oil to the plates, of a superheater in communication with the casing, a steam-dome within the superheater, and a steam-pipe leading from said dome to the interior of the casing and into proximity to the generator-plates.

5. In a gas-generator the combination with a generator-casing, inclined generator-plates therein, means for supplying oil thereto, and a superheater in communication with the casing, of a boiler having its dome located within the superheater, means for leading a heating agent through the boiler and into contact with the plates within the casing, steam-pipes having jet-nozzles in proximity to the plates, and means for leading gas from the superheater.

6. In a gas-generator the combination with a generator-casing, an interior casing having an open bottom, and generator-plates extending from the lower edge of the interior casing and converging at its top, of a vertical plate intermediate of the generator-plates, a movable damper below the vertical plate, a boiler having its flue leading into the generator-casing, a flue leading from the opposite side of said casing, a superheater surrounding the dome of the boiler and in communication with the generating-chamber, a trough located above the generator-plates, a steam-pipe in communication with the dome and provided with jet-nozzles in proximity to the plates, and means for leading oil to the steam-pipes.

7. In a gas-generator the combination with a generator-casing, generator-plates therein, and means for supplying oil to the plates, of a superheater in communication with the casing, a boiler having its dome located in the superheater, means for leading steam from the dome to the casing, means for leading a heating agent through the boiler and into contact with the generator-plates and a heater located below the casing.

657,377. GRAIN-CLEANER. JOSEPH P. ADAMS, Garfield, Wash. Filed July 10, 1899. Serial No. 723,352. (No model.)



Claim.—1. A horizontally-disposed revoluble screen, in combination with a revoluble shaft, and straight, radial, balancing spring-arms having their inner ends secured to said shaft, said straight, radial balancing spring-arms having their outer ends connected to the screen, and forming the sole supports thereof, and means to vibrate said screen longitudinally, independently of said shaft, substantially as described.

2. In a grain-cleaning machine, the combination with a casing and a revoluble reel therein, of the reversely-inclined cant-boards, 32, 33, situated below the reel and arranged relatively one to the other to form a grain-passage therebetween, a blast-fan having its mouth contiguous to one cant-board for discharging the blast of air to the grain which is discharged from said cant-board, a suction-fan casing, a fan therein, a horizontal wind-trunk having a mouth adjacent to the reel, and a valved wind-trunk communicating with the chamber of the machine-casing and arranged to receive the exhaust from the blast-fan, substantially as described.

3. A grain-cleaning machine comprising a machine-casing, the revoluble reels mounted in said casing one below the other, the reversely-inclined cant-boards below the upper reel, a blast-fan below said cant-boards, an inclined cant-board, 37, over the lower reel and in spaced relation to one cant-board to form therebetween a passage for the blast from said fan, an inclined apron, 38, below the cant-board, 37, and discharging to the lower reel, a discharge-chute below the cant-board, 37, and arranged to receive the tailings from the upper reel, and other discharge-chutes below the lower reel, substantially as described.

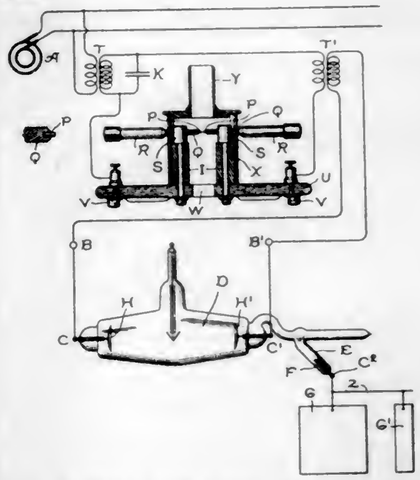
657,378. ROENTGEN-RAY APPARATUS. WILLIAM S. ANDREWS, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Jan. 20, 1898. Serial No. 667,198. (No model.)

Claim.—1. The method of maintaining a vacuum-tube in operative condition at a predetermined vacuum, which consists in passing current through the tube, and taking a discharge from a point in the circuit to a body capable of absorbing and returning electrical energy, causing said discharge to vary the vacuum in the tube, and varying the discharge in accordance with the vacuum in the tube.

2. The combination with a vacuum-tube of a chamber therein, a chemical adapted to liberate vapor or gas upon the application of heat in said chamber, and a connection whereby a discharge passes from the tube to a body capable of absorbing and returning electrical energy, so as to liberate vapor or gas from said chemical.

3. The combination with a vacuum-tube of a chamber therein, a chemical adapted to liberate vapor or gas upon the application of heat in said chamber, a connection whereby a discharge passes from the tube to a body capable of absorbing and returning electrical energy, so as to liberate vapor or gas from said chemical, and means for regulating the amount of said discharge.

4. The method of varying the discharge of a part of the current in the circuit of an X-ray apparatus, through a gas-yielding body contained within the tube, which consists in adjusting the frequency of the supply-current.



5. The method of varying the capacity of discharge of a part of the current in the circuit of an X-ray apparatus, through a gas-yielding body contained within the tube, which consists in varying the length of the spark-gap in the supply-circuit.

6. The combination with a vacuum-tube of a chamber therein, an element adapted to liberate vapor or gas upon the application of heat in said chamber, a body having electric capacity and a connection whereby a surging discharge passes from the tube to said body in proximity to said gas-yielding element.

7. The combination of a vacuum-tube having a chamber therein, a chemical adapted to liberate vapor or gas in said chamber, a terminal in said chamber and a connection from the said terminal to earth.

8. The combination of a vacuum-tube having a chamber therein, a chemical adapted to liberate vapor or gas in said chamber, a terminal in said chamber, and a connection from the said terminal to earth through an adjustable spark-gap.

9. The combination with a source of alternating current, a condenser, an adjustable spark-gap through which the condenser is adapted to discharge a high-frequency electromotive force, and a translating device in series with said spark-gap, the spark-gap terminals being formed of points of refractory material.

10. The combination with a source of alternating current, a condenser, an adjustable spark-gap through which a condenser is adapted to discharge a high-frequency electromotive force, and a translating device in series with said spark-gap, the spark-gap terminals being formed of points of refractory material, in combination with a chimney for causing a natural draft across the spark-gap.

11. The method of maintaining a desired degree of density in an X-ray tube, which consists in causing an increase in the tube resistance due to the decrease in the density thereof, to divert current which liberates gas within the tube, and is then absorbed outside the tube.

12. Means for maintaining a desired degree of density in an X-ray tube, which comprises a lead from a part of the tube, the electromotive force of which is dependent upon the degree of tube density, a condenser of the capacity required to maintain the tube density at a desired degree, to which condenser said lead is connected, and a gas-yielding agent within the tube in the path of the current flowing through said lead.

13. The method of determining the vacuum at which the tube of an X-ray apparatus shall operate, that is, of varying the operating degree of tube density which consists in varying the capacity of discharge along a path adapted to join the main circuit at one point only and to traverse a gas-yielding body contained within the tube.

14. The combination with a Crookes tube, of a condenser electrically connected therewith, to which current flows when the resistance of the tube increases owing to the decrease of tube density, and a gas-yielding body within said tube from which gas is liberated by current flowing to the condenser.

15. The combination with a Crookes tube, or a variable condenser electrically connected therewith, and a gas-yielding body within said tube in the path to the condenser.

16. The combination with a Crookes tube, of a gas-yielding body therein, and means for diverting a part of the line-current through said body along a path adapted to be connected to the tube at only one point, and then dispersing said part.

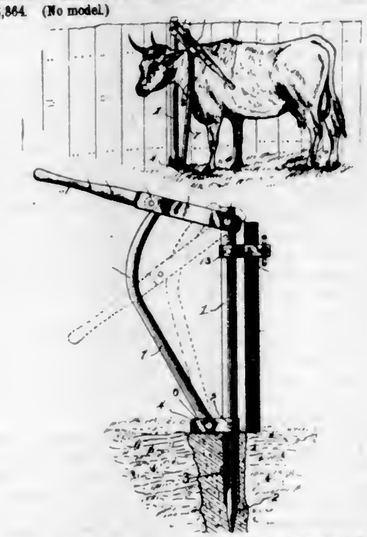
17. The combination with a Crookes tube, of a gas-yielding body therein, a condenser adapted to receive a discharge of part of the line-current through said body when the vacuum in the tube rises, and means for regulating said discharge.

18. The combination with a Crookes tube, of a gas-yielding body therein, a condenser adapted to receive a discharge of part of the line-current when the vacuum in the tube rises, and an adjustable spark-gap in the supply-circuit, whereby said discharge is regulated.

19. The combination with a Crookes tube, of a gas-yielding body therein, and means for discharging a part of the line-current in heating relation to said body, and then to earth, when the vacuum in the tube rises.

20. The combination with a Crookes tube, of a gas-yielding body therein, a connection from the tube to earth, means for heating said body, and an adjustable spark-gap, both in series in said connection.

657,379. STOCK FOR HOLDING CATTLE WHILE DEHORNING. EDWARD C. BAKKEN, Renville, Minn. Filed May 16, 1900. Serial No. 16,864. (No model.)



Claim.—1. Cattle-stocks, comprising a hollow standard, a pointed extension adapted to be adjusted in said hollow standard, means for securing said standard to an auxiliary support, a laterally-moving arm pivoted to said standard, and means for forcing said arm toward said standard, substantially as described.

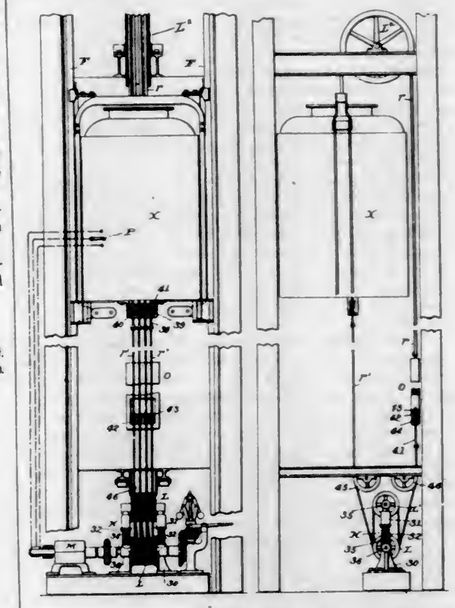
2. Cattle-stocks comprising a rigid support, a vertical standard adjacent thereto, a bracket for securing the standard to the support, an adjustable point on the lower end of the standard to enter the earth, a laterally-movable arm pivoted at its lower end to the standard, and a slotted arm pivoted to the standard and embracing the laterally-movable arm, substantially as described.

657,380. ELEVATOR. CYRUS W. BALDWIN and WILLIAM D. BALDWIN, Yonkers, N. Y., Mary E. Baldwin executrix of said Cyrus W. Baldwin, deceased, assignors to the Otis Elevator Company, East Orange, N. J. Filed Feb. 4, 1898. Serial No. 669,073. (No model.)

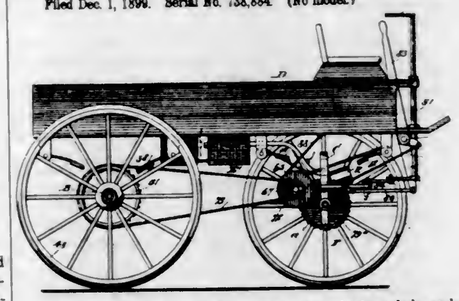
Claim.—1. The combination with a car, its counterweight, and upper and lower sheaves, of flexible connections passing from the top and bottom of the car to the counterweight, a frame in two sections, a set of sheaves supported by each section, the lower flexible connections passing around both of the sets of sheaves carried by said frame, springs between the sections, a motor connected to drive the lower sheaves of the frame, and means for controlling the motor from the car, substantially as set forth.

2. The combination with the car, of driving-cables, two sets of sheaves around which the cable passes and means for separating them under yielding tension, eyebolts connected with said cables and passing through a part of the car and provided with nuts, and springs interposed between the nuts and bearing on the car, substantially as set forth.

657,380.



657,381. AUTOMOBILE. WILLIAM O. BARNES, Stamford, Conn. Filed Dec. 1, 1899. Serial No. 738,884. (No model.)



Claim.—1. In a horseless vehicle, a steering-wheel, a tubular stub-axle, an arch-shaped main axle or frame having offsets pivotally connected with the stub-axle the axis of the pivotal connection being inclined, and a driving-shaft extending through an opening in the main axle or frame and connected with the wheel.

2. In a horseless vehicle, a steering-wheel, a tubular stub-axle having arms at its inner end, and an arch-shaped main axle or frame provided with offsets pivotally connected with the arms of the stub-axle, the axis of the pivotal connection being inclined, and a driving-shaft passed through the stub-axle and connected with the wheel.

3. In a horseless vehicle, the combination of a tubular stub-axle, having an upwardly-extending arm and a downwardly-extending arm at its inner end, the said arms being formed with knuckles, an arch-shaped main axle or frame, provided at each leg with upper and lower offsets having knuckles pivotally connected with the knuckles of the arms of the stub-axle, the pivotal connection being inclined, a supporting-wheel mounted on the said stub-axle, and a sectional driving-shaft passed through the said stub-axle and secured at obe end to the said wheel, the sections of the driving-shaft having universal connections, as described.

4. In a horseless vehicle, the combination of a tubular stub-axle having arms at its inner end, an arch-shaped main axle or frame formed at each leg with offsets, pivotally connected with the arms of the stub-axle, the pivotal joint being inclined, a steering and driving wheel mounted on the said stub-axle, and a sectional knuckled driving-shaft extending through an opening in the main axle or frame and connected at one end with said wheel.

5. In a horseless vehicle, the combination of a tubular axle, a bushing or skein mounted to turn upon the outer surface of the body of the tubular axle, the bushing or skein being provided with an interior shoulder against which the outer end of the tubular axle abuts, the said bushing being further provided with an outer shoulder, a driving-wheel secured to said bushing or skein, a driving-axle passed through the tubular axle, and a keyway and feather connection between the axle skein or bushing and the driving-axle, the outer end of the said driving-axle adjacent to said connection being reduced forming a shoulder adapted to abut against the outer shoulder on the bushing, the said reduced end of the axle being formed with a threaded surface, for the purpose set forth.

6. In a horseless vehicle, the combination of a hollow stub-axle provided with an extending arm, an arch-shaped frame or main axle having offsets attached to the stub-axle by an inclined pivotal joint, and directing mechanism comprising a bar connected with the extended arm of the stub-axle, a vertical shaft provided with a crank-arm, and a connection between the crank-arm and the bar connected with the extended arm of the stub-axle, a wheel mounted upon the stub-axle, and a driving-shaft passed through the said stub-axle, and connected at one end with the wheel.

7. In a horseless vehicle, the combination of two tubular stub-axles, a frame or main axle connected with the stub-axles by inclined pivotal joints, supporting-wheels secured upon the stub-axles, independent three-part driving-shafts passed through said stub-axles and each comprising an end section, an intermediate section, and a central section, one of said central sections being tubular and the other solid and adapted to enter the said tubular section, a connection between the shafts and the wheels, bearings for the central sections of the driving-shafts adapted for attachment to the body of the vehicle or the motor-frame for the same and a connecting-bar located in front of the frame or main axle and pivotally connected at its ends with arms on the stub-axle.

8. In a horseless vehicle, the combination of two tubular stub-axles, each provided with an upwardly-extending arm and a downwardly-extending arm, a frame or main axle provided with offsets connected with the said arms of the stub-axles by inclined pivotal joints, supporting-wheels on the stub-axles, a driving-axle extending through said stub-axles, a connection between the driving-axle and the wheels, a forwardly-extending arm forming part of the upwardly-extending arm of each stub-axle, and a connecting-bar pivoted to said forwardly-extending arms for the purpose set forth.

9. In a horseless vehicle, the combination of two tubular stub-axles each having arms at its inner end, an arch-shaped main axle or frame provided with offsets pivotally connected with the arms of the stub-axle, wheels mounted upon the stub-axles, a driving-shaft passed through the stub-axles and connected with the wheels, a forwardly-projecting arm on each stub-axle and a bar connecting the said arms, for the purpose set forth.

10. In a horseless vehicle the combination of a tubular axle having arms at its inner end, an arch-shaped frame or main axle having an upper and a lower offset to which said arms are pivotally connected, and a vehicle-spring connecting the main or supporting axle with the body of the vehicle, the said spring being secured to the main axle above the upper offset.

11. In a horseless vehicle, the combination of an arch-shaped main or supporting axle provided at each leg with upper and lower offsets having an outward direction, the said offsets being each provided with two knuckles spaced apart, springs secured to the main axle above the upper offset and connecting the axle with the body of the vehicle, a stub-axle having a downward and outward inclination and carried at each of the side members of the main axle, each of said stub-axles being provided at its inner end with an upwardly-extending arm and a downwardly-extending arm, the said arms having knuckles pivotally connected with the knuckles of the offsets of the main axle, a wheel carried by each of said stub-axles, sections of a knuckled shaft extending through openings in the downwardly-extending members of the main or supporting axle between the upper and lower knuckles thereof and received within the stub-axles, and a connection between the shafts and the wheels.

12. In a horseless vehicle, a rear axle consisting of two shaft-sections mounted one within the other, a stub-axle receiving the shaft-sections and having an inclined spindle and an enlarged portion near the spindle, means for supporting the stub-axle and preventing the same from turning, a skein mounted upon the spindle of the stub-axle, and couplings connecting the outer ends of the shaft-sections and the axle-skein.

13. In a horseless vehicle, a rear axle consisting of two shaft-sections mounted one within the other, the inner section extending beyond the inner end of the outer section, a stub-axle located upon the outer end of the projecting portion of the inner shaft-section of the axle, means for spring-supporting the stub-axle and holding it against turning, an axle-skein mounted upon the stub-axle, and couplings between the projecting portion of the inner shaft-section of the axle and the axle-skein.

14. In a horseless vehicle, the combination of the front and rear axles, a driving-shaft mounted between the same, a disk keyed to the driving-shaft and carrying two pinions, gear-wheels loosely mounted on the driving-shaft and engaged by the said pinions, a train of gearing between one of said loosely-mounted gear-wheels and the rear axle for distributing power to the same, a second disk secured to the other gear-wheel, two pinions carried by said second disk, and gears to which the power is transmitted from the said pinions the said gears being provided with pinions meshing respectively with gears attached to the members of the front axle, substantially as described.

15. In a horseless vehicle, the combination with the front axle formed of two independent members, and a driving-shaft arranged parallel with the same, of a disk on said driving-shaft, two pinions carried by said disk, and gears mounted to turn loosely on the driving-shaft and to which the power is transmitted from the said pinions, one of said gears being provided with a pinion meshing with a gear attached to one of the members of the front axle, the other gear being provided with a pinion meshing with a gear attached to the other member of the front axle, substantially as described.

16. In a horseless vehicle, the combination with the rear axle consisting of two shaft-sections, mounted one within the other, and a driving-shaft extending parallel with the rear axle, of a wheel loosely mounted on the rear axle and driven from the driving-shaft, a box or casing fixed to the said wheel and turning therewith, pinions carried by the box or casing on the inner side thereof and gear-wheels secured to the shaft-sections of the rear axle and with which the said pinions mesh respectively, substantially as described.

17. In a horseless vehicle the combination with the rear axle consisting of two shaft-sections mounted one within the other and a driving-shaft extending parallel with the rear axle, of a sprocket-pinion carried by said driving-shaft, a sprocket-wheel loosely mounted on the rear axle, and connected by a chain belt with the said sprocket-pinion, the said sprocket-wheel being provided with a box or casing arranged to turn therewith, pinions inclosed and carried by the box or casing, and gears secured to the shaft-sections of the rear axle and with which the said pinions mesh respectively, substantially as described.

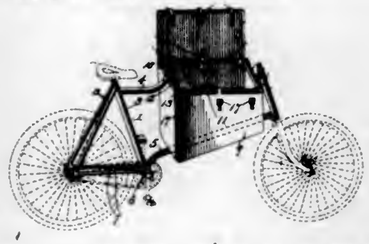
18. In a horseless vehicle, the combination of a tubular stub-axle, an axle journaled in the same, the said stub-axle being provided with a spherical enlargement, a spherical socket receiving said spherical enlargement, and a vehicle-spring to which the said socket is secured, substantially as described.

19. In a horseless vehicle the combination of the rear axle, the tubular stub-axles provided with spherical enlargements concentric with the bores of the same, spherical sockets adapted to receive the said enlargements, springs connected with the body of the vehicle and secured to the said sockets, and means for limiting the motion of the stub-axles in their sockets, substantially as described.

20. In a horseless vehicle, a steering-wheel, a driving-axle constructed in sections and connected therewith, a tubular stub-axle, having arms at its inner end, and an arch-shaped main axle or frame pivotally connected with the arms of the stub-axle, the axis of the pivotal connection being inclined, the outer or end section of the driving-axle being mounted to turn in the stub-axle, and having a downward inclination, substantially as described.

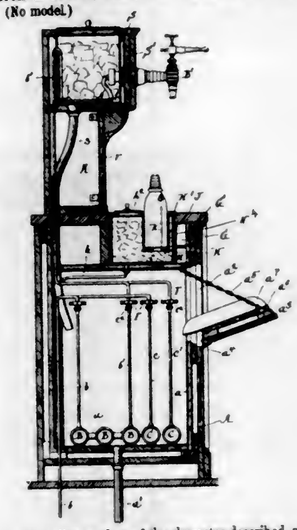
21. In a horseless vehicle, the combination of two tubular stub-axles, an arch-shaped main frame or axle pivotally connected at its legs with the stub-axles, the axis of the pivotal connection being inclined, wheels mounted upon the stub-axles, a driving-axle made in sections, the outer or end sections of the axle being mounted to turn in the stub-axles and having a downward inclination, and a bar connecting the stub-axles, for the purpose set forth.

657,382. BICYCLE. GEORGE S. BARTLETT, Boise, Idaho. Filed Mar. 16, 1900. Serial No. 8,934. (No model.)



Claim.—A bicycle-frame, of the single diamond form, having its upper frame-bar, between the head-tube and the seat-post thereof, provided with an integral horizontal open supporting-rim projecting equidistant at opposite sides of the vertical plane of the frame, said upper frame-bar having a short section extending from the rear side of the said open rim to a point of lower elevation on the seat-post to constitute a bracing-strut for the said rim, a carrying bag or receptacle interposed between the open rim and the lower inclined reach-bar of the frame, and having an inclined bottom portion resting flat upon the said inclined reach-bar, fastening connections between the top edge of the bag or receptacle and the rim, separate fastening connections between the bottom of the bag or receptacle and the reach-bar to prevent lateral displacement of the bag or receptacle, and a cover hinged at one side of the rim and arranged in its closed position to rest directly upon the opposite side bars of the said rim, substantially as set forth.

657,383. COOLING-CABINET FOR LIQUID-DISPENSING APPARATUS. LOUIS A. BECKER, Chicago, Ill. Filed Feb. 12, 1900. Serial No. 4,864. (No model.)



Claim.—1. A cooling-cabinet of the character described, comprising a base-chamber adapted to receive the coolers for aerated water, an ice-box located above the top of said base-chamber, the top plate of said ice-box being provided with openings to receive syrup-bottles, separate endless-tube portions extending downwardly from the openings in said top plate and terminating above the bottom of said ice-box, an inwardly-projecting annulus provided at the extreme lower end of each of said endless-tube portions to serve as a support for bottles placed within said tube portions, whereby bottles may be placed within said tube portions in direct contact with the ice in said box.

2. A cooling-cabinet of the character described comprising a base-chamber, a slab or top G′ extending over said base-chamber, a cooling-case H located beneath said top or slab G′ and provided with a cover H′ having openings h^4 therein to receive bottles, tubes J connected to and depending from said cover H′ and a tray M extending beneath said tubes J, said tray serving as a support for the bottles and being provided with openings m' at the bottoms of the tubes.

3. A cabinet of the character described comprising a base-chamber, a top or slab G′ extending over said base-chamber, a cooling-chamber H located below said top or slab, said cooling-chamber H being provided with a top plate H′ having bottle-openings h^4 therein and having tubes J depending below said bottle-openings and a tray M extending beneath said tubes J and provided with openings m' and with rubber rings m^3 around said openings.

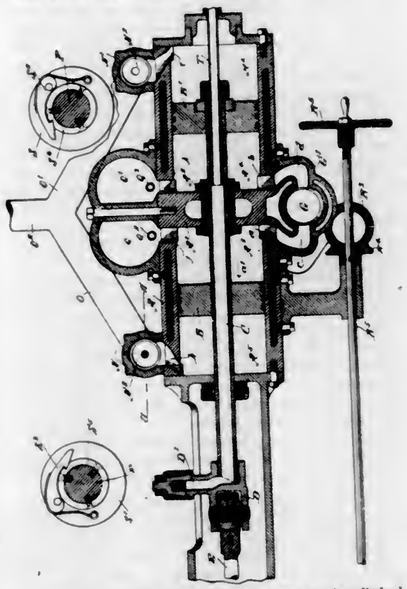
4. A cabinet of the character described comprising a base-chamber A adapted to receive the coolers for aerated water, said base-chamber being formed with an opening a^2, a door a^3 pivoted at its bottom to the front wall of the base-chamber and provided with a lining a^6 having said flanges a^7 extending below the bottom of the door, and a suitable support for limiting the downward movement of said door.

5. A cooling-cabinet for liquids, comprising an ice-chamber, coolers for liquids located therein and provided with inlet and outlet pipes, supply and draw-off pipes connected to said inlet and outlet pipes by couplings composed of two members, and brackets secured to the walls of said chamber provided with means for engaging one of the members of said couplings to hold the same against movement.

6. A cooling-cabinet for liquids, comprising an ice-chamber, coolers for liquids in the lower part thereof provided with inlet and outlet pipes extending to the upper part of said chamber, supply and draw-off pipes connected to said inlet and outlet pipes by couplings composed of two parts and brackets secured to the walls of said ice-chamber provided with means for engaging the members of the couplings attached to said supply and draw-off pipes to hold the members of said couplings from movement and the ends of said pipes in their proper relative positions.

7. A cabinet of the character described comprising a base-chamber A, a chamber G located above said base-chamber and having a top or slab G′, a cooling-case H located within said chamber G and below its top G′, said cooling-case H being provided with a top having bottle-openings therein and having tubes depending below said bottle-openings, a case R above said chamber G and an elevated cooling-chamber S above said case R, said elevated case S having coiled therein a pipe leading from coolers within the base-chamber and a draft-arm arranged outside said elevated case S and connected to said pipe.

657,384. EXPLOSIVE-ENGINE. SAMUEL F. BERTI, Mendota, Ill. Filed May 5, 1899. Serial No. 715,673. (No model.)



Claim.—1. An explosive-engine, comprising a main cylinder having a transverse partition for forming separate cylinders containing working chambers on opposite sides of the partition and compression-chambers at the outer ends of the main cylinder, pistons reciprocating in unison in said cylinders and connected with the main driving-shaft, a rotary valve driven in unison with said pistons and having an inlet and exhaust port arranged to alternately connect said working chambers with the motive-agent-supply pipe and the exhaust-pipe, and valve-casings located at the ends of the cylinder and each connected by a port with the corresponding compression-chamber, the said valve-casings being each provided with a chamber leading to the said port and connected through valve-controlled openings with the motive-agent supply and with said rotary admission-valve, so that the compressed charge from the compression-chamber of one cylinder can pass into the working chamber of the other cylinder, substantially as shown and described.

2. An explosive-engine, comprising a main cylinder having a transverse partition for forming separate cylinders containing working chambers on opposite sides of the partition and compression-chambers at the outer ends of the main cylinder, pistons reciprocating in unison in the said cylinders and connected with the main driving-shaft, a rotary valve driven in unison with said pistons and having an inlet and an exhaust port arranged to alternately connect said working chambers, with the motive-agent-supply pipe and the exhaust-pipe, valves arranged in casings located at said compression-chambers and arranged for connecting said chambers with the motive-agent supply and with said admission-valve so that the compressed charge from the compression-chamber of one cylinder can pass into the working chamber of the other cylinder, the connection between

the compression-chambers and the admission-valve comprising a conveyer-pipe connected with the admission-pipe for the rotary valve, branch pipes leading from the valve-casings at the compression-chambers and connected with said conveyer-pipe and a cushioning-chamber for said conveyer-pipe substantially as shown and described.

3. An explosive-engine comprising a main cylinder having a transverse partition for forming separate cylinders containing working chambers on opposite sides of the partition, and compression-chambers on the outer ends of the main cylinder, pistons reciprocating in unison in said cylinders and connected with the main driving-shaft, a rotary valve driven in unison with said pistons and having an inlet and exhaust port arranged to alternately connect said working chambers with the motive-agent-supply pipe and the exhaust-pipe, valves at said compression-chambers and arranged for connecting said chambers with the motive-agent supply and with said admission-valve so that the compressed charge from the compression-chamber of one cylinder can pass into the working chamber of the other cylinder, explosion-chambers located at one side of the cylinder adjacent to the working chambers and each connected by a port with the corresponding working chamber and an igniting device in each explosion-chamber, substantially as shown and described.

4. An explosive-engine comprising a main cylinder having a central transverse partition for forming separate cylinders containing working chambers on opposite sides of the partition and compression-chambers at the outer ends of the main cylinder, pistons reciprocating in unison in said cylinders, a stationary valve-body located at one side of the cylinder and connected with the working chambers by ports located at opposite sides of the transverse partition, a rotary valve mounted to turn in said body and driven in unison with said pistons, the said valve having an inlet and exhaust port arranged to alternately connect said working chambers with the motive-agent-supply pipe and the exhaust-pipe, valves at said compression-chambers and arranged for connecting said chambers with the motive-agent supply and with said rotary admission-valve, a reversing-gear for said rotary admission-valve, combustion-chambers, located at the side of the cylinder opposite the rotary valve, and communicating with the working chambers by ports located at opposite sides of the transverse partition, substantially as shown and described.

5. An explosive-engine, comprising alined working chambers, and compression-chambers, pistons mounted to reciprocate in unison, one piston for a compression-chamber and a working chamber, a valve-chamber connected with each compression-chamber and with the opposite working chamber, two valves in each of said valve-chambers one valve controlling the admission of the explosive mixture to the compression-chamber and the other controlling the discharge of the compressed explosive mixture from the compression-chamber to the opposite working chamber, and a rotary valve in the connection from the said valve-chamber to the working chamber for controlling the admission of the compressed charge to the said working chamber and for controlling the exhaust from said working chamber substantially as shown and described.

6. An explosive-engine comprising working chambers and compression-chambers, pistons reciprocating therein, a valve-chamber connected with each compression-chamber, a pipe leading from a suitable source of gaseous-mixture supply and connected by branch pipes with the respective valve-chambers, valves in each of said valve-chambers, one for controlling the admission of the motive agent to the compression-chamber, and the other for controlling the passage of the compressed charge therefrom, pipes leading from the valve-chambers for conveying the compressed charge, a rotary valve connected by a supply-pipe with said conveying-pipes and with an exhaust, the said valve having a single inlet-port and a single exhaust-port for connecting the working chambers alternately with the compressed motive-agent supply and said exhaust, and a driving and reversing gear for said valve, substantially as shown and described.

7. An explosion-cylinder, provided with separate working chambers pistons reciprocating therein, a stationary valve-body provided with a port for each of the working chambers, a rotary valve mounted to turn in said body and connected with a compressed motive-agent supply and with an exhaust, the said valve having both an inlet and an exhaust port adapted to register alternately with each of the ports in the stationary valve-body, to connect said working chambers alternately with said supply and exhaust, substantially as shown and described.

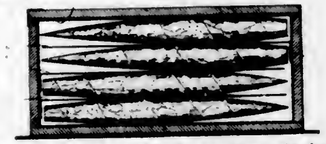
8. An explosion-cylinder, provided with separate working chambers, pistons reciprocating therein, a stationary valve-body provided with ports connected with the respective working chambers, a rotary valve mounted to turn in said body and connected with a compressed motive-agent supply and an exhaust, the said valve having a single inlet-port and a single exhaust-port adapted to register alternately with each port in the body of the valve to connect the working chambers with said supply and said exhaust, and a driving and reversing gear for said valve, substantially as shown and described.

9. In an explosive-engine, the combination with the working chambers of the engine, of a stationary valve-body having a port for each of the working chambers, and a valve mounted to rotate in said body and having a narrow feed-port for the admission of the charge to the working chamber, and a wide exhaust-port for the exhaust from said working chamber, the said ports being adapted to register alternately with each of the ports in the valve-body, substantially as described.

10. In an explosive-engine, the combination with a rotary admission and exhaust valve for said engine having an admission-port at one end thereof, of a feed-pipe connected with the admission-port, and a spring-pressed check-valve closing the opening between the said port and feed-pipe, the said valve opening inwardly in direction of the rotary valve, for the purpose set forth.

11. In an explosive-engine, a stationary valve-body provided with a port connected with a working chamber of the engine, a rotary valve mounted to turn in said body and having an admission-port and an exhaust-port adapted to register alternately with the said port in the body of the valve, an admission-pipe for the charge connected with the admission-port and a spring-pressed valve located in said pipe adjacent to the rotary valve, substantially as shown and described.

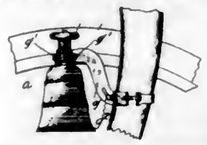
657,385. CIGAR BOX OR PACKING. LOUIS BERGER and MORRIS BERGER, New York, N. Y. Filed Feb. 28, 1900. Serial No. 6,834. (No model.)



Claim.—As a prevention of the fraudulent reuse of a cigar-box, the combination with a cigar-box, of strips of paper or the like attached alternately in pairs at opposite sides of the interior of the box, one edge of each strip being free and each strip being adapted to completely cover a layer of cigars in the box, substantially as specified

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657,386. BELL. ABNER A. BEVIN and PHILIP C. ARNOLD, East Hampton, Conn., assignors to The Bevin Brothers Manufacturing Company, same place. Filed Apr. 6, 1900. Serial No. 11,906. (No model.)



Claim.—1. In a bell, in combination, a bracket adapted to be secured to the frame of a bicycle or the like and extending in a direction substantially parallel with the frame of the wheel adapted to sound the gong, ears extending from said bracket in a direction at right angles thereto, a plate secured to the gong and having ears formed to cooperate with the ears on the bracket, a pivot extending through the ears on the bracket and plate, and a striker-arm mounted in the gong and extending in the direction of the axis thereof and having a striker on one end and a roller on the opposite end adapted to make contact with the rim of a wheel.

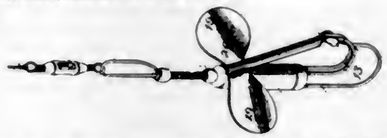
2. In a bell, in combination with the gong, a sleeve secured within an opening in the gong, a striker-arm rotatively mounted in the sleeve, a striker loosely mounted on the arm, a roller secured to the arm, a plate secured between a shoulder on the sleeve and the end of the gong and having a pivotal connection with a bracket, the bracket, and means for securing the bracket to the support.

3. An attachment for securing a bracket in place consisting of the body part of the bracket bent at its outer end and having a slot, a branch formed in opposition to the bent end of the bracket and having a T-shaped end adapted to engage said slot, and a yoke formed in opposition to the bent end of the bracket and branch and adapted to be secured to said parts.

4. In a bell, in combination with the gong, a sleeve secured in the end of the gong, a plate located between a shoulder on the sleeve and the end of the gong and provided with ears, a striker-arm mounted in said sleeve, a striker loosely borne on the arm, a roller secured to the arm, a bracket having ears, a pivot passing through the ears on the bracket and plate, and means for securing the bracket in position.

657,387. FISH-HOOK. CHARLES BEW, Chicago, Ill. Filed Jan. 6, 1900. Serial No. 601. (No model.)

Claim.—1. In a trolling-hook, a spring-actuated hook, and a mousing therefor formed with wings adapted to cause the hook to ride and spin upon the water, substantially as described.



2. In a trolling-hook, a mousing having lateral wings at its pivoted end and having guards at its opposite or swing end, and a spring-actuated hook adapted to have its point inserted between the guards of the mousing, substantially as specified.

3. In a trolling-hook, a casing having a transverse cut in its side, a spring-actuated hook, and a mousing having a flat hinge extension passed through the transverse cut and bent, and having lateral wings, the one given a spiral twist, the other bent between its edges and having its swing end provided with guards, substantially as set forth.

4. In a fish-hook, a stock, a hook journaled to the stock to turn about its shank as an axis and having an offset portion, and a spring adapted to exert a lateral pressure against the offset part of the shank, substantially as described.

5. In a fish-hook, a stock, a hook journaled to the stock to turn about its shank as an axis and having an offset portion, and a spring-arm extending lengthwise of said shank and having its free end portion widened and curved transversely and adapted to bear laterally against the offset portion of the shank of the hook, substantially as set forth.

6. In a fish-hook, a stock, a spring, and a hook journaled to the stock and having an offset portion coming between the end of the spring and the side of the contiguous bearing of the stock, substantially as specified.

7. In a fish-hook, a stock, a hook obliquely disposed and journaled to the stock and having an offset portion, and an oblique spring-arm exerting a pressure against the offset part of the hook and serving to hold the latter in place, substantially as specified.

8. In a fish-hook, a stock, a central hook, other hooks journaled at the sides of the stock and having offset portions forming stops, and spring-arms exerting a pressure against the offset portions of the hooks, substantially as specified.

9. In combination with a stock having lateral extensions at one end, a head secured to the other end of the stock and having resilient arms, and hooks journaled in the head and lateral extensions and formed with offset portions engaged by the said arms, substantially as set forth.

10. In combination a stock having lateral extensions at one end and a rivet extension at the opposite end, a head secured to the stock by means of the said rivet extension and formed with spring-arms, and hooks journaled to the head and lateral extensions and having offset portions, substantially as specified.

11. In a fish-hook, a central hook, side hooks obliquely disposed and of less size than the middle hook and mounted for rotary action, a spring for throwing the side hooks rearward, and a mousing to hold the hooks folded, substantially as described.

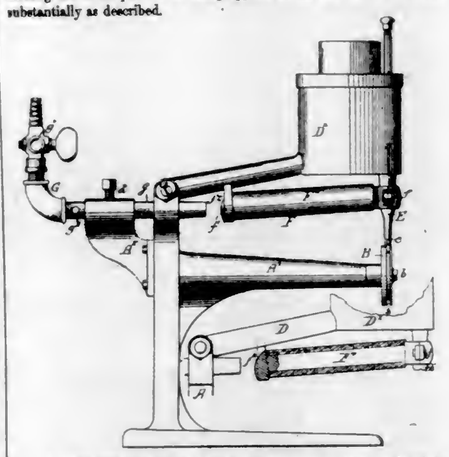
12. A stock having lateral extensions at one end and a head at the opposite end, hooks applied to the lateral extensions and head, and a casing open at one end for the inspection and removal of the stock and attached hooks and having its open end closed by the said head, the parts being held in place by interning the end of the casing, substantially as described.

13. A trolling-hook, comprising a casing, a troll-wire connected by a swivel-joint with the casing, a stock, a middle hook secured to the stock, a head applied to the stock and having spring-arms, side hooks journaled to the head and lateral extensions of the stock and having offset portions forming stops and engaged by the spring-arms, the stock and attached parts being fitted within the casing, and a mousing hinged to the casing and having lateral wings at one end and guards at its opposite or swing end, one of the wings being spirally twisted and the other bent between its edges, substantially as described.

657,388. COLLAR-SEAM-DAMPENING MACHINE. GOTTLOB BINDER, Philadelphia, Pa. Filed Nov. 21, 1899. Serial No. 737,798. (No model.)

Claim.—1. The combination in a seam-dampener, of a support for the collar over which the collar is drawn, a presser-foot, a reservoir, a passage leading from the reservoir to the presser-foot, and means for heating the water prior to its being applied to the fold-line of the collar, substantially as described.

2. The combination in a seam-dampener, of a frame carrying a wheel, a pivoted reservoir, a presser-foot carried thereby directly above the wheel, a passage leading from the reservoir to the presser-foot, and means for heating the water prior to its being applied to the fold-line of the collar substantially as described.



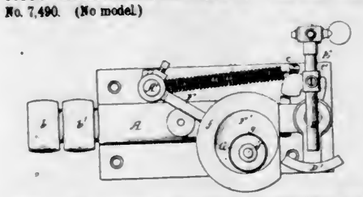
3. The combination in a seam-dampener, of a frame, a bracket, a wheel carried by the bracket, an arm pivoted to the frame, a reservoir carried by the arm, said reservoir having a tubular depending portion, a presser-foot at the end of the depending portion directly above the wheel, a bar secured to the depending portion and so arranged that the gas-flame will heat the bar which will in turn heat the depending portion through which the water flows onto the collar, substantially as described.

4. The combination of a frame, a wheel carried thereby, a reservoir having a depending tubular portion, a presser-foot at the end of the depending portion, a bar secured to the depending portion, and extending rearwardly, a gas-burner having its nozzle directly back of the end of the bar so that the flame from the burner will strike the end of the bar, substantially as described.

5. The combination of a frame, a bearing, a wheel carried by the bearing, an arm pivoted to the frame, a reservoir carried by the arm, having a tubular depending portion and a presser-foot at the lower end of the tubular portion, a rearwardly-extending bar secured to the depending portion, a space between the end of the bar and the arm, and a burner so situated in respect to the bar and arm that the flame from the burner will strike against the end of the bar and enter the space between the bar and the arm, substantially as described.

6. The combination of a frame, a bearing, a wheel at the end of the bearing, an arm pivoted to the frame, a reservoir carried by the arm, a portion depending from the reservoir, a grooved presser-foot carried thereby, a bar clamped to the depending portion and extending rearwardly, a burner for heating the bar and a non-conducting cover for the bar, substantially as described.

657,389. MACHINE FOR IRONING EDGES OF COLLARS OR CUFFS. GOTTLOB BINDER, Philadelphia, Pa. Filed Mar. 6, 1900. Serial No. 7,490. (No model.)



Claim.—1. The combination in an ironing-machine of a vertical shaft, an iron carried thereby, said iron having a segmental ironing-surface, means for imparting an oscillatory motion to the shaft, and a moistening device at one side of the iron, so that the collar will be moistened prior to its being ironed, substantially as described.

2. The combination in an ironing-machine, of a frame, a driving-shaft on said frame, and a cam on the driving-shaft, a vertical shaft carrying an iron at its upper end, an arm on the shaft bearing against the cam on the driving-shaft whereby an oscillatory motion will be imparted to the driving-shaft and its iron, substantially as described.

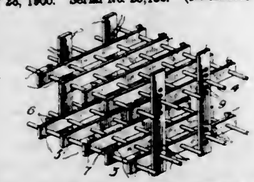
3. The combination in an ironing-machine, of an iron, means for imparting motion to the iron, said iron having two or more grooves in its face, a flanged cup, and a vertically-arranged moistening device projecting

from said cup, said moistening-cup being vertically adjustable so that its flange can be arranged opposite either groove, substantially as described.

4. The combination in an ironing-machine for ironing the edges of collars or cuffs, of a driving-shaft, a cam thereon, a driven shaft carrying a segmental iron, an arm on the said driven shaft bearing against the cam on the driving-shaft, a spring tending to keep the arm in contact with the cam, a moistening-cup at one side of the iron, and a moistening-roller in said cup, substantially as described.

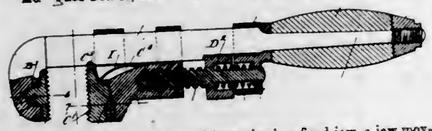
5. The combination of a driving-shaft, a cam on said shaft, a vertical driven shaft, an arm on the driven shaft bearing against the cam on the driving-shaft, means for keeping the arm in contact with the cam, an iron on the driven shaft having a flange, a gas-burner, said burner being situated directly back of the flange, so that the flange will be heated by the flame from the burner, a moistening-cup at one side of the iron, a roller in said moistening-cup, and means for adjusting the moistening-cup, substantially as described.

657,390. BOTTLE-CRATE. THOMAS BOOKER, Hamilton, Canada. Filed July 28, 1900. Serial No. 25,139. (No model.)



Claim.—In a crate for shipping bottles, jugs and the like, the combination, with an inclosing box or casing, of upper and lower interior compartment-frames each comprising a series of parallel horizontal rods, a series of parallel slats adjustably mounted on said rods and forming therewith compartments to receive bottles, means for adjustably securing the slats to the rods, and uprights arranged at the ends of the frames and adapted to adjustably engage the projecting ends of the rods, whereby the compartment-frames are adjustably connected and braced, substantially as described.

657,391. WRENCH. THOMAS H. BROSNIHAN, Livermore Falls, Me. Filed Dec. 15, 1899. Serial No. 740,448. (No model.)



Claim.—1. A wrench comprising a shank, a fixed jaw, a jaw movable on the shank, a bearing held on said shank, a screw-rod engaging the movable jaw to adjust the same on the shank, the said screw-rod being mounted to turn in said bearing and also having sliding movement, a head on said screw-rod for turning the same, the said head being normally separated from said bearing, and a spring held in opposing recesses in the head and bearing, substantially as described.

2. A wrench comprising a shank, a jaw fixed on the shank, a jaw movable on the shank, a cheek-piece free to slide on the movable jaw, and a spring-pressed screw-rod engaging the movable jaw to adjust the same on the shank, the said screw-rod being mounted to turn and having sliding movement, substantially as described.

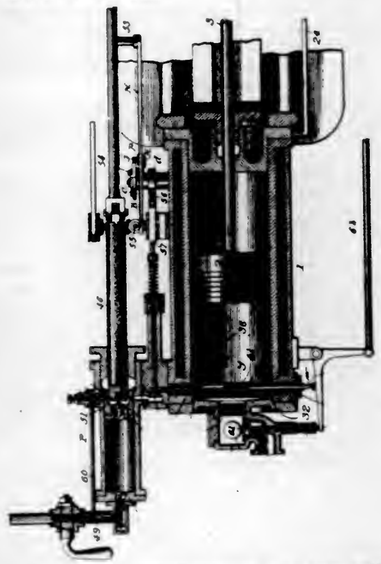
3. A wrench comprising a shank, a fixed jaw, a movable jaw having a cheek-piece slidable on the movable jaw, a spring held on the movable jaw and pressing said cheek-piece, a screw-rod engaging the movable jaw to adjust the same on the shank, a bearing in which said screw-rod is mounted to turn and to slide, a head on said screw-rod adjacent to the bearing for turning the screw-rod, and a spring for pressing the screw-rod in a longitudinal direction, the said spring normally holding the head separated from the bearing, substantially as described.

4. A wrench comprising a handled shank, a jaw fixed on the shank, a movable jaw slidable on the shank and having a cheek-piece slidable on the movable jaw toward the shank and in an oblique direction thereto, a screw-rod screwing in said movable jaw and mounted to turn and to slide in a bearing on the shank, and a spring pressing the said screw-rod in a longitudinal direction, substantially as shown and described.

5. A wrench comprising a shank, a jaw fixed on the shank, a jaw movable on the shank, a cheek-piece free to slide on the said movable jaw, and a spring-pressed screw-rod for adjusting the movable jaw on said shank, and for releasing the movable jaw, substantially as shown and described.

6. A wrench comprising a handled shank, a jaw fixed on the shank and provided with a cheek-piece, a jaw movable on the shank a cheek-piece free to slide on the said movable jaw, a collar held on the shank adjacent to the handle and formed with a bearing at one side thereof, a screw-rod having a smooth end mounted in said bearing and a threaded end engaging the movable jaw to adjust the same on the shank, a head on said screw-rod for turning the screw-rod in its bearing, the said head being forward of the said bearing and normally slightly separated therefrom, and a spring surrounding the smooth end of the screw-rod and held in opposing recesses in said head and bearing, the said spring pressing the screw-rod in a longitudinal direction, substantially as described.

657,392. APPARATUS FOR CONVERTING HEAT INTO WORK. FRANZ BURGER, Fort Wayne, Ind., assignor of three-fourths to Henry M. Williams, same place. Filed Aug. 4, 1898. Renewed Jan. 8, 1900. Serial No. 780. (No model.)



Claim.—1. In an apparatus for utilizing the heat energy of fuel, the combination of a cylinder and piston, means for supplying the cylinder with compressed air alone during the first portion of the forward movement of the piston, means for thereafter injecting a fuel into the cylinder concurrently with the air and mixing it with a portion of the incoming air, means for heating the incoming air and fuel, and means for igniting the mixture, substantially as set forth.

2. The combination with a cylinder and piston of a gas-engine, of means for supplying compressed air alone to the cylinder during the first portion of the forward movement of the piston, means for thereafter injecting a fuel into the cylinder concurrently with the air and mixing it with a portion of the incoming air, means for heating the incoming air and fuel, means for igniting the mixture, means for cutting off the supply of fuel at a predetermined point of the stroke of the piston and means for subsequently cutting off the supply of air, substantially as set forth.

3. The combination with the cylinder and piston of a gas-engine, of a regenerator arranged between the cylinder and the exhaust-port, means for passing compressed air through the regenerator into the cylinder, means for injecting fuel under pressure into the cylinder and mixing it with a portion of the incoming air before its entrance into the cylinder, and an igniter against which the mixture is discharged, substantially as set forth.

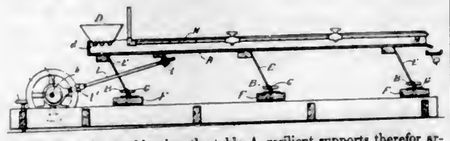
4. The combination with the cylinder and piston of a gas-engine, of a casing on the cylinder containing an inlet-port provided with a valve and communicating with a reservoir of compressed air and with the cylinder, and also provided with an exhaust port and valve, a regenerator between the exhaust-port and cylinder through which the compressed air passes to the cylinder, means for injecting fuel under pressure into the cylinder and mixing it with a portion of the incoming air before its entrance into the cylinder, and an igniter against which the mixture is discharged, substantially as set forth.

5. The combination with the cylinder and piston of a gas-engine, of a valved inlet-port communicating with a reservoir of compressed air and the cylinder, a disk supported in the cylinder in front of the inlet-port and having a solid central portion and outer perforated portion concentric therewith, and a fuel-injector supported within the cylinder in close proximity to the disk and receiving the air flowing through some of the perforations in the disk, substantially as and for the purpose set forth.

6. The combination with the cylinder and piston of a gas-engine, of a casing on the cylinder containing an inlet-port provided with a valve and communicating with a reservoir of compressed air and with the cylinder and provided also with a valved exhaust-port, a regenerator between the exhaust-port and cylinder through which the compressed air passes to the cylinder, a disk supported in the cylinder adjacent to the inlet-port, said disk having a solid central portion opposite the inlet-port and a concentric perforated outer portion, an igniter within the cylinder in close proximity to the solid portion of the disk, and a fuel-injector discharging onto the igniter, substantially as described.

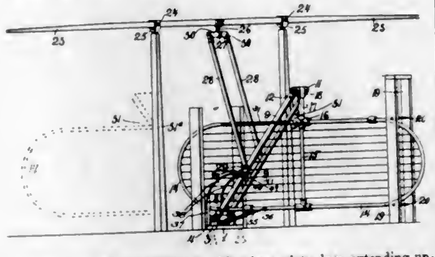
7. In a gas-engine, the combination with the cylinder and piston, of means to introduce compressed air to the cylinder, a disk supported in the cylinder and having a solid central portion and a concentric perforated portion through which latter the air passes to the cylinder, a fuel-injector in close proximity to the said disk having openings registering with openings in the disk, means to supply fuel to the injector, a valve 43 in the fuel-supply passage, and a governor on the casing to control the movement of the valve, substantially as and for the purpose specified.

657,393. APPARATUS FOR CONCENTRATING AND SEPARATING ORES, &c. JULIUS BUSS, London, England. Filed Feb. 12, 1900. Serial No. 4,999. (No model.)



Claim.—In combination, the table A, resilient supports therefor arranged in pairs, independent devices carrying each pair of said supports vertically adjustable to tilt the table transversely, a support common to all of said devices for vertically adjusting the same to tilt the table longitudinally, a feed-hopper at the upper front corner of the table and a perforated pipe above the table arranged parallel with and in proximity to the upper side edge of the table, substantially as described.

657,394. SLIDING GATE. LEONARD A. COOPER, Atchison, Kans. Filed Mar. 7, 1900. Serial No. 7,687. (No model.)



Claim.—1. The combination with a base-plate, lugs extending upwardly from the same, a casting having depending lugs pivotally secured between the lugs on the base-plate by means of a bolt, levers extending upwardly from said casting, arms secured to said levers, a gate, an upwardly-extending arm secured to the center of the gate and pivotally secured between the upper ends of said levers, hand-operated levers suitably pivoted, and a yoke and perforated hanger-casting integral with each other, said hand operating-levers being pivoted together at their inner ends in said yoke, and the upper ends of the first-named arms being pivotally secured on each side of said hanger.

2. In a gate of the character described, the combination with a base-plate, lugs extending upwardly from the same, a casting having depending perforated lugs pivotally secured between said lugs, levers extending upwardly from the casting, and flat spring-standards connected to said levers, of a gate, a central arm 17 extending upwardly from the gate to which the upper ends of said levers are pivotally secured, arms pivotally secured to said levers, a combined yoke and hanger-casting to which said arms are pivoted, and hand operating-levers pivoted together in said yoke.

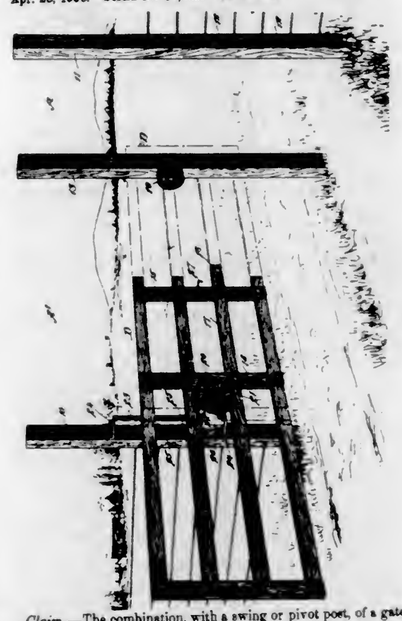
3. The combination with a gate of the character described, of bowed guides for the lifting-arms, secured to the gate and movable at one end.

4. In a gate of the character described, the combination of bowed guides for the lifting-arms secured to the gate and movable at one end, and coil-springs interposed between the movable ends of said guides and the gate.

5. In a gate of the character described, the combination with the levers pivoted to the gate and operating-arms pivoted to the levers, of spring-standards, a loop pivotally secured to the upper end of the spring-standards, and a bolt on the levers to which said loop is movably connected.

6. In a gate of the character described, the combination with the base-plate, levers pivoted thereto, a gate pivoted between the upper ends of said levers, operating-arms connected with said levers, and a catch comprising an inverted-U-shaped frame and arms extending upwardly and backwardly from the frame, said arms secured to the lower rail of the gate, while the U-shaped frame straddles said rail, and is adapted to lock against the base-plate and hold the gate closed against movement except that derived from the operating-arms.

657,395. GATE. GEORGE O. CULVER, Quarryville, N. J. Filed Apr. 28, 1900. Serial No. 14,713. (No model.)



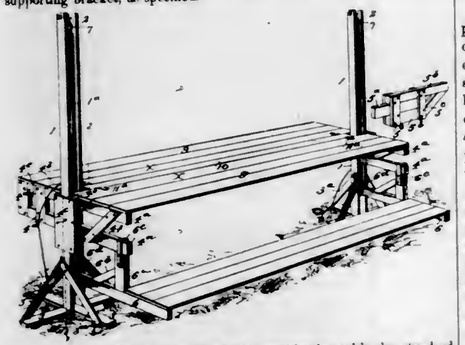
Claim.—The combination, with a swing or pivot post, of a gate-support comprising a rotatable shaft arranged vertically or parallel to the post, and having a series of holes, a sleeve mounted to slide vertically on said shaft, and having an opening adapted to register with the holes in the sleeve, a pin for securing the sleeve in any adjustment, a pulley mounted rotatably on said sleeve, and a gate mounted slidably on said pulley, as shown and described.

657,396. SCAFFOLD. GEORGE CURLEY, Salt Lake City, Utah. Filed Apr. 12, 1900. Serial No. 12,607. (No model.)

Claim.—1. A scaffold, comprising in combination a pair of supporting-standards and mason's-platform-carrying brackets vertically movable on each standard, means for elevating the said brackets, each of the said brackets having a forwardly-extending portion and a rearwardly-extending portion, a hod-carrier's platform adapted to be detachably hung from the mason's platform, said hod-carrier's platform including a supporting-bracket having means for hanging pendently from the mason's-platform bracket, and a shoe adapted to slidably engage the standard, as set forth.

2. In a scaffold, the combination with the standard comprising two parallel members each having a vertical tongue-piece on the inner face, a hanging bolt or loop mounted in the upper end of the two members; of a bracket consisting of upper and lower horizontal timbers joined to move together, said timbers being adapted to extend transversely between the standard members and having grooves to engage the tongues on the said members, the lift-rod 12, and the block-and-tackle devices connecting with the lift-rod 12 and the rod at the top of the standard, all being arranged substantially as shown and described.

3. The combination with the standards and the mason's-platform-supporting brackets, vertically movable on the standards, means for elevating the said brackets, said brackets each extending forwardly and rearwardly of the standards; of a hod-carrier-platform bracket, consisting of a base member having a shoe adapted to slidably bear against the standard and a member projected vertically from the base member midway thereof, the upper end of said vertical member having a clip or socket portion whereby it can be detachably hung from the mason's-platform-supporting bracket, as specified.



4. In a scaffold as described, the combination with the standard formed of two parallel members having a suitable base connection, and a hanger-rod at the top; of a bracket consisting of the two bars $4\ 4^a$, adapted to extend transversely between the standard members, the vertical bars $4^b\ 4^b$ connecting the bars 4^a, and forming guides to engage the edges of the standard; the lift-rod 12 and the block-and-tackle devices connected to the lift-rod and to the top hanger all being arranged substantially as shown and described.

5. The hereinbefore-described scaffolding, consisting of a pair of standards each formed of parallel members connected to the suitable base and having a transversely-disposed hanger-rod at the top, the inner faces of the parallel members having vertical guide-tongues, the brackets 4, consisting each of an upper and a lower bar 4^a adapted to pass transversely through the standards and having grooves at the sides to engage the tongue of the standards, said brackets also having external guide-bars 4^d, engaging the edges of the standards, the rearwardly-extending portions of the said brackets being free whereby to form bracket members, the brackets 6, each having a vertically-projecting member 6^a, provided with a clip or cuff member 6^a, adapted to slip over the free end of the lower bar 4^a, of the brackets 4, the forward end of the bracket 6, having a shoe 6^d, adapted to engage the sides of the standard, and the block-and-tackle devices for elevating the brackets, all being arranged substantially as shown and described.

6. In a scaffold of the character described, the combination with the standards and the brackets 4, vertically movable thereon, said brackets having vertical sockets at the forward end, of the end brackets 5, said brackets having heel portions 5^a, adapted to engage the sockets in the forward end of the brackets 4, all being arranged substantially as shown and described.

657,397. CATTLE-STANCHION. SAMUEL A. CURTIS, Eaton, N. Y. Filed May 2, 1900. Serial No. 15,249. (No model.)



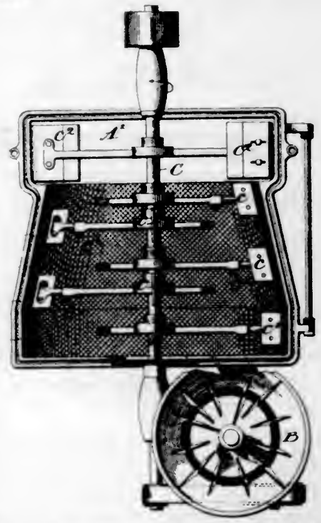
Claim.—1. In a cattle-stanchion, the combination with top and bottom supports, of a movable panel comprising a stationary and a pivoted picket, said panel being pivoted between the upper and lower supports, and a larger socket for the lower pivot, wider than said pivot to permit of the lateral movement in any direction of the lower end of the panel, substantially as described.

2. In a cattle-stanchion, the combination with upper and lower supports, of a socket on the under side of the upper support, and a larger socket on the upper side of the lower support, a movable panel, comprising a stationary and a movable picket, and upper and lower cross-bars, a bolt secured in the upper cross-bar, and provided with a head seated in the upper socket, and a bolt secured in the lower cross-bar, and provided with a ball seated in the lower socket, the lower socket being wider than its ball, to permit lateral movement of its ball in all directions, substantially as described.

3. The combination, in a cattle-stanchion, of upper and lower supports and stationary pickets secured between said supports, of a panel pivoted in said supports between the stationary pickets, said pivoted panel comprising a lower and an upper cross-bar, a stationary picket secured in said cross-bars, and a picket pivoted in the lower cross-bar, and a latch-bar slidingly mounted upon the upper cross-bar and engaging the upper end of the pivoted picket, said latch-bar being provided with an end slot or notch adapted to straddle a stationary picket of the stanchion when the pivoted panel-picket is in its open position, and thereby prevent movement of the central panel on its pivot, substantially as described.

4. The combination in a cattle-stanchion, of upper and lower supports, a central panel pivotally mounted between said supports, and comprising upper and lower cross-bars, the upper cross-bar being provided with a longitudinal slot, a stationary picket secured in said cross-bars, and a picket pivoted in the lower cross-bar, said picket being slidably mounted at its upper end in the longitudinal slot in the upper cross-bar, a longitudinally-slotted latch-bar slidably mounted upon the upper cross-bar and engaging the pivoted picket, a triangular tooth projecting above the upper cross-bar to engage in the longitudinal slot in the latch-bar, a horizontal cross-pin in the latch-bar adapted to ride over said tooth, and means for moving the latch-bar vertically and longitudinally, substantially as described.

657,398. APPARATUS FOR PREPARING AND FEEDING FUEL. ALBERT A. DAY, New York, N. Y. Filed May 2, 1900. Serial No. 15,263. (No model.)

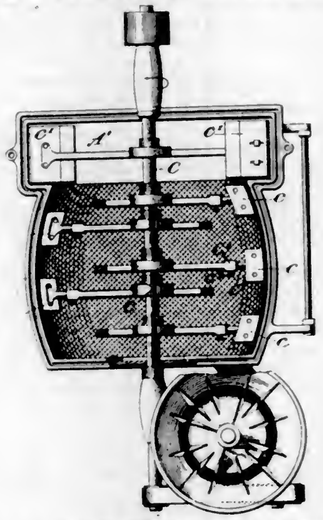


Claim.—1. In an apparatus for preparing and feeding fuel, a pulverizing-chamber of the form of a truncated cone, having a cylindrical portion at its larger end the said cylindrical portion being the receiving end of the chamber and the smaller end of the conical part the discharging end, substantially as described.

2. In an apparatus for preparing and feeding fuel, the combination with the pulverizing-chamber of the form of a truncated cone having a cylindrical portion adjacent to its larger end, of a series of revolving pulverizing-blades within the said chamber, the blades within the cylindrical portion being set at an angle to the axis of the chamber to feed the fuel forward and the other blades set at other and different angles, substantially as described.

657,399. APPARATUS FOR PREPARING AND FEEDING FUEL. ALBERT A. DAY, New York, N. Y. Filed May 2, 1900. Serial No. 15,264. (No model.)

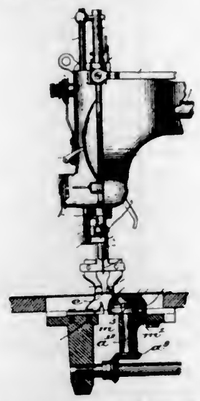
Claim.—1. In an apparatus for preparing and feeding fuel, the pulverizing-chamber having the general form of an ellipse and having an inlet at one end and a discharge at the opposite end as and for the purpose set forth.



2. In an apparatus for preparing and feeding fuel, the combination with the pulverizing-chamber having the general form of an ellipse and provided with an inlet at one end and a discharge at its opposite end, of revolving pulverizing-blades within said chamber adjustable radially and angularly in respect to the axis of said chamber, substantially as described.

3. In an apparatus for preparing and feeding fuel, the combination with the pulverizing-chamber of circular form, the diameter of which changes between its inlet and discharge end, of revolving pulverizing-blades within said chamber adjustable radially and angularly in respect to the axis of the chamber whereby the feed of the materials acted upon through the chamber may be regulated, substantially as described.

657,400. HEMSTITCHING SEWING-MACHINE. GEORGE H. DIMOND and WILBUR F. DIAL, Bridgeport, Conn., assignors to The Wheeler & Wilson Manufacturing Company, same place. Filed Mar. 29, 1898. Serial No. 675,533. (No model.)



Claim.—1. In a sewing-machine for making a hemstitch, the following instrumentalities, viz: a circularly-moving looping mechanism for manipulating a second or under thread, the point of said looping mechanism in its movement in the direction of the line of stitching and of the feed entering the loop of needle-thread; a needle-bar provided with an eye-pointed needle to contain a needle-thread; means to move said needle-bar laterally and to reciprocate said needle-bar vertically in two or more defined vertical planes, and a plurality of deflectors, said needle at one downward thrust being met by one of said deflectors to force the same when below the material into proper position to have its loop entered by the point of the looping mechanism, and at another descent of said needle through the material being met by the other deflector, forcing the needle then below the material in the opposite direction, putting the same in position properly with relation to the point of the looping mechanism to have the loop of needle-thread entered by the point of said looping mechanism, substantially as described.

2. A needle-bar having an attached needle; means to vibrate said needle-bar, placing it at times at one and then at the opposite edge of the hemstitch-seam to be made; means to reciprocate said needle-bar and needle; a throat-plate; two deflectors located below said throat-plate and adapted each to act at predetermined times against and to move the point of said needle while below said throat-plate toward the center line of said hemstitch figure or seam, combined with looping mechanism to control an under or second thread, said looping mechanism having a point which moves in the direction of the length of the seam and the stitch when the point thereof takes the loop of thread from the needle, substantially as described.

3. In a machine for making a zigzag or hem stitch, a needle-bar gate; a needle-bar therein provided with an eye-pointed needle; a throat-plate; a looping mechanism composed of a rotating hook containing an under thread and located to turn in a horizontal plane the point of the hook in each rotation coinciding with the center line of said hemstitch-figure; means to rotate said hook continuously at a uniform speed; means to move said needle-bar gate to place said needle prior to its descent first at one and then at the other side of the center line of said hemstitch-figure; and means located below said throat-plate and coöperating with said needle to force it laterally at times in one and then in the opposite direction, into substantially the center line of said figure, that the loop of thread carried by said needle may be entered by the point of said hook, substantially as described.

4. The needle-bar gate, its needle-bar and needle; means to vibrate said gate to place the needle at times at one and then at the opposite side of the center line of a hemstitch-figure; a throat-plate; a stationary and a movable deflector located below said throat-plate and adapted each to act at predetermined times against and to force the point of said needle while below said throat-plate into substantially the center line of said figure; and a complemental under looping mechanism carrying an under thread, said looping mechanism having a point to enter the loop of needle-thread while the needle is forced into position at the center line of said figure, substantially as described.

5. In a machine for hemstitching, the following instrumentalities, viz: a piercer-carrying bar; a piercer carried thereby; means to reciprocate said piercer-bar to enable the piercer to penetrate the material always at one side of the center line of the hemstitch-figure, the needle-bar, its needle; a gate carrying said needle, means to vibrate said gate to place the needle at times at one and then at times at the other side of the center line of said hemstitch-figure; a throat-plate; two deflectors located below said throat-plate and adapted each to act at predetermined times against and to move the point of said needle while below said throat-plate into substantially the center line of said figure; and a complemental looping mechanism carrying an under thread, said looping mechanism having a hook to enter the loop of needle-thread while the needle is in position at the center line of said figure, substantially as described.

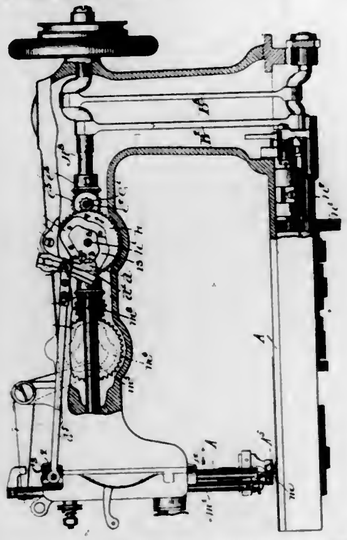
6. In a sewing-machine for sewing a hemstitch, the following instrumentalities, viz: a piercer-carrying bar, a piercer carried thereby, means to reciprocate said piercer-carrying bar to enable the piercer to penetrate the material always at one side of the center line of the hemstitch-figure; looping mechanism for manipulating a second or under thread, said looping mechanism having a point moving in the direction of the feed of the material, the point of said looping mechanism coinciding once during each complete movement with the center line of the hemstitch-figure; a needle-bar provided with an eye-pointed needle to contain a needle-thread, means to move said needle-bar laterally and to reciprocate it vertically in two or more defined vertical planes; and suitable deflectors coöperating with the point of said needle below the material, forcing it aside and putting the needle in proper position with relation to the point of the looping mechanism to enable the loop of needle-thread to be entered by the point of the looping mechanism, substantially as described.

7. In a hemstitch-sewing machine, a rotary looping mechanism, means to move it in a horizontal plane, a deflector stationary with relation to said looping mechanism, a feed-bar located between said looping mechanism and the support for said deflector, said feed-bar having an opening in which stands the acting end of the deflector, and actuating means for said feed-bar, substantially as described.

8. In a sewing-machine for sewing a hemstitch, the following instrumentalities, viz: a needle-bar carrying an eye-pointed needle, a rotary looping mechanism having a point; means for causing the coöperation of the needle and the looping mechanism comprising a deflector rotating with said looping mechanism and acting in advance of the point of the loop-

ing mechanism, means to rotate said looping mechanism in a horizontal plane; devices to move said needle-bar vertically and to vibrate it laterally whereby said needle may pass for a plurality of times in succession through the material of single thickness, and then through the material of double thickness, the said needle thus passing through the material in two vertical planes in the direction of the length of the same, one of which descents of the needle would leave it below the material in an inoperative position with relation to the point of the looping mechanism, said deflector coöperating with the needle only at such descents thereof where the needle would occupy its inoperative position with relation to the point of the looping mechanism; said deflector forcing the point of the needle laterally below the material into its operative position with relation to the advancing point of the looping mechanism, that said point may enter the loop of needle-thread; a piercer-carrying bar having a piercer, and means to actuate said piercer at successive descents of the needle, said piercer in its descents penetrating only the material of single thickness at one side of the edge of the material of double thickness, said piercer in its passage always descending through the said material at one side of the center line of the hemstitch-figure, substantially as described.

657,401. **HEMSTITCHING SEWING-MACHINE.** GEORGE H. DIMOND and WILBUR F. DIAL, Bridgeport, Conn., assignors to The Wheeler & Wilson Manufacturing Company, same place. Filed Jan. 16, 1899. Serial No. 702,206. (No model.)



Claim.—1. An organized sewing-machine containing a needle-bar provided with an eye-pointed, thread-carrying needle, means for reciprocating said needle-bar and needle, means for imparting to said needle-bar and needle a lateral movement that it may penetrate the material in two different vertical planes, said means imparting to the needle-bar and needle while the latter is in the material off the hem a lateral motion with relation to the edge of the hem; a piercer-bar and piercer, and an independent cam and intermediate devices to operate said piercer-bar and piercer, causing it to descend with each descent of the needle-bar and needle, said piercer, however, entering only the material off the hem and remaining therein while the needle then in the material off the hem is moved laterally with relation to the edge of the hem, to enable said needle to enlarge the hole in the material, the piercer holding the material from moving with the needle.

2. In a sewing-machine for hemstitching, the following instrumentalities, viz: a needle-bar provided with a needle, a needle-bar gate, means to reciprocate said needle-bar in said gate, and to impart to said gate and needle-bar a lateral movement while the needle is out of the material so that it may be put into position to descend not only through the hem but also through the material off the hem, and to move said gate, needle-bar and needle, causing said needle while in the material off the hem, or rising therefrom, to be moved laterally, a piercer-bar and piercer, an independent cam, and intermediate devices to actuate said piercer-bar at each descent of the needle and needle-bar that the piercer may enter only the material off the hem, said piercer standing in and holding the material while the needle in the material off the hem is moved laterally to enlarge the hole therein.

3. In a sewing-machine, a needle-bar having an eye-pointed needle, means to reciprocate said needle-bar and needle, an independent cam, and mechanism actuated thereby to move said needle-bar and needle laterally that it may penetrate the material in two different vertical planes, the needle in one of its descents entering the material in one of said planes, and in other of its descents entering the material in the other of said planes, said cam being shaped to impart to the needle-bar and needle a lateral movement while the needle is in the material in the first of said planes, combined with a piercer-bar and piercer, and means to reciprocate said bar and cause the piercer to enter the material only in the first of said planes at each descent of the needle-bar and needle, the lateral movement of the needle in the material taking place while the piercer remains in the material, such lateral movement of the needle enlarging the hole made by joint operation of both the piercer and the needle, the threads of the material being moved aside and packed together by said lateral movement of the needle.

4. In an organized sewing-machine, a work-support to sustain the material, a piercer-bar provided with a piercer, means to reciprocate said piercer-bar and cause the piercer to penetrate the material at each descent; combined with a needle-bar provided with a needle, and means to reciprocate said needle to penetrate the material, and while said needle and piercer are in said material to impart to said needle a lateral movement, whereby the needle is actuated to enlarge the hole occupied by both the piercer and needle, the piercer preventing lateral movement of the material while the needle is being moved laterally.

657,402. **INHALER.** PETER T. DONOVAN, New York, N. Y. Filed Apr. 12, 1900. Serial No. 12,542. (No model.)



Claim.—1. An inhaler consisting of a body having spring-clamps at its upper portion adapted for engagement with opposite sides of the cartilage of the nostrils, and receptacles supported at each side of the body below the clamps and adapted to contain a saturated or absorbent material, as set forth.

2. An inhaler consisting of a U-shank formed with a finger-piece, clamping members carried by the shank at the upper portion thereof, and receptacles for saturated or absorbent material, the said receptacles being held at opposite sides of the shank and supported from the clamping members, for the purpose set forth.

3. An inhaler formed of a single piece of wire and having a body portion provided with coil-clamps for attachment to the cartilage of the nose, and receptacles for a healing material, the said receptacles being formed of a series of coils and adapted when the device is applied to the nose to be brought beneath the nostrils.

4. An inhaler formed of a single piece of spring-wire bent upon itself to form a central U-shaped shank, the wire at each side of the shank at the top forming a clamp, the wire extending downward and outward from each clamp and terminating in a series of coils forming receptacles at each side of the shank, substantially as described.

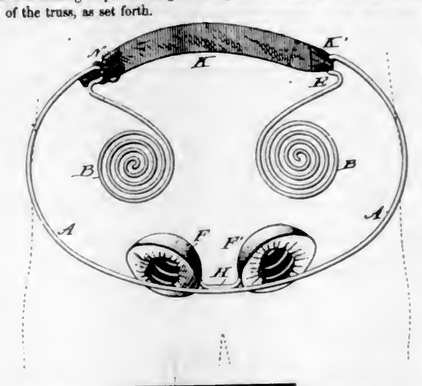
657,403. **CIGAR OR CIGARETTE.** NAPOLEON DU BRUL, Cincinnati, Ohio. Filed June 24, 1899. Serial No. 721,756. (No model.)



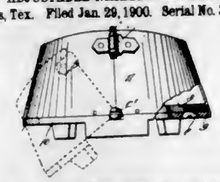
Claim.—A combined binder and wrapper for cigars or cigarettes having a curved starting edge and a curved pasting edge adapted to be wound straight about a filler so as to bring its curved edges substantially longitudinal of the cigar or cigarette.

657,404. **HERNIAL TRUSS.** GEORGE FANCHER, Greenwich, Ohio. Filed June 21, 1900. Serial No. 21,096. (No model.)

Claim.—A hernia-truss comprising a flexible body-engaging wire bent upon itself at two locations forming loops, a looped band engaging one of said loops, and a combined buckle and hook engaging the second loop, the ends of said wire being bent at substantially right angles to said loops and at right angles to each other and terminating in coils which are in planes at acute angles to the circular body-engaging portion of the truss, combined with the wire H held in a fixed position at the middle of the truss, the arms of said wire being bent toward said loops and their ends terminating in pad-bearing coils disposed adjacent to the inner margin of the truss, as set forth.



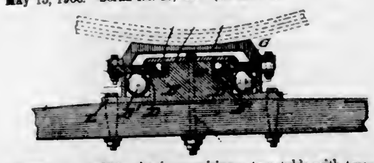
657,405. **ADJUSTABLE NAILLESS HORSESHOE.** HARRIET R. FENLEY, Dallas, Tex. Filed Jan. 29, 1900. Serial No. 3,182. (No model.)



Claim.—1. In an adjustable horseshoe, the combination with a tread-plate and a hood thereon, both bisected at their front and the tread-sections hinged together, of a wear-plate comprising two side plates and a toe-plate, all secured upon the tread-plate.

2. In an adjustable horseshoe, the combination with a tread-plate comprising two half-sections having tongues and grooves formed at their front ends, and said tongues hinged together, and a two-part hood, the sections of which are held together at their front meeting edges by a locking-clasp, and at the lower edge by the head of the pintle-bolt for the hinge on the tread-plate, of a wear-plate formed in three portions, comprising two side plates of like form each having a heel-calk thereon, and each side plate detachably secured upon the tread-plate, and a toe-plate having an abutment-flange engaging with the inner edge of the tread-plate opposite the hinge-joint thereon, a toe-calk on the toe-plate, and means to detachably hold the toe-plate upon the tread-plate.

657,406. **FIFTH-WHEEL.** HIRAM C. FOUTS, Emory, Tex. Filed May 15, 1900. Serial No. 16,749. (No model.)



Claim.—1. A fifth-wheel comprising a turn-table with two circular raceways and series of balls, and a raised boss in the middle, the inner series of balls being in a higher plane than the outer one, a ring-shaped plate bearing with its under surface on the outer series of balls, and bearing at its inner edges against the inner series of balls, and a cap-plate bolted to the central boss and overlapping the inner edges of the ring-shaped plate substantially as described.

2. A fifth-wheel comprising a turn-table with the lugs and clamping devices for connecting them to the axle, said turn-table having two raceways and concentric series of balls, the inner set being higher than the outer set, and having also a raised boss in the center, a swiveling ring-plate resting on the outer series of balls and against the inner series of balls, and a cap-plate bolted to the central boss and overlapping the ring-plate substantially as described.

3. A fifth-wheel comprising a turn-table with a raised central boss, two concentric raceways with balls, and having also diametrically-arranged lugs with clamping devices for the axle, a ring-shaped plate resting upon the outer series of balls and against the inner series of balls, and a cap-plate overlapping the ring-plate and connected to the central boss by two or more bolts passing through the same outside of the axle as shown and described.

4. A fifth-wheel comprising a turn-table with raised central boss, two concentric raceways with balls, a ring-plate resting on the outer series of balls and against the inner series of balls and having outwardly-projecting lugs on its sides, a cap-plate bolted to the central boss and overlapping the ring-plates, and a spring-seat consisting of a bar curved on its upper side to receive the spring, and having on its lower side at its ends lugs resting upon and secured to the lugs of the ring-plates as described.

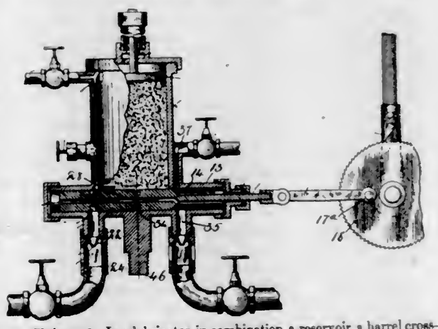
5. In a fifth-wheel, the combination with the swiveling plate arranged about a vertical center over the front axle, a connecting-pole or reach-bar hinged or jointed to the said swiveling plate, and brace-rods extended to the same hinged center between the connecting-pole and swiveling plate substantially as and for the purpose described.

657,407. **FISHING-FLOAT.** LORENZO P. GIBSON, Little Rock, Ark. Filed May 29, 1900. Serial No. 18,408. (No model.)



Claim.—A fishing-float, having a body portion or float proper formed with a passage extending vertically therethrough, a stem fitted in the passage and projecting above and below the body, the stem being formed with a reduced portion at the lower part of the body, and a metallic sleeve or ferrule fitted around the reduced portion of the stem and having its major portion contained within the body of the boat, for the purpose specified.

657,408. **LUBRICATOR.** FREDERICK GIELOW, Sr., Chicago, Ill. Filed Oct. 7, 1899. Serial No. 732,837. (No model.)



Claim.—1. In a lubricator, in combination, a reservoir, a barrel crossing the bottom of the reservoir and open thereto, a delivery-duct leading laterally from the barrel, a pressure-duct entering the barrel on the same transverse plane thereof with the delivery-duct, a carrier having a pocket adapted to open alternately to the chamber of the reservoir and to the pair of ducts, and means for causing the reciprocation of the carrier.

2. In a lubricator, in combination, a cylinder having a discharge-aperture, a follower in the cylinder, a barrel across the bottom of the cylinder and to which the discharge-aperture thereof opens, a carrier adapted to reciprocate in the barrel and having a pocket, a steam-service pipe leading to the top of the cylinder 10, and to the barrel, and a receiving-duct leading from the barrel in line with the steam-service pipe.

3. In a graphite-lubricator, in combination, a reservoir, a barrel crossing the reservoir and open thereto, a reciprocating carrier within the barrel and having a pocket and an agitating-arm which projects into the reservoir, and a conveying-duct for receiving the contents of the carrier-pocket.

4. In a graphite-lubricator, in combination, a reservoir, a barrel crossing the reservoir and open to its chamber, a carrier adapted to reciprocate within the barrel and having a pocket, an agitating-arm mounted upon the carrier and projecting into the reservoir, a conveying-tube and a pressure-duct open to the barrel, the pocket of the carrier being adapted to register with the tube and duct simultaneously.

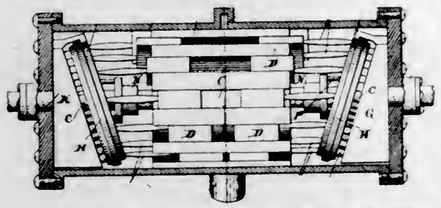
5. In a graphite-lubricator, in combination, a reservoir, a barrel crossing the bottom thereof, a reciprocating carrier in the barrel and having a

pocket in the form of a circumferential groove, the bottom of the reservoir being depressed below the axis of the carrier, and a conveying-tube for receiving the lubricant from the carrier-pocket.

6. In a graphite-lubricator, in combination, a reservoir, a barrel crossing the bottom thereof, a reciprocating carrier in the barrel and having a circumferential groove, the bottom of the reservoir being depressed below the axis of the carrier, means for agitating the lubricant within the reservoir, and a delivery-tube for receiving the lubricant from the carrier-pocket.

7. In a graphite-lubricator, in combination, a reservoir, a barrel crossing the bottom thereof, a carrier adapted to reciprocate in the barrel and having a circumferential groove, the bottom of the reservoir being recessed to uncover the groove below the axis of the carrier, an agitating-arm fixed upon the carrier and projecting into the reservoir, and a conveying-tube for receiving the lubricant from the carrier-groove.

657,409. **ROTARY ENGINE.** ALEXANDER H. GOULD, Toledo, Ohio. Filed Feb. 21, 1900. Serial No. 6,073. (No model.)



Claim.—1. An engine of the type described comprising a rotatable armature having a plurality of longitudinally-arranged piston-receiving grooves formed in its periphery, a casing inclosing the said armature and forming the outer wall of the said piston-receiving grooves, pistons situated in said grooves, an inlet-port and an exhaust-port in communication with said grooves, and pitmen carried by the pistons and working on inclined surfaces carried by the cylinder, substantially as described.

2. An engine of the type described comprising a rotatable armature having a plurality of longitudinally-arranged piston-receiving grooves formed in its periphery with open outer sides, a casing inclosing the said armature and forming the outer wall of the said piston-receiving grooves, a piston situated in both ends of each groove, an inlet-port and exhaust-port in communication with said grooves between the pistons, and pitmen carried by the pistons and working on inclined surfaces carried by the ends of the cylinder, substantially as described.

3. An engine of the type described comprising a rotatable mandrel or armature having a plurality of longitudinally-arranged piston-receiving grooves, two independent pistons situated in each passage, steam and exhaust ports alternately in communication with the said passages between the inner ends of the pistons, inclined rotatable and oscillating disks situated at each end of the said mandrel or armature, and a plurality of oppositely-extending pitmen having their inner ends connected with the said pistons and their outer ends connected to the said rotatable and oscillating disks, substantially as described.

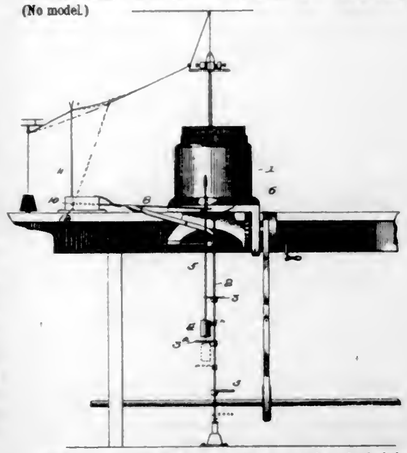
4. An engine of the type described comprising a rotatable mandrel or armature having a plurality of longitudinally-extending piston-receiving grooves, two independent pistons situated in each groove, independent rotatable and oscillating disks supported at an incline and situated at opposite ends of the said armature, the armature and the said disks connected to prevent independent rotation but permitting independent oscillation of said disks, and oppositely-extending pitmen having their inner ends connected with the pistons and their outer ends connected with the said disks, substantially as described.

5. An engine of the type described comprising a rotatable armature having a plurality of longitudinally-arranged piston-receiving grooves formed in its periphery with open outer sides, a casing inclosing the said armature and forming the outer wall of the said piston-receiving passage, pistons situated in the said grooves, an inlet-port in communication with the grooves at their inner ends, an exhaust-port also in communication with the said grooves, an inclined oscillating disk at the end of the armature, a connection between the armature and the disk adapted to hold the same against independent revolution but permitting independent oscillation of the disk, and a plurality of pitmen having one of their ends connected with the pistons and their opposite ends connected with the disk, substantially as described.

6. An engine of the type described comprising a rotatable armature, the said armature having a plurality of longitudinally-arranged piston-receiving grooves in its periphery with open outer sides, a casing inclosing the said armature and constituting the outer wall of the said piston-receiving grooves, inclined oscillating and rotating disks supported at the ends of the armature and within the casing, two pistons situated in each of said grooves, a plurality of oppositely-extending pitmen having their inner ends connected with the pistons and their outer ends connected with the rotatable and oscillating disks, and inlet and outlet ports in communication with the grooves between the said pistons, substantially as described.

7. An engine of the type described comprising a rotatable armature provided with a plurality of piston-receiving passages in its periphery, an inclined surface at the end of the armature, an independent rotatable and oscillating disk journaled against the said inclined surface, the disk having radially-extending slots, longitudinally-extending pins connected with the mandrel and loosely projecting into the said radially-extending slots of the disk, a plurality of pistons in the piston-passages, and a plurality of pitmen having one of their ends connected with the pistons and their opposite ends connected with the said disk, substantially as described.

657,410. **KNOT-ACTUATED STOP FOR KNITTING-MACHINES.** WALTER GREEN, Williston, S. C. Filed Feb. 27, 1900. Serial No. 6,739. (No model.)

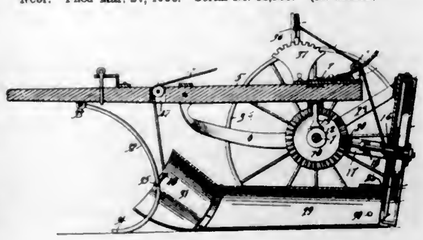


Claim.—1. In combination with the stop-motion of a knitting-machine, a swinging lever projecting into the path of the thread supplied to said knitting-machine, and constructed to be engaged by a knot, tangle or the like, occurring in said thread, a gravitating member suspended detachably above the stop-motion and dropping by gravity upon the latter when released, and a thrust-bar moved longitudinally by the swinging lever and engaging the gravitating member in a direction transverse to its drop, whereby it is dislodged from its point of suspension by the movement of said lever and gravitates independently of the operating means; substantially as herein set forth.

2. The herein-described actuating device for stop-motions, comprising the gravitating weight, means for suspending said weight provided with a lug engaging a fixed point, a thrust-bar for dislodging said lug, and a lever connected with said thrust-bar and projecting into the path of the thread; substantially as set forth.

3. A stop for knitting-machines, comprising a weight, a suspending-bar for said weight provided with a lug for engagement with a fixed point, a thrust-bar having sliding connection with said weight transverse to the line of movement of said bar, and the lever with which said bar is connected; substantially as set forth.

657,411. **STALK-CUTTER.** JACOB HAMM, Steelburg, Nebr., assignor of one-half to John F. Demel and Frank Hamm, Steele City, Nebr. Filed Mar. 27, 1900. Serial No. 10,363. (No model.)



Claim.—1. In a stalk-cutter, the combination with a supporting-frame, of a riding-shoe adapted to ride down and bend standing cornstalks, and a cutting mechanism in rear of said riding-shoe, substantially as described.

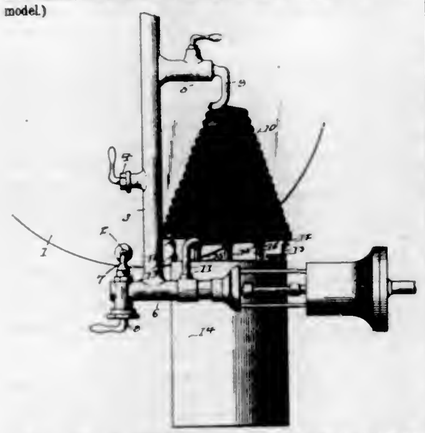
2. The combination with a supporting-frame, of a rocking frame, a revoluble cutter carried by the rocking frame and geared to the axle-shaft, of the supporting-frame, a riding-shoe having its rear end supported by the rocking frame, a lever to raise and lower the latter and thereby raise and lower the rear end of the riding-shoe, and a lever and connections to raise and lower the front end of the riding-shoe, substantially as described.

3. In combination with a supporting-frame having an axle-shaft provided with a gear-wheel, a rocking frame pivoted on said axle, a revoluble cutter having a supporting-shaft journaled in the rocking frame and provided with a pinion engaging said gear-wheel, a shield carried by the rocking frame and incasing the revoluble cutter, a longitudinally-disposed riding-shoe in advance of the cutter mechanism and having its rear end flexibly connected to the lower side of said shield, and means to raise and lower said rocking frame and the front end of said riding-shoe, substantially as described.

4. In a cornstalk-cutter of the class described, the combination with a supporting-frame and operating mechanism, of a shield or casing, a revoluble cutter-wheel therein, and a longitudinally-disposed riding-shoe, the rear end of the latter being flexibly connected to the lower side of said shield or casing, substantially as described.

5. In a cornstalk-cutter of the class described, the combination with a supporting-frame, and a cutter mechanism, of a longitudinally-disposed riding-shoe having its front end adapted to be raised and lowered, and pivoted gathering-arms at the front end of said riding-shoe and flexibly connected thereto, substantially as described.

657,412. **VAPORIZING ATTACHMENT FOR BURNERS.** IRVING L. HAMMOND, Lewiston, Me. Filed May 11, 1900. Serial No. 16,340. (No model.)



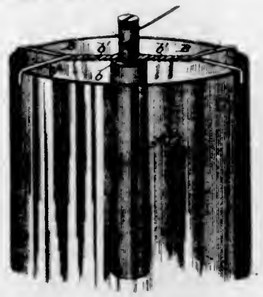
Claim.—The combination with the burner of an automobile-motor, of a feeding-pipe for oil provided with a supply-valve and a controlling-valve below the latter, a vapor-conveyer communicating with the pipe and burner, a vaporizer of conical form having its reduced end uppermost and composed of a plurality of closely-arranged coils to form a chamber to retain products of combustion and heated air therein, the coils being continuous and the upper end thereof directly attached to said supply-valve and the lower end to the vapor-conveyer, and a starting-burner having a plurality of individual burners and disposed beneath the entire bottom area of the vaporizer in a removable manner to cause the products of combustion and heated air to ascend through the latter and escape through the constricted top portion.

657,413. **HANGER FOR BATTERY ELEMENTS.** JAMES L. HAYES, Salida, Colo., assignor of one-half to George F. Stoghill, same place. Filed Apr. 30, 1900. Serial No. 14,874. (No model.)

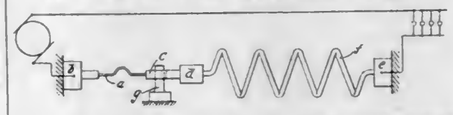
Claim.—1. A hanger for a galvanic-battery element, consisting of two intertwisted pieces of wire having a central eye and divergent ends, and means for clamping the battery element to the central eye substantially as described.

2. A hanger for a galvanic-battery element, consisting of two intertwisted pieces of wire having a central eye, and divergent ends, and a binding-post having a screw-stem adapted to pass through the central eye, substantially as and for the purpose described.

3. The combination with a battery element having a screw-socket in its upper end; of a binding-post having a screw-stem at its lower end, and a horizontal hanger composed of two intertwisted wires having divergent ends and a central eye clamped between the binding-post and the battery element substantially as described.



657,414. **FUSE.** RUDOLF HUNDHAUSEN, Wilmersdorf, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Nov. 18, 1899. Serial No. 737,445. (No model.)



Claim.—1. The combination with a fuse portion, of a tension device adapted for separating the terminals of the said fuse portion upon rupture, a second fuse portion in secondary relation with the said fuse portion, and a support associated with the second fuse portion for receiving the tension due to the said tension device, the weakest portion of the said fuse portion being thereby relieved of tension, substantially as described.

2. The combination with a fuse portion, of a second fuse portion of increased cross-section, a support associated with said second fuse portion, and a tension device adapted for connection with the second fuse portion for separating the terminals of the fuse upon rupture, substantially as described.

3. The combination with a fuse portion, one terminal of which is adapted for connection with one terminal of a circuit, of a second fuse portion electrically united to said fuse portion, a support associated with the second fuse portion normally in fixed relation to the first aforesaid fuse portion, and a tension device for separating the terminals of the fuse upon rupture, substantially as described.

4. The combination with a fuse portion, the terminals of the said fuse portion being knotted, of supporting means against which said knotted portions are adapted to rest, and tension devices associated with the knotted portions of the said fuse for separating the terminals of the said fuse upon rupture, the main portion of the said fuse being relieved of tension, substantially as described.

5. The combination with a fuse portion, the terminals of the said fuse portion being of increased cross-section, of a supporting means against which said portions of increased cross-section are adapted to rest, flexible terminals in electrical communication with the said terminals of the fuse portion, and tension devices associated with the said terminals for separating the said terminals upon the rupture of the fuse, substantially as described.

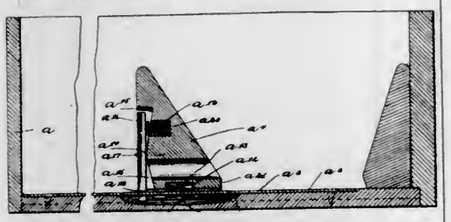
6. The combination with a fuse portion, the terminals of the said fuse portion being of increased cross-section, of a supporting-frame against which said portions of increased cross-section are adapted to rest, flexible terminals in electrical communication with the said terminals of the fuse portion, and tension devices associated with the said terminals for separating the said terminals upon the rupture of the fuse, substantially as described.

7. The combination with a fuse, of a spring-retractor therefor, and a fixed support normally relieving the fuse of strain, the retractor being freed when the arc extends a determinate amount.

8. The combination with a fuse portion suitably secured in position, of tension means for separating the terminals of the said fuse upon rupture, and means for normally preventing the tension means from exerting tension upon the fuse portion, substantially as described.

9. An electric fuse normally connecting circuit-terminals without being strained, and means controlled by the arc when the fuse blows for rapidly separating the terminals.

657,415. DRAWER FOR CARD-INDEXES. DAVID E. HUNTER, Cambridge, Mass., assignor to the Library Bureau, Boston, Mass. Filed Jan. 27, 1900. Serial No. 2,940. (No model.)



Claim.—1. The combination with a receptacle for cards, of a plate constituting guides and secured to said receptacle, a follower-block having lips engaging said guides and maintaining the follower on said plate while permitting longitudinal movement, said plate having openings or notches cut in its edge to permit said lips to be inserted or removed.

2. The combination with a receptacle for cards, of a plate constituting guides and secured to said receptacle, a follower-block having lips engaging said guides and maintaining the follower on said plate while permitting longitudinal movement, said plate having openings or notches cut in its edge to permit said lips to be inserted or removed, a cavity in the bottom of said block, and a spring or resilient member occupying said cavity and bearing in frictional engagement against said plate.

3. In a device of the kind described, a follower-block having a wide base, a track therefor, means holding said block on said track, and a spring carried by said block and engaging said track immediately beneath the base of said block for steadying and retarding said block on the track.

4. A card-receptacle, a follower-block movable longitudinally thereof, a bar or plate mounted in said receptacle, and a clamping device for said block, said clamping device comprising a member pivotally mounted on the block and having a recess or jaws embracing said bar or plate and movable into and out of biting engagement therewith.

5. A card-receptacle, a follower-block movable longitudinally thereof, a bar or plate mounted in said receptacle, and a clamping device for said block, said clamping device comprising a member pivotally mounted on the block and having a recess or jaws embracing said bar or plate and movable into and out of biting engagement therewith, and means automatically maintaining said pivoted member in biting position.

6. A card-receptacle, a follower-block movable longitudinally thereof, a bar or plate mounted in said receptacle, and a clamping device for said block, said clamping device comprising a member pivotally mounted on the block and having a recess or jaws embracing said bar or plate and movable into and out of biting engagement therewith, and a spring mounted in said block and bearing against said member for maintaining the same normally in one position.

7. A card-receptacle, a follower-block therein, a bar or plate mounted in said receptacle, a fulcrum on the back side of said block, a clamping-lever mounted on said fulcrum, said clamping-lever having a recess or transverse slot for engaging said bar or plate, and being capable of turning on said fulcrum into and out of locking engagement with said bar or plate.

8. A card-receptacle, a follower-block therein, a bar or plate mounted in said receptacle, a fulcrum on the back side of said block, a clamping-lever mounted on said fulcrum, said clamping-lever having a recess or transverse slot for engaging said bar or plate, a recess behind the upper end of said lever, and a spring therein bearing on said lever, movement of said lever toward said block serving to disengage the lever from biting engagement with said bar or plate.

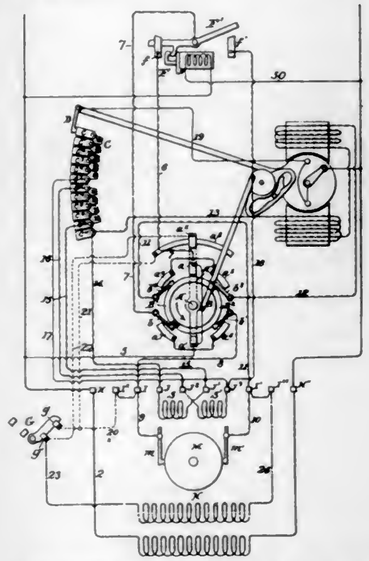
9. In a card-receptacle, a follower-block, locking means carried by said block for engaging a fixed portion of said receptacle, and locking the block in desired adjustment, said locking means being movable toward and from said block, movement thereof toward said block serving to unlock the latter, and automatic means for moving the same away from said block

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657,416. SPEED-CONTROLLER FOR ELECTRIC ELEVATORS. JOHN D. IRLDER, Yonkers, N. Y., assignor, by mesne assignments, to the Otis Elevator Company, East Orange, N. J. Filed Nov. 27, 1897. Serial No. 659,973. (No model.)

Claim.—1. The combination with a shunt-wound motor and circuits and connections for controlling the same, of an open shunt around the armature-terminals of the motor including a resistance device, and means for closing said shunt and including resistance between the armature-terminals, substantially as described.

2. The combination with a motor and circuits and connections for controlling the same, of a normally-open shunt around the armature-terminals of the motor, and an automatic stop-switch arranged to close the shunt between the armature-terminals to decrease the speed of the motor, substantially as described.



3. The combination with a motor, and circuits and connections for operating the same, of an extra field-coil in shunt around the armature-terminals of the motor arranged to magnetize the motor in the same direction as the shunt-field, and means for closing the extra field-coil on the terminals of the armature, substantially as described.

4. The combination with a motor and circuits and connections for operating the same, of an extra field-coil in shunt around the armature-terminals of the motor, an external resistance included in said shunt, and means for closing the shunt on the terminals of the armature, whereby the magnetization of the field is increased and the speed of the motor decreased, substantially as described.

5. The combination with, a motor and circuits and connections for operating the same, of a potential switch arranged in the armature-circuit and adapted to interrupt the supply-circuit and to close the circuit of the armature upon itself while the shunt field-circuit is excited, substantially as described.

657,417. BOX-COVERING MACHINE. HORACE INMAN, Amsterdam, N. Y. Filed Nov. 11, 1898. Serial No. 696,166. (No model.)

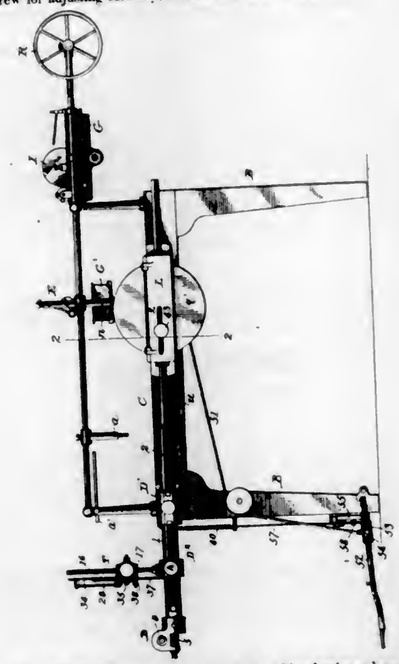
Claim.—1. The combination, in a box-covering machine, with the main driving-shaft adapted to rotate at a uniform speed continuously, a box-form, an adjustable rotating support for the form, a cutting mechanism, and means for operating the same of a variable gear having movable parts to transmit movement from the driving-shaft to the said rotating support, and means for shifting the same for changing the speed at which the box-form is rotated without dismembering or removing any part of the gear, substantially as set forth.

2. The combination, in a box-covering machine, of a main driving-shaft, a box-form, a rotating support for the box-form, a cutting mechanism, means operated by the rotating support to operate the cutting mechanism, a clutch mechanism to transmit movement from the driving-shaft to the said rotating support, means to lock the clutch mechanism in operative position, and means operated by the cutting mechanism to release the clutch mechanism, substantially as described.

3. The combination in a box-covering machine, of the bracket D′, tube 1 adjustably supported in the bracket, a rotatable box-form supported by the tube 1 and movable with it, a cutting mechanism supported on the tube 1 and movable with it, and means to adjust the cutting mechanism on the tube 1 independently of its movement with the tube, substantially as described.

4. The combination of the box-form, bracket carrying the same, a shaft *u* having its bearing in said bracket, a support for the bracket longitudinally adjustable on the frame of the machine and consisting of a split tube, a bracket receiving said tube, and a wedge-like key and means for forcing it into the channel of the tube, substantially as set forth.

5. The combination with the cutter, and with the box-form of a box-covering machine, of a slotted tube 1, a collar receiving said tube and supporting the cutter-frame, a wedge-shaped key carried by the collar, and set-screw for adjusting said key, substantially as set forth.



6. The combination, in a box-covering machine having a box-form and an adjustable support therefor, of stopping and starting mechanism, and an extensible treadle connected with said stopping and starting mechanism, substantially as set forth.

657,418. MACHINE FOR MAKING PAPER-BOX BLANKS. HORACE INMAN, Amsterdam, N. Y. Filed June 2, 1899. Serial No. 719,131. (No model.)

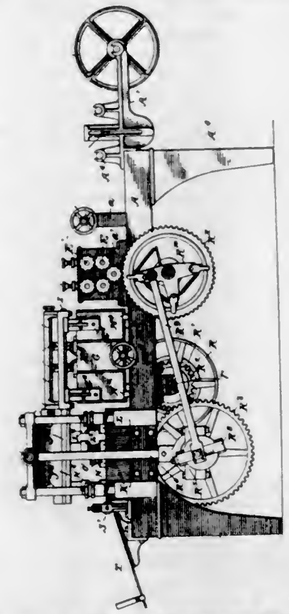
Claim.—1. In a blanking-machine, the combination with the feeding and longitudinal scoring devices, of corner-cutting devices adjustable laterally and longitudinally on the machine, transverse scoring and cutting devices separate from and in advance of the corner-cutting devices also adjustable longitudinally on the machine independently of the corner-cutting devices, and means for simultaneously operating the corner-cutting devices and scoring and cutting devices, substantially as described.

2. In a blanking-machine, the combination with the feeding and longitudinal scoring devices, of corner-cutting devices adjustable laterally and longitudinally on the machine, transverse scoring and cutting devices separate from and in advance of the corner-cutting devices adjustable longitudinally on the machine independently of the corner-cutting devices, and means for simultaneously operating the corner-cutting devices and transverse scorers and cutters, substantially as described.

3. In a blanking-machine, the combination with intermittent feeding-rolls and longitudinal scoring-rolls, of corner-cutters adjustable laterally and longitudinally on the machine, transverse scorers and cutters separate from and in advance of the corner-cutters adjustable longitudinally on the machine independently of the corner-cutters, means for operating the feeding devices and longitudinal scorers intermittently, and means for intermittently and simultaneously operating the corner-cutters and the transverse scorers and cutters, substantially as described.

4. In a machine of the general character described in which the web of material is drawn into the machine to be operated upon, a guide comprising two plates having longitudinal slots, guide-arms projecting into the slots, and means for adjusting the arms simultaneously toward or away from each other, substantially as described.

5. In a machine of the general character described in which the web of material is drawn into the machine to be operated upon, a guide comprising two plates having longitudinal slots, guide-arms extending into the slots and provided with friction-rollers, and means for simultaneously adjusting and securing the guide-arms in position in the slots, substantially as described.



6. In a machine of the general character described, the corner-cutters comprising the U-shaped frame, the stem slidably mounted in one arm thereof and carrying cutter-blades, and a complementary cutter-blade mounted on the other arm thereof, substantially as described.

7. In a machine of the general character described, the corner-cutters comprising the U-shaped frame, a stem slidably mounted in one arm of the frame and carrying a beveled cutter-plate, and a coöperating cutter-plate mounted on the other arm, substantially as described.

8. In a machine of the general character described, the combination of the corner-cutters comprising a U-shaped frame, a stem mounted therein, a coöperating cutter also mounted on the frame, a corner-cutter carrier on which the corner-cutter is adjustably mounted, a rocking frame mounted on the corner-cutter carrier, and connections between the rocking frame and stem, substantially as described.

9. In a machine of the general character described, the combination of the corner-cutters comprising a U-shaped frame, a stem mounted therein, a coöperating cutter also mounted on the frame, a corner-cutter carrier on which the corner-cutter is adjustably mounted, a rocking frame mounted on the corner-cutter carrier, and a link adjustably connected to the rocking frame and to the stem, substantially as described.

10. In a machine of the general character described, the combination with an auxiliary frame carrying a supporting-bar, of the corner-cutters, the corner-cutter carriers on which the corner-cutters are adjustably mounted, and means for adjusting the corner-cutter carriers with relation to the supporting-bar, substantially as described.

11. In a machine of the general character described, the combination with a supporting-frame, of a plurality of cutting and scoring bars arranged one in advance of the other and connections between the respective bars and the frame for adjusting each of said bars on the frame independently of the others, substantially as set forth.

12. In a machine of the general character described, the combination with a supporting-frame having grooves, of a plurality of scoring and cutting bars arranged one in advance of the other, each bar having a projection extending into its respective groove in the frame, and connections between the respective bars and frame for adjusting each of said bars on the frame independently of the other bars, as set forth.

13. In a machine of the general character described, the combination with a supporting-frame having grooves, of scoring or cutting bars having projections fitting the grooves, and screws for independently adjusting the scoring or cutting bars on the supporting-frame, substantially as described.

14. In a machine of the general character described, the combination with a supporting-frame, of scoring or cutting bars adjustably mounted thereon each scorer or cutter comprising two bars one of which is pro-

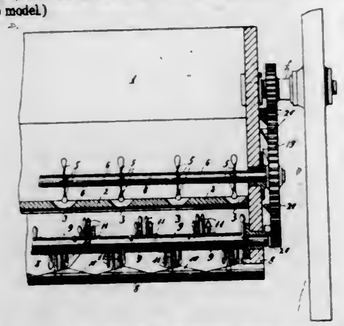
vided with guides for the reception of the other bar whereby the two bars may be adjusted or removed together, substantially as described.

15. In a machine of the general character described, the combination with a supporting-frame, of scoring or cutting bars adjustably mounted thereon, a guide-bar also adjustably mounted thereon, and flanged rollers adjustably mounted on the guide-bar, substantially as described.

16. In a machine of the general character described, the combination with a supporting-frame, of scoring or cutting bars adjustably mounted thereon, a reciprocating head for operating the scoring or cutting bars, corner-cutters adjustably mounted on the machine, and connections between the reciprocating head and corner-cutters whereby they are operated in unison, substantially as described.

17. In a machine of the general character described, the combination with a supporting-frame, of scoring or cutting bars adjustably mounted thereon, a reciprocating head for operating the same, corner-cutters, corner-cutter carriers on which the corner-cutters are adjustably mounted, means for adjusting the corner-cutter carriers, a rocking frame connected to the corner-cutter carriers and to the corner-cutters, and connections between the rocking frame and the reciprocating head whereby they are operated in unison, substantially as described.

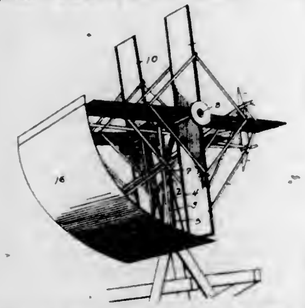
657,419. MACHINE FOR DISTRIBUTING MANURE. WILHELM JÄGER, Könkendorf, Germany. Filed June 22, 1899. Serial No. 721,441. (No model.)



Claim.—1. A machine for distributing manure comprising a box provided with a distributing-board having holes for the exit of the manure, a trough beneath the said box or distributing-board, the edges of the trough being formed with projecting portions at the points beneath the holes in the distributing-board to effect a regular fall of the manure over the edge, notwithstanding the unevenness of the feed through the holes.

2. A machine for distributing manure comprising a box provided with a distributing-board having holes for the exit of the manure, a trough beneath the said box or distributing-board, the edges of the trough being formed with projecting portions at the points beneath the holes in the distributing-board to effect a regular fall of the manure over the edge, notwithstanding the unevenness of the feed through the holes, and a distributing-roller located beneath said distributing-board and provided with arms of different length, mechanism for rotating said roller and mechanism for imparting a reciprocating longitudinal movement to said roller.

657,420. WINDMILL. JOHN W. JAYCOX, Elkhorn, Kans. Filed Dec. 28, 1899. Serial No. 741,705. (No model.)



Claim.—1. A windmill comprising a tower, a support consisting of an outer bearing-sleeve, and supporting-rods, a rotary bearing provided with diverging arms and having an inner rotary sleeve fitting within the said sleeve and supported by the same, a horizontal shaft journaled on the diverging arms, a rotary frame supported by the tower and connected with the said arms, a shield arranged at one end of the frame, and a vane arranged at the other end of the frame and adapted to counterbalance the shield, substantially as described.

2. A windmill comprising a tower, a support extending upward therefrom and having a bearing, a rotary frame mounted on the tower and composed of a lower bearing-ring, upright standards arranged in pairs, the horizontal top bars supported by the standards and having their rear ends converged, the front and rear inclined braces, the rear braces being disposed at different inclinations, and the diagonal braces converging upward, a vane mounted on the frame at the back thereof, a shield arranged at the front of the frame and secured at its ends to the top and bottom of the same and to the lower ends of the diagonal braces, a rotary bearing mounted on the said support, and connected with the rotary frame, a wind-wheel shaft, and wind-wheels mounted on the shaft and located at opposite sides of the rotary frame, substantially as described.

657,421. CORKSCREW. RALPH W. JORRES, St. Louis, Mo., assignor to William A. Williamson, Newark, N. J. Filed Feb. 24, 1900. Serial No. 6,335. (No model.)



Claim.—1. In a corkscrew, the combination of two hollow members adapted to be fitted together and one of which has a reduced outer portion, and a corkscrew having a button on its inner end to snugly fit in the opening of the reduced portion of one of the members, substantially as set forth.

2. In a corkscrew, the combination of two hollow members adapted to be screwed together and one of which has a reduced outer portion, a hollow plug fitted in the member having the reduced portion, and a corkscrew passing through said hollow plug and having a button on its inner end to snugly fit in the opening of the reduced portion of one of the members, substantially as set forth.

3. In a corkscrew, the combination of two hollow members adapted to be screwed together, a hollow plug fitted in one of the members and having a reduced aperture, a corkscrew having a button adapted to fit in said hollow plug, and to be turned at right angles to the plug, substantially as set forth.

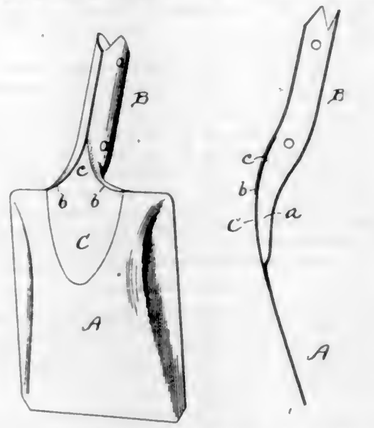
4. A corkscrew consisting of two hollow members adapted to be screwed together, a threaded collar secured to one of the members, a hollow plug tapped into the other member, and a corkscrew having a button adapted to fit in said plug; said first-mentioned member and said collar being slotted to receive the corkscrew, substantially as set forth.

5. In a corkscrew, the combination of two hollow members, one of which is provided with a threaded collar, and the other of which has a reduced portion, a hollow plug tapped into the last-mentioned member, and a corkscrew having a button secured to the inner end thereof and adapted to fit in said hollow plug when the corkscrew is drawn out; said first-mentioned member and its collar being slotted to receive the corkscrew, and said plug having a reduced aperture, substantially as and for the purpose set forth.

657,422. SHOVEL. WALLACE S. JUDD, Cleveland, Ohio, assignor to the Avery Stamping Company, same place. Filed June 20, 1898. Serial No. 683,981. (No model.)

Claim.—1. A shovel-blade having an integral cylindrical socket and a central depression in the rear side thereof at the juncture with said socket, the rear edges of said socket flaring downwardly and outwardly above said depression, combined with a backing-plate behind said depression having a tongue lying within said socket against its rear side, the edges of said tongue flaring outwardly and lying beneath the flared edges of said socket to form a support therefor, substantially as described.

2. A shovel-blade A having an integral socket B and a central depression in the rear side thereof at the juncture of said socket and blade, the rear edges *b* of said socket flaring downwardly and outwardly above said depression, combined with a backing-plate C behind said depression and having a tongue c projecting within said socket, the upper edges of said tongue lying beneath the flared edges of said socket, said plate C being curved but in a vertical plane only whereby it unites with said blade to form a substantially-flat back therefor, substantially as described.



657,423. LAMP-BRACKET. BENJAMIN F. KENT, Eugene, Oreg. Filed Sept. 28, 1899. Serial No. 731,958. (No model.)



Claim.—1. The combination of a horizontal carrier-support, a carrier adapted to traverse the same in a horizontal path and provided with a guide, a flexible lamp-support extending lengthwise of the carrier-support and over the guide on the carrier, whereby the lamp may be raised and lowered, and a gravity take-up engaging with the lamp-support and operable to automatically take up slack therein, substantially as described.

2. The combination with a lamp-bracket arm, of a carrier arranged to traverse said arm and provided with a pulley, a flexible lamp-support extending lengthwise of the arm, and over the pulley on the carrier to permit the lamp to be raised and lowered, a weight adapted to traverse a portion of said support for taking up slack therein when the lamp is adjusted up or down, and a pendent operating-arm and hanger on the carrier, substantially as described.

3. A lamp-bracket consisting of a hub rotatably supported, an arm extending outward therefrom, a carrier traversing said arm, a flexible lamp-support passing over said carrier and along the bracket-arm, means for adjusting said carrier, and means for taking up slack in said flexible support, substantially as described.

4. In a lamp-bracket, a pivoted horizontal bracket-arm movable in a horizontal plane, in combination with a carrier adapted to traverse said arm longitudinally, a pulley mounted on said carrier, and a flexible lamp-support passing from the pivoted end of the arm lengthwise thereof, and over the pulley on the carrier, substantially as described.

5. In a lamp-bracket, a pivoted arm adapted to swing in a horizontal plane, means for suspending a lamp from said arm, and an annular track upon which the free end of the arm rests and travels, substantially as described.

6. In a lamp-bracket, a bracket-arm pivoted and adapted to swing in a horizontal plane, an annular track forming a support for the free end of said arm, and an antifriction-roller journaled on the end of the arm and moving in contact with said track, substantially as described.

7. In a lamp-bracket, a pivoted bracket-arm adapted to swing in a horizontal plane, a hollow hub for said arm, a pulley arranged centrally of said hub, a carrier movable lengthwise of the arm, and a flexible lamp-support extending lengthwise of the arm and engaging said pulley, substantially as described.

8. In a lamp-bracket, a tubular bracket-arm having a slot in its lower side, a carrier embracing and slidable on said arm, and a flexible lamp-support passing through said tubular arm and supported by the carrier, and working through a slot in the bracket-arm, substantially as described.

9. In a lamp-bracket, a tubular bracket-arm mounted to swing in a horizontal plane, and having a slot in its lower side, a carrier embracing and slidably mounted on said arm, to move lengthwise thereof, a pulley journaled in said carrier, and a flexible lamp-support passing through the tubular arm, the slot therein, and over the pulley on the carrier, substantially as described.

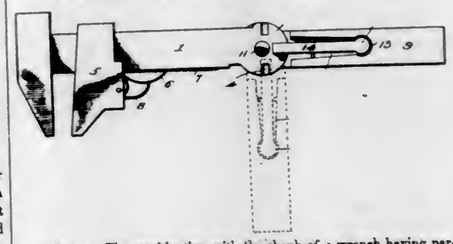
10. In a lamp-bracket, the combination with a tubular arm mounted to swing in a horizontal plane, and having a longitudinal slot in its lower side, of a carrier slidingly mounted on said arm, a tubular hanger depending therefrom, a hook or clip connected to said hanger, and a flexible lamp-support passing through the tubular arm and hanger, and through the slot in the bracket-arm, substantially as described.

11. A lamp-bracket comprising a tubular arm mounted to swing in a horizontal plane, and provided with a longitudinal slot in its lower side, a carrier embracing said arm and adapted to slide lengthwise thereof, a pulley journaled on said carrier and projecting through the slot in the bracket-arm, and a flexible lamp-support passing through the tubular arm and over the pulley on the carrier, substantially as described.

12. The combination of a carrier-support movable in a horizontal plane around a vertical axis, a carrier mounted to traverse the support in a horizontal path, and a pliable lamp-support guided on the carrier-support and the carrier to depend for a part of its length from the latter, as set forth.

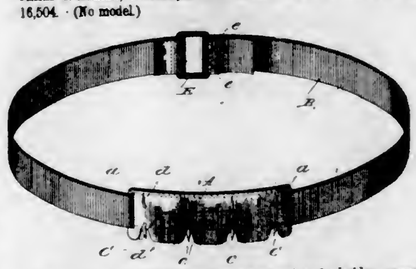
13. The combination of a carrier-support movable in a horizontal plane around a fixed vertical axis, a horizontally-movable carrier traversing the carrier-support, a pliable lamp-support guided on the carrier, and a self-adjusting take-up engaging with said pliable lamp-support, as set forth.

657,424. WRENCH. CHARLES B. KETCHUM, Cody, Wyo. Filed May 10, 1900. Serial No. 16,126. (No model.)



Claim.—The combination with the shank of a wrench having parallel segmental heads formed with notches, of a handle having a disk formed on one end which is pivoted between said heads, said handle being provided with longitudinal slots each of which has at one end a socket or seat, springs placed in said sockets or seats, and levers pivoted in said slots and provided with lugs adapted to engage the notches of the segmental heads, substantially as set forth.

657,425. COMBINED SKIRT-SUPPORTER AND WAIST-HOLDER. JAMES C. KINSEY, Philadelphia, Pa. Filed May 12, 1900. Serial No. 16,504. (No model.)



Claim.—1. A combined skirt-supporter and waist-holder, comprising a plate having a series of hooks projecting upwardly from the face of the plate near the upper edge of the same, and a series of hooks projecting from the same side near the lower edge of the plate downwardly and rearwardly to and beyond the opposite face of said plate, substantially as shown, together with the supporting-belt.

2. A combined skirt-supporter and waist-holder, comprising a plate having holes through the upper and lower portions thereof, and a series of wires having pointed ends *d* and *d'* passed through said holes from one side of the plate and bent in opposite directions, one of the points being

bent rearward under the edge of the plate to form a point or hook on the opposite side of the plate from the other hook and projecting in an opposite direction therefrom; together with the supporting-belt to which the plate is attached, substantially as shown and for the purpose set forth.

3. A combined skirt-supporter and waist-holder, comprising a plate having holes through the upper and lower portions thereof and cut away at one edge to form openings C on a line with said holes, and a series of wires D having pointed ends *d* and *d'* passed through said holes from the rear side of the plate and bent in opposite directions in front of said plate, one of the points of each wire being further bent to project through the adjoining opening C beyond the rear side of the plate; together with the supporting-belt to which the plate is attached, substantially as shown and for the purpose set forth.

657,426. **ANTISEPTIC BROOM.** OSCAR S. KULMAN, Savannah, Ga. Filed Nov. 29, 1899. Serial No. 738,719. (No model.)



Claim.—1. A broom having an antiseptic retainer incorporated in its straws entirely below the lowest line of stitching, and flexible supporting devices for the retainer attached to the handle and arranged in the center of the broom and passing through said line of stitching to the retainer as described.

2. A broom having one or more external longitudinal grooves in its handle, supports arranged in these grooves and projecting downwardly through the central parts of the broom, and a retainer for antiseptic material carried on the lower ends of said supports below the line of stitching substantially as and for the purpose described.

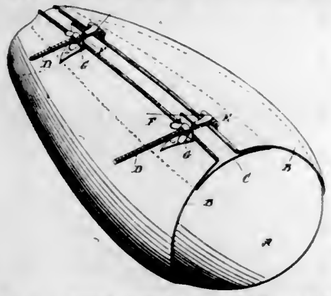
3. A broom having a hollow handle, a retainer embedded in its straws below the line of stitching, flexible supports for the retainer made in tubular form and connected to the hollow handle and projecting downwardly through the central parts of the broom to the retainer substantially as described.

4. A broom having one or more external longitudinal grooves in the lower portion of the handle, a support laid therein and retained by the convolutions of the broom-wires that secure the straws, and a retainer secured upon the lower end of said supports below the line of stitching and embedded in the straw of the broom substantially as described.

5. A broom having one or more external longitudinal grooves in the lower portion of the handle, one or more supports laid therein and having their upper ends turned inwardly toward the center of the handle, said supports being retained by the straw-wrapping wire, and a retainer carried on the lower ends of said supports below the line of stitching substantially as described.

6. A broom having attached to its handle at the lower end a bowed or loop-shaped support arranged in the center of the broom and combined with a bag-shaped receptacle for antiseptic or other material, said receptacle being both distended and supported by said loop at a point below the line of stitching substantially as described.

657,427. **FORM FOR BOILING MEATS.** FREDERICK A. LASHING, New York, N. Y. Filed Aug. 15, 1899. Serial No. 727,322. (No model.)



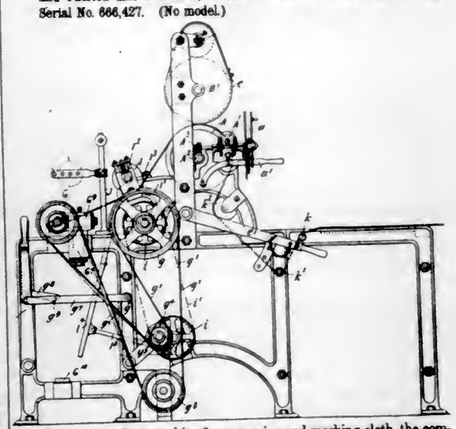
Claim.—1. A form for boiling meats, comprising a tapering metallic casing fitted to the general form of a piece of meat, the said casing being curved from end to end, larger at one end than the other, and having a longitudinal opening in its upper portion extending from end to end and permitting of its expansion and contraction, and means for drawing the edges of the opening together, substantially as described.

2. A form for holding meats for boiling, consisting of a casing slitted along one side so that it may expand and contract, a plate adapted to span said slit, and means for drawing the edges of the casing together, substantially as described.

3. A form for holding meats for boiling, consisting of a casing open at the ends and slitted on one side so that it may expand and contract, a plate adapted to span said slit, bolts secured to the casing at one edge of the slit, and eyes secured to the casing at the other edge of the slit and adapted to receive said bolts, whereby said edges may be drawn together.

4. A form for holding meats for boiling consisting of a metallic casing having a lower portion consisting of a curved plate and an upper portion comprising two curved plates connected at their lower edges with the side edges of the lower plate, the upper inner edges of the top plates being normally separated a short distance so as to permit of adjustment, a plate adapted to span the opening between the edges of the top plates, and means for drawing the edges together, substantially as described.

657,428. **MACHINE FOR MEASURING, MARKING, AND ROLLING CLOTH.** ROBERT LIVINGSTON and WILLIAM RODGER, Dysart, Scotland, assignors to said Livingston, William John Normand, Edinburgh, and Patrick Hill Normand, Aberdour, Scotland. Filed Jan. 12, 1898. Serial No. 666,427. (No model.)



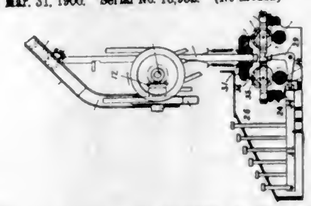
Claim.—1. In a machine for measuring and marking cloth, the combination of a measuring-roller, driven by the cloth drawn through the machine, and provided with projecting pads, and drawing-rollers, with a numbering-wheel having a series of type around its periphery, the said numbering-wheel being geared to and driven by said measuring-roller, and means for permitting the movement of the gear of the measuring-roller out of engagement with the gear of the numbering-wheel, substantially as described.

2. In a machine for measuring, marking and rolling cloth, the combination of a measuring-roller provided with pads, an indexing device operated by said roller and a numbering-wheel geared to and driven by said measuring-roller, and having a series of type around its periphery, mechanism for disengaging the indexing device from the measuring-roller and for disengaging the measuring-roller gear from the numbering-wheel gear, the said indexing device and the said numbering-wheel being adapted to be returned to zero when disengaged, with drawing-rollers, and a winding-reel, substantially as described.

3. In a machine for measuring and marking cloth, the combination of a measuring-roller, rotated by the cloth moving through the machine and provided with a brake-wheel, a driving-belt, a bell-crank lever carrying a loose pulley to act upon said driving-belt and provided with a horn to act upon the brake-wheel of the said measuring-roller, a numbering-wheel geared to and driven by said measuring-roller, and means for permitting the disengagement of the gear of the measuring-wheel from the gear of the numbering-wheel, substantially as described.

4. In a machine for measuring, marking and rolling cloth, the combination of the reel adapted to fold upward or swing outward, a pulley, and driving-belt therefor, and means for preventing the motion of the reel when out of its normal working position, said means comprising a stenting-pulley, with a bell-crank lever carrying the said stenting-pulley, a setting-handle, a link connecting the said handle and the bell-crank lever, a pin on said link and a locking-lever engaging the said pin, substantially as set forth.

657,429. **LINOTYPE-MACHINE.** JOHN H. LYNCH, New York, N. Y., assignor to the Mergenthaler Linotype Company, of New York. Filed Mar. 31, 1900. Serial No. 10,932. (No model.)



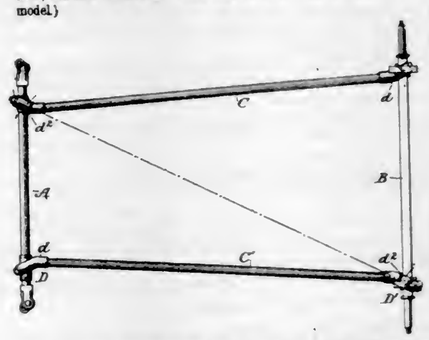
Claim.—1. In a composing mechanism, the combination of type-discharging devices, corresponding finger-keys, and intermediate mechanism to vary the interval between the action of the respective keys and discharging devices, according to the time required for the type to pass from the respective discharging devices to the point of composition.

2. In a composing mechanism, a series of time-controlled type-discharging devices, graduated as to their relative speeds according to the time required for the travel of the respective type, substantially as described and shown.

3. In a composing mechanism, the combination of a continuously-revolving roll, a series of type-discharging mechanisms adapted to be thrown independently into engagement therewith, said parts constructed and arranged to cause the action of the respective discharging devices at different intervals after engagement.

4. In a composing mechanism, the combination of a magazine, the conveyer-belt parallel therewith, the finger-keys, means for discharging the matrices from the magazine, and an intermediate mechanism controlling the interval of time between the operation of a key and the operation of the corresponding discharging device and giving a greater interval for those devices which are near the point of assemblage than for those which are remote therefrom.

657,430. **RUNNING-FRAME FOR VEHICLES.** HIRAM P. MAXIM, Hartford, Conn., assignor to the Electric Vehicle Company, Jersey City, N. J., and New York, N. Y. Filed Jan. 20, 1900. Serial No. 2,099. (No model.)



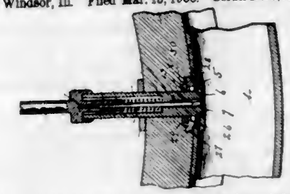
Claim.—1. A running-frame for vehicles comprising overlapping transverse and longitudinal members and couplings joining the transverse and longitudinal members at the points of overlapping, the frame being composed of two parts hinged together on a diagonal line.

2. A running-frame for vehicles comprising overlapping transverse and longitudinal members and couplings joining the transverse and longitudinal members at the points of overlapping, each of two diagonally-opposite couplings having a socket with its axis in a diagonal line common to both, the end of the corresponding longitudinal member entering said socket loosely, whereby said frame is hinged on said diagonal line.

3. A running-frame for vehicles comprising overlapping transverse and longitudinal members and couplings joining the transverse and longitudinal members at the points of overlapping, each of two diagonally-opposite couplings having a socket with its axis in a diagonal line common to both, the end of the corresponding longitudinal member being crooked to lie in the same diagonal line and to enter the socket loosely, whereby said frame is hinged on said diagonal line.

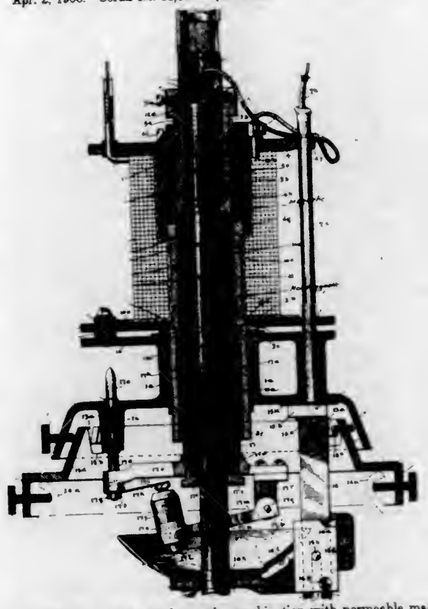
4. A running-frame for vehicles comprising transverse and longitudinal members and couplings joining the transverse and longitudinal members, the longitudinal members being straight from joint to joint and the frame being hinged on a line from one joint to a diagonally-opposite joint.

657,431. **VALVE FOR PNEUMATIC TIRES.** CHANCY J. MEAD, New Windsor, Ill. Filed Mar. 15, 1900. Serial No. 8,785. (No model.)



Claim.—A valve-casing having a central through-bore and an exteriorly-smooth outer end portion and also provided with an external recessed valve-seat at one end, in combination with a disk-shaped valve fitting within the recessed valve-seat, a terminally-threaded valve-stem, a removable disk-shaped packing-washer fitting around the stem and against the inner face of the valve, a nut adjustable on the valve-stem, a coiled spring around said stem between the nut and an internal shoulder within the casing, and a cap provided with an annular flange loosely embracing the end of the casing and having an internally-threaded stem to engage the valve-stem, and also having an oppositely-projecting nut-operating extension, substantially as specified.

657,432. **ELECTRIC-ARC LAMP.** JOSEPH MELZER, Cleveland, Ohio, assignor to the Interstate Electric Company, same place. Filed Apr. 2, 1900. Serial No. 11,153. (No model.)



Claim.—1. In an arc-lamp, the combination with permeable magnet-heads, of a two-part spool therefor, one part of said spool being of permeable material having a large external diameter, and the other part of non-permeable material having a relatively-smaller diameter, substantially as set forth.

2. In an arc-lamp, the combination with permeable magnet-heads, of a two-part spool-tube having about the same internal diameter throughout its length, one part of permeable material and of large cross-section, and the other part of non-permeable material and small cross-section, substantially as set forth.

3. In an arc-lamp, the combination with an armature-tube of small external diameter, of an annular disk secured thereon some distance from the end, and a continuation of the tube of dissimilar material comprising a hub of large external diameter secured to the end of the armature-tube, said hub terminating in a second disk or head, substantially as set forth.

4. In an arc-lamp, the combination with an upper magnet-head having a depending hollow hub of large radial dimensions outside of the hole therein, of a tube of dissimilar material having a small external diameter and an internal diameter about the same as that of the hub, fastened to

the said hub, of a lower magnet-head secured to said tube about the same distance from the hub as the hub projects out from its head, substantially as set forth.

5. A solenoid-magnet comprising a discontinuous spool, one end of said spool being of high magnetic permeability and of large external diameter outside of the hole formed therein, and the other end of low magnetic permeability and relatively-reduced external diameter, substantially as set forth.

6. In an arc-lamp, a solenoid-magnet, a discontinuous core comprising one head and about one-half of said core of highly-permeable material the core being of large external diameter, in combination with a second head of similar permeability, and a non-permeable joining-tube of small external diameter, substantially as set forth.

7. In an arc-lamp, a solenoid-magnet having a hollow core therein, a hollow limit-stop within such magnet, a hollow armature operating in opposition to said stop, in combination with means for adjusting the stop into different positions, thereby adapting said lamp to operate under widely-different voltages, substantially as set forth.

8. In an electric-arc lamp adapted for use with widely-different voltages, an arc forming and regulating armature, a limit-stop determining the length of arc drawn by the armature, a clutch controlled by the armature, and an external stop or clutch-release, in combination with means independent of the magnet for adjusting the limit-stop and clutch-release to different interrelated positions, substantially as set forth.

9. In an electric-arc lamp, a movable armature, an arc-striking limit-stop therefor, a clutch mechanism carried by said armature to control an upper carbon, a clutch-release, and a lower-carbon support, in combination with means independent of the magnet for adjusting the limit-stop, clutch-release and lower-carbon support to interrelated different positions, substantially as set forth.

10. In an electric-arc lamp, a solenoid-magnet and a hollow core therein, a limit-tube within the core, a hollow armature movable in opposition to said tube, registering grooves formed in the tube and in the armature, in combination with a sliding carbon-terminal cap having a projection adapted to engage the grooves, substantially as set forth.

11. In an arc-lamp, a solenoid-magnet with a hollow core and a limit-tube therein, a hollow armature movable in the core opposite the limit-tube, in combination with a carbon-terminal cap adapted to move in the armature and stop-tube and means for maintaining non-revoluble relation between said cap and the parts through which the same passes, substantially as set forth.

12. A globe-holder comprising a base, an adjustable cap thereon and a series of disconnected springs within the cap and a common supporting-ring passing through all the springs and constructed to hold them against longitudinal displacement, substantially as set forth.

13. A globe-holder comprising a base, an adjustable cap thereon, a series of disconnected springs within said cap, a ring passing through the series of springs and notched lugs projecting from said ring and having convolutions of the springs passing through them.

14. In an arc-lamp, a regulating-magnet, a hollow core therein, a movable armature in said core, an axial opening in the armature and a guideway in said opening, in combination with a supporting-tube for said magnet having a similar guideway formed therein and means for keeping the two guideways in axial alinement, substantially as set forth.

15. In an arc-lamp, a solenoid-magnet, a supporting-tube and hollow core therefor, an armature movable in said core, a carbon contact-cap adapted to slide through the supporting-tube and the armature, in combination with stops placed at or beyond the ends of the armature-movement space, adapted to limit the movement of the carbon-terminal cap, substantially as set forth.

16. A solenoid-magnet, comprising permeable heads, and a permeably-discontinuous core, in combination with a minimum wire area around the permeable portion of said core and a maximum wire area around the non-permeable portion of said core, substantially as set forth.

17. A solenoid-magnet having a hollow core, one portion of said core having a greater external diameter than the remaining portion and a winding on said core having substantially-uniform external diameter from end to end.

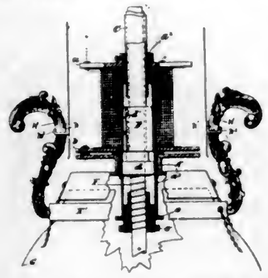
18. A solenoid-magnet comprising a coil, a hollow core therein consisting of permeable and non-permeable sections disposed in axial alinement with each other, and an armature.

19. A solenoid-magnet, comprising a permeably-discontinuous core, in combination with dissimilar external diameters to said core, substantially as set forth.

20. A solenoid-magnet, a permeably-discontinuous core therein, in combination with maximum and minimum diameters to said core within the length thereof, substantially as set forth.

21. In arc-lamps, in combination, a solenoid-magnet, comprising suitable heads therefor and a permeably-discontinuous core formed therein, substantially as set forth.

657,433. ELECTRIC-ARC LAMP. JOSEPH MELKER, Cleveland, Ohio, assignor to the Interstate Electric Company, same place. Filed May 2, 1900. Serial No. 15,192. (No model.)



Claim.—1. In an electric-arc lamp, a solenoid-magnet, comprising a supporting-tube, an iron ring secured thereon, a magnet-core tube external to said ring, a magnet-head secured to the core-tube at the other end thereof, a magnet-head secured to the ring of the supporting-tube, in combination with an iron ring external to the core-tube and extending for about one-half the length thereof, substantially as set forth.

2. In an electric-arc lamp, a solenoid-core tube of highly-reluctant material, a hollow ring of highly-permeable material secured therein, a supporting-tube secured to and projecting through said ring, a highly-permeable detachable magnet-head also fastened to said ring, a second magnet-head of similar permeability secured to the core-tube, a ring of great permeability also secured to the core-tube adjacent the detachable magnet-head and an armature movable within the core-tube, in combination with limit-stops therefor, whereby the movement of said armature is confined within predetermined limits, substantially as set forth.

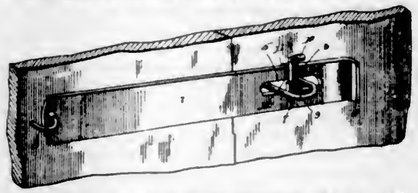
3. In an electric-arc lamp, a solenoid-core tube of highly-reluctant material and magnet-heads of great permeability supported by said tube, in combination with a ring of high permeability placed externally to the core-tube and adjacent to one of the magnet-heads, substantially as set forth.

4. In an arc-lamp, a solenoid-core tube, magnet-heads supported thereby and an armature within the tube, in combination with a ring of high permeability secured outside of the tube adjacent one of the magnet-heads, substantially as set forth.

5. In an electric-arc lamp, the combination with a solenoid and an armature therein, of a tubular extension projecting from the core of the solenoid, a head or piston within said tubular extension and connected with the armature, a nut or sleeve adjustable in said tubular extension, and a coiled spring disposed in said tubular extension and nut or sleeve and adapted to permit the passage of a carbon-rod through it, one end of said spring secured to the head or plunger in the tubular extension and the other end secured to said nut or sleeve.

6. In an arc-lamp, a solenoid-core tube, permeable heads supported thereby, an armature within the same, and a highly-permeable ring outside of the tube and adjacent one of the heads, in combination with adjustable limit-stops, placed in the path of the armature, whereby its movement is confined within variably-fixed points, substantially as set forth.

657,434. HASP-FASTENER. NATHAN MILAM, Greensborough, N. C. Filed Dec. 14, 1899. Serial No. 740,329. (No model.)



Claim.—In a hasp-fastener, the combination with a pivotal hasp, having a longitudinal slot, a transverse entrance-slot communicating with the longitudinal slot, and provided with a pivot-pin extending transversely across said transverse slot and supported by the opposite walls thereof, of a staple-shaped keeper to project through the longitudinal slot, and a gravity-detent, having its lower end enlarged or weighted, and its upper end bowed outwardly to form a finger-piece, and a substantially U-shaped clip to pivotally embrace the pivot-pin, and having its opposite ends connected to the detent at a point intermediate of its ends.

657,435. FELLY-PLATE. CHARLES MITCHELL, Terre Haute, Ind. Filed Mar. 24, 1900. Serial No. 10,035. (No model.)



Claim.—A cast-metal felly-plate D, having the curved surface d, the flat annular surface d', the hole d^2, concentric with said annular surface, the deep sides d^3 rising from the edge of the annular surface, the tapering ends d^4 extending from the edge of the annular surface, the outer edge of the annular face d' being adapted to lie flush with the outer surface of the spoke, and the sides d^3 being substantially flush with the spoke and with the edges of the felly.

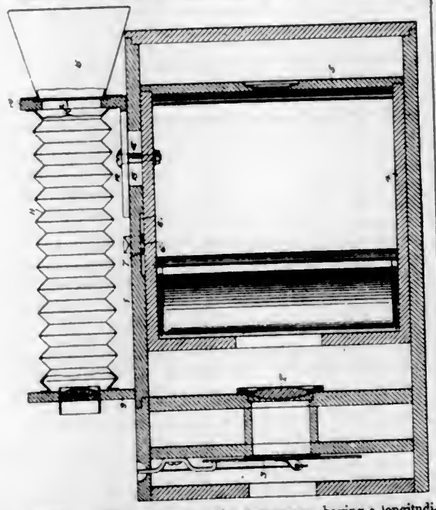
657,436. NUT-LOCK. MICHAEL MORAN, St. Louis, Mo., assignor of one-half to Frank H. Gervais, same place. Filed Feb. 5, 1900. Serial No. 4,451. (No model.)



Claim.—1. A nut-lock washer comprising a body provided with a longitudinal centrally-positioned groove in its rear face and a locking-tongue of a thickness corresponding to the thickness of the body of the washer at the location of said groove; substantially as described.

2. A nut-lock washer comprising a body provided with a longitudinal centrally-positioned groove, a locking-tongue of corresponding thickness to the body of said washer at the location of said groove, said tongue having a beveled end for the engagement of a tool, and a lip bent rearwardly from the body of said washer at the location of the bolt-hole therein, said lip being adapted to enter the bolt-hole in the fish-plate of a railway-rail, substantially as described.

657,437. FOCUSING-CAMERA. JOSEPH D. MORLEY, Lake Pleasant, N. Y. Filed May 16, 1900. Serial No. 16,871. (No model.)

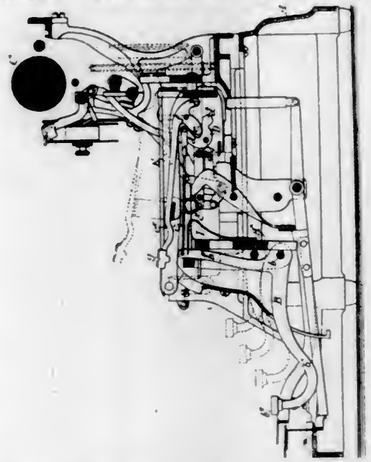


Claim.—1. The combination of a box-camera having a longitudinally-adjustable film or plate carrying structure, with a focusing device having its adjustable element connected directly to and moving with said longitudinally-adjustable film or plate carrying structure of the camera, substantially as specified.

2. A camera having a focusing-plate visible from the outside of the camera, a longitudinally-adjustable film or plate carrying structure, and an adjustable reflector carried by and moving with said structure, and serving to project an image onto the focusing-plate, substantially as specified.

3. A camera having a focusing-plate visible from the outside of the camera, a longitudinally-adjustable roll-film-carrying structure having a portion which shields the rolls from the chamber within said structure, and an adjustable reflector carried by and moving with said structure and serving to project the image onto the focusing-plate, substantially as specified.

657,438. KEYBOARD MECHANISM FOR TYPE-WRITERS. CHARLES P. MOSHER, Philadelphia, Pa., assignor of one-half to T. Henry Asbury, same place. Filed Jan. 31, 1900. Serial No. 3,429. (No model.)



Claim.—1. The combination in a keyboard mechanism for type-writing machines, of a key-lever, a type-lever, an arm on the type-lever having its acting face resembling a gear-tooth in outline, an intermediate lever of the bell-crank type with one arm for connection to the key-lever, and the other arm engaging the acting face of the arm on the type-lever, and a link connecting the intermediate lever with the key-lever, the said intermediate lever and the arm of the type-lever meshing together with a continuous rolling motion when the key-lever is depressed, substantially as described.

2. In a keyboard mechanism for type-writers, the combination of a pivoted key-lever, a link and a spring with a lever D, having one arm adapted to connect to said link and the other with its bearing-surface shaped like a figure 6, and a three-armed type-lever having two of its arms in the same plane as those of the said two-armed lever, one of said type-lever arms e^3 carrying the type, a second arm e being approximately the shape of a gear-tooth and with the third type-lever arm e' constructed to engage the two-armed lever D, and from their form, securing a continuous rolling contact between their bearing-surfaces during operation, substantially as described.

657,439. OFFICE ENVELOP-FASTENER. JOHN O. MUENICH, Jefferson, Wis. Filed May 9, 1900. Serial No. 16,090. (No model.)



Claim.—1. As a new article of manufacture, a fastening device for attachment to an envelop, file-wrapper, or similar receptacle, having one or more spring-arms, and one or more puncturing spurs or prongs for engagement with a flexible tie.

2. The combination with a receptacle, of a flexible tie, and a fastening or tie-engaging device having means extending through registering openings in, and engaging, said tie and the receptacle, the fastening being provided with one or more spring tie-engaging arms.

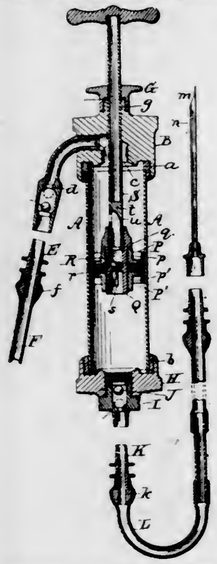
3. The combination with an envelop, file-wrapper or the like, of a

fastening secured thereto, and having one or more prongs or spurs, and a cord or the like, having one end fixedly secured to the fastening, and its opposite free end being arranged for engagement with the spurs or prongs.

4. A fastening of the class described, comprising a head, having an attaching-shank, an outwardly-directed spring arm or finger, one or more lateral spurs or prongs, and a cord having one end fixedly secured to the fastening and its opposite free end being arranged for engagement beneath the finger and also with the prongs or spurs.

5. A fastening of the class described, comprising a head struck from a single blank of metal, and provided with a central perforation, opposite spring-arms, and one or more spurs or prongs arranged between the fingers, and an attaching rivet or eyelet received within the perforation.

657,440. ASPIRATOR. WILLIAM J. MCCAW, Providence, R. I. Filed July 2, 1900. Serial No. 22,322. (No model.)

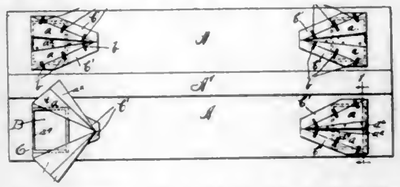


Claim.—The improved aspirator herein described, consisting of the combination of a tubular barrel having a centrally-bored headpiece secured thereon, which is provided with a chamber in its lower portion and with a passage therefrom through its side, a centrally-bored end piece secured on said tubular barrel at its opposite end, a centrally-perforated cap fitting on said headpiece, a centrally-perforated packing held between said cap and headpiece, a piston in said tubular barrel with a sleeve or tube passing centrally through it, a valve and a valve-seat in said sleeve or tube, a piston-rod attached to said piston and passing through the central bores of said headpiece and cap and having its lower end hollow and opening into said sleeve or tube and provided with an aperture through one side thereof, a handle upon the outer end of the piston-rod, a centrally-perforated valve-block secured in the bore of said end piece and having therein a valve-seat, a valve in said valve-block, a discharge-pipe fitting in the side passage of the headpiece, a valve-seat in said discharge-pipe and a valve therein, a rubber tube with a coupling-piece connecting it to said discharge-pipe, a rubber tube and a coupling-piece connecting it to said valve-block, a hollow needle with holes in its sides, a thimble in which said needle is mounted and a coupling-piece connecting the thimble to the last-named rubber tube, substantially as specified.

657,441. VENTILATING-HATCH FOR REFRIGERATOR-CARS. HARRY M. MCINTOSH, Chicago, Ill. Filed Aug. 27, 1898. Serial No. 689,629. (No model.)

Claim.—1. The combination, with a refrigerator-car having an ice-opening; of a cover for the ice-opening comprising lids adapted to open and close on opposite sides of the ice-opening on axes converging toward each other and trending lengthwise of the cars and means for securing the lids together in raised position and closing the opening between the edges of the lids to provide a hood whereby the air entering between the lids is deflected and led as a forced draft into the ice-opening.

2. The combination, with a refrigerator-car having an ice-opening; of a cover for the ice-opening comprising lids having overlapping edges and adapted to open and close on opposite sides of the ice-opening on axes converging toward each other and trending lengthwise of the car, locking devices located along the overlapping edges of the lids, and means for securing the lids together in raised position and closing the opening between the edges of the lids to provide a hood whereby the air entering between the lids is deflected and led as a forced draft into the ice-opening.



3. The combination, with a refrigerator-car having an ice-opening; of a cover for the ice-opening comprising lids having underlapping and overlapping plates respectively and adapted to open and close on opposite sides of the ice-opening on axes converging toward each other and trending lengthwise of the car, and means for securing the plates together when the lids are in raised position to provide a hood whereby the air entering between the lids is deflected and led as a forced draft into the ice-opening.

4. A refrigerator-car having an ice-opening in the roof thereof, a hatch or cover for the said opening, said hatch being pivotally connected to the roof of the car and provided with pivoted sections or lids having an extension-plate on the first adapted to fit under the second and an extension-plate on the second adapted to fit over the first, said lids or sections adapted when raised to form a ventilating-hood, substantially as described.

5. A refrigerator-car having an ice-opening in the roof thereof, a hatch or cover for the said opening divided longitudinally into two sections each independently and pivotally connected with the roof of the car, said hatch being provided with convergingly-hinged overlapping lids, one to each section, constructed with a fixed extension-plate on the first adapted to lap under the body of the second and a fixed extension-plate on the second adapted to lap over the body of the first, and means for securing the said lids together when in a raised position with their edges meeting, substantially as described.

6. A refrigerator-car having an ice-opening in the roof thereof, a hatch or cover for said opening divided into two sections, each independently and pivotally connected with the roof of the car, a ventilating-opening in the said cover and a screen to protect the same, said hatch or cover being provided with convergingly-hinged lids, one to each section, constructed with a fixed extension-plate on the first adapted to underlap the body of the second and a fixed extension-plate on the second adapted to overlap the body of the first, with locking devices along the exposed edges of the said plates, substantially as described.

7. In combination with a refrigerator-car having a rectangular ice-opening in the roof thereof, timbers pivotally connected with the front corners of the opening and normally meeting at the rear side, means for movably securing the meeting ends of the said timbers, triangular overlapping lids hinged to said timbers and adapted to close the space between them when shut, means for securing the proximate edges of these lids together when raised, to form a ventilating-hood, and wings secured to the outer edges of said timbers to close the remaining portions of said rectangular opening, substantially as described.

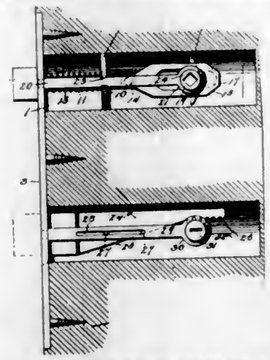
8. In combination with a refrigerator-car having a rectangular ice-opening in the roof thereof, timbers pivotally connected with the front corners of the opening and normally meeting at the rear side, means for normally securing the meeting ends of said timbers, triangular lids pivotally attached to said timbers and adapted to close the space between the same when shut and to form a ventilating-hood when open, and triangular wings hinged to the outer edges of said timbers and adapted to close the remaining portions of the rectangular opening, substantially as described.

657,442. LOCK. SCOTT NELSON and ELIJAH WOOD, Brockston, Ind. Filed Dec. 1, 1899. Serial No. 738,892. (No model.)

Claim.—1. As an improved article of manufacture, a casingless lock consisting of a plate and guide-stripe extending therefrom, a disk having slots to receive the guide-strips, a hub revolubly carried by said strips, a yoke connected with the bolt, the bolt arranged to extend through the plate, and through a hole in the disk, and an axial support for said hub in the inner end of the yoke, and means for operating said bolt through the rotation of said hub, substantially as shown and described.

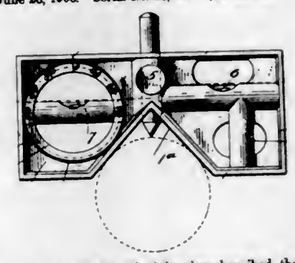
2. A casingless lock, comprising a plate, a disk, guide-strips held in

said plate and disk, a bolt arranged to work through the plate and disk, a spring between the plate and disk, a detachable yoke connected with the bolt and having an elongated opening, a hub having an axial support passed through the opening of the yoke, and lateral extensions over which fit eyes on the guide-strips, all substantially as and for the purpose specified.



3. In a lock, the combination with a sliding bolt provided with laterally-projecting pins, and formed on its under surface with rack-teeth, of guides arranged at opposite sides of the bolt, and formed with elongated slots, and a rotatable key-barrel provided with teeth to engage the teeth on the bolt.

657,443. SPIRIT-LEVEL. CHARLES L. NEWTON, Pueblo, Colo. Filed June 28, 1900. Serial No. 21,978. (No model.)



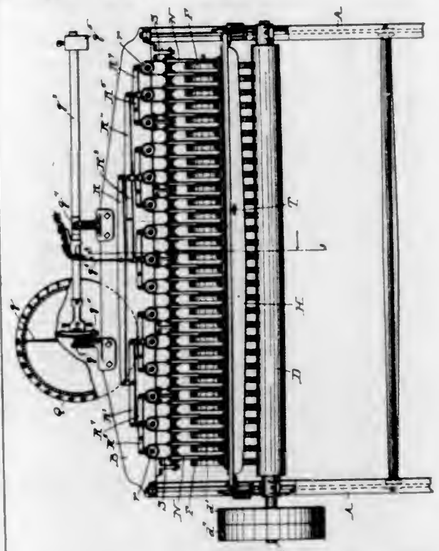
Claim.—1. In a spirit-level of the class described, the combination of a main frame having mounted therein one or more fixed spirit-level glasses, a movable frame carrying a spirit-level glass, the said movable frame rotatably mounted in said main frame, an inverted-V-shaped notch or recess provided in the lower edge of said frame, an adjustable punch or prick mounted to move vertically in said frame and means for holding said punch in its adjusted position, substantially as and for the purposes described.

2. In a spirit-level of the class described, the combination of a main frame having mounted near one end thereof a vertically-disposed adjustable punch, a hinged frame pivoted to and adapted to be folded by said main frame, a rotatably-mounted spirit-level glass and a scale of degrees carried by said hinged frame, an inverted-V-shaped longitudinally-disposed groove or recess formed in the lower edge of said main frame, substantially as and for the purposes set forth.

657,444. MACHINE FOR MEASURING AREAS OF SURFACES. JOSIAH E. NIGHTINGALE, Danvers, Mass. Filed May 1, 1900. Serial No. 15,052. (No model.)

Claim.—1. In a machine for measuring the area of surfaces, a system of levers, composed of a main lever R, having a long and short arm, a lever R′, pivotally connected to the longer arm of lever R, a lever R″, having a long and short arm, pivotally connected to the short arm of the lever R, a lever R^3, pivotally connected to the short arm of the lever R″, a series of levers R^4, having each a long and short arm pivotally connected to opposite ends of the levers R′, R^3 and to the longer arm of lever R″ a series of levers R^5, pivotally connected to the shorter arms of the levers R^4, and a series of pulleys *r*, *r*, suspended from the ends of the levers R^5, and the longer arms of the levers R^4, and chains or cords S, leading from the pulleys *r*, to the hubs of the segments N, substantially as and for the purpose set forth.

2. In a machine for measuring the areas of surfaces, the combination with segments, of a front cross-bar H, longitudinally adjustable relative to the frame of the machine, a series of yokes or frames G, pivotally connected to said adjustable cross-bar, and a measuring-wheel and pinion journaled in each of said yokes or frames, all so arranged that the pinions of the measuring-wheels may be adjusted relative to the segments, substantially as and for the purpose set forth.



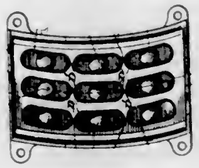
3. In a machine for measuring the areas of surfaces, the combination with segments, of a front cross-bar H, vertically adjustable upon the frame of the machine, a series of yokes or frames G, pivotally connected to said cross-bar, and a measuring-wheel and pinion journaled in each of said yokes or frames, all so arranged that the position of the pinions may be adjusted properly relative to the segments, substantially as herein set forth and described.

4. In a machine for measuring the areas of surfaces, the combination of a series of toothed segments, a vertically-adjustable bracket carried on the frame of the machine in which is mounted a feed-roller, a series of pivoted yokes or frames located between the toothed segments and the feed-roller, and a series of measuring-wheels arranged in said yokes and normally resting upon said feed-roller, and a series of pinions on the axles of said measuring-wheels adapted to engage the teeth of the respective segments, substantially as described.

5. In a machine for measuring the areas of surfaces, in combination, a series of segments, a series of pawls engaging the latter, a shaft on which said pawls are hung, a bracket, a back cross-bar L, mounted in said bracket carrying and said shaft and pawls, and means for vertically adjusting said bracket and the cross-bar mounted therein, so as to cause a proper engagement of said pawls with the segments substantially as and for the purpose set forth.

6. In a machine for measuring the areas of surfaces, in combination, a series of toothed segments, a pawl-supporting rod having pins l^4 adapted to be received in longitudinal recesses *m*, on the pawls M, mounted on said rod, each of said pawls having a transverse cut-away portion *m*″, for the purpose of enabling said pawls to be readily removed from and replaced upon said rod, without removing the pins l^4, substantially as herein set forth and described.

657,445. ANTIFRICTION-BEARING FOR CAR-TRUCKS. JAMES S. PATTEN, Baltimore, Md. Filed Jan. 19, 1900. Serial No. 2,024. (No model.)



Claim.—1. A bearing substantially as described, comprising a casing composed of an upper portion, a lower portion having an upwardly-projecting inclosing flange bearing at its upper edge beneath the upper portion and having such edge reduced in thickness, and the antifriction devices between said portions, substantially as set forth.

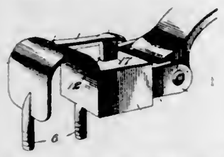
2. A bearing comprising a casing composed of an upper portion having its under side grooved longitudinally, a lower portion having an upwardly-projecting inclosing flange bearing at its upper edge beneath the upper portion and conformed at its upper edge to the grooves thereof, and the antifriction devices between said portions, substantially as set forth.

3. The herein-described bearing comprising a casing composed of upper and lower portions, the upper portion having longitudinal grooves and the lower portion having an upwardly-extending inclosing flange bearing at its upper edge beneath the upper portion, conformed at such edge to the grooves of the upper portion and having its upper edge reduced in thickness, and the antifriction devices fitting between said portions, substantially as set forth.

4. In a bearing substantially as described, the combination of the casing composed of the upper and lower portions, the upper portion being grooved longitudinally and the lower portion having in its upper side a plurality of individual pockets for antifriction devices and such lower side being also provided with an upwardly-projecting flange bearing beneath the lower portion and having its upper edge reduced in thickness and conformed to the grooved under side of the upper portion of the casing, and the antifriction devices in said pockets, substantially as set forth.

5. In a railway-car truck, the combination with the upper and lower truck-bearings of a chambered and ribbed chair having its ribs extending edgewise in a direction parallel to the axis of the truck whereby the chair can be conveniently cut away to fit the space between the beams or bolsters substantially as set forth.

657,446. THILL OR POLE COUPLING. JAMES C. PERKINS, Inwood, Iowa. Filed Mar. 2, 1900. Serial No. 7,123. (No model.)



Claim.—1. A thill-coupling comprising a U-shaped clip provided with an integral flaring socket, a member adapted to engage said socket and having means for attachment to a pole or thills, a wedge-pin retaining the member in the socket, and a yielding retainer operatively engaging the wedge-pin.

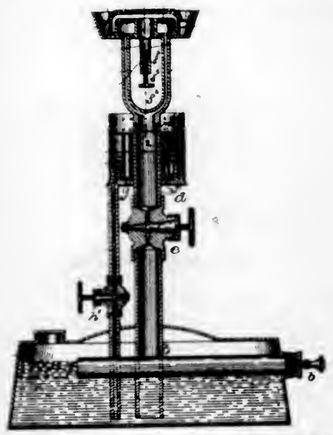
2. A thill-coupling comprising a clip member provided with a flaring socket, a wedge member adapted to said socket and having ears at its exposed end, a wedge-pin coacting with the socket and the wedge member, and a spring-retainer attached to the clip member and engaging with the wedge-pin, substantially as described.

3. A thill-coupling comprising a clip member provided with a slotted boxing having the flaring socket, a wedge member adapted to the socket and provided with a longitudinal slot and ears at its exposed end, a wedge-pin fitted in the slotted boxing and the wedge, and a spring-retainer pivoted to the clip member and engaging with the wedge-pin, substantially as described.

4. A thill-coupling comprising a clip member provided with a flaring socket, a member adapted to engage said socket and having means for attachment to a pole or thills, a wedge-pin connecting the socket and member, and a pivoted resilient retainer carried by the clip member and provided with a terminal cavity for the reception of one end of the wedge-pin.

657,447. HYDROCARBON-VAPORIZING BURNER. SIMON A. POLITSKY and JOSEPH AGUST, Boston, Mass., assignors of one-third to Cornelius F. Greene, same place. Filed Nov. 16, 1899. Serial No. 737,213. (No model.)

Claim.—1. A hydrocarbon-burner of the character described, comprising a base constituting an oil-reservoir and being equipped with pressure-supplying means; an oil-conveying stand-pipe rising from said reservoir and having a valve to control the flow of oil; a preheating-burner of annular form surrounding the stand-pipe above the valve thereof and consisting of an oil-holder and a combustion-chamber thereabove with restricted air-inlets; an oil-pipe communicating at its upper end with the oil-holder of the preheating-burner and at its lower end with the reservoir; a valve controlling the flow of oil through said pipe; and a main burner surmounting the stand-pipe and communicating therewith through branches which overhang the combustion-chamber of the preheating-burner.



2. A hydrocarbon-burner comprising an annular oil-holder having an oil-supply conduit communicating therewith, a perforated cylindrical shell rising from the said holder at the outer part thereof and constituting the outer wall of a combustion-chamber, an inner wall of such chamber rising from the oil-holder at the inner part thereof, and a perforated shell encompassing said inner wall at its upper part, vertical vapor passage-ways being formed between said encompassing shell and the inner wall of the combustion-chamber.

3. In a hydrocarbon-burner, the combination of an oil-reservoir, an annular wick-holder, a conduit connecting the reservoir with the wick-holder, a wick in the latter, a perforated cylindrical shell rising from the wick-holder on the outer side of the wick and forming the outer wall of a combustion-chamber, an inner wall of such chamber rising from the wick-holder on the inner side of the wick, and a perforated shell encompassing the upper portion of said inner wall, vertical passage-ways being formed between the latter and the encompassing perforated shell, substantially as and for the purpose described.

4. A hydrocarbon-burner comprising an annular oil-holder having an oil-supply conduit communicating therewith, a perforated cylindrical shell rising from the said holder at the outer part thereof and constituting the outer wall of a combustion-chamber, an inner wall of such chamber rising from the oil-holder at the inner part thereof, and a perforated shell encompassing said inner wall at its upper part, and having a flaring lower end portion, vertical vapor passage-ways being formed between said encompassing shell and the inner wall of the combustion-chamber.

5. In a hydrocarbon-burner the combination of an oil-reservoir, an annular wick-holder, a conduit connecting the reservoir with the wick-holder, a wick in the latter, a perforated cylindrical shell rising from the wick-holder on the outer side of the wick and forming the outer wall of a combustion-chamber, an inner wall of such chamber rising from the wick-holder on the inner side of the wick, and a perforated shell encompassing the upper portion of said inner wall and having a flaring lower end portion, vertical passage-ways being formed between the inner wall and the encompassing perforated shell, substantially as and for the purpose described.

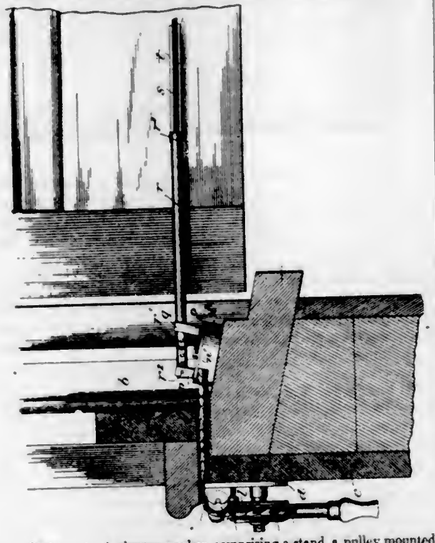
6. A hydrocarbon-burner comprising an annular oil-holder having an oil-supply conduit communicating therewith, a perforated cylindrical shell rising from the said holder at the outer part thereof and constituting the outer wall of a combustion-chamber, an inner wall of such chamber rising from the oil-holder at the inner part thereof, and a perforated shell encompassing said inner wall at its upper part, vertical vapor passage-ways being formed between said encompassing shell and the inner wall of the combustion-chamber; together with a sleeve within the latter and having a perforated flange extending over the top edge of the same and of the perforated encompassing shell.

7. A hydrocarbon-burner comprising an annular oil-holder having an oil-supply conduit communicating therewith, a perforated cylindrical shell rising from the said holder at the outer part thereof and constituting the outer wall of a combustion-chamber, an inner wall of such chamber rising from the oil-holder at the inner part thereof, and vertically corrugated, and a perforated shell encompassing said inner wall at its upper part, vapor-passages being formed by the corrugations of the latter and the said encompassing shell.

8. In a hydrocarbon-burner, the combination of an oil-reservoir, a conduit rising therefrom, a main burner at the top of said conduit, a preheating-burner surrounding the latter and comprising an annular wick-holder and wick, a perforated shell rising from the wick-holder on the outer side of the wick, a corrugated shell rising from said holder on the inner side of the wick, a perforated shell surrounding the upper portion of the corrugated shell, and a sleeve fitting around the conduit inside the corrugated shell and having a perforated flange extending over the top edge of the latter and the top edge of the perforated shell which surrounds it; together with a valved conduit connecting the oil-reservoir with the wick-holder.

9. In a hydrocarbon-burner, the combination of an oil-reservoir, an annular wick-holder, a conduit connecting the same with the reservoir, a wick in the holder, and an annular combustion-chamber rising from the wick-holder and comprising an outer perforated shell, an inner imperforate shell corrugated to provide vertical vapor-passages, a perforated shell surrounding the upper portion of the corrugated shell, and a perforated disk extending over the upper ends of the latter and the said surrounding shell, substantially as described.

657,448. SHUTTER-WORKER. SAMUEL L. POWELL, Newberry, S. C. Filed July 2, 1900. Serial No. 22,314. (No model.)



Claim.—1. A shutter-worker, comprising a stand, a pulley mounted thereon, means to rotate said pulley, guide-pulleys mounted upon said stand and at right angles to the axis of the main pulley first mentioned, an outside pulley, a cord, chain, or band connecting the two pulleys, and an arm pivoted to the outside pulley and adapted to be movably connected with the shutter, substantially as described.

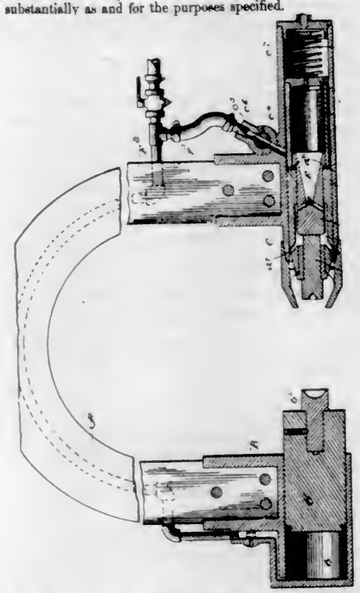
2. A shutter-worker, comprising a stand, a pulley mounted thereon, means to rotate said pulley, guide-pulleys mounted upon said stand and at right angles to the axis of the main pulley first mentioned, an outside pulley, having upwardly-projecting forked bearings, an arm pivoted in one of said bearings and guided by the other and adapted to be connected with the shutter, and a power-transmitting connector engaging the pulleys, substantially as described.

3. A stand, a pulley mounted thereon and provided with rack-teeth, a dog for engaging said teeth, means to rotate said pulley, and guide-pulleys arranged on the stand, combined with a stand having an upright flange, a pulley mounted upon said stand within said flange, a cord, chain, or band for connecting said pulleys, and a shutter-operating arm pivoted to the incased pulley, substantially as described.

4. The combination with a shutter-worker having a swinging arm, of a shutter-fastener having a plate provided with oppositely-arranged inclined lugs to coöperate with said swinging arm and adapted for use on right or left hand shutters, substantially as described.

657,449. PNEUMATIC RIVETER. HERMAN H. FRANCK, Akron, Ohio, assignor to the Johnson, Parfitt Tool Company, Springfield, Ill. Filed Feb. 19, 1900. Serial No. 5,774. (No model.)

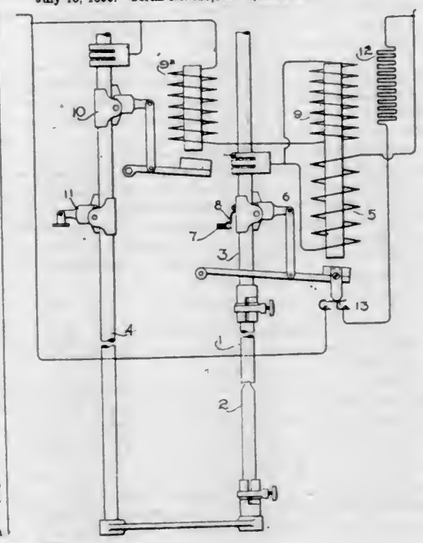
Claim.—1. The combination with a suitable supporting-casing, of a pneumatic hammer longitudinally movable in the casing, means for the admission of motive fluid to the casing and hammer, a plate-closer mounted on the casing, and means for holding the rivet and plates up to the plate-closer, substantially as and for the purposes specified.



2. The combination with a suitable support, of a hold-on, a fixed casing, a pneumatic hammer longitudinally movable in the fixed casing, means for the admission of motive fluid to the hold-on and to the fixed casing and the pneumatic hammer, and a plate-closer mounted on the fixed casing, substantially as and for the purposes specified.

3. The combination with a suitable support, of a hold-on, a casing, a pneumatic hammer longitudinally movable in the casing, and a valved motive-fluid-supply pipe having branches leading to the hold-on and to the casing the one leading to the casing having an independent throttle-valve, substantially as and for the purposes specified.

657,450. ELECTRIC-ARC LAMP. IRVING R. PRENTISS, Lynn, Mass., assignor to the General Electric Company, of New York. Filed July 15, 1899. Serial No. 723,893. (No model.)



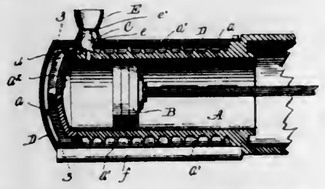
Claim.—1. A focusing arc-lamp, comprising relatively-movable positive and negative electrodes, a series regulating-coil for the positive, a shunt-coil for intermittently lifting the negative, and a clutch fixed to the lamp for supporting the negative when fed upward.

2. A focusing arc-lamp, comprising relatively-movable positive and negative carbons, means for striking the arc, and a shunt-circuit controlling an intermittent upward and downward feed of the negative and positive electrodes, respectively.

3. A focusing arc-lamp, comprising movable positive and negative electrodes, the positive being fed by gravity, a clutch controlling said feed, a differential coil having windings in series and shunt relation to the arc respectively for controlling the clutch, an independent clutch and a coil in the shunt-circuit for intermittently operating it to raise the negative electrode, and a detent for locking said negative electrode in position when raised.

4. A focusing arc-lamp, comprising a gravity clutch-fed electrode, and a negative electrode intermittently raised by a lifting-coil in shunt to the arc, a detent for holding it in position when raised, the range of movement of the shunt-controlled armature being graduated according to the average rate of consumption of the negative electrode.

657,451. COOLING MEANS FOR EXPLOSIVE-ENGINES. SAMUEL W. REA, Rushville, Ind. Filed Apr. 14, 1900. Serial No. 12,910. (No model.)



Claim.—In a cooling device for explosive-engines, the combination with the cylinder having webs around the same and across the end or head, and an exhaust-valve C projecting from one side of said cylinder; of a jacket D inclosing the cylinder and having a tapered inlet-opening *f* extending longitudinally at one side thereof and formed by slitting the jacket and bending the edges back, the wider part of the inlet-opening being at the head of the cylinder; and a nozzle E projecting from the other side of said jacket over the exhaust-nozzle, and through which said exhaust-nozzle discharges, substantially as shown and described.

657,452. PROCESS OF MAKING MAGNESIA-ALUMINA. MATHEW E. ROTHBERG, Johnstown, Pa. Filed Nov. 23, 1899. Serial No. 738,071. (No specimens.)

Claim.—1. The process of manufacturing magnesia-alumina, which consists in mixing lime chloride with a solution of alumina sulphate, and subsequently adding to the alumina-chloride solution produced thereby, magnesian lime, substantially as specified.

2. The process of manufacturing magnesia-alumina, which consists in mixing lime chloride with a solution of alumina sulphate, treating the resultant alumina-chloride solution with barium chloride, and adding to the alumina-chloride solution, so treated, magnesian lime, substantially as specified.

3. The process of manufacturing simultaneously, plaster-of-paris, alumina-magnesia, and baryta, which consists in first, mixing together solutions of alumina sulphate and lime chloride, and separating the resultant lime sulphate; secondly, treating the resultant alumina-chloride solution with barium chloride, and separating the resultant barium sulphate; thirdly, adding to the purified alumina-chloride liquor, magnesian lime, and separating the resultant magnesia-alumina, and fourthly, recovering the lime-chloride solution, substantially as specified.

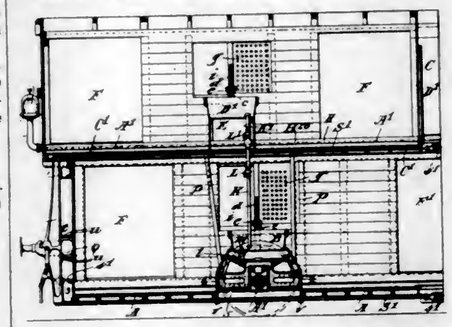
657,453. PROCESS OF OBTAINING ALUMINA. MATHEW E. ROTHBERG, Johnstown, Pa. Filed Mar. 5, 1900. Serial No. 7,407. (No specimens.)

Claim.—1. The process of manufacturing alumina, which consists in mixing lime chloride with a solution of alumina sulphate, subsequently adding lime to the alumina-chloride solution produced thereby, and finally separating and heating the resultant precipitate, substantially as specified.

2. The process of manufacturing alumina, which consists in mixing lime chloride with a solution of alumina sulphate, treating the resultant alumina-chloride solution with barium chloride, adding lime to the alumina-chloride solution so treated and finally separating and heating the resultant precipitate, substantially as specified.

3. The process of simultaneously manufacturing plaster-of-paris, alumina and baryta, which consists in first mixing together solutions of alumina sulphate and lime chloride, and separating out the resultant lime sulphate; secondly, treating the resultant alumina-chloride solution with barium chloride, and separating out the barium sulphate; thirdly, adding lime to the purified alumina, chloride liquor, separating and heating out the resultant precipitate, and fourthly recovering the lime-chloride solution, substantially as specified.

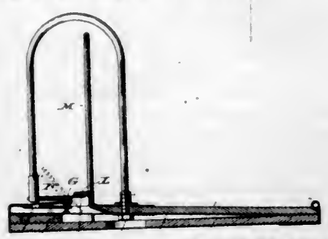
657,454. CATTLE-CAR. EUGRAPHUS RYKOVSKOFF, Moscow, Russia. Filed Apr. 21, 1896. Serial No. 588,511. (No model.)



Claim.—1. A double-deck stock-car, comprising a metallic under body, a metallic underframing for the upper compartment forming the top of the lower compartment, trucks between the side sills, flanged bolsters whose flanges are adapted to rest on the ends of the trucks and support the car, substantially as set forth.

2. A double-deck stock-car, comprising a metallic underframe, a metallic underframing for the upper compartment, metallic posts connecting the side sills of the two framings, flanged bolsters on the lower framing adapted to rest on the trucks, and diagonal tension members from the line of support to the side sills of the framings, substantially as set forth.

657,455. BILL-FILE. JACOB S. SAMMONS, Marshalltown, Iowa. Filed Jan. 6, 1900. Serial No. 586. (No model.)



Claim.—1. In a bill-file, the combination, of a tablet or support, a plate having a hole therein, a curved rod provided with a head or cutter adapted to pass into said hole, a spring to which the curved rod is attached and supported, a pivoted plate having fingers between which the end of the paper to be punctured is passed, and means for automatically lifting the free end of said pivoted plate upon the operation of the curved rod, substantially as shown and for the purpose set forth.

2. In a bill-file, the combination, of a tablet or support, a plate having a hole therein, a curved rod provided with a head or cutter adapted to pass into said hole, a spring to which the curved rod is attached and supported, a pivoted plate having fingers between which the end of the paper to be punctured is passed, means for automatically lifting the free end of the pivoted plate upon the operation of the curved rod, and a wire loop disposed across the tablet to form a guide, substantially as shown and for the purpose set forth.

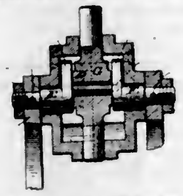
3. In a bill-file, the combination, of a tablet or support, a plate having a hole therein, a curved rod provided with a head or cutter adapted to pass into said hole, a spring to which the curved rod is attached and by which it is supported, a lip projecting from the spring, and a pivoted plate having a tongue engaged by the lip, said pivoted plate being also provided with fingers which embrace the head or cutter, substantially as shown and for the purpose set forth.

4. In a bill-file, the combination, of a tablet or support, a plate having a hole therein, a curved rod provided with a head or cutter adapted to pass into said hole, a spring to which the curved rod is attached and supported, a pivoted plate having fingers which embrace the head or cutter, means operating the pivoted plate from the spring which supports the curved rod or punch, a guide-loop for the bill or paper, and a side gage at one side of the tablet, substantially as shown and for the purpose set forth.

5. In a bill-file, the combination, of the support or tablet made up of two boards connected together at one end and separated at the other end, the upper board being cut away as shown to form a spring, a plate located upon the tablet and provided with a hole therein, a curved rod attached to the aforesaid spring and provided with a head or cutter adapted to pass into the hole of the plate, a pivoted plate or lift supported upon the tablet, and means for operating the pivoted plate from the spring which supports the curved rod or punch, substantially as shown and for the purpose set forth.

6. In a bill-file, the combination, of the tablet or support, a plate having a hole therein, a curved rod having a head or cutter adapted to pass into said hole, a spring to which the curved rod is attached and supported, a plate pivoted upon the tablet and having a rearwardly-projecting tongue, a plate attached to the spring and adapted to engage the tongue of the pivoted plate, a side gage on the tablet, and a wire loop passing under the curved rod; together with a metal strip securing the ends of the boards forming the tablet, substantially as shown and for the purpose set forth.

657,456. MECHANICAL MOVEMENT. JOHN SCHIES, Anderson, Ind. Filed Jan. 18, 1900. Serial No. 1,892. (No model.)



Claim.—1. The combination substantially as described of a revolving body or carrier, a plunger moving with and also movable longitudinally in the carrier as the latter is revolved and arranged to protrude alternately at its opposite ends beyond the carrier, and means for moving the plunger longitudinally during the revolution of the carrier.

2. The combination of a revolving body or carrier, a plunger movable longitudinally in the carrier and arranged to protrude alternately at its opposite ends beyond the carrier and means within the carrier by which to move the plunger longitudinally as the carrier is revolved.

3. The combination of the framing, the bearings for the carrier, the crank-pin eccentric to said bearings, the carrier supported and arranged to be revolved on said bearings, and the plunger movable longitudinally within the carrier and having between its ends a yoke for engagement by the crank-pin and arranged to protrude alternately at its opposite ends beyond the carrier substantially as set forth.

4. The combination of the bearing-pieces having spindles forming bearings for the carrier, crank-arms forming guides, and the crank-pin between said crank-arms and eccentric with respect to the spindles, the carrier arranged to revolve on the spindles, and the plunger movable longitudinally in said carrier and provided between its ends with means for engagement by the crank-pin and arranged to protrude alternately at its opposite ends beyond the carrier substantially as set forth.

5. An apparatus substantially as described comprising the carrier-body composed of a box formed in sections having in their abutting faces bearings for the plunger, a support on which said carrier is journaled to revolve, a plunger movable longitudinally in the carrier, and means within the carrier for operating the plunger longitudinally as the carrier is revolved, substantially as set forth.

6. The combination of the opposite bearing-pieces having spindles, the crank-pin extending between said pieces and arranged eccentric to the spindles thereof, the carrier revolving on the spindles, and the plunger movable longitudinally in the carrier and engaged between its ends with the crank-pin and arranged to protrude alternately at its ends beyond the carrier substantially as set forth.

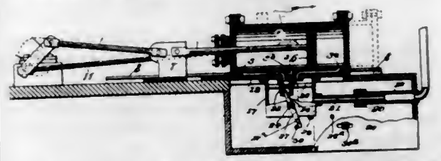
7. The combination of the framing-uprights, the bearing-pieces held thereto and having spindle portions and a crank-pin extended between said bearing-pieces and arranged eccentric to the spindle portion, the carrier composed of the box-sections journaled on the spindles and having in their abutting faces bearings for the plunger, and the plunger having between its ends a yoke for engagement by the crank-pin substantially as set forth.

657,457. ATTACHMENT FOR SCREW-DRIVERS. EMANUEL L. SCHNEIDER, Ann Arbor, Mich. Filed Apr. 16, 1900. Serial No. 13,070. (No model.)



Claim.—The combination with a screw-driver, of a collar rigidly secured thereon but capable of being removed, a shell or sleeve having a bell-mouth to receive a screw and of a diameter throughout its length to pass freely over said collar except for a shoulder or internal flange at its lower end and loosely fitting the screw-driver, and internally threaded at its upper end to receive the screw-threaded end of a gland, a gland fitting on the screw-driver shank and a spring interposed between the shoulder on the sleeve and the collar on the screw-driver, the whole constituting an attachment for holding and driving or removing a screw, and readily removable for the purpose of regrinding or sharpening the screw-driver, substantially as described.

657,458. ENGINE. LOUIS SCHULZ, New Orleans, La., assignor of one-third to Herman H. Hutten, same place. Filed Mar. 22, 1900. Serial No. 9,752. (No model.)



Claim.—1. In the fluid-pressure engine described, the combination of the casing, the bed arranged above the casing and having a slot in communication therewith, and also having a guide, and shaft journaled in suitable bearings, and having oppositely-disposed cranks, a cylinder movable on the bed in the guide thereof, a cross-head also movable in the guide, driving connections between the cylinder and cross-head and the cranks of the shaft, a piston arranged in and movable independent of the cylinder, and having a rod connected to the cross-head, a valve-chest movable with the cylinder, and extending through the slot in the bed into the casing; said chest being connected by ports with the interior of the cylinder at the opposite ends thereof, and also connected by an exhaust-port with the atmosphere, suitable means for connecting the valve-chest with a source of fluid-pressure, a slide-valve arranged in the chest, a rock-shaft journaled in the chest, and having an arm within the chest arranged in engagement with the valve and also having an arm without the chest, and the upper and lower tappets contained in the casing, and arranged in the path of and adapted to engage the outer arm of the rock-shaft.

2. In a fluid-pressure engine, the combination of an element to be driven, a cylinder movable toward and from the element to be driven, a piston arranged in and movable independent of the cylinder, driving connections between the cylinder and piston and the element to be driven, a valve-chest movable with the cylinder and connected by ports with the interior of the cylinder at opposite ends thereof and also connected by an exhaust-port with the atmosphere, suitable means for connecting the valve-chest with a source of fluid-pressure supply, a slide-valve arranged in the chest, a rock-shaft journaled in the chest and having an arm within the chest arranged in engagement with the valve and also having an arm without the chest, and the upper tappets and lower tappets arranged in the path of and adapted to engage the outer arm of the rock-shaft, substantially as specified.

3. In a fluid-pressure engine, the combination with an element to be driven, a cylinder movable toward and from the element to be driven, a piston arranged in and movable independent of the cylinder, driving connections between the cylinder and piston and the element to be driven, a valve-chest movable with the cylinder and connected by ports with the interior of the cylinder at opposite ends thereof and also connected by an exhaust-port with the atmosphere, a fixed tube adapted to be connected with a source of fluid-pressure supply, a pipe connected to the valve-chest and telescoped in said fixed tube, a slide-valve arranged in the chest, a rock-shaft journaled in the chest and having an arm within the chest arranged in engagement with the valve and also having an arm without the chest, and the upper tappets and lower tappets arranged in the path of and adapted to engage the outer arm of the rock-shaft, the lower tappets being adjustable, substantially as specified.

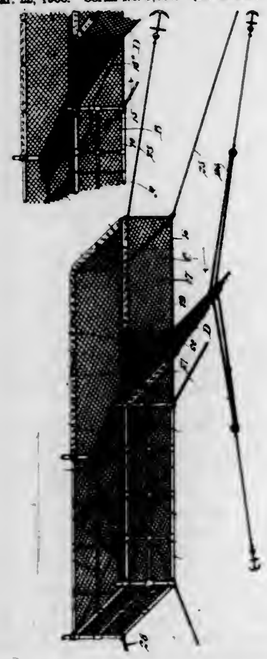
657,459. BOTTLE-STOPPER. CARL H. SEELIG, Watertown, Mass., assignor to Hector E. Lynch, same place. Filed Jan. 31, 1900. Serial No. 3,400. (No model.)

Claim.—1. In an antirefillable bottle, a stopper comprising a jacket having a central tubular passage, means at the top of the passage for preventing access for interfering with the stopper, a valve-seat secured intermediately of said passage, a valve mounted in said valve-seat, said valve having a funnel shape with the open flaring mouth thereof toward the mouth of the bottle, a seating-weight suspended from the inner apex end of the valve, and a cage or directing means secured in the lower part of said passage for properly maintaining said suspended weight centrally below the valve when the bottle is in upright position.



2. In an antirefillable bottle, a stopper comprising a jacket having a central tubular passage, means at the top of the passage for preventing access for interfering with the stopper, a valve-seat secured intermediately of said passage, a valve mounted in said valve-seat, said valve having a funnel shape with the open flaring mouth thereof toward the mouth of the bottle, a seating-weight suspended from the inner apex end of the valve, and a cage or directing means secured in the lower part of said passage for properly maintaining said suspended weight centrally below the valve when the bottle is in upright position, said cage having a small annular upper portion and flaring rod extending downwardly therefrom to the bottom of said tubular passage and secured in the latter.

657,460. **FISH-TRAP.** JOHN O. SHARPLESS, Fairhaven, Wash. Filed Mar. 22, 1900. Serial No. 9,767. (No model.)



Claim.—1. A fish-trap having two compartments, an inclined bottom leading from the bottom of one compartment to the upper portion of the other, and an apron extending into said other compartment and forming an extension of the said inclined bottom.

2. A fish-trap, having a heart with an end wall extending up to near the top thereof, an apron extending into the heart from the upper edge of said wall, a hook, and an inclined bottom on the same, the bottom leading up to the upper edge of the said wall of the heart.

3. A fish-trap, comprising a pot, a heart situated at one side thereof, a tunnel leading from the heart to the pot, an inner side wall for the heart, the wall extending up to near the top thereof, an apron extending inward from said wall, a hook or outer inclosure adjacent to the heart and having an inclined bottom leading up to the said apron, and a lead extending to the hook or outer inclosure, to direct the fish thereinto.

4. A fish-trap, having a lead connected therewith, the upper portions of such connection being slidable, floats connected with the upper edge of the lead, and means for anchoring the lower edges of the lead, such means being adjustable, for the purpose described.

5. A fish-trap, comprising a heart, a hook or outer inclosure contiguous thereto, a wall between the heart and hook, the wall extending upward to near the top of the trap, an apron extending into the heart from the upper edge of such wall, and an inclined bottom extending from the hook upwardly to the upper edge of the said wall.

6. A fish-trap, having a lead fastened thereto at the lower part of one end, the upper part of said end being slidably connected with the trap, so that the sidewise inclination of the lead may be varied for the purpose specified, and means for holding the lead in the desired position.

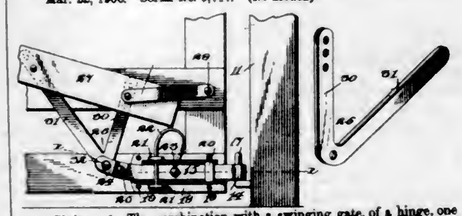
7. A fish-trap, having a framing comprising side and bottom walls formed of metallic pipes, certain of which are open at their upper portions, and netting or the like carried on the frame.

657,461. **COMPOSITION OF MATTER.** JAMES K. P. SHELTON, Cuba, Ala. Filed June 14, 1900. Serial No. 20,275. (No specimens.)

Claim.—1. A cement or composition of matter for the purpose herein described, comprising coal, sand and resin, ground or powdered and combined, substantially as described.

2. A fusible cement or composition of matter for the purpose herein described, comprising equal parts of coal, sand and resin, ground or powdered and combined, and adapted to be fused or melted, substantially as described.

657,462. **GATE.** WILLIAM N. SIMPKINS, Streator, Ill. Filed Mar. 22, 1900. Serial No. 9,717. (No model.)



Claim.—1. The combination with a swinging gate, of a hinge, one member of which has a sliding engagement with the gate, a lever pivoted upon the gate contiguous to the hinged end thereof and having an operative connection with the said hinge member, said lever extending diagonally across the gate forming a strengthening-bar therefor, and means for locking the free end of the lever to the gate-post, substantially as described.

2. The combination with a swinging gate, of a hinge arranged at the lower corner of the gate, one member of said hinge being slidably mounted upon the gate, a lever pivoted to the lower corner of the gate and having one end operatively connected to the slidable hinge member, said lever extending diagonally across the gate forming a bar, and means for locking the free end of said lever to the gate-post, substantially as described.

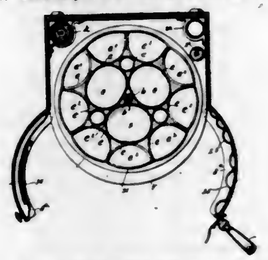
3. The combination with a swinging gate, of a hinge arranged at the lower corner thereof and having one of its members slidably mounted upon the gate, a lever pivoted to the lower corner of the gate and operatively connected to the slidable hinge member, said lever extending diagonally across the gate and projecting beyond the free end thereof, and a pair of reversely-arranged keepers, one of which is adapted to receive the lower free end of the gate, the other adapted to engage the free end of the lever, substantiellly as described.

4. The combination with a swinging gate, of a hinge having one of its members slidably mounted, and a spring engaging the slidable member and exerting a pressure against the weight of the gate, substantially as described.

5. The combination with a swinging gate, of a hinge having one of its members slidably mounted upon the gate, a spring mounted upon the gate, and engaging the slidable hinge member, and a lever pivoted to the gate and connected to the slidable hinge member, whereby when said lever is operated the gate is raised or lowered, substantially as described.

6. The combination with a swinging gate, of a hinge having one of its members slidably mounted upon the gate, and a spring engaging the slidable hinge member, a portion of said spring also forming a retaining means for the slidable hinge member, substantially as described.

657,468. **PORTABLE CABINET.** CHARLOTTE G. SIMPSON, New York, N. Y. Filed May 1, 1900. Serial No. 15,149. (No model.)



Claim.—1. In a portable cabinet, a casing having hinged doors and a rotatable carrier therein comprising a three-part hollow column adapted to hold articles, a central spindle removably engaging supports in the casing, and passing through an opening where the three portions of the column join, and spaced galleries held on the tubular column.

2. In a portable cabinet, a casing having hinged doors, and a rotatable carrier therein comprising a three-part tubular column, closed at the bottom and open at the top for reception of goods, a spindle passing through an opening at the center of the hollow column where its three portions join, and encircling galleries held upon the column at spaced distances apart, each gallery having a plurality of pockets formed by spaced partitions, a bottom wall, and an exterior side wall.

3. In a portable cabinet, a casing, doors on one open side of the casing, and a rotatable carrier in the casing, comprising a three-part tubular column open at the upper end for reception of articles, a supporting-spindle passing through a small tubulation at the center of the hollow column upon which the three hollow portions of the column are affixed, a removable base-plate, in which the lower end of the spindle is stepped, a slotted bracket-box on the opposite end of the casing within it adapted to hold the upper end of the spindle removably, and a plurality of galleries mounted at intervals upon the tubular column for rotation therewith.

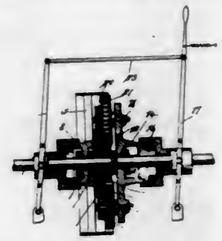
4. In a portable cabinet, the bottle-holding device comprising a three-part tubular column open at the upper end for reception of articles, a longitudinal tubulation at the center and whereon the three portions of the hollow column are joined, a spindle passing through the tubulation, a base-plate in which the lower end of said spindle is stepped, two galleries each having a plurality of pockets and encircling the column, one at the lower end and one above said lower gallery, each gallery having a plurality of pockets formed by spaced partitions, and a set of antifriction-rollers intervening the bottom wall of the lower gallery and the base-plate.

5. A portable cabinet, having a body of stiff material, the ends of which extend above the sides and are rounded at the upper edges, curved doors hinged to the side edges of the body, the body and doors forming a hand-bag, and a rotary carrier for bottles, jars and the like, the carrier being mounted on an axis ranging longitudinally of the cabinet and having compartments ranging lengthwise of the carrier at points around the axis and being closed except at an end facing an end of the cabinet, to hold the contained bottles and the like in an upright position when the cabinet is on end, all as shown and described.

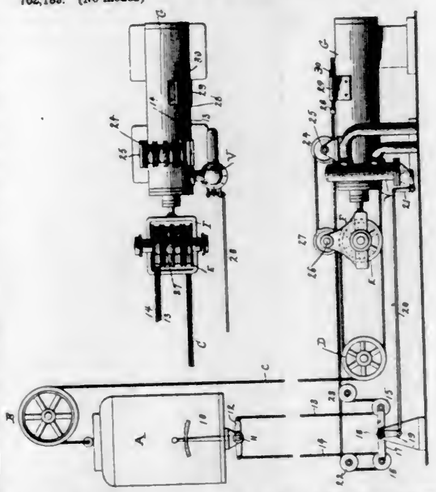
6. A portable cabinet, having a body of stiff material, the ends of which extend above the sides and are rounded at the upper edges, curved doors hinged to the side edges of the body and provided interiorly with flexible pockets, the body and doors forming a hand-bag, and a rotary carrier for bottles, jars and the like, the carrier being mounted on an axis ranging longitudinally of the cabinet and having compartments ranging lengthwise of the carrier at points around the axis and being closed except at an end facing an end of the cabinet, to hold the contained bottles and the like in an upright position when the cabinet is on end, all as shown and described.

657,464. **REVERSING-GEAR.** ELGAN S. SLOAN, Elk City Pa. Filed Apr. 9, 1900. Serial No. 12,105. (No model.)

Claim.—In a reversing-gear, the combination with a revoluble shaft, of a pulley mounted loosely thereon, collars fast on the shaft and bearing on opposite sides of the pulley to prevent the sliding thereof, the hub of the pulley being formed into a clutch member, a second clutch member splined on the shaft and engageable with the clutch member on the hub of the pulley to fasten the pulley to the shaft, a third clutch member mounted loosely on the shaft, means for holding the third clutch member to slide but not to turn, a member mounted loosely on the shaft and comprising a clutch member engageable with the third clutch member, whereby the said member on the shaft may be held stationary with respect thereto, a double-faced gear-wheel mounted to turn on the said member which is mounted loosely on the shaft, one face of said gear-wheel being meshed with teeth on the pulley, and a gear-wheel fast to the shaft and meshing with the other face of said double-faced gear-wheel.



657,465. **ELEVATOR-CONTROLLER.** LOUIS W. SOUTHGATE, Worcester, Mass., assignor to the Otis Elevator Company, East Orange, N. J. Filed Nov. 13, 1896. Renewed Jan. 14, 1899. Serial No. 702,189. (No model.)



Claim.—1. The combination of an elevator-car and its motor, a running controlling-rope, a positively-actuated take-up device for taking up or letting out the controlling-rope as the car travels, and motor-controlling connections engaging the controlling-rope between the car and the take-up device, substantially as described.

2. The combination of an elevator-car and its motor, two running controlling-ropes, a positively-actuated take-up device for taking up or letting out said controlling-ropes as the car travels, and motor-controlling connections engaging said controlling-ropes between the car and the take-up device, substantially as described.

3. The combination of an elevator-car and its motor, a running controlling-rope attached at its ends to the car and a fixed point respectively, motor-controlling connections and a take-up device applied to said rope between the motor-controlling connections and the fixed point, substantially as described.

4. The combination of an elevator-car and its motor, running controlling-ropes attached to the car and to fixed points respectively, motor-controlling connections, and a take-up device applied to said ropes between the motor-controlling connections and the fixed points, substantially as described.

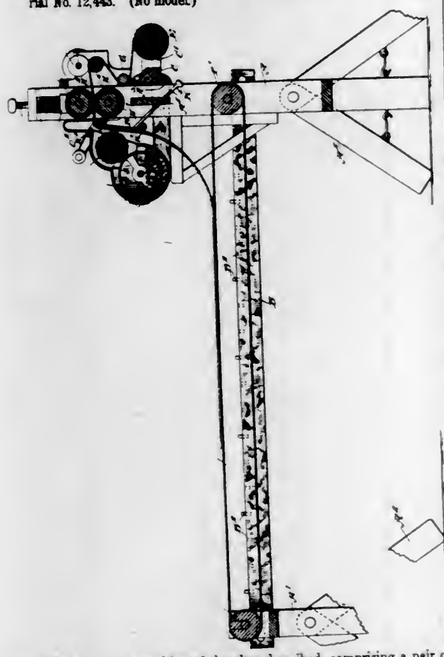
5. The combination of an elevator-car and its motor, a running controlling-rope attached to an operating device carried by the car, a pulley as 15 to which said running controlling-rope passes from the operating device, connections from this pulley 15 to the motor-controlling element, and

a positively-actuated take-up device for taking up or letting out said rope as the car travels, to which said controlling-rope passes from the pulley 15, substantially as described.

6. The combination of an elevator-car and its motor, two running controlling-ropes connected to an operating device carried by the car, pulleys as 15 and 16 around which said ropes pass from said operating device, connections from said pulleys to the motor-controlling element, and a positively-actuated take-up device to which said ropes pass from said pulleys, substantially as described.

7. The combination of an elevator-car and its motor, motor-controlling connections, a running controlling-rope extending in a straight line from the elevator-car to the motor-controlling connections, and means for maintaining a constant tension of the controlling-rope as the car moves up and down, substantially as described.

657,466. WALL-PAPER TRIMMING, PASTING, AND MATCHING MACHINE. WILLIAM D. TABER, Cranston, R. I., assignor to Carrie E. Knight and Rhobey Knight, same place. Filed Apr. 11, 1900. Serial No. 12,443. (No model.)



Claim.—1. A machine of the class described, comprising a pair of drawing-rollers for the paper to pass between, circular knives or cutters on said rollers, to trim the paper by cutting off the selvage, a spring for holding the knives in shearing contact, an upright table forward of said rollers and over which the paper passes, a brush in front of said table for applying paste to the paper, means for supplying paste to the brush, and means for adjusting the table relatively to the brush, as set forth.

2. A machine of the class described, comprising a pair of drawing-rollers for the paper to pass between, circular knives or cutters for trimming the paper at one side thereof, a table adjustable in width and over which the paper passes after leaving the rollers, a revoluble brush in front of the table, for applying paste to the back of the paper, and means for adjusting the table relatively to the brush, as set forth.

3. A machine of the class described, comprising a pair of drawing-rollers for the paper to pass between, circular knives or cutters for trimming the paper at one side thereof, an upright table over which the paper passes after leaving the rollers, a revoluble brush in front of the table for applying paste to the back of the paper, a receptacle for paste supported forward of the table and under which the paper passes from the table, a roller in said receptacle for supplying paste to the brush, and a traveling apron upon which the paper passes after passing over the table, to move the trimmed and pasted paper forward, as set forth.

4. A machine of the class described, comprising a rack for supporting the roll of paper, guide-rollers for the paper after it unwinds from the said rack, a driven shaft carrying an adjustable cutting-disk, over one of the said rollers, and two bearings for one end of the shaft and located one below the other, substantially as shown and described.

5. A machine of the class described, comprising a pair of drawing-rollers for the paper to pass between, circular knives or cutters for trimming the paper at one side thereof, an upright table arranged forward of the drawing-rollers and over which the paper passes after leaving the rollers, a revoluble brush in front of the table, for applying paste to the back of the paper, a traveling apron upon which the paper passes after passing over the table to move the trimmed and pasted paper forward, and means, substantially as described, for matching the paper while it travels forward on the apron, as set forth.

6. A machine of the class described, comprising a pair of drawing-rollers for the paper to pass between, circular knives or cutters for trimming the paper at one side thereof, an upright table over which the paper passes after leaving the rollers, a revoluble brush in front of the table, for applying paste to the back of the paper, a receptacle for paste, a roller in said receptacle for supplying paste to the brush and means, substantially as described, for adjusting said table relatively the the brush, as set forth.

7. A machine of the class described, comprising a pair of drawing-rollers for the paper to pass between, circular knives or cutters for trimming the paper at one side thereof, a table over which the paper passes after leaving the rollers, and a revoluble brush in front of the table for applying paste to the back of the paper, said table being made in sections transversely adjustable relatively to one another, to render the width of the table somewhat less than the width of the paper under treatment, as set forth.

8. A machine of the class described, comprising a rack for supporting a roll of paper, said rack being held transversely adjustable, a guide-roll under which the paper passes after it unwinds from its rollers, a second guide-roll over which the paper passes, a pair of drawing-rollers between which passes the paper from the last guide-roll, and a revoluble disk for engaging the paper on the top of the last-mentioned guide-roll, as set forth.

9. A machine of the class described, comprising a rack for supporting a roll of paper, said rack being held transversely adjustable, guide-rolls for the paper after it unwinds from its roller, a pair of drawing-rollers between which passes the paper from the last guide-roller, a revoluble cutting-disk for engaging the paper on the top of the last-mentioned guide-roll, and means, substantially as described, for laterally adjusting said rack, as set forth.

10. A machine of the class described, comprising a rack for supporting a roll of paper, a transversely-extending guideway in which said rack is mounted to slide, drawing-rollers for the paper, cutters for trimming the paper, and means for adjusting the rack transversely to bring the selvage edge of the paper in proper relation to the cutters, as set forth.

11. A machine of the class described, comprising a pair of drawing-rollers for the paper to pass between, circular knives or cutters for trimming the paper, an upright table over which the paper passes after leaving the rollers, a rod on which the table is hung, a revoluble brush in front of the table for applying paste to the back of the paper, and means for adjusting the table relatively to the brush, as set forth.

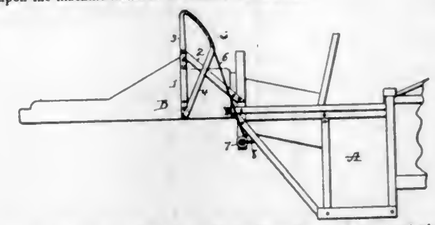
12. In a machine of the class described a table over which the paper passes, and means for applying paste to the paper, the said table being made in sections, rods engaging the ends of the sections, and means for adjusting the sections, for the purpose set forth.

13. A machine of the class described, comprising a rack for supporting a roll of paper, a pair of drawing-rollers for the paper to pass between, knives or cutters for trimming the paper, an upright table arranged forward of the drawing-rollers and over which the paper passes after leaving the rollers, a revoluble brush in front of the table for applying paste to the back of the paper, means for adjusting the table relatively to the brush, a traveling apron upon which the paper passes after passing over the table, and means for matching the paper, as set forth.

657,467. FEEDER ATTACHMENT FOR THRESHING-MACHINES. HENRY TANK, near Fremont, Nebr. Filed Feb. 20, 1900. Serial No. 5,946. (No model.)

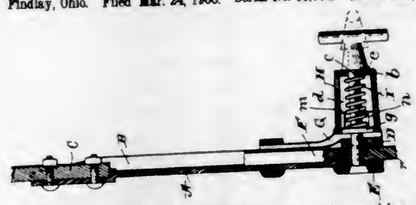
Claim.—1. The combination with a machine-frame and a feeder-frame pivoted at its upper edge thereto, of a post projecting upwardly from the pivotal support of the feeder-frame, a cord or chain secured to the upper end of said post and a device on the machine-frame below the plane of and approximately in line with the end of the feeder-frame for manipulating said cord or chain to invert said feeder-frame.

2. The combination with a machine-frame and a feeder-frame, said feeder-frame pivoted at its upper edge near one end to one end of the feeder-frame, of a post carried by the feeder-frame and projecting upwardly above the pivotal support thereof, a segment projecting from said post toward the machine-frame, a flexible device mounted on said segment and secured at the upper end thereof and means located on the machine-frame below and approximately in line with the pivoted end of the feeder-frame for manipulating said flexible device to cause the feeder to be placed upon the machine-frame or to remove it therefrom.



3. The combination with a threshing-machine frame and a feeder attachment pivotally connected therewith, of a post secured to the feeder attachment and projecting above the pivotal point thereof, a curved bar secured to said post, a rod connecting the free end of said curved bar with the feeder attachment below the pivotal point thereof, a drum supported by the threshing-machine frame in a plane below that of the pivotal point of the feeder attachment, means for operating said drum, and a chain or rope connecting the upper end of the post and drum and disposed along the upper face of the curved bar.

657,468. WINDMILL-PUMP CONNECTION. JOHN C. TAYLOR, Findlay, Ohio. Filed Mar. 24, 1900. Serial No. 10,064. (No model.)



Claim.—1. A connection for the purpose described comprising a frame, a channel-bar adapted to enter said frame, a pump-rod adapted to enter said channel-bar, a spring-pressed member carried by the frame and adapted to pass through the channel-bar and pump-rod and independent means for securing the frame to the channel-bar, substantially as described.

2. A connection for the purpose described comprising a channel-bar A, a pump-rod adapted to enter the channel-bar, a frame G adapted to receive the channel-bar A, clamping means carried by the said frame, the frame G provided with a laterally-projecting locking-pin socket, and a longitudinally-movable locking-pin within the socket and of a length longer than the said socket whereby its inner end is adapted to project inward beyond the inner end of the socket, and to enter one of the openings in the pump-rod, substantially as described.

3. A connection for the purpose described comprising a channel-bar, a perforated pump-rod longitudinally movable therein and independent thereof, a frame adapted to receive the said channel-bar, means carried by said frame for locking it to the channel-bar, a perforated pump-rod within the channel-bar, and a locking member carried by the frame and adapted to pass through the channel-bar and to enter the pump-rod, substantially as described.

4. A connection for the purpose described comprising a channel-bar having at one end a transverse perforated web D constituting an opening at one end, a pump-rod adapted to enter said opening, a frame G adapted to receive the channel-bar, means for securing the frame to the channel-bar, a laterally-projecting spring-pin-receiving socket H situated over the said web D, and a longitudinally-movable pin within the said socket having its inner end adapted to pass through the perforation of the said web D and into the perforation of the pump-rod F, substantially as described.

5. A connection for the purpose described, comprising a frame, a channel-bar within the frame, means for securing it thereto, a pump-rod within the channel-bar, and means carried by the frame for securing the pump-rod to the channel-bar, substantially as described.

6. A connection for the purpose described comprising a frame, a channel-bar adapted to enter said frame, a pump-rod longitudinally adjustable in the channel-bar, the said frame provided with a laterally-projecting socket H, the said socket having contracted upper and lower ends, a spring situated therein between said contracted ends, the upper end of the spring engaging the inner side of the upper contracted portion, a longitudinally-movable pin passing through the said socket and provided with lateral projections against which the lower end of the spring abuts, the lower contracted portion provided with passage-ways for the said projections, the parts adapted to coöperate substantially as described.

7. A pump connection comprising a frame having a bar-receiving opening, the said frame provided with a laterally-projecting socket H, the said socket having contracted upper and lower ends, a spring situated therein between said contracted ends, the upper end of the spring engaging the inner side of the upper contracted portion, a longitudinally-movable pin passing through the said socket and provided with projections against which the lower end of the spring abuts, the lower contracted portion provided with passage-ways for the said pins or studs, and a bar passing through the said opening and adapted to receive the pin, substantially as described.

657,469. BED-COUCH. JOHN THOMPSON, New York, N. Y., assignor to Thompson & Co., New York, N. Y. Filed Feb. 20, 1900. Serial No. 5,922. (No model.)



Claim.—A couch, comprising end frames, each consisting of side bars connected at the top by cross-pieces, bars connecting the lower portions of the end frames, side bars connecting the opposite end frames, side extensions mounted to swing on the end frames, a mattress extending over the extensions and the body portion of the couch, supporting-bars pivotally connected to the swinging extensions and guided in slots formed in the side portions of the end frames, rock-shafts extended lengthwise of the couch at opposite sides and designed to be engaged with the ends of the supporting-bars to hold the extensions in elevated position, plates mounted to swing and engaging with the supporting-bars, and foot-pieces extended outward from said plates, substantially as specified.

657,470. APPARATUS FOR PURIFYING WATER. WILLIAM TWEEDDALE, Topeka, Kans. Filed June 4, 1900. Serial No. 19,017. (No model.)

Claim.—1. In an apparatus for softening and purifying water, the combination of a settling-tank with a combined filter and mixer, consisting of a case, an iron spiral located in said case and filtering material held between the coils of the spiral, substantially as described.

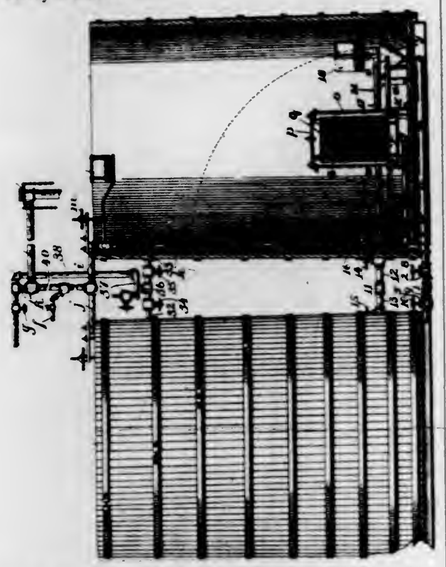
2. In an apparatus for softening and purifying water, the combination of a settling-tank and combined filter and mixer consisting of a case, an iron spiral supported in said case, perforated plates at each end of said spiral and filtering material in the coils of the spiral, substantially as described.

3. In an apparatus for softening and purifying water, the combination of a tank and combined filter and mixer located in said tank, consisting of a case, an iron spiral located in said case and filtering material in the coils of said spiral and means for delivering the water to be purified to said filter and mixer, substantially as described.

4. In an apparatus for softening and purifying water, the combination of a tank, a combined filter and mixer located in said tank consisting of an outer case, an iron spiral in said case, filtering material located in the coils of said spiral and perforated plates at the ends of said spiral, with means for delivering a mixture of air and water to said filter and mixer, substantially as described.

5. In an apparatus for softening and purifying water, the combination of a tank, a combined filter and mixer in said tank consisting of an iron spiral having filtering material in the coils thereof and means for de-

livering a mixture of air, water and steam to said filter and mixer, substantially as described.



6. In an apparatus for softening and purifying water, the combination of a tank provided with discharge and waste pipes, a combined filter and mixer in said tank consisting of an inclosing casing, an iron spiral located in said casing, filtering material in the coils of said spiral and perforated plates at the ends of said spiral, means for delivering mixture of air, steam and water to said filter and mixer, said aerator being also provided with discharge-pipes leading into said tank, substantially as described.

7. In an apparatus for softening and purifying water, the combination of a tank provided with waste and discharge openings, a combined filter and mixer in said tank, consisting of an inclosing casing, a spiral in said casing, filtering material in the coils of said spiral and perforated plates at the ends of said spiral, and means for delivering a mixture of water, steam, air and chemical reagents to said filter and mixer, substantially as described.

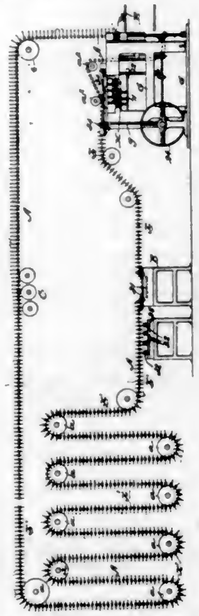
8. In an apparatus for softening and purifying water, the combination of a water-pump, a chemical-tank, an air-pump and a steam-pipe, all connected together, a settling-tank provided with waste and discharge outlets, a combined filter and mixer located in said settling-tank into which the water to be purified is discharged and consisting of a closed outer casing provided with inlet and outlet pipes, an iron spiral, filtering material in the coils of said spiral and perforated plates at the ends of said spiral, substantially as described.

657,471. **MATCH-MACHINE.** FRANK L. VAN DUSEN, Ottawa, Canada. Filed Nov. 22, 1898. Serial No. 697,171. (No model.)

Claim.—1. The combination, with a series of guideways and a series of endless block-carriers, or chains, adapted to travel in the same, of a like series of sprockets and shafts having ratchet-disks keyed on their outer ends, pendent levers pivoted on said shafts and having pawls that engage the ratchets, a bar connecting the lower ends of said levers, and having parallel lateral arms, and a rotatable cam arranged between said arms, substantially as set forth and for the purpose specified.

2. The combination with the fixed guideways for sliding splint-blocks, and an endless splint-carrier having perforated slats, of the cutter-head having an opening and horizontal guideways, the abutment-plate adapted to slide in the latter and having a projecting flange, the cutter-plate fixed directly over the abutment-plate, the splint-guide plate 28 fixed upon the cutter-plate and having a series of splint-sockets adapted to register with those in the splint-carrier, and means for reciprocating the cutter-head, whereby the aforesaid abutment-plate, cutter-plate, and splint-guide plate are reciprocated together and the limits of movement are the height of the splint-block, as shown and described.

3. The combination with the block guideways and cutter-heads reciprocating as specified, of a crank-shaft and pitmen, abutment or splint-elevating plates arranged in slots in the cutter-heads as specified, levers pivoted to said cutter-heads and having their lower ends formed as elongated yokes, and cams on said crank-shaft which are embraced by said yokes, as shown and described, whereby the levers reciprocate the abutment-plates horizontally, while the cutter-heads reciprocate vertically, as shown and described.



4. In a match-machine, the endless splint and match carrier, composed of solid slats having sockets, which extend through the latter, and are triangular in cross-section, and made funnel-shaped at both ends, as shown and described.

5. The combination with a splint and match carrier having match-receiving sockets, of match-ejecting mechanism comprising in part a pin-guide bar having projections adapted to engage such sockets, and pins working through said bar and adapted to project into the sockets, substantially as shown and described.

6. The combination with a guide-frame and a splint and match carrier composed of slats or bars loosely connected and having a series of match-sockets which have funnel-like entrances, of the ejecting mechanism comprising a bar having a series of conical projections coinciding with the aforesaid sockets and adapted to enter the same, pins working through the said projections and adapted to enter the sockets, substantially as and for the purpose specified.

7. The combination with a guide-frame and a splint and match carrier composed of slats or bars loosely connected and having a series of match-sockets which have funnel-like entrances, of the ejecting mechanism comprising a bar having a series of conical projections coinciding with the aforesaid sockets and adapted to enter the same, a series of pins working through the said projections and adapted to enter the sockets, a guide-frame to which said pins are attached, and springs interposed such frame and the bar having conical projections, as aforesaid, substantially as shown and described, for the purpose specified.

8. The combination with a guide-frame and a splint and match carrier composed of slats or bars loosely connected and having a series of match-sockets which have funnel-like entrances, of the ejecting mechanism comprising a bar having a series of conical projections coinciding with the aforesaid sockets and adapted to enter the same, a box-like guide-frame whose top and bottom sides are adapted to embrace a carrier-slat, pins fixed to the bottom of such frame interiorly, and adapted to work through the conical projections and slat-sockets, and spiral springs encircling the pins and arranged as shown and described.

9. The combination with a carrier having slats provided with a series of match-sockets, a horizontal slidable plate and a lever and cam-shaft for reciprocating said plate, ejecting mechanism proper which is attached to and carried by said plate, and consists of a guide-frame, a series of pins, a bar through which said pins work, and a series of springs that encircle the pins and support the said bar, substantially as described.

10. In a match-machine, the combination with a traveling splint and match carrier, having slats provided with sockets, of a series of devices arranged adjacently in different horizontal planes so as to form collectively an incline over which the matches are carried, substantially as shown and described.

11. In a match-machine, the combination, with an endless traveling splint and match carrier, having sockets as specified, for reception of the upper ends of splints and of means arranged horizontally and adjacently in different planes, so as to form an incline, as shown and described.

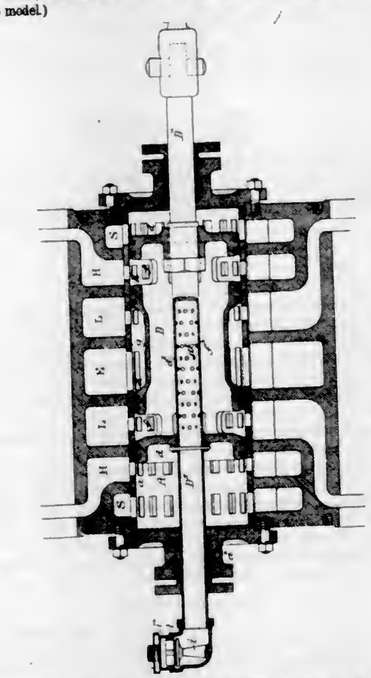
12. The combination with a traveling match-carrier having sockets for matches as specified, of a series of rollers arranged in an inclined plane parallel to each other and beneath the carrier, whereby the shanks of the matches strike first upon the lowest roller, and, riding over it, are forced up in the sockets a certain distance, then successively upon the higher rollers by which they are raised still higher, as shown and described.

13. In a match-machine, the heater for match composition, having a series of three or more openings arranged in zigzag relation, a series of composition vats or pans placed and supported in said openings, and a series of rollers arranged one in each pan, as shown and described, for the purpose specified.

14. The combination with a series of splint-carriers and a water-bath, of a series of composition-vats, a series of annular gears surrounding the respective vats and meshing as shown, stirrers attached to the gears and working in the vats, the vats and gears being so connected that both may be raised together from the water-bath, as shown and described.

15. The combination with a water-bath and splint-carriers, of a series of removable composition-vats, meshing annular gears surrounding the vats and having a shoulder that engages a ledge on the vats, stirrers attached to the gears and working in the vats and a series of removable composition take-up rolls, one for each vat, substantially as shown and described.

657,472. **RELIEF-VALVE FOR LOCOMOTIVES.** SAMUEL M. VAUCLAIN, Philadelphia, Pa. Filed June 30, 1900. Serial No. 22,120. (No model.)



Claim.—1. The combination of the cylinders of a compound engine, a hollow valve controlling the flow of steam to and from the said cylinders, a hollow stem communicating with the passage in the valve, and a relief-valve in this tubular stem closing against steam-pressure, substantially as described.

2. The combination of the cylinders of a compound engine, a valve-chamber communicating with the said cylinders, a piston-valve in said chamber controlling the passage of steam to and from said cylinders, said valve having a central passage forming a communication between one end of one cylinder and the opposite end of the other cylinder, a hollow stem secured to the valve and communicating with the said central passage, and a valve in said stem closing against steam-pressure, substantially as described.

3. The combination of the high and low pressure cylinders, a valve-chamber communicating with both cylinders, a hollow piston-valve therein having a central passage communicating with the ports leading to the ends of the said cylinders, a hollow stem extending into the valve from the rear and perforated, said stem extending through a packing-box in the valve-casing, and a valve closing against steam-pressure, said valve being mounted on the stem, substantially as described.

4. The combination of a hollow piston-valve, a stem extending from the rear of said valve, the portion of the stem within the valve being perforated, an elbow secured to the end of the stem, a valve-seat secured in said elbow, a valve mounted in the elbow and closing against the seat under steam-pressure, substantially as described.

657,473. **PAPER BOX.** JOHN A. WAGNITZ, Dayton, Ohio. Filed June 18, 1900. Serial No. 20,639. (No model.)



Claim.—1. A blank as herein described for lamp-chimney boxes, the same consisting of a rectangular blank of pliable material, having a series of vertical score-lines 2 intersected by two horizontal score-lines 5, the latter lines being adjacent to the horizontal edges of the blank and providing a series of inwardly-folding flaps at both ends, a series of oblique parallel score-lines 6 adjacent to the horizontal edges of the blank extending from the intersection of the score-lines 2 and 5 to the extreme horizontal edges of the blank, the terminals of the vertical score-lines 2, and the oblique score-lines 6 providing a series of triangular folds which occupy inner positions with relation to the adjacent flaps, the said triangular folds and the flaps providing inner yielding surfaces for the top and bottom of the box, substantially as shown and described.

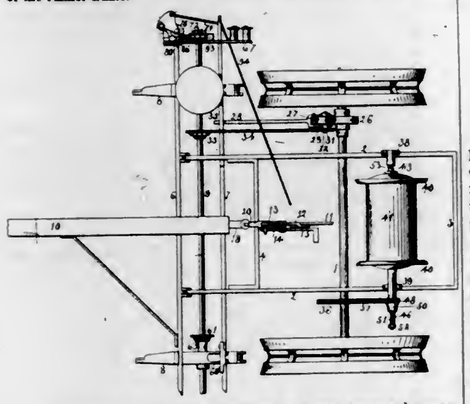
2. A blank as herein described for a lamp-chimney box, square in cross-section, the same consisting of a rectangular blank of paper having a series of vertical score-lines 2 providing four walls or panels 1, the said vertical score-lines being intersected by two horizontal score-lines 5 the latter score-lines being adjacent to the horizontal edges of the blank and providing at both ends of the box a series of inwardly-folding flaps, a series of oblique score-lines 6 extending from the intersections of the score-lines 2 and 5 to the extreme horizontal edges of the blank, the oblique score-lines 6 occupying parallel positions throughout each horizontal edge of the blank, the said parallel oblique score-lines 6 at one horizontal edge of the blank being reversed to those at the other horizontal edge of the blank, the terminals of the vertical score-lines 2, and the oblique score-lines 6 providing a series of triangular folds which occupy inner positions with relation to each adjacent flap, the said triangular folds and the flaps providing inner yielding surfaces at the ends of the box, as herein shown and described.

3. A blank as herein described for a lamp-chimney box, sextagonal in cross-section, the same consisting of a rectangular blank of paper having a series of vertical score-lines 2 providing six walls or panels 1, the said vertical score-lines being intersected by two horizontal score-lines 5, the latter lines being adjacent to the horizontal edges of the blank and providing at both ends of the box a series of inwardly-folding flaps, a series of oblique score-lines 6 extending from the intersections of score-lines 2 and 5 to the extreme horizontal edges of the blank, the said oblique score-lines 6 occupying uniformly-parallel positions at each horizontal edge of the blank, the terminals of the vertical score-lines 2, and the oblique score-lines 6 providing a series of triangular folds which occupy inner positions with relation to each adjacent flap, the said triangular folds and the flaps providing inner yielding surfaces at the ends of the box, as herein shown and described.

657,474. **CORN-PLANTER.** LEWIS E. WATERMAN, Moline, Ill., assignor to the Emerson Manufacturing Company, Rockford, Ill. Filed Jan. 16, 1900. Serial No. 1,701. (No model.)

Claim.—1. In a corn-planter, the combination of a main frame and runner-frame, a rotating toothed wheel, a pivoted casing, an arm having

a connection with the runner-frame and a pivotal connection with the casing, and a toothed wheel supported by the arm adapted to be moved into and out of engagement with the rotating toothed wheel by the movement of the runner-frame.



2. In a corn-planter, the combination of a main frame and runner-frame, a rotating toothed wheel, a pivoted casing, an arm having a connection with the runner-frame and a pivotal connection with the casing, a toothed wheel supported by the arm adapted to be moved into and out of engagement with the rotating toothed wheel by the movement of the runner-frame and a connection between the toothed wheel and rod of the runner-frame for operating the seed-dropping devices.

3. In a corn-planter, the combination of a main frame and runner-frame having a hinged connection, a hand-lever and toothed quadrant, the hand-lever having an extension, a foot-lever pivoted to the extension, a thumb-lever on the hand-lever, and a rod connecting the thumb and foot levers and having a horizontal portion for engaging the toothed quadrant.

4. In a corn-planter, the combination of a main frame, a sectional shaft supported by the main frame and a wire-reel located between the sections of the shaft and removably supported thereby.

5. In a corn-planter, a main frame, a bearing supported by the main frame, a shaft supported by the bearing, a wire-reel supported by the shaft, the shaft having a squared section and a round screw-threaded end, two cone friction-gears supported upon the square portion of the shaft one being external and the other internal, a nut on the screw-threaded end of the shaft, a spring between the nut and the internal cone friction-gear and sprocket-wheel provided with internal and external cone friction-gear engaging the cone friction-gear supported by the shaft, the other end of the reel being suitably supported by the main frame.

6. In a corn-planter, a runner having a recess in its upper face, a combined star-wheel and beveled pinion, the star-wheel located in the recess, and a valve operated by the star-wheel.

7. In a corn-planter, a runner-frame supporting an end bar, a shaft supported by the frame, a ratchet-wheel secured to the shaft, a forked lever, a dog engaging the ratchet-wheel, a forked lever having a bodily movement in the lengthwise direction of the checking-wire and a pivotal movement transverse thereto, a guide-wheel for the checking-wire having a pivotal connection with the end bar, a catch holding the wheel in a horizontal position and a spring holding the catch.

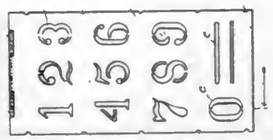
8. In a corn-planter, a runner-frame supporting an end bar, a shaft supported by the frame, a ratchet-wheel secured to the shaft, a yoke pivotally supported by the shaft, a dog supported by the yoke, a forked lever pivotally supported by the yoke, a guide-wheel for the checking-wire having a pivotal connection with the end bar, a catch holding the wheel in a horizontal position a pivoted bar holding the catch and a spring connecting the bar and dog.

9. In a corn-planter, a runner-frame supporting an end bar, a guide-wheel for the checking-wire having a pivotal connection with the end bar, a catch holding the wheel in a horizontal position, and an adjustable bushing against which the checking-wire may press to release the wheel.

10. In a corn-planter, the combination of a main frame, a sectional shaft supported by the main frame, one section made longitudinally movable and a wire-reel located between the sections of the shaft and removably supported thereby.

657,475. CHECK-PROTECTOR. GEORGE C. BAKER, Albany, N. Y. Filed Sept. 29, 1899. Serial No. 732,060. (No model.)

Claim.—1. A check-protector of the class described, comprising two superposed plates or members between which the check is inserted, said members being provided with registering stencil-perforations formed to represent denominational symbols, substantially as and for the purpose set forth.



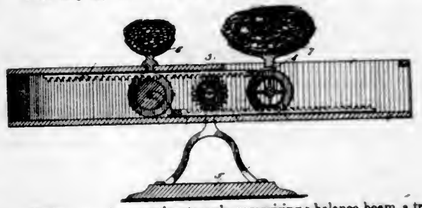
2. A check-protector of the class described, comprising two superposed plates or members between which the check is inserted, and each of said members being provided with registering perforations formed to represent denominational symbols, and through which and through a portion of the check therebetween, a pointed instrument operates to destroy portions of said check, substantially as and for the purpose set forth.

3. A check-protector of the class described, comprising two plates or members pivoted together at one edge of each, and each provided with registering stencil-openings formed to simulate denominational symbols, substantially as and for the purpose set forth.

4. A check-protector of the class described, comprising two superposed plates or members between which the check is inserted, and provided with registering stencil-openings formed to simulate denominational symbols, and provided at their edges with guides having a predetermined relation to said symbols, substantially as and for the purpose set forth.

5. A check-protector of the class described, comprising two plates or members hinged together at an edge of each and provided with registering stencil-openings which simulate denominational symbols, said symbols being arranged in rows transversely of said plates or members, and notches or indentations formed in the edges of said plates with a predetermined arrangement relative to said rows of symbols, whereby a check inserted between said plates or members may be guided with relation to said symbols, substantially as and for the purpose set forth.

657,476. PROPORTIONATE SCALE. GEORGE R. BROWN, Pledger, Tex., assignor of one-half to Nathaniel St. George Floyd, same place. Filed May 29, 1900. Serial No. 18,388. (No model.)



Claim.—1. A proportionate scale, comprising a balance-beam, a tray fixedly supported on said beam, a tray movable along said beam, a roller supporting the tray, a rack extended from said movable tray, a counterpoise-roller movable in the beam, a rack extended from said counterpoise-roller, a pinion engaging with said rack, and a hand-wheel on the shaft of said pinion, said hand-wheel being provided with a scale, substantially as specified.

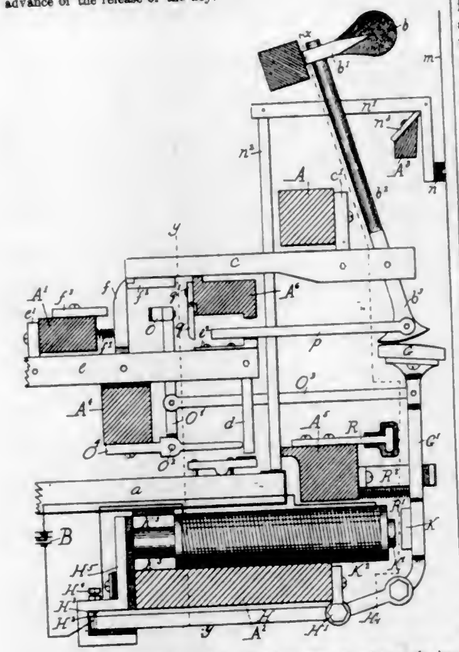
2. A proportionate scale, comprising a hollow balance-beam, a tray attached to said beam at one side of its fulcrum-point, a tray movable along the beam at the opposite side of its fulcrum-point, a grooved roller on which said movable tray is mounted, a rack extended from said movable tray, a grooved counterpoise-roller movable in the beam, a rack extended from said counterpoise-roller and underneath the first-named roller, a pinion engaging with said racks, a hand-wheel mounted on the shaft of said pinion and having gage-marks on its outer surface, and a pointer carried by the beam for coacting with said scale, substantially as specified.

657,477. PIANO-ACTION OR OTHER KEYBOARD INSTRUMENT. THADDEUS CAHILL, New York, N. Y., assignor to James B. Lambie, E. Hilton Jackson, George Frederick Cahill, and Arthur T. Cahill, trustees. Filed Sept. 8, 1894. Serial No. 522,435. (No model.)

Claim.—1. In combination, in a keyboard mechanism, (*a*) a key at the keyboard; (*b*) a motor, normally inactive; (*c*) motor-controlling means operated by said key, and acting when said key is depressed, to bring said motor into action; and (*d*) means thereupon acting to restore said motor to its normal position in advance of the release of the key.

2. In combination in a keyboard mechanism, (*a*) a key at the keyboard; (*b*) a motor, normally inactive; (*c*) a controlling device for the motor, normally in position to render said motor inactive; said motor-controlling device tending when moved from its normal position to return thereto; the key serving when depressed to operate said motor-controlling device to bring the motor into action; and (*d*) means operated by said motor, and acting when the key is depressed and said motor thereby brought into action, to permit the motor-controlling device to return toward its normal position in advance of the release of the key.

thereto; the key serving when depressed to operate said motor-controlling device to bring the motor into action; and (*d*) means, thereupon acting to permit said motor-controlling device to return to its normal position in advance of the release of the key.



3. In combination in a keyboard mechanism, (*a*) a key at the keyboard; (*b*) a motor, normally inactive; (*c*) a controlling device for the motor, normally in position to render said motor inactive; said motor-controlling device tending when moved from its normal position to return thereto; the key serving when depressed to operate said motor-controlling device to bring the motor into action; and (*d*) means operated by said motor, and acting when the key is depressed and said motor thereby brought into action, to permit the motor-controlling device to return toward its normal position in advance of the release of the key.

4. In combination in a keyboard mechanism, (*a*) a key at the keyboard; (*b*) a motor, normally inactive; (*c*) a controlling device for the motor, normally in position to render said motor inactive; said motor-controlling device tending when moved from its normal position to return thereto; the key serving when depressed to operate said motor-controlling device to bring the motor into action; (*d*) means thereupon acting to permit said motor-controlling device to return to its normal position in advance of the release of the key; and (*e*) means thereupon acting to restore said motor to its normal position in advance of the release of the key.

5. In combination in a keyboard mechanism, (*a*) a key at the keyboard; (*b*) a motor, normally inactive; (*c*) a controlling device for the motor, normally in position to render said motor inactive; said motor-controlling device tending when moved from its normal position to return thereto; the key serving when depressed to operate said motor-controlling device to bring the motor into action; (*d*) means operated by said motor, and acting when the key is depressed and said motor thereby brought into action, to permit the motor-controlling device to return toward its normal position in advance of the release of the key; and (*e*) means thereupon acting to restore said motor to its normal position in advance of the release of the key.

6. In combination in a keyboard mechanism, (*a*) a key at the keyboard; (*b*) a motor normally inactive; (*c*) means for starting said motor when said key is depressed; and (*d*) means acting automatically to stop said motor in advance of the release of said key; said stopping means including a tripping device operated by the motor aforesaid.

7. In combination in a keyboard mechanism, (*a*) a key at the keyboard; (*b*) a motor normally at rest; (*c*) a controlling device for said motor; (*d*) a jack intermediate said key and said motor-controlling device, wherethrough said key acts, when depressed, upon said motor-controlling device to bring said motor aforesaid into action; and (*e*) means acting to free said jack in advance of the release of the key depressed, thereby to permit the motor-controlling device to return toward its normal position; said motor-controlling device thereupon operating to render the motor inactive in advance of the release of the key depressed.

8. In combination in a keyboard mechanism, (*a*) a key at the keyboard; (*b*) a motor; (*c*) a controlling device for said motor; (*d*) a jack intermediate said key and said motor-controlling device, wherethrough said key acts when depressed, upon said motor-controlling device to bring the motor into action; and (*e*) a connection between said jack and said motor whereby said motor is made to free said jack, thereby to permit the motor-controlling device aforesaid to return toward its normal position in advance of the release of the key depressed.

9. In combination in a keyboard mechanism, (*a*) a key at the keyboard; (*b*) an electromagnet; (*c*) a circuit-controlling device for said magnet; said circuit-controlling device being normally in position to render said magnet inactive, and tending when moved from such normal position to return thereto; said circuit-controlling device being operated by the key and serving when the key is depressed to bring the magnet aforesaid into action; and (*d*) means acting then to permit said circuit-controlling device to return toward its normal position in advance of the release of the key; whereby said magnet is rendered inactive until another key-depressing.

10. In combination in a keyboard mechanism; (*a*) a key at the keyboard; (*b*) a circuit; (*c*) a source of electric current; (*d*) a circuit-closing device for said circuit, normally in open-circuit position, and tending when moved from the open-circuit to the closed-circuit position to return to its normal position; said circuit-closing device being operated by the key and serving when said key is depressed to permit the current to flow in the circuit aforesaid; and (*e*) means acting when said key is depressed, to permit said circuit-closing device to return toward its normal position in advance of the release of the key.

11. In combination in a keyboard mechanism, (*a*) a jack; (*b*) a circuit-controlling device operated through said jack; (*c*) an electromagnet affected by said circuit-controlling device, and acting in turn upon the jack aforesaid to affect the circuit-controlling device aforesaid.

12. In combination in a keyboard mechanism, (*a*) a circuit, including an electromagnet; (*b*) a device for controlling said circuit, said device being normally in position to render said magnet inactive; (*c*) a key at the keyboard; (*d*) a connection, releasable by the electromagnet, intermediate said key and said circuit-controlling device, whereby said key acts when depressed upon said circuit-controlling device to bring said magnet into action; said magnet thereupon acting on said connection to permit said circuit-controlling device to return toward its normal position in advance of the release of the key.

13. In combination in a keyboard mechanism, (*a*) an electromagnet; (*b*) a circuit-closing device therefor, normally in position to render said electromagnet inactive; (*c*) a key at the keyboard; (*d*) a jack, releasable by the magnet, wherethrough said key when it is depressed, acts upon the circuit-closing device to bring the electromagnet into action; said magnet thereupon acting upon the jack to permit the circuit-closing device to return toward its normal position in advance of the release of the key.

14. In combination in a keyboard mechanism, (*a*) a motor, normally inactive; (*b*) a plurality of keys at a keyboard, alike controlling said motor; said keys each acting when depressed, to bring said motor into action; and (*c*) means acting, when any of said keys is depressed, to cut off the power from said motor in advance of the release of the key depressed.

15. In combination in a keyboard mechanism, (*a*) a motor, normally inactive; (*b*) a plurality of keys at a keyboard, alike controlling said motor; said keys each acting when depressed, to bring said motor into action; and (*c*) means operated by said motor itself, acting when any of said keys is depressed and said motor thereby brought into action, to render said motor inactive, in advance of the release of the key depressed.

16. In combination in a keyboard mechanism, (*a*) a motor normally inactive; (*b*) a plurality of keys at a keyboard alike controlling said motor; (*c*) means for starting said motor whenever any of said keys is depressed; and (*d*) means acting automatically to stop said motor in advance of the release of the key depressed, said stopping means including a plurality of releasing devices, a releasing device for each of the keys controlling said motor, and means operated by said motor for freeing said releasing devices.

17. In combination in a keyboard mechanism, (*a*) a motor normally inactive; (*b*) a plurality of keys at a keyboard; (*c*) a controlling device for said motor; said controlling device being common to a plurality of the keys aforesaid, each of said keys when depressed operating said controlling device to bring said motor into action; and (*d*) means acting when a key is depressed, to render said motor aforesaid inactive in advance of the release of the key depressed.

18. In combination in a keyboard mechanism, (*a*) a motor normally inactive; (*b*) a plurality of keys at a keyboard; (*c*) a controlling device for said motor; said controlling device being common to a plurality of the keys aforesaid, each of said keys when depressed operating said controlling device to bring said motor into action; and (*d*) means operated by said motor acting when a key is depressed and said motor thus brought

into action, to render said motor inactive in advance of the release of the key depressed.

19. In combination in a keyboard mechanism, (*a*) a motor normally inactive; (*b*) a plurality of keys at a keyboard; (*c*) a controlling device for said motor, common to a plurality of the keys aforesaid; (*d*) connections intermediate each of said keys and said motor-controlling device, wherethrough when a key is depressed it operates said motor-controlling device; and (*e*) means acting on the connections last mentioned to permit said motor-controlling device to return toward its normal position in advance of the release of the key depressed; said motor-controlling device thereupon serving by such return movement, to render the motor aforesaid inactive.

20. In combination in a keyboard mechanism, (*a*) a motor normally inactive; (*b*) a plurality of keys at a keyboard alike controlling said motor; (*c*) jacks operated by said keys; (*d*) means operated by said jacks whereby when a key is depressed the motor aforesaid is brought into action; and (*e*) a device common to a plurality of said jacks, operating to free said jacks, each as required.

21. In combination in a keyboard mechanism, (*a*) a motor normally inactive; (*b*) a plurality of keys at a keyboard; (*c*) a controlling device for said motor; said controlling device being common to a plurality of the keys aforesaid; (*d*) jacks intermediate said keys and said motor-controlling device, wherethrough said keys, when depressed, operate said motor-controlling device to bring the motor aforesaid into action; and (*e*) a releasing-frame operated by said motor and acting, when a key is depressed upon the jack operated by said key to permit the motor-controlling device aforesaid to return toward its normal position; said motor-controlling device acting by such return movement to render said motor device inactive.

22. In combination, (*a*) a keyboard; (*b*) jacks controllable independently one of another from said keyboard; and (*c*) a device controlled from said keyboard and common to a plurality of said jacks, for freeing said jacks, each as required.

23. In combination, (*a*) a keyboard; (*b*) a plurality of jacks controlled from said keyboard; and (*c*) a motor device also controlled from said keyboard, and acting to free said jacks.

24. In combination in a keyboard mechanism, (*a*) a motor; (*b*) a plurality of jacks; and (*c*) a controlling device for said motor, common to a plurality of said jacks and operated by them.

25. In combination in a keyboard mechanism, (*a*) a motor; (*b*) a plurality of jacks; (*c*) a controlling device for said motor, common to a plurality of said jacks and operated by them; and (*d*) means operated by said motor for freeing said jacks, each as required.

26. In combination in a keyboard mechanism, (*a*) a keyboard of keys; (*b*) jacks equal in number to said keys, and operated by them, a jack for each key of said keyboard; and (*c*) a releasing-frame common to a plurality of said jacks, for freeing said jacks, each as required.

27. In combination in a keyboard mechanism, (*a*) a plurality of keys at a keyboard; (*b*) jacks corresponding to said keys and operated by them, a jack for each key; and (*c*) a device common to a plurality of said jacks, for freeing said jacks each as required; said device being controlled by the same keys which control said jacks.

28. In combination in a keyboard mechanism, (*a*) a plurality of keys at a keyboard; (*b*) jacks corresponding to said keys and operated by them, a jack for each key; (*c*) levers operated by said keys through said jacks; and (*d*) a device common to a plurality of said jacks and controlled by them, operating to free said jacks, each as required.

29. In combination in a keyboard mechanism, (*a*) an electromagnet, normally inactive; (*b*) a plurality of keys at the keyboard; (*c*) circuit-controlling means operated by each of said keys independently of the other keys, said means acting whenever any of said keys is depressed, to bring the magnet aforesaid into action; and (*d*) means acting when any of said keys is depressed, to cut off current from said electromagnet in advance of the release of the key depressed; whereby said magnet is rendered inactive until another key-depressing.

30. In combination in a keyboard mechanism, (*a*) an electromagnet, normally inactive; (*b*) a plurality of keys at the keyboard; (*c*) circuit-controlling means operated by said keys, whereby when any of said keys is depressed said magnet is brought into action; and (*d*) means supplemental to said circuit-controlling means, acting when any of said keys is depressed, to cut off current from the magnet aforesaid, in advance of the release of the key depressed, whereby said magnet is rendered inactive until another key-depressing.

31. In combination in a keyboard mechanism, (*a*) an electromagnet; (*b*) a plurality of keys at the keyboard; (*c*) a circuit-controlling device for said electromagnet; said circuit-controlling device being normally in position to render said magnet inactive; said circuit-controlling device being operated by each of the keys aforesaid independently of the other keys, and acting whenever any of said keys is depressed, to close the circuit of the electromagnet; and (*d*) a tripping device for said circuit-controlling device, operating when the key is depressed and the magnet thereupon brought into action, to permit said circuit-controlling device to return toward its normal position in advance of the release of the key depressed.

32. In combination, (*a*) a keyboard; (*b*) jacks controllable, independently one of another, from said keyboard; and (*c*) an electromagnet, controlled from said keyboard and acting to free a plurality of said jacks, each jack as required.

33. In combination in a keyboard mechanism, (*a*) a plurality of jacks; (*b*) an electromagnet; (*c*) circuit-controlling means for said magnet operated through said jacks; said magnet acting in turn to free said jacks.

34. In combination, (*a*) a keyboard; (*b*) an electromagnet; (*c*) a plurality of jacks, operated from said keyboard; and (*d*) a controlling device for the circuit of said electromagnet; said circuit-controlling device being common to a plurality of said jacks, and operated by them.

35. In combination in a keyboard mechanism, (*a*) a plurality of jacks; (*b*) an electromagnet; (*c*) circuit-controlling means for said magnet operated by said jacks; and (*d*) a releasing-frame common to a plurality of said jacks and acting to free said jacks, each as required.

36. In combination in a keyboard mechanism, (*a*) a plurality of jacks; (*b*) an electromagnet; (*c*) circuit-controlling means for said magnet operated by said jacks; and (*d*) a device common to a plurality of said jacks for freeing said jacks, each as required, said device being itself operated by the electromagnet aforesaid.

37. In combination in a keyboard mechanism, (*a*) an electromagnet; (*b*) a plurality of jacks; (*c*) a controlling device for the circuit of said electromagnet; said circuit-controlling device being common to a plurality of said jacks and operated by them; and (*d*) means operated by said magnet for freeing said jacks each as required.

38. In combination in a keyboard mechanism, (*a*) an electromagnet; (*b*) a plurality of jacks; (*c*) means for controlling the circuit of said electromagnet; said circuit-controlling means being operated by said jacks; and (*d*) a pivoted frame receiving movement from the magnet aforesaid and acting on the jacks aforesaid to free said jacks each as required.

39. In combination in a keyboard mechanism (*a*) a circuit, including an electromagnet; (*b*) a plurality of keys at a keyboard; (*c*) a device for controlling said circuit, said circuit-controlling device being normally in position to render the magnet inactive, and being common to a plurality of the keys aforesaid; (*d*) connections, releasable by the magnet intermediate said keys and said circuit-controlling device, wherethrough said keys each when it is depressed, acts upon said circuit-controlling device to bring the magnet aforesaid into action; said magnet thereupon acting upon the connection intermediate the key depressed and the circuit-controlling device aforesaid to permit said circuit-controlling device to return toward its normal position in advance of the release of the key depressed.

40. In combination in a keyboard mechanism; (*a*) an electromagnet; (*b*) keys at a keyboard controlling said magnet; (*c*) a circuit-closing device for said magnet; said circuit-closing device being normally in position to render said magnet inactive and being common to a plurality of the keys aforesaid; (*d*) jacks intermediate said keys and said circuit-closing device, each of said keys acting, when depressed, through the corresponding jack upon said circuit-closing device to bring the magnet aforesaid into action; and (*e*) a releasing-frame operated by said magnet for freeing said jacks, said releasing-frame acting when a key is depressed, upon the jack operated by said key, to permit the circuit-closing device aforesaid to return toward its normal position in advance of the release of the key depressed.

41. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest and having a normal position to which it tends to return, when displaced; (*b*) a motor for actuating said frame; said motor being normally inactive; (*c*) a key at the keyboard, serving when depressed, to cause said motor to move said frame from its normal position; and (*d*) means receiving movement from the motor aforesaid, and acting when the key is depressed and the frame aforesaid moved from its normal position by said motor, to permit said frame to return toward its normal position in advance of the release of said key.

42. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest and having a normal position to which it tends to return, when displaced; (*b*) a motor for actuating said frame; (*c*) a key at the keyboard, serving when depressed, to cause said motor to move said frame from its normal position; and (*d*) means connected with said frame and acting when the key aforesaid is depressed and said frame moved from its normal position by the motor aforesaid, to permit said frame to return toward its normal position in advance of the release of said key.

43. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest and having a normal position to which it tends to return, when displaced; (*b*) a motor for actuating said frame; said motor being normally inactive; (*c*) a key at the keyboard; (*d*) a controlling device for said motor said controlling device having a normal position to which it tends to return when displaced; (*e*) a connection intermediate said key and the motor-controlling device, wherethrough said key when depressed gives movement to said motor-controlling device to bring the motor aforesaid into action; and (*f*) means acting upon said connection to permit both the motor-controlling device and the frame aforesaid to return toward their normal positions in advance of the release of the key depressed.

44. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest and having a normal position to which it tends to return, when displaced; (*b*) a motor for actuating said frame, said motor being normally inactive; (*c*) a key at a keyboard; (*d*) a controlling device for said motor said controlling device having a normal position to which it tends to return when displaced; (*e*) a jack intermediate the key and said motor-controlling device, wherethrough said key when depressed acts upon said motor-controlling device, to bring the motor aforesaid into action to give movement to the frame aforesaid; said motor thereupon acting upon the jack to permit the motor-controlling device to return toward its normal position in advance of the released key; said motor-controlling device operating by such return movement to render said motor inactive, whereby the frame aforesaid is permitted to return toward its normal position in advance of the release of the key depressed.

45. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest and having a normal position to which it tends to return, when displaced; (*b*) an electromagnet for actuating said frame; (*c*) a key at the keyboard, serving when depressed to bring said electromagnet into action to move said frame from its normal position; and (*d*) means receiving movement from said electromagnet and acting (when the key is depressed and the electromagnet thus brought into action to move the frame aforesaid from its normal position,) to permit said frame to return toward its normal position in advance of the release of said key.

46. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest and having a normal position to which it tends to return, when displaced; (*b*) an electromagnet for actuating said frame; (*c*) a key at the keyboard; (*d*) circuit-controlling means operated by said key and acting when said key is depressed, to bring the magnet aforesaid into action to operate the frame aforesaid; and (*e*) means connected with said frame, acting when said key is depressed and said magnet thus brought into action, to cut off current from said magnet, thereby to permit the frame aforesaid to return toward its normal position in advance of the release of the key depressed.

47. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest and having a normal position to which it tends to return, when displaced; (*b*) an electromagnet for actuating said frame; (*c*) a key at the keyboard; (*d*) a device controlling the circuit of said magnet said circuit-controlling device having a normal position to which it tends to return when displaced; (*e*) a mechanical connection intermediate said key and said circuit-controlling device, wherethrough movement is communicated from said key when said key is depressed, to said circuit-controlling device, to bring said electromagnet into action to actuate the frame aforesaid; and (*f*) means acting on said connection when the key aforesaid is depressed to permit said circuit-controlling device to return toward its normal position, said circuit-controlling device operating by such return movement to cut off current from the electromagnet aforesaid in advance of the release of the key.

48. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest and having a normal position to which it tends to return, when displaced; (*b*) an electromagnet for actuating said frame; (*c*) a key at a keyboard; (*d*) a device controlling the circuit of the magnet aforesaid said circuit-controlling device having a normal position to which it tends to return when displaced; (*e*) a jack intermediate said key and said circuit-controlling device, wherethrough said key when it is depressed acts upon said circuit-controlling device to bring the magnet into action, so that said magnet gives movement to the frame aforesaid; said magnet thereupon acting upon said jack to permit the circuit-controlling device aforesaid to return toward its normal position in advance of the release of the key depressed; said circuit-controlling device operating by such return movement, to render the magnet inactive, so as to permit the frame aforesaid to return toward its normal position in advance of the release of the key depressed.

49. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest and having a normal position to which it tends to return, when displaced; (*b*) a motor for actuating said frame; (*c*) a plurality of keys at a keyboard each controlling independently of the other keys, said frame; said keys each acting when depressed to bring the motor aforesaid into action to move said frame from its normal position; and (*d*) means acting when any of said keys is depressed and said motor thus brought into action to move said frame from its normal position as aforesaid, to permit said frame to return toward its normal position in advance of the release of said key.

50. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest and having a normal position to which it tends to return, when displaced; (*b*) a motor for actuating said frame; (*c*) a plurality of keys at a keyboard, controlling said frame; said keys each acting when depressed to bring the motor aforesaid into action to move said frame from its normal position; and (*d*) means operated by said motor, acting when any of said keys is depressed to move said frame from its normal position, to permit said frame to return toward its normal position in advance of the release of the key depressed.

51. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest and having a normal position to which it tends to return, when displaced; (*b*) a motor for actuating said frame; (*c*) a plurality of keys at a keyboard; (*d*) a controlling device for the motor, said motor-controlling device being common to and operated by a plurality of the keys aforesaid and having a normal position to which it tends to return when displaced, said motor-controlling device tending when moved from its normal position by the action of any of the keys aforesaid, to return to its normal position; (*e*) jacks intermediate said keys and said motor-controlling device, a jack for each key, wherethrough said key when it is depressed, acts upon said motor-controlling device to bring the motor into action to operate the frame aforesaid; and (*f*) means controlled by said motor acting when a key is depressed, to free the jack operated by said key, thereby to permit the motor-controlling device aforesaid to return toward its normal position in advance of the release of said key; said motor-controlling device operating by such return movement to permit the return of the frame aforesaid toward its normal position in advance of the release of the key depressed.

52. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest and having a normal position to which it tends to return, when displaced; (*b*) an electromagnet for actuating said frame; (*c*) a plurality of keys at the keyboard, each controlling independently of the other keys, said frame; said keys each acting whenever it is depressed to bring the electromagnet into action to move said frame from its normal position; and (*d*) means acting, when any of said keys is depressed and said magnet thus brought into action to move said frame from its normal position, to permit said frame to return toward its normal position in advance of the release of said key.

53. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest and having a normal position to which it tends to return, when displaced; (*b*) an electromagnet for actuating said frame; (*c*) a plurality of keys at the keyboard, alike controlling said frame; each of said keys acting when depressed, to bring the electromagnet aforesaid into action to move said frame from its normal position; and (*d*) means operated by said electromagnet, acting when a key is depressed, and said electromagnet thereby brought into action to operate said frame, to permit said frame to return toward its normal position in advance of the release of the key depressed.

54. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest; (*b*) an electromagnet for actuating said frame; (*c*) a plurality of keys at the keyboard alike controlling said frame; (*d*) a circuit-controlling device common to a plurality of said keys, operated by them, and serving when any of said keys is depressed, to bring the electromagnet aforesaid into action to operate the frame aforesaid; and (*e*) means controlled by said keys through said circuit-controlling device, operating to break the circuit of the electromagnet aforesaid in advance of the release of the key depressed.

55. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest and having a normal position to which it tends to return, when displaced; (*b*) an electromagnet for actuating said frame; (*c*) a plurality of keys at the keyboard alike controlling said frame, each of said keys serving when depressed to bring said electromagnet into action to move said frame from its normal position; (*d*) a circuit-controlling device common to a plurality of said keys, said circuit-controlling device having a normal position to which it tends to return when displaced; (*e*) connections between said keys and said circuit-controlling device, whereby each key, when depressed, gives movement to said circuit-controlling device to bring the electromagnet aforesaid into action to operate the frame aforesaid, and (*f*) means acting when a key is depressed to release the connection between said key and said circuit-controlling device, thereby to permit said circuit-controlling device to return toward its normal position in advance of the release of the key; said circuit-controlling device serving by such return movement to permit the frame aforesaid to return toward its normal position.

56. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest; (*b*) an electromagnet for actuating said frame; (*c*) a plurality of keys at a keyboard; (*d*) a device controlling the circuit of said electromagnet, said circuit-controlling device having a normal position to which it tends to return when displaced; (*e*) jacks intermediate the keys and said circuit-controlling device, wherethrough said key when depressed, act upon said circuit-controlling device to bring the magnet into action to operate the frame aforesaid; (*f*) a device common to a plurality of said jacks acting when one of the keys aforesaid is depressed and the magnet thus brought into action to operate the frame aforesaid, to free the jack corresponding to the key depressed, thereby to permit the circuit-controlling device aforesaid to return toward its normal position in advance of the release of the key depressed.

57. In a keyboard mechanism and in combination, (*a*) a reciprocating frame, normally at rest; (*b*) a motor for impelling said frame; (*c*) a key; (*d*) a member corresponding to said key; said member being normally disconnected from the frame aforesaid and having a normal position to which it tends to return when displaced; said key acting when depressed to cause said member to be connected with said frame; and (*e*) controlling means for the motor aforesaid; said controlling means being operated by the key aforesaid; said motor acting when said key has been depressed and is at rest in its depressed position to actuate the frame aforesaid and the key-corresponding member connected with said frame by the depressing of the key aforesaid, moving said key-corresponding member from its normal position to the limit of its movement.

58. In combination, (*a*) a reciprocating frame normally at rest; (*b*) members, to which said frame is common, and for the impelling of which members each as required, said frame serves, each of said members having a normal position to which it tends to return when displaced; (*c*) keys at a keyboard, corresponding to said members, a key for each of said members; (*d*) a motor for actuating the frame aforesaid; each of the keys aforesaid acting when depressed both to connect the corresponding one of the members aforesaid with said frame, and to bring the motor into action to impel said frame and the member connected with said frame by the action of the key depressed, so that said motor impels said member from its normal position to the limit of its movement.

59. In combination, (*a*) a reciprocating frame normally at rest; (*b*) members, to which said frame is common, and for the impelling of which, each as required, said frame serves, each of said members having a normal position to which it tends to return when displaced; (*c*) keys at a keyboard corresponding to said members, a key for each of said members; (*d*) a motor for actuating the frame aforesaid; and (*e*) a controlling device for said motor, common to a plurality of the keys aforesaid; each of said keys acting when depressed both to connect the corresponding one of the members aforesaid with the frame aforesaid, and to operate the controlling device aforesaid to bring the motor aforesaid into action; said motor thereupon acting after a key has been depressed and while said key is at rest in its depressed position, to give movement to the frame aforesaid and the key-corresponding member connected therewith by the action of the key depressed, moving said member from its normal position to the limit of its movement.

60. In a keyboard mechanism and in combination, (*a*) a reciprocating frame normally at rest; (*b*) an electromagnet for actuating said frame; (*c*) a key; (*d*) a member corresponding to said key; said member being normally disconnected from the frame aforesaid and having a normal position to which it tends to return when displaced; said key acting when depressed to cause said member to be connected with said frame; and (*e*) means operated by said key for controlling the circuit of the magnet aforesaid; said magnet acting when said key has been depressed and is at rest in its depressed position, to actuate the frame aforesaid and the key-corresponding member connected with said frame by the depressing of the key aforesaid, moving said key-corresponding member from its normal position to the limit of its movement.

61. In combination, (*a*) a reciprocating frame normally at rest; (*b*) members, to which said frame is common and for the impelling of which, each as required, said frame serves; (*c*) keys at a keyboard, corresponding to said members, a key for each of said members; (*d*) an electromagnet for actuating the frame aforesaid; each of the keys aforesaid acting when depressed both to connect the corresponding one of the members aforesaid with said frame, and to bring the magnet into action to impel said frame and the member connected with said frame by the action of the key depressed.

62. In combination, (*a*) a reciprocating frame normally at rest; (*b*) members, to which said frame is common and for the impelling of which, each as required, said frame serves, each of said members having a normal position to which it tends to return when displaced; (*c*) keys at a keyboard, corresponding to said members, a key for each of said members; (*d*) an electromagnet for actuating the frame aforesaid; and (*e*) a circuit-controlling device for said magnet, said circuit-controlling device being common to a plurality of the keys aforesaid; each of said keys acting when depressed, both to connect the corresponding one of the members aforesaid with the frame aforesaid and to operate the circuit-controlling device aforesaid to bring the magnet aforesaid into action; whereby the member corresponding to the key depressed and connected by the action of said key with the frame aforesaid, is moved from its normal position to the limit of its movement by the power of the magnet aforesaid.

63. In combination, (*a*) a key at a keyboard; (*b*) a member corresponding to said key; (*c*) a frame for giving movement to said key-corresponding member; said frame being normally inactive and having a normal position to which it tends to return, when displaced; (*d*) a motor for actuating said frame; the key operating when depressed, both to connect the key-corresponding member aforesaid with the frame aforesaid and to cause the motor to actuate said frame, thereby to actuate said key-corresponding member; and (*e*) means acting, when said key is depressed and the frame aforesaid actuated by the motor aforesaid, to permit said frame to return toward its normal position in advance of the release of said key.

64. In combination, (*a*) a key at a keyboard; (*b*) a member corresponding to said key; (*c*) a frame for giving movement to said key-corresponding member; said frame being normally inactive and having a normal position to which it tends to return, when displaced; (*d*) a motor for actuating said frame; the key operating when depressed, both to connect the key-corresponding member aforesaid with the frame aforesaid and to cause the motor to actuate said frame, thereby to actuate said key-corresponding member; and (*e*) means acting when said key is depressed and the frame aforesaid actuated by the motor aforesaid, to disconnect the key-corresponding member operated by said key from the frame aforesaid in advance of the release of said key.

65. In combination, (*a*) a key at a keyboard; (*b*) a member corresponding to said key; (*c*) a frame for giving movement to said key-corresponding member; said frame being normally inactive and having a normal position to which it tends to return, when displaced; (*d*) a motor for actuating said frame; the key aforesaid operating when depressed, both to connect the key-corresponding member aforesaid with the frame and to cause the motor aforesaid to actuate said frame, thereby to actuate the key-corresponding member aforesaid; and (*e*) means operated by said motor, acting when the key aforesaid is depressed, to permit the frame to return toward its normal position in advance of the release of said key.

66. In combination, (*a*) a key at a keyboard; (*b*) a member corresponding to said key, said key-corresponding member being normally at rest and having a normal position to which it tends to return when displaced; (*c*) a frame for giving movement to said key-corresponding member; said frame being normally inactive and having a normal position to which it tends to return, when displaced; (*d*) a motor for actuating said frame; the key operating when depressed, both to connect the key-corresponding member aforesaid with the frame aforesaid and to cause the motor aforesaid to actuate said frame, thereby to actuate the key-corresponding member aforesaid; and (*e*) means operated by said motor, acting when the key is depressed, to permit the frame to return toward its normal position in advance of the release of said key, and also to disconnect the key-corresponding member operated by the key depressed from said frame, thereby to permit said key-corresponding member to return toward its normal position in advance of the release of its key.

67. In combination, (*a*) a key at a keyboard; (*b*) a member corresponding to said key; (*c*) a frame for giving movement to said key-corresponding member; said frame being normally inactive and having a normal position to which it tends to return, when displaced; (*d*) a motor for actuating said frame; (*e*) a controlling device for said motor, said controlling device having a normal position to which it tends to return when displaced; (*f*) a jack intermediate the key aforesaid and said motor-controlling device, wherethrough said key when depressed, acts upon said motor-controlling device to bring the motor aforesaid into action to give movement to the frame aforesaid; said motor thereupon acting upon the jack aforesaid to permit the motor-controlling device aforesaid to return toward its normal position in advance of the release of said key; said motor-controlling device operating by such return movement to permit the frame aforesaid to return toward its normal position in advance of the release of the key.

68. In combination, (*a*) a key at a keyboard; (*b*) a member corresponding to said key; (*c*) a frame for giving movement to said key-corresponding member; said frame being normally inactive and having a normal position to which it tends to return, when displaced; (*d*) an electromagnet for actuating said frame; the key operating when depressed, both to connect the corresponding member aforesaid with the frame and to cause the electromagnet aforesaid to actuate said frame, thereby to actuate the key-corresponding member aforesaid; and (*e*) means acting, when said key is depressed and the frame aforesaid actuated by the electromagnet, to permit said frame to return toward its normal position in advance of the release of said key.

69. In combination, (*a*) a key at a keyboard; (*b*) a member corresponding to said key; (*c*) a frame for giving movement to said key-corresponding member; said frame being normally inactive and having a normal position to which it tends to return, when displaced; (*d*) an electromagnet for actuating said frame; the key operating when depressed, both to connect said key-corresponding member with the frame and to cause the electromagnet to actuate said frame, thereby to actuate the key-corresponding member; and (*e*) means acting when said key is depressed and the frame actuated by the electromagnet, to disconnect said key-corresponding member from said frame, and to permit said frame to return toward its normal position in advance of the release of said key.

70. In combination, (*a*) a key at a keyboard; (*b*) a member corresponding to said key; (*c*) a frame for giving movement to said key-corresponding member; said frame being normally at rest and having a normal position to which it tends to return, when displaced; (*d*) an electromagnet

for actuating said frame; (*e*) a circuit-controlling means operated by said key and acting when said key is depressed to bring the magnet aforesaid into action to operate the frame aforesaid; and (*f*) means acting when said key is depressed and said magnet thus brought into action, to cut off current from said magnet, thereby to permit the frame aforesaid to return toward its normal position in advance of the release of the key depressed.

71. In combination, (*a*) a key at a keyboard; (*b*) a member corresponding to said key; (*c*) a frame for giving movement to said key-corresponding member; said frame being normally at rest; (*d*) an electromagnet for actuating said frame; (*e*) a device controlling the circuit of the magnet aforesaid; (*f*) a mechanical connection intermediate the key and the circuit-controlling device aforesaid; and (*g*) means acting when said key is depressed, to trip said connection in advance of the release of said key.

72. In combination, (*a*) a key at a keyboard; (*b*) a member corresponding to said key; (*c*) a frame for giving movement to said key-corresponding member; said frame being normally at rest and having a normal position to which it tends to return, when displaced; (*d*) an electromagnet for actuating said frame; (*e*) a device controlling the circuit of said magnet, said circuit-controlling device having a normal position to which it tends to return when displaced; (*f*) a jack intermediate said key and said circuit-controlling device, wherethrough said key when it is depressed acts upon said circuit-controlling device to bring the magnet aforesaid into action, so that the said magnet gives movement to the frame aforesaid; said magnet thereupon acting upon said jack to permit the circuit-controlling device to return toward its normal position in advance of the release of the key depressed; said circuit-controlling device operating by such return movement to render the magnet aforesaid inactive so as to permit the frame aforesaid to return toward its normal position in advance of the release of the key depressed.

73. In combination, (*a*) a plurality of keys at a keyboard; (*b*) members corresponding to said keys, a member for each key; (*c*) a frame for giving movement to said key-corresponding members, each as required; said frame being normally at rest and having a normal position to which it tends to return, when displaced; (*d*) a motor for actuating said frame; the keys aforesaid each operating when it is depressed both to connect that one of the members aforesaid corresponding to said key with the frame aforesaid, and to cause the motor to actuate said frame, thereby to actuate the key-corresponding member thus connected with it; and (*e*) means acting when a key is depressed and the frame aforesaid actuated by the motor aforesaid, to permit said frame to return toward its normal position in advance of the release of said key.

74. In combination, (*a*) a plurality of keys at a keyboard; (*b*) members corresponding to said keys a member for each key; (*c*) a frame for giving movement to said key-corresponding members, each as required; said frame being normally at rest; (*d*) a motor for actuating said frame; the keys aforesaid each operating when it is depressed both to connect that one of the members aforesaid corresponding to said key with the frame aforesaid, and to cause the motor to actuate said frame, thereby to actuate the key-corresponding member thus connected with it; and (*e*) means acting when a key is depressed to disconnect said key-corresponding member from said frame in advance of the release of the key depressed.

75. In combination, (*a*) a plurality of keys at a keyboard; (*b*) members corresponding to said keys, a member for each key; (*c*) a frame for giving movement to said key-corresponding members, each as required; said frame being normally at rest and having a normal position to which it tends to return, when displaced; (*d*) a motor for actuating said frame; the keys each operating when it is depressed both to connect that one of the members aforesaid corresponding to said key with the frame aforesaid, and to cause the motor to actuate said frame, thereby to actuate the key-corresponding member thus connected with it; and (*e*) means acting when a key is depressed to disconnect the member corresponding to the key depressed, from the frame aforesaid, and to permit said frame to return toward its normal position in advance of the release of the key depressed.

76. In combination, (*a*) a plurality of keys at a keyboard; (*b*) members corresponding to said keys a member for each key; (*c*) a frame for giving movement to said key-corresponding members, each as required; said frame being normally at rest; (*d*) a motor for actuating said frame; (*e*) a controlling device for said motor, common to a plurality of the keys aforesaid; (*f*) jacks intermediate said keys and said motor-controlling device, wherethrough said keys when depressed act upon said motor-controlling device to bring the motor into action to operate the frame aforesaid and the key-corresponding member connected therewith by the key depressed; and (*g*) means operated by the motor aforesaid, acting when a key is depressed, to free the jack operated by said key, in advance of the release of said key.

77. In combination, (*a*) a plurality of keys at a keyboard; (*b*) members corresponding to said keys, a member for each key; (*c*) a frame for giving movement to said key-corresponding members, each as required; said frame being normally at rest; (*d*) a motor for actuating said frame; (*e*) a controlling device for said motor, common to a plurality of the keys aforesaid; (*f*) jacks intermediate said keys and said motor-controlling device, wherethrough said keys when depressed act upon said motor-controlling device to bring the motor into action to operate the frame aforesaid and the key-corresponding member connected therewith by the key depressed; and (*g*) means operated by the motor aforesaid, acting when a key is depressed, to free the jack operated by said key, in advance of the release of said key.

78. In combination, (*a*) a plurality of keys at a keyboard; (*b*) members corresponding to said keys, a member for each key; (*c*) a frame for giving movement to said key-corresponding members, each as required; said frame being normally at rest and having a normal position to which it tends to return, when displaced; (*d*) an electromagnet for actuating said frame; the keys aforesaid each operating when it is depressed, both to connect that one of the members aforesaid corresponding to said key with the frame aforesaid, and to cause the electromagnet to actuate said frame, thereby to actuate the key-corresponding member thus connected with it; and (*e*) means acting when a key is depressed and the frame aforesaid actuated by the electromagnet aforesaid, to permit said frame to return toward its normal position in advance of the release of said key.

79. In combination, (*a*) a plurality of keys at a keyboard; (*b*) members corresponding to said keys a member for each key; (*c*) a frame for giving movement to said key-corresponding members, each as required; said frame being normally at rest and having a normal position to which it tends to return, when displaced; (*d*) an electromagnet for actuating said frame; the keys aforesaid each operating when it is depressed, both to connect that one of the members aforesaid corresponding to said key with the frame aforesaid, and to cause the electromagnet to actuate said frame, thereby to actuate the key-corresponding member thus connected with it; and (*e*) means acting when a key is depressed and the frame aforesaid moved by the electromagnet aforesaid, to disconnect the key-corresponding member corresponding to the key depressed, from said frame, and to permit said frame to return toward its normal position in advance of the release of the key depressed.

80. In combination, (*a*) a plurality of keys at a keyboard; (*b*) members corresponding to said keys, a member for each key; (*c*) a frame for giving movement to said key-corresponding members, each as required; said frame being normally at rest; (*d*) an electromagnet for actuating said frame; (*e*) a device controlling the circuit of said magnet; said device being common to a plurality of the keys aforesaid; (*f*) jacks corresponding to said keys, a jack for each key, wherethrough said key when depressed, acts to give movement to that one of the members aforesaid that corresponds to said key, to cause said key-corresponding member to be connected with the frame aforesaid, and wherethrough said key acts upon the circuit-controlling device aforesaid to bring the magnet into action to operate the frame aforesaid and the key-corresponding member connected therewith; and (*g*) means acting when a key is depressed, to free the jack operated by said key.

81. In combination, (*a*) a plurality of keys at a keyboard; (*b*) members corresponding to said keys, a member for each key; (*c*) a frame for giving movement to said key-corresponding members, each as required; said frame being normally at rest; (*d*) an electromagnet for actuating said frame; (*e*) a device controlling the circuit of said magnet; said device being common to a plurality of the keys aforesaid; (*f*) jacks corresponding to said keys, a jack for each key, wherethrough said key when depressed, acts to give movement to that one of the members aforesaid that corresponds to said key, to cause said key-corresponding member to be connected with the frame aforesaid, and wherethrough said key acts upon the circuit-controlling device aforesaid to bring the magnet aforesaid into action to operate the frame aforesaid and the key-corresponding member connected therewith; and (*g*) means operated by the electromagnet aforesaid acting when a key is depressed, to free the jack operated by said key in advance of the release of said key.

82. In combination, (*a*) a reciprocating frame, normally at rest; (*b*) a movement-receiving member which said frame serves to actuate; said movement-receiving member being normally disconnected from said frame; (*c*) a lever to which said movement-receiving member is pivoted, and whereby it is mounted to be moved into operative relation with the frame aforesaid; (*d*) a key, controlling said lever; and (*e*) motor mechanism acting when said key is depressed, to operate said frame.

83. In combination, (*a*) a reciprocating frame, normally at rest; (*b*) a movement-receiving member which said frame serves to actuate; said movement-receiving member being normally disconnected from said frame; (*c*) a lever to which said movement-receiving member is pivoted and whereby it is mounted to be moved into operative relation with the frame aforesaid; (*d*) a key; (*e*) a jack intermediate said key and the lever aforesaid, wherethrough said key when it is depressed, gives movement to said lever and the movement-receiving member pivoted thereto, to bring said movement-receiving member into operative relation with the frame aforesaid; and (*f*) motor mechanism acting when said key is depressed, to operate said frame.

84. In combination, (*a*) a reciprocating frame, normally at rest; (*b*) a movement-receiving member which said frame serves to actuate; said movement-receiving member being normally disconnected from said frame; (*c*) a lever to which said movement-receiving member is pivoted and whereby it is mounted to be moved into operative relation with said frame; (*d*) a key; (*e*) a jack intermediate said key and the lever aforesaid, wherethrough said key when it is depressed, gives movement to said lever and the movement-receiving member pivoted thereto to bring said movement-receiving member into operative relation with the frame aforesaid; and (*f*) means acting when said key is depressed, to operate the frame and to free the jack aforesaid.

85. In combination, (*a*) a reciprocating frame, normally at rest; (*b*) a movement-receiving member which said frame serves to actuate; said movement-receiving member being normally disconnected from said frame; (*c*) a lever to which said movement-receiving member is pivoted and whereby it is mounted to be moved into operative relation with said frame; (*d*) a key; (*e*) a jack intermediate said key and the lever aforesaid, wherethrough said key when it is depressed, gives movement to said lever and the movement-receiving member pivoted thereto to bring said movement-receiving member into operative relation with said frame; and (*f*) a motor device serving, when said key is depressed, both to operate the frame aforesaid and also to free the jack aforesaid.

86. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest; (*b*) movement-receiving members for the actuating of which, each as required, said frame serves; and (*c*) levers to which said movement-receiving members are pivoted and whereby they are mounted to be moved into operative relation with the frame aforesaid.

87. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest; (*b*) movement-receiving members for the actuating of which, each as required, said frame serves; (*c*) levers to which said movement-receiving members are pivoted and whereby they are mounted to be moved into operative relation with the frame aforesaid; and (*d*) a motor for operating said frame.

88. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest; (*b*) movement-receiving members for the actuating of which, each as required, said frame serves; (*c*) levers to which said movement-receiving members are pivoted and whereby they are mounted to be moved into operative relation with the frame aforesaid; (*d*) a motor for operating said frame; and (*e*) a controlling device for said motor common to and operated by a plurality of the levers aforesaid.

89. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest; (*b*) movement-receiving members for the actuating of which, each as required, said frame serves; (*c*) levers to which said movement-receiving members are pivoted and whereby they are mounted to be moved into operative relation with the frame aforesaid; (*d*) jacks acting on said levers; and (*e*) means for freeing said jacks.

90. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest; (*b*) movement-receiving members for the actuating of which, each as required, said frame serves; (*c*) levers to which said movement-receiving members are pivoted and whereby they are mounted to be moved into operative relation with the frame aforesaid; (*d*) jacks acting on said levers; (*e*) a motor for actuating the frame aforesaid; (*f*) means for controlling said motor, operated through the jacks aforesaid; and (*g*) means for freeing said jacks, each as required.

91. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest; (*b*) movement-receiving members for the actuating of which, each as required, said frame serves; (*c*) levers to which said movement-receiving members are pivoted and whereby they are mounted to be moved into operative relation with the frame aforesaid; (*d*) jacks acting on said levers; (*e*) a motor for actuating the frame aforesaid; (*f*) means for controlling said motor, operated through the jacks aforesaid; and (*g*) a frame common to a plurality of said jacks; said frame being actuated by the motor aforesaid and acting to free said jacks each as required.

92. In combination, (*a*) a reciprocating frame, normally at rest; (*b*) movement-receiving members for the actuating of whieh, each as required, said frame serves; (*c*) levers to which said movement-receiving members are pivoted and whereby they are mounted to be moved into operative relation with the frame aforesaid; and (*d*) keys controlling said levers.

93. In combination, (*a*) a reciprocating frame, normally at rest; (*b*) movement-receiving members for the actuating of which, each as required, said frame serves; (*c*) levers to which said movement-receiving members are pivoted and whereby they are mounted to be moved into operative relation with the frame aforesaid; (*d*) keys controlling said levers; and (*e*) a motor device controlled by said keys, and acting when a key is depressed, to give movement to the frame aforesaid.

94. In combination, (*a*) a reciprocating frame, normally at rest; (*b*) movement-receiving members for the actuating of which, each as required, said frame serves; (*c*) levers to which said movement-receiving members are pivoted and whereby they are mounted to be moved into operative relation with the frame aforesaid; (*d*) keys controlling said levers; (*e*) a motor device connected with the frame aforesaid; and (*f*) a controlling device for said motor, common to a plurality of the keys aforesaid and acting when any of said keys is depressed to bring said motor into action to operate the frame aforesaid.

95. In combination, (*a*) a reciprocating frame, normally at rest; (*b*) movement-receiving members for the actuating of which, each as required, said frame serves; (*c*) levers to which said movement-receiving members are pivoted and whereby they are mounted to be moved into operative relation with the frame aforesaid; (*d*) keys corresponding to said levers; and (*e*) jacks intermediate said keys and said levers wherethrough said keys operate said levers.

96. In combination, (*a*) a reciprocating frame, normally at rest; (*b*) movement-receiving members for the actuating of which, each as required, said frame serves; (*c*) levers to which said movement-receiving members are pivoted and whereby they are mounted to be moved into operative relation with the frame aforesaid; (*d*) keys corresponding to said levers; (*e*) jacks intermediate said keys and said levers wherethrough said keys operate said levers; (*f*) a motor for actuating the frame aforesaid; (*g*) controlling means for said motor operated by said keys through said jacks; and (*h*) means for freeing said jacks, each as required.

97. In combination, (*a*) a reciprocating frame, normally at rest; (*b*) movement-receiving members for the actuating of which, each as required, said frame serves; (*c*) levers to which said movement-receiving members are pivoted and whereby they are mounted to be moved into operative relation with the frame aforesaid; (*d*) keys corresponding to said levers; (*e*) jacks intermediate said keys and said levers wherethrough said keys operate said levers; (*f*) a motor for actuating the frame aforesaid; and (*g*) a releasing-frame common to a plurality of the jacks aforesaid; said frame being operated by the motor aforesaid and acting to free said jacks, each as required.

98. In combination in a keyboard mechanism, (*a*) a frame mounted to reciprocate in two arcs or paths, but normally at rest; (*b*) a motor for actuating said frame; and (*c*) a controlling device for said motor the movement of said frame in one arc or path bringing the motor aforesaid into action to move said frame in another arc or path.

99. In combination in a keyboard mechanism, (*a*) a frame mounted to reciprocate in two arcs or paths, but normally at rest; (*b*) an electromagnet for actuating said frame; (*c*) circuit-controlling means operated by said frame, the movement of said frame in one arc or path bringing the magnet aforesaid into action to move it in another arc or path.

100. In combination in a keyboard mechanism, (*a*) a frame mounted to reciprocate in two arcs or paths, but normally at rest; (*b*) a motor for actuating said frame; (*c*) a lever to which said frame is pivoted and whereby it is mounted; and (*d*) means operated by said lever for controlling the motor aforesaid; the movement of said frame in one arc or path bringing said motor into action to move it in another arc or path.

101. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest; (*b*) a motor for actuating said frame; (*c*) a controlling device for said motor to which said frame is connected; (*d*) a key; and (*e*) a member operated by said key and acting when said key is depressed, to press upon said frame, and through said frame to act upon the motor-controlling device aforesaid to bring the motor aforesaid into action to operate said frame, so that said frame in turn gives movement to the member pressed against it by the key depressed.

102. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest; (*b*) a motor for actuating said frame; (*c*) a controlling device for said motor to which said frame is connected; (*d*) a key; (*e*) a member operated by said key and acting when said key is depressed, to press upon said frame, and through said frame to act upon the motor-controlling device aforesaid to bring the motor aforesaid into action to operate said frame, so that said frame in turn gives movement to the member pressed against it by the key depressed; and (*f*) means acting to release said frame in advance of the release of the key depressed.

103. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest; (*b*) a motor for actuating said frame; (*c*) a controlling device for said motor to which said frame is connected; (*d*) a key; (*e*) a member operated by said key and acting when said key is depressed, to press upon said frame, and through said frame to act upon the motor-controlling device aforesaid to bring the motor aforesaid into action to operate said frame, so that said frame in turn gives movement to the member pressed against it by the key depressed; and (*f*) means acting to release the member pressed by the action of said key against said frame, from said frame, in advance of the release of said key.

104. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest; (*b*) a motor for actuating said frame; (*c*) a controlling device for said motor to which said frame is connected; (*d*) a key; (*e*) a movement-receiving member corresponding to said key; (*f*) a lever whereto said movement-receiving member is pivoted and whereby it is mounted to move to and from the frame aforesaid; (*g*) a jack intermediate said lever and the key aforesaid, wherethrough said key when it is depressed, acts upon said lever to press the movement-receiving member aforesaid against the frame aforesaid so that the motor aforesaid gives movement to said frame and to the movement-receiving member corresponding to the key depressed, said motor thereupon acting to free said jack.

105. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest; (*b*) a motor for actuating said frame; (*c*) a controlling device for said motor to which said frame is connected; (*d*) a key; (*e*) a movement-receiving member corresponding to said key; (*f*) a lever whereto said movement-receiving member is pivoted and whereby it is mounted to move to and from the frame aforesaid; (*g*) a jack intermediate said lever and the key aforesaid, wherethrough said key when it is depressed, acts upon said lever to press the movement-receiving member aforesaid against the frame aforesaid so that the motor aforesaid gives movement to said frame and to the movement-receiving member corresponding to the key depressed, said motor thereupon acting to free said jack.

106. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest; (*b*) an electromagnet for actuating said frame; (*c*) a circuit-controlling device for said magnet, to which circuit-controlling device the frame aforesaid is mechanically connected; (*d*) a key; and (*e*) a member operated by said key and acting when said key is depressed to press upon the frame aforesaid, and through said frame to act upon the circuit-controlling device aforesaid to bring the magnet aforesaid into action to operate said frame so that said frame in turn gives movement to the member pressed against it by the key depressed.

107. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest; (*b*) an electromagnet for actuating said frame; (*c*) a circuit-controlling device for said magnet to which circuit-controlling device the frame aforesaid is mechanically connected; (*d*) a key; (*e*) a member operated by said key and acting when said key is depressed to press upon the frame aforesaid, and through said frame to act upon the circuit-controlling device aforesaid to bring the magnet aforesaid into action to operate said frame so that said frame in turn gives movement to the member pressed against it by the key depressed; and (*f*) means acting to release said frame in advance of the release of the key depressed.

108. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest; (*b*) an electromagnet for actuating said frame; (*c*) a circuit-controlling device for said magnet, to which circuit-controlling device the frame aforesaid is mechanically connected; (*d*) a key; (*e*) a member operated by said key and acting when said key is depressed to press upon the frame aforesaid, and through said frame to act upon the circuit-controlling device aforesaid to bring the magnet aforesaid into action to operate said frame so that said frame in turn gives movement to the member pressed against it by the key depressed; and (*f*) means acting to release the member pressed by the action of the key against said frame, from said frame, in advance of the release of the key depressed.

109. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest; (*b*) an electromagnet for actuating said frame; (*c*) a circuit-controlling device for said magnet, to which circuit-controlling device the frame aforesaid is mechanically connected; (*d*) a key; (*e*) a movement-receiving member corresponding to said key; (*f*) a lever whereto said movement-receiving member is pivoted and whereby it is mounted to move to and from the frame aforesaid; (*g*) a jack intermediate said lever and the key aforesaid, wherethrough said key when it is depressed, acts upon said lever to press the movement-receiving member aforesaid against the frame aforesaid, so that the magnet aforesaid gives movement to said frame and to the movement-receiving member corresponding to the key depressed; and (*h*) means for freeing the latch aforesaid in advance of the release of the key.

110. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest; (*b*) a motor for actuating said frame; (*c*) a controlling device for said motor, to which said frame is connected; (*d*) a plurality of keys to which said frame is common; (*e*) members operated by said keys, a member for each key, acting when said key is depressed to press upon said frame and through said frame to act upon the motor-controlling device aforesaid to bring the motor aforesaid into action to operate said frame, so that said frame gives movement to the member pressed against it by the key depressed.

111. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest; (*b*) a motor for actuating said frame; (*c*) a controlling device for said motor, to which said frame is connected; (*d*) a plurality of keys to which said frame is common; (*e*) members operated by said keys, a member for each key, acting when said key is depressed to press upon said frame, and through said frame to act upon the motor-controlling device aforesaid to bring the motor aforesaid into action to operate said frame, so that said frame gives movement to the member pressed against it by the key depressed; and (*f*) means acting to release the member pressed (by the action of the key depressed) against said frame, from said frame, in advance of the release of the key depressed.

112. In combination in a keyboard mechanism, (*a*) a reciprocating frame normally at rest; (*b*) a motor for actuating said frame; (*c*) a controlling device for said motor, to which said frame is connected; (*d*) a plurality of keys to which said frame is common; (*e*) movement-receiving members corresponding to said keys, a movement-receiving member for each key; (*f*) levers whereto said movement-receiving members are pivoted and whereby they are mounted to move to and from the frame aforesaid; (*g*) jacks intermediate said levers and the keys aforesaid, a jack for each key, wherethrough said key when it is depressed acts upon the lever corresponding to said key to press the movement-receiving member pivoted to said lever against the frame aforesaid, thereby operating the motor-controlling device aforesaid so that the motor gives movement to the frame and to the movement-receiving member corresponding to the key depressed; and (*h*) means for freeing the jack corresponding to the key depressed in advance of the release of said key.

113. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest; (*b*) an electromagnet for actuating said frame; (*c*) a circuit-controlling device for said magnet, to which circuit-controlling device said frame is mechanically connected; (*d*) a plurality of keys to which said frame is common; (*e*) members operated by said keys, a member for each key, each member acting when the key to which it corresponds is depressed, to press upon the frame aforesaid and through said frame to act upon the circuit-controlling device aforesaid to bring the electromagnet aforesaid into action to operate said frame, so that said frame gives movement to the member pressed against it by the key depressed.

114. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest; (*b*) an electromagnet for actuating said frame; (*c*) a circuit-controlling device for said magnet, to which circuit-controlling device said frame is mechanically connected; (*d*) a plurality of keys to which said frame is common; (*e*) members operated by said keys, a member for each key, each member acting when the key to which it corresponds is depressed, to press upon the frame aforesaid and through said frame to act upon the circuit-controlling device aforesaid to bring the electromagnet aforesaid into action to operate said frame, so that said frame gives movement to the member pressed against it by the key depressed; and (*f*) means acting to release the member pressed (by the action of the key depressed) against said frame, from said frame, in advance of the release of the key depressed.

115. In combination in a keyboard mechanism, (*a*) a reciprocating frame, normally at rest; (*b*) an electromagnet for actuating said frame; (*c*) a circuit-controlling device for said magnet, to which circuit-controlling device the frame aforesaid is mechanically connected; (*d*) a plurality of keys to which said frame is common; (*e*) movement-receiving members corresponding to said keys, a movement-receiving member for each key; (*f*) levers whereto said movement-receiving members are pivoted and whereby they are mounted to move to and from the frame aforesaid; (*g*) jacks intermediate said levers and the keys aforesaid, a jack for each key, wherethrough said key, when it is depressed, acts upon the corresponding lever to press the movement-receiving member pivoted to said lever against the frame aforesaid, thereby operating the circuit-controlling device aforesaid, so that the electromagnet gives movement to the frame aforesaid and to the movement-receiving member corresponding to the key depressed; and (*h*) means for freeing the jack corresponding to the key depressed in advance of the release of said key.

116. In a pianoforte-action and in combination, a key; a hammer; a reciprocator, normally at rest; means controlled by the key aforesaid acting, upon the depressing of said key, to connect the hammer aforesaid with the reciprocator aforesaid; said reciprocator acting to impel said hammer.

117. In a pianoforte-action and in combination, a plurality of keys; hammers corresponding respectively with said keys; a reciprocator normally at rest; the keys aforesaid each acting when depressed to connect the hammer corresponding to it with the reciprocator aforesaid; said reciprocator acting to impel said hammer.

118. In a pianoforte-action and in combination, a key; a hammer; a motor, normally at rest, the key aforesaid acting when depressed to connect the hammer aforesaid with the motor aforesaid; and motor-controlling means, operated by the key aforesaid, and acting when said key is depressed, to bring the motor aforesaid into action to impel the hammer connected with it.

119. In a pianoforte-action and in combination, a plurality of keys, hammers corresponding with said keys; a motor, normally at rest, operating to impel all the hammers aforesaid, each as required; means, acting on the depressing of a key, to connect the hammer corresponding to such key with the motor aforesaid; and means operated by the keys aforesaid and acting when any of said keys is depressed, to bring the motor aforesaid into action for the impelling of the hammer connected with it.

120. In a pianoforte-action and in combination, a reciprocator, normally at rest; a hammer; a key acting, when depressed to connect said

hammer with the reciprocator aforesaid; a motor, acting to impel said reciprocator; and means acting when said key is depressed to bring the motor aforesaid into action to impel the reciprocator aforesaid and the hammer connected with it.

121. In a pianoforte-action and in combination, a reciprocator, normally at rest; a plurality of hammers; keys, corresponding to said hammers; said keys acting each, when depressed, to connect the hammer corresponding to it with the reciprocator aforesaid; and means acting when any of the keys aforesaid is depressed, to impel the reciprocator aforesaid and the hammer connected therewith.

122. In a pianoforte-action and in combination, a reciprocator, mounted to move in two different arcs or paths and being normally at rest; a motor, acting to impel said reciprocator; a hammer; a key, acting when depressed, to connect said hammer with said reciprocator, and to move said reciprocator in one of the arcs or paths above mentioned; and a motor-controlling device, controlled by the movement last mentioned of the reciprocator aforesaid and acting to bring the motor aforesaid into action to impel said reciprocator in the other one of the two arcs or paths before mentioned, thereby to impel the hammer aforesaid, connected with said reciprocator.

123. In a pianoforte-action and in combination, a reciprocator mounted to move in two different arcs or paths, and being normally at rest; a motor acting to impel said reciprocator; a plurality of hammers; keys corresponding to said hammers, said keys each acting, when depressed, to connect the hammer corresponding to said key with the reciprocator aforesaid, and to move said reciprocator in one of the two arcs or paths before mentioned, in which said reciprocator is mounted to move; and a motor-controlling device, controlled by the movement last mentioned, of the reciprocator aforesaid, and acting to bring the motor aforesaid into action to impel said reciprocator in the other one of the two arcs or paths before mentioned, thereby to impel the hammer connected with said reciprocator by the key depressed.

124. In a pianoforte-action and in combination, a reciprocator, normally at rest; an electric motor, acting to impel said reciprocator; a hammer, normally disconnected from said motor; a key, acting when depressed, to connect said hammer with said reciprocator to receive movement therefrom; and circuit-controlling means, controlled by the key aforesaid and acting, when said key is depressed, to bring the electric motor aforesaid into action for the impelling of the reciprocator aforesaid and the hammer connected therewith.

125. In a pianoforte-action and in combination, a reciprocator normally at rest; an electric motor, acting to impel said reciprocator; a plurality of hammers, normally disconnected from the motor aforesaid; keys, corresponding to said hammers, each key acting, when depressed, to connect the hammer corresponding to it with the reciprocator aforesaid; and circuit-controlling means, controlled by the keys aforesaid and acting, when any of said keys is depressed, to bring the electric motor aforesaid into action, to impel the reciprocator aforesaid and the hammer connected therewith.

126. In a pianoforte-action and in combination, a reciprocator, mounted to move in two different arcs or paths and being normally at rest; an electric motor, acting to impel said reciprocator; a hammer; a key, acting when depressed to connect said hammer with said reciprocator and to move said reciprocator in one of the two arcs or paths before mentioned; circuit-controlling means, operated by the movement last mentioned, of the reciprocator aforesaid, and acting to bring the motor aforesaid into action for the impelling of the reciprocator aforesaid, and the hammer connected therewith.

127. In a pianoforte-action and in combination, a reciprocator mounted to move in two different arcs or paths and being normally at rest; an electric motor, acting to impel said reciprocator; a plurality of hammers; keys, corresponding to said hammers, each key acting, when depressed, to connect the hammer corresponding to it with the reciprocator aforesaid, and to move said reciprocator in one of the two arcs or paths before mentioned; circuit-controlling means, operated by the movement last mentioned, of the reciprocator aforesaid, and acting to bring the motor aforesaid into action for the impelling of said reciprocator and the hammers connected therewith.

128. In a pianoforte-action and in combination, a reciprocator normally at rest; a hammer normally disconnected from said reciprocator; a key, acting when depressed, to connect said hammer with said reciprocator; means whereby said reciprocator is impelled when the key is depressed; and means acting to disconnect the hammer aforesaid from the reciprocator aforesaid in advance of the release of the key.

129. In a pianoforte-action and in combination, a reciprocator normally at rest; a hammer normally disconnected from said reciprocator; a key, acting when depressed, to connect said hammer with said reciprocator; means whereby said reciprocator is impelled when the key is depressed; and means acting to permit the reciprocator aforesaid to return to its normal position in advance of the release of the key.

130. In a pianoforte-action and in combination, a reciprocator normally at rest; a hammer normally disconnected from said reciprocator; a key, acting when depressed, to connect said hammer with said reciprocator; means whereby said reciprocator is impelled when the key is depressed; means acting to disconnect the hammer aforesaid from the reciprocator aforesaid and to permit the reciprocator aforesaid to return to its normal position in advance of the release of the key; and a check, whereby the hammer is arrested on rebounding from the string.

131. In a pianoforte-action and in combination, a reciprocator normally at rest; a hammer normally disconnected from said reciprocator; a key, acting when depressed, to connect said hammer with said reciprocator; motor mechanism, acting when the key is depressed to impel said reciprocator; and means acting to disconnect the hammer aforesaid from the reciprocator aforesaid in advance of the release of the key.

132. In a pianoforte-action and in combination, a reciprocator normally at rest; a hammer normally disconnected from said reciprocator; a key, acting when depressed, to connect said hammer with said reciprocator; motor mechanism acting when the key is depressed to impel said reciprocator; means acting both to disconnect the hammer aforesaid from the reciprocator aforesaid, and to permit said reciprocator to return to its normal position in advance of the release of the key; and a check for the hammer.

133. In a pianoforte-action and in combination, a reciprocator normally at rest; a hammer, normally disconnected from said reciprocator; a key, acting when depressed, to connect said hammer with said reciprocator; motor mechanism, acting to impel said reciprocator; means controlled by the key aforesaid, acting when said key is depressed, to bring the motor aforesaid into action for the impelling of the reciprocator aforesaid and the hammer connected therewith; and means acting to disconnect the hammer aforesaid from the reciprocator aforesaid in advance of the release of the key.

134. In a pianoforte-action and in combination, a reciprocator normally at rest; a hammer, normally disconnected from said reciprocator; a key, acting when depressed, to connect said hammer with said reciprocator; an electric motor acting to impel said reciprocator; means controlled by the key aforesaid, acting when said key is depressed, to bring the motor aforesaid into action for the impelling of the reciprocator aforesaid and the hammer connected therewith; means acting to disconnect the hammer aforesaid from the reciprocator aforesaid, and to permit said reciprocator to return to its normal position in advance of the release of the key; and a check, whereby the hammer aforesaid is arrested on rebounding from the string.

135. In a keyboard instrument and in combination, a reciprocator normally at rest; a motor acting to impel said reciprocator; a plurality of keys; members corresponding respectively to said keys, each key acting when depressed, to connect the member corresponding to it with the reciprocator aforesaid; a motor-controlling device, operated by the keys aforesaid and acting when any key is depressed to bring the motor aforesaid into action for the impelling of the reciprocator aforesaid, and the member connected therewith by the key depressed; and means acting to disconnect the members aforesaid from the reciprocator aforesaid and to permit said reciprocator to return to its normal position in advance of the release of the key; and means whereby each of the members aforesaid is prevented from returning to its normal position, so long as the key controlling is held down.

136. An action for a keyboard instrument, including in combination, an oscillating friction-driver, normally at rest; a contact-piece; and a key, acting when depressed to press said contact-piece against said friction-driver.

137. An action for a keyboard instrument, including in combination, a reciprocating friction-driver, normally at rest; a contact-piece; and a key, acting, when depressed to press said contact-piece against said friction-driver to receive motion therefrom; and a motor, acting to impel said friction-driver, when the key is depressed.

138. An action for a keyboard instrument, including in combination, a reciprocating friction-driver, normally at rest; said reciprocating friction-driver being mounted to move in two different arcs or paths; motor mechanism acting to impel said reciprocating friction-driver; a contact-piece; a key, acting when depressed, to press said contact-piece against said friction-driver to establish a frictional connection between them; said key, acting also to move the reciprocating friction-driver aforesaid in one of the two arcs or paths before mentioned; means operated by the last-mentioned movement of the reciprocating friction-driver aforesaid, acting to bring the motor aforesaid into action to move the friction-driver aforesaid in the other one of the two arcs or paths in which it is mounted to move.

139. An action for a keyboard instrument, including in combination, a reciprocating friction-driver, normally at rest; a contact-piece; a key, acting, when depressed to press said contact-piece against said friction-driver to establish a frictional connection between them; and means acting to disconnect the contact-piece aforesaid from the friction-driver aforesaid in advance of the release of the key.

140. An action for a keyboard instrument, including in combination, a reciprocating friction-driver, normally at rest; a contact-piece; a key, acting, when depressed, to press said contact-piece against said friction-driver; a motor, acting to impel said friction-driver when the key is depressed; and means acting to disconnect the contact-piece aforesaid from the friction-driver aforesaid in advance of the release of the key.

141. An action for a keyboard instrument, including in combination, a reciprocating friction-driver, normally at rest; said reciprocating friction-driver being mounted to move in two different arcs or paths; motor mechanism acting to impel said reciprocating friction-driver; a contact-piece; a key, acting when depressed, to press said contact-piece against said friction-driver to establish a frictional connection between them; said key, acting also to move the reciprocating friction-driver aforesaid in one of the two arcs or paths before mentioned; means operated by the last-mentioned movement of the reciprocating friction-driver aforesaid, acting to bring the motor aforesaid into action to move the friction-driver aforesaid in the other one of the two arcs or paths in which it is mounted to move; and means acting to disconnect the contact-piece aforesaid from the friction-driver aforesaid in advance of the release of the key.

142. An action for a keyboard instrument, including in combination, a reciprocating friction-driver, normally at rest; a contact-piece; a key, acting, when depressed, to press said contact-piece against said friction-driver; a motor, acting to impel said friction-driver when the key is depressed; means acting to disconnect the contact-piece aforesaid from the friction-driver aforesaid and to permit said friction-driver to return to its normal position in advance of the release of the key, and means whereby the contact-piece aforesaid when moved by the friction-driver aforesaid and disconnected therefrom is prevented from returning to its normal position in advance of the release of the key.

143. In a pianoforte-action and in combination, a reciprocating friction-driver normally at rest; a hammer; a contact-piece connected with said hammer; and a key, acting when depressed, to press the contact-piece aforesaid against the friction-driver aforesaid to establish a frictional connection between them.

144. In a pianoforte-action and in combination, a motor, normally at rest; a hammer, normally disconnected from said motor; a key, and means controlled thereby, acting, when said key is depressed to connect the hammer aforesaid with the motor aforesaid frictionally; and a motor-controlling device, controlled by the key aforesaid and operating when said key is depressed to bring the motor aforesaid into action to impel the hammer aforesaid.

145. In a pianoforte-action and in combination, a reciprocating friction-driver; a hammer; a contact-piece connected with said hammer; a key, acting when depressed, to establish a frictional connection between the contact-piece aforesaid and the friction-driver aforesaid; and motor mechanism controlled by the key aforesaid, and acting on the depressing of said key to impel the friction-driver aforesaid.

146. In a pianoforte-action and in combination, a reciprocator mounted to move in two different arcs or paths, said reciprocator being normally at rest; a motor for actuating said reciprocator; a hammer; a contact-piece, connected with said hammer; a key, acting when depressed, to press the contact-piece aforesaid against the reciprocator aforesaid, thereby connecting said contact-piece frictionally with said reciprocator, and moving said reciprocator in one of the two arcs or paths before mentioned; and means operated by the last-mentioned movement of said reciprocator, and acting to bring the motor aforesaid into action to impel the reciprocator aforesaid in the other one of the arcs or paths in which it is mounted to move, as before mentioned, thereby to impel the contact-piece aforesaid and the hammer connected therewith.

147. In a pianoforte-action and in combination, a hammer; a contact-piece connected with said hammer; a reciprocator acting as a friction-driver to impel the contact-piece aforesaid, and the hammer connected therewith; a key, acting when depressed, to connect the contact-piece aforesaid with the reciprocator aforesaid frictionally; and an electric motor acting on the depressing of the key to impel said reciprocator.

148. In a pianoforte-action and in combination, a hammer; a contact-piece connected with said hammer; a reciprocator acting as a friction-driver to impel said contact-piece and hammer, said reciprocator being normally at rest; a key, acting when depressed, to press the contact-piece aforesaid against the reciprocator aforesaid, to connect them frictionally; and means acting to disconnect said contact-piece and reciprocator while the pressure upon the key is maintained.

149. In a pianoforte-action and in combination, a motor normally at rest; a hammer normally disconnected from said motor; a key and means controlled thereby acting, when said key is depressed to connect the hammer aforesaid frictionally with the motor aforesaid, to receive movement therefrom and to bring said motor into action for the impelling of said hammer; and means acting to disconnect said hammer from said motor while the pressure on said key is maintained.

150. In a pianoforte-action and in combination, a hammer, a contact-piece connected therewith; a reciprocator, acting as a friction-driver to impel the contact-piece and hammer aforesaid, said reciprocator being normally at rest; a key, acting when depressed, to connect the contact-piece aforesaid with the reciprocator aforesaid frictionally; motor mechanism, acting, when said key is depressed, to impel said reciprocator; and means whereby the contact-piece aforesaid is disconnected from the reciprocator aforesaid, while the pressure upon the key aforesaid is maintained.

151. In a pianoforte-action and in combination, a hammer; a contact-piece connected with said hammer; a reciprocator acting as a friction-driver to impel said contact-piece and hammer, said reciprocator being normally at rest; a key, acting when depressed, to press the contact-piece aforesaid against the reciprocator aforesaid; means acting to disconnect said contact-piece and reciprocator while the pressure upon the key is maintained; and a check for the hammer.

152. In a pianoforte-action and in combination, a motor normally at rest; a hammer normally disconnected from said motor; a key and means controlled thereby acting when said key is depressed, to connect the hammer aforesaid frictionally with the motor aforesaid to receive movement therefrom, and to bring the motor aforesaid into action for the impelling of said hammer; means acting to disconnect the hammer aforesaid and the motor aforesaid while the pressure on the key is maintained; and a check for the hammer.

153. In a pianoforte-action and in combination, a hammer; a contact-piece connected therewith; a reciprocator acting as a friction-driver to impel the contact-piece and hammer aforesaid, said reciprocator being normally at rest; a key, acting when depressed, to connect the contact-piece aforesaid with the reciprocator aforesaid frictionally; motor mechanism, acting, when said key is depressed, to impel said reciprocator; means whereby the contact-piece aforesaid is disconnected from the reciprocator aforesaid, while the pressure upon the key aforesaid is maintained; and a check for the hammer.

154. In an action for a keyboard instrument and in combination a reciprocator normally at rest; a motor acting to impel said reciprocator; a motor-controlling device to which said reciprocator is pivoted, said motor-controlling device being actuated by the movement of said reciprocator in one direction and thereupon acting to bring the motor aforesaid into operation to actuate said reciprocator in another direction.

155. In a pianoforte-action and in combination, a hammer; a contact-piece connected therewith; a reciprocator acting as a friction-driver to impel said contact-piece and hammer, said reciprocator being normally at rest; a motor acting to impel said reciprocator; a motor-controlling device, to which said reciprocator is pivoted, said motor-controlling device being actuated by the movement in one direction of said reciprocator when the contact-piece aforesaid is pressed against it, and thereupon acting to bring the motor aforesaid into operation to actuate said reciprocator in another direction, thereby to impel the contact-piece and hammer aforesaid.

156. In a pianoforte-action and in combination, a hammer; a contact-piece connected therewith; a reciprocator acting as a friction-driver to impel said contact-piece and hammer, said reciprocator being normally at rest; a motor acting to impel said reciprocator; a motor-controlling device, to which said reciprocator is pivoted, said motor-controlling device being actuated by the movement in one direction of said reciprocator when the contact-piece aforesaid is pressed against it, and thereupon acting to bring the motor aforesaid into operation to actuate said reciprocator in another direction; and means controlled by the motor aforesaid and acting to cut off the power from said motor.

157. In a pianoforte-action and in combination, a hammer; a contact-piece connected therewith; a reciprocator acting as a friction-driver to impel said contact-piece and hammer, said reciprocator being normally at rest; a motor acting to impel said reciprocator; a motor-controlling device, to which said reciprocator is pivoted, said motor-controlling device being actuated by the movement in one direction of said reciprocator when the contact-piece aforesaid is pressed against it, and thereupon acting to bring the motor aforesaid into operation to actuate said reciprocator in another direction; and means for cutting off the power from the motor aforesaid, said means including a trip operatively connected with the reciprocator aforesaid.

158. In a pianoforte-action and in combination, a reciprocator normally at rest; a plurality of hammers, normally disconnected from said reciprocator; keys corresponding to said hammers, said keys acting each, when depressed, to connect the hammer corresponding to it with the reciprocator aforesaid; means whereby said reciprocator is impelled when any of the keys aforesaid is depressed, and means acting to disconnect the hammer connected with the reciprocator aforesaid from said reciprocator in advance of the release of the key, governing said hammer.

159. In a pianoforte-action and in combination, a reciprocator normally at rest; a plurality of hammers, normally disconnected from said reciprocator; keys, corresponding to said hammers, each of said keys acting, when depressed, to connect the hammer corresponding to it with the reciprocator aforesaid; means whereby said reciprocator is impelled when

any of the keys aforesaid is depressed; and means acting to permit the reciprocator aforesaid to return to its normal position in advance of the release of the key.

160. In a pianoforte-action and in combination, a reciprocator normally at rest; a plurality of hammers normally disconnected from said reciprocator; keys corresponding to said hammers, said keys each acting when depressed, to connect the hammer corresponding to it with the reciprocator aforesaid; motor mechanism, acting when any of the keys aforesaid is depressed, to impel said reciprocator; and means acting to disconnect the hammer connected with the reciprocator aforesaid from said reciprocator in advance of the release of the key corresponding to said hammer.

161. In a pianoforte-action and in combination, a reciprocator normally at rest; a plurality of hammers, normally disconnected from said reciprocator; keys corresponding to said hammers, each of said keys acting when depressed, to connect the hammer corresponding to said key with the reciprocator aforesaid; motor mechanism acting, when any of the keys aforesaid is depressed, to impel said reciprocator; and means acting both to disconnect the hammer for the time being connected with the reciprocator aforesaid from said reciprocator, and to permit said reciprocator to return to its normal position in advance of the release of the key.

162. In a pianoforte-action and in combination, a reciprocator normally at rest; a plurality of hammers, normally disconnected from said reciprocator; keys corresponding to said hammers, each of said keys acting when depressed, to connect the hammer corresponding to said key with the reciprocator aforesaid; motor mechanism acting, when any of the keys aforesaid is depressed, to impel said reciprocator; means acting both to disconnect the hammer, for the time being connected with the reciprocator aforesaid, from said reciprocator, and to permit said reciprocator to return to its normal position in advance of the release of the key; and a check for the hammer.

163. An action for a keyboard instrument, including in combination, a reciprocating friction-driver, normally at rest; a plurality of contact-pieces, normally disconnected from said reciprocating friction-driver, and keys corresponding to said contact-pieces, each key acting, when depressed, to press the contact-piece corresponding to said key against the friction-driver aforesaid.

164. An action for a keyboard instrument, including in combination, a reciprocating friction-driver, normally at rest; a plurality of contact-pieces, normally disconnected from said reciprocating friction-driver; keys, corresponding to said contact-pieces, each of said keys acting, when depressed, to press the contact-piece corresponding to said key against the friction-driver aforesaid, to receive movement therefrom, and a motor, acting to impel said friction-driver when any of the keys aforesaid is depressed.

165. An action for a keyboard instrument, including in combination, a reciprocating friction-driver, normally at rest, said reciprocating friction-driver being mounted to move in two different arcs or paths; motor mechanism, acting to impel said reciprocating friction-driver; a plurality of contact-pieces; keys, corresponding to said contact-pieces, each of said keys acting, when depressed, to press the contact-piece corresponding to said key against the friction-driver aforesaid, to establish a frictional connection therewith, said key also acting to move the reciprocating friction-driver aforesaid in one of the two arcs or paths before mentioned; means operated by the last-mentioned movement of the reciprocating friction-driver aforesaid, acting to bring the motor aforesaid into action to move the friction-driver aforesaid in the other one of the two arcs or paths in which it is mounted to move.

166. An action for a keyboard instrument, including in combination, a reciprocating friction-driver normally at rest; a plurality of contact-pieces; keys, corresponding to said contact-pieces, each of said keys acting, when depressed, to press said contact-piece against said friction-driver to establish a frictional connection therewith; and means acting to disconnect the contact-piece aforesaid from the friction-driver aforesaid, in advance of the release of the key.

167. An action for a keyboard instrument, including in combination, a reciprocating friction-driver, normally at rest; said reciprocating friction-driver being mounted to move in two different arcs or paths; motor mechanism acting to impel said reciprocating friction-driver; a plurality of contact-pieces; keys, corresponding to said contact-pieces, each of said keys acting when depressed, to connect the contact-piece corresponding to it with the friction-driver aforesaid frictionally; said keys each acting also to move the reciprocating friction-driver aforesaid in one of the two arcs or paths before mentioned; means operated by the last-mentioned movement of the reciprocating friction-driver aforesaid acting to bring the motor aforesaid into action to move the friction-driver aforesaid in the other one of the two arcs or paths in which it is mounted to move; and means acting to disconnect the contact-piece aforesaid from the friction-driver aforesaid in advance of the release of the key controlling said contact-piece.

168. An action for a keyboard instrument including in combination, a reciprocating friction-driver, normally at rest; a plurality of contact-pieces to be impelled by said friction-driver; keys, corresponding to said contact-pieces, each of said keys acting when depressed, to press the contact-piece corresponding to said key against the friction-driver; a motor acting to impel said friction-driver when any of the keys aforesaid is depressed; means acting to disconnect the contact-pieces aforesaid, when connected with the reciprocating friction-driver aforesaid by the depressing of the corresponding keys, from said friction-driver, and to permit said friction-driver to return to its normal position in advance of the release of the key; and means whereby each of the contact-pieces aforesaid, when moved by the friction-driver aforesaid and disconnected therefrom, is prevented from returning to its normal position in advance of the release of its key.

169. In a pianoforte-action and in combination, a reciprocating friction-driver normally at rest; a plurality of hammers; contact-pieces, connected with said hammers; and keys, corresponding to said hammers, each of said keys acting, when depressed, to press the contact-piece connected with the hammer corresponding to said key, against the friction-driver aforesaid, to establish a frictional connection between them.

170. In a pianoforte-action and in combination, a motor, normally at rest; a plurality of hammers normally disconnected from said motor; keys corresponding to said hammers, each of said keys acting, when depressed, to connect the hammer corresponding to such key with the motor aforesaid frictionally; and a motor-controlling device controlled by the keys aforesaid, and acting when any key is depressed to bring the motor aforesaid into action to impel the hammer corresponding to the key depressed.

171. In a pianoforte-action and in combination, a reciprocating friction-driver normally at rest; a plurality of hammers; contact-pieces connected respectively with the different hammers aforesaid; keys, corresponding to the hammers aforesaid, each of said keys acting, when depressed, to establish a frictional connection between the contact-piece connected with the hammer corresponding to such key and the friction-driver aforesaid; and motor mechanism, controlled by the keys aforesaid and acting when any of said keys is depressed to impel the friction-driver aforesaid.

172. In a pianoforte-action and in combination, a reciprocator mounted to move in two different arcs or paths, said reciprocator being normally at rest; a motor, for actuating said reciprocator; a plurality of hammers; contact-pieces connected respectively with the different hammers aforesaid; keys, corresponding to said hammers, each key acting when depressed, to press the contact-piece connected with the hammer, corresponding to such key against the reciprocator aforesaid, thereby connecting said contact-piece with said reciprocator frictionally, and moving said reciprocator in one of the two arcs or paths before mentioned; and means operated by the last-mentioned movement of said reciprocator, and acting to bring the motor aforesaid into action, to impel the reciprocator aforesaid in the other one of the arcs or paths in which it is mounted to move, as before mentioned, thereby to impel the contact-piece aforesaid and the hammer connected therewith.

173. In a pianoforte-action and in combination, a plurality of hammers; contact-pieces connected respectively with the different hammers aforesaid; a reciprocator, acting as a friction-driver to impel the contact-pieces aforesaid and the hammers connected therewith, each as required; keys, corresponding to the hammers aforesaid, each of said keys acting when depressed, to connect the contact-piece that is connected with the hammer corresponding to said key with the reciprocator aforesaid frictionally; and an electric motor, acting on the depressing of any of the keys aforesaid to impel the reciprocator aforesaid.

174. In a pianoforte-action and in combination, a plurality of hammers; contact-pieces connected respectively with the different hammers aforesaid; a reciprocator, normally at rest, said reciprocator acting as a friction-driver to impel the contact-pieces and hammers aforesaid, each as required; keys, corresponding to the hammers aforesaid, each of said keys acting when depressed, to press the contact-piece that is connected with the hammer corresponding to said key, against the reciprocator aforesaid, thereby to connect said hammer and contact-piece with said reciprocator frictionally; and means acting to disconnect said contact-piece from said reciprocator, while the pressure upon the key corresponding to said contact-piece is maintained.

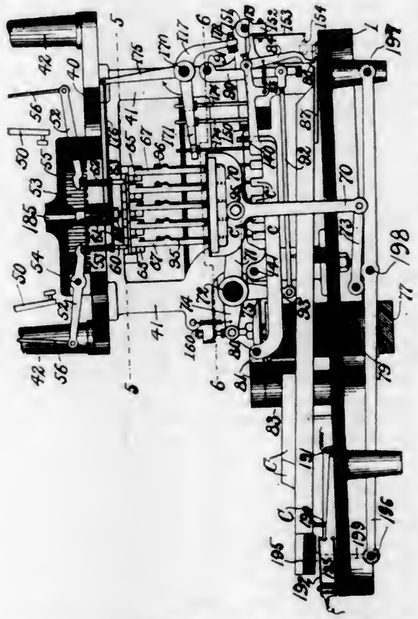
175. In a pianoforte-action and in combination, a plurality of hammers; contact-pieces connected respectively with the different hammers aforesaid; a reciprocator, normally at rest, said reciprocator acting as a friction-driver to impel the contact-pieces and hammers aforesaid, each as required; keys, corresponding to said hammers, each of said keys acting when depressed to connect the contact-piece that is connected with the hammer corresponding to such key with the reciprocator aforesaid frictionally; motor mechanism, acting when any of the keys aforesaid is depressed, to impel said reciprocator; and means whereby each of the contact-pieces aforesaid is disconnected from the reciprocator aforesaid, while the pressure upon the key connecting them is maintained.

176. In a pianoforte-action and in combination, a plurality of hammers; contact-pieces, connected respectively with the different hammers aforesaid; a reciprocator normally at rest, said reciprocator acting as a friction-driver to impel the contact-pieces and hammers aforesaid; each as required; keys corresponding to said hammers, each of said keys acting when depressed, to press the contact-piece that is connected with the hammer corresponding to said key against the reciprocator aforesaid; and means acting to disconnect said contact-piece from said reciprocator while the pressure upon the key controlling said contact-piece is maintained; and a check for the hammer.

177. In a pianoforte-action and in combination, a plurality of hammers; contact-pieces connected respectively with the different hammers aforesaid; a reciprocator normally at rest, said reciprocator acting as a friction-driver to impel the contact-pieces and hammers aforesaid, each as required; keys, corresponding to said hammers, each of said keys acting when depressed, to connect the contact-piece that is connected with the hammer corresponding to such key with the reciprocator aforesaid frictionally; motor mechanism, acting, when any of the keys aforesaid is depressed, to impel the reciprocator aforesaid; means whereby each of the contact-pieces connected with the reciprocator aforesaid by the action of the corresponding key, is disconnected from said reciprocator while the pressure upon such key is maintained, and checks for the hammers, whereby they are arrested on rebounding from the string.

657,478. TYPE-WRITING MACHINE, LINOTYPE-MACHINE, TYPE-SETTING MACHINE, OR OTHER KEYBOARD PRINTING INSTRUMENTALITY.

THADDEUS CAHILL, Washington, D. C., assignor to James B. Lambie, E. Hilton Jackson, George Frederick Cahill, and Arthur T. Cahill, trustees. Filed June 30, 1898. Serial No. 684,880. (No model.)



Claim.—1. In a type-writing machine having a plurality of type-bars striking to a common printing-center, and keys for controlling said type-bars, the combination with a key of means constructed to permit said key, when depressed for the printing of a letter, to remain depressed after said letter has been printed and while a subsequent letter is being printed without interfering with the due printing of such subsequent letter; said means including, (*a*) a type-bar-controlling member actuated by said key; and (*b*) a normally-stationary intermittingly-vibratory element acting, when said key has been depressed and is at rest in its depressed position, to release the type-bar-controlling member actuated by said key from said key, thereby to permit said type-bar-controlling member to return toward its normal position in advance of the release of said key.

2. In a type-writing machine having type-bars, and in combination, (*a*) a key; (*b*) a type-bar-controlling member, actuated by said key; (*c*) a connection intermediate said key and said type-bar-controlling member; and (*d*) a part set in motion in consequence of the depressing of the key aforesaid and acting, when said key has been depressed and is at rest in its depressed position, upon the connection aforesaid, to disconnect the type-bar-controlling member aforesaid from the key aforesaid, thereby to permit the return of said type-bar-controlling member toward its normal position in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

3. In a type-writing machine having a plurality of type-bars striking to a common printing-center, and in combination with said type-bars, type-bar-controlling mechanism, including, (*a*) a key; (*b*) a type-bar-controlling member, actuated by said key; (*c*) a latch for connecting the key and type-bar-controlling member aforesaid; (*d*) a spring for said latch; and (*e*) a vibratory releaser, normally stationary, but controlled by the key aforesaid, and acting, when said key is depressed, upon the latch aforesaid to disconnect the key aforesaid and the type-bar-controlling member aforesaid, actuated by said key, thereby to permit said type-bar-controlling member to return toward its normal position before the key controlling it is released, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

4. In a type-writing machine having a plurality of type-bars striking to a common printing-center, a type-bar-controlling mechanism, including, (*a*) a key; (*b*) a type-bar-controlling member actuated by said key; and (*c*) a motor, acting when the key aforesaid is depressed to release the type-bar-controlling member aforesaid, permitting it to return toward its normal position, without waiting for the key controlling it to be released, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

5. In a type-writing machine having type-bars, and in combination, (*a*) a key; (*b*) a type-bar-controlling member, actuated by said key; (*c*) a connection intermediate said key and the type-bar-controlling member aforesaid, wherethrough said key, when depressed, gives movement to said type-bar-controlling member; and (*d*) a normally-stationary intermittingly-vibratory motor device, controlled by the key aforesaid and acting, when said key is depressed, upon the connection aforesaid to disconnect the type-bar-controlling member aforesaid from the key aforesaid, thereby to permit said type-bar-controlling member to return toward its normal position in advance of the release of the key.

6. In a type-writing machine having type-bars, and in combination, (*a*) a key; (*b*) a type-bar-controlling member, actuated by said key; (*c*) a connection intermediate said key and the type-bar-controlling element aforesaid, wherethrough said key, when depressed, gives movement to said type-bar-controlling element; (*d*) a releasing-frame; and (*e*) a motor impelling said releasing-frame, and acting through said releasing-frame upon the connection before mentioned as intermediate the key and type-bar-controlling member aforesaid to release the type-bar-controlling member aforesaid.

7. In a type-writing machine having type-bars, and in combination, (*a*) a key; (*b*) a type-bar-controlling member actuated by said key; and (*c*) an electromagnetic releasing device acting, when the key aforesaid is depressed, to release the type-bar-controlling member aforesaid, permitting it to return toward its normal position in advance of the release of the key; all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

8. A type-writing mechanism, including, in combination, (*a*) a key; (*b*) a normally-stationary motor device; (*c*) a motor-controlling device, actuated by the key aforesaid and serving, when said key is depressed, to bring the motor device aforesaid into action; and (*d*) a releasing means, whereby the motor-controlling device aforesaid is permitted to return toward its normal position in advance of the release of the key aforesaid; all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

9. A type-writing mechanism, including, in combination, (*a*) a key; (*b*) a motor; (*c*) a motor-controlling device; (*d*) a latch connecting said key with said motor-controlling device, and wherethrough said key, when depressed, gives movement to said motor-controlling device, to bring the motor aforesaid into action; and (*e*) means, acting upon said latch to release the motor-controlling device aforesaid, thereby to permit said motor-controlling device to return toward its normal position in advance of the release of the key controlling it.

10. A type-writing mechanism, including, in combination, (*a*) a key; (*b*) a motor device, normally inactive; (*c*) a motor-controlling device actuated by the key aforesaid and serving, when thus actuated, to bring the motor device aforesaid into action; said motor device thereupon acting to release the motor-controlling device, actuated by the key aforesaid, from

said key, thereby to permit said motor-controlling device to return toward its normal position in advance of the release of the key controlling it; whereby the motor device aforesaid is again caused to be inactive all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

11. A type-writing mechanism, including in combination, (*a*) a key; (*b*) motor mechanism; (*c*) a controlling device for said motor mechanism; (*d*) a releasable connection intermediate said motor-controlling device and the key aforesaid, wherethrough said key, when depressed, actuates said motor-controlling device to bring the motor mechanism aforesaid into action; and (*e*) a vibratory frame, normally stationary, but actuated by the motor mechanism aforesaid and serving, when said motor mechanism is brought into action, upon the depressing of the key aforesaid, to permit the return of the motor-controlling device aforesaid toward its normal position in advance of the release of the key, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

12. A type-writing machine, including, in combination, (*a*) a key, (*b*) a circuit-controller, receiving movement therefrom; and (*c*) releasing means, whereby said circuit-controller is left free to return toward its normal position in advance of the release of the key aforesaid.

13. A type-writing machine, including, in combination, (*a*) a key, (*b*) a circuit-controller; (*c*) a latch wherethrough said key, when depressed, gives movement to said circuit-controller; and (*d*) a frame for acting on said latch to release the circuit-controller aforesaid, thereby to permit said circuit-controller to return toward its normal position in advance of the release of the key aforesaid.

14. A type-writing machine, including, in combination, (*a*) a key; (*b*) an electromagnet; (*c*) a circuit-controller, actuated by the key aforesaid and releasably connected therewith; said circuit-controller serving, when actuated by the key aforesaid, to cause an action of the electromagnet aforesaid; said electromagnet acting, on the depressing of the key aforesaid, to release the circuit-controller aforesaid, to permit said circuit-controller to return toward its normal position in advance of the release of the key aforesaid, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

15. A type-writing machine, including, in combination, (*a*) a key; (*b*) an electromagnet; (*c*) a circuit-closer for the electromagnet aforesaid; (*d*) a releasable connection intermediate said key and said circuit-closer, wherethrough said key, when depressed, gives movement to said circuit-closer to close the circuit of the electromagnet aforesaid; said magnet thereupon acting upon the releasable connection aforesaid to permit the return of the circuit-closer aforesaid toward its normal position, whereby the circuit of the electromagnet aforesaid is broken in advance of the release of the key controlling it.

16. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a key; (*c*) a type-bar-controlling member actuated by said key, and releasably connected therewith; and (*d*) motor mechanism brought into action by the key-actuated movement of the type-bar-controlling member aforesaid, and operating to impel the type-bar aforesaid and to release the type-bar-controlling member aforesaid, thereby to permit the return of said type-bar-controlling member toward its normal position in advance of the release of the key controlling it, and whereby the type-bar also is permitted to return toward its normal position in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

17. In a type-writing machine having a plurality of type-bars striking to a common printing-center, the combination of (*a*) a type-bar; (*b*) a key; (*c*) a motor device for impelling said type-bar, to cause it to print; (*d*) a motor-controlling device receiving movement from the key aforesaid, and serving, when said key is depressed, to bring the motor device aforesaid into action for the impelling of the type-bar aforesaid; and (*e*) releasing means for the motor-controlling device aforesaid, whereby said motor-controlling device is left free to return toward its normal position in advance of the release of the key depressed.

18. In a type-writing machine having a plurality of type-bars striking to a common printing-center, the combination of (*a*) a type-bar; (*b*) a key; (*c*) a motor device for impelling said type-bar, to cause it to print; (*d*) a motor-controlling device; (*e*) a releasable connection intermediate said key and said motor-controlling device, wherethrough said key, when depressed, actuates said motor-controlling device; said motor-controlling device operating, when thus actuated, to bring the motor device aforesaid into action for the impelling of the type-bar aforesaid; said motor device also acting upon the releasable connection aforesaid to permit the return of the motor-controlling device aforesaid toward its normal position, whereby the power is cut off automatically from said motor device, and type-bar left free to return toward its normal position in advance of the release of the key, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

19. In a type-writing machine having a plurality of type-bars striking to a common printing-center, the combination of (*a*) a type-bar; (*b*) a key; (*c*) a motor device for impelling said type-bar, to cause it to print; (*d*) a motor-controlling device; (*e*) a latch intermediate said motor-controlling device and said key, wherethrough said key, when depressed, gives movement to said motor-controlling device; said motor-controlling device operating, when thus actuated, to bring the motor device aforesaid into action to impel the type-bar aforesaid; and (*f*) a pivoted frame, impelled by the motor device aforesaid, and acting upon the latch aforesaid to permit the return of the motor-controlling device aforesaid toward its normal position in advance of the release of the key aforesaid.

20. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a key; (*c*) an electromagnet serving to actuate said type-bar; (*d*) a circuit-controller for said electromagnet, actuated by the key aforesaid when said key is depressed; and (*e*) releasing means, whereby the circuit-controller aforesaid is left free to return toward its normal position in advance of the release of the key aforesaid, thereby to release the type-bar aforesaid, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

21. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a key; (*c*) an electromagnet serving to actuate said type-bar; (*d*) a circuit-closer for the electromagnet aforesaid; (*e*) a latch intermediate the key aforesaid and the circuit-closer aforesaid, wherethrough said key, when depressed, gives movement to the circuit-closer aforesaid, so that it closes the circuit of the electromagnet aforesaid; and (*f*) a frame for acting on said latch, to permit the circuit-closer aforesaid to return toward its normal position, breaking the circuit of the type-bar-impelling magnet aforesaid in advance of the release of the key aforesaid.

22. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a key; (*c*) an electromagnet for actuating said type-bar; (*d*) a circuit-controller actuated by the key aforesaid, and releasably connected therewith; said circuit-controller serving, when thus actuated, to cause the electromagnet aforesaid to give movement to the type-bar aforesaid; said electromagnet acting also to release the circuit-controller aforesaid, permitting it to return toward its normal position in advance of the release of the key aforesaid, whereby the type-bar is released in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

23. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a key; (*c*) an electromagnet for actuating said type-bar; (*d*) a circuit-closer for said electromagnet; (*e*) a releasable connection intermediate said key and said circuit-closer wherethrough said key, when depressed, gives movement to said circuit-closer to close the circuit of the electromagnet aforesaid; and (*f*) a pivoted frame actuated by the electromagnet aforesaid and acting upon the releasable connection aforesaid to permit the circuit-closer aforesaid to return toward its normal position, breaking the circuit of the electromagnet aforesaid, in advance of the release of the key.

24. In a type-writing machine and in combination, (*a*) a key; (*b*) a normally-stationary intermittingly-vibratory motor device; (*c*) spacing mechanism actuated by said motor device, whereby the letter-spaces are caused to be produced; (*d*) a motor-controlling device receiving movement from the key aforesaid and serving, when said key is depressed, to bring the motor device aforesaid into action to operate the spacing mechanism aforesaid; and (*e*) tripping means whereby the motor-controlling device aforesaid is permitted to return toward its normal position in advance of the release of the key aforesaid, thereby releasing the spacing mechanism aforesaid.

25. In a type-writing machine and in combination, (*a*) a key; (*b*) a normally-stationary intermittingly-vibratory motor device; (*c*) spacing mechanism actuated by said motor device, whereby the letter-spaces are caused to be produced; (*d*) a motor-controlling device for the motor aforesaid; (*e*) a releasable connection intermediate said key and said motor-controlling device wherethrough, when said key is depressed, movement is communicated to said motor-controlling device to bring the motor aforesaid into action to operate the spacing mechanism aforesaid; and (*f*) a vibratory releasing-frame, normally stationary, but controlled by the key aforesaid, and serving, when said key is depressed, to act upon the releasable connection aforesaid, thereby to permit the motor-controlling device aforesaid to return toward its normal position in advance of the release of the key aforesaid.

26. A type-writing machine, including, in combination, (*a*) a key; (*b*) spacing mechanism whereby the letter-spaces are caused to be produced as the printing of a line progresses; (*c*) an electromagnet for actuating said spacing mechanism; (*d*) a circuit-controller for said electromagnet, operated by the key aforesaid when said key is depressed, said circuit-controlling device being normally in a position to render said electromagnet inactive, and tending when moved from its normal position to return thereto; and (*e*) releasing means, whereby said circuit-controller is left free to return toward its normal position in advance of the release of the key aforesaid.

27. A type-writing machine, including, in combination, (*a*) a key; (*b*) spacing mechanism whereby the letter-spaces are caused to be produced as the printing of a line progresses; (*c*) an electromagnet for actuating said spacing mechanism; (*d*) a circuit-controller for said electromagnet; (*e*) a releasable connection intermediate the key aforesaid and the circuit-controller aforesaid, wherethrough said key, when depressed, gives movement to said circuit-controller; and (*f*) another electromagnet whose circuit is also controlled by the circuit-controller aforesaid, acting upon the releasable connection aforesaid to permit the return of the circuit-controller aforesaid toward its normal position in advance of the release of the key aforesaid.

28. In a type-writing machine, having a plurality of type-bars striking to a common printing-center, and in combination, (*a*) a type-bar; (*b*) a key; (*c*) a motor device for impelling said type-bar to cause it to print; (*d*) a motor-controlling device actuated by the key aforesaid and serving, when said key is depressed, to bring the motor aforesaid into action for the impelling of the type-bar aforesaid; (*e*) letter-spacing mechanism, controlled by the motor-controlling device aforesaid; and (*f*) releasing means whereby the motor-controlling device aforesaid is left free to return toward its normal position in advance of the release of the key depressed, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

29. In a type-writing machine having a plurality of type-bars striking to a common printing-center, and in combination, (*a*) a type-bar; (*b*) a key; (*c*) a motor device for impelling said type-bar to cause it to print; (*d*) a motor-controlling device actuated by the key aforesaid and serving, when said key is depressed, to bring the motor aforesaid into action for the impelling of the type-bar aforesaid; (*e*) letter-spacing mechanism, controlled by the motor-controlling device aforesaid; and (*f*) releasing mechanism also controlled by the motor-controlling device aforesaid; said releasing mechanism operating when the key aforesaid is depressed to permit the motor-controlling device aforesaid to return toward its normal position in advance of the release of the key aforesaid, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

30. In a type-writing machine and in combination, (*a*) a key; (*b*) a type-bar; (*c*) an electromagnet for actuating said type-bar; (*d*) a circuit-controller for said electromagnet, said circuit-controller receiving movement from the key aforesaid when said key is depressed; (*e*) a paper-carrier; (*f*) letter-spacing mechanism, controlled by the action of the circuit-controller aforesaid; and (*g*) releasing means whereby the circuit-controller aforesaid is permitted to return toward its normal position in advance of the release of the key aforesaid.

31. In a type-writing machine and in combination, (*a*) a key; (*b*) a type-bar; (*c*) an electromagnet for actuating said type-bar; (*d*) a paper-carrier; (*e*) letter-spacing mechanism therefor; (*f*) another electromagnet for actuating said letter-spacing mechanism; (*g*) a circuit-controlling device actuated by the key aforesaid when said key is depressed, and serving to control the two electromagnets aforesaid; and (*h*) means whereby the circuit-controlling device aforesaid is permitted to return toward its normal position in advance of the release of the key aforesaid.

32. In a type-writing machine, and in combination, (*a*) a type-bar; (*b*) a key; (*c*) a lever corresponding to and actuated by said key; (*d*) a type-bar-impelling motor, letter-spacing mechanism, and releasing mechanism, all controlled by said lever; said releasing mechanism acting, when the key aforesaid is depressed, to permit the key-actuated lever aforesaid to return toward its normal position in advance of the release of the key aforesaid.

33. In a type-writing machine and in combination, (*a*) a key; (*b*) a type-bar; (*c*) a letter-spacing device; (*d*) a vibratory releaser, normally stationary; (*e*) motor mechanism for impelling the type-bar aforesaid and for operating the letter-spacing device and the vibratory releaser aforesaid; (*f*) a member controlling said motor mechanism, said member being actuated by the key aforesaid; the vibratory releaser aforesaid operating to permit the key-actuated member aforesaid to return toward its normal position in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

34. In a type-writing machine and in combination, (*a*) a key; (*b*) a type-bar; (*c*) a letter-spacing device; (*d*) a releasing device; (*e*) electrically-controlled means for actuating the type-bar aforesaid, and also for actuating the spacing device aforesaid and the releasing device aforesaid; and (*f*) circuit-controlling means receiving movement from the key aforesaid and acting, when said key is depressed, to cause the actuating of the type-bar aforesaid, the spacing device aforesaid and the releasing device aforesaid; said releasing device thereupon acting to permit the return of the circuit-controlling means actuated by the key aforesaid toward its normal position in advance of the release of said key.

35. In a type-writing machine and in combination, (*a*) a key; (*b*) a type-bar; (*c*) a type-bar-impelling frame; (*d*) letter-spacing mechanism; (*e*) a vibratory releaser, normally stationary; (*f*) a circuit-closing frame operated by the key aforesaid and releasably connected therewith; said circuit-closing frame tending when moved from its normal position, to return thereto; and (*g*) means, controlled by said circuit-closing frame, for actuating the type-bar-impelling frame, the spacing mechanism and the vibratory releaser aforesaid; the vibratory releaser aforesaid acting to permit the circuit-closing frame aforesaid to return toward its normal position in advance of the release of the key aforesaid.

36. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a vibratory motor device for impelling said type-bar; said type-bar being normally disconnected from said motor device; (*c*) a key; (*d*) means operated by said key for connecting said type-bar with said motor device when said key is depressed; and (*e*) releasing means, whereby said type-bar is disconnected from said motor device in advance of the release of the key aforesaid, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

37. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a normally-stationary intermittingly-vibratory motor device serving to impel said type-bar, said type-bar being normally disconnected from said motor device; (*c*) a key; (*d*) means operated by said key for connecting said type-bar with said motor device when said key is depressed; (*e*) a motor-controlling device actuated by the key aforesaid, when said key is depressed, and serving when thus actuated to bring the motor device aforesaid into action for the impelling of the type-bar aforesaid; said motor-controlling device tending when moved from its normal position on the depressing of a key, to return thereto; and (*f*) releasing means whereby said motor-controlling device is left free to return toward its normal position in advance of the release of the key aforesaid.

38. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a motor device serving to impel said type-bar; said type-bar being normally disconnected from said motor device; (*c*) a key; (*d*) a type-bar-controlling lever corresponding to said key and receiving movement therefrom when said key is depressed; (*e*) means operated by said lever for connecting the type-bar aforesaid with the motor device aforesaid, and for bringing said motor device into action for impelling said type-bar when the key aforesaid is depressed; and (*f*) releasing means whereby the type-bar-controlling lever aforesaid is left free to return toward its normal position in advance of the release of the key controlling it.

39. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a vibratory type-bar-impelling frame normally stationary, the type-bar aforesaid being normally disconnected from said frame; (*c*) a key; (*d*) means operated by said key for connecting the type-bar aforesaid with the type-bar-impelling frame aforesaid when said key is acted on; (*e*) means, also controlled by the key aforesaid, acting, when said key is depressed, to actuate the type-bar-impelling frame aforesaid; and (*f*) means whereby the type-bar-impelling frame and the type-bar aforesaid are permitted to return toward their normal positions in advance of the release of the key aforesaid, and whereby the type-bar aforesaid is disconnected from the type-bar-impelling frame aforesaid in advance of the release of the key aforesaid, controlling it, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

40. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a vibratory type-bar-impelling frame normally stationary, the type-bar aforesaid being normally disconnected from said frame; (*c*) a lever and means controlled thereby, serving when said lever is actuated, both to connect the type-bar aforesaid with the type-bar-impelling frame aforesaid, and to vibrate said frame to give movement to said type-bar; (*d*) a key acting when depressed to give movement to said lever; and (*e*) releasing means whereby said lever, when actuated by said key is left free to return toward its normal position in advance of the release of the said key.

41. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a vibratory type-bar-impelling frame normally stationary, the type-bar aforesaid being normally disconnected from said frame; (*c*) letter-spacing mechanism; (*d*) a releasing-frame; (*e*) means for connecting the type-bar

aforesaid with the type-bar-impelling frame aforesaid; (*f*) motor mechanism for actuating the type-bar-impelling frame aforesaid, the letter-spacing mechanism, and the releasing-frame aforesaid; (*g*) a key; (*h*) means operated by said key, serving to connect the type-bar aforesaid with the type-bar-impelling frame aforesaid; (*i*) motor-controlling means whereby the motor mechanism aforesaid is brought into action to impel the type-bar-impelling frame, the spacing mechanism, and the releasing-frame aforesaid; (*k*) a releasable connection intermediate the key aforesaid and the motor-controlling means aforesaid wherethrough said key, when depressed, actuates said motor-controlling means; the releasing-frame aforesaid acting upon said releasable connection to permit the motor-controlling means aforesaid to return toward its normal position in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

42. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a vibratory type-bar-impelling frame normally stationary, the type-bar aforesaid being normally disconnected from said frame; (*c*) letter-spacing mechanism; (*d*) a releasing-frame; (*e*) motor mechanism for actuating the type-bar-impelling frame aforesaid, the letter-spacing mechanism, and the releasing-frame aforesaid; (*f*) a motor-controlling device whereby the motor mechanism aforesaid is brought into action to impel the type-bar-impelling frame aforesaid, the letter-spacing mechanism aforesaid and the releasing mechanism aforesaid; (*g*) a lever for operating said motor-controlling device, and means connected with said lever whereby the type-bar aforesaid is brought into operative relation with the type-bar-impelling frame aforesaid to receive movement therefrom; (*h*) a key, releasably connected with said lever, and operating when depressed to actuate the same; said lever thereupon operating both to bring the type-bar aforesaid into operative relation with the type-bar-impelling frame aforesaid, and also by its action upon the motor-controlling device aforesaid, serving to cause the motor mechanism aforesaid to actuate the type-bar-impelling frame aforesaid, the letter-spacing mechanism aforesaid and the releasing-frame aforesaid; said releasing-frame thereupon acting upon the releasable connection aforesaid to permit the return of the parts aforesaid controlled by the key aforesaid, to their normal positions in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

43. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a type-bar-impelling frame normally at rest, the type-bar aforesaid being normally disconnected from said frame; (*c*) an electromagnet for actuating said frame; (*d*) a key; (*e*) means controlled by said key, whereby the type-bar aforesaid is brought into operative relation with the type-bar-impelling frame aforesaid, to receive movement therefrom when the key aforesaid is depressed; (*f*) a circuit-controller actuated by the key aforesaid, and serving to control the electromagnet aforesaid; and (*g*) releasing means, whereby said circuit-controller, when actuated by the key aforesaid, is left free to return toward its normal position in advance of the release of the key aforesaid.

44. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a type-bar-impelling frame, normally at rest, the type-bar aforesaid being normally disconnected from said frame; (*c*) an electromagnet for actuating said frame; (*d*) a lever and means operated thereby, whereby the type-bar aforesaid is brought into operative relation with the type-bar-impelling frame aforesaid to receive movement therefrom and whereby the electromagnet aforesaid is caused to actuate said frame for the impelling of said type-bar; (*e*) a key for giving movement to said lever; and (*f*) releasing means whereby said lever is left free to return toward its normal position in advance of the release of the key aforesaid, said circuit-controller tending when moved from its normal position by the key aforesaid, to return thereto thereby to permit the type-bar and type-bar-impelling frame aforesaid to return toward their normal positions without waiting for the key aforesaid, controlling them, to be released.

45. In a type-writing machine and in combination, (*a*) a type-bar; (*b*) a type-bar-impelling frame, normally at rest, the type-bar aforesaid being normally disconnected from said frame; (*c*) letter-spacing mechanism (*d*) a vibratory releaser; (*e*) electromagnetic motor mechanism for actuating said type-bar-impelling frame, the letter-spacing mechanism, and the vibratory releaser aforesaid; (*f*) a lever, and means operated thereby whereby the type-bar aforesaid is brought into operative relation with the type-bar-impelling frame aforesaid, to receive movement therefrom, and whereby the electromagnetic motor mechanism aforesaid is brought into operation to actuate the type-bar-impelling frame, the letter-spacing mechanism and the vibratory releaser aforesaid; (*g*) a key; and (*h*) a connection intermediate said key and the lever aforesaid, wherethrough said key when depressed actuates said lever; the vibratory releaser aforesaid acting upon said connection to permit the lever aforesaid, controlling the motor mechanism aforesaid, to return toward its normal position, in advance of the release of the key.

46. In a type-writing machine, having a plurality of type-bars striking to a common printing-center, and in combination with said type-bars type-bar-controlling mechanism including, (*a*) a plurality of keys; (*b*) type-bar-controlling elements, corresponding to the keys aforesaid, and each actuated by the corresponding key; and (*c*) a common releaser, controlled by the keys aforesaid, and acting, when a key is depressed to permit the type-bar-controlling element actuated by said key to return toward its normal position in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print another key can also be depressed to print, without waiting to release the key first depressed.

47. In a type-writing machine having a plurality of type-bars striking to a common printing-center, and in combination, (*a*) a plurality of keys; (*b*) type-bar-controlling elements corresponding respectively to, and actuated respectively by, the keys aforesaid; (*c*) releasable connections intermediate said keys and said type-bar-controlling elements; and (*d*) a single vibratory releaser, for acting upon all said connections, each as required, to permit the type-bar-controlling element corresponding to a key depressed to return toward its normal position without waiting for such key to be released.

48. A type-selecting mechanism, including, in combination, (*a*) a plurality of keys; (*b*) levers corresponding to and actuated by the keys aforesaid; (*c*) latches connecting said keys with said levers, a latch for each key and lever; and (*d*) a releasing-frame for acting on a plurality of said latches, each latch as required.

49. In a type-writing machine having a plurality of type-bars striking to a common printing-center, and in combination with said type-bars, type-bar-controlling mechanism, including, (*a*) a plurality of keys; (*b*) type-bar-controlling elements corresponding to the keys aforesaid, and each actuated by the corresponding key; and (*c*) a motor device for tripping the type-bar-controlling elements aforesaid, and acting, when a key is depressed, to trip the type-bar-controlling element corresponding thereto, thereby to permit the making of a succeeding letter in advance of the release of the key previously depressed.

50. In a type-writing machine having a plurality of type-bars striking to a common printing-center, and in combination, (*a*) a plurality of keys; (*b*) type-bar-controlling elements corresponding respectively to and actuated respectively by the keys aforesaid; (*c*) releasable connections intermediate said keys and said type-bar-controlling elements; (*d*) a releasing-frame for acting on said releasable connections, each as required, to permit the type-bar-controlling element corresponding to the key depressed to return toward its normal position in advance of the release of said key; (*e*) another frame actuated by the keys aforesaid through the type-bar-controlling elements aforesaid; and (*f*) means controlled by the frame last mentioned for actuating the releasing-frame aforesaid.

51. In a type-writing machine having a plurality of type-bars striking to a common printing-center, and in combination, (*a*) a plurality of keys; (*b*) type-bar-controlling elements corresponding respectively to and actuated respectively by the keys aforesaid; (*c*) releasable connections intermediate said keys and said type-bar-controlling elements; (*d*) a frame operated by the keys aforesaid through the type-bar-controlling elements aforesaid; and (*e*) a motor device controlled by said frame, and acting on the releasable connections aforesaid to release the type-bar-controlling elements aforesaid, each as required, to permit said type-bar-controlling elements and the motor-controlling frame operated therethrough to return to their normal positions in advance of the release of the key controlling them.

52. In a type-writing machine having a plurality of type-bars striking to a common printing-center, and in combination, (*a*) a plurality of keys; (*b*) type-bar-controlling elements corresponding to and actuated respectively by the keys aforesaid; (*c*) an electromagnet for tripping all the type-bar-controlling elements aforesaid, each as required; whereby when a key is depressed the type-bar-controlling element corresponding thereto is left free to return toward its normal position in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print another key can also be depressed to print, without waiting to release the key first depressed.

53. In a type-writing machine having a plurality of type-bars striking to a common printing-center, and in combination, (*a*) a plurality of keys; (*b*) type-bar-controlling elements corresponding respectively to and actuated respectively by the keys aforesaid; (*c*) releasable connections intermediate said keys and said type-bar-controlling elements, a releasable connection intermediate said key and the corresponding type-bar-controlling element; (*d*) an electromagnet; (*e*) a circuit-controller operated by the type-bar-controlling elements aforesaid and controlling the electromagnet aforesaid; the electromagnet aforesaid acting, when a key is depressed, upon the connection aforesaid intermediate said key and the type-bar-controlling element operated by said key to permit said type-bar-controlling element and the circuit-closing frame aforesaid operated thereby, to return toward their normal positions in advance of the release of the key depressed.

54. In a type-writing machine having a plurality of type-bars striking to a common printing-center, and in combination, (*a*) a plurality of keys; (*b*) type-bar-controlling elements corresponding respectively to and actuated respectively by the keys aforesaid; (*c*) releasable connections intermediate said keys and said type-bar-controlling elements; (*d*) an electromagnet; (*e*) a circuit-controller operated by the type-bar-controlling elements aforesaid and controlling the electromagnet aforesaid; and (*f*) a frame, operated by the electromagnet aforesaid, and acting, when a key is depressed, upon the connection aforesaid intermediate said key and the type-bar-controlling element operated by said key to permit said type-bar-controlling element and the circuit-closing frame aforesaid operated thereby, to return toward their normal positions in advance of the release of the key depressed, all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print another key can also be depressed to print, without waiting to release the key first depressed.

55. A type-writing mechanism, including, in combination, (*a*) a plurality of keys; (*b*) a motor device normally inactive; (*c*) a motor-controlling device receiving movement from each of the keys aforesaid, and serving, when one of said keys is depressed, to bring the motor device aforesaid into action; and (*d*) a releasing means, whereby the motor-controlling device aforesaid is permitted to return toward its normal position, to stop the action of the motor device aforesaid in advance of the release of the key aforesaid.

56. A type-writing mechanism, including, in combination, (*a*) a plurality of keys; (*b*) a frame receiving movement from each of said keys; (*c*) a motor device controlled by said frame; and (*d*) releasing means whereby the frame aforesaid is permitted to return toward its normal position to cut off power from the motor device aforesaid in advance of the release of the key depressed.

57. A type-writing mechanism, including, (*a*) a plurality of keys; (*b*) levers, corresponding to and actuated by said keys; (*c*) latches connecting said keys with said levers; (*d*) a frame operated by the keys aforesaid through the levers aforesaid; and (*e*) a motor device controlled by the frame aforesaid, and serving to free the latches aforesaid.

58. A type-writing mechanism, including, (*a*) a plurality of keys; (*b*) a circuit-controller receiving movement from all said keys; (*c*) a tripping means whereby, when a key is depressed and the circuit-controller aforesaid operated thereby, said circuit-controller is left free to return toward its normal position in advance of the release of said key.

59. A type-writing mechanism, including, (*a*) a plurality of keys; (*b*) levers corresponding to said keys; (*c*) a circuit-controlling frame operated by said levers; (*d*) releasable connections intermediate said keys and said levers wherethrough said keys, when depressed, actuate said levers and the circuit-controlling frame aforesaid; (*e*) a releasing-frame for acting on the releasable connections aforesaid; and (*f*) a magnet controlled by the circuit-controlling frame aforesaid, and serving to actuate the releasing-frame aforesaid, whereby, when a key is depressed, the lever aforesaid corresponding to said key and the circuit-controlling frame aforesaid, are left free to return to their normal positions in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print another key can also be depressed to print, without waiting to release the key first depressed.

60. In a type-writing machine and in combination, (*a*) a plurality of type-bars striking to a common printing-point; (*b*) a normally-stationary intermittingly-vibrating single-motor device for impelling said type-bars, each as required; said type-bars being normally disconnected from said motor device; (*c*) keys; (*d*) means operated by said keys for connecting the type-bars aforesaid, each as required, with the motor device aforesaid; and (*e*) releasing means whereby a type-bar, connected with the motor device aforesaid upon the depressing of a key, is disconnected from said motor device in advance of the release of the key depressed, all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print another key can also be depressed to print, without waiting to release the key first depressed.

61. In a type-writing machine and in combination, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a motor device for impelling the type-bars aforesaid, each as required; said type-bars being normally disconnected from said motor device; (*c*) keys; (*d*) means operated by said keys for connecting said type-bars with the motor device aforesaid, each type-bar as required; (*e*) a motor-controlling device, operated by a plurality of the keys aforesaid, and serving, when a key is depressed, to bring the motor device aforesaid into action, for the impelling of the type-bar corresponding to the key depressed; (*f*) releasing means whereby said motor-controlling device is left free, when a key is depressed, to return toward its normal position in advance of the release of said key; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print another key can be depressed to print without waiting to release the key first depressed.

62. In a type-writing machine and in combination, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a single-motor device normally at rest, serving to impel said type-bars, each as required; (*c*) keys; (*d*) type-bar-controlling levers receiving movement from said keys; (*e*) means operated by said levers for connecting the type-bars aforesaid, each as required, with the motor device aforesaid, and for bringing said motor device into action to impel the type-bar connected with it when a key is depressed; and (*f*) releasing means for the type-bar-controlling levers aforesaid, whereby said levers are left free to return toward their normal positions in advance of the release of the key controlling them, so that the key can be held down without interfering with the action of the succeeding key or keys.

63. In a type-writing machine and in combination, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a type-bar-impelling frame normally stationary; the type-bars aforesaid being normally disconnected from said frame; (*c*) keys; (*d*) means operated by said keys for connecting the type-bars aforesaid with the tye-bar-impelling frame aforesaid, each type-bar as required; (*e*) means, controlled by the keys aforesaid, acting, when a key is depressed, to give movement to the type-bar-impelling frame aforesaid for the actuating of the type-bar aforesaid; and (*f*) means whereby the type-bar-impelling frame and the type-bar actuated thereby are permitted to return toward their normal positions in advance of the release of the key aforesaid, and whereby the type-bar aforesaid is disconnected from the type-bar-impelling frame aforesaid in advance of the release of the key depressed to control it, all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print another key can be depressed to print without waiting to release the key first depressed.

64. In a type-writing machine and in combination, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a vibratory type-bar-impelling frame, normally stationary; the type-bars aforesaid being normally disconnected from said frame; (*c*) keys; (*d*) type-bar-controlling levers receiving movement from said keys and releasably connected therewith; (*e*) means operated by the type-bar-controlling levers aforesaid, serving when a key is depressed to connect the appropriate type-bar with the type-bar-impelling frame aforesaid, to receive movement therefrom, and serving also to vibrate said frame to give movement to said type-bar; and (*f*) releasing means for the type-bar-controlling levers aforesaid, whereby each of said levers when actuated by the corresponding key, is left free to return toward its normal position in advance of the release of such key, whereby a key may be depressed to make a letter without first releasing the key or keys previously depressed.

65. In a type-writing machine and in combination, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a single-motor device for impelling the type-bars aforesaid, each as required; (*c*) keys; (*d*) type-bar-controlling elements corresponding to and actuated by said keys; each of said type-bar-controlling elements being releasably connected with the corresponding key, to receive movement therefrom when said key is depressed; (*e*) means operated by the type-bar-controlling elements aforesaid, whereby the type-bars aforesaid are connected, each as required, with the motor device aforesaid to receive movement therefrom; (*f*) a vibratory frame, operated by the type-bar-controlling elements aforesaid, and serving, when a key is depressed, to bring the motor device aforesaid into action to impel the type-bar connected with it; and (*g*) releasing means whereby the type-bar-controlling element corresponding to the key depressed and actuated thereby is left free to return toward its normal position in advance of the release of such key, to permit the depressing of a subsequent key or keys to print without releasing the key first depressed.

66. In a type-writing machine and in combination, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a single-motor device for impelling the type-bars aforesaid, each as required; (*c*) keys; (*d*) type-bar-controlling elements corresponding to and actuated by said keys; each of said type-bar-controlling elements being releasably connected with the corresponding key, to receive movement therefrom when said key is depressed; (*e*) means operated by the type-bar-controlling elements aforesaid, whereby the type-bars aforesaid are connected, each as required, with the motor device aforesaid to receive movement therefrom; (*f*) a vibratory frame, operated by the type-bar-controlling elements aforesaid, and serving, when a key is depressed, to bring the motor device aforesaid into action to impel the type-bar connected with it; and (*g*) letter-spacing mechanism, controlled by the frame above mentioned as operated by the type-bar-controlling elements aforesaid; and (*h*) releasing means whereby the type-bar-controlling element corresponding to a key depressed and actuated thereby is left free to return toward its normal position in advance of the release of such key, to permit the depressing of a subsequent key or keys to print without releasing the key first depressed.

67. In a type-writing machine and in combination, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a type-bar-impelling frame for giving movement to said type-bars; said frame being nor-

mally stationary, and said type-bars being normally disconnected therefrom; (c) keys; (d) type-bar-controlling elements corresponding to and actuated by said keys; each of said type-bar-controlling elements being releasably connected with the corresponding key to receive movement therefrom when said key is depressed; (e) means operated by the type-bar-controlling elements aforesaid whereby the type-bars aforesaid are connected, each as required, with the type-bar-impelling frame aforesaid, to receive movement therefrom; (f) letter-spacing mechanism; (g) a releasing-frame; (h) motor mechanism for impelling the type-bar-impelling frame aforesaid, the letter-spacing mechanism aforesaid, and the releasing-frame aforesaid; said releasing-frame acting, when a key is depressed, to release the type-bar-controlling element corresponding to such key, thereby to permit the return of said type-bar-controlling element toward its normal position in advance of the release of the key depressed, whereby a subsequent key may be depressed to print without first releasing the key previously depressed.

68. In a type-writing machine and in combination, (a) a plurality of type-bars striking to a common printing-center; (b) a type-bar-impelling frame for giving movement to said type-bars; said frame being normally stationary, and said type-bars being normally disconnected therefrom; (c) keys; (d) levers corresponding to and actuated by said keys, each of said levers being releasably connected with the corresponding key to receive movement therefrom when said key is depressed; (e) means operated by the levers aforesaid whereby the type-bars aforesaid are connected, each as required, with the type-bar-impelling frame aforesaid to receive movement therefrom; (f) a releasing-frame; (g) a single-motor device for actuating both the type-bar-impelling frame aforesaid and the releasing-frame aforesaid; (h) a frame operated by the key-actuated levers aforesaid and means connected with said frame to control the motor mechanism aforesaid; (i) letter-spacing mechanism, controlled by the frame last mentioned, the releasing-frame above mentioned serving, when a key is depressed, to permit the return of the lever before mentioned as corresponding to said key and actuated thereby toward its normal position in advance of the release of said key; so that a subsequent key or keys may be depressed to print without releasing the key first depressed.

69. In a type-writing machine and in combination, (a) a plurality of type-bars striking to a common printing-center; (b) a type-bar-impelling frame normally at rest; the type-bars aforesaid being normally disconnected from said frame; (c) an electromagnet for actuating said frame; (d) keys; (e) means controlled by said keys whereby when a key is depressed the appropriate type-bar is brought into operative relation with the type-bar-impelling frame aforesaid, to receive movement therefrom; (f) a circuit-controller actuated by each of the keys aforesaid, controlling the electromagnet aforesaid; and (g) releasing means whereby said circuit-controller, when actuated by the depressing of a key, is left free to return toward its normal position in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print another key can be depressed to print without waiting to release the key first depressed.

70. In a type-writing machine and in combination, (a) a plurality of type-bars striking to a common printing-center; (b) a type-bar-impelling frame normally at rest, the type-bars aforesaid being normally disconnected from the frame aforesaid; (c) type-bar-controlling elements and means operated thereby whereby the different type-bars aforesaid are connected with the type-bar-impelling frame aforesaid, each as required; (d) keys, releasably connected with said type-bar-controlling elements; (e) letter-spacing mechanism; (f) a circuit-closing frame, actuated by the keys aforesaid through the type-bar-controlling elements aforesaid; (g) electromagnetic mechanism controlled by said circuit-closing frame for actuating the type-bar-impelling frame aforesaid and the letter-spacing mechanism aforesaid; and (h) releasing means whereby, when a key is depressed, the type-bar-controlling element aforesaid actuated by said key, is left free to return toward its normal position in advance of the release of said key, thereby to permit the printing of a subsequent letter or letters in advance of the release of the key first depressed.

71. In a type-writing machine and in combination, (a) a plurality of type-bars striking to a common printing-center; (b) a type-bar-impelling frame normally at rest; the type-bars aforesaid being normally disconnected from said frame; (c) keys; (d) levers actuated by said keys, and means controlled by said levers whereby the type-bars aforesaid are connected each as required, with the type-bar-impelling frame aforesaid; (e) releasable connections intermediate said keys and said levers; (f) letter-spacing mechanism; (g) a vibratory releaser, for acting on the releasable connections aforesaid; (h) a circuit-closing frame operated by the keys aforesaid through the key-actuated levers aforesaid; (i) electrical means controlled by said circuit-closing frame for actuating the type-bar-impelling frame aforesaid, the letter-spacing mechanism aforesaid, and the vibratory releaser aforesaid, when a key is depressed; the vibratory releaser aforesaid acting, when a key is depressed, upon the releasable connections intermediate said key and the key-actuated lever before mentioned corresponding to and actuated by said key, to permit said key-actuated lever to return toward its normal position in advance of the release of the key depressed; thereby to permit the printing of a subsequent letter in advance of the release of the key first depressed.

72. In a type-writing machine and in combination, (a) a plurality of type-bars striking to a common printing-center; (b) a type-bar-impelling frame normally at rest; the type-bars aforesaid being normally disconnected from said frame; (c) keys; (d) levers actuated by said keys, and means controlled by said levers whereby the type-bars aforesaid are connected, each as required, with the type-bar-impelling frame aforesaid; (e) latches intermediate said keys and said levers; (f) letter-spacing mechanism; (g) a pivoted releasing-frame for acting on the latches aforesaid; (h) a pivoted circuit-closing frame operated by the keys aforesaid through the key-actuated levers aforesaid; (i) electromagnetic means controlled by said circuit-closing frame for actuating the type-bar-impelling frame aforesaid, the letter-spacing mechanism aforesaid and the releasing-frame aforesaid when a key is depressed; the releasing-frame aforesaid acting, when a key is depressed, upon the latch intermediate said key and the lever before mentioned as actuated by and releasably connected with said key, to permit said lever to return toward its normal position in advance of the release of said key; whereby the printing of a subsequent letter is made possible without having first to release the key previously depressed.

73. In combination in a type-writing machine, (a) an alphabet of type-bars striking to a common printing-center; (b) members fewer in number than said type-bars, and means, controlled by said members acting singly and in different combinations, for actuating said type-bars, each as required; (c) keys, corresponding to and controlling said members; and (d) releasing means for the members aforesaid, operating, when a key is depressed, to permit that one of the members aforesaid corresponding to and controlled by the key depressed, to return toward its normal position in advance of the release of said key, whereby another key may be depressed to print while the key first depressed is still held down.

74. In combination in a type-writing machine, (a) an alphabet of type-bars striking to a common printing-center; (b) members, fewer in number than said type-bars, and means, controlled by said members for actuating said type-bars, each as required; (c) keys, corresponding to and controlling said members; (d) latches, intermediate said keys and said members, a latch for each key and the corresponding member; and (e) a releaser, common to a plurality of said latches, and serving, when a key is depressed, to act upon the latch corresponding to said key to permit the member aforesaid corresponding to said key to return toward its normal position in advance of the release of said key, whereby another key may be depressed to print while the preceding key is still held down.

75. In combination in a type-writing machine, (a) an alphabet of type-bars striking to a common printing-center; (b) members fewer in number than said type-bars, and means, controlled by said members acting singly and in different combinations, for actuating said type-bars, each as required; (c) keys, corresponding to and controlling said members; (d) connections intermediate said keys and said members; (e) a motor; and (f) a controlling device for said motor, said controlling device being operated by the keys aforesaid through the members aforesaid; said motor acting, when a key is depressed, upon the connection intermediate said key and the member aforesaid controlled thereby, to permit said member to return toward its normal position in advance of the release of said key, whereby another key may be depressed to print while the key first depressed is still held down.

76. In combination in a type-writing machine, (a) an alphabet of type-bars striking to a common printing-center; (b) members, fewer in number than said type-bars, and means, controlled by said members, for actuating said type-bars, each as required; (c) keys, corresponding to and controlling said members; (d) latches, intermediate said keys and said members, a latch for each key and the corresponding member; (e) a releasing-frame, common to a plurality of said latches; and (f) an electromagnet for actuating said releasing-frame; said frame acting, when a key is depressed, upon the latch corresponding to said key, to permit the member operated by said key through said latch to return toward its normal position in advance of the release of said key, whereby another key may be depressed to print while the key first depressed is still held down.

77. In combination in a type-writing machine, (a) an alphabet of type-bars striking to a common printing-center; (b) members fewer in number than said type-bars, and means, controlled by said members, for actuating said type-bars, each as required; (c) keys, corresponding to and controlling said members; (d) releasable connections intermediate said keys and said members; (e) an electromagnet for freeing a plurality of said releasable connections; (f) a circuit-controller for said magnet, operated by the keys aforesaid through the members aforesaid, whereby when a key is depressed, the magnet aforesaid is brought into action to free the releasable connection between said key and the member aforesaid corresponding to and controlled by said key, to permit said member to return toward its normal position in advance of the release of said key, whereby another key may be depressed to print while the key first depressed is still held down.

78. In combination in a type-writing machine, (a) a plurality of type-bars, striking to a common printing-center; (b) a device controlling said type-bars; (c) a key, for operating said type-bar-controlling device; (d) a latch, intermediate said key and said type-bar-controlling device; and (e) means, acting, when said key is depressed, upon said latch, to permit the type-bar-controlling device aforesaid to return toward its normal position in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that when the key aforesaid is depressed to print, another key can also be depressed to print, without waiting to release the key first depressed.

79. In combination in a type-writing machine, (a) a plurality of type-bars striking to a common printing-center; (b) a member wherefrom movement is communicated to said type-bars, each as required, and means whereby said member is made to operate the different type-bars aforesaid, each as required; (c) a motor for actuating said member; (d) a device controlling the action of said motor upon said member; (e) a key at the keyboard, serving, when depressed, to actuate the motor-controlling device aforesaid, thereby to cause the motor aforesaid to operate the member aforesaid, and one of the type-bars controlled thereby; and (f) releasing means, whereby said motor-controlling device is left free to return toward its normal position in advance of the release of the key depressed, all the parts being constructed, arranged and operating in such a manner that they allow of the depressing of a subsequent key to print while the key first depressed is still held down.

80. In combination in a type-writing machine, (a) a plurality of type-bars striking to a common printing-center; (b) a member wherefrom movement is communicated to said type-bars, each as required, and means whereby said member is made to operate the different type-bars aforesaid, each as required; (c) a motor for actuating said member; (d) a device controlling the action of said motor upon said member; (e) a key at the keyboard; (f) a latch wherethrough said key actuates the motor-controlling device aforesaid to cause the motor aforesaid to actuate the member aforesaid and one of the type-bars operated by it; (g) means operated by the motor-controlling device aforesaid for freeing said latch to permit the return of the motor-controlling device aforesaid and the parts controlled thereby, toward their normal positions, in advance of the release of the key depressed, all the parts being constructed, arranged and operating in such a manner that they allow of the depressing of a subsequent key to print while the key first depressed is still held down.

81. In combination in a type-writing machine, (a) a plurality of groups of type-bars striking to a common printing-center; (b) devices, each controlling a different group of said type-bars; (c) keys, corresponding to said group-controlling devices; (d) latches intermediate said keys and said group-controlling devices, a latch for each key and the corresponding group-controlling device; and (e) means, acting when a key is depressed, upon the latch corresponding to said key, to permit the corresponding group-controlling device to return toward its normal position in advance of the release of said key, whereby another key may be depressed to print while the key first depressed is still held down.

82. In combination in a type-writing machine, (a) a plurality of groups of type-bars striking to a common printing-center; (b) members, each controlling a different group of said type-bars; (c) means whereby the different type-bars of a group controlled by one of the members aforesaid are brought into operative relation with said member to receive movement therefrom, each type-bar as required; (d) a motor for actuating a plurality of said group-controlling members; (e) devices for bringing said group-controlling members into operative relation, each as required, with the motor device aforesaid, to receive movement therefrom; (f) keys, actuating the devices last mentioned; and (g) releasing means, whereby when a key is depressed the device aforesaid actuated by said key to bring the corresponding group-controlling member into operative relation with the motor aforesaid, is released in advance of the release of the key depressed, so that another key may be depressed to print while the key first depressed is still held down.

83. In combination in a type-writing machine, (a) a plurality of groups of type-bars striking to a common printing-center; (b) members, each controlling a different group of said type-bars; (c) means whereby the different type-bars of a group, controlled by one of the members aforesaid, are brought into operative relation with said member to receive movement therefrom, each type-bar as required; (d) a motor for actuating a plurality of said group-controlling members; (e) devices for bringing said group-controlling members into operative relation, each as required, with the motor device aforesaid, to receive movement therefrom; (f) keys, actuating the devices last mentioned; (g) latches intermediate said keys and said devices, a latch for each key and the corresponding device actuated thereby; and (h) motor-operated means acting, when a key is depressed, to free the latch aforesaid corresponding to said key, thereby to permit another key to be depressed to print while the key first depressed is still held down.

84. In combination in a type-writing machine, (a) a plurality of groups of type-bars striking to a common printing-center; (b) members, each controlling a different group of said type-bars; (c) means whereby the different type-bars of a group, controlled by one of the members aforesaid, are brought into operative relation with said member to receive movement therefrom, each type-bar as required; (d) a vibratory frame normally stationary, for actuating a plurality of said group-controlling members, each as required; (e) devices, for bringing said group-controlling members into operative relation with said frame, each as required, to receive movement from said frame; (f) keys, actuating the devices last mentioned; (g) releasing means, whereby when a key is depressed, the device aforesaid, actuated by said key to bring the corresponding one of the group-controlling members aforesaid into operative relation with the vibratory frame aforesaid, is released in advance of the release of the key depressed, to permit another key to be depressed to print while the key first depressed is still held down.

85. In combination in a type-writing machine, (a) a plurality of groups of type-bars striking to a common printing-center; (b) members, each controlling a different group of said type-bars; (c) means whereby the different type-bars of a group, controlled by one of the members aforesaid, are brought into operative relation with said member to receive movement therefrom, each type-bar as required; (d) a vibratory frame normally stationary, for actuating a plurality of said group-controlling members, each as required; (e) devices, for bringing said group-controlling members into operative relation with said frame, each as required, to receive movement from said frame; (f) keys, actuating the devices last mentioned; (g) a motor for actuating the frame aforesaid; (h) a device controlling the action of said motor upon said frame; (i) means, acting when a key is depressed and the corresponding type-bar set in motion by the means aforesaid, to permit the motor-controlling device aforesaid, the vibratory frame aforesaid, and the group-controlling member and type-bar operated thereby, to return toward their normal positions in advance of the release of the key depressed, whereby another key may be depressed while the key first depressed is still held down.

86. In combination in a type-writing machine, (a) a plurality of groups of type-bars striking to a common printing-center; (b) members, each controlling a different group of said type-bars; (c) means whereby the different type-bars of a group controlled by one of the members aforesaid, are brought into operative relation with said member to receive movement therefrom, each type-bar as required; (d) a vibratory frame normally stationary, for actuating a plurality of said group-controlling members, each as required; (e) devices, for bringing said group-controlling members into operative relation with said frame, each as required, to receive movement from said frame; (f) keys, actuating the devices last mentioned; (g) an electromagnet for actuating the frame aforesaid; (h) a circuit-controlling device for said magnet, operated by the keys aforesaid; and (i) means acting, when a key is depressed and the corresponding type-bar set in motion toward the printing-point, to release the circuit-controlling device aforesaid, the vibratory frame aforesaid and group-controlling member and type-bar operated thereby, to permit said parts to return to their normal positions in advance of the release of the key depressed, whereby another key may be depressed while the key first depressed is still held down.

87. In a type-writing machine, an alphabet of type-bars striking to a common printing-center, in combination with type-bar-selecting mechanism having keys fewer in number than the letters of the alphabet and means, operated by said keys, whereby the operator is enabled to control all the letters of the alphabet, each as required, by acting upon the keys aforesaid singly and in different combinations, said means including, (a) levers, corresponding to said keys, and each operated by the key to which it corresponds; (b) means, operated by said key-corresponding levers, for actuating the type-bars aforesaid, each as required; and (c) releasing means, whereby, when a combination of keys is depressed the key-corresponding levers operated thereby are released simultaneously in advance of the release of said keys, so that another key or combination of keys may be depressed to print while the key or combination of keys first depressed is still held down.

88. In a type-writing machine, an alphabet of type-bars striking to a common printing-center in combination with type-bar-selecting mechanism having keys fewer in number than the letters of the alphabet, and means operated by said keys, whereby the operator is enabled to control all the letters of the alphabet, each as required, by acting upon the keys aforesaid, singly and in different combinations, said means including, (a) levers, corresponding to said keys and actuated thereby; (b) latches, intermediate said keys and said levers, a latch for each key and the corresponding lever; (c) means, operated by said key-corresponding levers for actuating the type-bars aforesaid, each as required; and (d) a vibratory releasing-frame, acting, when a combination of keys is depressed, upon the latches corresponding to said keys, to permit the key-corresponding

levers operated by said keys to return toward their normal positions in advance of the release of the keys depressed.

89. In a type-writing machine, an alphabet of type-bars striking to a common printing-center in combination with type-bar-selecting mechanism having keys fewer in number than the letters of the alphabet, and means operated by said keys, whereby the operator is enabled to control all the letters of the alphabet, each as required, by acting upon the keys aforesaid, singly and in different combinations, said means including, (*a*) levers, corresponding to said keys and actuated thereby; (*b*) latches, intermediate said keys and said levers, a latch for each key and the corresponding lever; (*c*) means, operated by said key-corresponding levers for actuating the type-bars aforesaid, each as required; (*d*) a releasing-frame, acting, when a combination of keys is depressed, upon the latches corresponding to said keys, to permit the key-corresponding levers operated by said keys to return toward their normal positions in advance of the release of the keys depressed; (*e*) a motor, for actuating said releasing-frame; and (*f*) a controlling device for said motor, operated by the keys aforesaid.

90. In a type-writing machine and in combination therein with a set of type-bars disposed about a circle, and striking to a common printing-center, a type-bar-selecting device, including an oscillating circular pin-carrier, having movement-transmitting pins mounted therein and supported thereby, and springs in said carrier for returning said pins to their normal positions.

91. In a type-writing machine and in combination therein with a set of type-bars disposed about a circle, and striking to a common printing-center, a type-bar-selecting device, including (*a*) an oscillating circular pin-carrier, having movement-transmitting pins mounted therein and supported thereby; (*b*) one or more keys for positioning said carrier; and (*c*) means for arresting said carrier.

92. In a type-writing machine and in combination therein with a set of type-bars disposed about a circle and striking to a common printing-center, a type-bar-selecting device, including (*a*) an oscillating circular pin-carrier, having movement-transmitting pins mounted therein and supported thereby; (*b*) a plurality of keys for positioning said pin-carrier; and (*c*) stopping means for said pin-carrier, controlled by one or more of said keys.

93. In a type-writing machine and in combination therein, with a set of type-bars disposed around a circle, and striking to a common printing-center, the levers 52, 52, connected with said type-bars; the group-controlling levers 65, 65 and an oscillating circular pin-carrier with movement-transmitting pins mounted therein, and supported thereby, to travel intermediate the group-controlling levers aforesaid and the levers 52, 52.

94. In combination in a type-writing machine, (*a*) a set of type-bars disposed about a circle, and striking to a common printing-center; (*b*) levers 52, 52, connected with said type-bars; (*c*) an oscillating circular pin-carrier with movement-transmitting pins mounted therein and supported thereby, for acting on the levers 52, 52 aforesaid; (*d*) segment-furnished group-controlling levers for actuating said pins; (*e*) one or more keys for positioning said circular pin-carrier; (*f*) other keys corresponding to the group-controlling levers aforesaid; and (*g*) means controlled by said keys for actuating said group-controlling levers, each as required.

95. In combination in a type-writing machine, (*a*) a plurality of groups of type-bars disposed about a circle and striking to a common printing-center; (*b*) devices, each controlling a different group of said type-bars, (*c*) levers connected with said type-bars; (*d*) an oscillating circular pin-carrier with movement-transmitting pins mounted therein and supported thereby, to travel intermediate the group-controlling devices aforesaid and the type-bar-connected levers aforesaid, a pin for each group-controlling device, to bring said group-controlling device into operative relation with the different type-bar-connected levers operated by it, each as required.

96. In combination in a type-writing machine (*a*) a plurality of groups of type-bars striking to a common printing-center; (*b*) devices, each controlling a different group of said type-bars; (*c*) levers connected with said type-bars; (*d*) an oscillating circular pin-carrier with movement-transmitting pins mounted therein and supported thereby, to travel intermediate the group-controlling devices aforesaid and the type-bar-connected levers aforesaid, a pin for each group-controlling device, to bring said group-controlling device into operative relation with the different type-bar-connected levers operated by it, each as required; (*e*) one or more keys for positioning said pin-carrier; (*f*) other keys, corresponding to the group-controlling devices aforesaid; and (*g*) means controlled by said keys for operating said group-controlling devices, each as required.

97. In combination in a type-writing machine (*a*) a plurality of groups of type-bars striking to a common printing-center; (*b*) devices, each controlling a different group of said type-bars; (*c*) levers connected with said type-bars; (*d*) an oscillating circular pin-carrier with movement-transmitting pins mounted therein and supported thereby, to travel intermediate the group-controlling devices aforesaid and the type-bar-connected levers aforesaid, a pin for each group-controlling device, to bring said group-controlling device into operative relation with the different type-bar-connected levers operated by it, each as required; (*e*) one or more keys for positioning said pin-carrier; (*f*) a motor device for operating the group-controlling devices aforesaid, each as required; said group-controlling devices being normally disconnected from said motor device; and (*g*) keys, and means controlled thereby, whereby the group-controlling devices aforesaid are brought into operative relation with the motor device aforesaid, each group-controlling device as required, to receive movement therefrom, and whereby said motor device is brought into action to operate the group-controlling device brought into operative relation with it by the key depressed.

98. In combination in a type-writing machine (*a*) a plurality of groups of type-bars striking to a common printing-center; (*b*) devices, each controlling a different group of said type-bars; (*c*) levers connected with said type-bars; (*d*) an oscillating circular pin-carrier with movement-transmitting pins mounted therein and supported thereby, to travel intermediate the group-controlling devices aforesaid and the type-bar-connected levers aforesaid, a pin for each group-controlling device, to bring said group-controlling device into operative relation with the different type-bar-connected levers operated by it, each as required; (*e*) one or more keys for positioning said pin-carrier; (*f*) a vibratory frame for giving movement to the group-controlling devices aforesaid, each as required; said vibratory frame being normally stationary and said group-controlling devices being normally disconnected from said frame; (*g*) keys and means controlled thereby, whereby the group-controlling devices aforesaid are brought into operative relation, each as required, with the vibratory frame aforesaid, to receive movement therefrom; and (*h*) a motive device, controlled by said keys, whereby the vibratory frame aforesaid is actuated when a key is depressed.

99. In combination in a type-writing machine (*a*) a plurality of groups of type-bars striking to a common printing-center; (*b*) devices, each controlling a different group of said type-bars; (*c*) levers connected with said type-bars; (*d*) an oscillating circular pin-carrier with movement-transmitting pins mounted therein and supported thereby, to travel intermediate the group-controlling devices aforesaid and the type-bar-connected levers aforesaid, a pin for each group-controlling device, to bring said group-controlling device into operative relation with the different type-bar-connected levers operated by it, each as required; (*e*) one or more keys for positioning said pin-carrier; (*f*) a vibratory frame for giving movement to the group-controlling devices aforesaid, each as required; said vibratory frame being normally stationary and said group-controlling devices being normally disconnected from said frame; (*g*) keys and means controlled thereby, whereby the group-controlling devices aforesaid are brought into operative relation, each as required, with the vibratory frame aforesaid, to receive movement therefrom; and (*h*) an electromagnet whereby the vibratory frame aforesaid is actuated when a key is depressed.

100. In a type-writing machine, the combination with the levers 65, 65, the vibratory frame for actuating said levers, and the movement-receiving arms pivoted to said levers to receive movement from said vibratory frame, of (*a*) bell-cranks connected with the movement-receiving arms aforesaid; (*b*) keys at the keyboard for actuating said bell-cranks; and (*c*) means controlled by said keys for actuating the vibratory frame aforesaid.

101. In a type-writing machine, the combination with a plurality of levers, a vibratory frame for actuating said levers, and the movement-receiving arms pivoted to said levers to receive movement from said vibratory frame, of (*a*) bell-cranks connected with the movement-receiving arms aforesaid; (*b*) levers, for giving movement to said bell-cranks; (*c*) keys, corresponding to the levers last mentioned; (*d*) latches intermediate said keys and the levers last aforesaid, a latch for each key and the corresponding lever; and (*e*) means operated by the levers last mentioned, for actuating the vibratory frame aforesaid, and for releasing the latches aforesaid.

102. In combination in a type-writing machine, (*a*) a plurality of groups of type-bars arranged about a circle and striking to a common printing-center; (*b*) levers 52, 52, corresponding to said type-bars and each connected with the corresponding type-bar; (*c*) group-controlling levers, each controlling a different group of the type-bars aforesaid; (*d*) an oscillating circular pin-carrier with movement-transmitting pins mounted therein, and supported thereby, to travel intermediate the group-controlling levers aforesaid and the type-bar-connected levers operated thereby; (*e*) one or more keys for positioning said pin-carrier; (*f*) a vibratory frame for actuating said group-controlling levers; (*g*) arms pivoted to said levers to receive movement from said vibratory frame; (*h*) bell-cranks connected with said movement-receiving arms; (*i*) keys at the keyboard for actuating said bell-cranks; and (*k*) means controlled by said keys for actuating the vibratory frame aforesaid.

103. In combination in a type-writing machine (*a*) a plurality of groups of type-bars striking to a common printing-center; (*b*) levers 52, 52, corresponding to said type-bars and each connected with the corresponding type-bar; (*c*) group-controlling levers, each controlling a differ-

ent group of the type-bars aforesaid; (*d*) an oscillating pin-carrier with movement-transmitting pins mounted therein and supported thereby, to travel intermediate the group-controlling levers aforesaid and the type-bar-connected levers aforesaid, operated thereby; (*e*) one or more keys for positioning said pin-carrier; (*f*) a vibratory frame for actuating said group-controlling levers; (*g*) arms pivoted to said group-controlling levers to receive movement from said vibratory frame; (*h*) bell-cranks connected with said movement-receiving arms; (*i*) levers, for giving movement to said bell-cranks; (*k*) keys at the keyboard corresponding to the levers last mentioned; (*l*) latches intermediate said keys and the levers last aforesaid; and (*m*) means operated by the last-mentioned levers, serving to actuate the vibratory frame aforesaid and to release the latches aforesaid.

104. In combination, in a keyboard printing instrumentality, (*a*) a key; (*b*) a type-controlling member, actuated by said key, and coming to rest when said key comes to rest in its depressed position; (*c*) a connection intermediate said key and said type-controlling member, wherethrough movement is communicated from said key to said type-controlling member; and (*d*) a part, set in motion in consequence of the depressing of said key, and acting, when said key has been depressed and is at rest in its depressed position and the type-controlling member aforesaid is at rest in the position into which it is moved by said key, upon the connection aforesaid, to disconnect the type-controlling member aforesaid from the key aforesaid, thereby to permit said type-controlling member to return toward its normal position in advance of the release of said key, whereby another key may be depressed while the key first depressed is held down.

105. In combination, in a keyboard printing instrumentality, (*a*) a key; (*b*) a type-selecting device; (*c*) a latch for connecting said key with said type-selecting device; and (*d*) a tripper controlled by the key aforesaid, and operating to free said latch, after the depressing of the key aforesaid and before the release thereof, whereby another key may be depressed in advance of the release of the key first depressed.

106. In combination, in a keyboard printing instrumentality, (*a*) a key; (*b*) a type-controlling member; (*c*) a releasable connection intermediate said key and said type-controlling member, wherethrough said key, when depressed, gives movement to said type-controlling member; and (*d*) a vibratory motor device, normally stationary, but controlled by the key aforesaid and acting, when said key is depressed upon the releasable connection aforesaid, to permit the type-controlling member aforesaid to return toward its normal position in advance of the release of the key aforesaid, whereby another key may be depressed while the key first depressed is still held down.

107. In combination, in a keyboard printing instrumentality, (*a*) a key; (*b*) a type-controlling member; (*c*) a latch for connecting said type-controlling member and key; (*d*) a releasing-frame, normally at rest, for acting upon said latch to permit the type-controlling member aforesaid to return toward its normal position in advance of the release of the key aforesaid; and (*e*) a motor device, controlled by the key aforesaid and serving, when said key is depressed to actuate the releasing-frame aforesaid; all the parts being constructed, arranged and operating in such a manner that they allow of the effective depressing of a succeeding key while the key aforesaid is still held down.

108. In combination, in a keyboard printing instrumentality, (*a*) a key; (*b*) a type-controlling member; (*c*) a connection intermediate said key and said type-controlling member wherethrough said key, when depressed, gives movement to said type-controlling member; and (*d*) an electromagnet, for acting upon the connection aforesaid intermediate the key aforesaid and the type-controlling member aforesaid to permit the type-controlling member aforesaid to return toward its normal position in advance of the release of the key aforesaid; all the parts being constructed, arranged and operating in such a manner that they allow of the effective depressing of a succeeding key while the key aforesaid is still held down.

109. In combination, in a keyboard printing instrumentality, (*a*) a type-controlling element; (*b*) a key; (*c*) a normally-stationary motor device; (*d*) a motor-controlling device, actuated by the key aforesaid and serving when said key is depressed to bring the motor device aforesaid into action to operate the type-controlling element aforesaid; and (*e*) a releasing means for the motor-controlling device aforesaid whereby said motor-controlling device is left free to return toward its normal position in advance of the release of the key depressed; all the parts being constructed, arranged and operating in such a manner that they allow of the effective depressing of a succeeding key while the key aforesaid is still held down.

110. In combination, in a keyboard printing instrumentality, (*a*) a key; (*b*) a type-controlling member; (*c*) a latch, intermediate said key and said type-controlling member; (*d*) a motor, acting to free said latch; and (*e*) a motor-controlling device, operated by the type-controlling member aforesaid, serving when the key aforesaid is depressed, to bring the motor aforesaid into action to free the latch aforesaid, thereby to permit the type-controlling member aforesaid to return toward its normal position in advance of the release of the key depressed; all the parts being constructed, arranged and operating in such a manner that they allow of the effective depressing of a succeeding key while the key aforesaid is still held down.

111. In combination, in a keyboard printing instrumentality, (*a*) a type-controlling element; (*b*) a motor device, for impelling said type-controlling element; (*c*) a motor-controlling device; (*d*) a key; (*e*) a releasable connection, intermediate said key and said motor-controlling device, wherethrough said key, when depressed, actuates said motor-controlling device; said motor-controlling device operating, when thus actuated, to bring the motor aforesaid into action to operate the type-controlling element aforesaid; said motor device also acting upon the releasable connection aforesaid to permit the return of the motor-controlling device aforesaid toward its normal position, whereby the power is cut off automatically from said motor device and the type-controlling element aforesaid left free to return toward its normal position in advance of the release of the key depressed, so that another key may be depressed before the key first mentioned is released.

112. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of keys; (*b*) type-controlling members, corresponding to said keys; (*c*) releasable connections intermediate said keys and type-controlling members, a releasable connection intermediate each key and the corresponding type-controlling member, wherethrough movement is communicated from said key to said type-controlling member when said key is depressed; and (*d*) a common releaser, normally stationary, but controlled by the keys aforesaid and acting, when a key is depressed, upon the releasable connection intermediate said key and the corresponding type-controlling member, to permit said type-controlling member to return toward its normal position in advance of the release of the key depressed, whereby another key may be depressed while the key first depressed is still held down.

113. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of keys; (*b*) type-controlling members, corresponding to said keys; (*c*) latches intermediate said keys and type-controlling members, a latch intermediate each key and the corresponding type-controlling member, wherethrough movement is communicated when a key is depressed from said key to the corresponding type-controlling member; and (*d*) a vibratory releasing-frame, common to the latches aforesaid; said releasing-frame being normally stationary, but acting, when a key is depressed, to free the latch intermediate said key and the corresponding type-controlling member, to permit said type-controlling member to return toward its normal position in advance of the release of the key depressed, whereby another key may be depressed while the key first depressed is still held down.

114. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of keys; (*b*) type-controlling members, corresponding to said keys; (*c*) pivoted latches intermediate said keys and type-controlling members, a pivoted latch intermediate each key and the corresponding type-controlling member, wherethrough movement is communicated when said key is depressed from said key to the corresponding type-controlling member; (*d*) a returning-spring for said latch; and (*e*) a vibratory releasing-frame, common to a plurality of said latches for freeing the same, each as required; each of said latches being formed in such manner that when in its normal position it is clear of the releasing-frame and not affected by the releasing movement of said frame, but comes, when moved by the depressing of the corresponding key, into the path of said releasing-frame, so that it is struck and freed thereby, whereby the type-controlling member corresponding to a key depressed is left free to return toward its normal position in advance of the release of said key, so that another key may be depressed while the key first depressed is still held down.

115. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of keys; (*b*) type-controlling members, corresponding to the keys aforesaid, and each actuated by the key with which it corresponds; and (*c*) a normally-stationary intermittingly-vibratory motor device, controlled by the keys aforesaid and acting, when a key is depressed, to trip the type-controlling member corresponding to said key, all the parts being constructed, arranged and operating in such a manner that they allow of the effective depressing of a succeeding key while the key first depressed is still held down.

116. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of keys; (*b*) type-controlling members, corresponding respectively to the keys aforesaid; (*c*) releasable connections intermediate said keys and type-controlling members, a releasable connection intermediate each key and the corresponding type-controlling member wherethrough, when a key is depressed, movement is communicated to the corresponding type-controlling member; (*d*) a releasing-frame for acting on said releasable connections, each as required, to permit the type-controlling member corresponding to the key depressed to return toward its normal position in advance of the release of said key; (*e*) another

frame, operated by the type-controlling members aforesaid; and (*f*) means, controlled by the frame last mentioned, for actuating the releasing-frame aforesaid.

117. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of keys; (*b*) type-controlling members, corresponding respectively to the keys aforesaid; (*c*) releasable connections intermediate said keys and type-controlling members, a releasable connection intermediate each key and the corresponding type-controlling member wherethrough, when a key is depressed, movement is communicated to the corresponding type-controlling member; (*d*) a releasing-frame for acting on said releasable connections, each as required, to permit the type-controlling member corresponding to the key depressed to return toward its normal position in advance of the release of said key; (*e*) another key-operated frame, and (*f*) a normally-stationary intermittingly-vibratory motor device, controlled by the frame last mentioned, and serving to actuate the releasing-frame aforesaid.

118. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of keys; (*b*) type-controlling members, corresponding to the keys aforesaid, and each actuated by the key with which it corresponds; and (*c*) electrically-operated tripping mechanism, acting, when a key is depressed, to trip the type-controlling member corresponding to said key, thereby to permit the depression of another key while the key first depressed is still held down.

119. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of keys; (*b*) type-controlling members, corresponding to the keys aforesaid; (*c*) latches intermediate said keys and said type-controlling members each latch serving to communicate movement from the corresponding key when it is depressed, to the corresponding type-controlling member; (*d*) a tripper, common to a plurality of said latches; and (*e*) an electromagnet for actuating said tripper.

120. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of keys; (*b*) type-controlling members, corresponding to the keys aforesaid; (*c*) latches intermediate said keys and said type-controlling members, each latch serving to communicate movement from the corresponding key when it is depressed, to the corresponding type-controlling member; (*d*) a tripper, common to a plurality of said latches; (*e*) an electromagnet for actuating said tripper; and (*f*) a frame, controlling the circuit of said electromagnet; said frame being operated by keys aforesaid through the type-controlling members aforesaid, whereby when a key is depressed the type-controlling member corresponding thereto is left free to return toward its normal position, so that another key may be depressed while the key first depressed is still held down.

121. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of type-controlling elements; (*b*) a single normally-stationary but intermittingly-vibratory motor device for actuating said type-controlling elements, each as required; said type-controlling elements being normally disconnected from said motor device; (*c*) keys; (*d*) means operated by said keys for connecting the type-controlling elements aforesaid, each as required, with the motor device aforesaid, and for bringing said motor device into action to impel the type-controlling elements thus connected with it; and (*e*) releasing means, whereby a type-controlling element, connected with the motor device aforesaid upon the depressing of a key, is disconnected from said motor device in advance of the release of the key depressed, all the parts being constructed, arranged and operating in such a manner that when a key is depressed to select or make a letter, another key can be depressed to select or make a succeeding letter, while the key first depressed is still held down.

122. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of type-controlling elements; (*b*) a motor device for impelling said type-controlling elements, each as required; said type-controlling elements being normally disconnected from said motor device; (*c*) keys; (*d*) means operated by said keys for connecting the type-controlling elements aforesaid with the motor device aforesaid, each type-controlling element as required; (*e*) a motor-controlling device operated by the keys aforesaid and serving, when a key is depressed, to bring the motor device aforesaid into action for the impelling of the type-controlling element corresponding to the key depressed; and (*f*) releasing means, whereby said motor-controlling device is left free, when the key is depressed, to return toward its normal position in advance of the release of said key, and whereby the type-controlling element aforesaid is disconnected from the motor device aforesaid in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that when a key is depressed to select or make a letter, another key can be depressed to select or make a succeeding letter, while the key first depressed is still held down

123. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of type-controlling elements; (*b*) a single motor device for actuating a plurality of said type-controlling elements, each as required; (*c*) keys; (*d*) levers, corresponding respectively to and actuated respectively by said keys; (*e*) latches, intermediate said keys and said levers, a latch for each key and the corresponding lever; (*f*) means, operated by said levers, for connecting the type-controlling elements aforesaid, each as required, with the motor device aforesaid, and for bringing said motor device into action to operate the type-controlling element connected with it when a key is depressed; and (*g*) a releasing-frame, for freeing the latches aforesaid, to permit the levers aforesaid actuated by the keys aforesaid to return to their normal positions in advance of the release of the key depressed, whereby another key may be depressed without releasing the key first depressed.

124. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of type-controlling elements; (*b*) a vibratory frame, normally stationary, for giving movement to the type-controlling elements aforesaid, each as required, said type-controlling elements being normally disconnected from said frame; (*c*) keys; (*d*) means operated by said keys for connecting the type-controlling elements aforesaid, each as required, with the vibratory frame aforesaid; (*e*) means, operated by said keys, acting, when a key is depressed, to give movement to the vibratory frame aforesaid, to actuate the type-controlling element connected with it; (*f*) means, whereby the vibratory frame aforesaid and the type-controlling element actuated thereby are permitted to return toward their normal positions in advance of the release of the key depressed, and whereby the type-controlling element aforesaid is disconnected from the vibratory frame aforesaid in advance of the release of the key depressed, all the parts being constructed, arranged and operating in such a manner that when a key is depressed to select or make a letter, another key can be depressed to select or make a succeeding letter, while the key first depressed is still held down.

125. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of type-controlling elements; (*b*) a vibratory frame, normally stationary, for giving movement to the type-controlling elements aforesaid, each as required, said type-controlling elements being normally disconnected from said frame; (*c*) keys; (*d*) levers, corresponding to and actuated by said keys; (*e*) latches intermediate said keys and said levers, a latch for each key and the corresponding lever; (*f*) means, operated by said levers for connecting the type-controlling elements aforesaid, each as required, with the vibratory frame aforesaid; (*g*) a releasing-frame, for acting on the latches aforesaid to release the levers aforesaid, actuated by the keys aforesaid through said latches; (*h*) motor mechanism for actuating the vibratory frame aforesaid and the releasing-frame aforesaid; (*i*) motor-controlling means operated by the keys aforesaid, and serving, when a key is depressed, to bring the motor mechanism aforesaid into action, to operate the vibratory frame aforesaid, and the type-controlling element connected therewith by the key depressed, and also to operate the releasing-frame aforesaid to free the latch operated by the key depressed, permitting the lever aforesaid operated by said key through said latch and the motor-controlling means operated by said key through said latch and lever, to return toward their normal positions, cutting off power from the motor device aforesaid, so that the vibratory frame aforesaid and the releasing-frame aforesaid return toward their normal positions in advance of the release of the key depressed, whereby another key may be depressed while the key first depressed is still held down.

126. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of type-controlling elements; (*b*) a vibratory frame for giving movement to said type-controlling elements, each as required; said frame being normally at rest, and said type-controlling elements being normally disconnected therefrom; (*c*) an electromagnet for actuating said frame; (*d*) keys; (*e*) means, controlled by said keys, whereby, when a key is depressed, the proper type-controlling element is brought into operative relation with the vibratory frame aforesaid to receive movement therefrom; (*f*) a circuit-controller common to a plurality of the keys aforesaid, and controlling the circuit of the electromagnet aforesaid, each of said keys acting, when depressed, to give movement to said circuit-controlling frame, to bring the magnet aforesaid into action to impel the vibratory frame aforesaid; and (*g*) a releasing means, whereby said circuit-controlling frame, when actuated by the depressing of a key, is left free to return toward its normal position in advance of the release of said key, to permit a succeeding key or keys to be depressed without having first to release the key previously depressed.

127. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of type-controlling elements; (*b*) a vibratory frame for giving movement to said type-controlling elements, each as required; said frame being normally at rest; and said type-controlling elements being normally disconnected therefrom; (*c*) keys; (*d*) levers corresponding to and actuated by said keys; (*e*) latches intermediate said keys and said levers, a latch for each key and the corresponding lever, wherethrough movement is communicated from said key, when depressed, to the corresponding lever; (*f*) means, operated by the levers aforesaid, for connecting the type-controlling elements, aforesaid, each as required, with the vibratory frame aforesaid, to receive movement therefrom; (*g*) a releasing-frame for acting on said latches to permit the levers aforesaid operated by the keys aforesaid to return toward their normal positions in advance of the release of the keys depressed, corresponding to them; (*h*) electromagnetic means for actuating the vibratory frame aforesaid and the releasing-frame aforesaid; and (*i*) circuit-controlling means, actuated by the keys aforesaid, controlling the electromagnetic means above mentioned; whereby, when a key is depressed, the vibratory frame aforesaid is caused to act to impel the type-controlling element connected with it by the key depressed, and the releasing-frame aforesaid caused to operate upon the latch corresponding to the key depressed, to permit the return of the lever corresponding to said key, and the parts operated thereby toward their normal positions in advance of the release of the key depressed, so that another key may be depressed without releasing the key first depressed.

128. In a keyboard printing instrumentality, a type-selecting mechanism, including, (*a*) a plurality of type-controlling elements; (*b*) a vibratory frame for giving movement to said type-controlling elements, each as required; said frame being normally at rest, and said type-controlling elements being normally disconnected therefrom; (*c*) keys; (*d*) levers corresponding to and actuated by said keys; (*e*) latches intermediate said keys and said levers, a latch for each key and the corresponding lever, wherethrough movement is communicated from said key, when depressed, to the corresponding lever; (*f*) means, operated by the levers aforesaid, for connecting the type-controlling elements aforesaid, each as required, with the vibratory frame aforesaid, to receive movement therefrom; (*g*) a releasing-frame for acting on said latches to permit the levers aforesaid, operated by the keys aforesaid, to return toward their normal positions in advance of the release of the keys depressed, corresponding to them; (*h*) an electromagnet, actuating both the vibratory frame aforesaid and the releasing-frame aforesaid; and (*i*) circuit-controlling means, operated by the keys aforesaid through the latches aforesaid, and controlling the electromagnet aforesaid.

129. In a keyboard printing instrumentality and in combination (*a*) a plurality of keys; (*b*) levers, corresponding to said keys; (*c*) type-selecting means, operated by said levers; (*d*) latches intermediate said keys and said levers, a latch for each key and the corresponding lever; and (*e*) a releasing-frame common to a plurality of said latches for acting when a key is depressed, upon the latch intermediate said key and the corresponding one of the levers aforesaid to permit the return of said lever toward its normal position, in advance of the release of the key depressed.

130. In a keyboard printing instrumentality and in combination, (*a*) a plurality of keys; (*b*) levers, corresponding to said keys; (*c*) type-selecting means, operated by said levers; (*d*) releasable connections intermediate said keys and said levers; and (*e*) a motor device, normally stationary, but controlled by the keys aforesaid and acting, when a key is depressed, upon the releasable connection intermediate said key and the corresponding one of the levers aforesaid, to trip said lever, all the parts being constructed, arranged and operating in such a manner that when a key is depressed to select or make a letter, another key can be depressed to select or make a succeeding letter, while the key first depressed is still held down.

131. In a keyboard printing instrumentality, and in combination, (*a*) a plurality of keys; (*b*) levers, corresponding to and actuated by said keys; (*c*) type-selecting means, operated by said levers; (*d*) a motor device, normally inactive, but serving, when called into action, to trip the levers aforesaid; (*e*) a motor-controlling device, operated by the levers aforesaid and serving to bring the motor device aforesaid into action when a key is depressed and acting, when the trip takes place, to cut off power from said motor device to permit the return of the parts toward their normal positions in advance of the release of the key depressed; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to select or make a letter, another key can be depressed to select or make a succeeding letter, while the key first depressed is still held down.

132. In a keyboard printing instrumentality, and in combination, (*a*) keys; (*b*) levers, corresponding to said keys; (*c*) type-selecting means, operated by said levers; (*d*) pivoted latches intermediate said keys and said levers, a latch for each key and the corresponding lever; (*e*) a releasing-frame common to a plurality of said latches, for freeing said latches, each as required; (*f*) a motor device for actuating said releasing-frame; and (*g*) a motor-controlling device, operated by the levers aforesaid, and controlling the motor device aforesaid.

133. In a keyboard printing instrumentality and in combination, (*a*) keys; (*b*) levers, corresponding to said keys; (*c*) type-selecting means, operated by said levers; (*d*) releasable connections intermediate said keys and said levers wherethrough said keys give movement to said levers; and (*e*) electrically-operated means acting, when a key is depressed, upon the releasable connection intermediate said key and the corresponding one of the levers aforesaid to trip said lever, whereby another key may be depressed while the key first depressed is still held down.

134. In a keyboard printing instrumentality, and in combination, (*a*) keys; (*b*) levers, corresponding to said keys; (*c*) type-selecting means, operated by said levers; (*d*) pivoted latches intermediate said keys and said levers, a latch for each key and the corresponding lever; (*e*) a releasing-frame common to a plurality of the latches aforesaid, for freeing said latches each as required; (*f*) an electromagnet for actuating said releasing-frame; and (*g*) means operated by the levers aforesaid for controlling said magnet.

135. In combination in a keyboard printing instrumentality, (*a*) an alphabet of type-controlling devices; (*b*) members, fewer in number than said type-controlling devices, and means controlled by different combinations of said members for operating the type-controlling devices aforesaid, each as required; (*c*) keys, corresponding to and controlling said members; and (*d*) releasing means for the members aforesaid, operating, when a key is depressed, to permit that one of the members aforesaid corresponding to and controlled by the key depressed, to return toward its normal position in advance of the release of said key; whereby another key may be depressed while the key first depressed is still held down.

136. In combination in a keyboard printing instrumentality, (*a*) an alphabet of type-controlling devices; (*b*) members fewer in number than said type-controlling devices, and means controlled by said members for operating said type-controlling devices, each as required; (*c*) keys, corresponding to and controlling said members; (*d*) latches, intermediate said keys and said members, a latch for each key and the corresponding member; and (*e*) a releasing device, common to a plurality of said latches, and serving, when a key is depressed, to act upon the latch corresponding to said key to permit the member aforesaid corresponding to said key, to return toward its normal position in advance of the release of said key, whereby another key may be depressed while the preceding key is still held down.

137. In combination in a keyboard printing instrumentality, (*a*) an alphabet of type-controlling devices; (*b*) members fewer in number than said type-controlling devices, and means controlled by different combinations of said members for operating the type-controlling devices aforesaid, each as required; (*c*) keys, corresponding to and controlling said members; (*d*) connections intermediate said keys and said members; (*e*) a motor; and (*f*) a controlling device for said motor, said controlling device being operated by the keys aforesaid through the members aforesaid; said motor acting, when a key is depressed, upon the connection intermediate said key and the member aforesaid controlled thereby, to permit said member to return toward its normal position in advance of the release of said key, whereby another key may be depressed while the key first depressed is still held down.

138. In combination in a keyboard printing instrumentality, (*a*) an alphabet of type-controlling devices; (*b*) members fewer in number than said type-controlling devices, and means controlled by said members for operating said type-controlling devices, each as required; (*c*) keys, corresponding to and controlling said members; (*d*) latches, intermediate said keys and said members, a latch for each key and the corresponding member; (*e*) a releasing-frame, common to a plurality of said latches; and (*f*) an electromagnet for actuating said releasing-frame; said releasing-frame acting, when a key is depressed, upon the latch corresponding to said key, to permit the member operated by said key through said latch to return toward its normal position in advance of the release of said key, whereby another key may be depressed while the key first depressed is still held down.

139. In combination in a keyboard printing instrumentality, (*a*) an alphabet of type-controlling devices; (*b*) members, fewer in number than said type-controlling devices, and means controlled by said members for operating said type-controlling devices, each as required; (*c*) keys, corresponding to and controlling said members; (*d*) releasable connections intermediate said keys and said members; (*e*) an electromagnet for freeing a plurality of said releasable connections; (*f*) a circuit-controller for said magnet, operated by keys aforesaid, whereby, when a key is depressed, the magnet aforesaid is brought into action to free the releasable connection between said key and the member aforesaid corresponding to and controlled by said key, to permit said member to return toward its normal position in advance of the release of said key, whereby another key may be depressed while the key first depressed is still held down.

140. In combination in a type-writing machine, (*a*) means for printing; (*b*) keys controlling said printing means; (*c*) paper-feeding mechanism including a paper-carriage and letter-spacing mechanism therefor, for advancing the paper step by step as the letters are printed; (*d*) a device whereby the movement of the carriage may be enlarged to provide for an interverbal space; (*e*) a key at the keyboard controlling said space-enlarging device, said key acting, when depressed, to cause a movement of said space-enlarging device wherefrom an increased movement of the paper-carriage ensues; and (*f*) releasing means whereby said space-enlarging device, when the key aforesaid controlling it is depressed, is left free to return toward its normal position in advance of the release of said key.

141. In combination in a type-writing machine, (*a*) means for print-

ing; (*b*) keys controlling said printing means; (*c*) paper-feeding mechanism including a paper-carriage and letter-spacing mechanism therefor, for advancing the paper step by step as the letters are printed; (*d*) a device whereby the movement of the carriage may be enlarged to provide for an interverbal space; (*e*) a key at the keyboard for controlling said space-enlarging device; (*f*) a latch intermediate said key and said space-enlarging device wherethrough said key, when depressed, gives movement to said space-enlarging device to cause a movement of said space-enlarging device, wherefrom an increased movement of the paper-carriage ensues; and (*g*) means, acting when said key is depressed to free said latch, thereby to permit said space-enlarging device to return toward its normal position in advance of the release of the key.

142. In combination in a type-writing machine, (*a*) means for printing; (*b*) keys controlling said printing means; (*c*) paper-feeding mechanism including a paper-carriage and letter-spacing mechanism therefor, for advancing the paper step by step as the letters are printed; (*d*) a device whereby the movement of the carriage may be enlarged to provide for an interverbal space; (*e*) a key at the keyboard for controlling said space-enlarging device; (*f*) a latch intermediate said key and said space-enlarging device wherethrough said key, when depressed, gives movement to said space-enlarging device to cause a movement of said space-enlarging device wherefrom an increased movement of the paper-carriage ensues; and (*g*) a motor, acting when said key is depressed, to free said latch, thereby to permit said space-enlarging device to return toward its normal position in advance of the release of the key.

143. In combination in a type-writing machine, a paper-carriage and letter-spacing mechanism therefor, including, (*a*) a fast dog; (*b*) a loose dog; (*c*) a toothed part connected with the carriage and with which said dogs alternately engage; (*d*) means for actuating said dogs; (*e*) a stop for the loose dog aforesaid; said stop being mounted to move out of position to cause or permit an increased movement of said loose dog; (*f*) a key, controlling said loose-dog stop; and (*g*) releasing means whereby, when said key is depressed, and said stop thereby moved from its normal position so as to permit an increased movement of the loose dog aforesaid, said loose-dog stop is permitted to return toward its normal position in advance of the release of said key.

144. In combination in a type-writing machine, a paper-carriage and letter-spacing mechanism therefor, including (*a*) a fast dog; (*b*) a loose dog; (*c*) a toothed part connected with the carriage and with which said dogs alternately engage; (*d*) means for actuating said dogs; (*e*) a stop for the loose dog aforesaid; said stop being mounted to move out of position to cause or permit an increased movement of said loose dog; (*f*) a key for controlling said loose-dog stop; (*g*) a latch intermediate said key and said loose-dog stop, wherethrough said key when depressed, gives movement to said loose-dog stop to move it from its normal position, so that it permits an increased movement of the paper-carriage; and (*h*) means, acting when said key is depressed to free said latch, thereby to permit the loose-dog stop aforesaid to return toward its normal position in advance of the release of the key.

145. In combination in a type-writing machine, a paper-carriage and letter-spacing mechanism therefor, including (*a*) a fast dog; (*b*) a loose dog; (*c*) a toothed part connected with the carriage and with which said dogs alternately engage; (*d*) means for actuating said dogs; (*e*) a stop for the loose dog aforesaid; said stop being mounted to move out of position to cause or permit an increased movement of said loose dog; (*f*) a key for controlling said loose-dog stop; (*g*) a latch intermediate said key and said loose-dog stop, wherethrough said key when depressed, gives movement to said loose-dog stop to move it from its normal position, so that it permits an increased movement of the paper-carriage; and (*h*) a motor device, acting when said key is depressed, to free said latch, thereby to permit the loose-dog stop aforesaid to return toward its normal position in advance of the release of the key.

146. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) keys and means controlled thereby for actuating said type-bars; said means including latches intermediate said keys and the devices operated by them; (*c*) a paper-carriage; (*d*) letter-spacing mechanism, whereby said paper-carriage is fed step by step, as the letters are printed; (*e*) a device whereby the movement of said carriage may be enlarged to provide for an interverbal space; (*f*) a space-key at the keyboard for controlling said space-enlarging device; (*g*) a latch intermediate said key and said space-enlarging device wherethrough said key when depressed, gives movement to said space-enlarging device to cause a movement of said device, wherefrom an increased movement of the paper-carriage ensues; and (*h*) a releasing device common to the latch last mentioned and to a plurality of the latches above mentioned, for freeing said latches, each as required.

147. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) keys and means controlled thereby for actuating said type-bars; said means including latches intermediate said keys and the devices operated by them; (*c*) a paper-carriage; (*d*) letter-spacing mechanism, whereby said paper-carriage is fed step by step, as the letters are printed; (*e*) a device whereby the movement of said carriage may be enlarged to provide for an interverbal space; (*f*) a space-key at the keyboard for controlling said space-enlarging device; (*g*) a latch intermediate said key and said space-enlarging device wherethrough said key when depressed, gives movement to said space-enlarging device to cause a movement of said device, wherefrom an increased movement of the paper-carriage ensues; (*h*) a vibratory frame, common to the latch last mentioned and to a plurality of the other latches above mentioned, for freeing said latches, each as required; and (*i*) a motor device for giving movement to said vibratory frame.

148. In combination in a type-writing machine, (A) a plurality of type-bars striking to a common printing-center; (B) keys and means controlled thereby for actuating said type-bars; said means including latches intermediate said keys and the devices operated by them; (C) a paper-carriage and letter-spacing mechanism therefor, including (*a*) a fast dog; (*b*) a loose dog; (*c*) a toothed part connected with the carriage with which said dogs alternately engage as they are actuated; (*d*) a stop for the loose dog aforesaid, said stop being mounted to move out of position to permit an increased movement of said loose dog; (*e*) a key at the keyboard for controlling said loose-dog stop; and (*f*) a latch intermediate said key and said loose-dog stop, wherethrough said key when depressed, gives movement to said loose-dog stop to move said loose-dog stop from its normal position, so that it permits an increased movement of the loose dog aforesaid, and of the paper-carriage; and D) a releasing device common to the latch last mentioned and to a plurality of the other latches above mentioned, for freeing said latches, each as required.

149. In combination in a type-writing machine, (A) a plurality of type-bars striking to a common printing-center; (B) keys and means controlled thereby for actuating said type-bars; said means including latches intermediate said keys and the devices operated by them; (C) a paper-carriage and letter-spacing mechanism therefor, including (*a*) a fast dog; (*b*) a loose dog; (*c*) a toothed part connected with the carriage, with which said dogs alternately engage as they are actuated; (*d*) a stop for the loose dog aforesaid; said stop being mounted to move out of position to permit an increased movement of said loose dog; (*e*) a key at the keyboard for controlling said loose-dog stop; and (*f*) a latch intermediate said key and said loose-dog stop, wherethrough said key when depressed, gives movement to said loose-dog stop to move said loose-dog stop from its normal position, so that it permits an increased movement of the loose dog aforesaid, and of the paper-carriage; (D) a vibratory frame, common to the latch last mentioned and to a plurality of the other latches above mentioned, for freeing said latches, each as required; and (E) a motor device for giving movement to said vibratory frame.

150. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) motor mechanism for impelling said type-bars; (*c*) keys for controlling said type-bars; (*d*) latches intermediate said keys and the devices controlled by them; (*e*) a paper-carriage; (*f*) letter-spacing mechanism, whereby said paper-carriage is fed step by step as the letters are printed; (*g*) a device whereby the movement of said paper-carriage may be enlarged to provide for an interverbal space; (*h*) a space-key at the keyboard, for controlling said space-enlarging device; (*i*) a latch intermediate said key and said space-enlarging device, wherethrough said key, when depressed, gives movement to said space-enlarging device to cause a movement of said device, wherefrom an increased movement to the paper-carriage ensues; and (*k*) releasing mechanism for the latches aforesaid; acting when the space-key aforesaid and one of the other keys aforesaid are depressed simultaneously, to free the latches corresponding to the keys depressed in advance of the release of said keys.

151. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) motor mechanism for impelling said type-bars; (*c*) keys for controlling said type-bars; (*d*) latches intermediate said keys and the devices controlled by them; (*e*) a paper-carriage; (*f*) letter-spacing mechanism whereby said paper-carriage is fed step by step as the letters are printed; (*g*) a device whereby the movement of said paper-carriage may be enlarged to provide for an interverbal space; (*h*) a space-key at the keyboard for controlling said space-enlarging device; (*i*) a latch intermediate said key and said space-enlarging device, wherethrough said key when depressed, gives movement to said space-enlarging device to cause a movement of said device, wherefrom an increased movement to the paper-carriage ensues; (*k*) a vibratory frame, common to the latch last mentioned, and to a plurality of the other latches above mentioned, for freeing said latches, each as required, and (*l*) a motor, for actuating said frame.

152. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a motor device common to a plurality of said type-bars for actuating said type-bars, each as required; said motor being normally inactive and said type-bars being normally disconnected therefrom; (*c*) keys for controlling said type-bars; (*d*) devices actuated by said keys, for connecting said type-bars, each

type-bar as required, with the motor device aforesaid; (*e*) latches intermediate the keys aforesaid and the key-actuated devices last above mentioned; (*f*) means for bringing the motor aforesaid into action, said motor-controlling means being operated by the keys aforesaid through the latches aforesaid; each key when depressed, acting through its latch upon the other devices controlled by said key, to connect one of the type-bars aforesaid with the motor aforesaid, and to bring said motor into action to operate said type-bar; (*g*) a paper-carriage; (*h*) letter-spacing mechanism whereby said paper-carriage is fed step by step as the letters are printed; (*i*) a device whereby the movement of said paper-carriage may be enlarged to provide for an interverbal space; (*k*) a space-key at the keyboard for controlling said space-enlarging device; (*l*) a latch intermediate said key and said space-enlarging device, wherethrough said key, when depressed, controls said space-enlarging device to cause a movement of said device, wherefrom an increased movement to the paper-carriage ensues; and (*m*) releasing mechanism for the latches aforesaid, acting when the space-key aforesaid and one of the other keys aforesaid are depressed simultaneously, to free the latches corresponding to the keys depressed in advance of the release of said keys.

153. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a motor device common to a plurality of said type-bars for actuating said type-bars, each as required; said motor being normally inactive and said type-bars being normally disconnected therefrom; (*c*) keys for controlling said type-bars; (*d*) devices actuated by said keys, for connecting said type-bars, each type-bar as required, with the motor device aforesaid; (*e*) latches intermediate the keys aforesaid and the key-actuated devices last above mentioned; (*f*) means for bringing the motor aforesaid into action, said motor-controlling means being operated by the keys aforesaid through the latches aforesaid, each key when depressed, acting through its latch upon the other devices controlled by said key, to connect one of the type-bars aforesaid with the motor aforesaid, and to bring said motor into action to operate said type-bar; (*g*) a paper-carriage; (*h*) letter-spacing mechanism, whereby said paper-carriage is fed step by step as the letters are printed; (*i*) a device whereby the movement of said paper-carriage may be enlarged to provide for an interverbal space; (*k*) a space-key at the keyboard, for controlling said space-enlarging device; (*l*) a latch intermediate said key and said space-enlarging device, wherethrough said key, when depressed, controls said space-enlarging device to cause a movement of said device, wherefrom an increased movement to the paper-carriage ensues; and (*m*) a releasing-frame common to the latch last mentioned and to a plurality of the other latches above mentioned, for freeing said latches each as required.

154. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a motor device common to a plurality of said type-bars for actuating said type-bars, each as required; said motor being normally inactive and said type-bars being normally disconnected therefrom; (*c*) keys for controlling said type-bars; (*d*) devices actuated by said keys, for connecting said type-bars, each type-bar as required, with the motor device aforesaid; (*e*) latches intermediate the keys aforesaid and the key-actuated devices last-above mentioned; (*f*) means for bringing the motor aforesaid into action, said motor-controlling means being operated by the keys aforesaid through the latches aforesaid, each key when depressed acting through its latch upon the other devices controlled by said key, to connect one of the type-bars aforesaid with the motor aforesaid, and to bring said motor into action to operate said type-bar; (*g*) a paper-carriage; (*h*) letter-spacing mechanism whereby said paper-carriage is fed step by step as the letters are printed; (*i*) a device whereby the movement of said paper-carriage may be enlarged to provide for an interverbal space; (*k*) a space-key at the keyboard for controlling said space-enlarging device; (*l*) a latch intermediate said key and said space-enlarging device wherethrough said key, when depressed controls said space-enlarging device to cause a movement of said device, wherefrom an increased movement to the paper-carriage ensues; and (*m*) a releasing-frame common to the latch last mentioned and to a plurality of the other latches above mentioned, for freeing said latches each as required.

155. In combination in a type-writing machine, (A) a plurality of type-bars striking to a common printing-center; (B) a motor device common to a plurality of said type-bars for actuating said type-bars, each as required; said motor being normally inactive and said type-bars being normally disconnected therefrom; (C) keys for controlling said type-bars; (D) devices actuated by said keys, for connecting said type-bars, each type-bar as required, with the motor device aforesaid; (E) latches intermediate the keys aforesaid and the key-actuated devices last-above mentioned; (F) means for bringing the motor aforesaid into action, said motor-controlling means being operated by the keys aforesaid through the latches aforesaid; each key when depressed, acting through its latch upon the other devices controlled by said key, to connect one of the type-bars aforesaid with the motor aforesaid, and to bring said motor into action to operate said type-bar; (G) a paper-carriage and letter-spacing mechanism therefor, including (*a*) a fast dog; (*b*) a loose dog; (*c*) a toothed part, connected with the carriage, with which said dogs alternately engage as they are actuated; (*d*) a stop for the loose dog aforesaid, said stop being mounted to move out of position to permit an increased movement of said loose dog; (*e*) a key at the keyboard for controlling said loose-dog stop; and (*f*) a latch intermediate said key and said loose-dog stop wherethrough said key when depressed, controls said loose-dog stop to move said loose-dog stop from its normal position, so that it permits an increased movement of the loose dog aforesaid, and of the paper-carriage; and (H) releasing mechanism for the latches aforesaid, acting when the space-key aforesaid and one of the other keys aforesaid are depressed simultaneously, to free the latches corresponding to said keys depressed in advance of the release of said keys.

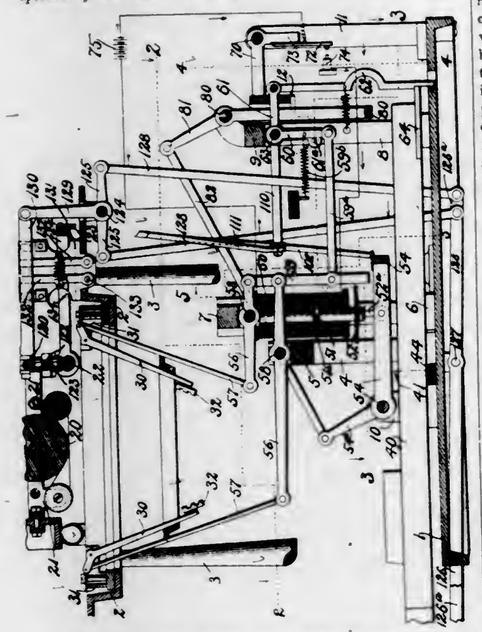
156. In combination in a type-writing machine, (A) a plurality of type-bars striking to a common printing-center; (B) a motor device common to a plurality of said type-bars for actuating said type-bars, each as required; said motor being normally inactive and said type-bars being normally disconnected therefrom; (C) keys for controlling said type-bars; (D) devices actuated by said keys, for connecting said type-bars, each type-bar as required, with the motor device aforesaid; (E) latches intermediate the keys aforesaid and the key-actuated devices last-above mentioned; (F) means for bringing the motor aforesaid into action, said motor-controlling means being operated by the keys aforesaid through the latches aforesaid; each key when depressed, acting through its latch upon the other devices controlled by said key, to connect one of the type-bars aforesaid with the motor aforesaid, and to bring said motor into action to operate said type-bar; (G) a paper-carriage and letter-spacing mechanism therefor, including (*a*) a fast dog; (*b*) a loose dog; (*c*) a toothed part connected with the carriage with which said dogs alternately engage as they are actuated; (*d*) a stop for the loose dog aforesaid, said stop being mounted to move out of position to permit an increased movement of said loose dog; (*e*) a key at the keyboard for controlling said loose-dog stop; and (*f*) a latch intermediate said key and said loose-dog stop wherethrough said key when depressed controls said loose-dog stop to move said loose-dog stop from its normal position, so that it permits an increased movement of the loose dog aforesaid, and of the paper-carriage; and (H) a vibratory releasing-frame common to the latch last mentioned and to a plurality of the other latches above mentioned, for freeing said latches each as required.

157. In combination in a type-writing machine, (A) a plurality of type-bars striking to a common printing-center; (B) a motor device common to a plurality of said type-bars, for actuating said type-bars, each as required; said motor being normally inactive and said type-bars being normally disconnected therefrom; (C) keys for controlling said type-bars; (D) devices actuated by said keys, for connecting said type-bars, each type-bar as required, with the motor device aforesaid; (E) latches intermediate the key aforesaid and the key-actuated devices last-above mentioned; (F) means for bringing the motor aforesaid into action, said motor-controlling means being operated by the keys aforesaid through the latches aforesaid; each key when depressed, acting through its latch upon the other devices controlled by said key, to connect one of the type-bars aforesaid with the motor aforesaid, and to bring said motor into action to operate said type-bars; (G) a paper-carriage and letter-spacing mechanism therefor, including (*a*) a fast dog; (*b*) a loose dog; (*c*) a toothed part connected with the carriage with which said dogs alternately engage as they are actuated; (*d*) a stop for the loose dog aforesaid, said stop being mounted to move out of position to permit an increased movement of said loose dog; (*e*) a key at the keyboard for controlling said loose-dog stop; and (*f*) a latch intermediate said key and said loose-dog stop wherethrough said key when depressed, controls said loose-dog stop to move said loose-dog stop from its normal position, so that it permits an increased movement of the loose dog aforesaid, and of the paper-carriage; and (H) a vibratory releasing-frame common to the latch last mentioned and to a plurality of the other latches above mentioned, for freeing said latches each as required; said frame being actuated by the type-bar-impelling motor aforesaid.

657,479. TYPE-WRITING MACHINE OR OTHER KEYBOARD PRINTING INSTRUMENTALITY. THADDEUS CAHILL, New York, N. Y., assignor to James B. Lambie, E. Hilton Jackson, George Frederick Cahill, and Arthur T. Cahill, trustees. Filed Dec. 24, 1898. Serial No. 700,234. (No model.)

Claim.—1. In a type-writing machine or other similar instrument, and in combination, (A) a multiplicity of type-bars arranged to strike to a common printing-point; (B) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; the keys of the machine being arranged in two banks and shaped piano fashion, and consisting of two groups, one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) four

keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb, and (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger.



2. In a type-writing machine or other similar instrument, and in combination, (A) a multiplicity of type-bars arranged to strike to a common printing-point; (B) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; the keys of the machine being arranged in two banks and shaped piano fashion, and consisting of two groups one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) four keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb; and (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; (C) a paper-carrier; (D) means whereby the same is advanced a step for each letter printed; (E) a space-key in one of the groups aforesaid constructed to be depressed simultaneously with the type-bar-controlling keys; and (F) means controlled by said space-key and acting to make the interverbal space.

3. In a type-writing machine or other similar instrument, and in combination, (A) a multiplicity of type-bars arranged to strike to a common printing-point; (B) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; the keys of the machine being arranged in two banks and shaped piano fashion, and consisting of two groups one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) a plurality of keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb, and (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; (C) means whereby the paper is advanced as the letters are printed; (D) a space-key in each of the two groups of keys aforesaid, constructed to be depressed simultaneously with the type-bar-controlling keys; and (E) means controlled by said space-keys and acting to cause the production of the interverbal spaces, whereby the interverbal space is made on the part of the operator simultaneously with the last letter of a word, by depressing one of the space-keys aforesaid simultaneously with the type-bar-controlling key corresponding to the final letter of the word.

4. In a type-writing machine or other similar instrument, and in combination, (A) a multiplicity of type-bars arranged to strike to a common printing-point; (B) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; the keys of the machine being arranged in two banks and shaped piano fashion, and consisting of two groups one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) a plurality of keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb; and (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; (C) means whereby the paper is advanced as the letters are printed; (D) a space-key in one of the sets of keys aforesaid, disposed in a position to be operated by the ring-finger when the hand is in its normal position in relation to the keys, and constructed to be operated simultaneously with the type-bar-controlling keys; and (E) means controlled by said space-key and acting to cause the production of the interverbal space, whereby the interverbal space is made on the part of the operator simultaneously with the last letter of a word by depressing the space-key simultaneously with the type-bar-controlling key corresponding to the final letter of the word.

5. In a type-writing machine or other similar instrument, and in combination, (A) a multiplicity of type-bars arranged to strike to a common printing-point; (B) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; the keys of the machine being arranged in two banks and shaped piano fashion, and consisting of two groups, one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) four keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb; and (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; and (C) suitable motor mechanism controlled by the keys aforesaid for impelling the type-bars aforesaid.

6. In a type-writing machine or other similar instrument, and in combination, (A) a multiplicity of type-bars arranged to strike to a common printing-point; (B) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; the keys of the machine being arranged in two banks and shaped piano fashion, and consisting of two groups one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) four keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb; and (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; (C) suitable motor mechanism controlled by the keys aforesaid for impelling the type-bars aforesaid; (D) a paper-carrier; (E) means whereby the same is advanced a step for each letter printed; (F) a space-key in one of the groups aforesaid constructed to be depressed simultaneously with the type-bar-controlling keys; and (G) means controlled by said space-key and acting to make the interverbal space.

7. In a type-writing machine or other simular instrument, and in combination, (A) a multiplicity of type-bars arranged to strike to a common printing-point; (B) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; the keys of the machine being arranged in two banks and shaped piano fashion, and consisting of two groups one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) a plurality of keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb, and (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; (C) suitable motor mechanism controlled by the keys aforesaid for impelling the type-bars aforesaid; (D) means whereby the paper is advanced as the letters are printed; (E) a space-key in each of the two groups of keys aforesaid, constructed to be depressed simultaneously with the type-bar-controlling keys; and (F) means controlled by said space-keys and acting to cause the production of the interverbal spaces, whereby the interverbal space is made on the part of the operator simultaneously with the last letter of a word by depressing one of the space-keys aforesaid simultaneously with the type-bar-controlling key corresponding to the final letter of the word.

8. In a type-writing machine or other similar instrument, and in combination, (A) a multiplicity of type-bars arranged to strike to a common printing-point; (B) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; the keys of the machine being arranged in two banks and shaped piano fashion, and consisting of two groups one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) a plurality of keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb; and (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; (C) suitable motor mechanism controlled by the keys aforesaid for impelling the type-bars aforesaid; (D) a paper-carrier; (E) means whereby the same is advanced a step for each letter printed; (F) a space-key in one of the groups aforesaid constructed to be depressed simultaneously with the type-bar-controlling keys; and (G) means controlled by said space-key and acting to make the interverbal space.

tioned, and each connected to control the corresponding type-bar; the keys of the machine being arranged in two banks and shaped piano fashion, and consisting of two groups one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) a plurality of keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb, and (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; (C) suitable motor mechanism controlled by the keys aforesaid for impelling the type-bars aforesaid; (D) means whereby the paper is advanced as the letters are printed; (E) a space-key in one at least of the sets of keys aforesaid, disposed in a position to be operated by the ring-finger when the hand is in its normal position in relation to the keys, and constructed to be operated simultaneously with the type-bar-controlling keys; and (F) means controlled by said space-key and acting to cause the production of the interverbal spaces, whereby the interverbal space is made on the part of the operator simultaneously with the last letter of a word by depressing the space-key simultaneously with the type-bar-controlling key corresponding to the final letter of the word.

9. In a type-writing machine or other similar instrument, and in combination, (A) a multiplicity of type-bars arranged to strike to a common printing-point, and carrying each three types; (B) shifting mechanism, whereby the different types carried by a bar are caused to print, each as desired; (C) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; said keys being arranged in two banks and shaped piano fashion, and consisting of two groups, one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) a plurality of keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb; and (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger.

10. In a type-writing machine or other similar instrument, and in combination, (A) a multiplicity of type-bars arranged to strike to a common printing-point, and carrying each three types; (B) shifting mechanism whereby the different types carried by a bar are caused to print, each as required; (C) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; said keys being arranged in two banks and shaped piano fashion, and consisting of two groups, one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) a plurality of keys in each of the two banks aforesaid normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb; (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; (D) a paper-carrier; (E) means whereby the same is advanced as the letters are printed; (F) a space-key in one of the groups aforesaid, constructed to be depressed simultaneously with the type-bar-controlling keys; and (G) means controlled by said space-key and acting to make the interverbal space.

11. In a type-writing machine or other similar instrument and in combination, (A) a multiplicity of type-bars arranged to strike to a common printing-point, and carrying each three types; (B) shifting mechanism, whereby the different types carried by a bar are caused to print, each as required; (C) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; said keys being arranged in two banks and shaped piano fashion, and consisting of two groups, one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) a plurality of keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb; (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; (D) means whereby the paper is advanced as the letters are printed; (E) a space-key in each of the two groups of keys aforesaid, constructed to be depressed simultaneously with the type-bar-controlling keys; and (F) means controlled by said space-keys and acting to cause the production of the interverbal spaces, whereby the interverbal space is made on the part of the operator simultaneously with the last letter of a word, by depressing one of the space-keys aforesaid simultaneously with the type-bar-controlling key corresponding to the final letter of the word.

12. In a type-writing machine or other similar instrument, and in combination, (A) a multiplicity of type-bars arranged to strike to a common printing-point, and carrying each three types; (B) shifting mechanism whereby the different types carried by a bar are caused to print, each as desired; (C) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; said keys being arranged in two banks and shaped piano fashion, and consisting of two groups, one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) a plurality of keys in each of the two banks aforesaid normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb; (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; (D) a space-key in one at least of the groups of keys aforesaid disposed in a position to be operated by the ring-finger when the hand is in its normal position in relation to the keys, and constructed to be operated simultaneously with the type-bar-controlling keys; and (E) means controlled by said space-key and acting to cause the production of the interverbal spaces, whereby the interverbal space is made on the part of the operator simultaneously with the last letter of a word by depressing the space-key simultaneously with the type-bar-controlling key corresponding to the final letter of the word.

13. In combination in a type-writing machine, (*a*) a plurality of type-bars arranged so that they strike to a common printing-center; (*b*) a motor device, acting to impel said type-bars, each as required; (*c*) keys, equal in number to the type-bars impelled by the motor device aforesaid, a key for each type-bar, said keys each acting, when depressed, to connect the corresponding type-bar with the motor device aforesaid to receive movement therefrom; (*d*) a motor-controlling device operated by one or more of the keys aforesaid, and acting when a key is depressed to bring the motor aforesaid into operation for the impelling of the type-bar connected with it; and (*e*) means acting to release said motor-controlling device in advance of the release of the key depressed, all the parts being constructed, arranged and operating in such a manner that a succeeding key may be depressed to print while the key first depressed is still held down.

14. In combination in a type-writing machine, (*a*) a plurality of type-bars arranged so that they strike to a common printing-center; (*b*) a motor device, acting to impel said type-bars, each as required; (*c*) keys, equal in number to the type-bars impelled by the motor device aforesaid, a key for each type-bar, said keys each acting, when depressed, to connect the corresponding type-bar with the motor device aforesaid to receive movement therefrom; (*d*) a motor-controlling device operated by one or more of the keys aforesaid, and acting when a key is depressed to bring the motor aforesaid into operation for the impelling of the type-bar connected with it; and (*e*) means actuated by the motor device aforesaid, serving when a key is depressed to release the motor-controlling device aforesaid in advance of the release of the key depressed controlling it, all the parts being constructed, arranged and operating in such a manner that a succeeding key may be depressed to print while the key first depressed is still held down.

15. In combination in a type-writing machine or other similar instrument, (*a*) a plurality of type-bars arranged so that they strike to a common printing-center; (*b*) an electromagnet acting to impel said type-bars, each as required; (*c*) keys, equal in number to the type-bars impelled by the electromagnet aforesaid, a key for each type-bar; said keys each acting when depressed to connect the corresponding type-bar with the electromagnet aforesaid to receive movement therefrom; (*d*) a circuit-controlling device operated by one or more of the keys aforesaid, and serving when such key is depressed to bring the magnet aforesaid into action to impel the type-bar corresponding to the key depressed; and (*e*) means acting to permit said circuit-controlling device to return toward its normal position in advance of the release of the key depressed, all the parts being constructed, arranged and operating in such a manner that a succeeding key may be depressed to print while the key first depressed is still held down.

16. In combination in a type-writing machine or other similar instrument, (*a*) a plurality of type-bars arranged so that they strike to a common printing-center; (*b*) an electromagnet acting to impel said type-bars, each as required; (*c*) keys, equal in number to the type-bars impelled by the electromagnet aforesaid, a key for each type-bar; said keys each acting when depressed to connect the corresponding type-bar with the electromagnet aforesaid, to receive movement therefrom; (*d*) a circuit-controlling device operated by one or more of the keys aforesaid and serving when such key is depressed to bring the magnet aforesaid into action to impel the type-bar corresponding to the key depressed; and (*e*) means operated by the electromagnet aforesaid, acting when a key is depressed to permit the circuit-controlling device aforesaid to return toward its normal position in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that a succeeding key may be depressed to print while the key first depressed is still held down.

17. In a type-writing machine or other similar instrument, and in combination, (A) a multiplicity of type-bars arranged to strike to a com-

mon printing-point; (B) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; the keys of the machine being arranged in two banks and shaped piano fashion, and consisting of two groups one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) four keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb; (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; (C) a type-bar-impelling motor, the type-bar aforesaid being normally disconnected from said motor; (D) means controlled by the keys aforesaid, acting to coanect the type-bars aforesaid, each as required, with the motor aforesaid, to receive movement therefrom.

18. In a type-writing machine or other similar instrument, and in combination, (A) a multiplicity of type-bars arranged to strike to a common printing-point; (B) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; the keys of the machine being arranged in two banks and shaped piano fashion, and consisting of two groups one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) four keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb, (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; (C) a type-bar-impelling motor, the type-bars aforesaid being normally disconnected from said motor; (D) means controlled by the keys aforesaid, acting to connect the type-bars aforesaid, each as required, with the motor aforesaid, to receive movement therefrom; (E) a paper-carrier; (F) means whereby the same is advanced a step for each letter printed; (G) a space-key in one of the groups aforesaid, constructed to be depressed simultaneously with the type-bar-controlling keys; and (H) means controlled by said space-key and acting to make the interverbal space.

19. In a type-writing machine or other similar instrument, and in combination, (A) a multiplicity of type-bars arranged to strike to a common printing-point; (B) keys, equal in number to the type-bars before mentioned, and each connected to control the corresponding type-bar; the keys of the machine being arranged in two banks and shaped piano fashion, and consisting of two groups, one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) a plurality of keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb; (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; (C) a type-bar-impelling motor, the type-bars aforesaid being normally disconnected from said motor; (D) means controlled by the keys aforesaid, acting to connect the type-bars aforesaid, each as required, with the motor aforesaid, to receive movement therefrom; (E) means whereby the paper is advanced as the letters are printed; (F) a space-key in each of the sets of keys aforesaid, constructed to be depressed simultaneously with the type-bar-controlling keys; and (G) means controlled by said space-keys and acting to cause the production of the interverbal spaces, whereby the interverbal space is made on the part of the operator simultaneously with the last letter of a word by depressing one of the space-keys aforesaid simultaneously with the type-bar-controlling key corresponding to the final letter of the word.

20. In a type-writing machine or other similar instrument, and in combination, (*a*) a plurality of type-bars; (*b*) a motor for impelling said type-bars; (*c*) keys corresponding to the type-bars actuated by the motor aforesaid, a different key for each different type-bar; (*d*) members equal in number to the type-bars aforesaid, said members being connected each to the corresponding type-bar and serving to receive movement from the motor aforesaid, for the impelling of such type-bar; (*e*) a connection between each key and the member before mentioned as connected with the type-bar corresponding to such key, wherethrough said key, when depressed, throws said member into operative relation with the motor aforesaid to receive movement therefrom; and (*f*) means acting upon the connection between the key depressed and the type-bar-connected member corresponding to such key, to disconnect said member from said key, thereby to permit said member to return toward its normal position in advance of the release of said key; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print a succeeding key may be depressed to print while the key first depressed is still held down.

21. In a type-writing machine or other similar instrument, and in combination, (*a*) a plurality of type-bars; (*b*) a type-bar-impelling frame, acting to communicate movement to all the type-bars aforesaid, each as required; (*c*) keys corresponding to the type-bars actuated by the frame aforesaid, a different key for each different type-bar; (*d*) members equal in number to the type-bars aforesaid, said members being connected each to the corresponding type-bar and serving to receive movement from the frame aforesaid for the impelling of such type-bar; (*e*) key-impelled members corresponding to the keys aforesaid, a key-impelled member for each key, each of said key-impelled members acting when its key is depressed to throw the type-bar-connected member aforesaid into operative relation with the frame aforesaid, to receive movement therefrom; and (*f*) means acting when a key is depressed, to disconnect the key-impelled member aforesaid, corresponding to the key depressed, from said key, thereby to permit said member to return toward its normal position in advance of the release of said key; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print a succeeding key may be depressed to print while the key first depressed is still held down.

22. In a type-writing machine or other similar instrument, and in combination, (*c*) a plurality of type-bars; (*b*) a type-bar-impelling frame, acting to communicate movement to all the type-bars aforesaid, each as required; (*c*) keys corresponding to the type-bars actuated by the motor aforesaid, a different key for each different type-bar; (*d*) members equal in number to the type-bars aforesaid, said members being connected each to the corresponding type-bar and serving to receive movement from the frame aforesaid for the impelling of such type-bar; (*e*) key-impelled members corresponding to the keys aforesaid, a key-impelled member for each key, each of said key-impelled members acting when its key is depressed to throw the type-bar-connected member aforesaid into operative relation with the frame aforesaid, to receive movement therefrom; the type-bar-impelling frame aforesaid acting also to disconnect the key-impelled member controlled by the key depressed, from such key, thereby to permit said member to return toward its normal position in advance of the release of said key; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print a succeeding key may be depressed to print while the key first depressed is still held down.

23. In a type-writing machine or other similar instrument, and in combination, (*a*) a plurality of type-bars; (*b*) a type-bar-impelling frame, acting to communicate movement to all the type-bars aforesaid, each as required; (*c*) keys corresponding to the type-bars actuated by the frame aforesaid, a different key for each different type-bar; (*d*) members equal in number to the type-bars aforesaid, said members being connected each to the corresponding type-bar and serving to receive movement from the frame aforesaid; (*e*) key-impelled members corresponding to the keys aforesaid, a key-impelled member for each key, each of said key-impelled members acting when its key is depressed to throw the type-bar-connected member aforesaid into operative relation with the frame aforesaid, to receive movement therefrom; and (*f*) a releasing-frame, connected with the type-bar-impelling frame aforesaid and acting to disconnect the key-impelled member corresponding to the key depressed, from such key, thereby to permit said member to return toward its normal position in advance of the release of said key; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print a succeeding key may be depressed to print while the key first depressed is still held down.

24. In a type-writing machine or other similar instrument, and in combination, (*a*) a plurality of type-bars; (*b*) a motor for actuating said type-bars; (*c*) keys corresponding to the type-bars actuated by the motor aforesaid, a different key for each different type-bar; (*d*) members equal in number to the type-bars aforesaid, said members being connected each to the corresponding type-bar and serving to receive movement from the motor aforesaid for the impelling of such type-bar; (*e*) key-impelled members corresponding to the keys aforesaid, a key-impelled member for each key, each of said key-impelled members acting when its key is depressed, to throw the type-bar-connected member aforesaid, corresponding to such key, into operative relation with the motor aforesaid, to receive movement therefrom; and (*f*) means acting to disconnect the key-impelled member aforesaid controlled by the key depressed, from said key, thereby to permit said member to return toward its normal position in advance of the release of said key; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print a succeeding key may be depressed to print while the key first depressed is still held down.

25. In a type-writing machine or other similar instrument, and in combination, (*a*) a plurality of type-bars; (*b*) a motor for actuating said type-bars; (*c*) keys corresponding to the type-bars actuated by the motor aforesaid, a different key for each different type-bar; (*d*) members equal in number to the type-bars aforesaid, said members being connected each to the corresponding type-bar and serving to receive movement from the motor aforesaid for the impelling of such type-bar; (*e*) key-impelled members corresponding to the keys aforesaid, a key-impelled member for each key, each of said key-impelled members acting when its key is depressed

to throw the type-bar-connected member aforesaid, corresponding to such key, into operative relation with the motor aforesaid, to receive movement therefrom; the type-bar-impelling motor aforesaid acting also to disconnect the key-impelled member aforesaid, controlled by the key depressed, from said key, thereby to permit said member to return toward its normal position in advance of the release of said key; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print a succeeding key may be depressed to print while the key first depressed is still held down.

26. In a type-writing machine or other similar instrument, and in combination, (*a*) a plurality of type-bars; (*b*) a motor for actuating said type-bars; (*c*) keys corresponding to the type-bars actuated by the motor aforesaid, a different key for each different type-bar; (*d*) members equal in number to the type-bars aforesaid, said members being connected each to the corresponding type-bar and serving to receive movement from the motor aforesaid for the impelling of such type-bar; (*e*) key-impelled members corresponding to the keys aforesaid, a key-impelled member for each key, each of said key-impelled members acting when its key is depressed, to throw the type-bar-connected member aforesaid, corresponding to said keys into operative relation with the motor aforesaid, to receive movement therefrom; and (*f*) a frame, actuated by the type-bar-impelling motor aforesaid and acting to disconnect the key-impelled member aforesaid, controlled by the key depressed, from such key, thereby to permit said member to return toward its normal position in advance of the release of said key; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print a succeeding key may be depressed to print while the key first depressed is still held down.

27. In a type-writiug machine or other similar instrument and in combination, (*a*) a plurality of type-bars; (*b*) a motor for actuating said type-bars; (*c*) keys corresponding to the type-bars actuated by the motor aforesaid, a different key for each different type-bar; (*d*) members equal in number to the type-bars aforesaid, said members being connected each with the corresponding type-bar and serving to receive movement from the motor aforesaid, for the impelling of such type-bar; (*e*) key-impelled members, corresponding to the keys aforesaid, a key-impelled member for each key, each of said key-impelled members acting when its key is depressed to throw the type-bar-connected member aforesaid into operative relation with the motor aforesaid to receive movement therefrom; (*f*) motor-controlling means, actuated by the keys through the key-impelled members aforesaid, and acting when the keys are depressed, to bring the motor aforesaid into action for the impelling of the type-bar; and (*g*) means acting when a key is depressed, to disconnect the key-impelled member corresponding to the key depressed, from such key; thereby to permit said member to return toward its normal position in advance of the release of said key; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print, a succeeding key may be depressed to print while the key first depressed is still held down.

28. In a type-writing machine or other similar instrument, and in combination, (*a*) a plurality of type-bars; (*b*) a motor for actuating said type-bars; (*c*) keys corresponding to the type-bars actuated by the motor aforesaid, a different key for each different type-bar; (*d*) members equal in number to the type-bars aforesaid, said members being connected each with the corresponding type-bar and serving to receive movement from the motor aforesaid, for the impelling of such type-bar; (*e*) key-impelled members corresponding to the keys aforesaid, each of said key-impelled members acting when its key is depressed to throw the type-bar-connected member aforesaid into operative relation with the motor aforesaid to receive movement therefrom; (*f*) motor-controlling means actuated by the keys through the key-impelled members aforesaid, and acting when the keys are depressed, to bring the motor aforesaid into action for the impelling of the type-bar; and (*g*) means acting when a key is depressed, to disconnect the key-impelled member corresponding to the key depressed from such key, thereby to permit said member, and the motor-controlling means actuated by the key, through said member, to return toward their normal positions; the motor-controlling means aforesaid acting by such movement of return to affect the motor device aforesaid so that the same releases the type-bar, corresponding to the key depressed, leaving it free to return toward its normal position in advance of the release of the key; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print, a succeeding key may be depressed to print while the key first depressed is still held down.

29. In a type-writing machine or other similar instrument, and in combination, (*a*) a plurality of type-bars; (*b*) a motor for actuating said type-bars; (*c*) keys corresponding to the type-bars actuated by the motor aforesaid, a different key for each different type-bar; (*d*) members equal in number to the type-bars aforesaid, said members being connected each with the corresponding type-bar and serving to receive movement from the motor aforesaid, for the impelling of such type-bar; (*e*) key-impelled members corresponding to the keys aforesaid, each of said key-impelled members acting when its key is depressed to throw the type-bar-connected member aforesaid into operative relation with the motor aforesaid to receive movement therefrom; (*f*) a motor-controlling device, actuated by the keys through the key-impelled members aforesaid, and acting when a key is depressed to bring the motor aforesaid into action for the impelling of the type-bar corresponding to such key; the type-bar-impelling motor aforesaid acting to disconnect the key-impelled member aforesaid corresponding to the key depressed, from such key, thereby to permit the return of the motor-controlling device toward its normal position and the release of the type-bar corresponding to the key depressed in advance of the release of the key; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print, a succeeding key may be depressed to print while the key first depressed is still held down.

30. In a type-writing machine or other similar instrument, and in combination, (*a*) a plurality of type-bars; (*b*) a motor for actuating said type-bars; (*c*) keys corresponding to the type-bars actuated by the motor aforesaid, a different key for each different type-bar; (*d*) members equal in number to the type-bars aforesaid, said members being connected each with the corresponding type-bar and serving to receive movement from the motor aforesaid, for the impelling of such type-bar; (*e*) key-impelled members corresponding to the keys aforesaid, each of said key-impelled members acting when its key is depressed to throw the type-bar-connected member aforesaid into operative relation with the motor aforesaid to receive movement therefrom; (*f*) a motor-controlling device, actuated by the keys through the key-impelled members aforesaid, and acting when a key is depressed to bring the motor aforesaid into action for the impelling of the type-bar corresponding to such key; and (*g*) a frame, acting when the key is depressed, upon the key-impelled member aforesaid corresponding to the key depressed, to disconnect said member from said key, thereby to permit the return of the motor-controlling device toward its normal position and the release of the type-bar corresponding to the key depressed, in advance of the release of the key.

31. In a type-writing machine or other similar instrument, and in combination, (*a*) a plurality of type-bars; (*b*) a motor for actuating said type-bars; (*c*) keys corresponding to the type-bars actuated by the motor aforesaid, a different key for each different type-bar; (*d*) members equal in number to the type-bars aforesaid, said members being connected each with the corresponding type-bar and serving to receive movement from the motor aforesaid, for the impelling of such type-bar; (*e*) key-impelled members corresponding to the keys aforesaid, each of said key-impelled members acting when its key is depressed to throw the type-bar-connected member aforesaid into operative relation with the motor aforesaid to receive movement therefrom; (*f*) a motor-controlling device, actuated by the keys through the key-impelled members aforesaid, and acting when a key is depressed to bring the motor aforesaid into action for the impelling of the type-bar corresponding to such key; and (*g*) a frame actuated by the motor aforesaid and acting upon the key-impelled member, corresponding to the key depressed, to disconnect said member from said key, thereby to permit the return of the motor-controlling device toward its normal position and the release of the type-bar, in advance of the release of the key depressed to control said type-bar; whereby another key may be depressed to print while the key first depressed is still held down.

32. In a type-writing machine or other similar instrument, and in combination, (*a*) a type-bar-impelling frame; (*b*) type-bars, impelled by said frame, each as required; (*c*) a motor for actuating the frame aforesaid, to impel the type-bars aforesaid; (*d*) keys corresponding to the type-bars actuated by the frame aforesaid, a different key for each different type-bar; (*e*) members equal in number to the type-bars aforesaid, said members being connected each with the corresponding type-bar and serving to receive movement from the motor and frame aforesaid for the impelling of such type-bar; (*f*) key-impelled members corresponding to the keys aforesaid, each of said key-impelled members acting when its key is depressed to throw the type-bar-connected member aforesaid into operative relation with the frame aforesaid to receive movement therefrom; (*g*) motor-controlling means actuated by the keys aforesaid through the key-impelled members aforesaid, and acting when the keys are depressed, to bring the motor aforesaid into action for the impelling of the frame aforesaid and the type-bar connected therewith; and (*h*) means acting when a key is depressed to disconnect the key-impelled member corresponding to the key depressed, from such key; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print, a succeeding key may be depressed to print while the key first depressed is still held down.

33. In a type-writing machine or other similar instrument, and in combination, (*a*) a type-bar-impelling frame; (*b*) type-bars impelled by said frame, each as required; (*c*) a motor for actuating the frame aforesaid, to impel the type-bars aforesaid; (*d*) keys corresponding to the type-bars actuated by the frame aforesaid, a different key for each different type-bar; (*e*) members equal in number to the type-bars aforesaid, said members being connected each with the corresponding type-bar and serving to receive movement from the motor and frame aforesaid for the impelling

of such type-bar; (*f*) key-impelled members corresponding to the keys aforesaid, each of said key-impelled members acting when its key is depressed to throw the type-bar-connected member aforesaid into operative relation with the frame aforesaid to receive movement therefrom; (*g*) motor-controlling means actuated by the keys aforesaid through the key-impelled members aforesaid, and acting when the keys are depressed, to bring the motor aforesaid into action for the impelling of the frame aforesaid and the type-bar connected therewith; and (*h*) means acting, when a key is depressed, to disconnect the key-impelled member corresponding to the key depressed, from such key; thereby to permit said member and the motor-controlling means actuated by the key depressed, through said member, to return toward their normal positions; the motor-controlling means aforesaid serving by such movement of return to affect the motor device aforesaid, so that the same leaves the frame aforesaid, with the type-bar impelled thereby, free to return toward their normal positions, in advance of the release of the key; whereby another key may be depressed to print while the key first depressed is still held down.

34. In a type-writing machine or other similar instrument, and in combination, (*a*) a type-bar-impelling frame; (*b*) type-bars, impelled by said frame, each as required; (*c*) a motor for actuating the frame aforesaid, to impel the type-bars aforesaid; (*d*) keys corresponding to the type-bars actuated by the frame aforesaid, a different key for each different type-bar; (*e*) members equal in number to the type-bars aforesaid, said members being connected each with the corresponding type-bar and serving to receive movement from the motor and frame aforesaid for the impelling of such type-bar; (*f*) key-impelled members corresponding to the keys aforesaid, each of said key-impelled members acting when its key is depressed to throw the type-bar-connected member aforesaid into operative relatioo with the frame aforesaid to receive movement therefrom; (*g*) a motor-controlling device actuated by the keys through the key-impelled members aforesaid, and acting when a key is depressed, to bring the motor aforesaid into action for the impelling of the frame aforesaid, and the type-bar corresponding to the key depressed, the type-bar-impelling motor aforesaid acting to disconnect the key-impelled member aforesaid corresponding to the key depressed, from such key, thereby to permit the return of the motor-controlling device aforesaid toward its normal position and the release of the type-bar corresponding to the key depressed, in advance of the release of the key; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print, a succeeding key may be depressed to print while the key first depressed is still held down.

35. In a type-writing machine or other similar instrument, and in combination, (*a*) a type-bar-impelling frame; (*b*) type-bars, impelled by said frame, each as required; (*c*) a motor for actuating the frame aforesaid, to impel the type-bars aforesaid; (*d*) keys corresponding to the type-bars actuated by the frame aforesaid, a different key for each different type-bar; (*e*) members equal in number to the type-bars aforesaid, said members being connected each with the corresponding type-bar and serving to receive movement from the motor and frame aforesaid for the impelling of such type-bar; (*f*) key-impelled members corresponding to the keys aforesaid, each of said key-impelled members acting when its key is depressed to throw the type-bar-connected member aforesaid into operative relation with the frame aforesaid to receive movement therefrom; (*g*) a motor-controlling device actuated by the keys through the key-impelled members aforesaid, and acting when a key is depressed, to bring the motor aforesaid into action for the impelling of the frame aforesaid and the type-bar corresponding to the key depressed; and (*h*) a frame, acting when a key is depressed, upon the key-impelled member aforesaid corresponding to the key depressed, to disconnect said member from said key, thereby to permit the return of the motor-controlling device toward its normal position and the release of the type-bar corresponding to the key depressed, in advance of the release of the key; whereby another key may be depressed to print while the key first depressed is still held down.

36. In a type-writing machine or other sunilar instrument, and in combination, (*a*) a type-bar-impelling frame; (*b*) type-bars, impelled by said frame, each as required; (*c*) a motor for actuating the frame aforesaid, to impel the type-bars aforesaid; (*d*) keys corresponding to the type-bars actuated by the frame aforesaid, a different key for each different type-bar; (*e*) members equal in number to the type-bars aforesaid, said members being connected each with the corresponding type-bar and serving to receive movement from the motor and frame aforesaid for the impelling of such type-bar; (*f*) key-impelled members corresponding to the keys aforesaid, each of said key-impelled members acting when its key is depressed to throw the type-bar-connected member aforesaid into operative relation with the frame aforesaid to receive movement therefrom; (*g*) a motor-controlling device, actuated by the keys through the key-impelled members aforesaid, and acting when a key is depressed to bring the motor aforesaid into action for the impelling of the type-bar corresponding to such key; and (*h*) a releasing-fraine actuated by the motor aforesaid, and acting when a key is depressed, upon the key-impelled member corresponding to the key depressed to disconnect said member from said key, thereby to permit the return of the motor-controlling device toward its normal position and the release of the type-bar, in advance of the release of the key depressed to control said type-bar; whereby another key may be depressed to print while the key first depressed is still held down.

37. In a type-writing machine and in combination, (A) a plurality of type-bars, striking to a common printing-center; (B) keys, equal in number to said type-bars and each serving to control a different one of the type-bars aforesaid; (C) a motor; (D) a frame actuated thereby; (E) levers connected with the type-bars aforesaid; (F) members connected to said levers; (G) a connection between each key and the member connected with the lever aforesaid that is connected with the type-bar corresponding to such key; said connection acting when the key is depressed to communicate movement from said key to the movement-receiving member corresponding to said key, so as to bring said movement-receiving member into operative relation to the frame aforesaid, to receive movement therefrom, for the impelling of the type-bar; and (H) means acting to permit the type-bar to return to its normal position in advance of the release of the key; all the parts being constructed, arranged and operating in such a manner that when a key is depressed to print, a succeeding key may be depressed to print while the key first depressed is still held down.

38. In combination in a type-writing machine, (*a*) a type-bar; (*b*) a frame for giving movement to said type-bar; said frame being normally at rest; said type-bar being normally disconnected therefrom; (*c*) a lever corresponding to said type-bar; (*d*) a link connecting said lever with said type-bar; (*e*) a movement-receiving member pivoted to said lever; (*f*) a bell-crank connected with said movement-receiving member; (*g*) a key for actuating said bell-crank; and (*h*) a latch intermediate said key and said bell-crank.

39. In combination in a type-writing machine, (*a*) a type-bar; (*b*) a frame for giving movement to said type-bar; said frame being normally at rest; said type-bar being normally disconnected therefrom; (*c*) a lever corresponding to said type-bar; (*d*) a link connecting said lever with said type-bar; (*e*) a movement-receiving member pivoted to said lever; (*f*) a bell-crank connected with said movement-receiving member; (*g*) a key; (*h*) a latch intermediate said key and said bell-crank; (*i*) a motor for actuating the frame aforesaid; (*k*) a controlling device for said motor; said controlling device being operated by the key aforesaid through the latch aforesaid; and (*l*) means acting on said latch when the key is depressed, to free said latch in advance of the release of said key, thereby to permit the motor-controlling device aforesaid, the movement-receiving member aforesaid, and the motor-actuated frame aforesaid, to return toward their normal positions in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that a succeeding key may be depressed to print while the key first depressed is still held down.

40. In combination in a type-writing machine, (*a*) a type-bar; (*b*) a frame for giving movement to said type-bar; said frame being normally at rest; said type-bar being normally disconnected therefrom; (*c*) a lever corresponding to said type-bar; (*d*) a link connecting said lever with said type-bar; (*e*) a movement-receiving member pivoted to said lever; (*f*) a bell-crank connected with said movement-receiving member; (*g*) a key; (*h*) a latch intermediate said key and said bell-crank; (*i*) a motor for actuating the frame aforesaid; (*k*) a controlling device for said motor; said controlling device being operated by the key aforesaid through the latch aforesaid; and (*l*) a releasing-frame for freeing said latch; said releasing-frame acting when the key aforesaid is depressed, to free the latch aforesaid, thereby to permit the motor-controlling device aforesaid, the movement-receiving member aforesaid and the type-bar-impelling frame aforesaid, to return toward their normal positions in advance of the release of the key depressed, all the parts being constructed, arranged and operating in such a manner that a succeeding key may be depressed to print while the key first depressed is still held down.

41. In combination in a type-writing machine, (*a*) a type-bar; (*b*) a frame for giving movement to said type-bar; said frame being normally at rest; said type-bar being normally disconnected therefrom; (*c*) a lever corresponding to said type-bar; (*d*) a link connecting said lever with said type-bar; (*e*) a movement-receiving member pivoted to said lever; (*f*) a bell-crank connected with said movement-receiving member; (*g*) a key; (*h*) a latch pivoted to said bell-crank; (*i*) an arm connected with said bell-crank in such manner that it must move with said bell-crank when said bell-crank is moved in one direction by the key when said key is depressed, while said bell-crank is free to move in the reverse direction without moving said arm; (*k*) a link, connecting said arm with the movement-receiving member aforesaid; (*l*) a motor for actuating the frame aforesaid; (*m*) a controlling device for said motor, operated by the key aforesaid through the latch and bell-crank aforesaid; and (*n*) means for releasing the latch aforesaid.

42. In combination in a type-writing machine, (*a*) a type-bar; (*b*) a frame for giving movement to said type-bar; said frame being normally at rest; said type-bar being normally disconnected therefrom; (*c*) a lever corresponding to said type-bar; (*d*) a link connecting said lever with said type-bar; (*e*) a movement-receiving member pivoted to said lever; (*f*) a key; (*g*) a latch; (*h*) the bell-crank, 61; (*i*) the arm 60, operated by said bell-crank; (*k*) the link 59*, connecting said arm 60 with the movement-receiving member aforesaid; (*l*) a motor, for actuating the frame aforesaid; (*m*) means for controlling said motor; said motor-controlling means being operated by the key aforesaid through the bell-crank aforesaid; and (*n*) means for freeing the latch aforesaid.

43. In a type-writing machine, and in combination therein with type-bars striking to a common printing-center, a releasing action including (*a*) a plurality of keys; (*b*) latches, corresponding to and actuated by said keys; (*c*) levers, corresponding to said keys and actuated by said keys through said latches; said levers being separate from the type-bars, but serving for the operating of said type-bars; (*d*) a hanger-bar, having grooves or slots formed therein to receive said levers; and (*e*) a rod set in said bar, and whereon said levers are mounted.

44. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a frame for giving movement to said type-bars, each as required; (*c*) levers corresponding to said type-bars, a lever for each type-bar that is operated by the frame aforesaid; (*d*) links connecting said type-bars with said levers; (*e*) movement-receiving members pivoted to said type-bar corresponding levers, a movement-receiving member to each type-bar corresponding lever; (*f*) keys, corresponding to said movement-receiving members, a key for each movement-receiving member; (*g*) connections intermediate said keys and said movement-receiving members wherethrough each key, when depressed, gives movement to the corresponding movement-receiving member to bring said member into operative relation with the frame aforesaid; and (*h*) means acting, when a key is depressed, to permit the movement-receiving member corresponding to said key to return toward its normal position in advance of the release of said key, thereby to permit the frame aforesaid to actuate another movement-receiving member while the key first depressed is still held down, without again actuating the movement-receiving member corresponding to the key depressed until said key has been released and again depressed.

45. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a frame for giving movement to said type-bars, each as required; (*c*) levers corresponding to said type-bars, a lever for each type-bar that is operated by the frame aforesaid; (*d*) links connecting said type-bars with said levers; (*e*) movement-receiving members pivoted to said type-bar corresponding levers, a movement-receiving member to each type-bar corresponding lever; (*f*) keys, corresponding to said movement-receiving members; (*g*) latches intermediate said keys and the movement-receiving members aforesaid; (*h*) a motor for actuating the frame aforesaid; (*i*) a controlling device for said motor, common to a plurality of the keys aforesaid and actuated by said keys through the latches aforesaid; and (*k*) means acting when a key is depressed and the motor aforesaid thereby brought into action, to free the latch corresponding to said key, thereby to permit the movement-receiving member corresponding to said key to return toward its normal position in advance of the release of said key, and to permit also the motor-controlling device aforesaid to return toward its normal position in advance of the release of said key; said motor-controlling device operating by such its return movement to affect the motor device aforesaid in such manner that the type-bar-actuating frame aforesaid returns toward its normal position in advance of the release of the key depressed; whereby another key may be depressed to print while the key first depressed is still held down.

46. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a frame for giving movement to said type-bars, each as required; (*c*) levers corresponding to said type-bars, a lever for each type-bar that is operated by the frame aforesaid; (*d*) links connecting said type-bars with said levers; (*e*) movement-receiving members pivoted to said type-bar corresponding levers, a movement-receiving member to each type-bar corresponding lever; (*f*) keys, corresponding to said movement-receiving members; (*g*) latches intermediate said keys and the movement-receiving members aforesaid; (*h*) a motor for actuating the frame aforesaid; (*i*) a controlling device for said motor, common to a plurality of the keys aforesaid and actuated by said keys through the latches aforesaid; and (*k*) a releasing-frame common to a plurality of the latches aforesaid; said releasing-frame being controlled by the keys corresponding to said latches and serving when any of said keys has been depressed, to free the latch corresponding to said key depressed, thereby to permit the movement-receiving member corresponding to said key to return toward its normal position in advance of the release of said key, and to permit also the motor-controlling device aforesaid to return toward its normal position in advance of the release of said key; said motor-controlling device operating by such its return movement to affect the motor device aforesaid in such manner that the type-bar-actuating frame aforesaid returns toward its normal position in advance of the release of the key depressed; whereby another key may be depressed to print while the key first depressed is still held down.

47. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a frame for giving movement to said type-bars, each as required; (*c*) levers corresponding to said type-bars, a lever for each type-bar that is operated by the frame aforesaid; (*d*) links connecting said type-bars with said levers; (*e*) movement-receiving members pivoted to said type-bar corresponding levers, a movement-receiving member to each type-bar corresponding lever; (*f*) keys, corresponding to said movement-receiving members; (*g*) latches intermediate said keys and the movement-receiving members aforesaid; (*h*) a motor for actuating the frame aforesaid; (*i*) a controlling device for said motor, common to a plurality of the keys aforesaid and actuated by said keys through the latches aforesaid; and (*k*) a releasing device common to a plurality of the latches aforesaid; said releasing device being operated by the motor aforesaid and serving when a key controlling one of the latches to which it is common is depressed, to free said latch, thereby to permit the movement-receiving member corresponding to said key to return toward its normal position in advance of the release of said key, and to permit also the motor-controlling device aforesaid to return toward its normal position in advance of the release of said key; said motor-controlling device operating by such its return movement to affect the motor device aforesaid in such manner that the type-bar-actuating frame aforesaid returns toward its normal position in advance of the release of the key depressed; whereby another key may be depressed to print while the key first depressed is still held down.

48. In combination in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys corresponding to said type-bars, a key for each type-bar; (*c*) latches corresponding to and operated by said keys; (*d*) means operated by said latches for actuating said type-bars, each as required; and (*e*) means controlled by the keys aforesaid acting when a key is depressed, and is at rest in its depressed position, to free the latch corresponding to said key in advance of the release of said key, whereby another key may be depressed to print while the key first depressed is still held down.

49. In combination in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys corresponding to said type-bars, a key for each type-bar; (*c*) latches corresponding to and operated by said keys; (*d*) means operated by said latches for actuating said type-bars, each as required; and (*e*) a device common to a plurality of said latches and acting when any key controlling one of said latches to which said device is common is depressed, upon the latch corresponding to such key depressed, to free said latch in advance of the release of said key, whereby another key may be depressed while the key first depressed is still held down.

50. In combination in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys corresponding to said type-bars, a key for each type-bar; (*c*) latches corresponding to and operated by said keys; (*d*) means operated by said latches for actuating said type-bars, each as required; and (*e*) a key-controlled releasing-frame common to a plurality of said latches, and acting when any key controlling one of the latches to which it is common is depressed, to free said latch in advance of the release of said key, whereby another key may be depressed, while the key first depressed is still held down.

51. In combination in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys corresponding to said type-bars, a key for each type-bar; (*c*) latches corresponding to and operated by said keys; (*d*) means operated by said latches for actuating said type-bars, each as required; and (*e*) a single releasing-frame common to all said latches and controlled by said keys, and acting when any of said keys is depressed, to free the latch operated by said key in advance of the release of said key; whereby another key may be depressed while the key first depressed is still held down.

52. In combination in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys corresponding to said type-bars, a key for each type-bar; (*c*) latches corresponding to said keys, a latch for each key; said latches being operated by the keys to which they respectively correspond; (*d*) motor mechanism for actuating the type-bars aforesaid, each as required; said motor mechanism being controlled by the keys aforesaid through the latches aforesaid; and (*e*) means controlled by the keys aforesaid acting when a key is depressed, to free the latch corresponding to said key in advance of the release of said key; whereby another key may be depressed to print while the key first depressed is still held down.

53. In combination in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys corresponding to said type-bars, a key for each type-bar; (*c*) latches corresponding to

said keys, a latch for each key; said latches being operated by the keys to which they respectively correspond; (*d*) motor mechanism for actuating the type-bars aforesaid, each as required; said motor mechanism being controlled by the keys aforesaid through the latches aforesaid; and (*e*) a device common to a plurality of the latches aforesaid, acting when any of the keys controlling said latches is depressed, to free the latch corresponding to said key, whereby another key may be depressed to print while the key first depressed is still held down.

54. In combination in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys corresponding to said type-bars, a key for each type-bar; (*c*) latches corresponding to said keys, a latch for each key; said latches being operated by the keys to which they respectively correspond; (*d*) motor mechanism for actuating the type-bars aforesaid, each as required; said motor mechanism being controlled by the keys aforesaid through the latches aforesaid; and (*e*) a key-controlled releasing-frame, common to a plurality of the latches aforesaid and acting when any of the keys controlling one of the latches to which said releasing-frame is common is depressed, to free the latch controlled by said key depressed, whereby another key may be depressed to print while the key first depressed is still held down.

55. In combination in a type-writing machine, (*a*) an alphabet of type-bars striking to a common printing-center; (*b*) keys corresponding to said type-bars, a key for each type-bar; (*c*) latches corresponding to said keys, a latch for each key; said latches being operated by the keys to which they respectively correspond; (*d*) motor mechanism for actuating the type-bars aforesaid, each as required; said motor mechanism being controlled by the keys aforesaid through the latches aforesaid; and (*e*) a key-controlled motor-operated device common to a plurality of the latches aforesaid and acting when any of the keys controlling one of the latches to which said device is common is depressed, to free the latch controlled by said key depressed, whereby another key may be depressed to print while the key first depressed is still held down.

56. In combination in a type-writing machine, (*a*) a type-bar; (*b*) paper-feeding mechanism, whereby the paper is advanced step by step as the printing progresses; (*c*) a single motor device, serving to actuate both the type-bar aforesaid and the paper-feeding mechanism aforesaid; (*d*) a key, controlling said motor device; (*e*) releasing means, acting when said key is depressed to release both the type-bar aforesaid and the paper-feeding mechanism aforesaid in advance of the release of the key depressed, all the parts being constructed, arranged and operated in such a manner that when a key is depressed to print the parts are released, so that another key can be depressed to print without waiting to release the key first depressed.

57. In combination in a type-writing machine, (*a*) a type-bar; (*b*) paper-feeding mechanism, whereby the paper is advanced step by step as the printing progresses; (*c*) a single motor device, serving to actuate both the type-bar aforesaid and the paper-feeding mechanism aforesaid; (*d*) a controlling device for said motor; (*e*) a key; (*f*) a latch intermediate said key and said motor-controlling device, wherethrough said key when depressed operates said motor-controlling device; (*g*) means acting when said key has been depressed to free said latch, thereby to permit the motor-controlling device aforesaid to return toward its normal position in advance of the release of said key; whereby another key may be depressed to print while the key first depressed is still held down.

58. In combination in a type-writing machine, (*a*) a type-bar; (*b*) paper-feeding mechanism, whereby the paper is advanced step by step as the printing progresses; (*c*) a single motor device, serving to actuate both the type-bar aforesaid and the paper-feeding mechanism aforesaid; (*d*) a controlling device for said motor; (*e*) a key; (*f*) a latch intermediate said key and said motor-controlling device, wherethrough said key when depressed operates said motor-controlling device; and (*g*) means actuated by the motor aforesaid serving, when the key aforesaid is depressed, to free the latch aforesaid, thereby to permit the motor-controlling device aforesaid to return toward its normal position in advance of the release of said key; whereby another key may be depressed to print while the key first depressed is still held down.

59. In combination in a type-writing machine, (*a*) a type-bar; (*b*) paper-feeding mechanism, whereby the paper is advanced step by step as the printing progresses; (*c*) a single electromagnet serving to actuate both the type-bar aforesaid and the paper-feeding mechanism aforesaid; (*d*) a key controlling said magnet; and (*e*) means acting when said key is depressed to release both the type-bar aforesaid and the paper-feeding mechanism aforesaid in advance of the release of said key, whereby another key may be depressed to print while the key first depressed is still held down.

60. In combination in a type-writing machine, (*a*) a type-bar; (*b*) paper-feeding mechanism, whereby the paper is advanced step by step as the printing progresses; (*c*) a single electromagnet serving to actuate both the type-bar aforesaid and the paper-feeding mechanism aforesaid; (*d*) a circuit-controlling device for said electromagnet; (*e*) a key; (*f*) a latch intermediate said key and said circuit-controlling device wherethrough said key, when depressed, operates said circuit-controlling device to bring the electromagnet aforesaid into action to operate the type-bar aforesaid and the paper-feeding mechanism aforesaid; and (*g*) means acting, when said key has been depressed, to free said latch, thereby to permit the circuit-controlling device aforesaid to return toward its normal position in advance of the release of said key, whereby another key may be depressed to print while the key first depressed is still held down.

61. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a paper-carriage; (*c*) spacing mechanism controlling the letter-space movements of said paper-carriage; (*d*) a motor device for actuating both the type-bars aforesaid and the spacing mechanism aforesaid; said type-bars being normally disconnected from said motor device; (*e*) keys; (*f*) means controlled by said keys for connecting the different type-bars aforesaid each as required, with the motor device aforesaid, and for bringing said motor device into action to operate the type-bar thus connected with it, and the spacing mechanism aforesaid; and (*g*) releasing means whereby when a key is depressed and the type-bar corresponding to said key actuated and the spacing mechanism aforesaid actuated by the motor device aforesaid, said type-bars and spacing mechanism are left free to return toward their normal positions in advance of the release of said key, all the parts being constructed, arranged and operating in such a manner that a succeeding key may be depressed to print while the key first depressed is still held down.

62. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a paper-carriage; (*c*) spacing mechanism controlling the letter-space movements of said paper-carriage; (*d*) a vibratory frame for giving movement to the type-bars aforesaid each as required; said type-bars being normally disconnected from said frame, and said frame being normally at rest; (*e*) a motor for actuating said vibratory frame; said motor serving also to actuate the spacing mechanism aforesaid; (*f*) keys; (*g*) latches operated by said keys; (*h*) means operated by said keys through said latches for connecting the type-bars aforesaid, each as required, with the frame aforesaid, and for bringing the motor aforesaid into action to operate the frame aforesaid and the spacing mechanism aforesaid; and (*i*) means acting when a key is depressed, upon the latch operated by said key, to free said latch; all the parts being constructed, arranged and operating in such a manner that a succeeding key may be depressed to print while the key first depressed is still held down.

63. In combination in a type-writing machine, (*a*) a plurality of type-bars striking to a common printing-center; (*b*) a paper-carriage; (*c*) spacing mechanism controlling the letter-space movements of said paper-carriage; (*d*) a vibratory frame for giving movement to the type-bars aforesaid, each as required; said type-bars being normally disconnected from said frame, and said frame being normally at rest; (*e*) a motor for actuating said vibratory frame; said motor serving also to actuate the spacing mechanism aforesaid; (*f*) keys; (*g*) latches operated by said keys; (*h*) means operated by said keys through said latches for connecting the type-bars aforesaid, each as required, with the frame aforesaid, and for bringing the motor aforesaid into action to operate the frame aforesaid and the spacing mechanism aforesaid; and (*i*) a releasing-frame common to a plurality of the latches aforesaid; said releasing-frame being operated by the motor aforesaid and acting when a key is depressed, upon the latch operated by said key, to free said latch; whereby another key may be depressed while the key first depressed is still held down.

64. In a type-writing machine or other similar instrument, the combination with type-bars having each three characters and a platen, of a shifting mechanism therefor, including (*a*) two members normally spring-pressed against a central stop; (*b*) a pin connected with the platen and lying between said spring-pressed members; and (*c*) stops serving to limit the movement of said spring-pressed members from their normal position.

65. In a type-writing machine or other similar instrument, and in combination, (*a*) a shifting platen; (*b*) a frame wherein said platen is mounted to rotate and to move longitudinally as the letters are printed; said frame being mounted also to move transversely to the length of the platen to shift the printing-points; (*d*) one or more shift-keys; (*e*) a member connected with said key or keys and acting upon the platen-carrying frame to shift the platen transversely to its length; (*f*) a pin in said member; (*g*) centralizing members, lying on each side of said pin, and normally spring-pressed against a fixed stop, thereby to hold the platen normally in its central position; and (*h*) stops to limit the movement of said centralizing members when moved from their normal positions.

66. In a type-writing machine or other similar instrument, the combination with the paper-carrying platen and a frame moving therewith, of (*a*) a member 130, furnished with a projection 136; (*b*) the stop 135; (*c*) the centralizing members 132, 132, normally bearing against said stop 135, and lying on opposite sides of the projection 136 aforesaid; and (*d*) the stops 137, 137, whereby the play of the members 132, 132 is limited.

67. In a type-writing machine or other similar instrument, the combination with the paper-carrying platen and a frame moving therewith, of (*a*) a member 130, furnished with a projection 136; (*b*) the stop 135; (*c*) the centralizing members 132, 132, normally bearing against said stop 135, and lying on opposite sides of the projection 136 aforesaid; (*d*) the stops 137, 137 whereby the play of the members 132, 132 is limited; and (*e*) two space-keys, acting to move the member 130 in opposite directions from its central position.

68. In a type-writing machine or other similar instrument, the combination with the paper-carrying platen and a frame moving therewith, of (*a*) a member 130, furnished with a projection 136; (*b*) the stop 135; (*c*) the centralizing members 132, 132, normally bearing against said stop 135, and lying on opposite sides of the projection 136 aforesaid; (*d*) the stops 137, 137 whereby the play of the members 132, 132 is limited; (*e*) two shift-keys, acting to move the member 130 in opposite directions from its normal position; and (*f*) a rock-shaft having an arm 129 connected to the member 130 and having other arms connected with the shift-keys aforesaid.

69. In combination, in a keyboard printing instrumentality, (*a*) an alphabet of keys; (*b*) latches corresponding to said keys, a latch for each key; (*c*) letter-controlling mechanism operated by said keys through said latches; and (*d*) releasing mechanism acting when a key is depressed and is at rest in its depressed position, upon the latch corresponding to said key, to free said latch, thereby to permit the parts operated by said key through said latch to return toward their normal positions in advance of the release of said key; whereby another key may be depressed to print while the key first depressed is still held down.

70. In combination, in a keyboard printing instrumentality, (*a*) an alphabet of keys; (*b*) latches corresponding to said keys, a latch for each key; (*c*) letter-controlling mechanism operated by said keys through said latches; and (*d*) a releasing device, common to a plurality of the latches aforesaid and acting when a key controlling any of said latches is depressed, to free the latch operated by the key depressed, thereby to permit the parts operated by said key through said latch to return toward their normal positions in advance of the release of said key; whereby another key may be depressed to print while the key first depressed is still held down.

71. In combination, in a keyboard printing instrumentality, (*a*) an alphabet of keys; (*b*) latches corresponding to said keys, a latch for each key; (*c*) letter-controlling mechanism operated by said keys through said latches; and (*d*) a key-controlled releasing-frame common to a plurality of the latches aforesaid and acting when a key controlling any of said latches is depressed, to free the latch operated by the key depressed, thereby to permit the parts operated by said key through said latch to return toward their normal positions in advance of the release of said key; whereby another key may be depressed while the key first depressed is still held down.

72. In combination, in a keyboard printing instrumentality, (*a*) an alphabet of keys; (*b*) latches corresponding to said keys, a latch for each key; (*c*) letter-controlling mechanism operated by said keys through said latches; and (*d*) motor mechanism controlled by the keys aforesaid, said motor mechanism being normally at rest, but acting when a key is depressed, to free the latch corresponding to said key, thereby to permit the parts operated by said key through said latch to return toward their normal positions in advance of the release of said key; whereby another key may be depressed to print while the key first depressed is still held down.

73. In combination, in a keyboard printing instrumentality, (A) an alphabet of letter-controlling elements; (B) keys equal in number to the letter-controlling elements before mentioned; each of said keys being connected to control the corresponding letter-controlling element; the keys being arranged in two banks and shaped piano fashion, and consisting of two groups, one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) four keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys arranged to be operated by the thumb; and (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger.

74. In combination in a keyboard printing instrumentality, (*a*) an alphabet of letter-controlling elements; (*b*) a motor device serving to actuate a plurality of said letter-controlling elements, each as required; (*c*) keys equal in number to said letter-controlling elements; said keys each acting when depressed to connect the corresponding letter-controlling element with the motor device aforesaid to receive movement therefrom; (*d*) a motor-controlling device, operated by a plurality of the keys aforesaid and acting when one of said keys is depressed to bring the motor device aforesaid into action for the impelling of the letter-controlling element connected with it by the key depressed; and (*e*) means acting to release said motor-controlling device, in advance of the release of the key.

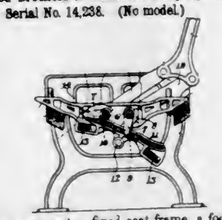
75. In combination in a keyboard printing instrumentality, (*a*) an alphabet of letter-controlling elements; (*b*) a motor device serving to actuate a plurality of said letter-controlling elements, each as required; (*c*) keys equal in number to said letter-controlling elements; said keys each acting when depressed to connect the corresponding letter-controlling element with the motor device aforesaid to receive movement therefrom; (*d*) a motor-controlling device, operated by a plurality of the keys aforesaid and acting when one of said keys is depressed to bring the motor device aforesaid into action for the impelling of the letter-controlling element connected with it by the key depressed; and (*e*) means actuated by the motor device aforesaid and acting to release the motor-controlling device aforesaid in advance of the release of the key controlling it.

76. In combination in a keyboard printing instrumentality, (*a*) an alphabet of letter-controlling elements, (*b*) an electromagnet, acting to impel a plurality of said letter-controlling elements; (*c*) keys equal in number to said letter-controlling elements, and each acting when depressed, to connect the corresponding letter-controlling element with the electromagnet aforesaid, to receive movement therefrom; (*d*) a circuit-closing device, operated by a plurality of the keys aforesaid and acting when one of said keys is depressed, to close the circuit of the electromagnet aforesaid; and (*e*) means acting to release said circuit-closing device in advance of the release of the key controlling it, whereby another key may be depressed while the key first depressed is still held down.

77. In combination in a keyboard printing instrumentality, (*a*) an alphabet of letter-controlling elements; (*b*) an electromagnet, acting to impel a plurality of said letter-controlling elements; (*c*) keys equal in number to said letter-controlling elements, and each acting when depressed, to connect the corresponding letter-controlling element with the electromagnet aforesaid, to receive movement therefrom; (*d*) a circuit-closing device, operated by a plurality of the keys aforesaid, and acting when one of said keys is depressed, to close the circuit of the electromagnet aforesaid; and (*e*) means operated by the electromagnet aforesaid; acting to release the circuit-closing device aforesaid in advance of the release of the key controlling it, whereby another key may be depressed while the key first depressed is still held down.

78. In combination in a keyboard printing instrumentality, (A) an alphabet of letter-controlling elements; (B) keys equal in number to the letter-controlling elements before mentioned, said keys being each connected to control the corresponding letter-controlling element; the keys of the instrument being arranged in two banks, and shaped piano fashion, and consisting of two groups, one for the right hand and the other for the left hand, arranged in juxtaposition, each group including (*a*) four keys in each of the two banks aforesaid, normally disposed to be conveniently operated each by the appropriate one of the four fingers, with the hand in its normal position; (*b*) a plurality of keys, arranged to be operated by the thumb; (*c*) a plurality of keys in a bank back of the thumb-keys aforesaid and disposed in such a position as to be conveniently operated by the thumb or forefinger; (C) a motor for actuating a plurality of the letter-controlling elements aforesaid; and (D) means controlled by the keys aforesaid and acting to connect the letter-controlling elements for which said motor serves with said motor, to receive movement therefrom, each as required.

657,480. CAR-SEAT. THOMAS R. CANN, Wakefield, Mass., assignor to the Heywood Brothers & Wakefield Company, same place. Filed Apr. 25, 1900. Serial No. 14,238. (No model.)



Claim.—1. In a car-seat, a fixed seat-frame, a foot-rest frame pivoted to the seat-frame below the seat and comprising cross-bars having slots, and foot-rests which are alternately elevated and depressed by movements of the frame, two rock-shafts journaled in bearings in the seat-frame and each having two arms engaged with the slots in the cross-bars of the foot-rest frame, a reversible seat-back, and parallel links jointed to the back and attached rigidly to the rock-shafts, the arms of one rock-shaft being so arranged relatively to the arms of the other rock-shaft that when the back is reversed the arms of one rock-shaft are depressed, while those of the other rock-shaft are raised, whereby a reversal of the position of the back causes a reversal of the position of the foot-rest frame, as set forth.

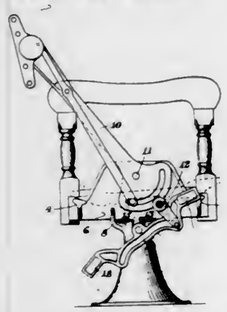
2. In a car-seat, a fixed seat-frame having seat-guiding inclines, a foot-rest frame pivoted to the seat-frame below the seat and comprising cross-bars having slots, and foot-rests which are alternately elevated and depressed by movements of the frame, two rock-shafts journaled in bearings in the seat-frame and each having two arms engaged with the slots in the cross-bars of the seat-frame, and two seat-inclining cams, a reversi-

ble seat-back, parallel links jointed to the back and rigidly attached to the rock-shafts, and seat-supporting slides engaged with the said cams and having inclines guided by the inclines on the seat-frame, the arms and cams of one rock-shaft being so arranged relatively to the arms and cams of the other rock-shaft that when the back is reversed the arms and cams of one shaft are depressed, while the arms and cams of the other shaft are raised, whereby a reversal of the position of the back causes a reversal of the position of the foot-rest frame and of the seat, as set forth.

3. In a car-seat, a fixed seat-frame having seat-guiding inclines, a reversible foot-rest frame below the seat and comprising parallel foot-rests and cross-bars connecting the ends of the rests, two rock-shafts journaled in the seat-frame and having rigidly-attached cams, seat-supporting slides having inclines guided by the inclines on the seat-frame and having lugs bearing on said cams, a reversible back, parallel links jointed to the back and rigidly attached to the rock-shafts, and connections between the rock-shafts and the foot-rest frame, whereby a reversal of the position of the back causes also a reversal of the position of the foot-rest frame, the cams on one rock-shaft being so arranged relatively to the cams on the other rock-shaft that a reversal of the position of the back causes also a reversal of the position of the seat.

4. In a car-seat, a fixed seat-frame, two rock-shafts journaled in the seat-frame and having rigidly-attached cams, seat-supporting slides having inclines guided by corresponding inclines on the seat-frame and having lugs bearing on said cams, a reversible back, and parallel links jointed to the back and rigidly attached to the rock-shafts, the cams on one rock-shaft being so arranged relatively to the cams on the other rock-shaft that a reversal of the position of the back raises the cams on one rock-shaft and depresses the cams on the other rock-shaft, thereby reversing the position of the seat.

657,481. CAR-SEAT. THOMAS B. CANN, Wakefield, Mass., assignor to the Heywood Brothers & Wakefield Company, same place. Filed Apr. 25, 1900. Serial No. 14,239. (No model.)

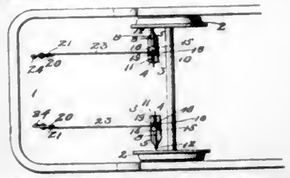


Claim.—1. In a car-seat, a fixed seat-frame, a reversible foot-rest frame pivoted to the seat-frame below the seat thereof and comprising parallel foot-rests, and foot-rest-connecting cross-bars having slots the end portions of which are curved downwardly, back-supporting levers pivoted to the seat-frame above the pivots of the foot-rest frame, a connecting-rod extending between said levers below their pivots and rigidly attached to the levers, and downwardly-projecting arms rigidly attached to said rod and having studs entering said slots, the movement of said arms caused by the reversal of the position of the back causing a reversal of the position of the foot-rest frame.

2. In a car-seat, a fixed seat-frame, a reversible foot-rest frame pivoted to the seat-frame below the seat thereof and comprising parallel foot-rests, and foot-rest-connecting cross-bars having slots the end portions of which are curved downwardly, back-supporting levers pivoted to the seat-frame above the pivots of the foot-rest frame, a connecting-rod extending between said levers below their pivots and rigidly attached to the levers, downwardly-projecting arms rigidly attached to said rod and having studs entering said slots, the movement of said arms caused by the reversal of the position of the back causing a reversal of the position of the foot-rest frame, and seat-supporting slides having inclines guided by corresponding inclines on the seat-frame, and shoulders or abutments located at opposite sides of and coacting with said rod, the said abutments being separated by spaces considerably longer than the diameter of the rod, whereby when the position of the back is reversed the rod first moves independently from one pair of abutments to the other, and then causes a reverse inclination of the seat.

657,482. LUBRICATOR. WILLIAM J. COX and SERVETUS C. GRAY, Nashville, Tenn. Filed May 26, 1900. Serial No. 18,170. (No model.)

Claim.—1. In a lubricator of the character described, the combination with the grease-box provided with a discharge-opening, of a movable discharge-tube connected to the grease-box and provided with an opening, and means for alining the two openings to permit of the discharge of the lubricant from the grease-box into and through the discharge-tube, substantially as set forth.



2. In a lubricator of the character described, the combination with the grease-box provided with a discharge-opening, of a discharge-tube provided with an opening, and means for simultaneously alining the two openings and moving the outer end of the discharge-tube into engagement with a moving body, substantially as set forth.

3. In a lubricator of the character described, the combination with the grease-box provided with a discharge-opening, of a discharge-tube connected to said grease-box and provided with an opening, means for normally holding the openings in unalined relation, and means for moving the discharge-tube to aline said openings and permit of the discharge of the lubricant through said openings, substantially as set forth.

4. In a lubricator of the character described, the combination with the grease-box provided with a discharge-opening, of a discharge-tube connected to said grease-box and provided with an opening, means for normally holding the openings in unalined relation, means for moving the discharge-tube to aline said openings and permit of the discharge of the lubricant through said openings, and a spring-actuated plunger within the grease-box for forcing the lubricant through said openings, substantially as set forth.

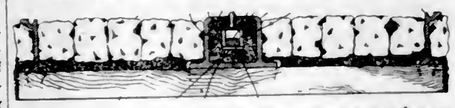
5. In a lubricator of the character described, the combination with the grease-box having an opening, of a movable discharge-tube provided with a normally-unalined opening, a cam provided with an enlargement arranged to contact with and move the discharge-tube to aline said openings, means for actuating the cam, and means for restoring the cam to its normal position, substantially as set forth.

657,483. FOUNTAIN-PEN. ALONZO T. CROSS, Providence, R. I. Filed Sept. 2, 1896. Serial No. 604,662. (No model.)



Claim.—In a fountain-pen, the combination of the ink-reservoir, and the removable point-section provided with an inner and outer tube, and having an annular space between the inner and outer tubes to receive the shank of the writing-pen and hold the same eccentrically, and the feed-bar connected with the ink-reservoir independently of the point-section, and provided with the guiding enlargement within the bore of the point-section, and with the deflected lower portion extending eccentrically to contact with the nibs of the writing-pen, substantially as described.

657,484. CLOSED-CONDUIT ELECTRIC RAILWAY. LÉON DION, Boston, Mass. Filed Mar. 6, 1899. Serial No. 707,857. (No model.)

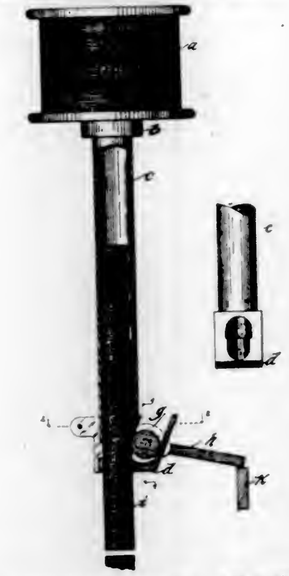


Claim.—In a closed-conduit electric-railway system, a surface conductor, a casing carried by the car and supporting at its lower end a collecting-shoe adapted to run in contact with said conductor, and a magnet inclosed in said casing.

657,485. ELECTRIC-ARC LAMP. THOMAS E. DROHAN, Chicago, Ill., assignor to the Siemens & Halske Electric Company of America, same place. Filed Aug. 26, 1899. Serial No. 728,600. (No model.)

Claim.—1. In an arc-lamp, the combination with a carbon-carrier, of a swinging arm carried by the carbon-carrier, a revoluble clutch member rotatably supported by and bodily movable with relation to the swinging arm adapted for engagement with the carbon, and electromagnetic means for releasing the said clutch member from engagement with the carbon, substantially as described.

2. In an arc-lamp, the combination with a movable carbon-carrier, of an arm mounted on the carbon-carrier, a revoluble clutch member rotatably supported by and bodily movable with relation to the arm and rotatable with relation thereto adapted for engagement with the carbon, and means for actuating the arm for releasing the said clutch member from engagement with the carbon, substantially as described.



3. In an electric-arc lamp, the combination with a carbon-carrier, of electromagnetic means for controlling the vertical position thereof, a swinging arm mounted on the carbon-carrier, a revoluble clutch member rotatably supported upon and bodily movable with relation to the arm toward and from the carbon and adapted for engagement with the carbon, and a stop for engaging the arm when the carbon-carrier is lowered upon undue elongation of the arc, whereby the arm is actuated to release the revoluble clutch member from engagement with the carbon to permit the same to feed, substantially as described.

4. In an electric-arc lamp, the combination with a carbon-carrier, of electromagnetic means for controlling the vertical position thereof, an arm mounted on the carbon-carrier, a revoluble clutch member rotatably supported upon the arm and bodily movable with relation thereto toward and away from the carbon and adapted for engagement with the carbon, and a stop for engaging the arm when the carbon-carrier is lowered upon undue elongation of the arc, whereby the arm is actuated to release the revoluble clutch member from engagement with the carbon to permit the same to feed, substantially as described.

5. In an electric-arc lamp, the combination with a carbon-carrier, of a carbon adapted to be moved with relation to the carrier, electromagnetic means for controlling the vertical position of the carrier, a swinging arm, a revoluble clutch member rotatably supported upon the swinging arm, the carbon-carrier being provided with an oblique slot for receiving the said clutch member the said slot also affording engagement between the carbon and roller, and a stop for engaging the unmounted end of the arm upon the descent of the carbon-carrier to cause the clutch member to be released from its engagement with the carbon to permit the carbon to feed upon an undue elongation of the arc, substantially as described.

6. In an arc-lamp, the combination with a hollow carbon-carrier c in which a carbon is adapted to travel vertically, of electromagnetic means for controlling the vertical position of the carbon-carrier, an arm *h* pivoted at one end to the carbon-carrier, a stop *k* for engaging the other end of the arm, and a clutch member in the form of a roller rotatably supported upon the arm, substantially as described.

7. In an arc-lamp, the combination with a hollow carbon-carrier c in which a carbon is adapted to travel vertically, of electromagnetic means for controlling the vertical position of the carbon-carrier, an arm *h* pivoted at one end to the carbon-carrier, a stop *k* for engaging the other end of the arm, and a clutch member in the form of a roller rotatably supported upon the arm, the said arm being provided with an elongated recess for receiving the shaft of the roller, substantially as described.

8. In an arc-lamp, the combination with a hollow carbon-carrier c in which a carbon is adapted to travel vertically, of electromagnetic means for controlling the vertical position of the carbon-carrier, an arm *h* pivoted at one end to the carbon-carrier, a stop *k* for engaging the other end of the arm, and a clutch member in the form of a roller engaged by the arm, an oblique slot being provided in the carbon-carrier for containing the roller to guide the same toward and away from the carbon, substantially as described.

9. In an arc-lamp, the combination with a hollow carbon-carrier c in which a carbon is adapted to travel vertically, of electromagnetic means for controlling the vertical position of the carbon-carrier, a pivoted arm *h* mounted upon the carrier, a stop *k* for engaging the arm, and a clutch member in the form of a roller rotatably supported upon the arm, substantially as described.

10. In an arc-lamp, the combination with a hollow carbon-carrier c in which a carbon is adapted to travel vertically, of electromagnetic means for controlling the vertical position of the carbon-carrier, a pivoted arm *h*, a stop *k* for engaging the arm, and a clutch member in the form of a roller, rotatably supported upon the arm, the said arm being provided with an elongated recess for receiving the shaft of the roller, substantially as described.

11. In an arc-lamp, the combination with a hollow carbon-carrier c in which a carbon is adapted to travel vertically, of electromagnetic means for controlling the vertical position of the carbon-carrier, a pivoted arm *h*, mounted upon the carbon-carrier, a stop *k* for engaging the arm, and a clutch member in the form of a roller engaged by the arm, an oblique slot being provided in the carbon-carrier for containing the roller to guide the same toward and away from the carbon, substantially as described.

12. In an electric-arc lamp, the combination with a feeding-solenoid *a* having a core *b*, of a hollow carbon-carrier c adapted to contain the upper carbon of the lamp and in which the upper carbon is adapted to travel, the said carbon-carrier being provided with an oblique slot *f*, a roller *g* adapted to travel obliquely from and toward the carbon in the said slot, an arm *h* pivoted to the carbon-carrier and engaging the roller, and a stop *k* for engaging an end of the arm, whereby the arm is caused to remove the roller from engagement with the carbon upon the descent of the carbon-carrier to permit the carbon to feed upon an undue elongation of the arc, substantially as described.

13. In an electric-arc lamp, the combination with a feeding-solenoid *a* having a core *b*, of a hollow carbon-carrier c adapted to contain the upper carbon of the lamp and in which the upper carbon is adapted to travel, the said carbon-carrier being provided with an oblique slot *f*, a roller *g* adapted to travel obliquely from and toward the carbon in the said slot, a swinging arm *h* pivotally secured to the carbon-carrier and engaging the roller, an elongated recess being provided in the arm to receive the shaft of the roller, in which recess the said shaft is adapted to travel transversely, and a stop *k* for engaging an end of the arm, whereby the arm is caused to remove the roller from engagement with the carbon upon the descent of the carbon-carrier to permit the carbon to feed upon an undue elongation of the arc, substantially as described.

14. In an arc-lamp, the combination with a carbon-carrier, of a swinging arm and a roller-clutch member of insulating material rotatably supported by and bodily movable with relation to the swinging arm adapted for direct engagement with the carbon, and electromagnetic means for releasing the said clutch member from engagement with the carbon, substantially as described.

15. In an arc-lamp, the combination with a carbon-carrier, of an arm and a roller-clutch member of insulating material rotatably supported by and bodily movable with relation to the arm adapted for direct engagement with the carbon, and electromagnetic means for actuating the arm for releasing the said clutch member from engagement with the carbon, substantially as described.

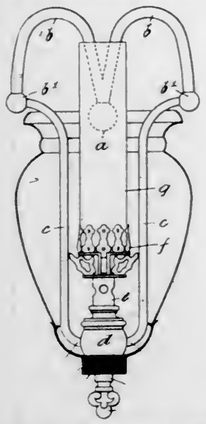
16. In an electric-arc lamp, the combination with a carbon-carrier, of electromagnetic means for controlling the vertical position thereof, a swinging arm, a roller-clutch member of insulating material rotatably supported upon the arm and adapted for direct engagement with the carbon, and a stop for engaging the arm when the carbon-carrier is lowered upon undue elongation of the arc, whereby the arm is actuated to release the revoluble clutch member from engagement with the carbon to permit the same to feed, substantially as described.

17. In an arc-lamp, the combination with a hollow carbon-carrier c in which a carbon is adapted to travel vertically, of electromagnetic means for controlling the vertical position of the carbon-carrier, an arm *h* pivoted at one end to the carbon-carrier, a stop *k* for engaging the other end of the arm, and a clutch member of insulating material in the form of a roller rotatably supported upon the arm, substantially as described.

657,486. SUSPENSION-LAMP. WALTHER FAHNDRICH, Hamburg, Germany, assignor to Clifford William Kemp, Birmingham, England. Filed Mar. 23, 1900. Serial No. 9,918. (No model.)

Claim.—1. In suspension-lamps, the combination with a double-

armed or branched bracket, of a hanger consisting of a pair of depending arms arranged to come between the globe and the chimney of the lamp, and terminating in a burner-fitting, to which a support for the said globe is detachably secured to admit of the globe being introduced into position from below, substantially as and for the purpose herein described and also as set forth in the accompanying drawings.



2. In suspension gas-lamps, the combination with a double-armed or branched bracket, of a hanger consisting of a pair of depending arms arranged to come inside the globe and between it and the chimney and provided with a gasway, and terminating in a stop-cock casing, to which a support for the said globe is detachably secured to admit of the globe being introduced into position from below, substantially as and for the purpose herein described and also as set forth in the accompanying drawings.

3. In suspension-lamps, the combination with a bracket or support, of a hanger coming between the globe and chimney of the lamp and terminating in a burner-fitting, to which a globe-support is detachably secured to admit of the said globe being introduced into position from below, substantially as herein described, and also as set forth in the accompanying drawings.

4. In a suspension-lamp, the combination with a double-armed or branched bracket, a hanger consisting of a pair of depending arms arranged to go between the globe and the chimney of the lamp, a burner-fitting supported by said hanger and provided with a screwed neck, a chimney arranged over the burner-fitting, a support having a detachable screw connection with the screwed neck of the burner-fitting and provided with a seat for the globe, and a globe resting in said seat, all so arranged that the globe may be introduced into position from below, substantially as described.

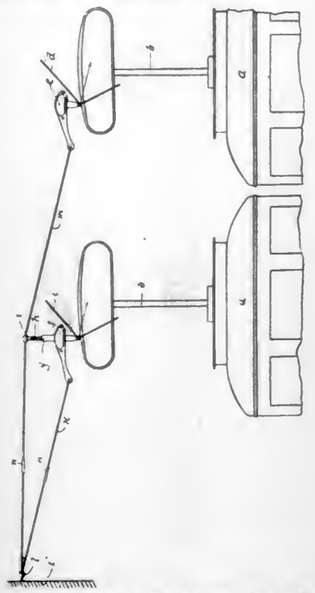
657,487. ELECTRIC-RAILWAY SYSTEM. EMMERICH FRISCHMUTH, Berlin, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Feb. 12, 1900. Serial No. 4,920. (No model.)

Claim.—1. In a double-track electric-railway system, the combination with the two conductors for the two tracks, of span-wires extending to said conductors, the span-wire for one conductor crossing the other conductor, and means for elevating said crossing span-wire an extent to prevent its interfering with the current-collecting device, which travels along the conductor which it crosses.

2. In a double-track electric-railway system, the combination with the two conductors for the two tracks, of span-wires extending to said conductors, the span-wire for one conductor crossing the other conductor, supports for the conductors serving as media of attachment of the span-wires to the conductors, and means on the support of the crossed conductor for elevating the span-wire of the other conductor an extent to prevent its interfering with the current-collecting device traveling along such crossed conductor.

3. In an electric-railway system, the combination with the trolley-conductors thereof, of a trolley-conductor support supporting one of the said trolley-conductors, a second trolley-conductor support by which the second aforesaid trolley-conductor is supported, and a vertical extension provided upon the second trolley-conductor support whereby the span-wire attached to the first aforesaid trolley-conductor support is passed over the second trolley-conductor support, substantially as described.

4. In an electric-railway system, the combination with the trolley-conductors thereof, of a trolley-conductor support supporting one of the said trolley-conductors, a second trolley-conductor support by which the second aforesaid trolley-conductor is supported, and a vertical extension provided upon the second trolley-conductor support whereby the span-wire attached to the first aforesaid trolley-conductor support is passed over the second trolley-conductor support, the said span-wire and the span-wire attached to the second trolley-conductor support being attached to the same supporting means, substantially as described.



5. In an electric-railway system, the combination with the trolley-conductors thereof, of a trolley-conductor support supporting one of the said trolley-conductors, a second trolley-conductor support by which the second aforesaid trolley-conductor is supported, a vertical extension, and an adjustable post mounted in said vertical extension whereby the span-wire attached to the first aforesaid trolley-conductor support is passed over the second trolley-conductor support, substantially as described.

6. In an electric-railway system, the combination with the trolley-conductors thereof, of a trolley-conductor support supporting one of the said trolley-conductors, a second trolley-conductor support by which the second aforesaid trolley-conductor is supported, a vertical extension, and an adjustable post mounted in said vertical extension whereby the span-wire attached to the first aforesaid trolley-conductor support is passed over the second trolley-conductor support, the said span-wire and the span-wire attached to the second trolley-conductor support being attached to the same supporting means, substantially as described.

7. In an electric-railway system, the combination with the trolley-conductors thereof, of a trolley-conductor support supporting one of the said trolley-conductors, a second trolley-conductor support by which the second aforesaid trolley-conductor is supported, a vertical extension, an adjustable post provided in the said extension, and a recessed head which is adapted to receive the span-wire attached to the first aforesaid trolley-conductor support, substantially as described.

8. In an electric-railway system, the combination with the trolley-conductors thereof, of a trolley-conductor support supporting one of the said trolley-conductors, a second trolley-conductor support by which the second aforesaid trolley-conductor is supported, a vertical extension, an adjustable post provided in said extension, and a recessed head which is adapted to receive the span-wire attached to the first aforesaid trolley-conductor support, the said span-wire and the span-wire attached to the second trolley-conductor support being attached to the same supporting means, substantially as described.

9. In an electric-railway system, the combination with the trolley-conductors thereof, of a trolley-conductor support, supporting one of the said trolley-conductors, a second trolley-conductor support by which the second aforesaid trolley-conductor is supported, a vertical extension, a post having screw-threaded engagement with the said extension and being vertically adjustable thereof, and a recessed head which is adapted to receive the span-wire attached to the first aforesaid trolley-conductor support, substantially as described.

10. In an electric-railway system, the combination with the trolley-conductors thereof, of a trolley-conductor support supporting one of the said trolley-conductors, a second trolley-conductor support by which the second aforesaid trolley-conductor is supported, a vertical extension, a post having screw-threaded engagement with said extension and being vertically adjustable thereof, and a recessed head which is adapted to receive the span-wire attached to the first aforesaid trolley-conductor support, the said span-wire and the span-wire attached to the second trolley-conductor support being attached to the same supporting means, substantially as described.

11. In an electric-railway system, the combination with the trolley-conductors thereof, of a trolley-conductor support supporting one of the said trolley-conductors, a second trolley-conductor support by which the second aforesaid trolley-conductor is supported, a vertical extension, a post having screw-threaded engagement with the said extension and being vertically adjustable thereof, a recessed head which is adapted to receive the span-wire attached to the first aforesaid trolley-conductor support, and insulators provided in the said span-wire, substantially as described.

12. In an electric-railway system, the combination with the trolley-conductors thereof, of a trolley-conductor support supporting one of the said trolley-conductors, a second trolley-conductor support by which the second aforesaid trolley-conductor is supported, a vertical extension, a post having screw-threaded engagement with said extension and being vertically adjustable thereof, a recessed head which is adapted to receive the span-wire attached to the first aforesaid trolley-conductor support, the said span-wire and the span-wire attached to the second trolley-conductor support being attached to the same supporting means, and insulators provided in the said span-wires, substantially as described.

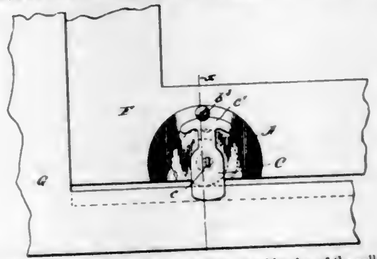
13. In an electric-trolley-conductor support, the combination with a post portion thereof, of a vertical extension *g* provided thereon, a vertically-adjustable post *h* in engagement with the said vertical extension, and a head *i* provided on said adjustable post, substantially as described.

14. In an electric-railway system, the combination with curved portions of trolley-conductors thereof, of a trolley-conductor support supporting one of the said trolley-conductors, a second trolley-conductor support by which the second aforesaid trolley-conductor is supported, and means whereby the span-wire attached to the first aforesaid trolley-conductor support is passed over the second trolley-conductor support, substantially as described.

15. In an electric-railway system, the combination with curved portions of trolley-conductors thereof, of a trolley-conductor support supporting one of the said trolley-conductors, a second trolley-conductor support by which the second aforesaid trolley-conductor is supported, and means whereby the span-wire attached to the first aforesaid trolley-conductor support is passed over the second trolley-conductor support, the said span-wire and the span-wire attached to the second trolley-conductor support being attached to the same supporting means, substantially as described

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657,488. ADJUSTABLE ROLLER. EDWARD J. GULICK, Jamestown, N. Y., assignor of one-half to Adam F. Weber, same place. Filed Apr. 27, 1900. Serial No. 14,639. (No model.)



Claim.—1. In an adjustable roller, the combination of the roller, the eccentric-pin, and the adjusting-lever and guide substantially as shown and described.

2. In an adjustable roller, the combination with the main and rear plates thereof, of the eccentric-pin journaled therein, the roller having a smooth periphery or tread and journaled on said eccentric-pin, and the adjusting-lever and guide secured to said eccentric-pin, substantially as shown and described.

657,489. ACETYLENE-GAS LAMP. EMIL HOFFMANN, Chicago, Ill. Filed Feb. 26, 1897. Serial No. 625,123. (No model.)

Claim.—1. In an acetylene-lamp a calcic-carbid chamber and a valve-controlled superimposed water-chamber, of an antechamber having a perforate bottom through which communication can be had to the water-chamber to allow access of gas to said water-chamber, a supply-chamber provided with an opening whereby communication can be had with said antechamber, a valve-controlled burner leading from said supply-chamber, and a valve controlling the communicating opening between said antechamber and supply-chamber, as and for the purpose set forth.



2. In an acetylene-lamp, the combination with a gas-generating chamber, and a superimposed water-chamber communicating therewith, of a supply-chamber arranged above said water-chamber and an antechamber interposed between said supply and water chambers having valved connections with said supply-chamber and having also connections with the water and generating chambers, substantially as set forth.

3. In an acetylene-lamp, a gas-generating chamber, in combination with a superimposed water-chamber, which is open to the gas-pressure therefrom, and which has an opening in its bottom communicating with said generating-chamber, a valve controlling said opening, a compressible drum suspended in said water-chamber to which said valve is connected, said drum being exposed to the gas-pressure from all sides, a supply-chamber above said water-chamber connected by suitable passages with said generating-chamber, and a valve controlling the ingress of gas from the generating-chamber into the supply-chamber.

4. In an acetylene-lamp, a gas-generating chamber, in combination with a superimposed water-chamber to which said gas-generating chamber is removably secured, which is open to the gas-pressure therefrom and which has an opening in its bottom communicating with said generating-chamber, a valve controlling said opening, a compressible drum suspended in said water-chamber to which said valve is connected, an antechamber immediately above said water-chamber connected by suitable passages with said generating-chamber, a supply-chamber above said antechamber, and a valve controlling the ingress of gas from the antechamber into the supply-chamber.

5. In an acetylene-lamp, a calcic-carbid receptacle provided with a short tubular neck and with suitable perforations for the escape of gas, and a lower section of the shell of the lamp within which said receptacle is placed in such manner as to leave a gas-circulating chamber between the two, in combination with a superimposed water-chamber to which said lower section is removably secured, which has an opening in its bottom provided with downwardly-projecting annular flanges to which said calcic-carbid receptacle is connected by means of its said neck, and which is open to the gas-pressure from said lower section, a valve controlling said opening, a compressible drum suspended in said water-chamber, to which said valve is connected by suitable passages with said lower section, and a valve controlling the ingress of gas from the generating-chamber.

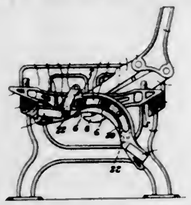
6. In an acetylene-lamp, a calcic-carbid receptacle provided with a short tubular neck and with suitable perforations for the escape of gas, and a lower section of the shell of the lamp within which said receptacle is placed in such manner as to leave a gas-circulating chamber between the two, in combination with a superimposed water-chamber to which said lower section is removably secured, which has an opening in its bottom provided with downwardly-projecting annular flanges to which said calcic-carbid receptacle is connected by means of its said neck, and which is open to the gas-pressure from said section, a valve controlling said opening, a compressible drum suspended in said water-chamber to which said valve is connected, an antechamber connected by suitable passages with said circulating-chamber in the lower shell, a supply-chamber above said antechamber, and a valve controlling the ingress of gas from the antechamber into the supply-chamber.

7. In an acetylene-lamp, a calcic-carbid receptacle provided with a short tubular neck and with suitable perforations for the escape of gas, and a lower section of the shell of the lamp within which said receptacle is placed in such manner as to leave a gas-circulating chamber between the two, in combination with a superimposed water-chamber to which said lower section is removably secured and which has an opening in its bottom provided with downwardly-projecting annular flanges to which said

calcic-carbid receptacle is connected by means of its said neck and which is open to the gas-pressure from said lower section, a valve controlling said opening and a burner, as and for the purpose set forth.

8. In an acetylene-lamp, the combination with a gas-generating chamber and a superimposed water-chamber having an opening in its bottom communicating with the said generating-chamber, of a pressure-controlled device located in the water-chamber, a valve-stem connected thereto and extending into proximity to said opening, and a valve-head adapted to close said opening connected to said stem and adjustable thereon, whereby the pressure required to operate said valve may be regulated.

657,490. **CAR-SEAT.** DONALD M. HOUSTON, Wakefield, Mass., assignor to the Heywood Brothers & Wakefield Company, same place. Filed Apr. 25, 1900. Serial No. 14,237. (No model.)



Claim.—1. In a car-seat, a seat-frame, two rock-shafts journaled in fixed bearings in the seat-frame and each having two rigidly-attached arms, a foot-rest frame comprising parallel foot-rests and segmental rest-connecting cross-bars having segmental slots through which the rock-shafts pass, the foot-rest frame being movable on and guided by the two rock-shafts, links connecting the arms of the rock-shafts with the foot-rest frame, a reversible back, and parallel links jointed to the back and rigidly attached to the rock-shafts, the arms of one rock-shaft being so arranged relatively to the arms of the other rock-shaft that when the position of the back is reversed the arms of one rock-shaft are depressed, while those of the other rock-shaft are raised, whereby a reversal of the position of the back causes a reversal of the position of the foot-rest frame, as set forth.

2. In a car-seat, a seat-frame, two rock-shafts journaled in fixed bearings in the seat-frame, a foot-rest frame comprising parallel foot-rests and segmental rest-connecting cross-bars having segmental slots through which the rock-shafts pass, the foot-rest frame being movable on and guided by the rock-shafts, a reversible seat-back, parallel links jointed to the back and rigidly attached to the rock-shafts, and connections between the rock-shafts and the foot-rest frame, whereby a reversal of the position of the back causes also a reversal of the position of the seat-frame, said connections being above the under sides of the segmental cross-bars, and the said cross-bars being arranged with their concave sides downward, whereby baggage-receiving spaces are formed between the ends of the seat-frame and the floor of the car.

657,491. **SAFETY-SPIKE FOR SUSPENDING UNDERGROUND SAFETY-LAMPS.** DAVID JAMES, Henllys, and ALFRED PEARSON, Upper Cwmbran, England. Filed Oct. 7, 1899. Serial No. 732,900. (No model.)



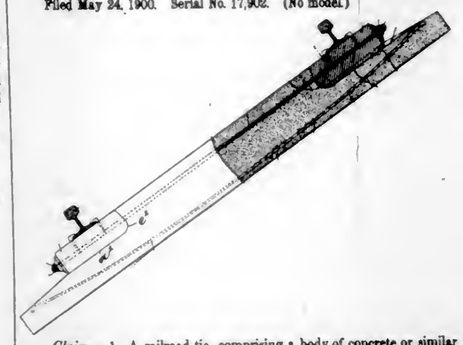
Claim.—1. A suspending appliance for miners' safety-lamps and other articles consisting in the combination of a central spike *c* with pointed end *b* and cup-shaped head *d*, shield *a* capable of being moved thereon and of being locked thereto in two positions, and holes *f*, *g*, *i*, slot *h* and pin *j* operating in conjunction with said holes and slot to lock the shield *a* in two positions, substantially as described.

2. In a device of the character described, a spike, a cup-shaped head thereon, a shield slidable on the spike, and a pin in the spike adapted to slide in a slot of the shield and lock the shield in two positions, substantially as described.

3. In a device of the character described, a spike, a shield slidable thereon, a head on the spike, and a pin projecting from the head and adapted to engage the shield, substantially as described.

4. In a device of the character described, a spike, having a suitable head, a pin projecting from the head and passing through the spike, and a shield slidable on the spike and provided with a slot on one side to slide on the pin and perforations on the other side to be engaged by the pin, substantially as described.

657,492. **RAILROAD-TIE.** EBENEZER A. W. JEFFERIES, Detroit, Mich., assignor to the American Construction Company, same place. Filed May 24, 1900. Serial No. 17,902. (No model.)



Claim.—1. A railroad-tie, comprising a body of concrete or similar material, a strip or strips of metal embedded therein, blocks arranged at both ends of said body at or near the upper face thereof, and a reinforcing bar or bars traversing said body and block, substantially as and for the purposes described.

2. A railroad-tie, comprising a body of concrete or similar material, a strip of metal embedded in the base of said body, a wooden block arranged at either end of said body at or near its upper face, and reinforcing bars or rods traversing the body and the blocks, said bars or rods adapted to clamp said blocks to the body of the tie, substantially as and for the purposes described.

3. A railroad-tie, comprising a body of concrete or similar material having either end recessed, in combination with a wooden block adapted to fit into the recess at either end of the concrete body, a dovetailed projection formed on the base of said wooden block and adapted to slide in a complemental groove formed in the base of said recess, and reinforcing bars or rods adapted to traverse the body and the blocks and to clamp said blocks to said body, substantially as and for the purposes described.

657,493. **TUNING-STEM FOR STRINGED INSTRUMENTS.** WILLIAM A. LANG, New York, N. Y., assignor to Arthur Lang, same place. Filed July 8, 1898. Renewed June 30, 1900. Serial No. 22,202. (No model.)



Claim.—In an attachment of the character described, the combination with a suitable base-plate, having bearing-lugs integral therewith and provided with forwardly-opening slots and a worm-turning key detachably journaled in said slots, of a stem provided with a reduced end portion, said end being provided with a square tenon, and a dish-shaped gear-wheel having a square opening therein to fit upon said square tenon, the convex portion of said dish-shaped gear-wheel being adjacent to the base-plate, and held thereto by upsetting, the perimeter of the projecting portion of said gear-wheel being provided with lugs or teeth adapted to mesh with the worm-turning key, as and for the purpose set forth.

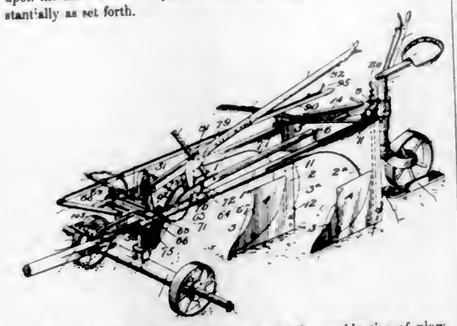
657,494. **PLOW.** JOHN J. MARICK, Chicago, Ill. Filed July 26, 1900. Serial No. 24,902. (No model.)

Claim.—1. In a plow, the combination of a draft-bar having a segmental slot and a transverse opening, and a draft-plate carrying a pivoted L-shaped key to engage said slot and opening, substantially as set forth.

2. In a plow, the combination of a draft-bar having a vertical flange and a laterally-projecting bracket at one side, a draft-plate, and a rod passing diagonally through said flange and connecting said bracket and outer rear edge of the draft-plate to equalize the pulling strain on both sides of the line of draft, substantially as set forth.

3. In a plow of the character set forth, the combination of plow-beams, a king-bolt carrying wheels, a sleeve in which the king-bolt is mounted, a cross-beam connecting the front ends of the plow-beams, a guide upon the sleeve in which said cross-beam is mounted to slide, and means for sliding the cross-beam, substantially as set forth.

4. In a plow of the character described, the combination of plow-beams, a king-bolt carrying wheels, a cross-beam connecting the forward ends of the side beams, a sleeve in which the king-bolt is mounted, a guide upon the sleeve and an operating-lever for sliding the cross-beam, substantially as set forth.



5. In a plow of the character set forth, the combination of plow-beams, a head-tube, a king-bolt mounted in the head-tube, a draft-bar connected to said bolt, draft connections between said bar and plow-beams, a cross-beam connecting the side beams, a guide in which the cross-beam is slidably mounted and carried by the head-tube, and a lever for operating the cross-beam, substantially as set forth.

6. In a plow of the character described, the combination of plow-beams, a king-bolt carrying wheels, a head-tube carrying the king-bolt, a guide mounted on the head-tube, a cross-beam connecting the side beams and slidable in said guide, means for sliding the cross-beam, and means connected to the head-tube for raising and lowering the side beams, substantially as set forth.

7. In a plow of the character set forth, the combination of a king-bolt, a sleeve or tubular bearing carried by the king-bolt, and axles journaled in said sleeve and carrying removable reversible wheels, substantially as set forth.

8. In a plow of the character set forth, the combination of a king-bolt, a sleeve or tubular bearing carried by the king-bolt, shafts or axles journaled in said sleeve and having grooved ends, hubs mounted on the axles and carrying reversible wheels, and keys engaging the grooved ends of the axles, substantially as set forth.

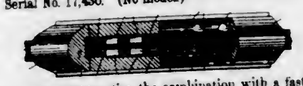
9. In a plow of the character set forth, the combination of a sleeve or tubular bearing, axles journaled therein and having grooved ends, hubs mounted on the axles and carrying reversible wheels, a king-bolt fitted in a socket in the sleeve and having a recessed end, a chock-block inserted in said recess, keys on opposite sides of said block and engaging the grooved ends of the axles, a locking-rod, and a head-tube having a keyhole-slot to receive said bolt and rod, substantially as set forth.

10. In a plow of the character set forth, the combination of plow-beams provided with standards having sockets, a rear cross-beam having legs fitting in said sockets, and bolts passed through the standards and legs and securing said cross-beam to hold the plows in place, substantially as set forth.

11. In a plow of the character set forth, the combination of plow-beams provided with standards having sockets, a rear cross-beam having legs fitting in said sockets, a bearing-plate engaging one of said legs and provided with a bearing, a caster-wheel journaled in said bearing, and means for raising and lowering the plows on said caster-wheel, substantially as set forth.

12. In a gang-plow, the combination of plow-beams provided with standards having sockets, a rear cross-beam having legs to fit within said sockets, bolts passed through the standards and legs and securing said cross-beam, a bearing-plate connected to the cross-beam, a caster-wheel journaled in said plate, a lever connected to the bearing-plate, a rack carried by the lever, and a pawl to engage said rack, substantially as set forth.

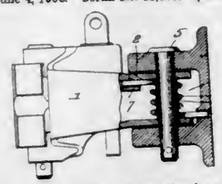
657,495. **TIRE.** WILLIAM H. MITCHELL, Boston, Mass., assignor of one-half to Dudley H. Bradlee, Jr., Medford, Mass. Filed May 21 1900. Serial No. 17,430. (No model.)



Claim.—1. In a rubber tire, the combination with a fastening-strip provided near its end with one or more lateral recesses at opposite sides; of a fastening device having a body portion to underlie the said strip; vertical projections to coöperate with said lateral recesses; and vertical portions extending along the sides of the fastening-strip where the ends thereof meet, substantially as described.

2. In a rubber tire, the combination with a fastening-strip provided near its ends with one or more lateral recesses at opposite sides; of a fastening device having a comparatively-thin body portion adapted to underlie the said fastening-strip, said body portion being extended laterally at the middle of said device and bent upward to lie along the sides of the fastening-strip where the ends thereof meet; and projections adapted to be bent upward to enter the recesses in the fastening-strip, said projections being mainly thicker than the body portion and having thinner extended portions to be bent over the surface of the fastening-strip, substantially as described.

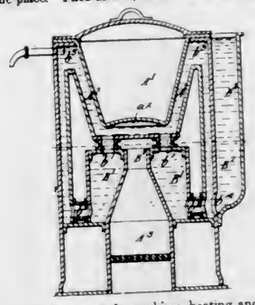
657,496. **TENDER-COUPLING.** ERIC W. PALMQUIST, St. Louis, Mo., assignor to the Shickle, Harrison & Howard Iron Company, same place. Filed June 4, 1900. Serial No. 18,925. (No model.)



Claim.—1. In a tender-coupler, the combination of a head provided with a short hollow shank, a chambered bracket within which said shank fits, a pivot-pin connecting the shank and bracket together, and a spring coiled about the pivot-pin within the hollow shank one end of which bears against the shank and the other against the bracket, substantially as and for the purpose set forth.

2. In a tender-coupler, the combination of a head provided with a short hollow shank, a chambered bracket within which said shank fits, a pivot-pin connecting the shank and bracket together, and a spring coiled about the pivot-pin within the hollow shank, one end of which bears against a lug on the shank and the other end of which fits in a hole in the bracket, substantially as and for the purpose set forth.

657,497. **APPARATUS FOR COOKING, HEATING, &c.** EDWARD W. PARISH, London, England, assignor of one-half to Jeffery William Eady, same place. Filed Mar. 6, 1900. Serial No. 7,526. (No model.)

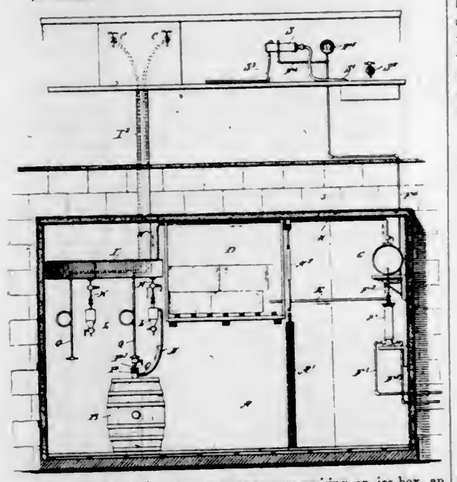


Claim.—1. In apparatus for cooking, heating and similar purposes and for simultaneously supplying hot liquid, the combination with the cooking or heating chamber, of an annular chamber surrounding the liquid-space of said latter chamber and communicating therewith at its upper part, of an outlet-pipe for hot water from the upper part of said liquid-space, of an intermediate liquid-chamber located beneath the said liquid-space and communicating therewith, of lateral conduits connecting the said annular chamber and the said intermediate chamber near their lower ends, and of an external compartment which is open at the top and communicates with the said annular chamber through an opening near the bottom thereof, substantially as and for the purpose described.

2. In apparatus for cooking, heating and similar purposes and for simultaneously supplying hot liquid, the combination with the cooking or heating chamber, of an annular chamber surrounding the liquid-space of said latter chamber and communicating therewith at its upper part, of an outlet-pipe for hot water from the upper part of said liquid-space, of an intermediate liquid-chamber having a central flue therein and located beneath the said liquid-space and communicating therewith, of lateral conduits connecting the said annular chamber and the said intermediate chamber near their lower ends, of an external compartment which is open at the top and communicates with the said annular chamber through an open-

ing near the bottom thereof and of a furnace located beneath said central flue in the intermediate liquid-chamber, all substantially as and for the purpose described.

657,498. HYGIENIC BEER-PRESSURE APPARATUS. CHARLES PETERS, New York, N. Y., assignor to Charles Peters, Henry Moeller, and Ferdinand Moeller, same place. Filed Nov. 15, 1899. Serial No. 737,117. (No model.)



Claim.—1. A beer-pressure apparatus, comprising an ice-box, an air-pump having its inlet connected with the ice-box, an air-reservoir connected with the outlet of the pump, a supplementary cooling device, a pipe leading from the air-reservoir to the supplementary cooling device, an automatic valve for said pipe within the reservoir, and a pipe leading from the supplementary cooling device to the beer-keg, substantially as described.

2. A beer-pressure apparatus, comprising an ice-box, an air-pump having its inlet connected with the ice-box, an air-reservoir connected with the outlet of the pump, a supplementary cooling device, a pipe leading from the reservoir to the supplementary cooling device, a purifying device connected with the supplementary cooling device, and a pipe leading from the purifying device and adapted to be connected with a beer-keg, substantially as described.

3. A beer-pressure apparatus, comprising a chamber for containing barrels or kegs, an ice-box in the chamber, an air-pump having its inlet connected with the ice-box, an air-reservoir connected with the outlet of the pump, a supplementary cooling device, a pipe leading from the air-reservoir to the supplementary cooling device, an automatic valve for said pipe within the reservoir, purifying devices connected with the supplementary cooling device, and a pipe leading from each purifying device to a barrel or keg, substantially as described.

4. A beer-pressure apparatus, comprising a chamber formed into compartments having a door between them, a pump arranged in one of the compartments of the chamber, an air-reservoir arranged in the same compartment as the pump and connected with the pump, an ice-box arranged in the other compartment of the chamber and with which box the pump is connected, a cooling device in the compartment with the ice-box, a pipe leading from the air-reservoir to the cooling device and a purifying device connected with the cooling device and with the keg or barrel into which the air is to be forced and arranged in the compartment containing the ice-box and cooling device, substantially as described.

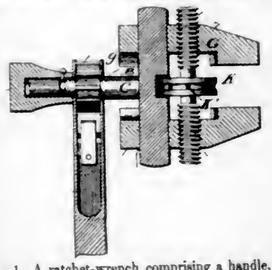
5. A beer-pressure apparatus, comprising an ice-box, a pump connected with the ice-box, an air-reservoir connected with the outlet of the pump, an auxiliary cooling device comprising a box and pipes arranged in the box and having reducing-cores, a pipe leading from the air-reservoir to the auxiliary cooling device, said pipe being provided with an automatic valve in the reservoir, a purifier connected with the pipes of the auxiliary cooling device, and a valved pipe leading from the purifier and adapted to be connected with the bung of a barrel or keg, substantially as described.

6. A beer-pressure apparatus, provided with a compressed-air reservoir having an outlet-pipe extending into the same, and a float having guided movement in the reservoir and provided with a tubular stem into which the outlet-pipe of the reservoir loosely extends, substantially as and for the purpose set forth.

7. A beer-pressure apparatus, provided with a compressed-air reservoir having an outlet-pipe, a float-valve in said reservoir for closing said outlet-pipe when water accumulates in the reservoir, said valve comprising a float, a tube for loosely engaging the depending end of the air-outlet pipe, and a disk-valve in said tube, for engaging and closing the end of the air-outlet pipe, substantially as shown and described.

8. A beer apparatus comprising an ice-box, an air-pump having its inlet connected with the ice-box, an air-reservoir connected with the outlet of the pump, a supplementary cooling device, a pipe leading from the air-reservoir to the supplementary cooling device, said pipe being provided with an automatic valve in the reservoir, a purifying device connected with the supplementary cooling device, and a pipe leading from the purifying device and carrying a valve at its end for connection with a bung of a barrel or keg, said valve serving to prevent foam and foreign matter from entering the purifier, substantially as described.

657,499. RATCHET-WRENCH. ALFRED PETERSON, Duluth, Minn. Filed May 24, 1900. Serial No. 17,872. (No model.)



Claim.—1. A ratchet-wrench, comprising a handle, a shaft having a T-shaped end journaled in said handle at right angles thereto, a ratchet-wheel turning with the shaft, jaws laterally adjustable on said T-shaped end of the shaft, a swiveled handle mounted on the opposite end of the shaft, pivoted dogs designed to engage said ratchet-wheel at locations diametrically opposite each other, each dog having two angled faces near their pivotal points, and a spring adapted to engage one or the other of said angled faces, accordingly as it is desired to hold the dog into or out of engagement with the ratchet-wheel, as set forth.

2. In a ratchet-wrench, a handle, a shaft journaled in apertures in the recessed end of the handle, ratchet-wheel mounted on and rotating with the shaft in said recessed end of the handle, the jaws mounted on the T-shaped end of the shaft, a right and left screw mounted in right and left threaded apertures in the jaws, a milled wheel rotating with said screw, and guided in a recess in the T-shaped end of the shaft, in alinement with the shaft, the swiveled handle and the spring-actuated dogs, and springs for holding the free ends of the latter either into or out of engagement with the teeth of the ratchet-wheel, as shown and described.

657,500. MANUFACTURE OF ENDLESS BANDS FOR RUBBER STAMPS. GEORGE A. PICKUP, Baltimore, Md., assignor to William A. Force, New York, N. Y. Filed Nov. 20, 1899. Serial No. 737,615. (No model.)



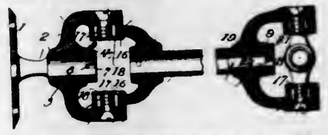
Claim.—The process of making endless rubber printing-bands, which consists in folding a sheet or strip of unvulcanized rubber upon a separating-sheet and lapping the edges, then placing the folded rubber sheet with its separating medium between molds having in their faces printing characters in intaglio, then vulcanizing the folded sheet with the interposed separating medium, and then cutting the sheet into strips between the raised characters thereon, substantially as specified.

657,501. CAR-SEAT CUSHION. WALTER E. RICHARDSON, Reading, Mass., assignor to the Heywood Brothers & Wakefield Company, Wakefield, Mass. Filed Apr. 25, 1900. Serial No. 14,269. (No model.)



Claim.—In a car or other seat, an upholstery-supporting member comprising a series of springs supported by the seat-frame, a relatively-narrow flexible sheet-metal strip extending across the series of springs and perforated to receive spring-attaching rivets, a series of independent sheet-metal plates having offset loops whereby the plates are strung on the strip, each plate having a rivet-receiving perforation which coincides with one of the perforations of the strip, and rivets passed through the perforations in the plates and strip and secured to the upper ends of the springs, the said plates being of greater width than the strip, and constituting a series of yielding bearings for the upholstery top of the seat, while the strip constitutes a flexible connection between the plates, and a reinforcement thereof.

657,502. SUPPORT FOR ELECTRIC LAMPS. WILLIS A. SWAN, Providence, R. I. Filed Jan. 6, 1900. Serial No. 612. (No model.)



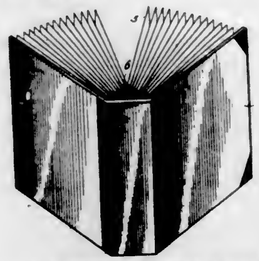
Claim.—1. In a support for electric and other lamps, the combination with a suitable attaching-plate, of one or more adjustable sections pivotally joined to said attaching-plate by two yokes, one of said yokes being capable of a rotary motion, whereby the section or sections may be adjusted to various positions.

2. In a support for electric and other lamps, the combination with a suitable attaching-plate, of one or more adjustable sections pivotally joined to said attaching-plate by two yokes, one of said yokes being journaled on a tapering arm, whereby lost wear may be taken up.

3. In a support for electric and other lamps, the combination with a suitable attaching-plate provided with an arm, a yoke journaled on said arm and provided with tapering bearings in its ends, of one or more adjustable sections pivotally joined to said yoke, one of said sections being provided with a yoke having hubs in its ends, tapering bushings, seated in said bearings, the bushings provided with pins entering holes in said hubs, and screws for joining the yokes together.

4. In a support for electric and other lamps, the combination with a suitable attaching-plate, of one or more adjustable sections pivotally joined to said attaching-plate by two yokes, one of said yokes being journaled on a screw-threaded tapering arm, provided with an end slot and secured on said arm by a screw-threaded nut, a washer having a tang entering said slot, whereby lost wear may be taken up and the nut prevented from turning.

657,503. BOOKBINDING. CHARLES J. TAYLOR, Chicago, Ill., assignor of one-half to John B. Hall, Jr., same place. Filed Mar. 30, 1900. Serial No. 10,813. (No model.)



Claim.—1. A book consisting of a number of double leaves nested and fastened together through the back, in a single signature, said signature having a square back, substantially as described.

2. A book consisting of a number of double leaves fastened together in a single signature, said leaves being each provided with a square back portion and nested together, substantially as described.

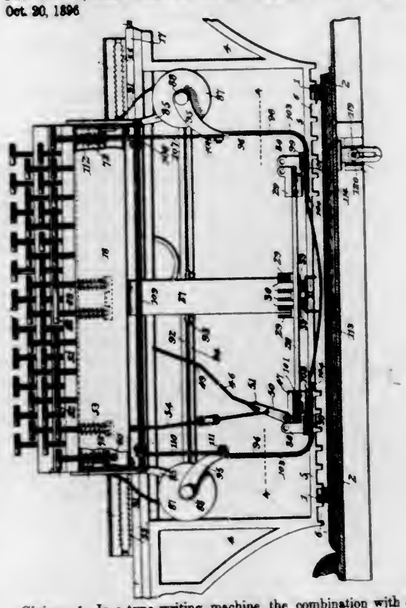
3. A book consisting of a number of double leaves provided with square back portions of gradually-decreasing width and nested and fastened together to form a single signature, substantially as described.

4. A book consisting of a number of double leaves nested and fastened together, said leaves being provided with parallel creases to form square back portions, substantially as described.

5. A book consisting of a number of double leaves nested and fastened together in the form of a signature, said leaves having parallel creases to form a back portion on each leaf having an angular relation to the plane of the leaves when the book is closed and said creases being gradually brought nearer together from the outer to the middle leaves of the book, substantially as described.

REISSUES.

11,850. TYPE-WRITING MACHINE. ROBERT J. FISHER, Athens, Tenn., assignor to the Fisher Typewriter Company, of Tennessee. Filed Oct. 19, 1898. Serial No. 694,041. Original No. 569,627, dated Oct. 20, 1896.



Claim.—1. In a type-writing machine, the combination with carriage-guides, a carriage having a crescent type-bar-supporting ring, carriage-feeding mechanism, and type-bars having pivotal type-heads provided with trip-arms, of a pivotal shifting-arm having a head adapted to be arranged in the path of said trip-arms for engagement thereby when the type-head reaches the printing-plane, the shifting-arm having a spring-blade carrying said head, and means for operating the shifting-arm so as to hold the type-head in its adjusted position while the impression is being made, substantially as specified.

2. In a type-writing machine, a carriage mounted upon guides for movement parallel with the line of writing and having a casing constructed of sheet metal bent at intervals to form front and rear sides and ends, a slotted bottom or floor, a keyboard closing the front portion of the top of the casing, and a removable plate closing the rear portion of the same, the key-levers being arranged within the casing, and draw-wires for connection with type-bars extending through the slots in the bottom or floor, substantially as specified.

3. In a type-writing machine, the combination with a type-bar-supporting ring, of upper and lower type-bar-bearing clips secured, respectively, to the upper and lower surfaces of the supporting-ring, the upper bearing-clips having lateral upstruck flanges terminating at their outer ends in bearing-eyes and arranged at intervals on the ring, and the lower bearing-clips being provided beyond the outer edge of the supporting-ring with upturned bearing-eyes, terminating approximately in the plane of the bearing-eyes on the upper clips, and type-bars mounted in said bearing-eyes, substantially as specified.

4. In a type-writing machine, the combination with a type-bar-supporting ring, of upper and lower type-bar-bearing clips secured, respectively, to the upper and lower surfaces of the supporting-ring, the upper bearing-clips being arranged at intervals upon the supporting-ring and having upstruck lateral flanges and bearing-eyes, and the lower bearing-clips having downturned lateral flanges provided beyond the outer periphery of the supporting-ring with upturned bearing-eyes, the lower bearing-clips being arranged below the intervals between the upper bearing-clips, and type-bars mounted in the bearings of the clips, substantially as specified.

5. In a type-writing machine, the combination with a type-bar-supporting ring, of type-bar-bearing clips arranged alternately above and below the plane of the supporting-ring and provided, respectively, with threaded openings and longitudinal slots, the supporting-ring being provided, respectively, in the planes of the upper and lower clips with slots and threaded perforations, and screws engaging the registering slots and perforations to secure the clips at the desired radial adjustment, substantially as specified.

6. In a type-writing machine, the combination with carriage and printing mechanism, of vertical slides mounted upon the carriage and operatively connected with the printing mechanism, a rock-shaft having crank-arms connected to said slides, a feed-pawl arranged in operative relation with a rack, connections between said feed-pawl and the rock-shaft, a return-spring for the rock-shaft to return the feed-pawl to its normal position, and a tension-rod connected at one end by a lever with said return-spring and provided at the other end with an adjustable exposed bead having a stem threaded in a socket in the body portion of the rod, substantially as specified.

7. In a type-writing machine, the combination with a type-bar-supporting ring of ribbon-spools mounted for axial movement above the plane of the supporting-ring, ribbon-guides mounted for movement simultaneous with the ribbon-spools and depending therefrom, said ribbon-guides having horizontal inturned lower extremities and upstruck clips in said horizontal extremities, and guide-strips carried by the type-bar-supporting ring and arranged transverse to the line of writing for engagement by the upstruck clips, substantially as specified.

8. In a type-writing machine, the combination with printing mechanism including a type-bar-supporting ring, of ribbon-spools mounted for axial movement transverse to the line of writing, ribbon-guides mounted upon the spindles of the ribbon-spools and extending to a point below the plane of the type-bar-supporting ring, a ribbon-shifting key, a rock-shaft connected to the ribbon-shifting key, and connections between the rock-shaft and said ribbon-guide, whereby the latter may be moved transversely to the line of writing to expose the same, substantially as specified.

9. In a type-writing machine, the combination with a type-bar-supporting ring, of ribbon-spools mounted for axial movement above the plane of the supporting-ring and transverse to the line of writing, ribbon-guides mounted for movement simultaneous with the ribbon-spools and depending therefrom, said ribbon-guides having horizontal inturned lower extremities, and guide-strips carried by the type-bar-supporting ring transverse to the line of writing and having an interlocking sliding connection with the ribbon-guides, substantially as specified.

10. In a type-writing machine, the combination with printing mechanism including a type-bar-supporting ring, of ribbon-spools mounted for axial movement transverse to the line of writing, ribbon-guides mounted upon the spindles of the ribbon-spools and extending to a point below the plane of the type-bar-supporting ring, a ribbon-shifting key, and connections between the shifting-key and said ribbon-guide whereby the latter may be moved transversely to the line of writing to expose the same, substantially as specified.

11. In a type-writing machine, the combination with parallel tracks adapted to be arranged upon a page of a book, and a frame mounted upon the tracks for movement parallel therewith, of a table having countersunk vertically-adjustable supporting-strips adapted to be arranged, respectively, under the opposite sides of a book to support the same in a horizontal position, an elevating-spring arranged under each supporting-strip and adapted to elevate the same with the superposed portion of a book, and a shouldered locking-arm threaded in a fixed guide and extending through a slotted arm on the supporting-strip with its shoulder in contact with said arm, the locking-arm extending to and beyond the front of the table and terminating in means whereby it may be rotated to secure the strip at the desired vertical adjustment, substantially as specified.

12. A support for a type-writing machine, comprising a platen having a uniformly-smooth and continuously-unobstructed upper surface to continuously support a leaf or sheet throughout its extent where the printing is to be effected, and separate parallel tracks or guides, for the movable frame of the type-writing machine, spanning the upper surface of the platen to rest upon the sheet or leaf on lines respectively at opposite sides of the printing area, and hold said sheet or leaf in place, one of said tracks or guides being transversely adjustable upon the platen, toward and from the other track or guide, substantially as specified.

13. A support for a type-writing machine, comprising a platen having a uniformly-smooth and continuously-unobstructed upper surface to continuously support a leaf or sheet throughout its extent where the printing is to be effected, and separate parallel tracks or guides, for the movable frame of the type-writing machine, spanning the upper surface of the platen to rest upon the sheet or leaf on lines respectively at opposite sides of the printing area, and hold said sheet or leaf in place, one of said tracks or guides being unconnected with, and the other being adjustably mounted upon, the platen, the adjustable track or guide being movable toward and from the other track or guide, substantially as specified.

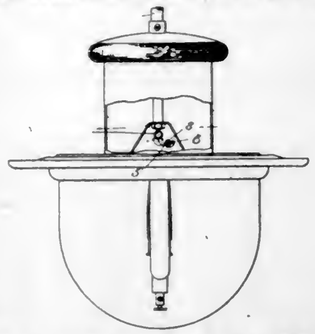
14. A support for a type-writing machine, comprising a platen having a uniformly-smooth and continuously-unobstructed upper surface to continuously support a leaf or sheet throughout its extent where the printing is to be effected, and separate parallel tracks or guides, for the movable frame of the type-writing machine, spanning the upper surface of the platen to rest upon the sheet or leaf on lines respectively at opposite sides of the printing area, to hold said sheet or leaf in place, one of said tracks or guides having an interlocking connection with the platen at points beyond the opposite edges of the sheet or leaf supported by the latter, substantially as specified.

15. A support for a type-writing machine, comprising a platen having a uniformly-smooth and continuously-unobstructed upper surface to continuously support a leaf or sheet throughout its extent where the printing is to be effected, and separate parallel tracks or guides, for the movable frame of the type-writing machine, spanning the upper surface of the platen to rest upon the sheet or leaf on lines respectively at opposite sides of the printing area, to hold said sheet or leaf in place, both of said tracks or guides being separable from the platen, and one of them being provided, at an interval in excess of the length of the engaged sheet or leaf, with means for engaging the platen, substantially as specified.

16. A support for a type-writing machine, comprising a platen having a uniformly-smooth and continuously-unobstructed upper surface to continuously support a leaf or sheet throughout its extent where the printing is to be effected, and separate parallel tracks or guides, for the movable frame of the type-writing machine, spanning the upper surface of the platen to rest upon the sheet or leaf on lines respectively at opposite sides of the printing area, to hold said sheet or leaf in place, one of said tracks or guides having spaced clips for adjustably engaging the opposite edges of the platen, substantially as specified.

17. A support for a type-writing machine, comprising a platen having a uniformly-smooth and continuously-unobstructed upper surface to continuously support a leaf or sheet throughout its extent where the printing is to be effected, and disconnected parallel tracks or guides, for the movable frame of the type-writing machine, spanning the upper surface of the platen, to rest upon the sheet or leaf on lines respectively at opposite sides of the printing area, and holding said sheet or leaf in place, substantially as specified.

11,851. VAPOR-TUBE HEATER. ARTHUR KITSON, Philadelphia, Pa., assignor to the Kitson Hydrocarbon Heating and Incandescent Lighting Company, same place and Charleston, W. Va. Filed June 26, 1900. Serial No. 21,685. Original No. 650,899, dated June 5, 1900.



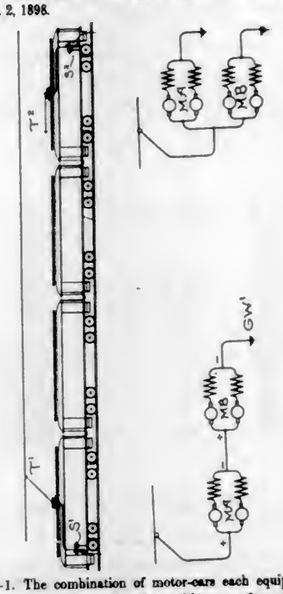
Claim.—1. In a vapor-burning apparatus the combination of an oil-supply pipe, a vaporizing-tube connected thereto, a gas-supply pipe, a Bunsen burner comprising a tube parallel to the vaporizing-tube and connected to the gas-supply pipe, and provided with one or more openings so located that jets of flame projecting therethrough will impinge on the vaporizing-tube.

2. In a vapor-burning apparatus the combination of the main frame, the horizontal vaporizing-tube therein, the Bunsen burner comprising a tube arranged parallel to the vaporizing-tube, said burner having its end closed but provided with one or more discharge-openings in the side adjacent to the vaporizing-tube, an oil-supply pipe connected to the vaporizing-tube and a gas-supply pipe connected to the Bunsen burner.

3. In a vapor-burning apparatus the combination of the main frame, the horizontal vaporizing-tube therein, the Bunsen burner arranged parallel to the vaporizing-tube, said burner having its end closed, but provided with one or more discharge-openings in the side adjacent to the vaporizing-tube, said openings discharging slightly downward, an oil-supply pipe connected to the vaporizing-tube, and a gas-supply pipe connected to the Bunsen burner.

4. In a vapor-burning apparatus, the combination of the vapor-burner and oil-supply pipe, a vaporizing-tube connected thereto, a gas-supply pipe, and a Bunsen burner separate from the vapor-burner connected to the gas-supply pipe, and so located that the flame from the Bunsen burner impinges on all parts of the vaporizing-tube exposed to the flame of the vapor-burner.

11,852. SYSTEM OF TRAIN CONTROL. EDWIN W. RICE, Jr., Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Mar. 16, 1899. Serial No. 709,345. Original No. 608,301, dated Aug. 2, 1898.



Claim.—1. The combination of motor-cars each equipped with a motor or motors, a controller and trolley, with means for controlling the different motor equipments from a single point when the cars are joined in a train, said means comprising a cable for connecting the different motor equipments, switches or switch-contacts in the trolley-circuits of the different cars, and other switches or switch-contacts for opening or closing the ground-circuits of the different cars, and coupling up the motor equipments in series or parallel.

2. The combination of motor-cars at different positions of a train, a single conductor connecting said cars, and a switch on one of the motor-cars for coupling the motor equipments of the different cars in series or parallel, as set forth.

3. The combination of motor-cars, with a single cable extending from one car to another, and switches by which the positive terminals of the motor equipments of said cars may be connected by said cable and the motor equipments run in parallel, or for establishing a connection through the same cable between the negative terminal of the motor equipment of one car and the positive terminal of the motor equipment of a second car, and thereby connecting the motor equipments in series, as set forth.

4. The combination of motor-cars, a switch on one of said cars by which the different motor equipments may be coupled in series or in parallel, and a switch or controller for further regulating all of the motors from a single point on the train, when said motor equipments are connected up in either order.

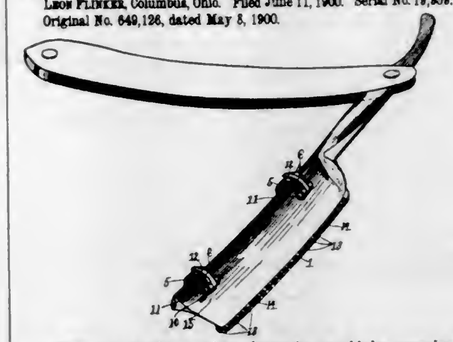
5. The combination of motor-cars, a ground connection for the motor equipments of each car, a cable extending from one motor equipment to another, and switches for breaking the ground connection of one car and connecting the different equipments in series between the trolley-circuit of one car and the ground connection of a second car, or for grounding each motor equipment independently and connecting the different equipments in parallel.

6. The combination of motor-cars, each equipped with proper complement of motors, controlling devices, and circuits, with switches on the cars by which the complete motor equipments may be coupled in series or in parallel, as desired.

7. The combination, with motor-cars coupled in a train, having a proper equipment of motors and controlling devices such that each motor car may, if desired, be independently operated, of switches by which the complete motor equipments may be thrown in series or parallel with each other, and simultaneously regulated when in either connection by one of the motor-controllers.

8. Means for operating motor-cars from each end of a train which comprises a train-conductor system or circuit, and identical controllers on each motor-car provided respectively with devices for arranging the motors and train-conductor circuit or system in fixed combination on the rear car to drive the train forward and with devices for connecting the train-conductor circuit or system, trolley-conductor, and motors and their accessories in variable combinations on the front car, substantially as described.

11,858. SAFETY-GUARD ATTACHMENT FOR RAZOR-BLADES. LEON FLINKER, Columbus, Ohio. Filed June 11, 1900. Serial No. 19,959. Original No. 649,126, dated May 8, 1900.



Claim.—1. A safety-guard attachment for razor-blades, comprising a supporting member adapted to be secured to the razor-blade a guard-bar and a friction-clamp for adjustably securing said guard-bar to the supporting member, substantially as described and for the purpose set forth.

2. A razor-guard comprising, a guard-bar, a supporting device for suspending said guard-bar from the razor-blade, and a spring clamping device for adjustably securing said guard-bar to the said supporting device, substantially as described and for the purpose set forth.

3. A safety-guard attachment for razor-blades comprising, a guard-bar, a supporting member, means for locking said supporting member on the razor-blade, and a spring clamping device forming an operative connection between the supporting member and the guard-bar, substantially as described and for the purpose set forth.

4. A safety-guard attachment for razor-blades comprising, a guard-bar, a supporting member adapted to be secured to the razor-blade, and a spring clamping device formed integral with the said supporting member, and adapted to hold the said guard-bar in frictional engagement with the supporting member, substantially as described and for the purpose set forth.

5. In a safety-guard attachment for razor-blades, a guard-bar and a combined supporting and clamping body consisting of a strip of resilient material, one end of which is bent to form a loop adapted to engage the razor-blade, and the other end is bent upon itself to form a spring-clamp for frictionally engaging the guard-bar, substantially as described.

6. An adjustable safety-guard attachment for razor-blades, comprising a guard-bar, a supporting member comprising a strip of material bent to form a loop adapted to engage the razor-blade, and means for increasing or decreasing the tension of said loop, and a spring-clamp formed integral with one end of said supporting member and adapted to frictionally engage the guard-bar, substantially as described and for the purpose set forth.

7. In an adjustable safety-guard attachment for razor-blades, a combined supporting and clamping member comprising upwardly and downwardly bent loop portions, the upwardly-bent loop portion having an opening through its inner end, substantially as described and for the purpose set forth.

8. In a safety-guard attachment for razor-blades, a guard-bar provided with guide-marks arranged on the face adjacent to the razor-blade, substantially as described and for the purpose set forth.

9. In a safety-guard attachment for razor-blades, a guard-bar having a smooth outer face and provided, on its inner face, with projections, guide-marks and corrugations, substantially as described and for the purpose set forth.

10. In a safety-guard for razors, the combination with the guard-bar member comprising a yoke-body consisting of the bar 1 and arms 2 of combined supporting and clamping bodies 5, each comprising upwardly and downwardly bent loop portions, the loop 7 having an opening through its inner end adapted to engage arms 2, substantially as described.

11. In a safety-guard attachment for razor-blades, the combination with a guard-bar member comprising a yoke-body consisting of a bar 1 having projections on its inner face arranged at intervals, and arms 2 of two combined supporting and clamping bodies 5, each consisting of an upwardly and downwardly bent loop portion, said upwardly-bent loop being provided with an opening and adapted to receive and clamp the arms of said yoke, substantially as specified.

12. In a safety-guard for razors, the combination with the guard-bar member comprising a yoke-body consisting of the bar 1 and arms 2 of combined supporting and clamping bodies 5, each comprising upwardly and downwardly bent loop portions, the loop 7 having an opening through its inner end adapted to engage arms 2, and a cam-lever fulcrumed in the outer portion of the loop 6, substantially as specified.

13. In a safety-guard attachment for razor-blades, the combination with the guard-bar member comprising a yoke-body consisting of a bar 1 having projections on its inner face arranged at intervals, and arms 2 of combined supporting and clamping bodies 5, each consisting of an upwardly and downwardly bent loop portion, said upwardly-bent loop being provided with an opening and adapted to receive and clamp the arms of said yoke, and a cam-lever fulcrumed in the downwardly-bent loop portion, substantially as specified.

14. In a safety-guard attachment for razor-blades, the combination with the guard-bar member comprising a yoke-body consisting of a bar 1 and arms 2, said bars having separated indentations or guide-marks 14 on its inner face, of combined supporting and clamping bodies 5 having oppositely-bent loop portions adapted to respectively embrace the back of the razor-blade and the arms of said yoke-body, substantially as specified.

15. In a safety-guard attachment for razor-blades, the combination with a supporting member, of a guard-bar and means for indicating the proper adjustment of said guard-bar to the edge of the razor-blade, for the purpose set forth.

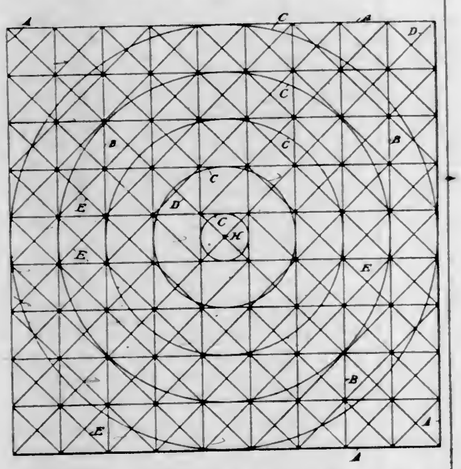
DESIGNS.

33,150. PAPER-CUTTER. WICK HATHAWAY, Madison, Ohio. Filed June 11, 1900. Serial No. 19,963. Term of patent 3½ years.



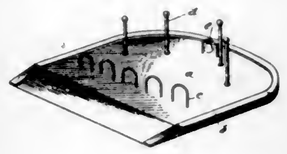
Claim.—The design for a paper-cutter, substantially as herein shown and described.

33,151. GAME-BOARD. HENRY BOGEN, Philadelphia, Pa. Filed July 23, 1900. Serial No. 24,608. Term of patent 14 years.



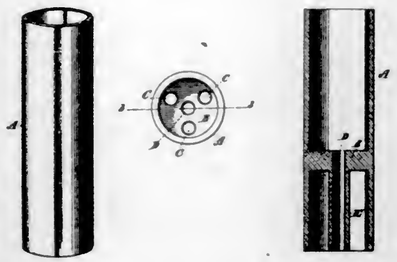
Claim.—The design for a game-board, as herein shown and described.

33,152. GAME-BOARD. EDMUND F. HAWKINS, Yaphank, N. Y. Filed July 25, 1900. Serial No. 24,823. Term of patent 14 years.



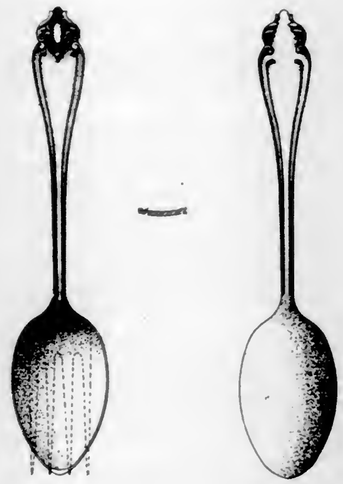
Claim.—The design for a game-board, as herein shown and described.

33,153. CASING FOR A GAME APPARATUS. GEORGE V. CORNELL, Bound Brook, N. J. Filed June 28, 1900. Serial No. 21,994. Term of patent 3½ years.



Claim.—The design for a casing for a game apparatus, substantially as shown and described.

33,154. HANDLE FOR A SPOON OR SIMILAR ARTICLE. FREDERICK PRÉTAT, Waterbury, Conn., assignor to the International Silver Company, Meriden, Conn. Filed July 26, 1900. Serial No. 24,945. Term of patent 14 years.



Claim.—The design for the handle of a spoon or similar article, as herein shown and described.

33,155. BADGE. JOHN H. MERTZ and BENJAMIN F. DAVIS, Chicago, Ill. Filed July 5, 1900. Serial No. 22,632. Term of patent 3½ years.



Claim.—The design for a badge as herein shown and described

33,156. BADGE-FRAME. JOSEPH ECHELBACHER, New York, N. Y. Filed July 11, 1900. Serial No. 23,280. Term of patent 3½ years.



Claim.—The design for a badge-frame, as shown and described.

33,157. LACE-FASTENER. JAMES L. POALK, Merchantville, N. J. Filed Aug. 4, 1900. Serial No. 25,951. Term of patent 14 years.



Claim.—The design for a lace-fastener, substantially as herein described and illustrated.

33,158. HAT-PIN TIP. WILLIAM J. RYAN, Philadelphia, Pa. Filed Nov. 13, 1899. Serial No. 736,886. Term of patent 7 years.



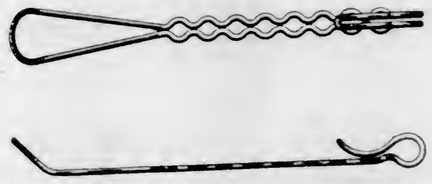
Claim.—The design for a hat-pin tip as herein shown and described.

33,159. BUTTONHOLE-OPENER. JOHN R. S. YODER, Freemansburg, Pa. Filed July 31, 1900. Serial No. 25,469. Term of patent 7 years.



Claim.—The design for a buttonhole-opener, herein shown and described.

33,160. LINK CUFF-HOLDER. GEORGE KALKBRENNER, New York, N. Y. Filed Aug. 9, 1900. Serial No. 26,445. Term of patent 14 years.



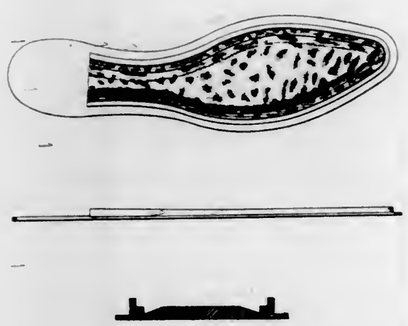
Claim.—The design for a link cuff-holder herein shown and described.

33,161. DRESS-SHIELD. JOHN EDWARDS, New York, N. Y., assignor to William Crawford, same place. Filed Aug. 4, 1900. Serial No. 25,950. Term of patent 7 years.



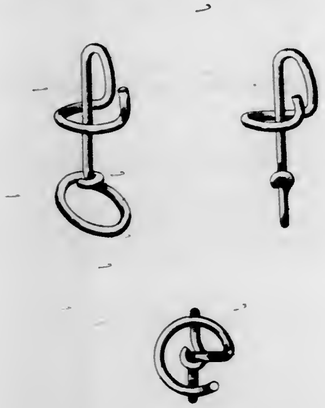
Claim.—The design for a dress-shield, as herein shown and described.

33,162. INNER SOLE. JOSEPH FENNER, Brockton, Mass. Filed July 19, 1900. Serial No. 24,224. Term of patent 14 years.



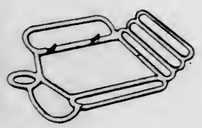
Claim.—The design for an inner sole herein shown and described.

33,163. HOOK. CLIFTON R. FRITZ, New Oxford, Pa. Filed July 27, 1900. Serial No. 25,056. Term of patent 7 years.



Claim.—The design for a hook substantially as shown and described.

33,164. HALTER-RING. EPHRIAM T. RUGG, Newark, Ohio. Filed July 24, 1900. Serial No. 24,724. Term of patent 14 years.



Claim.—The design for a halter-ring, as herein shown and described.

33,165. HITCH-REIN LOOP. CHARLES ROSELL, Hutchinson, Kans. Filed July 24, 1900. Serial No. 24,723. Term of patent 14 years.



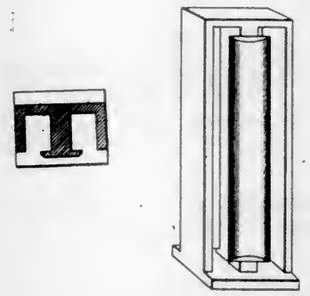
Claim.—The design for a hitch-rein loop herein shown and described.

33,166. BINDER-TAB. FRANK TAFT, New York, N. Y. Filed Aug. 9, 1900. Serial No. 26,443. Term of patent 7 years.



Claim.—The design for a binder-tab herein shown and described.

33,167. TYPE-HOLDER. DUANE LA DU, Warner's, N. Y. Filed July 24, 1900. Serial No. 24,721. Term of patent 3½ years.



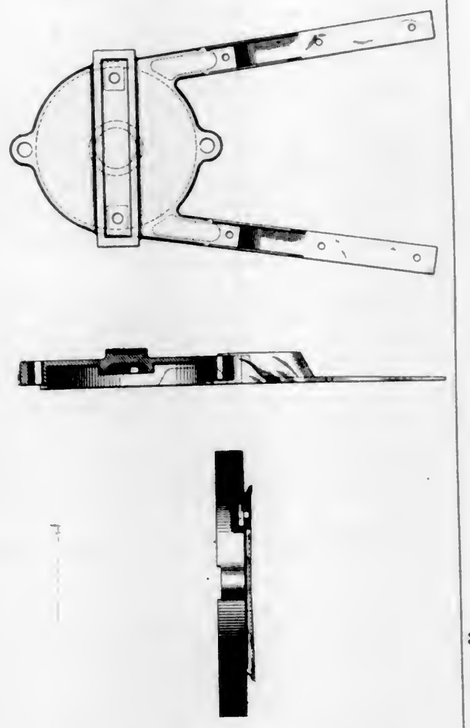
Claim.—The design for a type-holder as herein shown and described.

33,168. SHELF-BRACKET. JOHN D. JOHNSTON, Newport, R. I. Filed Aug. 8, 1900. Serial No. 26,315. Term of patent 14 years.



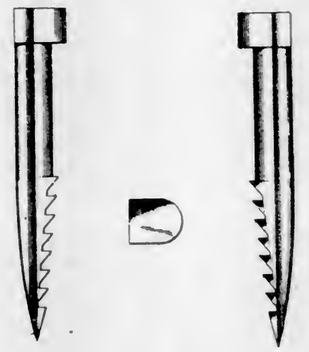
Claim.—The design for a shelf-bracket herein shown and described.

33,169. UPPER MEMBER FOR FIFTH-WHEELS. HARRY A. BARNES, Milwaukee, Wis., assignor to the Premier Manufacturing Company, Hartford, Conn. Filed Apr. 13, 1900. Serial No. 12,778. Term of patent 14 years.



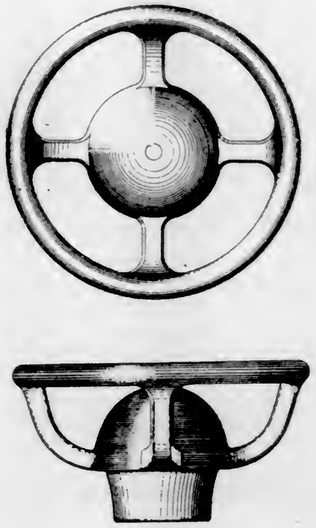
Claim.—The design for the upper member of a fifth-wheel as herein shown and described.

33,170. RAILWAY-SPIKE. CHRIST J. SCHULTZ, Merrill, Iowa. Filed June 18, 1900. Serial No. 20,775. Term of patent 7 years.



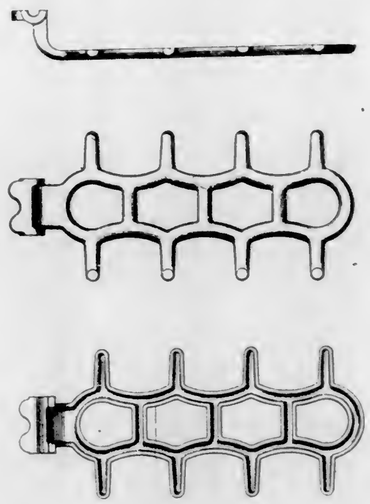
Claim.—The design for a railroad-spike, as herein shown and described.

33,171. NOZZLE. WILLIAM H. DEWAR, New York, N. Y. Filed July 14, 1900. Serial No. 23,682. Term of patent 7 years.



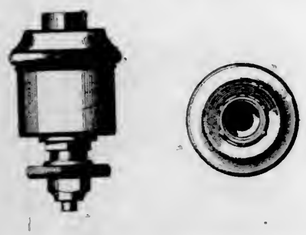
Claim.—The design for the nozzle herein shown and described.

33,172. SIDE FRAME FOR HOSE-BRACKETS. EDWARD CLIFF, Newark, N. J., assignor to the Cliff & Guibert Company, New York, N. Y. Filed July 20, 1900. Serial No. 24,341. Term of patent 14 years.



Claim.—The design for a side frame for hose-brackets, substantially as shown and described.

33,173. FILTER-BODY. THEODORE LINKE, New York, N. Y. Filed Sept. 12, 1899. Serial No. 730,275. Term of patent 7 years.



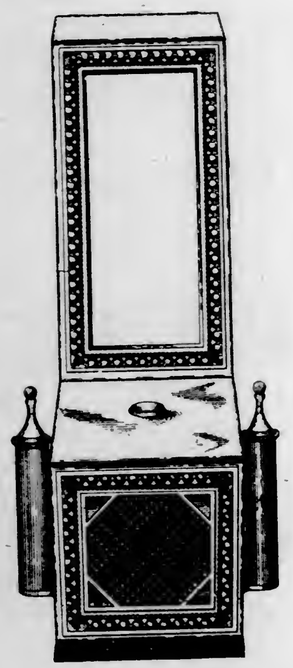
Claim.—The design for a filter-body, substantially as shown and described.

33,174. FILTERING VESSEL. DAVID O. JOHNVILLE, Detroit, Mich. Filed Feb. 26, 1900. Serial No. 6,649. Term of patent 7 years.



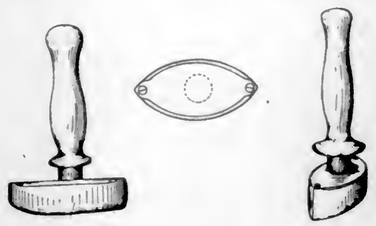
Claim.—The design for a filtering vessel, substantially as herein shown and described.

33,175. ADVERTISING-CASE. TIMOTHY G. DALY, Revere, Mass., assignor to George E. Smith, Boston, Mass. Filed July 25, 1900. Serial No. 24,822. Term of patent 14 years.



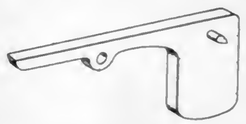
Claim.—The design for an advertising-case, as shown and described.

33,176. POLISHING-IRON. JOSEPH G. GRALL, Detroit, Mich., assignor to Robert Mitchell, same place. Filed Jan. 31, 1900. Serial No. 3,525. Term of patent 3½ years.



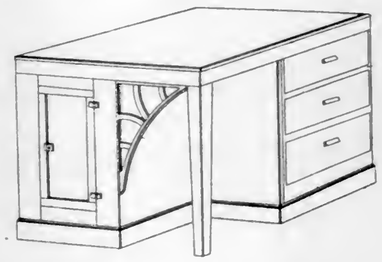
Claim.—The design for a polishing-iron, substantially as herein shown and described.

33,177. SWITCH-LEVER FOR ELECTRIC CIRCUITS. EDWARD S. BALDWIN, Peabody, Mass., assignor to the Boston Pump Company, Boston, Mass. Filed July 16, 1900. Serial No. 23,835. Term of patent 14 years.



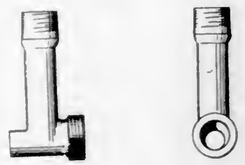
Claim.—The design for a switch-lever for electric circuits, substantially as herein shown and described.

33,178. CABINET. WALLACE H. WITHINGTON and HARRY A. SHANKLIN, Toledo, Iowa. Filed July 20, 1900. Serial No. 24,343. Term of patent 14 years.



Claim.—A design for a cabinet, substantially as herein shown and described.

33,179. PIPE-COUPLING. JAMES J. LAWLER, Mount Vernon, N. Y. Filed July 7, 1900. Serial No. 22,881. Term of patent 7 years.



Claim.—The design for a pipe-coupler substantially as shown and described.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

IN RE REED MANUFACTURING COMPANY.

Decided June 25, 1900.

COPIES OF APPLICATIONS FURNISHED WHERE REFERRED TO IN PATENTED FILE.

Where a patentee has in the papers of his application referred to a prior application filed by him and the petitioner asking for copies of that prior application for use in a suit shows that the record therein is pertinent, *Held* that he has a *prima facie* right to obtain copies, and if the patentee fails to show good reasons why he has no such right the copies will be furnished.

IN the matter of the petition of the Reed Manufacturing Company to obtain copies of the application of William J. Asher, No. 577,098, filed January 28, 1896.

Mr. Charles L. Sturtevant for the petitioner.

Messrs. L. W. Serrell & Son for Asher.

CHAMBERLIN, *Assistant Commissioner:*

This is a petition by the Reed Manufacturing Company that it be allowed to obtain copies of the application of William J. Asher, No. 577,098, filed January 28, 1896.

The records of the Office show that the above-noted application was placed in interference with an application filed by W. C. Shaw, which subsequently became Patent No. 608,720. That interference was decided in favor of Shaw. The records also show that Asher filed another application, No. 659,119, which resulted in Patent No. 627,889, and that in the papers in that case reference is made to his application No. 577,098. It appears that the two applications were very closely related and that they contained in part at least the same claims, for in the patented case it was said on behalf of Asher that—

> he has elected to prosecute the present application, and whenever he may elect to prosecute application No. 577,098, he must strike out from the same whatever claims have been granted in the present application.

The petitioner states that it is the sole owner of Shaw's patent, above referred to; that it has brought suit under that patent against Asher and those manufacturing under his patent; that it is now moving for a preliminary injunction, setting up the adjudication of this Office in the above-noted interference as grounds for the issue of said preliminary injunction, and that it desires a copy of Asher's application No. 577,098 to be used in that proceeding.

Asher was notified of the petition and given an opportunity to be heard. On the day of the hearing he filed a letter objecting to the granting of the petition on the ground that his application has nothing to do with the case mentioned. According to the facts set forth in the petition and shown by the records of this Office, however, the record in that application seems to be pertinent to the question in controversy, and Asher has made no showing beyond his bare statement that it is not pertinent.

In view of the showing made by the petitioner and of the fact that the application is referred to in the record of the Asher patent the petitioner has a *prima facie* right to obtain copies of the application, and no good reason has been shown by Asher why they should not be furnished.

As was said in *Metropolitan R. R. Co.* v. *Siemens*, (85 O. G., 290:)

> But when a patentee has referred to a prior application for a patent, whether such reference appears upon the face of the specification or only among the application papers, and thereafter brings suit upon his patent, he cannot with very good grace urge that the papers referred to by him are "private papers."

The petition is granted.

BUNDY *v.* RUMBARGER.

Decided May 31, 1900.

1. MOTION TO SHIFT THE BURDEN OF PROOF—MATTER OUTSIDE OF THE RECORD.

The contention that a motion to shift the burden of proof and include in the interference a prior application filed by B. is improper because based upon matter outside of the present record is not well founded, since if there was error in failing to include that application the only way in which it can be corrected is by referring to matter outside of the present record.

2. SAME—OPPONENT ENTITLED TO OBTAIN COPIES OF APPLICATION.

R. is entitled to see and obtain copies of an application referred to by B. in a motion to shift the burden of proof; but B is not required to serve copies upon him, since it is not the practice of the Office to require a party to serve upon his opponent copies of all Office records referred to in a motion made by him.

APPEAL on motion.

SEAT-POST FASTENER.

Application of Erwin O. Bundy filed November 4, 1899, No. 735,794. Application of Victor E. Rumbarger filed October 30, 1899, No. 735,312.

Messrs. Carter & Graves for Bundy.

Mr. I. C. Koehne for Rumbarger.

CHAMBERLIN, *Assistant Commissioner:*

This is an appeal by Rumbarger from the deci-

sion of the Examiner of Interferences transmitting to the Primary Examiner Bundy's motion to shift the burden of proof in the above-entitled interference.

In his motion Bundy asked that he be given the benefit of the filing-date of his application No. 717,715, which it is stated discloses the invention in controversy. Rumbarger contends that the motion is not proper and should not have been transmitted to the Primary Examiner, since it is based on matter outside of the record of this case and also for the reason that he was not furnished with a copy of Bundy's application referred to.

It is well settled that motions to dissolve an interference cannot properly be based on matter outside of the record, as set forth in the decisions cited by Rumbarger; but the present motion of Bundy is not to dissolve the interference, but to shift the burden of proof. There is nothing in the rules or decisions to indicate that such a motion should not be based on matter outside of the record. The present motion by Bundy in effect merely calls attention to an alleged error by the Examiner in failing to include his prior application in the declaration of the interference. He clearly has the right to have the error, if it was an error, corrected, and the only way in which he can do this is by referring to matter outside of the present record of this interference. The question whether the prior application should in fact be included in the interference is a matter to be determined by the Primary Examiner in considering the motion itself and was not before the Examiner of Interferences in passing on the motion to transmit.

The contention that Bundy should have served a copy of his application referred to on Rumbarger is not well founded. That application is a matter of record in this Office, and in view of Bundy's motion referring to it Rumbarger is entitled to see and obtain copies of it, (*Thorpe* v. *White and White*, 68 MS. Dec., 442; *ex parte Swihart*, 90 O. G., 601;) but it is not the practice of the Office to require a party to serve upon his opponent copies of all Office records referred to in a motion made by him.

Bundy's motion being seasonably presented and regular in form was properly transmitted to the Primary Examiner.

The decision of the Examiner of Interferences is affirmed.

BUNDY *v.* RUMBARGER.

Decided August 16, 1900.

1. MOTION TO SHIFT BURDEN OF PROOF—EARLIER APPLICATION DISCLOSING INVENTION.

   Where on a motion to shift the burden of proof and include an earlier pending application it appears that the earlier case clearly discloses the invention in controversy, although there is no statement in either case connecting it with the other and the second includes additional matter not shown in the first, *Held* that the motion should be granted.

2. SAME—CONTINUOUS APPLICATION—QUESTION OF FACT.

   The question whether the second application is a continuation of the first as to the matter in issue is one of fact which must be determined by the Office without regard to any statement to that effect in the cases themselves. The statement would be a mere notice of the fact; but the fact and not the statement is what would justify action. This Office must take notice of facts shown by its records.

3. SAME—SAME—CONSTRUCTIVE REDUCTION TO PRACTICE.

   If an application involved in interference is a continuation of a prior application such as to give the applicant the benefit of its date for a constructive reduction to practice of the matter in issue, although it is not a continuation for all purposes, *Held* that the applicant is entitled to the benefit of the earlier date on the question of burden of proof. (*Park* v. *Cain*, 83 O. G., 1345.)

4. SAME—JUDGMENT ON THE RECORD.

   Since the rules provide that the first to file an application clearly disclosing the invention will be presumed to be the first inventor and will be made the senior party and that in the absence of testimony judgment will be rendered on the record against the junior party, *Held* that a party who was the first to file an application disclosing the invention and in so far as the Office records go appears to be the first inventor should not be made the junior party.

APPEAL on motion.

SEAT-POST FASTENER.

Application of Erwin O. Bundy filed November 4, 1899, No. 735,794.

Application of Victor E. Rumbarger filed October 30, 1899, No. 735,312.

Messrs. Carter and Graves for Bundy.

Mr. I. C. Koehne for Rumbarger.

CHAMBERLIN, *Acting Commissioner:*

This is an appeal by Bundy from the decision of the Primary Examiner denying his motion to shift the burden of proof.

Bundy is now the junior party, his application having been filed on November 4, 1899, and Rumbarger's application having been filed on October 30, 1899. In his motion Bundy asks that he be given the benefit of the filing date of his prior application, No. 717,715, filed May 22, 1899, and be made the senior party to the proceedings.

The Examiner, while admitting that the matter involved in this interference is disclosed in Bundy's prior application, holds that Bundy's present application is not a continuation of his prior case in such sense as will give him the benefit of its date on the question of burden of proof. The grounds for this holding seem to be that there is no statement in either of the cases which connects it in any way with the other, so as to show that the second is a division or continuation of the first, and that the second case includes some matter not disclosed in the first and is therefore not a legitimate division of the first for all purposes. (Citing *ex parte Henry*, 64 O. G., 299.)

The appellant cites *Park* v. *Cain* (83 O. G., 1345) in support of his holding that he is entitled to the date of his earlier application, but the Examiner holds that this decision is not applicable, since the question there was not as to the burden of proof, but whether the first case could be received as a constructive reduction to practice at its date. Attention is also called to the fact that in that case there were statements in the second case connecting it with the first case, and it is argued that without this connecting link the court would not have held the second case to be a continuation of the first as to the matter common to both cases, as it did on appeal. (*Cain* v. *Park*, 86 O. G., 797.)

Rule 116, relating to the question of burden of proof, provides that—

the parties will be presumed to have made the invention in the chronological order in which they filed their completed applications for patents clearly illustrating and describing the invention—

and Rule 114 provides that if a junior party fails to file a statement judgment will be rendered against him on the record. Rumbarger does not contend in this case that Bundy's application of May 22, 1899, does not disclose the invention in issue, and therefore it is assumed that Bundy was the first to file an application illustrating and describing the invention as set forth in Rule 116. If his application here involved is a continuation of that application such as to give him the benefit of its date for a constructive reduction to practice, as set forth in *Park* v. *Cain*, above cited, it is manifest that a decision could not properly have been rendered against him on the record if he had failed to file a statement or if he had failed to take testimony in support of his statement. The question whether his second application is a continuation of the first as to the matter in issue is one of fact which must be determined from the records, since a mere statement in the second that it is a continuation of the first could not be accepted without examining the cases to see if it was in accordance with the facts. The statement would be a mere notice calling attention to the fact, but the fact and not the statement is what would justify action. If the matter is called to the attention of the Office in any other manner—such, for instance, as the present motion—notice should be taken of it. As stated by the court in *Cain* v. *Park*, the Office is justified in taking notice of facts shown by its records in order that justice may be done. (See also *Hunter* v. *Wightman*, 81 O. G., 1788.)

The invention in issue being disclosed in the prior application and the second application being filed while the first was pending, the second is a continuation of the first for the purpose of giving Bundy the benefit of its date for a constructive reduction to practice. In so far as the records of the Office go, therefore, Bundy appears to be the first inventor. The burden of proof should therefore be upon Rumbarger to establish a different state of facts by evidence.

It is suggested by Rumbarger that there is no proof that the Bundy who filed the earlier application is the same party as the Bundy who filed the later case. There is, however, *prima facie* evidence that they are the same, such as will justify placing the burden of proof upon Rumbarger. If they are not the same, Rumbarger may show it by his proofs.

The decision of the Primary Examiner refusing to shift the burden of proof is reversed.

EX PARTE LAUGHLIN AND REULEAUX.

Decided August 17, 1900.

1. ABANDONMENT OF APPLICATION—REISSUE APPLICATION.

   A reissue application, like an original application, becomes abandoned, under section 4894 of the Revised Statutes, by a failure to prosecute it within one year from the date of the last Office action.

2. SAME—SAME.

   The statute provides that "all applications for patents" become abandoned by failure to prosecute within one year, and reissue applications clearly come within these broad terms. Even if they did not, however, the provision that reissue applications are subject to revision "in the same manner as original applications" would make the limitation as to the time within which action should be taken applicable.

3. REISSUE APPLICATION—REASON FOR DILIGENCE IN PROSECUTION.

   The contention that delay in the prosecution of an application for a reissue is not objectionable, since it does not change the time when the invention will become public property by the expiration of the patent, is not well founded, since it is well settled that delay in filing the application is objectionable on account of the possible intervening rights of the public, and the same reasons apply to make an unreasonable delay in the prosecution of an application after it is filed improper and objectionable.

4. SAME—DOUBTS RESOLVED IN FAVOR OF DILIGENCE.

   It is believed that the public should be informed at the earliest possible date if a patent is to be altered by reissue, and therefore any and all doubts as to what is intended by the statutes should be resolved in favor of prompt and vigorous prosecution of the application.

ON petition.

FURNACES.

Application of Alexander Laughlin and Josef Reuleaux filed February 17, 1899, No. 705,941.

Mr. J. Nota McGill for the applicants.

CHAMBERLIN, *Acting Commissioner:*

This is a petition from the refusal of the Primary Examiner to enter an amendment in the above-entitled case on the ground that it has been abandoned under section 4894 of the Revised Statutes by reason of the applicants' failure to take action therein within one year from the date of the last Office action.

This is an application for the reissue of a patent, and the petitioners contend that section 4894 of the Revised Statutes, relating to the abandonment of applications, does not apply to applications for reissue. This is the only question to be determined in this case, since it is clear and is admitted that the applicants failed to take action within a year from the date of the last Office action and they have made no attempt to show that the delay was unavoidable under Rule 172. They hold that it is not incumbent upon a reissue applicant to amend within any specified time, but that he can delay as long as he desires without forfeiting any of his rights.

Commissioner Leggett held in 1873 that the statute relating to the abandonment of applications did not apply to reissues. (*Ex parte Galusha*, 3 O. G., 321; C. D., 1873, 55.) That holding was followed by the Office until 1897, when it was overruled by Commissioner Seymour in *ex parte Messinger*, (78 O. G., 1903; C. D., 1897, 1.) In *ex parte Galusha* it was said:

If the Office should hold the contrary, the only effect would be, not the abandonment of the invention as contemplated in said section, but simply the requirement of another fee, as the applicant could immediately make another application for a reissue. For this reason it is very evident that reissues were not intended to be covered by this section.

In referring to this statement it was said in *ex parte Messinger*:

This was before the principal decisions of the Supreme Court of the United States on reissue cases, laying down a much stricter rule. I need not refer in detail to these cases, but it was held that the application for reissue must be made seasonably

and as soon as the defect is discovered, and that there is no fixed right to wait two years before applying. No countenance is given to the claim that reissues may be applied for as often as desired. The ground for these decisions appears to be that where the patentee holds a grant which covers more than he has a right to claim he should be prompt to disaffirm that to which he has no right, and that the public should know from the patent precisely what they may do and what they may not do, and ought to be informed that there is something in the patent to which the public is entitled, and that this information should reach them at as early a day as practicable. The reason likewise holds with equal force in cases where the patentee has informed the public of his claim in the original issue of the patent, but intends further on to broaden his claims. On these grounds I am of the opinion that *ex parte Galusha* has come to be in conflict with the later Supreme Court decisions, that it is not the law, and that reissue cases are abandoned after two years of inactivity, like other cases, by operation of section 4894.

It is undoubtedly true, as stated in this decision, that the question of laches in applying for a reissue is given great weight by the courts in determining whether or not the applicant is entitled to a reissue. Delay in making application is condemned on accounnt of the possible intervening rights of the public, and it would seem that the same reasons would apply to make an unreasonable delay in the prosecution of an application after it is filed improper and objectionable. The petitioners contend that delay in the prosecution of an application for a reissue does not work an injury to the public, since it does not change the time when the invention will become public property by the expiration of the patent whether it is reissued or not; but this contention is not well founded, since the same reasoning would apply to delay in filing the application for reissue, and it is well settled that such delay is objectionable. They contend, further, that the patentee and not the public is injured by the delay in the prosecution of the reissue application and that the public is really the gainer by such delay in view of the court's decision in *Burrell* v. *Hackley*, (35 Fed. Rep., 833,) wherein it was held that the patentee cannot maintain an action upon his original patent while it is in the hands of the Commissioner of Patents for the purpose of being reissued. This decision, however, was rendered by the circuit court and seems to be in direct conflict with the later decisions by the Supreme Court in *Allen* v. *Culp* (70 O. G., 1523; C. D., 1897, 472) and *McCormack Harvesting Machine Co.* v. *Aultman*, (82 O. G., 1988; C. D., 1898, 398.) In these cases it was held that the fact that the original patent is required to remain in the custody of this Office during the prosecution of the application for reissue does not give this Office jurisdiction of it for any purpose except to reissue it and does not deprive the patentee of any rights which he possessed under that patent. The surrender does not take effect until the reissue is granted, and until that time the orignal patent remains in force.

The petitioners' contention, therefore, that there are no substantial reasons why a reissue application should be prosecuted with diligence is not well founded. On appeal from Commissioner Seymour's decision referred to above the question of abandonment of the reissue application was not directly before the Court of Appeals of the District of Columbia for decision; but the court said, after referring to prior decisions:

> It is manifest from these well-settled principles that * * * there must be due diligence shown in discovering the mistake or inadvertence and in the application for reissue *and in the prosecution of such application.* (*Messinger* v. *The Commissioner of Patents*, 83 O. G., 1995; C. D., 1898, 507.)

Section 4894 does not state specifically that a reissue application becomes abandoned by the failure to prosecute within one year from the date of the last Office action; but it does state that "all applications for patents" become abandoned under such circumstances. A reissue application is undoubtedly an application for a patent and comes within the broad terms of the statute. In the absence of any indications to the contrary in the statutes themselves it is believed that the broad terms of section 4894 were intended to apply to reissue applications as well as original applications. However, even if this section standing alone were not construed as applying to reissues it is held that the provisions of section 4916 of the Revised Statutes, relating to reissues, would make it applicable. That section provides that—

> the specifications and claims in every such case shall be subject to revision and restriction in the same manner as original applications are.

The manner of revising the application includes not merely the kind of actions which should be taken, but refers to the entire procedure, including the time within which actions should be taken.

Section 4903 of the Revised Statutes, relating to the citation of references and the reconsideration of the application, and section 4904, relating to interferences, do not refer specifically to reissue applications; but they have been held to apply presumably by reason of the provision in section 4916 quoted above. There are just as strong reasons for holding section 4894 to be applicable to reissues.

This question of the abandonment of reissue applications by failure to prosecute has not, in so far as I am aware, been directly passed upon by the courts. As mere *obiter dictum* in the statement of the case in *Allen* v. *Culp*, cited above, Justice Brown intimated that a reissue application would become abandoned by delay in prosecution, saying:

> Counsel for the defendant, who appears to have had absolute control of the reissue proceedings, made no effort to meet the formal objection of the Examiner and permitted the application to lapse by his failure to prosecute it within two years.

This statement cannot, however, be given much weight in disposing of this case, for the reason that the question was not before the court for decision, but was merely recited as a part of the history of the case.

It is held that under the law a party is in fact required to use diligence and that section 4894 of the Revised Statutes applies to reissue applications and unless action is taken by the applicants within one year from the date of the last Office action the applications become abandoned. I believe that the public should be informed at the earliest possible date if a patent is to be altered by reissue, and therefore even if the law is not as explicit and its application as clear as it might have been made any and all doubts as to what is intended by the statutes should be resolved in favor of prompt and vigorous prosecution of the application.

The present application has been abandoned by failure to prosecute it, and therefore the petition is denied.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

Vol. 92.—No. 11. TUESDAY, SEPTEMBER 11, 1900. Price—$5 per year.

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DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., August 31, 1900.

SIR: The Secretary of the Interior has ordered that Noland D. Williams, of Natchez, Miss., be not recognized after this date as attorney or agent in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,
EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., September 4, 1900.

SIR: The Secretary of the Interior has ordered that Juno C. Bentley, of Burlington, Iowa, be not recognized after this date as attorney or agent in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,
EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

Preparation of Specifications, Entry of Amendments, Etc.

LEGIBLE WRITING REQUIRED.

The specification and claims must be plainly written or printed on but one side of the paper. All interlineations and erasures must be clearly referred to in marginal or foot notes on the same sheet of paper. Legal-cap paper with the lines numbered is deemed preferable, and a wide margin must always be reserved upon the left-hand side of the page.

AMENDMENTS MUST BE SPECIFIC—HOW WRITTEN.

In every amendment the exact word or words to be stricken out or inserted in the application must be specified, and the precise point indicated where the erasure or insertion is to be made. All such amendments must be on sheets of paper separate from the papers previously filed, and written on but one side of the paper. Erasures, additions, insertions, or mutilations of the papers and records must not be made by the applicant.

SPECIFICATIONS REWRITTEN.

When an amendatory clause is amended, it must be wholly rewritten, so that no interlineation or erasure shall appear in the clause, as finally amended, when the application is passed to issue. If the number or nature of the amendments shall render it otherwise difficult to consider the case, or to arrange the papers for printing or copying, the Examiner or Commissioner may require the entire specification to be rewritten.

CERTIFICATES OF REGISTRATION ISSUED SEPTEMBER 11, 1900.

Labels.

7,775.—Title: "WINORR." (For Canned Corn.) *Pressing & Orr*, Pittsburg, Pa. Application filed August 15, 1900.

7,776.—Title: "CREAM CORN." (For Canned Corn.) *The United States Printing Company*, New York, N. Y. Application filed August 17, 1900.

7,777.—Title: "BEN ALI." (For Cigarettes.) *Knubel Tobacco Company*, New York, N. Y. Application filed August 16, 1900.

7,778.—Title: "GRAPE KOLA." (For Soda-Water Syrup.) *Liquid Carbonic Acid Manufacturing Company*, Chicago, Ill. Application filed August 10, 1900.

7,779.—Title: "QUICK GRIP CURE." (For a Medicine.) *J. B. Quick*, Seattle, Wash. Application filed June 29, 1900.

Prints.

259.—Title: "SPLIT." (For Wines, Liquors, &c.) *A. Werner & Co.*, New York, N. Y. Application filed August 3, 1900.

260.—Title: "BOARD OF TRADE." (For Tobacco, Cigars, and Cigarettes.) *Anthony Robinson*, New Bedford, Mass. Application filed August 2, 1900.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business September 4, 1900.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. of applications awaiting action.
	In arrears—Under one month.			
217	XXXIII. *Designs, †Trade-Marks, ‡Labels and Prints, Optics.	Aug. 30	Aug. 17	27
250	VIII. Furniture, Beds, Store Furniture, etc.	Aug. 27	Aug. 27	67
106	II. Farm Stock, Products, etc.	Aug. 25	Aug. 25	114
111	XXXII. Bottles and Jars, Carbonating Beverages, Refrigeration, Shipping and Storing Vessels, etc.	Aug. 17	Aug. 21	192
122	XXIV. Sewing-Machines, Apparel, and Toilet.	Aug. 14	Aug. 18	107
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	Aug. 9	Aug. 17	92
38	XXXV. Advertising, Baggage, Buckles, Buttons, and Clasps, Packing and Storing Vessels, etc.	Aug. 9	Aug. 16	142
39	XXXI. Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	Aug. 8	Aug. 18	126
105	XI. Boots and Shoes, Harness, Hose and Belting, and Leather-Working Machinery.	Aug. 8	July 26	146
253	X. Carriages and Wagons	Aug. 7	Aug. 25	81
255	XII. Mechanical Engineering, Store-Service, etc.	Aug. 6	Aug. 21	133
30	IV. Civil Engineering, Fire-Proof Buildings, Bridges, Water Distribution, etc.	Aug. 6	Aug. 20	171
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	Aug. 6	Aug. 18	221
246	I. Tillage and Fences	Aug. 6	Aug. 17	130
240	VII. Velocipedes, Games, and Toys.	Aug. 6	Aug. 11	179
102	XIX. Stoves and Furnaces	Aug. 6	Aug. 3	229
221	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	Aug. 5	Aug. 2	144
	Between one and two months.			
261	XXXVI. Weighing and Measuring Devices, Driers, and Drafting.	Aug. 4	Aug. 18	90
248	XVIII. Steam-Engineering, etc.	Aug. 4	Aug. 9	162
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Aug. 2	Aug. 13	155
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	July 31	Aug. 20	138
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	July 31	Aug. 14	173
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	July 31	Aug. 13	160
93	XXI. Textiles, etc	July 30	Aug. 21	87
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	July 30	Aug. 7	137
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	July 24	Aug. 1	169
215	XVII. Printing, Type-Writing Machines, and Linotyping.	July 23	Aug. 6	174
120	IX. Hydraulics, Fire-Extinguishers, etc.	July 23	July 16	118
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	July 21	Aug. 1	130
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	July 17	July 21	218
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	July 12	July 10	292
35	XXVIII. Pneumatics, Air and Gas Engines, etc.	July 9	July 9	261
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	July 6	July 19	179
	Between two and three months.			
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 21	Aug. 1	246
95	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	June 21	July 21	230
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	June 14	July 23	410

Total number of applications awaiting action.....5,830

Applications Under Examination—Continued.

Under one month.			
*Designs	Aug. 24	Aug. 25	100
†Trade-Marks	Aug. 7	July 18	207
‡Labels and Prints	Aug. 31	Aug. 31	6

ISSUE OF SEPTEMBER 11, 1900.

Patents	403—No. 657,504 to No. 657,906,	inclusive
Designs	24—No. 33,180 to No. 33,203,	inclusive.
Trade-Marks	None.	
Labels	5—No. 7,775 to No. 7,779,	inclusive.
Prints	2—No. 259 to No. 260,	inclusive.
Reissues	1—No. 11,854.	
Total issue	435	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	2		Nevada		
Arizona Territory			New Hampshire	1	
Arkansas	1		New Jersey	23	
California	13		New Mexico Territ'y		
Colorado	3		New York	68	3
Connecticut	5		North Carolina	3	
Delaware			North Dakota		
District of Columbia	4		Ohio	20	
Florida	1		Oklahoma Territ'y		
Georgia	4		Oregon		
Hawaii	1		Pennsylvania	44	1
Idaho			Rhode Island	3	
Illinois	42	1	South Carolina		
Indian Territory			South Dakota	1	
Indiana	11		Tennessee	3	
Iowa	6		Texas	6	
Kansas	7		Utah	3	
Kentucky	8		Vermont	1	
Louisiana	1		Virginia	3	
Maine	3		Washington	5	1
Maryland	3		West Virginia	2	
Massachusetts	19	1	Wisconsin	5	
Michigan	14		Wyoming		
Minnesota	6		U. S. Army		
Mississippi			U. S. Navy		
Missouri	10				
Montana	1		Total to citizens of the United States	360	7
Nebraska	4				

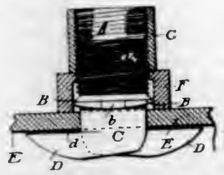
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina			Italy	1	
Australia			Japan		
Austria-Hungary	3		Java		
Barbadoes			Natal	1	
Belgium	1		Netherlands		
Bermuda			New South Wales	1	
Brazil			New Zealand		
Canada	5		Norway	1	
Chile			Queensland		
China			Russia	1	
Costa Rica			Scotland	3	
Cuba			South African Republic		
Denmark			South Australia		
Egypt			Spain		
England	21		Sweden	2	
Finland			Switzerland	2	
France	3		Venezuela		
Germany	21		Victoria	1	
Guatemala					
Haiti			Total to citizens of foreign countries	67	
India					
Ireland					

PATENTS

GRANTED SEPTEMBER 11, 1900.

657,504. **MEANS FOR COUPLING PIPES OR COCKS TO FLUID MAINS, BRANCHES, RECEPTACLES, OR TANKS.** FRIEDRICH ALBRECHT, Melbourne, Victoria. Filed June 22, 1900. Serial No. 21,168. (No model.)



Claim.—1. A coupling for pipes or cocks comprising two meeting tubular sections, each having a foot arranged to extend in opposite directions and on opposite sides of a radial line running parallel with the inner sides of said feet, substantially as described.

2. A coupling for pipes comprising two tubular sections, each having a foot-piece and a threaded portion, a collar carried by said sections and a washer inclosing said collar and interlocking therewith to prevent the turning thereof, substantially as described.

3. The means for coupling pipes or cocks to fluid mains, branches, receptacles or tanks comprising two meeting tubular sections each having a foot-piece arranged to lie in opposite directions to the other pipe and having screwed portion and stop-collar in combination with a lead washer F and a coupling-piece G substantially as and for the purposes set forth.

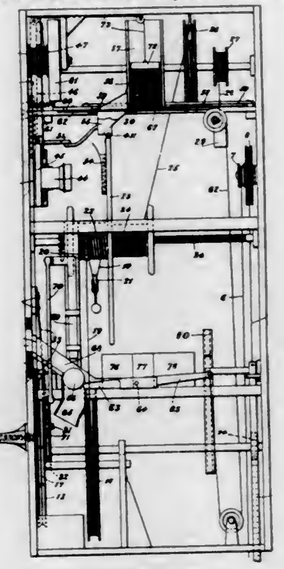
4. The means for coupling pipes or cocks to fluid mains, branches, receptacles or tanks comprising two meeting tubular sections each having a foot-piece arranged to lie in opposite direction to the other pipe and having screwed portion and stop-collar with flat portions in combination with a lead washer F with corresponding flat projections *f* and a coupling-piece G substantially as and for the purposes set forth.

657,505. **AUTOMATIC PHOTOGRAPHIC APPARATUS.** EDWIN J. BALL, Hull, England. Filed June 19, 1899. Serial No. 721,086. (No model.)

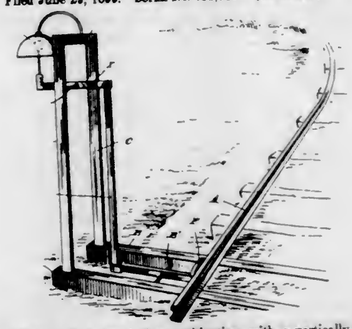
Claim.—1. The apparatus for passing the plate through the developing-tanks consisting of a screw-axis, a nut on the axis, a plate-holder pivoted to the nut at a distance from its axis, a series of developing-tanks underneath the axis and a means for rotating the nut on the axis.

2. In a photographic apparatus, a plate-receptacle, a chute leading from the plate-receptacle, a plate-holder adapted to be brought opposite the chute, a rotatable and traversing support for the plate-holder, a means for forcing a plate out of the receptacle into the chute, a lens opposite the plate-holder, a slide between the lens and the plate-holder, a means for raising and lowering the slide, an escapement-catch actuated by the raising and lowering of the slide and acting on the plate-holder, a means for rotating and traversing the plate-holder support, a series of developing-tanks underneath the support and a delivery-slide adapted to come in contact with the plate-holder at the end of its traverse and tilt the plate into the slide.

3. In a photographic apparatus, a spring-platform a ratchet-rack connected to the platform, a counterweight connected to the rack, a ratchet-pinion gearing with the rack, a weight connected to the ratchet-pinion and wound up on the fall of the counterweight, a plate-receptacle, a slide in the receptacle adapted when operated to force out a plate, a chute to receive the plate, a means for connecting the slide to the counterweight, a rotatable traversing support connected to the weight to be operated by it, a plate-holder pivoted to the support at one extremity to receive a plate from the chute, a lens opposite the plate-holder, a slide between the lens and the plate-holder, a means for raising and lowering the slide, an escapement-catch actuated by the raising and lowering of the slide and acting on the plate-holder, a series of developing-tanks underneath the support, and a delivery-slide adapted to come in contact with the plate-holder at the end of its traverse and tilt the plate into the slide.

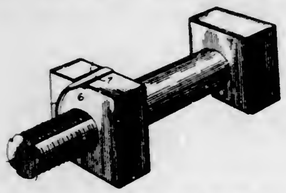


657,506. **BRIDGE-ALARM FOR TRAINMEN.** ROBERT J. BARRY, Bangor, Me., assignor of one-half to Charles Cullinan, same place. Filed June 29, 1899. Serial No. 722,316. (No model.)



Claim.—In a signal, the combination, with a vertically-perforated bridge, the top of which is recessed at the perforation, of a shoe, the ends of which are beveled and the central portion is provided with a depending projection to fit in the recess of the bridge, a pin rigidly secured to the projection in position to extend through the perforation, a spring in the recess around the pin, a lever secured to the projecting end of the pin, a standard, a spring-supported bell on top of the standard, a lever pivotally secured to the standard, one end of which is provided with a spring-supported clapper in position to engage with the bell, and a link-bar connecting the other end of the lever with the lever that is secured to the pin.

657,507. NUT-LOCK. SAMUEL C. BAUGHN, Jr., Comer, Ky. Filed July 9, 1900. Serial No. 23,039. (No model.)



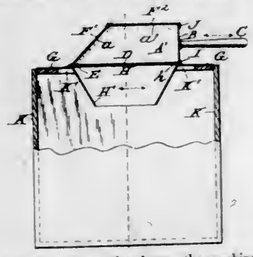
Claim.—1. The combination with a bolt, having one or more longitudinal grooves formed therein, of a nut fitted thereto, and provided with a groove extending entirely across one edge thereof, and another groove formed in the inner face of the nut and intersecting the inner end of the former groove, and a substantially L-shaped spring ratchet device, having one branch fitted in the first-mentioned groove of the nut, and also bent into the other groove, the walls of the latter being upset against the ratchet device, and the opposite branch of the latter being formed into a spring-tongue located at the outer face of the nut and for engagement with the grooves of the bolt.

2. A nut, having a transverse groove formed entirely across one edge thereof, opening at the front and rear faces of the nut, and increasing in width from the rear face to the front face thereof, and another groove formed in the rear face of the nut and forming a continuation of the former groove, and a substantially L-shaped spring ratchet device, having one branch received within the former groove and out of contact with the opposite walls thereof, the rear extremity of the branch being bent into the other groove, and the walls of the latter being upset against the bent portion of the branch to fixedly connect the latter to the nut, and said branch having a lateral movement within the former groove, the other branch being formed into a spring-tongue extending across the front face of the nut.

3. A nut, having a substantially L-shaped ratchet-spring, the free branch of which is bowed across the front face of the nut and arranged for engagement with a bolt, the other attaching branch being twisted longitudinally and having its rear end portion secured to one edge of the nut, and the forward portion of the arm being out of engagement with the nut, whereby an inward pressure upon the outer free end of the attaching-arm will twist the latter and throw the free end of the other branch laterally outward.

4. A nut, having a transverse groove formed across one edge thereof, and a substantially L-shaped ratchet-spring having one end bowed laterally across the outer face of the nut for engagement with a bolt, and the other attaching branch having its rear end portion fixedly held between the opposite walls of the groove, the forward portion of the branch being free from said walls and twisted longitudinally, the outer edge portion of said attaching branch being out of contact with the back of the groove.

657,508. COAL-SCREEN. WILLIAM W. BROWN, Waterville, Me. Filed Feb. 23, 1900. Serial No. 6,320. (No model.)



Claim.—1. In a coal-screening device, the combination of a receptacle having an opening in its top, a plate adapted to cover said opening and be reciprocated thereon, and provided with a central opening H, a frame having a screen-bottom and adapted to contain the material to be sifted and to fit over said opening H, and a cover hinged to said plate and adapted to cover said frame when in position, substantially as set forth.

2. In a coal-screening device, the combination of a receptacle having an opening in its top, a plate adapted to cover said opening and be reciprocated thereon and provided with a central opening H, a funnel-shaped hopper attached to said plate beneath said opening and tapering downward and inward, a frame having a screen-bottom and adapted to contain the material to be sifted and to fit over said opening H, and a cover hinged to said plate and adapted to cover said frame when in position, substantially as set forth.

3. In a coal-screening device, the combination of a receptacle having an opening in its top, a plate adapted to cover said opening and be reciprocated thereon and provided with a central opening H, a frame having a screen-bottom and open at its front end and top, adapted to contain the material to be sifted and to fit over said opening H, and a cover hinged to said plate consisting of two parts hinged together and adapted to cover respectively the open end and top of said frame when in position, substantially as set forth.

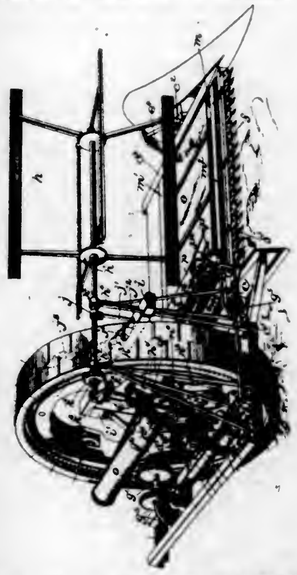
4. In a coal-screening device the combination of a receptacle having an opening in its top, a plate adapted to cover said opening and be reciprocated thereon and provided with a central opening H, a raised rim surrounding said opening and leaving a ledge A between itself and the edges of said opening, and a frame containing the material to be sifted, having a screen-bottom and adapted to rest on said ledge over said opening H and to fit closely within said rim so as to provide a rigid and secure means of connection between said sliding plate and frame, substantially as set forth.

5. In a coal-screening device a receptacle open at the top in combination with a sliding plate having a central opening H and adapted to reciprocate on said receptacle, and a shovel or scoop provided with a handle and having a screen-bottom and adapted to fit over said opening H, and a cover hinged to said plate and adapted to cover the said scoop when in position, substantially as set forth.

6. In a coal-screening device a receptacle open at the top in combination with a sliding plate having a central opening H and adapted to reciprocate on said receptacle, a shovel or scoop provided with a handle and having a screen-bottom and adapted to fit over said opening H, said scoop having its sides slanting upward and backward from its lip, and a cover hinged to said plate at the front end of said opening H, consisting of two parts hinged together and respectively adapted to rest on the said slanting front edges and top edges of the scoop, substantially as set forth.

7. In a coal-screening device a receptacle open at the top in combination with a sliding plate having a central opening H and adapted to reciprocate on said receptacle, a shovel or scoop provided with a handle and having a screen-bottom and adapted to fit over said opening H, and a cover hinged to said plate at the front end of said opening H, consisting of two parts hinged together and respectively adapted to rest on the front and top edges of the scoop, the said parts having downward flanges at their free edges adapted to fit around the edges of said scoop, substantially as set forth.

657,509. HARVESTER. REUBEN C. BRUBAKER, El Dorado, Ohio. Filed June 19, 1899. Serial No. 721,172. (No model.)



Claim.—1. In a harvester, a master-wheel rim, a bearing therefor provided with a curved slot, a frame vertically adjustable on said bearing, a driving mechanism upon said frame, a power-transmitting member also on said frame and having connection with the said driving mechanism and including a rotatable member contacting with the said master-wheel rim, and a member upon the frame extending into the said slot in the wheel-bearing, whereby in the adjustment of the said frame the said rotatable member remains in contact with the said master-wheel rim; substantially as described.

2. In a harvester, a master-wheel rim, a bearing therefor provided with a curved slot, a curved rack upon said bearing in proximity to said slot, a frame vertically adjustable on said bearing, a driving mechanism upon said frame, a power-transmitting member also on said frame and having connection with the said driving mechanism and including a rotatable member contacting with the said master-wheel rim, a shaft journaled upon said frame and extending through said curved slot in the said wheel-rim bearing, a gear upon said shaft and engaging the said rack, and means for rotating the said shaft to cause adjustment of the frame upon the bearing, the said slot and shaft serving to maintain the said rotatable power-transmitting member in engagement with the wheel-rim in the various adjustments of the frame; substantially as described.

3. In a harvester, a master-wheel rim, a ring-bearing therefor, a frame, an elevator-apron having its support pivotally connected at one end to said frame and extending therefrom through said ring-bearing, a cutter, mechanism for imparting motion from said master-wheel rim to said cutter and elevator-apron, and a toggle connecting the elevator-apron support with said frame adapted to maintain the driving-gearing for said apron in operative position at different adjustments of the frame and means for adjusting said frame vertically upon the said bearing and for maintaining the same in its adjusted position, and a link pivotally connected to said bearing and to said frame; substantially as described.

4. In a harvester, a master-wheel rim having an internal gear, a ring-bearing therefor, a frame adjustably supported by said ring-bearing, standards upon said frame, journal-bearings having sliding connection upon said standards, a reel-shaft in said bearings, and means for adjusting said reel-shaft toward and away from the frame; together with a shaft mounted on said frame in gear with said master-wheel rim and with said reel-shaft for imparting motion to the latter substantially as described.

5. In a harvester, a master-wheel rim having an internal gear, a ring-bearing therefor, a frame adjustably supported by said ring-bearing, standards upon said frame, journal-bearings having sliding connection upon said standards, a reel-shaft in said bearings, a lever pivoted upon said frame, a collar loosely engaging said reel-shaft, and a link connecting said collar and lever whereby said reel-shaft can be adjusted toward and away from the frame by the movement of said lever; together with a shaft mounted on said frame in gear with said master-wheel rim and with said reel-shaft for imparting motion to the latter substantially as described.

6. In a harvester, a master-wheel rim, a ring-bearing therefor, a main frame adjustably supported by said ring-bearing, in combination with an inclined elevator-frame carrying an elevator-apron extending through said ring-bearing, means for vertically adjusting said main frame and simultaneously changing the inclination of the elevator-apron frame, a line-shaft journaled in bearings on the said main frame, gearing connecting said line-shaft with the master-wheel rim, chain-gearing connecting said line-shaft with the elevator-apron, and a toggle connecting said main frame and the elevator-apron frame, and adapted to automatically maintain said chain-gearing in operative position in different adjustments of the main frame and elevator-apron, substantially as described.

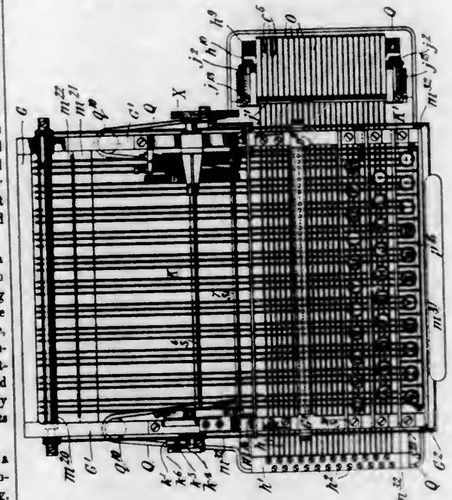
7. In a harvester, a master-wheel rim, a ring-bearing therefor, a main frame supported by said ring-bearing, an elevator-frame or apron-support carrying an elevator-apron extending through said ring-bearing, a frame pivotally connected with said main frame, means for vertically adjusting the latter frame, a line-shaft in bearings on said main frame, gearing connecting said line-shaft with the master-wheel, chain-gearing connecting said line-shaft with the elevator-apron, a swinging arm pivoted to the main frame and carrying a roller at one end in engagement with the chain to keep the same taut, and a link connecting said arm with the apron-support whereby the chain is automatically adjusted according to the height of the frame.

8. In a harvester, a master-wheel rim, a ring-bearing therefor, a frame supported at one side of the machine by said ring-bearing, a grain-wheel supporting said frame at the other side of the machine, means for adjusting the frame vertically, rollers in bearings on the portion of the frame between the two wheels, an inclined frame pivotally connected with the main frame and extending through and connected with the ring-bearing of the master-wheel, a roller supported by said inclined frame, an apron running over said roller and the rollers in the main frame, a line-shaft on the main frame, gearing connecting said shaft with the master-wheel, gearing connecting said shaft with one of the apron-rollers, and means for automatically maintaining the elevator-apron-driving gearing in operative position in different adjustments of the main frame.

9. In a harvester, a master-wheel rim, a ring-bearing therefor, a frame supported at one side of the machine by said ring-bearing, a grain-wheel supporting said frame at the other side of the machine, means for adjusting the frame vertically, rollers in bearings on the portion of the frame between the two wheels, an inclined frame pivotally connected with the main frame and extending through and connected with the ring-bearing of the master-wheel, a roller supported by said inclined frame, an apron running over said roller and the rollers in the main frame, a line-shaft on the main frame, gearing connecting said shaft with the master-wheel, chain-gearing connecting said shaft with the upper apron-roller, an arm pivoted at one end to the main frame and carrying a roller at its free end in engagement with the chain, and a link connecting said pivoted arm with the upper apron-roller-supporting frame said pivoted arm and link forming a toggle for automatically keeping said chain taut at different adjustments of the main frame, substantially as and for the purpose described.

10. In a harvester, a master-wheel rim, a ring-bearing therefor, a main frame supported by said ring-bearing, in combination with an inclined elevator frame or apron support pivotally connected to said main frame and carrying an apron extending through said ring-bearing, a line-shaft on said main frame geared to said master-wheel rim, and gearing connecting said line-shaft with the elevator-apron, together with mechanism for vertically adjusting said main frame and simultaneously changing the inclination of the elevator frame or apron support, and a toggle pivotally connecting said main frame and inclined elevator-frame, and adapted to keep the elevator-apron-driving gearing in operative connection with the line-shaft at different adjustments of the main frame, substantially as described.

657,510. PERFORATOR-KEYBOARD. CHARLES L. BUCKINGHAM and EMIL GERMANN, New York, N. Y.; said Germann assignor to said Buckingham. Filed Jan. 13, 1898. Serial No. 666,553. (No model.)



Claim.—1. The combination, in a perforating system, of a perforator having a series of punches, a feed-wheel having variable steps of movement, a keyboard having a substructure common to all codes, and superstructures carrying keys and other parts of said keyboard, each superstructure being individual in character and adapted to one particular code.

2. The combination, in a perforating system, of a perforator having a series of punches, a feed-wheel for feeding the paper tape step by step as each character is perforated, a keyboard consisting of a substructure, which is adapted to all codes, and two or more superstructures each of which is adapted to one code only, thus adapting the perforating system to many different codes by changing only a small part of the apparatus.

3. The combination, in a perforating system, of a perforator containing electromagnets for actuating the punches and feeding devices, a keyboard in which are employed a series of chains or cords, a series of contact-levers, a series of stationary contacts electrically connected with the magnets of the perforator, a series of key-levers for actuating said contact-levers, a device for indicating the perforation of a definite number of characters, a locking device controlled by said indicating device, and a locking-bar controlled thereby for arresting the further operation of perforating, and a key provided with means for releasing said lock, as and for the purposes set forth.

4. In a perforating system, the combination of a perforator having punches and feeding apparatus, a keyboard having a series of finger-keys and indicating apparatus which is actuated a step at a time by a depression of each key, a locking device controlled by said indicator for arresting the further action of the key-levers after the perforation of a predetermined number of characters, and an auxiliary key for releasing said lock, as and for the purpose set forth.

5. In a perforating system, the combination of a perforator having punches and feeding apparatus, a keyboard having a series of finger-keys, a registering mechanism which is moved a step at a time by the depression of each key, a locking mechanism controlled by said registering apparatus, an auxiliary key for releasing said locking apparatus and moving the indicator an additional step, as and for the purpose set forth.

6. In a perforating system, the combination of a perforator having a series of punches and feeding apparatus, a registering apparatus for indicating the number of characters perforated, a locking device controlled by said registering mechanism for arresting the further action of the key-levers after the perforation of a predetermined number or group of characters, an auxiliary key which, when depressed, releases said locking device and effects an additional step of rotation of the registering apparatus, and an auxiliary registering device for indicating the number of groups perforated, each group representing a line in pages printed upon a receiving-machine.

7. In a perforating system, the combination of a perforator having punches and feeding apparatus, a keyboard having a series of key-levers, a registering apparatus for indicating the number of characters perforated, a locking device controlled by said indicator which arrests the further action of the key-levers after the perforation of a predetermined number or group of characters, and an auxiliary register which is actuated by and in conjunction with the locking apparatus to indicate the number of groups of characters perforated.

8. In a manual keyboard arrangement, the combination of a series of key-levers, a registering-wheel, W, a locking-disk, L, a dog, z^4, a ratchet-wheel, z', driving or escapement pallets therefor actuated by said key-levers, a link p^{11}, locking-bar p^{12}, and an auxiliary key K', as and for the purpose set forth.

9. In a keyboard arrangement, the combination of a series of key-levers, an indicating-wheel, W, a notched disk L, attached thereto, arm p^4 carrying a dog z^4, link p^{11}, arms p^{14}, a locking-bar p^{15}, an auxiliary key K' for withdrawing the dog z^4 from the notch z^3, ratchet-wheel z', and escapement or driving pallets s^3 which are actuated by the keys of the keyboard, as and for the purpose set forth.

10. In a keyboard having a series of key-levers, an indicating-wheel W, locking-disk L, driving or escapement pallets s^3, a ratchet-wheel z' which is movable lengthwise of its axis, and a handle and stop whereby said ratchet-wheel may be disengaged from its pallets and rotated to a zero position, as and for the purpose set forth.

11. In a keyboard, the combination of a series of finger-keys, an indicating-wheel W, locking-disk L, a ratchet-wheel and escapement-pallets for actuating the indicating-wheel a step at a time by the depression of key-levers, a ratchet-wheel which is movable along its axis to disengage its teeth from the driving or escapement pallets, a handle or knob z^5 for moving said wheel along its axis and for rotating said wheel to a zero position, a stationary stop z^9 and a pin z^{10}, yieldingly mounted within said ratchet-wheel, as and for the purpose set forth, whereby at any point of rotation said ratchet or escapement wheel may be disengaged from its pallets and, with the indicating-wheel, rotated to a zero position.

12. In a keyboard arrangement, the combination of a series of key-levers, a rock-shaft s^4 actuated thereby, an arm s^5 rigidly connected therewith, an escapement-anchor, having pallets s^3, loosely pivoted upon said shaft which are vibrated by said arm s^5, a ratchet or escapement wheel which is actuated or controlled by said pallets, an indicating-wheel W, and a common break apparatus for opening and closing an electric circuit in unison with the step-by-step action of said indicator.

13. In a keyboard arrangement, the combination of a series of key-levers, a rock-shaft s^4 actuated thereby, a vibrating arm carrying pallets s^3, a ratchet-wheel driven or controlled thereby, an indicating-wheel W, a locking-disk L, a locking-arm p^4, a locking-bar for arresting the further action of the key-levers at a predetermined point in the rotation of the indicating-wheel, and a common break apparatus actuated by said rock-bar s^4 for opening and closing an electrical circuit in unison with the movement of said indicator-wheel.

14. In a keyboard arrangement, the combination of a series of key-levers, rock-shaft s^4, pallets s^3, a ratchet-wheel z' actuated or controlled by said pallets, an indicating-wheel W, a locking-disk L, a locking-arm p^4, a locking-bar n^{15} for arresting the further action of the key-levers, an auxiliary key K' for releasing said locking apparatus, an indicator X, a ratchet-wheel m^{19} connected therewith, and a pallet m^{14} operated in conjunction with arm p^4 at a predetermined point in the rotation of the indicator W, as and for the purpose set forth.

15. In a keyboard arrangement, a series of finger-keys, side plates G' G', having a series of steps s^{20}, cross-bars s^{21} and blades m^{20} mounted thereon for separating the buttons of the key-levers, as and for the purpose set forth.

16. In a keyboard arrangement, the combination of the keyboard-frame and a series of cross-bars, s^{21}, from which project blades m^{20}, whereby said keys are so separated that upon touching one, the operator cannot inadvertently depress another.

17. In a perforating system, a perforator having punches and feeding apparatus for moving a paper tape through steps of variable length, electromagnets for actuating said punches and variable step-feeding apparatus, a keyboard for controlling said perforator and means whereby the lengths of the various steps of the feed movements may be increased for the purpose of double spacing between letters or between words, as and for the purpose set forth.

18. In a perforating system, the combination of a perforator having punches, a feed-wheel for moving a paper tape through variable steps of movement, and means for increasing the length of each step of feed movement whereby double or additional spacing between letters and words may be effected.

19. In a perforating system, the combination of a perforator having a series of punches, a feeding device for feeding the paper tape through variable steps of movement, a series of electromagnets, one to control each of the different steps of movement of the feed-wheel, and a switching device whereby, at the pleasure of the operator, a feeding-magnet may be brought into action in advance of the one which would be normally operated.

20. In a perforating system, the combination of punching devices, a variable feed apparatus a series of magnets H' to H^5 for controlling said feed apparatus, and a multiple switch having movable connecting-pieces q^{26} to q^{27}, as and for the purpose set forth.

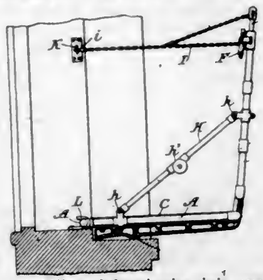
21. In a perforating system, the combination of a keyboard having a series of key-levers, a series of contact-arms actuated thereby, a common closing and breaking apparatus in the common return-circuit of said perforator, and a circuit-breaking contact in one branch which is actuated by the space-key to break said branch as the common return-circuit is closed, as and for the purpose set forth.

22. In a perforating system, the combination of a series of punches actuated by electromagnets B^2 to B^{16} in separate branches, contact-levers controlled by said keys for opening and closing said magnet branches, a punch-magnet B', a breaking device for opening the circuit of punch-magnet B' upon the depression of one of the keys of the keyboard, and an apparatus for closing and breaking the common return-circuit.

23. In a perforating system, the combination of a perforator having a series of punch and feed magnets, a line-marking key and a switch whereby one feed-controlling magnet or another may be brought into action, as it may be desired to merely mark the commencement of a new line in preparing printer messages, or to erase or rub out a part of a message already perforated.

24. In a perforator system, the combination of a perforating-machine and a feed-wheel for moving the tape therein, a line-marking key and means whereby, upon the depression of said key, the paper tape may be fed a greater or less distance, according to the purpose for which said key is at the time used.

657,511. FOLDING WINDOW-CLEANING CHAIR. LOUIS BULASKY, New York, N. Y. Filed May 4, 1900. Serial No. 15,447. (No model.)



Claim.—1. A folding window-cleaning chair, comprising a seat-frame, beams or girders secured to said frame and having their outer ends upturned, an outer frame or back hinged in the upper ends of the upturned portions of said beams or girders and jointed links connected at one end to the seat portion and at the other end to the outer frame or back, substantially as shown and described.

2. A folding window-cleaning chair comprising a seat portion adapted to be secured to the bottom of the window frame or casing, an outer frame or back hinged to the seat portion and having tubular side members, an extension-frame having its side members arranged to slide in said tubular members, latches carried by said tubular members to engage the side members of the extension-frame, and jointed links hinged to the seat portion and to the back or outer portion, substantially as shown and described.

657,512. RATCHET-WRENCH. TAYLOR CARTER and BOWEN HENRY, Frankfort, Ky. Filed Feb. 27, 1900. Serial No. 6,745. (No model.)



Claim.—1. In a wrench, the combination, with a head provided with a circular opening, of a slotted ratchet-disk journaled therein, one side of which is provided with a jaw, the inner face of which is even with the end wall of the slot, a movable jaw provided with a threaded stem which projects through the slot and with shoulders which bear against the disk upon opposite sides of the slot, a washer and a nut on the stem, and means for locking the disk against rotation, substantially as described.

2. In a wrench, the combination, with a slotted head, of a slotted ratchet-disk journaled therein, one side of which is provided with a jaw at one end of the slot, a movable jaw in the slot provided with a threaded stem, a nut and a washer on the stem, two spring-actuated dogs in the handle, each of which is provided with a pin that projects through the side of the handle, and thumb-pieces pivotally secured to the side of the handle in position to engage with said pins, said thumb-piece and nut being upon the same side of the stem.

657,513. RAILROAD-SPIKE. BARNARD M. CHASE, Hudson, N. Y. Filed June 18, 1900. Serial No. 20,741. (No model.)

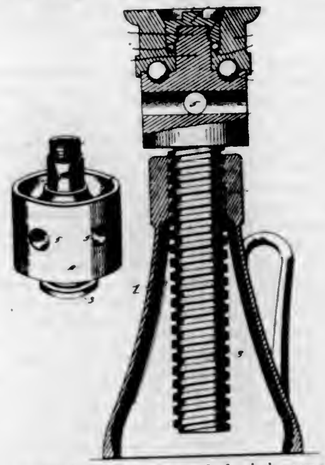


Claim.—A railroad-spike, comprising a substantially-rectangular shank, having a head, which projects laterally at the forward side thereof, the front and rear sides of the shank being free from projections, and the opposite edges of the shank having a plurality of longitudinally-alined projections or ribs, the opposite longitudinal sides of which are beveled and intersect substantially midway between the opposite sides of the spike, the opposite lowermost ribs having their sharp longitudinal edges inclined inwardly toward the point of the spike, and their upper ends beveled upwardly and inwardly, the opposite ends of the other ribs having their opposite ends beveled to converge outwardly, and the adjacent beveled ends forming sockets or recesses, the uppermost ribs terminating short of the head.

657,514. LIFTING-JACK. ALFRED L. COBB, Boulder, Colo., assignor of one-half to James Cowie, same place. Filed June 4, 1900. Serial No. 19,021. (No model.)

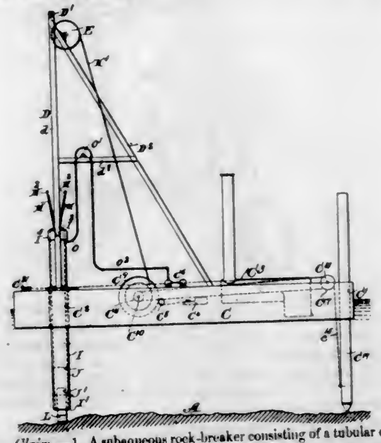
Claim.—1. A lifting-jack comprising a standard, a screw engaging the standard and provided at its top with an enlargement and having a vertical stud extending centrally from the enlargement and threaded at its upper end, a supporting head or cap arranged on the enlargement of the screw and provided with a central aperture extending entirely through the head or cap and receiving the stud, the upper portion of the aperture being enlarged to provide a shoulder, and a securing-nut located wholly within the upper portion of the aperture of the supporting head or cap, engaging the screw-threads of the stud, and having its lower edge located directly above the said shoulder, whereby the cap or head is retained in position, said nut being provided at its upper face with a wrench-receiving enlargement located within the central aperture of the head or cap, substantially as described.

2. A lifting-jack comprising a standard, a screw having an enlargement, a vertical stud projecting from the said enlargement at the top thereof and provided with a threaded upper portion and a smooth lower portion, a supporting head or cap arranged on the stud and having a central aperture to receive the same, the upper portion of the aperture being enlarged to provide a shoulder, and the latter having an annular groove forming a ball-race, a securing-nut located within the upper portion of the aperture and having an interiorly-threaded upper portion to engage the screw-threads of the stud, the lower portion of the nut being smooth and the bottom of the nut being provided with an annular groove located above the said groove, antifriction-balls arranged in the said grooves and interposed between the shoulder of the cap or head and the lower edge of the securing-nut, and antifriction devices interposed between the cap or head and the enlargement of the screw, substantially as described.



3. A lifting-jack comprising a standard, a jack-screw engaging the standard and having a cylindrical enlargement, a vertical stud extending from the top of the enlargement and provided with a threaded upper portion and a smooth lower portion, a supporting head or cap having a central aperture receiving the stud, enlarged to form a shoulder and provided with a flaring upper portion, said shoulder being grooved, a nut fitting over and engaging the threaded portion of the stud and having an annular groove at its bottom and provided at its top with a projecting peripheral portion having an inclined lower face conforming to the configuration of the flare of the aperture of the head or cap, balls interposed between the nut and the shoulder, and antifriction devices arranged between the enlargement of the screw and the bottom of the head or cap, substantially as described.

657,515. SUBAQUEOUS ROCK-BREAKER. BARTON H. COFFEY, Philadelphia, Pa. Filed May 20, 1899. Renewed Feb. 6, 1900. Serial No. 4,283. (No model.)



Claim.—1. A subaqueous rock-breaker consisting of a tubular caisson closed at top and open at bottom, in combination with a heavily-weighted chisel vertically movable in the tubular caisson, means for elevating the chisel in and dropping it through the caisson and means for forcing compressed air into the caisson to maintain it substantially free from water.

2. A subaqueous rock-breaker consisting of a tubular caisson closed at top and open at bottom and provided with longitudinal guides, as I', in combination with a weight as J, movable on the guides in the caisson

and adapted to hold a rock-breaking chisel in its lower end, means for elevating the weight in and dropping it through the caisson and means for forcing compressed air into the caisson to maintain it substantially free from water.

3. A subaqueous rock-breaker having in combination a tubular caisson closed at top and open at bottom, a weight adapted to hold a chisel longitudinally movable in said caisson, means for raising and dropping said weight and means for connecting the weight and caisson together at will.

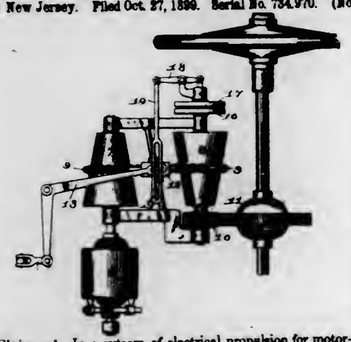
4. A subaqueous rock-breaker having in combination a staging having an opening therethrough, a tubular caisson closed at top and open at bottom passing through opening, a weight adapted to hold a chisel longitudinally movable in said caisson, means for raising and dropping said weight and a clamp adapted to secure the caisson to the staging arranged as described to have a capacity to rotate with the caisson.

5. A framing or derrick, as D D', having guides, as D^4 in combination with a tubular caisson arranged to extend down into water beneath said derrick, a weight vertically movable in the caisson and adapted to hold a rock-breaking chisel, a rod, as K, extending through a stuffing-box in the top of the caisson and adapted to connect with the weight aforesaid to raise it, a cross-head, as K^3, moving in the guides D^3 and connected to the top of rod K, a cord connected to said cross-head and leading over a pulley on the derrick to a hoisting-drum and means, as hook-arms M M, for connecting the top of the caisson to the cross-head K^3.

6. A framing or derrick, as D D', having guides, as D^4, in combination with a tubular caisson arranged to extend down into water beneath said derrick, a weight vertically movable in the caisson and adapted to hold a rock-breaking chisel, a rod, as K, extending through a stuffing-box in the top of the caisson and adapted to connect with the weight aforesaid to raise it, a cross-head, as K^3, moving in the guides D^3 and connected to the top of rod K, a cord connected to said cross-head and leading over a pulley on the derrick to a hoisting-drum, means, as hook-arms M M, for connecting the top of the caisson to the cross-head K^3 and means, as clamp G, for holding the caisson in depressed position.

7. In a subaqueous rock-breaker, a tubular caisson closed at top and open at bottom in combination with a weight adapted to hold a chisel and longitudinally movable in said caisson, said weight having a catch-engaging device at its top, a catch situated in the caisson above the weight and also longitudinally movable therein, said catch being adapted to engage and hold the weight when forced against its top, means for moving the catch in the caisson and a catch-disengaging device situated at the top of the caisson and whereby the catch is made to disengage the weight when drawn upward to the disengaging device.

657,516. MOTOR-VEHICLE. CLYDE J. COLEMAN, Chicago, Ill., assignor, by mesne assignments, to The General Automobile Company, of New Jersey. Filed Oct. 27, 1899. Serial No. 734,970. (No model.)



Claim.—1. In a sytsem of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch, a motor, a variable-speed mechanism, intermediate connections between the same and the actuating means of the controller, and means capable of independent actuation carried by the movable member of the controller within easy reach of the operator's hand and having operative connection with said switch, substantially as set forth.

2. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch, a motor, a variable-speed mechanism, intermediate connections between the same and the actuating means of the controller, means capable of independent actuation carried by the movable member of the controller within easy reach of the operator's hand and having operative connection with said switch, and means for locking said switch against movement except when the controller mechanism is in its starting position, substantially as set forth.

3. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch, a motor, a variable-speed mechanism, intermediate connections between the same and the actuating means of the controller, means capable of independent actuation carried by the movable member of the controller within easy reach of the operator's hand, the same comprising a bell-crank handle having operative link connection with the movable member of the reversing-switch, substantially as set forth.

4. In a system of electrical propulsion for motor-vehicles the combination of a circuit-controller, a current-reversing switch, a motor, a variable-speed mechanism, intermediate connections between the same and the actuating means of the controller, means capable of independent actuation carried by the movable member of the controller within easy reach of the operator's hand and having operative connection with said switch, and means for locking said switch against movement except when the controller mechanism is in its starting position, the same comprising a laterally-projecting pin on the switch-operating connection, and a confining-bar adapted to be engaged by said lateral pin to prevent a shifting of the switch except when the pin is moved out of engagement with said bar, substantially as set forth.

5. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch, comprising a fixed and movable member arranged concentric with the pivot-axis of the controller, a motor, a variable-speed mechanism, intermediate connections between the same and the actuating means of the controller, and means capable of independent actuation carried by the movable member of the controller within easy reach of the operator's hand and having operative connection with said switch, substantially as set forth.

6. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch comprising a fixed and movable member arranged concentric with the pivot-axis of the controller, a motor, a variable-speed mechanism, intermediate connections between the same and the actuating means of the controller, means capable of independent actuation carried by the movable member of the controller within easy reach of the operator's hand and having operative connection with said switch, and means for locking said switch against movement except when the controller mechanism is in its starting position, substantially as set forth.

7. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch comprising a fixed and movable member arranged concentric with the pivot-axis of the controller, a motor, a variable-speed mechanism, intermediate connections between the same and the actuating means of the controller, means capable of independent actuation carried by the movable member of the controller within easy reach of the operator's hand and having operative connection with said switch, and means for locking said switch against movement except when the controller mechanism is in its starting position, the same comprising a laterally-projecting pin on the switch-operating connection, and a confining-bar adapted to be engaged by said lateral pin to prevent a shifting of the switch except when the pin is moved out of engagement with said bar, substantially as set forth.

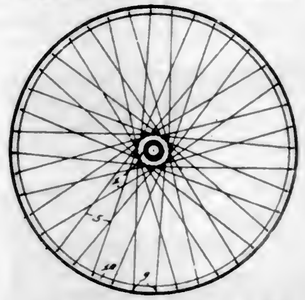
8. In a system of electrical propulsion for motor-vehicles, the combination of a current-reversing switch, means for actuating the same, a motor, a variable-speed mechanism, intermediate connections between the same and the actuating means of the switch, and a brake mechanism having intermittent operative connection with the variable-speed mechanism, substantially as set forth.

9. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch, a motor, a variable-speed mechanism, intermediate connections between the same and the actuating means of the controller, and a brake mechanism receiving motion from the movable member of the current-controller, and adapted to be actively operated by a continued movement of such movable member past the point where it effects an interruption of the motor-circuit, substantially as set forth.

10. In a system of electrical propulsion for motor-vehicles, the combination of a circuit-controller, a current-reversing switch, a motor, a variable-speed mechanism, intermediate connections between the same and the actuating means of the controller, a brake mechanism receiving motion from the movable member of the current-controller and adapted to be actively operated by a continued movement of such movable member past the point where it effects an interruption of the motor-circuit, and means for insuring the return of the movable member to its starting-point before a reversal of the motive current can be effected, substantially as set forth.

657,517. METHOD OF MAKING VEHICLE-WHEELS. HENRY F. Condon, De Kalb, Ill. Filed Jan. 17, 1900. Serial No. 1,735. (No model.)

Claim.—1. The method of tensioning suspension-wheels of the general character described, which consists in first assembling the hub, rim and spokes of the wheel and thereafter twisting a part of the hub connected with one set of spokes bodily with relation to the part of the hub connected with the other set of spokes in such direction as to increase the tension of the spokes and in such manner as to impart a permanent distortion or re-forming and set to the metal which is re-formed.

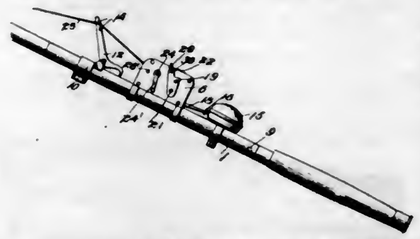


2. The method of tensioning suspension-wheels of the general character described, which consists in first assembling the spokes, hub and rim next heating a part of the hub intervening between the spoke-support of one side and the spoke-support of the other side of the wheel and thereafter twisting said heated portion bodily and holding it in tensioned position until it regains its rigidity.

3. The method of tensioning suspension-wheels of the general character described, which consists in first assembling the hub, rim and spokes, next heating an annular section of the hub intervening between the spoke-supporting portions thereof and finally twisting said heated portion from opposite ends and in opposite directions and holding it in tensioned position until the metal acquires a permanent set.

4. The method of tensioning suspension-wheels of the general character described, which consists in first assembling the hub, rim and spokes of the wheel, next subjecting a part of the hub intervening between the spoke-supporting portions thereof to an electrical heating-current and finally twisting said heated portion bodily in such manner as to increase the tension of the spokes and holding the re-formed hub in tensioned position until the metal is cooled and regains its rigidity.

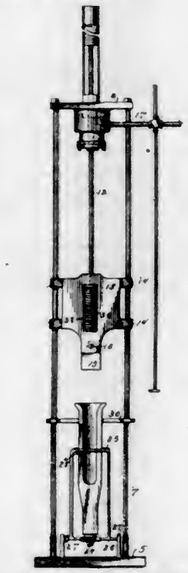
657,518. AUTOMATIC FISHING DEVICE. GEORGE COOK, Louisville, Ky. Filed Oct. 10, 1899. Serial No. 733,168. (No model.)



Claim.—In an automatic fishing-reel, the combination with the slotted tube and the spring-actuated plunger incased thereby, of the clamp-bracket secured to said slotted tube; the notched lever 12 fulcrumed in said clamp-bracket near the forward end of the slot in said tube; the continuous-alarm bell 15 provided with the push-pin 16, and the casing 6 fixed to said spring-actuated plunger and having sliding engagement with the tube; the arm 18 fulcrumed upon a shaft in said casing and adapted to engage and release said push-pin 16; the reel-shaft and reel; the counter-shaft; the spring-actuated shaft 19; the gear-wheel 22 each supported within the casing in operative engagement, and means substantially as described for throwing said gearing into and out of gear with the reel-shaft, substantially as specified.

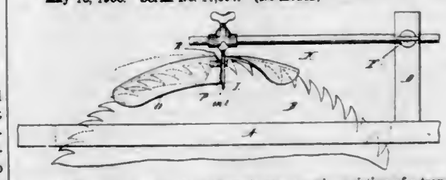
657,519. APPARATUS FOR REPAIRING DRILLS. PERRY L. CROSSMAN, Joplin, Mo. Filed Feb. 24, 1900. Serial No. 6,874. (No model.)

Claim.—1. A steam swaging-machine comprising uprights, a cylinder carried by the uprights at the upper ends thereof, a cross-head slidably engaged with the uprights and having a spring-receiving recess and a communicating guideway, a piston in the cylinder and having a rod passed through the guideway and into the recess, a spring in the recess, a head upon the rod engaging the spring, a base for the uprights, ears upon the base, a drill-holding frame pivotally mounted in the ears, a stop-bar upon the uprights in the path of movement of the drill-frame to retain said frame in operative position, and steam supply and exhaust connections with the cylinder, the cross-head having a hammer connected therewith for engagement with a drill in the frame.



2. A steam swaging-machine comprising uprights, a cross-head slidably engaged with the uprights, a steam-cylinder, a piston for the cylinder having a rod slidably engaged with the cross-head, a cushion between the end of the rod and the cross-head, a base for the uprights, ears upon the base, a rock-shaft pivotally mounted in the ears, a drill-holder mounted upon the shaft and comprising a U-shaped bar attached at its ends to the shaft and having its end adjacent the web bent laterally and provided with a cross-bar connecting the arms of the U-shaped bar at their bends to form a rectangular inclosure, a seat upon the shaft for the butt of the drill, means for rocking the shaft, and a stop-bar upon the uprights for contact by a drill in the frame to stop the drill in operative relation to the cross-head, said cross-head having a hammer for engagement with the drill in the frame.

657,520. SAW-GUARD. TONEY DAVID, New York, N. Y. Filed May 18, 1900. Serial No. 17,097. (No model.)



Claim.—1. A vertically-adjustable saw-guard consisting of a transverse rigid plate having a vertical opening centrally thereof and opening downwardly and through which the saw passes, a backwardly and downwardly inclined member, and a forwardly and downwardly inclined member which is pivotally connected with said plate and adapted to move vertically, substantially as shown and described.

2. A vertically-adjustable saw-guard consisting of a transverse rigid plate having a vertical opening centrally thereof and opening downwardly and through which the saw passes, a backwardly and downwardly inclined member, and a forwardly and downwardly inclined member which is pivotally connected with said plate and adapted to move vertically, said last two members being trough-shaped in cross-section, substantially as shown and described.

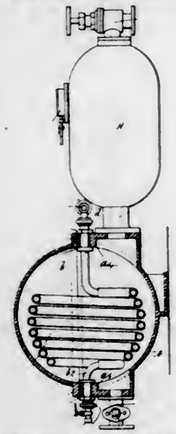
3. In a device of the class described, an upright or standard, a vertically-adjustable bar or support connected therewith, a tubular head or guard

support mounted on said bar and longitudinally adjustable thereon, and a saw-guard connected with said tubular head consisting of a transverse central plate having a vertical central opening through which the saw passes, a backwardly-directed member, and a forwardly-directed pivoted member, substantially as shown and described.

4. A saw-guard consisting of a stationary upright, a horizontal support vertically adjustable thereon, a guard-support longitudinally adjustable on said first-named support, and a guard connected with the lower side of said guard-support, and consisting of a transverse plate having a central vertical opening which opens downwardly, and through which the saw passes, a stationary member secured to said plate and projecting backwardly over the saw, and a forwardly-directed member pivotally connected with said plate and projecting over the saw, said last-named member being adapted to move vertically at the free end thereof, substantially as shown and described.

5. A saw-guard consisting of a transverse rigid plate having a vertical opening centrally thereof and opening downwardly and through which the saw passes, a backwardly and downwardly inclined member, and a forwardly and downwardly inclined member which is pivotally connected with said plate and adapted to move vertically, substantially as shown and described.

657,521. EVAPORATING APPARATUS. JAMES DAVIE, Glasgow, Scotland. Filed May 26, 1899. Serial No. 718,373. (No model.)



Claim.—1. In an apparatus of the class described, a main casing arranged vertically and composed of two separable parts, a steam-coil mounted in and rotatable in one of said parts, substantially as shown and described.

2. In an apparatus of the class described, a main casing arranged vertically and composed of two separable parts, a steam-coil mounted in and rotatable in one of said parts, and a steam-drum mounted on said casing and in communication therewith, substantially as shown and described.

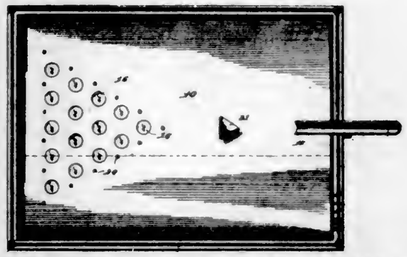
3. In an apparatus of the class described, a main casing arranged vertically and composed of two separable parts, a steam-coil mounted in and rotatable in one of said parts, and a steam-drum mounted on said casing and in communication therewith, said coil being provided with a steam supply and exhaust, substantially as shown and described.

4. In an apparatus of the class described, a main casing arranged vertically and composed of two separable parts, a steam-coil mounted in one of said parts and adapted to turn therein, a steam-supply connected with one end of said coil and an exhaust connected with the other end, a steam-drum mounted on said casing and in communication therewith, and a water-gage connected with said casing and said drum, said drum being also provided with a gage and safety-valve, substantially as shown and described.

5. In an apparatus of the class described, a main casing composed of two separable parts, a plurality of steam-coils arranged vertically in one of said parts and rotatable therein, a steam-supply connected with one of said coils, a drum connected with said casing and with which another of said steam-coils is connected, and a water-supply communicating with the main casing adjacent to the last-named coil, whereby the supply of water to the main casing is discharged upon said last-named coil, substantially as shown and described.

6. In an apparatus of the class described, a main casing composed of detachable parts, a plurality of steam-coils mounted therein, a drum mounted on said casing and communicating therewith, a steam-supply connected with one of said coils, the other coil being in communication with said drum, and a water-supply communicating with the main casing adjacent to said last-named coil, whereby the water-supply to the main casing is discharged upon said last-named coil, substantially as shown and described.

657,522. GAME APPARATUS. HARRY A. DEITERS and EDWARD L. BILL, Spencer, W. Va. Filed May 3, 1900. Serial No. 15,383. (No model.)

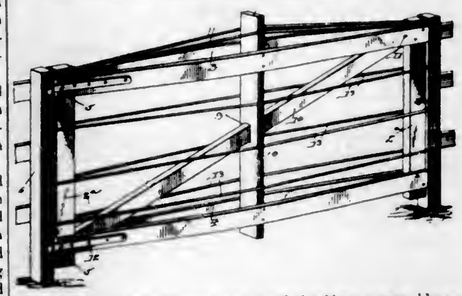


Claim.—1. A game apparatus comprising a board having a surrounding wall provided with a cushion on its inner face, posts at the corners of the wall, rails engaged with the posts, counting-disks slidably engaged with the rails, a triangular series of recesses in the upper face of the board and separated by interspaces, pins in the board opposite the interspaces between the outer recesses, a chute pivoted to the board and a rotatably-adjustable block in the path of discharge from the chute.

2. A game apparatus comprising a board having a series of recesses therein for engagement by a ball, a wall at the edge of the board, a bracket fixed to the wall opposite to the recesses, said bracket having a lateral arm provided with an axial spindle having a lesser diameter than the arm to form a shoulder at the inner end of the spindle, a chute having a perforated lug for engagement with the spindle, a clamping-nut in threaded engagement with the free end of the spindle to clamp the lug against the shoulder, ears upon the lug, and a stop between the ears and adapted for alternate engagement thereby to limit the pivotal movement of the lug upon the spindle.

3. A game apparatus comprising a board having a wall at its edge provided with a cushion, a triangular series of recesses in the upper face of the board and adjacent one end thereof, a chute pivotally mounted at the opposite end of the board, means for holding the chute at different points of its pivotal movement, means for limiting the pivotal movement of the chute in both directions, and a cross-sectionally angular block pivotally mounted upon the board in a line between the chute and the apex of the triangular series of recesses.

657,523. GATE. WILLIAM H. DICKIE, Black Lick Station, Pa. Filed June 6, 1900. Serial No. 19,290. (No model.)

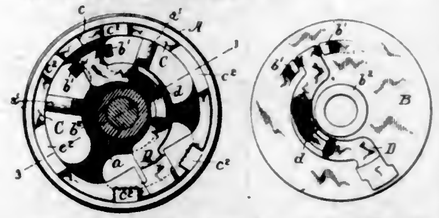


Claim.—1. A gate comprising the vertical end bars, upper and lower horizontal bars arranged in pairs and connecting the end bars and bowed outward to form upper and lower trusses, the vertical bar arranged edgewise between the horizontal bars and forming a strut for the same and provided between its ends with an opening, and the inclined diagonal brace passing through the opening of the strut-bar and having its ends abutting against the end bars of the gate, substantially as described.

2. A gate comprising end bars, the upper and lower horizontal truss-bars arranged in pairs and connecting the end bars, said truss-bars being bowed outward, the central vertical strut-bar arranged edgewise within and interposed between the truss-bars and extended above the upper ones, the diagonal brace extending through a central opening of the strut-bar and having its ends abutting against the end bars, and the top wire or brace connected with the strut-bar and with the end bar and having oppositely-inclined portions, substantially as described.

3. A gate comprising the end bars, the upper and lower horizontal truss-bars arranged in pairs and connecting the end bars and bowed outward, the central vertical strut-bar interposed between the truss-bars and provided with a central opening, the diagonal brace extending through the central opening and abutting against the end bars and secured to the truss-bars, and the continuous wires passing around the gate longitudinally, substantially as described.

657,524. CLUTCH. PHILIP DIEHL, Elizabeth, N. J., assignor to The Singer Manufacturing Company, of New Jersey. Filed Apr. 3, 1900. Serial No. 11,371. (No model.)

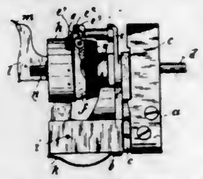


Claim.—1. In a clutch mechanism, the combination with a member or wheel to be driven, of a split clutch-ring housed within said member or wheel, a clutch-lever having one end interposed between the parts of said split clutch-ring, a central bearing or stop for said clutch, and a driving member or part operatively connected with the other end of said clutch-lever.

2. The combination with a pulley or wheel to be driven and a shaft or spindle rigid therewith, of a driving member or disk loosely mounted on said shaft or spindle and having on its inner face a boss or hub, a clutch-lever operatively connected at one end with said driving member or disk, a central bearing or stop for said clutch-lever at said boss or hub, and a split clutch-ring housed within said driven pulley or wheel and between the parts of which the other end of said clutch-lever is interposed.

3. The combination with the wheel or pulley A having recessed opposite faces, of the shaft or spindle *a* rigid with said wheel or pulley, the driving-disks or driving members B loosely mounted on said shaft or spindle and provided with the pinions *b* on their outer faces and the hubs or bosses b^2 on their inner faces, the split clutch-rings C housed in the recessed faces of said wheel or pulley, and the clutch-levers D each operatively connected at one end with said disks or driving members and each having its other end interposed between parts of said split clutch-rings, said levers having central bearings at said hubs or bosses, to operate substantially as hereinbefore set forth.

657,525. REVOLVING-HOOK SEWING-MACHINE. ALBERT DÖRGE, Dresden, Germany. Filed Sept. 22, 1898. Serial No. 691,639. (No model.)



Claim.—In combination in a sewing-machine, a thread-looper comprising an oscillating arm, a shaft carrying said arm, a cam on said shaft, a bobbin-case holder, means for oscillating said holder in a direction transversely of the end of the looper-shaft, said means comprising a pivoted stirrup *b* having a link engaging and oscillated by the cam of the looper-arm substantially as described.

657,526. DRIVE-CHAIN. CHARLES E. DURYEA, Peoria, Ill. Filed Nov. 22, 1899. Serial No. 737,841. (No model.)



Claim.—1. In a drive-chain link, a bearing-block, having pivot-holes in opposite ends thereof, a cylindrical chamber between said holes transverse thereto and of larger diameter than their distance apart and an absorbent filling for said chamber.

2. In a drive-chain a bearing-block, having a central cylindrical chamber and parallel pivot-holes transversely and oppositely intersecting same and an absorbent filling for said chamber.

3. In a drive-chain a bearing-block having a central opening circular in cross-section and contracted in area at one end, filled with an absorbent material and intersected on opposite sides by transverse pivot-holes.

4. In a drive-chain a bearing-block having a chamber open at the vertical bearing-face and a noise-reducing material filling said chamber.

5. In a drive-chain a bearing-block having a chamber open at the vertical bearing-face, an absorbent noise-reducing material filling in said chamber and transverse pivot-holes intersecting same.

6. A drive-chain bearing-block having transverse pivot-holes and a cylindrical chamber at right angles thereto with both ends open and the one end reduced, substantially as and for the purpose specified.

657,527. PROCESS OF MAKING METALLIC DUPLICATE PHONOGRAPH-RECORDS. THOMAS A. EDISON, Llewellyn Park, N. J. Filed May 4, 1900. Serial No. 15,453. (No specimens.)



Claim.—1. The process of making a metallic duplicate from an original phonograph-record, which consists in first forming a matrix in relief of the original record, in then depositing a metal upon the matrix, and in finally removing the matrix from the metal deposited thereon, substantially as set forth.

2. The process of making a metallic duplicate from an original phonograph-record, which consists in depositing a metal upon an original record so as to form a matrix with the record in relief or negative thereon, in depositing a metal upon the matrix whereby the record will be formed in positive upon the deposited metal, and in separating the matrix from the deposited metal, substantially as set forth.

3. The process of making a metallic duplicate from an original phonograph-record, which consists in forming a metallic matrix of the original record, in depositing a different metal upon the metallic matrix, and in dissolving the metallic matrix from the metal deposited thereon, substantially as set forth.

4. The process of making a metallic duplicate from an original phonograph-record, which consists in depositing a metal upon the original record to form a matrix with the record in relief, in depositing a different metal upon the matrix, and in dissolving the metallic matrix from the deposited metal, substantially as set forth.

5. The process of making a metallic duplicate from an original phonograph-record, which consists in forming a metallic matrix of the original record, in waterproofing the matrix except on such portions carrying the record in negative, in depositing a different metal upon the uncoated portion of the matrix, and in removing the matrix from the deposited metal, substantially as set forth.

6. The process of making a metallic duplicate from an original phonograph-record, which consists in forming a metallic matrix of the original record, in waterproofing the matrix except on such portions carrying the record in negative, in depositing a different metal upon the uncoated portion of the matrix, and in dissolving the matrix from the deposited metal, substantially as set forth.

7. The improved process of making a metallic copy of a cylindrical phonographic record, which consists in depositing a metal upon the cylindrical record to form a matrix, in separating the original record from the matrix, in depositing a different metal upon the bore of the matrix, and in separating the matrix from the deposited metal, substantially as set forth.

8. The improved process of making a metallic copy of a cylindrical phonographic record, which consists in depositing a metal upon the cylindrical record to form a matrix, in separating the original record from the matrix, in depositing a different metal upon the bore of the matrix, and in dissolving the matrix from the deposited metal, substantially as set forth.

9. The improved process of making a metallic copy of a cylindrical phonographic record, which consists in depositing a metal on the original record to form a cylindrical matrix, in waterproofing the exterior of the matrix, in immersing the matrix in a plating-bath and depositing a different metal on its bore, and in removing the matrix from the deposited metal, substantially as set forth.

10. The improved process of making a metallic copy of a cylindrical phonographic record, which consists in depositing a metal on the original

record to form a cylindrical matrix, in waterproofing the exterior of the matrix, in immersing the matrix in a plating-bath and depositing a different metal on its bore, and in dissolving the matrix from the deposited metal, substantially as set forth.

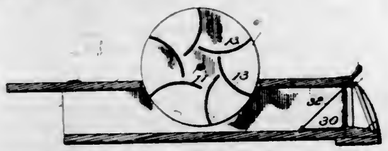
11. The process of making a metallic duplicate from an original phonograph-record, which consists in securing a copper matrix of the original record, in depositing silver on the matrix, and in subjecting the combined matrix and silver deposit to the action of hydrochloric acid to dissolve the copper, substantially as set forth.

12. The process of making a metallic duplicate from an original phonograph-record, which consists in depositing copper on the original record to form a matrix, in depositing silver upon the copper matrix, and in subjecting the matrix and its silver deposit to the action of hydrochloric acid to dissolve the copper, substantially as set forth.

13. The improved process of making a metallic copy of a cylindrical phonographic record, which consists in depositing copper upon the original record to form a cylindrical matrix, in depositing silver upon the bore of the cylindrical matrix, and in subjecting the matrix and silver deposit to hydrochloric acid to dissolve the copper from the silver, substantially as set forth.

14. The improved process of making a metallic copy of a cylindrical phonographic record, which consists in depositing copper upon the original record to form a cylindrical matrix, in waterproofing the exterior of the copper matrix, in depositing silver upon the interior of the matrix, and in subjecting the matrix and silver deposit to hydrochloric acid to dissolve the copper from the silver, substantially as set forth.

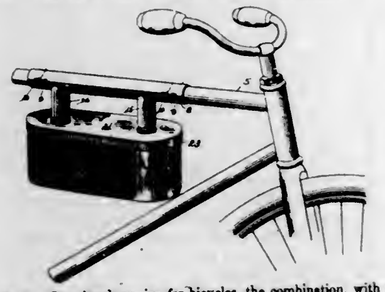
657,528. WATER-MOTOR. EVER EVERSON, Mankato, Kans. Filed Mar. 13, 1900. Serial No. 8,506. (No model.)



Claim.—1. In a water-motor of the character described, the combination of an open-ended chambered float, side and bottom pieces forming an inclosure at the upstream end of the float, an inclined bridge-piece placed upon the bottom piece of the said inclosure and extended forward of the bottom of the float with its rear portion in a higher plane than the said float-bottom, a water-wheel mounted at the top of the float and extending down into the chamber thereof, an inclined fender-grating pivotally mounted to tilt upwardly in said inclosure and adapted to abut against the bridge-piece which forms a stop therefor, a gate pivoted to the float in rear of the bridge-piece, and means for operating the gate from the exterior to cut off the flow of water, substantially as described.

2. In a water-motor of the character described, the combination of an open-ended chambered float, a water-wheel mounted upon the top of the float and extending down into the chamber thereof, a framing at the upstream end of the float, a sill applied to the bottom portion of the framing and inclined rearwardly and upwardly upon its top side and having its rear portion projecting above the plane of the bottom portion of the float, a gate adapted to fold upon the bottom of the float and pivoted in the rear of the said sill and protected thereby, and means for operating the gate, substantially as set forth.

657,529. LUNCH-CARRIER. MARTIN FEILER, Salt Lake City Utah. Filed Oct. 5, 1899. Serial No. 732,687. (No model.)



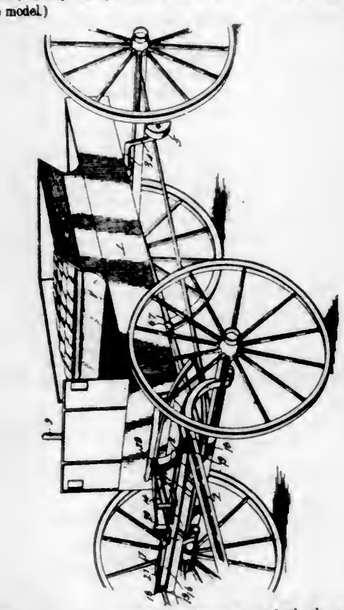
Claim.—In a lunch-carrier for bicycles, the combination, with two semicylindrical spring-actuated hinged sections, one of which is provided with a tubular projection near each end, the outer end of which is flanged inwardly, of a receptacle, the top of which is provided with a rod near each end to register with said projections, the end of which is headed, and a coiled spring around the rod within each projection, one end of which bears against the head and the other end bears against the flange.

657,530. APPAREL-CAP. CHARLES W. GORDON, St. Paul, Minn. Filed Mar. 31, 1900. Serial No. 10,908. (No model.)



Claim.—A cap of the class described, comprising a body part, a vizor, and a pair of flaps foldably secured to the inside of the body part with their front ends extending forward beyond the adjacent ends of the vizor and their rear ends overlapping each other.

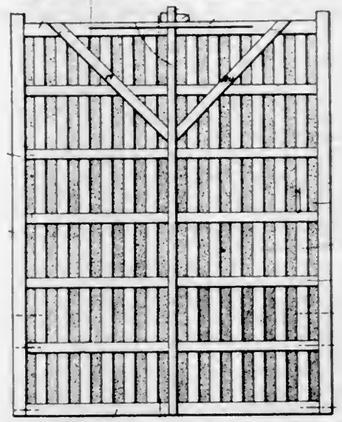
657,531. HORSE-DETACHER AND BRAKE. ARMSTEAD M. GRANT, Cherry Valley, Ark. Filed May 8, 1900. Serial No. 15,922. (No model.)



Claim.—1. In a device of the character set forth, the combination with a vehicle-body and thills therefor, of brake mechanism, a rock-shaft at the front of the vehicle-body connected to the brake mechanism and having a lifting-lever rigidly attached thereto and extending forwardly in advance of the said body, the front upturned end of the said lever being transversely slotted, an independently-operative releasing-lever pivotally supported on the front portion of the vehicle-body and also having its free extremity upturned and in advance of the vehicle-body and transversely slotted, the said free end of the releasing-lever being adjacent to the free end of the lifting-lever, trace-releasing devices on the thills, and an elongated link having its front extremities movably attached to the trace-releasing devices and its rear closed end loosely engaging the transverse slot of the releasing-lever and in position for engagement with the front slotted end of the lifting-lever, both levers having vertical movement.

2. In a device of the character set forth, the combination with a vehicle-body and thills therefor, of a brake mechanism, a rock-shaft at the front under portion of the vehicle-body connected to the brake mechanism and having an operating-lever and a downwardly-extending forwardly-projecting lifting-lever with an upturned transversely-slotted end freely disposed in advance of the vehicle-body, an independently-operative releasing-lever also pivotally connected to the under front portion of the vehicle-body and extending downwardly and forwardly and provided with a free upturned bifurcated extremity having transversely-slotted end portions, the free end of the lifting-lever being movable upwardly and downwardly through the bifurcated extremity of the releasing-lever, trace releasing devices in connection with the thills and including inner levers attached to hooked slide-rods, and an elongated link having its front ends attached to the said inner levers and its rear closed portion loosely engaging the slotted end portions of the bifurcated extremity of the releasing-lever across the path of movement of the said lifting-lever.

657,532. DOOR FOR DRY-KILNS. THOMAS GREEN, Wabash, Ind. Filed Mar. 16, 1900. Serial No. 8,929. (No model.)

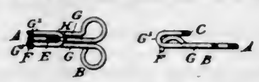


Claim.—1. A door for kilns, comprising a frame consisting of vertical and transverse bars; a series of parallel vertical strips on the outer side of the door; transverse bars secured to said strips; a series of parallel vertical strips on the inner side of the door alternating with the outer strips and breaking joints therewith; and a sheet of asbestos interposed between the outer and inner strips, and clamped in place thereby.

2. A door for kilns comprising a rectangular frame; a series of outer vertical strips; a series of inner strips overlapping and alternating with said outer strips; a sheet of asbestos clamped between the two series of strips; transverse securing-bars for the outer strips, and a central longitudinal bar secured to the outer strips of the door.

3. In a door for kilns; the combination with a rectangular frame, of a series of outer vertical strips; a series of inner vertical strips; a sheet of asbestos between the two series of strips; and cross-bars for bracing and securing the strips, said cross-bars being formed with equidistant recesses to receive said vertical strips.

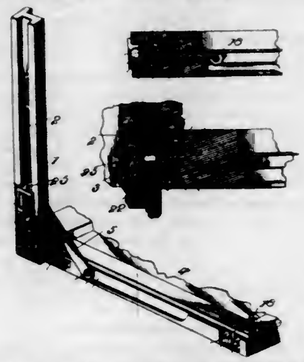
657,533. HOOK FOR GARMENTS, &c. JOHN M. GUILBERT, Philadelphia, Pa. Filed Apr. 3, 1895. Serial No. 544,283. (No model.)



Claim.—1. A garment-book having a guard for the bill carried by a tongue H having its extremity extended down between the side bars and bent, at a point slightly in front of the bend of the bill, laterally under one of the side bars to form an angle-piece F abutting from the rear against said side bar in front of the bend of the bill, substantially as and for the purposes described.

2. A garment-hook having a guard for the bill carried by a tongue H having its extremity extended down between the side bars and bent, at a point slightly in front of the bend of the bill, laterally under one of the side bars and flattened to form a lateral flattened angle-piece F abutting from the rear against said side bar in front of the bend of the bill, substantially as and for the purpose described.

657,534. WINDOW. MICHAEL HABERLE, New York, N. Y. Filed Apr. 4, 1900. Serial No. 11,522. (No model.)



Claim.—1. In a window, and in combination with a slide and a sash pivoted thereto, a fastening comprising complementary members or parts secured, respectively, to the slide and sash, each member having an offstanding projection provided with an inclined end and a notched or cut-away portion opposite said projection, the notch of one member being adapted to receive the projection of the opposite member, substantially as set forth.

2. In a window, the combination with a slide and a sash pivoted thereto, of a fastening comprising complementary members secured, respectively, to the swing end of the sash and the corresponding end of the slide and formed with interlocking projections having coöperating beveled portions, and a spring-actuated catch applied to one of the members and adapted to enter an opening or depression in the opposite member, substantially as set forth.

3. In a window, the combination with a slide and a sash pivoted thereto, of a fastening comprising complementary parts applied, respectively, to the swing end of the sash and the corresponding end of the slide, a spring-actuated catch applied to one of the members and adapted to cooperate with the opposite member, and a locking-pin for securing both of said members, the latter being provided with offstanding projections having beveled interlocking parts, substantially as set forth.

4. In a window and in combination with a slide and a sash pivoted thereto, a slide-block having the side facing the window-opening open and its top portion formed with an opening to receive the counterbalance connection, and a brace connecting the lower portion of the slide-block with the sash, substantially as set forth.

5. In a window, and in combination with a slide and a sash pivoted thereto, of a slide-block applied to the slide and having the side facing the window-opening open and its top part formed with an opening to receive the counterbalance connection which is insertible through the said open side of the slide-block, and a brace pivotally connected at one end to the lower portion of the slide-block and having similar connection at its opposite end with the sash, substantially as specified.

6. In a window and in combination with the slide and the sash pivoted thereto, of a slide-block comprising an outer member and horizontal space members, the upper horizontal member having an opening to receive the counterbalance connection, a cap applied to the outer end of the horizontal member having the opening, and a brace pivotally connected with the lower horizontal member of the slide-block, substantially as specified.

657,535. MANUFACTURE OF CELLULOID. CARL G. HAGENMANN and FRIEDRICH O. C. ZIMMERMANN, Ludwigshafen, Germany. Filed June 25, 1898. Serial No. 684,503. (No specimens.)

Claim.—1. The process, which consists in combining with nitrocellulose a hydrate or hydroxid of a metal, for the purpose set forth.

2. The process, which consists in combining a hydrate or hydroxid of a metal with nitrocellulose and gelatinizing the compound, substantially as and for the purposes set forth.

3. The process, which consists in combining a hydrate or hydroxid of a metal with nitrocellulose, and gelatinizing the compound with a nitrocellulose solvent holding camphor in solution, for the purpose set forth.

4. The process, which consists in combining, with a solution of nitrocellulose, a solution of a hydrate or hydroxid of a metal, reacting upon the compound with a solution of an agent capable of neutralizing the same and precipitating the hydroxid, and removing the nitrocellulose solvent and the soluble constituents resulting from the reaction, for the purpose set forth.

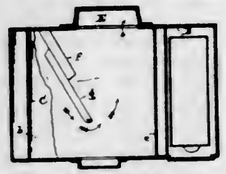
5. The process, which consists in molecularly combining, with a solution of nitrocellulose, a solution of a hydrate or hydroxid of a metal, reacting upon the compound with a concentrated solution of a salt of a metal capable of neutralizing said compound, and precipitating the hydroxid, and removing the cellulose solvent and the soluble constituents resulting from the reaction, for the purpose set forth.

6. The process, which consists in combining, with a solution of nitrocellulose, a concentrated solution of a hydrate or hydroxid of a metal, reacting upon the compound with a concentrated solution of caustic soda, removing the cellulose solvent and soluble constituents resulting from the reaction, drying, and gelatinizing the compound, for the purpose set forth.

7. The process, which consists in combining, with a solution of nitrocellulose, a concentrated solution of a hydrate or hydroxid of a metal, reacting upon the compound with a concentrated solution of caustic soda, removing the cellulose solvent and soluble constituents resulting from the reaction, drying, and gelatinizing the compound with a solvent of nitrocellulose holding camphor in solution, for the purposes set forth.

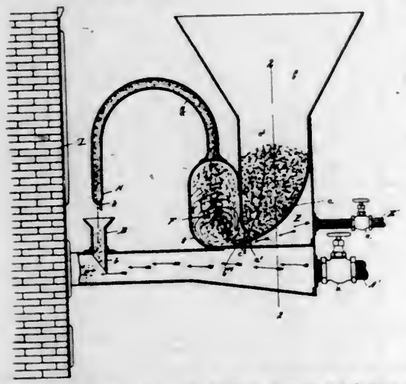
8. The herein-described product consisting essentially of gelantinized nitrocellulose and a hydrate or hydroxid of a metal, substantially as set forth.

657,536. RANGE, &c. ALBERT W. HAWKINS, Cleveland, Ohio. Filed Nov. 6, 1899. Serial No. 735,864. (No model.)



Claim.—A stove provided with the flues *a*, *b*, *c*, and E, combined with the stationary double-flanged plate *f*, which is placed diagonally across the flue *c* and provided with a stationary headed button *h*, which projects therefrom near one end, an adjustable plate which is applied to the flat side of the stationary plate, *f*, and which adjustable plate is provided with a slot which is corrugated upon opposite edges, and through which the button is made to pass, and which plate is adapted to be adjusted back and forth upon the button so as to extend a greater or less distance across the flue *c*, and which adjustable plate is also provided with an eye at its outer end, substantially as shown.

657,537. APPARATUS FOR FEEDING COMMINUTED FUEL TO FURNACES, &c. JOHN F. HAY, Erie, Pa., assignor to J. P. Metcalf, R. J. Walker, and G. R. Metcalf, same place. Filed Dec. 27, 1899. Serial No. 741,713. (No model.)



Claim.—1. In an apparatus for feeding comminuted fuel, the combination of a receiver, having a discharge-opening to which the fuel is delivered by gravity; a retarding-surface below said opening for checking the discharge by gravity; and an air-blast mechanism arranged to direct the blast from beneath the discharge-opening upon the fuel lodged upon said retaining-surface and to feed the fuel therefrom.

2. In an apparatus for feeding comminuted fuel, the combination of a receiver, having a discharge-opening, to which fuel is delivered by gravity; a protruding lip extending from said opening into a chamber upon which the fuel is delivered by gravity; said chamber; an air-blast mechanism directed into the chamber from beneath the projecting lip; and a deflector for deflecting the blast to operate upon the material upon the projecting lip:

3. In an apparatus for feeding comminuted fuel, the combination of a receiver, having a discharge-opening to which the fuel is delivered by gravity; a retarding-surface below said opening for checking the discharge by gravity; and an air-blast mechanism arranged to direct the blast from beneath the discharge-opening upon the fuel lodged upon said retarding-surface and to feed the fuel therefrom in proportion to the volume or intensity of the air-blast.

4. In an apparatus for feeding comminuted fuel, the combination of the receiver, C, having the bottom plate, *c*, and an opening *c'* therefrom to which the fuel is fed by gravity; surface, C', below the opening: the air-blast mechanism having the opening, *e'*, in proximity to surface, C', described; and means for regulating the air-blast.

5. In an apparatus for feeding comminuted fuel, the combination of the receiver, C, having the opening, *c'*, therefrom, beneath which is the projecting lip formed by the extension on the plate, *c*, to which the fuel is fed by gravity, from the receiver, C; the air-blast mechanism, having the opening, *e'*, immediately beneath the projecting lip; and means for regulating the air-blast and for deflecting the air-blast to operate upon the material upon the projecting lip.

6. In an apparatus for feeding comminuted fuel, the combination of the fluffing-chamber, F, having a curved surface, *f*, extending from the bottom thereof; means for feeding the fuel to said chamber opposite the curved surface, *f*; blast mechanism having the opening, *e'*, in position to direct the blast against the material deposited in the bottom of the fluffing-chamber, in front of the curved surface, *f*; and a passage, G, leading from the upper part of said fluffing-chamber.

7. In an apparatus for feeding comminuted fuel, the combination of means for fluffing the fuel; a passage for conveying the fluffed fuel; an air-blast arranged to carry the fuel in the fluffed state into and through said passage; and a reducer at the discharge end arranged to concentrate the fluffed fuel at the exit.

8. In an apparatus for feeding comminuted fuel, the combination of means for fluffing the material; a passage having an upwardly-extended portion connecting with a downwardly-extending portion, at the end of which is a reduced discharge-opening for concentrating the fluffed material; and an air-blast mechanism for forcing the material through the passage.

9. In an apparatus for feeding comminuted fuel, the combination of a means for delivering fuel in the fluffed state; a passage for conveying the fuel in the fluffed state; an air-blast for carrying the fuel through said passage; a reducer for concentrating the fuel at the discharge end; and an auxiliary opening, *h*, adjacent to the reducer for allowing the escape of air.

10. In an apparatus for feeding comminuted fuel, the combination of a mixer-flue having a feed-opening therein; a blast apparatus therefor; a passage for conveying comminuted fuel to the feed-opening, said opening in passage being arranged with a break in the continuity of the passage, whereby the influence of the blast in the mixer-flue on the feeding of material through the passage, is eliminated; an air-blast mechanism for effecting a feeding action through said passage and a separate blast mechanism for directing a blast to the mixer-flue.

11. In an apparatus for feeding comminuted fuel, the combination of a mixer-flue; a blast device therefor; a receiver for storing the fuel to be used; a separate air-blast mechanism arranged to produce the discharge of the fuel from the receiver; and means for conveying the discharged fuel to the mixer-flue.

12. In an apparatus for feeding comminuted fuel, the combination of a mixer-flue; a blast device therefor; a receiver for storing the fuel to be used; an air-blast mechanism arranged to produce the discharge of the fuel from the receiver; means for conveying the discharged fuel to the mixer-flue; and means for regulating one of the air-blasts relatively to the other.

13. In an apparatus for feeding comminuted fuel, the combination of a mixer-flue; a receiver for storing the fuel to be fed; an air-blast mechanism arranged to produce the discharge action from the receiver and to convey the material discharged to the mixer-flue and a separate blast mechanism for producing a blast in the mixer-flue.

14. In an apparatus for feeding comminuted fuel, the combination of a mixer-flue; a receiver for storing the fuel to be fed; an air-blast mechanism arranged to produce the discharge action from the receiver and to convey the material discharged to the mixer-flue; a separate blast mechanism for producing a blast in the mixer-flue; and means for regulating one of the blasts relatively to the other.

15. In an apparatus for feeding comminuted fuel, the combination of a mixer-flue; a receiver for storing fuel to be fed; an air-blast mechanism arranged to produce a discharge action from the receiver, in proportion to the volume or intensity of the air-blast; means for conveying the discharged fuel to the mixer-flue and a separate blast mechanism for producing a blast in the mixer-flue.

16. In an apparatus, for feeding comminuted fuel, the combination of a mixer-flue; a receiver for storing fuel to be fed; an air-blast mechanism arranged to produce a discharge action from the receiver; means arranged to regulate the amount discharged from the receiver in proportion to the volume or intensity of the air-blast; means for conveying the discharged fuel to the mixer-flue; a separate blast mechanism for producing a blast in the mixer-flue; and means for regulating one of the blasts relatively to the other.

17. In an apparatus for feeding comminuted fuel, the combination of a mixer-flue; a receiver for storing the fuel to be fed, arranged to deliver the fuel to a discharge-opening; an air-blast mechanism arranged to operate upon the fuel at the discharge-opening, and to regulate the amount discharged; means for conveying the fuel discharged to the mixer-flue and a separate blast mechanism for producing a blast in the mixer-flue.

18. In an apparatus for feeding comminuted fuel, the combination of a mixer-flue; a receiver for storing fuel to be fed and arranged to deliver the fuel to the discharge-opening; an air-blast arranged to operate upon the fuel at the discharge-opening and to regulate the amount discharged; means for conveying the fuel discharged to the mixer-flue; a separate blast mechanism for producing a blast in the mixer-flue; and means for regulating one of the blasts relatively to the other.

19. In an apparatus for feeding comminuted fuel, the combination of a mixer-flue; a receiver for storing the fuel to be fed arranged to deliver the fuel to a discharge-opening; an air-blast mechanism arranged to operate upon the fuel at the discharge-opening, to regulate the amount discharged and to convey the fuel discharged to the mixer-flue and a separate blast mechanism for producing a blast in the mixer-flue.

20. In an apparatus for feeding comminuted fuel, the combination of a mixer-flue; a receiver for storing the fuel to be fed, arranged to deliver the fuel to a discharge-opening; an air-blast mechanism arranged to operate upon the fuel at the discharge-opening to regulate the amount discharged and to convey the fuel discharged to the mixer-flue; a separate blast mechanism for producing a blast in the mixer-flue; and means for regulating one of the blasts relatively to the other.

21. In an apparatus for feeding comminuted fuel, the combination of a mixer-flue; a receiver for storing the fuel to be fed, said receiver having a discharge-opening to which fuel is delivered by gravity; a retaining-surface below said opening for checking the discharge by gravity; an air-blast mechanism arranged to conduct a blast upon the fuel lodged upon said retaining-surface and to feed the fuel therefrom; means for conveying the fuel so fed to the mixer-flue and a separate blast mechanism for producing a blast in the mixer-flue.

22. In an apparatus for feeding comminuted fuel, the combination of a mixer-flue; a receiver for storing the fuel to be fed; said receiver having a discharge-opening, to which fuel is delivered by gravity; a retaining-surface below said opening for checking the discharge by gravity; an air-blast mechanism arranged to conduct a blast upon the fuel lodged upon said retaining-surface and to feed the fuel therefrom; means for conveying the fuel so fed to the mixer-flue; a separate air-blast mechanism for producing a blast in the mixer-flue; and means for regulating one of said blasts relatively to the other.

23. In an apparatus for feeding comminuted fuel, the combination of a fluffing-chamber; a receiver for storing the fuel to be fed, said receiver being provided with an opening entering into said fluffing-chamber, and also being arranged to deliver the material to said opening by gravity; an air-blast mechanism arranged to direct a blast from beneath the opening from the receiver into the fluffing-chamber and to produce a feeding action from the receiver into the fluffing-chamber and to direct a blast against the fuel in the fluffing-chamber at the discharge-opening; means for deflecting a blast to fluff the fuel acted upon in said chamber; and a passage for conveying the fluffed fuel from the chamber.

24. In an apparatus for feeding comminuted fuel, the combination of a fluffing-chamber, a receiver having an opening leading to said chamber for storing the material to be fed; an air-blast mechanism arranged to produce a feeding action of the fuel from the receiver into the fluffing-chamber; means arranged to regulate the amount discharged from the receiver in proportion to the volume or intensity of the air-blast; means for deflecting the air-blast in the fluffing-chamber to fluff the fuel acted upon in said chamber; and a passage for conveying the fluffed fuel from the chamber.

25. In an apparatus for feeding comminuted fuel, the combination of a fluffing-chamber; a receiver for storing the fuel to be fed; an air-blast mechanism arranged to produce a feeding action from the receiver into the fluffing-chamber and to direct a blast against the fuel in the fluffing-chamber; means for deflecting the blast to fluff the fuel acted upon in said chamber; a mixer-flue; a passage leading from the fluffing-chamber and arranged to convey the fuel from the fluffing-chamber to the mixer-flue and a blast mechanism for producing a blast in the mixer-flue.

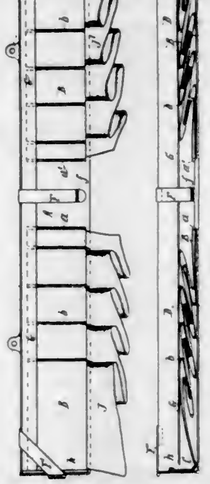
26. In an apparatus for feeding comminuted fuel, the combination of a fluffing-chamber; a receiver for storing the material to be fed; an air-blast mechanism arranged to produce a feeding action of the fuel from the receiver into the fluffing-chamber; means arranged to regulate the amount discharged from the receiver in proportion to the volume or intensity of the air-blast; means for deflecting the air-blast, in the fluffing-chamber to fluff the fuel acted upon in said chamber; and a mixer-flue; a passage leading from the chamber and arranged to convey the fuel from the fluffing-chamber to the mixer-flue and a separate blast mechanism for producing a blast in the mixer-flue.

27. In an apparatus for feeding comminuted fuel, the combination of a fluffing-chamber; a receiver for storing the fuel to be fed; an air-blast mechanism arranged to produce a feeding action from the receiver into the fluffing-chamber and to direct a blast against the fuel in the fluffing-chamber; means for deflecting the blast to fluff the fuel acted upon in said chamber; a passage for conveying said material in a fluffed state; and a reducer at the discharge end of the passage for concentrating said material.

28. In an apparatus for feeding comminuted fuel, the combination of a fluffing-chamber; a receiver for storing the fuel to be fed; an air-blast mechanism arranged to produce a feeding action from the receiver into the fluffing-chamber and to direct a blast against the fuel in the fluffing-chamber; means for deflecting the blast to fluff the fuel acted upon in said chamber; a mixer-flue; a passage extending from the chamber and arranged to carry the material therefrom in a fluffed state, and to deliver the same to the mixer-flue; a reducer at the end of the passage for concentrating the fluffed fuel, and a separate blast mechanism for producing a blast in the mixer-flue.

29. In an apparatus for feeding comminuted fuel, the combination of the mixer-flue, A; a blast-pipe, A', leading thereto and having the regulating-valve, *a*, therein; the feeding-tube, B, extending into the mixer-flue; the receiver, C, having the hopper-bottom and forwardly-projecting plate, *c*; the blast-chamber, E, extending through the opening, *e'*, and under the opening, *c'*; a blast-pipe, E', having a regulating-valve, *e*, therein; a fluffing-chamber, F, having the deflecting-surface, *f*; the passage, G, leading therefrom to the feed-tube, B, the reducer, H; and the auxiliary passage, *h*.

657,538. COMBINED CORNICE AND CURTAIN-HANGER. OSCAR E. HELLSTRÖM, Sydney, New South Wales. Filed Dec. 12, 1899. Serial No. 740,113. (No model.)



Claim.—1. In combination, a cornice-frame, with two articulated folding slips, between which the curtain is placed, and a retaining flange or batten for retaining in the folded position the plaited slips and curtain, as specified.

2. In combination a front plate, which is provided with a hinged top and ends, two articulated or jointed slips hinged to the rear side of the front plate and so arranged that they can be folded into plaits, means for securing the free ends of the jointed slips, means for securing and retain-

ing in the folded position the folded slips, and means for securing all the hinged or articulated parts of the appliance firmly together as and for the purposes set forth.

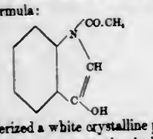
3. In combination, two articulated folding slips, arranged opposite each other and adapted to be folded and hold the curtain between them in folds, and means for holding the slips in folded condition, substantially as described.

4. In combination, an articulated folding slip, the sections of which when folded overlie each other, and means for holding the slip in folded condition, substantially as described.

657,539. MONOACETYL-INDOXYL AND PROCESS OF MAKING SAME. BERNHARD HEYMANN and ALFRED HERRE, Elberfeld, Germany, assignors to the Farbenfabriken of Elberfeld Company, New York, N. Y. Filed Sept. 23, 1899. Serial No. 731,974. (Specimens.)

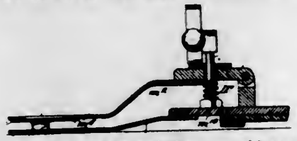
Claim.—1. The process for the production of monoacetyl-indoxyl, which process consists in first heating diacetyl-indoxyl with a saponifying agent acting in a moderate manner, and secondly isolating the monoacetyl-indoxyl thus produced from the reaction mixture, substantially as hereinbefore described.

2. As a new article of manufacture the new monoacetyl-indoxyl having most probably the formula:



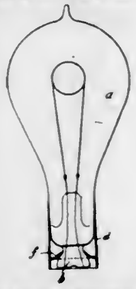
being when dry and pulverized a white crystalline powder melting at 135° centigrade, easily soluble in boiling water, in alcohol and in a cold dilute caustic soda-lye, yielding indigo when heated with alkalies and subsequently treated with atmospheric air, substantially as hereinbefore described.

657,540. WORK-CLAMP FOR BUTTONHOLE-SEWING MACHINES. JAMES T. HOGAN, Jersey City, N. J., assignor to the National Machine Company, of New York. Original application filed June 15, 1897, Serial No. 640,857. Divided and this application filed Nov. 9, 1899. Serial No. 736,365. (No model.)



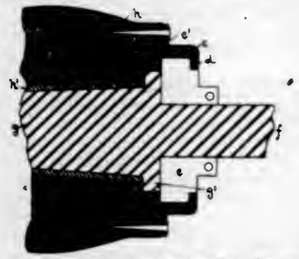
Claim.—A sewing-machine work-clamp comprising a plate having an opening therein, two serrated bars crossing such opening, each of said serrated bars having at the ends resilient supporting-arms extending across the line of the other serrated bar, substantially as specified.

657,541. DEVICE FOR FIXING INCANDESCENT ELECTRIC LAMPS. LOUIS J. P. HOLLUS and HENRI MIGNAL, Paris, France. Filed May 29, 1900. Serial No. 18,455. (No model.)



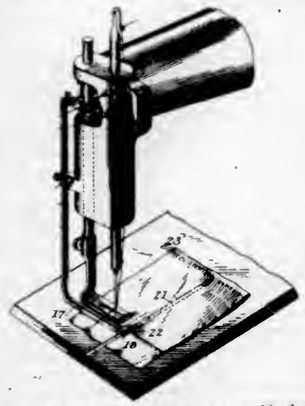
Claim.—In a device for fixing incandescent electric lamps, a T-shaped part *b* formed upon or applied to the head of the lamb-bulb, in combination with a socket *d* provided with a diaphragm *f* in which is formed an oblong aperture *e*, in such a manner that upon engaging the T-piece *b* in the aperture *e* and turning the lamp through ninety degrees this latter is fixed by the arms of the T-shaped piece, which engage in the recesses *g* in the diaphragm *f*, the extremity of the socket comprising slits *d'* in such a manner as to exert a spring action upon the conical portion of the head of the lamp and thus constantly maintain the arms of the T-piece engaged in the recesses *g* substantially as hereinbefore described and illustrated in the accompanying drawings.

657,542. SAND-BAND. ALFRED M. INGERSOLL, South Bend, Ind. Filed Oct. 24, 1899. Serial No. 734,617. (No model.)



Claim.—In a device of the character described, the combination of a collar *e* formed in sections adapted to be secured about the squared portion of an axle, a threaded collar surrounding said first-named collar, means for securing said threaded collar *c* to a hub, and the threaded cap *d*, substantially as set forth.

657,543. GUIDE FOR SEWING-MACHINES. PERCY R. IRVINE, Port Chester, N. Y. Filed Nov. 29, 1899. Serial No. 738,694. (No model.)



Claim.—1. The combination, with a sewing-machine head carrying presser means comprising a presser-foot and its bar, of a fold-gage connected with said presser means for swinging movement whereby said gage may be thrown into and out of its working position and away from the work, and means for detachably connecting said gage with said sewing-machine head, thereby to maintain said fold-gage in said working position.

2. The combination, with a sewing-machine head carrying a presser-foot bar, of a fold-gage adjustably secured thereto for adjustment thereon, for movement therewith, and for swinging movement independently thereof, whereby said gage may be swung out of its working position and away from the front of the machine; and means for detachably connecting said gage with said head thereby to maintain it in its working position.

3. The combination, with a sewing-machine head and with a presser-foot bar, of a fold-gage supported by said presser-foot bar for shiftable movement into and out of its working position, and means for detachably securing said gage to said head.

4. The combination, with a sewing-machine head member and with a presser-foot bar carried thereby, of a fold-gage member supported by said bar for swinging movement whereby it may be swung into and out of its working position, one of said members having a slot, and one of said members having means adapted to work in said slot for detachably securing said gage member to said head member, the organization being such that on the shifting of said presser-foot bar the gage member will be shifted therewith relative to said head member.

5. The combination, with a sewing-machine head and with a presser-foot bar supported thereby, of a slotted fold-gage supported by said bar for swinging movement whereby it may be swung into and out of its working position, and means working in said slot for detachably securing said gage to said head, the organization being such that on the shifting

of such presser-foot bar the gage, by means of its slot, can move with said bar relatively to said head.

6. The combination, with a fixed member and with a presser-foot bar of a sewing-machine, of a fold-gage comprising a bracket secured to said bar; a supporting-bar jointed to said bracket for shiftable movement independently thereof and having a guide-arm, whereby said guide-arm is shiftable into and out of engagement with the work; and means for securing said supporting-bar in engagement with said fixed member, thereby to maintain the guide-arm in its working position.

7. The combination, with a sewing-machine head and with a presser-foot bar mounted thereon, of a fold-gage comprising a bracket secured to said bar and having an arm in engagement with said head, a supporting-bar jointed to said bracket and having a guide-arm, whereby said arm is supported for swinging movement into and out of engagement with the work and means for maintaining said gage in its working position.

8. The combination, with a sewing-machine head and with a presser-foot bar mounted thereon, of a fold-gage comprising a bracket secured to said bar and having an arm in engagement with said head to prevent torsional or rotary movement of said presser-foot bar; a supporting-bar jointed to said bracket and having a guide-arm, whereby said arm is supported for swinging movement into and out of engagement with the work; and means for securing said supporting-bar in movable engagement with said head, thereby to maintain said guide-arm in its working position.

9. The combination, with a sewing-machine head and with a presser-foot bar mounted thereon, of a fold-gage comprising a bracket secured to said bar; a supporting-bar having a slot therein and a guide-arm and jointed to said bracket for swinging movement; and a guide-block for the slot of said bar and adapted to be secured to said head, whereby on the movement of said presser-foot bar the supporting-bar is movable therewith relatively to said guide-block.

10. The combination, with a sewing-machine head and with a presser-foot bar mounted thereon, of a fol -gage comprising a bracket secured to the said bar for movement therewith and adjustment thereon; a supporting-bar jointed to said bracket for swinging movement and having a slot therein; a guide-block carried by said bar and adapted to be rigidly secured to said head, whereby on the movement of said presser-foot bar the supporting-bar is movable therewith relatively to said guide-block; and a guide-bar adjustably carried by said supporting-bar.

11. The combination, with a sewing-machine head and with a presser-foot bar mounted thereon, of a fold-gage comprising a bracket secured to said bar for movement therewith and adjustment thereon and having an arm in engagement with said head, a supporting-bar jointed to said bracket for swinging movement and having a slot therein; a guide-block carried by said bar and adapted to be rigidly secured to said head, whereby on the movement of said presser-foot bar the supporting-bar is movable therewith relatively to said guide-block; and a guide-bar adjustably carried by said supporting-bar, said guide-bar having a beveled guiding edge for the fold of the hem.

12. The combination, with a sewing-machine head and with a presser-foot bar carried thereby, of a fold-gage comprising a supporting-bar supported by said presser-foot bar for shiftable movement into and out of its working position, said fold-gage having a detachable connection with said head, and an adjustable guide-arm carried by said supporting-bar.

13. The combination, with a sewing-machine head and with a presser-foot bar mounted thereon, of a fold-gage comprising a bracket secured to said bar; a supporting-bar pivoted to said bracket; means for removably securing said supporting-bar to said head; and an arm adjustably carried by said supporting-bar.

14. A fold-gage comprising a bracket adapted for attachment to a movable member of a sewing-machine; a supporting-bar pivoted to said bracket for swinging movement relatively thereto, and carrying means adapted to detachably secure said bar to a fixed member of a sewing-machine; and an adjustable guide-arm carried by said supporting-arm.

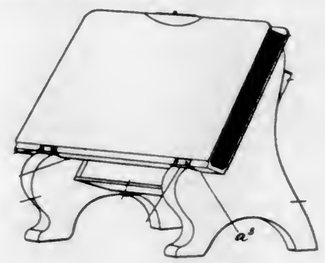
15. A fold-gage comprising a bracket adapted for attachment to a movable member of a sewing-machine, and a supporting-bar having a guide-arm and jointed to said bracket for swinging movement and having a slot for the reception of means whereby said bar may be detachably secured to a fixed member of a sewing-machine.

16. A fold-gage comprising a supporting-bar carrying means for shiftably attaching it to a fixed member and means for supporting it on a movable member of a sewing-machine, and a guide-arm carried by said supporting-arm.

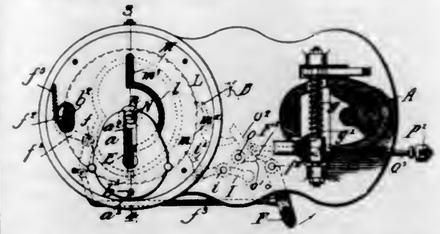
657,544. EASEL-ALBUM. CHRISTIAN JABOER, Philadelphia, Pa. Filed Feb. 23, 1900. Serial No. 6,187. (No model.)

Claim.—1. In combination a portable easel or stand comprising legs constructed to receive an album, a back portion which is adapted to support the legs, flanged members and their complemental fixed ways interposed between the back portion and legs, and detachable hinges interposed between the stand and album, substantially as described.

2. In combination an album, a portable stand comprising legs cut away to receive the album, guide pieces or ways on the legs, a back portion, strips mounted on the back portion and adapted to track in said ways, and detachable hinges interposed between the stand and album, substantially as and for the purposes set forth.



657,545. BUTTONHOLE-SEWING MACHINE. WLADISLAW F. JAGIELSKI, Hanover, Germany, assignor to The Singer Manufacturing Company, Elizabeth, N. J. Filed Dec. 23, 1899. Serial No. 741,409. (No model.)



Claim.—1. In a buttonhole-sewing machine, the combination with the work-clamp and the feed-wheel for moving said clamp, of a hand-operated device for rotating said wheel, a stopping device for arresting the movement imparted to said wheel by said hand-operated device, one part of said stopping device rotating with said wheel and being adjustable thereon, and the other part of said stopping device being movable out of the way of said rotating part.

2. In a buttonhole-sewing machine, the combination with the work-clamp and the feed-wheel for moving said clamp, of a hand-operated device for rotating said feed-wheel, a stopping device for arresting the movement imparted to the said wheel by the said hand-operated device, and a machine stop and start motion device connected with the said stopping device for said feed-wheel, so that when the machine is started the stopping device will be thrown out of action to permit the said feed-wheel to rotate.

3. In a buttonhole-sewing machine, the combination with the work-clamp and the feed-wheel for moving said clamp, of a hand-operated device for rotating said feed-wheel, a stopping device for arresting the movement imparted to said wheel by the said hand-operated device, and a machine stop and start motion device connected with the said stopping device for said feed-wheel, so that when the machine is started the stopping device will be thrown out of action to permit the said feed-wheel to rotate, one part of said feed-wheel stopping device being carried by said feed-wheel and being adjustable thereon to accommodate different-sized buttonholes.

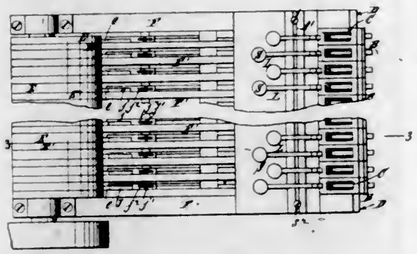
4. In a buttonhole-sewing machine, the combination with the work-clamp, and the feed-wheel for moving said clamp, of a hand-operated device for rotating said feed-wheel, a stopping device for arresting the movement imparted to the said feed-wheel by the said hand-operated device, and a machine stop and start motion device operated from said feed-wheel, to stop the machine, and connected with said stopping device for the said feed-wheel; whereby when the stitching of a buttonhole has been completed the machine will be stopped, and whereby also when the machine is started the stopping device for said feed-wheel will be thrown out of action to permit the said feed-wheel to rotate.

5. In a buttonhole-sewing machine, the combination with the work-clamp *a*, of the feed-wheel M provided with the plate *d'* having a nose or projection d^3, the lever *f'* having the arm f^3 movable into the path of the said nose or projection d^3, a hand-operated device, as lever I, provided with a pawl *i'*, for rotating said feed-wheel, and means, as lever F and

rod f^4, for operating the said lever f' to remove the said arm f^3 from the path of the said nose or projection d^3 when it is desired that the feed-wheel should rotate to carry the said nose or projection d^3 past the said arm f^3.

6. In a buttonhole-sewing machine, the combination with the work-clamp, of the feed-wheel M provided with the plate d' having a nose or projection d^3, the lever f' having the arm f^3 movable into the path of the said nose or projection d^3, a hand-operated device, as lever I provided with a pawl i', for rotating said feed-wheel, and means, as lever F and rod f^4, for operating the said lever f' to remove the said arm f^3 from the path of the said nose or projection d^3 when it is desired that the feed-wheel should rotate to carry the said nose or projection d^3 past the said arm f^3, and a machine stop and start-motion device actuated from said feed-wheel, said stop and start motion device being connected with said lever F.

657,546. TYPE-SETTING APPARATUS. LOUIS K. JOHNSON and ABBOT A. LOW, New York, N. Y., assignors to the Alden Type Machine Company, same place. Filed Jan. 4, 1899. Serial No. 701,124. (No model.)



Claim.—1. In type-setting apparatus substantially such as described, the combination with the bed formed with the recesses for the reception of the tennon of the channel-holders, said channel-holders and a yielding bar or cap for closing the fronts of the said recesses, substantially in the manner and for the purpose described.

2. In type-setting apparatus substantially such as described, the combination of the bed formed with recesses for the reception of the tenons of the channel-holders, said channel-holders, a yielding cap for closing the front of said tenon-recesses and confining the tenons therein and type-forwarding mechanism arranged and operating substantially in the manner and for the purpose described.

3. In type-setting apparatus substantially such as described, the combination of the table A, formed with the recesses a, the channel-holders B, the retaining-cap D, formed with the dowels d, fitting in the sockets a', and suitable forwarding mechanism arranged and operating, substantially in the manner and for the purpose described.

4. In type-setting apparatus substantially such as herein described, the combination with type-forwarding mechanism, channel-holders, and a yielding cap for closing the recesses in which the tenons of the channel-holders rest, of type-fingers upon the actuating-levers jointed so as to adapt themselves to the position of the said yielding cap, substantially in the manner and for the purpose described.

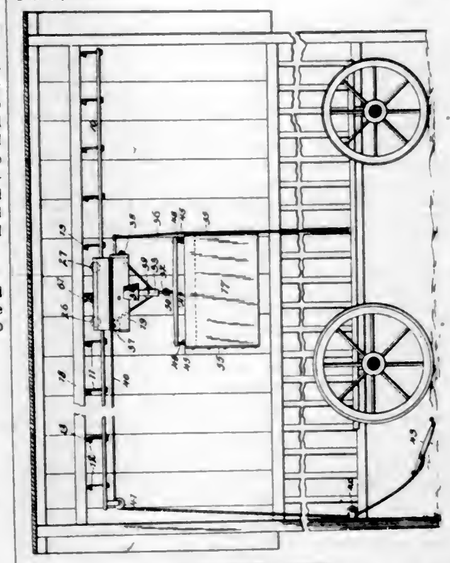
5. In type-setting apparatus substantially such as described, the combination of the table A, formed with the recesses a, the channel-holders B, the retaining-cap C', formed with the dowels d, fitting in the sockets a', suitable type-forwarding mechanism, the bolts L, formed with the slots s, the fulcrum-bar s', the set-screws s^2, and the locking-screws S, the whole arranged and operating substantially as set forth.

657,547. UNLOADING APPARATUS. JACOB W. KAMM, Atwood, Ill. Filed May 21, 1900. Serial No. 17,503. (No model.)

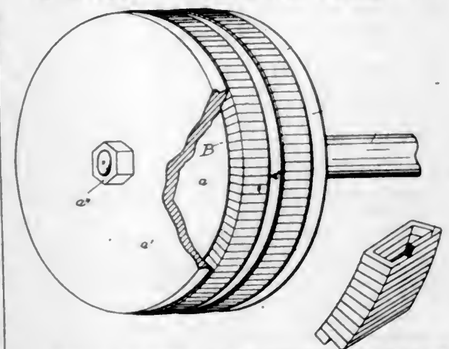
Claim.—1. An unloading apparatus comprising a trackway having hangers, a traveler mounted upon the trackway for movement therealong, a lever pivoted to the traveler for movement to lie above and transversely of the trackway to engage a hanger and hold the traveler from movement, a latch carried by the traveler and a bucket adapted for engagement with the latch.

2. An unloading apparatus comprising a trackway, a traveler mounted to travel on the trackway, and a bucket removably connected with the traveler for movement therewith, said bucket having hangers pivotally attached thereto and adapted for connection with the traveler, and one side of the bucket having hinged connection with the bottom of the bucket and having its side edges turned upwardly to form a chute, and means for holding the side at the limits of its movement.

657,547.



657,548. PISTON-PACKING. SIDNEY E. KELSEY, Kansas City, Mo. Filed Aug. 21, 1899. Serial No. 727,942. (No model.)



Claim.—1. An annular packing composed of a strip of suitable material folded upon itself, forming self extensible and contractible parts, compressed together in a substantially fluid-tight mass, and with the outer sides of the folded parts of the packing upset to fill the interstices, the ends of said packing being in contiguity.

2. A metallic packing-ring, comprising a coiled strip having its end coils connected together, and the contacting surfaces of the parts of the coils compressed into a substantially fluid-tight mass.

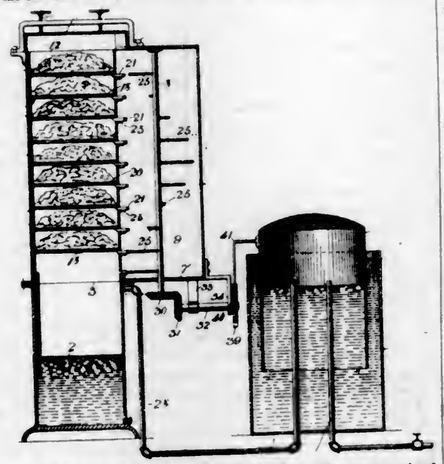
3. A metallic packing-ring, comprising a helically-wound strip with its ends joined together, and the contiguous parts of the coils compressed into substantially fluid-tight joints, and said joints upset to fill the interstices.

4. A metallic packing-ring composed of a suitable helically-wound spring, the end coils of which spring are joined together and the contiguous parts of the coils compressed into substantially fluid-tight joints, and enlarged at their ends to fill the interstices.

657,549. ACETYLENE-GAS GENERATOR. ARTHUR L. KIFF, Corning, N. Y. Filed Jan. 18, 1899. Serial No. 702,539. (No model.)

Claim.—1. In an acetylene-generator, the combination with a water-tank, of a series of stationary tilting carbid-trays, said trays being superposed one above another over the tank, catches for supporting the trays in horizontal position, and a vertical rotary shaft provided with means to engage the catches and release the trays in regular order beginning with the lowermost.

2. In an acetylene-generator, the combination with a water-tank, of a series of stationary tilting carbid-trays, said trays being arranged in flats superposed one above another over the tank, catches for supporting the trays in horizontal position, and a vertical rotary shaft provided with means to engage the catches and release the trays in regular order beginning with the lowermost and the trays of each flat being released before those of the flat next above.



3. In an acetylene-generator, the combination with a water-tank, of a superposed casing, a series of stationary removable tilting carbid-trays inclosed in said casing, said trays being arranged vertically one above another, catches for holding said trays in horizontal position, and a vertical rotary shaft provided with means to engage and release the catches of said trays in regular order beginning with the lowermost.

4. In an acetylene-generator, the combination with a water-tank, of a superposed casing, a stationary removable cabinet inclosed in said casing, a series of stationary tilting carbid-trays arranged in said removable cabinet one above another, catches carried by said cabinet for holding the trays in horizontal position, and means to engage and release the catches of said trays in regular order beginning with the lowermost.

5. In an acetylene-generator, the combination with a water-tank, of a superposed casing, a stationary annular cabinet removably inclosed in said casing, a series of stationary tilting carbid-trays arranged in flats in said removable annular cabinet, one above another, catches carried by said cabinet for holding the trays in horizontal position, and a vertical rotary shaft arranged centrally of the annular cabinet and provided with means to engage and release the catches of the trays in regular order beginning with those of the lowermost flat.

6. In an acetylene-generator, the combination with a water-tank, of a series of superposed tilting trays arranged in flats, each tray being adapted to hold a quantity of carbid, a rotary operating-shaft, a series of superposed sleeves on said shaft, the lowermost one of which is fixed on the shaft, and the remainder being capable of turning thereon, engaging devices between the sleeves, and means on the sleeves for successively operating the trays to dump their contents into the water in the generator.

7. In an acetylene-generator, the combination with a water-tank, of a series of radially-arranged superposed tilting trays for holding quantities of carbid, means for supporting the trays in horizontal positions, a central rotary shaft, a series of normally-loose sleeves on the shaft provided with fingers for successively tilting the trays, a fixed sleeve at the lower end of the shaft, and engaging devices between the sleeves whereby the normally-loose sleeves are successively locked to the shaft as the latter revolves.

8. In an acetylene-generator, the combination with a water-tank, of an outer casing, a removable cabinet in said casing, a series of superposed tilting trays arranged in said cabinet for holding carbid, catches for supporting the trays in horizontal positions, a rotary shaft having fingers to release the catches, a telescopic gas-holder, pipe connections between the latter and the generator, and means intermediate said holder and the tray-operating shaft whereby said trays are released successively to dump their contents into the water.

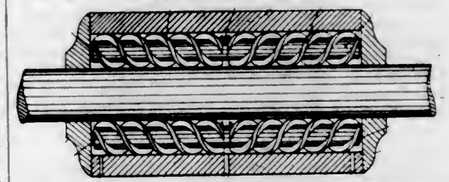
9. In an acetylene-generator, the combination with the generator, of a casing supported by the same having a removable cover, a removable cabinet supported in said casing and communicating at its lower end with the generator, a series of superposed hinged trays forming compartments in the cabinet, catches for supporting said trays in horizontal positions, a rotary shaft having fingers located in position to engage and release said catches, a telescopic gas-holder, pipe connections between the latter and the generator, a pawl carried by the said gas-holder, and an intermediate shaft geared to the finger-carrying shaft, and having a ratchet-wheel operated by the descending movements of the holder.

10. In an acetylene-generator, the combination with a water-tank, of an annular series of stationary trays for holding carbid, the trays of each series being arranged one above the other, a rotary vertical shaft adjacent said trays, catches for holding said trays, and means on the shaft to successively engage the catches to dump the trays.

11. In an acetylene-generator, the combination with a water-tank, of a casing superposed above the tank, a series of tilting shelves or trays each adapted to hold a measured quantity of carbid, and to discharge the same by gravity through the casing into the tank below, catches for holding the shelves or trays in horizontal position, and means for automatically releasing the catches so as to dump the shelves or trays in regular order beginning with the lowermost.

12. In an acetylene-generator, the combination with a water-tank, of a casing superposed above the tank, a series of tilting shelves or trays forming partitions which when in horizontal position divide the casing into receptacles adapted to hold measured quantities of carbid, and arranged to discharge the same by gravity through the casing into the tank below, catches for holding said shelves or trays in horizontal position, and means for releasing the catches so as to dump the contents of the carbid-receptacles into the water in regular order beginning with the lowermost.

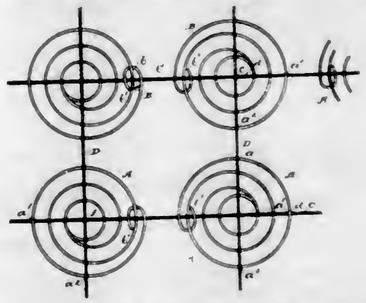
657,550. BEARING. CHESTER A. LATHAM, Wichita, Kans. Filed Oct. 8, 1898. Serial No. 693,018. (No model.)



Claim.—1. In combination with a journal with a continuous smooth surface and a boxing with a continuous smooth surface, solid rollers having the rounded ends, a series of uniform spiral ridges surrounding said rollers from one end to a point near the center in one direction, a like series of spiral ridges surrounding said rollers in the opposite direction from the opposite end to a point near the center.

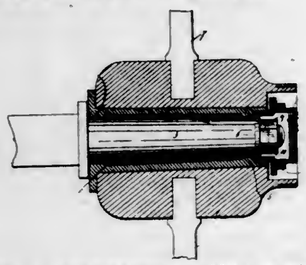
2. A journal with a continuous smooth surface, a boxing with a continuous smooth surface, and small openings in the under side for the purpose specified, solid rollers having rounded ends, a series of spiral ridges surrounding each of said rollers in one direction from one end to a point near the center, and a series of like ridges surrounding each of said rollers in an opposite direction from the opposite end to a point near the center, and a suitable collar sleeved on said bearing at each end of said boxing and rollers, substantially as shown and described.

657,551. SPRING BED-BOTTOM. HOWARD E. LAUGHLIN, Cleveland, Ohio. Filed Nov. 4, 1899. Serial No. 735,827. (No model.)



Claim.—A lock or tie for bed-bottom springs comprising the springs each having a hook-shaped end and a recessed portion of the coil beneath the hook portion, and the bent tie-wire resting between the hook-shaped end of the spring and the wire of the coil beneath, substantially as set forth.

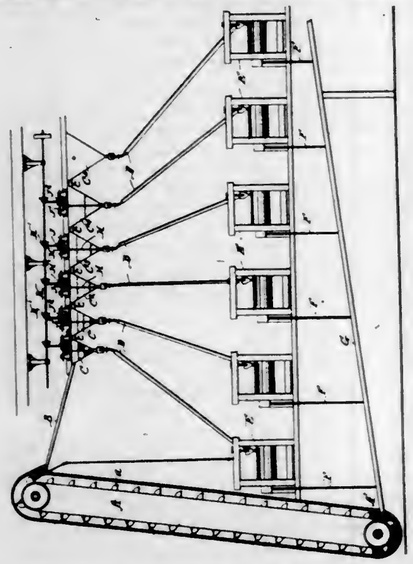
657,552. AXLE-OILER. WILLIAM LINHART, New York, N. Y. Filed Jan. 30, 1900. Serial No. 3,282. (No model.)



Claim.—1. An axle-lubricator, comprising a cap-nut within which the end of the axle projects, there being a transverse opening formed through the crown thereof, a disk provided with a threaded stud which is screwed into the crown of said cap-nut and having a transverse opening arranged to be brought into registration with the opening in said cap-nut, said disk being provided with a segmentally-cut-away portion, and a stop-pin fixed to the crown of said cap-nut and projecting through said cut-away portion of said disk, and whereby the revoluble play of said disk is limited, substantially as shown and described.

2. An axle-lubricator, comprising a cap-nut within which the end of the axle projects, there being a transverse opening formed through the crown thereof, a disk provided with a threaded stud which is screwed into the crown of said cap-nut and having a transverse opening arranged to be brought into registration with the opening in said cap-nut, said disk being provided with a segmentally-cut-away portion, and with a transverse groove adapted to receive a screw-driver or other implement, and a stop-pin fixed to the crown of said cap-nut and projecting through said cut-away portion of said disk, and whereby the revoluble play of said disk is limited, substantially as shown and described.

657,553. ORE-CLASSIFYING APPARATUS. JOHN S. LODER, Ouray, Colo., assignor of three-fourths to Alexander Cuninghame, Birmingham, Ala. Filed Apr. 29, 1898. Serial No. 472,306. (No model.)



Claim.—1. An apparatus for classifying ore-pulp, consisting of a series of V-shaped receptacles connected at their upper ends by suitable conduits and each provided with an outlet at its lower end, a vertical shaft extending into each receptacle and one or more horizontal diaphragms carried by said shaft, each of said diaphragms being provided with downwardly-projecting wings, located out of radial alinement with each other, and means for adjusting said shaft to vary the space between the diaphragms and the walls of the receptacles, substantially as described.

2. In an apparatus for classifying ore-pulp, the combination with a V-shaped receptacle provided with a discharge-opening at or near its bottom of a vertical shaft extending into the receptacle, horizontal diaphragms mounted on the shaft and a valve for said discharge-opening constituting a bearing for the lower end of the shaft, said diaphragms, shaft and valve being vertically adjustable to simultaneously vary the space between the diaphragm and the walls of the receptacle, and the size of the discharge-opening, substantially as described.

3. In an apparatus for classifying ore-pulp the combination of a V-shaped receptacle provided with a vertical shaft for carrying means for agitating and elevating a portion of the contents of the receptacle, and a seat for the lower end of said shaft consisting of a plug having a valve-opening adapted to be opened by the elevation of the plug, and means for elevating the plug, substantially as described.

4. In an apparatus for classifying ore-pulp the combination with the V-shaped receptacle and vertical shaft of a seat for the lower end of the shaft, said seat being in the form of a plug, filling the lower end of the receptacle, said plug provided with a rim on its upper end and a longitudinal recess in its side, said recess being larger at the lower end than at the upper end, substantially as described.

5. An apparatus for classifying ore-pulp, consisting of V-shaped receptacles into which the pulp is introduced successively, each receptacle being provided with a vertical shaft rotating at a speed different from that of the other shafts and carrying diaphragms provided with blades, and means for adjusting said shaft vertically to vary the space between the walls of the receptacle, and the diaphragms, substantially as described.

6. An apparatus for classifying ore-pulp, consisting of a series of V-shaped receptacles gradnated in size and each provided with a valved discharge-opening at or near its bottom, the smallest receptacle receiving the supply for the series through which the ore is passed, an adjustable shaft in each receptacle carrying mechanism for agitating, means for varying the space between the diaphragms and walls of the receptacles, and means for giving the shaft of each receptacle a different speed from that of the receptacle next adjacent, substantially as described.

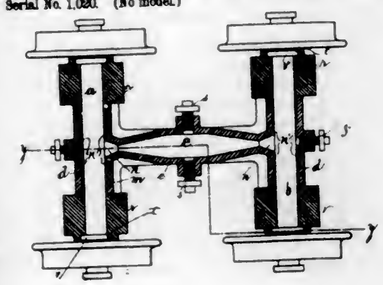
7. In an apparatus for classifying ore-pulp, the combination of an elevator for elevating the pulp, a conduit leading therefrom to the first of a series of V-shaped separating-receptacles each of said receptacles containing a vertically-adjustable shaft carrying revolving diaphragms for agitating and elevating the lighter particles of the receptacle, and each provided with a valved discharge-opening at or near its bottom, a conduit leading from the lower end of each receptacle to one of a series of concentrators, and a conduit leading from the upper end of each receptacle to the receptacle next adjacent, substantially as described.

8. In an apparatus for classifying ore-pulp, the combination with a V-shaped receptacle provided with a discharge-opening at or near its bottom, of a vertical shaft extending into the receptacle, one or more horizontal diaphragms mounted on the shaft, each of said diaphragms being provided with a downwardly-projecting wing and an opening above each wing, said wings being out of radial alinement, substantially as described.

9. In an apparatus for classifying ore-pulp, the combination with a series of receptacles suitably connected together, a bucket elevator and a chute leading from the upper end of said elevator and discharging into one of said receptacles, of a fluid-nozzle located at the head of said chute and directing a stream of fluid into each bucket of the elevator as it passes the chute, substantially as described.

10. In an apparatus for classifying ore-pulp, the combination with a series of receptacles into which the ore is successively introduced, of a bucket elevator, a chute leading from the upper end of said elevator and discharging into one of the said receptacles, and a fluid-nozzle adapted to discharge a stream of water upward and into each bucket as it passes the chute and discharges its contents therein, substantially as described.

657,554. LUBRICATING MEANS. HUGO LOOSE and GUSTAV SCHREYER, Karsten-Centrum-Grube, Germany. Filed Jan. 10, 1900. Serial No. 1,020. (No model.)



Claim.—1. A lubricating device for cars consisting of an elongated chamber, situated between the axles of the wheels and having sleeves arranged at each end to encircle the axles and close up against the inner sides of the axle-boxes, the interior of said sleeves being in communication with the said chamber in the manner and for the purpose substantially as described.

2. In a lubricating device the combination of a chamber *e* having at each end transverse sleeves *d d* to encircle the car-axles, chambers *n n* communicating with the interior of the said sleeves, and interior ribs within the sleeves to close around the axles, there being a recess in the outer surface of each axle-bearing and a collar on each axle to fit into each said recess, the said sleeves closing against the interior of the axle-boxes substantially as described.

657,555. KINETOGRAPHIC FILM. SIEGMUND LUBIN, Philadelphia, Pa. Filed Apr. 16, 1900. Serial No. 13,066. (No specimens.)

Claim.—1. A film for life-motion pictures comprising a ribbon having a thin, transparent-ground or inner portion for receiving the picture and thicker, perforated edges, for the purposes set forth, said parts forming a flexible, integral body without joint, substantially as specified.

2. A film for life-motion pictures, comprising a flexible ribbon having a thin ground for receiving the pictures, raised edges for protecting said ground portion, and means for engaging feeding mechanism, substantially as specified and for the purposes set forth.

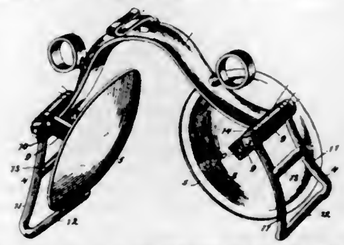
657,556. CAMPAIGN BADGE OR BUTTON. WILLIAM H. LUTHER, Providence, R. I. Filed June 19, 1900. Serial No. 20,905. (No model.)



Claim.—1. In a badge or button the combination of an upper face part having an inturned flange, a lower face part also containing an inturned flange whose upper flanged surface bears an inscription, a hinge uniting both parts, and means for holding the flanged surfaces in contact.

2. In a badge or button the combination of an upper face part having an inturned flange, a lower face part also containing an inturned flange whose upper flanged surface bears an inscription, a hinge uniting both parts, a spring for holding the flanged surfaces in contact.

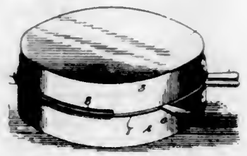
657,557. HARNESS-SADDLE. PETER MADSAARD, Kenosha, Wis. Filed Aug. 1, 1899. Serial No. 725,799. (No model.)



Claim.—1. A device of the class described comprising the arched bar provided at its ends with eyes, the links extending downward from the ends of the arched bar, the concavo-convex plates located within the space inclosed by the arched bar and the links at points above the lower ends of the latter and provided with parallel arms arranged in pairs at opposite sides of the ends of the bar and extending upward at an inclination at right angles to the planes of the peripheries of the plates and provided at intervals with alined perforations, whereby the plates are adapted to be adjusted toward and from each other without moving them longitudinally of the links and the arched bar, and the transverse pivots passing through the perforations, the eyes and the links, said links being entirely separate from and adapted to move independently of the plates, substantially as described.

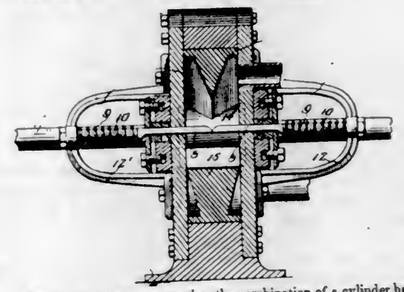
2. A device of the class described comprising a bar provided with eyes, the links extending downward from the ends of the bar and composed of sides provided at their upper ends with perforations, registering with the said eyes, said sides having diverging lower portions and inwardly-bent lower ends, the intermediate transverse connecting-pieces 13 extending across the links and connecting the sides between the ends thereof, and the lower transverse pieces 12 connecting the bent ends of the sides, the plates located within the space inclosed by the bar and the links, and arms connecting the plates with the links and the bar, said links being entirely separate from and adapted to move independently of the plates, substantially as described.

657,558. ASH-SIFTER. SAMUEL D. MELVIN, Preytown, Pa. Filed Jan. 2, 1900. Serial No. 110. (No model.)



Claim.—An ash-sifter comprising a pan, a cover detachably interlocked with the pan, handles projecting from the pan and the cover and arranged adjacent to each other, and a sieve or screen arranged within the pan and provided with a projecting handle adapted to be arranged between the said handles, substantially as described.

657,559. ROTARY ENGINE. JAMES E. MOATS, Daleville, Ind. Filed May 26, 1900. Serial No. 18,180. (No model.)



Claim.—1. In a rotary engine, the combination of a cylinder having therein oppositely-arranged inlet and exhaust ports, a concentric wheel-shaped piston mounted to rotate therein, having wedge-shaped spokes and a hub fixed on the drive-shaft of said engine, inlet-ports arranged in the periphery of said piston, and automatically-closing abutment-blocks located within the path of said spokes, substantially as and for the purpose set forth.

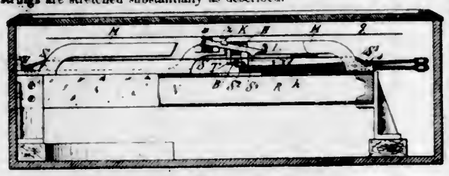
2. In a rotary engine, the combination of a cylinder having in the periphery thereof, oppositely-arranged inlet-ports, and in one head diametrically-arranged exhaust-ports, a drive-shaft, a wheel-shaped piston concentrically mounted on said shaft, a series of radial wedge-shaped spokes mounted within said wheel-shaped piston, a series of ports arranged in the periphery of said piston and between said spokes, and automatically-operated abutment-blocks arranged in pairs on opposite sides of the center of said piston and within the path of said wedge-shaped spokes, substantially as and for the purpose set forth.

3. In a rotary engine, the combination of a base and a cylinder mounted thereon, having in the periphery thereof oppositely-arranged inlet-ports, the diametrically-arranged exhaust-ports, a drive-shaft, a wheel-shaped piston mounted on said shaft to rotate the same, a series of radial wedge-shaped spokes mounted within said piston, a series of elongated inlet-ports arranged in the periphery of said piston between said spokes, springs for preventing leakage through said ports, horizontally-disposed abutment-blocks, arranged in pairs on opposite sides of said piston and within the path of movement of said spokes, having their inner edges held in close contact with each other, and springs for closing said blocks and holding their edges in close contact with each other, said blocks being adapted to be forced apart by said wedge-shaped spokes allowing them to pass, substantially as and for the purpose set forth.

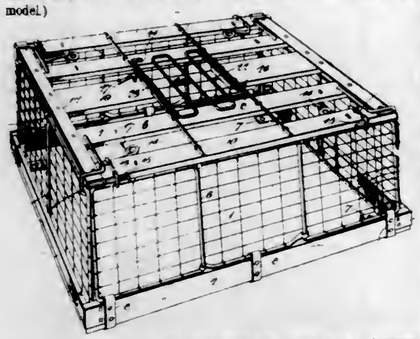
657,560. MECHANICAL MUSICAL INSTRUMENT. HENRY MÜLLER, Wahren, near Leipsic, Germany, assignor to the Polyphon Werke, same place. Filed Sept. 15, 1898. Serial No. 691,035. (No model.)

Claim.—In a mechanical musical instrument of the class specified having a set of strings and a bow moving in a direction transversely to the same and means for depressing the string down onto the moving bow, the combination of a stationary table to support the said bow and means for sharply defining the length of string to be depressed consisting of a

bar having a series of vertically-located pins or ledges around which the strings are stretched substantially as described.



657,561. FOLDING COOP. CHARLES L. NEAL and WILLIAM A. NEAL, Bungers, W Va. Filed Jan. 12, 1900. Serial No. 1,236. (No model.)



Claim.—1. A device of the class described comprising a bottom, ends hinged to the bottom, the hinged sides arranged to swing upward between the ends, a top having the ends slidingly connected with it, and fastening devices mounted on the top and consisting each of a transverse pintle portion, an outer arm for engaging the side, and an inner arm forming a handle, said fastening devices being resilient and adapted to clamp the adjacent portions of the top between the inner and outer arms, substantially as described.

2. A device of the class described comprising a bottom, sides and ends hinged to the bottom, a top composed of slats or bars spaced apart, said top being slidingly connected with the ends, fastening devices mounted on the top and provided with inner and outer arms adapted to clamp the adjacent slats or bars, the outer arm being also adapted to engage the side of the coop and the inner arm forming a handle, projections extending from the side edges of the top to limit the upward movement of the outer arms, and transverse wires arranged to support the inner arms, substantially as described.

3. A device of the class described comprising a bottom, sides, ends, a top provided with an opening, and a compressible resilient door hinged to the top at one side and provided at its opposite side with means for detachably engaging the top, substantially as described.

4. A device of the class described comprising a coop provided with an opening, and a resilient compressible door hinged at one side of the opening and constructed of a continuous wire or rod and provided at the opposite side of the opening with means for engaging the coop, said wire or rod being bent or looped to form a compressible resilient door, substantially as described.

5. A device of the class described comprising a coop having a slatted top provided with an opening, said top being also provided with transverse rods located at opposite sides of the opening, and a resilient compressible door hinged at one side of the opening and provided with an arm arranged to engage the arm at the opposite side of the opening, substantially as described.

657,562. WALL-HYDRANT. HORACE F. NEUMEYER, Macungie, Pa. Filed June 18, 1900. Serial No. 20,738. (No model.)



Claim.—1. A wall-hydrant comprising a wall-pipe having a cylinder and a plug-socket at its opposite ends, a non-rotary reciprocatory plunger within the cylinder, and a rotary plug in the plug-socket, said plug and plunger being operatively connected.

2. A wall-hydrant comprising a wall-pipe, a valve-seat located at one end of the pipe, a plug-socket adjacent to the opposite end thereof, a plunger in operative relation with the valve-seat, a plug for operating the plunger, and a spring disposed to urge the plunger against the valve-seat.

3. A wall-hydrant comprising a wall-pipe having a valve-seat disposed adjacent to one end and a plug-socket adjacent to its opposite end, a plunger arranged to seat upon the valve-seat, a plug located in the plug-socket and operatively connected with the plunger, packing interposed between the plug and its socket, and a spring arranged to exert constant pressure upon the plug to compress the packing for the purpose of insuring a water-tight connection around the plug.

4. In a wall-hydrant, the combination with a wall-pipe and cylinder, of a supply-pipe coupled to the cylinder, a reciprocatory plunger within the cylinder and arranged to seat against the end of the supply-pipe, means for preventing the rotary movement of the plunger and for limiting its reciprocatory movement, and plunger-actuating mechanism located at the end of the wall-pipe opposite the cylinder.

5. In a wall-hydrant, the combination with a wall-pipe, a cylinder located at one end of the pipe, and a supply-pipe coupled to the cylinder, of a reciprocatory plunger within the cylinder and arranged to seat against the end of the supply-pipe, a rotary plug located at the opposite end of the wall-pipe, said plug being provided with a stem having a threaded engagement with the plunger, whereby the reciprocation of said plunger is effected by the rotation of the plug.

6. In a wall-hydrant, the combination with a wall-pipe, a cylinder located at one end thereof, and a supply-pipe coupled to the cylinder, of a plunger located within the cylinder and provided with a threaded socket, a rotary plug located at the opposite end of the wall-pipe and provided with a plug-stem having a threaded extremity engaging the socket of the plunger.

7. In a wall-hydrant, the combination with a wall-pipe, a cylinder located at one end thereof, a supply-pipe coupled to the cylinder, a reciprocatory plunger controlling the supply-pipe and provided with passages through which water may pass to the wall-pipe and with a longitudinal recess, a rib projecting into the recess from the cylinder, and a rotary plug located at the opposite end of the hydrant and having an operative connection with the plunger.

8. In a wall-hydrant, the combination with a wall-pipe and cylinder, of a plunger within the cylinder provided with a series of peripheral passages and with a longitudinal recess closed at one end, a rib extending from the interior of the cylinder into the recess of the plunger and designed to cooperate with the closed end of the recess for the purpose of limiting the reciprocatory movement of said plunger, and means for operating the plunger.

9. In a wall-hydrant, the combination with a wall-pipe and valve mechanism, of a plug-socket adjacent to one end of the wall-pipe, a plug mounted in the plug-socket and operatively connected with the valve mechanism, a face-nut screwed into the socket, and a spring interposed between the contiguous faces of the plug and nut for the purpose of urging said plug in a direction to effect a water-tight connection.

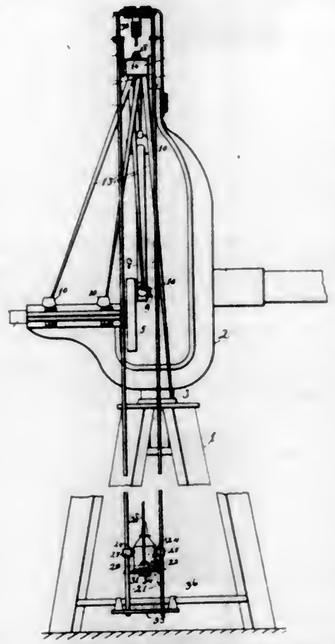
10. In a wall-hydrant, the combination with a wall-pipe, valve mechanism and a plug-socket disposed at one end of the pipe, of a plug located within the plug-socket and provided with a head, packing interposed between the head of the plug and the bottom wall of the socket, a face-nut screwed into the opposite end of the socket, and a spring interposed between the face-nut and the plug for the purpose of urging the latter in a direction to compress the packing.

11. In a wall-hydrant, the combination with a wall-pipe and valve mechanism located at one end thereof, of a face-casting located at the opposite end thereof, said casting comprising a face-plate, a hose-nipple and a pipe connection located out of alinement and at opposite sides of the face-plate, a port extending between the connection and nipple, a plug-socket, a rotary plug within the socket and operatively connected with the valve mechanism, a face-nut screwed into the plug-socket and projecting beyond the face-plate, and a spring interposed between the plug and face-nut to urge the plug firmly upon its seat.

12. In a wall-hydrant, the combination with a wall-pipe, a cylinder located at one end thereof, and a pipe-bend coupled to the cylinder and having one end extended therein, a plunger within the cylinder provided with a compressible disk arranged to close the end of the pipe-bend, said plunger being also provided with peripheral recesses, a longitudinal groove and a threaded socket, a guide-rib extending from the cylinder into the groove, a threaded plug-stem engaging the socket of the plunger, a face-casting located at opposite end of the wall-pipe and formed with a hose-nipple in communication with the wall-pipe, and a plug-socket in axial alinement with said pipe, a rotary plug within the plug-socket provided with an annular head and with a key-post, a gasket between the annular head of the plug and the bottom wall of the plug-socket, a face-nut screwed into the outer end of the plug-socket and apertured for the reception of the key-post, and a spring interposed between the face-nut and the adjacent wall of the plug.

13. A wall-hydrant comprising a wall-pipe having a cylinder and plug-socket at its opposite ends, a reciprocatory plunger within the cylinder, a rotary plug in the plug-socket, and a plug-stem having threaded engagement with the plunger to convert the rotary movement of the plug into reciprocatory movement of the plunger.

657,563. DEVICE FOR OILING WINDMILLS. SWITHES C. PETTEGREW, Morantown, Kans. Filed Nov. 28, 1898. Serial No. 697,628. (No model.)



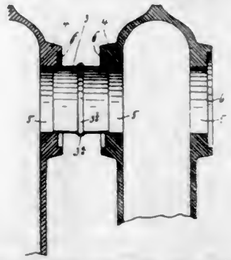
Claim.—1. A device for oiling windmill-bearings consisting of a stationary can mounted above the bearings, provided with spouts leading to the oil-cups and bearings, a track or way having one end mounted above said stationary can, brackets arranged to travel on said track, a traveling oil-can pivotally mounted between said brackets, a spring-arm mounted upon said traveling can and arranged to bear against the track to prevent the tilting of the can, a trip-arm secured upon the track in the path of said spring-arm to release the same from the track at such point that as the release is made the can will be tilted and discharge its contents into the stationary can, and means for propelling said traveling can upon its track, substantially as set forth.

2. In a device for oiling windmill-bearings a track having one end mounted above the bearings, brackets arranged to travel on said track, an oil-can pivotally mounted between said brackets, a spring-arm mounted upon said can and arranged to bear against the track to prevent tilting of the can, a trip-arm secured upon the track in the path of said spring-arm to release the same from the track, a cord secured to the can and passing over an elevated pulley for elevating the can and tilting the same when said spring-arm is released, and a weight on the can for restoring the same to upright position and returning it down the track, substantially as set forth.

3. In a device for oiling windmill-bearings, a track consisting of two parallel wires, winged brackets embracing said wires and arranged to travel thereon, an oil-can provided with oppositely-disposed gudgeons arranged to engage elongated openings in said bracket-wings, and elongated caps on said gudgeons to prevent escape from said openings, substantially as set forth.

4. In a device for oiling windmill-bearings, and oil-can mounted above the bearings and provided with a marginal lip, a weighted hinged cover on said can arranged to be opened inwardly and to close against said lip, and spouts on said can leading to the oil-cups and bearings, substantially as set forth.

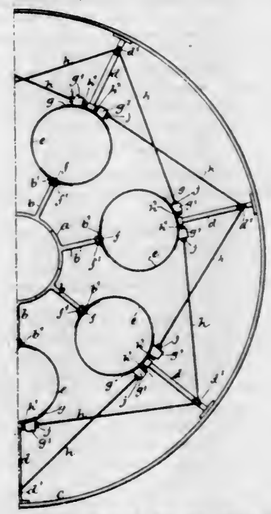
657,564. RADIATOR CONSTRUCTION. CHARLES T. PRATT, Cheyville, N. Y. Filed July 2, 1896. Serial No. 597,857. (No model.)



Claim.—1. In a radiator construction, the combination of two sections having coinciding conical openings, and a slip-nipple having reduced ends and swelling toward the middle, having a circumferential flexible enlargement 3^a substantially midway between the ends and a corresponding internal groove or depression 3^b, substantially as set forth.

2. In a radiator the combination of a slip-nipple having a circumferential flexible enlargement 3^a and a corresponding internal depression or groove 3^b, radiator-sections having coinciding conical openings having surrounding rabbets, the openings and rabbets being adapted to receive the nipple when the sections are forced together.

657,565. WHEEL. ALEXANDER G. RANAGE, Leith, and GEORGE MACMILLAN, Edinburgh, Scotland. Filed Feb. 5, 1900. Serial No. 4,068. (No model.)



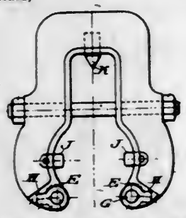
Claim.—1. The combination of a hub, short spokes projecting outward from the hub, a rim, short spokes projecting inward from the rim, springs interposed between the ends of the spokes of the two sets, and pairs of tie-bars connecting the outer end of each spoke on the rim to the inner ends of the two adjacent spokes.

2. The combination of a hub, short spokes projecting outward from the hub, a rim, short spokes projecting inward from the rim, approximately-circular springs interposed between the ends of the spokes of the two sets and pairs of tie-bars connecting the outer end of each spoke on the rim to the inner ends of the two adjacent spokes.

3. The combination of a hub, short spokes projecting outward from the hub, a rim, short spokes projecting inward from the rim, springs extended radially to the wheel interposed between the ends of the spokes of the two sets, and pairs of tie-bars connecting the outer end of each spoke on the rim to the inner ends of the two adjacent spokes.

4. The combination of a hub, short spokes projecting outward from the hub, a rim, short spokes projecting inward from the rim, approximately-circular springs extended radially to the wheel interposed between the ends of the spokes of the two sets and pairs of tie-bars connecting the outer end of each spoke on the rim to the inner ends of the two adjacent spokes.

657,566. HOLDING DEVICE FOR TENSILE-TEST SPECIMENS. FREDERICK A. RIEHLE, Philadelphia, Pa. Filed June 13, 1900. Serial No. 20,169. (No model.)



Claim.—1. In a device for holding a tensile-test specimen, adjustable jaws, cushions of pliable material on said jaws adapted to contact with said specimen and bolts, said cushions being of tubular form and receiving said bolts.

2. In a device for holding a tensile-test specimen, adjustable jaws with recesses therein, cushions of pliable material on said jaws adapted to contact with said specimen, and means for holding the cushions on the jaws, said cushions being of tubular form radially divided.

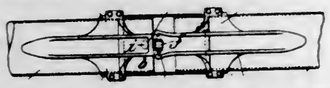
3. In a device for holding a tensile-test specimen, adjustable jaws with recesses therein, and cushions of pliable material held on said jaws and adapted to contact with said specimen, said cushions being divided and having tongues on the ends of the divisions thereof retained in said recesses.

4. In a device for holding a tensile-test specimen, adjustable jaws with cushions of pliable material thereon adapted to contact with the specimen, and a resting device on the jaws for the back of the specimen.

5. In a device for holding a tensile-test specimen, adjustable jaws with recesses therein, cushions of pliable material therein adapted to contact with the specimen, and a center point on the body between the jaws, said cushions being of tubular form radially divided.

6. In a device for holding a tensile-test specimen, adjustable jaws with cushion of pliable material thereon adapted to contact with the specimen, a resting device on the jaws for the back of the specimen, and a center point on the body between the jaws.

657,567. SUCTION-PIPE FOR DREDGES. ARTHUR W. ROBINSON, Milwaukee, Wis. Filed Dec. 8, 1899. Serial No. 739,612. (No model.)



Claim.—1. The combination, in a suction-pipe, of a swiveling elbow-joint connecting the pipe to the dredge, a joint adapted to horizontal movement near the elbow-joint, a universal joint about midway of the pipe, and a drag at the lower end of the pipe, for the purposes set forth.

2. The combination with other parts composing a suction-pipe, of parts attached to the exterior of the ends of the pipe-sections which constitute a universal joint and whereby the ends of the sections are maintained in proper relative positions, and a spring coacting with the parts which constitute the universal joint adapted to resist deflection of the pipe from a straight line, for the purposes set forth.

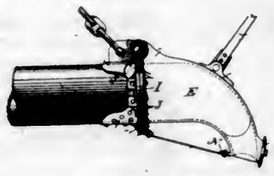
3. In a suction-pipe a universal joint embodying one point of support at one side of the pipe and two spring-actuated points of support at the other side of the pipe, for the purposes set forth.

4. In a suction-pipe a universal joint embodying a point of support on the upper side of the pipe, normally in a condition of compression, and two spring-actuated points of support at or near the lower side of the pipe, which are strained by flexure of the pipe, for the purposes set forth.

5. In a suction-pipe a joint between two adjoining sections thereof embodying terminal devices on the exterior of the ends of the sections respectively, provided with arms projecting therefrom, which arms engage with each other at about the medial line of the flexible material, a spring or springs connecting the ends of the pipe opposite said projecting arms and on the exterior thereof, which resist any flexure of the pipe, and a flexible tubular material connecting the ends of the pipe-sections, for the purposes set forth.

6. In a suction-pipe the combination of a swiveling elbow-joint located in the side of the vessel, a rigid section of the pipe connected to the elbow by a tubular piece of elastic material, arms projecting from the elbow-piece and from the pipe pivoted together and permitting movement in one direction, a universal joint about midway of the pipe connecting two rigid sections thereof by means of a single point of support on the upper side of the pipe and two spring-actuated points of support near the lower arc thereof, and a drag on the end of the pipe, for the purposes set forth.

657,568. MOUTHPIECE OR DRAG FOR SUCTION-PIPES FOR DREDGES. ARTHUR W. ROBINSON, Milwaukee, Wis. Original application filed Dec. 8, 1899, Serial No. 739,619. Divided and this application filed May 7, 1900. Serial No. 15,854. (No model.)



Claim.—1. In a suction-pipe, a drag or mouthpiece hinged at one side to the pipe and held thereto at the other side by easily-ruptured devices, for the purposes set forth.

2. In a suction-pipe, a drag or mouthpiece connected to the pipe by easily-ruptured devices, and means whereby the drag or mouthpiece can be recovered after said devices have been ruptured, for the purposes set forth.

3. The combination of a suction-pipe, a drag or mouthpiece, a hinge connection between the two at the upper side of the pipe, and means upon the side opposite the hinge whereby the mouthpiece will be held in operative position unless subjected to excessive strains, for the purposes set forth.

657,569. PHOTOGRAPHIC CAMERA. JACOB SCHAUB, Logan, Utah, assignor of one-half to Aten Bowman Hower, same place. Filed Oct. 5, 1899. Serial No. 732,713. (No model.)



Claim.—1. A camera, comprising a base, a front supported on said base, a back movable laterally on said base, there being provided several series of keepers each of which series contains a different number of keepers, and a catch adapted to engage with the keepers of any series, as set forth.

2. In a camera, a laterally-movable back, devices for moving said back and for automatically stopping the same at intervals, and means for changing the intervals at which the back will automatically stop, as and for the purpose set forth.

3. In a camera, a base, a laterally-movable carriage on said base, said carriage being provided with upright guides one of which is formed with several series of keepers each containing a different number, a frame for the plate-holders fitted in said guides and provided with a spring-catch, and means for holding said catch in alinement with the different series, as set forth.

4. A camera, comprising a base, a front, guides on said base, one of which is formed with several series of apertures, the number of apertures being different in each series, a carriage movable in said guides, and a changeable spring-catch on said carriage adapted to engage with any one of the series of apertures, as set forth.

5. In a camera, a base, a front, guides on said base, one of which is formed with several longitudinally-extending series of apertures each containing a different number of apertures, a carriage movable in said guide, a spring-catch pivoted on said carriage and having a lateral stud adapted to successively enter the apertures of any one series, and means for holding said catch in alinement with different series, as set forth.

6. In a camera, a base, a front, guides on said base in the rear of the front and one of which is provided with a series of apertures and a rack-bar, a carriage movable in said guides, a spindle held to rotate in a bearing in said carriage and movable laterally in the apertured guide, the said spindle having a pinion meshing in said rack, a spring-catch on said carriage having a stud adapted to successively enter said apertures, and means whereby inward movement of said spindle will withdraw said stud, as set forth.

7. In a camera, a base, a front, guides on said base in the rear of the front, a carriage movable in said guides, a rack-bar in one of said guides, a spindle held to rotate in a bearing in said carriage and movable laterally in the last-named guide, the said spindle having a pinion meshing in said rack, a spring-catch on said carriage and arranged to engage the same at intervals, the said pinion lying against said catch, whereby an inward pressure of the spindle will disengage the catch from the guide, and a spring serving to push the spindle outward, as set forth.

8. In a camera, the combination with the carriage, of a frame adapted to receive the plate-holders and mounted to move in guides on said carriage toward and from the latter, rack-bars in said guides, a spring-pressed shaft extending across the said frame and having pinions meshing in said rack-bars, a spring-catch on said frame adapted to engage at intervals with one of the guides, and means whereby a longitudinal pressure on said shaft will disengage the catch from said guide, as set forth.

9. In a camera, a base provided with laterally-extending guides, one of which is formed with several series of keepers, each series containing a different number of keepers, a carriage fitted to move in said guides, a catch pivoted on said carriage and having a stud adapted to successively engage with the keepers of any one series, and means for holding said catch with its stud in alinement with different series, as set forth.

10. In a camera, a base, laterally-extending guides one of which is provided with several series of longitudinally-extending keepers each series containing a different number of keepers, a carriage fitted to move in said guides, and a spring-catch pivoted between its ends on said carriage and having a lateral stud at one end and a plurality of apertures at its other end, there being provided a lug on the carriage adapted to enter different apertures in the catch, as set forth.

11. In a camera, the combination with a base having lateral guides one of which is formed with several series of keepers, each series containing a different number of keepers and the number in each series representing the division of the sensitive field into a number of equal parts, and a carriage for the support of the sensitive field fitted in said guides and provided with a changeable catch arranged to engage with the keepers of any one series, said catch being formed with indices indicating the necessary position of the catch in order for it to divide the field into a certain number of parts, as set forth.

12. In a camera, the combination of a laterally-movable carriage, a vertically-movable frame for the plate-holders mounted in said carriage, changeable spring-catches for automatically stopping the lateral movements of the carriage and frame and the vertical movements of the frame whereby to divide the sensitive field into equal parts, said catches being provided with indices indicating the position of the catches necessary for the division of the field into certain parts, as and for the purpose set forth.

13. In a camera, the combination with the lens-tube, of a tube surrounding the lens-tube and projecting rearwardly therebeyond, and a series of open-ended cut-out tubes, each of which has one end corresponding approximately in size to the said rearwardly-projecting tube and adapted to fit thereon, the other ends of said cut-out tubes being of areas equal to the number of parts into which the sensitive field is to be divided by the tube, as set forth.

14. In a camera, a frame adapted to receive the plate-holders, a lever mounted on said frame and formed with fingers, spring-bars secured between their ends to said frame, and guide-bars adapted to receive the ground glass, said guide-bars being secured to the free ends of said spring-bars and being adapted for engagement with the fingers of the lever when the latter is raised, as set forth.

15. In a camera, a frame adapted to receive the plate-holders, a bell-lever mounted on said frame, spring-bars on said frame, and guide-bars adapted to receive the ground glass, and secured to said spring-bars, the said bars being engaged by said lever so that the movement of the latter will move the guide-bars as a whole away from and toward said frame, as set forth.

16. In a camera, a frame, a ground glass movable as a whole toward and from said frame and spring-pressed toward the latter, the plate-holder being adapted for insertion between the frame and glass whereby the pressure of the latter against the former will hold said plate-holder in place and a lever mounted on the frame and having a finger bearing upon said ground glass to move the same away from the frame, as set forth.

657,570. FOUNTAIN-SYRINGE OR OTHER CAP. GEORGE H. F. SCHRADER, New York, N. Y. Filed Feb. 5, 1898. Serial No. 669,202. (No model.)



Claim.—1. In caps for fountain-syringes and other devices, a cap formed of sheet metal, having a hollow screw-threaded end for screwing to a body, a top, and a hollow projection above said top having its walls bent to form a flattened portion, and having its hollow interior correspondingly shaped.

2. In caps for fountain-syringes and other devices, a cap formed of sheet metal, having a hollow screw-threaded end for screwing to a body, a top, and a hollow projection above said top having its walls bent to form a flattened portion, and having its hollow interior correspondingly shaped and a tabular nipple on the end of said projection.

3. In caps for fountain-syringes and other devices, a cap formed of a single integral piece of sheet metal having a hollow contracted and screw-threaded lower end, a bulging top above and of greater diameter than such end, and a hollow cylindrical projection on said top having its walls bent to form a flattened portion.

4. In caps for fountain-syringes and other devices, a cap having a screw-threaded end for screwing to a body, a top, and a hollow projection above said top having a flattened portion, the greatest diameter of said flattened portion being less than that of said screw-threaded end, and an under face above said screw-threaded end for pressing a washer against said body.

5. In caps for fountain-syringes and other devices, a cap formed of sheet metal, having a screw-threaded end for screwing on a body, a top, and a hollow projection above said top, and a washer-chamber within said top, having upper and lower walls.

6. In caps for fountain-syringes and other devices, a cap having a contracted and screw-threaded lower end, a bulging top above and of greater diameter than such end, a cylindrical portion having flattened sides, and a transverse end wall formed of a sheet of pressed metal.

7. In caps for fountain-syringes and other devices, a cap having a contracted and screw-threaded lower end, a bulging top above and of greater diameter than such end, a tubular portion having flattened sides, and a transverse end wall, and a nipple on said wall.

8. In caps for vessels, a cap having an internally screw-threaded and contracted lower end, a top above said end, and of greater internal diameter than the latter, a washer-chamber within said top, and a hollow projection above said top, all formed of a single piece of pressed sheet metal.

9. In caps for vessels and other devices, a cap having a hollow lower end and an internal screw-thread therein, a top above said end constituting the top of the screw-threaded socket therein, and a relatively-small hollow projection above and centrally of said top having at its upper end a transverse wall.

10. In caps for vessels and other devices, a cap having a screw-threaded lower end for screwing to a body, a top above said end, and having an under face above the screw-thread thereof for pressing a washer against such body, a small hollow projection above and extending upwardly from the center of said top, said projection having a socket in its upper end, and having parallel side walls near such end.

657,571. CAP FOR TIRE-VALVES, &c. GEORGE H. F. SCHRADER, New York, N. Y. Filed Apr. 25, 1898. Renewed May 5, 1900. Serial No. 15,647. (No model.)



Claim.—1. In caps for tire and other valves, a cap adapted to screw over the end of a valve-shell, in combination with a packing-washer within the cap having an annular bearing-face for being clamped by the cap against the end of the valve-shell, and having a central recess inwardly of such face for receiving a valve-stem.

2. In caps for tire and other valves, an internally-threaded cap, in combination with a packing-washer therein having an annular outer bearing portion, and a hollow central dome.

3. In caps for tire and other valves, an internally-threaded cap and a packing-washer therein, in combination with an antifriction member within the cap between the latter and said washer, having an annular bearing portion engaging the edge of the washer for transmitting to such edge the pressure of the cap when it is screwed on a valve-shell and having a recess inwardly of such portion.

4. In tire and other valves, a valve-shell and a stem therein, in combination with a cap screwing over the end of such shell and having an annular bearing portion and a central cavity within its upper end opposite said stem, and a packing-washer carried by said cap and adapted to be pressed around its edge by the annular bearing portion thereof against the end of such shell.

5. In caps for tire and other valves, a hollow cap and a packing-washer therein, in combination with an antifriction member having a smooth annular bearing portion surrounding its edge, and having a recess opposite the center of said washer, said antifriction member transmitting the pressure of the cap to the outer edge of the washer for forcing it against the end of a valve-shell.

6. In tire and other valves, a shell, and a projecting stem therein, in combination with a cap C consisting of a single imperforate piece of sheet metal bent into cap shape, and having the screw-threaded socket *m*, annular bearing *i*, and curved dome *j*.

7. The improved article of manufacture consisting of an antifriction member for tire-caps, having a smooth outer bearing edge *f*, a central recess *g* on its under face, and a curved dome *h* at its center on its upper face.

8 The improved article of manufacture consisting of a valve-shell, a stem projecting therefrom, a cap screwing over the end of such shell, and a packing-washer in said cap, having an annular outer bearing portion adapted to be clamped against the end of such shell, and having a central recess opposite said stem.

9. The improved article of manufacture consisting of the packing-washer D having an outer annular bearing-flange *a*, a dome *e* on one side, and a central concavity *d* opposite said dome and on its flat side.

657,572. TIRE-VALVE AND CAP. GEORGE H. F. SCHRADER, New York, N. Y. Original application filed June 21, 1898, Serial No. 684,062. Divided and this application filed Jan. 4, 1900. Serial No. 337. (No model.)



Claim.—1. In tire and other valves, a valve-shell having a screw-threaded socket, in combination with a screw-threaded plug screwing into said socket and having screw-driver provisions, a valve-stem projecting through said plug, and a screw-driver entering said socket having screw-driver provisions for engaging those of said plug, and having a recess for passing over said stem.

2. In tire and other valves, a shell having a screw-threaded socket, in combination with a plug screwing in said socket and having screw-driver projections, a valve-stem projecting into said socket, and a screw-driver for entering said socket having notches for engaging said projections, and having a recess for receiving said stem.

3. In tire and other valves, a valve-shell, in combination with a valve-stem projecting toward the end of said shell, a cap screwing over the end of said shell, and a ring of packing material in said cap compressed against the end of said shell to close the latter, and having a central perforation opposite the end of said stem, said cap having provisions for holding said ring against the end of the shell.

4. In tire and other valves, a valve-shell, in combination with a valve-stem projecting toward the end of said shell, a cap screwing over the end of said shell, and a ring of packing material in said cap compressed against the end of said shell to close the latter, and having a central perforation opposite and for receiving the end of said stem, and an antifriction-disk between said ring and cap.

5. In tire and other valves, a valve-shell, in combination with a valve-stem projecting toward the end of said shell, a cap screwing over the end of said shell, and a ring of packing material in said cap compressed against the end of said shell to close the latter, and having a central perforation opposite the end of said stem, and an antifriction-disk between said ring and cap having a projection entering the perforation in the ring and resisting inward distortion thereof.

6. For tire and other valves, a cap consisting of a body adapted to be screwed to the end of a valve-shell for closing it, and having a projection adapted to enter said shell and engage a plug within the same said projection having a screw-driver provision at one end, and a socket for receiving a valve-stem at that end.

7. In caps for tire and other valves, a tubular body open at both ends having a screw-thread at one end for engaging a valve-shell, a screw-driver projection at the other end for entering such valve-shell when the cap is reversed, a socket within said projection, and a packing material between said ends.

8. For tire and other valves, a cap for closing the end of a valve-shell, having a hollow screw-driver projection at one end adapted to enter said shell and engage a plug within the same said projection having transverse screw-driver notches.

9. For tire and other valves, a cap having a screw-threaded socket for screwing over the end of a valve-shell, a ring of packing material in said socket having a central perforation, and an antifriction member between said material and the cap.

10. For tire and other valves, a cap having a screw-threaded socket for screwing over the end of a valve-shell, a ring of packing material in said socket having a central perforation, and a member having a portion within said ring for preventing inward distortion thereof.

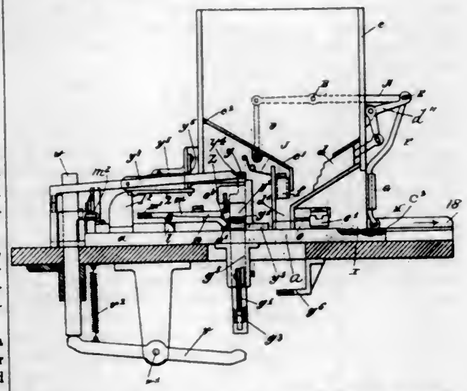
11. For tire and other valves, a cap having a screw-threaded socket for screwing over a valve-shell, a ring of packing material within said cap, and a disk between said material and cap having a projection entering said ring for preventing inward distortion thereof.

12. In caps for tire and other valves, a cap consisting of a single piece of sheet metal having a hollow interior open at both ends and having provisions for retaining a packing, and a separate part within and closing communication through said cap.

13. For tire and other valves, a cap having a screw-threaded socket for screwing over a valve-shell, a ring of packing material within said cap, and means carried by said cap for preventing inward distortion of the ring.

14. For tire and other valves, a cap having a screw-threaded socket for screwing over a valve-shell, a ring of packing material within said cap, and means carried by said cap and entering said ring for preventing inward distortion of the ring.

657,573. MACHINE FOR FILLING AND CLOSING MATCH-BOXES. ALBERT SCHUSTER, Berlin, Germany. Filed Oct. 27, 1896. Serial No. 610,215. (No model.)



Claim.—1. In combination in a machine for filling match-boxes, a reciprocating carriage *a* having a compartment or opening extending therethrough from top to bottom, a holder *y* above the carriage adapted to hold the box in inverted position over the carriage, a reciprocating piston *g'* below the reciprocating carriage and arranged to be moved up into the compartment thereof, means for supporting the piston from the reciprocating carriage, a pawl g^3 for holding the piston up, a reservoir *d'* above the carriage and located to one side of the box-holder *y*, means for separating a quantity of matches in said reservoir from the main body of the matches, means for releasing the piston *g'* to allow the same to fall when the compartment arrives under the reservoir *d'*, a movable face-wall *h'* for the compartment, means for retracting said face-wall while the matches are dropping from the reservoir into the compartment, means for operating the face-wall inwardly to reduce the size of the compartment and for raising the piston *g'* and means for uniting the box with its covering portion, substantially as described.

2. In combination, the reciprocating carriage having an opening therein extending vertically therethrough, a movable face-wall *h'*, a reservoir for the matches above the carriage, springs i^2 for retracting the face-wall to enlarge the opening or compartment and an incline *i'* for moving the face-wall inwardly in the movement of the carriage, substantially as described.

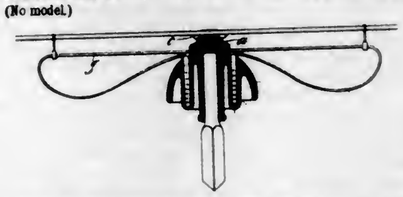
3. In combination, the reciprocating carriage having a compartment

or opening therethrough, a holder *y* above the carriage, a spring *y'* under which the box is forced, the two springs y^2 bent outwardly at their lower ends, a movable part guided to move vertically and carrying said springs for determining the position of the inner box during the introduction of the matches, a piston reciprocating vertically through the compartment to introduce the matches to the inner box and means for operating the piston, the said springs *y'* and y^2 holding the box yieldingly and allowing for different-sized boxes, substantially as described.

4. In combination, a reciprocating carriage having an opening extending vertically thereof, a plunger working in said opening, means for supporting the plunger on the carriage whereby it moves therewith and forms the bottom of the cavity in the carriage, means above the carriage to feed the matches into the opening, means for holding the boxes in inverted position above the said carriage and means for reciprocating the carriage whereby the opening is moved from the feeding means to the box-holding means, and means for controlling the movement of the plunger, to raise the same flush with the table when the matches are fed into position above the opening, and to lower with the supply of matches supported thereby, substantially as described.

5. In combination, the carriage having an opening to receive the matches, said opening having a movable side wall, means for moving the side wall to increase or diminish the size of the opening, means for delivering the matches to said opening and a piston working in said opening from below, substantially as described.

657,574. HIGH-VOLTAGE INSULATOR. ALF SINDING-LARSEN, Frederiksvaern, Norway. Filed Dec. 11, 1899. Serial No. 739,996. (No model.)



Claim.—1. The combination with a main line conductor carrying alternating or pulsating current, and its insulating-supports; of a local circuit at each support and means for heating said supports included in the local circuit, substantially as and for the purpose set forth.

2. An insulator for electric purposes having an outer hood and an inner hood, the latter being provided with an annular pocket for taking up electric resistance.

3. The combination with a main wire and a support therefor, a heater for said support, an auxiliary wire suspended from the main wire and adapted to heat the heater by induced current, substantially as set forth.

4. In combination with a main wire and its support, a heater for said support, a local wire suspended in proximity to, and insulated from the main wire, and in circuit with the heater, adapted to heat the latter by induced current, substantially as set forth.

5. The combination with a main line conductor carrying alternating or pulsating current, and its insulating-supports; of a secondary circuit and means for heating said supports included in the secondary circuit, substantially as and for the purpose set forth.

6. An insulator comprising a hollow stem, a hood therefor, a depending flange between said hood and stem and a heater carried by said flange, substantially as and for the purpose set forth.

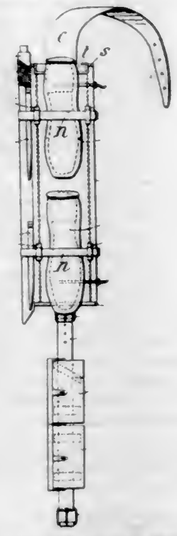
7. An insulator, comprising a hollow stem, a hood therefor, a hollow depending flange between said hood and stem, and an electric heater carried in said flange, substantially as and for the purpose set forth.

657,575. KNAPSACK. VLADIMIR SHERDOFF, Warsaw, Russia. Filed May 9, 1899. Serial No. 716,127. (No model.)

Claim.—1. A knapsack to be carried obliquely across the back of the body, comprising an oblong flexible receptacle closed at one end only, the outer side of said receptacle constituting a cover therefor, a cover for the open end of the receptacle, straps secured to the opposite ends thereof, means for connecting said straps in front of the body and an arched plate secured to the inner side of said receptacle, for the purpose set forth.

2. A knapsack to be carried obliquely across the back of the body, comprising an oblong flexible receptacle closed at one end only, the outer side of said receptacle forming a cover therefor and for its open end, straps secured to opposite ends of the receptacle, means for connecting the straps in front of the body, and an arched plate secured to the inner side of said receptacle, for the purpose set forth.

3. A knapsack to be carried obliquely across the back of the body comprising an oblong flexible receptacle closed at one end only, the outer side of said receptacle constituting a cover therefor, and for the opened end of the receptacle, straps secured to the opposite ends thereof and adapted to be connected in front of the body, pockets secured to the inner side of said receptacle, an arched plate held in said pockets, and a carrying-hook secured to the lower end of the receptacle for supporting it from the waist-belt, substantially as specified.



4. A knapsack to be carried obliquely across the back of the body comprising an oblong flexible receptacle closed at one end only, the outer side of said receptacle constituting a cover therefor, straps secured to the opposite ends thereof and adapted to be connected in front of the body, cartridge-cases mounted on one of said straps, pockets secured to the inner side of the receptacle, an arched plate held in said pockets, supplemental receptacles mounted on each end of the main receptacle, straps for securing said supplemental receptacles and runners for holding said straps in position, substantially as and for the purpose specified.

5. A knapsack to be carried obliquely across the back of the body, comprising an oblong receptacle provided with strap-loops at different points, straps secured to opposite ends of the receptacle and means for connecting said straps in front of the body, in combination with shoe-holders and straps passing through the aforesaid loops on the receptacle for strapping said holders thereto at different points of its length, substantially as set forth.

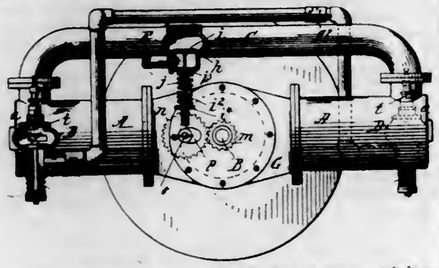
6. A knapsack to be carried obliquely across the back of the body, comprising an oblong receptacle, a strap secured to one end thereof, a buckle secured to its opposite end, a strap *d* connected at one end with said buckle and having a buckle at the opposite end, cartridge-pouches threaded on strap *d*, one of said pouches having an oblique strap-loop, said receptacle provided with strap-loops *o* and straps *n* held and guided thereby, one of said straps wider than the other, substantially as and for the purpose set forth.

7. A knapsack to be carried obliquely across the back of the body comprising an oblong receptacle, a strap secured to one end thereof, a buckle secured to its opposite end, a strap *d* connected at one end with said buckle and having a buckle at the opposite end, cartridge-pouches threaded on strap *d*, one of said pouches having an oblique strap-loop, said receptacle provided with strap-loops *o*, straps *n* held and guided thereby, one of said straps wider than the other, and means for supporting one end of the receptacle from the waist-belt, substantially as and for the purpose set forth.

657,576. GAS-ENGINE. HIRSDALE SMITH, Springfield, Mass. Filed May 11, 1899. Serial No. 716,386. (No model.)

Claim.—1. In a gas-engine, in combination, the two cylinders, oppositely arranged and having their outer ends closed, and having pistons therein, the common crank-shaft located between the cylinders with which both pistons are connected, the common conduit connected with the outer ends of both cylinders, and constituting an always-open passage from the one cylinder to the other, a separate admission-inlet connected with the outer end of each cylinder, and a valve for each of said inlets, a common exhaust-passage and an exhaust-valve provided in an intermediate part

of said common cylinder-connecting conduit, and an exhaust-valve-operating mechanism, substantially as and for the purpose set forth.



2. In a gas-engine, in combination, the two cylinders, oppositely arranged and having their outer ends closed, and having pistons therein, the common crank-shaft located between the cylinders with which both pistons are connected, the common conduit connected with the outer ends of both cylinders, and constituting an always-open passage from the one cylinder to the other, a valve-casing provided and inwardly opening into the outer end of each cylinder and constructed with a valve-seat, and an admission-valve provided to normally close upon each valve-seat, a gas-inlet conduit connected with each valve-casing, a common exhaust-passage and an exhaust-valve provided in an intermediate part of said common cylinder-connecting conduit, and an exhaust-valve-operating mechanism, substantially as and for the purpose set forth.

657,577. BUCKLE. JOSEPH R. SMITH, Waterbury, Conn., assignor to the Waterbury Button Company, same place. Filed Mar. 23, 1900. Serial No. 9,833. (No model.)



Claim.—1. As a new article of manufacture, a lever-buckle, composed of a frame and a lever, the material-holding edge of the lever being bent upward and the coöperating edge of the frame being bent downward, substantially as set forth.

2. A buckle, consisting solely of a lever member having an upturned lip or edge for engaging and holding the fabric or material, an opening for attaching the material and pivotal ears or lugs, and a frame member having a cross-piece with a downturned lip or edge coöperating with the said upturned lip or edge, another cross-piece, and sides in which the said ears or lugs are centered, substantially as set forth.

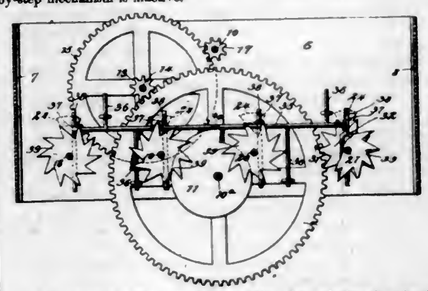
3. A buckle, consisting solely of a lever member having an upturned lip or edge for engaging and holding the fabric or material, an opening for attaching the material and pivotal ears or lugs, and a frame member having a cross-piece with a downturned lip or edge coöperating with the said upturned lip or edge, another cross-piece, and sides in which the said ears or lugs are centered, the said sides of the frame member lying in planes at right angles to the plane of the cross-pieces, substantially as set forth.

4. A buckle, consisting solely of a lever member having an upturned lip or edge for engaging and holding the fabric or material, an opening for attaching the material and pivotal ears or lugs, and a frame member having a cross-piece with a downturned lip or edge coöperating with the said upturned lip or edge, another cross-piece, and sides in which the said ears or lugs are centered, the said sides of the frame member lying in planes at right angles to the plane of the cross-pieces, and the said lever member having stiffening sides or flanges lying within and parallel to the sides of the said frame member, substantially as set forth.

5. A buckle consisting solely of a lever member of sheet material having pivotal lugs or ears, an opening for attaching the material, and stiffening side flanges, and a frame member having two cross-pieces united by side flanges which receive the said lugs or ears, the two members fitting one within and parallel with the other, and one of the cross-pieces b''' adapted to lie above or within the said opening for attaching the material, so as to reduce the bulkiness of the buckle when in use, substantially as set forth.

657,578. REGISTER. CHARLES F. J. WERNERT, Evansville, Ind. Filed June 11, 1900. Serial No. 19,929. (No model.)

Claim.—1. In a register for meters, the combination of a drive-shaft and a plurality of dial-shafts, of step-by-step mechanism for rotating the several shafts, one from another, escapement-wheels carried by the dial-shafts, and means operated from the drive-shaft for engagement with the escapement-wheels to hold the dial-shafts against rotation when the step-by-step mechanism is inactive.

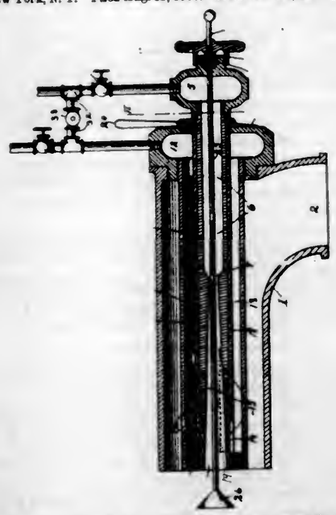


2. In a register the combination with a drive-shaft and a plurality of dial-shafts, of a step-by-step mechanism for rotating the several shafts one from another, escapement mechanism carried by the dial-shafts, and means operated from the drive-shaft for engaging the escapement mechanism to hold the dial-shafts immovable when the escapement mechanism is inactive.

3. In a register for meters, the combination with a drive-shaft and a plurality of dial-shafts, of an escapement-wheel upon each of the dial-shafts, means operated by the drive-shaft for intermittent engagement with the escapement-wheels to hold the dials against movement at times, step-by-step mechanism operated from the drive-shaft for moving the dial-shafts when released by the escapement mechanism, and ratchet mechanism coöperating with the escapement mechanism to hold the dials for oscillatory movement.

4. In a register for meters, the combination with a drive-shaft and a plurality of dial-shafts having step-by-step operating means, of an escapement-wheel upon each of the dial-shafts, a reciprocatory bar having a plurality of knife-edges adapted for engagement with the escapement-wheels to hold them from rotation in one direction, a cam upon the drive-shaft, an arm upon the rod engaging the cam to reciprocate the rod, and ratchet mechanism for holding the dial-shafts from movement in a second direction.

657,579. FUEL INJECTOR AND BURNER. GEORGE WHITE, Jersey City, N. J., assignor to David Grear and Elisha G. Selchow, trustees, New York, N. Y. Filed Aug. 15, 1899. Serial No. 727,324. (No model.)



Claim.—1. In a furnace, the combination of means for feeding coal-dust into the combustion-chamber and means for injecting a fluid fuel into said chamber, the flame of the fluid fuel being directed across the path of the coal-dust in order to ignite and mechanically distribute the body of coal-dust.

2. In a furnace, the combination of means for supplying coal-dust to the combustion-chamber, means for injecting a fluid fuel to said chamber, and means for directing the flame of the fluid fuel across the path of the coal-dust.

3. In a furnace, the combination of a conduit through which coal-dust is fed to the combustion-chamber by a blast of air, a conduit for injecting a fluid fuel, and means for directing the flame of the fluid fuel across the path of the coal-dust.

4. In a furnace, the combination of the means for supplying coal-dust to the combustion-chamber, and means for supplying a fluid fuel to said chamber under a high velocity, the flame of the fluid fuel being directed across the path of the coal-dust.

5. In a furnace, the combination of a conduit for supplying coal-dust to the combustion-chamber, a conduit for supplying a fluid fuel to said chamber, said conduits being concentrically arranged, and means for directing the flame of the fluid fuel across the path of the coal-dust.

6. In a furnace, the combination of two conduits leading to a combustion-chamber, said conduits being concentrically arranged and spaced from each other, the outer conduit supplying coal-dust and the inner conduit a fluid fuel to the combustion-chamber, and means for directing the flame of the fluid fuel across the path of the coal-dust.

7. In a furnace, the combination of two conduits leading to a combustion-chamber, said conduits being concentrically arranged and spaced from each other, the outer conduit supplying coal-dust and the inner conduit a fluid fuel, each under a high velocity, and means for directing the flame of the fluid fuel across the path of the coal-dust.

8. In a furnace, the combination of a conduit for supplying coal-dust to the combustion-chamber under a high velocity, a restrictive conduit for supplying a fluid fuel under a high velocity to said combustion-chamber, said conduits being concentrically arranged, and means for directing the flame of the fluid fuel across the path of the coal-dust.

9. In a device for separately feeding coal-dust and oil into furnaces, the combination of a conduit for supplying coal-dust to the combustion-chamber under a high velocity, an oil-conduit, a nozzle communicating with the oil-conduit, means for supplying the oil and means for directing the flame of the fluid fuel across the path of the coal-dust.

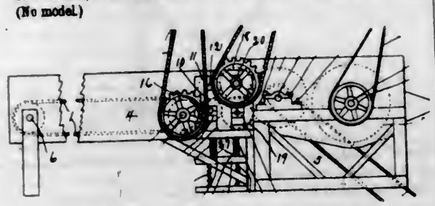
10. In a device for separately feeding coal-dust and oil into a furnace, the combination of a conduit for supplying coal-dust to the combustion-chamber under a high velocity, an oil-conduit, a nozzle communicating with the oil-conduit, means for supplying the oil to the combustion-chamber under a high velocity, and a deflector for directing the flame of the fluid fuel across the path of the coal-dust.

11. In a device for separately supplying oil and coal-dust into a furnace, the combination of the coal-dust conduit leading into the furnace, means for supplying the coal-dust to the combustion-chamber, an oil-conduit concentrically arranged within the coal-dust conduit, a steam-supplying nozzle communicating with the oil-conduit, said nozzle having a contracted portion and an expanded portion, whereby the fluid fuel will be injected into the combustion-chamber at an increased velocity, and means for directing the flame of the fluid fuel across the path of the coal-dust.

12. In an injector-burner, the combination of an oil-conduit provided with a supply-pipe, and a nozzle arranged in the oil-conduit and communicating therewith, said nozzle having a gradually-increased portion in the direction of its exit end and a contracted portion in the rear of the expanded portion, the former of sufficient length to cause the oil-feeding medium to gradually expand, whereby the pressure will be diminished and the velocity of the medium increased, substantially as described.

13. In an injector-burner, the combination of an oil-conduit provided with a supply-pipe and a nozzle arranged in the oil-conduit and communicating therewith, said nozzle having a gradually-increased portion in the direction of its exit end and a contracted portion in the rear of the expanded portion, the former of sufficient length to cause the oil-feeding medium to gradually expand, whereby the pressure will be diminished and the velocity of the medium increased, with means for regulating the supply of oil.

657,580. COTTON PICKING AND CLEANING MACHINE. JOHN T. WOOLERY, Fort Worth, Tex. Filed Jan. 27, 1900. Serial No. 3,008. (No model.)



Claim.—1. A picking and cleaning machine having feed-rollers arranged in pairs, a suitable frame for said rollers, a picker mounted in said frame adjacent to one pair of said rollers, and a brush mounted in said frame adjacent to said picker, the pair of rollers next to said picker having annular grooves therein oppositely disposed and the teeth of said picker being adapted to run in the grooves of each roller.

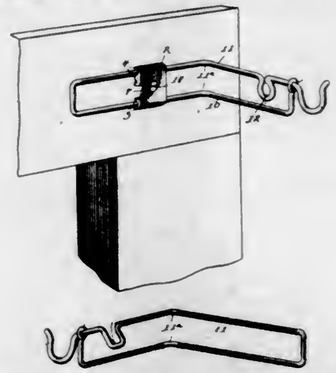
2. A picking and cleaning machine having a pair of feed-rollers, a suitable frame for said rollers, a spring-pressed bearing for one of said rollers, a pair of annularly-grooved feed-rollers mounted in said frame adjacent to said first-named rollers, the grooves in the rollers being oppositely disposed a spring-pressed bearing for one of said rollers, a picker mounted in said frame and being provided with teeth adapted to run in the grooves of each of said rollers, and a brush adapted to take material from said picker.

3. A picking and cleaning machine having a pair of feed-rollers, a suitable frame for said rollers, a picker mounted in said frame adjacent to said rollers, a brush for removing material from said picker, stationary bearings for one of said feed-rollers, and movable bearings for the other one of said bearings, said feed-rollers having annular grooves therein and said picker having teeth adapted to run in said grooves and pick material from said rollers.

4. A picking and cleaning machine having a picker, a brush, and feed-rollers adjacent to said picker, stationary bearings for one of said rollers, movable bearings for the other feed-roller, a lever for each of said bearings having a suitable fulcrum, link-bars attached to the short arms of said levers and supporting said bearings, and spiral springs attached to the long arms of said levers and to a fixed support whereby said rollers are held yieldingly in close proximity, said rollers having annular grooves therein and said picker having teeth running in said grooves.

5. A picking and cleaning machine having a suitable frame, a picker, a brush, and two pairs of feed-rollers all mounted in said frame, one roller of each pair of feed-rollers being mounted in spring-pressed bearings, one pair of said feed-rollers having annular and longitudinal grooves therein, said rollers being so arranged that a bearing-surface of one roller is opposite a longitudinal groove in the other roller, said picker having teeth adapted to run in the annular grooves of both of said rollers.

657,581. CURTAIN-FIXTURE BRACKET. CHARLES A. WEEKS, Oil City, Pa. Filed Nov. 8, 1899. Serial No. 736,273. (No model.)



Claim.—In a device of the character described the bracket comprising a continuous piece of wire bent upon itself to form two separated arms, said bracket being bent at right angles, the upper arm being bent downward then upward to form a bearing and again bent at its extreme outer end to form a hook, the lower arm being turned upward and secured to the upper arm, substantially as described

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657,582. COMBINED UNDERSHIRT AND SUSPENSORY BANDAGE. FRANK W. WRIGHT, Wichita, Kans. Filed Sept. 23, 1899. Serial No. 731,996. (No model.)

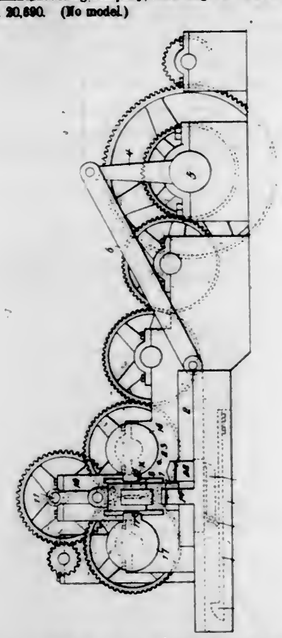
Claim.—1. As a new article of manufacture an undershirt having an opening in the front part thereof a short distance from the bottom, a sack permanently secured at the bottom and sides to the inside, in front and near the bottom of said shirt, and under said opening.

2. A new article of manufacture consisting of an undershirt having an opening in the front thereof a short distance from the bottom, a sack permanently secured at the bottom and sides to the inside, in front and near the bottom of said shirt, a draw-string passing through the upper end of said sack and through said shirt, substantially as shown and described.

657,582.



657,583. MACHINE FOR MANUFACTURING CLIPS FOR WAGONS. JAMES H. BAKER, Allegheny, Pa., assignor to the James H. Baker Manufacturing Company, Pittsburg, Pa. Filed June 18, 1900. Serial No. 20,690. (No model.)



Claim.—1. A machine for the manufacture of clips for wagons, &c., having in combination a reciprocating anvil, a hammer for effecting a preliminary flattening of the rod, and a roll adapted to flatten and spread the body of the blank in one direction, substantially as set forth.

2. A machine for the manufacture of clips for wagons, &c., having in combination a reciprocating anvil, a hammer for effecting a preliminary flattening of the rod, and oppositely-rotating rolls adapted to flatten and oppositely spread portions of the body of the blank, substantially as set forth.

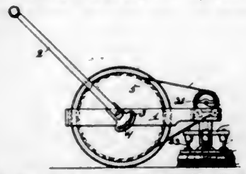
3. A machine for the manufacture of clips for wagons, &c., having in combination a reciprocating anvil and oppositely-rotating rolls adapted to operate in conjunction with the anvil to flatten and oppositely spread the intermediate portion of a rod, substantially as set forth.

4. A machine for the manufacture of clips for wagons, &c., having in combination a reciprocating anvil, a hammer for effecting a preliminary flattening of the rod, oppositely-rotating rolls adapted to flatten and oppositely spread portions of the body of the blank, means for lifting the article during the reciprocating of the anvil for the removal of cinder, substantially as set forth.

5. A machine for the manufacture of clips for wagons, &c., having in combination a reciprocating anvil, a hammer for effecting a preliminary flattening of the rod, oppositely-rotating rolls adapted to flatten and oppositely spread portions of the body of the blank, and means operative by the anvil to lift the finished blank from the anvil, substantially as set forth.

6. A machine for the manufacture of clips for wagons, &c., having in combination a reciprocating anvil, oppositely-rotating rolls adapted to operate in conjunction with the anvil to flatten and oppositely spread a portion of a rod and means for lifting the article during the reciprocation of the anvil, substantially as set forth.

657,584. SCRUBBING-MACHINE. HIRAM C. BURK, Cleveland, Ohio. Filed Jan. 29, 1900. Serial No. 3,141. (No model.)

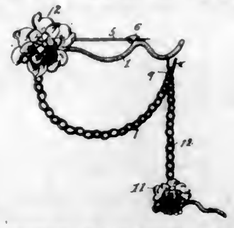


Claim.—1. In a scrubbing-machine, the combination with the frame, main driving-wheels and centrally-located driving sprocket-wheel, of a transverse shaft located in the front of the machine, provided with a sprocket pinion and chain connecting with the driving sprocket-wheel, vertical shafts mounted underneath the front of the frame, rollers secured to said shafts, yokes sleeved over said shafts, weights encircling said shafts, brushes mounted upon said weights and grouped about each roller, vertical rods or guides passing through said yokes and secured to said weights, and bevel-gearing communicating the movements of said transverse shaft to said yokes, substantially as described.

2. In a scrubbing-machine, a frame, in combination with vertical shafts at the front of the frame provided with rollers at their lower extremities, weights encircling said rollers, brushes secured to said weights in groups and means for driving said weights and brushes in opposite directions and for affording free vertical movement thereto, consisting of yokes sleeved about the vertical shafts, guide-rods passing through said yokes and weights, bevel-pinions upon the yokes, a transverse shaft, oppositely-faced bevel-gears upon said shaft, and driving mechanism connecting said shaft with the main shaft of the machine, substantially as described.

3. In a scrubbing-machine the combination with a frame and driving mechanism, of a transverse shaft, driven by said driving mechanism, bevel-gears upon said shaft, vertical shafts mounted upon said frame and provided with rollers at their lower extremities, scrubbing devices placed in groups about the said rollers, weights upon the scrubbing devices, yokes upon the vertical shafts, pinions engaging said yokes and the bevel-gears on said transverse shaft, and means for connecting said yokes with the weights and scrubbing devices whereby the movement of said yokes is transmitted to said weights and scrubbing devices, substantially as described.

657,585. BOUQUET-HOLDER. JAMES H. CARROLL, New York, N. Y. Filed Mar. 19, 1900. Serial No. 9,161. (No model.)



Claim.—The combination with the bar 1 formed to simulate the stem of a flower, the part 2 at the end of the bar simulating a flower, the pin 5 pivotally secured at one end to the rear of the part 2, the lock-catch 6 secured to the bar 1, the link chain 7 fixedly secured at one end, as at 8, to the rear of the part 2, the hook 10 on the bar, the hook being adapted to receive a link of said chain, and a weight on the free end of the chain; said weight simulating a flower, substantially as described.

657,586. CIPHER-CODE SYSTEM. ELMER F. CAMEL, Seattle, Wash. Filed Mar. 10, 1900. Serial No. 8,153. (No specimens.)

Comm. B	A
fail	Your telegram received
fact	Your telegram not received
fail	Telegram received and understood
flag	Telegram not understood
flam	Referring to your telegram of
flap	Referring to my telegram of C
B flat	Wire me at once
flaw	Wire full particulars
flip	Will wire full particulars
flit	Advise by wire when done
C	

Claim.—1. A cipher-code in which words or syllables capable of literal translation are so compounded as to form a complete cipher-word without literal meaning, as set forth.

2. A cipher-code in which single code words or characters are formed of two united parts or syllables indicating respectively a definition and a group of definitions, as set forth.

3. A cipher-code consisting of a series of groups each indicated by a word or syllable and containing a series of definitions, each of which latter is also designated by a word or syllable, said words or syllables when united forming a cipher-word without literal meaning, as set forth.

4. A cipher-code consisting of a series of groups each indicated by a word or syllable and containing a series of definitions, each of which latter is also designated by a line word or syllable, said line words or syllables being the same for each group, arbitrary cipher-words being formed by compounding said page and line words or syllables, as set forth.

657,587. CIPHER-CODE. ELMER F. CAMEL, Seattle, Wash. Filed June 23, 1900. Serial No. 21,319. (No model.)

U	E	H	M
bad	I (we) can	bam	If I can
bag	I (we) cannot	ban	If I cannot
bard	Can I (we)	bub	If you can
F bag	You can	bub	If he (they) can
bang	You cannot D	F bud	If he (they) cannot
back	Can you	bug	When can I (we)
bank	He (they) can	bung	When can you
black	He (they) cannot	bum	When can he (they)
brag	Unless I (we) can	bung	How can I (we)
brack	Unless you can	bap	How can you
blag	Unless he (they) can	boop	How can he (they)

Claim.—1. A cipher-code comprising a series of definitions each indicated by a line word or syllable, said line words or syllables having no cipher meaning unless combined with another line word or syllable.

2. A cipher-code comprising a series of definitions arranged in pages or groups, and page and line words or syllables indicating the same, said page and line words having no cipher meaning unless combined with another page or line word.

3. A cipher-code comprising a series of groups or definitions which may be used alone or in combination, one with the other, as set forth.

4. A cipher-code comprising a series of groups containing a series of definitions each indicated by a line word or syllable representing part of a cipher-word, said definition being capable of use alone or in combination, one with the other, as set forth.

5. A cipher-code comprising a series of definitions of universal use and application segregated into groups of primary and auxiliary words or phrases susceptible of universal combination, one with the other, and each indicated by a line word or syllable, said line words or syllables when united forming a complete cipher-word indicating the definitions contained in the desired message, as set forth.

6. A cipher-code comprising a series of groups or columns of definitions each of which is indicated by a line word or syllable, the definitions of any one group or column being capable of use with any one of the remaining groups or columns, arbitrary cipher-words being formed by uniting said line-words, as set forth.

7. A cipher-code comprising several series of definitions arranged in vertical columns, and individual line-words for each of said definitions also arranged in columns, the combination of any two of said line words forming a complete cipher-word indicating the definitions contained in the desired message, as set forth.

8. A cipher-code consisting of a series of primary words or phrases arranged in columns and each indicated by a line-word, and a series of auxiliary words or phrases also arranged in columns and each indicated by a line-word, and two of said primary and auxiliary words or phrases being capable of grammatical combination, said line-words when united forming a cipher-word indicating the primary and auxiliary expressions intended to be so combined, as set forth.

657,588. CHURN. HENRY G. CONNETT, Chicago, Ill. Filed June 16, 1900. Serial No. 20,529. (No model.)

Claim.—A churn comprising a supporting-frame, a churn-body journaled thereon, a curved rack-bar fixed to the supporting-frame and having its ends extending downward and provided with inwardly-extending lugs, dasher mechanism provided with gearing meshing with the rack, and an operating-rod connected with the churn-body and having a loop forming a grip and arranged to engage the adjacent end of the rack-bar for supporting the churn-body in a slightly-inclined position, substantially as described.



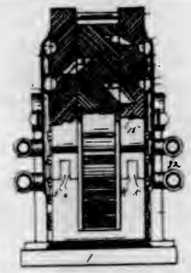
657,589. WHIFFLETREE. JUSTIN M. CONRAD, Arlington, Nebr. Filed Mar. 22, 1900. Serial No. 9,772. (No model.)



Claim.—1. In a device of the character described the combination, with a whiffletree, of singletrees pivoted thereto, a plate secured to the whiffletree therebetween, and a hammer-strap pivoted within said plate at a point in alinement with the center of the pivots of the singletrees.

2. In a device of the character described the combination, with a tongue, of a hammer-strap detachably secured thereto, a forked end to the hammer-strap, a plate pivoted therein, a whiffletree secured to the plate, and singletrees pivoted to the whiffletree on opposite sides thereof.

657,590. ROTARY ENGINE. EUGENE P. COUTURE, Gualala, Cal. Filed Apr. 30, 1900. Serial No. 15,008. (No model.)

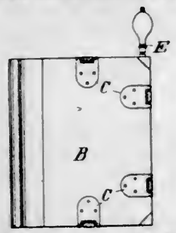


Claim.—1. In a rotary engine, the combination of fixed side plates, each having a circular series of cavities in its inner surface, each cavity having a surface in a plane approximately passing through the axis of the engine, a rotating cylinder between the two side plates having a circular series of cavities on each of its faces, said cavities being adapted to register with the cavities in the side plates to form steam-chambers, circular grooves in the outer faces of the side plates, plates covering said grooves to form steam and exhaust conduits, connections through the side plates from said steam-conduits to the several cavities in the inner faces of of the side plates, and connections from said exhaust-conduits to the inner faces of the side plates, said connections being arranged to register with exhaust-passages from the cavities in the rotary cylinder, steam-pipes leading to the circular steam-conduits and an exhaust-pipe leading from the circular exhaust-conduit, substantially as described.

2. In a rotary engine, the combination of fixed side plates, each having an inner and an outer circular series of cavities in its inner surface,

each cavity having a surface in a plane approximately passing through the axis of the engine, but said surfaces of the two series having opposite aspects relatively to their respective cavities, a rotary cylinder between the two side plates having inner and outer circular series of cavities on each of its faces, said cavities being adapted to register with the cavities in the side plates to form steam-chambers, inner and outer circular grooves in the outer faces of the side plates, and plates covering said grooves to form steam-conduits, connections through the side plates from said steam-conduits to the several cavities in the inner faces of the side plates, inner and outer circular grooves in the outer faces of the side plates, and plates covering said grooves to form exhaust-conduits, and connections from said grooves to the inner faces of the side plates, said connections being arranged to register with exhaust-passages from the cavities in the rotary cylinder, independent steam-pipes leading to the circular steam-conduits, and a connection between the circular exhaust-conduits, substantially as described.

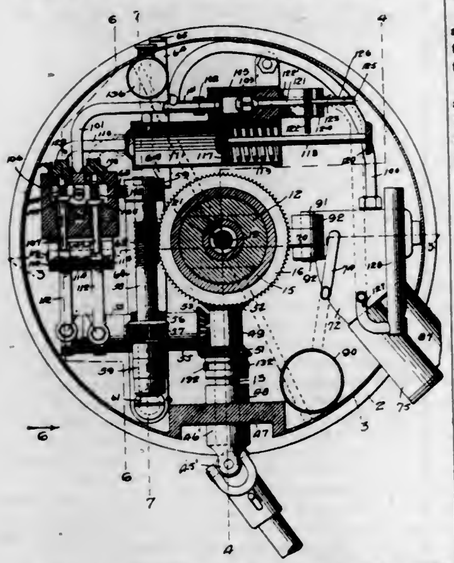
657,591. - LETTER-COPYING BOOK. SAMUEL H. CROCKER, London, England. Filed June 12, 1899. Serial No. 720,242. (No model.)



Claim.—1. A letter-copying book the covers of which are provided with clasps by which they can be held in closed position, an air-bag placed within the book and means for producing air-pressure in the bag, substantially as and for the purposes specified.

2. In an internal inflatable air-bag for use in a clasped letter-copying book an inflator having a tubular connecting-piece, non-return valves and a deflating device, the metal piece J fixed in the tubular connecting-piece attached to the air-bag, said piece J being bent around in the bag and operating when the book is closed to prevent the tubular connecting-piece turning around when the screwed socket is being attached or detached therefrom, substantially as and for the purposes specified.

657,592. TRAIN-ORDER SIGNAL. HARRY DE WALLACE, Watertown, N. Y. Filed Jan. 29, 1900. Serial No. 3,093. (No model.)



Claim.—1. In a train-order signal, the combination, with a movable hand, and means for moving said hand, of the graduated dials over which said hand travels, the series of triggers arranged between said dials and adapted to be engaged with the edge of the outer dial, and a signal-releasing bolt or catch carried by said hand and adapted to be operated by the passage of said hand over any trigger that is in engagement with the edge of the dial, substantially as described.

2. In a train-order signal, the combination, with a movable plunger by which the signal is brought into operation, a traveling hand, and a latch or bolt upon said hand adapted to engage said plunger and hold the same out of operation, for the purpose set forth.

3. In a train-order signal, the combination, with the movable plunger 19 and its operating-spring 21, of the movable hand provided with a catch or bolt adapted to engage said plunger, and hold it from movement against the tension of said spring while said hand is moving, for the purpose set forth.

4. In a train-order signal, the combination, with the movable plunger 19 and its operating-spring 21, of the movable hand, the dials, means for moving said hand over said dials, and a catch or bolt carried by said hand and adapted to engage and hold said plunger while said hand is being moved over said dial, for the purpose set forth.

5. In a train-order signal, the combination, with the dials, the triggers arranged in connection with one of said dials, a movable hand, means for moving said hand over said dial, a signal mechanism, a plunger adapted to operate said mechanism, and a catch or bolt carried by said hand and adapted to engage and hold said plunger, for the purpose set forth.

6. In a train-order signal, the combination, with the dials 5 and 7, of the movable hand and the series of triggers arranged between said dial and adapted to be engaged with the edge of one of said dials, for the purpose set forth.

7. In a train-order signal, the combination, with the dials 5 and 7, of the series of pivoted dogs arranged between said dials, a signal-releasing device, a movable hand by which said signal-releasing device is carried, and means for causing said signal-releasing device to be operated whenever said hand passes over a trigger that is in engagement with one of said dials, for the purpose set forth.

8. In a train-order signal, the combination, with the signal-operating valve and its operating-lever, of a movable plunger adapted to engage said lever, a spring for moving said plunger, a movable hand, and a bolt or catch carried by said hand and adapted to engage said plunger and to hold the same while said hand is being moved, for the purpose set forth.

9. In a train-order signal, the combination, with the casing, the central standard and the rotating hollow shaft 14, of the dial 5 secured to the front of the casing, the ring or hollow standard 6 arranged upon said dial, and the dial 7 arranged upon said ring, and means for securing said dials and rings to the casing, for the purpose set forth.

10. The combination, with the hollow central standard 12, the plunger mounted in said standard, the signal-releasing valve adapted to be operated by said plunger, a spring for moving said plunger, and means for holding and releasing said plunger, for the purpose set forth

11. In a train-order signal, the combination, with the dial 7 of the shoes 34 pivoted upon the back side of said valve, the spring-actuated triggers mounted upon said shoes, provided with the lugs 39 and with the loops 41, substantially as described.

12. In a train-order signal, the combination, with the dial 7, of the shoe 34 pivoted upon said dial and provided with the bearings 36 and 37, one of said bearings having a slot therein, the trigger 38 mounted in said bearings and adapted to move in said slot, a spring engaging said triggers, and a lug 39 carried by said trigger and adapted to engage said dial, for the purpose set forth.

13. The combination, with the dial 7 and the pivoted shoe 34, of the trigger 38 having the loop 41 provided with sharp edges for the purpose set forth.

14. In a train-order signal, the combination, with the movable hand 17, of the sliding bolt 31 provided with the double lug 42' having the double inclined surface 43 and the inclined surface 44, substantially as described.

15. The combination, with the hand 17, of the sliding bolt 31 mounted in bearings upon said hand, the button 33 upon said bolt, and the spring 35 engaging said bolt, for the purpose set forth.

16. In a train-order signal, the combination, with a valve controlling the escape of air from the train-pipe to an exhaust-chamber, of a puppet-valve, and a signal-whistle, both connected to said exhaust-chamber, and means for operating said valve, whereby when said valve is partially opened the air entering said chamber from the train-pipe will pass to and will operate said signal, and when said valve is fully opened said puppet-valve will open, permitting the escape of air through said valve, the reduction of pressure in the train-pipe and thereby the setting of the train-brakes, substantially as described.

17. The combination, with the exhaust-chamber, of the puppet-valve provided with the adjustable follower 81, having the openings 82, the cap 83 provided with the opening 84, and the adjustable plate 85, for the purpose set forth.

18. In a train-order signal, the combination, with the air-valve 72, of the bell-crank lever 69 engaging said valve, and the movable plunger engaging said lever, and means for permitting first a partial opening and then a complete opening of said valve, for the purpose set forth.

19. In a train-order signal, the combination, with the train-pipe, the exhaust-chamber 73 and the movable valve 72, of the whistle connected to said exhaust-chamber, a lever engaging said valve, and means for first partially opening said valve and then completely opening it, for the purpose set forth.

20. In a train-order signal, the combination, with the air-valve, and the lever for moving said valve, provided with a series of worm-grooves, of the shaft, the worm 66 slidably mounted upon said shaft, and means for forcing said lever into engagement with said worm, for the purpose set forth.

21. The combination, in a train-order signal, with the air-valve and the lever for moving said valve, provided with a series of worm-grooves, of the movable worm 66, and means for forcing said lever into engagement with said worm, for the purpose set forth.

22. The combination, with the air-valve and its operating-lever 69, of the shaft 13, the worm 66 slidably mounted upon said shaft, and the spring 66' arranged upon said shaft upon opposite sides of said worm, for the purpose set forth.

23. The combination, in a train-order signal, with the air-valve 72, of the pivoted lever 69 engaging said valve, and provided with a series of worm-grooves, the plunger 19 provided with the spring 21 adapted to move said plunger into contact with said lever, the worm 66 slidably mounted upon the driving-shaft 13, and suitable springs for holding said worm normally in a central position on said lever, and means for holding and releasing said plunger, whereby as said plunger is moved by its spring said air-valve will be slightly opened and said lever will be brought into engagement with said worm, and after a short interval said worm will move from the engagement with said lever and permit said valve to be farther opened, for the purpose set forth.

24. In a train-order signal, the combination, with the movable hand, the hollow-shaft 14 and the worm 16, of the worm-shaft 58 engaging said worm-wheel, and movable bearings in which said worm-shaft is mounted, substantially as described.

25. The combination, in a train-order signal, with the driving-shaft 13, of the movable sleeve 49 secured upon said driving-shaft by a spline or feather and slidable thereon, the yoke 132 engaging said sleeve, the gears 51 and 52 mounted upon said sleeve and adapted to engage the gear 53, and means for moving said yoke, for the purpose set forth.

26. In a train-order signal, the combination, with the driving mechanism, of a disorder alarm or signal, and independent pneumatically-controlled automatic connections that prevent the operation of said signal except upon the stoppage of said driving mechanism, substantially as described.

27. The combination, with a driving-shaft, of a disorder alarm or signal, and a plurality of controlling members either one of which causes the operation of said disorder alarm or signal upon the stopping of said shaft, substantially as described.

28. The combination, with a driving-shaft, of a disorder alarm or signal, and a plurality of controlling members operated by said shaft and either member arranged to operate said disorder alarm or signal on the stopping of said shaft.

29. The combination, with a driving-shaft, of a disorder alarm or signal, a plurality of pneumatic cylinders provided with pistons, automatic means for operating said alarm by the movement of either of said pistons, and valves controlled by the movement of said shaft and controlling the admission of air to said cylinders, for the purpose set forth.

30. The combination, with a driving-shaft, of a disorder alarm or signal, a pneumatic controlling-cylinder, and an auxiliary or storage reservoir in open connection with said cylinder, for the purpose set forth.

31. The combination, with the disorder-alarm, of the controlling-cylinders provided with pistons 117, piston-rods 118 and springs 119, the movement of said rods adapted to operate said alarm, of the twin valves controlling admission of air to said cylinders, and means for operating said valves.

32. The combination, with a driving-shaft, of a disorder alarm or signal, a plurality of pneumatic cylinders controlling the operation of said alarm, twin valves periodically operated by said shaft and controlling the admission of air to said cylinders, and means for forcing the air from said cylinders and operating said disorder-alarm upon the stopping of said shaft.

33. The combination, with a driving-shaft, of a disorder-alarm, a valve controlling said alarm, a plurality of pneumatic cylinders, having pistons either of which is adapted to operate said valve, springs for moving said pistons and thereby operating said valve, and means operated by said shaft and controlling the admission of air to said cylinders to limit the movement of said pistons.

34. The combination, with the disorder-alarm, and the controlling-cylinders 111, of the twin valves 105, governing the admission of air to said cylinders, and means for alternately operating said valves, for the purpose set forth.

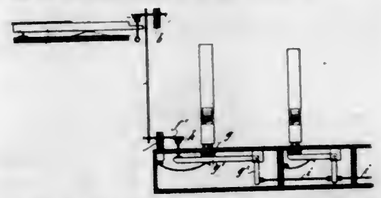
657,593. WARDROBE. DWIGHT R. DIX, St. Paul, Minn. Filed May 31, 1900. Serial No. 18,610. (No model.)



Claim.—1. A wardrobe comprising a base having a standard adjustably mounted thereon and provided with a shoulder at its upper end, a plate resting upon the shoulder and having arms provided with hooks, an axial extension of the standard having an encircling ring, arms connected with the ring and extending outwardly and downwardly, a second ring engaged with the outer ends of the arms, hangers attached to the second ring and connected with the extension of the standard, and a fabric casing supported upon the second ring and the hangers.

2. A wardrobe comprising a base, and a standard mounted thereon and provided with hooks, a frame mounted upon the standard and including upper and lower rings, radially-extending arms connected with the lower ring, downwardly and radially extending hangers connected with the upper ring, a third ring connected with the outer ends of the arms and hangers, a conical fabric-casing section disposed upon the hangers, and a cylindrical fabric-casing section suspended from the last-named ring.

657,594. ORGAN. FRIEDRICH E. P. EHRLICH, Gohlis, Germany. Filed May 18, 1898. Serial No. 681,063. (No model.)



Claim.—A mechanism for connecting a key of an organ or similar instrument with the air-valve which the key controls, comprising in combination with the key and the valve-lever, a crank-lever fulcrumed adjacent to the key and with which the latter is connected, another crank-lever arranged adjacent to the valve-lever with which it has direct or immediate connection, and a rod directly connecting the said crank-levers, substantially as set forth.

657,595. PENCIL-POINTER. ALFRED J. GILLESPIE, Rochester, N. Y. Filed July 5, 1899. Serial No. 722,825. (No model.)

Claim.—1. In a pencil-pointer, the combination with the holder, of the cutting-blade, and a stop arranged in front of the edge of the blade with which the point of the pencil is adapted to coöperate to regulate its length as the pencil and blade are moved relatively, said blade being stationary relative to the stop during the cutting operation.

2. In a pencil-pointer, the combination with the holder, of a blade and an adjustable stop arranged in front of the cutting edge of the blade with which the point of the pencil is adapted to coöperate to regulate the length of the latter, said blade and stop being stationary relative to each other during the cutting operation.

3. In a pencil-pointer, the combination with the holder having the

grooves provided with stops at the ends, of a reversible blade having opposite cutting edges and arranged in the grooves.



4. In a pencil-pointer, the combination with the holder having the grooves, and the cutting-blade therein, of the stop arranged in the grooves in front of the edge of the blade and with which the end of the pencil cooperates.

5. In a pencil-pointer, the combination with the hollow holder adapted to receive the cuttings and having the yielding sides and grooves therein, of the cutting-blade entering the grooves and held by the spring action of the sides.

6. In a pencil-pointer, the combination with the holder having the yielding sides, and the grooves therein, of the cutting-blade entering the grooves and held by the spring action of the sides.

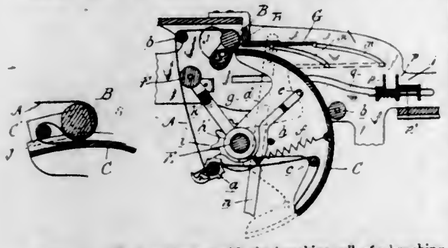
7. In a pencil-pointer, the combination with the holder having the yielding sides and the grooves therein, of the curved cutting-blade entering the grooves and held by the sides, and an adjustable stop in front of the edge of the blade and arranged in the grooves.

8. In a pencil-pointer in which the pencil to be sharpened is adapted to be moved longitudinally relative to a cutting-blade, the combination of a holder, a cutting-blade, and a stop in front of the blade for engaging the pencil-point, said stop and blade being relatively adjustable to regulate the length of the cut but held stationary in their adjusted position during the sharpening operation.

9. In a pencil-pointer, the combination of a holder for the blade and adapted to receive the cuttings, a cutting-blade, and a stop in front of the blade for engaging the pencil-point, said stop and blade being relatively adjustable to regulate the length of the cut but held stationary in their adjusted position during the sharpening operation.

10. In a pencil-pointer, the combination with the U-shaped spring-metal holder having the grooves in the edges, the curved removable cutting-blade arranged in the grooves in the holder, and the stop held in the grooves and arranged in front of the blade to engage the pencil-point and limit the length of cut.

657,596. CIGAR-BUNCHING MACHINE. ALEXANDER GORDON, Detroit, Mich. Filed Nov. 11, 1897. Serial No. 658,196. (No model.)



Claim.—1. The combination with the bunching-roll, of a bunching-table adapted to be oscillated in proximity to said roll, a bunching-apron in the form of an endless slack loop surrounding said roll and table, and having a pocket formed therebetween, in the initial position of the table, from the slack in said loop, a tightener-frame within said loop adapted to be rocked outward to extend the loop and contract said pocket and yielding connection between said bunching-apron and table permitting of the tensioning of said apron on each side of said pocket by the action of said tightener.

2. The combination with the bunching-roll an oscillating segmental bunching-table and a bunching-apron in the form of an endless slack loop surrounding said roll and table, having a bunch-pocket formed from the slack in said loop, of a tightener rock-frame within said loop adapted to extend the same to contract said pocket, a take-up roll secured to said apron, and a rock-frame in which said roll is rotatorily adjustably secured having a yielding connection to said bunching-table.

3. The combination with the bunching-roll, an oscillating segmental bunching-table, and a bunching-apron in the form of an endless slack loop surrounding said roll and table having a pocket formed therebetween in the initial position of the table from the slack in said loop; of a binder-table having one edge near said bunching-table at the forward edge, of said pocket and extending outward therefrom, means for supporting and guiding said binder-table, and mechanism for moving said binder-table and bunching-table correspondingly in closing said pocket to bring the binder in position to be rolled around the bunch.

4. The combination with the bunching-roll, an oscillating segmental bunching-table and a bunching-apron in the form of an endless slack loop surrounding said roll and table having a pocket formed therebetween, in the initial position of the table, from the slack in said loop; of a binder-table having one edge near said bunching-table at the forward edge of said pocket and extending outward therefrom, means for supporting and guiding said binder-table mechanism for moving said binder-table and bunching-table correspondingly in closing said pocket to bring the binder in a position to be rolled around the bunch, and the presser-roll H, for the purpose described.

5. The combination with the bunching-roll, an oscillating-bunching-table and the bunching-apron having a pocket for the bunch therein, and means for holding the apron whereby it can be drawn upon in order to roll the bunch in the pocket, of freely-swinging members, fingers carried by said members and projecting into said pocket from each side, and means for swinging said members whereby the fingers are adapted to guide the edges of the apron during the rolling of the bunch.

6. The combination with the bunching-roll, the oscillating segmental bunching-table and the bunching-apron having the pocket for the bunch formed therein, of freely-swinging fingers projecting into said pocket from opposite sides, and marginal flanges on said segmental table adapted to swing said fingers backward to form guides for the edges of said bunching-apron during the rolling of the bunch.

7. The combination with a drive-shaft adapted to run continuously and the actuating cam or wheel for the bunching mechanism loosely sleeved upon said shaft, of a clutch for coupling and automatically disengaging said cam or wheel and shaft, comprising a toothed wheel fixed upon said shaft, a dog secured to said cam or wheel and adapted to engage said toothed wheel, an annular track or camway with which said dog engages adapted to hold the latter in engagement with said toothed wheel to lock the cam and toothed wheel together and having an eccentric portion for disengaging said dog from said toothed wheel, and means for slightly rotating said track to force said dog from said eccentric portion of the track and thereby engage it with said toothed wheel.

8. The combination with the drive-shaft and the actuating cam or wheel for the bunching mechanism loosely sleeved thereon, of a toothed wheel fixed upon said shaft, a dog secured to said cam or wheel and adapted to engage with said toothed wheel, an annular track or guideway with which said dog has a traveling engagement, having one or more eccentric portions for throwing said dog out of engagement with said toothed wheel, means for slightly rotating said track oppositely from the rotation of said shaft to force said dog from said eccentric portion and thereby cause it to engage with said toothed wheel and travel therewith until it again engages with said eccentric portion, and means for automatically rotating said track after the disengagement of said dog from said toothed wheel, to fully clear the former from the latter.

9. The combination with the drive-shaft and the actuating cam or wheel for the bunching mechanism loosely journaled thereon, of a toothed wheel fixed upon said shaft, a dog secured to said cam-wheel and adapted to engage with said toothed wheel, the disk R^2 sleeved upon said shaft having an annular track or groove R^3 with one or more eccentric portions R^3, the wrist-pin R′ on said dog having a traveling engagement with said track R^3, the link R^4 and treadle-lever V connected with said disk R^2, the arm R^6, on said disk, the fixed stop R^7 therefor, and the spring R^8, all arranged substantially as and for the purpose described.

10. A cigar-bunching machine comprising a bunching-roll, a segmental bunching-table, a bunching-apron in the form of an endless slack loop surrounding said roll and table and having a pocket formed therebetween by the slack in the loop, means for holding the apron whereby it can be drawn upon in order to roll the bunch in the pocket, a tightener rock-frame within said loop and disconnected therefrom, and mechanism for intermittently rocking said table and tightener-frame, timed to first rock the table to close the pocket, then to rock said tightener to contract the pocket during the rolling operation of the apron and finally to move said table and tightener together to roll the bunch.

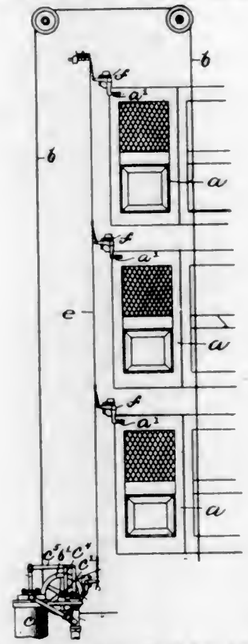
11. In a cigar-bunching machine, the combination with the frame and bunching mechanism supported thereon, of a mold-press adjacent to said bunching mechanism comprising a stationary lower platen K, the follower-plate N, operating mechanism therefor comprising a bar M connected to said follower and slidingly secured in the frame, the drive-shaft P adapted to rotate continuously, the cams S and S′ sleeved thereon, the former adapted to operate the bunching mechanism and the latter the bar M of the press mechanism, and a clutch for each of said cams S and S′, each clutch adapted to couple and uncouple its cam with the drive-shaft and comprising a toothed wheel secured to the drive-shaft, a dog secured to its cam, a movable element having an annular track with which said dog engages adapted to hold the same in engagement with said toothed wheel, and provided with one or more eccentric portions, and a treadle-lever for moving the said track element to disengage said dog from said eccentric portion or portions.

12. In a cigar-bunching machine, the combination of a bunching-roll, a rotary shaft, an oscillating segmental bunching-table having sleeves loosely engaging on said shaft, a gear secured to one of said sleeves, a bunching-apron in the form of an endless slack loop surrounding said table and roll and having a bunch-pocket formed therebetween from the slack in the loop, a tightener for said apron-loop secured to said rotary shaft, a pinion secured to said rotary shaft, segmental racks meshing with said pinions for operating the table and tightener, and mechanism for imparting the proper relative movement to said segmental racks.

13. The combination with a bunching-roll, a bunching-table, a bunching-apron having a pocket for the bunch therein and means for oscillating said table and apron, of a freely-swinging member and a finger carried by said member projecting into said pocket from the side thereof and adapted to guide the edge of the apron during the rolling of the bunch.

14. The combination with the bunching-roll and the apron having a pocket therein for the bunch, of a reciprocating bunching-table adapted to close said pocket in its initial movement and having an interval of rest after the closing of said pocket, and means for drawing upon said apron to contract the pocket during the interval of rest.

657,597. ELEVATOR. EDWARD L. HAIL and GEORGE HAIL, Providence, R. I. Filed Dec. 27, 1898. Serial No. 700,363. (No model.)



Claim.—1. In an elevator, a plurality of doors, a motor-controlling line having stops, a lock for said line having a sliding locking-plate, a lever having one arm connected to said plate, a line connected to said lever, and a lever coacting with each door and flexibly connected with said last-mentioned line.

2. In an elevator, a plurality of doors, a motor-controlling line having stops, a lock for said line having a sliding locking member, a three-armed lever having one arm weighted, and a second arm connected with the said member, a line connected to the third arm of said lever, and a plurality of door-controlled levers flexibly connected with the last-mentioned line.

3. In an elevator, a plurality of laterally-sliding doors, a valve for governing the motive force, a plurality of door-controlled levers adapted to directly engage said doors, a wire extending from the top to the bottom of the elevator-well and connected to said levers, to move downward when any one of said levers is actuated by the opening of the door adjacent thereto, means independent of said levers for overbalancing said wire when the doors are closed, and a lock connected to the wire and adapted to lock a movable member of the valve.

4. In an elevator, a plurality of laterally-sliding doors, a valve for governing the motive force, a plurality of spring-tensioned elbow-levers engaging said doors, a wire extending from the top to the bottom of the elevator-well and connected to said levers, a lock connected to said wire to lock a movable member of the valve against movement when any one of the doors is opened, and a weighted lever for yieldingly supporting the said wire and permitting it to be pulled downward by any one of said levers.

5. In an elevator, a plurality of laterally-sliding doors, a valve for governing the motive force, a plurality of door-controlled levers adapted to directly engage said doors, a wire extending from the top to the bottom of the elevator-well and adapted to be pulled downward by any one of said levers, a lock for said valve connected to said wire, yielding means independent of the levers for supporting the said wire, and flexible connections between said levers and said wire.

6. In an elevator, a plurality of laterally-sliding doors, motor-controlling means, a lock for said controlling means, a wire extending past said doors and arranged to control said lock, a plurality of clips adjustably attached to said wire, a plurality of door-controlled levers, and yielding means connecting each lever with one of said clips.

7. In an elevator, a pilot-valve for controlling the main valve of the hoisting mechanism, a locking member connected to a movable part of said pilot-valve, a lock arranged to engage said locking member, a line connected to said lock to hold it out of engagement with said member, a counterbalance for said line and said lock, a plurality of elbow-levers, connections between said levers and said line, and a plurality of laterally-sliding doors directly engaging said levers.

8. An attachment constituting part of a safety appliance for elevators, the same consisting of a plate having a pivot-stud, and two lugs or stops, a lever fulcrumed on said stud and having an arm lying between said lugs or stops, and a spring detachably secured to one of said lugs and to said lever, said parts being constructed and arranged whereby said lever can be reversed and the spring attached to the other of said lugs.

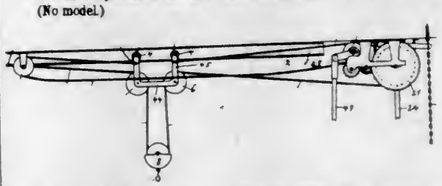
9. In an elevator safety appliance, a lock for the motor-controlling means, a line for controlling said lock and governed by the doors, a two-armed lever from one arm of which the line depends, and a weight adjustably secured to the other arm, which is notched to receive it.

10. A locking device for a motor-controlling line having stops, the same consisting of a casing having an aperture adequate to permit the passage of said stops, a yieldingly-operated locking-plate adapted to close said aperture and engage one of said stops, and means for operating said plate, said means consisting of two oppositely-acting weights.

11. In an elevator the combination with a line having stops, a casing having an aperture adequate to permit the passage of said stops, a yieldingly-operated locking member adapted to partially close the said aperture, a weight for moving said member to operative position, and a superiorly-weighted device controlled by the door, for holding the member in inoperative position.

12. A locking device for a motor-controlling line having stops, the same consisting of a casing having an aperture adequate to permit the passage of said stops, a yieldingly-operated locking-plate adapted to partially close said aperture and engage one of said stops, and means for operating said plate, said means consisting of two oppositely-acting weights, each being pivotally mounted and engaging said plate, one of said weights being greater than the other.

657,598. HOIST AND CARRIER. CYNTHIA S. HARRIS, Rome, N. Y., executrix of Lewis Harris, deceased, assignor, by mesne assignments, to Cynthia S. Harris. Filed Aug. 8, 1898. Serial No. 688,129. (No model.)



Claim.—1. In combination, a track, a carriage traveling thereon and provided with pulleys, an idler-pulley at one end of the track, a frame, an operating mechanism therein comprising a drive-shaft, a drum-shaft, a hoisting-drum thereon, a hoisting-cable thereon and extending over the

carriage-pulleys and secured at the opposite end of the track, a band-brake engaging said drum and secured at one end to said frame, a brake-operating lever to which the opposite end of said band is secured, one end of said drum being internally beveled, a head on said shaft having the beveled end to enter said beveled end of the drum, a gear rigid with said head and geared with said drive-shaft, means to move said beveled ends of the head and drum to and from each other to throw the drum into and out of gear with the drive-shaft, another shaft provided with a cable-driving pulley, the carriage-moving cable actuated by said pulley and passing around said idler and attached to said carriage, reversing driving mechanism between said drive-shaft and said cable-driving pulley comprising a swinging support having a hand-operating lever, substantially as described.

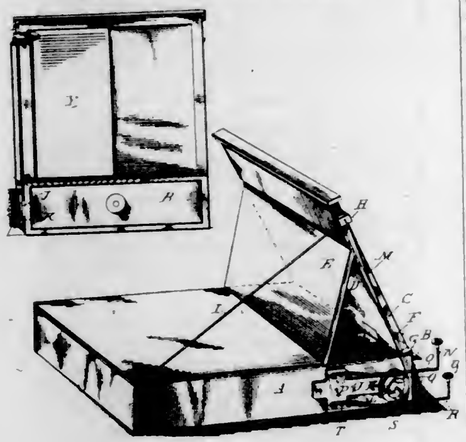
2. In combination, a frame, a rotary drive-shaft therein, a hoisting-drum shaft geared to the drive-shaft, a hoisting-drum, a manually-operated clutch to throw the drum into and out of gear with said shaft, a pair of oppositely-rotating shafts geared to said drive-shaft and provided with adjacent separated friction-disks, a driven shaft provided with a friction-disk arranged opposite, adjacent, and adapted to move into engagement with either of said first-mentioned disks, a movable support for said driven shaft, means for moving the same, and a conveyer-cable pulley driven in either direction by said driven shaft, substantially as described.

3. In combination, in a hoisting and conveying apparatus, a track, a carriage movable thereon, a cable for moving the carriage back and forth on said track, a frame, a pulley-shaft, a pulley rigid on said shaft and receiving said cable to actuate the same in either direction, a drive-shaft, a counter-shaft driven from and in an opposite direction to the drive-shaft, friction-disks rigid with the drive and counter shafts, a friction-disk driving said pulley-shaft, a swinging support for said pulley provided with manually-operated moving means, and arranged to move said friction-disk into engagement with either of said disks rigid with said drive and counter shafts, substantially as described.

4. In a hoisting and conveying apparatus, the combination, of a track, a frame at one end thereof, an idler-pulley at the opposite end thereof, a carriage movable back and forth on said track and having pulleys mounted therein, a drive-shaft in said frame, a cable-hoisting drum therein, a clutch mechanism between said drum and said shaft, a hoisting-cable from said carriage to said drum, a shaft in said frame having a cable-pulley rigid thereon, a cable on said pulley and passing around said idler and secured to said carriage to move the same back and forth on said track, and reversing driving gearing and shafting between said pulley-shaft and said driving-shaft provided with manually-operated movable controlling means, whereby said single pulley can be operated in opposite directions, substantially as described.

5. In a hoisting and conveying apparatus, the combination, of a frame, a drive-shaft therein, a counter-shaft geared to the drive-shaft, said shafts rotating in opposite directions and provided with adjacent friction-disks, swinging arms carried by the frame, a pulley-shaft carried by said arms between the planes of the axes of said drive and counter shafts, said pulley-shaft having a friction-disk opposite and capable of engaging and being driven by either of said first-mentioned disks, means to move the pulley-shaft to bring its disk into contact with either of said first-mentioned disks, and a cable-pulley rigid on said pulley-shaft, substantially as described.

657,599. COPY-HOLDER. GUSTAFF F. HEISS, Everett, Wash. Filed Apr. 2, 1900. Serial No. 11,179. (No model.)



Claim.—1. In a copy-holder, the combination of a suitable base; a copy-support extending up therefrom; an index-finger adapted to move over said support; a spring for normally holding said index-finger in its elevated position; and means for drawing said index-finger downwardly step by step against the spring, substantially as described.

2. In a copy-holder, the combination of a suitable base; a copy-support extending upward therefrom; an index-finger or pointer mounted at one side of said support; a spring for normally holding said index-finger or pointer in its elevated position; means for drawing said index-finger downwardly against the action of the spring; and mechanism for actuating said means step by step, substantially as described, whereby the index-finger or pointer will be drawn down one space at a time.

3. In a copy-holder, the combination with a suitable base, of a copy-support extending upward therefrom; suitable guides connected to one side of said support; an index-finger mounted and movable upon said guides; a spring for normally holding said index-finger in its elevated position; and means for drawing said finger downwardly step by step against the action of the spring.

4. In a copy-holder, the combination of a suitable base; a copy-support hinged to the forward end thereof; an adjustable brace for maintaining said support in position; guides secured to the side of said support; an index-finger mounted and movable upon said guides; a spring for maintaining said finger in its elevated position; a band or cord secured to said index-finger; a pulley journaled upon the side of the base; and means for moving said pulley step by step and winding the cord thereon, substantially as described, whereby the index-finger will be moved downwardly against the action of the spring.

5. In a copy-holder, the combination of a suitable base; a copy-support hinged to the forward end thereof; an adjustable brace for maintaining said support in any desired position; guides connected to the side of said support; an index-finger or pointer mounted and movable upon said guides; a spring for maintaining said index-finger in its elevated position; a pulley journaled upon one side of the base; a cord or band connecting said index-finger and the pulley; a ratchet-wheel connected to the pulley; and means for moving said ratchet-wheel step by step and thereby winding up the cord and drawing down the index-finger.

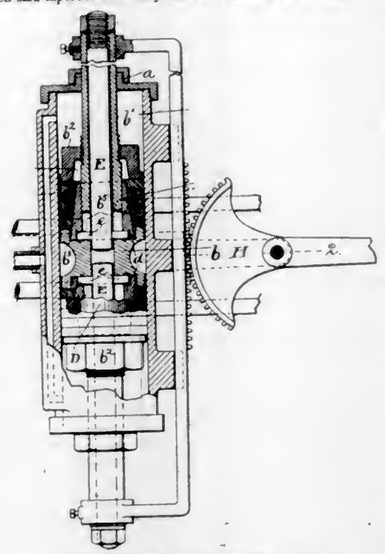
6. In a copy-holder, the combination of a suitable base; a copy-support hinged to the forward end thereof; means for holding said support in any desired position; guides connected to one side of said support; an index-finger or pointer mounted and movable upon said guides; a spring for maintaining said index-finger or pointer in its elevated position; a pulley journaled upon one side of the base; a ratchet-wheel connected to said pulley; a band or cord extending from the index-finger or pointer to said pulley; and a spring arm or lever provided with an operating-key adapted to actuate the ratchet-wheel, and thereby wind the cord or band about the pulley.

7. In a copy-holder, the combination of a suitable base; a copy-support hinged to the forward end thereof; means for maintaining said support in position; guides secured to one side of said support; an index-finger or pointer mounted and movable upon said guides; a spring for maintaining said index-finger in its elevated position; a pulley journaled upon one side of said base; a band or cord extending from the index-finger to said pulley; a ratchet-wheel connected to said pulley; a lever O fulcrumed at a point in rear of said ratchet-wheel and provided with an actuating tooth or pawl Q; means for normally holding said tooth out of contact with the ratchet-wheel; a second lever R also fulcrumed in rear of the ratchet-wheel and provided with a pawl S adapted to engage the teeth of the ratchet; and means for normally holding said pawl in engagement with the ratchet-wheel, substantially as and for the purpose described.

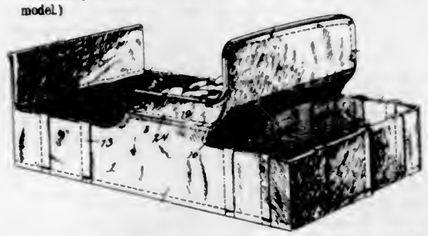
657,600. PISTON. WILLIAM HESTON, Homestead, Pa. Filed Oct. 9, 1899. Serial No. 733,001. (No model.)

Claim.—1. The combination of a piston-head, a tubular stem extending therefrom, a tapered sleeve slidably mounted upon said stem, a rod within the stem, a projection on said rod extending through a slot in the stem into engagement with said sleeve, expansible packing-rings around the sleeve adapted to be pressed outward thereby, and a follower in threaded engagement with the stem and adapted to press said packing-rings toward the piston-head, there being provided an annular recess about the stem on the operative side of said follower into which the end of the tapered sleeve may take, substantially as described.

2. The combination of a piston-head having an annular recess on one side, a tubular stem extending from said head, a tapered sleeve slidably mounted upon said stem and adapted to occupy said recess, a rod within said stem, a cross-key on said rod extending through slots in the stem and taking into openings in said sleeve, expansible packing-rings surrounding said sleeve and adapted to be expanded thereby, and a follower in threaded engagement with the sleeve and having a projecting flange bearing against said packing-rings whereby the follower may compress the packing-rings between it and the piston while leaving an annular recess about the stem into which said tapered sleeve may take, substantially as described.



657,601. MUD OR DUST PROTECTOR FOR BUGGIES. GEORGE H. KEELEY, Milford, Ill. Filed Mar. 3, 1900. Serial No. 7,223. (No model.)



Claim.—1. A protector for vehicles comprising the front, back and sides composed of inner and outer portions and supported upon the upper edges of the body or box of the vehicle, the back being composed of overlapped sections, substantially as described.

2. A protector for vehicles comprising the front, back and sides composed of inner and outer portions and supported upon the upper edges of the box or body of the vehicle and provided with approximately U-shaped clasps located at the sides and back, substantially as described.

3. A protector for vehicles comprising the front having an inverted pocket to receive the dashboard, the sides arranged on the exterior of the sides of the box or body and provided with inner depending front and rear portions located in advance and in rear of the seat, and the back having inner and outer portions, substantially as described.

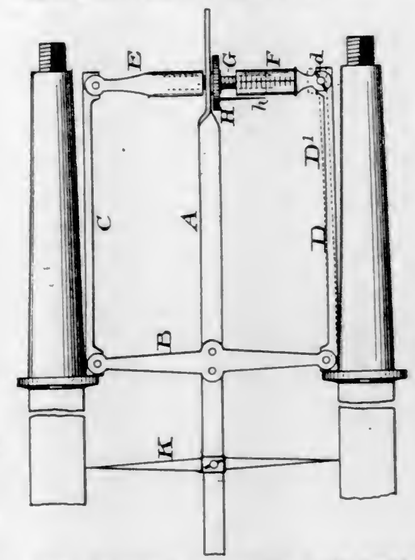
4. A protector for vehicles composed of the front back and sides consisting of inner and outer portions and supported upon the upper edges of the body or box, said sides being provided between their ends with extensions located at the ends of the seat, and a shield arranged at the back of the seat and provided with opposite extensions arranged above the said extensions, substantially as described.

5. A protector for vehicles comprising the front back and sides, and the shield designed to be arranged on the back of the seat and provided at the sides of the box or body of the vehicle, with extensions located at the arms or ends of the seat, substantially as described.

6. A protector for vehicles comprising the front, back and sides composed of inner and outer portions and the approximately U-shaped clasps located at the back and sides and conforming to the configuration of the inner and outer portions of the same and extending to the lower edges of the outer portions, whereby the latter are held closely against the body or box of the vehicle and are prevented from blowing upward and exposing the same, substantially as and for the purpose described.

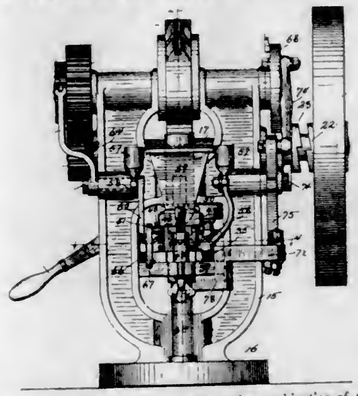
7. A protector for vehicles conforming to the configuration of a box or body and composed of inner and outer portions, the inner portions being shorter than the outer portions, and the approximately U-shaped clasps having short inner sides and long outer sides to conform to the inner and outer portions of the protector, the outer sides of the clasps being extended to the lower edges of the outer portions of the protector to hold the same closely against the body or box, substantially as described.

657,602. AXLE-GAGE. BARNEY F. KNOBLOCH, Cleveland, Ohio. Filed Nov. 4, 1899. Serial No. 735,845. (No model.)



Claim.—The axle-setting gage, consisting of main central bar A, fixed cross-bar B, side bars C D pivotally attached to the ends of said cross-bar B, arms E F, pivotally attached, respectively, to the ends of said side bars C D, the right and left hand screw G provided with thumb-disk H and loosely held in the bar A, said screw G working in the tapped inner ends of said arms E and F, the arm F having the scale marked thereon, the pointer h attached to the thumb-disk H, and the adjustable cross-bar K mounted on the main bar A, constructed and adapted to operate substantially as described and for the purpose set forth.

657,603. STAMPING-MACHINE. WILLIAM KRAEMER, Chicago, Ill. Filed June 22, 1900. Serial No. 21,167. (No model.)



Claim.—1. In a stamping-machine, the combination of a main or supporting frame, with a matrix plate or disk rotatably mounted thereon, a feed-box communicating with the matrices thereof, a powder-box located near the feed-box, and vertically movable thereon, and means to intermit-

tently rotate the matrix-disk and to agitate the material in the feed-box and to shake the powder-box, substantially as described.

2. In a stamping-machine, the combination of a main or supporting frame, with a platform horizontally located thereon and having an opening, a matrix-disk rotatably mounted on said platform and having hinged doors below the matrices, a feed-box communicating with the matrices, a powder-box located near the feed-box and vertically movable thereon, and means to intermittently rotate the matrix-disk and to agitate the material in the feed-box and to shake the powder-box, substantially as described.

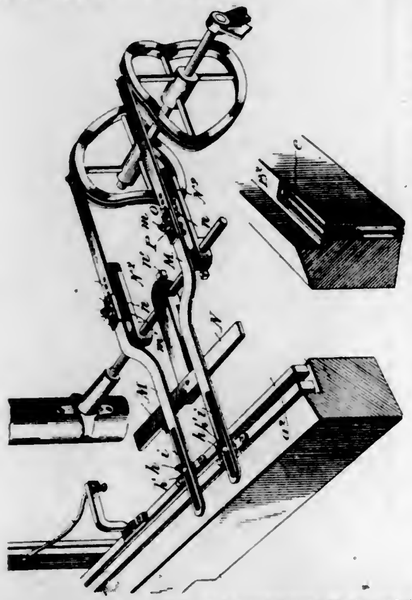
3. In a stamping-machine, the combination with a main or supporting frame, of a matrix-disk rotatably mounted thereon, a feed-box communicating with the matrices thereof, a powder-box located near the feed-box, a plunger carrying a die-head and an ejector-head, means to intermittently rotate the matrix-disk and to agitate the material in the feed-box and to shake the powder-box, and means to raise and lower the said plunger, substantially as described.

4. In a stamping-machine, the combination with a main or supporting frame, of a matrix-disk rotatably mounted thereon, a feed-box communicating with the matrices thereof, a powder-box located on each side of the feed-box and each having a foraminous bottom, said powder-boxes being vertically movable, a rock-shaft transversely journaled in the feed-box and having fingers within the said box, levers rigid on the rock-shaft and connected to the powder-boxes, and means to intermittently rotate the matrix-disk and to operate the rock-shaft, substantially as described.

5. In a stamping-machine, the combination with a main or supporting frame, of two powder-receptacles thereon, two powder-boxes having foraminous bottoms and connected to said receptacles by means of flexible tubes, a rock-shaft journaled near the powder-boxes, levers or arms rigid on the rock-shaft and connected to the powder-boxes, and means to operate the rock-shaft, substantially as described.

6. In a stamping-machine, the combination with the main frame, of a die-carrying plunger vertically movable thereon, a shaft horizontally journaled on the upper portion of the main frame, eccentric connections uniting said shaft and plunger, to raise and lower the same, a rock-shaft vertically journaled on the main frame and having at its upper end an arm, an arm secured to the lower portion of the rock-shaft and having a wiper for the dies, and a wheel mounted on the horizontal shaft, and provided with a projection to strike the upper arm on the rock-shaft, substantially as described.

657,604. LOOM. GEORGE F. KUETT, Paterson, N. J., assignor to the American Automatic Loom Company, New York, N. Y. Filed July 2, 1900. Serial No. 22,315. (No model.)



Claim.—1. In a needle-loom and in combination with the reed the lay and warp-shed-forming mechanism, a filling-inserting needle to traverse the warp-shed to lay the filling in loop form therein, formed or provided back of its point with a curved projecting portion in a plane transverse to the warps arranged and adapted to wipe over or upon the warps during the traverse of the needle through the warp-shed, substantially as and for the purposes hereinbefore set forth.

2. In a needle-loom and in combination with the lay provided with guide-slots, a filling-inserting-needle carrier or traverse-bar mounted to slide lengthwise on said lay, and provided at intervals throughout its length with downwardly-projecting fins which enter and pass through said guide-slots, and engage the same so as to resist any tendency to lateral tilt or movement of the traverse-bar during its reciprocations, substantially as and for the purposes hereinbefore set forth.

3. In a needle-loom and in combination with the lay provided with guide-slots a filling-inserting-needle carrier or traverse-bar provided at intervals throughout its length with downwardly-projecting fins which enter and pass down through said slots, said slots being so formed that the fins have contact with the sides of the same at the top and bottom edges thereof only, substantially as and for the purposes hereinbefore set forth.

4. In a needle-loom, a lay provided at intervals throughout its length with vertical slots, provided at the top and bottom with removable slotted scutcheons, in combination with a filling-inserting-needle carrier or traverse-bar provided with downwardly-projecting fins to enter and pass through said slots and to laterally engage said scutcheons, substantially as and for the purposes hereinbefore set forth.

5. In a needle-loom, a lay provided at intervals throughout its length with vertical slots, in combination with two filling-inserting-needle carriers or bars, mounted to slide upon the lay out of contact with each other, and having contact with the lay only on their bottom or under side, and provided with downwardly-projecting fins which enter and pass through and laterally engage the slots in the lay, substantially as and for the purposes hereinbefore set forth.

6. In a needle-loom and in combination with a lay provided at intervals throughout its length with vertical slots, a filling-inserting-needle carrier or traverse-bar mounted to slide on said lay, fins attached to said traverse-bar, projecting downwardly through and laterally engaging said slots, and holddown devices secured to the lower ends of said fins and bearing against the under side of the lay, substantially as and for the purposes hereinbefore set forth.

7. In a needle-loom and in combination with the lay and a filling-inserting-needle carrier or traverse-bar mounted to move lengthwise thereon, a traverse-bar-actuating lever having a longitudinally-slotted front end to engage a pin on the traverse-bar, an operating-cam engaging the opposite or rear end of the lever, a fulcrum or pivot for the lever between its two ends, and a fixed or stationary support over which the front end or arm of the lever plays and by which it is held during its movement above and out of contact with the lay, substantially as and for the purposes hereinbefore set forth.

8. In a needle-loom the combination of the lay, a filling-inserting-needle traverse-bar mounted to move lengthwise thereon, an actuating-lever engaging at one end the traverse-bar, an operating-cam engaging the opposite end of said lever and an adjustable tilting frame on which said lever is supported and pivoted, substantially as and for the purposes hereinbefore set forth.

9. In a needle-loom, the combination with the lay and a filling-inserting-needle carrier mounted to move lengthwise thereon, an actuating-lever engaging at one end the traverse-bar, and at the other end an operating-cam, and provided with a series of holes for reception of a fulcrum-pin, a fulcrum-plate provided with a corresponding series of holes, a fulcrum-pin to engage any one set of holes in the fulcrum plate and lever, a steady-plate provided with an elongated bearing through which the fulcrum-pin passes, and steady-pins for adjustably securing the steady-plate to the lever, and to permit it to be shifted when the fulcrum-pin is shifted substantially as and for the purposes hereinbefore set forth.

657,605. COATED METAL PIPE. WILLIAM LACY, Los Angeles, Cal. Filed Jan. 15, 1900. Serial No. 1,575. (No model.)



Claim.—1. A pipe comprising a strong inner shell; an outer coating of grains of hard inelastic material; and an intermediate cushioning-body.

2. A pipe comprising a metal shell; an intermediate cushioning-body; and a coating of fine gravel outside the cushioning-body.

3. A pipe comprising a metal shell; a body formed of a fibrous sheet and a gum; and a coating of fine gravel outside the fibrous sheet.

4. A pipe comprising a metal shell; a fibrous coating outside the metal shell; an exterior coating of granular hard inelastic material and a suitable binding material.

5. A pipe comprising a metal shell; a gum coating on the shell; a fibrous sheet outside the gum coating; a gum coating outside the fibrous sheet; and a coating of granulated hard and inelastic material outside the gum coating of said sheet.

6. The combination of a metal pipe having a coating of preservative gum; a sheet of fibrous material exterior the gum; a coating of preservative gum exterior the fibrous sheet; and a coating of silicious material embedded in the exterior coating of preservative gum.

657,606. SHOE-LACE FASTENER. WILLIAM L. LEE, Iola, Kans., assignor of one-fourth to Lewis L. Northrup, same place. Filed July 6, 1900. Serial No. 22,705. (No model.)



Claim.—1. A shoe-lace fastener, comprising a body, having a central opening therein, and a slot communicating therewith, and a swinging member or head hingedly connected to the body, and provided with a central stud or projection which is received within the central opening, when the device is fastened.

2. A shoe-lace fastener, comprising a body, having a central opening, and a transverse longitudinally-inclined slot opening out through the front edge of the body and also communicating with the opening, a swinging member hingedly connected to the rear edge of the body, and provided with a central stud or projection, which is received within the central opening, in the fastened position of the device, and a spring-catch secured to the middle of the front edge of the body and for engagement with the swinging member.

3. A shoe-lace fastener, comprising a body, having a central opening, and opposite substantially-parallel transverse ribs at opposite sides of the opening, and a swinging member hingedly connected to one edge of the body, and provided with a central stud or projection to enter the opening in the body, and also having ribs located at opposite sides of the stud, and arranged in staggered relation to the ribs of the body.

4. A shoe-lace fastener, comprising a body, having a concaved under or inner side, a central opening formed therein, a lateral slot in communication with the opening and also opening outwardly through the front edge of the body, opposite front and rear longitudinal outstanding flanges upon the outer side of the body, transverse ribs located at opposite sides of the central opening and extending between the flanges, a swinging member hingedly connected to the rear edge of the body, and provided with a central stud or projection to be received within the central opening, and transverse ribs upon the inner side of the member and at opposite sides of the stud, said ribs being in staggered relation to those of the body, and a spring-catch to hold the members closed.

657,607. APPARATUS FOR FORMING CAKES OF FOOD FOR CATTLE, &c. CESARE LUSATTO, Milan, Italy, assignor of one-half to The Firm Eisenwerk, vormals Nagel & Kaemp, Actien-Gesellschaft, Hamburg, Germany. Filed Dec. 9, 1897. Serial No. 661,246. (No model.)

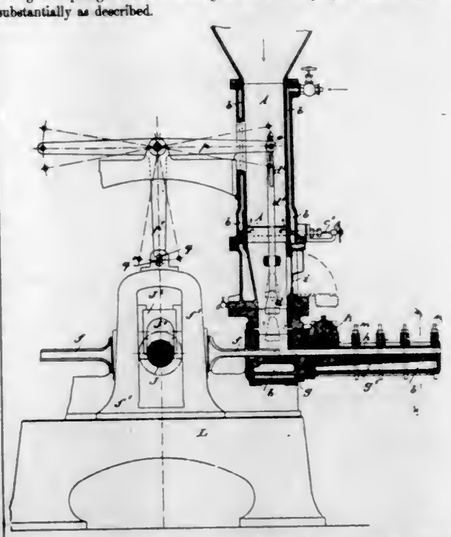
Claim.—1. In a machine for the manufacture of cakes of food for cattle or the like, the combination of a preliminary pressing device, a feeding-channel communicating with said preliminary pressing device and fitted with a steam-jacket, a main pressure-chamber having an adjustable cover-plate, and a reciprocating plunger for compressing the material in said main pressure-chamber, substantially as described.

2. In a machine for the manufacture of cakes of food for cattle or the like, the combination of a preliminary pressing device having a plunger arranged to fall freely, a feeding-channel communicating with said preliminary pressing device and fitted with an annular steam-inlet c and a steam-jacket *b*, a main pressure-chamber having an adjustable cover-plate *h*, and a reciprocating plunger for compressing the material in said main pressure-chamber, substantially as described.

3. The combination of a main pressure-chamber, a preliminary pressure-chamber having a plunger arranged so as to fall freely and to form in its lowest position a wall for the main pressure-chamber, a steam-jacketed feeding-channel communicating with the preliminary pressure-chamber, and a screw conveyer B' mounted in said feeding-channel, substantially as described.

4. The combination of a main pressure-chamber, a preliminary pressure-chamber having a plunger arranged so as to fall freely and to form in its lowest position a wall for the main pressure-chamber, a vertically-arranged steam-jacketed feeding-channel, a feeding-channel extending between the vertically-arranged feeding-channel and the preliminary pressure-chamber, and a screw conveyer B' arranged in said last-mentioned feeding-channel, substantially as described.

5. The combination with a main pressure-chamber, and a preliminary pressure-chamber, of the plunger D mounted to reciprocate in the preliminary pressure-chamber, the beam G connected to the plunger D, the rod S pivotally connected to the beam G, the cam H having a pin F adapted to engage the rod S in its upward movement, a plunger mounted to reciprocate in the main pressure-chamber, and means for reciprocating said plunger and for rotating the cam H in proper relative time, substantially as described.



6. The combination with a main pressure-chamber, and a preliminary pressure-chamber, of the plunger D mounted to reciprocate in the preliminary pressure-chamber, and forming in its lowest position a wall for the main pressure-chamber, the hanging rod S having a toe *n*, connections between the rod S and the plunger D, a rotary cam H having a pin F adapted to engage the rod S in its upward movement, a plunger mounted to reciprocate in the main pressure-chamber, and means for reciprocating said plunger and for rotating the cam H in proper relative time, substantially as described.

657,608. COMBINED PICK AND REED-HOOK. RUDOLPH W. MAREK, Summit, N. J. Filed Feb. 5, 1900. Serial No. 4,136. (No model.)



Claim.—1. A device of the class described comprising a body portion, as A, having a pointed extension, a reed-hook, as E, and means for attaching said reed-hook to the pointed-extension end of said body portion.

2. A device of the class described comprising a body portion, as A, having resilient jaws at one end and a pointed extension at the other end, a reed-hook, as E, and means for attaching said reed-hook to the pointed-extension end of said body portion.

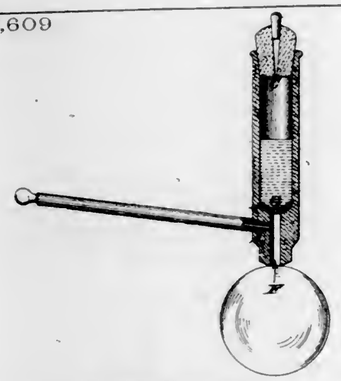
3. A device of the class described comprising a body portion, as A, having resilient jaws, an exteriorly-threaded shank and a pointed extension, and a reed-hook, as E, the latter hollow and interiorly threaded at its butt-end to screw onto said shank.

4. A device of the class described comprising a body portion, as A, having resilient jaws, an exteriorly-threaded shank and a pointed extension, and a curved reed-hook, as E, the latter hollow and interiorly threaded at its butt-end to screw onto said shank, and provided with a recess at its point end.

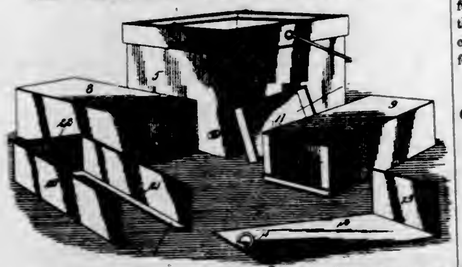
657,609. BUBBLE-BLOWING DEVICE. ALEXANDER D. MENDENHALL, Newport, Ky., assignor of one-half to Mary V. Mendenhall, same place. Filed Nov. 27, 1899. Serial No. 738,375. (No model.)

Claim.—A bubble-blowing device comprising a reservoir having at one end a bored stopper provided with a readily-removable plug, and having, at its other end, a longitudinal outlet with which a lateral air-inlet communicates, for the purpose described.

657,609



657,610. ICE-CREAM MOLD. WILLIAM MITCHELL, Coldwater, Mich. Filed July 7, 1900. Serial No. 22,835. (No model.)

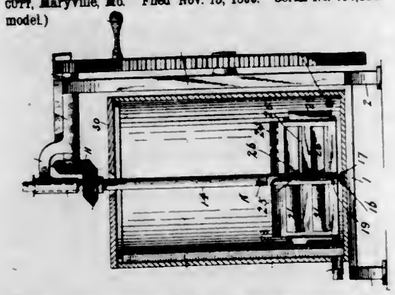


Claim.—1. A device of the class described comprising a storage-can, an open-ended lining slidably fitted in the can, said lining having stops at its inner end, and a plate adapted to fit against the bottom of the lining and having an upturned end adapted to lie against the stops and close the end of the lining.

2. A device of the class described comprising a storage-can, a lining for the can, a mold consisting of two sides and a connected end having inwardly-projecting portions at their lower edges, said mold being adapted to lie with its open end within the end of the storage-can lining, and a plate adapted to lie upon the inwardly-projecting portions of the mold and having an upturned end to close the end of the mold, said plate being adapted to be passed from the mold into the lining of the storage-can.

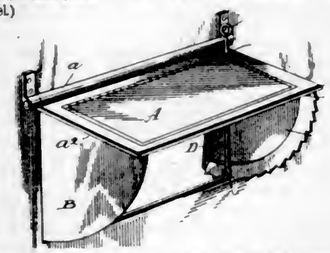
3. A device of the class described comprising an ice-box, a storage-can within the box, a lining for the can having open ends and stops at its inner end, a mold comprising two sides and an end rigidly connected and having inwardly-projecting portions at their lower edges, and a drawer consisting of a plate having an upturned end, said plate being adapted to rest upon the inturned portions of the mold and to close the end thereof with its upturned portion, and to move from the mold into the lining to rest with its upturned end against the stops thereof.

657,611. CHURN. BERTHA NORTHCUTT and JOSEPH M. NORTHCUTT, Maryville, Mo. Filed Nov. 15, 1899. Serial No. 737,124. (No model.)



Claim.—The herein-described churn-dasher consisting of a tubular shaft; radial blades secured to said shaft; a casing surrounding said blades and connected to the free ends thereof and provided with a series of alternately inwardly and outwardly directed blades, said radial blades attached to said shaft further having a curved upper edge and a series of openings and lips partly covering said openings, all combined in the manner specified and for the purpose set forth.

657,612. FURNACE-DOOR. CHARLES C. NOTT and FRANCIS G. WARD, Washington, D. C. Filed Mar. 2, 1900. Serial No. 7,098. (No model.)



Claim.—A furnace-door hinged at the top to the doorway of the furnace with sides or wings which are contained within the compass of the doorway and fit snugly against the sides thereof when the door is closed, and means for holding the door open at any desired angle, as and for the purposes hereinbefore shown and described.

657,613. ARTIFICIAL TOOTH. EVELYN PIERREPONT, London, England. Filed May 26, 1898. Serial No. 681,824. (No model.)

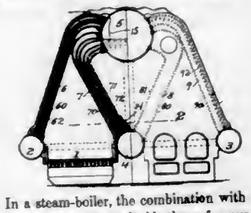


Claim.—1. A mineral tooth having a recess spirally threaded, said threading interrupted by a slot.

2. In combination, a mineral tooth having a spirally-threaded recess, a slot interrupting said threading, a backing-plate having an undercut boss projecting into the said recess, and a filling securing the said tooth to the backing-plate.

3. In combination, a mineral tooth having a spirally-threaded recess, a slot interrupting said threading, a grooved metal projection entering the said recess, a backing-plate attached to the said metal projection, and a filling uniting the said tooth to the said projection.

657,614. WATER-TUBE BOILER. JOHN PLATT, Westfield, N. J. Filed Feb. 23, 1899. Serial No. 706,468. (No model.)



Claim.—1. In a steam-boiler, the combination with a steam-drum, of a grate, water-drums located on each side thereof, groups of bent tubes connecting the steam-drum with the water-drums, a part of the tubes of each group being arranged in passages for the products of combustion which run longitudinally of the boiler, the remainder of the tubes being arranged in the walls of said passages, and means whereby the products are admitted substantially at one end of said passages and allowed to escape at the opposite ends, substantially as described.

2. In a steam-boiler, the combination with two grates, of water-drums located on the outer sides thereof, a water-drum located between the grates, steam-separating means, four groups of bent tubes connecting the water-drum with the steam-separating means, some of the tubes of each group being arranged in passages for the products of combustion which run longitudinally of the boiler, and some of the tubes being arranged in the walls of said passages, and means whereby the products are admitted at one end of the passages and allowed to escape from the other, substantially as described.

3. In a steam-boiler, the combination with a grate, of a water-drum

located on each side thereof, a steam-drum, groups of bent tubes connecting the water-drums with the steam-drum, some of the tubes of each group being arranged in passages for the products of combustion which run longitudinally of the boiler and some of the tubes being arranged in the walls of said passages, the said walls extending from the steam-drum to the water-drums whereby the passage formed by each group of tubes is independent of the passage formed by the adjoining group, and means whereby the products are admitted to the passages, substantially as described.

4. In a steam-boiler, the combination with a grate, of a water-drum located on each side thereof, a steam-drum, groups of bent tubes connecting the water-drums with the steam-drum, some of the tubes of each group being arranged in passages for the products of combustion which run longitudinally of the boiler and some of the tubes being arranged in the walls of said passages, the said walls extending from the steam-drum to the water-drums, whereby the passage formed by each group of tubes is independent of the passage formed by the adjoining group, and means whereby the products are admitted at one end of said passages, substantially as described.

5. In a steam-boiler, the combination with a grate, of a water-drum located on each side thereof, a steam-drum, groups of tubes connecting the water-drums with the steam-drum, some of the tubes of each group being arranged in passages for the products of combustion which run longitudinally of the boiler and some of the tubes being arranged in the walls of said passages, the said walls extending from the steam-drum to the water-drums whereby the passage formed by each group of tubes is independent of the passage formed by the adjoining group, and means whereby the products are admitted at one end of the passages and allowed to escape from the other, substantially as described.

6. In a steam-boiler, the combination with a steam-drum, of a plurality of grates, water-drums located at the outer sides of the grates, a water-drum between adjoining grates, groups of bent tubes connecting the steam-drum with the several water-drums, some of the tubes of each group being arranged in passages for the products of combustion which run longitudinally of the boiler, and some of the tubes being arranged in the walls of said passages, and means whereby the products of combustion are admitted substantially at one end of said passages and allowed to escape at the opposite ends, substantially as described.

7. In a steam-boiler, the combination with a steam-drum, of a plurality of grates, water-drums located at the outer sides of the grates, a water-drum between adjoining grates, groups of bent tubes connecting the steam-drum with the several water-drums, some of the tubes of each group being arranged in passages for the products of combustion which run longitudinally of the boiler, the tubes which form the walls of the passages which are next the combustion-chamber being arranged so as to admit the products at one end of the said passages, substantially as described.

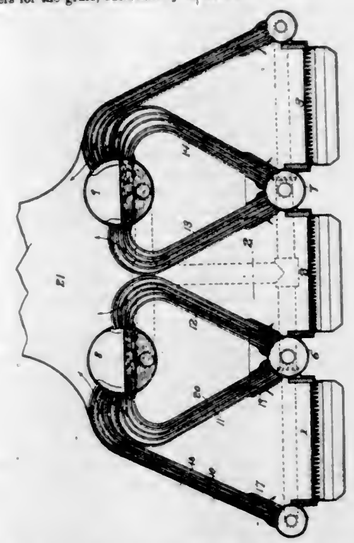
8. In a steam-boiler, the combination with a steam-drum, of a plurality of grates, water-drums located at the outer sides of the grates, a water-drum between two grates, groups of bent tubes connecting the steam-drum with the water-drums, some of the tubes of each group being arranged in passages for the products of combustion which run longitudinally of the boiler, and some of the tubes being arranged in the walls of said passages and the said walls extending from the steam-drum to the water-drum whereby the passage formed by each group of tubes is independent of the passage formed by the adjoining group, and means whereby the products are admitted at one end of said passages, substantially as described.

9. In a steam-boiler, the combination with a steam-drum, of a plurality of grates, water-drums located at the outer sides of the grates, a water-drum adjoining two grates, groups of bent tubes connecting the steam-drum with the water-drums, some of the tubes of each group being arranged in passages for the products of combustion which run longitudinally of the boiler, and some of the tubes being arranged in the walls of said passages and the said walls extending from the steam-drum to the water-drum, whereby the passage formed by each group of tubes is independent of the passage formed by the adjoining group, means whereby the products are admitted at one end of said passages, and a flue and stack arranged at the other end of said passages and with which said passages communicate, substantially as described.

657,615. WATER-TUBE BOILER. JOHN PLATT, Westfield, N. J. Filed Feb. 23, 1899. Serial No. 706,469. (No model.)

Claim.—1. In a steam-boiler, the combination with a series of grates, of a series of steam-drums, a series of water-drums, two of which are located at the outer edges of the outer grates and the remainder of which are located between the adjacent grates, and groups of bent tubes connecting the water and steam drums, said tubes being arranged to form combustion-chambers for the grates, substantially as described.

2. In a steam-boiler, the combination with a series of grates, of a series of steam-drums, a series of water-drums, two of which are located at the outer edges of the outer grates and the remainder of which are located between the adjacent grates, and groups of tubes connecting the water and steam drums, some of the tubes standing in flues or chambers and some of the tubes being arranged in the walls of the flues or chambers, the side walls on each side of a grate being arranged to form combustion-chambers for the grate, substantially as described.



3. In a steam-boiler, the combination with a series of grates, of a series of steam-drums, a series of water-drums, two of which are located at the outer edges of the outer grates and the remainder of which are located between the adjacent grates, and groups of bent tubes connecting the water and steam drums, some of the tubes standing in flues or chambers and some of the tubes being arranged in the walls of the flues or chambers, the side walls on each side of a grate being arranged to form combustion-chambers for the grate, substantially as described.

4. In a steam-boiler, the combination with a series of grates, of a series of steam-drums, a series of water-drums, two of which are located at the outer edges of the outer grates and the remainder of which are located between adjacent grates, groups of tubes connecting the water and steam drums, the inner tubes of the two groups adjacent to each grate being arranged in walls for a part of their length and being spaced from each other for the remainder of their length to form openings for the admission and escape of products, the outer tubes of one of said groups being arranged in a wall extending from the water-drum to a point adjacent to the steam-drum, and the outer tubes of the other group being arranged in a wall, substantially as described.

5. In a steam-boiler, the combination with a series of grates, of a series of steam-drums, a series of water-drums, two of which are located at the outer edges of the outer grates and the remainder of which are located between the adjacent grates, groups of bent tubes connecting the water and steam drums, the inner tubes of the two groups adjacent to each grate being arranged in walls for a part of their length and being spaced from each other for the remainder of their length to form passages for the admission and escape of products, the outer tubes of one of said groups being arranged in a wall extending from the water-drum to a point adjacent to the steam-drum, and the outer tubes of the outer group being arranged in a wall, substantially as described.

6. In a steam-boiler, the combination with three grates and four water-drums, two of said drums being located at the outer edges of said grates and two of the drums being between two grates, of two steam-drums, and three groups of tubes connecting each steam-drum with two water-drums, substantially as described.

7. In a steam-boiler, the combination with three grates and four water-drums, two of said drums being located at the outer edges of said grates and two of the drums being between two grates, of two steam-drums, and three groups of bent tubes connecting each steam-drum with two water-drums, substantially as described.

8. In a steam-boiler, the combination with three grates and four water-drums, two of said drums being located at the outer edges of said grates and two of the drums being between two grates, of two steam-drums, and three groups of tubes connecting each steam-drum with two

water-drums, some of the tubes of each group being arranged in flues or passages and some of the tubes of each group being arranged in the walls of said passages, substantially as described.

9. In a steam-boiler, the combination with three grates, and four water-drums, two of said drums being located at the outer edges of said grates and two of the drums being between two grates, of two steam-drums, and three groups of bent tubes connecting each steam-drum with two water-drums, some of the tubes of each group being arranged in flues or passages and some of the tubes of each group being arranged in the walls of said passages, substantially as described.

10. In a steam-boiler, the combination with three grates, of two steam-drums arranged above the grates, four water-drums, two of said drums being arranged at the outer edges of the grates and two between adjoining grates, a group of tubes connecting each of the outer water-drums with a steam-drum, and two groups of tubes connecting each of the inner water-drums with a steam-drum, substantially as described.

11. In a steam-boiler, the combination with three grates, of two steam-drums arranged above the grates, four water-drums, two of said drums being arranged at the outer edges of the grates and two between adjoining grates, a group of tubes connecting each of the outer water-drums with the steam-drum, two groups of tubes connecting each of the inner water-drums with the steam-drum, and the groups of tubes adjacent to each grate being arranged in the walls of the combustion-chamber for said grate, substantially as described.

12. In a steam-boiler, the combination with three grates, of two steam-drums arranged above the grates, four water-drums, two of said drums being arranged at the outer edges of the grates and two between adjoining grates, a group of bent tubes connecting each of the outer water-drums with the steam-drum, and two groups of bent tubes connecting each of the inner water-drums with the steam-drum, substantially as described.

13. In a steam-boiler, the combination with three grates, of two steam-drums arranged above the grates, four water-drums, two of said drums being arranged at the outer edges of the grates and two between the adjoining grates, a group of bent tubes connecting each of the outer water-drums with the steam-drum, two groups of bent tubes connecting each of the inner water-drums with the steam-drum, and the groups of bent tubes adjacent to each grate being arranged in the walls of the combustion-chamber for said grate, substantially as described.

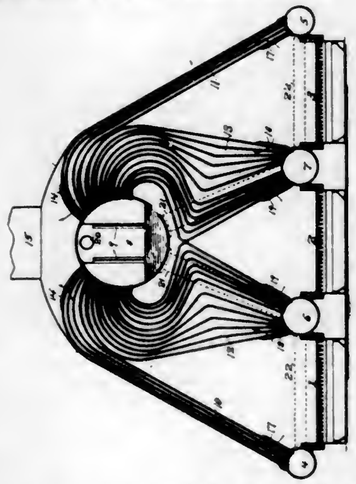
14. In a steam-boiler, the combination with three grates, of four water-drums, two of the drums being arranged at the outer edges of the grates and two of the drums between adjoining grates, two steam-drums, a group of tubes connecting each of the outer water-drums with one of the steam-drums, the outer tubes of each group being arranged in walls extending substantially from the water-drums to a point adjacent to the steam-drums and being spaced apart form this point to the steam-drum to form passages for the escape of the products, the inner tubes of each group being arranged in walls for a part of their length, the remainder of the tubes of each group being arranged between these walls, two groups of tubes connecting the inner water-drums with the steam-drums, the outer tubes of each group being arranged in walls extending substantially from the steam-drum to the water-drum and the inner tubes of each group being arranged in walls for a part of their length and spaced apart for the remainder of their length for the admission and egress of the products and the remainder of the tubes of these groups being arranged between these walls, substantially as described.

15. In a steam-boiler, the combination with three grates, of four water-drums, two of the drums being arranged at the outer edges of the grates and two of the drums between adjoining grates, two steam-drums, a group of bent tubes connecting each of the outer water-drums with one of the steam-drums, the outer tubes of each group being arranged in walls extending substantially from the water-drums to a point adjacent to the steam-drums and being spaced apart from this point to the steam-drum to form passages for the escape of the products, the inner tubes of each group being arranged in walls for a part of their length, the remainder of the tubes of each group being arranged between these walls, two groups of bent tubes connecting the inner water-drums with the steam-drums, the outer tubes of each group being arranged in walls extending substantially from the steam-drum to the water-drum and the inner tubes of each group being arranged in walls for a part of their length and spaced apart for the remainder of their length for the admission and egress of the products and the remainder of the tubes of this group being arranged between these walls, substantially as described.

657,616. WATER-TUBE BOILER. JOHN PLATT, Westfield, N. J. Filed Feb. 23, 1899. Serial No. 706,470. (No model.)

Claim.—1. The combination with three grates, of four water-drums, two of the drums being arranged at the outer edges of the grates and two of the drums between adjacent grates, a steam-drum, and four groups of bent tubes connecting the steam-drum and the water-drums, substantially as described.

2. The combination with three grates, of four water-drums, two of the drums being arranged at the outer edges of the grates and two of the drums being arranged between adjacent grates, a steam-drum, a group of tubes connecting each of the outer water-drums with the steam-drum, a group of tubes connecting each of the inner water-drums with the steam-drum, a part of the tubes of each group being arranged in flues or passages, and the remainder of the tubes of each group being arranged in the walls of said flues or passages, and means for admitting the products of combustion to the flues or passages, substantially as described.



3. In a steam-boiler the combination with three grates, of four water-drums, two of the drums being arranged at the outer edges of the outer grates and two of the drums between adjoining grates, a steam-drum, a group of tubes connecting each of the outer water-drums with the steam-drum, the outer tubes of each group being arranged to form a close wall from the water-drum to a point adjacent the steam-drum, and being spaced apart from there on to form openings for the egress of the products, a group of tubes connecting each of the inner water-drums with the steam-drums, some of the tubes of each of these groups being arranged for a portion of their length to form close walls and being spaced apart for the remainder of their length, and some of the tubes of these groups being arranged in flues formed by these walls, substantially as described.

4. In a steam-boiler the combination with three grates, of four water-drums, two of the drums being arranged at the outer edges of the outer grates and two of the drums between adjoining grates, a steam-drum, a group of bent tubes connecting each of the outer water-drums with the steam-drum, the outer tubes of each group being arranged to form a close wall from the water-drum to a point adjacent the steam-drum and being spaced apart from there on to form openings for the egress of the products, a group of bent tubes connecting each of the inner water-drums with the steam-drum, some of the tubes of each of these groups being arranged for a portion of their length to form close walls and being spaced apart for the remainder of their length, and some of the tubes of these groups being arranged in flues formed by these walls, substantially as described.

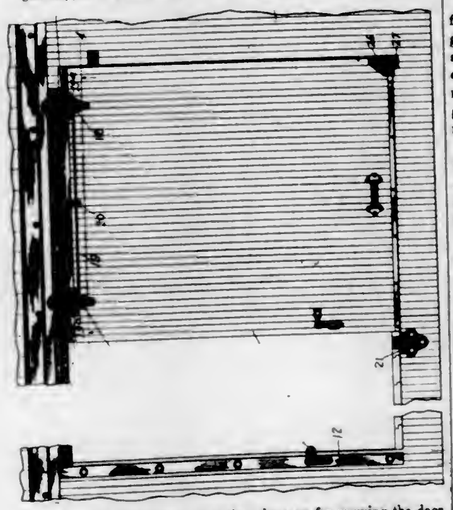
5. In a steam-boiler, the combination with three grates, of four water-drums, two of the drums being arranged at the outer edges of the grates and two of the drums between adjoining grates, a steam-drum, two outer groups of tubes connecting the outer water-drums with the steam-drum, two inner groups of tubes connecting the inner water-drums with the steam-drum, the outer tubes of the outer groups being arranged to form close walls from the water-drum to a point adjacent the steam-drum and being spaced apart from there onward to the point of junction with the steam-drum to form openings for the egress of the products, the inner tubes of the outer groups being spaced apart at their ends and arranged to form a close wall intermediate their ends, the tubes of the inner groups which are next the inner grate being arranged to form close walls except for a portion of their length near the water-drum, the tubes of the inner group next the outer grates being arranged to form close walls intermediate their ends and spaced apart at their ends, and the tubes of each group which are not arranged in the walls standing in the flues formed by the walls, substantially as described.

6. In a steam-boiler, the combination with three grates, of four water-drums, two of the drums being arranged at the outer edges of the grates and two of the drums between adjoining grates, a steam-drum, two outer groups of bent tubes connecting the outer water-drum with the steam-drum, two inner groups of bent tubes connecting the inner water-drum with the steam-drum, the outer tubes of the outer groups being arranged to form close walls from the water-drum to a point adjacent the steam-drum and being spaced apart from there onward to the point of junction with the steam-drum to form openings for the egress of the products, the inner tubes of the outer groups being spaced apart at their ends and arranged to form a close wall intermediate their ends, the tubes of the inner groups which are next the inner grate being arranged to form close walls except for a portion of their length near the water-drum, the tubes of the inner groups next the outer grates being arranged to form close walls intermediate their ends and spaced apart at their ends, and the tubes of each group which are not arranged in the walls standing in the flues formed by the walls, substantially as described.

7. The combination with three grates, of four water-drums, two of which are arranged at the outer edges of the outer grates and two of which are arranged between adjoining grates, a steam-drum, groups of tubes connecting the outer drums with the steam-drum, part of the tubes of each group being arranged to form outer and inner walls and the remaining tubes of each group being arranged between the walls, groups of tubes connecting the inner drums with the steam-drum, the tubes of each group which are nearest the grates being arranged to form close walls for a part of their length and the remaining tubes of each group being arranged between these walls, substantially as described.

8. The combination with three grates, of four water-drums, two of which are arranged at the outer edges of the outer grates and two of which are arranged between adjoining grates, a steam-drum, groups of bent tubes connecting the outer drums with the steam-drum, part of the tubes of each group being arranged to form outer and inner walls and the remaining tubes of each group being arranged between the walls, groups of bent tubes connecting the inner drums with the steam-drum, the tubes of each group which are nearest the grates being arranged to form close walls for a part of their length and the remaining tubes of each group being arranged between these walls, substantially as described.

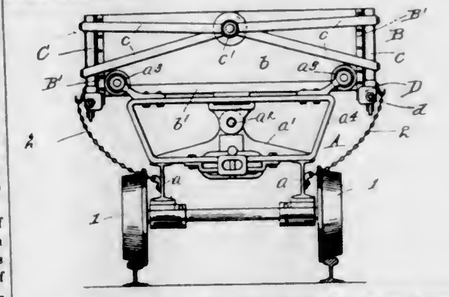
657,617. CAR-DOOR. HERMAN PRIES and JOHN W. MEYER, Michigan City, Ind. Filed July 27, 1899. Serial No. 725,228. (No model.)



Claim.—In combination, a car-door, hangers for carrying the door, a rod connecting the hangers and rigidly fixed thereto, and a strut located between the hangers and supporting the rod away from the door.

657,618. DUMPING-CAR. JAY B. RHODES, Harvey, Ill., assignor to Frederick C. Austin, Chicago, Ill. Filed Apr. 13, 1899. Serial No. 712,926. (No model.)

Claim.—1. A dumping-car comprising a tilting receptacle mounted upon a suitable truck or body frame, a side board arranged to close the open side of the receptacle when the latter is in a horizontal position, the side board having arms which are pivotally connected with the said receptacle, and suitable supports or stops being provided for supporting the arms during the tilting of the receptacle; the point of contact between the stops and arms shifting lengthwise of the latter as the receptacle tilts to one side, and the side board thereby serving at such time to counterbalance the load.



2. A dumping-car comprising a tilting receptacle mounted upon a truck or body frame, and a couple of side boards arranged to close the opposite sides of the receptacle when the same is in a horizontal position, the said side boards being pivotally connected with the said receptacle by means of suitable arms or bars, and supports or stops being provided for supporting the arms of either side board according to the side from which it is desired to dump; the side board at the side from which the load is discharged being supported against downward movement at such time by the said stops, and the opposite side board being carried upward and remaining in place at the side of the receptacle; the point of contact between the stops and the arms of the released side board shifting lengthwise of the latter as the receptacle tilts, and the said side board thereby serving to counterbalance the load during the tilting of the receptacle.

3. A dumping-car comprising a tilting receptacle mounted upon a suitable truck or body frame, a side board pivotally connected with the end board by means of suitable arms, and a couple of rolls mounted upon the truck or body frame and adapted to support the said arms during the tilting of the receptacle, the point of contact between the rolls and arms shifting lengthwise of the latter as the receptacle tilts.

4. In a dumping-car, the combination of a suitable truck or body frame; a receptacle mounted thereon and constructed to tilt about a longitudinal axis, the axis being located at a point beneath the said receptacle; a couple of side boards having arms which are pivotally connected to the end boards at points above the axis about which the receptacle tilts; and rolls rotatably mounted upon the truck or body frame and arranged to engage and support the arms of either side board during the tilting of the receptacle, according to the side from which the load is discharged.

5. A dumping-car comprising a suitable truck or body frame and a receptacle mounted thereon, the said receptacle being arranged to tilt about a longitudinal axis, and each side of the receptacle being provided with a truss, the latter consisting of the angle-iron D, the two blocks D′, and the truss-rod D^2, substantially as and for the purpose described.

6. A dumping-car comprising a suitable truck or body frame and a tilting receptacle mounted thereon, the center of the receptacle being supported by a plurality of pivot-bearings, and each side portion of the receptacle-floor being provided with a truss consisting of a longitudinally-extending angle-iron, a couple of blocks provided with recesses adapted to receive and engage the opposite ends of the said angle-iron, and a truss-rod having its opposite end portions extended through and secured to each of the said recessed blocks.

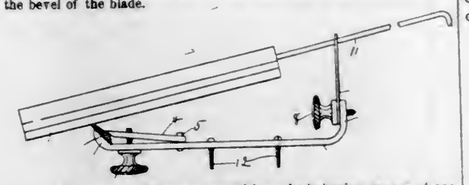
7. A dumping-car comprising a suitable truck or body frame, a receptacle mounted upon said body-frame and arranged to tilt about a longitudinal axis, a couple of automatic side boards arranged to normally close the opposite sides of the receptacle, the said boards being provided with arms which are pivotally connected with the end boards of the receptacle, and a roll being mounted below each arm in such manner as to support and traverse a portion of the length of the arms of the released side board during the tilting of the receptacle.

8. A dumping-car comprising a suitable truck or body frame; a tilting receptacle mounted upon said frame and arranged to tilt about a horizontal axis; a couple of automatic side boards C having arms c pivotally connected with the end boards of the receptacle; a couple of frame-pieces a^4 mounted upon the end portions of the truck or body frame, and provided with the rolls a^2, substantially as and for the purpose described.

657,619. SHEARS-SHARPENER. KONRAD ROESLER, Fort Worth, Tex. Filed Apr. 10, 1900. Serial No. 12,376. (No model.)

Claim.—1. A sharpener for shears comprising a body having a jaw integral therewith and another jaw adapted to engage and hold a blade of the shears against said first-named jaw, a hone, and means at the other end of said body for determining the angle which the hone makes with

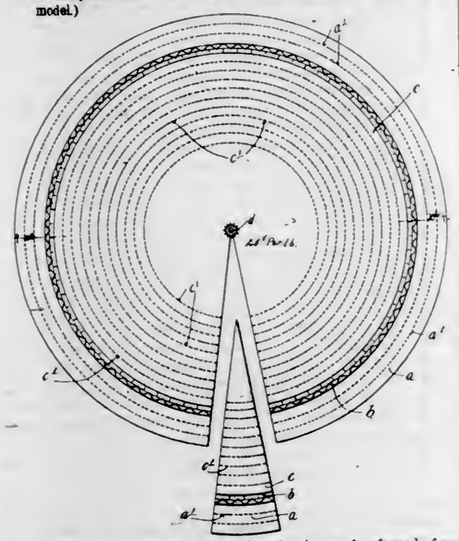
the flat surface of the blade and for regulating the strokes of the hone on the bevel of the blade.



2. A sharpener for shears comprising a body having an arm at one end and a jaw at the other end, an upper jaw, a loose rivet for securing the upper jaw on said body, a thumb-screw for clamping said jaws on a blade of the shears, a bevel-setter mounted on said arm, and a hone provided with a guide-rod operating through said bevel-setter.

3. A sharpener for shears and other tools comprising a body provided with means for holding rigidly a blade of the shears, means mounted on said body for giving any desired bevel to the blade and for biasing the stroke of the hone on the bevel, and the hone for sharpening the blade.

657,620. CUTTING-SCALE FOR CHEESE. HENRY G. ROTH, Minneapolis, Minn. Filed May 17, 1900. Serial No. 16,972. (No model.)



Claim.—1. A cutting-scale or chart for cheeses, &c., formed of material adapted to be readily cut with a knife and securable to one face of a cake of cheese, said chart having circular graduations indicating fractions or subdivisions of the total cheese, the section of the chart cut and remaining attached to the cut segment of the cheese indicating the fraction cut, substantially as described.

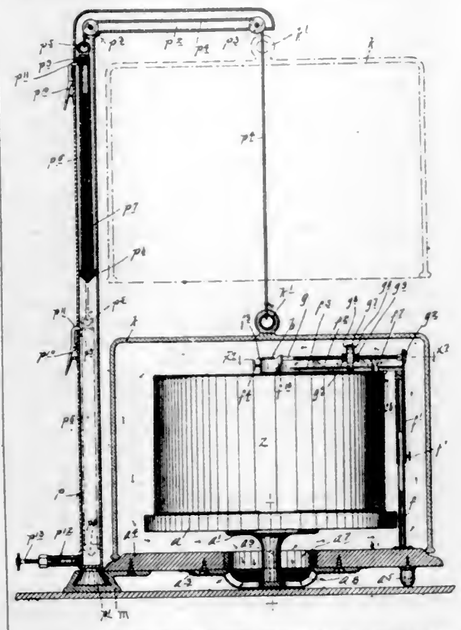
2. A cutting-scale or chart for cheeses, &c., in the form of a paper disk having concentric zones separated by perforated circles adapting the same to be torn, the said zones being graduated to indicate fractions or subdivisions of the total of cheese, substantially as described.

3. A scale for cutting cheese, &c., comprising in combination the centering-disk *a* with concentric lines of perforations *a'*, and the disk *b* separated into concentric zones by the perforate circles *b'*, each zone being graduated and marked to indicate fractions or subdivisions of the cheese, substantially as described.

4. A cutting-scale for cheeses, &c., comprising in combination the disks *a*, *b* and *c* connected at their centers by the eyelet *d*, said disk *b* being graduated and marked to indicate fractions or subdivisions of the total cheese, substantially as described.

657,621. CALCULATING CHEESE-CUTTER. HENRY G. ROTH, Minneapolis, Minn. Filed June 29, 1900. Serial No. 22,021. (No model.)

Claim.—1. A device for measuring cheese, &c., comprising a wheel guide or support securable radially of the cheese and marked to indicate the total cheese, by weight or value, a measuring-wheel adjustable on said guide, for contact with the cheese at various radial points, and an indicator actuated by said measuring-wheel and marked to indicate fractions or subdivisions of the cheese, substantially as described.



2. The combination with a rotary support for the cheese, of a measuring device comprising a wheel guide or support securable radially over the cheese and marked to indicate the total cheese, by weight or value, a measuring-wheel adjustable on said guide, for contact with the cheese at various radial points, and an indicator actuated by said measuring-wheel and marked to indicate fractions or subdivisions of the cheese, substantially as described.

3. The combination with a rotary support and a non-rotary centering-tube, of a measuring device comprising a radial wheel guide or support marked to indicate the total cheese, by weight or value, a measuring-wheel adjustable on said guide for contact with the cheese, a relatively-fixed radial straight-edge overlying the cheese, and an indicator actuated by said measuring-wheel and marked to indicate fractions or subdivisions of the cheese, substantially as described.

4. The combination with a rotary table or support and a non-rotary centering-shaft, of a relatively-fixed straight-edge radiating from said centering-shaft, a knife guided by said centering-shaft and cooperating with said straight-edge, and a measuring device comprising a graduated radial wheel guide or support marked to indicate the total cheese by weight or value, a measuring-wheel adjustable on said guide for contact with the cheese, and an indicator actuated by said measuring-wheel and marked to indicate fractions or subdivisions of the total cheese, substantially as described.

5. The combination with a table or support for the cheese and a centering-shaft rising axially therefrom, of a straight-edge radiating from said centering-shaft, a pivotal guide-rod also radiating from said centering-shaft marked to indicate the total cheese as by weight or value, a rotary measuring-wheel adjustable on said measuring-rod for contact with the cheese, an indicator actuated by said measuring-wheel and marked to indicate fractions or segments of the cheese, and a connection tying said straight-edge and measuring-rod together, substantially as described.

6. The combination with the rotary table *a* and the non-rotary centering shaft or tube *b*, of the straight-edge f^2 having the head f^3 secured to said shaft *b* and supported at its outer end, the graduated and screw-threaded measuring-rod *g* swiveled to said head f^3, the measuring-wheel g^8 and pointer g^9 adjustably securable on said rod *g*, the case g^7 embracing said wheel g^8, and the connection g^{11} mounted to slide longitudinally of said straight-edge f^2 and connected to the case f^7, substantially as described.

7. The combination with the table *a* and centering shaft or tube *b*, of the straight-edge f^2 having the head f^3 adjustably secured on said shaft *b*, and the telescoping connection *f*, *f'*, adjustably supporting the outer

end of said straight-edge, whereby said straight-edge may be adjusted close to the top of said cheese, substantially as described.

8. The combination with a support for the cheese, of a cheese-cover, and means for supporting and controlling said cover, comprising the tubular standard, the counterweight working in said standard and connected to said cover, means for latching said counterweight in position to hold said cover elevated, and a valve controlling the admission of air into said standard, to regulate the descent of said cover when released, substantially as described.

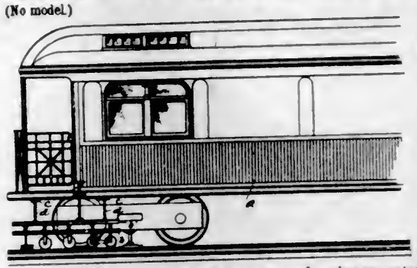
9. The combination with a support and a cover for a cake of cheese, of an oscillating standard or support, and a counterweight working in said standard and provided with connections to the said cover, substantially as described.

10. The combination with the cover *k*, of the tubular standard *p* with extended upper end p^2 having the guide-sheaves p^3, the counterweight p^9 working within said standard *p* as a piston but having less weight than said cover, and the valve controlling the inlet of air to the lower end of said standard, said parts operating substantially as described.

11. The combination with the base a^4 provided with the central air-passage divided by a diametrically-extended partition, of the table supporting the cheese above said base, and the cover *k* inclosing said table and the cheese supported thereby, substantially as described.

12. A device for measuring cheese comprising a support for the cheese, the centering-shaft *b* rising from said support and provided with the head f^3, the screw-threaded rod *g* swiveled to said head f^3 at its inner end and provided with scale-graduations indicating both the total weight and total value of the cheese, the measuring-wheel g^8 adjustable on said rod *g*, the pointer or finger g^9 adjustable with said wheel g^8, clamping-nuts g^6 for locking said parts g^9 and g^8 on said rod *g*, and a non-rotary support adjustable on said rod *g* and provided with the pound and price graduations g^{13} and g^{14} cooperating with said finger g^9, substantially as described.

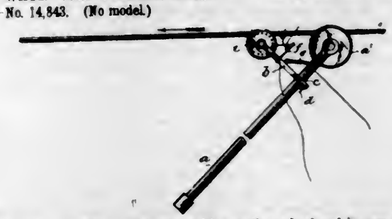
657,622. ICE-REMOVING MECHANISM FOR RAILROAD-RAILS. JOHN J. SHIRKEY, Chicago, Ill. Filed Apr. 30, 1900. Serial No. 14,842. (No model.)



Claim.—1. The combination with superimposed, spring-supported and vertically-adjustable bars, of a series of wheels faced with mechanism adapted to comminute ice and sleet on railroad-rails and means to remove said comminuted material, substantially as specified.

2. The combination with superimposed, spring-supported and vertically-adjustable bars thrust apart by springs and held in place to each other by wheel-supports, of a series of wheels in said supports, faced with mechanism adapted to comminute ice and sleet and means to remove said comminuted material from railroad-rails, substantially as specified.

657,623. ICE-REMOVING TROLLEY FOR ELECTRIC RAILWAYS. JOHN J. SHIRKEY, Chicago, Ill. Filed Apr. 30, 1900. Serial No. 14,843. (No model.)



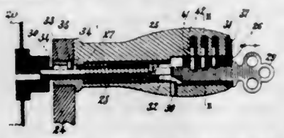
Claim.—1. The combination with a trolley-wheel and its arm, of a spring-actuated reciprocable arm on said trolley-arm, a flanged spool on said reciprocable arm, axially-parallel cutters on the body of said spool and cylindrical teeth projecting from the opposite inner faces of said flanges, said teeth having points passing closely by the trolley-wire, substantially as specified.

2. The combination with a trolley-arm, of a reciprocable spring-actuated arm provided with a fixed arm carrying a reciprocable arm, a ram to said latter reciprocable arm and mechanism to vibrate said arm, substantially as specified.

3. The combination with a trolley-arm, of a vibratable arm to said trolley-arm, a rotatable cylindrical ram to said arm, means to support said arm and mechanism to vibrate said ram, substantially as specified.

4. The combination with a trolley-arm, of a vibratable arm, a bladed rotatable ram to said arm means to support said arm and mechanism to vibrate said ram, substantially as specified.

657,624. CASH-REGISTER. ELIJAH F. SPAULDING, Bound Brook, N. J., assignor to the Ideal Cash Register Company, same place. Filed Mar. 13, 1900. Serial No. 8,453. (No model.)

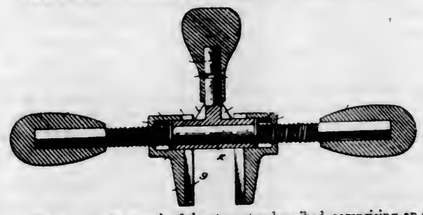


Claim.—1. The cash-register having the driving-shaft 23, and the exposed crank or lever 24 on said shaft, said crank or lever having the handle 25, combined with the tumbler-cylinder within said handle, the locking-bolt also within said handle, and the keeper connected with the register-casing for receiving the end of said bolt, said tumbler-cylinder having at its inner end the slot 36, and the adjacent end of said bolt having the projection 32 to enter said slot when said cylinder is turned so that said slot is in alinement with said projection; substantially as set forth.

2. The cash-register having the driving-shaft 23, the exposed operating crank or lever 24 on said shaft, and the handle 25 connected with said lever, combined with the tumbler-cylinder 26 within said handle, the locking-bolt also within said handle, the spring for normally retracting said bolt into said handle, and means for limiting the throw of said bolt and preventing axial motion of said bolt, the said cylinder having at its inner end the slot 36, and said bolt adjacent to the said cylinder having the projection 32 to enter the said slot when said slot and projection are in line with one another; substantially as set forth.

3. The cash-register having the driving-shaft 23, the exposed operating crank or lever 24 on said shaft, and the handle 25 connected with said lever, combined with the cylinder 26 in the outer end of said handle and adapted to receive the key, the bolt 27 within said handle and having at its inner end the projection 32 and adjacent to its outer end the surface 33, the spring encompassing said bolt and normally operating to retract the bolt into said handle, the pin 35 cooperating with said surface 33 to prevent axial turning of the said bolt, and the keeper connected with the register-casing and adapted to receive the end of said bolt when the latter is projected from said handle, said cylinder 26 having at its inner end the slot 36 to receive said projection 32 when the said bolt 27 is at its inward position; substantially as set forth.

657,625. WRENCH. RONELLO S. SPAULDING, Shawmut, Me. Filed Apr. 20, 1900. Serial No. 13,642. (No model.)



Claim.—1. A wrench of the character described, comprising an angular body, reversely-screw-threaded rods swiveled to and projecting outwardly in opposite directions from the opposite ends of the body, handles provided at the outer ends of the rods, and opposite jaws, which have angular sockets slidably receiving the adjacent ends of the body, and are also provided with screw-threaded openings receiving the screw-threaded portions of the respective rods, whereby the jaws are adjustable for the entire length of the body.

2. A wrench of the class described, comprising an angular body or sleeve, having a cylindrical bore, a rod, having its intermediate portion loosely mounted within the bore, and its opposite outwardly-projecting ends being oppositely screw-threaded, opposite jaws, having angular sockets to fit the respective ends of the angular body, and also screw-threaded

openings to fit the respective screw-threaded portions of the rod, and handles provided at the opposite ends of the rod.

3. A wrench of the class described, comprising an angular body, having a cylindrical bore, a rod loosely mounted within the bore and projecting at opposite ends thereof, the ends of the rod being oppositely screw-threaded, opposite jaws having angular sockets to fit the respective ends of the angular body, and also screw-threaded openings to receive the respective screw-threaded portions of the rod, and a handle swiveled to the body intermediate of the jaws.

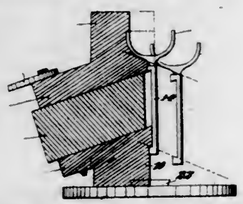
4. A wrench of the class described, comprising an angular body, having an intermediate laterally-projecting handle swiveled thereto, rods projecting at opposite ends of the body, handles at the outer ends of the rods, and opposite jaws adjustable longitudinally in opposite directions upon the respective rods, and having angular sockets to fit the respective angular end portions of the body.

5. A wrench of the class described, comprising an angular body, having a cylindrical bore, a laterally-projecting and intermediate handle swiveled thereto, a rod, having a smooth intermediate portion mounted loosely within the bore of the body, and having its opposite end portions oppositely screw-threaded and projecting at opposite ends of the body, handles fitted to each end of the rod, annular shoulders formed upon the rod and located at opposite ends of the body, and opposite substantially L-shaped jaws, each of the latter having one arm provided with an angular socket that is open at its inner end to receive the adjacent angular end of the body, the opposite end of the socket being closed by a wall, having a screw-threaded opening to receive the respective screw-threaded portion of the rod.

6. A wrench of the character described, comprising an angular elongated body, opposite rods projecting longitudinally in opposite directions from the respective ends of the body, handles at the outer ends of the rods, and opposite jaws having angular sockets slidably receiving the adjacent ends of the angular body, openings slidably receiving the respective rods, and also having longitudinally-adjustable connections with said rods.

7. A wrench of the class described, comprising a body, opposite outwardly-projecting feed-screws, which are swiveled to the body, opposite jaws slidably mounted upon the opposite end portions of the body and in operative connection with the respective feed-screws for adjustment in opposite directions, means for preventing rotation of the jaws during the adjustment thereof, and a handle swiveled to the body.

657,626. APPARATUS FOR MANUFACTURING PLATES. WERNER F. STUHL, Cologne, Germany. Filed July 27, 1898. Renewed June 30, 1900. Serial No. 22,201. (No model.)

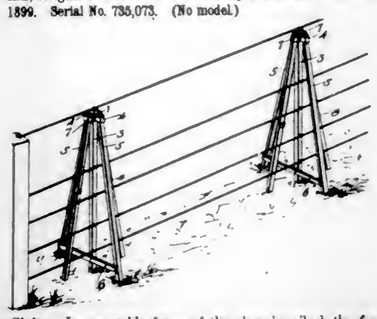


Claim.—1. In an apparatus for manufacturing plates of plastic material the combination with two mold halves hinged together, of a rectangular recess in one of said mold halves, another recess in the second mold half, a projecting part on the inner side of the latter the under side of which is inclined downwardly, an upwardly-inclined guideway in the second mold half, a movable slide or piston in said guideway, means for leading a liquid mass into the recesses in the mold halves when the latter are brought close together, and means for producing a slight pressure on the liquid mass during the molding operation, substantially as and for the purpose set forth.

2. In an apparatus for manufacturing plates of plastic material, the combination with two mold halves hinged together, of suitable recesses on the inner faces of said mold halves, said recesses having inclined sides, and forming an inner hollow space in the shape of the plates to be manufactured when the mold halves are brought close together, one or more lateral slides movably arranged in inclined guideways provided in one of said mold halves, suitable recesses in the upper part of the mold halves, a vertically-movable slide or piston in said upper recesses, means for manipulating the mold halves, and means for holding the mold halves in closed positions, substantially as and for the purpose set forth.

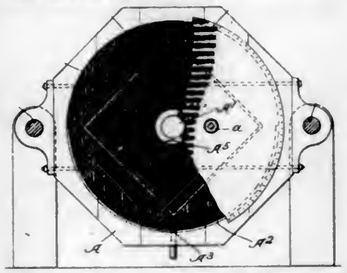
3. In an apparatus for manufacturing plates of plastic material, the combination with two mold halves hinged together, of suitable recesses in the inner faces of said mold halves and forming an inner hollow space in the shape of the plates to be manufactured, when the mold halves are brought close together, one or more lateral slides movably arranged in inclined guideways provided in both mold halves, a suitable reservoir in the upper part of the mold and connected to the inner recesses through suitable passages, a vertically-movable slide or piston guided in said reservoir, means for manipulating the mold halves, and means for holding the mold halves in closed position, substantially as and for the purpose set forth.

657,627. PORTABLE FENCE. WILLIAM H. TURNER, Converse, Ind., assignor of one-half to Roscoe Kimple, same place. Filed Oct. 28, 1899. Serial No. 735,073. (No model.)



Claim.—In a portable fence, of the class described, the fence-post comprising a cap formed with a central orifice receiving the upper end of the vertical stake 3; integral lateral sockets receiving the upper ends of the downwardly-diverging braces 5, 5; integral longitudinal, downwardly-diverging sockets receiving the upper ends of the downwardly-diverging stakes 8, 8; and the horizontal brace 6 connecting the lower end of said stake 3 and the lower ends of the diverging braces 5, 5; substantially as described.

657,628. FILTER-PRESS PLATE. JOHN E. TURNEY, Louisville, Ky., assignor to the Turney Drier Company, Chicago, Ill. Filed Mar. 16, 1900. Serial No. 8,889. (No model.)



Claim.—1. A filtering-plate for a filter-press, comprising a back or central element superficially channeled or grooved; an open-meshed wire screen applied on the grooved surface of said back element; a perforated sheet-metal plate applied on the screen; and suitable means for binding said elements together.

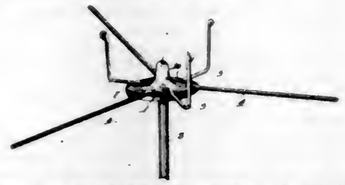
2. A filtering-plate for a filter-press, comprising a back or central element superficially channeled or grooved; an open-meshed wire screen applied upon the grooved surface; a sheet-metal plate having perforations in the form of long, narrow slots, applied upon the wire screen; and suitable means for binding said elements together.

3. A filtering-plate for a filter-press, comprising a back or central element superficially grooved; an open-meshed wire screen applied upon the grooved surface; a sheet-metal plate perforated with fine slots whose margins are burred or roughened, such plates being applied upon the woven-wire screen with its burred or roughened surface outward.

4. A filtering-plate for a filter-press, comprising a back or central element having vertical parallel channels or grooves and suitable means for draining the same; an open-meshed wire screen applied upon the grooved surface with its wires in both directions oblique to the vertical grooves; a sheet-metal plate perforated with long fine slots applied upon the open-meshed screen; and suitable means for securing said several elements together.

5. A filtering-plate for a filtering-press, comprising a back or central element having up-and-down drainage-channels; an open-meshed wire-screen applied upon such central element and its surface covering constituting the filtering element, consisting of sheet metal perforated with long, fine slots, and applied with its slots extending up and down.

657,629. HAT-RACK. AUGUST VIEKI, Coldwater, Mich. Filed May 17, 1900. Serial No. 17,037. (No model.)



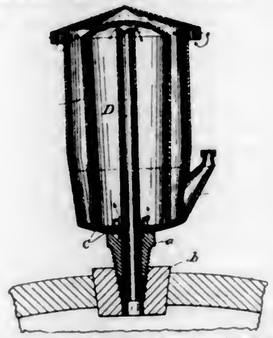
Claim.—1. A hat-rack comprising a support, a disk-hub rotatably mounted thereon and having a central upstanding socket to loosely fit over the upper end of said support, and a series of radial arms engaging the hub and continuous with upstanding guards intermediate of the planes of the arms.

2. A hat-rack comprising a horizontally-disposed hub with a central upstanding socket for rotatable support of the same, and a series of horizontal arms radially projecting from the hub and having upstanding guards continuous therewith.

3. A hat-rack comprising a horizontally-disposed rotatable hub, and a series of continuous combined arms and guards, each threaded through the hub near the periphery of the latter, and the guard portions of the combined arms and guards located in the intervals between the said arms and at an angle to the latter.

4. A hat-rack comprising a horizontally-disposed hub, and a series of combined radial arms and upstanding guards each formed from a single piece of wire threaded through the hub and comprising a bracing member bearing against the under side of the said hub.

657,630. VENT FOR CASKS. JOSEPH WAHL, Cincinnati, Ohio. Filed Apr. 23, 1900. Serial No. 13,853. (No model.)



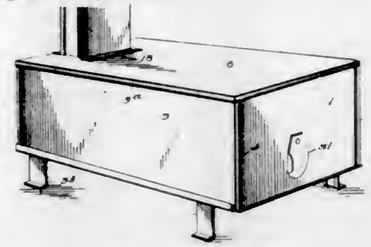
Claim.—1. In a vent for casks the combination of a closed outer vessel having perforations around its top, a closed inner vessel seated upon the bottom of the outer vessel and having perforations near its lower edge and a tube passing through the bottom of the outer vessel into the inner vessel to within a short distance of its top and means for admitting alcohol into the vessels to a certain height whereby the vacuum created in the casks by the withdrawal of liquor therefrom is filled by air permeated with alcohol-vapors, substantially as shown and described.

2. In a vent for casks the combination of a closed outer vessel having perforations around its top and a spout upon its side closed by a removable cap for the admission of alcohol to the vessel, a closed inner vessel seated upon the bottom of the outer vessel and having perforations near its lower edge and a tube passing up through the bottom of the outer vessel into the inner vessel to within a short distance of its top, substantially as shown and described.

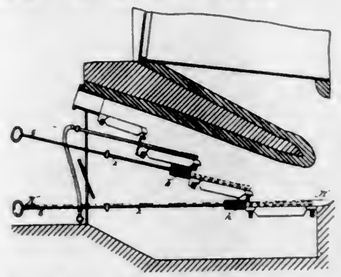
3. In a vent for casks the combination of a closed outer vessel having perforations around its top and a screw-threaded plug secured to its bottom for screwing it into a cask, a closed inner vessel seated upon the bottom of the outer vessel and having perforations near its lower edge, a tube passing up through the plug, the bottom of the outer vessel and into the inner vessel to within a short distance of its top and means for admitting alcohol into the vessels to a certain height whereby the vacuum created in the casks by the withdrawal of liquor therefrom is filled by air permeated with alcohol-vapors, substantially as shown and described.

657,631. KNOCKDOWN CAMP-STOVE. DAVID B. WARREN, West Plains, Mo. Filed June 16, 1900. Serial No. 20,594. (No model.)

Claim.—A portable knockdown camp-stove, comprising in its construction a body formed of front, rear and side walls having tongue-and-grooved joints slidably connecting them, one of said side walls having fire-box and oven openings, top and bottom walls slidably connected to said side walls and closing the top and bottom of the body, a partition removably mounted in the body between said fire-box and oven openings and forming with the front, side and top and bottom walls of the body a fire-box, an oven mounted between said partition and the rear wall of the body and comprising top, bottom and side plates detachably connected and supported, flue-passages being formed in front of and at the rear, top and bottom of the oven, a smoke pipe or flue detachably connected to the sliding top of the body, a damper controlling the passage of the smoke and products of combustion through the bottom and rear flue passages to the pipe, and a door slidably mounted on the side of the body and movable in either direction to control said fire-box and oven openings, substantially as set forth.

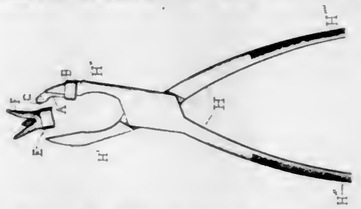


657,632. STOKING DEVICE. JULIUS WEKEL, Leipsic, Germany. Filed Mar. 7, 1900. Serial No. 7,754. (No model.)



Claim.—In a stoking device for furnaces, the combination with a step-grate, of a series of tubes arranged in rows between the steps thereof, and stoking-irons having a series of prongs, said prongs arranged to pass through said tubes, substantially as described.

657,633. TOOTH-SHELL SLITTER. CHARLES M. WILCOX, New Paris, Ohio. Filed Dec. 22, 1899. Serial No. 741,277. (No model.)

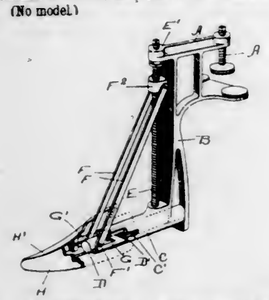


Claim.—1. In a device of the kind specified, the body portion provided with means for securing the same to forceps, the upper end of the body being slotted, a cutting-wheel journaled in the slot and adapted to revolve against the shells of teeth, all as described and for the purposes set forth.

2. In combination with a pair of dental forceps, of a device to be attached thereto, for the purposes specified, of the body A, provided with a band B at its lower end, a slot D at its upper end, a cutting-wheel C, journaled in said slot, all as described and set forth.

3. In a tooth-shell slitter, in combination with a roller-cutter attached to one jaw of dental forceps, a fulcrum attached in like manner to the opposite jaw, all as described and specified.

657,634. SHOE-HOLDER. ELMER A. WILCOX, Chicago, Ill., assignor to Thomas G. Connor, same place. Filed Jan. 29, 1900. Serial No. 3,075. (No model.)

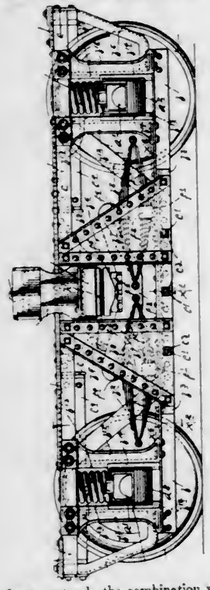


Claim.—1. The combination in a shoe-holder of a frame, a vertical screw, a slide actuated by said screw by means of a nut and bars F, forms H and H', and arms connecting said forms to the slide, substantially as specified.

2. The combination in a shoe-holder of a frame, a vertical screw, a slide actuated by said screw by means of a nut and bars F, expanding-forms H and H', and L-shaped arms connecting said forms to the slide and freely pivoted at both ends, substantially as specified.

3. The combination in a shoe-holder of expanding-forms H and H' unitedly possessing the shape of a last, means for supporting said forms so as to permit their self-adjustment to the shoe, and means for moving the forms forward in the shoe, substantially as specified.

657,635. PASSENGER-CAR TRUCK. JOHN C. BARBER, St. Paul, Minn. Filed Sept. 14, 1899. Serial No. 730,403. (No model.)



Claim.—1. In a car-truck, the combination with rigid side frames and a single central bolster, of two sets of springs on each side frame, located one set on each side of the bolster, on a base forming a part of the rigid side frame, and equalizers resting on said sets of springs and supporting said central bolster, substantially as described.

2. In a car-truck, the combination with rigid side frames, of a central bolster, two sets of springs on each side frame located one on each side of said bolster, and equalizers resting on said sets of springs and supporting said bolster, which equalizers are free for a limited rocking motion with respect to said bolster, substantially as described.

3. In a car-truck, the combination with side frames spring-cushioned on the journal-boxes, of a single, central bolster, two sets of elliptic springs on each side frame disposed lengthwise thereof and located one set on each side of the bolster, and equalizers disposed lengthwise of the side frames with their ends resting on said sets of springs, for supporting said bolster, substantially as described.

4. In a car-truck, the combination with side frames spring-cushioned on the journal-boxes, of a single central bolster, two sets of twin elliptic springs on each side frame, disposed lengthwise thereof and located, one set on each side of the bolster, equalizers, for supporting said bolster, disposed lengthwise of the side frames between the facing ends of the twin members of said sets of springs and having cross-bars resting on the spring-caps, substantially as and for the purposes set forth.

5. In a car-truck, the combination with rigid side frames and a central bolster, of columns or vertical guides forming part of said side frames and between which the ends of the bolster work vertically, two sets of springs on each side frame located one on each side of said bolster, equalizers resting on said sets of springs and supporting said bolster, which equalizers are fulcrumed for limited rocking movements below said bolster, substantially as described.

6. In a car-truck, the combination with side frames spring-cushioned on the journal-boxes, of the single central bolster, two sets of springs located one set on each side of the bolster, lengthwise of the side frames, equalizers disposed lengthwise of the side frames with their ends resting on said sets of springs, saddle-plates resting on the equalizers, bottom roller-bearing plates resting on said saddles, bearing-plates on the bolster, rollers between said bottom and bolster-carried bearing-plates, with said saddle-plates and said bottom bearing-plates constructed and related to permit a rocking motion of the equalizers in respect to the bolster, substantially as described.

7. In a car-truck, the combination with the side frames having top and bottom chords arranged in pairs side by side, of truss-bars permanently anchored to the top chords, over the journal-boxes and between the bottom chords, throughout that portion which underlies the bolster-supporting springs, substantially as described.

8. In a car-truck, side frames wherein the top and bottom chords are composed of angle-bars, the truss-bar is independently and permanently anchored to the top chord over the journal-boxes and to the bottom chord throughout that portion thereof which underlies the bolster-supporting springs, and said upper and lower chords are also connected by end braces and the journal-box pedestals, substantially as described.

9. In a truck, the combination with rigid side frames having top and bottom chords, of twin springs seated on the bottom chords, with the members of the twins spaced apart laterally, and truss-bars anchored at their ends to said top chords, passed between the members of the twin springs and connected to said bottom chords at their intermediate portions, substantially as described.

10. In a car-truck, side frames wherein the top and bottom chords are each composed of pairs of angle-bars, the truss-bar is independently and permanently anchored to the top chord over the journal-boxes and to the bottom chord throughout that portion thereof which underlies the bolster-supporting springs, the said upper and lower chords are connected by sets of removable counterbraces on opposite sides of the bolster-space and are also connected by end braces and the journal-box pedestals, all substantially as and for the purposes set forth.

11. In a car-truck, the combination with side frames each composed of upper and lower chords connected by truss-bars, counterbraces, the bolster-pedestals and end braces, of top cross-bars connecting the top chords of the two side frames and lap-plates covering, connecting and reinforcing the said chords and tie-bars at the jointing portions thereof, substantially as and for the purposes set forth.

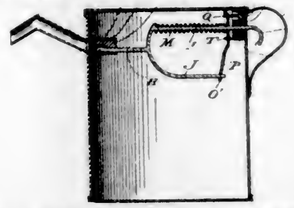
12. In a car-truck, the combination with side frames and a bolster, of a combined bolster-chafing and guide block independent or separable from the bolster-columns anchored to the top portion of the side frame, substantially as and for the purposes set forth.

13. In a car-truck, the combination with a bolster and side frames having top and bottom chords connected by truss-bars and counterbraces, with the counterbraces applied on opposite sides of the bolster-space, of a bracket or block independent or separable from the bolster-columns anchored to the top chord over the bolster-space and constructed with vertical walls spaced apart to pass the bolster and serve as chafing-surfaces and guides for the same, substantially as described.

14. In a car-truck, the combination with side frames and a bolster, of springs and equalizers for supporting said bolster disposed lengthwise of the frames and brackets or blocks anchored to the upper portions of the side frames and provided with vertical side walls embracing the bolster and serving as chafing-surfaces and guides for the same, but extending a short distance only below the top chords of the side frames, whereby clearance is afforded for the parts which support the bolster, substantially as described.

657,636. CAN. GOUNDRY W. BINGHAM, Washington, D. C. Filed Dec. 6, 1899. Serial No. 739,390. (No model.)

Claim.—1. The combination with a can provided with outlet and vent openings, of a valve controlling the outlet-opening, and having a longitudinally-extending stem, a valve controlling the vent-opening, and a vertically-disposed lever connected at its respective ends with the stem of the outlet-valve and the vent-valve, substantially as described.



2. The combination with a can provided with an outlet and a vent opening formed in opposite walls of the body thereof, of inwardly-movable valves controlling said openings, and a vertically-disposed lever connected at its respective ends with the stems of said valves, substantially as described.

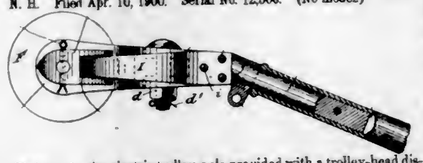
3. The combination with a can formed with an outlet and a vent opening, valves controlling said openings and movable transversely of the can-body, and a vertically-disposed lever connected at its respective ends to said valves, substantially as described.

4. The combination with a can provided with outlet and vent openings, of a valve controlling said outlet-opening, longitudinally-extending arms carried by said valve, one of said arms projecting to the exterior of the can-body, a valve controlling the vent, and an operative connection between the other of said arms and the vent-valve, substantially as described.

5. The combination with a can provided with outlet and vent openings, of a valve controlling said outlet and having a bifurcated valve-stem, one of said bifurcations extending to the exterior of the can-body, a valve controlling the vent, and a lever connected at its respective ends with the vent-valve and other bifurcation of the outlet-valve stem, substantially as described.

6. The combination with a can provided with outlet and vent openings, of valves controlling said openings, a bifurcated valve-stem for said outlet-valve, one of said bifurcations extending to the exterior of the can-body, a lever loosely engaging said bifurcation and connected at its respective ends with the vent-valve and other of said bifurcations, and a spring holding said valves to their seats, substantially as described.

657,637. TROLLEY-HEAD. STANISLAS BOURGEOIS, Manchester, N. H. Filed Apr. 10, 1900. Serial No. 12,306. (No model.)



Claim.—1. An electric trolley-pole provided with a trolley-head disposed at an angle with said pole and substantially upon a horizontal plane, an oscillatory yoke pivotally attached to said head, and a trolley-wheel mounted in said yoke.

2. An electric trolley-pole provided with a trolley-head disposed at an angle with said pole and substantially upon a horizontal plane, a laterally-oscillating yoke pivoted to said head, a trolley-wheel mounted in said yoke, and means for limiting the oscillating movement of said yoke.

3. In an electric trolley-pole, a trolley-head disposed at an angle with said pole and substantially upon a horizontal plane and provided with a laterally-oscillating yoke, a trolley-wheel mounted in the yoke, and means comprising springs attached to said trolley-head and adapted to bear against opposite sides of said yoke whereby the latter is held normally in alinement with said trolley-pole.

4. A trolley-head disposed at an angle with said pole and substantially upon a horizontal plane and provided with a pivoted yoke, springs for maintaining said yoke normally in alinement with said head, and means within the pivoted connection of said parts for limiting the lateral movement of said head.

5. A trolley-head disposed at an angle with said pole and substantially upon a horizontal plane and provided with a pivoted yoke, a trolley-wheel mounted within the yoke, springs for maintaining said yoke normally in alinement with said head, a collar and helical spring mounted at each side of the trolley-wheel upon its pivot-pin, and means within the pivoted connection of said yoke and head for limiting the lateral movement of the yoke.

6. In an electric trolley-pole, a trolley-head disposed at an angle with said pole and substantially upon a horizontal plane and provided with a laterally-oscillating yoke, a trolley-wheel mounted in said yoke, a spring attached to each side of said trolley-head, and a recess formed in each side of said yoke adapted to receive the free end of either spring, substantially for the purpose set forth.

657,638. SECONDARY-BATTERY PLATE. WILLIAM BOWKER, Sr., Waltham, Mass. Filed Jan. 19, 1900. Serial No. 2,071. (No model.)



Claim.—1. A secondary-battery plate consisting of the lead or conducting-plate provided with lips or ears, and the sheets of natural vegetable fibrous network secured to opposite sides of the conducting-plate by said ears or lips and having a filling of lead oxid or active material.

2. In a secondary battery, a sheet or piece of loofah having a filling of active material and adapted for use in a secondary battery.

657,639. ROTARY HEARSE-TABLE. MICHAEL BRESTLE and GEORGE E. BRESTLE, Middletown, Pa. Filed May 3, 1900. Serial No. 15,395. (No model.)



Claim.—A hearse-table, comprising the body portion, an apron-frame supported within the body portion, an apron mounted upon the said frame and provided with rollers to engage and ride along the edges of said frame, a roller mounted at the advance end of the body portion, and locking-levers for locking the apron against movement.

657,640. BATH-TUB SEAT. EGBERT T. BROWN, Buffalo, N. Y. Filed Feb. 12, 1900. Serial No. 4,843. (No model.)



Claim.—1. The combination with the seat-board provided in its under side with a longitudinal groove or recess, of a covering-plate secured to the under side of the seat-board and extending across the open lower side of its groove, and adjustable wire hangers each comprising a hook-shaped loop adapted to fit over the rim of a bath-tub, and shanks or branches extending downwardly from said loop and provided with inward extensions which are frictionally confined in said groove or recess, substantially as set forth.

2. The combination with the seat-board provided in its under side with a longitudinal groove or recess, of hangers, each comprising a hook-shaped loop adapted to fit over the rim of the bath-tub, shanks which extend downwardly from the ends of said loop and which have parallel inward extensions which are arranged in said groove or recess and terminate at their ends in cross-bars which bear against the under side of the seat-board and resist twisting of said extensions, and means whereby said extensions are frictionally confined in said groove, substantially as set forth.

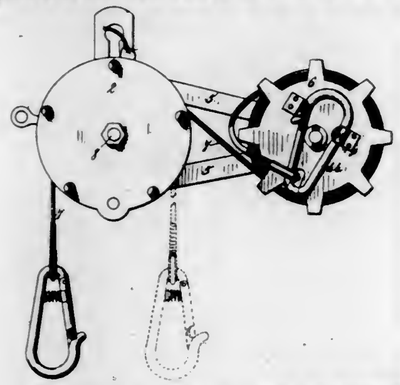
3. The combination with the seat-board provided in its under side with a longitudinal groove or recess, of hangers, each comprising a hook-shaped loop adapted to fit over the rim of the bath-tub, shanks which extend downwardly from the ends of said loop and which have parallel inward extensions which are arranged in said groove or recess and terminate at their ends in cross-bars which overlap each other and extend across said groove, and means whereby said extensions are frictionally confined in said groove, substantially as set forth.

657,641. FIRE-ESCAPE. CHARLES L. BUDDENBOHN and WILLIAM SPEER, Baltimore, Md. Filed Jan. 29, 1900. Serial No. 3,189. (No model.)

Claim.—1. In a fire-escape, a rotatable drum, a lowering rope or cable wound in a plurality of coils thereon, and means embracing and engaging said coils for preventing the progressive lateral movement of said rope or cable as a whole along said drum.

2. In a fire-escape, a rotatable drum, a lowering rope or cable wound in a plurality of coils thereon, and a rope-guide embracing and engaging said coils for preventing the progressive lateral movement of said rope or cable as a whole along said drum.

3. In a fire-escape, a rotatable drum, a lowering rope or cable wound thereon, and a rope-guide embracing said drum and provided with a spiral groove on the inner surface thereof, as and for the purpose set forth.



4. In a fire-escape, a rotatable drum, a lowering rope or cable wound thereon, and a rope-guide for preventing the progressive lateral movement of said rope or cable as a whole along said drum, the same consisting of a fixed sleeve or ring surrounding said drum, provided with a spiral groove on the inner surface thereof and having openings for the passage of the lowering-rope at the opposite ends of said groove.

5. In a fire-escape, a rotatable drum, a lowering rope or cable wound thereon, a sleeve surrounding said drum, and a rope-presser extending through said sleeve and engaging said rope or cable for maintaining the latter in contact with said drum.

6. In a fire-escape, a rotatable drum, a lowering rope or cable wound thereon, a rope-guide surrounding said drum and provided with a spiral groove on its inner surface in which said rope fits, and rope-pressers for holding said rope in contact with said drum, the same consisting of inwardly, spring-pressed pins extending through openings in said guide and engaging the outer surface of said rope.

7. In a fire-escape, the combination with a shaft or spindle, a rotatable drum mounted thereon and a lowering rope or cable wound upon said drum, of a brake longitudinally movable on said shaft or spindle for controlling the speed of rotation of said drum, a sleeve or pinion driven from said drum for throwing said brake into operation, and means for permitting the longitudinal movement of said sleeve on said shaft or spindle, whereby the degree of pressure of said brake on said drum may be controlled.

8. In a fire-escape, the combination with a shaft or spindle, a drum mounted to turn thereon, and a lowering rope or cable wound on said drum, of an automatic governor for controlling the speed of rotation of said drum, the same consisting of a brake-shoe longitudinally movable on said shaft or spindle and adapted to engage said drum, inclined engaging portions on said shoe, a sleeve loosely mounted on said shaft or spindle and driven through intermediate gearing from said drum, means on said sleeve actuated by centrifugal force for throwing said brake-shoe into operation, and means for changing the position of said sleeve on said shaft or spindle, as and for the purpose set forth.

9. In a fire-escape, the combination with a shaft or spindle, a rotatable drum mounted thereon and a lowering rope or cable wound upon said drum, of a brake longitudinally movable on said shaft or spindle for controlling the speed of rotation of said drum, a sleeve or pinion driven from said drum for throwing said brake into operation, a lever mounted to turn on said shaft or spindle and engaging said sleeve at one end, and means actuated by the turning movement of said lever for moving the same longitudinally on said shaft or spindle, and thereby causing a similar movement of said sleeve on said shaft or spindle for varying the speed of rotation of said drum.

10. In a fire-escape, the combination with a shaft or spindle, a rotatable drum mounted thereon and a lowering rope or cable wound upon said drum, of a governor for controlling the speed of rotation of said drum, the same comprising a brake-shoe longitudinally movable on said shaft or spindle and adapted to engage one face of said drum, inclined engaging surfaces on said shoe, a toothed sleeve or pinion loosely mounted on said shaft or spindle and driven from said drum, radially-movable brake-actuating blocks carried by said sleeve, the same adapted to be thrown outwardly by centrifugal force and to bear against the inclined engaging surfaces on said brake-shoe, inwardly-projecting cams on a fixed part of the frame adjacent to said shaft or spindle, and a lever mounted to turn on said shaft or spindle, normally engaging one end of said toothed sleeve or pinion and provided with correlative devices for said cams, whereby upon the turning movement of said lever, said sleeve is moved in one direction or permitted to be moved in the other direction, as and for the purpose set forth.

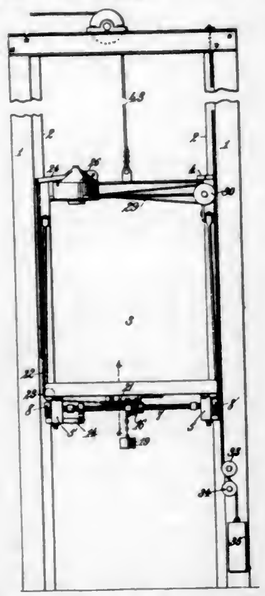
11. A friction device for a drum and a cable or rope winding thereon, said device consisting of a fixed casing surrounding the drum and having an internal thread for the passage of the cable or rope, the thread terminating near its ends in apertures for the passage of the cable or rope to the outside of the casing, substantially as shown and described.

12. A friction device for a drum and a cable or rope winding thereon, said device consisting of a fixed casing surrounding the drum and having an internal thread for the passage of the cable or rope, the thread terminating near its ends in apertures for the passage of the cable or rope to the outside of the casing, said apertures being located on opposite sides of the casing, substantially as shown and described.

13. A friction device for a drum and a cable or rope winding thereon, said device consisting of a fixed casing surrounding the drum and having an internal thread for the passage of the cable or rope, the thread terminating near its ends in apertures for the passage of the cable or rope to the outside of the casing, the walls of the thread being arranged to separate the coils of the rope or cable from each other, as set forth.

14. A friction device for a drum and a cable or rope winding thereon, said device consisting of a fixed casing surrounding the drum and having an internal thread for the passage of the cable or rope, the thread terminating near its ends in apertures for the passage of the cable or rope to the outside of the casing, said thread separating the coils of the rope or cable from each other, and holding the cable or rope in frictional contact with the peripheral surface of the drum, substantially as shown and described.

657,642. SAFETY MECHANISM FOR ELEVATORS. CHARLES L. BUDDENBORN and WILLIAM SPEER, Baltimore, Md. Filed Apr. 11, 1900. Serial No. 12,465. (No model.)



Claim.—1. The combination with an elevator-shaft and guide-rails located on opposite sides thereof, of a car movable in said shaft, a rock-shaft mounted on said car, cams on said rock-shaft adapted to engage said guide-rails, a governor for continuously vibrating said rock-shaft during the movement of the car and for rocking said shaft and throwing said cams in locking engagement with said guide-rails, the same including a rotary shaft having radially-extending arms thereon and slide-blocks on said arms adapted to be thrown outwardly by centrifugal force during the rotation of said rotary shaft, a pulley on said car, a cord passing around said pulley and said rotary shaft, and a constant connection between said blocks and said rock-shaft for operating the latter from the former, as and for the purpose set forth.

2. The combination with an elevator-car and locking devices therefor, of a governor mounted on said car for throwing said locking devices into operation, the same comprising a lever connected with said locking devices, a rotary shaft having radially-extending arms thereon, slide-blocks on said arms adapted to be thrown outwardly by centrifugal force during the rotation of said shaft, and a slide on said shaft adapted to be thrown into engagement with said lever by said blocks, and connections between said shaft and said car, whereby said shaft will be rotated therefrom and the speed thereof will be controlled by the speed of movement of said car.

3. The combination with an elevator-car and locking devices therefor, of a governor mounted on said car for throwing said locking devices into operation, the same comprising a lever connected with said locking devices, a rotary shaft having a pulley thereon, radial arms on said shaft, slide-blocks on said arms adapted to be moved outwardly by centrifugal force during the rotation of said shaft and provided with recesses having inclined bottom walls, springs surrounding said arms for resisting the outward movements of said blocks, a slide loosely mounted on said shaft having wings or extensions lying within said recesses and provided with inclined walls adapted to be engaged by the inclined bottom walls of said recesses, the said slide being adapted to be moved into engagement with said lever when said slide-blocks are moved outwardly, a pulley on said car, and a cord secured at one end, passing around the pulley on said car and on said shaft and having a weight at its free end, whereby said shaft will be rotated from said car and the speed of rotation thereof will be controlled by the speed of movement of said car.

4. The combination with an elevator-shaft and guide-rails located on opposite sides thereof, of a car movable in said shaft, a rock-shaft mounted on said car, cams upon the ends of said shaft adapted to engage said guide-rails, and an automatic governor in constant connection with said shaft for continuously vibrating the latter during the movement of the car and for rocking said shaft and throwing said cams into locking engagement with said guide-rails when the speed of the car increases beyond a certain predetermined limit.

5. The combination with an elevator-shaft and guide-rails on opposite sides thereof, of a car, a rock-shaft mounted thereon, cams on the ends of said shaft adapted to be moved into locking engagement with said guide-rails, means for normally holding said shaft at the limit of its movement in one direction and for maintaining said cams out of locking engagement with said guide-rails, a governor in constant connection with said shaft for continuously vibrating the latter during the movement of the car and for moving the latter in opposition to said holding means and thereby throwing said cams into locking engagement with said guide-rails when the speed of the car increases beyond a certain predetermined limit.

6. The combination with an elevator-shaft and guide-rails on opposite sides thereof, of a car movable in said shaft, a rock-shaft mounted on said car, cams on the ends of said shaft adapted to engage said guide-rails, a weight connected with said shaft for normally maintaining it at the limit of its movement in one direction and for holding said cams out of engagement with said guide-rails, a pulley on said shaft, a bell-crank lever on said car, flexible connections between one arm of said bell-crank lever and said pulley, a governor and connections between said governor and the other arm of said bell-crank lever, whereby said shaft will be moved by said governor in opposition to said weight for throwing said cams into locking engagement with said guide-rails when the speed of movement of the car increases beyond a certain predetermined limit.

7. The combination with an elevator-shaft and guide-rails on opposite sides thereof, of a car movable in said shaft, a rock-shaft mounted on said car, cams upon the ends of said shaft adapted to engage said guide-rails, a governor, in constant connection with said rock-shaft for continuously vibrating the latter during the movement of the car and for moving said cams into locking engagement with said guide-rails when the speed of the car increases beyond a certain predetermined limit, and a lever being vibrated by said shaft and connected with said shaft and extending up into the car, the said lever serving as an indicator and as a means for rotating said shaft and throwing said cams into locking engagement with said guide-rails by hand.

8. The combination with an elevator-shaft and guide-rails on opposite sides thereof, of a car movable in said shaft, a flexible rock-shaft mounted on said car, cams on the ends of said rock-shaft adapted to engage said guide-rails, a governor, connections between said governor and said shaft for automatically rocking the latter and throwing said cams into locking engagement with said guide-rails, and a lever connected with a flexible portion of said shaft and extending up into the car, as and for the purpose set forth.

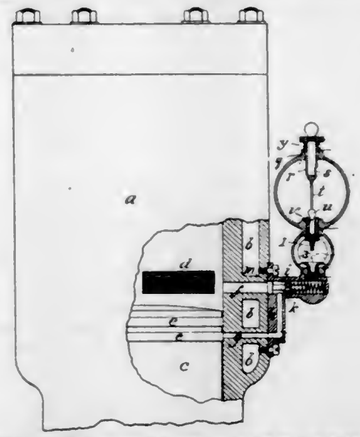
9. The combination with an elevator-shaft having guide-rails on opposite sides thereof, of a car movable in said shaft, a rock-shaft on said car, cams on said rock-shaft adapted to be moved into locking engagement with said guide-rails, and means for shifting said rock-shaft bodily to move said cams away from said guide-rails when they are in locking engagement therewith.

10. The combination with an elevator-shaft having guide-rails on opposite sides thereof, of a car movable in said shaft, boxes secured to said car having elongated slots therein, a rock-shaft extending through said slots and mounted in bearings movable in said boxes, cams on the ends of said rock-shaft adapted to be moved into locking engagement with said guide-rails, wedges engaging the bearings of said shaft, and means for moving said wedges to change the position of said bearings, as and for the purpose set forth.

11. The combination with an elevator-car and braking mechanism therefor, of a rock-shaft for throwing into operation said braking mechanism, and means for imparting to said shaft a vibratory or back-and-forth-rocking movement during the movement of said car.

12. The combination with an elevator-car and braking mechanism therefor, of a rock-shaft for operating said mechanism, a governor for rocking said shaft to throw said braking mechanism into operation, and means thrown into operation by said governor for imparting to said shaft a constant vibratory or back-and-forth-rocking movement during the movement of the car.

657,643. LUBRICATOR FOR ENGINE-CYLINDERS. GEORGE A. BURWELL, Toledo, Ohio. Filed June 15, 1899. Serial No. 720,734. (No model.)



Claims.—1. In a lubricator, a pressure-opening and an outlet-channel, means for supplying oil to the outlet-channel, and movable means alternately closing the oil-supply and the pressure-opening, said outlet-channel communicating with the oil-supply when the pressure-opening is closed and with said pressure-opening when the oil-supply is closed, substantially as described.

2. In a lubricator, the combination of a chamber provided with a pressure-opening and an outlet-channel, means for supplying oil to said chamber, and yielding means in the chamber for closing said pressure-opening, the outlet-channel communicating directly with the oil-supply in the chamber when said pressure-opening is closed, substantially as described.

3. In a lubricator, the combination of a chamber with a pressure-opening, an outlet-channel leading from the chamber, means for delivering a regulated supply of oil to the chamber, and movable means in the chamber reciprocating across the mouth of the outlet-channel alternately connecting said channel directly to the pressure-opening and to the oil-supply in the chamber, substantially as described.

4. In a lubricator, the combination of a chamber provided with a pressure-opening and an outlet-channel, means for supplying oil to the outlet-channel, and movable means in the chamber for alternately closing the oil-supply and the pressure-opening, said outlet-channel communicating directly with the oil-supply when the pressure-opening is closed and with said pressure-opening when the oil-supply is closed, substantially as described.

5. The combination with a cylinder and its piston, of a lubricator provided with a pressure-channel communicating with said cylinder and alternately covered and uncovered by said piston, an outlet-channel communicating with said cylinder, means for delivering a regulated supply of oil to said outlet-channel, and means for closing said oil-supply and establishing direct communication between said channels when the pressure-channel is uncovered, so as to exert pressure through said outlet-channel, substantially as described.

6. The combination with a cylinder and its moving piston, of a lubricator provided with a pressure-opening and an outlet-channel, each communicating directly with the cylinder, means for supplying oil to said outlet-channel, and means for closing said oil-supply and permitting pressure

to be exerted in the outlet-channel through the pressure-opening when said outlet-channel is covered by the piston, substantially as described.

7. The combination with a cylinder and its piston, of a lubricator provided with a pressure-opening and an outlet-channel, each communicating with said cylinder, and being alternately covered and uncovered by the piston, means for supplying oil to said outlet-channel, and means for closing said oil-supply and establishing direct communication between said channels when the outlet-channel is covered and the pressure-channel is uncovered by said piston, substantially as described.

8. The combination of a cylinder provided with two apertures through its side and its moving piston, a lubricating device attached to the cylinder, a chamber in said device opening into one of said apertures and a channel leading from the chamber to the other aperture, a piston adapted to reciprocate in the chamber and a spring to press the piston to a position between the channel-mouth and the aperture leading into the cylinder, when both of said apertures are uncovered by the engine-cylinder with a means for delivering a regulated supply of oil into the chamber behind the piston.

9. The combination of a cylinder and its moving piston, said cylinder being provided with an exhaust-port near its end and two apertures through its side the inner one of said apertures being located at or near the plane of the outer edge of the exhaust-port and the other nearer to the end of the cylinder, a lubricating device attached to the cylinder, a chamber in said device opening into the inner aperture of the cylinder and a channel leading from the chamber to the other aperture of the cylinder a piston adapted to reciprocate in said chamber and a spring to press the piston to a position between the mouth of the channel and the aperture leading into the cylinder, with means for delivering a regulated supply of oil into the chamber behind the piston.

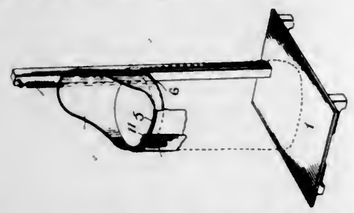
10. In a lubricating device the combination of the chamber *i*, a piston-rod provided with a piston and a guide fitting the bore of the chamber, said guide having a series of grooves or notches across its periphery, a spring between said guide and the end of the chamber and the channel communicating with the chamber at a point between the piston and the guide when in their normal position, with means for delivering a regulated supply of oil into the chamber behind the guide.

11. In combination with a cylinder provided with two apertures through its side, a lubricating device having a chamber communicating with one of said apertures, a channel leading from the chamber to the other aperture, a spring-pressed piston adapted to reciprocate in said chamber across the mouth of the channel with a drip-cup fitting in an aperture leading into the chamber and having a closed recess under its head or top, vertical side grooves in the shank of the cup leading to said recess, a central cavity in the upper end of the cup and horizontal passages leading from the bottom of this cavity to the side grooves substantially as set forth.

12. In a lubricator the combination of the chamber *i*, and a channel leading therefrom, a piston adapted to reciprocate in said chamber, a drip-cup screwed into the top of the chamber behind the piston, the head or flange of the cup being undercut and fitting at its edge against the surface of the part into which the cup is screwed forming a closed recess, vertical side grooves in the screwed shank of the cup leading into said closed recess, a central cavity having a flaring mouth at the top of the cup and horizontal passages leading from the bottom of this cavity to the vertical side grooves substantially as set forth.

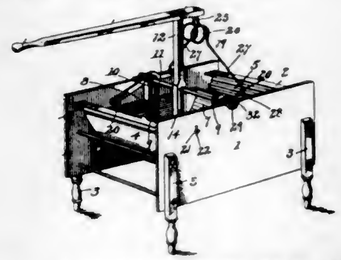
13. In a lubricator the combination of the reservoir and the sight-chamber below the reservoir with the feed-passage connecting them, the drip-cup with central flaring cavity located below the feed-passage and provided with transverse passages and vertical side grooves as described with means for regulating the size of the opening leading from the reservoir substantially as described.

657,644. SACK-HOLDER. GEORGE H. CARNEY, Salt Lake City, Utah. Filed June 16, 1900. Serial No. 20,582. (No model.)



Claim.—In a bag-holder, the combination with the hopper having a flared upper end depressed at its front and an exterior bead around its lower end, and means for supporting the hopper; of a plate secured within the hopper at its front and having a bearing, and a hook having its body pivoted within said bearing and in such location that the bill thereof is sprung slightly in passing over the depressed front edge of the hopper, as and for the purpose set forth.

657,645. WASHING-MACHINE. JOHN W. CLAYTON, Atlanta, Ga. Filed Oct. 2, 1899. Serial No. 732,373. (No model.)



Claim.—1: A washing-machine comprising a suds-box, an oscillatory rubber having an upwardly-extending standard, a spring provided near its upper end with the coils 26 and extended into the loop, 25, a lever pivoted at a point intermediate its length to the standard and fulcrumed at its end by fastening the same to the loop of said spring and means connecting the lower end of the spring with the suds-box, substantially as described.

2. A washing-machine comprising a suds-box having a concave bottom, a shaft arranged above said bottom, an oscillatory rubber having short slotted arms which slidably embrace said shaft, a standard fastened to the rubber and extended above the slotted arms, hangers in which said shaft is mounted, a doubled spring having the terminal portions connected respectively to the hangers and provided with the intermediate coils, and a lever-handle attached to the standard and fulcrumed on the spring above the coiled portions thereof, substantially as described.

3. A washing-machine comprising a suds-box having a concaved bottom, a shaft arranged above said bottom, an oscillatory rubber having the short slotted arms fitted slidably on said shaft, a slotted standard fastened to the rubber, slidably embracing the shaft and extended above the slotted arms, pivoted hangers provided at points intermediate of their length with slots for the reception of said shaft, a spring having its terminal portions connected with the hangers and provided with the intermediate coils, and an operating-lever pivoted to the standard and fulcrumed on the spring above the coiled portions thereof, substantially as described.

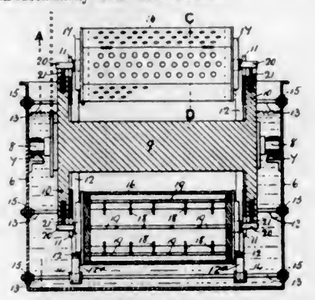
4. A washing-machine comprising a suds-box having a rubbing-surface, an oscillatory rubber, the hangers pivoted to the suds-box and shiftable with the rubber away from the rubbing-surface of said box, a spring pivoted to and shiftable with said hangers and provided near its upper end with the coils which are extended to form the loop, a lever attached to the loop of said spring, a shaft, means for holding the shaft on the suds-box, and a standard attached at its respective ends to the rubber and to the lever and slidably embracing the shaft at a point intermediate of its length, substantially as described.

5. In a washing-machine, the combination with the suds-box, and an oscillating rubber mounted therein, of a shaft for said rubber detachably mounted on the suds-box, collars on said shaft forming spaced shoulders one of which is cut away at one side, forming an open-sided bearing receiving the shaft between said collars, and a pivoted keeper or button adapted to close the open side of the bearing and to be locked in such position by said collars upon a partial rotation of the shaft, substantially as described.

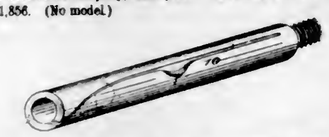
657,646. APPARATUS FOR RECLAIMING TIN AND ZINC FROM TINNED AND ZINC SCRAP. GEORGE B. CRUICKSHANK, Birmingham, HERBERT R. S. COLEMAN, Smethwick, and PERCIVAL CRUICKSHANK, Birmingham, England. Filed May 23, 1900. Serial No. 17,768. (No model.)

Claim.—1. In apparatus for reclaiming tin or zinc from tinned or zinc scrap by the use of a chemical solution and electricity, the combination of the vat 6, having suspended therein the revoluble reel 9, with flanges 10, carried in bearings 7, with the circumferential revoluble perforated anode-drums 16, journaled at 11, such drums and their interiors being connected to the positive pole of a battery or dynamo, and the cathode-plates 22, connected to the negative pole of a battery or dynamo, all substantially as set forth and shown upon the drawings.

2. In apparatus for reclaiming tin or zinc from tinned or zinc scrap, by the use of a chemical solution and electricity the combination of the vat 6, having suspended therein the revoluble reel 9, having flanges 10 carrying perforated drums 16, in bearings 11, pressure-springs 21, said drums having rings 17 metallically and electrically connected to anodes and of the metallic pathway 12, insulated from tank but electrically connected to the positive pole of a battery or dynamo, with the cathode-plates 22, all substantially as set forth and shown.



657,647. TUBE-ROLLING MACHINE. CHARLES L. CURTIS, New York, N. Y., assignor, by mesne assignments, to the Nordlinger-Charlton Fireworks Company, same place. Filed May 27, 1898. Serial No. 681,856. (No model.)



Claim.—1. A tube-forming machine comprising a mandrel having a longitudinal slot open at one end and curved near its open end, and adapted to receive the edge of a strip while rotating, and means for supporting and rotating said mandrel, substantially as described.

2. A tube-forming machine comprising a mandrel having a longitudinal slot open at one end and curved near its open end, a support for said mandrel, and means to cause said mandrel to move longitudinally, to remove the formed body from the same, substantially as described.

3. A tube-forming machine comprising a mandrel having an open hollow end, a longitudinal slot in said mandrel curved near the open end of the mandrel, and adapted to receive the edge of a strip while rotating, and means for supporting and rotating said mandrel, substantially as described.

4. A tube-forming machine comprising a mandrel having a longitudinally-disposed slot that enters the same tangentially and is curved near its open end, the metal of said mandrel having a cut-away portion at the side of said slot that leads into the latter, and means for supporting and rotating said mandrel, substantially as described.

5. A tube-forming machine comprising a mandrel having a bore at one end, a longitudinally-disposed slot that is parallel to said bore at the portion in the rear of said bore and curved at the side of said bore, and means for supporting and rotating said mandrel, substantially as described.

6. A tube-forming machine comprising a mandrel having a hollow end, and a longitudinal slot entering the wall at the hollow end of the mandrel tangential to its inner circumference, and curved along the hollow portion of the mandrel, said slot being adapted to receive the edge of a strip while rotating, and means for supporting and rotating said mandrel, substantially as described.

7. A mandrel for rolling a strip upon itself comprising a bar hollow at one end, and having a longitudinally-disposed slot entering the wall at the hollow end of the bar tangential to its inner circumference and curved along the hollow portion of the mandrel, substantially as described.

8. A mandrel comprising a bar having a longitudinally-disposed slot and a bore at one end, said slot being straight in the rear of said bore and curved at the side of said bore, substantially as described.

9. A mandrel comprising a bar having a longitudinally-disposed slot and a bore at one end, said slot being straight in the rear of said bore and curved at the side of said bore, the metal of said mandrel at one side of said slot being cut away, substantially as described.

10. A tube-forming machine comprising a mandrel adapted to hold a strip while rolling it, a longitudinally-movable rod, means for detachably connecting the rod with the mandrel, means to cause said rod to move longitudinally without stopping its rotation, and means to rotate said rod, substantially as described.

11. A tube-forming machine comprising a mandrel adapted to hold a strip while rolling it, a longitudinally-movable rod adapted to carry the mandrel and having a worm or threads, means to cause said worm or threads to move the rod longitudinally, and means for rotating said rod, substantially as described.

12. A tube-forming machine comprising a mandrel to hold a strip while rolling it, a longitudinally-movable rod adapted to carry the mandrel and having a worm or threads, a toothed wheel meshing with said worm or threads, and means to check the rotation of said wheel, substantially as described.

13. A tube-forming machine comprising a mandrel adapted to hold a strip while rolling it, a longitudinally-movable rod adapted to carry the mandrel and having a worm or threads, a toothed wheel meshing with said worm or threads, and a handle connected with said wheel, whereby it may be independently rotated and its rotation by said worm or threads checked, substantially as described.

14. A tube-forming machine comprising a mandrel adapted to hold a strip while rolling it, a rod adapted to carry said mandrel, a sleeve to receive said rod, means to support and rotate said sleeve, means to lock said sleeve and rod rotatively, and means to cause said rod to move longitudinally by and during its rotation, substantially as described.

15. A tube-forming machine comprising a mandrel adapted to hold a strip while rolling it, a rod adapted to carry said mandrel, a sleeve to receive said rod, means for supporting and rotating said sleeve, means for connecting said sleeve and rod rotatively while permitting said rod to have longitudinal movement within said sleeve, and means for causing said rod to have rotation without longitudinal movement and also to have longitudinal movement without stopping its rotation, substantially as described.

16. A tube-forming machine comprising a mandrel adapted to hold a strip while rolling it, a threaded rod adapted to carry said mandrel, a sleeve adapted to receive said rod, means for supporting and rotating said sleeve, means for causing said rod to rotate without longitudinal movement and to move longitudinally while rotating said rod having one or more longitudinal grooves and one or more feathers carried by said sleeve and located in said groove, whereby said rod may be rotated by said sleeve and may have longitudinal movement within said sleeve, substantially as described.

17. A tube-forming machine comprising a mandrel adapted to hold a strip while rolling it, a threaded rod adapted to carry said mandrel, a sleeve adapted to receive said rod, means for supporting and rotating said sleeve, said sleeve having one or more slots, said rod having one or more grooves alined with said slots, one or more feathers located in the slot or slots of said sleeve and entering the groove or grooves of said rod, and means for causing the latter to rotate without longitudinal movement and also to move longitudinally while rotating, substantially as described.

18. A tube-forming machine comprising a mandrel adapted to hold a strip while rolling it, a rod adapted to carry said mandrel, a sleeve adapted to receive and rotate said rod, a pulley journaled to rotate around said sleeve, a clutch to connect said pulley and sleeve, and means to cause said rod to move longitudinally within the sleeve, substantially as described.

19. A tube-forming machine comprising a mandrel adapted to hold a strip while rolling it, a rod adapted to carry said mandrel, a sleeve to receive and rotate said rod, means for supporting said sleeve rotatively, a pulley adapted to rotate around said sleeve, said pulley having a stud or projection, a sleeve or collar keyed upon the first-mentioned sleeve, and carrying a stud or projection to engage the stud or projection of the pulley, means for shifting said sleeve or collar, and means for causing said rod to move longitudinally within the sleeve, substantially as described.

20. A tube-forming machine comprising a mandrel adapted to hold a strip while rolling it, a rod adapted to carry said mandrel, a sleeve to receive and rotate said rod, means for supporting and rotating said sleeve, a guide carried at the end of said sleeve adapted to permit the passage of said mandrel, and in position to receive the end of the body that is rolled on the mandrel and means for causing said rod to move longitudinally, substantially as described.

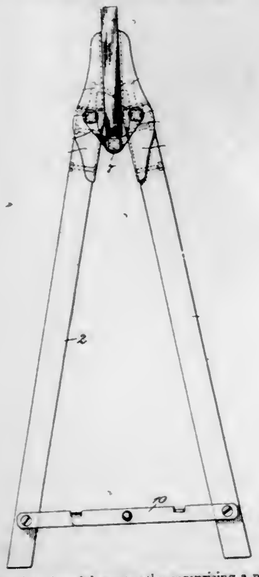
21. A tube-forming machine comprising a mandrel, a rod adapted to carry the mandrel, a sleeve to receive said rod, means for supporting and rotating said sleeve, an apertured keeper at the end of said sleeve, a removable bushing at the end of said sleeve to receive and guide the mandrel, and means for causing said rod to move longitudinally, substantially as described.

22. In a tube-forming machine the combination of a bed, a head-stock and tail-stocks, with a sleeve journaled in said head and tail stocks, means for intermittently rotating said sleeve, a rod located in said sleeve and adapted to carry a mandrel, means to rotate the rod by the sleeve and means for causing said rod to move longitudinally, substantially as described.

657,648. KNOCKDOWN TRESTLE. LEWIS W. DAVIDSON, New York, N. Y. Filed July 17, 1900. Serial No. 23,867. (No model.)

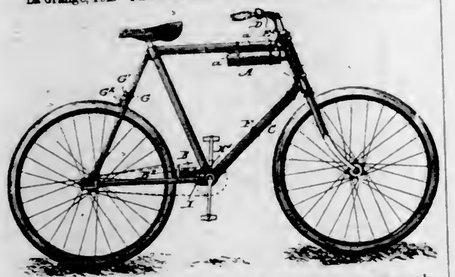
Claim.—1. A support for knockdown trestles comprising a pair of spreading legs, links pivoted to said legs and to each other, the joint ends of said links being rounded out in formation of an enlargement, and jaws upon the ends of said legs, substantially as described.

2. A support for knockdown trestles comprising a pair of spreading legs, jaws at the meeting ends of said legs, a plank adapted to be held by said jaws, links pivoted to said jaws and to each other, the point of junction of said links being beneath said plank and being rounded out into an enlargement for taking the weight of the plank.



3. A support for knockdown trestles comprising a pair of spreading legs, jaws on the meeting ends of said legs, pivoted links for joining said legs and beaks pivotally supported at the meeting ends of said legs, said beaks being adapted to be driven into any body placed between said jaws for fastening the same.

657,649. VEHICLE AIR-BRAKE. WILLIAM J. DONALDSON, JR., La Grange, Tex. Filed Oct. 11, 1897. Serial No. 654,915. (No model.)



Claim.—1. In a brake substantially as described an operating-valve, provided with an air-passage to and from the cylinder, and the vent-passage to atmosphere, a single and a two way valve-plug in said casing, and having its ports or ways arranged to be turned into register with the passage and vent and means whereby said valve-plugs may be turned, including segment-levers and springs E^3 and E^4, to control the air-passage, substantially as shown and described.

2. In a brake substantially as described, the combination with the bicycle or vehicle frame, of the brake-shoe piston and cylinder, the frame for supporting said cylinder having upper and lower plates and bolts connecting the same, and clamping them to the bicycle or vehicle frame, and a bracket traveling with the piston whereby to prevent the sagging of the brake-shoe, and piston-rod by the friction of the wheel, substantially as described.

3. The combination of the brake-shoe cylinder a support therefor an abutment and an adjustable back-stop for cylinder consisting of a set-screw bearing between the cylinder and the abutment, substantially as described.

4. In an air-brake, an operating-valve comprising the casing having the air-passage and vent, the plugs turning in said casing and controlling said passage and vent, and the buttons having rack-segments geared with and adapted to operate the plugs substantially as described.

5. The improvement herein described consisting of the air-receptacle, and the brake-cylinder, pipes or tubes for conducting the air and the operating-valve having a casing, an air-passage and a vent, the plugs controlling the said passage and vent and the buttons or levers, and the traveling piston-bracket for preventing the downward motion of the brake-shoe and the piston-rod substantially as described.

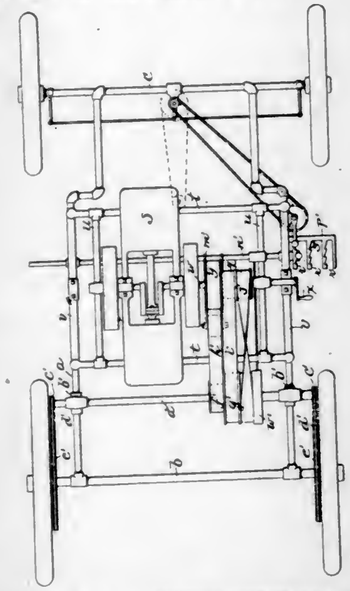
6. In a brake apparatus substantially as described, the combination of the brake-shoe, the cylinder, piston and piston-rod for operating the same, supports for said cylinder, a bracket traveling with the piston-rod whereby to prevent the depression of the shoe and rod by the friction of the wheel and supports on which the said bracket travels substantially as set forth.

7. In a brake apparatus an operating-valve comprising a casing having the air-passage and vent, the independent valves controlling said passage and vent, means for positively operating said valves independently, and the brake-shoe, pressure-reservoir and connecting devices substantially as set forth.

8. In an apparatus substantially as described, the operating-valve comprising the casing having the air-passage and vent, the plug-valves controlling said passage and vent, and the levers operating side by side and meshed with their respective plug-valves substantially as set forth.

9. In an apparatus substantially as described, the combination of the pressure-reservoir, the brake-shoe and its operating means, the pipe connections between the reservoir and the brake-operating devices, the controlling-valves, a vent-valve between the brake-shoe-operating devices and the controlling-valve, and means for positively operating said valves independently.

657,650. AUTOMOBILE VEHICLE. LEONARD H. DYER, Washington, D. C., assignor of one-fourth to Frank L. Dyer, Montclair, N. J. Filed June 8, 1898. Serial No. 682,939. (No model.)



Claim.—1. In an automobile vehicle a transmission-gearing therefor, the combination with the driving-shaft having two or more fast pulleys thereon, the driven shaft having two or more corresponding fast pulleys thereon, two or more endless slack belts connecting the pulleys of the two shafts, and a single independent jockey-pulley, and means for engaging the said jockey-pulley with any of said belts, substantially as set forth.

2. In an automobile vehicle a transmission-gearing therefor, the combination with the driving-shaft having two or more fast pulleys thereon, a driven shaft having two or more fast pulleys, two or more endless slack belts connecting the two shafts, a rock-shaft carrying a single jockey-pulley, and means for moving the said jockey-pulley so as to cause it to engage with any of said belts, substantially as set forth.

3. In an automobile vehicle a transmission-gearing therefor, the combination with the driving-shaft having two or more fast pulleys thereon, a driven shaft having two or more fast pulleys, two or more endless slack belts connecting the two shafts, a rock-shaft carrying a single jockey-pulley, capable of lateral motion, and means for applying said pulley and for moving it laterally so that it may engage with any of said belts, substantially as set forth.

4. In an automobile vehicle a transmission-gearing therefor, the combination with the driving-shaft having two or more fast pulleys thereon, a driven shaft having two or more fast pulleys, two or more endless slack belts connecting the two shafts, a rock-shaft, a jockey-pulley mounted thereon, the said jockey-pulley being capable of lateral movement, an operating-lever, and a register-plate having a series of notches or slips for guiding said lever, whereby the said jockey-pulley will be caused to register with any of the belts, substantially as set forth.

5. In an automobile vehicle a transmission-gearing therefor, the combination with the driving-shaft having two or more fast pulleys thereon, a driven shaft having two or more fast pulleys, two or more endless slack belts connecting the two shafts, a rock-shaft carrying a single jockey-pulley thereon capable of lateral movement, an operating-lever for applying said jockey-pulley, and a brake connecting with said driven shaft and operated by a reverse movement of said lever, substantially as set forth.

6. In an automobile vehicle, the driving and steering wheels therefor, a driving-motor therefor having a shaft, a series of tight pulleys on said shaft, a counter-shaft arranged parallel to the said driving-shaft, one or more loose endless belts connecting the said pulleys, a single jockey-pulley, a lever for applying said jockey-pulley to said belts, and connections with the said lever and the steering-wheels of the carriage, substantially as set forth.

7. In an automobile vehicle a transmission-gearing therefor, the combination with the supporting-wheels, a driving engine or motor, the shaft thereof having two or more fast pulleys thereon, a driven shaft having two or more fast pulleys, connections between said driven shaft and supporting-wheels, two or more endless slack belts connecting the two shafts, a rock-shaft carrying a single jockey-pulley, and means for moving the said jockey-pulley so as to cause it to engage with any of said belts, substantially as set forth.

8. In an automobile vehicle a transmission-gearing therefor, the combination with the driving-shaft having two or more fast pulleys thereon, a driven shaft having two or more corresponding fast pulleys thereon, two or more endless slack belts connecting the pulleys of the two shafts, a single independent jockey-pulley, a supporting-shaft therefor, an operating-handle, and a series of fixed guides engaging with said operating-handle for engaging the said jockey-pulley with any of said belts, substantially as set forth.

9. In an automobile vehicle a transmission-gearing therefor, the operating-handle o' therefor, the fixed guide-plate p' having recesses r', r' therein, substantially as set forth.

10. In an automobile vehicle, a transmission-gearing therefor, the operating-handle o' therefor, a fixed guide-plate p', having recesses r' and notches s' therein, substantially as set forth.

11. In an automobile vehicle, the supporting-wheels therefor, a frame connecting said wheels, a driving engine or motor elastically supported upon said frame, an engine-shaft, two or more fast pulleys thereon, a counter-shaft having two or more fast pulleys thereon, connections between said counter-shaft and wheels, two or more endless slack belts connecting the pulleys of the two shafts, a single independent jockey-pulley, means for engaging the said jockey-pulley with any of said belts, and a body elastically supported upon said frame independently of the motor.

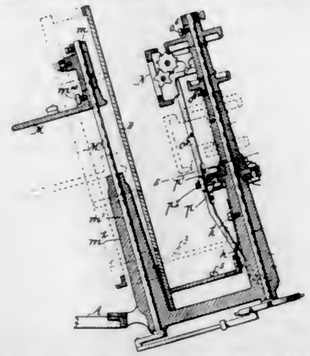
12. In an automobile vehicle, the supporting-wheels therefor, a frame connecting said wheels, a secondary frame elastically supported upon said primary frame, a driving engine or motor carried by said secondary frame, an engine, two or more fast pulleys thereon, a counter-shaft having two or more fast pulleys thereon, connections between said counter-shaft and wheels, two or more endless slack belts connecting the pulleys of the two shafts, a single independent jockey-pulley, means for engaging the said jockey-pulley with any of said belts and a body elastically supported on said primary frame independently of the secondary frame.

13. In an automobile vehicle, the supporting-wheels therefor, a frame connecting said wheels, a driving engine or motor elastically supported upon said frame, an engine, two or more fast pulleys thereon, a counter-shaft having two or more fast pulleys thereon, connections between said counter-shaft and wheels, two or more endless slack belts connecting the pulleys of the two shafts, a single independent jockey-pulley, a supporting-shaft therefor, an operating-handle, a series of fixed guides engaging with said operating-handle for engaging said jockey-pulley with any of said belts and a body elastically supported on said frame independently of the motor.

14. In an automobile vehicle, the supporting-wheels therefor, a frame connecting said wheels, a driving engine or motor elastically supported upon said frame, an engine, two or more fast pulleys thereon, a counter-shaft having two or more fast pulleys thereon, connections between said counter-shaft and wheels, two or more endless slack belts connecting the pulleys of the two shafts, a rock-shaft carrying a single jockey-pulley, means for moving the said jockey-pulley so as to cause it to engage with any of said belts and a body elastically supported upon said frame independently of the motor.

15. In an automobile vehicle, the supporting-wheels therefor, a counter-shaft connected therewith and carrying two or more fast pulleys thereon, a driving engine or motor elastically supported upon said wheels, the driving-shaft of said motor carrying two or more fast pulleys, two or more endless slack belts connecting the pulleys of the two shafts, a single independent jockey-pulley, means for engaging the said jockey-pulley with any of said belts and a body elastically supported upon said wheels independently of the motor.

657,651. CORN-HARVESTER. GEORGE A. FARRALL and CHRISTIAN MAUL, Batavia, N. Y., assignors to the Johnston Harvester Company, same place. Filed June 11, 1900. Serial No. 19,849. (No model.)



Claim.—1. The combination with the platform and the binder-deck, the conveyer-belt provided with folding teeth and a rock-shaft, of a tooth-guide which consists of a plate forming two bars arranged lengthwise on opposite sides of the conveyer-belt, a cross-piece connecting the bars near their rear ends, a cross-piece connecting the bars at their front ends, and a shaft-socket at the front end, substantially as set forth.

2. The combination with the platform and the binder-deck, the oscillating needle, a conveyer-belt provided with folding teeth, a tooth-guide which is movable toward and from the deck, and a rock-shaft having a shifting-arm for said guide, of a connecting-bar which is connected at one end with the needle and an actuating-arm which is secured to said rock-shaft and has a sliding connection with said bar and is provided with a bearing-shoulder adapted to engage with the end of said bar and with a bearing-face extending laterally from said shoulder and adapted to bear against the side of said bar, substantially as set forth.

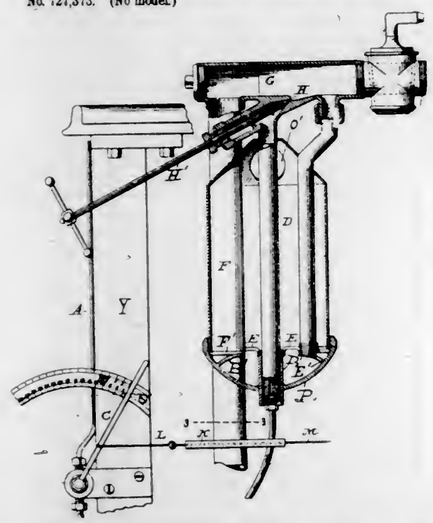
3. The combination with the knotter-shaft and the knotter mechanism which is capable of vertical adjustment on the same, of a main frame provided with a standard in which the knotter-shaft is journaled and which is composed of a lower section, secured to the main frame, and an upper section which is detachably secured to the lower section, said upper section forming a rigid extension of the lower section when in place and supporting the knotter-shaft near the knotter mechanism when the latter is in its highest position, while said upper section can be removed when the knotter mechanism is to be placed in a lower position, substantially as set forth.

4. The combination with the knotter-shaft and the knotter mechanism which is capable of vertical adjustment on the same, of a main frame provided with a standard in which the knotter-shaft is journaled and which is composed of a lower section, secured to the main frame, and an upper section which is detachably secured to the lower section, a brace attached at its lower end to the main frame, an arm connecting the upper end of the lower standard-section with said brace, and a breast-plate capable of vertical adjustment on the upper portion of said brace, substantially as set forth.

5. The combination with the binder-deck, and the stalk-conveyer, of an upright needle-shaft arranged on the under side of the deck and journaled in a stationary bearing, a binder-needle mounted on said shaft and adjustable lengthwise thereon, an upright knotter-shaft facing the binder-deck, a knotter mechanism mounted on the knotter-shaft and adjustable lengthwise thereon, a standard in which the knotter-shaft is journaled and which consists of a stationary lower section and a removable

upper section, a retaining-boss arranged on the upper end of the lower standard-section and engaging with a recess in the lower end of the upper standard-section, and clamping-bolts passing through ears on the opposing ends of said standard-sections, substantially as set forth.

657,652. CARBURETER. CHARLES FORTH, Elizabeth, N. J., assignor to E. P. Reichhelm, Bayonne, N. J. Filed Aug. 16, 1899. Serial No. 727,373. (No model.)



Claim.—1. The combination of the closed mixing-chamber provided with a suitable outlet, a vaporizing-chamber connected therewith, and a blast-pipe also connected therewith, in such manner that the force of the blast continuously causes its admixture with the vapor, and the carriage of the mixed vapor to the several places of combustion, together with suitable means for heating the air in the blast-pipe and producing the vapor in the vaporizing-chamber.

2. The combination of the closed mixing-chamber provided with a suitable outlet, a vaporizing-chamber connected therewith, and a blast-pipe also connected therewith, in such manner that the force of the blast continuously causes its admixture with the vapor, and the carriage of the mixed vapor to the several places of combustion, suitable means for controlling the force of the blast and the supply of vapor so that they may be mixed in the proper and desired proportions, together with suitable means for heating the air in the blast-pipe and producing the vapor in the vaporizing-chamber.

3. The combination of the closed mixing-chamber provided with a suitable outlet, a vaporizing-chamber connected therewith, a blast-pipe also connected therewith, a burner arranged to heat the air in the blast-pipe and to produce the vapor in the vaporizing-chamber, and a connection from the mixing-chamber to the burner, which connection is also subjected to the heat from the burner, the whole arranged so that the force of the blast continuously causes the injection of the vapor, the admixture of the vapor with the blast, and the division of the mixed vapor into two parts, a portion of which is forced under blast to the several places of combustion, and the remaining portion to the heating and vaporizing burner.

4. In an apparatus for producing combustible vapors, the closed mixing-chamber provided with a suitable outlet, and a heating or vaporizing chamber connected therewith, the said mixing-chamber being provided with two inlets, through one of which when desired a blast may be admitted to the mixing-chamber, and through the other of which air under the ordinary atmospheric pressure may be admitted when the blast is discontinued.

5. In an apparatus for continuously producing combustible vapors, the combination of the closed mixing-chambers provided with a suitable outlet, a vaporizing-chamber connected therewith, a blast-pipe also connected therewith, means to supply the fluid to the vaporizing-chamber, and suitable valves for controlling respectively the supply of fluid to the vaporizing-chamber, and the intensity of the blast to the mixing-chamber, the said valves being connected in such manner that they may be controlled simultaneously, together with suitable means for heating the air in the blast-pipe and producing the vapor in the vaporizing-chamber.

6. In an apparatus for continuously producing combustible vapors, the combination of the closed mixing-chamber provided with a suitable outlet, a vaporizing-chamber connected therewith, means to supply the fluid to the vaporizing-chamber, a blast-pipe connected to the mixing-chamber, a burner to heat the air in the blast-pipe and to produce the vapor in the vaporizing-chamber, means for supplying vapor from the mixing-chamber to the burner, which means are also subjected to the heat from the burner, together with valves suitably connected so that their simultaneous operation controls the supply of fluid to the vaporizing-chamber, the intensity of the blast to the mixing-chamber, and the supply of vapor to the burner.

7. In an apparatus for producing combustible vapors, the combination with the exterior casing of the generator, and the burner contained therein, of the blast-pipe, and the pipe designed to supply vapor to the burner, both of the said pipes passing through the generator-casing and being thereby subjected to the heat from the burner together with means for supplying vapor to the generator.

8. In an apparatus for producing combustible vapors, the combination with the exterior casing of the generator, and the burner contained therein, of a blast-pipe, and the vaporizing-chamber, both of which are contained within the generator-casing and are thereby subjected to the heat from the burner.

9. In an apparatus for producing combustible vapors, the combination of the blast-pipe and the vaporizing-chamber, with a single burner arranged to heat the air in the blast-pipe and to produce the vapor in the vaporizing-chamber.

657,653. PLOW. EDWARD FOWLER, Cedar Grove, Ga., assignor of one-half to Thomas B. Simmons and Jesse L. Simmons, same place. Filed Feb. 7, 1900. Serial No. 4,417. (No model.)



Claim.—1. In a plow, an adjustable landside carrying a shin-board having a broad concaved working face.

2. In a plow, an adjustable landside, a shin-board having a broad concaved working face secured to said landside, and an adjustable point in combination with the concaved disk.

3. In a plow, the combination with the landside of a shin-board of the character described, extending beyond the vertical plane of the landside.

4. In a plow, the combination with the landside of a rod or arm secured to the vertical standard, of the plow, a bearing on the rear end of said rod having an inclined face, a drawing-in disk journaled in said bearing and on the inclined face, the periphery of said disk extending beyond the vertical plane of the landside.

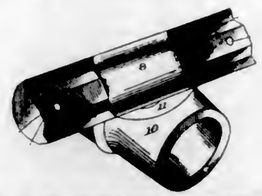
5. In a plow, the combination with the landside of a rod or arm secured to the vertical standard, of the plow, a bearing on the rear end of said rod having an inclined face, a drawing-in disk journaled in said bearing and on the inclined face, the periphery of said disk extending beyond the vertical plane of the landside, and a rearwardly-extending lug integral with said bearing and a scraper bearing against the inner working face of the drawing-in disk.

6. In a plow, the combination with the concaved plow-disk of a shin-board, and a rearwardly-extending point integral with said board forming a shoulder at their juncture against which the periphery of the concaved disk works.

7. In a plow, the combination with the landside of a concaved plow-disk, a shin-board projecting beyond the vertical plane of the landside and a rearwardly-extending point integral with said shin-board forming a shoulder at its juncture, with said board, against which the said disk works.

657,654. PLOW. EDWARD FOWLER, Cedar Grove, Ga., assignor of one-half to Thomas B. Simmons and Jesse L. Simmons, same place. Filed Feb. 7, 1900. Serial No. 4,418. (No model.)

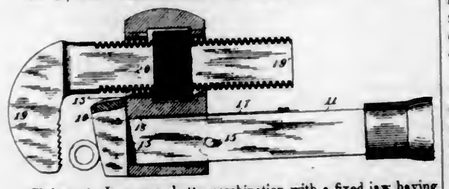
Claim.—1. In a plow of the character described, the combination with the standard of a plate having grooves extending lengthwise, a journal-bearing secured to said plate, and a V-shaped groove formed in the outside of said bearing as a continuation of one of the grooves on said plate.



2. In a plow of the character described, the combination with the standard of a plate adjustably secured on the same, a journal-bearing secured on said plate tapering from end to end, a groove increasing in depth from end to end formed around the larger end of said bearing and a journal carrying a disk.

3. In a plow of the character described, the combination with the standard of a plate adjustable on said standard, grooves extending lengthwise of said plate, a journal-bearing secured to said plate, a V-shaped groove formed in the outside of said bearing as a continuation of one of the grooves on said plate and a groove increasing in depth from end to end formed around one end of the journal-bearing, and a journal carrying a disk.

657,655. WRENCH. RANDOLPH HAYDEN, Haddam, Conn. Filed Jan. 15, 1900. Serial No. 1,436. (No model.)



Claim.—1. In a wrench, the combination, with a fixed jaw having a shoulder, of a strap having a rocking movement on said shoulder, and a movable jaw carried by, and having a rocking movement on, the strap.

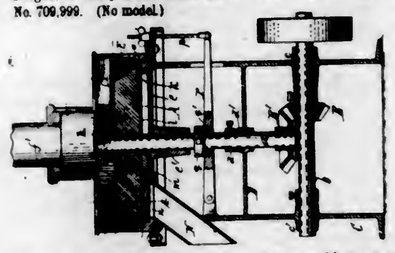
2. In a wrench, the combination, with a fixed jaw having a shoulder, and a movable jaw, of a strap for retaining the movable jaw and having a rocking movement on said shoulder, such movement being limited thereby, and means for holding the strap against said shoulder.

3. In a wrench, the combination, with a fixed jaw having a shoulder, of a strap having a rocking movement on said shoulder; a movable jaw carried by said strap and having a rocking movement thereon; and a pin carried by the fixed jaw and engaging said strap for holding the same against the shoulder.

4. In a wrench, the combination, with a fixed jaw, of a strap having a rocking movement thereon, and a movable jaw carried by the strap and having a rocking movement on the strap.

5. In a wrench, the combination, with a fixed jaw, of a strap provided with a recess and having a rocking movement on said jaw; a movable jaw; and an adjusting-nut carried thereon and of less thickness than the width of said recess to permit rocking movement of said movable jaw on the strap.

657,656. ATTRITION-MILL. AUGUST HEIER, Silver Creek, N. Y., assignor to Mary L. Allen, same place. Filed Mar. 21, 1899. Serial No. 709,999. (No model.)



Claim.—1. In an attrition-mill, the combination with a rotary horizontal disk having a working top face and a working peripheral face, of a casing which surrounds the peripheral face of the disk and extends inwardly over the top face thereof and which has a feed-opening above the top of the disk and a constricted annular discharge-passage around the disk and below the peripheral face thereof, whereby the escape of the material is retarded by the constricted discharge-passage and the material is subjected to attrition in passing outwardly between the casing and the top of the disk and in passing downwardly between the casing and the peripheral face of the disk, substantially as set forth.

2. In an attrition-mill, the combination with a rotary horizontal disk having a working top face and a working peripheral face, of a casing which surrounds the peripheral face of the disk and extends inwardly over the top face thereof and which has a feed-opening above the top of the disk and a constricted discharge-passage below the peripheral face of the disk, and rubbing-wings arranged in said casing above the disk and approaching the same in the direction of its rotation, substantially as set forth.

3. In an attrition-mill, the combination with a rotary horizontal disk having a working top face and an outwardly-inclined peripheral working face, of a casing which surrounds said peripheral face and forms therewith a downwardly-converging space leading to a constricted discharge-passage below the peripheral face, said casing extending inwardly over the top face of the disk and having a feed-opening above the same, substantially as set forth.

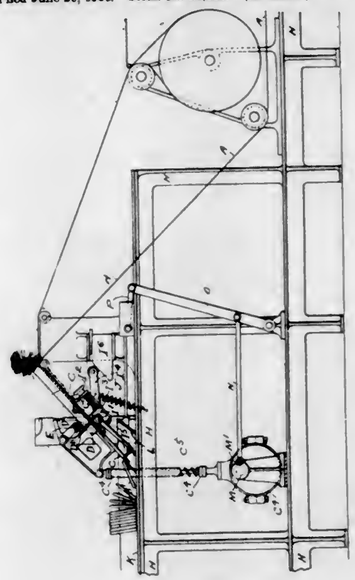
4. In an attrition-mill, the combination with a rotary horizontal disk having a working top face and an outwardly-inclined peripheral working face, of a casing which surrounds said peripheral face and forms therewith a downwardly-converging space leading to a constricted discharge-passage below the peripheral face, said casing extending inwardly over the top face of the disk and having a feed-opening above the same, and deflecting-wings arranged in said casing above the disk and deflecting the material into said downwardly-converging space, substantially as set forth.

5. In an attrition-mill, the combination with a rotary horizontal disk having a working top face and a peripheral working face, of a casing which surrounds said peripheral face and which extends inwardly over said top face and also inwardly along the under side of the disk below the peripheral face thereof, forming an inwardly-opening constricted peripheral discharge-passage below the disk, substantially as set forth.

6. The combination with a rotary disk having an outwardly-inclined upper peripheral face and an inwardly-inclined lower peripheral face, of a surrounding casing having a feed-opening above said disk and having an inwardly-inclined internal shoulder below the lower peripheral face of the disk, forming therewith an inwardly-inclined annular discharge-passage, substantially as set forth.

7. The combination with a rotary disk, having an upper, outwardly-inclined, peripheral face and a lower inwardly-extending face, of a surrounding casing having a feed-opening above said disk and having an internal shoulder below the lower face of the disk, forming therewith a discharge-opening, and rubbing-wings arranged in said casing above said disk and inclined in the direction of the rotation of the disk, substantially as set forth.

657,657. APPARATUS FOR FEEDING OR DELIVERING BISCUITS FOR PACKING. GEORGE HERBERT, Jr., Glasgow, Scotland. Filed June 26, 1900. Serial No. 21,602. (No model.)



Claim.—1. Apparatus for feeding or delivering biscuits for packing, consisting of the combination with a traveling band onto which the biscuits are laid, of an inclined table, a series of chutes on said table formed by adjustable side rails down which the biscuits travel, movable catches in said rails adapted to alternately retain and release the biscuits in the chute, movable pins adapted to catch the released biscuits and afterward to allow them to pass, stationary troughs for receiving the delivered biscuits and pistons normally situated behind the table and moving forward to push the delivered biscuits in an approximately-upright position along said trough, substantially as described.

2. In apparatus for feeding or delivering biscuits for packing, the combination with an inclined table having a series of chutes formed by side rails on it, of movable catches in the side rails, bell-crank levers carrying between them a bar for opening these catches, cams or stops for operating the bell-crank levers, pins for retaining the biscuits released from the chutes by the catches, said pins being actuated by inclined blocks or cams, and a movable piston for raising the biscuits into an approximately-upright position, said piston being operated by a crank through connecting-rods and levers, substantially as described.

657,658. LUNG TESTER AND DEVELOPER. ISRAEL HOGELAND, Chicago, Ill., assignor to Emilie C. Hall, South Haven, Mich. Filed Nov. 18, 1899. Serial No. 737,393. (No model.)



Claim.—1. In a lung-developing device, the combination of a cylindrical tube provided with a longitudinal slot; a screw-threaded shaft rotatably mounted axially of said tube; fan-blades fixed on said shaft; and an index-finger having a screw-thread connection with said shaft, and movable in said longitudinal slot.

2. In a lung-developing device, the combination of a cylindrical tube provided with a longitudinal slot; a perforated cap for one end of said tube; a screw-threaded shaft rotatably mounted axially of said tube; fan-blades fixed on said shaft adjacent to said cap; and an index-finger mounted upon said shaft, and having a screw-thread connection therewith, which finger is movable in said longitudinal slot.

3. In a lung-developing device, the combination of a cylindrical tube provided with a longitudinal slot, and having an index at the side of said slot; a perforated cap for one end of said tube; a screw-threaded shaft rotatably mounted axially of said tube; fan-blades fixed on said shaft within said tube adjacent to said perforated cap; and an index-finger mounted upon said shaft, and having a screw-thread connection therewith, and adapted to register upon said index.

4. In a lung-developing device, the combination of a tube provided with a longitudinal opening, perforated caps, one secured to each end of said tube, a threaded rod pivoted in said perforated caps, flared blades secured to said rod, and a threaded nut upon said rod carrying an index movable in the longitudinal opening.

5. In a lung-developing device, the combination of the tube having a longitudinal opening therein, a threaded shaft pivoted axially in said tube, propeller-blades on said shaft near each end thereof, and an index-finger engaging the threads upon said shaft and passing through the opening.

657,659. SECONDARY BATTERY. AUGUSTUS JAMIESON, Elizabeth, N. J., assignor of three-fifths to Sydney H. Carney, Henry R. Knox, and William Watt, New York, N. Y. Filed Nov. 18, 1897. Serial No. 658,896. (No model.)



Claim.—The process of producing electrodes for electric accumulators which consists in applying a plastic mixture consisting of lead carbonate and water only to a supporting-plate then drying, and with a suitable electrode, treating the same, as a cathode by an electric current in a solution of carbonate of soda, whereby the carbonic acid is eliminated and a spongy but non-disintegrating metallic lead is produced ready for use without compressing.

657,660. FLOATING SECTIONAL DRY DOCK. WALTER JAMIESON, New York, N. Y. Filed Dec. 26, 1899. Serial No. 741,640. (No model.)

Claim.—1. The combination, with a floating dry-dock section formed of a closed approximately U-shaped body provided with keel-blocks on its inner wall, of an apron attached to the end wall of said body and extending beyond the edge of the inner wall of the same to a point approximately on a level with the keel-blocks of said body, substantially as set forth.



2. The combination, with a floating dry-dock section formed of a closed approximately U-shaped body, of an apron attached at its outer portion to the end wall of said body and extending beyond the inner wall of the same, said apron being formed of two superposed layers of planks, straps connecting the inner ends of said layers with each other, and straps for connecting the outer ends of said layers with each other, substantially as set forth.

3. The combination, with a floating dry-dock section formed of a closed approximately U-shaped body, of an apron applied to the end wall of the same and extending beyond the inner wall of said section, said apron being composed of two superposed layers of planks attached to the end wall and connected at their inner ends and outer ends by suitable connecting-straps, the inner layer of planks being provided at their curved portions with wedge-shaped filling-pieces, substantially as set forth.

4. The combination, with a floating dry-dock section formed of a closed approximately U-shaped body, of an apron attached to and projecting beyond the inner wall of the same, said apron being formed of a middle or keel portion and side portions hinged to the ends of the keel portion, means for strapping the side portions to the hull, and means for suspending the hinged side portions either in outward or inward position, substantially as set forth.

5. The combination, with a floating dry-dock section, formed of a closed approximately U-shaped body, of an apron, attached to the end wall of the section and composed of two superposed layers of planks, one of said layers being provided with a hose packing at its inner edge, substantially as set forth.

6. The combination, with a floating dry-dock section formed of a closed body of approximately U shape, of a plated bulkhead attached to one end wall of the same, and an apron, attached to said bulkhead and projecting over the inner edge of said bulkhead and section, substantially as set forth.

7. The combination, with a floating dry-dock section formed of a closed body of approximately U shape, of an apron attached to one end wall of the same, and a hose packing attached to the outer face of the opposite end wall of the same, substantially as set forth.

8. The combination, with a floating dry-dock section formed of a closed body of approximately U shape, of a plated bulkhead attached to one end wall of said section, an apron attached to said bulkhead and a hose packing attached to the opposite end wall of the section, substantially as set forth.

9. The combination, with a floating dry-dock section formed of a closed approximately U-shaped body, of an apron formed of a double layer of superposed planks and composed of a middle or keel portion and hinged side portions, hoisting-ropes for securing said side sections in inwardly-raised or outwardly-opened position, sheave-blocks on the adjacent ends of said keel and side portions and blocks on the top of the section for attaching said hoisting-ropes, substantially as set forth.

10. A floating dry-dock section provided on one end wall with a hose packing composed of a grooved plank, angle-irons attached to the end wall for supporting said plank, and an inflatable hose packing retained in the groove of the planks, substantially as set forth.

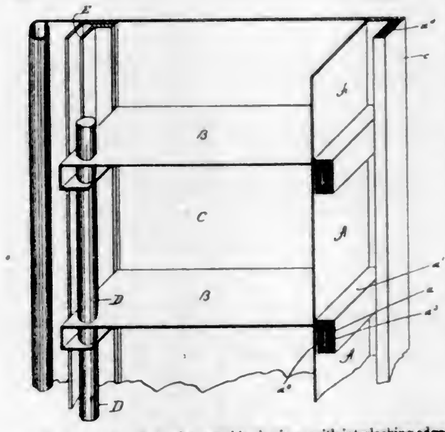
657,661. STORAGE OR SHOW CASE. WILLIAM R. KINNEAR, Columbus, Ohio, assignor to the Kinnear Manufacturing Company, same place. Filed Dec. 6, 1899. Serial No. 739,413. (No model.)

Claim.—1. In a storage-case, metal back pieces formed with edges to interlock with each other and with tongues at their ends, and continuous side pieces formed with a groove to receive the tongues of the back pieces.

2. In a storage-case, metal back pieces formed with edges to interlock with each other and with tongues at their ends, continuous side pieces formed with a groove to receive the tongues of the back pieces, and shelves interlocking with the back pieces.

3. In a storage-case, metal back pieces formed with edges to interlock with each other and with tongues at their ends, continuous side pieces formed with a groove to receive the tongues of the back pieces, and shelves secured to the sides.

4. A storage-case having metal back pieces with interlocking edges, and metallic shelves interlocking with the interlocking edges of the back pieces.



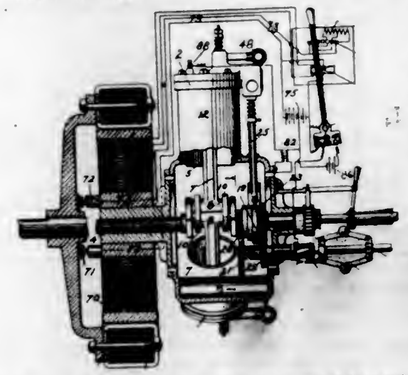
5. A storage-case having metal back pieces with interlocking edges, metallic shelves interlocking with the interlocking edges of the back pieces, and metallic sides interlocking with the ends of the back pieces.

6. A storage-case having a metal back piece, shelves formed to interlock with the back piece, and sides interlocking with the edges of the back piece.

7. In a storage-case of the kind described, metal shelves, an opening b^4 therein and a bent flange b^4, an opening b^5 in the horizontal part of said flange, and stay-posts D constructed to engage each other through said openings, substantially as set forth.

8. In a storage-case of the kind described, metal shelves formed with an interlocking tongue b and channel b', an opening b^4 therein and a bent flange b^4, an opening b^5 in the horizontal part of said flange, and stay-posts D constructed to engage each other through said openings, substantially as set forth.

657,662. CONTROLLING MEANS FOR EXPLOSIVE-ENGINES. FREDERICK A. LA ROCHE, New York, N. Y. Filed Mar. 14, 1900. Serial No. 8,617. (No model.)



Claim.—1. In a gas-engine, in which the torque of the rotating power-shaft varies according to an inverse ratio of the speed, the combination therewith, of ignition mechanism, and means controlled by the speed of the engine, whereby the ignition is automatically timed in such a manner as to automatically compensate for the loss of torque, due to increase of speed of said power-shaft, substantially as described.

2. In a gas-engine, in which the torque of the rotating power-shaft varies according to an inverse ratio of the speed, the combination therewith of ignition mechanism, and means controlled by the speed of the engine, whereby the ignition is automatically timed in such a manner as to automatically compensate for the loss of torque due to increase of speed of said power-shaft, and a fuel-feed mechanism driven by the engine for operating the same, and a hand controlling means for said driving mechanism for controlling the torque, substantially as described.

3. In a gas-engine, in which the torque of the rotating power-shaft varies according to an inverse ratio of the speed, the combination therewith of ignition mechanism, and means controlled by the speed of the engine, whereby the ignition is automatically timed in such a manner as to automatically compensate for the loss of torque due to increase of speed of said power-shaft, and a fuel-feed mechanism driven by the engine for operating the same and a hand controlling means for said driving mechanism for controlling the torque, and means controlled by the excess supply of said fuel for regulating the fuel-feed, substantially as described.

4. In a gas-engine, the combination with the rotary power-shaft thereof, of a fuel-feed mechanism, driven by the engine for operating the same; hand controlling means for said driving mechanism, and means controlled by the excess supply of said fuel for regulating the feed thereof, whereby the torque is controlled and regulated according to the variations in speed of said shaft, substantially as described.

5. In a gas-engine, having a carbureter adapted to convert liquid fuel for said engine into a gas, the combination of the valve or valves, adapted to admit said fuel to the carbureter, and means operated by said engine for carbureting the supply of fuel, which is adapted to pass through said valves, and of the supplemental controller for shutting off the supply of said liquid, actuated by an excess supply of liquid, when said gas shall have been oversaturated with said liquid fuel, substantially as described.

6. In a gas-engine, having an electrical igniting device, the combination of a stationary contact-making commutator, having the segments thereof diagonally disposed, a rotating brush revolving about said commutator, and a centrifugal governor, operated by said engine and connected to said brush, so as to move over the said stationary commutator, so as to vary time of ignition of the explosive mixture in the cylinder of said engine, substantially as described.

7. In an electric controlling and starting device for gas-engines the combination with suitable igniting-circuits, a storage battery charged by the engine and means for applying the power thereof to the engine-shaft, of a three-directional controlling-lever and connections whereby upon a movement thereof in one direction power is accumulated for starting the engine, by movement in another direction the ignition-circuits are thrown in, and upon movement in an opposite direction to the first movement the power accumulated in the storage battery will be applied to the engine-shaft for starting.

8. In an electric controlling and starting device for gas-engines the combination with suitable igniting-circuits, a storage battery charged by the engine and means for applying the power thereof to the engine-shaft of a controlling-handle capable of rocking about a pivot at right angles to its longitudinal axis and also movable about said longitudinal axis, and connections whereby when the handle is rocked in one direction power is accumulated for starting, when the handle is rocked in the opposite direction the accumulated power is applied to the engine-shaft for starting, and when the handle is moved about its longitudinal axis the ignition-circuits are thrown in or out.

9. In an electric controlling and starting device for gas-engines the combination of a storage battery charged by the engine and means for applying the power thereof to the engine-shaft, of a sparking igniter in circuit with the storage battery, an auxiliary ignition-battery also in circuit with the igniter and storage battery, and a controlling-lever and connections whereby movement thereof in one direction accumulates power for starting the engine-shaft, movement in the opposite direction applies the power accumulated to the engine-shaft, a third movement throws the storage battery onto the igniting-circuit, and a fourth movement throws the auxiliary battery onto the igniting-circuit.

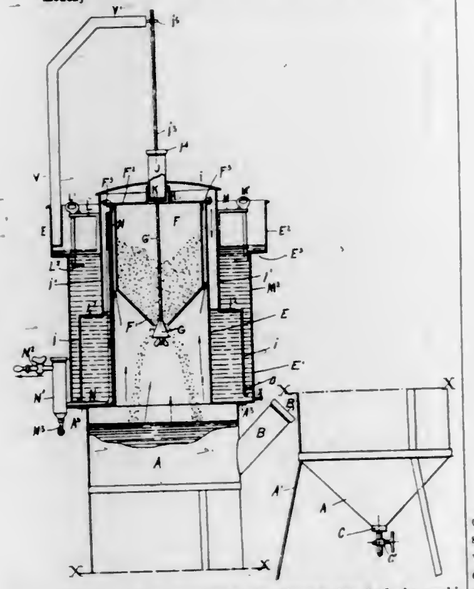
10. In an electric controlling and starting device for gas-engines the combination of a storage battery charged by the engine and means for applying the power thereof to the engine-shaft, of a sparking igniter in circuit with the storage battery, an auxiliary igniting-battery also in circuit with the igniter and storage battery, a controlling-handle capable of rocking about a pivot at right angles to its longitudinal axis and also movable about said longitudinal axis, and connections whereby rocking the handle in one direction accumulates power for starting, rocking it in the opposite direction applies the accumulated power to the engine-shaft, movement in one direction about its axis throws the storage battery onto the igniting-circuit and movement in the opposite direction throws the auxiliary battery onto the igniting-circuit.

11. In a gas-engine the combination with a sparking igniter of a storage battery charged by the engine and an auxiliary igniting-battery, both in circuit with the igniter and a single lever for throwing either the storage-battery current or the auxiliary-battery current onto the igniter at will.

12. In a controller for gas-engines the combination of a storage battery charged by the engine, means for applying the stored charge to the engine-shaft for starting, a variable rheostat, igniting-circuits including a sparking igniter, the storage battery and an auxiliary igniting-battery, a controlling-handle movable over the rheostat and capable of rocking movement in two directions and axial movement in two directions, and connections whereby the rocking movement introduces all the gradations of re-

sistance both in energizing and discharging the storage battery, and the axial movement, according to its direction, throws the storage battery or the auxiliary battery into circuit with the sparker.

657,663. ACETYLENE-GAS GENERATOR. EMMANUEL LARTIGUE, Candéran, France. Filed Apr. 20, 1899. Serial No. 713,732. (No model.)



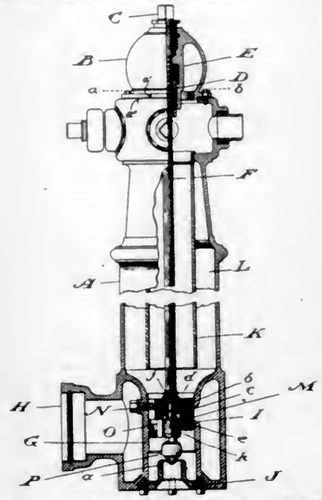
Claim.—1. In an apparatus of the character described, the combination of a water-reservoir, a water-tank supported upon the reservoir, a carbid-receptacle arranged within the said tank and adapted for vertical movement and having a discharge-opening at its lower end, a regulating-bell surrounding the tank and adapted for vertical movement, a valve arranged to close partially or entirely the discharge-opening of the carbid-receptacle, and a connection between the carbid-receptacle and the valve whereby when the said receptacle rises it will cause the valve to first partially close the discharge-passage, then entirely close it and finally cause the said receptacle to rise.

2. In an apparatus of the character described, the combination of a water-reservoir, a water-tank supported upon the reservoir, a carbid-receptacle arranged within the said tank and adapted for vertical movement and having a discharge-opening at its lower end, a regulating-bell surrounding the tank and adapted for vertical movement, a valve arranged to close partially or entirely the discharge-opening of the carbid-receptacle, and a connection between the carbid-receptacle and the valve whereby when the said receptacle rises it will cause the valve to first partially close the discharge-passage, then entirely close it and finally cause the said receptacle to rise, and means for supporting the regulating-bell in raised position with the valve entirely closing the discharge-passage of the carbid-receptacle.

3. In an apparatus of the character described, the combination of a water-reservoir, a water-tank supported thereon, and comprising cylindrical portion E, and cylindrical portions E′ E², and a plate E³ connecting said latter portions, a carbid-receptacle arranged within the tank and adapted for vertical movement and having a discharge-passage at its lower end, a regulating-bell surrounding the tank and adapted for vertical movement, a valve arranged to close partially or entirely the discharge-opening of the carbid-receptacle, a connection between the carbid-receptacle and the valve, adapted to operate the valve in the rising and falling movements of the said bell, and means carried by the bell adapted to engage over and be supported by the plate E³ when the bell has been raised to a point where the valve entirely closes the discharge-passage of the carbid-receptacle and the latter is supported by the said valve.

4. In an apparatus of the character described, the combination of a water-reservoir, a water-tank supported thereon and comprising inner and outer cylindrical portions, a carbid-receptacle arranged within the inner portion of the tank and having a discharge-passage in its lower end, a valve arranged to control said passage, a bell arranged over the carbid-receptacle, a tube-section secured in the top of said bell, a rod secured to the tube-section and passing down within the carbid-receptacle and secured to the valve, and a plug removably closing the upper end of the tube-section.

657,664. HYDRANT. WILLIAM H. LAW, Toronto, Canada. Filed Dec. 16, 1899. Serial No. 740,598. (No model.)



Claim.—1. In a hydrant, the body thereof provided with a main or inlet valve, a tube forming with the said body an annular air-compression chamber and having an open end in proximity to said valve, a drain-valve communicating with said air-compression chamber, and means for opening said drain-valve as the main or inlet valve is closed, whereby the air compressed in said air-compression chamber assists in expelling the water, substantially as described.

2. In a hydrant the body provided with a valve tube or chamber at its lower end, and a valve controlling the admission of water to the said tube, and a tube forming with the body an annular air-chamber closed at its upper end, the tube extending down in proximity to and being of slightly-greater width than the aforesaid valve-tube, substantially as and for the purpose specified.

3. In a hydrant, the body thereof provided with a main or inlet valve at its lower end, a tube forming with the said body an annular air-compression chamber at its upper end and having an open lower end communicating with said valve, and a drain-valve also communicating with the open end of said tube, the said main and drain valves moving simultaneously and arranged so that one opens as the other closes, whereby the air compressed in said air-compression chamber assists in expelling the water, substantiallyas described.

4. In a hydrant, a body, a valve-tube located at the lower portion thereof and turned outwardly at its ends to join said body to form an annular water-chamber, an inlet being formed in the body to the chamber, an inlet-port from the side of the chamber into the interior of the said valve-tube, a valve-rod, a split valve loose thereon and so formed as to be capable of expansion with the tube, and having its solid side against the inlet-port in the side of said tube, and a wedge secured to the valve-rod and arranged so that by the vertical motion of the valve-rod the split valve is expanded by the wedge to tightly close the inlet-port, substantially as and for the purpose specified.

5. In a hydrant a valve-tube with an inlet-port formed therein in combination with a valve-rod; a split valve loose thereon and so formed as to be capable of expansion within the tube; a stop to limit the vertical movement of the valve on the rod; a wedge screwed to the valve-rod and arranged so that by the vertical motion of the valve-rod the split valve may be expanded by the wedge to tightly close the inlet-port; a stop on the tube to limit the upward motion of the valve and a spring arranged to tend to keep the valve and wedge pressed apart, substantially as and for the purpose specified.

6. In a hydrant a valve-tube with an inlet-port formed therein in combination with a valve-rod; a valve comprising an annulus divided at one side, an eye loose on the valve-rod and a suitable bridge by which the other side of the annulus is connected to the eye; a stop to limit the upward motion of the valve on the rod; a wedge fast on the rod and adapted to enter the division in the annulus; a stop on the tube to limit the upward motion of the valve, substantially as and for the purpose specified.

7. In a hydrant a valve-tube with an inlet-port formed therein in combination with a valve-rod; a valve comprising an annulus divided at one side, an eye loose on the valve-rod and a suitable bridge by which the other side of the annulus is connected to the eye; a stop to limit the upward motion of the valve on the rod; a wedge fast on the rod and adapted to enter the division in the annulus; a stop on the tube to limit the upward motion of the valve; and a spring arranged to tend to keep the valve and wedge pressed apart, substantially as and for the purpose specified.

8. In a hydrant the combination of the valve-tube G provided with the inlet-port L; the valve-rod F provided with the stop *j*; the valve M comprising the divided annulus *b*, bridge *c* and eye *d* loose on the valve-rod G, the tapered sides *f* of the opening and the shoulders *g*; the wedge O fast on the rod F; the stop N on the tube G; and the spring A arranged between the wedge and the eye *d*, substantially as and for the purpose specified.

9. In a hydrant a valve-tube provided with an inlet-port in combination with a main piston-valve; a stop connected to the tube and adapted to limit the upward motion of the valve and a groove in the valve which will admit of the valve being lifted out when turned to make the groove and stop register, substantially as and for the purpose specified.

10. In a hydrant a valve-tube provided with an inlet-port in combination with a main piston-valve; a stop connected to the tube and adapted to limit the upward motion of the valve and a groove in the valve which will admit of the valve being lifted out when turned to make the groove and stop register; a detachable head for the hydrant; a non-revoluble nut, carried by the head in a suitable guide, to which the valve-rod is rigidly connected and a screw held from vertical motion engaging the said nut, substantially as and for the purpose specified.

657,665. CYLINDER-LOCK. EMERICH VON MARSÓVSZKY Budapesth, Austria-Hungary. Filed Dec. 3, 1897. Serial No. 660,692. (No model.)



Claim.—1. In a lock the combination of a key, having separable bit consisting of a series of sections, means for locking said sections together, a series of superposed cylinders in said lock and means in connection with the same for disengaging the bit-sections when the lock is opened and relocking the same when the lock is closed, door-fastening means, being attached to one of said lock-cylinders, substantially as described.

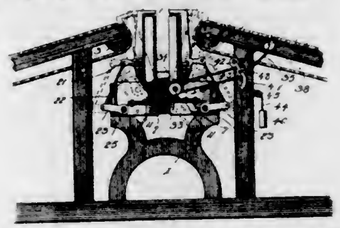
2. In a lock the combination of a cylindrical housing, having a base-plate and having therein a series of superposed cylinders and a bolt fast on one of said cylinders, a key, having a composite bit, one section of which is fast to the key-shaft and bit-sections pivotally mounted on said key-shaft, means concealed within said bit for locking the sections together and means in connection with lock-cylinders for unlocking said bit-sections and for releasing the bolt-cylinder after said sections have been disengaged and for relocking said sections before the key has left the lock, substantially as described.

3. In a lock the combination of a cylindrical housing, having a base-plate, a bolt-cylinder mounted on said base-plate and superposed bit-operating cylinders, revolubly mounted in said casing, a key, having separable bit, comprising a fixed section fast on the key-shaft and other sections pivotally attached thereto, and longitudinally movable thereon, means for locking said sections together, and means in connection with the lock-cylinder for unlocking said sections and for moving same, with the exception of the fixed section, longitudinally on the shaft when the key is forced into the lock and turned therein and means in connection with the base-plate of the lock-housing for releasing the bolt-cylinder when the key has been turned home and means in connection with the lock-cylinders for relocking the bit-sections together, before the key has left the lock, substantially as described.

4. The combination of a lock, having cylindrical housing and the base-plate fixed therein, a bolt-cylinder and superposed lock-cylinders, revolubly mounted on said base-plate and means for locking said bolt-cylinder to said base-plate, a key having separable bit, one section of which is fast on said key-shaft and two sections of which are revolubly mounted thereon, a latch pivotally mounted to the middle bit-section, and having formed at its end a series of fingers, a housing on the lower section to conceal said fingers and means for locking said three sections together, a series of sliding tumblers mounted in the lower locking-cylinder and means in connection with the upper locking-cylinder, for tripping said latch, means in connection with the bolt-cylinder for disengaging the lower bit-section and operating the fingers of the same against said tumblers to permit movement of said upper cylinder on said lower cylinder, an orifice in said lower cylinder for the passage therethrough of the fixed key-bit, means for unlocking the fixed section of the bit and the revoluble section thereunder, a series of bolts mounted in the base-plate and springs to press same upwardly a series of sliding bolts, to operate said detent-bolts and a series of depressions in the under side of the said fixed section, to engage said sliding bolts and depress same, when the key has been forced into the lock and the bit-sections of the same have been detached and means in connection with the lock-cylinders for relocking the bit-sections, before the key has left the lock, substantially as described.

5. The combination of a cylindrical lock-casing having a base-plate and a bolt-cylinder and superposed lock-cylinders mounted therein, a series of bolts, spring-mounted in said base-plate, to engage said bolt-cylinder, a key having a separable bit comprising three sections, one of which is fixed to the key-shaft and two of which are revoluble and longitudinally movable thereon, means in connection with said fixed bit, to depress the detent-bolts of the base-plate, a series of sliding bolts, mounted in the lower section of said bit, a series of spring-pressed bolts, mounted in the intermediate bit-section, and a spring-pressed bolt, to connect said upper and intermediate section, when the three sections are interlocked, a series of sliding tumblers mounted in the intermediate lock-cylinder and adapted to couple same to the upper lock-cylinder, a latch pivoted to the intermediate key-section and having fingers to operate said tumblers, means in connection with the upper lock-cylinder to trip said latch, means in connection with the bolt-cylinder to unlock the lower bolt-section and means in connection therewith to release the lock-bolt between the upper and intermediate bit-section, after said latch has been tripped and means for relocking the key before the same is withdrawn from the lock, substantially as described.

657,666. LUMBER-DELIVERING MACHINE. JOHN C. MELBY, Red Cliff, Wis., assignor of one-eighth to James T. Watson, Duluth, Minn. Filed May 7, 1900. Serial No. 15,788. (No model.)



Claim.—1. A machine for delivering lumber to resawing-machines, comprising a frame, gripping-rolls mounted thereon, movable means for carrying the same, means for adjusting them to different widths, and means for permitting them to fall apart to receive lumber and for forcing them together to grip the same.

2. A machine for delivering lumber for resawing, comprising a frame, slides moving thereon, rolls carried by the said slides, levers connected with the slides, toggles interposed between the ends of the said levers, a reciprocating bar connected with the said toggles for operating them, and means for reciprocating the bar, whereby the slides carrying the gripping-rolls may be adjusted to accommodate different thicknesses of lumber.

3. A machine for delivering lumber for resawing, comprising a frame, transversely-moving slides mounted thereon, pivoted frames secured to the slides, gripping-rolls carried by the said frames, means for adjusting the slides to accommodate the thickness of the lumber, and means for moving the roll-carrying frames upon their pivot-points, so that they may be thrown apart to receive the same and brought together to grip it.

4. A lumber-handling machine comprising a frame, slides moving thereon, cross-levers pivoted upon the frame and connected with the slides at their outer ends, a reciprocating bar moving in the frame, toggles connecting the cross-levers with the said bar, means for reciprocating the bar, whereby the crossed levers will be caused to draw the slides closer together or force them farther apart, and gripping-rolls carried by the said slides for engaging the lumber to be handled.

5. A lumber-handling machine comprising a frame having ways or tracks arranged at each end, slides adapted to move upon the said tracks, levers pivotally connected by means of links with the said slides, the said levers crossing each other and being fulcrumed near their central points, a reciprocating bar moving in the frame, toggle-levers connecting the bar with the ends of the said crossed levers, a lever connected with the said

bar and mounted upon a suitable standard, a segment carried by the standard for holding the lever in adjusted positions, and gripping-rolls mounted upon the slides, the structure being such that by moving the hand-lever upon its segment the crossed levers will be so actuated as to adjust the slides closer together or farther apart, substantially as described.

6. A lumber-handling machine comprising a frame, horizontal supporting-rolls mounted upon each end thereof, slides moving upon the ends of the frame transversely thereof, means for adjusting them with respect to each other, pivoted frames mounted upon the said slides, gripping-rolls secured in the said frames, shafts mounted upon the slides and connected with the pivoted frames, and means for rotating the shafts, whereby the pivoted frames may be moved so as to spread the gripping-rolls apart above the pivotal points of their respective frames for receiving lumber or for drawing them together to grip the same.

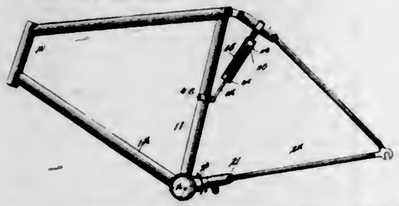
7. A lumber-handling machine comprising a frame, slides mounted thereon, pivoted frames mounted upon the slides, gripping-rolls carried by the said frames, shafts arranged longitudinally of the frames, and journaled at their ends in the slides, arms upon the said shafts connected by links with arms on said pivoted frames, actuating-arms mounted upon the shafts, and means for actuating them, whereby the shafts may be rotated so as to move the pivoted frames back and forth, and means for adjusting the slides upon the frames so that the gripping-rolls will accommodate themselves to different thicknesses of lumber, substantially as described.

8. A lumber-delivering machine comprising a frame, movable slides mounted thereon, frames pivoted to the said slides, gripping-rolls carried thereby, means for adjusting the slides so that the rolls will be nearer together or farther apart, means for rocking the pivoted frames so that their upper ends will fall apart to receive the lumber, skids arranged upon each side of the frame and having traveling belts adapted to deliver the lumber between the gripping-rolls when they are separated, and means for actuating one of the gripping-rolls to feed the lumber through the machine, substantially as described.

9. A lumber-delivering machine comprising a frame, gripping-rolls adjustably mounted thereon, means for spreading the rolls apart to receive the lumber and for drawing them together to grip the same, skids mounted upon each side of the frame and having lumber-delivering chains moving thereon, a shaft journaled upon the slides carrying the gripping-rolls, a beveled gear upon the said shaft, and a beveled gear upon one of the rollers for engaging the same, a pulley secured to the shaft, a pulley secured to a counter-shaft mounted upon one of the skids, a sprocket-wheel carried by the said counter-shaft and engaging one of the lumber-carrying chains, a belt connecting the pulley on the counter-shaft with the roll-actuating pulley, and means for tightening the said belt, comprising pulleys engaging or riding upon the same, and a weight for exerting a pressure upon them, the structure being such that the belt will be held taut no matter what the adjusted position of the gripping-rolls, substantially as described.

10. A lumber-delivering machine comprising a frame provided with slideways or tracks, roll-carrying slides mounted thereon, means for adjusting the slides with respect to each other, pivoted frames carried by the slides, gripping-rolls mounted in the said frames, shafts mounted upon the slides and connected with the pivoted frames, arms upon the said shafts, a piston-rod connected with the said arms and extending into a power-cylinder, and means for delivering power to the said cylinder for operating a piston therein and thereby moving the piston-rod, whereby the gripping-rolls after they have received the lumber may be forced together to grip the same, substantially as described.

657,667. BICYCLE-FRAME. VIRGIL H. MILLS, Hubbard City, Tex. Filed Dec. 9, 1899. Serial No. 739,836. (No model.)



Claim.—1. In a bicycle-frame, the combination with a crank-hanger and the seat-tube connected therewith, said hanger having a slot therein, of a bushing disposed within the hanger, a rod engaging the bushing through the slot of the hanger, tie-rods connected with the rod, rear forks connected with the tie-rods, a link connected with the rear forks and with the seat-tube, and means for holding the link yieldably in a predetermined position.

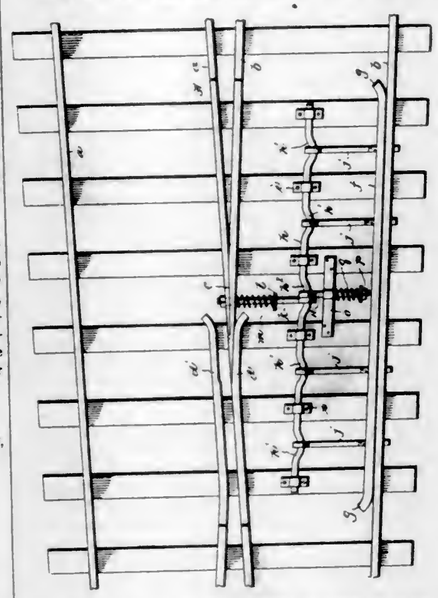
2. In a bicycle-frame, the combination with a crank-hanger and the seat-tube connected therewith, said hanger having a slot therein, of a bushing within the crank-hanger and adapted for oscillation, a rod passed through the slot of the hanger and engaging the bushing, a dust-cap fixed upon the rod and adapted to close the slot of the hanger, tie-rods slidably connected with the rod, rear forks connected with the tie-rods, and a link connection between the rear forks and the seat-tube.

3. In a bicycle-frame, the combination with a crank-hanger and a seat-tube connected therewith, said hanger having a slot therein, of a bushing within the crank-hanger and adapted for oscillation, a rod passed through the slot of the hanger and engaging the bushing, a dust-cap fixed upon the rod and adapted to close the slot of the hanger, tie-rods slidably connected with the rod, rear forks connected with the tie-rods, a link pivotally connected with the rear fork and with the seat-tube, and means for holding the link yieldably in a predetermined position.

4. In a bicycle-frame, the combination with a crank-hanger having a seat-tube fixed thereto, of tie-cords hinged to the crank-hanger, rear forks connected with the tie-rods and having their upper ends slotted, recesses in the walls of the slots, a link disposed between the slotted ends of the rear fork and having a transverse perforation, a clamping-bolt passed through the slots and the perforation, washers disposed upon the bolt and having lugs engaging the recesses, pivotal connections between the link and the seat-tube, and means for holding the link yieldably in a predetermined position.

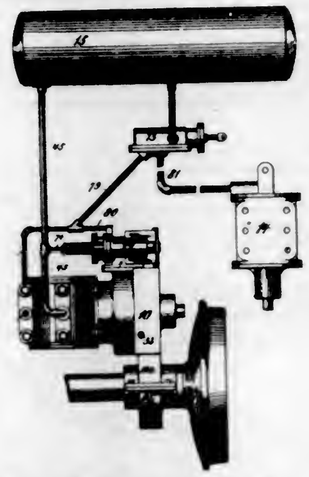
5. In a bicycle-frame, the combination with two separable parts, one of which is provided with ears adapted to receive the other part between them, and said ears being provided with slots having recesses in their walls, a bolt passed through the second part and lying in the slots of the first part, washers upon the bolt and having projections adapted to enter the slots and lie in the recesses in the walls thereof to hold the bolt from movement longitudinally of the slots, and nuts upon the bolt adapted to hold the washers in their opposite positions.

657,668. AUTOMATIC RAILROAD-FROG. CHARLES W. MCKINNEY, Butte, Mont. Filed July 5, 1900. Serial No. 22,568. (No model.)



Claim.—In combination, the frog-wings, the switch-tongue movable between said frog-wings, an operating-rail adapted to be actuated by the flange of a wheel, a rock-shaft provided with cranks, connections between several of the cranks of the rock-shaft and the operating-rail, a rod having one end loosely extending through the switch-tongue provided with a nut on its extremity, and provided with a shoulder intermediate its ends, a spring placed upon said rod and confined between said shoulder and switch-tongue, the inner end of said rod being connected to one of said cranks, and a second rod having its inner end connected to said crank and provided with a spring for holding the operating-rail in close relation to one of the siding-rails, substantially as set forth.

657,669. AIR-BRAKE. JOHN J. HEY, New York, N. Y. Filed June 22, 1898. Serial No. 684,160. (No model.)



Claim.—1. In an air-brake system, the combination with an air-reservoir of a pump and pump-operating mechanism, an automatic governor comprising a compound cylinder having piston-heads of different diameters corresponding with the bores of the cylinder, means whereby a pressure is constantly maintained in the small bore against the small piston-head, and means for varying the pressure in the large bore of the compound cylinder against the large piston-head, a clutch adapted to connect and disconnect the pump and pump-operating mechanism, and a clutch-lever operated by a connection between the piston-heads.

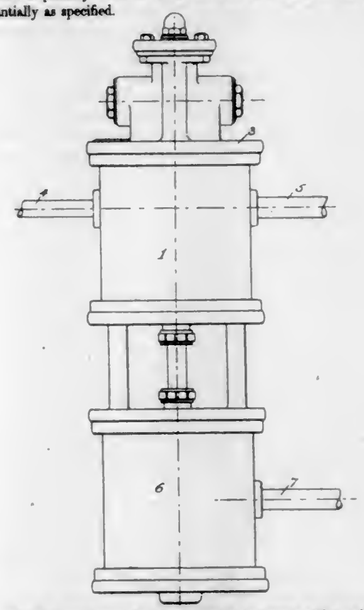
2. In an air-brake system, the combination with an air-reservoir of a pump and pump-operating mechanism, an automatic governor comprising a compound cylinder having piston-heads of different diameters corresponding with the bores of the cylinder, an open, and at all times unobstructed, communication between the air-reservoir and the small bore of the compound cylinder, means whereby the large bore of the cylinder may be placed in communication with the air-reservoir, or with an exhaust, a clutch adapted to connect and disconnect the pump and pump-operating mechanism, and a clutch-lever operated by a connection between the piston-heads.

3. In an air-brake system, the combination with an air-reservoir of a pump and pump-operating mechanism, an automatic governor comprising a compound cylinder having piston-heads of different diameters corresponding with the bores of the cylinder, means whereby a fluid-pressure is constantly maintained in the small bore of the compound cylinder, an auxiliary spring contained therein, means for varying the pressure in the large bore of the compound cylinder, a clutch-lever adapted to connect and disconnect the pump and pump-operating mechanism, and a clutch-lever operated by a connection between the piston-heads.

4. In an air-brake system the combination with an air-reservoir of a pump and pump-operating mechanism, the shell or cylinder of said pump comprising a casting having the two discharge-valve casings and the two suction-valve casings integral therewith the two discharge-valves each discharging into a common passage having a single connection with a pipe leading to the reservoir, the two suction-valves having a common suction-inlet, and each having a cylindrical portion below the said valve in which is mounted a plunger or piston, and a hollow cap or facing connecting the two cylindrical portions, and having a single outlet connecting with a pipe to a source of compressed-air supply, and an automatic governor for connecting and disconnecting the pump and the pump-operating mechanism substantially as specified.

657,670. STEAM-ENGINE FOR PUMPS. JOSEPH E. NORMAND, Watertown, N. Y., assignor of one-half to Joseph R. Ellicott, Nyack, and Charles A. Ball, New York, N. Y. Filed Aug. 19, 1896. Serial No. 603,197. (No model.)

Claim.—1. The combination in a steam-engine for pumps with a cylinder and piston mounted therein, of a steam-operated main valve for controlling the admission and exhaust of steam to and from the cylinder, a primary valve adapted in its movement to control the movement of the steam-operated main valve, a reach-sleeve and an actuating-rod adapted to move the primary valve at or near the end of a stroke of the piston, substantially as specified.



2. The combination in a steam-engine for pumps with a cylinder and piston mounted therein, of a steam-operated main valve for controlling the admission and exhaust of steam to and from the cylinder, a rotary primary valve adapted in its movement to control the movement of the steam-operated valve, a reach-sleeve adapted to partially rotate said primary valve at or near one end of a stroke of the piston and an actuating-rod adapted to partially rotate the said primary valve at or near the other end of a stroke of the piston, substantially as specified.

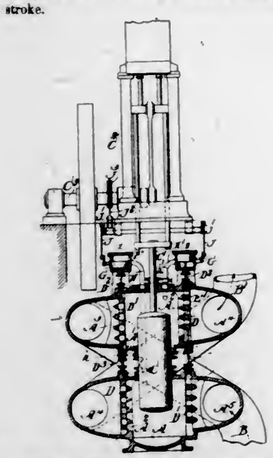
3. A bushing, adapted to receive a piston-valve, having a cross-over port or passage in its outer periphery, communicating at one of its ends with a port leading to the interior thereof and at the other of its ends adapted to register with a port in the casing or support in which the bushing is arranged to be mounted, substantially as specified.

4. The combination in a steam-engine for pumps with a cylinder and piston mounted therein, of a steam-operated main valve for controlling the admission and exhaust of steam to and from the said cylinder, the said steam-valve comprising four piston-heads, a bushing in which the said piston-heads are mounted and arranged to reciprocate, ports leading from the interior of the bushing to the exhaust and to the opposite ends of the said cylinder, said ports terminating in the bushing at points between the outer piston-heads of the main steam-valve in any position in which the said valve may be, ports in open communication with the steam source of supply and communicating with the interior of the bushing between the outer piston-heads of the main steam-valve, a primary valve having a cavity always in communication with the exhaust, and ports communicating with the outer piston-heads of the main steam-valve and with the steam source of supply or the exhaust, the said primary valve arranged to control the said last-named ports so that when one of the ports leading to one of the outer piston-heads is in communication with the steam source of supply the other is always in communication with the exhaust, and vice versa, substantially as specified.

657,671. PUMP-VALVE-ACTUATING MECHANISM. GUSTAV B. PETSCHE, Philadelphia, Pa., assignor to the Southwark Foundry and Machine Company, same place. Filed July 31, 1897. Serial No. 646,630. (No model.)

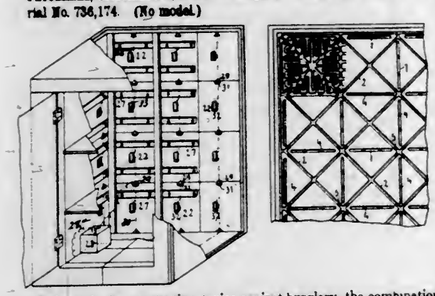
Claim.—1. In a pump the combination with a valve leading to or from the plunger-chamber of an actuating-cylinder, a piston therein operatively connected to the pump-valve, a conduit leading to the actuating-cylinder from the pump-chamber and a pilot-valve controlling the admission and exhaust of the fluid from the pump-cylinder to and from the actuating-cylinder the said actuating-cylinder being of a capacity to receive behind its piston the fluid forced out of the pump-chamber while the pump-valve is passing through its lap in opening and closing and the piston in the actuating-cylinder is making a corresponding part of its stroke.

2. In a pump the combination with a valve leading to or from the plunger-chamber of an actuating-cylinder, a piston therein operatively connected to the pump-valve, a conduit leading to the actuating-cylinder from the pump-chamber, a pilot-valve controlling the admission and exhaust of the fluid from the pump-cylinder to and from the actuating-cylinder and a non-return valve situated in the conduit leading from the pump-chamber to the actuating-cylinder the said actuating-cylinder being of a capacity to receive behind its piston the fluid forced out of the pump-chamber while the pump-valve is passing through its lap in opening and closing and the piston in the actuating-cylinder is making a corresponding part of its stroke.



3. In a pump the combination with a laterally-moving or slide valve leading to or from the plunger-chamber and having a slight freedom of movement to and from its seat, of an actuating-cylinder, a piston therein operatively connected to the pump-valve, a condnit leading to the actuating-cylinder from the pump-chamber and a pilot-valve controlling the admission and exhaust of the fluid from the pump-cylinder to and from the actuating-cylinder being of a capacity to receive behind its piston the fluid forced out of the pump-chamber while the pump-valve is passing through its lap in opening and closing and the piston in the actuating-cylinder is making a corresponding part of its stroke.

657,672. **PROTECTIVE DEVICE AGAINST BURGLARY.** AUGUST PETTERMEL, Siebenhirten, Austria-Hungary. Filed Nov. 7, 1899. Serial No. 736,174. (No model.)

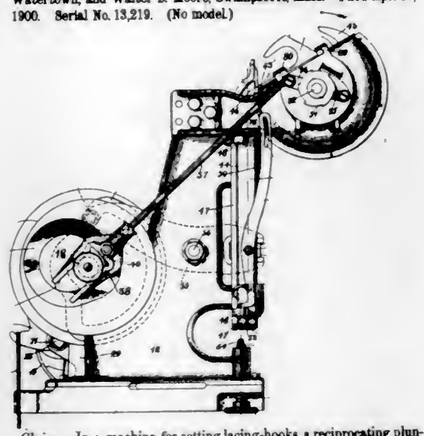


Claim.—1. In a protective device against burglary, the combination of an electric alarm-circuit, plates or frames for covering the space to be protected and provided with two separate and independent sets of grooves 1, 2, the air contained in one set differing in density from that contained in the other set and also from the outer air, a U-shaped mercury-tube 22, terminals of the alarm-circuit extending into the arms of the U-shaped mercury-tube, each set of grooves communicating with an arm of the U-shaped mercury-tube, the mercury-level of which when the grooves are broken into will change and close the alarm-circuit and actuate the alarm substantially as and for the purpose described.

2. In a protective device against burglary the combination of plates covering the part to be protected, adjacent but non-communicating sets of grooves 1, 2, in said plates, a hermetically-sealed cover-plate for said grooves, a U-shaped mercury-tube 22, the grooves 1 communicating with one leg of the U-shaped mercury-tube, the grooves 2 communicating with the other leg, wires 33 extending into the legs but not to the mercury and connected to one side of an alarm-circuit, wire 32 connected to the mercury in the U-shaped mercury-tube and to the other side of the alarm-circuit, whereby changing the relative pressure in grooves 1, 2, will close the alarm-circuit.

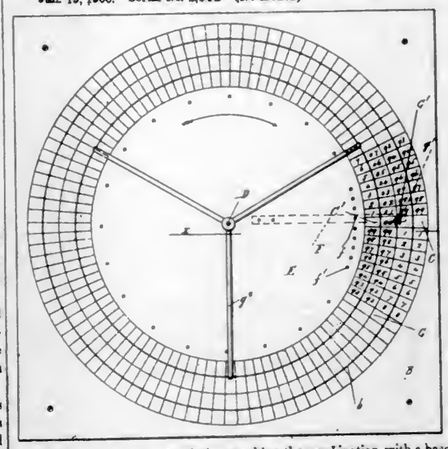
3. In a protective device against burglary the combination of plates covering the part to be protected, adjacent but non-communicating sets of grooves 1, 2, in said plates on both sides thereof, the grooves on one side of the grooved plate being connected to similar grooves on the other side of the plate, hermetically-sealed cover-plates on the sides of the grooved plate closing said grooves, a U-shaped mercury-tube 22, the grooves 1 communicating with one leg of the U-shaped mercury-tube, the grooves 2 communicating with the other leg, wires 33 extending into the legs but not to the mercury and connected to one side of an alarm-circuit, wire 32 connected to the mercury in the U-shaped mercury-tube and to the other side of the alarm-circuit, whereby changing the relative pressure in grooves 1, 2, on either side of the grooved plate will close the alarm-circuit.

657,673. **MACHINE FOR SETTING LACING-HOOKS.** JOHN PIERCE, Milton, Mass., assignor of two-thirds to Joseph H. Chadbourne, Watertown, and Walter B. Moore, Swampscott, Mass. Filed Apr. 17, 1900. Serial No. 13,219. (No model.)



Claim.—In a machine for setting lacing-hooks, a reciprocating plunger, a hopper, a discharge-opening in said hopper, a raceway rigidly attached to said reciprocating plunger, and making sliding contact with said hopper to intermittently receive fasteners therefrom.

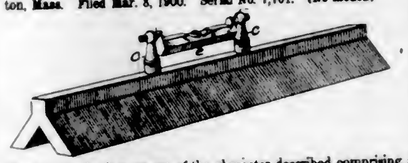
657,674. **CALCULATING-MACHINE.** WILLIAM G. POWELL, Jacksonville, Fla., assignor of one-half to Frank Clark, same place. Filed Jan. 19, 1900. Serial No. 2,044. (No model.)



Claim.—1. In a calculating-machine, the combination, with a base, a revoluble disk, and a stationary plate; of a revolnble ring provided with a hollow projection on its under side which forms a socket for the operating-handle, a catch secured to the said base and arranged in the path of the said projection and normally preventing the said disk from revolving, and a handle for engaging with the said socket and revolving the said ring and disk, substantially as set forth.

2. In a calculating-machine, the combination, with a base, a revoluble disk, and a stationary plate; of a revoluble ring journaled between the said plate and disk and provided with offset flanges at its lower edges which rest on the base and support the body of the ring clear of the base, said ring having also a hollow projection on its under side which forms a socket for the operating-handle, a catch arranged under the said disk and ring in the path of the said projection and normally preventing the disk from revolving, and a handle for engaging with the said socket and revolving the said ring, subetantially as set forth.

657,675. **SPIRIT-LEVEL AND PLUMB.** GEORGE F. QUINBY, Boston, Mass. Filed Mar. 8, 1900. Serial No. 7,761. (No model.)

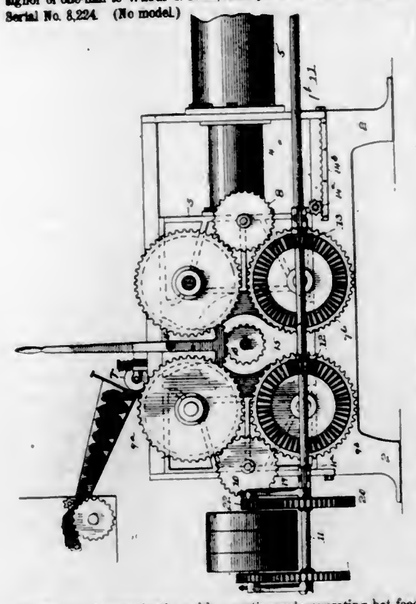


Claim.—1. An instrument of the character described comprising a suitable support for application to the work, and a spirit-level pivotally mounted on said support with its axis lengthwise of the spirit-level, the latter maintaining its longitudinal relation to the support with the right side uppermost.

2. An instrument of the character described comprising a suitable support for application to the work, and a spirit-level pivoted at its ends to said support and free to swing on an axis lengthwise of the spirit-level, the latter maintaining its longitudinal relation to the support, substantially as described.

3. An instrument of the character described comprising a suitable support for application to the work, said support having confronting and alining bearings; and a spirit-level engaged at its ends with said bearings and free to swing on an axis extending lengthwise of the spirit-level, the latter maintaining its longitudinal relation to the support, substantially as described.

657,676. **ROLLER-PRESS.** EDGAR REAGAN, Floresville, Tex.; assignor of one-half to Wilbur C. Bruff, same place. Filed Mar. 10, 1900. Serial No. 8,224. (No model.)



Claim.—1. In combination with a continuously-operating bat-feeding mechanism, a series of press-rollers, variable-speed mechanism for operating said rollers, and a driving mechanism connecting said feed mechanism with said variable-speed mechanism.

2. In a roller-press adapted to receive cotton-batting directly from the gin, the combination of the driving-shaft having means for actuating the compression-rollers, the compression-rollers, two sets of independently-actuated gears attached to said shaft and adapted to give a relatively slow or fast speed to the compression-rollers, and means for actuating either of said sets of gears for operating said shaft.

3. In a roller-press adapted to receive cotton-batting directly from the gin, the combination, of a driving-shaft having means for actuating the compression-rollers, two sets of independent gears attached to said shaft and supported by arms mounted on said shaft, and independent means for operating said gears to give a variable speed to said shaft.

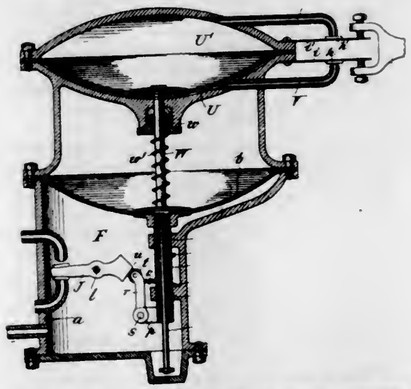
4. In a roller-press adapted to receive cotton-batting directly from the gin the combination, of a driving-shaft for the compression-rollers having gear-wheels of varying diameter, arms mounted on said driving-shaft supporting between them a stationary shaft having loosely mounted thereon spur-gears which mesh with said gear-wheels, companion pulleys adapted to be keyed independently to said spur-gears, and means for operating said pulleys.

5. In a roller-press for forming cylindrical bales, the combination of the revoluble bale end disks having recesses or holes therein, for the insertion of pins for clamping the ends of the bale-covering in said recesses.

6. In a roller-press for forming cylindrical bales, the combination of the revoluble bale end disks, means for temporarily clamping the bale-covering to said disks, and dished or recessed bale-core holders, whereby space is afforded between the backs of said disks and said holders to accommodate a bale-cover of sufficient width to cover the ends of the bale.

7. In a roller-press having a detachable bale-core, the combination of the bale end disks having axle-arms for supporting the same, the dished housings having a threaded hub, a spur having a threaded sleeve fitting said hub through which said axle-arms pass, and a segmental rack meshing with said spur.

657,677. **AUTOMATIC TEMPERATURE-REGULATOR.** ALFRED ROESCH, Bridgeport, Conn., assignor to the Davis & Roesch Temperature Controlling Company, of New Jersey. Filed May 9, 1898. Serial No. 680,104. (No model.)



Claim.—1. A governor for controlling the supply of compressed fluid to fluid-actuated mechanism consisting of a diaphragm-chamber and diaphragm, ports from the chamber on one side of the diaphragm leading to the supply of compressed fluid, to the fluid-actuated mechanism and to the atmosphere, valves mounted on a rocker-arm adapted to alternately open and close the port to the supply of compressed air and the exhaust to atmosphere, means operated by the movement of the diaphragm for governing said valve and means operated by a thermostat for controlling the movement of the diaphragm, substantially as described.

2. A governor for controlling the supply of compressed fluid to fluid-actuated mechanism, consisting of a diaphragm-chamber and diaphragm, ports from the chamber on one side of the diaphragm leading to the supply of compressed fluid, to the fluid-actuated mechanism and to the atmosphere, means operated by the movement of the diaphragm for alternately opening and closing the port to the supply of compressed air and the exhaust to atmosphere and an inlet and an outlet port communicating with the atmosphere connected with the chamber on the other side of the diaphragm, having valves controlled by a thermostat, subetantially as described.

3. A governor for controlling the supply of compressed fluid to fluid-

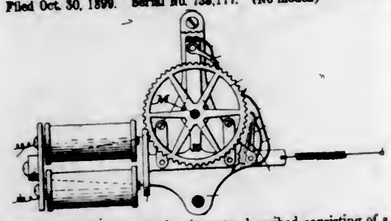
actuated mechanism consisting of a diaphragm-chamber and diaphragm, ports from the chamber on one side of the diaphragm leading to the supply of compressed fluid, to the fluid-actuated mechanism and to the atmosphere, means operated by the movement of the diaphragm for alternately opening and closing the port to the supply of compressed air and the exhaust to atmosphere and an inlet and an outlet port communicating with the atmosphere connected with the chamber on the other side of the diaphragm, valves under the control of a thermostat for opening and closing said ports and check-valves within said ports for preventing the ingress of fluid of the one and the egress of fluid in the other, substantially as specified.

4. A governor for controlliug the supply of compressed fluid to fluid-actuated mechanism, consisting of a diaphragm-chamber and diaphragm, ports from the chamber on one side of the diaphragm leading to the supply of compressed fluid, to the fluid-actuated mechanism and to the atmosphere, a rocker-arm mounted within said chamber, valves mounted on said rocker-arm and adapted to alternately open and close the port to the supply of compressed air and the exhaust to atmosphere, an arm controlled by the movement of the diaphragm to trip said rocker-arm, and an inlet and an outlet port connected with the chamber on the other side of the diaphragm having valves controlled by a thermostat, substantially as specified.

5. A governor for controlling the supply of compressed fluid to fluid-actuated mechanism consisting of a diaphragm-chamber and diaphragm, ports from the chamber on one side of the diaphragm leading to the supply of compressed fluid, to the fluid-actuated mechanism and to the atmosphere, valves mounted on a rocker-arm adapted to alternately open and close the port to the supply of compressed air and the exhaust to atmosphere, means operated by the movement of the diaphragm for governing said valves, a spring operating to move the diaphragm in one direction and means operated by a thermostat for controlling the movement of the diaphragm, substantially as described.

6. A governor for controlling the supply of compressed fluid to fluid-actuated mechanism consisting of a diaphragm-chamber and diaphragm, ports from the chamber on one side of the diaphragm leading to the supply of compressed fluid, to the fluid-actuated mechanism and to the atmosphere, a rocker-arm mounted within said chamber, valves mounted on said rocker-arm and adapted to alternately open and close the port to the supply of compressed air and the exhaust to atmosphere, an arm carried by a sleeve having a limited movement within the diaphragm-chamber and adapted to throw the rocker-arm first in one direction and then in the other, means carried by the diaphragm to cause such limited movement of said sleeve at the end of its stroke, and means operated by a thermostat for controlling the movement of the diaphragm, substantially as described.

657,678. SECONDARY ELECTRIC CLOCK. GEORGE P. ROSE, Jr., Dubuque, Iowa, assignor to Barnim L. Behrendt, New York, N. Y. Filed Oct. 30, 1899. Serial No. 735,177. (No model.)

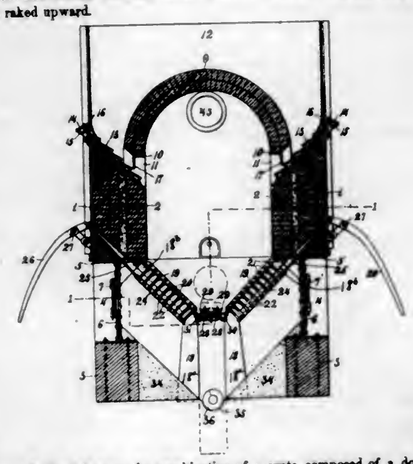


Claim.—1. A device of the character described consisting of a minute-wheel, a pawl in engagement with said wheel, a lever for operating said pawl, means for operating said lever, a second pawl with spring acting thereon to engage with the minute-wheel, an armature, a pin attached to the armature and engaging said second pawl to hold said pawl out of engagement with the minute-wheel, when the electric current is off, all combined to operate as and for the purpose shown.

2. A device of the character described consisting of a dial, hour and minute hands, a minute-wheel, a pawl with spring acting thereon to hold said pawl in engagement with said minute-wheel, a lever for operating said pawl, means for operating said lever, a second pawl with spring acting thereon to engage with the minute-wheel and stop its advance, an armature adapted to be moved in substantially a horizontal plane, a pin attached to the armature and engaging said second pawl to hold said pawl out of engagement with the minute-wheel when the electric current is off, all combined as and for the purposes shown.

657,679. FURNACE. JAMES G. SANDERSON, Scranton, Pa. Filed July 17, 1899. Serial No. 734,129. (No model.)

Claim.—1. In a furnace, the combination of a grate made up of a downwardly-inclined series of trunnioned or pivoted bars projecting one beyond another inwardly toward the fire and normally presenting approximately-horizontal portions for affording vertical support to the fuel, and means for rocking said bars in a direction to move their inner edges from said normal toward a vertical position, whereby adjacent material is raked upward.



2. In a furnace, the combination of a grate composed of a downwardly-inclined series of pivoted or trunnioned bars projecting one beyond the other inwardly toward the fire, normally presenting approximately-horizontal portions affording vertical support for the fuel, provided with enlargements along their protruding inner edges which rake in the ashes when the bars are oscillated, and suitable means for oscillating the bars in a direction to cause their said inner enlarged edges to rake upward from horizontal toward vertical position.

3. In a furnace, a grate made up of a number of trunnioned bars projecting one beyond another in downwardly-inclined series, suitably spaced apart for the passage of air between them, formed with enlargements upon their inner edges next the fire, which close the spaces between them when they are oscillated in a direction to move said enlargements upward toward vertical position, and having suitable means for oscillating them in unison in such direction.

4. In a furnace, a grate made up of a number of trunnioned bars projecting one beyond the other in a downwardly-inclined series affording vertical support to the fuel resting upon them, spaced apart for the passage of air between them and permitting the escape of ashes between them when rocked in a direction to move their edges next the fire upward toward vertical position, and having enlargements along their inner ends for closing the passages between them against the escape of fuel when they are moved toward vertical position; said enlargements being toothed or serrated to avoid cutting off the supply of air; substantially as herein set forth.

5. In a furnace, the combination of the downwardly-inclined series of substantially-horizontal grate-bars suitably trunnioned, a bar connecting said grate-bars in series, and means for imparting movement to the connecting-bar to oscillate the grate-bars from horizontal toward vertical position, and causing them to rake the adjacent fine ashes into the discharging-spaces between them; substantially as herein set forth.

6. In a furnace, the combination of the knees or supports 18 formed with the vertical portions 18ª and inclined portions 18ᵇ in conformity with the vertical section of the fire-pot, two series of grate-bars trunnioned in the inclined portions of said knees and spaced apart to permit them to assume an approximately-horizontal position and to be moved toward a vertical position, a clinker-crusher located at the angles of the knees, and means for oscillating said grate-bars at will; substantially as set forth.

7. A normally-horizontal oscillating grate-bar having a flat fire-supporting portion and an upwardly-raking enlargement along its edge distant from the trunnions.

8. The herein-described grate-bar 19 having trunnions 20 at its respective ends, formed with a longitudinal enlargement 21 along the edge next the fire, and with projections 22 upon its other edge for attachment of means for oscillating it; substantially as set forth.

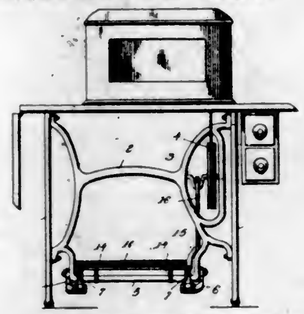
9. The herein-described normally-horizontal flat grate-bar 19 constructed with trunnions 20 at its respective ends, and with an enlargement 21 along its inner edge distant from the trunnions, serrated or toothed, substantially as shown.

10. In a furnace, a series of overlapping pivoted grate-plates having normally-horizontal flat supporting portions, and presenting normally a continuous support for fine fuel without vertical passage through the grate, and means for moving the horizontal portions of said plates from horizontal to vertical position; whereby they open vertical passages between them and rake thereinto the adjacent fine ashes; substantially as set forth.

11. In a furnace, the combination of the trunnioned grate-bars spaced apart for the escape of ashes between them when moved toward vertical position, and having means for oscillating them to cause them to feed downward clinker or other products of combustion too large to pass between them, and the clinker grinder and discharger located at the bottom of the fire-pot formed by said grates; substantially as herein explained.

12. In a furnace-grate, a plurality of overlapping pivoted grate-bars, or plates, suitably spaced apart, provided with normally-horizontal flat supporting portions, affording support for fine fuel without vertical passage through the grate and with raking enlargements or flanges along their edges distant from their trunnions, and means for moving the horizontal portions of said bars or plates from horizontal position upward toward vertical position to open vertical passages between the bars or plates and rake into said passages ashes adjacent thereto.

657,680. SEWING-MACHINE. WILLIAM SHAW, Rapid City, S. D. Filed June 8, 1899. Serial No. 719,824. (No model.)



Claim.—1. The combination with standards, of a cross-strip therebetween, brackets extending from the cross-strip, leaf-springs secured at one end to the brackets, a treadle secured to the opposite ends of the springs, and straps connecting the treadle to the cross-strip and adapted to limit the upward movement of said treadle.

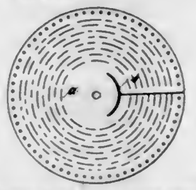
2. The combination with standards, of a cross-strip therebetween, brackets projecting from said strips, clamps thereon, springs held at their front ends by said clamps, a treadle secured to the rear ends of said springs, a strip connecting said springs at their rear ends, and straps connecting the treadle to the cross-strip.

657,681. FIFTH-WHEEL. JOHN A. SPANGLER, Sell's Station, Pa., assignor of one-half to Aaron Hostetter, Hanover, Pa. Filed Dec. 16, 1899. Serial No. 740,587. (No model.)



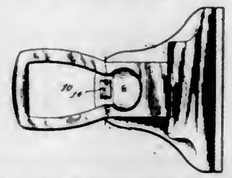
Claim.—A fifth-wheel comprising a bottom plate having its front and rear edges curved and provided at the back with oppositely-disposed rearwardly-extending curved arms, said bottom plate being provided in advance of the arms with a curved slot and having a perforation located at its rear edge at a point equidistant of the arms, the latter being located at the ends of the slot substantially concentric with the said perforation, the top plate provided with curved front and rear edges and having front and rear perforations registering with the slot and the perforation of the bottom plate, a king-bolt passing through the perforation of the bottom plate and through the rear perforation of the top plate, the arms arranged in pairs at opposite sides of the plates and extending upward and downward therefrom, an axle secured between the lower arms, a spring and bolster mounted between the upper arms, and a central fastening device passing through the spring-bolster and the front perforation of the upper plate, and interlocked with the lower plate at the slot thereof, substantially as described.

657,682. SPIRAL NOTE-SHEET. ADOLF STAFFELSTEIN, Albersdorf, and FRANZ KLUGE, Leipsic-Gohlis, Germany. Filed Mar. 30, 1900. Serial No. 10,818. (No model.)



Claim.—A spiral note-sheet for mechanical musical instruments consisting of a series of circular note-disks, each having an arc-shaped slot formed therein and a radial slot extending from the arc-shaped slot to the periphery, the said disks being connected together along the corresponding edges of the radial slot substantially as described and for the purpose specified.

657,683. HAME AND TRACE CONNECTOR. SAMUEL H. SWEARINGEN, Hedrick, Iowa. Filed Nov. 4, 1899. Serial No. 735,772. (No model.)



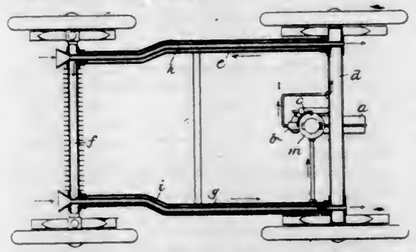
Claim.—1. A device of the class described comprising a hame-plate provided at its front portion with a recess and having a stud at its rear portion, a coupling-plate fulcrumed between its ends on the stud and having its front end arranged in the said recess, and a block mounted on the rear portion of the hame-plate and limiting the oscillatory movement of the coupling-plate, substantially as described.

2. A device of the class described comprising a hame-plate provided with a headed stud, a coupling-plate having its front end engaged with the hame-plate and provided with an opening to receive the stud and interlocked therewith, and a stop mounted on the hame-plate in rear of the stud and located within the opening of the coupling-plate, whereby the oscillation of the same is limited, substantially as described.

3. A device of the class described comprising a hame-plate having a headed stud cut away at its back, a coupling-plate having an opening with a reduced rounded front portion receiving the shank of the stud and providing shoulders for engaging the back of the same, whereby the plate is prevented from jumping forward, and a stop located in rear of the stud and arranged between the sides of the coupling-plate and limiting the oscillation thereof, substantially as described.

4. A device of the class described comprising a hame-plate provided at its front with a recess, a headed stud cut away at the back arranged at the back of the hame-plate, a coupling-plate having an opening with a reduced front portion to receive the headed stud and having its front end arranged in the said recess, and a block having a shank secured to the hame-plate at the back of the stud, substantially as and for the purpose described.

657,684. COOLING APPARATUS FOR MOTOR-CARRIAGES. ANSBERT E. VORREITER, Aix-la-Chapelle, Germany. Filed Apr. 16, 1900. Serial No. 13,160. (No model.)



Claim.—In a motor-vehicle, a main frame comprising longitudinally-extending pipes *e*, *g*, and transverse pipes *d*, *f*, connected together to form a conduit for water, combined with the water-jacket of the motor-cylin-

der, a pump for circulating water through the water-jacket and said pipes, and open-ended air-pipes extending through the pipes *e* and *g* and intersecting the pipes *d* and *f*, substantially as set forth.

657,685. PHOTOGRAPHIC-EXPOSURE METER. ALFRED WATKINS, Hereford, England. Filed July 5, 1899. Serial No. 722,786. (No model.)



Claim.—1. A photographic-exposure meter, comprising a casing having a removable front rim, a glass provided with a partial covering of opaque material rotatably mounted therein, a tint-disk provided with an opening, and a tint-gage mounted behind said glass, said casing being adapted to receive a disk of sensitive material behind said tint-disk, and means for removing said sensitive disk, substantially as shown and described.

2. In a photographic-exposure meter, a casing adapted to receive a disk of light-sensitive material revoluble therein, and provided with a central opening, a compression-pad revolubly mounted in said casing in connection with said sensitive material, and provided with a nipple which projects within said central opening therein, and means mounted upon said casing for rotating said compression-pad, substantially as shown and described.

3. In a photographic-exposure meter, a circular casing provided with a revoluble peripheral bead and adapted to receive a disk of light-sensitive material which is adapted to revolve therein, and devices mounted in said casing in connection with said disk of sensitive material, and in operative connection with said revoluble bead and arranged to revolve the former, and to be revolved by the latter, substantially as shown and described.

4. The herein-described photographic-exposure meter, comprising a casing provided with a front rim, a glass rotatably mounted in said rim and provided with a rotatable opaque element, a tint-disk mounted behind said glass and within the casing, said tint-disk being provided with a plurality of openings, and with a tint-gage arranged adjacent an edge of each of said openings, devices for sustaining a disk of light-sensitive material within said casing behind said tint-disk, and means for moving said sensitive disk, substantially as shown and described.

5. The herein-described photographic-exposure meter, comprising a casing provided with a front rim, a glass rotatably mounted in said rim and provided with a rotatable opaque element, a tint-disk mounted behind said glass and within the casing, said tint-disk being provided with a plurality of openings, and a tint-gage arranged adjacent an edge of each of said openings, means for sustaining a disk of light-sensitive material within said casing behind said tint-disk, and means for moving said sensitive disk, substantially as shown and described.

6. In a photographic-exposure meter, a casing, a rotatable disk of light-sensitive material mounted therein and provided with a central opening, and a compression-pad revolubly mounted in said casing in contact with said disk of sensitive material, and provided with a nipple which operates within the central opening therein, said casing being provided with means for rotating said compression-pad, substantially as shown and described.

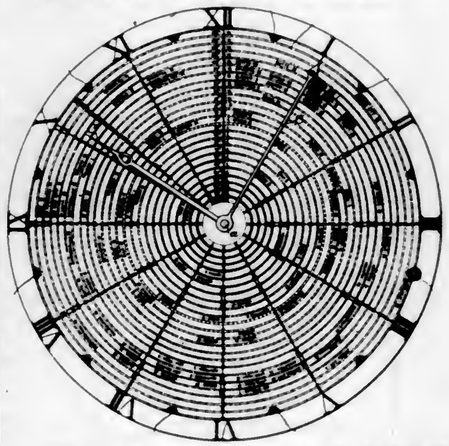
7. In a photographic-exposure meter, a circular casing provided with a revoluble peripheral bead, and means mounted within said casing for supporting a revoluble disk of light-sensitive material, said revoluble bead being in operative connection with said disk when the latter is in position, substantially as shown and described.

8. In a photographic-exposure meter, a circular casing provided with a revoluble peripheral bead, means mounted within said casing for supporting a revoluble disk of light-sensitive material, said revoluble bead being in operative connection therewith, and a spring-operated sounding device arranged to operate in connection with said bead, substantially as shown and described.

9. In a photographic-exposure meter, a circular casing provided with a revoluble peripheral bead and adapted to receive a revoluble disk of light-sensitive material, said revoluble bead being in operative connection with said disk when the latter is in position, a spring-operated sounding device arranged to operate in connection with said bead, said casing being provided at its front with a plurality of tint-openings, each of which is provided with a tint-gage, and through which tint-openings the light is caused to strike said disks, said casing being further provided forwardly of said tint-openings with a revoluble glass cover or face provided throughout a predetermined portion of its surface with an opaque coating or substance, substantially as shown and described.

10. A photographic-exposure meter, comprising a circular casing provided with a revoluble peripheral bead and adapted to receive a disk of light-sensitive material which is adapted to revolve therein, and devices mounted in said casing in connection with said disk when the latter is in position, and in operative connection with said revoluble bead and arranged to revolve the former, substantially as shown and described.

657,686. GEOGRAPHICAL CLOCK. ALBERT G. BRAUNSDORF, Chicago, Ill. Filed Feb. 12, 1900. Serial No. 4,923. (No model.)



Claim.—1. A dial divided by concentric circles into dial zones, each dial zone bearing dial-numerals for indicating time for a corresponding earth zone and bearing names of places located on said earth zone, one marginal dial zone representing an extreme eastern or western earth zone and the remaining dial zones being successively removed therefrom in a common direction and located according to the longitudes of the earth zones respectively represented, substantially as and for the purpose set forth.

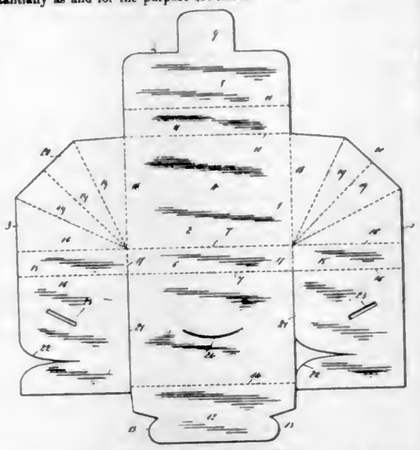
2. A dial divided by concentric circles into dial zones, each dial zone bearing dial-numerals for indicating time for a corresponding earth zone and bearing names of places located on said earth zone, the concentrically-arranged dial-numerals being also disposed in radial alinements, any given numeral of any dial zone being in radial alinement with a different numeral of any adjacent dial zone, the names of places appearing on the several dial zones and having the same initial letter being in radial alinement, substantially as and for the purpose set forth.

3. The combination of a dial divided by concentric circles into dial zones, each dial zone representing an earth zone of fifteen degrees width and bearing dial-numerals for indicating time for said earth zone and bearing also names of places on said earth zone, the numerals of the dial zones being in radial alinements, any given numeral of any dial zone being in radial alinement with different numerals of adjacent dial zones, and hour and minute hands moving over the face of said dial, said hour-hand being disposed to indicate simultaneously the hours for the several zones while the minute-hand indicates the common minute for the several zones upon one given dial zone, substantially as and for the purpose set forth.

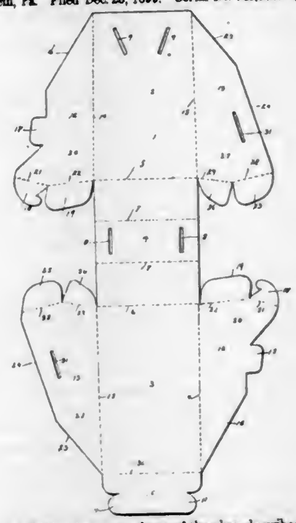
4. The combination with a permanently-fixed prominent ring of dial-numerals, of a normally-stationary adjustable dial divided by concentric circles into dial zones, said dial zones bearing dial-numerals and also names of places on the respective earth zones represented, said numerals being disposed in radial alinements, adjacent numerals of each alinement being dissimilar, the adjustability of the composite dial permitting any dial zone to be placed with its numerals in radial alinement with like numerals of said prominent dial, whereby a time-indicator for use in different longitudes is afforded, substantially as and for the purpose set forth.

657,687. FOLDING PACKAGE OR POCKET-BOOK. ALEXANDER W. BERRS, Bethlehem, Pa. Filed Nov. 28, 1899. Serial No. 738,567. (No model.)

Claim.—The herein-described package or pocket-book of the class mentioned, formed of a single sheet or blank provided with scoring or crease-lines for folding, and comprising the back 4, the bottom 6, the front 5, the top 10, the front flap 8, and the inner flap 12, said foregoing portions constituting serially the main or body portion, the side-flap portions projecting at opposite sides of said main or body portion and consisting respectively of the upper portion extending laterally from the back 4, the end 15, and the lower portion connected with the end 15 and extending from said end in a position at the side of the front 5, said lower portions of the side flaps and the front 5 being disconnected at their adjoining edges, the front flap 8 being adapted to engage with the front 5 and the inner flap 12 being adapted to engage said lower portions of the side flaps, substantially as and for the purpose set forth.



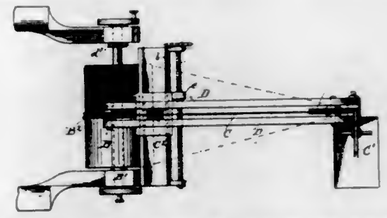
657,688. FOLDING BOX OR PACKAGE. ALEXANDER W. BERRS, Bethlehem, Pa. Filed Dec. 23, 1899. Serial No. 741,353. (No model.)



Claim.—A folding box or package of the class described, formed of a single sheet or blank with crease-lines or scoring for folding, and consisting of the front 2, the rear or back 3, the top portion 4, and the end wing or flap 10, the foregoing parts constituting the main or body portion, the side flaps 12 arranged respectively at opposite sides of the respective front portions 2 and rear portions 3 and extending laterally therefrom, said side flaps 12 being provided at their inner edges adjacent to the top portion 4 with projecting flaps adapted to fold under said top portion, and the side flaps 13 respectively arranged at opposite sides of the front portion 2 and back portion 3 and extending laterally therefrom at the side opposite from said flaps 12, said flaps 13 being provided at their inner edges adjacent to the top 4 with projecting flaps adapted to fold under said top, said flaps 12 and 13 being coincident with the full area of the side edges of the respective front portion 2 and rear portion 3 so that they conjointly close the full side of the box or package, the end flap 10 being adapted to engage with the front 2, and the inner edge portion of the flaps 12 adjacent to the top 4 being adapted to engage with said top, substantially as and for the purpose set forth.

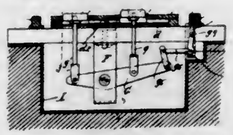
657,689. HOISTING APPARATUS. HANS C. BEHR, San Francisco, Cal., assignor to Fraser & Chalmers, Chicago, Ill. Filed May 2, 1899. Serial No. 715,297. (No model.)

Claim.—1. The combination with the winding-drum, of a truck or carriage arranged in close proximity thereto, a sheave-frame pivoted at each end, a rope-sheave mounted at each end of said frame, and of means whereby the carriage is caused to travel lengthwise of the winding-drum in order that the rope-leading edge of the sheave mounted at such end of the frame shall move within a plane tangent to the winding face or side of the drum in correspondence with the laying on or off of the rope or cable.



2. The combination with the winding-drum, of the pit-sheave, a guide-sheave located a distance therefrom, a rigid connection between said sheaves, a longitudinally-movable device to which the upper end of the frame is flexibly connected, a laterally-movable carriage to which the said frame is pivotally connected at its lower end, and of mechanism for causing the said carriage to traverse the winding-drum with the laying on or off of the rope or cable so that the rope-leading edge of the guide-sheave mounted within the frame will move within a plane tangent to the winding-face of the drum.

657,690. SWITCH-OPERATING APPARATUS. MAURICE W. BROWN, EDWIN A. BYRNE, and JOHN GILSENAN, Newark, N. J. Filed May 24, 1900. Serial No. 17,801. (No model.)

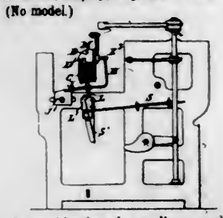


Claim.—1. A switch-operating apparatus placed between the rails of a railway-track adjacent to the switch, and comprising a plate mounted between said rails, a box or casing beneath said plate and of which said plate forms a cover, a support suspended from and beneath said plate, a lever pivotally connected with said support and ranging transversely of the track, and in operative connection at one end with the switch-tongue, and rods pivotally connected with said lever at each side of its pivotal support, and extending upwardly through said plate, each of said rods being provided at its upper end with a shoe-plate which is loosely mounted thereon, and which rests in a corresponding cavity or recess formed in said plate, substantially as shown and described.

2. A switch-operating apparatus placed between the rails of a railway-track adjacent to the switch, and comprising a plate mounted between said rails, a box or casing beneath said plate and of which said plate forms a covor, a support suspended from and beneath said plate, a lever pivotally connected with said support and ranging transversely of the track, and in operative connection at one end with the switch-tongue, and rods pivotally connected with said lever at each side of its pivotal support, and extending upwardly through said plate, each of said rods being provided at its upper end with a shoe-plate which is loosely mounted thereon, and which rests in a corresponding cavity or recess formed in said plate, and devices in connection with the platform of a car and adapted to be depressed into contact with said shoe-plates, whereby said lever and said switch are operated, substantially as shown and described.

3. In an apparatus of the class described, a plate mounted between the rails of a railway-track and adjacent to a switch, an open box or casing beneath said plate and of which said plate forms a cover, a support suspended from and beneath said plate, a lever pivotally connected with said support and extending transversely of the track, rods pivotally connected with the opposite ends of said lever and extending upwardly through said plate, shoe-plates loosely mounted on the ends of said rods in openings formed in said plate, one end of said lever being also in operative connection with the switch-tongue by means of a link pivotally connected with said lever, and a crank-lever pivotally supported beneath said switch-tongue and in operative connection with said switch-tongue and said link, said lever being adapted to be operated by devices connected with the platform of a car and operating in connection with said shoe-plates, substantially as shown and described.

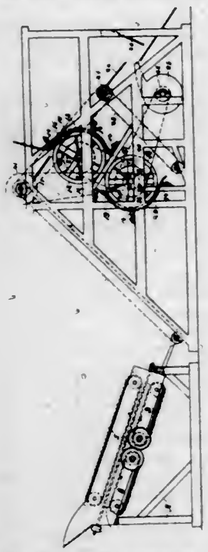
657,691. STOP-MOTION FOR LOOMS. JOHN C. COTTAM, Bradford, and JOSEPH BENTLEY, Shipley, England. Filed May 18, 1900. Serial No. 17,134. (No model.)



Claim.—1. In combination, the swell arranged at the shuttle-box to be operated by the shuttle, a stop-block and stop-finger, means for operating the stop-finger, and a device interposed between the means for operating the stop-finger and the swell for controlling the action of said finger, said operating means acting through said device to relieve the shuttle from the pressure of the swell, substantially as described.

2. In combination, the swell arranged at the shuttle-box, a stop-block, a stop-finger cooperating therewith, spring-pressed means on the lay for operating the stop-finger, a device interposed between said spring-operating means and the swell whereby the position of the swell causes said device to control the action of the stop-finger, said spring-pressed operating means acting through said device to relieve the shuttle from pressure of the swell, substantially as described.

657,692. RAISIN-CLEANER AND CAP-STEMMER. HARRY EASTWOOD, Fresno, Cal. Filed Dec. 21, 1899. Serial No. 741,093. (No model.)



Claim.—1. In a raisin-cleaner, the combination with a screen corrugated to form longitudinal channels, of an endless brush-belt adapted to travel parallel with the screen and to operate on the raisins as they travel through the channels.

2. A device for cleaning raisins and the like, consisting of a screen corrugated in the direction of travel of the raisins, an endless traveling belt having brushes projecting from its surface and adapted to contact with the raisins upon the screen, a second endless traveling belt having brushes fixed upon its surface and traveling parallel and in contact with the lower surface of the screen.

3. A device for cleaning raisins and the like, consisting of a corrugated screen, upon one end of which the fruit is delivered to be moved along the screen in the line of the corrugations, an endless traveling belt having brushes projecting from its surface and moving in contact with the raisins on the upper surface of the screen, a second endless traveling brush-carrying belt moving in the same direction below the screen and in contact therewith, and a third belt with brushes moving in contact with the screen and in a direction opposite to the first-named brushes.

4. In a device for cleaning raisins and the like, a corrugated screen and brushes adapted to move with relation to its surface as shown, and supports for the screen consisting of rods extending lengthwise beneath the arches of the corrugations with the tension screws and nuts.

5. In a raisin-cleaner, a revoluble foraminous drum, in combination with an opposing fender having a substantially-smooth unbroken surface capable of elastic yield at any point and between which and the periphery of the drum the raisins pass.

6. In a raisin-cleaner, the combination with means for effecting a preliminary cleaning of the raisins, of a revoluble drum, and a fender concentric with the drum and having a substantially-smooth unbroken surface capable of elastic yield at any point and between which and the drum the raisins pass.

7. In a raisin-cleaner, the combination of a foraminous revoluble drum, a flexible fender opposing the same and acting on the raisins with a yielding pressure, and means interior to the drum and adapted to engage and remove the stems of the raisins which project through the foraminations of the drum.

8. In a raisin-cleaner, the combination of a foraminous, revoluble drum, a yielding fender opposing the same and acting with a yielding pressure upon the raisins, and revoluble brushes interior to the drum and adapted to contact with and remove the portions of stems exposed through the foraminations of the drum.

9. In a raisin-cleaner, a revoluble drum having a foraminous surface, means for delivering the fruit upon the upper surface of the drum, a fender opposing the drum and having a substantially-smooth unbroken surface capable of elastic yield at any point said surface, separated from the drum to form an intermediate space through which the raisins are rolled.

10. In a device for cleaning raisins and the like, a revoluble drum having a foraminous surface, means for delivering the fruit upon the upper part of the drum, a segmental fender extending partially around the drum with an intermediate space between which the fruit is carried by the revolution of the drum and capable of elastic yield at any point, and means for adjusting the fender to vary the space.

11. In a device for cleaning raisins and the like, a revoluble drum having a foraminous surface, means for delivering the fruit near the top of the drum, a segmental fender surrounding the drum with an intermediate space and a flexible apron interposed between the fender and the drum and capable of elastic yield at any point.

12. In a device for cleaning raisins and the like, a revoluble drum having a foraminous surface, a segmental fender surrounding the drum with an intermediate space, a flexible apron interposed between the fender and the drum and springs by which the apron is normally pressed toward the drum and against the fruit passing between it and the drum said apron capable of elastic yield at any point.

13. In a device for cleaning raisins and the like, a plurality of revoluble drums, a means for delivering the fruit upon the upper part of the uppermost drum, an adjustable and segmental fender partially surrounding the uppermost drum having a spring-pressed flexible apron within it between which and the drum the raisins pass, said fender capable of elastic yield at any point and acting to deliver the fruit near the upper part of the succeeding drum and a like segmental fender and spring-pressed apron encircling said succeeding drum.

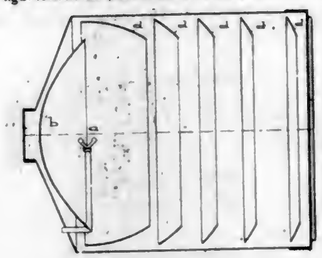
14. In a device for cleaning raisins and the like, revoluble drums having partially-inclosing segmental fenders, flexible spring-pressed aprons capable of elastic yield at any point and between which and the drums fruit is caused to pass, means for delivering the fruit into said space near the upper part of the drum, a tail-board or screen over which the fruit is passed from the drums, and an air-forcing blast mechanism by which the refuse is separated from the fruit.

15. A device for cleaning raisins and the like, consisting of foraminous revoluble drums, flexible aprons partially inclosing the drums, means for delivering the fruit between the apron and the drum and brushes contacting and rubbing against the interior surface of the drum.

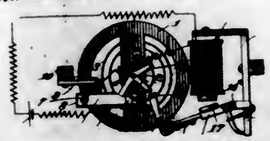
657,693. LIGHT-REFLECTOR. FRITZ BOSELL, Stockholm, Sweden, assignor to the Nordiska Acetylen-Aktiebolaget, same place. Filed Mar. 16, 1900. Serial No. 9,001. (No model.)

Claim.—1. In an apparatus as described, the arrangement on the inner side of the chamber or casing, surrounding the light source of a number of annular or frame-shaped reflectors *d* positioned to reflect the rays coming from the light source *a* back through the light source toward a parabolic mirror *b*, situated behind the same, in the focus of which the light source is situated, in order that the light radiating from the light source as well obliquely upward and forward as backward may be gathered up and reflected forward through the light-opening.

2. The combination with a light and a reflector arranged back of the same, of a series of reflecting-rings spaced a distance apart in front of the light, the reflecting-walls of said rings extending at predetermined and varying angles, the ring most remote from the light being arranged to reflect the same toward the center of the reflector back of the light, while the ring-reflectors near the light are extended at such angles that they reflect the light toward the edge of the back reflector.



657,694. ELECTRIC CLOCK. GEORGE FICHTER, Linn, Mass. Filed Jan. 10, 1900. Serial No. 973. (No model.)



Claim.—1. An electric clock comprising an oscillating shaft and balance-wheel, a hair-spring, an arm carried by said shaft, a swinging pendant suspended thereon, two springs having ends which are supported adjacent to each other but out of contact and which are insulated from each other, a battery which is connected to said springs, an electromagnent in its circuit, a flat surface adjacent to the end of one of said springs and arranged in the path of the pendant, said parts being arranged so that said pendant may be drawn over the ends of said springs in turn, and will simultaneously engage said ends, when the oscillations of the balance-wheel become too short and complete the circuit, and means actuated by said magnet for giving an impulse to said shaft.

2. An electric clock comprising an oscillating shaft and balance-wheel, a hair-spring, an arm extending from said shaft, a pendant pivotally suspended therefrom, a battery having an electromagnet in its circuit, two contact-points in said circuit which are arranged adjacent to each other and in the path of the pendant and make a break in the circuit, a surface adjacent to one of said points which will sustain said pendant as the pendant starts to return and cause the latter to simultaneously engage said contact-points and complete the circuit, and means actuated by said magnet for simultaneously actuating said shaft.

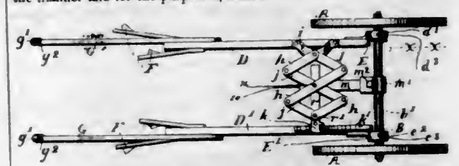
3. An electric clock comprising an oscillating shaft, a balance-wheel, a hair-spring connected thereto, an arm extending from said shaft, an electromagnet, an armature, an arm extending therefrom, a spring-pressed lever pivoted to the outer end of said armature-arm, means for normally drawing said armature away from the poles of the magnet, and for holding said lever outside the path of the shaft-arm, means for energizing said magnet when the oscillations of the balance-wheel become too short, said parts being adjusted so that said pivoted arm will engage said shaft-lever, and will be permitted to follow in the path of the latter when the magnets are energized.

4. An electric clock comprising an oscillating shaft, a balance-wheel, a hair-spring connected thereto, an arm extending from said shaft, an electromagnet, an armature, a spring-pressed lever pivoted thereto, a face on one end of said lever which is covered with a friction-packing, means for normally drawing the armature away from the end of the magnet and for holding said arm outside the path of the shaft-lever, means for energizing said magnet when the oscillations of the balance-wheel become too short, said parts being adjusted so that the packing on the face of the pivoted lever will engage said shaft-lever, and will follow in the path of the latter when the magnets are energized.

657,695. HAND-CULTIVATOR. HERBERT R. FOWLER, Cintonville, Conn. Filed Aug. 17, 1899. Serial No. 727,541. (No model.)

Claim.—1. In a cultivator the combination of an axle, a pair of wheels mounted thereon, a pair of hoe-frames coupled to the axle, and double-section lazy-tongs connected at the end joints with the said sections and supported at the center joint from the axle, substantially as and for the purpose specified.

2. In a cultivator the combination of an axle, a pair of wheels mounted thereon, a pair of hoe-frames coupled to the axle and adapted to lateral vibration relative to the axis thereof and provided with operating-handles, lazy-tongs of two sections connected at the ends to the hoe-frames, and having the central pivotal joint supported from the axle, substantially in the manner and for the purpose specified.



3. In a cultivator the combination of an axle, a pair of wheels mounted thereon, a pair of hoe-frames coupled to the axle and adapted to lateral and vertical vibration relative to the axis thereof, handles mounted on said frames, a central support mounted on the axle, and lazy-tongs of two sections connected at the ends with the hoe-frames, and having the central pivotal joint mounted on said support, substantially as and for the purpose specified.

4. In a cultivator the combination of an axle having a central arch a pair of wheels mounted on the axle, a pair of hoe-frames coupled to the axle and adapted to universal vibration relative to the axis, handles mounted on said frames, a central support mounted on said arch, lazy-tongs of two sections connected at the end joints to the frames and at its central joint from said support, whereby a limited motion parallel to the axis is permitted said central joint.

5. In a cultivator the combination of an axle provided with a central upwardly-curved arch, wheels mounted on the axle, a pair of hoe-frames coupled to the axle and adapted to universal vibration relative to the axis, handles mounted on said frame, a central support mounted on the axle-arch, a guide-bar mounted on one of the frames, a bracket mounted on the opposite frame, and lazy-tongs of two sections movably supported at the central joint from said support and adapted to a limited movement transversely of the cultivator, one end of the tongs being hinged to the said bracket and the other movably engaging the guide-bar, substantially in the manner and for the purpose specified.

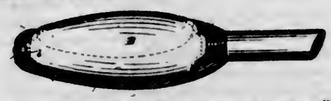
6. In a cultivator the combination of an axle having a central upwardly-curved arch, a pair of wheels mounted on the axle, a pair of hoe-frames coupled to the axle, one being hinged or pivoted thereto, and the other coupled thereto by means of a universal joint, lazy-tongs of two sections supported at the central joint from the axle and adapted to a limited movement parallel therewith, and having the end joints connected to the hoe-frames substantially as and for the purpose specified.

7. In a cultivator the combination of the axle B having the arch *b'*, the support *m* mounted on the arch, the wheels A journaled on the axle, the casting *d'* and cap d^3 clamped on one part of the axle, the casting d^2 journaled upon the axle, the frames D and D' hinged to said castings, the bracket *i* mounted on one frame, the guide-bar *k'* mounted on the opposite frame, and the double-section lazy-tongs having one end pivoted to said bracket, its center pivoted to the support, and its opposite end movably engaging the guide-bar, the frames being provided with hoes and handles, substantially in the manner and for the purpose specified.

657,696. PROCESS OF RAISING THE MELTING-POINT OF RESINS, WAXES, AND SIMILAR BODIES. ADOLF GEITTNER, Vienna, Austria-Hungary. Filed Aug. 18, 1899. Serial No. 727,688. (No specimens.)

Claim.—The process for raising the melting-point of resins, wax and wax-like substances, pitch and tar, or for preventing these from assuming the mobile liquid condition, which consists in causing water, either alone or with an addition of substances such as the carbonates of lime and magnesia, magnesium hydruxid, sulfate of lime or oxid of iron, to fall drop by drop onto the said substances while heated to above 100° centigrade until the mass has assumed a viscous condition, substantially as described.

657,697. HAND-GRIP FOR HANDLE-BARS. AUGUST GETZ and WILLIAM C. WESTALL, San Francisco, Cal. Filed Sept. 8, 1896. Serial No. 605,050. (No model.)

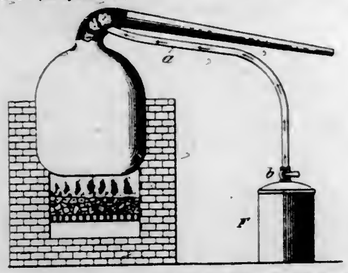


Claim.—1. A velocipede handle or grip consisting of an ellipsoidal pneumatic bulb having an unobstructed cavity and a longitudinal rigid shell or support which partially incloses the bulb, leaving the upper portion thereof exposed, and which is provided at its inner end with a socket which embraces the end of the bulb and by which the shell or support is attached to the handle-bar.

2. The combination with the handle-bar of a bicycle, of the grip frame

or holder removably secured thereto, said frame or holder having its upper surface cut away so as to present a spoon-shaped seat in cross-section, the flanges inwardly projecting from each end of the holder, an inflatable cushion held within the frame or holder, and an air-filling valve connected with the cushion.

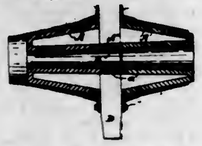
657,698. PROCESS OF AGING ALCOHOLIC LIQUORS. JULIAN A. H. HASBROUCK, New York, N. Y. Filed Aug. 5, 1899. Serial No. 726,254. (No specimens.)



Claim.—1. In aging liquors the process herein described consisting in injecting an oxygenizing agent into the vaporous distillate in the opposite direction to the motion of the distillate directly as it comes from the still, producing a concussive impact of the particles of the vapor and oxygenizing agent as and for the purpose specified.

2. In aging liquors the process herein described consisting in injecting oxygen gas into the vaporous distillate in the opposite direction to the motion of the distillate directly as it comes from the still producing thereby a concussive impact of the particles of the vapor and the oxygen gas, as and for the purpose specified.

657,699. WHEEL. CHARLES HEART, Frankton, Ind., assignor of one-half to William H. H. Quick, Anderson, Ind. Filed Jan. 29, 1900. Serial No. 3,134. (No model.)



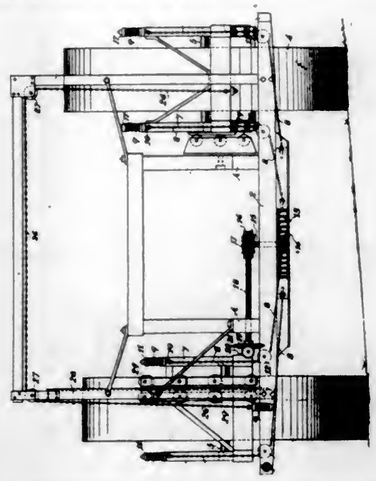
Claim.—1. A hub consisting of two hollowed-out portions having their inner ends open, the central part of each portion having a projection provided with a screw-thread whereby the portions are secured together, and the rims of these two portions not meeting leaving a space, a band shrunk on each portion having its inner end flush with the inner end of the rim, an annular flange on the inner end of each band provided with apertures, and bolts passing throuh the apertures adapted to act to further secure the two portions of the hub together and also to fasten the spokes.

2. A hub consisting of two hollowed-out portions heving their inner central parts secured together, and the inner ends of the rims of these portions being spaced apart, a band shrunk on each portion, having their inner ends flush with the rims, an annular flange on the inner end of each band provided with apertures, spokes positioned between the inner ends of the bands and rims of the two portions, and bolts passing through the apertures in the flanges and between each spoke for securing the spokes in position and further securing the two portions of the hub together.

657,700. TRAVELING HARVESTER. BENJAMIN HOLT, Stockton, Cal. Filed June 14, 1900. Serial No. 20,229. (No model.)

Claim.—1. The combination in a traveling harvester of a main frame for supporting threshing and cleaning mechanisms, supplemental frames in which the main bearing-wheels are journaled upon opposite sides of the machine, means for moving one of said wheels up and the other down at the same time, consisting of a transversely-movable guided rack-bar, chains connecting said rack-bar with each of the movable wheel-frames, and means for moving the rack-bar transversely in either direction.

2. The combination in a traveling harvester of a main frame to support threshing and cleaning mechanisms, bearing-wheels journaled in supplemental frames upon opposite sides of the main frame, means for moving said wheels up or down consisting of flexible chains or connections having one end attached to the wheel-frames, a transversely-slidable rack-bar to which the other ends of said chains are connected, means for moving said rack-bar in either direction, consisting of a pinion engaging its teeth, a worm-gear and a shaft carrying a screw engaging the gear, and mechanism by which said shaft is revolved in either direction.



3. The combination in a traveling harvester of a main frame adapted to support the threshing and cleaning mechanisms, supplemental frames in which the bearing-wheels are journaled upon opposite sides of the machine, standards fixed to movable parts of said frames, chains connected with the upper ends of said standards, direction-pulleys around which said chains pass, a transversely-slidable guided rack-bar with which the other ends of the chains are connected, a mechanism by which the rack-bar is moved in either direction to simultaneously raise one wheel and lower the other.

4. The combination in a traveling harvester of a main frame upon which the threshing and cleaning mechanisms are carried, supplemental frames in which the bearing-wheels are journaled upon opposite sides of the main frame, mechanism by which one wheel-frame is raised and the other lowered, consisting of a transversely-slidable guided rack-bar, with mechanism by which it is moved in either direction, chains connected with said rack-bar extending outwardly in opposite directions, guide-pulleys around which said chains pass, standards fixed upon the wheel-frames and carrying cushioned supports with which the ends of the chains are connected.

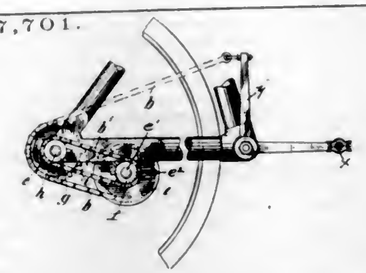
5. The combination in a traveling harvester of a main frame, supplemental frames in which the main bearing-wheels are journaled upon opposite sides of the machine, a rack-bar guided and slidable transversely with relation to the main frame, a mechanism by which said rack-bar is movable in either direction, chains connected with the bar extending outwardly in opposite directions, guide-pulleys around which the chains pass, standards carried by the wheel-frames to which the outer ends of the chains are connected, and a chain passing transversely across the machine over guide-pulleys and having its ends connected with the wheel-frames.

6. The combination in a traveling harvester of a main frame, supplemental frames in which the main bearing-wheels are journaled upon opposite sides of the machine, a rack-bar guided and slidable transversely with relation to the main frame, a mechanism by which said rack-bar is movable in either direction, chains connected with the bar extending outwardly in opposite directions, guide-pulleys around which the chains pass, standards carried by the wheel-frames to which the outer ends of the chains are connected, antifrictional rollers or slides carried by the movable wheel-frames, and fixed guides against which they are movable.

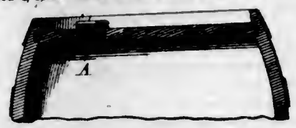
657,701. DRIVING MECHANISM FOR CYCLES. FRANS J. E. JOHANSSON, Stockholm, Sweden. Filed Apr. 14, 1900. Serial No. 12,907. (No model.)

Claim.—In combination in a bicycle, the treadle-levers, the driving-axle, chain-wheels thereon, a shaft *h* extending through the driving-axle from one side to the other, the wheels *g* at the ends of the shaft *h*, pulleys *e* supported on the frame, a wheel *f* connected with each of the pulleys *e*, flexible connections between the wheels *f* and *g*, and flexible connections extending from the treadles to the chain-wheels and from the chain-wheels to the pulleys *e*, substantially as described.

657,701.



657,702. BUSHING-PROTECTOR FOR USE IN PITCHING LAGER BEER KEGS. FRANK KOELSCH and JOSEPH P. KRAMER, Scranton, Pa. Filed Oct. 4, 1899. Serial No. 732,534. (No model.)



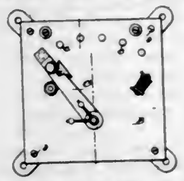
Claim.—1. As a new article of manufacture, the bushing-protector adapted to fit in a bushing, and having pivotal contacting points therewith, whereby it may be rocked from side to side therein, and readily removed, substantially as specified.

2. The combination with a barrel-bushing, of a bushing-protector adapted to fit therein, and having pivotal contacting points therewith, whereby it may be rocked from side to side therein, and readily removed, substantially as specified.

3. The combination with a barrel-bushing, of a bushing-protector, having its inner end portion of greater taper than said bushing, and of less diameter than said bushing above said inner tapered portion, substantially as specified.

4. The combination with a barrel-bushing, of a bushing-protector, having the inner tapered portion of greater taper than said bushing and provided with a rounded shoulder at its inner extremity, the central annular groove and the outer end portion of less diameter than the orifice of said bushing, substantially as specified.

657,703. ELECTRICAL RHEOSTAT. HARRY W. LEONARD, New York, N. Y. Filed Feb. 11, 1899. Serial No. 705,288. (No model.)



Claim.—1. A motor-starting or equivalent rheostat composed of a shallow box, one side of which is made wholly or partially of insulating material and carries the resistance and contact-plates, the resistance being inside of the box arranged in steps connected with the contact-plates and lying in a plane parallel to the top and bottom of the box, and embedded in a mineral insulating material, which insulates the sections of the resistance from each other and prevents overheating of the resistance by absorbing the heat developed therein.

2. A motor-starting or equivalent rheostat composed of a shallow metal box, one side of which is made wholly or partially of insulating material and carries the resistance and contact-plates, the resistance being inside of the box arranged in steps connected with the contact-plates and lying in a plane parallel to the top and bottom of the box and embedded in a mineral insulating material which insulates the sections of the resistance from each other and prevents overheating of the resistance by absorbing the heat developed therein.

3. A motor-starting or equivalent rheostat composed of a shallow cast-iron box, one side of which is made wholly or partially of insulating material and carries the resistance and contact-plates, the resistance being inside of the box arranged in steps connected with the contact-plates and lying in a plane parallel to the top and bottom of the box and embedded in a mineral insulating material which insulates the sections of the resistance from each other and prevents overheating of the resistance by absorbing the heat developed therein.

4. A motor-starting or equivalent rheostat composed of a shallow box, one side of which is made wholly or partially of insulating material and carries the resistance and contact-plates, the resistance being in the form of a ribbon inside of the box arranged in steps connected with the contact-plates and lying in a plane parallel to the top and bottom of the box, and embedded in a mineral insulating material.

5. A motor-starting or equivalent rheostat composed of a shallow cast-iron box, one side of which is made wholly or partially of insulating material and carries the resistance and contact-plates, the resistance being in the form of a ribbon inside of the box arranged in steps connected with the contact-plates and lying in a plane parallel to the top and bottom of the box, and embedded in a mineral insulating material.

6. A motor-starting or equivalent rheostat composed of a shallow box, one side of which is made wholly or partially of insulating material and carries the resistance and contact-plates, the resistance being inside of the box arranged in steps connected with the contact-plates and lying in a plane parallel to the top and bottom of the box and embedded in a granular or powdered insulating filling material which insulates the sections of the resistance from each other and prevents overheating of the resistance by absorbing the heat developed therein.

7. A motor-starting or equivalent rheostat composed of a shallow cast-iron box, one side of which is made wholly or partially of insulating material and carries the resistance and contact-plates, the resistance being inside of the box arranged in steps connected with the contact-plates and lying in a plane parallel to the top and bottom of the box and embedded in a granular or powdered insulating filling material which insulates the sections of the resistance from each other and prevents overheating of the resistance by absorbing the heat developed therein.

8. A motor-starting or equivalent rheostat composed of a shallow cast-iron box, one side of which is made wholly or partially of insulating material and carries the resistance and contact-plates, the resistance being in the form of a ribbon, inside the box arranged in steps connected with the contact-plates and lying in a plane parallel to the top and bottom of the box, and embedded in a granular or powdered insulating filling material which insulates the sections of the resistance from each other and prevents overheating of the resistance by absorbing the heat developed therein.

9. A motor-starting or equivalent rheostat composed of a shallow box, having a top or cover made of slate or equivalent material, and which carries the resistance, contact-plates and contact-lever, the resistance being inside the box arranged in steps connected with the contact-plates and lying in a plane parallel to the top and bottom of the box, and embedded in a filling of sand.

10. A motor-starting or equivalent rheostat composed of a shallow box, having a top or cover made of slate or equivalent material, and which carries the resistance, contact-plates and contact-lever, the resistance being inside the box arranged in steps connected with the contact-plates and lying in a plane parallel to the top and bottom of the box, and embedded in a filling of sand, and a layer of non-heat-conducting material between the resistance and the cover.

11. A motor-starting or equivalent rheostat composed of a shallow box, having a top or cover made of slate or equivalent material, and which carries the resistance, contact-plates and contact-lever, the resistance being in the form of a ribbon inside the box arranged in steps connected with the contact-plates and lying in a plane parallel to the top and bottom of the box, and embedded in a filling of sand.

12. A motor-starting or equivalent rheostat composed of a shallow cast-iron box, having a top or cover made of slate, or equivalent material, and which carries the resistance, contact-plates and contact-lever, the resistance being in the form of a ribbon inside the box arranged in steps connected with the contact-plates and lying in a plane parallel to the top and bottom of the box, and embedded in a filling of sand.

13. A motor-starting or equivalent rheostat composed of a shallow cast-iron box, having a top or cover made of slate, or equivalent material, and which carries the resistance contact-plates and contact-lever, the resistance being in the form of a ribbon inside the box arranged in steps connected with the contact-plates and lying in a frame parallel to the top and bottom of the box, and embedded in a filling of sand, and a layer of non-heat-conducting material between the resistance and the cover.

14. A motor-starting or equivalent rheostat composed of a shallow box having a top or cover, made of slate or equivalent material, the resistance being held to the inner side of said cover by clamps attached to the shanks of contact-plates which project through the cover, and said cover also having pins on its inner side around which the resistance is looped, and a filling of sand in said box, in which the resistance is embedded.

15. A motor-starting or equivalent rheostat composed of a shallow cast-iron box having a top or cover, made of slate or equivalent material, the resistance being held to the inner side of said cover by clamps at-

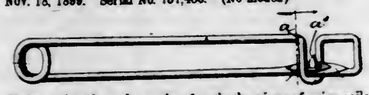
tached to the shanks of contact-plates which project through the cover, and said cover also having pins on its inner side around which the resistance is looped, and a filling of sand in said box, in which the resistance is embedded.

16. A motor-starting or equivalent rheostat composed of a shallow box having a top or cover, made of slate or equivalent material, the resistance in the form of a ribbon being held to the inner side of said cover by clamps attached to the shanks of contact-plates which project through the cover, and said cover also having pins on its inner side around which the resistance is looped, and a filling of sand in said box, in which the resistance is embedded.

17. A motor-starting or equivalent rheostat composed of a shallow cast-iron box having a top or cover, made of slate or equivalent material, the resistance in the form of a ribbon being held to the inner side of said cover by clamps attached to the shanks of contact-plates which project through the cover, and said cover also having pins on its inner side around which the resistance is looped, and a filling of sand in said box in which the resistance is embedded.

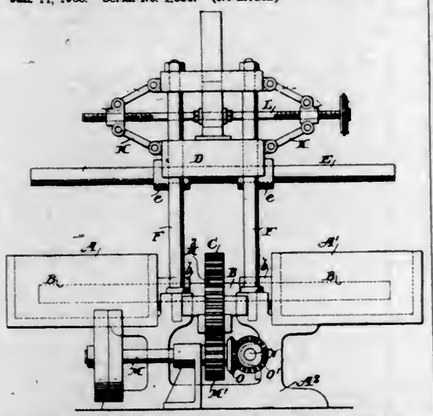
18. A motor-starting or equivalent rheostat composed of a shallow cast-iron box having a top or cover, made of slate or equivalent material, the resistance in the form of a ribbon being held to the inner side of said cover by clamps attached to the shanks of contact-plates which project through the cover, said cover also having pins on its inner side around which the resistance is looped, a filling of sand in said box in which the resistance is embedded, and a layer of non-heat-conducting material between the resistance and the cover.

657,704. **SAFETY-PIN.** ROBERT MARTIN, London, England, assignor to Eugen Sandow and Edward Williams, same place. Filed Nov. 18, 1899. Serial No. 737,486. (No model.)



Claim.—A safety-pin made of a single piece of wire coiled upon itself to form a body portion and a spring-pin having an eye near its end, said body portion having a transversely-bent U-shaped portion, the free end of the wire of said body portion beyond said U-shaped portion being shaped into a rectangular loop forming a guard for the pin-point, the wire forming one side of said rectangular loop terminating in an angularly-bent sharpened point in the center of and at the bottom of the U-shaped portion and arranged to engage said eye on the pin end, substantially as described.

657,705. **MERCERIZING-MACHINE.** THOMAS MCCONNELL, Chester, Pa., assignor to the Hampton Company, Easthampton, Mass. Filed Jan. 11, 1900. Serial No. 1,059. (No model.)



Claim.—1. In a machine for mercerizing, &c., the combination of two independent longitudinal vats, a series of rollers extending into said vats on each side and journaled in fixed bearings, driving devices for rotating said rollers located in the space between the vats, an upper longitudinal and vertically-adjustable frame, a series of rollers carried by said frame, and projecting at each side over the vats, and means to adjust said upper frame to or from the vats to regulate the distance between the upper and lower rollers and the tension to which the yarn is subjected.

2. In a machine for mercerizing, &c., the combination of two independent longitudinal vats, a series of long rollers spanning the space between said vats and projecting into them on each side and journaled in fixed bearings, driving devices for rotating said rollers located in the space between said vats, an upper longitudinal and vertically-adjustable frame, a series of rollers carried by said frame, and projecting at each side over the vats, and means to adjust said upper frame to or from the vats to regulate the distance between the upper and lower rollers and the tension to which the yarn is subjected.

3. In a machine for mercerizing, &c., the combination of two independent longitudinal parallel vats, a series of long rollers spanning the intermediate space between said vats and projecting into them at each side, gearing between said rollers located in said intermediate space, and a series of upper rollers projecting over said vats and lower rollers at each side.

4. In a machine for mercerizing, &c., the combination of two independent parallel longitudinal vats arranged to form an intermediate space between them, a series of long rollers spanning the intermediate space, projecting at either end into said vats and journaled in stationary bearings, gearing between said rollers located in said intermediate space, an upper longitudinal and vertically-movable frame, a series of rollers carried by said movable frame and projecting over said vats and lower rollers at each side, and means to raise or lower said upper frame.

5. In a machine for mercerizing, &c., the combination of two longitudinal parallel vats arranged to form an intermediate space between them, a series of long rollers spanning said intermediate space, projecting into said vats at either side and journaled in stationary bearings, a train of gears between said rollers located in said intermediate space, driving devices operatively connected with said train of gears at one end, and power-transmitting connections between said driving devices and the other end of said train of gears.

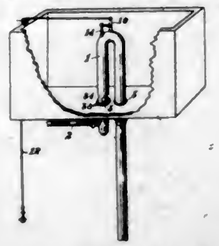
6. In a machine for mercerizing, &c., the combination of a vat to contain the mercerizing liquor, a series of rollers projecting into said vat and journaled in stationary bearings in the sides thereof, a series of upper and adjustable rollers projecting over said vat and the lower rollers journaled therein, and means to adjust said upper rollers to regulate their distance from the lower rollers and the tension to which the yarn is subjected.

7. In a machine for mercerizing, &c., the combination of a vat to contain the mercerizing liquor, a series of rollers projecting into said vat and journaled in stationary bearings in the sides thereof, driving devices for rotating said rollers in their stationary bearings located exterior to said vat, a series of upper and adjustable rollers projecting over said vat and the lower rollers journaled therein, and means to adjust said upper rollers to regulate their distance from the lower rollers and the tension to which the yarn is subjected.

8. In a machine for mercerizing, &c., the combination of a vat to contain the mercerizing liquor, a series of lower rollers, an upper adjustable frame, stationary guides for said frame, a series of upper rollers carried by said upper adjustable frame, toggles between said adjustable frame and a stationary part, provided with threaded sleeves at the elbows, and screws engaging said threaded sleeves for adjusting said upper frame and its rollers relatively to the lower rollers.

9. In a machine for mercerizing, &c., the combination of an upper and lower set of rollers between which the yarn to be treated is stretched, stationary bearings for one set of said rollers, a vertically-adjustable frame carrying the other set of rollers, toggles between said adjustable frame and a stationary part, provided with threaded sleeves at their elbows, and screws engaging said threaded sleeves for operating said toggles and adjusting the movable frame and its rollers relatively to the other set of rollers.

657,706. **WATER-CLOSET TANK.** ALEXANDER W. MCGAHAN, Los Gatos, Cal. Filed Aug. 21, 1899. Serial No. 727,931. (No model.)



top and bottom in said valve-casing, the outer cylindrical surface of said inner casing forming a portion of said chamber, and a balanced valve-disk slidably arranged in said inner casing, and means in said inner cylindrical casing for admitting a pressure-exerting medium into the chamber of the valve-casing and upon the opposite sides of the valve-disk, of an auxiliary cylinder, a piston in said cylinder, and a stem connected with said valve-disk extending into said cylinder and connected with the piston therein, and a means of direct communication between the valve-casing or parts connected therewith and with said cylinder for conducting a pressure-exerting medium against said piston in the cylinder and thereby operate the valve-disk in the valve-casing, consisting, essentially, of pipes 31 and 38 connecting the inlet portion of the valve-casing with a portion of said cylinder, and pipes 41 and 42 connecting the outlet portion of the valve-casing with another portion of said cylinder, and a three-way cock in said pipes, substantially as and for the purposes set forth.

5. In a valve, a valve-casing forming a chamber provided with an outlet, an inner cylindrical casing having an open top and bottom in said valve-casing, the outer cylindrical surface of said inner casing forming a portion of said chamber, having an inlet 5 and an outlet 6, a chamber 7, and a cylindrical casing in said chamber provided with ports which communicate with said chamber 7, a balanced valve-disk in said cylindrical casing, combined with an auxiliary cylinder, a piston in said cylinder, and a stem connected with said valve-disk extending into said cylinder and connected with the piston therein, substantially as and for the purposes set forth.

6. In a valve, a valve-casing, having an inlet 5 and an outlet 6, a chamber 7, and a cylindrical casing in said chamber provided with ports which communicate with said chamber 7, a balanced valve-disk in said cylindrical casing, combined with an auxiliary cylinder, a piston in said cylinder, and a stem connected with said valve-disk extending into said cylinder and connected with the piston therein, and a means of direct communication between the valve-casing or parts connected therewith and with said cylinder for conducting a pressure-exerting medium against said piston in the cylinder and thereby operate the valve-disk in the valve-casing, substantially as and for the purposes set forth.

7. In a valve, a valve-casing, having an inlet 5 and an outlet 6, a chamber 7, and a cylindrical casing in said chamber provided with ports which communicate with said chamber 7, a balanced valve-disk in said cylindrical casing, combined with an auxiliary cylinder, a piston in said cylinder, and a stem connected with said valve-disk extending into said cylinder and connected with the piston therein, and a means of direct communication between the valve-casing or parts connected therewith and with said cylinder for conducting a pressure-exerting medium against said piston in the cylinder and thereby operate the valve-disk in the valve-casing, consisting, essentially, of pipes 31 and 38 connecting the inlet portion of the valve-casing with a portion of said cylinder, and pipes 41 and 42 connecting the outlet portion of the valve-casing with another portion of said cylinder, substantially as and for the purposes set forth.

8. In a valve, a valve-casing, having an inlet 5 and an outlet 6, a chamber 7, and a cylindrical casing in said chamber provided with ports which communicate with said chamber 7, a balanced valve-disk in said cylindrical casing, combined with an auxiliary cylinder, a piston in said cylinder, and a stem connected with said valve-disk extending into said cylinder and connected with the piston therein, and a means of direct communication between the valve-casing or parts connected therewith and with said cylinder for conducting a pressure-exerting medium against said piston in the cylinder and thereby operate the valve-disk in the valve-casing, consisting, essentially, of pipes 31 and 38 connecting the inlet portion of the valve-casing with a portion of said cylinder, and pipes 41 and 42 connecting the outlet portion of the valve-casing with another portion of said cylinder, and a three-way cock in said pipes, substantially as and for the purposes set forth.

9. In a valve, a valve-casing, having an inlet 5 and an outlet 6, a chamber 7, and a cylindrical casing in said chamber provided with ports which communicate with said chamber 7, a balanced valve-disk in said cylindrical casing, combined with standards or supports on said valve-casing, an auxiliary cylinder on said standards or supports, a piston in said cylinder, and a stem connected with said valve-disk extending into said cylinder and connected with the piston therein, substantially as and for the purposes set forth.

10. In a valve, a valve-casing, having an outlet 6 and an inlet 5, a chamber 7, and a cylindrical casing in said chamber provided with ports which communicate with said chamber 7, a balanced valve-disk in said cylindrical casing, combined with standards or supports on said valve-casing, an auxiliary cylinder on said standards or supports, a piston in said cylinder, and a stem connected with said valve-disk extending into said cylinder and connected with the piston therein, and a means of direct communication between the valve-casing or parts connected therewith and with said cylinder for conducting a pressure-exerting medium against said piston in the cylinder and thereby operate the valve-disk in the valve-casing, substantially as and for the purposes set forth.

11. In a valve, a valve-casing, having an outlet 6 and an inlet 5, a chamber 7, and a cylindrical casing in said chamber provided with ports which communicate with said chamber 7, a balanced valve-disk in said cylindrical casing, combined with standards or supports on said valve-casing, an auxiliary cylinder on said standards or supports, a piston in said cylinder, and a stem connected with said valve-disk extending into said cylinder and connected with the piston therein, and a means of direct communication between the valve-casing or parts connected therewith and with said cylinder for conducting a pressure-exerting medium against said piston in the cylinder and thereby operate the valve-disk in the valve-casing, consisting, essentially, of pipes 31 and 38 connecting the inlet portion of the valve-casing with a portion of said cylinder, and pipes 41 and 42 connecting the outlet portion of the valve-casing with another portion of said cylinder, substantially as and for the purposes set forth.

12. In a valve, a valve-casing, having an outlet 6 and an inlet 5, a chamber 7, and a cylindrical casing in said chamber provided with ports which communicate with said chamber 7, a balanced valve-disk in said cylindrical casing, combined with standards or supports on said valve-casing, an auxiliary cylinder on said standards or supports, a piston in said cylinder, and a stem connected with said valve-disk extending into said cylinder and connected with the piston therein, and a means of direct communication between the valve-casing or parts connected therewith and with said cylinder for conducting a pressure-exerting medium against said piston in the cylinder and thereby operate the valve-disk in the valve-casing, consisting, essentially, of pipes 31 and 38 connecting the inlet portion of the valve-casing with a portion of said cylinder, and pipes 41 and 42 connecting the outlet portion of the valve-casing with another portion of said cylinder, and a three-way cock in said pipes, substantially as and for the purposes set forth.

13. In a valve, the combination, with a valve-casing, a cylindrical casing having an open top and bottom in said valve-casing, and a balanced valve-disk slidably arranged in said cylindrical casing, of an auxiliary cylinder, a piston in said cylinder, a stem connected with said valve-disk extending into said cylinder and connected with the piston therein, a post on said piston, and means connected with said post for moving the piston and the valve-disk, either upwardly or downwardly for adjustment, substantially as and for the purposes set forth.

14. In a valve, the combination, with a valve-casing, a cylindrical casing having an open top and bottom in said valve-casing, and a balanced valve-disk slidably arranged in said cylindrical casing, of an auxiliary cylinder, a piston in said cylinder, a stem connected with said valve-disk extending into said cylinder and connected with the piston therein, a post on said piston, and means connected with said post for moving the piston and the valve-disk, either upwardly or downwardly for adjustment, and a means of direct communication between the valve-casing or parts connected therewith and with said cylinder for conducting a pressure-exerting medium against said piston in the cylinder and thereby operate the valve-disk in the valve-casing, substantially as and for the purposes set forth.

15. In a valve, the combination, with a valve-casing, a cylindrical casing having an open top and bottom in said valve-casing, and a balanced valve-disk slidably arranged in said cylindrical casing, of an auxiliary cylinder, a piston in said cylinder, a stem connected with said valve-disk extending into said cylinder and connected with the piston therein, a post on said piston, and means connected with said post for moving the piston and the valve-disk, either upwardly or downwardly for adjustment, and a means of direct communication between the valve-casing or parts connected therewith and with said cylinder for conducting a pressure-exerting medium against said piston in the cylinder and thereby operate the valve-disk in the valve-casing, consisting, essentially, of pipes 31 and 38 connecting the inlet portion of the valve-casing with a portion of said cylinder, and pipes 41 and 42 connecting the outlet portion of the valve-casing with another portion of said cylinder, substantially as and for the purposes set forth.

16. In a valve, the combination, with a valve-casing, a cylindrical casing having an open top and bottom in said valve-casing, and a balanced valve-disk slidably arranged in said cylindrical casing, of an auxiliary cylinder, a piston in said cylinder, a stem connected with said valve-disk extending into said cylinder and connected with the piston therein, a post on said piston, and means connected with said post for moving the piston and the valve-disk, either upwardly or downwardly for adjustment, and a means of direct communication between the valve-casing or parts connected therewith and with said cylinder for conducting a pressure-exerting medium against said piston in the cylinder and thereby operate the valve-disk in the valve-casing, consisting, essentially, of pipes 31 and 38 connecting the inlet portion of the valve-casing with a portion of said cylinder, and pipes 41 and 42 connecting the outlet portion of the valve-casing with another portion of said cylinder, and a three-way cock in said pipes, substantially as and for the purposes set forth.

657,708. **INSTRUMENT OR OTHER CASE.** GUSTAVE REHMANN, Newark, N. J. Filed May 21, 1900. Serial No. 17,337. (No model.)



Claim.—1. As a new article of manufacture, a case, consisting of a pair of hinged sections, and a ledge or projection on one of said sections, extending above the surrounding upper and free edge of said section to provide a receiving-flange for the other section, a resilient supporting-plate in said section having said ledge, and holding portions on said plate adapted to be sprung under said ledge and hold said plate in detachable engagement with said section, substantially as and for the purposes set forth.

2. As a new article of manufacture, a case, consisting of a pair of hinged sections, and a ledge or projection on one of said sections, extending above the surrounding upper and free edge of said section to provide a receiving-flange for the other section, a resilient supporting-plate in said section having said ledge, an upwardly-extending holding portion at one end of said supporting-plate, and an upwardly-extending holding portion at the other end of said plate, adapted to be brought in spring-like holding engagement with the under shoulder of said ledge, substantially as and for the purposes set forth.

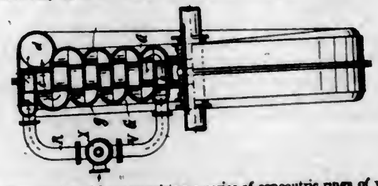
3. As a new article of manufacture, a case, consisting of a pair of hinged sections a and a', a band or strip f in said section a forming a shoulder f', a supporting-plate e in said section a, an upwardly-extending holding portion e^3 at one end of said plate e, and an upwardly-extending holding portion e^4 at the other end of said plate e, said holding portions being adapted to be brought in spring-like holding engagement with the shoulder of said strip or band f, substantially as and for the purposes set forth.

4. As a new article of manufacture, a case, consisting of a pair of hinged sections a and a', a band or strip f in said section a forming a shoulder f', a supporting-plate e in said section a, an upwardly-extending holding portion e^3 at one end of said plate e, and an upwardly-extending holding portion e^4 at the other end of said plate e, said holding portion e^3 having a straight edge e^5 and said holding portion e^4 having a shoulder e^6, said edge e^5 and said shoulder e^6 being adapted to be brought in spring-like holding engagement with the shoulder of said strip or band f, and a finger-piece e^8 above said shoulder e^6 on said holding portion e^4, all substantially as and for the purposes set forth.

5. As a new article of manufacture, a case, consisting of a pair of hinged sections, and a ledge or projection on one of said sections, to provide a shoulder at or near the upper and free edge of said section, a supporting-plate in said section, an upwardly-extending holding portion e^3 at one end of said plate, and an upwardly-extending holding portion e^4 at the other end of said plate, adapted to be brought in spring-like holding engagement with the shoulder formed by said ledge, substantially as and for the purposes set forth.

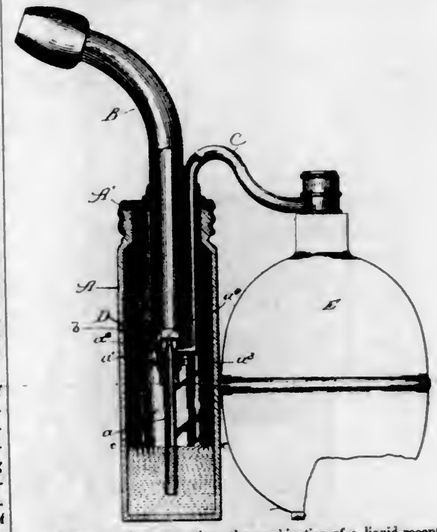
6. As a new article of manufacture, a case, consisting of a pair of hinged sections, and a ledge or projection on one of said sections, to provide a shoulder at or near the upper and free edge of said section, a supporting-plate in said section, an upwardly-extending holding portion e^3 at one end of said plate, an upwardly-extending holding portion e^4 at the other end of said plate, adapted to be brought in spring-like holding engagement with the shoulder formed by said ledge, and a finger-piece connected with said holding portion e^4, substantially as and for the purposes set forth.

657,709. **STEAM-TURBINE.** RICHARD SCHULZ, Berlin, Germany. Filed July 22, 1898. Serial No. 686,574. (No model.)



Claim.—A turbine comprising a series of concentric rings of vanes, means for introducing the steam to the ring of vanes nearest the center of rotation, means for directing the steam laterally in respect to the turbine first from one side and then from the other, a reversing ring of vanes at the outer periphery of the turbine, means for directing the steam thereto laterally, a reversing-valve controlling the steam-supply and an exhaust arranged at the outer edge of the turbine, said exhaust being large enough to communicate with the two outer rings of vanes, substantially as described.

657,710. **ATOMIZER.** EMMET L. SMITH, Chicago, Ill. Filed May 17, 1900. Serial No. 17,059. (No model.)



Claim.—1. In an atomizer, the combination of a liquid-receptacle having a closed top, spraying and compressed-air tubes passing through and having liquid-tight joints with said top and extending some distance beneath the same, said top being without other aperture, a spraying-head located at the lower ends of and in close communication with said tubes, said spraying-tube serving to receive the blast directly from the spraying-head, and means for supplying air-pressure, substantially as and for the purpose set forth.

2. In an atomizer, the combination of a bottle having a removable top, spraying and compressed-air tubes extending from near the center of the bottle through said top and removable therewith, a spraying-head joined to and in communication with both said tubes, and a bulb for the air-tube, substantially as and for the purpose set forth.

3. In an atomizer, the combination of a bottle having a removable top, spraying and compressed-air tubes extending from near the center of the bottle through said top and removable therewith, and a spraying-head located centrally beneath the lower end of said spraying-tube and attached to both the spraying-tube and the compressed-air tube, said spraying-head comprising a connecting part a^3 provided with a chamber a^2 in communication with said compressed-air tube and provided further with a discharge-port a^4, and a depending supply-tube a connected with the part a^2 and having a conical nozzle projecting into the chamber a^2, substantially as and for the purpose set forth.

657,711. **MOTOR-VEHICLE.** FRANCIS E. STANLEY and FREELAN O. STANLEY, Newton, Mass., assignors to the Stanley Automobile Company, of New York. Filed Oct. 16, 1899. Serial No. 733,802. (No model.)

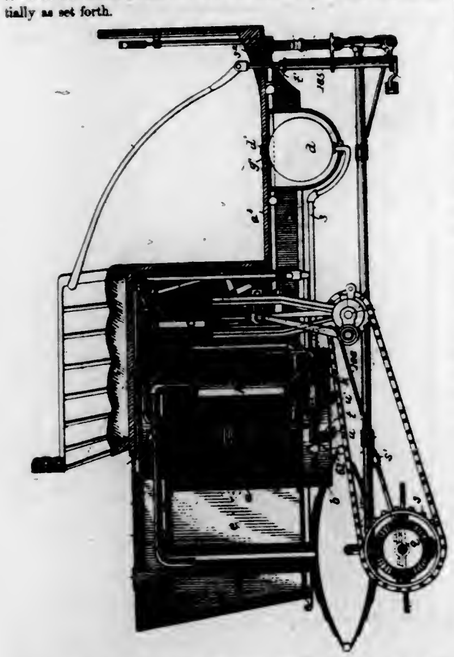
Claim.—1. In a motor-vehicle, the vehicle-body, a steam-boiler therein, a hood extending over the boiler and to the rear end of the vehicle-body, a flue extending from said hood upward and at the rear of the vehicle, and a flue extending downward below the body of the vehicle, whereby the discharge may be conveyed to the rear, either above or below the vehicle-body, substantially as set forth.

2. The combination with the body of a vehicle, of an engine, boiler, burner below the boiler, and hood above the boiler, discharge-flues arranged at the rear of the seat to discharge gases upward and downward from the hood, and means for discharging the exhaust from the engine through the downward flue toward the road-bed and create a downdraft through the upper flue, substantially as set forth.

3. The combination with the body of a vehicle, of a boiler, engine, burner, and water-tank having a flue extending downwardly through it to receive the gases passing from the boiler, substantially as set forth.

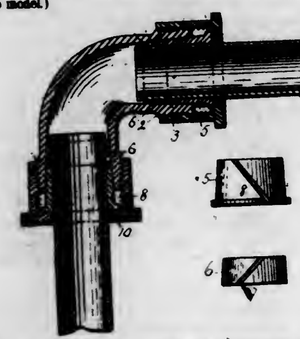
4. The combination with the body of a vehicle, of a boiler, engine, burner, a water-tank having a flue extending downwardly through it to

receive the gases passing from the boiler, and an exhaust-pipe arranged to direct the exhaust-steam into said downwardly-extending flue, substantially as set forth.



5. The combination with the body, burner and boiler of a motor-vehicle, of a hood extended beyond the seat to the rear of the body, and discharge-flues opening upward and downward from said hood at the rear of the seat, substantially as set forth.

657,712. COMBINED UNION AND ELBOW FOR COUPLING PIPES. GEORGE H. THOMAS, Washington, D. C., assignor of one-half to Harry R. Moran, same place. Filed July 17, 1900. Serial No. 23,935. (No model.)



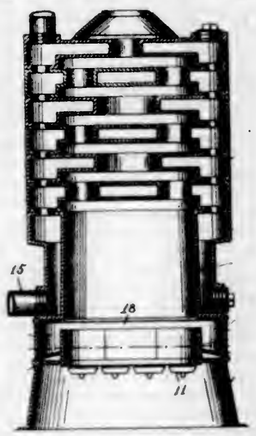
Claim.—1. In a pipe-coupling, the combination with approaching ends of pipes, of a bent pipe-section provided with exterior screw-threads on its ends and formed with interior tapering clamping-ring seats, tapering clamping-rings having diagonal slots extending from end to end, seated in the said ring-seats, and clamping nuts or caps having interior screw-threads to engage the threaded ends of the bent pipe-section and push the clamping-rings into the tapered seats and clamp the pipes to the bent section, substantially as set forth.

2. In a pipe-coupling, the combination of a bent pipe-section provided with exterior screw-threads on its ends and formed with interior tapering clamping-ring seats, a slotted and tapering clamping-ring seated at the lower end portion of each ring-seat, a slotted outer tapering clamping-ring seated in the outer portion of said seats with its inner end abutting the outer end of the inner clamping-ring, said rings being diagonally slotted from end to end, pipes arranged in the clamping-rings, and clamping nuts or caps on the pipes formed with interior screw-threads to engage the threaded ends of the bent pipe-section and push the clamping-rings into clamping relation on the parts, substantially as set forth.

3. In a pipe-coupling, the combination of a bent pipe-section provided with exterior screw-threads on its ends and formed with interior tapering clamping-ring seats, a tapering clamping-ring seated at the lower end portion of each ring-seat and provided with a diagonal slot extending from end to end thereof, a tapering clamping-ring seated in the outer portion of said seats with its inner end abutting the outer end of the inner clamping-ring, and formed with a diagonal slot extending from end to end thereof, said rings being arranged in their seats with the diagonal slots opposite to each other, and clamping nuts or caps on the pipes formed with interior screw-threads to engage the threaded ends of the bent pipe-section and push the clamping-rings into clamping relation on the parts, substantially as set forth.

4. In a pipe-coupling, the combination of a coupling-piece provided with exterior screw-threads on its end and formed with an interior tapering clamping-ring seat, a clamping-ring having a tapered exterior and slotted from end to end, seated in the inner end portion of said ring-seat, a clamping-ring slotted from end to end and arranged in the outer end portion of the said ring-seat with its inner end abutting the outer end of the inner clamping-ring, a pipe in the clamping-rings, and a clamping nut or cap on the pipe formed with interior screw-threads to engage the screw-threads of the coupling-piece and push the clamping-rings endwise to clamp the pipe, substantially as described.

657,713. FURNACE FOR HEATERS. CHARLES B. THOMPSON, Chicago, Ill., assignor to the American Radiator Company, of New Jersey. Filed Feb. 19, 1900. Serial No. 5,736. (No model.)



Claim.—1. In a furnace for heaters, in combination, a base-ring, a fuel-support mounted therein, a hollow flue-casing mounted on the base-ring and forming the side walls of the lower portion of the fire-chamber, such casing having an air-inlet port and opening to the fire-chamber entirely around the same and near the plane of the grate; and a fire-pot extending upwardly from such flue-casing, whereby a full air-supply may be introduced into the fire-chamber and into the mass of fuel contained therein without passing any part of such supply through the grate or ash-pit of the furnace.

2. In a furnace for heaters, the combination with a base-ring carrying a grate and a fire-pot; of a ring resting upon the base-ring and upon which the fire-pot is mounted, and having an air-inlet port; and an inner ring resting upon the base-ring, and of less height than and spaced apart from the outer ring and forming a continuation downwardly of the fire-pot, whereby an annular air-flue is formed around the bottom of the fire-box and opens thereto through which the supply of air for combustion of the fuel is delivered laterally into the fire-chamber near its bottom.

3. As an article of manufacture, a hollow casing adapted to be interposed between the grate-supporting base of a furnace and the fire-pot thereof and forming a continuation downwardly of the latter, such casing having an inwardly-opening port, and a port for admitting air to its chamber.

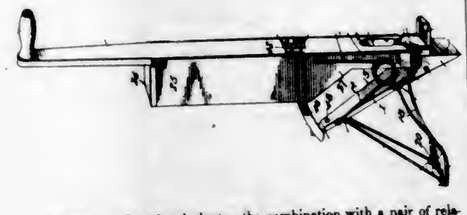
4. As an article of manufacture, a fire-chamber for heating-furnaces having its walls formed of upper and lower sections spaced apart to form an air-passage below the normal level of the fuel and of sufficient size to supply the full quantity of air essential to substantially complete combustion of the fuel, the upper section being hollow to contain water and the lower section forming the inner wall of an air-flue.

5. In a furnace for heaters, in combination, a fire-chamber having its walls formed of upper and lower sections spaced apart below the normal level of the fuel to form an air-flue, and a casing inclosing the lower section to form a passage leading to such flue and having an external air-port; whereby a full supply of air for combustion may be delivered laterally into the fire-chamber.

6. In a furnace for heaters, in combination, a grate-support, a fuel-support mounted thereon, a flue-casing forming the side walls of the lower portion of the fire-chamber and having ports in its inner and outer walls, and a fire-pot extending upwardly from the casing; whereby a full supply of air for combustion may be delivered laterally into the fire-chamber below the normal level of the fuel.

7. In a furnace for heaters, in combination, a grate-support, a grate mounted thereon, a fine-casing forming the side walls of the lower portion of the fire-chamber and having ports in its inner and outer walls, and a fire-pot extending upwardly from the port of the inner wall and being hollow to contain water, whereby a supply of hot air adequate for complete combustion may be delivered laterally into the fire-chamber below the normal level of the fuel.

657,714. CORN-PLANTER. PAULUS J. A. VAN DEINSE, Greenville, Mich., assignor to the Gordon Hollow Blast Grate Company, same place. Filed June 2, 1900. Serial No. 18,874. (No model.)



Claim.—1. In a hand-planter, the combination with a pair of relatively-movable members provided with cooperating jaws, of a seed-chamber carried by one member, a segmental seed-slide passed transversely through the seed-chamber, and a latch adjustably carried by the other member and arranged to be moved into or out of engagement with one end of the slide.

2. In a hand-planter, the combination with a pair of pivoted members, and a seed-chamber carried by one member, of a feed-slide movable through the seed-chamber, said slide being formed from sheet metal and having one end bent at an angle to form a stop, and a movable latch carried by the other member and arranged to be moved into or out of engagement with the end of the slide opposite the stop.

3. In a feeding mechanism for hand-planters, the combination with a segmental slide-track provided with upturned longitudinal flanges, of a segmental slide provided with depending longitudinal flanges located between the upturned flanges of the track.

4. In a feed mechanism for hand-planters, the combination with a segmental slide-track provided with upturned longitudinal flanges, and with a feed-opening at one end, of a segmental feed-slide provided with depending longitudinal flanges intermediate of the upturned flanges of the track, said slide being provided with a feed-opening, and transverse flanges depending from the opposite ends of the opening in the slide and defining an intermediate seed-receptacle.

5. In a feed mechanism for hand-planters, the combination with a segmental slide-track provided with upturned flanges along its edges, of a segmental feed-slide provided with depending longitudinal flanges intermediate of the track-flanges and with a feed-opening, a stationary transverse flange defining one end of the feed-opening, and an adjustable transverse flange defining the opposite end of said opening, said flanges extending from the slide into contact with the upper face of the track to define an intermediate adjustable seedbox.

6. In a feed mechanism for hand-planters, the combination with a slide-track provided with upturned longitudinal flanges, and a terminal transverse retaining-flange, of a segmental slide provided with depending longitudinal flanges and with a stationary transverse flange defining one end of a feed-opening, and an adjustable feed-plate housed between the depending flanges of the slide and provided with a transverse terminal flange defining the other end of the feed-opening, means located at one end of said slide for connecting it to a supporting member, and a stop at the opposite end of said slide.

7. A planter comprising a seed-chamber, a feed-slide moving therein, a brush-plate detachably carried upon the exterior of the chamber, and a brush movable with said brush-plate and located upon the interior of the casing to clear the slide.

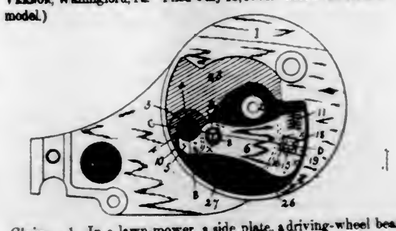
8. A planter comprising a seed-chamber, a feed-slide extending therethrough, a clearing-brush located within the receptacle to clear the slide, the wall of the receptacle being provided with an opening for the insertion of the brush and a detachable brush-plate covering the opening and retaining the brush.

9. A planter comprising a seed-chamber, a feed-slide extending therethrough, a clearing-brush arranged to clear the slide, the opening in one wall of the seed-chamber being extended above the slide to permit the insertion and withdrawal of the brush, and a brush-plate secured to the seed-chamber and serving to retain the brush and to hold the slide upon its seat.

10. A planter comprising a seed-chamber, a slide extending therethrough, a stop upon the slide, and a guard-plate secured to the seed-chamber to receive the impact of the stop, said guard-plate having an inturned guard-flange opposed to the slide to prevent binding of the latter.

11. A planter comprising a seed-chamber having an opening in one side wall, a slide movable through the chamber, a pair of grooved blocks mounted above the slide, a brush-block inserted through the opening in the wall of the chamber and located in the grooves of the blocks, a brush carried by the brush-block, and a brush-plate fixed to the brush-block and covering the exterior of the opening in the casing.

657,715. LAWN-MOWER JOURNAL-BEARING. WILLIAM G. VERNON, Wallingford, Pa. Filed July 13, 1900. Serial No. 23,452. (No model.)



Claim.—1. In a lawn-mower, a side plate, a driving-wheel bearing, a cutting-cylinder bearing composed of a fixed upper part integral with the side plate, a journal, a cap for the journal and its bearing and which is fixed to a lever, a lever, a fulcrum, the lever having a weighted outer end, and means at the weighted end to secure the lever to the side plate and its attached bearing-cap under the cutting-cylinder journal.

2. In a bearing, a plate whereto the bearing is secured above the journal, a bearing consisting of a fixed upper part above the journal, a journal, a movable and adjustable lower part for the bearing, a lever to which the lower part of the bearing is attached, means to secure the lever adjustably on its fulcrum for movements which permit the lower part of the bearing to adjust itself truly to the journal's under and rounded surface, the lever having an outer end formed to increase the weight at this end of the lever, and means to secure the weighted end of the lever for vertical movement.

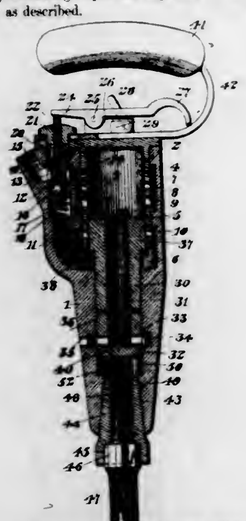
3. In a divided journal-bearing, a side plate, an upper part for the bearing which is affixed to the side plate and wherein the journal is seated, a journal, a lower and movable part for the bearing, a lever whereon the lower part of the bearing is fixed, and having a weighted end, a spring seated in manner to press against the weighted end of the lever to force the movable part of the bearing to the journal, and means to secure the lever to the side plate and the movable part of the bearing longitudinally under the bearing and permit its vertical adjustment.

4. In a bearing, a side plate, a journal, an upper fixed part for the bearing, on the plate, a lower movable part attached to a lever, a lever having a weighted end, means therethrough and through a slot in the side plate to secure the lever, an inclined seat surrounding the slot upon the outer side of the plate whereon the securing means is prevented from moving upward, if loosened, to prevent the movable part of the bearing from leaving its position under the journal.

657,716. AUTOMATIC HAMMER. DANIEL S. WAUGH, Marion, Ohio. Filed Nov. 9, 1899. Serial No. 736,335. (No model.)

Claim.—1. A fluid-pressure hammer comprising a shell or casing having the reciprocating piston and also carrying means for controlling the admission of motive fluid thereto, a doubled spring having one arm secured to the casing, and a handle attached to the other arm of said spring, whereby the entire hammer may be held and manipulated in the hand and the spring is adapted to absorb the vibration due to reciprocation of the piston, substantially as described.

2. In an automatic hammer, a casing provided with graduated ports communicating with the main compression-chamber, a piston or hammer mounted to slide past said openings and successively uncover the same and means for supplying motive fluid under pressure to said ports, whereby a progressively-increasing impetus is imparted to the piston or hammer, substantially as described.



3. In an automatic hammer, a casing having ports of progressively-increasing areas communicating with the main compression-chamber, in combination with a piston mounted to slide within said chamber and to successively uncover said ports beginning with those of the least area, said piston also serving as means for controlling the supply of motive fluid to the ports for the main compression-chamber, substantially as and for the purpose specified.

4. In a fluid-pressure hammer, the combination with a shell or casing, of a reciprocatory plunger fitted in said casing and serving as an automatic valve for controlling the admission and exhaust of motive fluid to or from the working chamber of said shell or casing, a supply-valve communicating with said working chamber, an operating device for said supply-valve, and means for locking said operating device to hold the supply-valve in an open position, substantially as described.

5. In a fluid-pressure hammer, the combination with a shell or casing having a working chamber, of a reciprocatory plunger fitted in said casing and serving as an automatic valve for controlling the admission and exhaust of motive fluid to and from the working chamber thereof, a supply-valve communicating with said working chamber, an operating-lever mounted on the casing and connected with said supply-valve, and means for locking said lever in place to hold the supply-valve normally in an open position, substantially as described.

6. In an automatic hammer, the combination of a shell or casing having a valve-chamber and a valve-seat, a supply-valve provided with the spaced head and piston and arranged within the chamber for said head and piston to be exposed to the pressure of the motive fluid, a valve-lever mounted on the shell or casing, and a cam-lever fulcrumed independently of the valve-lever and having a crank adapted in one position to engage with said valve-lever and hold the valve open, substantially as described.

7. In an automatic hammer, a shell or casing and means for supplying the motive agent thereto, of a main compression-chamber, an auxiliary compression-chamber having graduated ports leading to the main compression-chamber, and a reciprocating piston or hammer having a central bore closed at one end and open at the other and provided with lateral induction and eduction ports, substantially as described.

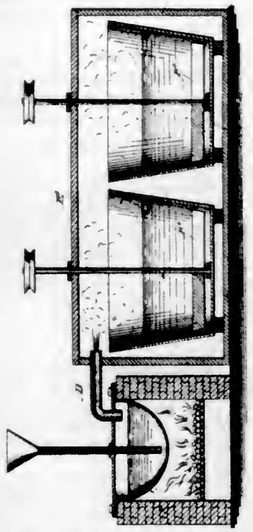
8. In an automatic hammer, a shell or casing comprising a main compression-chamber, an auxiliary compression-chamber surrounding the same and communicating therewith by means of graduated ports, in combination with a hollow piston or hammer slidingly mounted in said main compression-chamber and provided with induction and eduction ports, substantially as described.

9. In a fluid-hammer, a casing provided in addition to its working chamber with an auxiliary compression-chamber and with a series of ports between the two chambers, combined with a hollow plunger having ports for the supply and exhaust of the motive fluid, said plunger controlling the admission of motive fluid to the reservoir-chamber and slidably arranged to cover and expose the ports, substantially as described.

10. In a fluid-pressure hammer, a casing provided in addition to the working chamber with an annular supply-chamber and with an auxiliary compression-chamber, and a cap having a shell fitted within said casing across said annular chambers therein and provided with the ports, 7, 8, 9 and 10, combined with a hollow shouldered plunger having the contiguous supply and exhaust ports and slidably fitted in the casing for the shoulder thereof to traverse the ports, 10, and for the supply-ports to communicate with the supply-chamber, substantially as described.

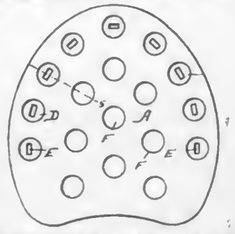
11. In a fluid-pressure hammer, a casing provided, in addition to the working chamber with the annular supply-chamber and the auxiliary compression-chamber, and also having a series of ports which establish communication between the reservoir and working chambers, combined with a hollow shouldered plunger having the supply and exhaust ports and said plunger slidably fitted in the casing for one end portion thereof to traverse the series of ports from the reservoir-chamber, substantially as described.

657,717. PROCESS OF MAKING PHOSPHATES. JOHN C. WHARTON, Nashville, Tenn. Filed Dec. 18, 1899. Serial No. 740,723. (No specimens.)



Claim.—The process for extracting phosphates from phosphate rocks, consisting in liberating hydrochloric acid from ammonium chloride by the admixture of sulphuric acid; passing the evolved hydrochloric acid into a mixture of phosphate rocks and water, effecting solution of the phosphates; separating the phosphatic solution from the undissolved matter; precipitating the phosphates from the said phosphatic solution; separating the precipitated phosphates from the liquid portion containing calcium chloride and ammonium chloride; precipitating the calcium from the calcium chloride, separating the precipitate from the ammonium chloride; adding other ammonium chloride to supply any deficiency and using the ammonium chloride as at first, and consecutively, substantially as described and set forth.

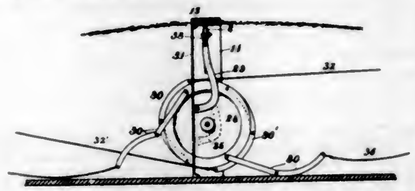
657,718. RUBBER-PAD HORSESHOE. ELMER A. WILCOX, Davenport, Iowa. Filed Aug. 17, 1899. Serial No. 727,474. (No model.)



Claim.—1. As a substitute for a metal horseshoe, a rubber pad covering the bottom of the hoof and secured thereto solely by nails passing through the pad into the hoof, and said pad having its heel curved upward and adapted to be straightened out when applied to the hoof, so that the natural spring in the material will keep the heel closely and securely against the hoof, substantially as specified.

2. As a substitute for a metallic horseshoe, a rubber pad covering the bottom of the hoof and secured thereto solely by nails passing through the pad into the hoof, and said pad having its side edges thickened so as to maintain a close contact with the hoof and thus prevent the entrance of dirt between the hoof and pad, substantially as specified.

657,719. GATE. CLAUDE H. WILLIAMS, San Francisco, Cal., assignor of one-half to William G. Johnston, Ben Lomond, Cal. Filed Mar. 30, 1900. Serial No. 10,843. (No model.)



Claim.—1. In a gate, the pivoted oscillating ways 6 and 7, gates 1 and 2 mounted with rolling-bearings thereon, and adapted to open and close by gravity as the ways are tilted to produce an inclination right or left, the wheel 28 and a connection therefrom to the inner ends of the ways 6 and 7 whereby the latter are raised or lowered, substantially as specified.

2. In a gate or gates, a pivoted way or ways on which the gate or gates will automatically move by gravity, the wheel 28, connection 29 attached to the inner ends of the running-ways, and tripping-gearing to turn the member 28 by vehicles approaching or leaving the gate, substantially as specified.

3. In a road-gate, the slotted main posts 3, 4, end posts 16, 17, central frame 14, sole-plate 18, pivoted ways 6, 7, movable gates 1, 2, on said pivoted ways, wheel 28 connected to said ways, and means to turn said wheel by the action of a passing vehicle, substantially as specified.

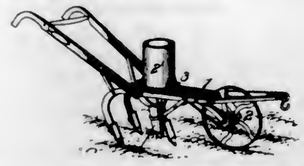
4. In a road-gate, the pivoted angular ways 6, 7, gates 1, 2, sliding thereon, oscillating wheel 28, and curved link 29, between said wheel and said pivoted ways, the curvature allowing said link to pass the center of the wheel in both positions of its throw, substantially as specified.

5. In a road-gate, the pivoted angular ways 6, 7, having slots 39 in the ends thereof, connecting member 38 between said ends, oscillating wheel 28, curved link 29 between said oscillating wheel and said member 38, whereby the pivoted ways are moved in unison, and means whereby said oscillating wheel is operated by a passing vehicle, through flexible connections leading to said wheel, substantially as specified.

6. In a road-gate, the pivoted angular ways 6, 7, movably connected together at their inner ends, gates 1, 2, mounted to slide on said ways, automatic latches 11, 12, operating to hold the gates in closed position and to release the gates when the ways are tilted, and a tripping connection 15, whereby a gate can be unlatched by hand without tilting the supporting-way, substantially as specified.

7. In a road-gate, the pivoted angular ways 6, 7, movably connected together at their inner ends, gates moving thereon, oscillating wheel 28 with a connection to said inner ends, to move the same, vertical fixed frame 14, sustaining the wheel 28, cross-cap 13 on said fixed frame, recessed to receive the latches, and automatic latches 11, 12, on said gates, engaging said recesses when the gates are closed, substantially as specified.

657,720. COTTON-SEED PLANTER. JAMES H. WOLFE, Fremont, Ohio, assignor to the Lehr Agricultural Company, same place. Filed May 28, 1900. Serial No. 18,246. (No model.)



Claim.—1. In a seed-planter of the character described, the combination of a shell or base provided with a central support and a concentric annular shoulder, a distributing-disk mounted on said annular shoulder, means for rotating said disk in one direction, an intermediate disk mounted on said central support and adapted to be rotated in a direction opposite to the direction of the distributing-disk, and an agitator-disk mounted upon and carried by said intermediate disk.

2. In a seed-planter of the character described, the combination of a shell or base provided with a central support and a concentric annular shoulder, a distributing-disk mounted on said annular shoulder, means for rotating said disk in one direction, an intermediate disk mounted on said central support and adapted to be rotated in a direction opposite to the distributing-disk, an agitator-disk mounted upon and carried by said intermediate disk and having on its upper surface spiral agitator-wings, and an opening in the shell at one side thereof to permit the passage of seed from the hopper to the distributing-tube.

3. In a seed-planter of the character described, the combination of a shell or base provided with a central support and a concentric annular shoulder, a distributing-disk mounted on said annular shoulder and provided with peripheral distributing-spaces, means for rotating said disk in one direction, an intermediate disk mounted on said central support and adapted to be rotated in a direction opposite to the distributing-disk, an agitator-disk mounted on and carried by said intermediate disk, wings on said agitator-disk and an opening in one side of the shell to permit the passage of the seed to the distributing-tube.

4. In a seed-planter of the character described, the combination with a suitable carriage or support, of a shell or base provided with a central support and a concentric annular shoulder, a distributing-disk, mounted on said annular shoulder and provided with gear-teeth on its under side, an intermediate disk mounted on said central support and provided with teeth on its under side, an agitator-disk mounted on and carried by the intermediate disk, said distributing-disk being provided with peripheral distributing-spaces, a driving-shaft, a gear-wheel mounted on said shaft for driving the distributing-disk in one direction, and a gear-wheel mounted on said shaft for driving the intermediate disk in the opposite direction.

5. In a seed-planter of the character described, the combination with a cultivator and a power-wheel mounted thereon; of a cylindrical shell or base, an opening in one side thereof, the said opening leading from the interior thereof to the dropping-tube, a central support, a cylinder-gear seated on said support, annular shoulders in said shell, a distributing-ring supported on said shoulders and provided with gear-teeth on the under side thereof, a separator and agitator superimposed on said distributing-ring and carried by said circular gear, mechanism secured to the under side of said shell and connected with the power-wheel on the cultivator, whereby the distributing-ring and the agitator and separator are rotated in opposite directions to separate and give an even distribution of the seeds to be planted, as set forth.

6. In a seed-planter of the character described, the combination with a cultivator, and a power-wheel mounted thereon; of a cylindrical shell or base, a hopper mounted thereon, supporting-arms for holding said shell to the cultivator, a central upwardly-extending annular support in said shell, a circular gear provided with a flange and seated on said support, annular shoulders in said shell, a distributing-ring supported on said shoulders and provided on the under side thereof with gear-teeth, a superimposed cap-shaped separator and agitator carried by said circular gear, shafts secured to the under side of said shell and provided with suitable pinions rigidly secured thereon, a driving clutch-gear loosely mounted on said shaft, means for shifting said driving-clutch into and out of engagement with one of said pinions, and means for transmitting power from the power-wheel to said driving-gear, as set forth.

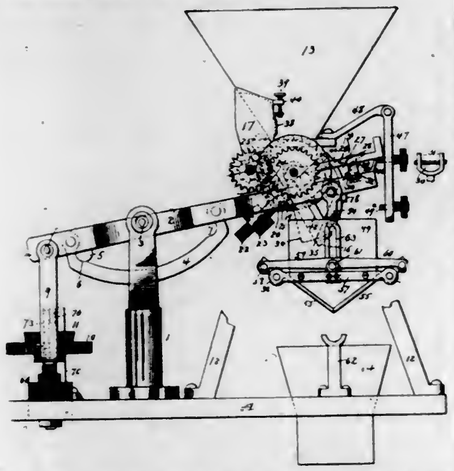
657,721. WEIGHING-MACHINE. CHARLES F. WOOD, Richmond, Va. Filed July 1, 1898. Serial No. 684,969. (No model.)

Claim.—1. The combination with a scale-beam, a bucket supported at one end thereof, a weight having a fixed relation to the other end and means for controlling the discharge of material into and from said bucket, of a curved guideway attached to the scale-beam at respective sides of its fulcrum and having a pocket at each end and a movable device adapted to travel from end to end of said guideway and become seated in one or the other of said pockets.

2. The combination with a base, uprights on said base, scale-beams mounted on said uprights, a weight at one end of said scale-beam and a bucket at the other end of said beams, of a main hopper disposed above said bucket and adapted to empty thereinto, an auxiliary hopper communicating at its upper end with said main hopper and discharging directly into the bucket, a gate for the main hopper, a gate for the auxiliary hopper and devices on the scale-beam adapted to operate the main gate and subsequently operate the gate of the auxiliary hopper.

3. The combination with a pivoted scale-beam provided with a weight-receptacle at one end and a bucket at the other end of said scale-beam, of a main hopper disposed over said bucket, a door or gate on said hopper, means on said scale-beam to operate said gate, an auxiliary hopper communicating with said first-mentioned hopper, a wheel conveyer communicating with said auxiliary hopper and adapted to convey material to

said bucket, a gate on said auxiliary hopper and means for opening said gate, holding it in its open position and closing said gate.



4. The combination with a base, an upright on said base and a scale-beam depending from said upright, of hangers on one end of said scale-beam, a weight-receptacle supported by said hangers, a bucket on the other end of said scale-beam, a guideway attached to said scale-beam at respective sides of its fulcrum and a weighted roller adapted to move on said guideway between the hangers and bucket.

5. The combination with a base and uprights on said base, of parallel scale-beams balanced on said uprights, a bucket mounted at one end of said scale-beams, hangers depending from the other end of said scale-beams, a weight-receptacle between said hangers and means between the base and scale-beam and in constant connection with both for deadening or taking up the rebound to said scale-beam.

6. The combination with pivoted parallel scale-beams, a bucket at one end of said scale-beams, a hanger at the other end of each beam, a pan or receptacle mounted in said hangers and adapted to receive weights thereon, a cup adapted to contain liquid disposed below said pan or receptacle, a disk in said cup, a rod on said disk adapted to be engaged by said pan, a lever connected with a standard and in engagement with said rod and provided with a counterweight on said lever, an arm on said lever pivotally connected with a catch connected with said last-mentioned standard, concentric arms on said catch and a lug or pin on one of said hangers adapted to engage said catch.

7. The combination with a pivoted scale-beam, a weight-receptacle on one end of said beam, a bucket on the other end of said beam, and a main hopper over said bucket and adapted to communicate therewith, of an auxiliary hopper connected with and communicating with said main hopper, a wheel conveyer adapted to convey material from said auxiliary hopper to a spout which communicates with said bucket, a gear-wheel on said wheel conveyer, another gear-wheel communicating with said last-mentioned gear-wheel, a ratchet-wheel on said last-mentioned wheel, means for turning said gear and ratchet wheels, a lever or arm adapted to engage said ratchet-wheel, a door on said spout and a lever or arm adapted to engage said door and together with said door be held in its upper position by mean of a hanger on said main hopper, substantially as set forth.

8. The combination with a scale-beam, a bucket and slotted hangers whereby said bucket is suspended from the scale-beam, of hinged gates for said bucket, arms pivoted at their outer ends to the hinged ends of the gates, studs mounted to slide in the slotted hangers and having the inner ends of said arms pivotally connected thereto, and a fixed standard to be engaged by said studs when the bucket descends whereby to raise the studs and effect the opening of the gates.

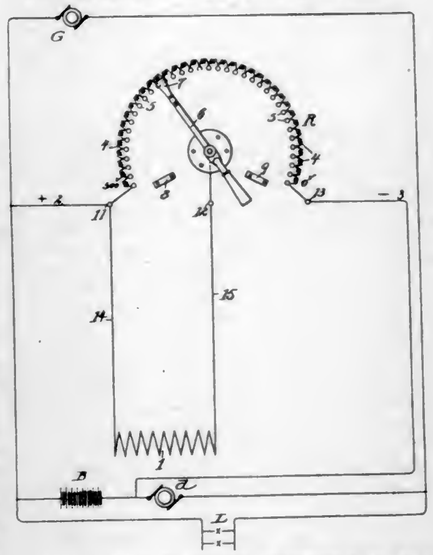
9. The combination with a scale-beam, a weight-receptacle and a lug on the weight-receptacle, of a standard, a lever pivoted to said standard and having one end weighted, the other end of said lever being constructed and arranged to be moved by the weight-receptacle on the scale-beam, an arm projecting upwardly from the lever and a catch pivotally connected with said arm and connected with the standard through the medium of a curved slot and a pin, said catch having a slotted or bifurcated portion to coöperate with the lug on the weight-receptacle, substantially as set forth.

10. The combination with a hopper, of a scale-beam, a bucket carried by the scale-beam, gates for said bucket, a toggle-lever connecting said gates at points beyond their pivotal supports, a lug projecting from said toggle-lever, a fixed arm to be engaged by said lug, and a movable device carried by the scale-beam and adapted to impart momentum to the bucket, whereby to cause the lug on the toggle-lever to forcibly engage the fixed arm and cause the gates to open, substantially as set forth.

11. In a weighing-machine, the combination with a scale-beam, of slotted hangers depending therefrom, a bucket carried by said hangers, gates for said bucket, toggle-levers pivotally connected with said gates, studs connecting the members of said toggle-levers and adapted to move in said slotted hangers and means for moving said studs to open the gates, substantially as set forth.

12. In a weighing-machine, the combination with a scale-beam, of a bucket at one end thereof, gates for the bucket, operating means for the gates, guides carried by the scale-beam, a weight-pan attached to the scale-beam, a cup under said pan, a plunger in said cup, a plunger-rod adapted to engage the pan and a catch operated by the scale-beam for controlling said plunger, substantially as set forth.

657,722. **MEANS FOR CONTROLLING EXCITATION OF BOOSTERS OR GENERATOR-FIELDS.** JOSEPH APPLETON, Philadelphia, Pa., assignor to The Electric Storage Battery Company, Gloucester City, N. J. Filed Mar. 30, 1899. Serial No. 711,131. (No model.)



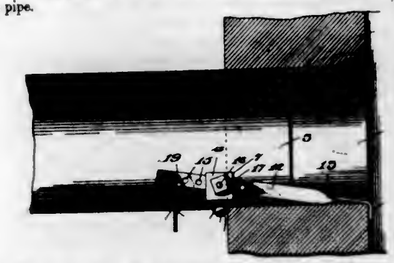
Claim.—1. Means for controlling the excitation of the field of a dynamo-electric machine or booster which comprise a source of current other than said dynamo or booster, and a resistance connected across said source of current and to different points of which the field-coil is connected, substantially as described.

2. Means for controlling the excitation of the field-coil of a dynamo-electric machine or booster which comprise a source of current other than said dynamo or booster, a pair of resistances connected across said source of current, and means for connecting the terminals of the field-coil to various points of the same, to vary both potential and polarity of the field, substantially as described.

657,723. **STOVEPIPE ATTACHMENT.** HOMER C. ARMITAGE, Kenesaw, Nebr., assignor of one-half to Albert A. Armitage, same place. Filed May 31, 1900. Serial No. 18,605. (No model.)

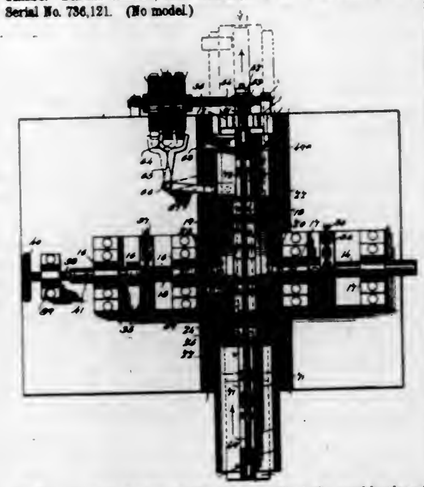
Claim.—1. The combination with a stovepipe extension, of a bracket extending inwardly from the wall thereof, an operating-lever fulcrumed in the bracket and having a hooked end extended beyond the pipe, and an operating-handle piercing the wall of the pipe-section and connected to the end of the lever opposite the hook.

2. The combination with a stovepipe or thimble, of a bearing-bracket therein, a bolt piercing the wall of the stovepipe and constituting means for retaining the bracket and for limiting the insertion of the pipe, a locking-lever fulcrumed in the bearing-bracket and provided with a hooked end extended beyond the end of the stovepipe or thimble, and a handle connected to the inner end of the lever and extended through the wall of the pipe.



3. The combination with a stovepipe or thimble, of a bearing-bracket therein comprising a base-plate and a pair of parallel bearing-flanges, means for securing the bearing-bracket in place, a fulcrum-bolt piercing the flanges, a locking-lever provided with a series of openings for engagement with the fulcrum-bolt, a nut upon the fulcrum-bolt for compressing the bearing-flanges against the opposite sides of the lever to retain it in place, said lever being provided with a hook at one end and with a loosely-connected handle at its opposite end, said handle being extended through the wall of the pipe.

657,724. **MACHINE FOR GRINDING AND POLISHING PLATE-GLASS.** DANIEL BRATTY, New Kensington, Pa. Filed Nov. 7, 1899. Serial No. 736,121. (No model.)



Claim.—1. In a machine of the class described, the combination of oppositely-rotating disks in opposing relation to each other, a power-shaft and connections between the same and the disks to rotate the latter, a reciprocating carriage movable in a path between said disks, a reversible driving mechanism for said carriage connected to and actuated by said power-shaft, and means operated by the carriage at the limits of its movement for automatically shifting the driving mechanism, whereby the carriage is automatically reciprocated, substantially as described.

2. In a machine of the class described, the combination of the opposing disks provided with working surfaces, a reciprocating carriage, a main driving-shaft, independent gear connections between said shaft and the disks for rotating the latter in opposite directions, a reversible driving mechanism connected operatively with the main shaft and the carriage, and automatic trip devices operated by the carriage at the limits of the movement thereof for reversing the carriage-driving mechanism whereby the carriage is automatically reciprocated, substantially as described.

3. In a machine of the class described, a work-carriage provided with a frame, and interchangeable strips inserted removably in said frame, substantially as described.

4. In a machine of the class described, a work-carriage, a frame having the slotted posts fastened to said carriage and connected by the cap and bottom rails, and strips insertible within the limits of the frame and arranged to clamp the work within and between themselves, substantially as described.

5. In a machine of the class described, the combination with a work-carriage, and a frame thereon, of the insertible work-holding strips arranged within said frame, certain of said strips being connected adjustably to said frame, for the purpose described, substantially as set forth.

6. In a machine of the class described, the combination with a pair of revoluble disks, for the purpose set forth, arranged opposite each other, of a reciprocatory work-carriage movable in a path between said disks and having stops and a traveling nut, a screw-shaft engaging said traveling nut and having a worm-gear, a worm-shaft engaging said gear, and means to rotate and reverse said worm-shaft, said means including a shifting-lever disposed in the path of the stops, a power-shaft, and connections between the same and the worm-shaft, whereby said revoluble disk and carriage are operated simultaneously, and whereby reciprocatory motion is automatically imparted to said work-carriage, substantially as described.

7. In a machine of the class described, the combination of the revoluble disks, a power-shaft and connections to rotate said disks, a work-carriage, a feed-nut fast with said carriage, a feed-screw having threaded engagement with said nut, a shaft geared to the feed-screw, oppositely-rotating driving elements on said shaft, connected to and operated by the power-shaft and a reversing trip mechanism operated by the carriage at the limits of the movement thereof to automatically reverse the action of the driving elements, substantially as described.

8. In a machine of the class described, the combination of a base provided with water-channels, a carriage movable on said base between the channels, the water-sheds fast with the carriage and arranged to deflect water toward the channels, the oppositely-revoluble disks, and means for supplying water and an abrasive material to the disks, substantially as described.

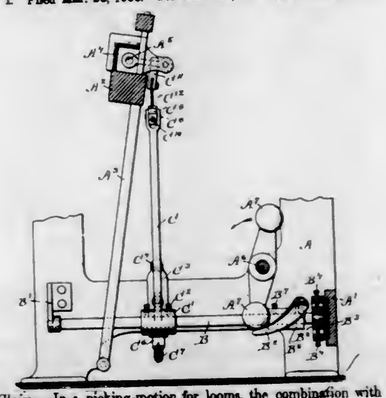
9. In a machine of the class described, a work-carriage provided with a frame, the insertible work-holding strips confined within said frame, and springs attached to the carriage and disposed on opposite sides of the strips, in combination with revoluble disks on opposite sides of the carriage and in the path of the springs, and means for propelling the carriage, substantially as described.

657,725. **HORSESHOE-FASTENING.** ZACHARY T. BLACKMAN, Florala, Ala. Filed July 23, 1900. Serial No. 24,572. (No model.)



Claim.—A horseshoe having countersunk openings, and fastening-bands composed of wire nails having their heads in said countersunk openings, the said wire nails being passed through openings in the sides of the hoof, bent forward, and having their ends drawn and twisted together, substantially as described.

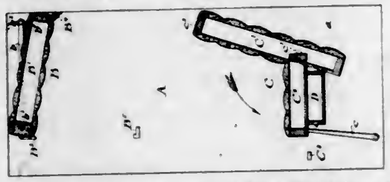
657,726. **PICKING-MOTION FOR LOOMS.** JOSEPH BLANCHET, Providence, R. I., assignor of one-half to Louis Guedesse, Woonsocket, R. I. Filed Mar. 26, 1900. Serial No. 10,117. (No model.)



Claim.—In a picking-motion for looms, the combination with the picker A^6 and the plate C^{11} connected to and moving with the picker, of

the flexible blade C^{12} pivotally secured to the plate C^{11}, the frame C^9 secured to the blade C^{12} and having an adjustable journal-block bearing on the pivot C^8, the lever C secured to a cam-actuated rock-bar located at the lower part of the loom-frame, the floor-spring connected with the lower end of the lever C, and the stop C^3 adjustably secured to a fixed part of the loom and having the cushion C^4; whereby the motion of the cam-actuated rock-bar is transmitted at increased speed through the lever C directly to the picker, as described.

657,727. BERTH. WILLIAM A. BROWN, Philadelphia, Pa. Filed Nov. 16, 1899. Serial No. 737,167. (No model.)

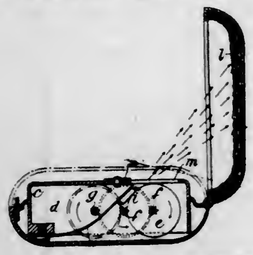


Claim.—1. In a berth, the combination with a mattress-frame, of a seat extension projecting from said frame in rigid relation therewith, pivotal supports for said frame, means to uphold said frame in idle position as a seat, and means to uphold said frame in operative position, as a berth, substantially as set forth.

2. The combination with a berth-compartment, of a mattress-frame pivotally suspended upon hangers pivotally connected with the walls of said compartment, means to uphold said mattress-frame in idle position, means to uphold said mattress-frame in operative position, a second mattress-frame pivotally mounted in said compartment beneath the first frame aforesaid, a seat extension projecting from said second mattress-frame in rigid relation therewith, means to uphold said second frame in idle position, as a seat, and means to uphold said second frame in operative position, substantially as set forth.

3. The combination with a berth-compartment, of a mattress-frame, pivotally suspended upon hangers extending vertically from the rear edge of said frame, to points of pivotal attachment upon the walls of said compartment, means such as the brackets B^3, arranged to support the front edge of said frame, and means such as the hooks B^2, and bracket B^4, arranged to uphold said frame in idle position, substantially as set forth.

657,728. LIGHTER FOR CIGARS, CIGARETTES, OR THE LIKE. LEOPOLD E. BUTCHER, London, and MARSHALL G. WOOD, Brighton, England. Filed Mar. 9, 1900. Serial No. 8,001. (No model.)



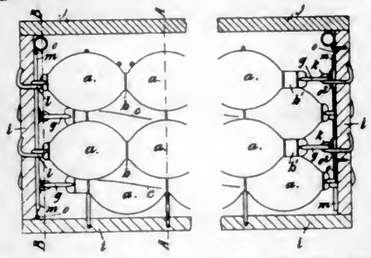
Claim.—1. In a lighter for cigars, cigarettes and the like, the combination with a box containing the spark-generating devices, of a cover lined with and carrying tinder on its under surface, all substantially as described.

2. The improved lighter for cigars, cigarettes and the like, comprising a case and its cover hinged together, such cover being surface-lined with tinder, an emery-wheel, a steel plate pressed against the wheel, a handle, and means for transmitting motion of the handle to the said emery-wheel to produce sparks, all substantially as described.

657,729. APPARATUS FOR PACKING EGGS. HAMILTON D. CRIPPS, Waterloo, England. Filed July 18, 1899. Serial No. 724,250. (No model.)

Claim.—1. A packing for eggs, fruit and the like comprising a continuous string of purses of textile fabric and means for restricting the fabric at the points which are to constitute the ends of the purses, the said textile fabric being of greater thickness in the body portion of the purses than at said restricted portions, substantially as described.

2. A packing for eggs, fruit and the like, comprising a continuous string of purses composed of continuous flexible material, with the material between the purses annularly constricted, said constriction being concentric with the longitudinal axis of the string of purses, and each of said purses having an independent longitudinal opening, substantially as described.



3. A packing for eggs, fruit and the like comprising a continuous string of purses of textile material thickened at the wider portions of the purses, the portions between said purses being annularly constricted or gathered, and a fastening device at each end, substantially as described.

4. A packing for eggs, fruit, and the like, comprising a single piece of textile fabric with permanent bindings at intervals constricting the packing at such intervals annularly, and concentrically with the axis thereof, and forming a plurality of purses, and each of said purses having an independent longitudinal opening formed by the meeting edges of the fabric, and constituting the means for inserting and withdrawing the articles, substantially as described.

5. A packing for eggs, fruit and the like comprising a box, continuous strings of purses, fastening devices *g* at each end thereof, fastenings *i*, and fastenings *l*, *m*, and hook-fastenings *k* adapted to engage the fastenings *g*, and fastening-closing devices *o* closing the hooks *k*, substantially as described.

657,730. ELECTRIC-RAILWAY SIGNAL. GEORGE H. DUNHAM, Quincy, Mass., assignor of one-half to Elmer H. Heath, Boston, Mass. Filed Nov. 11, 1899. Serial No. 736,651. (No model.)



Claim.—1. In an electric-railway signal the combination with the trolley-wire, of a side-current-conducting medium connected to said trolley-wire at or near one turnout, and grounded at or near the next turnout; a box or receptacle of conducting material mounted upon and above said trolley-wire; a pendent lever mounted in said box and projecting below it into near proximity to said trolley-wire; an angularly-grooved and inclined raceway of non-conducting material mounted in said box with its lowest end in near proximity to said lever; a pair of metal plates on the upper edges of said grooved raceway and extending from the end thereof opposite to said lever, toward said lever three-fourths, more or less, of the length of said raceway; an electromagnet mounted in said box; a plate of insulating material inclosing the poles of said magnet; a pair of metal pins set in, and projecting through said pole-inclosing plate; an armature beneath the poles of said magnet; conducting-wires connecting one of said pins and one of said plates on the raceway with said box; wires connecting the other of said plates with the other of said pins and with the coils of said magnet; a plurality of incandescent electric lamps in said circuit at or near the next turnout; a metal sphere resting in the lowest part of the groove of said raceway and movable along said groove, all so constructed and arranged that a trolley-wheel carried by a moving car will act upon the lower end of said lever and impel said sphere along said raceway into contact with the metal plates on said raceway to close said side circuit and light the signal-lamp, and means to be operated by said trolley-wheel at or near said second turnout for breaking said side circuit and extinguishing the signal-lights.

2. In a signaling device the combination of a main circuit-line; a side circuit-line connected at one end to said main line and grounded at its other end; a signal-lamp in said side circuit at or near its distant end; a circuit-closing mechanism connecting said main and side circuit-lines; means for automatically operating said circuit-closing mechanism to light said signal-lamp; a circuit-breaking device at or near said distant end comprising the box 27, the pendent lever 29 having its middle portion covered with insulating material 41; the inclined raceway 30 of insulating material, having its lowest end next to said lever; the metal plates 28 and 31 secured upon the upper edges of said raceway at the end thereof next to said lever and extending a short distance toward the opposite end of said raceway; and the metal sphere 40 resting upon said plates 28 and 31 and in contact with the insulated portion of said lever 29.

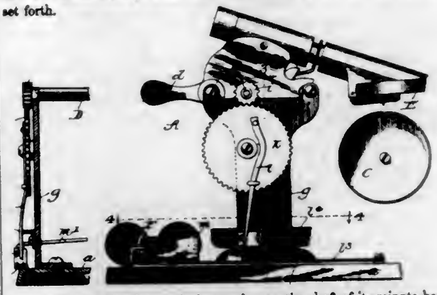
3. In a signaling device for electric railways, the combination with a trolley-wire or main circuit-line, and a side circuit-line constructed and arranged to be intermittently connected at one end to said main line and grounded at its other end, and a circuit-closing device operated by a passing trolley-wheel; of a circuit-maintaining device, comprising the electromagnet 9^a in said side circuit-line; the non-conducting plate 10 inclosing the poles of said magnet; the pins 36 and 37 set in and projecting through said plate; the armature 12; and suitable wires connecting said pins 36 and 37 respectively with the main circuit-line and with said side circuit-line.

4. In an electric-railway signaling device the combination with the trolley-wire and trolley-wheel of an electric railway, of a side circuit-line extending from one turnout to the next and grounded at the latter turnout; a circuit-closing mechanism connecting said trolley-wire and side line at or near said first turnout and constructed and arranged to be automatically operated by said trolley-wheel; an electric signal-lamp at or near said second turnout and in said side circuit; and a circuit-breaking device in said side circuit-line near said second turnout comprising the metal box 27; mounted upon an in electric connection with said trolley-wire; the lever 29; the angularly-grooved and inclined raceway 30 of non-conducting material; the short metal plates 28 and 31 secured to the upper corners of said raceway at the end next to said lever 29; the metal sphere 39 normally resting upon said plates 28 and 31, and the band of insulating material 40 surrounding the pendent arm of said lever 29 opposite said sphere, said plates 28 and 31 forming portions of said side circuit-line, and said lever 29 being constructed and arranged to be vibrated by the trolley-wheel and thus impel the sphere along the inclined groove of said raceway beyond the ends of the plates 28 and 31 and thus break the circuit and extinguish the signal-lights.

5. A circuit-closing mechanism comprising the following elements, viz: the box 8; the lever 17; the non-conducting raceway 13; the plates 14 and 15 mounted on said raceway; the sphere 21 of conducting material; the electromagnet 9^a; the non-conducting plate 10; the pins 36 and 37; the armature 12, and suitable wires connecting said pins 36 and 37, respectively, with said box 8 and the plate 15, all constructed, arranged and operating substantially as and for the purposes described.

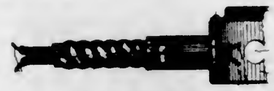
657,731. GRAPHOPHONE-CLOCK. JOHN F. ELDRED, Chicago, Ill. Filed Oct. 28, 1899. Serial No. 735,056. (No model.)

Claim.—1. In combination, a clock provided with electric-circuit-closing mechanism operated at predetermined intervals by the clock-movement, a speech-reproducing instrument having its record-surface provided with announcements according to the intervals at which said clock-movement is operated, having its threaded shaft provided on its outer end with a pinion, a toothed wheel journaled on the instrument to mesh with said pinion and carrying a stop-finger, a guide for said finger, a spring-controlled lever carrying a stop-lug normally projecting into the path of said finger to check the motor of said instrument, an electromagnet having its pivotal armature linked to the free end of said lever to move the stop out of the path of said finger by movement of the armature and thereby release said motor, and an electric generator-circuit containing said magnet and circuit-closing mechanism, substantially as and for the purpose set forth.



2. In combination, a clock carrying on the shaft of its minute-hand a disk of insulated material having a metallic center electrically connected with the clock and from which radiate at intervals metallic strips terminating at notches equidistant apart in the periphery of the disk, a contact-finger supported on the clock to engage with said periphery, a speech-reproducing instrument having its record-surface provided with announcements according to the intervals at which said clock-movement is operated, brake mechanism normally checking the motor of said instrument, an electromagnet having its armature connected with said brake mechanism to release it by movement of the armature, and an electric generator-circuit containing said magnet and contact-finger to be closed by contact of said finger with a strip on said disk in its rotation, substantially as and for the purpose set forth.

657,732. COUPLING FOR ELECTRIC CONDUITS. EDWARD S. FRANCIS, Hartford, Conn. Filed July 6, 1900. Serial No. 22,736. (No model.)

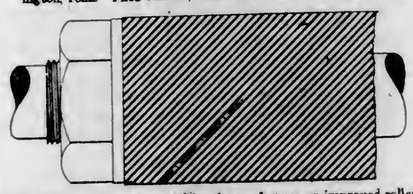


Claim.—1. In a coupling for connection-boxes, in combination, a main section tubular in form and threaded on the inner surface at one end and having a removable section less in length than the coupling and partible on about the central plane lengthwise of the coupling, and means for securing the two sections together and clamping them upon the end of the conduit.

2. The improved coupling having in combination a body part or main section with a tubular opening at one end having its inner walls threaded, a complementary removable section fitting the main section and registering parts with means for securing the sections together.

3. In combination, a coupling having a body part or main section with a tubular opening at one end having its inner walls threaded, a complementary removable section fitting the main section, means for securing the sections together, a nipple having a shoulder and threaded to fit the tubular opening in the main section of the coupling, and a flexible conduit having its outer wall formed of a series of spirally-arranged separate bands.

657,733. ROLLER FOR ROLLER-GINS. JOHN W. GRAVES, Covington, Tenn. Filed Jan. 24, 1900. Serial No. 2,573. (No model.)



Claim.—1. As a new article of manufacture, an improved roller for roller-gins, comprising a core or shaft, and elliptical disks of material presenting innumerable points carried by said core or shaft at an angle to the plane of rotation thereof, substantially as set forth.

2. As a new article of manufacture, an improved roller for roller-gins, comprising a core or shaft, elliptical disks of material presenting innumerable points carried by said core or shaft at an angle to the plane of rotation thereof, and elliptical disks of a flexible material carried by said

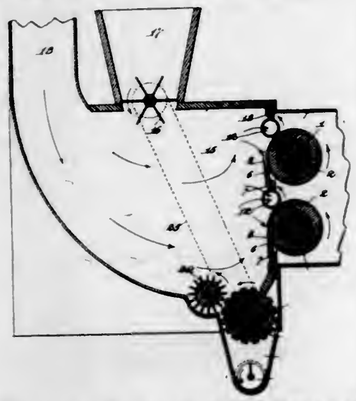
core or shaft in alternation with the disks of bristle-like material, substantially as set forth.

3. As a new article of manufacture, an improved roller for roller-gins, comprising a core or shaft, and elliptical disks of horsehair carried by said core or shaft at an angle to the plane of rotation thereof, substantially as set forth.

4. As a new article of manufacture, an improved roller for roller-gins, comprising a core or shaft, elliptical disks of horsehair carried by said core or shaft at an angle to the plane of rotation thereof, and elliptical disks of fibrous material carried by said core or shaft in alternation with the horsehair disks, substantially as set forth.

5. As a new article of manufacture, an improved roller for roller-gins, comprising a core or shaft, elliptical disks of horsehair carried by said core or shaft at an angle to the plane of rotation thereof, and elliptical disks of leather carried by said core or shaft in alternation with the horsehair disks, substantially as set forth.

657,734. ROLLER COTTON-GIN. JOHN W. GRAVES, Covington, Tenn. Filed Jan. 30, 1900. Serial No. 3,263. (No model.)



Claim.—1. In a roller cotton-gin, the combination of a ginning-roller, a perforated cylinder mounted adjacent to said roller to provide for the escape of air but preventing the passage of seeds, and means for rotating the roller and said cylinder, substantially as set forth.

2. In a roller cotton-gin, the combination of a ginning-roller, a perforated cylinder mounted adjacent to said roller to provide for the escape of air but preventing the passage of seeds, and means for rotating the roller and said cylinder in the same direction, substantially as set forth.

3. In a roller cotton-gin, the combination of a ginning-roller, a perforated cylinder mounted adjacent to said roller to provide for the escape of air but preventing the passage of seeds, means for rotating the roller and said cylinder, and a slat or bar mounted adjacent to the roller, substantially as set forth.

4. In a roller cotton-gin, the combination of a ginning-roller, a perforated cylinder mounted adjacent to said roller to provide for the escape of air but preventing the passage of seeds, means for rotating the roller and said cylinder, a slat or bar mounted adjacent to the roller, and means for moving the slat or bar toward and away from the said roller, substantially as set forth.

5. In a roller cotton-gin, the combination with a ginning-roller, of a slat or bar coöperating with said roller, means for moving the slat or bar toward and away from said roller to present a passage between the bar and the periphery of the roller into which the fiber may pass, a ginning-chamber partly surrounding the roller, and means for directing an air-blast into the ginning-chamber and for feeding the seed-cotton to the effect of the blast, whereby the lint will be carried by the blast into the space formed between the slat or bar and the ginning-roller, substantially as set forth.

6. In a roller cotton-gin, the combination with a ginning-roller, of a slat or bar coöperating with said roller, means for moving the slat or bar toward and away from said roller to present a passage between the bar and the periphery of the roller into which the fiber may pass, a ginning-chamber partly surrounding the roller, means for directing an air-blast into the ginning-chamber, a feed-hopper placed above the ginning-chamber, and means coöperating therewith for permitting the seed-cotton to fall vertically through the ginning-chamber so as to be acted upon by said blast, substantially as set forth.

7. In a roller cotton-gin, the combination with a ginning-roller, of a slat or bar coöperating with said roller, means for moving the slat or bar toward and away from said roller to present a passage between the bar and the periphery of the roller into which the fiber may pass, a ginning-chamber partly surrounding the roller, means for directing an air-blast into the ginning-chamber, a feed-hopper placed above the ginning-chamber, and a rotating valve at the bottom of said hopper for permitting the cotton to fall vertically through the ginning-chamber so as to be acted upon by the blast, substantially as set forth.

8. In a rotary cotton-gin, the combination of a ginning-chamber, a ginning-roller located adjacent to or within the chamber for removing lint from the fiber-bearing seeds, and a longitudinally-grooved seed-removing roller mounted at the bottom of said chamber for removing the seed therefrom, substantially as set forth.

9. In a rotary cotton-gin, the combination of a ginning-chamber, a ginning-roller located adjacent to or within the chamber for removing lint from the fiber-bearing seeds, a longitudinally-grooved seed-removing roller mounted at the bottom of said chamber for removing the seed therefrom, and an inclosed chamber beneath said seed-removing roller into which the seed may be deposited, substantially as set forth.

10. In a rotary cotton-gin, the combination of a ginning-chamber, a ginning-roller located adjacent to or within the chamber for removing lint from the fiber-bearing seeds, a longitudinally-grooved seed-removing roller mounted at the bottom of said chamber for removing the seed therefrom, an inclosed chamber beneath said seed-removing roller into which the seed may be deposited, and means for continuously removing the seed accumulated in said chamber, substantially as set forth.

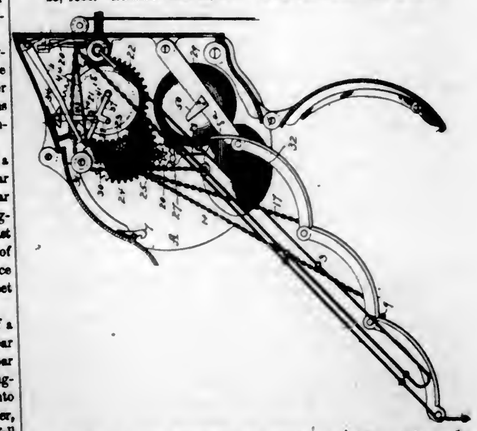
11. In a rotary cotton-gin, the combination of a ginning-chamber, a ginning-roller located adjacent to or within the chamber for removing lint from the fiber-bearing seeds, a longitudinally-grooved seed-removing roller mounted at the bottom of said chamber for removing the seed therefrom, an inclosed chamber beneath said seed-removing roller into which the seed may be deposited, and a screw conveyer for continuously removing the seed accumulated in said chamber, substantially as set forth.

12. In a rotary cotton-gin, the combination of a ginning-chamber, a ginning-roller located adjacent to or within the chamber for removing lint from the fiber-bearing seeds, a longitudinally-grooved seed-removing roller mounted at the bottom of said chamber for removing the seed therefrom, and a picker-drum coöperating with said seed-removing roller for preventing the removal from the ginning-chamber of lint or bolls, substantially as set forth.

13. In a roller-gin, the combination of a ginning-roller, a slat or bar mounted on a rock-shaft adjacent to the ginning-roller, a lever carried by said rock-shaft, and a cam on the shaft of the ginning-roller engaging said lever, substantially as set forth.

14. In a roller-gin, the combination of a ginning-roller, a slat or bar mounted on a rock-shaft adjacent to the ginning-roller, a lever carried by said rock-shaft, a cam on the shaft of the ginning-roller engaging said lever, and a spring for maintaining the lever in contact with said cam, substantially as set forth.

657,735. FIRE-ESCAPE. CHARLES R. HARRIS, Williamsport, Pa., assignor to the Harris Safety Company, New York, N. Y. Filed Apr. 25, 1899. Renewed Jan. 23, 1900. Serial No. 2,516. (No model.)



Claim.—1. In a fire-escape the combination with a casing and a flexible ladder, of means for lowering the ladder at a distance outwardly from the building to which the apparatus is attached, means for stopping the ladder before it reaches the ground and means for subsequently lowering the ladder to the ground and disposing it close to the building.

2. In a fire-escape, the combination with a casing, of a flexible ladder having one of its ends secured therein, a reel on which said ladder is wound, an automatically-operating bell and means for normally holding the clapper at rest and releasing it when the ladder is discharged from the casing.

3. In a fire-escape, the combination with a casing having a door, a latch for said door and a lever adapted to engage said latch, of a flexible ladder in the casing, and means for automatically operating said lever to open the door of the casing when the ladder is released.

4. In a fire-escape, the combination with a casing having a door and a latch for said door, of a pivoted lever adapted to engage said latch, a sectional platform normally disposed within the casing and adapted when released to engage said lever and cause the door of the casing to be opened, and a ladder normally disposed within the casing and adapted to be discharged over said platform.

5. In a fire-escape, the combination with a casing and a flexible platform normally disposed therein, of means for releasing said platform and causing it to project outwardly and downwardly from the casing and a flexible ladder secured at one end within the casing and adapted to be discharged over said platform.

6. In a fire-escape, the combination with a casing, of a sectional platform secured at one end to the casing and adapted to be coiled therein, a flexible ladder secured at one end in the casing and normally coiled within and inclosed by the coiled sectional platform.

7. In a fire-escape, the combination with a casing, of a platform secured at one end thereto, means for projecting said platform and stopping it at an angle to the building to which the casing is secured, a flexible ladder adapted to be projected over said platform and means for dropping the platform alongside the building.

8. In a fire-escape, the combination with a casing having a door and a latch for the door, of a platform normally within the casing, a flexible ladder normally within the platform, means for projecting the ladder outwardly from the building and simultaneously opening the door of the casing and releasing the ladder, means for stopping the ladder before it reaches the ground and means for subsequently releasing the platform and ladder automatically to cause the platform to drop and the ladder to fall to the ground.

9. In a fire-escape the combination with a casing, of a sectional platform normally inclosed therein, a latch normally engaging said platform, a lever for operating said latch, a cord attached to said lever, devices between the lever and latch for operating the latter to release the platform, and a flexible ladder secured at one end within the casing and normally inclosed by said platform.

10. In a fire-escape, the combination with a casing, of a sectional platform secured thereto and normally inclosed therein, a latch adapted to engage said platform, a cross-head engaging said latch, an arm for moving said cross-head, a lever for operating said arm to release the platform, means for operating said lever and a ladder normally inclosed by said platform.

11. In a fire-escape, the combination with a casing, of a sectional platform secured at one end thereto and normally inclosed therein, of a latch for said platform, a drum, a weighted cord on the drum, a lever pivoted to the drum and adapted to operate said latch, an automatically-detachable connection between said lever and drum, a cord connected with said lever, and a ladder normally inclosed by said platform.

12. In a fire-escape, the combination with a casing, of a sectional platform secured to and normally inclosed within said casing, a latch for said platform, a drum, means for rotating said drum, a lever pivoted to the drum, two pins projecting from said lever, an arm depending from the latch and disposed between said pins, pins on the drum, a shoulder on the lever and disposed between the pins on the drum, a cord attached to said lever and a ladder secured at one end within the casing and normally inclosed by said platform.

13. In a fire-escape, the combination with a casing, of a sectional platform secured thereto and normally inclosed therein, a latch for the platform, a flexible ladder secured within the casing and inclosed by the platform, means for operating said latch, a latch-bar, chains secured to the platform and attached to said latch-bar for limiting the first movement of the platform, a chain secured at one end to the ladder a few feet removed from its fixed end, said last-mentioned chain attached at its other end to said latch-bar, a lever normally holding said latch-bar fixed and means for automatically operating said lever to release the latch-bar and the chains attached thereto.

14. In a fire-escape, the combination with a casing, of a sectional platform secured thereto and normally inclosed therein, a latch for said platform, a drum, a motor therefor, means connected with the drum for operating said latch, a ladder secured within the casing and normally inclosed by said platform, a latch-bar, a lever holding said latch-bar normally fixed, chains secured at one end to the platform and attached to the latch-bar, a chain attached at one end of the ladder several feet from its fixed end and an arm on the drum for tripping said lever to release the latch-bar after the platform and ladder shall have been released by the first-mentioned latch.

15. In a fire-escape the combination with a casing, of a sectional platform secured thereto and normally disposed therein, a flexible ladder secured within the casing and normally inclosed by said platform and a reel on which the ladder is wound also normally inclosed within the platform and adapted to be released with the discharge of the platform.

16. In a fire-escape, the combination with a casing, of a sectional platform secured thereto and normally inclosed therein, a reel normally inclosed by said platform, a flexible ladder wound on said reel and secured at one end within the casing, means for releasing said platform, and a flange on the platform and adapted to engage the reel to force it out of the casing when the platform is discharged.

17. In a fire-escape, the combination with a flexible ladder adapted to be secured at one end to a building, of a reel on which said ladder is wound, ratchet-teeth on the shaft of said reel, a collar mounted on said shaft, a dog carried by said collar and adapted to engage said ratchet-teeth, a link pivotally attached to said collar and adapted at its free end for attachment to a hook secured in the ground, and means for rotating the reel.

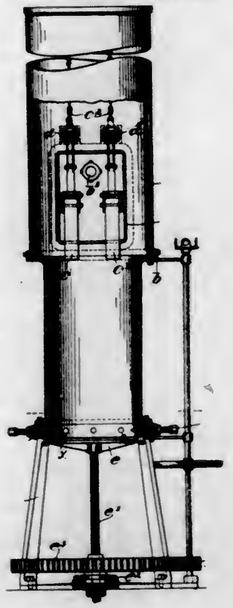
18. In a fire-escape, the combination of tubular rungs, cables passing transversely through the rungs, each rung having an internal projection crowding the cables out of line with the holes in the rungs through which they pass.

19. In a fire-escape, the combination of tubular rungs, cables passing transversely through the same, the wall of each rung being depressed and crowding the cables out of line with the holes through which they pass.

20. In a fire-escape, the combination with a casing, a flexible ladder therein, tripping devices and a motor, of a cord connected at one end with said tripping devices and fastened at its other end, and a fuse connected with said cord, whereby when the fuse melts, the motor and tripping devices will be released and effect the opening of the casing and release of the ladder.

21. In a fire-escape, the combination with a casing and a flexible ladder therein, of releasing devices for the ladder, a cord connected at one end with said releasing devices and fixed at its other end, said cord being looped at intervals and fusible devices connected with said loops whereby the cord will be slackened and permit the operation of said releasing devices when one of said fusible devices releases a loop in the cord.

657,736. ELECTRIC FURNACE. WILLIAM S. HORRY, Sault Ste. Marie, Mich., assignor to the Union Carbide Company, Chicago, Ill. Filed Nov. 23, 1897. Serial No. 659,543. (No model.)

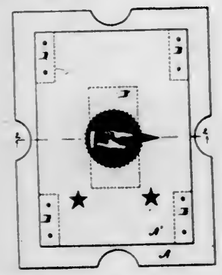


Claim.—1. The combination with an electric furnace constructed for the continuous delivery of carbid, of pointed clamp-screws mounted outside of the furnace and movable inward to nip off the finished product as it is delivered from the furnace, and a movable furnace-bottom constructed and arranged to support the weight of the contents of the furnace and of the product from underneath and to carry the product and present it between the points of the screws, substantially as described.

2. The combination with an electric furnace constructed for the continuous delivery of carbid, of, a movable furnace-bottom constructed and arranged to support the weight of the contents of the furnace and of the product from underneath and to carry the product, and devices constructed and arranged to cut off the finished product as it is delivered from the furnace, substantially as described.

3. An electric furnace comprising the combination of a framework, a carbid-chamber mounted on the framework, a furnace proper mounted on the carbid-chamber, a kiln-chamber mounted on the furnace proper, electrodes located in and having their axes parallel with the axis of the furnace proper, a movable furnace-bottom, lift or elevator, and clamping devices cooperating with said elevator and furnace, substantially as described.

657,737. **DUPLICATE-WHIST TRAY.** REINHOLD IHLING, Kalamazoo, Mich., assignor, by mesne assignments, to The Duplicate Whist Company, same place. Filed Nov. 23, 1896. Renewed Jan. 15, 1900. Serial No. 1,481. (No model.)



Claim.—1. The combination in a duplicate-whist tray of the bottom board A, and the top board A', of elastic material; corner blocks B, B, B, B, between the same and a central block B', dividing the same into four receptacles for the cards, and a raised portion C, struck up from one of the boards to form a clamp between it and the opposite board for securing the cards securely in place.

2. The combination in a duplicate-whist tray, of a suitable top board and bottom board, one of which shall be of elastic material, secured together by suitable means and a little separated from each other to form pockets at the sides for the cards, and one of said boards having a raised portion struck up therefrom within each pocket, projecting toward the opposite board to form a clamp between it and the opposite board to hold the cards as specified.

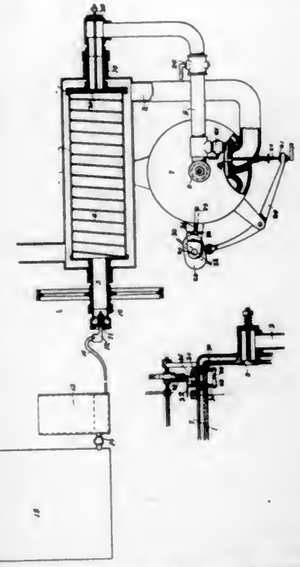
657,738. **CARBURETER FOR EXPLOSIVE-ENGINES.** HENRY L. JESSEN, Watsonville, Cal. Filed Nov. 15, 1899. Serial No. 737,017. (No model.)

Claim.—1. The combination with an explosive-engine and the pumping and propelling piston thereof, of a horizontally-disposed rotating cylinder with interior spiral ribs, and means for supplying hydrocarbon liquid thereto, an exterior casing surrounding said cylinder having inlet and discharge passages and connection between the exhaust of the engine and the inlet-passage of said casing.

2. In an explosive-engine, a generator comprising an exterior horizontally-disposed casing with inlet and outlet passages and connections by which the exhaust products from the cylinder are discharged thereunto, a cylinder journaled and revoluble within said casing having spirally-disposed ribs or flanges extending from end to end, means for supplying hydrocarbon liquid at one end of the cylinder, and a tubular connection between the opposite end of the cylinder and the inlet-valve of the engine.

3. In an explosive-engine, a horizontally-journaled revoluble cylinder having spirally-disposed interior flanges, an exterior inclosing casing through which the hot products of combustion from the engine are discharged, a hollow journal-shaft at one end and pipe connection with the inlet-valve of the engine, a hollow journal at the opposite end, an opening through which air is admitted into the generator during the operation of the engine.

4. In an explosive-engine, a horizontally-journaled revoluble cylinder with spirally-arranged interior flanges, a stationary jacket through which heat from the exhaust products of the engine is applied, a hollow journal at one end and pipe connection with the inlet-valve of the engine, a similar journal at the opposite end, with valve-controlled air-inlet opening and a pipe through which the hydrocarbon liquid is also admitted thereto.



5. In an explosive-engine, a horizontally-journaled revoluble cylinder, with means for advancing the liquid therethrough, an exterior stationary jacket through which the hot exhaust products from the engine are discharged, a hollow journal at one end of the generator and pipe connection with the inlet-valve of the engine, a similar hollow journal with controlling-valve through which air is admitted into the generator by the vacuum produced by the engine, supply-tanks and pipe connection with said inlet-passage whereby the hydrocarbon liquid is also admitted simultaneously.

6. In an explosive-engine, the horizontally-revoluble cylindrical generator with interior spirally-disposed flanges by which the liquid is advanced from the inlet toward the discharge end, a channel at the discharge end of larger diameter and a coiled pipe, the outer end of which dips into the lower part of said channel whereby the residue is constantly collected therefrom.

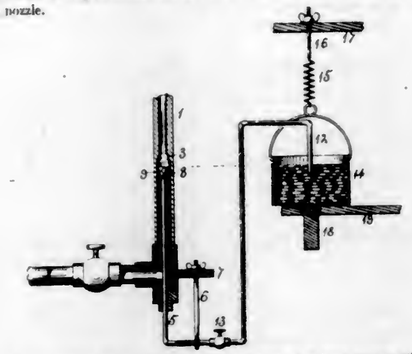
7. In an explosive-engine, a horizontally-journaled revoluble cylinder with means for advancing the hydrocarbon liquid therethrough, means for heating the generator to vaporize the liquid, a pipe connection from one end of the generator to the inlet-valve of the engine, a closed main tank and an open-topped supplemental supply-tank with connection between, and upwardly-curved trap-pipe connecting the supplemental chamber with the inlet end of the generator whereby the vacuum produced by the engine-piston acts to draw the liquid into the generator.

8. In an explosive-engine, a horizontally-journaled revoluble generator, with means for advancing the liquid therethrough, and means for heating the same, an open-pipe connection between the discharge end of the generator and the inlet-valve of the engine whereby a vacuum is produced in the generator by the movement of the engine-piston, a pipe-and-trap connection between the opposite end of the cylinder and the supply-tank whereby the hydrocarbon liquid is drawn into the generator when the engine-piston produces a vacuum and the supply is cut off when the inlet-valve of the engine has not opened or the engine is at rest.

657,739. **VAPORIZER FOR PETROLEUM-ENGINES.** GEORGE KILTS, Marengo, Ill. Filed July 5, 1899. Serial No. 722,785. (No model.)

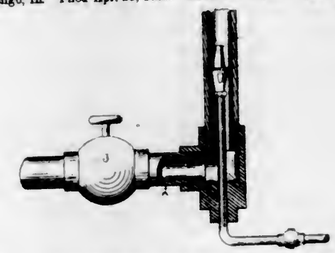
Claim.—1. In a gas-engine, an air-supply pipe, an oil-pipe located within the air-pipe and supporting a nozzle at its upper end, the nozzle being in conical form having an end plate provided with a series of perforations and an air passage-way extending obliquely through the nozzle having its outlet located at or about the center of the top plate of the nozzle.

2. In a gas-engine, an air-supply pipe having its upper portion contracted, an oil-pipe located within the air-pipe and supporting a nozzle at its upper end and located below the contracted portion of the air-pipe, the nozzle being in conical form having an end plate provided with a series of perforations, and an air passage-way extending obliquely through the nozzle having its outlet located at or about the center of the top of the nozzle.



3. In a gas-engine, an oil-supply pipe adapted to have a connection with an engine, an oil-can supported by a spring and located away from the engine, the outer end of the oil-supply pipe bent in siphon form and turned down into the open end of the can.

657,740. **CARBURETER FOR GAS-ENGINES.** GEORGE KILTS, Marengo, Ill. Filed Apr. 25, 1900. Serial No. 14,366. (No model.)



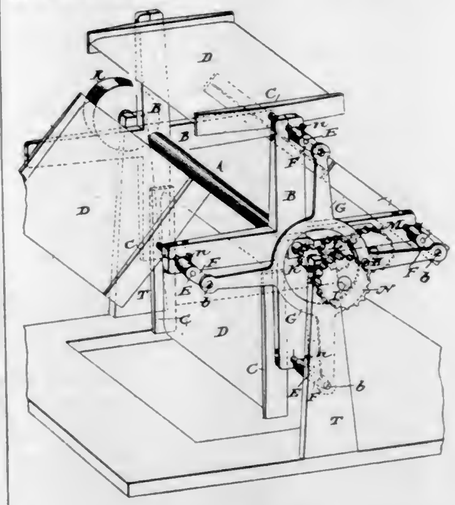
Claim.—1. In a gas-engine, an air-supply pipe, an oil-supply pipe located within the air-pipe and supporting a nozzle at its upper end, the nozzle being in conical form having an upper portion in reverse conical form, a top plate between the conical portions an air passage-way extending obliquely through the nozzle-opening through the top plate, a series of openings through the upper portion above the top plate and a series of openings below the top plate.

2. In a gas-engine, a nozzle in conical form having an upper portion in reverse conical form, a top plate between the conical portions an air passage-way extending obliquely through the nozzle-opening through the top plate, a series of openings through the upper portion above the top plate and a series of openings below the top plate.

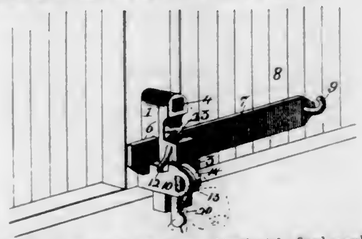
657,741. **PADDLE-WHEEL.** DANIEL S KNOWLTON, Perry, N. Y. Filed Jan. 26, 1900. Serial No. 2,885. (No model.)

Claim.—1. A paddle-wheel having a number of floats or sails arranged around the main shaft, firmly attached to axles or shafts supported by bearings carried at or near the periphery of the wheel suitable to permit the floats to freely revolve in either direction, every float having its axis at its geometrical center parallel with the axis of the main shaft, its plane at right angles to the one exactly opposite, and its axle connected to a sleeve loosely fitted over a part of the main shaft, by a mechanism suitable to automatically rotate the axle in its bearing one-half as fast in the opposite circular direction as that in which the main wheel may be revolved while the sleeve is at rest, in combination, with a wheel attached to the sleeve suitable to rotate the said sleeve in either direction, or hold it at rest at any point of the complete revolution, substantially as set forth and for the purposes designated.

2. In a paddle-wheel having a number of floats and arranged around the main shaft, and supported by bearings suitable to permit of the floats being freely revolved in either direction, and having their axes parallel with the axis of the main shaft, the combination of a sleeve that is loosely fitted over a part of the main shaft, suitable to permit the shaft to freely revolve therein, the said sleeve having securely attached to it a primary spur gear-wheel, in mesh with an idle wheel that is in mesh with a planet-gear wheel, having twice the number of cogs that there are on the primary gear, the planet-gear also having a crank-pin engaging with a yoke connecting it with all the floats by means of cranks on each of the floats, having the same throw as the crank-pin on the planet-gear, and suitable to transmit the same direction and degree of rotary motion to the floats on their axles, as is received by the planet-gear on its axle-pin, from the primary gear attached to the sleeve, substantially as shown and described and for the purpose specified.



657,742. **SEAL-LOCK.** GEORGE W. LEWIS, Portsmouth, Va., assignor of two-thirds to W. R. Robinson and S. M. Lewis, same place. Filed Dec. 5, 1899. Serial No. 739,279. (No model.)



Claim.—1. In a seal-lock, the combination of a fixed member provided with a stop-ear at one side of a hasp-seat and with a seal-socket below the hasp-seat, and a swinging member also provided with a seal-socket and pivoted to the fixed member for adjustment thereon to bring the two seal-sockets into vertical registration, said swinging member engaging with the stop-ear of the fixed member and held thereby against lateral outward pressure, substantially as described.

2. A lock having a fixed member provided with a hasp-seat and a contiguous stop-ear provided in one edge with a notch, and a movable member pivotally mounted upon the fixed member to swing over the hasp-seat and limited in its movement by said stop-ear, said movable member being provided with a lateral lug to engage the notch of the stop-ear, substantially as specified.

3. A lock having a fixed member provided with a hasp-seat, and a movable member pivotally mounted upon the fixed member, said movable member being provided with a cavity forming a seal-seat, and the fixed member being provided with a seal-seat extension with which the cavity of the movable member registers when the latter is in its normal position, and said movable member being further provided with a guard-ear to prevent access to the seal-seat and extension, substantially as specified.

4. A seal-lock comprising a fixed member having a vertical seal-socket, and a movable member arranged to overlap the seal-socket in the fixed member and provided with a vertical seal-socket open at its top and

bottom, said movable member also having an offset extending across and within said seal-socket to partly close the upper end thereof and lying in the path of a seal inserted in the socket, whereby a seal may be inserted endwise from the top of the lock and the offset therein restrains the seal from upward withdrawal.

5. A lock having a fixed member and a movable member pivotally mounted upon the fixed member and provided with a cavity forming a main seal-seat to register with a seal-seat extension in the fixed member, when the movable member is in its normal position, the main seal-seat being accessible at the end opposite to said seal-seat extension through an inlet-passage of tortuous or irregular construction, substantially as specified.

6. A lock having a fixed member provided with a seal-seat extension, and a movable member pivotally mounted upon the fixed member and having a cavity forming a main seal-seat adapted to register with said seal-seat extension when the movable member is in its normal position, the main seal-seat being accessible at the end opposite to said seal-seat extension for the introduction of a seal, and having an interior guard-shoulder extending across the inlet-opening to prevent the movement of the seal in a reverse direction through the inlet-opening, substantially as specified.

7. A lock having a fixed member provided with a shoulder-cord to form a seal-seat extension, and a movable member having a cavity open at one end for closure by said shoulder of the fixed member when the movable member is in its normal position, and also having an opposite opening for the introduction of a seal, and a guard-shoulder in the cavity of the movable member to cover said inlet-opening, said movable member arranged to be shifted in a path across the plane of the alined seal-seats of the two members, substantially as specified.

8. A lock having a fixed member provided with a shoulder which is cored to form a seal-seat extension, and a movable member pivotally mounted upon the fixed member and provided with a cavity open at one end for closure by said shoulder of the fixed member, and having at the opposite end an inlet-opening, of less depth than the cavity and located contiguous to one wall thereof, and a guard-shoulder located within the cavity and projecting from said wall contiguous to which the inlet-opening is formed to cover the inlet-opening, substantially as specified.

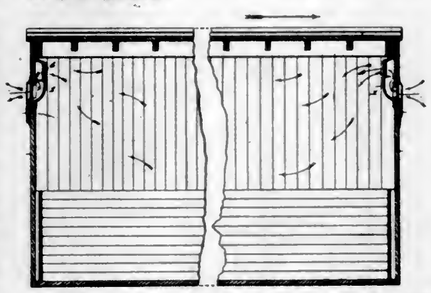
9. A lock having a fixed member provided with a shoulder cored to form a seal-seat extension, and a movable member pivotally mounted upon the fixed member and provided with a cavity open at one end to register with said seal-seat extension, the cavity being of greater width than the seal-seat extension and being provided at the opposite end from said shoulder of the fixed member with an inlet-slit and a contiguous guard-shoulder, in combination with a seal adapted to be introduced through said inlet-slit, and having a tongue or shank adapted to extend through said seal-seat extension, and a head of greater width than the tongue or shank to occupy the cavity of the movable member, substantially as specified.

10. A lock having a fixed member provided with a shoulder cored to form a seal-seat extension, and a movable member provided with a cavity forming a main seal-seat adapted to be closed at one end by the shoulder of the fixed member when the movable member is in its normal position, said main seal-seat being provided at the opposite end with an inlet-slit and a contiguous guard-shoulder, and having its wall opposite to said guard-shoulder inclined inwardly and provided with a channel to register with the seal-seat extension, substantially as specified.

11. A lock having a fixed member provided with a shoulder cored to form a seal-seat extension, and a movable member pivotally mounted upon the fixed member and provided with a cavity forming a main seal-seat of greater width than the seal-seat extension, said cavity being open at one end for closure by the shoulder of the fixed member when the movable member is in its normal position, and being provided at the opposite end with an inlet-slit and a contiguous guard-shoulder, and being also provided in the wall opposite to said guard-shoulder with a channel registering with the seal-seat extension, in combination with a seal adapted to be introduced through said inlet-slit and having a tongue or shank adapted to be guided by said channel into engagement with the seal-seat extension, and also having a head of greater width than the tongue or shank to occupy the main seal-seat, substantially as specified.

12. A lock having a fixed member provided with a shoulder cored to form a seal-seat extension disposed longitudinally of the member, and a movable member pivotally mounted upon the fixed member and provided with a longitudinal cavity forming a main seal-seat for registration with said seal-seat extension, and open at the end remote from the pivot for closure by said shoulder of the fixed member, said cavity being provided in one wall with a channel of reduced width registering with the seal-seat extension, and being reduced in depth as it recedes therefrom, and said cavity being provided at its extremity contiguous to the pivotal point of the movable member with an inlet-slit, equal in width with the cavity and arranged contiguous to the wall opposite to that in which said channel is formed, and being, furthermore, provided with an undercut guard-shoulder projecting toward the wall in which the channel is formed, in combination with a seal having a reduced tongue or shank adapted to lie in said channel and engage the seal-seat extension, and also provided with a head adapted to occupy the main seal-seat and lie under said guard-shoulder to prevent removal of the seal through said inlet-slit, substantially as specified.

657,743. CAR-VENTILATOR. AUGUST MILLER, St. Louis, Mo., assignor to the Miller Supply Company. Filed Jan. 13, 1900. Serial No. 1,277. (No model.)



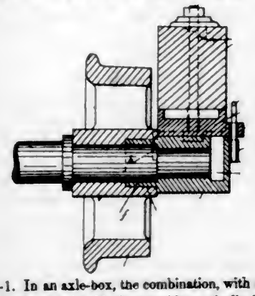
Claim.—1. A car-ventilator comprising a ventilator-box formed with a securing-frame, an angular seating-lip, recesses in the securing-frame above the seating-lip and an upper opening for an upper screen, and the holding-plate formed with an inner frame fitting in the recesses of the securing-frame of the box, pendent projections fitting against the angular lip of the box, and an outer frame adapted to receive a lower screen.

2. A car-ventilator comprising a ventilator-box formed with a securing-frame, an angular seating-lip, recesses in the securing-frame, above the seating-lip, an upper opening for an upper screen and a horizontal ledge beneath the opening projecting into the box and adapted to support the upper screen and the holding-plate formed with an inner frame fitting in the recesses of the securing-frame of the box, pendent projections fitting against the angular lip of the box, and an outer frame adapted to receive a lower screen.

3. A car-ventilator comprising a ventilator-box formed with a securing-frame, an angular seating-lip, recesses in the securing-frame above the seating-lip, and an upper opening for an upper screen and the holding-plate formed with an inner frame fitting in the recesses of the securing-frame of the box, pendent projections fitting against the angular lip of the box, an outer frame adapted to receive a lower screen, an outwardly-projecting flange for supporting a door, and door-retaining lips.

4. A car-ventilator comprising a ventilator-box, a holding-plate fitted to the box and formed with an outwardly-projecting flange for supporting a door and door-retaining lips, a door guide-plate formed with outwardly-extending walls, flanges projecting from the walls, having inwardly-curved ends, an overhanging flange, a lower cross-bar having inwardly-projecting lugs, and a sliding door adapted to seat on the lugs or on the projecting flange.

657,744. CAR-AXLE BOX. THOMAS J. MORGAN, Kingston, Pa. Filed July 21, 1900. Serial No. 24,409. (No model.)



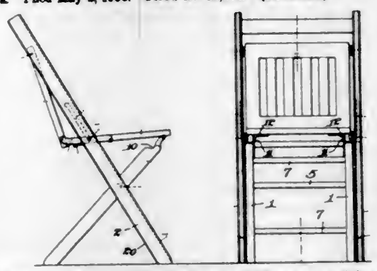
Claim.—1. In an axle-box, the combination, with a bracket having a forked guide, of a bearing-block movable vertically in the said guide and having a chamber for lubricant which is normally closed by the said bracket, and having also a wedge-shaped projection at one end, and a split pin engaging with the said bracket and projection and preventing the bearing-block from sliding endwise out of the bracket, substantially as set forth.

2. In an axle-box, the combination, with a bracket having a forked guide provided with a stop at its lower part, of a bearing-block which is slidable vertically to a limited extent in the said guide, said block being provided with a chamber for lubricant which is normally closed by the said bracket, and means for preventing the bearing-block from sliding endwise out of the bracket, substantially as set forth.

3. In an axle-box, the combination, with a bracket having a forked guide, of a bearing-block having a chamber for lubricant near one end which is normally closed by the said bracket, and an annular projection at the other end for engaging with a recess in the adjacent car-wheel, substantially as set forth.

4. In an axle-box, the combination, with a bracket having a forked guide and a projecting lug, of a bearing-block movable vertically in the said guide and having a chamber for lubricant which is normally closed by the said bracket, said block having also flanges which prevent it from sliding endwise in one direction and a wedge-shaped projection arranged under the said lug, and a split pin passed through a hole in the said lug and engaging with the said projection and preventing the said block from sliding endwise in the other direction, substantially as set forth.

657,745. FOLDING CHAIR. WILLIAM M. NORCROSS, Philadelphia, Pa. Filed May 2, 1900. Serial No. 15,174. (No model.)



Claim.—1. The combination of the crossed and pivoted legs, the outer ones of which are extended to constitute back-posts, the back pivoted at its upper end between said posts, the seat pivotally connected at its forward end with the inner legs, links connecting the sides of said seat, at some distance from its rearward edge, with the lower portion of the back, and a pivotal sliding connection between the said links and the back-posts, substantially as described.

2. The combination of the crossed and pivoted legs, the outer ones of which are extended to constitute back-posts, the back pivoted at its upper end between said posts, the seat pivotally connected at its forward end with the inner legs, links pivotally connecting the sides of said seat, at some distance from its rearward edge with the lower portion of the back, and a pivotal sliding connection between the said links and the back-posts, the pivotal connections being such that when the parts are closed the pivotal connection at the forward end of the seat passes slightly beyond the vertical center of the link connection with the seat, substantially as described.

3. In a folding chair, the combination of the crossed and pivoted legs whereof the outer legs are extended to constitute back-posts, the seat, pivotal connections between the same, the legs, and the back, whereby the several elements may be folded and unfolded, and a rung uniting the outer legs and affording a stop or abutment which coacts with the seat when the chair is open, and with the inner legs when the chair is closed, substantially as described.

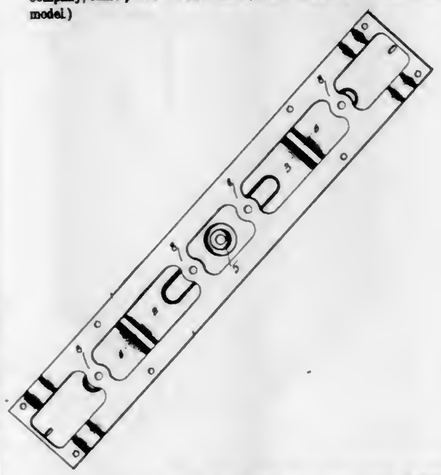
4. The combination of the crossed and pivoted legs, the outer ones of which are extended to constitute back-posts provided with longitudinal guideways, the back pivoted at its upper end between said posts, the seat pivotally connected at its forward end with the inner legs, links connecting the sides of said seat, at some distance from its rearward edge, with the lower portion of the back, and studs on said links coacting with the guideways in the back-posts, substantially as described.

5. The combination of the crossed and pivoted legs, the outer ones of which are extended to constitute back-posts provided with longitudinal guideways, the back pivoted at its upper end between said posts, the seat pivotally connected at its forward end with the inner legs, links connecting the sides of said seat, at some distance from its rearward edge, with the lower portion of the back, studs on said links coacting with the guideways in the back-posts, and a rung uniting the outer legs, and affording a stop or abutment which coacts with the seat when the chair is open, and with the inner legs when the seat is closed, substantially as described.

6. The combination of the crossed and pivoted legs, the outer ones of which are extended to constitute back-posts provided with longitudinal guideways, the back pivoted at its upper end between said posts, the seat pivotally connected at its forward end with the inner legs, links connecting the sides of said seat, at some distance from its rearward edge, with the lower portion of the back, studs on said links coacting with the guideways in the back-posts, and a hook or lug on the rearward end of the seat adapted to be interlocked with the upper portion of the back when the chair is folded, substantially as described.

7. The combination of the crossed and pivoted legs, the outer ones of which are extended to constitute back-posts provided with longitudinal guideways, the back pivoted at its upper end between said posts, the seat pivotally connected at its forward end with the inner legs, links connecting the sides of said seat, at some distance from its rearward edge, with the lower portion of the back, studs on said links coacting with the guideways in the back-posts, a rung uniting the outer legs, and affording a stop or abutment which coacts with the seat when the chair is open, and with the inner legs when the chair is closed, and a hook or lug on the rearward end of the seat adapted to be interlocked with the upper portion of the back when the chair is closed, substantially as described.

657,746. BODY-BOLSTER FOR RAILWAY-CARS. ERIC W. PALMQUIST, St. Louis, Mo., assignor to the Shickle, Harrison & Howard Iron Company, same place. Filed June 4, 1900. Serial No. 18,924. (No model.)

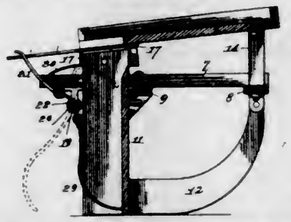


Claim.—1. A cast body-bolster for railway-cars consisting of sides having horizontally-extending flanges, a bottom provided with center and side bearings, and webs that tie the sides together at the top, all formed integral, substantially as set forth.

2. A cast body-bolster for railway-cars consisting of sides having horizontally-extending flanges at their tops, a bottom inclined upwardly each way from the center and having center and side bearings, and webs that tie the sides together at the top, all formed integral, substantially as set forth.

3. A cast body-bolster for railway-cars having a bottom and sides and provided with integral webs flush with the top edges of the sides and which tie the sides together and form supports for the truss-rod stands, substantially as set forth.

657,747. POTATO-PLANTING MACHINE. JOHN RYAN, Wanda, Ill. Filed July 11, 1900. Serial No. 23,940. (No model.)

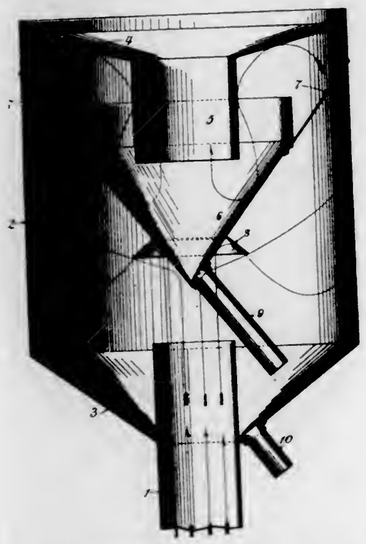


Claim.—1. In a potato-planter, the combination of a table, a runner, a chute arranged beneath said table, an apertured slide arranged above said chute, a rocker arranged beneath said slide, and having arms adapted to enter said chute, and means for operating said rocker and slide, substantially as described.

2. In a potato-planter, the combination of a table, a chute arranged beneath said table, a runner, an apertured slide arranged above said chute, a rocking rod adapted to receive the engagement of a check-wire, a rocker having arms adapted to enter said chute, and a finger carried by said rocker and arranged in engagement with said slide, substantially as described.

3. In a potato-planter, the combination of a table, a chute arranged beneath said table, a runner, an apertured slide arranged above said chute, a rocking rod adapted to receive the engagement of a check-wire, a spring for retracting said rod, a rocker provided with upper and lower curved arms adapted to alternately enter said chute, and a finger carried by said rocker and having engagement with said slide, substantially as described.

657,748. EXHAUST-HEAD. SEATON M. SCOTT, New York, N. Y., assignor to the Abendroth & Root Manufacturing Company, same place. Filed June 15, 1900. Serial No. 20,408. (No model.)



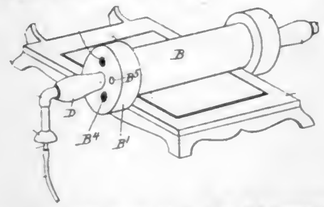
Claim.—1. An exhaust-head consisting of a metal shell 2 provided with a cone-shaped bottom 3, downwardly-extending cone-shaped top 4 and a downwardly-extending tube 5 secured to the top, the lower end of said tube extending into a combined cylindrical and cone-shaped deflector 6; in combination with a reverse cone-shaped deflector 8 of slightly-greater diameter than the exhaust-pipe 1, the arrangement being such that the exhaust-steam is caused to be deflected against all parts of the inner surface of the outer shell and the combined cylindrical and cone-shaped deflector, substantially as described.

2. An exhaust-head consisting of a metal shell 2 provided with a cone-shaped bottom 3 and top 4 and a downwardly-extending tube 5 secured to the top, the lower end of said tube extending into a combined cylindrical and cone-shaped deflector 6; in combination with a reverse cone-shaped deflector 8 of slightly-greater diameter than the exhaust-pipe 1, together with drain-pipes 9 and 10, the arrangement being such that the exhaust-steam is caused to be deflected against all parts of the inner surface of the outer shell and the combined cylindrical and cone-shaped deflector, substantially as described.

3. An exhaust-head consisting of a metal shell 2 provided with a cone-shaped bottom 3 and top 4 and a downwardly-extending tube 5 secured to the top, the lower end of said tube extending into a combined cylindrical and cone-shaped deflector 6 secured to the inner surface of the shell 2 by arms 7, 7; in combination with a reverse cone-shaped deflector 8 of slightly-greater diameter than the exhaust-pipe 1 and drain-pipes 9, 10, the arrangement being such that the exhaust-steam is caused to be deflected against all parts of the inner surface of the outer shell and the combined cylindrical and cone-shaped deflector, substantially as described.

4. An exhaust-head consisting of a cylindrical metal shell 2 provided with a cone-shaped bottom 3 and a downwardly-extending cone-shaped top 4; together with a downwardly-extending tube 5 secured to the top, the lower end of said tube extending into a combined cylindrical and cone-shaped deflector 6 secured to the inner surface of the shell 2 by arms 7, 7; in combination with a reverse cone-shaped deflector 8 of slightly-greater diameter than the exhaust-pipe 1 and secured directly to the lower end of the combined cylindrical and cone-shaped deflector 6 in such manner that the exhaust-steam is caused to be thrown against the entire inner surface of the cylindrical metal shell 2 and its bottom and top 3, 4, and afterward deflected against the inner surface of the combined cylindrical and cone-shaped deflector 6, ultimately passing out through the tube 5, drain-pipes 9 and 10 being provided, the former for conveying all of the moisture from the inner surface of the deflector 6 and the exterior surface of said deflector below the reverse deflector 8 upon its outer surface, and the latter for conveying all of the condensed moisture from the entire exhaust-head, substantially as described.

657,749. DEVICE FOR UNITING CELLULOID TO PHOTOGRAPHIC PRINTS. EUGENE W. SILSBY, Chicago, Ill. Filed Dec. 6, 1899. Serial No. 739,193. (No model.)



Claim.—1. A roller for the purpose indicated, comprising a metal shell or hollow cylinder, and ventilated metal heads or caps closing the ends of the cylinder; a tubular axle, connected at one end with a source of gas, and having gas-discharge orifices within the cylinder; combined with a shield or deflector mounted within the shell and supported so as to be interposed between the same and the gas-orifices, to shield the shell from the direct action of the same and deflect the latter.

2. An implement for uniting celluloid or like facing to photographic or other prints or films, comprising a plain metal base or platen and a metal shell or hollow cylinder constructed to operate as a roller; ventilated heads or caps closing its ends; a tubular axle connected at one end with a source of gas, and having gas-orifices within the cylinder, and handles at the opposite ends, outside the cylinder; and a shield or deflector mounted on the axle within the shell, interposed between the latter and the gas-orifices to deflect the flame and shield the shell from the direct action thereof.

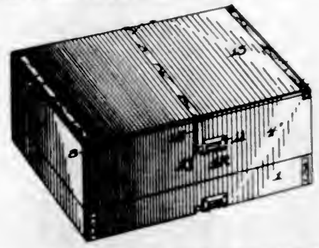
3. A roller for the purpose indicated comprising a thin metal shell or hollow cylinder, and ventilated metal heads or caps closing the ends of the cylinder; a tubular axle connected at one end with a source of gas and having gas-orifices within the cylinder, and a shield or deflector, comprising an upper and lower wall, and intervening air-space, mounted within the shell and supported so as to be interposed between the same and the gas-orifices to shield the shell from the direct action of the flame and deflect the latter.

4. An implement for the purpose indicated comprising a plain metal base or platen and a roller, comprising a thin metal shell or hollow cylinder, and heavy or weighted metal heads or caps closing the ends of the cylinder, and provided with ventilating-apertures, and a tubular axle having a flexible connection at one end with a source of gas and having gas-orifices within the cylinder, and a shield or deflector mounted within the shell and held interposed between the same and the gas-orifices, said shield comprising an upper and a lower wall or plate, with an intervening air-space.

5. A roller for the purpose indicated comprising a thin metal shell or hollow cylinder and ventilated metal heads or caps closing the ends of the cylinder; a tubular axle having a flexible connection at one end with a source of gas and having gas-orifices within the cylinder and provided with suitable handles at opposite ends of the cylinder by which the roller may be operated while the axle is held non-rotating; and a shield or deflector mounted within the shell and held interposed between the same and the gas-orifices to shield the shell from the direct action of the flame and to deflect the latter.

6. A roller for the purpose indicated, comprising a thin metal shell or hollow cylinder, and heavy or weighted and ventilated metal heads or caps closing the ends of the cylinder, adapted to afford by their weight the necessary pressure; a tubular axle having a flexible connection at one end with a source of gas, and having gas-orifices within the cylinder, and provided with suitable handles at opposite ends of the cylinder, whereby the cylinder may be rotated while the axle is held non-rotating, and a shield or deflector mounted within the shell and interposed between the same and the gas-orifices, such shield or deflector comprising an upper and a lower plate, with an intervening air-space.

657,750. KNOCKDOWN BOX. SAMUEL H. WEIMER, Boston, Pa. Filed Mar. 8, 1900. Serial No. 7,863. (No model.)



Claim.—1. A knockdown crate comprising a section 1 consisting of a bottom, side walls, and end walls, and a collapsible section consisting of side walls, end walls, and a cover, said side and end walls of the collapsible section carrying eyes, stay-bolts passed through the said eyes and engaging the bottom and cover, a strap secured to said cover and provided with downwardly-extending ends having eyes, a keeper secured to each side wall of the section 1, and a locking-bolt operating in said keeper to engage the eyes of the strap and secure the crate in the knockdown form, substantially as described.

2. A knockdown crate, comprising a section 1 having side walls, end walls and a bottom secured rigidly together, and a collapsible section comprising side walls, end walls 4, and a cover, strips secured to the inner face of said end walls 4, an eye carried on the ends of said end walls 4, eyes carried on the ends of said side walls of the collapsible section, bolts passing through said eyes and the bottom and cover at each corner of the crate, a strap carried by said cover and having downwardly-extending ends provided with eyes, and lock-bolts carried by the sides of the section 1, to engage with the eyes of said strap and secure the crate in the knockdown form, substantially as described.

657,751. RAIL-JOINT. WILLIAM J. WHITAKER and SAMUEL M. GRUBER, Dravosburg, Pa. Filed June 26, 1900. Serial No. 21,620. (No model.)



Claim.—In combination, a chair provided with integral fish-plates, a pair of rail-sections mounted in said chair and having their abutting ends provided with an extending tread portion forming a recess, a supporting-block mounted in said recess and adapted to engage the under face of the extending tread portion of the rails, and means extending through said fish-plates and block for securing the latter in position.

657,752. CLASP. FREDERICK R. ALLEN, Boston, Mass., assignor of one-half to Frank R. H. Gary, same place. Filed Feb. 10, 1900. Serial No. 4,756. (No model.)



Claim.—1. A clasp comprising two jaws hinged together, and a cam-plate interposed between the rear ends of said jaws and unconnected with either jaw, said cam-plate being movable by a rotatory movement into a position transverse to the jaws, whereby the front or gripping ends of the jaws are moved into gripping relation, or into a position parallel to said jaws, whereby said gripping ends are permitted to separate.

2. A clasp comprising two jaws hinged together, a flattened cam-plate interposed between the rear ends of said jaws and unconnected with either jaw, said cam-plate being movable by a rotatory movement into a position transverse to the jaws, whereby the front or gripping ends of the jaws are moved into gripping relation, or into a position parallel to said jaws, whereby said gripping ends are permitted to separate, and a bail or loop connected with said cam-plate and adapted to attach the clasp to a base, the cam-plate being movable into its transverse position by rearward tension exerted on the bail.

3. A clasp comprising two jaws hinged together, a flattened cam-plate interposed between the rear ends of said jaws and disconnected from both jaws, said cam-plate being movable by a rotatory movement into a position transverse to the jaws, whereby the front or gripping ends of the jaws are moved into gripping relation, or into a position parallel to said jaws, whereby said gripping ends are permitted to separate, a bail or loop connected with said cam-plate and adapted to attach the clasp to a base, and projections extending inwardly toward each other from the jaws, substantially at right angles to the planes of the jaws and forming abutments limiting the rearward movement of the cam-plate.

4. A clasp comprising two jaws hinged together, a flattened cam-plate interposed between the rear ends of said jaws and disconnected from both jaws, said cam-plate being movable by a rotatory movement into a position transverse to the jaws, whereby the front or gripping ends of the jaws are moved into gripping relation, or into a position parallel to said jaws, whereby said gripping ends are permitted to separate, and means retaining the cam-plate between the jaws when in its transverse position, and permitting its removal from between the jaws when in its parallel position.

5. A clasp comprising two jaws hinged together, a flattened cam-plate interposed between the rear ends of said jaws and disconnected from both jaws, said cam-plate being movable by a rotatory movement into a position transverse to the jaws, whereby the front or gripping ends of the jaws are moved into gripping relation, or into a position parallel to said jaws, whereby said gripping ends are permitted to separate, a bail or loop connected with said cam-plate and adapted to attach the clasp to a base, the cam-plate being movable into its transverse position by rearward tension exerted on the bail, and projections extending inwardly toward each other from the jaws substantially at right angles to the planes of the jaws and forming abutments limiting the rearward movement of the cam-plate, said projections having a space between them when the gripping ends of the jaws are closed together, sufficient to permit the cam-plate to be removed from the clasp when held in its parallel position.

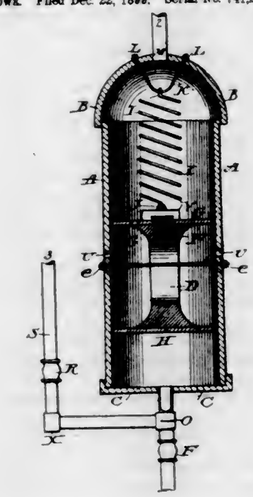
6. A clasp comprising two jaws hinged together, a cam-plate interposed between the rear ends of the jaws, back of the hinge, said cam-plate being free from both of the jaws, and movable from a position transverse to the jaws, wherein it holds the front or gripping ends of said jaws in gripping relation, by rotatory movements in either of two directions to positions parallel with said jaws, whereby their gripping ends are permitted to separate, and a loop or bail attached to said cam-plate and adapted to connect the clasp to a base, the cam being movable to its transverse position from either of its parallel positions, by rearward tension on the bail.

7. A clasp comprising two jaws hinged together, and a cam-plate for operating said jaws, said plate having integral continuous loops bent up from its corners, the side bars of said loops forming two triangles with the plate, the cross-bars meeting and running parallel, the two loops forming a bail for attaching the clasp to a base.

8. A clasp comprising two jaws hinged together, a spring normally holding their gripping ends apart, and a cam movable in either one of opposite directions to move said ends toward each other.

9. A clasp comprising two jaws hinged together, a spring normally holding their front or gripping ends apart, and a cam interposed between the rear ends of the jaws, back of the hinge and movable in either one of opposite directions, for moving the gripping ends toward each other.

657,753. AIR-ACTUATED PUMP. FREDERICK Z. EARTELL, Sioux City, Iowa. Filed Dec. 22, 1899. Serial No. 741,241. (No model.)



Claim.—1. The combination, in an air-actuated pump, of a cylinder, a double piston-head therein, a coil-spring for drawing the pistons up, a valve in the upper head of the piston adapted to be operated by a rod passing through the cylinder, and through a slot in the stem between the two piston-heads, all as described and for the purposes set forth.

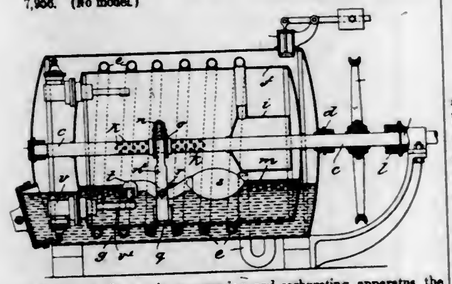
2. The combination of the double pistons, G and H, the former provided with a valve F, the latter solid, a spring I adapted to hold the piston up, means for securing the spring at its extremities, vents T and U and a dome-shaped cap at one end of the cylinder, all as described and for the purposes specified.

657,754. BARREL. MARY C. BAYLOR, Atlantic City, N. J., executrix of Robert W. Baylor, deceased. Filed Aug. 12, 1897. Serial No. 648,086. (No model.)



Claim.—In a knockdown barrel, the combination of the hoops provided with metal tongues *c*, and connected at their ends by wire loops, the staves provided with slots *c*, adapted to receive said tongues, the barrel-heads adapted to receive expanding-blocks, provided with edge grooves which fit the inner edges of said barrel-heads, beveled to fit the cross-grooves of the staves, and also provided at their rear ends with grooves, on a higher plane than the side grooves for the reception of the locking-piece, substantially as described.

657,755. AIR COMPRESSING AND CARBURETING MACHINE. ADOLPHE BOUVIER, Lyons, France. Filed Mar. 9, 1900. Serial No. 7,956. (No model.)

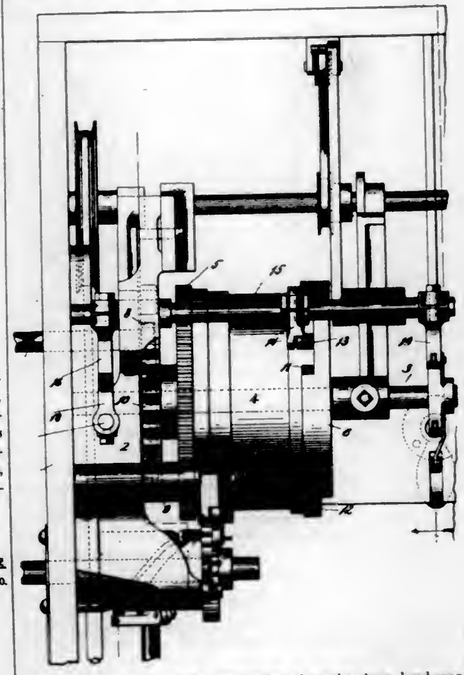


Claim.—1. In an air compressing and carbureting apparatus, the combination of a stationary outer cylinder or chamber; a hollow shaft traversing the same and having perforations in its walls, an inner drum secured to said shaft, means for rotating said shaft and drum, a spiral tube located on the periphery of said inner drum, a smaller drum located within the inner drum and forming an enlargement of one end of said spiral tube, said tube adapted to convey fluid from the outer cylinder to the inner drum, an offtake-pipe registering with the hollow rotatable shaft, and means for automatically discharging the surplus liquid accumulating in the inner drum into the outer cylinder, substantially as and for the purposes described.

2. In an apparatus of the character described, a stationary outer receptacle, a hollow shaft traversing the receptacle longitudinally and having a portion of its walls perforated, an inner drum carried by said shaft and provided with a spiral tube adapted to feed the liquid in the outer receptacle to the inner drum, means for rotating said shaft and drum, a series of valves located in the walls of the inner drum and a float suspended from said shaft within said drum and adapted to open said valves successively during the rotation of the drum when the liquid in said drum reaches a predetermined height, substantially as and for the purposes described.

657,756. MOTOR MECHANISM. GUSTAV A. BRACHHAUSEN, Rahway, N. J. Original application filed Apr. 4, 1900, Serial No. 11,415. Divided and this application filed June 7, 1900. Serial No. 19,347. (No model.)

Claim.—1. In a spring-motor, the combination of a spring-drum, hand-operated means for winding the spring of said drum and retaining it against backward movement and a driving-gear operatively connected thereto to rotate therewith, said driving-gear being rotatable with said drum in one direction but capable of movement independently of said drum in an opposite direction.



2. In a spring-motor, the combination of a spring-drum, hand-operated means for winding the spring of said drum and retaining it against backward movement, a driving-gear adapted to rotate with said drum in one direction to effect a movement of the movable parts and a pin-and-slot connection between said drum and gear to permit an independent movement of said drum and gear with relation to each other in an opposite direction.

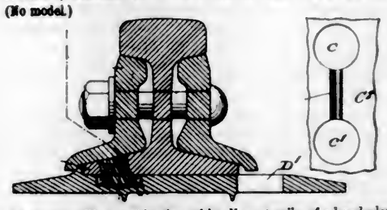
3. In a spring-motor, the combination of a spring-drum, hand-operated means for winding the spring of said drum and retaining it against backward movement, a driving-gear adapted to rotate therewith to effect a movement of the movable parts of the instrument, inclined pins or projections extending from said gear and cooperating with undercut grooves in the drum into which said pins project to prevent the gear from being removed from the drum but to permit an independent movement of the drum and gear with relation to each other.

4. In a spring-motor, the combination of a spring-drum, hand-operated means for winding the spring of said drum and retaining it against backward movement, a driving-gear adapted to rotate with said drum in one direction to effect a movement of the movable parts of the instrument, inclined pins or projections extending from said gear and cooperating with undercut grooves in the drum into which grooves said pins project to prevent the gear from being removed from the drum but to permit an independent movement of the drum and gear with relation to each other, a cam-plate adapted to rotate with the drum to effect a movement of the movable parts, inclined pins or projections carried by said cam-plate, undercut grooves in the drum and into which grooves the pins on the cam-plate are adapted to project to prevent the cam-plate from being removed from the drum but to cause said drum and cam-plate to move together in one direction but to permit an independent movement of the drum and cam-plate with relation to each other in an opposite direction.

5. In a spring-motor, the combination of a spring-drum, hand-operated means for winding said drum and a driving-gear and a cam-plate operatively connected to rotate with the drum in one direction, said driving-gear and cam-plate being capable of movement independently of said drum in an opposite direction.

6. In a spring-motor, the combination of a spring-drum, hand-operated means for winding said drum, a driving-gear adapted to rotate with said drum in one direction to effect a movement of the movable parts, a cam-plate and pin-and-slot connection between said drum and gear and between the drum and cam-plate to permit an independent movement of said drum, gear and cam-plate with relation to one another in said opposite direction.

657,757. ELECTRIC BOND FOR RAILWAY-RAILS. HAROLD P. BROWN, Montclair, N. J. Filed Feb. 18, 1899. Serial No. 705,950. (No model.)



Claim.—1. The combination with adjacent rails, of a bond-plate arranged to overlap the meeting ends of the rails, the bond-plate and the rails being provided, the one with electric conducting-plugs fixed thereto and the other with bodies of plastic alloy in position to permanently engage the said plugs, substantially as set forth.

2. The combination with the adjacent rails, of a plate arranged to overlap the meeting ends of the rails and extended along the flanges at the bases of the rails, the said plate and the flanges at the bases of the rails being provided, the one with electric conducting-plugs fixed thereto and the other with bodies of plastic alloy arranged to permanently engage the said plugs, substantially as set forth.

3. An electric bond comprising a plate provided with cups for holding bodies of plastic alloy and rails provided with electric conducting-plugs fixed in their base-flanges with their free ends projecting below the base-flanges in position to enter the bodies of plastic alloy, substantially as set forth.

4. An electric bond comprising a bond-plate arranged to receive thereon the meeting ends of railway-rails and provided with cups for receiving bodies of plastic alloy and rails provided with electric conducting-plugs fixed in their flanges and projecting therefrom in position to dip into the bodies of plastic alloy, the said plug being located in position to be covered by the usual angle-plate, substantially as set forth.

5. In combination a bond-plate adapted to receive the meeting ends of adjacent railway-rails and provided with cups for receiving bodies of plastic alloy and rails having electric conducting-plugs fixed in their base-flanges and projecting therefrom into the bodies of plastic alloy, the said plugs and the wall of the opening in which they are fixed being spaced from one another throughout a small extent of the periphery of the plug to form relief-conduits between the body of plastic alloy and the top of the base-flange of the rail, substantially as set forth.

6. The combination with the base-flanges of the rails provided with holes extending therethrough, of electric conducting-plugs fixed in said holes and projecting below the rail-bases and means for maintaining bodies of plastic alloy in permanent engagement with the ends of said plugs, substantially as set forth.

7. The combination with rail-bases having electric conducting-plugs fixed therein and projecting below the bottoms of the rail-bases, of a bond-plate provided with cups in position to receive the projecting ends of said plugs and bodies of plastic alloy in said cups in engagement with the plugs, the projecting ends of the plugs being normally spaced from the walls of the said cups, substantially as set forth.

8. The combination with rail-bases provided with perforations therethrough, the walls of said perforations being amalgamated, of amalgamated electric conducting-plugs fixed in said holes in the bases and a bond-plate provided with bodies of plastic alloy in position to permanently engage the said plugs, substantially as set forth.

9. In an electric bond, the combination of two or more contiguous conductors, a receptacle formed in one conductor containing a plastic-metal compound and a plug or rod electrically connected to a second conductor and dipping into the said plastic-metal compound, the said plug or rod having a free limited movement relatively to the said first-named conductor, substantially as set forth.

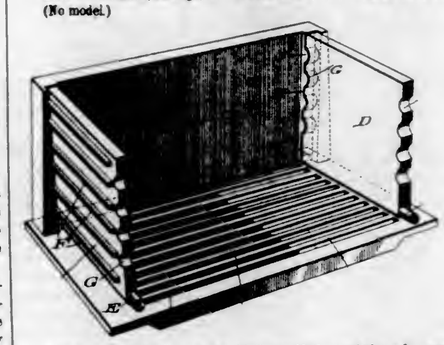
10. In an electric bond, the combination of two meeting conductors, a hole formed in one conductor containing a plastic-metal compound, and a plug, rod or projection electrically connected to a second conductor and dipping into the said plastic-metal compound, the contact-surfaces of said plugs and holes being amalgamated or rubbed and impregnated with a decomposable alloy of mercury, substantially as set forth.

11. In an electric bond, the combination of two meeting conductors, a receptacle formed in one conductor, a plastic-metal compound in said receptacle, a projection from the second conductor dipping into the said receptacle and means for clamping or binding the two conductors together, the said projection having a free limited movement relatively to the said first-named conductor, substantially as set forth.

12. In an electric bond, the combination of two meeting conductors, plugs or projections extending from same into holes in a third overlapping conductor and a plastic-metal compound contained in said holes, substantially as set forth.

13. In an electric bond, the combination of two meeting conductors, plugs or projections extending from same into holes in a third overlapping conductor, a plastic-metal compound contained in said holes and adherent coating of amalgam on the contact-surfaces of said plugs and holes, substantially as set forth.

657,758. LINING FOR FIRE-BOXES OF STOVES OR RANGES. EARL V. COULSTON, Chicago, Ill. Filed Feb. 23, 1900. Serial No. 6,144. (No model.)



Claim.—1. A fire-pot of the kind specified, consisting of a grate, and a lining, a section of said lining being movable downwardly from an upright position to cover said grate and to leave a gap or opening in the side of the fire-pot occupied by said section of the lining when in its upright position.

2. A fire-pot of the kind specified, consisting of a grate, and a lining, a section of said lining being movably supported at its lower end adjacent the end of said grate, whereby it can be moved downwardly from an upright position to cover said grate and to leave a gap or opening in the side of the fire-pot occupied by said section of the lining when in its upright position.

3. A fire-pot of the kind specified, consisting of a grate, a lining, a section of said lining being movable downwardly from an upright position to cover said grate and to leave a gap or opening in the side of the fire-pot occupied by said section of the lining when in its upright position, draft-openings between said movable section of the lining and the other walls of said lining, and means upon the upper face of said lining to support the fuel above the face thereof to create draft-passages.

4. A fire-pot of the kind specified, consisting of a grate, a lining, a section of said lining being movable downwardly from an upright position to cover said grate and to leave a gap or opening in the side of the fire-pot occupied by said section of the lining when in its upright position, the adjacent walls of said lining being provided with stops against which said movable section rests when in an upright position.

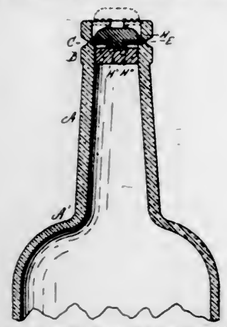
5. A fire-pot of the kind specified, consisting of a grate, a lining, a section of said lining being movable downwardly from an upright position to cover said grate and to leave a gap or opening in the side of the fire-pot occupied by said section of the lining when in its upright position, the adjacent walls of said lining being provided with inclined stops against which said movable section rests when in an upright position.

6. A fire-pot of the kind specified consisting of a grate, a lining, a section of said lining being movable downwardly from the upright position to cover said grate and to leave a gap or opening in the side of the fire-pot occupied by said section of the lining when in its upright position, said movable section being provided with notches or draft-openings in the side edges thereof.

7. A fire-pot of the kind specified, consisting of a grate, a lining, a section of said lining being movable downward from an upright position to cover said grate and being provided with notches or draft-openings in the side edges thereof, and stops upon the adjacent walls of said lining adapted to support said movable section in an upright position, said stops being provided with projections that are adapted to enter said notches or draft-openings.

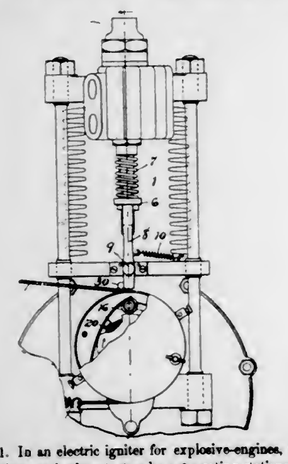
8. A fire-pot of the kind specified, consisting of a grate, a lining, the end walls of said lining being pivoted at their lower ends adjacent the ends of said grate, notches or draft-openings in the side edges of said pivoted end sections of the lining, ribs or projections upon the upper sides of said pivoted end sections, and stops upon the other walls of the lining adapted to support said pivoted sections in an upright position.

657,759. NON-REFILLABLE BOTTLE. WILLIAM C. CURTISS, Boston, Mass. Filed May 3, 1900. Serial No. 15,969. (No model.)



Claim.—In a non-refillable bottle, the neck provided with the coincident inner and outer grooves D, C formed near the upper end of the neck, the thickened portion B of the neck next and immediately below said grooves, and the shoulder *b* extending inward from the neck and forming a ledge next and below the inner groove D whereby the diameter of the passage below said groove is less than its diameter above it; the solid button H provided with the small central shank H′ and small head H″; and the flat, thin plate or washer E provided with the small central hole E′ adapted to fit loosely around said shank and the radial passage E″ connecting said hole with the periphery of the plate and sufficiently wide to allow the shank of the button to be passed through it, substantially as described.

657,760. ELECTRIC IGNITER FOR EXPLOSIVE-ENGINES. ISAAC H. DAVIS, Boston, Mass., assignor of one-half to E. D. Mellen, Cambridge, Mass. Filed Nov. 13, 1899. Serial No. 737,408. (No model.)



Claim.—1. In an electric igniter for explosive-engines, the combination of an engine-revolved contact and a coöperating stationary contact, means to effect a relative concentric adjustment of said contacts to vary the occurrence of ignition with respect to the power-stroke of the engine, and means operated by the adjusting movement for throwing the contacts into and out of coacting relation.

2. In an explosive-engine, the combination of an igniting device, adjusting means associated therewith and adapted to vary the point in the engine-cycle at which ignition occurs, an outlet from the engine-cylinder, a valve controlling said outlet, and a device operated by movement of said adjusting means, for controlling said valve.

3. In an igniter for explosive-engines, a circuit-breaker comprising an engine-revolved contact or circuit-terminal, a current-carrying brush coöperating therewith, a normally-stationary support carrying said brush and adjustable concentrically with the engine-revolved contact, and a fixed cam-abutment arranged to engage said brush after a predetermined adjusting movement of said support in the direction of revolution of the contact, and to thereby move the brush out of coacting relation with the contact.

4. In an apparatus of the character specified, the combination with the engine, of a circuit-breaker comprising an engine-revolved part and a normally-stationary adjustable part, an outlet from the engine-cylinder, a valve controlling said outlet, and mechanism operated by movement of said adjustable part for holding said valve open.

5. In an apparatus of the character specified, the combination with the main exhaust-valve of the engine, of a device for holding said valve open, a circuit-breaker comprising an engine-revolved part and a normally-stationary adjustable part, and a member connected with said adjustable part and adapted to engage said device and place it in operative position during movement of said adjustable part.

6. In an apparatus of the character specified, the combination with the main exhaust-valve of the engine and the spring holding said valve to its seat, of a dog adapted to hold the valve open when opened by other means, a circuit-breaker comprising an engine-revolved part and a normally-stationary adjustable part, and a member connected with said adjustable part and adapted to engage said dog and place it in operative position during movement of said adjustable part.

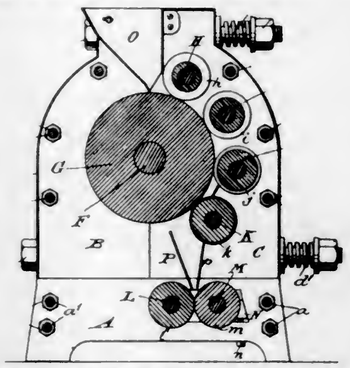
7. In an apparatus of the character specified, an engine-revolved support, a contact fixed thereto and forming a part of the igniting-circuit, an arm constructed as a spring and having a contact forming a part of the igniting-circuit, said contacts being separable by centrifugal force to break the circuit, a stud supporting said spring-arm and having gear-teeth, and a rotatable screw engaging said teeth and adapted to adjust the tension of the spring-arm.

8. In an apparatus of the character specified, an engine-rotated shaft, a support mounted thereon, contacts mounted on said support and forming part of an igniting-circuit, said contacts being separable by centrifugal force to break the circuit, a spring to hold the contacts together, and a pin rotatable to adjust the tension of said spring and also serving as a key to lock the support to the shaft, the key being held to its seat by the tension of the spring.

9. In an apparatus of the character specified, an engine-rotated shaft, a support mounted thereon, a speed-governor mounted on said support and including a spring, and a member movable to adjust the tension of said spring and acting as a key to secure the support to the shaft, which key is held to its seat by the tension of the spring.

10. In an apparatus of the character specified, an igniting-circuit breaker including an engine-revolved support having a conductive ring and an isolated segmental contact, and a spring-resisted connector mounted on said support and adapted to connect said ring and said contact and to be separated from the two simultaneously by centrifugal force to break the igniting-circuit.

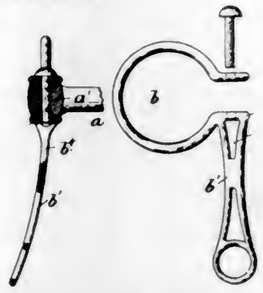
657,761. PULVERIZER. JOSEPH DAVIDSON, New York, N. Y. Filed Oct. 24, 1899. Serial No. 734,610. (No model.)



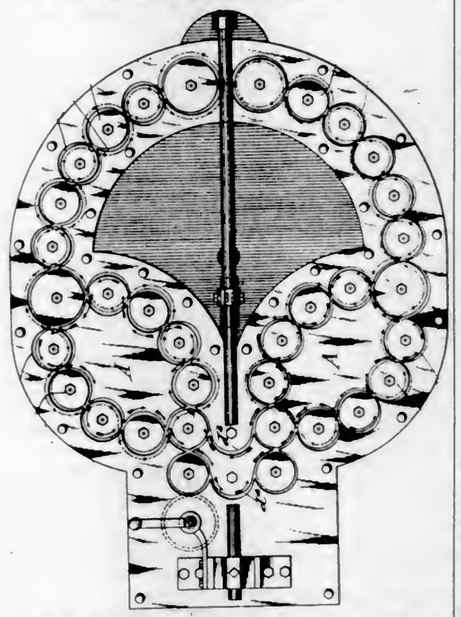
Claim.—In a pulverizer, the combination with a smooth-faced large grinding-roll, of a plurality of smaller grinding-rolls having their ends of uniform diameters, the said ends being normally in direct frictional engagement with and driven by the large grinding-roll, each of the said small grinding-rolls having a shallow circumferential groove therein intermediate its ends, the grooves in the several small grinding-rolls being of gradually-lessening depths from the top small roll to the bottom small roll for producing successive reductions of the material being treated, substantially as set forth.

657,762. BRIDLE-BIT. JOHN DEAN, Racine, Wis., assignor to John P. Davies, same place. Filed Feb. 3, 1898. Serial No. 668,927. (No model.)

Claim.—The bit consisting essentially of a mouth-bar provided with end openings, the two cheek-pieces, each having the ring with the two extremities above and below a mouth-bar end and having perforations alined with the opening therein and the spoon integral with one of said extremities and provided with the transverse tool-receiving opening intersecting the perforation in said extremity, the portion of the spoon divided or forked by said opening uniting or binding together the diametrically-opposite portions of said ring extremity in front of and behind its perforation, and the two headed rivets passed through said ring extremities and mouth-bar ends and projecting into said transverse openings and adapted to have their ends upset by an instrument inserted in said openings, substantially as described.

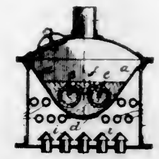


657,763. BRAIDING-MACHINE. OTTO DICKHAUS, New York, N. Y. Filed Feb. 28, 1900. Serial No. 6,795. (No model.)



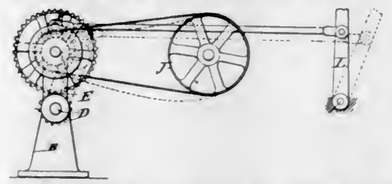
Claim.—In a braiding-machine, the combination of a race-plate, means for supporting the same, said race-plate having two single lines of race-circles, disconnected at one end, two converging loop-shaped and relatively-inclined series of race-circles communicating at their diverging ends with the other ends of said single lines of race-circles, and two connecting-ways only between the converging ends of the loops, with three sets of racers, gearing for moving the first set of racers only around one of the single lines of race-circles and the connecting loop-shaped series of race-circles, gearing for moving the second set of racers only around the other single line of race-circles and its connecting loop-shaped series of race-circles, gearing for moving the third set of racers only around the two loop-shaped series of race-circles and through the connecting-ways, and a drive-shaft provided with a gear meshing with the gearing for the third set of racers, substantially as set forth.

657,764. MALT-DRYING APPARATUS. BERNHARD FISCHER, Mannheim, Germany. Filed May 10, 1899. Serial No. 716,296. (No model.)



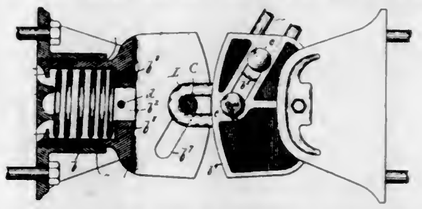
Claim.—In an apparatus for floor and kiln drying malting-houses, the combination of the trough *a*, and the pair of correspondingly-coiled spiral heating-pipes *e*, *e*, mounted therein in parallel position and in close proximity and rotated in opposite directions so as to effect a continuous circulation of the material from end to end of the trough while drying the same as explained.

657,765. BELT DRIVING MECHANISM. GEORGE J. GIBBS, York, England. Filed Jan. 24, 1900. Serial No. 2,593. (No model.)



Claim.—In a belt driving mechanism, the combination of a motor-shaft, a gear-wheel on said shaft, a swinging bracket pivoted at one end concentrically with said shaft, a counter-shaft journaled in the other end of said bracket, a gear-wheel on the counter-shaft, the same meshing with aforenamed gear-wheel, the machine to be driven, a belt-and-pulley connection between said counter-shaft and the machine to be driven, and means for moving and securing said bracket, substantially as set forth.

657,766. CAR BUMPER AND COUPLING. WILLIAM C. GREGG, Honolulu, Hawaii. Filed Feb. 5, 1900. Serial No. 4,112. (No model.)



Claim.—1. In a car bumper and coupler wholly attached to the outside of the car, a draw-head provided with a permanent link and a rearward-extending spring-case, in combination with a housing bolted to the end of the car and adapted to receive the aforesaid spring-case, a helical spring resting on flanges within the spring-case, a cross-bar rigidly attached to the housing back of the spring and a pin or bolt rigidly attached to the housing and extending down in front of the spring, substantially as described.

2. In a car bumper and coupler, the combination of a draw-head, a helical spring held within an inward extension of the draw-head, a housing attached to the car and adapted to receive the inward extension of the draw-head, a cross-bar at the rear of the housing, a pin or bolt rigidly attached to the housing and passing through the draw-head extension forward of the spiral spring, substantially as described.

3. In a car bumper and coupler, the combination of the draw-head having a horizontal opening entirely across its face, a slot in the upper lip, a corresponding slot in the lower lip, a pin passing through said slots and through an interposed link, means for retaining said pin loosely in said slots, a helical spring held in a rearward extension of the draw-head, a housing attached to the car, a chamber in said housing adapted to receive the rearward extension of the draw-head, a cross-bar at the rear of the housing, a pin or bolt rigidly attached to the housing and passing through an opening in the draw-head extension forward of the spiral spring, substantially as described.

657,767. NAPHTHOL PREPARED WITH ROSIN SOAP. EUGEN GROSSMANN, Basle, Switzerland, assignor to John R. Geigy & Co., same place. Filed Jan. 12, 1900. Serial No. 1,182. (No specimens.)

Claim.—The herein-described process of producing bottoms for azo colors on cotton fiber, which consists in impregnating the fiber with a solution containing a phenol, and a mordant obtained by heating colophony with caustic-soda lye and consisting for the most part of the sodium salt of abietinic acid, substantially as set forth.

657,768. BLUE COTTON SULFUR DYE AND PROCESS OF MAKING SAME. HERMANN GUSSMANN, Höchst-on-the-Main, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed June 3, 1899. Serial No. 719,292. (Specimens.)

Claim.—1. The herein-described process of producing a blue cotton dyestuff, which consists in heating dioxyamidodiphenylamin with sulfur and sulfids of alkali metals, to a temperature of from 160° to 200° centigrade, and treating the mass thus obtained in an aqueous solution with oxidizing agents, substantially as set forth.

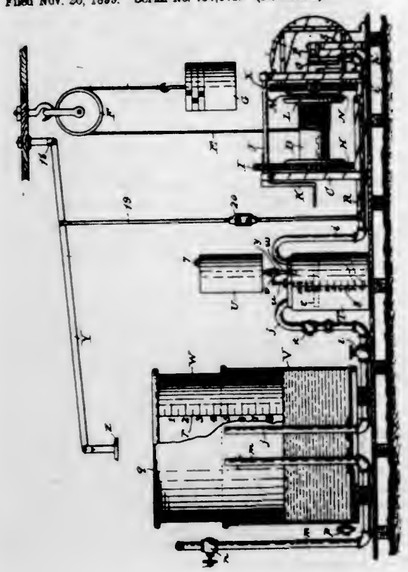
2. As a new product, the herein-described blue cotton dyestuff derived from dioxyamidodiphenylamin, being when dry a dark-brown powder of coppery luster, easily soluble in water with a blue color, precipitated from its aqueous solutions by means of acids as an acid dyestuff which is not soluble by itself in water, but soluble on addition of soda or alkali; said dyestuff dissolving in concentrated sulfuric acid with a dirty blue-green color which on addition of water turns a pure blue, precipitation taking place simultaneously, and dyeing mordanted cotton blue, substantially as set forth.

657,769. BLUE COTTON SULFUR DYE AND PROCESS OF MAKING SAME. HERMANN GUSSMANN, Höchst-on-the-Main, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Original application filed June 3, 1899, Serial No. 719,292. Divided and this application filed Nov. 7, 1899. Serial No. 736,063. (No specimens.)

Claim.—1. The herein-described process of producing a blue cotton dyestuff, which consists in heating para-oxy-para-amido-diphenylaminsulfonic acid to from 160° to 200° centigrade with sulfur and sulfids of alkali metals and then treating the mass thus obtained in an aqueous solution with oxidizing agents, substantially as set forth.

2. As a new product, the herein-described dyestuff derived from diphenylaminsulfonic acid and sulfur, said dyestuff being when pulverized a dark powder of coppery luster, readily soluble in water with a blue color, mineral acids precipitating the dyestuff from its aqueous solutions in blue flakes, the dyestuff dissolving in sulfuric acid with a blue-green color, substantially as set forth.

657,770. CARBURETER. SAMUEL R. HEDRICK, Spencer, Ind. Filed Nov. 20, 1899. Serial No. 737,672. (No model.)



Claim.—1. In apparatus for obtaining gas, the combination of the transparent carbureter vessel, the gage at the side of said vessel, the removable top or cover sealed upon said vessel, the circular disk-float, the vertical stem attached to said float and extending through said top, the packing-gland for said stem, the supply-pipe attached to said top above said float, the regulating-valve connected to said supply-pipe, the lever connected to said valve and to said stem above said top, the air-supply pipe, and the gas-outlet pipe, substantially as set forth.

2. In apparatus for obtaining gas, the combination of the pump or bellows, the check-valve, the air-supply pipe, the transparent carbureter vessel, the gage at the side of said vessel, the motor, the pivoted lever connected operatively with said motor, the reserve-supply tank, the feed-regulating valve, the float, the packing-gland, the stem working through said gland and connected to the float and to the feed-regulating valve, the receiver, and the lever engaging the receiver and connected operatively with said pivoted lever, substantially as set forth.

3. In apparatus for obtaining gas, the combination of the dialyzer, the bellows-pump attached to the head of the dialyzer, the check-valve connected with said pump, the air-supply pipe connected with said check-valve, the motor, the sliding bar attached to said pump and connected to said motor, the supporting-guides for said sliding bar, the pivoted lever connected operatively with said motor, the carbureter, the reserve-supply tank, the feed-regulating valve, the float, the packing-gland, the stem working through the packing-gland and connected to the float and to the feed-regulating valve, the receiver, and the lever engaging the receiver and connected with said pivoted lever, substantially as shown and described.

4. In apparatus for obtaining gas, the combination of the transparent carbureter vessel, the removable top or cover sealed upon said vessel, the circular disk float, the vertical stem attached to said float and extending through said top, the packing-gland for said stem at the center of said top, the supply-pipe attached to said top above said float, the regulating-valve connected to said supply-pipe, the lever connected to said valve and to said stem above said top, the air-supply pipe, the gas-outlet pipe, the reserve-supply tank, the receiver, and the bellows, substantially as set forth.

5. In apparatus for obtaining gas, the combination of the transparent carbureter vessel, the removable top or cover sealed upon said vessel, the liquid-supplying pipe attached to said removable top, the regulating-valve connected with said supplying-pipe, the reserve-supply tank connected with said supplying-pipe, the air-supplying pipe connected to said removable top, the gas-outlet pipe connected to said removable top, the receiver, the check-valve in said outlet-pipe, the dialyzer, the bellows connected with the head of the dialyzer, and the check-valve in said air-supplying pipe, substantially as set forth.

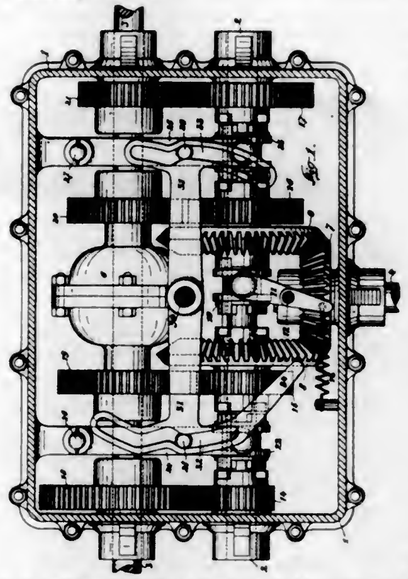
657,771. TRANSMISSION DEVICE FOR MOTOR-CARS. FRITZ HEINRICH-SCHWEIZER, Marin, Switzerland. Filed Apr. 12, 1900. Serial No. 12,569. (No model.)

Claim.—1. In a transmission device for motor-vehicles, the combination of two sets of meshing gears of varying diameters, one set being loose on its shaft, means for rotating the shaft of the loose gears, clutch members, each for coupling one of the loose gears with the shaft on which they are arranged, levers connected with said clutch members, a fulcrumed controlling-lever extending transversely of aforesaid levers and suitably connected with aforesaid levers, and means for oscillating said controlling-lever, substantially as set forth.

2. In a transmission device for motor-vehicles, the combination of two sets of meshing gears of varying diameter, one set being loose on its shaft, means for rotating the shaft of the loose gears, clutch members, each for coupling one of the loose gears with the shaft on which they are arranged, levers connected with said clutch members, a fulcrumed controlling-lever, the opposite ends of which are formed with cam-slots receiving suitable projections on aforesaid levers, and means for oscillating said controlling-lever, substantially as set forth.

3. In a transmission device for motor-vehicles, the combination of two sets of meshing gears of varying diameters, one set being loose on its shaft, means for rotating the shaft of the loose gears, slidable clutch members on said shaft, each adapted to couple one of the loose gears with the said shaft, a pair of levers, pivoted at one end and connected at the other end with said clutch members, a fulcrumed controlling-lever, the ends of which are formed with cam-slots receiving suitable projections on aforesaid levers, and means for rocking said controlling-lever, substantially as set forth.

4. In a transmission device for motor-vehicles, the combination of two sets of meshing gears of varying diameters, one set being loose on its shaft, the motor-shaft, gearing connecting the latter with aforesaid shaft, two gears of said connecting-gearing being loose, a shiftable clutch member for connecting either of said two loose gears with their shaft, means for normally maintaining said clutch member in forwarding position, means for connecting any one of the other of said loose gears with their shaft, means for operating the same, and provided with means for throwing the first clutch member from its normal forwarding position into reversing position, substantially as set forth.



5. In a transmission device for motor-vehicles, the combination of two sets of meshing gears of varying diameters, one set being loose on its shaft, and three pairs of said gears being for forward movement and another pair for reversing, means for driving said shaft, a clutch member adapted to connect said driving means with said shaft for either foward or reversed movement, means for normally maintaining said clutch member in forwarding position, means, comprising a pair of levers, for connecting any one of the loose gears with their shaft, a fulcrumed controlling-lever suitably connected with said pair of levers, and provided with a projecting nose for acting on the means for maintaining the first-named clutch member in forwarding position, whereby a reverse movement is caused, and means for oscillating said controlling-lever, substantially as set forth.

6. In a transmission device for motor-cars, the combination, with the motor-shaft, a bevel-gear on said shaft, of a shaft to be driven, a series of gear-wheels on said driven shaft, an intermediate shaft, loose gear-wheels on said intermediate shaft, meshing with aforesaid gear-wheels, slidable coupling 10, loose bevel-gears on the intermediate shaft, and meshing with aforesaid bevel-gear of the motor-shaft, a shifting lever connected with said coupling, couplings 22 and 23, for the gear-wheels on the intermediate shaft, a rocking lever provided with suitable slots in both ends, said rocking lever having a nose for engaging said shifting lever, coupling-levers connected with couplings 22 and 23 and provided with projections engaging in said slots, and means for rocking said rocking lever, substantially as set forth.

657,772. BICYCLE PROPELLING MECHANISM. EDWARD L. HOLMES, Chicago, Ill. Filed Feb. 23, 1900. Serial No. 6,293. (No model.)

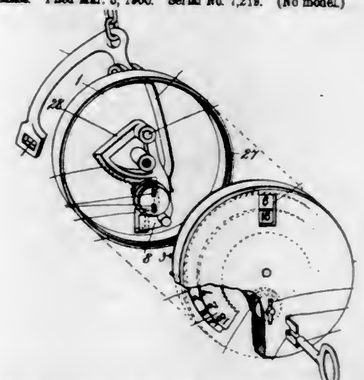


Claim.—1. The combination of a gear-wheel provided with rigid teeth each having a groove in its side extending from the free end of the tooth toward its base, and an intermeshing gear-wheel provided with teeth consisting of pivotally-mounted balls arranged to have peripheral contact with said sides at the grooves, and to rotate in and move lengthwise of the grooves.

2. The combination of a gear-wheel provided with rigid teeth inclined at less than a right angle from the axis of the wheel each having a groove in its side extending from the free end of the tooth toward its base, and an intermeshing gear-wheel provided with teeth consisting of pivotally-mounted balls each having its axis inclined at an angle to the axis of said intermeshing gear-wheel, said balls being arranged to have peripheral contact with said sides at the grooves, and to rotate in and move lengthwise of the grooves.

3. A gear-wheel provided with teeth which consist each of a fork, a pin seated therein and a roller mounted on said pin, in combination with a removable spider adapted to engage each of said pins against revolution in its fork, substantially as described.

657,773. INDICATOR-LOCK. CHARLES L. HOSFORD, Haydenville, Mass. Filed Mar. 3, 1900. Serial No. 7,219. (No model.)



Claim.—1. In an indicator-lock, a locking mechanism and an indicating mechanism constituting in their separated relations two independently-operable groups, and a key therefor whereby the mechanism of both groups may be interlocked for simultaneous operation, and means for securing together said two groups in operative relation, substantially as described.

2. In an indicating-lock, a locking mechanism, and an indicating mechanism constituting in their separated relations two independently-operable groups, a pinion in each group axially located one relative to the other, whereby primary movements are imparted to each group, and a key adapted to engage each pinion to effect their simultaneous operation, and means for securing together said two groups in operative relation, substantially as described.

3. An indicating-lock comprising in their separated relations two independently-operable groups of mechanism; viz., a locking mechanism and an indicating mechanism; a key adapted to operate both groups simultaneously, a ratchet-and-pawl device for said indicating mechanism whereby the latter may be held against retrograde movement, and a spring for said locking mechanism whereby movement in opposition to that imparted by said key may be imparted to said mechanism upon the withdrawal of said key, and means for securing together said two groups in operative relation, substantially as described.

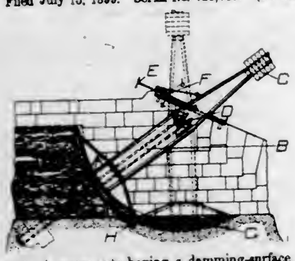
4. In an indicating-lock, a suitable case, a locking mechanism, and an indicating mechanism constituting in their separated relations two independently-operable groups, a pinion in each group axially located one relative to the other, and having their adjacent ends in substantially the same vertical plane, a key-slot through the wall of said case and the pinion of said indicating mechanism, and a key-slot in the pinion of said locking mechanism on one side of the axis thereof, and means for securing together said two groups in operative relation, substantially as described.

5. In an indicating-lock, a suitable case, a locking mechanism and an indicating mechanism constituting in their separated relations two independently-operable groups; said indicating mechanism consisting of two toothed rings of different diameters; indicating characters on one side thereof, and a pinion adapted to rotate both rings simultaneously, and an aperture through the wall of said case, whereby said characters may be seen; a key adapted to interlock said indicating and locking mechanisms to operate both simultaneously, and a suitable detent to prevent the movement of said rings in one direction, and means for securing together said mechanisms in operative relations, substantially as described.

6. In an indicating-lock, a suitable case, a locking device consisting of a swinging bolt, a toothed segment thereon; a pinion adapted to engage the latter; an indicating mechanism consisting of two toothed rings of different diameters, indicating-numerals on said rings, a pinion adapted to engage the teeth of both of said rings which pinion is supported in the case in axial alinement with the pinion of the locking mechanism, normally-registering key-slots in both of said pinions, a key adapted to rotate said

pinions simultaneously in one direction, a spring-bearing on said swinging bolt, whereby its operating-pinion is reversely rotated back to normal position, when the key is withdrawn, and a detent to prevent the reverse rotation of said rings, and means for securing together said two groups in operative relation, substantially as described.

657,774. **WATER-GATE.** HENRY A. ICKE, Pietermaritzburg, Natal. Filed July 13, 1899. Serial No. 723,713. (No model.)



Claim.—1. A water-gate having a damming-surface consisting of the segment of a circle, means for balancing the said gate about a horizontal axis coincident with the center of the said curved gate, in combination with a controlling counterbalance-weight K, a well containing said balance-weight, always in communication with the water under control and means to connect said balance-weight with the water-gate, substantially as described.

2. A water-gate having a damming-surface consisting of the segment of a circle, means for balancing the said gate about a horizontal axis coincident with the center of the said curved gate, in combination with a controlling balance-weight, a well containing said balance-weight, a passage connecting the upper part of said well with the water under control, and another passage connecting the bottom of said well with the downstream and means to connect said balance-weight with the water-gate under control, substantially as described.

3. A curvilinear water-gate having a damming-surface consisting of the segment of a circle and means for controlling the movements of same in combination with a waterway arranged to fit the sides and periphery of the said gate, elastic adjustable packing held in the side edges of the gate, a water-check formed in the floor of the waterway consisting of a trough, a packing-piece in said trough and a passage connecting the bottom of said trough with the water under control, substantially as described.

4. A curvilinear water-gate having a body portion formed on a curve and an apron or upper portion formed on a reverse curve, substantially as described.

657,775. **TUBE-COMPRESSOR.** JAMES J. JESSUP, Van Pelt Manor, N. Y., and EVERETT K. LEVINGWELL, Upper Montclair, N. J., assignors to the Brass Goods Manufacturing Company, New York, N. Y. Filed June 23, 1900. Serial No. 21,364. (No model.)



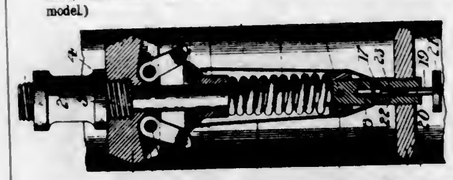
Claim.—A clamp or compressor for tubes consisting of a pair of spring-plate jaws adapted to be sustained upon a tube and having means for forcing them together, said jaws being so formed that the distance between them, measured transversely of the tube, gradually decreases toward the sides of the tube, so that the tube may be forced toward the middle of the jaws and complete closure thereof effected, substantially as and for the purpose set forth.

657,776. **FINGER-RING.** GOTTLOB KAUTEMANN, Newark, N. J. Filed Apr. 29, 1899. Serial No. 714,935. (No model.)



Claim.—The improved finger-ring herein described, having a portion forming an arc of its circumference pressed outward beyond the line of the circle in the form of a crescent in cross-section, said pressed-out portion being thickest in the middle and gradually becoming thinner toward each edge in cross-section, and diminishing in width from the middle toward each end, the opposite thin edges being rolled inward and forming curls decreasing in diameter from the middle toward each end and merging at said ends into the plain shank, whereby the ring is provided with an apparently massive enlargement at one side which is in reality hollow and permanently open toward the finger of the wearer, substantially as set forth.

657,777. **TOOL FOR PERFORATING PIPES.** GEORGE W. KELLOGG, Bakersfield, Cal. Filed Apr. 26, 1900. Serial No. 14,498. (No model.)



Claim.—1. A perforator for pipes, comprising a series of cutters, and spring-actuated means for forcing the latter into contact with a pipe for perforating the same.

2. A perforator for pipes, comprising a series of radially-arranged cutters, and spring-actuated means for forcing the latter into contact with a pipe for perforating the same.

3. A perforator for pipes, comprising a series of pivoted radially-arranged cutters, and spring-actuated means for forcing the latter into contact with a pipe for perforating the same.

4. A perforator for pipes, comprising a series of cutters, spring-actuated means for forcing the latter into contact with a pipe, and means for normally restraining said forcing means.

5. A perforator for pipes, comprising a series of radially-arranged cutters, spring-actuated means for forcing the latter into contact with a pipe, and means for normally restraining said forcing means.

6. A perforator for pipes, comprising a series of cutters, means for forcing the latter into contact with a pipe, means for normally restraining said forcing means, and means for automatically releasing said restraining means.

7. A perforator for pipes, comprising a series of cutters, spring-actuated means for forcing the latter into contact with a pipe, means for normally restraining said forcing means, and means for automatically releasing said restraining means.

8. A perforator for pipes, comprising a series of radially-arranged cutters, spring-actuated means for forcing the latter into contact with a pipe, means for normally restraining said forcing means, and means for automatically releasing said restraining means.

9. A perforator for pipes, comprising a series of pivoted radially-arranged cutters, spring-actuated means for forcing the latter into contact with a pipe, means for normally restraining said forcing means, and means for automatically releasing said restraining means.

10. A perforator for pipes, comprising a shank, a head carried thereby, a series of cutters carried by said head and adapted to swing in a vertical plane, and spring-actuated means for forcing said cutters into contact with a pipe.

11. A perforator for pipes, comprising a shank, a head carried thereby, a series of cutters carried by said head, spring-actuated means for forcing said cutters into contact with a pipe, and means for normally restraining said forcing means.

12. A perforator for pipes, comprising a shank, a head carried thereby, a series of cutters carried by said head, a collar slidably mounted upon said shank for forcing the cutters into contact with a pipe, and means for actuating said collar.

13. A perforator for pipes, comprising a shank, a head carried thereby, a series of cutters carried by said head, a collar slidably mounted upon said shank for forcing the cutters into contact with a pipe, and a spring for actuating said collar.

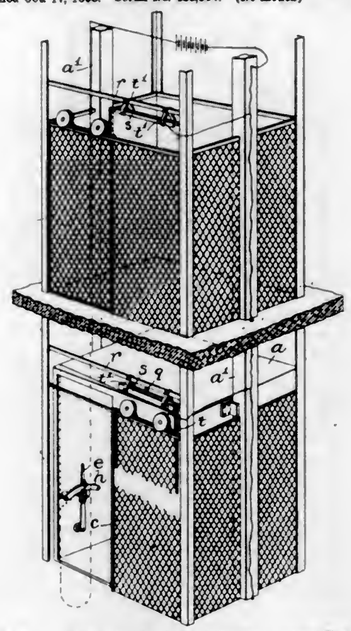
14. A perforator for pipes, comprising a shank, a head carried thereby, a series of cutters carried by said head, a collar slidably mounted upon said shank for forcing the cutters into contact with a pipe, a spring for actuating said collar, and means for normally restraining said spring.

15. A perforator for pipes, comprising a shank, a head carried thereby, a series of cutters carried by said head, a collar slidably mounted upon said shank for forcing the cutters into contact with a pipe, a spring for actuating said collar, and a wire for normally restraining said spring.

16. A perforator for pipes, comprising a shank, a head carried thereby, a series of cutters carried by said head, a collar slidably mounted upon said shank for forcing the cutters into contact with a pipe, a spring for actuating said collar, a wire for restraining said spring, and a cutter for severing said wire to release said spring.

17. A perforator for pipes, comprising a shank, a head carried thereby, a series of cutters carried by said head, a collar slidably mounted upon said shank for forcing the cutters into contact with a pipe, a spring also mounted upon said shank for actuating said collar, a wire for restraining said spring, said wire having its ends connected to said collar and its body portion fitting in a transverse passage of the shank, a cutter slidably mounted in said shank and adapted to contact with said wire for severing the latter, and a guide also carried by said shank.

657,778. **SAFETY DEVICE FOR ELEVATORS.** NELSON R. KEYSER, Philadelphia, Pa., assignor to Marcus R. May, Winchester, Mass. Filed Oct. 17, 1893. Serial No. 488,397. (No model.)



Claim.—1. In a safety device for elevators, a controlling-lever, a latch adapted to lock said lever, and an electric circuit including an electromagnet for actuating said latch to lock said lever.

2. In a safety device for elevators, the combination with a lever carried upon the car, a latch or lock for locking said lever in a neutral position, an electromagnet for operating said latch or lock, an electric circuit including said magnet, and a plurality of door-operated circuit make and break devices.

3. In a safety device for elevators, the combination with a motor-controlling lever upon the car, of a latch or lock adjacent to said lever, an opening in said lever with which said latch or lock may be engaged when the lever is brought to a position to hold the car at rest, a solenoid or magnet for operating said latch or lock, an electric circuit including said solenoid or magnet, and a plurality of door-operated make and break devices in said circuit.

4. The combination with a device controlling the operating mechanism of an elevator-car, of an electromagnet affixed to said car in proximity to the said device, a latch or lock controlled by said electromagnet, and adapted to lock said device when a current of electricity is passed through the said electromagnet, and suitable mechanism for establishing a complete and independent circuit through said magnet at each landing when the elevator-car is brought to a stop thereat and the door at that particular landing is opened, and for breaking said circuit when the door is closed; substantially as described.

5. In an elevator, the combination with a motor-controlling device, electromagnetic mechanism for locking said controlling device, and an electric circuit including a circuit make and break device controlled by a door and a circuit make and break device operated automatically independently of the door.

6. In an elevator, the combination with a motor-controlling device, electromagnetic mechanism for locking said controlling device, and an electric circuit including said magnet, and also including two independent circuit make and break devices which are operable simultaneously to cause the operation of said gripping devices.

7. In an elevator, the combination with motor-controlling devices, electromagnetic mechanism for locking said controlling devices, and an electric circuit including said magnet, and also including two independent circuit make and break devices which are operated simultaneously to cause the operation of said gripping devices, one of said make and break devices being controlled by the door, and the other being controlled by the car.

8. In an elevator, a car, a motor-controlling device, a plurality of doors, and electrical mechanism inoperative except when the car is opposite one of said doors, for automatically locking the controlling device upon the opening of said door.

9. In an elevator, a car, a motor-controlling device, a plurality of doors, and electrical mechanism for preventing the operation of said device upon the opening of a door, including an electric circuit, a circuit make and break device operated by each door, and a contact carried by the car.

10. In an elevator, a car, a motor-controlling device, a plurality of doors, electromagnetic mechanism for preventing the actuation of said device, and an electric circuit having an independent branch for each door, and mechanism in each branch whereby the electromagnetic mechanism is actuated only when the car is opposite a door and said door is opened.

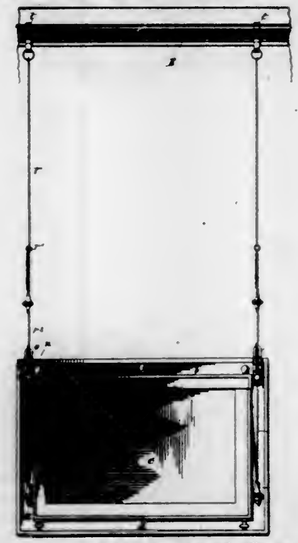
11. In an elevator, a plurality of doors, a motor-controlling device, a single source of power, mechanism for preventing the actuation of said device, means for conveying energy or power from said source to said mechanism, and means controlled by any one of said doors for causing the conveyance of power or energy only when the car is opposite a door and said door is opened.

12. In an elevator, a plurality of doors, a motor-controlling device, a single source of power, mechanism on the car for preventing the actuation of said device, flexible means for conveying power or energy from said source to said mechanism, and means controlled by any one of said doors for causing the conveyance of power or energy only when the car is opposite a door and said door is opened.

13. The combination with an elevator-car, the doors, a motor-controlling device, of an insulated finger carried on each of said doors, two parallel insulated contact-strips placed at each landing in proximity to the door thereat in such position that when the door is opened said insulated finger will make contact with said strips, electromagnetic mechanism for preventing the actuation of said motor-controlling device, and an electric circuit including said electromagnetic mechanism and said contact-strips.

14. The combination with an elevator-car, the doors, and a motor-controlling device, of an insulated finger carried on each of said doors, two parallel insulated contact-strips placed at each landing in proximity to the door thereat in such position that when the door is opened said insulated finger will make contact with said strips, electromagnetic mechanism for preventing the actuation of said motor-controlling device, a contact on the car adapted to make contact with one of said strips, and an electric circuit including said strips, said contact, and said electromagnetic mechanism.

657,779. **HANGING CABINET, &c.** GEORGE W. KIRCHHOFFER, New York, N. Y. Filed July 3, 1899. Serial No. 722,617. (No model.)



Claim.—1. A cabinet for sheet-music and the like, consisting of a base, a portfolio member comprising bottom, side and front walls, said portfolio member being hinged to the base at the rear edge of its bottom

wall, spring-actuated clamping-arms hinged to the side walls of the portfolio member and adapted to retain the sheet-music or other matter on the front wall of the same, suspension devices for supporting said portfolio member in lowered position, and a cover hinged to the base and provided at its front end with means for securing said portfolio member in closed position, substantially as set forth.

2. The combination, with a cabinet or like article, of a plurality of suspension devices for suspending it on the wall, each of said suspension devices consisting of an upper member, means for suspending the upper member from the wall, two converging members, means for connecting the lower members with the lower end of the upper member, means for connecting the lower ends of the lower members with the cabinet or other article, and means for adjusting the length of one of said lower members, substantially as set forth.

657,780. **PENCIL-SHARPENER.** CHRISTIAN F. KLETT, Philadelphia, Pa., assignor of one-half to Andrew H. Angle, same place. Filed Jan. 25, 1900. Serial No. 2,748. (No model.)



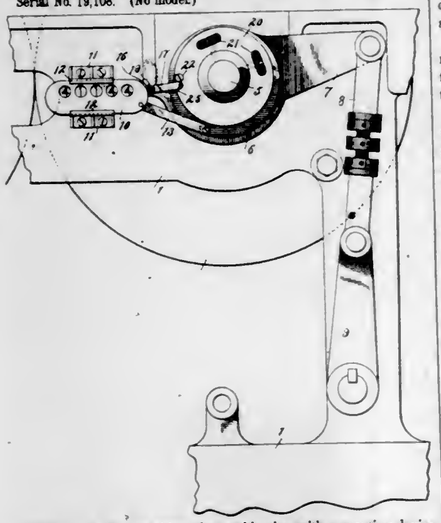
Claim.—1. A pencil-sharpener, consisting of a sheath having opposite recesses therein, a knife located on one wall of one of said recesses, and supporting devices therein for the pencil-point during the act of sharpening.

2. A pencil-sharpener consisting of a sheath having oppositely-located recesses therein, a knife or cutting device located at one terminal of one of said recesses and an inwardly-deflected resilient tongue, or tongues located opposite said knife.

3. A pencil-sharpener consisting of a sheath, recesses of different lengths oppositely located therein, a knife located at the terminal of one of said recesses, and an inwardly-deflected resilient tongue or tongues located opposite said knife.

4. A pencil-sharpener consisting of a sheath having recesses therein, a knife located on one wall of one of said recesses and a guide for the pencil-point during the act of sharpening.

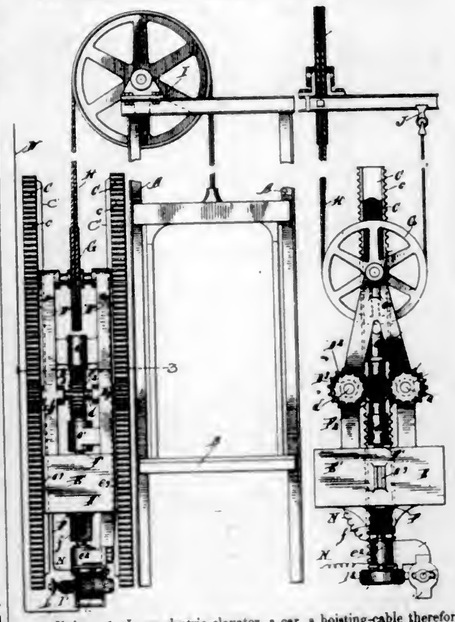
657,781. **COUNTING DEVICE FOR PRINTING-PRESSES.** JEROME W. LEARY, Plainfield, N. J., assignor to the Aluminum Plate and Press Company, same place and New York, N. Y. Filed June 5, 1900. Serial No. 19,108. (No model.)



Claim.—1. In a machine, the combination with a counting device, and a revolving shaft, of an actuating-arm for said counting device composed of two pivotally-connected parts, of a pin revolving with said shaft and adapted to engage said arm for the purposes of operating same while moving in one direction and throwing it out of operation while moving in the other direction as set forth.

2. In a machine, the combination with a counting device, a revolving shaft and a counter-actuating pin rotating with said shaft, of an actuating-arm for said counting device composed of two parts and having a knuckle-joint between said parts, and a spring attached to one of said parts and adapted to bear against the other of said parts, for the purposes set forth.

657,782. **ELECTRIC ELEVATOR.** JOHN W. MABIE, Chicago, Ill. Filed July 26, 1897. Serial No. 646,032. (No model.)



Claim.—1. In an electric elevator, a car, a hoisting-cable therefor, a motor suspended from said cable and forming a counterweight for the car, and gearing actuated by said motor for raising and lowering the car, as and for the purpose set forth.

2. In an electric elevator, a car, a hoisting-cable therefor, an electric motor suspended from said hoisting-cable and forming a counterweight for the car, a guideway for said motor, and gearing actuated by said motor for raising and lowering the car, as and for the purpose set forth.

3. In an electric elevator, a car, a hoisting-cable therefor, a motor suspended from said cable and forming a counterweight for the car, a guideway in which said motor operates, a rack carried by said guideway, and a gear actuated by said motor and engaging said rack for raising and lowering the car, as and for the purpose set forth.

4. In an electric elevator, a car, a hoisting-cable therefor, a frame suspended from said cable and forming a counterweight for the car, a motor carried by said frame, a guideway in which said frame operates and gearing operated by said motor for raising and lowering the car, as and for the purpose set forth.

5. In an electric elevator, a car, a hoisting-cable therefor, guides in which the car operates, independent guides arranged to form a guideway, a frame arranged between said independent guides and engaged on opposite sides thereof with said guides, said frame connected to said hoisting-cable and forming a counterweight for the car, a rack carried by each independent guide, a shaft arranged in suitable bearings in said frame and disposed transversely thereof, pinions carried at each end of said shaft and respectively arranged to engage said racks, and a motor carried by said frame for rotating said shaft, whereby said counterweight-frame is caused to travel to raise or lower the car, as and for the purpose set forth.

6. In an electric elevator, a car, a hoisting-cable therefor, guides in which the car operates, independent upright guides arranged to form a guideway, a frame arranged between to be engaged on opposite sides by said independent guides, said frame connected to said hoisting-cable to form a counterweight for said car, racks carried by said independent guides, gearing carried by said frame and arranged to engage said racks, and a motor carried by said counterweight-frame for driving said gearing, as and for the purpose set forth.

7. In an electric elevator, a car, a hoisting-cable therefor, a guideway for the car, guides arranged to form an independent guideway, a frame arranged between to be engaged on opposite sides thereof by said guides, said frame connected to said hoisting-cable to form a counterweight for the car, a pair of racks arranged on each guide, the members of each pair of racks arranged on opposite sides of their guide, and presenting in opposite directions, a pair of shafts suitably journaled in said frame and transversely disposed with reference to and respectively arranged on opposite sides of said guides, a pinion mounted on each end of each shaft, said pinions respectively engaging corresponding racks on said guides, and a motor carried by said frame and arranged to drive said gears, as and for the purpose set forth.

8. In an electric elevator, a car, a hoisting-cable therefor, a guideway in which the car operates, a frame connected to said cable, and forming a counterweight for the car, independent guides between which said frame is arranged to operate, said guides engaging said frame on opposite sides, a rack carried by each guide, a transverse shaft journaled in said frame and carrying a pinion at each end thereof, said pinions respectively engaging said racks, a worm-gear mounted on said shaft intermediate the ends thereof, a motor carried by said frame, a worm carried by the shaft of said motor, said worm arranged to engage and drive said worm-gear, as and for the purpose set forth.

9. In an electric elevator, a car, a hoisting-cable therefor, a guideway in which the car operates, a frame connected to said cable and forming a counterweight for the car, independent guides between which said frame is arranged to operate, said guides engaging said frame on opposite sides thereof, a rack carried by each guide, a shaft carried by said frame and transversely arranged with respect thereto, a pinion mounted on each end of said shaft, said pinions respectively engaging said racks, a worm-gear mounted on said shaft intermediate the ends thereof, a shaft journaled in said frame longitudinally thereof and carrying a worm arranged to engage and drive said worm-gear, and a motor carried by said frame for rotating said shaft, as and for the purpose set forth.

10. In an electric elevator, a car, a hoisting-cable therefor, a guideway in which said car operates, a frame connected to said cable and forming a counterweight for said car, guides spaced a distance apart to form an independent guideway, said frame operating in said guideway and engaged on opposite sides by said guides, oppositely-presenting racks respectively arranged on opposite sides of each guide, a pair of shafts journaled transversely in said frame and arranged to extend respectively on opposite sides of said guides, a pinion mounted on each end of each shaft, said pinions respectively engaging corresponding racks, a worm-gear mounted upon each transverse shaft intermediate the ends thereof, a drive-shaft arranged between said shafts and carrying a worm arranged to engage and drive both of said worm-gears, and a motor carried by said frame for rotating said drive-shaft, as and for the purpose set forth.

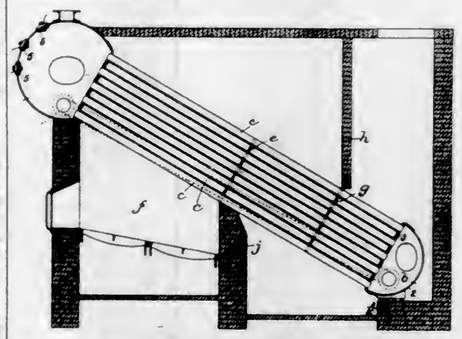
11. In an electric elevator, a car, a hoisting-cable therefor, a guideway in which the car operates, a frame connected to said cable and forming a counterbalance for the car, guides arranged a distance apart to form an independent guideway for said frame, said guides engaging said frame on opposite sides, racks carried by said guides, transversely-arranged shafts carried by said frame and arranged to extend on opposite sides, respectively, of said guides, pinions carried by said shafts and arranged to engage said racks, a worm-wheel mounted on each transverse shaft, a drive-shaft journaled in said frame and arranged to extend between said transverse shafts, a worm mounted thereon and arranged to engage at diametrically-opposite points thereof with said worm-gears, and a motor carried by said frame for rotating said drive-shaft, as and for the purpose set forth.

12. In an electric elevator, a car, a hoisting-cable therefor, a frame connected to said cable and forming a counterweight for the car, guides between which said counterweight-frame operates, said guides engaging said frame on opposite sides thereof, racks carried by said guides, gearing carried by said frame for engagement with said racks, a motor mounted on said frame for actuating said gearing, and an electrically-operated brake arranged in the motor-circuit, whereby when current is supplied to the motor the brake is automatically released, and when the motor-circuit is broken the brake is set, as and for the purpose set forth.

13. In an electric elevator, a car, a hoisting-cable therefor, a frame connected to said cable and forming a counterweight for the car, guides spaced a distance apart to form a guideway in which said frame is adapted to operate, said guides engaging said frame on opposite sides thereof, racks carried by said guides, gearing carried by said frame for engagement with said racks, a motor carried by said frame for operating said gear, a solenoid arranged in the motor-circuit, and a brake for said motor arranged to be released when said solenoid is energized and to be applied when said solenoid-circuit is broken, as and for the purpose set forth.

657,783. **STEAM-BOILER.** CHARLES D. MOSHER, New York, N. Y. Filed Apr. 25, 1894. Serial No. 508,970. (No model.)

Claim.—1. In combination an upper chamber, a pair of lower chambers, groups of tubes connecting the upper with the lower chambers, plug-holes in the upper chamber through which the tubes are adapted to pass, and plugs for closing the holes.



2. In combination an upper chamber, a pair of lower chambers, groups of tubes connecting the upper with the lower chambers, a row of plug-holes in the upper chamber opposite to each group of tubes, through which the tubes are adapted to pass, and plugs for closing the holes.

3. A boiler or steam-generator comprising in its construction a cylindrical water-drum, flattened or reduced at its upper portion to form a tube-sheet which is flat or approximately flat, a series of straight tubes extending upwardly from said tube-sheet substantially at right angles with the water-drum, and a cylindrical steam-drum to the lower part of the cylindrical portion of which the upper ends of said tubes are attached, said tubes being inserted substantially the entire length of said drums, said steam-drum being parallel with the water-drum and having in the upper part of its cylindrical portion a plurality of holes provided with detachable plugs or covers, each hole being opposite a tube or group of tubes, so that the tubes can be introduced by passing them through the said openings and the steam-drum.

4. A boiler or steam-generator comprising in its construction an elevated steam-drum, a plurality of water-drums located below and parallel with the steam-drum, each water-drum being connected with the steam-drum by a series of straight tubes, a furnace or fire-box between the water-drums and between the series of tubes, and a baffle-plate extending downwardly from the steam-drum at the outer side of each series of tubes, whereby the products of combustion after rising and passing between the inner tubes are diverted downwardly and caused to pass between the cooler or outer tubes, said cooler tubes absorbing heat from the products of combustion just before said products escape to the stack, as set forth.

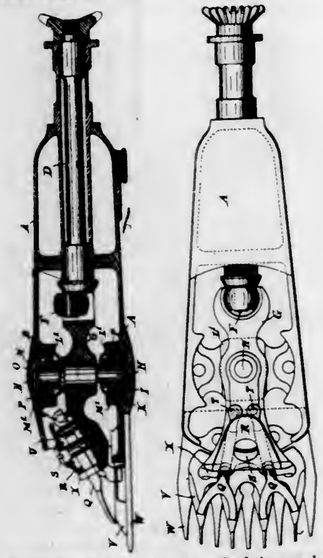
5. A boiler or steam-generator comprising in its construction a water-drum, a steam-drum located higher than the water-drum, a plurality of tubes connecting said drums, a furnace or fire-box at one side of the series of tubes, an outlet for the products of combustion at the opposite side of said series, a baffle-plate extending downwardly from the steam-drum at the opposite side of the series of tubes from the fire-box whereby the products of combustion are caused to first pass upwardly along and between the inner tubes of the series and are then guided downwardly along and between the outer tubes of the series, and extensions hinged to said baffle-plates and adapted to be raised and lowered, as set forth.

6. A boiler or steam-generator comprising a steam-drum, a water-drum located at a lower point than the steam-drum, a series of straight tubes connecting said drums and exposed to the heat from the fire-box, return-pipes connecting the end portions of said drums, a part of each return-pipe being substantially horizontal, and vertical tubes extending upwardly from the horizontal portions of the return-pipes, and connected at their upper ends with a horizontal header communicating with the steam-drum.

657,784. **MACHINE FOR CUTTING HAIR OR WOOL.** JOHN W. NEWALL, London, England. Filed Oct. 4, 1898. Renewed July 17, 1900. Serial No. 23,968. (No model.)

Claim.—1. The combination in a machine for cutting hair or wool of a vibrating lever which has its pivot formed as a pin rigidly connected to the lever and projecting above and below it, which lever has projections formed on it to drive the cutter to and fro, with bearings formed in the top and bottom of the shear-body to receive the ends of the pivot-pin and allow the lever to vibrate in the plane necessary for driving the cutter but preventing motion in every other plane, and with a device for transmitting pressure from the lever to each tooth of the cutter equally, consisting of forked pressure-pieces Q Q, a pressure-plate R, an adjusting-screw S, three pins T T and U, and guides X, mounted on the front part

of the lever, which automatically balance and are adjusted, substantially as shown and described.



2. The combination in a machine for cutting hair or wool of a vibrating lever which has its pivot formed as a pin rigidly connected to the lever and projecting above and below it, which lever has projections formed on it to drive the cutter to and fro with bushes fitted in the top and bottom part of the shear-body to receive the ends of the pivot-pin and to allow the lever to vibrate in the plane necessary for driving the cutter but prevent motion in every other plane, and balls and the requisite seats to form with the bushes a ball-bearing in which the bushes revolve in the plane required, and plates which hold the bushes and balls in position in the shear-body.

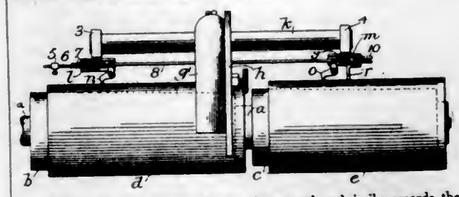
3. The combination in a machine for cutting hair or wool of a vibrating lever which has its pivot formed as a pin rigidly connected to the lever and projecting above and below it, which lever has projections formed on it to drive the cutter to and fro, with bushes fitted in the top and bottom of the shear-body to receive the ends of the pivot-pin and allow the lever to vibrate in the plane necessary for driving the cutter but prevent motion in every other plane, and balls and the requisite seats to form with the bushes a ball-bearing in which the bushes revolve in the plane required, and plates which hold the bushes and balls in position in the shear-body and flexible washers or packing-rings to exclude dirt from the balls.

4. The combination in a machine for cutting hair or wool of a vibrating lever which has its pivot formed as a pin rigidly connected to the lever and projecting above and below it and which lever has projections formed on it to drive the cutter, with bushes fitted in the top and bottom of the shear-body to receive the ends of the pivot-pin and allow the lever to vibrate in the plane necessary for driving the cutter but prevent motion in every other plane, and balls and the requisite seats to form with the bushes a ball-bearing in which the bushes revolve in the plane required, and plates which hold the bushes and balls in position in the shear-body, and flexible washers or packing-rings which exclude dirt from the balls and a device for transmitting pressure from the lever to each tooth of the cutter equally consisting of two forked pressure-pieces Q Q, a pressure-plate R, an adjusting-screw S, three pins T T and U, and guides X, mounted on the front part of the lever, which automatically balance and are adjusted, substantially as shown and described.

657,785. PHONOGRAPH. ADEMOR N. PETIT, Newark, N. J. Filed Oct. 27, 1899. Serial No. 734,934. (No model.)

Claim.—1. In a machine for reproducing phonograph and similar records, the combination with a reproducing device, of a shaft, a fixed sleeve or mandrel thereon to receive the record-cylinder, a removable sleeve or mandrel adjustable longitudinally upon the free end of the same shaft in relation to the fixed sleeve or mandrel and adapted to receive the blank cylinder, and means for holding the removable mandrel in position, substantially as set forth.

2. In a machine for reproducing phonograph and similar records, the combination with a shaft and means for supporting and rotating the same, of a fixed sleeve or mandrel upon the shaft at a distance from the free end of the shaft greater than the length of the sleeve, a removable cylinder or mandrel adapted to be placed upon the free end of the shaft in line with the fixed sleeve or mandrel, the said sleeves or mandrels being tapering and adapted to receive the record and the blank cylinders, a means for frictionally holding the removable cylinder to the shaft as adjusted, a following-style and a reproducing-style connected together, means for supporting the same and for exerting a pressure thereon to cause said styles to work in unison, substantially as set forth.



3. In a machine for reproducing phonograph and similar records, the combination with a recording-cylinder and a blank cylinder in line and upon the same shaft, of a following-style and a reproducing-style and a connection between the said styles and supports therefor whereby the said styles are in line axially with the shaft, means for exerting a pressure upon the following-style to cause it to follow the record of the cylinder and means for exerting a pressure upon the reproducing-style to cause it to cut to a depth in the blank agreeing with the record, and adjustable weights for regulating the pressure applied, substantially as set forth.

4. In a machine for reproducing phonograph and similar records, the combination with a record-cylinder and a blank cylinder in line and upon the same shaft, of a following-style in engagement with the record-cylinder and a reproducing-style in engagement with the blank cylinder, supports therefor and means connecting the following and reproducing styles to cause them to move in unison, substantially as set forth.

5. In a machine for reproducing phonograph and similar records, the combination with a record-cylinder and a blank cylinder in line and upon the same shaft, of a support-rod and curved arm pivoted thereto, an adjusting-bar connected to the free end of the curved arm, a fixed rest-bar upon which the adjusting-bar bears, a following and a reproducing style and means for connecting and for supporting and for adjusting the same, substantially as set forth.

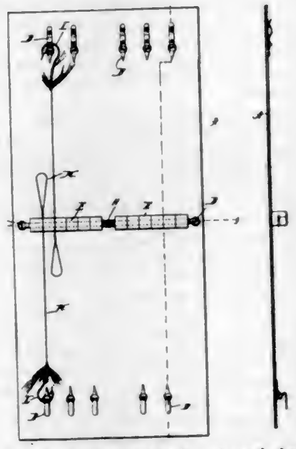
6. In a machine for reproducing phonograph and similar records, the combination with a record and a blank cylinder in line, a following and a reproducing style and a connection from one to the other also in line with the said cylinders and supports for the following and reproducing styles, a carrier-block *l* for the following-style and a carrier-block *m* for the reproducing-style to which the said styles are pivoted, said blocks being made centrally and transversely hollow and springs in the said openings in the carrier-blocks and means for applying tension thereto and a guide-bar connected to the carrier-block of the reproducing-style and adapted to bear upon the blank cylinder, substantially as set forth.

7. In a machine for reproducing phonograph and similar records, the combination with a record and a blank cylinder in line, a following and a reproducing style and a connection from one to the other also in line with the said cylinders and supports for the following and reproducing styles, a carrier-block *l* for the following-style and a carrier-block *m* for the reproducing-style to which the said styles are pivoted, said blocks being made centrally and transversely hollow, an arm 5 connected to the carrier-block *l*, a hook 6 adjustable in said arm, a spring 7 in the opening of the said carrier-block with its respective ends connected to the said hook and to the following-style, a spring 9 in the opening in the carrier-block *m*, an adjusting-screw 10 for exerting a pressure upon the spring 9 and a guide-bar *r* connected to the under side of the carrier-block *m* and resting upon the blank cylinder, substantially as set forth.

8. In a machine for reproducing phonograph and similar records, the combination with a record and blank cylinder in line, a sleeve for the record and a sleeve for the blank cylinder, a shaft on which the same are mounted, and means for revolving the said parts, of a following and a reproducing style and a connection from one to the other also in line with the said cylinders, supports for the said styles, a sleeve on which said supports are mounted, a supporting-shaft and means for progressively moving the said styles and supports over the surface of the record and blank cylinders, substantially as set forth.

9. In a machine for reproducing phonograph and similar blanks, the combination with a record and a blank cylinder in line, of a style following the impression in the record-cylinder, a reproducing-style connected to the following-style, supports for the said styles and a guide-bar connected to the support of the reproducing-style for controlling the position and the depth of cut produced by the reproducing-style, substantially as set forth.

657,786. HOLDER FOR SNELL FLY-HOOKS. GARDNER L. PLUMLEY, New York, N. Y. Filed Apr. 9, 1900. Serial No. 12,071. (No model.)



Claim.—1. In a holder for snell-hooks, a sheet or leaf provided with a transverse row of hooks, and also with a transverse rod or bar on which are mounted slidable spring-operated blocks, substantially as shown and described.

2. In a holder for snell-hooks, a sheet or leaf provided at each end with a transverse row of hooks, and centrally thereof with a transverse rod or bar, and a plurality of spring-operated blocks mounted on said rod or bar, substantially as shown and described.

3. In a device of the class described, a sheet or leaf provided with a transverse row of hooks, and a transverse rod or bar, a plurality of slidable blocks mounted on said rod or bar, and springs arranged on said rod or bar and adapted to force said blocks together, substantially as shown and described.

4. A snell-hook holder comprising a sheet or leaf provided with a row of hook attachments, and a rod or bar arranged substantially parallel with said hook attachments, and provided with a plurality of separate spring-operated snell-holders loosely and slidably mounted thereon, substantially as shown and described.

657,787. RUBBER VEHICLE-TIRE. RAYMOND B. PRICE, Chicago, Ill., assignor to the Calumet Tire Rubber Company, same place. Filed Apr. 9, 1900. Serial No. 12,141. (No model.)



Claim.—1. In a vehicle-tire, the combination with a rim provided with annular overhanging flanges on its side edges, adapted to form annular grooves, of a tire provided at the sides of its base portion with annular flanges adapted to fit within said grooves, and a foraminated stiffening-strip intermolded in said base portion of said tire and provided with annular flanges at its side edges extending into said flanges of said tire and extending to the surface of said flanges at a plurality of points, said flanges of said stiffening-strip being adapted to engage the flanges of the rim and assume the strains and wear to which said flanges of said tire are subjected.

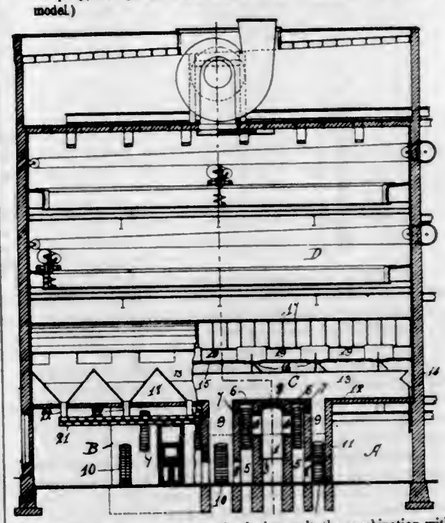
2. In a vehicle-tire, the combination with a rim provided with annular overhanging flanges on its side edges, adapted to form annular grooves, of a tire provided at the sides of its base portion with annular flanges adapted to fit within said grooves, and a lateral foraminated metal stiffening-strip intermolded in the base portion of said tire and extending into the flanges thereof and provided at its edges with flanges located within the flanges of said tire and extending to the surface of the latter at a plurality of points, whereby said flanges of said stiffening-strip are brought into direct engagement with the flanges of said rim and assume the strains and wear to which the flanges of the said tire are otherwise subjected.

3. In a vehicle-tire, the combination with a rim provided with annular overhanging flanges on its side edges, adapted to form annular grooves, of a tire provided at the sides of its base portion with annular flanges adapted to fit within said grooves, and a lateral foraminated stiffening-strip intermolded in said base portion of said tire and extending into the flanges thereof and provided with flanges within the flanges of said tire, said flanges of said stiffening-strip being adapted to extend to the surface of said flanges adjacent their points of connection with said base and at top and bottom of said flanges, whereby said flanges of said stiffening-strip are brought into direct contact with the flanges of the rim and engage the same to relieve the flanges of the tire of strain and wear.

4. In a vehicle-tire, the combination with a rim provided with annular overhanging flanges on its side edges, adapted to form annular grooves, of a tire provided at the sides of its base portion with annular flanges adapted to fit within said grooves, and a lateral foraminated metal stiffening-strip intermolded in the base of said tire and extending into the flanges thereof, said stiffening-strip being provided at its edges with flanges and with its flanges resembling an I-beam in shape, said flanges extending to the top and bottom faces of said flanges of the tire and adapted to engage the flanges of the rim.

5. In a vehicle-tire, the combination with a rim provided with annular overhanging flanges on its side edges, adapted to form annular grooves, of a tire provided at the sides of its base portion with annular flanges adapted to fit within said grooves, and a lateral foraminated metal stiffening-strip intermolded in the base of said tire and extending into the flanges thereof, said stiffening-strip being provided at its edges with flanges folded over upon themselves and projecting beyond both faces of the strip, thus giving said strip an I-beam shape in cross-section, the flanges thereof extending to the top and bottom faces of the flanges and adapted to directly engage said flanges of said rim.

657,788. APPARATUS FOR DRYING MALT. WILLIAM H. PRINK, Austin, Ill., assignor to the Saladin Pneumatic Malting Construction Company, Chicago, Ill. Filed Aug. 15, 1898. Serial No. 688,622. (No model.)



Claim.—1. In an apparatus for drying malt, the combination with a furnace having a firing-chamber mixing-chambers beside same through which the air from said firing-chamber passes means for admitting hot air to said mixing-chambers to be mixed with fresh air, of a mixing-chamber above said furnace adapted to receive the hot and fresh air from said furnace and mixing-chambers and further mix the same, substantially as described.

2. In an apparatus for drying malt, the combination with a furnace, and a floor surrounding it adjacent its upper end, of walls dividing said floor into a plurality of compartments, one of which communicates with said furnace and is covered and the remainder of which are provided with hoppers adapted to receive finished malt, and means for unloading said hoppers comprising spiral conveyers in the bottom thereof adapted to convey the malt to spouts leading from said hoppers, substantially as described.

3. In an apparatus for drying malt, the combination with a furnace, of a floor surrounding the upper end of same, partitions dividing said floor

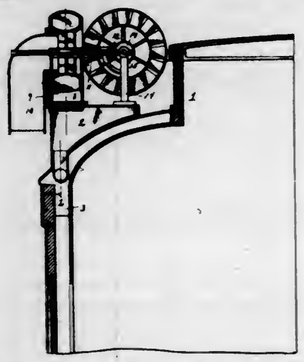
into a plurality of compartments, one of said compartments being adapted to receive hot air from said furnace and distribute same, and the remainder being adapted to serve as malt-receptacles, substantially as described.

4. In an apparatus for drying malt, the combination with a furnace, of a floor surrounding the upper end of same, partitions dividing said floor into a plurality of compartments, one of said compartments being adapted to receive hot air from said furnace and distribute same, and the remaining compartments being adapted to contain hoppers, substantially as described.

5. In an apparatus for drying malt, the combination with a furnace, of a floor surrounding the upper end of same, partitions dividing said floor into a plurality of compartments, one of said compartments being adapted to receive hot air from said furnace and distribute same, and the remaining compartments being adapted to contain hoppers, each of said hoppers covering the entire area of the compartment in which it is situated, and provided in its bottom with conveyers, and with spouts leading therefrom, said conveyers being adapted to convey the malt to said spouts to discharge the same.

6. In an apparatus for drying malt, a floor divided into a plurality of chambers, constituting hot-air and malt-receiving chambers respectively, said malt-receiving chambers being adapted to contain one hopper each covering the entire area thereof and provided in its bottom with right and left spiral conveyers adapted to convey the malt toward spouts connecting said hopper with devices for transporting the malt from said drier, substantially as described.

657,789. VENTILATOR FOR RAILWAY-CARS. CORNELIUS L. A. ROOSEVELT, New York, N. Y. Filed May 7, 1900. Serial No. 15,670. (No model.)

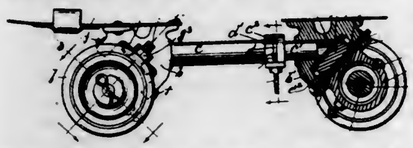


Claim.—1. In car-ventilating apparatus, the combination, with a reversible blower to force air into the car when revolved in either direction, of a pair of rotary fans having oppositely-inclined wings and adapted to be revolved in opposite directions, and gearing by which both fans revolve the blower in the same direction.

2. In car-ventilating apparatus, the combination, with a single blower, having two separate outlets, and a fan for revolving the blower in opposite directions, of a movable partition to close either outlet and open the other simultaneously, and an air-actuated part acting as a vane to operate the movable partition.

3. In car-ventilating apparatus, the combination, with a single blower having two separate outlets, and a fan for revolving the blower in opposite directions, of a movable partition to close either outlet and open the other simultaneously, a swinging blower inlet-pipe, actuated by the air as a vane, and an operating connection between the swinging inlet-pipe and the partition.

657,790. ROLLER-SKATE. FRANK A. ROSS, Chicago, Ill. Filed Oct. 29, 1898. Serial No. 694,876. (No model.)



Claim.—1. The combination with the front and rear portions of the skate, of the telescoping outer and inner tubes, the inner tube carrying a series of openings, a clamp for clamping said tubes together and a catch mounted on the outer tube and adapted to engage any one of said openings, substantially as described.

2. The combination with the front and rear portions of the skate, of the telescoping outer and inner tubes, a clamp for clamping said tubes together, the inner tube carrying a series of openings, a pivoted lever mounted upon the outer tube and adapted to engage any one of said openings, and a spring for pressing said lever into engagement with said openings, substantially as described.

3. The combination with the front and rear portions of the skate, of the telescoping outer and inner tubes, the inner tube carrying a longitudinal slot, a rod or part within said inner tube, and a set-screw passing through the outer tube and through said slot and screwing into said rod or part, substantially as described.

4. The combination with the front and rear portions of the skate, of the telescoping outer and inner tubes, the inner tube carrying a series of openings, a catch mounted on the outer tube and adapted to engage any one of said openings, said inner tube carrying a longitudinal slot, a rod or part within said inner tube, and a set-screw passing through the outer tube and said slot and screwing into said rod or part, substantially as described.

5. The combination with the body of the skate, of the barrel for the bearings pivoted thereto, a cushion of rubber interposed between the barrel and body, and a pair of adjusting-screws for varying the tension of the cushion, one situated on each side of said pivot whereby one or both ends of the cushion may be adjusted in tension, substantially as described.

6. In a cushion-roller for skates, a rigid cylindrical body, an annulus of rubber on the periphery thereof, a metallic casing surrounding said annulus and having flanges on the edges extending inward and having the inner edges of said flanges situated approximately opposite the outer periphery of the cylindrical body to leave portions of the rubber annulus between said body and the respective flanges to form cushions to resiliently resist the sidewise thrusts to which the metallic casing is subjected, substantially as described.

7. In a cushion-roller for skates, a non-elastic cylindrical body having a peripheral ridge, an annulus of rubber on the periphery thereof, and a metallic casing having flanges on the edges at right angles to the tread to engage the sides of the annulus, portions of the rubber annulus being interposed between said peripheral ridge and the respective flanges to form cushions to yieldingly resist sidewise thrusts to which the casing is subjected, substantially as described.

8. In a cushion-roller for skates, a non-elastic cylindrical body, an annulus of rubber on the periphery thereof, and a metallic casing having flanges on the edges to engage the sides of the annulus and having the medial portion of the periphery depressed to secure the annulus in position and form a guttered tread, substantially as described.

9. In a cushion-roller for skates, a non-elastic cylindrical body having a peripheral ridge, an annulus of rubber on the periphery thereof, and a metallic flanged casing having the medial portion of the periphery depressed to secure the annulus in position and form a guttered tread, substantially as described.

10. In a cushion-roller for skates, a rigid cylindrical body, an annulus of rubber on the periphery thereof, and a metallic casing surrounding said annulus and having inturned flanges on the edges which coöperate with the cylindrical body to prevent the sidewise displacement of the casing and annulus, substantially as described.

657,791. SOAP-BUBBLE PIPE. CHARLES SCHINDLER, Toledo, Ohio. Filed Jan. 27, 1899. Serial No. 703,550. (No model.)

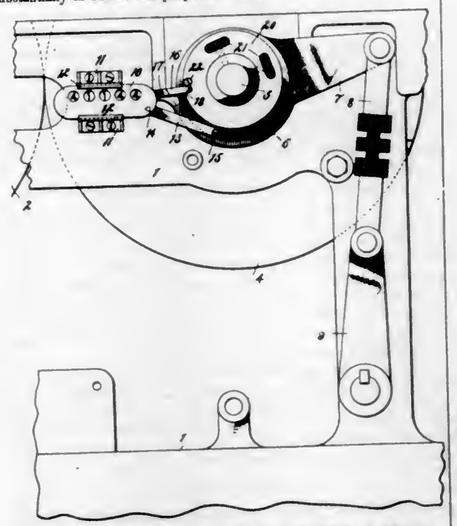


Claim.—1. A device for blowing soap-bubbles consisting of a cylindrical bowl having smooth inner walls, a stem connected with the cavity of the bowl, and a soap tablet conforming to the cavity of the bowl and having a small aperture therethrough coinciding with the bowl of the stem, substantially as described.

2. A device for blowing soap-bubbles consisting of a cylindrical bowl having smooth inner walls, a stem connected with the cavity of the bowl, a soap tablet conforming to the cavity of the bowl and having a small aperture therethrough coinciding with the bowl of the stem, and a spring adapted to aid in holding the tablet in the bowl, substantially as described.

657,792. SHEET-COUNTING DEVICE FOR PRINTING-PRESSES. EDWARD C. SEYMOUR, Detroit, Mich., assignor to the Aluminum Plate and Press Company, New York, N. Y., and Plainfield, N. J. Filed May 22, 1900. Serial No. 17,567. (No model.)

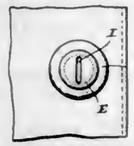
Claim.—1. The combination with the form and impression cylinders of a printing-press, and means for moving the impression-cylinder into and out of operative relation with the form-cylinder, of a counting device, means rotating with a moving part of the press for operating the counting device and means connecting the counting device with the impression-cylinder-throw-out mechanism, whereby the counting device will be moved out of operative relation with its operating mechanism when the impression-cylinder is thrown out of operative position, and vice versa, substantially as and for the purpose set forth.



2. The combination with the form and impression cylinders of a printing-press, and suitable throw-out mechanism for the impression-cylinder, of a collar mounted upon the impression-cylinder shaft, a pin or lug carried by said collar, the counting device having an operating-arm which is adapted to be engaged by said pin or lug, and a link connecting the counting device with the throw-out mechanism, whereby it will be moved toward and away from the impression-cylinder shaft, substantially as and for the purpose set forth.

3. The combination with the form and impression cylinders of a printing-press, suitable eccentric bearing-bushings in which the impression-cylinder is journaled, and means for operating said eccentric bushings for moving the impression-cylinder into and out of operative relation with the form-cylinder, with a counting device movably mounted in a suitable support, a link connecting the movable counting device with one of said eccentric bushings, an operating-arm for the counting device, and a part rotating with the impression-cylinder and adapted to actuate said operating-arm, substantially as and for the purpose set forth.

657,793. EYELET FOR SHOES OR THE LIKE. FREDERICK I. SHADE and MONTGOMERY R. FRY, Linfield, Pa. Filed Sept. 6, 1899. Serial No. 729,614. (No model.)

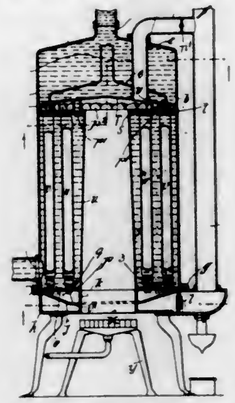


Claim.—1. As a new article of manufacture, an eyelet for shoestrings and the like consisting of the eyelet proper having flanges for clamping the material, and a turn-plug fitted therein so as to freely revolve, said plug having a hole formed therein for the passage of the string and flanges on the plug for engaging the eyelet, as specified.

2. In combination, an eyelet having flanges for clamping the material, and a plug fitted within the eyelet so as to freely turn, said plug having a slot for the passage of a flat string and flanges on the plug for engaging the eyelet, as specified.

3. In combination, an eyelet having an upper flange for bearing against the upper surface of the material into which it is to be fastened, a lower flange for clenching upon the under side of the material, a plug fitted to turn within the eyelet and having a slot formed therethrough, a flange formed upon the upper end of the plug, and a flange formed upon the lower edge of the plug for securing it within the eyelet, as and for the purpose set forth.

657,794. WATER-HEATER. THOMAS P. SHAW, Montreal, Canada. Filed Nov. 2, 1899. Serial No. 735,605. (No model.)



Claim.—1. A water-heater consisting of a casing having an exit-port at its upper end; a diaphragm cutting off the lower portion of said casing; a hollow head located within said casing a short distance from the top thereof, and having a series of vertical passages therethrough; said head extending entirely across the casing and having its periphery corrugated; a tubular connection extending from the lower end of the interior of the casing to an opening in the bottom of said hollow head; and a series of pipes connecting openings in said diaphragm to corresponding openings in the bottom of said head; substantially as described and for the purpose set forth.

2. A water-heater consisting of a casing having exit and inlet ports; a diaphragm cutting off the lower portion of said casing, said lower portion being of annular dish form; a hollow head located within said casing near the top thereof; a tubular connection extending from an opening in said lower portion to a central opening in the bottom of said hollow head; a series of pipes elliptical in cross-section and connecting a series of openings in said diaphragm to corresponding openings in the bottom of said head, said elliptical pipes being arranged with their major axes at an angle to the radii of said central tubular section; substantially as described and for the purpose set forth.

3. A water-heater consisting of a casing having exit and inlet ports; a diaphragm cutting off the lower portion of said casing said lower portion being of annular dish form; a hollow head located within said casing near the top thereof; a tubular connection extending from an opening in said lower portion to a central opening in the bottom of said hollow head; a series of pipes connecting a series of openings in said diaphragm to corresponding openings in the bottom of said head, a series of nipples located in the exit ends of said pipes; substantially as described and for the purpose set forth.

4. A water-heater consisting of a casing having exit and inlet ports; a diaphragm cutting off the lower portion of said casing said lower portion being of annular dish form; a hollow head located within said casing near the top thereof; a tubular connection extending from an opening in said lower portion to a central opening in the bottom of said hollow head; a series of pipes elliptical in cross-section and connecting a series of openings in said diaphragm to corresponding openings in the bottom of said head, said elliptical pipes being arranged with their major axes at an angle to the radii of said central tubular section; a series of nipples located in the exit ends of said pipes; a pipe connected to the edge of an opening in the upper side of said head and extending through an opening in the top of the casing to the chimney connection; substantially as described and for the purpose set forth.

5. A water-heater consisting of a casing having flow and return connections; a diaphragm cutting off the lower portion of said casing; said lower portion being of annular dish form; an annular diaphragm connected at its outer edge to the top of said lower portion and downwardly inclined toward its center; a pipe leading from said lower portion to the chimney connection; a hollow head located within said casing near the top thereof, a tubular connection extending from an opening in said lower portion to a central opening in the bottom of said hollow head; a series of pipes elliptical in cross-section and connecting a series of openings in

said diaphragm to corresponding openings in the bottom of said head, said elliptical pipes being arranged with their major axes at an angle to the radii of said central tubular section; a branch connected to the edge of an opening in the upper side of said head and extending through an opening in the top of the casing to the said first-mentioned pipe; and a stuffing-box carried by said opening in the casing, substantially as described and for the purpose set forth.

6. A water-heater consisting of a casing having flow and return connections; a diaphragm cutting off the lower portion of said casing; said lower portion being of annular dish form; a pipe leading from the said portion to the chimney connection; a hollow head located within said casing near the top thereof, a tubular connection extending from an opening in said lower portion to a central opening in the bottom of said hollow head; a series of pipes elliptical in cross-section and connecting a series of openings in said diaphragm to corresponding openings in the bottom of said head, said elliptical pipes being arranged with their major axes at an angle to the radii of said central tubular section; a stuffing-box carried in an opening in the casing; a branch pipe connected to the edge of an opening in the upper side of said head and extending through said stuffing-box to the said first-mentioned pipe; an annular diaphragm connected at its outer edge to the top of said bottom portion and downwardly inclined toward its center; the opening through said diaphragm being eccentric of and encircling said central tube, substantially as described and for the purpose set forth.

7. A water-heater having a heat-distributing device located in its interior a short distance from the upper end thereof and a hood having an opening in its upper end for conducting the heated water from within close proximity to said heat-distributing device to the upper end of said heater.

657,795. **ELECTRIC-CIRCUIT CLOSER FOR LOOMS.** HARRY W. SMITH and WILLIAM H. REDDING, Worcester, Mass. Filed July 13, 1898. Serial No. 685,832. (No model.)



Claim.—1. In an electric-circuit closer for looms, the combination with a shuttle provided with an opening to receive the bobbin, and a chamber or recess for a pair of contact-surfaces, of a pair of contact-surfaces inclosed in said chamber, a bar extending into the bobbin-opening and arranged to bear against the weft-thread on the bobbin and connecting mechanism between said bar and the contact-surfaces in said chamber, whereby they are brought into contact as the weft is removed from the bobbin, substantially as described.

2. In an electric-circuit closer for looms, the combination with a shuttle provided with an opening to receive a bobbin, and a bobbin held therein, of a contact-chamber arranged at the base of the bobbin and outside said bobbin-opening, contact-surfaces inclosed in said contact-chamber and forming the terminals of an electric circuit, and means located in the bobbin-opening, comprising a yielding bar arranged to normally press against the weft, whereby said terminals are brought into contact as the weft is removed, substantially as described.

3. In an electric-circuit closer for looms, the combination with a shuttle having an opening to receive a bobbin, of a chamber 26, a fixed contact-surface inclosed in said chamber, a lever pivoted in the shuttle with one end entering said chamber and forming a movable contact-surface and having its opposite end entering said bobbin-opening, a bar arranged to bear against the weft of the bobbin and operatively connected with said lever, whereby the contact-surfaces are joined as the weft is removed from the bobbin, substantially as described.

4. In an electric-circuit closer for looms, the combination with a shuttle provided with an opening to receive a bobbin, of a bar pivoted at one end and extending transversely across the bobbin-opening and arranged to bear against the weft held on the bobbin, a pivoted lever having a mortise receiving the free end of said bar and a contact-surface held by the shuttle in the path of said lever, whereby the circuit is closed by the rocking of said pivoted lever as the weft is withdrawn from the bobbin, substantially as described.

5. In an electric-circuit closer for looms, the combination with a shuttle provided with an opening to receive a bobbin, and a bobbin held therein, of a contact-chamber at one end of the bobbin-opening and at the base of the bobbin, contact-surfaces inclosed in said chamber and forming the terminals of an electric circuit, a pivoted lever carrying one of said contact-surfaces and extending from said contact-chamber into said bobbin-opening, said lever lying parallel with the axis of the bobbin, with its end overlapping the bobbin and means controlled by the weft, whereby said lever is rocked to bring said terminals into contact, substantially as described.

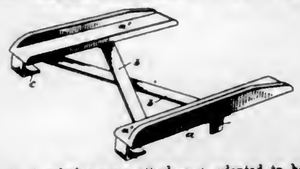
6. In an electric-circuit closer for looms, the combination with a shuttle and a weft-bobbin carried therein, and provided with a groove to receive the weft, of a lever pivoted on said shuttle and extending across the surface of said bobbin in the plane of said groove and arranged to bear against the weft held in the groove and mechanism for completing an electric circuit and operatively connected with said lever, whereby the closing of the circuit is determined by the removal of weft from said groove, substantially as described.

7. In an electric stop-motion for looms, the combination with a shuttle provided with a bobbin or cop chamber and a separate contact-chamber, a pivoted lever extending from said bobbin-chamber into said contact-chamber, an adjusting-screw in said contact-chamber and in the path of one end of said lever, a bar extending transversely to the bobbin-chamber and pivoted at one end to the shuttle and having its opposite end carried by said lever, and a spring by which said lever is rocked to hold said bar against the weft on the bobbin or cop, said adjusting-screw and said pivoted lever forming the terminals of an electric circuit, substantially as described.

8. In an electric-circuit closer for looms, the combination with a shuttle provided with an opening for a weft-bobbin, of a weft-bobbin held in said opening and having a circumferential groove to receive a portion of the weft, a bar arranged to bear against the weft in the plane of said groove, means for applying pressure to said bar, whereby the movement of said bar is continued beyond the surface of the bobbin adjacent to said groove, and a pair of contact-surfaces forming the terminals of an electric circuit and operatively connected with said bar, whereby the movement of said bar as the weft is removed from said groove will bring said contact-surfaces into contact, substantially as described.

9. The combination with a shuttle and weft-bobbin held therein, of a bar 18 arranged to bear against the weft, a lever 21 having one end engaged by said bar, an adjusting-screw held in said shuttle and in the path of said lever as it is rocked, and a spring applied to carry said bar 18 against the weft, said adjusting-screw and said lever forming the terminals of an electric circuit, substantially as described.

657,796. **PRINTING-PRESS ATTACHMENT.** MAX SNYDER, Beatty, Pa. Filed Apr. 2, 1900. Serial No. 11,134. (No model.)



Claim.—1. A printing-press attachment, adapted to be engaged with the platen of the printing-press to carry the form into position to be engaged by the form-holder, the attachment comprising side bars, cross-bars extending between them, and devices on the side bars for engaging the platen to hold the frame in position.

2. A printing-press attachment, comprising a frame adapted to be fastened to the platen of the printing-press, to carry the form into position for engagement with the form-holder, the attachment comprising side bars, cross-bars extending between them, hooks fastened to the front ends of the side bars to engage the platen, and lugs projecting downward from the side bars to engage the side edges of the platen.

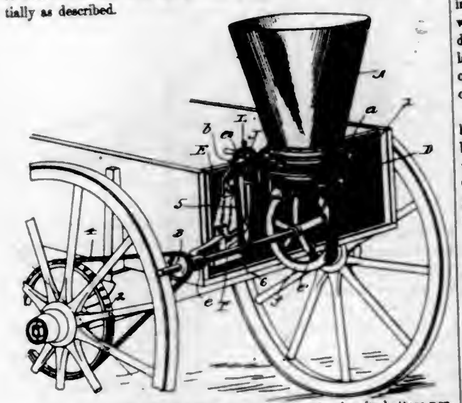
3. A printing-press attachment, comprising a frame adapted to carry the form into position to be engaged with the form-holder, and means on the frame for holding it releasably engaged with the platen of the press.

657,797. **FORCED-FEED END-GATE BROADCAST SEEDER.** IRVING D. STEVENS, Joliet, Ill. Filed Aug. 25, 1899. Serial No. 728,418. (No model.)

Claim.—1. The combination of the hopper, a rotary feeder arranged at the bottom of said hopper, feed ports or openings below said feeder, pivoted reducing-valves controlling said ports or openings, a rotary seed-wheel located below said valves and arranged to receive the seed from said ports or openings, and means for rotating said feeder and seed-wheel, substantially as described.

2. In a seeding-machine and in combination with a hopper and a broadcasting device arranged beneath the said hopper, a rotary feeder arranged intermediate of the hopper and broadcasting device and provided with a plurality of radial wings which, in effect, provide the feeder with a plurality of pockets which carry the seed from the hopper and deliver it to the said broadcasting device and which extend up into the interior of the hopper, substantially as described.

3. A broadcasting-seeder comprising a hopper having its bottom portion constructed or formed with a cup or cavity, a rotary feeder arranged for rotation within the said cup and provided with end walls or disks and intermediate radial wings which extend up into the interior of the hopper and which, in effect, provide the rotary feeder with a plurality of pockets, and a rotary seed-wheel arranged beneath the said hopper and adapted to receive the seed from the pockets of the said rotary feeder, substantially as described.



4. In a broadcast seeding-machine a hopper having its bottom portion constructed or formed with a cup or cavity, the bottom of which latter is provided with a couple of openings, a rotary feeder arranged for rotation within the said cup or cavity and provided with pockets, a broadcasting device arranged beneath the said hopper and adapted to receive the seed from the pockets of the rotary feeder, and a couple of reducing-valves for controlling the downward escape of the seed through the said openings in the bottom of the said cup or cavity, the said rotary feeder being arranged for rotation about a horizontal axis which is transverse to the line of progression, substantially as described.

5. In a broadcast seeding-machine, and in combination with a hopper having its bottom portion constructed or formed with a cup or cavity *a'*, a broadcasting device arranged beneath the said hopper, the rotary feeder B constructed and operating within the said cup or cavity substantially as and for the purpose described.

6. A broadcast seeding-machine adapted to be attached to the end-gate of a wagon and comprising a hopper, a broadcasting device arranged beneath the said hopper, a rotary feeder arranged intermediate of the hopper and the broadcasting device, both the said feeder and the broadcasting device being driven from one of the rear wagon-wheels through the medium of suitable power-transmitting devices, and a clutch mounted upon the shaft of the said rotary feeder whereby the rotation of the latter may be stopped without stopping the wagon or the said broadcasting device.

7. A broadcast seeding-machine adapted to be attached to the end-gate of a wagon and comprising a hopper, a rotary seed-wheel suitably mounted and arranged beneath the said hopper, and a rotary feeder arranged intermediate of the hopper and rotary seed-wheel, a horizontal shaft which is driven from one of the rear vehicle-wheels through the medium of a sprocket-chain and from which are driven both the rotary feeder and rotary seed-wheel, the medium of connection between said shaft and rotary feeder consisting of sprockets and sprocket-chain, and the shaft of the said rotary feeder being provided with a clutch which permits the rotation of the feeder to be stopped without stopping the wagon and without subjecting either of the two sprocket-chains to lateral shift, substantially as described.

8. A forced-feed end-gate broadcast seeder comprising a hopper, a rotary seed-wheel arranged beneath the said hopper, a rotary feeder arranged intermediate of the hopper and seed-wheel, both the latter and the said rotary feeder being driven from one of the rear wagon-wheels through the medium of suitable power-transmitting devices, a clutch arranged upon the shaft of the said rotary feeder for the purpose of permitting the latter to be stopped or started at will, a swinging lever adapted to engage one member of the said clutch, and a pivoted locking arm or lever adapted and arranged to be swung into the path of the latter, which engages one member of the said clutch, and whereby said member may be locked either into or out of engagement with the other member of said clutch, substantially as described.

9. A forced-feed end-gate broadcast seeding-machine comprising a hopper, a rotary seed-wheel arranged beneath the said hopper, a rotary feeder arranged at a suitable point between the hopper and the seed-wheel, both the latter and the said rotary feeder being driven from one of the rear wagon-wheels through the medium of suitable power-transmitting devices, a clutch arranged upon the shaft of the said rotary feeder, a swinging lever L arranged to engage the said clutch, and a locking arm or lever M, substantially as and for the purpose described.

10. A broadcast seeding-machine comprising in combination a hopper, a rotary seed-wheel arranged beneath the said hopper, a feeding device for feeding the seed to the said rotary seed-wheel, a couple of openings intermediate of the feeding device and rotary seed-wheel and through which the seed is delivered from the former to the latter, a couple of reducing-valves for controlling the said openings and whereby each of the latter may be reduced in area at will, such reduction of the size of said openings being in directions radial, or substantially radial, to the center of the said rotary seed-wheel.

11. A broadcast seeding-machine comprising a hopper having its bottom provided with a couple of openings, a rotary seed-wheel arranged beneath the said hopper and adapted to receive the seed as it escapes downwardly through said openings, and a couple of swinging reducing-valves C C for controlling the said openings, and whereby the size of the latter may be varied at will, substantially in the manner and for the purpose set forth.

12. In a forced-feed end-gate broadcast seeder, and in combination with a hopper, a rotary seed-wheel arranged beneath the said hopper, a rotary feeder B arranged to feed the seed through a couple of openings *h*, a couple of reducing-valves for controlling the escape of the seed through the said openings, said openings and reducing-valves being located between the said feeder and the said seed-wheel, substantially as described.

13. In a forced-feed end-gate broadcast seeder, and in combination with a hopper, rotary seed-wheel and feeding device, a couple of swinging reducing-valves provided with openings for controlling the downward escape of the seed and also provided with forwardly-extending arms, the end of each arm being provided with a thumb-screw or bolt which swings or travels in a segmental slot formed in the body of the machine, substantially as described.

14. In a forced-feed end-gate broadcast seeder, and in combination with a hopper, rotary seed-wheel and feeding device, a couple of swinging reducing-valves provided with openings for controlling the downward escape of the seed and provided also with forwardly-extending arms, the end of each arm being provided with a thumb-screw or bolt which swings or travels in a segmental slot formed in the body-casting, and said valves being mounted in such manner that their openings swing in directions toward and away from the center or axis of said seed-wheel, substantially as and for the purpose described.

15. A seeding-machine comprising a suitable hopper, a rotary seed-wheel arranged beneath the said hopper and rotating about a vertical axis, the said wheel being provided with a central receiving-surface and also with webs which extend inwardly and terminate at points between the center and the periphery of the said wheel, and the opening or openings through which the seed is fed from the hopper to the seed-wheel being located directly above the said central receiving-surface of said wheel, substantially as and for the purpose set forth.

16. A forced-feed end-gate broadcast seeder comprising a hopper or other receptacle for holding the seed, a rotary feeder arranged at the bottom of the said hopper and provided with pockets for carrying the seed, one or more reducing-valves arranged beneath the said rotary feeder and adapted to control the downward escape of the seed from the pockets of the feeder, a rotary seed-wheel arranged for rotation about a vertical axis beneath the said reducing-valves, the said seed-wheel being provided with a central receiving-surface to which is delivered the seed from the pockets of the rotary feeder and also with vertical and inwardly-extending webs which terminate at points substantially midway between the center and periphery of the said seed-wheel, substantially as described.

17. The combination of a hopper, a rotary feeder B, reducing-valves C located immediately below said feeder, and a rotary seed-wheel D located immediately below said reducing-valves, all constructed, organized and operating substantially as and for the purpose set forth.

18. In a forced-feed end-gate broadcast seeder and in combination with a suitable hopper and a rotary seed-wheel arranged beneath said hopper, a feeding device arranged intermediate of the hopper and said wheel and extending into the interior of the said hopper and provided with a plurality of pockets which are successively brought into position to be filled with seed from the hopper and which are then successively brought into a position to discharge their contents onto the said rotary seed-wheel, and means for controlling the discharge of seed from the pockets of the said feeding device.

19. A forced-feed end-gate broadcast seeder comprising a suitable hopper, a centrifugal broadcasting device arranged beneath the said hopper, a couple of openings in the bottom of said hopper arranged at either side of the median line and at a point somewhat forward of the axis of said centrifugal broadcasting device, a feeding device for feeding the seed downward from the hopper through the said openings, and independently-adjustable reducing-valves for varying the area or size of said openings, such variation in size of the two openings being in directions substantially

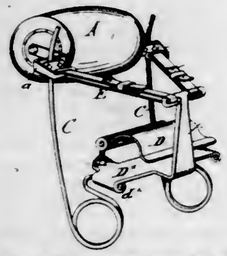
toward and away from the axis of the said centrifugal broadcasting device, substantially as and for the purpose described.

20. In a forced-feed end-gate broadcast seeder, and in combination with a suitable hopper and a centrifugal broadcasting device, a rotary feeder mounted for rotation in a cup or cavity formed in the bottom of said hopper, means for driving both the feeder and the centrifugal broadcasting device, and a cap arranged to cover the said rotary feeder and having its top or upper wall which extends upwardly into the interior of the hopper cut away to provide an opening through which the seed may enter the pockets of the said rotary feeder, which latter by this arrangement revolves practically within the seed at the bottom of the hopper, substantially as described.

21. In a broadcast seeding-machine and in combination with a suitable hopper for holding the seed, a rotary seed-wheel which is arranged beneath the said hopper and which is provided with horizontal blades having a slight outward and downward dip, the rear edges or marginal portions of the said blades being turned up to provide a plurality of webs which are substantially vertical and which extend inwardly and terminate at points between the center and periphery of the said wheel, so as to provide a central receiving-surface and one or more openings for feeding the seed directly to said surface.

22. In a broadcast seeding-machine, and in combination with a suitable hopper for holding the seed, a rotary seed-wheel which is arranged beneath the said hopper, and which is provided with tangential blades having a slight outward and downward dip, the rear edges or marginal portions of said blades being turned up to provide a plurality of slightly-tangential webs which are vertical, or substantially vertical, and which extend inwardly and terminate at points between the center and periphery of the wheel, substantially as shown and described and for the purpose stated.

657,798. GAIT-STRAIGHTENING ATTACHMENT. JOHN W. SUTTON, New York, N. Y. Filed June 2, 1900. Serial No. 18,828. (No model.)



Claim.—1. A gait-straightening attachment for vehicle-shafts, consisting of a pad, springs supporting the same, means for adjusting the position of the pad on said springs, means for attaching said springs to the vehicle-shaft, and means for limiting the movement of said pad-supporting springs, substantially as set forth.

2. A gait-straightening attachment for vehicle-shafts, consisting of a pad, springs supporting the same, means for attaching said springs to the vehicle-shaft, an upright post on said attaching means, and adjustable straps connecting said post with said springs for limiting the movement of the latter, substantially as set forth.

3. A gait-straightening attachment, consisting of a pad, supporting-springs, clips securing said pad to said springs and adjustable thereon, a clip device for attaching said springs to the shaft of a vehicle, an upright post on said clip device, and adjustable straps connecting said clips with the post, substantially as set forth.

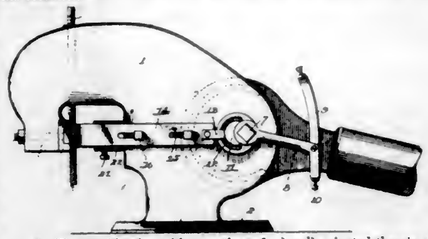
657,799. PROCESS OF MAKING ASPHALTIC COMPOSITION POWDER. WILLIAM W. VARNEY, Baltimore, Md. Filed May 2, 1900. Serial No. 15,167. (No specimens.)

Claim.—The process herein described, of producing asphaltic powder, which consists in mixing asphalt rendered fluid by means of heat and a solvent whose boiling temperature is above the melting-point of said asphalt with a powder the particles of which are to be coated by said fluid asphalt, and removing the solvent by means of heat, thus leaving the particles of powder coated with fluid asphalt, substantially as described.

657,800. PUNCH. CHARLES P. VERNIER, Hudson, Mich. Filed May 29, 1900. Serial No. 18,447. (No model.)

Claim.—1. The combination with a casting, of a handle pivoted therein, a plunger operated thereby, a yoke inclosing the handle, and a stripper operated from said yoke.

2. The combination with a casting, of a handle pivoted therein, a plunger operated thereby, a yoke inclosing the handle, an eccentric pivoted to the casting and secured to the yoke, and a stripper operated from the eccentric.



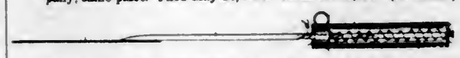
3. The combination with a casting, of a handle pivoted therein and having an eccentric slot, a plunger slidably mounted within the casting, an arm secured thereto and projecting into the slot, an eccentric pivoted to the casting and having a slot therein, a stripper slidably mounted upon the casting and engaging the groove of said eccentric, and a yoke inclosing the handle and secured to the eccentric of the stripper.

4. The combination with a casting, of a handle pivoted therein and having an eccentric slot, a plunger slidably mounted within the casting, arms thereto engaging the eccentric slot of the handle, pins extending from the casting, a stripper slidably mounted thereon, eccentrics pivoted to the casting and having slots therein, arms secured to the stripper and engaging said grooves, a yoke inclosing the handle, and arms connecting said yoke and the eccentric.

5. The combination with a casting having a recess therein and a downwardly-extending arm; of a handle pivotally mounted within the recess and having an eccentric slot, a plunger slidably mounted within the casting, arms thereto engaging the slot of the handle, a cam pivoted upon each side of the casting and having an eccentric slot therein, a stripper slidably mounted upon the casting, angle-plates thereon engaging the slots of the cams, and means for imparting motion to the cams and stripper from the handle wheo the same is near the limits of its movements

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657,801. PANCAKE-TURNER. WILLIAM VOGEL, Paterson, N. J., assignor, by mesne assignments, to the Fischer Manufacturing Company, same place. Filed May 26, 1900. Serial No. 18,024. (No model.)



Claim.—1. In a cake-turner, the combination of a hollow handle having a longitudinal slot, a spindle journaled in said handle and provided with screw-threading in the portion thereof inclosed by said handle, a blade carried by said spindle, a sleeve inclosed in said handle and engaging the threaded portion of said spindle, and a projection on said sleeve protruding through and guided in said slot, substantially as described.

2. In a cake-turner, the combination of a hollow handle having a longitudinal slot, a spindle journaled in said handle and provided with screw-threading in the portion thereof inclosed by said handle, the blade carried by said handle, the sleeve inclosed in said handle and engaging the threaded portion of said spindle, a spring interposed between said sleeve and one end of said handle, and a projection on said sleeve protruding through and guided in said slot, substantially as described.

3. In a cake-turner, the combination of a hollow handle having a longitudinal slot, a spindle journaled in said handle and provided with screw-threading in the portion thereof inclosed by said handle, a blade carried by said spindle, a sleeve inclosed and guided in said handle and engaging the threaded portion of said spindle, a disk adjustably arranged in said handle, a spring interposed between said sleeve and the disk, and a projection on said sleeve protruding through and guided in said slot, substantially as described.

657,802. CEMENT-CURB MOLD. CHRISTOPHER H. WATSON, Riverside, Cal. Filed July 20, 1899. Serial No. 724,493. (No model.)

Claim.—1. The combination of the framework or yokes, with retaining-plates mounted thereon to slide toward and from each other, and cams journaled upon the yokes and engaging the retaining-plates to operate the same.

2. The combination of the framework or yokes, with retaining-plates mounted thereon to slide toward and from each other, and operating devices secured to the yokes and engaging the retaining-plates to move them relatively to the yokes.

3. The combination of the framework or yokes with retaining-plates movable transversely thereto, mechanism for moving the retaining-plates from each other, transversely-extending guides secured to the retaining-plates, and an end plate removably supported in said guides.



4. The combination of retaining-plates with yokes, each composed of two arms and a top bar, each arm being independently adjustable upon the said bar to vary the angle of the retaining-plates.

5. The combination of retaining-plates with yokes, each composed of two arms and a top bar, each arm being independently adjustable upon the said bar to vary the angle of the retaining-plates, sliding connections between the yokes and retaining-plates permitting said plates to move toward and from each other, and means for actuating the said plates.

6. The combination of the framework or yokes, shafts journaled therein, retaining-plates having slotted lugs or ears embracing and sliding upon the shafts toward and from each other, cams mounted upon the shafts and engaging the plates to advance or withdraw them, and means connecting those cams which engage the same retaining-plate to operate them together.

7. The combination of adjustable yokes, shafts journaled therein, retaining-plates having slotted lugs or ears embracing and sliding upon the shafts toward and from each other, cams mounted upon the shafts and engaging the plates to advance or withdraw them, and means connecting the cams which engage the same retaining-plates to operate them together.

8. The combination of yokes, retaining-plates carried upon said yokes, shafts journaled upon and connecting the yokes, cams upon said shafts engaging the retaining-plates to advance and withdraw them, means for turning said shafts, and lugs carried by the retaining-plates and slotted to embrace and slide upon said shafts.

9. The combination of yokes, retaining-plates carried upon said yokes, shafts journaled upon and connecting the yokes, cams upon said shafts engaging the retaining-plates to advance and withdraw them, crank-arms upon the shafts, links connecting said crank-arms, a handle secured to one of the shafts, and arms or lugs carried by the retaining-plates and slotted to embrace and slide upon said shafts.

10. In a mold, the combination of yokes, retaining-plates carried thereby, wheels mounted upon one side of the mold and adjustable supporting-posts upon the opposite side thereof.

11. In a mold, the combination of retaining-plates, yokes connected therewith and adjustable to vary the angle of the retaining-plates, arms pivoted upon the mold, wheels journaled on said arms, and means for changing the angular position of the wheels relatively to the yokes.

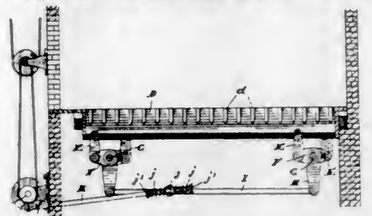
12. A yoke for molds, comprising a top bar and two depending arms pivoted thereto and engaging the sides of the mold, and means for adjusting and clamping the depending arms to the top bar at different angular positions.

13. A yoke for molds comprising a top bar and two depending arms pivoted thereto and engaging the sides of the mold, and set-screws between the top bar and the depending arms whereby they may be adjusted and held in different positions.

14. A yoke for curb-molds, comprising a top bar having longitudinally-extending slots, depending arms pivotally secured to the top bar by bolts passing through said slots, said arms also having side lugs extending parallel with the top bar and containing segment-slots and clamping-bolts passing through said segment-slots in the arms and slots in the top bar.

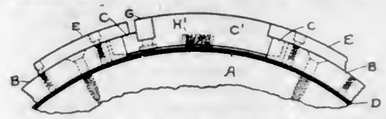
15. A yoke for curb-molds, comprising a top bar having longitudinally-extending slots, depending arms pivotally secured to the top bar by bolts passing through said slots, said arms having side lugs extending alongside of the top bar, set-screws passing through said lugs and engaging the top bar to adjust their relative positions, and means for clamping the two together when adjusted.

657,803. GRATE FOR FURNACES OR STOVES. JOSIAH WEDGEWOOD, Brampton, Canada, assignor of one-half to the Polson Iron Works, Toronto, Canada. Filed May 18, 1899. Serial No. 717,344. (No model.)



Claim.—A grate comprising a frame and grate-bars provided with interlocking teeth, said bars being arranged in two series, one stationary and the other vertically movable, said movable bars being arranged alternately with the stationary bars, and means for operating the movable bars so that the alternate ones ascend while the remaining descend, substantially as described.

657,804. TIP FOR COMMUTATOR-SEGMENTS. ANTON R. WESTERDAHL, New York, N. Y., assignor to the General Electric Company, of New York. Filed May 31, 1900. Serial No. 18,518. (No model.)



Claim.—1. As an article of manufacture, a commutator-segment composed of insulating material, with a metal tip secured thereto, comprising a rectangular block with a pin formed on the under side and integral therewith, which pin is employed for clamping the tip in place.

2. As an article of manufacture, a commutator-segment made of insulating material, and provided with a tongue for securing it in place and a metal tip composed of a rectangular block having a downwardly-extending pin formed integral therewith, which pin passes through a hole located in line with the tongue and is riveted over to hold the tip in place.

3. As an article of manufacture, a commutator-segment composed of lignum-vitæ, and provided with a tongue and slot, a metal tip located in the slot, and a pin which is formed integral with the tip and passes through the segment, and is riveted over a washer countersunk on the under side of the segment.

4. As an article of manufacture, a commutator-segment comprising an insulating portion and a metal tip, the latter being made of a solid rectangular body of metal, G, having a single pin G', of circular cross-section formed integral therewith and located midway between the ends, which pin forms a rivet for securing the tip to the insulating portion.

657,805. CHURN. CHARLES E. YATES, near Mill Grove, Mo. Filed Jan. 17, 1900. Serial No. 1,748. (No model.)

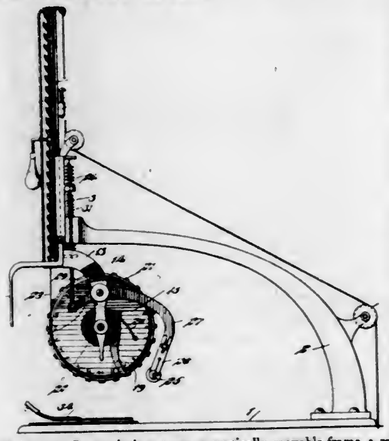


Claim.—1. In an operating mechanism for churns, the combination of the stationary guide, the cross-head mounted to move on said guide

and provided with projections adapted to be connected to a dasher-rod and with a loop extending transversely in relation to the guide, the pitman connected with the cross-head and extending through said loop, and crank mechanism connected with the pitman.

2. In an operating mechanism for churns, the combination of the stationary guide, the cross-head having two spaced slides mounted to move on said guide and provided with two projections adapted to be connected to a dasher-rod and with a loop extending transversely relatively to the guide, the pitman connected with the cross-head between the two slides and extending through the loop, and crank mechanism connected with the pitman.

657,806. **PRINTING-STAMP.** JOHN W. ADAMS, Pinebluff, N. C., assignor of one-half to Anthony P. Diehl, same place. Filed Apr. 20, 1900. Serial No. 13,603. (No model.)



Claim.—1. In a printing-stamp, a vertically-movable frame, a rack carried by said frame, an adjusting-rod adapted for engagement with either one of the teeth of the rack, a type-carrying cylinder movable with the frame, and a connection between the adjusting-rod and the cylinder whereby said cylinder is rotated upon a movement of the rod, substantially as specified.

2. A printing-stamp, comprising a vertically-movable frame, a rack carried by said frame, an adjusting-rod adapted for engagement with either one of the teeth of said rack, a type-carrier mounted to rotate in arms attached to the frame, a flexible connection between said carrier and the adjusting-rod, and a spring for rotating the carrier in one direction, substantially as specified.

3. A printing-stamp, comprising a movable frame, a rack on said frame, an adjusting-rod adapted for engagement with either one of the teeth of said rack, a type-carrying cylinder supported by the frame, a flexible connection between the adjusting-rod and said cylinder, and an inking-roller movable underneath the cylinder upon a movement of the carrying-frame, substantially as specified.

4. A printing-stamp, comprising a vertically-movable frame, an index-plate mounted on said frame, a rack-bar attached to the frame, an adjusting-rod adapted for engagement with either one of the teeth of said rack-bar, and a type-carrying cylinder carried by the frame and having flexible connection with the adjusting-bar, substantially as specified.

5. In a printing-stamp, a type-carrier or cylinder having an outwardly-opening slot, a supported bar adapted to engage in said slot, and a lever pivoted to the carrier and adapted to engage with said bar for holding the parts together, substantially as specified.

6. In a printing-stamp, a type-carrying cylinder mounted to rotate and having an outwardly-opening slot, a bar angular in cross-section adapted to engage in said slot, and hook-shaped levers pivoted to the ends of the cylinder and adapted to engage in notches formed in the bar, substantially as specified.

7. A printing-stamp, comprising a vertically-movable frame, rack-bars on said frame, an adjusting-rod adapted for engagement with said rack-bars, arms extended from the lower end of the movable frame, a type-carrier having bearings in said arms, and tapes connected at one end to the adjusting-bar and at the other end to the cylinder, substantially as specified.

8. A printing-stamp, comprising a rotary type-carrier, means for rotating the same, a slotted plate extended underneath the carrier, and stop-out plates movable over the slot of said plate, substantially as specified.

9. In a printing-stamp, a cylinder, lines of type arranged on said cylinder, a frame carrying the cylinder, a stationary index-plate on the frame having printed thereon matter corresponding to the lines of type on the cylinder, means for rotating the cylinder in one direction, and devices at the sides of the index-plate for engaging and holding said means.

657,807. **MOLD FOR CASTING WALL-PAPER-PRINTING ROLLERS.** EUGENE C. BAECK, Hastings, N. Y. Filed Apr. 16, 1900. Serial No. 13,079. (No model.)



Claim.—1. A mold having a frame, a number of needles mounted therein and arranged in parallel lines, the needles being formed with slots therein, and strips or the like held in the frame and passed through the slots, whereby the needles are mounted to have limited movement on such strips, for the purpose specified.

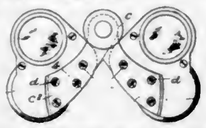
2. A mold, comprising an open frame, a plurality of needles arranged side by side in the frame, said needles being of approximately-equal lengths, and having their ends at each side of the frame normally lying in the same plane, the upper ends of the needles forming a smooth flat surface on which a design may be traced, and means for holding the needles to move independently on their longitudinal axes, substantially as described.

3. A mold, comprising an open frame, a plurality of needles, and means for independently and movably mounting the needles in the frame, said needles being approximately of the same length and having their ends at each side of the frame normally lying in the same plane, as and for the purpose set forth.

4. A mold, comprising an open frame, a plurality of needles, and means for independently and movably mounting the needles in the frame, said needles being approximately of the same length and having their ends, at each side of the frame, normally lying in the same plane, in combination with a body of soft material arranged below one end of the needles, as specified.

5. A mold, comprising an open frame, a plurality of needles having one end pointed and independently and movably mounted in the frame, said needles being approximately of the same length and having their ends at each side of the frame, normally lying in the same plane, in combination with a body of soft material arranged below the pointed ends of the needles, substantially as described.

657,808. **PRISMATIC BINOCULAR.** JOHN H. BARTON, London, England, assignor to the Ross, Limited, same place. Filed Feb. 20, 1900. Serial No. 5,917. (No model.)

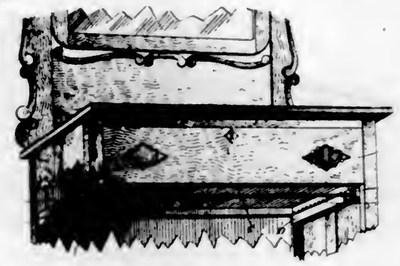


Claim.—A prismatic binocular having the body parts connected by arms affixed to the end plates and connected in pairs at each end so as to be capable of being turned as upon a hinge for adjustment of the distance apart of the eyepieces, one or more of the said arms being adjustably affixed to the end plate or plates as to allow of slight adjustment of the body parts for obtaining coincident images, substantially as hereinbefore described.

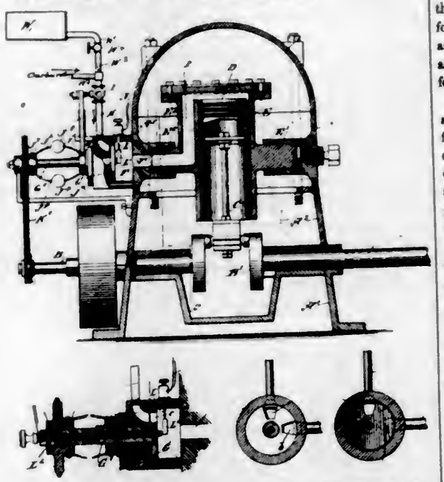
657,809. **DRAWER-EQUALIZER.** WILLIAM BEEBE, New York, N. Y., assignor to himself and Martha B. Mosher, same place. Filed Mar. 27, 1900. Serial No. 10,355. (No model.)

Claim.—The combination with an article of furniture having a drawer-opening, and provided in the inner faces of the walls of said opening with oppositely-arranged recesses forming bearings, and a drawer fitted to slide in the said opening and provided with racks on its bottom, one at each end, of a shaft below the drawer and provided at its ends with pinions meshing with the racks on the drawer, said shaft having at one end a fixed journal fitting in one of the said recesses or bearings, and provided at its other end, with a central and longitudinally-extending passage and a slot extending from the passage out through the side of the shaft, a journal fitted to slide in the passage of the shaft and fitting in the other recess or bearing, the said journal being provided with a lateral projecting pin extending out through the slot of the shaft and serving as a means for moving the journal inward, a spring in the passage and serving to force the journal outward, and a stop extending across the slot of

the shaft and with which the pin of the journal engages to limit the outward movement of the journal, substantially as herein shown and described.



657,810. **GAS-ENGINE.** WILLIAM E. CARY, Springfield, Vt. Filed July 8, 1899. Serial No. 723,162. (No model.)

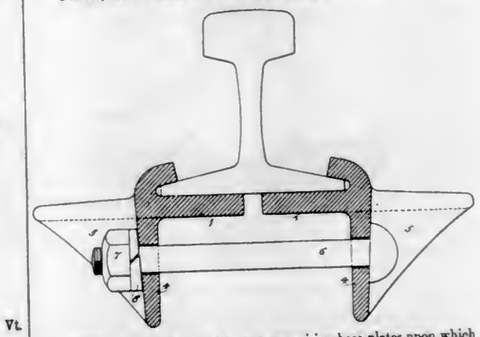


Claim.—1. In a gas-engine provided with a valve-chamber and a supply-pipe, a rotary valve for controlling the admission of the motive agent from the supply-pipe to the valve-chamber, a throttle-valve in the supply-pipe, a spring-pressed arm held by one end on the stem of the throttle-valve and having its other end free, means for adjusting said arm along the throttle-valve stem, a governor comprising two disks on the rotary valve-stem, one of said disks being fixed on the stem and the other mounted to slide on and turn with said stem, weight-carrying springs connecting said disks, and a cam on the slidable disk, said cam being normally out of engagement with the arm on the throttle-valve stem and engaging the free end of said arm to swing the same when the slidable disk moves toward the other disk, as set forth.

2. In a gas-engine provided with a valve-chamber and supply-pipe, a rotary valve for controlling the admission of the motive agent from the supply-pipe to the valve-chamber, a throttle-valve in the supply-pipe, a spring-pressed arm having one end on the stem of said throttle-valve, a governor on the stem of the rotary valve and having a slidable disk formed with a cam adapted to engage said arm to swing the same whereby to close the throttle-valve when the disk is slid, and means for holding said arm at different points on the stem of the throttle-valve whereby the disk will have to reach different points to engage with said arm, as and for the purpose set forth.

3. In a gas-engine, a casing having a valve-chamber and supply-pipe connected thereto, a hollow rotary valve-stem coupled with the engine-shaft and carrying a valve for controlling the admission and exhaust of the motive agent, a stationary electrode in the valve-chamber, a movable electrode having a shank inserted through the hollow valve-stem, a disk fixed on said shaft and a disk slidable thereon, ball-carrying spring-arms connecting said disks, a cam on the slidable disk, and a throttle-valve whose plug has a spring-pressed swinging arm secured thereto and adapted to be engaged by said cam, as set forth.

657,811. **RAIL-JOINT.** THOMAS C. CLARKE, New York, N. Y., assignor to the Bonzano Rail Joint Company, Camden, N. J. Filed Feb. 21, 1900. Serial No. 6,050. (No model.)



Claim.—1. A rail-joint structure comprising base-plates upon which the rails are vertically supported, each plate having horizontal portions for being secured to the ties, a lip for clamping the base-flanges of the rails, and a girder formed by bending downward the outer portion of the plate at and near the center thereof, whereby the joint can be made without forming bolt-holes in the webs of the rails, substantially as specified.

2. A rail-joint structure comprising base-plates upon which the rails are vertically supported, each of said plates having horizontal portions for being secured to the ties, a clamping-lip for engaging the opposite edges of the base-flanges of the rails, and a girder formed by bending downward the outer portion of the plate at and near the center thereof, and a transverse securing-bolt passing through said downwardly-bent girders whereby the joint can be made without forming bolt-holes in the webs of the rails, substantially as specified.

3. A rail-joint structure comprising base-plates serving as vertical supports for the ends of the rails, each of said plates having horizontal portions for being secured to the ties, and a clamping-lip for engaging with the base-flanges of the rails, in combination with a brace-plate on the outer side of the rail, and a transverse bolt passing through said brace-plate and through an opening formed by recesses in the ends of the rail-webs and serving to secure the brace-plate laterally to the end portions of the rails, whereby the joint can be made without forming bolt-holes in the webs of the rails, substantially as specified.

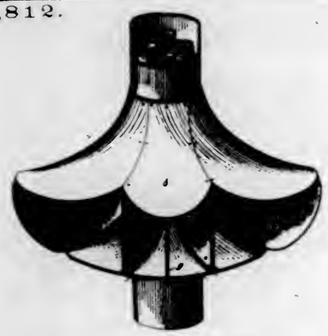
4. A rail-joint structure comprising base-plates serving as vertical supports for the ends of the rails, each of said plates having horizontal portions for being secured to the ties, a clamping-lip for engaging with the base-flange of the rails, and a girder formed by bending downward the outer portion of the plate at and near the center of the same, in combination with a brace-plate on the outer side of the rail, and a transverse bolt passing through said base-plate and through an opening formed by recesses in the ends of the rail-webs and serving to secure said brace-plate laterally to the end portions of the rails, whereby the joint can be made without forming bolt-holes in the webs of the rails, substantially as specified.

5. A rail-joint structure comprising base-plates serving as vertical supports for the ends of the rails, each of said plates having horizontal portions for being secured to the ties, a clamping-lip for engaging with the base-flanges of the rails, and a girder formed by bending downward the outer portion of the plate at and near the center of the same, in combination with a brace-plate on the outer side of the rail, a transverse bolt passing through said brace-plate and through an opening formed by recesses in the ends of the rail-webs and serving to secure said brace-plate laterally to the end portions of the rails, and a second transverse bolt passing through the girders of the base-plate and serving to confine the same laterally, whereby the joint can be made without forming bolt-holes in the webs of the rails, substantially as specified.

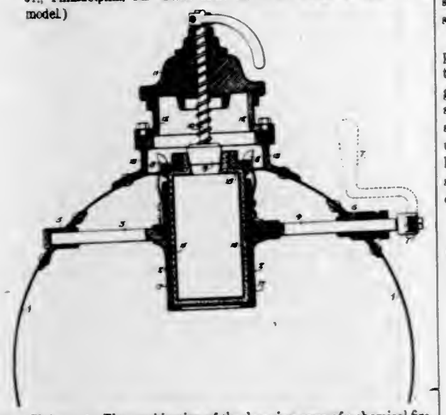
657,812. **DRAFT DEVICE.** JOHN COMMISKY, New York, N. Y. Filed Mar. 28, 1900. Serial No. 10,536. (No model.)

Claim.—The combination with a pipe or stack, of a series of hoods arranged close together and forming a complete circle around the stack, each hood consisting of a downwardly and outwardly curved bottom plate secured at the top to the stack, side plates and a top plate also curved downward and outward, a partition dividing each hood longitudinally into two compartments communicating at the top, the outer ends of the partitions being extended beyond the ends of the hoods, and draft-pipes in the stack and communicating with the interior of the hoods, substantially as specified.

657,812.



657,813. CHEMICAL FIRE-EXTINGUISHER. GEORGE W. CROUT, Jr., Philadelphia, Pa. Filed Mar. 10, 1900. Serial No. 8,149. (No model.)



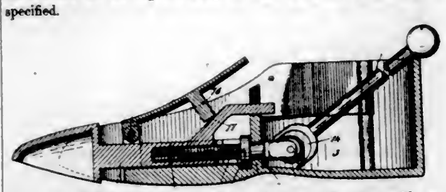
Claim.—1. The combination of the dumping-cage of a chemical fire-extinguisher having projecting spring-catches, with an acid vessel consisting of a bottle or jar of earthenware having a shouldered top and contracted neck with vertical outer sides and an internal lining of acid-proof glaze, and a metallic sheathing or armor for said earthenware jar comprising a casing inclosing the sides and bottom of the jar and a ring surrounding the vertical-sided neck and engaging with the upper shoulder of the jar and secured to the sides of the casing, said ring presenting a shoulder for engagement with said spring-catches and having a projecting threaded neck, and a ring adapted to engage with said threaded neck and to force or hold apart the spring-catches, whereby the vessel can be withdrawn from the holder, substantially as specified.

2. The combination of the dumping-cage of a chemical fire-extinguisher, having a series of projecting spring-catches, with the acid vessel having at the top an externally-threaded neck, and a shoulder projecting laterally beyond the same, and a ring adapted to be screwed upon said neck, said ring having a diameter as great as that of said shoulder, whereby it is adapted to force or hold apart the spring-catches whereby the acid vessel is normally secured to the dumping-cage of the extinguisher substantially as specified.

3. The combination of the dumping-cage of a chemical fire-extinguisher, having a series of projecting spring-catches, with the acid vessel having a threaded neck at the upper end and a shoulder projecting laterally beyond said neck, and a cap adapted to screw upon said neck and to close the mouth of the acid vessel, said cap having a portion of as great a diameter as said shoulder, whereby it is adapted to force or hold apart the spring-catches whereby the acid vessel is normally held in place in the dumping-cage of the extinguisher, substantially as specified.

657,814. SHOE-STRETCHER. CHARLES W. CROMER, New York, N. Y. Filed Apr. 27, 1900. Serial No. 14,567. (No model.)

Claim.—1. A shoe-stretcher, comprising a bottom plate, a toe-stretcher movable longitudinally with relation to the bottom plate, an in step-stretcher mounted to swing vertically, side-stretchers adapted to swing laterally, means for moving the toe-stretcher, and devices carried by the toe-stretcher for moving the instep and side stretchers, substantially as specified.

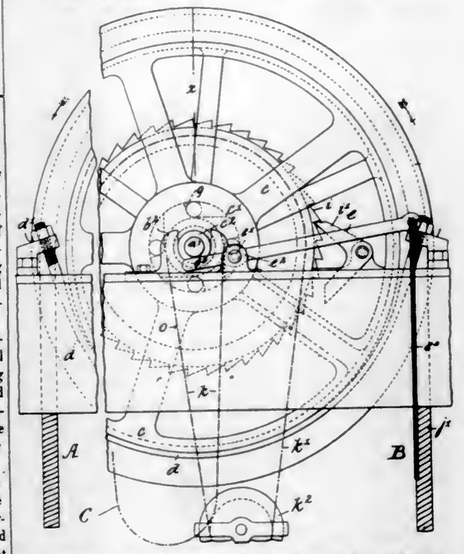


2. A shoe-stretcher, comprising a bottom plate, a movable toe-stretcher, a movable instep-stretcher, laterally-swinging side-stretchers, pintles on which the side-stretchers are removably mounted, and means for simultaneously moving the several stretching devices, substantially as specified.

3. A shoe-stretcher, comprising a bottom plate, a toe-stretcher having a tang movable lengthwise, guides on said bottom plate, a screw-rod engaging with said tang, an operating-rod having a universal-joint connection with the screw-rod, a vertically-swinging instep-stretcher, means carried by the said tang for moving said stretcher upward, laterally-swinging side-stretchers, and means carried by said tang for swinging the side-stretchers outward, substantially as specified.

4. A shoe-stretcher, comprising a bottom plate, having a counter portion at its heel end, a toe-stretcher block having a tang movable between guides on the forward portion of the bottom plate, a screw engaging in said tang, a bridge-piece on the bottom plate through which said screw passes, an operating-rod having connection with the screw, a swinging instep-stretcher plate having a downwardly-extended lug on its under side, an inclined arm carried by said tang for engaging with said lug, laterally-swinging side-stretching plates, cam-blocks on the inner sides of said plates, and arms carried by the tang for engaging with said cam-blocks, substantially as specified.

657,815. HOIST. WILLIAM T. EADES and EDMUND ALLDAY, Small Heath, near Birmingham, England. Filed May 3, 1900. Serial No. 15,394. (No model.)



Claim.—1. In a hoisting device, a shaft provided centrally with a helix, a hand-wheel mounted on the helix of the shaft, and a load-pulley loosely mounted upon said shaft at each side of said wheel and adapted to be operated by frictional engagement with said wheel.

2. In a hoisting device, a shaft provided centrally with a helix, a hand-wheel mounted on the helix of the shaft, a pair of load-pulleys suitably arranged upon said shaft and adapted to be operated by the frictional engagement therewith of the said wheel, a braking means suitably connected to one of said pulleys, a ratchet-wheel carried by the other of said pulleys, and a pawl adapted to engage said ratchet-wheel.

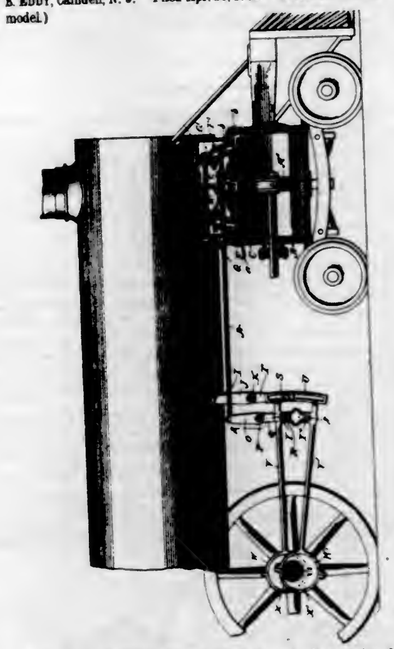
3. In a hoisting device, a pair of load-pulleys of different diameters suitably mounted upon a shaft, a hand-wheel adapted to frictionally engage said pulleys for operating the same, an endless cable for operating said hand-wheel in either direction, a brake-wheel resting upon a braking expedient, a friction-clutch adapted to be brought into engagement with one of said pulleys by means of said brake-wheel, means for releasing said brake-wheel to permit of the running down of said pulley, a pawl-and-ratchet means connected to the other of said pulleys to prevent the running down thereof, and an endless chain operating over the said pulleys, substantially as described.

4. In a hoisting device, a pair of load-pulleys of different diameters suitably mounted upon a shaft, a hand-wheel adapted to frictionally engage said pulleys for operating the same, a brake-wheel resting upon a braking expedient, a friction-clutch adapted to be brought into engagement with one of said pulleys by means of said brake-wheel, means for releasing the said brake-wheel to permit the running down of said pulley which is adapted to be connected thereto, and a pawl-and-ratchet means connected to the other of said pulleys and adapted to prevent the running down of the same.

5. In a hoisting device, a shaft journaled at each end in open-topped bearings, a load-pulley mounted thereon, operating means therefor, a brake-wheel resting upon a braking expedient, a clutch adapted to connect said brake-wheel and said pulley and a lever adapted to engage and elevate one end of said shaft for releasing said brake-wheel from the braking expedient.

6. In a hoisting device, a shaft provided centrally with a helix, a hand-wheel mounted upon the helix, a load-pulley carried by said shaft at each side of the wheel and adapted to be operated by frictional engagement with said wheel, a pawl-and-ratchet means for preventing the running down of said pulleys, a braking means for preventing the running down of the other of said pulleys, and a lever adaptad to engage said shaft to release said braking means.

657,816. VALVE-GEAR FOR LOCOMOTIVE-ENGINES. GEORGE B. EDDY, Camden, N. J. Filed Apr. 28, 1900. Serial No. 14,714. (No model.)



Claim.—1. An engine having admission and exhaust valves having independent motion, the stroke of the exhaust-valve being fixed and that of the admission-valve variable, an eccentric mechanism, a link-motion actuated by said eccentric mechanism and controlling said admission-valve, and mechanism for operating the exhaust-valve from the eccentric mechanism to impart a full stroke to the exhaust-valve irrespective of the position of the said eccentric mechanism.

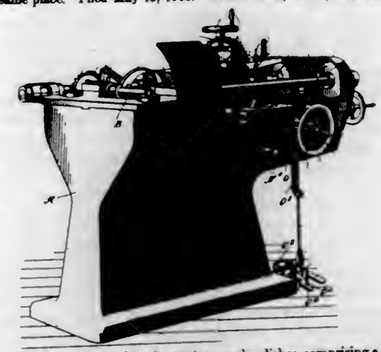
2. In an engine, the combination with admission and exhaust valves, eccentric-rods carrying a link, and means for operating the admission-valves from the said link, of an exhaust-valve-operating mechanism, and means for operating the said mechanism from the eccentric-rods to impart a full stroke to the exhaust-valve irrespective of the position of said link, substantially as described.

3. In an engine, the combination with admission and exhaust valves, eccentrics, eccentric-rods carrying a link, and means for operating the admission-valves from the said link, of a rock-shaft provided with oppositely-projecting arms, with one of which the eccentric-rods are adapted to be alternately engaged, the other arm of the said shaft being connected with the exhaust-valve rod, substantially as described.

4. In combination with valves of the character described, a valve mechanism consisting of two eccentrics, eccentric-rods connected thereto by straps, a link to which said eccentric-rods are attached, a block which said link embraces, an arm carrying the block, a rock-shaft to which said arm is secured, another arm carried by said rock-shaft, whereby motion is transmitted to the admission-valves, a second rock-shaft, an arm projecting downward therefrom, pins projecting from said arm, hooks carried by the eccentric-rods for engaging said pins, and means for transmitting the motion of the hooks to the exhaust-valve, as specified.

5. A valve mechanism consisting of two eccentrics, eccentric-rods connected thereto by straps, a link to which said rods are pivoted, said link operating upon a block, for transmitting a variable motion to the admission-valves, hooks carried by the eccentric-rods, and means for transmitting a given motion from either eccentric from the hooks to the exhaust-valve, substantially as described.

657,817. MACHINE FOR MAKING WOODEN DISHES. GEORGE A. ENSIGN, Defiance, Ohio, assignor to The Defiance Machine Works, same place. Filed May 15, 1900. Serial No. 16,762. (No model.)



Claim.—1. A machine for cutting wooden dishes, comprising a curved revolving dish-knife, and a plurality of facing-knives for trimming the face of a wood block after the revolving dish-knife has cut a dish from the block, said facing-knives rotating in unison and being located one in advance of the other, substantially as shown and described.

2. A machine for cutting wooden dishes, comprising a curved revolving dish-knife, and a plurality of facing-knives for trimming the face of the wood block after the revolving dish-knife has cut a dish from the block, the said facing-knives rotating in unison, one knife being in advance of the other and each reaching approximately over one-half of the face of the block, substantially as shown and described.

3. A machine for cutting wooden dishes, comprising a curved revolving dish-knife, and a plurality of facing-knives mounted to rotate in unison, the facing-knives being located upon different sides of the dish-knife and extending about over one-half of the face of the block.

4. A machine for cutting wooden dishes, having a block-holding carriage, clamping-jaws on the said carriage for clamping the rear end of a wooden block, said jaws being adjustable in a vertical plane and a support for the forward end of the block, said support being adjustable in a plane parallel with the plane of adjustment of said jaws, substantially as shown and described.

5. In a machine for cutting wooden dishes, the combination with a revoluble curved dish-knife for cutting dishes from the forward face of a block, of a carriage for feeding the block forward and having clamping-jaws for holding the block, said jaws being adjustable at right angles to the knife-shaft and a support for the forward end of the block, said support being adjustable in a plane parallel with the plane of adjustment of the clamping-jaws the said support and jaws permitting adjustment of the block, to bring the latter in proper position relatively to said knife, as set forth.

6. A machine for cutting wooden dishes, provided with a safety friction device for the carriage lead-screw, consisting of an intermittently-rotating gear-wheel, friction-disks on opposite faces of said gear-wheel, a

collar secured on the said lead-screw and engaged by the first-named friction-disk, a second collar having recesses, and springs set in the second collar and pressing the second friction-disk, substantially as shown and described.

7. A machine for cutting wooden dishes, provided with a safety friction device for the carriage lead-screw, consisting of an intermittently-rotating gear-wheel, friction-disks on opposite faces of said gear-wheel, a collar secured on the said lead-screw and engaged by the first-named friction-disk, a second collar having recesses, springs set in the second collar and pressing the second friction-disk, and means for adjusting the tension of the said springs, as set forth.

8. A machine for cutting wooden dishes, having an intermittent feeding device for the block-holding carriage, consisting of a revoluble wheel, a friction-roller held adjustably on the face of the said wheel, a lead-screw, a pawl-and-ratchet mechanism for the lead-screw, a friction device interposed between the ratchet and the lead-screw and a spring-pressed arm adapted to be engaged by the said friction-roller and connected with the said pawl-and-ratchet mechanism, substantially as shown and described.

9. A machine for cutting wooden dishes, having an intermittent feeding device for the block-holding carriage, consisting of a revoluble wheel, a friction-roller held adjustably on the face of the said wheel, a lead-screw, a pawl-and-ratchet mechanism for the lead-screw, a spring-pressed arm adapted to be engaged by the said friction-roller and connected with the said pawl-and-ratchet mechanism, and means for limiting the return movement of the said spring-pressed arm, as set forth.

10. A machine for cutting wooden dishes, having a shaft, collars surrounding the shaft and having portions spaced therefrom, and a curved knife provided with outwardly-extending flanges fitting between the collars and the shaft.

11. A machine for cutting wooden dishes, having a carriage for holding a wooden block, a lead-screw, a sectional nut for engaging the lead-screw and having its members pivoted on the carriage and formed with extension-arms, and a hand-lever fulcrumed on the carriage, and having a wedge-shaped block for engagement with the said arms, to close the nut members upon the lead-screw, substantially as shown and described.

12. A machine for cutting wooden dishes, having a carriage for holding a wooden block, a lead-screw, a sectional nut for engaging the lead-screw and having its members pivoted on the carriage and formed with extension-arms, a hand-lever fulcrumed on the carriage, and having a wedge-shaped block for engagement with the said arms, to close the nut members upon the lead-screw, and a locking device for the said hand-lever, and carried by the said carriage, substantially as shown and described.

13. A machine for cutting wooden dishes, having a carriage for holding a wooden block, a lead-screw, a sectional nut for engaging the lead-screw and having its members pivoted on the carriage and formed with extension-arms, a hand-lever fulcrumed on the carriage and having a wedge-shaped block for engagement with the said arms, to close the nut members upon the lead-screw, a locking device for the said hand-lever and carried by the said carriage, and means for tripping the said locking device to unlock the said lever and allow the nut members to open, as set forth.

14. A machine for cutting wooden dishes, having a carriage for holding a wooden block, a lead-screw, a sectional nut for engaging the lead-screw and having its members pivoted on the carriage and formed with extension-arms, a hand-lever fulcrumed on the carriage and having a wedge-shaped block for engagement with the said arms, to close the nut members upon the lead-screw, and a spring connecting the said arms with each other, to open the nut members when the said wedge-shaped block moves out of engagement with the said arms, substantially as shown and described.

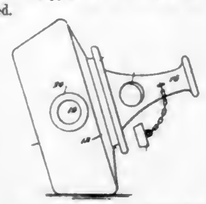
657,818. MANUFACTURE OF CELLULOSE. MAX FREMERY and JOHANN URBAN, Oberbruch, Germany. Filed June 20, 1899. Serial No. 721,261. (No specimens.)

Claim.—As an improvement in the production of cellulose products from cellulose material, such as cellulose, hydrate of cellulose or hydrocellulose, subjecting the material to an energetic preliminary treatment with reducing or oxidizing bleaching media and then subjecting it to the action of an ammoniacal solution of copper, substantially as described.

657,819. BED-PAN. HARRIET D. GOODRICH, Augusta, Ga. Filed Mar. 19, 1898. Renewed July 26, 1900. Serial No. 24,962. (No model.)

Claim.—1. A bed-pan having its side surfaces flat and beveled whereby the said pan is adapted to rest upon either of the said side surfaces when in use, the pan being further provided with a retaining-ing near one end, adapted to be received between the legs of the patient, as and for the purpose set forth.

2. A bed-pan having its sides flat and beveled, being adapted to rest upon either of the said sides when in use and provided with a retaining-lug near one of its ends, shaped to be held between the legs of a patient, the upper opening in the pan being surrounded by an outwardly-curved rim, whereby the said rim will serve as a handhold in addition to its function as a smooth support for the body of the patient, as and for the purpose specified.



3. A bed-pan provided with flat and beveled sides, being adapted to rest upon one of the said sides when in use, and further provided with a retaining-lug near one of its ends, shaped to enter between the legs of the patient and to be held thereby, the said retaining-lug having an opening which is in communication with the main chamber of the vessel, as and for the purpose set forth.

4. A bed-pan provided with flat and beveled sides, being adapted to rest upon one of the said sides when in use, and further provided with a retaining-lug near one of its ends, shaped to enter between the legs of the patient and to be held thereby, the said retaining-lug having an opening which is in communication with the main chamber of the vessel, the opening in the upper face of the body being surrounded by an outwardly-curved rim, as and for the purpose specified.

5. A bed-pan the body of which is provided with a flat rim and flat sides, the sides being flat longitudinally and transversely and inclined from the bottom outwardly in opposite directions, the top of the body of the vessel being inclined from the sides upwardly in direction of the center of the vessel, the said upper surface of the vessel being provided with a main opening surrounded by an outwardly-curved rim, and a retaining-lug located near one end of the vessel, shaped to be received between the legs of the patient, the said retaining-lug being provided with an opening which is in communication with the main chamber of the vessel, and means for closing the said opening, as and for the purpose specified.

657,820. LENS. ROBERT D. GRAY, New York, N. Y. Filed July 15, 1899. Serial No. 723,880. (No model.)

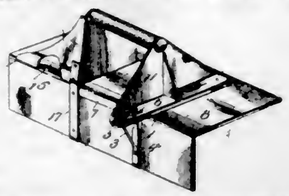


Claim.—1. In an element for an optical objective, the combination of a plano-convex positive lens with a double-concave negative lens, said positive lens having a higher refractive index than the said negative lens.

2. In an element for an optical objective, the combination of a plano-convex positive lens with a double-concave negative lens, the positive lens consisting of two sections, one of the sections of said positive lens being of higher refractive index than its other section and than the negative lens.

3. An element for an optical objective, comprising a plano-convex positive lens and a double-concave negative lens, the lenses being spaced apart to leave a plano-convex air-space between the lenses, the positive lens having a higher refractive index than the negative lens.

657,821. CHAFING-ROLLER FOR WAGONS. ROBERT E. HALL, Mankato, Kans. Filed Mar. 27, 1900. Serial No. 10,383. (No model.)

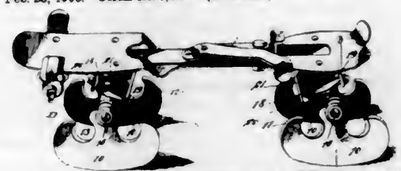


Claim.—1. The herein-described means for preventing injurious contact of a vehicle-wheel with the body when making short turns, the same comprising an upper fixed rub-iron, companion brackets or hangers pendent from the bed, one of the brackets having a vertical lip extension to overlap the side of the wagon-bed, and a roller supported by the lower ends of the brackets and located inside of a vertical plane touching the outer face of the side of the bed to which the means are applied so that the wheel will touch the roller and the aforementioned rub-iron at the same time, substantially as set forth.

2. The herein-described means for preventing injurious contact of a vehicle-wheel with the body when making a short turn, the same comprising a hanger consisting of a plate, a flange at the upper edge of the plate, and a centrally-disposed rib between the flange and plate, said hanger being disposed to project a short distance from the adjacent side of the bed to which it is attached, a second hanger comprising a vertical plate, a brace at the outer edge of said plate and having a lip extension at its top edge to overlap the side of the bed, and flanges at the upper ends of the plate and brace, and a roller supported by the lower ends of the hangers, the last-mentioned hanger being disposed with the brace about in the plane of the side of the bed, substantially as set forth.

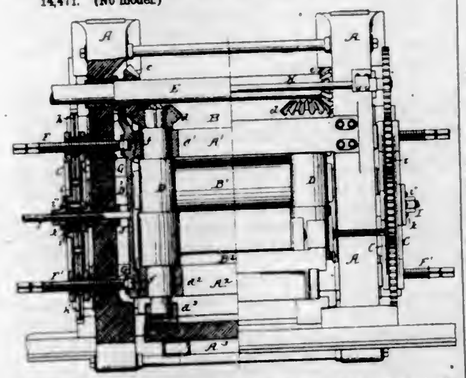
3. In combination with a wagon-body provided with a bolster, a hanger secured to the bottom side of the bolster and comprising a vertical plate, a horizontal flange and a centrally-disposed brace, a stake and brace therefor secured to the side of the wagon-bed and having their lower ends serving to connect the outer end portion of the flange of the hanger to the projecting portion of the bolster, a companion hanger secured to the bed and comprising a vertical plate, a brace at the outer edge of the plate and about in the plane of the side of the wagon-bed and having its upper edge portion overlapping said side, and flanges at the upper ends of said plate and brace, an iron secured to the side of the wagon-body and having its lower end portion made fast to the brace of the last-mentioned hanger, and a roller supported between the lower ends of the companion hangers, substantially as set forth.

657,822. SKATE. HUGO HANDWERK, New York, N. Y. Filed Feb. 23, 1900. Serial No. 6,292. (No model.)



Claim.—In a skate, the combination with a body-plate provided with spaced brackets depending from its lower face, the inner bracket being the longer and each provided with a vertically-elongated opening, of runners provided with polygonal openings, a tubular supporting-bar having a threaded bore and provided with polygonal ends fitting in the openings of the runners, screws screwing into the bore of the supporting-bar, a plate secured to the supporting-bar at right angles thereto, said plate inclining downwardly and inwardly and provided with pins at its ends fitting loosely in the openings of the brackets, and a cushion between the inclined plate and body-plate, substantially as described.

657,823. ADJUSTING MECHANISM FOR UNIVERSAL MILLS. CHARLES L. HUSTON, Coatesville, Pa. Filed Apr. 26, 1900. Serial No. 14,471. (No model.)



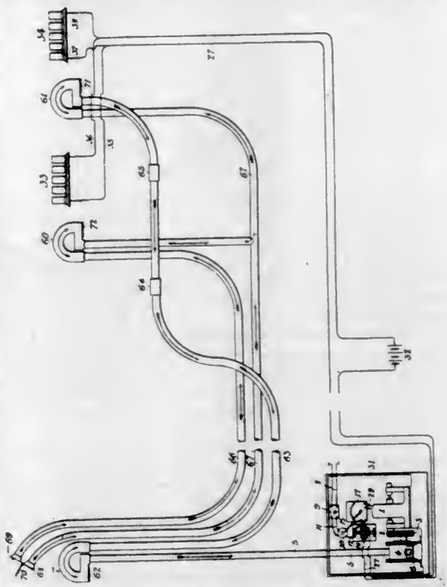
Claim.—1. The combination in a universal mill, of the vertical rolls, a supporting-frame therefor, adjusting-screws attached to said supporting-frame, a gear-wheel keyed to each screw, an intermediate gear-wheel and a screw attached to the frame, the thread of said screw meshing with a screw-thread in said intermediate gear-wheel, the screw being moved laterally thereby without being rotated, substantially as described.

2. The combination in a universal mill, of the vertical rolls, supporting-frame therefor, adjusting-screws extending from the frame, a gear-wheel on each screw, an intermediate gear-wheel, a screw projecting from the frame and extending through a bushing on which said gear-wheel operates, and a nut on the screw connected to the intermediate gear-wheel, substantially as described.

3. The combination in a universal mill, of the vertical roll, bearings therefor, a frame carrying the bearings, a housing, nuts therein, screws meshing with the nuts, gear-wheels on the screws, an intermediate gear-wheel, a hollow stud projecting from the housing and carrying the intermediate gear-wheel, a screw attached to the frame passing through the hollow stud, a nut on the screw, said nut being detachably secured to the hub of the intermediate gear-wheel, substantially as described.

4. The combination of the housings of a universal mill, vertical rolls, bearings therefor, a frame carrying the bearings, housings, screw-threaded bushings therein, a screw passing through each bushing and attached to the frame, a gear-wheel splined to each screw so as to turn the screw in its bushing, a hollow stud projecting from the housing midway between the two screws, an intermediate gear-wheel carried by the hollow stud, frames on each side of the train of gears, a screw passing through the hollow stud and attached to the supporting-frame of the vertical rolls, said screw being right-handed and movable laterally through said hollow bushing, a flanged nut on the said screw, and bolts securing the nut to the hub of the intermediate gear-wheel, substantially as described.

657,824. CONVEYING APPARATUS. ROBERT T. JENNEY, London, England. Filed June 25, 1900. Serial No. 21,536. (No model.)



Claim.—1. In a conveying apparatus, the combination with a motor forming the operating means of same, of means controlled by the carriers for stopping the motor when such carriers are not in use.

2. In a conveying apparatus, and in combination, an electric motor, holding devices for the carriers of the apparatus, contacts in such holding devices and means whereby the carriers when placed in such holders will break the circuit so that the motor will not operate.

3. In a conveying apparatus, and in combination, an electric motor, a holder for each carrier of the apparatus, a contact-plate in each holder, which when the carrier is placed in the holder are separated, a circuit in which such contacts are situated, and means in such circuit for controlling the motor-circuit so that it is opened or closed as the carriers are in or out of the holders.

4. In a conveying apparatus, the combination with a blower, a motor for driving same, a system of pneumatic carrier-tubes, holders for the carriers of the system, contacts in such holders, a circuit in which such contacts are situated, and means in such circuit controlled by the making

or breaking of same for starting or stopping the motor according as the carriers are in or out of their holders.

5. In a conveying apparatus, and in combination, an electric motor, a holder for the carriers of the apparatus, contact-plates in such holder which when a carrier is placed in the holder are separated, a battery-circuit in which such contacts are situated, a magnetic switch in such circuit, and a starting device in the motor-circuit operated by such switch so that when the battery-circuit is broken by the carriers the magnetic switch breaks the motor-circuit through the starting device.

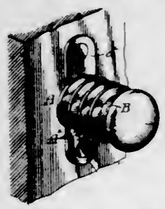
6. In a conveying apparatus, the combination with a battery-circuit, of a contact making and breaking device in such circuit, a magnetic switch also in the circuit, a motor-circuit in which a part of the magnetic switch is situated, and a mechanical rheostat in such motor-circuit.

7. In a conveying apparatus, a carrier-holder, a movable piece forming part of same adapted to receive and to move by the weight of the carrier, a battery-circuit, and a contact in same adapted to be controlled by the weight of the carrier on the movable piece for the purpose described.

8. In a conveying apparatus, a carrier-holder, a movable plate forming a seat for the carrier, a spring for supporting such plate, a pin carried by said plate, a contact carried by the pin, a contact carried by the holder, and a battery-circuit in which the contacts are placed and which is interrupted by the separation of the contacts for the purpose described.

9. In a conveying apparatus, a carrier-holder, a base 41, a projection 43 in the holder, a plate 45, a pin 44 passing through both, a spring intermediate of the plate and projection, a head 48 for the pin, a contact 50 carried by the other end of same, and a contact 53 carried by the base for the purpose described.

657,825. CORD-RETAINER. SAMUEL KENYON, Doncaster, England. Filed Apr. 3, 1900. Serial No. 11,345. (No model.)



Claim.—1. The combination in a cord-retainer, of a post, a flexible strip coiled around the post, bearing thereon throughout its length and secured so that it is prevented from turning, said post extending through the coil and forming the bottom of the groove for retaining the cord, substantially as described.

2. The combination in a cord-retainer, of a post, forming the support for the cord, a spring-strip coiled around the post, said strip being secured at one end and free at the opposite end, so as to yield when a cord is wrapped around the post between the coils of the strip, said post having the shape of the space inclosed by the coiled strip and filling said space, substantially as described.

3. The combination of a post, a flat strip of metal coiled on its edge around the post and secured at one end, substantially as described.

4. The combination of a post, a flat strip of metal coiled around the post and said strip being coiled on its edge, the coils being inclined from a perpendicular to the cylindrical surface of the post and secured at one end, substantially as described.

5. The combination of a base-plate having a narrow extension, and a post secured to the base-plate, the said extension being coiled around the post, substantially as described.

6. The combination of a base-plate, a headed post secured to the base-plate, projections on each side of the base-plate by which it is secured to a suitable fastening, and a narrow flat extension on the base-plate coiled around the post between the base-plate and the head, substantially as described.

657,826. ROTARY ENGINE. GEORGE E. LEDVINA, New York, N. Y., assignor of one-half to Julius C. Müller, same place, Emanuel R. Ledvina, Princeton, Ind., and Henry Fischer, Mount Vernon, N. Y. Filed Oct. 25, 1899. Serial No. 734,751. (No model.)

Claim.—1. A multi-expansion rotary engine having steam-chests provided with perforations circumferentially in conformity with the feed and exhaust ports of the revolving cut-offs, the steam-chests being formed of two disks to each steam-chest, the disks of each steam-chest being pressed against the ends of the revolving cut-offs, piston-heads and the spring ring or sleeve surrounding the shaft forming a packing by the pressure of the fluid force which passes through the same.

2. A multi-expansion rotary engine having the combination of a cylinder, an eccentrically-inserted shaft, a hollow revolving cut-off inserted in the cylinder to revolve in the same by the assistance of the piston-head, a piston-head effecting the connection between the shaft and the cut-off, and a packing ring or sleeve encircling the shaft and effecting a steam-tight connection between the shaft and the cut-off at the points of contact thereof, and also forming steam-tight connection between the shaft and the boxes of the steam-chests, the edges of the ends of the sleeve sliding against the faces of the steam-chests.



3. A multi-expansion motor having the combination of a cylinder having pockets formed in its bore, a cut-off fitted in the cylinder, and a jacket fastened or shrunk onto the cut-off and bearing against the projecting ribs of the cylinder-bore, the pockets of the cylinder being juxtaposed to the jackets and serving to receive the leakage of the motive fluid establishing a contrapressure from the exterior to the one interior of the same, and thereby assisting the tensile strength of the cut-off.

4. A rotary engine, having hollow cylindrical rotating cut-offs formed with annular flanges, each having a port-opening within the space between the flanges and the jacket, shrunk on the exterior of the flanges to inclose the space between the flanges, thus forming an inclosed passage for the fluid, the passage extending circumferentially around the cut-off, each cut-off being provided with two openings cut adjacently into the flanges, one opposite the other, the one separated from the other by longitudinally-running flanges, one serving as feed and the other oppositely as the outlet-opening for the fluid passing into and out of the expansion-chamber.

5. A rotary engine, having hollow cylindrical cut-offs with feed and exhaust ports formed therein adjacently one to the other, and in some parts of the several expansions the feed and exhaust ports are directly opposite the other, the annular ribs or flanges being flanked by longitudinal flanges, a jacket fastened onto the exterior of the cut-off to inclose the space between the annular and cross flanges, thus forming separate ducts for the feed and exhaust extending circumferentially around the cut-off, both the end annular flanges having an orifice forming respectively the initial feed-port, and the final exhaust-port of the motive fluid passes through the perforations of the cut-off jacket.

6. The combination of a revoluble engine-shaft, a stationary cylinder through which the shaft is eccentrically passed, a plurality of multiple-expansion cut-offs revolubly fitted within the cylinder and encircling the shaft, steam-chests interposed between the cut-offs and held stationarily within the cylinder, the cut-offs having feed and exhaust ports, and the steam-chests having ports registering therewith, permitting the motive fluid to pass successively from one cut-off to the other, and piston-heads pivotally connected with the respective cut-offs and having radially-sliding connection with the shaft at different points on the circumference thereof, the side edges of the piston-heads sliding against the ends of the steam-chests.

7. The combination of a cylinder, an eccentrically-disposed shaft revolubly mounted therein, a cut-off turning within the cylinder around the shaft, the cut-off having feed and exhaust ports, and a piston-head sliding radially in the shaft and having pivotal connection with the cut-off at a point between the feed and exhaust ports thereof.

8. The combination of a cylinder having pockets formed in its port, a cut-off fitted therein, and a jacket fastened on the cut-off and bearing against the cylinder, the pockets in the cylinder being juxtaposed to the pockets and serving to receive the leakage of the motive fluid, establishing against the jacket a pressure contrary to that within the same.

9. The combination of a cylindrical cut-off formed with annular flanges and a port communicating with the space between the flanges, and a jacket fastened exteriorly on the cut-off to inclose the space between the flanges, thus forming a steam-passage extending circumferentially around the cut-off, one of the flanges having orifices for the final outlet of the steam from the piston.

10. In a rotary engine, the combination of a cylinder, an engine-shaft extended continuously throughout the cylinder and mounted to turn therein and disposed eccentrically thereto, the shaft being formed with a transverse passage or housing therein, a piston-head fitted to slide in the passage or housing and radially of the shaft, and a rotating cut-off fitted to turn within the cylinder and having connection with the outer end of the piston-head.

11. In a multiple-expansion rotary engine, the combination of a cylinder, a rotating engine-shaft extended continuously through the cylinder and mounted eccentrically therein, the shaft being formed with a plurality of transverse passages or housings therein, such passages being out of radial alinement with each other, piston-heads fitted to slide respectively in the passages or housings, whereby the movement of the pistons is transmitted uniformly to the shaft, causing it to run true in its bearings, a rotating cut-off encircling each piston-head and connected therewith, and means fitted between the cut-offs to transmit the motive fluid successively from one to the other.

12. In a rotary engine, the combination of a cylinder, an engine-shaft mounted to turn therein and disposed eccentrically thereto, a piston-head carried by the shaft and sliding radially thereof within the cylinder, and a revolving cut-off shell encircling the shaft and piston-head and pivotally connected with the outer portion of the latter, the cut-off turning with the piston-head and shaft and serving to control the application of steam to the piston-head.

13. In a rotary engine, the combination of a cylinder, a rotating shaft extended eccentrically therethrough, a piston-head carried by the shaft and sliding radially thereof, and a rotating cut-off fitted to turn in the cylinder and having pivotal connection with the outer portion of the piston-head, the cut-off having feed and exhaust ports situate on opposite sides of the piston-head and having a circumferential steam-passage formed therein, such passage being in communication with the exhaust-port of the cut-off and extending around into close proximity with the feed-port, the cut-off having an orifice at the discharge end of the said steam-passage therein, for permitting the final passage of the steam from the cut-offs.

14. A multiple-expansion rotary engine, comprising a cylinder, an engine-shaft mounted to turn therein and disposed eccentrically thereto, a plurality of piston-heads mounted to slide radially on the shaft within the cylinder, hollow revolving cut-offs fitted in the cylinder and encircling the shaft and respectively having pivotal connection with the outer portions of the piston-heads, the cut-offs being formed with steam-passages serving to control the application of the steam to the pistons, and steam-chests sandwiched between the cut-offs and engaged with the cylinder and shaft, the steam-chests serving to transmit the steam successively from one cut-off to the other.

15. The combination of a cylinder, an eccentrically-disposed shaft mounted to turn therein, a piston-head sliding radially on the shaft within the cylinder, and a revolving cut-off fitted in the cylinder and encircling the shaft and piston-head and pivotally connected with the outer portion of the latter, the cut-off comprising a cylindrical drum with peripheral flanges, and a jacket fastened on the flanges to form a circumferential steam-passage within the cut-off, the cut-off having feed and exhaust ports at opposite sides of the piston-head, and the exhaust-port being in communication with the said circumferential steam-passage of the cut-off.

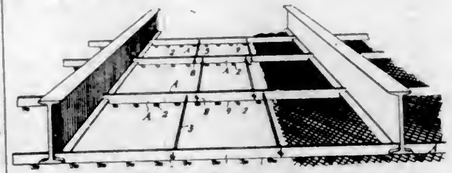
16. The combination of a cylinder, a revolving shaft mounted eccentrically therein, a piston-head mounted to slide radially in the shaft, and a cut-off mounted to turn in the cylinder and encircling the shaft and piston-head, with which latter the cut-off has connection, the said cut-off having feed and exhaust ports and having a circumferential passage therein in communication with the exhaust-port, such passage serving to lead the motive fluid from the cut-off.

17. A rotary engine, having a cylinder, a piston, and a rotating cut-off serving to control the application of the motive fluid to the piston, the cut-off having feed and exhaust ports and having a circumferential steam-passage therein in communication with the exhaust-port, and serving to conduct the motive fluid from the cut-off.

18. A rotary engine, comprising a cylinder, a shaft mounted to turn eccentrically therein, a piston-head mounted to slide in the shaft, a rotating cut-off fitted in the cylinder and capable of endwise movement therein, and a steam-chest also fitted in the cylinder and snugly on the shaft, the steam-chest bearing against the rotating cut-off and being also capable of endwise movement.

19. The combination of a cylinder, a shaft mounted to turn eccentrically therein, piston-heads carried by the shaft to slide radially thereof, rotating cut-offs fitted in the cylinder and connected with the respective piston-heads, steam-chests fitted in the cylinder between the cut-offs, the steam-chests and cut-offs being capable of endwise movement in the cylinder, and movable cylinder-heads in the cylinder arranged to have steam-pressure exerted thereon, whereby to press together the steam-chests and cut-offs.

657,827. METAL-LATH ATTACHMENT AND SUPPORT. WILLIAM MCCALL, San Francisco, Cal. Filed May 2, 1900. Serial No. 15,206. (No model.)



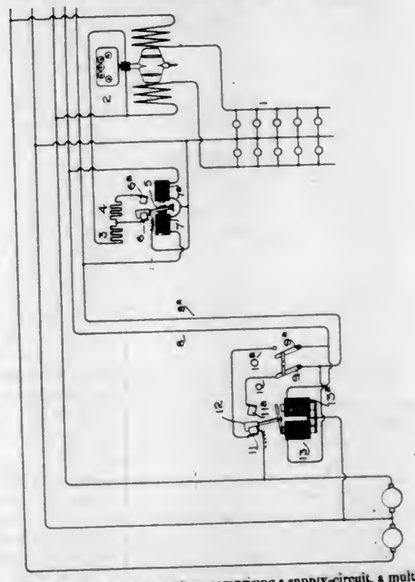
Claim.—1. The combination with parallel strips having slots, of transverse strips having their ends passed through said slots and transversely slitted to form tongues adapted to be bent to lock the transverse strip to the parallel strips.

2. A support for metallic lathing consisting of metallic plates, means for securing said plates to the wall, partition or ceiling to be covered, transverse connections having ends passed through the plates and locked thereto by twisting or bending, and tongues formed by slits made in the part to which the lath is to be attached, said tongues having the base connected with the support, and the point projecting outwardly therefrom.

3. The combination with a supporting-base of plates or strips of sheet metal having slits cut upon the sides to form tongues with one end remaining attached to the strip, said strips extending over the lower flanges of the I-beams, and having one or both edges turned at right angles with the vertical depth of the strips, and transverse connections having ends passed through the strips and locked thereto.

4. Supports for metallic lathing consisting of parallel strips of metal having slits cut to form projecting tongues upon the edges, transverse strips or bars having the ends formed to pass through corresponding slots in the adjacent parallel strips and adapted to be locked thereto by twisting or bending.

657,828. SYSTEM OF MULTIPLE-RATE METERING. EUSTACE OXLEY, Lynn, Mass., assignor to the General Electric Company, of New York. Filed July 31, 1899. Serial No. 725,603. (No model.)



Claim.—1. A meter system, comprising a supply-circuit, a multirate metering device, means for fixing its rate of registration from a distant point of control, and a control-circuit for automatically restoring when disturbed the rate for which it is set.

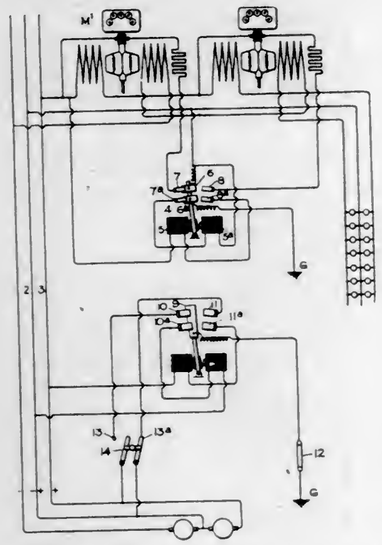
2. A metering system, comprising a supply-circuit, current-consuming devices, and a multirate metering device at the consumer's station, a control-circuit extending to said station from a distant point, electromagnetic devices operated by said control-circuit for changing the rate of meter registration, and an electromagnetic device at the control-station responsive to a change of the meter connections and adapted to restore them if changed independently of the control-station.

3. An electric metering system, comprising a supply-circuit, current-consuming devices, a multirate metering device, a control-circuit for changing the rate of meter registration, and a magnetic device in said circuit responsive to an irregular change of the meter connections, for connecting the control-circuit to restore such connections.

4. An electric metering system, comprising a supply-circuit, current-consuming devices, multirate metering apparatus, a control-circuit therefor extending to a control-station, a meter-switch operated thereby, and a circuit-changer at the control-station, responsive to a change of said switch to automatically vary the control-circuit and restore said switch if abnormally shifted.

5. A three-wire electric metering system, comprising a supply-circuit, current-consuming devices, a two-rate metering apparatus, a magnetically-controlled circuit-changer for such apparatus between the control-wires and the neutral wire, determining the rate of registration, two control-wires extending to a controlling-station for operating said circuit-changer, a switch at the control-station for energizing any desired control-wire, a magnetic circuit-changer at the control-station in the control-circuit, and contacts operated thereby to connect the potential wire with the open control-wire if the meter circuit-changer be operated independently of the control-switch.

657,829. **MULTIRATE-METER.** EUSTACE OXLEY, Lynn, Mass., assignor to the General Electric Company, of New York. Filed Aug. 7, 1899. Serial No. 726,363. (No model.)



Claim.—1. A control system for a multirate-meter, comprising a ground-control circuit, and electromagnetic devices included therein at the consumer's station and at the control-station, including an automatic circuit-changer to reset the apparatus in case of an accidental ground, and thereby maintain the rate for which the meter was set.

2. A control system for multirate-meters, comprising an electrically-controlled switch at the consumer's station for changing the meter-rate, a ground-controlling circuit from a distant point of the system, and means for automatically restoring the switch if operated by a temporary ground.

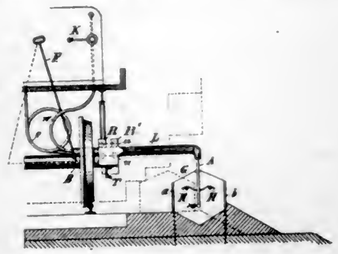
3. In a multirate-metering system, a switch at the consumer's station for changing the meter-rate and a ground-control circuit for said switch including a supply-wire, and an electrically-operated rate-maintainer at the control-station for restoring said switch if shifted by an accidental ground.

4. In a multirate-metering system, a ground-control circuit for setting the meter-rate, two automatic switches controlled thereby at the consumer's and control station, respectively, maintaining the ground from different supply-wires, and a periodically-operated switch at the control-station for grounding the automatic switch from either supply-wire.

5. In a three-wire multirate-metering system, a ground-control circuit for changing the meter-rate, including two magnetically-controlled switches at the consumer's and control station, respectively, completing a ground for an outside and neutral wire, contacts governed by the switches for transferring the relative connection with the control-wires, whereby the meter-switch is reset if changed by a temporary ground, and an indicator at the control-station operated by a permanent ground.

6. A multirate-metering system comprising a control-circuit connecting the consumer's station and a control-station, a magnetically-controlled meter-rate-changing switch at the former, a magnetically-controlled rate-maintaining switch at the latter, contacts with the control-circuit governed by the several switches for rendering their movements conjoint on a change of the control-circuit and circuit connections for effecting a restoration of the maintaining-switch if disturbed by independent operation of the rate-changing switch.

657,830. **CONDUCTOR AND COLLECTOR FOR ELECTRIC RAILWAYS.** ARTHUR PETZENBURGER, Berlin, Germany. Filed Dec. 8, 1899. Serial No. 739,706. (No model.)



Claim.—1. In an electric railway, a conductor-casing, having an elastic strip on each side of its slot, one strip being secured to the casing by springs and the other to the casing by a hinge, substantially as described.

2. In an electric railway, a conductor-casing having a strip of fabric extending along each side of its slot, and secured at intervals thereto, one strip being connected to the casing by a spring and the other by a hinge, substantially as described.

3. In an electric railway, a current-collector, comprising an angular rocking support having at the lower end of its vertical member a horizontal pivot projecting beyond the side of the same, a contact-shoe mounted to turn on said pivot, and means for swinging said shoe on its pivot, substantially as described.

4. In an electric railway, a current-collector, comprising an angular support mounted to rock and to have longitudinal movement, the vertical member of the support being provided with a horizontally-projecting pivot at its lower end, a contact-shoe mounted on the said pivot, and means passing through the support for operating the shoe, substantially as described.

5. In an electric railway, the combination with a support, of a pivoted contact-shoe carried by the support, and a flexible shaft for operating the shoe, and means for operating said shaft, substantially as described.

6. In an electric railway, the combination of a support mounted to rock, pivoted contact-shoe carried by the support, a flexible shaft for operating the shoe, said shaft extending through the support to the operator's position, and means for rocking said support, substantially as described.

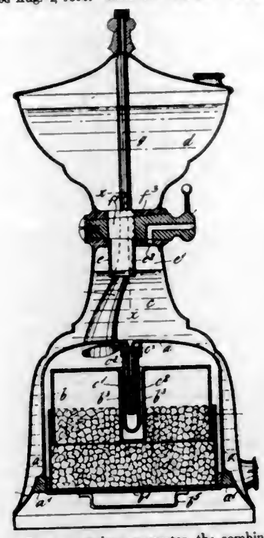
7. In an electric railway, the combination with a support, of a conductor extending through the support and having its lower end formed into a horizontally-projecting pivot, a contact-shoe mounted on the pivot, and means for swinging the shoe, substantially as described.

8. In an electric railway, the combination with a rocking support, of a conductor extending through the support and having its lower end formed into a horizontally-projecting pivot, a contact-shoe mounted on the pivot, and a flexible shaft for operating the shoe, said shaft passing through the support, substantially as described.

9. In an electric railway, the combination with a support mounted to rock and have longitudinal movement, of a conductor extending through the support and having one end formed into a coil and its other end into a pivot, and a contact-shoe mounted on the said pivot, substantially as described.

10. In an electric railway, the combination with a movable support, and contact-shoes carried thereby, of bearing-rings, and rollers carried by the rings and engaging the support for guiding it in its movement, substantially as described.

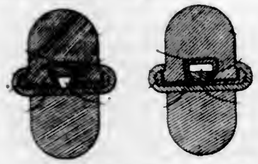
657,831. **ACETYLENE-GAS GENERATOR.** VICTOR POWERS, London, England, assignor to the Victor Light Syndicate, Limited, same place. Filed Aug. 4, 1899. Serial No. 726,180. (No model.)



Claim.—1. In an acetylene-generator, the combination of an air-tight reservoir, a reaction-chamber, a gas-outlet therefrom, a constant-level chamber between said reservoir and reaction-chamber and communicating with the latter, a tubular mouth for said reservoir extending to the constant water-level, an air-space around said mouth, and means for simultaneously opening and closing said mouth and air-space, substantially as described.

2. In an acetylene-generator, the combination of an air-tight reservoir, a constant-level water-supply chamber, a tubular mouth extending from said reservoir into said chamber, an air-orifice leading into said chamber, and a double-acting cock for simultaneously controlling said mouth and air-orifice, substantially as described.

657,832. **VEHICLE-TIRE.** RAYMOND B. PRICE, Cambridge, Mass., assignor to the Calumet Tire Rubber Company, of Illinois. Filed July 7, 1899. Serial No. 723,096. (No model.)



Claim.—1. In a solid vehicle-tire, the combination with a rim having overhanging annular flanges adapted to form an annular channel contracted at its peripheral portion, of a rubber tire adapted to be inserted in said rim and provided in its base with an annular groove or channel narrower at its mouth than in the body of said tire, and an annular band of greater width than the mouth portion of said groove or channel adapted to be inserted in the latter and fit snugly within the wide portion of same whereby it is held in position while said tire is being sprung into said rim and adapted to spread the base portion of said tire when drawn radially inwardly, whereby said tire is firmly wedged into said rim and secured.

2. In a solid vehicle-tire, the combination with a rim provided with annular flanges adapted to form an annular channel contracted at its peripheral portion, of a tire adapted to be mounted in said rim, said tire being normally of greater width at its base than the peripheral portion of said rim, and provided at its middle portion with an annular groove or channel contracted at its mouth, and an annular band of greater thickness than the mouth of said annular groove or channel adapted to enter the latter and fit snugly within the wide portion of same whereby it is firmly held in position while the tire is being sprung into said rim, and adapted to spread the base of said tire when drawn radially inwardly, whereby said tire is firmly wedged in said rim and secured.

3. In a solid vehicle-tire, the combination with a rim provided with annular overhanging flanges forming annular recesses, of a rubber tire adapted to be mounted on said rim and provided with annular flanges adapted to fit within said annular recesses of said rim, and means for securing said tire comprising an annular groove or channel therein adapted to be contracted at its mouth portion, and a key-piece in said groove or channel of greater width than the mouth of the latter, and adapted to fit snugly within the wide portion of said groove, whereby it is firmly held in position while said tire is being sprung into said rim, and adapted to be drawn radially toward said rim to spread the base portion of said tire and wedge same into said rim.

4. In a solid vehicle-tire, the combination with a rim provided with annular flanges adapted to form a channel contracted at its peripheral portion, of a rubber tire adapted to be mounted in said rim and provided in its base portion with an annular groove adapted to be contracted at its mouth portion, and means for securing said tire within said rim, comprising devices within said groove of greater width than the mouth of the latter and adapted to fit snugly within the wide portion thereof, whereby said devices are firmly held in place while said tire is being sprung into said rim, said devices being adapted to be drawn toward said mouth to spread said base portion of said tire to wedge same firmly within said rim.

5. In a solid vehicle-tire, the combination with a rim provided with annular overhanging flanges adapted to form annular recesses at the sides of said rim, of a rubber tire provided with annular flanges at its base adapted to enter said annular recesses in said rim, an annular groove in the middle portion of said base adapted to be contracted at its mouth portion, and means for securing said tire within said rim comprising devices mounted in said groove of greater width than the mouth portion of the latter and adapted to fit snugly within the wide portion of said groove, whereby said devices are firmly held in position while said tire is being sprung into said rim, said devices being adapted to be drawn toward said mouth to spread said tire at its base and force said flanges firmly within the recesses of said rim.

6. In a solid vehicle-tire, the combination with a rim provided with annular overhanging flanges adapted to form annular recesses at the sides of said rim, of a rubber tire provided with annular flanges at its base adapted to enter said annular recesses in said rim, an annular groove in the middle portion of said base adapted to be contracted at its mouth portion, and means for securing said tire within said rim comprising devices mounted in said groove of greater width than the mouth portion of the latter and adapted to fit snugly within the wide portion of said groove, whereby said devices are firmly held in position while said tire is being sprung into said rim, said devices being adapted to be drawn toward said mouth to spread said tire at its base and force said flanges firmly within the recesses of said rim, and an intermolded stiffening-strip in said tire extending laterally on each side of said groove and into said flanges, adapted to prevent lateral bending or buckling of said base portion of said tire.

7. In a solid vehicle-tire, the combination with a rim provided with annular flanges adapted to form an annular channel contracted at its peripheral portion, of a rubber tire of greater width at its base than said channel adapted to be mounted in said rim, an annular groove in the middle portion of said base adapted to be contracted at its mouth portion to decrease the width of said base to enable the latter to enter said channel, and a key-piece in said groove of greater width than the mouth portion of said groove when contracted, and adapted to fit snugly within the wide portion of said groove, whereby it is firmly held in position while said tire is being sprung into said rim, said key-piece being adapted to be drawn toward said mouth portion to spread said base and wedge same firmly between the flanges of said rim.

8. In a solid vehicle-tire, the combination with a rim having flanges adapted to form an annular channel contracted at its mouth, of a tire adapted to be mounted in said rim, and means for securing said tire within said rim comprising devices contained in said tire adjacent the base thereof and adapted to be engaged by the sides of the containing-recess to hold same in place, and when moved radially inwardly to spread the base of said tire and wedge same firmly in said rim.

9. In a solid vehicle-tire, the combination with a rim having annular flanges adapted to form an annular channel contracted at its mouth, of a tire adapted to be mounted in said rim and engage said flanges at its base portion, an annular groove or recess in the base portion of said tire contracted at its mouth portion, lateral intermolded stiffening-strips in said base on each side of said annular groove or channel, and a key-piece in said groove or channel of greater width than the mouth portion thereof adapted to spread said base across said stiffened portion when forced radially inwardly to lock said tire within said rim.

10. In a solid vehicle-tire, the combination with a rim having annular flanges adapted to form an annular channel contracted at its mouth, of a tire adapted to be mounted in said rim and engage said flanges at its base portion, an annular groove or recess in the base portion of said tire contracted at its mouth portion, an intermolded stiffening-strip in said base

portion arched over said groove or channel and extending laterally from each side thereof, and a key-piece in said groove or channel of greater width than the mouth portion thereof adapted to be forced radially inwardly to spread said base and lock said tire within said rim.

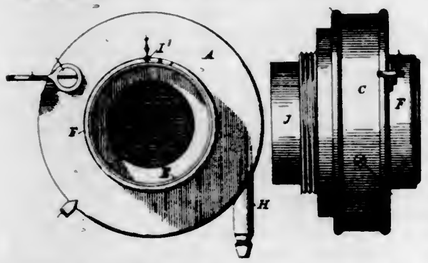
11. In a solid vehicle-tire, the combination with a rim provided with annular overhanging flanges adapted to form annular recesses, of a rubber tire provided at its base with annular flanges adapted to fit within the annular recesses of said rim, a dovetail-shaped annular groove or channel in the middle portion of the base of said tire, an intermolded stiffening material following the contour of the base of said tire and extending into the flanges thereof, and means for locking said tire in said rim comprising an annular key of greater width than the narrow portion of said groove or channel mounted within said groove and adapted to be forced into said narrow portion thereof to spread said base portion of said tire.

12. A solid vehicle-tire, comprising a rubber tire provided at its base with annular flanges, an annular groove or channel in the middle portion of said base contracted at its mouth, an annular key in said groove or channel of greater width than the mouth thereof adapted to spread said base when forced toward said mouth, a foraminated metallic stiffening-strip intermolded in said base and following the contour thereof, and a rim adapted to receive said tire.

13. A solid vehicle-tire, comprising a rubber tire provided at its base with annular flanges, an annular groove or channel in the middle portion of said base contracted at its mouth, an annular key in said groove or channel of greater width than the mouth thereof adapted to spread said base when forced toward said mouth, a foraminated metallic stiffening-strip intermolded in said base and following the contour thereof and provided with annular flanges adapted to extend into the flanges of said tire, and a rim adapted to receive said tire.

14. A solid vehicle-tire, comprising a rubber tire provided at its base with annular flanges, an annular groove or channel in the middle portion of said base contracted at its mouth, an annular key in said groove or channel of greater width than the mouth thereof adapted to spread said base when forced toward said mouth, a foraminated metallic stiffening-strip intermolded in said base and following the contour thereof, and provided with annular flanges adapted to extend into the flanges of said tire and a rim adapted to receive said tire, said rim being provided with annular recesses adapted to receive the flanges of said tire.

657,833. PHOTOGRAPHIC SHUTTER. HENRY M. REICHENBACH and JOHN SCHADELI, Rochester, N. Y., assignors to the Reichenbach, Morey & Will Company, same place. Filed Mar. 7, 1900. Serial No. 7,656. (Model.)



Claim.—1. The herein-described dust-proof shutter, having a casing entirely closed, and provided with the rotatory setting-ring concentric with the lens-tube, substantially as and for the purposes set forth.

2. The combination with a photographic shutter having a casing entirely closed, of the rotatory setting-ring concentric with the lens-tube, the release-lever having a pivot passing through the casing and suitable exposing mechanism, as and for the purposes set forth.

3. In a photographic shutter of the character described, the combination with a dust-proof casing entirely closed from the outside, of a projecting lens-tube, a setting-ring concentric with the said lens-tube, a release-lever having a pivot passing through the casing, and exposing mechanism; substantially as described.

4. In a photographic shutter, the combination, with the exposure mechanism, and a spring for operating the same, of a time-exposure ring, a setting-ring mounted on the time-exposure ring, and levers for operating the said rings; substantially as described.

5. The combination with suitable exposure mechanism of the projecting lens-tube, the time-exposure ring, provided with a time-exposing lever mounted thereon, the setting-ring mounted on the time-exposure ring, the release-lever and the operating-spring, as and for the purposes set forth.

6. The combination with suitable exposure mechanism, of the projecting lens-tube, the time-exposure ring provided with the time-exposing lever mounted thereon, the setting-ring mounted on the time-exposure ring, means for holding the rings in different positions of adjustment relative to each other, the release-lever and the operating-spring, as and for the purposes set forth.

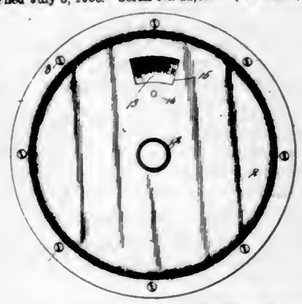
7. The combination with the movable apertured blades, of the rotatory setting-ring provided with the pawl, the vibrating lever provided with a pin interposed in the path of the pawl, the release-lever and the operating-spring, as and for the purposes set forth.

8. The combination with the movable apertured blades of the rotatory setting-ring provided with the pawl, the vibrating lever provided with a pin interposed in the path of the pawl, the rotatory time-exposure ring provided with a time-exposing lever, means for securing the setting-ring and time-exposure ring in various positions of relative adjustment, the release-lever and the operating-spring, as and for the purposes set forth.

9. The combination with the movable apertured blades, of the rotatory setting-ring provided with a pawl, the vibrating lever provided with a pin interposed in the path of the pawl, the rotatory time-exposure ring provided with a time-exposing lever, means for securing the setting-ring and time-exposure ring in various positions of relative adjustment, the release-lever and the operating-spring attached at one end to one of the rings and at the other end to the vibrating lever, as and for the purposes set forth.

10. The combination with a suitable exposure mechanism of the rotatory setting-ring provided with a flange having an inclined slot, the rotatory time-exposure ring, the time-exposing lever pivoted thereon and provided with a pin engaging with the slot, means for securing the setting-ring and the time-exposure ring in different positions of adjustment, the release-lever and the operating-spring, as and for the purposes set forth.

657,834. OFFICE-INDICATOR. CHARLES F. RUTTMAN, Valparaiso, Nebr. Filed July 5, 1900. Serial No. 22,626. (No model.)



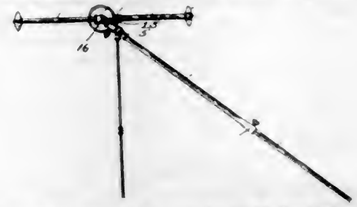
Claim.—1. A device of the class described comprising a casing having a sight-aperture and provided with an opening, a projection located within the casing and extending rearward from the front of the same, a pivot projecting from the back of the casing, a dial having a hub arranged on the pivot and extending through the opening of the casing, said dial being provided at intervals with openings to receive the projection, and a coiled spring disposed on the pivot and interposed between the dial and the back of the casing, substantially as described.

2. A device of the class described comprising a casing having an opening and provided with a sight-aperture, a transparent plate arranged at the inner face of the front of the casing at the sight-aperture, a projection located within and rigid with the front of the casing, a stud forming a pivot and extending from the back of the casing, a dial having openings to receive the pin and provided with a hub arranged on the pivot and extending through the opening of the casing, a knob secured to the hub, a washer arranged on the hub and interposed between the dial and the front of the casing, and a coiled spring arranged on the pivot and engaging the dial, substantially as described.

657,835. BORING-MACHINE. AARON Z. SAVAGE, Canoe Station, Ala. Filed Jan. 31, 1900. Serial No. 3,540. (No model.)

Claim.—1. In a boring-machine, the combination with the tubular frame, of the cross-coupling carried thereby, the spindle journaled in the cross-coupling, a crank-shaft journaled in the frame at a right angle to the spindle, gearing for transmitting motion from the crank-shaft to the spindle, an auger fitted in the spindle, and a support swiveled upon the laterally-projecting arms of the cross-coupling, substantially as described.

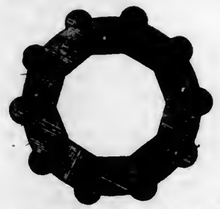
2. In a boring-machine, the combination with the cross-coupling, of sleeves swiveled on the laterally-projecting ends of said coupling, legs attached to said sleeves, a spindle journaled in the cross-coupling, an auger fitted in the spindle, bearings supported by the cross-coupling, a tubular crank-shaft journaled in said bearings, and gearing for transmitting motion from the crank-shaft to said spindle, substantially as described.



3. In a boring-machine, the combination with the tubular frame comprising the cross-coupling, the elbows fitted on the laterally-projecting ends of the cross-coupling and the T-couplings carried by said elbows, of the tubular crank-shaft journaled in said T-couplings, the spindle journaled in said cross-coupling, gearing for transmitting movement from the crank-shaft to the spindle, an auger fitted in the spindle, and a support for the tubular frame, substantially as described.

4. In a boring-machine, the combination with the tubular frame comprising the cross-coupling, the elbows fitted on the laterally-projecting ends of the cross-coupling, and the T-couplings carried by said elbows, of the crank-shaft journaled in said T-couplings and comprising the central tubing, elbows fixed on the ends thereof, tubular sections fitted in said elbows, elbows fitted on the ends of said sections, handles fitted in the elbows, a spindle journaled in the cross-coupling, gearing for transmitting motion from the crank-shaft to the spindle, and an auger fitted in the spindle, substantially as described.

657,836. WOODEN COLUMN. ALBERT F. SCHWERD and ASA W. ENRICK, Allegheny, Pa. Filed May 8, 1899. Serial No. 715,968. (No model.)



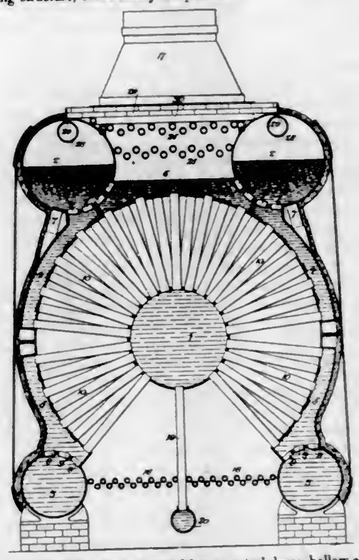
Claim.—1. As a new article of manufacture, a hollow wooden column consisting of a series of substantially wedge-shaped sections which are interlocked together, the engaging faces of said sections diverging outwardly in opposite directions and one of the engaging faces of each section provided with an integral tongue of equal thickness throughout having both of its side faces extending outwardly on parallel planes at an acute angle to the engaging face with which the tongue is formed, the outer face of said tongue being parallel to the engaging face, the other engaging face of each section being provided with a groove corresponding in shape to the tongue, the groove of one section being adapted to receive the tongue of the adjoining section, substantially as shown and described.

2. As a new article of manufacture, a hollow wooden column consisting of a series of substantially wedge-shaped sections which are interlocked together, the engaging faces of said sections diverging outwardly in opposite directions and one of the engaging faces of each section provided with an integral tongue of equal thickness throughout having both of its side faces extending outwardly on parallel planes at an acute angle to the engaging face with which the tongue is formed, the outer face of said tongue being parallel to the engaging face, the other engaging face of each section being provided with a groove corresponding in shape to the tongue, the groove of one section being adapted to receive the tongue of the adjoining section, and a bead formed integral with the outer face of each section at one of its corners, the bead on one section overlapping on the adjoining section to conceal the joint, substantially as shown and described.

657,837. WATER-TUBE BOILER. JOSEPH M. SEARLE, Pittsburg, Pa. Filed Oct. 31, 1899. Serial No. 735,402. (No model.)

Claim.—1. A water-tube boiler comprising a central drum, a hollow water-circulating structure extending transversely part way around said drum, radiating tubes connecting said central drum and water-circulating structure, and a fireplace parallel with the drum, substantially as specified.

2. A water-tube boiler comprising a central drum, a water-circulating structure extending transversely part way around the drum, radiating tubes connecting said central drum and water-circulating structure, and a fireplace parallel with the central drum and located beneath the latter and between the tubes of the opposite side portions of the outer water-circulating structure, substantially as specified.



3. A water-tube boiler comprising a central drum, hollow segmental headers having their longitudinal dimensions transverse to the axis of the drum and disposed one behind another in the direction of the length of said drum, and radiating tubes connecting said drum and headers, substantially as specified.

4. A water-tube boiler comprising a central drum, hollow segmental headers having their longitudinal dimensions transverse to the axis of the drum and disposed one behind another in the direction of the length of said drum, radiating tubes connecting said drum and headers, and a steam-drum structure communicating with the upper headers, substantially as specified.

5. A water-tube boiler comprising a central drum, hollow segmental headers having their longitudinal dimensions transverse to the axis of the drum and disposed one behind another in the direction of the length of said drum, radiating tubes connecting said drum and headers, and mud-drums communicating with the lower headers, substantially as specified.

6. A water-tube boiler comprising a central drum, hollow segmental headers having their longitudinal dimensions transverse to the axis of the drum and disposed one behind another in the direction of the length of said drum, radiating tubes connecting said drum and headers, mud-drums communicating with the lower headers, and a steam-drum structure communicating with the upper headers, substantially as specified.

7. A water-tube boiler comprising a central drum, upper and lower segmental headers having their longitudinal dimensions transverse to the axis of the drum and disposed one behind another in the direction of the length of the drum, inwardly and upwardly inclined radiating tubes connecting the lower portion of the drum with the lower headers, and outwardly and upwardly inclined radiating tubes connecting the upper portion of the drum with the upper headers, said tubes and central drum furnishing the only communication between the upper and lower headers, substantially as specified.

8. A water-tube boiler comprising a central drum, a water-circulating structure comprising upper and lower portions on each side of said central drum, radiating tubes connecting the lower portion of the drum with the lower side structure, and radiating tubes connecting the upper portion of the drum with the upper side structure, there being no direct communication between the upper and lower portions of each side structure, substantially as specified.

9. A water-tube boiler comprising a central drum, hollow segmental headers extending transversely around the same and disposed longitudinally one behind another, radiating tubes connecting said drum and headers, supplementary drums adapted to segmental seats formed upon said headers, and nipples directly connecting the casings of said drums and the segmental seats therefor upon the headers, substantially as specified.

10. A water-tube boiler comprising a central drum, upper and lower side and top segmental headers extending transversely part way around the central drum, the sets of said headers being disposed one behind another longitudinally, radiating tubes connecting said central drum and headers, mud-drums communicating with the lower headers, a steam-drum structure communicating with the upper headers, and a fireplace parallel with the central drum and located beneath the same, and between the tube structures and headers of the opposite sides of the boiler, substantially as specified.

11. A water-tube boiler comprising a central drum, hollow segmental headers extending transversely around said drum and disposed one behind another in the direction of the length of the drum, radiating tubes connecting said drum and headers, a steam-drum structure communicating with the upper headers, and means for providing circulation between said central drum and the steam-drum structure, substantially as specified.

12. A water-tube boiler comprising a central drum, hollow headers disposed around the same, radiating tubes connecting said drum and headers, mud-drums communicating with the lower headers, a steam-drum structure communicating with the upper headers, and means whereby a circulation is provided between the steam-drum structure and the mud-drum substantially as specified.

13. A water-tube boiler comprising a central drum, hollow headers disposed around the same, radiating tubes connecting said drum and headers, mud-drums communicating with the lower headers, a steam-drum structure communicating with the upper headers, and means whereby a circulation is provided between the steam-drum structure and the mud-drum, and between said steam-drum structure and the central drum, substantially as specified.

14. A water-tube boiler comprising a central drum, hollow headers disposed around the same, radiating tubes connecting said drum and headers, a steam-drum structure communicating with the upper headers, and superheating-pipes communicating with said steam-drum structure and located in the flue-space of the boiler-setting, substantially as specified.

15. A water-tube boiler comprising a central drum, hollow headers disposed around the same, radiating tubes connecting said drum and headers, a steam-drum structure communicating with the upper headers, a pipe located in the upper portion of said steam-drum structure and having an inlet for steam at the top, and superheating-pipes communicating with said steam-drum pipe and disposed in the flue-space of the boiler-setting, substantially as specified.

16. A water-tube boiler comprising a central drum, hollow headers disposed around the same, radiating tubes connecting said drum and headers, a pair of laterally-separated steam-drums communicating with the upper headers, a system of superheating-pipes disposed in the flue-space between said steam-drums, manifolds connected with the ends of said superheating-pipes, one of said manifolds also communicating with receiving-pipes in the steam-drums, substantially as specified.

17. A water-tube boiler comprising a central drum, hollow headers disposed around the same, radiating tubes connecting said drum and headers, a steam-drum structure communicating with the upper headers, and a feed-water-heating pipe located in the upper portion of the flow structure of the boiler-setting, substantially as specified.

18. A water-tube boiler in which are combined a central drum, upper and lower side headers and top headers disposed around said drum, and radiating tubes connecting said drum and headers the top headers being separated for the passage of the products of combustion between them, and the side headers being ribbed or flanged to prevent such passage, substantially as specified.

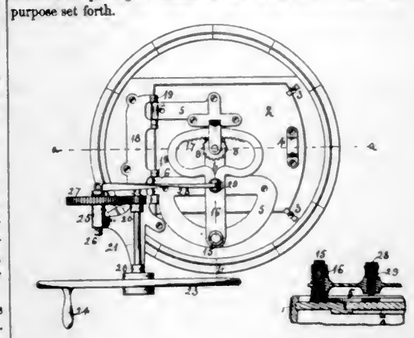
19. A water-tube boiler in which are combined a central drum, a water-circulating structure communicating with, and partially surrounding said drum, a fireplace located beneath the drum, and parallel therewith, and a longitudinal partition in said fireplace composed of tubes communicating with said central drum at their upper ends, and with a feeding-manifold at their lower ends, substantially as specified.

20. A water-tube boiler comprising a central drum, a fireplace having vertical partition-tubes communicating at their upper ends with said drum, a water-tube grate, and a manifold structure providing communication between said water-tube grate and the lower ends of the partition-tubes, substantially as specified.

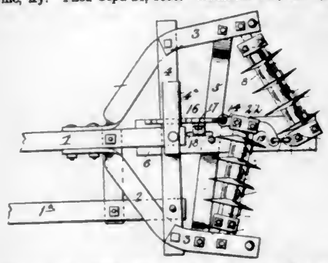
21. A water-tube boiler comprising a central drum, hollow segmental headers disposed transversely around the same and one behind another in the direction of the length of the drum so as to provide spaces between the headers for the passage of the products of combustion, a fireplace parallel with the drum, and a boiler-setting having transverse partitions forming ascending and descending flues in which successive sections of said headers and connecting-tubes are disposed, substantially as specified.

657,838. GEARING FOR WASHING-MACHINES. CHARLES H. SHAFFER, Muskegon, Mich., assignor to the Michigan Washing Machine Company, same place. Filed Mar. 19, 1900. Serial No. 9,222. (No model.)

Claim.—In gearing for a washing-machine having a hinged cover, the combination with the shaft 8, having the pinion 9 at its upper end; of the base-plate 5 secured to said cover and extending beyond the lateral bounds thereof to form a stop to limit the closing movement of the cover, said base-plate having the stud 15; the arm 16 removably pivoted at one end to said stud, said arm having its opposite end enlarged and extending beyond said pinion, said enlarged end having an opening, one side of which is formed with a gear-segment to mesh with said pinion; the stud 29 removably and pivotally secured to said arm intermediate the stud 15 and said segment; the gear-wheel 27; the connecting bar or rod 28; and means for imparting movement to said wheel, substantially as and for the purpose set forth.



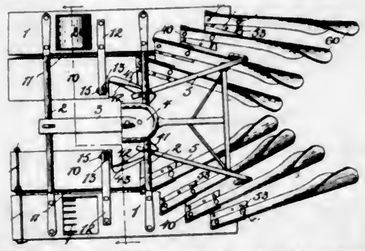
657,839. ROTARY-DISK HARROW. ROBERT M. SLATON, Madisonville, Ky. Filed Sept. 21, 1899. Serial No. 731,190. (No model.)



Claim.—1. In a rotary-disk harrow, the harrow-disks spaced apart on rods by intermediate sleeves, said disks being secured to arches pivoted at their outer ends to the frame, and their inner ends extending beyond the center or draft line of the harrow, flexible connections between the inner ends of the arches, and a lever attached to said flexible connections for changing the angle of draft, substantially as described.

2. In a rotary-disk harrow, two gangs of disks mounted to revolve on separate axles journaled at their outer ends in the harrow-frame, the inner ends of said axles extending beyond each other and connected by a flexible coupling, and means for changing the draft-angle of the axles and disks, substantially as described.

657,840. LISTED-CORN CULTIVATOR. SETH SMITH, Castana, Iowa. Filed Jan. 20, 1900. Serial No. 2,162. (No model.)



Claim.—1. In a listed-corn cultivator, two parallel runners connected by arches, and a seat-beam on the latter combined with wings hinged to the inner edges of the runners, bars projecting inward from the latter over the wings, adjusting devices for the wings at the inner ends of the

bars, and rollers removably and adjustably journaled in the runners near their forward ends, as and for the purpose set forth.

2. In a device of the character set forth, the combination with a pair of parallel runners connected by a framework, wings hinged to their inner edges, and means for adjusting the angles of the wings; of vertically-adjustable rollers mounted in openings near the front ends of the runners, and harrows removably attached to the forward ends of the runners and wings, substantially as and for the purpose described.

3. In a device of the character set forth, the combination with parallel runners having adjustable wings with oblique notches in their inner edges, and a framework supporting a driver's seat; of hoes pivoted near their front ends in said notches and having their upper edges turned over into footpieces, as and for the purposes set forth.

4. In a device of the character described, the combination with a runner having an upturned front end; of a harrow removably mounted thereon and comprising a flat body with ears at its front corners connected by a cross-rod, said body having teeth at its rear end which are twisted so as to stand on edge, and stops secured on the body near its rear end to hold it in a position oblique to the runner, substantially as described.

5. In a cultivator, the combination with a runner, and a plate carried thereby and having a curved slot; of a cultivator-blade whose stem is pivotally connected with the plate, and an attachment whose shank engages the stem and slot, as and for the purpose set forth

6. In a cultivator, the combination with a runner, and a bolder consisting of an L-shaped plate having a curved slot in each of its members; of a pivot between the lower member and the runner, a set-screw engaging the latter and the slot in this member, a blade pivotally connected with the upper member, and an attachment whose shank engages the stem of the blade and the slot in this member, substantially as described.

7. In a cultivator, the combination with a support, a cultivator-blade holder mounted thereon, and means for adjusting it horizontally; of the blade proper having a cylindrical stem, a bearing in which the stem is journaled, a bolt with one end of its shank curved around the stem and its other end passing through the holder, and a thumb-nut on the same, all as and for the purpose set forth.

8. In a cultivator, the combination with a support, and a cultivator-blade holder mounted thereon and having a curved slot in its upright member; of the blade proper having a cylindrical stem, a bearing in which the stem is journaled, said bearing being pivoted to said upright member of the holder, a bolt with one end of its shank curved around the stem and its other end passing through said slot in the holder, and a thumb-nut on the same, all substantially as described.

9. In a cultivator, the combination with a support having an upright member provided with a curved slot; of a tubular bearing pivoted at one end to said member, a cultivator-blade having a stem journaled in said bearing, a bolt passing through the slot and engaging the stem adjacent the movable end of the bearing, and means for tightening the bolt on the stem and the bearing against the holder, as and for the purpose set forth.

10. In a cultivator, the combination with a support, a holder thereon, a tubular bearing having notches in its front end, and adjustable connections between the bearing and holder; of the cultivator-blade having a stem journaled in said bearing, and a lug on the stem adapted to engage said notches, as and for the purpose set forth.

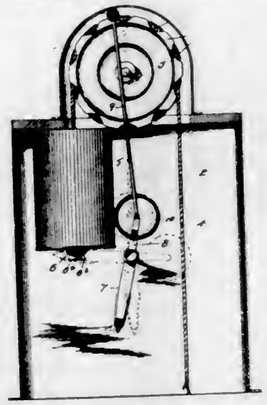
11. In a cultivator, the combination with a support, a holder thereon, a tubular bearing having notches in its front end, said front end being pivoted to the holder and the latter provided with a slot struck on a curve around the pivot; of a cultivator-blade having a stem journaled in the bearing and provided with a lug adapted to engage the notches thereof, and a bolt having its shank passing through said slot with one end engaging said stem and the other end having a nut, all as and for the purpose set forth.

12. In a cultivator, the combination with a support, an L-shaped holder having curved slots in each member, the lowermost being pivoted to the support, and a set-screw in the latter engaging the slot in this member; of a tubular bearing pivoted near its front end to the upright member and having notches in said front end, a cultivator-blade whose stem is journaled in the bearing and has a lug engaging said notches, and a bolt having its shank passing through the slot in this member with one end engaging said stem and the other end receiving a nut, all as and for the purpose set forth.

657,841. WATER-HOIST. THOMAS H. TISE and CHARLES H. TISE, Winston, N. C., assignors to Thomas H. Tise. Filed Nov. 13, 1899. Serial No. 736,800. (No model.)

Claim.—1. In a hoist of the character described, a tilting or pivoted pan or receptacle having a delivery or discharge spout adapted to serve as a pivot, and an opposite pivot, and provided with a lateral valved water-inlet, and means to actuate said pan, substantially as set forth.

2. In a hoist of the character described, the well-bucket having a valved bottom, a tilting or pivoted pan or receptacle having a lateral valved water-inlet adapted to receive the water from said bucket, via its valve, and means to actuate said pan and bucket, substantially as set forth.



3. In a hoist of the character described, the combination of a well-bucket having a valve in its bottom, a tilting or pivoted pan or receptacle having a lateral valved water-inlet and adapted to open said bucket-valve, and means for actuating said bucket and pan, substantially as specified.

4. In a hoist of the character described, the combination of a well-bucket having a valved bottom, a tilting or pivoted pan or receptacle having a lateral valved water-inlet and carrying means adapted to be acted upon by said bucket to initially tilt or deflect said pan, and means to operate said bucket and pan, substantially as set forth.

5. In a hoist of the character described, the combination of a well-bucket having a valved bottom, a tilting or pivoted pan or receptacle having a lateral water-inlet and adapted to open said valve to allow the contents of said bucket to pass into said pan, a wheel carried by said pan and adapted to be engaged by said bucket to initially tilt or deflect said pan, and means to operate said bucket and pan, substantially as described.

6. In a hoist of the character described, the combination of a well-bucket having a valved bottom, a tilting or pivoted pan or receptacle having a lateral water-inlet and adapted to open said valve and having an arm carrying a wheel or disk engaged by said bucket to initially tilt or deflect said pan, and means to actuate said bucket and pan, substantially as specified.

7. In a hoist of the character described, the combination of a well-bucket having a valved bottom, a tilting or pivoted pan or receptacle having a lateral water-inlet and adapted to open said valve, and carrying means acted upon by said bucket to initially tilt said pan, and a push-rod connected to said pan, substantially as set forth.

8. In a hoist of the character described, the combination of a sheave having an intermediate annular flange, a brake or lever having an outer end lateral flange adapted to engage the outer surface of said annular flange, and an eccentric adapted to form the bearing of the shaft of said sheave, with its greater radius arranged next to said flange of lever and embraced by said lever or brake, substantially as set forth.

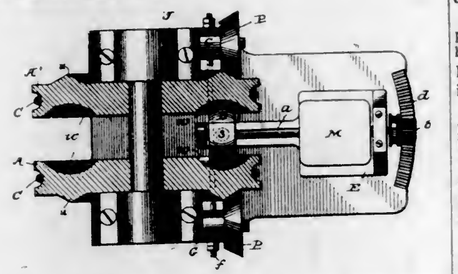
9. In a hoist of the character described, the combination of a sheave having an intermediate annular flange, a brake or lever having an outer end lateral flange, adapted to engage the outer surface of said annular flange, and having a lateral handle or projection and a counterbalancing-arm, and an eccentric adapted to form the bearing of the shaft of said sheave, with its greater radius arranged next to said flange of lever and embraced by said lever or brake, substantially as set forth.

657,842. MEANS FOR CONVERTING ROTARY INTO RECIPROCATING MOTION. ISAAC H. VENN, Yonkers, N. Y., assignor to the Otis Elevator Company, same place. Filed Oct. 21, 1899. Serial No. 734,353. (No model.)

Claim.—1. In an apparatus for converting rotary into reciprocating motion, the combination of a continuously-rotating drive-wheel, two driven wheels having inner annular bearing-faces transversely curved, means for changing the angle of the drive-wheel to said wheels, a cable passing around the wheels and formed into loops and blocks engaging said loops and connected to the object to be moved, substantially as set forth.

2. The combination of two wheels A A', an endless cable passing around each wheel and forming two loops, a block in each loop, and a

motor provided with a drive-wheel engaging both wheels A A′ and adjustable to bear on the wheels at different distances from the centers thereof, substantially as set forth.



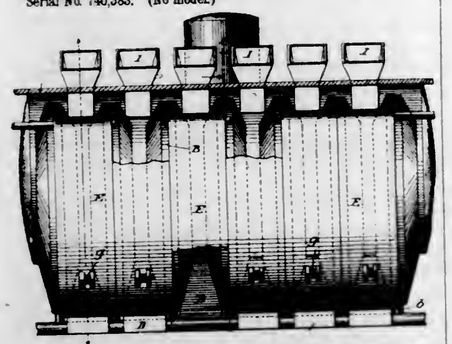
3. The combination with two wheels A A′ having annular bearing-faces curved in cross-section, of a drive-wheel D adjustable between said faces, two blocks, and a cable engaging said wheels A A′ and formed into loops passing through said blocks, substantially as set forth.

4. The combination of the blocks, cable C, two driven wheels provided with annular inner faces transversely curved, a drive-wheel D between said faces, and means for shifting the wheel D to carry its bearing-points to or from the axes of the wheels, substantially as set forth.

5. The combination with the driven wheels having annular beveled faces and an intermediate drive-wheel, of roller-bearings having conical faces bearing against said beveled faces, substantially as set forth.

6. The combination with the driven wheels having annular beveled faces and an intermediate drive-wheel, of roller-bearings having conical faces, and means for varying the pressure of the rollers against the said beveled faces of the wheels, substantially as set forth.

657,843. **APPARATUS FOR UTILIZING HOT SLAG FOR HEATING PURPOSES.** JAMES L. WELLS, El Paso, Tex. Filed Dec. 16, 1899. Serial No. 740,583. (No model.)



Claim.—1. In apparatus for utilizing slag for heating purposes, a receptacle provided on its exterior surface with a plurality of chambers for the reception of the slag, each chamber partially surrounding said receptacle and having a movable side and a filling-aperture, substantially as set forth.

2. In apparatus for utilizing slag for heating purposes, a receptacle provided with a plurality of ribs or corrugations on its exterior surface, the opposing faces of adjacent ribs or corrugations forming sides of a chamber, a plate between adjacent ribs forming the bottom of the chamber, and a hinged plate to close the front of the chamber, substantially as set forth.

3. In apparatus for utilizing slag for heating purposes, a receptacle provided with a plurality of ribs or corrugations on its outer surface, the opposing faces of adjacent ribs flaring outwardly and forming sides of the chamber, a plate between adjacent ribs forming the bottom of a chamber, and a plate hinged at its upper end to said ribs and adapted to abut at its lower end against said bottom plate and engage with its inner face the outer face of said ribs and form a front wall for said chamber, substantially as set forth.

4. In apparatus for utilizing slag for heating purposes, a receptacle provided with a plurality of ribs or corrugations on its exterior surface, the opposing faces of adjacent ribs or corrugations forming sides of a chamber, a plate between adjacent ribs forming the bottom of the slag-receiving chamber, a plate hinged at its upper end to the ribs and adapted to abut at its lower end against the bottom plate and engage with its inner face the outer faces of the ribs, and means to hold the hinged plate in its closed position, substantially as set forth.

5. In apparatus for utilizing slag for heating purposes, a receptacle provided on its exterior surface with a plurality of slag-receiving chambers, each chamber partially surrounding the receptacle and having a hinged front wall, combined with filling-funnels supported to discharge into the upper ends of said chambers, substantially as set forth.

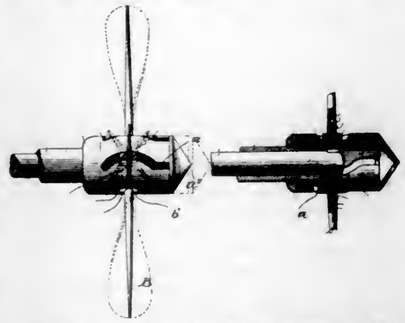
6. In apparatus for utilizing slag for heating purposes, a receptacle provided on its exterior surface with a plurality of slag-receiving chambers, the front wall of each chamber being hinged at one end, combined with a fixed vertical guide-rod adjacent to said front wall, a pull-rod slidably supported on the guide-rod, and a connecting-link pivotally connected to said pull-rod and to the free end of the front wall, substantially as set forth.

7. In a slag steam-generator, the combination of the main shell A, a plurality of hollow ribs or projections B secured to the exterior surface of the shell, the interior of said ribs being in communication with the interior of the shell, plates fitted between adjacent ribs to form the bottoms of slag-receiving chambers, movable plates to engage said bottom plates and the front faces of the ribs and form the front walls of said chambers, means to detachably lock said front plates in closed position, and means for introducing molten slag into said chambers, substantially as set forth.

8. In apparatus for utilizing slag for heating purposes, a receptacle provided on its exterior with a plurality of slag-receiving chambers, the front wall of each chamber being hinged at its upper end, and a projection on the hinged end of the front wall projecting into the chamber to engage the solidified slag when the lower end of the wall swings open, for the purpose set forth.

9. In apparatus for utilizing slag for heating purposes, a receptacle provided on its exterior surface with a plurality of chambers for the reception of slag, each chamber partially surrounding said receptacle and being wider at its front than at its rear portion, and each chamber having a movable side and a filling-aperture, substantially as set forth.

657,844. **REVERSIBLE PROPELLER.** ADOLPH A. WILLIAMS, Duluth, Minn., and GUSTAF W. JOHNSON, Superior, Wis. Filed Apr. 27, 1899. Serial No. 714,728. (No model.)



Claim.—1. In a reversible propeller, the combination with a propeller-shaft, of a hollow head provided with cam-shaped slots, propeller-blades pivoted to the shaft and having extensions or heads, which engage said slots, and a sleeve movable on the shaft, connected with the head, whereby upon movement of the sleeve, the blades by reason of the coaction of the extensions with the slots, can be given a forward or rearward inclination in the direction of the axis of the shaft, thus to drive a vessel either forward or backward without reversing the engine, substantially as described.

2. In a reversible propeller, the combination of a rotating shaft, a sleeve slidable on said shaft, a hollow head connected to said sleeve and provided with curved slots, a cross-head having arms which project through the curved slots, propeller-blades being provided with a hollow inner end and a transverse passage extending through and into said hollow end which hollow ends receive the ends of the cross-head, and wrist-pins passed through the transverse slots and extending into the cross-head, and projections or extensions on the lower end of the propeller-blades which operate in the curved slots in the hollow head of the housing, substantially as described.

3. In a reversible propeller, the combination of a propeller-shaft, one or more cross-heads fixed to the outboard end of the shaft, a plural number of propeller-blades, provided with lateral lugs and revolubly attached to the ends of the cross-head or cross-heads, a cam-head provided with a plural number of curved slots in the sides thereof and a sleeve inclosing the propeller-shaft for a part of its length and secured in any suitable manner at its outboard end to the cam-head, substantially as described.

4. In a reversible propeller, the combination of a propeller-shaft, one or more cross-heads fixed to the outboard end of said shaft, a plural number of propeller-blades, provided with lateral lugs, revolubly attached to the ends of the cross-head or cross-heads, a cam-head provided with a rearwardly-extending conical-shaped cap or plug, and provided in its sides with a plural number of curved slots or guideways and a sleeve inclosing the propeller-shaft for a part of the length of said shaft and secured in any suitable manner at its outboard end to the cam-head, substantially as described.

5. In a reversible propeller, the combination of a propeller-shaft, one or more cross-heads fixed to the outboard end of said shaft, a plural number of propeller-blades, provided with lateral lugs, revolubly attached to the ends, respectively, of said cross-head or cross-heads, a cam-head provided with a rearwardly-extending cap or plug and provided in its sides with a plural number of curved slots or guideways adapted to engage the lugs on the propeller-blades, respectively, and having horizontal rearwardly-extending continuations, and a sleeve inclosing the propeller-shaft for a part of the length of said shaft and attached at its outboard end to the cam-head, substantially as described.

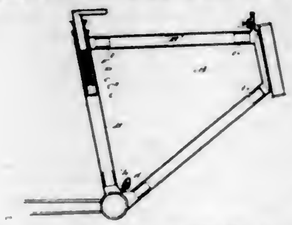
6. In a reversible propeller, the combination of a plural number of propeller-blades, revolubly attached to the end of a propeller-shaft cross-head and provided with lateral lugs and a cam-head provided in its sides with a plural number of curved slots or guideways adapted respectively, to engage the lugs of the respective propeller-blades and control the pitch of said blades, substantially as described.

7. In a reversible propeller provided with a shaft, a cross-head on the outboard end of said shaft and propeller-blades revolubly attached to the respective ends of said cross-head and provided with lateral lugs, the combination of a cam-head provided in its sides with curved slots or guideways, adapted to engage the lugs on said blades, substantially as described.

8. In a reversible propeller, provided with a propeller-shaft, a cross-head attached to the outboard end of said shaft and propeller-blades revolubly attached to the respective ends of said cross-head and provided with lateral lugs, the combination of a cam-head provided in its sides with curved slots or guideways adapted to engage the lugs on said blades respectively, and provided with a rearwardly-projecting cap or plug, and a forwardly-projecting sleeve inclosing said shaft for a part of the length thereof, substantially as described.

9. In a reversible propeller, the combination with a propeller-shaft, of a cross-head or cross-heads, fixed to the outboard ends of said shaft, and provided with terminal wrists or apertures as desired, propeller-blades revolubly attached respectively to the respective ends of said cross-heads and provided with lateral lugs extending on either side of each of said blades respectively, substantially in the direction of the axis of said shaft but curved to conform to curved slots, or guideways in a cam-head adapted to engage them respectively, a hollow cam-head provided in its longitudinal walls with curved slots or guideways where cords are parallel with the axis of the propeller-shaft and adapted to engage the lug on said legs and provided with a rearwardly-extending cap or plug and with a forwardly-extending sleeve, said cam-head inclosing the end of said propeller-shaft and part or all of said cross-head and said sleeve inclosing said propeller-shaft for part of its length, substantially as described.

657,845. **PNEUMATIC-TIRED VEHICLE.** JOHN M. WOLBRECHT, Los Angeles, Cal. Filed Nov. 22, 1899. Serial No. 737,938. (No model.)

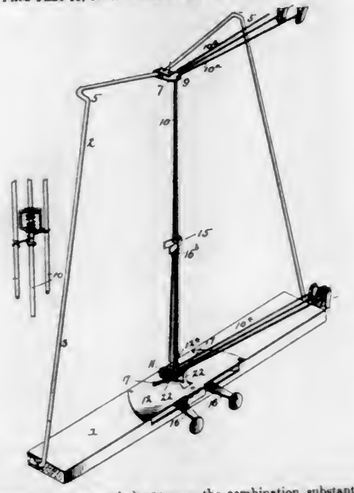


Claim.—1. In a vehicle of the character described, the combination of a hollow post applied to the hollow vehicle-frame and having a valved chamber at its lower end, a hollow sliding seat-bar telescoping said post and having connected to its lower end a diametrically-reduced tubular rod carrying a valved piston arranged in said valved chamber, and a spring-support for said seat-bar, substantially as set forth.

2. In a vehicle of the character described, a combined pump and saddle-post comprising a post having a chamber at the lower end thereof with a valved outlet therefrom, a seat-bar slidably mounted within the post above the chamber, a valved piston having a hollow rod connection with said seat-bar and arranged within said chamber, and a spring-support for said seat-bar arranged intermediately of said chamber and seat-bar, substantially as described.

3. In a device of the character described, the combination of a reservoir having a valved air-outlet, a combined saddle-support and pump comprising a vertically-adjustable post having a chamber in its lower end provided with a valved outlet, a hollow seat-bar arranged to slide in said hollow post, a valved piston arranged in said chamber and having a detachable rod connection with said seat-bar within said post, and means to effect the adjustment of the length of the stroke of said piston, substantially as set forth.

657,846. **MUSIC-LEAF TURNER.** JOSEPH D. WOLF, New Brighton, Pa. Filed June 15, 1900. Serial No. 20,455. (No model.)



Claim.—1. In a music-leaf turner, the combination, substantially as described, of a plurality of pivoted frames, each provided with means for securing leaves of music thereto, a pivoted bridge beveled at each end, and a pair of triggers each provided with a hooked point and mounted on pivots set parallel to the pivot of said bridge, said triggers being located relative to the bridge, in such a manner, that when actuated the hooked ends ride up on the bridge and engage the frames, one of said triggers being adapted to fold the frames over in one direction and the other trigger to fold them over in the other direction.

2. In a music-leaf turner, the combination, substantially as described, of a plurality of frames, pivoted disks in which said frames are journaled, triggers adapted to actuate said frames and fold them over one at a time, and means for bringing said frames successively into position to be engaged by said triggers.

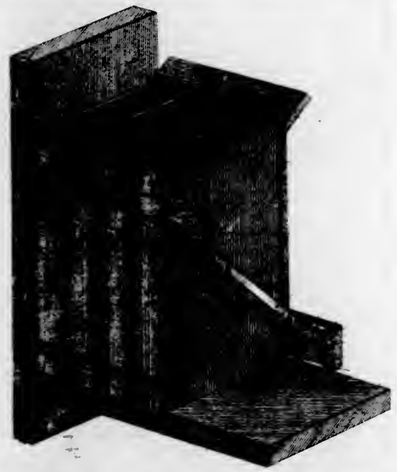
3. In a music-leaf turner, the combination, substantially as described, with a plurality of pivoted frames each provided with means for securing leaves of music thereto, of a pivoted beveled bridge, and a trigger provided with a hooked point on one end and pivotally mounted with its axis parallel to the axis of the said bridge, and so positioned, that, when actuated the hooked end will ride up on the bridge and engage the frames and fold them over and then snap off of the bridge and return to its initial position by rotating the said bridge on its axis.

657,847. **BOOK CASE OR RACK.** JOHN A. YOUNG, Chicago, Ill. Filed Mar. 23, 1900. Serial No. 9,952. (No model.)

Claim.—1. A separator and index attachment for book racks or cases, comprising a series of pivoted and outwardly-swinging separator-pieces, adapted to move into the place of the removed books, the pivots of the separator-pieces being located in a position immediately adjacent to the rear end of the book-shelf upon which rest the books to be separated, substantially as set forth.

2. A separator and index attachment for book racks or cases comprising a series of pivoted and outwardly-swinging separator-pieces formed with an angular forward end, and adapted to move into the place of the removed books, the pivots of the separator-pieces being located in a position immediately adjacent to the rear end of the book-shelf upon which rest the books to be separated, substantially as set forth.

3. A separator and index attachment for book racks or cases, comprising a series of pivoted and outwardly-swinging separator-pieces, provided with receiving-pockets at their front ends and adapted to move into the place of the removed books, the pivots of the separator-pieces being located in a position immediately adjacent to the rear end of the book-shelf upon which rest the books to be separated, substantially as set forth.



4. A separator and index attachment for book racks or cases, comprising a series of pivoted and outwardly-swinging separator-pieces adapted to move into the place of the removed books, the pivots of the separator-pieces being located in a position immediately adjacent to the rear end of the book-shelf upon which rest the books to be separated, and an attaching-rail secured to the rear edge of the book-shelf, substantially as set forth.

5. A separator and index attachment for book racks or cases, comprising a series of pivoted and outwardly-swinging separator-pieces adapted to move into the place of the removed books, a series of pivot-brackets and an attaching-rail secured to the rear edge of the book-shelf, substantially as set forth.

6. A separator and index attachment for book racks or cases, comprising a series of pivoted and outwardly-swinging separator-pieces adapted to move into the place of the removed books, a series of saddle-shaped pivot-brackets, and an attaching-rail secured to the rear edge of the book-shelf, substantially as set forth.

7. A separator and index attachment for book racks or cases, comprising a series of pivoted and outwardly-swinging separator-pieces adapted to move into the place of the removed books, a series of saddle-shaped pivot-brackets provided with flanges on their lower ends, an attaching-rail secured to the rear end of the book-shelf, and a secondary rail engaging the flanges of the brackets to secure the same in place, substantially as set forth.

657,848. CAR-COUPLING. DAVID ARENSON, Escanaba, Mich. Filed Oct. 14, 1899. Serial No. 733,644. (No model.)



Claim.—1. In a car-coupler the combination with a draw-head and knuckle, of a depending member adapted to engage the side of an engaging coupling member, and prevent its lateral movement, and a supporting member on the lower end of the depending member, consisting of a narrow shelf or lug, the length of the depending member, between the knuckle and supporting member, being substantially the width of the knuckle, substantially as set forth.

2. In a car-coupler, the combination with a draw-head and knuckle, of a knuckle extension provided with a supporting member, the shape of the knuckle and knuckle extension corresponding in cross-section, substantially as set forth.

3. In a car-coupler the combination with a draw-head and knuckle, of a knuckle extension provided with a horizontal supporting member grooved on top to receive and prevent the swinging motion of a detached coupling member, when united therewith, substantially as set forth.

4. In a car-coupler the combination with a draw-head and knuckle, of a knuckle extension provided with a supporting member, the extension being cut away to one side of the longitudinal axis of the draw-head, and on its end which carries the supporting member, substantially as set forth.

5. As a new article of manufacture, a knuckle provided with an extension corresponding to the knuckle in cross-section and having a supporting member, substantially as set forth.

6. As a new article of manufacture, a knuckle extension conformable in cross-section to the shape of a knuckle to which it is to be applied, provided upon one end with a dowel-pin and upon the other with a supporting member, substantially as set forth.

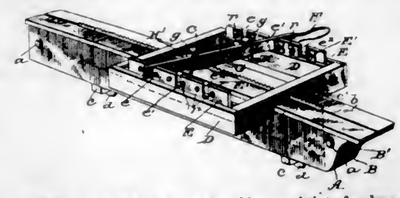
657,849. PROCESS OF MERCERIZING. HENRY E. AYKROYD, Ilkley, and PAUL KRAIS, Bradford, England. Filed Dec. 19, 1899. Serial No. 740,922. (Specimens.)

Claim.—1. The process of treating cellulose materials during the process of mercerization, which consists in immersing them in a stretched condition in caustic alkali, separating the surplus caustic liquor, exposing the treated fiber to the action of bisulfid of carbon and afterward decomposing the thiocarbonate of cellulose formed on the fiber, substantially as described.

2. The improvement in the process of mercerization, or making silk-like materials from fibrous cellulose, which consists in partially converting the same during the process of mercerization and while in a stretched condition into cellulose thiocarbonate, and then decomposing the thiocarbonate, substantially as described.

3. The improvement in the process of mercerization, or making silk-like materials, which consists in taking dry alkali-cellulose fiber while under process of mercerization and treating it with bisulfid of carbon in an attenuated form and decomposing the cellulose thiocarbonate thus formed, substantially as described.

657,850. SAW-SHARPENING MACHINE. GRANVILLE BARTLETT, Lexington, Ky. Filed Apr. 23, 1900. Serial No. 13,935. (No model.)



Claim.—1. A saw-sharpening machine, consisting of a clamp composed of three separate parts having two spaces for receiving and clamping the saw in different planes, bolts passing through the three parts of the clamp, and a movable file-carriage with guides, and a file-bar reciprocating therein substantially as described.

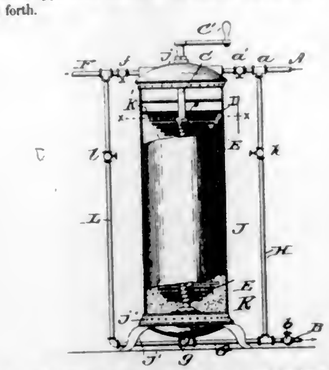
2. In a saw-sharpening machine, the combination with the saw-clamp; of a file-carriage made in rectangular form with two of its sides parallel with but offset from the saw-clamp and provided with a set of guides, and a file-holder reciprocating therein substantially as described.

3. In a saw-sharpening machine, the combination with the saw-clamp; of a file-carriage made in rectangular form with two of its sides parallel with but offset from the saw-clamp, a series of adjustable guides arranged in said parallel sides, a file-holder reciprocating therein, and means for holding the carriage upon the clamp substantially as described.

4. In a saw-sharpening machine, the combination of the saw-clamp made in sections and having flanges *b b* and provided with clamping-bolts and subjacent adjusting-screw, a saw-carriage made in rectangular form with end pieces cut away on the under side and provided with springs *c' c'* underlapping the flanges *b b*, and having also side pieces parallel with and offset from the clamp and provided with guides, and a file-holder reciprocating therein and carrying a file substantially as and for the purpose described.

657,851. FILTER. TILGHMAN H. BOYER, Allentown, Pa. Filed Mar. 30, 1900. Serial No. 10,799. (No model.)

Claim.—1. In a filter of the class described, the combination with a filtering vessel containing a mass of granulated filtering material, of the longitudinally-arranged spiral conveyer arranged to advance the filtering material longitudinally of the vessel, a stop for the material, and passage-ways longitudinally of the vessel whereby the said material can return in a direction opposite to that of its advance by the conveyer, substantially as set forth.



2. In a filter of the class described, the combination with a filtering vessel containing a mass of granulated filtering material, of a spiral conveyer formed of a series of blades, said series extending continuously around the axis, and each blade having its inner end in or near the same axial plane as the ends of the adjacent blades, and having its outer end in an axial plane other than those of the outer ends of the adjacent blades, each said blade diverging outwardly from those in adjacent axial planes, leaving passages on lines between its side edges and the side edges of the blades next adjacent whereby the filtering material can be moved longitudinally of the vessel, and allowed to move in the opposite direction, longitudinally, substantially as set forth.

3. In a filter of the class described, the combination with the filtering vessel containing a mass of filtering material, of the spiral conveyer formed of a series of relatively-narrow blades overlapping each other successively in axial planes at their inner ends, and separated from each other axially at their outer ends, substantially as set forth.

4. In a filter of the class described, the combination with the filtering vessel containing a mass of granulated filtering material, of a longitudinally-arranged upwardly-acting spiral conveyer having a series of blades whose outer ends are separated from each other, and are arranged to provide passage-ways downward for the material and a guide or stop for the material at the upper end of the vessel, substantially as set forth.

5. In a filter of the class described, the combination with the filtering vessel containing a mass of granulated filtering material, of a longitudinally-arranged spiral conveyer formed of a series of relatively-narrow arms or bars in different planes transverse of the axis of the conveyer, and separated at their outer ends, substantially as set forth.

6. In a filter of the class described, the combination with a filtering vessel containing a mass of granulated filtering material, of the longitudinally-arranged shaft in the vessel, the series of collars or arm-supports and a series of spirally-arranged agitating and conveying arms respectively secured to the said collars or supports, substantially as set forth.

7. In a filter, the combination with a filtering vessel adapted to contain a mass of granulated filtering material, of a mechanism for positively engaging with and agitating the granulated material from the axis of the vessel to the circumference thereof and forcing it in a continuous stream in one direction through the vessel, passage-ways permitting the passage of the material in the opposite direction, and means for guiding the material from the lines along which it is forced to said passage-ways, substantially as set forth.

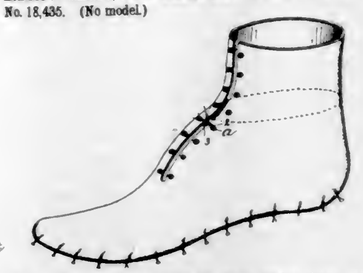
8. In a filter, the combination with a filtering vessel containing a mass of filtering material, of an agitator having a series of arms rotating around a common axis and arranged to form a substantially-continuous spiral or helix relative to axial planes and separated from each other in transverse planes, whereby the material is not only agitated but continuously advances longitudinally, substantially as set forth.

9. In a filter, the combination with a filtering vessel adapted to contain a mass of granulated filtering material of mechanism extending from the axis to the circumference of the said mass and positively engaging with and agitating it throughout and simultaneously moving it in a substantially-continuous stream on longitudinal lines of the vessel, and means supplemental to said mechanism for engaging with the material and positively moving it transversely of the vessel, substantially as set forth.

10. In a filter, the combination with a filtering vessel adapted to contain a mass of granulated filtering material, of a perforated partition or retaining device D, mechanism for causing the filtering material to move toward the said partition, and a rotary arm or arms K adjacent to the said partition or retainer, and in the path of the filtering material, substantially as set forth.

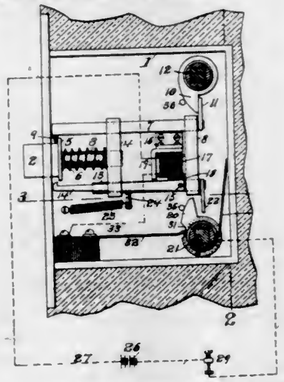
11. In a filter, the combination with a filtering vessel adapted to contain a mass of filtering material, of a rotary agitator-shaft, the series of laterally-projecting arms having their surfaces inclined to planes transverse of the shaft and the blade carriers or hubs adapted to be secured in either of several positions around the shaft substantially as set forth.

657,852. INSTEP-FASTENER FOR USE IN LASTING SHOES. ERNEST E. CANEDY, North Adams, Mass. Filed May 29, 1900. Serial No. 18,435. (No model.)



Claim.—A wire instep-holder for use in lasting shoes, consisting of a base portion, legs at the outer ends of said base portion, said legs being bent inward toward each other to form hooks for engagement with opposite eyelets at the instep-line of shoe-vamp, and a crown or loop formed on said holder centrally between said hooks and projecting from the base of the holder upon the same side as said hooks, said crown or loop designed to extend out between the edges of the instep-opening of the vamp in position to be readily severed by a wire-cutter when the shoe is lasted, substantially as described.

657,853. ELECTRIC LOCK. HENRY G. CARLETON, New York, N. Y., assignor to the Carleton Electric Company, same place. Filed Jan. 13, 1900. Serial No. 1,298. (No model.)



Claim.—1. In a lock, the combination with a movable engaging part, of a withdrawing mechanism, a controller which moves with the withdrawing mechanism when the lock is to be opened, and electrically-controlled means for giving the controller a movement independent of the movement which it has under the influence of the withdrawing mechanism to cause it to engage the movable part, substantially as described.

2. In a lock, the combination with a movable engaging part, of a withdrawing slide, a controller which moves with the slide when the lock is opened, and electrically-controlled means for giving the controller a movement independent of the movement which it has under the influence of the withdrawing slide to cause it to engage the movable part, substantially as described.

3. In a lock, the combination with a sliding spring-held bolt, of a hand-operated withdrawing mechanism therefor, a controller which moves with the withdrawing mechanism when the lock is to be opened, and electrically-controlled means for giving the controller a movement independent of the movement which it has under the influence of the withdrawing mechanism to cause it to engage the movable part, substantially as described.

4. In a lock, the combination with a movable engaging part, of a controller connected to one of said parts and moving therewith, a mag-

net for giving the controller a movement independent of the movement which it has in common with the part to which it is connected for causing it to engage the other part, and means for moving the slide, substantially as described.

5. In a lock, the combination with a movable engaging part, of a slide, a controller carried by one of said parts, a magnet for moving the controller to cause it to engage the other part, said controller forming the armature for the magnet and moving across the field thereof when the lock is opened, and means for moving the slide, substantially as described.

6. In a lock, the combination with a movable engaging part, of a slide and means for moving it, a controller moving with the slide and electrically-controlled means for giving the controller a movement which is independent of the movement it has with the slide for causing it to engage said movable part, whereby the movement of the slide is made effective to open the lock, substantially as described.

7. In a lock, the combination with a movable engaging part, of a slide, a controller pivoted to the slide, a magnet, the attractive force of which is exercised upon the controller to cause it to engage said movable part, and means for moving the slide, substantially as described.

8. In a lock, the combination with a movable engaging part, of a slide, a controller pivoted to one of said parts, a magnet for moving the controller to cause it to engage the other part, said controller forming the armature of the magnet and moving across the field thereof when the lock is opened, and means for moving the slide, substantially as described.

9. In a lock, the combination with a movable engaging part, of a withdrawing mechanism therefor, a controller carried by one of said parts, and a magnet by which the controller is actuated to engage the other part, said controller moving across the field of the magnet when the lock is opened, substantially as described.

10. In a lock, the combination with a movable engaging part, of an actuating device, movable connections between said actuating device and the part, a controller moving with the connections, and a magnet lying in the path of movement of the controller and operating to give it a movement which is independent of the movement which it has with the connections to cause it to engage the movable part, substantially as described.

11. In a lock, the combination with a movable engaging part, of a slide, an actuating device therefor, a controller pivoted on the slide, and a magnet for which the controller forms the armature and across the field of which it moves when the lock is opened, said magnet operating to cause the controller to engage the movable engaging part, substantially as described.

12. In a lock, the combination with a movable engaging part, of a slide, an actuating device therefor, a controller pivoted on the slide, and a magnet lying in the path of movement of the controller and operating to cause it to engage said movable part, substantially as described.

13. In a lock, the combination with a movable engaging part, of an actuating device, moving connections between the actuating device and movable part, a controller pivoted to the connections, and a magnet located near the pivotal point of the controller and the poles of which are arranged close to the controller, said magnet operating when energized to cause the controller to engage the said movable part, substantially as described.

14. In a lock, the combination with a movable engaging part, of movable connections therefor, a controller pivoted to one of said parts, and a magnet located near the pivotal point of the controller and having its poles arranged close to the controller, whereby the controller is caused to engage the other part, the controller moving across the field of the magnet when the lock is opened, substantially as described.

15. In a lock, the combination with a movable engaging part, of a slide, an actuating device therefor, a controller pivoted to the slide, a magnet located near the pivotal point of the controller and having its poles arranged close to the controller, said magnet operating when energized to cause the controller to engage said part, substantially as described.

16. In a lock, the combination with the movable engaging part of a withdrawing mechanism therefor including a rotating cam, electrically-controlled means whereby the withdrawing mechanism is made effective to move the engaging part, a suitable circuit for said means, and means located within the lock-casing whereby the rotating cam operates to close the said circuit, substantially as described.

17. In a lock, the combination with a movable engaging part, of a withdrawing mechanism including an actuating device, and moving connections between it and the said engaging part, a controller, a magnet operating to cause said controller to engage said part, a circuit for the magnet which is open at two points, and circuit-closing devices operated by the movement of the withdrawing mechanism to close the circuit at one of the points, substantially as described.

18. In a lock, the combination with a movable engaging part, of a slide, a controller moving with the slide, a magnet for causing the controller to engage said part, a circuit for the magnet normally open at two points and means operated by the actuating device for closing the circuit at one of the points, substantially as described.

19. In a lock, the combination with a movable engaging part, of a slide, a controller moving with the slide, a magnet for causing the controller to engage said part, a circuit for the magnet normally open at two points and means located in the lock-casing and operated by the actuating devices for closing the circuit at one of the points, substantially as described.

20. In a lock, the combination with a sliding bolt, of two slides, means on one of the slides for engaging said bolt, a controller moving with the other slide, a magnet for causing the controller to engage the bolt and actuating devices for the two slides lying on opposite sides of the lock, substantially as described.

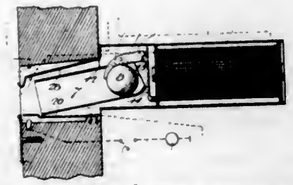
21. In a lock, the combination with a sliding bolt, of two slides, actuating devices for each of the slides, said devices including rotating cams and operating-knobs therefor, said knobs lying on opposite sides of the lock, means whereby one of the slides engages the bolt, a controller pivoted on the other slide, a magnet for causing the controller to engage the bolt, a circuit for said magnet including the rotating cam for the slide which carries the controller, said circuit being open at two points, a terminal for said circuit contained in the lock-casing, said rotating cam being arranged to strike the terminal and close the circuit when the lock is operated, substantially as described.

22. In a lock, the combination with the movable engaging part including a recessed rotating cam, electrically-controlled means whereby the withdrawing mechanism is made effective to move the engaging part, a suitable circuit for said means said circuit including the recessed cam and a terminal lying in the recess, whereby the rotation of the cam closes the circuit, substantially as described.

23. In a lock, the combination with a movable engaging part, of a slide, a controller moving with the slide, a rotating cam for moving the slide, a magnet lying in the path of movement of the controller and operated when energized to cause it to engage said part, a circuit for said magnet which includes the rotating cam, a terminal for the circuit lying in the casing and normally out of contact with the cam, but in a position to be struck by the cam when the same is rotated, and means for closing the circuit at another point, substantially as described.

24. In a lock, the combination with a bolt, of a slide, a controller pivoted to the slide, a club-foot magnet located near the pivotal point of the controller, the poles of said magnet being arranged close to the controller, the magnet being operative when energized to cause the controller to engage the bolt, substantially as described.

657,854. **COMBINED TELEPHONE SIGNAL AND JACK.** OREN R. CLINE, El Dorado, Kans. Filed Feb. 6, 1900. Serial No. 4,211. (No model.)



Claim.—1. The combination with a switchboard having a jack-socket and an inclined guideway leading to the socket, a rotatable indicator element in the guideway and adapted to roll therethrough into the jack-socket, a latch for holding the indicator element normally retracted, electrical terminals, and a plug having its body formed to enter the socket and passage or guide way leading thereto, to move the indicator element into engagement with the latch and to engage a contact, said latch having electrically-operated means for releasing it from the indicator element.

2. The combination with a switchboard having a jack-socket, of a ball adapted for bodily movement to enter the socket, means for holding the ball normally retracted, means for releasing the ball to permit it to move to its indicating position, a plug adapted to fit the socket and to engage the ball and move it to its retracted position, and electrical contacts disposed for engagement by the plug when the ball is moved into engagement with its retaining means.

3. The combination with a switchboard having a jack-socket, of a guideway in the rear of the seat and leading thereto, a rotatable body disposed in the guideway and adapted to roll through the guideway into the socket, a dog adapted to engage the body and hold it retracted, an electromagnet having an armature for operative engagement with the dog to hold the latter in its operative position and to release the dog to release the body, a plug adapted to enter the socket and to engage the body and move it into engagement with the dog, and electrical contacts disposed for contact by the plug when the body is moved into engagement with its retaining means.

4. The combination with a switchboard having a jack-socket, of a tilted tube in the rear of the socket and leading thereto, a revoluble body disposed in the tube and adapted for movement therefrom into the socket, a dog adapted for engagement with the body to hold it in its retracted position, and an electromagnet provided with an armature adapted to engage and hold the dog operative and to release the dog to release the body.

5. The combination with a switchboard having a jack-socket adapted to receive a plug and a guide-tube leading thereto, of a rotatable indicator disposed in the tube for movement therethrough into the socket, means for holding the body normally retracted, a signal-circuit including a movable circuit-closing terminal in the path of movement of the body to receive pressure thereof to close the circuit, and a plug adapted to enter the socket and engage the indicator and move it into engagement with its retaining means.

6. The combination with a switchboard having a jack-socket of a body adapted to roll into the socket, means for guiding the body to the socket, means for holding the body normally retracted, means for releasing the body to permit it to roll into the socket, and a plug adapted to enter the socket and engage the body and move it to its retracted position.

657,855. **FRICTIONAL DRIVING-GEAR.** CLYDE J. COLEMAN, Chicago, Ill., assignor to Thomas J. Ryan, New York, N. Y. Filed Jan. 12, 1900. Serial No. 1,198. (No model.)



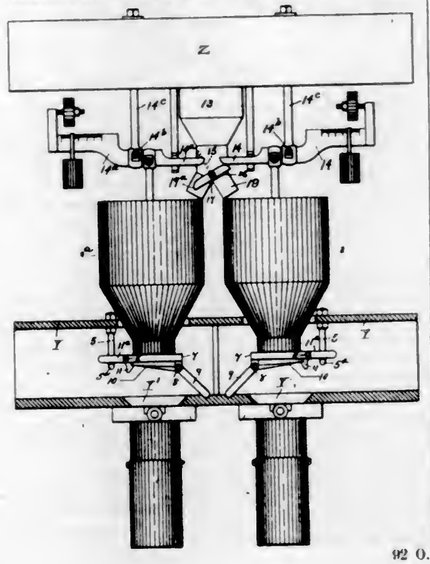
Claim.—1. In a frictional driving-gear, the combination of a driven and driving member, and a series of intermediate bearing shoes or pads carried by the driving member, and attached thereto by a central stud, so as to be capable of independent movement, substantially as set forth.

2. In a frictional driving-gear, the combination of a driven and a driving member, of a series of cup-shaped intermediate bearing shoes or pads carried by the driving member, substantially as set forth.

3. In a frictional driving-gear, the combination of a driven and driving member, and a series of intermediate bearing shoes or pads carried by the driving member, each pad comprising an inner supporting-spider provided with elastic prongs and an outer covering or facing, substantially as set forth.

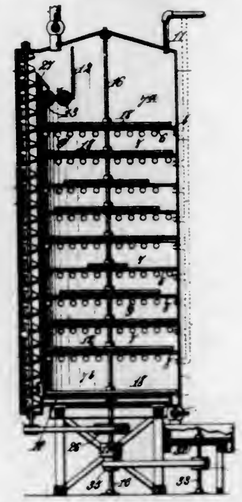
4. In a frictional driving-gear, the combination of a driven and driving member, and a series of intermediate bearing shoes or pads carried by the driving member, each pad comprising an inner supporting-spider provided with elastic prongs, an integral attaching-shank and an outer covering or facing, substantially as set forth.

657,856. **AUTOMATIC WEIGHING-MACHINE.** DAVID S. COOK, Sellersburg, Ind. Filed Aug. 10, 1898. Serial No. 688,264. (No model.)



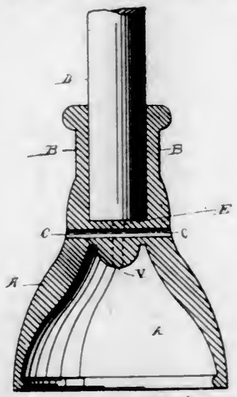
Claim.—In weighing apparatus, the combination of the scale-beams, the weigh-boxes suspended therefrom, the continuous casing or inclosure, having openings in its upper wall through which project the lower end portions of said boxes, and openings in its lower wall opposite said first-named openings, the hopper having the branched discharge into said weigh-boxes, means for controlling the discharge of said hopper, the valve-plates controlling the discharge of said weigh-boxes, the catches for said plates, means whereby said catches are released upon descent of said beams and weigh-boxes, and packaging apparatus communicating with said last-named openings of said inclosure, substantially as specified.

657,857. **PROCESS OF COOKING COTTON-SEED.** WALTER H. COOK, New Orleans, La. Filed May 27, 1899. Serial No. 718,577. (No specimens.)



Claim.—The herein-described process of cooking cotton-seed meats, which consists in dividing the entire body of material into a number of thin layers, repeatedly exposing said thin layers of cotton-seed meats to the action of a low cooking temperature in contact with heated surfaces and under a vacuum, and maintaining said thin layers of meats in a constant state of agitation, whereby scorching and staining of the meats is avoided, substantially as specified.

657,858. **FLEXIBLE WASTE-PIPE CLEANER.** LOUIS A. CORNELIUS, Grand Rapids, Mich. Filed Feb. 15, 1900. Serial No. 5,380. (No model.)



Claim.—1. A tube-cleaner comprising a flexible cup-shaped plunger provided with a solid handle and having a valve located in said plunger and an opening extended from said valve through the wall of the plunger, substantially as described.

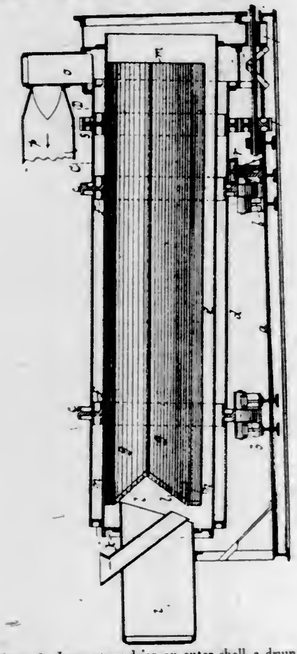
2. In a tube-cleaner, the combination with a flexible cup-shaped plunger A provided with a socket B and a solid handle D, and having an opening C C extended through the plunger-wall, of a valve V located in said plunger and in communication with said opening, substantially as described.

657,859. DRIVING-GEAR FOR VELOCIPEDES. JAMES COTTRELL, London, England, assignor of one-half to Alfred Henry Smith, same place. Filed Dec. 28, 1897. Serial No. 664,071. (No model.)



Claim.—A driving-gear for velocipedes consisting of the combination with the hub of the driving-wheel of the bearing therein situated out of the true center of the driving-wheel, the crank-spindles arranged one within the other and pivotally mounted therein, and links connecting the cranks with the hub of the driving-wheel, substantially as described.

657,860. DRIER. CHARLES L. CUMMINGS, New York, N. Y. Filed Dec. 14, 1899. Serial No. 740,354. (No model.)



Claim.—1. In a rotary drier, an outer shell, a drum secured within said shell and suitably spaced therefrom so as to form a heating-space, and a series of triangular-shaped hollow blades secured to the inner face of said drum and extending toward one another past the axis of the drum, said blades forming heating-surfaces.

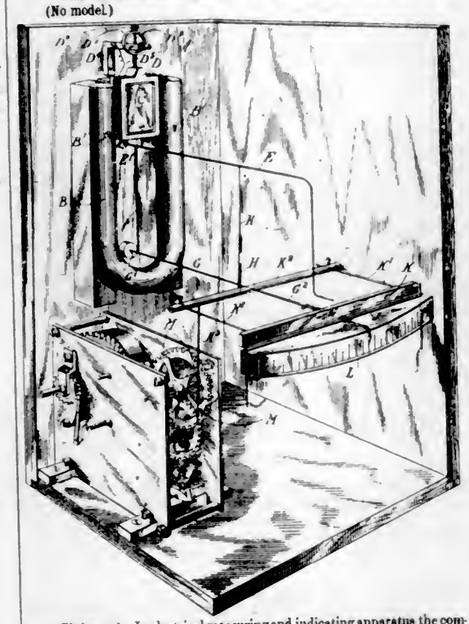
2. In a rotary drier, an outer shell, a drum secured therein and suitably spaced therefrom so as to form a heating-space, a series of hollow blades secured to the inner face of said drum and extending toward one another non-radially and past the axis of the drum, said blades forming heating-surfaces, and means for rotating said drum, substantially as described.

3. In a rotary drier an outer shell, a drum suitably mounted therein, a series of hollow blades arranged in said drum and extending toward one another past the axis of the drum, said blades forming heating-surfaces, a closure-plate for one end of the blades, means for connecting said drum to a source of heat-supply, and means for rotating said drum and sleeve, substantially as described.

4. In a rotary drier, a revolving drum a series of longitudinally-extending hollow blades forming heating surfaces or flues secured to the inner face of said drum, said blades extending toward one another past the axis of the drum, and means for connecting said drum to a source of heat-supply, substantially as described.

5. In a rotary drier, an outer casing, a drum arranged therein and forming a heating-space, a series of hollow blades arranged therein and extending toward one another past the axis of the drum, said blades forming heating-surfaces and in communication with said heating-space, a closure-plate for the said blades, means for connecting said drum to a source of heat-supply, and means for revolving said drum and said casing, substantially as described.

657,861. ELECTRIC MEASURING AND INDICATING APPARATUS. HORACE DARWIN, ERNEST H. GRIFFITHS, and WILLIAM C. D. WHETHAM, Cambridge, England. Filed May 29, 1900. Serial No. 18,472. (No model.)



Claim.—1. In electrical measuring and indicating apparatus the combination of an electric circuit as used in a null method, a movable conductor connected between two points of said circuit, means whereby the conductor automatically alters its point of connection with the circuit until the balancing-point is reached and means for making an intermittent contact between the circuit and the conductor and for arresting the motion of the conductor when such contact is broken substantially as set forth.

2. In electrical measuring and indicating apparatus the combination of an electric circuit as used in a null method, a movable conductor connected between two points of said circuit, means whereby the conductor automatically alters its point of connection with the circuit until the balancing-point is reached, means for making an intermittent contact between the circuit and the conductor and for arresting the motion of the conductor when such contact is broken and means for indicating the position of the point of connection between the circuit and the coil substantially as set forth.

3. In electrical measuring and indicating apparatus the combination of an electric circuit as used in a null method, a movable conductor connected between two points of said circuit, means whereby the conductor automatically alters its point of connection with the circuit until the balancing-point is reached, means for making an intermittent contact between the circuit and the conductor and for arresting the motion of the conductor when such contact is broken, means for indicating the position of the point of connection between the circuit and the coil and means for recording such position substantially as set forth.

4. In electrical measuring and indicating apparatus the combination of an electric circuit as used in a null method, a bridge-wire forming part of said circuit, a magnetic field, a coil suspended in said field and connected between two points of said circuit, a torsion-conductor attached to the coil and in electrical connection therewith, a conducting arm or boom at the lower end of the torsion-conductor, a second arm or boom rigidly attached to the coil, a non-conducting bar situated between the two arms, means for automatically moving the bar so that it presses alternately against each arm, a fixed scale and an indicator on the lower conducting-arm serving to show the position at which said arm makes contact with the bridge-wire substantially as set forth.

5. In electrical measuring and indicating apparatus the combination of an electric circuit as used in a null method, a bridge-wire forming part of said circuit, a magnetic field, a coil suspended in said field and connected between two points of said circuit, a torsion-conductor attached to the coil and in electrical connection therewith, a conducting arm or boom at the lower end of the torsion-conductor, a spring attached to the conducting-arm, a second arm or boom rigidly attached to the coil, a link connecting the two arms, a non-conducting bar situated between the two arms, means for automatically moving the bar so that it presses alternately against each arm, a fixed scale and an indicator on the lower conducting-arm serving to show the position at which said arm makes contact with the bridge-wire substantially as set forth.

6. In electrical measuring and indicating apparatus an electric circuit as used in a null method, a bridge-wire forming part of said circuit, a magnetic field, a coil suspended in said field and connected between two points of said circuit, a torsion-conductor attached to the coil and in electrical connection therewith, a conducting arm or boom at the lower end of the torsion-conductor, a second arm or boom rigidly attached to the coil, means for alternately bringing the lower conducting-arm into contact with the bridge-wire and for frictionally engaging the upper arm and means for indicating the position at which the conducting-arm makes contact with the bridge-wire substantially as set forth.

7. In electrical measuring and indicating apparatus an electric circuit as used in a null method, a bridge-wire forming part of said circuit, a magnetic field, a coil suspended in said field and connected between two points of said circuit, a torsion-conductor attached to the coil and in electrical connection therewith, a conducting arm or boom at the lower end of the torsion-conductor, a second arm or boom rigidly attached to the coil, means for alternately bringing the lower conducting-arm into contact with the bridge-wire and for frictionally engaging the upper arm, means for indicating the position at which the conducting-arm makes contact with the bridge-wire and means for recording such position substantially as set forth.

657,862. SULKY-PLOW. CALVIN R. DAVIS, South Bend, Ind., assignor to the South Bend Iron Works, same place. Filed Mar. 3, 1900. Serial No. 7,223. (No model.)

Claim.—1. In a sulky-plow, the combination with a beam, of a furrow-wheel crank-axle and a land-wheel crank-axle, a lever secured to the land-wheel crank-axle, an arm also secured to said last-mentioned axle, a spring secured at one end to said arm and at the other end to the beam, a toothed segment secured to said land-wheel crank-axle, a lever loosely mounted on said axle and adapted to engage said segment and a rod connecting the loosely-mounted lever and the furrow-wheel crank-axle.

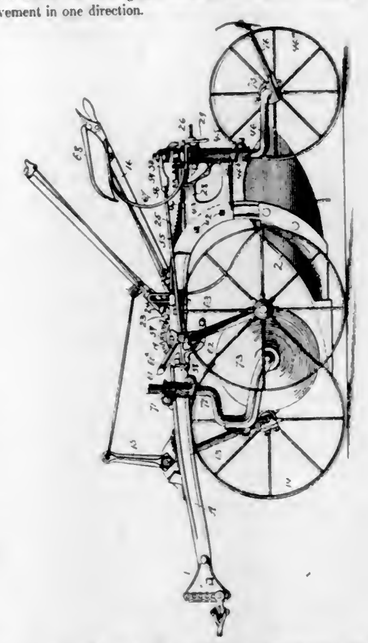
2. In a sulky-plow, the combination of a furrow-wheel crank-axle, a lever for turning said furrow-wheel axle independently, a lever for simultaneously turning the furrow and land wheel axles, an arm secured to the land-wheel axle between said levers and a spring connected with the said arm and the beam and adapted to assist in raising the plow.

3. In a sulky-plow, the combination with a beam, furrow and land wheel axles connected thereto and a single lever for simultaneously turning said axles to raise and lower the beam, of an arm secured to one of said axles and a spring connected to said arm and to the beam and adapted to assist in raising the plow from the ground.

4. In a sulky-plow, the combination with a beam, land-wheel and furrow-wheel crank-axles connected therewith, of levers on the land-wheel axle for operating the furrow-wheel axle, an arm secured to the land-wheel axle, and a spring connected with said arm and the beam to assist in raising the plow from the ground.

5. In a sulky-plow, the combination with a beam, a furrow-wheel crank-axle on said beam and an arm secured to said axle, of a land-wheel crank-axle revolubly supported on the beam, a lever secured to said land-wheel axle, a toothed segment also secured to said axle, another lever loose on said axle, means on said last-mentioned lever adapted to lock the same and toothed segment together, a rod connecting said last-mentioned lever and arm on the furrow-wheel axle, an arm secured on the land-wheel axle, and a spring secured at one end to the rear portion of the beam and at its other end to the free end of said last-mentioned arm.

6. In a sulky-plow, the combination with a beam, a bracket secured to said beam and a caster-wheel crank-axle mounted in said bracket, of an arm secured to said axle, and a foot-lever and means connecting said axle and arm for turning the caster-wheel axle and locking it against movement in one direction.



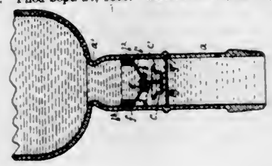
7. In a sulky-plow, the combination with a beam, a caster-wheel crank-axle revolubly connected therewith and an arm on said axle projecting at right angles thereto, of a bell-crank foot-lever connected with said beam and a rod connecting one member of the lever with the arm on the caster-wheel axle and means for limiting the movement of said lever and permitting the connection of the rod to the lever to descend below the pivotal support of the lever for locking the caster-wheel axle against movement in one direction.

8. In a sulky-plow, the combination with a beam, a caster-wheel crank-axle revolubly connected therewith, and an arm on said axle projecting at right angles thereto, of a bell-crank foot-lever supported by said beam, a pivoted bracket on one member of said lever, a headed rod disposed in the bracket and secured to the arm on the caster-wheel axle, and means for locking said last-mentioned member of the lever with its free end below its pivotal support.

9. In a sulky-plow, the combination with a beam, a caster-wheel crank-axle connected therewith and a bell-crank foot-lever supported by said beam, of a bracket on one member of the foot-lever, a rod connecting said bracket with the caster-wheel crank-axle and adapted to be moved to a plane below the axis of the foot-lever to lock the caster-wheel axle against movement in one direction and means for releasing the rod from its locked position.

10. In a sulky-plow, the combination with a beam, a caster-wheel crank-axle connected therewith and a bell-crank foot-lever supported by the beam, of a rod connecting one member of the foot-lever with the caster-wheel axle and adapted to be moved below the pivotal support of said member to lock the axle against movement in one direction, and a downwardly and rearwardly projecting arm on said member for releasing the lever from its locked position.

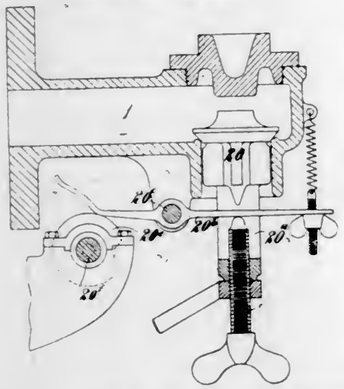
657,863. NON-REFILLABLE BOTTLE. SAMUEL DAVIS, New York, N. Y. Filed Sept. 27, 1899. Serial No. 731,849. (No model.)



Claim.—1. A valve-seat having an upper vertical mouth portion, an incline *b'* and a cross-bar fixed in the upper or mouth portion, the lower or enlarged portion of the seat being left unobstructed or without any cross-piece, a valve of corresponding shape to fit both portions of the the valve-seat, a guiding-stem sliding in the cross-bar and depending from the under part of the valve and secured to the latter so as not to project above the same, and a guard *g* above the valve, the space between the valve-top and guard being left empty or unobstructed to leave the valve free to move back and forth, substantially as described.

2. A valve-seat having an upper vertical mouth portion, an incline *b* and a cross-bar fixed in the upper or mouth portion, the lower or enlarged portion of the seat being left unobstructed or without any cross-piece, a valve of corresponding shape to fit both portions of the valve-seat, a guiding-stem sliding in the cross-bar and depending from the under part of the valve and secured to the latter so as not to project above the same, and a guard *g* above the valve, the space between the valve-top and guard being left empty or unobstructed to leave the valve free to move back and forth, said cross-bar being magnetic to hold or attract the valve to its seat, substantially as described.

657,864. **PUMP.** FREDERICK EDWARDS, London, England. Filed Apr. 17, 1900. Serial No. 13,222. (No model.)



Claim.—1. In a pump, the combination with the barrel having a main inlet and a bucket, of an air-inlet to said barrel, a valve controlling said inlet, and means whereby said valve is closed during its suction and is opened during the discharge stroke of the bucket, substantially as set forth.

2. In a pump, the combination with a barrel having main inlet-openings, a bucket adapted to control said main inlet-opening, an air-inlet to said barrel, a valve controlling said air-inlet, and means whereby said valve is kept closed during the suction-stroke until said main inlet-opening in the barrel communicates with the discharge side of the bucket, substantially as set forth.

3. In a pump, the combination of a barrel having a main inlet, a bucket, means for reciprocating the said bucket, an air-inlet to said barrel, a valve controlling said inlet, a lever for holding the valve closed during the suction-stroke, and means for actuating said lever to permit the opening of the valve during the discharge-stroke of the bucket, substantially as set forth.

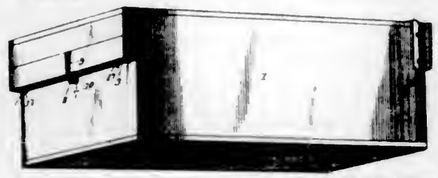
4. In a pump, the combination of a barrel having a main inlet, a bucket, means for reciprocating said bucket, an air-inlet to said barrel, a valve controlling said inlet, a lever connected to said valve, and a cam adapted to actuate said lever and close the valve during the suction-stroke and permit it to open during the discharge-stroke, substantially as set forth.

5. In a pump, the combination of a barrel having a main inlet, a bucket, means for reciprocating said bucket, an air-inlet to said barrel, a valve controlling said inlet, a lever connected to said valve, a spring connected to said lever and tending to open the valve, and a cam which bears against said lever and is adapted to keep said valve closed during the suction-stroke of the bucket, substantially as set forth.

6. In an air-pump, the combination with the barrel having a main inlet and a bucket, of an air-inlet to said barrel, means for opening the inlet during the discharge-stroke and adapted to close the said inlet during the suction-stroke of the bucket, said means also preventing outflow through said inlet, substantially as set forth.

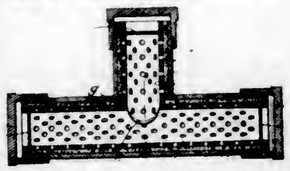
7. In an air-pump, the combination with the barrel having a main inlet, and a bucket, of an air-inlet to said barrel, a non-return valve adapted to control said inlet, means for opening said valve during the discharge-stroke and for preventing said valve opening during the suction-stroke of the bucket, substantially as set forth.

657,865. **BOX-FASTENER.** JAMES M. FELKINS, Americus, Mo. Filed May 7, 1900. Serial No. 15,749. (No model.)



Claim.—The combination with a box, having an outer end cleat provided with an intermediate groove or slot, of a lid, having a pendent catch projected through the slot or groove of the cleat, the lower projecting end of the catch being provided in its outer side and opposite the box with a lateral notch, a spring-wire latch having one end secured to the under side of the cleat, and its intermediate portion received within the notch of the catch, and a keeper pendent from the cleat and having an entrance-opening located upon the inner side and toward the box, the free end of the spring-latch being engaged with the keeper from the inner side thereof.

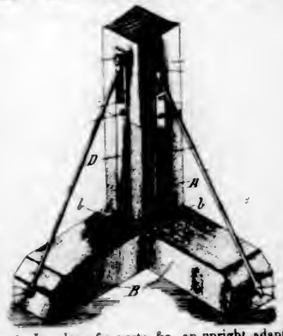
657,866. **INHALER.** WILLIAM H. FIKE, Iberia, Mo. Filed May 17, 1900. Serial No. 16,996. (No model.)



Claim.—1. An inhaler comprising a casing having a body open at its opposite ends, and a stem communicating with and extending laterally from the body at an intermediate point in the length of the latter and open at its outer end, a foraminated cylinder arranged in the body of the casing, a foraminated cylinder arranged in the stem of the casing and communicating with that in the body, and absorbent material interposed between the foraminated cylinders and the body and stem of the casing substantially as specified.

2. An inhaler comprising a casing having a body open at its opposite ends, and a stem communicating with and extending laterally from the body at an intermediate point in the length of the latter and open at its outer end, a foraminated cylinder removably arranged in the body of the casing, a foraminated cylinder removably arranged in the stem of the casing, and absorbent material interposed between the cylinders and the body and stem of the casing and removable therefrom; said absorbent material being held in position by the cylinders and adapted to hold said cylinders against casual movement or displacement, substantially as specified.

657,867. **ARTIFICIAL-STONE BASE.** LEE K. FORSYTHE, Battle Creek, Mich. Filed June 28, 1900. Serial No. 21,933. (No model.)



Claim.—1. In a base for posts, &c., an upright, adapted to support a pole or post on its upper end, metal straps on the sides of the upright

secured thereto and projecting above the upper end thereof and fastened to the post above the upright, and the anchor-piece attached to and projecting from the lower part of the upright, substantially as described.

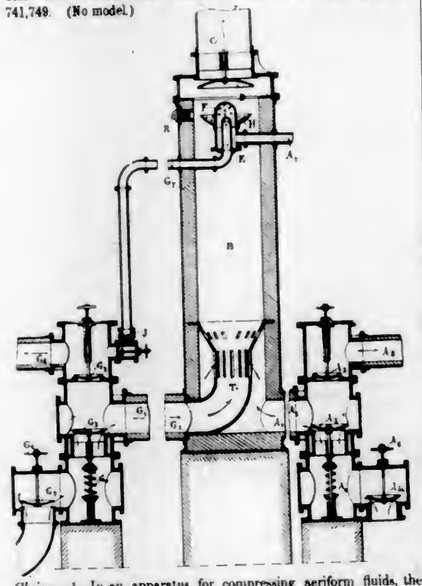
2. The combination of an upright, the pole or post supported on the upper end thereof, and metal straps on the sides of the upright secured thereto and projecting above the upper end thereof and fastened to the post above the upright; with an anchor-piece projecting from the lower part of the upright, the tie-bolt securing the anchor-piece to the upright, and the brace-rod attached to the anchor-piece and to the post above the upright, substantially as described.

3. The combination of the upright, anchor-pieces attached to the lower end thereof, the pole or post supported on the upper end of said upright and the metal straps attached at their upper ends to the lower end of the pole or post and extending down the sides of the upright and fastened thereto and to the anchor-pieces at the lower end thereof substantially in the manner and for the purpose described.

4. The combination of the upright, the anchor-pieces secured thereto by tie-bolts, the post or pole supported on top of the upright, and the metal straps attached to the lower end of the post above the upright, extending down the sides of the upright and having their lower ends secured by the tie-bolts which secure the anchors to the uprights, for the purpose and substantially as described.

5. The combination of the upright, the anchor-pieces secured thereto by through-bolts, the post or pole supported on top of the upright, the metal straps attached to the lower end of the post above the upright, extending down the sides of the upright and having their lower ends secured thereto by tie-bolts which secure the anchors to the uprights, and brace-rods having their upper ends bolted to the post above the upright and their lower ends fastened to the outer ends of the anchor-pieces, for the purpose and substantially as described.

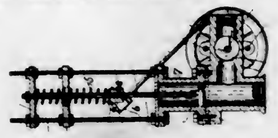
657,868. **APPARATUS FOR USE IN COMPRESSING AIR AND GAS.** EMILE GOBBE, Jumet, Belgium. Filed Dec. 27, 1899. Serial No. 741,749. (No model.)



Claim.—1. In an apparatus for compressing aeriform fluids, the combination of an explosion-chamber having a chimney provided with a valve, an igniter in the upper portion of said chamber, a twyer located in the lower portion of the explosion-chamber and provided with lateral openings, a valved gas-pipe communicating with said twyer, the air-pipe A' communicating with the explosion-chamber through the lateral openings of the twyer, the air-regulating valve A^3 and suction-valve A^2, the air-collector A^4 and the delivery-valve A^5 intermediate said collector and air-pipe, substantially as described.

2. In an apparatus for compressing aeriform fluids, the combination of an explosion-chamber having a chimney provided with a valve, an igniter in the upper portion of said chamber, a twyer located in the lower portion of the explosion-chamber, the air-pipe A' having valves A^2 A^3 and A^5 the air-collector A^4, the gas-pipe G' having valves G^2, G^3 and G^5, and the gas-collector G^4, the said air and gas pipes being in communication with the explosion-chamber through the twyer, substantially as described.

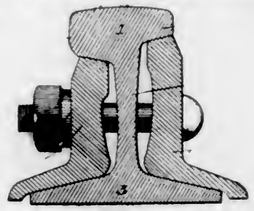
657,869. **STEAM-ENGINE GOVERNOR.** DANIEL GRIFFITH, Wexford, Mich. Filed Feb. 26, 1900. Serial No. 6,606. (No model.)



Claim.—1. In a steam-engine governor, the combination with the valve-casing adapted to be connected with a steam-boiler, the coupling secured thereto and adapted to be connected with a steam-engine cylinder, the cylinder connected to said coupling, the piston located therein, the piston-rod and the coiled spring, of the cross-head secured to said piston-rod, the connecting-rods pivotally connected therewith, the wheels to which said rods are pivotally connected, the shaft connected therewith, and the rotary valve secured to said shaft and seated in said valve-casing, substantially as described.

2. In a steam-engine governor the combination of a valve-casing adapted to be connected with a steam-boiler, a cylinder connected to said valve-casing and adapted to be connected with a steam-engine cylinder, a piston located in said cylinder, a piston-rod fitted in said piston, a coiled spring surrounding the upper end of said piston-rod, a cross-head secured to said piston-rod, a rotary valve seated in said valve-casing, and means for connecting said rotary valve with said cross-head, substantially as described.

657,870. **RAILWAY-RAIL AND JOINT.** SCHUYLER HAZARD, Cincinnati, Ohio. Filed July 27, 1899. Serial No. 725,297. (No model.)



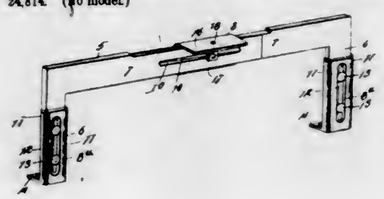
Claim.—1. A railway-rail of the T type, having an eccentric head reduced in depth upon one side and its flange-bearing proportionately projected upon the opposite or gage side of the head, substantially as and for the purposes specified.

2. A railway-rail of the T type, having a head of substantially standard cross-sectional area with its flange-bearings at unequal distances from the central line of its web, said web being the shortest on the gage side of the head or that side which projects farthest from the median line of the web, substantially as and for the purposes specified.

3. A railway-rail of the T type, having a head whose flange-bearings are unequal distances from the central line of the head, and a web whose sides are of unequal length, the longest side of the web corresponding with that side of the head whose flange-bearing is the nearest to the central line of the head, substantially as and for the purposes specified.

4. The combination with a rail of the T type having a head reduced in depth upon one side and correspondingly projected beyond the median line on its opposite or gage side, and a web of unequal height, of angle-plates of unequal depth that having the greater depth being placed on the side opposite the gage side of the rail, substantially as and for the purposes specified.

657,871. **BUGGY BODY AND SEAT BRACE.** STEPHEN J. HESTER and JAMES I. CARTER, Mayfield, Ky. Filed July 25, 1900. Serial No. 24,814. (No model.)



Claim.—1. A device of the class described comprising a lower brace having sides or legs and provided with a central flange, a top brace designed to be arranged on a seat and having upwardly-extending arms for attachment to the sides of the seat, and a fastening device connecting the top brace and the flange of the bottom brace, substantially as described.

2. A device of the class described comprising a top brace, and a bottom brace consisting of a top portion having adjustable sections and provided with a central plate or section secured to the said sections and connected with the top brace, and sides or legs, substantially as described.

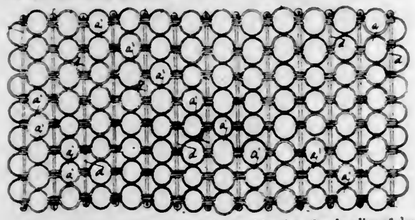
3. A device of the class described comprising a top brace designed to be secured to the upper face of a seat and composed of adjustable sections, and a bottom brace designed to be arranged beneath a seat and composed of adjustable sections and connected with the top brace, substantially as described.

4. In a device of the class described, the top brace designed to be arranged at the upper face of a seat and composed of overlapped sections adjustably secured together at their inner ends, and provided at their outer ends with arms adapted to be secured to the sides of the seat, substantially as described.

5. In a device of the class described, a bottom brace composed of the top sections 7 having overlapped inner ends tapered and slotted, a central plate or section, a fastening device extending through the central plate or section and through the slots of the other sections, and the sides or legs composed of upper body portions having ways, and the adjustable lower sections mounted in the ways, substantially as described.

6. In a device of the class described, a bottom brace composed of the central plate or section having a top flange and provided at its bottom with a rib, the sections 7 having overlapped inner ends adjustably secured to the plate or section between the rib and the flange thereof, and sides or legs, substantially as described.

657,872. **METAL DOOR-MAT.** JOHN W. HORNER, Des Moines, Iowa. Filed July 2, 1900. Serial No. 22,278. (No model.)



Claim.—1. In a metal door-mat the combination of a plurality of short flat pieces of metal bent laterally at their central portions and their straight end portions perforated and straight wires extended through the mating perforated ends to pivotally connect the flat end portions, for the purposes stated.

2. A flexible metal door-mat consisting of a plurality of short pieces of flat metal each bent laterally into angular form at its center and perforated at their ends, straight round wires extended through its mating parallel and overlying perforated ends and provided with heads at their ends, to operate in the manner set forth for the purposes stated.

657,873. **INSERTIBLE CUTTER OR TOOTH FOR ROTARY SAWS.** JOHN H. JEWETT, Koss, Mich. Filed Feb. 14, 1900. Serial No. 5,184. (No model.)

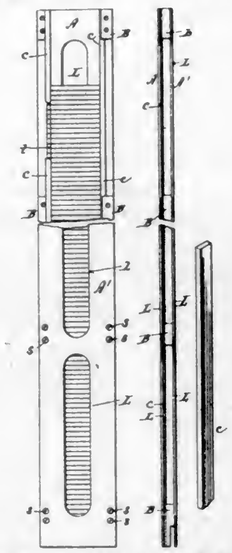


Claim.—1. The combination with a saw-blade provided with an arcuate socket having spaced notches in its convex side, an arcuate cutter having concentric front and rear sides and a locking-nib on its concave side at the heel thereof adapted for engagement with either of the notches of the blade, an arcuate wedge having interlocking engagement with the cutter and with the concave side of the socket, and an auxiliary fastener engaging the contiguous edges of the wedge and socket to retain the wedge in position to prevent such movement of the cutter as would effect a withdrawal of the locking-nib from its recess.

2. The combination of a saw-blade provided with an arcuate socket and the spaced notches in its convex side, an arcuate cutter having the grooved front and rear sides and the locking-nib on its concave side at the heel thereof adapted for engagement with either of the notches of the blade, an arcuate wedge grooved and notched on its rear side and engaging with the cutter and the concave wall of the bit-socket, and a fastener-screw engaging with the blade and with the notched edge of the wedge, as set forth.

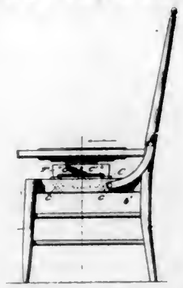
3. In a rotary saw, an arcuate cutter provided on its rear side with a deep channel or groove extended to define a cutting edge at the active end of the cutter, and the cutter-bits located on opposite sides of the cutting edge, the latter extending in advance of the cutter-bits and the whole arranged to exert a shearing or drawing cut on the work, in combination with a blade having an arcuate socket, and a locking-wedge engaging the groove in the convex edge of the cutter, substantially as described.

657,874. **TYPE-CONTAINING CHANNEL.** LOUIS K. JOHNSON and ABBOT A. LOW, New York, N. Y., assignors to the Alden Type Machine Company, same place. Filed Jan. 18, 1899. Serial No. 702,517. (No model.)



Claim.—The combination of the side walls A, A', formed with the longitudinal openings L, L, the spacing-blocks B, B, formed with the offset *b*, *b*, the longitudinal shoulder-strips *c*, *c*, fitting in the offsets *b*, *b*, in the blocks B, B, and the screws *s*, *s*, for binding the parts together to form a rigid type-containing channel, substantially in the manner shown and described.

657,875. **CHAIR.** SAMUEL W. JOHNSON, Newport News, Va. Filed Mar. 13, 1900. Serial No. 8,463. (No model.)



Claim.—1. The combination with a chair-frame, having a back rigid therewith; of a combined rocking and revolving seat mounted in and supported by the frame and independent of the back.

2. The combination with a chair-frame, having a back rigid therewith; of opposite depending arc-shaped supports; opposite rests for the same; a seat independent of the back supported by said arc-shaped supports; and means for revolubly supporting said seat.

3. The combination with a chair-frame having a back rigid therewith; and opposite rests secured to the side rails thereof; of a cross-piece having a central socket; arc-shaped supports depending from the cross-piece; and a superimposed seat revolubly mounted on the cross-piece and independent of the back.

4. The combination with a chair-frame having a back rigid therewith; and opposite rests secured to the side rails thereof; of a cross-piece having a central socket; arc-shaped supports depending from the cross-piece and supported by the rests; and a seat, provided with a central depending post entering said socket, said seat being independent of the back.

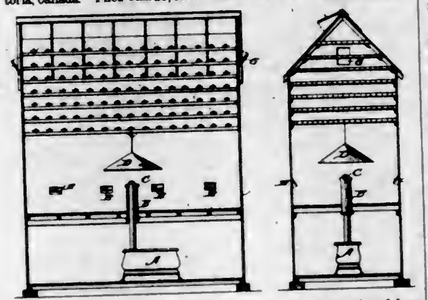
657,876. **HEDGE FENCE.** ERASTUS P. KEPNER, Nora, Ill. Filed Feb. 2, 1899. Serial No. 704,252. (No model.)



Claim.—1. A hedge fence comprising a single straight row of plants bent over in the same direction, each plant having the form of an arch and all being substantially in the vertical plane of the row, all the plants being interwoven in the same vertical plane, passing across each other in the process of interweaving, by twos, and each plant having its bent-over upper end secured to another plant in the row, near the earth, substantially as described.

2. A hedge fence comprising a single straight row of plants, as 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11, bent over or arched in the same direction and in substantially the vertical plane of the row, each plant, as plant 5, being passed in front of plants 1 and 2, behind plants 3 and 4, in front of plants 6 and 7, and behind plants 8 and 9, and secured to plant 10, near the earth, substantially as and for the purpose set forth.

657,877. **PROCESS OF CURING AND SMOKING FISH.** HORACE E. KIRBY, Rock Bay, Canada, assignor to Frank Caspar Davidge, Victoria, Canada. Filed Jan. 23, 1900. Serial No. 2,522. (No specimens.)



Claim.—The process of smoking fish with cool smoke produced from a wood-fire and coal-tar, substantially in the proportions mentioned for the purposes set forth.

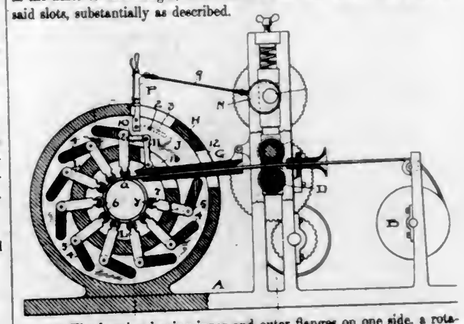
657,878. **WIRE-SPRING-COILING MACHINE.** SETH KIRK, Akron, Ohio, assignor to Thomas M. Brintnall, Medina, and J. B. Parsons and C. H. Tucker, Cleveland, Ohio. Filed Nov. 27, 1899. Serial No. 738,258. (No model.)

Claim.—1. In a spiral-spring-forming machine, a former having a series of radially-disposed adjustable plungers, and a cam-plate to determine the position of the plungers, substantially as described.

2. The housing for the forming mechanism, having bearings for a series of radially-disposed plungers, a plate having slots to adjust the plungers, and engaging parts on the plungers in said slots, substantially as described.

3. The housing having two concentric flanges on one side, the inner flange having slots at intervals and plungers in said slots, and a rotatable cam-plate between said flanges with which the plungers are connected, substantially as described.

4. The double-flanged housing and the rotatable cam-plate therein having a series of tangential slots, plungers adapted to slide in bearings in the inner of said flanges, and rollers on the side thereof engaged in said slots, substantially as described.



5. The housing having inner and outer flanges on one side, a rotatable cam-plate between the base of said flanges, and means to secure the plate in any adjusted position, substantially as described.

6. The double-flanged housing and the plate between the flanges, a lever fixed on said plate, and means connected with the lever to rotate the plate back and forth successively, substantially as described.

7. The machine described having a series of coil-forming members, a casing in which said members are supported, rollers on the ends of said members set in spiral relation from first to last, and devices to feed the stock to said members, substantially as described.

8. The housing and the movable ring therein having a series of tangential slots, in combination with a series of plungers engaged at one end in said slots and having rollers on their other ends in spiral arrangement, substantially as described.

9. The housing and the radially-disposed plungers having rollers on their inner ends, and a wire-guide arranged to feed the wire beneath the first roller in the series, and a support for said guide from the first plunger, substantially as described.

10. The housing and the series of wire-forming plungers therein, a cam-plate to actuate said plungers, and an eccentric and lever connections for actuating said plate, substantially as described.

11. In a spiral-wire-forming machine, a series of plungers, means to actuate said plungers simultaneously comprising a member with which all the plungers are connected, an eccentric and connections therefrom to said member, and means to rotate said eccentric, substantially as described.

12. The housing and the plungers therein, and means to operate said plungers, in combination with mechanism in advance of the first plunger to force the wire past all the plungers, substantially as described.

13. In a machine for making coiled springs, the combination of the coil-forming members and the supports therefor, with a stock-guiding device for the said members, and stock-feeding rolls outside said device to force the stock forward, substantially as described.

14. In a machine for making coiled springs, a series of forming members set in radial and spiral relation from first to last, and stock-feeding mechanism constructed to force-feed the stock in its formations between said forming members, substantially as described.

15. In a coil-spring-forming machine, a series of radially-disposed forming members having spiral-forming ends, and means to feed the stock to said spiral-forming ends comprising a feed-tube leading to one of said ends, substantially as described.

16. In a spiral-spring-forming machine, a former having a series of radially-disposed adjustable plungers, means to set said plungers for varying diameters of springs, and means to forcibly feed the wire to the plungers, substantially as described.

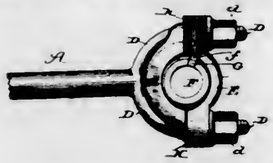
17. In a spiral-wire-spring-forming machine, the combination of a set of forming-plungers, a feed-guide for the wire leading to the first plunger, means to move said plungers and guide together, and means to feed the wire forcibly through said guide, substantially as described.

18. In a spiral-spring-forming machine, a series of wire-coil-forming plungers radially disposed, means to automatically move said plungers back and forth lengthwise to form a varying-diameter spring, said means comprising an eccentric rotatable member and connections therefrom to all the said plungers, and means outside said plungers to force-feed the wire thereto, substantially as described.

19. In a spiral-spring-forming machine, the combination of a set of forming-plungers, and a feed-guide for the stock, means to actuate said plungers and guide together, and means to feed the stock to said guide, substantially as described.

20. In a spiral-spring-forming machine, a series of coil-forming plungers, and means to automatically actuate said plungers back and forth to form a varying diameter of spring, substantially as described.

657,879. PITMAN CONNECTION. DAVID C. LIEGENFELTER, Plainview, Nebr. Filed June 26, 1900. Serial No. 21,504. (No model.)

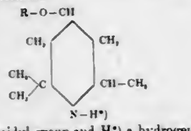


Claim.—1. The combination with the mower-shaft, wrist-pin, and the pitman-box comprising the fork D, and the movable cap E, of the brass bushing F for such bearing, the same having a circumferential swell and a lengthwise slot, and a key of the required width inserted between the separated edges of the bushing and forming part of a smooth bearing-surface and holding the edges of the bearing a fixed distance apart, as shown and described.

2. The combination with the wrist-pin and pitman having a bearing as described, and means for clamping the movable part of the bearing, of washers inserted between the parts of said bearing, a bushing having a lengthwise slot and one of a series of graduated keys inserted in such slot, as and for the purpose specified.

657,880. COMPOUND OF VINYLDIACETON-ALKAMINS AND PROCESS OF MAKING SAME. ALBRECHT SCHMIDT and GEORGE MERLING, Berlin, Germany, assignors to the Chemische Fabrik auf Actien, vormals E. Schering, same place. Filed Sept. 26, 1896. Serial No. 607,110. (Specimens.)

Claim.—1. As new chemical products, compounds of the herein-described vinyldiacetonalkamin melting at 138°, the composition of which compounds answers the formula



in which R signifies an acidyl group and H* a hydrogen atom which can be replaced by an alkyl group; such compounds in the form of the free bases are insoluble in water, decompose, upon boiling with watery or alcoholic alkalies, into the corresponding alkamin base and a salt of that acid the radical of which was substituted for the hydrogen atom of the hydroxyl, and combine with inorganic and organic acids to form the corresponding salts which have anæsthetic properties.

2. The process of obtaining local anæsthetics which consists in reducing vinyldiacetonamin to vinyldiacetonalkamin, transforming the latter into a salt, crystallizing this salt, whereby a vinyldiacetonalkamin of a melting-point of 138° centigrade is isolated and substituting in this base an acidyl group for the hydrogen atom of the hydroxyl, substantially as described.

3. As an improvement in the process of obtaining local anæsthetics from the herein-described vinyldiacetonalkamin melting at 138° centigrade, substituting in this base an acidyl group for the hydrogen atom of the hydroxyl, substantially as described.

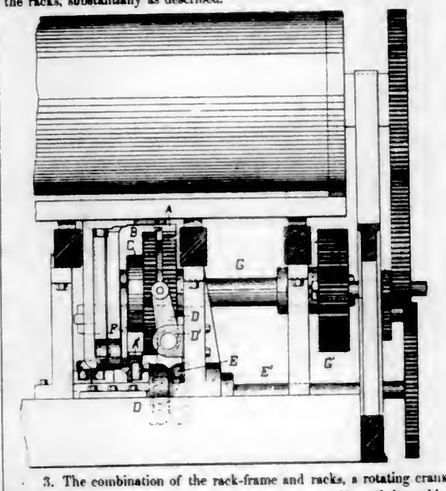
4. In the process of obtaining local anæsthetics from the herein-described vinyldiacetonalkamin melting at 138° centigrade, the production of alkyl derivatives from the base melting at 138° by treating it with alkyl reagents.

5. In the process of obtaining local anæsthetics from the herein-described vinyldiacetonalkamin melting at 138° centigrade, the production of alkyl derivatives by first producing the acidyl compounds of this base and then treating the acidyl compounds with alkyl reagents.

657,881. PRINTING-PRESS. ROBERT MIEHLE, Chicago, Ill., assignor to the Miehle Printing Press and Manufacturing Company, same place. Filed Dec. 20, 1899. Serial No. 741,024. (No model.)

Claim.—1. In a bed motion, the combination of the bed-racks, a pinion adapted to engage said racks, a stationary spindle supporting said pinion, a crank for rotating said pinion on said spindle and means for shifting said pinion on said spindle to alternately engage the racks substantially as described.

2. In a bed motion, the combination of the bed-racks in different vertical planes, a pinion adapted to alternately engage said racks, a stationary spindle on which said pinion is journaled, a crank for rotating said pinion, and means for shifting said pinion on the spindle to alternately engage the racks; with means for reversing the movement of the rack-frame independently of the pinion and while the same is disengaged from the racks, substantially as described.



3. The combination of the rack-frame and racks, a rotating crank, means for supporting said crank, and means whereby said crank in enabled to reverse the movement of the rack-frame at each end of the movement thereof; with a pinion adapted to be alternately engaged with said racks, means for supporting said pinion concentric to the crank or its supports, the journal-bearings of said pinion and crank being independent, and means for rotating said pinion, substantially as described.

4. The combination of the bed or part to be reciprocated, a pair of racks attached to the bed and located in different vertical planes, a crank-shaft, a crank thereon intermediate the racks, and means whereby said crank is enabled to reverse the movement of the rack-frame at each end of the movement thereof; with a pinion adapted to be alternately engaged with said racks, a stationary spindle supporting said pinion concentric to but independently of the crank, and means for effecting the relative change of position of the racks and pinion during the reversal periods, substantially as described.

5. The combination of a pair of racks in different planes, a rotating crank, a fixed spindle or support concentric to the crank-axis, a pinion supported upon said spindle, means for rotating the pinion, means for engaging said pinion alternately with the racks, and mechanism actuated by said crank for reversing the movement of the bed when the pinion is disengaged from the racks substantially as described.

6. The combination of a pair of racks in different planes, a rotating crank, a fixed spindle or support concentric to the crank-axis, a pinion supported upon and longitudinally movable on said spindle, means for rotating the pinion from said crank, means for shifting said pinion on the spindle to alternately engage the racks, and mechanism actuated by said crank for reversing the movement of the bed during the shifting movement of the pinion.

7. The combination of the rack-frame, the racks disposed in different vertical planes, a pinion adapted to alternately engage said racks, and a stationary spindle upon which said pinion is journaled; with a shaft extending through the said spindle, and mechanism, operated by said shaft, for reversing the movement of the rack-frame while the pinion is disengaged from the racks, and means for rotating the pinion.

8. The combination of the rack-frame, the racks disposed in different vertical planes, a main pinion adapted to alternately engage said racks, and a stationary spindle upon which said pinion is journaled; with a rotary shaft extending through the said spindle, a crank on the inner end of said shaft, and mechanism whereby said crank is enabled to effect the reversal of movement of the rack-frame while the pinion is disengaged from both racks and means for shifting the pinion, during the reversal, from one rack to the other.

9. The combination of a reciprocating bed, the opposite racks attached thereto, a pinion adapted to alternately engage said racks, a stationary spindle upon which said main pinion is journaled, and means for shifting the engagement of said pinion during the period of reversal from one rack to the other; with a shaft extending axially through said spindle, the crank on the inner end of said shaft, means connected to the rack-frame whereby said crank is enabled to reverse the movement of the racks when the pinion is disengaged therefrom, and means whereby the gear is rotated from the crank while supported independently thereof, substantially as described.

10. The combination of a reciprocating bed, the opposite racks, a pinion adapted to alternately engage said racks, a stationary spindle upon which said main pinion is journaled, said spindle being of greater width than the pinion, and means for shifting the pinion on the spindle during the period of reversal; with a shaft extending axially through said spindle, the crank on the inner end of said shaft, means whereby said crank is enabled to reverse the movement of the bed when the pinion is disengaged from the racks, and means whereby the gear is rotated from the crank while supported independently thereof, substantially as described.

11. The combination of a reciprocating bed, the opposite racks disposed in different vertical planes attached thereto, a pinion adapted to alternately engage said racks, a stationary spindle upon which said main pinion is journaled, said spindle being of greater width than the pinion, and means for shifting said pinion on the spindle during the period of reversal from one rack to the other; with a shaft extending axially through said spindle, the crank on the inner end of said shaft partially concealed in a recess in the end of the spindle, means connected to the rack-frame whereby said crank is enabled to reverse the movement of the racks when the pinion is disengaged therefrom, and an arm on said crank extending over said spindle and engaging the pinion whereby the latter is rotated with the crank while supported independently thereof, all substantially as and for the purpose set forth.

12. In a bed movement, the combination of the bed, the two opposite racks attached thereto in different vertical planes, a pinion adapted to alternately engage said racks, a stationary spindle upon which said pinion is journaled, and means for shifting said pinion longitudinally on said spindle from position to engage one rack into position to engage the other during the period of reversal; with a rotating crank-shaft projecting axially through and journaled in said spindle, having a crank-body on its inner end, a crank-arm attached to said body and projecting over said spindle and engaging the pinion so as to rotate the latter on the spindle, and means whereby the crank is enabled to reverse the bed while the main pinion is out of mesh with the racks.

13. In a bed movement, the combination of the bed, two opposite racks attached thereto in different vertical planes, a main pinion adapted to alternately engage said racks, a stationary spindle upon which said pinion is journaled, and means for shifting said pinion longitudinally on said spindle from position to engage one rack into position to engage the othe during the period of reversal; with a rotating shaft projecting axially through said spindle, having a crank-body on its inner end, a crank-arm attached to said body and projecting over said spindle and engaging a recess in the bore of the pinion so as to rotate the latter on the spindle, a crank-arm attached to said disk and projecting radially therefrom, a wrist-pin on said arm, and end slots at the end of the rack-frame adapted to be engaged by said wrist-pin to effect the reversal of movement of the rack-frame while the pinion is disengaged from the racks, and means for shifting the pinion longitudinally of the spindle while it is disengaged from the racks during the period of reversal.

14. The combination of the rack-frame, the racks, the stationary spindle, the pinion journaled on said spindle, the rotating shaft journaled in and projecting through said spindle and a crank-arm on said shaft engaging said pinion and adapted to rotate the same on the spindle, substantially as described.

15. The combination of the rack-frame, the racks, and the guide-slots on the end of the rack-frame, the stationary spindle, and the main pinion journaled on said spindle; with the rotating shaft projecting through said spindle, a crank-arm on said shaft engaging said pinion and adapted to rotate the same on the spindle; another crank-arm attached to said shaft and carrying a wrist-pin adapted to engage the guide-slots to effect the reversal of the movement of the bed, and means for shifting the pinion longitudinally on said spindle during the reversal of the bed, substantially as described.

16. The combination of the rack-frame, the opposite racks disposed in different vertical planes, and mechanism for effecting the reversal of the movement of the bed; with a stationary support, a pair of connected main pinions journaled thereon, and adapted to respectively, but at alternate times, engage the opposite racks and a crank for rotating said pinions for the purpose and substantially as described.

17. The combination of the rack-frame, the opposite racks disposed in different vertical planes, a fixed spindle, a pair of connected pinions journaled thereon, respectively adapted to engage the opposite racks, but at alternate times, means for reversing the movement of the beds, a crank for rotating said pinions and means for throwing the pinions alternately into engagement with their respective racks.

18. The combination of the rack-frame, the opposite racks disposed in different vertical planes, a fixed spindle, a pair of rigidly-connected pinions journaled on said spindle and movable longitudinally thereof, and respectively adapted to engage the opposite racks at alternate times; with a crank for rotating said pinions, means for reversing the movement of the frame, and means for shifting the pinions on the spindle alternately into engagement with their respective racks.

19. The combination of the rack-frame, the racks, the stationary spindle, the pair of connected main pinions journaled on said spindle, the rotating shaft journaled in and projecting through said spindle and a crank-arm on said shaft engaging said pinions and adapted to rotate the same on the spindle, and a second crank-arm attached to said shaft and carrying a wrist-pin and the guide-slots on the end of the rack-frame adapted to be engaged by the wrist-pin to effect the reversal of the movement of the beds, and means for shifting the pinions longitudinally on said spindle during the reversals of the bed, substantially as described.

20. The combination of the rack-frame, the opposite racks, a fixed spindle, a pair of pinions journaled thereon, respectively adapted to engage the opposite racks, but at alternate times, and means for throwing the pinions alternately into engagement with their respective racks; with a rotating shaft extending through the spindle, means for rotating the pinions upon the spindle from said shaft, and means for reversing the movement of the beds while the pinions are being shifted.

21. The combination of the rack-frame, the opposite racks disposed in different vertical planes, a fixed spindle, a pair of connected pinions journaled thereon, respectively adapted to engage the opposite racks, but at alternate times, and means for throwing the pinions alternately into engagement with their respective racks; with a rotating shaft extending through the spindle, a crank-arm attached to said shaft for rotating the pinions upon the spindle, and means, independent of the pinions, actuated by said shaft for reversing the movement of the beds while the pinions are being shifted.

22. The combination of the rack-frame, the opposite racks thereon disposed in different vertical planes and the guide-slots at the end of the rack-frame; a stationary spindle, and a pinion journaled on said spindle, with a crank-shaft extending through said spindle, a crank-arm attached to said shaft and engaging the pinion and rotating the latter upon the spindle, and a second crank-arm attached to said shaft carrying a wrist-pin and rollers adapted to engage the end slots in the rack-frame to reverse the movement thereof, and means for shifting the engagement of the pinion from one rack to the other during the reversal periods, substantially as described.

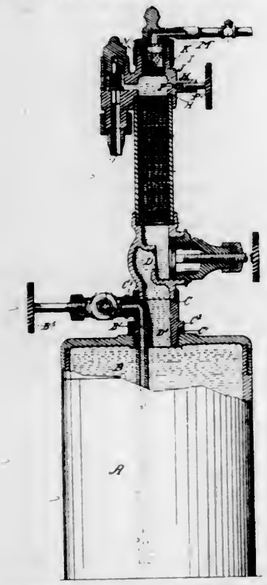
23. The combination of the rack-frame, the opposite racks thereon disposed in different vertical planes and the guide-slots at the end of the rack-frame, a stationary spindle, a pinion journaled upon and longitudinally movable on said spindle, a crank-shaft extending axially through said spindle and journaled therein, a crank-body on the inner end of said shaft and loosely fitted in a recess in the inner end of the spindle, a crank-arm attached to said body, engaging a recess in the bore of the pinion whereby the latter is rotated upon the spindle, and a second crank-arm attached to the said body carrying a wrist-pin and rollers adapted to engage the end slots in the rack-frame to reverse the movement thereof, and means for shifting the pinion longitudinally of the spindle during the reversal periods, all substantially as and for the purpose set forth.

657,882. CARBONATING APPARATUS. EDWARD E. MURPHY, Somerville, Mass., assignor to the New Era Carbonator Company, Charlestown, W. Va. Filed Apr. 15, 1899. Serial No. 713,099. (No model.)

Claim.—1. In a carbonating apparatus, a liquid-inlet pipe for supplying liquid under pressure, a gas-inlet pipe for supplying gas under less pressure than that on the liquid, a mixing-chamber for the gas and liquid in constant open communication with the liquid-supply under initial liquid-pressure and normally filled with gas and liquid, a valve normally closing said gas-inlet pipe by the pressure in said mixing-chamber and adapted to open automatically by the pressure of the gas upon a reduction of pressure in the mixing-chamber below the gas-pressure to admit gas which flows into the mixing-chamber by its own pressure independently of the flow of the liquid, means operating to allow the gas to fill the mixing-chamber before it is filled with the liquid, a passage establishing communication between the mixing-chamber and the storage-reservoir, a valve controlling said passage, an outlet for the carbonated liquid from the storage-reservoir, and a valve controlling said outlet.

2. In a carbonating apparatus, a liquid-inlet pipe for supplying liquid under pressure, a gas-inlet pipe for supplying gas under less pressure than that on the liquid, a mixing-chamber for the gas and liquid in constant open communication with the liquid-supply under initial liquid-pressure and normally filled with gas and liquid, a valve normally closing said gas-inlet pipe by the pressure in said mixing-chamber and adapted to open automatically by the pressure of the gas upon a reduction of pressure in the mixing-chamber below the gas-pressure to admit gas which flows into the mixing-chamber by its own pressure independently of the flow of the liquid, means for retarding the flow of the liquid from the liquid-supply pipe into the mixing-chamber to allow the gas to fill the mixing-chamber before it is filled with the liquid, a passage establishing communication between the mixing-chamber and the storage-reservoir, a valve

controlling said passage, an outlet for the carbonated liquid from the storage-reservoir, and a valve controlling said outlet.

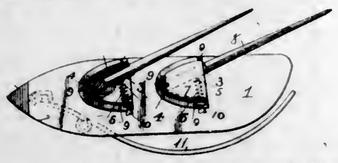


3. In a carbonating apparatus, a liquid-inlet pipe for supplying liquid under pressure, a gas-inlet pipe for supplying gas under less pressure than that on the liquid, a mixing-chamber for the gas and liquid in constant open communication with the liquid-supply under initial liquid-pressure and normally filled with gas and liquid, a valve normally closing said gas-inlet pipe by the pressure in said mixing-chamber and adapted to open automatically by the pressure of the gas upon a reduction of pressure in the mixing-chamber below the gas-pressure to admit the gas which flows into the mixing-chamber by its own pressure independently of the flow of the liquid, means for subdividing and combining the gas and liquid, means for retarding the flow of the liquid from the liquid-supply pipe into the mixing-chamber to allow the gas to fill the mixing-chamber before it is filled with the liquid, a passage establishing communication between the mixing-chamber and the storage-reservoir, a valve controlling said passage, an outlet for the carbonating liquid from the storage-reservoir, and a valve controlling said outlet.

657,883. PROCESS OF MANUFACTURING BRONZE-POWDER. LEONHARDT OTT and HANS RIFFELMACHER, Roth, Germany, assignors to the Bronzefarbenwerke Actien-Gesellschaft, vormals Carl Schlenk, same place. Filed July 21, 1899. Serial No. 724,711. (No specimens.)

Claim.—The herein-described process of producing bronze colors from granular metal powder, consisting in cleaning and pickling the grains, gradually reducing the grains by stamping into fine dust, and annealing the powder for which purpose the stamping is interrupted at intervals.

657,884. GRASS-BOARD. FRANKLIN F. PARK, New Castle, Colo. Filed Mar. 26, 1900. Serial No. 10,216. (No model.)

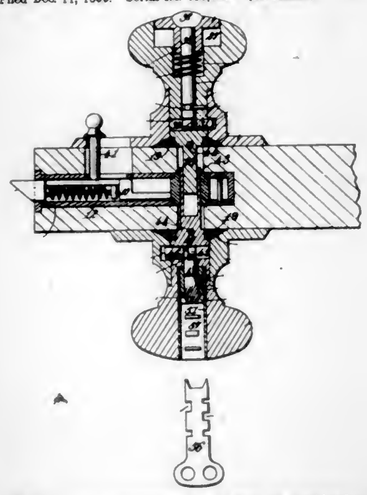


Claim.—1. In a grass-divider, the combination of a board, grass-sticks fitted in sleeves pivoted at one end to the board, housings covering the pivoted ends of said sleeve, and springs attached to the sleeves and housings to restore said grass-sticks to their normal position after being depressed, said springs being covered by the housings, substantially as described.

2. In a grass-divider, the combination of a board, grass-sticks fitted in sleeves pivoted at one end to the board, springs attached to the sleeves, tension-screws for regulating the tension of said springs, and housings protecting the springs, the springs being secured thereto, substantially as described.

3. In a grass-divider, the combination of a board, grass-sticks fitted in sleeves pivoted to the board, housings, springs for actuating the grass-sticks said springs being protected by the housings, tension-screws for regulating the tension of the springs, and a heavy spring secured to the board to act as a shoe, substantially as described.

657,885. LOCK AND LATCH COMBINED. MARCUS C. PATRICK, Seattle, Wash., assignor of one-half to James F. Howle, same place. Filed Dec. 11, 1899. Serial No. 739,939. (No model.)



Claim.—1. In a combined lock and latch, the combination with the reciprocating latch, of rotatable spindles for retracting the latch, said spindles being coupled together to cause them to rotate in unison, knobs for turning the spindles, locking-pins slidably arranged transversely in both the knob-spindles and locking mechanism arranged in said knob-spindles and adapted to be operated by a key inserted in one of the knob-spindles and by a rotatable rod or stem in the other knob-spindle to project the pins into radial sockets formed in the fixed knob-spindle casing, substantially as described.

2. In a combined lock and latch, the combination with the reciprocating latch, of hollow bosses attached to the opposite sides of the door and each provided internally with a radial socket, knob-spindles arranged in said bosses and coupled together to rotate in unison, said spindles operating when turned to retract the latch, locking-pins slidably arranged transversely in the knob-spindles, and locking mechanism arranged in said knob-spindles and adapted to be operated by a key inserted in one of the knob-spindles and by a rotatable rod or stem in the other knob-spindle to project said pins into the radial sockets in the bosses to lock the knob-spindles against turning, substantially as described.

3. In a combined lock and latch, the combination with the reciprocating latch, of plates attached to the opposite sides of the door and each provided with a hollow boss, said bosses being each provided internally with a radial socket, knob-spindles arranged in said bosses and operating when turned to retract the latch, transverse locking-pins slidably arranged in the knob-spindles and each provided with a transverse slot, rods rotatably arranged centrally in the knob-spindles and provided at their inner ends with wrist-pins engaging said transverse slots and operating when the rods are rotated to move the locking-pins in and out of the radial sockets, substantially as described.

4. In a combined lock and latch, the combination with the reciprocating latch, of plates attached to the opposite sides of the door and each provided with a hollow boss, said bosses being each provided internally with a radial socket, knob-spindles arranged in said bosses and operating when turned to retract the latch, transverse locking-pins slidably arranged in the knob-spindles and each provided with a transverse slot, rods rotatably arranged centrally in the knob-spindles and provided at their inner ends with wrist-pins engaging said transverse slots and operating when the rods are rotated to move the locking-pins in and out of the radial sockets, and means for independently rotating said rods, substantially as described.

5. In a combined lock and latch, the combination with the reciprocating latch, of plates attached to the opposite sides of the door and each provided with a hollow boss, said bosses being countersunk at their inner ends and each provided internally with a radial socket, knob-spindles arranged in said bosses and operating when turned to retract the latch, transverse locking-pins slidably arranged in the knob-spindles and each provided with a transverse slot, rods rotatably arranged centrally in the knob-spindles and provided at their inner ends with wrist-pins engaging said transverse slots and operating when the rods are rotated to move the locking-pins in and out of the radial sockets, and frusto-conical washers disposed in the countersunk portions of the bosses and fixed on the knob-spindles, substantially as described.

6. In a combined lock and latch, the combination with the reciprocating latch, of plates attached to the opposite sides of the door and each provided with a hollow boss, said bosses being each provided internally with a radial socket, knob-spindles arranged in said bosses and operating when turned to retract the latch, said knob-spindles being connected at their inner ends to rotate in unison, transverse locking-pins slidably arranged in the knob-spindles and each provided with a transverse slot, and rods rotatably arranged centrally in the knob-spindles and provided at their inner ends with wrist-pins engaging said transverse slots and operating when the rods are rotated to move the locking-pins in and out of the radial sockets, substantially as described.

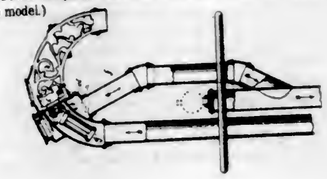
7. In a combined lock and latch, the combination with the reciprocating latch, of plates attached to the opposite sides of the door and each provided with a hollow boss, said bosses being each provided internally with a radial socket, knob-spindles arranged in said bosses and operating when turned to retract the latch, transverse locking-pins slidably arranged in the knob-spindles and each provided with a transverse slot, rods rotatably arranged in the knob-spindles and provided at their inner ends with wrist-pins engaging said transverse slots and operating when the rods are turned to move the locking-pins in and out of the radial sockets, and means for normally holding said rods against rotation, substantially as described.

8. In a combined lock and latch, the combination with the reciprocating latch, of a plate attached to the outer side of the door and provided with a hollow boss having an internal radial socket, a knob-spindle arranged in said boss and operating when turned to retract the latch, a transverse locking-pin slidably arranged in the knob-spindle and having a transverse slot, a tubular casing fitted centrally in the knob-spindle and provided with internal lugs or projections, a sleeve fixed in the inner end of said casing, a rod rotatably arranged in said sleeve and provided at one end with an eccentric wrist-pin engaging the slot in the locking-pin to move the latter in and out of the radial socket, and provided at its opposite end with a head having notches formed in its opposite sides and adapted to be engaged by a key to turn the rod, substantially as described.

9. In a combined lock and latch, the combination with the reciprocating latch, of a plate attached to the inner side of the door and provided with a hollow boss having an internal radial socket, a knob-spindle arranged in said boss and operating when turned to retract the latch, a transverse locking-pin slidably arranged in the knob-spindle and having a transverse slot, a rod rotatably arranged in the knob-spindle and provided at one end with an eccentric wrist-pin engaging the slot in the locking-pin to move the latter in and out of the radial socket in the boss, and provided at its other end with a head by means of which it may be turned, substantially as described.

10. In a combined lock and latch, the combination with the reciprocating latch, of a plate attached to the inner side of the door and provided with a hollow boss having an internal radial socket, a knob-spindle arranged in said boss and operating when turned to retract the latch, a transverse locking-pin slidably arranged in the knob-spindle and having a transverse slot, a rod rotatably arranged in the knob-spindle and provided at one end with an eccentric wrist-pin engaging the slot in the locking-pin to move the latter in and out of the radial socket in the boss and provided at its other end with a flat head by means of which it may be turned, a hollow plunger surrounding the outer end of said rod and provided with a recessed head adapted to inclose the headed end of the rod, and a spring for forcing said plunger outward, substantially as described.

657,886. PNEUMATIC-DESPATCH-TUBE SYSTEM. ALBERT W. PEARSALL, New York, N. Y., assignor to the Pearsall Pneumatic Tube and Power Company, same place. Filed Feb. 10, 1900. Serial No. 4,806. (No model.)



Claim.—In a suction pneumatic-carrier system or tube apparatus, the combination with a terminal having an outwardly-opening valve across its delivery end, of a vacuum or power chamber surrounding said terminal and communicating therewith through diamond-shaped perforations located in the wall of said terminal close to and surrounding said valve, substantially as described.

657,887. ELECTRIC TRAIN-SIGNAL DEVICE. JAMES F. SCULLEN, Chicago, Ill. Filed Jan. 26, 1900. Serial No. 2,913. (No model.)



Claim.—1. In an electric train-signal, a train of individual parts, an equipment of parallel insulated wires for said train composed of individual sections corresponding with the individual parts of said train, an electric connection at each terminal of said train-wire equipment, a separable coupling for each of said individual sections consisting of two similar parts, parallel blades in each part each blade connected with one of said parallel wires, springs on the sides of each of said blades, an insulating material between said blades a wrap of insulating material inclosing said blades and springs except the free ends which protrude, a spring-actuated clip on each of said parts of said coupling adapted to engage normally with the free ends of said blades, said blades of each of said parts adapted to be inserted between the blades and springs of the other part and the clip of one part to engage with the outer surface of the connecting part, substantially as specified.

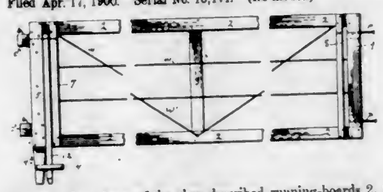
2. In a separable coupling for an electric signal-wire equipment composed of individual sections of parallel wires, parallel blades at the terminals of said sections, an insulated block between said blades, a spring on the side of each of said blades, a cover of insulating material for said block and blades, the free ends of said blades protruding from said cover, a spring-actuated metal clip on the outer surface of said cover the said clip adapted to engage normally with the protruding free ends of said blades, substantially as described.

657,888. JOINT FOR RAILWAY-RAILS. JAMES F. SCULLEN, Chicago, Ill. Filed Feb. 26, 1900. Serial No. 6,634. (No model.)



Claim.—In a joint for railway-rails, rails having one side at each end beveled, a triangular rail portion adapted to fit into the angular open space formed by the two abutting beveled ends of said rails forming a Y-joint, a wedge-shaped collar raised on the outer side of the shank of said triangular rail portion, a slot through said collar and rails, a bolt through said slot and rails, a nut on said bolt, a wedge-shaped washer provided with a slot on said bolt between said nut and collar substantially as described.

657,889. FENCE. AUGUSTUS B. TWITCHELL, Syracuse, N. Y. Filed Apr. 17, 1900. Serial No. 13,171. (No model.)



Claim.—In a fence of the class described running-boards 2, 2, end sections comprising a post-section with downwardly-projecting sharpened end portion, a parallel vertical member extending from the top line of the upper running-board to the lower line of the bottom running-board and secured firmly to both, longitudinally-projecting tongues extending from the end section at one end, a vertical intermediate member secured between the post-section and its parallel vertical member and abutting at its ends against said tongues, parallel vertical members next the end sections nearer the middle of the fence-section and braces connected at their upper ends to said end sections and said last-mentioned parallel vertical members, 7, in combination with pockets at the opposite abutting ends of the fence-sections formed of three vertical end pieces, and the ends of the

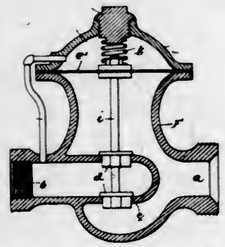
running-boards, joined rigidly together all substantially as described and shown.

657,890. **VALVE-OPERATING MECHANISM.** JOHN W. BRANNON, Otsego, Ohio. Filed Mar. 10, 1899. Serial No. 708,581. (No model.)



Claim.—The combination with a water-supply or reservoir, and a distantly-located receiving-station, of a hydraulic ram located between the receiving-station and the reservoir, a conduit leading from the ram to the receiving-station, a raceway leading from the reservoir to the ram, a pivoted gate controlling the raceway, a cross-head rigidly connected with the gate, an operating-lever at the receiving-station, and parallel wires leading from the operating-lever to the cross-head and connected with the lever and cross-head at opposite sides of their fulcrum-points, substantially as specified.

657,891. **FITTING FOR STEAM HEATING APPARATUS.** JAMES A. DONNELLY, New York, N. Y. Filed July 17, 1900. Serial No. 23,869. (No model.)



Claim.—1. In an automatic valve device for steam heating apparatus, the combination of a valve-body having a thoroughfare, a valve-piece to control said thoroughfare, and a pressure-motor for controlling said valve-piece communicating with the valve-body on the outlet side beyond the thoroughfare and controlled by the pressure on the said outlet side.

2. In an automatic valve device for steam heating apparatus, the combination of a valve-body having a thoroughfare, a valve-piece to control said thoroughfare, and means within the valve-body controlled by the pressure on the outlet side of said thoroughfare to control said valve-piece.

3. In an automatic valve device for steam heating apparatus, the combination with the valve-piece, of a pressure-actuated diaphragm for operating said valve-piece, and a duct leading to said diaphragm from the outlet side of the valve device, whereby the operation of said diaphragm and valve-piece is controlled by the pressure on the outlet side.

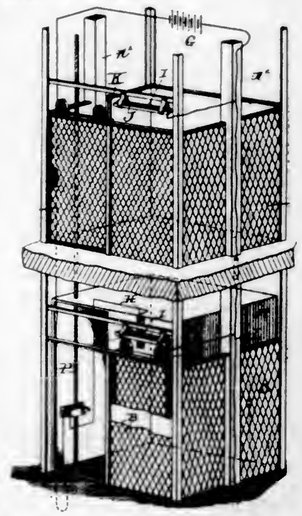
4. In an automatic valve device for steam heating apparatus, the combination of a valve-body having a thoroughfare, a valve-piece for controlling said thoroughfare, a pressure-actuated diaphragm for controlling said valve-piece, and a tube connecting said diaphragm and valve-piece and forming a communication between the inner side of said diaphragm and the outlet side of the valve-body.

5. In an automatic valve device for steam heating apparatus, the combination of a valve-body, a valve-piece to control the passage through said valve-body, a flexible diaphragm in the upper part of the valve-body forming a closed chamber, a connection between said diaphragm and valve-piece, and a duct between the chamber formed by said diaphragm and the outlet side of the valve-body beyond the valve-piece, whereby the operation of said diaphragm and valve-piece is controlled by the pressure on the outlet side of the valve-body.

6. In an automatic valve device for steam heating apparatus, the combination of a valve-body having a thoroughfare, a valve-piece to control said thoroughfare, and a pressure-motor controlling said valve-piece having one side in communication with the inlet side of said valve-piece and the other side in communication with the outlet side thereof.

7. In an automatic valve device for steam heating apparatus, the combination of a valve-body having a thoroughfare, a valve-piece to control said thoroughfare, a pressure-motor controlling said valve-piece having one side in communication with the inlet side of said valve-piece and the other side in communication with the outlet side thereof, and means acting on said pressure-motor to control its movements under the action of the relative pressures on the inlet and outlet sides.

657,892. **ELECTRICALLY-ACTUATED SAFETY DEVICE FOR ELEVATORS.** NELSON B. KEYSER, Philadelphia, Pa., assignor to Marcus B. May, Winchester, Mass. Original application filed Oct. 17, 1893, Serial No. 488,397. Divided and this application filed Oct. 29, 1897, Serial No. 656,779. (No model.)



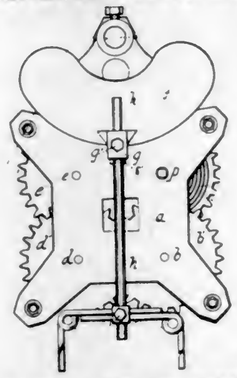
Claim.—1. In an elevator, a motor-controlling device, a door, and mechanism operable only when the car is opposite said door and said door is open, for actuating said device to automatically stop the travel of the car, said mechanism including a source of power, and also including door-controlled means for conveying power from said source to cause the actuation of the motor-controlling device.

2. In an elevator, a motor-controlling device, a door, and mechanism operable only when the car is opposite said door and said door is open, for actuating said device to automatically stop the travel of the car, said mechanism including a lock on the car, a source of power, and flexible means for conveying power from said source to said lock.

3. In an elevator, a door, a motor-controlling device, and an electric circuit including an electromagnetic lock on the car for said device by means of which the car will be automatically stopped, and also including independent circuit-make-and-break devices, one adjacent the door and one on the car.

4. In an elevator, the combination of a plurality of doors at the landings, a motor-controlling device, and means for automatically operating said device to stop the travel of the car, said means including an electromagnetic lock on said car in operative relation to said device, and mechanism for establishing a complete and independent circuit at each landing when the elevator-car is opposite thereto, and the door at said door-landing is open.

657,893. **HOME-HAMMOCK MOTOR.** FRANCIS J. LOWE, New York, N. Y. Filed Jan. 6, 1900. Serial No. 640. (No model.)

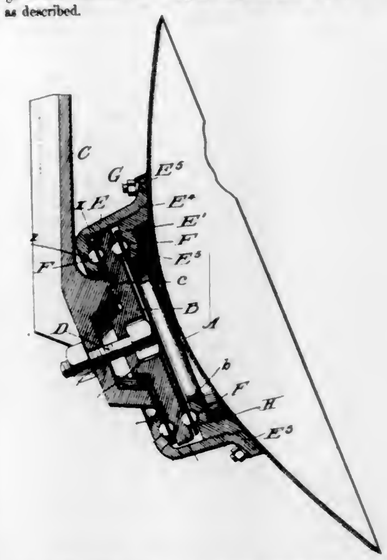


Claim.—1. The combination with a revoluble shaft, supported and actuated substantially as hereinbefore set forth, of a bar rigidly fastened to the supporting-frame in which said shaft is journaled, a sleeve upon said bar formed with flange and lug substantially as specified, a rocker, having a hole adapted to said sleeve as set forth and by means of said sleeve and its set-screw mounted adjustably and detachably upon said bar, and formed with a socket, and curving groove and pins, a bar in said socket, a set-screw to bind said bar adjustably in said socket, a block upon said bar pierced with a set-screw for securing said block, to said bar, and spring-bars in said block, said block also pierced with a channel for said bar, and two other channels for spring-bars, spring-bars in said channels adapted to engage the cords of a hammock as set forth, a universal joint on the end of said revoluble shaft, a telescopic shaft attached by said universal joint to said revoluble shaft, a guide to control the motion of said telescopic shaft, the end of said telescopic shaft engaging the groove in said rocker, and a wheel mounted on said telescopic shaft, engaging the pins of said rocker, substantially as and for the purpose set forth.

2. The combination with a train of wheels, actuated substantially as set forth, and the supporting-frame in which they are journaled of a bar rigidly fastened to said frame, a sleeve upon said bar formed with flange and lug as specified, a set-screw in said lug, adjustably and detachably attaching said sleeve to said bar, a rocker mounted on said sleeve, on said bar, having a hole formed with an extension to allow said lug to pass through, a series of pins, circular groove, and socket as specified, a bar adjustably and detachably held in said socket a set-screw to hold said bar in said socket, a block on said bar, said block being pierced with a set-screw, and formed with a channel for said bar, and two other channels for spring-bars, said block said three bars and said set-screw, all so arranged that they are all held detachably and adjustably together by said set-screw, spring-bars, held in said block, as described, bent with loops, and adapted to engage the cords of a hammock, as specified, a universal joint on the end of one of the shafts of said train of wheels, a telescopic shaft attached to said shaft by said universal joint, a guide to direct the motion of said telescopic shaft, the end of the inner member of said telescopic shaft engaging the groove in said rocker, and a wheel moonted on said inner member of said telescopic shaft and engaging the pins of said rocker, to produce a reciprocating motion in said rocker, all subetantially as and for the purpose set forth.

657,894. **DISK-BEARING.** CHARLES H. MELVIN, Moline, Ill., assignor to the Deere & Company, same place. Original application filed June 12, 1900, Serial No. 20,048. Divided and this application filed July 30, 1900. Serial No. 25,322. (No model.)

Claim.—1. A disk-bearing comprising a supporting-standard, a bearing-plate secured to said standard with provision for giving a partial rotation thereto and securing it in different positions, a rotary cutting-disk, and means for securing said disk in rotative engagement with said bearing-plate, together with an annular series of antifriction devices arranged at each side of said bearing-plate and confined between a bearing-surface thereon and a confronting bearing-surface on a rotative member carried by or revolving with the disk, whereby the disk is supported and has its bearings on said antifriction devices grappling said bearing-plate, substantially as described.



2. A disk-bearing comprising a circular bearing-plate and means for securing the disk in rotative engagement therewith, a rotative member carried by the disk straddling the circumferential portion of said bearing-plate, and an annular series of antifriction devices at each side of said bearing-plate confined between the same and a bearing-surface on said rotative member confronting the bearing-surface on said bearing-plate, substantially as described.

3. The combination, in a disk-bearing, of a relatively-fixed part or bearing-plate, a cutting-disk carrying a bifurcated or two-part member embracing the circumferential portion of said bearing-plate, and a series of antifriction devices at each side of said bearing-plate interposed between bearing-surfaces thereon and corresponding bearing-surfaces on said bifurcated member, substantially as described.

4. The combination, in a disk-bearing, of a relatively-fixed part or bearing-plate, a cutting-disk carrying a bifurcated or two-part member embracing the circumferential portion of said bearing-plate, and a series of antifriction devices at each side of said bearing-plate interposed between bearing-surfaces thereon and corresponding bearing-surfaces on said bifurcated member, together with means for holding said antifriction devices at suitable distances apart in their respective races, substantially as described.

5. In a device of the character described, a composite antifriction-bearing for the rotary disk, comprising a relatively-fixed part about which the disk may rotate, an annular series of antifriction devices interposed between confronting bearing-surfaces on said fixed part and an annular portion of a rotary element on the back of the disk, and a second annular series of antifriction devices interposed between confronting bearing-surfaces on the opposite side of said fixed part and said rotary element, substantially as described.

6. In a device of the character described, a composite antifriction-bearing for the rotary disk, comprising a relatively-fixed part about which the disk may rotate, an annular series of antifriction devices interposed between confronting bearing-surfaces on said fixed part and an annular portion of a rotary element on the back of the disk, and a second annular series of antifriction devices interposed between confronting bearing-surfaces on the opposite side of said fixed part and said rotary element, together with means for adjusting and securing said fixed part so as to shift the positions of the bearing-surfaces thereon and of the antifriction devices in such manner as to cause those parts that are least exposed to wear to take the position of excessively-worn portions, substantially as described.

7. In a device of the character described, a composite antifriction-bearing for the rotary disk, comprising a relatively-fixed part or bearing-plate about which the disk may rotate, an annular series of antifriction devices interposed between confronting bearing-surfaces on said bearing-plate and a rotary element on the back of the disk, a second annular series of antifriction devices interposed between the opposite side of said bear-

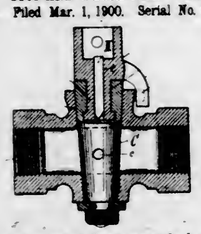
ing-plate and a confronting bearing-surface on a rotary element surrounding said first-named element, and means for separating and holding said antifriction devices at suitable distances apart in their respective races, together with means for securing and adjusting said bearing-plate so as to shift the positions of the bearing-surfaces thereon and of the antifriction devices in such manner as to cause those parts that are least exposed to wear to take the position of excessively-worn portions.

8. In a device of the character described, the plow standard or hanger and the single circular bearing-plate centrally secured to said standard by a suitable fastening-bolt; one of said parts having a recess or recesses to receive an interlocking lug or lugs on the other part, whereby the bearing plate may be rotated about said fastening-bolt as a center and secured in different positions, in combination with a composite antifriction-bearing for the disk, comprising a series of antifriction devices interposed between confronting bearing-surfaces on said bearing-plate and a rotary element on the back of the disk, and an annular series of antifriction devices interposed between confronting bearing-surfaces on the opposite side of said bearing-plate and a rotary element on the back of the disk surrounding said first-named element and overlapping the bearing-plate so as to confine the same between said rotary elements, substantially as described.

9. In a device of the character described, the combination with a relatively-fixed part or support circular in form and a disk journaled thereon, of an annular series of antifriction devices interposed between confronting raceways on opposite sides of the circumferential portion of said fixed part or support and confronting annular members carried by or revolving with the disk at a point between its hub and circumference, substantially as described.

10. In a device of the character described, the combination with a relatively-fixed part or support circular in form and a disk journaled thereon, of an annular series of antifriction devices interposed between confronting raceways on opposite sides of the circumferential portion of said fixed part or support and confronting annular members carried by or revolving with the disk at a point between its hub and circumference, together with means for separating and holding said antifriction devices in relatively-fixed positions in the line of rotation, substantially as described.

657,895. **STOP AND WASTE COCK.** EMANUEL RICKERSBERG, Cleveland, Ohio. Filed Mar. 1, 1900. Serial No. 6,901. (No model.)



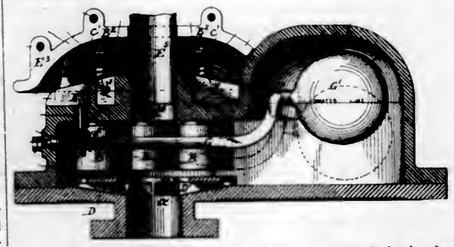
Claim.—1. A stop-valve of the type set forth comprising a casing a plug seated within said casing said plug being provided with a stop adapted to engage one or more stops formed with or secured to said casing, and being formed in two parts connected together by means of a split or divided projection polygonal in cross-section throughout its length on one of said parts and a recess adapted to receive said projection formed in the other part said recess being of the same contour in cross-section as the projection E in combination with a key for expanding the split or divided portion within the recess for the purpose set forth.

2. In a stop-valve of the type set forth, a valve-casing provided with one or more stops, a plug fitted within said casing said plug having one or more ways registering with the ways or passages through the casing, and being provided with a cap-piece formed separate from the plug and secured thereto by means of a divided projection and a recess to receive the same said divided projection being formed upon one of the parts and having enlarged end portions, and said recess being formed on the opposed part and having lateral spaces adapted to receive the enlarged portion of the divided projection, in combination with a wedge or spreader for securing the parts together.

3. The method herein set forth of securing cap-pieces to valve-plugs, consisting in providing said cap or plug with a two-part projection of polygonal shape in cross-section, said parts being separated by an oblong or polygonal-shaped slot adapted to receive a key for spreading said parts and a recess provided in the opposed part said recess being of such contour as to receive the projection and hug the same closely when the parts of said projection are spread.

657,896. **AIR-CONTROLLING VALVE.** ELLIS L. ROWE, Troy, N. Y. Filed Mar. 1, 1899. Serial No. 707,343. (No model.)

Claim.—1. The combination with the valve-chamber, a trapped-air chamber at one side of and communicating with the valve-chamber, a float in said air-chamber, and the auxiliary valve controlled by said float, substantially as described.



2. The combination of the valve-chamber, a trapped-air chamber at one side of and communicating with the valve-chamber; with the pivoted lever extending into the air-chamber, a float on said lever within the air-chamber, and the auxiliary valve in the valve-chamber controlled by said float whereby the accumulations of air under such excessive pressure as would hold the main air-valves closed will be automatically relieved, substantially as described.

3. In an air-controlling valve, the combination of the two-part casing having an air-valve chamber, an air-trapping chamber, a water-inlet in the bottom of the valve-chamber, the small vent-opening in the top of the casing, the pivoted lever extending into the air-chamber, the float on the end of said lever within the air-chamber, and the valve on said lever adapted to close the vent-opening when the float is raised, substantially as and for the purpose described.

4. The combination of the valve-casing having an inlet-opening, and a vent-opening, the inverted-cup-shaped valve adapted to close said vent-opening and provided with a stem, the removable exterior tubular guide for said stem, and the spring partially surrounding said guide and supporting said valve-stem, and the baffle-plate below the lower open end of said valve.

5. The combination with the valve-casing, the water-inlet thereto, the vent-opening in the top of said casing, the valve-seat in said opening provided with an exteriorly-projecting tubular guide, and the inverted-cup-shaped valve closed at its upper end and provided with a stem extending through said tubular guide, the spring surrounding said guide and supporting said valve, and a baffle-plate beside the lower open end of said valve, substantially as described.

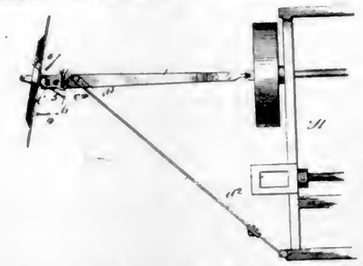
6. The combination of the valve-casing, the water-inlet thereto, the vent-opening in the top of said casing, the removable valve-seat in said opening provided with a tubular guide, and the inverted-cup-shaped valve closed at its upper end and provided with a stem extending through said tubular guide; with a washer on the upper end of said stem, the adjusting-nuts for said washer on said stem, the spring surrounding said guide and supporting said valve, and a baffle-plate beside the lower open end of said valve, substantially as described.

7. The combination of the air-valve chamber having a water-inlet in its bottom, the vent-openings in its top, the series of inverted-cup-shaped air-valves closing said openings provided with stems projecting above the top of the casing and the baffle-plates below and opposite the lower open ends of said valves, and the exterior superimposed housing or hood supported on and attached to said casing and protecting the air-valves, substantially as described.

8. The combination of the casing having an air-valve chamber, a water-inlet in its bottom, and vent-openings in its top; and the series of inverted-cup-shaped air-valves closing said vent-openings and provided with stems projecting above the top of the casing; with the removable valve seats and guides and supporting-springs above the casing; the baffle-plates below and opposite the lower open ends of said valves formed rigidly with the casing; and the housing or hood supporting on said casing and extending over and protecting the air-valve guides and springs, substantially as described.

9. The combination of the valve-casing containing an air-valve chamber, and an air-trapping chamber and having a water-inlet in the bottom of the valve-chamber, and a series of vent-openings in the top of said chamber, the removable valve-seats in said openings provided with upstanding tubular guides, the inverted-cup-shaped air-valves closing said openings, the springs surrounding said guides for equalizing the weight of said air-valves and the baffle-plates opposite the lower ends of said valves formed integral with the casing; with the vent-tube in the valve-chamber, the pivoted lever extending through the valve-chamber into the air-chamber, the float on the end of said lever within the air-chamber, and the valve on said lever near the pivot thereof adapted to close the vent-tube, all substantially as and for the purpose set forth.

657,897. **GUIDE-MARKER FOR PLANTERS.** CONRAD E. SMITH, Plainfield, Ill. Filed July 28, 1900. Serial No. 25,134. (No model.)



Claim.—1. In a marker for planters the combination of a marker-bar, means for connecting said bar to the planter, and a marking-head secured to the outer end of the marker-bar and automatically adjustable with relation to said bar, substantially as described.

2. In a marker for planters the combination of a marker-bar, means for connecting said bar to the planter, an arm pivotally secured to the outer end of said bar, a marking-head secured to the outer end of said arm, and a brace connecting the inner end of said arm to the planter, substantially as described.

3. The combination with a marker-bar of the character described, an arm pivoted to the outer end thereof, a marking-head secured to the outer end of said arm, and stops for limiting the movement of said arm relatively to said bar, substantially as described.

4. The combination with a marker-bar of the character described, of an arm pivoted to the outer end thereof, a marking-head secured to the outer end of said arm and an adjustable stop serving to limit the movement of said arm relatively to said bar in one direction, substantially as described.

5. The combination of a marker-bar of the character described, an arm pivoted to the outer end thereof, a marking-head secured to the outer end of said arm, and an adjustable stop carried by said bar, said arm and stop being provided with slot and projection for limiting the movement of the arm, substantially as and for the purpose set forth.

6. The combination of a marker-bar of the character described, a marking-head connected with the outer end thereof, and an extensible rigid brace-rod provided at its front end with means for connecting it with the planter, substantially as described.

657,898. **SNOW-PLOW.** WILLIAM H. TAGERT, Anise, Pa. Filed Dec. 14, 1899. Serial No. 740,339. (No model.)



Claim.—1. An apparatus of the class described comprising front and rear trucks, a plow mounted on the front truck, a pole or beam connecting the trucks and designed to be connected with the draft-animals, and a reversible tongue or pole detachably coupled to the apparatus in rear of the rear truck, whereby the draft-animals connected with it may be reversed, substantially as and for the purpose described.

2. An apparatus of the class described comprising front and rear trucks, a snow-plow mounted on the front truck, a pole or beam connected to the front and rear trucks and provided at its rear end with a socket, and a reversible tongue or pole detachably secured within the socket and adapted to have either end arranged therein, whereby the draft-animals at the back of the apparatus may be reversed, substantially as and for the purpose described.

3. In an apparatus of the class described, the combination of a push pole or beam, a front truck carrying a plow and connected by horizontal and vertical pivots with said push pole or beam, and independently-operable devices for swinging the front truck on its vertical and horizontal pivots with relation to the push-pole, for the purpose described, substantially as set forth.

4. In an apparatus of the class described, the combination of a front truck having a transverse rack-bar, a pole or beam pivotally connected with the front truck and adapted to permit the same to swing vertically and horizontally, gearing carried by the pole or beam and meshing with the rack-bar to swing the truck horizontally, and a frame or lever connected with the rack-bar and with the pole or beam and adapted to move the front truck vertically, substantially as described.

5. In an apparatus of the class described, the combination of a front truck having an axle forming a fulcrum, a transverse rack-bar carried by the truck and located in rear of the axle, a plow mounted on the front truck, a pole or beam coupled to the front truck and adapted to permit the same to swing vertically and horizontally, gearing carried by the pole or beam and meshing with the rack-bar to swing the front truck horizontally, a longitudinal bar or frame receiving the rack-bar and fulcrumed on the pole or beam, and operating mechanism mounted on the latter and connected with the frame or lever for raising and lowering the same, whereby the front truck is tilted on the axle to raise and lower the point of the plow, substantially as described.

6. In an apparatus of the class described, the combination of a front truck, a plow mounted thereon, a pole or beam coupled to the front truck, a transverse rack-bar carried by the latter, gearing meshing with the rack-bar, a lever provided with an opening to receive the rack-bar, and an operating-lever fulcrumed on the apparatus and connected with the said lever and adapted to raise and lower the same, substantially as described.

7. In an apparatus of the class described, the combination of a front truck, a plow mounted thereon, a rack-bar carried by the front truck, a pole or beam coupled to the latter, a lever or frame located beneath the pole or beam, fulcrumed at its front end thereon and engaging the rack-bar at a point between its ends, and operating mechanism connected with the rear end of the frame or lever and adapted to raise and lower the same, substantially as and for the purpose described.

8. In an apparatus of the class described, the combination of a front truck, a pole or beam coupled to the same and extending rearward therefrom, a rack-bar carried by the front truck, a lever fulcrumed on the pole or beam and having an opening receiving the rack-bar, a shaft having vertical movement on the pole or beam and provided with a pinion arranged within the opening of the lever and meshing with the rack-bar, gearing carried by the pole or beam and having sliding connection with the said shaft, and means for raising and lowering the said lever, substantially as described.

9. In an apparatus of the class described, the combination of a front truck, a pole or beam extending rearward therefrom and coupled to the same, a lever fulcrumed on the pole or beam, located beneath the same and having an opening, a rack-bar carried by the front truck and extending through the opening of the lever, a vertical shaft slidingly mounted on the pole or beam and carrying a pinion arranged withiu the opening of the said lever and meshing with the rack-bar, a gear-wheel mounted on the pole or beam and slidingly connected with the said shaft, a spring connected with the shaft, and a steering-post having a pinion meshing with the gear-wheel, substantially as described.

10. In an apparatus of the class described, the combination of a front truck having converging hounds, a post extending upward from the front ends of the same, moldboards extending rearward from the post, side pieces supporting the mold-boards and conforming to the configuration of the same, said side pieces being mounted on the ends of the axle of the truck, and connections between the upper ends of the side pieces and the post, substantially as described.

11. In a snow-plow substantially such as described, the combination of a push-pole, a front truck carrying a plow and connected with said push-pole to turn on vertical and horizontal axes, a rear truck pivotally connected with said push-pole to turn on a vertical axis only, means connected with the individual trucks for separately adjusting the same, and draft appliances connected with the push-pole between the front and rear trucks.

12. In a snow-plow substantially such as described, the combination of a push-pole, a front truck carrying a plow and connected with said push-pole, a rear truck also connected with the push-pole, draft appliances connected to the push-pole intermediate between the front and rear trucks, and a supplemental push-pole connected detachably to the first-named

pole and provided with draft appliances independent of those on the other push-pole.

13. In a snow-plow, substantially such as described, the combination of a push-pole, a wheeled front truck pivotally connected with said push-pole and carrying a plow, means for adjusting the front truck relatively to the push-pole, draft appliances connected to the push-pole in rear of the front truck, a wheeled rear truck also connected with the push-pole and arranged in rear of the draft appliances, and means for adjusting the rear truck independently of the front truck, as set forth.

14. In a snow-plow, substantially such as described, the combination of a main push-pole, wheeled trucks connected thereto at intervals, a plow carried by the front truck, draft appliances connected to the push-pole between the two trucks, a supplemental push-pole connected detachably to the first-named push-pole, and draft appliances also connected to the supplemental push-pole.

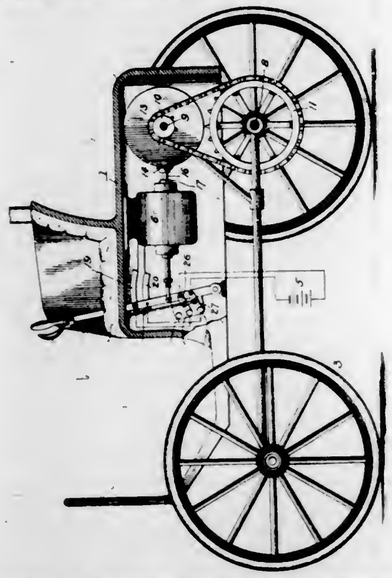
15. In a snow-plow, the combination of a push-pole provided with draft appliances, the front and rear trucks, a plow carried by the front truck, a reversible and supplemental push-pole connected detachably to the first-named push-pole and arranged in alinement therewith, and draft appliances carried by the supplemental push-pole.

16. In a snow-plow, the combination of a push-pole, a rear truck connected therewith, a front truck carrying a plow and also connected to the push-pole, a rock-shaft mounted on the rear truck, a scraper-beam connected with the rock-shaft to swing therewith and provided with scrapers, and means for adjusting the scraper-beam vertically.

17. In a snow-plow, the combination of a push-pole, the front truck carrying a plow, a rear truck connected with the push-pole, a scraper-beam detachably suspended from the rear truck, means for adjusting the scraper-beam vertically on the rear truck, and brush-arms removably secured to the rear truck and provided with brushes, substantially as described.

18. In a snow-plow, the combination of a push-pole, a front truck carrying a plow, a rear truck adjustably connected to the push-pole to swing on a vertical axis, a scraper-beam hung on the rear truck to be adjusted therewith in a horizontal plane and provided with scrapers, means for adjusting the truck on its vertical axis, and means for adjusting the scraper-beam independently of the adjustment of the truck, substantially as described.

657,899. MOTOR-VEHICLE. CLYDE J. COLEMAN, Chicago, Ill., assignor to Thomas J. Ryan, New York, N. Y. Filed Dec. 8, 1899. Serial No. 739,727. (No model.)



Claim.—1. In a system of propulsion for motor-vehicles, the combination of an electric motor, a friction-pulley having operative engagement with the armature of the motor, and adapted to have longitudinal movement with relation to such motor, a shaft adapted to operate the driving-wheels of the vehicle, a friction-disk carried by said shaft, means for maintaining frictional engagement between the friction pulley and disk, an operating-lever for imparting movement to the friction-pulley, and a current-controller for the electric motor carried by said lever, substantially as set forth.

2. In a system of propulsion for motor-vehicles, the combination of an electric motor, a coned friction-pulley having operative engagement with the armature of the motor and adapted to have longitudinal movement with relation to such motor, a shaft adapted to operate the driving-wheels of the vehicle, a coned friction-disk carried by said shaft, means for maintaining frictional engagement between the friction pulley and disk, an operating-lever for imparting movement to the friction-pulley, and a current-controller for the electric motor carried by said lever, substantially as set forth.

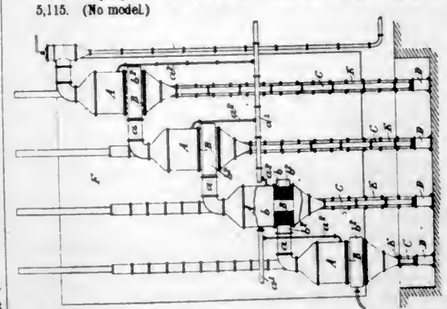
3. In a system of propulsion for motor-vehicles, the combination of an electric motor, a friction-pulley having operative engagement with the armature of the motor, and adapted to have longitudinal movement with relation to such motor, a counter-shaft formed in sections that have independent connections with the driving-wheels of the vehicle, an equalizing-gear connecting the counter-shaft sections together, a friction-disk carried by one section of the counter-shaft, means for maintaining frictional engagement between the friction pulley and disk, an operating-lever for imparting movement to the friction-pulley, and a current-controller for the electric motor carried by said lever, substantially as set forth.

4. In a system of propulsion for motor-vehicles, the combination of an electric motor, a friction-pulley having operative engagement with the armature of the motor and adapted to have longitudinal movement with relation to such motor, a shaft adapted to operate the driving-wheels of the vehicle, a friction-disk carried by said shaft, and adapted to have longitudinal movement thereon, a spring arranged to impart longitudinal movement to such disk and maintain frictional engagement between the same and the friction-pulley, an operating-lever for imparting movement to the friction-pulley, and a current-controller for the electric motor carried by said lever, substantially as set forth.

5. In a system of propulsion for motor-vehicles, the combination of an electric motor, a friction-pulley having operative engagement with the armature of the motor, and adapted to have longitudinal movement with relation to such motor, a counter-shaft formed in sections that have independent connections with the driving-wheels of the vehicle and are arranged in a vertical plane above the same, an equalizing-gear connecting the counter-shaft sections together, a friction-disk carried by one section of the counter-shaft, means for maintaining frictional engagement between the friction pulley and disk, an operating-lever for imparting movement to the friction-pulley, and a current-controller for the electric motor carried by said lever, substantially as set forth.

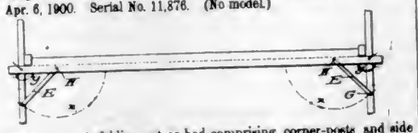
6. In a system of propulsion for motor-vehicles, the combination of an electric motor, a friction-pulley having operative engagement with the armature of the motor and adapted to have longitudinal movement with relation to such motor, a counter-shaft formed in sections that have independent connections with the driving-wheels of the vehicle, and arranged in a vertical plane above the same, an equalizing-gear connecting the counter-shaft sections together, a friction-disk carried by one section of the counter-shaft, means for maintaining frictional engagement between the friction pulley and disk, an operating-lever for imparting movement to the friction-pulley, and a current-controller for the electric motor carried by said lever, and the vehicle-body provided with an open-bottomed rearwardly-extended skirt inclosing said mechanism, substantially as set forth.

657,900. MULTIPLE-EFFECT EVAPORATING APPARATUS. EDWARD J. DUFF, Liverpool, England, assignor of one-half to the United Alkali Company, Limited, same place. Filed Feb. 13, 1900. Serial No. 5,115. (No model.)



Claim.—A multiple-effect brine-evaporating apparatus, comprising a number of separate and independent vacuum-pans arranged side by side in ascending series, each pan being provided with a heating-chamber and having at its top a horizontal outlet-neck, and the neck of each pan communicating directly with the heating-chamber of the next higher pan in the series, as and for the purpose set forth.

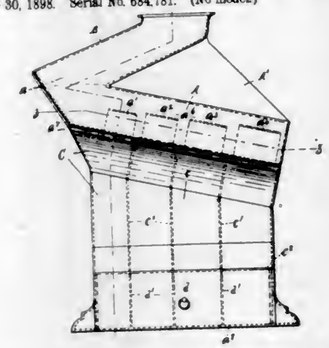
657,901. FOLDING COT OR BED. JAMES S. DYETT, Rome, N. Y., assignor to the Hard Manufacturing Company, Buffalo, N. Y. Filed Apr. 6, 1900. Serial No. 11,876. (No model.)



Claim.—1. A folding cot or bed comprising corner-posts and side pieces, corner-locks clasping the corner-posts, pivots connecting the locks with the side pieces, lugs projecting from the corner-locks and engaging the side pieces, braces between the corner-posts and side pieces, pivots connecting the braces with the corner-posts and side pieces, and grooves or recesses running along the lower inner sides of the side pieces, substantially as described.

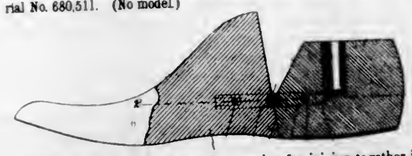
2. A folding cot or bed comprising corner-posts and side pieces, corner-locks clasping the corner-posts, pivots connecting the locks with the side pieces, lugs projecting from the corner-locks and engaging the side pieces, braces between the corner-posts and side pieces, and pivots connecting the braces with the corner-posts and side pieces, substantially as described.

657,902. COIN-ASSORTING DEVICE. JASON G. FRANCE, Syracuse, N. Y., assignor of one-half to James R. Pearsall, same place. Filed June 30, 1898. Serial No. 684,781. (No model.)



Claim.—In a coin-assorting device, the combination of a substantially-upright wall A', a wall a^5 inclining downwardly toward one end and one longitudinal side and having its other longitudinal side united to the wall A', said wall a^5 being provided with a series of openings a' a^3 a^2 a^4 of unequal area, a wall a^6 arranged substantially parallel with the wall a^5, a wall a^7 uniting the lower longitudinal sides of the walls a^5 a^6, a wall c extending from the wall a^7 and arranged opposite to the wall A' and provided with a lateral extension c^2, a plurality of partitions c' arranged beneath the wall a^7 and above the extension c^2 and between the walls A' c and having their upper ends alined with the spaces between the openings a' a^3 a^2 a^4, a guide a^8 projecting laterally from the lower end of the wall A' beneath the extension c^2, and a drawer d movable in the guide a^8 beneath the extension c^2 and provided with partitions d' alined with the partitions c', substantially as and for the purpose described.

657,903. LAST. ELI E. GURNEY, Abington, Mass., assignor of one-half to William B. Arnold, same place. Filed May 12, 1898. Serial No. 680,511. (No model.)



Claim.—1. A divided last, having a union for joining together its parts, said union comprising plugs or dowels pivotally connected and embedding in the parts of the last, and a cylindrical stop projecting transversely therefrom at the pivot for alining the union in position within the last.

2. A union for joining together the parts of a last, in combination with said last, said union being H-shaped and comprising plugs or dowels in opposite independently-movable pairs pivotally connected, and connected together.

3. A union for a divided last, in combination with said last, said union comprising opposite pairs of plugs or dowels, each pair being independently pivoted together, each part of the last having two sockets to receive the respective dowels of that end of the union, the last having a transverse hole at the pivotal point of said union, and a stop for said dowels corresponding in shape and size to said hole, and means for securing said dowels within the respective parts of the last.

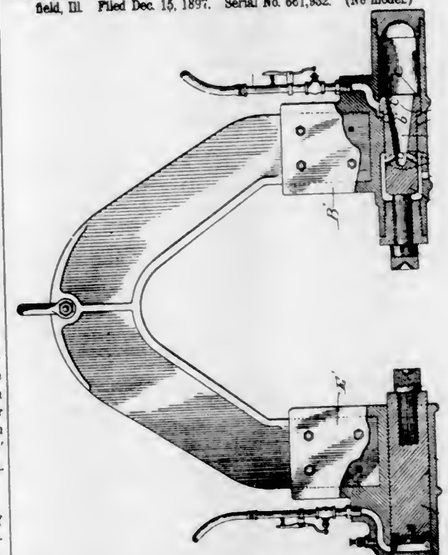
4. A divided last having its fore part and heel part pivotally connected to swing on a horizontal line of flexure, and a union, said union comprising a plurality of pairs of retaining members, said members being respectively held by the said fore part and heel part, said members having their adjacent ends pivoted together at said line of flexure, said members being separate from each other and independently pivoted and means located between said fore part and heel part for maintaining the pivots of said several pairs in axial alinement with each other and with said line of flexure.

5. A divided last having its fore part and heel part provided with longitudinally-alined cylindrical holes extending longitudinally of the last, a transverse cylindrical hole having its axis in the line of flexure of the last and cutting across the axis of said longitudinal holes, cylindrical plugs fitting said longitudinal holes and having their meeting ends lapped and transversely perforated, a pivot-pin extending through said perforations, and a cylindrical stop extending at one side of said plugs in coaxial alinement with said pivot-pin and occupying said transverse hole, the heel part being free to swing into abutting engagement with the fore part at either side of the line of flexure thereof.

6. A transversely-divided last comprising two sections and a hinge connecting them comprising sets of eyebolts, one bolt of each set entering its respective section, and a hinge-pintle passing through the eyes of the bolts for joining them together

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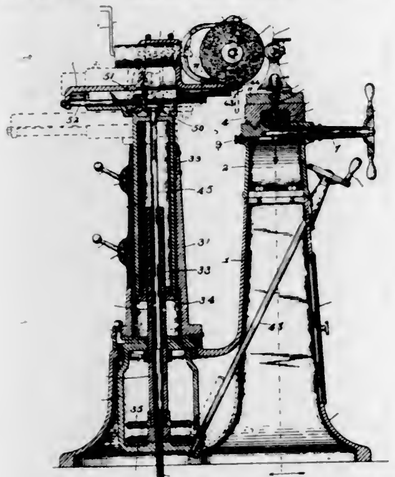
657,904. RIVETING-MACHINE. CHARLES H. JOHNSON, Springfield, Ill. Filed Dec. 15, 1897. Serial No. 661,932. (No model.)



Claim.—1. In a portable riveter, the combination of a bifurcated yoke, one end of which has a fluid-pressure cylinder in which a clamping-piston is reciprocatingly mounted and the other end with a cylinder having a percussion-hammer arranged therein and a die interposed between the hammer and rivet to be operated on and held in position by the percussion-hammer cylinder, substantially as described.

2. In a pneumatic riveter, the combination with a yoke, of a holder-on having a rivet-die, a pneumatic hammer comprising a hammer-cylinder and a hammer-piston, a rivet-die supported by the cylinder of the hammer-piston, and fluid-pressure means for causing the said hammer and hold-on to automatically clamp and hold the rivet between the rivet-dies during the operation of the pneumatic hammer.

657,905. **UNIVERSAL GRINDING-MACHINE.** EDWARD S. LEA, Elwood, Ind., assignor to the Anderson Tool Company, Anderson, Ind. Filed Jan. 27, 1900. Serial No. 3,054. (No model.)



Claim.—1. The combination, in a grinding-machine, of a suitable frame, an adjustable work-holding mechanism carried thereon, an independent motor for actuating said work-holding mechanism, mounted on the same frame and adjustable with said work-holding mechanism, an adjustable operating mechanism, and an independent motor for driving said operating mechanism.

2. The combination, in a grinding-machine, with the operating-tool, of a work-carrying apparatus including a longitudinally-movable table, a carriage-driving screw mounted in bearings in said carriage, a shaft arranged transversely to said carriage-driving screw and bearing a worm-pinion, suitable handles on said carriage-driving screw and said shaft, and a locking-pin mounted in the frame and adapted to engage with said pinion, whereby, by means of the same apparatus, either a fast or a slow movement of said carriage may be secured, substantially as shown and described.

3. The combination, in a grinding-machine, with the work-holding mechanism, of a grinder mounted on the shaft of an independent motor, and said motor carrying said grinder mounted to be adjusted on the grinder-supporting frame, substantially as set forth.

4. The combination, in a grinding-machine, with the work-holding mechanism, of a grinding mechanism, an independent electric motor, mounted and capable of being adjustably moved on trunnions and a grinder mounted upon and driven by the armature-shaft of said motor.

5. The combination, in a grinding-machine, with the work-holding mechanism, of a grinding mechanism comprising a carriage, a fork-shaped frame adjustably mounted in said carriage, an electric motor adjustably mounted in said fork-shaped frame, and a grinder driven from the armature-shaft of said motor.

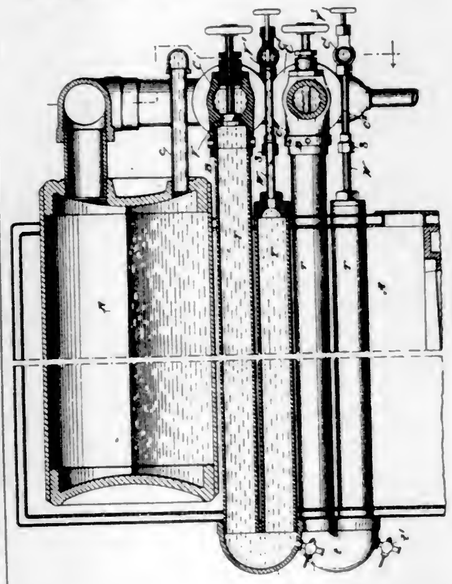
6. The combination, in a grinding-machine, with adjustable work-holding mechanism, of adjustable grinding mechanism comprising a carriage, means for adjusting said carriage horizontally, means for adjusting said carriage vertically, a fork-shaped motor-carrying frame horizontally and revolubly mounted on said carriage, and a motor pivotally mounted in said fork-shaped frame, and a grinder driven from the shaft of said motor.

7. The combination, in a grinder, of a grinding-mechanism carriage, and means for elevating and lowering the same comprising a hollow standard, a hollow sleeve vertically adjustable in said standard, a hollow screw-shaft for adjusting said sleeve vertically, a gear-wheel on the lower end of said hollow screw-shaft, a pinion engaging with said wheel, a shaft to said pinion running to the front of the machine where it is provided with a handle, a central shaft passing up through said hollow screw-shaft, means for revolving the same, and a connection between said central shaft and the grinder-carrier table whereby the same may be adjusted.

8. The combination, in a grinding-machine, of the main frame, a grinder-carrying frame mounted thereon, adjustable connections between said main frame and the standard on said grinder-carrying frame, and means for rotatably adjusting said standard on said main frame whereby the direction of the grinder may be shifted on a vertical axis, substantially as set forth.

9. The combination, in a grinder, of a main frame, a grinder-table-carrying frame adjustably mounted thereon, means for elevating and lowering the same, and a central shaft passing up through the structure of said grinder-table-carrying frame, a pinion on the upper end of said shaft, a screw-nut mounted in the table and having a toothed face engaging with said pinion, a carriage-driving screw operated by said nut, a gear-wheel near the lower end of the vertical shaft and connected thereto by a spline entering a long keyway in said shaft, a pinion engaging with said wheel, and a shaft running thence to the front of the machine where it is provided with a handle, whereby the grinder-carrier table may be adjusted horizontally by the same mechanism irrespective of the vertical adjustment, substantially as set forth.

657,906. **BOILER.** GEORGE E. LEDVINA, New York, N. Y., assignor of one-fifth to Henry Fischer, Mount Vernon, Ind. Filed May 2, 1900. Serial No. 15,204. (No model.)



Claim.—1. A boiler, having a steam-reservoir, a circulating-pipe passing therefrom, a return-pipe passing thereto, the circulating and return pipes having orifices therein, a plurality of independent boiler-sections removably connected with the circulating and return pipes and respectively communicating with the orifices therein, and independently-operative valves commanding the orifices in the circulating and return pipes.

2. A boiler having a steam-reservoir, a circulating-pipe passing therefrom, a return-pipe passing thereto, such pipes lying parallel with each other and having orifices therein, independently-operative valves commanding such orifices, and independent boiler-sections each formed of two tubes connected with each other at one end by an elbow, the other ends of the tubes being in communication with the respective orifices in the circulating and return pipes, and the tubes of said boiler-sections being removably connected with the circulating and return tubes so that they may be independently removed from the boiler, as specified.

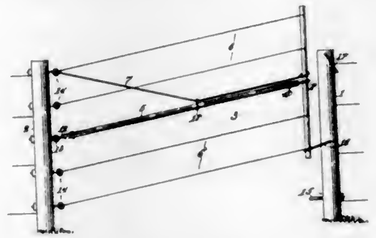
3. A boiler having a steam-reservoir, a plurality of independent boiler-sections each independently and removably connected with the steam-reservoir, a feed-water supply directing the feed-water to each boiler-section, and independent valves commanding the respective boiler-sections and capable of operation to cut off such boiler-sections from the steam-reservoir and from the feed-water supply, whereby to permit the removal of any one of the boiler-sections from the boiler.

4. A boiler having a steam-reservoir, a number of independent boiler-sections each independently and removably connected with the boiler and communicating with the steam-reservoir, and valves commanding the respective boiler-sections and capable of cutting off their communications with the steam-reservoir, whereby to permit the removal of any one of the boiler-sections from the boiler.

5. A boiler, having a steam-reservoir, a circulating-pipe passing from the same, a return-tube leading to the steam-reservoir, a plurality of boiler-sections each having two portions respectively removably connected with the circulating-pipe and return-tube so that any one of the boiler-sections may be removed from the boiler, and valves working with the circulating-pipe and return-tube and movable to cut off the communications of such tubes with the boiler-sections, for the purpose specified.

REISSUES.

11,854. **GATE.** THOMAS FERGUSON, Parkersburg, and GEORGE R. BRACE, Cedar Falls, Iowa; said Ferguson assignor to said Brace. Filed July 5, 1900. Serial No. 22,646. Original No. 639,547, dated Dec. 19, 1899.



Claim.—1. In a gate, the combination of a post, an upright, a strut having a hinged connection with each, one or more tie-strands connecting the post and upright each side of the strut, a diagonal guy connecting the post and upright, and means for deflecting the same, whereby one end of the gate may be elevated or depressed.

2. In a gate, the combination of a post, an upright, a strut hinged to each, one or more tie-strands connecting the post and upright each side of the strut, a diagonal guy connecting with the post and upright, and a ring embracing the strut and guy, whereby the guy may be deflected by the sliding of said ring along the strut, and one end of the gate elevated or depressed.

3. In a gate, the combination of a post, an upright, a strut hinged to each, a series of parallel tie-strands arranged each side of said strut and connecting with the post and upright, means substantially as described for straining said tie-strands, a flexible guy connecting diagonally with the post and upright, and means for deflecting the same, substantially as and for the purpose set forth.

4. In a gate, the combination of an upright, a pair of posts, a strut hinged to the upright and one of said posts, a series of parallel tie-strands each side of said strut connecting with said upright and last-mentioned post, a diagonal, flexible guy connecting with the same post and upright, means for deflecting the same to tilt the gate, a foot to hold the lower end of the upright when in closed position, and means substantially as described for securing the upper end of said post when in the same position.

5. The combination with a gate substantially as described, comprising a terminal post and upright, a longitudinal strut hinged to each, a series of parallel tie-strands, a diagonal guy and means for deflecting the same to tilt the gate, of a post provided with a foot to support the lower end of the upright when in normal, closed position, a loop to support the same in an elevated position, and means for securing the upper end of the upright when in normal, closed position, substantially as described.

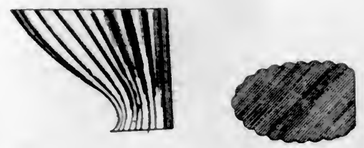
DESIGNS.

33,180. **SHOE-LACE FASTENER.** LENA F. FERRELL, La Monte, Mo. Filed July 30, 1900. Serial No. 25,353. Term of patent 14 years.



Claim.—The design for a shoe-lace fastener, herein shown and described.

33,181. **HEEL FOR BOOTS OR SHOES.** JOSEPH PETRONE, New York, N. Y. Filed Aug. 16, 1900. Serial No. 27,113. Term of patent 7 years.



Claim.—The design for a heel for boots and shoes, substantially as shown and described.

33,182. **BADGE OR SIMILAR ARTICLE.** CARL FREDERICK KABISCH, New York, N. Y. Filed Aug. 10, 1900. Serial No. 26,531. Term of patent 3½ years.





Claim.—The design for a badge or similar article herein shown and described.

33,183. **BADGE.** FERDINAND E. LIBENOW, Spokane, Wash., assignor of two-thirds to Daniel J. Munn, New Westminster, Canada. Filed July 31, 1900. Serial No. 25,468. Term of patent 7 years.



33,183.



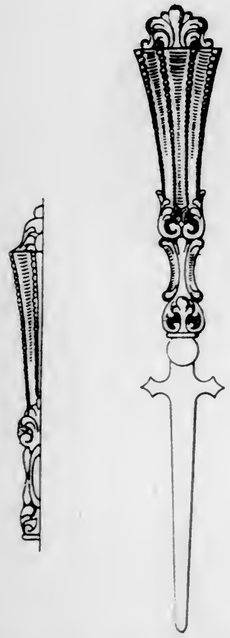
Claim.—The design for a badge, substantially as herein shown and described.

33,184. CAMPAIGN-BADGE. HIRAM H. PEIRCE, Peoria, Ill. Filed July 5, 1900. Serial No. 22,754. Term of patent 3½ years.



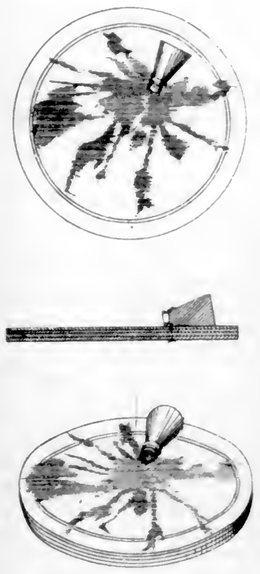
Claim.—The design for a campaign-badge, as herein shown and described.

33,185. HANDLE FOR PAPER-CUTTERS OR SIMILAR ARTICLES. HERBERT J. STRAKER, Attleborough, Mass., assignor to the Attleboro Manufacturing Co., same place. Filed July 10, 1900. Serial No. 23,167. Term of patent 3½ years.



Claim.—The design for a handle for paper-cutters or similar articles as herein shown and described.

33,186. COVER FOR PEN-WIPERS OR SIMILAR ARTICLES. WILLIAM T. PARTRIDGE, New York, N. Y. Filed May 21, 1900. Serial No. 17,485. Term of patent 3½ years.



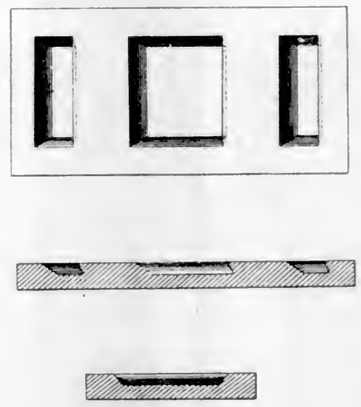
Claim.—The design for a cover for a pen-wiper or similar article, as shown and described.

38,187. PUZZLE-BOARD. WALLACE ODELL, North Tarrytown, N. Y. Filed Aug. 6, 1900. Serial No. 26,099. Term of patent 7 years.



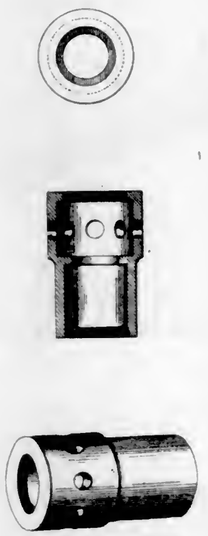
Claim.—The design for a puzzle-board herein shown and described.

33,188. TILE. EMIL KÖHLER, New York, N. Y., assignor to the American Encaustic Tiling Company, Limited, same place. Filed June 28, 1900. Serial No. 21,999. Term of patent 14 years.



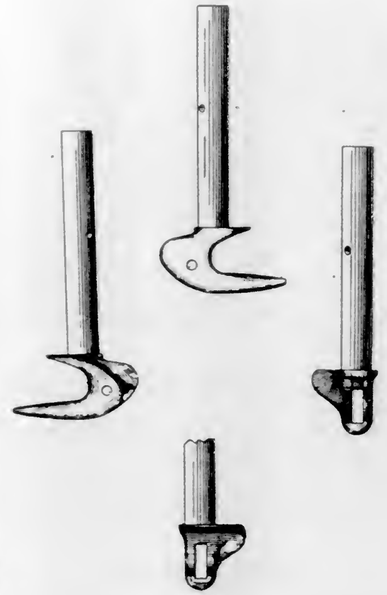
Claim.—The design for a tile, substantially as herein shown and described.

33,189. ATOMIZER-CASING. HARRY C. THAMSEN, Hamburg, Pa., assignor of two-thirds to Alexander Murdoch, same place, and Adam H. Leader, Reading, Pa. Filed Apr. 17, 1900. Serial No. 13,274. Term of patent 7 years.



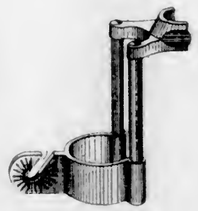
Claim.—The design for an atomizer-casing substantially as shown and described.

33,190. STATIONARY JAW FOR TYING-BILLS. SAMUEL K. DENNIS, Chicago, Ill., assignor to the Piano Manufacturing Company, same place. Filed Aug. 4, 1900. Serial No. 25,948. Term of patent 14 years.



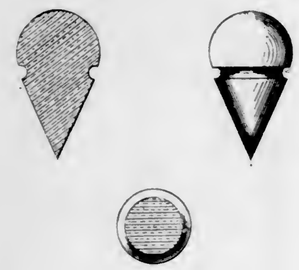
Claim.—The design for a stationary jaw for tying-bills substantially as herein shown and described.

33,191. LAMP-BRACKET MEMBER. WILLIAM P. CRARY, New York, N. Y. Filed Jan. 11, 1900. Serial No. 1,146. Term of patent 3½ years.



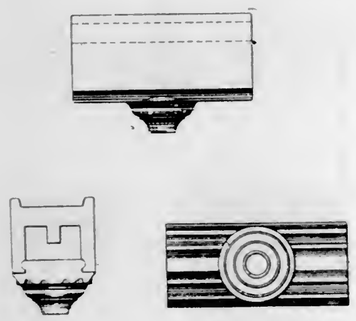
Claim.—The design for a lamp-bracket member, herein shown and described.

33,192. LIGHT FOR ILLUMINATED SIGNS. WILLIAM H. VOORHEES, Columbus, Ohio. Filed Apr. 28, 1900. Serial No. 14,765. Term of patent 14 years.



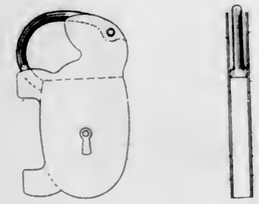
Claim.—The design for a light for illuminated signs, as herein shown and described.

33,193. CASING FOR PENDENT CEILING CUT-OUTS. CHARLES P. SCOTT, New York, N. Y. Filed May 29, 1900. Serial No. 18,468. Term of patent 3½ years.



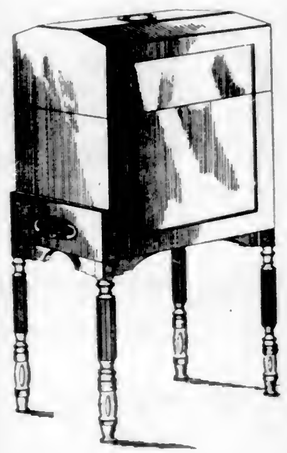
Claim.—The design for the casing of a pendent ceiling cut-out, substantially as shown and described.

33,194. PADLOCK-CASE. GUSTAV DARMANN, Wald, Germany. Filed May 28, 1900. Serial No. 18,333. Term of patent 3½ years.



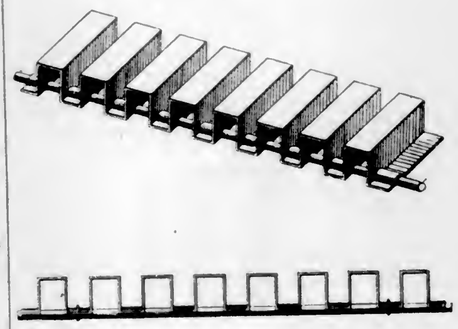
Claim.—The design for a padlock-case as herein shown and described.

33,195. CABINET. JOHN D. BUTLER, Giles Mills, N. C., assignor of one-half to Ernest F. Young, Dunn, N. C. Filed July 14, 1900. Serial No. 23,681. Term of patent 7 years.



Claim.—The design for a cabinet, substantially as shown and described.

33,196. CHAFFER OR SIEVE SLAT. BENJAMIN F. MARTIEN, Ashland, Ohio. Filed July 18, 1900. Serial No. 24,113. Term of patent 14 years.

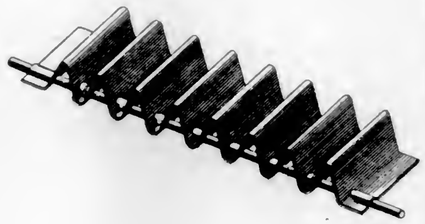


Claim.—The design for a chaffer or sieve slat, as herein shown and described.

33,197. CHAFFER OR SIEVE SLAT. BENJAMIN F. MARTIEN, Ashland, Ohio. Filed July 18, 1900. Serial No. 24,114. Term of patent 14 years.

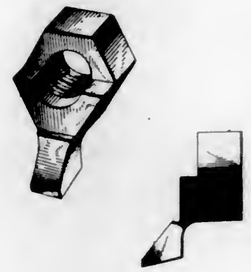


33,197.



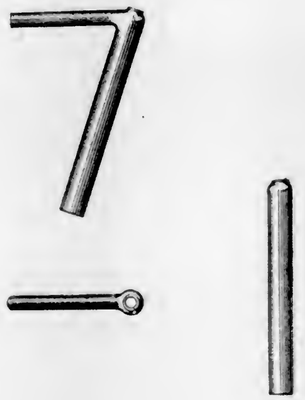
Claim.—The design for a chaffer or sieve slat, as herein shown and described.

33,198. NUT. HENRY M. HART and JACOB L. SHOOK, New Brighton, Pa. Filed Aug. 1, 1900. Serial No. 25,594. Term of patent 14 years.



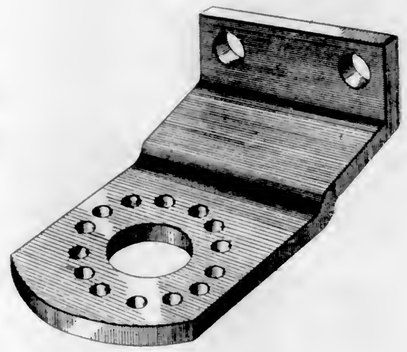
Claim.—The design for a nut, substantially as herein shown and described.

33,199. BICYCLE SEAT-POST. GEORGE G. SPENCER, Chicago, Ill. Filed Sept. 23, 1899. Serial No. 731,498. Term of patent 7 years.



Claim.—The design for a bicycle seat-post substantially as shown and described.

33,200. SWITCH CHAIR OR BRACE. AXEL A. STROM, Austin, Ill., assignor to the Strom Manufacturing Company, Chicago, Ill. Filed Aug. 1, 1900. Serial No. 25,593. Term of patent 14 years.

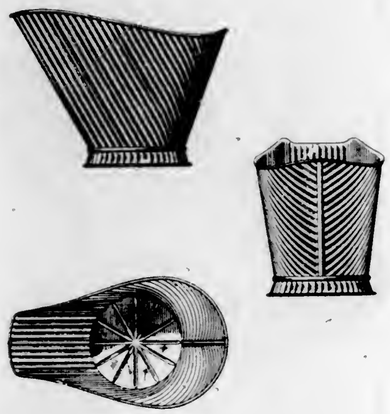


Claim.—The design for a switch chair or brace, substantially as shown and described.

33,201. GRATE-BAR. HENRY TRUESDELL, Toronto, Canada. Filed Mar. 2, 1900. Serial No. 7,136. Term of patent 14 years.

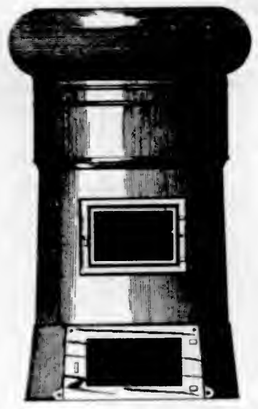
Claim.—The design for a grate-bar herein shown and described.

33,202. COAL-HOD OR SIMILAR ARTICLE. CHARLES DONAGHY, Philadelphia, Pa. Filed Aug. 7, 1900. Serial No. 26,201. Term of patent 14 years.



Claim.—The design for a coal-hod or similar article, substantially as herein described and illustrated.

33,203. HEATER. GEORGE E. DOWNE, Chicago, Ill., assignor to the American Radiator Company, of New Jersey. Filed Aug. 13, 1900. Serial No. 26,792. Term of patent 14 years.



Claim.—The design for a heater, as herein shown and described.

PHOTO-LITHO. THE NORRIS PETERS CO. WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

IN RE GILLESPIE.

Decided June 23, 1900.

INTERFERENCE—DIVISIONAL APPLICATION—ACCESS TO ORIGINAL APPLICATION—RULE 108.

Where in an application involved in an interference there is a statement that it is a division of a prior application, and by reason of the prior application the applicant is made the senior party and his preliminary statement refers to such prior application and it appears that he intends to rely upon it to establish his claim to priority, *Held* that an opposing party is entitled, under Rule 108, to see and obtain copies of the original application. (*In re Swihart*, 90 O. G. 601, cited.)

IN the matter of the petition of Alfred J. Gillespie for a copy of the application of James H. Dean, filed December 31, 1897, No. 665,109.

Messrs. Church & Church for petitioner.
Messrs. Pierce and *Fisher* for Dean.

CHAMBERLIN, *Assistant Commissioner:*

This is a petition by Alfred J. Gillespie asking that he be furnished with a copy of the file and contents, including the drawing, of Dean's application, No. 665,109, filed December 31, 1897.

Gillespie is a party to an interference (*McKenzie* v. *Gillespie* v. *Dean*) in which Dean's application No. 708,201, filed March 8, 1899, is involved. That application contains the statement that it is a division of the prior applications, Nos. 665,108 and 665,109, and in declaring the interference the Examiner referred to those prior applications and by reason of them made Dean the senior party in the proceedings. He would not have been the senior party if those applications had not been taken into consideration. In his preliminary statement in the interference Dean states that his invention was first reduced to practice by filing an application for a patent in December, 1897, thus indicating that he intends to rely on one or both of the applications mentioned above to assist him in establishing his claim. This being true, Gillespie is clearly entitled to see and obtain copies of the application relied on. (*In re Swihart*, 90 O. G., 601.)

Dean, however, opposes the present petition for copies and contends that for Gillespie to obtain copies of No. 665,108, which has become Patent No. 622,192, is sufficient.

Since Dean's application No. 708,201 is a continuation of and part of the same proceedings as his prior application No. 665,109, that prior application is necessarily involved in the interference and Gillespie is under Rule 108 entitled to obtain copies of it.

The petition is granted.

Revision of Classification.

(ORDER No. 1,367.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., September 4, 1900.

The following changes in classification of inventions are hereby directed, to take effect this day:

In Division XXIV, class 223, Apparel Apparatus, establish subclass—

55. Collar, cuff, and bosom machines,

and transfer thereto all the patents heretofore classified in class 93, Paper Manufactures, Collar, Cuff, and Bosom Machines.

In Division VIII, class 211, Store Furniture, establish subclasses as follows:

29. Serving apparatus—
30. Printing attachments,
31. Roll-holders—
32. Cutting attachments,
Serving apparatus—
Roll-holders—
33. Feeding attachment,

and transfer thereto the patents hitherto classified in the corresponding subclasses of class 93, Paper Manufactures.

In Division XV, class 92, Paper-Making, establish a new subclass as follows:

55. Reels.

In Division II abolish class 232, Paper-Tube Machines, the patents composing the same having been embodied in new subclasses under class 93, Paper Manufactures.

DIVISION XVII.—In class 198, Matrix-Making, establish a new subclass as follows:

7. Matrices and materials.

In class 101, Printing, change the number of subclass Bed-and-cylinder machines, bed-movements, from 156 to 158.

In class 101, Printing, abolish the following subclasses:

35. Electrotyping.
135. Stereotyping—
137. Matrices and materials.
138. Surfaces—
139. Bases,
141. Holders, sliding-clamp,
Surfaces—
142. Planographic—
143. Hectographs,
144. Holders and supports,
145. Rules,
157. Transferring,
146. Types.

In class 101, Printing, establish subclasses as follows:

181. Imitating.
Planographic—
172. Copying apparatus.
Planographic machines—
180. Damping.
Processes—
182. Miscellaneous.
179. Spaces and straight column-rules.
Surfaces—
165. Backing apparatus,
163. Elastic,
164. Fountain,
Holders—
167. Cylinder-mandrel,
168. Metal-sheet stretchers,
169. Miscellaneous,
Surfaces—
166. Mechanical transferring and registering,
161. Multicolor,
Planographic—
171. Elastic pantographs,
170. Hectographic compositions,
173. Miscellaneous,
Relief and intaglio—
177. Backs and blocks,
175. Combination,
174. Integral metal type,
178. Miscellaneous,
176. Non-elastic materials,
162. Tintographs.

In Division XXX abolish all subclasses of class 93, Paper Manufactures, and establish subclasses and definitions as follows:

CLASS 93.—PAPER MANUFACTURES.

Bag-machines—
13. Central-fold,
27. Closers,
26. Cutters and closers,
25. Cutters and openers,
21. Cutters, openers, and closers,
33. Cutting,
31. Hand bottom-folders, tables,
35. Methods,
8. Miscellaneous,
28. Openers—
29. Roll,
30. Side,
22. Openers and closers—
23. Openers, roll,
24. Openers, side,
11. Plate-mandrel,
34. Printing attachments,
12. Rectangular-mandrel,
32. Refolders,
Triangular-fold—
9. Blade-and-roller,
10. Mandrel,
20. Web-formers,
19. Web formers and cutters,
18. Web formers, cutters and closers,
17. Web formers, cutters and openers,
14. Web formers, cutters, openers and closers—
15. Openers, roll,
16. Openers, side.
Box-machines—
37. Cell-cases—
38. Traveling-carrier, shifting-form,
54. Covering,
58. Cutting and scoring,
44. Endless-mandrel carrier,
57. Fly-affixers,
49. Folding—
50. Driers,
51. Plunger-and-die,
52. Stationary folders,
45. Web-supply—
46. Driers,
47. Plunger-and-die,
48. Folding and covering,
39. Folding and setting up,
42. Folding and stapling,
41. Folding and staying,
59. Mandrels and dies,
36. Miscellaneous,
60. Plaiting,
Box-machines—
53. Refolders,
55. Setting up,
43. Setting up and covering,
56. Staying.
98. Bunching and banding.
Envelop-machines—
74. Drying—
75. Chain-discharging,
61. Miscellaneous,
73. Printing and stamping,
Reciprocating—
71. Carrying mechanism,
70. Creasing mechanism,
72. Ejecting mechanism,
67. Folding,
68. Gumming—
69. Picker-faces,
Gumming and folding,
65. Turret,
64. Web-supply,
Rotary—
62. Blank-supply,
63. Web-supply,
76. Thread-affixers.
Folding—
84. Miscellaneous,
85. Powder-paper machines,
86. Radial-fold.
1. Miscellaneous.
Tag-machines—
90. Eyeleting,
87. Miscellaneous.
89. Pin-ticket making,
88. Pin-ticket making and attaching,
91. String-attaching.
92. Washer-attaching.
Tube-machines—
82. Axial-feed,
81. Convolute-wind,
78. Fuse-making,
77. Miscellaneous,
83. Sizing and burnishing,
80. Spiral-wind,
79. Tapering-wind.
94. Tubes.
Wrapping-machines—
5. Crimpers and twisters,
2. Miscellaneous,
4. Packet making and wrapping,
6. Receptacle filling and closing,
3. Receptacle making and filling,
7. Traveling-carrier.

WALTER H. CHAMBERLIN,
Acting Commissioner.

CLASS 93.—PAPER MANUFACTURES.

DEFINITIONS.

Class.

93. PAPER MANUFACTURES. Machines for working up previously-made paper into articles of commerce, except those which make the article from dry paper by means of drawing-dies, which are classified in class 113, SHEET-METAL WARE, MAKING, VESSELS, DIE-SHAPING, and those which mold the article from moist paper or in heated dies, which are classified in class 18, CAOUTCHOUC AND MINOR PLASTICS, MINOR PLASTICS, MOLDING DEVICES.

(Note.—Wood veneer, cloth, and similar flexible materials when handled in the same manner as paper to form specific articles are, for the purposes of classification, regarded as paper, and machines for working such materials to make specific articles are classified in paper manufactures, subject to the exceptions stated in the above general definition. Compound webs and sheets of paper are not regarded as specific articles, and patents relating to the formation of such webs and sheets are classified in class 92, PAPER-MAKING.)

Subclasses.

1. MISCELLANEOUS. Machines and appliances for working paper into articles and parts and adjuncts of such machines and appliances which are not classified under more specific titles.

2. WRAPPING-MACHINES, MISCELLANEOUS. Machines for applying wrappers to articles of commerce and parts and adjuncts of such machines which are not classified under more specific titles.

(Note.—Machines for wrapping newspapers are classified in class 101, PRINTING, FOLDERS, NEWSPAPER-WRAPPING MACHINES. Machines particularly designed for the boxing of matches are classified in class 144, WOODWORKING, MATCH-MAKING, BOX-FILLING.)

3. WRAPPING-MACHINES, RECEPTACLE MAKING AND FILLING. Machines which make a paper receptacle and fill the same with loose material.

(Note.—Search should also be made in class 144, WOODWORKING, MATCH-MAKING, BOX-FILLING.)

4. WRAPPING-MACHINES, PACKET MAKING AND WRAPPING. Machines which form a packet or cake of fibrous or other loose material and inclose the same in a paper covering.

5. WRAPPING-MACHINES, CRIMPERS AND TWISTERS. Machines which apply paper wrappers to articles of commerce by crimping or twisting the sheet about the article. These machines are usually designed to wrap oranges and other fruit, but are not confined to fruit-wrapping.

6. WRAPPING-MACHINES, RECEPTACLE FILLING AND CLOSING. Machines which fill a previously-made paper receptacle and thereafter close the same.

(Note.—Search should also be made in class 144, WOODWORKING, MATCH-MAKING, BOX-FILLING.)

7. WRAPPING-MACHINES, TRAVELING-CARRIER. Machines which employ a traveling carrier to convey the objects being operated on from place to place, where the several manipulations involved in the wrapping are performed.

(Note.—Search should also be made in subclasses Bag-machines, plate-mandrel, and rectangular-mandrel, and Box-machines, endless-mandrel carrier, in this class.)

8. BAG-MACHINES, MISCELLANEOUS. Machines for making paper bags and parts and adjuncts of such machines which are not classified under more specific titles.

9. BAG-MACHINES, TRIANGULAR-FOLD, BLADE-AND-ROLLER. Machines for making triangular or cone-shaped bags, the bags being formed by driving the material between rollers by means of a folding-blade.

10. BAG-MACHINES, TRIANGULAR-FOLD, MANDREL. Machines for making triangular or cone-shaped bags, the bags being formed by folding the material around a triangular or cone-shaped mandrel.

11. BAG-MACHINES, PLATE-MANDREL. Machines which form bags by folding the material around a plate or flat mandrel.

12. BAG-MACHINES, RECTANGULAR-MANDREL. Machines which form bags by folding the material around a rectangular mandrel.

(Note.—Search should also be made in subclasses Box-machines, endless-mandrel carrier, and Wrapping-machines, traveling-carrier, in this class.)

13. BAG-MACHINES, CENTRAL-FOLD. Machines which form bags by folding the material transversely on a line about equally distant from the sides or ends of the blank and securing the edges together.

(Note.—Search should also be made in subclasses Envelop-machines, rotary, blank-supply, and Rotary, web-supply, in this class.)

14. BAG-MACHINES, WEB-FORMERS, CUTTERS, OPENERS AND CLOSERS. Machines which fold and paste a web of paper longitudinally to form a tube, cut the tube into bag lengths, open into some form one end of each length as a preliminary step in the formation of the bottom, and close the opened formation to complete the bag. When the opening of the tube is effected by devices carried by rolls or by contrivances operating on the edges of the tube, the patents are classified in subclasses 15 and 16 of this group according to the opening mechanism.

15. BAG-MACHINES, WEB-FORMERS, CUTTERS, OPENERS AND CLOSERS, OPENERS, ROLL. Machines which fold and paste a web of paper longitudinally to form a tube, cut the tube into bag lengths, open into some form one end of each length by means of openers carried by rolls as a preliminary step in the formation of the bottom, and close the opened formation to complete the bag.

16. BAG-MACHINES, WEB-FORMERS, CUTTERS, OPENERS AND CLOSERS, OPENERS, SIDE. Machines which fold and paste a web of paper longitudinally to form a tube, cut the tube into bag lengths, open into some form one end of each length by means of openers operating on the edges of the bag length as a preliminary step in the formation of the bottom, and close the opened formation to complete the bag.

17. BAG-MACHINES, WEB-FORMERS, CUTTERS AND OPENERS. Machines which fold and paste a web of paper longitudinally to form a tube, cut the tube into bag lengths, and open into some form one end of each length as a preliminary step in the formation of the bottom, the opened formation being afterward closed by hand or by independent mechanism to complete the bag.

18. BAG-MACHINES, WEB-FORMERS, CUTTERS AND CLOSERS. Machines which fold and paste a web of paper longitudinally to form a tube, cut the tube into bag lengths, and fold one end of each length back upon itself to close the same and complete the bag.

19. BAG-MACBINES, WEB FORMERS AND CUTTERS. Machines which fold and paste a web of paper longitudinally to form a tube and cut the tube into bag lengths, the remaining operations necessary to complete the bag being afterward performed by hand or by independent mechanism.

20. BAG-MACHINES, WEB-FORMERS. Machines which fold and paste a web of paper longitudinally to form a tube, the remaining operations necessary to complete the bag being afterward performed by hand or by independent mechanism.

(Note.—Search should also be made in subclasses Box-machines, folding, web-supply, stationary folders, and Folding, stationary folders, and Tube-machines, axial-feed, in this class.)

21. BAG-MACHINES, CUTTERS, OPENERS AND CLOSERS. Machines which cut a previously-made tube into bag lengths, open into some form one end of each length as a preliminary step in the formation of the bottom, and close the opened formation to complete the bag.

22. BAG-MACHINES, OPENERS AND CLOSERS. Machines which open into some form one end of previously-made bag lengths as a preliminary step in the formation of the bottom and close the opened formation to complete the bag. When the opening of the tube is effected by devices carried on rolls or by contrivances operating on the edges of the tube, the patents are classified in subclasses 23 and 24 of this group according to the opening mechanism.

23. BAG-MACHINES, OPENERS AND CLOSERS, OPENERS, ROLL. Machines which open into some form one end of previously-made bag lengths by means of openers carried by rolls as a preliminary step in the formation of the bottom and close the opened formation to complete the bag.

24. BAG-MACHINES, OPENERS AND CLOSERS, OPENERS, SIDE. Machines which open into some form one end of previously-made bag lengths by means of openers operating on the edges of the bag lengths and close the opened formation to complete the bag.

25. BAG-MACHINES, CUTTERS AND OPENERS. Machines which cut previously-made tubes into bag lengths and open into some form one end of each length as a preliminary step in the formation of the bottom, the opened formation being afterward closed by hand or by independent mechanism to complete the bag.

26. BAG-MACHINES, CUTTERS AND CLOSERS. Machines which cut previously-made tubes into bag lengths and fold one end of each length back upon itself to complete the bag.

27. BAG-MACHINES, CLOSERS. Machines which close previously-prepared bag lengths to complete the bag.

(Note.—These machines are usually in the nature of attachments to bag-machines, but in some instances are complete machines to which the incomplete bags are fed.)

28. BAG-MACHINES, OPENERS. Machines which open into some form one end of previously-made bag lengths as a preliminary step in the formation of the bottom, the opened formation being afterward closed by hand or by independent mechanism. When the opening of the tube is effected by devices carried by rolls or by contrivances operating on the edges of the tube, the patents are classified in subclasses 29 and 30 of this group according to the opening mechanism.

29. BAG-MACHINES, OPENERS, ROLL. Machines which open into some form one end of previously-made bag lengths by means of openers carried by rolls as a preliminary step in the formation of the bottom, the opened formation being afterward closed by hand or by independent mechanism to complete the bag.

30. BAG-MACHINES, OPENERS, SIDE. Machines which open into some form one end of previously-made bag lengths by means of openers operating on the edges of the bag lengths as a preliminary step in the formation of the bottom, the opened formation being afterward closed by hand or by independent mechanism to complete the bag.

31. BAG-MACHINES, HAND BOTTOM-FOLDERS, TABLES. Work-tables designed to hold previously-made bag lengths or tubes while the bottoms are formed thereon by hand.

32. BAG-MACHINES, REFOLDERS. Machines for operating upon previously-made bags to change the formation or configuration of the same.

33. BAG-MACHINES, CUTTING. Cutting-machines and parts and adjuncts of such machines which are specially applicable for use in the manufacture of bags and which are not of general application.

(Note.—Search should also be made in subclasses Bag-machines, miscellaneous; Triangular-fold, blade-and-roller; Triangular-fold, mandrel; Plate-mandrel; Rectangular mandrel; Central-fold, in this class. To complete the search for cutters designed for use in connection with bag-machines, all subclasses in bag-machines which include "cutters" in the title should be examined.)

34. BAG-MACHINES, PRINTING ATTACHMENTS. Printing machines, attachments, and appliances which are specially applicable for use in conjunction with paper-bag machines and which are not of general application.

35. BAG-MACHINES, METHODS. Methods of making paper bags wherein the steps follow the operation of the machine, and an examination of the machine class is necessary to complete the search for the method.

36. BOX-MACHINES, MISCELLANEOUS. Machines for making paper boxes and parts and adjuncts of such machines which are not classified under more specific titles.

37. BOX-MACHINES, CELL-CASES. Machines for making boxes or cases having a plurality of compartments or cells, such as egg-cases, except such as are classified under more specific titles.

38. BOX-MACHINES, CELL-CASES, TRAVELING-CARRIER, SHIFTING-FORM. Machines for making boxes or cases having a plurality of compartments or cells, such as egg-cases, which are provided with a plurality of shifting forms arranged on a traveling carrier.

39. BOX-MACHINES, FOLDING AND SETTING UP. Machines which fold one blank to form an incomplete box and afterward set thereon or attach thereto other blanks to complete the box.

(Note.—Search should also be made in subclass Box-machines, endless-mandrel carrier, in this class.)

40. BOX-MACHINES, FOLDING AND COVERING. Machines which fold a box-blank into shape and afterward apply ornamental covering-paper to the folded box.

(Note.—Search should also be made in subclass Box-machines, endless-mandrel carrier, in this class.)

41. BOX-MACHINES, FOLDING AND STAYING. Machines which fold a box-blank into shape and afterward stay the adjoining edges.

(Note.—Search should also be made in subclass Box-machines, endless-mandrel carrier, in this class.)

42. BOX-MACHINES, FOLDING AND STAPLING. Machines which fold a blank into shape and afterward secure the edges or joints by means of staples.

(Note.—Search should also be made in subclass Box-machines, endless-mandrel carrier, in this class, and in class 1, NAILING AND STAPLING, the following subclasses: Machines, box, staple forming and setting; Machines, box, staple forming and setting, sheet-metal; Machines, box, staple-setting; Machines, staple forming and setting; Machines, book, staple forming and setting; Book, staple-setting; Machines, shoe, staple forming and setting; and Machines, shoe, staple-setting.)

(Note.—Many of the machines make veneer or paper dishes for grocers' use.)

43. BOX-MACHINES, SETTING UP AND COVERING. Machines which make boxes by setting together two or more independent pieces of material and afterward apply ornamental covering-paper to the folded box.

44. BOX-MACHINES, ENDLESS-MANDREL CARRIER. Machines for making paper boxes which employ a plurality of holders, forms, or mandrels mounted on a traveling carrier to hold the blanks while the several manipulations necessary to complete the boxes are performed thereon.

(Note.—Search should also be made in subclasses Wrapping-machines, traveling-carrier; Bag-machines, rectangular-mandrel, and plate-mandrel; Box-machines, folding, web-supply, driers; and Box-Machines, folding, driers, in this class.)

45. BOX-MACHINES, FOLDING, WEB-SUPPLY. Machines which cut box-blanks from a continuous web and fold boxes therefrom, except such as are classified under more specific titles.

(Note.—Search should also be made in subclass Box-machines, endless-mandrel carrier, in this class.)

46. BOX-MACHINES, FOLDING, WEB-SUPPLY, DRIERS. Machines which cut box-blanks from a continuous web and fold boxes therefrom, the machines being provided with driers which dry the boxes during their manufacture or after their completion.

(Note.—Search should also be made in subclass Box-machines, endless-mandrel carrier, in this class.)

47. BOX-MACHINES, FOLDING, WEB-SUPPLY, PLUNGER-AND-DIE. Machines which cut box-blanks from a continuous web and fold boxes therefrom by means of a plunger and die.

(Note.—Search should also be made in subclasses Box-machines, endless-mandrel carrier; Box-machines, folding, web-supply, driers, and Box-machines, folding, driers, in this class.)

48. BOX-MACHINES, FOLDING, WEB-SUPPLY, STATIONARY FOLDERS. Machines for making folded boxes from a continuous web, the folding operations being performed by means of stationary folders or guides over which the material is drawn. These machines either first fold a web of paper into a tube and then cut the boxes from such folded tube or else cut the blanks from a web and then fold the blanks to complete the box.

(Note.—Search should also be made in subclasses Envelop-machines, rotary, blank-supply, and web-supply, and Tube-machines, axial-feed, in this class.)

49. BOX-MACHINES, FOLDING. Machines which form boxes by folding into shape previously-prepared blanks and parts and adjuncts of such machines, except such as are classified under more specific titles.

(Note.—Search should also be made in subclass Box-machines, endless-mandrel carrier, in this class.)

50. BOX-MACHINES, FOLDING, DRIERS. Machines which form boxes by folding into shape previously-prepared blanks and which are provided with means for drying the folded boxes.

(Note.—Search should also be made in subclass Box-machines, endless-mandrel carrier.)

51. BOX-MACHINES, FOLDING, PLUNGER-AND-DIE. Machines which form boxes by folding into shape previously-prepared blanks by means of a plunger and die.

(Note.—Search should also be made in subclasses Box-machines, endless-mandrel carrier; Box-machines, folding, web-supply, driers, and Box-machines, folding, driers, in this class.)

52. BOX-MACHINES, FOLDING, STATIONARY FOLDERS. Machines which form boxes by folding into shape previously-prepared blanks by drawing the same over stationary folders or guides.
(Note.—Search should also be made in subclasses Envelop-machines, rotary, blank-supply, and rotary, web-supply, and Tube-machines, axial-feed, in this class.)

53. BOX-MACHINES, REFOLDERS. Machines for refolding or breaking on alternate edges previously-made boxes of rectangular form or tubes from which such boxes are to be made, so that the finished boxes will be equally flexible at all corners.

54. BOX-MACHINES, COVERING. Machines and appliances and parts and adjuncts of such machines and appliances for fixing covering material to boxes otherwise complete.

55. BOX-MACHINES, SETTING UP. Machines for setting together independent pieces of previously-prepared material to form boxes.

56. BOX-MACHINES, STAYING. Machines for applying strips of paper, cloth, or other material to the corners of paper boxes to secure the parts together or to strengthen the joint when otherwise secured.
(Note.—Machines for driving metallic stays into the corners of boxes are found in class 1, NAILING AND STAPLING.)

57. BOX-MACHINES, FLY-AFFIXERS. Machines for applying an inner fly or flap of ornamental paper to boxes otherwise complete.

58. BOX-MACHINES, CUTTING AND SCORING. Machines which cut and score box-blanks and machines which either cut or score such blanks and which are not of general application, but are specially designed for use in the manufacture of paper boxes.
(Note.—Search also in Box-machines the following subclasses: Miscellaneous; Cell-cases; Cell-cases, traveling-carrier, shifting-form; Folding and staying; Setting up and covering; Endless-mandrel carrier; Folding, web-supply; Folding, web-supply, driers; Folding, web-supply, plunger-and-die; Folding, web-supply, stationary folders; Covering; Staying.)

59. BOX-MACHINES, MANDRELS AND DIES. Mandrels, dies, and forming-blocks used in the manufacture of paper boxes.

60. BOX-MACHINES, PLAITING. Machines which make paper receptacles by plaiting the material from a single sheet or blank.

61. ENVELOP-MACHINES, MISCELLANEOUS. Machines for making envelops and parts and adjuncts of such machines which are not classified under more specific titles.

62. ENVELOP-MACHINES, ROTARY, BLANK-SUPPLY. Machines which make envelops from previously-cut blanks by means of continuously-operating rotary elements which gum and fold the blanks to complete the envelops.
(Note.—Search should also be made in subclasses Bag-machines, central-fold, and Envelop-machines, rotary, web-supply, in this class.)

63. ENVELOP-MACHINES, ROTARY, WEB-SUPPLY. Machines which make envelops from a continuous web by means of continuously-operating rotary elements which cut out the blanks and gum and fold the same to complete the envelops.
(Note.—Search should also be made in subclasses Bag-machines, central-fold, and Envelop-machines, rotary, blank-supply, in this class.)

64. ENVELOP-MACHINES, RECIPROCATING, WEB-SUPPLY. Machines which cut envelop-blanks from a continuous web, gum the same, and fold the blanks by means of reciprocating folding mechanism.

65. ENVELOP-MACHINES, RECIPROCATING, TURRET. Machines which gum previously-cut envelop-blanks and fold the same by means of reciprocating folding mechanism, the operating elements being arranged in the form of a turret, so that several blanks may be operated on at the same time.

66. ENVELOP-MACHINES, RECIPROCATING, GUMMING AND FOLDING. Machines which gum previously-cut envelop-blanks and fold the same by means of reciprocating folding mechanism.

67. ENVELOP-MACHINES, RECIPROCATING, FOLDING. Machines which are confined in their operation to folding previously cut and gummed envelop-blanks by means of reciprocating folding mechanism and parts and elements of such mechanism.

68. ENVELOP-MACHINES, RECIPROCATING, GUMMING. Machines which are confined in their operation to gumming previously-cut envelop-blanks as a step preliminary to the folding operation.

69. ENVELOP-MACHINES, RECIPROCATING, GUMMING, PICKER-FACES. Pads or heads for the gumming mechanism of envelop-machines.

70. ENVELOP-MACHINES, RECIPROCATING, CREASING MECHANISM. Devices which are confined in their operation to the creasing of envelop-blanks as a step preliminary to the operation of the folding mechanism.

71. ENVELOP-MACHINES, RECIPROCATING, CARRYING MECHANISM. Devices which are confined in their operation to the carrying of envelop-blanks from the stack to the creasing or the folding mechanism.

72. ENVELOP-MACHINES, RECIPROCATING, EJECTING MECHANISM. Devices which are confined in their operation to discharging or ejecting envelops from the folding-box into the receiving-box or drying-chain.

73. ENVELOP-MACHINES, PRINTING AND STAMPING. Printing and stamping machines, attachments, and appliances which are specially applicable for use in conjunction with envelop-machines and which are not of general application.

74. ENVELOP-MACHINES, DRYING. Drying-chains and other drying devices which are specially designed for use in conjuction with envelop-machines.

75. ENVELOP-MACHINES, DRYING, CHAIN-DISCHARGING. Devices which are confined in their operation to discharging or ejecting envelops from the drying devices into the counting-box or other receptacle.

76. ENVELOP-MACHINES, THREAD-AFFIXERS. Devices which are confined in their operation to applying a wire or thread to envelops as a means for opening the same.

77. TUBE-MACHINES, MISCELLANEOUS. Machines for making paper tubes and parts and adjuncts of such machines except such as are classified under more specific titles.

78. TUBE-MACHINES, FUSE-MAKING. Machines which make fuses by forming a paper tube and filling the same with firing material.

79. TUBE-MACHINES, TAPERING-WIND. Machines for making tapered tubes, usually cigarette-holders, by winding a strip of paper over a tapered mandrel.

80. TUBE-MACHINES, SPIRAL-WIND. Machines which wind one or more strips of paper spirally over a mandrel to form a tube.
(Note.—Search should also be made in class 153, METAL-BENDING, COILING, TRAVELING DIE OR MANDREL.

81. TUBE-MACHINES, CONVOLUTE-WIND. Machines which wind a sheet of paper in a number of convolutions over a mandrel to form a tube.

82. TUBE-MACHINES, AXIAL-FEED. Machines which feed a web of paper to a stationary mandrel in line with its axis and fold the same longitudinally to form a tube.
(Note.—Search should also be made in Box-machines, folding, web-supply, stationary folders. To complete a search in this class, inspection should be made of all the subclasses in 93, PAPER MANUFACTURES, BAG-MACHINES, which involve "web-formers.")

83. TUBE-MACHINES, SIZING AND BURNISHING. Machines for reducing to uniform size and burnishing previously-made paper tubes.

84. FOLDING, MISCELLANEOUS. Machines for making folded paper articles and parts and adjuncts of such machines, except such as are classified under more specific titles.
(Note.—Search should also be made in subclasses Bag-machines, web-formers, and Tube-machines, axial-feed, this class.)

85. FOLDING, POWDER-PAPER MACHINES. Machines for making folded powder-papers such as are used by physicians and druggists to inclose medicinal powders.

86. FOLDING, RADIAL-FOLD. Machines for making radially-folded sheets of paper, usually filter-paper.

87. TAG-MACHINES, MISCELLANEOUS. Machines for making shipping and marking tags and parts and adjuncts of such machines, except such as are classified under more specific titles.

88. TAG-MACHINES, PIN-TICKET MAKING AND ATTACHING. Machines for making marking-tags, applying fastening pins or wires to the same, and securing the finished tag to the fabric to be marked.
(Note.—Search also subclass Box-machines, folding and stapling, this class. To complete the search for the pin making, attaching, and securing mechanism, the various subclasses of class 1, NAILING AND STAPLING, and of class 218, BUTTON, EYELET, AND RIVET SETTING, must be examined.)

89. TAG-MACHINES, PIN-TICKET MAKING. Machines for making marking-tags and for applying fastening pins or wires to the same.
(Note.—Search also subclass Box-machines, folding and stapling. To complete the search for the pin forming and attaching mechanism, the various subclasses of class 1, NAILING AND STAPLING, must be examined.)

90. TAG-MACHINES, EYELETING. Machines for making marking or shipping tags which are provided with metallic eyelets.
(Note.—Search also subclasses Rivet-setting, Implements, eyeleting; Machines, eyeleting, and Machines, eyeleting, magazine, in class 218, BUTTON, EYELET, AND RIVET SETTING.)

91. TAG-MACHINES, STRING-ATTACHING. Machines for making marking or shipping tags which are provided with securing strings or wires; also, machines for securing such strings to tags otherwise complete.

92. TAG-MACHINES, WASHER-ATTACHING. Machines for making marking or shipping tags which have the perforated portion strengthened by washers secured around the opening.

93. BUNCHING AND BANDING. Machines for gathering manufactured paper articles into bunches of a predetermined number and machines for applying a band to such bunches already gathered and machines which both gather such articles and also band the same; mostly machines for counting, bunching, and banding for use with envelop-machines, but also includes machines for collecting and bunching other articles, such as bags, boxes, tags, etc.

94. TUBES. Includes all patents for paper tubes as articles of manufacture, except such as by reason of their peculiar construction are limited in use to some specific art.

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Renewal of Forfeited Cases.

Rule 175. When the patent has been withheld by reason of nonpayment of the final fee, any person, whether inventor or assignee, who has an interest in the invention for which such patent was ordered to issue may file a renewal of the application for the same invention; but such second application must be made within two years after the allowance of the original application. * * *

Rule 176. In such renewal the oath, petition, specification, drawing, and model of the original application may be used for the second application; but a new fee ($15.00) will be required. * * *

United States Courts—Appeal from Interlocutory Order Granting Injunctions, Etc., Authorized.

[PUBLIC—No. 175.]

An Act to amend the seventh section of the Act entitled "An Act to establish circuit courts of appeals, and to define and regulate in certain cases the jurisdiction of the courts of the United States, and for other purposes," approved March third, eighteen hundred and ninety-one.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress Assembled, That the seventh section of the Act entitled "An Act to establish circuit courts of appeals, and to define and regulate in certain cases the jurisdiction of the courts of the United States, and for other purposes," approved March third, eighteen hundred and ninety-one, be amended so as to read as follows:

"SEC. 7. That where, upon a hearing in equity in a district court or in a circuit court, or by a judge thereof in vacation, an injunction shall be granted or continued or a receiver appointed, by an interlocutory order or decree, in a cause in which an appeal from a final decree may be taken under the provisions of this Act to the circuit court of appeals, an appeal may be taken from such interlocutory order or decree granting or continuing such injunction or appointing such receiver to the circuit court of appeals: *Provided*, That the appeal must be taken within thirty days from the entry of such order or decree, and it shall take precedence in the appellate court; and the proceedings in other respects in the court below shall not be stayed, unless otherwise ordered by that court, or by the appellate court or a judge thereof, during the pendency of such appeal: *Provided further*, That the court below may in its discretion require as a condition of the appeal an additional bond.

Approved, June 6, 1900

CERTIFICATES OF REGISTRATION ISSUED SEPTEMBER 18, 1900.

Labels.

7,780.—Title: "WITHOUT NEW YORK, 16 TO 1." (For a Game.) *De Lancey A. Cameron*, Caledonia, N. Y. Application filed August 23, 1900.

7,781.—Title: "CHICAGO AMERICAN." (For Cigars.) *Samuel Paley*, Chicago, Ill. Application filed July 11, 1900.

7,782.—Title: "JNO. W. DANIEL." (For Cigars.) *Brown & Brown*, Baltimore, Md. Application filed August 27, 1900.

7,783.—Title: "NAVENA." (For Beverages.) *The Navena Co.*, Milton, Mass. Application filed August 21, 1900.

7,784.—Title: "CROW IN YOUR THROAT." (For Cough Lozenges.) *Jacob Mishkin*, Philadelphia, Pa. Application filed August 21, 1900.

7,785.—Title: "FERRINOIDS." (For a Medicine.) *Dinet & Delfosse*, Chicago, Ill. Application filed August 24, 1900.

7,786.—Title: "SUNFLOWER CHOLERA CURE." (For a Medicine.) *W. J. Roberts Medicine Co.*, Coldwater, Mich. Application filed August 13, 1900.

7,787.—Title: "OLD VIRGINIA CORN RELISH IN-OIL." (For a Relish.) *Mrs. E. I. Alvord*, Chicago, Ill. Application filed August 24, 1900.

7,788.—Title: "RALSTON HOMINY GRITS." (For Grits.) *Robinson-Danforth Milling Company*, St. Louis, Mo. Application filed August 27, 1900.

7,789.—Title: "PLYMOUTH ROLLED OATS." (For Rolled Oats.) *Pillsbury-Washburn Flour Mills Company, Limited*, Minneapolis, Minn. Application filed August 23, 1900.

7,790.—Title: "RALSTON." (For Farinaceous Food Products.) *Robinson-Danforth Milling Company*, St. Louis, Mo. Application filed August 21, 1900.

7,791.—Title: "PURINA PANCAKE FLOUR." (For Mixed Flour.) *Robinson-Danforth Milling Company*, St. Louis, Mo. Application filed August 21, 1900.

7,792.—Title: "PURINA HEALTH FLOUR." (For Flour and Like Articles.) *Robinson-Danforth Milling Company*, St. Louis, Mo. Application filed August 21, 1900.

Prints.

261.—Title: "ILDERIM." (For Cigarettes.) *Knubel Tobacco Company*, New York, N. Y. Application filed August 4, 1900.

262.—Title: "PARIS EXPOSITION SOUVENIR PLAYING CARDS." (For Playing-Cards.) *Tom Jones*, Denver, Colo. Application filed August 16, 1900.

263.—Title: "LITHOLITE." (For Artificial Stone.) *Charles W. Stevens*, Harvey, Ill. Application filed August 24, 1900.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business September 11, 1900.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears—Under one month.			
217	XXXIII. *DESIGNS, †TRADE-MARKS, ‡LABELS AND PRINTS, Optics.	Sept. 4	Aug. 28	45
106	II. Farm Stock, Products, etc.	Aug. 30	Sept. 1	110
250	VIII. Furniture, Beds, Store Furniture, etc.	Aug. 29	Aug. 29	164
253	X. Carriages and Wagons	Aug. 24	Aug. 30	93
111	XXXII. Bottles and Jars, Carbonating Beverages, Refrigeration, Shipping and Storing Vessels, etc.	Aug. 24	Aug. 28	203
122	XXIV. Sewing-Machines, Apparel, and Toilet.	Aug. 16	Aug. 20	177
38	XXXV. Advertising, Baggage, Buckles, Buttons, and Clasps, Packing and Storing Vessels, etc.	Aug. 16	Aug. 17	160
261	XXXVI. Weighing and Measuring Devices, Driers, and Drafting.	Aug. 15	Aug. 29	81
248	XVIII. Steam-Engineering, etc	Aug. 14	Aug. 17	146
30	IV. Civil Engineering, Fire-Proof Buildings, Bridges, Water Distribution, etc.	Aug. 13	Aug. 29	148
39	XXXI. Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	Aug. 13	Aug. 28	147
255	XII. Mechanical Engineering, Store-Service, etc.	Aug. 13	Aug. 28	176
246	I. Tillage and Fences	Aug. 13	Aug. 25	139
240	VII. Velocipedes, Games, and Toys.	Aug. 13	Aug. 23	187
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	Aug. 13	Aug. 22	117
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	Aug. 13	Aug. 20	176
105	XI. Boots and Shoes, Harness, Hose and Belting, and Leather-Working Machinery.	Aug. 13	Aug. 13	165
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Aug. 13	Aug. 13	161
221	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	Aug. 12	Aug. 6	141
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	Aug. 11	Aug. 24	251
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Aug. 11	Aug. 15	150
	Between one and two months.			
93	XXI. Textiles, etc	Aug. 8	Aug. 23	122
120	IX. Hydraulics, Fire-Extinguishers, etc.	Aug. 8	Aug. 10	140
102	XIX. Stoves and Furnaces	Aug. 8	Aug. 9	255
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Aug. 6	Aug. 1	132
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Aug. 3	Aug. 27	160
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Aug. 2	Aug. 7	160
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc	July 24	Aug. 6	156
215	XVII. Printing, Type-Writing Machines, and Linotyping.	July 23	Aug. 6	224
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	July 23	July 21	346
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	July 17	Aug. 9	212
35	XXVIII. Pneumatics, Air and Gas Engines, etc.	July 16	July 18	316
	Between two and three months.			
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	July 6	July 19	192
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 21	Aug. 3	263
95	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	June 21	Aug. 1	211
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	June 14	July 23	388

Total number of applications awaiting action.....6,414

Applications Under Examination—Continued.

Under one month.			
*Designs	Aug. 24	Aug. 25	134
†Trade-Marks	Aug. 13	Sept. 4	116
‡Labels and Prints	Sept. 5	.....	3

ISSUE OF SEPTEMBER 18, 1900.

Patents	425—No. 657,907 to No. 658,331,	inclusive.
Designs	32—No. 33,204 to No. 33,235,	inclusive.
Trade-Marks	125—No. 35,000 to No. 35,124,	inclusive.
Labels	13—No. 7,780 to No. 7,792,	inclusive.
Prints	3—No. 261 to No. 263,	inclusive.
Reissues	2—No. 11,855 to No. 11,856,	inclusive.
Total issue	600	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	4	.....	Nevada	.....	.....
Arizona Territory	.....	1	New Hampshire	1	.....
Arkansas	2	.....	New Jersey	31	8
California	16	3	New Mexico Territ'y	1	.....
Colorado	1	2	New York	66	24
Connecticut	8	3	North Carolina	1	.....
Delaware	1	.....	North Dakota	1	.....
District of Columbia	4	1	Ohio	28	7
Florida	3	.....	Oklahoma Territ'y	1	.....
Georgia	5	1	Oregon	5	1
Hawaii	.....	.....	Pennsylvania	32	30
Idaho	1	.....	Rhode Island	6	.....
Illinois	44	9	South Carolina	1	.....
Indian Territory	.....	.....	South Dakota	8	.....
Indiana	12	3	Tennessee	5	.....
Iowa	7	1	Texas	.....	.....
Kansas	8	1	Utah	2	.....
Kentucky	4	.....	Vermont	4	1
Louisiana	3	2	Virginia	2	2
Maine	1	1	Washington	.....	.....
Maryland	3	3	West Virginia	16	1
Massachusetts	27	6	Wisconsin	.....	.....
Michigan	7	3	Wyoming	.....	.....
Minnesota	4	3	U. S. Army	.....	.....
Mississippi	1	.....	U. S. Navy	.....	.....
Missouri	12	8	Total to citizens of the United States	390	126
Montana	1	.....			
Nebraska	.....	1			

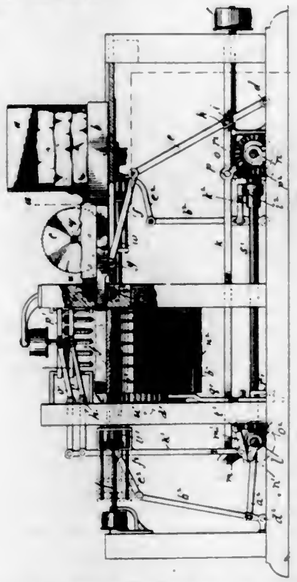
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Italy	.....	1
Australia	.....	.....	Japan	.....	.....
Austria-Hungary	2	.....	Java	.....	.....
Barbadoes	.....	.....	Natal	.....	.....
Belgium	4	.....	Netherlands	2	.....
Bermuda	.....	1	New South Wales	1	.....
Brazil	.....	.....	New Zealand	.....	.....
Canada	6	.....	Norway	1	.....
Chile	.....	.....	Queensland	.....	.....
China	.....	.....	Russia	3	.....
Costa Rica	.....	.....	Scotland	1	1
Cuba	.....	.....	South African Republic	.....	.....
Denmark	1	1	South Australia	.....	.....
Egypt	.....	.....	Spain	1	.....
England	23	5	Sweden	2	.....
Finland	.....	.....	Switzerland	4	2
France	3	1	Venezuela	.....	.....
Germany	13	3	Victoria	.....	.....
Guatemala	.....	.....	Total to citizens of foreign countries	67	15
Haiti	.....	.....			
India	.....	.....			
Ireland	.....	.....			

PATENTS

GRANTED SEPTEMBER 18, 1900.

657,907. MACHINE FOR TREATING PEAT TO BE USED AS FUEL. JOSEPH AHRENS, Berlin, Germany. Filed Mar. 9, 1899. Serial No. 708,327. (No model.)



Claim.—1. In a machine for treating peat, the combination of a slide upon which the blocks of peat are fed, a pair of saws to trim two sides of the block, another pair of saws to trim two other sides of the block, a rotating drum beyond the saws provided with seats receiving the trimmed block and boring devices adjacent to the drum for perforating the block, substantially as described.

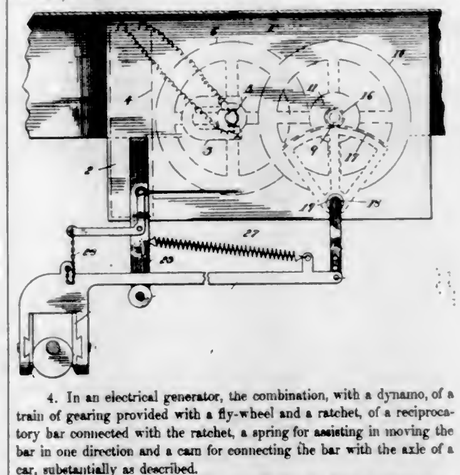
2. In a machine for treating peat, the combination of a slide upon which the blocks of peat are fed, a pair of saws to trim two sides of the block, another pair of saws to trim two other sides of the block, a rotating drum beyond the saws and provided with seats receiving the trimmed block, boring devices adjacent to the drum for perforating the block, and a set of saws adjacent to the drum to cut slits in the block.

657,908. SPEED-REGULATOR FOR DYNAMOS. PHILEMON W. ALEXANDER, Tifton, Ga., assignor to the Alexander Company, same place. Filed Feb. 7, 1900. Serial No. 4,387. (No model.)

Claim.—1. In an electrical generator, the combination, with a dynamo, of a train of gearing provided with a fly-wheel and a ratchet connection, reciprocatory mechanism for operating the gearing, and an eccentric for connecting said mechanism with the axle of a car, substantially as described.

2. In an electrical generator, the combination, with a dynamo, of a train of gearing provided with a fly-wheel and a ratchet, a segmental gear, and a reciprocatory bar adjustably connected with the segmental gear, substantially as described.

3. In an electrical generator, the combination, with a dynamo, of a train of gearing provided with a fly-wheel and a ratchet, one part of the ratchet being connected rigidly with one of the shafts of the gearing, and the other one is on a sleeve on said shaft, a segmental gear for rotating the sleeve, a reciprocatory bar for operating the gear, and means for connecting the bar with the axle of a car, substantially as described.



4. In an electrical generator, the combination, with a dynamo, of a train of gearing provided with a fly-wheel and a ratchet, of a reciprocatory bar connected with the ratchet, a spring for assisting in moving the bar in one direction and a cam for connecting the bar with the axle of a car, substantially as described.

5. In an electrical generator, the combination, with a dynamo, of a train of gearing provided with a fly-wheel and a ratchet, a segmental gearing provided with an arm, a reciprocatory bar adjustably secured at one end to said arm, and a coiled spring, one end of which is rigid, and the other end is secured to said reciprocatory bar, substantially as described.

6. In an electrical generator, the combination, with a dynamo, of a train of gearing provided with a fly-wheel and ratchet, one part of the ratchet being rigidly secured to one of the shafts of the gearing and comprising a disk the periphery of which is in the form of an overhanging internally-toothed flange, and the other portion of the ratchet is in the form of a sleeve, one end of which fits within the flange of the rigid portion, and is provided with opposite pawls for engaging therewith and the other end is provided with a pinion, a segmental gear in engagement with said pinion, and a reciprocatory bar for operating said segmental gear and pinion, substantially as described.

7. In an electrical generator, the combination, with a case, of a dynamo therein, a train of gearing for operating the dynamo provided with a fly-wheel and a ratchet connection, a shaft projecting through one side of the case, the inner end of which is provided with a segmental gear and the outer end is provided with an arm, the free end of which is provided with a series of perforations, the reciprocatory bar adjustably connected with the perforated end of said arm, and a spring connected with said bar, substantially as described.

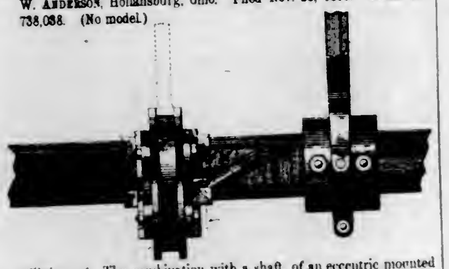
8. In a speed-regulator for dynamos, the combination, with a car-body, of a case secured to the under side thereof, a dynamo, a storage battery, and a train of gearing within said case, a gearing for operating the train of gearing, the shaft of which projects through the side of the case and is provided with an arm at its outer end, a reciprocatory bar connected with said arm at one end and having its opposite end eccentrically connected with the car-axle, substantially as described.

9. In a speed-regulator for dynamos, the combination, with a car, of a case secured to the under side thereof, a dynamo, a storage battery, and a train of gearing within the case, said bearing being provided with a fly-wheel and a ratchet, a segment for operating the train of gearing provided with an arm, a reciprocatory bar adjustably secured to said arm at

one end, and having its opposite end slotted and bifurcated to form a yoke, a bracket secured to the car and provided with a pin through said slot to hold the bifurcated end of the bar astride the car-axle, removable shoes upon the inner faces of the bifurcated ends of the bar and an eccentric upon the axle extending to a distance upon each side of the bracket, substantially as described.

10. The combination, with an electrically-propelled vehicle, provided with a generator and a storage battery the axle of said vehicle being provided with an eccentric, of means for intermittently supplying power to the generator, a reciprocatory bar connected therewith, one end of which is detachably connected with said eccentric, and means for detaching said bar, substantially as described.

657,909. **REVERSING MECHANISM FOR ENGINES.** GEORGE W. ANDERSON, Hollansburg, Ohio. Filed Nov. 23, 1899. Serial No. 738,038. (No model.)



Claim.—1. The combination with a shaft, of an eccentric mounted thereon and adapted for movement radially thereof, passages through the eccentric, slides mounted upon the shaft, ribs carried by the slides and adapted for engagement with the passages to shift the eccentric, and means for moving the slides, said ribs being arranged at different angles to the shaft.

2. The combination with a shaft having a squared portion and projections, of an eccentric mounted upon the squared portions between the the projections and adapted for movement radially of the shaft, passages through the eccentric, slides mounted upon the shaft, ribs mounted upon the slides and adapted for engagement with the passages to shift the eccentric, and means for moving the slides, said ribs being arranged at different angles to the shaft.

3. The combination with a shaft having a slideway comprising radial projections, of an eccentric mounted in the slideway between the projections, passages through the eccentric, slides upon the shaft having ribs engaging the passages and means for operating the slides to shift the eccentric, said ribs being arranged at different angles to the shaft.

4. The combination with a shaft having a squared portion provided with radial projections forming a guideway, of an eccentric disposed in the guideway upon the squared portion and having passages to receive the projections, and permit application and removal of the eccentric, reinforcing-plates upon the eccentric, additional passages through the plates and the eccentric, slides having ribs disposed at an angle to the axis of the shaft and adapted for engagement with the last-named passages to shift the eccentric, and means for moving the slides.

5. The combination with a shaft having a squared portion and radial projections forming an intermediate guideway, of an eccentric disposed in the guideway upon the squared portion and having passages to receive the projections and permit application and removal of the eccentric, plates secured to the eccentric and covering said passages, additional passages formed through the eccentric and the plates, slides upon the shaft, ribs mounted upon the slides and adapted to engage the last named passages to shift the eccentrics, a collar connected with the slide and having a peripheral groove, an elliptical strap engaging the groove, a yoke pivoted to the strap, and means for operating the yoke to shift the slides.

657,910. **METALLIC CEMENT FOR ELECTRIC-CONDUCTOR JOINTS.** WILLARD F. BARBER, Wilkes-Barré, Pa. Filed Feb. 3, 1900. Serial No. 3,814. (No specimens.)

Claim.—1. A conducting-cement consisting of an amalgam and a binding material.

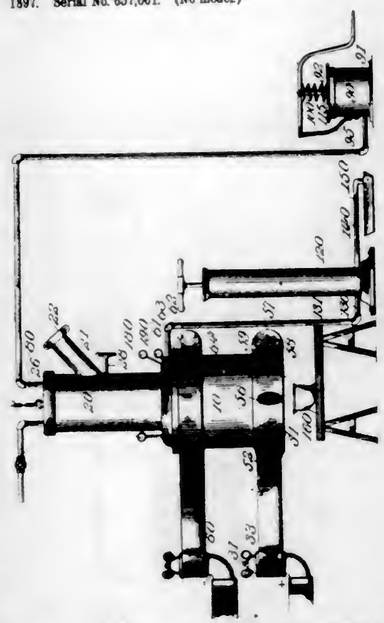
2. A conducting-cement consisting of an amalgam and a binding material consisting of glucose and silicate of soda.

3. A conducting-cement comprising an amalgam consisting of zinc, tin, copper, cadmium, bismuth, lead, antimony and mercury, and a binding material.

4. A conducting-cement comprising an amalgam consisting of zinc, tin, copper, cadmium, bismuth, lead, antimony and mercury, and a binding material consisting of glucose and silicate of soda.

5. A conducting-cement comprising an amalgam consisting of zinc, tin, copper, cadmium, bismuth, lead, antimony and mercury, substantially in the proportions set forth and a binding material consisting of glucose and silicate of soda.

657,911. **APPARATUS FOR SEPARATING METALS FROM ORES BY ELECTRICITY.** GEORGE D. BURTON, Boston, Mass. Filed Nov. 1, 1897. Serial No. 657,061. (No model.)



Claim.—1. In an electric furnace, the combination of a reducing-chamber, the body of which is composed of electroconductive resistance material and provided with an exterior flange, an electrode adapted for contact with said chamber near the top thereof under said flange and serving as a support for said chamber, and another electrode adapted for connection with said chamber at the lower part thereof.

2. In an electric furnace, the combination of a reducing-chamber composed of electroconductive resistance material, an electrode connected with the upper part of said chamber, an electrode adapted to serve as a bottom for said chamber, and means for lifting said chamber from said bottom.

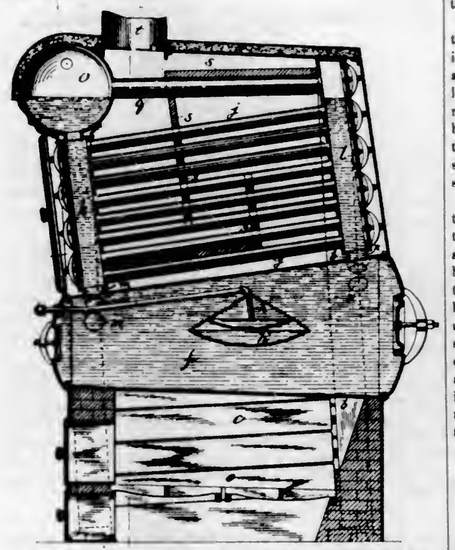
3. In an electric furnace, the combination of a reducing-chamber composed of electroconductive material, an electrode in electric connection with the upper part thereof, an electrode extending under said chamber, means for lifting said chamber from said bottom electrode, an exhaust-pump connected with said chamber, and means for supplying air, gas or steam to said chamber.

4. In an electric furnace, the combination of a reducing-chamber composed of conductive material and having a stack provided with means for feeding in the ore, said chamber being provided with an exterior flange, an electrode comprising a clamp adapted for contact with said chamber near the top thereof and under said flange and serving as a support for said chamber, an electrode adapted to serve as a bottom for said chamber, and means for passing a large heating-current through said electrode.

657,912. **STEAM-BOILER.** JOHN J. CAIN, Bayonne, N. J. Filed Nov. 20, 1899. Serial No. 737,547. (No model.)

Claim.—1. In a steam-boiler comprising a grate-furnace, series of tubes, and headers to which the tubes are connected, the combination therewith, of a drum located beneath and arranged in the same direction as the tubes and in the furnace and wholly above the grate, so as to receive the direct heat of combustion of the fuel; and connections between the ends of the drum and the headers.

2. In a steam-boiler comprising a grate-furnace, series of tubes arranged in inclined position, and headers, to which the tubes are connected, the combination therewith of a drum located and in the furnace wholly above the grate and beneath the tubes and arranged with its upper side parallel with and in the same direction as the tubes, so as to receive the direct heat of combustion of the fuel; and connections between the ends of the drum and the headers.



3. In a steam-boiler comprising a series of inclined tubes, and headers to which the tubes are connected and arranged at right angles to the tubes, the combination therewith of a conical drum, located beneath and arranged in the same direction as the tubes, so as to receive the direct heat of combustion of the fuel, the large end of the drum being beneath the upper ends of the inclined tubes; and connections between the ends of the drum and the headers.

4. In a steam-boiler comprising a grate-furnace, series of tubes, and headers to which the tubes are connected, the combination therewith, of a drum located beneath and arranged in the same direction as the tubes so as to receive the direct heat of combustion of the fuel; connections between the ends of the drum and the headers; and a water-supply pipe arranged to feed water to the central part of the drum.

5. In a steam-boiler comprising a grate-furnace, series of tubes, and headers to which the tubes are connected, the combination therewith, of a drum located beneath and arranged in the same direction as the tubes, so as to receive the direct heat of combustion of the fuel; connections between the ends of the drum and the headers; a steam-drum located transversely to the tubes, and above the headers at one end of the boiler to which said drum is connected; and pipe connections between the upper ends of the headers at the other end of the boiler and the steam-drum.

6. In a steam-boiler comprising a series of inclined tubes, a grate-furnace, and headers to which the tubes are connected and arranged at right angles to the tubes, the combination therewith, of a conical drum, located beneath and arranged in the same direction as the tubes, so as to receive the direct heat of combustion of the fuel, the large end of the drum being beneath the upper ends of the inclined tubes; connections between the upper sides of the ends of the drum and the lower ends of the headers; a steam-drum located transversely to the tubes and connected to the upper ends of the headers of the lower ends of the tubes; and pipe connections between the upper ends of the headers of the upper ends of the tubes and the steam-drum.

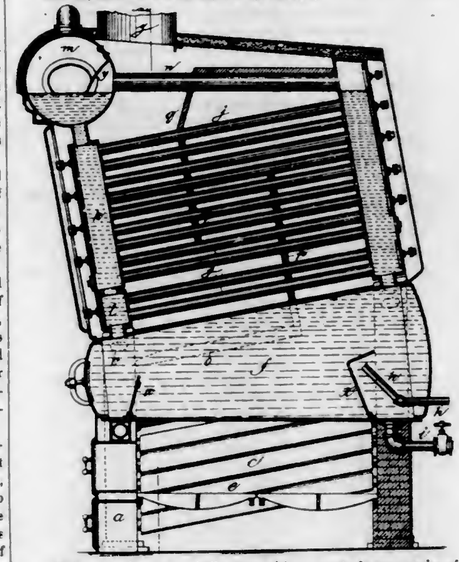
7. In a steam-boiler comprising corner boxes or chambers, connections between the front and rear corner-boxes, a grate-furnace, series of tubes, and headers to which the tubes are connected, the combination therewith, of a drum located beneath and arranged in the same direction as the tubes; connections between the ends of the drum and the headers; and saddle-brackets secured to the corner-boxes, and by means of which the drum is held and supported.

8. In a steam-boiler comprising corner boxes or chambers, connections between the front and rear corner-boxes, a grate-furnace, series of tubes, and headers to which the tubes are connected, the combination therewith, of a drum located beneath and arranged in the same direction as the tubes; connections between the ends of the drum and the headers; saddle-brackets secured to the sides of the boxes and by means of which the drum is held and supported; a steam-drum located transversely to the tubes above the headers and front corner-boxes at one end of the boiler, and connected to said headers and corner-boxes; and pipe connections between the upper ends of the headers and corner-boxes at the other end of the boiler and the steam-drum.

9. In a steam-boiler comprising corner boxes or chambers, connections between the front and rear corner-boxes, a grate-furnace, series of inclined tubes, and headers to which the tubes are connected and arranged at right angles to the tubes, the combination therewith, of a conical drum located beneath and arranged in the same direction as the tubes so as to receive the direct heat of combustion of the fuel, the large end of the drum being beneath the upper ends of the inclined tubes, connections between the ends of the drum and the headers; and saddle-brackets secured to the sides of the corner-boxes, and by means of which the drum is held and supported.

10. In a steam-boiler comprising corner boxes or chambers, connections between the front and rear corner-boxes, a grate-furnace, series of tubes, and headers to which the tubes are connected and arranged at right angles to the tubes, the combination therewith, of a conical drum, located beneath and arranged in the same direction as the tubes, so as to receive the direct heat of combustion of the fuel, the large end of the drum being beneath the upper ends of the inclined tubes; connections between the upper sides of the ends of the drum and the lower ends of the headers; saddle-brackets secured to the corner-boxes and by means of which the drum is held and supported; a steam-drum located transversely to the tubes and connected to the upper ends of the headers of the lower ends of the inclined tubes and the upper ends of the front corner-boxes; and pipe connections between the upper ends of the headers, of the upper ends of the tubes, and of the upper ends of the rear corner-boxes and the steam-drum.

657,913. **STEAM-BOILER.** JOHN J. CAIN, Bayonne, N. J. Filed Mar. 29, 1900. Serial No. 10,606. (No model.)



Claim.—1. In a steam-boiler comprising a grate-furnace, series of tubes, and headers to which the tubes are connected, the combination therewith, of a drum located beneath and arranged in the same direction as the tubes, so as to receive the direct products of combustion of the fuel; connections between the ends of the drum and the headers; baffle-plates arranged across the boiler from the sides of the drum to the sides of the boiler; and doors located at the front of the boiler and opening to the upper surface of the baffle-plates.

2. In a steam-boiler comprising a grate-furnace, series of tubes arranged in inclined position, and headers, to which the tubes are connected, the combination therewith of a drum located beneath the tubes and with its upper side arranged parallel with and in the same direction as the tubes, so as to receive the direct heat of combustion of the fuel; connections between the ends of the drum and the headers; baffle-plates arranged across the boiler from the sides of the drum to the sides of the boiler; a transverse wall extending upwardly from the rear ends of the baffle-plates; another wall between this wall and the front of the boiler extending from the top of the boiler to within a short distance of the

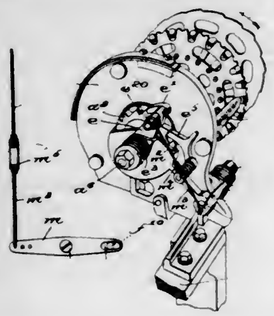
baffle-plates; and doors located at the front of the boiler and opening to the upper surface of the baffle-plates.

3. In a steam-boiler comprising a grate-furnace, series of tubes, vertically-arranged front and rear headers to which the tubes are connected, the combination therewith, of a drum located beneath and arranged in the same direction as the tubes, so as to receive the direct heat of combustion of the fuel; connecting-nipples joining the lower ends of the rear headers and the rear end of the drum; a horizontal header arranged above and connected to the front end of the drum; connections between this horizontal header and the lower ends of the front vertical headers; baffle-plates arranged across the boiler from the sides of the drum to the sides of the boiler; and doors located at the front of the boiler beneath the horizontal header and opening to the upper surface of the baffle-plates.

4. In a steam-boiler comprising a series of inclined tubes, and headers to which the tubes are connected and arranged at right angles to the tubes, the combination therewith of a conical drum, located beneath and arranged in the same direction as the tubes, so as to receive the direct heat of combustion of the fuel, the large end of the drum being beneath the upper ends of the tubes; connections between the ends of the drum and the headers; baffle-plates arranged across the boiler from the sides of the drum to the sides of the boiler; a transverse wall extending upwardly from the rear ends of the baffle-plates; another wall between this wall and the front of the boiler extending from the top of the boiler to within a short distance of the baffle-plates; and doors located at the front of the boiler and opening to the upper surface of the baffle-plates.

5. In a steam-boiler comprising a series of tubes inclined, vertically-arranged front and rear headers to which the tubes are connected, the combination therewith, of a conical drum, located beneath and arranged in the same direction as the tubes, so as to receive the direct heat of combustion of the fuel, the large end of the drum being beneath the upper ends of the tubes and placed in communication with the lower ends of the headers at these ends of the tubes; a horizontal header arranged above and in communication with the front end of the drum; connections between the horizontal header and the lower ends of the front vertical headers; baffle-plates arranged across the boiler from the sides of the drum to the sides of the boiler; a transverse wall extending upwardly from the rear ends of the baffle-plates; another wall between this wall and the front of the boiler, extending from the top of the boiler to within a short distance of the baffle-plates; and doors located at the front of the boiler and opening to the upper surface of the baffle-plates.

657,914. LOOM. IRVING W. CHANDLER, Burlington, Vt. Filed Nov. 6, 1899. Serial No. 735,998. (No model.)



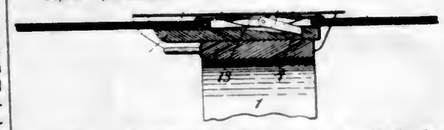
Claim.—1. A rotatable filling-supply holder, a spring to rotate it, a transferrer to remove the filling-supplies singly from the holder, and means actuated by or through the transferrer to wind the spring.

2. A rotatable filling-supply holder, a spring to rotate it, a transferrer to remove the filling-supplies singly from the holder, and means operative on the active movement of the transferrer to wind the spring.

3. A rotatable filling-supply holder, a ratchet rotatable therewith, a pawl-carrier having a pawl to engage the ratchet, a spring fast at one end and connected at its other end with the pawl-carrier, a transferrer to remove the filling-supplies from the holder, and connections between the pawl-carrier and transferrer, to wind the spring by the operation of the transferrer.

4. A filling-feeder to hold a series of filling-carriers, an actuating-spring to intermittingly move the feeder and bring the filling-carriers singly into operative position, a transferrer to engage a filling-carrier in operative position and remove it from the feeder, and means controlled by the operation of the transferrer to wind the feeder-actuating spring.

657,915. CHECKREIN-HOLDER. JOHN CLYDE, Marion Center, and MILTON STUCHELL, Big Run, Pa. Filed June 13, 1900. Serial No. 20,208. (No model.)

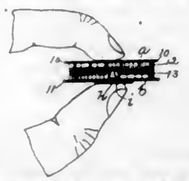


Claim.—1. In a checkrein-holder, the combination with the check-strap having a slot, and a tongue pivoted at one end within said slot midway of the length of the latter and adapted to be swung into diametrically-opposite positions and housed therein; of a casing mounted on the harness-saddle and provided with a longitudinal groove for the strap and a transverse notch for the tongue, substantially as described.

2. In a checkrein-holder, the combination with the check-strap having a slot, a plate secured thereover and having longitudinal lips standing within the slot, and a tongue pivoted at one end between said lips and adapted to be swung in either direction and housed between the lips and within the slot; of a casing mounted on the harness-saddle and provided with a longitudinal groove for the strap and a transverse notch for the tongue, substantially as described.

3. In a checkrein-holder, the combination with the check-strap having a slot, and a tongue pivoted at one end within said slot and adapted to be swung in either direction and housed therein; of a casing consisting of a base mounted on the harness-saddle and provided with a longitudinal groove adapted to freely receive the strap and a transverse notch adapted to engage the tip of the tongue, and a frame-plate secured upon the base and extending over the top of the groove, substantially as described.

657,916. CALCULATING INSTRUMENT. ROGER W. CONANT, Boston, Mass. Filed June 18, 1900. Serial No. 20,619. (No model.)



Claim.—1. An instrument of the class described, comprising a plurality of cylindrical members independently revoluble about a common center and provided on their rims or peripheries with coöperating endless scales provided with graduations, substantially as described.

2. An instrument of the class described, comprising a plurality of cylindrical members independently revoluble about a common center and provided on their rims or peripheries with endless scales, and an arm provided with an indication which coöperates with the graduations of the endless scales, substantially as described.

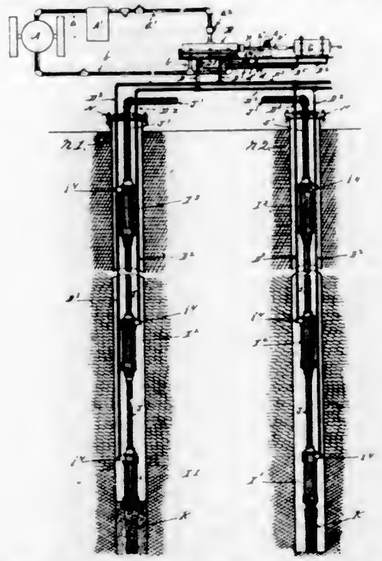
3. An instrument of the class described, comprising a plurality of members revoluble about a common center and having annular flanges extended toward each other, and endless scales carried by said annular flanges, substantially as described.

4. An instrument of the class described, comprising the member *b* provided with a projecting hub and an annular flange, and the member *a* having a hub mounted to turn on the hub of the member *b* and an annular flange extended toward the flange on the member *b*, and endless coöperating scales affixed to the said flanges, substantially as described.

5. An instrument of the class described, comprising a plurality of cylindrical members revoluble about a common center and provided on their rims or peripheries with endless scales, and means to frictionally restrain the movement of one member relative to the other, substantially as described.

657,917. APPARATUS FOR ACTUATING FLUID UNDER PRESSURE. RUDOLPH CONRADER, Erie, Pa. Filed Jan. 14, 1898. Serial No. 666,729. (No model.)

Claim.—1. In an apparatus for actuating fluid under pressure the combination of two pump-chambers arranged to bring a motor fluid and fluid to be actuated into contact with each other within said chambers; connections leading from said chambers to a source of motor-fluid supply; a motor-fluid connection between said chambers; means for admitting a fluid to be actuated to said chambers; means for conducting an actuated fluid from said chambers; and a valve mechanism controlling the movement of motor fluid arranged to open a connection to one of said chambers during a closure of the connection between said chambers, to open the connection between said chambers during a closure of the connection between both chambers and the source of motor-fluid supply, and then to open the connection between the second chamber and the source of motor-fluid supply during a closure of the connection between said chambers.



2. In an apparatus for actuating fluid under pressure, the combination of two pump-chambers arranged to bring a motor fluid and fluid to be actuated into contact with each other within said chambers; a connection leading from said chambers to a source of motor-fluid supply; a motor-fluid connection between said chambers; means for admitting a fluid to be actuated to said chamber; means for conducting an actuated fluid from said chambers; and a valve mechanism controlling the movement of motor fluid arranged to open a connection between a source of motor-fluid supply and one of said chambers during a closure of the connection between said chambers, to open the connection between said chambers during a closure of the connections between both chambers and the source of motor-fluid supply, and then to open the connection between the second chamber and the source of motor-fluid supply and during a closure of the connection between said chambers to open the first chamber to an exhaust during the connection of the second chamber with the source of supply.

3. In an apparatus for actuating fluid under pressure, the combination of two pump-chambers arranged to bring a fluid to be actuated and a motor fluid into contact with each other within said chambers; a suction device; a connection leading from one of said chambers to a source of motor-fluid supply; a connection leading from the said chamber to said suction device; a connection between said chambers; means for admitting fluid to be actuated to each of said chambers; means for conducting the actuated fluid from said chambers; and a valve mechanism for controlling the movement of motor fluid arranged to successively open the connection leading to the source of supply during a closure of the connection leading to the suction device and the connection between said chamber, then to open the connection between said chambers during the closure of the connections leading to the source of supply and the suction device, and then to open the connection leading to the suction device during a closure of the connection leading to the source of supply and the connection between the chambers.

4. In an apparatus for actuating fluid under pressure, the combination of two pump-chambers arranged to bring a fluid to be actuated and a motor fluid into contact with each other within said chambers; a connection leading from one of said chambers to a source of motor-fluid supply; a motor-fluid connection between said chambers said connection being independent of the conducting means for the fluid to be actuated; means for admitting a fluid to be actuated to each of said chambers; a valve device for controlling the movements of motor fluid arranged to open the connection to the motor-fluid supply during a closure of the connection between said chambers and to open the connection between said chambers during a closure of the connection to the source of motor-fluid supply and an automatic means for actuating said valve device.

5. In an apparatus for actuating fluid under pressure the combination of two pump-chambers arranged to bring a motor fluid and fluid to be actuated into contact with each other within said chambers; connections leading from said chambers to a source of motor-fluid supply; a motor-fluid connection between said chambers; means for admitting a fluid to be actuated to said chambers; means for conducting an actuated fluid from said chambers; and an automatically-actuated valve mechanism controlling the movement of motor fluid arranged to open a connection to one of said chambers during a closure of the connection between said chambers, to open the connection between said chambers during a closure of the connections between both chambers and the source of motor-fluid supply, and then to open the connection between the second chamber and the source of motor-fluid supply during a closure of the connection between said chambers.

6. In an apparatus for actuating fluid under pressure, the combination of two pump-chambers arranged to bring a motor fluid to be actuated into contact with each other within said chambers; a connection leading from said chambers to a source of motor-fluid supply; a motor-fluid connection between said chambers; means for conducting an actuated fluid from said chambers; and an automatically-actuated valve mechanism controlling the movement of motor fluid arranged to open a connection between said chambers, to open the connection between said chambers during a closure of the connection between both chambers and the source of motor-fluid supply, and then to open the connection between the second chamber and the source of motor-fluid supply and during a closure of the connection between said chambers to open the first chamber to an exhaust during the connection of the second chamber with the source of supply.

7. In an apparatus for actuating fluid under pressure, the combination of two pump-chambers arranged to bring a fluid to be actuated and a motor fluid into contact with each other within said chambers; a suction device; a connection leading from one of said chambers to a source of motor-fluid supply; a connection leading from the said chamber to said suction device; a connection between said chambers; means for admitting fluid to be actuated to each of said chambers; means for conducting the actuated fluid from said chambers; and an automatically-actuated valve mechanism for controlling the movement for motor fluid arranged to successively open the connection leading to the source of supply during a closure of the connection leading to the suction device and the connection between said chamber, then to open the connection between said chambers during the closure of the connections leading to the source of supply and the suction device, and then to open the connection leading to the suction device during the closure of the connection leading to the source of supply and the connection between the chambers.

8. In an apparatus for actuating fluid under pressure, the combination of two pump-chambers arranged to bring a fluid to be actuated and a motor fluid into contact with each other within said chambers; a valve-chest; connections between said chest and a source of motor-fluid supply and said cylinders; and a valve mechanism in said chest controlling the movements of motor fluid arranged to open and close the connection between one of said chambers and the source of motor-fluid supply during a closure by said valve mechanism of the connection between said chambers and to open the connection between said chambers during a closure of the connection to the source of motor-fluid supply.

9. In combination with an Artesian well or the like, an apparatus comprising two pump-chambers arranged to raise liquid therefrom; said chambers being arranged to bring the liquid to be actuated and a motor fluid into contact with each other within said chambers; a connection leading from one of said chambers to a source of motor-fluid supply without said well; a motor-fluid connection between said chambers a part of said connection extending without said well said connection being independent of the conducting means for the fluid to be actuated; means for admitting the liquid to be raised to each of said chambers; means for conducting the liquid from said chambers; a valve device for controlling the movement of motor fluid arranged to open the connection to the motor-fluid supply during a closure of the connection between said chambers and to open the connection between said chambers during a closure of the connection to the source of motor-fluid supply, said valve mechanism being arranged without said well and an automatic means for actuating said valve device.

10. In an apparatus for raising liquids from Artesian wells, the combination of a series of two or more cylinders, one above the other; tubes connecting said cylinders; an eduction extending from the uppermost cylinder out of the top of the well; check-valves in said connecting-tubes at or near their entrance to said cylinders; check-valves in said connecting-tubes at or near the exhaust ends of said cylinders; two pipes extending down into the well each of which connects with each alternate cylinder therein for alternately conveying air or gas under pressure thereto, and exhausting the same therefrom; and valve mechanism arranged to successively open one of said pipes to a source of supply, close both of said pipes, and then connect said pipes substantially as and for the purpose set forth.

11. In an apparatus for raising fluid from Artesian wells, the combination of two or more cylinders one above the other; tubes concentric

with and connecting said cylinders; an eduction extending from the uppermost cylinder out of the top of the well; check-valves in the induction-pipes of said cylinders at or near the lower ends of each of said cylinders; check-valves in the tubes connecting and extending down into the cylinders; pipes extending into the well, each of which connects with each alternate cylinder therein for alternately conveying air or gas under pressure thereto and exhausting the same therefrom; and valve mechanism adapted to alternately connect one of said pipes with air or gas under pressure and simultaneously open the other to the exhaust, and also operating to cut off the supply of air or gas, and while so cut off to equalize the pressure in said pipes for a brief period simultaneously with each reversal of pressure therein substantially as and for the purpose set forth.

12. In an apparatus for raising liquids from Artesian wells and the like, the combination of a pump cylinder or chamber; means for admitting liquid to said chamber; an eduction-tube within the walls of said chamber extending from the top to near the bottom of said chamber; a valve for closing the connection between said eduction-tube and the chamber, said valve being arranged to be seated by a movement in the direction of the flow of the fluid through the valve-passage to the eduction-tube; a float within said chamber arranged to actuate the valve to close the connection between said chamber and the eduction-tube with such a level of the fluid to be actuated as to prevent the entrance of the motor fluid to the eduction-tube; and a connection between said chamber and a source of motor-fluid supply.

13. In an apparatus for raising liquids from Artesian wells and the like, the combination of a pump cylinder or chamber; means for admitting liquid to said chamber; an eduction-tube within said chamber extending from the top to near the bottom of said chamber; a float within said chamber; a valve for closing the connection between said eduction-tube and the chamber, said valve being arranged to be actuated by said float and to be brought to its seat by gravity and to be seated by a movement in the direction of the flow of fluid through the valve-passage to the eduction-tube to close the same with a level of liquid in said chamber above the opening to the exit-tube; and a connection between said chamber and a source of motor-fluid supply.

14. In an apparatus for raising liquids from Artesian wells and the like, the combination of a pump cylinder or chamber; means for admitting liquid to said chamber; an eduction-tube within said chamber extending from the top to near the bottom of said chamber; a check-valve within said eduction-tube and within the body of said chamber below the highest level to which said chamber is arranged to receive incoming liquids; a valve for closing the connection between said eduction-tube and the chamber, said valve being arranged to be seated by a movement in the direction of the flow of the fluid through the valve-passage to the eduction-tube; a float within said chamber arranged to close said valve with a level of liquid in said chamber above the opening to the exit-tube and to open said valve with the incoming liquid; and a connection between said chamber and a source of motor-fluid supply.

15. In an apparatus for raising fluid from Artesian wells, the combination of a cylinder or chamber; an induction-pipe connected with the lower end thereof; a check-valve for closing said induction-pipe against the backward movement of fluid; a diaphragm above said check-valve; a central pipe extending up through said diaphragm and through a diaphragm near the top of said cylinder; openings in the lower diaphragm around said pipe for the passage of fluid; a vertically-moving valve adapted to close the openings in the lower diaphragm; a check-valve in said pipe; a pipe connection to said cylinder below the upper diaphragm therein and an eduction-pipe in the top of said cylinder or chamber, substantially as and for the purpose set forth.

16. In an apparatus for actuating fluids under pressure the combination of a chamber; means for admitting fluid to be actuated to said chamber; means for conducting the fluid actuated from said chamber; a valve-motor; a valve-chest; a connection between said valve-motor and said chest; a connection between said chest and said chamber independent of the connection between the valve-motor and the chest; and a connection between said chest and a source of motor-fluid supply; and valve mechanism contained in said chest and arranged to control the movement of motor fluid to said chamber and to the valve-motor.

17. In an apparatus for actuating fluid under pressure, the combination of a pump-chamber; a valve-motor; a valve-chest; connections between said valve-chest and the pump-chamber, the valve-motor and a source of motor-fluid supply; of a main valve arranged to be actuated by said valve-motor and to control the movement of motor fluid to the pump-chamber; and an auxiliary valve contained in said chest for actuating the valve-motor.

18. In a valve mechanism, the combination of a valve-seat having a series of ports therein, and pipes connected therewith alternately operating as compression and exhaust pipes, with a valve operating on said valve-seat having chambers therein and ports adapted to coincide with the ports in the valve-seat, and operate at one point in its traverse to equalize the pressure in the exhaust and compression pipes, and at another point in its traverse to reverse the pressure in said pipes; a cylinder and piston connected with said valve, said valve-seat and valve also having ports therein adapted to alternately admit compressed air or gas to the ends of said cylinder and exhaust the same, whereby said valve is automatically actuated, substantially as set forth.

19. In a valve mechanism, the combination of a valve-chest; a main valve and two auxiliary valves therein operated by said main valve; a cylinder; a valve-rod connecting said valve with a piston in said cylinder for actuating the same; a rack on the valve-rod; a pinion and an arm and weight operated thereby; pipes from ports in the valve-chest leading to the ends of said cylinder; ports and passages in the valves leading thereto; a pipe leading to said valve-chest for supplying air or gas under pressure thereto; exhaust and pressure-conveying pipes leading from ports in said valve-chest; and ports and passages in said valves communicating therewith, substantially as and for the purpose set forth.

20. In an apparatus for raising fluid from Artesian wells; a valve-chest; a pipe for supplying air or gas under pressure leading thereto; a valve, E, in said chest having ports, e e', at one end thereof connected by a passage, e^2, and a lateral port, e^{14}, in the face of the valve communicating therewith; ports, e^3 e^4, at the other end thereof connected by a passage, e^5, and a lateral port, e^{15}, in the face of the valve communicating therewith; ports, e^6 and e^7, connected by a passage, e^8, and a central chamber, e^{16}, in the face of the bridge separating the ports, e^3 and e^7, and lateral passages, e^{11} and e^{12} and e^{13}, communicating with the chamber, e^{16}; a valve-seat, B^2, having ports, b', and b^3, b^4, b^5, b^6, b^8, adapted to communicate with ports in the valve E; two auxiliary valves, F and F', adapted to be actuated by the valve E, and having ports, f f', therein adapted to communicate with ports b^7 and b^8, in the valve-seat, B^2; a valve-rod H, connecting the valve E, with a piston, G', in a cylinder, G; a rack, H', on said valve-rod; a pinion, h, and arm, h', and weight, h^2, operated by the rack, H'; pipes, D^3 and D^4, connecting the ends of the cylinder to a passage, e^{10}, in the valve communicating with the ports, b^2 b^6 b^7 and b^8, in the valve-seat; exhaust-pipes, b b, connected with the ports, b' b^2, in the valve-seat; and pipes, D D', connected with the ports, b^2 and b^4 in the valve-seat, substantially as and for the purpose set forth.

21. In an apparatus for raising fluid from Artesian wells, the combination of an air-compressor; a valve-chest; a pipe for compressed air leading from the compressor to said valve-chest; a suction-pipe from said compressor to said valve-chest; pipes leading from ports in said valve-chest to the alternate cylinders; valves in said valve-chest adapted to reverse the pressure and exhaust in the pipes leading to said alternate cylinders, and also operating to cut off the supply of compressed air or gas, and while so cut off, to equalize the pressure therein by connecting said cylinders, to simultaneously equalize the pressure therein; a cylinder and piston for actuating said valves; and pipes leading from ports in said valve-chest to the ends of said cylinder, substantially as and for the purpose set forth.

22. In a valve mechanism, the combination of a valve-chest; a main valve and two auxiliary valves therein operated by said main valve; a cylinder; a valve-rod connecting said valve with a piston in said cylinder for actuating the same; pipes from ports in the valve-chest leading to the ends of said cylinder; ports and passages in the valves leading thereto; a pipe leading to said valve-chest for supplying air or gas under pressure thereto; exhaust and pressure-conveying pipes leading from ports in said valve-chest; and ports and passages in said valves communicating therewith, substantially as and for the purpose set forth.

657,918. MAGAZINE-FIREARM. JAMES L. COPPING and GEORGE D. FREECE, London, England. Filed May 26, 1900. Serial No. 18,145. (No model.)

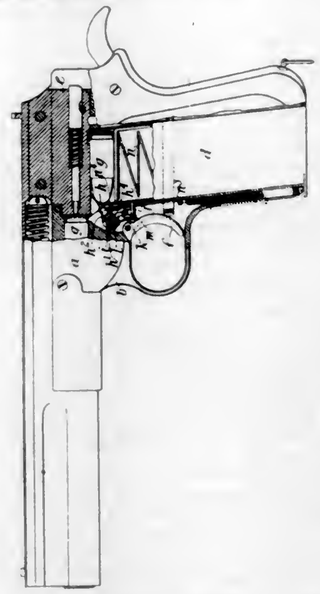
Claim.—1. In breech-loading small-arms the combination with the cartridge-magazine, of means whereby the said magazine is automatically ejected when the last cartridge has been fed from the magazine, substantially as hereinbefore described.

2. In breech-loading small-arms the combination with the magazine, of a spring-bolt engaging a slot or notch in the magazine so as to hold it in position, and of means for withdrawing the bolt out of engagement with the magazine when the last cartridge has left the magazine, substantially as hereinbefore described.

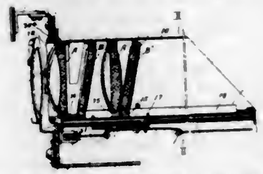
3. In breech-loading small-arms the combination with the magazine, of a spring-bolt normally engaging a slot or notch in the magazine, of a pivoted lever engaging the said bolt and of means such as a cam, a ratchet-wheel and a pawl-arm, which normally extends into the path of the cartridges, for releasing the said bolt when the last cartridge has been fed from the magazine, substantially as hereinbefore described.

4. In breech-loading small-arms the combination with the magazine, of a spring-bolt normally holding the magazine in position, of means for automatically withdrawing the bolt and of means such as a spring for ejecting the magazine when released, substantially as hereinbefore described.

5. In breech-loading small-arms the combination with the magazine, of a pointer and a dial, of a ratchet-wheel in connection with the pointer, and of a pawl for actuating the ratchet-wheel, the said pawl being mounted upon an arm which normally extends into the path of the cartridges so as to be intermittently operated thereby substantially as, and for the purpose, hereinbefore described.



657,919. OPTOMETER. ANDREW J. GROSS, New York, N. Y. Filed June 16, 1899. Serial No. 720,765. (No model.)



Claim.—1. The combination of a series of cylindrical lenses arranged on a common optical axis and inclined in relation to each other.

2. The combination of a series of cylindrical lenses arranged on a common optical axis, said lenses being inclined and movable along their optical axis in relation to each other.

3. An apparatus of the kind described comprising a rotatably-mounted sight-tube and cylindrical lenses arranged therein, the lenses being inclined with relation to each other, substantially as described.

4. An apparatus of the kind described, comprising a series of cylindrical lenses arranged on a common optical axis, along which they are movable and inclined in relation to each other, and means extensible from the support of the said lenses by which they can be operated.

5. In an apparatus of the kind described, the combination of the cylindrical lenses with crossing meridional axes to produce spherical effects, the lenses being inclined in relation to each other, substantially as described.

6. In an apparatus of the kind described, the combination of a series of cylindrical lenses arranged on a common optical axis with crossing meridional axes, the lenses being inclined in relation to each other and some of them being movable with respect to the others.

7. The combination of the series of cylindrical lenses arranged on a common optical axis and inclined in relation to each other, some of the lenses being movable along their optical axis in relation to the other lenses, and means for operating the said lenses, said means being extensible from the instrument in which the lenses are supported.

8. An apparatus of the kind described comprising a series of correlated pairs of cylindrical lenses, one pair being stationary and the others movable in respect to the stationary lenses and in relation to each other.

9. An apparatus of the kind described comprising a series of cylindrical lenses arranged in correlated pairs, one pair being stationary and the other lenses movable in relation to the stationary lenses and to each other, the several lenses being also inclined in relation to each other.

10. The combination with the stationary lenses of the movable lenses, a locking device to hold the movable lenses together, and mechanism for moving the movable lenses together or separately, substantially as described.

11. The combination with the stationary lenses of the movable lenses, an operating-cord to move the lenses, and a connection between the cord and lenses by means of which the latter may be moved together or separately, substantially as described.

12. An apparatus of the kind described comprising suitably-supported stationary lenses, a pair of movable lenses arranged on the same optical axis as the stationary lenses, slide-blocks suitably supported carrying the movable lenses, a cord for moving the slide-blocks, and a locking device operated by the cord to hold the slide-blocks together and to release the same, substantially as described.

13. An apparatus of the kind described comprising a sight-tube, suitable stationary lenses therein, slidable lenses also mounted in the tube, a latch to hold the slidable lenses together, and a cord connecting with the latch to operate the same and move the lenses, substantially as described.

14. An apparatus of the kind described comprising a sight-tube, a pair of stationary cylindrical lenses mounted therein, said lenses being at angles to each other and having their meridional axes at right angles, and a second pair of lenses movably mounted in the said tube, the said second pair of lenses being also at angles to each other and having crossing meridional axes, substantially as described.

15. In an apparatus of the kind described, the combination with the sight-tube, and the stationary inclined cylindrical lenses therein having crossing meridional axes, of a second pair of lenses mounted in the tube and movable longitudinally therein and in relation to each other, the movable lenses having axes, angles and inclinations corresponding to those of the stationary lenses, substantially as described.

16. In an apparatus of the kind described, the combination with the sight-tube of the stationary lenses therein, and the ring supporting the lenses, said ring having diverging parts serving as abutments to the lens-rings, substantially as described.

17. The combination with the sight-tube of the movable lenses therein, the slide-blocks carrying the lenses, and the latch pivoted on one slide-block and means on the second slide-block for engagement with the latch, substantially as described.

18. The combination with the sight-tube having an opening therein, of the lens-rings protruding through the opening and merging in the slide-blocks, the guide-rods supporting the slide-blocks, and the latch pivoted on one slide-block and engaging the other, substantially as described.

19. The combination with the sight-tube, the movable lenses, and the slide-blocks carrying the lenses, of the latch pivoted on one slide-block and engaging the second slide-block, a pulley in advance of the second slide-block, and a cord extending over the pulley, the ends of the cord being fixed to opposite ends of the latch, substantially as described.

657,920. SHEET-FEEDING ATTACHMENT FOR STENCIL PRINTING-MACHINES. ALBERT B. DICK, Chicago, Ill., assignor to A. B. Dick Company, same place. Filed Apr. 5, 1900. Serial No. 11,566. (No model.)

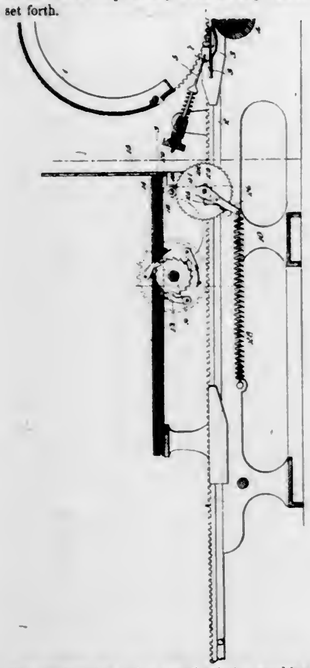
Claim.—1. The combination with a reciprocating stencil printing-machine having a reciprocating platen and stencil-carrier, of supporting devices for sustaining a number of sheets to be printed in a vertical pile, and means coöperating with the stencil-carrier for effecting the commencement of the feed of the bottom sheet on the negative stroke of the stencil-carrier, substantially as set forth.

2. The combination with a stencil printing-machine, of a slotted or recessed ledge or shelf and a feed-roller for sustaining the sheets to be printed in a vertical pile, a series of friction-fingers working in the slots or recesses of the ledge or shelf to engage the bottom sheet and withdraw it from the ledge or shelf, means for operating said fingers, and means for rotating the feed-roller subsequent to the operation of said fingers for moving the bottom sheet toward the printing position, substantially as set forth.

3. The combination with a stencil printing-machine having a reciprocating platen and stencil-carrier, the platen being provided with grippers for engaging the sheets to be printed, of a feed-roller upon which the sheets to be printed are sustained in a vertical pile, means for releasing the forward edge of the pile, means for sustaining the forward edge of the pile, means for releasing the forward edge of the bottom sheet, and means coöperating with the platen and carrier for rotating the feed-roller to feed the bottom sheet into position to be engaged by the gripping-fingers, substantially as set forth.

4. The combination with a stencil printing-machine having a reciprocating platen and stencil-carrier, the platen being provided with grippers for engaging the sheets to be printed, of a feed-roller upon which

the sheets to be printed are sustained in a vertical pile, means for sustaining the forward edges of the pile, means for releasing the forward edge of the bottom sheet, means coöperating with the platen and carrier for rotating the feed-roller to feed the bottom sheet into position to be engaged by the gripping-fingers, and a ratchet connection for permitting the feed-roller to turn independently of its driving mechanism, substantially as set forth.



5. The combination with a stencil printing-machine having a reciprocating platen and stencil-carrier, the platen being provided with grippers for engaging the sheets to be printed, of a feed-roller upon which the sheets to be printed are sustained in a vertical pile, means for supporting the forward edge of the pile, means for releasing the forward edge of the bottom sheet, and means for rotating the feed-roller on the negative stroke of the carrier, substantially as set forth.

6. The combination with a stencil printing-machine having a reciprocating platen and stencil-carrier, the platen being provided with grippers for engaging the sheets to be printed, of a feed-roller upon which the sheets to be printed are sustained in a vertical pile, means for supporting the forward edge of the pile, means for releasing the forward edge of the bottom sheet at the commencement of the negative stroke of the carrier, and means for rotating the feed-roller on such negative stroke, substantially as set forth.

7. The combination with a stencil printing-machine having a reciprocating platen and stencil-carrier, the platen being provided with grippers for engaging the sheets to be printed, of a feed-roller upon which the sheets to be printed are sustained in a vertical pile, a ledge or shelf for supporting the forward edge of the pile, means for disengaging the bottom sheet from said ledge or shelf, and means coöperating with the platen and carrier for rotating the feed-roller to move the forward edge of the bottom sheet into position to be engaged by the gripping-fingers, substantially as set forth.

8. The combination with a stencil printing-machine having a reciprocating platen and stencil-carrier, the platen being provided with grippers for engaging the sheets to be printed, of a feed-roller upon which the sheets to be printed are sustained in a vertical pile, a ledge or shelf for supporting the forward edge of the pile, means for disengaging the bottom sheet from said ledge or shelf, and means coöperating with the platen and carrier and operated on the negative stroke thereof for rotating the feed-roller to move the forward edge of the bottom sheet into position to be engaged by the gripping-figers, substantially as set forth.

9. The combination with a stencil printing-machine having a reciprocating platen and stencil-carrier, the platen being provided with grippers for engaging the sheets to be printed, of a feed-roller and a ledge or shelf on which the sheets to be printed are sustained in a vertical pile, a friction device for withdrawing the bottom sheet from said ledge or shelf, means coöperating with the platen and carrier for operating said friction device, and means for rotating the feed-roller to move the bottom sheet into position to be engaged by the gripping-fingers, substantially as set forth.

10. The combination with a stencil printing-machine having a reciprocating platen and stencil-carrier, the platen being provided with grippers for engaging the sheets to be printed, of a feed-roller and a ledge or shelf on which the sheets to be printed are sustained in a vertical pile, a friction device for withdrawing the bottom sheet from said ledge or shelf, means coöperating with the platen and carrier for operating said friction device, and means for rotating the feed-roller subsequent to the operation of the friction device for moving the bottom sheet into position to be engaged by the gripping-fingers, substantially as set forth.

11. The combination with a stencil printing-machine having a reciprocating platen and stencil-carrier, the platen being provided with grippers for engaging the sheets to be printed, of a feed-roller and a supporting ledge or shelf for sustaining the sheets to be printed in a vertical pile, a friction device for withdrawing the bottom sheet from said ledge or shelf, means coöperating with the platen and carrier for operating said device at the commencement of the negative stroke of the carrier, and means for rotating the feed-roller to move the bottom sheet into position to be engaged by said gripping-fingers, substantially as set forth.

12. The combination with a stencil printing-machine having a reciprocating platen and stencil-carrier, the platen being provided with grippers for engaging the sheets to be printed, of a feed-roller and a supporting ledge or shelf for sustaining the sheets to be printed in a vertical pile, a friction device for withdrawing the bottom sheet from said ledge or shelf, means coöperating with the platen and carrier for operating said device at the commencement of the negative stroke of the carrier, and means for rotating the feed-roller on the negative stroke of the carrier for moving the bottom sheet into position to be engaged by said gripping-fingers, substantially as set forth.

13. The combination with a stencil printing-machine having a reciprocating platen and stencil-carrier, the platen being provided with grippers for engaging the sheets to be printed, of a feed-roller and a supporting ledge or shelf for sustaining the sheets to be printed in a vertical pile, slots or recesses in said ledge or shelf, a plurality of feeding-fingers working within said slots or recesses for engaging the bottom sheet to withdraw it from the ledge or shelf, means coöperating with the platen and carrier for moving said fingers, and means for rotating the feed-roller to move the bottom sheet into position to be engaged by said grippers, substantially as set forth.

14. The combination with a stencil printing-machine having a reciprocating platen and stencil-carrier, the platen being provided with grippers for engaging the sheets to be printed, of a feed-roller and a supporting ledge or shelf for sustaining the sheets to be printed in a vertical pile, slots or recesses in said ledge or shelf, a plurality of feeding-fingers working within said slots or recesses for engaging the bottom sheet to withdraw it from the ledge or shelf, means coöperating with the platen and carrier for moving said fingers, and means for rotating the feed-roller subsequent to the movement of the feeding-fingers for moving the bottom sheet into position to be engaged by said grippers, substantially as set forth.

15. The combination with a stencil printing-machine having a reciprocating platen and stencil-carrier, the platen being provided with grippers for engaging the sheets to be printed, of a feed-roller and a supporting ledge or shelf for sustaining the sheets to be printed in a vertical pile, slots or recesses in said ledge or shelf, a plurality of feeding-fingers working within said slots or recesses for engaging the bottom sheet to withdraw it from the ledge or shelf, means coöperating with the platen and carrier for actuating said fingers near the completion of the positive stroke of the carrier to withdraw the edge of the bottom sheet from said ledge or shelf, and means coöperating with the platen and carrier for rotating said feed-roller to move the bottom sheet into position to be engaged by the grippers, substantially as set forth.

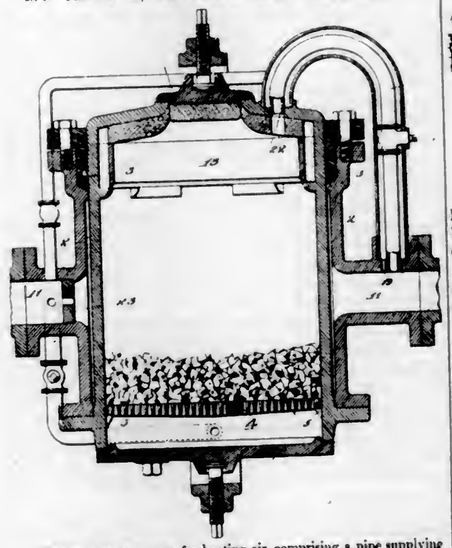
16. The combination with a stencil printing-machine having a reciprocating platen and stencil-carrier, the platen being provided with grippers for engaging the sheets to be printed, of a feed-roller and a supporting ledge or shelf for sustaining the sheets to be printed in a vertical pile, slots or recesses in said ledge or shelf, a plurality of feeding-fingers working within said slots or recesses for engaging the bottom sheet to withdraw it from the ledge or shelf, means coöperating with the platen and carrier for actuating said fingers at the beginning of the negative stroke of the carrier to withdraw the edge of the bottom sheet from said ledge or shelf, and means for rotating the feed-roller on the negative stroke of the carrier for moving the bottom sheet into position to be engaged by the grippers, substantially as set forth.

657,921. SCREW-ON STOPPER FOR DRINKING-FLASKS. JAMES W. DIXON, Sheffield, England. Filed Apr. 25, 1900. Serial No. 14,314. (No model.)

Claim.—The combination with a bottle having a threaded neck and a ring secured thereto, of a second ring hinged to the first, said second ring having its upper edge turned in to form an annular flange and a stopper having a stem threaded to fit said neck, the said stem being slidable vertically in the second ring, the lower edge of said stem having an outwardly-projecting annular flange adapted to project beneath the flange on the ring, substantially as described.

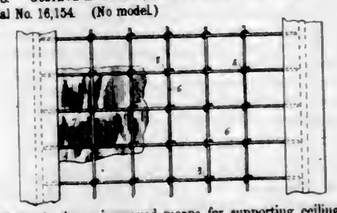


657,922. APPARATUS FOR REHEATING COMPRESSED AIR FOR INDUSTRIAL PURPOSES. THOMAS A. EDISON, Llewellyn Park, N. J. Filed Dec. 12, 1899. Serial No. 740,065. (No model.)



Claim.—An apparatus for heating air, comprising a pipe supplying compressed air from a source of supply to a translating device, a reheater in said pipe for heating the air therein by radiation, a solid combustible in the reheater, a by-pass including the reheater for permitting a portion of the air to pass through the reheater to support combustion and to be heated directly, and means to permit a drop in the air-pressure between the inlet to said by-pass and the translating device to automatically cause air to flow through the by-pass in quantity depending upon the consumption at the translating device, substantially as set forth.

657,923. MEANS FOR SUSPENDING OR SUPPORTING CEILINGS. GUSTAVE E. ESCHER, New York, N. Y. Filed May 10, 1900. Serial No. 16,154. (No model.)

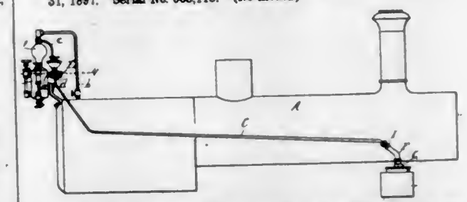


Claim.—1. As an improved means for supporting ceilings, a plurality of suitably supported and connected flat bars or rods, with which the ceiling is connected, said bars or rods having a relative edge-to-edge arrangement, the devices for connecting said bars or rods comprising hook-shaped devices embodying relatively angularly directed hooked end portions, substantially as shown and described.

2. As an improved means for supporting ceilings, a plurality of suitably-supported flat bars or rods arranged in two series, a main and a transverse, devices for connecting the bars of said transverse series with the bars of said main series, whereby the bars of said transverse series are suspended from the bars of said main series, comprising hook-shaped devices embodying a central shank and relatively rectangularly directed hooked end portions, the bars of said main series and the bars of said transverse series having a relative edge-to-edge arrangement.

3. As an improved means for supporting ceilings, a plurality of suitably-supported flat bars or rods arranged in two series, a main and a transverse, there being a relative edge-to-edge arrangement of the bars of said main series and the bars of said transverse series, and devices for connecting the bars of said transverse series with the bars of said main series, whereby the bars of said transverse series are suspended from the bars of said main series, substantially as shown and described.

657,924. LUBRICATOR. GEORGE P. ESSEX, Detroit, Mich., assignor to the Michigan Lubricator Company, same place. Filed Dec. 31, 1897. Serial No. 665,113. (No model.)



Claim.—1. In a lubricator for locomotives, the combination of the lubricator, the tallow-pipe communicating with the boiler through said lubricator, the lower end of the tallow-pipe communicating with the steam-chest, a diaphragm in said communicating passage having a central aperture, the ball-valve adapted to close said aperture, there being a reduced passage establishing communication between the tallow-pipe and steam-chest independent of said valve-controlled aperture.

2. In a lubricator for locomotives, the combination of the lubricator, the tallow-pipe communicating with the boiler through said lubricator, the coupling uniting the lower end of the tallow-pipe with the steam-chest, the inclined diaphragm in said coupling, there being an aperture through said diaphragm, the ball-valve adapted to close said aperture but normally lying away therefrom, there being another and reduced aperture through said diaphragm independent of said valve-controlled aperture.

3. In a lubricating apparatus provided with suitable cylinder and equalizing-pipe connections, and in combination with the lubricator and the steam chest or cylinder, a duct connecting the same, containing a minimum-supply choked passage, a relatively-larger by-passage, separate and distinct from the minimum-supply choked passage, and a valve for controlling said by-passage automatically seated by the pressure within the duct on the lubricator side and automatically unseated by gravity when pressure is on the cylinder side.

4. In a lubricating apparatus provided with suitable cylinder and equalizing-pipe connections, and in combination with the lubricator and the steam chest or cylinder, a duct connecting the same, containing a minimum-supply choked passage, a relatively-larger by-passage, separate and distinct from the minimum-supply choked passage, and a valve for controlling said by-passage, said valve presenting surfaces of equal area to the steam in the duct on the cylinder and on the lubricator sides.

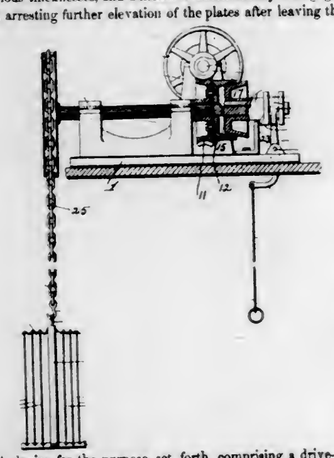
5. In a lubricator for locomotives, the combination of a lubricator, a tallow-pipe communicating with the boiler through said lubricator, the lower end of the tallow-pipe communicating with the steam-chest; a diaphragm in said communicating passage having an aperture; a ball-valve adapted to close said aperture, there being a reduced passage establishing communication between the tallow-pipe and the steam-chest independent of said valve-controlled aperture.

657,925. HOISTING DEVICE FOR TIN-PLATE MACHINERY. JAMES F. FAWCETT, Pittsburg, Pa., assignor of one-half to John Hamilton, same place. Filed Apr. 20, 1900. Serial No. 13,567. (No model.)

Claim.—1. A device for the purpose set forth, comprising a drive-worm, a worm-wheel loosely mounted upon a shaft and driven by said worm, a clutch slidably secured upon said worm-wheel shaft, a pulley arranged upon said shaft, a chain attached to said pulley, a lever arranged to engage said clutch and lock said worm-wheel to the shaft and a means whereby the speed of said worm may be increased or decreased to produce coatings of various thickness.

2. A device for the purpose set forth, comprising a drive-worm, a worm-wheel loosely mounted upon a shaft and driven by said worm, a

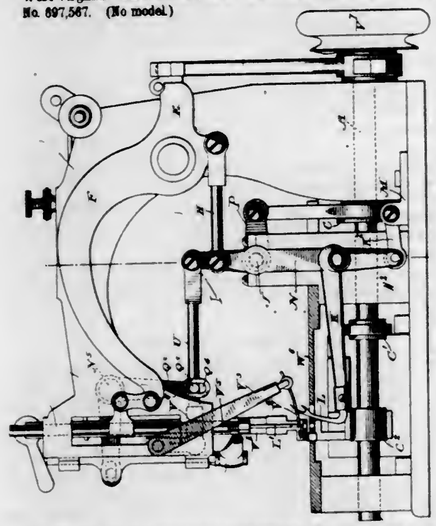
clutch slidably secured upon said worm-wheel shaft, a pulley arranged upon said shaft, a chain attached to said pulley, a lever arranged to engage said clutch and lock said worm-wheel to the shaft, a means whereby the speed of said worm may be increased or decreased to produce coatings of various thicknesses, and a means of automatically disengaging said clutch and arresting further elevation of the plates after leaving the bath.



3. A device for the purpose set forth, comprising a drive-worm, a worm-wheel loosely mounted upon a shaft and driven by said worm, a clutch slidably secured upon said worm-wheel shaft, a pulley secured to said shaft, a chain attached to said pulley, a lever arranged to engage said clutch with the worm-wheel to lock the same to the shaft, a cam carried by said clutch, and a fixed stop adapted to engage said cam and automatically disengage said clutch from the wheel, as shown and set forth.

4. A device for the purpose set forth, comprising a drive-worm, a worm-wheel loosely mounted upon a shaft and driven by said worm, a clutch slidably secured upon said worm-wheel shaft, a pulley attached to said shaft, a chain secured to said pulley, a lever arranged to engage said clutch with the worm-wheel and lock the same to the shaft, a cam carried by said clutch, a fixed stop adapted to engage said cam and automatically disengage said clutch from the worm-wheel, and a step cone-pulley arranged upon the drive-wheel shaft, as shown and set forth.

657,926. **OVERSEAMING SEWING-MACHINE.** HENRY H. FELBEL, New York, N. Y., assignor to the Multiple Power Company, of West Virginia. Filed Dec. 31, 1896. Renewed Nov. 26, 1898. Serial No. 697,567. (No model.)



Claim.—1. In an overedge sewing-machine, in combination, a vertically-reciprocating needle, a loop-transmitter, a rocking lever having an inclined crank on which the loop-transmitter is mounted as a fulcrum and actuated to take the thread from the needle, a locking-thread carrier adapted to take the needle-thread from the loop-transmitter and deliver a loop of its own thread in position for the needle to pass through it, and means for operating said parts.

2. In a sewing-machine of the character described, the combination of a driving-shaft, a needle-arm driven by link connection with an eccentric on said driving-shaft, a needle actuated by said arm, a lever having an inclined crank-pin actuated by link connection with said arm, a bell-crank lever mounted on the inclined crank-pin and carrying a loop-transmitter and a locking-thread carrier adapted to take the needle-thread from the loop-transmitter and deliver a loop of its own thread in position for the needle to pass through it.

3. In a sewing-machine the combination of a driving-shaft, a needle-carrying arm driven by a link connection with an eccentric on said driving-shaft, a lever having a crank-pin actuated by link connection with said arm, a bell-crank lever mounted upon the crank-pin at the free end of the lever, an adjustable loop-transmitter upon the free end of said bell-crank and a locking-thread carrier adapted to take the needle-thread from the loop-transmitter and deliver a loop of its own thread in a position for the needle to pass through it.

4. In a sewing-machine the combination of a driving-shaft, a needle-carrying arm driven by link connection with an eccentric on said shaft, a front lever having an inclined crank-pin, connection between said arm and said front lever, a bell-crank lever having its fulcrum upon said inclined crank-pin, a loop-transmitter carried by said bell-crank lever, a rear rocking arm having its axis coincident with the front lever, a locking-thread carrier, a link connecting the latter with said rear rocking arm, a stationary cutter on the cloth-plate, a reciprocating cutter operating therewith, a second bell-crank lever connected with said link, and with said reciprocating cutter to operate the latter, and means for actuating the rear rocking arm.

5. A sewing-machine provided with a driving-shaft, a needle-carrying arm having link connection with an eccentric on said driving-shaft, a lever having a crank-pin and having link connection with said arm, a bell-crank lever upon said crank-pin carrying a loop-transmitter, a link pivotally connected to a bracket and with the free end of said lever, and a locking-thread carrier adapted to take the needle-thread from the loop-transmitter and deliver a loop of its own thread in position for the needle to pass through it.

6. A sewing-machine provided with a driving-shaft, a needle-carrying arm having link connection with an eccentric on said driving-shaft, a lever provided with a link connection with said arm, a bell-crank lever upon the free end of said lever carrying a loop-transmitter, a link pivoted to a bracket upon the bed-plate, a universal connection between the free end of said bell-crank lever and the end of said last-mentioned link, and a locking-thread carrier adapted to take the needle-thread from the loop-transmitter and deliver a loop of its own thread in position for the needle to pass through it.

7. A sewing-machine provided with a reciprocating needle, a bifurcated standard, a front lever provided with a journal fitted in a bearing in one side of said standard, said journal having a reduced extension, a rear rocking arm carrying a tubular sleeve through which said extension passes, said sleeve being journaled in the other side of the standard, a loop-transmitter carried by said front lever, and a locking-thread carrier operated by the rear rocking arm and means for actuating said parts.

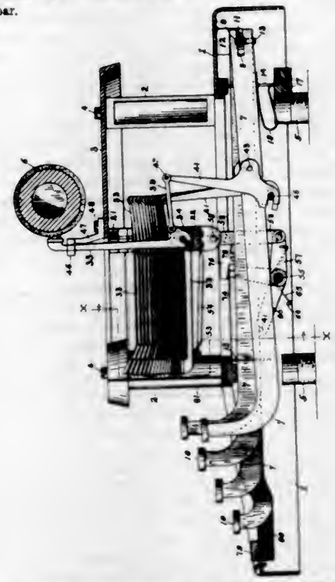
8. A sewing-machine provided with a driving-shaft carrying eccentrics, a needle-carrying arm having link connection with one of said eccentrics, a bifurcated standard, a front lever having a journal fitted in a bearing in said standard, and having link connection with said arm, a loop-transmitter connected to said lever, a rear rocking arm journaled in said standard having link connection with the other of said eccentrics, a locking-thread carrier and connections between the same and the rear rocking arm.

9. A sewing-machine provided with a reciprocating needle, a front lever, a bell-crank lever upon the same carrying a loop-transmitter, means for actuating said parts, a cloth-plate provided with slots, stationary cutter mounted in one of the slots, a reciprocating cutter operating therewith, a rear rocking arm, a locking thread-carrier, connections between the rear rocking arm, the locking-thread carrier and the reciprocating cutter, and means for actuating the rear rocking arm.

657,927. **TYPE-WRITING MACHINE.** JACOB FELBEL, New York, N. Y. Filed June 5, 1899. Serial No. 719,419. (No model.)

Claim.—1. The combination of a platen, a type-bar, a key-lever, a lever pivoted directly on the key-lever and connected to the type-bar and an abutment to which the second-named lever is loosely connected, whereby the latter has a compound movement resulting from the downward movement of its pivot on the key-lever and its loose connection to said abutment.

2. In a type-writing machine, the combination of a platen, a type-bar pivoted to strike upwardly and rearwardly, an abutment, a key-lever, a lever pivoted directly on the key-lever and provided with a slot engaging said abutment so as to enable a turning and sliding movement of the lever thereon, and a connection between the second-named lever and the type-bar.



3. In a type-writing machine, the combination of a platen, a type-bar pivoted to strike upwardly and rearwardly, a key-lever, a lever pivoted directly on the key-lever, an abutment loosely connected to the second-named lever and on which the second-named lever turns and slides, and a link connecting the second-named lever with the type-bar.

4. In a type-writing machine, the combination of a platen, a type-bar pivoted to strike upwardly and rearwardly of the machine, a pivoted key-lever provided with a finger-piece, a lever pivoted directly on the key-lever intermediate the fulcrum and the finger-piece thereof, and an abutment with which the second lever is loosely connected so as to turn and slide thereon during motion of the type to the printing-point.

5. In a type-writing machine, the combination of a platen, a type-bar striking upwardly and rearwardly, a key-lever fulcrumed at one end and provided with a finger-piece at the other end thereof, an abutment, a lever pivoted directly on said key-lever and provided with a loose bearing for said abutment, to enable said second lever both to turn and slide and a pivoted link connecting said second lever with the type-bar.

6. In a type-writing machine, the combination of a platen, a type-bar striking upwardly and rearwardly, a key-lever fulcrumed at one end and provided with a finger-piece at the other end thereof, a lever pivoted directly on the key-lever intermediate the fulcrum and the finger-piece thereof, an abutment with which the second lever is loosely connected so as to turn and slide thereon during the depression of the key-lever, and a pivoted link connecting the second lever and the type-bar.

7. In a type-writing machine, the combination of a platen, a type-bar pivoted to strike upwardly and rearwardly, a key-lever fulcrumed a one end and provided with a finger-piece at the other end thereof, a lever pivoted on the key-lever intermediate the fulcrum and the finger-piece thereof, an abutment intermediate the pivot of the second-named lever and the finger-piece of the key-lever and with which the second lever is slidably connected during the depression of the key-lever, and a connection between the second-named lever and the type-bar.

8. In a type-writing machine, the combination of a platen, a type-bar pivoted to strike upwardly and rearwardly, a lever fulcrumed at one end and provided with a finger-piece at the other end thereof, a lever pivoted on the key-lever intermediate the ends thereof, an abutment with which the second-named lever is slidably connected during the depression of the key-lever, and a link pivotally connected with the type-bar above the pivot thereof and pivotally connected with the second-named lever.

9. In a type-writing machine, the combination of a platen, a series of type-bars pivoted in a curved line to strike upwardly and rearwardly, a series of key-levers below the type-bars, a series of levers pivoted on the key-levers and connected each with a type-bar, and an abutment-rod below the key-levers with which each of the second series of levers has a sliding action.

10. In a type-writing machine, the combination of a platen, a series of type-bars pivoted in a curved line to strike upwardly and rearwardly, a series of converging key-levers below the type-bars and arranged at their rear portions to have a collective transverse width substantially equal to the chord of the arc in which the type-bars are pivoted, a second series of levers connected to the type-bars and pivotally connected with the key-levers at their rear portions and abutments for said second series of levers.

11. In a type-writing machine, the combination of a platen, a series of type-bars pivoted in a curved line to strike upwardly and rearwardly, a series of key-levers, an abutment, a series of substantially-parallel upright levers connected with said type-bars and said abutment and said series of key-levers, and having their upper ends terminating in a curve having substantially the same chord as the curve upon which the type-bars are pivoted.

12. In a type-writing machine, the combination of a platen, a series of type-bars pivoted in a curved line to strike upwardly and rearwardly, a series of key-levers, an abutment, a series of levers connected with said type-bars and said abutment and said series of key-levers, and having their upper ends terminating in a curve having substantially the same chord as the curve upon which the type-bars are pivoted, and links pivotally connected with the levers of the second series by horizontal pivots and with the type-bars by pivots which are parallel to the pivot of the type-bar in each individual case.

13. In a type-writing machine, the combination of a platen, a series of type-bars pivoted in a curved line to strike upwardly and rearwardly, a series of key-levers arranged at one place collectively to have a transverse width substantially equal to the chord of the arc in which the type-bars are pivoted, an abutment-rod, a second series of levers slidably connected with said abutment and pivoted on said key-levers and arranged with their upper ends terminating in a curve having a chord substantially equal to the chord of the type-bar-pivot curve, and a series of links connected with the second series of levers by horizontal pivots and with the type-bars by pivots parallel to the pivot of the type-bar in each individual case.

14. In a type-writing machine, the combination of a platen, a series of type-bars pivoted in a curved line to strike upwardly and rearwardly, a series of key-levers below the type-bars and arranged at one place to have a collective width substantially equal to the chord of the arc in which the type-bars are pivoted, a series of levers pivotally connected with the key-levers to vibrate in vertical planes, an abutment-rod to which the levers of the second series are connected and the upper ends of the second series of levers terminating in a curve having a chord substantially equal to the chord of the type-bar-pivot arc, and a series of links connected with the upper ends of the second series of levers by horizontal pivots and with the type-bars by pivots parallel to the axis of the type-bars in each individual case.

15. In a type-writing machine, the combination of a platen, a series of type-bars pivoted in a curved line to strike upwardly and rearwardly, a series of key-levers arranged at one place to have a collective transverse width substantially equal to the chord of the arc in which the type-bars are pivoted, an abutment-rod, a second series of levers slidably connected with one of said abutment and series of key-lever elements and pivotally connected with the other of said elements and arranged with their upper ends terminating in a curve having a chord substantially equal to the chord of the type-bar-pivot curve, and a series of links connected with the second series of levers by horizontal pivots and also pivotally connected with the type-bars.

16. In a type-writing machine, the combination of a platen, a series of type-bars pivoted in a curved line to strike upwardly and rearwardly, a series of key-levers below the type-bars and arranged at one place to have a collective width substantially equal to the chord of the arc in which the type-bars are pivoted, a series of levers pivotally connected with the key-levers to vibrate in vertical planes, an abutment-rod to which the levers of the second series are slidably connected, and the upper ends of the second series of levers terminating in a curve having a chord substantially equal to the chord of the type-bar-pivot arc, and a series of links connected with the upper ends of the second series of levers by horizontal pivots and also pivotally connected with the type-bars.

17. In a type-writing machine, the combination of a platen, a series of thin type-bars, a slotted segment in which the type-bars are pivoted to strike upwardly and rearwardly, a series of key-levers below the type-bars and arranged at one place to have a collective width substantially equal to the chord of the arc in which the type-bars are pivoted, a series of levers vibrating only in vertical planes and operatively connected with the key-levers and having their upper ends terminating in an arc substantially concentric with the arc in which the type-bars are pivoted, and a series of flat links connected with the vertical levers by horizontal pivots

and with the type-bars by pivots parallel with the pivot of the type-bar in each individual case, and said links being twisted where necessary to secure such parallelism.

18. In a type-writing machine, the combination of a platen, a type-bar pivoted to strike upwardly and rearwardly, a key-lever, an abutment below the same, a lever fulcrumed upon the key-lever and slotted to embrace the abutment, and a connection between the upper end of the second-named lever and the type-bar.

19. In a type-writing machine, the combination of a platen, a type-bar pivoted to strike upwardly and rearwardly, a key-lever fulcrumed at its rear end in rear of the pivot of the type-bar, a lever pivoted to the key-lever in rear of the pivot of the type-bar, an abutment below the key-lever and forward of the pivot of the second-named lever and connected with the second-named lever, and a connection between said second-named lever and the type-bar at a point above the pivot of the latter.

20. In a type-writing machine, the combination of a platen, a pivoted type-bar, a key-lever of the second order, an abutment therebelow, a lever pivoted on the key-lever and connected with the abutment by a slot, and a link pivotally connected to the second-named lever and to the type-bar.

21. In a type-writing machine, the combination of a platen, a series of type-bars pivoted in a curved line to strike upwardly and rearwardly, a series of converging key-levers of the second order having parallel rear portions of a collective width substantially equal to the chord of the type-bar-pivot curve, a series of levers pivoted each to a corresponding key-lever at said rear parallel portions, an abutment with which the second-named series of levers engages and the upper ends of said second series of levers being parallel and moving in vertical planes, and a connection between each of said upper ends and the corresponding type-bar.

22. In a type-writing machine, the combination of a platen, a series of type-bars pivoted in a curved line to strike upwardly and rearwardly, a series of key-levers of the second order having parallel front and rear portions connected by oblique portions and the rear parallel portions being of a collective width substantially equal to the chord of the arc in which the type-bars are pivoted, a series of straight parallel levers pivoted each to a corresponding key-lever at the rear parallel portions thereof, an abutment with which the second-named series of levers engages and the upper ends of said second series of levers terminating in a curve substantially concentric with the pivot-curve of the type-bars, and links connecting said upper ends and the corresponding type-bars.

23. In a type-writing machine, the combination of a platen, a series of type-bars pivoted to strike upwardly and rearwardly and provided each with a plurality of types, mechanism for shifting the type-bars to bring each type of the bars to one and the same printing-point, a series of key-levers fulcrumed in the fixed framework of the machine, and a series of levers intermediate the key-levers and the type-bars and connected with each.

24. In a type-writing machine, the combination of a platen, a series of type-bars arranged to strike upwardly and rearwardly and provided each with a plurality of types, mechanism for shifting the type-bars vertically to bring each type to one and the same printing-point, a series of key-levers fulcrumed in the fixed framework of the machine, and a series of levers intermediate the key-levers and the type-bars and connected with each.

25. In a type-writing machine, the combination of a platen, a series of type-bars pivoted to strike upwardly and rearwardly, a vertically-movable segment to which the type-bars are connected, mechanism for moving said segment upwardly, a counterbalance for said segment, and a returning-spring for the said segment normally disengaged therefrom and put under tension thereby after the segment has moved upwardly a predetermined distance from its normal position.

26. In a type-writing machine, the combination of a platen, a series of type-bars pivoted to strike upwardly and rearwardly at the front side of said platen and provided each with a plurality of types, mechanism for shifting the type-bars to bring each type of each bar to one and the same printing-point, a series of key-levers extending beneath the type-bars and fulcrumed at their rear ends in the fixed framework of the machine, a series of levers engaging said key-levers, and horizontally-disposed links connecting said second series of levers and the type-bars.

27. In a type-writing machine, the combination of a platen, a series of type-bars arranged to strike upwardly and rearwardly at the front side of said platen and provided each with a plurality of types, mechanism for shifting the type-bars in an up-and-down direction to bring each type to one and the same printing-point, a series of key-levers fulcrumed in the fixed framework of the machine, a series of levers engaging with the key-levers, and horizontally-disposed connecting rods or links between the second-named series of key-levers and the type-bars.

28. In a type-writing machine, the combination of a platen, a series of type-bars pivoted below the platen and striking at the front side thereof and provided each with a plurality of types, mechanism for shifting the type-bars in a up-and-down direction to bring each type to one and the same printing-point, a series of key-levers fulcrumed in the fixed framework of the machine, an abutment rod or shaft, a series of levers slidably connected with one and pivotally connected with the other of said key-lever and abutment elements, and a series of links or connecting-rods intermediate the second-named series of levers and the type-bars.

29. In a type-writing machine, the combination of a platen, a series of type-bars arranged to strike at the front side of said platen and provided each with a plurality of types, mechanism for shifting the type-bars in an up-and-down direction to bring each type to one and the same printing-point, a series of key-levers fulcrumed in the fixed framework of the machine, a series of levers fulcrumed upon the key-levers, an abutment rod or shaft with which the second-named series of levers engage, and connecting-links intermediate the second-named series of levers and the type-bars.

30. In a type-writing machine, the combination of a platen, a series of type-bars arranged to strike at the front side of said platen, mechanism for shifting the type-bars in an up-and-down direction to bring each type to one and the same printing-point, a series of key-levers of the second order fulcrumed in the fixed framework of the machine, and a series of levers intermediate the key-levers and the type-bars and connected with each.

31. In a type-writing machine, the combination of a platen, a series of type-bars arranged to strike at the front side of said platen and provided each with a plurality of types, mechanism for shifting the type-bars in an up-and-down direction to bring each type to one and the same printing-point, a series of key-levers of the second order fulcrumed in the fixed framework of the machine, an abutment rod or shaft, a series of levers movably connected with one and pivotally connected with the other of said key-lever and abutment elements, and connections between the second-named series of levers and the type-bars.

32. In a type-writing machine, the combination of a platen, a series of type-bars arranged to strike at the front side of said platen and provided each with a plurality of types, mechanism for shifting the type-bars in an up-and-down direction to bring each type to one and the same printing-point, a series of key-levers of the second order, a series of levers pivotally connected to said key-levers, an abutment rod or shaft with which the second-named series of levers engage slidably, and connections between said second-named series of levers and the type-bars.

33. In a type-writing machine, the combination of a platen, a series of type-bars arranged to strike at the front side of said platen and provided each with a plurality of types, mechanism for shifting the type-bars vertically to bring each type to one and the same printing-point, a series of key-levers of the second order fulcrumed in the fixed framework of the machine, an abutment-rod, a series of levers slidably connected with one and pivotally connected with the other of said series of key-lever and abutment elements, and links connecting said second-named series of levers and the type-bars.

34. In a type-writing machine, the combination of a platen, a series of type-bars arranged to strike at the front side of said platen and provided each with a plurality of types, mechanism for shifting the type-bars in an up-and-down direction to bring each type to one and the same printing-point, a series of key-levers of the second order fulcrumed in the fixed framework, a series of levers pivotally connected to said key-levers, an abutment rod or shaft with which the second-named series of levers is connected, and links connected to said second-named series of levers and to the type-bars.

35. In a type-writing machine and in a case-shifting mechanism, the combination of a pair of fixed plates having ball-guiding grooves therein, a shifting plate having ball-guiding grooves therein opposing those in the fixed plates, balls in said grooves, ball-separating plates between the fixed and movable plates and having projections, stop-arms on the fixed plates adapted to engage with the arms on the ball-separators, and stops on the shifting plate for engaging the said arms.

36. In a type-writing machine and in a case-shifting mechanism, a rock-shaft operatively connected with the shifting element of said mechanism, an arm on said shaft, a latch normally out of contact with but adapted to engage the said arm and hold the same and the shaft in one position, a shift key-lever adapted to rock said arm and also to release said latch; the construction and arrangement being such that when the key-lever is in its normal position it holds the latch out of engagement with the arm, but when the shift-key is depressed it rocks the arm and permits the latch to pass into engagement with the arm and lock the same and the parts shifted by the key-lever.

37. In a type-writing machine and in a case-shifting mechanism, a spring-pressed arm connected to the part to be shifted, a latch normally out of engagement with said arm but adapted to engage said arm and hold the shifted part in its abnormal position, and a spring-actuated key-lever for rocking said arm and moving the part to be shifted, said key-lever releasing the said latch so that upon the depression of the key-lever the latch may come into operative relation with the arm, and a second spring-actuated shifting key-lever also adapted to rock said arm and thereby release the first-named shifting-lever and its connected parts from the control of said latch.

38. In a type-writing machine and in a case-shifting mechanism, the combination of spring-actuated arms 60 and 74, the latter having a notch 75, a pivoted latch 76 having a pin 78, a spring-pressed shifting key-lever 71 with which the pin 78 contacts so as to keep the latch normally out of engagement with the arm 74, a projection 61 on the arm 60 adapted to be engaged by the under side of the lever 71 when depressed, and a spring-pressed shifting key-lever 62 also adapted to act on the arm 60, to relieve pressure of the arm 74 against the latch, so as to release the same and enable it and the lever 71 to return to normal position, and the shifted element to return to normal position upon release of the key-lever 62.

39. In a type-writing machine, the combination of a platen, a shifting type-bar segment, links connected thereto, arms 57 connected to said links, a rock-shaft 55 having a rocker-arm 60 and a rocker-arm 74, a spring for said rocker-arms, a pair of spring-pressed key-levers 62 and 71 arranged adjacent to each other and adapted each to depress the arm 60 and rock the shaft and the arms 57 and 74 and thus raise the type-bar segment, a latch adapted to engage the arm 74 but held normally out of engagement by the lever 71 when in its normal position, whereby when the lever 62 is operated to shift the type-bar segment the locking mechanism is inoperative, but when the lever 71 is depressed to rock the arm 60 and the arms 57 and 74, the latch drops down into operative engagement with the arm 74 and prevents said arm and its key-lever and connected parts from returning to normal position until the lever 62 is slightly depressed and rocks the arm 74 away from the latch and thus allows the key-lever 71 and the latch to return to normal position, whereupon the segment may return to normal position upon the release of the key-lever 62.

40. In a type-writing machine, the combination of a platen, a vertically-shifting type-bar segment, the type-bars, the links 39, the levers 41, the key-levers 7 to which the levers 41 are pivotally connected, the abutments for the levers 41, means for guiding the segment vertically up and down, the rock-shaft 55, the rocker-arms 57, the links 58, the rocker-arm 60, the rocker-arm 74, the latch 76, and the shifting key-levers 62 and 71, all operating in substantially the manner described.

41. In a type-writing machine, the combination of a vertically-shifting type-bar segment provided with side guides adapted to guides on the framework, a spring 68, said spring being normally inactive but put under tension during the shifting movements of the type-segment and adapted only to start the segment down quickly and allow it to complete its movement by the force of gravity upon release of the shifting mechanism.

42. In a type-writing machine, the combination of a vertically-shifting type-bar segment having side guide-plates 23, guide-plates 18 on the framework, a spring 68 secured to the frame guide-plate and having its free end extending over the guide-plate 23, a projection 70 on the guide-plate 23 arranged a suitable distance away from the free end of the spring when the segment is in its lower position but adapted to contact with said spring and flex the same at a suitable time in the upward movement of the segment, so that upon the release of the shifting mechanism the said spring may operate quickly to start the segment downwardly.

43. In a front-strike type-writing machine, the combination of a platen, a segment arranged below said platen, a series of type-bars pivotally supported upon said segment and having bends 52 such that the upper portion of the type-bar stands substantially vertical when in printing position, and also having bends 51 near their hub portions, the hub portions of said type-bars radiating to a point above said bend 52, and the body portions of the type-bars when in printing position extending radially from the bends 51 to the bends 52.

44. In a type-writing machine, the combination of a platen, a series of type-bars pivoted in a vertically-disposed plane to strike at the front side thereof, a series of horizontally-disposed links pivotally connected with the type-bars by pivots which are parallel with the axes of the type-bars in each individual case, a series of vertically-disposed levers terminating at their upper ends in an arc substantially concentric wth the arc of the type-bar pivots and with which the said links are connected by horizontal pivots, and key-levers and connections for actuating said vertically-disposed levers and said type-bars.

45. In a type-writing machine, the combination of a platen, a vertically-disposed slotted curved segment lower than the same, a series of thin type-bars pivotally connected with the segment to strike at the front side of said platen and having projecting radial toes or arms, a series of parallel, vertically-disposed thin levers terminating in an arc substantially concentric with the arc of the type-bar pivots, flat links connected with said levers by horizontal pivots and twisted into parallelism with said arms or toes and connected therewith by pivots at right angles to the planes of said arms, key-levers, and connections for operating said vertically-disposed levers and the type-bars.

46. In a type-writing machine, the combination of a series of type-bars provided each with an open-ended keyhole-slot, a slotted segment or ring, a flattened pivot-rod on said segment or ring and forming the fulcra of the type-bars, a series of key-levers having open-ended longitudinal keyhole-slots at one end thereof, a revoluble flattened fulcrum-rod forming the fulcrum of said key-levers and engaging said slots, a series of levers pivoted to the key-levers and provided each with an open-ended slot, a rod engaging the slots of the second-named series of levers, and links connecting the type-bars and the second-named series of levers.

47. In a type-writing machine, the combination of a framework, a flat-sided fulcrum-rod revoluble in said framework, a key-lever provided with a double keyhole-slot open at one end and adapted to engage with said fulcrum-rod, a type-bar provided with an open-ended keyhole-slot, a flattened fulcrum for engaging said slot, a lever pivotally attached to the key-lever and having an open-ended slot, an abutment for engaging with said lever-slot, and connections between the type-bar and the second-named lever.

48. In a type-writing machine, the combination of a platen, a series of type-bars each provided with a plurality of types, a series of key-levers extending rearwardly beneath the type-bar system, connections extending upwardly from the key-levers to the type-bars, and mechanism for shifting said type-bars independently of the key-levers and toward and away therefrom.

49. In a type-writing machine, the combination of a platen, a series of rearwardly-striking type-bars each provided with a plurality of types, a series of converging key-levers extending rearwardly beneath the type-bar system, a series of levers connected to said key-levers and extending upwardly, links connecting said upwardly-extending levers to said type-bars, and means for shifting said type-bars in an up-and-down direction, all of said links being constructed to vibrate simultaneously at the shifting operation.

50. In a type-writing machine, the combination of a platen, a series of type-bars each provided with a plurality of types, a series of key-levers extending rearwardly beneath the type-bars, connecting devices arranged in rear of the type-bars and extending from the type-bars to the key-levers, and mechanism for shifting said type-bars in an up-and-down direction.

51. In a type-writing machine, the combination of a platen, a series of type-bars each provided with a plurality of types, a series of key-levers extending rearwardly beneath said type-bars, links extending rearwardly from the type-bars and connected to the key-levers, and mechanism for shifting said type-bars in an up-and-down direction, all of said links being constructed to vibrate simultaneously at the shifting operation.

52. In a type-writing machine, the combination of a platen, a series of type-bars arranged to strike rearwardly and each provided with a plurality of types, a series of upright key-operated levers arranged in rear of the type-bars, links connecting said levers to said type-bars, and means for shifting said type-bars, said links being constructed to vibrate at the shifting operation and the pivots about which they vibrate being arranged substantially at right angles to the direction of the shifting movement of the type-bars.

53. In a type-writing machine, the combination of a platen, a series of rearwardly-striking type-bars each provided with a plurality of types, mechanism for shifting said type-bars in an up-and-down direction, a series of key-levers, and connections whereby said key-levers are enabled to swing said type-bars in either shift position thereof, said connections comprising both a series of levers which move in a direction at an angle to the direction of movement of the key-levers, and also a series of links extending substantially in the direction of movement of said second series of levers and connecting the latter to the type-bars.

54. In a type-writing machine, the combination of a platen, a series of rearwardly-striking type-bars each provided with a plurality of types, mechanism for shifting said type-bars in an up-and-down direction, a series of links connected with the type-bars by pivots which are parallel with the axes of the type-bars in each individual case, a series of upwardly-extending levers with which said links are connected by horizontal pivots, whereby said links are enabled to vibrate in substantially-vertical planes at the type-bar-shifting operation, and key-levers connected to said upwardly-extending levers.

55. In a type-writing machine, the combination of a platen, a segment arranged forwardly thereof, a series of slots formed or provided in said segment, a series of thin type-bars pivotally arranged in said slots and arranged to strike at the front side of said platen and each of said type-bars being provided with a plurality of types, means for shifting said segment in an up-and-down direction, radial toes or arms provided upon said type-bars, a series of substantially-parallel upright thin levers whose upper ends terminate in an arc substantially concentric to the arc of the type-bar pivots, flat links connected with said levers by horizontal pivots and twisted into parallelism with said radial arms or toes and pivoted thereto, and a series of key-levers connected to said upwardly-extending levers.

56. In a front-strike type-writing machine, the combination of a platen, a vertically-arranged segment provided with a series of slots which radiate substantially to the printing-point, a curved fulcrum-rod arranged

upon said segment, and a series of type-bars placed in said slots and engaging said rod and having bends 52, such that the upper portions of said type-bars stand in a substantially-vertical line when in printing position, and also having bends 51 near their hubs, the body portions of the type-bars extending radially between said bends 51 and 52.

57. In a front-strike type-writing machine, the combination of a series of type-bars, a series of key-levers, independent connections from the key-levers to the type-bars, an up-and-down-movable segment upon which said type-bars are pivotally supported, a rock-shaft journaled in the framework, and arms fixed upon said shaft and connected to said segment.

58. In a front-strike type-writing machine, the combination of a platen, a series of type-bars, an up-and-down-sliding segment upon which said type-bars are pivotally supported, key-operated mechanism for sliding said segment, and relatively-fixed key-levers connected to said type-bars.

59. In a front-strike type-writing machine, the combination with a platen, of a series of type-bars, a segment upon which said type-bars are pivotally supported, rock-shaft 55, arms 57, links 58, and means for operating said rock-shaft.

60. In a type-writing machine, the combination of a platen, a series of type-bars, a series of key-levers extending rearwardly below the type-bars, a series of bell-levers arranged behind the type-bars and pivoted at their lower rear portions upon the said key-levers, a fulcrum for the lower front portion of each bell-lever, and a series of links pivotally engaged at their rear ends to said bell-levers and at their forward ends to said type-bars.

61. In a type-writing machine, the combination of a platen, a series of type-bars arranged to strike rearwardly, a series of converging key-levers extending rearwardly beneath the type-bars, a series of substantially-vertical levers pivoted at their lower ends to said key-levers and having a fulcrum, and a series of links connecting said substantially-vertical lever to said type-bars.

62. In a type-writing machine, the combination of a platen, a type-bar pivoted to strike upwardly and rearwardly, a key-lever, a lever pivoted between its ends on the key-lever and provided below said pivot with a slot, an abutment arranged within said slot, and a connection between the upper end of the second-named lever and the type-bar.

63. In a type-writing machine, the combination of a platen, a type-bar pivoted to strike upwardly and rearwardly, a key-lever, a lever pivoted on the key-lever, an abutment for actuating the second-named lever on the depression of the key-lever and on which the second-named lever moves, and a link connecting the second-named lever with the type-bar, said key-lever being disposed between said abutment and said link.

64. In a type-writing machine, the combination of a platen, a type-bar pivoted to strike upwardly and rearwardly of the machine, a pivoted key-lever provided with a finger-piece, an upright lever pivoted on the key-lever intermediate the fulcrum and the finger-piece thereof and extending to a point above the pivot of the type-bar, and an abutment with which the second lever is loosely connected so as to turn and slide thereon during motion of the type-bar to the printing-point.

65. In a type-writing machine, the combination of a platen, a type-bar striking upwardly and rearwardly, a key-lever fulcrumed at one end and provided with a finger-piece at the other end thereof, an abutment, a lever pivoted on said key-lever and provided with a bearing for said abutment, and a pivoted link extending rearwardly from the type-bar and connected at its rear end to said second lever.

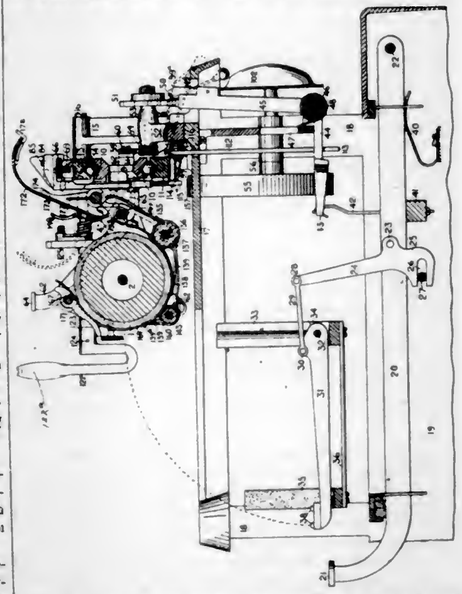
637,928. TYPE-WRITING MACHINE. JACOB FELBEL, New York, N. Y. Filed Apr. 12, 1900. Serial No. 12,498. (No model.)

Claim.—1. In a type-writing machine, the combination of a slide-bar, a pair of track-bars, grooves formed in said slide-bar and said track-bars, rollers arranged in said grooves and serving to wholly support and guide said slide-bar, forwardly-extending arms rigidly secured to said slide-bar, and a cylindrical platen wholly supported by and confined between said forwardly-extending arms.

2. In a type-writing machine, the combination of a slide-bar, a trackway whereby said slide-bar is wholly supported and guided, forwardly-extending arms rigidly secured to said slide-bar, and a cylindrical platen carried by and confined between said forwardly-extending arms, said arms and platen being wholly supported by said slide-bar and trackway.

3. In a type-writing machine, the combination of a U-frame open in front and comprising parallel end bars united by a longitudinally-extending slide-bar provided upon its upper and lower edges with grooves, track-bars arranged above and below said slide-bar and also provided with grooves, rollers arranged in said grooves whereby said U-frame is wholly supported and guided, and a platen wholly supported by said end bars in front of said slide-bar.

4. In a type-writing machine, the combination with a cylindrical platen of an overhanging platen-frame, consisting of end bars in which said platen is journaled and a slide-bar arranged in rear of said platen and rigidly uniting said end bars, a groove formed longitudinally in said slide-bar, a supporting and guiding carriage-track formed with a groove to match said slide-bar groove, rollers arranged in said grooves, whereby said slide-bar is supported upon said track, and means engaging said slide-bar for holding the latter upright and guiding the same.



5. In a type-writing machine, the combination with a cylindrical platen of an overhanging platen-frame, consisting of end bars in which said platen is journaled and a slide-bar arranged in rear of the said platen and rigidly uniting said end bars, a groove formed longitudinally in each of the under and top edges of said slide-bar, grooved tracks arranged above and below said slide-bar, and rollers arranged in the ballways formed by said grooves.

6. In a type-writing machine, the combination with a platen and a platen-frame, of an escapement-rack, and a lever rigidly secured to said rack at each end thereof, each of said levers being pivoted between its ends upon the platen-frame and bearing at its forward end a finger-piece, and said levers and rack taken together forming a single swinging frame or bail which vibrates upon said lever-pivots, so that either of said finger-pieces may be manipulated to release said rack from the carriage escapement devices.

7. In a type-writing machine, the combination with a platen and a platen-frame, of a rack, an escapement-controlled pinion in mesh therewith, a lever rigidly secured to said rack at each end thereof, each of said levers being pivoted to the platen-frame and bearing at its forward end a finger-piece, and said levers and rack taken together forming a single swinging frame or bail so that either of said finger-pieces may be manipulated to release said rack from the pinion, and a spiral spring and a plunger for returning said frame or bail to normal position, said spring and plunger being arranged in a housing fixed upon the platen-frame, and said plunger bearing down upon the upper edge of said rack-bar.

8. In a type-writing machine, the combination with a platen and a platen-carriage including a slide-bar, of means for supporting and guiding said slide-bar, said supporting and guiding means including a track arranged over said slide-bar, a margin-gage bar supported over said track and parallel therewith, a margin-controlling device adjustable to various positions along said bar; and means upon the said platen-carriage for engaging said adjustable device.

9. In a type-writing machine, the combination with a platen and a platen-carriage including a slide-bar, of means for supporting and guiding said slide-bar, said supporting and guiding means including a track arranged over said slide-bar, and a margin-gage bar supported over said track and parallel therewith, said margin-gage bar being provided with gradnations upon its top surface and with a strengthening-rib extending along its lower surface, teeth cut upon one edge of said bar, a margin-controlling device adjustable along said bar, locking means arranged upon said adjustable device for engaging said teeth, and means arranged upon the platen-carriage for engaging said adjustable device.

10. In a type-writing machine, the combination with a paper-carriage of a margin-gage bar, a journal-block secured upon each end of the bar, each of said blocks being provided with trunnions, fixed supports in which said trunnions are journaled, a margin-controlling device constructed for adjustment along said bar, and means upon the carriage for engaging said adjustable device.

11. In a type-writing machine, the combination with a paper-carriage including a slide-bar, of a carriage track-bar arranged over said slide-bar, ears fixed upon said track-bar, a margin-gage bar journaled in said ears, a margin-controlling slide constructed for adjustment along said margin-gage bar, and means upon the carriage for engaging said slide.

12. In a type-writing machine, the combination with a carriage, of a journaled margin-gage bar, a device carried by and adjustable along said bar, mechanism constructed to coöperate with said adjustable device for controlling the margin upon the written page, and a finger-piece secured to said margin-gage bar, whereby the latter may be given a partial rotation so as to effect a disengagement between said adjustable devices upon said bar and said coöperative mechanism.

13. In a type-writing machine, the combination with a carriage, of a margin-gage bar provided with trunnions, suitable supports in which said trunnions are journaled, at least one of said trunnions being extended beyond its support and provided with a finger-piece, a carriage-contact, and an adjustable margin-controlling device carried by said bar and releasable from the carriage-contact by the rotation of said bar.

14. In a type-writing machine, the combination with a carriage, of a margin-gage bar provided with trunnions, suitable supports in which said trunnions are journaled, at least one of said trunnions being extended beyond its support and being provided with a finger-piece, a returning-spring, and an adjustable margin-controlling device carried by said bar.

15. In a type-writing machine, the combination with a carriage, including a slide-bar, of a track-bar arranged above said slide-bar and provided with ears, a margin-gage bar provided with trunnions and journaled in said ears, each of said trunnions being extended beyond said ears, a finger-piece secured to each of said extensions, an adjustable slide carried by said bar, and means arranged upon said carriage for engaging said slide.

16. In a type-writing machine, the combination with a carriage, of a journaled margin-gage bar, a device carried by and adjustable along said bar, mechanism constructed to coöperate with said adjustable device for controlling the margin upon the written page, a finger-piece secured to said margin-gage bar, so that the latter may be given a partial rotation so as to effect a disengagement between the adjustable device upon said bar and said coöperative mechanism, a returning-spring for said bar, and a stop for limiting the rotation of said bar under the tension of said spring.

17. In a type-writing machine, the combination with a carriage, of an endwise-immovable journaled bar of the margin-gage and line-locking mechanism, an adjustable margin-controlling device arranged on said bar, means for rotating said bar to effect a release of the carriage, and a returning-spring.

18. In a type-writing machine, the combination with a platen-carriage, including a slide-bar, of means, including a track arranged over said slide-bar, for supporting and guiding the carriage, a bar supported over said track and parallel therewith, a contact adjustable upon the last-mentioned bar, and a bell striking mechanism including a device arranged upon said carriage and adapted to engage said adjustable contact.

19. In a type-writing machine, the combination of a carriage, a lever fulcrumed upon said carriage, a contact or stop arranged in the path of said lever and adjustable in the direction of movement of said carriage, whereby upon engagement of said stop and said lever at any point in the advance movements of said carriage, the said lever is caused to turn upon its fulcrum by reason of the movement of the carriage, and a bell striking mechanism on the framework of the machine constructed to be operated by said lever during the turning movement thereof, at any point in the travel of said carriage at which said adjustable stop may cause said lever to turn.

20. In a type-writing machine, the combination of a carriage, a lever fulcrumed upon said carriage, a contact or stop arranged in the path of said lever, whereby upon engagement of said stop and said lever the latter is caused to turn upon its fulcrum by reason of advance movement of the carriage, and a bell striking mechanism, including a bar arranged parallel with the line of movement of said carriage and constructed to be moved by said lever during the turning movement of the latter.

21. In a type-writing machine, the combination of a carriage, a device arranged upon said carriage and movable independently thereof, a contact or stop arranged in the path of said independently-movable device, whereby upon engagement of said stop and said device the latter is caused to move independently upon said carriage during and by reason of the advance movements of the latter, and a bell striking mechanism constructed to be operated by said device during such independent movement thereof.

22. In a type-writing machine, the combination of a carriage, a device arranged thereon and movable independently thereof, a contact or stop arranged in the path of said independently-movable device, whereby upon engagement of said stop and said device the latter is caused to move independently upon said carriage during and by reason of the advance movements of the latter, a bell striking mechanism constructed to be operated by said device during such independent movement thereof, and a spring for restoring said independently-movable device to normal position.

23. In a type-writing machine, the combination of a carriage, a trip-lever fulcrumed thereon, a contact or stop arranged in the path of said trip-lever, the construction and arrangement being such that upon engagement of said stop and said trip-lever the latter is caused by reason of the advance movements of the carriage to first turn upon its fulcrum and to then trip off from said stop, a bell-hammer, and connections between said bell-hammer and said trip-lever, whereby during the engagement of said trip-lever with said stop the said bell-hammer is moved away from the bell, and at the tripping action of said lever the said bell-hammer is permitted to strike the bell.

24. In a type-writing machine, the combination of a carriage, a trip-lever pivoted thereon, an adjustable contact or stop arranged in the path of said trip-lever, a movable bar arranged parallel with the direction of the carriage travel, and a bell-hammer operated by said movable bar, the construction and arrangement being such that during the advance movements of said carriage the said trip-lever is caused to turn upon its pivot by reason of contact with said stop, so as to move said bar and said bell-hammer, and being further such that when said trip-lever subsequently trips off from said stop, said bar is enabled to resume normal position and said bell-hammer is enabled to strike.

25. In a type-writing machine, the combination with a carriage, including a slide-bar, of carriage-tracks arranged above and below said slide-bar, a margin-gage bar arranged over said upper track, a contact adjustable upon said margin-gage bar, a vertically-arranged lever pivoted upon said carriage slide-bar and constructed to engage by its upper end said contact, a bar arranged below said lever and extending parallel with said carriage-tracks and provided at its ends with ears, whereby it is pivoted to the ends of said lower track, said pivoted bar being operable by said vertical lever at any point in the travel of said carriage determined by the adjustment of said contact, and a bell striking device operated by said pivoted bar.

26. In a type-writing machine, the combination with a carriage, including a slide-bar, of carriage-tracks arranged above and below said slide-bar, a margin-gage bar arranged over said upper track, a contact adjustable upon said margin-gage bar, a vertically-arranged lever pivoted upon said carriage slide-bar and constructed to engage by its upper end said contact, a bar arranged below said lever and extending parallel with said carriage-tracks, and provided at its ends with ears whereby it is pivoted to the ends of said lower track, said pivoted bar being operable by said vertical lever at any point in the travel of said carriage determined by the adjustment of said contact, a bell striking mechanism operated by said pivoted bar, and a spring for returning said pivoted bar to normal position.

27. In a type-writing machine, the combination with a carriage, including a slide-bar, of carriage-tracks arranged above and below said slide-bar, a margin-gage bar arranged over said upper track, a contact adjustable upon said margin-gage bar, a vertically-arranged lever pivoted upon said carriage slide-bar and constructed to engage by its upper end said contact, a bar arranged below said lever and extending parallel with said carriage-tracks and provided at its ends with ears, whereby it is pivoted to the ends of said lower track, said pivoted bar being operable by said vertical lever at any point in the travel of said carriage determined by the adjustment of said contact, a finger upon said pivoted bar, and pivoted bell-hammer constructed to be engaged by said finger.

28. In a type-writing machine, the combination with a carriage of two bars arranged parallel with the direction of the movement of said carriage, an adjustable device arranged upon one of said bars, a bell-hammer operatively connected to the second of said bars, and means connected to the carriage and controlled by said adjustable device for moving said second bar and thereby operating said bell-hammer.

29. In a type-writing machine, the combination with a carriage of two bars arranged parallel with the direction of movement of said carriage, an adjustable device arranged upon one of said bars, a bell striking device connected to the second of said bars, and a lever pivoted upon the carriage and extending from the first to the second bar and constructed to engage said adjustable device during the advance movements of the carriage and to be thereby turned upon its pivot and caused to operate said second bar.

30. In a type-writing machine, the combination with a carriage of a journaled margin-gage bar, a device adjustable along said bar, a bell-striking device, a lever pivoted upon said carriage, said lever being constructed to be engaged by said adjustable device and to be thereby turned

upon its pivot during the advance movements of the carriage, and means for enabling said lever to operate said bell striking device, said lever being also constructed to escape from said adjustable device during the subsequent advance movements of the carriage, and said adjustable device being enabled, by reason of the movement of said margin-gage bar upon its axis, to yield when engaged by said lever during the return movements of the carriage.

31. In a type-writing machine, the combination with a carriage, of a bar parallel therewith, bell striking means operated by said bar, and a lever upon the carriage adapted to directly engage said bar and move the same crosswise at variable predetermined points in the advance movement of the carriage.

32. In a type-writing machine, the combination with a carriage, of a bell striking mechanism, a contact adjustable along the line of travel of the carriage, and a two-arm lever pivoted upon the carriage, one arm of said lever being adapted to engage said adjustable contact and the other arm thereof being constructed to operate the bell striking mechanism.

33. In a type-writing machine, the combination with a carriage, of a contact adjustable along the travel of the carriage, a rocker-bar parallel with the carriage, bell striking means operated by said rocker-bar, and means upon the carriage between said adjustable contact and said rocker-bar for engaging the latter and causing it to rock.

34. In a type-writing machine, the combination with a carriage and a bell striking mechanism, of a lever mounted upon the carriage and constructed by its vibration to operate said bell striking mechaniam, and means for causing said lever to vibrate at variable predetermined points in the travel of the carriage.

35. In a type-writing machine, the combination with a carriage having a vertically-arranged pivoted lever, of a bar arranged above said carriage and carrying an adjustable contact adapted to actuate said lever, a bar arranged below said carriage and parallel therewith and adapted to be actuated by said lever, and bell striking devices operated by said second bar.

36. In a type-writing machine, the combination with a carriage of two rocker-bars, a bell striking device operated by one of said bars, a contact adjustable along the second of said bars, and a device upon the carriage constructed to rock the first bar when engaged by said adjustable contact during the advance movement of the carriage and also constructed to rock the second bar when engaging said contact during a return movement of the carriage.

37. In a type-writing machine, the combination with a carriage, of a bar parallel therewith, a bell striking device operated by said bar, a contact supported independently of said bar and adjustable along the travel of the carriage and provided with an abrupt face and an oblique face, and a device upon the carriage adapted to engage the abrupt face of said contact during the advance movement of the carriage and to be thereby enabled to move said bar crosswise to cause the bell to ring, said device on the carriage being also constructed to engage the oblique face of said contact and force the latter out of its path during the return movement of the carriage.

38. In a type-writing machine, the combination with a carriage and a bell striking mechanism, of a pivotally-supported lever upon the carriage, and a pivotally-supported contact therefor arranged upon the frame of the machine, said pivotally-supported lever being constructed to be turned upon its pivot by said contact during the advance movement of the carriage and to cause the bell to ring, and said pivotally-supported contact being constructed to turn upon its pivot during a return movement of the carriage to permit the passage of said pivotally-supported lever.

39. In a type-writing machine, the combination of a carriage, lever 87 fulcrumed thereon, adjustable contact 104, and a bell striking mechanism including bail 94.

40. In a type-writing machine, the combination of a carriage slide-bar 9, tracks 11 and 12 arranged above and below the slide-bar, bar 66, contact 104 adjustable thereon, spring-actuated lever 87 pivoted upon the slide 9, rocker-bar 94 arranged below said lever, ears provided upon said bar 94, whereby it is pivoted to the lower track 11, and a bell striking device operated by the bar 94.

41. In a type-writing machine, the combination with a carriage, of bar 94, an adjustable contact 104 having an abrupt working face and an oblique or beveled face, a lever pivoted to the carriage and comprising both an arm 87 for engaging said contact and an arm 92 for engaging said bar 94, spring 90, stop 91, and bell striking devices connected to the latter.

42. In a type-writing machine, the combination of a series of types, operating-keys therefor, a carriage, a lever fulcrumed upon said carriage, a stop arranged in the path of said lever and adjustable in the direction of movement of said carriage, whereby upon engagement of said stop and said lever at any point in the advance movements of said carriage the said lever is caused to turn upon its fulcrum by reason of the movement of the carriage, and means for preventing the keys from moving the types to the printing-point, said means being constructed to be operated by said lever during said turning movement thereof at any point in the travel of said carriage at which said adjustable stop may cause said lever to turn.

43. In a type-writing machine, the combination of a series of types, operating-keys therefor, a carriage, a lever fulcrumed upon said carriage, an adjustable stop arranged in the path of said lever, whereby upon engagement of said stop and said lever the latter is caused to turn upon its fulcrum by reason of the advance movement of the carriage, and means for preventing said keys from moving said types to the printing-point, said means including a bar arranged parallel with the line of movement of said carriage and constructed to be moved by said lever during the turning movement of the latter.

44. In a type-writing machine, the combination of a series of types, operating-keys therefor, a carriage, a device arranged upon said carriage and movable independently thereof, a stop arranged in the path of said independently-movable device, whereby upon engagement of said stop and said device the latter is caused to move independently upon said carriage during and by reason of the advance movements of the latter, and means for preventing said keys from moving said types to the printing-point, said means being constructed to be operated by said device during such independent movement thereof.

45. In a type-writing machine, the combination of a series of types, operating-keys therefor, a carriage, two bars arranged parallel with the direction of movement of said carriage, an adjustable stop arranged upon one of said bars, means connected to the second of said bars for preventing said keys from moving said types to the printing-point, and means connected to the carriage and controlled by said adjustable stop for moving said second bar and thereby preventing movement of the types to the printing-point.

46. In a type-writing machine, the combination with a series of types, operating-keys therefor, a carriage, and an escapement mechanism for said carriage, including a pivoted dog-rocker having a vertical dog-carrying arm and a horizontal arm, whereby said rocker is operated by said keys, of a depending hook pivoted upon the framework in proximity to said horizontal dog-rocker arm, and normally tending toward said rocker-arm, and means for enabling said hook to engage said horizontal arm and thereby prevent operation of said dog-rocker and said keys.

47. In a type-writing machine, the combination with a series of types, operating-keys therefor and a carriage, of a device constructed to be reciprocated at every key-stroke, and means controlled by the carriage for preventing the movement of said reciprocatory device and thereby of said keys, said means being normally spring-pressed toward said reciprocatory device, the construction and arrangement being such that during the advance movements of said carriage said means are permitted to move automatically into engagement with said reciprocatory device to prevent movement thereof and of said keys.

48. In a type-writing machine, the combination with a series of types, operating-keys therefor and a carriage, of a movable bar arranged parallel with the travel of said carriage, an intercepting device connected to said bar and extending to a part constructed to reciprocate at each motion of the keys, a lever pivoted upon the carriage and constructed to operate said bar at various points in the travel of the carriage, and means for causing a movement of said lever upon its pivot, so as to move said bar and said intercepting device and thereby prevent operation of said reciprocatory part and of said keys.

49. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a bar movable in a direction transversely of its length, means connected to said bar and operated during said transverse movement thereof for preventing said keys from moving said types to the printing-point, said bar being arranged parallel with the carriage and adjacent thereto, and extending for substantially the whole length of the carriage travel, and means upon said carriage for operating said bar at varying predetermined points in the travel of the carriage.

50. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a platen-carriage, including a slide-bar, of means including a track arranged over said slide-bar, for supporting and guiding the carriage, a bar supported over said track and parallel therewith, a stop adjustable upon the last-mentioned bar, and a line-locking mechanism, including a device arranged upon said carriage and adapted to engage said adjustable stop.

51. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a device arranged upon the carriage and movable independently thereof, a stop arranged in the path of said independently-movable device, whereby upon engagement of said stop and said device the latter is caused to move independently of said carriage by reason of the advance movements of the latter, means constructed to be operated by said device during such independent movement thereof for preventing said keys from moving the types to the printing-point, and a spring for restoring said independently-movable device to normal position.

52. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a lever fulcrumed upon the carriage, a stop arranged in the path of said lever, the construction and arrangement being such that upon engagement of said stop and said lever, the latter is caused by reason of the advance movement of the carriage to turn upon its fulcrum, an intercepting device, and means between said device and said keys, whereby when the lever is vibrated said intercepting device is caused to move to a position for preventing the keys from moving the types to the printing-point.

53. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage including a slide-bar, of carriage-tracks arranged above and below said slide-bar, a margin-gage bar arranged over said upper track, a stop adjustable upon said margin-gage bar, a vertically-arranged lever pivoted upon said carriage slide-bar and constructed to engage at its upper end with said contact, a bar arranged below said lever and extending parallel with said carriage-tracks and provided at its ends with ears whereby it is pivoted to the ends of said lower track, said pivoted bar being operable by said vertical lever at variable points in the travel of said carriage as determined by the adjustment of said stop, and means operated by said pivoted bar for preventing the keys from moving the types to the printing-point.

54. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of two bars arranged parallel with the direction of movement of said carriage, an adjustable device arranged upon one of said bars, means operated by the second of said bars for preventing the keys from moving the types to the printing-point, and a lever pivoted upon the carriage and extending from the first to the second bar and constructed to engage said adjustable device during an advance movement of the carriage, and to be thereby turned upon its pivot and caused to operate said second bar.

55. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a line-locking mechanism, a stop adjustable along the line of travel of the carriage, and a two-armed lever pivoted upon the carriage, one arm of said lever being adapted to engage said adjustable stop and the other arm thereof being constructed to operate said line-locking mechanism.

56. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a stop adjustable along the travel of the carriage, a rocker-bar parallel with the carriage, line-locking devices operated by said rocker-bar, and means upon the carriage between said adjustable stop and said rocker-bar for engaging the latter and causing it to rock.

57. In a type-writing machine, the combination with a series of types, operating-keys therefor and a carriage, of a line-locking mechanism including a rocking bar which extends parallel with the travel of the carriage, a lever on the carriage for rocking said bar, and a stop independently supported upon the framework of the machine for vibrating said lever to rock said bar and lock the line.

58. In a type-writing machine, the combination with a series of types, operating-keys therefor and a carriage having a vertically-arranged pivoted lever, of a bar arranged above said carriage and carrying an adjustable stop adapted to actuate said lever, a bar arranged below said carriage and parallel therewith and adapted to be actuated by the said lever, and line-locking devices operated by said second bar.

59. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of two rocker-bars, a line-locking device operated by one of said bars, a stop adjustable along the second of said bars, and a device upon the carriage constructed to rock the first bar when engaged by said adjustable stop during the advance movement of the carriage, and also constructed to rock the second bar when engaging said stop during a return movement of the carriage.

60. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a bar parallel with the carriage, line-locking mechanism operated by said bar, a stop supported independently of said bar and adjustable along the travel of the carriage and provided with an abrupt face and an oblique face, and a device upon the carriage adapted to engage the abrupt face of said stop during the advance movement of said carriage and to be thereby enabled to move the said bar crosswise to cause the line to lock, said device on the carriage being also constructed to engage the oblique face of said stop and force the latter out of its path during a return movement of the carriage.

61. In a type-writing machine, the combination with a series of types, operating-keys therefor, a carriage, and a line-locking mechanism, of a bail mounted upon the framework parallel with the carriage and connected to both the line-locking mechanism and an operating device on the carriage.

62. In a type-writing machine, the combination with a series of types, operating-keys therefor, a carriage, and an adjustable stop on the frame, of a rocking bar, a line-locking mechanism operated thereby, a lever on the carriage for rocking said bar to operate said line-locking mechanism, and a stop for arresting the movement of the lever, whereby the carriage is arrested when the line is locked.

63. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage including a slide-bar 9, of track 12 arranged over said slide-bar, bar 66 arranged over said track, stop 117 adjustable along said bar, lever 87 upon the carriage, and line-locking devices operated by said lever.

64. In a type-writing machine, the combination of a series of types, operating-keys therefor, a carriage, stop 117, lever 87 pivoted upon the carriage, bar 94, and intercepting-arm 112.

65. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of bar 94, adjustable stop 117 having an abrupt working face and an oblique or beveled face, a lever pivoted to the carriage and comprising both an arm 87 for engaging said stop and an arm 92 for engaging said bar 94, and a hook 112 connected to the latter and adapted to engage the dog-rocker.

66. In a type-writing machine, the combination of a series of types, keys therefor, a carriage, lever 87 fulcrumed upon the carriage, adjustable stop 117, stop 119, spring 90, and a line-locking mechanism, including bail 94 and hooked arm 112.

67. In a type-writing machine, the combination of a series of types, operating-keys therefor, a carriage, a lever fulcrumed upon said carriage, a releasable stop arranged in the path of said lever and adjustable in the direction of movement of said carriage, whereby upon engagement of said releasable stop and said lever at any point in the advance movement of said carriage the said lever is caused to turn upon its fulcrum by reason of the movement of the carriage, and means for preventing the keys from moving the device to the printing-point, said means being constructed to be operated by said lever during said turning movement thereof at variable points in the travel of said carriage at which said adjustable and releasable stop may cause said lever to turn, said stop being constructed to be moved out of the path of said lever to permit subsequent operation of the types.

68. In a type-writing machine, the combination of a series of types, operating-keys therefor, a carriage, a lever fulcrumed upon said carriage, an adjustable and releasable stop arranged in the path of said lever and constructed to turn the latter upon its fulcrum, and a line-locking mechanism including a bar arranged parallel with the carriage and operated by the turning movement of the lever, the construction and arrangement being such that said releasable stop may be moved out of the path of the lever to enable the latter to resume normal position.

69. In a type-writing machine, the combination of a series of types, operating-keys therefor, a carriage, two bars arranged parallel with the direction of movement of said carriage, an adjustable and releasable stop arranged upon one of said bars, line-locking mechanism connected to the second of said bars, and means connected to the carriage and controlled by said adjustable and releasable stop for moving the second bar and the line-locking devices, said stop being releasable to enable said line-locking devices to resume normal position.

70. In a type-writing machine, the combination with a series of types, operating-keys therefor, a carriage, and an escapement mechanism for said carriage, including a pivoted dog-rocker having a vertical dog-carrying arm and a horizontal arm, whereby said rocker is operated by said keys, of a depending hook pivoted upon the framework in proximity to said horizontal dog-rocker arm, means for enabling said hook to engage said horizontal arm and thereby prevent operation of said dog-rocker and said keys, and means for releasing said dog-rocker from the control of said hook, to permit additional letters to be written at the end of the line.

71. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a movable bar arranged parallel with the carriage, an intercepting device connected to said bar and extending to a part constructed to reciprocate at each motion of the keys, a lever pivoted upon the carriage and constructed to operate said bar at various points in the travel of the carriage, means for causing a movement of said lever upon its pivot so as to move said bar and said intercepting device and thereby prevent operation of said reciprocatory part and of said keys, and means for releasing the latter from the control of said intercepting device.

72. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of two bars arranged parallel with the carriage, an adjustable stop arranged upon one of said bars, line-locking mechanism operated by the second of said bars, a lever pivoted upon the carriage and extending from the first to the second bar and constructed to engage said adjustable stop and to be turned thereby upon its pivot and caused to operate said second bar, and means for releasing said lever from the control of said stop.

73. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of two rocker-bars, a line-locking device operated by one of said bars, a stop adjustable along the second of said bars, and a device upon the carriage constructed to engage said stop and to be operated thereby to rock the first bar to lock the line, and also constructed to be released from said stop by a rocking movement of the second bar.

74. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of two rocker-bars, a line-locking

device operated by one of said bars, a stop adjustable along the second of said bars, and a device upon the carriage constructed to engage said stop and to be operated thereby to rock the first bar to lock the line, and also constructed to be released from said stop by a rocking movement of the second bar, and also constructed to rock the second bar when engaging said stop during a return movement of the carriage.

75. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, including slide 9, of track 12 arranged over said slide, pivoted bar 66 arranged over said track, adjustable slide 117 upon said bar, lever 87 upon the carriage, final stop 191, and a line-locking mechanism operated by said lever.

76. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of lever 87 fulcrumed on the carriage, adjustable and releasable stop 117, final stop 191, and a line-locking mechanism including bail 94.

77. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of lever 87 fulcrumed on the carriage, adjustable and releasable stop 117, stop 191, bar 94, and intercepting-arm 112.

78. In a type-writing machine, the combination with a series of types, operating keys therefor, and a carriage, of a lever fulcrumed upon said carriage, a stop arranged in the path of said lever and adjustable in the direction of movement of said carriage and also constructed to operate said lever, and a combined bell striking and line-locking mechanism actuated by said lever during the turning movements thereof.

79. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a lever fulcrumed upon said carriage, an adjustable slide having a contact and a stop each constructed to turn the lever, and a combined bell striking and line-locking mechanism, including a bar arranged parallel with the carriage and constructed to be actuated by said lever during its turning movements.

80. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, including a slide-bar, of carriage-tracks arranged above and below said slide-bar, a margin-gage bar arranged over said upper track, a device adjustable upon said margin-gage bar and provided with two contacts or stops, a vertically-arranged lever pivoted upon said carriage slide-bar and constructed to engage by its upper end said stops or contacts, a rocker-bar arranged below said lever and parallel with the carriage, and bell striking and line-locking devices operated by said rocker-bar.

81. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of two bars arranged parallel with the carriage, an adjustable device arranged upon one of said bars, both a bell striking device and a line-locking device connected to the second of said bars, and a lever pivoted upon the carriage and extending from the first to the second bar and constructed to engage said adjustable device and to be thereby turned upon its pivot and caused to operate said second bar.

82. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a combined bell striking and line-locking mechanism, a stop adjustable along the line of travel of the carriage, and a two-armed lever pivoted upon the carriage, one arm of said lever being adapted to engage said adjustable stop or contact and the other arm thereof being constructed to operate said combined bell striking and line-locking mechanism.

83. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of bar 94, adjustable stops 104 and 117, each having an abrupt or working face and an oblique or beveled face, a trip-lever pivoted to the carriage and comprising both an arm 87 for engaging said stops and an arm 92 for engaging said bar 94, and both bell striking devices and line-locking devices connected to the bar 94.

84. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of two contacts adjustable along the line of carriage travel, a lever pivoted upon the carriage and constructed to be operated by said contacts, bell striking devices actuated by said lever when the latter is operated by the first of said contacts, line-locking devices actuated by said lever when the latter is operated by the second of said contacts, and means for releasing said lever from the control of said second contact, whereby additional letters may be written.

85. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of two contacts adjustable along the line of carriage travel, a lever pivoted upon the carriage and constructed to be operated by said contacts, bell striking devices actuated by said lever when the latter is operated by the first of said contacts, line-locking devices actuated by said lever when the latter is operated by the second of said contacts, means for releasing said lever from control of said second contact, whereby additional letters may be written, and means for again vibrating said lever and causing the latter to finally lock the line.

86. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a bell striking device, means for preventing said keys from moving said types to the printing-point, and a lever pivoted upon the carriage and constructed to turn upon its pivot and thereby operate said bell striking device and said line-locking mechanism, and also constructed to arrest the carriage and prevent its further advance movement.

87. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a bell striking device, mechanism for preventing said keys from moving said types to the printing-point, and a member constructed to control both said bell striking device and said line-locking mechanism, said member being operatively connected to said carriage and being constructed and arranged to operate said bell striking device by a limited movement, and to operate said line-locking mechanism by a greater movement in the same direction.

88. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a margin-gage bar, a gage adjustable thereon and provided with two projections or working faces, a bell striking device, mechanism for preventing said keys from moving said types to the printing-point, and a member independently movable upon said carriage and constructed to coact with said adjustable gage to control both said bell striking device and said line-locking mechanism, said independently-movable member being constructed to contact with one of said projections upon said adjustable gage and to be thereby given a limited movement, whereby said member is caused to operate said bell striking device, and said independently-movable member being also constructed to thereupon slip off from said projection and thereby release said bell striking device, whereby an alarm is sounded, and being further constructed and arranged to thereupon engage the other of said projections upon said adjustable gage and to be thereby given a further independent movement in the same direction and caused to operate said line-locking mechanism.

89. In a type-writing machine, the combination of a series of types, operating-keys therefor, and a carriage, of a bell striking device, mechanism for preventing said keys from moving said types to the printing-point, a movable bar arranged parallel with the carriage and controlling both said bell striking device and said line-locking mechanism, means upon the carriage for operating said movable bar, and adjustable means for determining at what part of the longitudinal travel of the carriage said movable bar shall be operated, the construction and arrangement being such that during the advance movements of the carriage said bar is first given a limited movement to operate said bell striking device, and is thereafter given a greater movement in the same direction to operate said line-locking mechanism.

90. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a bell striking device, mechanism for preventing said keys from moving said types to the printing-point, a movable bar arranged parallel with the travel of the carriage and operatively connected to both said bell striking device and said line-locking mechanism, a lever pivoted upon said carriage and constructed to engage and control said movable bar, a margin-gage bar, a gage adjustable thereon and provided with two working faces, with each of which said pivoted lever is constructed to engage, so that during the advance movements of the carriage said lever is caused to turn about its pivot, whereby said movable bar and said bell striking device are operated, the construction and arrangement being such that during the movement of the carriage said lever slips off from the first of the working faces upon said adjustable gage and thereby releases said movable bar and enables said bell striking device to sound an alarm, and such that thereupon said pivoted lever engages the second face upon said adjustable slide and is thereby caused, through subsequent advance movements of the carriage, to give said movable bar a greater movement in the same direction, so as to operate said line-locking mechanism, and means for limiting the turning movement of said lever, whereby said carriage is arrested.

91. In a type-writing machine, the combination with a series of types, operating-keys therefor and a carriage, of two bars arranged parallel with the direction of movement of said carriage, an adjustable device arranged upon one of said bars, a bell striking device connected to the second of said bars, means also connected to said second bar for preventing said keys from moving said types to the printing-point, and means connected to the carriage and controlled by said adjustable device for moving said second bar so as to operate said bell striking device and also so as to prevent the movement of the types to the printing-point.

92. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of an escapement mechanism for said carriage, including a pivoted dog-rocker, comprising both a vertical arm carrying escapement-dogs and a horizontal arm connected to said keys, whereby said dog-rocker is operated, a hook pivoted upon the framework of the machine and extending to said horizontal dog-rocker arm, a movable bar arranged parallel with the carriage travel and engaging said hook, a bell-striker also connected to said bar, a lever pivoted upon said carriage and constructed to engage said movable bar, and a device adjustable in a direction parallel with the movement of said carriage and constructed to engage said pivoted lever, so that the latter is caused during the advance movements of the carriage to turn upon its pivot and operate said movable bar, both to cause said bell striking device to sound an alarm and also to cause said hook to engage said dog-rocker arm and prevent subsequent movement of said arm and hence of said keys.

93. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a bar movable in a direction transversely of its length, means connected to said bar and operated during said transverse movement thereof for sounding an alarm and also for preventing said keys from moving said types to the printing-point, said bar being arranged parallel with the carriage and adjacent thereto, and means upon said carriage for giving said bar a limited transverse movement to cause the sounding of the alarm, and also for giving said bar a greater transverse movement for operating said line-locking mechanism, said bar-operating means being constructed to operate the bar at varying predetermined points in the travel of the carriage.

94. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a margin-gage bar, a device adjustable along said bar, a bell striking device, means for preventing said keys from moving said types to the printing-point, and means controlled by said adjustable device and connected to the carriage and arranged between said adjustable device and the bell striking and line-locking devices for operating the latter.

95. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a bell striking device and line-locking mechanism, a bar arranged parallel with the travel of the carriage and operatively connected to both said bell striking device and said line-locking mechanism, a lever pivoted upon the carriage above said bar and comprising an elbow, the angle of which normally engages said bar, and also comprising vertical arm 87, a margin-gage bar, and a slide arranged upon said bar and provided with two working faces, each of which is constructed to engage the upper end of said arm 87, whereby during the advance movements of the carriage, said lever is given a limited rotation upon its pivot and said movable bar is forced downwardly to a limited extent by the angle of said elbow, the construction and arrangement being such that the upper end of said arm 87 thereupon slips off from the first working face upon said adjustable slide, a spring connected to said lever for thereupon causing it to resume normal position upon said carriage, and the construction and arrangement being further such that said arm thereupon contacts with the second of said working faces upon said adjustable slide and causes the extreme end of said elbow to engage said movable bar, to give it a further movement in the same direction and cause said line-locking device to operate.

96. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a bell striking device, a line-locking mechanism, a device adjustable in the direction of travel of said carriage, and a tripping-lever pivoted upon said carriage between said adjustable device and said bell striking and line-locking mechanism, and constructed to coöperate with said adjustable device so as to cause successively a movement of the bell striking device and an operation of the line-locking mechanism.

97. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a bell striking device, a line-locking mechanism, a margin-gage bar journaled upon a fixed portion of the machine and provided with a finger-piece whereby it may be turned in its bearings, a device adjustable along said margin-gage bar, and a tripping-lever pivoted upon said carriage and constructed to coöperate with said adjustable device so as to cause successively a movement of the bell striking device and an operation of the line-locking mechanism, the construction and arrangement being such that said margin-gage bar may then be turned by said finger-piece to release said tripping-lever from the control of said adjustable device, whereby said line-locking mechanism is released, so that additional letters may be written upon the line.

98. In a type-writing machine, the combination with a carriage, of a bar arranged parallel with the travel of said carriage, a lever pivoted upon said carriage and constructed to engage said bar, a margin-gage bar, a device adjustable along said margin-gage bar and constructed to engage said lever to cause it to turn upon its pivot and operate said movable bar and bell striking device, whereby the approach of the end of the line is indicated, a second device also adjustable along said margin-gage bar and constructed to engage said lever to limit the return movements of said carriage, and means for enabling said lever at will to pass said second adjustable device, so as to permit writing in the left-hand margin upon the paper, the construction and arrangement being such that said lever also engages said second adjustable device and is caused thereby to vibrate during the subsequent advance movements of the carriage, and such that said lever slips off from said second adjustable device, whereby an alarm is sounded so as to notify the operator that the margin is filled.

99. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a bell striking device, means for preventing said keys from moving said types to the printing-point, and a lever pivoted upon the carriage and constructed to turn upon its pivot and thereby operate said bell striking device and said line-locking mechanism, and also constructed to arrest the carriage and prevent its further advance movement, and also to limit the return movements of the carriage.

100. In a type-writing machine, the combination with a series of types, operating-keys therefor, and a carriage, of a bell striking device, means for preventing said keys from moving said types to the printing-point, and a lever pivoted upon the carriage and constructed to turn upon its pivot and thereby operate said bell striking device and said line-locking mechanism and also to arrest the carriage and prevent its further advance movement, an adjustable device for coacting with said lever to limit the return movements of the carriage, and means for enabling said lever to pass said adjustable device, to enable words to be written in the left-hand margin upon the written page, said lever being also constructed to coact with said adjustable device during subsequent advance movements of the carriage, so as to again operate said bell striking device and notify the operator that the margin is filled.

101. In a type-writing machine, the combination with a series of types, operating-keys therefor and a carriage, of lever 87 pivoted on the carriage and adapted to ring the bell and lock the line on the forward traverse of the carriage, stop 91, and stop 86 adapted to arrest said lever on the return movement of the carriage and thereby arrest the carriage at variable predetermined points.

102. In a type-writing machine, the combination with a series of types, operating-keys therefor and a carriage, of rocker-bar 66, adjustable stops 104, 117 and 86, lever 87 pivoted upon the carriage, stops 91 and 119 upon the carriage, stops 191 and 192 upon the framework, and a combined bell-ringing and line-locking mechanism actuated by said lever.

103. In a type-writing machine, the combination with a platen and a platen-frame, of a horizontal rod secured in the end bars of said platen-frame in rear of the platen, a pair of depending arms hinged upon said rod, a pressure-roller journaled in the lower ends of said arms, a forwardly-extending spring secured to each of said arms and provided at its forward end with a bearing, a second roller journaled in said bearings, and means for pressing said depending arms toward the platen.

104. In a type-writing machine, the combination with a platen and a platen-frame, of a horizontal rod extending parallel with the platen and rigidly secured upon said platen-frame, a pair of collars rigidly secured to said rod, each collar having a cut-away portion or opening, a pair of depending arms whose upper ends are arranged in said openings and hinged upon said rod, a horizontal shaft journaled in the lower ends of said arms, a pressure-roller mounted upon said horizontal shaft, a spring rigidly secured at its lower end to the lower end of each of said arms and having a bearing at its upper end against each of said collars, said spring also extending forwardly at its lower portion and being provided at its forward end with a bearing, a second shaft carried by said bearings, and a pressure-roller arranged upon said second shaft.

105. In a type-writing machine, the combination with a platen and a platen-frame, of a pair of depending arms suitably hinged upon the platen-frame, means for pressing said arms toward the platen, a pressure-roller carried by the lower ends of said arms, spring mechanism carried by said arms, a pressure-roller independently supported upon said spring mechanism forwardly of the first-mentioned pressure-roller, the construction and arrangement being such that each of said pressure-rollers bears independently against the platen, a rock-shaft journaled in the end bars of the platen-frame and provided with tappets, whereby said rock-shaft is enabled to swing said depending arms rearwardly, and a finger-lever secured upon said rock-shaft, the construction and arrangement being such that upon the operation of said finger-lever said rock-shaft is rocked, said depending arms are wrung rearwardly and all of said pressure-rollers are moved away from said platen.

106. In a type-writing machine, the combination with a platen and a platen-frame, of a sheet-metal deflector pivotally supported upon said platen-frame, a pair of pendent swinging arms also supported upon said platen-frame independently of said deflector, means for pressing said arms toward said platen, pressure-rollers carried by said arms and pressed independently against said platen, and means also carried by said arms for independently pressing said deflector against said platen.

107. In a type-writing machine, the combination with a platen and a platen-frame, of a paper-shelf, a clutch secured thereto, and a rod carried by said platen-frame wherewith said clutch engages, the construction and arrangement being such that said paper-shelf may be turned about said rod as a center and such that the friction of said clutch on said rod maintains the paper-shelf in any position to which it may be turned, and being further such that said clutch may yield to enable the paper-shelf to be withdrawn from said rod and to be replaced thereupon.

108. In a type-writing machine, the combination with a platen and a platen-frame, of a hinge-rod supported upon said platen-frame, a paper-

shelf, a pair of clutches secured to said paper-shelf and formed with laterally-extending bosses or hubs which are bored to form an opening for said rod and are also cut away or notched, and a long slot formed in the body of each of said clutches and intersecting said hubs or bosses so as to enable the said clutch to yield so that said paper-shelf may be pulled off from said rod and replaced thereon, said clutches permitting said paper-shelf to be swung bodily about said rod, and the pressure of the clutches being sufficient to hold the paper-shelf firmly in place upon the rod.

109. In a type-writing machine, a platen-frame, a suitable track for said platen-frame, a margin-gage bar arranged in rear of said platen, a margin-controlling device adjustable along said bar, a paper-shelf arranged upon said carriage and extending over said margin-gage bar, and means for enabling said paper-shelf to be moved in a direction transversely of its length so as to give access to said margin-gage bar and the adjustable device thereon.

110. In a type-writing machine, a paper-carriage having a paper-table extending rearwardly over adjustable margin stop devices on the framework and immediately behind said table, the latter being arranged to be swung forwardly so as to afford access to said adjustable margin devices.

111. In a type-writing machine, the combination with a platen and a platen-frame, of a paper-shelf arranged in rear of the platen, and a rigid frame-like extension detachably secured to said paper-shelf and extending upwardly and rearwardly to serve as a support for the paper.

112. In a type-writing machine, the combination with a platen of a platen-frame, of a paper-shelf arranged in rear of the platen, a strip secured to the under side of said paper-shelf and having its ends bent or fluted to form openings, and a frame formed with prongs for detachably engaging said openings, said frame extending upwardly and rearwardly from said paper-shelf.

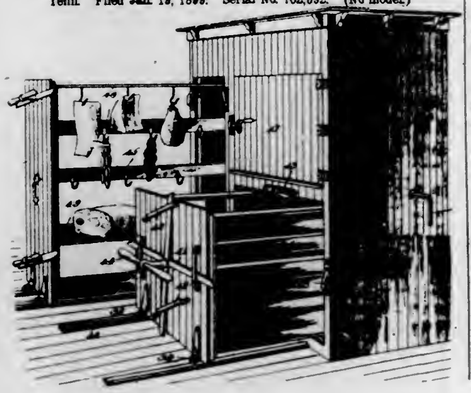
113. In a type-writing machine, the combination with a carriage slide-bar, of a track arranged below said slide-bar, a track arranged above said slide-bar, said tracks and said slide-bar being provided with ball-bearing grooves, brackets to which said tracks are attached, an ear formed upon said upper track about midway between said brackets, a screw passing downwardly through said ear, and a fixed bracket engaged by said screw, whereby said upper track may be adjusted.

114. In a type-writing machine, the combination with a carriage slide-bar, of a track arranged below said slide-bar and a track arranged above said slide-bar, said tracks and said slide-bar being provided with ball-bearing grooves, brackets to which said tracks are attached, and a screw passing upwardly into said lower track at a point about midway between said brackets, said screw also engaging a fixed portion of the machine, whereby said lower track may be adjusted.

115. In a type-writing machine, the combination with a carriage slide-bar of an upper adjustable fixed rail and a lower independently-adjustable fixed rail.

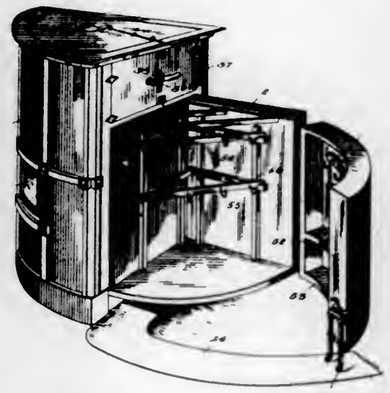
116. In a type-writing machine, the combination with a carriage slide-bar, of a track arranged below said slide-bar, a track arranged above said slide-bar, said tracks and said slide-bar being provided with ball-bearing grooves, brackets to which said tracks are attached, an ear formed upon said upper track about midway between said brackets, a screw passing downwardly through said ear, a fixed bracket engaged by said screw, whereby said upper track may be adjusted, and a screw passing upwardly into said lower track and engaging a fixed portion of the machine, whereby said lower track may be adjusted.

657,929. REFRIGERATOR. LOUIS J. FELDKIRCHER, Nashville, Tenn. Filed Jan. 19, 1899. Serial No. 702,692. (No model.)



Claim.—In an ice-chest, the combination, with an exterior comprising four walls, a top and a bottom, each of which is doubled and provided with a packing-strip around its edges and a filling, one of the walls being provided with three openings, two of which are arranged one above the other, and the other one is narrower than said two openings and substantially as high as the top one, the outer sides of the wall being higher than the inner sides and the top and bottom each having its inner side smaller than the outer side and fitting within the outer sides of the walls, of bolts through two of the walls and having their ends in engagement with the wall provided with the openings and the wall directly opposite, an ice-rack within the box adjacent to the upper opening, a swinging door in each opening and a sliding shelf-rack in each of the other openings, the ends of which are adapted to close said openings.

657,930. REFRIGERATOR. LOUIS J. FELDKIRCHER, Nashville, Tenn. Filed Sept. 18, 1899. Serial No. 730,933. (No model.)



Claim.—1. A refrigerator having a compartment of the shape of a quarter-circle in horizontal section, in combination with a receptacle of similar form swung on a vertical pivot at about the center of the circle adapted to be swung on said pivot into and out of the compartment, and having a door formed in the curved wall thereof, substantially as described.

2. A refrigerator having a compartment of the shape of a quarter-circle in horizontal section, in combination with a receptacle of similar form swung on a vertical pivot at about the center of the circle and adapted to be swung on said pivot into and out of the compartment, a door forming the curved wall of the receptacle and hinged at the outside of its outside radial wall, and adjustable roller-supports adapted to be engaged with the floor of the room to support the door while open, substantially as described.

3. In a refrigerator, the combination of a meat-receptacle pivoted above the floor of the room, a door pivoted to the receptacle and adjustable roller-supports on the door to support it while open, substantially as described.

4. In a refrigerator, the combination of a door swung above the floor, keepers on its end, slidable rods in said keepers, rollers at the lower ends of said rods, a handle for raising the rods and a latch for retaining them in raised position, substantially as described.

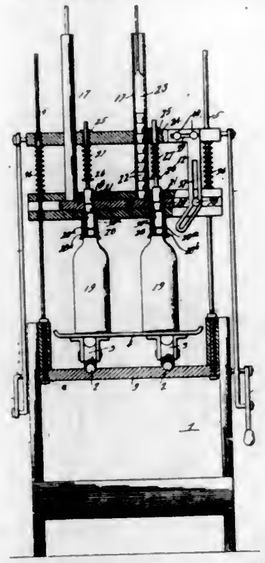
5. In a refrigerator, the combination of a receptacle of sector shape, a rack fronting outward, a sector-shaped casing to receive the receptacle, and a window with hinged sash, in the curved side of the casing to afford access to the rack, substantially as described.

6. In a refrigerator, the combination of a sector-shaped casing, a window in its curved side, a sector-shaped meat-receptacle hung to swing into the casing, a curtain to inclose its curved side, and a window-hole and flap in the curtain registering with the window when the receptacle is swung into the casing, substantially as described.

7. In a refrigerator, the combination of a sector-shaped receptacle provided with horizontal grooves in the inside of its radial walls, and shelves adapted to be removably fitted into said grooves, and racks hinged between the radial walls above the shelves, substantially as described.

8. In a refrigerator, the combination with a swinging door carrying keepers, of a sliding bracket carrying rollers at one end and formed with a handle portion at its opposite end, and a latch carried by the door adapted to engage said bracket and hold the same raised, substantially as described.

657,931. CORKING ATTACHMENT FOR BOTTLE-FILLING MACHINES. GEORGE W. FIELD, North Branch, N. J. Filed May 18, 1900. Serial No. 17,153. (No model.)



Claim.—1. In a machine of the class described, the combination of a frame provided with suitable guides, an upper cross-head or support mounted on the guides and provided with plungers, a lower cross-head provided with hoppers, a reciprocating slide or carrier arranged to convey corks or stoppers from the hoppers to points beneath the plungers, said slide or carrier being connected with the upper support or cross-head and adapted to be reciprocated by the same, and means for operating the upper cross-head or support, substantially as described.

2. In a machine of the class described, the combination of upper and lower cross-heads or supports, plungers mounted on the upper cross-head, hoppers carried by the lower cross-head, and a reciprocating slide or carrier operated by the upper cross-head and adapted to convey corks or stoppers from the hoppers to points beneath the plungers, substantially as described.

3. In a machine of the class described, the combination of upper and lower cross-heads, plungers mounted on the upper cross-head, a reciprocating slide arranged on the lower cross-head and adapted to convey corks or stoppers to points beneath the plungers, and a guide mounted on the upper cross-head and connected with the slide, substantially as described.

4. In a machine of the class described, the combination of upper and lower cross-heads, a reciprocating slide mounted on the lower cross-head and adapted to carry corks or stoppers, plungers mounted on the upper cross-head, and an arm secured to the upper cross-head and provided with a guide or way engaged by the slide and having an inclined portion adapted to reciprocate the said slide, substantially as described.

5. In a machine of the class described, the combination of upper and lower cross-heads, plungers mounted on the upper cross-head, a transversely-reciprocating carrier extending beneath each of the plungers and arranged to carry corks or stoppers to points beneath the same, and means for connecting the upper cross-head with the movable carrier, substantially as described.

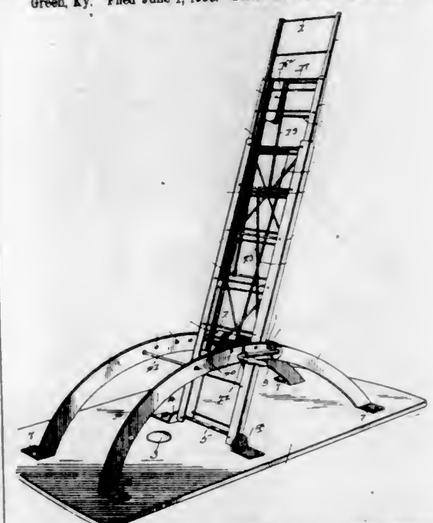
6. In a machine of the class described, the combination of the upper and lower cross-heads, plungers mounted on the upper cross-head, hopper-tubes carried by the lower cross-head, a transversely-reciprocating carrier extending beneath all of the plungers and hoppers and arranged to convey corks or stoppers from the hoppers to the plungers, and means for operating the carrier, substantially as described.

7. In a machine of the class described, the combination of upper and lower cross-heads, springs interposed between the cross-heads, plungers mounted on the upper cross-head, a carrier for conveying corks beneath the plungers, said carrier being operatively connected to the upper cross-head, and operating mechanism connected with one of the cross-heads, substantially as described.

8. In a machine of the class described, the combination of a frame provided with vertical guides, upper and lower cross-heads mounted thereon, a reciprocating slide mounted in a suitable way of the lower cross-head and connected with the upper cross-head, springs interposed between the cross-heads, hoppers mounted on the lower cross-heads and adapted to receive the corks or stoppers, plungers carried by the upper cross-head, and operating mechanism connected with one of the cross-heads, substantially as described.

9. In a machine of the class described, the combination of a support, a depending tube provided at its lower end with an outwardly-extending stop, a cap arranged on the tube and provided with interior stops, and means for yieldingly engaging the cap, substantially as described.

657,932. EXTENSION-LADDER. GEORGE W. GARDNER, Bowling Green, Ky. Filed June 1, 1900. Serial No. 18,773. (No model.)



Claim.—1. In a foldable and extensible ladder, a hingedly-mounted base-section, extensible sections carried thereby, a common operating device for folding and extending the ladder, extending means connecting the operating device with the extensible sections, and means for folding the ladder upon its hingedly-mounted base-section, said means being carried by the base-section and also having a detachable connection with the extending means.

2. In a foldable and extensible ladder, a hingedly-mounted base-section, extensible sections carried thereby, a common operating-drum for folding and extending the ladder, a main cable wound upon the drum and connected to the extensible sections for extending the latter, and a cable for folding the ladder carried by the base-section, and having a detachable connection with the main cable.

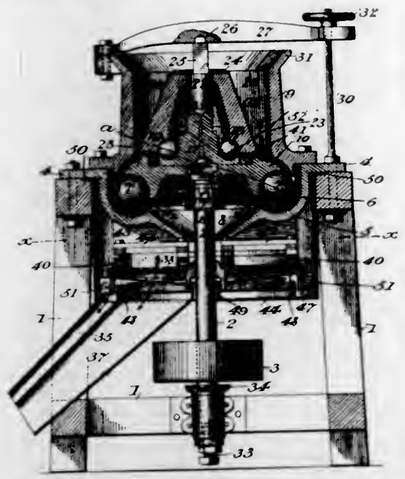
3. In a foldable and extensible ladder, a hingedly-mounted base-section, extensible sections carried thereby, a common operating-drum for folding and extending the ladder, a main cable for extending the sections, said cable being wound upon the drum and also connected to the sections, a stop carried by the main cable, and a cable for folding the ladder, said cable being carried by the base-section, and also having a hook for detachable engagement with the stop carried by the main cable.

4. In an extensible ladder, the combination with a fixed base-section, and a plurality of telescopically-connected sections, of a single operating device, a main extending-cable connected to the operating device, and also connected to one of the movable sections, a pulley carried by the base-section and receiving the main cable, another cable having one end connected to the fixed base-section and its opposite end connected to another movable section, and a pulley carried by the first-mentioned movable section and receiving the intermediate portion of the other cable.

657,933. CRUSHING AND PULVERIZING MACHINERY. THOMAS R. GOTH, San Francisco, Cal. Filed May 31, 1899. Serial No. 718,860. (No model.)

Claim.—1. In a combined crushing and pulverizing machine, a superimposed crushing-muller and a cylinder or casing therefor, a train of balls to operate the muller rolling in a revoluble inclined raceway set eccentric to the axis of revolution and inclined to the plane of its orbit to produce a gyratory movement of the muller and apply an oblique force thereto, substantially as specified.

2. In a combined crushing and pulverizing machine, the revoluble member 10 having on its top an inclined and eccentric raceway for a series of bearing-balls and a gyratory muller mounted thereon, a larger guide or way on the bottom to receive a train of pulverizing-balls that oppose their pressure obliquely to the upper train of balls and to the gyratory muller, substantially as specified.



3. In a combined crushing and pulverizing machine, a non-revoluble muller resting upon and actuated by a series of balls, a revoluble raceway for these balls set eccentric to a shaft by which the raceway is driven and at an inclination from a horizontal plane and means to revolve the raceway, substantially as shown and specified.

4. In a combined crushing and pulverizing machine, a superimposed gyratory muller supported on and actuated by rolling balls, mounted in a revoluble member having an inclined and eccentric raceway on the top and a concentric groove or guide for pulverizing-balls on the bottom, these race or guide ways of different radius to give the upper and lower balls an oblique position in the line of pressure and in respect to the axis of revolution, the two sets of balls therein opposing each other and exerting an oblique force on the gyrating muller, as specified.

5. The revoluble member 10 having an inclined and eccentric raceway on its top for the balls 19, a concentric way or groove on its bottom to receive the pulverizing-balls 7, the stem 15 and adjustable means for applying pressure on this stem and thereby to the pulverizing-balls 7, substantially as specified.

6. In a combined crushing and pulverizing machine a ball pulverizing apparatus, a superimposed crushing apparatus, a rotative bearing member resting on the pulverizing-balls provided with an upward-projecting stem set eccentric at the base and oblique to the axis of rotation, a tapering muller mounted on the stem resting on a ball-bearing at its base and an embracing crushing-cylinder around the muller so disposed and made that the muller can pass out of the top of the cylinder substantially as specified.

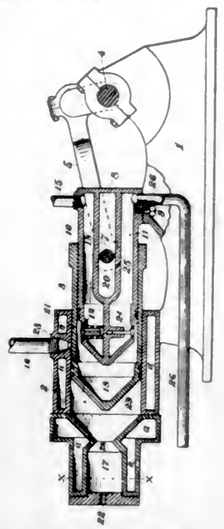
7. In a combined crushing and pulverizing machine, the revoluble member 10 pivotally supported on a main driving-shaft and provided with an inclined and eccentric raceway on its top, a series of balls therein, a superimposed muller resting on these balls and deriving an angular or upward and lateral thrust therefrom, substantially as specified.

8. In a combined crushing and pulverizing machine, a frame, a vertical driving shaft or spindle, a circular concave seat, with balls therein, heavy member 10, centrally mounted on the spindle, inclined stem 15, conical gyratory muller 18, with ball-supports, and surrounding cylinder 9, having flaring mouth 31, substantially as specified

9. The combination of vertically-adjustable driving-shaft 2, concave seat 5, balls 7, heavy member 10, inclined stem 15, conical muller 18, cylinder 9, lever 27, and means to apply pressure through said lever to the pulverizing-balls 7, substantially as specified.

10. In a combined crushing and pulverizing machine, an eccentric non-revoluble crushing-muller, an eccentric and inclined revolving raceway and guide with rolling balls to actuate the muller, a hopper below the pulverizing parts to discharge centrally around the driving-shaft, and a revoluble screen in combination therewith attached to the driving-shaft below the pulverizing apparatus, substantially in the manner shown and described.

657,984. REAR-COMPRESSION GAS-ENGINE. GEORGE E. HOYT, San Francisco, Cal. Filed Mar. 9, 1900. Serial No. 8,033. (No model.)



Claim.—1. In a gas-engine, a main cylinder, a trunk-piston movable within said main cylinder, forming a combustion-chamber at the outer end of the latter, a fixed trunk-piston extending within said movable trunk-piston, forming a compression-chamber between it and the latter, a gas inlet and outlet in said fixed trunk-piston, and valves in said fixed trunk-piston, leading to and from said compression-chamber, substantially as specified.

2. In a gas-engine, a main cylinder, a trunk-piston movable therein, forming a combustion-chamber between the two, a fixed trunk-piston extending within said movable piston, forming a compression-chamber between the two latter, a horizontal partition in said fixed trunk-piston, dividing it internally into two chambers or passages, an inlet-pipe for gas to one chamber, an outlet-pipe for gas from the other chamber to the combustion-chamber, and valves between said chambers or passages respectively and the compression-chamber, substantially as specified.

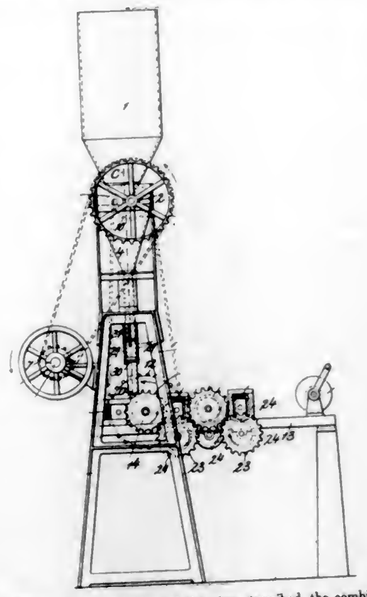
3. In a gas-engine, a main cylinder, a trunk-piston movable therein, forming a combustion-chamber between the two, an extension 17 to said combustion-chamber in which ignition takes place, a fixed trunk-piston extending within the movable piston forming a compression-chamber between the two latter, said fixed piston being divided into two chambers or passages, a gas-inlet to one passage 19, a gas-outlet from the other passage 25, to the combustion-chamber, a valve opening from passage 19 to the compression-chamber, and a valve opening into passage 25 from the compression-chamber, substantially as specified.

4. In a gas-engine, a main cylinder, a trunk-piston movable therein, a fixed trunk-piston extending within and guiding the movable trunk-piston, a horizontal partition in said fixed trunk-piston, dividing it internally into two passages, a slotted way in said partition for the cross-pin to traverse in, a cross-pin in said slot fixed in the walls of the movable trunk-piston, a forked connection between said cross-pin and the main crank-shaft, and a main crank-shaft from which the movable trunk-piston derives its motion, substantially as specified.

5. In a gas-engine, a main cylinder, conically formed at its outer extremity, an extension 17 to said main cylinder, opening into the conically-formed end thereof by a contracted passage 28, a trunk-piston movable within said main cylinder, conically formed at its extremity to fit the form of the main cylinder, a fixed trunk-piston extending within and supporting the movable piston, divided into two passages, a gas-inlet to one passage, a gas-outlet from the other passage connected by pipe connection with the said extension 17, and valves between the said passages respectively and the space between the fixed piston and the movable piston, substantially as specified.

6. In a gas-engine, a main cylinder, a trunk-piston movable therein, a fixed trunk-piston extending within said movable piston, supporting and guiding the latter at top and bottom, said fixed piston being flattened at the sides to form clearance-spaces for the strengthening-bosses of the movable piston, bosses 14 formed on the interior of said movable piston, and a cross-pin 7, fixed in said bosses, to form a means of attachment for the mechanism which moves the movable piston, substantially as specified.

657,985. MACHINE FOR FILLING TUBULAR CASINGS. CARL IMBODEN, Murgenthal, Switzerland. Filed Oct. 28, 1899. Serial No. 735,114. (No model.)



Claim.—1. In a machine of the class described, the combination with means for filling the tubular casing, of rollers disposed in pairs for compressing said filled tubular casing, said rollers having their axes all arranged in parallelism.

2. In a machine of the class described, the combination, of means for filling the tubular casing, a pair of contacting rollers located below said filling means and adapted to compress the filled casing, and other pairs of contacting rollers arranged with their axes in a common plane and parallel with each other.

3. In a machine of the class described, the combination of means for filling the tubular casing, a pair of contacting rollers located below said filling means and adapted to compress the filled casing, and other pairs of contacting rollers arranged with their lines of contact in a plane tangent to the lower surface of the said pair of rollers.

4. In a machine of the class described, the combination with a receptacle having a filling-tube arranged to receive the tubular casing to be filled, of a pair of contacting rollers located below said filling-tube, and other pairs of contacting rollers arranged with their lines of contact in a plane tangent to the lower surface of the first-mentioned pair of rollers.

5. In a machine of the class described, the combination with means for filling the tubular casing, of rollers for rolling said filled casing, and means for cleaning said rollers, said means adapted to precipitate the adhering material in the path of movement of said filled casing.

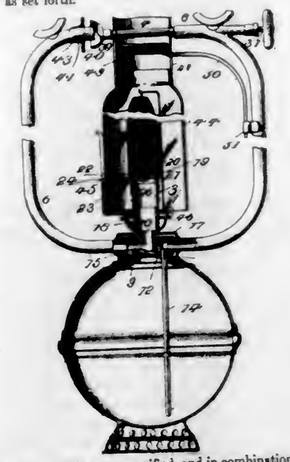
6. In a machine of the class described, the combination with the receptacle and the filling-tube adapted to receive the tubular casing that is to be filled, of a pair of contacting rollers located below said filling-tube and adapted to compress the filled casing, and other pairs of contacting rollers arranged with their axes in parallelism to each other and to the said pair below said filling-tube.

7. In a machine of the class described, the combination with the receptacle and the filling-tube adapted to receive the tubular casing, of a pair of contacting rollers located below said filling-tube and adapted to compress the filled casing, and other pairs of contacting rollers arranged with their axes in a common plane and parallel with each other.

8. In a machine of the class described, the combination with the receptacle and the filling-tube adapted to receive the tubular casing, of a pair of contacting rollers located below said filling-tube and adapted to compress the filled casing, and other pairs of contacting rollers arranged with their lines of contact in a common plane, and guide-plates intermediate the said pairs and having their top surface lying in said plane.

657,936. VAPOR-LAMP. WILLIAM H. IRBY, Memphis, Tenn. Filed Apr. 28, 1900. Serial No. 14,747. (No model.)

Claim.—1. In a lamp of the character described, and in combination with the burner, generator and lamp-body, oppositely-disposed tubular arms for conveying the gaseous mixture to the burner and hydrocarbon to the generator, castings fitted to the lower ends of said arms and formed with matching basal extension secured to the top portion of the lamp-body, one of the castings having a vertical extension in line with the burner, and a tube extending from the other casting and passed within the lamp-body and terminating a short distance from the bottom thereof, substantially as set forth.



2. In a lamp of the type specified, and in combination with the lamp-body, the burner and the generator, oppositely-disposed tubular arms serving, respectively, to convey the hydrocarbon to the generator and the gaseous mixture to the burner, castings fitted to the lower ends of said arms and having offstanding basal portions which overlap and are secured to the top side of the said lamp-body, one of the castings having a vertical extension in line with the burner, and the other casting having a tube pendent therefrom and entering the lamp-body and terminating a short distance from the bottom thereof, substantially as set forth.

3. In a lamp of the character substantially as described, and in combination with the lamp-body, burner and generator, oppositely-disposed tubular arms in communication with, respectively, the burner and generator, castings fitted to the lower ends of the said arms and formed with complementary basal extensions unitedly constituting a support overlapping and secured to the top side of the lamp-body, one of the castings having a vertical extension in line with the burner, and a tube pendent from the other casting and extending within the lamp-body and terminating a short distance from the bottom thereof, substantially as specified.

4. In a lamp of the class set forth, a lamp-body, a burner and a generator, in combination with oppositely-disposed tubular arms in communication with, respectively, the burner and lamp-body, castings fitted to the lower ends of the arms and having offstanding basal portions overlapping and secured to the top side of the lamp-body and unitedly forming a basal support, a housing inclosing the castings and the basal portions thereof, and a tube pendent from one of the castings and extending within the lamp-body and terminating a short distance from its bottom, substantially as described.

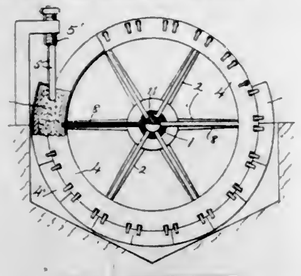
5. In combination with a vapor-burner, a tip, a filler for the tip composed of a straight and a fluted metallic ribbon placed side by side and spirally wound, and a spreader securing the central portion of the spirally-formed filler and consisting of a headed fastening, substantially as set forth.

657,937. PROCESS OF MANUFACTURING NITROGEN COMPOUNDS. CHARLES B. JACOBS, East Orange, N. J., assignor, by mesne assignments, to the Cyanide Company, of New Jersey. Filed Apr. 7, 1899. Serial No. 712,054. (No specimens.)

Claim.—1. The process of making a nitrogen compound consisting in subjecting a mixture of carbid and coarsely-ground coke to the action of heat in an electric furnace, whereby the carbid is caused to fuse and coat the particles of coke, allowing the mass to cool below the temperature of fusion of the carbid, and subjecting the porous mass at such lower temperature to the action of nitrogen.

2. The process of forming a cyanid of an alkaline-earth metal consisting in subjecting an alkaline-earth compound mixed with carbon in excess of the amount required for the formation of carbid to the heat of an electric furnace, whereby a porous carbid composition, consisting of

particles of carbon coated with carbid, is formed, allowing the said porous composition to cool below the temperature of fusion of the carbid and subjecting the porous mass at such lower temperature to the action of nitrogen.



657,938. PROCESS OF MANUFACTURING COMPOUNDS OF NITROGEN. CHARLES B. JACOBS, East Orange, N. J., assignor to the Ampere Electro Chemical Company, Ampere, N. J. Filed Jan. 23, 1900. Serial No. 2,543. (No specimens.)

Claim.—1. The process of forming a cyanid which consists in forming a mixture of coking-coal with an alkaline-earth compound, there being present in the mixture an amount of carbon in excess of that required for the formation of carbid, submitting the said mixture to a coking heat to form a porous composition, consisting of coke having the alkaline-earth compound diffused through it, then subjecting the resulting material to the heat of an electric furnace, to cause formation of carbid and fusion of such carbid in and on the surface of the coke, forming a porous carbid composition, then allowing the mass to cool, and subjecting the mass to the action of nitrogen or nitrogen-bearing gases while at a temperature below the fusing-point of the carbid.

2. The process of forming a cyanid which consists in forming a mixture of coking-coal with an alkaline-earth compound, there being present in the mixture an amount of carbon in excess of that required for the formation of carbid, submitting the said mixture to a coking heat to form a porous composition, consisting of coke having the alkaline-earth compound diffused through it, then subjecting the resulting material to the heat of an electric furnace, to cause formation of carbid and fusion of such carbid in and on the surface of the coke, forming a porous carbid composition, then allowing the mass to cool, and during such cooling subjecting the mass to the action of nitrogen or nitrogen-bearing gases while at a temperature below the fusion-point of the carbid.

3. The process of forming barium cyanid which consists in forming a mixture of coking-coal with barium compound, there being present in the mixture an amount of carbon in excess of that required for the formation of carbid, submitting the said mixture to a coking heat to form a porous composition, consisting of coke having barium compound diffused through it, then subjecting the resulting material to the heat of an electric furnace, to cause formation of carbid and fusion of such carbid in and on the surface of the coke, forming a porous carbid composition, then allowing the mass to cool, and subjecting the mass to the action of nitrogen or nitrogen-bearing gases while at a temperature below the fusing-point of the carbid.

657,939. MAIL-MATTER-MARKING MACHINE. FREDERICK G. JAHN, New York, N. Y., assignor, by mesne assignments, to The International Postal Supply Company of New York, of New York. Filed May 8, 1893. Renewed Jan. 16, 1900. Serial No. 1,635. (No model.)

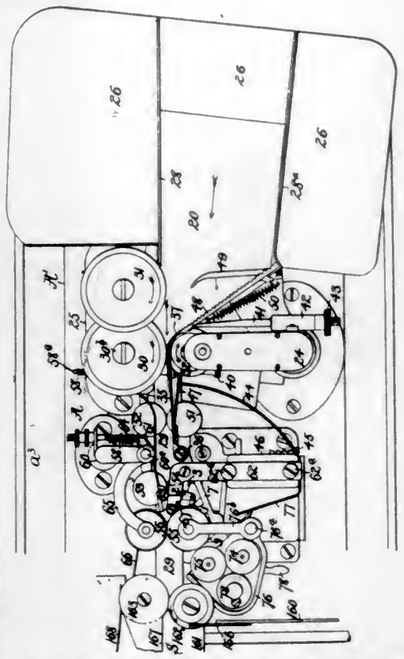
Claim.—1. In a mail-matter machine, the herein-described mechanism mounted on vertical spindles, a base-plate having bearings for said spindles, gearing for said spindles carried by the base-plate, a hollow stand supporting the base-plate, to which it is pivotally connected, a motor mounted within said stand and supported by its walls, a vertical shaft within the stand and extending from the motor to the gearing carried by the base-plate and a disconnective coupling between said shaft and gearing.

2. A hollow stand inclosing a motor, an oil trough or housing on said stand, a base-plate for an automatic mechanism supported on the trough and bearings formed in the wall of the trough for a shaft connecting the mechanism with the motor.

3. An oil trough or housing, a base-plate for an automatic mechanism supported on the trough and bearings below and supported by the base-plate for the gearing of the mechanism within the trough, and a bearing formed in the wall of the trough for a driving-shaft.

4. An oil-trough having a bearing projecting upward into said trough for a driving-shaft, and a base-plate supporting operative mechanism on the trough and connections between said mechanism and the driving-shaft.

5. A supporting-stand having bearings for a driving-shaft, a base-plate hinged to the stand and carrying operative mechanism on its opposite sides and a coupling interposed between said mechanism and the driving-shaft the parts of which coupling adapted to be disconnected by the movement of the base-plate on its hinge.



6. In a mail-matter machine, herein-described feed-rolls mounted on vertical spindles, a base-plate below the feed-rolls, another plate below the base-plate both plates forming the supports for said spindles, whereby the matter fed by the rolls is unobstructed by upper bearings, gearing for said spindles interposed between the two plates and a housing protecting said gearing.

7. The combination of a feed-roller, an opposed separator-roll, a separator-plate carrying a bearing for the separator-roll and hinged at its forward end and adapted to swing laterally to and from the feed-roller, and an adjusting device engaging the plate for determining its position with respect to the feed-roller, substantially as described.

8. The combination of a feed-roller, an opposed separator-plate hinged at its forward end, a separator-roller carried by the plate, and means for adjusting the plate and roller to and from said feed-roller, substantially as described.

9. The combination of the feed-roller, a separator-plate, the separator-roller, means for adjusting the roller with respect to the plate, and means for adjusting the plate with respect to the feed-roller, substantially as described.

10. The combination of a separator-plate, a separator-roller, a bearing for the same, a guide-pin and an adjusting-rod projecting from the plate supporting said bearing, substantially as described.

11. The combination of a separator-plate, a separator-roller, a bearing for the same supported by the plate, an adjusting rod and nut for the bearing, and a spring-pin for engaging the nut, substantially as described.

12. The combination of the feed-roller, the laterally-moving separator plate and roller, bearings on the plate for said roller, and a spring for holding the plate and roller toward the feed-roller, substantially as described.

13. The combination of the laterally-yielding separator-roller and plate carrying said roller a spring-blade bearing against the plate and a series of notches for the blade for changing the tension of the spring-blade, substantially as described.

14. The combination of the feed-roller, the opposed laterally-yielding separator-roller, the separator-plate carrying said separator-roller, the separator-pillar inclosing a driven spindle, a short depending shaft also supported by the pillar, gearing connecting said shaft to the spindle, and a universal connection from said shaft to the roller, substantially as described.

15. The combination with the feed-roller and a separator-roller, of a succeeding pair of feed-rollers less in height than the first-mentioned roller, means for driving said rollers positively, yielding bearings for said feed-rollers permitting them to yield laterally independently and a narrow elevated fixed plate on which the mail-matter travels mounted between the yielding bearings and forming a stop thereto.

16. The combination with the feed-roller and separator-roller, of a succeeding pair of feed-rollers mounted in laterally-yielding bearings, another succeeding pair of feed-rollers, one of the rollers mounted in fixed bearings and the other in laterally-yielding bearings, substantially as described.

17. The combination with the opposed vertical feed-rollers for the mail-matter, each of inverted-cup shape, a spindle depending therefrom and bearings for the same extending within the roller, and a narrow elevated fixed plate on which the mail-matter moves mounted between the bearings and below the lower edge of said rollers, as set forth.

18. The combination of the yielding feed-roller, a coöperating feed-roll and a narrow stationary elevated plate for the lower end of the matter passing between the rollers, said plate interposed between the bearings for the rolls forming a stop for limiting the bite of said feed-rollers, substantially as described.

19. The combination with a supporting bed-plate, of the endless carrier-belt supported above said bed-plate, the elevated stationary narrow plate forming a continuation of said belt, and oppositely-arranged feed-rollers mounted independent of the elevated plate for carrying the mail-matter forward on said elevated plate, substantially as described.

20. The combination with the base-plate, the endless carrier-belt and the stationary plate forming a continuation thereof supported in an elevated position above the base-plate, of a number of feed-rollers arranged upon opposite sides of the stationary plate and having bearings also elevated above the base-plate, substantially as described.

21. The combination of the carrier-belt, the feed-roller, the separator-roll, an angularly-arranged deflecting-plate extending over the carrier-belt and a spring-pressed finger for preventing the letters on the belt from falling laterally, substantially as described.

22. The combination with the marking-roll, of the removable sustaining-bar, a stop for the roll and a letter-engaging finger for moving the stop, both the stop and finger mounted upon the under side of said bar whereby the accumulation of dirt thereon is prevented and the whole is removable bodily from the machine, as set forth.

23. The herein-described removable trip-sustaining bar having the trip or finger mounted on a vertical axis and sustained below the under side of the bar.

24. The combination of the sustaining-bar, a lever pivoted to its under surface, a trip or finger carried by said lever, and stops formed on the bar for limiting the movement of said lever, whereby the parts are suspended and the accumulation of dirt thereon prevented, substantially as described.

25. The combination with the marking-roll, of the removable sustaining-bar, a movable trip or finger carried on the under side of said bar for controlling the operation of said roll, means for holding said finger in its operative position, a shoulder on the finger, and a yielding latch-pin adapted to oppose the movement of the finger in one direction when not in operative position, as set forth.

26 The combination with the marking-roll, of the trip or finger for controlling the operation of said roll, the yielding stop-pin for the finger having a slotted end, a tongued cap-plate engaging the slot of the stop-pin, and a spring interposed between the pin and the cap-plate, substantially as described.

27. The combination of the printing-roll, the letter-engaging finger for controlling the operation of said roll, the lever for returning the said finger, a restraining rebound-pawl for the roll and a single spring for returning the pawl and lever, substantially as described.

28. The combination with the marking-roll, the letter-engaging finger for controlling the operation of said roll, the lever for returning said finger, a counter and connection with said lever for operating the counter, substantially as described.

29. The combination with the marking-roll, the letter-engaging finger for controlling the operation of said roll, the lever for returning said finger, the rock-shaft carrying the lever, a counter and connections with the rock-shaft for operating the counter, substantially as described.

30. The combination with the printing-roller having a cam, of a finger for controlling the operation of the roller, a lever moved by said cam, a counter, connections between the lever and counter for operating the latter and between said lever and the finger for returning said finger, substantially as described.

31. The combination with the printing-roll spindle having upper and lower rolls fixed thereto, of a printing-roll interposed between said upper and lower rolls and resting on the lower roll, and means for vertically adjusting said lower roll and printing-roll relatively to the other rolls whereby the position of the printing-roll is controlled, substantially as described.

32. The combination of the printing-roll spindle the printing-roll mounted thereon, a screw-threaded collar fixed to the spindle and a vertically-adjustable roll engaging said collar, substantially as described.

33. The combination of the printing-roll spindle formed in two parts with stepped engaging ends, a printing-roll carried by one part, means for driving the other part of the spindle, and bearings for the spindle permitting the withdrawal of the part of the spindle carrying the printing-roll, and a platen coacting with the printing-roll, as set forth.

34. The combination of the printing-roll, its spindle, a fixed lower bearing for the spindle, a vertically-removable and laterally-swinging upper bearing for the spindle whereby the roll may be removed, and a coacting platen, substantially as described.

35. The combination of the printing-roll, its spindle, a fixed lower bearing for the same, a vertical removing-rod having at its upper end a bearing for the upper end of the spindle, means for supporting the rod, and a platen coacting with said roll, substantially as described.

36. The combination of a feed-roller, an opposed separator-plate movably mounted with respect to the feed-roller, a separating-roll mounted in and carried by said plate and a spring for holding the plate and roll yieldingly toward the feed-roller, as set forth.

37. The combination with the feed-roller and separator-roller, of the printing and platen rolls, an intermediate feed mechanism and means for driving the printing and platen rolls and intermediate feed mechanism faster than the feed-roller, as set forth.

38. The combination with the printing-roller, of the letter-engaging finger controlling the printing movement of said roller, a bifurcated shoe opposed to the finger, an adjacent feed-roll and means adapting the shoe and roll to yielding independent of each other, as described.

39. The combination with the printing-roller and the letter-engaging finger controlling the printing movement of said roller, of the stand 60, the feed-roller supported by said stand, the bifurcated shoe also supported by said stand independent of the feed-roller and straddling the finger, and springs for said shoe and roller permitting each to yield independent of the other, substantially as described.

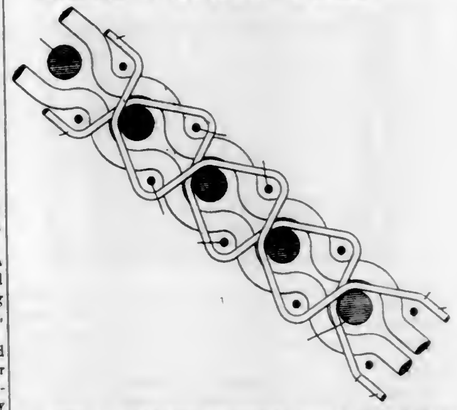
40. The combination of the intermittently-moved printing-roller, an ink-fountain and ink-rollers, a swinging holder carrying said fountain and rollers independent of said printing-roller and a spring engaging the holder for holding it in its adjusted positions, substantially as described.

41. The combination of the intermittently-moved printing-roller, the movable holder supporting the ink-rollers independent of said printing-roller, and a stop for determining the position of the holder, a screw for adjusting the stop, and a spring-detent for holding the screw in its adjusted position, substantially as described.

42. In a mail-matter-marking machine, the combination with the marking-machine, of a stacker therefor including an endless freely-moving chain formed by overlapping links providing a plurality of ridges against which the bottom edges of the mail-matter may bear.

43. In a mail-matter-marking machine, the combination with the marking-machine, of a stacker therefor including an endless freely-moving chain formed by overlapping links providing a plurality of ridges against which the bottom edges of the mail-matter may bear, a series of track-disks supporting the upper stretch of the chain, and an intermediate roll supporting the return portion of the chain, as set forth.

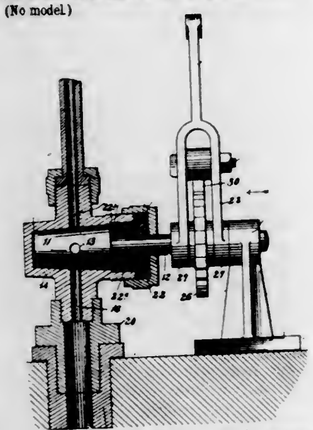
657,940. WOVEN FABRIC. ROBERT JOHNSTON, Philadelphia, Pa. Filed June 29, 1900. Serial No. 22,023. (No specimens.)



Claim.—A double-faced, homogeneous woven fabric having both faces figured or ornamented by heavy warp-threads, the said fabric con-

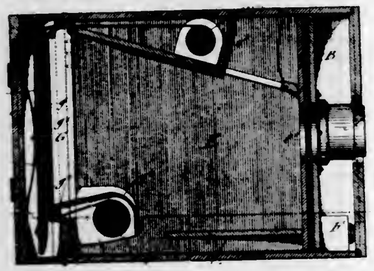
sisting of two sets of heavy figuring warp-threads, one set remaining in one plane of the fabric and the other set remaining in the other or parallel plane, a series of heavy stuffer weft-threads shot between the two sets of heavy warp-threads, a series of light weft-threads arranged in sets of two and shot into the fabric in alternate series with the heavy stuffer-wefts, the two weft-threads being arranged respectively above the upper figuring heavy warp-threads and below the lower figuring heavy warp-threads, and two light binder-warps inclosing one heavy stuffer-weft and one set of two light weft-threads to bind the warps and wefts into a homogeneous structure, substantially as and for the purposes described.

657,941. LUBRICATOR ATTACHMENT FOR STEAM-ENGINES. WILLIAM F. JOHNSTON, Richmond, Va. Filed Mar. 9, 1900. Serial No. 8,069. (No model.)



Claim.—A lubricator attachment for locomotive-engines comprising a valve-casing having oppositely-located inlet and outlet passages for the lubricant, and having a direct rigid coupling connection with the valve-chest, an oil-conducting pipe leading from a remotely-located lubricator and connected with the inlet-passage of the valve-casing upon the side opposite its connection with the valve-chest, an automatically-actuated oil-feed plug having a steam-tight fit within the casing and provided with a stem projecting exterior thereto, valve-actuating means coöperating with the stem outside of the valve-casing, and a separate exterior supporting and bracing bracket rigidly connected with the valve-chest of the engine and having a bearing receiving the extreme outer end of the plug-stem, whereby the valve-casing and the valve-actuating means are mutually braced from the chest and vibrate in harmony therewith to insure the maintenance of an operative relation of the parts of the attachment, substantially as set forth.

657,942. ROLL-HOLDING CAMERA. MAX JURUICK, Demarest, N. J. Filed Nov. 21, 1899. Serial No. 737,737. (No model.)



Claim.—1. The combination, with a photographic camera having a lens-tube and a ground-glass plate, of means for movably supporting a sensitive film within the camera between the lens and the ground-glass plate, so that it may be moved to position at one side of the interior of the camera or transversely of the same, and means for adjusting said film to expose an unused portion, substantially as set forth.

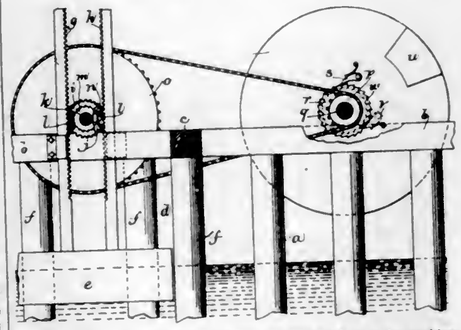
2. The combination, with a photographic camera, of a folding roll-holder between the lens-tube and ground glass, means for turning the movable portion of the roll-holder from the position at the side of the box to the rear end of the same, and means for adjusting the film, substantially as set forth.

3. In a photographic camera, the combination, with an ordinary camera having a lens-tube and ground glass, of a roll-holder box open at its rear end and inserted into the main box of the camera, the roll-holder being adapted to be moved sidewise at the side of the main box or transversely across the rear end of the same, so that the camera can be used either as an ordinary camera or for film-pictures, substantially as set forth.

4. In a photographic camera, a roll-holder box, a roll-holder having a swinging portion pivoted to one corner of said box, means for moving said portion to one side or transversely across the box, and means for adjusting the film of said roll-holder, substantially as set forth.

5. In a photographic camera, the combination of a roll-holder box having an angular partition at one side of the same, a roll-holding frame pivoted to one corner of said box, means for arresting said roll-holder frame when turned toward the side or end of the box, a supporting-roller in the movable frame, a winding-up roller in the angular partition of the box, means for moving the roll-holding frame from a position sidewise to a position at the rear end of the roll-holding box, and means acting on said winding-up roller for moving the film so as to subject one section after the other to the light, substantially as set forth.

657,943. TIDE-MOTOR. FRANKLIN R. KIMBALL, Salem, Mass. Filed April 2, 1900. Serial No. 11,170. (No model.)



Claim.—1. In a tide-motor, a suitably-guided float, racks meshing with pinions having connections to rotate speed-increasing gears, pinions connected with the gears and having detachable connections adapted to lift weights, combined with clutching devices to apply the weights as they fall to rotate a shaft, substantially as described.

2. In a tide-motor, the combination with devices for imparting the energy of tidal motion to a train of speed-increasing mechanism that is arranged to elevate pivoted masses, of means for temporarily connecting the masses as they fall to a shaft having means for absorbing energy, so the successive impulses may cause constant rotation, substantially as described.

3. In a tide-motor, devices to receive and transmit the energy of tidal motion to mechanism for raising isolated pivoted masses, combined with clutches to unite the several masses to a concentric shaft so it may receive intermittingly-rotative impulses, substantially as described.

4. In a tide-motor, the combination with mechanism actuated by the tide to position bodies in opposition to the forces of gravity, of devices to connect the bodies while falling with a shaft, substantially as described.

657,944. EMBROIDERING-MACHINE. ERNEST J. KLINGENBERG, Chicago, Ill. Filed Aug. 3, 1899. Serial No. 726,022. (No model.)

Claim.—1. In a sewing-machine, the combination of a feed-bar, a slide-bar having said feed-bar jointed thereto, at its upper end, and carrying a nipple at its lower end, and means to actuate said slide-bar and feed-bar, substantially as set forth.

2. In a sewing-machine, the combination of a feed-bar, a slide-bar having said feed-bar universally jointed thereto at its upper end and carrying a nipple at its lower end, and means to actuate said slide-bar and feed-bar, substantially as set forth.

3. In a sewing-machine, the combination of a feed-bar, a needle-bar, and a "throw" or cam mechanism carried by said needle-bar having a partly-curved slot and pin or stud connection with said feed-bar, substantially as set forth.

4. In a sewing-machine, the combination of a feed-bar, a needle-bar and a "throw" or cam mechanism comprising a cam on said needle-bar, having a partly-curved slot, and a ring having a pin or stud adapted to engage said slot, and an extension or bearing of said feed-bar adapted to carry said ring, substantially as described.

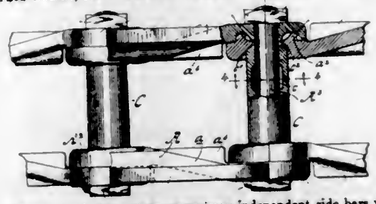


5. In a sewing-machine, the combination of a slide-bar carried by the head of the needle-bar arm or bracket, a cam-lever having a cam-slot-and-pin connection with the driving-shaft, and a slotted arm and pin or stud connection with said slide-bar and a feed-bar carried by said slide-bar and means for actuating the feed-bar, substantially as specified.

6. In a sewing-machine, the combination of a slide-bar carried by the needle-bar arm or bracket, a nipple carried by said slide-bar, a feed-bar jointed to said slide-bar, and a lever having a cam-slot-and-pin connection with said slide-bar and a similar connection with the driving-shaft and means for actuating the feed-bar, substantially as set forth.

7. In a sewing-machine, the combination of a slide-bar carried by the needle-bar arm or bracket, a nipple carried by said slide-bar, a feed-bar jointed to said slide-bar, a lever having a slot-and-pin connection with said slide-bar and a similar connection with the driving-shaft, and a "throw" or cam-actuating mechanism adapted to impart the feeding motion to the feed-bar, substantially as set forth.

657,945. CHAIN. CHRISTOPHER W. LEVALLEY, Milwaukee, Wis. Filed Dec. 27, 1897. Serial No. 663,621. (No model.)



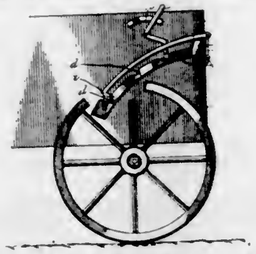
Claim.—1. A drive-chain comprising independent side bars which are duplicates one of the other, such side bars having their opposite end portions arranged in parallel planes lengthwise of the chain, one end being set in and the other end set out, whereby the end portions of the side bars of adjacent links are arranged to lie side by side, the contiguous faces of such end portions of the side bars being provided with interlocking annular flanges and recesses concentric with holes formed in the said end portions of the side bars, cross-bolts passing through such holes and uniting the side bars, and means for maintaining the side bars of each link properly separated under working conditions and holding the interlocking flanges and recesses in engagement, substantially as set forth.

2. A chain comprising independent side bars, cross-bolts uniting them, the links having end portions arranged in parallel planes lengthwise of the chain, one end portion of each side bar being set in and the other set out, and the said end portions being connected by inclined central or body portions of the bar, and these inclined central portions being provided with reversely-set flanges or webs, and the contiguous faces of the end portions of the side bars being provided with interlocking annular flanges and recesses concentric with the holes for the cross-bolts through the said end portions of the side bars, and means for maintaining the side bars of the links properly separated under working conditions and with the interlocking flanges and recesses in engagement, substantially as set forth.

3. The combination with the side bars having annular lateral recesses and flanges concentric with the bolt-holes therethrough and having bearing-sockets at one end in their inner faces around said bolt-holes, of the cross-bolts uniting said side bars and the barrels encircling the cross-bolts and entering at their ends into said sockets and turning therein.

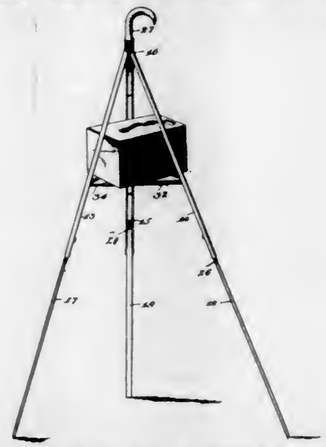
4. A drive-chain comprising side bars having discoid end portions, connecting cross-bolts passing through holes in the said discoid end portions of the said side bars, the said end portions being arranged in planes substantially parallel with a line corresponding with the length of the chain, and one end of each bar being set in and the other end set out, and such end portions being connected by inclined central or body parts of the side bars, and the latter being provided with reversely-set side webs or flanges, means for maintaining the side bars properly separated under working conditions, substantially as set forth.

657,946. TAIL-GATE FOR WAGONS. JESSE M. LILLPOP, Kyana, Ind. Filed Mar. 14, 1900. Serial No. 8,638. (No model.)



Claim.—A support for the tail-gates of wagons and similar vehicles comprising a notched segment secured to the bed of the vehicle, a rod mounted transversely of the tail-gate having an end projecting therebeyond, a latch pivoted to the projecting end adapted to engage the notched segment, a lever pivoted to the bed adjacent the latch, fingers formed upon one end of said lever to receive the latch, the other end of the said lever projecting upwardly to form a handle, a second notched segment secured to the bed in the path of the lever, and a trigger mounted upon the lever to engage the notches of the second-named segment for holding the lever in a raised or lowered position.

657,947. COMBINED CANE AND TRIPOD. WILLIAM H. MACGILL, Louisville, Ky. Filed Jan. 13, 1900. Serial No. 1,347. (No model.)



Claim.—1. In a collapsible tripod, the combination with a head, of legs pivoted thereto, a plate slidably secured to each leg provided with an inwardly-projecting flange, a telescoping hooked rod secured to each flange and adapted to engage the flange on one of the other plates, substantially as described.

2. In a device of the kind described, the combination with a head, of legs pivoted thereto in the form of a third of a circle in cross-section, the longitudinal edges of said legs being turned inwardly to form overlapping portions, slidable leg-sections secured in said overlapping portions,

flanged plates and adjustable side bars to form a triangular frame slidably secured to the legs of the tripod and set-screws for holding the parts in a predetermined adjustment, substantially as described.

3. The combination with a head, of telescoping legs, pivoted to said head, a slidable triangular frame below the head consisting of pivoted telescoping rods provided with hooks to engage the respective legs and hold the same rigid, substantially as described.

657,948. **DEVICE FOR ATTACHING SLATS TO CANVASES.** JAMES MACPHAIL, Blue Island, Ill., assignor to the Deering Harvester Company. Filed Apr. 30, 1900. Serial No. 14,904. (No model.)



Claim.—1. A slat-fastening for endless conveyers, the same comprising a staple straddling the slat on one side of the conveyer, and a washer on the opposite side of said conveyer, the points of the staple being passed downward through the conveyer and turned back and passed upward through the washer and into the slat.

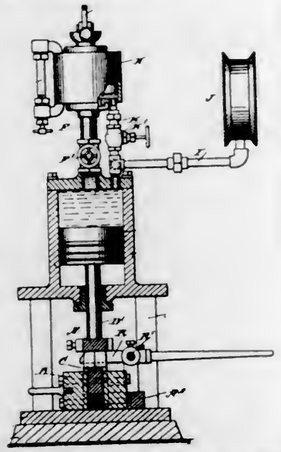
2. A slat-fastening for endless conveyers, the same comprising a staple straddling the slat on one side of the conveyer, and a washer on the other side of said conveyer, the points of the staple being passed downward through the conveyer and turned back and passed upward through the washer and terminating in a return-clench in the slat.

657,949. **WINDOW-VENTILATOR.** CLAES O. MEURK, Chicago, Ill. Filed Sept. 15, 1899. Serial No. 780,537. (No model.)



Claim.—A ventilator comprising a window-sash or other piece having a main channel, the ends of which terminate in oblique and diverging external openings in a horizontal plane with the channel, the said sash or other piece having internal openings on a horizontal plane with the main channel and communicating therewith at some distance from the ends of the main channel, substantially as described.

657,950. **MACHINE FOR MAKING BRIQUETS FOR TESTING PURPOSES.** THOMAS MILLER, Jr., New York, N. Y. Filed June 5, 1899. Serial No. 719,379. (No model.)



Claim.—1. In a machine for forming briquets, a mold for containing material, a reciprocating plunger for said mold, a cylinder containing a piston carrying on its piston-rod said plunger, a pump for pumping a liquid into the cylinder against the piston, a reservoir surrounding the pump-barrel and opening into the same, the lower end of said pump-barrel projecting from the reservoir and connected with the top of said cylinder, a valve in said barrel for closing communication between the barrel and cylinder and a pipe leading from the upper end of the cylinder and connected with a pressure-gage, the said pipe being also connected by a valved pipe with the lower part of the reservoir, for the purpose set forth.

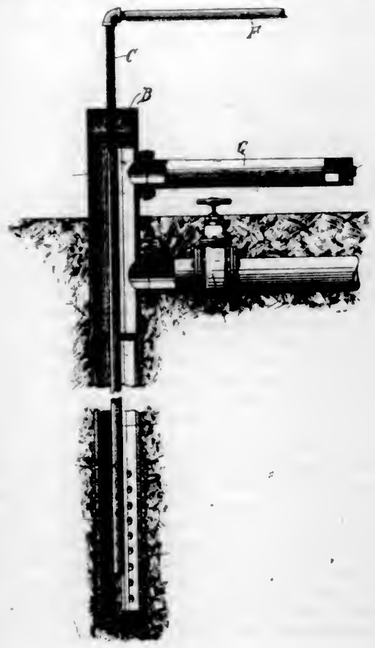
2. In a machine for forming briquets for testing purposes, a removable mold for containing material, a reciprocating plunger for said mold, a cylinder containing a piston carrying on its piston-rod said plunger, a pump for pumping a liquid into the cylinder against the piston, a valved return connection between the cylinder and the reservoir for the pump, and a manually-actuated return device for moving said plunger out of the mold and moving the piston back to its former position, the said device comprising an arm secured on the piston-rod, arms engaging the under side of said arm, a shaft journaled in suitable bearings and to which the said arms are secured, and a hand-lever secured to said shaft, as set forth.

3. A machine for forming briquets for testing purposes comprising a mold for containing material, a reciprocating plunger for said mold, a cylinder containing a piston carrying on its piston-rod said plunger, a pump for pumping a liquid into the cylinder against the piston, the barrel of the pump being connected with the upper end of the cylinder, a reservoir adapted to contain liquid and opening into the barrel of the pump, a valved pipe leading from the cylinder to the reservoir to allow of a return of liquid from the cylinder to the reservoir, and a manually-actuated return device for moving said plunger out of the mold and moving the piston back to its former position, the return movement of the piston forcing the liquid from the cylinder back into the reservoir, substantially as described.

4. In a machine for forming briquets for testing purposes, a reciprocating plunger for compressing the material, a cylinder, a piston in said cylinder provided with a piston-rod connected with said plunger, a pump for pumping liquid into the cylinder against the piston, a water-reservoir located above the cylinder, the said reservoir surrounding the pump-barrel and opening into the same, the lower end of the pump-barrel projecting below the reservoir and connected with the top of the cylinder, a valve in the pump-barrel between the reservoir and cylinder and a valved pipe extending from the top of the cylinder to the bottom of the reservoir and connecting the same substantially as set forth.

5. In a machine for forming briquets, a mold for containing material, a reciprocating plunger for said mold a cylinder containing a piston carrying on its piston-rod said plunger, a pump for pumping a liquid into the cylinder against the piston, a reservoir surrounding the pump-barrel and opening into the same, the lower end of said pump-barrel projecting from the reservoir and connected with the top of said cylinder, a valve in said barrel for closing communication between the barrel and cylinder, a valved pipe leading from the cylinder to the reservoir to allow of a return of liquid from the cylinder to the reservoir, and an electric alarm controlled by the movement of said plunger, substantially as set forth.

657,951. **PROCESS OF TREATING DEEP WELLS, &c.** WILLIAM MOONEY, Atlantic Highlands, N. J. Filed July 31, 1899. Serial No. 725,689. (No specimens.)



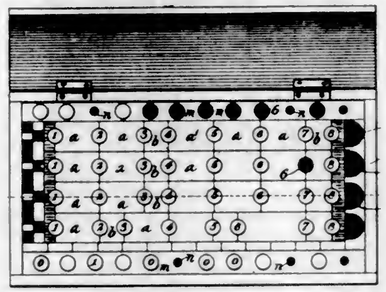
Claim.—The method of clearing Artesian or deep wells by the application of an external pressure to the bottom and sides thereof, in excess of internal or natural pressure as set forth and described.

657,952. **HAIR-CURLER.** ALBERT C. MOORE, Victor, Md. Filed July 23, 1898. Serial No. 725,402. (No model.)



Claim.—A curling-iron having a handle provided with a chamber, a closure for the chamber comprising a plate fitting on the end of the handle and having an integral projection extending into the chamber, a flat spring on the outer surface of the handle extending beyond the end of the handle and bent to embrace the edge of the plate.

657,953. **DEVICE FOR TEACHING MUSIC.** LAURA MCLAREN, Ottawa, Canada. Filed Dec. 8, 1899. Serial No. 739,663. (No model.)



Claim.—1. The combination of a holder, a plurality of pegs, representing sounds, adapted to be supported in said holder, and a plurality of blocks, representing intervals of pitch distances, adapted to be interposed between said pegs, substantially as described.

2. The combination of a holder having a longitudinal slot therein, a plurality of pegs, representing notes, adapted to fit into said slot, and a plurality of blocks, representing intervals of pitch distances, adapted to be interposed between said pegs, substantially as described.

3. A combination of a holder, a plurality of pegs having flat surfaces, bearing inscriptions representing sounds, said pegs being adapted to be supported in said holder, and a plurality of blocks representing intervals of pitch distances, adapted to be interposed between said pegs, substantially as described.

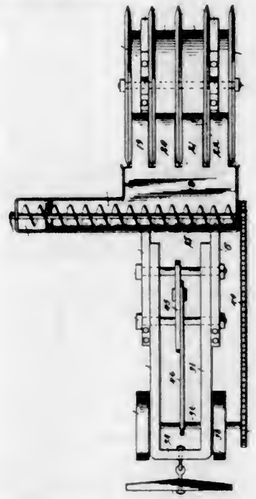
4. A combination of a holder having a longitudinal slot therein, a plurality of pegs representing notes, said pegs being adapted to fit into said slot, and a plurality of blocks representing intervals of pitch distances, said blocks each having a recess at the end thereof, adapted to surround said pegs, substantially as described.

5. A combination of a holder, a plurality of pegs representing sounds, adapted to rest therein, and a plurality of blocks representing intervals of pitch distances, adapted to be interposed between said pegs, one or more of said pegs, or parts thereof, being colored or otherwise distinguished from the rest of the said pegs, substantially as described.

657,954. **DITCHING-MACHINE.** GRAVES Y. MCMURRY, Silver City, Ga. Filed Jan. 5, 1900. Serial No. 507. (No model.)

Claim.—1. A ditching-machine comprising a main frame, a supplemental frame pivoted to the main frame, an axle mounted upon the main frame, cutting-disks mounted upon the axle and separated by interspaces, said disks having peripheral cutting-cogs, fingers disposed between the disks and adapted to receive and convey dirt therefrom, supporting-wheels upon the supplemental frame, means for moving the supplemental frame upon its pivot to raise and lower the wheels carried thereby, and casters upon the main frame for supporting it when the supplemental frame is raised upon its pivot.

2. A ditching-machine comprising a main frame, cutting-disks carried by the main frame and adapted to cut and raise the dirt from the ditch, means for removing the dirt from the disks, a conveyer adapted to discharge the dirt, a supplemental frame pivoted to the main frame, supporting-wheels upon the supplemental frame, means for holding the supplemental frame normally with its supporting-wheels in operative position, connections between the supporting-wheels and the conveyer for operating the latter, means for moving the supplemental frame upon its pivot, and casters upon the main frame for supporting the main frame when the supplemental frame is raised upon its pivot.



3. A ditching-machine comprising a frame, an axle carried by the frame, cutting-disks mounted upon the axle and separated by interspaces, said disks having peripheral lugs separated by recesses, additional disks disposed in said interspaces and lying with their peripheries within the inclosure of the lines of the bases of the recesses, and fingers disposed between the cutting-disks with their ends upon the second disks and below the bases of the recesses, said fingers extending beyond the peripheries of the cutting-disks.

4. A ditching-machine comprising a main frame, cutting-disks carried by the main frame and adapted to cut and raise the dirt from the ditch, means for removing the dirt from the disks, a conveyer adapted to discharge the dirt, a supplemental frame pivoted to the main frame, supporting-wheels upon the supplemental frame, means for holding the supplemental frame normally with the supporting-wheels in operative position, connections between the supporting-wheels and the conveyer for operating the latter, and means for moving the supplemental frame upon its pivot.

657,955. **PROCESS OF ENRICHING METALLIC SULFIDS.** HUGO PETERSEN, Laxyhütte, Germany. Filed July 5, 1899. Serial No. 722,861. (No specimens.)

Claim.—The herein-described process of enriching metallic sulfids which are mixed with carbonates of the alkali-earth metals consisting in dissolving out the carbonates with an aqueous solution of sulfurous acid, substantially as described.

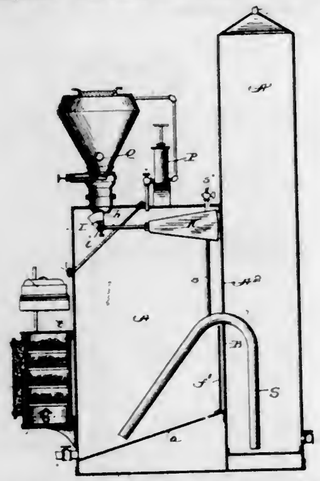
657,956. **GRAPHOPHONE-CYLINDER.** ADEMOR N. PETIT, Newark, N. J. Filed Nov. 15, 1899. Serial No. 737,016. (No model.)



Claim.—1. As a new article of manufacture, a cylinder or record for phonographs, graphophones or similar machines, formed from a tube with the ends integral and bent inward and provided with openings of different diameters, so that they fit upon the taper mandrel of the machine, substantially as set forth.

2. As a new article of manufacture, a cylinder or record for phonographs, graphophones or similar machines of celluloid and formed from a tube with the ends integral and bent inward and provided with openings of different diameters so that they fit upon the taper mandrel of the machine, substantially as set forth.

657,957. ACETYLENE-GAS GENERATOR. HOWARD L. FYLE, Wilmington, Del., assignor to the American Carbide Lamp Company, Philadelphia, Pa. Filed June 7, 1900. Serial No. 19,449. (No model.)



Claim.—1. In a gas-generating apparatus, the combination with a casing separated by a partition into two compartments one extending above the other and communicating through an opening in the partition at a point near, but not at, the bottom, the taller compartment being open to the atmosphere at the top and the shorter compartment being closed to the atmosphere, of a closed carbid-holder communicating with the closed compartment, a valve controlling the feed of carbid, a float in the closed compartment controlling the valve, a gas-main leading from the closed compartment and a shield extending past the opening in the partition for preventing the entry of gas being generated into the open compartment; substantially as described.

2. In a gas-generating apparatus the combination with a casing constituting a water and gas holder, of a cap detachably secured on and forming one corner of said casing, a carbid-holder on the exterior of said cap and a valve controlling the feed of carbid and a float controlling the valve both pivotally mounted directly on and entirely supported by the cap within the casing; substantially as described.

3. In a gas-generating apparatus, the combination with a casing forming a gas-generating and water-holding compartment and having an inclined seat at the top extending diagonally across one corner of the casing, of a removable cap constituting the corner of the casing mounted on said seat and carbid-feeding mechanism including a float and valve both pivotally mounted directly on and removable with said cap; substantially as described.

4. In a gas-generating apparatus the combination with the generating-compartment adapted for the reception of a body of water and means for feeding carbid thereto and a second compartment communicating therewith below the water-level and near but not at the bottom, of a siphon connecting the bottom portions of the two compartments.

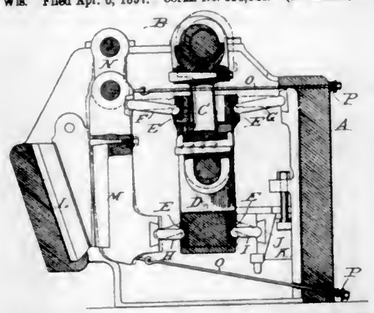
5. In a gas-generating apparatus the combination with the generating-compartment and means for feeding carbid thereto and a second compartment extending above the first-mentioned compartment into which water is supplied for both compartments, of a siphon connecting the lower portions of the two compartments and serving to allow the water to flow from either compartment into the other from points near the bottom and a blow-off cock for discharging sediment; substantially as described.

6. In an acetylene-gas generator, the combination with the casing having a vertical partition and extending upwardly to a greater height on one side of said partition than on the other to form a balance-chamber open to the air, said chambers being in communication through an opening in the partition located approximately midway of the height of the partition whereby the gas may escape when generated in excessive quantity and means for feeding carbid, of a bottom for the generating-chamber sloping away from the partition, a duct independent of said opening extending to a point in proximity to the lowest point in the generating-chamber for draining one chamber into the other and a liquid blow-off at the lowest point in the generating-chamber; substantially as described.

7. In an acetylene-gas generator, the combination with the casing and a removable cap-piece forming one corner of said casing, of a carbid-holder mounted on the top of said cap-piece, a transverse shaft journaled in the side walls of said cap-piece, a valve carried by said shaft for controlling the feed of carbid, a segmental float adjustably connected with said shaft and a handle connected with the shaft and projecting on the exterior of the cap, whereby the position of the shaft and valve is indicated and the valve may be opened or closed manually; substantially as described.

8. In an acetylene-gas generator the combination with the casing, of an integral cap-piece forming a portion of both the top and side walls of said casing and carbid feeding and controlling mechanism including a float entirely mounted on and supported by the cap-piece said float being pivotally mounted between the side-wall portions of the cap-piece, whereby when the latter is removed it will carry with it the entire carbid-feeding mechanism; substantially as described.

657,958. CRUSHING-MACHINE. EDWIN REYNOLDS, Milwaukee, Wis. Filed Apr. 6, 1897. Serial No. 631,041. (No model.)



Claim.—1. In a crushing-machine, the combination of a fixed jaw; a pivotally-suspended crushing-jaw movable toward and from the fixed jaw in a substantially-horizontal line; toggles arranged to act on said movable jaw at or near its extremities with a differential throw and to impart a greater number of impulses to one end than to the other; and means for actuating said toggles.

2. In a crushing-machine, the combination of a fixed jaw; a pivoted jaw bodily movable in a horizontal line toward the fixed jaw; and means for imparting a differential movement to the opposite ends of said pivoted jaw and a greater number of impulses to the lower end than to the upper end thereof, substantially as described.

3. In a crushing-machine, the combination of a fixed jaw; a movable jaw pivotally suspended from its upper end; toggles to act upon opposite ends of said movable jaw one of said toggles occupying a substantially-horizontal position, and the other arranged at an angle thereto and designed to give a differential movement to the opposite ends of said jaw, and to impart a greater number of impulses to the lower end than to the upper end thereof, substantially as described; and means for moving said toggles.

4. In a crusher, the combination of a movable jaw; a swinging pivot therefor; toggles arranged to act upon said jaw at or near its extremities, one of said toggles being so arranged that it will swing to both sides of its position of greatest thrust; and means for operating said toggles.

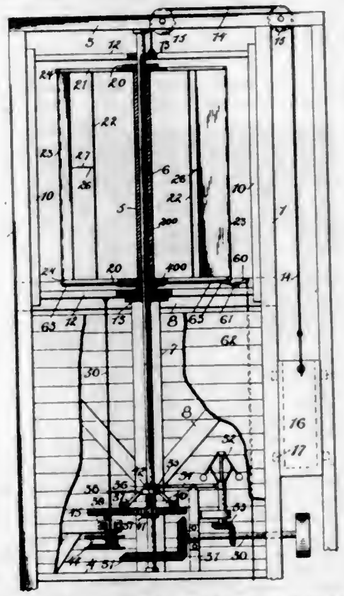
5. In a crusher, the combination of a frame; a movable jaw; a swinging pivot therefor; an eccentric; a block suspended from said eccentric; and two sets of toggles arranged upon opposite sides of the block and designed to bear against the frame and the jaw; one set of toggles being arranged to swing to both sides of its position of greatest thrust, substantially as described.

6. In a crushing-machine, the combination of a frame; a movable jaw; a swinging pivot therefor; toggles arranged to act upon said jaw at or near each end thereof, one of said toggles being arranged to swing to both sides of its position of greatest thrust; means for operating said toggles; and means for adjusting the same.

7. In a crushing-machine, the combination of a frame; a fixed jaw; a movable jaw; a link journaled upon the frame and pivotally connected to the upper end of the movable jaw; a block; toggles bearing against said block and the movable jaw and frame; one of said toggles being arranged to swing to both sides of its position of greatest thrust; and means for adjusting said toggle.

8. In a crushing-machine, the combination of a frame; a fixed jaw; a movable jaw; a link N journaled upon the frame and pivotally connected to the upper end of the movable jaw; a block, as D; an eccentric; a link C pivotally connected to the block and actuated by the eccentric; toggles F, G, H and I arranged upon opposite sides of the block and bearing respectively against the upper and lower ends of the movable jaw and the frame; and tension-rods O, substantially as described.

657,959. WINDMILL. JOHN H. RICKMAN, Gladstone, N. D. Filed July 19, 1899. Serial No. 724,383. (No model.)



Claim.—1. In a windmill, the combination with an upright shaft, a wheel-frame mounted loosely thereon, means for raising and lowering the frame bodily, and a brake mounted on the lower cross-bar of the frame and having a depending operating-cord; of a horizontal wheel whose hubs are splined on said shaft within the frame, arms diverging from the hubs and connected in upright pairs, an annular band connecting the lower arms and against which said brake bears, swinging blades carried by the arms, and means for limiting their movements, as and for the purpose set forth.

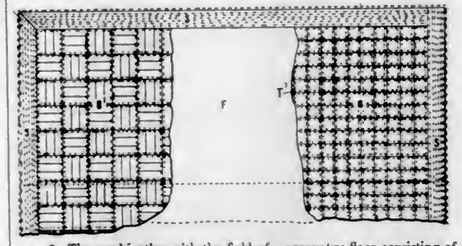
2. In a windmill, the combination with two upright grooved posts connected by top and bottom bars, a vertical shaft journaled in the latter, two short posts in line with said shaft at right angles to the grooved posts a housing embracing the short posts and the lower ends of the other posts, a wheel-frame part of the height of the longer posts and moving in said grooves, and a counterbalance-weight for this frame; of the wind-wheel mounted within the frame and having its hubs splined on said shaft, a governor driven by the shaft, a winding-drum having a rope connected with said wheel-frame, a clutch between the main shaft and winding-drum, and connections between the governor and clutch, as and for the purpose set forth.

3. In a windmill, the combination with two upright posts whose lower portions are surrounded by a housing, a wheel-frame moving in guides in said posts, a counterbalance-weight for this frame, a horizontal wheel mounted therein, and an upright grooved shaft to which the wheel is splined; of a governor driven by said shaft, a clutch whose members are mounted on the shaft and respectively splined and loose, connections between the splined member and the governor, a winding-drum connected with the loose member, and a rope leading therefrom to the wheel-frame, as and for the purpose set forth.

4. In a windmill, the combination with an upright grooved shaft, a wheel-frame loose thereon, means for normally raising the frame, and a wheel within the frame and splined on the shaft; of a winding-drum for drawing the wheel-frame downward, a clutch consisting of a collar splined on the shaft, rods pivoted thereto and radiating therefrom, shoes at their outer ends, a pulley whose hub is loose on the shaft and whose rim embraces said shoes and is connected with said drum, an expansive spring between the collar and hub, a governor driven by the shaft, and connections between the governor and collar for moving the latter toward the hub when the wind becomes excessive, substantially as described.

657,960. PARQUETRY. CHARLES E. RIDER, Rochester, N. Y. Filed May 15, 1900. Serial No. 16,826. (No model.)

Claim.—1. The combination with the field of a parquetry floor consisting of a series of wooden blocks suitably attached together, of the compression-strip at one edge of the field, adapted to permit expansion, substantially as described.



2. The combination with the field of a parquetry floor consisting of a series of wooden blocks suitably attached together, of the compression-strip at one side of the field and a suitable connection between the strip and the blocks at the edge of the field, substantially as described.

3. The combination with the field of a parquetry floor, consisting of a series of wooden blocks suitably attached together, of the compression-strip at one side of the field and a metallic tongue inserted in grooves between the blocks at the edge of the field and the compression-strip, substantially as described.

4. The combination with the field of a parquetry floor consisting of a series of grooved wooden blocks connected together by metallic tongues crossing each other in different planes in the grooves, the compression-strip at one side of the field and a metallic tongue inserted in grooves between the blocks at the edge of the field and the compression-strip, substantially as described.

5. The combination with the field of a parquetry floor consisting of grooved blocks connected together by metallic tongues crossing each other in different planes of the compression-strip arranged between the wall and the field, substantially as described.

6. The combination with the field of a parquetry floor consisting of a series of grooved blocks connected together by metallic tongues crossing each other in different planes, of the compression-strip at one edge of the field formed by a wooden strip having one or more grooves in its lower side, substantially as described.

7. The combination with the field of a parquetry floor consisting of grooved blocks suitably connected together, the compression-strip at one edge of the field and the concrete or other similar foundation, substantially as described.

8. The combination with the field of a parquetry floor consisting of grooved blocks connected together by metallic tongues crossing each other in different planes, of the compression-strip at one edge of the field formed with one or more saw-kerfs in its lower side and the concrete or other similar foundation, substantially as described.

9. The combination with the field of a parquetry floor consisting of grooved wooden blocks connected together by metallic tongues crossing each other in different planes, of the compression-strip formed with one or more saw-kerfs in its lower side, the metallic tongue between the strip and the blocks at the edge of the field and the concrete or other similar foundation, substantially as described.

10. The combination with the field of a parquetry floor consisting of grooved wooden blocks connected together by metallic tongues crossing each other in different planes, of the compression-strip of a depth less than that of the field, and the flush strip above it, substantially as described.

657,961. INKING-PAD. THOMAS ROBERTS, Green Cove Springs, Fla. Filed Jan. 15, 1900. Serial No. 1,586. (No model.)

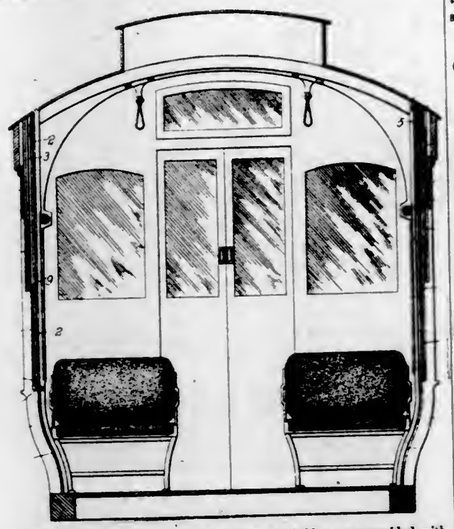


Claim.—As an article of manufacture, an inking-pad comprising an upper ink-absorbing pad, an elastic base or cushion pad, and a moisture-proof material separating said pads throughout their opposing surfaces and secured thereto.

657,962. CAR. CHARLES ROEHR, Bucyrus, Ohio. Filed Nov. 1, 1899. Serial No. 735,471. (No model.)

Claim.—1. In a car, the combination of a series of side posts provided with parallel guides extending from different points to or approximately to the tops of the posts, and side panels consisting of three or more independent flexible and non-flexible sections arranged between adjacent

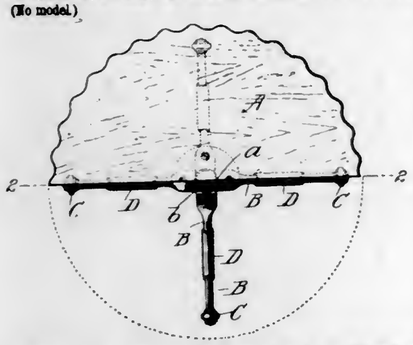
posts, said sections being movable into the upper portion of the car independent of each other in different but parallel vertical planes, substantially as set forth.



2. In a car, the combination of a series of side posts provided with parallel guides extending from different points to or approximately to the tops of the posts, and movable panels consisting of a series of flexible and non-flexible sections, the intermediate section being formed by a glass-carrying frame, said sections being independently movable in different but parallel planes to positions alongside of each other at or near the tops of the posts, substantially as set forth.

3. In a car, the combination of a series of side posts provided with parallel guides extending from different points to or approximately to the tops of the posts, and a series of panels consisting of a lower flexible and transparent non-flexible upper sections, said sections being independently movable to or approximately to the tops of the posts in different but parallel vertical planes, substantially as set forth.

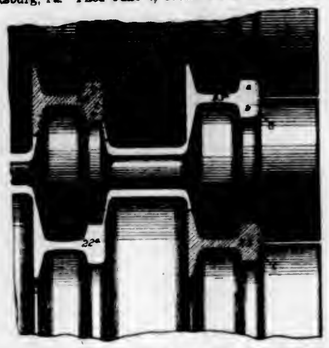
657,963. **ROTATABLE CENTER FOR DINING-TABLES.** GEORGE H. SCHROETER, St. Louis, Mo. Filed Mar. 15, 1900. Serial No. 3,762. (No model.)



Claim.—1. In a self-waiter for dining-tables, the combination with standard-arms crossing each other intermediate their ends and provided intermediate their ends and points of intersection with downwardly bent or bowed portions constituting a supporting-base for the arms, of a rotatable plate having a socket-piece at its center, a pin pivotally connecting said socket-piece and standard-arms at their point of intersection, and bearing-rollers for the plate mounted on the ends of said arms, substantially as described.

2. In a self-waiter for dining-tables, the combination, with a rotatable plate, of a socket *a* arranged in the center of the plate, crossed standard-arms B formed with matching portions at their point of intersection provided with alining openings, bearing-rollers C for said plate mounted in the ends of said standard-arms, said arms intermediate their point of intersection and ends having downwardly-bent portions constituting a supporting-base, and a pivot-bolt *b* passing through the alining openings in the matching portions of the arms and threaded into the socket *a*, substantially as described.

657,964. **MANUFACTURE OF RAILS.** JOSEPH S. SEAMAN, Pittsburg, Pa. Filed June 7, 1900. Serial No. 19,394. (No model.)

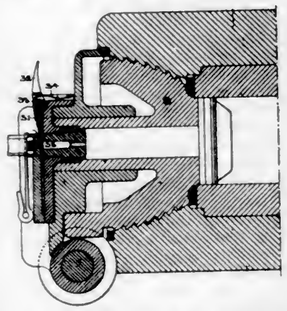


Claim.—1. As an improvement in the art of making rails, the method described herein which consists in providing during the rolling operation an additional body of metal uniformly distributed or substantially so over the entire tread-surface of the rail, and beyond the final plane of finish, and then as a final finishing operation forcing such additional body into the head by the action of a rolling-surface and without any material enlargement of the head, substantially as set forth.

2. As an improvement in the art of making rails the method described herein, which consists in providing during the rolling operation a body of metal uniformly distributed over the head of the rail in addition to that required in the ordinary reduction of the rail and then as a final operation forcing such additional body of metal into the head without permitting any material enlargement thereof by the action of rolling-surfaces acting simultaneously on all parts of the surface of the head, substantially as set forth.

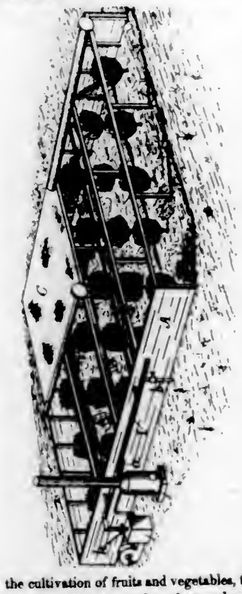
3. As an improvement in the art of making rails the method herein described, which consists in rolling an ingot to approximately the finished size and shape of rail desired, providing during such rolling operation a body of metal in the head of the rail in addition to that required in the ordinary reduction of the rail, allowing the partially-finished rail to cool and then as a final operation forcing such additional body of metal into the head without permitting of any material enlargement thereof by the action of rolling-surfaces acting simultaneously on all parts of the surface of the head, substantially as set forth.

657,965. **EXTRACTOR FOR PRIMING-CARTRIDGES IN BREECH-LOADING GUNS.** ARENT SILFVERSPARRE, Bofors, Sweden. Filed June 29, 1900. Serial No. 22,011. (No model.)



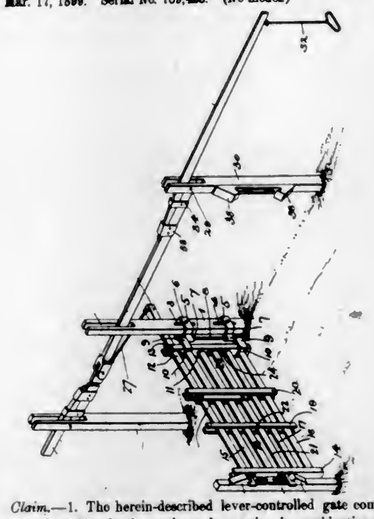
Claim.—An improved extractor for the priming-cartridge in the breech-loading guns, consisting of a two-armed lever 32 mounted radially on the rear side of the door so as to have a slight longitudinal play and by means of a spring 34 held with its inner end pressing inward and forward on the cartridge, when inserted, while its outer end is free and easily accessible, for the purpose of clamping the inserted priming-cartridge securely in position by means of the extractor while at the same time admitting of its being easily ejected by applying a blow on the outer branch of the said extractor.

657,966. **ART OF CULTIVATING FRUITS OR VEGETABLES.** STANLEY H. G. STEWART, New York, N. Y. Filed May 1, 1900. Serial No. 15,112. (No model.)



Claim.—In the cultivation of fruits and vegetables, the combination, with a fence inclosing the sides of a section of ground under cultivation, of a covering to inclose the same at pleasure, pipes extended above the ground at intervals and perforated to discharge their contents into the atmosphere, means for heating air and supplying the same to the pipes, and means for boiling water and discharging the steam to the pipes, and suitable valves for directing the hot air or steam at pleasure into the pipes, whereby the hot air or steam may be diffused throughout the inclosure, as may be required.

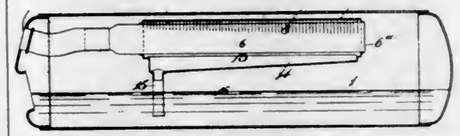
657,967. **FARM-GATE.** GEORGE W. THOMPSON, Union, Ill. Filed Mar. 17, 1899. Serial No. 709,433. (No model.)



Claim.—1. The herein-described lever-controlled gate comprising an upper pivoted bar having an inward extension, in combination with an intermediate pivoted bar pivotally connected to said upper bar, said upper and intermediate bars being respectively pivoted near the hinge and latch end of the gate-frame whereby when an upward pull upon said extension of the upper bar is made the free end of said bars will be simultaneously drawn toward each other, thereby permitting said ends to be received by the keeper and will automatically separate from each other when said extension is released, as specified and for the purpose set forth.

2. A gate comprising an upper and an intermediate pivoted bar, the former having its pivot-point near the hinged portion of the gate while the latter bar is pivoted near the outer end of the gate; an inwardly-directed extension formed upon the upper bar, a controlling-lever and means to connect said lever with said extension, and a link located intermediate the pivot-points of said bars and pivotally connected to each bar, whereby an upward pull upon said extension will simultaneously draw the free outer ends of said pivoted bars toward each other in the manner specified and for the purpose set forth.

657,968. **SEPARATOR FOR STEAM-GENERATORS.** JOHN I. THORNYCROFT, London, England. Filed May 12, 1899. Serial No. 716,483. (No model.)



Claim.—1. A separator for separating water from steam comprising two chambers arranged one within the other, the outer chamber having a row of openings along one side thereof and having its ends closed, the inner chamber having a row of openings along one side thereof and having one end closed and the other end in communication with the steam-main, means for causing the steam to pass partly around the inner chamber before it enters the same through the openings thereof, and means for discharging the separated water from the outer chamber, substantially as described.

2. For separating water from steam in a steam-boiler, a separator comprising chambers arranged one within the other, and a water-discharge conduit connected to the lower side of the outer chamber, said outer chamber having an inlet for wet steam and an outlet in connection with said discharge-conduit through which water separated from the steam within the outer chamber can escape, and said inner chamber having an inlet for steam from the outer chamber and an outlet for connection to a steam-main, the inlets to the outer and inner chambers being separated from each other so that steam entering the outer chamber must pass partly around the inner chamber before it can enter the same.

3. For separating water from steam in a steam-boiler, a separator comprising inner and outer longitudinal chambers, a longitudinal partition secured to and between the walls of said chambers, and a water-discharge conduit connected to the outer chamber, said outer chamber having at its upper part and to one side of said partition, inlet-openings for wet steam and at its lower part an outlet for water in connection with said conduit, and said inner chamber having a series of inlet-openings at the opposite side of said partition and an outlet for connection with a steam-main.

4. For separating water from steam in a steam-boiler, a separator comprising an outer pipe provided at its upper part with inlet slits or openings for wet steam and at its lower part with an outlet for water of condensation, an inner pipe secured within the outer pipe so as to leave a practically-annular space or chamber between the two and provided at or near its upper part with a series of slits or openings for inlet of steam from said space or chamber and at one end with an outlet for connection to a steam-main, a partition secured to and between the two pipes and located between the two sets of inlet-openings therein, and a water-discharge conduit connected to the outer pipe and in communication with the water-outlet therefrom, substantially as described.

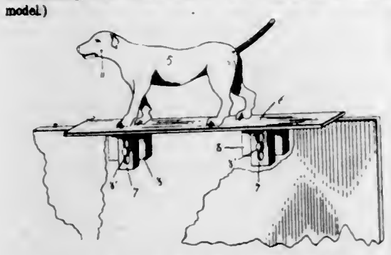
5. For separating water from steam in a steam-boiler, a separator comprising two chambers connected together through suitable openings one of the said chambers having an inlet for wet steam and an outlet for water separated from such steam within the chamber, and the other chamber having an outlet for connection to a steam-main, a water-discharge pipe in connection with the outlet from the first-mentioned chamber, and an automatic non-return-valve arrangement adapted to control said discharge-pipe.

6. For separating water from steam in a steam-boiler, a separator comprising an outer chamber having inlets for wet steam and an outlet for water of condensation, an inner chamber secured within said outer pipe and having inlets for steam from the space between the walls of the two chambers and an outlet for connection with a steam-main, a longitudinal partition secured to and between the walls of said chambers and be-

tween the steam-inlets thereof, a longitudinal casing or box secured to the outer chamber below the water-outlet therefrom, a water-outlet pipe secured to the casing or box, and an automatic non-return-valve arrangement adapted to control said discharge-pipe, substantially as described.

7. In a steam-boiler, the combination with a vessel for containing steam and water, and a steam-main therefrom, of a steam and water separator comprising an outer longitudinal chamber having at the top, inlets for wet steam and at the bottom an outlet for water, an inner longitudinal chamber secured within said outer chamber, closed at one end and secured at the other to said steam-main and having inlets for steam from the space between the two chambers, a longitudinal partition secured to and between the walls of said chambers and located between the steam-inlets thereof, a longitudinal casing or box secured to the outer chamber below the water-outlet thereof, an outlet-pipe extending from said casing or box and terminating below the water-level in said vessel, and an automatic non-return-valve arrangement adapted to control said outlet-pipe, substantially as described.

657,969. REIN-HOLDER. JOHN C. TOLLIVER and JACOB A. STINGEL, Patricksburg, Ind. Filed May 17, 1900. Serial No. 17,009. (No model.)



Claim.—1. A rein-holder comprising a base adapted for attachment to a dashboard, a hollow body mounted on the base and comprising a fixed jaw, a lever pivoted in the body and having a projecting portion forming a jaw for cooperation with the fixed jaw, a spring disposed in the body and bearing at its ends against the upper wall of the body and against the lever to hold the jaws yieldably in engagement, and a second lever pivoted in the body, the inner end of the second lever being disposed beneath the inner end of the first lever and having its opposite end extending exteriorly of the body, whereby the extending portion of the second lever may be depressed to open the jaws.

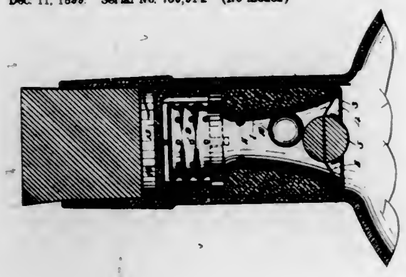
2. A rein-holder in the form of an animal, wherein one jaw is formed by the upper jaw of the animal and the other gripping-jaw is formed by the lower jaw of the animal, said lower jaw being pivoted and having an extension extending into the body of the animal, a lever passed into the rear end of the body of the animal and having a protruding portion to form the tail of the animal and having its inner end disposed beneath the inwardly-extending portion of the lower jaw, and a spring bearing against the last-named inwardly-extending portion and upon the upper wall of the body, to hold the jaws yieldably closed

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657,970. FIRE-EXTINGUISHING COMPOUND. JOSEPH TOMBEUR, Brussels, Belgium. Filed July 3, 1897. Serial No. 643,925. (No specimens.)

Claim.—The new fire-extinguishing compound consisting of a solution in water of sulfate of alumina, borate of sodium and boric acid, mixed together in about the proportions herein set forth.

657,971. BOTTLE. GEORGE W. VOGHT, New York, N. Y. Filed Dec. 11, 1899. Serial No. 739,914. (No model.)

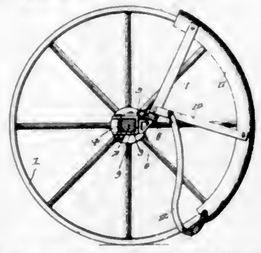


Claim.—1. In a bottle, a valve-casing arranged in the neck portion thereof, a valve held yieldingly in a seat formed in the lower portion of the casing, a head on said casing having annular channels and perforations through the wall of the head in said channels, and a cap for fitting over the head of the valve-casing, the said cap having a port through its top wall and having channels in the inner side of its side wall, substantially as specified.

2. In a bottle, a valve-casing having a head portion provided with perforations and annular channels, a plate in the lower end of said casing and having a valve-controlled opening, a cap fitted over the head portion of the valve-casing and having ports and channels in the inner side of its side wall, and lugs extended from said cap and having hooked portions for engaging underneath a flange formed on the casing, substantially as specified.

3. In a bottle, a valve-casing arranged in the neck portion of the bottle, a cement for securing the casing, and a string or the like extended through the cement and adapted when drawn to form a vent.

657,972. MUD-GUARD. THOMAS J. WARD, Dubuque Iowa. Filed May 7, 1900. Serial No. 15,758. (No model.)

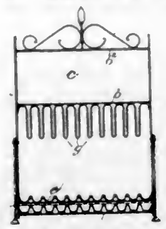


Claim.—1. The combination with a wheel and axle, of a hinged mud-guard having a depending arm extending below the lower end of said guard.

2. The combination with a wheel and axle, of a mud-guard movably attached to the axle and having an arm with a lower depending extremity, and a stop to limit the lower movement of the said arm.

3. The combination with a wheel and axle, of a clip removably applied to the axle and having a rear stop, a mud-guard movably connected to the rear portion of the clip and limited in its downward movement by the said stop, and an arm attached to the guard and having a lower depending curved extremity.

657,978. BICYCLE-STAND. CHARLES W. WARNER, Middletown, Conn. Filed Dec. 1, 1897. Serial No. 660,357. (No model.)



Claim.—1. In combination in a bicycle-stand, a frame including a cross-piece bearing holds, braces secured to each end of the frame and extending on opposite sides at each end thereof, and arms pivoted at one end to the lower ends of the braces and pivotally connected at their opposite ends.

2. In combination in a bicycle-stand, a frame including a cross-piece bearing holds, braces secured at a common point at each end of the frame and extending on opposite sides thereof, sectional arms connecting the braces at opposite ends of the frame, the sections of each arm being pivotally connected at one end and pivotally connected to a brace at the opposite end.

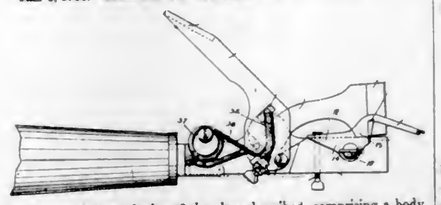
3. In combination in a bicycle-stand, a frame including a cross-piece bearing holds, braces detachably secured at one end to said frame, a sectional arm pivoted to the opposite end of said braces and each section being pivotally connected to each other and to the frame.

4. In combination in a bicycle-stand, a frame including a top and bottom cross-piece each bearing holds, braces pivotally connected at one end and detachably secured to the frame and extending downward on

opposite sides of the frame, and arms each pivoted at one end to the lower end of a brace and pivotally connected at their opposite ends to each other and to the frame.

5. In a bicycle-stand in combination, a cross-piece bearing holds, braces connected with the cross-piece at each end and extending on opposite sides thereof, sectional arms connecting the braces at opposite ends of the frame, the sections of each arm being pivotally connected at one end and pivotally connected to a brace at the opposite end.

657,974. SAW-SET. DANIEL C. WIEST, Mohrsville, Pa. Filed Jan. 8, 1900. Serial No. 704. (No model.)



Claim.—1. A set device of the class described, comprising a body portion, one end of which is provided with an anvil, a set-regulator pivotally mounted adjacent said anvil, means for adjusting the same, a set-arm pivotally mounted rearwardly of said anvil, a trigger-arm pivotally mounted adjacent said set-arm and provided with an adjustable device which operates in connection with said set-arm to elevate the same, and a coiled spring mounted adjacent said set-arm, and said trigger-arm, and the ends of which operate respectively in connection with said set-arm and said trigger-arm, substantially as shown and described.

2. In a device of the class described, a body portion provided at one end with an anvil, a set-arm pivotally connected therewith and provided with a head which operates in connection with said anvil, a trigger-arm pivotally connected with said body portion adjacent said set-arm, a catch-piece adjustably connected with said trigger-arm and provided with a laterally-deflected end, said trigger-arm being provided with a slot through which said deflected end operates, and said set-arm having a recess within which said deflected end operates, the deflected end of said catch-piece being radially farther distant from the pivotal point of said trigger-arm than said recess is radially distant from the pivotal point of said set-arm, and tensional devices which operate in connection with said set-arm to normally depress the same, substantially as shown and described.

3. In a device of the class described, a body portion provided at one end with an anvil, a set-arm pivotally connected with said body portion and provided at its outer end with a head which operates in connection with said anvil, a trigger-arm pivotally connected with said body portion adjacent the pivotal point of said set-arm, said trigger-arm being provided adjacent its pivotal point with a chamber, a block having a flange slidably and adjustably mounted in said chamber, and provided with a catch-piece, which latter is provided with a laterally-directed outer end which operates through a slot formed in said trigger-arm, and in connection with a recess formed in said set-arm, and a coiled spring connected with said body portion and one end of which is operatively connected with said adjustable block, the other end of said coiled spring being operatively connected with said set-arm to normally depress the same, substantially as shown and described.

4. A device of the class described, comprising a body portion provided at one end with an anvil, a set-arm pivotally connected with said body portion and provided at its outer end with a head which operates in connection with said anvil, a trigger-arm pivotally connected with said body portion adjacent the pivotal point of said set-arm, and provided adjacent its pivotal point with a chamber, a block provided with a flange slidably mounted therein and provided with an adjusting-screw which operates in connection with said trigger-arm connected with said block and operating through a slot formed in said trigger-arm, and in connection with a recess formed in said set-arm, and a coiled spring imposed upon a stud connected with said body portion, and one end of which spring operates in connection with said block, the other end being connected with the inner end portion of said set-arm by means of a link, substantially as shown and described.

5. In a device of the class described, a body portion provided with an anvil, a set-arm pivotally connected with said body portion and provided at its outer end with a head which operates in connection with said anvil, a trigger-arm pivotally connected with said body portion adjacent the pivotal point of said set-arm and provided adjacent its pivotal point with a chamber, a block slidably mounted upon said set-arm and provided with a flange which operates within said chamber, said trigger-arm being provided with an adjusting-screw which operates in connection with said block, said block being provided with a catch-piece which operates through a slot formed in said trigger-arm and in connection with a recess formed in said set-arm, and tensional means which operate in connection with said set-arm whereby the same is normally held in a depressed position, substantially as shown and described.

6. In a set device of the class described, a pivotally-mounted set-arm, a trigger-arm pivotally mounted adjacent said set-arm and provided with an adjustable device which operates in connection with said set-arm to elevate the same, and a coiled spring mounted adjacent said set-arm and said trigger-arm, and the ends of which operate respectively in connection with said set-arm and said trigger-arm, substantially as shown and described.

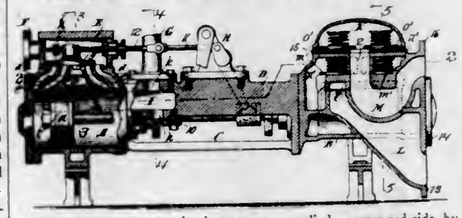
657,975. PROCESS OF MANUFACTURING ARTICLES FROM VENEERS. CARL WITTKOWSKY, Berlin, Germany. Filed Mar. 17, 1898. Serial No. 674,251. (No model.)



Claim.—1. The method of manufacturing shaped articles such as bowls, plates, boxes, trunks or the like from crosswise-arranged superposed veneers consisting in first uniting the latter with each other and at the same time preliminarily shaping them, then subjecting the surface of the preliminary-shaped articles to the action of steam, finally completing the shaping of the said articles by aid of pressure and heat, substantially as set forth.

2. The method of manufacturing shaped articles such as bowls, plates, boxes, trunks or the like from crosswise-arranged superposed veneers consisting in first uniting the latter with each other and at the same time subjecting the same to pressure, so as to obtain a preliminary shaping of the same, then subjecting the preliminary-shaped article to the action of steam to soften the same at its outside only, and finally subjecting said article to heat and at the same time pressing the said article the second time so as to thereby complete its shape, substantially as set forth.

657,976. PUMP. CHARLES C. WORTHINGTON, Irvington, N. Y. Filed Oct. 4, 1898. Serial No. 692,660. (No model.)



Claim.—1. A pump having two pump-cylinders arranged side by side with the force-chamber above the pulsation-chambers and the force-passage extending downward centrally between the pulsation-chambers and suction-valves to a plane below the suction-valves and then upward and outward to open at the end of the pump above and in a plane between the cylinders.

2. A pump having two pump-cylinders arranged side by side with the force-chamber above the pulsation-chambers, the suction-passage entering at the end of the pump below and in a plane between the cylinders and passing upward between the cylinders to form a suction-chamber above and between the cylinders below the pulsation-chambers, and the force-passage extending downward centrally between the pulsation-chambers and suction-valves to a plane below the suction-valves and then upward and outward to open at the end of the pump above and in a plane between the cylinders.

3. A pump having two pump-cylinders arranged side by side with the force-chamber above the pulsation-chambers and the force-passage extending downward centrally between the pulsation-chambers and suction-valves into the suction-chamber and between the cylinders and then upward and outward to open at the end of the pump above and in a plane between the cylinders

4. A pump having two pump-cylinders arranged side by side with the force-chamber at the top of the pump and the force-passage extending downward centrally between the suction-valves of the two cylinders to a plane below the valves and then to the discharge.

5. A pump having two pump-cylinders arranged side by side with the force-chamber at the top of the pump and the force-passage extending downward centrally between the valves of the two cylinders to a plane below the valves and between the cylinders and then to the discharge.

6. A pump having two pump-cylinders arranged side by side with

the force-chamber at the top of the pump and the force-passage extending downward centrally between the valves of the two cylinders to a plane below the valves and between the cylinders and then to the discharge, said passage being flattened between the cylinders for securing a compact arrangement of the passage and cylinders.

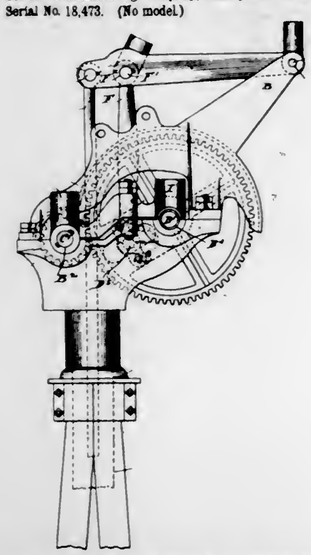
7. A pump having the cylinders B, B', pulsation-chambers *n*, *n'* and force-chamber K, suction-valves *m*, *m'* force-valves *o*, *o'* above the suction-valves *m*, *m'*, suction-passage L extending upward from the end of the pump between the cylinders and forming suction-chamber *l*, above and between the cylinders, and force-passage M extending downward centrally between and below the valves and then outward to the discharge at the end of the pump, substantially as shown and described.

8. A pump having the cylinders B, B', pulsation-chambers *n*, *n'*, suction-passage L and chamber *l*, and central force-passage M extending downward centrally between the pulsation-chambers and then upward and outward to the discharge, all formed integral, substantially as shown and described.

9. In a pump having two cylinders, an inlet-chamber between the two cylinders and a suction-pipe connection at the back end and below the cylinder-heads, side walls and a horizontal plate above the suction-chamber and partitions above the horizontal plate, there being openings and suction-valves in said horizontal plate, the partition separating the valve-chest into chambers that open into the ends of the pump-cylinders, a plate above the valve-chest having openings through it and force-valves and a downward discharge-opening through the plate communicating with a discharge-pipe and passing down through the valve-chamber and below the valves extending to the rear and terminating at the rear end of the pump and over the cylinder-heads, and a hood over the force-valves.

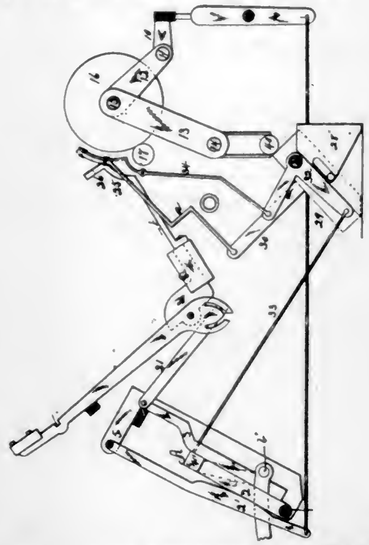
10. In a pump having two cylinders, an inlet-chamber between the two cylinders and a suction-pipe connection at the back end and below the cylinder-heads, side walls and a horizontal plate above the suction-chamber and partitions above the horizontal plate, there being openings and suction-valves in said horizontal plate, the partition separating the valve-chest into chambers that open into the ends of the pump-cylinders, a plate above the valve-chest having openings through it and force-valves and a downward discharge-opening through the plate, communicating with a discharge-pipe passing down through the valve-chamber and below the valves and extending to the rear and terminating with a connection for the discharge-pipe at the rear and over the cylinder-heads, and a hood over the force-valves and connecting-bolts for securing the same and the valve-plate to the valve-chest.

657,977. **WINDMILL.** OSCAR J. ZIEGLER, Freeport, Ill., assignor to the Stover Manufacturing Company, same place. Filed May 29, 1900. Serial No. 18,473. (No model.)



Claim.—In a windmill, in combination, two pinions mounted on a driving-shaft, two spur-wheels—concentrically mounted on separate shafts—meshing with the pinions and provided with a wrist-pin connection, a walking-beam, a pitman connecting the walking-beam with the wrist-pin connection of the spur-wheels, a pump-rod pivoted to the free end of the walking-beam, the longitudinal axes of the pitman, walking-beam and pump-rod lying in a vertical plane parallel with, and substantially midway between, the spur-wheels and pinions, substantially as and for the purpose specified.

657,978. **TYPE-WRITING MACHINE.** EDWIN E. BARNEY, Groton, N. Y. Filed July 18, 1898. Serial No. 686,235. (No model.)

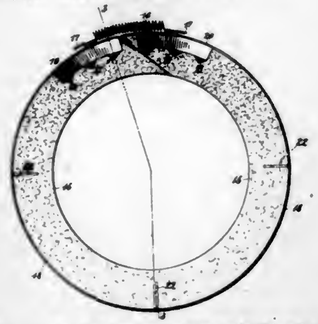


Claim.—1. In a type-writing machine, the combination with a universal bar mounted to swing forward and back upon arms projecting from it, of a bell-crank key-lever engaging with said universal bar, a cam-lever with which the arm of the universal bar engages, an escapement and a reciprocatory escapement-rod connected to said cam and drawn forward by it when said cam is swung forward by the forward swing of the universal bar.

2. In a type-writing machine the combination with an oscillating universal bar, and a bell-crank key-lever engaging with said bar of a cam-bar oscillated by said universal bar whenever a key-lever is operated, an escapement and an escapement-rod connected to and reciprocated by the oscillation of said cam-bar.

3. In a type-writing machine, the combination with a carriage-frame rail, of a bracket secured to said rail and laterally projecting therefrom, and having a ball-cone created upon its free end, a roller-arbor removably mounted in said cone and having a ball-cone created upon it adjacent to its outer end, a roller recessed on opposite sides to create ball-cups therein, balls between said cups and cones, and a carriage-track traversed by said roller.

657,979. **DUST-GUARD.** SETH A. CROSE, New York, N. Y. Filed July 17, 1900. Serial No. 23,864. (No model.)



Claim.—1. The dust-guard comprising the flexible strip 15 adapted to be inserted around the car-axle while the latter is in position in the journal-box, said strip at its ends being correspondingly cut off at an angle so that the joint between the meeting ends of said strip is on a tangent to the car-axle, combined with the spring 16 for connecting the ends of said strip to maintain the latter around the car-axle, and means carried at the ends of said strip to engage the ends of said spring; substantially as and for the purposes set forth.

2. The dust-guard comprising the flexible strip 15, and the flexible band 18 connected thereto, said strip and band being adapted to be inserted around the car-axle while the latter is in position in the journal-box, combined with the hooks 17 adjacent to the ends of said strip, and the spring 16 to engage said hooks 17 and connect the ends of said strip to maintain the latter around the car-axle; substantially as and for the purposes set forth.

3. The dust-guard comprising the flexible packing-strip 15, the flexible band 18 connected thereto, and the clips 19 and 20 secured to the ends of said strip 15, combined with means for connecting the ends of the guard together to form a ring when said guard is in operative position; substantially as set forth.

4. The dust-guard comprising the flexible packing-strip 15, the flexible band 18 connected thereto, the clips 19 and 20 connected with the ends of said strip 15, and the hooks 17 on said clips, combined with the spring 16 for engaging said hooks and connecting the ends of the guard to form a ring when said guard is in operative position; substantially as set forth.

5. The dust-guard comprising the flexible strip 15 adapted to be inserted around the car-axle while the latter is in position in the journal-box, combined with the hooks 17 adjacent to the ends of said strip, and the spring 16 to engage said hooks 17 and connect the ends of said strip and maintain the latter under a spring tension around the car-axle; substantially as and for the purposes set forth.

6. The dust-guard comprising the flexible strip 15, and the metallic clips 19 and 20 secured to its ends, combined with the spring 16 for engaging said clips and binding said strip in the form of a ring around the car-axle; substantially as set forth.

657,980. **PILE-HOLDER FOR PILE-DRIVING MACHINES.** JOSEPH G. FALCON, Evanston, Ill. Filed Feb. 7, 1900. Serial No. 4,316. (No model.)



Claim.—1. A pile-holder of the class described, having a spar of any suitable length, means for receiving the upper end of the pile to be driven and holding the pile in line with the spar while the latter is being handled, and means for attaching said holding means directly to the spar substantially as set forth.

2. A pile-holder of the class described, having a spar and a socket, having parallel sides, attached to and carried by the lower end of the spar, for receiving the upper end of the pile to be driven, the socket being of considerable weight, whereby it holds the pile-holder plumb while sinking it, substantially as set forth.

3. A pile-holder of the class described, having a spar, a sleeve into which the lower end of the spar projects so as to leave beyond the extremity of the spar a socket of considerable length, having practically-parallel sides, for receiving the upper end of the pile to be driven and for holding the pile in line with the spar, and means for preventing the endwise movement of the spar relatively to the sleeve, substantially as set forth.

4. A pile-holder of the class described, having a spar and a sleeve into which the lower end of the spar projects leaving beyond the extremity of the spar a socket of considerable length, having parallel sides, for receiving the upper end of the pile to be driven and for holding the pile in line with the spar, the spar and sleeve being secured together so as to prevent their relative endwise movement, substantially as set forth.

5. A pile-holder of the class described, having a spar and a sleeve into which the lower end of the spar projects leaving beyond the extremity of the spar a socket of considerable length, having practically-parallel sides, for receiving the upper end of the pile to be driven and for holding the pile in line with the spar, and a seat upon which the lower end of the spar bears, the seat being immovable relatively to the sleeve, substantially as set forth.

6. A pile-holder of the class described, having a spar, a rectangular sleeve into which the lower end of the spar projects, leaving below the extremity of the spar a socket for receiving the upper end of the pile to be driven, said sleeve being constructed of four plates secured together at their angles of intersection, and means for preventing the endwise movement of the spar within the sleeve, substantially as set forth.

7. A pile-holder of the class described, having a spar, means attached to and carried by the lower end of the spar for receiving the upper end of the pile to be driven and for holding the pile in line with the spar, and tackle for handling the holder thus constructed, said tackle comprising lines attached to the pile-holder above and in the vicinity of its center of gravity, respectively, substantially as set forth.

8. A pile-driver of the class described, having a spar, means at the lower end of the spar for receiving the upper end of the pile to be driven, and tackle for handling the holder thus constructed, said tackle consisting of a line attached to the holder above its center of gravity, and a second line attached to the holder below its center of gravity, substantially as set forth.

9. A pile-holder of the class described, having a spar, a socket at the lower end of the spar for receiving the upper end of the pile to be driven, and tackle for handling the holder thus constructed, said tackle consisting of a line attached to the spar near its upper end, and a second line attached to the holder in the vicinity of the socket, substantially as set forth.

10. A pile-holder of the class described, having a spar, a sleeve into which the lower end of the spar projects, leaving beyond the extremity of the spar a socket for receiving the upper end of the pile to be driven, and tackle for handling the holder thus constructed, said tackle consisting of a line attached to the spar above its center of gravity, and a second line attached to the sleeve, substantially as set forth.

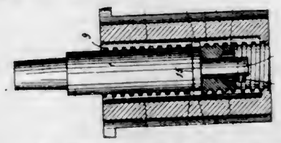
11. A pile-holder of the class described, having a spar, a rectangular sleeve into which the lower end of the spar projects, leaving below the extremity of the spar a socket for receiving the upper end of the pile to be driven, and a seat within the sleeve upon which the lower end of the spar bears, said seat being of substantially U shape and having its sides secured to opposite sides of the sleeve, substantially as set forth.

12. A pile-holder of the class described, having a spar, a rectangular sleeve into which the lower end of the spar projects, leaving below the extremity of the spar a socket for receiving the upper end of the pile to be driven, said sleeve being constructed of four plates secured together at their angles of intersection, means for securing the spar to the sides of the sleeve, and a seat within the sleeve upon which the lower end of the spar bears, said seat being of substantially U shape and having its sides secured to the sides of the sleeve, substantially as set forth.

13. A pile-holder of the class described, having a spar, a socket at the lower end of the spar for receiving the upper end of the pile to be driven, and means for securing the pile in the socket, substantially as set forth.

14. A pile-holder of the class described, having a spar, a socket at the lower end of the spar for receiving the upper end of the pile to be driven, and means for securing the pile in the socket, said means consisting of a line, and means for securing its ends to the holder, substantially as set forth.

657,981. **CHAIR.** JULIUS M. GERMANSON, Milwaukee, Wis. Filed Jan. 2, 1900. Serial No. 25. (No model.)



Claim.—1. The combination, of a hub having a vertical screw-threaded opening, a spindle fitting freely in said opening, said spindle provided with a reduced portion, a shoulder being formed where the reduced portion joins the main portion of the spindle, a nut loosely carried on the reduced portion of the spindle, and adapted to engage the threads of the hub-opening, a collar also carried on the reduced portion of the spindle and interposed between the nut and the shoulder of the spindle, means whereby the collar is held against rotation, and clutch mechanism between the nut and the spindle, said clutch mechanism being normally out of engagement so as to permit free revolution of the spindle without revolving the nut therewith, but said clutch mechanism constructed to be thrown

into engagement and thereby revolve the nut with the spindle and cause a vertical movement of the nut and spindle.

2. The combination, of a hub having a vertical screw-threaded opening, a spindle fitting freely in said opening, said spindle provided with a projecting stem, the stem having a stud projecting laterally from the lower end thereof, and a nut provided with a main opening through which the stem passes freely, and the lower end of the nut having an opening branching from the main opening and a wing extending to the main opening, said branching opening leading upwardly to a socket above the wing, said socket being provided with projecting shoulders, the stud of the spindle being normally below the lower end of the nut, whereby the spindle is adapted to revolve freely without carrying the nut therewith, and said stud when in line with the branching opening, and when the spindle is raised, adapted to be carried up into the socket and supported between the shoulders of the socket, whereby as the spindle is turned the nut is turned therewith to cause a vertical movement of the nut and spindle.

3. The combination of a hub having a vertical screw-threaded opening, a spindle fiting freely in said opening, said spindle provided with a projecting stem, the stem having a stud projecting laterally from the lower end thereof, a nut provided with a main opening through which the stem passes freely, and the lower end of said nut having an opening branching from the main opening and a wing extending to the main opening, said branching opening leading upwardly to a socket above the wing, said socket being provided with projecting shoulders, the stud of the spindle being normally below the lower end of the nut, whereby the spindle is adapted to revolve freely without carrying the nut therewith, and said stud when in line with the branching opening, and when the spindle is raised, adapted to be carried up into the socket and supported between the shoulders of the socket, whereby as the spindle is turned the nut is turned therewith to cause a vertical movement of the nut and spindle, a collar through which the stem of the spindle passes freely, said collar being interposed between the nut and a shoulder on the spindle, and means for holding the collar against turning.

4. The combination, of a hub having a vertical screw-threaded opening, a spindle fitting freely in the opening, said spindle provided with a projecting stem, said stem having a stud projecting laterally from the lower end thereof, and a nut provided with a main opening through which the stem passes freely, and the lower end of the nut having an opening branching from the main opening and a wing extending to the main opening, said branching opening leading upwardly by an inclined ledge to a socket above the wing, said socket being provided with projecting shoulders, the stud of the spindle being normally below the lower end of the nut, whereby the spindle is adapted to revolve freely without carrying the nut therewith, and said stud when in line with the branching opening, and when the spindle is raised, adapted to be carried up the upwardly-inclined ledge to and into the socket and supported between the shoulders of the socket, whereby as the spindle is turned the nut is turned therewith to cause a vertical movement of the nut and spindle.

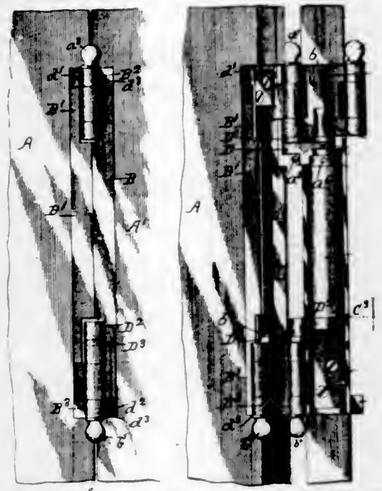
5. The combination, of a hub having a vertical screw-threaded opening, a spindle fitting freely in the opening, said spindle provided with a projecting stem, said stem having a stud extending laterally from the lower end thereof, and a nut provided with a main opening through which the stem passes freely, and the lower end of the nut having openings branching from the main opening and wings extending to the main openings, said branching openings leading upwardly to sockets above the wings, said sockets being provided therein with shoulders, the stud of the spindle being normally below the lower end of the nut, whereby the spindle is adapted to revolve freely without carrying the nut therewith, and said stud when in line with either of the branch openings, and when the spindle is raised, adapted to be carried into either of the sockets and supported between the shoulders thereof, whereby as the spindle is turned the nut is turned therewith to cause a vertical movement of the nut and spindle.

657,982. SPRING-HINGE. WILLIAM GERWIEN, Chicago, Ill. Filed Mar. 2, 1899. Renewed Feb. 10, 1900. Serial No. 4,823. (No model.)

Claim.—1. In a spring-hinge, the combination of the companion hinge-leaves, the connecting hinge-plates, of a concavo-convex shape, the tension-spring, the connecting-arms, and the connecting-links, said arms and links being of the same length, the links connecting with said hinge-plates on a line through the vertical center thereof.

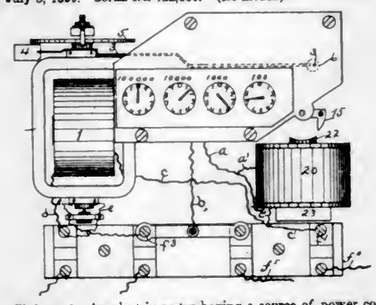
2. In a spring-hinge, the combination with a tension-spring, of a case, inclosing the same, the companion hubs, loosely inserted in the respective ends of said case, the rod connecting said hubs and having its free ends stop short outside thereof, the arms connecting with the projecting ends of said rod, the connecting-links, and the concavo-convex hinge-plates.

3. In a spring-hinge, the combination with the hinge-leaves, of the connecting concavo-convex hinge-plates, the links pivoted to said plates on a line through their vertical center, the arms, connecting with the free end of the links, the rod, on which the opposite ends of said arms are mounted, the tension-hubs mounted on the respective ends of said rod, the case wherein are seated the reduced ends of said hubs and the tension-spring, inclosed therein having its respective ends secured in the tension-hubs.



4. In a spring-hinge, the door and jamb leaves provided on opposite sides with projecting lugs adapted to check any unnecessary swaying of the door.

657,983. ELECTRIC METER. JESSE HARRIS, Lynn, Mass. Filed July 5, 1899. Serial No. 722,889. (No model.)

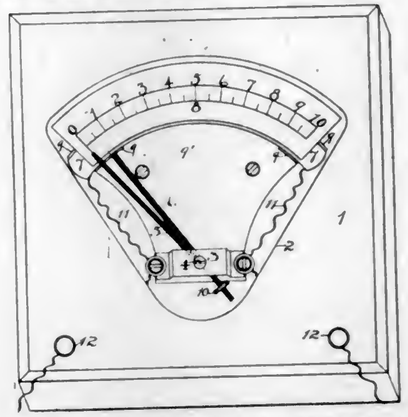


Claim.—1. An electric meter having a source of power consisting of an electromagnet and a clockwork; the electromagnet being arranged to receive initial power intermittently and to intermittently wind the clockwork; the clockwork being arranged to complete an electric current whereby the electromagnet is energized, the meter also having a registering-train and an indicating device, the registering-train being arranged to intermittently receive motion from the transmitting device, and the transmitting device arranged to receive motion from the electromagnet and communicate said motion to the registering-train and indicating device substantially as described.

2. In an electric meter a dynamometer and an arm arranged to be swung or moved by the torque of the coil, said arm carrying a transmission-wheel and having a plurality of rollers, one of them having an irregular surface between which the transmission-roller lies and moves horizontally along the surface of the rollers and communicates motion to one of said rollers, said roller so receiving motion being in operative connection with a train of gearing operating pointers on the face of a dial, the rollers arranged to receive motion from an electromagnet arranged to operate intermittently, said electromagnet being in operative connection with a clockwork and arranged to wind the same intermittently, said clockwork being arranged to carry a movable contact-piece and bring it in electrical connection at predetermined times with electrodes said electrodes being in operative connection with a source of electric power and arranged to energize the electromagnet when in contact with the contact-piece substantially as described.

3. In an electric meter an indicating-train and a transmitting device in operative connection, and an electromagnet and a clockwork, the transmitting device consisting of a wheel and a plurality of rollers arranged to operate by surface contact one roller being operatively connected with the electromagnet the clockwork being arranged to complete an electric circuit intermittently and to intermittently energize the electromagnet, the said magnet being arranged to intermittently wind the clockwork substantially as described.

657,984. ELECTRIC MEASURING INSTRUMENT. JESSE HARRIS, Lynn, Mass. Filed July 20, 1899. Serial No. 724,500. (No model.)



Claim.—1. In an electric measuring instrument a coil or solenoid traversed by an electric current to be measured, the coil or solenoid having a tapering opening and a movable homogeneous magnetizable arm or body within said opening, and an indicator; the arm and the indicator being arranged to be moved by the influence of the current and to be operative in any position, and having means for bringing the indicator to zero when no current flows through the coil substantially as described.

2. In an electrical measuring instrument a revoluble shaft and a homogeneous arm or body carried thereby, and a triangular coil or solenoid, the homogeneous arm or body being arranged so that a portion thereof at least lies in the triangular opening in the coil or solenoid and having an index, all arranged so that when the index is at zero the arm or body rests at its greatest distance from the sides of the coil and as the indicator moves toward the higher readings the arm or body approaches nearer to said sides and arranged to operate in a plurality of positions substantially as described.

3. In an electrical measuring instrument a V-shaped open coil within the opening of which lies a homogeneous magnetizable arm or body, said arm or body being mounted on a shaft and having an indicator and scale for reading the movements of the arm and indicator and a resilient device for controlling the return of the indicator to zero and opposing the movements of the arm or body against the force generated in the coil substantially as described.

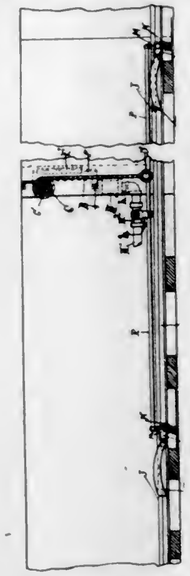
4. In a measuring instrument a pointer or index provided with separate sights arranged to eliminate the error due to parallax substantially as described.

5. In an electrical measuring instrument an angular-shaped open coil or solenoid within the opening of which is a homogeneous magnetizable movable arm or body, said arm or body being arranged to be moved by the resultant force of a current passing through the coil and to move the arm from zero to higher readings, and having a resilient device arranged to return the arm to zero when no current is in the coil, and having a scale and indicator arranged to indicate the movements of the arm and an air-brake arranged to steady the motion of the moving parts substantially as described.

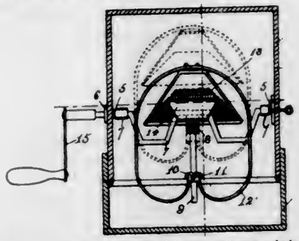
6. In an electrical measuring instrument an angular coil or solenoid and an arm, a portion of which at least, rests in the opening in the coil, and arranged to be horizontally deflected, and having a pointer arranged to be moved or deflected in unison with said arm and a graduated scale to which the pointer points as it moves substantially as described.

657,985. TRAP-DOOR FOR MINES. ALVIN HURFORD, Canton, Ohio. Filed Nov. 4, 1897. Serial No. 657,319. (No model.)

Claim.—In a mine trap-door or curtain-operating device, the combination with a roller and curtain, of a pinion on said roller, a cylinder and piston, a rack operated by the piston, a supply-valve for said cylinder, and means for controlling said valve, comprising a lever pivotally secured upon one end of a rock-shaft mounted in proximity to the track-rail, a crank-arm on the opposite end of the shaft, and a spring located below said crank-arm, and a pitman connecting said crank-arm to the valve-operating rod.



657,986. ASH-SIFTER. ERNST KLUGE, Chicago, Ill. Filed Jan. 26, 1900. Serial No. 2,843. (No model.)



Claim.—1. An ash-sifter comprising a casing consisting of an upper portion containing sifting devices and a lower removable receptacle for fine ashes, said sifting mechanism comprising a revolnble frame adapted to carry an ash-pan, a perpendicular bar carried thereby, a collar longitudinally adjustable on said bar, a frame carried thereby, and an inverted dished sieve carried by said frame and adapted to be moved to cover and uncover said pan on said frame.

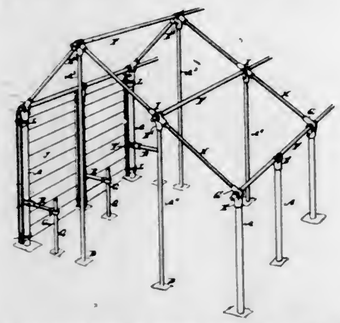
2. In an ash-sifter, the combination with a casing, of a revoluble frame mounted therein and adapted to carry a removable ash-pan at its middle portion, a bar rigidly mounted on said frame and extending perpendicularly thereto, a collar adjustably mounted on said bar and carrying a frame extending through said first-named frame, an inverted dished sieve carried by said last-named frame and adapted to be moved therewith to cover and uncover said removable pan, and devices for holding said first-named frame rigid to permit insertion and removal of said pan.

657,987. GREENHOUSE CONSTRUCTION. JUDSON A. KRAMER, Marion, Iowa. Filed July 18, 1899. Serial No. 724,218. (No model.)

Claim.—1. A greenhouse frame or skeleton comprising a series of outer tubular posts, a series of king-posts in transverse alinement therewith, a series of rafters in the same planes as the posts, tubular purlins at the ridge and eaves, and interlocking socket-irons adapted to connect the ends of the rafters with the posts by the passage through said socket-irons of the purlins, substantially as described.

2. A greenhouse frame or skeleton comprising a series of outer, tubular posts, a series of king-posts in transverse alinement therewith, tubular rafters in the same transverse planes as said posts, each of said raf-

ters being composed of two or more pieces, socket-irons connecting the adjacent ends of said pieces of each rafter, and adapted to receive a tubular purlin at right angles thereto, purlins at the ridge, eaves and between the adjacent ends of the sections of each rafter, and socket-irons forming interlocking terminals for the posts and rafters, and through which the purlins pass to connect the parts of the frame, substantially as described.



3. A greenhouse frame or skeleton comprising tubular wall-posts, tubular king-posts, tubular rafters, purlins and struts, interlocking socket-irons forming the terminals of the posts, rafters and struts, socket-irons connecting the adjacent ends of each part of a rafter, all said socket-irons being adapted to receive said purlins therethrough to bind the parts together, and a step for the lower ends of the struts, adjustable on the king-post, substantially as described.

4. In a greenhouse-frame, the combination of a tubular post, rafter and purlin, of a forked cap for the post, and a socket-terminal for the rafter adapted to lie between the lugs of a forked cap, said post-cap and rafter-socket being provided with transverse holes to receive said purlin, substantially as described.

5. In a greenhouse-frame, the combination of a tubular post, purlin and pair of rafters, of a forked cap for the post and a pair of terminal socket-irons for the rafters, the lugs of the cap and heads of the socket-irons being provided with holes to receive the purlins, and the heads of the socket-irons being halved together, whereby they may lie between the lugs of the cap and with the rafters in the same plane, substantially as described

6. In a greenhouse-frame, the combination with a tubular post, purlin, and rafter composed of two or more tubular parts, of a forked cap surmounting the post or strut, and a socket-iron to receive the adjacent ends of the parts of the rafter, said socket-iron having a transverse middle hole to receive the purlin, and the lugs of the cap having similar holes for the same purpose, substantially as described.

7. In a greenhouse, the combination of a tubular outer post, an adjacent wood post to which to nail the siding, and clamps adapted to partially embrace both posts and hold the nailing-post in position, substantially as described.

8. In a greenhouse, the combination with a tubular frame or skeleton, substantially as described, of sash-bars clipped to the purlins, and vertical, side sash-bars extending down therefrom in the same planes as the roof sash-bars, the eaves being formed by the projection of the roof-glass, substantially as described.

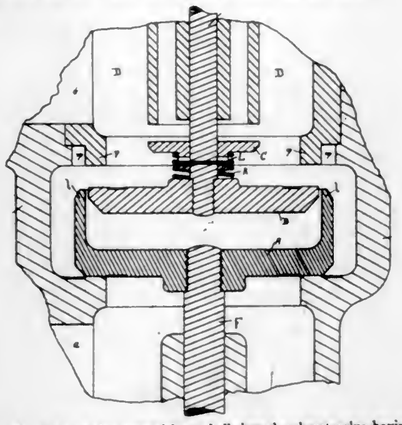
9. In a greenhouse, the combination of tubular bench-posts and cross-bars to support the bench-bed, of a pair of clamp-irons adapted to engage one end of each cross-bar and the adjacent post, a retaining-bolt therefor, and a socket-iron fitting the opposite end of each cross-bar and adapted to engage the adjacent post, and provided with set-screws for securing it to the respective parts, substantially as described.

10. In a greenhouse, the combination of a series of opposite, eave-supporting posts, a gutter under the eaves, a series of descending cross-bars to support said gutter, and socket-irons attached to the ends of said cross-bars and adapted to slide on said posts and to be secured thereto, substantially as described.

657,988. **VALVE FOR GAS-ENGINES.** ARTHUR A. LANIER, Buffalo, N. Y. Filed Jan. 18, 1900. Serial No. 1,876. (No model.)

Claim.—1. A gas-engine comprising a bell-shaped exhaust-valve having a stem, an air-valve, an air-valve seat around which the bell-shaped exhaust-valve is adapted to extend, a fuel-valve, a fuel-valve seat and a stem carrying the air-valve and fuel-valve.

2. A gas-engine comprising a valve-chest, a bell-shaped exhaust valve having a stem extending through the valve-chest, a spring for closing the bell-shaped exhaust-valve, an air-valve, an air-valve seat around which the bell-shaped exhaust-valve is adapted to extend, a fuel-valve, a fuel-valve seat and a stem carrying the air-valve and fuel-valve.



3. A gas-engine comprising a bell-shaped exhaust-valve having a stem, an air-valve located within the bell-shaped exhaust-valve, an air-valve seat around which the bell-shaped exhaust-valve is adapted to extend, a fuel-valve, a fuel-valve seat and a stem carrying the air-valve and fuel-valve.

4. A gas-engine comprising a bell-shaped exhaust-valve having a stem, an air-valve, an air-valve seat around which the bell-shaped exhaust-valve is adapted to extend, a fuel-valve, a stem carrying the air-valve and fuel-valve, and a spring for keeping the air-valve and fuel-valve closed.

5. A gas-engine comprising a bell-shaped exhaust-valve having a stem, an air-valve, an air-valve seat around which the bell-shaped exhaust-valve is adapted to extend, a fuel-valve, a fuel-valve seat, a stem carrying the air-valve and fuel-valve, and a spring located between the air-valve and the fuel-valve holding them yieldingly apart and for opening the air-valve in advance of the fuel-valve and for closing the fuel-valve in advance of the air-valve.

6. A gas-engine comprising a bell-shaped exhaust-valve having a stem, an air-valve, an air-valve seat around which the bell-shaped exhaust-valve is adapted to extend, a fuel-valve having a hub formed with a transverse opening, a fuel-valve seat, a stem carrying the air-valve and fuel-valve, and having a transverse pin extending through a slot in the hub for limiting the movement of the fuel-valve and a spring extending on both sides of the transverse pin for opening the air-valve in advance of the fuel-valve and for closing the fuel-valve in advance of the air-valve.

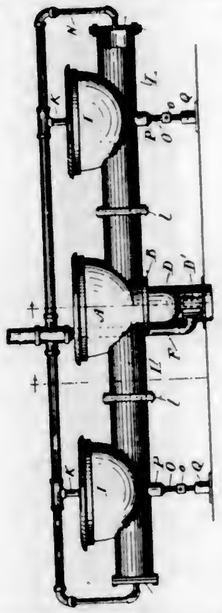
7. A gas-engine comprising a valve-chest having an exhaust-outlet passage, a cylinder-port, an air-inlet passage, a fuel-inlet passage, and an air and fuel mixing space, a plug having ports, registering with the fuel-inlet passage and air-inlet passage of the valve-chest, an air-valve seat surrounded by an annular space, and a fuel-valve seat, a bell-shaped exhaust-valve adapted to extend into the annular space and having a stem and a controlling-spring, an air-valve, a fuel-valve, a stem carrying the air-valve and fuel-valve, a controlling-spring for closing the air-valve and fuel-valve and a yielding spring located between the air-valve and fuel-valve.

657,989. **WATER-CLOSET.** PATRICK J. MADDEN, Chicago, Ill. Filed Mar. 1, 1895. Serial No. 540,162. (No model.)

Claim.—1. In a water-closet, the combination with a bowl having an opening for the admission of water to its rim and a trap communicating with the bowl at bottom, whence it proceeds upward, and having a jet-opening, of an integral pipe having laterally-projecting ends and having at its lower end a flange bolted to the lower portion of the trap, at its upper end a flange bolted to the bowl, and at an intermediate point a flange bolted to an intermediate portion of the trap whereby the bowl and trap are braced against each other, the bowl and trap having passages through which the pipe communicates with the rim-opening and jet-opening, respectively, substantially as set forth.

2. In a water-closet, the combination of a range of bowls having discharge-openings, and rim-openings of sufficient capacity to admit a volume of water sufficient for flushing purposes, a range-pipe with which the discharge-openings of all the bowls communicate, a trap, means for supplying the rim-opening of each of the bowls with a sufficient quantity of water for flushing purposes, a jet-opening of very much smaller capacity than the range-pipe arranged to discharge a jet of water thereinto, and means for supplying said jet-opening with water, substantially as set forth.

3. In a water-closet, the combination of a range of bowls having discharge-openings and rim-openings of sufficient capacity to admit a volume of water sufficient for flushing purposes, a range-pipe with which the discharge-openings of all the bowls communicate, a trap, means for supplying the rim-openings of each of the bowls with a quantity of water sufficient for flushing purposes, means for discharging a jet of water into the trap, a jet-opening of very much smaller capacity than the range-pipe arranged to discharge a jet of water thereinto, and means for supplying the jet-opening with water, substantially as set forth.



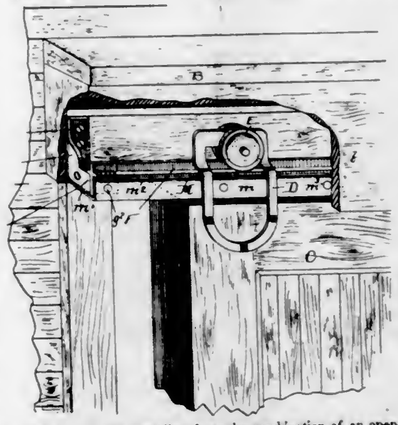
4. In a water-closet the combination of a range of bowls having discharge-openings and rim-openings of sufficient capacity to admit a volume of water sufficient for flushing purposes, a range-pipe with which the discharge-openings of all the bowls communicate, means for supplying the rim-openings of all the bowls with a volume of water sufficient for flushing purposes, jet-openings of very much smaller capacity than the range-pipe arranged to discharge jets of water into the opposite ends thereof, means for supplying said jet-openings with water and a trap communicating with the discharge-opening of an intermediate bowl, substantially as set forth.

5. In a water-closet the combination of a range of bowls having discharge-openings and rim-openings of sufficient capacity to admit a volume of water sufficient for flushing purposes, a range-pipe with which the discharge-openings of all the bowls communicate, means for supplying the rim-openings of all the bowls with a volume of water sufficient for flushing purposes, jet-openings arranged to discharge jets of water into the opposite ends of the range-pipe, means for supplying said jet-openings with water, a trap communicating with the discharge-opening of an intermediate bowl of the range, a jet-opening arranged to discharge a jet of water into one leg of the trap, and means for supplying said jet-opening with water, substantially as set forth.

6. In a water-closet the combination of a range of bowls having discharge-openings and rim-openings of sufficient capacity to admit a volume of water sufficient for flushing purposes, a range-pipe with which the discharge-openings of all the bowls communicate, a trap communicating with the discharge-opening of an intermediate bowl of the range, a water-supply pipe common to all of said bowls having a branch communicating with the rim-opening of each bowl, and a branch extending to each end of the range-pipe, and jet-openings at each end of the range-pipe with which the branches last aforesaid communicate, substantially as set forth.

7. In a water-closet the combination with a range of bowls having discharge-openings and rim-openings of sufficient capacity to admit a volume of water sufficient for flushing purposes, a range-pipe with which the discharge-openings of all of the bowls communicate, a trap communicating with the discharge-opening of an intermediate bowl of the range a jet-opening arranged opposite one leg of the trap, a water-supply pipe communicating with the rim-openings of all of the bowls and with the jet-opening of the trap, said pipe having branches extending to the ends of the range-pipe, and jet-openings with which the last-named branches communicate, said jet-openings being arranged to discharge jets of water into the range-pipe from opposite ends thereof, substantially as set forth.

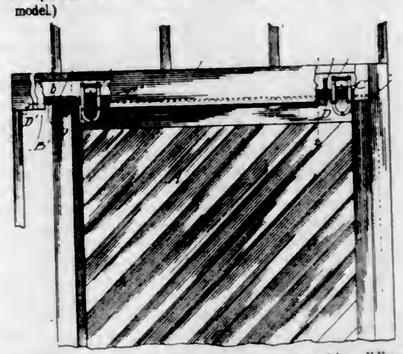
657,990. **HOUSING AND HANGER-TRACK FOR SLIDING DOORS.** JAMES H. PHELPS, Sharon, Wis., assignor to James H. Phelps and Louis Radke, same place. Filed June 30, 1900. Serial No. 22,155. (No model.)



Claim.—1. In a sliding door, the combination of an open-bottom housing and a central track-rail therein and its supporting-brackets, with the door and its hangers, and a sheet-metal protecting-strip fitting against and secured to the central track-rail and projecting to each side thereof and closing the openings on each side of the central track-rail against admission of birds, there being a narrow slot between the outer edge of said protecting-strip and the outer member of said housing for the hanger-straps to pass through and reciprocate in as the sliding door opens and closes, substantially as specified.

2. In a sliding door, the combination of an open-bottom housing and a central track-rail therein and its supporting-brackets, with the door and its hangers, and a sheet-metal protecting-strip fitting against and secured to the central track-rail and projecting to each side thereof and closing the openings on each side of the central track-rail against admission of birds, there being a narrow slot between the outer edge of said protecting-strip and the outer member of said housing for the hanger-straps to pass through and reciprocate in as the sliding door opens and closes, said sheet-metal protecting-strip having an upright portion m and two horizontal flanges m' m^2, one projecting to each side of the central track-rail, substantially as specified.

657,991. **HOUSING AND HANGER FOR SLIDING DOORS.** LOUIS RADKE, Sharon, Wis., assignor to Louis Radke and James H. Phelps, same place. Filed Dec. 15, 1899. Serial No. 740,401. (No model.)



Claim.—1. In a door-hanger, the combination with a sliding door, a roller-hanger therefor, a suitable track for said hanger supported above the door, and a housing for said hanger and track, the outer side wall

thereof extending slightly below the upper edge of the door when in its normal or operative position, of a separate protecting piece, or strip, located in said housing beneath said track of sufficient width to nearly close the bottom of the housing leaving a narrow slot wherein the hanger-arm is permitted to travel, substantially as and for the purpose set forth.

2. In a door-hanger, the combination with a sliding door, a roller-hanger therefor, a suitable track for said hanger supported above the door, and a housing for said hanger and track, the outer side wall thereof extending slightly below the upper edge of the door when in its normal or operative position, of a separate protecting piece, or strip, located in said housing beneath said track of sufficient width to nearly close the bottom of the housing leaving a narrow slot wherein the hanger-arm is permitted to travel, and means for supporting and winding said strip, substantially as specified.

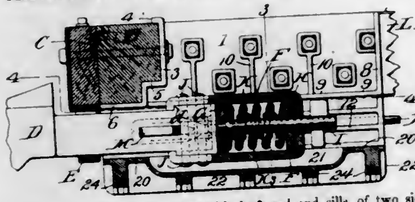
3. In a door-hanger, the combination with a sliding door, a roller-hanger therefor, a suitable track for said hanger supported above the door, and a housing for said hanger and track, the outer side wall thereof extending slightly below the upper edge of the door when in its normal or operative position, of a separate protecting piece, or strip, located in said housing beneath said track of sufficient width to nearly close the bottom of the housing leaving a narrow slot wherein the hanger-arm is permitted to travel, and winding-screws for supporting said strip at each end, substantially as specified.

657,992. STOVEPIPE. CHARLES A. SMITH, New Philadelphia, Ohio. Filed Feb. 12, 1900. Serial No. 4,859. (No model.)



Claim.—A stovepipe-section formed of a sheet of metal, one edge of which is bent twice upon itself forming two folds, the first fold being provided with a slot and the free side of the second fold being spaced from its other side and extending beyond the slot, the opposite edge of the section being provided with a lip having an inclined edge, the free side of the second fold being adapted to hold the lip within the slot, when the parts are in their operative relation, substantially as and for the purpose specified.

657,993. DRAFT-RIGGING. PETER SOUTHER, Pine Bluff, Ark. Filed Jan. 24, 1900. Serial No. 2,582. (No model.)



Claim.—1. The combination with draft and end sills, of two side plates 1, having in their upper portion bolt-holes for horizontal bolts passing through the draft-sills, and having lower portions depending below the sills, said plates being formed with outer ribs 2, engaging the bottoms of the sills, opposite inwardly-projecting horizontal flanges 9, the front wall 3 secured to the end sill and having top and bottom horizontal flanges engaging respectively the top and bottom of the end sill, and vertical flanges 11 and 13 depending from the horizontal flanges 9, and a bottom plate secured between said side plates, substantially as described.

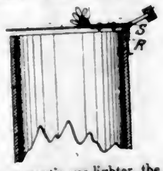
2. The herein-described housing-plate for draft-riggings, comprising the vertical side having bolt-holes in its upper portion, the outer, horizontal rib 2, the inner horizontal flange 9 and end horizontal flange 6, intermediate the upper and lower edges of the plate, the vertical end wall 3 having the top horizontal flange 4, and the inner vertical flanges 11 and 13 depending from the horizontal flange 9, substantially as described.

3. The combination with the end and draft sills, of side plates secured to said end and draft sills, a bottom plate between said side plates, a draw-bar, a yoke, follower-plates extending laterally behind said yoke and cooperating with shoulders on the side plates, a draft-spring interposed between said follower-plates, a cross-key carried by the draw-bar and projecting through slots in the side plates, and draft-rods arranged on the ends of said cross-key close to the side plates; substantially as described.

4. The herein-described framing-plate for draft-gear housing, comprising a body portion 1, a horizontal rib or flange 2 on its outer face, a front wall 3, having a flange 4 at its top, a recessed portion 5 in said front wall, an inwardly-extending horizontal flange 9, vertical flanges 11 and 13, and strengthening-webs for said horizontal flange 9, and said vertical flanges 11 and 13; substantially as described.

5. The combination with draft and end sills, of side plates secured on the inner sides of the draft-sills and extending below the same, said side plates being provided with outside horizontal ribs 2 engaging the under sides of the draft-sills, horizontal flanges 6 engaging the under side of the end sill, vertical front pieces 3 secured to the end sill, the opposite inwardly-projecting flanges 9, the vertical flanges 11 and 13 depending from flanges 9, a bottom plate secured between said side plates, a draw-bar, a yoke, follower-plates extending laterally beyond said yoke and cooperating with the flanges 11 and 13, said follower-plates being guided between said flanges 9 and bottom plate, and a spring between said follower-plates, substantially as described.

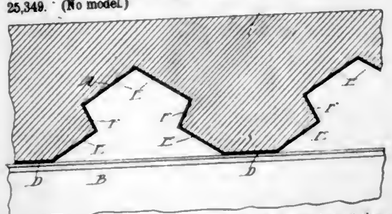
657,994. AUTOMATIC GAS-LIGHTER. KARL VON VICTINGHOFF-SCHEEL, Berlin, Germany. Filed Nov. 4, 1898. Serial No. 695,455. (No model.)



Claim.—1. In an automatic gas-lighter, the combination with the chimney of a gas-burner, of a thin plate arranged on and covering the top of the chimney and provided with an aperture, and a primer or lighting device arranged in said aperture, whereby the escaping gas is caused to brush in a concentrated stream against the primer, as set forth.

2. In an automatic gas-lighter, the combination with a chimney of a gas-burner, of a thin plate movably hinged on and covering the top of the chimney and provided with an aperture, and a primer or lighting device arranged in said aperture, substantially as set forth.

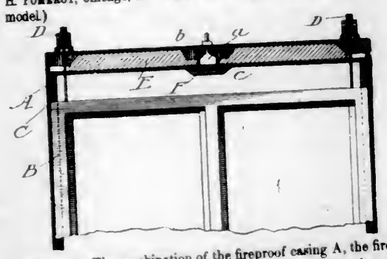
657,995. SHEET-METAL FLOORING. FRANK VOIGTMANN, Chicago, Ill. Filed Sept. 15, 1898. Renewed July 30, 1900. Serial No. 25,349. (No model.)



Claim.—1. The herein-described flooring, consisting of the combination of the sheet metal bent in V-shaped ridges, said ridges having projecting ridges upon them which restrict the space between the first-mentioned ridges making said space greater below than above them to form a key, and the concrete upon said sheet metal which fills said space between said ridges, all substantially as shown and described.

2. In a composition flooring the herein-described sheet-metal plate for holding the concrete, having the flat base portion D, the inclined portions E, E, and the offset portions F, F, all substantially as shown and described.

657,996. FIREPROOF WINDOW. FRANK VOIGTMANN and SILAS H. POMEROY, Chicago, Ill. Filed Feb. 5, 1900. Serial No. 4,102. (No model.)



Claim.—1. The combination of the fireproof casing A, the fireproof sash B, sliding therein, the weight E, located above said sash, and the destructible retaining device F, by which said weight is released when fire reaches it; all substantially as shown and described.

2. The combination of the fireproof casing A, the fireproof sash B sliding therein, the weight E, located above said sash, and the fusible plug F, located in an exposed position, by which said weight is released when the fire reaches said plug; all substantially as shown and described.

3. The combination of the fireproof casing A, the fireproof sash B, sliding therein, the weight E, located above said sash, having the guides *e*, *e* at each end for the sash-cords, and the fusible plug F, by which said weight is held in place; all substantially as shown and described.

4. The combination of the fireproof casing A, the fireproof sashes B, B′ sliding therein, the cords C, C, connecting said sashes, the pulleys D, D over which said cords pass, the weight E located so as to fall upon one of said sashes when released, and the destructible retaining device F by which said weight is suspended; all substantially as shown and described.

657,997. WAGON-REACH CLAMP. WILLIAM H. WEBER, Chicago, Ill. Filed Mar. 21, 1900. Serial No. 9,630. (No model.)



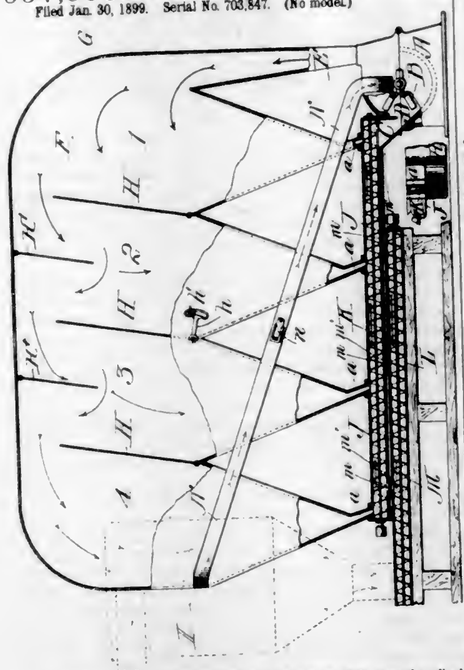
Claim.—1. In a wagon-reach clamp, the combination of the axle, a flanged plate adapted to receive the reach, the bolster, and a cam adapted to bear against the reach.

2. In a wagon-reach clamp, the combination with the reach, of the bolster, a plate adapted to receive the reach, an eccentric cam adapted to bear against the reach and means for connecting said bolster, plate and cam.

3. In a wagon-reach clamp, the combination of the axle, the bolster, and an eccentric cam attached to said bolster and adapted to bear upon the reach.

4. In a wagon-reach clamp, the combination of the axle, a flanged plate adapted to receive the reach, a bolt passing through said flange and the bolster and provided with an eccentric cam adapted to bear upon the reach, and bolts passing through said plate to connect the axle therewith substantially as described.

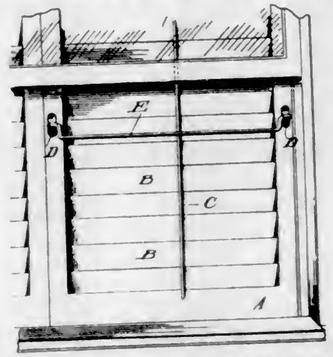
657,998. SEPARATOR. MILTON F. WILLIAMS, St. Louis, Mo. Filed Jan. 30, 1899. Serial No. 703,847. (No model.)



Claim.—1. The combination with a pulverizer of the type described, of a separating-chamber F, a spout E, leading into the chamber F, adjustable partitions H dividing said chamber into a number of separate compartments which are open to each other over the tops of said partitions a pipe N leading from the last compartment back into the eye of the pulverizer, an air-gate *n* in said pipe, a trough J communicating independently with each compartment into which the material falling in said compartments is discharged, a screw conveyer K in said trough for conveying all or part of said material back to the pulverizer, a trough L located under trough J, and communicating therewith through openings *m*, arranged in advance of the communications between trough J and the compartments, slides *m′* for controlling the openings *m*, and a screw conveyer M in trough L, substantially as described.

2. The combination with a rotary pulverizer, of a separating-chamber F, a spout E leading from the pulverizer to said chamber F, through which the pulverized material is forced by the pulverizer to the separating-chamber, partitions dividing said chamber F into a number of separate compartments, a pipe N leading from the last compartment back to the eye of the pulverizer, an air-gate *n* in said pipe N, a trough J communicating independently with each compartment, into which trough material falling into said compartments is discharged, a conveyer in said trough adapted to convey the material from each compartment back to the pulverizer, a second trough communicating with the first trough through openings arranged in advance of the communications between the first trough and compartments, gates for controlling said openings, and a conveyer in the second trough, substantially as described.

657,999. SHUTTER-PROTECTOR. MARY E. WOODWORTH, Montgomery, Ala. Filed June 18, 1900. Serial No. 20,761. (No model.)



Claim.—A device for protecting the slats of blinds, comprising in combination with the blind having pivoted shutters and a staff connected to said shutters to open and close same, eyes secured opposite each other to the longitudinal strips of the blind, a bail having its ends journaled in said eyes and independent of said staff, and designed to limit the outward throw of the staff, as set forth.

658,000. UPHOLSTERER'S BUTTON. JAMES A. YOUNG, St. Paul, Minn., assignor of one-half to Fred Howard, same place. Filed Mar. 6, 1899. Serial No. 707,886. (No model.)

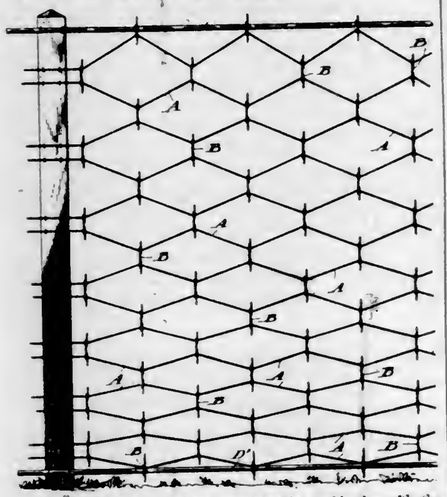


Claim.—1. As an improved article of manufacture, an upholsterer's button constructed in two attachable sections, one of which consists of a button-like head having a central, pointed shank with an annular recess forming an angular shoulder at the side of the groove nearest the point of the shank, the other section being made from a piece of tubing, by flaring one end of it outward like a funnel, and slitting the other end into arms adapted to be closed into the recess in the shank, substantially as and for the purpose set forth.

2. As an improved article of manufacture, an upholsterer's button constructed in two attachable sections, one of which consists of a button-like head having a sharp, pointed, central stem or shank, with an annular recess about it, the other section being made from a piece of tubing, by flaring one end of it into a funnel, and slitting the other end into inwardly-disposed spring-arms adapted to engage the recess in the shank of the first section, substantially as and for the purpose set forth.

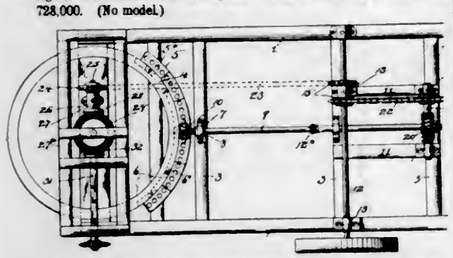
3. The process of making an upholsterer's button, consisting in the providing of a button with a central pointed stem or shank having an annular recess about it, the cutting off of a piece of tubing, slitting one end of it into arms, F, and bending said arms slightly inward to adapt them to engage the recess in the shank; and forming the other end of the tube into a funnel, E, adapted to hold the upholstery against the head or button, substantially as and for the purpose set forth.

658,001. FENCE. EUGENE B. BATEMAN, Marques, Tex. Filed June 7, 1900. Serial No. 19,391. (No model.)



Claim.—A barbed-wire fence comprising in combination with the top and bottom wires, the intermediate longitudinal wires secured in pairs to a post, the distances between said pairs increasing from the bottom to the top wire, said wires at the post and projecting beyond the edge thereof a short distance being parallel to one another, short alternately-arranged connecting-wires twisted once about a wire of each pair and stretching the intermediate wires in opposite directions in a vertical plane, the ends of said short wires being vertically disposed in alinement with one another, the spaces between the barbed points increasing from the bottom to the top of the fence, the spaces, between the adjacent wires of the various pairs, at their points of connection with the short barb wires, being equal, as shown and described.

658,002. STRAW-STACKER. PETER BOGER, Marion, Ohio, assignor to Edward Huber, same place. Filed Aug. 21, 1899. Serial No. 728,000. (No model.)

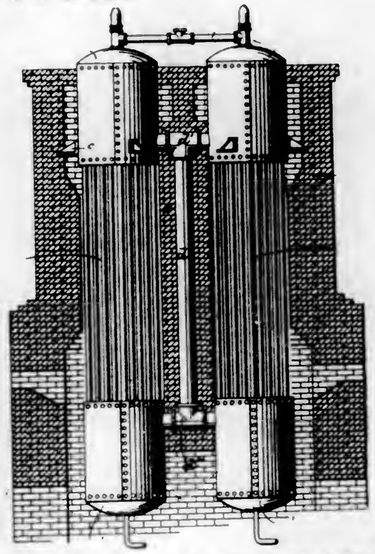


Claim.—1. A straw-stacker comprising a turn-table adapted to move in a horizontal plane, a perforated sectional rack mounted thereon, a vertically-adjustable journal-box, a stationary journal-box, a guide or bracket, a revoluble shaft made in sections, one of said sections supported in the stationary journal-box, and the other section supported in the adjustable journal-box in the said guide or bracket, said shaft provided with a pinion adapted to engage the said rack, and means for operating the said shaft and pinion, substantially as shown and described.

2. A straw-stacker comprising a frame, a turn-table, a perforated sectional rack mounted thereon, a guide or bracket on said frame, a vertically-slidable journal-box carried by said guide, a stationary journal-box, a revoluble shaft made in sections connected together by a knuckle-joint, one section mounted in the stationary journal-box and its end having a worm-gear thereon, and the other section mounted in the slidable journal-box, guides at the opposite ends of said rack in which the end of the said section is adapted to move, and means for operating the said straw-stacker, substantially as shown and described.

3. A straw-stacker comprising a frame, a turn-table, a perforated sectional rack or plate mounted thereon, a sectional shaft provided with a pinion adapted to engage said perforated rack, and the end of said shaft extending beyond said pinion, a guide at each end of said rack for the purpose of guiding the said extended end of the shaft as the pinion moves around the end of the rack while traveling from the upper to the lower surface of said rack, and means for operating said shaft and pinion, substantially as shown and described.

658,003. WATER-TUBE BOILER. JAMES F. CASEY and MERTLAND M. HEDGES, Chattanooga, Tenn., assignors to the Casey & Hedges Manufacturing Company, same place. Filed Feb. 17, 1899. Serial No. 705,755. (No model.)



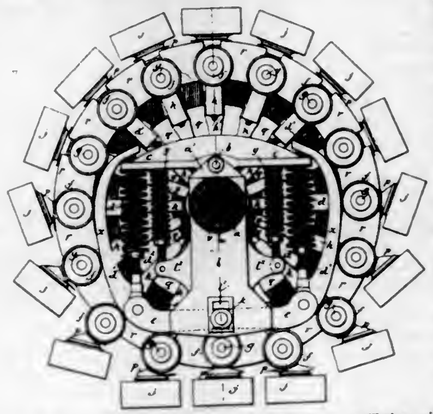
Claim.—1. A boiler such as described consisting of units, each of which is made up of upper and lower drums connected together by vertical tubes as described, and at the top near the bottom of the upper drums and at the bottom near the top of the lower drums by pipes carrying T connections, which T connections are connected by a circulating-pipe in combination with a furnace having a bridge-wall which surrounds said circulating-pipe, substantially as specified.

2. In a boiler such as described, the arrangement of the units each consisting of upper and lower drums connected together by tubes as described, and a central protected circulating-pipe of a larger body than the said tubes, the lower drums being placed below the furnace-line, substantially as and for the purpose specified.

3. The combination with the boiler consisting of two units each consisting of upper and lower drums connected together by vertical tubes, an outer casing surrounding said boilers, said casing being provided with a bridge-wall which separates said units and circulating-pipe connecting the upper and lower drums of said units protected by said bridge-wall, and a furnace extending across the respective units, substantially as described.

4. A boiler such as described, consisting of units, each of which is made up of upper and lower drums connected together by vertical tubes as described, and at the top near the bottom of the upper drums and bottom near the top of the lower drums by pipes carrying T connections, which T connections are connected by a circulating-pipe of larger body than said tubes, an outer casing for said boiler with the furnace extending across the respective units thereof, a bridge-wall extending throughout the height of the combustion-chamber of said furnace and inclosing said circulating-pipe throughout its entire length, outlets for said combustion-chambers near the top thereof, feed-water-supply inlets in the lower drums of said boiler and steam-outlets in the upper drums thereof, substantially as and for the purpose specified.

658,004. WHEEL. BRAMAH J. DIPLOCK, London, England. Filed Feb. 7, 1900. Serial No. 4,344. (No model.)



Claim.—1. The combination of a vehicle-body, an oscillating rail pivoted to it, feet carried by it, means for placing the feet successively on the ground and rollers pivoted to the feet and supporting the rail.

2. The combination of a vehicle-body, an axle and a rail carried by it, a disk pivoted on the axle, guides on the disk, spokes working in the guides, feet pivoted to the spokes, means for placing the feet successively on the ground and rollers pivoted to the feet and supporting the rail.

3. In a foot for supporting a vehicle, the combination of a box, a block free to move inside the box, a spoke and a universal joint connecting the spoke to the block.

4. In a foot for supporting a vehicle, the combination of a box, a block having a spherical recess in its top free to move inside the box, an inverted cup resting on the block and also free to move in the box, a second cup inside the first, a spoke and a ball on the end of the spoke fitting inside the recess and the inner cup.

5. The combination of a vehicle-body, a lever pivoted to the body and supporting it, a rail, spring connections between the lever and rail, feet carried by the body, means for placing the feet successively on the ground and rollers pivoted to the feet and supporting the rail.

6. The combination of a vehicle-body, a lever pivoted to the body and supporting it, a rail, spring connections between the lever and rail, a disk pivoted to the body, guides on the disk, spokes working in the guides, springs tending to draw the spokes inward, feet pivoted to the spokes, rollers pivoted to the spokes and means for forcing the rollers outward as the feet approach the ground and guiding them beneath the rail.

7. The combination of a vehicle-body, a lever pivoted to the body and supporting it, a guide fixed to the body, a rail, a pivot at the middle of the rail working in the guide, spring connections between the lever and rail, feet carried by the body, means for placing the feet successively on the ground and rollers pivoted to the feet and supporting the rails.

8. The combination of a vehicle-body, a lever pivoted to the body and supporting it, a guide fixed to the body, a rail, a pivot at the middle of the rail working in the guide, spring connections between the lever and rail, a disk pivoted to the body, guides on the disk, spokes working in the guides, springs tending to draw the spokes inward, feet pivoted to the spokes, rollers pivoted to the spokes and means for forcing the rollers outward as the feet approach the ground and guiding them beneath the rail.

9. The combination of a vehicle-body, a lever pivoted to the body and supporting it, a rail, spring connections between the lever and rail, a disk pivoted to the body, guides on the disk, spokes working in the guides, springs tending to draw the spokes inward, universal joints at the ends of the spokes, feet carried by the joints, rollers pivoted to the spokes and means for forcing the rollers outward as the feet approach the ground and guiding them beneath the rail.

10. The combination of a vehicle-body, a lever pivoted to the body and supporting it, a guide fixed to the body, a rail, a pivot at the middle of the rail working in the guide, spring connections between the lever and rail, a disk pivoted to the body, guides on the disk, spokes working in the guides, springs tending to draw the spokes inward, universal joints at the ends of the spokes, feet carried by the joints, rollers pivoted to the spokes and means for forcing the rollers outward as the feet approach the ground and guiding them beneath the rail.

11. The combination of a vehicle-body, a lever pivoted to the body and supporting it, a rail, spring connections between the lever and rail, feet carried by the body, means for placing the feet successively on the ground, rollers pivoted to the feet and supporting the rail, and spring connections between the body and the lever.

12. The combination of a vehicle-body, a lever pivoted to the body and supporting it, a rail, spring connections between the lever and rail, a disk pivoted to the body, guides on the disk, spokes working in the guides, springs tending to draw the spokes inward, feet pivoted to the spokes, rollers pivoted to the spokes, means for forcing the rollers outward as the feet approach the ground and guiding them beneath the rail, and spring connections between the body and the lever.

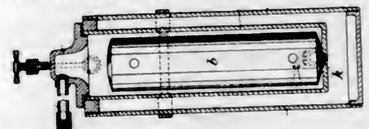
13. The combination of a vehicle-body, a lever pivoted to the body and supporting it, a guide fixed to the body, a rail, a pivot at the middle of the rail working in the guide, spring connections between the lever and rail, feet carried by the body, means for placing the feet successively on the ground, rollers pivoted to the feet and supporting the rail, and spring connections between the body and the lever.

14. The combination of a vehicle-body, a lever pivoted to the body and supporting it, a guide fixed to the body, a rail, a pivot at the middle of the rail working in the guide, spring connections between the lever and rail, a disk pivoted to the body, guides on the disk, spokes working in the guides, springs tending to draw the spokes inward, feet pivoted to the spokes, rollers pivoted to the spokes, means for forcing the rollers outward as the feet approach the ground and guiding them beneath the rail, and spring connections between the body and the lever.

15. The combination of a vehicle-body, a lever pivoted to the body and supporting it, a rail, spring connections between the lever and rail, a disk pivoted to the body, guides on the disk, spokes working in the guides, springs tending to draw the spokes inward, universal joints at the ends of the spokes, feet carried by the joints, rollers pivoted to the spokes, means for forcing the rollers outward as the feet approach the ground and guiding them beneath the rail, and spring connections between the body and the lever.

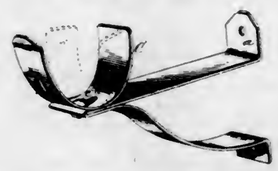
16. The combination of a vehicle-body, a lever pivoted to the body and supporting it, a guide fixed to the body, a rail, a pivot at the middle of the rail working in the guide, spring connections between the lever and rail, a disk pivoted to the body, guides on the disk, spokes working in the guides, springs tending to draw the spokes inward, universal joints at the ends of the spokes, feet carried by the joints, rollers pivoted to the spokes, means for forcing the rollers outward as the feet approach the ground and guiding them beneath the rail, and spring connections between the body and the lever.

658,005. STEAM-GENERATOR. RICHARD FIEDLER, Berlin, Germany. Filed July 23, 1898. Serial No. 686,704. (No model.)



Claim.—An apparatus for generating steam, consisting of an outer shell or casing, as shown, a receptacle centrally of said casing, a heat-containing body or bodies in said receptacle, a source of water-supply, a pulsometer connected with said source, a tank or receiver above the pulsometer to receive the water forced therethrough, means for supplying a column of water to the generator, and a steam connection between the generator and the pulsometer, for operating the latter, substantially as specified.

658,006. CURTAIN-POLE BRACKET. CHARLES E. FULLERTON, Helena, Ark. Filed July 20, 1900. Serial No. 24,255. (No model.)



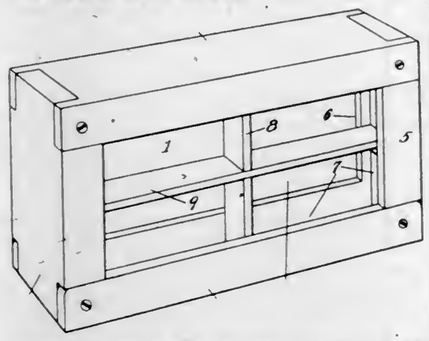
Claim.—1. A curtain-pole bracket and a segmental support for the end of the pole, means connecting the support and bracket, and means on the support cooperating with said connecting means for permitting adjustment of the support on an arc of a circle longitudinal of said support and coincident with the arc thereof, substantially as and for the purpose set forth.

2. A curtain-pole bracket and segmental support for the end of the pole, a vertical pivot connecting the support to the bracket, and means embodied in the support for permitting its adjustment longitudinally and on an arc coincident with the arc of said support, substantially as and for the purpose described.

3. A curtain-pole bracket and a segmental support for the end of the pole, said support having a longitudinal slot therethrough, and a suitable pivot-fastening extending vertically through the slot and secured to the bracket, whereby said support is capable of a horizontal and a lateral adjustment and also a longitudinal adjustment, substantially as and for the purpose specified.

4. A curtain-pole bracket comprising two arms joined at their outer ends and the rear ends of said arms terminating in outwardly-extending perforated flanges, a segmental support having a longitudinal slot therethrough, and a vertical pivot connecting the support to the bracket and extending through the slot of the support, substantially as and for the purpose set forth.

658,007. MOLD. WILLIAM F. GILES, Chester, Pa. Filed Nov. 13, 1899. Serial No. 736,751. (No model.)

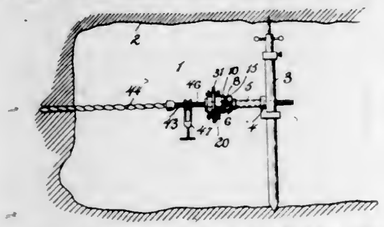


Claim.—1. A mold or carrier comprising a marginal recessed, pocketed frame.

2. A mold or carrier comprising a frame consisting of a number of marginal pieces and provided on each side with inwardly-extending marginal flanges in combination with partitions adapted to the flanges, substantially as described.

3. A mold or carrier comprising recessed marginal pieces hinged together and detachably connected, and partitions connected together and as a whole detachably fitted to said mold or carrier, substantially as described.

658,008. MINING-MACHINE. HENRY J. HALEY, Cardiff, Tenn. Filed Apr. 16, 1900. Serial No. 13,062. (No model.)



Claim.—1. In a mining-machine, the combination with a non-rotary cylinder having a cup, a head rotarily connected therewith and carrying a chuck, a feed-screw through the chuck, and a drill carried thereby; of radial ears on said cup, a link pivoted at its inner end between said ears, a band-brake encircling the head, and a bolt passing pivotally through the ends of the band, and through the outer end of the link, as and for the purpose set forth.

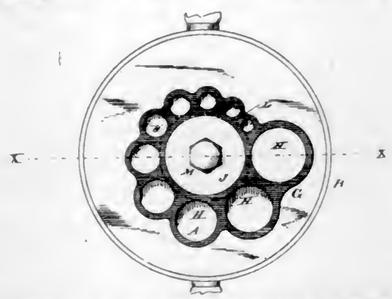
2. In a mining-machine, the combination with a non-rotary cylinder having a cup, screws passing radially inward through the latter, a band-brake attached to the cup, and means for tightening the band; of a head resting against the front of the cup and having a boss entering the latter and provided with a circumferential groove engaged by the inner ends of said screws, the band encircling said head, a chuck in the latter, a feed-screw through the chuck, and a drill carried thereby, substantially as described.

3. In a mining-machine, the combination with a non-rotary cylinder, a head rotarily connected therewith, a band-brake pivotally connected with the cylinder and encircling said head, and means for tightening this brake; of radially-movable nut members within the head, a disk swiveled thereon and having eccentric slots, radial pins in said members passing outward through holes in the head, screws in the outer ends of said pins parallel with the axis of the head and extending through the slots in the disk, a feed-screw, and a drill, substantially as described.

4. In a mining-machine, the combination with the feed-screw and drill, the supporting-cylinder, the head having an oval bore and provided with an exterior shoulder at its front end, a disk journaled on the head against said shoulder, and retaining devices on the head in rear of the disk, the latter having eccentric slots; of nut members movable radially in said bore and each having a radial pin, in rear of the disk and a radial ear in front of it, and a screw connecting said ear and pin and passing through one of said slots, as and for the purpose set forth.

5. In a mining-machine, the combination with the feed-screw and drill, a head having an oval bore with two radial holes, a support for this head, and a disk journaled thereon and having two eccentric slots; of nut members within said bore each having a pin about midway of its length screwed into its body and projecting through one of said holes in the head and an ear at its front end having an eye, and a screw passing through said eye and through one of said slots and screwed into the outer end of said pin, as and for the purpose set forth.

658,009. TOOL FOR TURNING REGULAR FORMS. ERNEST A. HAVENS, Peoria, Ill. Filed Nov. 13, 1899. Serial No. 736,790. (No model.)



Claim.—1. In a tool for turning regular forms of varying lengths, a revoluble block having a series of bores of varying size therein whose inner peripheries touch a circle struck from the center of such block, and a suitable base or support carrying a knife adapted to register with each of the said holes.

2. In a tool for turning regular forms, a suitable block having a series of various-sized openings therethrough, the centers of which are arranged in a spiral form, the inner peripheries touching a circle struck from the circle of said block, a base or support for the block to which the latter is secured, a knife secured to such base and having its cutting edge on the circle described from the center of the block, for the purposes set forth, said block being capable of rotary adjustment on said base for the purpose described.

3. In a tool for turning regular forms of various lengths, a block having a series of various-sized holes therethrough, arranged in a circle, said openings being flared at their lower ends, a base or support on the block having a flaring annular rim at its outer edge for receiving the said block, a central vertical post or wrist for the said base, a central recess in the block for receiving the said post, a washer resting on the block and a suitable screw passing through the washer into the post for locking the base and the block together, and a knife adjustably secured on the post and adapted to register with the openings as each is brought in line with it for the purpose described.

4. In a tool for turning regular forms, a block having a series of openings of varying diameter, a central bore intersecting each of the several openings, a base or support for the block, a central vertical post for such base, a knife adjustably attached to the post and adapted to extend within the said openings formed by the intersection of the central bore and the openings H, for the purposes set forth.

5. In a tool for turning regular forms, a base, or support having a vertical post thereon, a knife secured to the post, a recess through the base and the post, a block having a central bore adapted to receive the said post whereby such block may revolve thereon, means for locking the block and the base together, and a series of openings of varying diameters bored through the block parallel to said post and adapted one by one to register with the knife for the purposes herein set forth and described.

6. In a tool for turning regular forms, a block having a series of openings or bores therethrough arranged on a circle, each of said openings having a recess therein on that circle and a stationary knife adapted to enter each of the holes by a revolution of the said block, all for purposes set forth.

7. In a tool for turning regular forms, a revoluble block mounted on a base or support, a series of holes of varying size in the block, a central bore therethrough for receiving a post on the said base and upon which it revolves, a second larger bore adapted to intersect the said holes whereby apertures are formed in each of the openings H toward the pivot of the block and a knife secured to the said base, or support and adapted to enter each of the apertures whereby the work when entered in the openings containing the knife will be rounded, when revolved against the knife, or the knife revolved against the work as set forth.

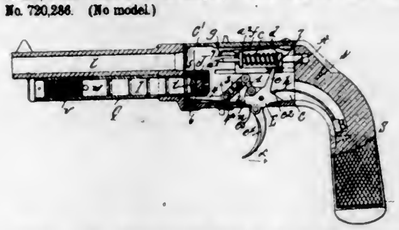
8. In a tool for turning regular forms, a block having a series of holes therein, a central bore intersecting each of the holes and a knife located within the bore and adapted to have each of the said series of bores revolve past it, whereby any one thereof may be set opposite such knife for the purposes set forth.

9. In a tool for turning regular forms, a block G having bores or openings H flared at their lower ends, the base A having the central post C, a knife D^2 secured to the latter, counterbores K and L, the former for receiving said post C, the latter intersecting and opening into the bores H and adapted to permit the revolution of said block about the knife for the purposes set forth and means for rigidly securing the base and block together.

10. In a tool for turning regular forms, a block having a series of openings therethrough, a counterbore arranged to intersect and open into said openings, and a knife located within the block to enter any one of the said bores, for the purposes herein set forth and described.

11. In a tool for turning regular forms, a revoluble block having a series of bores parallel with the axis of said block, said bores arranged in a circle with their peripheries equidistant from the said axis of the block and a knife located within the circle described by the revolution of the bores, said knife adapted to intersect the periphery of each bore as set forth.

658,010. MAGAZINE-PISTOL. OTTO A. HOFFMANN, Csepel, Austria-Hungary, assignor to Waffen-und Maschinenfabriks Actiengesellschaft, Buda-Pesth, Austria-Hungary. Filed June 12, 1899. Serial No. 720,286. (No model.)



Claim.—1. In a breech-loading magazine-firearm, the combination with the barrel, a cartridge-magazine below the same, and opening into the frame of the arm, and suitable cartridge-feed mechanism in said magazine; of a vertically-movable breech-block provided with a cartridge receiving and firing chamber and with an aperture leading to said chamber for the percussion end of the firing-pin, a lever in perpetual engagement with the breech-block and adapted to move the same into position for loading or firing, a trigger connected with and actuating said lever, and a firing-pin cocked and released by the movements of the trigger, for the purposes set forth.

2. In a breech-loading magazine-firearm, the combination with the barrel, a cartridge-magazine below the same and opening into the frame of the arm, and suitable cartridge-feed mechanism in said magazine; of a vertically-movable breech-block provided with a cartridge receiving and firing chamber and with an aperture leading to said chamber for the percussion end of the firing-pin, a lever in perpetual engagement with the breech-block and adapted to move the same into position for loading or firing, a trigger, connected with and actuating said lever, a firing-pin cocked and released by the movements of the trigger, and a spring acting on the trigger to return the breech-action into normal loading position, for the purposes set forth.

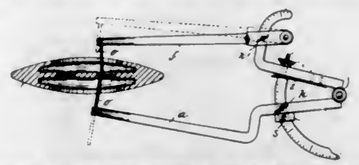
3. In a breech-loading magazine-firearm, the combination with the barrel, the magazine below the same and opening into the frame of the arm, suitable cartridge-feeding mechanism in said magazine, a vertically-movable breech-block provided with a cartridge receiving and firing chamber, and an apertnre leading thereto for the percussion-point of the firing-pin, a rock-lever in perpetual engagement with the breech-block, a trigger and a connection between the same and the lever for rocking the latter; of a slide in perpetual engagement with the trigger and provided with a vertical extension at either end, the firing-pin mounted in said extensions and having a stop-collar a^2, the power-spring mounted on the firing-pin between said collar and the rear extension of the slide, and a scar-spring having a lock-notch adapted to engage the aforesaid collar a^2 and having its forward free end bent down into the path of the forward extension on the slide, substantially as and for the purpose set forth.

4. In a breech-loading magazine-firearm, the combination with the barrel, the magazine below the same and opening into the frame of the arm, suitable cartridge-feeding mechanism in said magazine, a vertically-movable breech-block provided with a cartridge receiving and firing chamber, and an aperture leading thereto for the percussion-point of the firing-pin, a rock-lever in perpetual engagement with the breech-block, a trigger, and a connection between the same and the lever for rocking the latter; of a slide in perpetual engagement with the trigger and provided with a vertical extension at either end, the firing-pin mounted in said extensions and having a stop-collar a^2, the power-spring mounted on the firing-pin between said collar and the rear extension of the slide, a scar-spring having a lock-notch adapted to engage the aforesaid collar a^2 and having its forward end bent down into the path of the forward extension on the slide, and a spring acting on the trigger to hold the breech-action in its normal position of loading, substantially as and for the purpose set forth.

5. The combination with the vertically-movable breech-block and the trigger, of the lever 3 linked to said trigger, a finger 4 in perpetual engagement with said breech-block and pivotally connected to the forward end of the lever, the latter and the finger provided with coacting abutments arranged to limit the movement of said finger independently of the lever, substantially as and for the purpose set forth.

6. The combination with the frame C and the firing mechanism, of a cover for said frame having dovetail connection with the frame-walls, and a tang adapted to be locked to the stock of the firearm, and the scar-spring *f* secured to the under side of said cover, substantially as and for the purposes set forth.

658,011. COMBINED COMPASSES AND CALIPERS. JOHN H. HOPPER, Paterson, N. J., assignor of one-half to W. Lake Boreland, same place. Filed Dec. 11, 1899. Serial No. 739,885. (No model.)



Claim.—An instrument adapted for use as calipers, compasses and the like, and consisting essentially of an intermediate member and two other members pivotally connected together, graduated blades comprised in the structure of the intermediate member, one end portion of said intermediate member constituting one of said blades and being reduced to form an abutment on said member, and a block adjustably arranged on the other blade, said abutment and the block providing stops against which either of said other members is adapted to abut while the latter are being relatively adjusted, substantially as described.

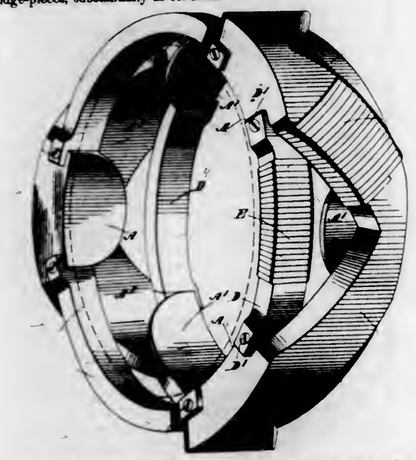
658,012. DYNAMO-ELECTRIC MACHINE. MARK H. HURRELL, Wimbledon, England. Filed Feb. 13, 1900. Serial No. 5,088. (No model.)

Claim.—1. In a dynamo-electric machine a field-magnet comprising a series of like poles symmetrically spaced and arranged to operate upon one peripheral annulus of an armature, a second series of like poles of opposite polarity to the first series, the poles of the second series being spaced alternately with those of the first series and arranged to operate upon another peripheral annulus of the armature, oblique yokes magnetically joining all the poles and coils operating to magnetize the poles, substantially as set forth.

2. In a dynamo-electric machine a field-magnet comprising a series of like poles symmetrically spaced and arranged to operate upon one peripheral annulus of an armature, a second series of like poles of opposite polarity to the first series, the poles of the second series being spaced alternately with those of the first series and arranged to operate upon another peripheral annulus of the armature, oblique yokes magnetically joining all the poles, exciting-coils on the yokes and compensating coils acting upon adjacent poles of like name, substantially as set forth.

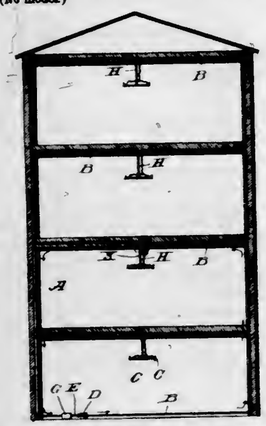
3. In a dynamo-electric machine a field-magnet comprising a series of like poles symmetrically spaced and arranged to operate upon one pe-

ripheral annulus of an armature, a second series of like poles of opposite polarity to the first series, the poles of the second series being spaced alternately with those of the first series and arranged to operate upon another peripheral annulus of the armature, oblique yokes magnetically joining all the poles, exciting-coils on the yokes, magnetic bridge-pieces between adjacent poles of each series and compensating coils upon the bridge-pieces, substantially as set forth.



4. In a dynamo-electric machine the combination with a plurality of like poles, of compensating coils acting between adjacent poles, substantially as set forth.

658,013. METHOD OF LOCATING CONCEALED WATER-PIPES. FREDERICK T. IDDINGS and DWIGHT H. WASHBURN, Washington, D. C.; said Iddings assignor to said Washburn. Filed Dec. 2, 1899. Serial No. 739,039. (No model.)

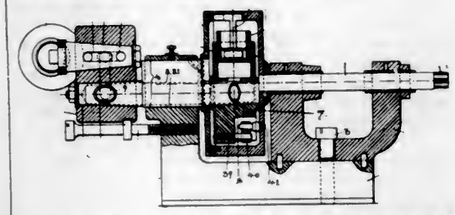


Claim.—1. The herein-described method of tracing and locating pipes concealed within the wall or floors of a building, which consists in charging the pipes with electricity, throwing an electric interrupter into the circuit, moving an explorer over the surface of the wall or floor and inducing a current in the latter as it approaches the circuit and changing the position of the explorer to indicate the direction in which the pipe extends, substantially as described.

2. The herein-described method of tracing and locating pipes concealed within the wall or floors of a building, which consists in charging the pipes with electricity, throwing an electric interrupter into the circuit, then changing the position of the explorer until the induced current therein ceases, thus indicating that the explorer is immediately over and in line with the pipe, substantially as described.

658,014. STEAM-MOTOR. MATHIAS JÖNSSON, Wisby, Sweden. Filed Apr. 5, 1899. Serial No. 711,860. (No model.)

Claim.—1. In a revolving-cylinder steam-engine, a stationary longitudinally-adjustable eccentric-shaft having two tapering journals, the revolving cylinder, and a valve-casing provided with bearings fitting said journals, said shaft and valve-casing having steam-passages adapted to supply live steam to and exhaust steam from the power-cylinders of the revolving cylinder, and means for adjusting the shaft longitudinally through the medium of said valve-casing, for the purpose set forth.



2. In a revolving-cylinder steam-engine, a stationary hollow shaft eccentric to a revolving cylinder at one end of said shaft, both ends of said shaft tapered, and a steam-chest adjustable on that end opposite the cylinder, a series of power-cylinders revoluble on the end of the stationary shaft, single-acting pistons therein, said pistons connected by piston-rod to said cylinder and the latter to a power-transmitting shaft, substantially as described.

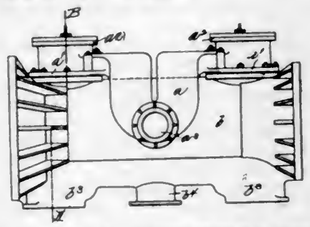
3. In a revolving-cylinder steam-engine, a stationary eccentric-shaft, a revolving cylinder, and a valve-casing mounted on said shaft, the latter and valve-casing provided with two steam-passages arranged to supply live steam to and exhaust steam from the power-cylinder, a blow-off passage in communication with the live and exhaust steam passages, and a loaded valve controlling said communications, for the purpose set forth.

4. In a revolving-cylinder steam-engine, a stationary eccentric-shaft, a revolving cylinder and a valve-casing mounted on said shaft, the latter and valve-casing provided with two steam-passages arranged to supply live steam to and exhaust steam from the power-cylinder, a blow-off passage in communication with the live-steam and exhaust passages, a loaded valve controlling said communications, and means for varying the load on said valve, for the purpose set forth.

5. In a revolving-cylinder steam-engine, a stationary eccentric-shaft, a revolving cylinder and a valve-casing mounted on said shaft, the latter and valve-casing provided with two steam-passages arranged to supply live steam to and exhaust steam from the power-cylinder, a blow-off passage in communication with the live-steam and exhaust passages, a loaded valve controlling said communications, and means for positioning the valve by hand to establish communication between the blow-off passage and said live and exhaust steam passages, for the purpose set forth.

6. In a revolving-cylinder steam-engine, a stationary eccentric-shaft, a revolving cylinder and a valve-casing mounted on said shaft, the latter and valve-casing provided with two steam-passages arranged to supply live steam to and exhaust steam from the power-cylinder, a blow-off passage in communication with the live-steam and exhaust passages, a loaded valve controlling said communications, means for positioning the valve by hand to establish communication between the blow-off passage and live and exhaust steam passages, and means for locking said valve in its said position, for the purpose set forth.

658,015. EXPANSION-COMPENSATING DEVICE FOR STEAM-CYLINDERS. EDUARD KÖNIG, Aschersleben, Germany. Filed June 23, 1900. Serial No. 21,367. (No model.)

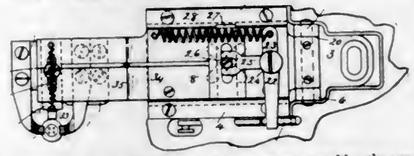


Claim.—1. A device for equalizing differences of expansion in the inlet parts of superheated steam-engines, which consists of a tubular connecting-piece carrying the steam-inlet socket a^3 and a casing at each end for receiving the inlet-valves, which casings are formed in one piece with the said connecting-piece and the latter being bent to the general form of a V shape in order to receive a spring action, substantially as described.

2. In a device such as described for equalizing differences of expansion, fixing the double seat d of the valve for the admission of the steam by means of a flange d' on said seat which is held firmly between a flange a' on the casing of the steam-inlet box a and a flange b' on the steam-cylinder b in such a way that the seat cannot warp, and the steam-inlet valves will close perfectly tight even at the highest temperatures, substantially as described.

3. In a device such as described for equalizing differences of expansion, forming the upper seat-faces d^2 of annular shape on concentric walls d^4 d^5 of the double seat to inclose the whole valve e and thus allow the surfaces both of the seat and of the valve, which are acted on by fresh boiler-steam and cylinder-steam respectively, to be correctly calculated for equal expansion, and providing the seat-disk, which carries the under annular faces d^3 and fixing-flange d' with suitable openings for giving passage to the hot steam, substantially as described.

658,016. CLAMP MECHANISM FOR BUTTON-SEWING MACHINES. FRANCIS T. LEILICH, San Francisco, Cal., assignor to the Climax Manufacturing Company, same place. Original application filed Oct. 20, 1899, Serial No 734,237. Divided and this application filed Jan. 15, 1900. Serial No. 1,529. (No model.)

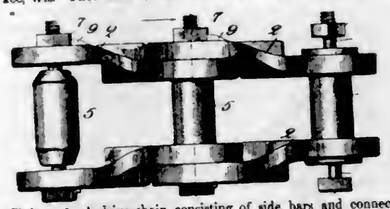


Claim.—1. In a button-clamp for a button-sewing machine, the combination of three movable button-supporting jaws, means for constraining the movement of said jaws so that they move always all three in unison with equal velocity in substantially-straight lines to and from the common center, a reciprocating device arranged to be moved in one direction against the hereinafter-mentioned spring by the direct pressure of the operator to so move said jaws outward from said center, and a spring for returning said jaws to said center when released from said pressure, substantially as described.

2. In a button-sewing machine, a pair of oppositely-directed button-clamping jaws each having a rigid mouth, the vertical cross-section of which is a reëntrant angle, the divergent surfaces of the mouth extending equally above and below the apex of the angle, substantially as described.

3. In a clamp mechanism for a button-sewing machine, the combination of two jaw-carriers constructed to move in opposite and parallel directions, and having slots oblique to said directions and crossing each other, a pin moving in both of said slots, and means for moving said pin in a direction transverse to the directions of motions of the carriers, substantially as described.

658,017. DRIVE-CHAIN. CHRISTOPHER W. LEVALLEY, Milwaukee, Wis. Filed Jan. 20, 1900. Serial No. 2,160. (No model.)

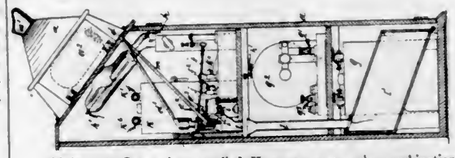


Claim.—1. A drive-chain consisting of side bars and connecting cross-bolts and nuts engaging with the cross-bolts by screw-threads, certain of said bars having stops with which the heads of the bolts are adapted to engage and which operate to prevent the bolts from turning, and the opposite side bars being provided with inclined or beveled stops with which the nuts on the bolts engage, substantially as set forth.

2. In a drive-chain the combination of the side bars having end portions which lap past each other, the headed cross-bolts which pass through the said lapping portions of the side bars and unite them, and the nuts upon the said bolts, certain of the side bars being provided with stops, 8, with which the heads of the bolts engage, and certain others with beveled or inclined stops, 9, with which the nuts engage, substantially as set forth.

3. In a drive-chain the combination of the side bars having end portions which lap past each other, connecting cross-bolts, having heads, the nuts upon the bolts, and the barrels or sleeves which surround the bolts and arranged between the side bars, certain of the side bars having stops with which the heads of the bolts engage and which prevent them from turning, the opposite side bars being provided with inclined stops 9, with which the nuts are adapted to engage, substantially as set forth.

658,018. COIN-CONTROLLED X-RAY APPARATUS. FRITZ NEUGEBAUER, New York, N. Y. Filed Jan. 25, 1900. Serial No. 2,728. (No model.)

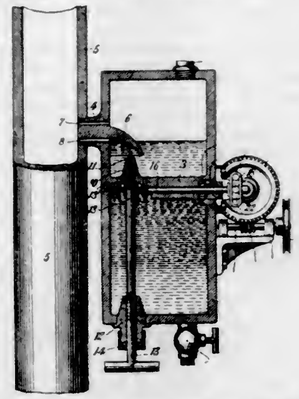


Claim.—1. In a coin-controlled X-ray apparatus, the combination of a lever adapted to be tilted by the weight of a coin, with a pair of contacts adapted to be closed by the lever, one contact being adapted to place the bulb in circuit, and the other contact being adapted to place a motor in circuit, combined with means actuated by the motor for dislodging the coin, substantially as specified.

2. In a coin-controlled X-ray apparatus, the combination of a lever with a tilting pan carried thereby, a motor adapted to be placed in circuit by the turning of the lever, and means actuated by the motor for tilting the pan, substantially as specified.

3. In a coin-controlled X-ray apparatus, the combination of a lever with a spring-actuated tilting pan carried thereby, an arm movable with the pan, a motor adapted to be placed in circuit by the turning of the lever, and means actuated by the motor for engaging the arm and tilting the pan, substantially as specified.

658,019. LUBRICATOR. JOHN POWER, New York, N. Y. Filed Apr. 30, 1900. Serial No. 14,886. (No model.)



Claim.—1. In a lubricator the combination of a lubricant-reservoir and a second reservoir for containing a liquid of different weight than the lubricant; a passage for the liquids intermediate between the reservoirs; a passage for the lubricant from the second reservoir; means for alternately changing the pressure in one of the reservoirs relative to the pressure in the other reservoir to thereby force the liquids alternately through the said intermediate passage substantially as described.

2. In a lubricator the combination of a lubricant-reservoir and a reservoir surmounting the lubricant-reservoir and adapted for containing a liquid heavier than the lubricant; a passage between the reservoirs; an outlet-passage for the lubricant from the surmounting reservoir; means for alternately changing the pressure in one of the reservoirs relative to the pressure in the other reservoir to force the liquids alternately through the passage between the reservoirs, substantially as described.

3. In a lubricator, the combination of a lubricant-reservoir and a water-reservoir above the lubricant-reservoir; a passage between the reservoirs; means for alternately changing the pressure in the lubricant-reservoir relative to that in the water-reservoir to force the lubricant and the water alternately through the said passage, and an outlet-passage for the lubricant from the water-reservoir to a leading-pipe substantially as described.

4. In a lubricator the combination of a reservoir for containing a

liquid lubricant and a second reservoir for containing a liquid of different specific gravity than the lubricant; a pump-plunger in one of the reservoirs for varying the pressure therein relative to the pressure in the other reservoir; a passage between the reservoirs; a passage for the lubricant from the second reservoir to a conducting-pipe substantially as described.

5. In a lubricator the combination of an oil-reservoir and a water-reservoir; a passage connecting the reservoirs; a plunger in the oil-reservoir for drawing water from the water-reservoir into the oil-reservoir and forcing oil into the water-reservoir, an oil-outlet passage from the water-reservoir to a pipe and means for regulating the size of the passage between the reservoirs, substantially as described.

6. In a lubricator the combination of a lubricant-reservoir and a water-reservoir; a passage between the reservoirs a regulating-stem projecting into said passage and therein adjustable to regulate the cubical size thereof; a passage for lubricant from the water-reservoir to a conductor, and means for alternately changing the pressure in the reservoirs substantially as described.

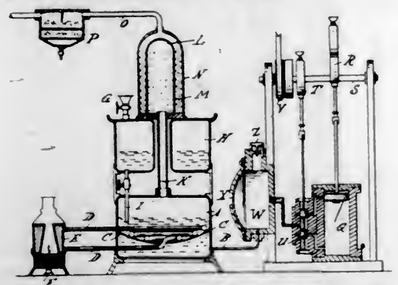
7. In a lubricator the combination of a lubricant-reservoir and a water-reservoir; a passage between the reservoirs; a valve for controlling the passage having a stem projecting into the passage and adjustable longitudinally therein to regulate the cubical space thereof; a pump in the lubricant-reservoir adapted for forcing alternately a quantity of lubricant and a quantity of water through the said passage from their respective reservoirs, and a lubricant-outlet from the water-reservoir substantially as described.

8. In a lubricator the combination of an oil-reservoir and a water-reservoir surmounting the oil-reservoir; a passage connecting the reservoirs; an oil-outlet passage from the water-reservoir; a hood-shaped projection on the wall of the water-reservoir and adapted for leading oil to the outlet-passage; a pump-plunger in the oil-reservoir, and means for operating the plunger substantially as described.

9. In a lubricator the combination of a steam-condenser and an oil-reservoir; a steam-pipe connected to the condenser; a passage for steam between the condenser and the steam-pipe; a passage for liquid between the oil-reservoir and the steam-condenser; means for alternately changing the pressure in the oil-reservoir relative to that in the condenser to force oil from the oil-reservoir into water in the condenser, and to draw water into the oil-reservoir substantially as described.

10. In a lubricator the combination of two reservoirs one above the other, formed integral and separated by a partition-wall, the lower reservoir adapted for containing oil and the upper reservoir for containing water; a passage for the liquids between the reservoirs; an oil-passage from the upper reservoir and means for alternately increasing and decreasing the pressure in the oil-reservoir, substantially as described and for the purpose set forth.

658,020. **CARBURETER.** HENRI REY, Brussels, Belgium. Filed Aug. 1, 1899. Serial No. 725,770. (No model.)



Claim.—1. In an air-carbureter, the combination of a perforated plate C plunging into an oil-bath and having a heating-coil D placed directly upon it, with a perforated cylinder L surrounded by a deflecting-envelop N, substantially as shown for the purpose specified.

2. In an air-carbureter having a perforated plate C heated by a coil D and a perforated cylinder L surrounded by a deflecting-envelop N, the air vessel W provided with an india-rubber diaphragm X, a safety-valve Z and an air-tube B communicating with the carbureter A below the perforated plate C, substantially as set forth.

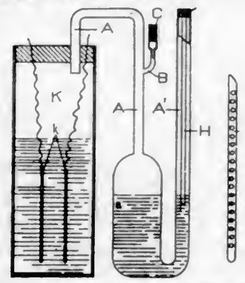
658,021. **FERTILIZER AND PROCESS OF MAKING SAME.** EMIL RICHTER, Dresden, Germany. Filed Dec. 20, 1899. Serial No. 741,047. (No specimens.)

Claim.—1. The process of manufacturing a blood product for fertilizing, alimentary and other purposes, which consists in treating animal blood with sodium bisulphate and heating the mass; substantially as described.

2. The process of manufacturing a blood product for fertilizing alimentary and other purposes, which consists in treating animal blood with sodium bisulphate, heating the mass by the introduction of steam, and then drying it; substantially as described.

3. A blood product for fertilizing, alimentary and other purposes, consisting of animal blood and sodium bisulphate.

658,022. **MAXIMUM-ELECTRICAL-CURRENT INDICATOR AND RECORDER.** ERNEST C. RIMINGTON, London, England. Filed May 3, 1900. Serial No. 15,359. (No model.)



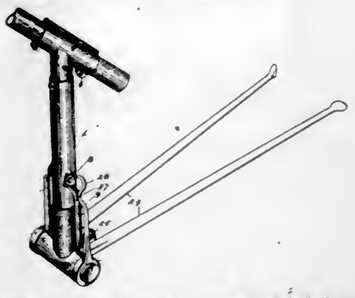
Claim.—1. In combination a closed electrolytic cell, an exit-tube for the gases generated by electrolysis, a partially-impeded exit to the atmosphere from said gas-tube, and means connected to closed end of said gas-tube for permanently recording the highest pressure generated by the accumulated gases.

2. In combination a closed electrolytic cell, an exit-tube therefrom for the gases generated by electrolysis, a partially-impeded exit to the atmosphere from said gas-tube; means connected to the closed end of said gas-tube for permanently recording the highest pressure generated by the accumulated gases; and means for retarding the immediate effect of the accumulated gaseous pressure upon the recording device.

3. In combination a closed electrolytic cell, an exit-tube for the gases therefrom, an exit by-pass to atmosphere from the said gas-tube, a porous plug in said by-pass to impede the exit of gases to the atmosphere, a continuation of the gas-tube as a U-tube, a liquid therein, and means for permanently recording the rise of level of said liquid in the ascending leg of said U-tube.

4. In combination a closed electrolytic cell, an exit-tube for the gases therefrom, an impeded exit by-pass to atmosphere from the said gas-tube, a U-bend continuation of gas-tube with liquid therein, and a side issue from ascending leg of U-tube with a pocket tube or trap connected thereto for permanent reception of overflow liquid therein.

658,023. **BICYCLE-SUPPORT.** PHILIP A. SHANKLIN, Sandoval, Ill., assignor of one-half to Stephen A. Ingersoll, same place. Filed Jan. 15, 1900. Serial No. 1,500. (No model.)



Claim.—1. A bicycle-support, comprising a tubular body, a tubular sleeve of two parts pivoted together, a cylinder carried by said tubular body, a second cylinder operating within the first-mentioned cylinder, a pair of spring-actuated legs carried by the said second cylinder, and a lever on one end of the first-mentioned cylinder for operating the said legs, substantially as specified.

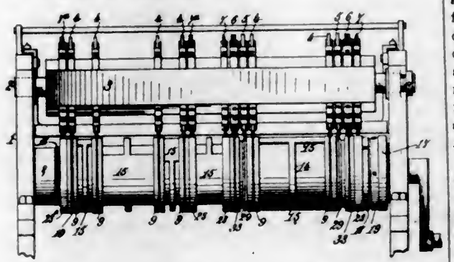
2. In a bicycle-support, a tubular body, a bolt rotatably carried by said body, arms rigidly carried by said bolt, a cylinder carried by said tubular body, a second cylinder rotatably carried in the first-mentioned cylinder, a lever connecting the said bolt with the said second cylinder, and a lever connected to one end of the said second cylinder for operating the same, substantially as specified.

3. In a bicycle-support, a tubular body, a cylinder carried by said body, and having an excision of various lengths on one side thereof, a second cylinder carried in the first-mentioned cylinder, spring-actuated legs pivotally secured to the said second cylinder, and a lever connected to the said second cylinder for operating the same and thereby the legs, substantially as specified.

4. In a device of the class described, a suitable support, a cylinder carried within the said support, a levered cap, pivotally secured to said cylinder, supporting-legs carried by said cylinder, lugs carried by said cap, one of which is on each side of one of the supporting-legs, which lugs are adapted to come in contact with and operate the said legs into a vertical or a horizontal position, substantially as specified.

5. In a device of the class described, a cylinder, a second cylinder within the first-mentioned cylinder, legs having meshing gears in their inner ends pivotally carried by the said second-mentioned cylinder, there being notches in the first-mentioned cylinder for receiving the said legs, a levered cap carried by the said second-mentioned cylinder, and a plurality of lugs carried by said cap for engaging against and removing the said legs from the said notches, substantially as specified.

658,024. **DEVICE FOR CORRUGATING AND CREASING PAPER-BOARD.** HARRY B. SMITH, New York, N. Y. Filed Dec. 12, 1899. Serial No. 740,056. (No model.)



Claim.—1. In a machine for scoring or creasing paper-board to facilitate bending, the combination with a suitable part having a rounded working face, of an opposed part having a groove, the width of said working face being greater than the width of the groove, whereby when said parts are caused to act upon a sheet of paper-board fed between the said parts a relatively-wide depression will be formed in one side of the board and a narrow rib will be formed on the other side of the board opposite said depression.

2. In a paper-board scoring or creasing machine, the combination with a rotating part having a rounded working face, of an opposed cylindrical part having a circumferential groove, the width of said working face being greater than the width of the groove, whereby when said parts are caused to act upon a sheet of paper-board fed between the said parts a relatively-wide depression will be formed on one side of the board and a narrow rib will be formed on the other side of the board opposite the said depression.

3. In a paper-board-corrugating machine, the combination with a rotatable disk having a rounded periphery, of an opposed ring or roll having a circumferential groove, the thickness of the edge of said disk being greater than the width of said groove, substantially as described.

4. In a paper-board-corrugating machine, the combination with a rotatable disk having a rounded periphery, of a rotatable ring arranged parallel to said disk and having a circumferential groove disposed opposite the rounded edge of the disk, the thickness of the edge of the disk being greater than the width of the groove, and said rounded edge being struck on the arc of a circle of greater diameter than that on which the groove is struck, substantially as described.

5. A spacer for the purpose specified, comprising a slotted or divided segment having thickened or laterally-extending ends, substantially as described.

6. A spacer for the purpose specified comprising a substantially U-shaped segment having its ends thickened or laterally extended on opposite sides, substantially as described.

7. In a paper-board-corrugating machine, the combination with a shaft, of a plurality of corrugating-rings adjustable longitudinally on said shaft, spacers removably arranged on the shaft between the rings and each provided with laterally-extending projections on its opposite sides engaging the ends of the rings, and means for clamping the spacers and rings together on the shaft, substantially as described.

8. The combination with the shaft, of a corrugating-ring having a rounded circumferential groove, a scoring-ring 29 having a V-shaped scoring edge, both mounted on said shaft in parallelism, a rotatable disk having a rounded periphery arranged to rotate opposite the said grooved ring, and a rotatable disk having a cylindrical periphery arranged to rotate opposite the scoring-ring, whereby said rings and disks operate to groove and rib the opposite sides of a sheet of paper-board and simultaneously score it upon its ribbed side, substantially as described.

9. The combination with the shaft, of a corrugating-ring 33 having a rounded circumferential bead or rib, a scoring-ring 7 having a V-shaped scoring edge, both mounted on said shaft in parallelism, a rotatable disk 6 having a circumferential groove arranged to rotate opposite said ribbed or beaded ring, and a rotatable disk 5 having a cylindrical periphery arranged to rotate opposite the scoring-ring whereby said rings and disks operate to groove and rib the opposite sides of a sheet of paper-board and simultaneously score it upon the ribbed side, substantially as described.

10. The combination with the shaft, of a corrugating-ring having a rounded circumferential groove, a scoring-ring having a V-shaped scoring edge, both mounted on said shaft in parallelism, a rotatable disk having a rounded edge arranged to rotate opposite the said grooved ring, the rounded edge of the disk being of greater thickness than the width of said groove, and a rotatable disk having a cylindrical periphery arranged to rotate opposite the scoring-rings, whereby said rings and disks operate to groove and rib the opposite sides of a sheet of paper-board and simultaneously score it upon its ribbed side, substantially as described.

11. The combination with the shaft, of corrugating-rings 10, adjustably mounted thereon in parallelism, each of said rings having a circumferential groove, and means for locking said rings on the shaft, rotatable disks arranged to rotate opposite the said grooved rings, the edge of each disk being of greater thickness than the width of the groove in the rings and coöperating trimming knives or cutters, arranged outside the outermost grooved rings, whereby said rings and disks and coöperating trimming knives or cutters operate to groove and rib the opposite sides of a sheet of paper-board and simultaneously trim off its edges, substantially as described.

12. The combination with the shaft and the rings and spacers loosely arranged thereon, said shaft being threaded at one end, of a ring screwed on the threaded end of the shaft, a ring fixed on the other end thereof, and sleeves loosely arranged on the shaft between the said threaded end ring and the adjacent rings, said sleeves being provided on their adjacent faces with interlocking threaded flanges, substantially as described.

13. In a machine for making box-blanks from paper-stock, the combination with a rotary shaft having mounted thereon a plurality of circumferentially-grooved rings, two scoring-rings mounted on the shaft parallel with the grooved rings and having V-shaped scoring edges, two circumferentially-ribbed rings, mounted upon the shaft, one adjacent to each scoring-ring, and two rings mounted on the shaft outside the said ribbed rings and having cylindrical faces, of disks arranged to rotate opposite the grooved rings, two cylindrical-faced disks arranged to operate opposite the scoring-rings, two grooved disks operating opposite the ribbed rings, and two trimming-disks having cutting edges arranged to rotate in contact with the cylindrical-faced rings, whereby the blank is simultaneously grooved and ribbed on one side, ribbed, scored and grooved on the opposite side and trimmed off at its edges, substantially as described.

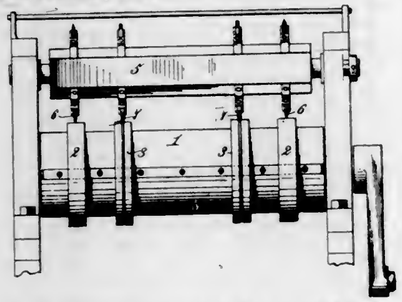
14. In a machine for making box-blanks from paper-board, the combination with a rotary shaft having mounted thereon a plurality of circumferentially-grooved rings, two scoring-rings mounted on the shaft parallel with the grooved rings and having V-shaped scoring edges, and two rings mounted on the shaft outside the first-named rings and having cylindrical faces, of disks arranged to rotate opposite the grooved rings and having rounded edges, two cylindrical-faced disks arranged to rotate opposite the V-shaped edges of the scoring-rings and two trimming-disks having cutting edges arranged to rotate in contact with the cylindrically-faced rings on the shaft, whereby the blank is simultaneously grooved on one side, ribbed and scored on the opposite side and trimmed off at its edges, substantially as described.

658,025. **MACHINE FOR CUTTING AND SCORING PAPER-BOARD.** HARRY B. SMITH, New York, N. Y. Filed May 10, 1900. Serial No. 16,148. (No model.)

Claim.—1. The combination with a longitudinally-grooved shaft or drum and an annulus adjustably arranged thereon and provided with an internal groove adapted to register with the groove in the shaft or drum, of a strip or key normally disposed wholly within said groove in the shaft or drum, and means for forcibly thrusting said strip or key radially outward into the groove in the annulus and into frictional contact with the body of the latter, substantially as described.

2. The combination with a longitudinally-grooved shaft or drum and

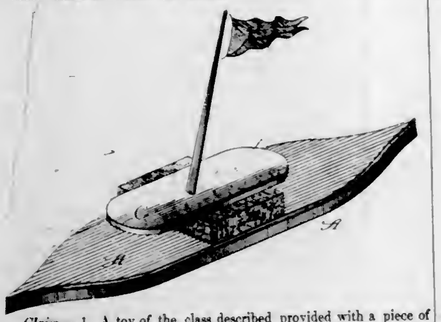
an annulus adjustably arranged thereon and provided with an internal groove adapted to register with the groove in the shaft or drum, of a strip or key normally disposed wholly within said groove in the shaft or drum, and means carried by said strip or key for forcing the latter radially outward into the groove in the annulus and into frictional contact with the body of the latter, substantially as described.



3. The combination with a longitudinally-grooved shaft or drum and an annulus adjustably arranged thereon and provided with an internal groove adapted to register with the groove in the shaft or drum, of a strip or key normally disposed wholly within said groove in the drum or shaft and provided with a plurality of threaded perforations or screw-holes passing transversely therethrough, and screws arranged in said perforations or screw-holes and arranged to impinge against the bottom of the groove in the shaft or drum and operating to force the strip or key radially outward into the groove in the annulus and into frictional contact with the body of the annulus, substantially as described.

4. In a machine for scoring and trimming paper-box blanks, the combination with a longitudinally-grooved shaft or drum, of cutting and scoring rings adjustably arranged thereon and each provided with an internal groove adapted to register with the groove in the shaft or drum, a strip or key disposed in the groove in said drum and provided with a plurality of threaded perforations or screw-holes passing transversely therethrough, and screws fitted in said perforations and arranged to impinge against the bottom of the groove in the drum or shaft and operating when turned in the proper direction to force the strip or key radially outward against the bottoms of the grooves in the said rings, substantially as described.

658,026. MOBILE TOY. MATHEW J. STEFFENS, Chicago, Ill., assignor of one-half to Charles Hetherington, same place. Filed Jan. 13, 1900. Serial No. 1,311. (No model.)



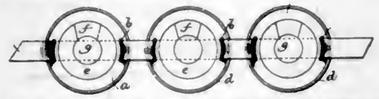
Claim.—1. A toy of the class described provided with a piece of material adapted to hold a highly-volatile chemical in suspension so that when the toy is placed in water it will become self-propelling, substantially as described.

2. A toy of the class described provided with a non-absorbent hull portion, and a portion of absorbent material adapted to hold a quantity of highly-volatile liquid, substantially as described.

3. In a toy of the class described, the combination of a hull portion formed of non-absorbent material, an upwardly-projecting deck portion and a piece of absorbent material such as blotting-paper arranged on the upwardly-projecting deck portion adapted to hold a quantity of highly-volatile liquid, substantially as described.

658,027. THERAPEUTIC DEVICE. ANDREW W. STEIGER, Boston, Mass. Filed Nov. 22, 1899. Serial No. 737,894. (No model.)

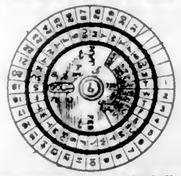
Claim.—1. A therapeutic unit composed of unlike pieces of metals, fitted one within the other to form a disk, and each piece in contact with the next, one of the pieces being a permanent magnet having a metallic circuit, substantially as described.



2. In a therapeutic appliance, a series of units each consisting of a disk composed of a permanent magnet and several unlike metals in contact with each other, each unit being provided with opposite slots so a number of such units may be joined by passing a tape in one slot, along the face and out through the other slot of each unit, to form a girdle, substantially as described.

3. In a therapeutic unit, sections adapted to cause thermo and galvano electric action combined with a section that is also permanently magnetic, all being arranged to form a disk by forcing fit alone, so that the several sections of the unit may be assembled or separated, to afford ready means to adapt the unit to a particular diagnosis, substantially as described.

658,028. CALENDAR. ANDREW W. STEIGER, Boston, Mass. Filed Jan. 24, 1900. Serial No. 2,673. (No model.)



Claim.—In a calendar, concentric dials for indicating months of the year, combined with a concentric dial showing the days of the week permanently connected with two concentric dials, one showing ordinary years and the other leap-years arranged in proper relation to the said week-days dial; the principal months-dial having two selecting-holes one day's space apart, each registering with one of the years-dials, and the auxiliary months-dial having a selecting-slot that may register with either hole of the principal months-dial, so that if the slot and a hole exhibit a year, the several dials display the first week-days for all the months of that year, substantially as described.

658,029. METAL-EDGE-BOX-MAKING MACHINE. JOHN S. STOKES, Moorestown, N. J. Filed Sept. 25, 1899. Serial No. 731,655. (No model.)



Claim.—1. The combination in a metal-edge-box machine, of a plunger, an anvil, one of said parts being adapted to fit in a groove in the other, yielding strip-retainers projecting through the inner walls of the grooved part, whereby the box will be shaped and held by the inner walls of the grooved portion beyond the strip-retainers, substantially as described.

2. The combination in a metal-edge-box machine, of a grooved plunger, an anvil shaped to conform to the groove of the plunger, yielding strip-retainers projecting through the inner walls of the plunger, some distance from the outer edges thereof, whereby the material of the box will be shaped and held by the plunger while the strip is being secured thereto, substantially as described.

3. The combination in a metal-edge-box machine, of a grooved plunger, an anvil shaped to conform to the groove of the plunger, longitudinal slots formed in the opposite inner walls of the plunger, bars adapted to said slots and projecting beyond the surface of the walls, and springs back of the bars so that the bars will be pushed into the grooves as the box is formed, substantially as described.

4. The combination in a metal-edge-box-making machine, of a plunger, an anvil, said plunger being recessed to receive the anvil, means for feeding a metal strip into the recess, spring-controlled bars for retaining the strip in the recess of the plunger, said bars having pins adapted to openings in the sides of the plunger, screw-plugs adapted to said openings, and springs arranged on said pins and interposed between the bars and said screw-plugs, substantially as described.

5. The combination of an anvil, a plunger grooved to conform to the anvil, two slots in the inner walls of the plunger some distance from the edge thereof, yielding retaining-bars adapted to the slots and so proportioned that when forced in their edges will be flush with the surface of the groove in the plunger, substantially as described.

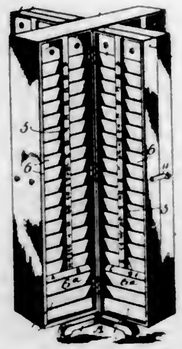
6. The combination of an anvil having a rounded projecting portion, a plunger having a rounded groove corresponding to the shape of the anvil and having straight sides beyond the rounded portion, longitudinal slots in the anvil some distance from the outer edge thereof, and yielding retaining-bars for the strip whereby the strip is held between the bars at the round portion, substantially as described.

7. The combination of a plunger, an anvil, one of said parts having a groove, yielding strip-retainers adapted to hold the strip within the groove, the outer surface of each strip-retainer when forced back forming a continuation of the face of the groove, and stops to limit the movement of the said strip-retainers, so that the said retainers not only hold the strip in place prior to its being forced upon the box but tend to shape the box while the strip is being secured thereto, substantially as described.

8. The combination of a plunger, an anvil, one of said parts having a groove, yielding strip-retainers adapted to hold the strip within the groove, the outer face of each strip-retainer when forced back forming a continuation of the face of the groove so that the said retainers not only hold the strip in place prior to its being placed upon the box but tend to shape the box while the strip is being secured thereto, substantially as described.

9. The combination in means for securing the edges of boxes having rounded corners, of a plunger, an anvil, one of said parts having a rounded projecting portion, the other part having a rounded groove corresponding in shape to the projecting portion, and yielding strip-retainers adapted to hold the strip within the groove, said strip-retainers having bearing-faces to rest upon the box-blank and shape it to the rounded projecting portion, substantially as described.

658,030. COMBINED FILE-CASE AND INDEX. IGNATIUS L. UNTERBRINK, Botkins, Ohio. Filed June 22, 1899. Serial No. 721,470. (No model.)

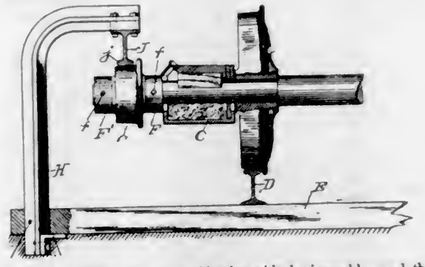


Claim.—1. In a file-case, the combination with a frame having pigeonholes, of two sections having pigeonholes, hinged to the central portion of the frame so as to close the pigeonholes therein and the pigeonholes in the frame, when closed against the frame and stand back to back and expose all the pigeonholes when open.

2. The combination with a frame having two sets of pigeonholes in each side, of two sections hinged at their inner edges to each side of the frame, each section adapted when closed to close one of the series of pigeonholes in the frame, pigeonholes in each hinged section, and means for locking adjacent hinged sections when open, back to back against the frame between the series of pigeonholes in the latter.

658,031. RAILWAY-CAR. WILLIAM T. VAN DORN, Chicago, Ill. Filed Nov. 4, 1899. Serial No. 735,745. (No model.)

Claim.—1. In a railway-car, the combination with the rotary axle thereof and its journal-box said axle projecting laterally beyond the journal-box, of a continuous rail or track above the end of the axle with which it can come in contact when the axle is abnormally elevated, substantially as described.



2. In a railway-car, the combination with the journal-box and the rotary axle extended laterally beyond the journal-box and provided on its end with an antifriction-roller, of a continuous rail or track above said roller against which the roller can bear when the axle is abnormally elevated, substantially as described.

658,032. COMBINED TANNING AND DYEING PROCESS. FRANZ W. WARTENBERGER, Altona, Germany. Filed Sept. 30, 1899. Serial No. 732,233. (No specimens.)

Claim.—1. The process of simultaneously dyeing and tanning hides and skins, previously prepared for tanning in the usual manner, which consists in subjecting the same to the action of a solution of a dyestuff and of an acid tanning agent incapable of fixing the dyestuff, and subjecting the dyed and tanned hides or skins to the action of a solution of a reagent capable of fixing both dyestuff and acid tanning agent.

2. The process of simultaneously dyeing and tanning hides and skins, previously prepared for tanning in the usual manner, which consists in subjecting them to the action of a dyestuff and picric acid and subjecting the dyed and tanned hides or skins to the action of a solution of a suitable hyposulfite and hydrochloric acid.

3. The process, which consists in subjecting hides or skins, previously prepared for tanning by the usual processes, to the action of a solution of about ten parts of picric acid, of about seven hundred parts of water, and of about one part of anilin dye or color, substantially as and for the purpose set forth.

4. The process, which consists in subjecting hides or skins, previously prepared for tanning by the usual processes, to the action of a weak solution of picric acid containing a suitable dyestuff, and then to the action of a solution of a hyposulfite and hydrochloric acid, substantially as and for the purpose set forth.

658,033. ACETYLENE-GAS GENERATOR. JOHN W. WEEKS, Providence, R. I., assignor to the Helion Gas Generator Company, same place. Filed July 1, 1899. Serial No. 722,567. (No model.)

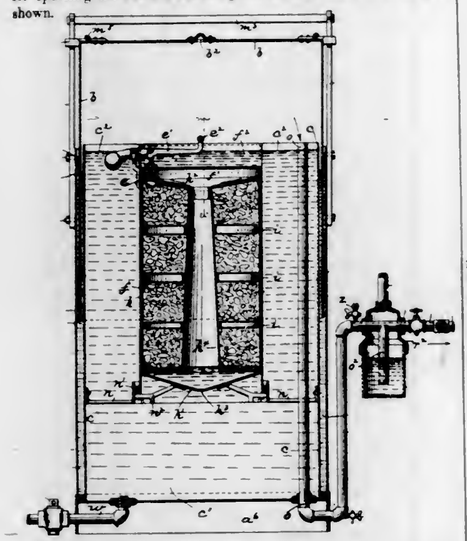
Claim.—1. In an acetylene-gas-generating apparatus, the combination with the vertically-movable water-sealed gas-reservoir, of an inner water-holder tank, a carbid-holder mounted in said tank surrounded by and communicating through the bottom with the water in the tank, a water-inlet arranged to communicate with the interior of the carbid-holder, and a self-closing gas-outlet valve adapted to be opened by the movement of the said gas-reservoir, whereby the flow of water into the carbid-holder through said water-inlet is controlled, substantially as described.

2. In an acetylene-gas-generating apparatus, a carbid-holder closed externally but having an opening in its lower end through which water and gas may flow, the carbid being arranged in the holder in superposed layers having hollow perforated partitions between them, substantially as described and for the purpose set forth.

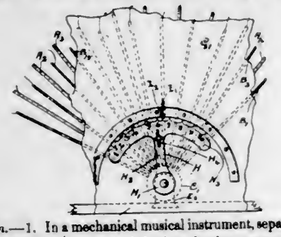
3. The carbid-holder *p* substantially as herein described, having perforated walls and further having a perforated chambered base communicating with the holder proper, for the purpose set forth.

4. In an acetylene-gas-generating apparatus, the combination of the removable perforated holder or receiver containing the calcium carbid, closed at its upper end and having an opening in the lower end for the passage of water and the gas generated, a water-holding tank surrounding the said holder and in communication with the carbid through the said opening in the holder, a self-closing valve communicating with the interior of the holder, a vertically-movable water-sealed gasometer or reservoir surrounding and inclosing said tank, holder and valve, arranged to open the latter when the supply of gas in the reservoir is nearly exhausted, thereby allowing the water to unite with the carbid to generate acetylene gas and recharge the reservoir, substantially as hereinbefore described.

5. In an acetylene-gas generator, a shell for containing water, a vertically-movable gasometer, and a tank which is submerged in the water and provided with a valve in its top, and an opening through its bottom, combined with a carbid-holder placed in said tank, and means for operating the valve when the gasometer descends, substantially as shown.



658,034. TUNE-SHEET FEEDER. JULIUS WELLNER, Jersey City, N. J. Filed Sept. 28, 1899. Serial No. 731,904. (No model.)



Claim.—1. In a mechanical musical instrument, separate tune-sheets for operating the same, a swiveled pivot having means supporting the tune-sheets substantially as and for the purposes described.

2. In a mechanical musical instrument, separate tune-sheets for operating the same, means separating and supporting the tune-sheets attached to a pivot for the purposes set forth substantially as described.

3. In a mechanical musical instrument, separate tune-sheets for operating the same, a swiveling pivot, means secured to such pivot separating and supporting the tune-sheets for the purposes set forth substantially as described.

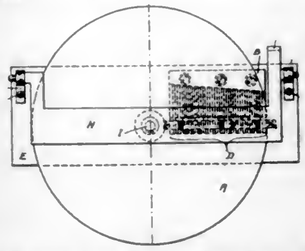
4. In a mechanical musical instrument, separate tune-sheets for operating the same, a swiveling pivot supported in a frame, means secured to said pivot separating and supporting the tune-sheets, means for regulating the feeding of each sheet in turn, a manipulating and indicating lever attached to the pivot substantially as and for the purposes described.

5. In a mechanical musical instrument, separate tune-sheets for operating the same, a swiveled pivot mounted in a frame, means secured on said pivot having rods arranged in alined pairs forming a fan on each side, means for regulating the feeding of each individual sheet and a manipulating-arm secured on the pivot externally to the frame of the instrument for the purposes set forth substantially as described.

6. In a mechanical musical instrument, separate tune-sheets for operating the same, a swiveled pivot mounted to the frame of the instrument having means for supporting tune-sheets, a ratchet-wheel mounted on the pivot, a pawl cooperating with said ratchet-wheel, an indicating and manipulating lever attached to the pivot substantially as and for the purposes described.

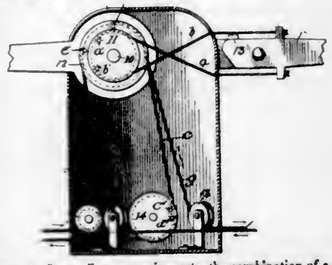
658,035. TUNE-SHEET HOLDER. JULIUS WELLNER, Jersey City, N. J. Filed Apr. 9, 1900. Serial No. 12,056. (No model.)

Claim.—1. In a mechanical musical instrument, separate tune-sheets operating the same, a pivoted tune-sheet holder having a pin fixed thereto, a hollow seat cooperating with said pin substantially as and for the purposes described.



2. In a mechanical musical instrument having separate tune-sheets for operating the same, the combination with a pivoted tune-sheet holder having a pin fixed thereto of a hollow seat with which the pin interlocks, so that said pin lies longitudinally through the axis of its seat.

658,036. GATE FOR RAILWAY-CROSSINGS. CHARLES R. WOODWARD, Campbell, N. Y. Filed July 26, 1899. Renewed Apr. 20, 1900. Serial No. 13,648. (No model.)



Claim.—1. In a railway-crossing gate, the combination of a pivoted gate-bar for the roadway, an oppositely-extending pivoted gate-bar for the sidewalk, and operating ropes or cables extending from the roadway-gate on opposite sides of its axis to the sidewalk-gate on opposite sides of its axis, said cables being crossed so as to cause the gates to move in opposite directions.

2. In a railway-crossing gate, the combination of a pivoted gate-bar on one side of the roadway, a similar bar on the opposite side of said roadway, oppositely-extending pivoted gate-bars for each sidewalk, ropes or cables connected at their opposite ends to the roadway gate-bars on opposite sides of their axes so as to cause them to swing in opposite directions, and ropes or cables connected at opposite ends to said roadway-gates and to said sidewalk-gates, said cables being crossed so as to cause each sidewalk-gate to move in the opposite direction to its roadway-gate.

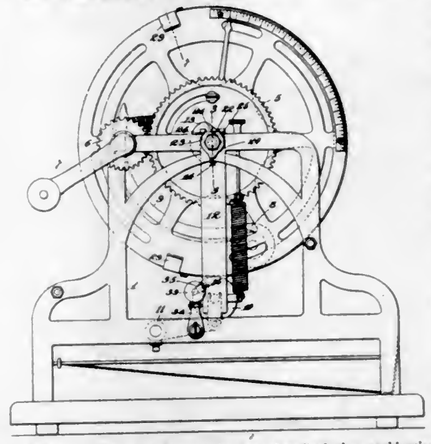
3. In a railway-crossing gate, the combination of pivoted gate-bars on each side of the roadway, pivoted gate-bars on one side of each sidewalk, operating ropes or cables connecting the roadway gate-bars together on opposite sides of their axes, crossed ropes or cables connecting the sidewalk gate-bars with the bars of the roadway-gates, an operating-station located in proximity to the crossing, a shaft at said station and ropes or cables extending from said shaft to one of the roadway gate-bars whereby both the said bars and both the sidewalk-bars are operated.

4. In a railway-crossing gate, the combination of pivoted gate-bars on each side of the roadway, pivoted gate-bars on one side of each sidewalk, operating ropes or cables connecting the roadway gate-bars together on opposite sides of their axes, crossed ropes or cables connecting the sidewalk gate-bars with the bars of the roadway-gates, an operating-station located in proximity to the crossing, a shaft at said station, and ropes or cables extending from opposite sides of said shaft to one of the roadway gate-bars whereby both the said bars and both the sidewalk-bars are operated positively in both directions.

5. A railway-gate comprising a pivoted sidewalk gate-bar, a pivoted roadway gate-bar, and flexible means connecting each side of the latter opposite its pivot with the other side of the former opposite its pivot, in combination substantially as described.

6. In a railway-gate, the combination of a standard, a roadway gate-bar pivoted thereto, and provided with a pulley, a sidewalk gate-bar also pivoted thereto, and flexible connections secured to the pulley, extending therefrom on opposite sides of the pivot and secured to opposite sides of the sidewalk gate-bar, said connections crossing each other intermediate the pivots, substantially as described.

658,037. DUPLICATING APPARATUS. ALBERT B. DICK, Chicago, Ill., assignor to the A. B. Dick Company, same place. Filed Feb. 15, 1900. Serial No. 5,254. (No model.)

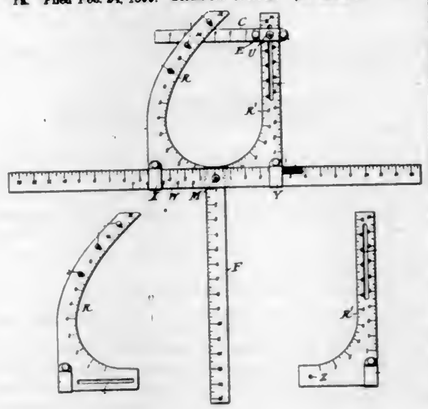


Claim.—1. In a machine of the type described, the combination with the side frames, of a rotary carrier-supporting shaft mounted in open bearings in said frames, and means for securing said shaft in the side frames, one end of said shaft being flattened, whereby a shoulder will be formed which bears against the corresponding side frame and whereby also rotation will be prevented, and the other end of the said shaft being borne upon by shoulders which are carried by the other side frame, substantially as set forth.

2. In a machine of the type described, the combination with the side frames, of a rotary carrier-supporting shaft carried in open bearings in said frames, one end of the shaft being reduced to form shoulders which engage with the corresponding side frame, and the other end of the shaft abutting against the shoulders which are carried by the other side frame, screw-bolts engaging the ends of said shafts and washers between the head of each of said bolts and the adjacent side frame, substantially as set forth.

3. In a machine of the type described, the combination with the side frames, of a rotary carrier-supporting shaft carried in open bearings in said frames, one end of the shaft being reduced to form shoulders which engage with the corresponding side frame, and the other end of the shaft abutting against shoulders which are carried by the other side frame, screw-bolts engaging the ends of said shafts and washers between the head of each of said bolts and the adjacent side frame, and top plates carried by said washers which cover the open bearings, substantially as set forth.

658,038. TAILOR'S MEASURE. GIUSEPPE FREGA, Philadelphia, Pa. Filed Feb. 24, 1899. Serial No. 706,748. (No model.)



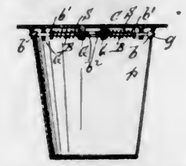
Claim.—1. A tailor's measuring implement, consisting of a linear base-strip, two linear arms detachably connected to the base-strip, one of said arms being curved from its base toward its outer end and provided with means by which it may be adjusted, and the other arm slightly curved at its base, and provided with a slot and a linear arm adjustable in said slot.

2. A tailor's measuring implement, consisting of a linear base-strip, two curved linear arms detachably connected to the base, a linear arm adjustably connected to one of the curved linear arms, and a spirit-level situated in the base-strip, whereby the base may be positioned, in taking the measure, in a true horizontal line.

3. A tailor's measuring implement, consisting of a linear base-strip, two curved linear arms detachably connected to the base-strip, one of said arms being adjustable, a linear arm adjustably connected to one of the curved linear arms, and a linear strip pivoted to the base-strip.

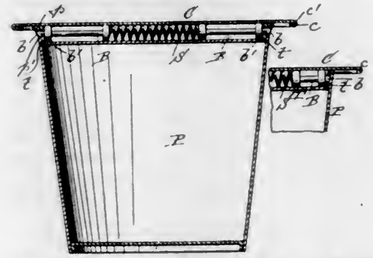
4. A tailor's measuring implement, consisting of a linear base-strip, two curved linear arms detachably connected to the base-strip, one of said arms being adjustable, a linear arm detachably connected to one of the curved linear arms, a spirit-level in the base-strip, and a linear strip pivoted to the base-strip.

658,039. SAP-PAIL COVER. ABBOT A. LOW, New York, N. Y. Filed Nov. 7, 1899. Serial No. 736,087. (No model.)



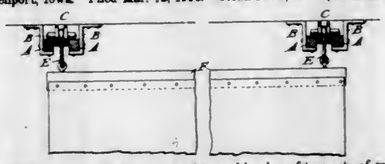
Claim.—The combination of the pail *p*, formed with the annular groove *g*, having inclined sides, the cover C formed with the guides G, G, the bolts B, B, having the cam-shaped bearings *b*, *b*, square shanks b^2, b^2, and shoulders *b'*, *b'*, and the springs S, the whole arranged and operating substantially as herein shown and described.

658,040. SAP-PAIL. ABBOT A. LOW, New York, N. Y. Filed Dec. 18, 1899. Serial No. 740,630. (No model.)



Claim.—The combination of the pail P, the cover C, formed with the trough or tube T, and the bolts B, B, and spring S, arranged and operating substantially as described.

658,041. DISPLAY-RACK FOR RUGS. DE WITT C. MAIN, Davenport, Iowa. Filed Mar. 12, 1900. Serial No. 8,212. (No model.)

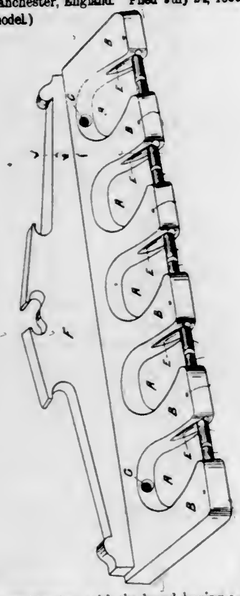


Claim.—1. In a display-rack, the combination of two sets of guide-rails, each set consisting of two rails, adjacent and parallel to each other, means for securing said sets of guide-rails horizontally and parallel to each other, the rollers or pulleys C adapted to travel upon and between said guide-rails, a bar or strip from which is adapted to be suspended or hung rugs or similar articles; said bar or strip provided with means for loosely connecting it with two of said rollers, one of said rollers to travel upon one set of guide-rails and the other roller upon another set of such guide-

rails for the purpose of sustaining the bar or strip with a rug or similar article suspended therefrom substantially at right angles to the guide-rails.

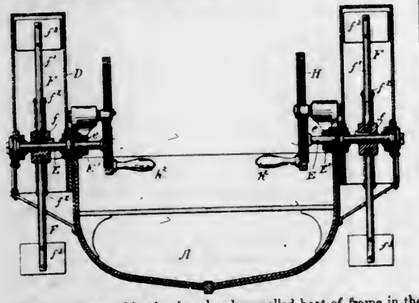
2. In a display-rack, the combination of sets of guide-rails, brackets or hangers to support and sustain said sets of guide-rails near the ceiling, the rollers or pulleys C adapted to travel upon and between said guide-rails, a bar or strip from which is adapted to be suspended or hung rugs or similar articles: said bar or strip provided with rings or hooks secured in its upper side, S-shaped hooks connecting said bar or strip with two such rollers, one of which rollers travels upon one set of guide-rails and the other roller upon another like set of guide-rails, for the purpose of sustaining said bar or strip and rug or similar article suspended therefrom, in a position at right angles to the sets of guide-rails, substantially as described.

658,042. UMBRELLA-STICK AND BILLIARD-CUE GRIP. MICHAEL MENDEL, Manchester, England. Filed July 24, 1899. Serial No. 724,973. (No model.)



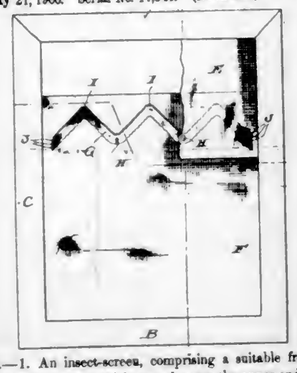
Claim.—The combination, with the board having a series of gaps, the walls of each gap having a recess, and the portions of the board between the gaps having a longitudinal bore, of an elastic or rubber cord laced through the bores and divided centrally between the said portions to form a series of cord ends adapted to be operated in the said recesses, substantially as set forth.

658,043. HAND-PROPELLED BOAT. DANIEL M. PFAUTZ, Philadelphia, Pa., assignor of three-fourths to Charles F. Maize, Josiah Dearnley, John F. Reichardt, Bertram D. Rearick, John E. Challenger, John Binkin, Jr., Charles J. McDougall, Abraham B. Metzler, and John W. Barr, same place, and Christian E. Metzler, Lansdale, Pa. Filed Dec. 5, 1899. Serial No. 739,287. (No model.)



Claim.—The combination in a hand-propelled boat of frame in the form of a parallelogram extending laterally outward from the gunwale of the boat, on each side braces for strengthening said frame, ball-bearing on the top of the frame directly over the side of the boat and a like bearing on top of the outer side of the frame, shaft carried by the said ball-bearings, inner end of said shaft extending inward over side of boat stuffing-box protecting inner bearing, spur-wheel on inner end of said shaft operated by an internal gear-wheel turning on a stud-shaft, said stud-shaft carried in double ball-bearings fixed in casting secured to the frame over the gunwale of the boat, handle fixed to the rim of said internal gear-wheel, between the bearings a hub keyed on said principal shaft, radial arms of metal tubing or other suitable material fixed in said hub, rings for bracing said arms, plates fixed crosswise in slots at outer end of said arms, and cap fixed firmly on aforesaid frame covering said hub, arms and plates, and extending below the gunwale of boat, substantially as described.

658,044. INSECT-SCREEN. GEORGE SATTLER, Sheboygan, Wis. Filed May 21, 1900. Serial No. 17,341. (No model.)



Claim.—1. An insect-screen, comprising a suitable frame having separate pieces of screen material secured across the upper and lower parts thereof from side to side, and having the lower end of the upper piece, and the upper end of the lower piece offset from the vertical plane of the balance of each piece, and extending past each other without contact with the opposed horizontal members of said frame, in combination with a doubled strip having openings in the upper wall thereof, interposed between said screen-pieces intermediate of the side pieces of the frame.

2. An insect-screen, comprising a suitable frame having separate overlapping pieces of screen material secured across the upper and lower parts thereof, from side to side, one of the said pieces terminating above the plane of the bottom of the frame, and the other of said pieces terminating below the top thereof, in combination with an interposed continuous open bottom doubled strip of like material having openings through the upper wall thereof.

3. An insect-screen, comprising a suitable frame having separate overlapping pieces of screen material secured across the upper and lower parts thereof from side to side, and respectively falling short of meeting the lower and upper frame members, in combination with a doubled zig-zag strip of like material secured between and separating said screen-pieces, the said strip having an open bottom and a continuous top and the latter being provided with openings at the apexes of its double-angled portions.

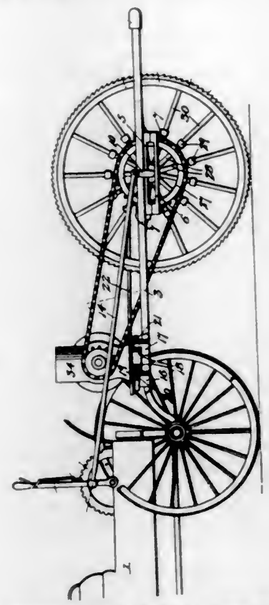
658,045. HOSE-COUPLING. EDWARD T. SHAW, Arlington, Vt. Filed June 25, 1900. Serial No. 21,443. (No model.)



Claim.—The combination with a socketed and threaded valve-chamber of a coupling-pipe having its entering end fitted with a flanged packing-seat, a compressible packing-ring, an expanding-ring and a screw-threaded gland arranged loosely on said pipe above said flange in the order named, and provided in use with means for preventing the detachment of said movable parts from the pipe, and means for effecting tight connection with a supply-tube.

658,046. MOTOR-VEHICLE. CALVIN T. SHOUP, Parsons, Kans. Filed June 2, 1900. Serial No. 18,886. (No model.)

Claim.—1. The combination with the shafts of a vehicle, of an axle which is pivoted or hinged to one of said shafts and has its other end free for movement in a horizontal plane, a driving or propelling wheel on said axle, a guide for the free end of the axle, in which the axle is adapted to move freely back and forth, a steering-lever on the vehicle and a steering-rod connecting the lever with the free end of the axle, said lever and rod being adapted by a straight back-and-forth movement to shift the free end of the axle in the guide and change the inclination of the propelling-wheel.



2. The combination with the shafts of a vehicle, of an axle hinged or pivoted to one of the shafts and having its other end free for movement, a driving-wheel on said axle, a motor-base connected to the axle and adapted to swing therewith, a motor on said base adapted for driving the wheel, and means for shifting the free end of the axle to incline the driving-wheel and accomplish the steering of the vehicle.

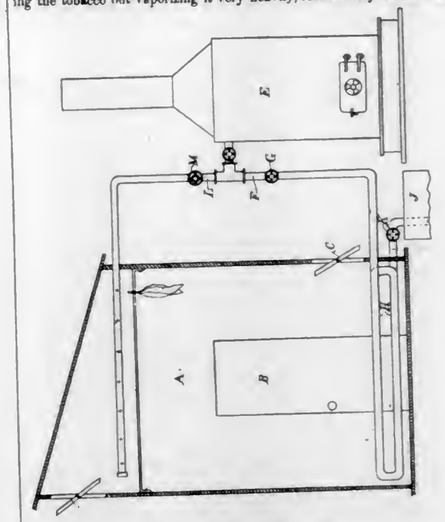
3. The combination with the shafts of a vehicle, of an axle hinged or pivoted to one of said shafts and having its other end free for movement, an arc-shaped motor-base support connected to the shafts of the vehicle, a motor base and table of arc shape movable on said support, braces connecting the motor-base to the axle, a driving or propelling wheel on said axle, a motor on said base which is adapted to turn the wheel, and means for shifting the axle, whereby the steering of the vehicle is accomplished.

4. The combination with the shafts of a vehicle, of an axle adapted for shifting horizontally which is carried by the shafts, a driving or propelling wheel on said axle which is provided with a hub, spokes, and sprocket-wheel all cast integral, a motor-base connected to the axle and adapted to move therewith, and a motor on said base having a sprocket-chain connected with the sprocket-wheel, and means of shifting the axle to accomplish the steering of the vehicle.

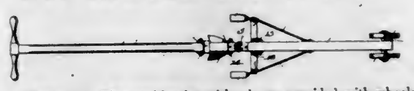
5. The combination with the shafts of a vehicle, of an axle pivoted or hinged to one of said shafts, a guide on the other shaft in which the free end of the axle moves, a steering-lever on the vehicle, having an operative connection with the free end of the axle, arc-shaped plates secured to the shafts and struck from the pivotal point of the axle as a center, a motor-base having a table extending over the said plates, balls interposed between the table and the plates, braces connecting the base to the axle, a driving-wheel loose on the axle between the braces and provided with a sprocket-wheel, collars on the axle and abutting the braces, a motor on the motor-base and table, and a sprocket-chain connecting said motor to the sprocket-wheel aforesaid.

658,047. TOBACCO-CURING PROCESS. CLINTON F. SMITH, Northampton, Mass. Filed Nov. 16, 1899. Serial No. 737,237. (No specimens.)

Claim.—A tobacco-curing process consisting in first subjecting the tobacco for forty-eight hours to heat near but not more than 75° Fahrenheit, then in raising that temperature slowly to 85° or 90° and maintaining this temperature for four weeks, then, during a period of two weeks, gradually reducing the temperature to 50° at the end of the two weeks, and during the time consumed as stated, from the beginning of the process, in introducing vapor sufficient to keep the tobacco positively advancing to the different stages, and, finally, during twelve hours next before taking the tobacco out vaporizing it very heavily, substantially as described.



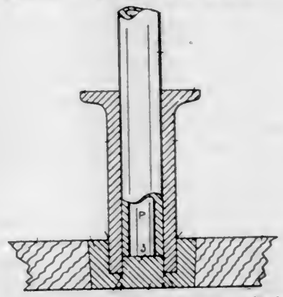
658,048. ONION-PULLING MACHINE. RUFUS H. SMITH, Schuyler, N. Y. Filed Jan. 30, 1900. Serial No. 3,318. (No model.)



Claim.—1. The combination with a beam provided with wheels on its front end, of an adjustable plow carried by said beam, and adjustable runners positioned in front of said standard and having rearwardly-projecting flat bearing-surfaces adapted to lie on each side of the furrow.

2. The combination with a beam provided with wheels at its front end, and carrying a plow-standard, of a handle hingedly connected to the rear of said beam, a strap-iron secured on said handle and provided with slots, and means carried by said beam for engagement with slots to regulate the angle of the handle, substantially as described.

658,049. BARREL-BUNG. GEORGE SMITH, Hamilton, Canada. Filed Sept. 25, 1899. Serial No. 731,587. (No model.)

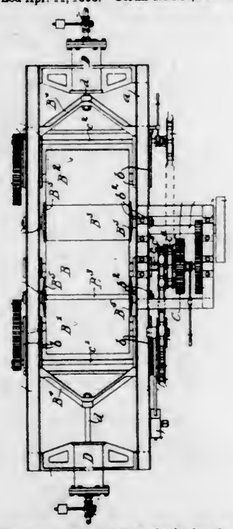


Claim.—1. The combination with a barrel-bung having a concavity in its outer face whose bottom is provided with a severable raised, central core surrounded by an annular channel having substantially-upright walls, of a tubular guide having one end fitted snugly into the annular channel and around the raised core, said tubular guide serving to guide the core-removing implement and the core itself when being punched out of the bung and preventing splitting, shrinkage, or collapsing of the bung.

2. The combination with a barrel-bung having a concavity in its outer face whose bottom is provided with a severable raised, central core surrounded by an annular channel having substantially-upright walls, of

a tubular guide fitted snugly into the concavity with its end fitted snugly into the annular channel and around the severable raised core, said guide preventing splitting, shrinkage or collapse of the bung after the core has been driven out, and a section of pipe snugly fitting the interior of the tubular guide and adapted to be driven therethrough to punch out the severable core from the bung and afford an outlet for the latter.

658,050. COTTON-PRESS. MAGNUS SWENSON, Chicago, Ill., assignor, by mesne assignments, to the American Cotton Company, New York, N. Y. Filed Apr. 11, 1895. Serial No. 545,303. (No model.)



Claim.—1. The combination with a single bat-forming apparatus, of two sets of rotary cotton-pressing appliances to which the bat is alternately fed, a bale being first formed in one of said appliances and then in the other of said appliances, whereby the process of forming a bale in either one may go on while a previously-finished bale is being removed from the other.

2. In a cotton-press, three compressing-rolls having their axes substantially in line with each other, mechanism for operating said rolls to provide for the formation of a bale alternately between the intermediate roll and each of the other two rolls, and a core-rod supported at each side of said intermediate roll.

3. In a rotary cotton-press, the combination of a stationary compression-roll, compression-rolls movable toward and from said stationary roll, movably-supported baling-spools arranged, one between the stationary roll and each movable roll, means to hold the movable rolls yieldingly in contact with their respective baling-spools, or the bale formed thereon, and means to rotate said compression-rolls, substantially as described.

4. In a rotary cotton-press, the combination of a middle stationary compression-roll, compression-rolls movable toward and from said stationary roll, baling-spools arranged, one between the stationary roll and each movable roll, said rolls and spools forming substantially a horizontal series, means to hold the movable rolls yieldingly in contact with their respective baling-spools, or with the bales formed thereon, means to rotate said compression-rolls, means to independently engage and disengage the rear compression-roll from the driving mechanism and means to simultaneously engage and disengage the middle and rear compression-rolls from the driving mechanism, substantially as described.

5. In a rotary cotton-press, the combination of a middle stationary compression-roll, compression-rolls movable toward and from said stationary roll, baling-spools, arranged, one between the stationary roll and each movable roll, said compression-rolls and baling-spools forming a substantially-horizontal series, means to hold the movable rolls yieldingly in contact with their respective spools, or with the bales formed thereon, means to rotate said compression-rolls, the movable rolls being driven from a shaft located between them through the medium of chain belts, a clutch whereby the rear roll may be engaged and disengaged with the driving mechanism, the sprocket-wheel on the middle shaft, from which the rear compression-roll is driven, being secured to a pinion on said shaft, through the medium of which the stationary roll is driven, and a clutch whereby said pinion may be engaged and disengaged from the driving mechanism, substantially as described.

6. In a rotary cotton-press, the combination of a middle stationary compression-roll, compression-rolls movable toward and from said stationary roll, baling-spools arranged, one between the stationary roll and each movable roll, said compression-rolls and spools forming a substantially-horizontal series, means to hold the movable compression-rolls yieldingly in contact with their respective spools, or with the bales formed thereon, means to rotate said compression-rolls, the movable compression-rolls being driven from a shaft located between them through the medium of chain belts and means being provided to support the loose upper section of the chain belt on which the duty comes on the under section, substantially as described.

7. In a rotary cotton-press, the combination of a middle statiooary compression-roll, compression-rolls, arranged on opposite sides of said stationary roll and movable toward and from the same, baling-spools arranged, one between the stationary compression-roll and each movable roll, said compression-rolls and spools forming substantially a horizontal series, means to hold the movable rolls yieldingly in contact with their respective spools, or the bales formed thereon, means to rotate said compression-rolls, the movable rolls being driven from a shaft between them through the medium of chain belts, and means being provided to support the loose upper section of the chain belt on which the duty comes on the under section, said means comprising a lever pivoted between its ends, an idle pulley pivoted to one end thereof, over which said loose upper section of said chain belt passes and a counterweight at the other end of said lever, substantially as described.

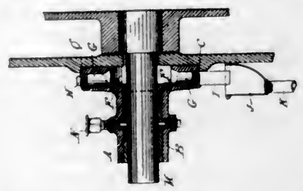
8. In a rotary cotton-press, the combination of a middle stationary compression-roll, compression-rolls arranged on opposite sides thereof, and baling-spools arranged, one between said stationary roll, and each movable roll, said rolls and spools forming a substantially-horizontal series, means to rotate said compression-rolls and means to hold the movable compression-rolls yieldingly in contact with their respective baling-spools, or the bales formed thereon, said means comprising a cross-head connecting the bearing-blocks of each movable roll, a rigid rod or bar connecting said cross-head with the piston of a cylinder secured to the end of the press-frame, a pipe connecting said cylinder with a source of supply of some suitable inelastic medium and safety-valve in said pipe, substantially as described.

658,051. RIBBON-HOLDER. ALBERT H. TAYLOR and THEODORE M. GOOD, Morrisonville, N. Y. Filed Sept. 28, 1899. Serial No. 731,989. (No model.)



Claim.—An adjustable ribbon-holder consisting of a strip of metal provided at its ends with prongs adapted to engage the spool on which the ribbon is wound; a keeper pivoted to the inner end of said strip and comprising a metallic plate having its ends bent inwardly; and an arm adjustably secured in the keeper and having a guard at its outer end.

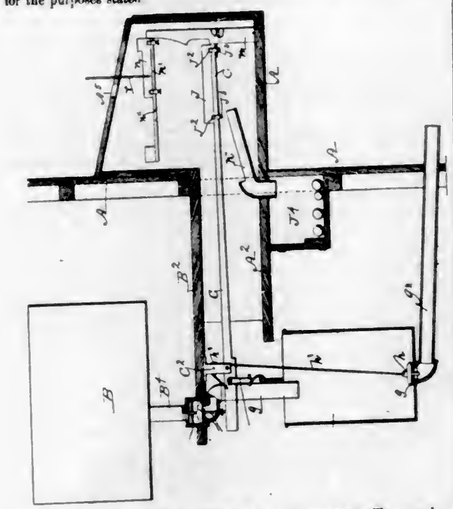
658,052. JOURNAL-BOX FOR WASHING-MACHINES. DAVID K. TULLIS, Kilbowie, Scotland. Filed May 28, 1900. Serial No. 18,347. (No model.)



Claim.—A journal-box for washing-machines, comprising two sections suitably bolted together, an annular hollow enlargement F formed in one end of the axle-box, a vertical tubular passage G, formed in said enlargement and communicating with the hollow portion thereof, a screw-plug closing the upper end of said passage, a drain-pipe secured in the lower end of said passage and a receptacle J into which said drain-pipe discharges.

658,053. AUTOMATIC APPARATUS FOR WEIGHING AND DELIVERING MILK. ABNER B. WRIGHT, Gilbert Station, Iowa. Filed May 8, 1900. Serial No. 15,906. (No model.)

Claim.—1. In an apparatus for measuring and conveying milk, a tank a valve-chamber connected with the bottom of the tank, a valve fitted in the seat in the valve-chamber, a stem fixed to the valve and to the short arm of a weighing-beam, a measuring vessel suspended from the short arm of the beam and a tube connected with the valve-chamber to convey milk into the measuring vessel, a valve-seat in the bottom of the measuring vessel, a valve fitted to the seat, a cord fixed to the valve and extended over a directing-pulley and fixed to the short arm of the weighing-beam, arranged and combined to operate in the manner set forth for the purposes stated.



2. In an apparatus for measuring and conveying milk, a tank, a valve-chamber connected with the bottom of the tank, a valve fitted on the seat in the valve-chamber, a stem fixed to the valve and to the short arm of a weighing-beam, a measuring vessel suspended from the short arm of the beam and a tube connected with the valve-chamber to convey milk into the measuring vessel, a valve-seat in the bottom of the measuring vessel, a valve fitted to the seat, a cord fixed to the valve and extended over a directing-pulley and fixed to the short arm of the weighing-beam, and a tube fixed to the bottom of the measuring vessel to convey milk therefrom, arranged and combined to operate in the manner set forth for the purposes stated.

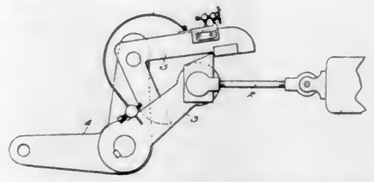
3. In an apparatus for measuring milk, a weighing-beam, an adjustable ball-conveyer on the long arm of the beam, an inclined plane or ball director under the inner end of the ball-conveyer on the beam and a ball-receptacle under the inclined ball-director, arranged and combined to operate in the manner set forth.

4. In an apparatus for measuring milk, a weighing-beam, an adjustable ball-conveyer on the long arm of the beam, an inclined plane or ball director under the inner end of the ball-conveyer on the beam and a ball-receptacle under the inclined ball-director, a fixed post at the end of the long arm of the beam composed of two mating parts and having a web to be engaged by the beam and elbow-shaped lateral projections to enter corresponding slots in the ball-conveyer and to engage a ball, and means for delivering a ball to the ball-conveyer. arranged and combined to operate in the manner set forth.

5. In an apparatus for measuring and conveying milk, a fixed post composed of two mating parts connected by a web at their central portion and having curved edges at their top portions and notches above their central portions, a scale-beam the end of the long arm of which moves adjacent to said curved edges said arm having a ball-receiver, and the weighted lever in a plane above the scale-beam arranged and combined as shown and described to operate in the manner set forth for the purposes stated.

6. An apparatus for measuring and conveying milk, comprising a tank in a building, a weighing-beam under the tank, a valve-chamber connected with the tank and provided with a stem fixed to the short arm of the weighing-beam; a vessel suspended from the short arm of said beam, a valve in the bottom of the vessel, a cord connected with the valve and extended over a pulley and connected with the short arm of the beam, a tube connected to the bottom of the vessel, a ball-conveyer on the end of the long arm of the beam, a post having a web to engage the front end of the beam and projections to engage a ball, a lever at the top of the post having a ball-receiver on its long arm and means for operating the lever to deliver a ball from the ball-receiver to the ball-conveyer on the beam, all arranged and combined to operate in the manner set forth for the purposes stated.

658,054. SPRING TENSION DEVICE FOR VALVE-GEAR. LOUIS G. WULBERN, Birmingham, Ala. Filed Apr. 5, 1900. Serial No. 11,592. (No model.)



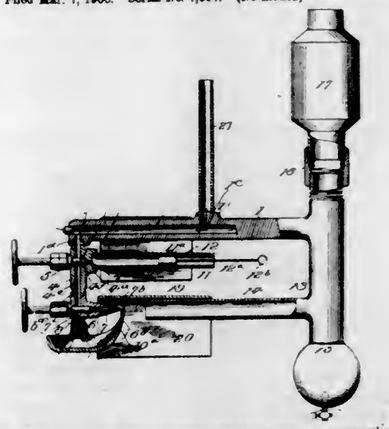
Claim.—1. The combination with a claw and spring of the valve-gear of an engine, of a clamp secured to said claw, an upright thereto, a screw keyed within the upright, a wedge upon the claw engaged by the screw, and means for holding the wedge in position within the clamp, said spring bearing upon the wedge.

2. The combination with a claw and spring of the valve-gear of an engine, of a clamp secured to said claw, an upright thereto, a screw keyed within the upright and revoluble therein, a wedge slidable upon the claw, an arm thereto engaged by the screw, and flanges upon the sides of the wedge adapted to slide within the clamp, said spring bearing upon the wedge.

658,055. BROWN COTTON DYE AND PROCESS OF MAKING SAME. JULIUS ABEL, Mannheim, and FRITZ KALKOW, Ludwigshafen, Germany, assignors to the Badische Anilin und Soda Fabrik, Ludwigshafen, Germany. Filed July 18, 1900. Serial No. 24,086. (No specimens.)

Claim.—The new dyestuff which can be made from a hereinbefore-specified diphenylamin derivative by heating with sulfur and sodium sulfid and which dyes unmordanted cotton brown shades which are very resisting to the action of steaming, soap, acids, sulfur dioxid and of chlorin and which are deepened and are rendered more resisting by treatment with copper sulfate and acetic acid.

658,056. CARBURETER. CHARLES W. ATKINSON, Hudson, Mich. Filed Mar. 7, 1900. Serial No. 7,697. (No model.)



Claim.—1. A carbureter comprising a horizontal gas-generating tube, a pendent gas-generating tube connected with the horizontal gas-generating tube and having a horizontal jet-opening, and an upper valve controlling the jet-opening, a horizontal burner-pipe having a series of holes and located in line with the upper jet-opening adjacent to the horizontal gas-generating tube, a valve-housing secured to the lower end of the pendent gas-generating tube, having a horizontal jet-opening, and a lower valve controlling the jet-opening, and a vertical feed-pipe, having a horizontal commingling-pipe, located in line with the lower jet-opening.

2. A carbureter comprising a horizontal gas-generating tube, a pendent gas-generating tube connected with the horizontal gas-generating tube and having a horizontal jet-opening and an upper valve controlling the jet-opening, a horizontal burner-pipe having a series of holes and located in

line with the upper jet-opening adjacent to the horizontal gas-generating tube, a piston or plunger adapted to be adjusted in the burner-pipe for cutting off or opening the holes at will, a valve-housing secured to the lower end of the pendent gas-generating tube, having a horizontal jet-opening and a lower valve controlling the jet-opening, and a feed-pipe having a horizontal commingling-pipe located in line with the lower jet-opening.

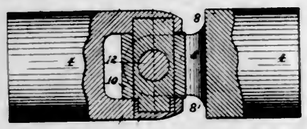
3. A carbureter comprising a horizontal gas-generating tube, a pendent gas-generating tube connected with the horizontal gas-generating tube and having a horizontal jet-opening and an upper valve controlling the jet-opening, a horizontal burner-pipe having a series of holes and located in line with the upper jet-opening, adjacent to the horizontal gas-generating tube, a valve-housing secured to the lower end of the pendent gas-generating tube, having a horizontal jet-opening, and a lower valve controlling the jet-opening, a feed-pipe having a horizontal commingling-pipe located in line with the lower jet-opening, and a drip-reservoir located at the lower end of the feed-pipe.

4. A carbureter comprising a horizontal gas-generating tube, a pendent gas-generating tube connected with the horizontal gas-generating tube, and having a horizontal jet-opening, and an upper valve controlling the jet-opening, a horizontal burner-pipe having a series of holes and located in line with the upper jet-opening, adjacent to the horizontal gas-generating tube, a valve-housing secured to the lower end of the pendent gas-generating tube having a horizontal jet-opening, and a lower valve controlling the jet-opening, an initial swinging heating-cup, pivoted to the valve-housing, having a lip adapted to project in front of the lower jet-opening, and a feed-pipe having a horizontal commingling-pipe located in line with the lower jet-opening.

5. A carbureter comprising a horizontal gas-generating tube, a pendent gas-generating tube connected with the horizontal gas-generating tube, and having a horizontal jet-opening, and an upper valve controlling the jet-opening, a horizontal burner-pipe having a series or holes and located in line with the upper jet-opening, adjacent to the horizontal gas-generating tube, a valve-housing secured to the lower end of the pendent gas-generating tube, having a horizontal jet-opening and a lower valve controlling the jet-opening, a feed-pipe having a horizontal commingling-pipe located in line with the lower jet-opening, and a removable inverted-U-shaped shield fitting over the horizontal gas-generating tube and burner-pipe.

6. A carbureter comprising a horizontal gas-generating tube, a pendent gas-generating tube, connected with the horizontal gas-generating tube, and having a horizontal jet-opening, and an upper valve controlling the jet-opening, a horizontal burner-pipe having a series of holes and located in line with the upper jet-opening, adjacent to the horizontal gas-generating tube, a valve-housing secured to the lower end of the pendent gas-generating tube having a horizontal jet-opening and a lower valve controlling the jet-opening, a feed-pipe having a horizontal commingling-pipe located in line with the jet-opening, and a removable inverted-U-shaped shield fitting over the lower jet-opening, and over the commingling pipe.

658,057. UNIVERSAL JOINT. FRANK E. BOCORSELSKI, Hartford, Conn. Filed June 18, 1900. Serial No. 20,703. (No model.)



Claim.—1. A universal joint consisting of two cylindrical shaft-sections of uniform diameter from end to end and each having an integral fork at the inner end thereof the outer faces of the prongs of which are disposed in a common arc coincident with the circumferential arc of the body portion of said section; two concentric members one of which extends through the other and is connected at its ends to the prongs of one fork; and a cylindrical member extending through the concentric members and having its ends connected to the prongs of the other fork.

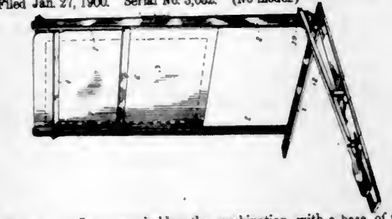
2. A universal joint consisting of two cylindrical forked shaft-sections the forks of each section of which are formed integral with the body portion and have their outer faces curved in the direction of their widths in a common arc coincident with the circumferential arc of the body portion and having their inner faces parallel with the longitudinal axis of said section; and a coupling-center having two relatively-transverse members one of which extends through and is supported for rotative movement in the other and one of which is fixedly connected at opposite ends to the fork of one section and the other of which is rotatably supported by the fork of the other section.

3. A universal joint comprising two cylindrical forked shaft-sections the prongs of one fork of which have registering bores extending entirely through the same, and one prong of the other fork of which has a cylindrical socket formed only part way through the same from the inner face and the other prong of which has a bore registering with this socket; a tubular member supported between the two forks; a bearing member seated in the bore which registers with the socket; a cylindrical member extending through the tubular member and having one end reduced and seated in the bearing member and having its opposite end seated in the socket of one fork; and another cylindrical member extending transversely through the two first-mentioned members and having its opposite ends seated in the registering bores of the other fork.

4. A universal joint comprising two cylindrical forked shaft-sections the forks and body portions of each of which are integral and the outer faces of which are curved widthwise in a common arc coincident with the circumferential arc of the body portion; and two cylindrical connecting members one of which extends through and is rotatively supported in the other and has its ends supported in the prongs of one fork with its outer end faces flush with the outer faces of said prongs, and the other of which is rotatably supported in the prongs of the other fork and has a diametrically-reduced end, substantially as described.

5. A universal joint comprising two cylindrical forked shaft-sections, the forks and body portions of each of which are integral and have their outer faces curved widthwise in a common arc coincident with the circumferential arc of the body portion; two cylindrical connecting members, one of which extends transversely through and is rotatably supported in the other and has its ends supported in the prongs of one fork with its outer end faces flush with the outer faces of said prongs, and the other of which has its opposite ends extending into the prongs of the other fork for rotation and has a diametrically-reduced end; and a cylindrical bearing member fixedly secured in one fork and supporting the diametrically-reduced end of the last-mentioned member.

658,058. COPY-HOLDER. BENJAMIN F. CHILDRESS, Dublin, Va. Filed Jan. 27, 1900. Serial No. 3,032. (No model.)



Claim.—1. In a copy-holder, the combination, with a base, of two standards secured thereto, one of which is provided with a pulley at the top and bottom, respectively, a cord over said pulleys, a block adjustably secured to the ends of said cord, two cords adjustably secured at one end to said block, an indicator secured to opposite ends of said cord, and means for rotating said pulleys, substantially as described.

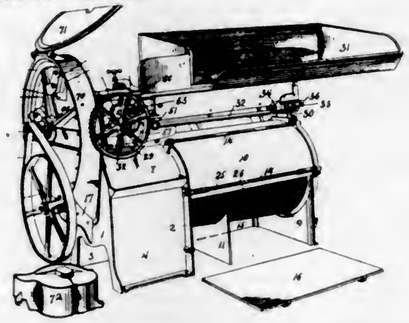
2. In a copy-holder, the combination, with a base, of two standards, a pulley journaled at the top and bottom respectively, of one of said standards, a cord over said pulleys, a substantially T-shaped block, each end of which is provided with a screw-eye, said eyes being secured to the ends of the cord, two screw-eyes in the stem of the block, a cord secured to each of said two eyes an indicator at the opposite ends of two cords, and means for moving said pulley, substantially as described.

3. In a copy-holder, the combination, with a base, two standards, a back secured to the upper portions of said standards, each side of the back being provided with a recess or notch adjacent to the standard, a substantially-rectangular clasp pivotally secured to said standards with its ends within the recesses of the back, the forward portion of which projects at a distance in front of the back of the copy-holder, a spring secured to the back of the holder with its free end in engagement with said clasp, and an indicator movable below the clasp, substantially as described.

4. In a copy-holder, the combination, with a substantially L-shaped base, of standards secured to one arm of the base, and a lever pivotally mounted upon the other arm, the end of said lever being slotted, a back connecting the standards, an indicator, movable in front of the back, two pulleys supported by one of the standards, a milled wheel connected with one of said pulleys, a cord over said pulleys provided with means for operating the indicator, a crank pivotally mounted at the axis of said pulley and milled wheel, the free end of which is provided with a pawl and a pin, said pin fitting within the slot in the rear end of the lever, and an adjusting-screw in the forward end of said lever in position to engage with the base, substantially as described.

658,059. TOBACCO-CUTTING MACHINE. NAPOLEON DU BRUL, Cincinnati, Ohio. Filed Apr. 19, 1900. Serial No. 13,528. (No model.)

Claim.—A tobacco-cutting machine comprising a main shaft, an inner transverse shaft geared to the main shaft, a lower knife-roll having its shaft geared to the inner transverse shaft, an upper grooved roll geared to the lower knife-roll, the lower apron-roller geared to the upper grooved roll, the outer apron-roller, the apron connecting the apron-rollers, the rear yoke loosely secured to the shaft of the grooved roll, the front yoke loosely secured to the shaft of the grooved roll and provided with a short shaft geared to the shaft of the grooved roll, and an upper feed-roller having its shaft loosely suspended in the outer ends of the yokes and geared with the short shaft.

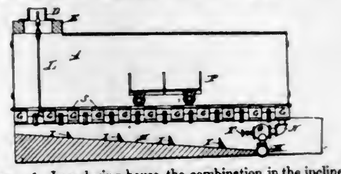


658,060. ROCK-DRILL HEAD. WILLIAM A. DUDLEY, Petersburg, Va. Filed July 21, 1900. Serial No. 24,351. (No model.)



Claim.—A double, reversible drill-head provided with a circle of chisels on each end, the said chisels being V-shaped, with the cutting edges radial to a common center, substantially as shown and for the purpose set forth.

658,061. DRYING-ROOM. FREDERICK E. FREY, Glennville, Ohio. Filed Nov. 24, 1899. Serial No. 738,148. (No model.)



Claim.—1. In a drying-house, the combination in the inclined floor thereof, of hollow heat-radiating sills, provided with steam-openings near their opposite extremities and on opposite sides thereof, each sill being formed separately, and all the sills being connected together to form a continuous series for the passage of steam, substantially as described.

2. In a drying-house, the combination in the inclined floor thereof of a series of transversely-placed hollow floor-sills provided with alternate steam connections at opposite extremities of the sills, and stops upon the bottoms of the sills, substantially as and for the purpose described.

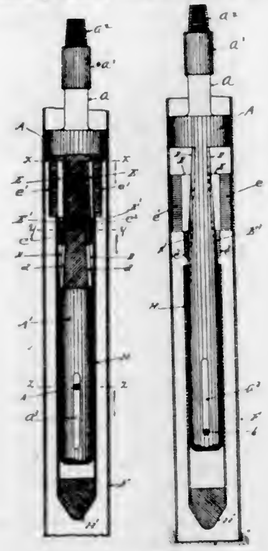
3. In a drying-house, the combination in the inclined floor thereof, of a steam-heating and car-supporting device resting thereon, consisting of hollow heat-radiating sills placed transversely upon said floor, steam connections connecting alternate ends of the sills, rail-shoes upon the sills and rails across the shoes, substantially as described.

4. In a heating and car-supporting device for a drying-house, a series of transverse sills connected at alternate extremities to form a continuous steam-radiator, each sill consisting of a body portion closed at either end, and provided with openings on opposite sides and at either end whereby each sill can be connected with the next adjacent sills in the series, substantially as described.

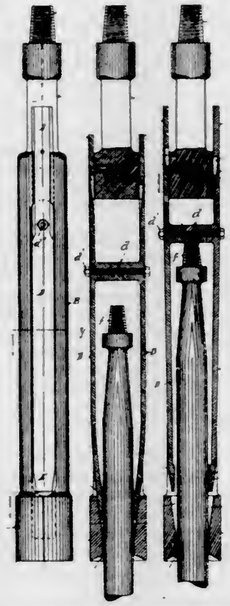
5. The combination of cold-air passage F, deflectors I, radiating-sills G, steam connection N, feed-pipe K, rail-tracks T, arch E, vapor-flue D, and blower L.

658,062. CASING-SPEAR. HOWARD R. HARDENBURG, Saginaw Mich. Filed June 18, 1900. Serial No. 20,683. (No model.)

Claim.—The combination in a casing-spear, of a body comprising a screw-threaded nipple a^2, a head A, and a stem A′ having inclined surfaces D D on opposite sides thereof, jaws E E having reduced portions E′ E′ on the lower ends thereof and sliding in dovetailed grooves in said inclined surfaces D D, serrations e' on the peripheries of said jaws, and a sleeve H sliding vertically on the stem A′ so that when raised it operates to raise the jaws E E and passes over the reduced portions E′ E′ thereof, substantially as and for the purpose set forth.



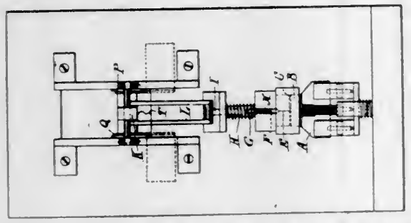
658,063. SLIP-SOCKET. HOWARD R. HARDENBURG, Saginaw, Mich. Filed June 18, 1900. Serial No. 20,684. (No model.)



Claim.—The combination in a slip-socket, of a socket-body comprising substantially a head having vertical slots therein, arms projecting downward from said head, a collar on the lower ends of said arms, with arms adapted to slide vertically in the slots in the head, jaws on the lower

ends of such arms adapted to enter the collar, a cross-piece connecting said vertically-sliding arms, and spring-actuated stops in the head adapted to engage notches in the vertically-sliding arms, substantially as and for the purpose set forth.

658,064. SWITCH FOR ALTERNATING ELECTRIC CURRENTS. BERTRAM HOPKINSON, London, England. Filed Dec. 22, 1899. Serial No. 741,252. (No model.)



Claim.—1. A switch for alternating electric currents comprising two terminals in a circuit, actuating means for separating said terminals to break the circuit, and means controlled by the alternating current for rendering the actuating means inert until the instant in the cycle of said current when its value is zero.

2. In a switch for alternating electric currents the combination with a main switch comprising terminals and means for opening and closing the circuit between said terminals, of a shunt connection between said terminals, and means associated with said shunt-circuit and adapted to open the same at the zero-point of any one alternation of the current.

3. In a switch for alternating electric currents, actuating means tending to open the circuit and means whereby magnetism induced by the current acts to render said actuating means inert and hold the circuit closed until the current reaches the zero-point of an alternation, whereupon the actuating means act to break the circuit.

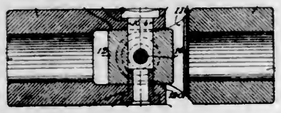
4. In a switch for alternating electric currents, actuating means tending to open the switch, means whereby magnetism induced by the current acts to render said actuating means inert and hold the switch closed until the current reaches the zero-point of an alternation, whereupon the actuating means act to open the switch, and a movable catch or retaining device for preventing the operation of the actuating means irrespective of the action of the current.

5. In a switch for alternating electric currents, means for holding it closed by magnetism induced by the current, and a spring (or its equivalent) retained out of action by a catch which, when withdrawn allows the spring to break the circuit at the instant in the cycle when the value of the current is at, or about, zero; substantially as hereinbefore described.

6. In a switch for alternating electric currents, the combination of a laminated electromagnet one end of whose coil is electrically connected to one terminal of the circuit, the other end being connected to the core of the magnet; a laminated armature electrically connected to the other terminal of the switch; and a spring which pulls the armature away as soon as the current falls to a certain small value substantially as hereinbefore described.

7. The combination with a circuit carrying alternating electric currents, of a main switch comprising terminals connected in said circuit and means for opening and closing the circuit between said terminals, a shunt or auxiliary connection between the terminals of the main switch, an auxiliary switch in said shunt, an electromagnet having its coil connected in said shunt and acting when energized to a sufficient strength to prevent the opening of the auxiliary switch, actuating means for opening the auxiliary switch when the energization of the magnet is at or about zero due to the alternation of the current, a movable detent or catch adapted to prevent the opening of the auxiliary switch by said actuating means, and means for throwing said detent to an inoperative position by the opening of the main switch.

658,065. UNIVERSAL JOINT. JULIUS JETTER, Hartford, Conn., assignor to Frank E. Bocorselski, same place. Filed May 16, 1900. Serial No. 16,876. (No model.)



Claim.—1. In a universal joint, the combination of the coupling-heads, each provided with forked members, a block interposed between the forked members of the coupling-heads, two bushings rigidly supported in openings at two adjacent sides of the block, the axes of the bushings intersecting at right angles with one another, bolts passing through the forked members, block and bushing, substantially as described.

2. In a universal joint, the combination of the coupling-heads, each provided with forked members, a block interposed between the forked members of the coupling-heads, two bushings rigidly supported in openings at two adjacent sides of the block, the axes of the bushings intersecting at right angles with one another, bolts passing through the forked members, block and bushing, and having their ends riveted over upon the bushing, substantially as described.

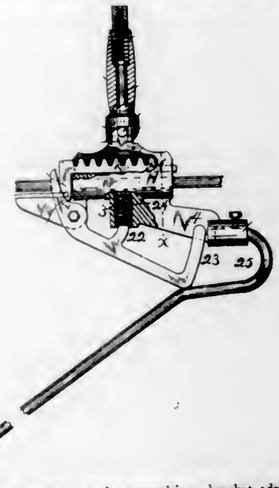
3. A universal joint consisting of the combination of the coupling-heads, having forked members integral with the coupling-heads, a block interposed and fitting substantially as described between the forked members, bushings rigidly supported in the block, the bolt 15 provided with the opening, the bolt 16 passing through the opening of the bolt 15, and means for securing the ends of the bolts for the purpose specified.

4. A universal joint consisting of the combination of the coupling-heads, having forked members integral with the coupling-heads, a block interposed and fitting substantially as described between the forked members, bushings rigidly supported in the block, and having their axes intersecting at ninety degrees with one another, bolts passing through the openings of each one of the forked members of the coupling-heads and the block, and forming pivotal connections, the bushing forming the pivotal connection between the other forked members and the block, all combined and operating substantially as described.

5. A universal joint consisting of the combination of the coupling-heads, having forked members integral with the coupling-heads, a block interposed and fitting substantially as described between the forked members, bushings rigidly supported in the block and having their axes intersecting at ninety degrees with one another, bolts rigidly supported in the block, each bolt with its corresponding bushings forming the pivotal connection between the two forked members of the coupling-head and the block, and each bolt having its end riveted over upon its bushing, substantially as described.

6. A universal joint consisting of the combination of the coupling-heads, having forked members integral with the coupling-heads, a block interposed and fitting substantially as described between the forked members, bushings rigidly supported in the block and forming the pivotal connection between one forked member of each of the coupling-heads, the axes of the bushings intersecting at ninety degrees with one another, bolts rigidly supported in the block and forming the pivotal connection between the other forked members of the coupling-heads, the axes of the bolts coinciding with the axes of the bushings, and the ends of the bolts riveted over to prevent the forks from spreading, substantially as described and for the purpose set forth.

658,066. RAILROAD MAIL-BAG CATCHER. JOHN KAISER, Seneca Falls, N. Y. Filed Jan. 4, 1900. Serial No. 310. (No model.)



Claim.—1. A mail-bag catcher comprising a bracket, adapted to be rotatingly mounted and having means for operating it, a catching-arm secured thereto, a spring-actuated lever forming a lock to prevent the bag from bounding out of the arm, and means for releasing said lock.

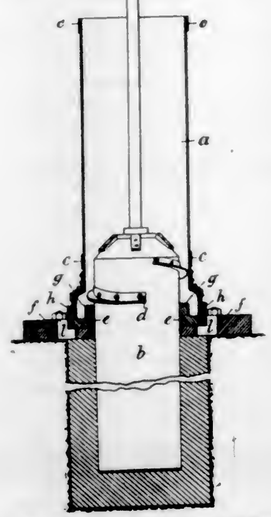
2. A mail-bag catcher comprising a bracket, adapted to be mounted so as to suitably perform the work in hand, and having means for operating it, a catching-arm secured thereto, a spring-actuated lever forming a lock to prevent the bag from bounding out of the catching-arm, a rack-bar slidingly mounted in the bracket having one end adapted to engage with the spring-actuated lever, and means for operating said rack-bar, for the purpose of releasing the said lever.

3. A mail-bag catcher comprising a bracket, suitably mounted for the purposes specified, a catching-arm secured thereto, a spring-actuated lever forming a lock to prevent the bag from bounding out of the catching-arm, a rack-bar slidingly mounted in said bracket, one end of which is adapted to engage with the spring-actuated lever, and pinion-lever adapted to engage with said rack-bar, for the purposes of operating the rack-bar and the bag-catcher, as set forth.

4. A mail-bag catcher comprising a bracket, adapted to be suitably mounted for the purposes in hand, a catching-arm secured thereto, a spring-actuated lever forming a lock to prevent the bag from bounding out of the catching-arm, a rack-bar mounted in the bracket, one end of which rack-bar is adapted to engage with the lever, a pinion-lever pivoted to the bracket, the teeth of which are adapted to engage with the rack-bar, and means for locking said pinion-lever.

5. A mail-bag catcher comprising a bracket, adapted to be suitably mounted for the purposes in hand, a catching-arm secured thereto, a spring-actuated lever forming a lock to prevent the bag from bounding out of the catching-arm, a rack-bar mounted in the bracket, one end of which rack-bar is adapted to engage with the lever, a pinion-lever pivoted to the bracket, the teeth of which are adapted to engage with the rack-bar, and a spring-actuated sleeve mounted on said pinion-lever, having its lower end provided with cams, for the purposes of locking the pinion-lever, as set forth.

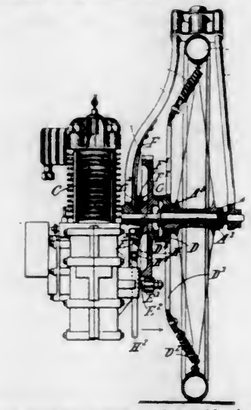
658,067. APPARATUS FOR MAKING CEMENT PIPES. CARL J. KIELBERG, Copenhagen, Denmark. Filed Oct. 2, 1899. Serial No. 732,273. (No model.)



Claim.—A device for forming pipes from cement mortar comprising a pipe-core *b*, a laterally-projecting rib *d*, extending on the surface of said core in part, spirally, and in part at right angles to the axis thereof, a shaft fixed to the upper end of said core in line with the axis thereof for connection with suitable mechanism whereby said core may be rotated and guided in a movement in line with the axis thereof, combined with the fixed mold *a* above said core, through which said shaft extends upwardly, in which the core may move in said axial line, a support for said mold, and a core-receiving chamber below said mold, substantially as described.

658,068. MOTOR-VEHICLE. HENRY J. LAWSON, London, England. Filed Jan. 31, 1900. Serial No. 3,420. (No model.)

Claim.—1. In a motor driving apparatus, the combination of a driving-wheel, a hub therefor, bearings for that hub, supports to carry the bearings, a motor mounted on the outside of one of the supports and of the wheel, a pinion on the motor-shaft eccentric to the driving-wheel, a free clutch part, gearing between this clutch part and the motor-pinion, a second clutch part arranged concentric with the first and adapted to engage the same, and means whereby one clutch part may be moved toward and away from the other substantially as set forth.



2. In a motor driving apparatus the combination of a driving-wheel, a hub therefor, bearings for that hub, supports to carry the bearings, a motor mounted on the outside of one of the supports and of the wheel, a pinion on the motor-shaft eccentric to the driving-wheel, a free clutch part, means for supporting that clutch part, gearing between the said clutch part and the motor-pinion, a second clutch part adapted to engage the first means for supporting this second clutch part, means whereby one clutch part may be moved toward and away from the other, a projection on the said second clutch part and a spring connecting this projection to the rim of the driving-wheel substantially as set forth.

3. In a motor driving apparatus the combination of a driving-wheel, a hub therefor, bearings for that hub, supports to carry the bearings, a motor mounted on the outside of one of the supports and of the driving-wheel, a pinion on the motor-shaft eccentric to the driving-wheel, a clutch making driving connection between said pinion and the driving-wheel, a spring which always tends to bring the parts of the clutch into contact with each other, and means whereby the two clutch parts may be separated, substantially as described.

4. In a motor driving apparatus the combination of a driving-wheel, a hub therefor, bearings for that hub, supports to carry the bearings, a motor mounted on the outside of one of the supports, a pinion on the motor-shaft eccentric to the driving-wheel, a free clutch part means for supporting that clutch part, gearing between the said clutch part and the motor-pinion, a second clutch part arranged concentric with the first and adapted to engage the same, means for supporting this second clutch part, a spring which always tends to bring the one clutch part into contact with the other, means whereby the two clutch parts may be separated, a projection from said second clutch part and a spring connecting this projection to the rim of the driving-wheel substantially as described.

5. In a motor driving apparatus the combination of a fixed axle, supports carrying that axle, a driving-wheel mounted upon the axle between the supports, a motor mounted on the outside of one of the supports and of the wheel, a pinion on the motor-shaft eccentric to the driving-wheel, a free clutch part arranged between the same and the support carrying the motor means for supporting that clutch part, gearing between the said clutch part and the motor-pinion, a second clutch part arranged concentric with the first and adapted to engage the same, means for supporting this second clutch part, a spring which always tends to bring the one clutch part into contact with the other, means whereby the two clutch parts may be separated, a projection from said second clutch part and a spring exterior to the driving-wheel and connecting this projection to the rim thereof substantially as described.

6. In a motor driving apparatus the combination of a driving-wheel, supports to carry the driving-wheel, a motor mounted through the medium of a sliding connection on the opposite side of one of the supports to the driving-wheel, means for controlling the movements of the motor on the support, a suitable driving connection between the motor-shaft and driving-wheel including a clutch, and means for controlling said clutch.

7. In a motor driving apparatus the combination of a driving-wheel, supports for the driving-wheel, a motor, a sliding connection through which the motor is secured on the side of a support opposite to the driving-wheels, means for controlling the movements of the motor on the support, a driving connection between the motor and the driving-wheel, including means

for controlling said driving connection through said clutch, and a spring connecting one part of said clutch to the rim of the driving-wheel substantially as set forth.

8. In a motor driving apparatus the combination of a fixed axle, supports carrying that axle, a driving-wheel mounted upon the axle between the supports, a motor on the side of one of the supports opposite the wheel and a sliding bracket whereby the motor is secured to the support, means whereby the bracket with the motor may be raised or lowered on the support, a driving connection between the motor and the driving-wheel, a clutch controlling said connection, means whereby the clutch is controlled, and a spring connection between one part of the clutch and the rim of the driving-wheel, substantially as described.

9. In a motor driving apparatus the combination of a driving-wheel, a support for said driving-wheel, a motor on the outside of the supports and of the driving-wheel, a sliding connection whereby the motor is secured to the support, means for controlling the movements of the motor on the support, and a suitable gearing between the said motor and the driving-wheel, substantially as set forth.

10. In a motor driving apparatus the combination of a fixed axle, supports carrying that axle, a driving-wheel mounted upon the axle between the supports, a motor mounted on the outside of one of the supports, a sliding bracket whereby the motor is secured to the support, means whereby the bracket with the motor may be raised or lowered on the support and suitable driving connection between the motor and the driving-wheel.

11. In a motor-driven vehicle the combination with a vehicle having a draft tongue or shafts; of two complete motor driving mechanisms each including a propelling-wheel, a support for each driving mechanism and wheel, steering-sockets to receive the said supports, braces connecting the steering-sockets, means for steering the supports, and means whereby the said steering-sockets may be attached to the tongue or shafts of the vehicle, substantially as set forth.

12. In a motor-driven vehicle the combination with a vehicle of two complete driving mechanisms each including a traction or propelling wheel independent of the supporting-wheels of the vehicle, supports for each motor mechanism and wheel-steering sockets for the supports of the motor driving mechanisms, braces connecting the steering-sockets and means whereby the steering-sockets may be connected to the pole of the vehicle, substantially as set forth.

13. A motor draft appliance for vehicles, comprising two traction-wheels, a frame spacing them apart in fixed relation, independent motors mounted on said frame, outside of and in driving relation to the respective traction-wheels, and means for attaching said frame to the ordinary pole or shafts of a vehicle.

14. A motor draft appliance for attachment to vehicles without removal of the supporting-wheels of the latter, comprising a pair of traction-wheels, independent motors laterally disposed in driving relation to the respective wheels, suitable independent supports for the wheels and their motors, and a frame in which said supports have steering-bearings, and by which the wheels are spaced apart, and means for connecting said frame to the ordinary pole or shafts of the vehicle.

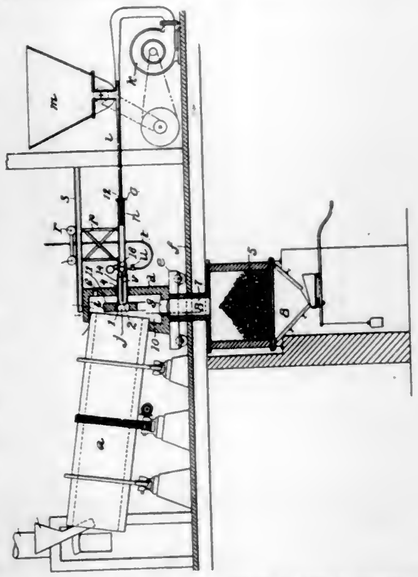
15. In combination with a vehicle, a motor traction device therefor, comprising a pair of traction-wheels, motors for said wheels, a frame by which said wheels and motors are mounted in fixed relation, means for connecting said frame to the ordinary draft tongue or shafts of the vehicle, and braces for strengthening said tongue or shafts in the directions of stress or strains imposed thereon by the traction-motors.

16. In combination with a vehicle, a motor traction appliance therefor, comprising a pair of traction-wheels, a pair of motors for said wheels, a frame by which said wheels and their motors are mounted in fixed relation, means for attaching the said frame to the ordinary draft appliance of the vehicle, consisting of sockets for receiving said draft appliance, and braces extending between the frame and the draft appliance for strengthening said connection.

658,069. METHOD OF FEEDING PULVERIZED FUEL. FREDERICK H. LEWIS, Philadelphia, Pa. Filed Oct. 17, 1899. Serial No. 733,863. (No model.)

Claim.—1. The art of feeding the fuel elements to a zone of combustion to produce heat for an industrial purpose, which consists in introducing powdered carbonaceous fuel and oxygen to said zone by the joint action of impinging blasts of air projected into said zone simultaneously in the same direction at different velocities, to wit: a forced blast of comparatively-low velocity and large volume carrying the powdered fuel in suspension, an inducing-blast of high velocity and small volume, and an induced blast for the main supply of oxygen.

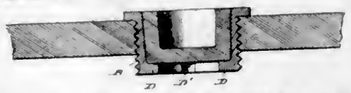
2. The art of feeding the fuel elements to a zone of combustion to produce heat for an industrial purpose, which consists in introducing powdered carbonaceous fuel and oxygen to said zone by the joint action of impinging blasts of air projected into said zone simultaneously in the same direction at different velocities, to wit: a forced blast of comparatively-low velocity and large volume carrying the powdered fuel in suspension, an inducing-blast of high velocity and small volume, and an induced heated blast for the main supply of oxygen.



3. The art of feeding the fuel elements to a zone of combustion to produce heat for an industrial purpose, which consists in introducing powdered carbonaceous fuel and oxygen to said zone by the joint action of impinging blasts of air projected into said zone simultaneously in the same direction at different velocities, to wit: a central inducing forced blast of comparatively-high velocity and small volume, a forced blast of comparatively-low velocity and large volume, surrounding the central inducing-blast and carrying the powdered fuel in suspension, and an induced blast of large volume outside the blast carrying the powdered fuel.

4. The art of feeding the fuel elements to a zone of combustion to produce heat for an industrial purpose, which consists in introducing powdered carbonaceous fuel and oxygen to said zone by the joint action of impinging blasts of air projected into said zone simultaneously in the same direction at different velocities, to wit: a central inducing forced blast of comparatively-high velocity and small volume, a forced blast of comparatively-low velocity and large volume, surrounding the central inducing-blast and carrying the powdered fuel in suspension, and an induced heated blast of large volume outside the blast carrying the powdered fuel.

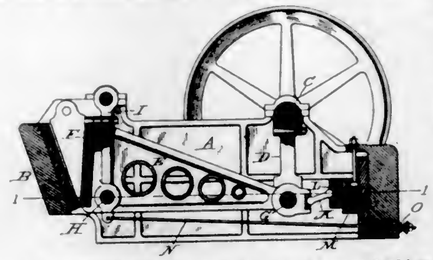
658,070. FAUCET-BUSHING. THOMAS PENDERGAST, Lancaster, Pa., assignor to Eugene G. Smith, same place. Filed Nov. 11, 1899. Serial No. 736,660. (No model.)



Claim.—A metallic bushing, adapted for insertion in the bung-hole of a barrel, &c., provided with an interior slightly-tapered circular wall terminating at its lower edge in an inwardly-projecting continuous or substantially-continuous annular supporting-flange D projecting inwardly to a substantial extent beyond the inner circular wall and having a flat upper surface extending at substantially a right angle thereto, in combination with a cup-shaped wooden bung having an outer tapered circular surface in frictional contact with the inner circular surface of the bushing and its base adjacent to the outer edge resting directly upon the flat upper surface of said supporting-flange for a distance substantially equal to the thickness of the annular body portion of said cup-shaped bung, substantially as and for the purposes described.

658,071. CRUSHING-MACHINE. EDWIN REYNOLDS, Milwaukee, Wis. Filed Apr. 6, 1897. Serial No. 631,042. (No model.)

Claim.—1. In a crushing-machine, the combination of a base or frame, a jaw pivotally mounted therein and a toggle-link arranged and designed to act on said jaw in such manner as to give to one end of said jaw twice the number of impulses as is imparted to the opposite end.

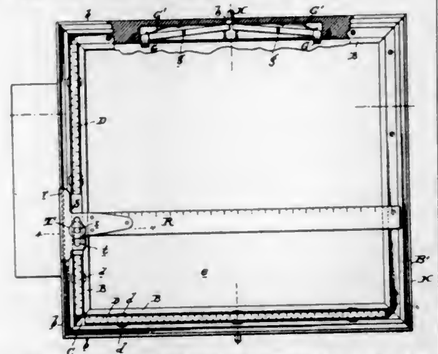


2. In a crushing-machine, the combination of a frame; a fixed jaw; a movable jaw; a link journaled upon the frame and pivoted to the jaw at its lower forward end; a toggle-link bearing against the rear end of the jaw in line with the pivotal point of the jaw; and means for reciprocating the rear end of the jaw and throwing the link above and below its greatest point of thrust.

3. In a crushing-machine, the combination of a frame; a fixed jaw; a movable jaw; a movable pivot for said movable jaw at its lower forward end; an eccentric mounted upon the frame; a link journaled upon the eccentric and pivotally connected to the rear end of the jaw; and a toggle-link bearing against the rear end of the jaw in line with the pivotal points thereof when the toggle is in its position of greatest thrust.

4. In a crushing-machine, the combination of a main frame; a fixed jaw; a jaw F carried upon the forward end of a frame E; links I pivoted to the upper part of the frame and likewise connected to the lower forward part of frame E; an eccentric mounted upon the frame; a link D connecting said eccentric and the rear end of the frame; and a link K bearing against a fixed portion of the main frame and the rear end of frame E, said link being in line with the pivotal points of said movable frame E when the link is in its position of greatest thrust, substantially as described.

658,072. DRAWING-BOARD. GEORGE K. RICH, Philadelphia, Pa. Filed June 21, 1900. Serial No. 21,057. (No model.)



Claim.—1. In a drawing-board, the combination of a main frame having inwardly-directed overhanging shoulders, a vertically-adjustable paper-supporting board adapted to support and press the paper upward against the overhanging shoulders, and hand-controlled devices for retaining the board in a depressed condition so as to permit easy insertion or removal of the paper.

2. In a drawing-board, the combination of a main frame having inwardly-directed overhanging shoulders, a vertically-adjustable paper-supporting board adapted to support and press the paper upward against the overhanging shoulders, hand-controlled devices acting on opposites edges of the board for retaining the board in a depressed condition so as to permit easy insertion or removal of the paper, and spring devices for pressing the board upward to clamp the paper when released from the hand-controlled retaining devices.

3. In a drawing-board, the combination of a main frame having inwardly-directed overhanging shoulders, a vertically-adjustable board for supporting the paper and pressing up against the overhanging shoulders, spring devices for moving the said board upward, spring-latches for locking the board in depressed condition, and projecting hand-controlled means for operating the spring-latches.

4. In a drawing-board, the combination of a main box-shaped frame open upon its upper central part and one end, guide-plates secured to the upper edges of the box-shaped frame and provided with overhanging shoulders extending inwardly on the two sides and one end of the frame, a vertically-adjustable supporting-board for the paper adapted to clamp the paper upward against the under parts of the overhanging shoulders, and an adjustable bottom end frame made upright and also furnished with an overhanging shoulder adapted to be moved into position on the main frame to close the open end thereof and to bring the overhanging shoulder above the paper at said open end.

5. In a drawing-board, the combination of a frame structure for supporting the paper and provided along one or more of its edges with a guide-plate having an upwardly-extending outer guide edge for a T-square, a longitudinal scale arranged in a recess in said guide-plate and having beveled side edges, and retaining spring-clips passed through apertures in the guide-plate and projecting over the bevel edges of the scale to hold it in position while permitting longitudinal adjustment.

6. The combination of a drawing-board having a guiding edge, a normally-stationary scale arranged on the drawing-board parallel to and close to its guiding edge, a T-square having a head adapted to the guiding edge of the drawing-board and also provided with a transverse guiding portion immediately over and parallel to the scale, a slide S adapted to said guiding portion of the T-square and having an upwardly-directed adjusting edge arranged immediately above the scale of the drawing-board, and an adjustable clamp for holding the slide firmly to the T-square, whereby the T-square and the adjustable slide are adjustable relatively to the board and over the scale thereon and the slide is relatively adjustable also to the drawing edge of the T-square.

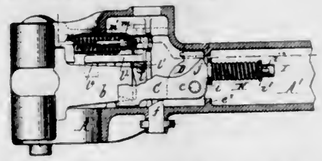
7. In a drawing-board, the combination of the main frame, a guide-plate secured to the upper edge of the main frame and provided with an overhanging shoulder at one side and an upwardly-directed guide edge at the other, means to clamp the paper against the under edge of the overhanging shoulder, and a T-square having a head guided upon the surface of the guide-plate and provided with an extended inverted-V groove r adapted to receive the upwardly-extending guide edge of the guide-plate.

8. A drawing-board having a guiding edge and a scale close to said guiding edge, combined with a T-square adapted to said guiding edge and having close to its head a guiding-groove transversely to the drawing edge of the T-square, a slide S adapted to said guide-groove of the T-square so as to move only at right angles to the drawing edge of the T-square and provided with an upper guide edge parallel to the drawing edge of the T-square, and a clamping device between the slide and the T-square for holding the slide in adjustable position upon the T-square.

9. A drawing-board having a guiding edge and a scale close to said guiding edge, combined with a T-square adapted to said guiding edge and having close to its head a guiding groove and slot transversely to the drawing edge of the T-square, a slide S adapted to said guide-groove of the T-square so as to move only at right angles to the drawing edge of the T-square and provided with an upper guide edge parallel to the drawing edge of the T-square, and a clamping device consisting of a clamping stud and nut secured to and movable with the slide for adjusting it and extending through the slot in the T-square.

10. In a drawing-board, the combination of a rectangular frame having overhanging shoulders on the inner edges and also a guiding edge, a longitudinal scale along one of its sides, a clamping-board for removably clamping paper against the under side of the overhanging shoulders, a T-square having a metallic head and a long flexible wooden ruling extension, a slide adjustably clamped on the head and guided transversely to the length of the wooden extension and so located on the T-square as to come immediately over the longitudinal scale in the frame of the drawing-board, and means carried by the slide for adjustably clamping it upon the T-square.

658,073. CAR-COUPLING. WILLARD F. RICHARDS, Buffalo, N. Y., assignor to the Gould Coupler Company, New York, N. Y. Filed June 20, 1900. Serial No. 20,996. (No model.)



Claim.—1. The combination with the draw-head, the draw-bar and the knuckle, the draw-bar being provided with an internal shoulder or abutment, of a block or carrier arranged in the draw-bar and held against

rearward displacement by said abutment, a vertically-swinging lock arranged lengthwise of the draw-head and pivoted to said block, and a spring bearing against the rear portion of the lock and operating to hold the same in its depressed position, substantially as set forth.

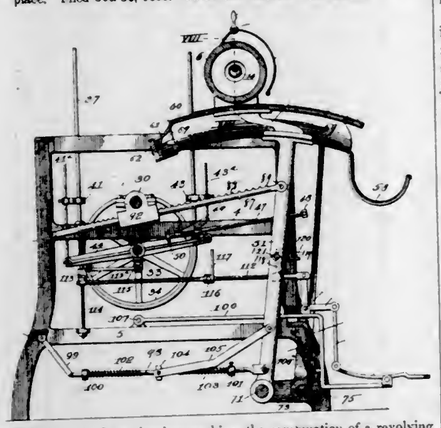
2. The combination with the draw-head, the draw-bar and the knuckle, the draw-bar being provided with an internal shoulder or abutment, of a block or carrier arranged in the draw-bar and held against rearward displacement by said abutment and provided with a rearwardly-extending stem, a vertically-swinging lock arranged lengthwise of the draw-head and pivoted to said block, and provided in rear of its pivot with an upwardly-projecting heel, and a spring mounted on said stem and operating against said heel, substantially as set forth.

3. The combination with the draw-head, the knuckle and its lock, of a kicking-lever arranged to operate against the tailpiece of the knuckle and pivoted to swing horizontally in the draw-head, and an operating-spring for the kicking-lever arranged horizontally on the knuckle side of the draw-head and on the front side of the pivot of the kicking-lever, substantially as set forth.

4. The combination with the draw-head, the knuckle and its lock, of a horizontal kicking-lever arranged in the upper portion of the draw-head and having a forwardly-extending front arm provided with a depending finger which engages against the rear side of the knuckle, and a knuckle-opening spring arranged on the knuckle side of the draw-head in front of the rear arm of the kicking-lever and bearing at its rear end against said arm and at its front end against the draw-head, substantially as set forth.

5. The combination with the draw-head having its front wall provided with a rearwardly-extending pocket, of the knuckle and its lock, a horizontal kicking-lever arranged in the upper portion of the draw-head and having a forwardly-extending front arm provided with a depending finger which engages against the rear side of the knuckle, and a knuckle-opening spring arranged in said pocket and bearing at its rear end against the rear arm of the kicking-lever, substantially as set forth.

658,074. IRONING-MACHINE. CHARLES RIESENWEBER, St. Louis, Mo., assignor to the Paragon Laundry and Machine Company, same place. Filed Oct. 30, 1899. Serial No. 735,236. (No model.)



Claim.—1. In an ironing-machine, the combination of a revolving ironing-roll, a reciprocating ironing-table, a rocker on which said table is mounted, means for operating said rocker, links to which said rocker is pivotally connected, a swinging lever connected to one of said links, and a handle carried by said lever by which it may be moved to operate said links and raise and lower the ironing-table, substantially as described.

2. In an ironing-machine, the combination of a revolving ironing-roll, a reciprocating ironing-table, a rocker on which said table is mounted, links to which said rocker is pivotally connected, means for operating said rocker, a lever connected to one of said links, a notched guide in which said lever operates and a pivoted handle connected to said lever and arranged to engage said guide, substantially as described.

3. In an ironing-machine, the combination of a revolving ironing-roll, a reciprocating ironing-table, a rocker on which said table is mounted, means for operating said rocker, an adjustment-link to which said rocker is pivotally connected, and a lever adjustably connected to said link, substantially as described.

4. In an ironing-machine, the combination of a revolving ironing-roll, a reciprocating ironing-table, a rocker on which said table is mounted, means for operating said rocker, a pivoted adjustment-link to which said rocker is pivotally connected, said link being provided with a slotted arm, a lever connected to said link, an adjustment-bolt carried by said lever, and fitting in the slot in said arm, and a screw-rod carried by said link fitted in said adjustment-bolt, substantially as described.

5. In an ironing-machine, the combination of an ironing-table having a recess for the neckband of a shirt, a swinging support having a clamp-plate adapted to be moved into and out of the recess, a rock-shaft having arms adapted to be moved toward and from the table, means whereby the rock-shaft is mounted independently of the swinging support, and means whereby the rock-shaft is connected with the swinging support so that the movement of the rock-shaft controls the movement of the swinging support; substantially as described.

6. In an ironing-machine, the combination of a table having a recess in one end thereof, a clamp-plate adapted to enter said recess, a pivoted bell-crank by which said plate is carried, a rocking shaft, arms carried by said rocking shaft adapted to be thrown against the end of said table, a crank-arm carried by said shaft, a stem carried by said crank-arm fitting in said bell-crank, and a spring on said stem bearing against said bell-crank, substantially as described.

7. In an ironing-machine, the combination of a reciprocating table, a rocker on which said table is carried, means for operating said rocker, a rack connected to said rocker, a driven pinion arranged to engage said rack, a toothed wheel located beside said pinion, said toothed wheel being provided with fewer teeth than said pinion, and a dog carried by said rack adapted to engage the teeth of said toothed wheel, substantially as described.

8. In an ironing-machine, the combination of a reciprocating table, a rocker by which said table is carried, means for operating said rocker, a rack carried by said rocker, a box in which said rack operates, a driven pinion adapted to engage said rack, a toothed wheel located beside said pinion having fewer teeth than the pinion, a spring mounted on said box, and a dog carried by said rack adapted to travel onto said spring and to engage the teeth of said toothed wheel, substantially as described.

9. In an ironing-machine, the combination of a reciprocating ironing-table, a rocker by which said table is carried, means for operating said rocker, a rack carried by said rocker, a box in which said rack operates, a spring-supported plate in said box on which the rack bears, and a driven pinion adapted to engage said rack, substantially as described.

10. In an ironing-machine, the combination of a reciprocating ironing-table, a rocker by which said table is carried, means for operating the rocker, pulleys, a belt-shifter, a connecting-rod having connection with said belt-shifter, an adjustable arm carried by said connecting-rod, an adjustable upright carried by said rod and having a stepped arm, and a rod carried by said rocker adapted to strike against said arm and upright and to engage in the step of the arm of said upright, substantially as described.

11. In an ironing-machine, the combination of a reciprocating ironing-table, a rocker by which said table is carried, pulleys, a belt-shifter, a connecting-rod having connection with said belt-shifter, a foot-lever, and a treadle pivotally connected to said foot-lever and having connection to said connecting-rod, substantially as described.

12. In an ironing-machine, the combination of a reciprocating ironing-table, a rocker by which said table is carried, pulleys, means for operating said rocker, a belt-shifter, a connecting-rod, a foot-lever, a spring for sustaining said foot-lever, a treadle pivotally connected to said foot-lever and having connection to said connecting-rod, substantially as described.

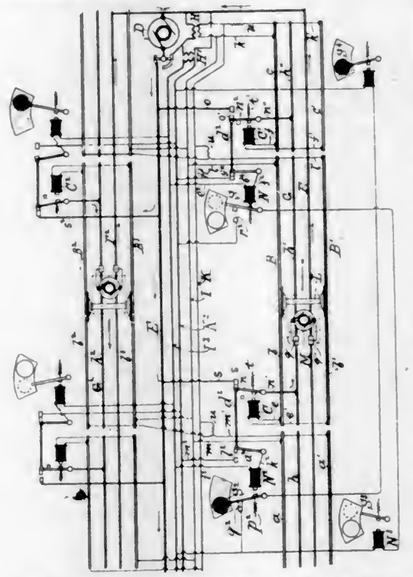
13. In an ironing-machine, the combination of an ironing-roll, a reciprocating ironing-table, a rocker by which said table is carried, means for operating said rocker, a rod connected to said rocker and to the frame of the machine, a bumper on said rod, springs on said rod against which said bumper may strike, and a connection between said bumper and said rocker; substantially as described.

14. In an ironing-machine, the combination of a reciprocating ironing-table, a rocker by which said table is carried, means for operating said rocker, a rod connected to the lower end of said rocker and to the frame of the machine, springs on said rod, a bumper slidable on said rod, and a link connecting said bumper and said rocker, substantially as described.

15. In an ironing-machine, the combination of a reciprocating ironing-table, means for moving said table, a revolving ironing-roll, a driven shaft, a removable pinion on said shaft, a spur-wheel carried by said ironing-roll, a plate movably mounted on said ironing-roll, and a gear-wheel carried by said plate arranged to mesh with said pinion and said spur-wheel, substantially as described.

658,075. ELECTRIC-RAILWAY SYSTEM. WILLIAM ROBINSON, Boston, Mass. Filed Sept. 22, 1897. Serial No. 652,520. (No model.)

Claim.—1. The combination, substantially as described, of a plurality of continuously-closed multiple circuits formed in part of parallel sections of railroad-track, a switch-magnet included in each of said circuits, a source of electric supply furnishing current to said magnets through said sections of railroad-track, said magnets being connected in multiple to the conductors from said source of electric supply and operating independently of each other, a traveling motor, a feed-wire, furnishing working current to said motor through a sectional working conductor normally disconnected from said feed-wire, the circuit of said motor being controlled at successive stages by said switch-magnets in succession, and means consisting of the wheels and axles of a car for actuating or controlling said magnets by short-circuiting, said working-conductor sections being independent of said switch-magnet circuits.



2. The combination, substantially as described, of a plurality of electromagnets included in a circuit formed in part of two parallel lines of sectional conductors consisting of the rails of a railroad-track, an electric transformer furnishing current in multiple to said respective magnets through said parallel sections of railroad-track, and the wheels and axles of a locomotive or car forming connection between said parallel sections of track, and thereby controlling the operation of said respective magnets independently of each other.

3. In an electric-railway system, the combination substantially as described, of a feed-wire, a working conductor formed in successive sections normally disconnected from said feed-wire, a traveling motor, switch-magnets arranged to establish and control electrical connection between said working sections and said feed-wire, additional sectional contact-conductors formed independently of said working conductors and forming a part of the circuits of said switch-magnets, and two independent traveling contact or circuit making devices, one making electrical connection between said motor and the sectional working conductor and the other establishing electrical connection between parallel sections of the said independent contact-conductors connected to said magnets, and thereby controlling the operation of said magnets, the last-named contact or circuit making device extending at both ends beyond the lines of the current-collector of the working conductor.

4. In an electric-railway system, the combination of a feed-wire, a working conductor formed in successive sections normally disconnected from said feed-wire, a traveling motor, an independent current-collector electrically connected to said motor and making traveling contact with said sectional working conductor, electromagnets arranged to establish and control electrical connection between said working sections and said feed-wire, additional sectional contact-conductors forming part of continuously-closed independent circuits through said magnets and means for demagnetizing said respective magnets by establishing and continuing short-circuiting connection between said last-named sectional contact-conductors while the train or car is running over said respective sections, said short-circuiting device overlapping and extending at each end beyond the lines of said current-collector of the working conductor, said current-collector and short-circuiting device being electrically independent of each other, substantially as and for the purpose described.

5. The combination, substantially as described, of a plurality of switch or track magnets included in continuously-closed circuits formed in part of parallel sections of railroad-track, said magnets being operated or controlled without opening the circuits of the same, a source of electric supply furnishing current to said magnets through said rail-sections, a plurality of additional or independent magnets receiving current from a common source of electric supply, the circuits of said respective independent magnets being actuated and controlled by said respective track-magnets, and means for operating said track-magnets by short-circuiting.

6. The combination, substantially as described, of a plurality of switch-magnets included in continuously-closed circuits formed in part of parallel sections of railroad-track, said magnets receiving operative current through said sections of track and being operated or controlled without opening the circuits of said magnets, a series of secondary circuits including translating devices and connected in compound circuit to a source of electric supply, the respective switch or track magnets actuating and controlling the respective secondary circuits independently of each other, and means for operating said switch-magnets by short-circuiting.

7. The combination, substantially as described, of a plurality of switch-magnets included in continuously-closed circuits formed in part of parallel sections of railroad-track, said magnets receiving operative current through said sections of track and being operated or controlled without opening the circuit of said magnets, a series of secondary magnets included in circuits connected in multiple to a source of electric supply, said secondary magnets and their circuits being operated and controlled independently of each other by the respective switch or track magnets, and the wheels and axles of a car demagnetizing said switch or track magnets by short-circuiting.

8. The combination, substantially as described, of a plurality of switch-magnets included in continuously-closed circuits formed in part of parallel sections of railroad-track, said magnets receiving operative current through said sections of railroad-track and being operated or controlled without opening the circuits of said magnets, a feed-wire, a working conductor formed in successive sections normally disconnected from said feed-wire, a traveling motor deriving current from said feed-wire through said sections of working conductor, the actuation of each of said respective switch-magnets operating to connect one of said sections of working conductor to said feed-wire and to disconnect the same therefrom, a series of additional circuits containing additional magnets or translating devices, said respective switch-magnets also operating and controlling said respective additional circuits, and means for demagnetizing said switch-magnets by short-circuiting.

9. In an electric-railway system, the combination, substantially as described, of a plurality of switch-magnets included in continuously-closed circuits formed in part of parallel sections of railroad-track, said magnets receiving operative current through said sections of track and being operated or controlled without opening the circuits of said magnets, a main feed-wire, a working conductor formed in successive sections normally disconnected from said feed-wire, a return-conductor, a traveling motor deriving current from said feed-wire through said sections of working conductor, a series of secondary magnets included in circuits connected in multiple to a source of electric supply, said secondary magnets and their circuits being operated and controlled, independently of each other, by the respective switch-magnets, the demagnetization of either of said switch-magnets also operating to connect the said main feed-wire to one of the sections of working conductor, and means for demagnetizing said switch-magnets by short-circuiting.

10. In an electric-railway system, the combination, substantially as described, of a plurality of switch-magnets included in continuously-closed circuits formed in part of parallel sections of railroad-track, said magnets receiving operative current through said sections of track and being operated or controlled without opening the circuits of said magnets, a main feed-wire, a working conductor formed in successive sections normally disconnected from said feed-wire, a return-conductor, a traveling motor deriving current from said feed-wire through said sections of working conductor, a plurality of signals operated or controlled by means of electromagnets connected in multiple to a source of electric supply, said signal-magnets being operated and controlled, independently of each other, by the respective switch-magnets, the operation of either of said switch-magnets also serving to connect the said main feed-wire to one of the sections of working conductor and to disconnect the same therefrom, and the wheels and axles of a car operating to demagnetize said switch-magnets by short-circuiting.

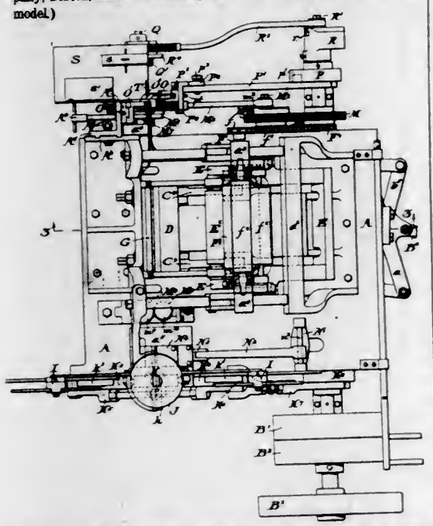
11. In an electric-railway system, the combination, substantially as described, of a generator, a transformer and a switch, said generator furnishing current, through a suitable feed-wire, for the operation of the motors, and also current to the primary of said transformer, the secondary of said transformer furnishing current to magnets connected to sections of railroad-track, said switch being so arranged that in closing the same current from said generator will be thrown on the primary of said transformer before being delivered to said feed-wire.

12. In an electric-railway system, the combination substantially as

described, of a generator, a transformer and a switch, said generator furnishing current to a main conductor and also to the primary of said transformer, said switch being so constructed and arranged that in closing the same current from said generator will be thrown on the primary of said transformer before being delivered to said main conductor.

13. In an electric-railway system, the combination substantially as described, of a generator, a transformer and a switch, said generator furnishing current, through a suitable feed-wire, for the operation of the motors and also current to the primary of said transformer, the secondary of said transformer, furnishing current to magnets arranged to control the admission of current from said feed-wire to the working conductor, said switch being so arranged that in closing the same current from said generator will be thrown on the primary of said transformer before being delivered to said feed-wire.

658,076. **MACHINE FOR MAKING TAGS.** GEORGE W. SWIFT, Jr., Bordentown, N. J., assignor to the Dennison Manufacturing Company, Boston, Mass. Filed Aug. 13, 1898. Serial No. 688,466. (No model.)



Claim.—1. The combination with means to progress a tag-body web, of mechanism to notch the edge of said web at regular intervals, and means to adjust said mechanism with respect to said web, to vary the dimensions of the notches therein, substantially as set forth.

2. The combination with means to progress a tag-body web, of mechanism to notch the edge of said web at regular intervals, and a wedge-block to adjust said mechanism with respect to said web, to vary the dimensions of the notches therein, substantially as set forth.

3. The combination with means to progress a tag-body web, of an oscillatory blade to slit said web, and means to adjust the relative position of the center of oscillation of said blade and the edge of said web, to vary the dimensions of the slits in said web, substantially as set forth.

4. The combination with a reservoir for an adhesive compound, of a port leading from said reservoir, means to progess a strip of fabric, and a roller opposed to said port to present said strip against the mouth thereof, to receive the adhesive directly therefrom, substantially as set forth.

5. The combination with means to progress a tag-body web, of mechanism to notch the edge of said web at regular intervals, means to adjust said mechanism with respect to said web, to vary the dimensions of the notches therein, and adjustable means to vary the distance between the successive notches in said web, substantially as set forth.

6. The combination with means to progress a tag-body web, of an oscillatory blade to slit said web, means to adjust the relative position of the center of oscillation of said blade and the edge of said web, to vary the dimensions of the slits in said web, and adjustable means to vary the distance between the successive slits in said web, substantially as set forth.

7. The combination with means to progress a tag-body web, of an oscillatory blade to slit said web, means to automatically vary the relative position of the center of oscillation of said blade, and the edge of said web, to vary the dimensions of the slits in said web, at predetermined periods in the operation, substantially as set forth.

8. The combination with means to intermittently progress a tag-body web, of means to perforate said web during the intermission in its traverse, mechanism to notch the edge of said web, at regular intervals, and means to simultaneously adjust said notching mechanism vertically and in the direction of traverse of the web, to vary the dimensions of the notches and the distance of the same from the perforations, substantially as set forth.

9. The combination with a reservoir for an adhesive compound, of two ports leading from said reservoir, two strips of fabric, respective rollers arranged to present the respective strips in opposition to the respective ports to receive the adhesive, directly therefrom, and means to simultaneously progress both of said strips, substantially as set forth.

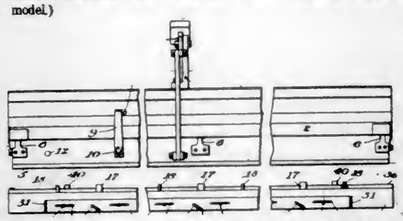
10. The combination with the feed-rollers M^6, M^{10}, of the gears m^9, m^{10}, fixed upon the respective rollers, the shaft M^8, extending from the roller M^9, the bevel-gear m^8, connecting said shaft M^8, with the shaft M^6, a ratchet-wheel M^7, fixed upon said shaft M^6, the pawl m^5, mounted to oscillate with respect to said shaft M^6, a pitman M^3, arranged to intermittently actuate said pawl m^6, an eccentric operatively connected with said pitman, and means to adjustably vary the throw of said eccentric, substantially as set forth.

11. The combination with means to progress a tag-body web, of mechanism to perforate said web at regular intervals, mechanism to notch the edge of said web at regular intervals, means to adjust said notching mechanism with respect to said web, to vary the dimensions of the notches therein, and mechanism arranged to operate in synchronism with said perforating and notching mechanism to provide said web with imprints in predetermined relation with said perforations and notches, substantially as set forth.

12. The combination with means to progress a tag-body web, of mechanism to notch the edge of said web at regular intervals, means to adjust said notching mechanism with respect to said web, to vary the dimensions of the notches therein, a blade arranged to slit said web, and mechanism arranged to operate in synchronism with said notching and slitting mechanism, to provide said web with imprints in predetermined relation with said perforations and slits, substantially as set forth.

13. The combination with means to progress a tag-body web, of means to progress reinforcing-strips upon opposite sides of said web, of perforating mechanism comprising opposed die-plungers K', K^3, the reciprocatory head K^3, in which said plunger K', is fixedly mounted, the reciprocatory head K^4, in which said plunger K^3, is mounted to reciprocate in the direction of its length, resilient means independent of the reciprocating mechanism to normally thrust said plunger K^3, forward with respect to said head K^4, a die-stem k^3, fixed in said head K^4, and extending through said plunger K^3, a passage-way k', in the plunger K', in registry with said die-stem k^3, and means to reciprocate said heads K^3, K^4, in opposition, substantially as set forth.

658,077. **MACHINE FOR BENDING SHEET METAL.** FRANCIS THOMAS, Cincinnati, Ohio. Filed Feb. 12, 1900. Serial No. 4,904. (No model.)



Claim.—1. In a machine of the character described, the combination of two members, one movable toward and away from the other and a plurality of forming devices carried by one member, one of said forming devices being rigidly held on its member and the other forming device on said member being adjustable into and out of operative position, substantially as set forth.

2. In a machine of the character described, the combination of two members, one movable toward and away from the other, a plurality of forming devices carried by one member, one of said forming devices being rigidly held on its member and the other forming device on said member being adjustable into and out of operative position, and a gage arranged for operation in connection with the adjustable forming device and also adjustable into and out of operative position, substantially as set forth.

3. In a machine of the character described, the combination of two members, one movable toward and away from the other, a plurality of forming devices carried by one member, one of said forming devices being adjustable into and out of operative position, means for moving the adjustable forming device, when released, out of operative position, and means adapted to hold said adjustable forming device in operative position during the movement of the member by which it is carried, substantially as set forth.

4. In a machine of the character described, the combination of two members, one movable toward and away from the other, and a forming device pivotally held on one member and adapted to be adjusted into and out of operative position and provided with means adapted to hold it out of operative position when so adjusted, substantially as set forth.

5. In a machine of the character described, the combination of two members, one movable toward and away from the other, a hammer and a die carried by one member in line with each other, one of said last-named parts being movable into and out of operative position and being provided with means adapted to hold it out of operative position when so moved, substantially as set forth.

6. In a machine of the character described, the combination of two members, one movable toward and away from the other, a shaft carried by one member, and a die held to swing on said shaft and provided with means adapted to hold it against movement when out of operative position, substantially as set forth.

7. In a machine of the character described, the combination of two members, one movable toward and away from the other, a gage, a slide, and means actuated from the slide for moving the gage into and out of operative position, substantially as set forth.

8. In a machine of the character described, the combination of two members, one movable toward and away from the other, a gage, a lever connected to the gage and a slide having a cam engaged with the lever to move the gage, substantially as set forth.

9. In a machine of the character described, the combination of two members, one movable toward and away from the other, dies carried by the respective members, a hammer carried by one member and a perforating device carried by one member, substantially as set forth.

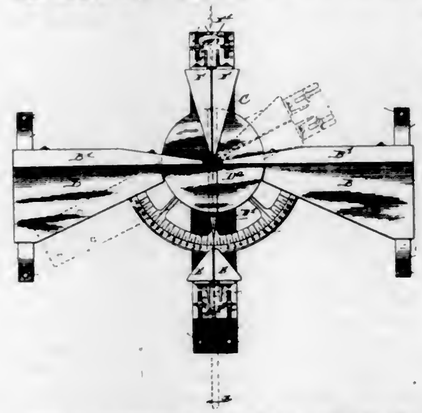
10. In a machine of the character described, the combination of two members one movable toward and away from the other, corresponding dies carried by the respective members, one of said dies being movable into and out of operative position, and a hammer carried by one member and adapted for operation when the movable die is out of operative position, substantially as set forth.

11. In a machine of the character described, the combination of two members, one movable toward and away from the other, two forming devices carried by one member and adapted for operation in connection with corresponding forming devices on the other member when the members are moved relatively to each other, one of said forming devices being in front of the other and being adapted for movement out of and into operative position, substantially as set forth.

12. In a machine of the character described, the combination of two members, one movable toward and away from the other, two forming devices carried by one member and adapted for operation in connection with corresponding devices on the other member when the members are moved relatively to each other, one of said forming devices being in front of the other and being movable into and out of operative position, and a gage adapted for use in connection with the movable forming device and also adapted to be moved out of operative position, substantially as set forth.

13. In a metal-bending machine, a member having two forming devices, one of which is arranged in front of the other and is movable into and out of operative position, substantially as set forth.

658,078. **MITER-BOX.** ARNE VICK, Chicago, Ill. Filed Dec. 28, 1899. Serial No. 741,817. (No model.)



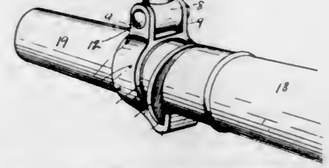
Claim.—1. In a miter-box, in combination, a supporting-frame; bed-pieces and back pieces on opposite ends of the supporting-frame, the bed-pieces having a space between them; a saw-carrying arm having a pivotal connection with said supporting-frame; a turn-table fixed with relation to said arm, and lying in the space between said bed-pieces, its surface being flush with the surfaces of said bed-pieces, which turn-table is adapted to rotate with the saw-carrying arm independently of the bed-pieces and back pieces; and means for forming a frictional engagement between the saw-carrying arm and the supporting-frame.

2. In a miter-box, in combination, a supporting-frame having a dial-plate; bed-pieces and back pieces for the frame; a saw-carrying arm having a pivotal connection with said frame concentric with the dial-plate; a turn-table fixed with relation to said arm; a lever pivotally mounted on said arm, having a frictional engagement with the supporting-frame; a spring for said lever; and means on the saw-carrying arm for supporting a saw.

3. In a miter-box, in combination, a supporting-frame; bed-pieces and back pieces on opposite ends of the supporting-frame, the bed-pieces having a space between them; a dial-plate on the supporting-frame, within said space between the bed-pieces; a saw-carrying arm having a pivotal connection with the frame; a turn-table fixed with relation to said saw-carrying arm, and lying over said dial-plate, within the space between said bed-pieces, which turn-table is adapted to rotate with the saw-carrying arm independently of the bed-pieces and back pieces, and has an indicator for said dial-plate; two brackets having an adjustable connection with said saw-carrying arm; and guide-blocks on each of said brackets for receiving a saw.

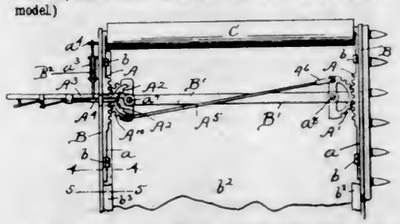
4. In a miter-box, in combination, a supporting-frame having a dial-plate formed integral therewith; bed-pieces and back pieces for the frame, the bed-pieces being secured to said frame on opposite sides of the dial-plate; a saw-carrying arm; a turn-table over said dial-plate; a stud connecting the arm and the turn-table rigidly together, which stud has a pivotal engagement with the supporting-frame; stops for limiting the pivotal movement of the saw-carrying arm; which turn-table is adapted to rotate with the saw-carrying arm independently of the bed-pieces and back pieces; two brackets having an adjustable connection with the saw-carrying arm; and guide-blocks on each of said brackets for supporting a saw between them.

658,079. **NECK-YOKE.** JOHN H. YOUNGEN, Canton, Ohio, assignor of two-thirds to Edward A. Rockhill and Frank E. D. Keplinger, same place. Filed Jan. 26, 1900. Serial No. 2,832. (No model.)



Claim.—The combination of the yoke 1 having connected thereto the plate 2 provided with an aperture, the head 8 provided with the shank 13 having an angled portion 15, a washer or connecting-head fixed upon the angled portion and seated in the plate 2, a tongue-ring provided with ears and the head pivotally connected to said ears, and means for limiting the movement of the head upon its pivotal connection, substantially as and for the purpose specified.

658,080. **BELT-TIGHTENER FOR GRAIN-CARRIERS.** CHARLES COLAHAN, Akron, Ohio. Filed Feb. 28, 1900. Serial No. 6,782. (No model.)



Claim.—1. The combination of the carrier-roller C, the adjusting supporting-racks *a a*, the segment-gear A', the connecting-rod A^5 and seg-

mental gear A^{10}, the adjusting-lever A^4, its pawl A^4, and the ratchet-holding teeth A^3 pivoted at a^7 substantially as shown and described.

2. The combination of the adjusting roller-supporting racks *a a*, the segment-gear A', A^{10}, connecting-rod A^2, the pawl operating in connection with the ratchet-holding teeth A^3 of the segment-gear A^{10}, the lever A^5 and the spring link connection B^2 operating substantially as shown and described.

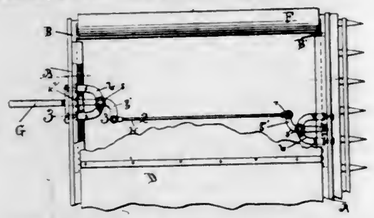
3. The combination of the adjusting roller-supporting racks *a, a*, the segmental gears A', A^{10}, connecting-rod A^2, the ratchet-holding teeth A^3 secured on the rear segment A^{10}, with the lever A^4, its pawl A^4 and the lever-holding teeth A^7 on the rear of main platform-frame B, substantially as shown and described.

4. The combination of the gear-racks *a* and the carrier-roll C with the adjusting-segments A' A^{10} and the connecting-rod A^6 and adjusting-nut A^8 as a means of retaining the segment in any position of independent adjustment with the toothed rack as and for the purposes described.

5. The combination of the roller-supporting adjustable arms *a a*, the segment A', connecting-rod A^2, segment A^{10}, and adjusting-lever A^5 operating substantially as shown and described.

6. The roller-supporting adjustable arms *a a*, the segment A', connecting-rod A^2, segment A^{10}, and adjusting-lever A^5 in combination with the spring link connection B^2 substantially as shown and described.

658,081. BELT-TIGHTENER. CHARLES COLAHAN, Chicago, Ill. Filed July 24, 1900. Serial No. 24,641. (No model.)

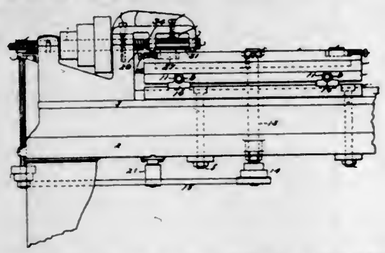


Claim.—1. The hand-lever G, pivoted on its supporting-bracket at *s*, and operating within the socket K to move the adjustable roller-supporting arm B, said lever being provided with an angular extension *g* beyond its pivot, the cross-rod H pivoted at *r* to the elbow-lever *g'* imparting a corresponding movement to the adjustable roller-supporting arm B', all said parts combined substantially as shown and described.

2. The combination of the carrier-roller F, the adjusting-arms B B' having the lever-socket K and the elongated apertures *b' b'* with the securing and lever-supporting brackets *b b*, and the elbow-lever *g'*, connecting cross-rod H, bent lever *g*, its pivot S and the actuating-lever G for adjusting and maintaining the apron-roller in any desired position, substantially as shown and described.

3. The adjusting-lever G, pivoted at *s*, combined with the rear adjusting-arm B, the connecting cross-rod H and elbow-lever *g'*, imparting a simultaneous movement to the arm B' substantially as shown and described.

658,082. APPARATUS FOR PERFORATING DESIGNS IN SHEET METAL. NATHAN B. EVANS, Providence, R. I., assignor to Bangs K. Smith and Frederic A. Fairbrother, Jr., same place. Filed Jan. 4, 1900. Serial No. 319. (No model.)



Claim.—1. The combination of two systems of mechanism, one movable and the other stationary, one system consisting of a rotatable milling-roll, two spring-depressed, rotatable friction-rolls and proper supports for said rolls, and the other system consisting of a bed, a die-holder thereon, a die held by said die-holder and adapted to support an embossed plate of sheet metal corresponding with and fitting on said die and in such a plane as to expose the protuberances of said plate to the operation of the milling-roll, while said plate is in contact with said friction-rolls, substantially as shown and for the purpose specified.

2. The combination of a movable bed, a die held thereon and adapted to support an embossed struck-up plate of sheet metal corresponding with and fitting upon the surface of said die, a rotatable milling-roll properly supported and having its lower operative surface in a plane coincident with the plane of the surface of the protuberant portions of said die and spring-pressed friction-rolls adapted to contact with said plate and rotatable by said contact while said bed is moving and means of supporting said friction-rolls in position, substantially as described.

3. The combination of a movable bed, a die movably supported on said bed and adapted to support an embossed, struck-up plate of sheet metal corresponding with and fitting upon the surface of said die, means for adjusting and holding said die in position, a rotatable milling-roll properly supported and having its lower operative surface in a plane coincident with the plane of the surface of the protuberant portions of said die and spring-pressed friction-rolls adapted to contact with said plate and rotatable by said contact while said bed is moving and means of supporting said friction-rolls in position, substantially as specified.

4. The combination of a movable bed having a die-socket, a die in said socket adapted to support an embossed, struck-up plate of sheet metal corresponding with and fitting upon the surface of said die, a die-holder in said socket adapted to hold said die, means for adjusting and holding said die and die-holder in said socket, a rotatable milling-roll properly supported and having its lower operative surface in a plane coincident with the plane of the surface of the protuberant portions of said plate and spring-pressed friction-rolls adapted to contact with said plate and rotatable by said contact while the bed is moving and means of supporting said friction-rolls in position, substantially as set forth.

5. The combination of a rotatable dial-plate properly supported, means to rotate the same, dies held on said dial-plate, each of which is adapted to support an embossed struck-up plate of sheet metal corresponding with and fitting upon the surface of said dies, respectively, a rotatable milling-roll properly mounted in a fixed support and having its lower operative surface in a plane coincident with the plane of the surface of the protuberant portions of said embossed plates and spring-pressed friction-rolls adapted to contact with said embossed plates and rotatable by said contact when said dial-plate is rotating and means of supporting said friction-rolls in position, substantially as described.

6. The combination of a rotatable dial-plate properly supported and provided with die-sockets, a die in each socket and adapted to support an embossed, struck-up plate of sheet metal upon each die and corresponding with and fitting upon the surface thereof, a die-holder for each die and adapted to hold the same, means for adjusting and holding said die and die-holder in the corresponding socket, a rotatable milling-roll properly mounted in a fixed support and having its lower operative surface in a plane coincident with the plane of the surface of the protuberant portions of said embossed plates and spring-pressed friction-rolls adapted to contact with said embossed plates and rotatable by said contact when said dial-plate is rotating and means of supporting said friction-rolls, substantially as specified.

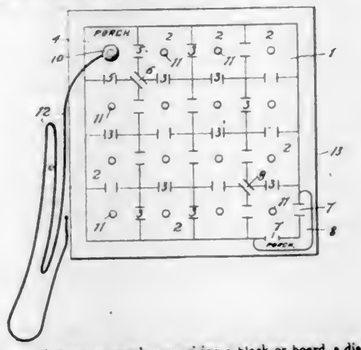
7. The combination of a base-plate having parallel grooves on its upper surface, a dial-bed having parallel grooves on its under surface, wedges adjustably movable in said grooves between said plate and bed and a dial-plate rotatable on and supported by said dial-bed, means to rotate said dial-plate, dies held on said dial-plate, each of which is adapted to support an embossed struck-up plate of sheet metal corresponding with and fitting upon the surface of said dies, respectively, a rotatable milling-roll properly mounted on a fixed support and having its lower operative surface in a plane coincident with the plane of the surface of the protuberent portions of said embossed plates and spring-pressed friction-rolls adapted to contact with said embossed plates and rotatable by said contact when said dial-plate is rotating and means of supporting said friction-rolls in position, substantially as shown.

8. The combination of a base-plate having parallel grooves on its upper surface, a dial-bed having parallel grooves on its under surface, wedges adjustably movable in said grooves between said plate and bed, a dial-plate rotatable on and supported by said dial-bed, and provided with die-sockets, means to rotate said dial-plate, a die in each socket and adapted to support an embossed, struck-up plate of sheet metal upon each die and corresponding with and fitting upon the surface thereof, a die-holder for each die and adapted to hold the same, means for adjusting and holding said die and die-holder in the corresponding socket, a rotatable milling-roll properly mounted upon a fixed support and having its lower operative surface in a plane coincident with the plane of the surface of the protuberant portions of said embossed plates and spring-pressed friction-rolls adapted to contact with said embossed plates and rotatable by said contact when said dial-plate is rotating and means of supporting said friction-rolls in position, substantially as described.

9. The combination of a base-plate and a dial-bed with means of vertically adjusting the latter upon the former, a dial-plate rotatable on and supported by said dial-bed, means to rotate said dial-plate, dies held on said dial-plate, each of which is adapted to support an embossed struck-up plate of sheet metal corresponding with and fitting upon the surface of said dies, respectively, a rotatable milling-roll properly mounted on a fixed support and having its lower operative surface in a plane coincident with the plane of the surface of the protuberant portions of said embossed plates and rotatable by said contact while said dial-plate is rotating and means of supporting said friction-rolls in position, substantially as specified.

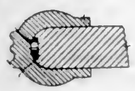
10. The improved apparatus for perforating embossed metal plates herein described, consisting of the combination of a lathe having a bed, standard and a shaft rotatable by power, a worm on the end of said shaft, a vertical shaft supported on one end of the lathe and having at its top a worm-gear engaged with said worm, a pulley on the bottom of said vertical shaft, a second vertical shaft mounted upon proper supports and having a pulley at the bottom, a belt from the pulley first named to the pulley last named, a belt-tightener in contact with said belt between said pulleys, a base upon the lathe-bed, a dial-bed above and parallel with said base, wedges adjustably mounted and movable between the dial-bed and base in grooves thereof, a dial-plate rotatable with the second-named vertical shaft and fitting in a circular recess in the top of the dial-bed and provided with die-sockets, a die in each socket, adapted to support an embossed plate of sheet metal upon the surface of such die and corresponding with and fiting upon the surface of the same, a die-holder in each socket, an adjusting-screw extending through the edge of the dial-plate into each socket and adapted to hold the die and die-holder therein, a bracket upon the standard of the lathe and having a base, four lugs extending down from said base, each lug having an elongated slot therein, two depression-rollers mounted in said slots, two adjusting-screws through said base, two bow-springs attached to the ends of said screws and placed with their ends in contact with the depression-rolls, respectively, and adapted to press said rolls into contact with said embossed plates, a milling-roll attached to the end of the lathe-shaft and rotatable therewith, the lower operative surface of which milling-roll is in a plane coincident with the plane of the surface of the protuberant portions of said embossed plate, all operating substantially as shown and for the purpose specified.

658,083. PUZZLE. FRANK FAVOUR, Rochester, N. Y., assignor, by mesne assignments, of one-half to Harold C. Mitchell, same place. Filed Dec 14, 1899. Serial No. 740,323. (No model.)



Claim.—A game or puzzle comprising a block or board, a diagram thereon representing a rectangular series of rooms with communicating doorways in their division-walls, a porch at one corner of the diagram provided with doorways communicating with the adjacent rooms, a porch at the diagonally-opposite corner of the diagram outside of the corner room and communicating therewith by two doorways, a pin in each of the rooms in line with the doorways, a pin on the front porch to indicate the starting-point, and a cord attached to said latter pin and of such length that it may be passed through all of the rooms and out onto the back porch without crossing any of the division-walls, substantially as shown and described.

658,084. BATH-TUB SEAT. HOWARD L. GRINNELL, Buffalo, N. Y., assignor of one-half to Conrad Bingel, Jr., same place. Filed Jan. 11, 1900. Serial No. 1,085. (No model.)

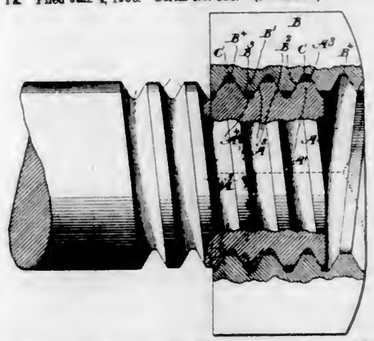


Claim.—1. A bath-tub seat comprising a plate formed with rounded ends having recesses, and cushioning-caps covering the rounded ends.

2. A bath-tub seat comprising a plate formed with rounded ends, and cushioning-caps formed with enlarged cylindrical portions at the corners of the plate and with flanges embracing the rounded ends.

3. A bath-tub seat comprising a plate formed with recesses in the ends, and cushioning-caps covering the recesses and formed with enlarged cylindrical portions at the corners of the plate and with flanges embracing the ends of the plate.

658,085. SCREW-COUPLING. CLINTON A. HIGBEE, Philadelphia, Pa. Filed Jan. 4, 1900. Serial No. 321. (No model.)



Claim.—1. A screw-coupling having V-shaped threads of the male and female portions formed on cylindrical surfaces and with tapered sides adapted to make a close fit with each other and their tops and bottoms so formed as to leave a substantial clearance between the tops and bottoms of the coupled threads both in the male and female portions of the coupling.

2. A screw-coupling, each member of which has truncated V-shaped threads formed on cylindrical surfaces and not merging into each other at the bottom and in which the distance between the sides of the threads is greater at their tops than is the distance between the sides of adjacent threads at the bottom, the tapered sides of the threads being formed to fit closely together and the tops and bottoms to clear each other when the members are coupled.

658,086. SCREW-COUPLING. CLINTON A. HIGBEE, Philadelphia, Pa. Filed Jan. 4, 1900. Serial No. 322. (No model.)



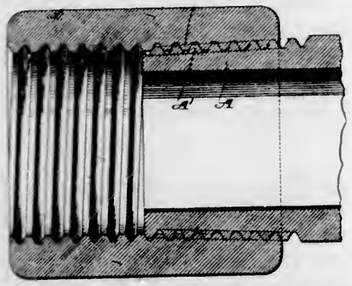
Claim.—1. A screw-coupling consisting of male and female members each having the portions of their threads which are first interengaged formed on cylindrical surfaces to engage freely and without jamming and one coupling member having a continuation of its thread formed on a conical surface and so as to form a jamming engagement with the threads of the other member, the threads of the coupling-members which engage in a jamming union as aforesaid being so formed as to leave a clearance between their tops and the bottoms of the engaged threads which permits of and is closed or partly closed up by a flow of the metal of the thread as the members are screwed together.

2. A screw-coupling consisting of male and female members each having the portions of their threads which are first interengaged formed on cylindrical surfaces to engage freely and without jamming and the male coupling member having a continuation of its thread formed on an outwardly-flaring conical surface so as to form a jamming union with the cylindrical or more nearly cylindrical thread of the female member, the threads of both members being so formed as to leave a clearance between their tops and the bottoms of engaged threads which permits of and is partly or wholly closed up by the flow of the metal of the threads where they form a jamming engagement.

3. A bolt and nut in which the thread of the bolt is formed partly on a cylindrical surface and partly on a conical surface and the thread of the nut on a cylindrical surface and so as to fit upon the cylindrical portion of the bolt and in which the threads of both bolt and nut are formed to engage with a clearance between their tops and the bottoms of engaged threads which clearance permits of and is partly or wholly closed up by

the flow of the metal of the threads where the nut forms a jamming union with the conical thread of the bolt.

658,087. SCREW-COUPLING. CLINTON A. HIGBEE, Philadelphia, Pa. Filed Jan. 4, 1900. Serial No. 323. (No model.)



Claim.—1. A screw-coupling one member of which has its threads formed on a conical surface and so as to form a jamming union when coupled with the other members and both members of which coupling have threads formed with angular sides and square tops and bottoms the breadth of the tops being greater than that of the bottoms and so that a clearance is left between the square tops and square bottoms of the coupled threads.

2. A screw-coupling, one member of which has its threads formed on a conical surface and so as to form a jamming union when coupled with the other member, and both members of which coupling have threads formed with angular sides and square rounded-edged tops and bottoms, the breadth of the tops being greater than that of the bottoms and so that a clearance is left between the square tops and square bottoms of the coupled threads.

658,088. APPARATUS FOR MOLDING GLASS PIPES. STEPHEN JONES, Dunmore, Pa. Filed Dec. 16, 1899. Serial No. 740,580. (No model.)



Claim.—1. A core for glass-molds consisting of two heads separably connected together, each head having hinged thereto a series of tapering staves, the staves connected with one of said heads fitting between the staves connected with the opposing heads to form a cylinder.

2. A core for glass-molds consisting of two heads separably connected together, each head having hinged thereto a series of separated, tapering staves, and having openings or pockets between said staves adapted to receive the narrow ends of the staves connected with the opposing head.

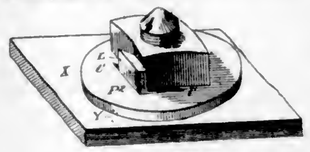
3. A core for glass-molds consisting of two heads separably connected together, each head having hinged thereto a series of separated, tapering staves, and having openings or pockets between said staves adapted to receive the narrow ends of the staves connected with the opposing head, conical or tapering faces upon the heads adjacent to said pockets, and means for adjusting said heads toward each other to force the staves together.

4. A core for glass-molds consisting of two heads each having hinged thereto a series of separated tapering staves, and having openings or pockets between said staves adapted to receive the narrow ends of the staves connected with the opposing head, conical or tapering faces upon the heads adjacent to said pockets, and a removable bolt securing said heads together.

5. A collapsible core for glass-molds formed in two separable parts, each part consisting of a head and a series of tapering staves hinged thereto, the staves connected with one of said heads fitting between the staves connected with the opposing head to form a cylinder, and means for moving said parts in opposite directions to separate the core.

658,089. NUT-LOCK. ROBERT LAURIN, Chicago, Ill. Filed Sept. 8, 1898. Serial No. 605,161. (No model.)

Claim.—In a nut-lock, the combination of a washer-plate having a triangular-shaped slot therein, of a catch having a base portion fitting said slot and having a flange extending along one side of said base portion, said flange being adapted to engage the side of the nut, substantially in the manner and for the purpose set forth.



658,090. BALE-TIE. CHARLES E. MALLETT, New York, N. Y. Filed May 16, 1900. Serial No. 16,860. (No model.)



Claim.—1. A bale-tie comprising a tongue portion having a narrow neck and a cross-bar extending at right angles thereto and projecting beyond each side of said neck, and a loop portion having an opening wider than the length of the cross-bar, a narrow slot to engage the neck of said tongue portion, a cross-bar for engaging the cross-bar of the tongue and locking projections or teeth, all arranged and adapted to operate substantially as set forth.

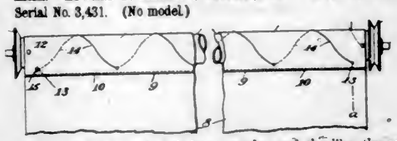
2. A bale-tie comprising a tongue portion having a narrow neck and a cross-bar extending at right angles thereto and projecting beyond each side of said neck, and a loop portion having an opening wider than the length of the cross-bar of the tongue portion, a narrow slot for engaging the neck of said tongue portion, a cross-bar for engaging the tongue cross-bar, and locking-teeth, the cross-bar of the loop being in a different plane from the sides of the loop adjacent thereto, substantially as and for the purpose set forth.

3. A bale-tie comprising a tongue portion having a narrow neck and a cross-bar extending at right angles thereto and projecting beyond each side of said neck, and a loop portion having an opening wider than the length of the cross-bar of the tongue portion, a narrow slot for engaging the neck of said tongue portion, a cross-bar for engaging the tongue cross-bar and locking-teeth, the cross-bar of the tougue portion being in a different plane from the neck portion adjacent thereto substantially as set forth.

4. A bale-tie comprising a tongue portion having a narrow neck and a cross-bar extending at right angles thereto and projecting beyond each side of said neck, and a loop portion having an opening wider than the length of the cross-bar, a narrow slot to engage the neck of said tongue portion, a cross-bar for engaging the cross-bar of the tongue and locking projections or teeth, having the inclined rear surfaces and the rectangular front surfaces, the first to permit automatic insertion of the rear end, and the second to lock it securely in place, substantially as set forth.

5. A bale-tie comprising a tongue portion formed with a body part, a tongue having an upward bend, and a cross-bar, located beneath the forward end of the tongue in the same plane as the body, and having portions extending beyond the edges of the tongue, and the looped portion formed with a body part, having a cross-slot slightly longer than the length of the cross-bar of the tongue, and also a contracted slot of less width than the length of the cross-bar and having an upward bend, a pendent cross-bar located at the forward end of the contracted slotted portion in the same plane as the cross-bar of the tongue, and acute-angular teeth down which the cross-bar of the tougue is adapted to slide into place, and providing between said teeth and the cross-bar of the loop portion an approximately-rectangular bearing for the cross-bar of the tongue.

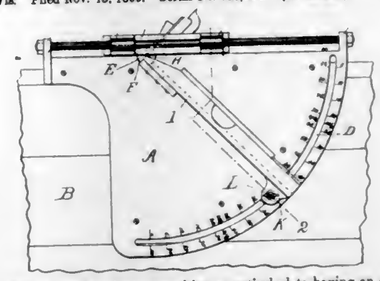
658,091. SHADE-ROLLER FOR WINDOWS, PORCHES, OR THE LIKE. EDWARD F. MEAGHER, Glendale, Ohio. Filed Jan. 31, 1900. Serial No. 3,431. (No model.)



Claim.—In a shade for windows, porches and the like, the combination of a roller having a tabular metal body portion, a shade having

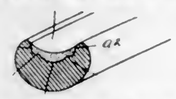
one end lapped over and sewed to the body of the shade to form an open loop or pocket to receive the roller, and a cord passed spirally around outside of the loop or pocket when in place on the roller and passed through openings in the shade and having its ends secured to bind the shade on the roller, substantially as set forth.

658,092. MITER-PLANE. CHARLES B. MCCALLUM, Stoughton, Wis. Filed Nov. 13, 1899. Serial No. 736,804. (No model.)



Claim.—A miter-plane, comprising a vertical plate having an edge forming an arc of ninety degrees drawn from a point in the upper horizontal edge of said plate, a slot concentric with and adjacent to said edge, a supporting-channel pivotally mounted on plate and movable over same, the pivot of said channel comprising a shaft journaled in a sleeve carried by a flange on said plate and cut away to leave only a quarter-section at its forward end to which said channel is secured, said pivot being concentric with said curved edge, a plane movable horizontally on guides carried by said plate, over one end of said channel, and means for adjusting the angle of said channel relatively to the movement of said plane, substantially as described.

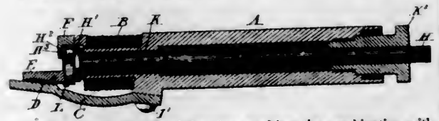
658,093. VELOCIPEDE WHEEL-RIM AND ATTACHMENT. ELTON W. MCCALLIN, Chicago, Ill., assignor to the Morgan & Wright same place. Filed July 24, 1899. Serial No. 724,935. (No model.)



Claim.—1. The combination with a bicycle or other velocipede wheel-rim of the clincher type, of a converting-strip applied and fitted to such rim and converting the same into a crescent rim adapted for a tubular tire such as set forth.

2. A clincher-tire wheel-rim provided with a converting-strip, such as set forth, applied to the periphery of the wheel-rim with its ends abutting or in juxtaposition, and a fastening-strip C applied over said ends of the strip.

658,094. ANIMAL-SHEARING MACHINE. CHESTER M. PALMER, Fond du Lac, Wis. Filed Sept. 6, 1898. Serial No. 690,279. (No model.)

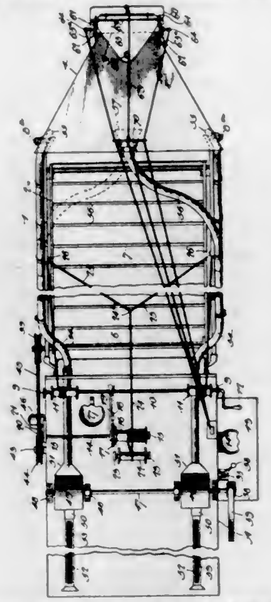


Claim.—1. In an animal-shearing machine, the combination with a frame, a fixed comb or guard, and operating mechanism, of a furcated cutter-holder the base of the forks formed at a pitch to the plane of the face of the teeth of said guard, a flexible cutter having teeth corresponding to the forks of said holder, and means of detachably securing said cutter upon the base of said holder, and a tension device, whereby said cutter is held or conformed to a shear pitch, substantially as set forth.

2. In an animal-shearing machine, the combination with a frame A, of a fixed comb or guard C, a furcated cutter-holder E, a flexible cutter D, means for securing said cutter upon the base of said holder, a shaft H journaled in the frame A, the pin H', and roller H^2, and the coil B upon the frame A, and a source of electric current in circuit with said coil B, all substantially as and for the purpose as set forth.

658,095. STRAW-STACKER. HENRY RIES, Bowling Green, Ohio. Filed May 23, 1900. Serial No. 17,706. (No model.)

Claim.—1. The combination with a grain separator and thresher, of a stacker and a discharge-hood, flexible tubes leading to the discharge-hood, above and below the stacker, blast-fans discharging through said tubes, and air-intake pipes for said blast-fans, disposed on the exterior of the casing of the thresher and separator, substantially as described.



2. In combination with a stacker and a discharge-hood, flexible tubes leading to the discharge-hood, above and below the stacker, and means to create blasts of air and direct the same through the said flexible tubes into the discharge-hood, above and below the stacker, substantially as described.

3. In combination with a grain thresher and separator, the swinging stacker comprising the swinging frame 2, and the inner pivotal section 32, the latter forming the support for the former, a gear-wheel 31, a pitman connecting said gear-wheel to the inner end of the said stacker-section 32, said pitman having flexible joints, and a power-shaft having a gear engaging the said gear-wheel 31, substantially as described.

4. In combination with a grain thresher and separator, the swinging stacker, comprising the swinging frame 2, and the inner pivotal section 32, the latter forming the support for the former, a gear-wheel 31, a pitman connecting said gear-wheel to the inner end of the said stacker-section 32, said pitman having flexible joints, a power-shaft having a gear engaging the said gear-wheel 31, a shaft having a hand-crank, and a pinion on said shaft adapted to engage the said gear-wheel 31, substantially as described.

5. The combination with a swinging stacker of a discharge-hood, and blast-fans having blast-pipes leading from the casings thereof to the sides of said hood and discharging therein, the said blast-pipes having branches discharged within said hood, above and below the straw-carrier, substantially as described.

6. The combination of a supporting-frame, a swinging stacker-frame mounted thereon and adapted also for vertical movement, the winches 11, 16 and hoisting-ropes engaged by guides with which said stacker-frame is provided, the said hoisting-ropes being attached to the said winches, substantially as described.

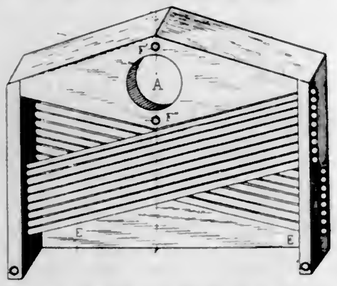
7. In a stacker of the class described, the hood having the discharge-opening, the extended plate below said opening, the plates 61 hinged to the vertical sides of said openings, the pivoted plate 65 disposed above said opening, the gate-plate 67 connected to said plate 65, connections between the plates 61, whereby they are caused to move in unison, and means substantially as set forth to adjust said plates 61, substantially as described.

8. In a stacker of the class described, the hood having the discharge-opening, and the plate or valve thereon, the said hood having an opening in its lower side and a closure for said opening, substantially as described.

9. The combination with a machine-frame, and a swinging stacker-frame having an endless carrier, of coacting shafts to transmit power from the machine-frame to said endless carrier, sprocket-wheels flexibly jointed on said coacting shafts, and an endless sprocket-chain connecting said sprocket-wheel, substantially as described.

10. A grain separator and thresher having a stacker and a discharge-hood, in combination with blast-fans having their drums or casings mounted on the machine-casing and provided with perforated air and duct intake pipes disposed longitudinally of the machine-casing, and discharge-pipes leading from said fan casings or drums to said hood, whereby the dust arising from the machine is collected by said perforated air-intake pipes and discharged pneumatically, together with the straw, from the discharge-hood of the stacker.

658,096. STEAM-BOILER. ISHAM SEDGWICK, Richmond, Ind. Filed Dec. 22, 1899. Serial No. 741,219. (No model.)



Claim.—1. In a sectional boiler, sections having water-legs at each side united at the top with a water and steam space of less width than the water-legs, so as to allow room for the passage of smoke to the top steam-space where the side parts are brought to other similar-constructed sections, such sections having one or more groups of water-tubes reaching from the lower part of one leg to the higher part of the opposite leg, groups of water-pipes slanting in opposite directions, all as described.

2. The combination, in a steam-boiler, of a front section provided with a double wall constituting a water-space, a fuel-door and water-tubes at an angle, a rear section provided with a double wall constituting a water-space, an exit-flue and water-tubes placed at an angle, intermediate sections with water-legs and water-tubes placed at an angle and all the sections joined together by pipes or nipples to form a complete boiler, all as described and for the purposes set forth.

3. The combination, in a steam-boiler, of a front section provided with double walls constituting a water-space, a fuel-door and with water-tubes placed at an angle, a rear section provided with a double wall constituting a water-space, an exit-flue and water-tubes placed at an angle, intermediate sections provided with water-legs, water-tubes placed at an angle and connecting the legs, an exit-flue extending through the steam-receptacle of the intermediate section and connecting with flue-spaces in the other sections and all the sections joined together by nipples to form a complete boiler, all substantially as described and for the purposes set forth.

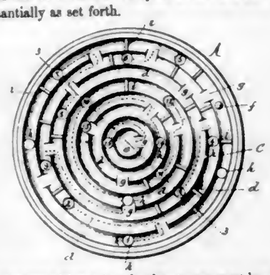
4. A steam-boiler comprising independent sections joined together and each composed of water-legs, and water-tubes connecting said legs, and water connections between the sections, one of the outer sections being provided with an exit-flue for carrying off the products of combustion and all of said sections having flue-sections leading to the exit-flue and in communication with the fire-box.

5. A steam-boiler comprising independent sections composed of water-legs, water-tubes connecting the legs, and a steam-drum connecting the water-legs above the tubes, said sections each having a flue for the products of combustion which is within the steam-drum and said flues being in communication with each other when the boiler-sections are together and each flue communicating with the fire-box, and water connections between the sections of the boiler.

6. A steam-boiler comprising independent sections composed of water-legs, a steam-drum in its upper part in which is located a smoke-flue communicating with the fire-box, and water-tubes connecting the water-legs below the drum, said smoke-flues of the sections forming continuations of each other and being provided with an exit in one of the sections, water and steam connections between the steam-drum sections, water connections between the water-legs, and caps which cover the joints where the boiler-sections meet each other.

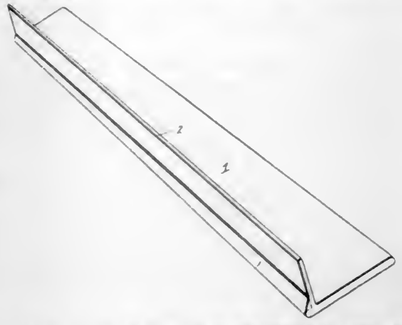
658,097. PUZZLE. CHARLES A. SMITH, Buffalo, N. Y. Filed Dec. 19, 1899. Serial No. 740,871. (No model.)

Claim.—1. A puzzle comprising a box having heads or covers both of which are transparent, a diaphragm dividing the box into separate compartments and provided in both sides with irregular channels, and with transverse apertures which connect the corresponding channels on opposite sides of the diaphragm, the two sets of channels and their connecting apertures forming together a labarynthian course which leads to a pocket or terminus, and one or more balls adapted to traverse said channels and apertures, substantially as set forth.



2. A puzzle comprising a box having transparent heads or covers, a diaphragm arranged parallel with said heads and dividing the box into separate compartments, and provided in both sides thereof with irregular channels, and apertures extending transversely through said diaphragm and connecting the corresponding channels on opposite sides of the diaphragm, stops or partitions arranged in said channels between said apertures, and one or more balls adapted to traverse said channels and apertures, substantially as set forth.

658,098. ANGLE CHAIR OR FITTING. GEORGE A. WEBER, Stamford, Conn., assignor to the Weber Railway Joint Manufacturing Company, of West Virginia. Filed Dec. 27, 1893. Serial No. 494,822. (No model.)



Claim.—1. A rolled angle or rail chair comprising a base, a flange extending upwardly from said base adjacent one edge thereof, and a strengthening-rib formed at the meeting-line of said base and flange, said rib being oblique to both parts and forming a continuation of the outside face of the flange to the edge of the adjacent end of said base.

2. A rolled angle comprising the following integral parts, a base, a flange projecting upwardly therefrom adjacent one edge so as to leave a projecting portion of the base, and a strengthening-piece oblique to both parts forming a brace for the upwardly-extending flange and integral with the outside face of the flange and the projecting portion.

658,099. GAS-BURNER. OSCAR WIEDERHOLD, East Orange, N. J. Filed Nov. 13, 1899. Serial No. 736,773. (No model.)

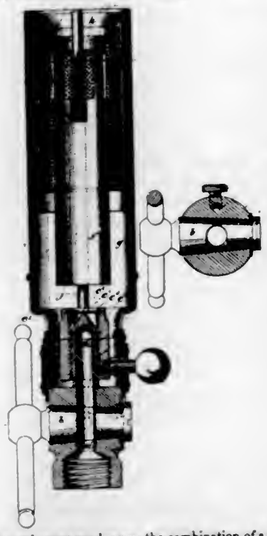
Claim.—1. In a burner, the combination of a mixing-chamber having lateral gas-delivering openings at or near its upper end and a foraminous casing surrounding the said mixing-chamber and extending below the said openings and a spreader located above the openings of the mixing-chamber, substantially as described and for the purposes set forth.

2. In a burner, the combination of a tubular mixing-chamber closed at its upper end and provided with lateral gas-delivering openings and a foraminous casing surrounding the said mixing-chamber and extending below the said openings.

3. In a burner, the combination of a mixing-chamber provided with lateral gas-delivering openings, a foraminous casing surrounding the said mixing-chamber and forming an annular chamber with the wall of the said mixing-chamber, substantially as described.

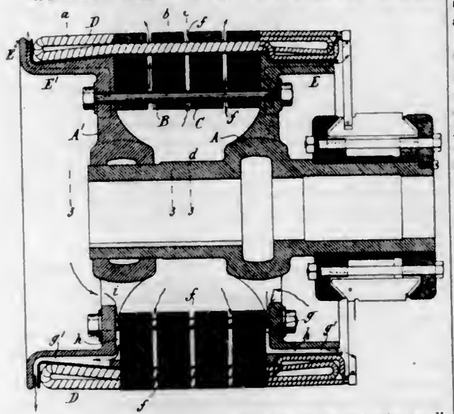
4. In a burner, the combination of a mixing-chamber closed at its upper end and provided with lateral gas-delivering openings and a foraminous casing surrounding the said mixing-chamber and extending above and below the said openings.

5. In a burner, the combination of a mixing-chamber closed at its upper end and provided with lateral openings and a foraminous casing surrounding the said mixing-chamber at such a distance therefrom as to form with the said mixing-chamber an open space for the more thorough commingling of the air and gas mixture, the said foraminous casing being closed at its upper and lower portions, whereby the gas and air mixture will be projected laterally from the mixing-chamber into a space where the air and gas will be thoroughly commingled and pass out laterally through the interstices of the foraminous casing.



6. In an incandescent gas-burner, the combination of a mixing-chamber provided with lateral openings at or near the top thereof, a foraminous casing surrounding the said mixing-chamber at a sufficient distance therefrom to form an annular chamber in which the air and gas mixture can be more thoroughly commingled, the said foraminous casing being closed at its top and bottom, substantially as described and for the purposes set forth.

658,100. ARMATURE FOR MULTIPOLAR DYNAMOS. JAMES J. WOOD, Fort Wayne, Ind., assignor to the General Electric Company, of New York. Filed June 14, 1898. Serial No. 683,406. (No model.)



Claim.—1. An armature comprising end spiders and an intermediate core and a winding extending across the periphery of the core and overlying the surface of the spiders, and provided with ventilating air ducts or channels extending outwardly between the spiders and core and then laterally along the spiders beneath the winding, substantially as described.

2. An armature having a laminated core clamped between end spiders, said spiders formed with ribs at intervals in contact with the ends of the core, said ribs extending from the inner part of the core outwardly to the exterior thereof and forming between said ribs ventilating-passages *h h* through which air may circulate from the interior of the core to the exterior of the armature.

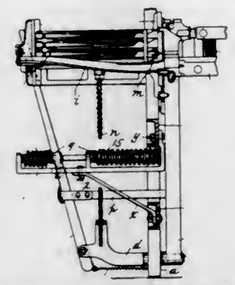
3. An armature having a laminated core clamped between end spiders, having outturned flanges for supporting the outlying portions of the winding, and having ventilating-spaces between said flanges and the winding for cooling the latter.

4. An armature comprising end spiders and an intermediate core, and a winding extending across the core and overlying the surface of the spiders, said spiders having ribs on their inner faces against the core leaving outwardly-extending air-ducts, and having ribs on their outer portions beneath the overlying winding forming laterally-extending air-ducts communicating with the outwardly-extending air-ducts.

5. An armature comprising end spiders and an intermediate core, and a winding extending across the core and overlying the surface of the spiders, and provided with ventilating air-ducts extending outwardly between the spiders and core, and then laterally along the spiders beneath the winding, and an annular flange at the end of one spider for directing the air-currents outwardly.

6. An armature comprising end spiders A A', with a laminated core B clamped between them, said spiders formed with outturned flanges E E', having ribs *g g* on their inner faces against said core, and ribs *g' g'* on the outer portions of said flanges, whereby between said ribs are formed ventilating-spaces *h h* for cooling the core and winding.

658,101. PICKER STOP MECHANISM FOR LOOMS. DAVID YOUNG, Paterson, N. J. Filed Nov. 21, 1899. Serial No. 737,750. (No model.)



Claim.—1. In a picker-stick stop mechanism or buffer attachment for looms, the combination of a suitable frame or support having a series of projections, a rod mounted in said projections, spiral springs penetrated by said rod and each arranged between two projections, and spaced stops carried by said rod and disposed between the adjoining ends of the springs and the adjacent projections, said rod being squared and the stops having squared orifices receiving said rod, substantially as described.

2. In a picker-stick stop mechanism or buffer attachment for looms, the combination of a suitable frame or support having a series of projections, a rod mounted in said projections, spiral springs penetrated by said rod and each arranged between two projections, spaced stops carried by said rod and disposed between the adjoining ends of the springs and the adjacent projections, said rod being squared and the stops having squared orifices receiving said rod, and means for adjusting one of said stops, substantially as described.

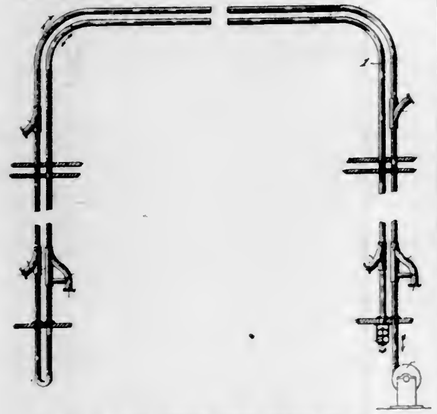
3. In a picker-stick stop mechanism or buffer attachment for looms, the combination of a suitable frame or support having a series of projections, a rod mounted in said projections, spiral springs penetrated by said rod and each arranged between two projections, and spaced stops carried by said rod and disposed between the adjoining ends of the springs and the adjacent projections, said rod being squared and the stops having squared orifices receiving said rod, and one of said projections consisting of a block adjustably secured to the support, substantially as described.

4. In a loom, the combination, with the frame, of a reciprocating and oscillating shuttle-box structure, a fulcrumed picker-stick, a movable picker operatively disposed relatively to said shuttle-box structure and connected to the picker-stick, a support projecting from said frame, spaced elastic buffers carried by said support, the picker-stick being disposed between and adapted to engage them and the acting face of one of said buffers being inclined or beveled from said support outwardly, and means for normally maintaining the picker-stick in contact with said last-named buffer, substantially as described.

5. In a loom, the combination, with the frame, of a picker-stick fulcrumed therein, and movable transversely relatively to the direction of its picking motion, a support projecting from said frame, and spaced elastic and independently-movable buffers carried by said support, the

picker-stick being disposed between and adapted to engage them and the impact-face of one being inclined, substantially as described.

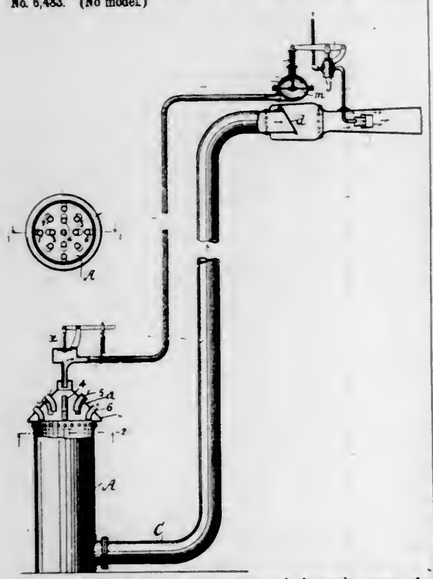
658,102. PNEUMATIC-DESPATCH SYSTEM. CHARLES S. BAVIER and JAMES R. HAWKES, New York, N. Y. Filed Oct. 10, 1899. Serial No. 733,124. (No model.)



Claim.—1. A vacuo despatch system characterized by the combination of a line of tubing, an exhauster operatively connected therewith, and a terminal air-inlet having a closure which automatically shuts the air-inlet when no carrier is being despatched and automatically opens same when a carrier is being despatched, substantially as described.

2. The combination in a vacuo despatch system of a line of tubing, an exhauster operatively connected therewith, despatch-inlets and discharge-outlets normally closed, and a terminal air-inlet on said line remote from said exhauster provided with a closure which is arranged to automatically shut the said terminal air-inlet when no carrier is being despatched and automatically open it when a carrier is being despatched, substantially as described.

658,103. PNEUMATIC-DESPATCH SYSTEM. CHARLES S. BAVIER and JAMES R. HAWKES, New York, N. Y. Filed Feb. 26, 1900. Serial No. 6,483. (No model.)



Claim.—1. The combination in a pneumatic-despatch system, of a pneumatic-despatch tube provided with inlets and outlets for carriers, means operatively connected with said tube and adapted to be actuated by the varying pressure in said tube, a device for exhausting air from said pneumatic-despatch tube, and a governor for said device operatively connected with said means, substantially as and for the purpose described.

2. The combination in a pneumatic-despatch system, of a plurality of pneumatic-despatch tubes provided with inlets and outlets for carriers, an exhauster, a receiver intermediate between and connected with said tubes and said exhauster, a governor for said exhauster, and a connection between said governor and said receiver, whereby the variations of pressure or vacuum in said receiver actuate said governor, substantially as described.

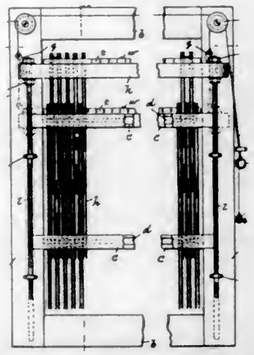
3. The combination in a pneumatic-despatch system, of a plurality of pneumatic-despatch tubes provided with inlets and outlets for carriers, an exhauster, a receiver connected with said tubes and said exhauster, means for controlling said exhauster, and a diaphragm operatively connected with said receiver and with said means, substantially as described.

4. The combination in a pneumatic-despatch system, of a plurality of pneumatic-despatch tubes provided with inlets and outlets for carriers, an ejector-exhauster, a receiver connected with said tubes and said exhauster, a valve controlling said exhauster, and a diaphragm operatively connected with said receiver and said valve, substantially as described.

5. In a pneumatic-despatch system, the combination of a receiver, an exhauster, and a governing device therefor, of pneumatic-despatch tubes and a tube from said governing device, the ends of all said tubes being carried in beyond the shell of the receiver, substantially as and for the purpose described.

6. In a pneumatic-despatch system, the combination of a receiver operatively connected with the pneumatic-despatch tubes, the exhauster and the governor therefor, and a safety-valve to prevent collapse of said receiver, substantially as described.

658,104. UNIVERSAL WARPING-REED. HENRY C. DREYER, Wilkes-Barré, Pa. Filed May 21, 1900. Serial No. 17,334. (No model.)

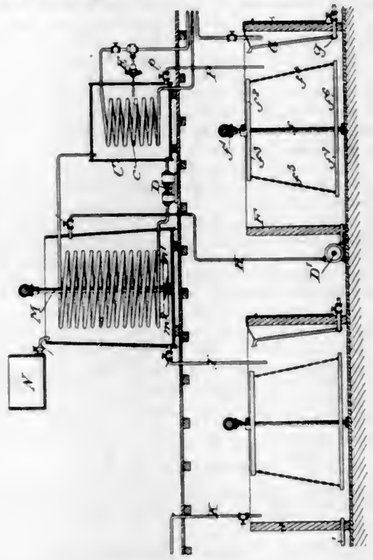


Claim.—The combination of a suitable frame, other and movable frames each comprising parallel guide-rods and a cross-bar connecting said guide-rods, guiding-eyelets projecting from said first-named frame and receiving said guide-rods, individually-movable dents, a dent-sustaining comb carried by each cross-bar, said comb being movable so as to be interchangeable for others having different arrangements of teeth, pulleys arranged on said first-named frame, and cords extending over said pulleys and connected to the movable frame, substantially as described.

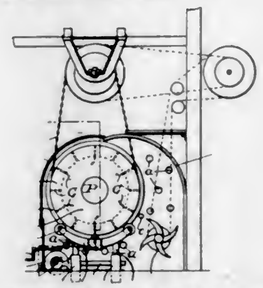
658,105. APPARATUS FOR TREATING STARCH. CHESTER B. DURYEA, New York, N. Y. Original application filed Jan. 12, 1899, Serial No. 701,909. Divided and this application Filed Dec. 13, 1899. Serial No. 740,149. (No model.)

Claim.—1. Apparatus for manufacturing thin boiling starch comprising a converter for containing the starch held in suspension, an agitator for thoroughly agitating the charge within the converter, means for supplying a heating liquid, means for circulating the heating liquid within the converter to maintain a desired temperature within the converter, means for keeping the heating liquid at a predetermined temperature, means for introducing acid into the converter and means for drawing the charge from the converter, substantially as set forth.

2. The apparatus for manufacturing thin boiling starch comprising a tank for preparing the starch in suspension, an agitator within the tank, a converter for holding the starch in suspension during its treatment, means for forcing the charge from the preparing-tank to the converter, means for supplying acid to the converter, means for agitating the charge within the converter, a tank for containing a heating liquid, means for heating the liquid within the tank, means for circulating the heating liquid in proximity to the charge within the converter, a tank for receiving the starch after treatment, an agitator within the tank, means for drawing the charge from the converter into the said receiving-tank and means for delivering water into the receiving-tank, substantially as set forth.



658,106. WOOL-DRYING APPARATUS. THEODOR ENDER, ALEXANDER KLEINDIENST, and JAN PROCNER, Pabianize, Russia. Filed Dec. 6, 1897. Serial No. 660,920. (No model.)

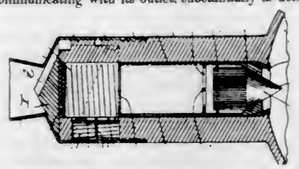


Claim.—In an apparatus for drying wool, the combination with a revoluble perforated cylinder provided with inwardly-projecting longitudinal ribs and provided with inlet and outlet openings at its ends for the material to be dried, means for revolving said cylinder, and annular flanges at the ends of same, of devices for supporting said cylinder comprising rollers journaled in supports on the floor and adapted to receive the annular flange at one end of said cylinder, and rollers journaled in vertically-adjustable standards and adapted to receive said other annular flange, whereby the inclination of said cylinder may be adjusted at will to regulate the speed at which the material to be dried passes through the same, a casing in which said cylinder revolves, and a fan in said casing adapted to create circulation of air in said casing and said cylinder.

658,107. NON-REFILLABLE BOTTLE. FREDERIC J. GOTTLIEB, New York, N. Y. Filed June 23, 1900. Serial No. 21,258. (No model.)

Claim.—1. The combination of a bottle-neck, a tube adapted to slide therein, said neck and tube each having an outlet to coact, the tube having an inlet-passage, a float within the tube adapted to close the same, and a hood or cover on the neck and communicating with the outlet of the latter, substantially as described.

2. The combination of a bottle-neck, a tube adapted to slide therein, said neck and tube each having an outlet, the neck being provided with an inner seat to receive the sliding tube, a float within the tube adapted to close the passage into said tube and to cause the tube to slide when pressure of liquid is applied to said float, and a hood or cover on the neck communicating with its outlet, substantially as described.



3. The combination of a bottle-neck, a tube, each having an outlet, the tube being adapted to slide inwardly to close the inward passage through the neck, a valve to prevent the flow of liquid into the neck, a hood or cover connected with the neck and communicating with its outlet, and a float within the tube adapted to close the passage into said tube and to cause the tube to slide when pressure of liquid is applied to said float, substantially as described.

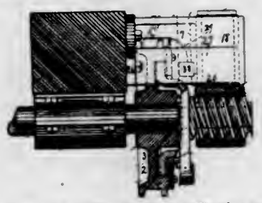
4. The combination of a bottle-neck having the outer end closed and an outlet in one side, and having a seat at its inner end, a cover over the end of the neck and provided with an outlet-neck, a circuitous channel being provided between the neck and cover, a sliding tube within the neck having its outer end closed and provided with an outlet in one side, and a float within the tube adapted to close its inlet-passage, said tube being adapted to fit the inner seat in the neck, substantially as described.

5. The combination of a bottle-neck provided with an outlet and a groove leading therefrom around the neck to a protuberance and leading upwardly along another protuberance, a hood or cover over the neck and encircling the grooves, a tube within the neck having an outlet, a valve within the tube to close its inlet end, and a seat within the neck to receive said tube, substantially as described.

6. The combination of a bottle-neck provided with a side outlet, a stopper at its outer end, a cap, a hood or cover fitting over the neck and cap, the neck being provided with peripheral grooves forming a circuitous channel, the neck having an inner seat, a sliding tube in said neck adapted to engage said seat, and a float within said tube to close its inlet end, substantially as described.

7. The combination of a bottle-neck provided with a seat, with a tube adapted to slide within the neck and provided with an outlet and a seat, the tube being adapted to fit the seat in the neck, and a float within the tube adapted to fit its seat to close its inlet and to cause the tube to slide inwardly when pressure of liquid is applied to the float, substantially as described.

658,108. OFFSET MECHANISM FOR SAWMILL-CARRIAGES. LOUIS J. HANEART, Cincinnati, Ohio, assignor to the J. A. Fay & Egan Company, same place. Filed June 20, 1900. Serial No. 21,010. (No model.)



Claim.—1. A sawmill-carriage having an offsetting mechanism operated solely from truck-wheel.

2. A sawmill-carriage having an offsetting mechanism directly connected to and operated solely from two or more truck-wheels directly interconnected through the offsetting mechanism.

3. The combination, in a sawmill-carriage, of framing arranged to slide laterally upon its axles to and from the saw-blade, of a truck comprising an axle and wheels, and a shifting mechanism connecting with the framing to move the same laterally and frictionally secured solely to a truck-wheel for imparting the lateral movement to the carriage, substantially as described.

4. The combination, in an offset mechanism, of a truck comprising an axle and wheels, a log-supporting framing laterally slidable on the axle, a cam mechanism, with friction devices connecting the latter frictionally solely with a truck-wheel, a bracket secured to the framing of the carriage and extending outwardly about the truck-wheel, a counterpart cam mechanism laterally unyieldingly secured to the bracket and connecting with the first-named cam mechanism, constructed and arranged for being supported solely from the framing and truck-wheel, substantially as described.

5. The combination, in an offsetting mechanism, of a truck comprising an axle and wheels, a framing slidable laterally thereon, a plate journaled in and frictionally secured to the outer side of a wheel, and a cam mechanism between the plate and framing for shifting the latter, substantially as described.

6. The combination, in an offsetting mechanism, of a truck comprising an axle and guide-wheel, a framing slidable laterally thereon, cam mechanism outside of the guide-wheel and frictionally secured thereto, with a transversely-unyielding connection between the cam mechanism and the framing, and with the friction device between the cam mechanism and the guide-wheel, substantially as described.

7. In an offset mechanism, the combination of a truck-wheel, a plate journaled thereon and frictionally secured thereto, a screw on the plate extending outwardly beyond the carriage-framing, a bracket secured to the framing and extending outwardly therefrom, and a nut connecting laterally unyieldingly with the bracket and taking about the screw and with the friction device for the plate and wheel located between the screw and nut and the truck-wheel, constructed and arranged for shifting the framing, substantially as described.

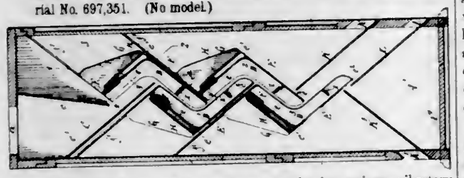
8. In an offset mechanism, the combination of a truck-wheel, a plate journaled thereon and frictionally secured thereto, a truck of which the wheel forms a part, a carriage-framing slidable laterally on the truck, with a bearing between the framing and truck, a bracket rigidly secured to the framing, cam mechanism secured to the plate, oppositely-arranged cam mechanism, a shank therefor, a socket for the shank on the bracket, and constructed and arranged for unyieldingly holding the shank laterally with relation to the bracket while permitting its movement longitudinally of the socket, substantially as described.

9. In an offset mechanism, the combination of a truck comprising an axle and wheels, a carriage-framing slidable laterally thereon, an annular face on the outer side of the wheel, a shell revoluble upon the face, a retaining-plate for the shell, a friction device between the wheel and the shell, a screw extending from the shell, a nut connecting with the screw, a bracket secured to the framing, with the nut secured to the bracket, constructed and arranged for permitting the shell to normally rotate with the wheel, and a stop to arrest the rotation of the shell, substantially as described.

10. In an offsetting mechanism, the combination of a plurality of trucks, guide-wheels therefor, a carriage-framing slidable laterally on the trucks, annular faces on the outer sides of the wheels, plates revoluble upon the faces, retaining-plates for the latter plates, friction devices between the wheels and said latter plates, cam mechanisms between the said latter plates and the framing, levers extending therefrom, a rod connecting the levers, an intermediate lever, an extension therefor, an engaging face for the extension, and a stop pivoted with relation to the framing for engaging the face and arranged for locking the shifting mechanism, substantially as described.

11. In an offset mechanism, the combination of trucks, each comprising an axle and wheels located near the respective ends of the carriage, a carriage-framing slidable laterally thereon, with shifting mechanism on each truck comprising an annular face on the outer side of a wheel, a shell revoluble upon the face, a retaining-plate for the shell, a friction device between the wheel and the shell, a screw extending from the shell, a bracket secured to the framing, a nut connecting the bracket with the screw, constructed and arranged for permitting the shell to normally rotate with the wheel, a stop to arrest the rotation of the shell, and a lever extending from each shell, with a rod connected with each lever, and an arm extending from the carriage-framing and pivotally connected thereto, intermediate of the shells, and a trunnion-clamp for the rod in the arm, substantially as described.

658,109. GRAIN-SEPARATOR. AUGUST HEINE, Silver Creek, N. Y., assignor to Lizzie Heine, same place. Filed Nov. 25, 1898. Serial No. 697,351. (No model.)



Claim.—1. A stationary separator-screen having springy, vibratory needles which are fixed at their upper ends and free from their fixed ends to their lower ends and which are of angular or elbow form, having their upper portions, above their bends, arranged in such a position that the material is prevented from coming in contact with the same, and having their lower portions, below their bends, arranged at the proper inclination to cause the flow of the material by gravity, substantially as set forth.

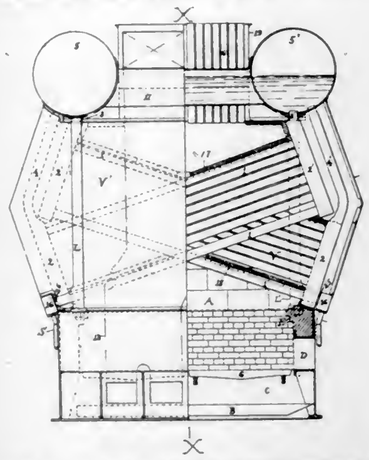
2. The combination with a stationary separating-screen having springy, vibratory needles which are fixed at their upper ends and free from their fixed ends to their lower ends and which are of angular or elbow form, having their lower portions, below their bends, arranged at the proper inclination to cause the flow of the material by gravity, of a directing-surface whereby the material is directed against the lower portions of the needles below the bends thereof, substantially as set forth.

3. The combination with a stationary separating-screen having springy, vibratory needles which are fixed at their upper ends and free from their fixed ends to their lower ends and which are of angular or elbow form, having their lower portions, below their bends, arranged at the proper inclination to cause the flow of the material by gravity, of a stop-plate arranged behind the upper portions of the needles, above the bends thereof, to protect the same against material falling from above, substantially as set forth.

4. A stationary separating-screen composed of side plates, a cross-head connecting said plates, springy, vibratory needles of angular or elbow form secured at their upper ends to said cross-head and free from their fixed ends to their lower ends, their lower portions, below their bends, having the proper inclination to cause the flow of the material by gravity, and a stop-plate arranged between the side plates and extending from said cross-head downwardly behind the upper portions of the needles to their bends, substantially as set forth.

5. The combination with a stationary separating-screen having springy, vibratory needles which are fixed at their upper ends and free from their fixed ends to their lower ends and which are of angular or elbow form, having their lower portions, below their bends, arranged at the proper inclination to cause the flow of the material by gravity, of upright side walls between which said needles are arranged, and rigid guard-flanges projecting from said walls inwardly and arranged in the plane of the lower portions of the needles, substantially as set forth.

658,110. STEAM-BOILER. ERNEST N. JANSON, Washington, D. C. Filed Feb. 1, 1900. Serial No. 3,644. (No model.)



Claim.—1. In an aggregate steam-generator the combination of two steam-generators, each composed of a steam-drum, water-tubes and single headers arranged in elements, separate downflow-pipes on the outer sides uniting each lower header of each element in each steam-generator with the drum of the opposite steam-generator, a manifold or manifolds located at the lower ends of the lower headers of each steam-generator, said manifolds connecting each lower header in each steam-generator, and downcomers forming communications between the steam and water drum or drums of each steam-generator with the manifold or manifolds of the opposite steam-generator, substantially as and for the purpose set forth.

2. In an aggregate steam-generator the combination of two steam-generators, each composed of a steam drum or drums, water-tubes and single headers arranged in elements, a manifold or manifolds located at the lower ends of the lower headers of each steam-generator, said manifolds connecting each lower header in each steam-generator, and downcomers forming communications between the steam and water drum or drums of each steam-generator with the manifold or manifolds of the opposite steam-generator, substantially as and for the purpose set forth.

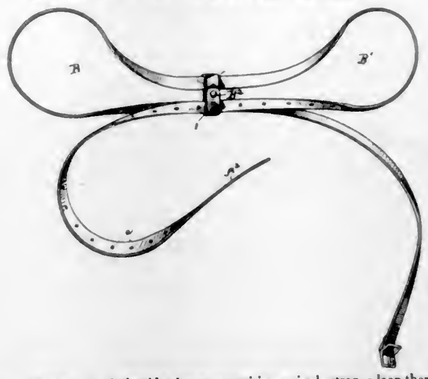
3. In an aggregate steam-generator the combination of two steam-generators, each composed of a steam drum or drums, water-tubes and

single headers arranged in elements, a manifold or manifolds located outside of and at the lower ends of the lower headers of each steam-generator, short tubes connecting each header in each steam-generator to the manifolds, parting-walls built between the downcomers placed at the front and back of the boiler, said downcomers forming communications between the steam and water drum or drums of each steam-generator with the manifold or manifolds of the opposite steam-generator substantially as and for the purpose set forth.

4. In an aggregate steam-generator the combination of two steam-generators, each composed of a steam-drum, water-tubes and single headers arranged in elements, separate downflow-pipes on the outer sides uniting each lower header of each element in each steam-generator with the drum of the opposite steam-generator, and an arrangement of bafflers, which constrain the gases of combustion to take defined, horizontal courses across the tubes over the full width of the boiler, substantially as shown and described and for the purpose set forth.

5. In a water-tube boiler composed of steam-drums, water-tubes and separate headers, said tubes and headers being arranged in elements, in which the tubes pass one another in vertical planes, the tubes forming obtuse angles, bafflers resting on the top and bottom rows of said tubes with an open space provided between the said bafflers and the sides of the boiler, the said open space in the bottom baffler being located on the opposite side of the similarly-arranged space in the top baffler, all for the gases to enter and depart during their passage among the tubes, substantially as described.

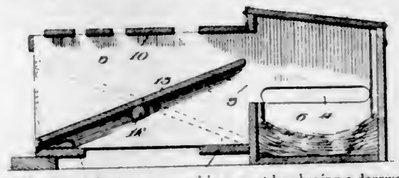
658,111. SHOULDER-BRACE. LOUISE S. LONG, San Francisco, Cal. Filed Mar. 12, 1900. Serial No. 8,299. (No model.)



Claim.—1. A shoulder-brace comprising a single strap, a loop thereon, at or near the middle of the strap, said strap being looped at opposite sides of said loop to form shoulder-openings and having its ends passed in opposite directions through said loop, and means for uniting the ends of the strap about the body of the wearer, substantially as described.

2. A shoulder-brace comprising a slide having separated openings, a single strap passed through one of said openings looped to form shoulder-openings and having its ends passed in opposite directions through the other slide-opening, and means for uniting the ends of the strap about the body of the wearer, substantially as described.

658,112. HEN'S NEST. FRANCIS C. MEAGHER, Orlando, Okla. Filed May 31, 1900. Serial No. 18,622. (No model.)



Claim.—1. A hen's nest comprising a nest-box having a doorway, a passage-way extending from the nest-box, and a tilting platform located within the passage-way with its inner end located obstructively before the doorway into the nest-box in one position of said platform to compel the tilting of said platform in order to gain access to the nest-box.

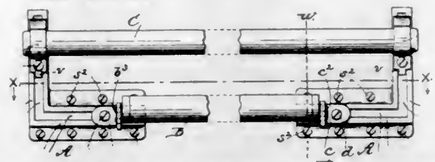
2. A hen's nest comprising a nest-box, a comparatively-narrow passage-way extending from the nest-box, said box being provided with a doorway disposed across the end of the passage-way, and a tilting platform within the passage-way and having its axis of movement substantially in the horizontal plane of the lower edge of the doorway to present the inner end of the platform obstructively before the door to compel the tilting of the platform in order to gain access to the nest-box.

3. A hen's nest comprising a nest-box having a doorway formed in the front wall thereof adjacent to one side of the box, a narrow passage-way extending from the front of the box with the doorway of the latter presented across its end, a tilting platform within the passage-way with its inner end disposed obstructively before the doorway, and a guard for protecting the space below the outer end of the platform.

4. A hen's nest comprising a nest-box having a doorway, the passage-way leading to the doorway, a tilting platform within the passage-way, and a flexible guard-curtain secured at its opposite ends to the outer end of the platform and to the bottom of the passage-way to completely close the space within the passage-way below the elevated outer end of the tilting platform.

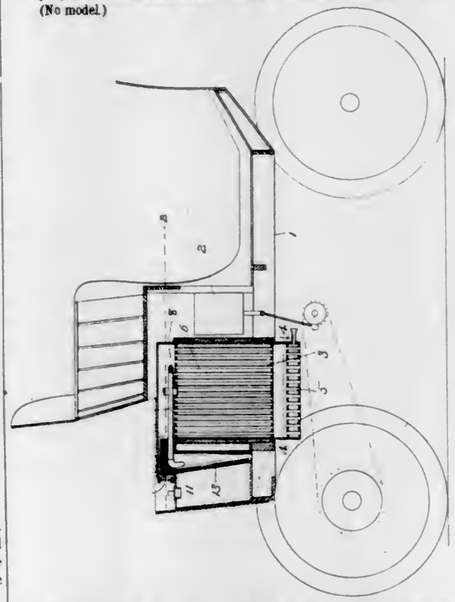
5. A hen's nest comprising a nest-box having a doorway, a passage-way extending from the nest-box, a tilting platform located within the passage-way, and a guard located below the outer end of the platform to completely close the entrance to the passage-way under the elevated outer end of the platform.

658,113. ADJUSTABLE BRACKET FOR CURTAIN-FIXTURES. JAMES A. MOORE, Central Falls, R. I. Filed June 8, 1900. Serial No. 19,644. (No model.)



Claim.—In an adjustable bracket for curtain-fixtures the combination of a support A, slotted vertically and horizontally; curtain-roller brackets adapted to slide in said horizontal slot, and drapery-pole brackets adapted to slide in said vertical slot; and a suitable bolt and nut adjustably securing each of said brackets to said support, substantially as described.

658,114. FLUE CONSTRUCTION FOR STEAM-CARRIAGES. RICHARD C. MUDGE, New York, N. Y., assignor to the Locomobile Company of America, same place. Filed Apr. 30, 1900. Serial No. 14,792. (No model.)



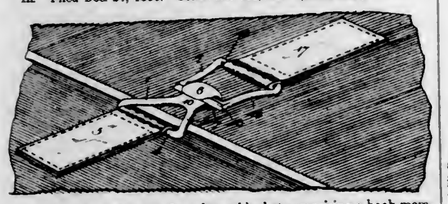
Claim.—1. The combination with a carriage, of a steam-boiler carried thereby and having a burner for heating it, and a flue for disposing of the products of combustion from the burner, said flue having substan-

tially-horizontal divergent branches, which are provided with outlets to the atmosphere and are arranged on either side of that portion of the flue which connects with the flues or heating-passages of the boiler, said branches together forming a through-passage for disposing of atmospheric currents which might otherwise reverse the normal draft of the burner.

2. The combination with a carriage-body, of a steam-boiler carried thereby and having a burner for heating it, and a flue for disposing of the products of combustion from the burner, said flue having substantially-horizontal divergent branches extending transversely of the carriage-body and terminating in outlets to the atmosphere which coincide substantially-with the planes of the side walls of the carriage-body, said branches being arranged on either side of that portion of the flue which connects with the flues or heating-passages of the boiler, and together forming a through-passage for disposing of atmospheric currents which might otherwise reverse the normal draft of the burner.

3. The combination with a carriage, of a steam-boiler carried thereby and having a burner for heating it, and a substantially-horizontal flue at the top of the boiler for disposing of the products of combustion from the burner, said flue having a middle or enlarged part immediately covering the boiler and a transverse part disposed to the rear of said middle or enlarged part and consisting of divergent branches having outlets to the atmosphere, and together forming a through-passage for disposing of atmospheric currents which might otherwise reverse the normal draft of the burner.

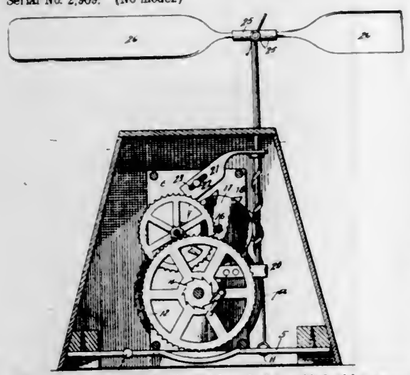
658,115. BLANKET-FASTENER. JAMES D. R. MURRAY, Chicago, Ill. Filed Dec. 27, 1899. Serial No. 741,766. (No model.)



Claim.—1. A fastener for a horse-blanket comprising a hook member having a hook at one extremity with an elliptical seat, a contracted throat leading to said seat, and a longitudinal slot, one end wall of the slot forming a stop-shoulder, and a coupling member provided with a coupling-bar of equal dimension from one extremity to the other thereof and having opposite flat sides of greater width extent than transverse thickness, the said bar being in an oblique angle to the plane of the coupling member and provided with a centrally-located tongue on one edge continuing in the same oblique angle to loosely enter the slot in the hook and adapted to abut against the shoulder of the latter.

2. A fastener for horse-blankets comprising a hook member having a longitudinal slot through the inner portion thereof, and a coupling member having a flat bar at an oblique angle to the plane thereof, the said flat bar being provided with a projecting tongue at the center of one edge having the same angle of obliquity and adapted to loosely engage the slot of the hook member.

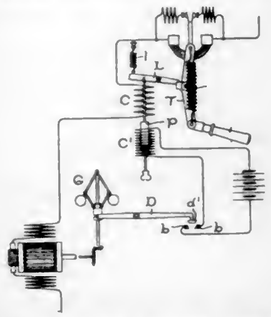
658,116. SCREW-GEARING. OREN A. PACKER, Sour Lake, Tex., assignor of one-half to G. R. Enloe, same place. Filed Jan. 26, 1900. Serial No. 2,909. (No model.)



Claim.—1. The combination with a shaft provided with a worm, of a wheel provided with radially-extending teeth and adapted to rotate in a plane at one side of the shaft and operatively engage the worm to rotate the shaft, and means for adjusting the worm bodily in a plane parallel to the ratchet-wheel to compensate for wear of the extremities of the ratchet-teeth.

2. The combination with a shaft provided with a worm, of a wheel disposed adjacent to the shaft and having radially-extending teeth disposed for rotation in a plane at one side of the shaft to engage the extremities of the teeth with the face of the worm, the extremities of the teeth being beveled on their sides adjacent to the shaft, and means for adjusting the worm bodily in a plane parallel to the ratchet-wheel to compensate for wear of the extremities of the ratchet-teeth.

658,117. AUTOMATIC MAXIMUM-SPEED GOVERNOR FOR ELECTRICALLY-PROPELLED VEHICLES. HORACE F. PARSHALL, London, England. Filed June 12, 1897. Serial No. 640,521. (No model.)



Claim.—1. In combination, a line-circuit, a motor supplied thereby, a circuit-breaker controlling the current flowing to said motor, an auxiliary source of electromotive force, and means for actuating such circuit-breaker by current from the auxiliary source when the motor speed rises too high.

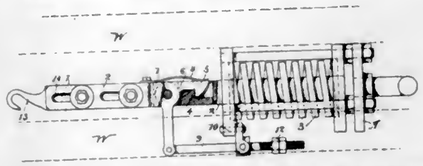
2. In combination, a line-wire, a dynamo-electric machine, a circuit-breaker in the line, an auxiliary dynamo connected to said machine, and a coil on the circuit-breaker in circuit with the auxiliary dynamo.

3. The combination with a dynamo-electric machine, of a circuit-breaker, a source of electromotive force proportional to the speed of said machines, and a coil upon the circuit-breaker supplied with current from the said source.

4. The combination with a motor, of a circuit-breaker containing a series coil and an auxiliary coil, and means for causing the auxiliary coil to open the circuit-breaker when the speed of the motor rises too high.

5. The combination with a dynamo-electric machine, of a circuit-breaker containing a series coil and an auxiliary coil, and means for causing the auxiliary coil to open the circuit-breaker when the machine departs too much from normal speed.

658,118. MANUFACTURE OF FLAT WIRE CABLE. EDWARD I. PARSONS, San Francisco, Cal., assignor to the American Steel and Wire Company, Chicago, Ill. Filed Jan. 2, 1900. Serial No. 48. (No model.)



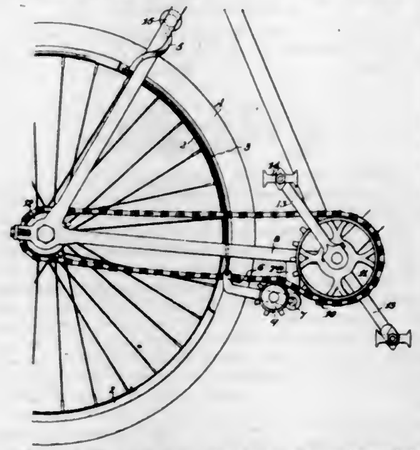
Claim.—1. An apparatus for regulating the pull upon stitching-wires in the manufacture of flat cable, consisting of a bar having a hook upon one end through which the pull is exerted, a shank or stem upon which the hook-bar is slidably guided, said shank having a handle through which the pull thereon is exerted, a yielding spring through which connection is made between the handle and the shank, a latch mechanism connecting the hook-bar with the shank, and a device whereby the latch is disengaged when a given tension has been reached.

2. A tension-regulating device for the stitching-wire used in the manufacture of flat cables consisting of a slidable hook-bar through which the pull is exerted, a spring-pressed latch fulcrumed to said bar, a shank

with relation to which the hook-bar is guided and slidable, said shank having a catch adapted to be engaged by the latch of the hook-bar, a spring, a handle connected therewith and a yoke or frame through which pull upon the handle is transmitted to the shank and thence to the hook-bar, and a connection between the latch and said slidable frame whereby the latch is disengaged and the slidable bar released when a certain tension has been reached.

3. A tension-regulating device comprising a slidable bar having a hook at one end, a spring-pressed latch-lever fulcrumed to the other, a shank with relation to which the hook-bar is guided and slidable, said shank having a catch with which the latch-lever is adapted to engage, a frame or yoke with relation to which the shank and connected hook-bar are slidable, a spring and a handle through which pull is exerted thereon and a rod having one end connected with the latch-lever and carrying an adjusting nut or like stop with which the frame contacts when the spring is acted upon by the pull and the required tension reached whereby the latch is disengaged and the hook-bar is allowed to slide upon its guide.

658,119. BICYCLE-BRAKE. WILLIAM H. PARSONS, Great Western Mine, Cal. Filed June 25, 1900. Serial No. 21,476. (No model.)



Claim.—1. The combination with a bicycle of a supplemental rim carried by the rear wheel, a fulcrumed lever having a sprocket-wheel loosely turnable thereon, a band having one end connected with the free end of said lever and the other connected to a fixed support upon the frame, said band lying in the supplemental rim or channel, a chain passing over the main driving-sprockets and the intermediate sprocket carried upon the lever whereby tension upon this portion of the chain acts through the sprocket upon the lever to force the brake-band into frictional contact with its rim.

2. In a bicycle-brake, a supplemental rim carried upon the rear wheel, a lever having one end fulcrumed in supports or brackets on the rear fork, a driving-chain passing around the crank and rear-wheel sprockets, a toothed sprocket loosely pivoted upon the fulcrumed lever with its teeth in line to be engaged by the lower part of the chain as it moves, a band having one end connected with the free end of the sprocket-carrying lever, a support with which the opposite end of the band is adjustably connected, said support coiling around the fork and rear brace of the frame and perforated for the attachment of the frictional band.

658,120. CONCENTRATOR. JOSEPH W. PENDER, Groveland, Cal. Filed July 12, 1900. Serial No. 23,333. (No model.)

Claim.—1. In a concentrator, a table having a rounded, concaved head with a surrounding rim, an extension into which said head gradually merges, said extension being inclined from one side toward the other, and also inclined in the direction of its length, standards supporting the opposite sides of the head and capable of universal movement, a crank connection with the center of the head whereby a rotary movement is produced, and rollers upon which the lower end of the table is supported whereby a longitudinal movement of this end of the table is produced, and riffles upon the lower side of the table.

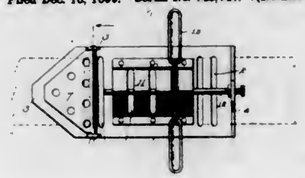
2. A concentrating-table consisting of a rounded head with the bottom sloping gradually to the center, and a peripheral rim, an extension forming the lower end of the table into which the concavity of the head merges, said extension being inclined transversely, means whereby a rotary movement of the head and a longitudinal reciprocating movement of the lower end of the table are produced, a series of divergent riffles extending from the side of the table toward the center a rib parallel with the side of the table against which the upper ends of said riffles abut, and a second series of riffles exterior to the rib and parallel with the side of the table.



3. A concentrating-table consisting of a rounded head having a bottom sloping toward a central point and a surrounding rim, the lower end of the table forming a continuation of said bottom into which it merges, said lower end being approximately flat and inclined longitudinally and also transversely with a rim upon its upper edge, pipes by which water is delivered into the head portion and along the sides of the lower portion, a tapering rib connecting with the rim of the head portion and extending toward the lower end, approximately parallel with the discharge side of the table, tapering riffles having their deeper ends contacting with the tapering rib and diverging toward the center of the table, other tapering riffles exterior to the rib and approximately parallel with the side of the table, troughs at the lower discharge side and end respectively to receive the materials separated upon the table and means whereby a rotary motion of the head, and a longitudinal movement of the lower end of the table are simultaneously produced.

4. A concentrator comprising a table having a rounded concaved head, with surrounding rim, the lower end forming a continuation of the bottom of the head portion and inclined longitudinally, and from one side to the other with a series of ribs and riffles for separating the materials flowing down the table, standards supporting the opposite sides of the head and having a universal movement, a crank-shaft connecting with the central portion of the head, and means for rotating said shaft to produce a rotary movement of the head, rollers journaled to the lower end of the table, guiding supports upon which the rollers are adapted to travel, a stem upon which said supports are carried having rack-teeth upon it, a pinion mounted upon a horizontally-journaled shaft engaging the rack-teeth of the stem, a lever fixed to the shaft by which it is turnable to raise or lower the table-support and change the grade thereof, and a spring-pressed pin and segment whereby the parts are retained at any position of adjustment.

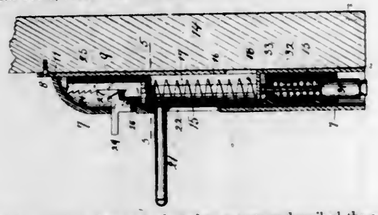
658,121. TRACE-CARRIER. PETER A. PRUDHOMME, Bermuda, La. Filed Dec. 18, 1899. Serial No. 740,747. (No model.)



Claim.—1. A back-band buckle comprising a base-plate having an upwardly-projecting flange at one end, formed with a threaded opening; a clamping-tongue adjacent to the opposite end of the base-plate; a casing or keeper secured to the base-plate and formed with transverse slots; and a threaded pin extending through the opening in the flange, and within said casing.

2. A back-band buckle comprising a base-plate formed with parallel transverse slots, and an end extension, and at one end with an upwardly-projecting flange formed with a threaded opening; a pivoted clamp adjacent to the other end of the plate; a casing secured to the base-plate and formed with parallel transverse slots; and a threaded pin extending through the opening in said flange, and within said casing.

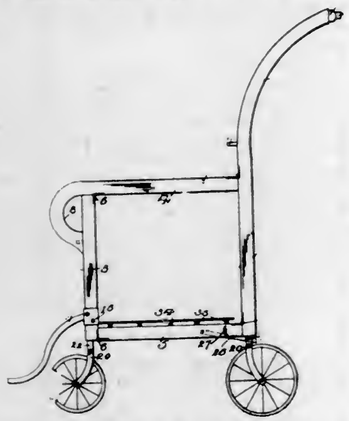
658,122. DOOR-STOP. GEORGE H. ROGERS, Birmingham, Ala. Filed Oct. 9, 1899. Serial No. 733,094. (No model.)



Claim.—1. In a door-stop adapted to operate as described, the combination of a housing consisting of the hollow front part 7, and a back plate 9 for closing the same, a bolt having an independent spring-pressed end fitted between the two in a manner to be capable of a sliding movement, a spring to hold it normally elevated and occupying a recess in this bolt, an internal seat for the lower end of this spring projecting from the housing into the recess which it occupies, means to detachably hold the bolt in its depressed position and means to release it therefrom.

2. In a door-stop adapted to operate as described, the combination of a housing consisting of a hollow front part 7 having a recess 11, around its open part, a back plate 9 fitted into this recess, internal projections 13, to receive screws which pass through the back plate to hold it in position, a bolt fitted to this housing and capable of a sliding movement therein, an extension having ratchet-teeth reaching upwardly therefrom and fitted between projections 13 which guide it, a spring-actuated pawl pivotally secured to the housing and adapted to engage these teeth when the bolt is depressed and to hold it in this position and means to operate the pawl for the purpose of releasing the bolt.

658,123. FOLDING GO-CART. JACOB ROSENTHAL, Rochester, N. Y. Filed Mar 29, 1900. Serial No. 10,689. (No model.)



Claim.—1. In a folding go-cart, a bottom, rear frame-bars, front frame-bars, and side bars hinged immediately to the front frame-bars and to the rear frame-bars to permit folding the side bars and bottom against the rear frame-bars and the front bars against the side bars, and the sectional folding cross-pieces.

2. In a folding go-cart, rear and front frame-bars, side bars joining the rear and front frame-bars, and cross-pieces joining the rear frame-bars, said cross-pieces being divided centrally and the sections hinged to each other and to the frame-bars.

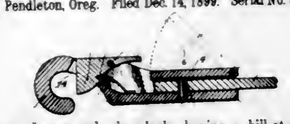
3. In a folding go-cart, rear and front frame-bars, side bars joining the rear and front frame-bars, and cross-pieces joining the rear frame-bars, said cross-pieces being divided centrally and the sections hinged to each other and to the frame-bars, and the side bars having hinged connection with the rear and with the front frame-bars.

4. In a folding go-cart, the side bars and front and rear frame-bars hinged together, cross-pieces having sections hinged to each other and to the front and rear frame-bars, and a sectional footboard having sections hinged to each other and mediately hinged to frame-bars.

5. In a folding go-cart, rear and front frame-bars, upper and lower side bars having hinged connection with the frame-bars, curved extensions projecting from the upper side bars adapted in use to bear against the front frame-bars, and means to prevent lateral movement of the extensions when the go-cart is opened.

6. In a folding go-cart, front and rear frame-bars, side bars hinged to the frame-bars, collapsible cross-pieces, handle-bars projecting from the rear frame-bars, and pins projecting from said handles, said pins being adapted to enter openings in the upper side bars when the go-cart is folded, substantially as described.

658,124. COMBINED BUCKLE AND SNAP-HOOK. WILLIAM W. SEMPLE, Pendleton, Oreg. Filed Dec. 14, 1899. Serial No. 740,327. (No model.)

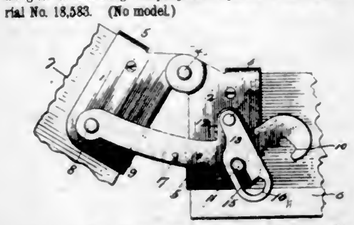


Claim.—1. In a snap-hook, a body, having a bill at one end and disposed upon one side thereof, a spring-actuated tongue, coöperating with the bill, and disposed longitudinally of the body, and a strap-engaging tongue pivoted to the opposite end and upon the opposite side of the body, alined longitudinally with the spring-actuated tongue, and having its free end located adjacent to the latter tongue.

2. In a snap-hook, a substantially-flat body, having opposite longitudinal flanges extending the entire length thereof, a bill located at one end of the body, and a flat plate pivoted to the opposite end of the body and located between the flanges, and provided upon its inner side with a strap-engaging lug or spur, and a spring-actuated tongue also pivoted between the flanges, coöperating with the bill, and having an operating thumb-piece arranged in advance of and adjacent to the free end of the pivoted plate.

3. In a snap-hook, a substantially-flat plate, having one end inclined laterally and forwardly, and provided with a longitudinal slot, a bill provided at the forward extremity of the inclined end, longitudinal flanges located at opposite edges of the plate, extending the entire length thereof, and having their front portions converged into the bill, a tongue mounted between the convergent portions of the flanges, projecting through the slot in the plate, to coöperate with the bill, and provided with an operating thumb-piece, and a flat plate located between and pivoted to the outer ends of the flanges and near the upper sides thereof, foldable inward between the flanges, and having a leg or spur provided upon its inner face, the free end of the pivotal plate being located adjacent to the operating thumb-piece of the tongue.

658,125. COUCH-HEAD HINGE. JULIUS T. SENG, Chicago, Ill., assignor to the Seng Company, same place. Filed May 31, 1900. Serial No. 18,583. (No model.)



Claim.—1. The herein-described improved hinge, the same comprising the companion leaves or members pivotally connected at their upper inner corners, the stud extending from one of said members, the gravity rack-bar pivotally connected to the face of the companion member and provided upon its under side with teeth beyond which teeth it terminates in a hook, and a gravity-latch eccentrically pivoted with relation to and upon the rack-bar and provided with an offset substantially coincident with the said hook, and a lug extending from the rack-bar in the path of the latch and adapted to strike and disengage the latter when the leaves or members are swung toward each other.

2. The herein-described improved hinge, the same comprising the companion leaves or members pivotally connected at their upper inner corners, the stud extending from one of said members, the gravity rack-bar pivotally connected to the face of the companion member and provided upon its under side with teeth beyond which teeth it terminates in a hook, and a gravity-latch eccentrically pivoted with relation to and upon the rack-bar and provided between its edges with longitudinally and transversely disposed communicating slots, the latter one of which is beyond the last tooth and coincident with the hook, and a lug extending from the rack-bar and into the path of and adapted to strike the said latch and disconnect the same from the stud.

3. The herein-described improved hinge, the same comprising the companion leaves or members pivotally connected at their upper inner corners, the stud extending from one of said members, the gravity rack-bar pivotally connected to the face of the companion member and provided upon its under side with teeth, a gravity-latch eccentrically pivoted with relation to and upon the rack-bar and provided with an offset occurring beyond the last tooth of the rack-bar and adapted to engage the stud, and a lug extending from the face of the rack-bar and adapted to strike the latch and disengage the same from the stud when the leaves or members approach each other.

4. The combination with a couch-frame and a head-rest frame, of the hinge connection consisting of the leaves or members 1, 2, pivotally connected at their upper ends, the stud 11 extending from one of the same, the rack-bar 9, pivoted as at 8 to the face of the companion member or leaf and provided with teeth beyond which it terminates in the hook 10, the latch 13 pivoted to the extension 12 of the rack-bar, as indicated at 14, and provided with the slots 15, 16 and the lug 17, as and for the purpose set forth.

5. The herein-described improved hinge, the same comprising the companion leaves or members pivotally connected, a stud fixedly arranged in relation to one of said members, a gravity rack-bar pivoted at one end with relation to and adapted to move with the companion member and to engage the stud, the latch 13, pivoted upon and eccentrically with relation to the said rack-bar, and provided with the slot 15, having at one end the offset 16, to operate as described, and means for liberating the said latch from the stud when the said leaves or members assume a certain relative position.

6. The herein-described improved adjustable connection, the same comprising opposite companion members or leaves pivotally connected, a stud extending from the face of one of said members, a rack-bar loosely pivoted to the opposite member and having teeth along its under side, and means for antomatically disengaging the rack-bar from the stud at a predetermined point and supporting the same out of such engagement during the approach of said leaves or members, and means for lowering the rack-bar at the end of such movement.

7. The herein-described improved hinge the same comprising the companion leaves or members pivotally connected, a stud located with relation to one of said members, the rack-bar pivoted with relation to the companion member and adapted to move with the same and to engage said stud, said rack-bar terminating at its free end beyond its teeth in a stop, the latch 13, pivoted upon and in eccentrical relation to said rack-bar, and having the slot 15, provided with the offset 16 coincident with said stop, and means for disengaging said latch from the stud when the leaves or members assume a certain relative position.

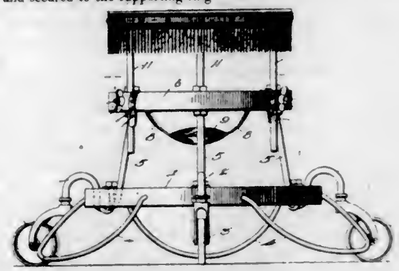
8. The combination with the couch or sofa frame, and the head-rest frame, of hinges for the same, studs extending inwardly from the sofa-frame adjacent to the hinge-points, gravity-bars pivotally connected to the head-rest frame and terminating in a hook or stop, a latch pivoted upon and eccentrically with relation to the said gravity-bar and having an engaging means substantially coincident with the hook of said gravity-bar, and means for liberating the said latch from engagement with the stud.

658,126. BABY-WALKER. DANIEL S. SETTLEMYRE, Connelly Springs, N. C. Filed Apr. 2, 1900. Serial No. 11,209. (No model.)

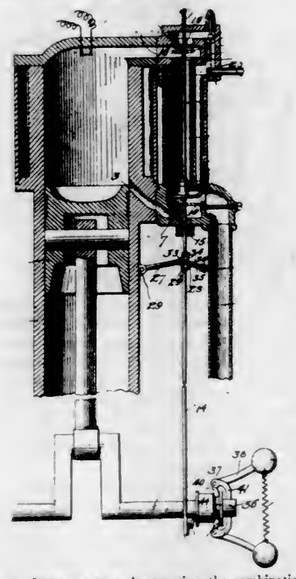
Claim.—1. In a device of the character described the combination with a base; of a ring; standards connecting said base and ring; curved ends to the standards; casters secured thereto; and fenders projecting from the base between the casters.

2. In a device of the character described, the combination with a base; of standards secured thereto; curved ends to the standards having casters pivotally secured thereto; fenders projecting from the base between the standards; a ring mounted upon the standards; hooks upon the outer surface of the ring; an adjustable saddle suspended therefrom within the ring; a supporting-ring; rods thereto projecting from the ring; recurved bolts adapted to bear on the rods; a strap within the supporting-ring; and a flexible connection between the strap and ring.

3. In a device of the character described, the combination with a base; of a ring, standards connecting said base and ring, fenders projecting from the base between the standards, hooks upon the outer surface of the ring, an adjustable saddle suspended therefrom within the ring, a supporting-ring adjustably secured to the ring, and an adjustable strap within and secured to the supporting-ring.



658,127. GAS OR GASOLENE ENGINE. JOHN J. SIMMONDS, Devon, Kans. Filed Mar. 15, 1900. Serial No. 8,781. (No model.)



Claim.—1. In a gas or gasolene engine, the combination with the cylinder having exhaust-ports; of a piston adapted to open and close one of said ports, an exhaust-pipe communicating with said exhaust-ports and provided with valve-casings, a valve-rod, having a lug thereon, valves attached to said rod and adapted to seat in said casings, one of the valves having a loose connection with the valve-rod and adapted to contact with said lug to lift the rod, whereby after the port has been opened by the piston and the valve-rod lifted to unseat the valves, the loose valve will be permitted to fall to its seat, substantially as and for the purpose set forth.

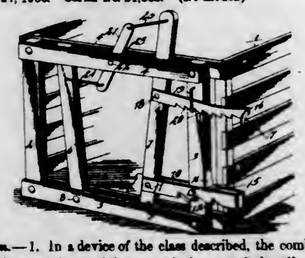
2 In a gas or gasolene engine, the combination with the cylinder having exhaust-ports; of a piston adapted to open and close one of said ports, an exhaust-pipe communicating with said exhaust-ports and provided with valve-casings, a mixing-chamber communicating with one of the valve-casings, a valve-rod having a lug thereon, valves attached to said rod and adapted to seat in said casings, one of said valves being fixed to said rod and the other having a loose connection with the valve-rod and adapted to contact with said lug to lift the rod, whereby after the port has been opened by the piston and the valve-rod lifted to unseat the valves, the loose valve will be permitted to fall to its seat, and an inlet check-valve located in the valve-casing to close the mixing-chamber and arranged in the path of movement of the valve carried at the upper end of the valve-rod, substantially as and for the purpose set forth.

3. In a gas or gasolene engine, the combination with the cylinder hav-

ing exhaust-ports; of a piston adapted to open and close one of said ports, an exhaust-pipe communicating with said exhaust-ports and provided with valve-casings, a valve-rod having a lug thereon, valves attached to said rod and adapted to seat in said casings, one of the valves having a loose connection with the valve-rod and adapted to contact with said lug and lift the rod, whereby after the port has been opened by the piston and the valve-rod lifted to unseat the valves, the loose valve will be permitted to fall to its seat, said valve having a greater area than the other valve, substantially as and for the purpose set forth.

4. In a gas or gasolene engine, the combination with the cylinder having exhaust-ports; of a piston adapted to open and close one of said ports; an exhaust-pipe communicating with said exhaust-ports and provided with valve-casings, a mixing-chamber communicating with one of the valve-casings, an air-pipe surrounding the exhaust-pipe and communicating with the mixing-chamber, a fuel-supply pipe leading to the mixing-chamber, a valve-rod carrying a lug or contact device, valves attached to said rod and adapted to seat in said casings, one of said valves being fixed to said rod and the other having a loose connection with the valve-rod and adapted to contact with said lug to move the valve inward, whereby after the port has been opened by the piston and the valve-rod moved inward to unseat the valves, the loose valve will be permitted to fall to its seat, and an inlet check-valve located in the valve-casing to close the mixing-chamber and arranged in the path of movement of the valve carried at the upper or inner end of the valve-rod, substantially as set forth.

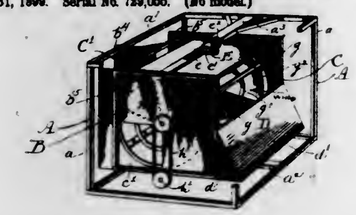
658,128. **HOG-TRAP.** HARRY N. SMITH, Deer Creek, Ill. Filed June 27, 1900. Serial No. 21,805. (No model.)



Claim.—1. In a device of the class described, the combination of a frame, the lever 6 fulcrumed thereon at its lower end, the adjustable clamping-lever 7, loosely supported in the frame, a ratchet-yoke receiving the frame and pivoted to the lower portion of the lever 7 and forming a fulcrum for the latter, an operating-bar pivotally connected with the upper portion of the lever 7 and provided with a ratchet for locking it against outward movement, and the lever 21 fulcrumed between its ends on the frame at a point between the upper ends of the levers 6 and 7, and connected with the same to cause the levers to move inward and outward simultaneously, substantially as described.

2. In a device of the class described, the combination of a frame provided with upper and lower horizontal bars arranged in pairs and forming guides, the lever 6 arranged between the upper and lower bars and fulcrumed at its lower end at the bottom of the frame, the adjustable clamping-lever 7 arranged in the guides formed by the horizontal bars and having its lower end loosely arranged between the lower ones and provided with a projection or pin resting upon the upper edges of the lower bars of the frame, the ratchet-yoke connected with the lower portion of the lever 7 and embracing a portion of the frame and engaging a projection thereof, the pivoted locking device mounted on the frame and engaging the ratchet-yoke, a ratchet device connected with the upper portion of the lever 7 for holding the latter in its engaging position, and the lever 21 fulcrumed between its ends on the upper portion of the frame at a point between the levers 6 and 7 and connected with the latter to move the same inward and outward simultaneously, substantially as described.

658,129. **WINDMILL.** EDWARD STEUDE, Chicago, Ill. Filed Aug. 31, 1899. Serial No. 729,055. (No model.)



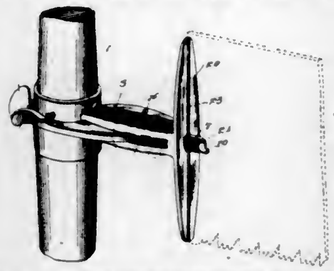
Claim.—1. In a windmill, a stationary frame, a receptacle mounted eccentrically with bearings at top and bottom of said frame so as to be movable horizontally within said frame, the said receptacle being provided with suitable wind-apertures and a wind-wheel having a horizontal axis and blades, and means for transmitting power from the shaft of the wind-wheel, as set forth.

2. A windmill having a stationary frame with open sides, and cross-pieces or beams at top and bottom of frame having bearings on which is mounted eccentrically a receptacle capable of rotating in a horizontal plane, the said receptacle being provided with apertures, a wind-wheel having a horizontal axis, means for keeping the front of receptacle toward the wind and means for transmitting power from the shaft of wind-wheel, as set forth.

3. In a windmill, the combination of a stationary and open frame, A, a receptacle B trunnioned or mounted eccentrically in said frame and having a wind-aperture C and suitable outlets, a wind-deflector D, and a wind-wheel G, the said wind-wheel being provided with a horizontal shaft and means for transmitting power to a vertical shaft located centrally in the stationary frame and beneath the receptacle B, as set forth.

4. In a windmill, a stationary frame, a box-like receptacle pivoted eccentrically on same and capable of rotating in a horizontal plane, the said receptacle being provided with a wind-wheel, a wind-inlet, and wind-outlets in the rear and wind-outlets in the ends of said receptacle, as set forth.

658,130. **DETACHABLE SAW-HANDLE.** GEORGE R. L. STINERS, Loyalton, Cal. Filed Feb. 23, 1900. Serial No. 6,239. (No model.)



Claim.—1. A detachable saw-handle, having a longitudinally-slotted stem or shank, a longitudinally-slotted saw-engaging bolt slidable within the stem or shank, and a cam-lever mounted upon the stem or shank, and received within the combined slots of the stem and bolt, to alternately engage the opposite end walls of the slot in the bolt.

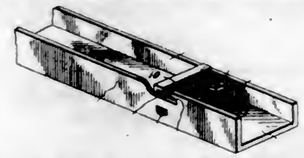
2. A detachable saw-handle, having a stem or shank, a saw-engaging bolt slidable upon the stem, a cam-lever mounted upon the stem and in operative relation to the bolt, and a set-screw carried by the handle and arranged to bind against the cam-lever to lock the latter.

3. A detachable saw-handle, having a stem or shank, a longitudinally-slotted saw-engaging bolt mounted upon the stem, and provided with a longitudinal opening communicating with the slot, a cam-lever mounted upon the stem and operating within the slot of the bolt, and a set-screw carried by the handle and extending through the opening in the bolt and into the slot thereof, to bind against the lever.

4. The combination with a saw-handle, of a lateral longitudinally-slotted stem or shank, having a longitudinal bore intersecting the slot, a transverse plate or head at the outer end of the stem, a longitudinally-slotted saw-engaging bolt slidable in the bore of the stem and projecting beyond the outer end thereof, a cam-lever received within the combined slots of the bolt and the stem and mounted upon the latter, and a set-screw extending through an opening in the handle, and engaging a screw-threaded opening in the bolt, which opening communicates with the slot in the bolt, and said set-screw being adapted to engage the cam-lever to lock the latter.

5. The combination with a saw-handle, having an opening or perforation formed therethrough, of a stem or shank, having a longitudinal bore opening at opposite ends of the stem and communicating with the opening in the handle, and a longitudinal slot intersecting the bore and terminating short of the opposite ends of the stem, a longitudinally-sliding saw-engaging bolt mounted within the bore of the stem and having a longitudinal slot, which terminates short of the opposite ends of the bolt and also communicates with the slot in the stem, and a screw-threaded opening communicating with the rear end of the slot in the bolt, a cam-lever received within the combined slots of the bolt and the stem and mounted upon the latter, and a set-screw loosely slidable through the opening in the handle and engaging the screw-threaded opening in the bolt, to bind against the cam-lever.

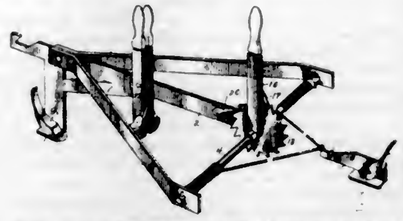
658,131. **METALLIC RAILROAD-TIE.** SWAN F. SWANSON, Pueblo, Colo. Filed Mar. 23, 1900. Serial No. 9,919. (No model.)



Claim.—1. The combination with a metallic tie provided with two vertical flanges on a horizontal base, of lugs projecting inwardly from said flanges, a lug projecting upwardly from said base, an angle-plate having an aperture to engage a lug in the base of said tie to prevent movement of the angle-plate longitudinally of the tie, the lugs in the flanges of said tie engaging said angle-plate and preventing vertical movement of the same, substantially as set forth.

2. The combination with a metallic tie provided with side flanges, one of which projects upwardly a greater distance than the other and is provided with a rail seat or recess, of lugs projecting inwardly from the flanges of said tie and a lug projecting upwardly from the base of the tie, an angle-plate having an aperture to engage the base-lug, and an overhanging or hooked end to engage the rail, substantially as set forth.

658,132. **WIRE-STRETCHER.** ROLLINS THOMSON, Jr., Eyrie, Tex. Filed Apr. 30, 1900. Serial No. 14,962. (No model.)

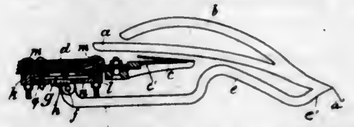


Claim.—1. A wire-stretcher comprising a frame, clamps connected with the frame, one of the clamps being movable and adapted to be drawn toward the other, means for operating the movable clamp, and a pair of stretching-levers fulcrumed on the frame between the said clamps and provided with means for engaging the ends of a fence-wire, whereby the latter may be again stretched after it has been operated on by the clamps, substantially as described.

2. A wire-stretcher comprising a frame provided at one end with a clamp, a shaft arranged at the other end of the frame and provided with a rope or cable, a clamp connected with the rope or cable, means for actuating the shaft, and a pair of levers fulcrumed on the frame between the ends thereof and provided with means for engaging a fence-wire, substantially as described.

3. A wire-stretcher comprising a frame composed of a central longitudinal bar, diverging sides or braces, a depending portion located at one end of the longitudinal bar, and means for bracing the depending portion, a clamp carried by the depending portion, a shaft journaled in suitable bearings of the longitudinal bar and the sides or braces, a ratchet-wheel fixed to the shaft, an operating-lever fulcrumed on the shaft and provided with means for engaging the ratchet-wheel, a rope or cable connected with the shaft at opposite sides of the ratchet-wheel, and a clamp connected with the rope or cable, substantially as described.

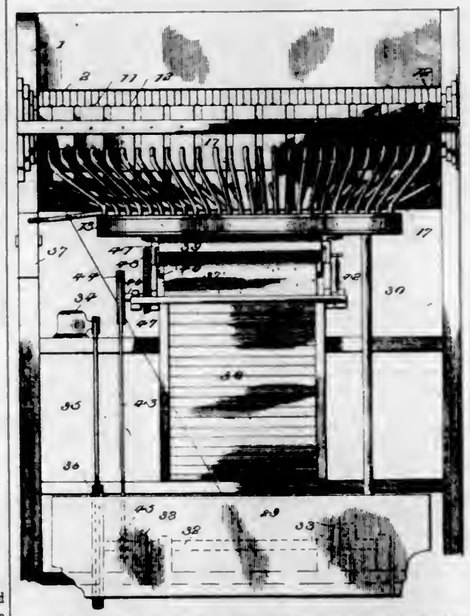
658,133. **STALK-RAISING DEVICE FOR REAPING-MACHINES.** ERNST ULLMANN, Dominium Buchhols-near-Drossen, Germany. Filed Oct. 11, 1899. Serial No. 733,302. (No model.)



Claim.—1. In combination, the finger-bar of a harvester and the bars *a* and *b* projecting forward of the finger-bar and with their rear ends in a plane above the finger-bar, the front ends of the bars *a* and *b* being joined while their rear ends are in different vertical planes or in staggered relation, substantiallly as described.

2. In combination, the finger-bar, the bars *a* and *b* projecting forward in relation to the finger-bar, the guide-bars *k*, *l*, attached to the finger-bar, the plate *g* guided to move in the bars *k*, *l*, and a hinged connection between the bars *a*, *b*, and the plates *g*, substantially as described.

658,134. **SELF-PLAYING MUSICAL INSTRUMENT.** JOHN W. WHITLOCK, Rising Sun, Ind. Filed Sept. 16, 1899. Serial No. 730,761. (No model.)



Claim.—1. In self-playing musical instruments, the combination with the musical strings, of pickers comprising bars having points to come in contact with the strings, dampers applied to the bars, and actuating mechanism for the pickers, substantially as described.

2. In self-playing musical instruments, the combination with the musical strings, of pickers comprising bars provided with points to come in contact with said strings, dampers applied to the bars and having notches to receive the strings, and actuating mechanism for the pickers, substantially as specified.

3. In self-playing musical instruments, comprising musical strings, the combination of bars provided with picker-points having their projecting ends curved, and dampers applied to the said bars and having the curved bills of the picker-points overlapping the said dampers, substantially as set forth.

4. In self-playing musical instruments, comprising musical strings, the combination of an obliquely-disposed bar mounted to receive a combined pivotal and sliding movement at one end and a combined lateral and longitudinal movement at its opposite end which is provided with a picker-point, a pair of spaced stops for the picker-bar to move longitudinally and laterally between, and actuating means connected to the picker end of the picker-bar and adapted to travel in a line forming an acute angle therewith, substantially as set forth.

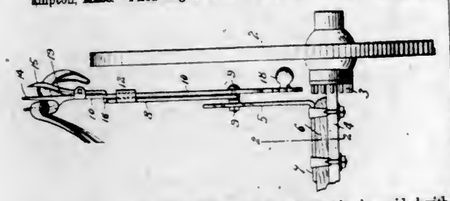
5. In self-playing musical instruments having musical strings, an obliquely-disposed bar provided at one end with a picker-point, a keeper at one end of said bar, spaced stops at the opposite end of said bar and limiting the same in its lateral movements, and actuating mechanism for reciprocating the picker-bar, as and for the purpose set forth.

6. In self-playing musical instruments having musical strings, the combination of obliquely-disposed bars adapted to move longitudinally and having a limited lateral play and provided at the ends adjacent to the musical strings with picker-points, rods connected with the ends of the bars carrying the picker-points, and actuating mechanism for imparting a rectilinear movement to said rods, as and for the purpose set forth.

7. In self-playing musical instruments, the combination with the operating mechanism for producing the musical notes and including motor-bellows, of an action-case having seats upon the inner face of a side and openings extending outward from the seats, said case being subdivided into an exhaust-chest and a series of valve-chambers, the latter having

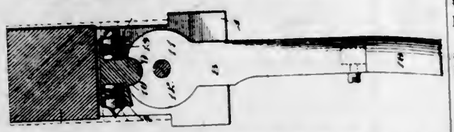
communication with the respective motor-bellows, cylinders secured in the seats and having vent-openings in communication with plungers operating in the cylinders, stems projected from the plungers and entering alined openings in opposite walls of the valve-chambers, double conical-ended valves connected with the stems between their ends and cooperating with alined openings leading from the respective valve-chambers into the exhaust-chest and the open air, and means for creating a tension in the exhaust-chest by sucking the air therefrom, substantially as described.

658,135. HORSE-ARRESTING DEVICE. JOSEPH AREL, Northampton, Mass. Filed Aug. 2, 1899. Serial No. 725,859. (No model.)



Claim.—In a horse-arresting device, the axle, the wheel provided with a series of projections or teeth upon the inner end of its hub, a vertical support secured to the axle, a pivot which is passed through the said support, and which is vertically adjustable therein, the lever 8 pivoted at its lower end upon the pivot 9, and provided at its upper end with a guide-box, and a slotted vertically-movable lever 10 provided with teeth upon its lower end, a weight to cause the lever to move automatically when left free to move, and a spring-actuated catch pivoted to the upper end of the lever 10, and having its lower end to pass through an opening in the lever so as to catch over the upper end of the lever 8, and thus hold the lever 10 in a raised position, substantially as shown and described.

658,136. TUBE-CUTTER. HARRY A. BENEFIEL, Columbus, Ind. Filed Mar. 15, 1900. Serial No. 8,800. (No model.)



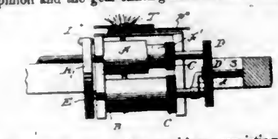
Claim.—1. A device of the class described comprising a rotary cutter-head adapted to be introduced into a tube or flue and provided with a slot or bifurcation having a straight inner end wall extending entirely across the cutter-head and forming a guide, a transversely-reciprocating cutter consisting of a block having straight faces to fit the walls of the slot or bifurcation and provided with a segmental lug located between its ends, said cutter being provided at its ends with cutting edges, and a lever fulcrumed in the slot or bifurcation, and provided with a recess receiving the lug, substantially as described.

2. A device of the class described comprising a rotary cutter-head, adapted to be introduced into a tube or flue, and provided with a slot or bifurcation having straight side and end walls extending entirely across it, the transversely-reciprocating cutter consisting of a block arranged within the slot or bifurcation and having straight faces conforming to the configuration of the straight wall of the slot or bifurcation and guided by the same, said block being provided at its ends with sockets, the knives having shanks secured in the sockets, and the lever fulcrumed in the slot or bifurcation and connected with the block and adapted to reciprocate the same, substantially as described.

3. A device of the class described comprising a cutter-head adapted to be introduced into the tubes or flues of a boiler and provided with a slot or bifurcation, a reciprocating cutter mounted in the slot or bifurcation, and a lever fulcrumed in the slot or bifurcation and composed of sections detachably fitted together, one of the sections being provided near one of its ends with a bend and being reversible, whereby either end may be connected with the adjacent section of the lever to provide either a straight or bent handle to enable the cutter to operate at different points on a boiler, substantially as described.

658,137. STOP-MOTION FOR CARDING-MACHINES. JOHN BRADY, Jr., and NAPOLEON CHOUINARD, Fall River, Mass. Filed Jan. 19, 1900. Serial No. 2,016. (No model.)

Claim.—1. A stop-motion for carding-machines, consisting of a vertically-movable calender-roll under which the cotton passes, a gear-wheel on the shaft of said roll, a pinion lying adjacent to said gear-wheel and having a portion of its teeth shorter than the others, and connections between said pinion and the gear-shifting mechanism of the doffer.



2. A stop-motion for carding-machines, consisting of a vertically-movable roll under which the cotton passes, a gear-wheel on the shaft of said roll, a pinion lying near said gear-wheel and having those teeth normally adjacent to said wheel shorter than the others, a rack in mesh with said pinion, a rock-shaft connected with said rack, and means for causing the rock-shaft to actuate the gear-shifting mechanism of the doffer.

3. The combination with the upper calendering-roll of a carding-machine, of a gear-wheel on the shaft of said roll, a pinion lying adjacent to said gear and having two or more of its teeth normally adjacent to the gear-wheel shorter than the others, a rack in mesh with said pinion, a rock-shaft having an arm pivoted to said rack, a gear-shifting mechanism, and an arm on the rock-shaft adapted to trip said mechanism.

4. In a carding-machine, the combination with a vertically-movable upper calendering-roll, of stop-motion mechanism adapted to be set in operation by said roll when lowered, and a rock-shaft adjacent to said roll for raising it when the machine is to be started.

5. In a carding-machine, the combination with an upper roll B, of a rock-shaft F having an arm *f* lying under the shaft of said roll, and a handle *f'* for actuating said rock-shaft.

6. The combination with the calender-rolls of a carding-machine, of a stop-motion therefor, a coiler mechanism, comprising a plate over which the sliver from the rolls passes, a hook adjacent to the cotton as it enters the roll, and connections between said hook and the coiler-plate, whereby when the coiler-plate departs from its normal position the hook will break the cotton, and thereby cause the stop-motion to operate.

7. The combination with the calender-rolls of a carding-machine, of a stop-motion therefor, a coiler mechanism comprising a hinged plate over which the sliver passes, an arm on said plate carrying a hook lying adjacent to the cotton as it enters the rolls, and means for tilting said plate when the sliver breaks or the can overflows or the coiler clogs.

8. The combination with the calender-rolls of a carding-machine, of a stop-motion therefor, a coiler mechanism comprising a hinged plate *p* having an arm *p'*, carrying a hook p^2, and a weight R on said arm.

658,138. CHECK-HOOK. HARRISON H. BROWN, Pond du Lac, Wis. Filed Nov. 29, 1899. Serial No. 738,684. (No model.)



Claim.—1. In a check-hook, a spring-actuated bed applied to the base of the hook and extending thereover, a clip embracing the sides of the base and bed, and a latch having pivotal connection with the clip and held in the required position by means of said bed, substantially as described.

2. In a check-hook, a spring-actuated bed recessed in its lower side to receive the base of the hook, and a pivoted latch connected with said base and overlying the spring-actuated bed and held in place thereby, substantially as specified.

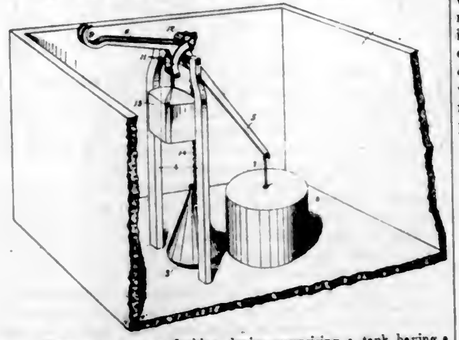
3. In a check-hook, a bed applied to the base portion of the hook and having a recessed portion at its free end forming a hood, a spring housed by said hood, and interposed between the base and bed, and a pivoted latch connected with the base and held in the required position by means of the spring-actuated bed, substantially as set forth.

4. A check-hook comprising a base and a hook, a bed pivotally connected with the base at its front end, a spring interposed between the base and bed, a clip embracing the sides of the base and bed, and a latch of approximately L form pivoted at the angle to the projecting terminal portions of the clip and overlying the bed, as and for the purpose set forth.

5. In a check-hook, a base having a seat in its lower side, a bed pivoted to the base and recessed in its lower side to receive the said base and having a hood at its free end, a spring housed by said hood and interposed between the bed and said base, a clip having its closed end fitted in the aforesaid seat of the base, and a latch of approximately L form pivoted at the angle to the projecting portions of the said clip and overlying the bed, substantially as described.

6. The herein-described check-hook comprising a hook and a base, the latter having its rear portion reduced and provided with a vertical stud and having a seat in its lower side, a bed recessed in its lower side to receive the base and pivoted to the latter and having its rear end made rounding and constructed to form a hood, a spring placed upon the vertical stud and housed by said hood, a clip embracing the sides of the bed and having its closed end fitted in the seat of the base, and a latch of L form pivoted at the angle to the projecting terminal portions of the clip and overlying the bed, substantially as described.

658,139. AUTOMATIC FLUSHER. IRA P. CLARKE, Alameda, Cal. Filed Feb. 16, 1900. Serial No. 5,506. (No model.)



Claim.—1. A sewer-flushing device comprising a tank having a discharge-opening, a valve by which said opening is controlled, a lever fulcrumed above said opening having a float connected with one end whereby it is tilted by the rising or falling of the float, a weighted traveler movable upon the opposite end of the lever to and from the fulcrum, and a chain connecting said traveler with the valve.

2. A sewer-flushing device consisting of a tank having a discharge-opening, a valve controlling said opening, an angular lever fulcrumed so that its arms project upon either side of the fulcrum-point above the discharge-opening, a float connecting with one of said arms, a weighted traveler movable upon the other arm having a chain connecting it with the valve, and a roller concentric with the fulcrum-shaft over which the chain passes, depressions near the fulcrum, and at the outer end of the second lever-arm in which the weighted traveler is retained at either end of its movement until the lever has inclined to a considerable angle above or below the horizontal.

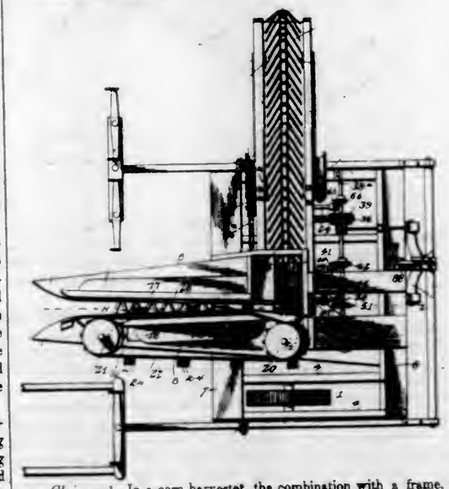
3. A sewer-flushing device consisting of a tank having a discharge-opening, a valve by which said opening is controlled, a bent lever having its angle fulcrumed approximately above said opening, a float connecting with one of its arms, a weighted traveler with antifrictional roller adapted to move upon the other arm, a depression at the inner end of said arm in which the roller lies while the float is rising until the lever-arm is depressed below the horizontal line whereby the roller is disengaged from the depression and the traveler caused to run to the outer end of the lever, a chain connecting the traveler with the valve, and a centrally-journaled roller over which the chain passes, whereby the outward and downward movement of the traveler suddenly opens the valve.

4. A sewer-flushing device consisting of a tank having a discharge-opening, a valve controlling said opening, a bent lever fulcrumed at its angle approximately in line above the discharge-opening, a float connected with a weighted arm of the lever adapted to tilt said lever when it rises and falls, depressions and stops made at the outer and inner ends of the other arm of the lever, a weighted traveler having a roller adapted to rest in the depression at the inner end until the arm of the lever is depressed below the horizontal so as to release the roller and allow the traveler to run to the outer end of the lever, a chain connecting the valve with the traveler passing over an antifrictional roller whereby the outward movement of the traveler opens the valve, and the sinking of the float tilts the lever until it is inclined in the opposite direction and the roller is released so that the weighted traveler returns to the center and allows the valve to suddenly close.

5. In a sewer-flushing device, a tank having a discharge-opening, a rising-and-falling valve controlling said opening, a bent lever having its angle fulcrumed approximately in line above the opening, one arm of said lever being loosely connected with a rising-and-falling float whereby the lever is tilted about its fulcrum-point, the other arm having a central depression, and books or stops and a corresponding depression at the outer end, a weighted traveler suspended from an antifrictional roller which travels upon said arm, a chain connecting the valve with the traveler, and a centrally-located antifrictional roller over which the chain passes whereby the outward movement of the traveler suddenly opens the valve, said roller being received and retained by the books, and the exterior depression, whereby the valve is held open until the tank is empty, and the float has sunk to the bottom.

6. In a sewer-flushing device, a tank having a discharge-passage connecting with a sewer, a rising-and-falling valve by which said passage is controlled, an angular lever having its angle fulcrumed approximately in line above the discharge-opening and the valve, a weighted traveler having a roller journaled thereto and adapted to roll out and in upon the arm, books and a depression at the outer end in which said roller is received when the traveler has moved to that point, a chain connecting the traveler with the valve, and a centrally-located antifrictional roller over which the chain passes whereby the valve is opened by the outward movement of the traveler, a second depression near the fulcrum of the lever into which the traveler-roller is returned when the lever is returned in the opposite direction whereby the valve is suddenly closed, a float and rod or like loose connection between it and the opposite end of the lever whereby said lever is tilted in either direction by the movement of the float until the weighted traveler is released and the lever allowed to complete its movement independent of the further movement of the float.

658,140. CORN-HARVESTER. JOHN E. CONWAY, Osgood, Iowa. Filed Oct. 28, 1899. Serial No. 735,091. (No model.)



Claim.—1. In a corn-harvester, the combination with a frame, of a stalk-race, an ear-race thereabove, ear-conveying mechanism, stalk-rolls below the stalk-race, and a spiral feeder intermediate of the stalk race and rolls.

2. In a corn-harvester, the combination with a frame and substantially-parallel race-plates defining a stalk-race, a pair of vertical ear-boards rising from the race-plates and defining an ear-race above and wider than the stalk-race, ear-conveying mechanism adjacent to the top and bottom of the ear-race, a spiral feeder immediately below the stalk-race, stalk-rolls below the feeder, and means for actuating the conveyer mechanism, feeder and rolls.

3. In a corn-harvester, the combination with a frame and a stalk-race obstructed by a stalk-cutter, an ear-race above the stalk-race and an ear-conveyer within the ear-race, of mechanism located below the stalk-race arranged to urge the stalks toward the cutter and to exert a downward pull upon the stalks at a point in advance of the cutter.

4. In a corn-harvester, the combination with a frame, of a stalk-race and initial husking-rolls at the end of the stalk-race and having their axes parallel therewith, an ear-race above the stalk-race, ear-conveying mechanism within the ear-race, stalk-feeding mechanism below the stalk-race, a husk-chute and an ear-chute oppositely inclined and located respectively directly under and to one side of the initial husking-rolls and means for operating the rolls and conveying and feeding mechanisms.

5. In a corn-harvester, the combination with a frame, of stalk and ear races, an endless conveyer within the ear-race provided with laterally-extending fingers, a spiral feeder adjacent the stalk-race, stalk-rollers below the spiral feeder, and means for operating the conveyer, the feeder and the rollers.

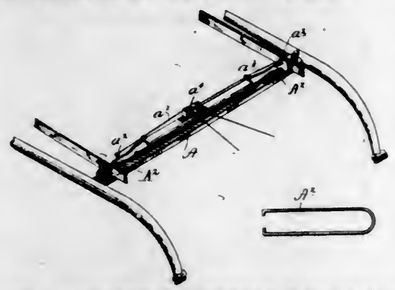
6. In a corn-harvester, the combination with a frame, of a gatherer a husking-box adapted to receive from the gatherer, said box comprising

side plates provided respectively with a pair of longitudinally-disposed husking-rolls, an intermediate floor inclined from its center to its side edges, and an endless conveyer movable over and located in proximity to the floor and provided with oppositely-extending inclined fingers.

7. In a corn-harvester, the combination with a frame, of a gatherer and a husking-box adapted to receive from the gatherer, said box comprising side plates provided with independent husking-rolls, means for throwing certain or all of the rolls out of operation, a floor inclined from its center toward its side edges, and a conveyer movable over said floor.

8. In a corn-harvester, the combination with a frame, of a gatherer and a husking-box adapted to receive from the gatherer and comprising a floor and side plates, a pair of husking-rolls carried by one of said plates and provided respectively with husking-pins and corresponding depressions, scraper-plates in proximity to the rolls, one of said plates being provided with notches to accommodate and effect the clearing of the husking-pins, and means for operating said roll.

658,141. **HORSE-DETACHER.** GEORGE W. CREPS, Rouzerville, Pa. Filed June 22, 1900. Serial No. 21,213. (No model.)



Claim.—1. The combination in a singletree, of the hook-shaped ends, a draft-pin mounted to extend across each hook and slide in and out, means for operating them, and a spring also extending across the hook, and adapted to pass under the tug when in place, and throw said tug out when freed from said draft-pin, substantially as set forth.

2. The combination, of a singletree A with the parts A′ formed with hook-shaped ends, the draft-pins, one mounted in each end to extend across the hook and through perforations in each side thereof, a spring for normally holding each of said pins outward, a transverse projection on each of said pins extending through a slot in the side of the socket, a connection running therefrom to within reach of the operator, and the spring A^2 mounted on each end of the singletree and extending across the open side of the hook and normally pressing toward said open side, whereby, when said tug is attached said spring will be forced down, and when the draft-pins are withdrawn said springs will throw the tugs out, substantially as set forth.

658,142. **CAR.** GEORGE A. DUNN and ROBERT F. DUNN, Dinuba, Cal. Filed Sept. 7, 1899. Serial No. 729,684. (No model.)

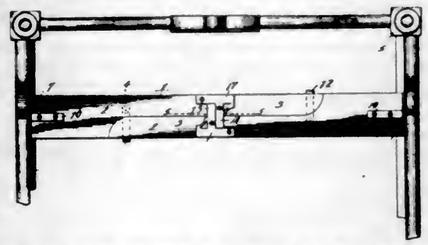


Claim.—1. In a car, the combination of superposed wheeled frames, pivoted links at the sides and connecting one frame with the other whereby one frame may be elevated above and lowered on top of the other, a hand-lever pivoted to one frame and projecting in the direction of the length thereof and a link connecting said lever with the other frame whereby the latter may be operated.

2. In a car, the combination of a main frame having bearing-wheels, a superposed frame having wheels journaled at right angles to those of the main frame, side links pivotally connected at opposite ends to said frames whereby one frame is permitted to be raised above and lowered onto the other frame, a lever fulcrumed to one frame and means connecting said lever with the other frame, and a hook on one frame and a pin or stud on the other frame engaged thereby to hold the frames together.

658,143. **BED-SLAT.** JOHN D. EDWARDS and CHARLES B. TIMMONS, Clarence, Mo. Filed May 1, 1900. Serial No. 15,076. (No model.)

Claim.—1. A slat composed of two sections having their inner ends overlapped and the upper and lower arms engaging the upper and lower faces of the sections and detachably connecting the same, substantially as described.



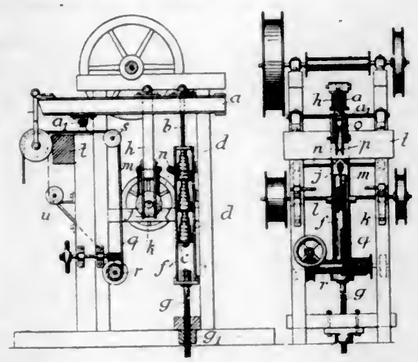
2. A bed-slat comprising the two sections provided at their outer ends with means for interlocking them with the side rails of a bedstead and having their inner portions reduced, overlapped and fitted together, and forming a slat of uniform width throughout its entire length and arms extending laterally from the sections for interlocking and supporting the inner portions of the sections, substantially as described.

3. A slat comprising two sections provided at their outer ends with means for engaging a bedstead and having their inner portions overlapped, the outer laterally-disposed arms extending from the lower faces of the sections and located adjacent to and engaging the inner terminals of the same, and the contiguous upper arms arranged at the upper faces of the sections, substantially as described.

4. A slat for beds comprising two sections having their inner portions reduced, fitted together and overlapped, the tongues arranged at the outer ends of the sections for engaging sockets of a bedstead, the transversely-disposed lower arms located adjacent to the inner ends of the sections and provided with lugs for engaging the side edges of the same, and the plates secured to the reduced portions of the sections at the center of the slat and having contiguous arms, substantially as described.

5. A slat comprising two overlapping sections provided at their outer ends with means for engaging a bedstead, the lower arms arranged at the inner ends of the sections, and the upper contiguous arms located at the center of the slats and having their adjacent edges beveled or undercut, substantially as described.

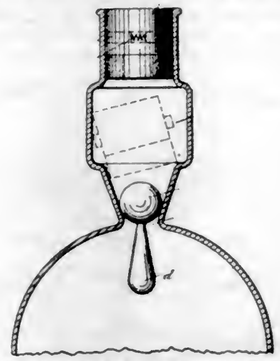
658,144. **WELL-BORING APPARATUS.** ALBERT FAUCK and ALBERT FAUCK, Jr., Mareinkowice, Austria-Hungary. Filed Feb. 21, 1900. Serial No. 6,111. (No model.)



Claim.—1. The combination with a percussion-drill, intended to work within flushing-water, of a driving-shaft, carrying an eccentric, a pulley loosely mounted upon the eccentric, a walking-beam, a connecting-rod jointed to the walking-beam and carrying a rope loop surrounding the said pulley, and a spring suspended from the power-arm of the walking-beam and adapted to be so put in tension as to balance the weight of the drill-rods, substantially as and for the purpose described.

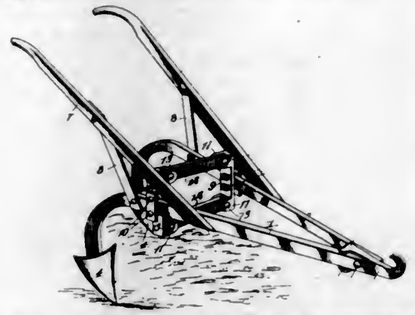
2. The combination with a percussion-drill, intended to work within flushing-water, of a driving-shaft, carrying an eccentric, a pulley loosely mounted upon the eccentric, a walking-beam, a connecting-rod jointed to the walking-beam and carrying a rope loop surrounding the said pulley, a spring suspended from the power-arm of the walking-beam and adapted to be so put in tension as to balance the weight of the drill-rods, and means, secured to the derrick, for fastening thereto one end of the rope forming the loop, substantially as and for the purpose described.

658,145. **NON-REFILLABLE BOTTLE.** PETER J. GERMAIN, Quincy Adams, Mass. Filed Dec. 12, 1899. Serial No. 740,096. (No model.)



Claim.—In a non-refillable bottle, the combination, with a bottle-neck provided with a cylindrical portion, and a chamber of larger area beneath it; of a cylindrical stopper of hard material provided with a packing-ring at its lower part and having a transverse slot which is narrow in the middle and has a flaring opening at each end, blunt wedges arranged in the said openings, and a spring between the apices of the said wedges in the narrow part of the slot, substantially as set forth.

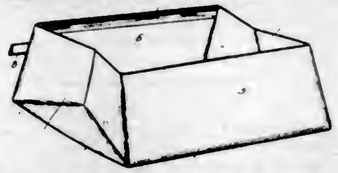
658,146. **DOUBLE-SHOVEL CULTIVATOR-PLOW.** JAMES W. GOODING, Flat Creek, Mo. Filed July 13, 1900. Serial No. 23,520. (No model.)



Claim.—1. In a double-shovel cultivator-plow, the combination of the beams pivotally connected together at their front ends and each provided with a lever-handle, vertically-disposed plates secured to the said plow-beams, near the rear ends thereof, and links having their ends pivotally connected to the upper and lower ends of said plates, substantially as described.

2. In a double-shovel cultivator-plow, the combination of the beams each having a handle-lever secured thereto, a connecting-piece to which the front ends of the beams are pivotally attached, said connecting-piece being disposed between the front ends of said beams, and having stops to engage and limit the play of said beams, and flexible connections between the said beams near the rear ends thereof, substantially as described.

658,147. **SAMPLE-BAG.** JOHN S. HERRIOTT, Mount Sterling, Ky. Filed Mar. 1, 1900. Serial No. 7,006. (No model.)



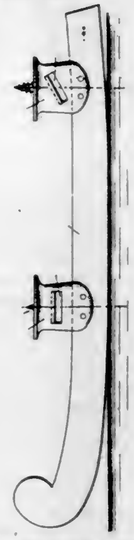
Claim.—1. A device of the character set forth, comprising a comparatively-low rectangular body having inwardly-folding ends and sides which are inturned at the center and adapted to give extended bearing-surface, for the contents when open, for the purposes of inspection or examination, and means for fastening the bag closed.

2. A bag of the character set forth, having a binder or stiffener on the inner upper portion of one of the sides and adapted to bear against an infold with a portion of the opposite side, and bendable fasteners secured to the same side carrying the binder or stiffener and located on the exterior, said bendable fasteners being bent inwardly over the infold portions of the sides to hold the latter closed.

3. A bag of the character set forth, comprising a body having end portions infolding above the plane of the bottom and sides which are inturned at the center and rolled, and bendable fasteners on the exterior of the one side below the upper edge which are located on the upper portion of the rolled sides when the latter are thus arranged the extremities of the fasteners being bent under the ends of said rolled sides and into the spaces formed therebelow by the infolding end portions.

4. A bag of the character set forth, comprising a body having infolding end portions and sides which are drawn together and inturned and rolled, and bendable fasteners on the exterior of one side below the upper edge of the latter and adapted to be located on the upper portion of the rolled sides and bent under the ends of the latter and into the spaces formed by the infolded ends, the bent portions of the fasteners being disposed between the rolled side portions and the bottom of the bag.

658,148. **SKATE.** ERNEST HUSOLD, Providence, R. I. Filed Jan. 12, 1900. Serial No. 1,189. (No model.)



Claim.—1. A skate comprising a runner, toe and heel plates and shanks, said shanks being provided with strap-slots having their upper walls inclined transversely with respect to the skate to prevent lateral movement of the securing-straps.

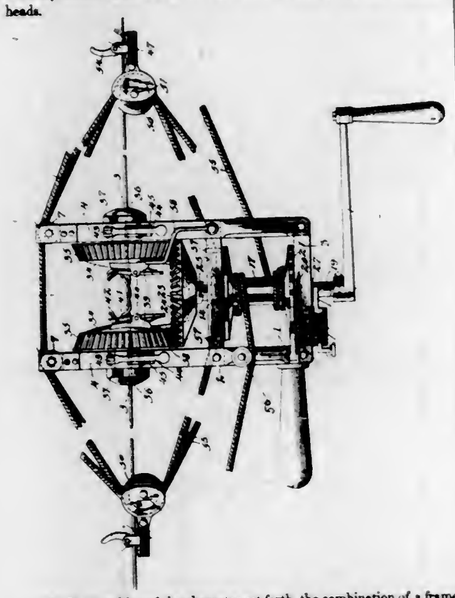
2. A skate comprising a toe-plate having an integral shank provided with a strap-slot parallel with the plate and having its upper wall transversely inclined with respect to the vertical plane of the plate, a heel-plate provided with an integral shank provided with a longitudinally-inclined strap-slot the upper wall of which is inclined transversely and a separate runner secured to the lower ends of the shanks.

658,149. **WIRE-STRETCHER.** HENRY JACOBS, Lexington, Ill. Filed Mar. 9, 1900. Serial No. 8,029. (No model.)

Claim.—1. In a wire stretching and splicing machine of the character set forth, the combination of a frame having a reel or spool, an operating-shaft shiftable through the said reel or spool and adapted to be clutched thereto and also having a gear thereon, twisting-heads provided with gears to mesh with that on the shaft, compound sheaves or pulleys disposed at opposite sides of the machine, and a continuous rope or cable passing through parts of the machine and the compound sheaves or pulleys and having their extremities connected to opposite portions of the spool or reel for reverse winding on the latter.

2. In a wire stretching and splicing machine of the character set forth, the combination of a frame, twisting-heads rotatably mounted there-

in and disposed in transverse alinement, wire-holders mounted on the inner opposing faces of the said twisting-heads, a continuous rope or cable, compound sheaves and a spool or reel for drawing the ends of the wire inwardly toward each other, and means for operating the said twisting-heads.



3. In a machine of the character set forth, the combination of a frame having sides with a pair of jaws at each extremity and in alinement, the said jaws having open spaces between them, horizontally-disposed sheaves or pulleys held by the terminal portions of the said jaws, twisting-heads rotatably mounted between the jaws and in transverse alinement and having radial slots to aline with the open spaces between the jaws, oppositely-disposed compound sheaves or pulleys, a continuous rope or cable threaded through the compound sheaves or pulleys and the sheaves or pulleys carried by the jaws, the said compound sheaves or pulleys carrying wire-clamps, a shaft having a gear thereon to operate twisting-heads, and a spool or reel normally loose on the shaft and adapted to be connected to the latter, the extremities of the rope or cable being attached to opposite portions of the spool or reel to wind in reverse directions on the latter.

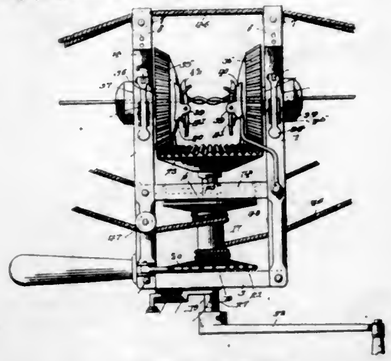
4. In a machine of the character set forth, the combination of a frame having sides with pairs of jaws, one jaw of each pair being removable, twisting-heads removably and rotatably mounted in the said jaws, the said jaws having open spaces between them and the twisting-heads provided with radial slots to aline with the said open spaces, wire-holders on the inner opposing faces of the twisting-heads, closing-pins adjustably mounted in the upper jaw of each pair of jaws to prevent accidental disengagement of the wire from the twisting-heads, means for stretching the wire and drawing the ends thereof together, and means for operating the twisting-heads.

5. In a machine of the character set forth, the combination of a frame having a reel or spool therein, a shaft on which the said reel or spool is loosely mounted and adapted to be shifted in opposite directions and in one position to be connected to the said reel or spool, twisting-heads mounted in the said frame and also operated by the shaft when in one position, pulling devices having a flexible connection with the reel for exerting a pulling tension on opposite portions of the wire, means for holding the reel against backward movement, and means for operating the said shaft, whereby the wire may be first stretched and positively held by the reel and the shaft shifted into operative relation with the twisting-heads to actuate the latter to form a twist-joint between the ends of the wire.

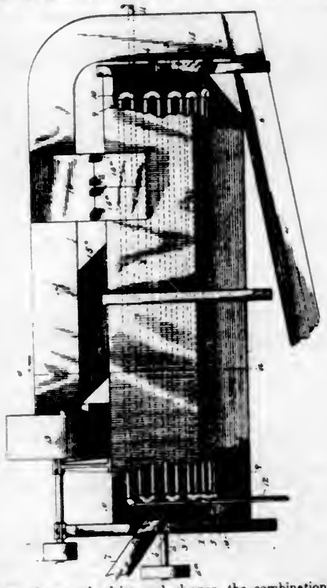
658,150. WIRE-SPLICING MACHINE. HENRY JACOBS, Lexington, Ill. Filed July 5, 1900. Serial No. 22,589. (No model.)

Claim.—1. In a wire stretching and splicing machine, the combination of a frame having opposite pairs of jaws at the extremities of the same, the lower jaw of each pair being removable, twisting-heads having hubs removably and rotatably held between the said jaws, and means for operating the said twisting-heads.

2. In a machine of the character set forth, the combination of a frame having opposite pairs of jaws, twisting-heads rotatably mounted between the said jaws and having radial slots to aline with open spaces between the jaws, and vertically-disposed freely-movable closing-pins extending downwardly through the upper jaw of each series to prevent accidental disengagement of the wire from the twisting-heads, said pins having spring-actuated operating-levers attached thereto.



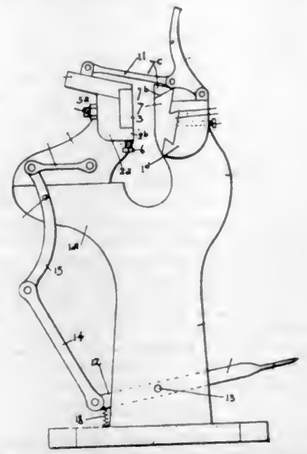
658,151. GRAIN DRIER AND CLEANER. CHRISTIAN H. LARSEN, Fowler, Ind. Filed Jan. 27, 1898. Serial No. 668,203. (No model.)



Claim.—In a grain drier and cleaner, the combination with the casing, the revoluble screen therein, and a heating apparatus therefor, of the wind-trunk 14, having the branch 15ª communicating with the upper side of the casing, the side spout 14, having the doors 16ª, for the purpose set forth, the inclined chute-flue 8, communicating with said wind-trunk at the discharge end of the screen, and means for exhausting air from the upper end of said wind-trunk, whereby the grain will be subjected to a cross-current of air as it passes through the screen, and to an upwardly-moving current of air, as it passes downward through the inclined chute-flue, substantially as described.

658,152. DEVICE FOR SHARPENING HORSESHOES. MARY P. LECLERE, Plaistow, N. H., administratrix of Joseph D. Leclere, deceased. Filed Jan. 24, 1900. Serial No. 2,650. (No model.)

Claim.—1. A device for the purpose described consisting of a vise having two jaws, one of which is movable with respect to the other, a support secured to one of said jaws which is provided with a groove arranged at right angles to the jaw-faces, a knife which is adapted to slide therein, a lever pivoted to the other jaw, and a link connecting said lever and knife.



2. A device for the purpose described consisting of a vise having two jaws, one of which is movable with respect to the other, one of said jaws having a support secured thereto, a groove therein having inwardly-projecting edges and arranged laterally with respect to the faces of said jaws, a knife fitted in said groove and arranged to slide therein, a lever connected to the other jaw and to said knife, and an inclined surface extending upwardly from the edge of the latter jaw.

3. A device for the purpose described consisting of a vise having two jaws, one of which is moved with respect to the other, a vertically-adjustable face connected to one of said jaws, a knife-support carried thereby a groove therein which is arranged laterally with respect to the jaw-faces, a knife which is adapted to slide therein, a lever fulcrumed to the opposite jaw, and a link connection between said knife and lever.

4. A device for the purpose described consisting of a vise having two jaws, a face which is removably connected to said jaws, a sliding knife carried by said face which is adapted to be moved over the face of the other jaw, and means for moving said knife.

658,153. CARD-INDEX. FRANK MACEY, Grand Rapids, Mich., assignor of two-thirds to Fred Macey and Charles W. Matheson, same place. Filed June 2, 1898. Serial No. 682,345. (No model.)



Claim.—1. The combination with a card having a T-shaped notch, of longitudinal end-hinged bars and a reciprocable plate provided with a T-shaped slot having a downwardly-projecting wedge.

2. In a card-index, the combination with flat bars each hinged at one edge in end supports and adapted to stand side by side in parallel planes or to be moved into the same plane, of a slidable plate with a slot in its lower edge to receive said bars, and provided with means whereby said bars may be moved from one to the other of said positions.

3. The combination with revoluble bars, end-hinged and edge-hinged, and adapted to stand in parallel planes and to turn therefrom into the same plane, of a frictionally-adjustable back-rest, pierced by said bars, substantially as specified.

4. In combination with a tray two flat bars pivoted at their adjacent sides, and provided with crank portions at the sides opposite their pivots, and means for turning and holding said bars engaging the said crank portions substantially as described.

5. The combination of a tray, flat bars pivoted at their adjacent edges in said tray, and having transverse slots in their adjacent edges, a vertically-movable plate having a slot with a divided and diverging upper end, a wedge between the diverging portions of said slot, and means for operating said plate, substantially as described.

6. In combination with a tray, flat bars having pivots on their ends at their adjacent edges and transverse slots in their adjacent edges, a vertically-slidable plate having a vertical slot with divided and oppositely-diverging upper ends and a wedge between said ends, and also having a horizontal slot, and a crank-wheel having a crank-pin engaging said slot and mounted on a shaft passing through the end of the tray and provided with a handle, substantially as described.

7. The combination of a tray, plates secured to the ends of the same, flat bars pivoted at their adjacent edges to said plates and having transverse slots in said edges, one of said plates being folded to form ways and a stop, a sliding plate traversing said ways and engaging the stop and having a vertical slot with divided and oppositely-curved upper ends, said plate also having a horizontal slot, a crank-wheel having a pin engaging said horizontal slot, a shaft passing through the end of said tray and a handle on said shaft, substantially as described.

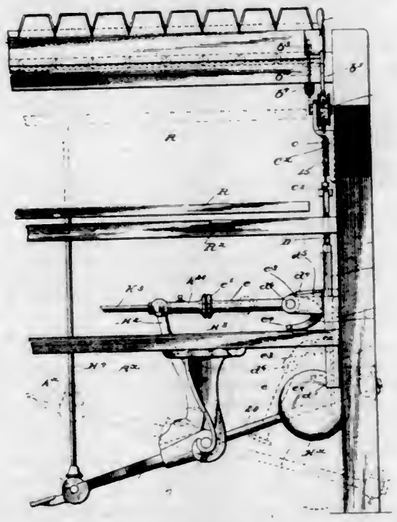
8. In a card-index, in combination with a series of cards having T-slots, flat bars pivoted to turn with their flat sides vertical to pass through the vertical part of said slots and to turn with their flat sides in the same horizontal plane to enter the horizontal part of said slots and means for turning and holding said bars, substantially as described.

9. In a card-index, in combination with a series of cards having T-slots and a tray having an adjustable inclined back-rest for said cards, flat bars pivoted at their adjacent edges and having opposing transverse slots in said edges, a vertically-slidable plate having a vertical slot with a divided and diverging upper end and downwardly-projecting wedge and a horizontal slot, plates secured to the ends of said tray in which the bars are pivoted, one of said plates having folded edges forming ways for the vertically-movable plate, a crank-wheel having a pin engaging the horizontal slot in the plate, a shaft supporting the crank-wheel and passing through the end of the tray, and a handle on the outer end of the shaft, substantially as described.

10. In combination with a tray, two flat bars pivoted at their adjacent sides and means for turning and holding said bars, said means being adapted to engage the non-adjacent sides or edges of the bars eccentric to their pivots.

11. A card-index-locking device, comprising the combination with cards having integral shoulders to afford locking provisions, of locking devices therefor comprising two bars pivoted at their adjacent longitudinal edges and adapted when turned in one position to engage by their non-adjacent longitudinal edges the shoulders of said cards, and means for rocking said bars upon their pivots.

658,154. SPINNING AND TWISTING FRAME. ARTHUR MASON, Raynham, Mass. Filed Apr. 12, 1900. Serial No. 12,521. (No model.)



Claim.—1. In spinning and twisting machines, means to lift the thread-board and automatically lock it in lifted position, and to simultaneously lock the ring-rail in doffing position.

2. In spinning and twisting machines, the thread-board, the ring-rail, means to lock them in doffing position, and a common actuator to lift the thread-board and operate said locking means.

3. In spinning and twisting machines, the thread-board, the ring-rail, and means controlled by the lifting of the thread-board to lock the ring-rail in doffing position.

4. In spinning and twisting machines, the thread-board, the ring-rail, and locking means for the thread-board and ring-rail, actuated by or through the lifting of the former to simultaneously and automatically maintain the thread-board and ring-rail in doffing position.

5. In spinning and twisting machines, the thread-board, the ring-rail, means to lift and automatically lock the thread-board, means to lock the ring-rail in doffing position, and intermediate connections to effect the operation of the latter means by or through the actuation of the former.

6. In spinning and twisting machines, the ring-rail, lifting means therefor, including a rocker-arm, a normally-inoperative detent, to receive the thrust of the rocker-arm when the rail is in doffing position, the thread-board, and means actuated by movement of the latter into doffing position to render the detent operative.

7. In spinning and twisting machines, the ring-rail, lifting means therefor, including a rocker-arm, a normally-inoperative, pivotally-mounted detent, a movable support therefor, and manually-controlled means to move the support to bring the detent into operative position between said support and the rocker-arm, to take up the thrust of the latter when the ring-rail is depressed and maintain said rail in doffing position.

8. In spinning and twisting machines, the ring-rail, lifting means therefor, including a rocker-arm, a normally-inoperative, pivotally-mounted detent, a movable support therefor, the thread-board, and a common actuator for the latter and for the detent, operatively connected with said support, to move the detent into position, when the thread-board is lifted, to maintain the ring-rail in doffing position.

9. In spinning and twisting frames, the ring-rail, a detent to maintain it in doffing position, said detent having a cam portion, a movable support for the detent, a fixed stop, and means to move said support to effect engagement of the stop and cam portion of the detent, to thereby operatively position the latter.

10. In spinning and twisting frames, the rocker-arm, an abutment carried thereby, a detent having a cam portion, a movable slide on which said detent is pivoted, a fixed stop, and means to move the slide to effect engagement of the stop and the cam portion of the detent, to swing the latter automatically into position to engage the abutment on the rocker-arm.

11. In spinning and twisting frames, the rocker-arm, a pivotally-mounted detent, a movable slide on which it is mounted, and means to bring said detent into alinement with its fulcrum and the rocker-arm and to take up the thrust of the latter.

12. In spinning and twisting frames, the ring-rail, means to traverse it, including a rocker-shaft having an arm extended therefrom and provided with a weight, and a stop longitudinally adjustable on said arm to limit the upward movement thereof, the weight and stop being located at the same side of the rocker-shaft.

13. In spinning and twisting frames, traverse means for the ring-rail, including an upturned rocker-arm, a normally-inoperative detent, a movable support on which it is mounted, means to move said support and the detent into position to take up the thrust of said arm when the ring-rail is in doffing position, and an actuating-handle for said means.

14. In spinning and twisting frames, traverse means for the ring-rail, including a rocker-arm, a normally-inoperative detent, a sliding support on which the detent is pivotally mounted, a stop to control the pivotal movement of the detent, and means to move the slide to effect coöperation of the stop and detent.

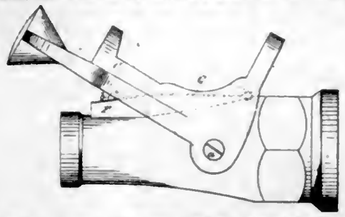
15. In spinning and twisting frames, traverse means for the ring-rail, including a rocker-arm, a normally-inoperative detent, a support therefor, mounted to slide on the main frame, and means to interpose the detent between the frame and the rocker-arm, to take up the thrust of the rocker-arm when the ring-rail is depressed.

16. In spinning and twisting frames, traverse means for the ring-rail, including a rocker-arm, a normally-inoperative detent having a cam-head, a slide on which said detent is fulcrumed, a fixed stop to coöperate with the cam-head and turn the detent into position to coöperate with the rocker-arm, a thread-board, and means operated by lifting of the thread-board to move the slide and thereby effect the coöperation of the fixed stop and the cam-head of the detent.

17. In spinning and twisting machines, the thread-board, locking means to hold it lifted, a lifting-handle, the ring-rail, its lifting-lever and a connected rocker-arm, a detent, and means operatively connected with the lifting-handle to operatively position the detent to resist the thrust of the rocker-arm when the lifting-lever is depressed.

18. In spinning and twisting machines, the thread-board, locking means to hold it lifted, a lifting-handle, the ring-rail, its lifting-lever and a connected rocker-arm, a detent, a slide on which it is pivotally mounted, a flexible connection between said handle and slide, and means to turn the detent into position to resist the thrust of the rocker-arm when the slide is raised by movement of the lifting-handle to lift the thread-board.

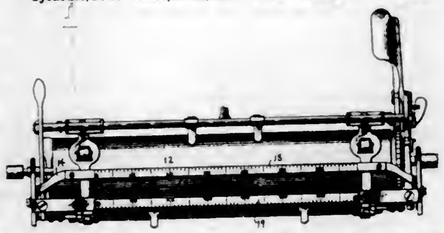
658,155. COMBINATION HOSE-NOZZLE. WILLIAM MATHEN, Brockville, Canada, assignor of one-half to John E. Hobbs, North Berwick, Me. Filed Oct. 29, 1897. Serial No. 656,782. (No model.)



Claim.—1. The combination with a nozzle, of a frame pivotally supported upon said nozzle, a cone secured at the free extremity of said frame, and means, rigidly secured to the body of the nozzle, and arranged to detain said frame with said cone either in axial alinement with said nozzle or in idle position aside therefrom, substantially as set forth.

2. The combination with a nozzle, of a frame pivotally supported upon said nozzle, a cone secured at the free extremity of said frame, and a spring G, arranged in coöperative relation with said frame to detain the latter with said cone in axial alinement with said nozzle and in idle position aside therefrom, substantially as set forth.

658,156. TYPE-WRITING MACHINE. HENRY W. MERRITT, Springfield, Mass., assignor to the Densmore Typewriter Company, Syracuse, N. Y. Filed Oct. 22, 1897. Serial No. 656,044. (No model.)



Claim.—1. In a type-writing machine, the combination with a carriage, of a platen adapted to be turned from a working to a non-working position, and a platen-scale which is connected to the carriage so as to move longitudinally therewith and which moves automatically to the printing-line when the platen is turned to a non-working position and which moves automatically away therefrom when the platen is turned to a working position.

2. In a type-writing machine, the combination with a platen adapted to be turned from a working to a non-working position, a carriage, of a platen-scale having arms which are attached to the carriage, and means for acting on said arms to cause said scale to automatically move to the printing-line when the platen is turned to its working position.

3. In a type-writing machine, the combination with a carriage, of a platen adapted to be turned from a working to a non-working position, a platen-frame in which said platen is mounted, a platen-scale attached to said carriage and having arms, and devices on said platen-frame for acting on said arms to move the platen-scale to the printing-line as the platen is turned to a non-working position.

4. In a type-writing-machine, the combination with a carriage, of a platen adapted to be turned from a working to a non-working position, a platen-scale having arms at its ends, said arms being pivoted to the carriage, and means for acting on said arms to swing the platen-scale to the printing-line as the platen is turned to a non-working position.

5. In a type-writing machine, the combination of a platen adapted to be turned from a working to a non-working position, a swinging platen-frame in which said platen is mounted, a carriage for supporting said swinging platen-frame, a platen-scale pivoted to said carriage, and projections on said platen-frame for swinging said scale to the printing-point when the platen-frame and platen are turned to a non-working position.

6. In a type-writing machine, a mechanism for adjusting paper through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after free rotation thereof in either direction and including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth, a dog normally in engagement with said minute teeth and causing said platen and said positioning-wheel to rotate together, and means for disengaging said dog from said set of minute teeth.

7. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after free rotation thereof in either direction and including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth, means engaging said set of minute teeth and normally causing said platen and said positioning-wheel to rotate together in either direction, and means for releasing said engaging means and simultaneously rotating the platen in either direction independently of said positioning-wheel.

8. In a type-writing machine, the combination of a revoluble platen, a wheel having outside teeth and fine inside teeth, a line-spacing mechanism adapted to the first-mentioned teeth, and a dog connected to the platen and adapted to the second-mentioned teeth.

9. In a type-writing machine, the combination of a revoluble platen, a ratchet-wheel having a circular series of teeth adapted to a line-spacing pawl, and a circular series of fine teeth, a dog connected to the platen and normally in engagement with said fine teeth, and means for breaking such engagement; whereby when the parts are in normal condition the ratchet-wheel and platen turn together, but when the dog is disengaged from the fine teeth the platen may turn independently of the ratchet-wheel.

10 In a type-writing machine, the combination of a revoluble platen, a ratchet-wheel having a set of coarse teeth and a set of fine teeth as described, a line-spacing pawl for engaging the set of coarse teeth, a dog for engaging the set of fine teeth and connected to the platen, a platen-shaft, and an oscillator on said shaft for disengaging said dog from its teeth.

11. In a type-writing machine, the combination of a revoluble platen, a ratchet-wheel having two sets of teeth as described, a pair of oppositely-acting dogs connected to said platen and normally engaging one set of the teeth of said ratchet-wheel, a platen-shaft, and means on said shaft for simultaneously disengaging both said dogs from said ratchet-wheel.

12. In a type-writing machine, the combination of a revoluble platen, a ratchet-wheel having two sets of teeth as described, a pair of oppositely-acting spring-pressed dogs engaging one set of said teeth, arms on said dogs, and an oscillating device controlled by the platen shaft or axle for moving said dogs out of operative relation to the ratchet-wheel.

13. In a type-writing machine, the combination of a revoluble platen, a ratchet-wheel having two sets of teeth as described, a plate attached to said platen, a pair of dogs pivoted on said plate and having arms, springs for holding said dogs normally in engagement with said ratchet-wheel, a platen shaft or axle, and a three-armed oscillator controlled by said shaft or axle for simultaneously disengaging said dogs from the ratchet-wheel.

14. In a type-writing machine, the combination of a revoluble platen, a plate secured thereto and having an inwardly-projecting hub and a peripheral groove, a platen shaft or axle mounted in said plate and hub, a ratchet-wheel having a series of regular line-spacing teeth on its outside and having a flange or collar which is connected to the said plate by means of screws or pins passing therethrough into the peripheral groove of said plate, a set of fine ratchet-teeth also formed interiorly of said ratchet-wheel, a pair of dogs pivoted to said plate and having arms or extensions, springs for holding said dogs normally in engagement with the interior ratchet-teeth, and a three-armed oscillator attached to said platen axle or shaft for disengaging said dogs from their ratchet-teeth.

15. In a type-writing machine, a revoluble platen having at one end a ratchet-wheel adapted to a line-spacing device and connected to the platen through a dog-and-ratchet mechanism so that the platen and the ratchet-wheel turn together when the line-spacing device is operated, a hand-wheel or knob, a device controlled thereby for disengaging said dog from its ratchet so that the said hand-wheel or knob may release the platen from its ratchet-wheel and may turn the platen variable distances without rotating said ratchet-wheel; and another hand-wheel or knob attached to the opposite end of the platen for turning the same and its ratchet-wheel in either direction independently of the line-spacing device.

16. In a type-writing machine, a mechanism for adjusting paper through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after free rotation thereof in either direction and including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth, a dog normally in engagement with said set of minute teeth and causing said platen and positioning-wheel to rotate together, a hand-wheel, and a device connected to said hand-wheel for disengaging said dog from said set of minute teeth, the whole being so arranged as that the hand-wheel may first render said dog inoperative and then effect a rotation of the platen independently of said positioning-wheel.

17. In a type-writing machine, a mechanism for adjusting paper through either regular or irregular intervals at will, comprising, in combination, a revoluble platen, means operating automatically to position the platen after free rotation thereof in either direction and including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth connected to or provided upon said wheel, a spring-pressed dog normally in engagement with said set of minute teeth, a plate mounted in a bearing which is provided in a head secured to one end of said platen, a cam or projection provided upon said plate, a shaft or spindle constructed to turn said plate to disengage said dog, and means for limiting the turning movement of said plate.

18. In a type-writing machine, the combination of a revoluble platen, a head or plate secured to one end thereof, a ratchet-wheel having a set of coarse teeth and a set of fine teeth and supported by said head or plate, a dog normally in engagement with the set of fine teeth, a platen-shaft, and means controlled thereby for disengaging said dog.

19. In a type-writing machine, the combination of a revoluble platen, a plate or head secured to one end thereof and having a tubular shank, a ratchet-wheel having a set of coarse teeth and a set of fine teeth and mounted on said head or plate, a dog normally in engagement with the set of fine teeth, a platen-shaft supported in said tubular shank, and an oscillator connected to said shaft for disengaging said dog.

20. In a type-writing machine, a mechanism for adjusting paper through either regular or irregular intervals at will, comprising, in combination, a revoluble platen having a shaft, means operating automatically to position the platen after free rotation thereof in either direction and including a wheel loosely mounted at one end of the platen and having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth formed upon or rigidly connected to said wheel, a dog normally in engagement with said set of minute teeth, an oscillator constructed to be turned by said platen-shaft to disengage said dog, and a stop for limiting such turning movement after the disengagement of the dog.

21. In a type-writing machine, the combination of a revoluble platen, a plate or head secured to one end thereof and provided with a stop, a ratchet-wheel supported on said head and provided with a set of coarse teeth and a set of fine teeth, a dog connected to said head and normally in engagement with the set of fine teeth, an oscillator for disengaging said dog, and a platen shaft or spindle for actuating said oscillator.

22. In a type-writing machine, a mechanism for adjusting paper through either regular or irregular intervals at will, comprising, in combination, a revoluble platen, means operating automatically to position the platen after free rotation thereof in either direction and including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth connected to said positioning-wheel, a dog connected to the platen and normally engaging said set of minute teeth, and a dog-disengaging device connected to a handpiece.

23. In a type-writing machine, a mechanism for adjusting paper through either regular or irregular intervals at will, comprising, in combination, a revoluble platen, means operating automatically to position the platen after free rotation thereof in either direction and including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth formed upon said wheel, a dog mounted upon a support attached to said platen and normally engaging said set of minute teeth, and a handpiece connected to said dog so that on the first movement thereof the dog is disengaged and on a further movement thereof the platen is turned independently of said positioning-wheel.

24. In a type-writing machine, the combination of a revoluble platen, a line-space wheel connected thereto, devices for preventing the platen from rotating in one direction independently of the line-space wheel, and independent devices for preventing the platen from rotating in the opposite direction independently of the line-space wheel.

25. In a type-writing machine, the combination of a revoluble platen, a line-space wheel, devices for locking the platen against rotation in one direction relatively to the line-space wheel, independent devices for locking the platen against rotation in the opposite direction relatively to said line-space wheel, and means for releasing the platen from the control of said locking devices so that it may be turned in either direction independently of said line-space wheel.

26. In a type-writing machine, a mechanism for adjusting paper through either regular or irregular intervals at will, comprising, in combination, a revoluble platen, a wheel having a series of positioning teeth or notches arranged at line-space intervals, devices for locking said platen to said positioning-wheel, a hand-wheel connected to rotate said platen and positioning-wheel together freely in either direction, means coöperating with said notched wheel to position the platen after free rotation thereof in either direction by said hand-wheel, and a second hand-wheel having a rotatory movement only and connected to means for releasing the platen from the control of said locking devices, the latter being constructed and arranged to relock the platen to the line-space wheel after an adjustment of the platen through an irregular or minute interval has been effected by said second hand-wheel.

27. In a type-writing machine, a mechanism for feeding the paper step by step in line-space direction and also adjusting it in opposite directions through either regular or irregular intervals at will, comprising, in combination, a revoluble platen, a wheel having a series of positioning

teeth or notches arranged at line-space intervals, independently-movable connecting devices between said platen and said positioning-wheel, line-spacing devices, means coöperating with said notched wheel to position the platen after free rotation thereof in either direction, and a hand-wheel movable relatively to the platen, said hand-wheel controlling said connecting devices, and the latter being constructed to automatically reconnect the platen to the line-space wheel after the platen has been adjusted through an irregular or minute interval in either direction by said hand-wheel.

28. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a revoluble platen, a wheel having a series of positioning teeth or notches arranged at line-space intervals, independently-movable connecting devices between said platen and said notched wheel, means coöperating with said notched wheel to position the platen after free rotation thereof in either direction, and a hand-wheel controlling said connecting devices and having a rotary movement only, the recited mechanism including means whereby upon a rotative movement of said hand-wheel in either direction said connecting devices may be moved and the platen may be adjusted through irregular or minute intervals.

29. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, a wheel adjustably connected thereto and provided with a series of positioning teeth or notches, means coöperating with said wheel to position the platen after free rotation thereof in either direction, a hand-wheel, means controlled by said hand-wheel for releasing the platen from the positioning-wheel, and means for enabling said hand-wheel to effect adjustments of the platen through irregular or minute intervals independently of said positioning-wheel, the construction and arrangement being such that upon release of said hand-wheel the platen is automatically reconnected in its adjusted position to said positioning-wheel.

30. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a revoluble platen, a wheel adjustably connected thereto and provided with a series of positioning teeth or notches, means coöperating with said wheel to position the platen after free rotation thereof in either direction, a shaft movable relatively to the platen and provided with means for releasing the platen from said positioning-wheel and for thereupon rotating the platen, a hand-wheel fixed upon said shaft, and a spring controlling said shaft, the recited mechanism including means whereby the hand-wheel and shaft may be moved to release the platen and also to effect minute rotative adjustments of the platen relatively to said positioning-wheel and whereby upon releasement of said hand-wheel said spring restores said hand-wheel and shaft to normal position and the adjusted platen is automatically reconnected to the said positioning-wheel.

31. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a revoluble platen, means operating automatically to position the platen after free rotation thereof in either direction and including a wheel having a series of positioning teeth or notches arranged at line-space intervals, two hand-wheels, means for enabling the platen to be rotated freely in either direction through one or more regular line-space intervals by manipulation of one of said hand-wheels, and means for enabling either of said hand-wheels to effect irregular or minute adjustments of the platen relatively to said positioning-wheel.

32. In a type-writing machine, the combination with a mechanism for adjusting paper in either direction through regular intervals, comprising both a revoluble platen and means operating automatically to position the platen after free rotation thereof in either direction and inclusive of a wheel having a series of positioning teeth or notches arranged at line-space intervals, of a mechanism for enabling the adjustment of any point or line upon the paper directly to the printing-line by a single movement of the paper and platen in either forward or backward direction, said last-mentioned mechanism including a scale or plate which extends longitudinally of the platen and which is movable from normal position to a position in which its edge registers with the printing-line upon the platen, and also including means independent of said platen-positioning means for holding the platen after rotative adjustment thereof through irregular or minute intervals, so that the desired type impressions may be made at said point or line upon the paper.

33. In a type-writing machine, the combination with a mechanism for adjusting paper in either direction through regular intervals, comprising both a revoluble platen and means operating automatically to position the platen after free rotation thereof in either direction and inclusive of a wheel having a series of positioning teeth or notches arranged at line-space intervals, of a mechanism for enabling the adjustment of any point or line upon the paper directly to the printing-line by a single movement of the paper and platen in either forward or backward direction, said last-mentioned mechanism including a scale or plate which extends longitudinally of the platen and which is movable from normal position to a position in which its edge registers with the printing-line upon the platen, and also including a hand-wheel for effecting irregular or minute adjustments of the platen independently of said platen-positioning means, and further including means for holding the platen in its adjusted position so that the desired type impressions may be made at said point or line upon the paper.

34. In a type-writing machine, the combination with a mechanism for adjusting paper in either direction through regular intervals, comprising both a revoluble platen and means operating automatically to position the platen after free rotation thereof in either direction and inclusive of a wheel having a series of positioning teeth or notches arranged at line-space intervals, of a mechanism for enabling the adjustment of any point or line upon the paper directly to the printing-line by a single movement of the paper and platen in either forward or backward direction, said last-mentioned mechanism including a scale or plate which extends longitudinally of the platen and which is movable from normal position to a position in which its edge registers with the printing-line upon the platen, and also including connecting devices arranged between said platen and said positioning-wheel, and further including a hand-wheel controlling said connecting devices so that upon rotation of said hand-wheel in either direction the platen may be rotated through irregular or minute arcs independently of said positioning-wheel, said connecting devices being constructed to maintain the platen in its adjusted position relatively to said positioning-wheel, so that the desired type impressions may be made at said point or line upon the paper.

35. In a type-writing machine, the combination with a cylindrical platen, of a line-space wheel, means for holding the platen at regular intervals in its rotation corresponding to the notches in said line-space wheel, means for holding the platen at intermediate points, a platen-scale arranged normally away from the printing-line upon the platen, and means for moving said platen-scale to said printing-line, whereby any line or point upon the paper may be brought into register with said printing-line by a single rotatory adjustment of the platen.

36. In a type-writing machine, the combination with a platen and a line-feed ratchet-wheel, of means for moving said platen through irregular or minute arcs relatively to said line-feed ratchet-wheel and for holding it in its adjusted position, a platen-scale arranged normally away from the printing-line upon the platen, and means for moving said platen-scale to said printing-line, whereby any line or point upon the paper may be brought into register with the printing-line by a single rotatory adjustment of the platen.

37. In a type-writing machine, the combination with a platen of a line-space ratchet-wheel, devices connecting the platen to the line-space wheel so that the two rotate together, means for releasing the platen from the control of said connecting devices so that the platen may be rotated through irregular or minute arcs independently of the line-space ratchet-wheel, said connecting devices being constructed to maintain the platen in its adjusted position relatively to the line-space ratchet-wheel, a platen-scale normally arranged away from the printing-line upon the platen, and means for moving said platen-scale to said printing-line, whereby upon releasement of the platen from the line-space wheel any line or point upon the paper may be brought into register with the printing-line by a single rotatory adjustment of the platen, and whereby the paper may be held in such position so that the desired type impressions may be made at said line or point upon the paper.

38. In a type-writing machine, the combination with a platen adapted to be turned from a working to a non-working position, of a platen-scale which moves automatically to the printing-point when the platen is turned to a non-working position, and means for rotatively adjusting the platen through minute arcs and holding it in such adjusted position while the type impressions are being made.

39. In a type-writing machine, the combination with a carriage of an independently-movable frame thereon, a platen mounted in said frame and adapted to be turned from a working to a non-working position, a scale traveling longitudinally with said carriage and constructed to move automatically to the printing-point when the platen is turned to a non-working position, and means for rotatively adjusting the platen through minute arcs and holding it in such adjusted position while the type impressions are being made.

40. In a type-writing machine, the combination with a carriage of a platen adapted to be turned from a working to a non-working position, a scale traveling therewith and moving automatically to the printing-line when the platen is turned to a non-working position, suitable line-spacing devices, a hand-wheel, and mechanism connecting said platen and said hand-wheel and so constructed and arranged that said platen may be rotatively adjusted by said hand-wheel through minute arcs, whereby upon moving said platen to a non-working position any line or point upon the paper may be brought into register with the printing-line by a single rotative adjustment of the platen.

41. In a type-writing machine, the combination with a platen of a carriage and a platen-scale connected to the carriage and moving longitudinally therewith, said scale being supported normally away from the printing-line upon the platen, and means connected to said carriage for supporting said scale in register with said printing-line.

42. In a type-writing machine, the combination with a platen and a carriage, of a platen-scale arranged upon the carriage and normally supported away from the printing-line upon the platen, and manually-actuated mechanism arranged upon said carriage for moving said scale into register with said printing-line.

43. In a type-writing machine, the combination with a platen and a carriage, of a platen-scale supported upon the carriage, and a manually-actuated lever connected to the carriage and constructed to move said platen-scale from normal position to a position in register with the printing-line upon the platen.

44. In a type-writing machine, the combination with a platen and a carriage, of a platen-scale, arms thereon, said arms being pivoted to the carriage, and a manually-actuated lever connected to the carriage for swinging the scale upon said arms from normal position to a position in register with the printing-line upon the platen.

45. In a type-writing machine, the combination with a platen and a longitudinally-traveling platen-frame so constructed and arranged as to expose in front of the platen the line which is being written, of a scale so mounted in proximity to the platen that it may be moved upwardly in front of the platen into register with said exposed line of writing and downwardly away from said exposed line.

46. In a type-writing machine, the combination with a longitudinally-traveling platen upon the front of which the line of writing is or may be exhibited, of a scale arranged in proximity to the platen, a lever, and connections whereby said lever may move the scale upwardly in front of the platen into register with the line of writing thereon.

47. In a type-writing machine, the combination with a platen and a longitudinally-traveling platen-frame so constructed and arranged as to exhibit the line of writing in front of the platen, of a scale arranged in proximity to the platen, and cam mechanism for moving said scale upwardly in front of said platen into register with the printing-line thereon.

48. In a type-writing machine, the combination of a carriage, scale 19 thereon, a platen, scale 13 independently connected to the carriage and means for moving scale 13 into register with the printing-line.

49. In a type-writing machine, the combination with a carriage, a platen-frame movable independently of said carriage, and a platen, of a platen-scale normally supported away from the printing-line and movable independently of both the carriage and the platen-frame and connected at one point with the platen-frame and at another point with the carriage, the construction and arrangement being such that by a movement of said platen-frame said scale may be brought into register with the printing-line upon the platen.

50. In a type-writing machine, the combination of a carriage, a platen-frame movable independently of said carriage, a platen, a platen-scale pivoted or hinged upon the carriage and normally supported away from the printing-line, and also movable independently of both the carriage and the platen-frame, and a connection between said scale and said platen-frame for causing said scale to be moved by said platen-frame to a position in register with the printing-line upon the platen.

51. In a type-writing machine, the combination of a carriage, a platen-frame movable independently of said carriage, a platen-scale pivoted or hinged to one of said devices and normally supported away from the printing-line, and means called into action by a movement of said platen-frame for causing said scale to move into register with the printing-line upon the platen.

658,157. TYPE-WRITING MACHINE. HENRY W. MERRITT, Springfield, Mass., assignor to the Densmore Typewriter Company, Syracuse, N. Y. Filed Oct. 22, 1897. Serial No. 656,045. (No model.)



Claim.—1. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a series of minute teeth connected to or provided upon said wheel, a dog connected to the platen and normally in engagement with said set of minute teeth, an oscillator

mounted on the hub or bearing, and a hand shaft or spindle passing therethrough and connected with said oscillator.

2. In a type-writing machine, a mechanism for adjusting the paper in opposite directions through either regular or irregular intervals at will, comprising in combination, a cylindrical platen, means operating automatically to position the platen after rotation in either direction, said positioning means including a wheel having a set of positioning teeth or notches arranged at line-space intervals, a set of minute teeth connected to or provided upon said wheel, a dog connected to the platen and normally in engagement with said set of minute teeth, a hub or bearing, an oscillator mounted thereon and having a slot or opening, a shaft or spindle passing through said hub or bearing and having a radial pin projecting into said slot or opening.

3. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth connected to or provided upon said wheel, a spring-pressed dog connecting said set of minute teeth to the platen, a hub or bearing, an oscillator mounted thereon and having a cam or projection for disengaging said dog, and a hand shaft or spindle passing through said hub and operatively connected to said oscillator.

4. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a series of minute teeth connected to or provided upon said wheel, a plate or head upon which said wheel is mounted, said plate or head being secured to one end of said platen and having a tubular shank inserted within the platen, a spring-pressed dog normally engaging said series of minute teeth, an oscillator for disengaging said dog, and a shaft or spindle operatively connected to said oscillator.

5. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a series of minute teeth connected to or provided upon said wheel, a platen shaft or spindle, a plate or head secured to one end of the platen and having a tubular shank inserted within said platen, an arm or lever pivoted in a slot in said shank and carrying at its outer end a dog normally engaging said series of minute teeth, and means for disengaging said dog operatively connected to the platen shaft or spindle.

6. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth connected to or provided upon said wheel, a plate or head upon which said wheel is mounted, said plate or head being secured to one end of the platen and having a tubular shank inserted within said platen, a spring-pressed arm or lever carrying a dog which is normally in engagement with said set of minute teeth, a hub or bearing on said plate or head, an oscillator mounted thereon, and a shaft or spindle passing through said hub or bearing and said shank and operatively connected to said oscillator.

7. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals, at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth connected to or provided upon said wheel, a plate or head secured to one end of the platen and carrying a spring-pressed dog normally engaging said set of minute teeth, and an oscillator supported by said plate or head and adapted to be turned to disengage said dog.

8. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth connected to or provided upon said wheel, a head upon which said wheel is mounted, said head being secured to one end of the platen and having a tubular shank, a spring-pressed arm or lever pivoted to said shank and carrying a dog which is normally in engagement with said set of minute

teeth, a plate having a cam or projection, means for turning said plate to disengage the dog, and means for stopping such turning movement of the plate.

9. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth connected to or provided upon said wheel, a plate or head upon which said wheel is mounted, said plate or head being secured to one end of said platen, a pair of diametrically-arranged spring-pressed dogs normally engaging said set of minute teeth, a plate having a plurality of cams or projections adapted to disengage both said dogs and a platen shaft or spindle for actuating said plate.

10. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth connected to or provided upon said wheel, a head upon which said wheel is mounted, said head being secured to one end of the platen, a pair of opposite spring-pressed dogs normally engaging said set of minute teeth, a plate mounted on a hub on said head and having four cams or projections, and a platen shaft or spindle operatively connected to said plate.

11. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth connected to or provided upon said wheel, a head upon which said wheel is mounted, said head being secured to one end of the platen, a pair of opposite spring-pressed dogs normally in engagement with said set of minute teeth, a plate provided with four cams or projections, an arm or arms adapted to a stop or stops on said head, and a platen shaft or spindle operatively connected to said plate.

12. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a set of minute teeth provided upon said wheel, a head upon which said wheel is mounted, said head being secured to one end of the platen and having a tubular shank, a pair of arms or levers pivoted in slots in said shank and provided at their outer ends with dogs which normally engage said set of minute teeth on opposite sides, a plate mounted on a hub or bearing on said head and provided with four cams or projections and two arms adapted to two stops on said head, and a platen shaft or spindle mounted in said tubular shank and provided with a pin adapted to a slot or opening in said plate.

13. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a ring having a series of positioning teeth or notches arranged at line-space intervals thereon, a set of minute teeth formed upon a second ring which is secured to said first-mentioned ring, a head upon which said rings are mounted, said head being secured to one end of said platen, a dog normally engaging said set of minute teeth, a platen shaft or spindle, and means connected therewith for disengaging said dog.

14. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a ring having a series of positioning teeth or notches arranged at line-space intervals, a second ring united to the first and having a series of minute teeth formed thereon, a head upon which said rings are mounted, said head being secured to one end of said platen, a pair of spring-pressed dogs normally engaging said set of minute teeth, an oscillator mounted on said head and adapted to both said dogs, and a handpiece operatively connected to said oscillator.

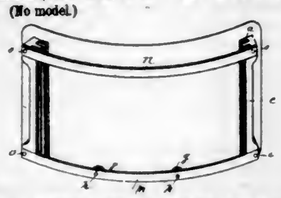
15. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a ring having a series of positioning teeth or notches arranged at line-space intervals, a second ring having a series of minute teeth, said rings being connected together and loosely mounted at one end of said platen, two spring-pressed dogs normally engaging said series of minute teeth, and means connected to the platen shaft or spindle for simuneously engaging both of said dogs.

16. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a ring having a series of positioning teeth or notches arranged at line-space intervals, a second ring having a series of minute teeth, said rings being connected together and loosely mounted at one end of said platen, a spring-pressed dog normally engaging said set of minute teeth and connected to the platen, a platen shaft or spindle, and an intermediate device connected thereto for disengaging said dog.

17. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a ring having a series of positioning teeth or notches arranged at line-space intervals, a parallel ring having a set of minute teeth, said parallel rings being connected together and loosely mounted at one end of said platen, two diametrically-arranged spring-pressed dogs normally engaging said set of minute teeth, and an oscillator adapted to simultaneously disengage both said dogs, and a platen shaft or spindle adapted to actuate said oscillator.

18. In a type-writing machine, a mechanism for adjusting paper in opposite directions through either regular or irregular intervals at will, comprising, in combination, a cylindrical platen, means operating automatically to position the platen after rotation thereof in either direction, said positioning means including a wheel having a series of positioning teeth or notches arranged at line-space intervals, a series of minute teeth connected to or provided upon said wheel, a second wheel rigidly connected thereto and having upon its outer peripheral edge a set of minute teeth, and a releasable dog connected to the platen and normally in engagement with said set of minute teeth.

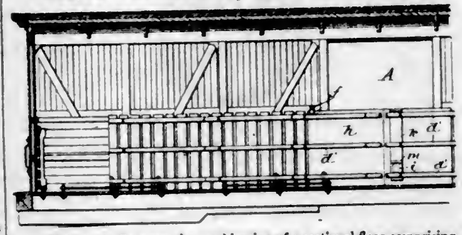
658,158. DASHBOARD-SIGN FOR STREET-RAILWAY CARS. THOMAS MILLER, New York, N. Y. Filed Feb. 16, 1898. Serial No. 670,525. (No model.)



Claim.—1. A sign-carrying rack for street-railway cars which consists of the vertical side pieces *c* and *c* containing the grooves *a* and *a*, having their body portion formed into open slots in combination with the transverse straps *m* and *n* curved to correspond with the dashboard of the car; the lower strap held in position by the bolts *h* and *o*, substantially as described.

2. A sign-carrying rack for street-railway cars consisting of the vertical side pieces *c* and *c* containing the grooves *a* and *a* having their body portion formed into open slots, suitable transverse straps as *m* and *n* formed to curve with the dashboard of the car and secured to the said side pieces as described, in combination with a sheet-metal sign adapted to slide within the grooves *a* and *a* and provided with raised rubber pieces as *e* and *e* to bear against the dashboard when the sign is sprung in place, substantially as described.

658,159. FALSE FLOOR FOR CARS. GEORGE J. SANTA CRUZ, Mobile, Ala. Filed June 27, 1900. Serial No. 21,823. (No model.)



Claim.—1. In a car, the combination of a sectional floor comprising end sections and intermediate sections, each of said sections being made up of slats and battens as described, the end sections being hinged to the ends of the car and adapted to be folded up thereagainst, while the intermediate sections are adapted to be folded up against the sides of the car, substantially as described.

2. In a car, the combination with the main floor, of a sectional open-work floor, adapted to rest on the main floor, each of said sections being hinged at its edge to the car-body, and the sections adjacent to the car-door being slidingly mounted in place, substantially as described.

3. In a car, the combination with the car-body, of a sectional floor, said sections being hinged to the car-body and adapted to cover the main floor, each end section having pivoted ends, substantially as described.

4. In a car, the combination with a car-body, of a sectional floor, each section being made up of slats and battens, and hinged to the car-body, the end sections having pivoted ends and the intermediate sections having a sliding connection with the car-body so as to permit them to be moved clear of the door-space, substantially as described.

5. In a refrigerator-car, the combination with an ice-chamber located in the end of the car, and a pivoted screen located at the lower end of the ice-chamber, of a sectional open-work floor, the section of the floor adjacent to the ice-chamber being pivotally connected with the lower edge of the screen, the remaining sections of the sectional floor being hinged to the car-body, substantially as described.

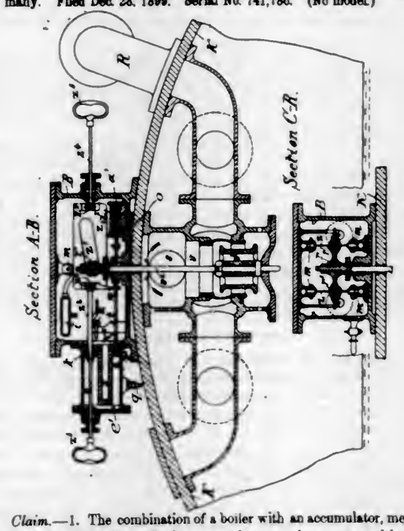
6. In a car, the combination with a ventilating-opening at the end thereof near the floor, a hinged screen adapted to cover said opening, of a sectional open-work floor, the section adjacent to said opening being loosely hinged to the lower edge of said screen, and the remaining sections of the sectional floor being hinged to the car-body, substantially as described.

7. In a car, the combination of a sectional floor comprising end and side sections, the side sections adjacent to the door-space being slidingly hinged to the car-body and adapted to form the car-door, substantially as described.

8. In a car, the combination of a sectional open-work floor comprising end and side sections, each of said side sections adjacent to the door-space being slidingly hinged to the car-body and provided with a closed portion opposite the door-space, substantially as described.

9. In a car, the combination of a sectional open-work floor comprising end and side sections, each of said side sections adjacent to the door-space being slidingly hinged to the car-body and provided with a closed portion opposite the door-space, a discharge-opening in said closed portion, and a slide to control the discharge therefrom, substantially as described.

658,160. THROTTLE. HERMANN SCHÜTZE, Bremerhaven, Germany. Filed Dec. 28, 1899. Serial No. 741,786. (No model.)



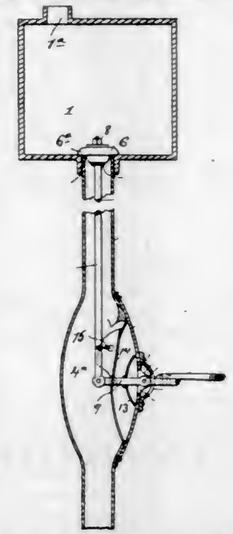
Claim.—1. The combination of a boiler with an accumulator, means for connecting the boiler with the accumulator, a piston actuated by an excess of steam-pressure in the accumulator, and a steam-controlling valve actuated by the piston, substantially as specified.

2. The combination of a boiler with an accumulator, a slide-valve that normally connects the boiler with the accumulator, a piston actuated by an excess of steam-pressure in the accumulator, and a steam-controlling valve actuated by the piston, substantially as specified.

3. The combination of a boiler with an accumulator, a slide-valve that normally connects the boiler to the accumulator, a piston actuated by an excess of steam-pressure in the accumulator, a steam-heater within the accumulator, and a steam-controlling valve actuated by the piston, substantially as specified.

4. The combination of a boiler with an accumulator having a cylinder, a piston movable therein, means for connecting the piston with the steam-controlling valve, a steam-pipe having a loop and communicating with the cylinder, and a cooling-reservoir inclosing the loop, substantially as specified.

658,161. WATER-TANK. MORRIS SHAPIRO, New York, N. Y. Filed Feb. 16, 1900. Serial No. 5,490. (No model.)



Claim.—1. The combination of a tank and conduit leading therefrom, with a valve to control the passage of water from the conduit, a stem extending from said valve and located in the conduit, a lever connected with said stem and pivotally supported so as to project through an opening in the conduit, a movable shield carried by the lever within the conduit, and a shield having an opening for the passage of the lever and secured on the exterior of the conduit, said shield serving to prevent water from passing through the opening in the conduit through which the lever projects, substantially as described.

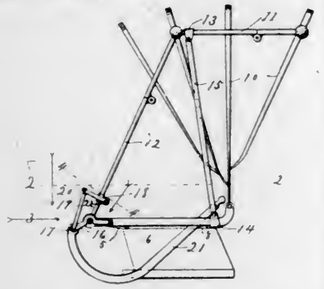
2. The combination of a tank and a conduit leading therefrom, and a valve to control the passage of water from the conduit, a stem extending from said valve and located in the conduit, a lever connected with said stem and pivotally supported so as to project through an opening in the conduit, a deflector extending upwardly from the lever, and a shield connected with said lever and extending in line with the opening through which the lever projects to cover the same during the movements of the lever, substantially as described.

3. The combination of a tank and a conduit leading therefrom, with a valve to control the passage of water from the conduit, a stem extending from said valve and located in the conduit, a lever connected with said stem and pivotally supported so as to project through an opening in the conduit, and a deflector carried by said lever and projecting upwardly normally out of contact with the wall of the conduit but adapted to engage the same when the lever is operated to raise the valve from its seat, substantially as described.

4. The combination of a tank and a conduit leading therefrom, with a valve to control the passage of water from the conduit, a stem extending from said valve and located in the conduit, a lever connected with the said stem and pivotally supported so as to project through an opening in the conduit, and a deflector carried by the lever and projecting upwardly and adapted to engage a wall in the conduit when the lever is raised, and means for connecting said deflector with the said stem for sustaining the deflector in position, substantially as described.

658,162. FOLDING DEVICE FOR BUGGY-TOPS. LACROTA L. SHORT, Russellville, Mo. Filed Mar. 5, 1900. Serial No. 7,378. (No model.)

Claim.—A folding device for buggy-tops, comprising a pair of rearwardly-extending arms 5 secured to the buggy-seat, a cross-bar 7 supported by said arms, laterally-extending arms 8 secured to the buggy-seat, side bars 9 supported by said side arms and said cross-bar, the bows of the vehicle-top being supported by said side bars 9, extension side bars 16 carried by said side bars, a rock-shaft 17 rotatably carried by said side extension side bars, a hand-lever 21 adjacent to the side of the buggy-seat for operating said rock-shaft, arms 19, 20 connecting said rock-shaft to the vertical toggle-joints for operating the same, and vertical connecting-rods 15 carried by the said side bars 9 for operating the horizontal toggle-joints, substantially as specified.



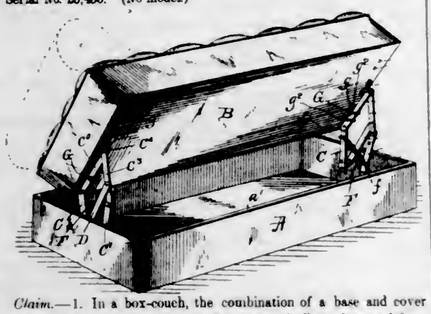
658,163. INDICATING-TABLET. ELMER H. STONE, Detroit, Mich. Filed Jan. 8, 1900. Serial No. 699. (No model.)



Claim.—1. In an indicating-card, the combination of a card provided with angled slots, and having imprinted thereon a designating term opposite each slot and a movable piece in each slot arranged to travel around the angled portion thereof, substantially as described.

2. In an indicating-card, the combination of a card provided with slots, and having imprinted thereon a designating term opposite each slot and a movable piece in each slot arranged to travel therein, each of said slots being provided with seats at its extremity in which the movable piece is adapted to rest by gravity, and with an obstruction intermediate the extremities around which the movable piece can travel only when force is applied thereto, substantially as described.

658,164. BOX-COUCH. ADAM H. SULSER, Washington, D. C., assignor of one-half to A. J. Haske, same place. Filed July 31, 1900. Serial No. 25,453. (No model.)



Claim.—1. In a box-couch, the combination of a base and cover and means whereby the cover may be raised vertically and opened from either side thereof.

2. In a box-couch, the combination of a base and cover and a pivoted system of rods or links connecting the base and cover whereby the cover may be raised vertically and opened from either side thereof.

3. In a box-couch, the combination of a base and cover and a pivoted system of rods or links connecting the base and cover whereby the cover may be raised vertically and opened from either side thereof, embracing a brace-rod attached at one end to a link and at the other end to the base of the couch.

4. In a box-couch, the combination of a base and cover and a pivoted system of rods or links connecting the base and cover whereby the cover may be raised vertically and opened from either side thereof, and a spring tending to raise the cover.

5. In a box-couch, the combination of a base and cover and a pivoted system of rods or links connecting the base and cover whereby the cover may be raised vertically and opened from either side thereof, a spring tending to raise the cover, and means to limit the movement of the links.

6. In a box-couch, the combination of a base and cover and a pivoted system of rods or links connecting the base and cover whereby the cover may be raised vertically and opened from either side thereof, a spring attached at one end to a link of the system of links tending to raise the cover.

7. In a box-couch, the combination of a base and cover and a pivoted system of rods or links connecting the base and cover whereby the cover may be raised vertically and opened from either side thereof, a spring attached at one end to a link of the system of links tending to raise the cover, and means to limit the movement of the links.

8. In a box-couch, the combination of a base and cover and a pivoted system of rods or links connecting the base and cover whereby the cover may be raised vertically and opened from either side thereof, a spring connected to one of the lower links of the system tending to raise the cover, and means to limit the movement of the links.

9. A box-couch comprising a base and cover, a connected series of rods or links pivoted respectively to the base and cover and to each other, a brace-rod pivoted at one end to the base of the couch and at the other end to a link.

10. A box-couch comprising a base and cover, a connected series of rods or links pivoted respectively to the base and cover and to each other, a brace-rod pivoted at one end to the base of the couch and at the other end to a link, and adjustable means adapted to connect the top or cover with one of the upper links of the system.

11. A box-couch comprising a base and cover, rods or links pivoted to the base, said links each pivoted to a rod or link the opposite ends of which are pivotally connected to the cover, a brace-rod connecting the base with one of the connecting-links, a spring tending to raise the cover, and means limiting the movement of the links.

12. A box-couch comprising a base and cover, rods or links pivoted to the base, said links each pivoted to a rod or link the opposite ends of which are pivotally connected to the cover, a brace-rod connecting the base with one of the connecting-links, a spring attached at one end to one of the links tending to raise the cover, and means limiting the movement of the links.

13. A box-couch comprising a base and cover, rods or links pivoted to the base, said links each pivoted to a rod or link the opposite ends of which are pivotally connected to the cover, a brace-rod connecting the base with one of the connecting-links, a spring connecting the lower links, and means to limit the movement of the links.

14. A box-couch comprising a base and cover, a connected series of rods or links pivoted respectively to the base and cover and to each other, a brace-rod pivoted at one end to the base of the couch and at the other end to a link, a spring connecting the lower links of the series, and adjustable means connecting the top or cover with one of the upper links.

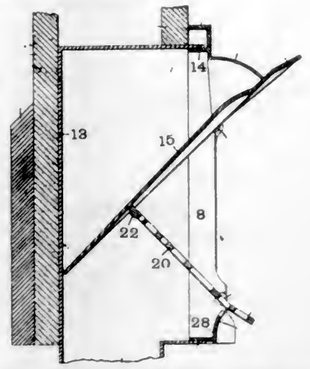
15. A box-couch comprising a base and cover, rods or links pivoted to the base, an upper rod or link pivoted to one of said last-named links and to the cover, a brace-rod pivotally connected to the other of said links and to the upper rod or link, a spring tending to raise the cover, and means to limit the movement of the links.

658,165. HOT-AIR REGISTER. HERBERT SYMONDS, East St. Louis, Ill., assignor of one-fourth to Arthur Frederick Symonds, same place. Filed Dec. 5, 1899. Serial No. 739,251. (No model.)

Claim.—1. In a hot-air register or the like, a substantially-vertical frame, an air-conduit leading to said frame, a valve horizontally pivoted in said frame at a point intermediate of its height to deflect the air from said conduit, whereby when said valve is open its upper part will project in front of said frame and its lower part to the rear thereof, and means for closing the space between the upper part of said valve and said frame.

2. In a hot-air register or the like, a substantially-vertical frame, an air-conduit leading to said frame, a valve horizontally pivoted in said frame at a point intermediate of its height to deflect the air from said conduit, whereby when the said valve is open its upper part will project in front of said frame and its lower part to the rear thereof, and a shield carried by said valve for closing the space between the upper part thereof and said frame.

3. In a hot-air register or the like, a frame, a valve horizontally pivoted in said frame at a point intermediate of its height, whereby when said valve is open its upper part will project in front of said frame and its lower part to the rear of said frame, a shield for closing the space between said valve and the upper part of said frame, and a forwardly-projecting hood carried by said valve above said shield.



4. In a hot-air register or the like, a frame, a single valve horizontally pivoted in said frame, and a grating horizontally pivoted in said frame below said valve to swing in the path of the air deflected by said valve.

5. In a hot-air register or the like, a frame, a valve horizontally pivoted in said frame, a grating horizontally pivoted in said frame below said valve to swing into the path of the air deflected by said valve, and a stop for positively limiting the movement of said grating.

6. In a hot-air register or the like, a frame, a valve horizontally pivoted in said frame, and a grating horizontally pivoted in said frame to actuate said valve.

7. In a hot-air register or the like, a frame, a valve horizontally pivoted in said frame, a grating also horizontally pivoted in said frame to operate said valve, and means for retaining said grating in the desired position.

8. In a hot-air register or the like, a frame, a valve horizontally pivoted in said frame, a grating also horizontally pivoted in said frame to actuate said valve, and frictional means for retaining said grating in the desired position.

9. In a hot-air register or the like, a frame, a valve horizontally pivoted in said frame at a point intermediate of its height, whereby when said valve is open its upper part will project in front of said frame and its lower part in the rear thereof, means for closing the space between the upper part of said valve and said frame, and a grating horizontally pivoted in said frame to operate said valve.

10. In a hot-air register or the like, a frame, a valve horizontally pivoted in said frame, and a grating horizontally pivoted in said frame so that its upper part will bear against said valve and actuate the same.

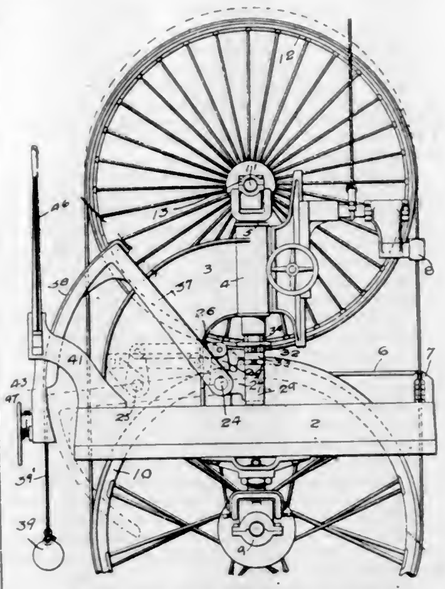
11. In a hot-air register or the like, a frame, a valve horizontally pivoted in said frame, a grating horizontally pivoted in said frame to actuate said valve, and spring-contact pieces carried by said grating and adapted to bear against said frame and hold said grating in the desired position.

658,166. BAND-SAW MILL. EDWIN E. THOMAS, Minneapolis, Minn., assignor to the Union Iron Works, same place. Filed July 22, 1899. Serial No. 724,731. (No model.)

Claim.—1. The combination, in a band-saw mill, with the base and the upper and lower band-wheels, of the columns for supporting the upper band-wheel, column-supporting rods provided with foot-pieces depending below the top of the lower band-wheel, and suitable connections between said foot-pieces, substantially as described.

2. The combination, in a band-saw mill, with the base and the upper and lower band-wheels, of the columns for supporting the upper band-wheel, the short shafts mounted in suitable bearings, connections between said shafts and said columns through which force is applied to exert tension upon the band-saw, and means connecting said short shafts, substantially as described.

3. The combination, in a band-saw mill, with the base and the upper and lower band-wheels, of the columns provided with bearings for the upper wheel, the short rocker-shafts arranged beneath said columns, connections between said rocker-shafts and said columns, the rocker-shaft parallel to said short rocker-shafts and suitably connected thereto, and tension mechanism connected with said rocker-shafts, substantially as described.



4. The combination, in a band-saw mill, with the base and the upper and lower band-wheels, of the columns provided with bearings for the upper wheel, the short rocker-shafts arranged below and connected with said columns, the rocker-shaft arranged parallel with said short rocker-shafts and suitably connected thereto, a tension mechanism and a counterbalance connected with said rocker-shafts, substantially as described.

5. The combination, in a band-saw mill, with the base and the upper and lower band-wheels, of the vertically-movable columns provided with bearings for the upper wheel, the rocker-shafts having suitable connections with said columns, the parallel-movement connections between the rocker-shafts upon opposite sides of said wheels, and suitable means connected to said shafts for maintaining tension upon the saw carried by said wheels, substantially as described.

6. The combination, in a band-saw mill, with the base and the upper and lower band-wheels, of the columns provided with bearings for the upper wheel, the short rocker-shafts, connections between said rocker-shafts and said columns, suitable connections between said rocker-shafts eccentrically arranged with respect thereto, whereby said rocker-shafts may be caused to rock or turn in their bearings, and tension and counterbalance mechanism connected with said rocker-shafts, substantially as described.

7. The combination, in a band-saw mill, with the base and the upper and lower band-wheels, of vertically-movable columns provided with bearings for the upper wheel, rocker-shafts provided upon opposite sides of said wheel, connections between said rocker-shafts and said columns, the parallel shaft 25 mounted in suitable bearings and arranged out of line with said rocker-shafts, arms upon all of said shafts, links connecting said arms, and a tension-lever connected to one of said shafts, substantially as described.

8. The combination, in a band-saw mill, with the base and the upper and lower band-wheels, of the vertically-adjustable columns provided with bearings for the upper wheel, the short rocker-shafts arranged below said columns, a shaft mounted in suitable bearings and arranged parallel with said rocker-shafts and connected thereto, whereby said rocker-shafts and said parallel shaft are caused to move together, means for applying force to said shafts to maintain tension upon the saw carried by said band-wheels and connections between said short shafts and said columns, substantially as described.

9. The combination, in a band-saw mill, with the base and the upper and lower band-wheels, of the vertically-adjustable columns provided with bearings for the upper wheel, the short rocker-shafts arranged beneath said columns, the parallel shaft connected thereto and whereby said rocker-shafts are caused to move together, means for applying force to said shafts to maintain tension upon the saw carried by said band-wheels, a tension and counterbalance lever connected to one of said short rocker-shafts, a quadrant upon said lever, a counterbalance-weight supported

said quadrant, and a separate tension-lever provided with adjustable means for connecting it with the means for supporting said weight, substantially as described.

10. The combination, in a band-saw mill, with the base and the upper and lower band-wheels, of the supports for the upper wheel, connections between said supports whereby said supports are caused to move together, the tension and counterbalance lever 37 provided with the quadrant 38, the rope or cord thereon, the counterbalance-weight upon said rope, the tension-lever 40 suitably weighted, a pivotal link depending therefrom and provided with a clamp for attachment upon said rope, and a lifting and locking lever arranged to operate upon said tension-lever, substantially as described.

11. The combination, in a band-saw mill, with the base and the upper and lower band-wheels, of the supports for the upper wheel, a tension-lever 40 provided with a suitable weight, means connecting said tension-lever with said supports to maintain tension upon the saw carried by said band-wheels, and means for raising said tension-lever and thereby relieving the tension from the band-wheel supports, and means for locking said lever in its raised position to relieve the tension on the saw, substantially as described.

12. The combination, in a band-saw mill, with the base and the upper and lower band-wheels, of the supports for the upper wheel, connections between said supports, a tension device applied to said connections, and provided with a counterbalance rope and weight, a pivoted lever 40 provided with a heel 48 and adjustable means for connecting said lever with said rope, and a pivoted lifting and locking lever 46 arranged to engage said lever 40, and adapted to lock against said heel 48 and hold the lever 40 in its raised position, substantially as described.

13. The combination, in a band-saw mill, with the upper band-wheel and its supporting means, of a tension device connected to said supporting means and provided with a counterbalance rope and weight, a pivoted lever 40, a link connected to said lever and provided with an eye through which the counterbalance-rope passes, and with means for clamping said rope to said link, and means for raising and locking said lever 40, substantially as described.

14. The combination, in a band-saw mill, with the base and upper and lower band-wheels, of the columns for the upper band-wheel, column-supporting rods provided with suitable feet, rocking shafts arranged beneath said columns and provided with quadrants or sectors 27, flexible connections between said quadrants or sectors and the feet of said rods, and a tension device connected with said rocking shafts, substantially as described.

15. The combination, in a band-saw mill, with the base and the upper and lower band-wheels, of the columns provided with bearings for the upper band-wheel, rocking shafts arranged below said columns, a shaft mounted in suitable bearings parallel to said rocking shafts, connections between said parallel shaft and said rocking shafts, column-supporting rods, quadrants upon said rocking shafts, chains or cords upon said quadrants connected to said rods, and a tension device connected to said rocking shafts, substantially as described.

16. The column-adjuster for band-saw mills, comprising, in combination, the column-lifting rod, the rod-foot, the lever 33 thereon, the fork at the lower end of the rod 30 resting upon said lever, the end of said rod extending into said foot, and an adjusting-screw applied between said lever and said foot, substantially as described.

17. The combination, in a band-saw mill, with the base, of the columns supporting the upper band-wheel, bearings pivoted in the upper portions of said columns, and a cushion arranged above one of said bearings and supporting it upon its column, substantially as described.

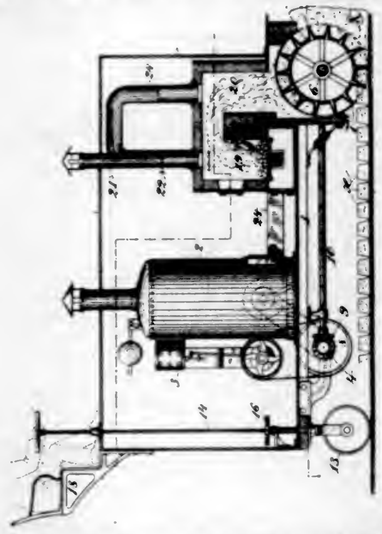
18. The combination, in a band-saw mill, with the band-wheel-supporting column, of a wheel-shaft bearing, a pivot-pin connected with said bearing, a hanger pivotally supporting one end of said pin upon said column, and a cushion-support for the opposite end of said pin, substantially as described.

19. The combination, in a band-saw mill, with the band-wheel-supporting column, of a wheel-shaft bearing, a pivot-pin connected with said bearing, a hanger pivotally supporting one end of said pin upon said column, said hanger being arranged upon one side of said bearing, and a cushion-hanger for the opposite end of the said bearing depending from a vertical extension of said column, substantially as described

20. The combination, in a band-saw mill, with the band-wheel-supporting column, with an arch 16 upon said column, of the shaft-bearing arranged within said arch, a pivot-pin connected with said bearing and supported at one end upon said arch by a pivoted hanger, and a cushion-hanger depending from said arch, and supporting the other end of said pivot-pin, substantially as described.

21. The combination, in a band-saw mill, with the band-wheel-supporting column, provided with the arch 16, of a wheel-shaft bearing arranged within said arch, a pivot-pin connected with said bearing and upon which said bearing is longitudinally adjustable, and a cushion-support for said pivot-pin, substantially as described.

658,167. SNOW-COMPRESSOR. WILLIAM WESTLAKE, New York, N. Y. Filed Oct. 24, 1899. Serial No. 734,624. (No model.)



Claim.—1. A snow-compressing apparatus comprising a roller provided with molds in its face, means for rolling said roller over the snow, and means for applying heat exteriorly to the upper part of said roller while it is being rolled over the snow.

2. A snow-compressing apparatus comprising a roller provided with molds in its face, a platform supported on said roller, a motor mounted on said platform and geared to said roller for driving it, and means carried by said platform for applying heat exteriorly to the upper part of said roller.

3. A snow-compressing apparatus, comprising a roller provided with molds in its face formed by longitudinally-extending ribs, and with apertures opening to its interior, a steering-wheel, a platform mounted on said roller and steering-wheel, means carried by said platform for operating said steering-wheel, a motor mounted on said platform and geared to said roller for driving it, and means carried by said platform for applying heat exteriorly to said roller.

4. A snow-compressing apparatus, comprising a platform supported on a roller having molds in its face, and a steering-wheel, the said roller and steering-wheel, a motor carried by said platform and geared to said roller for driving it, means carried by said platform for applying heat to said roller, and means carried by the platform for slicing the blocks of snow molded by said roller.

5. A snow-compressing apparatus comprising a roller having molds in its face, a platform supported on said roller, a motor on said platform geared to the roller for driving it, a furnace mounted on said platform and having a down-flue over said roller, and a blower, geared to the motor for driving it and having a conduit which discharges into said flue.

6. The combination with the platform, of the roller thereunder, said roller having molds in its face adapted for pressing the snow into blocks, and apertures at the bottoms of said molds for the passage of heated gases, and means carried by the platform for driving said roller, of a furnace on the said platform having its flue for hot products of combustion directed down upon said roller.

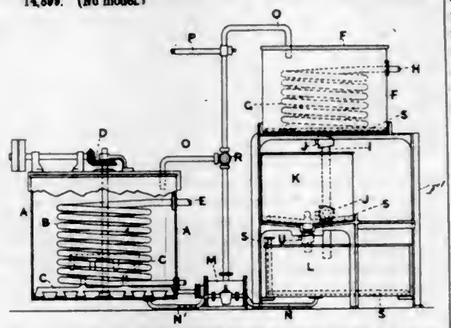
7. A snow-compressing apparatus having a roller composed of longitudinally-extending ribs with spaces or apertures between them, and end pieces connecting said ribs, and having means for driving and heating said roller.

8. A snow-compressing apparatus having a platform, a steering-wheel under the rear part of said platform, means carried by the platform for operating said wheel, a compressing and molding roller mounted rotatively under the front end of said platform, and means carried by said platform for driving said roller.

9. A snow-compressing apparatus comprising a platform, a compressing and molding roller or drum mounted rotatively under said platform, means for driving said roller, and a furnace on said platform having an outlet for products of combustion embracing the upper part of said roller.

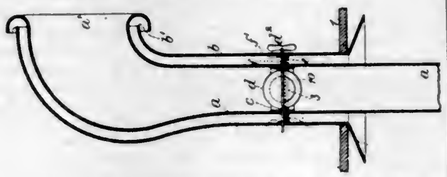
10. A snow-compressing apparatus comprising a drum to roll over the snow, said drum having means for molding the snow and for slicing it into blocks.

658,168. APPARATUS FOR SUGAR-COATING CONFECTIONERY. WILLIAM L. WHITE, Hedon, England. Filed Apr. 30, 1900. Serial No. 14,899. (No model.)



Claim.—The combination, with a pan F for cool syrup, of a syrup-bath K arranged at a lower level than the pan F, baskets for holding the articles to be coated in the bath K, a collecting-tank L arranged at a lower level than the syrup-bath K, valved pipe connections between the pan F, bath K and tank L whereby the syrup is run from one vessel to another by gravity, and means for supporting the said pan, bath and tank at different elevations, substantially as set forth.

658,169. VENTILATOR. THOMAS C. AVERY, Garrison's, N. Y. Filed Apr. 3, 1900. Serial No. 11,304. (No model.)



Claim.—1. The combination in a ventilating apparatus, with concentric inner and outer pipes, of a damper-rod passing entirely and transversely through the said pipes, a damper connected to the said rod within the inner pipe, means for closing off the damper, annular perforated plates between the inner and outer pipes, the one fixed and the other connected to and movable by the damper-rod whereby the passage through the inner pipe or that between the pipes is opened or closed at pleasure, substantially as set forth.

2. The combination in a ventilating apparatus with inner and outer concentric pipes, of a tube-section within the inner pipe and adapted to turn therein, a damper-rod passing through openings in the opposite sides of the tube-section and through opposite slots in the inner and outer pipes, a damper connected to the said rod and flanges upon the inner face of the tube-section against which the damper closes, annular perforated plates between the inner and outer pipes, the one fixed and the other movable by the damper-rod in its relation to the fixed pipe whereby the passage-way through the inner pipe and that between the pipes may be wholly or partially closed or opened at pleasure, substantially as set forth.

3. In a ventilating apparatus, the combination with inner and outer concentric pipes, of a tube-section within the inner pipe having curved flanges in parallel planes, a damper-rod passing across through openings in the tube-section and through opposite slots in both of the concentric pipes, a damper connected to the damper-rod and provided with opposite yielding faces coming against the respective flanges, a perforated annular flanged plate between the concentric pipes and fixed thereto, an annular perforated plate between the concentric pipes and above the aforesaid annular plate and provided with opposite flanges through which passes the damper-rod whereby when the damper-rod is rotated, the damper is swung to open the passage in the inner pipe and when the damper-rod is swung in a horizontal plane the upper annular plate is moved in relation to the under fixed plate to cause their openings to coincide or be closed off, substantially as set forth.

658,170. STOCKING OR HOSE SUPPORTER. LILLIAN A. CROCKETT, Indianapolis, Ind. Filed May 7, 1900. Serial No. 15,727. (No model.)

Claim.—1. A stocking-supporter comprising a yoke formed of a section of material having a central projection extending therefrom so as to bend over and lie in the vertical hollow of the back of the human form and having a length extending from the center of the back downwardly and obliquely to the sides of the pelvic girdle without the ends thereof meeting, said yoke being curved so that the central portion may stand nearly vertical while the end portions thereof may lie smoothly in somewhat-twisted positions against the form, whereby the strains when in use are applied directly upon the pelvic girdle, and suspenders so attached to said yoke so as to draw the same into frictional contact with the body about the pelvic girdle.

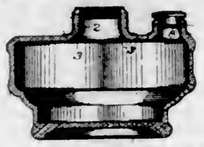


2. As an improved article of manufacture, the herein-described appliance for supporting stockings and consisting of a saddle-like member to rest frictionally against the back of the human form and extending downwardly obliquely about the pelvic girdle to the front of the limbs and there bifurcated and extending thence down opposite sides of the limbs and connected to the stockings, and a tie-brace for said member, whereby the strains through the connection with the stockings may be sustained by the pelvic girdle, as shown.

3. In stocking-supporters, the combination with the yoke having the stocking-suspenders attached thereto, of the projection extending from said yoke so as to be pressed by the garments into the vertical hollow of the back and cause frictional adhesion, and the brace connected at the junctions of said suspenders with said yoke, substantially as set forth.

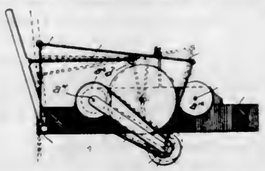
4. In stocking-supporters, the combination with the yoke having the brace connected therewith, of the projection extending from said yoke so as to be pressed by garments into the vertical hollow of the back and cause frictional adhesion, and the suspenders attached to said yoke at the junctions thereof with said brace, substantially as set forth.

658,171. LAMP. WILLIAM A. R. DALZELL, Findlay, Ohio. Filed Feb. 26, 1898. Serial No. 671,756. (No model.)



Claim.—As a new article of manufacture, a glass lamp having a neck and a metallic collar provided at one end with means for engaging the lamp-burner, said collar also provided with an outwardly-turned flange at the opposite end, said collar being smooth and uncorrugated over the contacting surfaces and adhering to the glass neck by the frictional contact which it makes with said neck, substantially as set forth.

658,172. SAW-FRAME. ARTHUR DENKES, St. Julien de Wolfstown, Canada. Filed Feb. 9, 1900. Serial No. 4,600. (No model.)

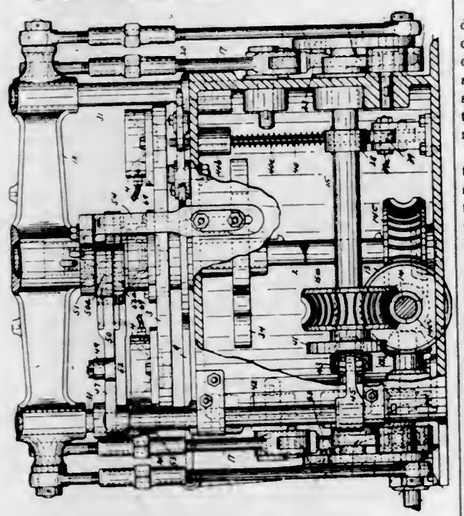


Claim.—1. A saw-frame, comprising a saw-shaft having a saw at one end and a driving-pulley at the other end; a pulley fixed upon said shaft; a shaft a^4 having a pulley connected by a belt with the pulley of said saw-shaft; a friction-wheel and a pulley fixed upon said shaft a^4; a movable shaft located between the said shafts, having a pinion fixed thereon; a friction-wheel fixed upon said movable shaft and adapted to be thrown into engagement with either the friction-wheel of the saw-shaft or that of the shaft a^4; an operating-lever connected with said movable shaft; a hanger-frame loosely mounted upon the shaft a^4; a pulley and a

friction-wheel fixed upon a shaft journaled in said hanger-frame; a driving-belt connecting said pulley with the pulley on the shaft a^1, an operating-lever connected with said hanger; a feed-shaft journaled in said frame having a gear-wheel meshing with the pinion on the said movable shaft; and a cog-wheel fixed on the end of said feed-shaft and adapted to engage a rack fixed upon the log-carriage for feeding the same, substantially as described.

2. A saw-frame, comprising a saw-shaft and a shaft driven by said saw-shaft; a friction-wheel fixed on each of said shafts; a movable shaft arranged between the said shafts; a friction-wheel mounted upon said movable shaft and adapted to be thrown into or out of engagement with said friction-wheels; a movable hanger-frame carrying a friction-wheel; adapted to be thrown into or out of engagement with the friction-wheel of said movable shaft; and a feed-shaft operatively connected with said movable shaft and adapted to feed a log-carriage, substantially as described.

658,173. **MACHINE FOR MOLDING ARTICLES FROM MOLTEN GLASS.** JEAN B. FONDU, Vilvorde, Belgium. Filed Mar. 28, 1899. Serial No. 710,763. (No model.)



Claim.—1. In a molding-machine, the combination, with the frame and with a revoluble shaft journaled in said frame and provided at each end with a worm, of a rotary table mounted in said frame, power-transmitting means operatively connecting said table and the worm at one end of said shaft, another shaft journaled in said frame and having operative connection with the worm at the other end of said first-named shaft, molds, portions of said molds being carried by the table, a reciprocating element or elements carrying the other portions of said molds and arranged in operative disposition relatively to the table, and operative connection between said element or elements and said last-named shaft, substantially as described.

2. In a molding-machine, the combination, with the frame and with a revoluble shaft journaled in said frame and provided at each end with a worm, of a rotary table mounted in said frame, intermittently-actuative power-transmitting means operatively connecting said table and the worm at one end of said shaft, another shaft journaled in said frame and having operative connection with the worm at the other end of said first-named shaft, molds, portions of said molds being carried by the table, a reciprocating element or elements carrying the other portions of said molds and arranged in operative disposition relatively to the table, and operative connection between said element or elements and said last-named shaft, substantially as described.

3. In a molding-machine, the combination, with the frame and with a revoluble shaft journaled therein, of a table mounted in said frame, means for intermittently rotating said table, molds, portions of said molds being carried by the table, reciprocating cross-pieces disposed above said table and carrying the other portions of said molds, rods connecting one of said cross-pieces and said shaft and having eccentric engagement with the latter, cams carried by said shaft, systems of interconnected levers connected to the other cross-piece and adapted to be engaged by said cams to be depressed thereby, and other cams carried by said shaft and adapted to engage said systems of levers to elevate the same, substantially as described.

4. In a molding-machine, the combination, with the frame, vertical guides mounted thereon, and a revoluble shaft journaled in said frame, of a table mounted in said frame, means for intermittently rotating said table, molds, portions of said molds being carried by the table, reciprocating cross-pieces engaging said guides, carrying the other portions of said molds and having eccentric engagement with the shaft, cams carried by said shaft, systems of interconnected levers connected to the other cross-piece and adapted to be engaged by said cams to be depressed thereby, other cams carried by said shaft and adapted to engage said systems of levers to elevate the same, and counterweights controlling said cross-pieces, substantially as described.

5. In a molding-machine, the combination, with the frame and with driving means mounted therein, of an intermittently-rotative table mounted on said frame, operative connecting means between said table and the driving means, molds, portions of said molds being carried by said table, an oscillatory shaft, an intermittently-actuative filling mechanism comprising a movable receptacle, and an independently-movable bottom for said receptacle having operative connection with said shaft, and operative connecting means between said shaft and the driving means, substantially as described.

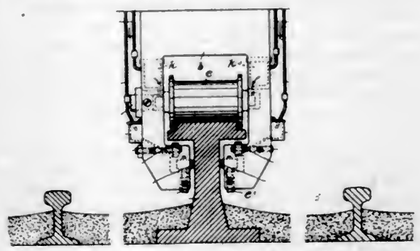
6. In a molding-machine, the combination, with the frame and with driving means mounted therein, of an intermittently-rotative table mounted on said frame, operative connecting means between said table and the driving means, molds, portions of said molds being carried by the table, a shaft journaled in said frame and carrying a cam, an oscillatory shaft, spring-controlled actuating means for said shaft operatively connected to the same and engaging said cam, and a filling mechanism operatively connected to said oscillatory shaft, substantially as described.

7. The combination, with a suitable support, of an operatively-sustained mold, a funnel sustained on said support, a plate disposed between said support and the funnel, and a lever movable and snugly fitting between said funnel and the plate and provided with an opening through the same adapted to register with the funnel, said mold being disposed in the line of movement of said opening, substantially as described.

8. The combination, with a suitable support, of an operatively-sustained mold, a funnel sustained on said support, a plate disposed and movable between said funnel and the support, and a lever movable and snugly fitting between said funnel and the plate and provided with an opening through the same adapted to register with the funnel, said mold being disposed in the line of movement of said funnel, and said lever and the plate having disconnective engagement with each other, substantially as described.

9. In a molding-machine, the combination, with the frame and with a revoluble shaft journaled therein, of a table mounted in said frame, means for intermittently rotating said table, molds, portions of said molds being carried by the table and having loose bottoms, reciprocating cross-pieces sustained above said table and carrying the other portions of said molds, rods connecting one of said cross-pieces and said shaft and having eccentric engagement with the latter, cams carried by said shaft, systems of interconnected levers connected to the other cross-piece and adapted to be engaged by said cams to be depressed thereby, other cams carried by said shaft and adapted to be engaged by said system of levers to elevate the same, a reciprocating device adapted to actuate the movable bottoms of said molds, and operative connecting means between said device and the shaft, substantially as described.

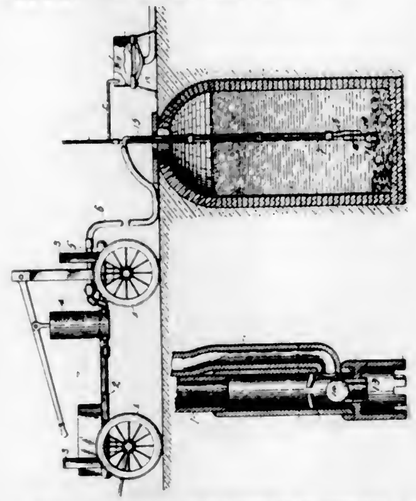
658,174. **DEVICE FOR PREVENTING DERAILING OF TRAINS.** LOUIS A. GRINDA Y GUIOL, San Gervasio, Barcelona, Spain. Filed Apr. 10, 1900. Serial No. 12,309. (No model.)



Claim.—1. In a device for preventing the derailing of cars or other vehicles, the combination of a rail adapted to be disposed under the vehicle, a forked guide adapted to be carried by said vehicle and receiving the rail, a roller journaled in said guide above the rail and adapted to bear upon the tread portion thereof, said roller having a peripheral groove receiving said tread portion of the rail, other rollers also journaled in said guide opposite, and adapted to bear against, portions of said rail subjacent the tread portion thereof, and tubular blocks removably arranged in said guide and affording bearings for said rollers, substantially as described.

2. In a device for preventing the derailing of cars or other vehicles, the combination of a rail adapted to be disposed under the vehicle, a forked guide adapted to be carried by said vehicle and receiving the rail, a roller journaled in said guide above the rail and adapted to bear upon the tread portion thereof, said roller having a peripheral groove receiving said tread portion of the rail, other rollers also journaled in said guide opposite, portions of said rail subjacent the tread portion thereof, tubular blocks removably arranged in said guide and affording bearings for said rollers, and means for lubricating the bearings of said rollers, substantially as described.

658,175. **CISTERN-CLEANER.** JAMES T. HINDMAN, Anna, Ill. Filed June 11, 1900. Serial No. 19,932. (No model.)



Claim.—1. A cistern-cleaner and water-purifier, comprising a conducting-pipe, an air-pipe leading into said conducting-pipe, a valve carried in said conducting-pipe adjacent to the lower end of the said air-pipe, and means for retaining the said valve within said pipe, substantially as specified.

2. A cistern-cleaner and water-purifier, comprising a conducting-pipe, an air-pipe leading into said conducting-pipe, a valve carried within said conducting-pipe adjacent to the end of said air-pipe, which valve is opened when the current of air is forced into the conducting-pipe, and is closed when the current is not in motion, substantially as specified.

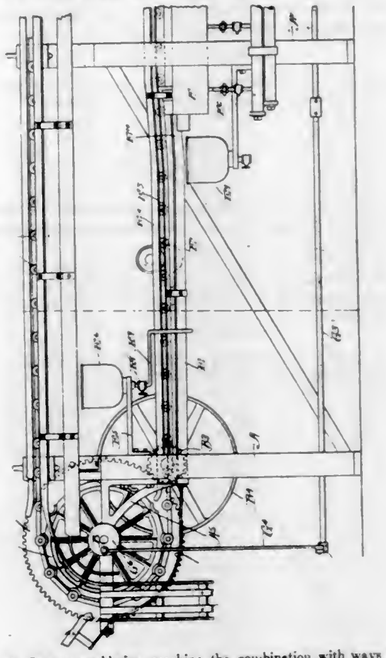
3. A device of the class described, comprising a conducting-pipe, an air-pipe carried alongside and leading into said conducting-pipe, means for drawing the settlings from the bottom of the cistern through said conducting-pipe, a valve carried within said conducting-pipe, pins for retaining said valve therein, and a detachable nipple for upholding said valve, substantially as specified.

4. A device of the class described, comprising a conducting-pipe, an air-pipe carried by and leading into said conducting-pipe near its lower end, means for forcing a current of air through said air-pipe and through said conducting-pipe, a nipple carried by the lower end of said conducting-pipe, a valve supported by said nipple for preventing a backflow of the settlings when the current is not in operation, and means for retaining said valve within the said conducting-pipe, substantially as specified.

658,176. **CAN-SOLDERING MACHINE.** EDWARD P. HOLDEN, Chicago, Ill., assignor to James L. Board, same place. Filed May 8, 1899. Serial No. 715,952. (No model.)

Claim.—1. In a can-soldering machine a fluxing-vat made up of a piece of angle-iron in which the end of the can rolls, a groove in the bottom of said vat, a receptacle above the vat with means for admitting a continuous stream of flux into the vat and a receptacle to receive the flux at the discharge end of the vat, substantially as described.

2. In a can-soldering machine a fluxing-vat through which the can is rolled provided with means for admitting a continuous stream of flux to the vat at its forward end the bottom of said vat provided substantially at its end with a discharge-orifice and the end of the vat inclined slightly upward beyond the orifice, substantially as described.



3. In a can-soldering machine the combination with ways along which the can is rolled of pusher-arms extending horizontally behind each can, each of said arms provided with an antifriction-roller, a stationary rack-bar adjacent to the path of each arm and a pinion connected with the roller and adapted to engage the rack-bar, substantially as described.

4. In a can-soldering machine a soldering-vat and an auxiliary vat adjacent thereto, a partition between the two and a discharge-orifice between the two, said orifice having its surface tinned, substantially as described.

5. In a can-soldering machine a solder-vat and an auxiliary vat adjacent thereto, a partition between the two and a discharge-orifice between the two said orifice having a soft-metal lining coated with tin, substantially as described.

658,177. **NECKWEAR-RETAINER.** WILLIAM O. HORR, New York, N. Y. Filed May 21, 1900. Serial No. 17,329. (No model.)



Claim.—A neckwear-retainer formed of a bar of light and pliable material with an opening therein, and a separate attaching device thereon consisting of a downwardly-extending doubled shank, and an upwardly-extending bill, the latter being continuous of one of the limbs of said shank, the limbs of the shank embracing said bar, the top bend of the limbs of the shank resting downwardly on the top wall of said opening and the bottom bend of the bill resting upwardly against the bottom of said bar.

658,178. **SMOKE-COOLER AND NICOTIN-EXTRACTOR FOR TOBACCO-PIPES.** WILLIAM B. HUGHES, Newark, N. J., and JOHN C. RAE, New York, N. Y. Filed Apr. 17, 1900. Serial No. 13,181. (No model.)



Claim.—A smoke-cooler and nicotin-extractor for tobacco-pipes, consisting, essentially, of a rod adapted to be arranged in a duct portion of the pipe, said rod having in its peripheral surface a multiplicity of channels or ducts forming with the inner surface of said duct portion of the

pipe a series of smoke-passages for diffusing and cooling the smoke, and means at or near one or both ends of said rod for collecting and extracting the nicotin or other objectionable matter, constructed to provide an annular passage directly around said rod and across the said channels or ducts, at right angles thereto, substantially as and for the purposes set forth.

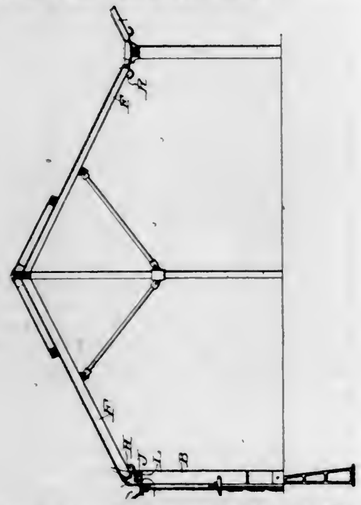
658,179. RUBBER-DAM CLAMP. JAMES W. IVORY, Philadelphia, Pa. Filed May 21, 1900. Serial No. 17,395. (No model.)



Claim.—1. In a rubber-dam clamp, a tooth engaging and clamping jaw having an opening therein and a reciprocatory dam-holding tongue in said opening.

2. In a rubber-dam clamp, a tooth engaging and clamping jaw with an opening therein and a reciprocatory dam-holding tongue in said opening, said tongue being provided with means for controlling the same in said opening.

658,180. GREENHOUSE. KIMBEY M. JENNINGS, Philadelphia, Pa. Filed Mar. 19, 1900. Serial No. 9,227. (No model.)



Claim.—1. In a greenhouse, a beam having an internally-projecting trough, an outer gutter, and a depending web common to said gutter and trough, said web having slots therein, whereby the adjustment of said gutter, trough and web can be simultaneously effected.

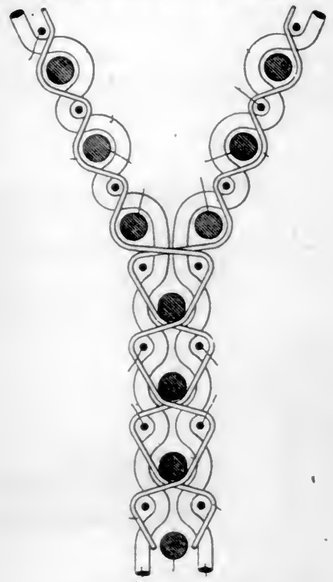
2. In a greenhouse, a beam or frame having an offset whereby a ledge is formed for supporting the rafters or roof, an internal trough secured to said beam, and located within the greenhouse, a depending web common to said offset and trough, and having slots therein for the reception of fastening devices whereby the adjustment of said offset, trough and web can be simultaneously effected.

3. In a greenhouse, a beam having an offset portion whereby a ledge or abutment is formed for the rafters or roof, thereby allowing screws to be inserted in the cross-grain of the wood thereof, an internal trough forming a continuation of said ledge and projecting within the greenhouse, a slotted web common to said ledge and trough and depending therefrom, and fastening devices for said web, whereby said beam can be vertically adjusted according to requirements.

4. In a greenhouse, a beam having an outer gutter, an internally-projecting trough, a ledge or offset intermediate said gutter and trough, a web common to said gutter, trough and offset, whereby said beam is strengthened and upright slots in said web, whereby said gutter, trough and offset are enabled to be simultaneously raised and lowered according to requirements.

658,181. WOVEN FABRIC. ROBERT JOHNSTON, Philadelphia, Pa. Original application filed June 29, 1900, Serial No. 22,023. Divided and this application filed Aug. 6, 1900. Serial No. 25,974. (No specimens.)

Claim.—A double-faced, homogeneous woven fabric, the main body of which is formed of upper and lower heavy figuring warp-threads, heavy stuffer-wefts shot between the warp-threads, sets of two light weft-threads between which the upper and lower warp-threads are arranged and light binder-warps inclosing one heavy stuffer-weft and one set of two light wefts to bind the fabric together and a double-ply frieze or border formed at the end of the fabric, one ply of said border being formed of alternate shots of a heavy stuffer-weft and one light weft tied or bound together by one heavy warp and one light binder-warp, and the other ply of said border formed of alternate shots of an added heavy stuffer-weft and the other light weft tied or bound by the other heavy warp and the other light binder-warp, substantially as and for the purposes described.



658,182. TOY. SAMUEL W. KAPLAN, McKeesport, Pa. Filed May 28, 1900. Serial No. 18,198. (No model.)

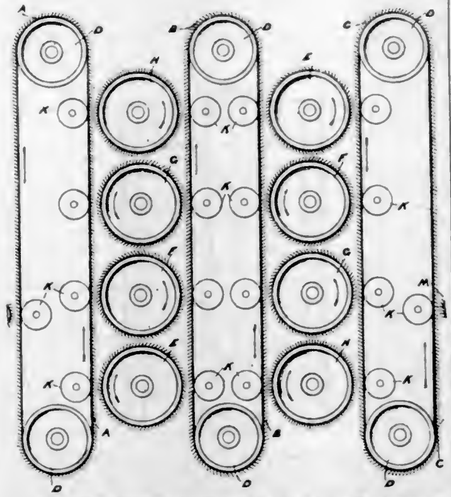


Claim.—1. An improved toy comprising a case formed with a longitudinal ridge, the sides of the case having complementary openings intersecting the ridge, shutters hinged at their lower ends and adapted to bear against each other at the upper ends and form a continuation of the ridge, springs for holding the shutters normally closed, actuating-strings, and a figure supported within the case and in line with the shutter-closed openings, substantially as shown and described.

2. An improved toy comprising a case formed with a longitudinal ridge, the sides of the case formed with complementary openings intersecting the ridge, shutters hinged at their lower ends and adapted to bear against each other at the upper ends and form a continuation of the ridge, the elastic bands for holding the shutters normally closed, the stops for limiting the movement of the shutters, the actuating-cords, the shelf within the case, and a figure on the shelf, substantially as shown and described.

658,183. MACHINERY FOR CARDING WOOL. JABEZ LEACH and FRIEND HEPWORTH, Huddersfield, England. Filed Mar. 28, 1900. Serial No. 10,429. (No model.)

Claim.—1. A carding-machine having a pair of endless carding-bands, suspended between rollers, arranged parallel to one another and at a distance apart, in combination with a number of carding-drums arranged between the pair of bands, to effect an alternate carding action upon the opposite adjacent surfaces of the carding-bands, substantially as herein set forth.

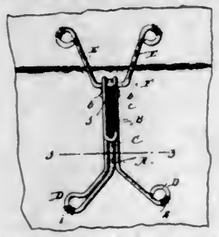


2. A carding-machine having a series of endless carding-bands, suspended between rollers, arranged parallel to one another and at a distance apart, in combination with a number of carding-drums arranged between each pair of bands, to effect an alternate carding action upon the opposite adjacent surfaces of the carding-bands, substantially as herein set forth.

3. A carding-machine consisting of two carding-bands A and B, supported upon rollers D, in combination with a set of carding-drums E, F, G, H, arranged between the bands A and B, together with supporting-rollers K and driving means, all arranged and acting substantially as herein set forth.

4. A carding-machine consisting of a series of carding-bands supported upon rollers D, in combination with sets of drums E, F, G, H, arranged between the carding-bands, together with supporting-rollers K and driving means, all arranged and acting substantially as herein set forth.

658,184. HOOK AND EYE. CHARLES LEIB, Philadelphia, Pa. Filed July 20, 1899. Serial No. 724,471. (No model.)



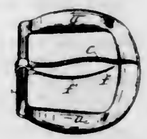
Claim.—1. The combination with a hook comprising the shank A, the hook proper or front member B, the tongue C, having the bow c, shoulders or enlargements formed on the side pieces of the shank a short distance from the bend in the hook and adjacent to the bow c, and the looped arms diverging laterally from the end of the shank and extending at an oblique angle thereto, of an eye having the straight connecting member F and the diverging looped side pieces E extending respectively from opposite ends of the member F at an oblique angle thereto, the eye being adapted to engage the hook by passing the straight connecting member of the eye between the bow of the tongue and the front member of the hook, substantially as described.

2. The combination with a hook comprising the shank A, the hook proper or front member B, the tongue C, and the looped arms diverging laterally from the end of the shank and extending at an oblique angle thereto, the tongue having a bow or swell which extends upwardly on a gradual incline toward the connecting bend between shank A and member B and close to the plane of member B, thence downwardly at a substantially-sharper incline, to the plane of the shank, and thence outwardly in the plane of the shank, of an eye having the straight connecting member F and the diverging looped side pieces E extending respectively from opposite ends of the member F at an oblique angle thereto, the eye being adapted to engage the hook by passing the straight connecting member of the eye between the bow of the tongue and the front member of the hook, substantially as described.

3. The combination with a hook comprising the shank A, the hook proper or front member B, the tongue C, having the bow c, shoulders or enlargements formed on the side pieces of the shank a short distance from the bend in the hook and adjacent to the bow c, and the looped arms diverging laterally from the end of the shank and extending at an oblique angle thereto, the tongue having a bow or swell which extends upwardly on a gradual incline toward the connecting bend between shank A and member B and close to the plane of member B, thence downwardly at a substantially-sharper incline, to the plane of the shank, and thence outwardly in the plane of the shank, of an eye having the straight connecting member E and the diverging looped side pieces F extending respectively from opposite ends of the member F at an oblique angle thereto, the eye being adapted to engage the hook by passing the straight connecting member of the eye between the bow of the tongue and the front member of the hook, substantially as described.

4. The combination, with a hook, of an eye having a straight connecting member adapted to engage the hook and of but slightly-greater length than the width of the shank of the hook, and outwardly-diverging looped side pieces extending respectively from opposite ends of said members and at an oblique angle thereto, thereby permitting the ready insertion of the hook while holding it from substantial lateral movement when engaged with the eye, substantially as described.

658,185. BUCKLE. ISAAC W. LEVI, Syracuse, N. Y. Filed July 5, 1900. Serial No. 22,470. (No model.)



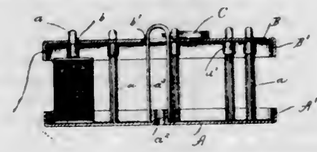
Claim.—1. The combination, with a belt-buckle, of a pin connected thereto and having the central portion of its length deflected inward from the plane of the buckle to pass through the underlying portion of the garment and confine the belt thereon as set forth.

2. The combination with a tongue-buckle, of a pin connected thereto and extending lengthwise thereof, and disposed to engage the immediately-underlying portion of the garment as and for the purpose set forth.

3. The combination, with a tongue-buckle, of a pin extending from the pivoted end of the tongue toward the opposite end of said tongue and disposed to engage the immediately-underlying portion of the garment and thereby confine the buckle in its position on the garment.

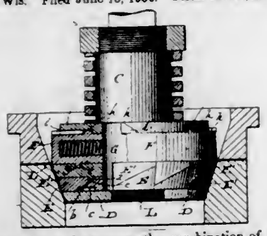
4. The combination, with a belt and tongue-buckle connected thereto, of a pin formed integral with the pivoted end of the tongue and extending lengthwise of the tongue and curved to pass through the underlying portion of the garment and entering at its free end the perforation of the belt, entered by the tongue of the buckle as set forth.

658,186. SPOOL-STAND. ISABELLE C. LINCOLN, Columbus, Ohio. Filed Dec. 4, 1899. Serial No. 739,162. (No model.)



Claim.—The herein-described improved spool-holder comprising in combination the following elements, to wit: the lower disk A flanged upwardly at its edge, upwardly-projecting pins *a* with shoulders *a'* near the upper ends thereof on said disk, a centrally-located and upwardly-projecting loop or staple on said disk A, the upper disk B, a depending flange B' thereon not reaching to the flange A', perforations in said disk B to fit on the upper ends of the pins *a*, the disk B being supported on the projections *a'*, and a perforation in said disk B through which the upper end of the loop or staple on the disk A passes to receive a lock, all substantially as shown and described.

658,187. DRAW-PRESS. HENRY MOHR and OTTO MOHR, Milwaukee, Wis. Filed June 13, 1900. Serial No. 20,132. (No model.)

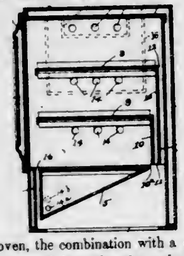


Claim.—1. In a draw-press, the combination of a taper die and blank-holder with a contractile punch comprising a shank, an annular taper-face plate on the shank, a series of taper-face sections arranged in pairs those in each pair being in bevel-match and movable radially on said plate, a corresponding series of spring-controlled blocks in union with the paired taper-face sections, a shank-fitting loose plate with which said blocks have radially-movable connection, and a spiral spring under tension around said shank against the latter plate.

2. In a draw-press, the combination of a taper die and a blank-holder with a contractile punch comprising a shank, an annular taper-face plate on the shank, a series of taper-face sections arranged in pairs, those in each pair being in bevel-match spring-controlled union and movable radially on said plate, a corresponding series of spring-controlled blocks in union with the paired taper-face sections, a shank-fitting loose plate with which said blocks have radially-movable connection, and a spiral spring under tension around said shank against the latter plate.

3. In a draw-press, the combination of a taper die and blank-holder with a contractile punch comprising a shank, an annular taper-face plate on the shank, a series of taper-face sections arranged in pairs, those in each pair being in bevel-match union and those opposing said plate having flange-and-recess engagement with the same to be radially movable thereon, a corresponding series of radially-recessed blocks in union with the paired taper-faced sections, spiral springs in the block-recesses abutting the shank, a shank-fitting loose plate having radial tongue-and-grooved connection with the blocks, a spiral spring surrounding said shank against the latter plate, and a spring-opposing tension-collar in screw-thread engagement with the aforesaid shank.

658,188. BAKING-OVEN. GEORGE R. MOON, Columbus, Ohio. Filed Aug. 2, 1900. Serial No. 25,624. (No model.)

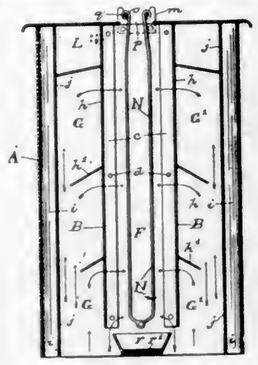


Claim.—In an oven, the combination with a double-walled casing having a doorway therein and doors therefor and a triangular deflector-casing supported in the lower portion of the oven-body, of parallel shelves arranged one above the other above said deflector, plates 10 extending downward from the rear ends of said shelves, said plates being so arranged with relation to each other to the rear wall of the inner casing and to the rear end of the deflector as to provide an opening between the lower portion of the oven-body and the space below the lower shelf and flues leading respectively to the spaces above the shelves, said opening and flues being graduated in size as described, central oven partition-plates 7 having perforations therein and forming a central flue 8, the external casing being provided with outlet-openings 1ª and the internal casing provided with openings 14, substantially as specified.

658,189. MEAT-BROILER. STEPHEN A. MORGAN, Baltimore, Md. Filed May 31, 1900. Serial No. 18,570. (No model.)

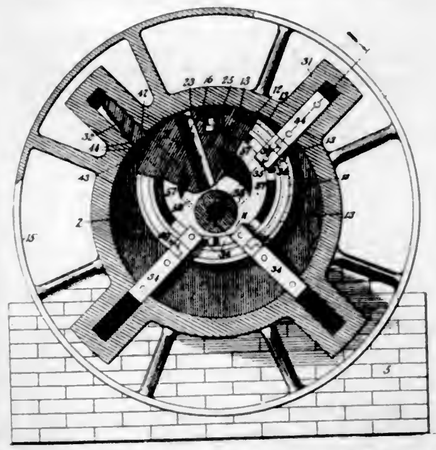
Claim.—1. A broiler comprising a case having an upright central chamber; a clamp or holder in said chamber; and two vertical heat-flues one on each side of the said chamber, each flue having a vertical series of openings leading to the chamber and a deflector-plate over each opening adapted to direct a portion of the heat-currents to said chamber, as set forth.

2. A broiler comprising a case having an upright central chamber; a cover on top of said case; a meat clamp or holder in said chamber suspended from said cover; two parallel upright walls B, one at each side of said chamber, each wall having a vertical series of openings leading to the chamber and a deflector-plate over each opening adapted to direct a portion of the heat-currents to said chamber; and a drip-pan in the bottom of the central chamber.



3. A broiler comprising a case having an upright central chamber; a cover on top of said case; a meat clamp or holder in said chamber suspended from said cover; two parallel upright walls B, one at each side of said chamber, each wall having a vertical series of openings leading to the chamber and a deflector-plate over each opening adapted to direct a portion of the heat-currents to said chamber; a drip-pan in the bottom of the central chamber; and insulated air-spaces, one being at each side of the heat-flues.

658,190. ROTARY ENGINE. CALVIN F. MOSS and SAMUEL A. IMBODEN, Leeper, Mo. Filed Feb. 3, 1900. Serial No. 4,529. (No model.)



Claim.—1. The combination with a piston and axle, of a cylinder surrounding the piston, sliding wings, and a self-adjusting saddle carried by each wing, substantially as described.

2. The combination with a stationary piston and axle, of a rotary cylinder surrounding the piston, wings carried by the cylinder and controlled in their movement by the piston, and a self-adjusting saddle carried by each wing and bearing against the piston, substantially as described.

3. The combination with a stationary piston and axle, of a rotary cylinder surrounding the same, wings carried by the cylinder and controlled in their movement by the piston, and a saddle having a rocking engagement with each wing, substantially as and for the purpose specified.

4. The combination with a stationary piston and axle, of a rotary cylinder surrounding the same, a wing carried by the cylinder and controlled by the piston and provided in its inner edge with a semicylindrical

seat, a saddle carried by the wing, and a rock-pin interposed between the saddle and wing, substantially as specified.

5. The combination with a stationary piston and axle, of a rotary cylinder surrounding the same, a wing carried by the cylinder and controlled by the piston, and a self-adjusting saddle carried by the wing and bearing against the piston and comprising relatively-movable sections, substantially as specified.

6. The combination with a stationary piston and axle, of a rotary cylinder surrounding the same, a wing carried by the cylinder and controlled by the piston, side bars on the wing moving in ways in the cylinder, and relatively-movable packing-sections connected with each of the side bars, substantially as described.

7. The combination with a stationary piston and axle, of a rotary cylinder surrounding the same, a wing carried by the cylinder and controlled by the piston, side bars on the wing movable in ways in the cylinder, and movable and self-adjusting packing-sections on each of the side bars, substantially as described.

8. The combination with a stationary piston and axle, of a rotary cylinder surrounding the same, a wing carried by the cylinder, side bars on the wing connected to the piston, relatively-movable packing-sections on each side bar, and a steam-actuated follower-plate for pressing the sections outward, substantially as described.

9. The combination with a stationary piston and axle, of a rotary cylinder surrounding the same, a wing carried by the cylinder, bars on the wing engaging the piston and each provided with a steam-passage, relatively-movable packing-sections on each side bar, and a steam-actuated follower-plate arranged behind the packing-sections and in front of the steam-passage, substantially as described.

10. The combination with a stationary piston and axle, of a rotary cylinder surrounding the same and carrying wings, an abutment seated in the piston and bearing against the cylinder and comprising relatively-movable sections, and a follower-plate arranged behind said sections, substantially as described.

11. The combination with a stationary piston and axle, of a cylinder surrounding the same and carrying wings, an abutment seated in a recess in the piston and bearing against the cylinder and comprising relatively-movable sections grooved on their inner faces, and a follower-plate provided with a guide-rib, substantially as and for the purpose specified.

12. The combination with a stationary piston, of a rotary cylinder surrounding the same, a movable abutment seated in the piston and comprising relatively-movable sections having dovetailed grooves in their inner surfaces, and a follower-plate provided with a dovetailed rib, substantially as and for the purpose specified.

13. The combination with a stationary piston and a rotary cylinder surrounding the same, of a movable abutment seated in a recess in the piston, a follower-plate behind the abutment, a steam-chamber under the follower-plate and a steam-supply passage communicating with said chamber, substantially as described.

14. The combination with a stationary piston, of a rotary cylinder surrounding the same, a movable abutment connected with the piston, a follower-plate behind the abutment, a head connected by a reduced neck with the follower-plate and arranged in a recess forming a steam-chamber, and a steam-supply passage communicating with said steam-chamber, substantially as described.

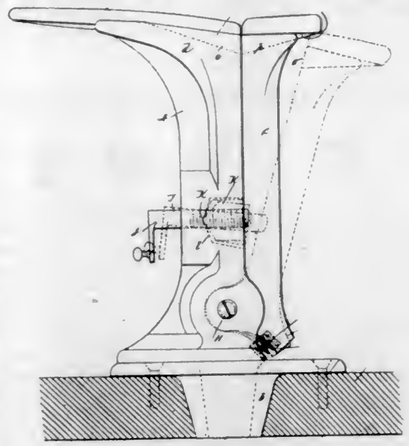
15. The combination with a stationary piston, of a rotary cylinder surrounding the same, a movable abutment seated in a recess in the piston, a follower-plate behind the abutment, a head connected with said plate and arranged in a recess in the piston, a steam-inlet passage leading thereto, and an exhaust-passage leading therefrom, substantially as described.

16. The combination with a rotary cylinder, of a stationary piston provided with an inclosed segmental exhaust-passage extending parallel with the periphery of the piston at one side and having one or more ports leading therefrom to the chamber within the cylinder, substantially as described.

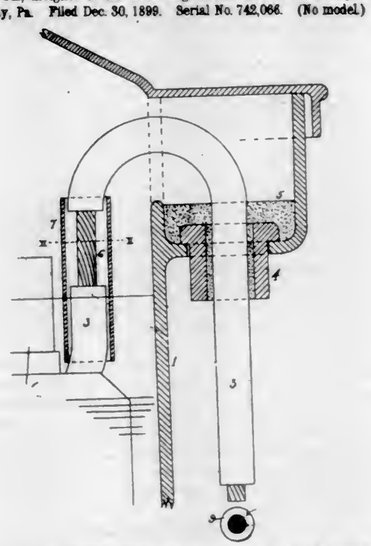
17. The combination with a stationary axle and piston, of a rotary cylinder surrounding the piston and having hub portions encircling the axle, sectional cylindrical bearing-sleeves interposed between the hub portions and the axle, adjusting-screws passing through the hub and pressing against the sectional bearing-sleeves, and oil-passages leading to the inner surfaces of said sleeves, substantially as described.

658,191. WORK-SUPPORT. JOHN ROBINSON, Gateshead, and GEORGE E. GRAVES, Newcastle-upon-Tyne, England. Filed Sept. 29, 1899. Serial No. 732,047. (No model.)

Claim.—An improved work-support, comprising a main upright carrying the foot-piece, a supplemental upright pivotally connected therewith and carrying a heel-piece, a cushion or spring operating to normally force said uprights together, a nut fixed to said supplemental upright and having a rocking bearing in said main upright, and an adjusting-screw working through said nut and bearing against said supplemental upright, and provided with an operating-crank, whereby said main and supplemental uprights may be relatively separated, substantially as shown and described.



658,192. ELECTRIC CONDUCTOR. FREDERICK C. SUTTER, Pittsburg, Pa., assignor to the Pittsburg Transformer Co., of Allegheny County, Pa. Filed Dec. 30, 1899. Serial No. 742,066. (No model.)



Claim.—1. In stranded electrical conductors, a device for preventing the passage of liquids along said conductor consisting of a solid, integral section in said conductor.

2. In stranded cables, a device for preventing the passage of liquids along said cables consisting of a section of said cable having the interstices between the strands filled with solder or like material.

3. In stranded cables provided with an insulating-covering, a device for preventing the passage of liquids along said cables consisting of a section of said cable devoid of insulating-covering and having the interstices between the strands filled with solder or like material.

4. In electrical conductors having an insulating-covering, a device for preventing the passage of liquids along said cables consisting of a section of said conductor devoid of said covering substantially as and for the purpose described.

5. In electrical conductors having a porous insulating-covering, a device for preventing the passage of liquids along said cables consisting of a section of said conductor from which said covering is omitted and a non-porous insulating-covering for said section.

6. In stranded cables provided with a porous insulating-covering, a

section devoid of such covering and having the interstices between the strands filled with solder or like material, and a non-porous insulating-covering for said section.

7. In electrical transformers, the conducting-cables leading from said transformer having the insulation omitted from a section thereof and the interstices between the strands of said section filled with solder or like material.

658,193. ARTIFICIAL TOOTH. CHARLES S. TALBERT, Minneapolis, Minn. Filed Feb. 9, 1900. Serial No. 4,597. (No model.)



Claim.—1. As a new article of manufacture, an artificial tooth, comprising a facing having locking or anchoring pins, a comparatively-thin backing-plate fitted over said facing and having holes to receive said pins, an anchoring-block provided on said backing and having holes registering with the holes therein, and wherein the ends of said pins are secured and a suitable fitting provided upon each side of said block, covering and concealing the edges and corners of the same and forming a smooth rounded surface on the rear of the tooth.

2. As a new article of manufacture, an artificial tooth, comprising a facing having locking or anchoring pins, a comparatively-thin backing-plate fitted over said facing and having holes to receive said pins, and an anchoring-block provided on said backing, and having holes registering with the holes in said backing and adapted to receive the ends of said pins and said block being provided with a groove connecting the holes therein and wherein the ends of said pins are clenched, substantially as described.

658,194. PRUNING IMPLEMENT. CARROLL TIFFANY, Scranton, Pa. Filed Apr. 20, 1900. Serial No. 13,574. (No model.)

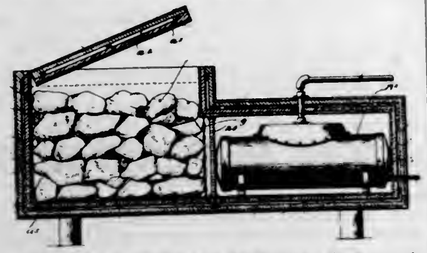


Claim.—1. In a pruning implement, the combination of pivotal blades each formed integral with front and rear extensions, one of said extensions serving as a handle and the other being bent back over the blade to form a gripping-jaw, said jaws having their free ends secured to the blades whereby the jaws are rigidly held.

2. A pruning implement including a pair of blades pivoted together said blades having integral rigid extensions from their points returned rearwardly over the blades and secured by the pivot-bolt of the latter.

3. A pruning implement consisting of blades pivoted together at their point of crossing said blades having rearwardly-extending shanks or handles and having their points drawn outward and returned over the blades to form rigid gripping or holding jaws for the severed article, and said jaws having their free ends formed with eyes or holes adapted to receive the pivot-bolt of the blades.

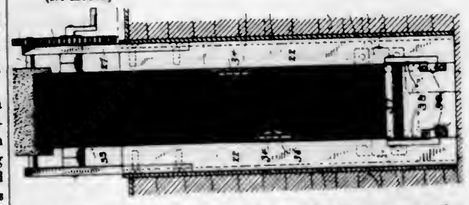
658,195. SOLAR HEATER. HENRY TUDOR, Boston, Mass. Filed Feb. 12, 1900. Serial No. 4,889. (No model.)



Claim.—1. In an apparatus of the class described, a heater comprising a compartment having an open top and constructed to prevent radiation of heat, heat-absorbing material in said compartment, to be heated by exposure to the sun, a closed compartment constructed to prevent heat radiation and containing the device to be heated, means to control communication between said compartments, and a non-heat-radiating cover to be applied to the open compartment when its contents have been heated.

2. In an apparatus of the class described, a closed compartment to contain the device to be heated, an open compartment containing heat-absorbing material to be heated by exposure to the sun, means to control communication between said compartments, whereby absorbed heat may pass to the closed compartment, a double-walled heat-insulating covering for said compartments inclosing a dead-air space, to prevent radiation of heat from both compartments, and a removable cover for the heat-absorbing compartment, also constructed to prevent heat radiation.

658,196. ENDLESS SCREEN FOR GATE-HOUSES. GEORGE E. WHITNEY, Stamford, Conn. Filed June 6, 1900. Serial No. 19,304. (No model.)



Claim.—1. The combination with the walls of a waterway and a frame adapted to slide vertically in said waterway and having an opening through it, of drums journaled upon said frame and an endless screen carried by the drums and covering the opening.

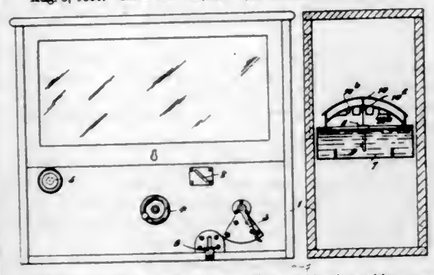
2. The combination with the walls of a waterway and a frame adapted to slide vertically in said waterway and having an opening through it, of drums journaled upon said frame, an endless screen carried by said drums and a rotary brush actuated from one of the drums and acting to clean the screen when the drums are rotated.

3. The combination with a frame having an opening through it, of drums journaled upon said frame, an endless screen carried by said drums and a swinging roller which engages both the screen and the frame at the lower end of the opening.

4. The combination with a frame having an opening through it and drums journaled upon said frame, said drums having recesses at their edges and sprocket-teeth, of sprocket-chains lying in the recesses and engaging the sprocket-teeth and an endless screen carried by the sprocket-chains.

5. The combination with a frame having an opening through it and drums journaled upon said frame, said drums being provided with recesses at their edges and sprocket-teeth in said recesses and one of said drums carrying a gear-wheel, of sprocket-chains lying in the recesses and engaging the sprocket-teeth, an endless screen carried by the sprocket-chains and a rotary brush having a gear-wheel engaging the gear-wheel upon one of the drums, whereby as the chain is moved by rotation of the drums the brush will also be rotated and will clean the screen.

658,197. GAME. ROBERT E. WICKES, London, England. Filed Aug. 3, 1899. Serial No. 726,049. (No model.)

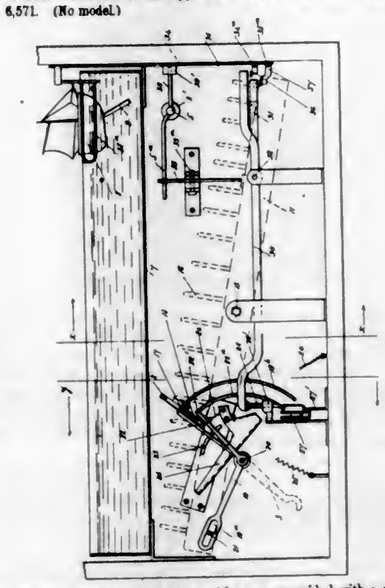


Claim.—1. In a game apparatus, the combination, with a course provided with obstructions, a movable object, and means for moving the object from one end of the course to the other; of a series of magnets arranged longitudinally of the course, and means for moving the said magnets laterally of the course whereby the said object may be guided so as to pass the said obstructions, substantially as set forth.

2. In a game apparatus, the combination, with a course provided with obstructions, and a movable object; of a pivoted bar provided with a series of magnets arranged longitudinally of the course and operating to move the object longitudinally of the course according to the direction in which the said bar is tilted, and means for moving the said bar laterally whereby the said object may be guided so as to pass the obstructions, substantially as set forth.

3. In a game apparatus, the combination, with a course provided with obstructions, and a movable object; of a steering-screw journaled transversely of the said course, and a bar provided with a series of magnets arranged longitudinally of the course, said bar being pivoted on the said screw and being moved laterally when the screw is revolved so as to guide the object past the said obstructions, substantially as set forth.

658,198. COIN-CONTROLLED MECHANISM. ROBERT E. WICKES, London, England. Original application filed Aug. 3, 1899, Serial No. 726,049. Divided and this application filed Feb. 26, 1900. Serial No. 6,571. (No model.)



Claim.—1. The combination, with a case provided with a coin-slot in its side, and an oscillatory operating-shaft in the case; of a lever mounted on the said shaft and provided with a coin-pocket which is open at its front part which comes next to the said coin-slot and has a transverse slot through its rear part, a curved arm 19^b projecting from the said lever and preventing a coin from being inserted through the said coin-slot when the coin-pocket is not in line with it, and an arm secured to the said shaft at the rear of the coin-pocket and on the opposite side of the said lever from the said coin-slot, said arm being provided with a lateral projection which passes through the said transverse slot when there is no coin in the pocket, substantially as set forth.

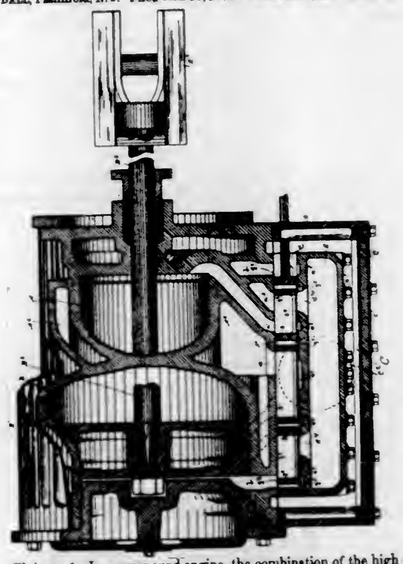
2. The combination, with a case provided with a coin-slot in its side, and an operating-shaft in the case; of a lever mounted on the said shaft and provided with a coin-pocket which is open at its front part which comes next to the said coin-slot and has a transverse slot through its rear part, an arm secured on the said shaft at the rear of the coin-pocket and on the opposite side of the said lever from the said coin-slot, said arm being provided with a lateral projection which passes through the said transverse slot when there is no coin in the pocket, and a curved arm 22^a carried by the said arm and preventing a coin from being inserted into the said coin-pocket after the said projection has passed through the said transverse slot, substantially as set forth.

3. The combination, with a coin-pocket formed of two parts pivoted at their lower ends, of means for turning the said parts on their pivots independently, whereby the coin is discharged on one side or the other as prearranged, substantially as set forth.

4. The combination, with a coin-pocket formed of two pivoted parts; of two levers provided with bars, intermediate mechanism operatively connecting the said levers with the respective parts of the coin-pocket, means for operating one lever, and a movable piece fitting between the said bars and constraining the second lever to be operated by the motion of the first lever, substantially as set forth.

5. The combination, with a coin-pocket formed of two pivoted parts; of two slidable plungers pivoted to the respective parts, two pivoted levers operating the respective plungers, two bell-crank levers operating the said levers respectively, means for moving one bell-crank lever and thereby discharging the coin from one half of the coin-pocket, and a movable piece for coupling the said bell-crank levers and constraining the other part of the coin-pocket to be operated before the first part, substantially as set forth.

658,199. STEAM-ENGINE. FRANK H. BALL and FREDERICK O. BALL, Plainfield, N. J. Filed Jan. 30, 1900. Serial No. 3,350. (No model.)



Claim.—1. In a compound engine, the combination of the high and low pressure cylinders arranged in cross compound relation; the double-acting piston mechanism for each; a common cross-head for said piston mechanism; a single valve for controlling the flow of steam to and from the said high and low pressure cylinders; and a passage exterior to the valve forming a receiver for conveying the steam from the end of the high-pressure cylinder exhausting to the opposite end of the low-pressure cylinder, said passage being also controlled by said valve.

2. In a compound engine, the combination of the high and low pressure cylinders arranged in cross compound relation; double-acting piston mechanism for each; a common cross-head for said piston mechanism; a steam-chest; a receiver arranged within the steam-chest between the high and low pressure cylinders; a single valve for controlling the flow of steam to and from the high and low pressure cylinders and to and from said receiver.

3. In a compound engine, the combination of the high and low pressure cylinders arranged in cross compound relation, double-acting piston mechanism for said cylinders, a common cross-head for said piston mechanism, a steam-chest, a receiver arranged within said steam-chest between the high and low pressure cylinders, and a valve mechanism for controlling the flow of steam from the high and low pressure cylinders and to and from said receiver.

4. In a compound engine, the combination of a high and a low pressure cylinder arranged in cross compound relation; double-acting piston mechanism for said cylinders; a common cross-head for said piston mechanism; a steam-chest; a receiver arranged within said steam-chest and provided with passages for conveying steam from the end of the high-pressure cylinder, exhausting to the opposite end of the low-pressure cylinder; and a valve mechanism for controlling the flow of steam to and from said high and low pressure cylinders and to and from said receiver.

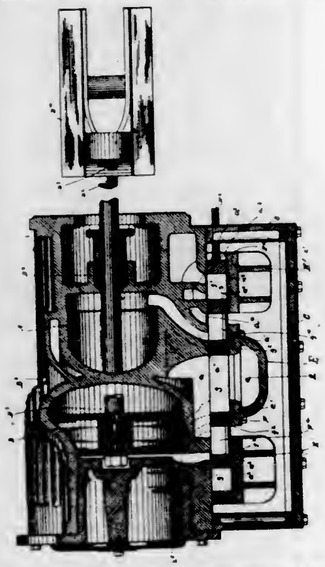
5. In a compound engine, the combination of a high and low pressure cylinder arranged in cross compound relation; double-acting piston mechanism for said cylinders; a common cross-head for said piston mechanism; a steam-chest; a receiver arranged within said steam-chest; and provided with passages for conveying steam from the end of the high-pressure cylinder exhausting, to the opposite end of the low-pressure cylinder; and a single valve arranged to control the flow of steam to and from said high and low pressure cylinders and to and from said receiver.

6. In a compound engine, the combination of a high and low pressure cylinder; steam-chest having the ports *a a'* and *b*, leading to the

steam-supply; the high-pressure cylinder and the low-pressure cylinder respectively; the receiver E, arranged over the valve-surface of the steam-chest and having the ports, e', said receiver having passages for conveying steam by the port, e', from the end of the high-pressure cylinder exhausting, to the opposite end of the low-pressure cylinder; the valve, F, having cross-bars f and f^2, arranged relatively to the ports in the steam-chest and receiver, to effect a passage of steam from the exhaust end of the high-pressure cylinder to the opposite end of the low-pressure cylinder.

7. In a compound engine, the combination of a high and a low pressure cylinder, A B; piston mechanism arranged in said cylinders; a common cross-head for said piston mechanism; steam-chest, C, having the ports, a, a', b, to the steam-supply, the high-pressure cylinder and the low-pressure cylinder respectively; the parallel bars, e, e'; the receiver E, arranged on said bars and having the ports, e', and said receiver forming a connecting-passage therein; the valve, F, arranged to operate between the inner surface of receiver, E, and the valve-surface of the steam-chest, said valve having the bars, $f f^2$, arranged in relation to the ports, e', a, a', b, as described.

658,200. STEAM-ENGINE. FRANK H. BALL and FREDERICK O. BALL, Plainfield, N. J. Filed Jan. 30, 1900. Serial No. 3,351. (No model.)



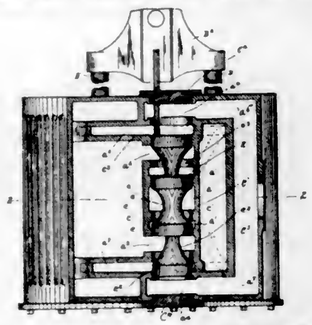
Claim.—1. In a compound engine, the combination of the high and low pressure cylinders arranged in cross compound relation; double-acting piston mechanism therefor; a common cross-head for said piston mechanism; a steam-chest and a single valve for controlling the flow of steam to and from said high and low pressure cylinders, said valve being arranged to admit steam to the high-pressure cylinder and to exhaust steam from the high-pressure cylinder into the steam-chest and to admit steam from the steam-chest to the low-pressure cylinder.

2. In a compound engine, the combination of the high and low pressure cylinders arranged in cross compound relation; double-acting piston mechanism therefor; a common cross-head for said piston mechanism; and a valve comprising a high-pressure part and a low-pressure part, the high-pressure part comprising the chamber, f, and the low-pressure part comprising the chambers, f', f', said chambers and their walls being so arranged relatively to the ports as to admit steam through the chamber, f, to the high-pressure cylinder, exhaust steam to the steam-chest, and admit steam to the low-pressure cylinder and exhaust steam through the chamber, f'.

3. In a compound engine, the combination of the high and low pressure cylinders; piston mechanism therefor; a common cross-head for said piston mechanism; a valve comprising a high-pressure part and a low-pressure part, the high-pressure part comprising the chamber, f, and the low-pressure part comprising the chambers, f', f', said chambers and their walls being so arranged relatively to the ports as to admit steam through the chamber, f, to the high-pressure cylinder, exhaust steam to the steam-chest, admit steam to the low-pressure cylinder and exhaust steam through the chamber, f'; and the pressure-plates, E and E', arranged over the valve and forming the closure for the chambers, f, f'.

4. In a compound engine, the combination of the cylinders, A and B; piston mechanism therefor; a commou cross-head attached to the said piston mechanism; steam-chest C, having in its valve-surface the port, a, extending from the steam-inlet, the ports a', a', leading to the high-pressure cylinder, the ports, a^2, a^2, leading to the low-pressure cylinder, and the ports, a^3, a^3, leading to the final exhaust; the valve F, comprising the high-pressure part, F', and the low-pressure part, F^2; the high-pressure part comprising the chambers, f, with the walls, f^3, f^3, the low-pressure part comprising the chambers, f', and the inside walls, f^3, said chambers and walls being arranged relatively to the several ports as described; and the pressure-plates, E, and E'.

658,201. STEAM-ENGINE. FRANK H. BALL and FREDERICK O. BALL, Plainfield, N. J. Filed Jan. 30, 1900. Serial No. 3,352. (No model.)



Claim.—1. In a compound engine, the combination of the high and low pressure cylinders arranged in cross compound relation; double-acting piston mechanism therefor; a common cross-head for said piston mechanism; a cylindrically-shaped valve for controlling the flow of steam to and from said high and low pressure cylinders; and a passage exterior to the valve for conveying steam from the end of the high-pressure cylinder exhausting, to the opposite end of the low-pressure cylinder, said passage being also controlled by said valve.

2. In a compound engine, the combination of the high and low pressure cylinders arranged in cross compound relation; double-acting piston mechanism therefor; a common cross-head for said piston mechanism; a receiver between the high and low pressure cylinders; a single piston-valve for controlling the flow of steam to and from the high and low pressure cylinders and to and from said receiver.

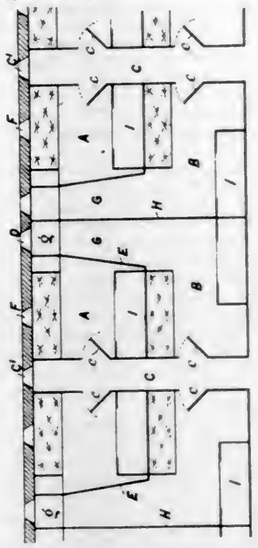
3. In a compound engine, the combination of the high and low pressure cylinders; piston mechanism therefor; a common cross-head for said piston mechanism; a cylindrically-shaped valve-chest having the ports, a, leading to the steam inlet or port, ports a', a', leading to the high-pressure cylinder, ports, a^2, a^2, leading to the steam chest or receiver and ports, a^3, a^3, leading to the low-pressure cylinder; the valve, E, having the walls, e and e^2 thereon, forming the chambers, e' and e^3, in the relation to said ports, as described.

658,202. VESSEL FOR CARRYING PASSENGERS. ARTHUR W. BIBBY, Liverpool, England. Filed June 4, 1900. Serial No. 19,090. (No model.)

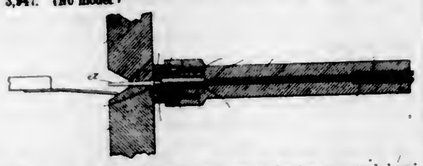
Claim.—1. A passenger vessel having a transverse passage C, a port-hole C', opening into same, a shorter state-room A, next the side of the vessel, a port-hole F opening into same, a longer state-room B, adjoining the room A at its side farthest from the side of the vessel, a passage G, extending from the room B past the end of the room A to the side of the vessel, a port-hole D opening into said passage G, and separate entrance-doors to the rooms A and B, substantially as and for the purposes set forth.

2. A passenger vessel having transverse passages C, leading to the side of the vessel, port-holes C', opening into the respective passages C, a transverse partition H dividing the space between the passages C, two short state-rooms A next to the side of the vessel and having doors opening to the respective passages C, port-holes opening into the respective rooms A, long state-rooms B, adjoining the respective rooms A at their sides farthest from the side of the vessel and having doors opening to the respective passages C, passages G, leading from the respective rooms B, between the rooms A and partition H, to the side of the vessel, and port-holes D at the ends of the respective passages G, substantially as and for the purpose set forth.

3. A passenger vessel having a transverse passage C, leading to the side of the vessel, a port-hole opening into same, an outer state-room next the side of the vessel with a door opening to the passage C, a port-hole opening into said outer state-room, an inner state-room, adjoining the outer room and of greater length than the latter, a passage extending from the prolongation of said inner room, back of the outer room, to the side of the vessel, and a port-hole opening into said passage, substantially as and for the purpose set forth.



658,203. APPARATUS FOR HEADING NAILS OR TACKS. ALBERT H. BRIGHAM, Whitman, Mass. Filed Feb. 5, 1900. Serial No. 3,947. (No model.)



Claim.—1. In a heading-die, a die-carrier having a central, longitudinal bore, a removable holder held therein and projecting from the front of the die-carrier to form a guide, headed side guides rigidly secured to the die-carrier, a die freely movable upon said side guides and recessed to receive the projecting end of the holder, said die having a head-forming opening, a heading-pin extended through the holder, and means to secure the heading-pin therein, the projecting end of the holder guiding and preventing lateral movement of the die.

2. In a heading-die, a die-carrier having a longitudinal bore, a holder removably seated therein and projecting from the front of the carrier, headed guides at the sides of the holder, rigidly secured to the die-carrier, a spring-controlled die freely movable upon said guides and the projecting end of the holder and having a head-forming opening, a heading-pin inserted in the holder, and means to retain said heading-pin therein, the projecting end of the holder guiding and preventing lateral movement of the die.

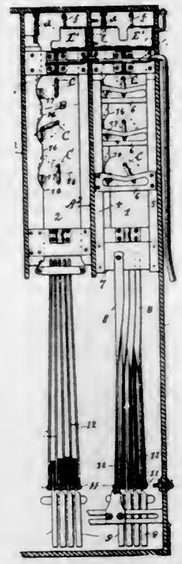
3. In a heading-die, a die-carrier having a central bore, a removable tubular holder seated therein, headed side guides rigidly secured to the die-carrier, a die freely movable upon said guides and having a head-forming opening, a heading-pin inserted in the holder, and means to retain said pin therein.

4. In a heading-die, a die-carrier having a central bore, a removable tubular compressible holder seated therein, headed side guides rigidly secured to the die-carrier, a die freely movable upon said guides and having a head-forming opening, a heading-pin inserted in the holder, means to compress the holder upon the heading-pin, and means to longitudinally adjust and take up end thrust of the heading-pin.

5. In a heading-die, a die-carrier having a central bore, a removable tubular holder seated therein and projecting beyond the end of the carrier, headed side guides rigidly secured to the carrier adjacent the holder, a spring-controlled die freely movable upon the side guides, having a head-forming opening and counterbored to receive the end of the holder, a heading-pin inserted in and projecting beyond the end of the holder, to enter the die, and means to retain the heading-pin in position in the holder.

6. In a heading-die, a die-carrier having a central bore threaded at its rear end, a removable tubular holder seated in the front end of the bore, a heading-pin inserted in the holder, means to retain the pin therein, means to longitudinally adjust and take up end thrust of the heading-pin, and a check-screw in the threaded part of the bore to lock said latter means in adjusted position.

658,204. VOTING-MACHINE. CHRIST CHRISTENSEN, Oakland, Cal. Filed Feb. 5, 1900. Serial No. 4,017. (No model.)



Claim.—1. In a voting-machine, the combination with the voting mechanism, of a series of voting-stems, there being a stem for each candidate to be voted for, a series of movable lock devices between which the stems work, each lock device being pivoted to swing laterally, and a series of slide-heads, a voting-stem pivoted to each slide-head, said stem being designed to displace the movable lock devices upon the slide-heads being raised.

2. In a voting-machine, the combination with a series of vertically-movable slide-heads, there being a slide-head for each candidate to be voted for, a stem pivoted to each slide-head, a series of pivoted lock devices between which the stems work, and of means for locking the slide-heads against movement.

3. In a voting-machine, the combination with a series of vertically-movable slide-heads, a lock device for the slide-heads, means for releasing said lock devices, a stem pivoted to each slide-head, a series of pivoted lock devices between which the stems work, and of a voting-stem for each slide-head.

4. The combination with a series of voting-keys, a slide-head operated by each key, a lock device for the slide-heads, a stem pivoted to each slide-head, a series of pivoted lock devices between which the stems work, and of mechanism for raising the lock device for the slide-heads in order that the heads may be free to move upward to cast a vote and lowering the same to force the slide-heads downward to complete the act of voting and hold the same locked against movement.

5. The combination with the turnable voting-keys, of a vertically-movable slide-head connected to each key, a stem pivoted to each slide-head so as to have lateral movement independent of the movement of the slide-head, and of a series of pivoted lock devices between which the stems of the slide-heads work.

6. In a voting-machine, the combination with a series of turnable voting-keys, of a slide-head connected to each voting-key, a stem pivoted to each slide-head, a device for holding the slide-heads against movement, a series of pivoted lock devices between which the stems work, stops for limiting the lateral movement of the lock devices, and of mechanism for releasing the lock device for the slide-heads and resetting the same.

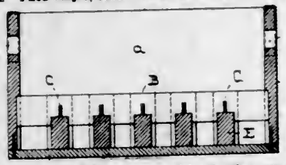
7. In a voting-machine, the combination with a series of vertically-movable slide-heads, of a stem pivoted to each slide-head, a series of pivoted lock devices or rolls between which the stems work, a voting-key

connected to each slide-head and by means of which the slide-heads are raised, a lock device for the slide-heads, and of means for releasing the lock device so as to permit of the slide-heads being raised and for resetting the same to lock the heads after the casting of the vote.

8. In a voting-machine, the combination with a series of independently movable and turnable voting-keys, of a vertically-movable slide-head for each voting-key, a stem pivoted to the lower end of each slide-head, a series of pivoted lock devices between which the stems work and which are displaced with the raising and lowering of the stems carried by the slide-heads, and of a registering or index device actuated by each voting-key.

9. In a voting-machine, the combination with a series of independently-movable voting-keys, of a registering or index device actuated by each voting-key, a vertically-movable slide-head carried by each voting-key, a stem pivoted to each slide-head, a series of pivoted lock devices between which the stems work and which are displaced as the stems are raised and lowered, and of means for holding the voting-keys locked against movement in but one direction when the slide-heads are lowered and against being completely turned when the heads are raised.

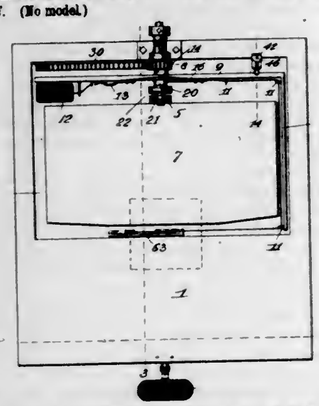
658,205. **BOTTLE-CARRIER.** EDWARD H. N. CLARKSON, Laurasville, Md. Filed July 9, 1900. Serial No. 22,899. (No model.)



Claim.—1. In a bottle-carrier comprising bottle-pockets formed by partitions at right angles, and posts situated where the partitions intersect, which are slotted out to receive the said partitions, the said partitions cut out at the lower edge to form spaces of a width equal to the distance across the corners of the posts, so as to admit of the partitions being passed down and over the posts below the slots in which the partitions are seated, substantially as, and for the purpose specified.

2. In a bottle-carrier comprising bottle-pockets formed by partitions at right angles, and posts situated at the intersection of the partitions, which posts are slotted to receive the said partitions, the said posts grooved longitudinally at their corners below the bottom of the slots in which the partitions rest, and the said partitions cut out so as to clamp the posts across their corners, the edges of the partitions adjoining the posts resting in the said grooves, substantially as, and for the purpose specified.

658,206. **PARCEL-TYING MACHINE.** JOHN C. COLLINS, Kane, Ill., assignor of two-thirds to Richard Huitt, Upper Alton, Ill., and Harry Lindenbaum, St. Louis, Mo. Filed Feb. 17, 1899. Serial No. 705,927. (No model.)



Claim.—1. A parcel-tying machine, comprising a table having an opening therein, a secondary table arranged in said opening and spaced from the other table upon which tables the parcel may be shifted and the twine carried about it at different angles, a rotatable arm for carrying the twine around the parcel, and a means for severing the twine after it has been carried around the parcel, substantially as specified.

2. A parcel-tying machine, comprising a table having an opening therein, a secondary table arranged in said opening and spaced from the other table, a rotatable arm for carrying the twine around the parcel, a means for severing the twine after it has been passed around the parcel, a means for securing a fastening-clip upon the ends of said twine, and a means for holding the free end of said twine after it has been severed, substantially as specified.

3. A parcel-tying machine, comprising a table having an opening, a secondary table in said opening and spaced from the other table, the said tables forming a flat and unobstructed surface upon which the package to be tied may be shifted and turned at different angles, a pivotally-mounted twine-carrying arm for passing the twine around the package to be tied, means for operating said twine-carrying arm, a binding-clip-feeding mechanism for feeding the clips to clamp the twine, and means for operating said binding-clip-feeding mechanism for clamping the same over the twine, substantially as specified.

4. In a parcel-tying machine, a table having an opening therein, a secondary table arranged in said opening, a twine-carrying arm rotatably held between said tables, means whereby the free end of the twine carried by the arm is held at a point in front of the second-mentioned table, and means whereby the twine-carrying arm is rotated in the space between the tables, substantially as specified.

5. In a parcel-tying machine, a table, a rotatably-arranged bar, an arm integral with said bar, a ball of twine carried by the bar, means whereby said bar and arm are rotated to pass the twine around the parcel to be tied, means for holding the free end of the twine, means whereby clips are clamped upon the free end of the twine and the body of the twine after the same has been passed around the parcel, and means whereby the twine is severed after it has been passed around said parcel, substantially as specified.

6. In a parcel-tying machine, a twine-holding device, comprising a rotatable shaft, a plurality of radially-arranged arms on said shaft, hooks formed integral with the outer ends of said arms, short rods rotatably arranged in said hooks and having laterally-bent ends, lugs formed integral with said rods within said hooks, and leaf-springs having their outer free ends bearing upon the laterally-bent ends of the rods, substantially as specified.

7. In a parcel-tying machine, the combination with a table and a rotatably-arranged twine-carrying arm, of a twine-holding device comprising a rotatable shaft, a plurality of radially-arranged arms on said shaft, hooks formed integral with the outer ends of said arms, short rods rotatably arranged in said hooks and having laterally-bent ends, lugs formed integral with said rods within said hooks, and leaf-springs having their outer free ends bearing upon the laterally-bent ends of the rods, substantially as specified.

8. In a parcel-tying machine, comprising a table, a rotatably-arranged twine-carrying arm, a suitably-bent fulcrumed arm for receiving the shock of the sudden stoppage of the twine-carrying arm, a pair of lugs, projecting from the front side of said arm, a rod passing through said lugs, a fixed nut upon said rod above the lower one of said lugs, and an expansive coil-spring upon said rod between said lugs, substantially as specified.

9. In a parcel-tying machine, a table having an opening in the rear end thereof, a secondary table occupying said opening, there being a space formed entirely around said secondary table, a bearing formed on the rear side of the first-mentioned table, a shaft rotatably arranged in said bearing, a bracket carried by the forward end of said shaft for sustaining the secondary table, a pinion arranged upon said shaft, a bar rotatably arranged upon said shaft, a pin projecting outwardly from the face of said pinion, which pin is provided with an inclined face, a leaf-spring fixed upon the rotatably-arranged bar, a pin carried by the outer end of said leaf-spring which passes through the aperture in the bar, the end of which pin is provided with an inclined face in opposition to the inclined face of the first-mentioned pin, an arm fixed to and extending at right angles from the end of the bar, which arm travels through the space at the ends of the secondary table, a twine-holding device arranged beneath the front edge of the secondary table, a segmental rack in mesh with the pinion, and means whereby said segmental rack is actuated, substantially as specified.

10. In a parcel-tying machine, a table having an opening in its rear portion, a secondary table positioned within said opening, there being a space extending entirely around said secondary table, a rotatably-arranged twine-carrying bar operating in the space behind said secondary table, an arm integral with and projecting forwardly from the end of the bar, which arm travels in the space at the ends of the secondary table, means whereby said bar is rotated a certain number of times, means whereby said bar is stopped after it has been rotated the required number of times, a twine-holding device arranged beneath the forward edge of the secondary table, a twine guide and cutter arranged to operate in connection with said twine-holding device, a pair of pincers normally positioned beneath the first-mentioned table for clamping the U-shaped tie upon the ends of the twine after the same has been passed around the parcel, and means whereby the U-shaped ties are fed one at a time between the jaws of the pincers, substantially as specified.

11. In a parcel-tying machine, a rotatably-arranged shaft, a pair of tapes coiled upon said shaft for carrying a plurality of U-shaped metallic ties and means for clamping said ties upon the ends of the twine, substantially as specified.

12. In a parcel-tying machine, a bracket having a vertically-arranged slot therin and having an opening therein, a pocket projecting laterally from said opening, a pair of parallel guide-strips in alinement with said pocket, a block arranged to slide in the vertical slot in said bracket, a shaft rotatably arranged in said block, a pair of tapes coiled upon said shaft, carrying U-shaped clips, said tapes passed between the guide-strips and over and above the pocket, a weight secured to the ends of the tapes after they leave said pocket, and means whereby the shaft carrying the coiled tapes is moved upwardly through the slot in the bracket as said tapes uncoil, substantially as specified.

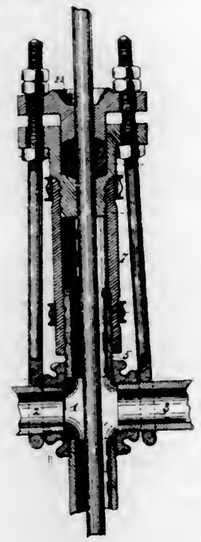
13. In a parcel-tying machine, the combination with a twine-holding device of a fulcrumed arm, the upper end of which is bent forwardly and downwardly, said arm being extended rearwardly, a curved guiding-finger formed integral with the end of the rearward extension and a knife fixed to the forwardly and downwardly extending bent portion, and means for presenting the cord to the holder, substantially as specified.

14. In a parcel-tying machine, a vertically-arranged fulcrumed arm, a pair of pincers carried by the upper end of said arm, a V-shaped guide having one end fulcrumed to the forward portion of the upper jaw, and a rod pivotally secured to the opposite end of said V-shaped guide and having its opposite end pivotally held to the vertically-arranged arm, and means for presenting the cord to the holder, substantially as specified.

15. In a parcel-tying machine, a fixed bracket having an aperture therein, a pocket extending around said aperture and extending laterally therefrom, a pair of tapes carrying U-shaped twine-clips carried by a shaft, means whereby U-shaped twine-clips are fed one at a time into said pocket, a laterally-moving plate arranged at right angles to the bracket, a pin formed integral with said plate which passes through said pocket and aperture, and means whereby said plate is actuated, substantially as specified.

16. In a parcel-tying machine, a table having an opening in its rear end, an auxiliary table arranged within said opening in such a manner that a space is formed entirely around said auxiliary table, a twine-carrying bar rotatably arranged at the rear end of said auxiliary table, an arm integral with the end of said bar, a twine-holding device arranged beneath the front edge of the auxiliary table, means whereby the twine-carrying bar and arm are rotated to wrap the twine around the parcel, a pair of pincers arranged immediately behind the twine-holding device, means whereby a U-shaped clip is fed into the jaws of said pincers, means whereby the twine after being passed around the parcel is guided into the clip held between the jaws, means whereby said jaws are brought together, and means whereby the twine is cut after the same has been passed around the parcel, substantially as specified.

658,207. **STUFFING-BOX.** CHARLES C. CONROY, Joplin, Mo., assignor to Mrs. J. Bookmiller, Java, N. Y. Filed July 5, 1900. Serial No. 22,577. (No model.)



Claim.—1. In a stuffing-box, a base part, a yielding, flexible and elastic tube-section secured thereto, a stuffing-box body secured to said tube-section, and a gland for the stuffing-box, as described.

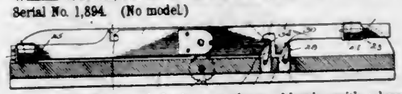
2. In a stuffing-box, a base part, a yielding, flexible and elastic tube-section secured thereto, a stuffing-box body secured to the other end of said tube-section, a gland for said stuffing-box, and tie-rods connecting the base portion and the stuffing-box body, as set forth.

3. In a stuffing-box, a base part consisting of a commercial pipe-fitting having branches as described, an elastic tube-section secured to one of said branches, a stuffing-box body secured to said tube-section, a gland for said stuffing-box, and tie-rods secured to the horizontal branches of said base part and passing through the flanges of the stuffing-box body and its gland and provided with nuts, as stated.

4. In a stuffing-box, a base part consisting of a commercial pipe-fitting cross, a hose-pipe nipple in the upper vertical branch of said cross, an elastic, flexible and yielding tube-section secured to said nipple by a band or other suitable fastening, a stuffing-box body secured to the upper end of said tube-section, a gland for said stuffing-box, tie-rods having eyes as described, nipples passed through said eyes and secured in the horizontal branches of said cross, and nuts at the upper ends of said rods, whereby the gland may be adjusted and the stuffing-box body adjusted, as and for the object stated.

5. In a stuffing-box, a base portion, a flexible, yielding and elastic tube-section secured thereto, a stuffing-box body secured to the upper end of said tube-section, and suitable means for adjusting said stuffing-box body upon said tube-section, as set forth.

658,208. **MUSIC-LEAF TURNER.** ETHAN W. EATON, Socorro, N. Mex., assignor to Joseph I. Eaton, Nestor P. Eaton, Edward C. Eaton, William J. Eaton, and Robert Eaton, same place. Filed Jan. 18, 1900. Serial No. 1,894. (No model.)



Claim.—1. In a music-leaf turner, the combination with a board or frame; of a plurality of pivoted spring-controlled levers; clamps carried thereby; spring-catches engaging said levers; crank-shafts for releasing said catches; keys for turning said shaft; and a shaft geared to one of said levers for returning the levers to their normal position.

2. In a music-leaf turner, the combination with a board or frame; of an arbor supported at the upper end of said frame; a plurality of levers pivotally supported upon said arbor, and recessed adjacent thereto; coil-springs within said recesses secured at one end to the arbor and at their opposite ends to the walls of the recesses; clamps on the ends of said levers; spring-catches for engaging the levers; means operated by a push-key for releasing said catches, and means for reëngaging the levers with their catches comprising a shaft geared to one of said levers.

3. In a music-leaf turner, the combination with a board or frame, of an arbor supported at the upper end of the frame; a plurality of spring-controlled levers supported on said arbor; adjustable clamps on the free ends of the levers; spring-catches for engaging the levers; means for releasing the catches; and means for reëngaging the levers with their catches comprising a shaft geared to one of said levers.

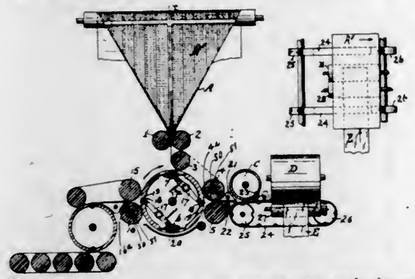
4. In a music-leaf turner, the combination with a board or frame, of an arbor supported at the upper end of the frame; a plurality of spring-controlled levers supported on said arbor; adjustable clamps supported upon said levers; spring-catches for engaging the levers; means for releasing said catches, comprising crank-shafts carrying fingers bearing upon said catches; and means for reëngaging the levers with their catches, comprising a rock-shaft geared to one of said levers, and provided with a handle.

5. In a music-leaf turner, the combination with a board or frame, of an arbor supported in bearings at the upper end of the frame; a plurality of spring-controlled levers loosely mounted on said arbor, each of said levers being formed on its inner edge with a shouldered notch; spring-catches for engaging said shoulders; means for releasing said catches; and means for turning the levers back into engagement with their catches.

6. In a music-leaf turner, the combination with pivoted spring-controlled clamp-carrying levers; catches for engaging said levers; releasing means for said catches; a rock-shaft geared to one of said levers to reëngage the levers with their catches; and a vertically-adjustable rack for supporting a sheet of music.

7. In a music-leaf turner, the combination with pivoted spring-controlled levers; of clamps adjustably secured to the free ends of said levers; catches for engaging said levers; means for releasing said catches; a rock-shaft geared to one of said levers; a vertically-adjustable music-supporting rack, comprising parallel arms provided with pawls and a transverse bar secured thereto; guides for said arms; and rack-bars secured to the frame adapted to be engaged by said pawls.

658,209. PRINTING-MACHINE. JOSEPH L. FIRM, Jersey City, N. J., assignor to the Goss Printing Press Company, Chicago, Ill. Filed Apr. 27, 1896. Serial No. 589,249. (No model.)



Claim.—1. In combination, a rotary web-printing mechanism containing forms in which the columns run longitudinally of the web, mechanism whereby the paper printed by said forms is folded longitudinally and transversely and cut transversely, a conveyer whereby a web is brought across the path of said printed paper, a conveyer running transversely of said web-conveyer whereby said folded paper is brought transversely across the web and mechanism whereby said folded paper and said web are folded together longitudinally of the page-columns, substantially as described.

2. In combination, a rotary web-printing mechanism, mechanism whereby the printed web is folded longitudinally and transversely and cut transversely, a conveyer whereby the longitudinally and transversely folded sheet cut from the web is carried, a wrapper-conveyer traveling transversely of said sheet-conveyer and mechanism whereby the folded sheet and wrapper are folded together, substantially as described.

3. In combination, a rotary web-printing mechanism, mechanism whereby the printed web is folded longitudinally and transversely and cut transversely, a conveyer whereby the longitudinally and transversely folded sheet cut from the web is carried, a wrapper-conveyer traveling transversely of said sheet-conveyer and mechanism whereby the folded sheet and wrapper are folded together; said wrapper-conveyer and sheet-conveyer being so timed that the wrapper projects beyond the edge of the sheet on one side and extends more than half-way across the sheet, substantially as described.

4. In combination, folding-rollers as 28 and 31, a wrapper-carrier, as D, containing a folding-blade and impaling-pins, means whereby a wrapper is guided to said impaling-pins and a conveyer running transversely to said carrier D whereby a sheet is brought transversely across said wrapper and means for operating said carrier D, substantially as described.

5. In combination, folding-rollers, as 28 and 31, a wrapper-carrier, as D, a sheet-conveyer running transversely to said carrier whereby a sheet is brought between said wrapper-carrier and wrapper and means whereby said sheet and wrapper are folded together between said folding-rollers, substantially as described.

6. In combination, a wrapper-conveyer, a sheet-conveyer and folding mechanism; said conveyers operating to convey said wrapper and said sheet transversely across the path of each other and mechanism whereby the motions of said sheet and said wrapper are so timed that one is conveyed to the point at which said paths intersect in advance of the other, substantially as described.

7. In combination, a wrapper-carrier D, a knife mounted thereon, a roller 28 between which and the carrier the wrapper enters, a matrix mounted on said roller to coöperate with said knife, a folding-blade mounted on said carrier, a sheet-conveyer operating transversely to said carrier whereby a sheet is conveyed transversely across said wrapper and means for conveying said sheet and wrapper after the same are thrust away from said carrier by said folding-blade, substantially as described.

8. In combination, the longitudinally-folding rollers 1, 2, the carrier B, the transverse-folding rollers 4, 5, the knife 19 whereby each sheet is cut from the web, a sheet-conveyer, a wrapper-conveyer operated transversely of said sheet-conveyer whereby the sheet and wrapper are brought transversely across one another and means whereby said sheet and wrapper are folded together, substantially as described.

9. In combination, a web-printing mechanism, the longitudinally-folding rollers 1, 2, substantially at right angles with the cylinders of said web-printing mechanism, the transversely-folding rollers 4, 5, subetantially parallel with the rollers 1, 2 and the three pairs of folding-rollers 28, 31, and 36, 37 and 42, 43, each of which is substantially parallel with the cylinders of said printing mechanism, substantially as described.

10. In combination, three web-printing mechanisms having substantially-parallel cylinders, guides whereby without turning or reversing, the webs are brought on top of one another, mechanism whereby said collected webs are together folded longitudinally and transversely, mechanism whereby the same are cut transversely, a conveyer whereby the longitudinally and transversely folded sheet cut from the web is carried, a wrapper-conveyer traveling transversely of said sheet-conveyer, means whereby said wrapper-web is cut transversely and means whereby said sheets are folded longitudinally inside of said wrapper, substantially as described.

11. In combination, the carrier B, the vertically-arranged folding-rollers 4 and 5, the conveyer 24 and the carrier D at right angles with the carrier B and substantially tangent to the plane of the conveyer 24, and folding mechanism mounted on said carrier B so timed that the sheets are thrust between said folding-rollers and conveyed by said carrier 24 to said carrier D with intervening spaces between successive sheets, substantially as described.

12. In combination, mechanism whereby sheets are successively severed from a web, a carrier C whereby one sheet is superposed upon the next following, a conveyer for said superposed sheets, a conveyer running transversely of said sheet-conveyer whereby a wrapper is laid across said sheets and means whereby said sheets are folded inside of said wrapper, substantially as described.

13. In a rotary press containing a plurality of web-printing mechanisms, mechanism whereby the webs are run out over one another without turning or reversing, mechanism whereby the sheets are folded on the longitudinal margins between the pages and transversely across the middle of the pages, a conveyer whereby a wrapper is brought across the path of the sheet, a conveyer running transversely of the wrapper-conveyer whereby the sheets are brought transversely across the wrapper and mechanism whereby the sheets and wrapper are folded longitudinally of the page-columns; the forms for those pages constituting the first half of the product being located upon corresponding zones of the form-cylinders of the various printing mechanisms, and the forms for those pages to constitute the last half of the product being arranged on other corresponding zones side by side with the zones in which the forms of the pages of the first half are located whereby the several pages belonging to the first half of the product will, before their first longitudinal fold, arrange themselves above each other and the several pages belonging to the last half of the product will arrange themselves above each other, substantially as described.

14. In combination, the carrier B, the folding-blade mounted thereon, mechanism whereby said folding-blade is operated to thrust the paper off of said carrier in a substantially-horizontal direction, the conveyer 24, the carrier D operating transversely of said conveyer and substantially tangent to the plane thereof, means whereby a web is guided to said carrier D transversely to the travel of said conveyer 24 and a folding-blade on said carrier D whereby said web and the paper supported by said conveyer are folded together, substantially as described.

15. In combination, the horizontal conveyer 24, the carrier D operating transversely to said conveyer, and substantially tangent to the plane of its supporting-surface, a folding-blade on said carrier D, the folding-rollers 28 and 31 substantially tangent to the plane of the supporting-surface of said conveyer on the opposite side from said carrier D, means whereby paper is guided onto said conveyer 24 and means whereby other paper is guided to said carrier D, substantially as described.

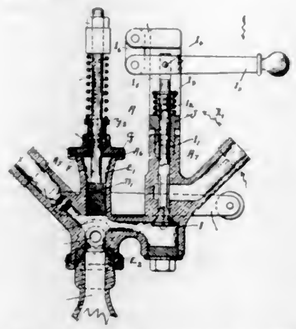
16. In combination, a rotary carrier, two diametrically-opposite pairs of folding-rollers each pair being so arranged that the paper is received between them substantially in line with the radius of the carrier, two folding-blades and two knives on said carrier, a matrix in one folding-roller of each pair, each matrix-carrying roller being in diameter a fraction of the diameter of said carrier, and means of adjustment whereby each of said matrix-carrying rollers may be adjusted bodily into or out of operation with said knives, mechanism for operating said folding-blades and means whereby the same may be rendered inoperative at each of said pairs of folding-rollers, substantially as described.

658,210. FILLING-HEAD FOR BOTTLING APPARATUS. ELIOT E. FORD, Rahway, N. J., assignor of one-half to Henry Johnson, same place. Filed Mar. 19, 1900. Serial No. 9,200. (No model.)

Claim.—1. In a filling-head for a bottling or liquid-filling apparatus having a cushioned nozzle for the aperture of the bottle or apparatus, a valve-controlled vacuum-vent, a valve-controlled liquid-filling vent; the combination of an automatic escape and relief valve with said filling-head, substantially as and for the purposes described.

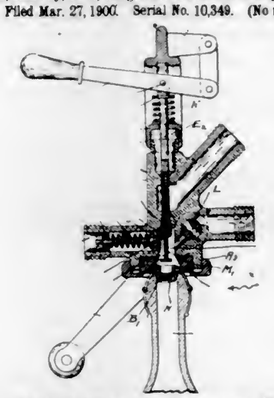
2. The combination with the filling-head of a bottling or liquid-filling apparatus, of the passage reciving the cork with an adjustable air-tight-fitting cap provided substantially as and for the purposes described.

3. In a filling-head for a bottling apparatus having a valve-controlled vacuum-vent, a valve-controlled liquid-filling vent and an automatic escape and relief valve adjacent to the nozzle of the filling-head; the combination of the mouth of the passage containing the cork with an adjustable cushioned cap coöperating with said mouth of the passage substantially as and for the purposes described.



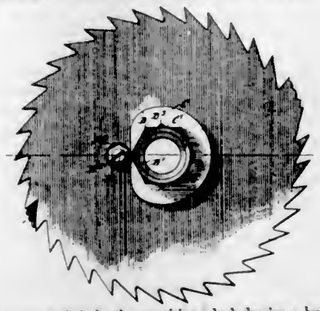
4. In a filling-head for bottling apparatus having a cushioned nozzle for the aperture of the bottle, a valve-controlled vacuum-vent, a valve-controlled liquid-filling vent and a passage-way for the insertion of a cork furnished with an adjustable air-tight-fitting cap; the combination of an automatic escape and relief valve with the said filling-head substantially as and for the purposes described.

658,211. FILLING-HEAD FOR BOTTLING APPARATUS. ELIOT E. FORD, Rahway, N. J., assignor of one-half to Henry Johnson, same place. Filed Mar. 27, 1900. Serial No. 10,349. (No model.)



Claim.—In a filling-head for a bottling apparatus, filling bottles having automatic stoppers, said filling-head having a vacuum-vent, a liquid-filling vent and a cushioned nozzle; the combination of a gas-return vent having an automatic relief and escape valve coöperating with the said filling-head substantially as and for the purposes described.

658,212. GROOVING-SAW. JAMES M. GARRISON, Santa Barbara, Cal. Filed Apr. 7, 1900. Serial No. 11,964. (No model.)



Claim.—1. A dado-head, comprising a body having a hub forming a bearing for the saw-blade and adjusting devices for engaging the saw-blade at opposite sides of its center, and a connection between the adjusting devices, so arranged that when one of the devices is adjusted, the said connection is automatically moved and correspondingly adjusts the other device, substantially as shown and described.

2. A dado-head, comprising a body having a hub forming a bearing for the saw-blade, the said dado-head having oppositely-located supports for one face of the saw-blade, a washer for engaging the opposite face, adjusting devices for engaging the saw at opposite sides of the head-supporting devices, and a connection between the said adjusting devices, so arranged that when one of the devices is adjusted the other connection is moved and correspondingly adjusts the other device, substantially as shown and described.

3. A dado-head, having an adjusting-screw and a pin for engagement with the saw-blade on opposite sides of its center, and a lever fulcromed on the head and engaged by the said screw and the said pin, the lever being so arranged that the adjustment of the said adjusting-screw causes a corresponding adjustment of the pin but in an opposite direction, substantially as shown and described.

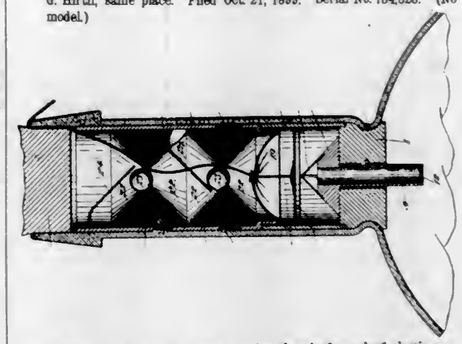
4. A dado-head, comprising a body for attachment to the saw-arbor, lugs carried by the body for engagement with one face of the saw-blade, a washer carried by the said head for engagement with the other face of the saw-blade, the said washer being beveled at one side, and adjusting devices for holding the saw-blade in position at right angles or other angles relatively to the axis of the dado-head, the said devices comprising an adjusting-screw screwing in the head, a pin sliding in the head, and a lever fulcrumed on the head and engaged at opposite sides by the said screw and the said pin, substantially as shown and described.

5. A dado-head, comprising a body for attachment to the saw-arbor lugs carried by the body for engagement with one face of the saw-blade, a washer carried by the said head for engagement with the other face of the saw-blade, the said washer being beveled at one side, and adjusting devices for holding the saw-blade in position at right angles or other angles relatively to the axis of the dado-head, the said devices comprising an adjusting-screw screwing in the head, a pin sliding in the head, and a lever fulcrumed on the head and engaged at opposite sides by the said screw and the said pin, the said adjusting-screw having a collar and adjusting-nuts, as set forth.

6. A saw-blade, provided with recesses in its faces, and clamping mechanism engaging said recesses to hold the saw-blade in position, the bottoms of the recesses being beveled to allow of proper engagement of the clamping mechanism with the saw-blade when the latter is moved into a tilted or angular position, substantially as shown and described.

7. A saw-blade, having a central eye, an aperture at one side of the eye for the passage of an adjusting-screw, and concentric recesses in the faces of the blade, at the said aperture, the recesses having their bottoms beveled for engagement by parts of the said screw, substantially as shown and described.

658,213. NON-REFILLABLE BOTTLE. WILTON A. HALL and THOMAS A. HALL, Fernandina, Fla., assignors to themselves and Louis G. Hirth, same place. Filed Oct. 21, 1899. Serial No. 734,323. (No model.)



Claim.—1. A bottle, having a valve therein formed of elastic material with an opening therein, the said material being drawn together at the opening so that the elastic properties of the material will cause the opening normally to be closed, and a plunger mounted adjacent to the valve to reciprocate in a fixed path and having a pointed end capable of moving against the valve to spread apart the walls of the opening in the valve.

2. A bottle, having a valve formed of elastic material with an opening therein, the said material being creased or puckered at the opening so that the elastic properties of the valve will cause the opening normally to be closed, a plunger movable against the valve to open the same, a fran-

gible partition situated between the valve and plunger, and means for fracturing such partition.

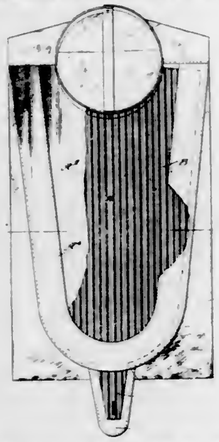
3. A bottle, having a valve situated in the neck thereof and formed of a sheet of elastic material with an opening therein, the valve being puckered or creased at the opening so as to cause the opening normally to be closed, a plunger movable against the valve to open the same, a frangible partition situated between the valve and plunger, and a cord attached to the frangible partition and passed through the opening in the valve, by means of which cord the partition may be fractured.

4. A bottle, having a sleeve fitted in the neck thereof, a block secured in the sleeve and having an opening therein to form a valve-seat with an inclined surface leading thereto, a valve working on said seat, and a perforated shield-plate supported above the inclined surface of the block parallel with the surface to guide the movement of the valve along such surface.

5. In a non-refillable bottle, the combination of a valve, a plunger movable toward and from the same to actuate the valve, a frangible partition situated between the plunger and the valve, normally to prevent the engagement of the plunger with the valve, and means for fracturing said partition.

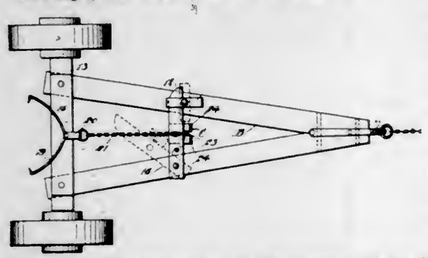
6. In a non-refillable bottle, the combination of a valve, and a plunger movable to the valve to open the same, the plunger being essentially frusto-conical in form and having a skeleton-like projection continuing the form of the cone and terminating in a point or apex to engage the valve.

658,214. APPAREL-SHIRT. SAMUEL A. ISRAEL, New York, N. Y. Filed June 6, 1900. Serial No. 19,240. (No model.)



Claim.—The combination with a bosom shirt having a retaining-flange provided with a slit or guideway at the lower end, of a supplemental removable bosom adapted to fit beneath said flange, and provided with a tab which passes through said guideway, as shown and described.

658,215. LOGGING-TRUCK. JOHN LINDSEY, Sandersville, Miss. Filed Aug. 8, 1899. Serial No. 726,573. (No model.)



Claim.—1. In a logging truck or cart, the combination, with an axle, wheels thereon and a pole or tongue extending forwardly from said axle, of a bolster secured to the axle, provided with a concaved upper face, a pivoted cross-bar carried by the pole or tongue, a latch for the said cross-bar, and tongs connected with the said cross-bar, for the purpose specified.

2. In a logging truck or cart, the combination, with an axle, wheels loosely mounted on the axle, and a pole or tongue forwardly projected from the axle, of a bolster secured on the said axle, a cross-bar pivoted at one end on the pole or tongue, a latch for the opposite end of the cross-bar, a keeper carried by the said cross-bar, tongs, and a pliable and adjustable connection between the said keeper and said tongs, for the purpose specified.

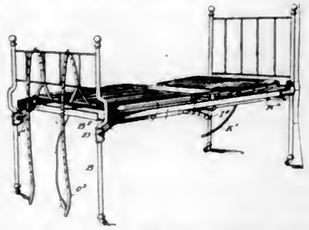
3. A logging-truck, having a tongue, in combination with a cross-bar pivoted by one end to the tongue, means for locking said cross-bar in a position transverse of the tongue, a chain-securing device on said cross-bar, a chain, and tongs adapted to engage a log, substantially as described.

4. A logging-truck, having a tongue, in combination with a cross-bar pivoted by one end to the tongue, means for locking said cross-bar in a position transverse of the tongue, a slotted plate extending upwardly from said cross-bar and having its upper ends curved forwardly, the slot in said plate being adapted to snugly embrace a chain-link placed flatwise therein, a chain adapted to fit in said slot, and tongs secured to said chain and adapted to lie on the truck-bolster when in use, substantially as described.

5. A logging-truck, having an A-shaped tongue, and draft-attaching means at the forward end thereof, in combination with a cross-bar pivoted by one end to one side of the tongue, releasable locking means for the other end of the cross-bar and adapted to hold the cross-bar transversely of the tongue, chain-securing means upon the cross-bar, a chain, and tongs secured thereto and adapted to secure a log, substantially as described.

6. The combination with a logging-truck having a wheeled axle and a horizontally-widened pole or tongue attached thereto, of a horizontally-swinging bar mounted at one end on the pole or tongue near one side thereof, a log-gripping device adapted to engage the log, a connection between the gripping device and the bar, and a latch engaging the free end of the bar to hold the same and situate near the side of the pole or tongue opposite the pivot of the bar.

658,216. BED. ELBERT E. MUNGER, Spencer, Iowa. Filed Oct. 11, 1899. Serial No. 733,248. (No model.)



Claim.—1. A bed having side rails, a complete mattress-support mounted to swing bodily on said side rails and to travel in a longitudinal direction thereon and means whereby the mattress-support may swing bodily and travel longitudinally of the said rails, substantially as shown and described.

2. A bed having side rails, a support for the entire mattress, and wheels journaled on said support between its ends so that the entire mattress may be inclined, said wheels resting on the rails and being mounted to travel thereon.

3. A bed having side rails, a mattress-support having side rails, a cross-bar connecting the mattress-support rails with each other between their ends, axles integral with said bar, and wheels journaled on the axles and mounted to travel on the side rails of the bed, substantially as shown and described.

4. A bed having side rails of angle-iron, the horizontal members thereof extending inwardly at the bottom, and a support for the entire mattress fulcrumed on said horizontal members, the fulcrum for said support being in the form of wheels mounted to travel on said horizontal members, substantially as shown and described.

5. A bed-frame having head-posts and foot-posts, side rails connecting said posts, and angle-iron cross-pieces, the vertical member of the cross-piece at the foot end of the frame terminating at a distance from the side rails, substantially as shown and described.

6. A bed having a bed-frame of angle-iron side rails and angle-iron cross-pieces rigidly connected together, the horizontal members of said rails and cross-pieces being at the bottom and extending inwardly, the vertical member of the foot cross-piece terminating at its ends a distance from the junction of the cross-piece with the side rails, substantially as shown and described.

7. A bed having side rails, and a wheeled seat mounted to travel on said rails, substantially as shown and described.

8. A bed having side rails of angle-iron, and a seat provided with wheels adapted to travel on said side rails, substantially as shown and described.

9. A bed having side rails, a mattress-support fulcrumed on said side rails, and a seat mounted to travel on said side rails and extending over the mattress-support, substantially as shown and described.

10. A bed having side rails, a mattress-support fulcrumed on said side rails, a seat mounted to travel on said side rails and extending over the mattress-support, and means for locking the seat to the mattress-support, substantially as shown and described.

11. A bed having side rails, a mattress-support having transverse axles, wheels on the said axles and engaging said rails, a wheeled seat on said rails, and hook-arms pivoted on said seat and adapted to engage said axles to lock the seat in position relative to the mattress-support, substantially as shown and described.

12. A bed having side rails, a mattress-support having transverse axles, wheels on said axles and engaging said rails, a wheeled seat on said rails, hook-arms pivoted on said seat and adapted to engage said axles to lock the seat in position relative to the mattress-support, and means for disconnecting said arms from said axles, substantially as shown and described.

13. A bed having a bed-frame, a mattress-support fulcrumed thereon, links pivotally connecting the head ends of said bed-frame with the sides of the mattress-support, and braces pivoted on the foot ends of said bed-frame and adjustably connected with the sides of said mattress-support, substantially as shown and described.

14. A bed having a bed-frame, a mattress-support fulcrumed thereon, links pivotally connecting the head ends of said bed-frame with the sides of the mattress-support, braces pivoted on the foot ends of said bed-frame and adjustably connected with the sides of said mattress-support, the connection between the foot and braces and bed-frame comprising a slide on each brace and carried by the mattress-support, and a spring locking-pin under the control of the operator and held removably in said slide to engage one of a series of apertures in the brace, substantially as shown and described.

15. A bed having a mattress-support, a bed-frame, a brace pivoted on said bed-frame, a slide movable on said brace, a pin secured to the slide and attached to the mattress-support, a locking-pin slidable in said slide to engage one of a series of apertures in said brace, and a spring-arm under the control of the operator, and attached to the said mattress-support and engaging said locking-pin, to move the latter in or out of engagement with said brace, substantially as shown and described.

16. A bed having a mattress-support, a bed-frame, a brace pivoted on said bed-frame, a slide movable on said brace, a pin secured to the slide and attached to the mattress-support, a locking-pin slidable in said slide to engage one of a series of apertures in said brace, a spring-arm under the control of the operator, and attached to the said mattress-support and engaging said locking-pin, to move the latter in or out of engagement with said brace, and means for imparting movement to said spring-arm in one direction, to move the locking-pin out of engagement with said brace, substantially as shown and described.

17. A bed-frame having head-posts and foot-posts, side rails connecting said posts, and cross-pieces of which the one at the foot end of the frame is secured directly to the side rails, at a distance from their point of attachment to the foot-posts, the foot-posts having outwardly-bent portions at about the same height as that of the cross-piece, substantially as shown and described.

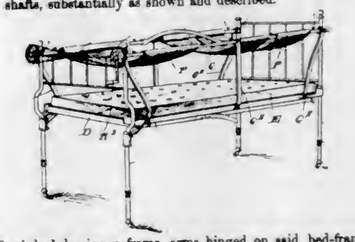
18. A bed having a head, a foot, a bed-frame, a mattress-support fulcrumed on said bed-frame, a seat carried on said bed-frame, a leg-rest pivoted to said seat, and straps on the free end of said leg-rest, and adapted to be secured to said foot, to hold the leg-rest in position relatively to said seat, substantially as shown and described.

19. A bed having a head, a foot, a bed-frame, a mattress-support fulcrumed on said bed-frame, a seat carried on said bed-frame, a leg-rest pivoted to said seat, straps on the free end of said leg-rest, and adapted to be secured to said foot, to hold the leg-rest in position relatively to said seat, and means for locking the seat to said mattress-support, substantially as shown and described.

20. A bed having a frame provided with a longitudinal track or guideway, head-posts, and foot-posts provided with outwardly-bent portions at about the height of said track, and a seat mounted to slide on said track and to pass between the outwardly-bent portions of the foot-posts, substantially as shown and described.

658,217. LIFTING DEVICE FOR HOSPITAL-BEDS. ELBERT E. MUNGER, Spencer, Iowa. Filed Apr. 11, 1900. Serial No. 12,434. (No model.)

Claim.—1. A bed having a frame, arms hinged on said bed-frame, shafts journaled in said arms, and adapted to rest against the head and foot of the frame, transverse supporting-strips connected with said shafts to wind thereon, and means for rotating said shafts to wind up or unwind said strips, the said means comprising sprocket-wheels on the shafts, a sprocket-chain connected with the sprocket-wheels, and a crank on one of said shafts, substantially as shown and described.



2. A bed having a frame, arms hinged on said bed-frame, shafts journaled in said arms, and adapted to rest against the head and foot of the frame, supporting-strips connected with said shafts to wind thereon, means for rotating said shafts to wind up or unwind said strips, the said means comprising sprocket-wheels on the shafts, a sprocket-chain connected with the sprocket-wheels, a crank on one of said shafts, and a removable brace for the said shafts when in an elevated position, substantially as shown and described.

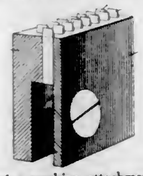
3. A bed having a frame, arms hinged on said bed-frame, shafts journaled in said arms, and adapted to rest against the head and foot of the frame, transverse supporting-strips connected with said shafts to wind thereon, means for rotating said shafts, to wind up or unwind said strips, the said means comprising sprocket-wheels on the shafts, a sprocket-chain connected with the sprocket-wheels, a crank on one of said shafts, and means for locking the shafts against accidental turning, substantially as shown and described.

4. The combination with a bed having side rails, of arms pivoted to said side rails, shafts journaled in said arms, flexible strips adapted to connect said shafts, and means for rotating the shafts.

5. The combination with a bed, of arms pivoted thereto upon pivots extending lengthwise of the bed, longitudinal shafts journaled in said arms, flexible strips adapted to connect said shafts, and means for rotating the shafts.

6. The combination with a bed, of arms pivoted thereto upon pivots extending lengthwise of the bed, longitudinal shafts journaled in said arms, flexible strips adapted to connect said shafts, means for rotating the shafts, and means for locking them against rotation.

658,218. STRIPPING-MACHINE ATTACHMENT. WILLIAM F. MCALLISTER, Merchantville, N. J. Filed Jan. 5, 1900. Serial No. 487. (No model.)



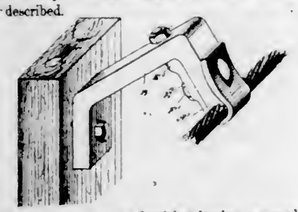
Claim.—1. A stripping-machine attachment, comprising rows of teeth arranged in pairs, the teeth of one row being staggered with relation to the teeth of the other row, a holding device consisting of a section having recesses to receive the teeth of one row and a section having recesses to receive the teeth of the other row, the recesses being in adjacent faces of the sections, and means for securing the sections together, substantially as specified.

2. A stripping-machine attachment, comprising a disk adapted to rotate, rows of teeth arranged in pairs, the teeth of one row being staggered with relation to the teeth of the other row, and a holder for two rows of teeth, consisting of two sections provided with staggered recesses in their adjacent faces, the said holder being seated in the disk.

658,219. CABLE-GRIP. GEORGE C. NILES, Bayside, Cal. Filed Feb. 14, 1900. Serial No. 5,221. (No model.)

Claim.—1. A cable-grip, comprising a fixed jaw and a clamping-band made U-shaped and between the members of which the jaw projects, said band engaging opposite sides of said fixed jaw, the middle portion of the band being arranged to engage the cable and clamp the latter against the free end of the said fixed jaw, means for clamping the ends of the band to the opposite sides of the jaw, and a bolt and nut on one

end of the band, to adjust the latter relatively to the cable, substantially as shown and described.

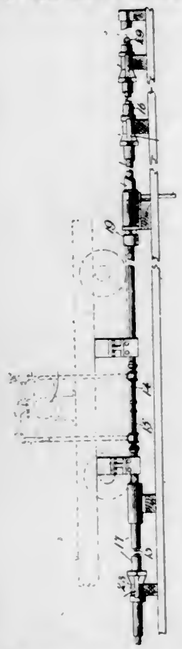


2. A cable-grip, comprising a fixed jaw having a curved face and a clamping-band made U-shaped and engaging opposite sides of said fixed jaw, the middle portion of the band being arranged to engage the cable and clamp the latter against the free end of the said fixed jaw, means for clamping the ends of the band to opposite sides of the jaw, and a bolt and nut on one end of the band, to adjust the latter relatively to the cable, the other end of the said clamping-band being curved in a lengthwise direction, to engage the curved face on the jaw, as set forth.

3. A cable-grip, comprising a bracket provided with a jaw projecting at an angle therefrom, said jaw being perforated and having a curved end, and a U-shaped clamping-band having members of unequal length and between which the said jaw projects, the longer member of the band being slotted and having its end screw-threaded, the screw-threaded end projecting through the perforation of the bracket and provided with a nut, and a bolt passing through the members of the band and the jaw and provided with a nut, substantially as described.

4. A cable-grip, consisting of a bracket provided with a jaw projecting at an angle therefrom, said jaw having a concave outer face, and provided with a curved and serrated end and with an aperture, and a U-shaped clamping-band having members of unequal length and between which the said jaw projects, the longer member of the band being slotted and having its end reduced and screw-threaded, the reduced and screw-threaded end projecting through the opening in the bracket and provided with a nut, the shorter member of the band being curved to fit upon the concave face of the jaw, and a bolt passing through the members of the band and jaw and provided with a nut, substantially as shown and described.

658,220. **PRESSURE-TRANSMITTER.** LOREN L. PRESCOTT, Marinette, Wis. Filed June 4, 1900. Serial No. 19,057. (No model.)



Claim.—1. In a connection between a stationary source of fluid-pressure and a movable fluid-motor, in combination, telescopically-engaged pipes of such relative size that their surfaces are out of frictional contact, the outer pipe being provided at intervals with annular bearing-blocks for carrying the inner pipe, such block being adapted to allow the passage of fluid.

2. In a connection between a stationary source of fluid-pressure and a movable fluid-motor, in combination, telescopically-engaged pipes of such relative size that their surfaces are out of frictional contact, the outer pipe being composed of sections, a coupling for uniting the adjacent sections and being contracted intermediate of its ends to provide bearings for the inner pipe.

3. In a connection between a stationary source of fluid-pressure and a movable fluid-motor, in combination, telescopically-engaged pipes of such relative size that their surfaces are out of frictional contact, the outer pipe being composed of sections, a coupling for uniting the adjacent sections, and a bushing of antifriction metal within each coupling to serve as a bearing for the inner pipe.

4. In a connection between a stationary source of fluid-pressure and a movable fluid-motor, in combination, telescopically-engaged pipes of such relative size that their surfaces are out of frictional contact, the outer pipe being composed of sections, a coupling for uniting the adjacent sections and being contracted intermediate of its ends to provide bearings for the inner pipe, and having a by-pass longitudinally through the wall of the contracted portion.

5. In a connection between a stationary source of fluid-pressure and a movable fluid-motor, in combination, telescopically-engaged pipes of such relative size that their surfaces are out of frictional contact, the outer pipe being composed of sections, a coupling for uniting the adjacent sections and being contracted intermediate of its ends to provide bearings for the inner pipe, the bore of the coupling being tapering at one end for the purpose specified.

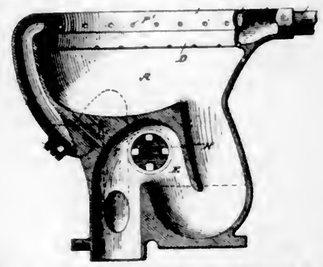
658,221. **SOFT-TREAD HORSESHOE.** JOHN RILEY, New York, N. Y. Filed July 19, 1900. Serial No. 24,172. (No model.)



Claim.—1. A horseshoe, comprising a metal portion, longitudinally-tapered pillars attached to said metal portion, and a pad portion having tapered openings in which the pillars engage, the walls of said openings engaging at all points on the pillars, substantially as specified.

2. A horseshoe, comprising a metal portion, tapered pillars attached to the shoe, and a pad engaging with said pillars and having portions extended through openings in the shoe, side portions of said shoe being extended outward from the pad and provided with nail-holes, substantially as specified.

658,222. **WATER-CLOSET BOWL.** CHARLES SCHIFFLIN, New York, N. Y., assignor of one-half to Charles F. Wildey, Jr., same place. Filed June 23, 1900. Serial No. 21,349. (No model.)



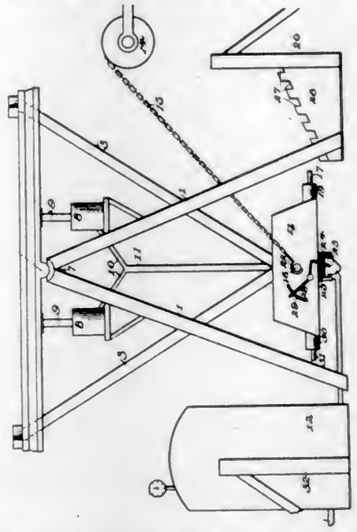
Claim.—1. A water-closet bowl having a water-inlet, a main trap as an outlet for the bowl, a water-distributing channel in communication with the inlet, an annular overflow-channel above said distributing-channel, all the parts being integral with the bowl, and an auxiliary trap leading from said overflow-channel, as set forth.

2. A water-closet bowl having a water-inlet, a main trap as an outlet for the bowl, a water-distributing channel in communication with the inlet, an annular overflow-channel above said distributing-channel, and an auxiliary trap leading from said overflow-channel, the outlet-leg of the auxiliary trap being connected with the outlet-leg of the main trap, as set forth.

3. A water-closet bowl having a water-inlet, a main trap as an outlet for the bowl, an annular water-distributing channel in communication with the inlet, an annular overflow-channel above said distributing-channel and also in communication with the water-inlet and an auxiliary trap leading from said overflow-channel to the outlet-leg of the main trap, as set forth.

4. A water-closet bowl having a water-inlet, a main trap as an outlet for the bowl, an annular water-distributing channel in communication with the inlet, an annular overflow-channel above said distributing-channel, an auxiliary trap leading from said overflow-channel to the outlet-leg of the main trap, means for connecting the overflow-channel with the water-inlet, and cleaning-holes for said traps, as set forth.

658,223. **MECHANICAL MOTOR.** WEBSTER W. TEAGUE, Wabash, Ind. Filed Mar. 22, 1900. Serial No. 9,784. (No model.)



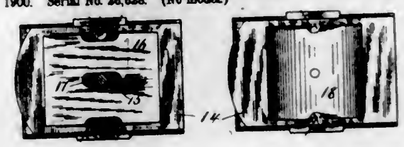
Claim.—1. In a mechanical motor, a support, a rigid rocking frame comprising a beam centrally mounted on said support, a weight, and inclined rods rigidly connecting the weight and the ends of the beam, means for connecting the weight to a source of power, mechanism for automatically releasing said connecting means when the weight has been moved a predetermined distance, and a stop for the motor automatically operative on release of said connecting means.

2. In a mechanical motor, a support, a rigid rocking frame comprising a beam centrally mounted on said support, a weight, and inclined rods rigidly connecting the weight and the ends of the beam, a motor, and means for connecting the motor directly to the weight whereby said weight, beam and their connections can be directly and positively moved, and mechanism for automatically disconnecting the weight and motor.

3. In a mechanical motor, a support, a rigid rocking frame comprising a beam centrally mounted on said support, a weight, and inclined rods rigidly connecting the weight and the ends of the beam, a motor, and means for connecting the motor directly to the weight whereby said weight, beam and their connections can be directly and positively moved, and mechanism for automatically disconnecting the weight and motor, said mechanism being also adapted to store power to aid in the initial movement of the motor.

4. The rocking-frame support, the rocking frame, the weight fixed to said frame, air-pumps operated thereby, means of connecting the weight to a motor, a bar provided with stops arranged in the path of the weight to automatically engage and hold it in raised situations, a device carried by the weight to engage the stops, and means for tripping said device.

658,224. **KEY FOR CAR JOURNAL-BOXES.** ARTHUR M. WAITT, Yonkers, N. Y., and HERMAN F. BALL, Cleveland, Ohio. Filed Aug. 11, 1900. Serial No. 26,628. (No model.)

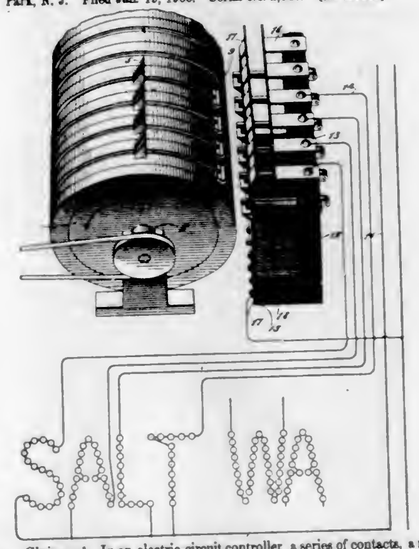


Claim.—1. In a wedge or key for car-axle journal-boxes, in combination, upper and lower plates, a link connecting the two plates, an intermediate slidable member apertured to accommodate the link, and positive stops for limiting the movement of the slidable member independently of the link.

2. In a wedge or key for car-axle journal-boxes, in combination, upper and lower plates, a link connecting the two plates, an intermediate slidable member having an elongated slot to accommodate the link, stop-lugs formed upon one of the said relatively-slidable parts, and recesses in another of such parts to receive the lugs, such recesses being of such length that they limit the relative movement of the parts independently of the link.

3. In a wedge or key for car-axle journal-boxes, in combination, upper and lower plates, a link uniting such plates, an intermediate slidable plate having an elongated slot to accommodate the link and having lateral recesses, and stop-lugs formed on one of the first-mentioned plates and entering the recesses.

658,225. **CIRCUIT-CONTROLLER.** CHARLES C. WEBSTER, Asbury Park, N. J. Filed Jan. 19, 1900. Serial No. 2,047. (No model.)



Claim.—1. In an electric-circuit controller, a series of contacts, a rotary part, setting-lugs adjustable circumferentially on the rotary part, releasing-lugs adjustable circumferentially on the rotary part and means operated by the releasing-lugs for opening the contacts, substantially as specified.

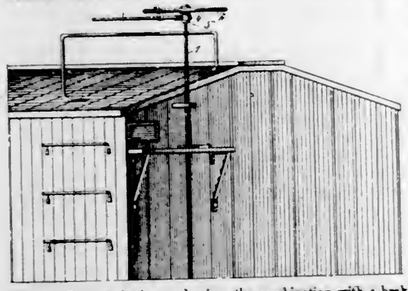
2. An electric-circuit controller for lamps in an illuminated sign, comprising a rotary part, a series of circuit-closing plates, a contact-plate common to all of the circuit-closers, lugs carried by the rotary part for moving the circuit-closers to their closing position, means for holding the said closers in their closing position, and lugs carried by the rotary part for releasing the holding means, substantially as specified.

3. A circuit-controller for an electrically-illuminated sign, comprising a rotary part, contact-plates each having electrical connection with lamps forming a letter, spring-contact plates coacting with said contacts and having connection with one of the supply-wires, a holding-latch for each spring-contact, lugs carried by the rotary part for engaging with cam-shaped projections on the spring-contact, and lugs carried by the rotary part for disengaging the latch from its holding position, substantially as specified.

4. In a circuit-controller, a rotary part, comprising a series of disks mounted on a shaft, plates connected to the periphery of the disks and having inwardly-extended portions spaced apart, lugs adjustable circumferentially on said plates, and circuit-closing devices operated by the lugs, substantially as specified.

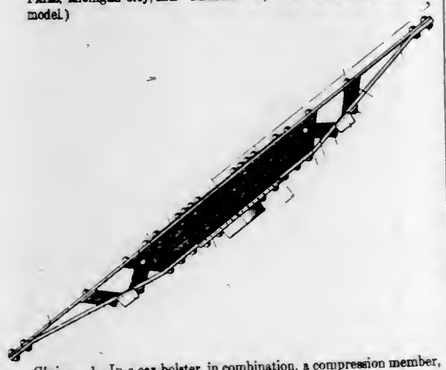
5. A circuit-controller for the purpose described, comprising a rotary part, setting-lugs movable entirely around said rotary part, releasing-lugs also movable entirely around said rotary part, spring-plates for closing circuits and adapted to be moved into closing position by the setting-lugs, and swinging latches passing through openings in the contact-plates, and having hook portions to engage with said plates and also having forwardly-projecting lugs to be engaged by the releasing-lugs, substantially as specified.

658,226. CAR-BRAKE LEVER. JOSEPH C. WESTERFIELD, Arlington, and HARRY S. CHINNOCK, Jr., Belleville, N. J. Filed Apr. 28, 1900. Serial No. 14,697. (No model.)



Claim.—In a car-brake mechanism, the combination with a brake-rod and a hand-wheel thereon, of a fixed collar on the rod below the wheel, a collar mounted loosely on the rod between the fixed collar and the wheel, a lever pivotally connected to the last-named collar, and a hook-shaped arm on the lever, the end of said arm being beyond one side of the lever, substantially as specified.

658,227. CAR-BOLSTER. HENRY C. WILLIAMSON and HERMAN PRIES, Michigan City, Ind. Filed Feb. 26, 1900. Serial No. 6,654. (No model.)



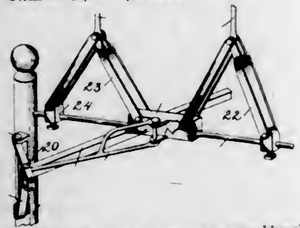
Claim.—1. In a car-bolster, in combination, a compression member, a pair of tension members spaced apart, and struts in Z form having their flanges secured respectively to the compression member and the tension members.

2. In a car-bolster, the combination with tension and compression members, of struts in Z form having their flanges secured to the first-named members.

3. In a car-bolster, in combination with tension and compression members, parallel through their middle sections and converging at their ends, of struts in Z form extending from end to end of the parallel portions of the first-named members and having their flanges secured thereto.

4. In a car-bolster, in combination, a compression member, a two-part tension member longitodinally separated, and a tie-plate superimposed upon and binding together the two parts of the tension member.

658,228. GATE. JOSHUA F. BARNES, Shannon, Ill. Filed June 6, 1900. Serial No. 19,276. (No model.)



Claim.—1. In combination, a gate-post, a gate hinged thereto, a supporting-frame, a horizontally-swinging gate opening and closing toggle comprising the long link hinged to the gate and the short link formed of a metal loop having the long link pivoted in its closed free end and having its widely-separated ends hinged by vertical pivots to said post at the side thereof opposite the gate, and mechanism for operating the toggle to open and close the gate, substantially as described.

2. In combination, a support, a swinging gate, a horizontally-swinging gate opening and closing toggle comprising a swinging loop hinged to the support and a link hinged to the gate and at its opposite end pivoted in the closed end of the loop, a reciprocating member, manually-operated means comprising oppositely-working toggles for reciprocating said member in opposite directions, and a link from said member to said toggle loosely joined thereto by the pivot between the link and the loop thereof, substantially as described.

3. A gate opening and closing mechanism comprising manually-operated actuating devices, a pair of oppositely-working toggles, a reciprocating member connecting and reciprocated by said toggles, operating connections between said actuating devices and said toggles, and gate opening and closing connections operated by said member, substantially as described.

4. In combination, a swinging gate, a support, a reciprocating member, gate opening and closing connections between said member and the gate, toggles for reciprocating said member in opposite directions and locking the same at its limits of movement in opposite directions to hold the gate open or closed, and means for operating said toggles, substantially as described.

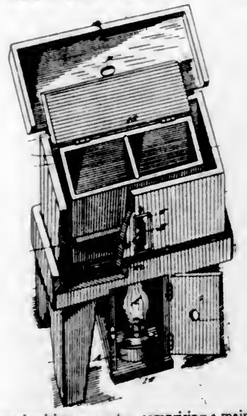
5. The gate opening and closing mechanism comprising a sliding head, a guide and support therefor, operative connections between said head and the gate for opening and closing the gate, oppositely-working toggles for reciprocating said sliding head in opposite directions, and operating devices for said toggles, substantially as described.

6. A gate opening and closing mechanism comprising vertically-swinging sweeps, a pair of oppositely-working toggles, operative connections from said sweeps to said toggles to break and straighten said toggles alternately, a gate-moving device, and operative connections between the same and said toggles, substantially as described.

7. A gate opening and closing device comprising a gate, a support, a toggle coupled to the gate and to the support to open and close the gate, a guide, a sliding head thereon, operative connections from the slide to said toggle, a pair of oppositely-working toggles coupled to said slide to reciprocate the same in opposite directions, operating devices, and pull connections from said operating devices to said oppositely-working toggles, respectively, substantially as described.

8. In combination, a support, a gate, a rigid slideway or guide, a slide longitudinally movable thereon, operative connections between said slide and the gate to open and close the same as the slide reciprocates in opposite directions, a pair of vertically-movable toggles, at their outer ends coupled at fixed points beyond opposite ends of said slide, the inner end of the toggles loosely coupled to said slide so that when one toggle is straightened out and locked on said slideway the other toggle is doubled or broken upwardly, operating devices, and pull-links therefrom to the joints of the toggles, respectively, substantially as described.

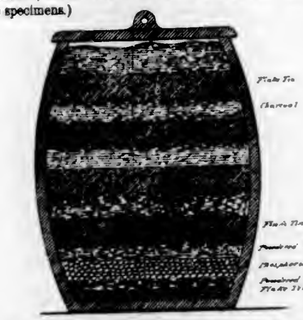
658,229. BREAD-RAISING APPARATUS. JOHN D. BELL, Arcadia, Kans., assignor of one-third to Charles O. Anderson, same place. Filed Jan. 24, 1900. Serial No. 2,602. (No model.)



Claim.—A bread-raising apparatus, comprising a main box, a hinged lid on the main box having an aperture therein, a legged stand whereon

the main box is removably seated, a smaller raising-box, a lid thereon, a removable partition in the raising-box, ledges on the main box and raising-box for the support of the latter centrally within the main box, a deflector-plate in the main box below the raising-box and over an aperture in the bottom of the main box, a casing hung from the bottom of the main box and inclosing the aperture therein, and a lamp in the casing adapted to transmit heat into the air-space between the main box and raising-box.

658,230. PROCESS OF MAKING PHOSPHOR-TIN. GEORGE BERTHOLD, Great Falls, Mont. Filed Apr. 6, 1900. Serial No. 11,789. (No specimens.)



Claim.—The herein-described process of making phosphor-tin, consisting in subjecting layers of charcoal, tin and phosphorus to the action of heat under exclusion of air, to melt the tin and cause the latter to absorb a portion of the phosphorus.

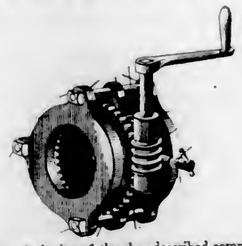
658,231. SHELL. HIRAM BICKEL, Guffey, Pa. Filed June 23, 1900. Serial No. 21,350. (No model.)



Claim.—1. In an explosive shell or cartridge, the combination with the cartridge-shell A, of a projectile comprising an outer shell or casing threaded at its inner end, an inner shell or canister disposed within said casing and providing an intermediate space to receive balls or the like, an annular nut screwed into the end of the outer casing, a nut screwed into the opening of said annular nut, said smaller nut having an opening threaded at one end, and a nipple screwed into said opening and adapted to carry the time-fuse, substantially as shown and for the purpose set forth.

2. A projectile for rifles or guns of large caliber, comprising an outer shell or casing threaded at its rear end, an inner shell or canister disposed in said outer shell or casing, an annular nut screwed into the outer shell or casing against the end of the canister, a nut screwed into said annular nut and provided with an opening threaded at one end, a nipple adjustable in said opening, and a time-fuse carried by said nipple, substantially as shown and for the purpose set forth.

658,232. THREAD-CUTTER. OLIVER H. BOLTS, Sandusky, Ohio. Filed June 30, 1899. Renewed Aug. 2, 1900. Serial No. 25,717. (No model.)



Claim.—1. A device of the class described comprising an inner and an outer disk rigidly connected, clamping mechanism carried by one of said disks, an intermediate disk slidably connected with respect to the inner and outer disk, a die rotatably mounted on the intermediate disk and means for rotating the die.

2. A device of the class described comprising an inner and an outer disk rigidly connected, clamping mechanism carried by one of said disks, an intermediate disk slidably connected with respect to the inner and outer disks, a die-plate rotatably mounted upon the intermediate disk and having a gear edge, a screw carried by the intermediate disk and engaging the gear edge and means for rotating the screw to rotate the die-plate.

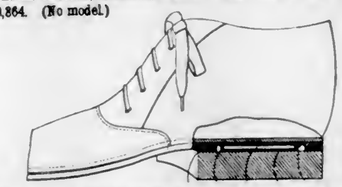
3. A device of the class described comprising an inner and an outer disk upon a common axis, rigid connections between said disks, clamping mechanism carried by one of said disks, an intermediate disk slidably mounted on said rigid connections, a groove in said disk, a ring mounted in said groove, a die-plate having a groove therein and lying against the intermediate disk and receiving said ring in its groove, said plate having a geared edge, a screw carried by the intermediate disk and engaging the geared edge of the die-plate and means for rotating the screw to rotate the die-plate.

658,233. WHEEL. PETER C. CAMPBELL, McCaskill, S. C. Filed Mar. 28, 1900. Serial No. 10,504. (No model.)



Claim.—In a wheel, the combination with the socketed spoke-sections, of an axle-box to receive the same, threads formed on one end of said axle-box and a flange on its other, flanges formed on the spoke-sections, hub-sections adapted to be received upon the axle-box and embrace the spoke-sections, recesses in the hub-sections to receive the flanges of the spoke-sections, and threads formed upon one of the hub-sections adapted to engage the threads on the box and compress the sections, substantially as described.

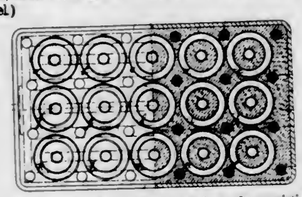
658,234. SHOCK-DEADENING DEVICE FOR BOOTS OR SHOES. JEAN M. CARTIER, La Roche, France. Filed June 19, 1900. Serial No. 20,864. (No model.)



Claim.—1. A shock-deadening device for boots and shoes, consisting of a lower or bearing plate and an upper or spring plate, said bearing-plate being provided at one end with tenons or projections and at its other end with an upward extension, and the said spring-plate being provided near one end with openings in which the tenons or projections are fitted, the opposite end of said spring-plate resting freely upon the upward extension on the bearing-plate.

2. A shock-deadening device for boots and shoes, consisting of the combination of two metallic plates, a spring-plate and a bearing-plate for the spring-plate, the bearing-plate being bent upwardly at a right angle along its front edge and provided with tenons or projections, the rear part of said plate being bent twice to a right angle, the said spring-plate being provided near and parallel to its front edge with rectangular holes engaging with the tenons of the bearing-plate, and having its rear edge resting on the horizontal surface formed by the double angle at the rear of the bearing-plate.

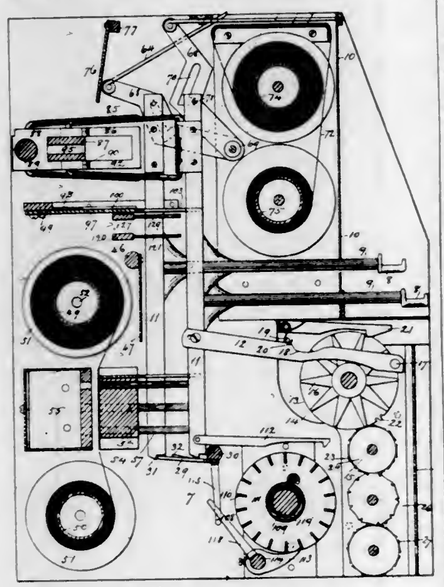
658,235. SECONDARY BATTERY. VICTOR CHEVAL and JOSEPH LIEBEMAN, Brussels, Belgium. Filed Jan. 19, 1900. Serial No. 2,060. (No model.)



Claim.—In an accumulator-battery, an electrode consisting of a series of cartridges with perforated envelops containing active material, in combination with another electrode consisting of other perforated envelops surrounding the said cartridges, with intervening spaces for the electrolyte, active material packed around said outer envelops and between them and

the walls of the battery, and conducting-rods in such active material, substantially as described.

658,236. VOTE REGISTER AND RECORDER. HERSEY A. CLIFFORD, San Francisco, Cal. Filed Jan. 23, 1900. Serial No. 2,537. (No model.)



Claim.—1. In a register, the combination of a reciprocating bar, a counting-wheel having radiating ribs, a reciprocating link from said bar to said wheel, the end of the link having a projection entering a recess between two radiating ribs, and means for guiding said link in its reciprocation, whereby said projection passes over the end of a rib and into the recess between said rib and the next rib, substantially as described.

2. In a voting-machine, the combination of a series of voting-keys, slotted levers detachably connected therewith, a bar, covers sliding under said bar, each lever being attached to one end of the corresponding cover, a plate beneath said covers, a sheet of paper between said plate and covers, and suitable means for advancing said sheet, substantially as described.

3. In a voting-machine, the combination of a sheet of paper, a cover therefor, a slotted lever for moving the cover, a voting-key, and a stud carried thereby engaging said slot, said slot being suitably conformed to lock said lever when said key is not operated, substantially as described.

4. In a voting-machine, the combination of a sheet of paper, a cover therefor, a slotted lever for moving the cover, a voting-key, and a stud carried thereby engaging said slot, said slot having its first portion, along which the stud moves, parallel with the direction of movement of said stud, whereby no motion is imparted to said lever during said first movement, substantially as described.

5. In a voting-machine, the combination of a sheet of paper, rollers therefor, voting-keys, means for resetting the same, a normally-inoperative train of mechanism between said resetting means and one of the rollers, covers for said paper, levers operated by the keys to remove the covers, a swinging plate against which the levers abut when so operated, and a connection from said plate to the shaft of one of the rollers whereby said train of mechanism is rendered operative and the operation of the resetting means then also advances the paper, substantially as described.

6. In a voting-machine, the combination of a sheet of paper, rollers therefor, the shaft of one of said rollers carrying a pinion, voting-keys, a shaft, and a rack driven thereby to reset the voting-keys, said rack being normally disconnected from said pinion, covers for said paper, levers operated by said keys to remove the covers, a swinging plate against which the levers abut when so operated, and a link from said plate to said roller-shaft to bring the pinion into mesh with the rack, substantially as described.

7. In a voting-machine, the combination of a sheet of paper, covers therefor, voting-keys operatively connected with the covers to remove the same, a bar under which said covers pass, and studs forming part of said connection and removable therefrom and adapted to be inserted through said bar and covers to secure the latter in position, substantially as described.

8. In a voting-machine, the combination of sliding spacing-blocks, a guide for the same, voting-keys, spreaders movable between said blocks to spread the same, and links pivotally connected to said keys and extending above and below said spreaders and pivotally connected thereto, substantially as described.

9. In a voting-machine, the combination of sliding spacing-blocks, a guide for the same, voting-keys, and spreaders pivotally connected thereto, said spreaders being forked to pass above and below said guide, substantially as described.

10. In a voting-machine, the combination of sliding spacing-blocks, a guide for the same, said blocks being forked to pass above and below said guide, voting-keys and spreaders connected thereto, the latter being movable with said keys between said blocks to spread the same, substantially as described.

11. In a voting-machine, the combination of sliding spacing-blocks, a guide for the same, said blocks being forked to pass above and below said guide, a rod retaining on said guide all such blocks, voting-keys and spreaders connected thereto, the latter being movable with said keys between said blocks to spread the same, substantially as described.

12. In a voting-machine, the combination of spacing-blocks, a guide for the same having recesses, limiting-blocks having tongues entering said recesses, a rod locking in position all of said blocks, voting-keys, and spreaders connected thereto, the latter being movable between said blocks to spread the same, substantially as described.

13. In a voting-machine, the combination of a plate extending lengthwise of the machine, an interlocking plate longitudinally sliding thereon having teeth with beveled ends, the ends of teeth at one end of the plate being beveled in one direction and those at the other end in the opposite direction and voting-keys having parts movable against said beveled ends to shift the interlocking plate longitudinally, substantially as described.

14. In a voting-machine, the combination of a plate extending lengthwise of the machine, an interlocking plate longitudinally sliding thereon having two sets of teeth, one set having their ends beveled in one direction and the other set in the opposite direction, said teeth being changeable in position on said plate, and voting-keys having parts abutting against the beveled ends of the teeth, substantially as described.

15. In a voting-machine, the combination of voting-keys and a shifting mechanism comprising two sets of devices each rigidly attached to the remainder of the shifting mechanism, each device corresponding to a voting-key, and each device when moved by said key shifting the mechanism to oppose all the devices of the other set to their respective keys, substantially as described.

16. In a voting-machine, the combination of a row of voting-keys, counters, a bar movable parallel with the row of keys and having obstructions one for each of certain keys, which when said bar is so moved, assume a position to obstruct said keys, each of the keys of the row being movable independent of said bar, means for moving said bar longitudinally independently of any of the keys of the row and means for simultaneously resetting those of the remaining keys which have been actuated, and returning said bar to its original position, substantially as described.

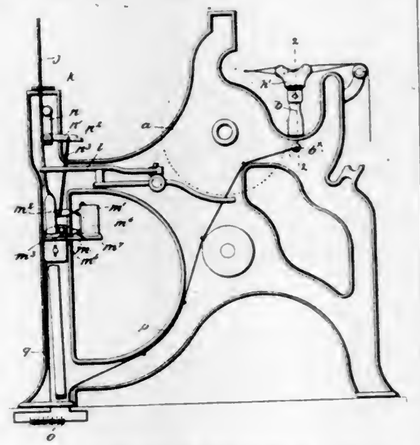
17. In a voting-machine, the combination of a row of voting-keys, counters, a bar movable parallel with the row of keys and having obstructions, one for each of certain keys, which, when said bar is so moved, assume a position to obstruct said keys, each of the keys of the row being movable independently of said bar, means for moving said bar longitudinally independently of any of the keys of the row a spring for retracting said bar, a catch automatically holding said bar when so moved, and means for simultaneously releasing said catch and resetting all actuated keys, substantially as described.

18. In a voting-machine, the combination of a row of voting-keys, a revoluble reel, having its axis parallel and coextensive with said row, a row of hooks, one for each key and moved thereby to engage said reel and advance the same, and means for limiting the angle of advance, substantially as described.

19. In a voting-machine, the combination of a row of voting-keys, a revoluble reel, parallel and coextensive with said row and having parallel peripheral bars, a device moved by each key engaging one of the bars and causing said reel to move through an angle of revolution, and means for limiting the angle of advance, substantially as described.

20. In a voting-machine, the combination of a row of voting-keys, a revoluble reel parallel and coextensive with said row and having parallel peripheral bars, a spring retracting the same, a device moved by each key engaging one of the bars to advance the reel, means for limiting the angle of advance, means for preventing rearward movement of the reel and a device for simultaneously releasing the reel from the latter means and resetting all actuated keys, substantially as described.

658,237. ELECTRICAL WARP STOP-MOTION FOR LOOMS. JOSEPH COLDWELL and CHRISTOPHER G. GILDARD, Fall River, Mass. Filed Jan. 11, 1900. Serial No. 1,139. (No model.)



Claim.—1. An electrically-operated stop-motion for looms comprising longitudinally-arranged circuit-rods, and a lower intermediate electrical conductor, opposite series of drop-bars loosely embracing said circuit-rods and normally supported out of contact with the aforesaid electrical conductor by the warp-threads of the loom, said circuit-rods serving to guide said drop-bars in their movements toward the conductor, tie-rods located above the circuit-rods, and a bridge-piece carried thereby and having lower slotted portions embracing said circuit-rods.

2. An electrically-operated stop-motion for looms comprising longitudinally-arranged circuit-rods and an intermediate electrical conductor, drop-bars loosely embracing said circuit-rods and adapted to be normally supported out of contact with the aforesaid electrical conductor by the warp-threads of the loom, said circuit-rods serving to guide said drop-bars in their movements toward the conductor, and a bridge-piece having converging slots arranged to embrace said circuit-rods, whereby their vibrations are arrested.

3. An electrically-operated stop-motion for looms, comprising the brackets *b*, having the integral bearings *c* and lugs *c'*, the contact-roll *d* and wiper-bar *e*, the upper brackets *h'* secured to the brackets *b*, the lugs h^3 h^4, the lease-rods *i*, tie-rods h^5, circuit-bars *f*, and the bridge-piece h^7 perforated to receive the tie-rods and slotted at its lower end as at h^8 to receive the circuit-bars.

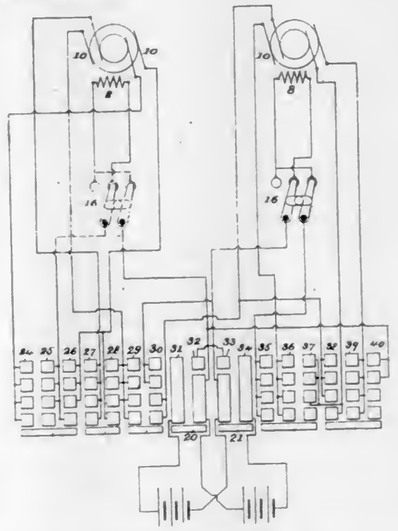
4. An electrically-operated stop-motion for looms comprising supporting-brackets, a contact-roll mounted therebetween, circuit-bars also mounted between said brackets, supplemental brackets supported by said former brackets and provided with a series of tubular bosses, tie-rods loosely mounted in said bosses, and a bridge-piece carried by said tie-rods and engaging said circuit-rods.

5. An electrically-operated stop-motion for looms, comprising supporting-brackets, a contact-roll mounted therebetween, circuit-bars also mounted between said brackets, supplemental brackets supported by said former brackets and provided with a series of tubular bosses, studs formed on said latter brackets, tubular lease-rods mounted thereon, tie-rods loosely mounted in said bosses, and a bridge-piece carried by said tie-rods and engaging said circuit-rods.

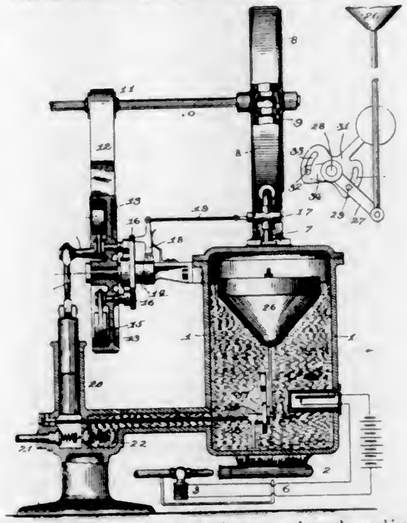
658,238. MOTOR-VEHICLE. CLYDE J. COLEMAN, Chicago, Ill., assignor of fifty-one one-hundredths to Thomas J. Ryan, same place. Filed Sept. 2, 1899. Serial No. 729,359. (No model.)

Claim.—In an electrically-propelled motor-vehicle, the combination of a pair of electric motors, the armatures of which are provided with independent coils or windings, two or more groups of storage batteries, and a current-controller cooperating through its switch-brushes, in one position to close the circuits with the batteries in multiple and armature-windings in series, in another position to close the circuits with the batteries in multiple and the armature-windings in multiple series, in another position to close the circuits with the batteries in multiple and the armature-windings in multiple, and in another position to close the circuits with the batteries in series and the armature-windings in multiple, substantially as set forth.

658,238.



658,239. AUTOMATIC FEED-WATER REGULATOR. CLYDE J. COLEMAN, Chicago, Ill., assignor to Thomas J. Ryan, New York, N. Y. Filed Oct. 27, 1899. Serial No. 734,968. (No model.)



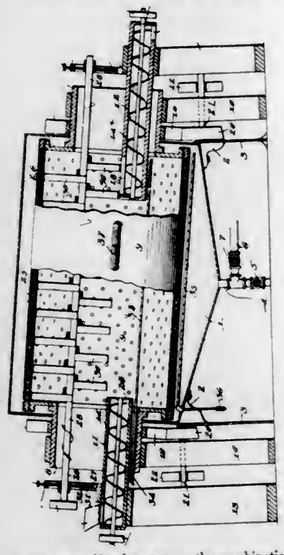
Claim.—1. In an automatic feed-water regulator, the combination of a vapor-pressure generator, a motor, a feed-pump operated by said motor, a single separating-wall between the generator and pump, means for opening communication between the atmosphere and valve-chamber of the pump, an operating-shaft for such means, and means within the generator for automatically controlling the operation of said shaft, said shaft extending through the said separating-wall.

2. In an automatic feed-water regulator, substantially as herein described, the combination of a vapor-pressure generator, a motor, a feed-pump operated by said motor in a constant manner, a duct connecting the valve-chamber of the pump with the generating-chamber, means for opening communication between the atmosphere and the valve-chamber of the pump, and means wholly within the generator and the connecting-duct for automatically controlling such communication, substantially as set forth.

3. In an automatic feed-water regulator, substantially as herein de-

scribed, the combination of a vapor-pressure generator, a motor, a feed-pump operated by said motor in a constant manner, a duct connecting the valve-chamber of the pump with the generator, means for opening communication between the atmosphere and the valve-chamber of the pump, and means wholly within the generator, and the connecting-duct for automatically controlling such communication, the same comprising a float, a link, a weighted trip mechanism, and a rock-shaft extending to the means for opening such communication, substantially as set forth.

658,240. CENTRIFUGAL MACHINE. WALTER H. COOK, New Orleans, La. Filed May 23, 1900. Serial No. 17,698. (No model.)



Claim.—1. In a centrifugal separator, the combination of an outer stationary casing, an inner perforated and rotary drum provided with tubular trunnions, cylindrical conveyer-casings extended through and supported independently of said trunnions, spiral conveyers arranged in said conveyer-casings, one of said conveyers being adapted to feed material into the rotary drum and the other to discharge material therefrom, and a rotary scraper located in the upper portion of said drum and having its shaft extended through the tubular trunnions, substantially as described.

2. In a centrifugal separator, the combination of an outer stationary casing, an inner rotary drum having perforated cylindrical walls and provided with tubular trunnions, cylindrical conveyer-casings extended through said trunnions and supported independently thereof, spiral conveyers arranged in said conveyer-casings, a rotary scraper comprising a shaft provided with radially-arranged scraper-blades, and means for supporting the shaft of said rotary scraper and for adjusting it to and from the interior wall of the rotary drum, substantially as described.

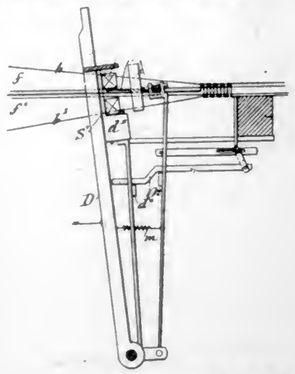
3. In a centrifugal separator, the combination of an outer stationary casing, a valved pipe communicating with the lower part of said casing, a rotary perforated drum arranged within the casing and provided with tubular trunnions, cylindrical conveyer-casings extended through said trunnions and each provided with an inlet and an outlet, spiral conveyers mounted in said conveyer-casings, means for rotating said spiral conveyers, mechanism for rotating the inner perforated drum, and a rotary scraper extended through said drum and its trunnions, substantially as described.

4. In a centrifugal separator, the combination of an outer stationary casing, having a depressed lower bottom and a valved pipe connected therewith, a rotary perforated drum provided with tubular trunnions and arranged in an inclined position within said outer casing, inclined cylindrical conveyer-casings extended through the tubular trunnions of the drum and supported independently thereof, spiral conveyers in said casings, a rotary scraper extended in an inclined position through the drum and its tubular trunnions, and means for adjusting said scraper toward and from the perforated wall of the drum, substantially as described.

5. In a centrifugal separator, the combination of an outer stationary casing, an inner perforated drum provided with tubular trunnions, friction-disks on said trunnions, power-driven friction-disks to bear against the friction-disks of the drum to rotate the same, cylindrical conveyer-casings extended into the drum through its tubular trunnions and each provided with an inlet and an outlet, spiral conveyers mounted in said conveyer-casings, means for rotating said conveyers, a rotary scraper extended through an upper part of the drum and its tubular trunnions, means for adjusting said scraper toward and from the perforated wall of the drum, and perforated cleansing-pipes inserted, respectively, into said drum and into its outer casing at one end of each, substantially as described.

6. In a centrifugal separator, an outer casing, a perforated drum arranged therein, a filtering material interposed between the walls of said drum, means for imparting a rotary movement to said drum, a suitably-arranged conveyer adapted to supply material to said drum, a suitably-arranged conveyer adapted to discharge material from said drum, a rotary scraper arranged in the said drum, means for adjusting the position of said scraper, means for imparting a rotary movement to said scraper, and a perforated cleansing-pipe arranged in the said drum and casing.

658,241. LOOM. JAKOB CORNELIUS, Paterson, N. J., assignor to the Bagdad Rug Company, of New Jersey. Filed July 20, 1897. Renewed Feb. 24, 1900. Serial No. 6,410. (No model.)



Claim.—1. In a loom, the combination, with the reed of the lay, of tension devices, means for holding the same away from the lay, during the pick of the shuttles, and means for moving said tension devices toward the lay, when the same moves forward to beat up the filling, said tension devices coöperating with the end dents of the reed, substantially as set forth.

2. In a loom, the combination, with the reed of the lay, of tension devices, means for holding the same away from the lay, during the pick of the shuttles, and springs connecting the tension devices and lay, for moving said tension devices into the end dents of the reed, when the lay moves forward to beat up the filling, substantially as set forth.

3. In a loom, the combination, with the lay and the shuttles, of pulling or dragging means acting on the filling between the lay and fell so as to draw it away from the fell, when the lay is moving back, substantially as set forth.

4. In a loom, the combination, with the lay; of a tension device, consisting of a movable rod provided with a U-shaped shoe for the weft-threads, coöperating with the end dents of the reed, and means for causing said tension device to meet the lay when the same moves forward to beat up the filling, substantially as set forth.

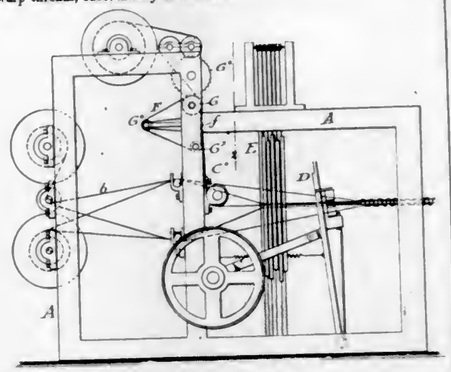
5. In a loom, the combination, with the lay, of tension devices for the weft-threads coöperating with the end dents of the reed of the lay, and stops for holding said tension devices in retracted position away from the reed during the pick of the shuttles through the shed, substantially as set forth.

6. In a loom, the combination with the lay, and a plate extending transversely of the same, of tension devices for the weft-threads coöperating with the end dents of the reed, pivoted latches constructed with shoulders and recesses, said latches resting upon the plate on said lay, and shoulders on the tension devices adapted to engage the recesses in the latches, substantially as set forth.

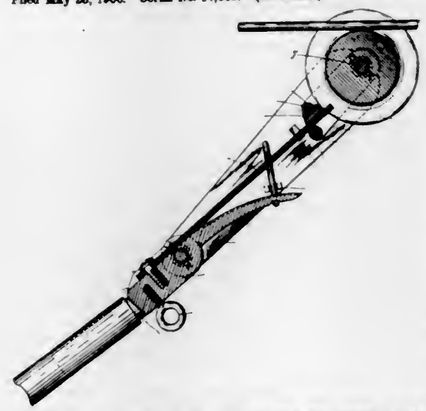
658,242. INDICATING DEVICE FOR LOOMS FOR WEAVING DOUBLE-PILE FABRICS. JAKOB CORNELIUS, Paterson, N. J. Filed June 1, 1899. Renewed Feb. 3, 1900. Serial No. 3,908. (No model.)

Claim.—1. In a pile-fabric loom, the combination, of an indicating band or apron having colors matching with the colors of the pile-warp threads, and means for imparting motion to said band or apron simultaneously and at the same rate of speed as the pile-warp threads, substantially as set forth.

2. The combination, in a pile-fabric loom, of an indicating band or apron having colors matching with the colors of the printed pile-warp threads, a supporting-roller and a guide-roller for said band or apron, and means for rotating said supporting-roller through the medium of said pile-warp threads, substantially as set forth.



658,243. TROLLEY. WILLIAM A. DAGGETT, Vineland, N. J. Filed May 23, 1900. Serial No. 17,662. (No model.)



Claim.—1. In a trolley, a frame comprising side plates, a trolley mounted to rotate in the upper end of said frame, a spring-yielding connection between the frame and the trolley-pole, and a curved arm extended underneath said spring, substantially as specified.

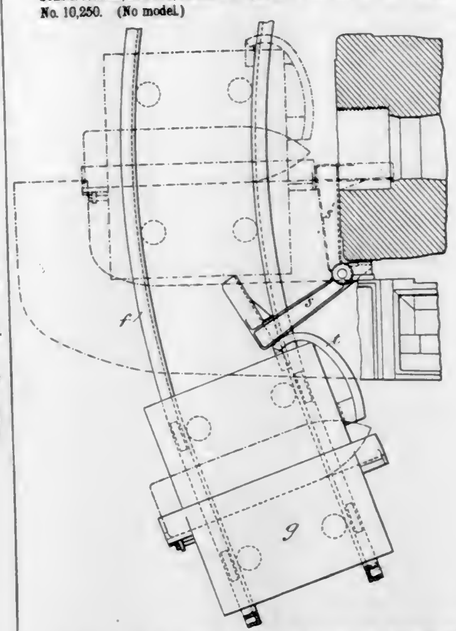
2. In a trolley, a frame comprising yielding side plates, a block to which the side plates are pivotally connected, a trolley arranged at the upper end of said arm, bolts connecting the side pieces of the frame underneath the trolley, a spring attached at one end to the block and having its other end passed between said bolts, and a curved arm extended from the block underneath the spring, substantially as specified.

3. In a trolley, a block adapted for connection with the trolley-pole, side plates having pivotal connection with said block, a trolley supported by said side plates, a curved arm extended from the block between the side plates, a loop having its side members attached to the side plates and having its horizontal member passing underneath the curved arm, and a spring attached at one end to the block over the arm and having its free end passed between parts supported by the side plates, substantially as specified.

4. In a trolley, a block adapted for connection with the trolley-pole, cheek-pieces on the side of said block having their lower ends inclined downward, a spring attached to the block between the cheek-pieces, side plates having pivotal connection with the block, parts carried by the side pieces and between which the free end of the spring passes, a shoe engaging with one of the parts and also with the upper surface of the spring and a curved arm extended from the block underneath the spring, substantially as specified.

5. A trolley, comprising a block, side plates of resilient metal pivotally connected to the block, a spring attached to the block and extended between the plates, means carried by the plates for engaging the upper and lower sides of the spring, lugs extended inward from the side plates to engage with the edges of the spring should the side plates be deflected laterally, and a trolley carried by the plates and having spring-yielding side motion relatively thereto, substantially as specified.

658,244. APPARATUS FOR SUPPLYING CHARGES TO HEAVY TURRET OR BARBETTE GUNS. ARTHUR T. DAWSON, London, and JAMES HORNE, Barrow-in-Furness, England, assignors to the Vickers, Sons & Maxim, Limited, Sheffield, England. Filed Mar. 26, 1900. Serial No. 10,250. (No model.)



Claim.—1. In an apparatus for supplying charges to turret or barbette guns, the combination of a turn-table carrying one or more guns, and a trunk or lift-shaft suitably attached to the said turn-table, of a cage traveling upon the said trunk and provided with a tray at its top, a pair of inclined and curved guide-rails, a cage *g* adapted to travel upon the said guide-rails and provided with a cam-bar, a trough interposed between the cage traveling upon the trunk and the said guide-rails and adapted to automatically receive a projectile from the cage upon the trunk and deliver it to the cage which travels upon the guide-rails, and a loading-tray connected to the loading-arm of each of the said guns and operated by the said cam-bar.

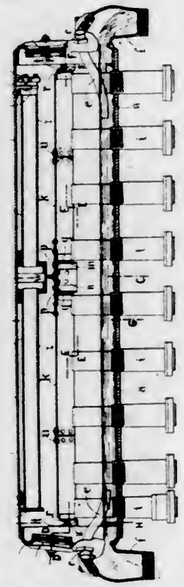
2. In an apparatus for supplying charges to turret or barbette guns, a vertically-moving cage, a tray carried thereby and mounted upon a longitudinal rocking shaft, an arm carried by said shaft, a stationary oblique guide for said arm, a receiving-trough mounted upon a transverse rocking shaft, means for tilting said trough, a vertically-moving cage *g*, a cam-bar connected thereto, and a loading-tray operated by said cam-bar.

3. In an apparatus for supplying charges to turret or barbette guns, the combination with a turn-table mounting, and a pair of turret-guns, and a chamber arranged under the turn-table mounting, of a pair of inclined and curved guide-rails, a loading-cage for projectiles adapted to travel along each guide-rail, a trunk or lift-shaft connected to the said turn-table mounting, means operating upon the said trunk or lift-shaft for transferring a projectile to the said loading-cage, and a loading-tray hinged to the loading-arm of each of said guns and automatically operated by said loading-cage.

4. In an apparatus for supplying charges to turret or barbette guns, the combination with the turn-table mounting, a pair of turret-guns, and a chamber arranged under the said turn-table, of a pair of suitably-disposed inclined and curved guide-rails, a loading-cage for projectiles adapted to travel along each guide-rail, and a loading-tray hinged to the loading-arm of each gun and operated by the said loading-cage.

658,245. FEED-WATER HEATER. LOUIS M. G. DELAUNAY-BELLEVILLE, St. Denis, France. Filed Sept. 5, 1899. Serial No. 729,495. (No model.)

Claim.—1. Apparatus of the character described, comprising a chamber, adapted to conduct the feed-water to the boiler and having steam-pipe connection with the boiler, a water and steam deflector arranged in said chamber, above the feed-water line and contiguously to the upper delivery ends of the pipes of said steam-pipe connection, said pipes also extending above the feed-water line, whereby the water and steam entering through said pipes are deflected or diverted, the water being directed into the feed-water chamber, and the steam passing off to the steam-supply, substantially as set forth.



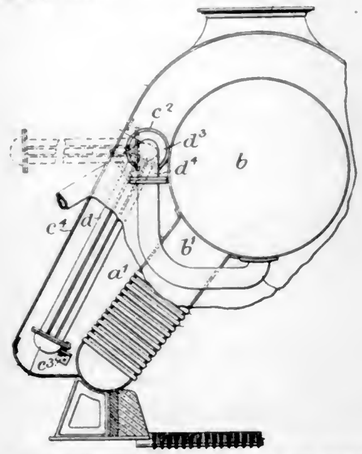
2. Apparatus of the character described, comprising a chamber adapted to conduct the feed-water to the boiler and having steam-pipe connection with the boiler, a water and steam deflector arranged in said chamber, above the feed-water line and contiguously to the upper delivery ends of the pipes of said steam-pipe connection, said pipes also extending above the feed-water line, the steam-supply chamber arranged in the upper part of said first referred-to chamber, above said deflector, and perforated pipes connected to said steam-supply chamber, substantially as set forth.

3. Apparatus of the character described comprising a cylinder or chamber, having feed-water-pipe connection and steam-pipe connection with the boiler, the feed-water pipes extending into the lower part of said cylinder or chamber, in opposite directions, the deflector, inverted-trough shape and arranged above the feed-water line, the steam-supply chamber arranged in the upper part of said cylinder, and the perforated pipes connected to said steam-supply chamber, the pipes of said steam-pipe connection also extending above said feed-water line, with their upper or delivery ends arranged contiguously to said deflectors, substantially as set forth.

658,246. **STEAM-GENERATOR.** GEORGE F. G. DES VIGNES and WALTER A. CLOUD, London, England. Filed Apr. 30, 1900. Serial No. 15,002. (No model.)

Claim.—1. A steam-generator comprising a steam and water chamber, depending divergent members or elements, transversely-intersecting smoke-tubes, a furnace located beneath and between said depending members, a casing surrounding the generator and furnace and leaving a smoke box or flue around the same, a flattened group of water-tubes located in said flue at each side of the generator, said group being mounted upon hollow trunnions so that it may be turned on said trunnions in order to give access to the smoke-tubes and communicating with the steam and water chamber, whereby the said group may constitute a part of the circulating system of the generator or a feed-water heater in said system, substantially as described.

2. A steam-generator comprising a steam and water chamber, and depending divergent members or elements, transversely-intersecting smoke-tubes, a furnace located beneath and between said members, a casing surrounding the generator and furnace and leaving a smoke box or flue around the same, a flattened group of water-tubes located in said flue, tube-boxes connecting the ends of said tubes the upper one of which is provided with hollow trunnions mounted in suitable bearings, and a pipe leading from the feed-water supply to one of the tube-boxes, and another pipe leading from the other tube-box to the steam and water chamber, substantially as described.



3. A steam-generator comprising a steam and water chamber, and depending divergent members or elements, transversely-intersecting smoke-tubes, a furnace located beneath and between said members, a casing surrounding the generator and furnace and leaving a smoke box or flue around the same, a flattened group of water-tubes located in said flue, tube-boxes connecting the ends of said tubes, the upper one of which is provided with hollow trunnions mounted in suitable bearings, and a pipe leading from the feed-water supply to one of the tube-boxes, and another pipe leading from the other tube-box to the steam and water chamber, and partitions in said tube-boxes arranged to cause the feed-water to travel a circuitous path therethrough, substantially as described.

4. A steam-generator comprising a steam and water chamber, depending divergent members or elements, transversely-intersecting smoke-tubes, a furnace located beneath and between said depending members, a casing surrounding the generator and furnace and leaving a smoke box or flue around the same, a group of water-tubes located in said flue at each side of the generator, said group being mounted upon hollow trunnions so that it may be turned on said trunnions in order to give access to the smoke-tubes and communicating with the steam and water chamber, whereby the said group may constitute a part of the circulating system of the generator or a feed-water heater in said system, substantially as described.

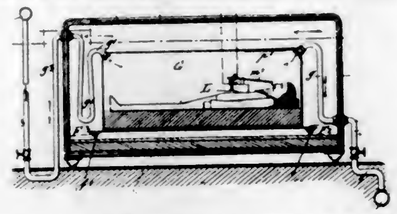
5. A steam-generator comprising a steam and water chamber, and depending divergent members or elements, transversely-intersecting smoke-tubes, a furnace located beneath and between said members, a casing surrounding the generator and furnace and leaving a smoke box or flue around the same, a group of water-tubes located in said flue, and tube-boxes connecting the tubes at their ends, hollow trunnions on the upper tube-box mounted in bearings, and pipes connecting the upper tube-box with the steam and water chamber, and detachable connections between the lower tube-box and the lower part of the water-space of said depending members, substantially as described.

6. In a steam-generator, the combination with a steam and water chamber, of a group of water-tubes located in the tubes or flues for the products of combustion, and hollow trunnions on said group mounted in suitable bearings, whereby said group of tubes may be swung out of the way, in order to give access to said smoke flues or tubes, substantially as described.

658,247. **APPARATUS FOR PREVENTING PREMATURE BURIAL.** CHRISTIAN A. DIETRICHS, New York, N. Y., assignor of one-half to Theodore Ortmann, same place. Filed Mar. 19, 1900. Serial No. 9,272. (No model.)

Claim.—1. An apparatus for preventing premature burial, consisting of an air-tight inclosing receptacle, a coffin in said receptacle, an air-supply pipe, an air-exhaust pipe, auxiliary pipes connecting the air supply and exhaust pipes with the interior of the receptacle, and flexible pipes connecting the auxiliary pipes with the upper part of the coffin, substantially as set forth.

2. An apparatus for preventing premature burial, consisting of an air-tight inclosing receptacle, a coffin in said receptacle, an air-supply pipe and an air-exhaust pipe, two sets of auxiliary pipes connecting said air supply and exhaust pipes with the receptacle, and flexible pipes connecting one set of said auxiliary pipes with the coffin, substantially as set forth.



3. In an apparatus for preventing premature burial, an air-tight inclosing receptacle having a hinged side door, connecting tracks on the inside of the door and bottom of the receptacle, and a truck for supporting the coffin, substantially as set forth.

4. In an apparatus for preventing premature burial an air-tight inclosing receptacle having a hinged side door, tracks on the inside of said door and on the bottom of the receptacle, hinged links connecting said tracks when the side door is lowered, and hinged legs for supporting the side door in lowered position, substantially as set forth.

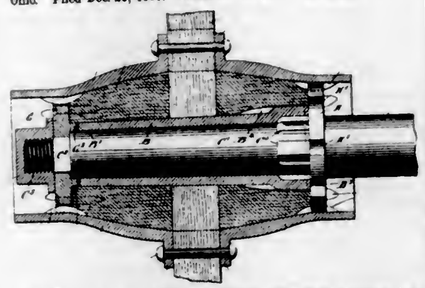
5. An apparatus for preventing premature burial, consisting of an air-tight inclosing receptacle, a coffin in said receptacle, an air-supply pipe, an air-exhaust pipe, two sets of auxiliary pipes connecting said air supply and exhaust pipes with the receptacle, flexible pipes connecting one set of auxiliary pipes with the coffin, and a furnace connected with the main exhaust-pipe for ventilating the receptacle and coffin and burning the obnoxious gases drawn off, substantially as set forth.

658,248. **PROCESS OF MAKING MEAT POWDER.** HENRY J. DUNN, London, England. Filed Mar. 27, 1899. Serial No. 710,691. (No specimens.)

Claim.—1. The process for the production of meat powder retaining its natural raw flavor which consists in comminuting the animal food substance, and then subjecting the same to the drying action of a current of air at a temperature not exceeding 60° Fahrenheit followed by a current of air at a higher temperature not exceeding 100° Fahrenheit.

2. The process for the production of meat powder retaining its natural raw flavor which consists in removing the fat, comminuting the remaining animal food substance, subjecting the same to the desiccating action of a current of dry air at a temperature not exceeding 60° Fahrenheit followed by a current of air at a higher temperature not exceeding 100° Fahrenheit and finally compressing the dry comminuted substance into cakes or tablets.

658,249. **MOTOR-VEHICLE WHEEL.** CALEB G. EMRICH, Madison, Ohio. Filed Dec. 29, 1899. Serial No. 741,917. (No model.)



Claim.—1. A wheel for motor-vehicles, comprising a wooden hub, wooden spokes inserted therein, a metallic covering for the outside of said hub, a power-receiving part adapted for driving connection with the motor, and a metallic connection between said power-receiving part and said covering.

2. A wheel for motor-vehicles, comprising a wooden hub, wooden spokes inserted therein, metallic bands surrounding the hub at each side of the spokes, a metallic connection extending from one band to the other across the spokes, a power-receiving part adapted for driving connection with the motor, and a metallic connection between said power-receiving part and one of the said bands.

3. A vehicle-wheel having a wooden hub, a metallic covering on the outside thereof, an axle within the hub, and a metallic connection between the axle and the covering to compel them to rotate in unison.

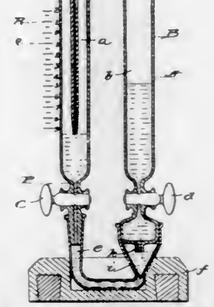
4. A vehicle-wheel having a hub, a metallic covering on the outside thereof, a hub-box located within the hub and provided on its outer surface with projections interlocking with the hub, an axle located within the hub-box and having projections engaging recesses of the hub-box, and collars secured to the axle to rotate therewith and projecting outwardly to an interlocking engagement with the hub-covering.

5. A vehicle-wheel having a hub, a metallic covering located on the outside thereof and having projections on its inner surface, an axle within the hub, and a metallic collar surrounding the axle and held to rotate therewith, said collar having at its periphery notches for the reception of the projections on the inside of the metallic covering, whereby said covering will be compelled to rotate with the axle.

6. A vehicle-wheel having a hub, a metallic covering on the outside thereof, a hub-box located within the hub and provided on its outer surface with spaced longitudinal projections or ribs interlocking with the hub, an axle located within the hub-box and having longitudinal projections or ribs engaging recesses of the hub-box, and collars secured to the axle to rotate therewith and projecting outwardly to an interlocking engagement with the hub-covering.

7. A vehicle-wheel having a hub, a metallic covering located on the outside of the hub and having longitudinal projections or ribs upon its inner face, a hub-box located within the hub and provided on its outer surface with spaced longitudinal projections or ribs interlocking with the hub, an axle located within the hub-box and having longitudinal projections or ribs engaging recesses of the hub-box, and collars secured to the axle to rotate therewith and located at the ends of the hub, said collars having at their peripheries, recesses to receive the projections of the hub-covering.

658,250. **CHEMICAL APPARATUS.** FERDINAND R. K. ERFMANN, Rotterdam, Netherlands. Filed Feb. 12, 1900. Serial No. 5,004. (No model.)



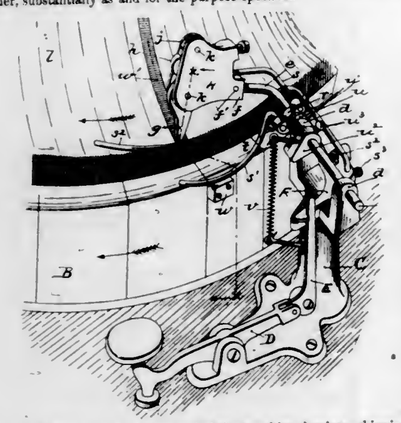
Claim.—1. The combination of two transparent vessels *a*, *b*, open at the top and furnished the one with two datum-marks, and the other with a series of graduation-marks, cocks in said vessels, a bent tube connecting the vessels, a filtering medium in said tube, and a removable pipette in the graduated vessel, substantially as, and for the purpose, described.

2. The combination of two transparent vessels *a*, *b*, open at the top and furnished the one with two datum-marks, and the other with a series of graduation-marks, cocks in said vessels, an enlargement at the lower end of the vessel *b*, an outlet *k* in said enlargement, a bent tube connecting the vessels, a filtering medium in said tube, a removable pipette fitting in the neck of the graduated vessel and a cock in the pipette, substantially as described, and for the purpose specified.

658,251. **STOP-MOTION FOR CIRCULAR-KNITTING MACHINES.** WILLIAM J. FERRIS, Woonsocket, R. I. Filed Mar. 1, 1900. Serial No. 7,005. (No model.)

Claim.—1. In a stop-motion for circular-knitting machines having a shipping-lever, an oscillating angle-shaft, and means intermediate said lever and shaft whereby the latter is enabled to control the operation of the former, the combination therewith of a guide-box mounted vertically upon the inner end of said angle-shaft and consisting of two parallel plates one of which has an internal shoulder at its forward portion and a boss formed upon its rear portion having an interior screw-threaded opening,

a set-screw to fit the opening of said boss, a presser-foot pivoted at the lower end of the guide-box between said plates and extending downward therefrom, a trip-lever pivoted in said guide-box between said plates and having its lower end adapted to engage with the upper end of said presser-foot, with an expansion-spring interposed between said trip-lever and said set-screw and acting normally to hold the trip-lever in contact with said shoulder, substantially as and for the purpose specified.



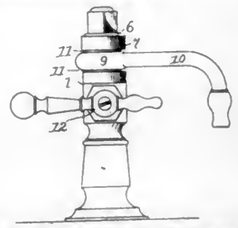
2. In a stop-motion for circular-knitting machines having a shipping-lever, an oscillating angle-shaft, with means intermediate said lever and shaft whereby the latter is enabled to control the operation of the former, the combination therewith of a guide-box mounted upon the end of said shaft and provided with a vertical slotted opening in the rear portion of one of its plates, a presser-foot and trip-lever pivotally mounted between said plates and engaging each other at their contiguous ends, a loose collar mounted upon the said shaft and having two extending lugs integral therewith and each provided with a circular opening, an angle-rod mounted in one of the lugs of said collar and having its opposite end extending through said slotted opening of the guide-box, a curved rod mounted in the other hub of said collar, each of said rods adjustably secured in position by a set-screw as shown, with a block secured to one of the plates of the cylinder and movable therewith, adapted to support the said curved rod and angle-rod, respectively, to prevent the presser-foot from being tripped while the seam in the fabric passes the same, as shown and described.

3. In a stop-motion for circular-knitting machines having a shipping-lever, a standard secured to the top of the bed of the machine, an oscillating angle-shaft mounted in the ears of said standard, and means intermediate said lever and shaft whereby the latter is enabled to control the operation of the former, the combination therewith of a guide-box secured to the said angle-shaft, a presser-foot pivoted at the lower end of the guide-box, a trip-lever pivotally mounted in the guide-box and having its lower end arranged to engage with the upper end of the presser-foot, a spring interposed between the plates of the guide-box and bearing against said trip-lever, with the angle-rod x^2 having one end bent downwardly to enter the top plate of said standard and the inner extended portion curved to bear against the top of the fabric and close to the inner side of the presser-foot, with a set-screw to enter the plate of the standard to adjustably secure the last-aforesaid rod in position, as shown and described.

4. In a stop-motion for circular-knitting machines having a shipping-lever, a standard secured to the top of the bed of the machine, an oscillating-shaft, with means intermediate said lever and shaft whereby the latter is enabled to control the operation of the former, the combination therewith of a guide-box mounted upon the inner end of said shaft, in which box is mounted a presser-foot and trip-lever engaging each other at their contiguous ends, the curved rod x^2 adjustably mounted in the top plate of said standard as shown and having its inner extended portion to bear against the top of the fabric and close to the inner side of the presser-foot, with the supporting-rod x^4 adjustably secured to the stationary plate of the machine as shown and having its outer portion curved to lie close to the inner sides of the contiguous needles, between the vertical plane of the presser-foot and beneath the knitted fabric, as shown and described.

658,252. **RIGHT AND LEFT BASIN-COCK.** WILLIAM B. FORD, Decatur, Ill. Filed July 5, 1898. Renewed Aug. 13, 1900. Serial No. 26,710. (No model.)

Claim.—1. In a right and left basin-cock, a body comprising parts adjustable lengthwise with relation to each other, such parts being connected by means of a reduced hollow cylinder forming part of the body and a nozzle swingable on the cylinder in communication with the interior thereof, whereby the nozzle may be swung to any desired position and clamped there, substantially as set forth.

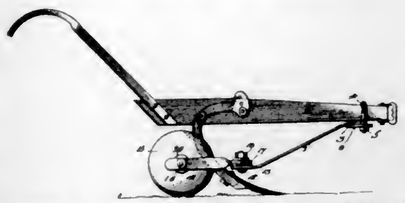


2. In a right and left basin-cock, a hollow cylindrical stem reduced with relation to the body and forming part thereof a nozzle encircling the stem and communicating with the interior thereof, and an adjustable bearing on the stem adapted to be forced against the nozzle, substantially as set forth.

3. In a basin-cock, a hollow exteriorly-threaded stem on the body of the cock communicating with the body and having an outlet-opening, a nozzle encircling the stem, and a nut on the stem adapted to bear against the nozzle.

4. In a basin-cock, the body 1, the reduced stem 2 bored and threaded, the recess 4 in the shoulder of the stem, the gasket 5 in recess 4, the nozzle 10 encircling the stem and having the annular bearings 11, the nut 6 having the recess 7, and the gasket 8 in recess 7, substantially as described.

658,253. **CORN AND COTTON FENDER.** ABRAHAM G. W. FOSTER, Sr., Powellville, Ga., assignor to Henry C. Fisher and Joseph E. Featherston, Newnan, Ga. Filed May 7, 1900. Serial No. 15,770. (No model.)



Claim.—1. A fender comprising a spring-arm connected to a plow-beam, a ratchet-plate secured to the free end of said arm, and a supplemental disk-carrying arm arranged on said spring-arm and provided with means for engaging the ratchet-plate whereby the disk can be arranged on an angle with relation to the beam.

2. A fender comprising a spring-arm adapted to be adjustably secured to a plow stock or beam, a supplemental arm carried by the free end of said spring-arm, a disk journaled to the supplemental arm and means for adjusting the two arms with relation to each other.

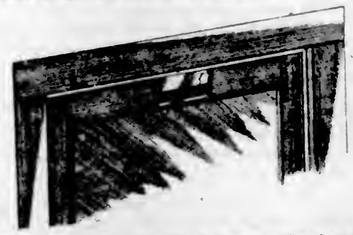
3. The combination with a plow-beam, of a perforated plate secured thereto, a spring-arm having lugs or pins at one end to engage the perforations in the plate, whereby the arm can be adjusted on either side of the beam, and a disk carried by the free end of said spring-arm.

4. The combination with a plow-beam, of a perforated plate secured thereto, a spring-arm adjustably engaging the perforations in said plate, a ratchet-plate arranged on the free end of said arm, a supplemental arm engaging the ratchet-plate and a fender carried by the free end of the supplemental arm.

658,254. **INSECT-ESCAPE AND VENTILATOR FOR WINDOW-SASHES.** MICHAEL FRIEDLY, Shelby, Ohio. Filed Jan. 10, 1900. Serial No. 961. (No model.)

Claim.—1. In a device of the class described, the combination of a sash provided with a slot extending from its interior to its exterior, an escape arranged within the slot and having a narrow opening for the exit of insects and to prevent their return, a vertically-sliding plate located at the outer side of the escape and arranged to cover the outer end of the slot of the sash, a rock-shaft located at the inner side of the escape and extending longitudinally of the sliding plate, and means for operating the rock-shaft, substantially as described.

2. In a device of the class described, the combination of a sash provided with a slot or opening extending from its interior to its exterior, an escape arranged within the slot, a sliding plate located at the outer side of the escape and arranged to cover the said slot, and operating mechanism located at the inner side of the escape and connected with and adapted to actuate the said plate, substantially as described.



3. In a device of the class described, the combination of a sash having a slot or opening extending through it, a sliding plate arranged at the outer face of the sash and adapted to cover the slot or opening, a rock-shaft arranged parallel with the plate and having arms connected with and adapted to actuate the plate, and means for rotating the rock-shaft from the interior, substantially as described.

4. In a device of the class described, the combination of a sash having a slot or opening extending through it, a movable plate arranged to cover the slot or opening, a rock-shaft provided with arms 11 connected with the movable plate, said rock-shaft having an arm 13, a spring engaging the arm 13, and means for shifting the spring, substantially as described.

5. In a device of the class described, the combination of a sash having a slot or opening extending through it, a movable plate arranged to cover the slot or opening, a rock-shaft connected with the plate and adapted to actuate the same, a spring having connection with the rock-shaft, and an operating-piece attached to the spring and provided with a catch, substantially as and for the purpose described.

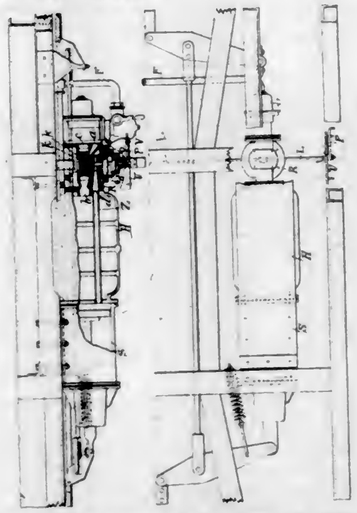
6. In a device of the class described, the combination of a casing adapted to be mounted in a slot or opening, an escape mounted in the casing, a movable plate or cover located at the outer side of the escape, a rock-shaft journaled on the casing at the inner side of the escape and having arms connected with the plate or cover, a spring connected with the rock-shaft, and means for shifting the spring, whereby the rock-shaft is partially rotated, substantially as described.

658,255. **APPARATUS FOR DISPLAYING LIVING PICTURES.** ROBERT FULGORA, New York, N. Y. Filed Apr. 19, 1900. Serial No. 13,518. (No model.)



Claim.—In an apparatus for reproducing living pictures, the combination with a tapering bellows having opaque walls, provided with a lens at the apex thereof, and with an annular frame at the rear end thereof, the said frame being provided with a rearwardly-extending flange, with an inwardly-extending flange and with an intermediate, inwardly extending offset forming two pockets, of a movable car or casing containing a platform for the living object to be reprodnced, the said car or casing having opaque top, bottom, side and rear walls, and adapted to form a lap-joint with the rearwardly-extending flange on the frame at the rear of said bellows, and electric lamps arranged in said pockets.

658,256. **REGULATOR FOR ATMOSPHERIC CAR-BRAKES.** JORDAN GEORGOFF, St. Petersburg, Russia. Filed Mar. 29, 1900. Serial No. 10,697. (No model.)



Claim.—1. The combination in a car-brake, with means for communication between the three-way valve and the auxiliary reservoir, and means for communication between the said three-way valve and the brake-cylinder, of means for restricting the said means for communication between the three-way valve and the brake-cylinder, means for controlling said restricting means by a predetermined difference of pressure between the air in the two said communicating means, and means for securing said restricting means in an unrestricting position.

2. The combination in a car-brake, with means for communication between the three-way valve and the auxiliary reservoir, and means for communication between the said three-way valve and the brake-cylinder, of a check-valve located in the said means of communication between the three-way valve and the brake-cylinder and arranged so that when closed it will prevent air from passing to the brake-cylinder, a check-valve mounted on said check-valve and also acting to close the passage of air into the brake-cylinder, and means for controlling said former check-valve by a predetermined difference of pressure between the air in the two said communicating means.

3. The combination in a car-brake, with means for communication between the three-way valve and the auxiliary reservoir, and means for communication between the said three-way valve and the brake-cylinder, of means for restricting the said means of communication between the three-way valve and the brake-cylinder, a pair of concentric communicating cylinders of different diameters, a piston working in each of said cylinders, a common piston-rod attached to said piston, means of communication between the space between the said pistons and the said means of communication with the auxiliary reservoir, means of communication between the other end of the larger cylinder and the said means of communication with the brake-cylinder, and means for causing said piston-rod to operate said restricting means.

4. The combination in a car-brake, with means for communication between the three-way valve and the auxiliary reservoir, and means for communication between the said three-way valve and the brake-cylinder, of means for restricting the said means of communication between the three-way valve and the brake-cylinder, a pair of cylinders of different diameters, a piston working in each of said cylinders, a common piston-rod attached to said pistons, means of communication between one of said cylinders and the said means of communication with the brake-cylinder, means of communication between the other said cylinder and the said means of communication with the auxiliary reservoir, means for causing said piston-rod to operate said restricting means, and means for securing

said piston-rod in position to hold the said restricting means in the open position.

5. The combination of a housing having two separate passages leading therethrough, a check-valve located in one of said passages, a pair of concentric communicating cylinders of different diameters connected with said housing, a piston working in each of said cylinders, a common piston-rod attached to said pistons, a rod interposed between said larger piston and said check-valve, said housing having also a passage communicating the said passage-way containing the check-valve with the end of the larger cylinder that is not communicating with the smaller cylinder, said housing having another passage-way communicating the space between the said pistons with said other separate passage-way, and an eccentric bearing on the extremity of said piston-rod for causing the said rod to retain said check-valve in the open position.

658,257. PROCESS OF COLORING PHOTOGRAPHS. PROSPER M. C. GRENIER-VILLERD, Paris, France, assignor, by direct and mesne assignments, to Henry E. Howland, New York, N. Y. Filed May 12, 1899. Renewed Mar. 6, 1900. Serial No. 7,595. (No specimens.)

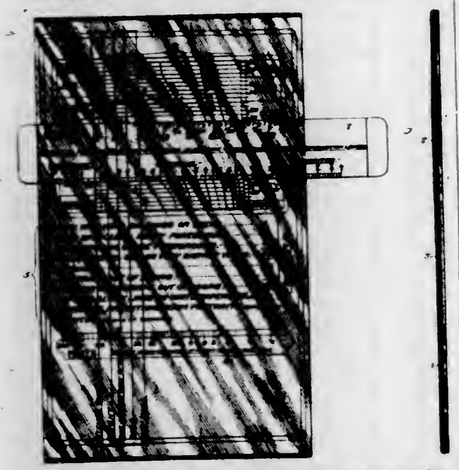
Claim.—1. The process of making photographs in colors which consists in first applying a solution of alum to the previously photographically printed fabric, then drying without washing out the alum, and then coloring the photograph as required.

2. The process of making photographs in colors which consists in photographically printing and then fixing and washing the photograph upon suitable fabric, and thereafter impregnating the fabric with a solution of alum, and subsequently applying the colors.

3. The process of making photographs in colors which consists in first producing upon fabric a photograph without colors, then applying alum to the back of the fabric and drying on the alum, and subsequently applying the colors to the printed face of the fabric, substantially as set forth.

4. The process of making photographs in colors, which consists in first producing upon woven fabric a photographic print, then applying alum and incorporating it in the woven fabric and drying, and subsequently applying the colors to the face of the fabric in contradistinction to coloring a gelatin or other film, substantially as set forth.

658,258. EXPOSURE-SCALE FOR PHOTOGRAPHERS. ROBERT J. HAGEY, Philadelphia, Pa. Filed June 27, 1900. Serial No. 21,308. (No model.)

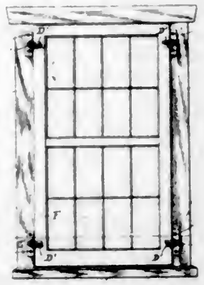


Claim.—1. The combination in an exposure-scale for photographers, of a card having thereon a chart containing curves representing mean-light values at different hours on different days of the year, with a strip adjustable laterally and longitudinally in respect to said chart and having a lens-index and an exposure-scale, and a series of lines representing different conditions of light, said lines being so disposed in respect to the chart and adjustable strip, that they will in all positions of adjustment of the latter, coact with the graduations of the exposure-scale to indicate the proper time of exposure, substantially as specified.

2. An exposure-scale for photographers consisting of a card having thereon a chart comprising curves representing the mean-light value at different hours of different days of the year, a strip adjustable in respect to said chart and having a lens-index and an exposure-scale, and a transparent cover having thereon lines indicating different conditions of light, which lines coöperate with the graduations of the exposure-scale to indicate the proper time of exposure, substantially as specified.

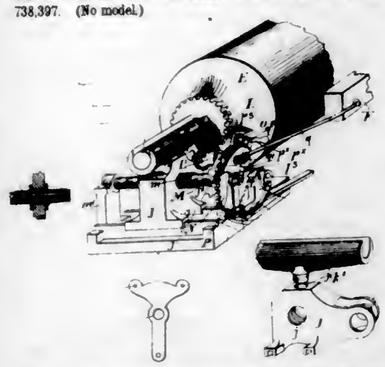
3. An exposure-scale for photographers consisting of a card having thereon a chart comprising curves representing the mean-light value at different hours on different days of the year, a strip adjustable in respect to said chart and having a lens-index and an exposure-scale, a scale representing the sensitiveness of different plates or films, said scale occupying a fixed relation to the curves of the chart, and a transparent cover having lines indicating different conditions of light, said cover and the scale of sensitiveness being adjustable in respect to one another.

658,259. COMBINED BLIND-HINGE AND STORM-WINDOW FASTENER. ROBERT W. HARLOW, Beverly, Mass. Filed Apr. 26, 1900. Serial No. 14,369. (No model.)



Claim.—The herein-described window and door attachment, comprising a metallic plate having means for attaching the same to a window or door frame and provided with an integral outwardly-projecting and internally-threaded hub or boss, a threaded shank screwed through said hub or boss and provided at its outer end with a bent portion projecting approximately at a right angle to the shank, and a lock-nut screwed on the threaded shank into engagement with the outer end of the hub or boss, said bent shank being adapted to be turned to either a vertical or horizontal position and locked in either of said positions by the lock-nut and serve as a hinge-pintle or storm-window fastener, substantially as and for the purpose specified.

658,260. WIRE-WEB GUIDE FOR PAPER-MAKING MACHINES. THOMAS HARVEY, Jr., Hull, Canada. Filed Nov. 27, 1899. Serial No. 738,397. (No model.)



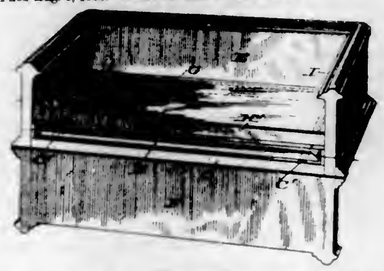
Claim.—1. In combination a guide-roll, a shiftable block supporting one end thereof, an oscillating stick, a supporting device for the same, mechanism for shifting the block, and means interposed between the stick and said mechanism for controlling the latter, said means being independent of the supporting device, substantially as described.

2. In a paper-making machine, the combination with the pivotally-supported guide-roll, and cross-stick of a slidable journal-block, a shaft having a worm-thread suitably journaled in the frame of the machine and passing through the said sliding block, a ratchet-wheel secured to the end of said shaft, a dog-supporting rocker loosely supported on said shaft and provided with gravity-dogs reversely set and designed to mesh with said wheel one at a time, mechanism interposed between said rocker and guide-roll to oscillate said rocker and means for alternately throwing said dogs in and out of gear as and for the purpose specified.

3. In a paper-making machine, the combination with the pivotally-supported guide-roll and stick, of a slidable journal-block provided with a screw-thread, a shaft having a worm-thread thereon passing through and meshing with the thread in said block, a ratchet-wheel secured to the end of said shaft, a dog-supporting rocker loosely supported on said shaft and provided with gravity-dogs set reversely and designed to mesh with said wheel, a cross-shaft provided with a feather connected to said rocker and designed to impart a rocking motion thereto, a spiral gear slidably supported on said shaft, lugs formed on said journal-box and surrounding said shaft on each side of said gear, a spiral gear located on the spindle of the guide-roll and meshing with said gear on the cross-shaft and means of throwing said dogs alternately in and out of gear as and for the purpose specified.

4. In a paper-making machine, the combination with the pivotal guide-roll, and stick, of a shaft having a worm-thread thereon, a journal-block threaded on said worm, a ratchet-wheel secured to the end thereof, a dog-supporting rocker loosely journaled on said shaft and provided with gravity-dogs reversely set, a rocker also loosely supported on said shaft provided with an arc-shaped guard, a stiff wire connected to said rocker-guard and cross-stick and means for transmitting motion from the guide-roll to the said dog-supporting rocker as and for the purpose specified.

658,261. BURIAL-CASKET. PHILIP HERBOLD, Jr., Galion, Ohio. Filed Aug. 9, 1900. Serial No. 26,398. (No model.)



Claim.—1. The burial-casket having a bottom, cleats thereon, a false bottom secured on said cleats over the true bottom, and a hinged side arranged for adjustment to expose the space between the bottom and the false bottom when not in use, substantially as set forth.

2. A burial-casket comprising a bottom, rails extending transversely on the upper side of said bottom, a side and two ends fixed in relation to said bottom, a false bottom above the said bottom and fixed in relation thereto, cleats between the bottom and the false bottom and supporting the latter, the fixed side and ends being provided near their upper edges with inwardly-projecting flanges exceeding in width or thickness the cleats for supporting the false bottom, the cap or lid fitted to rest upon said flanges and to be incased in the space between the bottom and the false bottom, and the hinged side arranged to expose such space, substantially as set forth.

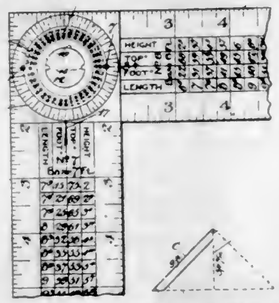
3. A burial-casket provided upon its bottom with a false bottom producing a recess adapted to incase the cap or lid and having a hinged side to expose such recess, the false bottom being provided above the open side of the recess with an upwardly-projecting side board or rail, substantially as set forth.

4. A burial-casket provided with a bottom and a false bottom spaced therefrom to form a recess for the cap or lid of the casket and having a side adjustable into position to expose such recess or to cover the same as may be desired, substantially as set forth.

5. The herein-described burial-casket having a bottom, a side and two ends fixed in relation to the bottom, a false bottom above and spaced apart from the bottom forming a recess for the cap or lid, the cap or lid fitted to be incased in said recess, and a side hinged to the bottom and adjustable to positions to cover or expose the opening to the cap or lid containing the recess, substantially as set forth.

658,262. ADJUSTABLE FRAMING-SQUARE. STEPHEN J. HESTER, Mayfield, Ky., assignor of one-half to William A. Carter and James I. Carter, same place. Filed June 22, 1900. Serial No. 21,226. (No model.)

Claim.—1. A framing-square, comprising pivotally-connected arms or members, a pivot-pin fixedly connected against rotation upon one of the members, and having its shank passing loosely through an opening in the other member, a circular degree-scale provided upon the head of the pivot-pin, an index or mark provided upon the said other member and coöperating with the marks of the degree-scale, and an adjustable binding device fitted to the projecting end of the pivot-pin.



2. A framing-square, comprising a pair of angularly-related arms or members, one of the latter having a comparatively-large circular opening formed therein, and the other member having a smaller concentrically-arranged opening to correspond with the former opening, a pivot-pin, having an enlarged circular head rotatable within the larger opening and fixed against rotation upon the other arm, and a screw-threaded shank projecting through the opening of the other arm, a thumb-nut provided upon the projecting end of the shank, a circular degree-scale provided upon the outer side of the head of the pivot-pin, and an index or mark provided upon the first-mentioned arm and coöperating with the marks of the circular scale.

3. A framing-square, comprising a pair of angularly-related arms or members, one of the latter having a comparatively-large opening formed therein, and the other arm having a smaller opening arranged concentrically with the former opening, a disk rotatable within the former opening, fixedly connected to the other arm, and provided with a central opening corresponding to the opening in said other arm; a circular degree-scale provided upon the outer face of the disk, an index or mark provided upon the first-mentioned arm and coöperating with the degree-scale, a pivot-pin, having one end fixed against rotation within the opening in the disk and also removably connected thereto, the opposite end projecting through the opening in the other member, said disk forming a removable part of the head of the pin, and an adjustable binding device fitted to the projecting end of the pivot-pin.

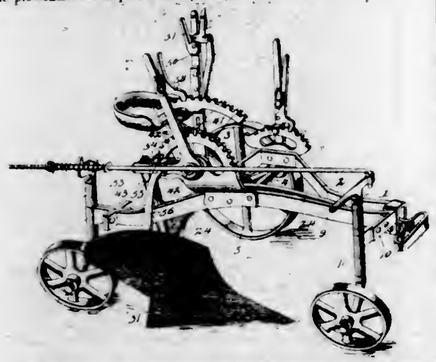
4. A framing-square, comprising a pair of members or arms, one of the latter having a comparatively-large opening formed therein, and the other arm having a smaller concentrically-arranged opening, a disk rotatable within the large opening and fixedly connected to the other arm, said disk also having a central opening, and lugs or projections upon the walls of said opening, a headed removable pivot-pin projecting through the two openings, the head of the pin being seated within the opening in the disk, and having marginal notches or recesses receiving the respective lugs or projections to fixedly connect the pivot-pin and the disk, the latter forming a removable part of the head of the pin, a binding device provided upon the opposite end of the pin, a circular degree-scale upon the disk and an index or mark provided upon the first-mentioned arm and coöperating with the degree-scale.

5. A framing-square, comprising a pair of angularly-related arms or members, one of the latter having a comparatively-large circular opening, the walls of which are beveled inwardly-toward the center of the opening, and the other arm having a smaller concentrically-arranged opening the walls of which are beveled centrally inward, a disk having an inwardly-beveled marginal edge rotatably fitted within the large opening and fixedly connected to the other arm, said disk being provided with a central opening having beveled walls which form continuations of the beveled walls of the opening in said other arm, projections or lugs upon the walls of the opening in the disk, a pivot-pin projecting through the openings, and having an enlarged head, the marginal edge of which is beveled inwardly toward the shank thereof to snugly fit the combined openings, and having notches or recesses receiving the projections to fixedly and removably connect the pin and the disk, the latter forming a removable part of the head of the pin, the shank of the pin being screw-threaded, a thumb-nut provided upon the pin, a circular degree-scale provided upon the disk, and a mark or index provided upon the first-mentioned arm and coöperating with the degree-scale.

658,263. WHEEL-PLOW. DAVID A. HOUSER, Ottawa, Kans. Filed Mar. 29, 1900. Serial No. 10,692. (No model.)

Claim.—1. In a wheel-plow the combination with a supporting-

frame, of a plow having its beam pivotally connected to the frame and the share pivotally connected to the standard and adapted to be inclined vertically adjusted with relation to said standard, and the adjusting-levers having their pivots in line with each other, one of said adjusting-levers being connected to the plow-beam and the other being adapted to adjust the plowshare on its pivot, substantially as described.



2. A plow having the plowshare pivotally connected to the standard, on one side thereof, and thereby adapted to be tilted in the direction of its length, said share being also adapted to turn laterally on said pivot, in combination with a key-wedge between the landside and the plow-standard, whereby said plowshare may be also obliquely adjusted with relation to the standard, substantially as described.

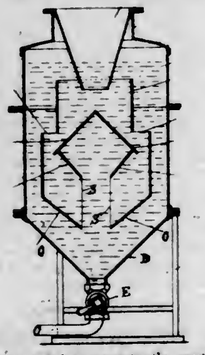
3. A plow having its share pivotally connected to the standard and adapted to turn laterally on said pivot in combination with means to secure said plowshare when adjusted both laterally and vertically with relation to its pivot, substantially as described.

4. A plow having the share provided with a bar secured to and substantially parallel with the landside and a brace-bar connecting said bar to the moldboard, in combination with the standard to which the share is pivoted, said standard being between the landside and supporting-bar, means to tilt and vertically adjust the share on its pivot and means to set said plow on said pivot at an angle to the line of draft, substantially as described.

5. A plow having a share adapted to be adjusted with relation with its standard, both in vertical and horizontal planes, substantially as described.

6. In a wheel-plow, the combination with a supporting-frame, a plow having its beam pivotally connected to the supporting-frame, said plow being pivoted to the lower end of the standard, a lever, to raise and lower said plow, an adjusting-lever to set the plow on its pivot with relation to the standard, said adjusting-lever having an arm, a link pivotally connected to the said plow, and a cross-head to which the upper end of said link is pivoted, said cross-head being adjustable on the said arm of said adjusting-lever, substantially as described.

658,264. **ACETYLENE-GAS GENERATOR.** ALBERT HUBBON, Porrentruy, Switzerland. Filed Jan. 15, 1900. Serial No. 1,711. (No model.)



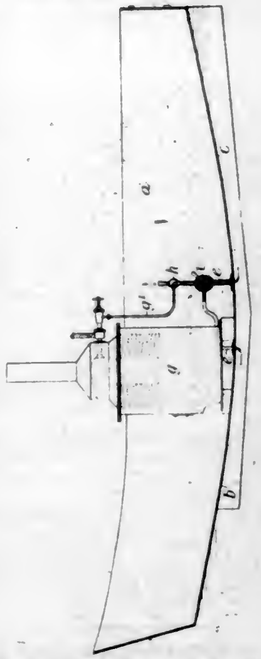
Claim.—1. In an acetylene-generator the combination of a vessel, to contain the water and charging material, having a tapering or conical bottom and a domed or arched cover with a tapering or conical charging-hopper the delivery-orifice of which is below the working level of the water in the said vessel a casing surrounding the lower portion of the said hopper inclined planes formed in one with or attached to the casing below the hopper, baffle-plates attached to the casing below the said inclined planes and an inclined bottom to the said casing all substantially as specified.

2. In an acetylene-generator having a tapering or conical bottom the combination of a tapering or conical charging-hopper having a delivery-orifice thereof below the working level of the water in the generator, a casing wider at the bottom than at the top and provided with a sloping bottom surrounding and attached to the lower portion of the said hopper, inclined planes formed in one with or attached to the said casing and baffle-plates attached to the casing below the inclined planes all substantially as and for the purposes specified.

3. In an acetylene-generator the combination of a vessel, to contain the water and charging material, having a tapering or conical bottom and a domed or arched cover with a tapering or conical charging-hopper the delivery-orifice of which is below the working level of the water in the said vessel, a casing surrounding the lower portion of the said hopper and inclined chutes formed in one with or attached to the casing the said chutes being below the delivery-orifice of the hopper and terminating in vertical mouths or mouths slightly inclined toward the said hopper as specified and for the purposes stated.

4. In an acetylene-generator having a tapering or conical bottom the combination of a tapering or conical charging-hopper having the delivery-orifice thereof below the working level of the water in the generator a casing surrounding and attached to the lower portion of the said hopper and inclined chutes formed in one with or attached to the said casing the mouths of the said chutes being vertical or slightly inclined toward the said hopper all substantially as specified and for the purposes stated.

658,265. **PNEUMATIC PROPELLING AND STEERING DEVICE FOR SHIPS.** CONSTANTIN JANCZARSKI, Hughesovka, Russia. Filed Feb. 24, 1900. Serial No. 6,390. (No model.)



Claim.—1. In a boat, the combination with the hull, of troughs provided on the under side thereof and adapted to slant upward from the center to the bow and stern respectively, ports in the bottom of said hull adjacent to the sides of and communicating with said troughs and on either side of the center of said hull, pipes leading to said ports, a three-way cock governing the air-supply to said pipes, and an air-injector adapted to supply air under pressure thereto, substantially as described.

2. In a boat, the combination with the hull, of troughs provided on the under side thereof and adapted to slant upward from the center to the bow and stern respectively, a supplemental trough provided at the end of the rearwardly-extending trough and inclined upward and outward from the stern of said hull, ports in the bottom of said hull communicating with said troughs, supply-pipes leading to said ports, a valve governing the air-supply to said pipes, an air-injector adapted to supply air thereto under pressure and means for steering said boat, substantially as described.

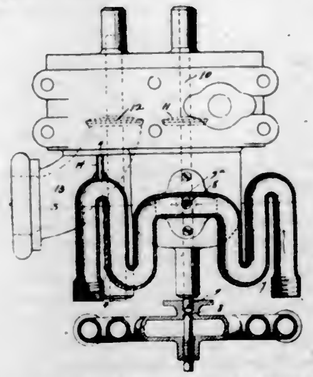
658,266. **TRIAL OR DAILY BALANCE SHEET.** LOUIS H. JOHNSON, Eugene, Oreg., assignor of one-half to Glass & Prudhomme, Portland, Oreg. Filed Oct. 24, 1899. Serial No. 734,659. (No model.)



Claim.—1. As a new article of manufacture, a trial or balance sheet comprising a main body or sheet 1, separate sheets mounted thereon properly ruled to receive the names, ledger-pages and debit and credit balances, a skeleton frame secured to the face of the sheet 1 with slideways along the edge of each separate sheet, and transparent sheets arranged in said slideways and covering said ruled sheets, the skeleton frame being provided with suitable permanent headings for the ruled sheets, substantially as described.

2. As an improved article of manufacture, a trial or balance sheet comprising a main body or sheet 1, thickened along its upper and side edges and longitudinally through its center, separate sheets mounted thereon, properly ruled to receive the names, ledger-pages, and debit and credit balances, said sheets being mounted between the edge and longitudinal centrally-thickened portions of said sheet 1, a skeleton frame secured upon the thickened portions of the sheet 1 and projecting slightly over said separate sheets, forming slideways along the edge of each separate sheet, and transparent sheets arranged in said slideways and covering said ruled sheets, the skeleton frame being provided with suitable permanent headings for the ruled sheets, substantially as described.

658,267. **GASOLENE-ENGINE FUEL-OIL FEEDER.** THOMAS C. KENNEDY, Chicago, Ill., assignor, by mesne assignments, to the Cornell Machine Company, same place. Filed June 3, 1899. Serial No. 719,238. (No model.)

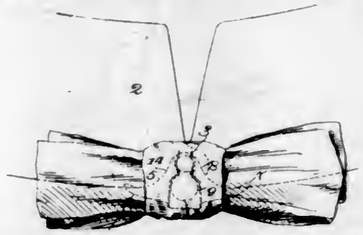


Claim.—1. An oil-feed for engines, comprising in combination an oil-supply receptacle having a tortuous interior passage, the return-bends whereof are located alternately above and below an intermediate level, a pump feeding oil into one side of said receptacle, an overflow leading out from the other side, and a supply-outlet leading from said receptacle to the vaporizer, whereby the upper bends of the tortuous passage constitute air-chambers acting to regulate the pulsatory movement of the oil-supply, substantially as described.

2. An oil-feed for engines, comprising in combination an oil-supply receptacle having a tortuous interior passage, the return-bends whereof are located alternately above and below an intermediate level, a pump feeding oil into one side of the receptacle, an overflow leading out from the other side thereof, a supply-outlet leading out from a point between the inlet and outlet passages, the exit end whereof is located substantially on a level with the overflow-outlet, whereby the upper bends constitute air-chambers above and in communication with the surface of the oil-supply, which act to minimize the pulsatory movement of the oil, substantially as described.

3. An oil-feed for engines, comprising in combination an oil-supply receptacle consisting of a pipe formed into three inverted-U bends in continuation with each other, the lower sides of the highest portions of the passage through the two outside U portions being located at or above the highest portion of the passage through the intermediate bend, a supply-passage leading out from the upper part of said intermediate bend, having its discharge end located approximately on a level with that portion of the receptacle constituting the overflow and which determines the level of the liquid therein, a vent-passage communicating with the upper part of the U-bend at the overflow side of the receptacle and a pump feeding into the opposite side of the receptacle, substantially as described.

658,268. **NECKTIE-SUPPORT.** DAVID E. LANTZ, Farmer City, Ill. Filed Feb. 7, 1900. Serial No. 4,328. (No model.)



Claim.—1. A necktie-supporter comprising a slotted plate curved to conform to the curvature of a collar with its lower corners extended and curved backward in greater degree than its main portion to form prongs as and for the purpose specified.

2. A necktie-supporter comprising a slotted plate curved to conform to the curvature of a collar with its lower ends or corners extended and curved back to form prongs, and the upper edge of the plate curved convexly as and for the purpose specified.

3. A necktie-supporter comprising a plate curved to conform to the curvature of a collar and having a vertical buttonhole-slot, the lower corners being extended and curved backward to form prongs, and its upper edge curved convexly and the side edges extending from the extremities of the prongs to said convexly-curved portion curved concavely to give a wedge-like form to the prongs, as shown and described.

4. A necktie-supporter comprising a slotted plate provided with spring-barbs extending over its face opposite the slot and with plate-securing prongs extending in opposite directions at the base of the plate and bent back into divergent relation.

5. A necktie-supporter comprising a slotted plate having a pair of crimped spring-barbs extending over its face and inclined with respect thereto, a divergent plate, securing-prongs extending from the opposite sides of the base of the plate and designed to engage the lower edge of the collar to prevent riding up or twisting of the tie.

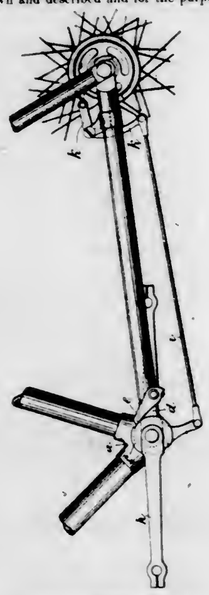
6. A necktie-support comprising a plate of substantially-triangular form, provided with a vertical slot enlarged at its lower end for the reception of a button-head, a flange extending from the base of the plate directly below the slot to form a seat, a pair of crimped spring-barbs connected at their lower ends by a transverse bar engaging said seat, and a pair of plate-securing prongs extending from the opposite sides of the plate at its base and bent back into divergent relation to slip under the lower edge of the collar to prevent the tie from riding up or twisting.

658,269. **BACK-PEDALING BRAKE.** WALTER J. LLOYD, Birmingham, England. Filed Sept. 25, 1899. Serial No. 731,595. (No model.)

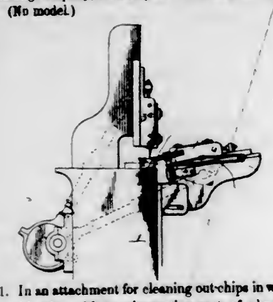
Claim.—1. The combination with brake mechanism of a free-wheel or free-crank bicycle, of a ratchet-disk fitted to rotate with the drive crank-shaft, a bell-crank lever arranged to freely oscillate about the said shaft as a center, a pawl carried by one of the arms of the bell-crank lever and resting in contact with the ratchet-disk by gravity, and means connecting the other arm of said bell-crank lever with the brake mechanism, substantially as shown and described and for the purpose specified.

2. The combination with brake mechanism for a free-wheel or free-crank bicycle, of a bell-crank lever, an outwardly-projecting flange on one of the bearing-cups of the bottom bracket for receiving said bell-crank lever, a pawl carried by one of the arms of the bell-crank lever,

and a notched or ratchet disk fitted to the crank adjacent to the bell-crank lever, the several parts being arranged and operating substantially in the manner shown and described and for the purpose specified.



658,270. **BRUSH ATTACHMENT FOR WOODWORKING-MACHINES.** HENRY MARLER, London, England, assignor to the Marler Carved Moulding Company, Philadelphia, Pa. Filed Mar. 1, 1900. Serial No. 6,983. (No model.)



Claim.—1. In an attachment for cleaning out chips in woodworking-machines, the combination with a reciprocating part, of a brush connected to and rotated by the reciprocation of the former, substantially as described.

2. In an attachment for cleaning out chips in woodworking-machines, the combination with a reciprocating part, of a brush, and an endless band connected to the brush shaft or spindle and to said reciprocating part whereby the former is rotated by the reciprocation of the latter, substantially as described.

3. In an attachment for cleaning out chips in woodworking-machines, the combination with a reciprocating tool-slide, of a brush connected to and rotated by the reciprocation of the former, substantially as described.

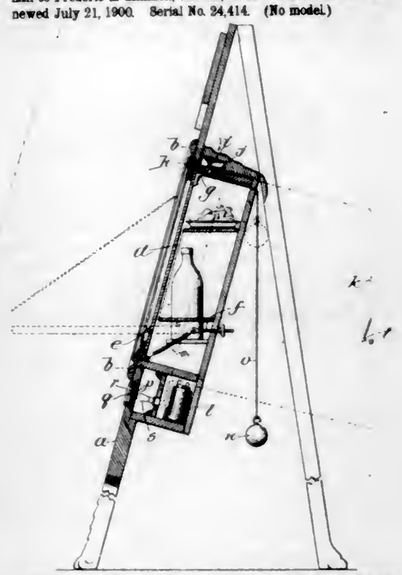
4. In an attachment for cleaning out chips in woodworking-machines, the combination with a reciprocating tool-slide of a brush, and an endless band connected to the brush shaft or spindle and to said reciprocating tool-slide, whereby the former is rotated by the reciprocation of the latter, substantially as described.

5. In a cleaning attachment for woodworking-machines, the combination with a table, of a tool-slide reciprocating thereon, a brush rotatably carried by said table, and a connection between said brush and said slide whereby the former is rotated by the reciprocation of the latter, substantially as described.

658,271. **WOOD-FILLING COMPOUND.** EDWARD A. MEYER, Fruitvale, Cal. Filed July 13, 1898. Serial No. 685,868. (No specimens.)

Claim.—The herein-described wood-filling compound comprising the following ingredients in substantially the proportions named: sodium biborate, six ounces; water, one hundred ounces; lacca in tabulis twelve ounces; and sufficient powdered pumice-stone and talc to reduce the compound to about the consistency of ready-mixed paint, substantially as described.

658,272. **INTERCONVERTIBLE EASEL OR OTHER ARTICLE OF FURNITURE.** JOHN H. MILLIKEN, Malden, Mass., assignor of one-half to Frederic L. Milliken, Milton, Mass. Filed June 3, 1899. Renewed July 21, 1900. Serial No. 24,414. (No model.)



Claim.—1. An interconvertible article of furniture consisting of a frame, a sideboard or cabinet supported thereon, a pivoted or hinged door or lid adapted to receive or hold a picture for closing the cabinet, and a latch and catch adapted to be operated automatically in combination with means to open the door after its release and counterbalancing means and a stop for the door, substantially as described.

2. An interconvertible article of furniture consisting of a frame, a sideboard or cabinet supported thereon, a picture-frame connected with the frame, a door adapted to receive a picture thereon pivoted at its sides to the frame, for closing the cabinet, and an electrically-operated catch and latch for releasing the door to allow it to open, in combination with means, as described, for opening the door after its latch is released.

3. An interconvertible article of furniture consisting of a frame, a sideboard or cabinet supported thereon, a pivoted or hinged door or lid adapted to receive or hold a picture, for closing the cabinet, and a latch and catch adapted to be operated automatically to release the door to allow it to open, combined with means for opening the door after its release and a screened sign *g* below the door and lamps in an electric circuit for illuminating the sign at predetermined intervals.

4. An interconvertible article of furniture consisting of a frame, a cabinet supported thereon, a pivoted or hinged door or lid *d* for closing the cabinet, a latch and catch for keeping the cabinet normally closed, and means at a distant point operatively connected with the latch and catch for releasing the lid or door to open the same in combination with means for opening the door or lid after its release, substantially as described.

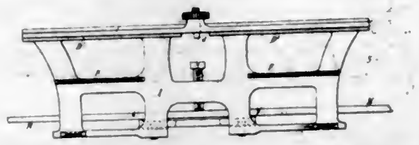
658,273. **PACKAGE FOR MEDICINES, &c.** LUTHER R. MOORE, Marietta, Ga. Filed Feb. 24, 1900. Serial No. 6,352. (No model.)



Claim.—1. The herein-described package, consisting of the sections formed of an outer layer of porous fibrous material, an inner layer of repellent fibrous material and a coating or sheet of cement therebetween which is a poor conductor of heat and impervious to paraffin or the like, such sections being cemented together, and a coating impervious to moisture inclosing the said cemented sections as set forth.

2. The herein-described package for effervescent or deliquescent drugs or chemicals, comprising dished sections each formed of an outer layer of absorbent fibrous material and an inner layer of repellent fibrous material, a layer of cement between the layers of fibrous material, said sections being connected together, and a coating of paraffin inclosing the said connected sections, as and for the purpose set forth.

658,274. **GAGE FOR CROSSCUT-SAWS.** JOSEPH MORIN, Seattle, Wash. Filed Sept. 18, 1899. Serial No. 730,967. (No model.)



Claim.—1. A gage for crosscut-saws consisting of a plate or frame having a lateral flange on one edge, said flange being formed with an opening or cut-away portion intermediate of its ends and an aperture at each side of and close to said opening, a plate formed with a slot for the raking-teeth of the saw, said plate being of a length greater than the opening or cut-away portion of the flange whereby its ends will be overlapped by the ends of the flange bordering on said opening, and having slots in such overlapped ends adapted to register with the apertures in the flange, and fastening devices passing through said end slots into the apertures, as set forth.

2. In a gage for crosscut-saws, the combination with the body of the gage having a flange on one edge and longitudinal ribs on its side, and a clamping-screw for a file mounted on the side of the said body, of a plate adapted for attachment to the under side of said flange and formed, on that side which is adjacent to the clamping-screw, with lugs whose points are in a plane at right angles to the side edges of said ribs, as set forth.

3. In a gage for crosscut-saws, the combination with the body of the gage formed with an edge flange and side ribs, of a screw working in said flange between the ends thereof and adapted to extend below the surface of the same, that side of the screw next to the gage-body being on a line with the outer edges of said ribs, and a locking-nut on said screw, substantially as set forth.

4. In a crosscut-saw gage the combination with the body of the gage consisting of a flat plate having a flange or traveling cap on one edge, two longitudinal ribs, one at the opposite edge and the other in the middle, of a glass plate or straight edge cemented to the under surface of the flange forming a perfect plane, said plane being at right angles with a plane passing through the outer edges of the parallel ribs, and a gage-screw working in said flange, substantially as shown and described.

5. In a crosscut-saw gage, the combination with the body of the gage provided with a traveling cap or flange on one edge, said flange being formed with an opening intermediate of its ends, of a glass plate cemented to the under surface of said flange, said plate having a cut-out portion registering with the opening in the flange, and a gage-screw working in said flange, as and for the purpose set forth.

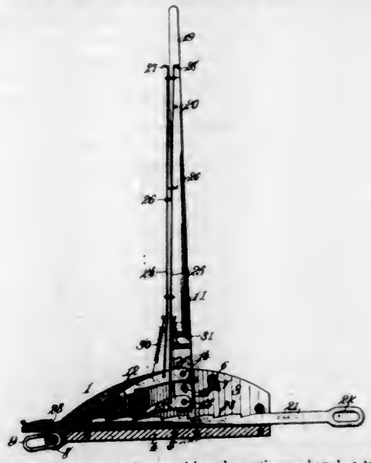
6. In a gage for crosscut-saws, the combination with the body of the gage formed with a flange on one edge having an opening intermediate its ends and an aperture at each side of said opening, a chilled plate having a slot for the raking-teeth of the saw and end slots adapted to register with the apertures in the flange, screws fitted in said slots and working in said apertures, and a metallic strip interposed between the flange and each end of the plate close to the screws as and for the purpose set forth.

658,275. **EXTENSION-TABLE.** FRANK P. MUSSER, Kent, Ohio. Filed Apr. 4, 1900. Serial No. 11,501. (No model.)



Claim.—An extension-table having compartments for the extra leaves, said compartments being hinged under the top of the table at one side of their centers, and gravity-latches for holding said compartments in two positions, substantially as described.

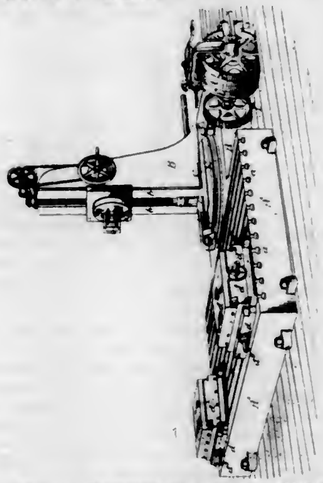
658,276. **ROD-JACK.** JAMES S. MCCARISTON, Corning, Ohio. Filed Nov. 24, 1899. Serial No. 738,208. (No model.)



Claim.—1. A rod-jack comprising the stationary box 1, a toothed draw-bar located therein, a lever fulcrumed in said box, dogs pivotally mounted on said lever on opposite sides of its fulcrum-point and working within said box and adapted to engage with the teeth of said draw-bar for moving said bar bodily through the box, and means for anchoring said box, substantially as described.

2. A rod-jack comprising the box 1, a toothed draw-bar working therein, a lever fulcrumed in said box, dogs pivotally mounted on said lever on opposite sides of its fulcrum-point and adapted to engage with the teeth of said draw-bar, a wire secured to each dog and extending along and working in guides on said lever, a coiled spring secured to each of said wires one of said springs being secured at its lower end to said box and the other of said springs having its lower end secured to said lever, substantially as described.

658,277. **RADIAL PLANING-MACHINE.** CHARLES C. NEWTON and ELLIS J. HANNUM, Philadelphia, Pa., assignors to the Newton Machine Tool Works, Incorporated, same place. Filed Apr. 13, 1900. Serial No. 12,772. (No model.)



Claim.—1. The combination in a planing-machine, of a bed on which the work is placed, a platform mounted to turn on a base, a standard mounted on the platform and movable toward and from the work-bed, a tool-head vertically movable on the standard, means for oscillating the platform, and means for automatically moving the tool-head in the standard, substantially as described.

2. The combination in a planing-machine, of a bed on which the work is placed, a platform mounted to torn on a base, a standard on the platform, a tool-head movable vertically on the standard, driving mechanism for the platform, means for automatically reversing the driving mechanism to oscillate the platform, and means for automatically moving the tool-head as the platform is oscillated, substantially as described.

3. The combination in a radial planing-machine, of a base, a platform mounted thereon, means for turning the platform, shifting mechanism whereby the platform will be turned first in one direction and then in the opposite direction, a standard carried by said platform, a tool-carrier mounted on the standard, feed mechanism for vertically feeding the tool-carrier, ratchet feed mechanism, and fixed blocks for actuating the ratchet feed mechanism, substantially as described.

4. The combination of a base, a platform, ways on the platform, a standard, the base of the standard mounted in the ways of the platform, a screw for adjusting the standard on the ways, a tool-carrier vertically adjustable on the standard, and means for vibrating the platform and for automatically feeding the tool, substantially as described.

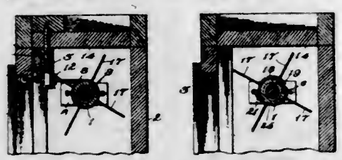
5. The combination in a radial planing-machine, of a support for the article to be planed, a platform adjacent to the support, means for vibrating said platform, a saddle adjustably mounted on the platform, a tool-carrier arranged to slide on vertical guideways on the standard, a vertical feed-screw for engaging the tool-carrier, and intermittent feed mechanism for feeding the carrier as the platform is reciprocated, substantially as described.

6. The combination of a bed for supporting the work to be planed, a base, a platform mounted on the base, a worm-wheel on the platform, a worm engaging the worm-wheel, lugs adjustably secured to the periphery of the platform, shifting mechanism actuated by the lugs so as to reverse the movement of the platform, a standard carried by the platform, and a tool-carrier carried by the standard, substantially as described.

7. The combination of a base, a platform, a standard on the platform, a tool-carrier mounted on vertical guideways on the standard, a feed-screw, a shaft geared to the feed-screw, an arm hung from the shaft, pawl-and-ratchet mechanism between the arm and the shaft so that said shaft will be turned in one direction only, and adjustable blocks against which the arm strikes as the platform vibrates so as to feed the slide, substantially as described.

8. The combination in a radial planing-machine, of a base, a platform, a standard, a tool carried by the standard, means for feeding the tool and means for vibrating the platform, a bed, tables on the bed, said tables being made in three sections so that they can be moved and adjustably secured to the bed, with means for moving one of the sections of the table longitudinally and the other section of the table laterally, so that the tables can be adjusted to properly receive the work, substantially as described.

658,278. FAN ATTACHMENT FOR DOORS. RUBY PEET, La Harpe, Kans. Filed Dec. 21, 1899. Serial No. 741,117. (No model.)



Claim.—1. In a device of the class described, a roller provided with blades arranged in pairs, the members of each pair being connected by an intermediate portion arranged on the roller, said blades being provided at the ends of the intermediate connecting portion with slots, combined with clamping-bands passing through the slots and arranged on the roller and on the exterior of the said intermediate portions, substantially as described.

2. In a device of the class described, a roller provided with blades arranged in pairs, the members of each pair being connected by an intermediate portion conforming to the configuration of the roller, said blades being provided at the ends of the connecting portions with slots, one of the slots being shorter than the other, combined with the clamping-bands passing around the roller and the exterior of the connecting portions of the blades, and provided with tongues passing through the smaller slots and interlocked with the main or body portion of the bands, substantially as described.

3. In a device of the class described, the combination of a pair of blades provided with an intermediate connecting portion and having slots of different lengths at their inner ends, and a clamping-band provided at one end with a reduced tongue and having a slot at its other end to receive the tongue, the tongue and the slotted end of the band being passed through the slots, substantially as and for the purpose described.

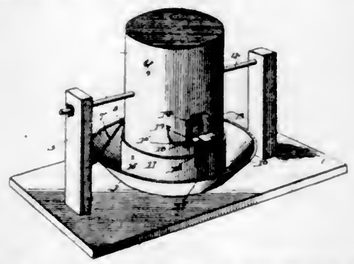
658,279. FOUNTAIN-PEN. JAMES A. PERRY, Pine, Fla. Filed July 15, 1899. Serial No. 723,950. (No model.)



Claim.—1. In a fountain-pen, the combination with a fountain having at one end a tubular stem, of a collar fitted to the inner end of said stem and provided with a finger that projects parallel with said stem and between which and the stem the shank of the pen-point is adapted to be retained, and a cut-off device having a limited movement on said stem and provided with means for cutting off the supply of ink fed through said stem, substantially as and for the purpose set forth.

2. In a fountain-pen, the combination with a fountain provided with a hollow stem having a notch in its end, of a collar secured to the said stem and provided with a finger projecting parallel with the stem, said finger having at its inner end a notch, a cut-off device having a collar that slips over said stem and has a limited play in the notch of said finger, said cut-off device having its forward end turned downward and provided with a lip that works into the notch at the end of the hollow stem, substantially as and for the purpose set forth.

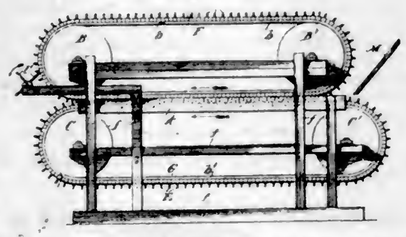
658,280. STOCK-WATERER. GEORGE S. RANDLE, Pratt, Kans. Filed July 5, 1900. Serial No. 22,602. (No model.)



Claim.—1. An invertible stock-waterer, comprising a can or receptacle having an open lower end, and provided with lateral perforations adjacent to said end, and a drinking-cup detachably connected to the open end of the can, and having an inner upstanding marginal flange fitting the lower end of the can, and provided with perforations which are out of alinement with those of the can, all of the perforations being located below the upper edge of the cup, and the perforations of the can being located in a different cross-sectional plane from those of the flange.

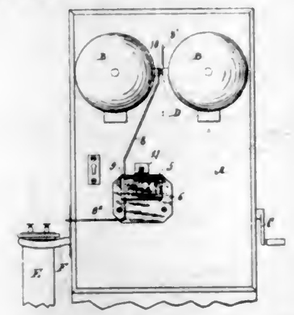
2. A stock-waterer, comprising a can or receptacle having a closed upper end, and an open lower end, a drinkiag-cup, having an inner upstanding marginal flange fitting the lower end of the can, an outlet from the latter to the cup, opposite substantially L-shaped and inverted catches rising from the flange, opposite pairs of eyes located upon opposite sides of the catches, and removable pins passing through the respective pairs of eyes, transversely across the adjacent catches, and immediately beneath the heads thereof.

658,281. MACHINE FOR TREATING PEAT. ADOLF ROM, Lian, Norway. Filed Mar. 18, 1899. Serial No. 709,635. (No model.)



Claim.—In a machine of the class described, the combination of two endless belts, one of said belts having teeth of lenticular form in section blunted at their rear edge, and the other, teeth of ellipsoidal form in section working between said lenticular teeth, the teeth on both belts set to leave considerable space between them, and means for driving the coöperative portions of said belts in one and the same direction, the upper belt traveling at a greater speed than the lower one, substantially as and for the purpose set forth.

658,282. SIGNAL. JOHN M. SAILER, Janesville, Wis. Filed Dec. 15, 1899. Serial No. 740,409. (No model.)



Claim.—1. A signal device, comprising a hood, a signal normally under and hidden by the hood, and a signal-supporting device consisting of a wire to which the signal is affixed, the wire being provided with a laterally-disposed shoulder adapted to rest on a laterally-movable call device and to be released therefrom by the movement laterally of the supporting call device and an upwardly-projecting part of the supporting device adapted to rest against the side of the laterally-movable call device after the shoulder has been released therefrom and has dropped below the call device.

2. A signal device, comprising a hood, a signal normally under and hidden by the hood, and a signal-supporting device provided with a shoulder adapted to engage releasably a movable call device and an extension of the supporting device adapted when the shoulder is released from the call device to fall to and rest on a supporting lifting device.

3. In a signal apparatus, a device normally supported releasably adapted when released to fall and disclose a signal, a withdrawable supporting device, means for engaging the supporting device releasably, means for upholding the signal-disclosing device in position after release from the supporting device to be replaced on the supporting device, an uptilting circuit-controlling arm, and means on the signal-disclosing device adapted when the signal-disclosing device falls to engage the uptilting arm and be lifted by the uptilting thereof into normal position.

4. The combination with a vibrating hammer of a telephone call device, and an uptilting circuit-controlling arm, of a signal, a signal-concealing device, a signal-supporting device, the supporting device being constructed to engage the vibrating hammer of the call device and to be released therefrom by the vibration of the hammer, and an extension of the signal-supporting device located above and adapted to fall on the uptilting arm when released from the call device and to be lifted thereby to its initial position when the arm moves upwardly.

658,283. MUSIC-LEAF TURNER. FLORIAN SCHAFFTER, New Orleans, La. Filed June 7, 1900. Serial No. 19,439. (No model.)

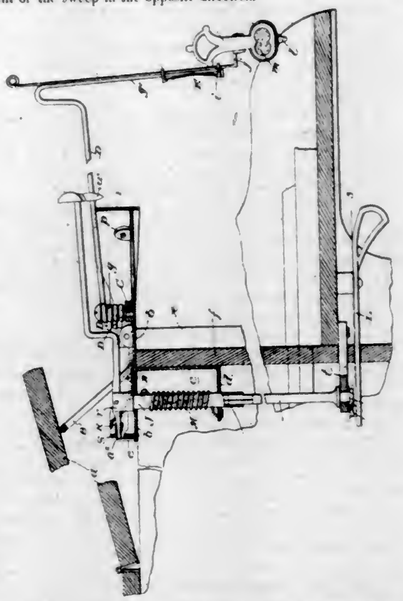
Claim.—1. In a music-leaf turner, the combination of a plurality of swinging arms, a swinging and vertically-movable sweep for moving the arms; said sweep having an enlargement provided with depending portions arranged one in advance of the other in a plane to enable both of them to engage the swinging arms, and the forward depending portion comprising a knuckle-joint, and means for raising the sweep and thereby disengaging it from an arm.

2. In a music-leaf turner, the combination of a plurality of swinging arms, a swinging and vertically-movable sweep for moving the arms, a support over which the sweep is arranged to move, and a spring arranged adjacent to the support for moving the sweep vertically as it passes off the support, substantially as specified.

3. In a music-leaf turner, the combination of a plurality of swinging arms, a swinging and vertically-movable sweep for moving the arms, a support over which the sweep is arranged to move horizontally in one direction, a spring arranged adjacent to the support for moving the sweep vertically in one direction as it passes off the support, and a cam for moving the sweep vertically in the opposite direction incident to its return horizontal movement, substantially as specified.

4. In a music-leaf turner, the combination of a plurality of swinging arms, a swinging and vertically-movable sweep for moving the arms, and a spring extending above the plane of movement of the sweep, for engaging and moving the same vertically at the termination of its horizontal movement in one direction, substantially as specified.

5. In a music-leaf turner, the combination of a plurality of swinging arms, a swinging and vertically-movable sweep for moving the arms; said sweep being fulcrumed at an intermediate point of its length, a support over which the inner arm of the sweep is arranged to move incident to the horizontal movement of the sweep in one direction, a sweep-elevating spring for engaging the inner arm of the sweep incident to the horizontal movement of the sweep in one direction and for moving the same vertically when it passes off the support, and a sweep-depressing cam for engaging the inner arm of the sweep incident to the horizontal movement of the sweep in the opposite direction.



6. In a music-leaf turner, the combination of a plurality of swinging arms, a swinging and vertically-movable sweep for moving the arms; said sweep being fulcrumed at an intermediate point of its length, and having an enlargement provided with depending portions arranged one in advance of the other in a plane to enable both of them to engage the swinging arms, and the forward depending portion comprising a knuckle-joint, a support over which the inner arm of the sweep is arranged to move horizontally in one direction, a spring arranged to engage the inner arm of the sweep and move the same vertically in one direction as it passes off the support, and a cam for engaging the inner arm of the sweep so as to move the sweep vertically in the opposite direction incident to its return horizontal movement, substantially as specified.

7. In a music-leaf turner, the combination of a plurality of swinging arms, a swinging and vertically-movable sweep for moving the arms; said sweep being fulcrumed at an intermediate point of its length, and having an enlargement provided with depending portions arranged one in advance of the other in a plane to enable both of them to engage the swinging arms, and the forward depending portion comprising a knuckle-joint, the spring for engaging the inner arm of the sweep, the curved plate having the slot provided with the lower inclined wall and receiving the inner arm of the sweep, and also having the comparatively-large opening at one end of the slot, and the lug supported in said opening of the curved plate and arranged to support the inner arm of the sweep incident to the horizontal movement thereof in one direction, substantially as specified.

8. In a music-leaf turner, the combination of a plurality of swinging arms, an upright rock-shaft, a sweep for moving the arms, fulcrumed at an intermediate point of its length on the rock-shaft so as to turn therewith and swing vertically thereon, a sweep-elevating spring for engaging the inner arm of the sweep incident to the horizontal movement of the sweep in one direction, and a sweep-depressing cam for engaging the inner arm of the sweep incident to the horizontal movement of the sweep in the opposite direction.

9. In a music-leaf turner, the combination of a plurality of swinging arms, an upright rock-shaft, a sweep for moving the arms, fulcrumed at an intermediate point of its length on the rock-shaft so as to turn therewith and swing vertically thereon, the spring for engaging the inner arm of the sweep, the curved plate having the slot provided with the lower inclined wall and receiving the inner arm of the sweep, and also having the comparatively-large opening at one end of the slot, and the lug supported

in said opening of the curved plate and adapted to engage the inner arm of the sweep, substantially as specified.

10. In a music-leaf turner, the combination of a body, an upright rock-shaft journaled therein, a coiled spring surrounding the shaft and connected at one end thereto and at its opposite end to the body, a plurality of swinging arms connected to the body, a sweep for moving the arms, fulcrumed at an intermediate point of its length on the rock-shaft, a spring connected to the body and arranged to engage the inner arm of the sweep, the curved plate connected to the body and having the slot provided with the lower inclined wall and receiving the inner arm of the sweep, and also having the comparatively-large opening at one end of the slot, the lug connected to the body and arranged in said opening of the curved plate, and suitable means for rocking the shaft in one direction, substantially as specified.

11. In a music-leaf turner, the combination of a plurality of swinging arms, and a swinging sweep having an enlargement provided with depending portions arranged one in advance of the other in a plane to enable both of them to engage the swinging arms; the forward depending portion comprising a knuckle-joint, substantially as specified.

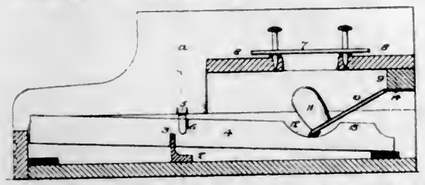
12. In a music-leaf turner, the combination of a plurality of swinging arms, and a swinging sweep for moving the arms; the said sweep being provided with a hand having a depending thumb arranged to engage the swinging arms and a finger arranged in advance of the thumb and comprising a knuckle-joint whereby it is adapted to flex in one direction and pass the arms and is held against flexing in the opposite direction so as to enable it to move the arms, substantially as specified.

13. In a music-leaf turner, the combination of a body having a curvilinear support on its forward portion, a post rising from the body, a plurality of swinging arms pivotally mounted one above the other on the post and resting on the support, and enlargements on the alternate arms whereby they are prevented from lapping.

14. In a music-leaf turner, the combination of a body having a curvilinear support on its forward portion, a plurality of swinging arms connected to a post rising from the body and resting on the support and having depending portions, enlargements on the alternate arms whereby they are prevented from lapping, fingers adjustably connected to the depending portions of the arms, and clasps on the said fingers; the clasps respectively comprising a member connected at an intermediate point of its length to a finger and having a cushion on the inner side of its lower portion and a tongue at the lower end thereof, and a second spring-pressed member fulcrumed at an intermediate point of its length and having an open, lower portion of smaller size than the lower portion of the first-named member substantially as specified.

15. A music-leaf turner comprising a body adapted to be arranged on the upper edge of the front panel of an upright piano, a plurality of swinging arms connected to the body, suitable means for moving said arms, and a curvilinear support connected at its ends to and extending upwardly and rearwardly from the body and adapted to support the lid of the piano, substantially as specified.

658,284. **TOY PIANO.** ALBERT SCHOENHUT, Philadelphia, Pa. Filed Aug. 11, 1899. Serial No. 726,905. (No model.)



Claim.—1. The combination of the keys of a toy piano, with a bar extending along the row of keys, and having fingers projecting between adjoining keys, substantially as specified.

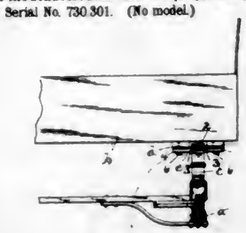
2. The combination of the keys of a toy piano, with a bar extending along the row of keys, and having fingers struck up therefrom and projecting between adjoining keys, substantially as specified.

3. The combination of the keys of a toy piano, with a bar extending along the row of keys, and consisting of a web with upturned flanges, said web having fingers struck up therefrom and projecting between adjoining keys, substantially as specified.

4. The within-described hammer for a toy piano, said hammer having a stem composed of a strip of pasteboard, with textile material secured thereto, said textile material projecting beyond the inner end of the stem so as to form a flexible hinge therefor, and being folded under the outer or free end of the stem so as to provide a cushion for the same, and a hammer-head secured to the outer end of the stem, substantially as specified.

5. The combination in a toy piano, of a series of keys, a pivot for said keys, means for separating the keys, the top of each key being recessed for the reception of the free end of the hammer-stem, metallic tone-plates, a series of hammers pivoted to the frame and arranged to strike the under side of the tone-plates, said hammers arranged to rest in the recesses in the keys and having cushions at the outer or free ends, substantially as described.

658,285. **SPRING-VEHICLE.** AUGUST SCHUBERT, Oneida, N. Y., assignor to the Schubert Bros. Gear Company, same place. Filed Sept. 13, 1899. Serial No. 730,301. (No model.)



Claim.—The combination with the cross-spring and the body, of a saddle comprising a horizontal central portion riding upon the top of the spring, vertical portions extending downward from said central portions and embracing the front and rear of the spring, and horizontal end portions extending from the lower ends of the vertical portions, cross-bars attached directly to the under side of the body and contiguous to the front and rear of the spring, said cross-bars being supported upon the horizontal end portions of the saddle and having their tops flush with the top of the horizontal central portion of the saddle to carry the body over said spring and contiguous to the top thereof, and means for fastening said saddle to the spring and to the cross-bars, substantially as set forth.

658,286. **BROWN SULFUR DYE AND PROCESS OF MAKING SAME.** NIKOLAUS SCHWAN and WILHELM ZEDEL, Höchst-on-the-Main, Germany, assignors to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed July 21, 1900. Serial No. 24,358. (Specimens.)

Claim.—1. The herein-described process for the manufacture of brown dyestuffs, which consists in subjecting trinitronaphthalenes to the action of alkali sulfids, substantially as set forth.

2. The herein-described process for the manufacture of a brown dyestuff for cotton, which consists in subjecting 1.3.8-trinitronaphthalene to the action of alkali sulfids.

3. As new products the brown dyestuffs obtained by the action of sulfids of alkali metals on trinitronaphthalenes being, when dry, brown-black products, easily soluble in water and directly dyeing cotton brown; their solutions produce with acids a brown precipitate.

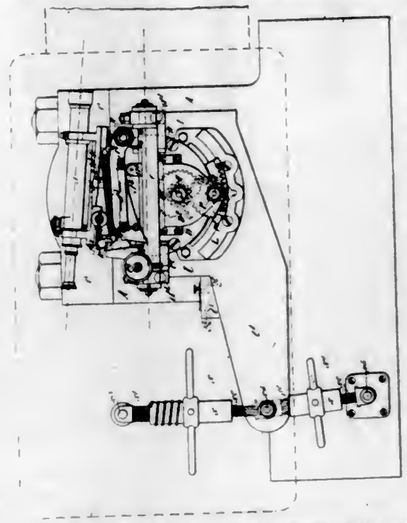
4. As a new product the brown dyestuff obtained by the action of alkali sulfid on 1.3.8-trinitronapthalene, being, when dry, a brown-black product, easily soluble in water and directly dyeing cotton brown, its solution producing with acid a brown precipitate.

658,287. **SIGHT FOR ORDNANCE.** LOTHIAN K. SCOTT, Farnborough, England. Filed Dec. 29, 1897. Serial No. 664,263. (No model.)

Claim.—1. A sighting apparatus for ordnance comprising a tube attached to the gun parallel to the longitudinal axis thereof, a telescope and "range-curve" hinged to one end of said tube, bearings projecting from the opposite end of said tube, pins projecting from the object-glass end of the telescope and sliding in said bearings, a traveler carried by said tube and bearing on the "range-curve," a spring for maintaining said "range-curve" in contact with said traveler, and means for operating said traveler when the gun is elevated or depressed so as to automatically effect the proper adjustment of the angle between the telescope and tube in accordance with the range at which the target is situated, substantially as described and for the purpose specified.

2. In sighting apparatus for ordnance the combination with a tube carried in bearings upon the gun and parallel to the longitudinal axis thereof, of a telescope hinged to said tube, a level hinged to said telescope and adjustable in a plane parallel to the longitudinal axis thereof, an adjustable segmental rack carried by the gun-mounting and gearing between said rack and said telescope, whereby the position of the latter is varied with the adjustment of the gun in elevation, substantially as described and for the purpose specified.

3. In sighting apparatus for ordnance the combination with a tube parallel to the longitudinal axis of the gun and rotatable about its longitudinal axis in bearings upon the gun, of a telescope hinged to said tube, a level hinged to said telescope and adjustable in a plane parallel to the longitudinal axis thereof, an adjustable segmental rack carried by the gun-mounting, gearing between said rack and said telescope, whereby the position of the latter is varied with the adjustment of the gun in elevation, a cross-level, and mechanism for moving the tube angularly about its longitudinal axis substantially as described and for the purpose specified.



4. In a sighting apparatus for ordnance the combination with a tube attached to the gun parallel to the longitudinal axis thereof, of a telescope and "range-curve" hinged to said tube, a toothed rack movable in said tube, a traveler carried by said rack, an adjustable toothed rack carried by the gun-mounting, mechanism gearing the rack in the said tube with the rack on the gun-mounting, means for clamping said mechanism, and means for taking up "backlash" in the gearing, substantially as described and for the purpose specified.

5. In a sighting apparatus for ordnance the combination with a tube attached to the gun parallel to the longitudinal axis thereof, of a telescope and "range-curve" hinged to said tube, a toothed rack movable in said tube, a traveler carried by said rack, an adjustable toothed rack carried by the gun-mounting, mechanism gearing the rack in the said tube with the rack on the gun-mounting, means for clamping said mechanism, means for taking up "backlash" in the gearing, and means for minimizing the effect of recoil on the apparatus when the gun is fired, substantially as described and for the purpose specified.

6. In a sighting apparatus for ordnance the combination with a tube carried in bearings upon the gun and parallel to the longitudinal axis thereof, of a telescope and "range-curve" hinged to said tube, a toothed rack movable in said tube, a traveler attached to said rack for operating said range-curve and telescope, an adjustable toothed rack carried by the gun-mounting, mechanism gearing the rack carried by the tube with the rack carried by the gun-mounting, and a spring one end of which bears against the rack carried by the tube and the other end of which bears against one of the closed ends of the said tube so as to take up "backlash" in the said gearing, substantially as described for the purpose specified.

7. In a sighting apparatus for ordnance the combination with a tube carried in bearings upon the gun and parallel to the longitudinal axis thereof, of a telescope and "range-curve" hinged to said tube, mechanism gearing said "range-curve" and telescope to the gun-mounting, and means applied to said tube for lessening the shock of recoil when the gun is fired, substantially as described.

8. In a sighting apparatus for ordnance the combination with a tube carried in bearings upon the gun and parallel to the longitudinal axis thereof, of a telescope and "range-curve" hinged to said tube, a toothed rack movable in said tube, a traveler attached to said rack for operating said "range-curve" and telescope, an adjustable toothed rack carried by the gun-mounting, mechanism gearing the rack carried by the tube with the rack carried by the gun-mounting, and a spring interposed between a collar at one extremity of said tube and its bearing at that end to minimize the shock of recoil when the gun is fired, substantially as described.

9. In sighting apparatus for ordnance the combination with a telescope and "range-curve" hinged to the gun, of mechanism gearing said telescope and "range-curve" to the gun-carriage, so that by means of a single operation of the elevating device the adjustment for range is given and the gun is elevated or depressed, and means whereby the telescope may be used as an ordinary sighting-telescope without the adjustment for range being effected by the elevating-gear of the gun, substantially as described.

10. In sighting apparatus for ordnance the combination with means whereby the angle between the line of sight and the longitudinal axis of the gun is automatically altered so as to give the necessary adjustment for range when the gun is elevated or depressed, of means whereby the gun and telescope can be together elevated or depressed without altering the said angle, substantially as described and for the purpose specified.

11. In a sighting apparatus for ordnance the combination with the tube attached to the gun and parallel to the longitudinal axis thereof, of a telescope and "range-curve" hinged to said tube, a traveler for operating said "range-curve" and telescope, means for operating said traveler when the gun is elevated or depressed so as to automatically effect the adjustment of the angle between the telescope and tube in accordance with the range at which the target is situated, and means whereby the telescope and tube can be moved together with said gun (when the latter is elevated or depressed) without altering the angle between them substantially as described and for the purpose specified.

12. In a sighting apparatus the combination of a collar embracing one of the gun-trunnions and provided with a segmental rack M, of an arm carried by such collar and of two independent elevating-screws one of which is connected to the said arm and the gun, and the other of which is connected to the said arm and a fixed point below it, for the purpose specified.

13. In sighting apparatus the combination with the arm of the collar embracing one of the gun-trunnions, of two spirit-levels located thereon and set at right angles to each other, of a frame for receiving said levels and of means whereby said frame and its levels can be adjusted either vertically or horizontally for the purpose specified.

14. In sighting apparatus the combination with the pivot to which the telescope is connected, of a curved plate adapted to be acted upon by the roller j^4 and of a longitudinally-arranged adjustable level carried by such plate substantially as described and for the purpose specified.

15. In sighting apparatus a range-curve comprising a series of parallelly-disposed movable blocks or teeth mounted in a frame and capable of independent adjustment for the purpose specified.

16. In sighting apparatus, a range-curve comprising a series of parallelly-disposed movable blocks or teeth mounted in a frame forming part of the telescope-support, of screw-stems on each of the said movable blocks or teeth, and of nuts carried by said stems and adapted to be revolved substantially as described.

17. In sighting apparatus the combination with the series of parallelly-disposed movable blocks or teeth of a resilient strip adapted to cover the free ends of the said blocks or teeth and fixed at one of its ends substantially as described and for the purpose specified.

18. In sighting apparatus for ordnance the combination with a tube attached to the gun parallel to the longitudinal axis thereof, a telescope and "range-curve" hinged to said tube, a rack movable in said tube, a traveler attached to said rack, and means for shifting the position of the said traveler on the movable rack, substantially as described and for the purpose specified.

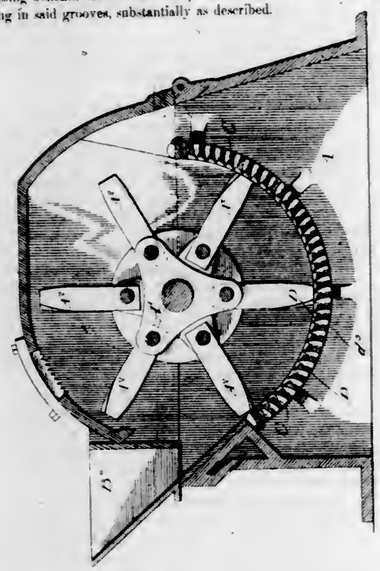
19. In sighting apparatus for ordnance the combination with a tube attached to the gun parallel to the longitudinal axis thereof, a telescope and "range-curve" hinged to said tube a rack having a dovetail groove therein and movable in said tube, a traveler having a dovetail capable of sliding in said groove in the movable rack, and a lug and clamping-screw on said traveler, substantially as described and for the purpose specified.

658,288. **CRUSHER AND PULVERIZER.** TRAVIS SHAW and JOHN C. LEE, Medford, Wis. Filed Feb. 9, 1900. Serial No. 4,672. (No model.)

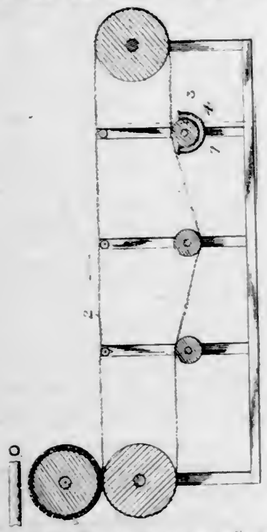
Claim.—1. In a crushing and pulverizing machine, a stationary cage or frame arranged to be operated against by the beaters, said frame comprising a pair of curved members provided upon their inner opposite faces with longitudinal grooves, and cross-heads rigidly connecting their corresponding ends, a plurality of sectional knife-bars engaging at their ends in said slots, and a truss-rod engaging at its opposite ends in said cross-heads and passing beneath said knife-bars upon the convex side of said frame, substantially as described.

2. In a crushing and pulverizing machine, a stationary cage or frame arranged to be operated against by the beaters, said frame comprising a pair of curved members provided upon their inner opposite faces with longitudinal grooves, and cross-heads rigidly connecting their corresponding ends; a plurality of sectional knife-bars engaging at their ends in said slots; said

knife-bars having central transverse grooves in their base edges in alinement; and a truss-rod engaging at its opposite ends in said cross-heads and passing beneath said knife-bars upon the convex side of said frame engaging in said grooves, substantially as described.



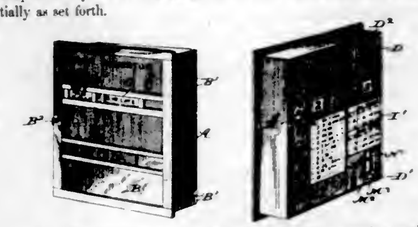
658,289. APPARATUS FOR CLEANING THE WIRE WEBS IN PAPER-MAKING MACHINES. JOHN M. SHEPHERD, Mottville, N. Y. Filed Dec. 21, 1899. Serial No. 741,171. (No model.)



Claim.—In a paper-making machine, an endless wire apron supported upon rollers, a trough located immediately below one of said rollers for containing acid for application to said wire apron by the roller, a wiper or cover applied to the central portion of said roller, a felt-covered couch-roll, contacting with said apron, and a water-spray pipe for casting water upon said felt-covered couch-roll to dilute the acid conveyed thereto by the endless apron, and means to cause the apron to travel, substantially as described.

658,290. TRAIN-INDICATOR. WILLIAM M. SIX and OLIVER R. DAILY, Lebanon, Ind. Filed June 14, 1900. Serial No. 20,261. (No model.)

Claim.—1. An indicator having upon it indicating characters arranged in longitudinal and circumferential series and movable both longitudinally and circumferentially or rotatably to bring any desired one of said characters to exposed position and a shaft connected with said drum and adapted to operate it both longitudinally and circumferentially substantially as set forth.



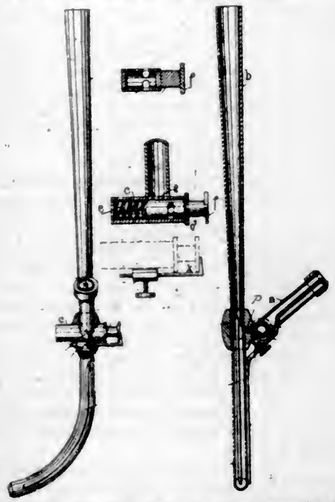
2. The combination of the drum F having the trunnions and the bearings in which said trunnions are movable longitudinally and rotatably, the gear L, the gear M, the boxing, the shaft of gear M journaled in said boxing and having the handle M^3, and the casing having a slot in which said shaft is movable up and down substantially as set forth.

3. In an indicator substantially as described, the combination of the casing having a hinged section D provided with a slot N, the drum F having a gear L, and supported on said section D, the shaft M' having a gear meshing with the gear L and operating in the slot N, the shaft M' being movable bodily in the slot N in a direction at right angles to its axis and the boxing supporting the shaft M' substantially as set forth.

4. An indicator comprising the casing having sight-openings E E' and G G', the time-indicator having inscriptions arranged to be exposed through the openings G and G', and the train-indicator having openings arranged to be exposed through openings E and E', the said train-indicator having its inscriptions arranged in two series and being movable longitudinally, whereby either of said series may be exposed through the openings E and E' substantially as set forth.

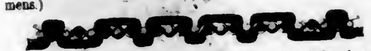
5. An indicator comprising the casing having sight-openings E and E', G and G', the time-indicator consisting of a drum arranged horizontally and having inscriptions which may be exposed through the openings G, G', the train-indicator in the form of a drum having upper and lower series of inscriptions and movable longitudinally and rotatably and an operating-shaft geared with the train-indicator and adapted to rotate the same, and to move it longitudinally, substantially as set forth.

658,291. BLOWPIPE. FRIEDRICH SPEIDEL, Pforzheim, Germany. Filed Nov. 20, 1899. Serial No. 737,680. (No model.)



Claim.—In a blowpipe, a gas-delivery pipe, a gas-inlet pipe having a transverse chamber communicating with the gas-delivery pipe, a sliding valve seated in said chamber to control the communication between the inlet and outlet pipes, a spring engaging the valve and normally tending to force it outwardly to closed position, a sleeve mounted on the blowpipe, a rod slidably supported in the sleeve, a head on the rod engaging the outer end of the valve, and a pinching-screw to lock the rod in the sleeve, substantially as and for the purpose set forth.

658,292. WOVEN FABRIC. WILLIAM M. STEVENSON, Springfield, Mass., assignor to the Hodges Fiber Carpet Company, same place and Portland, Me. Filed Jan. 22, 1900. Serial No. 2,324. (No specimens.)



Claim.—A woven fabric in which are combined figuring weft or filling threads of paper, fine binding warp-threads therefor, and figuring warp-threads which, owing to the incompressibility of the paper weft-threads, are caused to lie upon the surface of the latter and form figures in relief, substantially as specified.

658,293. WOVEN FABRIC. WILLIAM M. STEVENSON, Springfield, Mass. Filed June 19, 1900. Serial No. 20,844. (No specimens.)

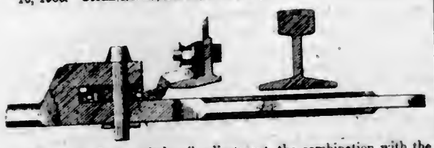


Claim.—1. A woven fabric composed of interwoven warp-threads and weft-threads forming two independent plies and a single set of figuring warp-threads which passes from face to face of the fabric, but not between the plies whereby it performs the double duty of patterning each face in relief and tying the two plies of the fabric firmly together, substantially as specified.

2. A woven fabric comprising independent face and back plies each consisting of weft-threads of alternating colors and warp-threads of like alternating colors, whereby the face of each weft-thread is crossed by a warp-thread of corresponding color, and a single set of figuring warp-threads passing from face to face of the fabric but not between the plies whereby it serves the double duty of patterning in relief on each face and of tying the two plies of the fabric firmly together, substantially as specified.

3. A woven fabric consisting of weft-threads of paper interwoven with warp-threads to form two separate and independent plies and a single set of figuring warp-threads of textile material, said warp-threads passing from face to face of the fabric but not between the plies, and serving to form a pattern in relief on each face and also to tie the two plies of the fabric firmly together, substantially as specified.

658,294. RAILWAY-SWITCH. AXEL A. STROM, Austin, Ill., assignor to the Strom Manufacturing Company, Chicago, Ill. Filed July 16, 1900. Serial No. 23,759. (No model.)

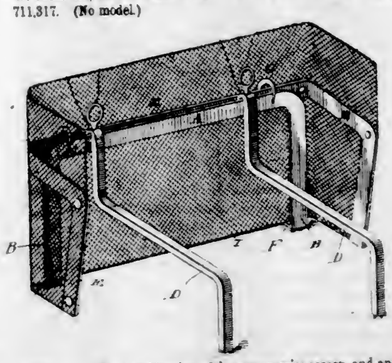


Claim.—1. In a switch-rail adjustment, the combination with the clip part fastened to the switch-rail, of an eccentric part pivotally connecting the clip with the tie-bar and adapted to be adjusted by turning, a series of stops arranged about the eccentric on one of said parts, one or more stops on the other said part to engage with a stop in said series for locking the eccentric in its adjusted position, and a dial on the eccentric having a progression of numbers extending part way about it in one direction from a given point and another progression of numbers extending part way about it in the contrary direction from said point, whereby the user shall be guided in turning the eccentric alternately in contrary directions for effecting different extents of the adjustment, substantially as described.

2. In a switch-rail adjustment, the combination with the clip part fastened to the switch-rail, of an eccentric part pivotally connecting the clip with the tie-bar and adapted to be adjusted by turning, a series of stops arranged at intervals denoting a progression of fractions of an inch for the adjustment, and extending in one direction about said eccentric from a given point, a series of stops arranged at intervals denoting another progression of fractions of an inch for the adjustment, alternating with those in the other series and extending from said given point in the contrary direction about said eccentric, a stop on the other said part to engage with a stop in either of said series for locking the eccentric in its adjusted position, and a dial on the eccentric carrying radially-arranged characters in series extending in contrary directions about its center from a given point, the characters in each series denoting a progression of intervals of adjustment alternating with those in the other series, substantially as and for the purpose set forth.

3. In a switch-rail adjustment, the combination with the clip fastened to the switch-rail and provided with an opening and with a series of stop-openings arranged about said opening substantially as described, of an eccentric confined in said clip-opening and having a pin extending through its opening and through said tie-bar to connect said bar and clip pivotally together, a flange about said eccentric carrying one or more stops to engage with said stop-openings, and a dial on said eccentric having a series of radially-disposed odd numbers extending at intervals from zero in one direction about its center and a series of radially-disposed even numbers extending at intervals from said zero in the contrary direction about its center, said numbers in regular succession indicating the predetermined intervals through which to turn the eccentric for adjusting the switch-rail and at which to lock the eccentric in its adjusted position, substantially as and for the purpose set forth.

658,295. COMBINED SAFETY ANDIRONS AND SCREEN. ISAAC W. SULLIVAN, near Pelham, Tenn. Filed Mar. 31, 1899. Serial No. 711,317. (No model.)



Claim.—1. The combination of the woven-wire screen, and andirons, having hooks at their extended front ends, a bar for detachable engagement of said hooks and support of the andirons, and devices attached to the screen for holding said bar in place, as shown and described.

2. The combination, with a fire-screen and hooks attached to the inner side of the same, of a curved supporting-bar adapted to rest upon the floor and which is loosely engaged by said hooks, and andirons whose front ends are supported detachably upon the horizontal portion of said bar, substantially as shown and described.

3. The combination, with a fire-screen and andirons having hooks at their extended front ends and a strip of band-iron riveted to the screen on the inner side for bracing the same as specified, hooks attached to said strip and projecting inwardly, of a curved bar B, supported independently upon the floor or hearth, and arranged parallel to the screen proper, its horizontal upper portion being engaged by the aforesaid hooks whereby the bar is held in loose connection with the screen proper and thereby adapted for supporting the andirons in the manner shown and described.

658,296. HAT-FINISHING DEVICE. EDGAR G. TAYLOR, Philadelphia, Pa. Filed Mar. 12, 1900. Serial No. 8,359. (No model.)

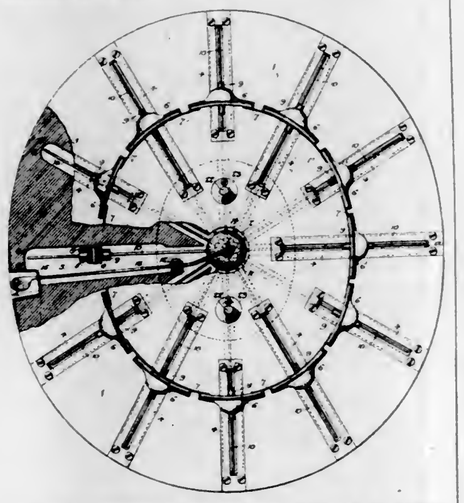
Claim.—1. The combination in a hat-brim gage, of a base-block, a series of brim-gages movable from and toward the center of said block, means for locking said gages in position after adjustment, and projecting strips carried by certain of said gages and overlapping adjoining gages so as to form a continuous bearing-surface for the outer edge of the brim, substantially as specified.

2. The combination in a hat-brim gage, of a base-block with a series of brim-gages movable from and toward the center of said base-block and independent cams on said brim-gages for locking them in position after adjustment, substantially as specified.

3. The combination in a hat-brim gage, of a base-block, a series of brim-gages movable from and toward the center of said block, independent cams on said gage-blocks for locking them in position after adjustment, a series of controlling-rods for said cams, and a centrally-located device for engaging with said rods and providing for the simultaneous movement of the same, substantially as specified.

4. The combination in a hat-brim gage, of a base-block, a series of brim-gages movable from and toward the center of said block, independent locking-cams on said gages, a series of elastic rods engaging with said locking-cams, and a centrally-located device engaging with said series of

elastic rods and providing for the simultaneous operation of the cams, substantially as specified.



5. The combination in a hat-brim gage, of a base-block, a series of gage-blocks adjustable from and toward the center of said base-block, independent cams on said gage-blocks for locking them in position, a series of rods engaging with said locking-cams, a central device engaging the series of rods, and a lever for imparting movement to said central engaging device, substantially as specified.

6. The combination in a hat-brim gage, of a base-block, a series of brim-gages movable from and toward the center of said block, independent cams on said gages for locking them in position, a series of rods engaging said cams, a central device for engaging the series of rods, a lever for imparting movement to said central device, and means for maintaining said lever in different positions of adjustment, substantially as specified.

7. The combination in a hat-brim gage, of a base-block, a series of brim-gages adjustable from and toward the center of said block, a series of locking-cams for said gages, a series of rods engaging said cams and each having a head at its inner end, and a central engaging device for said rod comprising upper and lower rings, and means for securing the same together, said rings having their meeting edges notched for the reception of the rods, substantially as specified.

8. The combination in a hat-brim gage, of a base-block, a series of brim-gages adjustable toward and from the center of said base-block, a series of locking-cams for said gages, a series of rods engaging said cams, a central device engaging the series of rods and providing for their simultaneous operation, a lever engaging said central device, and a bolt having a slot for the reception of said lever and serving as a fulcrum therefor, substantially as specified.

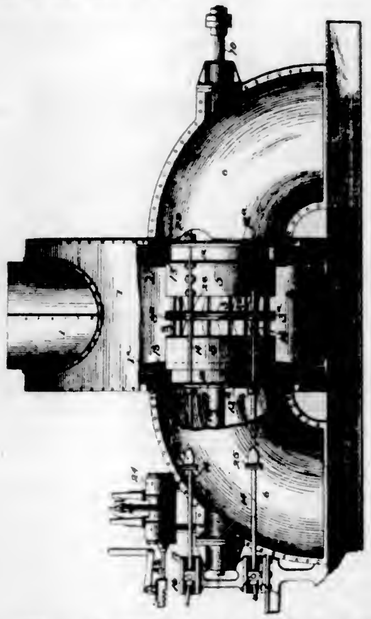
9. The combination in a hat-brim gage, of a base-block having radiating slots therein, a series of brim-gages adjustable from and toward the center of said block, slotted plates in which the stems of said brim-gages can move, locking-cams hung to said stems, and means for operating said locking-cams whereby the slotted plates are gripped between the same and the brim-gages, substantially as specified.

10. The combination in a hat-brim gage, of a slotted base-block, a series of brim-gages movable from and toward the center of said block, means for locking said brim-gages in position after adjustment, and slotted plates in which the stems of the brim-gages can move, some of said plates extending closer to the center of the base-block than others, whereby closer adjustment of certain of the brim-gages is permitted, substantially as specified.

11. The combination in a hat-brim gage, of a slotted base-block, a series of brim-gages movable from and toward the center of said block, means for locking said brim-gages in position after adjustment, and supplementary gages having clips whereby they can be secured to the main gages, substantially as specified.

12. The combination in a hat-brim gage, of a slotted base-block, a series of brim-gages movable from and toward the center of said block, means for locking said brim-gages in position after adjustment, and slotted plates in which the stems of the brim-gages can move both longitudinally and laterally, substantially as specified.

658,297. **WATER-WHEEL.** JOHN W. TAYLOR, Atlanta, Ga., assignor to the Taylor Manufacturing Company, Lynchburg, Va. Filed Nov. 10, 1899. Serial No. 736,468. (No model.)



Claim.—1. The combination, with a water-wheel and a chute-box, of a gate surrounding the same, slidable rods attached to the gate, and bearings for said rods which are arranged on the inner and outer ends of the gate, whereby the latter is supported and operated substantially as shown and described.

2. The combination, with a water-wheel, or runner, a chute-box arranged horizontally, an annular gate made in halves surrounding said chute-box and adapted to slide lengthwise of the same, of horizontal rods attached to and suspending the gate, being connected to gate by means of the lugs holding the two halves of the gates together and fixed bearings for said rods which are arranged on the inner and outer ends of the gate, substantially as shown and described.

3. The combination with two horizontal runners, arranged head to head, and surrounding chute-boxes, the flanges of same being bolted together, of two annular gates which are split, the same surrounding and sliding on the respective chute-boxes longitudinally thereof, and horizontal rods attached to split gate by lugs joining same, bearings for said rods which are affixed exteriorly on the flume-heads and the crown-plate of the chute-box for supporting the gates and sliding them simultaneously in opposite directions, longitudinally of the chute-boxes, substantially as shown and described.

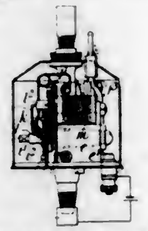
658,298. **FENCE-POST.** NANCY A. TAYLOR, McCoy, Oreg. Filed June 2, 1900. Serial No. 18,846. (No model.)



Claim.—1. A fence-post provided with a wire-receiving opening, and having a bracket with an upright arm located adjacent to one end of the opening and adapted to have a fence-wire coiled around it, whereby the fence-wire is held against lateral and longitudinal movement, substantially as described.

2. A fence-post provided with a wire-receiving opening, and having an upright arm offset from one end of the opening to enable a fence-wire to be coiled around it, and provided at the top with a knob or enlargement, substantially as and for the purpose described.

658,299. **ELECTRIC GAS-LIGHTER.** HENRI DE THIERSANT and HANS J. NORSALLE, London, England. Filed May 14, 1900. Serial No. 16,631. (No model.)



Claim.—1. An electric gas-lighting device consisting of a main burner, a by-pass burner for lighting the main burner, a cock provided with a ratchet-wheel for governing the gas-supply to both of said burners, a sparking device for igniting the gas-supply from said by-pass burner, an armature and magnet operating said ratchet-wheel on said cock and oscillating said sparking device and an auxiliary armature and magnet controlling the movement of said cock and thereby varying the gas-supply, substantially as described.

2. An electric gas-lighting device consisting of a main burner, a by-pass burner for lighting the main burner, a cock governing the gas-supply to both of said burners, a ratchet-wheel secured to the plug of said cock, a sparking device igniting the gas-supply from said by-pass burner, an armature and magnet oscillating said sparking device and provided with pawl mechanism for revolving said ratchet-wheel, and an auxiliary armature and magnet controlling the movement of said ratchet-wheel and varying the gas-supply, substantially as described.

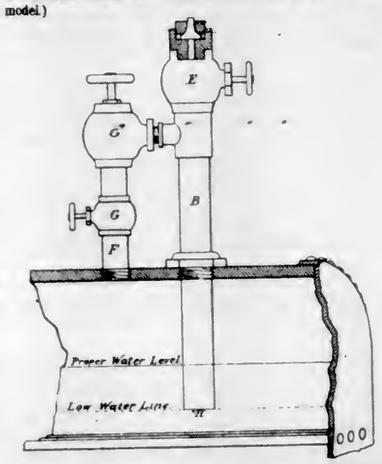
3. An electric gas-lighting device consisting of a main burner, a by-pass burner for lighting the main burner, a cock governing the gas-supply to both of said burners and provided with a ratchet-wheel having pins on its outer face near its periphery, a sparking device for igniting the gas-supply from said by-pass burner, an armature and magnet operating said ratchet-wheel on said cock and oscillating said sparking device, an auxiliary armature mounted on a spring which holds it out of engagement with the core of its magnet, a spring-arm extending from said auxiliary armature and adapted to be drawn into the path of said pins on said ratchet-wheel, and a positive arm extending from said auxiliary armature and limiting the movement of said spring-arm whereby the gas-supply is varied, substantially as described.

4. An electric gas-lighting device consisting of a main burner, a by-pass burner for lighting the main burner, a cock, the plug being provided with a ratchet-wheel and with an annular groove communicating with the supply-pipe, radial passages leading from said groove to a central longitudinal aperture within said cock, radial passages adapted to supply the main burner from said central longitudinal aperture and radial passages establishing communication between said central longitudinal aperture and the by-pass burner, all of said passages being so constructed as to cut off the supply of gas from the by-pass burner when the main burner is lighted and to allow the by-pass burner to be lighted first, a sparking device for igniting the gas-supply from said by-pass burner an armature having suitable pawl mechanism for operating said ratchet-wheel on said cock and oscillating said sparking device, and an auxiliary armature and magnet controlling the movement of said cock and varying the gas-supply, substantially as described.

5. An electric gas-lighting device consisting of a main burner, a by-pass burner for lighting the main burner, a cock governing the gas-supply to both of said burners, a ratchet-wheel secured to the plug of said cock, an oscillating electrode adapted to create a spark by its make-and-break contact with a fixed electrode, an armature and magnet, said armature being provided with a lever having two pawls engaging the teeth of said ratchet-wheel, a spring retaining said pawls in such engagement, a spring connection between said armature and said oscillating electrode and an auxiliary armature and magnet for controlling the movement of said ratchet-wheel, and varying the gas-supply, substantially as described.

6. An electric gas-lighting device consisting of a main burner, a by-pass burner for lighting the main burner, a cock having a central longitudinal aperture therein, an annular recess communicating with said longitudinal aperture, and with the gas-supply pipe by means of radial passages, radial passages connecting the said longitudinal aperture with the main-burner pipe and radial passages leading from said longitudinal aperture to said by-pass burner, said passages being so arranged with respect to said cock that gas is supplied to the by-pass burner first and cut off when the gas from said main burner is ignited, a ratchet-wheel secured to the plug of said cock, an oscillating electrode adapted to create a spark by its make-and-break contact with a fixed electrode, an armature and magnet, said armature being provided with a lever having two pawls engaging the teeth of said ratchet-wheel, a spring retaining said pawls in such engagement, a spring connection between said armature and said oscillating electrode and an auxiliary armature held normally out of contact with its magnet by means of a spring, a spring-arm extending from said auxiliary armature in such a position as to be drawn into the path of said pins on said ratchet-wheel by its magnet and an arm fixed to said auxiliary armature and limiting the movement of said spring-arm whereby the gas-supply is varied, substantially as described.

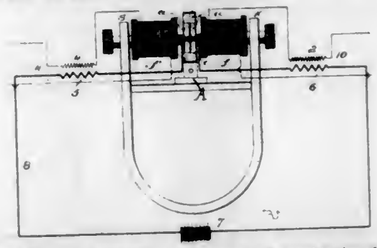
658,300. **STEAM-BOILER.** WALTER M. THOMPSON and CHARLES NUHRING, Cincinnati, Ohio. Filed May 7, 1900. Serial No. 15,762. (No model.)



Claim.—1. The improved water-column apparatus, embodying in combination with a steam-boiler and a water-column device with fusible plug and valve; a testing-pipe connecting the steam-chamber of the boiler with the water-column below its valve, substantially as set forth.

2. The improved water-column apparatus, embodying in combination with a steam-boiler and a water-column device with fusible plug and valve; a pipe provided with one or more valves connecting the steam-chamber of the boiler with the water-column.

658,301. **TELEPHONE-RELAY.** WILLIAM G. URMSON, New Brunswick, N. J., assignor of three-fourths to John W. Parsons, Henry A. Hull, and Josiah Tice, same place. Filed Feb. 5, 1900. Serial No. 4,060. (No model.)



Claim.—1. A telephonic relay comprising the combination of a microphone having electrodes separated by an air-space, conducting material surrounding the electrodes, tension devices for holding the electrodes in a position of poise and an electromagnet for varying the action of the tension devices, substantially as described.

2. A telephonic relay comprising the combination of electrodes separated by an air-space, granular material surrounding and bridging the electrodes, tension devices for holding the electrodes in a position of poise and an electromagnet for acting on the tension devices to vary the current in the microphone, substantially as described.

3. A telephonic relay comprising the combination of a microphone, coacting electromagnets on opposite sides thereof, secondary coils in circuit with each electromagnet and primary coils, coöperating with the secondary coils, in a common local circuit, substantially as described.

4. A telephonic relay comprising the combination of a microphone

having a pair of electrodes separated by an air-space, conducting material surrounding the electrodes, tension devices for holding the electrodes in a position of poise, coacting electromagnets situated on opposite sides of the microphone, secondary coils in circuit with each electromagnet and primary coils, coöperating with the secondary coils, in a common local circuit, substantially as described.

5. A telephonic relay comprising the combination of a microphone, a bipolar permanent magnet and coacting electromagnets mounted on the poles thereof and acting on the opposite sides of the microphone, substantially as described.

6. A telephonic relay comprising the combination of a microphone, a bipolar permanent magnet, coacting electromagnets mounted on the poles thereof and acting on the opposite sides of the microphone, secondary coils in circuit with each electromagnet and primary coils, coöperating with the secondary coils, in a common local circuit, substantially as described.

7. A telephonic repeater comprising the combination of a microphone, coacting electromagnets on the opposite sides thereof, secondary coils in circuit with each electromagnet and the incoming and outgoing lines respectively and primary coils, coöperating with the secondary coils, in a common local circuit, substantially as described.

8. A telephonic relay comprising the combination of a microphone having a pair of electrodes separated by an air-space, conducting material surrounding the electrodes, tension devices for holding the electrodes in a position of poise, a bipolar permanent magnet and coacting electromagnets mounted on the poles thereof and acting on the opposite sides of the microphone, substantially as described.

9. In a telephone-relay, a microphone having a pair of separated electrodes, conducting material surrounding the electrodes, spring-arms and adjustable devices for securing the electrodes to the spring-arms in a position of poise, substantially as described.

10. In a telephone-relay, a microphone having a pair of electrodes, spring-arms surrounding the microphone and adjustable devices securing the electrodes to the opposite arms, substantially as described.

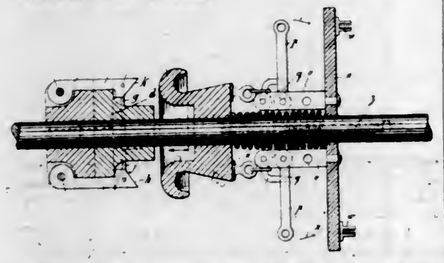
11. In a telephone-relay, a microphone having electrodes, a spring, having one arm secured to one electrode, and a screw and thumb-nut for adjustably securing the other electrode to the other arm in a position of poise, substantially as described.

12. In a telephone-relay, a pair of brackets having arms, springs on which the brackets are supported and a series of microphones supported respectively between opposite arms of the brackets, substantially as described.

13. In a telephone-relay, a pair of brackets having arms, supporting devices for the brackets, a series of microphones, a spring surrounding each microphone having its opposite arms adjustably secured to the electrodes thereof, and connections between the bracket-arms and electrodes, substantially as described.

14. In a telephone-relay, a pair of brackets having arms, supporting devices for the brackets, a series of microphones having screws projecting from its opposite electrodes, a spring surrounding each microphone having one arm rigidly connected to one screw and the other arm adjustably connected to the other screw, and connections between the bracket-arms and the screws, substantially as described.

658,302. DISCONNECTING-GEAR FOR SHAFT-COUPLINGS. CASPER VAN GYN, Willemsoord, Netherlands. Filed Dec. 29, 1899. Serial No. 741,992. (No model.)



Claim.—1. In a disconnecting device for shaft-couplings, the combination with a drive-shaft and a shaft to be driven, of the coupling members carried respectively by said shafts, means for connecting said coupling members to cause them to rotate in unison, and a cone longitudinally movable on the driving-shaft and arranged to engage and free the connecting means of the coupling members, substantially as described.

2. In a disconnecting device for shaft-couplings, the combination with a drive-shaft and a shaft to be driven, of the coupling members carried respectively by said shafts, pawls pivoted to one of said members and arranged to interlock with the other member to cause both members to rotate in unison, and a cone longitudinally movable on the driving-shaft and arranged to engage the free ends of said pawls to move them out of contact with the coupling member, substantially as described.

3. In a disconnecting device for shaft-couplings, the combination with a drive-shaft and a shaft to be driven, of coupling members carried respectively by said shafts, pawls pivoted to one of said members and arranged to interlock with the other member, said pawls having inclined ends, and a cone longitudinally movable on the driving-shaft and arranged to contact with the said inclined ends of the pawls to move them out of contact with the coupling member, substantially as described.

4. In a disconnecting device for shaft-couplings, the combination with a drive-shaft and a shaft to be driven, of the coupling members carried respectively by said shafts, means for connecting said coupling members to cause them to rotate in unison with the driven shaft, a spring-actuated cone mounted to move longitudinally on the driving-shaft and arranged to engage and free the connecting means of the coupling members, and means for holding said cone retracted under tension, substantially as described.

5. In a disconnecting device for shaft-couplings, the combination with a drive-shaft and a shaft to be driven, of coupling members carried respectively by said shafts, pawls pivoted to one of said members and arranged to interlock with the other member to cause both members to rotate in unison, a longitudinally-movable spring-actuated cone on the driving-shaft arranged to engage the free ends of said pawls to move them out of contact with the coupling member, means for holding said cone retracted under the tension of the spring, and means for releasing said cone to permit the same to move longitudinally on the shaft under the action of the spring and to engage the pivoted pawls, for the purpose described.

6. In a disconnecting device for shaft-couplings, the combination with a drive-shaft and a shaft to be driven, of coupling members carried respectively by said shafts, means for connecting said members to cause them to rotate in unison, a longitudinally-movable disconnecting-cone freely mounted on the drive-shaft, a spring normally acting to move the cone toward the clutch members for the purpose specified, links arranged to engage the cone to hold the same retracted under the tension of the spring, and levers for retaining and releasing said links to free the cone, substantially as described.

658,303. PROCESS OF PURIFYING BRINE. GERHARD N. VIE, Schweizerhalle, Switzerland. Filed May 3, 1899. Serial No. 715,480. (No specimens.)

Claim.—1. The process of purifying brine from gypsum which consists in dissolving in the brine to be treated a quantity of an easily-soluble sulfate exceeding the percentage of gypsum present, maintaining the liquor for some time in a state of motion, removing the gypsum separated out, treating the liquor with a reagent capable of transforming the remainder of dissolved gypsum into an indissoluble calcium compound, and separating the liquor from the precipitate, substantially as and for the purposes specified.

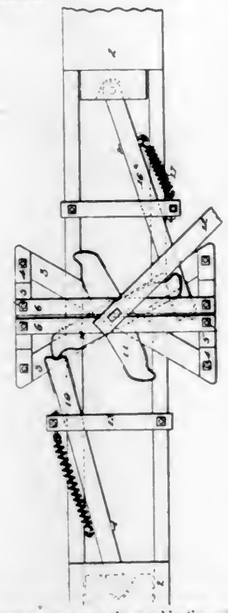
2. The process of purifying brine from gypsum which consists in dissolving in the brine to be treated a quantity of sodium sulfate exceeding the percentage of gypsum present, stirring the liquor, removing the gypsum separated out, treating the liquor with sodium carbonate, and separating it from the precipitate, substantially as and for the purposes specified.

658,304. BALING-PRESS. WILLIAM D. WATKINS and THOMAS P. PRUIT, Brownwood, Tex. Filed Feb. 28, 1900. Serial No. 6,875. (No model.)

Claim.—1. In a duplex baling-press, the combination with two bale-boxes and their reciprocating plungers and plunger-beams, of the intermediate rotatable cruciform power-head comprising two crossed bars arranged in different horizontal planes, and means for rotating the power-head, the ends of one of the said bars being arranged to alternately engage the free end of one of the plunger-beams, and the ends of the other bar being arranged to alternately engage the end of the other plunger-beam so that each plunger will be twice operated during a single rotation of the power-head, substantially as described.

2. In a duplex baling-press, the combination with two bale-boxes and their reciprocating plungers and plunger-beams, of means for retracting the plunger-beams and drawing their inner ends laterally away from one another, a rotatable cruciform power-head arranged between the inner adjacent ends of the plunger-beams and comprising two crossed bars arranged in different horizontal planes, and means for rotating the power-head, the ends of one of the said bars being arranged to alternately engage the free end of one of the plunger-beams, and the ends of the other bar being arranged to alternately engage the end of the other plunger-beam so that each plunger will be twice operated during a single rotation of the power-head, substantially as described.

3. In a duplex baling-press, the combination with two bale-boxes and their plungers, and the plunger-beams arranged in different horizontal planes and pivotally connected at their opposite outer ends to the plungers, of a rotatable cruciform power-head arranged between the inner adjacent ends of the plunger-beams and comprising two crossed bars arranged in different horizontal planes corresponding to the horizontal planes of the plunger-beams, the ends of one of the said bars being arranged to alternately engage the free end of one of the plunger-beams, and the ends of the other bar being arranged to alternately engage the free end of the other plunger-beam, and springs for retracting said plunger-beams so that each plunger will be twice operated during a single rotation of the power-head when the latter are released by the power-head and for drawing them laterally to one side into position to be again engaged by the power-head, substantially as described.

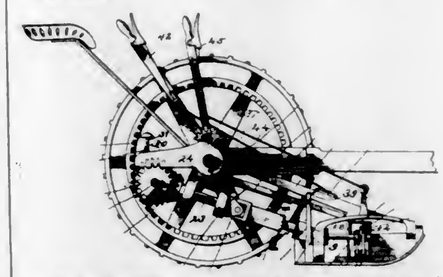


4. In a duplex baling-press, the combination with two bale-boxes and their plungers, and the plunger-beams arranged in different horizontal planes and pivotally connected at their opposite outer ends to the plungers, of a rotatable cruciform power-head arranged between the inner adjacent ends of the plunger-beams and comprising two crossed bars disposed in different horizontal planes corresponding to the horizontal planes of the plunger-beams, the ends of one of the said bars being arranged to alternately engage the free end of one of the plunger-beams, and the ends of the other bar being arranged to alternately engage the free end of the other plunger-beam, the arrangement being such that as one of the bars is about to release one of the plunger-beams, the other bar engages the other plunger-beam so that each plunger will be twice operated during a single rotation of the power-head, and means for retracting said plunger-beams and drawing them laterally to one side, substantially as described.

5. In a duplex baling-press, the combination with the two baling-presses and their plungers and the plunger-beams disposed in different horizontal planes and pivotally connected at their opposite outer ends to the plungers, of horizontally-slotted guides in which the plunger-beams reciprocate and are free to move laterally, a rotatable cruciform power-head arranged between the inner adjacent ends of the plunger-beams and comprising two crossed bars disposed in different horizontal planes corresponding to the horizontal planes of the plunger-beams, the ends of one of the said bars being arranged to alternately engage the free end of one of the plunger-beams, and the ends of the other bar being arranged to alternately engage the free end of the other plunger-beam so that each plunger will be twice operated during a single rotation of the power-head, coiled springs each attached at one end to one of the plunger-beams and at its other end to one end of the corresponding guide, and stops attached to the plunger-beams and operating to abut the guides and check or limit the rebound of the plunger-beams, substantially as described.

6. In a duplex baling-press, the combination with the two parallel sills and the bale-boxes attached to the opposite sides thereof, of the horizontally-slotted guides fixed to the sills intermediate the bale-boxes, the power-head frame fixed to the sills between the said guides and comprising two diagonally-crossed beams bolted transversely to the sills, cross-beams fixed to the outer ends of the diagonally-crossed beams, transverse beams fixed on said cross-beams, a vertical shaft journaled in said transverse beams and diagonally-crossed beams, a sweep fixed on the upper end of the shaft, a cruciform power-head fixed on said shaft, and plunger-beams fixed at their outer ends to the plungers and arranged to be alternately engaged and released by the power-head so that each plunger will be twice operated during a single rotation of the power-head, said plunger-beams being arranged to freely move in said guides, substantially as described.

658,305. MOWER. JAMES F. WELLS, St. Louis, Mo., assignor to Frank Wells, same place. Filed Feb. 24, 1899. Serial No. 706,750. (No model.)



Claim.—A mower comprising drive-wheels, a frame, a driving-shaft journaled in the frame, and with which the drive-wheels are geared, a finger-bar having knives, a shoe at the inner end of the finger-bar, the arm having ball-and-socket connection with the frame and a bifurcated head pivoted to the shoe, a bar pivoted to the outer end of the arm and also pivoted to the frame, a spring secured to the frame, and bearing upwardly against the bar to hold the shoe of the finger-bar off the ground, and the telescoping shaft having knuckle connections and geared with the driving-shaft and with the knives.

658,306. HARROW ATTACHMENT. JOHN D. WHITTEN, Kingsley, Oreg. Filed Jan. 17, 1900. Serial No. 1,793. (No model.)



Claim.—1. The combination, in a harrow attachment for plows, of the yoke-bar adapted to be secured transversely on the plow-handle the trail-bar connected to one end of said yoke-bar and depending therefrom and adapted to be inclined and secured at any required angle with relation thereto, and the harrow-frame pivotally connected at its inner end to the lower end of said trail-bar, substantially as described.

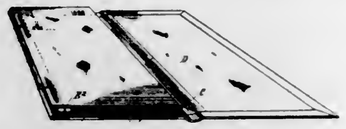
2. In a harrow attachment for plows, the yoke-bar adapted to be

secured transversely on the handles of a plow and comprising the two adjustable sections pivotally connected together and means to rigidly secure said sections together when adjusted, in combination with a depending trail-bar secured to one end of said yoke-bar, and the harrow-frame pivotally connected to the lower end of said trail-bar, substantially as described.

3. In a harrow-attachment for plows, the combination, with the yoke-bar, adapted to be secured on the handles of a plow, of the trail-bar, having its upper end curved and secured to, and adjustable on, one end of the yoke-bar, and the harrow-frame attached to the lower end of said trail-bar, substantially as described.

4. In a harrow attachment for plows, the combination with the yoke-bar adapted to be secured on the handles of a plow, of the trail-bar having its upper end curved and secured to and adjustable on one end of said yoke-bar, said trail-bar being longitudinally extensible, and the harrow-frame pivotally connected to the lower end of said trail-bar.

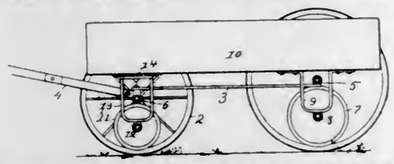
658,307. MANIFOLD SALES-BOOK. EDWARD M. WILDEY, Sydney, New South Wales. Filed May 10, 1900. Serial No. 16,199. (No model.)



Claim.—1. A counter sales book or tablet comprising a series of manifolding or copying sheets, with a carbon-sheet affixed thereto, a "back" having a depressed tongue, an outer cover, and a frame having a bent-up base portion adapted to receive thereunder said depressed tongue, the end portions of said base portion adapted to pass through and secured to said outer cover, and a hinged or pivoted bail connected to said base portion and adapted to engage the edge portion of the tablet, substantially as specified.

2. A counter sales book or tablet, comprising a series of manifolding or copying sheets, with a carbon-sheet affixed thereto, a "back" having a depressed tongue, an outer cover, and a frame having a base portion and a bail pivoted or hinged to upturned end terminals of said frame, said base portion having an upbent portion beneath which is received said depressed tongue, and adapted to be passed through and secured to said "back," said "back" also adapted to be connected to sheets, substantially as specified.

658,308. RUNNING-GEAR FOR VEHICLES. GEORGE M. WOOD, Decatur, Ill. Filed May 14, 1900. Serial No. 16,597. (No model.)



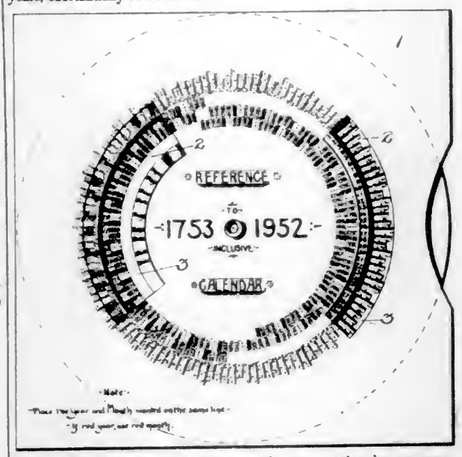
Claim.—1. A vehicle consisting of a draft or propulsion truck the wheels of which have flanges on their rims, and a load-bearing truck the wheels of which run inside the wheels of the draft-truck on the flanges thereof; the two trucks having independent motion lengthwise of the vehicle, substantially as described.

2. In a vehicle, the combination of a draft-truck composed of tread-wheels, axles therefor and a coupling-pole, and a load-bearing truck composed of wheels running on flanges of the tread-wheels and journaled on axles, a body and supports for the body rising from the load-bearing axles and straddling the axle of the draft-truck, substantially as set forth.

658,309. CALENDAR. ADOLF ZACHRISSON, Perth Centre, Canada. Filed Nov. 7, 1899. Serial No. 736,170. (No model.)

Claim.—1. A calendar of the character described, comprising two members mounted to have a movement relative to each other, one of said members carrying the years and the days of the week, the other member carrying the days of the month and a plurality of series of months, one of said series being adapted to be used solely in connection with leap-years substantially as described.

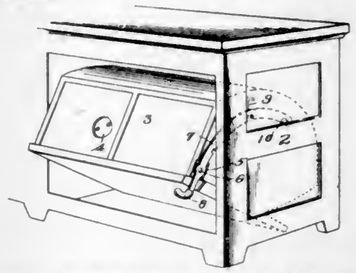
2. A calendar, comprising two members mounted to have a movement relative to each other, one of said members carrying the years arranged in sequential order and the days of the week, the other member carrying the days of the month and a plurality of series of months, one of said series being adapted to be used solely in connection with leap-years, substantially as described.



3. A calendar, comprising two members mounted to have a movement relative to each other, one of said members carrying the years arranged in periods of substantially four years each, each period having a leap-year at one end thereof, each leap-year having a distinctive designation, said years and periods being in sequential order, said member also carrying the days of the week, the other member carrying a plurality of series of months, one of said series having the same distinctive designation as said leap-years and coöperating solely therewith and also carrying the days of the month, substantially as described.

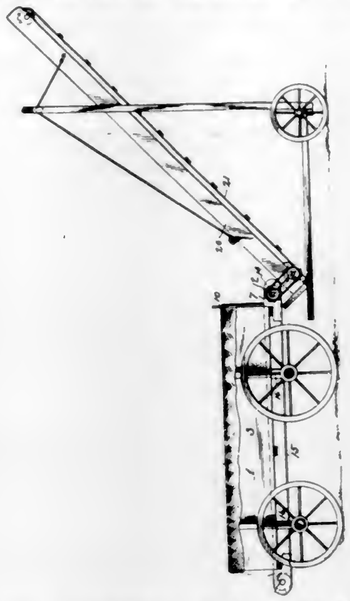
4. In a calendar of the class described, the combination of a series of years arranged in sequential order, said series having the leap-years of a distinctive designation; and a plurality of series of months, one of said series having the same distinctive feature as the leap-years, said series being adapted to coöperate solely with said leap-years, substantially as described.

658,310. LATCH FOR SWINGING BINS OR COMPARTMENTS. CHARLES A. BABB, Meadville, Mo. Filed Jan. 22, 1900. Serial No. 2,343. (No model.)



Claim.—The combination with an inclosing casing closed on all sides excepting at the rear and a swinging bin open only at its top and pivoted at its opposite ends above its axial center to the ends of the casing, whereby it swings closed by gravity, of a face-plate rigidly fixed to one end of the bin near the outer edge and above the pivotal point of the latter and provided with a fixed laterally-projecting pivot-pin, a downwardly-curved arm disposed between one end of the bin and casing and pivoted near its outer end on the said pivot-pin, said arm being provided on its under side with a plurality of notches having contracted throats, a staple fastened to the inner side of the end of the casing and straddling the arm, the notches on the under side of the arm being arranged to engage the lower leg of the staple and hold the bin against movement in either direction, the outer end of the arm projecting outward from and between the bin and casing and provided with a handle projecting at a right angle to the end of the arm, said handle operating, when it is grasped to swing the bin open, to automatically disengage the arm from the lower leg of the staple and permit the bin to be swung open, substantially as shown and described and for the purpose specified.

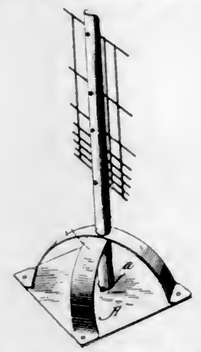
658,311. UNLOADER FOR WAGONS. WOODSON BARCLAY, Covell, Ill. Filed June 6, 1900. Serial No. 19,263. (No model.)



Claim.—1. In an unloader for wagons the combination of a wagon-box, a conveyer secured to the bottom of said wagon-box, and a flexible lining for said wagon-box, secured to the sides of said conveyer, substantially as described.

2. In an unloader for wagons, in combination with a box, a conveyer secured to the bottom of said box, a flexible lining for said box secured to the sides of said conveyer, and a false bottom in said box covering said conveyer, substantially as described.

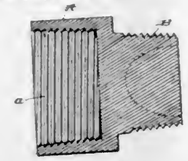
658,312. BASE FOR POSTS OR POLES. CHARLES L. BARRETT, Afton, Va. Filed June 4, 1900. Serial No. 19,037. (No model.)



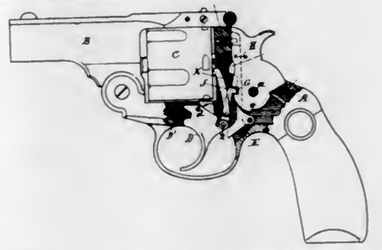
Claim.—A base or anchor for posts, poles and the like consisting of a brace-plate having a slot to receive the end of the post, braces secured thereto and arching therefrom and crossing each other with openings alining and corresponding to the configuration of the post and cotter-pins passing through the post to prevent movement in a vertical direction, substantially as described.

658,313. COMBINED PIPE CAP AND PLUG. JOSEPH A. BERNARDI, Salem, Oreg., assignor of one-half to Mark Skiff, same place. Filed Mar. 1, 1900. Serial No. 6,994. (No model.)

Claim.—As an improved article of manufacture, the herein-described combined cap, plug and connection for pipes of a common diameter, formed in one piece, and comprising the portion A having the threaded socket tapered or gradually reduced in diameter from its outer to its inner end, and the comparatively-small portion B of circular form in cross-section, exteriorly threaded and tapered from a point adjacent to the portion A, to its outer end, as and for the purposes set forth.



658,314. SAFETY MECHANISM FOR DOUBLE-ACTION FIRE-ARMS. MARTIN BYE, Worcester, Mass., assignor to the Harrington & Richardson Arms Company, same place. Filed June 27, 1900. Serial No. 21,731. (No model.)



Claim.—1. A sliding hammer-face provided with upper and under lugs, offsets or shoulders adapted for direct engagement with the lug or end of the lifter; in combination, with the pivoted hammer-body having said sliding hammer-face mounted thereon for moving into and from contact position with the firing-pin, the lifter adapted for impingement on said hammer-face lugs or shoulders, by its upward and downward movements, and the trigger carrying said lifter.

2. The sliding hammer-face fitting within the vertical groove in the front of the hammer-body, and adapted for moving into and from position of contact with the firing-pin, said hammer-face provided with a transverse longitudinal slot and with upper and under engaging lugs, offsets or shoulders, the latter coinciding with the bottom of the lifter-recess, when depressed, in combination with the hammer-body, a fastening-pin through said body and slot, the firing-pin, the swinging trigger, and the lifter hinged to said trigger and adapted for operative contact directly with the engaging lugs or shoulders on said sliding hammer-face, substantially as set forth.

658,315. ELECTRIC FURNACE. ALFRED H. COWLES, Cleveland, Ohio, assignor to the Electric Smelting and Aluminum Company, of Illinois. Filed Oct. 22, 1895. Serial No. 566,567. (No model.)

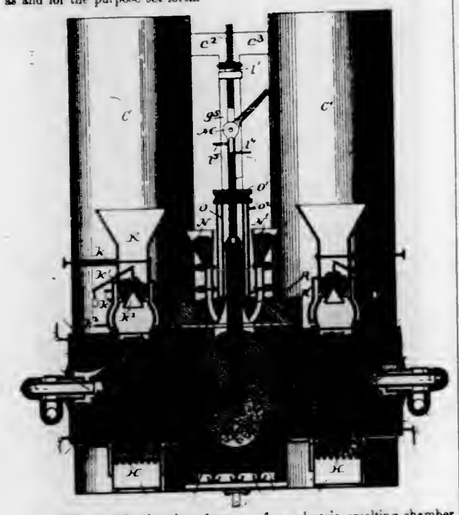
Claim.—1. The combination in a furnace, of an electric smelting-chamber to be charged with the material to be reduced and having electrodes and electric-circuit connections therewith, two chambers to be charged with fuel, flues connecting the electric smelting-chamber intermediate with the fuel-chambers, and means for causing a reversing flow of an aeriform fluid through the fuel-chambers and the intermediate electric smelting-chamber.

2. The combination in a furnace, of an electric smelting-chamber having electrodes and electric-circuit connections therewith, two or more fuel-chambers with the electric smelting-chamber interposed between them, and with communicating flues therebetween, with a blast mechanism for causing a flow of a gas through the series of fuel-chambers and electric chamber, and a reversing mechanism for said gas-flow, whereby ore or other material in the electric smelting-chamber can be preheated by a regenerative gas-flow.

3. The combination in a furnace, of an electric smelting-chamber having electrodes and electric-circuit connections therewith, two fuel-chambers with the electric smelting-chamber therebetween and communicating flues therefor, each of said chambers having gas-tight charging-ports, together with a draft mechanism for causing a reversing flow of gas through the series of chambers.

4. The combination in a furnace, of an electric smelting-chamber having electrodes and electric-circuit connections therewith, a pair of hot-blast stoves, and a chamber to be charged with fuel, with flues connecting the hot-blast stoves with the fuel-chambers, and the fuel-chamber

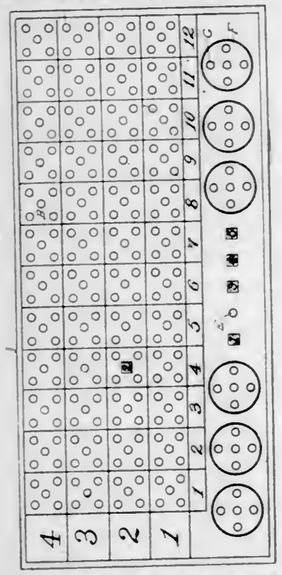
with the electric smelting-chamber, and the controlling-valves therefor, as and for the purpose set forth.



5. The combination in a furnace, of an electric smelting-chamber having electrodes and electric-circuit connections therewith, a pair of hot-blast stoves, and a pair of fuel-chambers, with flues connecting the hot-blast stoves with the fuel-chambers and the latter with the electric smelting-chamber, means for reversing the flow of gases, together with valves therefor, whereby a reversing flow of hot gases can be sent through the fuel-chambers and the smelting-chamber, as and for the purpose set forth.

6. The combination in a furnace, of an electric smelting-chamber the same having electrodes and electric-circuit connections therewith, and two fuel-chambers formed in a solid block of carbon with connecting-flues, the fuel-chambers flanking the smelting-chamber, and reversing means for causing a flow of gas through or between the series of chambers.

658,316. **MEANS FOR CHECKING UP LOADING OPERATIONS.** MATTHEW J. DOOLEY and THOMAS F. CARROLL, St. Paul, Minn. Filed Feb. 3, 1900. Serial No. 3,866. (No model.)



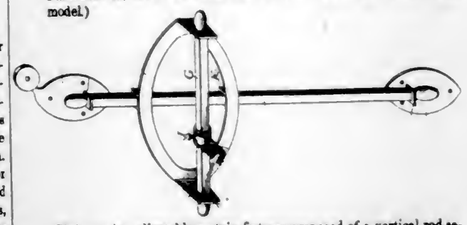
Claim.—1. Checking means for loading cars consisting of a board divided to represent the different cars and their location, means adapted to be used in connection with said divisions to indicate the loading attendants, and a series of cards inscribed to designate the cars and their location, and adapted to be arranged in said cars.

2. Means for checking loading operations consisting of a board formed with divisions representing the places where the loads are to be taken, means designating the loading attendants and adapted to be arranged in connection with the divisions of said board, and a series of cards or tabs inscribed to designate the different loading-places, and arranged at said places.

3. Means for checking loading operations consisting of a board formed with divisions representing the different places to which loads are to be taken, each of said divisions being formed with plug-openings, consecutively-numbered plugs constructed to fit in said openings, and a series of cards or tabs designating the places to which loads are to be taken, said different features being constructed and arranged in the manner and for the purpose specified.

4. Means for checking loading operations, consisting of a board formed with divisions corresponding with the number of cars to be loaded, indicating-marks being arranged in connection with said divisions to designate the different cars and their location, means designating the loading attendants and adapted to be arranged in connection with said divisions, and a series of tabs or cards inscribed to designate the different cars and their location, and adapted to be arranged and used in the manner specified.

658,317. **WINDOW-SHADE FIXTURE.** JOHN W. FORBES, Binghamton, N. Y., assignor of two-thirds to William E. Pettit, same place. Filed Feb. 23, 1898. Renewed Apr. 9, 1900. Serial No. 12,184. (No model.)



Claim.—An adjustable curtain-fixture composed of a vertical rod secured to each of the vertical inner faces of the window-frame, horizontal plates sliding vertically thereon provided with horizontal guide-rods and shade-roller brackets provided with set-screws sliding horizontally on the guide-rods attached to the said plates, in combination with cords, pulley-wheel and cord-stop for raising and lowering the fixtures, as described and specified.

658,318. **BROADCAST SEED-SOWER.** BENJAMIN F. HOWARD, North Manchester, Ind., assignor of one-half to Jesse Arnold, same place. Filed June 16, 1900. Serial No. 20,570. (No model.)



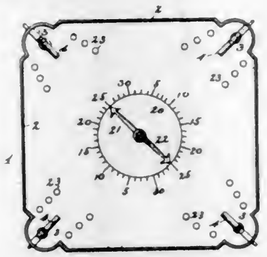
Claim.—1. In a broadcast seed-sower, a frame provided with a seed-opening having a vertical wall at one side and inclined approaches at the other sides, metallic plates covering the walls forming a metal-lined hopper, a metallic regulating-plate below the opening having a transversely-apertured extension, a pivoted arm passed through the aperture of the extension, and a slide-rod having shoulders between which the outer end of the arm is confined, said rod being frictionally held in adjusted position.

2. In a broadcast seed-sower, in combination with a frame having a seed-opening, and an adjustable plate below the opening, of an agitator consisting of two outwardly-bent arms and an inner loop encircling a wrist-pin on the distributer-wheel.

3. In a broadcast seed-sower, the combination with a frame, a wheel, and a drum and a pinion on the wheel-spindle, of devices on the frame permitting interchangeable attachment of reciprocating and of rotary operating means to be respectively connected with the drum and with the pinion.

658,319. **GAME.** GEORGE W. KREBS, Conway Springs, Kans., assignor of one-half to Frank Powe, same place. Filed June 6, 1900. Serial No. 19,320. (No model.)

Claim.—In a game, the combination of the board 1 provided with the flanges 2; cannon 4 pivotally mounted on the four corners of said board, the said cannon consisting of a block 5, a barrel 16 fixed on said block, a reciprocating plunger 7, having on its outer end an enlargement or breech-block 8, a curved plate 9 fixed on said breech-block, inwardly-upturned flanges 10 formed on the lower ends of said plate, a rearwardly-extending bracket 13 fixed to said block 5, depending guide-flanges 12 projecting downwardly from said bracket and adapted to be engaged by the said flanges 10 to guide said breech-block and plunger in their movements, a spring and trigger 14 fixed at one end to said bracket, a beveled catch-pin 15 fixed to said spring and lying normally in the path of a slot 16 formed in the under side of said breech-block to hold said block and plunger in their reciprocated position, hooks 17 fixed on each side of said block 5, an elastic band adapted to be passed around said breech-block and plunger and having its ends connected to said hooks, an opening in the top of said barrel near the breech thereof for the insertion of a projectile, game-pieces or men 23 adapted to be arranged upon said game-board, and a counter arranged in the center of said board, and consisting of the movable hands 21 and 22 pivoted in the center of said board and adapted to be moved around a circular scale of points, substantially as and for the purpose set forth.



658,320. **PROCESS OF REMOVING FIBER FROM AND FINISHING KNIT GOODS.** JACOB MAY, Nashville, Tenn. Filed Apr. 23, 1900. Serial No. 14,031. (No specimens.)

Claim.—1. The process herein described of removing the rough fiber from cotton goods, said process consisting in thoroughly saturating or permeating the goods with a solution containing alum, and chlorate of potash, then extracting said solution from the goods, and allowing the goods to dry in an ordinary temperature, and then subjecting the goods to an oxidizing action, substantially as described.

2. The process herein described of removing rough fiber from cotton goods, which consists in saturating or permeating the goods with a solution of alum, chlorate of potash, and a dye liquor, then extracting the said solution from the goods and permitting the goods to dry in an ordinary temperature, and then subjecting the goods to an oxidizing action, substantially as described.

3. The process herein described for removing rough fibers from cotton goods, consisting in thoroughly saturating or permeating the goods with a solution containing alum, chlorate of potash and an aniline salt, then extracting the solution from said goods, and allowing the goods to remain in an ordinary temperature a suitable period, and finally subjecting the goods to the action of an oxidizing-machine, substantially as described.

4. The process herein described of removing rough fibers from cotton goods, consisting in saturating or permeating the goods with a solution containing chlorate of potash, alum, blue vitriol and aniline salt, by forcing the said solution into the goods, then extracting the liquor from said goods and finally subjecting the goods to oxidation, substantially as described.

5. The process herein described of removing rough fiber from cotton goods, consisting in thoroughly saturating or permeating the goods with a solution containing alum, chlorate of potash, blue vitriol and sal-ammoniac, and an aniline salt, by forcing said solution into the goods, then extracting the solution from said goods and permitting them to remain in an ordinary temperature a suitable time, and finally subjecting the goods to an oxidizing action, substantially as described.

6. The process herein described for removing rough fibers from cotton goods, which consists in saturating or permeating the goods with a solution containing chlorate of potash, alum, blue vitriol and sal-ammoniac, in suitable proportions, and an aniline salt, at a density of 16° Twaddell, then extracting the liquor from said goods, and permitting them to remain for a suitable time in an ordinary temperature, and finally subjecting the goods to an oxidizing action, substantially as described.

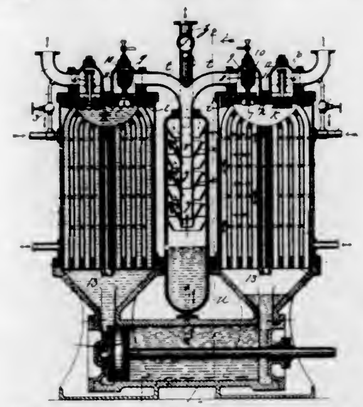
658,321. **PROCESS OF ABSORBING THE SURPLUS MERCURY IN THE MANUFACTURE OF MERCURY MIRRORS.** DANIEL J. MURNANE, Tuxedo Park, Mo. Filed Jan. 20, 1900. Serial No. 2,197. (No specimens.)

Claim.—1. The herein-described process for absorbing the surplus mercury in the manufacture of mercury-back mirrors, which consists in the application of metal capable of absorbing mercury to the amalgam back of the mirror, substantially as described.

2. The herein-described process for absorbing the surplus mercury in the manufacture of mercury-back mirrors, which consists in the application of granulated or pulverized metal capable of absorbing mercury in the proper quantity to the amalgam back of the mirror, substantially as described.

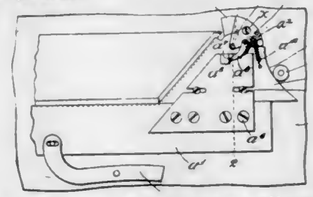
3. The herein-described process for absorbing the surplus mercury in the manufacture of mercury-back mirrors, which consists in the application of granulated or pulverized tin to the amalgam back of the mirror, substantially as described.

658,322. **AIR COMPRESSOR AND COOLER.** OSCAR P. OSTERGREN, New York, N. Y. Filed Mar. 23, 1900. Serial No. 9,880. (No model.)



Claim.—The combination with an air-compressor, of an aqueous-vapor separator consisting of the upright hollow cylinder receiving the compressed air at the top and containing injector devices consisting of the two series of funnels, the funnels of one series having the nozzles coacting with each other for injecting effects and being arranged for free upward passage of the air around them and the funnels of the other series adapted to cause the upflowing air to converge over the upper ends of the funnels having the nozzles, to favor separation of the aqueous vapor, the respective funnels of each series being placed intermediately of the funnels of the other series.

658,323. **MECHANISM FOR FOLDING COLLAR-BLANKS.** GEO. REECE, Wollaston, Mass., assignor to the Reece Folding Machine Company, Portland, Me., and Boston, Mass. Filed June 6, 1900. Serial No. 19,223. (No model.)



Claim.—1. A mechanism for making a corner fold, comprising an inwardly-moving blade, means to move the same, a coöperating blade operated by the movement of said first-mentioned blade for infolding a fold at an angle to said first-mentioned blade, and means carried by the free end of said second blade for infolding a corner and laying the material at said corner over toward the first-mentioned blade, said means being actuated by the coöperating movement of said two folding-blades.

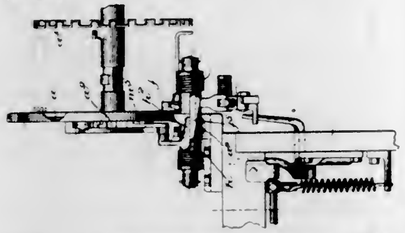
2. A mechanism for making a corner fold, comprising an inwardly-moving blade for infolding one edge of the material at said corner, a folding-finger carried by said blade, and means actuated by the movement

of said blade for causing said finger to move quickly inwardly to make the corner fold and then move back out of the way of another blade for folding the opposite edge at said corner.

5. In a folding mechanism, means for folding one edge of an acute-angled corner of a fabric blank, and means for infolding the fabric at said corner over said edge fold slightly back from the edge thereof and prior to the infolding of the opposite edge of the corner.

4. In a folding-machine, a blade for folding one edge of a corner, a finger pivoted on said blade adjacent said corner, means normally holding said finger in retracted position, and a tripping device for giving said finger a quick in-and-out movement for folding the corner and moving back away from the same.

658,324. FILLING-CHANGING MECHANISM FOR LOOMS. EDWARD S. STIMPSON, Hopedale, Mass., assignor to the Draper Company, same place and Portland, Me. Filed June 23, 1900. Serial No. 21,264. (No model.)



Claim.—1. A movable filling-feeder to hold a series of filling-carriers, means to intermittingly actuate the feeder, including a pawl, and a cam to engage the pawl when retracted and positively move it into operative position.

2. A movable filling-feeder to hold a series of filling-carriers, an attached ratchet, means, including a pawl and a pawl-carrier, to intermittingly actuate the feeder, and a cam to engage the pawl upon retractive movement of the pawl-carrier and positively effect engagement of the pawl with the ratchet.

3. A rotatable filling-feeder, an attached ratchet, a pawl-carrier fulcrumed eccentric to the axis of the feeder and having a pawl to coöperate with the ratchet, to intermittingly rotate the feeder, an actuating-spring for the latter, set by retraction of the pawl-carrier, a transferrer, and means controlled by operation thereof to retract the pawl-carrier.

4. A rotatable filling-feeder, an attached ratchet, a coöperating spring-actuated pawl, to effect intermitting rotation of the feeder, a transferrer, means controlled by its operation to retract the pawl, and a cam to engage the pawl when retracted and positively effect its coöperation with the ratchet.

5. A rotatable filling-feeder, an attached ratchet, a coöperating pawl its pawl-carrier, a transferrer, the fulcra of said pawl-carrier and transferrer being in alinement with each other, a feeder-actuating spring set by retraction of the pawl-carrier, and means controlled by operation of the transferrer to retract the pawl-carrier.

6. A rotatable filling-feeder, an attached ratchet, a coöperating pawl, its pawl-carrier, a transferrer, a fixed fulcrum-stud upon which said transferrer and pawl-carrier are mounted to rock, a feeder-actuating spring set by retraction of the pawl-carrier, and connections between the latter and the transferrer, to retract the pawl-carrier when the transferrer is operated.

7. A rotatable filling-feeder, an attached ratchet, a spring-actuated pawl-carrier, a pawl pivotally monnted thereon to coöperate with the ratchet, means to retract the pawl-carrier, and a fixed cam in the path of the pawl when retracted, to positively effect its coöperation with the ratchet.

658,325. DOUBLE-ACTING PUMP. JOHN M. STUKES and EARNEST K. SMITH, Snyder, Tex. Filed Dec. 13, 1899. Serial No. 740,211. (No model.)

Claim.—1. A double-acting pump comprising a pump-cylinder, valves located at the lower and upper ends of the cylinder respectively, a reciprocating combined pump and plunger tube, a plunger-head having lower and upper sections providing a valve-chamber formed with lower and upper frusto-conical valve-seats and a cylindrical part between the valve-seats and a double valve formed with a frusto-conical lower part having lateral perforations and an imperforate lower end, a frusto-conical upper part having an open upper end, and an intermediate cylindrical part of less height than the cylindrical part of the valve-chamber.

2. A double-acting pump comprising a pump-cylinder, valves located at the lower and upper ends of the cylinder respectively, a reciprocating combined pump and plunger tube, a plunger-head constructed with an annulus formed with a lower frusto-conical valve-seat and a cylindrical part above the valve-seat, a lower clamping-flange adjustable on the annulus, an upper section formed with an upper clamping-flange, with which the annulus is connected, a frusto-conical valve-seat having lateral perforations, and a neck with which the tube is connected, and a double valve formed with a frusto-conical lower part having lateral perforations and an imperforate lower end, a frusto-conical upper part having an open upper end, and an intermediate cylindrical part whereby the double valve is guided to the valve-seats.



3. A double-acting pump comprising a pump-cylinder, having a valve, at its lower end, the three-stepped cap, having a valve-chamber beneath the intermediate step, and a dome having lateral passages and an upper valve-chamber within the dome, the perforated plate secured to the cylinder by the lower step of the cap, the stuffing-box working in the perforated plate, and having a lower section, and an upper section formed with an upper valve, a reciprocating combined pump and plunger tube having frictional contact with the stuffing-box to raise and lower the latter, and the plunger-head having a valve and carried by the tube.

658,326. CAR-BRAKE. FREDERICK THEILENGERDES, Memphis, Tenn., assignor to the American Power Brake Company, same place. Filed June 8, 1900. Serial No. 19,532. (No model.)

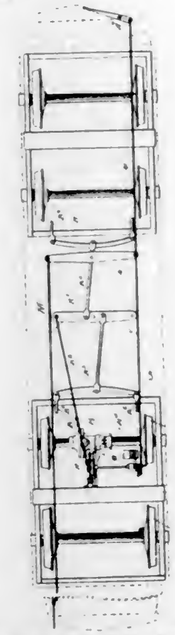
Claim.—1. In a car-brake of the class described, the combination with a car-axle and brake-applying devices to be operated from said axle, of an annular friction-clutch member fixed to said axle, a coacting annular friction member mounted to rock automatically upon axes approximately at right angles to each other, and means for forcibly moving said axes toward the member first mentioned.

2. In a car-brake, the combination with an axle and brake-applying devices to be operated therefrom, of a clutch member rotating with the axle, a coacting clutch member rotated by frictional engagement with the member first named to actuate said devices and supported by gimbal-rings, whereby automatic universal adjustment of its frictional face is permitted, and means for forcing said rings toward and away from the member rotating with the axle.

3. In a car-brake, the combination with the car-axle, of a friction-clutch member fixed to the axle, with its working face perpendicular thereto, a second friction member revolubly mounted to rock upon axes at right angles to each other, means for moving the second member toward and from the first member, and means whereby rotation of the second member actuates brake-applying devices.

4. The combination with an axle and a hub fixed thereon, of a friction-ring at one side of said hub and rigidly supported therefrom, a drum-sleeve mounted to slide and rotate upon the axle, gimbal-rings borne by the drum-sleeve the outer one coacting with said friction-ring, means for forcing the drum-sleeve toward said hub, an oil-reservoir within the drum-sleeve, a wick leading from said reservoir to the axle, and means whereby the rotation of the drum-sleeve actuates brake-applying devices.

5. The combination with the axle, the hub thereon and the friction-ring supported by the hub, of the drum-sleeve sliding and rotating upon the axle, a coacting rocking friction-ring borne by said sleeve, means for constantly applying oil to that part of the axle within the sleeve, and the ring of felt or the like secured about the axle in that end of the drum-sleeve nearest said hub.



6. The combination with the axle, a hub fixed thereon and a friction-ring rigidly supported from the hub, of a collar fixed to the axle at some distance from the hub, a drum-sleeve mounted to slide and rotate upon the axle between said hub and collar, a coacting friction-ring mounted upon the drum-sleeve to rock upon two axes at right angles to each other, devices operable at will, reacting against said collar and forcing said drum toward the hub, and a spring arranged to yieldingly resist the action of said devices.

7. The combination with a car and its brake, of independent trucks pivotally supporting the ends of the car, a brake-operating friction-clutch upon one axle, clutch-operating devices supported by the truck, a pivoted lever supported from the car near said axle, means whereby a brakeman at the end of the car may swing said lever, at will, and connections of automatically-adjustable length transmitting the rotary motion of the lever to said devices, whereby said devices are operated regardless of relative swinging of the truck.

8. The combination of a car and its truck, of a brake-operating friction-clutch upon one truck-axle, devices supported by the truck alone, for throwing the clutch into engagement, a sleeve mounted to both swing and rotate in a bearing supported from the car, a bar sliding but not rotating in said sleeve, means whereby the rotation of the bar actuates said devices, and means whereby said sleeve may be rotated from either end of the car.

9. The combination with a car and its truck, of a brake-operating friction-clutch upon one of the axles, a brake-staff at the end of the car, a sleeve mounted to swing and to rotate in a bearing supported by the car alone, a bar sliding but not rotating in said sleeve, means whereby said sleeve and bar may be rotated by the movement of the brake-staff, and means whereby the rotation of the bar throws said clutch into engagement.

658,327. PROCESS OF OBTAINING MAGNESIUM SULFATE FROM BRINE. GERHARD N. VIS, Basle, Switzerland. Filed Jan. 29, 1900. Serial No. 3,180. (No specimens.)

Claim.—1. The process for obtaining sulfate of magnesium from brine containing magnesium salts which consists in stirring the brine with caustic lime and a soluble sulfate, treating the precipitate obtained with a current of carbonic acid, and removing the magnesium sulfate formed, substantially as and for the purpose specified.

2. The process for obtaining sulfate of magnesium from brine containing magnesium salts, which consists in stirring the brine with caustic lime and a soluble sulfate in such quantities that a precipitate is obtained composed of magnesium hydroxide and calcium sulfate in about the proportion of their molecular weights, treating the precipitate obtained with carbonic acid and removing the magnesium sulfate formed, substantially as and for the purpose specified.

3. The process for obtaining sulfate of magnesium from brine containing magnesium salts, which consists in mixing the brine with caustic lime and Glauber salts, stirring for some time, separating the precipitate from the liquor, exposing it to the action of carbonic acid and removing the sulfate of magnesium formed, substantially as and for the purpose specified.

4. The process for obtaining sulfate of magnesium from brine containing magnesium salts which consists in mixing the brine with caustic lime and Glauber salts, stirring for some time, separating the precipitate from the liquor, suspending the precipitate in water, passing a current of carbonic acid into the suspended precipitate, removing the solution of magnesium sulfate, and causing the same to crystallize, substantially as and for the purpose specified.

5. The process for obtaining sulfate of magnesium from brine containing magnesium salts which consists in mixing the brine with caustic lime and Glauber salts, stirring for some time, separating the precipitate from the liquor, suspending the precipitate in water, heating and passing a current of carbonic acid into the suspended precipitate, removing the solution of magnesium sulfate formed, and causing the same to crystallize, substantially as and for the purpose specified.

658,328. STEAM-RENOVATOR FOR FABRICS. JAMES B. ALLEN and CORTEZ D. HALL, Providence, R. I. Filed May 14, 1900. Serial No. 16,679. (No model.)

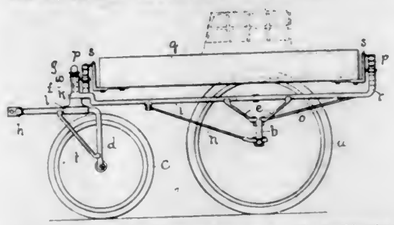


Claim.—1. In an apparatus for renovating ribbons, velvets and similar fabrics, the combination of the tube provided with the longitudinal slot for the escape of the steam into the fabric, with the projecting deflector adapted for movement from side to side of the slot, substantially as described.

2. In an apparatus for renovating ribbons, velvets, and similar fabrics, the combination of the tube provided with the longitudinal slot for the escape of steam onto the fabric, and the projecting deflector, with the grooved sliding cover for limiting the escape-opening of the slot to the width of the fabric, substantially as described.

3. In an apparatus for renovating ribbons, velvets and similar fabrics, the combination of the steam-kettle, the kettle-cover provided with an attached horizontal tube, having a closed projecting end portion adapted for ironing the fabric and a slotted end portion adapted for steaming the fabric, with a projecting edge over which the fabric being steamed is drawn, and a sliding cover for varying the length of the slot-opening, substantially as described.

658,329. VEHICLE-FRAME. ABRAHAM BATH, New York, N. Y., assignor to the Safety Three Wheel Vehicle Company, of New York. Filed Sept. 28, 1899. Serial No. 731,833. (No model.)



Claim.—1. In a vehicle frame or running-gear, the combination with a rear axle and wheels thereon, a forward fork and a wheel therein said fork being provided with diagonal braces *t t*, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of said fifth-wheel device and their middle portions to said rear axle, and braces *n n* connecting said axle and said side pieces, substantially as herein set forth.

2. In a vehicle frame or running-gear, the combination with a rear axle and wheels thereon, a forward fork and a wheel therein said fork being provided with diagonal braces *t t*, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of said fifth-wheel device, their middle portions to said rear axle, and their rear ends to a casting *r*, braces *n n* connecting said axle and said side pieces, and a brace *o* connecting said axle with said casting *r*, substantially as herein set forth.

3. In a vehicle frame or running-gear, the combination with a rear axle and wheels thereon, a forward fork and a wheel therein said fork being provided with diagonal braces *t t*, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of said fifth-wheel device, their middle portions to said rear axle, and their rear ends to a casting *r*, braces *n n* connecting said axle with said side pieces, a brace *o* connecting said axle with said casting *r*, and a horizontal brace *x* connecting the side pieces *i i* together, substantially as herein set forth.

4. In a vehicle frame or running-gear, the combination with a rear axle and wheels thereon, a forward fork and a wheel therein said fork being provided with diagonal braces *t t*, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of the fifth-wheel device, their middle portions connected to supports adapted to connect the same to the rear axle and to elevate the same above the said axle, and their rear ends connected to a casting *r*, braces *n n* connecting said axle with said side pieces, and a brace *o* connecting said axle with said casting *r*, substantially as herein set forth.

5. In a vehicle frame or running-gear, the combination with a rear axle and wheels thereon, a forward fork and a wheel therein said fork being provided with diagonal braces *t t*, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of said fifth-wheel device, their middle portioos connected to supports adapted to connect the same to said rear axle and to elevate the same above said axle, and their rear ends connected to the casting *r*, braces *n n* connecting said axle with said side pieces, a brace *o* connecting saidaxle with said casting *r*, and a brace *x* connecting the said side pieces together, substantially as herein set forth.

6. In a vehicle frame or running-gear, the combination with a curved or arched rear axle and wheels thereon, a forward fork and a wheel therein said fork being provided with diagonal braces *t t*, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of said fifth-wheel device, their middle portions to the raised or arched portion of the rear axle, and their rear ends to the casting *r*, braces *n n* connecting the ends or lower portions of the said axle with said side pieces, and a brace *o* connecting the middle portion of said axle with the said casting *r*, substantially as herein set forth.

7. In a vehicle frame or running-gear, the combination with a curved or arched rear axle and wheels thereon, a forward fork and a wheel therein said fork being provided with diagonal braces *t t*, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of said fifth-wheel device, their middle portions to the raised or arched portion of said rear axle, and their rear ends to a casting *r*, braces *n n* connecting the ends or lower portions of said axle with said side pieces, a brace *o* connecting the middle portion of said axles with said casting *r*, and a brace *x* connecting the said side pieces together, substantially as herein set forth.

8. In a vehicle frame or running-gear, the combination with a rear axle and wheels thereon, a forward fork and a wheel therein, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of said fifth-wheel device, their middle portions to supports adapted to connect the same to said rear axle and to elevate said side pieces above said axle, and their rear ends to a casting *r*, braces *n n* connecting said axle with said side pieces, and a brace *o* connecting said axle with said casting *r*, substantially as herein set forth.

9. In a vehicle frame or running-gear, the combination with a rear axle and wheels thereon, a forward fork and a wheel therein, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of said fifth-wheel device, their middle portions to supports adapted to connect the same to said rear axle, and to elevate said side pieces above said axle, and their rear ends to a casting *r*, braces *n n* connecting said axle with said side pieces, a brace *o* connecting said axle with said casting *r*, and a brace *x* connecting said side pieces together, substantially as herein set forth.

10. In a vehicle frame or running-gear, the combination with a curved or arched rear axle and wheels thereon, a forward fork and a wheel therein, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of said fifth-wheel device, their middle portions to the raised or arched portion of said rear axle, and their rear ends to a casting *r*, braces *n n* connecting the ends or lower portions of said axle with said side pieces, and a brace *o* connecting the middle portion of said axle with said casting *r*, substantially as herein set forth.

11. In a vehicle frame or running-gear, the combination with a curved or arched rear axle and wheels thereon, a forward fork and a wheel therein, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of said fifth-wheel device, their middle portions to the raised or arched portion of the rear axle, and their rear ends to a casting *r*, braces *n n* connecting the ends or lower portions of said axle with said side pieces, a brace *o* connecting the middle portion of said axle with said casting *r*, and a brace *x* connecting said side pieces together, substantially as herein set forth.

12. In a vehicle frame or running-gear, the combination with a curved or arched rear axle and wheels thereon, a forward fork and a wheel therein, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of said fifth-wheel device, their middle portions connected to the raised or arched portion of said rear axle, and their rear ends connected to a casting *r*, braces *n n* connecting the ends or lower portions of the axle with said side pieces, a brace *o* connecting the middle portion of said axle with said casting *r*, supporting-springs *p p* and supporting-pieces *s s*, substantially as herein set forth.

13. In a vehicle frame or running-gear, the combination with a curved or arched rear axle and wheels thereon, a forward fork and a wheel therein said fork being provided with diagonal braces *t t*, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of the fifth-wheel device, their middle portions connected to the raised or arched portion of the rear axle, and their rear ends connected to a casting *r*, braces *n n* connecting the ends or lower portions of the axle with said side pieces, a brace *o* connecting the middle portion of said axle with said casting *r*, supporting-springs *p p* and supporting-pieces *s s*, substantially as herein set forth.

14. In a vehicle frame or running-gear, the combination with a rear axle and wheels thereon, a forward fork and a wheel therein, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of said fifth-wheel device, their middle portions to supports adapted to connect them to said axle and to elevate them therefrom, and their rear ends to a casting *r*, braces *n n* connecting said axle with said side pieces, a brace *o* connecting the middle portion of said axle with said casting *r*, supporting-springs *p p* and supporting-pieces *s s*, substantially as herein set forth.

15. In a vehicle frame or running-gear, the combination with a rear axle and wheels thereon, a forward fork and a wheel therein said fork being provided with diagonal braces *t t*, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of said fifth-wheel device, their middle portions to supports adapted to connect the same to said rear axle and to elevate the same therefrom, and their rear ends to a casting *r*, braces *n n* connecting said axle with said side pieces, a brace *o* connecting said axle with said casting *r*, supporting-springs *p p* and supporting-pieces *s s*, substantially as herein set forth.

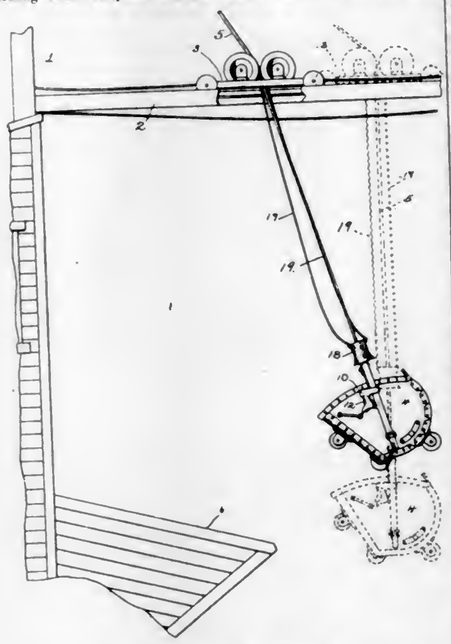
16. In a vehicle frame or running-gear, the combination with a rear axle and wheels thereon, a forward fork and a wheel therein said fork being provided with diagonal braces *t t*, and a fifth-wheel device; of side pieces *i i* having their front ends connected to the upper member of said fifth-wheel device, their middle portions to supports adapted to connect the same to said rear axle and to elevate the same therefrom, and their rear ends to a casting *r*, braces *n n* connecting said axle with said side pieces, a brace *o* connecting said axle with said casting *r*, a brace *x* connecting the said side pieces together, supporting-springs *p p*, and supporting-pieces *s s*, substantially as herein set forth.

658,330. **HOISTING APPARATUS.** HENRY J. COOK and ALEXANDER MORRIS, Boston, Mass. Filed June 4, 1900. Serial No. 18,928. (No model.)

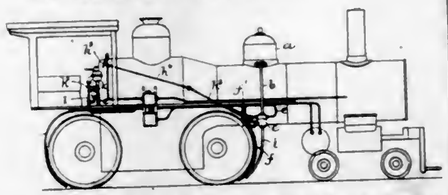
Claim.—1. In hoisting apparatus, the combination of a bucket or holder, a hoisting-rope suspending the same, a truck or trolley guiding said rope, a transverse track or runway for the trolley, a releasing-weight suspended from the trolley by a flexible swinging connection at a distance below the trolley, and confined to the hoisting-rope as to lateral movement but free to move vertically up and down thereon by reason of the flexibility of said connection, the said construction and arrangement permitting the weight to partake of the pendulous movements of the bucket imparted by lateral movement of the trolley, and means carried by the bucket and operated by the weight for discharging the bucket when it is raised into contact with the weight.

2. In a hoisting apparatus, the combination of a tilting bucket having a bail by which it is supported, said bail having vertical side arms and a cross-arm, a catch pivoted to one of the side arms and engaging a lug on the bucket to normally hold said bucket in upright position, a lever pivoted to the cross-arm and having its inner end located near the middle of said arm in position to be engaged by a releasing member, a hooked member pivoted to the outer end of said lever and its lower end connected with and adapted to elevate and release the catch when the inner end of the lever is depressed, and a releasing member adapted to engage and depress the inner end of said lever.

3. In a hoisting apparatus, the combination of a tilting bucket having a bail by which it is supported, said bail having vertical side arms and a cross-arm, the catch 10 pivoted to one of the side arms and engaging a lug on the bucket to normally hold said bucket in upright position, said catch having the flange 17, a lever pivoted to the cross-arm and having its inner end located near the middle of said arm in position to be engaged by a releasing member, a hook 15 pivoted at its upper end to the outer end of said lever and having the horizontal lip 16 taking under flange 17 on the catch, whereby when the inner end of the lever is depressed said catch is elevated and disengaged from the lug on the bucket, and a releasing member adapted to engage and depress the inner end of said lever.



658,331. **SANDING APPARATUS FOR LOCOMOTIVES.** HENRY H. HUFF, Boston, Mass., assignor of two-thirds to Arthur D. Curran, same place, and Smith P. Burton, Jr., Reading, Mass. Filed June 4, 1900. Serial No. 18,933. (No model.)



Claim.—1. A track-sanding apparatus comprising a sand-box, a casing connected with said box, and adapted to contain sand, a blast-pipe having a sand-receiving orifice and located within the casing and adapted to be embedded in the sand in said casing, a supply-pipe connected with one end of the blast-pipe, and a sand-delivery pipe connected with the other end of the blast-pipe.

2. A track-sanding apparatus comprising a sand-box, a casing connected with a sand-box, and adapted to contain sand, two blast-pipes located in the casing and each having a sand-receiving orifice within the casing, independently-controlled air-supply pipes connected with the receiving ends of the blast-pipes, and independent sand-delivery pipes connected to the delivery ends of the blast-pipes, one of said delivery-pipes being arranged to deliver sand in front of the driving-wheels, and the other behind the driving-wheels.

3. A track-sanding apparatus comprising a sand-holding casing, a blast-pipe having a sand-receiving orifice within the casing, an air-supply pipe connected with the receiving end of the blast-pipe, and an air-conducting plug or valve adjustable in the blast-pipe and adapted to vary the operative size of the sand-receiving opening therein.

4. A track-sanding apparatus comprising a sand-holding casing, a blast-pipe having a sand-receiving orifice within the casing, an air-supply pipe connected with the receiving end of the blast-pipe, a sand-delivery pipe connected with the delivering end of the blast-pipe, and an air-conducting plug or valve adjustable in the blast-pipe and adapted to vary the operative size of the sand-receiving opening therein, said valve having air-distributing orifices.

5. A track-sanding apparatus comprising a casing connected with a sand-box, and adapted to contain sand, a blast-pipe having a sand-receiving orifice within the casing, and a supply-pipe connected with one end of the blast-pipe, a sand-delivery pipe connected with the other end of the blast-pipe, a sand-delivery pipe extending from the casing below the blast-pipe, and a valve in the casing between the blast-pipe and the last-mentioned delivery-pipe.

6. A track-sanding apparatus comprising a casing connected with a sand-box, and adapted to contain sand, a blast-pipe having a sand-receiving orifice within the casing, and a supply-pipe connected with one end of the blast-pipe, a sand-delivery pipe connected with the other end of the blast-pipe, a sand-delivery pipe extending from the casing below the blast-pipe, a valve in the casing between the blast-pipe and the last-mentioned delivery-pipe, and means for operating said valve, said means including a handle in the cab and connections between said handle and the valve.

7. A track-sanding apparatus comprising two casings at opposite sides of a locomotive, connections between said casings and the sand-box, blast-pipes having sand-receiving orifices within the casings, means for supplying compressed air to the blast-pipes, sand-delivery pipes connected with the blast-pipes, said delivery-pipes extending from the lower portions of the casings, valves in the casings between the blast-pipes and the last-mentioned delivery-pipes, an operating-handle in the cab and connections between said handle and one of the valves, and connections between the two valves extending across the engine, whereby the valves are simultaneously operated.

8. A track-sanding apparatus comprising a sand-box, two casings at opposite sides of a locomotive, connections between said casings and the sand-box, blast-pipes located in said casing and having sand-receiving orifices intermediate the ends thereof and within the casings, air-supply pipes connecting a source of compressed-air supply with the receiving end of the blast-pipes, means controlled by an attendant in the cab for supplying and shutting off the compressed air, and sand-delivery pipes extending from the blast-pipes.

9. In a track-sanding apparatus, a sand-delivery pipe having a yieldingly-closed valve at its delivering end, adapted to be opened by sand in the pipe.

10. In a track-sanding apparatus a casing having a sand-supply pipe, two blast-pipes and a partition between the blast-pipes.

11. In a track-sanding apparatus a blast-pipe having a sand-inlet, a plug at one side of the inlet having a series of air-conducting orifices and means for distributing air supplied to said orifices.

12. In a track-sanding apparatus a blast-pipe having a sand-inlet, a plug at one side of the inlet having a series of air-conducting orifices, and a spring-pressed air-distributer yieldingly held against a seat in the conduit which supplies air to said orifices.

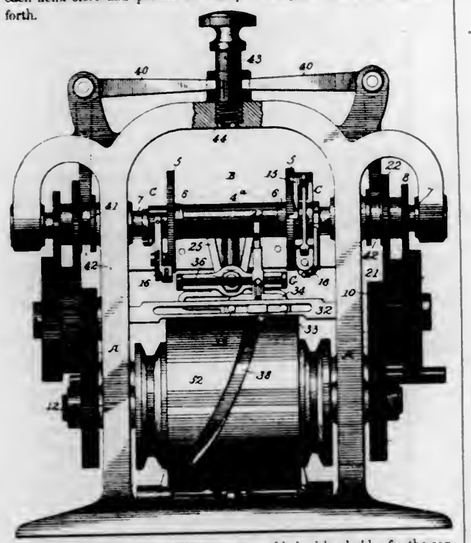
REISSUES.

11,855. **APPARATUS FOR WINDING COPS OR BALLS.** SIMON W. WARDWELL, Jr., Providence, R. I., assignor, by mesne assignments, to the Universal Winding Company, Portland, Me. Filed July 14, 1899. Serial No. 723,847. Original No. 480,157, dated Aug. 2, 1892.

Claim.—1. The combination in a winding-machine, of a rotating support for a cop tube or cylinder, a guide having an eye for the thread, means for reciprocating said guide and for turning said holder to definitely place the thread in reversed intersecting helices each in the position it is to occupy in the finished cop, and with abrupt bends at each point of reversal of the thread, means for maintaining the guide in contact with the cop with its eye at the bearing-point of the guide upon the cop, and means for progressively changing the relation of the said holder and the guide to secure the systematic laying of said helices in regular and uniform succession on the cop, and the reversal of each helix at a point at one end circumferentially different from the starting or reversing point of said helix at the opposite end, substantially as set forth.

2. In a cop-winding machine the combination of a holder, a thread-guide with its eye arranged at the point where the guide bears on the cop, to lay the thread definitely in the position it is to occupy in the finished cop, means for reciprocating the guide and rotating the holder to

turn the latter more than one-half a rotation during each traverse of the guide and to reverse the latter at a point at each end and immediately beyond the point where it was previously reversed at that end, to lay each helix close and parallel to that previously laid, substantially as set forth.



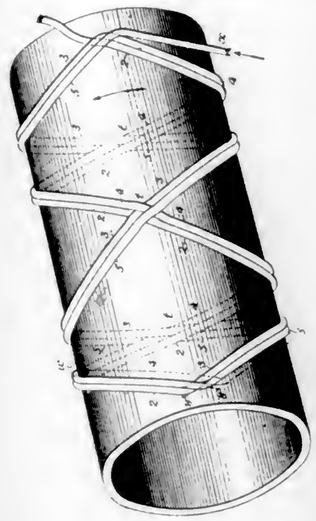
3. A machine for winding cops, provided with a holder for the cop, and a reciprocating guide for the thread supported to move in constant contact with and parallel to the axis of, the cop, and outward as the cop increases in diameter, with its eye at the point where it bears on the cop, to lay the thread definitely in the position it is to occupy in the finished cop, and means for turning the holder and for reciprocating the guide, to lay the thread in reversed helices crossing each other, and mechanism for varying the relative movements of the holder and guide, to insure a regular increment of movement to the holder, whereby each reversal of the movement of the guide at each end takes place immediately after the holder has turned beyond the point circumferentially occupied by the guide at the moment of the preceding reversal of the movement of the guide at said end, substantially as set forth.

4. The combination of the cop-holder, a rotating shaft for driving the holder, a cam operating independently of said shaft, and devices between the cam and the holder to rotate the latter independently of the shaft, substantially as set forth.

5. The combination of the holder consisting of disks carried by rotating shafts, pawls for engaging teeth upon said disks, cams, and means for moving the same independently of the disks, and devices between each cam and each pawl, whereby the latter is moved by the cam to impart additional movement to the adjoining disk independently of the movement of the shaft, substantially as described.

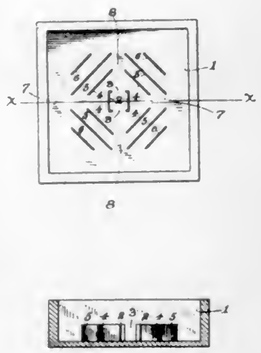
11,856. METHOD OF WINDING COPS. SIMON W. WARDWELL, Jr., Providence, R. I., assignor, by mesne assignments, to the Universal Winding Company, Portland, Me. Filed July 14, 1899. Serial No. 723,845. Original No. 480,158, dated Aug. 2, 1892.

Claim.—The within-described systematic method of cop-building consisting—first, in definitely placing thread upon a holder in a helix extending from end to end, in the position on said holder it is to occupy in the finished cop; second, in bending the thread at each end to form an abrupt bend which occupies a position circumferentially beyond that at the opposite end; third, returning the thread in a reverse helix to the opposite end and crossing and tying down the thread of the first helix at one or more points between the ends of the cop; fourth, carrying the thread, at each end, with an abrupt bend over the portion previously laid at a point circumferentially different from that at which the helix started at that end; fifth, continuing these operations to lay the helices in contact with each other progressively on the core until the core is uniformly covered forming a single layer of two thicknesses of thread consisting of crossed helices; sixth, building successive layers upon the first, all having the same number of turns in the helices as the first; thereby forming a cop of the desired length and diameter, consisting of superposed similar layers of thread, each layer uniformly covering the layer below, and each composed of series of superposed crossed helices, each extending from end to end of the cop the helices successively bent back at the ends at different points circumferentially, substantially as described.



DESIGNS.

33,204. GAME-BOARD. EDWIN I. PYLE, Bridgeport, Conn., assignor of one-half to Frank J. Naramore, same place. Filed Aug. 15, 1900. Serial No. 26,994. Term of patent 3½ years.



Claim.—The design for a game-board, herein shown and described.

33,205. BADGE. JOSEPH M. MOLLOY, Spalding, Idaho. Filed Aug. 8, 1900. Serial No. 26,314. Term of patent 3½ years.

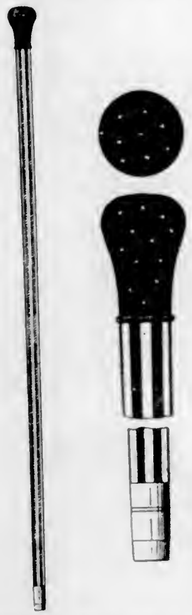


33,205.



Claim.—The design for a badge, herein shown and described.

33,206. CANE. GEORGE STOCKER, North Pasadena, Cal. Filed Aug. 24, 1900. Serial No. 27,961. Term of patent 14 years.



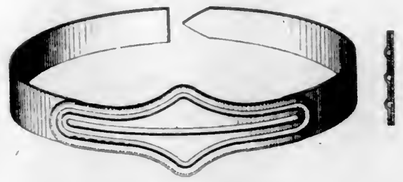
Claim.—The design for a cane, as herein shown and described.

33,207. BILLIARD-CUE HEAD. LEE R. MILLER and EMANUEL T. RICHERT, Akron, Ohio. Filed Aug. 16, 1900. Serial No. 27,115. Term of patent 7 years.



Claim.—The design for a billiard-cue head, substantially as shown and described.

33,208. BELT. LOUIS SANDERS, New York, N. Y. Filed July 25, 1900. Serial No. 24,827. Term of patent 3½ years.



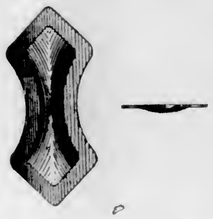
Claim.—The design for the belt herein shown and described.

33,209. BELT-BODY. JACOB HILDER, New York, N. Y. Filed July 26, 1900. Serial No. 24,947. Term of patent 7 years.



Claim.—The design for a belt-body, substantially as shown and described.

33,210. BODICE-BELT ORNAMENT. JULIUS HILDER, New York, N. Y. Filed June 11, 1900. Serial No. 19,967. Term of patent 3½ years.



Claim.—The design for a bodice-belt ornament, as herein shown and described.

33,211. BABY'S CAP. ROBERT HINCKLEY, Washington, D. C. Filed July 26, 1900. Serial No. 24,950. Term of patent 3½ years.



Claim.—The design for a baby's cap substantially as shown and described.

33,212. BABY-COMFORTER. CHRISTIAN W. MEINECKE, Jersey City, N. J. Filed July 18, 1900. Serial No. 24,111. Term of patent 14 years.



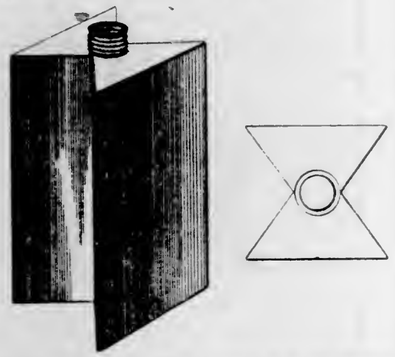
Claim.—The design for a baby-comforter herein shown and described.

33,213. GARMENT-PATTERN. FRANK SANTOMENE, New York, N. Y. Filed May 31, 1900. Serial No. 18,672. Term of patent 7 years.



Claim.—The design for a garment-pattern as shown and described.

33,214. BOTTLE. MORITZ REHNAUER, New York, N. Y. Filed Aug. 27, 1900. Serial No. 28,259. Term of patent 7 years.



Claim.—The design for a bottle, as herein shown and described.

33,215. WATER-BAG. GEORGE S. VAN PELT, New York, N. Y., assignor to William C. Howard, same place. Filed July 17, 1900. Serial No. 23,979. Term of patent 14 years.



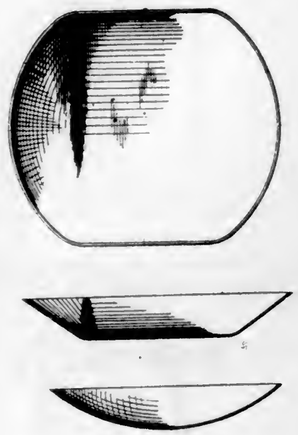
Claim.—The design for a water-bag, substantially as shown and described.

33,216. FOUNTAIN-SYRINGE BAG. GEORGE S. VAN PELT, New York, N. Y., assignor to William C. Howard, same place. Filed July 17, 1900. Serial No. 23,978. Term of patent 14 years.



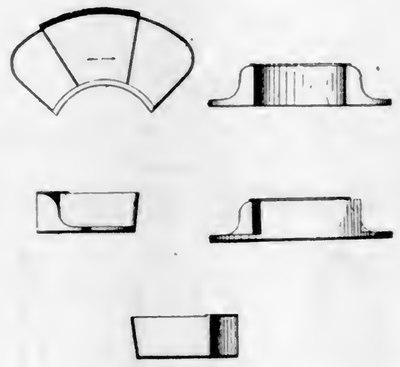
Claim.—The design for a fountain-syringe bag, substantially as shown and described.

33,217. WOODEN DISH. MAXIME CHEVRIER, Harrisville, N. Y., assignor to the Universal Wooden Ware Company, same place. Filed June 20, 1900. Serial No. 21,013. Term of patent 14 years.



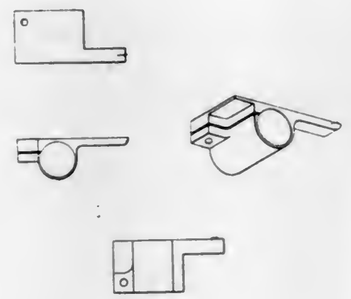
Claim.—The design for a wooden dish as herein shown and described.

33,218. COMPARTMENT-PAN. SISTA LOUISE DIXON, Kansas City, Mo. Filed Aug. 22, 1900. Serial No. 27,735. Term of patent 7 years.



Claim.—The design of compartment-pan, substantially as herein shown and described.

33,219. FEED-BAR SHOE FOR SEWING-MACHINES. JAMES S. GORTON, New York, N. Y., assignor to the Willcox & Gibbs Sewing Machine Company, same place. Filed Aug. 3, 1900. Serial No. 25,840. Term of patent 14 years.



Claim.—The design for a feed-bar shoe for sewing-machines herein shown and described.

33,220. GAS-BURNER TIP. CHARLES W. NOKES, Cleveland, Ohio, assignor of one-half to Edwin A. Bonfield, Savannah, Ga. Filed June 9, 1900. Serial No. 19,779. Term of patent 7 years.



Claim.—The design for a gas-burner tip, substantially as shown and described.

33,221. GAS-BURNER TIP. CHARLES W. NOKES, Cleveland, Ohio, assignor of one-half to Edwin A. Bonfield, Savannah, Ga. Filed June 9, 1900. Serial No. 19,780. Term of patent 7 years.



Claim.—The design for a gas-burner tip, substantially as shown and described.

33,222. HINGE MEMBER. JOHN NORMAN SPENCER, South Berwick, Me. Filed July 10, 1900. Serial No. 23,165. Term of patent 7 years.



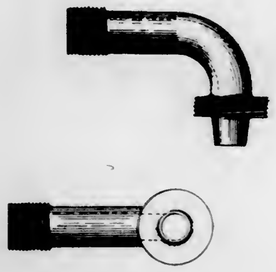
Claim.—The design for a hinge member, as herein shown and described.

33,223. ANTIRATTLER. FENTON E. JUDSON, Antigo, Wis. Filed Aug. 21, 1900. Serial No. 27,523. Term of patent 14 years.



Claim.—The design for an antirattler, as herein shown and described.

33,224. ANGLE-COUPLING. HENRY G. THOMPSON, New Haven, Conn., assignor to the New Haven Novelty Machine Company, same place. Filed Aug. 17, 1900. Serial No. 27,215. Term of patent 14 years.



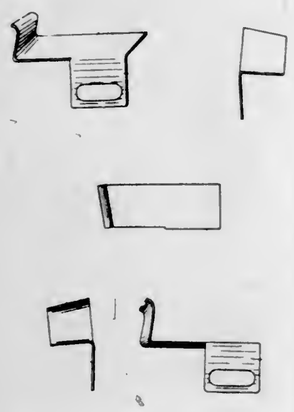
Claim.—The design for an angle-coupling, substantially as herein shown and described.

33,225. PIPE-COUPLING. HENRY G. THOMPSON, New Haven, Conn., assignor to the New Haven Novelty Machine Company, same place. Filed Aug. 17, 1900. Serial No. 27,214. Term of patent 14 years.



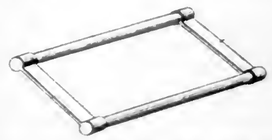
Claim.—The design for a pipe-coupling substantially as herein shown and described.

33,226. PART FOR A PEDAL-CLIP. LOUIS T. LAPAUGH and ARTHUR R. LEIFF, Utica, N. Y. Filed Aug. 22, 1900. Serial No. 27,734. Term of patent 7 years.



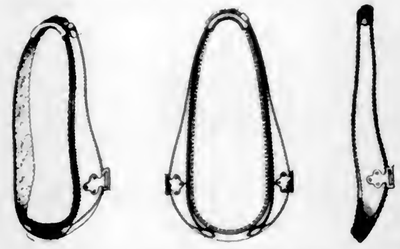
Claim.—The design for a part for a pedal-clip, as herein shown and described.

33,227. WEARING-PLATE FOR WAGON-REACHES. EDWARD QUIRK, Fulton, N. Y. Filed Aug. 13, 1900. Serial No. 26,796. Term of patent 14 years.



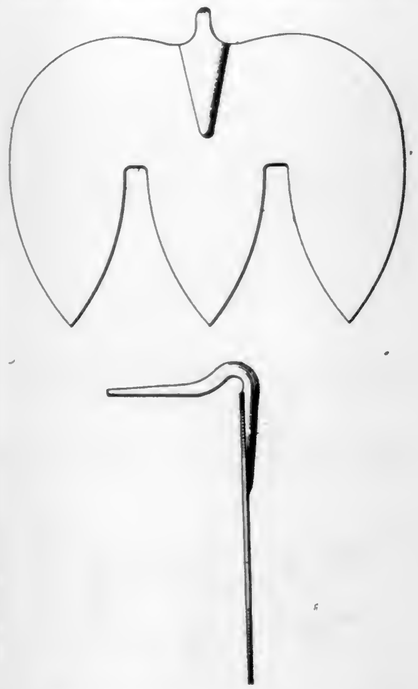
Claim.—The design for a wearing-plate for wagon-reaches as herein shown and described.

33,228. HORSE-COLLAR. HAS CLARK, Kansas City, Kans. Filed Aug. 7, 1900. Serial No. 26,199. Term of patent 7 years.



Claim.—The design for a horse-collar herein shown and described.

33,229. GARDEN-HOE. WILLIAM H. MCDONALD, Titusville, Pa. Filed Aug. 13, 1900. Serial No. 26,797. Term of patent 14 years.



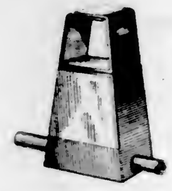
Claim.—The design for a garden-hoe, substantially as shown and described.

33,230. ELECTRIC-CELL BODY. ERNEST F. YOST and WILLIAM H. SMITH, New York, N. Y. Filed June 28, 1900. Serial No. 21,995. Term of patent 7 years.



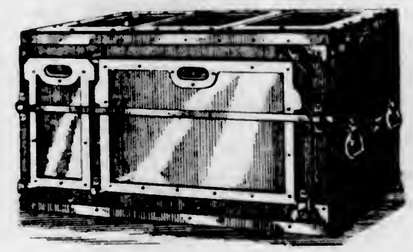
Claim.—The design for an electric-cell body, substantially as herein shown and described.

33,231. ELECTRIC-CELL BODY. ERNEST F. YOST and WILLIAM H. SMITH, New York, N. Y. Filed June 28, 1900. Serial No. 21,996. Term of patent 7 years.



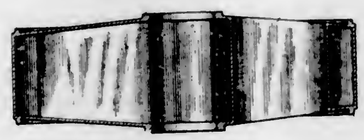
Claim.—The design for an electric-cell body substantially as herein shown and described.

33,232. CAMP-STOVE. FRANCIS H. BUZZACOTT, Chicago, Ill. Filed July 25, 1900. Serial No. 24,820. Term of patent 3½ years.

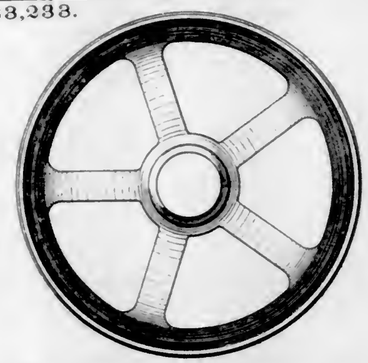


Claim.—The design for a camp-stove as herein shown and described.

33,233. SECTION FOR VERTICAL HEATERS. GEORGE K. DOWNE, Chicago, Ill., assignor to the American Radiator Company, of New Jersey. Filed Aug. 13, 1900. Serial No. 26,790. Term of patent 14 years.



33,233.



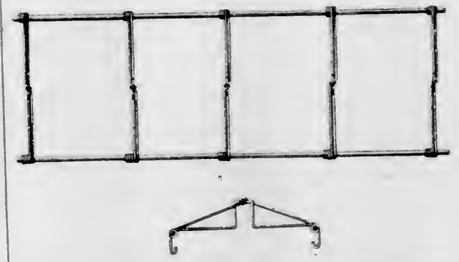
Claim.—The design for a section for a vertical heater, as herein shown and described.

33,234. HEATING-STOVE. HENRY P. COPE, Detroit, Mich. Filed Aug. 25, 1900. Serial No. 28,079. Term of patent 7 years.



Claim.—The design for a heating-stove, substantially as herein shown and described.

33,235. CANOPY-COVER FRAME. WILLIAM DUGUID, Seattle, Wash. Filed July 5, 1900. Serial No. 22,645. Term of patent 7 years.



Claim.—The design for a canopy-cover frame, substantially as herein shown and described.

TRADE-MARKS

REGISTERED SEPTEMBER 18, 1900.

35,000. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.

PRINCETON UNIVERSITY

Essential feature.—The words "PRINCETON UNIVERSITY." Used since July 10, 1900.

35,001. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.



Essential feature.—The representation of a shield, the face of which is divided into an upper field and a lower field, said upper field bearing the representation of an open book, and said lower field bearing the representation of a chevron. Used since July 10, 1900.

35,002. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.

HARVARD UNIVERSITY

Essential feature.—The words "HARVARD UNIVERSITY." Used since July 10, 1900.

35,003. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.



Essential feature.—The representation of a shield or escutcheon, and of three open books bearing respectively upon their exposed pages the groups of letters "VE" "RI" "TAS." Used since July 10, 1900.

35,004. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.

UNIVERSITY OF CAMBRIDGE

Essential feature.—The words "UNIVERSITY OF CAMBRIDGE." Used since July 10, 1900.

35,005. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.



Essential feature.—The representation of a heraldic shield or escutcheon, a cross-shaped figure, and four lions. Used since July 10, 1900.

35,006. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.

UNIVERSITY OF PENNSYLVANIA

Essential feature.—The words "UNIVERSITY OF PENNSYLVANIA." Used since July 10, 1900.

35,007. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.



Essential feature.—The representation of a ribbon scroll and a pile of closed books. Used since July 10, 1900.

35,008. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.

LEHIGH UNIVERSITY

Essential feature.—The words "LEHIGH UNIVERSITY." Used since July 10, 1900.

35,009. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.



Essential feature.—The representation of an open book upon the exposed pages of which is depicted a conventional heart-shaped figure. Used since July 10, 1900.

35,010. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.

CORNELL UNIVERSITY

Essential feature.—The words "CORNELL UNIVERSITY." Used since July 10, 1900.

35,011. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.



Essential feature.—The representation of a circular figure bearing the representation of the head and shoulders of a man and the words "THE CORNELL UNIVERSITY FOUNDED A. D. 1865." Used since July 10, 1900.

35,012. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.

OXFORD UNIVERSITY

Essential feature.—The words "OXFORD UNIVERSITY." Used since July 10, 1900.

35,013. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.



Essential feature.—The representation of a heraldic shield or escutcheon bearing the representation of an open book and three crowns. Used since July 10, 1900.

35,014. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.

JOHNS HOPKINS UNIVERSITY

Essential feature.—The words "JOHNS HOPKINS UNIVERSITY." Used since July 10, 1900.

35,015. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.



Essential feature.—The representation of a shield or escutcheon on the face of which are depicted a globe, open books, ornamental cross-shaped figures and spaces occupied by small blocks or spaces of contrasting shades. Used since July 10, 1900.

35,016. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.

SWARTHMORE COLLEGE

Essential feature.—The words "SWARTHMORE COLLEGE." Used since July 10, 1900.

35,017. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.



Essential feature.—A representation of books, a group of philosophical apparatus, and a sunburst. Used since July 10, 1900.

35,018. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.

COLUMBIA UNIVERSITY

Essential feature.—The words "COLUMBIA UNIVERSITY." Used since July 10, 1900.

35,019. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.



Essential feature.—The representation of a female figure in antique or classic robes seated upon a large chair, and a group of nude children. Used since July 10, 1900.

35,020. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.

UNIVERSITY OF CHICAGO

Essential feature.—The words "UNIVERSITY OF CHICAGO." Used since July 10, 1900.

35,021. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.



Essential feature.—The representation of a circular figure bearing the words "THE UNIVERSITY OF CHICAGO" and the word "SEAL." Used since July 10, 1900.

35,022. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.

YALE UNIVERSITY

Essential feature.—The words "YALE UNIVERSITY." Used since July 10, 1900.

35,023. WHISKY. LAURENCE MCCORMICK, Philadelphia, Pa. Filed Aug. 1, 1900.



Essential feature.—The representation of a shield or escutcheon and an open book depicted at the central part of the field of the same. Used since July 10, 1900.

35,024. CERTAIN NAMED ALCOHOLIC LIQUORS. JAMES BENNETT REGAN, New York, N. Y. Filed July 11, 1900.

WOODMANSTEN INN

Essential feature.—The words "WOODMANSTEN INN." Used since July 1, 1896.

35,025. BOTTLED BEER. C. L. CENTLIVRE BREWING COMPANY, Fort Wayne, Ind. Filed July 9, 1900.

NICKEL PLATE

Essential feature.—The words "NICKEL PLATE." Used since September, 1895.

35,026. CIGARS. J. H. LOCKE & Co., Cincinnati, Ohio. Filed Aug. 4, 1900.



Essential feature.—A pictorial representation of the heads of a man and a woman with their faces toward each other, the man being in the act of smoking a cigar and the smoke passing toward the woman and taking the form of fragrant flowers, for which she is in the act of reaching. Used since February 15, 1900.

35,027. MEDICATED GUM. STERLING REMEDY COMPANY, Jersey City, N. J. Filed July 20, 1900.

GUM-TO-BAC

Essential feature.—The hyphenated word "GUM-TO-BAC." Used since May 1, 1900.

35,028. MEDICAL COMPOUNDS FOR TREATMENT OF TOOTHACHE. LOUIS SCHERR, New York, N. Y. Filed July 14, 1900.

Mha

Essential feature.—The word "MHA." Used since May 1, 1900.

35,029. CERTAIN NAMED DRUGS. DR. O. KNÖFLER & Co., Plötzensee, Germany. Filed July 13, 1900.



Essential feature.—The representation of two swimming swans arranged in a hexagon border. Used since July 1, 1899.

35,030. DYSPEPSIA REMEDY. FAIRCHILD BROS. & FOSTER, Elisabeth, N. J., and New York, N. Y. Filed July 26, 1900.

DIAZYME

Essential feature.—The word "DIAZYME." Used since July 1, 1900.

35,031. REMEDIES FOR SKIN DISEASES. NEWTON N. GOBER, Atlanta, Ga. Filed July 14, 1900.

D. E. S.

Essential feature.—The letters "D. E. S." Used since July 1, 1899.

35,032. MEDICATED SOAP. ELIZABETH M. BARTHEL, London, England. Filed July 9, 1900.

ZINOLINE

Essential feature.—The word "ZINOLINE." Used since 1898.

35,033. SOAP, SOAP-POWDERS, AND SOAP COMPOUNDS. THE TRAYER-MILNE COMPANY, Philadelphia, Pa. Filed July 27, 1900.

TAKANAP

Essential feature.—The word "TAKANAP." Used since September 26, 1898.

35,034. LAUNDRY POWDER. IRVINE W. BIGGAR, Kansas City, Kans. Filed July 14, 1900.

Helpstarch

Essential feature.—The word "HELPSTARCH." Used since April 26, 1900.

35,035. JEWEL-STONE. JUERGENS BROS., New York, N. Y. Filed July 26, 1900.

ISIS

Essential feature.—The word "ISIS." Used since January 1, 1900.

35,036. AMMUNITION. NOBELS EXPLOSIVES COMPANY, LIMITED, Glasgow, Scotland. Filed Aug. 2, 1900.

BALLISTITE

Essential feature.—The word "BALLISTITE." Used since 1892.

35,037. THERMO-ELECTRIC GENERATORS. JOHN W. HARRISON, Pueblo, Colo. Filed July 31, 1900.

OXYMAGNETO

Essential feature.—The word "OXYMAGNETO." Used since June 19, 1900.

35,038. GRAPHOPHONES. FREDERICK MYERS, New York, N. Y. Filed July 26, 1900.

STYLOPHONE

Essential feature.—The word "STYLOPHONE." Used since July 1, 1900.

35,039. ORGANS AND PIANOS AND PARTS THEREOF. THE AEOLIAN COMPANY, Meriden, Conn., and New York, N. Y. Filed July 11, 1900.

EUTOLIA

Essential feature.—The word "EUTOLIA." Used since November, 1899.

35,040. ORGANS AND PIANOS AND PARTS THEREOF. THE AEOLIAN COMPANY, Meriden, Conn., and New York, N. Y. Filed July 11, 1900.

EUTOLIAN

Essential feature.—The word "EUTOLIAN." Used since November, 1899.

35,041. CERTAIN NAMED LEATHERS. ALBERT TROSTEL & SONS, Milwaukee, Wis. Filed Aug. 6, 1900.

PHOENIX

Essential feature.—The word "PHOENIX." Used since 1888.

35,042. BOOKBINDERS' AND POCKET-BOOK LEATHER. OTTO H. OPPENHEIMER COMPANY, Newark, N. J. Filed July 20, 1900.

OHOCO

Essential feature.—The word "OHOCO." Used since July 13, 1900.

35,043. ELASTIC GORING FOR BOOTS AND SHOES. GLENDALE ELASTIC FABRICS COMPANY, Easthampton and Boston, Mass. Filed July 16, 1900.

RIVAL

Essential feature.—The word "RIVAL." Used since June, 1898.

35,044. BOOTS, SHOES, AND SLIPPERS. SHAROOD & CROOKS, St. Paul, Minn. Filed July 31, 1900.

Aristo

Essential feature.—The word "ARISTO." Used since July 5, 1900.

35,045. PAPER AND PAPER SIGNS. JOHN IGELSTROEM, St. Louis, Mo. Filed July 30, 1900.

CLOTHINE

Essential feature.—The word "CLOTHINE." Used since January 1, 1899.

35,046. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed June 27, 1900.

AUTOMOBILE

Essential feature.—The word "AUTOMOBILE." Used since January 2, 1900.

35,047. WATCHES AND PORTABLE CLOCKS. WEBSTER C. BALL, Cleveland, Ohio. Filed Aug. 13, 1900.

Commercial.

Essential feature.—The word "COMMERCIAL." Used since February 22, 1897.

35,048. FOUNTAIN-PENS. L. E. WATERMAN COMPANY, New York, N. Y. Filed July 28, 1900.

IDEAL

Essential feature.—The word "IDEAL." Used since July 1, 1883.

35,049. CERTAIN NAMED OPTICAL INSTRUMENTS. THE FIRM OF CARL ZEISS, Jena, Germany. Filed June 8, 1900.

Unar

Essential feature.—The word "UNAR." Used since January 11, 1900.

35,050. CERTAIN NAMED OPTICAL INSTRUMENTS. THE FIRM OF CARL ZEISS, Jena, Germany. Filed June 8, 1900.

Protar

Essential feature.—The word "PROTAR." Used since January 11, 1900.

35,051. SUSPENDERS. EASTMAN & SPRENT, Chicago, Ill. Filed Aug. 4, 1900.

THE

20TH.

CENTURY

Essential feature.—The phrase "THE 20TH CENTURY." Used since May 1, 1900.

35,052. GENTLEMEN'S SHIRTS. EARL & WILSON, Troy, N. Y. Filed July 3, 1900.

PRINCE ALBERT

Essential feature.—The words "PRINCE ALBERT." Used since June 16, 1900.

35,053. CERTAIN NAMED ARTICLES OF APPAREL. HUTCHINS, HOWE & WITHINGTON, Chicago, Ill. Filed June 28, 1900.



Essential feature.—The picture of a statue representing a rearing horse with a rider mounted on his back. Used since January 1, 1899.

35,054. CERTAIN NAMED WEARING-APPAREL. ALBERT P. MCGRAW, New York, N. Y. Filed July 23, 1900.

WORLD

Essential feature.—The word "WORLD." Used since March 23, 1900.

35,055. CERTAIN NAMED WEARING-APPAREL. M. D. MIRSKY & CO., New York, N. Y. Filed July 27, 1900.

CORSETINE

Essential feature.—The word "CORSETINE." Used since January 1, 1900.

35,056. LINEN, COTTON, AND SILK THREADS, YARNS, AND SHOE-LACES. HUGHES FAWCETT, New York, N. Y. Filed July 31, 1900.

ARROW

Essential feature.—The word "ARROW" or the representation of an arrow. Used since January 1, 1886.

35,057. SHOES. GABRIELLE POULAT FRANCOS, Grenoble, France. Filed June 19, 1900.

ACOPE

Essential feature.—The word "ACOPE." Used since December 23, 1899.

35,058. CERTAIN NAMED BOOTS AND SHOES. BARTON BROTHERS, Kansas City, Mo. Filed July 6, 1900.

MISTLETOE

Essential feature.—The word "MISTLETOE." Used since May 1, 1900.

35,059. COMPRESSES. WILLIAM DE PUY, Indianapolis, Ind. Filed Aug. 3, 1900.

Z.Z.Z.

Essential feature.—The letters "Z. Z. Z." Used since July 20, 1900.

35,060. CHEWING-GUM. JOHN HILL, Jr., Chicago, Ill. Filed June 25, 1900.



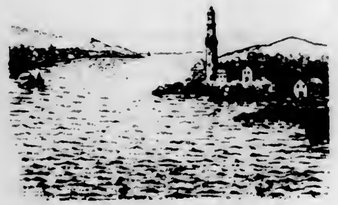
Essential feature.—The pictorial representation of the head and shoulders of a Salvation-Army girl. Used since March, 1900.

35,061. CHEWING-GUM. JOHN HILL, Jr., Chicago, Ill. Filed June 25, 1900.

VOLUNTEERS

Essential feature.—The word "VOLUNTEERS." Used since March, 1900.

35,062. CIGARS. THE FIRM OF R. SPRÜNGLI, Zurich, Switzerland and Manila, Philippine Islands. Filed July 13, 1900.



Essential feature.—A marine landscape, whose prominent features are the harbor or bay surrounded by hills and mountains and a lighthouse forming the dominant feature thereof. Used since May 6, 1899.

35,063. CIGARS. THE FIRM OF R. SPRÜNGLI, Zurich, Switzerland, and Manila, Philippine Islands. Filed July 13, 1900.

La Elzardo

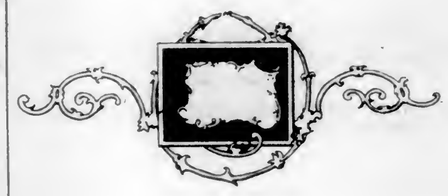
Essential feature.—The words "LA ELZARDO." Used since May 6, 1899.

35,064. MINERAL WATERS. DUQUESNE DISTRIBUTING COMPANY, INCORPORATED, Harmarville, Pa. Filed Aug. 4, 1900.



Essential feature.—The representation of an arm and hand bearing a tray. Used since December, 1897.

35,065. MINERAL WATERS. DUQUESNE DISTRIBUTING COMPANY, INCORPORATED, Harmarville, Pa. Filed Aug. 4, 1900.



Essential feature.—The representation of a plate set in a rectangular-shaped frame and scrollwork surrounding the frame. Used since December, 1897.

35,066. CERTAIN NAMED LIQUID BEVERAGES. DUQUESNE DISTRIBUTING COMPANY, INCORPORATED, Harmarville, Pa. Filed Feb. 23, 1900.



Essential feature.—The representation or figure of a raven colored red. Used since December 17, 1897.

35,067. LAGER-BEER. THE CAPITAL BREWING COMPANY OF OLYMPIA, Olympia, Wash. Filed Feb. 27, 1900.



Essential feature.—The representation of a waterfall spanned by a footbridge, a background of trees and sky, a representation of the rocky banks of the waterfall and a representation of the stone in the center of the waterfall. Used since November 1, 1896.

35,068. COFFEE. THE SMITH BROTHERS COMPANY, LIMITED, New Orleans, La. Filed Mar. 17, 1900.

CREOLE

Essential feature.—The word "CREOLE." Used since December 1, 1896.

35,069. SYRUP. THE GLUCOSE SUGAR REFINING COMPANY, Jersey City, N. J., and Chicago, Ill. Filed Aug. 6, 1900.

Kairomel

Essential feature.—The word "KAIROMEL." Used since March 31, 1900.

35,070. PIES. HENRY COPPERSMITH, Washington, D. C. Filed June 19, 1900.



Essential feature.—Lines or marks in rows extending in the same direction and a line of letters crosswise of the rows. Used since December 15, 1885.

35,071. CERTAIN NAMED PRESERVED GOODS. W. L. CHADWICK & Co., Liverpool, England. Filed June 29, 1900.

BLUE SKY

Essential feature.—The words "BLUE SKY." Used since January 1, 1898.

35,072. CERTAIN NAMED CANNED GOODS. PACIFIC COAST CONDENSED MILK Co., Seattle, Wash. Filed June 18, 1900.

Carnation

Essential feature.—The word "CARNATION." Used since November 1, 1899.

35,073. STARCH. ECLIPSE STARCH COMPANY, Kansas City, Mo. Filed Aug. 3, 1900.

ECLIPSE

Essential feature.—The word "ECLIPSE." Used since July 1, 1899.

35,074. WHEAT-FLOUR. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, LIMITED, Minneapolis, Minn. Filed June 7, 1900.

ELECTA

Essential feature.—The word "ELECTA." Used since May 5, 1900.

35,075. FOODS FOR SHEEP, HORSES, AND POULTRY. THE BOVINE, LIMITED, London, England. Filed Sept. 22, 1899.

THE BOVINE

Essential feature.—The words "THE BOVINE." Used since August 30, 1884.

35,076. TOILET POWDER. WARING & Co., Baltimore, Md. Filed July 17, 1900.

Panza

Essential feature.—The word "PANZA." Used since February 1, 1900.

35,077. CERTAIN NAMED TOILET PREPARATIONS. MELVIN G. HILL, Tempe, Ariz. Filed July 13, 1900.

BATHOLENE

Essential feature.—The word "BATHOLENE." Used since July 1, 1899.

35,078. PREPARATIONS FOR THE COMPLEXION. GEORGE T. BRANDON, Cleveland, Ohio. Filed Aug. 13, 1900.

BELLE'S DELIGHT

Essential feature.—The words "BELLE'S DELIGHT." Used since 1875.

35,079. TOILET OIL. THE MAINE PRODUCTS COMPANY, New York, N. Y. Filed July 3, 1900.

MAIZALINE

Essential feature.—The word "MAIZALINE." Used since May 15, 1900.

35,080. CERTAIN NAMED MEDICINAL TOILET PREPARATIONS. HENRY SCHNURMAN, Richmond, Va. Filed July 5, 1900.

HARTONA

Essential feature.—The word "HARTONA." Used since June 1, 1900.

35,081. BREATH-WASH. JUANO L. DE ZEABAULT, Birmingham, Mich. Filed Aug. 6, 1900.

Royal-Roman



Essential feature.—The compound word "ROYAL-ROMAN" and the representation of an ancient lamp. Used since August 1, 1900.

35,082. CERTAIN NAMED REMEDIES. JOHN JOSEPH LEEK, San Francisco, Cal. Filed May 31, 1900.

HINDOHERB

Essential feature.—The word "HINDOHERB." Used since June 1899.

35,083. DISINFECTANTS. VINCENZO CERVELLO, Palermo, Italy. Filed June 5, 1900.

IGAZOLO

Essential feature.—A facsimile signature of the registrant, the word "IGAZOLO," and the letters "C. F." Used since April 29, 1899.

35,084. POLISHING COMPOUNDS. WILLIAM H. SMITH, Kansas City, Mo. Filed May 31, 1900.

BOROLENE.

Essential feature.—The word "BOROLENE." Used since December 12, 1899.

35,085. CLEANING AND POLISHING SOAP. WHITTIER COBURN COMPANY, San Francisco, Cal. Filed June 25, 1900.

SAPHO

Essential feature.—The word "SAPHO." Used since June 9, 1900.

35,086. LIQUIDS FOR POLISHING OR BURNISHING METALS. WILLIAM HOWARD HOOPLE, New York, N. Y. Filed July 23, 1900.



Essential feature.—A pictorial representation of an army-encampment scene, with a cavalryman in the foreground engaged in burnishing his sword and an infantryman in the background or distance grasping the muzzle of his gun, the stock or butt thereof resting upon the ground. Used since July, 1900.

35,087. MOTOR-VEHICLES. FREDRICK A. LA ROCHE, New York, N. Y. Filed May 28, 1900.

MULTIMOBILE.

Essential feature.—The word "MULTIMOBILE." Used since September 15, 1899.

35,088. METAL TUBES OF ALL DESCRIPTIONS. LLOYD & LLOYD, LIMITED, Birmingham, England. Filed May 7, 1900.

L & L

Essential feature.—The letters and character "L & L." Used since August 13, 1872.

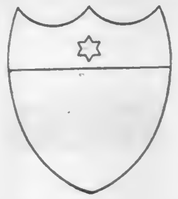
35,089. CERTAIN NAMED MACHINERY, ELECTRICAL APPARATUS, AND SUPPLY PARTS THEREFOR. GENERAL ELECTRIC COMPANY, Schenectady, N. Y. Filed July 24, 1899.

GE

Essential feature.—The letters "G E." Used since May, 1899.

35,090. BOOKS AND PAMPHLETS. ANDREW S. PATTERSON, New York, N. Y. Filed June 27, 1900.

35,090.



Essential feature.—The representation of a shield on which a star is displayed. Used since April 1, 1900.

35,091. BOOTS AND SHOES. JORDAN, MARSH & Co., Boston, Mass. Filed July 3, 1900.

OLD BRICK



Essential feature.—The words "OLD BRICK" and the representation of a boot or shoe upon a brick having on its front side the words "OLD BRICK." Used since 1883.

35,092. SHOES. GREEN-WHEELER SHOE COMPANY, Fort Dodge, Iowa. Filed May 1, 1900.



Essential feature.—The pictorial representation of a wheel printed in green color. Used since October, 1895.

35,093. SHOES. THE ANNEX SHOE COMPANY, Columbus, Ohio. Filed July 7, 1900.



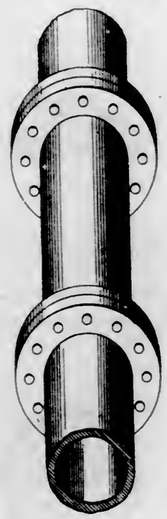
Essential feature.—The representation of a plurality of human arms arranged radially about a common center, the hand of each of said arms grasping a hammer. Used since June 1, 1900.

35,094. SAND AND EMERY PAPER AND CLOTH. UNION SAND PAPER COMPANY, Portland, Me.; Boston, Mass., and Chicago, Ill. Filed May 4, 1899.



Essential feature.—The representation of a shield. Used since May 18, 1892.

35,095. RUBBER BELTING, GASKETS, HOSE, AND PACKING. PEERLESS RUBBER MANUFACTURING COMPANY, New York, N. Y. Filed Mar. 21, 1900.



Essential feature.—The representation of a line of piping. Used since October 1, 1899.

35,096. CERTAIN NAMED MEDICINES. HERBERT R. SMALL, Boston, Mass. Filed Feb. 21, 1900.

RE-
JU-
VE-
NIS

Essential feature.—The word "REJUVENIS." Used since May 27, 1899.

35,097. CERTAIN NAMED PROPRIETARY MEDICINES. CHARLES S. ARCHER, Portland, Oreg. Filed June 16, 1900.



Essential feature.—A triangular figure, and the representation of an eagle in flight in the center, the letter "C" in the left corner, "P" in the upper corner, and "Co" in the right-hand corner, with a scroll curved from the small "o" under the letter "C," then to the left in a straight line slightly downward, terminating under the letter "C." Used since February 1, 1897.

35,098. CERTAIN NAMED MEDICINAL PREPARATIONS. NUTSHELL REMEDY CO., Georgetown, Ill. Filed July 2, 1900.



Essential feature.—The picture of a young lady, her face being in profile and her neck and arms bared and the left arm raised. Used since April 26, 1900.

35,099. CERTAIN NAMED MEDICAL COMPOUNDS. WILLIAM J. GARDNER, Cleveland, Ohio. Filed May 21, 1900.



Essential feature.—A bust portrait of the registrant. Used since February 16, 1889.

35,100. INTERNAL REMEDIES FOR CERTAIN NAMED DISEASES. JOHN T. SMITH, San Diego, Cal. Filed June 15, 1900.



Essential feature.—A figure having a series of angles on its perimeter within a circle. Used since May 1, 1900.

35,101. SPECIFIC FOR CERTAIN NAMED DISEASES. FOSTER-MILBURN COMPANY, Buffalo, N. Y. Filed Apr. 18, 1898.



Essential feature.—The representation of a maple-leaf. Used since October, 1885.

35,102. HEADACHE CURE. FREDERICK P. PYLE, Anderson, Ind. Filed June 23, 1900.

Waferetts

Essential feature.—The word "WAFERETTS." Used since February 1, 1900.

35,103. OINTMENT. WARREN BROOKS CROSBY, Cincinnati, Ohio. Filed May 7, 1900.

PETRO-PINE

Essential feature.—The compound term "PETRO-PINE." Used since October 1, 1899.

35,104. OINTMENTS. CAROLINE W. PATRICK, Norwalk, Ohio. Filed Feb. 9, 1900.

LISTEROL

Essential feature.—The word "LISTEROL." Used since October, 1898.

35,105. SPIRITUOUS LIQUORS. YOCHIM BROS., New Orleans, La. Filed Feb. 15, 1900.



Essential feature.—Inner and outer circular figures, together with the representation of a standard and a spread-eagle bearing on its breast a shield and holding arrows in each of its claws, the flag of the standard being draped in a curved manner between the circular figures at one side of the inner figure, and the staff of said standard disposed diametrically across the two figures, and the spread-eagle arranged within the inner circular figure. Used since December 20, 1898.

35,106. BUTTER. THE UNITED DANISH BUTTER PRESERVING COMPANY, Copenhagen, Denmark. Filed Feb. 5, 1900.



Essential feature.—A pair of clasped hands. Used since April 29, 1891.

35,107. CONFECTION. WILLIAM F. STOECKER, Omaha, Nebr. Filed Apr. 19, 1898.

FRUITINE

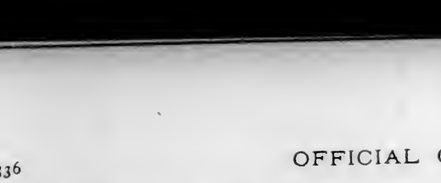
Essential feature.—The word "FRUITINE." Used since November 15, 1897.

35,108. CERTAIN NAMED BAKERY PRODUCTS AND CONFECTIONERY. NATIONAL BISCUIT COMPANY, Jersey City, N. J., and Chicago, Ill. Filed May 12, 1900.



Essential feature.—An oval-shaped figure divided centrally and horizontally in the direction of its greatest length by a bar from which extends a perpendicular bar which is intersected near its upper end by two horizontal cross-bars, while within said oval-shaped figure and above said central horizontal bar appear the letters "I N" and "E R," while below said horizontal dividing-bar appears the word "SEAL," the whole forming a sign or seal of identification. Used since March 1, 1900.

35,109. PREPARED FOODS. JOSEPH CAMPBELL PRESERVE COMPANY, Camden, N. J. Filed June 2, 1900.



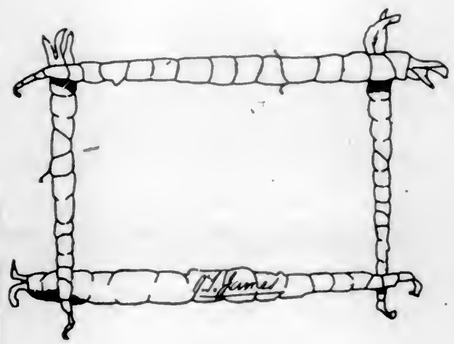
Essential feature.—Two parallel horizontal contrasting bands, each having substantially-uniform tint or color and in close juxtaposition and of substantially the same width and length. Used since April 30, 1898.

35,110. CHOCOLATE. BARCLAY & FRY, LIMITED, London, England. Filed Apr. 18, 1900.



Essential feature.—The representation of the head of Queen Victoria and the crown, the initial letters "V. R. I.," and the wording and signature in the facsimile handwriting of Queen Victoria. Used since November 25, 1899.

35,111. ARROWROOT. WILLIAM T. JAMES, Hamilton, Bermuda. Filed June 11, 1900.



Essential feature.—A fanciful frame formed by representation of roots and the facsimile-signature of the registrant. Used since 1899.

35,112. BAKING-SODA AND BAKING-POWDER. CHURCH & DWIGHT COMPANY, New York, N. Y. Filed June 7, 1898.



Essential feature.—A pictorial symbol representing a house and yoke of cattle hitched to a cart. Used since May, 1892.

35,113. WHEAT-FLOUR. THE KENNEWEG COMPANY, Cumberland, Md. Filed Aug. 7, 1897.

IVORY

Essential feature.—The word "IVORY." Used since January 3, 1896.

35,114. SHAVING AND TOILET SOAP. THE J. T. ROBERTSON COMPANY, Manchester, Conn. Filed June 5, 1900.



Essential feature.—The representation of a shaving-brush with a mass of foam surrounding and extending from the bristles. Used since May 25, 1900.

35,115. WASHING-POWDER. GEORGE E. CLAPP, Otsego, Mich. Filed May 29, 1900.

SNOW FLAKE

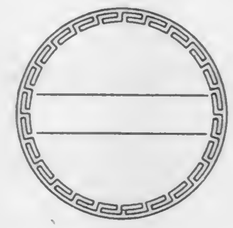
Essential feature.—The words "SNOW FLAKE." Used since January, 1898.

35,116. KAURI GUM. EDWARD HILL'S SON & CO., New York, N. Y. Filed June 13, 1900.



Essential feature.—A diamond-shaped broken-line parallelogram and the letter "H" in the center. Used since 1881.

35,117. PORTLAND CEMENT. VIRGINIA PORTLAND CEMENT COMPANY, New York, N. Y. Filed June 20, 1900.



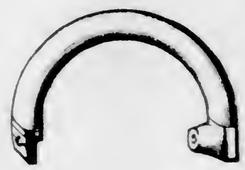
Essential feature.—An ornamental crenelated border inclosing a disk centrally divided by two separated horizontal lines. Used since June 13, 1900.

35,118. SYRINGES. VICTORIA A. WILHOFT, New York, N. Y. Filed Aug. 4, 1900.



Essential feature.—The representation of a disk. Used since January, 1892.

35,119. CERTAIN NAMED THERMIC APPARATUS. WILLIAM S. HAINES COMPANY, Camden, N. J.; Philadelphia and Pittsburg, Pa.; New York, N. Y.; Chicago, Ill., and Boston, Mass. Filed Feb. 17, 1900.



Essential feature.—The representation of a tube-spring. Used since September, 1895.

35,120. HELICES OR COILS FOR ELECTRICAL PURPOSES. VARLEY DUPLEX MAGNET COMPANY, Jersey City, N. J. Filed June 23, 1900.



Essential feature.—The representation of a cylinder having a wrapping of sheet material, a portion of which is torn out and left hanging as a flap and disclosing a layer of a helix composed of alternate convolutions of wire and thread or cord. Used since March 15, 1900.

35,121. BALL-AND-SOCKET FASTENERS. CONSOLIDATED FASTENER COMPANY, Boston, Mass. Filed May 5, 1899.

BIRD CAGE SPRING

Essential feature.—The words "BIRD CAGE SPRING." Used since January, 1894..

35,122. HANDSAWS. SIMONDS MANUFACTURING COMPANY, Fitchburg, Mass., and Chicago, Ill. Filed Apr. 28, 1900.



Essential feature.—The figure of a star and crescent. Used since March, 1900.

35,123. CERTAIN NAMED LAMPS AND LANTERNS. THE DRESSEL RAILWAY LAMP WORKS, New York, N. Y. Filed July 31, 1899.

HERCULEAN

Essential feature.—The word "HERCULEAN." Used since January 1, 1897.

35,124. AUTOMATICALLY-PROPELLED WHEELED VEHICLES AND PARTS THEREOF. KEYSTONE MOTOR CO., Philadelphia, Pa. Filed June 12, 1900.

AUTOCYCLE

Essential feature.—The word "AUTOCYCLE." Used since April 15, 1900.

THE NORRIS PETERS CO. PHOTO-LITH WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

FELBEL *v.* OLIVER.

Decided June 22, 1900.

1. MOTION FOR DISSOLUTION BASED UPON TESTIMONY—INTERFERENCE IN FACT.

The allegation that the testimony taken on the question of priority made clear the meaning of the issue and showed that there is no interference in fact is no excuse for the delay in bringing a motion for dissolution, since the question of interference in fact must be determined from the applications themselves, and this should be done before testimony is taken.

2. SAME—TRANSMITTING MOTION TO PRIMARY EXAMINER.

The fact that F. in his testimony placed a different construction on the issue from that given it by O. furnishes us good ground for transmitting to the Primary Examiner a motion to dissolve after the twenty days allowed by the rule have expired and after testimony has been taken.

APPEAL on motion.

TYPE-WRITING MACHINE.

Application of Jacob Felbel filed December 18, 1899, No. 740,703. Application of Thomas Oliver filed July 17, 1899, No. 724,049.

Mr. Jacob Felbel pro se.

Messrs. Poole & Brown for Oliver.

CHAMBERLIN, *Assistant Commissioner:*

This is an appeal by Oliver from the decision of the Examiner of Interferences refusing to transmit to the Primary Examiner his motion to dissolve the above-entitled interference.

This interference was declared on March 8, 1900, and the present motion was not filed until May 14, after testimony had been taken and filed by Felbel. The motion was made on the ground that there is no interference in fact, and it is alleged by the attorney for Oliver in his affidavit in support of the motion that he did not discover that there was no interference in fact until it was brought to his attention by the testimony on behalf of Felbel. He states that the testimony of Felbel "made clear the meaning of said issue" and convinced him that it does not apply to Oliver's construction. The affidavit of an expert, Wiles, has also been filed, in which the two inventions are compared, and it is stated as the opinion of the affiant that there is no interference in fact and that the construction given to the issue by Felbel is correct.

There is nothing in these affidavits to show why it was not discovered that there was no interference in fact before testimony was taken or within the twenty days allowed by the rules for motions to dissolve. It is well settled that the meaning of the issue and the question of interference in fact must be determined from the applications themselves and cannot be affected by testimony taken on the question of priority. (*Latham* v. *Force & Parenteau*, 82 O. G., 185.) It may be that the testimony suggested facts to Oliver which he had not before noticed; but, as above stated, those facts must appear from the applications themselves to furnish a proper basis for a motion for dissolution, and therefore he should have discovered them within the twenty days allowed by the rule for that purpose. It does not appear in the present case that proper efforts were made within the time stated to discover the facts now relied on, since it is merely stated that—

> affiant supposed the said issue was in proper form to cover the devices shown by both parties to said interference and that the interference had been properly declared.

The applications themselves should have been examined to determine whether the interference was proper, if Oliver wished to avail himself of his right to move for a dissolution, instead of merely assuming that the Examiner's action in declaring the interference was correct. It is too late now to raise the question without a proper showing excusing the delay.

The fact that Felbel in his testimony may have placed a different construction on the issue from that given it by Oliver furnishes no good ground for a dissolution of the interference. (*Pupin* v. *Hutin* and *Leblanc* v. *Stone*, 82 O. G., 1418.)

The decision of the Examiner of Interferences is affirmed.

HORTON *v.* SUMMER.

Decided July 24, 1900.

1. MOTION TO DISSOLVE—RIGHT TO MAKE CLAIM—BECHMAN *v.* WOOD.

On a motion to dissolve on the ground that S. has no right to make the claims in view of the decision in Bechman *v.* Wood, since he did not make the broad claims in issue until after H.'s application was filed and made them then only upon the suggestion of the Examiner, *Held* that under the clear and explicit statements in the decision itself the Office would not be justified in dissolving the interference at this time.

2. SAME—SAME.

Where to dissolve the interference on the ground that S. has no right to make the claims would make it necessary to allow the broad claims to H., which would dominate S.'s construction, while refusing them to S., although as far as the record goes S. appears to be the first inventor, *Held* that the court clearly did not contemplate or sanction any such action in its decision.

3. SAME—ESTOPPEL—QUESTION OF PROOFS.

The question of estoppel by delay in making the claim is not a proper one to be raised by a motion for dissolution, since according to the court's decision it can be determined only by the special circumstances as shown by the proofs and it is well settled that motions for dissolution should not be based upon proofs taken.

APPEAL on motion.

BASKET-MACHINE.

Application of Emmet Horton filed September 15, 1898, No. 691,030. Application of Henry W. Summer filed May 3, 1897, No. 634,930.

Mr. R. G. Du Bois and *Messrs. Baldwin, Davidson & Wight* for Horton.

Mr. E. G. Siggers for Summer.

CHAMBERLIN, *Acting Commissioner:*

This case is before me on an appeal by Horton from the decision of the Examiner of Interferences denying his motion to vacate the decision on priority as to claim 6 and on a petition by Horton asking that I exercise my supervisory authority and review the decision of the Primary Examiner denying his motion to dissolve the interference.

The petition will first be considered, since it is clear that if the Examiner was right in denying the motion to dissolve on the grounds stated by him the Examiner of Interferences was right in refusing to vacate the decision on priority.

One of the grounds for the motion to dissolve was that Summer has no right to make the claims involved in the interference, it being said:

> Under that branch of the motion which denied Summer's right to make this claim, we shall take the position that in view of the well-known decisions of *Beehman* v. *Wood* (89 O. G., 2462) and *McBerty* v. *Cook*, (90 O. G., 2265,) Summer has no right to make the claims covering the issues of the interference, in view of the fact that he made no such claims until after Horton's application involved in this interference was filed.

It is upon this branch of the motion alone that Horton asks for a review of the Examiner's decision.

It appears from the Examiner's statement that Summer was the first to file his application, but that he did not make the broad claims in issue until after Horton's application was filed, and made them then only after they had been suggested to him by the Examiner. The Examiner correctly held, however, that the facts in this case are not in all respects the same as those before the court in *Beehman* v. *Wood*, and that under the clear and explicit statements in that decision itself the Office would not be justified in dissolving the interference at this time. It is not believed that the court would hold by anything which now appears of record that Summer is estopped from making the claims in this case, but even should the special circumstances which may be shown by the proofs justify such a holding finally, as in the case of *Beehman* v. *Wood*, it would not be proper to dissolve the interference at this time without giving the parties full opportunity to try the questions involved. To dissolve the interference on the ground that Summer has no right to make the claim would make it necessary to allow the broad claims to Horton, which would dominate Summer's construction, while refusing them to Summer, although as far as the record goes Summer appears to be the first inventor. The court clearly did not contemplate or sanction any such action in its decision. In the very case where the doctrine of estoppel was held to apply the court said on rehearing (*Beehman* v. *Wood*, 89 O. G., 2462) that it had decided—

> not that there should have been no declaration of interference in the case, for we do not see how such declaration could have been avoided, not that either or both parties were not entitled to make the broad claim, for both were entitled to make it and to come to an issue upon it, but that under the special circumstances of the case as developed by the proof neither party was entitled to prevail against the other on that broad claim.

There is no dispute as to the fact that Summer's original application furnished a proper basis for the present claims and he has not lost his right to make them any more than had Cook in the case of *McBerty* v. *Cook*, cited above, where the court said:

> We agree, however, with the Commissioner of Patents that the amended claims of Cook are clearly shown and described in the specifications of his original application and that his amendment constitutes no departure which would subordinate him to the claim of even an intervening applicant, as was the case in *Beehman* v. *Wood*.

In addition to holding that the facts of this case as they now appear are not such as to justify the holding that Summer has no right to make the claims the Examiner correctly holds that the question of estoppel presented is not a proper one to be raised by a motion for dissolution. It is well settled that the bar to a party's right which is contemplated by the rule providing for such motions must exist independently of the interference proceedings and not merely appear from the proceedings. (*Latham* v. *Force and Parenteau*, 82 O. G., 185; *Paget* v. *Bugg*, 89 O. G., 1342.) The question of estoppel which is raised in this case is not independent of the interference, but according to the decision of the court can be settled only by the special circumstances as they appear from the proofs.

There has not only been no such abuse of discretion by the Primary Examiner as would justify me in exercising my general supervisory power to reverse his favorable decision on the right of Summer to make the claims, but his action appears to have been proper and in accordance with the settled practice of the Office.

The petition is denied.

The motion to vacate the decision on priority was also based upon the ground of estoppel set forth in the motion to dissolve, and therefore for the reasons given above the Examiner of Interferences properly denied it.

The decision of the Examiner of Interferences is affirmed.

Revision of Classification.

(ORDER NO. 1,369.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., September 10, 1900.

The following change in the classification of inventions is hereby directed, to take effect this day:

In Division XIV, class 151, Nut and Bolt Locks, abolish all subclasses and substitute the following in lieu thereof:

CLASS 151.—NUT AND BOLT LOCKS.

2. Coupled nut and bolt—
5. Cross-key—
6. Spring-seated,
7. Elastic gripping action,
4. Flexible-key,
3. Flexible-washer,
8. Longitudinal-key,
Pawl-and-ratchet—
9. Bolt-carried pawl,
10. Nut-carried pawl—
11. Flexible,
12. Pivoted,
13. Washer-carried pawl,
14. Thread-lock—
19. Cam or cone grip,
20. Canted-nut,
21. Distorted-nut,
22. Distorted-thread,
23. Longitudinal-key,
24. Radial key or gib,
25. Side-clutch,
15. Superposed nuts—
16. Oppositely-threaded—
17. Key or pawl locked,
18. Side-locked,
26. Tangential-key,
27. Top-stop—
28. Positive-lock—
29. Side,
39. Thread-gripper,
31. Wedged slotted bolt.
1. Flowing metal.
32. Locked bolt.
33. Locked nut—
34. Base-clutch—
35. Biting-tooth—
36. Coiled-washer,
Locked nut—
Base-clutch—
Biting-tooth—
37. Nut-carried,
38. Friction,
39. Pawl-and-ratchet—
40. Nut-carried pawl,
41. Yielding interlocking washer,
42. Distorted,
43. Gravity nut or washer,
44. Side-lock—
49. Flexible—
50. Automatic—
51. Coiled washer,
52. Spring-tongued washer-plate,
53. Inelastic washer-tongue,
Longitudinal—
54. Nut-held—
55. Reversed-nut,
56. Side-pin,
57. Spike-held,
58. Swinging,
59. Washer-tongue held,
60. Pawl-and-ratchet,
48. Rotatable washer—
45. Bent-tongue locked,
46. Pawl-locked,
47. Transversely-sliding—
61. Key, plate, or bar—
62. Nut-held,
63. Sliding-washer,
64. Transversely-swinging,
65. Transverse base-locking key.

C. H. DUELL,
Commissioner.

CLASS 151.—NUT AND BOLT LOCKS.

DEFINITIONS.

Class.

151. NUT AND BOLT LOCKS. This class includes all special means which prevent or tend to prevent the rotation of a threaded nut or bolt, their relative rotation, or their endwise movement or separation.

Subclasses.

1. FLOWING METAL. Includes fusible metal, which upon cooling locks the bolt or nut, and soft metal, some of whose parts by flowing or drawing lock the nut or bolt.

2. COUPLED NUT AND BOLT. The nut is locked to the bolt, so as to prevent their relative rotation or endwise separation.

3. COUPLED NUT AND BOLT, FLEXIBLE-WASHER. A washer secured to the bolt has an inelastic portion turned against the nut after the nut is screwed on.
(Note.—Search should also be made in subclass Locked nut, side-lock, flexible, inelastic washer-tongue, in this class.)

4. COUPLED NUT AND BOLT, FLEXIBLE-KEY. The nut and bolt are held together by a key which is bent after the nut is seated so as to form a connection between notches or slots in the nut and the bolt.

5. COUPLED NUT AND BOLT, CROSS-KEY. The nut and bolt are locked together by a key which has its locking portion lying transversely of the bolt.
(Note.—Keys which cut or bind against the threads of the nut or bolt are classified in subclasses Coupled nut and bolt, thread-lock, radial key or gib, and Coupled nut and bolt, thread-lock, tangential-key, this class.)

6. COUPLED NUT AND BOLT, CROSS-KEY, SPRING-SEATED. The key is forced to its seat by a spring.

7. COUPLED NUT AND BOLT, ELASTIC GRIPPING ACTION. The nut or washer is composed wholly or partly of elastic material, which grips the threaded or other part of the bolt.
(Note.—Search should also be made in subclasses Coupled nut and bolt, thread-lock, distorted-nut, and Coupled nut and bolt, thread-lock, superposed nuts, in this class.)

8. COUPLED NUT AND BOLT, LONGITUDINAL-KEY. The nut and bolt are locked together by a key whose locking portion extends longitudinally of the bolt.
(Note.—Keys which cut or bind against the threads are in Coupled nut and bolt, thread-lock, longitudinal-key.)

COUPLED NUT AND BOLT, PAWL-AND-RATCHET. The nut and bolt are interlocked by pawl-and-ratchet mechanism, which automatically locks the nut or bolt from movement in one direction, but permits free movement in the other. Those pawl-like structures which are not automatic are regarded as keys.

9. COUPLED NUT AND BOLT, PAWL-AND-RATCHET, BOLT-CARRIED PAWL. The bolt carries or holds from rotation a pawl which interlocks with ratchet-teeth in the nut.

10. COUPLED NUT AND BOLT, PAWL-AND-RATCHET, NUT-CARRIED PAWL. The nut carries a pawl which rotates with the nut and interlocks with ratchet-teeth in the bolt.

11. COUPLED NUT AND BOLT, PAWL-AND-RATCHET, NUT-CARRIED PAWL, FLEXIBLE. A flexible pawl interlocks with ratchet-teeth carried by the bolt or by a structure secured to the bolt.

12. COUPLED NUT AND BOLT, PAWL-AND-RATCHET, NUT-CARRIED PAWL, PIVOTED. The pawl carried by the nut moves on a pivot to lock and unlock.
(Note.—Search should also be made in subclass Coupled nut and bolt, thread-lock, side-clutch, in this class.)

13. COUPLED NUT AND BOLT, PAWL-AND-RATCHET, WASHER-CARRIED PAWL. The washer is secured to the bolt and carries a pawl which interlocks with a specially-made ratchet-surface of the nut. The corners of the ordinary nut are not regarded as forming a ratchet-surface.

14. COUPLED NUT AND BOLT, THREAD-LOCK. The nut is locked to the bolt directly or indirectly by the action upon the threads.

15. COUPLED NUT AND BOLT, THREAD-LOCK, SUPERPOSED NUTS. More than one nut is placed on a bolt, the outer one having some special construction or adjunct whereby it is adapted to lock the other nut. Jam-nuts are included only when they are specially adapted to serve as jam-nuts.
(Note.—Search should also be made in Coupled nut and bolt, elastic gripping-action; Coupled nut and bolt, top-stop, and Coupled nut and bolt, thread-lock, distorted-nut, in this class.)

16. COUPLED NUT AND BOLT, THREAD-LOCK, SUPERPOSED NUTS, OPPOSITELY-THREADED. One nut has a right-hand thread and the other a left-hand thread, the threads coöperating with a similarly-threaded bolt.

17. COUPLED NUT AND BOLT, THREAD-LOCK, SUPERPOSED NUTS, OPPOSITELY-THREADED, KEY OR PAWL LOCKED. The nuts are locked together by a key or by a pawl-and-ratchet mechanism.

18. COUPLED NUT AND BOLT, THREAD-LOCK, SUPERPOSED NUTS, OPPOSITELY-THREADED, SIDE-LOCKED. The nuts are locked together by a device engaging their sides.

19. COUPLED NUT AND BOLT, THREAD-LOCK, CAM OR CONE GRIP. The threads of the bolt are gripped by a cam-action between the nut and washer or other part or by the action of a cone and its coacting member forcing a part of the nut or washer against the bolt-threads.

20. COUPLED NUT AND BOLT, THREAD-LOCK, CANTED-NUT. The nut at its final position tends to bend the bolt at the base of the nut. Usually the nut or the washer is wedge-shaped.

21. COUPLED NUT AND BOLT, THREAD-LOCK, DISTORTED-NUT. The whole or a part of the nut is distorted or changed in shape before, during, or after its application to the bolt, so that the threads of the nut grip the threads of the bolt.
(Note.—Search should also be made in Coupled nut and bolt, elastic gripping action, and Coupled nut and bolt, thread-lock, superposed nuts, in this class.)

22. COUPLED NUT AND BOLT, THREAD-LOCK, DISTORTED-THREAD. The threads of the nut or bolt are during or after the application of the nut bent, crushed, or injured, so as to lock the nut and bolt from relative rotation.

23. COUPLED NUT AND BOLT, THREAD-LOCK, LONGITUDINAL-KEY. A key has its locking portion extending longitudinally of the bolt and biting or binding against the thread.

24. COUPLED NUT AND BOLT, THREAD-LOCK, RADIAL KEY OR GIB. A key or gib is moved radially toward the bolt and engages its threads.

25. COUPLED NUT AND BOLT, THREAD-LOCK, SIDE-CLUTCH. A device, not an integral part of the nut or bolt, clutches or bites the threads of the nut or bolt. The locking action in most cases resembles that of the pawl and ratchet, except the part engaged by such device has no coöperating notches.

26. COUPLED NUT AND BOLT, THREAD-LOCK, TANGENTIAL-KEY. A key in the nut moves tangentially to the bolt and bites or binds against the threads thereof.

27. COUPLED NUT AND BOLT, TOP-STOP. A stop secured or locked to the bolt has a portion above the nut which locks the nut.
(Note.—Search should also be made in subclass Coupled nut and bolt, thread-lock, superposed nuts, in this class.)

28. COUPLED NUT AND BOLT, TOP-STOP, POSITIVE-LOCK. The stop, by a positive interlocking engagement with the nut, prevents the rotation of the nut on the bolt.
(Note.—Mere friction-locks are in the next preceding subclass.)

29. COUPLED NUT AND BOLT, TOP-STOP, POSITIVE-LOCK, SIDE. The nut is locked by a portion of the stop engaging the side of the nut.
(Note.—Search should also be made in subclass Locked nut, side-lock, in this class and the subclasses thereunder.)

30. COUPLED NUT AND BOLT, TOP-STOP, THREAD-GRIPPER. The stop is locked to the bolt by its gripping action on the bolt-threads.

31. COUPLED NUT AND BOLT, WEDGED SLOTTED BOLT. The bolt has a slit or slot in which a wedge-shaped device moves to cause the bolt-sections to expand against the nut. The said device may be removed.

32. LOCKED BOLT. Devices for locking the bolt regardless of whether the nut is locked or not, but does not include means for locking the bolt to the nut or the use of flowing metal.

33. LOCKED NUT. The nut is locked to the base or substructure, so as to prevent its rotation. Includes all means for locking the nut regardless of whether the bolt is locked or not, but does not include means for locking the nut to the bolt or the use of flowing metal.
(Note.—All rotatable washers will be cross-referenced into Locked nut, side-lock, rotatable-washer, or the subclasses thereunder.)

34. LOCKED NUT, BASE-CLUTCH. The base or inner face of the nut is clutched automatically to the substructure.

35. LOCKED NUT, BASE-CLUTCH, BITING-TOOTH. The base of the nut is locked to the substructure by the biting action of one or more teeth.

36. LOCKED NUT, BASE-CLUTCH, BITING-TOOTH, COILED-WASHER. The tooth bites the nut-base and is carried by a washer coiled about the bolt.

37. LOCKED NUT, BASE-CLUTCH, BITING-TOOTH, NUT-CARRIED. The biting tooth is carried by the nut as it is turned.
(Note.—Search should also be made in subclass Locked nut, side-lock, flexible, automatic, this class.)

38. LOCKED NUT, BASE-CLUTCH, FRICTION. The nut is held to the substructure by friction.
(Note.—Washers which yield as the nut is turned on, so as to raise their faces next to the sides of the nut above the base of the nut, are classified under Locked nut, side-lock, flexible, and Locked nut, side-lock, flexible, automatic, this class.)

39. LOCKED NUT, BASE-CLUTCH, PAWL-AND-RATCHET. Pawl-and-ratchet mechanism locks the base of the nut to the substructure. The pawl automatically locks against movement in one direction, but permits free movement in the other.
(Note.—Search should also be made in subclass Locked nut, side-lock, rotatable-washer, pawl-locked, in this class.)

40. LOCKED NUT, BASE-CLUTCH, PAWL-AND-RATCHET, NUT-CARRIED PAWL. The pawl is carried by the nut and locks under the base of the nut.
(Note.—Search should also be made in subclass Locked nut, side-lock, rotatable-washer, pawl-locked, in this class.)

41. LOCKED NUT, BASE-CLUTCH, PAWL-AND-RATCHET, YIELDING INTERLOCKING WASHER. The nut has a ratcheted base which interlocks with a yielding washer carrying ratchet-teeth.
(Note.—Washers with free yielding tongues are in Locked nut, base-clutch, pawl-and-ratchet, this class.)

42. LOCKED NUT, DISTORTED. After the nut is seated some portion of the nut is bent to engage the substructure.
(Note.—Search should also be made in subclass Locked nut, side-lock, rotatable-washer, bent-tongue locked.)

43. LOCKED NUT, GRAVITY NUT OR WASHER. The nut is heavier on one side of the bolt-hole than the other, or the nut is seated in and carried by a washer heavier on one side than the other.

44. LOCKED NUT, SIDE-LOCK. The side of the nut is locked to prevent rotation.

45. LOCKED NUT, SIDE-LOCK, ROTATABLE-WASHER. The washer and nut turn together as a single piece, there being a locking action between the washer and the substructure.
(Note.—All rotatable washers will be cross-referenced into this subclass, no matter how the washer and nut are connected.

46. LOCKED NUT, SIDE-LOCK, ROTATABLE-WASHER, BENT-TONGUE LOCKED. The washer is locked to the nut and is prevented from rotation by bending a non-elastic portion thereof so as to engage a portion of the substructure.
(Note.—Search should also be made in subclass Locked nut, distorted, in this class.)

47. LOCKED NUT, SIDE-LOCK, ROTATABLE WASHER, PAWL-LOCKED. The washer and the substructure are interlocked by a pawl and ratchet. The pawl automatically locks against movement in one direction, but permits free movement in the other.
(Note.—Search should also be made in subclass Locked nut, side-lock, pawl-and-ratchet, in this class.)

48. LOCKED NUT, SIDE-LOCK, PAWL-AND-RATCHET. The nut is locked by pawl-and-ratchet mechanism. The pawl locks against movement in one direction, but permits it in the other. The corners of the nut are not regarded as ratchet-teeth.
(Note.—Pivoted devices locking against the side of the nut are classified in Locked nut, side-lock, transversely-swinging, and sliding devices having a similar function are classified in Locked nut, side-lock, transversely-sliding, in this class. Search should also be made in subclass Locked nut, side-lock, rotatable washer, pawl-locked, in this class.)

49. LOCKED NUT, SIDE-LOCK, FLEXIBLE. A flexible part of the locking device engages the side of the nut.

50. LOCKED NUT, SIDE-LOCK, FLEXIBLE, AUTOMATIC. The nut is automatically locked by a flexible device engaging the side thereof.

51. LOCKED NUT, SIDE-LOCK, FLEXIBLE, AUTOMATIC, COILED-WASHER. The nut is locked by a washer coiled about the bolt and having a portion automatically engaging the side of the nut.
(Note.—Search should also be made in subclass Locked nut, side-lock, flexible, inelastic washer-tongue.)

52. LOCKED NUT, SIDE-LOCK, FLEXIBLE, AUTOMATIC, SPRING-TONGUED WASHER-PLATE. A washer-plate has one or more spring locking-tongues engaging the side of the nut.
(Note.—Search should also be made in subclass Locked nut, side-lock, flexible, inelastic washer-tongue.)

53. LOCKED NUT, SIDE-LOCK, FLEXIBLE, INELASTIC WASHER-TONGUE. A washer has a non-elastic portion bent against the side of the nut after it is screwed to place. The washer must lock the nut which is seated thereon and not a nut seated on another washer.
(Note.—Search should also be made in subclasses Locked nut, side-lock, flexible, automatic, spring-tongued washer-plate, and Coupled nut and bolt, flexible-washer, in this class; also, Locked nut, side-lock, flexible, automatic, coiled-washer.)

54. LOCKED NUT, SIDE-LOCK, LONGITUDINAL. The locking device is, after the nut is seated, brought to locking position by a movement longitudinal of the bolt. The final locking movement alone is considered whatever previous movements the device has received.

55. LOCKED NUT, LONGITUDINAL, NUT-HELD. The nut which is locked holds in place its locking device. The locking device must not be held by a washer or other means applied under the nut before the seating thereof.

56. LOCKED NUT, LONGITUDINAL, NUT-HELD, REVERSED-NUT. After the nut has been seated and the locking device applied the nut is turned backwardly to lock said device.

57. LOCKED NUT, SIDE-LOCK, LONGITUDINAL, SIDE-PIN. A pin seated in the substructure is moved longitudinally of the bolt, so as to stand against the side of the nut.

58. LOCKED NUT, SIDE-LOCK, LONGITUDINAL, SPIKE-HELD. The locking device is held against the nut by a spike.

59. LOCKED NUT, SIDE-LOCK, LONGITUDINAL, SWINGING. The locking device swings to locking position against the side of the nut.
(Note.—Pawls engaging a ratcheted surface, not the sides of the common nut, are classified in Locked nut, side-lock, pawl-and-ratchet, in this class. Search should also be made in subclass Locked nut, side-lock, flexible, in this class.)

60. LOCKED NUT, SIDE-LOCK, LONGITUDINAL, WASHER-TONGUE HELD. The locking device is held in locking position by an integral portion of a washer standing over it.

61. LOCKED NUT, SIDE-LOCK, TRANSVERSELY-SLIDING. The locking device is slid transversely of the bolt after the nut is screwed on, so as to lock a side of the nut. The final locking movement alone is considered whatever previous movement the device has received.

62. LOCKED NUT, SIDE-LOCK, TRANSVERSELY-SLIDING, KEY, PLATE, OR BAR. The locking device is a key, plate, or bar.

63. LOCKED NUT, SIDE-LOCK, TRANSVERSELY-SLIDING, KEY, PLATE, OR BAR, NUT-HELD. The key, plate, or bar is held in place by the nut. The locking device must not be held by a washer or other means applied before the nut is seated.

64. LOCKED NUT, SIDE-LOCK, TRANSVERSELY-SLIDING, KEY, PLATE, OR BAR, SLIDING-WASHER. The locking device is a washer which is driven to locking position after the nut is seated, the washer bearing a stop to lock the side of the nut.

65. LOCKED NUT, SIDE-LOCK, TRANSVERSELY-SWINGING. The locking device swings transversely of the bolt after the nut is on, so as to engage a side of the nut.
(Note.—Pawl-and-ratchet mechanism where a special ratchet-face is employed may be found under Locked nut, side-lock, pawl-and-ratchet, this class. Flexible swinging devices are classified under Locked nut, side-lock, flexible, this class.)

66. LOCKED NUT, TRANSVERSE BASE-LOCKING KEY. A key extends transversely of the bolt between the base of the nut and the substructure.

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[BY AUTHORITY OF CONGRESS.]

Vol. 92.—No. 13. TUESDAY, SEPTEMBER 25, 1900. Price—$5 per year.

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The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1888, it was published and bound in semi-annual volumes; since July 1, 1888, in quarterly volumes. Terms: To subscribers within the United States, Canada, and Mexico, $5 per annum; to foreign subscribers, $10; single copies, 10 cents; if mailed to foreign countries 10 cents additional for postage; bound semi-annual volumes, (prior to June 30, 1888,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1888,) full sheep, $2.75 per volume. *Payment in advance.* No subscription will be received for less than three months. All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Payment of Patent Fees.

RULE 207. All payments of money required for Office fees must be made in specie, Treasury notes, national-bank notes, certificates of deposit, post-office money-orders, or certified checks. Money-orders and checks should be made payable to the "Commissioner of Patents." Payment may also be made to the Treasurer, or to any of the assistant treasurers of the United States, or to any of the depositaries, national banks, or receivers of public money, designated by the Secretary of the Treasury for that purpose, who shall give the depositor a receipt or certificate of deposit therefor. *This receipt or certificate of deposit shall, in case of payment of final fees, be deposited in the mail for transmission to the Patent Office, within six months from the allowance of the application.* Money sent by mail to the Patent Office will be at the risk of the sender. Letters containing money should be registered. In no case should money be sent with models.

RULE 208. The weekly issue closes on Thursday, and the patents of that issue bear date as of the third Tuesday thereafter. If the final fee in any application is not paid on or before Thursday, the patent will not go to issue until the following week.

Indexes to Periodicals.

The following journals containing indexes to periodical literature may be found on file in the reading-room of the Scientific Library:

Astrophysical Journal, Chicago, a monthly title-index of publications on astrophysical and allied subjects.

Electrical World, New York, a weekly digest of electrical articles.

Engineering Magazine, New York, a monthly title-index of engineering articles in the English language only.

Electrical Engineer, New York, a weekly synoptical index of electrical literature, American and foreign.

Journal of the United States Artillery, a bimonthly title-index of current artillery literature.

Proceedings of the Physical Society of London, monthly abstracts of the principal articles on physics published in the American and Continental journals since January 1, 1895.

School of Mines Quarterly, New York, a quarterly synoptical index of articles on analytical chemistry and title-index of metallurgical literature.

CERTIFICATES OF REGISTRATION ISSUED SEPTEMBER 25, 1900.

Labels.

7,793.—Title: "CARTER LYTLE'S TOOTH JELLINE." (For a Preparation for Toothache.) *Carter Lytle*, Baltimore, Md. Application filed September 4, 1900.

7,794.—Title: "TONIC WINE BITTERS." (For Wine Bitters.) *Dodge & Camfield*, Providence, R. I. Application filed August 31, 1900.

7,795.—Title: "TISANOLD RYE WHISKY." (For Whisky.) *J. Samuels & Co.*, New York, N. Y. Application filed August 21, 1900.

7,796.—Title: "SUNBEAM METAL POLISH." (For a Polish.) *C. W. Bouton*, New York, N. Y. Application filed August 31, 1900.

7,797.—Title: "SILVER LUSTRA." (For a Polish.) *Lewis Journey Henise*, York, Pa. Application filed August 28, 1900.

7,798.—Title: "JUST-RIGHT METAL POLISH." (For Metal-Polish.) *Just-Right Metal Polish Co.*, Webster, Mass. Application filed August 31, 1900.

7,799.—Title: "SILVER CLEAN." (For a Cleaning Preparation or Powder.) *Ashley Lewis Smith*, Sacramento, Cal. Application filed August 28, 1900.

Prints.

264.—Title: "SILVER LUSTRA." (For a Polish.) *Lewis Journey Henise*, York, Pa. Application filed August 28, 1900.

265.—Title: "FILL YOUR TEETH." (For Toothache-Gum.) *Pansey Tooth Ache Gum Co.*, Atlanta, Ga. Application filed August 3, 1900.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business September 18, 1900.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		New.	Amended	
	In arrears—Under one month.			
106	II. Farm Stock, Products, etc.	Sept. 10	Sept. 7	122
250	VIII. Furniture, Beds, Store Furniture, etc.	Sept. 8	Sept. 4	188
217	XXXIII. *DESIGNS, †TRADE-MARKS, ‡LABELS AND PRINTS, Optics.	Sept. 6	Sept. 5	18
111	XXXII. Bottles and Jars, Carbonating Beverages, Refrigeration, Shipping and Storing Vessels, etc.	Sept. 4	Sept. 4	186
253	X. Carriages and Wagons	Aug. 28	Sept. 5	99
39	XXXI. Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	Aug. 23	Sept. 1	141
98	XXI. Textiles, etc	Aug. 22	Aug. 23	150
261	XXXVI. Weighing and Measuring Devices, Driers, and Drafting.	Aug. 21	Sept. 5	106
240	VII. Velocipedes, Games, and Toys.	Aug. 21	Sept. 5	147
246	I. Tillage and Fences	Aug. 21	Sept. 4	133
248	XVIII. Steam-Engineering, etc	Aug. 20	Sept. 4	115
255	XII. Mechanical Engineering, Store-Service, etc.	Aug. 20	Sept. 4	190
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	Aug. 20	Sept. 4	84
120	IX. Hydraulics, Fire-Extinguishers, etc.	Aug. 20	Sept. 4	135
105	XI. Boots and Shoes, Harness, Hose and Belting, and Leather-Working Machinery.	Aug. 20	Aug. 30	164
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	Aug. 20	Aug. 29	179
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Aug. 20	Aug. 23	145
38	XXXV. Advertising, Baggage, Buckles, Buttons, and Clasps, Packing and Storing Vessels, etc.	Aug. 20	Aug. 21	174
221	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	Aug. 19	Aug. 29	168
	Between one and two months.			
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Aug. 18	Sept. 4	146
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	Aug. 18	Aug. 30	288
122	XXIV. Sewing-Machines, Apparel, and Toilet.	Aug. 14	Aug. 11	196
102	XIX. Stoves and Furnaces	Aug. 14	Aug. 10	267
30	IV. Civil Engineering, Fire-Proof Buildings, Bridges, Water Distribution, etc.	Aug. 13	Aug. 29	155
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Aug. 6	Sept. 4	183
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Aug. 6	Aug. 28	125
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Aug. 6	Aug. 14	162
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	Aug. 2	Sept. 1	196
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	Aug. 1	July 21	316
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	July 26	Aug. 24	121
35	XXVIII. Pneumatics, Air and Gas Engines, etc.	July 25	July 27	307
215	XVII. Printing, Type-Writing Machines, and Linotyping.	July 23	Aug. 6	251
	Between two and three months.			
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	July 6	July 19	174
95	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	July 3	Aug. 10	229
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 21	Aug. 3	284
	Between three and four months.			
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	June 18	July 23	389

Total number of applications awaiting action.....6,433

Applications Under Examination—Continued.

Under one month.			
*Designs	Sept. 6	Sept. 18	53
Between one and two months.			
†Trade-Marks	Aug. 16	Sept. 12	118
Under one month.			
‡Labels and Prints	Sept. 14	Sept. 17	4

ISSUE OF SEPTEMBER 25, 1900.

Patents	415—	No. 658,332 to No. 658,746, inclusive.
Designs	39—	No. 33,236, to No. 33,274 inclusive.
Trade-Marks	30—	No. 35,125 to No. 35,154, inclusive.
Labels	7—	No. 7,793 to No. 7,799, inclusive.
Prints	2—	No. 264 to No. 265, inclusive.
Reissues	2—	No. 11,857 to No. 11,858, inclusive.
Total issue	495	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	1	Nevada		
Arizona Territory	1		New Hampshire	1	
Arkansas	1		New Jersey	6	
California	16	1	New Mexico Territ'y		
Colorado	7		New York	79	11
Connecticut	18		North Carolina		
Delaware			North Dakota		
District of Columbia	7		Ohio	35	1
Florida	1		Oklahoma Territ'y	1	
Georgia	1		Oregon	4	
Hawaii	3	1	Pennsylvania	43	6
Idaho			Rhode Island	8	1
Illinois	38	4	South Carolina		
Indian Territory			South Dakota	1	
Indiana	13	1	Tennessee	4	2
Iowa	12	1	Texas	6	
Kansas	7		Utah	1	
Kentucky	2		Vermont	1	
Louisiana	1		Virginia	2	1
Maine	2		Washington	1	
Maryland	5	1	West Virginia	1	
Massachusetts	20	5	Wisconsin	6	
Michigan	19		Wyoming		
Minnesota	2		U. S. Army	1	
Mississippi			U. S. Navy		
Missouri	10	1	Total to citizens of the United States	387	38
Montana	2				
Nebraska	3				

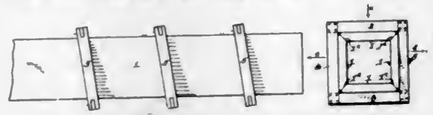
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina			Italy		
Australia			Japan		
Austria-Hungary	3		Java		
Barbadoes			Mexico	1	
Belgium	2		Netherlands		
Bermuda			New South Wales	3	
Brazil			New Zealand		
Canada	3		Norway	1	
Chile			Queensland		
China			Russia		
Costa Rica			Scotland	1	
Cuba			South African Republic		
Denmark	1		South Australia		
Egypt	2		Spain		
England	24		Sweden	2	
Finland			Switzerland	1	
France	4		Venezuela		
Germany	19		Victoria		
Guatemala					
Haiti			Total to citizens of foreign countries	67	1
India		1			
Ireland					

PATENTS

GRANTED SEPTEMBER 25, 1900.

658,332. KNOCKDOWN FLUME. ABRAHAM L. ADAMS, Bridgeport, Conn. Filed Feb. 1, 1900. Serial No. 3,636. (No model.)



Claim.—1. The herein-described improvement in a knockdown flume having three or more sides each of said sides provided with a beveled meeting face, combined with a binder adapted to envelop all of said sides, for the purpose set forth.

2. The herein-described improvement in a knockdown flume having three or more sides provided with beveled meeting faces, combined with a binder adapted to envelop all of said sides, means whereby force is applied to one or more of said sides to produce a resultant force at an angle to the initial force so as to crowd the remaining sides of the flume hard against the binder and thus firmly lock the whole structure together, for the purpose set forth.

3. The herein-described improvement in knockdown flumes having three or more sides provided with beveled meeting faces, angle-strips adapted to reinforce the corners of said flume, a binder adapted to embrace said angle-strips, means substantially as shown for locking the sides of said flume, for the purpose set forth.

4. The herein-described improvement in knockdown flumes having three or more sides provided with beveled meeting faces, combined with a metal-strap binder adapted to be spirally wound around said sides, a horizontal wooden strip adapted to rest against one side of the flume, said metal-strap binder adapted to be secured to such horizontal strip at every turn about the flume, for the purpose as described and set forth.

658,333. TOWEL OR PAPER RACK. EUGENE C. ALFORD, Moro, Oreg. Filed Aug. 19, 1899. Serial No. 727,772. (No model.)



Claim.—A rack for suspending towels or analogous articles, composed of a single piece of wire, the central portion of which is straight, and the portion at each end thereof is bent upward at right angles and then curved backward and downward and formed into a coil, the portion beyond the coil being extended upward to form a straight side bar, the portion of the wire at the top of the side bar being turned inward and downward to form a loop, and then bent at an angle inward and downward until the portions of the wires from the opposite sides cross each other, and are then each bent outward to the lower portion of its side bar and secured thereto by being wrapped around the same adjacent to the coil.

658,334. RIDING-PLOW. WILLIAM A. BALDWIN, Smith's Falls, and THOMAS JOHNSTON, Kemptville, Canada, assignors to John R. Lavell, Smith's Falls, Canada. Filed Mar. 14, 1899. Serial No. 709,108. (No model.)

Claim.—1. A riding-plow, comprising a wheeled axle; a beam adjustably connected thereto; means, carried by said axle for adjusting the position of said beam laterally on said axle, said beam retaining its normal angular alinement in each of its adjusted positions; and means for locking said beam against movement in one direction.



2. A riding-plow, comprising a wheeled axle; a plow-beam slidably mounted thereon, the normal position of said beam being at right angles to said axle; means for adjustably moving the front end of said beam on said axle, whereby the angle will be varied; and means, operated by the movement of said front end of the beam, for automatically steering the rear end of said beam to its normal position.

3. A riding-plow comprising a wheeled axle; a plow-beam slidably connected thereto, the normal position of said beam being at right angles to said axle; means for adjustably moving the front end of said beam on said axle, whereby the angle will be varied; means operated by the movement of said front end of the beam for automatically steering the rear end of said beam to its normal position; and means for locking said beam in its normal position against movement in one direction.

4. A riding-plow comprising a wheeled axle; a plow-beam slidably mounted thereon; means, including a lever and connections, for adjustably moving the front end of said plow-beam on said axle; and means for automatically moving the rear end of said beam to its adjusted position during the forward movement of the plow.

5. A riding-plow comprising a wheeled axle; a plow-beam slidably mounted thereon, the normal position of said beam being at right angles to said axle; means, including a lever and connections, for adjustably moving the front end of said beam on said axle, whereby the angle will be varied; and means for automatically moving the rear end of said beam to its normal position during the forward movement of the plow.

6. A riding-plow comprising a wheeled axle; a plow-beam slidably mounted thereon, the normal position of said beam being at right angles to said axle; means, including a lever and connections, for adjustably moving the front end of said beam on said axle, whereby the angle will be varied; and means, operated by the movement of said front end of the beam, for automatically steering the rear end of said beam to its normal position.

7. A riding-plow comprising a wheeled axle; a plow-beam slidably mounted thereon, the normal position of said beam being at right angles to said axle; means, including a lever and connections, for adjustably mov-

ing the front end of said beam on said axle, whereby the angle will be varied; means operated by the movement of said front end of the beam for automatically steering the rear end of said beam to its normal position; and means for locking said beam in its normal position against movement in one direction.

8. A riding-plow comprising a wheeled axle; a plow-beam adjustably mounted thereon; and means, including a lever and connections, for adjusting the position of said beam laterally on said axle, said beam retaining its normal angular alinement in each of its adjusted positions.

9. A riding-plow comprising a wheeled axle; a carriage loosely mounted thereon and normally held in a relative fixed position; means for adjustably moving said carriage laterally on said axle, said carriage being held in its adjusted position; a plow-beam pivotally connected to said carriage; means for automatically moving the rear end of said plow to its proper position during the forward movement of the plow; and means for locking said beam against movement in one direction.

10. A riding-plow comprising a wheeled axle; a carriage loosely mounted thereon to have a sliding movement; means, including a lever and connections, for adjustably moving said carriage on said axle, said carriage being held in its adjusted position; and means for automatically moving the rear end of said plow-beam to its proper position during the forward movement of the plow.

11. A riding-plow comprising a wheeled axle; a carriage loosely mounted thereon to have a sliding movement; means, including a lever and connections, for adjustably moving said carriage on said axle, said carriage being held in its adjusted position; means for automatically moving the rear end of said beam to its proper position during the forward movement of the plow; and means for locking said beam against movement in one direction.

12. A riding-plow comprising a wheeled axle; a carriage slidably mounted thereon; a lever having one of its ends operatively connected to a stationary fulcrum-point on said axle, said lever serving to adjustably regulate the position of said carriage on said axle; a plow-beam pivotally connected to said carriage; and means for automatically moving the rear end of said beam to its proper position during the forward movement of the plow.

13. A riding-plow comprising a wheeled axle; a carriage slidably mounted thereon; a lever mounted on said carriage and having one of its ends operatively connected to a stationary fulcrum on said axle, said lever serving to adjustably regulate the position of said carriage on said axle; a plow-beam pivotally connected to said carriage; and means for automatically moving the rear end of said beam to its proper position during the forward movement of the plow.

14. A riding-plow comprising a wheeled axle; a carriage slidably mounted thereon; a lever mounted on said carriage and having one of its ends operatively connected to a stationary fulcrum on said axle, said lever serving to adjustably regulate the position of said carriage on said axle; a plow-beam pivotally connected to said carriage; means for automatically moving the rear end of said beam to its proper position during the forward movement of the plow; and means for locking said beam against movement in one direction.

15. A riding-plow comprising a wheeled axle; a carriage slidably mounted thereon; a stationary standard secured on said axle; a lever mounted on said carriage and having one of its ends operatively connected to said standard, for adjustably regulating the position of said carriage on said axle; a plow-beam pivotally connected to said carriage; and means for automatically moving the rear end of said beam to its proper position during the forward movement of the plow.

16. A riding-plow comprising a wheeled axle; a carriage slidably mounted thereon; a stationary standard secured on said axle; a lever mounted on said carriage and having one of its ends operatively connected to said standard for adjustably regulating the position of said carriage on said axle; a plow-beam pivotally connected to said carriage; means for automatically moving the rear end of said beam to its proper position during the forward movement of the plow; and means for locking said beam against movement in one direction.

17. A riding-plow comprising a wheeled axle; a carriage slidably and adjustably mounted thereon; a plow-beam pivotally connected to said carriage; a rolling landside pivotally connected to the rear end of said plow-beam; and a rod connected to said landside and to said carriage adapted to automatically adjust the pivotal movement of said rolling landside when said carriage is moved on said axle.

18. A riding-plow comprising a wheeled axle; a carriage slidably and adjustably mounted thereon; a plow-beam pivotally connected to said carriage; a rolling landside pivotally connected to the rear end of said beam; a rod connected to said carriage and to said plow-beam for automatically adjusting the position of the rear end of said beam relative to the front end; and means for locking said beam against movement in one direction.

19. A riding-plow comprising a wheeled axle; a carriage slidably and adjustably mounted thereon, said carriage having a lateral movement; a plow-beam pivotally connected to said carriage, said plow-beam being automatically held at an approximate right angle to said axle; a rolling landside pivotally connected to the rear end of said beam; means for adjustably moving said carriage on said axle, whereby the angle of the beam may be varied; and a rod connected to said carriage and to said landside for automatically adjusting the position of the rear end of said beam relative to its front end.

20. A riding-plow comprising a wheeled axle; a carriage slidably and adjustably mounted thereon, said carriage having a lateral movement; a plow-beam pivotally connected to said carriage, said beam being automatically held at an approximate right angle to said axle; a rolling landside pivotally connected to the rear end of said beam; means for adjustably moving said carriage on said axle, whereby the angle of said beam will be varied; a rod connected to said carriage and said landside for automatically adjusting the position of the rear end of said beam relative to its front end; and means for locking said beam against movement in one direction.

21. A riding-plow comprising a wheeled axle; a plow-beam pivotally and slidably connected thereto; a rolling landside pivotally connected to said beam for automatically regulating the position of said beam relative to the axle; means for automatically moving said landside on its pivot; and means for locking said landside against pivotal movement in one direction.

22. A riding-plow comprising a wheeled axle; a plow-beam pivotally and slidably connected thereto; a rolling landside pivotally connected to said beam, said landside automatically regulating the position of the beam relative to the axle; means for automatically moving said landside on its pivot; and means for locking said landside against pivotal movement in one direction, said landside being free to move in the opposite direction.

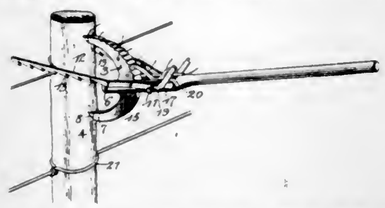
23. A riding-plow comprising a wheeled axle; a plow-beam pivotally and slidably connected thereto; means for imparting an adjustable rotary movement to said axle, whereby the depth of the furrow may be regulated; and means for adjusting the position of the beam laterally on said axle said beam retaining its normal angular alinement in each of its adjusted positions.

24. A riding-plow comprising a wheeled axle; a plow-beam pivotally and slidably connected thereto; means for imparting an adjustable rotary movement to said axle to regulate the depth of the furrow; and independent means for adjusting the position of the beam laterally on said axle said beam retaining its normal angular alinement in each of its adjusted positions.

25. A riding-plow comprising a wheeled axle; a plow-beam pivotally and slidably connected thereto; means for imparting an adjustable rotary movement to said axle to regulate the depth of the furrow; independent means for adjusting the position of the beam laterally on said axle, said beam retaining its normal angular alinement in each of its adjusted positions; and means for locking said beam against movement in one direction.

26. A riding-plow comprising a wheeled axle; a plow-beam slidably and adjustably mounted thereon; means for imparting an adjustable rotary movement to said axle to regulate the depth of the furrow; and means for adjustably moving the position laterally of said beam on said axle and retaining its normal angular alinement in each of its adjusted positions, whereby the distance between the furrow-wheel and the line of the furrow may be varied regardless of the vertical position of the plow.

658,335. **WIRE-TIGHTENER.** SAMUEL T. BEAL, Conway Springs, Kans., assignor of two-thirds to William H. Beal and Robert McKibben, Wichita, Kans. Filed Apr. 12, 1899. Serial No. 712,782. (No model.)



Claim.—1. A wire-stretcher comprising a support having integral diverging arms, an operating-lever having a slot or bifurcation in its lower end and receiving and extending on opposite sides of the support and fulcrumed thereon, the wire-engaging arms arranged at opposite sides of the lever, and a locking-pawl pivotally mounted in the bifurcated portion of the lever and engaging an arm of the support to hold the lever and the wire-engaging arms in their adjusted positions, substantially as described.

2. A wire-stretcher comprising a support having the oppositely-inclined arms, an operating-lever having its inner end bifurcated and extending on opposite sides of the support, a fastening device connecting the lever with the support, wire-engaging arms arranged at opposite sides of the lever, a pivot connecting the arms and extending across the bifurcation of the lever, and a pawl mounted on the said pivot and arranged to engage one of the arms of the support, substantially as described.

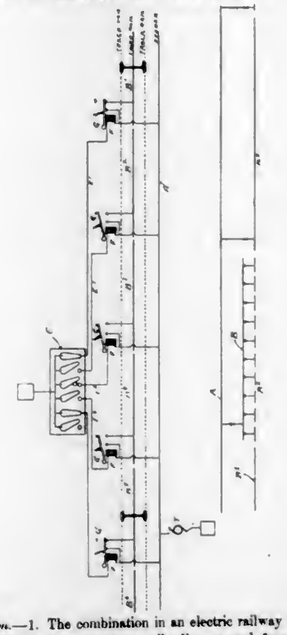
3. A wire-stretcher comprising a support, an operating-lever fulcrumed on the support, wire-engaging arms located at opposite sides of the lever and having convex portions pivoted to the same, said arms being provided with extensions arranged at an angle and forming handles or gripe, and a locking-pawl mounted on the lever and engaging the support and provided with an arm or handle located between the handles or grips of the wire-engaging arms, substantially as described.

4. A wire-stretcher comprising a support having upper and lower arms and provided with stops, a lever fulcrumed on the support and arranged between the stops, wire-engaging arms pivoted to the lever at opposite sides thereof, and a locking device, substantially as described.

5. A wire-stretcher comprising a support having upper and lower arms provided at their terminals with claws, said support being provided between its ends with a perforated ear, stops mounted on the body and located above and below the ear, a bifurcated lever receiving the support and pivoted to the said ear, wire-engaging arms connected with the lever, and a locking device for securing the parts at the desired adjustment, substantially as described.

6. A wire-stretcher comprising a support having diverging arms, an operating-lever having a slot or bifurcation receiving the support, the wire-engaging arms arranged at opposite sides of the lever, and a locking-pawl mounted on the lever and engaging the support to hold the wire-engaging arms and the lever in their adjusted positions, substantially as described.

658,336. **ELECTRIC RAILWAY.** EDWARD M. BENTLEY, New York, N. Y. Filed Aug. 5, 1896. Serial No. 601,710. (No model.)



Claim.—1. The combination in an electric railway of an exposed, sectional, working conductor normally disconnected from the circuit, an electrically-propelled vehicle on the railway provided with a traveling contact device adapted to pass over the sections of the said working conductor in succession and receive current therefrom, a feeding-conductor and an intermediate, manually-controlled circuit-closer operated from a distant point.

2. The combination in an electric railway of an exposed, sectional, working conductor normally disconnected from the circuit, an electrically-propelled vehicle on the railway provided with a traveling contact device adapted to connect with the sections of the said working conductor in succession and receive current therefrom, a feeding-conductor, a series of circuit-closers placed along the railway at the respective sections of working conductor and serving to connect the feeding-conductor with the said sections of working conductor respectively and a corresponding series of controlling devices for the said circuit-closers grouped at a common point.

3. The combination in an electric railway of an exposed, sectional, working conductor normally disconnected from the circuit, an electrically-propelled vehicle provided with a traveling contact device adapted to connect with the sections of the said working conductor in succession and to receive current therefrom, a feeding-conductor and an intermediate circuit-closing device consisting of contact-pieces connected with the two conductors respectively, an operating-magnet for said contact-pieces, a circuit extending to a distant point and a manual switch at said point controlling the said circuit.

4. The combination in an electric railway of an exposed, sectional, working conductor normally disconnected from the circuit, an electrically-propelled vehicle provided with a traveling contact device adapted to connect with the sections of the said working conductor in succession and receive current therefrom, a feeding-conductor, a series of circuit-closers along the railway serving to connect the feeding-conductor with the several sections of working conductors respectively, an operating-electromagnet for each circuit-closer, a circuit for each magnet and a series of manual controlling-switches for the several circuits placed at a common point.

5. The combination in an electric railway of a sectional working conductor normally disconnected from the circuit, a feeding-conductor, an intermediate circuit-closer and an operating-magnet for said circuit-closer included in a shunt-circuit from the said feeding-conductor and leading to a distant point where it is provided with a controlling-switch.

6. The combination in an electric railway of a sectional working conductor normally disconnected from the circuit, a feeding-conductor, a series of circuit-closers along the railway serving to connect the feeding-conductor with the several sections of working conductors respectively and a corresponding series of controlling devices for the said circuit-closers consisting each of an operating-electromagnet included in an individual shunt-circuit leading from the said feeding-conductor to a common controlling-point and there provided with a switch.

7. The combination in an electric railway of an exposed, sectional, working conductor normally disconnected from the circuit, an electrically-propelled vehicle provided with a traveling contact device adapted to connect with the sections of said working conductor in succession and receive current therefrom, a feeding-conductor, an intermediate manually-controlled circuit-closer operated from a distant point and a signaling device connected to the said circuit-closer so as to be manually controlled simultaneously therewith.

8. The combination in an electric railway of a section of working conductor, a feeding-conductor, an intermediate circuit-closer in a branch wire between the said conductors, a signaling device, a shunt-circuit magnet for operating the said circuit-closer and the said signaling device, and a magnet in series with said circuit-closer for restoring the said signaling device.

9. The combination in an electric railway of a section of working conductor, a feeding-conductor, an intermediate circuit-closer, a branch wire between the said conductors including the said circuit-closer, an operating-magnet for the said circuit-closer, a circuit for the said magnet extending to a distant point and there provided with a controlling-switch, signal-transmitting devices responding to the presence of a train on the said section of working conductor and corresponding signal-receiving devices at the aforesaid distant controlling-point.

10. The combination in an electric railway of a section of working conductor, a feeding-conductor, an intermediate circuit-closer, a branch wire between the said conductors including the said circuit-closer, a shunt-magnet for operating the circuit-closer, a circuit for said magnet extending to a distant point, an external resistance in said circuit, a series magnet operating shunting-contacts around the said resistance and indicating and controlling devices at the said distant point.

11. The combination in an electric railway of a section of working conductor, a feeding-conductor, two branch wires for connecting the said conductors, and two intermediate circuit-closers in the respective branch wires, one located at the beginning and the other at or near the end of the section and a common controlling device for the two circuit-closers whereby they may be operated simultaneously from a distant point.

12. The combination in an electric railway of a section of working conductor, a feeding-conductor, two branch wires between the said conductors, one at the beginning and the other at or near the end of the section, two circuit-closers included respectively in the said branch wires, distinctive signal-transmitting devices responding to the arrival of a train at each of the circuit-closers respectively, and a circuit extending to a distant point and there provided with signal-receiving devices responding respectively to the distinctive signals transmitted as aforesaid on the arrival of the train at the two circuit-closers.

13. The combination in an electric railway of conductor A, conduc-

tor-section B^2, two branch wires connecting the said conductors, intermediate circuit-closing and signaling devices D and D′, one at the beginning and the other at the end of said conductor-section, a magnet H in the said device D included in one of the said branch wires, a resistance R controlled by the said magnet H, so as to be shunted when the said magnet is deenergized, a corresponding magnet H′ at the said signaling device D′ included in the other branch wire, a resistance R′ controlled by the said magnet H′ so as to be shunted when the said magnet is energized, a line-wire E^2 including both of the said resistances R and R′ and extending to the station, and signal and receiving devices in the said line E^2 at the station responsive to the variations of current in the said line E^2.

14. The combination in an electric railway of a feeding-conductor, a section of working conductor, a branch wire between the said conductors, an intermediate circuit-closer in said branch wire, a shunt-magnet for operating the said circuit-closer, a signal device normally connected to the armature of the shunt-magnet, and a magnet included in the circuit connecting the section of working conductor with the feeding-conductor and in series with the said circuit-closer and acting to release the signal device from its connection with the armature of the shunt-magnet.

15. The combination with levers G and L of a latch normally connecting the two, a magnet F for operating both levers while they are connected and a magnet H controlling the said latch whereby the said levers may be moved conjointly in one direction and moved separately in the opposite direction.

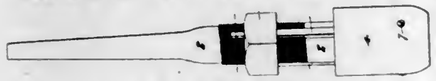
16. The combination in an electric railway of a conductor serving as a feeder, a sectional working conductor normally disconnected from said feeder and having one or more of its sections divided in the subsections, an eletrically-propelled vehicle adapted to receive current from the said subsections successively, an intermediate supply-conductor adjoining the said subdivided sections and normally disconnected from the said feeder, manual circuit-closers between the feeder and each undivided section of working conductor and between the feeder and the said supply-conductor and automatic circuit-closers between the said supply-conductors and each subsection of the subdivided section of working conductor.

17. The combination of feeding-conductor A, intermediate supply-conductor B, subdivided section B^2, an electrically-propelled vehicle adapted to receive current from the subsections in succession, of working conductor, a manual circuit-closer between said conductors A and B and automatic circuit-closers between conductor B and each subsection of conductor B^2.

18. The combination in an electric railway of a conductor serving as a feeder, sections of working conductor normally disconnected from the feeder, circuit-closers, acting temporarily and successively for connecting respectively the sections of working conductor to the feeder, a danger-signal at each section displayed normally while the section is disconnected and also when the section is occupied and a safety-signal displayed while the section is connected but not occupied.

19. The combination in an electric railway with conductor E^2 extending from the station to a remote point of the railway and connected with the feeding-conductor of the railway so as to receive a branch current therefrom, of a magnet therein, a section of working conductor, a circuit-closer between said section and feeding-conductor, signal-transmitting devices in said conductor E^2 at the remote point aforesaid and signal-receiving devices in said conductor E^2 at the station responsive to the said transmitting devices.

658,337. **TOOL FOR CUTTING RIVET-HEADS.** THOMAS BROWN, Allegheny, Pa., assignor of one-half to David A. Wilbert, Pittsburg, Pa. Filed Dec. 8, 1899. Serial No. 739,661. (No model.)



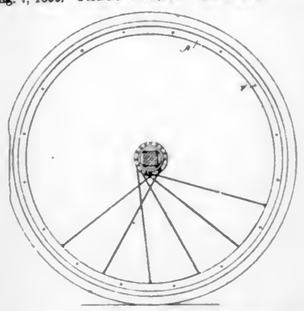
Claim.—1. In a tool for cutting rivet-heads, the combination of a stem, removable end cutter-bars mounted around and projecting beyond said stem, and a stop at the outer side of said bars and level with the cutting edge thereof; substantially as described.

2. In a tool for cutting rivet-heads, the combination of a stem, removable end cutter bars mounted around and projecting beyond said stem and a sleeve inclosing said cutter-bars, the cutting edge of said cutter-bars being level with the end of said sleeve; substantially as described.

3. In a tool for cutting rivet-heads, the combination of a stem, removable end cutter-bars mounted in grooves around and projecting beyond said stem, and a sleeve inclosing said cutter-bars, the cutting edge of said cutter-bars being level with the end of said sleeve; substantially as described.

4. In a tool for cutting rivet-heads, the combination of a stem, removable end cutter-bars mounted in grooves around and projecting beyond said stem, a sleeve inclosing said cutter-bars, the cutting edge of said cutter-bars being level with the end of said sleeve, and a nut which engages the other end of said bars; substantially as described.

658,338. **VEHICLE-WHEEL.** JOSEPH N. BYERS, Urbana, Ohio. Filed Aug. 7, 1899. Serial No. 726,391. (No model.)



Claim.—1. The combination with a vehicle-wheel, of a holding device forming the felly thereof consisting of a metal strip bent along a central line over on itself and forming a recess between such bent-over portions or sides, said sides being bent outward and upward near their outer edges, a stiffening device adapted to fit upon said bent-outward portions and between said bent-upward portions, all substantially as shown and described.

2. The combination with a vehicle-wheel, of a holding device consisting of an annular strip of metal bent along a central line over on itself, said bent-over portions constituting sides having a space between them, said sides extending outward in a substantially-horizontal plane and upward in a vertical plane, a stiffening device adapted to rest on said horizontal portions of said sides and extend within the pocket or recess between said sides, the outer extensions of said sides projecting beyond said stiffening device, substantially as shown and described.

3. The combination with a vehicle-wheel, of an inner hub having an internal annular groove or receptacle therein with an oil-passage leading into said groove and an external annular flange, of a pair of sleeves each having an annular flange adapted to fit upon said inner hub and against the hub-flange, and means for connecting the spokes of the wheel to said hub-sleeves midway their length, substantially as shown and described.

4. In a vehicle-wheel, a holding device constituting a felly, one or more stiffening devices consisting of a piece of metal having a flanged portion and a radially-extending portion adapted to fit within said holding device and below the outer periphery of said holding device, substantially as shown and described.

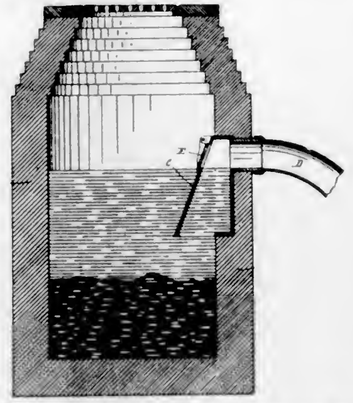
5. In a vehicle-wheel, a holding device constitating a felly, a pair of stiffening devices formed of angle-iron adapted to fit within said holding device and below its outer periphery, two of the corresponding sides of said angle-irons fitting back to back and the other two corresponding sides extending in the opposite direction from each other at substantially right angles to the radii of the wheel, and means to extend in through the inner portion of said holding device and also through said matching portions of said angle-irons, said angle-irons, constituting said stiffening feature and also acting to form a seat for an elastic tire, all substantially as shown and described.

658,339. **SEWER-TRAP.** THOMAS F. BYRNE, Utica, N. Y. Filed Mar. 9, 1899. Serial No. 708,318. (No model.)

Claim.—1. In a sewer-trap a box or casing, its front surface deflecting outwardly and downwardly, its rear surface adapted to connect with drainage-pipes, its bottom open to permit flowage; its face provided with an upwardly and outwardly swinging door in its closed position extending below the level of the bottom of the drainage-pipe and hung at its upper edge on hinges projecting from the face of the trap and by corresponding hinges on the door, permitting the door to automatically swing outwardly at a certain fixed pressure from within, substantially as set forth.

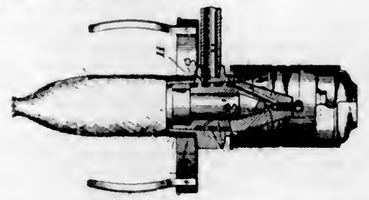
2. In a sewer-trap, a hood projecting outwardly and downwardly from the wall of the cesspool, an opening in the upper part of the hood extending downwardly as far the outer drain, a lid or trap pivotally suspended over the opening in said hood, its lower edge extending below the surface of the water in the cesspool when at its height, the pivoted door yielding outwardly with the pressure of the sewer-gas from within the trap, in combination, substantially as set forth.

3. In a sewer-trap a metal integral casing provided with an opening in the bottom for the ingress of sewage, an opening in the back for the egress of sewage, an opening in the front opposite the egress, a door suspended over the opening presenting a surface corresponding with the surface of the sewer-trap and in its closed position extending below the level of the bottom of the drainage-pipe, in combination, substantially as set forth.



4. In a sewer-trap a casing supported in and projecting from the wall of the cesspool, an open bottom to the projecting casing, an egress opening from the casing outward, an opening through the wall of the casing, a door hinged to the casing above the water-line and adapted when closed to fall below the water-line, the door pivotally mounted to open inwardly to the cesspool by the pressure of the sewer-gas, combined, substantially as set forth for the purposes stated.

658,340. **BURNER.** MORTIMER CAHILL, Chicago, Ill. Filed May 29, 1899. Serial No. 718,649. (No model.)



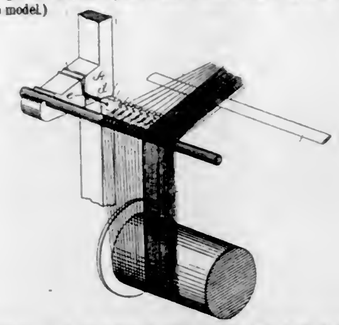
Claim.—1. In a burner of the class described, the combination with a tubular converter having its upper portion diminished to form a neck and an annular shoulder at the base of the same, of a sleeve encircling said neck, having lateral perforations near its base, and forming the outer wall of an annular air-space about the neck, means for holding the sleeve concentric with the neck, a mantle fitting over the sleeve above said perforations, and means for supporting the mantle from above.

2. In a burner of the class described, the combination with a tubular converter having its upper portion diminished to form a neck and an annular shoulder at the base of the same of a concentric mantle-receiving sleeve encircling said neck to form the outer wall of an air-space about the same and provided with lateral perforations below the mantle thereon, an annular chimney-supporting plate resting upon said shoulder extending outward from the base of the sleeve, below said perforations, and a support secured to the plate for holding the upper end of the mantle.

3. In a burner of the class described, the combination with a tubular converter having its lower portion diminished to form a neck and a shoulder at the upper end of the same, of a shell, closed below, inclosing the lower part of the converter and an annular space about the same, said shell being arranged for adjustment toward and away from said shoulder to vary the amount of air admitted to the inclosed parts, and means for holding said shell concentric with said neck.

4. In a burner of the class described, the combination with a tubular converter having its lower portion diminished to form a neck and an annular shoulder about the upper end of the same, of a perforated annular skirt mounted upon said neck, and a shell closed below, fitting around said skirt, and arranged for adjustment toward and away from said shoulder to vary the amount of air admitted between the shoulder and the edge of the shell.

658,341. **WARP-THREAD AND SELVAGE GUIDE FOR LOOMS.** NOAH CARTIER, Biddeford, Me., assignor to Jacob Cartier and Arthur George Pelletier, same place. Filed June 28, 1899. Serial No. 722,205. (No model.)



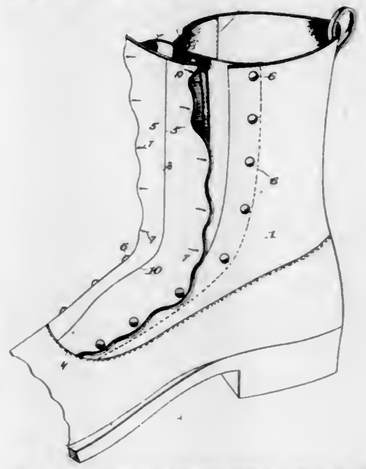
Claim.—1. A warp-thread guide consisting of a strip or plate provided with a series of holes for the passage of the threads, whereby they are separated and held apart, and having inclined slits arranged tangentially with respect to said holes, and extending therefrom to the edge of the strip, for the admission of the threads to the holes, substantially as described.

2. A warp-thread guide consisting of a strip or plate provided with holes for the passage of the threads, and slits leading from its edge to said holes in combination with a supporting device or holder adapted to be attached to the loom, said strip being pivoted to said holder, whereby it may be turned down into a vertical position when not required for use, substantially as described.

3. The combination with a warp-thread guide consisting of a strip or plate provided with holes for the passage of the threads, and slits leading from its edge to said holes, of a support or holder composed of spring-wire, and adapted to be sprung over and clasped around an adjacent portion of the frame of a loom, whereby it is held in the path of the warp-threads, substantially as described.

4. A warp-thread guide consisting of a strip or plate provided with two parallel rows or series of holes for guiding the threads, the holes of one row alternating with those of the other, and entrance-slits for the threads leading from said holes to the upper and lower edges of the strip, substantially as described.

658,342. **SHOE.** EMILIE H. CHRISTENSEN, New York, N. Y. Filed Jan. 30, 1899. Serial No. 703,829. (No model.)



Claim.—The combination with the upper of a shoe or the like having an opening therein, of a tongue-piece comprising rear flaps secured to the upper at the sides of said opening and extending inwardly, intermediate flaps connected to the contiguous edges of said rear flaps and extending outwardly, and a front piece having the said intermediate flaps attached thereto at a line within the edges of said front piece, said front

piece being provided with buttonholes at its sides between the edges and the lines at which it is secured to the intermediate flaps, and buttons upon the upper adapted to enter said buttonholes; substantially as described.

658,343. CLOSURE FOR RECEPTACLES. JOHN S. CLARK, New York, N. Y., assignor to the Iron Clad Manufacturing Company, same place. Filed Dec. 14, 1899. Serial No. 740,260. (No model.)



Claim.—1. A can comprising a body and a closure freely detachable from said body, said closure having a plurality of independent means detachably connecting said closure with the body and including a swinging cam-carrying actuator having a duplex pivotal connection with said closure, and cam coöperating means secured to said body.

2. A can comprising a body and a closure, said closure having a pair of projections extending beyond the same at one side thereof; a pair of links connected with each of said projections; an actuator pivotally connected to said links and provided with cam surfaces or projections; and means secured to said body and coöperating with said cam projections.

3. A receptacle comprising a body and a closure, having two sets of oppositely-located projections extending beyond the same, one set having detachable connection with the body to assist in maintaining the closure in position; a pair of links connected with each projection of the other set; an actuator connected with said links and provided with cam-surfaces; and means secured to said body and coöperating with said cam-surfaces.

4. A can comprising a body having an ear secured thereto provided with an opening; a detachable cover having at one side thereof a projection extending into said opening and detachable from said ear on the lifting of the cover; clamping means carried at the opposite side of said closure; and means secured to said body and coöperating with said clamping means for maintaining said closure in position.

5. A receptacle comprising a body and a closure, said closure having two sets of projections extending beyond the same, one set having a freely-detachable connection with the body to maintain one side of the closure in position, and the other set carrying links; an actuator pivotally secured to said links and provided with cam-surfaces; and flanged means carried on said body and coöperating with said cam-surfaces to enable the closure to be clamped in position.

6. A receptacle comprising a body and a closure, said closure comprising a plate having an upwardly-extending flange provided with a laterally-extending rim carrying a gasket; two sets of projections secured to said closure, one set at each side thereof, and one set having connection with said body to maintain one side of said closure in position, and the other set carrying links pivotally secured thereto; an actuator pivotally secured to said links and carrying cam surfaces or projections; and means secured to said body and coöperating with said cam-surfaces.

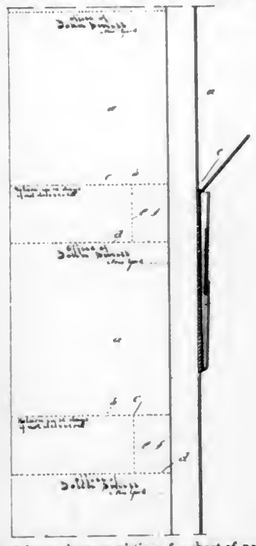
7. A receptacle comprising a body and a closure, said closure comprising a plate having an upwardly-extending flange provided with a laterally-extending rim carrying a gasket; two sets of projections carried by said closure, one set at each side thereof, and one set having connection with said body to maintain one side of said closure in position, and the other set carrying links pivotally secured thereto; a hoop or band located on the inner side of said flange; an actuator pivotally secured to said links and carrying cam surfaces or projections; and flanged means carried by the receptacle-body and coöperating with said cam-surfaces.

8. A receptacle comprising a body and a closure, said closure comprising a plate having an upwardly-extending flange provided with a laterally-extending rim carrying a gasket; a pair of substantially Z-shaped structures carried by said closure, one at each side thereof, the lateral projections of one having connection with said body to maintain one side of said closure in position, and the lateral projections of the other carrying links pivotally secured thereto; a hoop or band located intermediate the inner side of said closure-flange and the upright portions of said Z-shaped structures; an actuator pivotally secured to said links and carrying cam surfaces or projections; flanged means secured to the receptacle-body and coöperating with said cam projections; and reinforcing-strips extending across the top of said closure-plate and having the ends thereof in engagement with said Z-shaped structures.

9. A can comprising a body having a pair of ears secured thereto, each provided with an opening; a detachable cover having at one side thereof a pair of projections extending into said openings and detachable from said ears on the lifting of the cover; swinging clamping means carried at the opposite side of said closure and embodying cam-surfaces; and means carried on said body and coöperating with said cam-surfaces to maintain the cover in position.

10. A can comprising a body provided with two pairs of oppositely-located members; a closure having a pair of substantially Z-shaped structures secured thereto one at each side thereof, the lateral projections of each structure having detachable connection with said body members to maintain the closure in position.

658,344. LETTER-SHEET. SPENCER CLAWSON, Salt Lake City, Utah. Filed Oct. 19, 1898. Serial No. 693,989. (No model.)

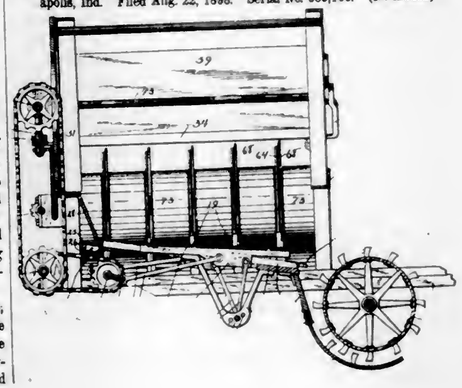


Claim.—1. A letter-sheet, consisting of a sheet of paper adapted to have a letter written thereon, and an envelop dropped on the sheet of paper in the process of forming the paper, so that the front face of the envelop will become an integral part of the fabric of the letter-sheet, the envelop being adapted to be separated from the letter-sheet so as to permit placing the letter within the envelop.

2. Letter-sheets, formed of a continuous web of paper having envelops attached thereto at various points along the length of the web, so that the letters may be written on the spaces between the envelops, and the envelops separated from the web to permit placing the letters within the envelops.

3. Letter-sheets, consisting of a continuous web of paper having envelops attached thereto at various points along the length thereof, the web having score-lines at the upper and lower edges of the envelops, whereby to permit separating the envelops from the web.

658,345. BAND-CUTTER AND FEEDER. W. W. COLLINS, Indianapolis, Ind. Filed Aug. 22, 1898. Serial No. 689,168. (No model.)



Claim.—1. In a feeder, the combination with a stationary platform having a series of longitudinal slots formed therein, a series of feed-bars mounted in said slots, means for reciprocating said feed-bars, a pivotal support for the rear end of said platform, a throat-piece hinged to the forward end of said platform, and means for supporting the free end of the throat-piece.

2. In a feeder, the combination with a stationary platform, of feeding mechanism mounted thereon, means for operating said feeding mechanism, a pivotal support for the rear end of said platform, means for shifting said platform with relation to the support, and means for supporting the forward end of the table.

3. In a feeder, the combination with a stationary platform, of a series of feed-bars mounted on said platform, means for reciprocating said bars, a pivotal support for the rear end of said platform, means for shifting said support with relation to the platform, a throat-piece hinged to the forward end of the platform, and means for supporting the free end of said throat-piece.

4. In a feeder, the combination with a stationary platform, of a series of feeder-bars mounted thereon, means for reciprocating said bars, the said bars being slidably supported, at their rear ends, upon said platform, a series of links each of said links being pivoted at one end to one of the feed-bars near its forward end, and a series of brackets mounted one near each link and provided with an adjustable pivotal support for the lower end of the adjacent link.

5. In a feeder, the combination with a stationary platform having a series of longitudinal slots formed therethrough, of a series of feed-bars mounted in said slots, means for reciprocating said bars, the said bars being slidably supported, at their rear ends, upon said platform, and a series of links, each of said links being pivoted at one end to one of the feed-bars near its forward end, and pivoted at its other end to a suitable support.

6. In a feeder, the combination with a stationary platform having a series of longitudinal slots formed therethrough, of a series of feed-bars mounted in said slots, means for reciprocating said bars, the said bars being slidably supported, at their rear ends, upon said platform, a series of links each pivoted at one end to one of the feed-bars near its forward end, and a series of brackets mounted one near each link and provided with an adjustable pivotal support for the other end of the adjacent link, substantially as described.

7. In a feeder, the combination with a stationary platform having a series of slots formed therethrough, of a series of feed-bars mounted in said slots, means for reciprocating said bars, the said bars being supported, at their rear ends, directly upon said platform, a series of links each pivoted at one end to one of the feed-bars near its forward end, a series of brackets mounted one near each link and provided with an adjustable pivotal support for the other end of the adjacent link, and a series of retarding-fingers secured to the forward end of the platform and projecting therefrom, substantially as described.

8. In a feeder, the combination with an endless belt, of a series of drags carried by said belt, and a rotatable wheel having its axis inside the bight of the belt, provided with one or more arms adapted to strip material from said drags.

9. In a feeder, the combination with an endless belt, of a series of drags carried thereby, of a shaft carrying a pulley adapted to drive said belt, a rotatable wheel also mounted on said shaft adjacent the pulley and provided with one or more arms adapted to strip material from the drags as they pass around the shaft.

10. In a feeder, the combination with an endless belt, of a series of drags carried by said belt, and a rotatable wheel, provided with one or more arms, the relative arrangement of arms and drags being such that an arm will strip material from each drag at one point in its travel, and an arm will also rise between each pair of drags immediately following the stripping action of the first arm, substantially for the purpose set forth.

11. In a feeder, the combination with an endless belt, of a series of drags carried thereby, a shaft carrying a pulley adapted to drive said belt, a rotatable wheel also mounted on said shaft adjacent the pulley and provided with one or more arms, the relative arrangement of arms and drags being such that an arm will strip material from each drag as it passes around the pulley while the following arm will rise between the said drag and the succeeding drag, substantially as described.

12. A transverse feed-table for feeders, consisting of the main frame, a shaft mounted in said frame and carrying a series of pulleys, a series of feed-belts passing over said pulleys, a series of drags carried by each belt, a breaker-wheel mounted on said shaft adjacent each pulley and provided with one or more arms adapted to strip material from each drag as it passes around the shaft, a platform mounted beneath the upper side of each belt in position to support it, and a series of platforms mounted between each pair of chains above the upper sides thereof, with sufficient space between the adjacent edges thereof to allow the passage of the drags and breaker-arms, substantially as described.

13. A transverse feed-table for feeders, consisting of the main frame, a shaft mounted in said frame and carrying a series of pulleys, a series of feed-belts passing over said pulleys, a series of drags carried by each belt, a breaker-wheel mounted on said shaft adjacent each pulley and provided with one or more arms, the relative arrangement of arms and drags being such that an arm will strip material from each drag as it passes around the shaft while the following arm will rise between the said drag and the succeeding drag, a platform mounted beneath the upper side of each belt in position to support it, and a series of platforms mounted between each pair of chains, above the upper sides thereof, with sufficient distance between the adjacent edges thereof to allow the passage of the drags and breaker-arms, substantially as described.

14. In a feeder, the combination with a cutter-supporting arm, pivoted upon a suitable support at one end and carrying a cutter at the other end, of a stationary rack, a pinion mounted so as to move along said rack, intermediate connections between said pinion and the cutter-arm allowing a relative upward movement of the cutter-arm, and means for rotating the pinion, whereby a rotation of the pinion will cause the pinion to move along the rack and the cutter-arm to swing upon its pivot.

15. In a feeder, the combination with a pair of cutter-supporting arms, pivoted upon suitable supports at one end and supporting a cutter which connects the other ends, of a pair of stationary racks one mounted near each arm, a pair of pinions one mounted on each rack, a shaft carrying said pinions, intermediate sliding connections between said shaft and the cutter-arms allowing a relative upward movement of the cutter-arms, and means for rotating the pinions, whereby a rotation of the shaft will cause the pinions to move along the racks and the cutter-arm to swing about its pivot, substantially as described.

16. In a feeder, the combination with a pivoted cutter-supporting arm carrying a cutter at its free end, means for swinging said arm about its pivot, a shaft carried in suitable bearings on said arm, intermediate connections between said shaft and cutter, a universal joint mounted on said shaft substantially in line with the pivotal point of said arm, and a driving-shaft connected to said joint, substantially as described.

17. In a feeder, the combination with a cutter-supporting arm, pivoted upon a suitable support at one end and carrying a cutter at the other end, of a rack, a pinion mounted so as to move along said rack, intermediate connections between said pinion and the cutter-arm, means for rotating the pinion, a shaft carried in suitable bearings on the cutter-arm, intermediate connections between the shaft and the cutter, a universal joint mounted on said shaft substantially in line with the pivotal point of the cutter-arm, and a driving-shaft connected to said joint, substantially as described.

18. In a feeder, the combination with a pair of pivoted cutter-supporting arms, of an angle-iron mounted between and connecting the free ends of said arms, a reciprocating cutter mounted upon one flange of said angle-iron, a guard-plate hinged to the other flange of said angle-iron, means operating the cutter, and means for adjusting the guard-plate, substantially as described.

19. In a feeder, the combination with a pair of pivoted cutter-supporting arms, of an angle-iron mounted between and connecting the free ends of said arms, a reciprocating cutter mounted upon one flange of said angle-iron, a guard-plate hinged to the other flange of said angle-iron, means for adjusting said guard-plate, a shaft mounted in suitable bearings on one of the cutter-supporting arms, intermediate connections between said shaft and cutter, and a universal joint mounted on said shaft substantially in line with the pivotal line of the cutter-supporting arms, substantially as described.

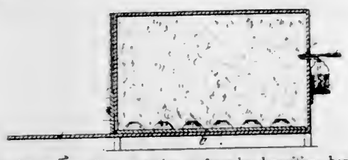
20. In a feeder, the combination with a pair of pivoted cutter-supporting arms, of an angle-iron mounted between and connecting the free ends of said arms, a pair of reciprocating cutters mounted upon one flange of said angle-iron, the end of said flange extending the length of and forming an abutment for the rear edges of the cutters, substantially as described.

21. In a feeder, the combination with a pair of pivoted cutter-supporting arms, of an angle-iron mounted between and connecting the free ends of said arms, a pair of reciprocating cutters mounted upon one flange of said angle-iron, the end of said flange forming an abutment for the rear edges of the cutters, a guard-plate hinged to the end of the other flange of the angle-iron, and means for adjusting said guard-plate, substantially as described.

658,346. PROCESS OF ORNAMENTING SURFACES. JOSEPH T. COMMOSS, New York, N. Y., assignor to the Commoss Process Company, same place. Filed Dec. 12, 1899. Serial No. 740,136. (No specimens.)

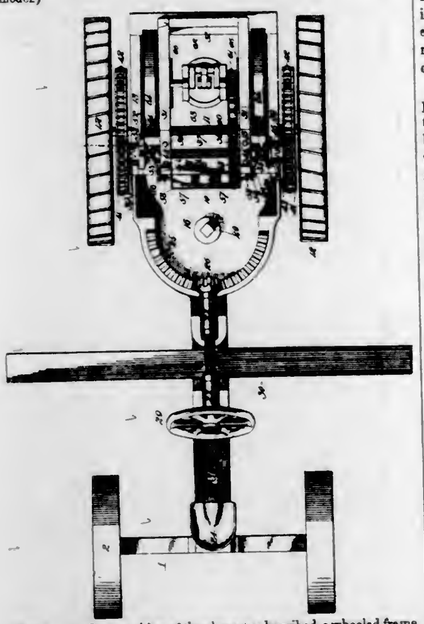
Claim.—1. The process of coating and ornamenting surfaces of woven fabrics, paper, wood, metal, glass, porcelain and other materials, by means of a coating or ornamenting substance in a finely-divided condition, consisting in exposing the articles in a closed chamber to the deposit on their surfaces of the coating substance projected into the cham-

ber in the form of a mist or cloud by means of a blast, substantially as described.



2. In the process of ornamenting surfaces by deposition thereon of an ornamenting substance in a finely-divided state, the method of forming designs on woven fabrics, paper, wood, china, glass and other material, consisting in applying suitable patterns containing open-work and other designs to the articles, then exposing such articles in a closed chamber to a cloud of the ornamenting substance projected into the chamber by a blast, and deposited on such articles by gravitation, and finally removing the patterns.

658,347. AUTOMOBILE AGRICULTURAL MACHINE. WILLIAM F. CROWLEY, Holly, Colo. Filed Mar. 20, 1900. Serial No. 9,356. (No model.)



Claim.—1. In a machine of the character described, a wheeled frame, comprising two parts pivoted together, an engine mounted upon one part and geared to the wheels thereof, a trip-wheel mounted on the last-named part of the frame, and a pin or projection from the other part, adapted under the pivotal movement of one part to rock said trip-wheel and thereby throw one wheel or the other out of engagement with the engine, substantially as described.

2. In a machine of the character described, a wheeled frame, comprising two parts pivoted together, an engine mounted upon one part and geared to the wheels thereof, a trip-wheel mounted on the last-named part of the frame, a shaft adapted to be turned by hand mounted upon one part of the machine and geared to the other to turn the latter, a projection from the frame to rock said trip-wheel as the turning operation is in progress, and connections whereby the operation of the trip-wheel throws the engine out of gear with one of its connected wheels or the other, substantially as described.

3. In a machine of the character described, a wheeled frame comprising two parts pivoted together, one part being provided with a semicircular rack-bar concentrically with the pivotal point, a shaft on the other part adapted to be turned by hand and provided with a cog-pinion engaged by said rack, an engine mounted upon the part provided with the rack-bar and geared to the wheels of said bar, and means for throwing one or the other of said wheels out of gear with the engine, as the machine begins to turn substantially as described.

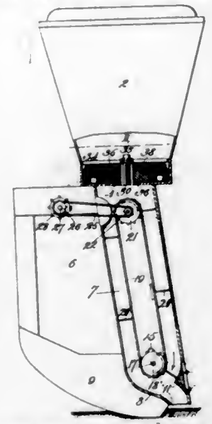
4. In a machine of the character described, a wheeled frame, comprising two parts, one provided with a turn-table having tracks, and the other with a reach-bar pivoted to said turn-table and provided with rollers for traveling on said tracks, an engine mounted upon the turn-table part and geared to the wheels thereof, and means for turning one part pivotally on the other, and for throwing the engine out of gear with one of said wheels or the other, substantially as described.

5. In a machine of the character described, a wheeled frame comprising two parts, one provided with a two-part turn-table having tracks, and the other with a reach-bar pivoted to and between the parts of the turn-table, and provided with rollers engaging the tracks thereon, an engine mounted upon the turn-table part and geared to the wheels thereof, and means for turning one part pivotally on the other, and for throwing the engine out of gear with one of said wheels or the other, substantially as described.

6. In a machine of the character described, a wheeled frame, comprising two parts pivoted together, one having a notched trip-wheel, and the other a pin to engage said notch and trip the wheel as the machine begins to turn, an engine mounted upon one part, a shaft journaled upon the same part and geared thereto, clutch members journaled upon said shaft and geared to the wheels of said part, spring-actuated clutch members keyed to slide but not rotate on said shaft and engaging the first-named clutch members, levers engaging said slidable clutch members, and instrumentalities between the trip-wheel and said levers whereby the operation of said wheel will cause one of said levers to withdraw the connected slidable clutch members from engagement with the companion clutch members, substantially as described.

7. In a machine of the character described, a wheeled frame, comprising two parts pivoted together, one having a notched trip-wheel, and the other a pin to engage the notch of and trip said wheel as the machine begins to turn, an engine mounted upon one part, a shaft journaled upon the same part and geared to the engine, clutch members journaled upon said shaft and geared to the wheels of said part, spring-actuated clutch members keyed to slide but not rotate on said shaft and engaging the first-named clutch members, levers engaging said slidable clutch members, rock-shafts linked to said members, and rods pivotally connected to the trip-wheel and having a sliding connection with said rock-shafts, said provided with collars adapted in the outward movement of said rods to rock said rock-shafts, substantially as described.

658,348. SEED-PLANTER. WILLIAM F. CROWLEY, Holly, Colo. Filed June 15, 1900. Serial No. 20,389. (No model.)



Claim.—1. A seed-planter, comprising a frame, a seedbox carried by said frame and provided with a discharge-hole, a shoe having a hollow boot or leg registering at its upper end with said hole, a plate rotating in the bottom of the seedbox and provided with a hole registering with the seedbox-hole once in each revolution, and a brush rotating upon said plate in the opposite direction and acting as a cover for the plate-hole at the moment the latter registers with the seedbox-hole, substantially as described.

2. A seed-planter, comprising a frame, a seedbox carried by said frame and provided with a discharge-hole, a shoe having a hollow boot or leg registering at its upper end with said hole, a shaft projecting up into the seedbox, a brush mounted upon said shaft within the seedbox, a plate suitably journaled and surrounding said shaft and interposed between the brush and the bottom of the seedbox, and provided with a hole adapted

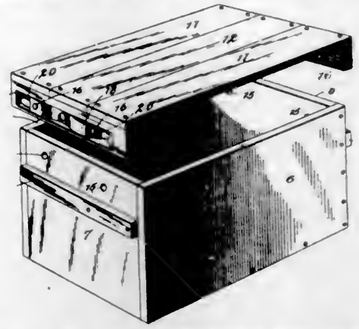
to register once in each revolution with the seedbox-hole, and means to impart movement in opposite directions but at equal speed to said shaft and said plate, substantially as described.

3. A seed-planter, comprising a frame, a seedbox carried by said frame and provided with a discharge-hole, a shoe having a hollow boot or leg registering at its upper end with said hole, a shaft projecting up into the seedbox, a brush mounted upon the upper end of the shaft, a gear-wheel secured upon the latter near its lower end, a gear-wheel journaled upon said shaft, a perforated seed-dropping plate connected rigidly to the last-named gear-wheel, and a shaft suitably driven and provided with a pinion meshing with said gear-wheels, substantially as described.

4. A seed-planter, comprising a frame, a seedbox carried by said frame and provided with a discharge-hole, a shoe having a hollow boot or leg registering at its upper end with said hole, a shaft projecting up into the seedbox, a brush mounted upon the upper end of the shaft, a gear-wheel secured upon the latter near its lower end, a gear-wheel journaled upon said shaft, a perforated seed-dropping plate connected rigidly to the last-named gear-wheel, a shaft provided with a pinion meshing with said gear-wheels, and with a sprocket-wheel, a shaft suitably driven, a sprocket-wheel thereon, and a chain connecting said sprocket-wheels, substantially as described.

5. In a seed-planter, a frame, a seed-hopper carried thereby and provided with a discharge-hole, means for effecting the discharge of seed through said hole at regular intervals, a shoe having a hollow boot or leg registering at its upper end with said hole, and having the lower end of its front wall sloping downward and rearward to provide a discharge-opening at the lower end of the boot or leg, a driven sprocket-wheel in the upper end of the boot or leg, an adjustable sprocket-wheel in the lower end of the boot or leg, a conveyer connecting said sprocket-wheels and provided with a plurality of arms or valves projecting outward and forming partitions between the conveyer and the boot or leg, and a movable block secured in the lower end of the boot or leg over the discharge-opening thereof and having its upper side substantially concentric with the lower sprocket-wheel, substantially as described.

658,349. CRATE-FASTENING. SYLVESTER W. DAMON, Mount Pleasant, Tex. Filed June 27, 1900. Serial No. 21,824. (No model.)

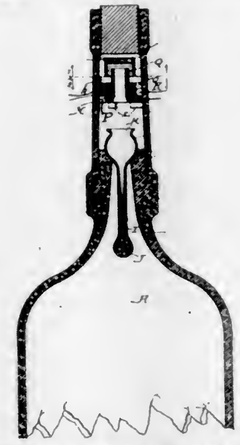


Claim.—1. The combination with a receptacle having a locking perforation of a cover having a perforation disposed to aline with the perforation in the receptacle, a spring-plate fixed to the cover and a pin fixed to the plate for engagement with the alining perforations, the distance between the fixed point of the spring-plate and the point of attachment of the pin being greater when the pin is disengaged, than the distance between the fixed point of the spring-plate and the perforation of the cover, whereby when the pin is engaged with the perforations the spring will be bowed, and when the pin is disengaged, the spring will hold it with its engaging end beyond the perforation of the cover.

2. The combination with a receptacle of a cover, said receptacle and cover having perforations for alinement, a plate fixed between its ends to the cover, a pin engaged with each end of the plate and adapted for engagement with corresponding alining perforations, and recesses in the cover beyond the perforations thereof, said plate being adapted to hold the pins in engagement with the recesses when disengaged from the perforations.

658,350. NON-REFILLING BOTTLE. JOHN H. DOERR, Camden, N. J. Filed Dec. 20, 1899. Serial No. 741,007. (No model.)

Claim.—1. In a non-refilling bottle, a neck having a seat formed therein, a globe-shaped valve adapted to fit said seat, said valve being hollow and open at the top, a stem formed with said valve, an enlargement formed upon the lower end of the stem an extension secured to the neck in any convenient manner, a protector having two flanges formed thereon, lugs projecting downward from the lower side of said protector, a neck Q projecting upward from the protector and having a hole therethrough, lugs arranged around said neck and protruding upward from the protector, and a keeper which is hollow upon its under side and partially incloses the neck of the protector, and held in place by ribs projecting from its sides, as specified.



2. In combination with a bottle of the character described, a neck having a reduced portion and a threaded portion, a neck extension adapted to fit over said smooth portion and engaged with the threaded portion, a shoulder formed in the upper portion of the neck extension, a keeper of inverted-cup shape having ribs formed upon its periphery adapted to fit within the neck of the extension and against the shoulder, a protector also fitted within the neck extension, two flanges formed with said protector having notches cut therein out of line with each other, projections extending inwardly from neck extension and adapted to register and pass through the series of notches in the upper flange of protector and into the annular groove formed between said flanges for the proper locking of the protector in position when the said protector is partially rotated, lugs projecting downward from the lower flange, and a neck Q projecting upward from the upper flange through which a hole is formed, and lugs arranged around the neck Q and projecting upward from the upper flange, as and for the purpose set forth.

3. In combination with a bottle of the character described, having a separable neck with a shoulder formed therein, a combined keeper and protector consisting of a tube, flanges around the bottom of the tube, said flanges having notches in their edges, no two of which register, projections extending inwardly from said separable neck and adapted to register and pass through notches in the upper flange into the annular space between the flanges, a disk a short distance above the tobe, an annular flange formed on the disk and extending downward around the tube so that a space is left between the tube and flange, longitudinal ribs on the sides of said flange fitting against the neck, a lug on the bottom of the protector substantially as described.

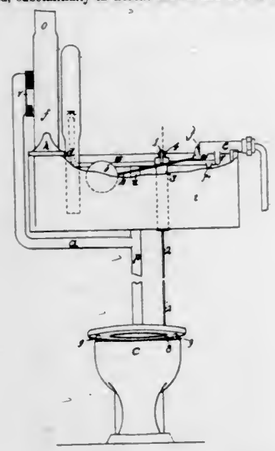
658,351. VENTILATING APPARATUS. JAMES J. DONOVAN, Peekskill, N. Y. Filed July 26, 1899. Serial No. 725,047. (No model.)

Claim.—1. The combination in a ventilating apparatus of a fan driven by a motor supplied from the tank water-supply and connected with a passage out of the room, an adjustable air-inlet from the room to the fan, an adjustable water-supply to said motor, branching air-conduits from the fan air-inlet to the flushing-pipes connected with the vessels to be ventilated, and means substantially as set forth for operating the fan by occupancy of a closet-seat, substantially as herein shown and described.

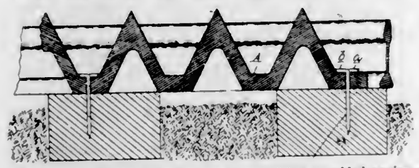
2. In combination with a fan operated by a motor with the water used in filling a flushing-tank, the fan having exhaust-pipe connections with closets or urinals, a valve for controlling the air-inlets substantially as herein shown and described.

3. The combination for closet-ventilation of the character described, of an exhaust-fan having connections with the bowls and adjustable openings to the rooms to be ventilated, a water-motor attached to the side of the fan-casing, the discharge from said motor entering the flushing-tank, the tank supply-valve connected with the water-motor, and an adjustable outlet from said motor connection, substantially as herein shown and described.

4. Means for ventilating water-closets, bath-rooms, &c., comprising an exhaust-fan driven by a water-motor supplied from the tank supply-valve substantially as shown, an adjustable air-inlet to said fan, an air-inlet pipe extending from the fan to the bowls to be ventilated, and means substantially as shown by which the fan may be operated when the closet-seat is occupied, substantially as herein shown and described.



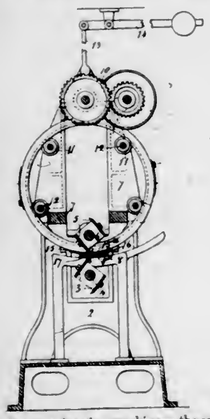
658,352. RAILWAY CATTLE-GUARD. JAMES DONOVAN, Three Rivers, Mich., assignor to the Roberts Car and Wheel Company, same place. Filed May 31, 1900. Serial No. 18,658. (No model.)



Claim.—1. A railway cattle-guard, comprising a molded section of non-corrodible material comprising a base and a series of pointed upward projections formed integral therewith.

2. A railway cattle-guard comprising a molded section of non-corrodible material consisting of a base and a hollow cone formed integral therewith and projecting upwardly therefrom.

658,353. MACHINE FOR DRESSING STAVES. ALEXANDER DUNBAR, Liverpool, England. Filed Oct. 16, 1899. Serial No. 733,816. (No model.)



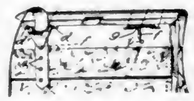
Claim.—1. In stave-dressing machinery, the combination with mechanism for feeding a stave transversely of its length, of end guides movable toward and from the stave and arranged to press yieldingly thereon, and a cutter between the guides arranged to move with the movement of the guides; substantially as described.

2. In stave-dressing machinery, the combination of stationary end supports arranged to support a stave by its dressed end portions, and a vertically-movable frame above the stationary guides and carrying upper guides arranged to press upon the end portions of the stave and also a cutter arranged to act upon the intermediate portion of the stave; substantially as described.

3. In stave-dressing machinery, the combination with stationary guides, of a vertically-movable frame carrying rotary guides and a feeder for the stave, and having also a cutter mounted thereon; substantially as described.

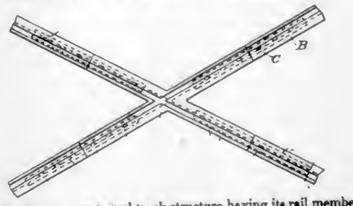
4. In stave-dressing machinery, a support for the stave, a frame movable toward and from said support, and having pressers thereon, rotary feeders mounted on the frame and arranged to feed the stave transversely of its length, and a rotary cutter also mounted on the movable frame; substantially as described.

658,354. DEVICE FOR SECURING STRAPS TO KNAPSACKS, &c. RUDOLF DÜNKELBERG and GUSTAV GOCKEL, Dusseldorf, Germany. Filed June 23, 1899. Renewed Aug. 27, 1900. Serial No. 28,243. (No model.)



Claim.—In knapsacks the combination with the body and adjustable perforated straps, of a metal plate riveted to the top of the knapsack, said metal plate fitted with pivots for a movable triangular flap, said flap having laterally-bent projections provided with holes to turn on the pivots being fitted at its lower face with a pin, said pin coinciding with a hole in the back of the knapsack and adapted to enter said hole after passing through one of the perforations in the knapsack-strap on turning down the flap, so that the smooth top surface of the flap is presented to the back of the wearer, substantially as set forth.

658,355. RAILWAY-TRACK STRUCTURE. THOMAS C. DU PONT, Johnstown, Pa., assignor to the Lorain Steel Company, of Pennsylvania. Filed Dec. 1, 1899. Serial No. 738,878. (No model.)



Claim.—1. A cast-steel track structure having its rail members provided with a joint or extension piece, consisting of a length of rolled rail, and cast-steel splice-bars cast to and uniting the rail member to the rolled-rail length, substantially as described.

2. A cast-steel track structure having integral branching rail members, of means for connecting the same to adjoining track-rails, consisting of short end extensions of rolled rails united to said rail members by cast-steel splice-bars.

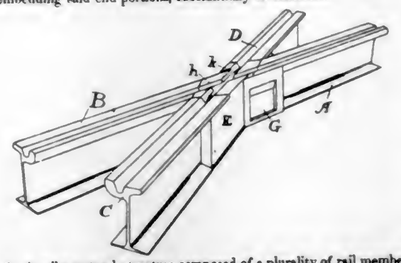
3. The combination with a cast-steel track structure having rail members, of rolled-rail joint-pieces secured to said rail members by means of splice-bars cast to both the rail members and the rolled-rail pieces, and integrally united by pin portions extending through openings in the said pieces.

4. A cast-steel track structure having its rail member or members each provided with a short joint extension consisting of a piece of rolled rail corresponding in section to the track-rails to which the structure is to be connected, and united to the rail member of the casting by the same metal which forms said casting.

658,356. RAILWAY-TRACK STRUCTURE. THOMAS C. DU PONT, Johnstown, Pa., assignor to the Lorain Steel Company, of Pennsylvania. Filed Dec. 1, 1899. Serial No 738,879. (No model.)

Claim.—1. A railway-track structure, comprising a plurality of rail members or sections relatively placed to form the wing portions of the structure, the head portions thereof at their adjacent ends being entirely

removed, and a central connecting portion of hard cast-steel cast about and embedding said end portions, substantially as described.



2. A railway-track structure composed of a plurality of rail members whose web and base portions at their adjacent ends are extended beyond their head portions, and a central connecting portion of hard cast-steel cast about and through the extended webs and fitting the space between the adjacent rail-heads to the level thereof, and forming the track intersection, substantially as described.

3. A railway-track structure, composed of a plurality of rail members having their heads cut obliquely at their adjacent end portions, and their web and foot portions extended beyond their heads, and a cast-steel central portion cast in place around and through the said end portions, to the full height of said members, substantially as described.

4. A railway-track structure, composed of short rail-sections forming the wing portions of the structure, and a central connecting portion of hard steel cast about the end portions of said sections, with its upper surface level with the top surfaces of the heads of said sections, and meeting the same obliquely, substantially as described.

5. The herein-described frog or track-crossing consisting of four rail-sections placed to form the four wing portions of the structure, and having their heads formed with oblique ends and their base and webs extended beyond the said heads, and a central homogeneous connecting portion of hard steel cast to said sections and forming the track intersection, substantially as described.

6. The herein-described frog or track-crossing, consisting of four rail-sections forming the four wing portions of the structure, the two sections at each end having their web and base portions extended beyond their heads to substantially meet the corresponding portions of the two opposite sections, and a central portion of cast-steel cast to said sections and uniting the same, the lateral faces of said central portions being substantially flush with the outer lateral lines of the heads of said sections, substantially as described.

7. The herein-described frog or track-crossing, consisting of four rail-sections forming the four wing portions of the structure, the two sections at each end having their web and base portions extended to substantially meet the corresponding portions of the two opposite sections, and a central portion of hard steel cast to said sections, and forming the intersection portion of the structure, substantially as described.

8. In a track structure, a central member of hard steel cast to the wing members and forming the intersection portion of the structure, said central member joining the heads of the wing members obliquely, substantially as described.

9. In a track structure, a central member of hard steel cast to the wing members and forming the intersection portion of the structure, said central member joining the heads of the wing members obliquely, and having top projections at one end which guard the joints between said central and wing members, substantially as described.

10. In a track structure, a central member of hard steel cast to the wing members and forming the intersection portion of the structure, said central member having its side faces within the lines of the outer edges of the wing members, and cored out to form seats for spike-heads, substantially as described.

11. In a railway-track frog or crossing, the rail-sections A, B, C and D having their heads cut obliquely and their web and base portions extended beyond their heads, and also cut obliquely at their ends, and a central connecting portion of hard steel cast to said rail-sections, and forming the intersection portion of the structure, substantially as described.

12. In a railway-track frog or crossing, the rail-sections A, B, C and D having their heads formed with oblique ends and their web and base portions extended beyond their heads and also cut obliquely, the base portions of each pair of rails being also partly cut away and abutted at their inner sides, and a central connecting portion of hard steel cast to said sections and forming the intersection portion of the structure, substantially as described.

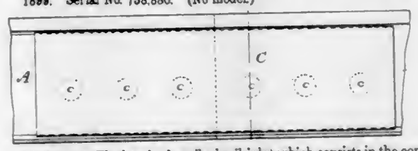
13. The herein-described railway frog or crossing, consisting of the two rail-sections A and B having their heads formed with oblique ends, their web and base portions extended beyond said ends, and their base portions partly cut away on the inner side and abutted, the two opposite rails B and C also having similarly-formed end portions, the projecting webs and bases of which substantially meet those of the rails A and B, and a central portion of hard steel cast to said rail-sections and forming the intersection portion of the structure, substantially as described.

14. The combination, in a railway-track structure, of a plurality of converging rails having their base portions extending beyond their head portions, and a body of cast-steel filling the central cavity between the heads of said rails and integrally connected to the said bases within said cavity, the top of said body of steel forming the intersection of the tracks, substantially as described.

15. In a railway frog or crossing, the combination of the converging members having their web and base portions at their inner ends extended beyond their head portions, said extended base portions being cut away and fitted to bring the web portions near each other, and a body of cast-steel uniting said members and forming the intersection of the tracks, substantially as described.

16. In a railway frog or crossing, a plurality of rail members having their head portions at their adjacent ends removed on converging lines which meet at the inner corners of the rails, and their web and base portions extended beyond said heads and converging toward the center of the structure, together with a cast-steel body uniting said members and forming the intersection portion of the structure, substantially as described.

658,357. RAIL-JOINT. THOMAS C. DU PONT, Johnstown, Pa., assignor to the Lorain Steel Company, of Pennsylvania. Filed Dec. 1, 1899. Serial No. 738,880. (No model.)



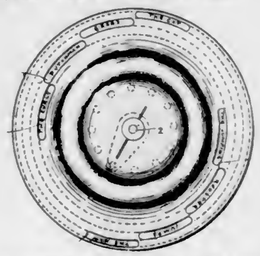
Claim.—1. The herein-described rail-joint which consists in the combination with the two rail members, of a pair of cast-steel splice-bars cast to the rail members between their head and base-flanges, and connected to each other and to the said joint by means of integral portions extending through openings in the said members, substantially as described.

2. The herein-described rail-joint which consists in the combination with the two rail members having openings through their web portions, of cast-steel splice-bars cast in place between the head and base-flanges of the said members, and united to each other solely by integral portions thereof extending through the said openings.

3. The combination with a pair of rails having openings through their web portions, of a pair of cast-steel splice-bars cast in place between the heads and base-flanges of the rails and united to each other solely by integral portions extending through the said openings, and to the rails by the said integral portions and by the adhesion of the splice-bars themselves, substantially as described.

4. The combination with a rolled rail and a cast-steel rail, of a joint therefor consisting of a pair of cast-steel splice-bars cast to said rails between their heads and base-flanges, substantially as described.

658,358. EDUCATIONAL TOP. WILSON R. ELLIS, Livermore, Cal. Filed Dec. 18, 1899. Serial No. 740,798. (No model.)



Claim.—1. In a device of the character described, the combination of a series of superposed coaxial disks having a series of symbols arranged in progressively-increasing circles, a cover for all the disks having a series of apertures lying respectively over the series of symbols on each disk and each disclosing one symbol therethrough, means for rotating the disks relatively to each other and to the cover, and means for arresting the disks in such a position that one symbol in each disk appears through an aperture in the cover, substantially as described.

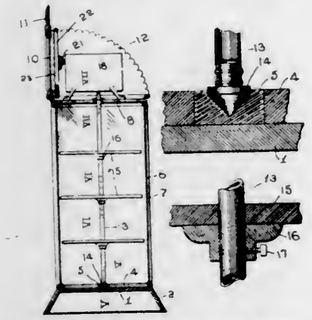
2. In a device of the character described, the combination of a series of superposed coaxial disks, having registering circular series of apertures, and having series of symbols arranged in progressively-increasing circles, a cover for all the disks having a series of apertures, lying respectively over the series of symbols on each disk and each disclosing one symbol therethrough, means for rotating the disks relatively to each other, and a bolt arranged to be released from said apertures before rotating the disks, and successively entering apertures in the respective disks as the latter rotate to lock the same, substantially as described.

3. In a device of the character described, the combination of superposed coaxial disks, having registering circular series of apertures and having series of symbols arranged in progressively-increasing circles, a cover for all the disks having a series of apertures lying respectively over the series of symbols on each disk and each disclosing one symbol therethrough, means for rotating the disks relatively to each other, and a gravity-bolt moving at right angle to the disks and successively entering the apertures therein to lock the same, substantially as described.

4. In a device of the character described, the combination of the top-body having a partition therein and having a series of slots in its upper side, a series of progressively-increasing disks on said partition loosely surrounding the spindle of the top, and having each a series of symbols on their margins and a circular series of apertures, a sleeve sliding on said spindle and a bolt carried by said sleeve and adapted to enter said apertures, substantially as described.

5. In a device of the character described, the combination of superposed coaxial disks, having series of symbols arranged in progressively-increasing circles, a cover for all the disks having a plurality of series of apertures, the apertures of each series lying respectively over the series of symbols on each disk and each disclosing one symbol therethrough, means for rotating the disks respectively to each other and to the cover, and means for arresting the disks in such a position that one symbol on each disk appears through each aperture in the cover, substantially as described.

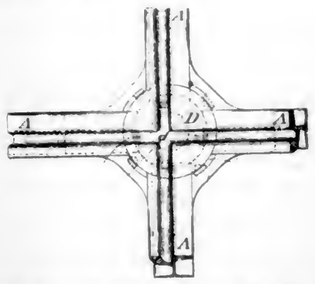
658,359. DUPLEX SIGN AND SHOW-CASE. ISAAC EMMER, St. Louis, Mo. Filed Dec. 22, 1899. Serial No. 741,342. (No model.)



Claim.—In a device of the class described, the base consisting of the bottom 1 and the four flaring side boards 2, the bottom board 4 upon the bottom 1, the glass socket 5 in an opening at the center of the bottom 4 and resting upon the bottom 1, the four glass walls 6 extending upwardly from the bottom 4 and joined together by corner-pieces, the top board 8 supported by the corner-pieces, the sign-frame 9 extending upwardly from the edge of the top board 8, the glass sign 10 in said frame and consisting of transparent letters in an opaque body, the cone 14 operating in the socket 5, the shaft 13 secured to the cone, the collars 16 adjustably mounted upon the shaft, the shelves 15 resting upon said collars, the motor 18 resting upon the top piece 8, the shaft 19 extending downwardly from the motor into the upper end of the shaft 13, the bolt 20 connecting the two shafts, the shaft 21 extending forwardly from near the top of the motor, the disk 22 mounted upon the forward end of the shaft 21 and the wrinkled tin-foil 23 pasted to the front face of the disk 22, all arranged to give the sign a lively appearance at the same time that the shelves are rotated, substantially as specified.

658,360. RAILWAY-TRACK STRUCTURE. EDWARD B. ENTWISLE, Johnstown, Pa., assignor to the Lorain Steel Company, of Pennsylvania. Filed Mar. 19, 1900. Serial No. 9,197. (No model.)

Claim.—1. In a railway-track structure, the combination with a body portion having a circular pocket formed therein, the lateral walls of said pocket having offset open recesses and adjacent undercut portions, of a circular wear or intersection plate adapted to fit said pocket and having circularly-spaced peripheral projections designed to enter said recesses and engage said undercut portions.



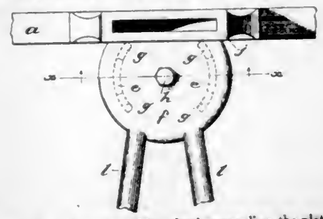
2. In a railway-track structure, the combination with a body portion having a circular pocket formed therein, the lateral walls of said pocket having offset open recesses and adjacent undercut portions, of a circular wear or intersection plate adapted to fit said pocket and having circularly-spaced peripheral projections designed to enter said recesses and engage said undercut portions, and means for preventing circular movement of the said plate.

3. In a track structure, a body portion having a circular pocket formed therein, the lateral wall of said pocket being formed with offset undercut portions communicating with open recesses, of a circular plate seated in said pocket and having circularly-spaced peripheral projections engaging said undercut portions, and soft retaining material around said plate and filling said recesses.

4. In a track structure, a body portion having a circular pocket formed therein, the lateral walls of said pocket being formed with offset undercut portions, and with open recesses leading thereto, of a wear or intersection plate fitted in said pocket and having peripheral segmental lugs or projections which engage said undercut portions, and wedges which normally prevent circular movement of the said plate.

5. In a track structure, the combination with a body portion having a circular pocket therein, of a circular wear-plate seated in said pocket and having portions thereof engaging lateral offsets of the pocket, said body portion also having openings to pass the said portions into and out of engagement with said offsets.

658,361. FIFTH-WHEEL. WALTER S. FRAZIER, Jr., Aurora, Ill., assignor to the W. S. Frazier & Company, same place. Filed May 9 1900. Serial No. 16,009. (No model.)

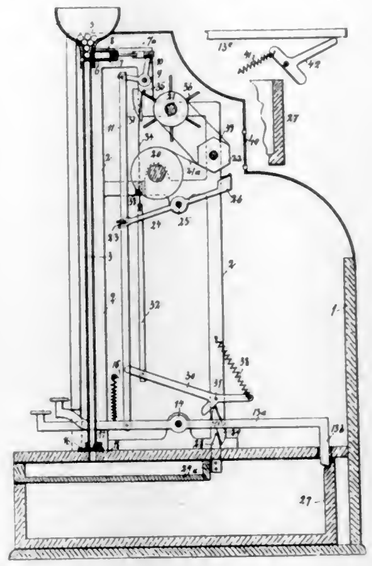


Claim.—1. In a carriage fifth-wheel or coupling, the plate *b* secured to the rear side of the front axle of a carriage, and provided centrally with the hub *c* on its lower face and boss *d* on its upper face, and also in its upper face a lug *e*, in combination with the plate *f* having a central recess adapted to receive the boss *d* and a curved groove *g* adapted to receive the lug *e*, and a king-bolt passing through the two plates and the hub *c* and boss *d*, substantially as and for the purpose specified.

2. In a carriage fifth-wheel or coupling, the combination of a plate secured to the rear side of the front axle, a pair of curved lugs on the upper face thereof, a plate mounted upon said first-named plate and provided on its lower face with a pair of curved grooves adapted to receive said lugs, reach-irons projecting rearwardly from said last-named plate, and means for pivotally connecting said plates together, substantially as described.

658,362. CASH-REGISTER. ANTON FREDERIKSEN, Copenhagen, Denmark. Filed Aug. 12, 1899. Serial No. 727,081. (No model.)

Claim.—1. In a cash-register, a plurality of glass tubes communicating with a receiver common to said tubes and adapted to contain balls, perforated gates between said tubes and receiver, a plurality of key-levers corresponding with said tubes, means for operating said gates from said key-levers, and means whereby the lower ends of said tubes may be simultaneously opened or closed, substantially as set forth.



2. In a cash-register, a plurality of glass tubes communicating with a receiver common to said tubes and adapted to contain balls, each of said tubes having a scale of figures indicated thereon, perforated slides or gates between said receiver and tubes, a plurality of key-levers corresponding with said tubes, means for operating said gates from said levers, and a perforated slide for opening and closing the lower end of said tubes simultaneously, substantially as set forth.

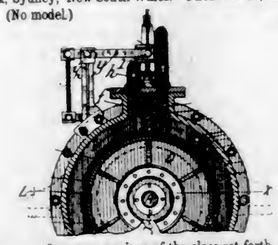
3. In a cash-register, a plurality of glass tubes communicating with a receiver common to said tubes and adapted to contain balls, perforated slides or gates between said receiver and said tubes, a plurality of key-levers corresponding with said tubes, rods pivoted to said key-levers, bell-cranks pivoted to said rods and connected with said slides or gates, levers bearing printing-types and connected with said rods, whereby the depression of said rods will operate said type-bearing levers, substantially in the manner set forth.

4. In a cash-register, a roller containing a band of paper, a platen-roller having a series of flat faces, a third roller adapted to have the band of paper wound thereon, a ratchet-wheel secured to said third roller in a yielding manner, means for operating said platen-roller, means for rotating said ratchet-wheel, consisting of a flat spring having a bar engaging the teeth of said ratchet-wheel, a rod secured to said spring, a lever for depressing said rod, a cash-drawer having a stop secured thereto, a lever bearing against said stop and against the rod-depressing lever and a spring secured to the last-named lever whereby, when the drawer is drawn out said spring will be permitted to depress said lever, substantially in the manner and for the purpose set forth.

5. In a cash-register, a roller containing a band of paper, a platen-roller having a series of flat faces, a third roller adapted to have the band of paper wound thereon, a ratchet-wheel yieldingly secured to said roller, means for rotating said ratchet-wheel consisting of a flat spring having a bar engaging the teeth of said wheel, a lug against which said bar bears, a rod secured to said spring, a lever for depressing said rod, means for operating said lever by the drawing out and pushing in of the cash-drawer, a plurality of key-levers, rods operated by said levers, and type-carrying levers connected with said rods, substantially as set forth.

6. In a cash-register, a suitable case, a frame mounted in said case, a plurality of glass tubes arranged in the rear of the case, a receiver communicating with said tubes, perforated slides between said receiver and tubes, a slide for opening and closing the lower ends of said tubes simultaneously metal balls adapted to drop into said tubes, a scale on said tubes, a plurality of key-levers means for operating said slides from said levers, glass tubes at each end of said series of tubes and connected with said receiver, slides for the last-named tubes, a cash-drawer, and means for operating said last-named slides by the drawing out and pushing in of said drawer, substantially as set forth.

658,363. ROTARY ENGINE. HENRY A. HANCOX and ROBERT J. HANCOX, Sydney, New South Wales. Filed Jan. 16, 1900. Serial No. 1,708. (No model.)

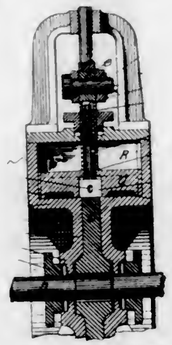


Claim.—1. In rotary engines of the class set forth, the combination, with a rotary disk carrying one or more piston-blocks, of, side-covers jointing-rings L, bolts passing through the said rings and adapted to hold them against rotation, while allowing their lateral motion, and springs surrounding the said bolts for pressing the said rings against the piston-disk, substantially as set forth.

2. In rotary engines of the class set forth, the combination, with an annular chamber of the kind described, of, a radial slide with steam-cavities formed therein, and, a central slide-block made adjustable and operated in the manner described, as described and shown, and for the purposes set forth.

3. In rotary engines of the class set forth, the combination, with an annular chamber constructed in the manner described, of, a radial slide provided with an independently-movable slide-block, means for reciprocating the said slide at suitable intervals and side springs operating against the said block transversely to the line of movement of the said slide, substantially as set forth.

658,364. ROTARY PUMP. HENRY A. HANCOX and ROBERT J. HANCOX, Sydney, New South Wales. Filed Jan. 16, 1900. Serial No. 1,709. (No model.)



Claim.—1. In rotary pumps having an annular chamber and inlet and outlet passages, a radial slide reciprocating in said chamber between the said passages and provided with cavities and a central tubular stem, in combination with cams and levers for operating the said slide, a slide-block, a spindle attached to the said block and a spring encircling the said spindle, the said spring and spindle being within the said stem, substantially as set forth.

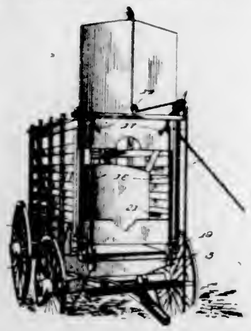
2. In rotary pumps having an annular chamber and inlet and outlet passages, a radial slide reciprocating in said chamber between said passages and provided with cavities and a central stem, in combination with cams and levers for operating the said slide, a slide-block, a spindle attached to the said block, a spring encircling the said spindle and acting on the said slide-block, and a cap retaining the said spring in position, substantially as set forth.

3. In rotary pumps having an annular chamber and inlet and outlet passages, a radial slide reciprocating in the said chamber between the said passages and having a central tubular stem, in combination with a slide-block, a spindle attached to the said block and a spring encircling the said spindle, the said spindle and spring being within the said stem, substantially as set forth.

658,365. HOG OR CATTLE HOLDING RACK. JAMES W. HARDY, Bevington, Iowa. Filed Sept. 18, 1899. Serial No. 730,906. (No model.)

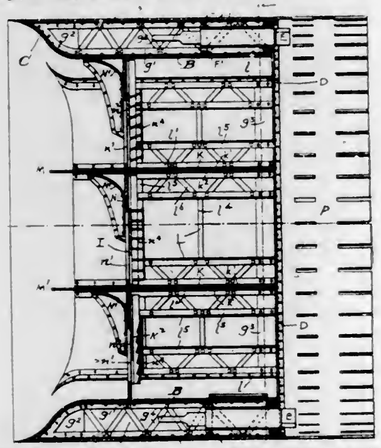
Claim.—1. A rack of the kind described, comprising the bottom, the side standards and supplemental standards, the upper and lower gate-sec-

tions, the rope for closing the upper section, weighted cords connected to the upper section for normally holding it in a raised position, a partition, rack-bars extending forwardly from the ends of the same, and a pin on each side of the rack to engage the rack-bars, substantially as described.



2. In a rack of the character described the combination with a partition and rack-bars extending forwardly from the ends of the same, of a pin secured to each side of the rack which the rack-bars are adapted to engage, substantially as described.

658,366. TUNNELING-SHIELD. CORNELIUS G. HASTINGS, Chicago, Ill. Filed Nov. 8, 1899. Serial No. 736,266. (No model.)



Claim.—1. A tunneling-shield comprising a cutting-face at the forward end a hood at the rear end two concentric cylindrical shells extending from and connecting said outer face and hood and longitudinal trusses connecting the said cylindrical shells providing open partitions and a plurality of compartments for hydraulic rams to be held therein substantially as described.

2. A tunneling-shield comprising a cylindrical shell vertical and horizontal cutting and division plates at the forward end rearwardly-extending floor-plates and trussed partitions comprising longitudinal parallel bars and connecting-plates and providing intermediate spaces between the said bars substantially as described.

3. A tunneling-shield comprising a cutting-face at the forward end a hood at the rear end two concentric cylindrical shells extending from the cutting-face to the hood a series of radial trusses interposed between and connecting said cylindrical shells perforated segment-plates connecting the rear ends of the inner and outer cylinders hydraulic rams supported between said radial trusses and projecting through the perforations of the segment-plates and separable yoke-sections for supporting the forward ends of the rams substantially as described.

4. A tunneling-shield comprising a cylindrical shell vertical and horizontal cutting and division plates at the forward end thereof floor-plates extending rearwardly from the horizontal cutting and division plates and reinforcing-strips secured longitudinally to the said cutting and division plates and floor-plates substantially as described.

5. A tunneling-shield comprising a cylindrical shell vertical and horizontal cutting and division plates at the forward end thereof to provide cellular sections removable bulkheads adapted to each of said cellular sections and doors adapted to said removable bulkheads substantially as described.

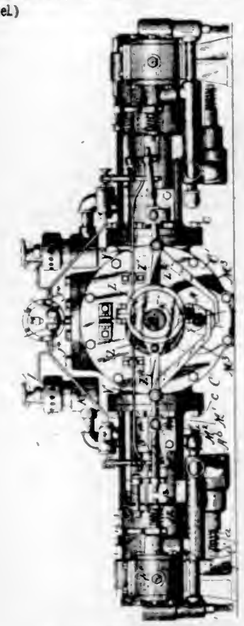
6. A tunneling-shield comprising a cylindrical shell vertical and horizontal cutting and division plates at the forward end thereof to provide cellular sections, bulkheads adapted to said sections and a door having slatted panels fitted upon said bulkhead, substantially as described.

7. A tunneling-shield comprising a cylindrical shell vertical and horizontal cutting and division plates at the forward end thereof to provide quadrangular sections, bulkheads adapted to said sections fitted with doors and fixed hooded triangular sections having fixed perforated bulkheads the said quadrangular and triangular chambers filling the cutting-face of the cylindrical shell substantially as described.

8. A tunneling-shield comprising a cutting-face at the forward end, a cylindrical shell, and a hood at the rear end thereof consisting of a plate having a series of slits by which said plate is divided in parallel strips being left united through a portion of their length, whereby said strips are hinged together and also maintained parallel and at a uniform distance apart, substantially as described.

9. A tunneling-shield comprising a cylindrical shell, vertical and horizontal cutting and division plates at the forward end thereof to provide cellular sections, an apertured bulkhead at the rear of said cutting and division plates and arched deflector-plates encircling the top and sides of the upper ends of said apertures and connecting both the vertical and horizontal division-plates with the bulkhead substantially as described.

658,367. EXPLOSIVE-ENGINE. ELWOOD HAYNES and ELMER APPERSON, Kokomo, Ind. Filed July 19, 1897. Serial No. 645,144. (No model.)



Claim.—1. The combination with an air-chamber and crank-shaft, of an air-admission valve comprising a rotating disk in contact with the wall of the chamber, said disk and wall being provided with coacting ports, driving connection between the shaft and disk adapted to afford movement of the disk toward and from its seat, and springs acting to hold the disk in contact with its seat, said driving connections consisting of pins in the disk, a part attached to the shaft with which said pins have sliding engagement and springs mounted on said pins and acting expansively on the disk.

2. An explosive-engine comprising a crank-shaft, a power-cylinder, a valve controlling the exhaust from the cylinder, and a valve-actuating device comprising an actuating-rod which is driven from the crank-shaft and has both an endwise-reciprocating and oscillatory movement, one end of said rod being laterally movable into and out of position to strike and move a part connected with the valve, and being adapted for contact therewith at each alternate rotation of the crank-shaft.

3. An explosive-engine comprising a crank-shaft, a power-cylinder, a valve controlling the exhaust from the cylinder, and means for actuating the said valve comprising an actuating-rod, an eccentric giving endwise movement to said rod and a cam giving oscillatory movement to said rod, one end of the said actuating-rod being movable laterally into and out of position to strike and move a part connected with the valve and being adapted for contact with said part at alternate rotations of the crank-shaft.

4. An explosive-engine comprising a crank-shaft, a power-cylinder, a valve controlling the exhaust from the cylinder, said valve being moved in one direction by a spring, and means for actuating said valve comprising an actuating-rod which is driven from the crank-shaft and has both an endwise-reciprocating and oscillatory movement, and a part connected with the valve which is adapted to be acted upon by said rod, one end of said rod being movable laterally into and out of position to strike said part connected with the valve and being adapted to engage and move the latter against the action of said spring at each alternate rotation of the crank-shaft.

5. An explosive-engine comprising a crank-shaft, a power-cylinder, a valve controlling the exhaust from the cylinder, and means for actuating the said valve comprising an actuating-rod movable laterally at one end into and out of position for operating the valve, means giving endwise movement to said rod, and a revolving cam giving oscillatory movement to said rod, said cam being driven from the crank-shaft by gearing which turns the cam once for each two rotations of the crank-shaft.

6. An explosive-engine comprising a crank-shaft, a power-cylinder, a valve which controls the exhaust from the cylinder and is moved in one direction by a spring, and means for actuating said valve comprising an actuating-rod, means for giving endwise movement to the rod, and a revolving cam giving oscillatory movement to the rod, said cam being driven from the shaft by gearing which turns the cam once to each two rotations of the shaft, one end of said rod being movable laterally into and out of position to strike a part connected with the valve and being adapted to engage and move the same against the action of said spring.

7. An explosive-engine comprising a crank-shaft, a power-cylinder, a valve controlling the exhaust from the cylinder, an ignition device and means for operating the said valve and ignition device comprising an actuating-rod which is driven from the crank-shaft and has both an endwise-reciprocatory and an oscillatory movement, said rod acting upon the said valve and ignition device alternately at successive rotations of the crank-shaft.

8. An explosive-engine comprising a crank-shaft, a power-cylinder, a valve controlling the exhaust from the cylinder, an ignition device, and means for actuating said valve and ignition device comprising an actuating-rod, means giving endwise movement to the rod, a rotating cam giving oscillatory movement to the said rod, gear connections between the crank-shaft and cam by which the cam is turned once for each two rotations of the shaft, and said actuating-rod being constructed to act upon and actuate the valve and ignition device alternately at successive rotations of the shaft.

9. An explosive-engine comprising a crank-shaft, a power-cylinder, a valve controlling the exhaust from the cylinder, said valve being moved in one direction by a spring, an ignition device embracing a reciprocating part which is also moved in one direction by a spring, and means for actuating said valve and ignition device comprising an actuating-rod which has both an endwise-reciprocatary and oscillatory movement, said rod acting upon the movable parts of the valve and ignition device, against the action of said springs, alternately at successive rotations of the crank-shaft.

10. An explosive-engine comprising a crank-shaft, a power-cylinder, a valve which controls the exhaust from the cylinder, an ignition device and means for actuating the said valve and the ignition device comprising an actuating-rod which has both endwise and oscillatory movement, an eccentric for giving endwise movement to said rod, a cam actuated from the crank-shaft for giving oscillatory movement to said rod, and an arm or projection attached to the operating-rod and acting on the ignition device at a time when the actuating-rod is out of position for engagement with the valve.

11. An explosive-engine comprising a crank-shaft provided with two oppositely-extending cranks, two power-cylinders located at opposite sides of the crank-shaft, the pistons of which are severally connected with said cranks, said cylinders being provided with valved exhaust-ports, and means for actuating the exhaust-port valves comprising actuating-rods adapted to act upon the movable parts of said valves and which have both an endwise-reciprocating and oscillatory movement, and the free ends of which are movable laterally into and out of position for engagement with the valve, eccentrics connected with said rods for giving endwise movement to the latter, and cams which operate upon said rods to give oscillatory movement to the same, said eccentrics being mounted on a shaft which is connected with the crank-shaft by gearing which turns the cams once for every two rotations of the crank-shaft.

12. The combination with a power-cylinder and crank-shaft of a valve-actuating device comprising an endwise-sliding actuating-rod, a pivoted bearing-block provided with a bearing-aperture for said rod and affording oscillatory movement to the same, and means for giving a combined endwise-reciprocating and oscillatory movement to said rod.

13. The combination with a power-cylinder and crank-shaft of a valve-actuating mechanism comprising an endwise-reciprocating and oscillatory actuating-rod, the free end of which is movable laterally into and out of position for actuating the valve, an eccentric mounted on the crank-shaft and pivotally connected with said rod for giving endwise movement to the latter, and a cam which is driven from the crank-shaft and acts upon the said rod to give oscillatory movement thereto.

14. An explosive-engine comprising a crank-shaft provided with two oppositely-extending cranks, two power-cylinders located at opposite sides of the crank-shaft, the pistons of which are severally connected with said cranks, said cylinders being provided with valved exhaust-ports and with gnition devices, valve-rods adapted to operate both exhaust-valves and the gnition device, said valve-rods having endwise-reciprocatory motion and oscillatory motion in a direction to bring them into engagement either with the exhaust-valves or igniting devices, eccentrics on the crank-shaft giving reciprocatory motion to the operating-rods and cams which act upon said rods to give oscillatory movement thereto, said cams being operated from the crank-shaft by gearing which revolves the cams once for each two rotations of the crank-shaft.

15. An explosive-engine comprising a crank-shaft, a power-cylinder, a valve which controls the exhaust from the cylinder, said valve having a stem which projects outside of the valve-casing and which is held closed by a spring, an actuating-rod having both endwise and oscillatory movement and the end of which is movable laterally into and out of position for contact with the valve-stem, an eccentric mounted on the crank-shaft for giving endwise movement to said actuating-rod and a cam operated from the crank-shaft and giving oscillatory movement to said rod, whereby its end which makes contact with the valve-stem is moved out of the path of the same at every alternate revolution of the crank-shaft.

16. An explosive-engine comprising a crank-shaft, a power-cylinder, a valve which controls the exhaust from the cylinder, said valve being provided with a stem that extends outside of the valve-casing, and a spring which holds the valve in its closed position and said cylinder being provided also with an ignition device operated by a stem which is moved in one direction by a spring, an actuating-rod having both an endwise-reciprocating and an oscillatory movement, said rod being adapted for contact with the valve-stem of the exhaust-valve and having a laterally-disposed part adapted to engage and actuate the stem of the ignition device, an eccentric on the crank-shaft giving endwise-reciprocatory movement to the actuating-rod and a revolving cam which acts on said rod to give oscillatory movement thereto.

17. The combination with a power-cylinder and an air-chamber which is in communication with the cylinder and is provided with a port through which air passes from the chamber to the cylinder, of means for supplying water to said port comprising a pump which is operated by pressure of air from the said chamber.

18. The combination with a power-cylinder and an air-chamber in which air is compressed in the outward stroke of the piston in the cylinder, said chamber being connected with the cylinder by a port which is uncovered by the piston at the outer limit of its stroke of a pump supplying water to said port, said pump being operated by air-pressure from the air-chamber.

19. The combination with a power-cylinder and an air-chamber in which the air is compressed in the outward movement of the piston within the cylinder, said air-chamber being connected with the cylinder by a port, of means for controlling the passage of air through said port, and means for supplying water to said port comprising a diaphragm-pump which is operated by pressure of air from said air-chamber, a water-passage provided with a valve, and means operated by the crank-shaft for intermittingly operating said valve.

20. The combination with a power-cylinder and an air-chamber in which air is compressed at each outward stroke of the piston, said air-chamber being connected with the cylinder by a port which is uncovered by the piston at the limit of its outward stroke, of a pump supplying water to said port, a valve controlling the passage of water to said port and means operated from the crank-shaft of the engine for controlling the said valve.

21. The combination with a power-cylinder and an air-chamber in which air is compressed at each outward stroke of the piston, said air-chamber being connected with the cylinder by a port which is uncovered by the piston at the limit of its outward stroke, of a pump supplying water to said port, a valve controlling the passage of water to said port, and means operated from the crank-shaft of the engine for controlling the said valve, comprising an endwise-reciprocating and oscillating actuating-rod, which acts upon the valve at alternate rotations of the crank-shaft, and a spring acting on said valve in opposition to said actuating-rod.

22. An explosive-engine comprising a crank-shaft, a power-cylinder, a valve which controls the exhaust from the cylinder, a passage supply-

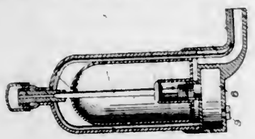
ing water to the cylinder, a valve controlling said passage which is normally held closed by a spring, and means for actuating said valves comprising an endwise-reciprocating and oscillatory actuating-rod adapted to act upon the exhaust-valve and provided with a tappet-shoulder for actuating the water-supply valve.

23. An explosive-engine comprising a crank-shaft, a power-cylinder, a valve which controls the exhaust from the cylinder, a passage supplying water to the cylinder, a valve controlling said passage which is normally held closed by a spring, and means for actuating said valves comprising an endwise-reciprocating and oscillatory actuating-rod adapted to act upon the exhaust-valve and provided with a tappet-shoulder for actuating the water-supply valve, and operative connections for actuating the water-supply valve from said tappet-shoulder of the actuating-rod.

24. An explosive-engine comprising a power-cylinder, a crank-shaft, an air-chamber in which air is compressed in the outward stroke of the piston, means for supplying the explosive mixture to the cylinder, a valve for the exhaust-port, means for actuating the valve of the exhaust-port, said cylinder being provided with a port leading from the air-chamber and which is uncovered by the piston at the outer limit of its stroke and having also an auxiliary exhaust-port also uncovered by the piston when near the outer limit of its stroke and provided with an outwardly-opening, spring-actuated, check-valve.

25. In an explosive-engine having a crank-shaft and a rotary valve upon said shaft, the combination therewith of means for driving said valve, as driving-pins, set in the crank of said shaft and said valve and means for holding said valve against its seat, said means consisting of springs surrounding said pins and bearing against said crank and valve.

658,368. AUTOMATIC AIR-VALVE FOR RADIATORS. FRANK A. HEADSON, Lafayette, Ind., assignor of one-half to Leo Pottlitzer, Herman Pottlitzer, Julius Pottlitzer, and Max Pottlitzer, same place. Filed May 13, 1899. Serial No. 716,734. (No model.)



Claim.—1. In an automatic air-valve mechanism, the combination with a hollow base, for containing an expansible liquid, a shell or cylinder mounted thereon and provided with an air-passage in its upper end having a valve-seat, of a float in the shell, a valve-stem carried by the float and projecting into the air-passage, an open-ended cylinder rising from the hollow base, a piston therein adapted to rest on the expansible liquid, and a piston-rod from the piston, bearing under the float, substantially as described.

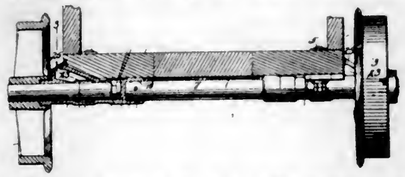
2. The combination with the shell or cylinder, having a constricted neck, a hollow screw-plug threaded therein and provided with a valve-seat; a float in the shell, having an upwardly-extending recess in its bottom, a valve-stem resting on the top of said recess and passing through the top of the float and into the valve-seat, a hollow base supporting the shell, an open cylinder extending upward from the base into the recess in the float, a piston in said cylinder, a piston-rod projecting up therefrom, and a spring on the upper end of the piston-rod in contact with the top of the recess of the float, substantially as described.

3. In an automatic air-valve mechanism, the combination of a base provided with a chamber for the reception of an expansible liquid and having a central cylindrical passage leading from said chamber, said base being provided with a passage therethrough adapted to communicate with a radiator, of a shell mounted on the base having an air-passage in its upper end, a float carrying a valve adapted to close the air-passage by a rise of the water in the shell, said float having a central vertical tubular chamber at the lower end thereof, in line with the cylindrical passage in the base, a piston slidable in the latter and a rod projecting from the piston into the chamber of the float, whereby the valve carried by the float will be caused to open and close the air-passage from the shell by the contraction and expansion of the liquid contained in the base, substantially as described.

658,369. PROCESS OF CHILLING BUTTER. WILHELM HELM, Berlin, Germany. Filed Apr. 14, 1900. Serial No. 12,917. (No specimens.)

Claim.—A new and useful process of producing butter, consisting in introducing frozen cream, milk, skimmed milk or buttermilk into the milk or cream to be churned in order to obtain suitable temperatures for the churning, as well as finer and more durable butter, and churning the resulting mixture.

658,370. CAR-AXLE. JOHN S. HICKEY and JAMES H. EGBERT, Anaconda, Mont. Filed June 25, 1900. Serial No. 21,561. (No model.)



Claim.—1. A device of the class described comprising a pair of separate and independent bearing-sleeves designed to be located at opposite sides of a car, a separate and independent piece connecting the sleeves, and a pair of short axle-sections spaced apart and secured within the sleeves and designed to have car-wheels fixed to them, substantially as described.

2. A device of the class described comprising a pair of separate and independent bearing-sleeves designed to be located at opposite sides of a car, a separate independent spacing-piece connecting the sleeves, the short axle-sections spaced apart and arranged within the bearing-sleeves and located beyond the central connection and designed to have car-wheels fixed to them, and locking devices for retaining the axle-sections in the bearing-sleeves, substantially as described.

3. In a device of the class described, the combination with a car, of bearing-sleeves arranged at opposite sides thereof, the short axle-sections arranged in the bearing-sleeves and designed to have car-wheels fixed to them, and the locking devices securing the axle-sections in the sleeves and arranged at the sides of the latter, whereby the axle-sections may be released and removed without unloading the car or separating the latter from the train or removing the sleeve from the car, substantially as described.

4. In a device of the class described, the combination of a car, of bearing-sleeves arranged at opposite sides of the car and provided with laterally-disposed enlargements forming interior chambers, the latter being open at the top and provided with side slots, axle-sections arranged within the sleeves, spaced apart and designed to have car-wheels secured to them, and the locking devices or keys arranged within the bearing-sleeves at the enlargements thereof, engaging the axle-sections and provided with shanks extending through the said slots, said locking devices being adapted to be operated from the sides of the sleeves without removing them therefrom, substantially as described.

5. In a device of the class described, the combination of bearing-sleeves designed to be located at opposite sides of a car, the short axle-sections spaced apart and arranged in the bearing-sleeves, locking devices arranged at the sides of the sleeves and having shanks extending through the same, said locking devices engaging the axle-sections, and keys retaining the locking devices in engagement with the axle-sections, substantially as described.

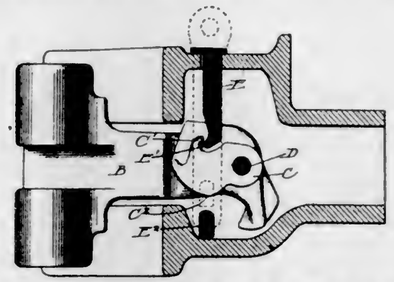
6. In a device of the class described, the combination of bearing-sleeves designed to be arranged at opposite sides of a car and provided with laterally-disposed enlargements having openings at the top and slots at the sides, the short axle-sections arranged in the bearing-sleeves, covers secured to the bearing-sleeves and arranged over the openings of the enlargements, and locking devices engaging the axle-sections and provided with shanks extending through the said slots and secured to the covers, substantially as described.

7. In a device of the class described, the combination of bearing-sleeves designed to be located at opposite sides of a car, the short axle-sections arranged within the bearing-sleeves and designed to have car-wheels fixed to them, abutting devices located within the sleeves and arranged to receive the inner ends of the axle-sections, whereby the outer ends of the sleeves and the inner ends of the hubs of the wheels are relieved of the friction resulting from the side thrusts of the bar, the independent spacing-piece connecting the bearing-sleeves and located between the abutting devices and means for securing the axle-sections in the sleeves, substantially as described.

658,371. CAR-COUPLING. EUGENE HIEN, Muncie, Ind., assignor, by mesne assignments, to David S. Wegg, Chicago, Ill. Filed May 20, 1897. Serial No. 637,313. (No model.)

Claim.—1. In a car-coupler the combination with a knuckle, its locking or dogging device, and mechanism for operating the locking device, of engaging mechanism between said locking device and operating mechanism, said engaging mechanism fixed with respect to the part to which it is attached and adapted to prevent the movement of the locking device to its unlocked position until after the operating mechanism is moved substantially as described.

2. In a car-coupler the combination with a knuckle, its locking or dogging device and mechanism for operating the locking device, of a projection on the locking device adapted to engage a projection on the operating mechanism when the locking device is in its locked position whereby said engagement will prevent a movement of the locking device until the operating mechanism is moved, substantially as described.



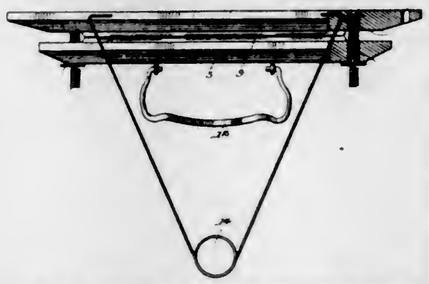
3. In a car-coupler the combination with the knuckle, its locking or dogging device, and mechanism for operating the locking device, of a hooked projection on said locking device adapted to engage a hooked projection on said operating mechanism whereby the locking device is held from movement until the operating mechanism is first moved, substantially as described.

4. In a car-coupler the combination with the knuckle, its locking device in the form of a rotary block, and its operating mechanism in the form of a vertically-movable pin, of a projection on the rotary block adapted when the block is in its locked position to engage a projection on the pin whereby the block is prevented from rotating until the pin has been moved to clear the two projections, substantially as described.

5. In a car-coupler the combination with the knuckle, its locking or dogging device and mechanism for operating the locking device, of engaging mechanism between said locking device and operating mechanism, said engaging mechanism fixed with respect to the part to which it is attached and adapted to prevent the movement of the locking device to its unlocked position until after the operating mechanism is moved, and means to prevent said locking device from moving to its locked position except when the knuckle is in its coupling position, substantially as described.

6. In a car-coupler the combination with the knuckle, its locking or dogging device and mechanism for operating the locking device, of a projection on the locking device adapted to engage a projection on the operating mechanism when the locking device is in its locked position whereby said engagement will prevent a movement of the locking device until the operating mechanism is moved and a projection on the tail of the knuckle adapted to prevent the locking device from moving to its locked position until the knuckle is in its coupling position, substantially as described.

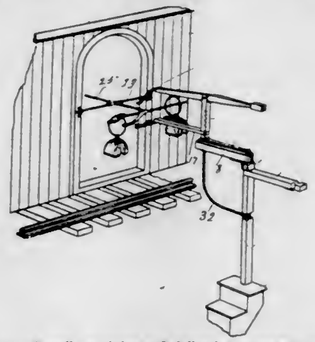
658,372. TROUSERS-HANGER. HENRY C. HOPKINS, Lithonia, Ga. Filed Jan. 4, 1900. Serial No. 371. (No model.)



Claim.—1. A device of the class described comprising a pair of clamping-bars, coiled springs connecting the clamping-bars, and removable fastening devices passing between the coils of the springs and regulating the tension thereof, substantially as described.

2. A device of the class described comprising front and rear clamping-bars, coiled springs secured at their inner ends to the rear clamping-bar and extending through the front clamping-bar, and fastening devices passing between the coils of the springs and engaging the front clamping-bar to regulate the tension of the springs and vary the capacity of the device, substantially as described.

658,373. MAIL SUPPLYING AND DELIVERING APPARATUS. BURT HULL, Auburn, Ind. Filed May 7, 1900. Serial No. 15,735. (No model.)

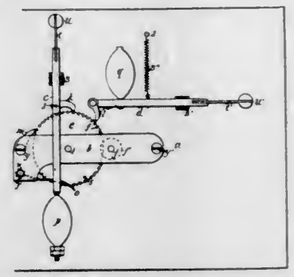


Claim.—1. A mail supplying and delivering apparatus, consisting of a crane having a fixed arm as shown; a swinging arm pivoted on said crane; a bag-receiving device pivotally mounted on the outer end of said swinging arm and consisting of an upright post, having on its lower end a fixed horizontal arm provided at its free end with a pouch-ring-engaging device, and a weighted arm pivoted on the top of said post and provided with a ring-engaging hook adapted to coöperate in supporting the mail-pouch; and an eccentrically-pivoted bifurcated plate mounted on the said swinging arm for the purpose specified.

2. In an apparatus of the class described an upright post having a fixed horizontal arm; a swinging arm pivoted on said post; a mail-pouch-receiving device pivotally mounted on the free end of said pivoted arm consisting of an upright post provided at its lower end with a fixed lateral arm and at its upper end with a pivoted weighted arm, the said arms being provided at their free end with a coöperating ring-supporting device, and an eccentrically-pivoted locking device arranged on said pivoted arm adapted to lock the said pouch-receiving device in its operative position and to automatically unlock the same when the said pivoted arm is folded into parallel arrangement with the said fixed arm.

3. In a mail-bag receiving and delivering apparatus the combination of a swinging arm pivotally mounted on a supporting-crane; a mail-pouch-supporting device pivotally mounted on the free end of said arm consisting of an upright post having a fixed horizontal arm and a pivoted weighted arm, the said arm being provided with coöperating mail-pouch-suspending devices; an eccentrically-mounted plate arranged on said swinging arm having a bifurcated head adapted to form a locked engagement with said post; and means for delivering the mail-pouch to the said suspending devices, and for taking it therefrom.

658,374. STREET-CAR ADVERTISING DEVICE. JOHN N. JOHNSON, Prescott, Ariz. Filed Oct. 24, 1898. Serial No. 694,394. (No model.)



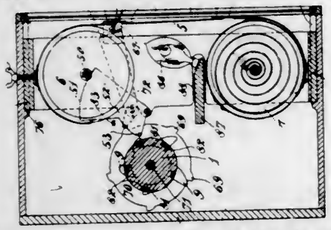
Claim.—1. In a device of the character described and in combination, a spring-winding mechanism, a jolt-vibrated lever mounted in vertical relation thereto, a second jolt-vibrated lever mounted in horizontal relation thereto, and means between the said levers and the winding mechanism whereby both the upward and longitudinal jolts or vibrations of the vehicle are utilized to wind up the spring, substantially as described.

2. In a device of the character described and in combination, the notched disk *h* fast to the shaft *i*, lever-arm *w* fast to rock-shaft *r* and adapted to coöperate with the notched disk, lever-arm *o* fast to said shaft *r*, the wheel *e* loose upon the shaft *i*, having a tripping-pin thereon, the lever-arm *o* being adapted to coöperate with the said pin, and a spring *v* sur-

rounding the shaft *r* and constructed and arranged to uphold the lever-arms substantially as described.

3. The combination with the device for utilizing the vibration of vehicles for the storage of power in the manner described, the pinion *f'* on shaft *j* engaging with the wheel *f*, shaft *j* attached to the axle of a miniature bicycle, said bicycle being attached to the frame of the device, and a belt and pulleys for imparting movement to the rear bicycle-wheel, substantially as herein shown and described.

658,375. ADVERTISING APPARATUS. JOHN A. KENNEDY-MCGREGOR, London, England. Filed Feb. 25, 1899. Serial No. 706,870. (No model.)



Claim.—1. In apparatus of the character described, the combination with a plurality of longitudinally-movable strips or carriers arranged parallel to and independent of one another and each provided with a succession of characters to form part of the words or other devices to be exhibited, and means for intermittently moving said strips or carriers longitudinally to variable extents in opposite directions, of an alinement device common to all the strips or carriers and adapted to come into operation after each operation thereof and insure that the several characters brought into position for exhibition shall finally occupy the desired relative positions to one another.

2. In apparatus of the character described, the combination with a plurality of longitudinally-movable strips or carriers arranged parallel to one another and each provided with a succession of characters to form part of the words or other devices to be exhibited, and means for intermittently moving said strips or carriers longitudinally to variable extents, of an alinement-bar arranged transversely to said strips and provided with fingers or projections adapted to enter holes therein, and means for operating said alinement-bar and fingers at the required times, substantially as described.

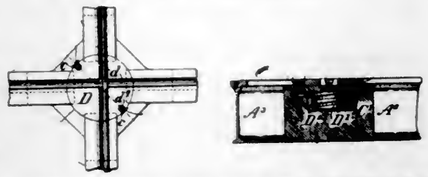
3. In an apparatus of the character described, the combination with a plurality of longitudinally-movable strips or carriers arranged parallel to one another and each provided with a succession of characters to form part of the words or other devices to be exhibited and with holes between the characters, and means for intermittently moving said strips or carriers longitudinally to variable extents, of alinement mechanism comprising one or more bars arranged transversely across said strips and provided with fingers each adapted by partial rotation of the bar carrying it to enter a hole in the corresponding strip, a toothed segment for operating said bar or bars, and means for intermittently operating said segment, substantially as described.

4. In apparatus of the character described, the combination of a plurality of independent longitudinally-movable flexible strips or carriers provided with a succession of characters to form part of the words or other devices to be exhibited, separate pairs of upper and lower drums to which the ends of said strips or carriers are attached, actuating mechanism for separately moving each pair of drums and the corresponding strip in one direction, controlling mechanism for simultaneously operating the sets of actuating mechanism and strips or carriers to variable extents in one direction, a case containing said parts and having an opening at the front side to permit of the several characters forming the desired word or device to be seen, and a plurality of removable holders each carrying a pair of said drums and the corresponding strip or carrier and actuating mechanism therefor, said holders being each adapted to be easily put in and removed from said case, substantially as described.

5. In apparatus of the character described, the combination of a plurality of longitudinally-movable flexible strips or carriers having a series of characters for separate exhibition, pairs of upper and lower drums to which the ends of said strips or carriers are attached, actuating mechanism for moving said drums and strips, controlling mechanism for operating said actuating mechanism and strips or carriers to variable extents in one direction, said controlling mechanism comprising cam-like projections of different lengths arranged in annular sets and each provided with a root, a rotary circular support for each annular set of cam-like projections, said support having notches or recesses into which the roots of the corresponding cam-like projections extend, and holding-down bars secured in longitudinal grooves in said support and passing through holes in the roots of the corresponding cam-like projections, substantially as described.

6. Apparatus of the character described, comprising a case having a longitudinal opening at its front side, a plurality of removable holders arranged side by side in said case, a pair of upper and lower drums mounted in each of said holders and one of which is a loaded drum, a plurality of independently longitudinally movable strips arranged side by side and each connected at its ends to one of said pairs of drums and provided with a succession of characters to form part of the words or devices to be exhibited actuating mechanism mounted on each holder for operating the corresponding set of drums and strip or carrier, a rotary body arranged transversely behind said holders and provided with a plurality of annular series of cam-like projections of variable length adapted to successively operate said actuating mechanism, to variable extents, an alinement-bar extending transversely to and behind said strips and provided with fingers each adapted to enter a hole brought opposite to it in the corresponding strip, and means for intermittently operating said alinement-bar and fingers, substantially as described.

658,376. RAILWAY-TRACK STRUCTURE. CARL F. KRESS, Jr., Johnstown, Pa., assignor to the Lorain Steel Company, of Pennsylvania. Filed Mar. 19, 1900. Serial No. 9,225. (No model.)



Claim.—1. In a railway-track structure, the combination with the rail members and the central connecting-body having a circular pocket therein, of a hardened intersection or center plate of circular form seated in said pocket, and means for securing said plate whereby it can only be removed by circular movement thereof.

2. A railway-track structure having secured in its central or intersection portion a hardened-metal plate of circular form, and means whereby said plate can be rotated to release it from its fastenings.

3. The combination with a railway-track structure having a circular pocket therein, of a hardened plate rotatably seated in said pocket, and means for normally securing said plate against rotary movement.

4. A railway-track structure having a wear or intersection plate of hard metal rotatably seated therein, and means for securing said plate and for releasing the same by rotary movement thereof.

5. A railway-track structure consisting of a plurality of rail members, a cast-metal body uniting said members and having a circular pocket formed therein between the adjacent ends of said rail members, the latter having their said ends shaped to form portions of the wall of said pocket, and a hardened wear-plate seated and secured in said pocket together with means for securing said plate, whereby it can be released and removed only by circular movement thereof.

6. In a railway-track structure, the combination with the rail members and the connecting-body therefor having the circular pocket between the ends of said members, of a circular plate fitted in said pocket and formed with one or more helical grooves or threads and retaining material around the threaded or grooved portions of said plates and engaging the same.

7. A railway-track structure having a circular pocket formed therein, a circular wear or intersection plate rotatably fitting the said pocket, and having a helical groove or thread and means whereby retaining material may be introduced into said pocket to engage said groove or thread.

8. A railway-track structure having a circular pocket formed therein, a circular wear-plate rotatably fitting the said pocket, means engaging said plate within said pocket to secure the same, and means whereby power may be applied to said plate to release it from the securing means.

9. A railway-track structure having a circular pocket formed therein, a circular wear-plate rotatably fitting the said pocket, and having a helical groove or thread thereon, and soft retaining material in said pocket engaging said groove or thread, said plate having means whereby power may be applied thereto to rotate it from engagement with the said material.

10. A railway-track structure having a circular pocket formed therein and deepened at its center portion, a hardened wear-plate rotatably fitted in said pocket and having a depending boss or projection extending into the deepened portion of the pocket and having a peripheral thread, and retaining material surrounding said boss or projection and engaging the said thread.

658,377. BRIDLE-BIT. JOSEPH L. LEE, Evant, Tex. Filed Mar. 6, 1900. Serial No. 7,532. (No model.)

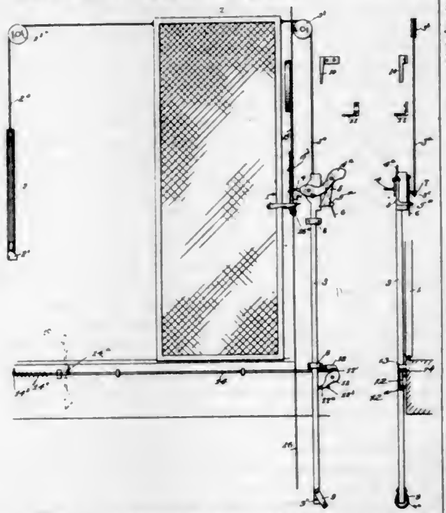


Claim.—1. A bridle-bit comprising an inside bit-bar, a curb-bar, means connecting the two bars and permitting the independent movement of each bar, and curb-levers operatively engaging said bars so that when moved a downward pressure is brought on the inside bit-bar and an upward pressure on the curb-bar, substantially as described.

2. A bridle-bit comprising two side rings, an inside bit-bar connected to said side rings, a curb-bar connected to said side rings, and curb-levers connected to said side rings and engaging said curb-bar and said inside bit-bar and adapted to operate in substantially the manner described and for the purposes set forth.

3. A bridle-bit, comprising two side rings, an inside bit-bar, movably connected to said side rings, a curb-bar movably connected to said side rings, and curb-levers movably connected to said side rings between said inside bar and curb-bar and extending from above one bar below and engaging the other bar, substantially as described.

658,378. ELEVATOR. WILLIAM F. LEONARD, Columbus, Ohio. Filed Jan. 3, 1900. Serial No. 213. (No model.)



Claim.—1. In combination, an elevator-shaft, a car to move therein, a door to said shaft, a weight to open the same and a preponderating weight to close the same, a latch to hold the door when closed, and means on the car to lift the door-closing weight into inoperative position until the door is opened and hold it there until released by the operative.

2. In combination, an elevator-shaft, and a car to move therein, a door to said shaft, a weight to open the same, and a preponderating weight to close the same, a latch to hold the door when closed, means on the car to lift said door-closing weight into inoperative position when the car approaches a landing, and means to similarly lift said weight when the car ascends from said landing after a stop and an opening and closing of the door.

3. In combination, an elevator-shaft, a car to move therein, a door to said shaft, a weight to open the same, and a preponderating weight to close the same, a latch to hold the door when closed, means on the car to lift said door-closing weight into inoperative position, means to hold it in this position, and devices on the car operated by the motor-controller for releasing said weight.

4. In combination, an elevator-shaft, a car to move therein, a door to said shaft, a weight to open the same, and a preponderating weight to close the same, a latch to hold the door when closed, means on the car to lift said door-closing weight into inoperative position, a support to hold it in this position, means in the shaft to release the support, and means on the car operated by the motor-controller to operate the support-releaser.

5. In combination, an elevator-shaft, a car to move therein, a door to said shaft, a weight to open the same and a preponderating weight to close the same, a latch to hold the door closed, means on the car to lift the door-closing weight into inoperative position, and means to automatically release the door-closing latch when the car stops at a landing.

6. In combination, an elevator-shaft, a car therein, a door at a landing from said shaft, a weight to open the same, and a preponderating weight to close the same, a latch to hold the door closed, means on the car to lift the door-closing weight into inoperative position, means for supporting the same in such position, means for automatically releasing the door-latch when the car stops at the landing whereupon the door is opened, and means operative by the motor-controller to release the support for the door-closing weight whereupon the door is closed.

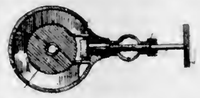
7. In an elevator-shaft-door-operating mechanism, a door-closing weight 3, a pivoted lug 4, a dog 5 to hold said lug in operative position, a cam 10 in the shaft to release said dog when the weight is lifted.

8. In an elevator-shaft-door-operating mechanism, a door-closing weight 3, a pivoted lug 4 with an arm 4^a thereon, a dog 5 to hold said lug in operative position, a cam 10 in the shaft to release said dog when the weight is lifted, and a finger 11 in the shaft to strike the arm 4^a and reset said lug into operative position when the weight descends.

9. In an elevator-shaft-door-operating mechanism, the combination of a door and weight therefor, a weight-releasing device 14, pin 14^a thereon, a car, a movable bar 19 on said car to engage said pin, means connecting the bar 19 with the motor-controller so that said bar shall be moved to operate the weight-releasing device when the motor-controller is moved to send the car either up or down the shaft.

10. In combination, an elevator-shaft, a car therein, a door to said shaft, a latch to hold the same when closed, a foot 15^a adapted to be projected toward said latch when the car is opposite the door, and means operated upon the cessation of motion of the car to operate said foot to release the latch.

658,379. FILTER. WILLIAM B. LINDSAY and WILLIAM E. TONNER, Steubenville, Ohio. Filed July 22, 1899. Serial No. 724,822. (No model.)



Claim.—In a filter of the kind described, the combination with the outer casing, the shell, the inner filtering-cylinder and the cleaner, of the plate attached to said cleaner and provided with a stud, and a plunger-rod loosely connected to the said stud and working in the inlet-pipe and leading into the outer shell or case, substantially as shown and described.

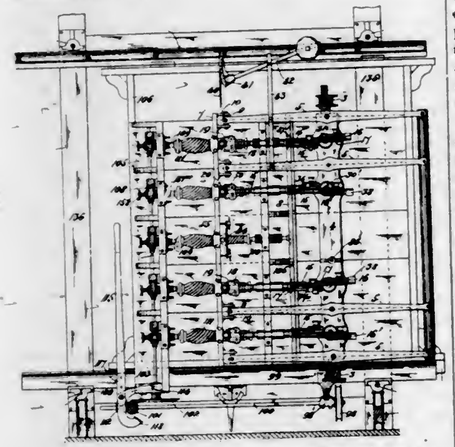
658,380. CARVING-MACHINE. EMIL LOCHMAN, St. Louis, Mo. Filed June 30, 1898. Serial No. 684,867. (No model.)

Claim.—1. In a carving-machine, a suitable frame swinging about an axis, a second frame swinging on said frame about a second axis, a series of tools at the free end of the second frame adapted to sweep in a plane parallel to said second axis, a drive-shaft located in the line of the axis of suspension of the first frame, and a single intermediate belt connection between said shaft and each tool, for imparting motion to the tools, the laps of each belt being disposed on opposite sides of the axis of suspension of the second frame, substantially as set forth.

2. In a carving-machine, a suitable frame swinging about an axis, a second frame swinging on said frame about a second axis, a series of tools at the free end of the second frame adapted to sweep in a plane parallel to said second axis, a drive-shaft located in the line of the axis of suspension of the first frame, and a single intermediate belt connection between said shaft and each tool, for imparting motion to the tools, substantially as set forth.

3. In a carving-machine, a suitable inner swinging frame, an outer frame comprising a post pivotally mounted at the free end of the inner frame, and a series of arms carried by said post and adapted to sweep in a vertical plane, a series of tools carried at the free end of the outer frame,

a series of brackets pivotally mounted on the post and corresponding in number to the number of tools, belt-pulleys mounted on the brackets and adapted in alternate series, to direct the belts passing over them to pass below and above the pulleys carried by the tool-spindles, whereby the tools will have imparted to them alternately a motion of rotation in opposite direction, a main drive-shaft located in the path of the axis of oscillation of the inner frame, and a series of pulleys mounted on said shaft, substantially as set forth.



4. In a carving-machine, a stock-frame, a suitable swinging frame located adjacent thereto, a series of tools carried at the free end of said swinging frame, and suitable devices for constraining the angular relation of the tools during their movement along the stock-frame, to lines parallel to any predetermined position to which the axis of rotation of the tool has been set to operate in front of the stock-frame; substantially as set forth.

5. In a carving-machine, a suitable inner swinging frame, an outer swinging frame carried by the inner frame, a tool-supporting beam at the free end of the outer frame, a connecting-rod having one end coupled to the tool-supporting beam, a guide-bar for guiding the opposite sliding end of the connecting-rod, whereby the movement of the tools must be in parallel lines during the oscillation of the outer frame, substantially as set forth.

6. In a carving-machine, a suitable inner swinging frame, an outer swinging frame carried thereby, a tool-supporting beam at the free end of the outer frame, a connecting-rod having one end adapted to be temporarily coupled to the tool-supporting beam, a guide-bar mounted in front of the stock-frame, and a sliding sleeve mounted on the guide-bar, the opposite end of the connecting-rod being pivotally secured to the sliding sleeve, whereby the tools are constrained to move in parallel lines during the oscillation of the swinging frames, substantially as set forth.

7. In a carving-machine, a suitable swinging frame, a tool-supporting beam carried thereby, a tracer operating in connection with the tools, and means for moving the tool-beam and tools carried thereby in one direction in a plane parallel to the surface of the stock-frame, while the tracer is moving in the opposite direction in lines parallel to the same plane, whereby the work carved by the tools is a reverse counterpart of the pattern traced by the tracer, substantially as set forth.

8. In a carving-machine, a suitable frame having a series of swinging arms, a tool-supporting beam carried at the free ends of said arms, a rocker carried by one of the arms, a rocking bar pivoted in proximity thereto, and having a rocking face coöperating with the rocking face of the rocker, suitable bands or cords connecting the end of one rocking face with the opposite end of the opposite rocker, a tracer carried at the free end of the rocking bar, and means for guiding the tracer along the tool-supporting beam, substantially as set forth.

9. In a carving-machine, a tool-supporting beam, a guide-plate adapted to be secured thereto, a tracer partially embracing the walls of said plate, and means for sliding the tracer back and forth along the guide-plate in directions opposite to the tools carried thereby, substantially as set forth.

10. In a carving-machine, a suitable inner swinging frame, an outer swinging frame having a pivotal post mounted at the free or swinging end of the inner frame, a series of pivoted and swinging arms carried by the post, a tool-supporting beam at the free end of the outer frame, a series of pulley-supporting brackets mounted on the post, a drive-shaft located in the path of the axis of oscillation of the inner frame, a rod having a series of belt-tighteners carried by the inner frame, a series of drive-pulleys mounted on the drive-shaft, and a series of independent tool-driving belts passing from the pulleys on the main shaft, over the pulleys carried by the brackets, and over the pulleys carried by the tool-spindles, substantially as set forth.

11. In a carving-machine, a suitable swinging frame, a series of tools carried at the free end thereof, a drive-shaft for said series, belts connecting the tools with the drive-shaft, a belt-tightener for each belt carried by the frame and located between the drive-shaft and tool series, each tightener comprising a rotatable sleeve, arms radiating outwardly from said sleeve, pulleys carried by said arms, a rod about which said sleeve is passed, a stationary ratchet-disk carried by the rod, a spring coiled about the rod and having one end secured to one of the arms and its opposite or free end adapted to engage the teeth of the ratchet, the lap of the belt being adapted to pass between the pulleys, substantially as set forth.

12. In a carving-machine, a suitable swinging frame, a series of tools carried at the free end thereof, a drive-shaft for said series, belts connecting the tools with the drive-shaft, a belt-tightener for each belt carried by the frame and located between the drive-shaft and tool series, each tightener comprising a stationary rod, a rotatable sleeve loosely mounted thereon, a stationary ratchet-disk located below the sleeve and clamped to said rod, arms radiating from the sleeve, pulleys mounted at the outer ends of said arms, between which the lap of the belt passes, a spring coiled about the rod below the sleeve, one end of the spring being secured to one of the arms and the free end being adapted to engage the teeth of the ratchet-disk, and an arm carried by the rod and adapted to come in contact with the tightener and limit its rotation or swing about the rod, substantially as set forth.

13. In a carving-machine, suitable guide-bars adapted to support between them a sliding stock-frame, a foot-lever pivoted at the base of the lower guide-bar, a rocking clamping-plate supported on pins and located adjacent to the foot-lever and exterior thereto, a wedge terminating the short arm of the lever and coöperating with a corresponding wedge-surface formed on the clamping-plate, a second and corresponding wedge formed along the long arm of the lever at a point suitably removed from the pivot thereof and coöperating with a wedge-surface formed in the clamping-plate, whereby upon tilting the foot-lever in one or the other direction the clamping-plate is rocked back and forth about its supporting-pins, the gripping edge of the plate being adapted to bear against the lower timber of the stock-frame, substantially as set forth.

14. In a carving-machine, an inner swinging frame, an outer swinging frame carried thereby, a stock-frame mounted in front of the outer frame, a pulley mounted on a pivoted bracket at the base of the stock-frame, means for rotating said pulley from the main drive-shaft, a shaft extending from said pulley parallel to the stock-frame, a pinion at the forward end of the shaft, a driving disk or plate meshing with said pinion, a worm-carrying shaft extending upwardly from said disk along the stock-frame, a series of worm-wheels and spindles coöperating with the worm-pinions of said shaft, and means for retaining the pinion carried by the lower shaft, in engagement with the driving-disk or disengaging the pinion from said disk, substantially as set forth.

15. In a carving-machine, a suitable shaft adapted to drive a series of stock-holding spindles, a disk at the lower end thereof, a horizontally-disposed shaft having at its forward end a pinion for driving said disk, the opposite end of the shaft carrying a pulley mounted in a bracket or arm pivotally secured at the base of the stock-frame, a sleeve loosely embracing the horizontal shaft at a point in proximity to the pinion, said sleeve forming the end of one arm of a lever pivoted in proximity to the shaft, a pivoted tripping-lever having a toe adapted to engage the opposite arm of the lever and rock the latter so as to disengage the pinion end of the horizontal shaft from the disk, or reëngage it at the will of the operator, the parts operating substantially as and for the purpose set forth.

16. In a carving-machine, a suitable pulley-supporting bracket, a pulley mounted on each face of the same, an oscillating brace for said bracket, a pivotal pin passing through the base, a cup for said base, a post to which said cup is secured, wearing-plates secured to the base and post respectively, a curved slot formed in the base, suitable antifriction-rollers confined within the slot and bearing against the respective bearing-plates, and an arm forming an extension of the bracket and adapted to be pivotally secured to the connecting-rod by which the arms of the frame are joined, substantially as set forth.

17. In a carving-machine, a tool-casing, a spindle for the same, a groove formed longitudinally along the periphery of the spindle, a pin projecting through the casing and having a series of transverse notches, a spring secured to the casing and having a portion adapted to engage the notches, for holding the pin in any adjusted position, and means for imparting rotation to the spindle upon a disengagement of the pin therefrom, substantially as set forth.

18. In a carving-machine, a suitable swinging frame, a pivotal support for the same comprising a hollow tube, brackets for the support of the opposite ends of the tube, a peripherally-grooved cone-shaped portion adapted to retain antifriction-rollers, the pivotal end of the frame embracing said peripherally-grooved cone-shaped portion and rollers carried thereby, and adapted to swing about the same, and a drive-shaft passing loosely through the tube, substantially as set forth.

19. In a carving-machine, a suitable swinging frame, a pivotal support for the same comprising a hollow tube having a lower exteriorly-screw-threaded portion, a medial peripherally-grooved conical portion and an upper smooth cylindrical portion, bearings for said screw-threaded and smooth portions, the pivotal end of the frame being swung from the conical portion, bearing-balls interposed between the conical portion and the frame embracing the same, said balls being adapted to travel in the peripheral grooves, and a shaft loosely passing through the tube and having supporting-bearings below and above the tube, the parts operating substantially as and for the purpose set forth.

20. In a carving-machine, a suitable frame swinging about an axis, a second frame swinging on said frame about a second axis, a series of tools at the free end of the second frame adapted to sweep in a plane parallel to said second axis, a drive-shaft located in the line of the axis of suspension of the first frame, and a single intermediate belt connection between said shaft and each tool, for imparting motion of rotation in one direction to a portion of the tool series, and an opposite rotation to the remaining tools of the series, substanially as set forth.

21. In a carving-machine, a suitable inner swinging frame, a drive-shaft located in the path of the axis of oscillation thereof, an outer frame comprising a post pivotally mounted at the free end of the inner frame, and a series of arms carried by said post and adapted to sweep in a vertical plane; a series of tools carried at the free end of the outer frame, a series of brackets pivotally mounted on the post, and belt-pulleys mounted on the brackets on each side of the axis of suspension of the outer frame, and on opposite faces of the brackets, for guiding the belts leading from the drive-shaft to the tool-spindles, substantially as set forth.

22. In a carving-machine, a suitable frame having a series of swinging arms, tools carried at the free ends of said arms, rockers operating in connection with the arms, one rocker being connected to the tools and the other to the tracer, whereby as the latter sweeps in one direction the tools will sweep in a direction opposite thereto, substantially as set forth.

23. In a carving-machine, a suitable swinging frame, a series of tools carried at the free end thereof, a drive-shaft for said series, belts connecting the tools with the drive-shaft, a belt-tightener for each belt carried by the frame and located between the drive-shaft and tool series, each tightener comprising a rod, a pair of pulleys rotatable about the same, the lap of the belt being adapted to pass between the pulleys and a resilient spring for simultaneously forcing the pulleys against the opposite faces of the lap, substantially as set forth.

24. In a carving-machine, suitable rotatable stock-holding spindles, and means for separately and individually adjusting the latter both in the line of the axis of rotation of the stock, and in a plane at right angles thereto, substantially as set forth.

25. In a carving-machine, a suitable swinging frame, a series of tools carried thereby, a drive-shaft, a stock-frame, said frame having a series of hollow tubular rotatable spindles, one end thereof being provided with suitable yielding arms, a chuck adjustable longitudinally along the same, means for forcing the arms into positive frictional engagement with the walls of the chuck, and intermediate connections between the drive-shaft and spindles for rotating the latter, substantially as set forth.

26. In a carving-machine, a suitable swinging frame, a series of tools carried thereby, a drive-shaft, a stock-frame, said frame having a series of hollow tubular rotatable spindles, yielding arms carried at one end of the same, a chuck passed over said arms and rotatable about the same, means for forcing the arms into positive frictional engagement with the inner walls of the chuck, and intermediate connections between the drive-shaft and spindles for rotating the latter, substantially as set forth.

27. In a carving-machine, a suitable swinging frame, a series of tools carried thereby, a drive-shaft, a stock-frame, said frame having a series of hollow tubular rotatable spindles, yielding arms terminating one end thereof, a chuck passed over said arms, a movable rod mounted in the tube and adapted upon movement in one direction to wedge the arms apart and force the same into frictional contact with the inner walls of the chuck, and intermediate connections between the drive-shaft and spindles for rotating the latter, substantially as set forth.

28. In a carving-machine, a suitable swinging frame, a series of tools carried thereby, a drive-shaft, a stock-frame, said frame having a series of hollow tubular rotatable spindles, having a series of split members or arms at one end thereof, a chuck passed over said arms, a movable rod mounted in the tube and adapted upon movement in one direction to wedge or force the arms into positive engagement with the walls of the chuck, a plate against which the chuck is adapted to bear, means for shifting the position of the plate and thus adjusting the position of the chuck in the direction of the axis of suspension of the stock, and intermediate connections between the drive-shaft and spindles for rotating the latter, substantially as set forth.

29. In a carving-machine, a suitable swinging frame, a series of tools carried thereby, a drive-shaft, a stock-frame, said frame having secured thereto a bracket having a hollow rotatable stock-holding spindle mounted therein, a controlling-screw mounted at one end of the spindle, a split extension forming the opposite end of the spindle, a rod carried in the hollow of the spindle and having a conical portion adapted to be embraced by the arms formed at the split end of the spindle, a chuck passed over the split end of the spindle, and rotatable about the same, a plate interposed between the bracket and the chuck, means for moving the plate to and from the bracket in the line of suspension of the stock, that is to say, in the axis of rotation of the spindle, and thus adjusting the position of the chuck longitudinally and intermediate connections between the drive-shaft and spindles for rotating the latter, the parts operating substantially as and for the purpose set forth.

30. In a carving-machine, a suitable swinging frame, a series of tools carried thereby, a drive-shaft, a stock-frame, said frame having a series of hollow tubular rotatable spindles, a chuck passed over one end of the same, a movable rod carried in the tube of the spindle and adapted to force the walls of the spindle and chuck into positive engagement, a terminal stem forming a part of the rod and passing through the base of the chuck for centering the stock-pieces, and intermediate connections between the drive-shaft and spindles for rotating the latter, substantially as set forth.

31. In a carving-machine, a suitable frame having a series of swinging arms, tools at the free ends thereof, a rocker carried by one of the arms, a rocking bar pivoted in proximity thereto, and having a rocking face coöperating with the rocking face of the rocker, a tracer carried at the free end of the rocking bar, and adapted, upon movement of the latter, to swing in one direction, while the tools swing in the opposite direction, substantially as set forth.

32. In a carving-machine, a suitable frame swinging about an axis, a second frame swinging on said frame about a second axis, a series of tools at the free end of the second frame adapted to sweep in a plane parallel to said second axis, a drive-shaft located in the line of the axis of suspension of the first frame, and a single intermediate belt connection between said shaft and each tool, for imparting motion of rotation in one direction to a portion of the tool series, and an opposite rotation to the remaining tools of the series, the laps of each belt being disposed on opposite sides of the axis of suspension of the second frame, substantially as set forth.

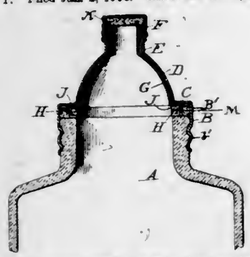
658,381. CAP FOR CLOSING VESSELS. ABBOT A. LOW, New York, N. Y. Filed Nov. 27, 1899. Serial No. 738,491. (No model.)



Claim.—1. In a sealing-cap for vessels the combination consisting of the barrel as D; flange as E, provided with downwardly-projecting bead as I, dome or chamber as F, inside shield as M, constructed and arranged to fasten within the dome D, and extend downwardly slightly below the flange E, and to where the cap is secured to the vessel enter the packing-ring beneath said flange and means for securing the whole upon a vessel to seal it and to open and close it in use, all constructed, arranged and combined to operate substantially as and for the purposes hereinbefore specified.

2. In a sealing-cap for vessels, the combination, consisting of the barrel; concentric flange turned inward from the sides of the said barrel; dome springing upward from the inner edge of said concentric flange; and discharge-opening at top of said dome, adapted to be opened and closed in use; means for securing the whole to a vessel and for removing it, and an internal shield adapted to protect the sealing-cap from contact with the contents of the vessel, all constructed and combined to operate substantially as specified.

658,382. CLOSING-CAP FOR VESSELS. ABBOT A. LOW, New York, N. Y. Filed Jan. 2, 1900. Serial No. 41. (No model.)



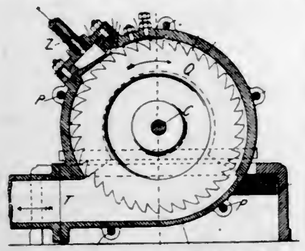
Claim.—In a closing-cap for vessels, the combination consisting of the barrel B, screw-thread *b'*, non-threaded portion B', flange C and packing-piece M dome D, and closing-cap F, internal lining G, constructed as shown and described to project above the opening of neck E and to flange under the flange C, said flange being provided with a vertical cutting edge H all arranged, constructed and combined to when applied to the mouth of a vessel, hermetically seal said vessel, by forcing the cutting edge H into cork or packing-piece M, by means of the closing-cap F, and by screwing the barrel B upon the vessel A, substantially as specified.

658,383. SEALING-CAP FOR VESSELS. ABBOT A. LOW, New York, N. Y. Filed Jan. 9, 1900. Serial No. 312. (No model.)



Claim.—A sealing-cap for vessels, consisting of the barrel, as D, for securing it to the vessel; flange as H; dome as I; discharge-tube as J; and closing-cap as K; internal shield M, provided at its base with flange as O, and rim as P, adapted to inclose a packing as Q, between the flange O, and the top of the walls of the vessel, and at its top adapted to enter the packing of the closing-cap, and to inclose a stopper and seal, beneath said closing-cap, all constructed, arranged and combined when applied to a vessel, to seal the same hermetically, and to prevent the vessel from being opened without detection, substantially as specified.

658,384. ROTARY MOTOR. RICHARD F. MARSH, East Maitland, New South Wales. Filed Jan. 16, 1900. Serial No. 1,710. (No model.)



Claim.—1. In rotary motors of the class set forth, the combination, with a fluid-pressure chamber, of, an adjustable plate for regulating the dimensions of the outlet-slot of the said chamber and a projecting lip extending from the rear wall of the said chamber under the whole of the said chamber and beyond the opposite or forward wall thereof, as described and shown, and for the purposes set forth.

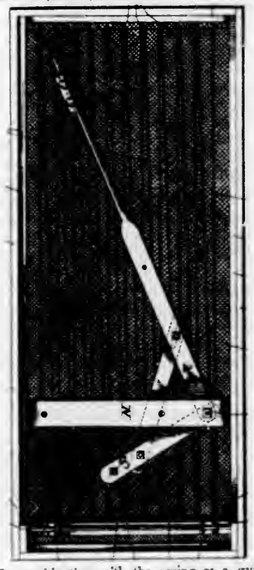
2. In rotary motors of the class set forth, an upper adjustable plate and adjustable side plates, placed within the casing in close proximity to the fluid-pressure chamber, and a projecting lip extending from the rear wall of the said chamber under the whole of the said chamber and beyond the opposite or forward wall thereof, as described and shown, and for the purposes set forth.

3. In rotary motors of the class set forth, a projecting lip, a passage in close proximity thereto, an upper and two side directing-plates, and, serrations constructed upon a rotary disk, all forming a reaction-chamber in communication with an outlet-slot of a fluid-pressure chamber, as herein described and shown, and for the purposes set forth.

4. In rotary motors of the class set forth, the combination, with a casing having upper and side adjustable director-plates, of, adjustable stuffing-boxes and foot-plates provided with means for adjusting the position of said casing relatively to an inclosed rotary disk whose serrations are in contact with a projecting lip of a fluid-pressure chamber, as described and shown and for the purposes set forth.

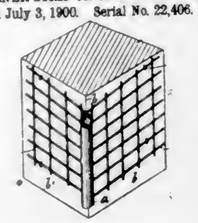
5. In rotary motors of the class set forth, an outer casing having upper and side director-plates and provided with inner side facing-strips, the lower part of such casing being of a diminished thickness so as to form an outlet-passage for the expended fluid, and communicating with an exhaust-port, as described and shown.

658,385. CLOTH-CLEANING DEVICE FOR SIEVES IN BOLTING-MACHINES. JOHN C. MAUN, McConnellsburg, Pa. Filed June 23, 1900. Serial No. 21,327. (No model.)



Claim.—In combination with the casing of a gyratory screen, a swinging plate mounted between the longitudinal walls thereof, a series of eyelets near the free swinging edge thereof, a second series of eyelets at the opposite end of the frame adjacent to the screen, cords connecting said series of eyelets, a bracket secured to the frame of the sieve, an angle-lever pivoted to said bracket, said lever having pivoted link connections between one arm thereof, and said plate, and a weighted member adjustably held at various locations on the long arm of said lever, as shown and described.

658,386. CORNER STRIP OR BEAD. FERRIS A. MITCHELL, New York, N. Y. Filed July 3, 1900. Serial No. 22,406. (No model.)



Claim.—1. A corner-bead for plastered walls consisting of wire-cloth adapted to be attached to the wall, and bent to form a straight edge, projecting from the angle of the walls, substantially as described.

2. A corner strip or bead for plastered walls composed of a strip of wire-cloth bent longitudinally, to form a wide and a narrow flange, the wide flange adapted to be secured to a corner-joist, and the narrow flange having a trued edge to form a straight edge for the plaster corner, substantially as described.

3. A corner strip or bead for plastered walls composed of a strip of metal wire-cloth bent on a longitudinal line to form a wing or flange for attachment to the corner of a wall, and a projecting edge, together with a straight edge member secured upon said projecting edge of the wire-cloth strips, substantially as described.

4. A corner strip or bead for plastered walls composed of wire-cloth bent to form an acute angle, with a pair of flanges adapted to embrace and be attached to the corner of the wall, and a metal edge member secured to the wire-cloth along the bent edge, substantially as described.

5. A corner strip or bead for plastered walls composed of a strip or sheet of wire-cloth bent longitudinally to form two flanges to straddle the corner of the wall, and a metal edge member compressed upon the bent edge of the wire-cloth, substantially as described.

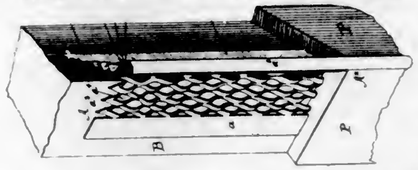
6. A corner strip or bead for plastered walls composed of a wire-cloth strip with a strip of solid metal attached to its edge, substantially as described.

7. A corner strip or bead for plastered walls consisting of a strip of wire-cloth bent upon a longitudinal line to form a securing-flange and a projecting edge, substantially as described.

8. A corner structure for the meeting faces of plastered walls consisting of a solid base or foundation, a mass or masses of gage-mortar or other quick-setting plastic material deposited thereon along the edge, a perforated metal strip extended along the edge and embedded in said plastic material, and body-plaster covering the structure, substantially as described.

9. In a corner structure for plastered walls, the combination with a corner-foundation, of a perforated metal strip applied thereto, and plastic material in masses binding the two together, together with external plastering covering the whole, substantially as described.

658,387. CORNER STRIP OR BEAD. FERRIS A. MITCHELL, New York N. Y. Filed July 14, 1900. Serial No. 23,625. (No model.)



Claim.—1. A plasterer's corner-strip comprising a corner-bead or straight edge and a support therefor, of sheet metal expanded or punched out to form a network, substantially as described.

2. A plasterer's corner-strip comprising a body flange or support of sheet metal punched out or expanded to form a network, and a straight edge or bead supported by and integral with said network, substantially as described.

3. A plasterer's corner-strip composed of a sheet of sheet metal bent longitudinally to form substantially a V shape in cross-section, the metal at the bent edge being left solid to form a corner-bead or straight edge, and on both sides thereof being slitted or perforated and expanded into a network, substantially as described.

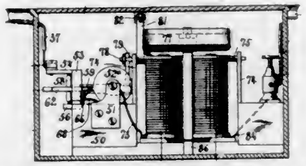
4. A plasterer's corner-strip composed of metal slitted and expanded to form a network, and bent to form a straight edge, substantially as described.

658,388. MECHANISM FOR IMPARTING SUCCESSIVE OR ALTERNATING MOVEMENTS. ELISHA MOORE, Meductic, Canada. Filed Nov. 15, 1899. Serial No. 737,094. (No model.)

Claim.—1. The combination with a shifting member, of armatures, a common axis for said armatures connected with the shifting member, magnets for said armature and a relay having an armature common to both of its magnets interposed in the circuit between the magnets and source of supply.

2. The combination with a shifting member, of armatures, a common axis for said armatures connected to the said member, magnets for said armature, a relay having an armature common to both of its magnets and a make-and-break contact interposed in the circuit between the magnet and the source of supply.

3. The combination with a shifting member, of armatures, a common axis for said armatures connected to said shifting member, magnets for the armatures, a relay having an armature common to both of its magnets, a make-and-break contact interposed in the circuit between the said magnets and source of supply, and means to operate the same contact.



4. The combination with a shifting member, armatures, a common axis for said armatures connected with the said member, magnets for the armatures, of a relay having an armature common to both of its magnets and make-and-break contact interposed in the circuit between the said magnets and source of supply and a magnet to operate said contact.

5. In a device of the character described, the combination with the magnets armatures and a common axis for said armatures, of a relay having an armature common to both of its magnets and means connecting the axis of the armatures and the relay to automatically shift the relay.

6. In a device of the character described, the combination with the magnets and pivoted armatures for said magnets of a relay and a flat spring connecting the armature of the relay with the axis of the said pivoted armatures to automatically shift the relay.

7. The combination with the magnets, armatures for said magnets mounted on a common axis, and a shifting member, of a relay comprising two magnets, a common armature, contact-springs mounted on the arm of the armature, contact-points connected with the last-named magnets with which the said springs alternately contact and a flat spring connecting the armature of the relay with the axis of the first-named magnets.

8. The combination with a shifting member, of two magnets, armatures for the same mounted on a common axis, a relay connected with said magnets, a resilient connection between the said axis and the armature of the relay, a make-and-break contact and a magnet mounted upon a car to operate the said contact.

9. The combination with a shifting member, two magnets, armatures for the same mounted on a common axis, a flat spring secured to one end of said axis, of a relay having an armature common to both of its magnets, and a forked projection extending from the end of the armature adapted to engage the flat spring secured to said axes.

10. The combination with the magnets, armatures for the same mounted upon a common axis, a shifting member connected with said axis, a relay comprising two magnets, an arm, an armature common to both magnets mounted upon said arm, contact-points connected with the magnets, flat springs extending from each side of the arm adapted to alternately contact with said contact-points, and a make-and-break contact-lever, a coiled spring connecting the same with the source of supply.

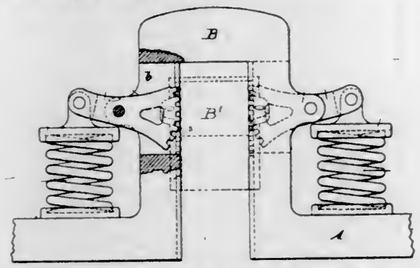
658,389. ROLLING-MILL SPRING APPLIANCE. LEWIS MORGAN, Reading, Pa. Filed July 22, 1899. Serial No. 724,762. (No model.)



Claim.—In a coupling for rolls, the combination of two coupling-boxes, adapted to be rigidly secured to the rolls, a spindle loosely mounted

in said coupling-boxes, and having longitudinal grooves, a lug secured to each of said coupling-boxes and provided with an opening, and two springs, one end of each being attached to the spindle, and curved to fit into one of said grooves in the spindle, the other end of each spring, being threaded, and a nut on each of said threaded ends, for attaching the same to said lugs, substantially as set forth.

658,390. CAR-TRUCK. EDWIN G. NICKWANER, Johnstown, Pa., assignor to the Lorain Steel Company, of Pennsylvania. Filed Jan. 8, 1900. Serial No. 701. (No model.)



Claim.—1. In a car-truck, the combination with a truck-frame having journal-box guides, journal-boxes mounted in said guides, journal-box springs seated in their lower ends on the said frame laterally of the boxes, and connections between said boxes and the upper ends of said springs whereby the latter are compressed by up thrusts or movements of the said boxes.

2. In a car-truck, the combination of a truck-frame having journal-box guides, and journal-boxes mounted in said guides, of springs seated on said frame laterally of said boxes, and gear connections between the upper bearings of the said springs and the said boxes.

3. In a car-truck, the combination with a truck-frame and a journal-box mounted therein, of springs seated laterally of said box, and connections between the box and the upper bearings of springs whereby the latter are compressed by the load on said frame and also by up thrusts or movements of said box.

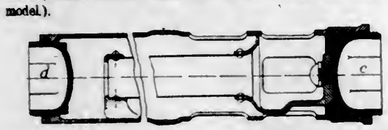
4. In a car-truck, the combination with a truck-frame, having journal-box guides, and journal-boxes mounted in said guides, of helical journal-box springs seated on said frame laterally of the boxes, and having movable upper bearings or caps, and gear connections between the said bearings and caps and the journal-boxes.

5. In a car-truck, the combination with a truck-frame having journal-box guides, and a journal-box in said guides, of a spring seated on said frame at each side of the said box, and having movable upper bearings or caps, and gear connections between the said box and the respective springs.

6. In a car-truck, the combination with a truck-frame having journal-box guides and a journal-box therein, provided with rack-teeth at opposite sides, of a helical spring seated on the frame at each side of said guides, movable upper bearings or caps for said springs, and levers pivoted to the said guides and each having one arm pivoted to the adjacent upper bearing or cap, and the other arm provided with a toothed segment which engages the rack-teeth on said box, substantially as described.

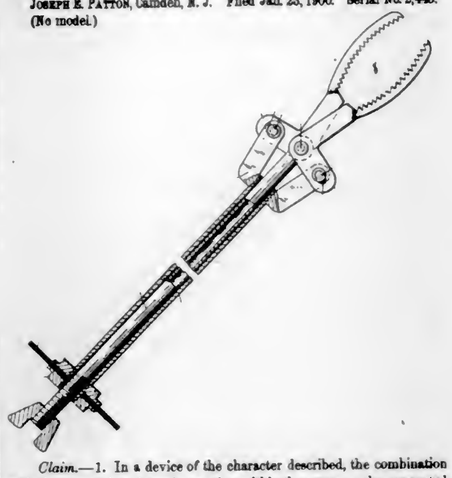
7. In a car-truck, a journal-box having rack-teeth formed at opposite sides thereof, journal-box springs seated on the truck-frame laterally of said box, and devices engaging said rack-teeth and arranged to compress said springs under the load on the truck and also under upthrusts of said box.

658,391. BOILER-TUBE. JULES NICLAUSSE and ALBERT NICLAUSSE, Paris, France. Filed Mar. 13, 1900. Serial No. 8,438. (No model.)



Claim.—In a boiler-tube, an outer or vaporizing tt be having a portion of its wall expanded to form a conical deformation and having its outer end thickened to form a second conical deformation, the interior of said thickened end being threaded, in combination with an inner circulation-tube and a cap or plug carrying said inner tube and adapted to be screwed into the threaded thickened end of the vaporizing-tube, substantially as and for the purposes described.

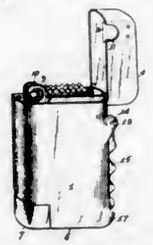
658,392. TONGS FOR CLEANING DRAINS OR THE LIKE. JOSEPH E. PATTON, Camden, N. J. Filed Jan. 23, 1900. Serial No. 2,445. (No model.)



Claim.—1. In a device of the character described, the combination with the outer tube, of a rod operating within the same, a yoke connected with the outer tube, angular jaws, connections between the angular jaws and the yoke, and a nut on the rod adapted to lock the jaws when operated, substantially as described.

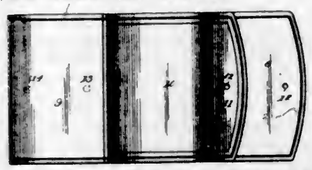
2. A device of the character described, comprising the outer tube, a rod operating within the same, a yoke connected with the outer tube, angular jaws, connections between the angular jaws and the yoke, a nut on the rod adapted to lock the jaws when operated, and a plunger connected with the outer tube to facilitate the cleaning operation, substantially as described.

658,393. MATCH-BOX. HENRY C. PAUL, St. Louis, Mo., assignor of one-half to Frank Hillig, same place. Filed Oct. 5, 1899. Serial No. 732,637. (No model.)



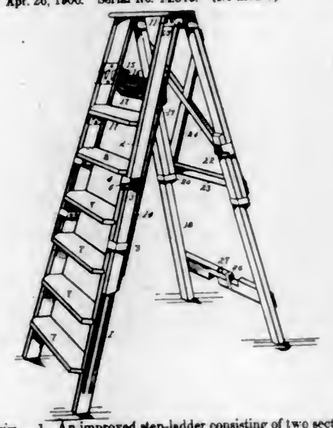
Claim.—The improved pocket match-box comprising the body 1, the pair of vertical ears 9 having the two alined apertures 10 and projecting freely such a distance above the upper marginal edge of said body that the said apertures 10 are located entirely above said marginal edge, the cover 4 provided with semicircular recesses 11, and a knife 8 carried by said cover, substantially as specified.

658,394. MONEY-PURSE. JOHN J. PETERS, Lincoln, Ill. Filed Mar. 6, 1900. Serial No. 7,539. (No model.)



Claim.—A combined coin and bill purse consisting of two creased portions, one of which is in the form of strip and is composed of five sections, four of which are in line with each other and the remaining one projects laterally from the next to the last one at one end of the strip, and the last section at the other end of the strip forms a flap, and the other portion of the purse is composed of two sections, one of which is secured at three of its edges to the section of the strip next to the flap, and the other section forms a narrow flap, each of said flaps being provided with one portion of a fastener and the back of the section to which the lateral section is secured being provided with the remaining portions of said fasteners, one near each edge thereof.

658,395. STEP-LADDER. CHARLES PFEIFFER, Akron, Ohio. Filed Apr. 26, 1900. Serial No. 14,376. (No model.)



Claim.—1. An improved step-ladder consisting of two sections both converging toward the top with fixed steps in the lower half and pivoted steps in the movable half adapted to rock backward and brackets to support them when rocked forward, with devices for clamping the upper and lower side rails together at any point, devices for permitting the upper ends of the upper rails to approach and recede from each other, and for insuring that the upper and lower rails shall be in contact along a straight line, in combination with independently-extensible legs and means for holding the halves of said legs together and for locking them at any determined point, substantially as shown and described.

2. An improved step-ladder having a lower half with fixed steps, the side bars of the upper half arranged by means of guides and clamps to slide on the bars of the lower half and to be retained at any desired point, in combination with rods lying parallel with said upper side bars, and bearing inwardly-projecting pins, steps pivotally mounted on said pins, and brackets on said side bars to support said steps when rocked forward, substantially as shown and described.

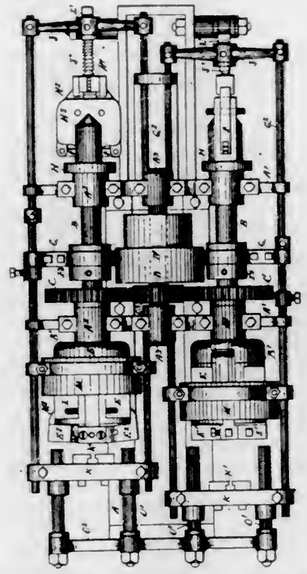
3. In a step-ladder the combination with the ladder side bars and top step, of plates attached to the upper ends of said side bars having T-heads, plates attached to the upper step having slots to receive said heads and having downwardly-projecting flanges to form a box to receive the upper ends of the legs, legs fitted to enter said boxes and pins passing through said boxes and legs to hinge them together, substantially as shown and described.

658,396. SCREW-CUTTING MACHINE. EDWARD PHILLIPS, Detroit, Mich., assignor to Edward T. Gilbert, same place. Filed Jan. 31, 1900. Serial No. 3,459. (No model.)

Claim.—1. A rotatable and reciprocatory cutter-head for forming threads on screws provided with parallel threading-jaws pivotally connected therewith, means to open and close said jaws, expansible inclined threading-jaws connected with said head, means to close said inclined threading-jaws, a jaw-opening device within the head to open the inclined threading-jaws, and means to hold the work.

2. A rotatable and reciprocatory cutter-head for forming threads on screws provided with parallel threading-jaws pivoted thereto intermediate their extremities, threaded dies engaged with said jaws, expansible inclined threading-jaws carried by said head having cutters engaged therewith, means to open and close said parallel threading-jaws, and means to close said inclined threading-jaws, a jaw-opening device within the head to open the inclined threading-jaws, said head having in combination therewith a rotatable spindle engaging said head, and means to reciprocate said spindle and head.

3. A rotatable and reciprocatory cutter-head for forming threads on screws provided with parallel threading-jaws pivoted thereto intermediate their extremities, threading-dies engaged with said jaws, expansible inclined threading-jaws carried by said head having cutters engaged therewith, means to open and close said parallel threading-jaws, means to close said inclined threading-jaws, a jaw-opening device within the head to open the inclined threading-jaws, said head having in combination therewith a hollow rotatable spindle, and a reciprocatory rod within said spindle to actuate the parallel threading-jaws.



4. A rotatable and reciprocatory cutter-head for forming threads on screws provided with parallel threading-jaws pivoted thereto, inclined threading-jaws engaged with said head, means to close the inclined threading-jaws, a jaw-opening device within the head to open the inclined threading-jaws, a hollow spindle engaging said head, means to reciprocate said spindle, a rod reciprocatory within said spindle to actuate the parallel threading-jaws, a feed-screw to actuate said rod, and means to rotate said spindle.

5. A cutter-head for forming threads on screws provided with parallel threading-jaws, means to open and close said jaws, inclined threading-jaws engaged with said head, means to open and close the inclined threading-jaws, a feed-screw, a sectional feed-nut to engage said screw, and means to open and close said nut upon the feed-screw synchronously with the actuation of said jaws.

6. In combination, a cutter-head provided with parallel threading-jaws and with inclined threading-jaws, a hollow rotatable spindle, a feed-screw, a sectional nut to engage the feed-screw, a feed-screw head engaged upon said spindle, a rod sleeved through said spindle, a toggle-nut engaged with one end of said rod and with the parallel threading-jaws, an additional toggle-nut in the feed-screw head engaged with the opposite end of said rod, jaws connected with said sectional nut and with the nut in the feed-screw head to open and close the sectional nut, and means to open and close the inclined threading-jaws in the cutter-head.

7. In combination, a hollow rotatable spindle, a cutter-head carried by said spindle provided with parallel threading-jaws and with inclined threading-jaws, means to actuate the parallel threading-jaws, an opening device, and a sliding collar to actuate the opening device and the inclined threading-jaws, said inclined threading-jaws constructed with angular faces engageable by the sliding collar.

8. In combination, a rotatable hollow spindle, a cutter-head carried thereby, parallel threading-jaws and inclined threading-jaws carried by said head, a rod reciprocatory in said spindle to actuate the parallel threading-jaws, a feed-screw head upon said spindle, a feed-screw, slide-rods carrying the feed-screw, a sectional feed-nut engageable with the feed-screw, means connected with the rod in the spindle to actuate the sectional feed-nut, a sliding collar carried by the slide-rods to actuate the inclined threading-jaws, and means to limit the reciprocation of the cutter-head.

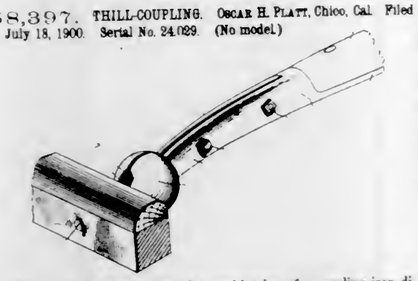
9. In combination, a rotatable hollow spindle, a cutter-head carried thereby, parallel threading-jaws and inclined threading-jaws carried by said head, a rod reciprocatory in said spindle to actuate the parallel threading-jaws, a feed-screw head upon said spindle, a feed-screw, slide-rods carrying the feed-screw, a sectional feed-nut engageable with the feed-screw, means connected with the rod in the spindle to actuate the sectional feed-nut, a sliding collar carried by the slide-rods to actuate the inclined thread-

ing-jaws, and means to limit the reciprocation of the cutter-head, said slide-rods moved forward by the feed-screw, and means to restore the slide-rods and cutter-head to normal position without reversing the action of the feed-screw.

10. In combination, a cutter-head, inclined threading-jaws carried thereby, a jaw-opening device within the head to open the said jaws, and a sliding collar to close said jaws.

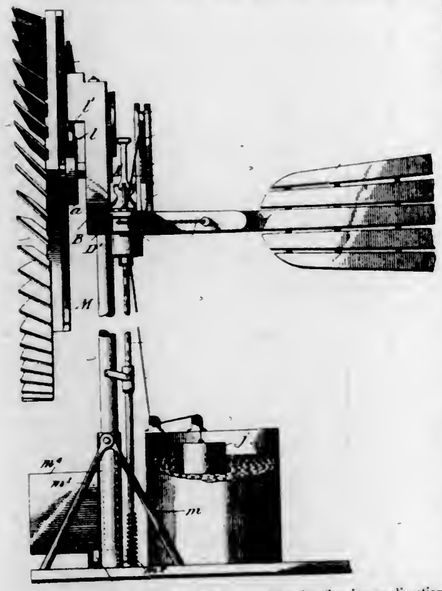
11. In combination, a cutter-head provided with inclined threading-jaws, a jaw-opening device within the head to open said jaws, slide-rods, a collar engaged upon said head and upon the slide-rods to close said jaws, and means to feed the slide-rods and cutter-head.

658,397. THILL-COUPLING. OSCAR H. PLATT, Chico, Cal. Filed July 18, 1900. Serial No. 24,029. (No model.)



Claim.—In a thill-coupling, the combination of a coupling-iron divided centrally and forming a fixed section and a removable section, said sections being provided at their rear ends with cups forming the complementary parts of the socket, said cups being provided in their meeting edges with notches having diagonal end walls and forming a slot provided with end shoulders, and a bolt provided with a ball seated within said socket and having a head and a neck portion connecting the same with the ball, said neck portion being provided with flattened sides to ride upon the walls of the slot and curved top and bottom faces against which the said end walls of the socket are adapted to abut when the thill is raised or lowered to the limit of its movement, substantially as and for the purpose described.

658,398. WIND-WHEEL REGULATOR. HERMAN REUTER, Warsaw, Ill. Filed May 17, 1900. Serial No. 17,016. (No model.)

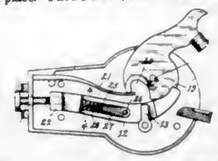


Claim.—1. In a wind-wheel, a vane hinged to flex in one direction, a drum vertically mounted and having chain connection with the vane, a disk carried by the drum and provided on its upper side with an annular series of shoulders, a stop-pawl pivoted to the frame and engaging the shoulders in one direction, a lever pivoted to the frame and connected with the pump-rod-actuating mechanism, an arm on the lever, a pawl pivoted to the arm and adapted to engage the disk-shoulders successively to rotate the drum and flex the vane, a float, and a connection between the float and pawls, the float operating normally to disengage the pawls from the shoulders.

2. In a wind-wheel, a vane hinged to flex in one direction, a drum having chain connection with the vane, a disk carried by the drum and provided with an annular series of shoulders, a spring-depressed stop-pawl adapted to engage the shoulders, a reciprocatory spring-depressed pawl adapted to engage the shoulders to rotate the drum and flex the vane, a lever hinged to the frame and connected with the pump-rod-actuating mechanism, an arm on the lever to which the propelling-pawl is pivoted, a rock-lever pivoted to the frame and connected at one end to the pawls, a float, and a connection between the other end of the rock-lever and float whereby movement of the latter is communicated to the pawls.

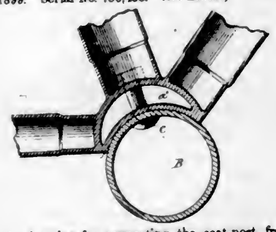
3. In a wind-wheel, a vane hinged to flex in one direction, a drum having chain connection with the vane, means controlled by a float for automatically rotating the drum to flex the vane, a bell-crank lever pivoted to the frame one arm of which has chain connection with the vane opposite its hinge, an annulus carried by the wheel, a brake-shoe carried by a spring-elevated stem, a cord connecting the stem and the other arm of the lever, and a spring connected to said latter arm and the frame and operating to restore the vane to its normal position.

658,399. COMBINED LOCK AND BURGLAR-ALARM. SAMUEL RITCHIE, Tomahawk Lake, Wis., assignor of one-third to Eugene R. Le Fevre, same place. Filed Feb. 26, 1900. Serial No. 6,553. (No model.)



Claim.—The combination of a casing or support adapted to be secured to a fixed part, a spring-retrieved slidable trigger within the casing, and provided with a projection in line to be engaged by a movable part, a hammer pivoted in the casing and projecting therefrom, the portion of the hammer within the casing provided on one edge with a shoulder which is adapted to be engaged by the end of the trigger when the hammer is cocked, and mechanism acting against the hammer and adapted, when the trigger is released from the shoulder of the hammer by reason of the actuation of said trigger through the movable part striking the projection of the trigger, to cause the hammer to be forcibly turned into contact with a suitable alarm device.

658,400. CRANK-HANGER. JOHN E. ROBERTS, Jamestown, N. Y., assignor to the Straight Manufacturing Company, same place. Filed Nov. 27, 1899. Serial No. 738,435. (No model.)



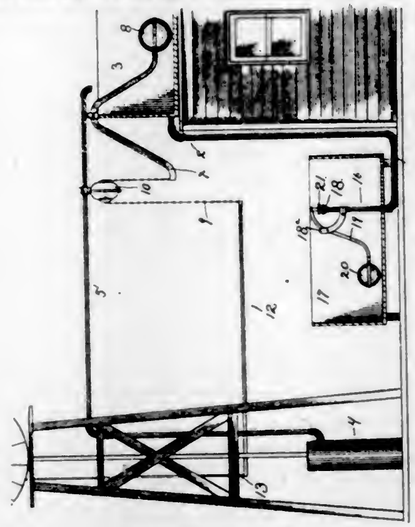
Claim.—1. A union for connecting the seat-post, front reach and rear fork of a bicycle, having a lune-shaped cross-section.

2. A union for connecting the seat-post, front reach and rear fork of a bicycle, composed of a hollow tube having a lune-shaped cross-section.

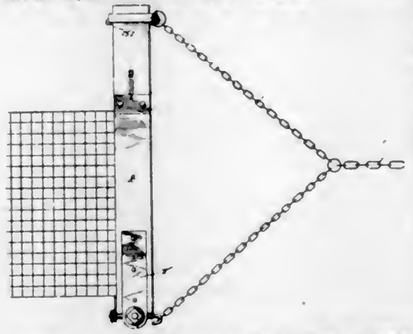
3. The combination with a union having a convex upper side and a concave under side, forming a hollow tube lune-shaped in cross-section, of a crank-shaft hanger composed of a short section of tubing seated snugly up against said concave under side, and bolts passing through the upper side of said hanger, and both the upper and under sides of the union on each side of the seat-post neck.

658,401. WINDMILL-REGULATOR. CLAUS H. ROHLF, New Fountain, Tex. Filed July 10, 1900. Serial No. 23,141. (No model.)

Claim.—Means for controlling a windmill comprising a tank, a lever pivoted to the tank, a float mounted upon one end of the lever, a pipe connecting the tank and a pump operated by the windmill, a pulley mounted upon the pipe, a chain passing over the pulley having one end attached to the lever and its other end attached to a second-named lever, said second-named lever being pivoted to the windmill-tower and having the controlling-wire of the mill attached to one of its ends, a second pipe passing downwardly from the tank having its end turned upwardly to pass within a drinking-trough, a drinking-trough to receive the said end, a lever pivoted to the upturned portion of the second-named pipe, a float attached to one end of the lever and a valve attached to the other end of the said lever and adapted to close the open end of the upturned portion of the second-named pipe when said float is raised.



658,402. WIRE-STRETCHER. JASPER M. RUBART, Urbana, Ohio. Filed Nov. 29, 1899. Serial No. 738,718. (No model.)



Claim.—1. A device of the class described, comprising opposite members jingedly connected at one end, a detachable band located opposite the hinged end of the members, means for clamping the latter together, a chain or the like having its opposite ends connected to the hinged end of the device and to the band, respectively, and a connection located at an intermediate point of the chain and for application to a tension device.

2. In a device of the class described, the combination with a pair of members, of a plate provided upon one of the members, a threaded eyebolt passing through the plate, and having an adjusting-nut bearing against the outer side of the plate, opposite eyes provided upon the other member, and receiving the eye of the bolt therebetween, a pivot-pin passing through the eyes and the eye of the bolt, and a connection for application to a tension device.

3. In a device of the class described, the combination with a pair of members, of a hinge-plate carried by one of the members, a guide-plate carried by the same member and overlapping the other member, a threaded eyebolt passing loosely through the latter member, an adjusting-nut provided upon the bolt and engaging the outer side of the member, a transverse pivot-pin hingedly connecting the bolt to the hinge-plate, means for clamping the members together, and a connection for application to a tension device.

4. A device of the class described, comprising a pair of members, having a hinged connection at one end thereof, the pivot-pin of the hinge being provided with a hook located exteriorly of the members, a detachable band located at the opposite end of the device, a chain having its opposite ends respectively connected to the hook and to the band, means for clamping the members together, and a connection for application to a tension device.

5. In a device of the class described, the combination with a pair of members, of a plate fitted to one end of one of the members, said plate being bent upon itself into a loop, and provided with a slot intersecting the loop, a plate fitted to the other member and projecting beyond the end thereof, an eyebolt passing loosely through the projecting end of the plate, the eye of the bolt being located in the bifurcation of the looped plate, a transverse pivot-pin passing through the loop and the eye of the eyebolt, an adjusting-nut provided upon the outer projecting end of the eyebolt and engaging against the adjacent member, means for clamping the members together, and a connection for application to a tension device.

6. A device of the class described, comprising a pair of pivotally or hingedly connected members, a clamping device, consisting of a latch, a threaded stem pivotally connected to the latch and passing loosely through one of the members, an adjusting-nut provided upon the stem and bearing against one side of the member, a keeper provided upon the other member and for engagement with the latch, and a connection for application to a tension device.

7. A device of the class described, comprising a pair of pivotally or hingedly connected members, one of the latter being provided with a recess or socket in its inner face, a latch located within the socket and projecting through the open end thereof, a threaded stem pivotally connected to the inner end of the latch and passing loosely through the member, an adjusting-nut provided upon the projecting end of the stem, the other member being provided with a slot receiving the outer end of the latch, a plate extending across one end of the slot, and forming a keeper for engagement with the latch, and a connection for application to a tension device.

8. A device of the class described, comprising hingedly-connected members, a removable band or collar embracing the members and located at the opposite end from the hinge connection thereof, pins or shoulders carried by each member and supporting the band or collar, and a chain or the like having its opposite ends connected to the band and to the opposite end of the device, respectively.

9. A device of the class described, comprising a pair of opposite clamp members, clamping means therefor, wear-plates secured to the inner faces of the respective members, located at opposite sides of the device, and projecting outwardly from the adjacent inner faces, and means for connection with a tension device.

658,403. ILLUMINATED SIGN AND LETTER THEREFOR. EDWARD G. STEPHENS, Philadelphia, Pa. Filed Apr. 7, 1900. Serial No. 12,031. (No model.)

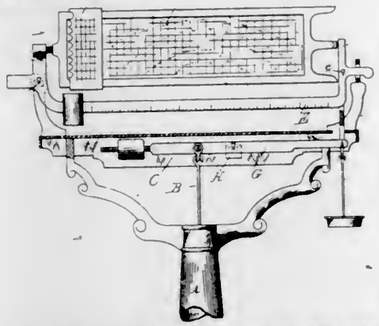


Claim.—Letters for signs and the like composed of hollow glass or other transparent material, said letters being polygonal in cross-section, said letters having openings formed near the top and holes near the bottom, and suitable means for stopping the holes, as and for the purpose set forth.

658,404. SCALE. WALTER F. STIMPSON, Milan, Mich. Filed Dec. 7, 1896. Serial No. 614,711. (No model.)

Claim.—1. In a scale, the beam formed of a lever of the second class, a shelf-lever below the beam, a connection at one end of said shelf-lever to the scale-platform, and at the other end a rigid connecting rod or link, connecting the beam and shelf-lever, oppositely-arranged bearings in the ends of said link, oppositely-disposed pivots in the lever and beam with which said bearings engage and a rotary computing member supported in said beam.

2. In a scale, the combination with the supporting-standard, a shelf or cap thereon, an intermediate or shelf lever fulcrumed below said cap, a connection from one end thereof to the scale-levers, a beam fulcrumed at its end on the cap or shelf, and a rigid connection from the other end of the beam to the shelf-lever.



3. In a scale, a cap or shelf, a beam above the shelf, upward end extensions thereon, the fulcrum-pivot in one of said end extensions, a lever below the cap connected to the scale-levers at one end, a rigid link connecting said lever at the other end to the beam, and a computing member supported in said extensions.

4. In a scale, a cap or shelf, a beam above the shelf, upwardly-extending extensions thereon the fulcrum-pivot in one of said extensions, a connecting-pivot in the other extension, a lever below the cap connected to the scale-levers, a rigid upstanding link connecting the lever to the connecting-pivot in the extension, and a rotatable weighing and computing member pivoted in said extensions.

5. In a scale, the combination with the lever G, and beam E of the connecting-link between the lever and beam, consisting of a rigid member, bifurcated to embrace the ends of both beam and lever, and oppositely-arranged bearings in the ends of the bifurcations, engaging oppositely-arranged pivots in the beam and lever.

658,405. RAILWAY-TRACK STRUCTURE. PETER G. STORMER, Johnstown, Pa., assignor to the Loraln Steel Company, of Pennsylvania. Filed Dec. 1, 1899. Serial No. 738,804. (No model.)



Claim.—1. In a railway-track structure, the combination with the rail members, one or more of which have their upper portions separated from their lower portions and laterally displaced therefrom to form a wing or guard, of a cast-metal filling which unites the said members, the top of said filling being substantially flush with the tops of the rails, and having flangeways formed therein, substantially as described.

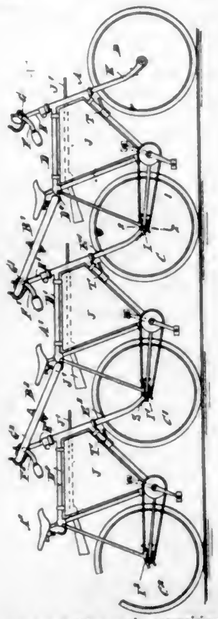
2. In a railway-track structure, the combination with the rail members, one or more of which have their upper portions laterally removed or displaced from the web, of cast-steel uniting said rails and forming the center of the structure, said cast-steel extending substantially flush with the tops of the rails and having flangeways formed therein, substantially as described.

3. In a railway-track structure, having a rail member a portion of whose upper portion is severed from its lower portion and laterally removed or displaced therefrom, of a cast-steel filling extending through and uniting the rail members, and forming the floor of the structure, said filling having the intersecting portions of the wheel-grooves formed therein.

4. In a railway-track structure, the combination with one or more rail members having their upper portions severed from their lower portions and removed laterally therefrom, of a cast-steel filling extending underneath the heads of and between the rails flush with their upper surfaces, and having formed therein the intersecting flangeways of the structure, substantially as described.

5. In a railway-frog, the combination with the two rail members, each of which has its upper portion severed and laterally removed from its lower portion for a part of its length, of a solid cast-steel filling extending between and through the said rails, and forming the point of the frog, substantially as described.

658,406. INTERLOCKING BICYCLE. OSCAR I. STRAUS, U. S Army. Filed Aug. 5, 1896. Renewed Feb. 24, 1900. Serial No. 6,414. (No model.)



Claim.—1. An interlocking cycle, comprising a series of bicycles arranged one behind the other, the front wheel of the following bicycle being removed from its fork and such fork being interlocked with the rear spindle of the preceding bicycle, the removed front wheel being carried on the frames of the adjacent interlocked bicycles and forming a slightly-yielding connection between said frames, as described.

2. An interlocking cycle, comprising a series of bicycles arranged one behind the other and of which the front wheel of the following bicycle is removed from its fork and such fork is locked upon the rear spindle of the preceding bicycle, an extension on the rear portion of the frame of the preceding bicycle, and a cushioned arm on the head of the following bicycle, the removed front wheel being received in said extension and arm and forming a means of connection between the upper portions of the bicycles, substantially as set forth.

3. An interlocking cycle, comprising a series of bicycles arranged one behind the other and of which the front wheel of the following bicycle is removed from its fork and such fork supported upon the rear spindle of the preceding bicycle, collars carried by said rear spindle, forked lock-arms mounted to turn upon the ends of the front fork members and arranged to engage the collars of said rear spindle, and a connection between said lock-arms, whereby each one will be turned on turning the other, substantially as described.

4. An interlocking cycle, comprising a series of bicycles arranged one behind the other, the rear spindle of the preceding bicycle having annular grooves arranged to receive the front fork members of the following bicycle, said fork members being bifurcated at their lower ends, and a forked locking-arm mounted to rotate upon the bifurcated ends of said fork and arranged to lock said fork in said annular grooves, as described.

5. A bicycle provided with a rear-wheel spindle formed with spiral grooves, rear lower braces, a forked box held in the forked end of each brace and provided with a pin engaging the said groove, whereby the brace is drawn inward or outward on turning the spindle, a forked lock-arm mounted to turn on said box and by which the forked end of said box is opened and closed, and a pin on said spindle and engaging said lock-arm, whereby said spindle is turned on turning said lock-arm, substantially as described.

6. A bicycle, provided with a rear-wheel spindle, a forked box on said spindle and carrying the bifurcated end of the rear lower brace, a connection between said box and spindle and by which the brace is drawn inward or outward on turning said spindle, and a lock-arm mounted to turn on said box, said lock-arm, when it is turned, turning the spindle and opening and closing the forked end of the box upon said spindle to hold or release the same, substantially as described.

7. A bicycle provided with a rear fork, a spindle received in said fork, and a forked arm held to turn on said rear fork and having its members receiving the spindle between them to hold the spindle in place, the fork of said arm being brought to register with the opening in the ends of the rear fork of the bicycle to release said spindle, substantially as set forth.

8. A bicycle provided with a rear fork having each member provided with bearings in which is received the spindle, and a forked lock-arm mounted to turn on said bearing and arranged to lock the spindle therein and to open the bearing to release the spindle, substantially as shown and described.

9. An interlocking cycle, provided with collars carried by the spindle of the rear wheel, a front fork adapted to engage with its forked members the said collars, and a forked lock-arm mounted to turn on the said members and adapted to lock the same on the said collars, and means for turning the said arms simultaneously, substantially as shown and described.

10. An interlocking cycle, provided with collars carried by the spindle of the rear wheel, a front fork adapted to engage with its forked members the said collars, and a forked lock-arm mounted to turn on the said members and adapted to lock the same on the said collars, and a pin projecting from the said forked member to engage a spiral groove in the said collar to draw the members inwardly on turning the collars, substantially as shown and described.

11. An interlocking cycle provided with collars carried by the spindle of the rear wheel, a front fork having forked members straddling said collars, forked lock-arms mounted to turn on said members and locking the same on said collars, a handle on one of said lock-arms, and a ring on one of the front fork members and arranged to engage said handle to hold said lock-arms in closed position, substantially as set forth.

12. An interlocking cycle, provided with collars carried by the spindle of the rear wheel and each formed with a spiral groove, and a front fork adapted to straddle with its forked ends the said collars, and a pin on each end to engage the said groove to draw the members toward each other on turning the collars, and means for simultaneously turning the said collars, as set forth.

13. An interlocking bicycle provided with rear lower braces, a forked box held in the forked end of each brace, a rear-wheel spindle carried in said boxes, and a forked lock-arm mounted to turn on each box and arranged to open and close the forked end of the same on said spindle, substantially as described.

14. An interlocking bicycle, provided with a rear-wheel spindle formed with spiral grooves, a box on the said spindle and carrying the rear lower brace, the said box being provided with a pin engaging the said groove to draw the lower rear brace inward or outward on turning the spindle, substantially as shown and described.

15. A bicycle provided with a rear-wheel spindle, rear lower braces, a forked box held in the forked end of each brace, and a forked lock-arm mounted to turn on the said box and by which the forked end of said box is opened and closed, the said lock-arm being connected with the said spindle, whereby said spindle is turned on turning said lock-arm, substantially as shown and described.

16. An interlocking bicycle having a handle-bar head formed in two sections hinged together, one of said sections having extending upwardly from it an open bifurcated arm which is shaped to receive the tire and rim of a wheel, substantially as set forth.

17. The combination with an interlocking bicycle, of an arm held in the lower front brace of the bicycle, said arm being provided with a set-screw by which it is adjusted along said brace, and two spring-arms arranged to engage the members of the front fork and hold the same from turning, substantially as described.

18. An interlocking bicycle provided with a front fork having its members bifurcated at their lower ends to receive the front-wheel spindle, forked lock-arms mounted to turn on the said ends, and means for locking the said arms in a closed position and to the said members, substantially as described.

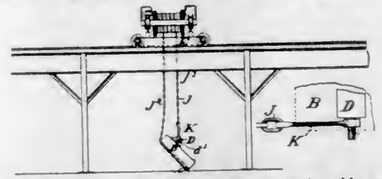
19. A bicycle provided with a forked locking-arm on the lower end of its front fork member, and a handle-bar arranged to be received in said fork and locked therein by said arm, substantially as described.

20. A bicycle provided with fork members formed with bifurcated ends, forked locking-arms mounted to turn on said bifurcated ends of the members, a handle-bar arranged to be received in said ends and locked therein by said locking-arms, and means for holding said arms in locked position substantially as shown and described.

21. An interlocking cycle, comprising a series of bicycles, each complete in itself and having its rear-wheel spindle loosely received in heads K', secured on the outer ends of the tube K, and collars K^2 secured on said tube K, and its front fork provided with a locking device, each bicycle of the series except the first having its front wheel removed from its fork and such fork attached to the rear spindle of the preceding bicycle, being locked thereon by said locking device, and a yielding connection between the upper portions of the frames of adjacent bicycles, substantially as described.

22. An interlocking military cycle, comprising a series of bicycles arranged one behind the other, all alike and each complete in itself, each bicycle except the first of the series having its front wheel removed from its fork and such fork supported upon the rear spindle of the preceding bicycle, a permanent and complete locking device carried on the front fork and arranged to lock said fork upon said rear spindle, and hook extensions formed at the rear of the frame and at the head of each bicycle, the removed front wheels being supported between the adjacent extensions of the frames and adjacent bicycles and serving to brace said frames, as described.

658,407. CASTING PLANT. MAXIMILIAN M. SUPPES, Elyria, Ohio. Filed Sept. 5, 1899. Serial No. 729,570. (No model.)



Claim.—1. In a pig-casting plant, the combination with a casting-car having a plurality of removable mold-beds supported thereon, each of said mold-beds having means at both ends and at one side for the connection thereto of hoist-chains, of a hoist having two drums, means for operating said drums both conjointly and independently, two chains connected to one drum for connection with the ends of any one of the mold-beds, and a single chain connected to the other drum and designed for connection with the side of a mold-bed.

2. The combination with a casting-car having thereon a number of independent, removable mold-beds, having pins or studs at their end portions at one side of their longitudinal centers, and also an eyebolt at their central portions upon the opposite side of the longitudinal axis of the mold from the said pins or studs, hoist-chains having means for engaging the said pins or studs, a hoist-chain having means for engaging the said eyebolt, of means for actuating the said chains altogether, or the last-named chain independently of the others.

3. The combination with a mold having pins or studs at its end portions at one side of its longitudinal center, and an eyebolt at its central portion upon the opposite side from said pins or studs, of a hoist having two chains provided with links at their lower ends for pivoted engagement with the said pins or studs, a third chain having means for engaging the said eyebolt, and means whereby the last-named chain may be operated either conjointly with, or independently of, the first-named chains.

4. In a casting plant, the combination of a casting-car, having a plurality of mold-beds loosely supported thereon, a crane, a hoist carried by said crane and having three chains, means whereby two of said chains may be connected to any one of the mold-beds at one side of its longitudinal axis, and the third chain to the same at the opposite side of such axis, and means whereby the last-named chain may be operated to raise or lower the mold-bed either conjointly with or independently of the first-named chains.

658,408. APPARATUS FOR HANDLING AND CRUSHING COAL. MAXIMILIAN M. SUPPES, Elyria, Ohio. Filed Mar. 20, 1900. Serial No. 9,381. (No model.)

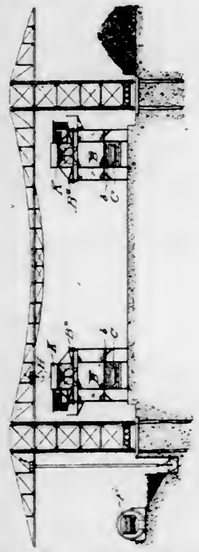
Claim.—1. In a coke plant, the combination with coke-ovens, and a coal-bin elevated above the said ovens, of a coal-crusher mounted over the said bin to traverse the same, and coal elevating and conveying mechanism arranged to deliver coal to the said crusher at any point in the range of its movement.

2. In a coal-crushing plant, the combination with a bin for crushed coal, of a coal-crusher mounted to traverse the top of the said bin, a crane spanning said bin, and a hoist and carrying device on said crane for delivering coal to said crusher.

3. In a coal-crushing plant, the combination with a movable crane extending from the coal-receiving to the coal stock-pile, a coal-bin spanned by said crane, a coal-crusher mounted on the top of said bin to traverse the same and a coal hoist and carriage mounted on said crane for carrying coal from the receiving-pile to the stock-pile, or from either of said piles to the coal-crusher.

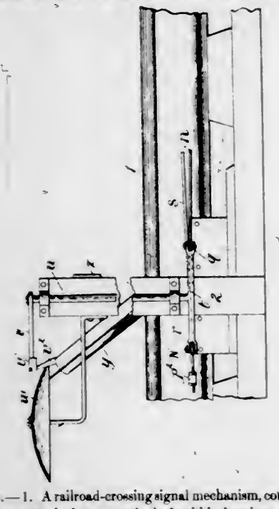
4. The combination of a line of coke-ovens, a crane spanning said ovens and movable in a direction parallel thereto, a coal-bin also spanned by said crane, a car-track extending underneath said bin and above said ovens, a coal-crusher mounted on said bin to traverse the same, and means on said crane for elevating coal and delivering it to said crusher.

5. In a coke plant, the combination with coke-ovens, a coal-bin, a car-track extending underneath the said bin and above said ovens, a coal-crusher mounted on the top of said bin to traverse the same longitudinally, and coal elevating and conveying mechanism also movable longitudinally of the said bin.



6. In a coal crushing and coking plant, the combination of a coal-receiving pile, a coal stock-pile, a movable crane spanning the distance between the said piles and overhanging the same, an elevated coal-bin between the said coal-piles and also spanned by the said crane, a coal-crusher mounted to traverse the top of said bin, and coal elevating and conveying mechanism supported on said crane and arranged to carry coal from the receiving-pile to the stock-pile, or from either of said piles to the coal-crusher.

658,409. **RAILROAD-CROSSING SIGNAL.** MINOR W. TAYLOR, Waterloo, Iowa. Filed Feb. 27, 1900. Serial No. 6,779. (No model.)



Claim.—1. A railroad-crossing signal mechanism, comprising signal-operating arms attached to a crank-shaft within bearings on a post at the crossing adapted to rock the signal-agitating arms back and forth, a crank-lever attached to the lower end of the crank-shaft, connecting-rods linked to the ends of the crank-lever and at their other ends to centrally-pivoted levers whose opposite ends are linked to connecting-rods lying parallel with the outer side of rail, springs connecting the connecting-rods to working beams, working beams linked at one end to the springs and at the other to braces pivotally attached to the rail, tubular boxes containing plungers provided with piston-shaped heads resting upon springs placed in the interior of the boxes, suspended from the rail at an inclination toward the crossing and pivotally connected to the working beams, plungers working within the boxes and having their upper ends pivotally connected to depressing-levers, depressing-levers connected at one end to the plungers and at the other to a crank-arm working upon a stud attached to the rail, springs linked at one end to lower portion of plunger-boxes and at the other to lugs attached to rail, studs attached to rail at proper places to regulate the position of the plunger-boxes, all substantially as herein set forth and described.

2. A railroad-crossing signal mechanism, comprising a tubular box containing a plunger resting upon a spring, the upper portion of plunger passing through an opening in the top of said box and normally raised above the upper surface of rail, a spring connecting plunger-box with rail, a depressing-lever at one end pivotally connected to rail and at the other to the upper portion of plunger, a working beam pivoted to the lower portion of plunger-box, the lower end of the beam moving upon a fulcrum-pivot and linked at its upper end to a connecting-rod supplied with a tension-spring, a connecting-rod and tension-spring linked to a centrally-pivoted lever, a centrally-pivoted lever linked to a connecting-rod pivoted to a crank-lever attached to a crank-shaft moving within bearings on a post at the crossing, all substantially as herein set forth and described.

3. In a railroad-crossing signal mechanism, the crank-shaft *n* working within bearings on the post 2 at the crossing, the signal-operating arms *v* and *x*, bell-clapper v^2 and hood *v'*, bell *w*, signal-semaphore *y* with weight *y'* pivoted to the post 2, stop *z*, crank-lever *t*, connecting-rods *q* and *r*, centrally-pivoted levers *o* and *p*, connecting-rods *n* and *s* and springs *g* and *g'*, in combination with the working beams *d* and *d'*, braces *i* and *i'*, plunger-boxes *a* and *a'*, plungers *c* and *c'* resting on springs 1, depressing-levers *b* and *b'*, crank-arms *h* and *h'*, springs *e* and *e'*, studs *f* and *f'*, all suitably connected and attached together, substantially as set forth and described herein.

4. In a railroad-crossing signal mechanism, the following subcombination of elements, viz: the depressing-levers *b* and *b'*, plungers *c* and *c'* working within the boxes *a* and *a'* and kept normally in position above the rail by the springs 1, *e* and *e'*, studs *f* and *f'*, the working beams *d* and *d'*, with suitable connections and supports, all substantially as set forth and described herein.

5. In a railroad-crossing signal mechanism, the following subcombination of elements, viz: the depressing-levers *b* and *b'*, plungers *c* and *c'*, plunger-boxes *a* and *a'* provided with springs placed therein and suspended from rail at an inclination toward crossing, studs *f* and *f'*, springs *e* and *e'*, all provided with suitable connections and supports, substantially as set forth and described herein.

658,410. **VEHICLE-AXLE NUT.** GEORGE W. TERRY, Pontiac, Mich., assignor of one-half to Isaac E. Terry, same place. Filed Mar. 12, 1900. Serial No. 8,390. (No model.)



Claim.—An extensible axle-nut comprising two telescoping members or sections, the inner member being recessed and threaded internally and having a polygonal outer surface, and an outer or extensible member having an opening formed therein conforming in configuration to said polygonal surface and provided upon its exterior with a wrench-hold, and a locking-wedge extending lengthwise of the nut and between the members, substantially as described.

658,411. **IONONE DERIVATIVE AND PROCESS OF MAKING SAME.** JOHANN C. W. F. TIEMANN, Berlin, Germany, assignor to Haarmann & Reimer, Holzminden, Germany. Filed Apr. 20, 1898. Serial No. 678,285. (No specimens.)

Claim.—1. The herein-described process of obtaining an intermediate product for the manufacture of ionone which consists in producing aliphatic ethyl citralidene aceto-acetate, converting at a low temperature into ethylic ether of ionone by acid, treating with an alkaline reagent to obtain ionone carbonic acid, splitting off carbonic acid, and separating the final product.

2. The herein-described process of obtaining ethylic ether of ionone carbonic acid, which consists in treating aliphatic ethyl citralidene aceto-acetate with a concentrated mineral acid, while maintaining the reagents at a low temperature.

3. The herein-described process of obtaining ethylic ether of ionone carbonic acid which consists in slowly adding a quantity of aliphatic ethyl citralidene aceto-acetate to a larger quantity of concentrated sulfuric acid cooled by ice, keeping the mixture at a temperature substantially between 2° and 7° for a few minutes and pouring the mixture on ice.

4. The herein-described process of obtaining aliphatic ethyl-citralidene aceto-acetate (ethylic-ether of pseudo-ionone-carbonic acid), which consists in heating a mixture of citral, ethyl acetyl-acetate, glacial acetic acid, anhydrous sodium acetate and acetic anhydrid, extracting the product and subjecting it to fractional distillation.

5. The herein-described process of obtaining ionone carbonic acid which consists in heating ethylic ether of ionone carbonic acid in an alcoholic solution of an alkali, and adding a mineral acid.

6. The herein-described process of obtaining ionone carbonic acid which consists in heating ethylic ether of ionone carbonic acid in a steam-bath with a solution of potassic hydrate in alcohol, acidifying, and extracting with ether.

7. The herein-described process of obtaining the semicarbazone of beta-ionone, which consists in heating ionone carbonic acid above its melting-point in an atmosphere of carbonic acid, dissolving the product in alcohol, and adding an aqueous solution of semicarbazid hydrochlorate and sodium acetate.

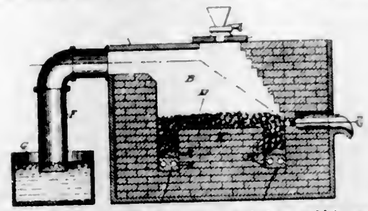
8. As a new article of manufacture, the herein-described ethylic ether of ionone carbonic acid derived from aliphatic ethyl citralidene aceto-acetate, being a yellow oily liquid having a fragrant odor, boiling at 215° under a pressure of one hundred millimeters, and at 160° under a pressure of eleven millimeters, having at 19° a specific gravity of 1.0387 and an index of refraction of $n / D = 1.5110$, crystallizing at low temperatures, melting at 49° when crystallized from ligroine at a low boiling-point, and having the formula $C_{16}H_{28}O_3$.

9. As a new article of manufacture, the herein-described ionone carbonic acid derived from ethylic ether of ionone carbonic acid, in yellowish-white crystals melting at 200° centigrade soluble with difficulty in ether, alcohol and benzene, soluble in boiling alcohol, and having the formula $C_{14}H_{20}O_3$.

10. The herein-described process of obtaining beta-ionone (also called iso-ionone) consisting in first producing aliphatic ethyl-citralidene aceto-acetate (ethylic-either of pseudo ionone-carbonic acid) by heating a mixture of citral, ethyl-acetyl-acetate, glacial acetic acid, anhydrous sodium acetate, and acetic-anhydride, extracting the product and subjecting to fractional distillation; second, obtaining ethyl ether of ionone carbonic acid by slowly adding a quantity of the so-produced aliphatic ethyl citralidene-aceto-acetate to a larger quantity of concentrated sulfuric acid cooled by ice, keeping the mixture at a temperature substantially between 2° and 7° for a few minutes and pouring the mixture on ice; third, obtaining ionone carbonic acid from its said ethyl ether by heating this latter in a steam-bath with a solution of potassic hydrate in alcohol, adding a mineral acid and extracting with ether; fourth, obtaining the semicarbazone of beta-ionone by heating said ionone carbonic acid above its melting-point in an atmosphere of carbonic acid, dissolving the product in alcohol and adding an aqueous solution of semicarbazid hydrochlorate and sodium acetate, and fifth, separating ionone from the said semicarbazone of beta-ionone, substantially as described

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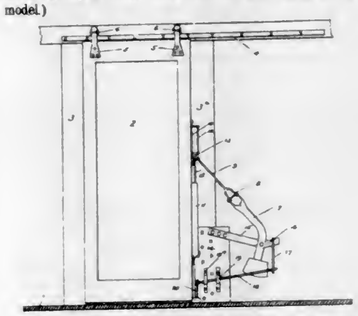
658,412. **METHOD OF TREATING ORES.** GUSTAF M. WESTMAN, New York, N. Y., assignor to the Arsenical Gold Reduction Company, Newark, N. J. Filed Jan. 12, 1899. Serial No. 701,903. (No specimens.)



Claim.—1. The process of treating arsenical ores which consists in melting the ores by the passage of electric currents therethrough, thereby vaporizing the arsenic, cooling portions of the electrodes maintaining portions of the electrodes intervening between the ore and the cooled portions in a melted condition and collecting the precious metals in such melted portions.

2. The process of treating arsenical ores which consists in melting the ores by the passage of electric currents therethrough, thereby vaporizing the arsenic, maintaining portions of the electrodes relatively cool, collecting the precious metals in melted conducting material at the bottom of the melting-chamber and withdrawing the precious metals with such melted material.

658,413. **AUTOMATICALLY-OPERATING DOOR.** JOHN H. WHITAKER, Davenport, Iowa. Filed July 14, 1900. Serial No. 23,564. (No model.)



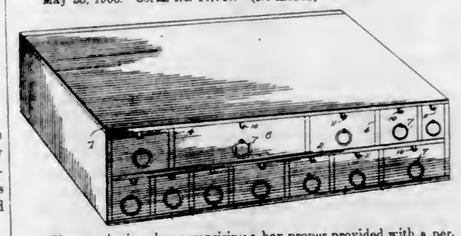
Claim.—1. A sliding door, a pivoted angular arm its upper extremity loosely secured to the rear of the door, its lower end provided with a weight, a tread-plate, an angular rocking bar to which the tread-plate is secured; said rocking bar resting upon the floor, with its inner extremity located near the rear edge of the door; and intermediate mechanism operatively connecting the rocking bar with the pivoted angular arm for the purposes stated.

2. In combination, a sliding door provided with pulley-wheels near its upper edge, a rail secured horizontally and upon which the pulley-wheels are mounted, a cylinder secured to the rear edge of the door, a piston vertically operative within said cylinder, a roller, an angular pivoted arm to whose upper extremity is secured the roller and the upper end of the piston and whose lower end is provided with a weight, guide-rods secured to the rear edge of the door above the cylinder between which guide-rods the roller is adapted to operate vertically; an angular rocking bar located above the floor, a tread-plate secured at or near the outer extremity of said rocking bar, a base-plate upon which the rocking bar rests, intermediate mechanism operatively connecting the rocking bar with the weighted angular arm so as to swing the latter on its pivot when the tread-plate is depressed for the purposes herein stated.

3. In combination, a sliding door, a cylinder secured to its rear edge, a piston vertically operative in the cylinder, guide-rods secured to the rear edge of the door and above the cylinder, a roller adapted to operate vertically between the guide-rods, a pivoted angular arm, its upper extremity connected with the roller and the upper end of the piston-rod, its lower end provided with a weight; an angular rocking bar resting upon the floor, a tread-plate secured thereto, a vertical bar whose lower end is loosely connected with the inner end of the rocking bar, a lever suitably fulcrumed, one end connected with the upper end of the vertical bar, and means for connecting its other end with the weighted arm for the purposes stated and substantially as set forth.

4. A sliding door, combined with an angular pivoted arm whose upper extremity is loosely secured to the rear edge of the door and whose lower end is provided with a weight, the angular rocking bar 21, the tread-plate 22 secured thereto, the base-plate 23, the vertical bar 20, the lever 18 fulcrumed as shown, the guide-piece 19*, the bar 16 and connecting-link 17 all for the purposes stated and substantially as shown and described.

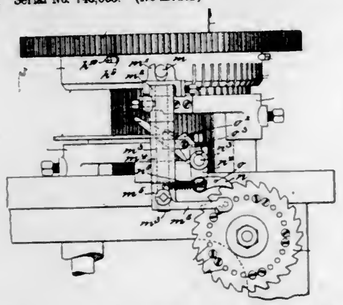
658,414. **CIGAR-BOX.** WILLIAM M. WILLIAMS, Bland, Va. Filed May 23, 1900. Serial No. 17,747. (No model.)



Claim.—A cigar-box comprising a box proper provided with a permanently-closed top and one open side, a single centrally-positioned horizontal partition in the box, a plurality of vertical partitions above and be-

low the said horizontal partition arranged at different distances apart to form compartments of varying dimensions, a series of cases corresponding in number to the number of the compartments and completely closed on all sides and at the ends, the cases being equal in length to the width of the box proper and having one end of each hinged for opening purposes, and catches of a yielding nature applied to the top portion of the outer ends of the cases to hold the latter against accidental disengagement from the box proper and retain the hinged ends closed, the said cases being adapted to receive different brands of cigars and to be delivered to the purchaser as a means of containing the cigars.

658,415. ATTACHMENT FOR AUTOMATIC CIRCULAR-KNITTING MACHINES. ALFRED G. WRIGHT, Philadelphia, Pa., assignor to the National Automatic Knitter Company, same place. Filed Dec. 12, 1899. Serial No. 740,063. (No model.)



Claim.—1. In a circular-knitting machine of the character described, a series of regular needles, divided into two sets, a carrier, means for reciprocating said carrier to operate both sets of needles, a locking mechanism for each needle of one set carried by said carrier and adapted to radially traverse the same to lock or release each needle of said set in the carrier, and means for operating said mechanism, substantially as and for the purposes described.

2. In a circular-knitting machine of the character described, a series of regular needles, divided into two sets, a carrier means for vertically moving said carrier to operate both sets of needles, a series of jacks adapted to be shifted in and out of said carrier to lock or release one set of needles to the carrier and means for operating said jacks, substantially as and for the purposes described.

3. In a circular-knitting machine of the character described, a series of needles divided into two sets, a carrier adapted to be elevated and depressed to thereby operate both sets of needles, a series of removable jacks adapted to permanently lock one set of needles in the carrier, and a series of movable jacks adapted to be shifted in said carrier to lock or release the other set of needles in said carrier, substantially as and for the purposes described.

4. In a circular-knitting machine of the character described, a series of needles divided into two sets, a carrier adapted to operate both sets of needles, a series of jacks adapted to permanently lock one set of needles in said carrier, a second series of jacks each provided with two upwardly-projecting prongs and adapted to slide in and out in the needle-carrier to lock or release the other set of needles in said carrier and an oscillating ring adapted to impinge alternately upon either of the prongs of said jacks and to thereby shift said jacks in or out in the carrier when said carrier is operated in one direction, substantially as and for the purposes described.

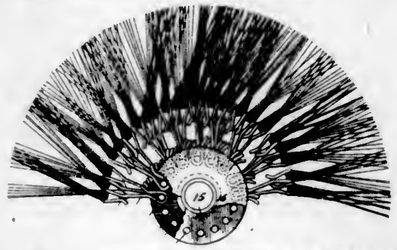
5. In a circular-knitting machine of the character described, a needle-carrier, means for moving said carrier up and down in a vertical direction, a set of needles adapted to be locked or released in said carrier and when released to have a vertical play in said carrier independent of the vertical movement of said carrier, means for locking or releasing said needles, and mechanism operated by the carrier for controlling said means, substantially as and for the purposes described.

6. In a circular-knitting machine of the character described, a needle-carrier, a set of needles adapted to be locked or released in said carrier and when released to have a vertical play in said carrier independent of the vertical movement of said carrier, a series of jacks, each provided with two upwardly-extending prongs and adapted to slide in and out in said carrier to lock or release the needles in the carrier, an oscillating ring adapted to enter between the prongs of the jacks when the carrier is operated in one direction and means controlled by the carrier for oscillating said ring to cause said ring to impinge upon either of said prongs and thereby shift the jacks in or out in said carrier, substantially as and for the purposes described.

7. In a circular-knitting machine of the character described, a needle-carrier, a grooved plate secured to the upper face of said carrier, a set of needles carried by said carrier, a series of jacks adapted to slide in the grooves of said plate to lock or release the needles in said carrier, means for operating said jacks and mechanism operated by the carrier for controlling said means, substantially as and for the purposes described.

8. In a circular-knitting machine of the character described, a ring having a downwardly-projecting flange, a series of radially-disposed grooves arranged along the inner periphery of said ring and terminating at the base of said flange, a similar series of grooves arranged along the outer periphery of said ring, the two series of grooves being arranged on different radial lines, substantially as and for the purposes described.

658,416. POLISHING-BRUSH. FRANK W. YALE, Aurora, Ill. Filed Oct. 19, 1899. Serial No. 734,077. (No model.)



Claim.—1. A polishing-brush comprising in combination a central hub or body, hangers mounted thereon parallel to its axis and wires doubled upon themselves and having coils whereby they may be attached to said hangers, substantially as described

2. A polishing-brush having a central hub or body, spindles mounted on said hub parallel to its axis, a movable means for clamping said spindles in place, the removal of said means affording free access to the ends of the spindles, hangers mounted on said spindles and each hanger having a polishing-tuft thereon composed of a plurality of wires, each wire being doubled upon itself and provided at its bent portion with an integral coil substantially as described.

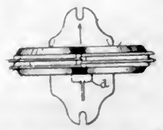
3. In a polishing-brush the combination with a central body or hub having a flanged end provided with seats or sockets concentric to its axis, spindles adapted to said sockets, a perforated washer to afford seats for the opposite ends of the spindles, a clamping-ring for securing the spindles in the sockets, hangers pivotally mounted on the spindles and tufts of wire carried by the hangers, substantially as described.

4. A brush having tufts composed of wires provided with coils intermediate their ends, substantially as and for the purpose described.

5. A brush having tufts composed of a plurality of wires provided between their ends with coils and the end being projected outwardly from the coils and on the same side thereof, substantially as described.

6. A brush having tufts composed of a plurality of wires doubled upon themselves and provided at their bent portions with coils and the end portions of each wire being extended from the coil in planes intersecting each other between the coil and the extremity of said ends, substantially as described.

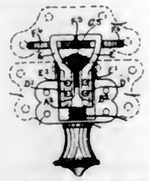
658,417. KNIFE-SHARPENER. JOHN H. AGNEW, Higganum, Conn. Filed Jan. 26, 1900. Serial No. 2,861. (No model.)



Claim.—In combination, the fixed clamp-plate, the removable clamp-plate, the screw attaching said clamp-plates together, the cutter-pins each attached to a clamp-plate and projecting into an oblong mortise in the other clamp-plate, and the cutters hung on said cutter-pins; all subetantially as described and for the purposes set forth.

658,418. FASTENER FOR WINDOWS. ALFRED E. APPLETON, Tewkesbury, England. Filed May 6, 1899. Serial No. 715,829. (No model.)

Claim.—1. A sash-fastener consisting of a catch-piece, a pair of pivoted arms, a rotatable screw, connections between the latter and the said arms pins on the latter and cam-slots for the reception of the said pins and to guide the pivoted arms to engage or disengage the catch-piece upon the rotation of the screw.



2. The improved sash-fastener consisting of a catch-piece, pivoted arms, a rotatable screw, a nut thereon with pin connections to the said arms base-plate and cam-slots therein for the guidance of the pivoted arms.

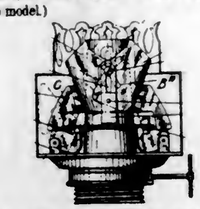
3. In a sash-fastener, the combination with a catch-piece on the bar of an upper sash, of a pair of horizontally-arranged arms on the bar of a lower sash having their outer ends hooked, a horizontally-movable follower, means for reciprocating the follower and pivotal connections between the follower and the inner adjacent ends of the arms, and means whereby when the follower is moved in one direction the outer ends of the arms will be caused to swing together and engage the catch-piece, and when the follower is moved in the opposite direction the said outer ends of the arms will free the catch.

4. In a sash-fastener, the combination with a catch-piece on the bar of an upper sash, of a pair of horizontally-arranged arms on the bar, of a lower sash and having their outer ends hooked, a horizontally-movable follower, a screw threaded through the follower and adapted to reciprocate the latter, pivotal connections between the follower and the inner adjacent ends of the arms, and means whereby when the follower is moved in one direction the outer ends of the arms will be caused to swing together and engage the catch-piece and when the follower is moved in the opposite direction the said outer ends of the arms will free the catch.

5. The combination with a catch-piece, of a base-plate, having cam-slots, a casing, a screw rotatable in the casing, a follower through which the screw is threaded, a pair of arms having hooked outer ends, a depending pin on each of the arms toward the inner end thereof, said pins extending into the slots as described, and pivotal connections between the lower end of the follower and the inner ends of the pins all arranged for coöperation substantially as and for the purpose set forth.

6. The combination with a catch-piece having a vertical portion and horizontal lateral extensions, of a pair of horizontally-arranged arms having hooked outer ends, a screw, connections between the latter and the arms and means whereby when the screw is turned in one direction the outer ends of the arms will swing together and engage the vertical portion of the catch-piece and lie beneath the lateral extensions of the latter, and when the screw is turned in the opposite direction the outer ends of the arms will swing apart and free the catch-piece.

658,419. EXTINGUISHER FOR LAMPS OR THE LIKE. WILLIAM E. ARCHER, London, England. Filed Aug. 2, 1899. Serial No. 725,910. (No model.)



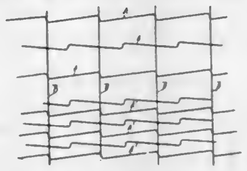
Claim.—1. In a lamp, the combination with the wick-holder, of a movable extinguisher and a plurality of levers each of which is pivoted to the lamp and operatively engaged with the extinguisher, each of said levers having, when in its normal position, its center of gravity above the fulcrum upon a radius inclined upward from the fulcrum toward the wick-tube and a stop to limit the motion of the lever toward the wick-tube, substantially as set forth.

2. In a lamp, the combination with a wick-holder, of a movable platform, an extinguisher carried by the platform, and a plurality of levers each of which is pivoted to the lamp and operatively engaged with the movable platform, each of said levers having, when in its normal position, its center of gravity above the fulcrum upon a radius inclined upward from the fulcrum toward the wick-tube, and a stop to limit the motion of the lever toward the wick-tube, substantially as set forth.

3. In a lamp, the combination with the wick-holder, of two members pivoted together, surrounding the wick-tube and free to slide thereon, means by which the members when raised are brought together above the wick-tube, and a plurality of levers, each of which is pivoted to the lamp and operatively engaged with the members surrounding the wick-tube, each of said levers having, when in its normal position, its center of gravity above the fulcrum upon a radius inclined upward from the fulcrum toward the wick-tube and a stop to limit the motion of the lever toward the wick-tube, substantially as set forth.

4. In a lamp, the combination with the wick-holder, of a movable platform, a member carried by the platform in close proximity to the wick-tube, a second member pivoted to the first and with the former surrounding, while free to slide upon the wick-tube, means by which the members when raised are brought together above the wick-tube and a plurality of levers, each of which is pivoted to the lamp and operatively engaged with the movable platform, each of said levers having, when in its normal position, its center of gravity above the fulcrum upon a radius inclined upward from the fulcrum toward the wick-tube and a stop to limit the motion of the lever toward the wick-tube, substantially as set forth.

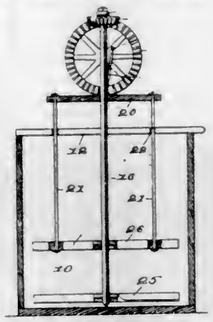
658,420. WIRE FENCE. REUBEN H. BLOOMER, Council Bluffs, Iowa. Filed Apr. 6, 1896. Serial No. 586,470. (No model.)



Claim.—1. In a metallic fence the combination with a plurality of wire strands A, in series multiple, each strand being provided with a plurality of reverse curved portions 6, extending in a like plane and in a staggered position, in combination with a plurality of pickets B, wound about said strands at said curved portions and near opposite ends of said curved portions so that the picket winds about the highest portion of the curve within one strand and the lower portion of the curve within one or more adjacent strands as and for the purpose set forth.

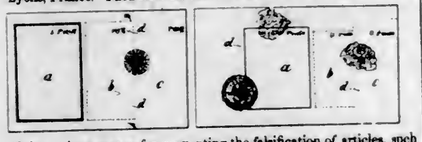
2. In a fence of the character described, a series of horizontal fence-strands, each strand being provided with a plurality of reverse curved portions extending in a like plane, said reverse curved portions being in a staggered position in combination with a plurality of vertical pickets wound about said stay-strands at said curved portions in such manner that the picket winds about the highest portion of the curve within one strand, and the lowest portion of a curve within one or more adjacent strands.

658,421. CHURN. FLETCHER H. BOGGESS, Sr., Dexter, Iowa. Filed Aug. 12, 1899. Serial No. 727,028. (No model.)



Claim.—An improved churn, comprising a churn-body, a cover-section secured to the body, and having a notch at the central portion of one edge and two notches on opposite sides thereof on the same edge, a hinged cover-section to lie when closed close to the fixed section, a bracket on the fixed section, a rotatable shaft supported in said bracket and in the bottom of the churn-body and passed through said central notch, a dasher fixed to the shaft, a second dasher slidingly mounted on the shaft, rods fixed to the sliding dasher and passed upwardly through the remaining notches in the fixed cover, a sliding cross-head on the shaft above the cover and having said rods attached thereto a pitman connected with the cross-head and means for rotating the shaft and reciprocating the pitman.

658,422. MEANS FOR DETECTING FALSIFICATION OF LIQUID OR OTHER PRODUCTS, &c. ANDRÉ BRALY and LOUIS BRALY, Lyons, France. Filed Nov. 16, 1896. Serial No. 612,248. (No model.)



Claim.—As a means for preventing the falsification of articles, such as articles of commerce, documents, works of art, &c., the combination with the article to be protected, of a means for labeling the same comprising a label proper containing a desired designation or information concerning the article applied to the said article and bearing a distinguishing mark such as a serial number, a check-foil removably borne by the article, said check-foil being provided with a distinguishing mark or number similar to that of the label and a counterfoil *c* similarly distinguished to be retained by the vender, the said two checks or counterfoils being provided with complementary portions of a designation, device or stamp whereby the said two foils may be fitted together to produce the entire designation or stamp, whereby the check-foil attached to the article may be removed by the purchaser and returned to the original vender where the said check-foil may be fitted to the corresponding check or counter foil and the genuineness of the article to which the two foils relate, thereby determined.

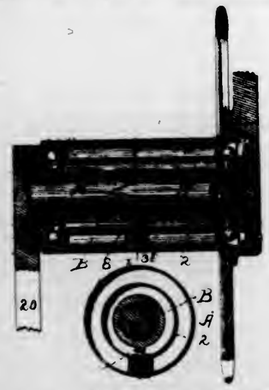
658,423. CARBON ROD FOR ELECTRIC-ARC LAMPS. HUGO BREMER, Neheim, Germany. Filed Aug. 5, 1899. Serial No. 726,344. (No specimens.)

Claim.—1. A carbon electrode for arc-lamps containing luminiferous mineral matter uniformly mixed with the carbon, and provided with an air-tight glassy coating adapted to melt at the extremity of the electrode and then to absorb and chemically combine with the basic slag produced by the burning of the electrode, substantially as and for the purpose described.

2. A carbon electrode for arc-lamps containing a salt of an alkaline earth uniformly mixed with the carbon and provided with an air-tight glassy coating adapted to burn at the extremity of the electrode and then to absorb and chemically combine with the basic slag produced by the burning of the electrode, substantially as described and for the purpose specified.

3. A carbon electrode for arc-lamps containing a salt of an alkaline earth uniformly mixed with the carbon and provided with a coating of a fusible material adapted to melt at the extremity of the electrode and then to absorb and chemically combine with the basic slag produced by the burning of the electrode, substantially as described, and for the purpose specified.

658,424. CYCLE CRANK MECHANISM. PATRICK H. BRENNAN, Syracuse, N. Y. Filed Aug. 28, 1897. Serial No. 649,899. (No model.)

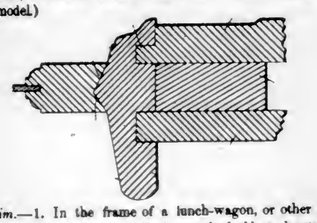


Claim.—1. In a cycle, the combination with a crank provided with an interiorly-recessed head, and a crank-shaft integral therewith and concentric to said recess, of a sleeve slid onto said shaft, a ball-cone screwed onto said sleeve, and a ring-nut screwed into said recess exterior to and engaging with said cone, whereby said sleeve is connected to said head and crank.

2. In a cycle, the combination with a casing, a sleeve concentric with it, and threaded substantially as shown, ball-cups in said casing, ball-cones screwed onto said sleeve, and balls between said cups and cones, of cranks having heads recessed, one to fit into and the other over an end of said casing, a nut engaging said head and cone to connect one end of said sleeve to that head, a crank-shaft section integral with this head, and retained in said sleeve by said nut, and a crank-shaft section integral with the other head and adapted to be screwed into said sleeve and make a joint with the inner end of the other section.

3. In a crank-shaft mechanism, the combination with a crank-hanger casing, ball-cups within it, a sleeve having both ends projecting beyond said casing, ball-cones upon it also projecting in like manner, cranks having heads recessed to close the ends of said casing, a nut connecting one end of said sleeve to the adjacent head, and a crank-shaft connected to said sleeve and connecting said head to the head upon the opposite crank.

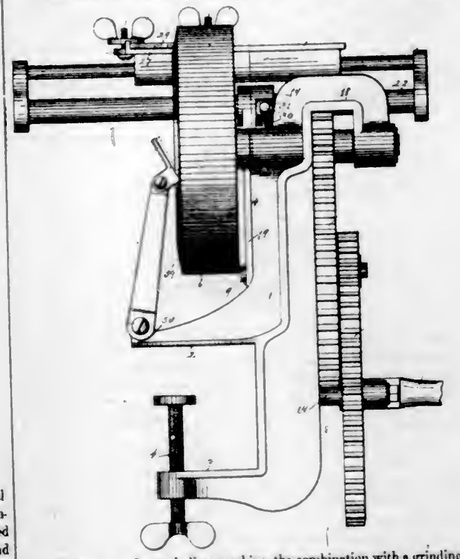
658,425. WINDOW-STOOL FOR LUNCH-WAGONS. THOMAS H. BUCKLEY, Worcester, Mass. Filed June 27, 1900. Serial No. 21,747. (No model.)



Claim.—1. In the frame of a lunch-wagon, or other device, the combination with the body of the frame, the inside and outside sheathing, and the uprights, of a window-stool having openings or mortises to receive the uprights, and two longitudinal grooves in its under surface to receive the upper edges of the sheathing, substantially as shown and described.

2. In the frame of a lunch-wagon or other device, the combination with the body of the frame, the inside and outside sheathing or paneling, and the uprights, of a window-stool having openings or mortises to receive the uprights, and two longitudinal grooves in its under surface to receive the upper edges of the sheathing or paneling, and an extension on its upper surface, to extend into a recess in the lower edge of the window-sash, substantially as shown and described.

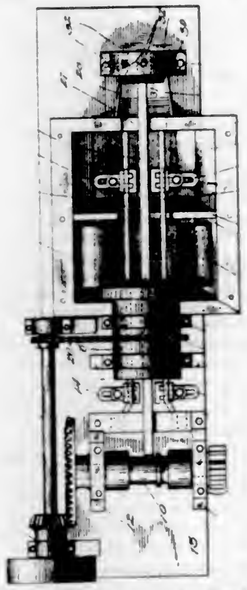
658,426. TOOL-GRINDING MACHINE. JOHN H. BURCK, Hoosick, N. Y., assignor to the Empire Implement Manufacturing Company, Albany, N. Y. Filed Aug. 14, 1899. Serial No. 727,100. (No model.)



Claim.—1. In a grinding-machine, the combination with a grinding-wheel; and means for rotating the wheel; of a tool-support, comprising a table inclined to and facing the wheel, and an offset from the table at or near the table edge nearest the wheel; and a pivotal connection between the projecting end of the offset and a stationary support, substantially as described.

2. In a grinding-machine, the combination with a grinding-wheel; and means for rotating the wheel; of a tool-support comprising a table inclined to and facing the wheel, and an offset from the table at or near the table edge nearest the wheel; a supporting-arm pivoted at its lower end to a fixed support; and a pivotal connection between the upper end of the arm and the projecting end of the table-offset, substantially as described.

658,427. MACHINE FOR PAINTING MOLDINGS. RUDOLPH F. CERMAK, Chicago, Ill. Filed Sept. 25, 1899. Serial No. 731,648. (No model.)



Claim.—1. The combination with a tank; of standards, a drum journaled within the standards, buckets within the tank and secured to the drum, a shaft, means for imparting motion from said shaft to the drum, normally-contacting rollers, standards for the rollers, means for imparting motion to said rollers from the shaft, and a bed extending from the rollers, through the drum and into the tank.

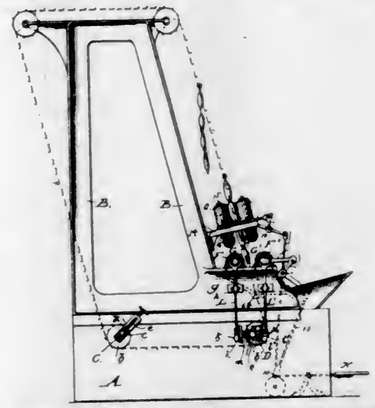
2. The combination with a tank; of a bed therein and projecting from opposite ends thereof, standards, a drum mounted upon the standards and surrounding the bed, an annular flange to the drum within the tank, buckets secured to the flange, a shaft, means for imparting motion from the shaft to the drum, rollers adjacent to the end of the bed, means for holding the rollers normally in contact, and means for imparting motion from the shaft to the rollers.

3. The combination with a tank having a trough at one end; of a bed extending longitudinally of the tank-trough, adjustable guides therefor, standards, a drum journaled therein and surrounding one end of the bed, an annular flange to the drum and within the tank, buckets secured to the flange, a shaft, means for imparting motion from said shaft to the drum, rollers, springs for holding the rollers normally in contact with each other, and means for imparting motion from the shaft to said rollers.

4. The combination with a tank; of a trough at one end thereof, a bed extending longitudinally of said tank-trough, a standard at the end of the trough having an opening therein for the reception of the bed, an elastic strip within the opening above the bed, means for shaping said strip to conform to the molding, a drum at the opposite end of the tank, standards therefor, a flange upon the inner end of the drum, buckets secured thereto, a shaft, and means for imparting motion from said shaft to the drum.

5. In a device of the character described, the combination of a tank, a hollow drum journaled at one side thereof and projecting partially therein, buckets attached to the drum and adapted to rotate therewith within the tank so as to drop therein, a bed extending longitudinally of the tank and through the drum, guides at opposite sides thereof, a standard having an opening therein, an elastic strip within the opening, screws within the standard adapted to contact with the strip and hold the same in position to conform to the shape of the molding, and a trough below the path of the molding and adapted to receive the excess of shellac.

658,428. SAUSAGE-CLEANING MACHINE. GEORGE W. CONSTANTINE, Chicago, Ill. Filed May 17, 1900. Serial No. 16,990. (No model.)



Claim.—1. The combination with a main frame having means for supporting the articles to be cleaned, of vertically-traveling chains or carriers, opposing brushes between which the chains or carriers pass and means for rotating the brushes, said chains or carriers capable of removing the articles from their support on the frame and transporting them between the brushes.

2. In a sausage-cleaning machine, the combination with a main frame, of endless side chains or carriers one upon each side of said frame and between which the sausages are detachably suspended; independent, horizontal, parallel shafts extending transversely across said frame, opposing horizontally-extending brushes on said shafts and between which the sausages are drawn by the chains or carriers, and means for rotating said brushes.

3. In a sausage-cleaning machine, the combination of a main frame, vertically-traveling chains or carriers one upon each side of said frame and between which the sausages are suspended, horizontal parallel brushes between which the sausages are drawn by the carriers, means for rotating the brushes and means for reciprocating the brushes endwise simultaneously with their rotation.

4. In a sausage-cleaning machine, the combination of a main frame, a tank or vat, vertically-traveling chains or carriers one upon each side of said frame and from which the sausages are detachably suspended, opposing horizontal brushes between which the sausages are drawn by the carriers, means for rotating the brushes, bearings in which the axes of the shafts are slidably mounted and means for reciprocating the brushes endwise simultaneously with their rotation.

5. In a sausage-cleaning machine, the combination of a main frame, vertically-traveling chains or carriers one upon each side of said frame and between which the sausages are detachably suspended, horizontal, oppositely-rotatable brushes between which the sausages are drawn by the carriers, vertical brushes above the horizontal brushes and between which the sausages pass after leaving the former, and means for rotating the brushes.

6. In a sausage-cleaning machine, the combination of a main frame, a tank or vat, vertically-traveling chains or carriers one upon each side of said frame and from which the sausages are detachably suspended, a double series of spaced opposing brushes between which the sausages are drawn by the carriers, one of said series of brushes arranged substantially at right angles to the other, means for rotating the brushes of each series in opposite directions and means for reciprocating the brushes of one series simultaneously with their rotation.

7. In a sausage-cleaning machine, the combination of a main frame, a tank or vat, vertically-traveling chains or carriers one upon each side of said frame and from which the sausages are detachably suspended, opposing horizontal brushes between which the sausages are drawn by the carriers, means for rotating the brushes in opposite directions, and means for moving one of said brushes toward and from its companion.

8. In a sausage-cleaning machine, the combination of a main frame, a tank or vat, vertically-traveling chains or carriers one upon each side of said frame and between which the sausages are suspended, horizontally-

disposed parallel brushes and means for rotating the same in opposite directions, and means including a pivoted treadle, a crank-shaft and connections therefrom whereby one of said brushes is movable toward and from its companion.

9. In a sausage-cleaning machine, the combination of a main frame, a tank or vat, vertically-traveling chains or carriers one upon each side of said frame and from which the sausages are suspended, vertically-disposed brushes arranged in opposing pairs and between which the sausages are drawn by the carriers, means for rotating the brushes, and means for moving them relatively toward and from each other.

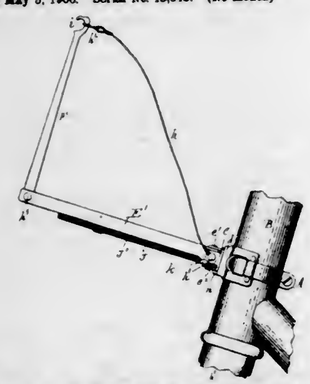
10. In a sausage-cleaning machine, the combination of a main frame, a tank or vat, vertically-traveling chains or carriers, one upon each side of the frame, vertically-disposed opposing brushes and means for rotating the same in opposite directions, and means including a pivoted treadle, a crank-shaft, a slidable frame and connections between it and the shaft whereby the brushes are movable in horizontal planes.

11. In a sausage-cleaning machine, the combination of a main frame, a tank or vat, vertically-traveling chains or carriers one upon each side of the frame for transporting the sausages, a pair of horizontal brushes between which the sausages are drawn by the carriers, and means for reciprocating the brushes including fulcrumed levers connected with the brush-shafts and a crank mechanism connected with the levers.

12. In a sausage-cleaning machine, the combination of a main frame, a tank or vat, vertically-traveling chains or carriers one upon each side of the frame, horizontal parallel brushes and means for rotating the same in opposite directions, a double row of oppositely-rotating vertical brushes above the horizontal brushes, parallel shafts, gearing between the shafts and the axes of the several vertical brushes, and means connecting the shafts with the power.

13. A sausage-cleaning machine including a water tank or vat, vertical frames or sides rising therefrom, sprocket-wheels on the frames and tank, endless-chain carriers one near each vertical side and engaging the sprocket-wheels, horizontal and vertical brushes arranged in opposing pairs and between which the sausages are drawn by the carriers, means for rotating the brushes of each series in opposite directions, and means for opening and closing the horizontal brushes.

658,429. LUGGAGE-CARRIER. JOSEPH DEMBINSKI, Buffalo, N. Y. Filed May 3, 1900. Serial No. 15,315. (No model.)



Claim.—1. In a luggage-carrier, the combination with a bracket having a substantially-horizontal pivot which extends forwardly therefrom, of a rotary main member mounted on said pivot, said bracket being provided with a stop arranged to limit the turning movement of said main member beyond an upright position in one direction and beyond a horizontal position in the opposite direction, and a locking-latch pivoted to said main member and arranged to bear against said bracket in either of its extreme positions, substantially as set forth.

2. In a luggage-carrier, the combination with a bracket and a normally-horizontal main member arranged transversely on the front side of said bracket, of horizontally-swinging side bars pivoted to the ends of said main member and capable of folding inwardly against the front side thereof, and intermediate horizontally-swinging bottom bars also pivoted to the ends of said main member and capable of being folded inwardly parallel therewith, substantially as set forth.

3. In a luggage-carrier, the combination with a normally-horizontal main member, of horizontally-swinging side bars pivoted to the ends of said main member, the pivot of one of said side bars being offset forwardly beyond the plane of the pivot of the other side bar, substantially as set forth.

4. In a luggage-carrier, the combination with a normally-horizontal main member, of horizontally-folding side bars pivoted to the ends of said main member, intermediate horizontally-folding bottom bars pivoted at their inner or rear ends to said main member, and coöperating shifting devices on adjacent side and bottom bars of the luggage-carrier, whereby the bottom bars are folded and unfolded by the corresponding movements of the side bars, substantially as set forth.

5. In a luggage-carrier, the combination with a normally-horizontal main member, of horizontally-folding side bars pivoted to the ends of said main member, and an intermediate horizontally-folding bottom bar pivoted at its inner or rear end to said main member and provided on the inner and outer sides of the adjacent side bar with shifting lugs or projections which extend into the path of said bar, whereby said bottom bar is folded and unfolded by the corresponding movements of said side bar, substantially as set forth.

6. In a luggage-carrier, the combination with a normally-horizontal main member, of horizontally-folding side bars pivoted to the ends of said main member, horizontally-folding bottom bars pivoted at their inner or rear ends to said main member and adapted to occupy a forwardly-converging position between said side bars, one of said bottom bars being provided on inner and outer sides of the adjacent side bar with lugs or projections which extend into the path of said bar, and a connection between the outer or front portions of said bottom bars which causes the same to fold and unfold in unison, substantially as set forth.

7. In a luggage-carrier, the combination with a normally-horizontal main member, of horizontally-folding side bars pivoted to the ends of said main member, and horizontally-folding bottom bars pivoted at their inner or rear ends to the outer ends of said main member, one of said bottom bars having a stud or pin which is arranged in a longitudinal slot formed in the other bottom bar, and one of said bottom bars being provided on opposite sides of the adjacent side bar with shifting lugs or projections which cause the bottom bars to take part in the folding and unfolding movements of said side bar, substantially as set forth.

8. In a luggage-carrier, the combination with a bracket and a normally-horizontal main member arranged centrally and transversely on the front side thereof, of horizontally-folding side bars pivoted to the ends of said main member, and vertically-folding arms pivoted at their lower ends to the outer free ends of said side bars, substantially as set forth.

9. In a luggage-carrier, the combination with a bracket, and a normally-horizontal main member arranged centrally and transversely on the front side thereof and provided at its ends with cord attachments, of horizontally-folding side bars pivoted to the ends of said main member, and vertically-folding arms pivoted at their lower ends to the outer free ends of said side bars and each provided at its upper end with an attachment for a luggage-retaining cord, substantially as set forth.

658,430. PULVERIZER. CHARLES H. DUIDEKER, Pekin, Ill. Filed Apr. 18, 1900. Serial No. 13,389. (No model.)



Claim.—1. In a pulverizer, the combination with a supporting-frame, of a shaft journaled therein and having a plurality of pulverizing-wheels mounted and turnable therewith, swinging boxings for the outer end of the shaft journaled in hollowed-out bearings suitably formed in the frame, substantially as described.

2. In a pulverizer, the combination with a supporting-frame, a shaft substantially of two parts suitably journaled in the frame, the matching inner ends of the shaft carried in collars J, having matching convex faces, and journaled in a boxing capable of vertical adjustment in the supporting-frame, the outer end of the shaft-sections journaled in swinging boxings to permit of the vertical adjustment of the inner ends.

3. A pulverizer, consisting of a supporting-frame, a shaft consisting of two parts flexibly journaled in said frame, a plurality of pulverizing-wheels mounted and turnable with said shaft, a centrally-disposed frame part having means whereby the inner ends of said shaft may be suitably journaled for vertical adjustment therein, substantially as described.

4. In a pulverizer, a shaft consisting of two parts, a universal bearing for the inner ends thereof comprising two half-boxings arranged for vertical adjustment and having centrally-disposed hollowed-out portions, bearings for the inner matching ends of the shaft rotatable therewith and suitably journaled to rotate in said boxings, swinging supports at the opposite or outer ends of the shaft to permit a vertical adjustment of the inner ends thereof, substantially in the manner, and for the purpose set forth.

5. In a pulverizer, the combination with a supporting-frame having the outer oppositely-arranged bearings *h*, and the centrally-disposed bearing D, of a two-part shaft carrying suitable pulverizers and flexibly journaled in the bearings of said frame, boxings H, for the outer end of the shaft-sections and the half-boxings *g*, for the inner matching ends of the shaft capable of vertical adjustment in the bearing D, substantially as described.

6. In a pulverizer, the combination with a supporting-frame having the outer bearings *h*, a plurality of pulverizing-wheels mounted on a shaft flexibly carried in the frame, and composed of sections having inner matching ends, outer boxings H, having extensions h^3, and spindles h', and journaled to have a swinging movement in the bearings *h*, through the spindles h', half-boxing *g*, inclosing the inner matching ends of the shaft-sections and capable of vertical adjustment in the frame, and sand-boxings I, interposed on the shaft between the pulverizing-wheels, substantially as described.

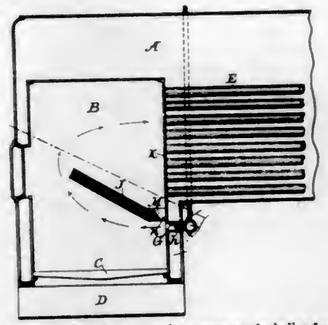
658,431. DYNAMO-BRUSH. CARL ENDRUWEIT, Berlin, Germany. Filed Aug. 7, 1899. Serial No. 726,496. (No model.)



Claim.—1. For dynamo-brushes a material prepared of chemically-pure metallic foils and an elastic organic substance, which latter substance is treated with a liquid favoring the cohesion with the metal foil and subsequent carbonization of said organic substance as set forth.

2. A dynamo-brush consisting of homogeneously-united metallic foils and carbon strips, so compiled that metal and carbon appears in alternate layers for the purpose as set forth.

658,432. SMOKE CONSUMING APPARATUS. HENRY L. FLEMING, New York, N. Y. Filed May 16, 1900. Serial No. 16,845. (No model.)



Claim.—1. In a smoke-consuming apparatus for boiler-furnaces, the combination with a baffling-arch spaced from the flue-sheet of boiler, and ducts or passages leading into furnace through said flue-sheet provided with suitable means for producing forced air-blasts, of the fireproof covers bridging the space between said arch and flue-sheet immediately above said ducts or passages, substantially as described.

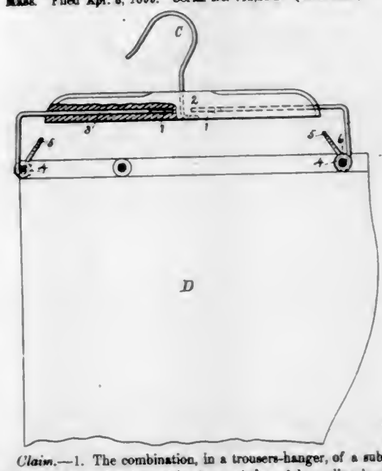
2. In a smoke-consuming apparatus for boiler-furnaces, the combination of a baffling-arch spaced from the flue-sheet of boiler, air ducts or passages in the water-leg at rear of furnace, a steam-supply pipe having nozzles to produce forced draft through said air-ducts, and fireproof covers bridging the space between the arch and flue-sheet immediately above air-ducts, substantially as and for the purpose specified.

658,433. ROCKING DEVICE. KARL GEIER, Pulkau, Austria-Hungary. Filed Apr. 2, 1900. Serial No. 11,193. (No model.)

Claim.—In a device of the character described, the combination with a frame *d*, axles mounted in opposite ends of the frame, the forward axle being pivotally mounted in the frame, and wheels mounted on the axles, the wheels on the rear axle being loosely mounted thereon, of an arched spring secured at its ends to the axles, a figure supported upon the arched portion of the spring, ratchet-teeth carried by each of the said loosely-mounted wheels, a pawl device carried at each end of the rear axle and adapted to engage the teeth to prevent backward rotation of the said wheels but permit forward rotation of the same, a curved band *p* secured to the front axle and means adapted to fix the said band rigidly to the frame *d* in different positions.



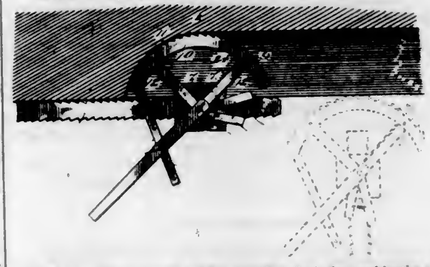
658,434. TROUSERS-HANGER. MYRON A. GILMAN, Westfield, Mass. Filed Apr. 8, 1899. Serial No. 712,224. (No model.)



Claim.—1. The combination, in a trousers-hanger, of a substantial body having holes therein, and hooks consisting of depending looped-eye portions for buttons, provided with resilient shanks adapted to be inserted in said holes, substantially as specified.

2. The combination, in a trousers-hanger, of a substantial body having holes therein; hooks provided with resilient shanks adjustably inserted in said holes, depending eye portions for buttons, and loops connecting said portions; and means for suspending said hanger from a support, substantially as specified.

658,435. COAL-DIGGER. WILLIAM T. GINN, Whiteside, Tenn. Filed Mar. 22, 1900. Serial No. 9,792. (No model.)

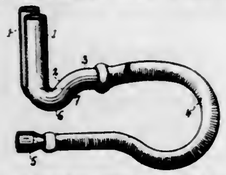


Claim.—1. In a cutter of the class described, the combination with a guide-beam provided with a rack-bar extending longitudinally thereof, of a carrier slidably mounted on said guide-beam, bearing-wheels journaled in said carrier and adapted to travel along the guide-beam, a cutter mounted upon said carrier and adapted to be oscillated thereon, a lever for oscillating said cutter, a connecting-link extending from said lever to the cutter, whereby the stroke of the latter may be varied, and pawls con-

nected to the carrier and engaging the rack-bar for advancing the cutter at each forward stroke thereof.

2. In a cutter of the class described, the combination with a guide-beam provided with a rack-bar extending longitudinally thereof, of a carrier slidably mounted on said guide-beam, bearing-wheels journaled in said carrier and adapted to travel along the guide-beam, a cutter mounted upon said carrier and adapted to be oscillated thereon, a lever for oscillating said cutter, a connecting-link extending from said lever to the cutter, whereby the stroke of the latter may be varied, pawls connected to the carrier and engaging the rack-bar for advancing the cutter at each forward stroke thereof, drag-teeth carried by the cutter, and a drag-plate also carried by the cutter, whereby the cuttings are removed.

658,436. **INSUFFLATOR.** HANS H. GROTH, Cincinnati, Ohio. Filed May 28, 1900. Serial No. 18,266. (No model.)



Claim.—1. An insufflator comprising a pair of nasal tubes for taking into both nostrils simultaneously, an inlet-tube 3 extending directly and connectedly therefrom, a depression between each of the nasal tubes and the inlet-tube for the receptioo of medicine, and forming two distinct receptacles for medicine each merging and extending directly without intermediate space and separately into the inlet-tube, the above constructed into one integral piece, and a flexible blow-tube connected with the inlet-tube, and constructed and arrranged for blowing through the tubes for forcing the medicine in the depression into both nostrils simultaneously, substantially as described.

2. The herein-described insufflator comprising a pair of nasal tubes 1, 1, for taking into both nostrils simultaneously and merging into an inlet blow-tube 3, a depression 6 between each of the nasal tubes and the inlet-tube, a web 7 in the depression for forming the two compartments 8, 9, in the depression for the reception of medicine and each communicating with one of the nasal tubes and with the inlet blow-tube, and forming two distinct receptacles for medicine each merging and extending directly without intermediate space and separately into the inlet-tube. the above constructed into one integral piece, and a flexible blow-tube connected with the inlet-tube, and constructed and arranged for blowing through the tubes from the inlet blow-tube and forcing the medicine in each compartment separately through the nasal tube with which it communicates and for simultaneously blowing through both compartments and nasal tubes, substantially as described.

658,437. **WATERPROOFING COATING.** STEFAN HANSEL and EUGEN HORNUNG, Vienna, Austria-Hungary, assignors to Brüder Hansel, Bärn, Austria-Hungary. Filed Jan. 31, 1898. Serial No. 667,486. (No specimens.)

Claim.—1. A more or less fluid waterproofing composition consisting of albumen or gluten, a solution of india-rubber or a substitute thereof and an antiseptic, substantially as and in or about in the proportions set forth.

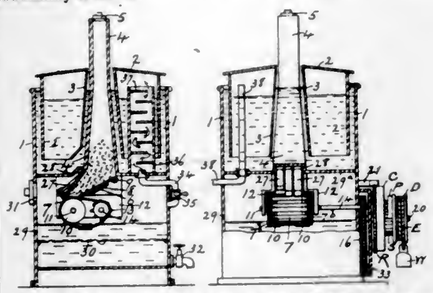
2. A more or less fluid waterproofing composition, consisting of coagulated gluten or albumen, a solution of india-rubber or a substitute thereof, an antiseptic together with a fatty or oleaginous material, substantially as and in or about in the proportions set forth.

658,438. **COMPOSITION FOR CONVERTING IRON INTO STEEL.** REINARD HARDMEYER, Kokomo, Ind. Filed June 11, 1900. Serial No. 19,973. (No specimens.)

Claim.—The herein-described composition of matter for converting iron into steel consisting of albumen one hundred pounds, and Epsom salts fifteen pounds, substantially as described.

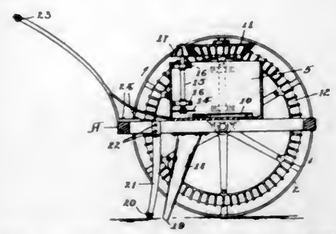
658,439. **ACETYLENE-GAS GENERATOR.** ISAAC L. HARRIS, Jacksonville, Fla. Filed Jan. 29, 1900. Serial No. 3,066. (No model.)

Claim.—1. In an apparatus for the generation of acetylene gas in combination with a water-tank, the carbid-chamber, the moving chain belt 7 at the delivery end of the floor of the carbid-chamber, for feeding the carbid into the generator-tank and from under the solid part of the floor of which it emerges, said chain belt comprising an endless series of transverse plate-links fastened closely together, the open marginal links of the chain belt 7 composed of the staples 7ᵇ and the cylindrical rings 7ᶜ, the two sprocket-wheels 13 and the revolving shaft 14 onto which they are fastened so distanced apart as to enable them to engage in the open marginal links of the chain belt which they operate and the disk pulleys 10 fastened to the idle shaft 11 over which the chain belt works loosely substantially as shown.



2. In an acetylene-gas generator in combination with a water-tank and a carbid-chamber, the mechanical feeding device inside the generator for discharging carbid into the water-tank, the motor on the outside of the generator for operating the mechanical feeding device, controlled by the movements of the bell of the gasometer, the device for transmitting the power of the motor from the outside to the inside of the generator consisting of a pair of sprocket-wheels located one within, one without a gas-generating chamber, separated from each other by a liquid seal consisting of a U-shaped receptacle containing liquid, and in each arm of which is contained one of said wheels, the said wheels being operatively connected by a sprocket-chain passed beneath the surface of the liquid, and beneath idle pulleys, whereby the motion is communicated from one wheel to the other without permitting the escape of gas.

658,440. **SUGAR-BEET-SEED PLANTER.** FRANCIS R. HASSENSTAB, Young America, Minn. Filed Apr. 13, 1900. Serial No. 12,667. (No model.)



Claim.—1. A sugar-beet-seed planter, consisting of a hopper; a feed-disk entering the side of said hopper, notched to receive the seed; means for operatively connecting said disk to the drive-wheel; a hollow drill carried below the hopper to receive the seed from the hopper through the disk and deposit them in the earth, and a roller positioned to follow after the drill.

2. A sugar-beet-seed planter, consisting of a hopper, an agitator in the hopper, a feed-disk entering the side of said hopper, notched to receive the seed, drive mechanism for the agitator and disk, and a hollow drill carried below the hopper to receive the seed from the hopper through the disk.

3. A sugar-beet-seed planter, consisting in combination, of a slotted hopper; a revoluble disk entering its side through said slot, said disk having notches in its periphery; means for revolving said disk; a frame supporting said parts, and wheels upon which the parts are carried and by which they are driven.

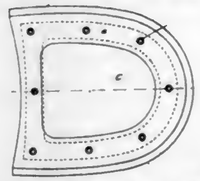
4. A sugar-beet-seed planter, consisting in combination, of a hopper; a revoluble disk having openings to receive the seed; means for revolving said disk as the seeder is propelled; said hopper having a slot in its side through which the disk projects laterally; a hollow drill positioned below the hopper, adapted to receive the seed as it is fed from the hopper; a roller positioned behind the drill and a frame for supporting said parts.

5. A machine of the class described, consisting of a journaled feed-disk, notched to receive the seed, a hopper having a slot through which said disk enters its side and carrying an agitator adjoining the disk, drive mechanism for the disk and agitator, and a frame for carrying said parts.

6. A sugar-beet-seed planter, consisting of a slotted hopper, a journaled disk entering its side through said slot, said disk having notches in its periphery, a journaled agitator adjoining the disk in the hopper, mechanism for revolving the disk and agitator, a hollow drill positioned below the disk, and a frame for supporting said parts.

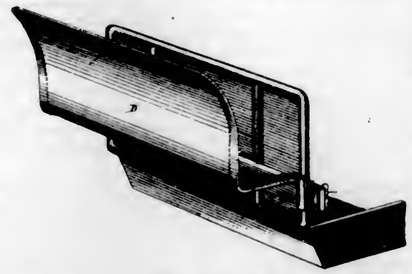
7. A machine of the class described, consisting of a hopper 5, a journaled disk 9, having openings to receive the seed, an agitator 14 in the hopper, drive mechanism for propelling the disk and agitator; said hopper having a slot 10, in its side through which the disk projects and adjoining which the agitator is positioned, a drill 18 carried below the hopper, adapted to receive and plant the seed as it is fed from the machine, and a frame for supporting said parts.

658,441. **RUBBER HEEL.** WENDELL R. HERBST, Hartford, Conn. Filed Feb. 23, 1900. Serial No. 6,206. (No model.)



Claim.—A rubber heel for a boot or shoe recessed on top and bottom, having an open-center metal plate embedded in the heel and provided next the face intended for union with the boot or shoe with a peripherally-extending lip or fin; all substantially as described and for the purposes set forth.

658,442. **MUD-GUARD FOR VEHICLES.** DEXTER HITCHCOCK, Norwalk, Conn. Filed Mar. 13, 1900. Serial No. 8,475. (No model.)



Claim.—1. The combination with the dashboard of a vehicle, of a mud-guard, and devices secured to the lower edge of the guard and adjustably clamped to the side edges of the dashboard, and the said guard projecting bodily in front of the dashboard with its lower edge below the top edge of the dashboard, substantially as set forth.

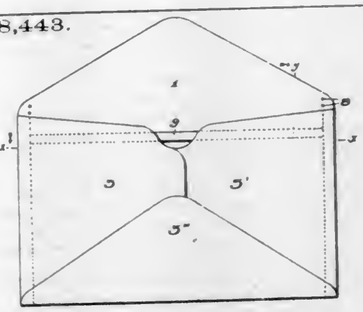
2. The combination with the dashboard of a vehicle, of a guard, and devices secured to the guard and clamping the side edges of the dashboard, the lower edge of said guard being below the top edge of the dashboard and its upper edge projecting forward in advance of the lower edge, substantially as set forth.

3. The combination with the dashboard of a vehicle, of a guard secured to the dashboard and projecting bodily in front thereof, said guard having a frame of flexible metal whereby it may be bent to vary its position relatively to the dashboard, substantially as set forth.

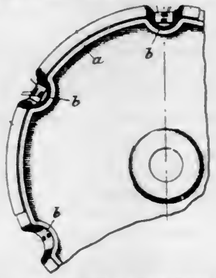
658,443. **ENVELOP.** GEORGE P. HOMMER, Niles, Ohio. Filed Dec. 18, 1899. Serial No. 740,727. (No model.)

Claim.—As a new article of manufacture, an envelop comprising a blank having the front 2, with sealing-flap 1, the end flaps 3, 3′ and the bottom flap 3″ formed integral therewith and adapted when folded to form the rear portion of the envelop, said blank being provided with the two vertical rows of perforations 8 near the junction of the end flaps with the front 2 and upon the line of which perforations the ends of the envelop are adapted to be folded inwardly in a double fold, and a securing-bar for engagement with the contents of said envelop arranged within the same along the top edge thereof and retained in position by having its ends clamped between the front of the envelop and the folds at the ends, as and for the purpose set forth and described.

658,443.

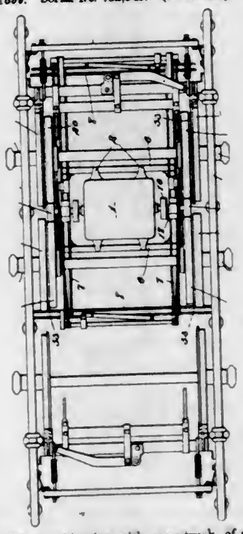


658,444. **FRICTION-WHEEL.** CHARLES W. HUNT, New York N. Y. Filed Apr. 14, 1900. Serial No. 12,812. (No model.)



Claim.—The combination with a friction-wheel having rounded depressions across its face, of friction-strips applied to the face of the wheel and having their ends overlapping in said depressions, and washers fastened to the wheel in said depressions over the overlapping ends of the strips, substantially as shown and described.

658,445. **ELECTRIC CAR.** ARNOLD A. INGRAHAM, Lowell, Mass. Filed Oct. 2, 1899. Serial No. 732,343. (No model.)



Claim.—1. The combination with a car-truck, of an electric motor supported by springs resting upon transverse bars; longitudinal bars supporting said transverse bars; transverse bars supporting said longitudinal bars; and longitudinal beams supporting said last-named transverse bars outside the wheels of the truck.

2. The combination with a car-truck, of driving-wheels provided

with lateral extensions forming friction-surfaces, and having annular grooves separating said surfaces from the driving-wheel; a motor; friction-wheels arranged concentric to the shaft of the motor; and means for moving the driving-wheels toward and from the friction-wheels.

3. combination with a car-truck, and the driving-wheels provided with lateral extensions forming friction-surfaces, of a motor; friction-wheels arranged concentric to the shaft of the motor; a lever mounted upon the truck; sliding boxes to the axles of said driving-wheels, pitmen connecting said boxes and lever; and means for operating said levers and pitmen, whereby the driving-wheels are moved to or from the friction-wheels.

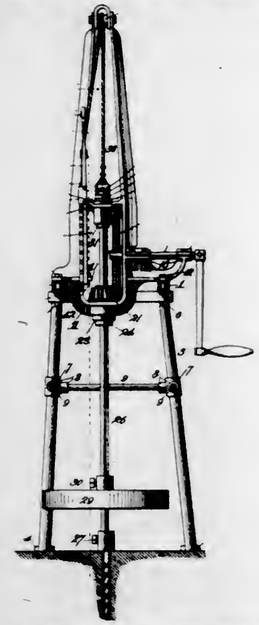
4. The combination with a friction-wheel and its shaft, of a disk upon the free end of said shaft, an annular flange thereto, a motor having a shaft, an end of which projects within the flange of the disk, and a spring connection between said motor-shaft and flange.

5. The combination with a car-truck and driving-wheels provided with lateral extensions forming friction-surfaces; of a friction-wheel adapted to contact with an extension; a shaft to said wheel having a disk upon the inner end thereof; an annular flange upon the face of the disk, a motor; a shaft thereto, an end of which projects within the flange; and a spring connection between the flange and motor-shaft.

658,446. **PROCESS OF OBTAINING VANILLIN DERIVATIVES.** ANDREAS C. JENSEN, Niederrad, Germany, assignor to Vereinigte Chininfabriken, Zimmer & Co., Gesellschaft mit Beschränkter Haftung, Frankfort-on-the-Main, Germany. Filed Dec. 29, 1897. Serial No. 664,452. (Specimens.)

Claim.—Condensation products derived from vanillin aldehyde having the following properties; their melting-point varies from 69° to 115° according to the character of the product, they crystallize readily from their solutions without hydration or crystallization water, form yellow-colored salts when treated with an acid, are nearly insoluble in water and have antipyretic, disinfecting and styptic action.

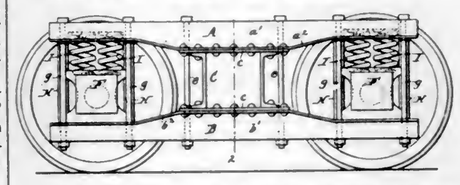
658,447. **DRILLING-MACHINE.** AMZIE E. JORDAN and CHARLES A. JORDAN, Buel, Kans. Filed June 15, 1900. Serial No. 20,410. (No model.)



Claim.—1. A drilling-machine, comprising a suitable frame and stand, a casting mounted thereon and provided with a pulley at its upper end, a small cog-wheel journaled in said casting below said pulley, a sleeve journaled in said casting between and in alinement with said cog-wheel and said pulley, an angular rod extending non-rotatably but slidably in said cog-wheel and sleeve, a swivel journaled upon the upper end of said rod, a drill-bit secured upon its lower end, a balance-wheel secured upon said rod, a sector secured upon the casting, a lever provided with a dog to engage said sector, a handle to retract the dog, and a rod connecting the handle and the dog, a rope extending over said pulley and attached at one end to the lever and at its opposite end to the swivel, a shaft journaled in the frame and provided with a large gear-wheel engaging the small cog-wheel, and a handle mounted upon the outer end of said shaft, substantially as described.

2. A drilling-machine, comprising a frame or stand, consisting of bars bent to form parallel horizontal portions and depending or leg portions, and also bent to form runners at the lower ends of certain of said legs, rounds or braces connecting said legs, and cross-bars connecting the horizontal bars at their under side and junction with their depending portions, a casting mounted upon said horizontal bars, a sleeve and a small wheel journaled in said casting one above the other, a rod extending slidingly through said wheel and sleeve and adapted to rotate with the same, a lever suitably mounted, a cable suitably guided and connected at one end to said lever and having a swivel connection at its opposite end with said rod, means to hold said lever at the desired point of adjustment, a drill-bit secured to the lower end of said rod, a shaft geared to said wheel, and means to rotate said shaft, substantially as described.

658,448. **CAR-TRUCK.** HERBERT R. KEITHLEY, Buffalo, N. Y. Filed Apr. 4, 1900. Serial No. 11,498. (No model.)

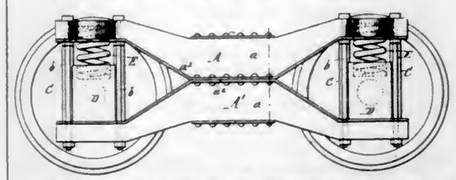


Claim.—1. A side frame for car-trucks having a tension member, and a compression member connected therewith and composed of a horizontal top plate and vertical webs extending downwardly from the edges of said plate and each provided at its lower edge with an outwardly-extending flange, said top plate, webs and flanges being formed from a single piece of metal, substantially as set forth.

2. A side frame for car-trucks having a compression member, and a lower tension member connected therewith and composed of a horizontal bottom plate and vertical webs extending upwardly from the edges of said plate and each provided at its upper edge with an outwardly-extending flange, said bottom plate, webs and flanges being formed from a single piece of metal, substantially as set forth.

3. The combination with the side frame of a truck having a compression member composed of a horizontal top plate and vertical webs depending from the edges of said plate, and each provided at its lower edge with an outwardly-extending flange, and a tension member composed of a horizontal plate and vertical webs extending upwardly from the edges of said plate and each provided at its upper edge with an outwardly-extending flange, of a transom having its end portion arranged between said compression and tension members and secured thereto by rivets or bolts passing through the top and bottom plates of the transom and the flanges of said compression and tension members, substantially as set forth.

658,449. **CAR-TRUCK.** HERBERT R. KEITHLEY, Buffalo, N. Y. Filed June 22, 1900. Serial No. 21,192. (No model.)



Claim.—1. A side frame for a car-truck composed of an upper and a lower member, each consisting of a pair of parallel upright webs connected together at one edge by a longitudinal plate, said members meeting at their central portions and being secured together by rivets passing through said central portions, and the portions of the members on opposite sides of said meeting portions diverging outwardly and terminating in horizontal end portions which embrace the axle-boxes, substantially as set forth.

2. A side frame for a car-truck composed of an upper and a lower member, each consisting of a pair of parallel upright webs connected together at one edge by a longitudinal plate and each provided at its opposite edge with an outwardly-extending flange, said members meeting at their central portions and being secured together by rivets passing through

their contiguous side flanges, and the portions of the members on opposite sides of said meeting portions diverging outwardly and terminating in horizontal end portions which embrace the axle-boxes, substantially as set forth.

3. The combination with the side frames of a car-truck, of a transom consisting of an upper metallic member composed of a horizontal plate and a pair of vertical webs depending from the edges of said plate, and a lower metallic member composed of a horizontal plate and vertical webs extending upwardly from the edges thereof, the webs of the two members meeting at their inner edges and being secured together, and the horizontal plates of the two members being provided at their ends with wings or extensions which embrace the top and bottom of the side frames, substantially as set forth.

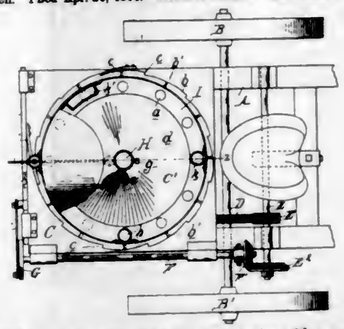
4. The combination with the side frames each composed of an upper and a lower member, said members being secured together at their central portions and diverging toward the ends of the side frames, of a transom provided at its ends with wings or extensions embracing the meeting central portions of said upper and lower members and secured thereto, substantially as set forth.

5. The combination with the side frames of a car-truck, of a transom composed of upper and lower members provided between the top and bottom of the transom with meeting side flanges which are riveted together, and at their ends with wings or extensions which embrace the top and bottom of the side frames, substantially as set forth.

6. The combination with the side frames of a car-truck, of a transom composed of upper and lower members provided between the top and bottom of the transom with meeting side flanges which are riveted together, and at their ends with wings or extensions which embrace the top and bottom of the side frames, the side flanges of the transom members extending upwardly and downwardly along the inner sides of the side frames and being riveted thereto, substantially as set forth.

7. The combination with the side frames each composed of upper and lower members provided between the top and bottom of the frame with meeting side flanges which are riveted together, the upper member having its central portion depressed below the plane of its end portions, and the lower member having its central portion raised above the plane of its end portions, and a transom provided at its ends with wings or extensions which embrace the depressed and raised portions of said members, substantially as set forth.

658,450. **SEED-PLANTER.** HENRY C. KETTLER, Mount Clemens, Mich. Filed Apr. 26, 1900. Serial No. 14,373. (No model.)



Claim.—1. In a seed-planter the combination with a rotary feed-disk provided with a concentric series of pockets, of the cylindrical feed-hopper having an inner conical wall fixedly supported above said feed-disk and forming the supporting means therefor, said hopper terminating at its lower end in an annular discharge-opening corresponding to and registering with said pockets.

2. In a seed-planter the combination with an intermittently-opened feed-disk provided with a concentric series of pockets, of the circular feed-hopper removably supported above said feed-disk and composed of the outer cylindrical wall and the inner conical wall stationarily secured in relation to each other and forming between them at their base an annular series of pockets.

3. In a seed-planter the combination with a rotary feed-disk provided with a concentric series of pockets, of the cylindrical feed-hopper independently supported above said disk upon a vertical central standard and having an outer cylindrical wall and an inner conical wall forming between them at their base a segmental annular discharge-opening registering with said annular series of pockets, a transverse wall connecting said inner and outer walls and forming the supporting means for the outer wall.

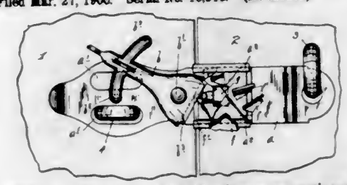
4. In a seed-planter, the combination with the fixed feed-hopper, of the intermittently-revolving feed-disk formed with an annular series of pockets, the peripheral flange or guide-rail formed on said feed-disk and the spring-actuated knocker-bar adapted to ride on said rail in its elevated position, and slots registering with the pockets in the feed-disk formed at intervals along said rail for releasing the knocker-bar.

5. In a seed-planter the combination with the fixed feed-hopper of the feed-disk formed with an annular series of pockets and provided with a peripheral series of ratchet-teeth, of the reciprocating slide, the dog carried by the slide for imparting intermittent movement to the feed-disk, the upwardly-projecting guide-rail carried by said feed-disk and provided with radial slots corresponding with the pockets, the spring-actuated knocker riding on said guide-rail and adapted to be released by said slots and the cam for intermittently raising said knocker.

6. In a seed-planter the combination with an intermittently-operated feed-disk provided with a series of pockets, a fixed feed-hopper supported above said feed-disk composed of an inner conical wall mounted upon a vertical central standard and forming the supporting means for the hopper and an outer vertical wall forming between them at their base a segmental discharge-opening, an arched transverse web connecting said inner and outer walls and forming the supporting means for said outer wall and a plurality of brushes operating at intervals in said segmental opening.

7. In a seed-planter the combination with a rotary feed-disk of a stationary feed-hopper independently supported above said feed-disk and composed of an inner conical wall sleeved upon a vertical central standard, an outer cylindrical wall and a connecting transverse web between the outer and inner walls and forming the supporting means for said outer wall.

658,451. **SEAL-LOCK.** JOHN D. C. KNAPP, Minneapolis, Minn. Filed Mar. 27, 1900. Serial No. 10,318. (No model.)



Claim.—1. The combination with a hasp or supporting plate, of the pivoted lock-hook having a transversely-extended base, a fragile sealing-piece directly engaging said base end of the lock-hook to hold said hook in an operative position, a seat or keeper holding said sealing-piece against lateral displacement, and a detent normally holding said sealing-block within its seat or keeper and against the base of said hook, which sealing-block extends in the plane of movement of said lock-hook and is adapted to be crushed by compression caused by the movement of said hook from its operative or locking position, substantially as described.

2. The combination with a hasp of a pivoted lock-hook b having the base end b^3, of the keeper-guides a^3, the spring-pressed detent g working through said hasp, and the fragile sealing-block f having the detent-seat f^2, which detent g engages said seat f^2 to hold said sealing-block, and which sealing-block engages the base b^3 of said hook b to lock the same and is adapted to be crushed by the unlocking movement of said hook b, substantially as described.

3. The combination with the hasp-plate a having the pocket a^4 keeper-guards a^3, and passage a^2, of the spring-pressed detent g, working through said passage a^2, the lock-hook b having the base end b^3 and one or more hooks b^2, and the fragile sealing-block f held by the keeper-guides a^3 and provided with the detent-seat f^2 engaged by said detent g, said sealing-block engaging the base b^3 of said lock-hook and adapted to be broken by the opening movement thereof, substantially as described.

658,452. **NOZZLE-HOLDER.** STEPHEN G. MILLS, Wichita, Kans. Filed Dec. 2, 1899. Serial No. 738,995. (No model.)



Claim.—1. In a nozzle-holder the combination of a stake, a head secured thereto and having a recess therein, a bolt slidably mounted in said head, a hook formed on said bolt and adapted to project into the socket, and means whereby a nozzle in said hook may be clamped against the edge of the socket, substantially as described.

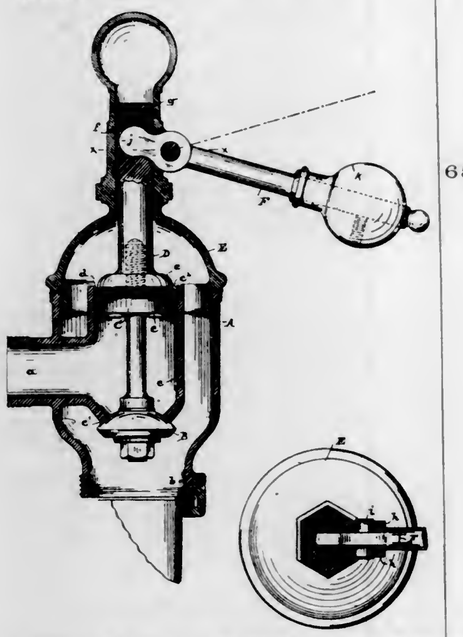
2. In a nozzle-holder the combination of a stake, a head detachably secured thereto and having a recess therein, a bolt slidably mounted in said head, a hook formed on said bolt and adapted to project into the socket, and a nut mounted upon said bolt and adapted to bear upon the end of the head, whereby a nozzle within said hook may be clamped against the edge of the socket, substantially as described.

3. The nozzle-holder having a head provided with a circular socket or recess, and a central or axial passage, and a pivot-bolt, adapted to embrace the nozzle and to provide for the adjustment of said nozzle, substantially as set forth.

4. The nozzle-holder comprising a head provided with a circular socket or recess and a central or axial passage, and a pivot-bolt having a hooked terminal to embrace the nozzle and to provide for the adjustment of said nozzle, substantially as described.

5. The nozzle-holder comprising a stake, a head connected thereto and having a circular recess or socket and a central or axial passage, a hook-ended bolt adapted to embrace the nozzle and a thumb or winged nut working upon said bolt and engaging the inner end or wall of said recess or socket, substantially as described.

658,453. **FLUSHING APPARATUS FOR CLOSETS, &c.** HARRY C. MONTGOMERY, Cleveland, Ohio. Filed Feb. 15, 1900. Serial No. 5,342. (No model.)

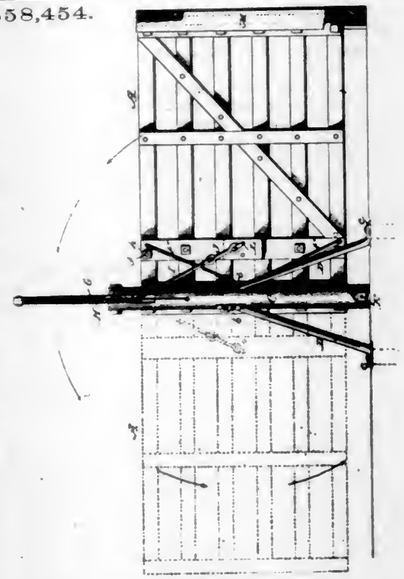


Claim.—A flushing apparatus for closets &c., comprising the combination of a casing having an internal cylinder with inlet extending through the side of said casing, the outlet being formed in or with the lower terminal thereof, and the top being inclosed by a bonnet with tubular neck, a valve, piston and rod combined, the said valve controlling the lower face of said cylinder, the piston fitting the cylinder above its inlet and the rod being guided in said bonnet-neck, and a lever equipped, supported and connected for closing said valve all constructed and arranged substantially as and for the purpose set forth.

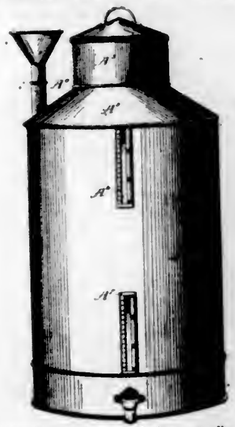
658,454. **FARM-GATE.** JAMES E. MOORE, Bozeman, Mont. Filed June 9, 1900. Serial No. 19,745. (No model.)

Claim.—A tilting gate having a horizontal beam connected thereto at or near its center, diagonal brace-rods having screw-threaded shanks which are disposed at right angles to each other and extend respectively through the rear end of the gate and through the ends of the beam, nuts engaging the screw-threaded ends of the rods, and pivoted levers connecting with the gate for operating it, substantially as and for the purpose described.

658,454.



658,455. **CREAM-SEPARATOR.** FREDRICK W. MOSELEY, Clinton, Iowa. Filed Oct. 12, 1899. Serial No. 733,387. (No model.)



Claim.—1. A receptacle having a conical or centrally-depressed bottom and a radiating discharge-channel extending to an outlet at the periphery thereof, and a sediment-dam spaced from the walls of said channel and having a discharge-passage communicating with said outlet; substantially as specified.

2. A receptacle having a conical or centrally-depressed bottom and a discharge-channel leading downward from the center of said bottom to an outlet-aperture, a sediment-dam disposed in said channel at a distance from the walls thereof and having a discharge-neck communicating with said outlet-aperture; substantially as specified.

3. A receptacle having a conical or centrally-depressed bottom and a radiating discharge-channel extending to an outlet at the periphery thereof, a discharge-cock located at said outlet and having a shank extending therefrom, and a sediment-dam supported by said shank and spaced from the walls of said channel to permit the collection of sediment in said channel beneath the said sediment-dam; substantially as specified.

4. A receptacle having a conical or centrally-depressed bottom and a radiating discharge-channel extending to an outlet at the periphery thereof, a discharge-cock located at said outlet and having a shank extending therefrom, a sediment-dam supported by said shank and spaced from the walls of said channel to permit the collection of sediment in said channel beneath the said sediment-dam, a tubular end to said sediment-dam adapted to enter the shank of said cock, and a removing-handle extending upward from said sediment-dam; substantially as specified.

5. A creaming-can having a reduced neck at its upper portion, a cooling vessel within said can and extending upward into said neck, and means whereby liquid is directed by the neck against the side walls of the vessel; substantially as specified.

6. A creaming-can having a reduced neck at its upper portion and a cooling vessel within said can and extending upward into said neck, and an annular flange carried by said neck and inclined toward said vessel to direct liquid against the surface of said cooling vessel; substantially as specified.

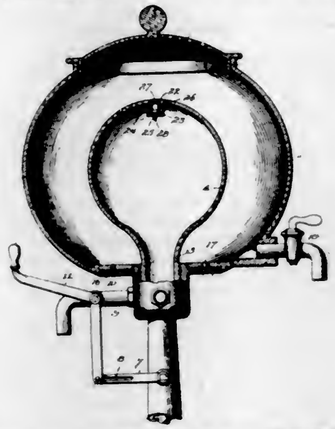
7. In a creaming-can, a removable water-distributer arranged within the can and disposed at the lower portion above the bottom thereof comprising a body having discharge-apertures in its side and bottom portions; substantially as specified.

8. A creaming-can having a removable breast and neck, a cooling vessel extending upward into said neck to form a receiving-chamber therein having an annular discharge-opening inclined toward said vessel, and supports to hold said vessel above the bottom of said can; substantially as specified.

9. A creaming-can provided with a centrally-depressed or conical bottom having a radiating channel extending to an outlet-aperture, and a sediment-dam comprising an open receptacle having side walls parallel with the walls of said channel and spaced from the walls thereof and having a discharge entering said aperture; substantially as specified.

10. A creaming-can, a cooling vessel supported in said can, and a flange at the base of the neck of said can and inclined toward said vessel to direct liquid into contact with said cooling vessel; substantially as specified.

658,456. **MEASURING-FAUCET.** WILLIAM MCCAUSLAND, New York, N. Y. Filed Nov. 28, 1899. Serial No. 738,551. (No model.)



Claim.—1. In a measuring-faucet, the combination with a hollow standard circumferentially enlarged at its upper end and internally threaded to form a socket; a measuring vessel externally threaded at its lower end to engage the socket, and provided with an air-vent at its top; a liquid-supply pipe within the hollow standard; a faucet secured to said socket; valves for said supply-pipe and faucet; and connections between said valves comprising a bell-crank secured to the faucet-valve, and a slotted lever secured to the pipe-valve, whereby the closing of one of said valves opens the other, and vice versa.

2. In a measuring-faucet, the combination with a hollow standard formed at its upper end with a socket; of a globular measuring vessel having a stem fitting said socket; a valved liquid-supply pipe within the hollow standard; a valved faucet connected with the valve of the supply-pipe; an annular horizontal flange projecting from said socket; and a globular casing secured to said flange formed with an opening to receive the upper end of the socket, and with a discharge-faucet.

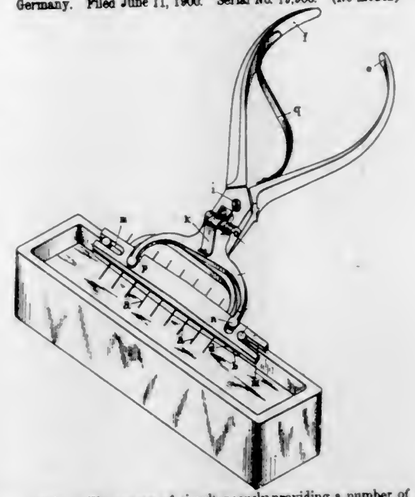
3. In a measuring-faucet, the combination with a hollow standard and a liquid-supply pipe arranged therein; of a measuring vessel secured to the upper end of the standard; a discharge-faucet communicating therewith; a valve within the liquid-supply pipe; a slotted lever extending therefrom; a valve within the discharge-pipe; and a bell-crank lever secured thereto and engaging with, and movable within, the slotted lever.

4. In a measuring-faucet, the combination with a hollow standard and a liquid-supply pipe arranged therein; of a measuring vessel secured to the upper end of the standard and having an air-outlet at the top thereof; a floating valve within said outlet; a valve in the supply-pipe and having a slotted lever secured thereto; a valve within the discharge-faucet; and a bell-crank lever secured to said valve and engaging and movable within the slotted lever.

5. In a measuring-faucet, the combination with a hollow standard and a liquid-supply pipe; of a measuring vessel secured to the upper end of the standard and having an air-outlet in the top thereof; a valve within the outlet; a valve within the supply-pipe having a slotted lever thereto; a valve within the discharge-faucet; a bell-crank lever secured thereto and engaging with, and movable within, the slotted lever; a casing secured to the standard and inclosing the measuring vessel; and a discharge vessel within said casing.

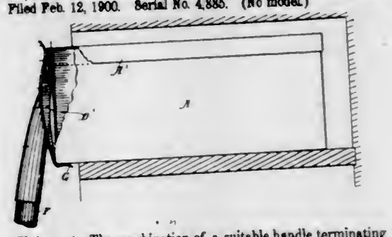
6. In a measuring-faucet, the combination with an internally-threaded hollow standard; of an annular flange at the upper end thereof; a measuring vessel projecting into and engaging with said standard, said vessel having a valved air-outlet; a casing inclosing the measuring vessel and secured to the flange of the standard; an inlet and an outlet to said measuring vessel; and valves therein, so arranged as to open and close alternately from a common lever.

658,457. **METHOD OF SIMULTANEOUSLY PROVIDING PIN-SHAFTS WITH HEADS OF GLASS.** ROBERT NEUSS, Aix-la-Chapelle, Germany. Filed June 11, 1900. Serial No. 19,900. (No model.)



Claim.—The process of simultaneously providing a number of pin-shafts with heads of glass, which consists first, in arranging said pin-shafts in a row, then dipping the blunt ends of the pin-shafts into a bath of liquid glass, and subsequently withdrawing them from said bath and rotating them until the head-forming material is sufficiently cooled off.

658,458. **BOX-LIFTER.** GERRIT NEVENZEL, Grand Rapids, Mich. Filed Feb. 12, 1900. Serial No. 4,885. (No model.)



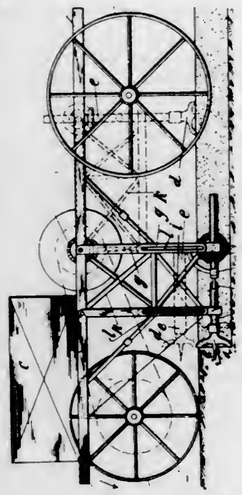
Claim.—1. The combination of a suitable handle terminating at its upper end in a flat plate, an opposing plate pivotally connected to the handle and having a downwardly-projecting arm terminating in a forwardly-projecting hook, substantially as described.

2. The combination of a socket terminating in a flat plate at its upper end, a transverse plate opposite the flat end of the socket, downwardly-extended arms on the plate and embracing the socket and pivoted to the

sides of the same, and forwardly-extended hooks at the lower ends of the arms, substantially as described.

3. The combination of a socket having a tubular lower end adapted to receive a handle, and a flattened upper end adapted to pass between the flange of the box-cover and the end of the box, a transverse plate adapted to engage the outer side of the said flange, arms extending downward and in a curve forward at each side of the socket, flanges on the arms pivoted to the socket, and forwardly-extended hooks at the lower end of the arms to engage the bottom of the box, substantially as described.

658,459. **MACHINE FOR PLOWING AND CULTIVATING LAND.** BOGHOS P. NUBAR, Cairo, Egypt. Filed Apr. 26, 1898. Serial No. 678,862. (No model.)



Claim.—1. In a plow, the combination of a carriage, a swinging frame supported thereby, a plowing-tool having a front edge adapted to operate against a bank of earth and so mounted on the frame as to be supported thereby in a horizontal position, when the frame is in one position and in a vertical position when the frame is swung into another position, driving means carried by the carriage for rotating the plowing-tool and mechanism intervening between the driving means and the tool adapted to operate the tool when the tool is in either its horizontal position or its vertical position, substantially as described.

2. In a plow, the combination of a carriage, a substantially-horizontal shaft carried thereby and extending longitudinally thereof, a shaft for driving the said horizontal shaft, bevel-gearing intervening between the source of power, the counter-shaft and the horizontal shaft, a swing-frame for supporting the horizontal shaft so that the said shaft may be swung to operate vertically, the bevel-gear connections permitting this swinging without effecting the disconnecting of the shafts and a plowing-tool carried by the horizontal shaft.

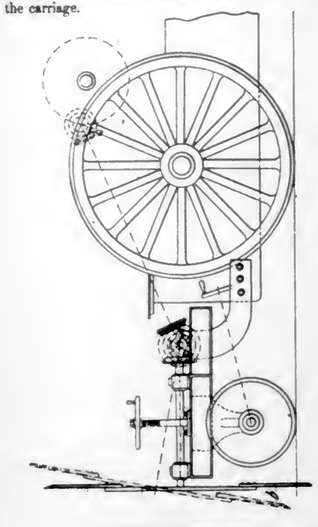
658,460. **MACHINE FOR PLOWING AND CULTIVATING.** BOGHOS P. NUBAR, Cairo, Egypt. Filed Mar. 4, 1899. Serial No. 707,728. (No model.)

Claim.—1. In a plowing apparatus, the combination of a carriage, a substantially-horizontal shaft with means for driving the same and a disk or carrier provided with arms having forwardly-projecting blades provided with cutting edges, substantially as described and for the purposes set forth.

2. In a plowing apparatus, the combination of a carriage, a substantially-horizontal shaft with means for driving the same and a disk or carrier provided with arms having forwardly-projecting blades provided with cutting edges, the said blades being arranged upon adjacent arms at varying distances from the center of rotation of said arms, substantially as described and for the purposes set forth.

3. In a plowing apparatus, the combination of a carriage, a substantially-horizontal shaft carried by the said carriage and extending longitudinally in the direction of movement of the said carriage, a disk or carrier carried by the said shaft and having arms projecting beyond the periphery thereof and provided with cutting edges located in a vertical plane so as to execute their cut only in a plane substantially at right angles to the axis of the shaft.

4. In a plowing apparatus, the combination of a carriage, a substantially-horizontal shaft carried thereby, the said shaft extending longitudinally in the direction of movement of the carriage, and cutting edges supported by the said shaft and located in a vertical plane so as to execute their cut in a plane substantially at right angles to the direction of movement of the carriage.



658,461. **VEHICLE-TIRE.** RAWSON E. OLDS, Lansing, Mich. Filed Nov. 6, 1899. Serial No. 735,951. (No model.)



Claim.—1. A rubber tire for vehicles, consisting of a series of cup-shaped flanges adapted to extend entirely about and to be secured to the wheel-rim, the outer ends of the flanges being separated one from another forming a tread composed of independent elastic sections, and the inner ends or base portions of said flanges being each of equal or greater diameter than the diameter of its outer end, whereby a solid backing is provided for the outer edge of said flange.

2. A rubber tire for vehicles, consisting of a series of base sections or blocks adapted to extend entirely about and to be secured to the wheel-rim, and a series of cup-shaped flanges arranged one upon each block, the outer ends of the flanges being separated one from another forming a tread composed of independent elastic sections, and the inner ends or base portions of said flanges being each of equal or greater diameter than the diameter of its outer end, whereby a solid backing is provided for the outer edge of said flange.

3. A rubber tire for vehicles, consisting of a series of base sections or blocks adapted to extend entirely about and to be secured to the wheel-rim, and a series of cup-shaped flanges arranged one upon each block, each flange being shaped externally in the form of a frustum of a cone, the base portion of which rests upon its block.

658,462. **SOIL-PULVERIZER.** JUDSON D. PERRY, Detroit, Mich. Filed May 26, 1899. Serial No. 718,354. (No model.)

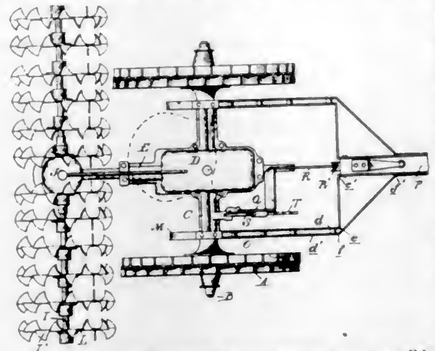
Claim.—1. In a soil-pulverizer comprising a frame, and a driven rotating cutter, of spades thereon comprising a pointed angle-shaped blade, the members thereof extending in vertical and transverse planes, the vertical portions being in front of the transverse portions in the spading operations.

2. In a soil-pulverizer, a pulverizing-blade comprising a disk having a peripheral cutting edge, spades on the sides of the disk and means for driving the disks so that their cutting portions move forwardly and upwardly in the soil for cutting a continuous furrow.

3. In a soil-pulverizer a driven pulverizing-blade comprising a toothed disk, and spading-teeth extending out from the side of the disk, for spading a continuous furrow.

4. In a soil-pulverizer, a driven pulverizing-blade comprising a disk,

teeth formed on the edge thereof, and lateral spades formed by turning the intermediate sections of the disk at an angle to the plane of the disk.



5. In a soil-pulverizer, a driven pulverizing-blade comprising a disk pointed teeth formed on the edge thereof and pointed lateral spading-blades on the rear cutting edge of each tooth.

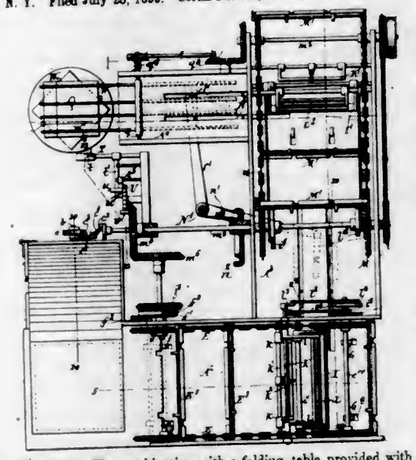
6. The combination of the wheeled axle, the housing pivoted thereon, a cutter supported at the rear end of the housing, the arms M extending downwardly and rearwardly from the housing, draft connection attached to these arms, an adjustable connection between the housing and the draft connection and a locking connection between such adjusting connection and the housing.

7. In a soil-pulverizer, the combination of the wheeled frame, a housing thereon, the rearward extension thereof, a transverse shaft journaled in the outer end of the extension, a series of disks secured to said shafts, a series of spading-cutters on the disks and a draft connection between the wheeled axle and the shaft, in the housing.

8. In a pulverizer and cutter comprising a disk having a series of inclined teeth formed on the periphery, and spading-cutters formed by portions of the interdental material turned at an angle to the teeth.

9. A cutter for a soil-pulverizer comprising a circular disk of sheet metal, a series of pointed teeth formed on the edge thereof, a series of spades or shovels formed by bending the interdental material of alternate teeth upon opposite sides of the disk.

658,463. **FOLDING-MACHINE.** GEORGE F. PFEIFFER, Buffalo, N. Y. Filed July 25, 1899. Serial No. 725,098. (No model.)



Claim.—1. The combination with a folding-table provided with a slot, of an upper folding-blade having a movement toward and from the top of the table on one side of its slot and adapted to press one end of the sheet against the table, and a lower folding-blade arranged below said table on the opposite side of its slot and adapted to move upwardly through said slot and over the upper folding-blade, whereby the central part of the sheet is folded or doubled around the opposite ends of said blades, substantially as set forth.

2. The combination with a folding-table provided with a slot, of an upper folding-blade having an oscillating movement toward and from the top of the table on one side of its slot, and a lower folding-blade arranged below the table on the opposite side of its slot and having a reciprocating movement through said slot and over the upper folding-blade, substantially as set forth.

3. The combination with a folding-table provided with a slot, of an upper folding-blade adapted to bear upon the table on one side of its slot, a rock-shaft carrying the upper folding-blade, a cam which operates said rock-shaft, a lower folding-blade arranged on guideways below the table on the opposite side of its slot and having a reciprocating movement through said slot and over the upper folding-blade, gear-segments meshing with gear-racks on the lower folding-blade, and a cam which operates the segments, substantially as set forth.

4. The combination with a folding-table provided with a slot, of an upper folding-blade adapted to bear against the top of the table on one side of its slot, a smoothing-bar adapted to bear against the top of the table on the opposite side of its slot, and a lower folding-blade arranged below the table and adapted to pass through said slot and over the upper folding-blade, substantially as set forth.

5. The combination with a folding-table provided with a slot, of an upper folding-blade adapted to bear against the top of the table on one side of its slot, a smoothing-bar adapted to bear against the top of the table on the opposite side of its slot, and loosely connected with the operating device of the upper folding-blade and a lower folding-blade arranged below the table and adapted to pass through said table and over the upper folding-blade, substantially as set forth.

6. The combination with a folding-table provided with a slot, of an upper folding-blade mounted on a rocking support and adapted to bear against the top of the table on one side of its slot, a smoothing-bar supported by a rock-shaft and adapted to bear against the top of the table on the opposite side of its slot, a rock-arm connected with said shaft, a rod passing loosely through said arm and provided with a head at its lower end and connected at its upper end with said rocking support, and a lower folding-blade arranged below the table and adapted to pass through said slot and over the upper folding-blade, substantially as set forth.

7. The combination with a folding-table, of two folding-blades which are adapted to overlap one another and fold the sheet between the same, and sad-irons adapted to engage with the sheet at the opposing ends of the folding-blades, substantially as set forth.

8. The combination with a folding-table, of two folding-blades which are adapted to overlap one another and fold the sheets between the same, and a clamp adapted to grasp the end of the blank and hold the same during the folding operation, substantially as set forth.

9. The combination with a folding-table provided with a slot, of an upper oscillating folding-blade adapted to bear against the top of the table on one side of its slot, a smoothing-bar adapted to bear against the top of the table on the opposite side of the slot, a lower reciprocating folding-blade arranged below the table and adapted to pass through said slot and over the upper folding-blade, a clamp adapted to grasp the end of the sheet which is being folded, and upper and lower sad-irons adapted to engage with the opposing ends of the folding-blades, substantially as set forth.

10. The combination with the folding mechanism, of an endless carrier, a gripper having a jaw which is fixed on said carrier, a movable jaw which is mounted on a rock-shaft turning on the carrier, a spring bearing against a crank on one end of said shaft, gripper closing and opening arms arranged on said rock-shaft, and stationary stops which are engaged by the closing and opening arms for shifting the latter, substantially as set forth.

11. The combination with the folding-table and the folding mechanism, of a carrier whereby the sheets are carried to the folding mechanism, clamping-fingers adapted to engage with the end of the sheet and mounted on a rock-shaft, a shifting-arm arranged on the rock-shaft, a gear-wheel meshing with a gear-wheel on said rock-shaft and provided with a shifting-arm which is arranged at an angle to the shifting-arm on said rock-shaft, and tappets arranged on said carrier and adapted to engage with said shifting-arms for opening and closing the clamping-fingers, substantially as set forth.

12. The combination with the folding-table and the folding mechanism, of a carrier whereby the sheets are carried to the folding mechanism, clamping-fingers adapted to engage with the end of the sheet and mounted on a rock-shaft, a shifting-arm arranged on the rock-shaft, a gear-wheel meshing with a gear-wheel on said rock-shaft and provided with a shifting-arm which is arranged at an angle to the shifting-arm on said rock-shaft, tappets arranged on said carrier and adapted to engage said shifting-arms for opening and closing the clamping-fingers, and a spring which engages with a crank on said shaft and whereby the clamping-fingers are yieldingly held in an open or closed position, substantially as set forth.

13. The combination with the folding mechanism, of a transfer-gripper having a movement toward and from the folding mechanism and consisting of a slide, jaws fixed on the slide, movable jaws mounted on a

rock-shaft which is journaled on said slide, a spring which engages with a crank on the shaft and holds the same yieldingly in an open or closed position, and two shifting-arms arranged at right angles to each other on said rock-shaft and adapted to engage with stops for turning the rock-shaft in opposite directions, substantially as set forth.

14. The combination with a feed-table, a primary folding-table and a secondary folding-table, said several tables being all arranged substantially in the same plane, of a primary carrier which carries the sheet to be folded from the feed-table to the primary folding-table, a primary transferring device which carries the sheet away from the first folding-table, a secondary carrier which carries the sheet from the primary transferring device to the secondary folding-table, and a secondary transferring device which carries the sheet away from the secondary folding-table, substantially as set forth.

658,464. APPARATUS FOR TEACHING CHILDREN TO WALK.

EDWARD REINLI, Murgenthal, Switzerland. Filed Apr. 24, 1899. Serial No. 714,295. (No model.)



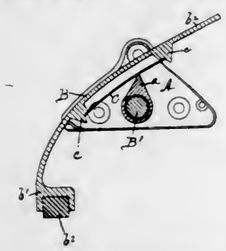
Claim.—1. A baby-walker, comprising two side frames rigidly connected, a back slidably mounted between the side frames, a seat pivotally mounted between the side frames and having connection with the back, means for adjusting and securing the seat and back in various positions, wheels for supporting the side frames, and pedals connected with and driven from the wheels.

2. A baby-walker, comprising a frame, a seat pivotally mounted in the frame, means for adjusting and securing the seat, a back movably mounted in the frame independently of the seat and connected with the seat to be moved in unison therewith, the seat and back being adjustable to various positions, and means for sustaining the feet of the baby independently of the seat and back.

3. A baby-walker, comprising a frame, rear wheels for the same, a front axle, wheels mounted on the front axle, a rod pivoted to the front axle, pedals having connection with the ends of the rod and located rearward of the front axle, and pedals having cranked connection with the rear wheels.

658,465. DOOR-STOP.

FRANK L. ROSENTRETER, Rochester, N. Y. Filed May 1, 1899. Serial No. 715,257. (No model.)

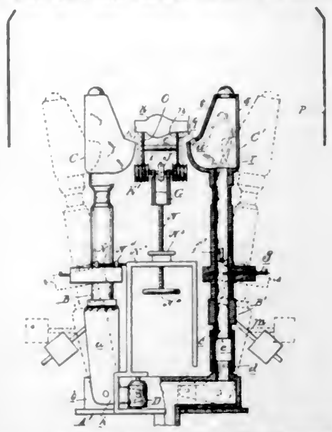


Claim.—1. In a door-stop, the combination of the plate A having the angular lug *a* thereon; the lever B pivoted to said plate A and provided with a spring, which spring is adapted to rest against the side of the point of the lug *a* when the lever is tilted in one direction or the other; so that when the lever is tilted in either direction the pressure of the spring against the corresponding side of the lug holds the lever in one of its extreme tilted positions, substantially as described.

2. In a door-stop, the combination of the plate A having the angular lug *a* thereon; the lever B pivoted to said plate and provided with the spring C, the ends of which rest against abutments of said lever and the center of which rests constantly against the lug; the said spring being adapted to rest against the side of the point of the lug at one side or the other of the center of said spring when the lever is tilted in one direction or the other, substantially as described.

658,466. GLASS-FINISHING MACHINE.

CHRISTIAN Z. F. ROTT, Pittsburg, Pa., assignor to the Macbeth-Evans Glass Company, same place. Filed Dec. 1, 1899. Serial No. 738,811. (No model.)



Claim.—1. In a glass-finishing machine, the combination with a drive mechanism of a rotatory supporting member for the work, detachably supported on and driven by said drive mechanism and adapted to revolve the work around a horizontal axis.

2. A rotatory work-holder comprising a driven-roller bearing, and a detachable supporting-roll for the work resting thereon and rotated thereby and adapted to impart a like rotary movement to the work.

3. A rotatory work-holder comprising a driven-roller bearing and a pair of detachable rolls supported in parallel adjacence upon said bearing and rotated thereby.

4. A rotatory work-holder comprising a series of parallel horizontally-arranged rolls, a pair of detachable work-supporting rolls resting thereon, and means for driving one or more of the rolls of said series to impart a like rotary movement to said detachable rolls.

5. In a glass-finishing machine, a rotatory work-holder comprising a driven-roller bearing, a pair of detachable work-supporting rolls resting in parallel adjacence upon said bearing and rotated thereby, and means for holding said detachable rolls from longitudinal movement in different positions of adjustment upon said roller-bearing.

6. In a glass-finishing machine, a rotatory work-holder comprising a driven-roller bearing having a series of parallel grooves and a pair of detachable work-supporting rolls each consisting of separated circular flanges and connecting-shanks, said detachable rolls resting upon said bearing with their flanges engaging the parallel grooves therein.

7. In a glass-finishing machine, the combination with a work-holder, of a furnace and a rocking support for said furnace adapted to move the same toward or from the work.

8. In a glass-finishing machine, the combination with a work-holder, of a furnace, a standard supporting said furnace, means for rocking said standard to move said furnace toward or from the work, and an adjustable stop for limiting the inward movement of said furnace.

9. In a glass-finishing machine, the combination with a work-holder, of a furnace, a hollow standard supporting said furnace and forming a conduit and mixer for the combustible gases and means for rocking said standard to move said furnace toward or from the work.

10. In a glass-finishing machine, the combination with a work-holder, of a furnace, a hollow standard supporting said furnace, a hollow base to which the lower end of said standard is pivotally connected, a flexible coupling between said hollow base and standard and means for rocking said standard to move said furnace toward or from the work.

11. In a glass-finishing machine, the combination with a work-holder, of a furnace, a supporting rocking standard therefor adapted to carry said furnace toward or from the work and a counterbalance for holding said standard in its different positions of adjustment.

12. In a glass-finishing machine, a standard, a laterally-projecting arm pivotally connected to said standard, a rotatory work-holder carried at the outer end of said arm, a furnace arranged upon opposite sides of said holder and a vertically-adjustable support for the free end of said arm whereby the position of said holder relative to said furnaces may be adjusted.

13. A glass-finishing machine comprising a standard, an arm extending laterally from said standard, a rotatory work-holder supported upon said arm, a pair of standards arranged upon opposite sides of said arm, furnaces supported upon said standards, foot-levers for rocking said standards to move said furnaces toward or from the work and means for vertically adjusting said laterally-extending arm.

14. In a glass-finishing machine, a rotatory support for the work comprising a pair of separated circular flanges or disks having a connecting-shank, and a tire of non-heat-conducting material secured to the periphery of each disk.

15. In a glass-finishing machine, a furnace comprising the hollow casing having main portion an upwardly-projecting portion of lesser width forming at one side a laterally-extending ledge or shelf, said ledge having a slot or aperture theren, substantially as described.

16. In a glass-finishing machine, a furnace comprising the body portion *r*, and the upwardly-extending portion *s* of lesser diameter forming at one side the laterally-projecting ledge or shelf *t*, said ledge having the slot or aperture *u* therein, substantially as and for the purpose described.

658,467. DEVICE FOR ADJUSTING TRUSS-PADS.

ANDREW B. C. SAWYER, Albany, N. Y. Filed May 11, 1899. Serial No. 716,399. (No model.)



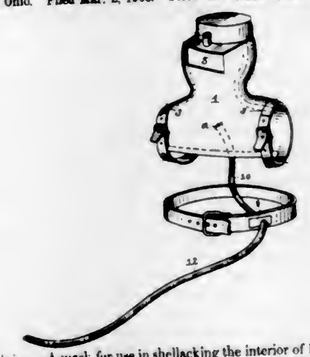
Claim.—1. The combination with a screw-threaded cylindrical piece having groove *a* running transverse to the direction of the screw-threads on the same, and piece B having integral with it nut *b* provided with screw-threads corresponding with those on said cylindrical piece, and seat *b'* adapted to support a portion of said screw-threaded and grooved cylindrical piece which is adjoining said nut, of clamping-piece C having integral with it tongue *c'* seating in said groove, and devices described binding said clamping-piece and its connected tongue in secure holding with the said grooved screw-threaded cylindrical piece, substantially as set forth.

2. The combination with a screw-threaded cylindrical piece having in it a series of longitudinal grooves *a*, and piece B comprising one or more nuts *b* provided with screw-threads for coaction with those of said cylindrical piece, and seat *b'* adapted to receive a portion of the latter piece which may be adjoining one of nuts *b*, of the clutch-piece C having in it concavity *c* and tongue *c'* projected from the bottom of said concavity and adapted to be engaged at pleasure with any one of the series of grooves *a*, and means described holding said clutch-piece and its tongue in engagement with piece A, and a selected groove in the latter, substantially as set forth.

3. The combination with a screw-threaded cylindrical piece A, having a series of longitudinal grooves *a* running transverse to its screw-threads, and piece B comprising seat *b'* and one or more screw-threaded nuts *b* within which said piece may be screwed in either direction, of a piece secured to piece B and adapted together with the latter piece, to be moved and adjusted both longitudinally and rotational in relation to said screw-threaded piece A, a clutch-piece C provided with tongue *c'*, and means described for holding said tongue in engagement with any selected one of said grooves *a* substantially as set forth.

658,468. RESPIRATORY MASK.

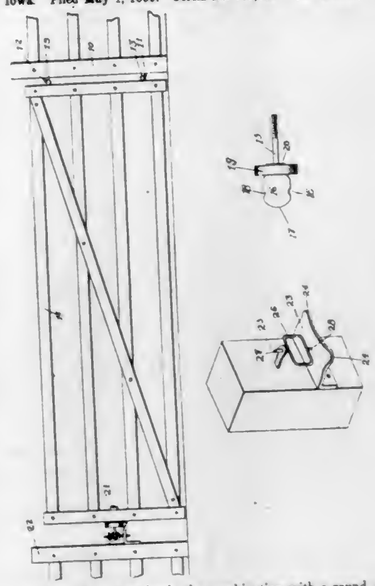
DANIEL W. SCHAEFFER, Dayton, Ohio. Filed Mar. 2, 1900. Serial No. 7,023. (No model.)



Claim.—A mask for use in shellacking the interior of brewery-casks, comprising a covering of flexible material for the head and shoulders, the same being provided with a transverse sight-opening extending across the upper portion, and a ventilation-opening directly above said sight-opening, straps connected around the edges of said mask that fit over and around the shoulders, whereby said mask may be secured tightly around said shoulders, a flexible air-tube projected under the lower front portion of said mask, a belt securable to the body of the wearer below said mask and disconnected therefrom, and to which the said air-tube is attached, and whereby said mask is relieved of the weight of the air-pipe.

658,469. GATE-LATCH.

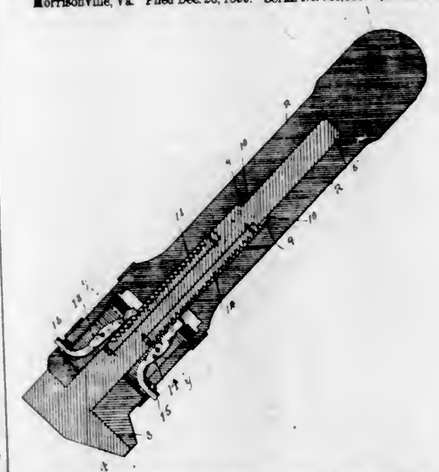
WILLIAM J. SCHOONOVER, Des Moines, Iowa. Filed May 1, 1899. Serial No. 715,093. (No model.)



Claim.—In a gate-latch the combination with a round shank 15 adapted to be attached to a gate having an integral flattened head 16 provided with rounded outer edges, a roller 16 encircling said shank, a platform 23, adapted to be attached to a gate-post, provided with rounded corners 24 inclined downwardly, a support 25 above the platform, of a rectangular loop 26 pivotally mounted in said platform and support, said loop being of a size slightly larger than the head 16, whereby when said head 16, is engaged by the loop only slight vertical movement of said head is permitted, as and for the purposes set forth.

658,470. WRENCH.

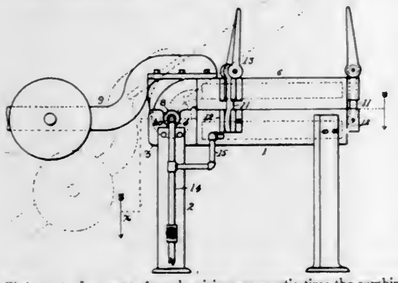
CHARLES D. SCOTT and BRUCE M. EAMICH, Morrisonville, Va. Filed Dec. 28, 1899. Serial No. 741,831. (No model.)



Claim.—The combination with the handle of a wrench terminating in guide extensions 2 provided with a fixed jaw 3, said extensions near

their rear ends having formed upon their adjacent faces, ribs 10, and the adjacent faces of the extensions at their forward end being formed with dog-chambers, of a shank 5, provided with a fixed jaw 4 and having a groove 8 in its side, straps 6 surrounding said handle extensions and the shank, a stop-pin 7 extending through said strap into said groove, said shank having in its sides near its rear end, grooves 9 to be engaged by the ribs 10, rack-bars 11 12, secured to said shank, the teeth of one rack-bar alternating with the teeth of the other rack, and spring-actuated dogs pivoted in said dog-chambers and adapted to alternately engage the teeth of said racks, substantially as specified.

658,471. VULCANIZING-PRESS. FRANK A. SEIBERLING, Akron, Ohio, and ALEXANDER STRAUS, New York, N. Y.; said Straus assignor to the Goodyear Tire and Rubber Company, Akron, Ohio. Filed Dec. 9, 1898. Serial No. 698,745. (No model.)

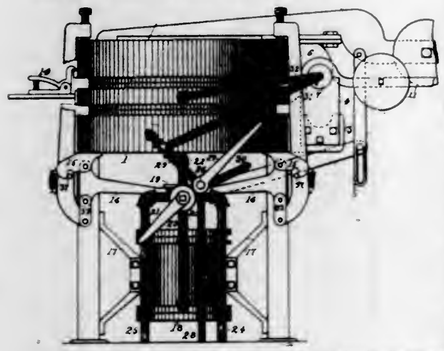


Claim.—1. In a press for vulcanizing pneumatic tires the combination of a fixed annular hollow case, a movable annular hollow case hinged at one side thereto, tire-forming molds detachably mounted in said cases and arranged to register, clamping devices for locking said cases together and means for introducing and controlling the entrance of live steam into said cases, substantially as shown and described.

2. In a press for vulcanizing pneumatic tires, the combination of two annular hollow cases, hinged together at one side, tire-forming molds detachably connected with said cases and arranged to meet and register, clamping devices for locking said cases together, means for introducing and controlling the entrance of live steam into said cases, and a tube having a flexible joint and arranged to carry live steam into the interior of a tire in said molds, and means for controlling the entrance of steam in said tube, substantially as shown and described.

3. In a vulcanizer the combination with a fixed annular hollow case and a free annular hollow case hinged to and adapted to register with the fixed case, of pipes to connect with a steam-supply connected with the interiors of said cases, devices for locking said cases together, molds arranged to rest in said cases, a counterweight to balance the free end of the free case, a pipe flexibly connected with one of said cases having a hollow tube with a lateral opening arranged to rest in the tire between said molds, and a valve and an exhaust-cock in said pipe, all constructed and arranged substantially as shown and described.

658,472. VULCANIZER. FRANK A. SEIBERLING, Akron, Ohio. Filed Mar. 14, 1900. Serial No. 8,591. (No model.)



Claim.—1. In a vulcanizer the combination of a fixed hollow case, a movable hollow case hinged thereto and an intermediate hollow ring hinged between said cases and molds in said cases and ring, with means for connecting said movable case and ring, clamps to bind said cases and ring together and means for introducing and controlling the entrance and escape of live steam to and from said cases and ring, substantially as shown and described.

2. In a vulcanizer the combination of a fixed hollow case and a movable hollow case hinged thereto and a hollow ring hinged between said cases and molds in said cases and ring, of a cylinder connected with said fixed case having a piston and rod adapted by intermediate mechanism to close and lock said cases and ring and to release and open them and means for controlling a fluid under pressure to operate said piston, substantially as shown and described.

3. In a vulcanizer the combination with a fixed hollow case and a movable hollow case hinged thereto and a hollow ring hinged between said cases molds held therein, and means for causing said movable case to rock on its hinges, of a latch to connect said ring and movable case to cause them to move in unison, substantially as shown and described.

4. In a vulcanizer the combination with a fixed hollow case and a movable hollow case hinged thereto and a hollow ring hinged between said cases and molds in said cases and ring, a latch to detachably connect said ring and movable case, of a cylinder having a piston and rod adapted to be moved by a fluid under pressure, means for controlling the entrance and escape of said fluid to operate said piston, of a pivoted lever adapted to be rocked by said piston-rod, and a slotted bar connecting said lever and movable case to open and close said case by the movement of said piston, substantially as shown and described.

5. In a vulcanizer the combination with a fixed hollow case and a movable hollow case and a hollow ring hinged between said cases and molds in said cases and ring, of a cylinder with a piston and rod, a number of levers pivoted about said fixed case, having one end arranged to engage and be rocked by said piston, clamp-bars arranged about said fixed case susceptible of a rocking and a longitudinal movement, adapted to rock to and descend to bind said cases and ring and to rise and release said cases and ring, and rock away from them, and links to connect the opposite ends of said levers and clamp-bars, to cause the latter to operate, substantially as shown and described.

6. In a vulcanizer the combination with a fixed hollow case and a movable hollow case, and a hollow ring hinged between said cases and molds in said cases and ring, and molds connected with the adjacent faces of said cases and ring and arranged to register, of a cylinder having a piston and rod adapted to be moved reciprocally by a fluid under pressure, means for controlling the entrance of steam to said cases and ring, locking devices arranged to be operated by said piston to lock together and release said cases and ring, mechanism adapted to be operated by said piston to open said movable case, and a latch to unite said ring and movable case, substantially as shown and described.

7. Tripartite vulcanizers consisting of a fixed hollow case, a movable hollow case hinged thereto, and a hollow ring hinged between said cases, and molds retained within said cases and ring and between their adjacent faces, and means for severally heating said cases and ring, substantially as shown and described.

8. As an improved article of manufacture a vulcanizer having a plurality of hollow cases hinged together, molds in said cases and means for severally heating said molds, substantially as shown and described.

9. An improved vulcanizer, consisting of a plurality of hollow steam-cases hinged together, molds within said cases, means for heating said cases and molds and mechanism for opening and closing said molds, substantially as shown and described.

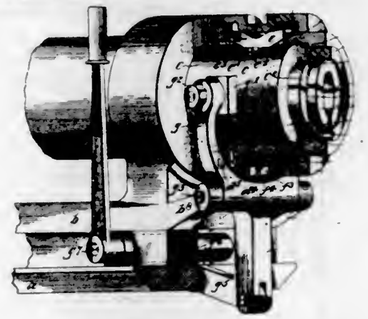
658,473. CHUCK. WILLIAM D. F. SMITH and THEODORE COVENTRY, Manchester, England, assignors to Smith & Coventry, Limited, same place. Filed Jan. 22, 1900. Serial No. 2,349. (No model.)

Claim.—1. In a chuck, the combination with a hollow spindle and a plurality of tapered gripping-jaws cooperating therewith; of a sleeve longitudinally slidable on the spindle, and a ring adjustable in said sleeve and arranged to positively move the jaws into and out of the spindle, substantially as set forth.

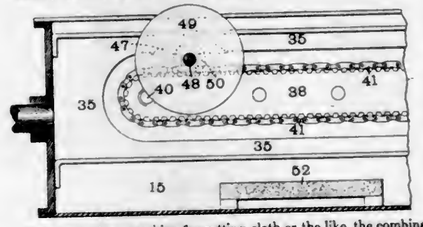
2. In a chuck, the combination with a hollow spindle and a plurality of gripping-jaws cooperating therewith; of a sleeve and an external bead on its rear end integral therewith, a plurality of slots ending at the bead, mechanism for reciprocating the sleeve, and an annular flanged adjusting-ring adapted to engage grooves in the jaws and positively move the jaws into and out of the spindle, substantially as set forth.

3. In a chuck, the combination with a hollow spindle, a sleeve thereon, slots therein and toggle-levers in said slots to slide the same; of a plurality of tapered grooved gripping-jaws in the spindle end, a ring externally threaded and adjustable in the end of said sleeve, and an internal flange between the ends of said ring, said flange engaging the grooves in the jaws, substantially as set forth.

4. In a chuck, the combination with a hollow spindle, of a sleeve provided with an external bead on one end, longitudinal slots ending at the base of the bead, double toggle-levers in said slots whose ends slide against the ends of said slots to move the sleeve, an internal threaded flange on the other end of said sleeve, conical-surfaced jaws, peripheral grooves therein, a threaded adjusting-ring in said internal flange, a flange in said ring adapted to engage the grooves in the jaws and hold and adjust the same, and mechanism for moving the levers, sleeve, ring and jaws, substantially as described.



658,474. CLOTH-CUTTER. CHARLES F. SPARKS, Alton, Ill. Filed Jan. 2, 1900. Serial No. 10. (No model.)



Claim.—1. In a machine for cutting cloth or the like, the combination with a rotary member around which the material to be cut passes, of a cutter carried within said rotary member and adapted to project beyond the same, and means for feeding said cutter longitudinally of said rotary member.

2. In a machine for cutting cloth or the like, the combination with a rotary member around which the material to be cut passes, of a rotary cutter within said rotary member and adapted to project beyond the same, and means for feeding said cutter longitudinally of said rotary member.

3. In a machine for cutting cloth or the like, the combination with a rotary member around which the material to be cut passes, of a rotary cutter within said rotary member and adapted to project beyond the same, means for feeding said rotary cutter longitudinally of said rotary member, and gearing for rotating said rotary cutter.

4. In a machine for cutting cloth or the like, the combination with a rotary member around which the material to be cut passes, an endless chain carried within said rotary member, a cutter carried by said endless chain and adapted to project beyond said rotary member, and means for actuating said endless chain.

5. In a machine for cutting cloth or the like, the combination with a rotary member around which the material to be cut passes, of an endless chain carried in said rotary member, a rack also carried by said rotary member, a rotary cutter carried by said chain and adapted to project beyond said rotary member, and a spur-wheel carried by said rotary cutter and adapted to engage with said rack.

6. In a machine for cutting cloth or the like, the combination with a rotary member around which the material to be cut passes, of a rotary cutter carried by said rotary member and adapted to project beyond the same, means for feeding said rotary cutter longitudinally of said rotary member, and an auxiliary cutter cooperating with said rotary cutter to make a shearing cut.

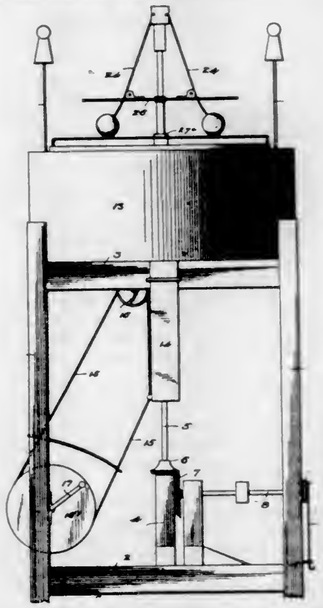
7. In a machine for cutting cloth or the like, the combination with a rotary member around which the material to be cut passes, of a rotary cutter carried in said rotary member and adapted to project beyond the same, means for feeding said rotary cutter longitudinally of said rotary member, and a guard adjacent to said rotary cutter for holding the cloth close to said rotary member.

8. In a machine for cutting cloth and the like, the combination with a rotary member around which the material to be cut passes, of a rotary cutter carried in said rotary member and adapted to project beyond the same, means for feeding said rotary cutter longitudinally of said rotary member, and a combined guard and auxiliary cutter cooperating with said rotary cutter to form a shearing cut.

9. In a machine for cutting cloth or the like, the combination with a rotary member around which the material to be cut passes, of means carried by said rotary member for cutting the material transversely and means for removing the material from said rotary member and folding the same.

10. In a machine for cutting cloth or the like, the combination with a rotary member around which the material to be cut passes, of means carried by said rotary member for cutting the material, a second rotary member adapted to remove the material from said first rotary member, a folder-blade carried by said second rotary member, and a third rotary member adapted to remove the material from the second rotary member in a folded condition.

658,475. WINDMILL. JOHN H. STOLL, Hutchinson, Kans. Filed Aug. 9, 1899. Serial No. 726,628. (No model.)



Claim.—1. The combination of a supporting-frame, a driving-shaft mounted therein, a turbine carried by said shaft, a governor, a wind shield or guard, a cross-head movable on said shaft, a vertically-movable frame, a vertically-movable band carried by said frame and connections between the band and governor, substantially as described.

2. The combination of a supporting-frame, a driving-shaft mounted therein, a turbine carried by said shaft, a governor, a wind shield or guard, a guiding-frame depending from said shield, a cord or chain connected to said depending frame for raising and lowering the frame and shield, a cross-head movable on the shaft, a vertically-movable frame, a band carried thereby and connections between the band and governor substantially as and for the purpose specified.

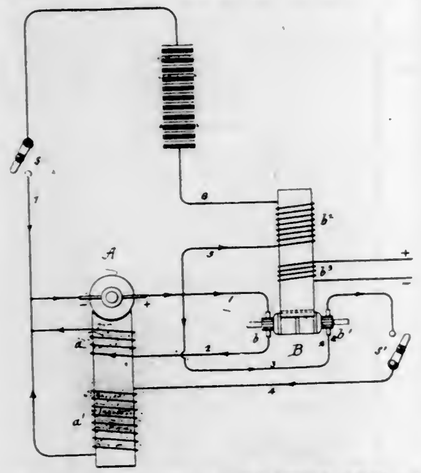
3. The combination of a supporting-frame, a driving-shaft mounted therein, a turbine carried by the shaft, a governor, a wind shield or guard, a cross-head, a frame depending from the shield, a cord or chain connected with said frame, the pulleys over which the cord or chain passes, a crank-shaft carrying the lowermost pulley, a vertically-movable frame, and means for raising and lowering said frame, and a band carried by the said frame, all substantially as specified.

4. The combination of a supporting-frame, a driving-shaft mounted therein, a turbine on said shaft, governor-arms on the upper end of said shaft, a cross-head with openings through which said arms pass, the vertically-movable frame, the band supported thereby, guides for said band and means connecting the governor-arms and cross-head for raising and lowering said band, all substantially as shown and described.

5. The combination of a supporting-frame, a driving-shaft mounted

therein, a turbine on said shaft, governor-arms pivotally mounted on the upper end of said shaft, a cross-head with openings through which said arms slide, the vertically-movable frame, a sleeve slidingly mounted on the shaft and movable with the said frame, a band supported by said frame, guides for said band and connections for raising and lowering the band by the motion of the governor-arms, substantially as specified.

658,476. **DYNAMO REGULATION.** IMLE E. STOREY, Trenton, N. J. Filed Feb. 23, 1900. Serial No. 6,196. (No model.)



Claim.—1. The combination of a main generator adapted to be driven at a variable speed and having on its field-magnet an exciting-coil and an opposing coil, a dynamo-electric machine whose field-magnet is energized by said generator and whose armature is connected with said opposing coil, substantially as described.

2. The combination of a main generator of electricity adapted to be driven at a variable speed and having on its field-magnet an exciting-coil and an opposing coil, a dynamo-electric machine whose field-magnet is energized by said main generator and whose armature is in a shunt-circuit from said main generator which includes said opposing coil, substantially as described.

3. The combination of a main generator adapted to be driven at a variable speed and provided on its field-magnet with an exciting-coil and an opposing coil, a motor-dynamo whose field-magnet is connected in the main circuit of the generator and whose two armature-circuits are connected respectively in shunts of the main generator which include said exciting and opposing coils thereon, substantially as described.

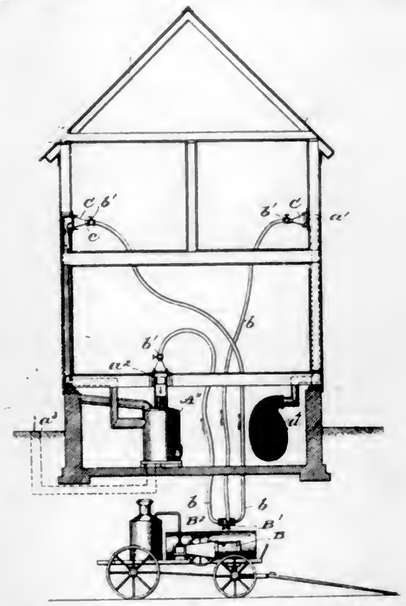
658,477. **MEANS FOR CLEANING FLUES FOR FURNACES OR THE LIKE.** WILLIAM T. VAN DORN, Chicago, Ill. Filed May 14, 1900. Serial No. 16,578. (No model.)

Claim.—1. In a device of the class described the combination with an air-pump of a detachable hood, adapted to seal or close the open end of a furnace-flue and provided on its inner side with a tube extending within the flue, a tube connecting the air-pump with said hood and inner tube, and a regulating-valve adapted to be operated at the hood whereby air under a desired pressure may be admitted to the flue, thereby carrying outwardly refuse matter therein contained.

2. In a device for the class described an air-compressing pump provided with means for connecting a plurality of hose therewith, a removable hood on the free end of each hose adapted to be secured in the open end of a furnace-flue, laterally-movable clamping means supported on said hood whereby the same may be secured within said flue and a regulating-valve in the hose adjacent to said hood whereby air may be excluded from the hood or admitted therethrough under a desired pressure.

3. A hood for the purpose specified comprising a plate of sufficient size to cover a heat-flue, a pad of packing surrounding said plate on the under side of the margin thereof, means for clamping said plate within said flue, said plate being provided with a central aperture, a casing secured to the plate and surrounding said aperture and having air-tight connection with a hose-nozzle and clamping means supported on said plate whereby the same may be rigidly secured within the open end of the flue.

4. In a device of the class described, a hood comprising a plate of metal or the like having dimensions greater than a flue-opening and provided on the under side thereof with a resilient pad adapted to form a tight joint around the flue, and an aperture extending through said plate, an air-tight casing surrounding said aperture on the outer side, and extending upwardly therefrom, means at the upper extremity thereof adapted to form air-tight connection with the nozzle of a hose, and means supported on said plate adapted to afford locking engagement thereof with parts surrounding said flue end, said locking mechanism being adapted for lateral adjustment to permit said hood to be used for flues of different sizes.



5. A hood comprising a casing adapted to have air-tight connection with the nozzle of a hose or the like and provided at its lower end with an apertured plate at approximately right angles with the axis thereof said plate being of sufficient dimensions to cover the discharge end of a furnace-flue, laterally-movable clamping means supported on said plate and adapted to engage on each side of the flue and a depending band or strip surrounding the aperture in said plate and adapted to extend within the flue.

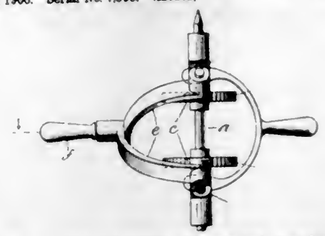
6. In a device of the class described, a hood comprising a casing adapted to have air-tight connection with a nozzle of a hose or the like and provided at its lower end with an apertured plate at right angles with the axis thereof, said plate being of sufficient dimensions to cover the discharge end of a furnace heat-flue, oppositely-moving parallel clamping-bars supported on the under side of said plate on each side of the aperture thereof and adapted to be moved laterally to engage on each side of the flue end, toggle-bars engaging centrally with their opposite ends said clamping-bars and engaging with their adjacent ends a pivot-pin, and means for moving said inner ends outwardly or inwardly, thereby forcing said clamping-bars into or out of engagement at the sides of the flue.

7. In a device of the class described, a plate provided with a central aperture and provided on the under side thereof with a marginal pad or band of resilient material, a casing surrounding said central aperture and provided at its upper ends with means for attachment to a nozzle, a band or strip surrounding the aperture in and depending from said plate and adjacent to said aperture, a rotative shaft passing through said plate provided on its upper ends with a hand-wheel and a ratchet, a pawl pivoted on said plate adapted to engage said ratchet, and to resist rotation of said shaft in one direction, the lower end of said shaft being provided with a laterally-directed arm, a stud on said arm, oppositely-directed toggle-bars pivoted on said stud and engaging with their outer ends clamping-bars on opposite sides of said plate, adapted to be moved by the rotation of said shaft into and out of engagement at the sides of a heat-flue or the like

8. In a device of the class described the combination with an air-pump, of a detachable hood provided on its under side with a resilient pad and adapted to seal or close the open end of a furnace-flue, a tube secured on the under side of said hood and extending into the flue, a tube connecting the air-pump and said hood whereby air may be admitted into the flue through said hood and tube, thereby carrying outwardly refuse matter therein contained.

9. In a device of the class described the combination with an air-compressing pump of a detachable hood adapted to seal or close the open end of a furnace-flue and provided on its under side with a tube extending into the flue, a tube connecting the air-pump and said hood and provided with a regulating-valve adapted to be operated at the hood, and clamping means on said hood adapted to secure the same in the flue end.

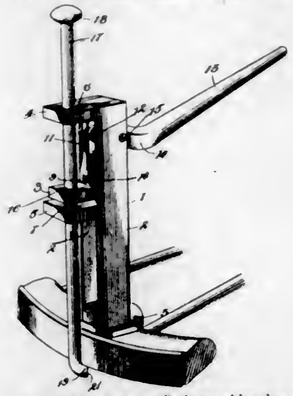
658,478. **MECHANICAL MOVEMENT.** HARVEY D. WILLIAMS, Ithaca, N. Y., and HORACE G. HOADLEY, Waterbury, Conn.; said Williams assignor to said Hoadley. Filed Feb. 15, 1897. Renewed Mar. 6, 1900. Serial No. 7,583. (Model.)



Claim.—1. In combination, the rotary shaft, a ratchet-wheel fixed upon said shaft, a curved support journaled upon said shaft and carrying an oscillatory pawl cooperating with said ratchet-wheel, a second curved support, and curved yokes pivoted respectively to said pawl-supports and joined by a common pivotal attachment, whereby the movement of said common pivotal attachment in any path approximating to an axial plane of said shaft causes the oscillation of said pawl and the intermittent rotation of said shaft, substantially as shown and described.

2. In combination, the rotary shaft, the two ratch-wheels fixed on said shaft, the two oscillatory pawls, the two supports for said pawls journaled on said shaft, and the two connecting-rods each pivotally attached to one of said supports and brought to a common pivotal attachment to each other, all substantially as described and for the purposes set forth.

658,479. **WHEEL-TIRE REMOVER.** BRADFORD M. BUCKLAND, Poplar, Cal. Filed Sept. 30, 1899. Serial No. 732,205. (No model.)



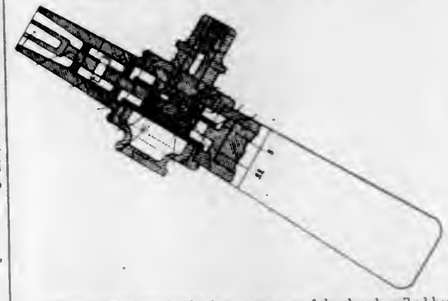
Claim.—A device of the class described comprising the vertical support 1, consisting of the vertical side pieces 2, the base-rest adapted to be placed on a felly contiguous to one of the edges of a tire, and the horizontal projecting guides 4 and 5 arranged respectively at the top of the support and at the center thereof, the vertical staff 17 extending through the horizontal guides and provided at its lower end with the foot 19, and adapted to be rotated in the guides to engage the foot properly with the lower edge of the tire, the operating-lever fulcrumed between the upper portions of the sides 2, the clutch-head 8 having an opening to receive the staff, and the approximately-vertical link depending from the lever and connected with the clutch-head, substantially as described.

658,480. **CASE OR CABINET.** JOHN R. BURTON, London, England. Filed June 19, 1900. Serial No. 20,867. (No model.)

Claim.—A case or cabinet comprising an outer shell, having an opening in its front, a panel or door fitting said opening brackets on said panel or door mounted on centers of motion in the shell behind said opening so that the panel or door can rotate partly within and partly without said shell, counterweights on said brackets, and stops on the shell to limit the movements of the panel or door, substantially as described.



658,481. **MASSAGE APPARATUS.** OSCAR C. A. CARLSSON, Stockholm, Sweden. Filed Dec. 28, 1897. Serial No. 664,151. (No model.)



Claim.—The combination in an apparatus of the class described having an axle journaled in the handle and a connecting-rod located in said handle the outer end of said connecting-rod carrying the massage-pad and the inner end being eccentrically connected to said axle, of a guide turnable in the said handle, means for turning said guide, a slide movable longitudinally in said guide and provided with a transverse slot in which the eccentric of said axle engages, a second guide turnable in the said handle, means for turning said second guide, a slide movable in said second guide and provided with a transverse slot in which a central tap of the first-mentioned slide engages and a journal for the said connecting-rod, substantially as and for the purpose set forth.

658,482. **CHECKING OR UNCHECKING DEVICE.** CHARLES J. CASTERA, Jr., Los Angeles, Cal. Filed Dec. 18, 1899. Serial No. 740,820. (No model.)

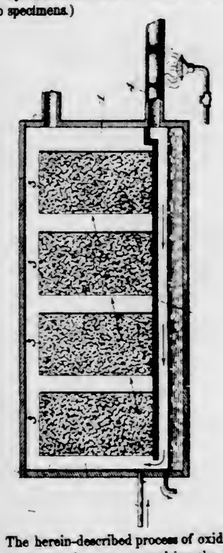


Claim.—1. An overcheck safety device comprising a loop-holding member provided at one end with two perforated projecting ears and with a screw-threaded hole leading into said member; an I-plate provided with a perforation through its body to correspond with the perforations in the ears and having end pieces to close the side spaces between the ears; a loop with its ends on opposite sides of the body of the I-plate and inserted in the space between the ears; a rivet through the ears, the loop and the body of the I-plate; a tube having one end provided with a spring-seat and with a hole somewhat larger than the screw-threaded hole of the loop-holding member; a spring seated on the spring-seat in the tube; a bolt passing through the hole in the end of the tube and provided at one end with a head to compress the spring and at the other end with a screw screwed into the said screw-threaded hole; a ferrule fastened to the tube and provided with an end opening and with catches; and a loop-key provided with two spring catch-limbs to enter the ferrule and engage with the catches.

2. An overcheck safety device comprising a loop-holding member; means for detachably connecting such member to the checkrein, said member being provided with two perforated projecting ears; an I-plate having its body perforated to correspond with the perforations of the ears and having its side pieces arranged to close the spaces between the edges of the ears; a loop with ends on opposite sides of the body of the I-plate and seated between the ears; and a rivet through the loop and through the ears and the body of the I-plate.

3. The combination of the body of an overcheck safety device provided in one end with a socket with internal catches; and an attaching device provided with two resilient limbs with waving sides, the wave-lines being less abrupt on the sides of the waves toward the free ends of the limbs than on the outer sides of the waves, whereby the limbs insert into the catches with greater ease than they withdraw.

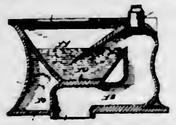
658,483. PROCESS OF OXIDIZING NEGATIVE ELECTRODES FOR PRIMARY BATTERIES. CLYDE J. COLEMAN, Chicago, Ill., assignor to Thomas J. Ryan, New York, N. Y. Filed Dec. 20, 1899. Serial No. 741,030. (No specimens.)



Claim.—1. The herein-described process of oxidizing negative electrodes for primary batteries, the same comprising the oxidation of a body of finely-divided or porous copper into a coherent mass by placing it in an oxidizing atmosphere and simultaneously supplying to it a requisite amount of moisture and controlling the supply of moisture, substantially as set forth.

2. The herein-described process of oxidizing negative electrodes for primary batteries, the same comprising the oxidation of a body of finely-divided or porous copper into a coherent mass, by placing it in an oxidizing atmosphere and simultaneously supplying to it the requisite amount of moisture and the required degree of temperature above normal, and controlling the supply of moisture and temperature, substantially as set forth.

658,484. WATER-CLOSET. CHARLES W. FRANKHEIM, Wheeling, W. Va. Filed Apr. 24, 1900. Serial No. 14,160. (No model.)



Claim.—1. A water-closet comprising an annular reservoir having an enlarged base and a contracted upper end, the walls of the reservoir between their ends being reëntrant, a downwardly-tapered bowl in the upper portion of the reservoir, and a siphon connected with the bowl, said siphon passing beneath the bowl and out through the bottom of the reservoir, said bowl extending from the upper edge of the reservoir to close the upper end of the latter and having its lower end sustained by the siphon, said reservoir, bowl and siphon being formed integral.

2. A water-closet comprising a bowl, a reservoir completely surrounding the bowl and having its upper end closed by the bowl, a siphon connected with the bowl and passed outwardly beneath the bowl and through the bottom of the reservoir and sustaining the bowl, said reservoir, bowl and siphon being formed integral.

658,485. OPERATING MECHANISM FOR WASHING-MACHINES. JOHN A. GROVE, Bluffton, Ind. Filed Feb. 3, 1900. Serial No. 3,853. (No model.)



Claim.—1. In operating mechanism for washing-machines and the like, a pinion secured to the dasher-shaft, a reciprocating slide coöperating with said pinion and a vertically and laterally adjustable guide for said slide, substantially as set forth.

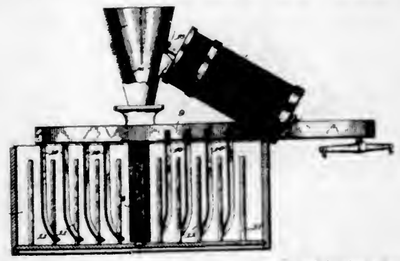
2. In operating mechanism for washing-machines and the like, a pinion applied to the dasher-shaft, a slide having cogs adapted to coöperate with the teeth of the pinion, means for imparting a reciprocating movement to the slide, vertically and laterally adjustable guides for the slide and means for securing said guides in an adjusted position, substantially as specified.

3. In operating mechanism for washing-machines and the like, a pinion applied to the dasher-shaft, a reciprocating slide coöperating with said pinion, and laterally-adjustable guides for the slide, substantially as specified.

4. In combination a standard having an offset portion, a dasher-shaft journaled in said offset portion of the standard and provided with a pinion, a reciprocating slide coöperating with said pinion and guides for the slide having adjustable connection with the aforesaid standard, substantially as set forth.

5. In combination, a socket, a dasher-shaft, having a journal at its upper end, a pinion secured to the dasher-shaft and having a pendent tubular extension obtaining bearing in the said socket, a standard receiving the journal at the upper end of the dasher-shaft, guides having adjustable connection with the standard, a slide mounted in the guides and coöperating with the aforesaid pinion and directed in its movements by the aforementioned guides, and means for imparting a reciprocating movement to the slide, substantially as set forth.

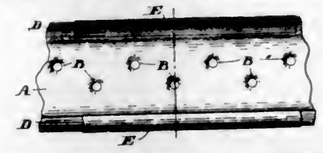
658,486. MACHINE FOR MIXING MORTAR. WILLIAM L. HAYES, Otis, Colo. Filed Sept. 2, 1899. Serial No. 729,399. (No model.)



Claim.—1. A mixing-machine comprising a tank having a track at its edge, a rotatable sweep having mixing-fingers entering the tank, a rotatable and inclined, open-ended sieve carried by and bodily movable with the sweep, said sieve resting upon the track for rotation thereby, said sieve being disposed over the tank and with its lower end projecting beyond the edge thereof, and a hopper arranged to discharge to the sieve.

2. A mixing-machine comprising a cylindrical tank having a track at its upper edge, a vertical shaft mounted in the tank, a sweep mounted upon the shaft and having mixing-fingers extending into the tank, a hopper mounted centrally of the sweep and having a discharge-chute, and an open-ended, foraminous cylinder having a shaft journaled at one end upon the hopper for bodily movement when the sweep is rotated, said cylinder having open ends and lying with one end to receive from the chute and with its opposite end in a lower plane and resting upon the track, whereby the cylinder will be rotated axially as it is rotated bodily.

658,487. VEHICLE-WHEEL RIM. ALEXANDER W. KENT, Boston, Mass. Filed Sept. 18, 1899. Serial No. 730,815. (No model.)



Claim.—1. The described improvement in vehicle-wheels, consisting in a metallic wheel-rim formed complete of a single piece having a concave peripheral face and at each side of its central line, a series of hollow struck-up bosses arranged in a zigzag line, and having walls of equal thickness with the rim, forming depressions in its concave face and corresponding protuberances on its convex face, open centrally to receive and form seats for the heads of the spoke-nipples, substantially as set forth.

2. The described improvement in wheel-rims, consisting in the annular metallic body A having a concave peripheral face with marginal trough-like seats D offset along its edges leaving the metal of uniform thickness throughout, and yielding cushion-strips E of uniform thickness secured in such seats and overlapping the edges of the rim, substantially as set forth.

3. The improved wheel-rim described, having the metallic body A peripherally concave, formed with a succession of open, hollow, struck-up bosses B, having walls of the full thickness of the metal protruding on the inner face of the rim, the axes of such bosses being oblique to the plane of the wheel and alternately reversed, such rim being formed with marginal seats D D offset about the thickness of the metal and extending outwardly in a line parallel with the transverse curvature of the rim, and provided with yielding cushion-strips E secured in said seats, substantially as set forth.

658,488. DISPLAY-TRAY. NATHAN B. LEVY and KALMAN LEVY, Scranton, Pa. Filed June 11, 1900. Serial No. 19,906. (No model.)



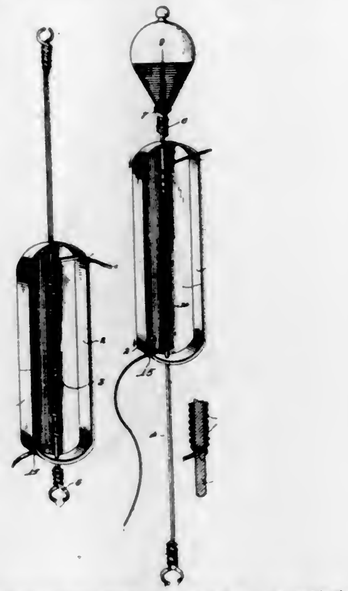
Claim.—1. In a display-tray of the character set forth, the combination of a back recessed at the front to provide a surrounding inwardly-beveled shoulder, a supporting device having its peripheral edge rested on the said shoulder and provided with a plurality of holders in the body thereof, a surrounding rim on the back to hold the supporting device in place, and a frame movably attached to the lower portion of said rim and having a transparent plate, the back also having a prop to hold the entire device in elevated position.

2. In a display-tray of the character set forth, the combination of a back, a card applied thereto and provided with a plurality of catches, a surrounding rim on the back to hold the card in place, and an annular or ring frame hinged to the lower portion of the rim and having a transparent plate to expose the card and the devices carried thereby, the back being provided with a prop to hold the entire device in elevated position.

658,489. TOP-SPINNER. ALFRED W. MORGAN, Burlington, Iowa. Filed May 14, 1900. Serial No. 16,669. (No model.)

Claim.—1. A top-spinner having a holder, a top-engaging spindle mounted in the holder, and a flexible spindle-operating element reeled upon the spindle, the holder open at one side and having a guard at the opposite side parallel with and spaced from the spindle a distance equal to the thickness of the spindle-operating element and having contact with one point only of the coils of the latter.

2. A top-spinner having a holder, a spindle slidingly mounted in the holder and having terminal top-engaging members for alternate use, and flexible spindle-rotating elements connected with the spindle and either coiled or reeled thereon as the spindle is turned by the uncoiling or unreeling of the other.



3. A top-spinner having a holder, a spindle slidingly mounted in the holder and having terminal top-engaging members for alternate use, and flexible spindle-rotating elements connected with the spindle and either coiled or reeled thereon as the spindle is turned by the uncoiling or unreeling of the other, the holder having a guard at one side exclusively parallel with and spaced from the spindle a distance equal to the thickness of the spindle-operating element and having contact with one point only of the coils of the latter.

4. The combination of a top, and an operating-spindle therefor, one of said devices having similarly-projecting spiral members and the other grooves of a corresponding construction to receive said members.

5. A top-spinner comprising a holder, and a rotatable spindle having top-engaging seats at the opposite terminals thereof for reversible use.

6. A top-spinner comprising a holder having a yielding frictional bearing element at one side exclusively, a spindle longitudinally and rotatably movable therein and provided with terminal seats to receive a top, and a cord regularly coiled on the spindle in loose contact with the frictional bearing element and having its opposite extremities exteeding through reverse portions of the holder near opposite ends of the latter.

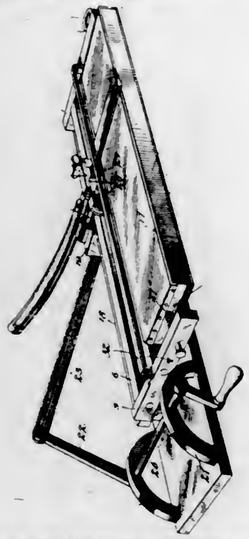
7. A top-spinner comprising a holder having a bearing element, a spindle longitudinally and rotatably movable therein and provided with terminal seats to receive a top, and a cord regularly coiled on the spindle from an intermediate point outwardly and partially contacting with the bearing element, the opposite extremities of the cord extending through reverse portions of the holder near the opposite ends of the latter.

8. A top-spinner comprising a holder having a yielding bearing element, a spindle longitudinally and rotatably movable therein and provided with terminal seats to receive a top, a cord regularly coiled on and secured to an intermediate portion of the spindle and partially contacting with the bearing element, the opposite extremites of the cord extending through reverse portions of the holder near the opposite ends of the latter, the lengths of the cord between the point of securement on the spindle and the portions of the holder through which said cord extremities extend, when the latter are unwound, forming resilient cushions for the spindle.

658,490. RAZOR-STROPPING MACHINE. WILLIAM W. PATRICK, Olive Hill, Tenn. Filed May 8, 1900. Serial No. 15,969. (Model.)

Claim.—1. A device of the class described comprising a strop, a carriage adapted for reciprocation adjacent to the strop, a razor-clamp pivoted to the carriage, a link pivoted to the clamp at one side of its pivotal connection with the carriage, a guide-rod passed through the link, and stops upon the guide-rod in the path of the link to arrest its movement

prior to the termination of movement of the carriage, whereby the clamp will be moved pivotally to reverse the razor.

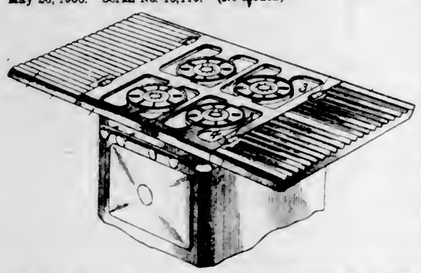


2. A device of the class described comprising a frame having a strop mounted therein, said frame including a guide-rail, a reciprocatory carriage at one side of the rail, a stub-shaft carried by the carriage and resting upon the rail, a clamp pivoted upon the shaft between the strop and the rail, said rail being adapted to receive and support the razor in the clamp, a link connected with the clamp, and a guide-rod passed through the link and having stops for engagement by the link for reversing the clamp at the ends of movement of the carriage.

3. A device of the class described comprising a reciprocatory carriage provided with a stub-shaft, a razor-clamp pivotally mounted on the shaft, a guide-rail adapted to receive the stub-shaft and the razor to support them, a link pivoted to the clamp below the stub-shaft, blocks for engagement by the link to arrest its movement, and a rod passed through the link and engaged with the blocks, whereby the clamp may be continued in its movement beyond the link to reverse the clamp.

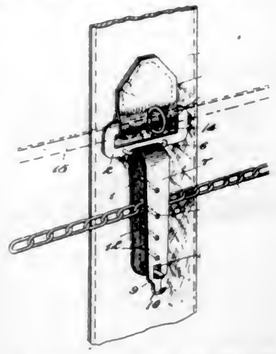
4. A device of the class described comprising a frame including guide-rails and cross-pieces, a reversible and reciprocatory razor-clamp for movement in the frame, said frame including also end pieces, and a strop including a block having trunnions rotatably mounted in the end pieces, perforations in one of the end pieces, pins upon the block for engagement with the perforations, and a spring disposed between the opposite end of the block and the opposite end piece, to hold the pins yieldably in engagement with the perforations.

658,491. GAS-STOVE. EMMA W. SIBBETT, Chicago, Ill. Filed May 26, 1900. Serial No. 18,119. (No model.)



Claim.—In combination with the top of a gas-stove or the like, a plate hinged thereto so as to fold upon the top of the stove or to be turned outward to form an extension thereof, said plate having a series of flutes or ribs upon one side to lie adjacent to the burners when folded over the stove, and having a flange upon its opposite face which is uppermost, to hold liquid substances when the plate is used in the capacity of a pan or skillet.

658,492. TRACE-CARRIER. WILLIAM F. SMITH, Crockett, Tex. Filed Mar. 17, 1900. Serial No. 9,075. (No model.)

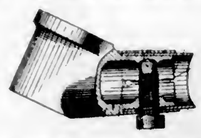


Claim.—1. A trace-carrier, comprising a back or body plate, having a transverse loop or eye at its upper end, a spring-catch at its opposite lower end, and a plurality of intermediate vertically-alined pins or prongs, and a tongue hinged to the upper portion of the back plate, and provided with a plurality of perforations for the reception of the outer ends of the respective pins, and a slot or opening to receive the spring-catch.

2. A trace-carrier comprising a back or body, having a transverse loop at its upper end, an attaching-loop embracing the upper side of the first-mentioned loop, a transverse link projecting outwardly from the lower side of the first-mentioned loop, a tongue hinged to the link and provided with a plurality of perforations, a plurality of outwardly-directed pins or prongs provided upon the back or body and to be received within the respective perforations of the tongue, and means for connecting the free end of the tongue to the back or body.

3. A trace-carrier, comprising a fixed plate or body, and a plate or tongue hingedly connected at one end thereto, and a locking device for connecting said members at the other end and holding them in approximate parallelism, one of said members having a plurality of spaced pins or spurs disposed transversely to the plane of said members, said spurs being adapted for independent respective engagement with a trace-chain, and the other member having a series of perforations registering with and adapted to receive the free ends of said pins or spurs when the members are in parallelism.

658,493. JOINT FOR CYCLE-FRAMES. JAMES R. TRIGWELL, London, England. Filed Dec. 28, 1897. Serial No. 663,896. (No model.)



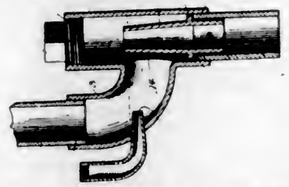
Claim.—1. In joints for cycle or other frames, the combination of a member having a lateral socket with a tube fitting the latter, a ferrule fitting the said tube and a transverse screw extending inward through openings in the said ferrule, tube and socket, engaging threads in the innermost of the said three concentric parts and acting expansively against its inner face, the two inner parts being longitudinally slotted, substantially as set forth.

2. In joints for cycle or other frames, the combination of a member having an outwardly-tapering lateral socket which is screw-tapped and split longitudinally, with a tube fitting outside said socket, a ferrule fitting on the said tube, and a transverse screw extending inward through openings in the said ferrule and tube engaging the screw-threads of the said socket and operating against the inner face of the latter to expand the said socket and bind the said parts of the joint together, substantially as set forth.

658,494. TRACK-SANDING DEVICE. JOHN H. WATTERS, Anniston, Ala. Filed July 21, 1900. Serial No. 24,440. (No model.)

Claim.—1. A track-sanding device comprising a casing having an arm designed to be connected with a sand-box, an inner tube or nozzle extending to the top of the opening of the arm and adapted to prevent sand from passing directly through the casing, and an air-tube communicating with the casing and adapted to force the sand above the inner tube or nozzle, substantially as described.

2. A track-sanding device comprising a casing having an arm designed to be connected with a sand-box, an inner tube arranged within the casing and extending to the top of the opening of the arm, and an air-tube extending through the arm and provided with a nozzle located within the arm at a point below the upper end of the inner tube and adapted to force the sand into the upper portion of the casing to cause the same to be forced through the inner tube, substantially as described.



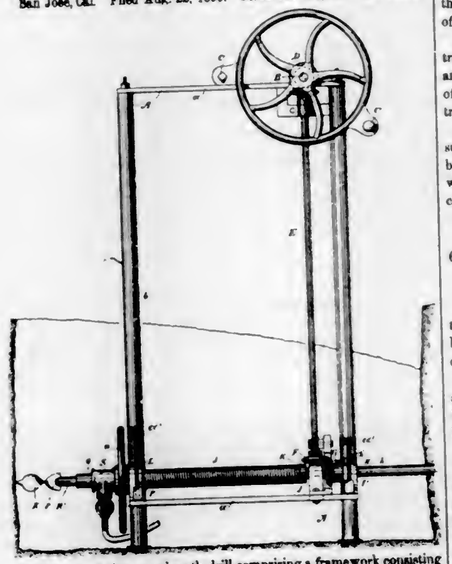
3. A track-sanding device comprising a casing consisting of a vertical tubular portion, and an arm extending from the same at one side thereof and designed to be connected with a sand-box, an inner tube arranged within the vertical portion of the casing and extending above the opening of the arm, and an air-tube extending into the lower portion of the arm at a point below the upper end of the inner tube, substantially as described.

4. A track-sanding device comprising a casing consisting of a vertical tubular portion having an interior seat, and an arm extending upward from the vertical tubular portion at a point between the ends thereof, an inner tube supported upon the said seat and extending to the top of the opening at the lower end of the said arm, and an air-tube extending into the casing, substantially as described.

5. A track-sanding device comprising a casing consisting of a vertical tubular portion, and an arm extending upward from one side of the vertical tubular portion, a lower tube extending into the lower end of the vertical tubular portion of the casing and forming a seat, a removable inner tube extending to the top of the opening of the lower end of the arm and provided between its ends with a supporting-flange arranged upon the said seat, a plug closing the upper end of the vertical portion of the casing, and an air-tube extending into the casing, substantially as described.

6. A track-sanding device comprising a casing having a seat and provided with an arm designed to be connected with the sand-box, an interior tube having a tapered upper portion and provided with a flange arranged upon the said seat and means for forcing the sand through the inner tube, substantially as described.

658,495. HORIZONTAL EARTH-DRILL. HERBERT E. WILLIAMS, San José, Cal. Filed Aug. 22, 1899. Serial No. 728,061. (No model.)



Claim.—An improved earth-drill comprising a framework consisting of two rectangular portions one at the top and the other at the bottom, and vertical guiding-posts at the corners, said upper and lower portions provided with journal-boxes, a horizontal shaft mounted in the lower boxes and a hollow feed-screw through which the shaft passes, said screw having its forward end mounted in one of the lower boxes, a vertical shaft and gears between the same and the horizontal shaft, one of said gears located between adjacent boxes and splined on the horizontal shaft, a collar against which the feed-screw abuts and a fixed nut in which the front end of said screw works, means for rotating the screw, a boring-tool and means for coupling it to the front end of the horizontal shaft said horizontal shaft having a hollow front end, and means for admitting water to the interior of said shaft.

658,496. WAGON OR TRUCK GEAR. GLENN T. WILLIS, Fresno, Cal., assignor to James Porteous, same place. Filed Apr. 25, 1900. Serial No. 14,298. (No model.)



Claim.—1. A vehicle-gear consisting of a steel axle-bar, a separate steel truss-bar above the axle-bar and forming a support for the vehicle-bed, and castings, each formed with a journal part suitably secured upon the end of the axle-bar, and a standard part suitably secured to the end of the truss-bar.

2. A vehicle-gear consisting of a steel axle-bar, and a separate steel truss-bar above the axle-bar and forming a support for the vehicle-bed, and castings, each formed with a journal part cast directly upon the end of the axle-bar, and a standard part suitably secured to the end of the truss-bar.

3. A vehicle-gear consisting of a steel axle-bar, and a steel truss or supporting bar, and castings cast directly, one on one end of the two steel bars, and one on the other end thereof, said castings being each formed with a journal part cast upon the axle-bar extremity, and a standard part cast upon the truss or supporting bar extremities.

658,497. METALLIC LATHING AND FIREPROOF CONSTRUCTION FOR BUILDINGS. MARTIN CARRICK, San Francisco, Cal. Filed Nov. 23, 1899. Serial No. 737,988. (No model.)

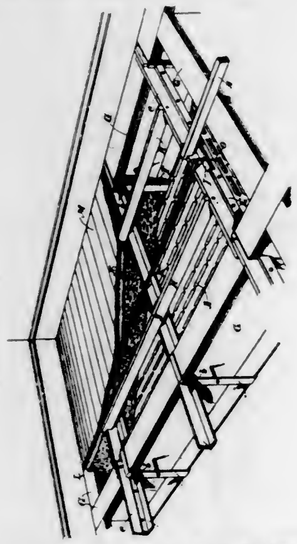
Claim.—1. The combination with parallel channel or I beams, of transverse beams abutting therewith, bands surrounding the first-named beams and angle-pieces or brackets by which the abutting beams are secured thereto.

2. The combination with parallel floor-beams of bands surrounding and fixed to said beams, transverse beams extending between the main beams, and brackets by which the transverse beams are secured to the bands.

3. The combination with parallel floor-beams and the like, of transversely-connecting beams, bands surrounding the first-named beams and brackets by which the ends of the transverse beams are secured to the main beams, and wooden strips carried by the transverse beams and serving for the attachment of metallic lathing.

4. The combination with parallel floor-beams, with intermediate transversely-abutting beams and connecting-brackets secured to the latter and to bands surrounding and fixed to the first-named beams, of wooden strips

carried by the transverse beams, for the attachment of flooring and the like.



5. The combination with parallel floor-beams, intermediate transversely-abutting beams and securing-brackets therefor, of supplemental strips, rabbeted and overlapping the main beams with their upper surfaces above the level thereof.

6. Parallel floor-beams, transverse abutting beams and connecting-brackets, in combination with wooden strips, the lower edges of which are parallel with the transverse beams, said strips being rabbeted to overlap upon the floor-beams, and with their upper edges above the level of said beams.

7. The combination with parallel floor-beams, transversely-abutting beams and intermediate securing-brackets, of strips supported parallel with the transverse beams with their upper edges above the tops of the floor-beams, and overlapping thereon, and wooden timbers transverse to said strips, with their ends supported thereon.

8. The combination with parallel floor-beams transversely-abutting beams and supporting-brackets of strips supported parallel with the transverse beams with their upper edges above the tops of the floor-beams, and overlapping thereon, wooden floor-supporting timbers with their ends fixed and supported upon said strips and at a higher level, and a body of plastic material filling the space with its upper surface level with the strips, and below the level of the floor-supporting timbers.

9. The combination with metal floor-beams and intermediate transverse beams, with strips thereon having their upper edges above the level of the floor-beams, of a body of plastic material filling the space to the level of the strips, wood timbers nailed transversely to said strips, and a floor laid thereon, with a space intermediate between it and the surface of the plastic material.

10. The combination with metal floor-beams and intermediate transverse beams, with strips supported parallel to the latter, of wooden floor-timbers and a floor laid upon said strips, and metallic lathing secured below, a filling of plastic material to the level of the top of the edge strips and openings made through said strips to allow the plastic material to unite from opposite sides, and form a bond.

11. The combination with metal floor-beams and intermediate transverse beams, with strips supported parallel with the latter and having transverse apertures, floors above and metallic lathing below and a filling of plastic material having its upper surface level with the edgewise strips, and one or more vertical tubular openings through the plastic material.

12. The combination with I-shaped floor-beams of bands surrounding the beams transversely, other beams extending between the upper flanges of the floor-beams, with brackets by which they are secured to the bands, wooden strips secured to the transverse beams and metallic lathing secured to said strips and the bands, and a filling of plastic material above, beams extending between the lower flanges of the floor-beams, with brackets by which they are secured to the bands, and a surface of metallic lathing secured thereto to form a ceiling independent of the plastic filling above.

13. A horizontal partition or floor structure comprising parallel I-beams, metal bands surrounding said beams at right angles to their length, angle-irons abutting against the beams with the upper edges flush therewith, and brackets by which said angle-irons are secured to the surrounding bands, floor-supporting timbers extending parallel with the I-beams and supported by the angle-irons, metallic lathing-sheets having the parallel slots and inturned angular ledges, said sheets being secured to the bands surrounding the I-beams and forming arches and a filling of concrete between the beams and above the arched sheets.

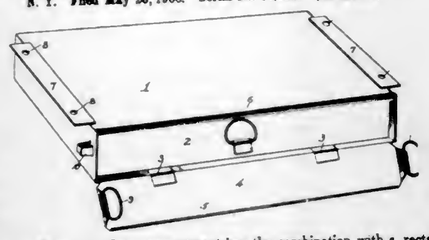
14. A horizontal partition or floor consisting of parallel I-beams, vertically-disposed bands surrounding said beams transversely to their length, angle-irons extending between the I-beams, their upper edges flush with the top thereof and angular brackets by which they are secured to the beam-inclosing bands, metal strips secured to the angle-irons projecting above them and the I-beams, and forming overlapping riveted joints thereon, floor-supporting timbers channeled to fit the metal strips, arches formed of metallic sheets having parallel slots or channels cut therethrough with inturned edges, said sheets secured to the lower sides of the angle-bars and being arched down to the bottom of the I-beams and secured to the beam-surrounding bands, and a filling of concrete extending therefrom up to the top of the metal strips whereby a space is left between said concrete and the wooden floor-surface above.

15. A horizontal partition or floor consisting of parallel I-beams, metal bands surrounding said beams transversely at intervals, angle-iron bars abutting against said bands at top and bottom and having their edges flush with the top and bottom surfaces of the I-beams, and angular brackets by which they are secured to the bands, floor-supporting timbers resting upon the angle-iron bars and a floor secured thereto, an arched sheet-metal surface fixed to the bottom of the angle-bars extending down to the bottom flanges of the I-beams and secured to the beam-surrounding bands, a filling of concrete between said arch and the top of the angle-iron bars, and a ceiling formed beneath by sheets having parallel slots or channels cut therethrough, with inturned ledges, said sheets being secured to wooden strips or the like, fixed to the angle-iron strips.

16. A horizontal partition or floor consisting of I-beams having transversely-surrounding metal bands at intervals, angle-iron bars supported between said beams by brackets at the ends, said brackets fastened to the beam-surrounding bands, arched metal surfaces formed by sheets secured to the lower sides of the angle-irons and to the bands and extending to the bottom of the I-beams, a ceiling-surface formed below by angle-irons extending between and secured to the bands flush with the lower faces of the I-beams, fastening-strips secured to said angle-irons and metallic sheet-lathing of the character described nailed thereto whereby open spaces are left between the arched sheets and said ceiling, and a filling of concrete above and around the arches and the I-beams, and a floor supported above and out of contact with the upper surface of the concrete.

17. A horizontal partition and floor consisting of I-beams with transversely-surrounding bands, intermediate angle-iron strips secured to the bands at top and bottom of the I-beams, extension-strips above the upper angle-iron beams, overlapping and secured together above the I-beams, floor-supporting timbers resting upon the angle-iron strips between the I-beams, the angle-iron strips and extensions having openings made through them at points between the I-beams, a supporting arched surface fixed to the bottom of the upper I-beams, and to the surrounding bands, a filling of concrete or the like above said arch surrounding the angle-iron beams and forming uniting-bonds through the openings made in said beams and strips.

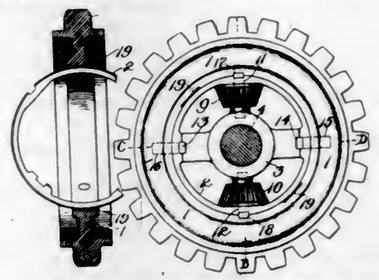
658,498. COMPARTMENT-BOX. WILLIAM F. COSTON, New York, N. Y. Filed May 23, 1900. Serial No. 17,659. (No model.)



Claim.—1. In a compartment-box the combination with a rectangular casing open at its front and provided at its top edge with a bead, of tongues attached to said casing and projecting beyond the ends of the same flush or substantially so with its side and serving as a means for securing the casing in place in reverse positions, a sliding tray mounted in said casing and reversible therein side for side, a door adapted to close the front of the casing and a lip on the edge of the door adapted to engage over the bead.

2. The combination with a seat, of a casing secured to the under side of the same and open at its forward end and provided at its top edge with a bead extending at the under side of the seat, a tray mounted in said casing, a door adapted to close the front of the casing, and a lip on the door arranged to engage over the bead when the door is closed.

658,499. UNIVERSAL JOINT. PATRICK CUNNINGHAM, New Bedford, Mass., assignor of three-fourths to Fred D. Stanley, same place, and William A. Whittlesey, Pittsfield, Mass. Filed Apr. 23, 1900. Serial No. 13,877. (No model.)

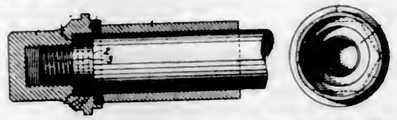


Claim.—1. The universal joint above described comprising an outer member with internal keyways one hundred and eighty degrees apart; an intermediate member with external keyways complementary to the internal keyways of the outer member, and also with internal keyways, ninety degrees from its external keyways; an inner member with external keyways complementary to the internal keyways of the intermediate member; keys for the internal keyways of the outer member and the external keyways of the intermediate member; and other keys for the internal keyways of the intermediate member and the external keyways of the inner member.

2. In a universal joint, an outer member; an intermediate member; an inner member; a spline connecting the outer member with the intermediate member; and another spline connecting the intermediate member with the inner member; all substantially as described.

3. In a universal joint an outer member with a spherical inner surface, and an intermediate member with a spherical outer surface, said outer member having gates as 19 to admit placing the intermediate member in the outer member substantially as and for the purpose specified.

658,500. WEAR-ADJUSTING NUT FOR VEHICLE-AXLES. WILLIAM H. HOLLIWAY, Oakdale, Cal. Filed Apr. 26, 1900. Serial No. 14,435. (No model.)

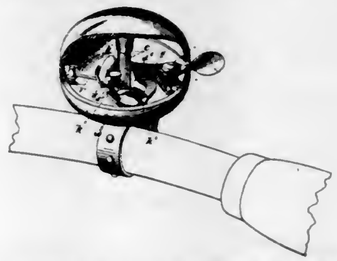


Claim.—The combination with a shaft or spindle having a shoulder at the outer end and a reduced threaded spindle extending beyond said shoulder, said spindle having a threaded outer portion and a base portion devoid of threads, of a nut having interior chambers of three diameters, the smaller chamber being threaded to engage said spindle, the intermediate chamber surrounding the base of the spindle and the larger chamber being in line with the shaft-box, said intermediate and larger chambers having washers with the washers of the intermediate chamber forming contact for the shouldered end of the shaft and lying with their outer peripheries in contact with the smooth inner periphery of the chamber and their inner peripheries in contact with the smooth base portion of the spindle, and the washer of the larger chamber forming contact for the end of the shaft-box, and said intermediate and larger chambers having slightly-greater diameters than the shaft and box respectively.

658,501. BELL. ALBERT B. HUNN, Bristol, Conn., assignor to the New Departure Bell Company, same place. Filed Jan. 11, 1900. Serial No. 1,056. (No model.)

Claim.—1. An alarm-bell comprising in its construction a base-piece and gong, and a lever carrying a spring-actuated striker, with means to limit the reciprocating motion of the lever and means to limit the reciprocating motion of the striker upon the lever, substantially as described.

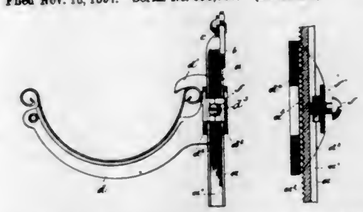
2. An alarm-bell consisting of a base-piece and gong, a lever-spring actuated in one direction; a striker-mount upon the lever and carrying a striker; a spring to actuate said striker-mount in either a right or left direction, and means to limit the motion of the striker upon the striker-mount and the striker-mount upon the lever.



3. An alarm-bell comprising in its construction a base-piece and gong; an actuating-lever; a striker-mount upon the lever, and coöperating means to permit control, and limit its motion thereupon; a striker upon the striker-mount and coöperating means to permit, control, and limit its motion thereupon; a spring to actuate the striker-mount in either direction to cause the striker to impinge against the gong; and means to maintain the striker in normal non-contact with the gong.

4. An alarm-bell consisting of a base-piece and gong; a lever limited in its motion carrying a striker-mount, and provided with channels coöperating with projections upon said striker-mount so as to permit, control, and limit the motion of the striker-mount upon the lever; a striker upon the striker-mount with projections engaging channels upon the lever and a slot coöperating with the shaft of the striker-mount to permit, control, and limit the motion of the striker upon the striker-mount and lever, a spring to actuate the striker-mount sharply in either direction and frictional means to hold the striker at rest upon the striker-mount, all constructed, combined, and arranged so that a movement of the lever in either direction will effect a sharp impingement of the striker against the gong and except at the moment of contact maintain the same in normal non-contact with the gong.

658,502. GUTTER-HANGER. JOHN M. LAIRD, Huntingdon, Pa. Filed Nov. 18, 1897. Serial No. 658,907. (No model.)



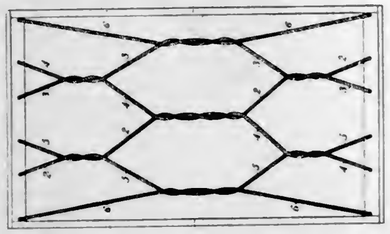
Claim.—In a gutter-hanger, the combination of a suspension-bar *a* having a support *b* therefor, a groove *a'* therein and a toothed rear surface, a gutter-support *d* having a stirrup composed of the guides d^2 for the suspension-bar and the apertured cross-bar d^3, and a tooth d^4 located to one side of the axis of the aperture of the cross-bar, a screw passing through the aperture of the cross-bar and a nut *f'* on the screw and adapted to bear against the inner face of the cross-bar, the sides of the said nut abutting against the walls of the groove *a'* of the suspension-bar which form stops to prevent rotation of the nut, whereby the suspension-bar and hanger will be firmly forced together by the screw or nut, the tooth d^4 acting as a fulcrum to receive the thrust of the suspension-bar, which suspension-bar also bears directly against the face of the gutter-support, thereby forming a rigid connection between the gutter-support and the suspension-bar, substantially as described and for the purposes set forth.

658,503. BED-BOTTOM. GEORGE H. MCBRIDE, San Francisco, Cal., assignor of fifty-one one-hundredths to Dandridge H. Bibb, same place. Filed Feb. 23, 1900. Serial No. 6,234. (No model.)

Claim.—1. In a bed-bottom and in combination with the frame thereof, a series of longitudinally-elastic cables extending diagonally from one end bar to the other end bar of the frame, intermediate cables fixed at each end between the first-named cables and the center and intertwined therewith near each end and with each other at the center and immovable with relation to each other.

2. In a bed-bottom, longitudinally-elastic cables having their ends secured to the end frames of the bed-bottom, similar cables attached to one end of the bed-bottom exterior to the first-named cables, extending

diagonally across to points on the other end equally distant from the opposite side of the frame, said first-named cables being rigidly intertwined with the diagonal cables at points near the ends of the frame, and the diagonally-disposed cables being intertwined with each other at their point of crossing and midway between the ends of the frame and means for diverging the central cables outwardly toward the sides of the frame intermediate between the ends.



3. In a bed-bottom, longitudinally-elastic cables attached to each end of the frame upon each side of the center, other cables attached to one end frame outside of the first-named cables, rigidly and immovably intertwined therewith at a point between the said end and the center of the bed, thence meeting and immovably intertwined with each other centrally of the length of the bed, thence diverging toward the opposite side from the starting-point and again intertwined with the first-named cables and having their ends finally fixed to the opposite end of the frame at points diagonally opposite from the attachment to the first-named end, other cables connected to each end frame near the side frames and immovably intertwined with the outwardly-diverging central cables near the center of the length of the frame.

4. In a bed-bottom, a rectangular frame, longitudinally-elastic cables having their ends fixed to one end of the frame upon each side of the center, diagonally-extending cables fixed to the same frame exterior to the first-named cables and immovably intertwined therewith between their points of attachment and the center of the bed, said diagonal cables converging and being immovably intertwined with each other at the longitudinal center, and the first-named cables diverging from their point of union with the diagonal cables, other cables having their ends attached near the corners of the frame, and the central portions immovably intertwined with the diverging central cables whereby three reinforced lines are formed at the middle of the bed, and said central cables thence converging and again immovably intertwined with the diagonal cables which diverge from each other and toward opposite sides of the end frame from their first point of attachment.

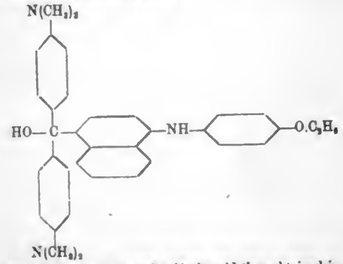
5. In a bed-bottom, the combination of pairs of longitudinally-elastic cables fixed to the ends of the main frame with the members of the same pairs immovably intertwined near the ends, one member of one pair of cables intertwined with a corresponding member of another pair at a point near the center of the bed, and means for diverging the remaining member of each of said pairs toward the sides of the frame.

658,504. **BLUE DIPHENYLNAPHTHYLMETHANE DYE AND PROCESS OF MAKING SAME.** OSCAR NASTVOGEL, Elberfeld, Germany, assignor to the Farbenfabriken of Elberfeld Company, of New York. Filed Oct. 4, 1899. Serial No. 732,551. (Specimens.)

Claim.—1. The process for producing new diphenylnaphthylmethane dyestuffs which process consists in first acting with fuming sulfuric acid on basic dyestuffs of the probable formula:

R and R_1, meaning fatty alkyl radicals, and secondly isolating the dyestuff sulfoeic acids thus produced in the form of their alkaline salts, substantially as hereinbefore described.

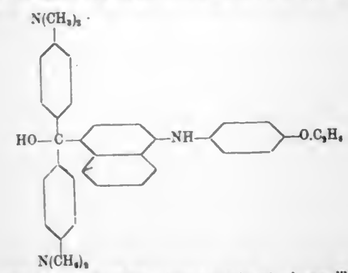
2. The process for producing a new diphenylnaphthylmethane dyestuff which process consists in first acting with fuming sulfuric acid on the basic dyestuff of the probable formula:



and secondly isolating the dyestuff sulfonic acid thus obtained in the form of an alkaline salt, substantially as hereinbefore described.

3. The herein-described new dyestuffs of the diphenylnaphthylmethane series being when dry and pulverized brown powders of a bronze-like luster, soluble in water and in alcohol with a blue color, in a twenty-eight-per-cent. hydrochloric acid with a reddish-brown color being dissolved by concentrated sulfuric acid with a brownish-red color, dyeing wool in acid-baths blue shades, substantially as hereinbefore described.

4. The herein-described new dyestuff of the diphenylnaphthylmethane series obtained from the basic coloring-matter of the probable formula:



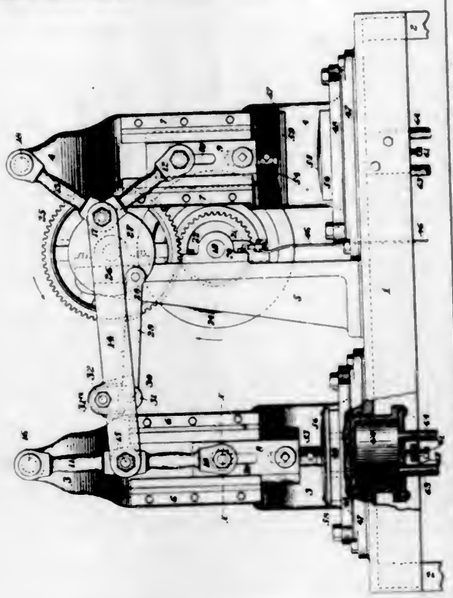
being when dry and pulverized a brown powder of a bronze-like luster, soluble in water and in alcohol with a blue color, in a twenty-eight-per-cent. hydrochloric acid with a reddish-brown color, being dissolved by concentrated sulfuric acid with a brownish-red color which changes into green on the addition of a small quantity of ice while the color is changed into blue on the addition of a larger quantity of ice a blue flaky precipitate being at the same time separated, dyeing wool in acid-baths beautiful blue, clear and even shades, substantially as hereinbefore described.

658,505. **EMBOSSING-MACHINE.** GEORGE P. O'CONNOR, Cambridge, Mass., assignor to Charles Place, same place. Filed May 18, 1900. Serial No. 17,151. (No model.)

Claim.—1. In an embossing-machine, the combination of two press-frames arranged side by side at a convenient distance apart; a pair of stationary male dies arranged one upon each of said frames, with their operating-faces in the same horizontal plane; a vertically and intermittently reciprocating plunger carried by each of said frames, and movable in different but parallel planes; a female die carried by each of said plungers, and arranged to cooperate with said stationary male dies to emboss an article placed on said male dies; a revoluble crank-shaft; a crank carried by said shaft; means connecting said crank and plungers, and movable substantially at right angles to the movement of said plungers; and means for intermittently rotating said crank, with a period of rest after each half-revolution thereof.

2. In an embossing-machine, the combination of a pair of press-frames arranged side by side at a convenient distance apart; a vertically-movable plunger fitted to suitable guideways on each of said frames; a stationary die secured in position beneath each of said plungers; a movable die carried by each of said plungers; a pair of toggle-links pendently supporting each of said plungers from the top of its frame; a rod connecting the central joints of said toggles with each other, and having such a length that when the links of one toggle are perpendicular, and its plunger is in its lowest position the links of the other toggle will be at an angle to each other and its plunger and the die carried thereby will be raised to its highest position; and means for imparting to said rod an endwise-reciprocating movement with a standstill at the end of each endwise movement of said rod.

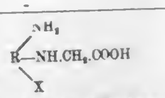
3. In an embossing-machine, the combination of a pair of press-frames arranged side by side at a convenient distance apart; a pair of vertically-movable plungers fitted to suitable guideways on said frames; a stationary die secured in a fixed position beneath each of said plungers; a movable die carried by each of said plungers and adapted to coöperate with said stationary die to emboss an article placed thereon; a pair of toggles connected at one end to said plungers and at their other end to their frames; a rod connecting the central joints of said toggles with each other, and having a length between pivotal centers different to the distance between the centers of said plungers, and provided with the divergent shoulders 33 and 34; the lever 31 pivoted to said rod and depending between said shoulders; the shaft 26; the crank-disk 27 secured upon and revoluble with said shaft 26; the crank-pin 28; the connecting-rod 29 mounted at one end upon said crank-pin, and pivoted at its other end to the lower end of the lever 31; and means for imparting to said shaft 26 an intermittent rotation, with a period of rest at the end of each half-revolution thereof.



4. In an embossing-machine the combination of a pair of press-frames arranged side by side at a convenient distance apart; a pair of vertically-movable plungers fitted to suitable guideways on said frames; a stationary die secured in position beneath each of said plungers; a movable die carried by each of said plungers and adapted to coöperate with a stationary die to emboss an article placed thereon; a pair of toggles connected to said plungers and to their frames; a rod connecting the central joints of said toggles with each other and having a length, between pivotal centers, different to the distance between the centers of said press-frames and provided with the divergent shoulders 33 and 34; the lever 31 pivoted to said rod and depending between said shoulders; the driving-shaft 19; the pinion 22 and the disk 23 mounted upon and revoluble with said shaft 19; the clutch-pulley 24 mounted loosely upon said shaft; the ratchet-ring 35 carried by said pulley; the pawl 37 carried by the disk 23; the spring 39 and plunger 40 arranged to press said pawl into engagement with said ratchet; the trip-pin 42 a spring for normally holding said trip-pin in position to disengage said pawl from engagement with said ratchet; means for retracting said trip-pin; the shaft 26; the gear-wheel 25 and the disk 27 secured upon and revoluble with said shaft 26; the crank-pin 28 and the connecting-rod 29 mounted at one end upon the crank-pin 28 and pivoted at its other end to the lower end of the lever 31, all as set forth.

658,506. **BROWN DYE AND PROCESS OF MAKING SAME.** PHILIPP OTT, ADOLF BRAEL, and RICHARD KOTHE, Elberfeld, Germany, assignors to the Farbenfabriken of Elberfeld Company, of New York. Filed Oct. 9, 1899. Serial No. 733,033. (Specimens.)

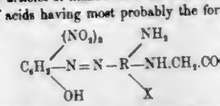
Claim.—1. The process for producing new monoazo dyestuffs by first combining the diazo derivatives of picramic acid with certain derivatives of metadiamido compounds of the benzene series having the formula:



R meaning a radical of a hydrocarbon of the benzene series, X a hydrogen atom which may be replaced by a sulfo group, secondly isolating the dyestuffs thus obtained substantially as hereinbefore described.

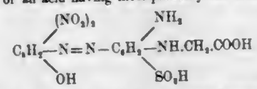
2. The process for producing a new monoazo dyestuff by first combining a diazo derivative of picramic acid with metaämidophenylglycinmonosulfonic acid, secondly isolating the dyestuff thus produced, substantially as hereinbefore described.

3. As new articles of manufacture the new monoazo dyestuffs, being alkaline salts of acids having most probably the formula:



R meaning a radical of a hydrocarbon of the benzene series, X a hydrogen atom which may be replaced by a sulfo group, secondly isolating the dyestuffs thus obtained substantially as hereinbefore described.

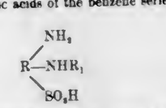
4. As a new article of manufacture the new monoazo dyestuff, being an alkaline salt of an acid having most probably the formula:



which is, when dry and pulverized, a dark-green powder of a metallic luster, soluble in water with a brownish-red color, soluble in concentrated sulfuric acid yielding a bluish-red solution the color of which changes into yellowish-brown on the addition of a small quantity of ice while a yellowish-brown precipitate is separated therefrom on adding a larger quantity of ice, dying wool in acid-baths reddish-brown shades which by a subsequent treatment with a solution of potassium bichromate are changed into deep-brown shades fast to milling and to light, substantially as hereinbefore described.

658,507. **BROWN AZO DYE AND PROCESS OF MAKING SAME.** PHILIPP OTT and FRANZ VOLGER, Elberfeld, Germany, assignors to the Farbenfabriken of Elberfeld Company, of New York. Filed Dec. 28, 1899. Serial No. 741,849. (Specimens.)

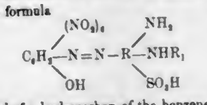
Claim.—1. The process for producing new monoazo dyestuffs by first combining the diazo derivatives of picramic acid with certain derivatives of metadiamido sulfonic acids of the benzene series having the formula:



R meaning a radical of a hydrocarbon of the benzene series, R_1 an alkyl radical, secondly isolating the dyestuffs thus obtained substantially as hereinbefore described.

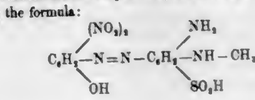
2. The process for producing a new monoazo dyestuff by first combining a diazo derivative of picramic acid with monomethylmetaphenylenediaminsulfonic acid, secondly isolating the dyestuff thus produced, substantially as hereinbefore described.

3. The herein-described new monoazo dyestuffs, being alkaline salts of acids having the formula



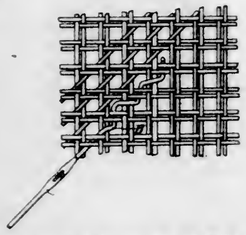
R meaning a radical of a hydrocarbon of the benzene series, R_1 meaning a radical of the fatty series, which dyestuffs are when dry and pulverized dark powders, soluble in water with a brownish-red color, dyeing unmordanted wool in acid-baths from reddish-brown to brown shades which by a subsequent treatment with solutions of potassium bichromate are changed into fast and deep-brown shades, substantially as hereinbefore described.

4. The herein-described specific dyestuff being an alkaline salt of the acid having the formula:



which is a dark bronzy-colored powder, soluble in water with a brownish-red color, soluble in concentrated sulfuric acid with a dark-red color which turns into reddish brown on adding a small quantity of ice while a reddish-brown precipitate is obtained on the addition of a larger quantity of ice to the sulfuric-acid solution, soluble in alcohol with a dark-brown color, in ammonia with a brownish-red color, dyeing unmordanted wool in acid-baths reddish-brown shades which by a subsequent treatment with a solution of potassium bichromate are changed into deep-brown shades fast to milling and to light, substantially as hereinbefore described.

658,508. NEEDLE FOR WEAVING CANE FABRICS. GEORGE O. REDPATH, Frankfort, Ky. Filed Apr. 30, 1900. Serial No. 14,936. (No model.)

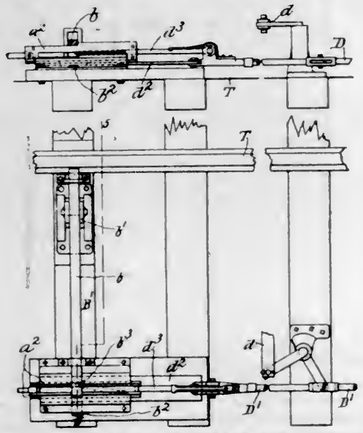


Claim.—1. A device of the character described comprising a single shaft with a socket at its tip, and a link or stirrup for the reception of the thread, and a pirn having a spiral advancing end and straight rear portion arranged to enter the socket in said shaft, substantially as and for the purpose described.

2. A weaving-needle having a long shaft and a link or stirrup pivotally secured to the shaft, said shaft provided with a socket or recess in its tip circular in cross-section, in combination with a pirn having a spiral advancing end and a straight rear portion arranged to enter the socket in said shaft, substantially as and for the purpose described.

3. A weaving-needle having a long shaft, and a link or stirrup pivotally secured thereto, said shaft provided with a socket or recess in its tip circular in cross-section, in combination with a pirn having a spiral advancing end and a straight rear portion coincident with the axis of the spiral, said straight portion provided with a pin adapted to enter and have bearing in said shaft-recess to permit of the turning of the pirn independent of the shaft, substantially as and for the purpose described.

658,509. BLOCK SYSTEM FOR RAILWAYS. BENTON C. ROWELL, Chicago, Ill., assignor to the Rowell Potter Safety Stop Company, Portland, Me. Filed Feb. 13, 1899. Serial No. 705,433. (No model.)

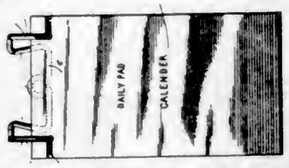


Claim.—1. In a block system the combination of two blocking appliances, as A A'; two automatic trips, as B B'; and a controlling mechanism as D D', to prevent the passing train from tripping one of the blocking appliances; substantially as described.

2. In combination two blocking appliances, as A A'; two automatic trips, as B B'; two pipe-lines as D D'; and connections between the pipe-lines and the blocking appliances; and between the pipe-lines and the trips, by means of which the blocking appliances and the trips are controlled by the pipe-lines; all substantially as described.

3. In combination two blocking appliances each provided with a power-storing device put under tension when its blocking apparatus is set to "safety," and which when released gives out its power to shift its blocking appliance from "safety" to "danger;" two detents, one for one power-storing device, the other for the other power-storing device; means actuated by the passage of a train for releasing the detents; and means also actuated by the passage of the train for inhibiting the release of one of the detents; all so arranged that a train which passes one of the blocking appliances will release its detent, thereby shifting the blocking appliance which it has passed to "danger," will then actuate the inhibiting means and thereby pass the other blocking appliance without releasing its detent.

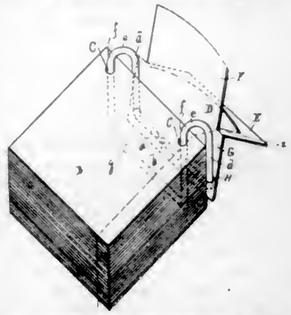
658,510. CALENDAR-HOLDER. WINFIELD S. RUSSELL, New York, N. Y. Filed Nov. 18, 1899. Serial No. 737,413. (No model.)



Claim.—1. A calendar-holder, constructed of a single piece or rod of wire formed into two parallel yokes, the forward arms of which range forwardly and are adapted to receive the calendar-sheets thereon, the said wire or rod being projected inwardly from the lower ends of the rear arms of the yokes to form shoulders and being then projected forwardly to form diagonal arms meeting the forward arms of the yokes and being connected together therebetween.

2. The combination with a calendar-holder which comprises resilient arms or members, a plurality of calendar-sheets connected therewith; of a removable guard or shield provided with notches in the opposite sides thereof which are adapted to engage the said arms or members and cover the calendar-sheets, whereby said guard or shield is secured in position, but is movable thereon and detachable therefrom.

658,511. CALENDAR-HOLDER. WINFIELD S. RUSSELL, New York, N. Y. Filed July 6, 1900. Serial No. 22,669. (No model.)

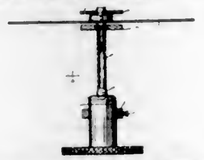


Claim.—1. A holder embodying a single length of wire comprising the transversely-ranging portion *g*, from either end of which range upwardly at substantial right angles the portions *f*, adapted to receive calendar-sheets thereon, which sheets in practice normally rest upon the portion *g*, said portions *f* being rearwardly turned to form curved portions *e* which are bent downwardly to form portions *d* ranging parallel with the portions *f* and bent to form portions *a* and *b*, ranging at angles thereto, to prevent the calendar-sheets from detachment from the holder, to form an auxiliary base to receive said sheets thereon when the same are turned over the curved portions, and to prevent said sheets from turning under the holder, when the same is raised or held in the hand, substantially as shown and described.

2. A calendar-holder, comprising a main member with which the several sheets of the calendar are adapted to be loosely connected, the said member embodying a pair of forward rods adapted to receive the unturned sheets, and a pair of rear rods adapted to receive the turned-over sheets, and a supplemental member operatively mounted upon the rear rods and comprising a plate D, having a portion F partially cut out therefrom and adapted to be held at an upwardly-ranging diagonal angle extending outwardly from the rear rods to receive the calendar-sheets thereon when

the same are turned over, and the remainder of the cut-out portion of the plate being adapted to be bent down at angles to the main body of the plate at or near the center thereof to support the portion F, and the whole plate D being adapted to be folded over against the calendar-sheets upon the forward rods, substantially as shown and described.

658,512. JOURNAL-BEARING. GUSTAVE A. SCHREFFER, Peoria, Ill., assignor to the Diamond Meter Company, same place. Filed May 15, 1900. Serial No. 16,708. (No model.)



Claim.—1. The combination with a rotatable shaft, of an armature supported thereby, the shaft being provided with a lower section in the form of a sphere, the said shaft-sections being separable, a removable cup-shaped jewel-bearing beneath the shaft, the cup-shaped cavity in the jewel-bearing serving to receive said sphere, and a vertically-adjustable support for the jewel-bearing, substantially as described.

2. The combination with a rotatable shaft, of an armature supported thereby, the shaft being provided with a lower section in the form of a sphere, the said shaft-sections being separable, and a removable cup-shaped bearing beneath the shaft, the cup-shaped cavity in the said bearing serving to receive said sphere, substantially as described.

3. The combination with a vertically-disposed shaft, of a sphere forming the lower section of the shaft and separable from the upper section of the shaft, the lower end of the upper shaft-section being provided with a seat adapted to receive the sphere, and a cup-shaped bearing for the sphere, the cup-shaped cavity in the said bearing flaring wider than the sphere and serving to receive the sphere, and to engage the same only at a point thereof coaxial with the shaft, whereby the proper alinement of the shaft is readily secured and maintained, substantially as described.

4. The combination with a vertically-disposed shaft, of a sphere forming the lower section of the shaft and separable from the upper section of the shaft, and a cup-shaped bearing for the sphere, the cup-shaped cavity in the said bearing flaring wider than the sphere and serving to receive the sphere, and to engage the same only at a point thereof coaxial with the shaft, whereby the proper alinement is readily secured and maintained, substantially as described.

658,513. BLUE CHRYSAZIN DYE AND PROCESS OF MAKING SAME. ROBERT E. SCHMIDT, Elberfeld, Germany, assignor to the Farbenfabriken of Elberfeld Company, of New York. Filed Aug. 3, 1899. Serial No. 725,980. (Specimens.)

Claim.—1. The process for producing a new chrysazin dyestuff which process consists in first heating a mixture prepared from diamidochrysazindisulfonic acid, a formic aldehyde solution and a solution of an alkaline bisulfite, secondly separating the new dyestuff from the solution thus obtained and finally isolating the same, substantially as hereinbefore described.

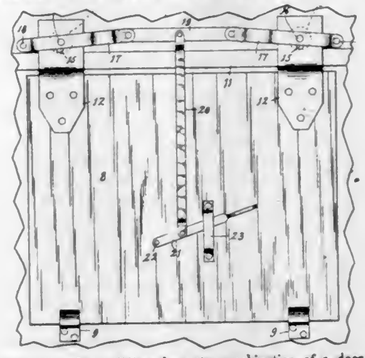
2. The herein-described new chrysazin dyestuff being when dry and pulverized a dark-blue powder easily soluble in water with a greenish-blue color which is not considerably changed on the addition of hydrochloric acid, being split under regeneration of diamidochrysazindisulfonic acid when heated with a fifteen-per-cent. hydrochloric acid, dyeing unmordanted wool bright greenish-blue shades, substantially as hereinbefore described.

658,514. ANTHRARUFIN DYE AND PROCESS OF MAKING SAME. ROBERT E. SCHMIDT, Elberfeld, Germany, assignor to the Farbenfabriken of Elberfeld Company, of New York. Filed Aug. 3, 1899. Serial No. 725,981. (Specimens.)

Claim.—1. The process for producing a new anthrarufin dyestuff which process consists in first heating a mixture prepared from diamidoanthrarufin disulfonic acid, a formic-aldehyde solution and a solution of an alkaline bisulfite secondly separating the new dyestuff from the solution thus obtained and finally isolating the same, substantially as hereinbefore described.

2. The herein-described new anthrarufin dyestuff being when dry and pulverized a dark-blue powder easily soluble in water with a greenish-blue color which is not considerably changed on the addition of hydrochloric acid, being split under regeneration of diamidoanthrarufin disulfonic acid when heated with a fifteen-per-cent. hydrochloric acid, dyeing unmordanted wool bright greenish-blue shades, substantially as hereinbefore described.

658,515. SLIDING DOOR. PHILIP L. SHERIDAN, Cleveland, Ohio. Filed Mar. 17, 1900. Serial No. 9,027. (No model.)



Claim.—1. In a sliding door, the combination of a door, a rail, hangers secured to the door and provided with upwardly-extending bent-over portions, the sides of said bent-over portions provided with vertically-elongated slots, levers pivoted to the hangers and straddling the same, rollers disposed between the sides of the bent-over portions of the hangers, and arranged to engage the rail, the axles of said rollers passing through the elongated slots in the sides of the bent-over portions of the hangers, and the ends of said axles journaled in the sides of the looped portions of the levers, and means engaging the ends of the levers and adapted to turn said levers on their pivots.

2. In a sliding door, the combination of a door, a rail, hangers secured to the door and provided with upwardly-extending bent-over portions, the sides of said bent-over portions provided with vertically-elongated slots, levers pivoted to the hangers and straddling the same, rollers disposed between the sides of the bent-over portions of the hangers and arranged to engage the rail, the axles of said rollers passing through the elongated slots in the sides of the bent-over portions of the hangers, and the ends of said axles journaled in the sides of the looped portions of the levers, means engaging the ends of the levers and adapted to turn said levers on their pivots, and mechanism between said means and the door, said mechanism adapted for elevating and lowering the door to and from its sliding position.

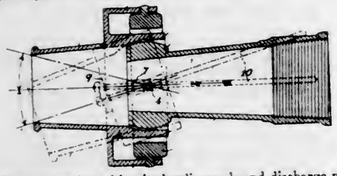
3. In a sliding door, the combination of a door, a rail, hangers secured to the door and having upwardly-extending bent-over portions, the sides of the bent-over portions provided with vertically-elongated slots, levers pivoted to the hangers and straddling the same, rollers disposed between the sides of the bent-over portions of the hangers and arranged to engage the rail, the axles of said rollers passing through the elongated slots in the sides of the bent-over portions of the hangers, and the ends of said axles journaled in the sides of the looped portions of the levers, a horizontal link pivotally connecting the inner ends of the levers, a vertical link pivotally connected to a medial point of the horizontal link, and an operating-lever pivotally connected to the vertical link.

4. In a sliding door, the combination of a door, a rail, hangers secured to the door and having upwardly-extending bent-over portions, the sides of the bent-over portions provided with vertically-elongated slots, levers pivoted to the hangers and straddling the same, rollers disposed between the sides of the bent-over portions of the hangers and arranged to engage the rail, the axles of said rollers passing through the elongated slots in the sides of the bent-over portions of the hangers, and the ends of said axles journaled in the sides of the looped portions of the levers, means engaging the ends of the levers and adapted to turn said levers on their pivots, and clamping devices whereby when the door is lowered and at rest, said door is automatically clamped and forced toward the coincident surface of the car and thereby rendered tight, and said clamping devices adapted when the door is raised to unclamp said door so as to provide for the free movement thereof.

658,516. DEFLECTOR FOR HYDRAULIC NOZZLES. JOSEPH W. SMITH, Weaverville, Cal. Filed Mar. 28, 1900. Serial No. 10,477. (No model.)

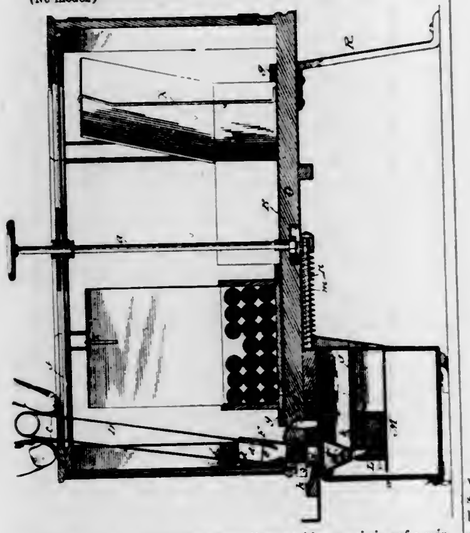
Claim.—1. The combination with a hydraulic nozzle, of a spherical segment fixed to the outer end, a ring of larger diameter pivoted and turnable about said segment, a supplemental, tubular nozzle having the rear end projecting between the two rings and slotted coincident with the

pivot-points of the outer ring, said nozzle having upon its rear lugs which extend outwardly and thence rearwardly substantially parallel with the sides of said slotted portion, and said lugs being also pivoted to the outer ring at right angles with the first-named pivots.



2. The combination with a hydraulic nozzle and discharge-pipe of a spherical segment fixed to the outer end of the pipe, a supplemental tubular pipe having the rear end enlarged and loosely turnable over the spherical segment, and having open slots at opposite sides, a ring of larger diameter, pivot-pins connecting said ring with the interior spherical segment and passing through the slots in the supplemental pipe, lugs connected with the supplemental pipe extending outwardly and thence rearwardly substantially parallel with the sides of the rear portion of the supplemental pipe, and pivot-pins by which said lugs are connected with the exterior ring at right angles with its connection to the spherical segment, and a lever whereby the supplemental pipe is turnable about either of its pivots with relation to the main nozzle.

658,517. COIN-CONTROLLED VENDING-MACHINE. DAVID K. STONE, Bloomingdale, Mich. Filed Feb. 21, 1900. Serial No. 6,083. (No model.)



Claim.—1. A coin-controlled vending-machine, consisting of a coin-controlling device consisting of a suitable slidable table provided with a coin-chamber and a stop, a locking and releasing device for the table, a suitable frame with a hopper and a coin-receiver connecting with the table and movable therewith, and a slotted guide-box for the receiver, substantially as and for the purpose described.

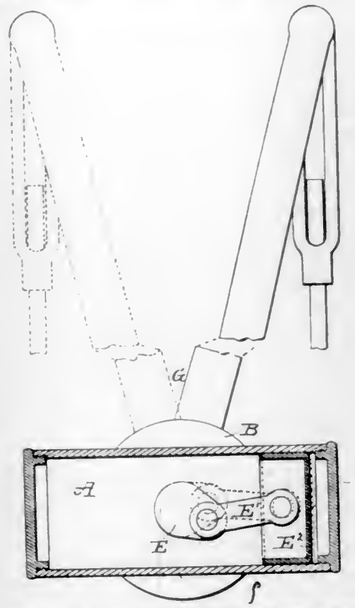
2. A coin-controlled vending-machine, consisting of a coin-controlling device connecting with the show-case and consisting of a cash-box, a stationary slotted guide-box located therein, a slidable table provided with a coin-chamber and means for locking or releasing said table, a slotted stationary supporting-plate for the slidable table, a suitable hopper and coin-receiver connecting with the table, and a slotted guide-box for containing the coin-receiver and operating substantially as and for the purpose specified.

3. A coin-controlled vending-machine, consisting of a coin-controlling device consisting of a slidable and spring-actuated table provided with a coin-chamber and a stop, a spring-trip for locking or releasing the table, a hopper and coin-receiver connecting with the table and moving therewith, a slotted supporting-plate for the table, and a guide-box for the coin-receiver having slots at both top and bottom, substantially as and for the purpose specified.

4. A coin-controlled vending-machine comprising a sliding table constructed with a bottomless chamber, a chute leading to the coin-chamber, a receiving-plate at the front end of the table, and a plate having a stop and providing a slot, the pendent spring-trip projecting into the slot and released from the stop by the coin, a stationary plate beneath the table, having a coin-slot through which the coin drops, and a coin-receptacle located beneath the stationary plate.

5. A coin-controlled vending-machine comprising a sliding table constructed with a bottomless coin-chamber, a chute leading to the coin-chamber, a receiving-plate at the front end of the table, and a plate having a stop and providing a slot, the pendent spring-trip projecting into the slot and released from the stop by the coin, a stationary plate beneath the table having a coin-slot through which the coin drops, a frame provided with a hopper and a bottomless coin-receiver beneath the hopper, and rigidly secured to the table, and a stationary box having a coin-slot and located beneath the coin-receiver.

658,518. COMBINED DOOR CHECK AND CLOSER. WARREN H. TAYLOR, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, same place. Filed Apr. 25, 1900. Serial No. 14,341. (No model.)



Claim.—1. In a combined door check and closer, the combination with a casing, a shaft, and a piston and a lever-arm connected to said shaft, of a sleeve mounted on the shaft and free to turn thereon, a reversible cam-shaped arbor removably secured to the sleeve and provided with a longitudinal shoulder or abutment, a spring the outer end of which is detachably secured to the casing, while the inner end of the spring is bent inwardly at approximately right angles to its body so as to engage the longitudinal shoulder or abutment on the cam-shaped arbor and means connecting the sleeve and lever-arm, substantially as and for the purpose set forth.

2. In a combined door check and closer, the combination with a casing, shaft, and spring, of a checking-surface connected to the shaft, a reversible lever-arm secured to the shaft and a pivoted pawl adapted to project on either side of the lever-arm, substantially as and for the purpose set forth.

3. In a combined door check and closer, the combination with a casing, shaft and spring, of a checking-surface connected to the shaft and a reversible lever-arm secured to the shaft, the angular opening in the lever-arm being located in a position slightly to one side of the center of the head of the lever so that when the lever-arm is reversed on the shaft the relative positions of the lever-arm and piston-head or other checking-surface are changed thus changing the length of the throw of the crank.

4. In a combined door check and closer, the combination with a casing, a shaft, and spring, of a checking-surface connected to the shaft and a reversible lever-arm secured to the shaft, the connection between the lever-arm and the shaft being so related to the center line through the head of said shaft and said lever that when the lever-arm is reversed on the shaft, the relative positions of the lever-arm and checking-surface are changed thus changing the length of the throw of the crank.

5. In a combined door check and closer, the combination with a casing containing a spring and a piston, the spring-chamber having an aperture therein, of a reversible spring carrying a series of characters one of which shows through the aperture in the casing and indicates from the outside the "hand" for which the check is adjusted.

6. In a combined door check and closer the combination with a liquid-chamber, a piston therein, a spring-chamber, a spring therein and a shaft engaging the spring and actuating the piston, of a removable by-pass valve-casing secured to the liquid-chamber, and a screw-valve in said valve-casing, substantially as set forth.

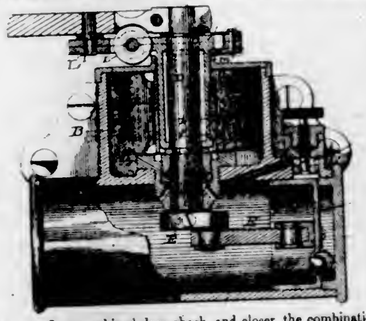
7. In a door-closer a reversible lever-arm provided with a double-acting automatic latch so that in whatever position said lever-arm is placed upon the shaft-head, the said latch will automatically connect it with the spring-actuating mechanism.

8. In a combined door closer and check, the combination of an adjustable lever-arm, a spring-actuated shaft and a piston or other checking-surface actuated by said shaft through suitable connecting mechanism, and an outlet or by-pass, the whole being so arranged that a reversal or turning upside down of the lever-arm changes the length of travel of the piston, substantially as described.

9. A spring adapted for door-closers, provided with indicating words or marks placed in fixed relation to the other parts of the spring so that said spring indicates on inspection the position in which it must be placed in the door-closer to cause said closer to operate a right or left hand door.

10. In a combined door check and closer the combination with a casing containing a spring and a checking-surface, of indicating devices for positively indicating from the outside the "hand" for which the spring is set.

658,519. DOOR CHECK AND CLOSER. WARREN H. TAYLOR, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, same place. Filed June 11, 1900. Serial No. 19,919. (No model.)



Claim.—1. In a combined door check and closer the combination with a liquid-chamber, a piston therein, a spring-chamber, a spring therein and a shaft connected to the piston, of a lever connected to the shaft, and a worm and gear connecting the spring and lever.

2. In a combined door check and closer the combination with a liquid-chamber, a piston therein, a spring-chamber, a spring therein, and a shaft connected to the piston, of a lever secured to the shaft, and a worm and gear connected to the spring and detachably connected to the lever.

3. In a combined door check and closer the combination with a liquid-chamber, a piston therein, a spring-chamber, a spring therein, and a shaft connected to the piston, of a lever secured to the shaft and a worm and gear detachably connected to the spring and also to the lever.

4. In a combined door check and closer the combination with a liquid-chamber, a piston therein, a spring-chamber, a spring therein and a shaft connected to the piston, of a lever secured to the shaft, a gear and its sleeve the latter connected to the spring, and a movable frame detachably connected to the lever and carrying means permanently in engagement with the gear for rotating the latter within the movable frame.

5. In a combined door check and closer, the combination with a liquid-chamber, a piston therein, a spring-chamber, a spring therein and a shaft connected to the piston, of a gear and connected sleeve the latter connected to the spring a movable frame mounted on the gear-sleeve, a worm carried by said frame and meshing with the gear and a lever secured to the head of the shaft and connected to the frame.

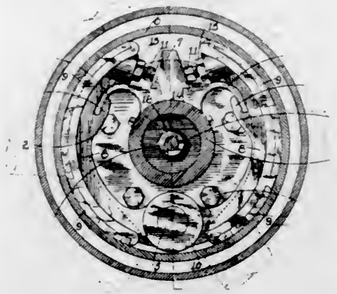
6. In a combined door check and closer the combination with a liquid-chamber, a piston therein, a spring-chamber, a spring therein, and a shaft connected to the piston, of an integral gear and sleeve the latter being connected to the spring, a frame mounted on the sleeve, a worm journaled in said frame, means for preventing overwinding of the spring and a lever connected to said shaft and frame.

7. In a combined door check and closer, the combination with a liquid-chamber, a piston therein, a spring-chamber, a spring therein, and a shaft connected to the piston, of a sleeve embracing the shaft and connected to the spring, a gear integral with the sleeve, a frame mounted on the sleeve, a worm carried by said frame, a stop on the gear, a stop on the frame and a lazy-arm adapted to be engaged by said stop for preventing initial overwinding of the spring.

8. In a combined door check and closer the combination with a sleeve, a spring connected thereto, a shaft, a lever secured to the shaft and means connecting the lever and sleeve, of means for limiting the movement of the spring-sleeve while imparting initial tension to the spring.

9. In a combined door check and closer, the combination with a sleeve, a spring connected thereto, a spring-chamber, a shaft, a lever secured to the shaft and means for detachably connecting the lever and sleeve, of a lazy-arm engaged by a stop on the sleeve and a stop for limiting the movement of the lazy-arm.

658,520. CLUTCH-PULLEY. BARNARD ABEL, Titusville, Pa. Filed May 22, 1900. Serial No. 17,550. (No model.)



Claim.—1. A clutch-pulley comprising a rotatable tubular part, a loose pulley on said part, clutching mechanism pivoted to said tubular part, a wedge for separating said clutching mechanism having a concave bottom edge, and a spindle carrying a cone fitting against the concave bottom of the wedge for operating said wedge.

2. A clutch-pulley comprising a rotatable tubular part, a loose pulley on said part, clutching-segments pivoted at one end to said tubular part by a common pivoting-pintle and having adjustable parts at the opposite end, a wedge for separating said clutching-segments having bearing against the adjustable parts, and a spindle carrying a cone slidable in the tubular part for operating said wedge.

3. A clutch-pulley comprising a rotatable tubular part, a loose pulley on said part, clutching-segments pivoted at one end by a common pivot to said tubular part, a wedge for separating the opposite ends of said segments, means for operating said wedge and adjusting devices at the unpivoted ends of the segments and bearing against the wedge.

4. A clutch-pulley comprising a rotatable tubular part, having a radial opening, a loose pulley on said part, curved clutching-segments, each having a perforated pivoting-ear at one end and a screw-threaded depression at or near the opposite end, a screw-bolt fitting in said depression and forming an adjusting device for the segment, a pintle passing through the pivoting-ears for securing the segments to the tubular part, a separating-wedge having sides bearing against the heads of the screw-bolts in the segments, and slidably mounted in the radial opening in the tubular part, and a spindle carrying a cone sliding in the central opening in the tubular part; said cone opening the wedge.

5. A clutch-pulley comprising a rotatable tubular part, a loose pulley mounted on said part, clutching-segments carried by said tubular part and each having a lip, means for moving said segments into frictional contact with the pulley, and U-shaped springs, each having one end fastened to the tubular part and the opposite end fitted over the lip of one of the segments for normally retaining said segments in inoperative position.

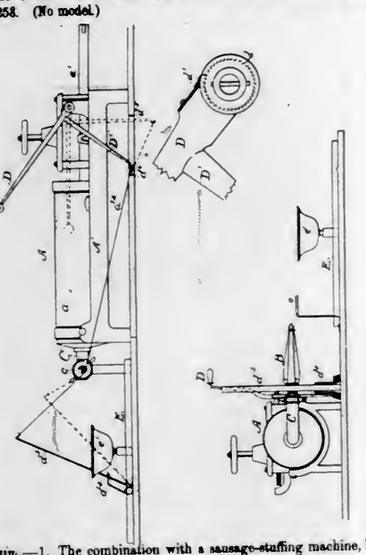
6. A clutch-pulley comprising a tubular part fastened to a rotating element and having a radial opening, a pulley mounted loosely on the tubular part, clutch devices pivoted to said tubular part by a common pintle, an arrow-head wedge interposed between the opposite portions of said clutch devices, and provided with a reduced shaft sliding in the radial opening, and means for moving said wedge to separate the clutch devices and lock the pulley to the tubular part.

7. A clutch-pulley comprising a tubular part fastened to a rotating element and having a radial opening, a pulley mounted loosely on the tubular part, clutch devices pivoted to said tubular part, a wedge interposed between the opposite portions of said clutch devices and having a shaft sliding in the radial opening in the tubular part, and provided with a concave bottom edge, and a cone device bearing against the concave bottom edge of the wedge for radially moving said wedge to separate the clutch devices and lock the pulley to the tubular part.

8. A clutch-pulley comprising a rotatable tubular part, having a radial opening, a loose pulley on said part, curved clutching-segments, each having a perforated pivoting-ear at one end and a screw-threaded depression at or near the opposite end, a screw-bolt fitting in said depression and forming an adjusting device for the segment, a pintle passing through the pivoting-ears for securing the segments to the tubular part, a separating-wedge having sides bearing against the heads of the screw-bolts in the segments, and slidably mounted in the radial opening in the tubular part, a spindle carrying a cone sliding in the central opening in the tubular part; said cone operating the wedge, and springs for normally holding said segments in inoperative position.

658,521. SAUSAGE STUFFING AND LINKING MACHINE.

HENRY C. ATKINSON, Louisville, Ky. Filed Dec. 14, 1899. Serial No. 740,258. (No model.)



Claim.—1. The combination with a sausage-stuffing machine, having a rotatable casing-holding part, of means applied to said part for yieldingly holding the casing thereon, and mechanism applied to said part for rotating the same at intervals.

2. A sausage-stuffing machine, having meat-feeding means, comprehending a reciprocable member, a linker, and connections between said reciprocable member and linker, said parts being combined to cause the reciprocable member to operate the feeding means and linker alternately.

3. A sausage-stuffing machine, having, in combination with meat-feeding means, comprehending a reciprocable member, a linker having a rotatable part which holds the casing open to access of meat thereinto and a clamping device which yieldingly holds the casing on said rotatable part, and connections by which said reciprocable member actuates the feeder and linker alternately.

4. A sausage-stuffing machine, having in combination with meat-feeding means, comprehending a reciprocable member; a linker, having a stationary tube in communication with the discharge-opening of the machine, a tube rotatably mounted on said stationary tube and a clamping device on the rotatable tube; and connections by which the reciprocable member actuates the feeder and linker alternately.

5. In a sausage-machine, the combination with meat-feeding means, comprehending a reciprocable lever having a pawl-and-ratchet connection with the part of the feeding means actuated by it, a rotatable linker, and a connecting device actuated by a movement of the lever different from that in which it actuates the feeder, for rotating said linker, whereby the feeding means and linker are actuated by the lever alternately.

6. In a sausage-stuffing machine, the combination with a meat-containing cylinder, and meat-feeding means having a lever, of an arm projecting from said lever, a rotatable linker designed to carry the sausage-casing, and a connecting means engaged with said linker and having its ends arranged in the path traversed by said arm during one movement of the lever.

7. In a sausage-machine, the combination with a meat-containing cylinder, and meat-feeding means, of a rotatably-mounted casing holder and linker connected with the discharge-opening of said cylinder and devices for imparting forward rotation to and preventing rearward rotation of said casing holder and linker.

8. In a sausage-machine, the combination with meat-feeding means, of a rotatable linker designed to carry the sausage-casing being filled, means for preventing backward rotation of the linker, a pivoted arm actuated to rotate said linker, a flexible connecting means engaged with said arm and linker, and returning devices for the connecting means.

9. In a sausage-machine, the combination with a meat-containing cylinder, and meat-feeding means, having a lever to control the action thereof, of a rotatable linker which supports the casing being stuffed, means for preventing backward rotation of said linker, an arm projecting from said lever, a flexible connecting means engaged with said linker and with said arm, and returning devices for said connecting means.

10. A sausage-machine, having, in combination a meat-containing cylinder, meat-feeding means including an actuating-lever and devices by which said lever is connected with the feeding means proper in one direction of its movement and released therefrom in the other direction of movement, and a linker, embodying a rotatable tube which supports the sausage-casing and is provided with a clamp which permits the casing to feed therefrom when the tube is stationary and causes a link-twist to be formed when the tube is rotated, and devices for connecting the rotatable tube with said lever when the latter is disengaged from the feeding means.

11. In a sausage-machine, the combination with means for filling the sausage-casing with meat, of a rotatable linker to be engaged with said casing, a pivoted spring-upheld lever, and a cord extending around said linker from said lever and pulled to rotate said linker, and means for preventing backward rotation of the linker.

12. In a sausage-stuffing machine, the combination of a rotatable linking-tube for holding the casing being filled, means for preventing backward rotation of said tube, a pivoted spring-upheld lever, a cord extending from said lever around said tube and having an eye at its free end, and a pivotally-mounted arm having a hook which engages said eye in one direction of its movement.

13. In a sausage-machine, the combination with meat-feeding means, including a pivoted lever having means for connecting it with the feeding means proper in one direction of its movement and releasing it therefrom in the other direction of its movement, of a rotary linker which supports the sausage-casing, a spring-upheld lever, a cord secured at one end to said lever and extending around the linker, said cord having an eye at its free end, means for preventing backward rotation of the linker, and an arm projecting from the first-mentioned lever and having a hook to engage said eye in a movement of said lever other than that in which it is operatively connected with the feeding means proper.

14. In a sausage-machine, the combination with a meat-containing cylinder, meat-feeding means, and a stationary tube connected to the discharge-opening of said cylinder, of a linking-tube mounted on said stationary tube, a ratchet at one end of said linking-tube, a pawl to engage said ratchet, a cord connected with said linking-tube and pulled to rotate the same, and a returning means for the cord.

15. A sausage-machine, having, in combination with meat-feeding means, and a rotatable casing-holding tube in communication with the discharge-opening of the machine, of a clamping means on said tube constructed to permit the casing to feed from the tube, by the pressure of inflowing meat, when the tube is stationary and to grasp the casing tightly when the tube is rotated, so as to assure the formation of a link-twist by rotation of said tube, and means by which said tube is rotated at intervals.

16. A sausage-machine, having, in combination, a meat-containing cylinder, means for filling the sausage-casing with meat, a rotatable casing-holding tube, and a clamping means on said tube, embodying a flexible band at the mouth thereof and springs secured to the tube at one end and having their other ends engaged with said band.

17. A casing holding and linking tube for sausage-stuffing machines having a casing-clamp applied to its exterior and movable to and from the tube to hold, or release or permit the feeding forward of the casing, said tube being adapted to be rotatably mounted on a support.

18. A casing holding and linking attachment for sausage-stuffers, consisting essentially of a body having interior passage-way and adapted to enter and support the end of a sausage-casing and to hold the casing open to the access of sausage-meat thereinto, said body adapted to be rotatably mounted on a support, and a clamping device; the body and the clamping device being relatively movable to and from each other to grasp, or release, or permit forward movement of the casing.

19. A casing holding and linking tube for sausage-stuffing machines, having a yielding casing-clamp applied to its exterior said clamp comprising spring-arms each secured at one end to the tube, and an elastic band at the mouth of said tube engaging the unattached ends of said arms, said tube being adapted to be rotatably mounted on a support.

20. A casing holding and linking attachment for sausage-stuffers, consisting essentially of a body having interior passage-way and adapted to enter and support the end of a sausage-casing and to hold the same open to the access of sausage-meat thereinto, said body adapted to be rotatably mounted on a support, a clamping device constructed to permit the casing to feed from said body as the stuffing proceeds and to assure that a twist will be formed in the casing when the body is rotated, and suitable means for preventing rearward rotation of said body.

21. A linker for sausage-stuffing machines, having in combination, a rotatable casing-holding tube having a ratchet at one end, a pawl to engage said ratchet, a flexible ring around the mouth of said tube, and spring-arms attached to the rotatable tube at one end and having their other ends engaged with said ring.

22. A linker for attachment to sausage-stuffing machines, embodying a rotatable casing-holding part, clamping means on said part, a cord engaging said part and pulled to rotate the same, a returning means for said cord, and means for preventing backward rotation of said part by the return of said cord.

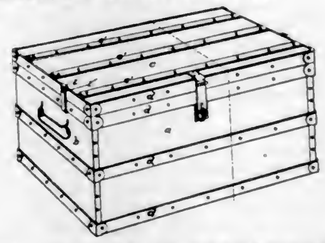
23. A linking attachment to sausage-stuffing machines, embodying a stationary tube designed to have communication with the discharge-opening of the machine, a rotative tube thereon having a ratchet at one end, a pawl to engage said ratchet, an elastic band around the mouth of said rotatable tube, spring-arms attached to the rotatable tube at one end and having their other ends engaged with said band, a cord pulled to rotate said tube, and a cord-returning means.

24. In a sausage stuffing and linking device, the combination, with a sausage-stuffing machine, of an elbow-tube C fitting in the delivery-hole of the sausage-holding cylinder; a linker B attached to the outer end of the tube C; a cord d^2 passing around a spool b^2 on the linker B and attached at one end to a spring-lever d^3 and at the other to a ring held in place by an eye-screw d^4; a crank D, pivoted on a spindle a^2, provided with a pawl d' and adapted to engage the teeth of a ratchet-wheel d journaled on the spindle a^2 and having a center of motion coincident with that of D, and an arm D', having at its outer end a hook adapted to engage the ring on the end of the cord d^2, and rotate the outer tube of the stuffer and linker B, substantially as described and for the purposes specified.

25. A sausage stuffer and linker consisting of an inner cylindrical tube having a wire ring soldered around it near its bottom and a flange around the bottom bearing a spring-pawl erected on its upper surface, and an outer cylindrical tube, having its bottom edges toothed to form a ratchet-wheel, fitted over the inner tube and creased over the ring around it to form a spool-banker and having a head provided with two or more holes with upwardly-extending tubes fitted in them and longitudinal wire springs extending up alongside of the tubes, the outer circumference of the head forming the other banker of the spool, the outer tube with its head rotated around the inner tube, substantially as described and for the purposes specified.

658,522. TOOL-CHEST.

MEDERICK BEAUDIN, Hartford, Conn. Filed Feb. 23, 1900. Serial No. 6,219. (No model.)



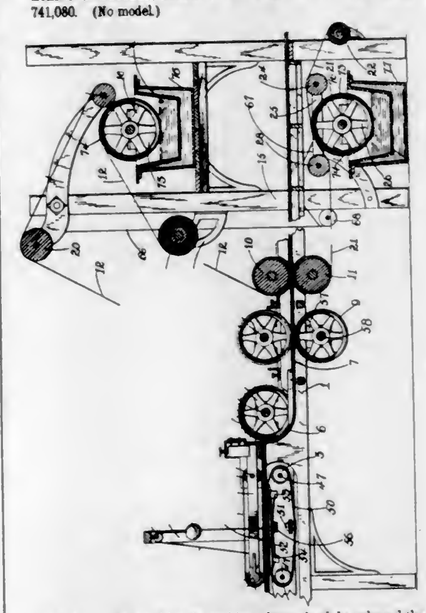
Claim.—1. In combination; the chest-body composed of one piece of sheet metal forming the bottom and sides, with two pieces flanged and riveted thereto forming the ends; bands of outwardly-closed channel-iron completely encircling the chest-body, riveted thereto, having corner-cuts at the corners and joined at the rear by non-alined fish-joints; the hinged cover composed of one piece of sheet metal forming the tops, sides and ends; the outwardly-closed channel-iron completely encircling the cover, riveted thereto and having corner-cuts at the corners; the angle-iron rest for the open cover riveted on the rear face of the uppermost of the channel-irons encircling the chest-body; and the hinge located at the angle of said angle-iron; all substantially as described and for the purposes set forth.

2. In combination; the chest-body composed of one piece of sheet metal forming the bottom and sides with two pieces flanged and riveted thereto forming the ends; bands of outwardly-closed channel-iron completely encircling the chest-body, riveted thereto, having corner-cuts at the corners and joined at the rear by non-alined fish-joints; the hinged cover composed of one piece of sheet metal forming the top, sides and ends; the outwardly-closed channel-iron completely encircling the cover, riveted thereto, and having corner-cuts at the corners; the angle-iron rest for the open cover riveted on the rear face of the uppermost of the channel-irons encircling the chest-body; the hinge located at the angle of said angle-iron and the outwardly-open channel-irons riveted on the bottom of said chest-body; all substantially as described and for the purposes set forth.

3. In combination; the chest-body composed of one piece of sheet metal forming the bottom and sides with two pieces flanged and riveted thereto forming the ends; bands of outwardly-closed channel-iron completely encircling the chest-body, riveted thereto, having corner-cuts at the corners and joined at the rear by non-alined fish-joints; the hinged cover composed of one piece of sheet metal forming the top, sides and ends; the outwardly-closed channel-iron completely encircling the cover, riveted thereto, and having corner-cuts at the corners; the angle-iron rest for the open cover riveted on the rear face of the uppermost of the channel-irons encircling the chest-body; the hinge located at the angle of said angle-iron; and clamp screw-pivoted to the channel-iron encircling the cover; all substantially as described and for the purposes set forth.

658,523. MACHINE FOR MAKING PICTURE-BACK BOARDS.

LORENZ A. DEUTHER, Buffalo, N. Y. Filed Dec. 21, 1899. Serial No. 741,080. (No model.)



Claim.—1. A machine for making picture-back boards and the like, into which slats are fed in vertical position, having forward feeding mechanism by which the slats are fed rearward in vertical position, a toothed wheel in the rear of the forward feeding mechanism for taking the slats as they come from said feeding mechanism and arranging them edge to edge, intermediate push-rollers in the rear of the toothed wheel, means for coating the surface of sheets of material with cement, and tension-rollers in the rear of the push-rollers for pressing and cementing the slats between interposed cement-coated sheets of material.

2. A machine for making picture-back boards and the like, into which slats are fed in vertical position, having forward upper and lower feed-belts between which the slats are arranged in vertical position and fed horizontally rearward, a toothed wheel in the rear of the forward feed-belts for taking the slats as they come from the forward feed-belts and arranging them edge to edge, intermediate push-rollers in the rear of the toothed wheel, means for coating the surface of sheets of material with cement, and tension-rollers in the rear of the push-rollers for pressing and cementing the slats between interposed cement-coated sheets of material.

3. A machine for making picture-back boards and the like, into which slats are fed in vertical position, having forward upper and lower feed-belts between which the slats are arranged in vertical position and fed horizontally rearward, a toothed wheel in the rear of the forward feed-belts for taking the slats as they come from the forward feed-belts, carrying them in an arc of a circle and arranging them edge to edge, intermediate push-rollers in the rear of the toothed wheel, means for coating the surface of sheets of material with cement and tension-rollers in the rear of the push-rollers for pressing and cementing the slats between interposed cement-coated sheets of material.

4. A machine for making picture-back boards and the like, into which slats are fed in vertical position, having forward upper and lower feed-belts between which slats are arranged in vertical position and fed horizontally rearward, a toothed wheel in the rear of the forward feed-belts for taking the slats as they come from the forward feed-belts, carrying them in an arc of a circle and arranging them edge to edge, intermediate push-rollers in the rear of the toothed wheel, means for coating the surface of sheets of material with cement, tension-rollers in the rear of the push-rollers for pressing and cementing the slats between interposed cement-coated sheets of material, and an automatic cutting device.

5. A machine for making picture-back boards and the like, in which sheets of material are cemented upon the opposite faces of a series of slats, having upper and lower tanks containing cement, cement-carrying rollers, a swinging arm having a guiding-roller at one end arranged to guide the upper sheet of material into contact with the upper cement-roller, a movable frame carrying rollers for guiding the lower sheet of material into contact with the lower cement-carrying roller and a single operating means for swinging the arm and raising the movable frame to move the sheets of material out of contact with the cement-carrying rollers.

6. A machine for making picture-back boards and the like, in which sheets of material are cemented upon the opposite faces of a series of slats having two tanks containing cement arranged one above the other, cement-carrying rollers arranged above said tanks, a swinging arm carrying rollers for guiding the upper sheet of material into contact with the upper cement-roller, and a movable frame carrying rollers for guiding the lower sheet of material into contact with the lower cement-carrying roller, and means for jointly and coincidently raising said swinging arm and movable frame to move the sheets of material out of contact with the cement-carrying rollers.

7. A machine for making picture-back boards and the like, into which slats are fed in vertical position, having forward feeding mechanism by which the slats are fed rearward in vertical position, a toothed wheel in the rear of the forward feeding mechanism for taking the slats as they come from said feeding mechanism and turning them from a vertical to a horizontal position, and means for pressing and cementing the slats between interposed cement-coated sheets of material.

8. A machine for making picture-back boards and the like, in which slats are cemented between interposed sheets of material comprising forward upper and lower pairs of feed-rollers connected by belts between which the slats are arranged in vertical position and fed horizontally rearward, a toothed wheel in the rear of the forward feed-belts for taking the slats as they come from the forward feed-belts and arranging them loosely edge to edge, intermediate push-rollers in the rear of the toothed wheel for pressing the edges of the slats into close contact, cement-rollers for coating the surface of the sheets of material, and tension-rollers in the rear of the push-rollers for pressing and cementing the slats between interposed sheets of material.

9. A machine for making picture-back boards and the like, comprising a frame, forward upper and lower feed-belts, a toothed wheel mounted on a shaft journaled in the frame in the rear of the forward feed-belts for taking the slats as they come from said feed-belts and arranging them loosely edge to edge, intermediate push-rollers mounted on shafts journaled in the frame in the rear of the toothed wheel for pressing the edges of the slats into close contact, means for coating the surface of the sheets of material with cement, tension-rollers mounted on shafts journaled in the frame in the rear of the push-rollers for pressing and cementing the slats between interposed sheets of material; said tension-rollers being rotated by the passage of the interposed slats, a driving-shaft having a gear-wheel, a pinion on the supporting-shaft of the toothed wheel meshing with said gear-wheel, a chain engaging with sprockets on the shaft of the intermediate push-rollers and a connection between the driving-shaft and the forward feed-belts.

10. A machine for making picture-back boards and the like, having upper and lower pairs of rollers connected by belts, a platform beneath the upper portion of the lower belt to support it in horizontal position, lugs upon said platform, a spring-board having connection with said lugs and a support beneath the middle portion of the spring-board.

11. A machine for making picture-back boards and the like, in which sheets of material are cemented upon opposite faces of a series of slats, comprising forward feeding mechanism by which the slats are introduced in vertical position, assembling mechanism arranged in a lower horizontal plane, and means located between the forward feeding mechanism and the assembling mechanism for carrying the slats through an arc of a circle from the horizontal plane of the feeding mechanism to the lower horizontal plane of the assembling mechanism and changing the slats from a vertical to a horizontal edge-to-edge position before feeding them between the sheets of material.

12. A machine for making picture-back boards and the like, in which sheets of material are cemented upon opposite faces of a series of slats, comprising upper and lower feed-belts between which the slats are introduced in vertical position and fed horizontally rearward, assembling mechanism arranged in a lower horizontal plane, and a toothed wheel interposed between the feed-belts and the assembling mechanism for carrying the slats through an arc of a circle from the horizontal plane of the feed-belts to the lower horizontal plane of the assembling mechanism and changing the slats from a vertical to a horizontal edge-to-edge position before feeding them between the sheets of material.

13. A machine for making picture-back boards and the like, into which sheets of material are cemented upon opposite faces of a series of slats and into which slats are first fed in vertical position, comprising a frame, forward feed-belts between which the slats are arranged in vertical position and fed horizontally rearward, a toothed wheel in the rear of the forward feed-belts for taking the slats as they come from the forward feed-rollers and arranging them in a loose edge-to-edge position, a curved track in the frame adjacent to the toothed wheel and extending downward from the rear of the feed-belts, a horizontal track in the rear of the curved track, intermediate push-rollers in the rear of the toothed wheel for pressing the edges of the slats closely together and feeding them rearward on the horizontal track, and tension-rollers in the rear of the push-rollers for pressing and cementing the slats between the interposed sheets of material.

14. A machine for making picture-back boards and the like, in which sheets of material are cemented upon opposite faces of a series of slats and into which slats are first fed in vertical position, comprising a frame, forward feed-belts between which the slats are arranged in vertical position and fed horizontally rearward, a toothed wheel in the rear of the forward feed-belts for taking the slats as they come from said feed-belts and arranging them in a loose edge-to-edge position, a curved track in the frame adjacent to the toothed wheel and extending downward from the rear of the feed-belts, a horizontal track in the rear of the curved track, intermediate push-rollers in the rear of the toothed wheel for pressing the edges of the slats closely together and feeding them rearward on the horizontal track, tension-rollers in the rear of the push-rollers for pressing and cementing the slats between interposed sheets of material and an automatic cutting device for severing the completed back.

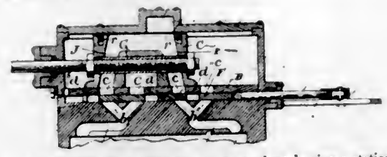
15. A machine for making picture-back boards and the like, in which sheets of material are cemented upon the opposite faces of a series of slats, having upper and lower tanks containing cement, a cement-carrying roller mounted above each of said tanks, an upper swinging arm and lower movable frame, each carrying rollers for guiding the upper and lower sheets of material into contact with the upper and lower cement-carrying rollers respectively, and common mechanism adapted to raise both coincidently to move the sheets of material out of contact with the cement-carrying rollers when the machine is not in operation.

16. A machine for making picture-back boards and the like, in which a series of slats are cemented between interposed sheets of material, having upper and lower pairs of rollers between which the slats are fed, a belt connecting the upper pair of rollers, a belt connecting the lower pair of rollers, a toothed wheel in the rear of the rollers, means for coating sheets of material with cement, guiding and cementing rollers in the rear of the toothed wheel, a driving-shaft, a connection between the driving-shaft and the toothed wheel, and connections between the toothed wheel and the pairs of feed-rollers, and the toothed wheel and guiding-rollers, as set forth.

17. A machine for making picture-back boards and the like, in which sheets of material are cemented upon opposite faces of a series of slats, comprising forward feeding mechanism by which the slats are introduced in vertical position, assembling mechanism for cementing the slats between cement-coated sheets of material, and means for turning the slats from a vertical position to a horizontal edge-to-edge position before feeding them into the assembling mechanism.

658,524. REVERSING-VALVE. DANIEL J. HOISINGTON and JOHN W. KESSINGER, Crescent, Okla., assignors of one-half to Mary E. Hoisington, same place, and Daniel S. Perkins, Bowman, Okla. Filed June 30, 1900. Serial No. 22,186. (No model.)

Claim.—1. A reversing-valve comprising a steam-chest having a stationary plate therein provided with exhaust and inlet ports, a reversing-plate situated therebelow and having passage-ways adapted to register with the said passage-ways of the stationary plate, a power-cylinder having ports in communication with the said reversing-plate passage-ways, a valve situated within the steam-chest and having its bottom provided with inlet and exhaust ports, and the steam-chest having inlet and exhaust passage-ways in communication respectively and independently with the said exhaust and inlet passage-ways of the said valve, substantially as described.



2. A reversing-valve comprising a steam-chest having a stationary plate therein provided with inlet and exhaust ports, a power-cylinder situated adjacent thereto and having ports in communication with opposite ends thereof, a reversing-plate situated between the stationary plate and the said power-cylinder ports and having passage-ways adapted to register with the said ports and with the said passage-ways in the stationary plate, a valve situated in the steam-chest and movable upon the said stationary plate, the said valve having a centrally transversely arranged inlet-port in communication with the interior of the steam-chest, and with end exhaust passage-ways, the said steam-chest having a laterally-extending exhaust passage-way in communication with the said exhaust-ports of the valve and separate from the communication of the inlet-port of the said valve, substantially as described.

3. A reversing-valve comprising a steam-chest having a stationary plate therein provided with inlet and exhaust passage-ways, a power-cylinder adjacent thereto having ports in communication respectively with opposite ends of the said cylinder, a reversing-plate situated and movable between the said stationary plate and the power-cylinder ports, the reversing-plate having passage-ways adapted to register with the said ports and with the passage-ways in the stationary plate, a valve within the steam-chest having its sides out of contact with the sides of the steam-chest, the said valve having a transverse inlet-port with open ends in communication with the space between the sides of the valve and the sides of the said chest, the top of the steam-chest having a laterally-projecting exhaust-port, and the said valve having at opposite ends exhaust-ports having their lower ends adapted to register with the openings of the stationary plate and their upper ends in communication with the exhaust-ports of the top of the steam-chest, substantially as described.

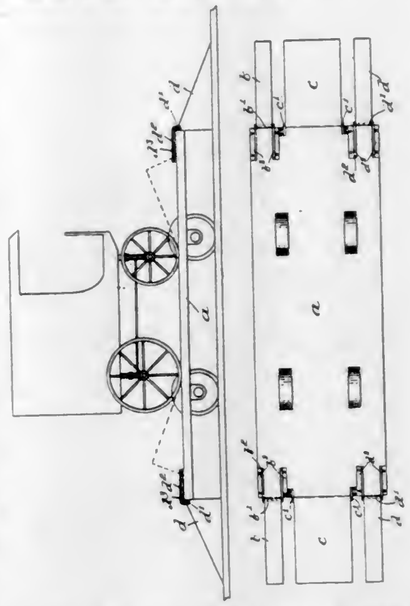
4. A reversing-valve comprising a steam-chest having a stationary plate therein provided with inlet and exhaust ports, a power-cylinder having ports in communication with opposite ends thereof, a reversing-valve movable between the stationary plate and the said power-cylinder ports and having passage-ways adapted to control the said ports of the power-cylinder and the passage-ways in the stationary plate a valve within the said steam-chest, the valve having a centrally-arranged inlet passage-way having open ends and an open bottom, the open bottom adapted to register with the said passage-ways of the stationary plate, the said valve having also end exhaust-ports with open lower ends and a horizontal recess or chamber in its upper side with which the upper ends of the exhaust-ports communicate, the top of the said chest having a laterally-extending exhaust passage-way in communication with the recess in the said valve, the said laterally-extending exhaust-port of the top of the steam-chest having an outlet-opening at one side of the steam-chest, substantially as described.

5. A steam-engine valve comprising a steam-chest, the bottom of the steam-chest having inlet and exhaust ports in communication with opposite ends of the power-cylinder, a valve within the steam-chest having exhaust passage-ways with open upper and lower ends, the top of the steam-chest having a laterally-extending exhaust passage-way with its outer end projecting beyond the side of the steam-chest, the side of the steam-chest having a downwardly-extending passage-way in communication with the projecting end of the said laterally-projecting passage-way of the top of the steam-chest, substantially as described.

6. A valve for reversing mechanisms having a recess in its top, a transverse inlet-port below the said recessed top, the said transverse port having open ends and an open bottom, and vertically-arranged exhaust-ports situated at opposite sides of the said transverse inlet-port, the ends of the exhaust-ports being open and communicating respectively with the recessed top and the working-cylinder ports, substantially as described.

7. A reversing-valve comprising a steam-chest, a stationary plate situated therein and having inlet and exhaust ports, a working cylinder having ports communicating with its opposite ends, a shifting plate situated between the stationary plate and the said working-cylinder ports, the reversing-plate having passage-ways, a valve situated above and resting upon the stationary plate, the stationary plate having steam passage-ways to permit the steam to pass therebelow independent of the said inlet and exhaust ports thereof, substantially as described.

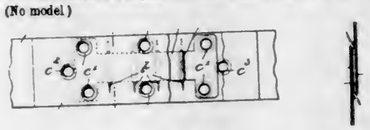
658,525. PLATFORM-CAR. EDWARD C. HUSE, Somerville, Mass. Filed May 31, 1900. Serial No. 18,581. (No model.)



Claim.—1. The combination with a platform-car, of runways pivotally connected to the ends thereof which may be turned over upon the car-platform into position to serve as trigs for the wheels of a wagon on the platform, substantially as described.

2. The combination of a platform-car, of runways c pivotally connected to each end of the platform, and runways *b* and *d* also pivotally connected to each end of the platform at opposite sides of said runways c, and bodily movable relatively to said platform to trig the wheels of the wagon when turned over upon the platform, substantially as described.

658,526. SKIRT-SUPPORTER AND SHIRT-WAIST HOLDER. WALTER LAMB, Philadelphia, Pa. Filed July 25, 1900. Serial No. 24,762. (No model.)



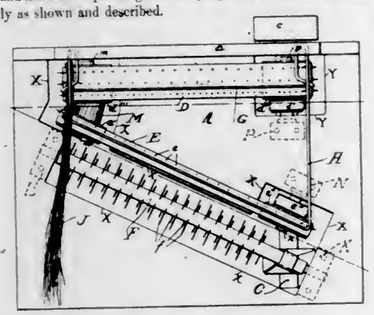
Claim.—1. A skirt-supporter and shirt-waist holder, comprising a belt or band, a reinforce-strip, a metal strip provided with a series of vertical grooves having prongs or spurs embedded in said grooves and extending respectively upward and outward and downward and outward from said plate, and means, substantially as described, for securing said plate between said reinforce-strip and belt or band, substantially as and for the purposes described.

2. A skirt-supporter and shirt-waist holder, comprising a belt or band, a reinforce-strip, a metal plate provided with end perforated lugs or projections and with vertical grooves in the body of said plate, a series of spurs or prongs embedded in said grooves and respectively extending upward and outward through the belt or band and downward and outward through said reinforce-strip, and means, substantially as described, extending through the perforations in said lugs or projections and along the edges and sides of said plate for maintaining the same in firm position between said reinforce-strip and belt or band, substantially as and for the purposes described.

658,527. BROOM-CORN CLEANER. PHILIP LAMBOY, Amsterdam, N. Y. Filed Nov. 27, 1899. Serial No. 738,303. (No model.)

Claim.—In a broom-corn cleaner, the combination with a main carrying-belt, of a rotating shaft arranged at an incline to said main carrying-belt and provided with cleaning-fingers, an auxiliary carrying-belt arranged parallel to the axis of said rotating shaft, and provided with retaining

points, and means for operating said carrying-belts and rotating shaft, substantially as shown and described.



658,528. RAIL JOINT OR CHAIR. EDWIN LANE, Johnstown, Pa. Filed July 20, 1900. Serial No. 24,296. (No model.)



Claim.—1. In a rail-joint, a base-plate shaped so as to be normally convex transversely, a fish-plate rigidly secured by connecting means to the base-plate, in combination with a second fish-plate having open-ended slots, a bar which is adapted to rest upon said second fish-plate and is connected to the base-plate by bolts which pass through the open-ended slots, substantially as shown and for the purpose set forth.

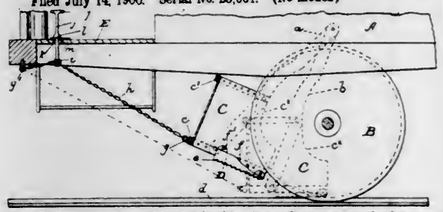
2. In a rail-joint, the combination with a base-plate to which an inner fish-plate is permanently attached, of an outer fish-plate having at its edge open-ended slots, a bar adapted to overlie longitudinally the edge and a portion of the top of the outer fish-plate and when in such engagement to bear upon the base-plate said bar having apertures which register with the open-ended slots of the outer fish-plate, and bolts which pass upwardly through the base-plate the open-ended slots and the apertures in the bar, substantially as shown.

658,529. PRODUCT FOR USE IN MAKING MARGARIN. MAX POPPER, Bielefeld, Germany. Filed Mar. 13, 1900. Serial No. 8,540. (No specimens.)

Claim.—1. As a new article of manufacture, a product for aromatizing margarin and artificial butter derived from natural butter, by saponifying same, liberating the fatty acids, and distilling off under reduced pressure the volatile fatty acids, and consisting essentially of the volatile fatty acids of the natural butter, as specified.

2. As a new article of manufacture, a product for aromatizing margarin and artificial butter, derived from natural butter by saponifying same, liberating the fatty acids, and distilling off under reduced pressure the volatile fatty acids, and consisting essentially of capronic acid, capric acid, caprylic acid, butyric acid, pelargonic acid, and volatile fatty acids being isomeric therewith, substantially as described.

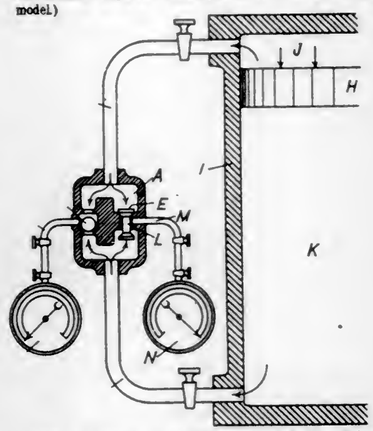
658,530. COMBINED WHEEL-FENDER AND EMERGENCY-BRAKE. EDWARD L. REQUARD and ELI S. MERRYMAN, Baltimore, Md. Filed July 14, 1900. Serial No. 23,661. (No model.)



Claim.—1. A combined wheel-fender and emergency-brake, comprising vertically-swinging arms; two transverse bars rigidly secured to said arms one above the other; a sheathing rigidly secured to said bars and forming the wheel-fender; brake-shoes, D, provided on their lower surfaces with teeth and having their upper surfaces rearwardly and downwardly inclined, and also having upwardly-projecting ears, *f'*, secured to the inside of the wheel-fender; and means whereby to hold the said aforementioned parts in raised, traveling position, and to allow them to swing by gravity into lowered, emergency position, as set forth.

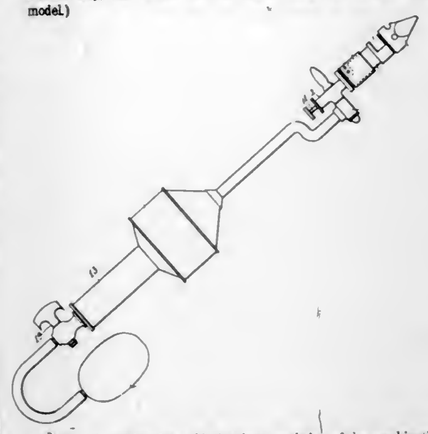
2. A combined wheel-fender and emergency-brake for cars, comprising swinging arms pivoted at their upper ends; a wheel-fender and brake-shoes carried by said pivoted arms; a chain secured to said wheel-fender to hold it elevated; a vertically-movable rod extending through the platform of the car and connected with the chain and provided at its upper end with a handle adapted to limit its downward movement and also provided with a collar below said handle; and a locking-lever pivoted on the said platform and provided with a notch or claw adapted to take around said rod underneath said collar whereby to hold said rod, the wheel-fender and brake-shoes in raised, traveling position, as set forth.

658,531. APPARATUS FOR INDICATING EFFECTIVE PRESSURES OF STEAM IN STEAM-ENGINE CYLINDERS. WILLIAM RIPPER, Sheffield, England. Filed Apr. 25, 1900. Serial No. 14,261. (No model.)



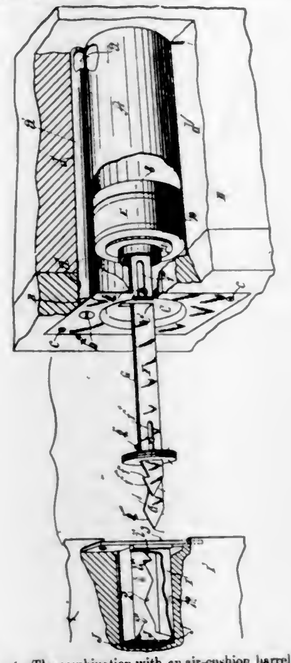
Claim.—In combination with an engine-cylinder, a valve-box having pipe connections to opposite ends thereof, pressure-gages connected with said valve-box, and check-valves located in said valve-box operating automatically to keep the pressure and exhaust ends of said piston in communication with the respective pressure-gages, substantially as described.

658,532. SELF-HEATING SOLDERING-IRON. HENRY A. ROSS, Kansas City, Mo. Filed Nov. 14, 1898. Serial No. 696,343. (No model.)



Claim.—A self-heating soldering-iron consisting of the combination with a vapor-burner, and a soldering-tip secured upon and forming part of the burner, of an oil vessel, a tube connecting said vessel with the burner and extending within the vessel, a cone or funnel shaped partition arranged within said vessel, and an extension on said vessel forming a handle wherewith to handle the tool, substantially as set forth.

658,533. DOOR-CHECK. DANIEL SCHUYLER, San Diego, Cal., assignor to the Perfect Sliding Door Company, Los Angeles, Cal. Filed Apr. 3, 1899. Serial No. 711,599. (No model.)



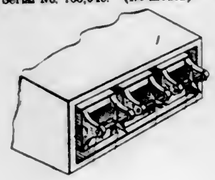
Claim.—1. The combination with an air-cushion barrel, of a piston-head in the barrel; a piston-rod connected to the head and extending from the barrel and provided with a catch and with a stop; a moving part to engage the stop and provided with a latch to engage the catch; and a slide carried by the piston-rod and having a limited movement therealong and a limited movement with relation to the barrel and provided with means for disengaging the latch and catch at the close of the movement of the piston.

2. A door-cushion piston comprising a head composed of a metal plate having an air-passage therethrough and provided with perforations; a piston-rod fastened to the plate; a backing of leather or like material on one side of the plate; plugs in the perforations and fastened to the backing; and a flap of leather or other flexible material fastened to the plugs.

3. In an air-cushion, a piston-retracting clutch device carried by the door and comprising a case set in the door; a latch pivoted in the case and extending below the pivot to engage the rear of the case to hold the pivot extended in position to catch the piston.

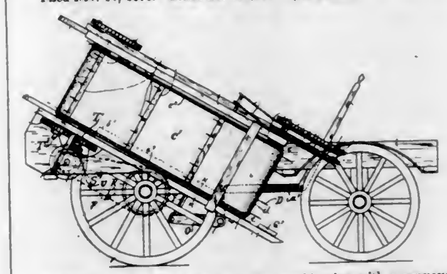
4. In an air-cushion for sliding doors, a piston-retracting clutch carried by the door and comprising a case set in the door; a latch pivoted in the case and extending below the pivot; and a cushioning-band around the rear wall of the case to cushion the said downward extension.

658,534. DEVICE FOR PERFORATING TILES. ISAAC STRIPE, Aultman, Ohio, assignor to the H. B. Camp Company, same place. Filed Feb. 16, 1899. Serial No. 705,640. (No model.)



Claim.—The combination of the outer die, die or dies located within the outer die and provided with arms, a bar or bars connected to the arms of the inside die or dies, a disk or disks located upon the bar or bars having cutting-arms and located within the hollow tile and inclosed thereby, and within the path of said hollow tile, substantially as and for the purpose specified.

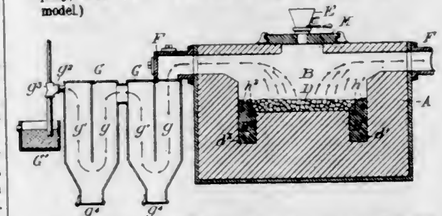
658,535. CORN-HARVESTER. JOHN WAGNER, Portage, Wis. Filed Nov. 17, 1899. Serial No. 737,293. (No model.)



Claim.—1. In a corn-harvester, the combination with a conveyer-frame; of a plurality of revolving belts or aprons, provided with spines and arranged to form a conveyer; of a fork projecting from the front end of the conveyer or frame; rotary, toothed interacting cutters located at the crotch of said fork; and a fingered shear located underneath the teeth of said cutters; together with cutting-knives disposed along the sides of said fork, with their cutting edges turned upwardly at an angle to the plane of their attachment to the fork.

2. In a corn-harvester, the combination with a conveyer-frame; of a plurality of revolving conveyer belts or aprons, extending around end rollers journaled in the frame; toothed, interacting cutters secured to the roller-shafts at the front end of said conveyer; sprocket-pulleys secured to the upper ends of said shafts by knuckle-joints; and revolving sprocket-chains running over said pulleys and extending forwardly from said conveyer, said chains being provided with inwardly-projecting spines; together with means for adjusting the sprocket-chains at various angles.

658,536. APPARATUS FOR TREATING ORES. GUSTAF M. WESTMAN, New York, N. Y., assignor to the Arsenical Gold Reduction Company, Newark, N. J. Filed Dec. 16, 1899. Serial No. 740,517. (No model.)



Claim.—1. In a furnace for treating electric conducting ores by means of electric currents, the combination of two horizontal electrodes of cast-iron, and wrought-iron pipes extended within the body of each electrode for forming a cooling-fluid circuit, said electrodes being located in depressions in the bottom of the furnace, a horizontal bed between the electrodes for receiving the ore to be treated, a vapor-escape flue in the upper portion of the furnace and a tap extending from the bed of the furnace at a point between the electrodes for withdrawing molten metal therefrom.

2. The combination of a melting-chamber, a source of electric currents, and two compound electrodes connected with said source extending along the bottom of said chamber and each consisting of a horizontal iron portion and a covering of lead, substantially as described.

3. An electrode for electric reduction-furnaces consisting of parallel superposed strata of iron and lead, the lead above and the iron portion being perforated for the passage of a cooling fluid therethrough.

4. In a furnace for the reduction of ore, the combination of electrodes composed of superposed layers of iron and lead, the lead above, and means for cooling the iron to prevent vaporization of the lead.

5. In a furnace for the reduction of ores, a bottom having a depression and a compound metallic electrode placed therein, the upper portion thereof consisting of a more-fusible metal than the under portion thereof the upper surface being below the general surface of the bottom.

6. In a furnace for the reduction of ores, a bottom having depressions and electrodes placed therein below the general surface of the bottom, each of said electrodes consisting of two layers of metals having different melting-points, the more-fusible metal constituting the upper layer.

7. In a furnace for treating ores, the combination of a melting-chamber having the depressions d', d^2, and the electrodes H, H', located in said depressions, and having perforations h', h^2, and the superposed strata of lead.

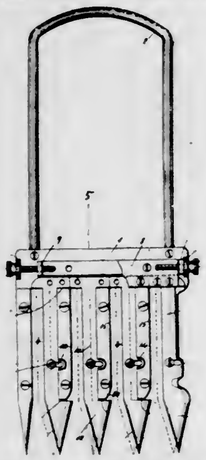
8. In a furnace for treating ores, the combination of compound electrodes comprising a normally-non-fused portion and a superposed readily-fusible portion, the chamber having depressions receiving the electrodes, the charging and discharging openings, and the removable cover.

9. In a furnace for electrically treating ores, the horizontal electrodes having fluid-passages therethrough, and having superposed relatively-fusible portions in combination with the insulated sources of cooling fluid, and connections from the sources to the respective fluid-passages.

10. In a furnace for electrically heating ores, one or more metallic electrodes comprising a normally-non-fused portion and a superposed readily-fusible portion, and a water-circuit through the normally-non-fused portion.

658,537. TOOL FOR ASSORTING AND BUNCHING NAILS.

MICHAEL J. WHALEN, New York, N. Y., assignor to himself and Albert Pasternak, same place. Filed Dec. 6, 1899. Serial No. 739,355. (No model.)



Claim.—1. A device for assorting and bunching nails, comprising a main plate or body portion carrying a handle and having a series of parallel projecting fingers arranged with intervening spaces, an auxiliary plate provided with a series of parallel projecting fingers having an adjustable movement with relation to the main fingers and with respect to said intervening spaces, and means for adjusting said auxiliary plate, substantially as and for the purpose set forth.

2. A device for assorting and bunching nails, comprising a series of projecting fingers arranged with intervening spaces, and a series of auxiliary fingers adjustably arranged with relation to the main fingers and with respect to said intervening space and carrying at their front end a beveled or pointed portion forming a guide to said intervening spaces, substantially as and for the purpose set forth.

3. A device for assorting and bunching nails, comprising a main plate or body portion provided with a handle and with a series of parallel projecting fingers arranged with intervening spaces, a supplementary plate carried by said main plate and provided with a series of parallel projecting auxiliary fingers which are adjustably arranged with relation to said main fingers and with respect to said intervening space, means for guiding or limiting the adjustable movement of the auxiliary fingers, and means for securing the auxiliary plate in adjustable connection with the main plate, substantially as and for the purpose set forth.

658,538. SHINGLE-GAGE.

CLARK WILSON, Topeka, Kans. Filed Mar. 22, 1900. Serial No. 9,754. (No model.)

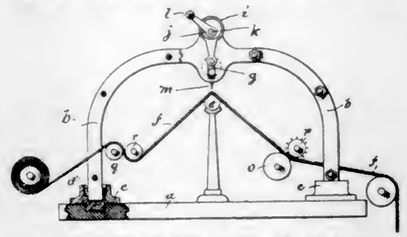
Claim.—1. A gage attachment formed in one piece and comprising a tapered stem having an opening therein, a plate having perforations, a spring-band between and of less thickness than the stem and plate, a screw within the opening of the stem and adapted to engage either of the perforations of the plate, and means for binding said stem and plate together.

2. The combination with the handle of a tool; of a gage attachment formed of one piece and comprising a tapered stem having an opening therein, a plate provided with a series of perforations, a spring-band between and of less thickness than said stem and plate, said band inclosing the handle, and means for clamping the stem and plate together.



658,539. MEANS FOR RAISING PILE OR NAP ON FABRICS.

WILLIAM H. BAKER, Central Falls, R. I., and FREDERIC E. KIP, Montclair, N. J. Filed Aug. 23, 1899. Serial No. 728,172. (No model.)



Claim.—1. Means for raising the nap or pile on fabrics, comprising a bar over which the fabric may be drawn, a generator of electricity of high tension, and a terminal of such generator arranged parallel to, but out of contact with said bar, and adjacent to that edge of the latter over which the fabric is drawn.

2. Means for raising the nap or pile on fabrics, comprising a saddle-bar over which the fabric is drawn with the pile outward, mechanism for moving the fabric over said bar while under tension, an elongated terminal adjacent to the pile on the fabric along the line where the latter passes over the saddle-bar, and a generator of electricity of high tension, said terminal being connected with one pole of the said generator.

3. Means for raising the nap or pile on fabrics, comprising a V-edged saddle-bar over which the fabric is drawn at an angle with the pile outward, mechanism for moving the fabric over said bar while under tension, a generator of electricity of high tension, and a bar-like terminal of said generator situated adjacent to and parallel with the edge of said saddle-bar.

4. In means for raising the nap or pile on fabrics, the combination with the saddle-bar e, and mechanism for drawing the fabric over the same, of a generator of electricity of high tension, an adjustable terminal of said generator, situated parallel with and adjacent to the bar e, and means for adjusting said terminal with respect to the bar e.

5. In a device for raising the nap or pile on fabrics, the combination with the frame, the bar g, mounted therein and having a comb-like terminal, of the generator, one pole of which is connected with said terminal, the saddle-bar e, situated under said terminal and parallel therewith, and means for drawing the fabric in a continuous manner over said bar e, substantially as set forth.

6. In a device for raising the nap or pile on fabrics, the combination with a support over which the fabric is moved, and means for moving the latter, of a generator of electricity, a conductor and terminal for said electricity, said terminal being substantially parallel with said support, and means for adjusting said terminal with respect to said support, said means comprising the shaft k the eccentric j thereon, and the yokes i, coupled to said terminal, substantially as set forth.

7. Means for raising the nap or pile on fabrics, comprising a generator of electric energy and a suitable conductor and terminal for applying same to the nap or pile of the fabric.

8. Means for raising the nap or pile on fabrics, comprising a generator of electric energy and a suitable conductor and terminal for applying same to the nap or pile of the fabric, in combination with means for moving the fabric adjacent to said terminal.

9. Means for raising the nap or pile on fabrics, comprising a generator of electric energy and a suitable conductor and terminal for applying same to the nap or pile of the fabric, in combination with automatic means for moving the fabric adjacent to said terminal.

10. Means for raising the nap or pile on fabrics, comprising a generator of electric energy and a suitable conductor and terminal for applying same to the nap or pile of the fabric, in combination with means for continuously moving the fabric adjacent to said terminal.

11. Means for raising the nap or pile on fabrics, comprising a generator of electricity, a conductor and terminal through which the current flows, and mechanism for moving the fabric along a path in proximity to the current flowing through said terminal, whereby the electric energy of the current acts to raise the nap or pile thereof.

12. Means for raising the nap or pile on fabrics, comprising a generator of electricity, a conductor and terminal through which the current flows, and mechanism for automatically moving the fabric along a path with its nap or pile in proximity to the current flowing through said terminal, whereby the electric energy of the current acts to raise the nap or pile thereof.

13. Means for raising the nap or pile on fabrics, comprising a generator of electricity, a conductor and terminal through which the current flows, and mechanism for continuously moving the fabric along a path with its nap or pile in proximity to the current flowing through said terminal, whereby the electric energy of the current acts to raise the nap or pile thereof.

14. Means for raising the nap or pile on fabrics, consisting of a generator of electricity, a conductor and terminal through which the current flows, and mechanism for moving the fabric along a path with the nap or pile face thereof in proximity to the current flowing through said terminal, whereby the electric energy of the current acts to raise the nap or pile on the moving fabric.

15. Means for raising the nap or pile on fabrics, consisting of a generator of electricity, a conductor and terminal through which the current flows, and mechanism for automatically moving the fabric along a path with the nap or pile face thereof in proximity to the current flowing through said terminal, whereby the electric energy of the current acts to raise the nap or pile on the moving fabric.

16. Means for raising the nap or pile on fabrics, consisting of a generator of electricity, a conductor and terminal through which the current flows, and mechanism for continuously moving the fabric along a path with the nap or pile face thereof in proximity to the current flowing through said terminal, whereby the electric energy of the current acts to raise the nap or pile on the moving fabric.

17. Means for raising the nap or pile on fabrics, consisting of a generator of electricity, a conductor and terminal through which the current flows, and mechanism for automatically and continuously moving the fabric along a path with the nap or pile face thereof in proximity to the current flowing through said terminal, whereby the electric energy of the current acts to raise the nap or pile on the moving fabric.

18. Means for raising the nap or pile on fabrics, consisting of a generator of electric energy, a conductor and terminal through which the current flows, a support for the moving fabric situated near said terminal, and mechanism for moving said fabric in an angular path over said support and with its nap or pile face adjacent to said terminal, for the purpose specified.

19. Means for raising the nap or pile on fabrics, consisting of a generator of electric energy, a conductor and terminal through which the current flows, a support for the moving fabric situated near said terminal, and mechanism for moving said fabric in an angular path over said support and adjacent to said terminal and with its face bearing the nap or pile next thereto, for the purpose specified.

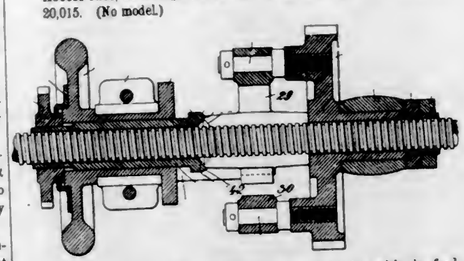
20. Means for raising the nap or pile on fabrics, consisting of a generator of electric energy, a conductor and terminal through which the current flows, a support for the moving fabric situated near said terminal, and mechanism for automatically moving said fabric in an angular path over said support and adjacent to said terminal and with its face bearing the nap or pile next thereto, for the purpose specified.

21. Means for raising the nap or pile on fabrics, consisting of a generator of electric energy, a conductor and terminal through which the current flows, a support for the moving fabric situated near said terminal, and mechanism for continuously moving said fabric in an angular path over said support and adjacent to said terminal and with its face bearing the nap or pile next thereto, for the purpose specified.

22. In a device for raising the nap or pile on fabrics, the combination with a support over which the fabric is moved, and means for moving it, of a generator of electricity, and a conductor and terminal for the latter, said terminal being adjustable with respect to said support for the fabric.

658,540. ROTARY NUT.

FRIEDRICH W. BUHNE, Freiburg, and AUGUST RITZ, St. Georgen, Germany. Filed June 12, 1900. Serial No. 20,015. (No model.)



Claim.—1. In a lathe or the like, the combination with the feed-screw, of a wheel loosely mounted on said screw, arms pivoted to said wheel having threaded portions for engaging said screw, a rotary hand-wheel, and projections operatively connected with said hand-wheel and engaging cam-surfaces on said nuts, substantially as described.

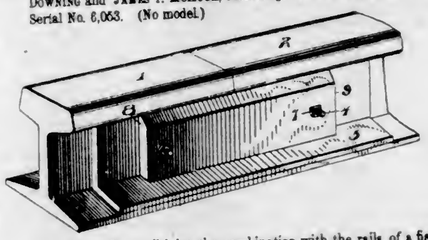
2. In a lathe or the like, the combination with the feed-screw, of a wheel loosely mounted thereon and connected with the tool-rest, arms pivotally connected with said wheel, and having threaded portions for engaging the screw, means for swinging said arms into or out of engagement with said screw, and means for locking said arms in either their engaged or disengaged position, substantially as described.

3. In combination, the feed-screw, the two-part nut including separable nut-sections having each opposite inclines on its outer edge, means for operating said sections to engage them with and disengage them from the screw, and a longitudinally-movable sleeve on said screw having opposite inclines for engaging the corresponding inclines on the nut, substantially as described.

4. In a lathe, the combination with the feed-screw of a wheel encircling said screw and journaled in the tool-rest, arms pivoted to said wheel having nut portions for engaging and disengaging said screw, a longitudinally-movable sleeve encircling said screw, means carried by said sleeve for engaging said nut portions for holding them either in an engaged or disengaged position, means for operating said sleeve, a second sleeve encircling said first-named sleeve and turning in a bearing carried by the tool-rest, projections carried by said second sleeve and engaging cam-slots in the arms, and a hand-wheel for operating said second sleeve, substantially as described.

658,541. BOND-TIE FOR ELECTRIC RAILWAYS.

WILLIAM A. DOWNING and JAMES T. MCHUGH, Pittsburg, Pa. Filed Feb. 21, 1900. Serial No. 6,053. (No model.)



Claim.—1. In a rail-joint, the combination with the rails, of a fish-plate mounted on one side thereof and adapted to be secured in position by means of bolts extending through the same and rail-sections, a rail-bond mounted upon said bolts, a bond fish-plate provided with a recess and adapted to be mounted at the opposite side of said rail-sections and surrounding said bond, and a pair of compression-springs arranged in said recess and adapted to retain said rail-bond in position when said bond-plate is secured to the rail-sections.

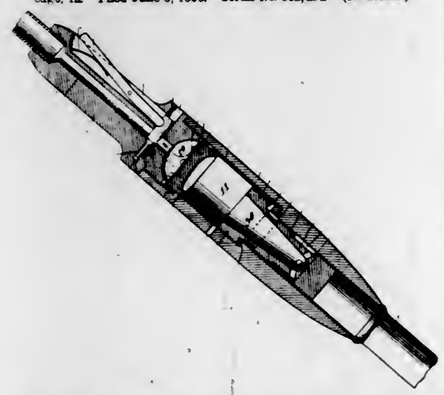
2. The combination with a pair of rail-sections having a fish-plate secured to one side thereof by means of bolts extending through the same and said rail-sections, of a rail-bond arranged at the opposite side of said rail-sections and mounted upon said bolts, a pair of eyes connected to said bond, a compression-spring connected to each of said eyes, a bond fish-plate adapted to be mounted upon said bolts at the opposite side of said sections and formed on its inner face with a recess surrounding said rail-bond, and means mounted upon said bolts for securing the said bond-plate in position.

3. In a device of the character described, the combination of a fish-plate 3 secured to one side of the rail-sections, a rail-bond formed of a rectangular plate and adapted to be mounted to the opposite side of said sections, a bond-plate surrounding said rail-bond and adapted to be secured to said rail-sections, and means arranged in said bond-plate for retaining said bond in position.

4. The combination with a pair of fish-plates suitably connected to the rail-sections of a railway-track, of a rail-bond consisting of a rectangular piece of suitable metallic material and suitably mounted to the side of said rail-sections and within one of said fish-plates, and means for retaining said bond in position.

5. The combination with a pair of fish-plates suitably connected to the rail-sections of a railway-track, of a rail-bond consisting of a rectangular piece of suitable metallic material and suitably mounted to the side of said rail-sections and within one of said fish-plates, a pair of eyes secured to said rail-bond, and means connected to said eyes and adapted to be engaged by one of the fish-plates for securing said bond in position.

658,542. PNEUMATIC HAMMER. EDMOND A. FORDYCE, Chicago, Ill. Filed June 3, 1898. Serial No. 682,424. (No model.)

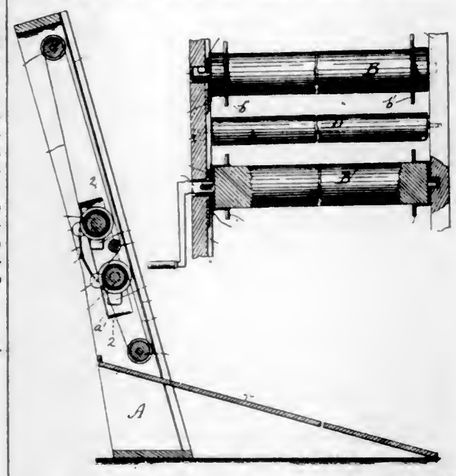


Claim.—1. A valveless pneumatic hammer comprising a cylinder having a bore of large diameter at its upper end and of small diameter at its lower end, each section of said bore being of equal diameter throughout, and a piston having an enlarged head and reduced body to fit said bore, the cylinder having an inlet-port opening into the reduced portion slightly below its top and an outlet-port opening from the enlarged portion above the normal downward position of the piston, and the piston having an external groove or port slightly below its shoulder, a second external groove or port below said first-mentioned groove or port, and a passage extending from the upper end of the piston to said lower groove or port, the lower end of the cylinder being closed by the piston throughout its range of movement, substantially as described.

2. A pneumatic hammer, comprising a cylinder or casing having a bore or chamber of unequal diameter in its upper and lower portions, an air port or passage opening into the reduced lower portion a short distance below the shoulder between the two portions, and an exhaust-port opening into the larger upper portion above said shoulder, and a piston or hammer proper having an enlarged head to fit the upper portion of the cylinder, a smaller body to fit and close the lower portion of the cylinder, an external groove a short distance below the shoulder thus formed, a passage or chamber of tapering or diminishing diameter extending from the upper end of said piston downward to the lower portion thereof, and an external groove in the lower portion of the piston below the first-mentioned groove and communicating with the internal passage or chamber thereof, substantially as described.

3. In a pneumatic hammer of the class described, the combination, with a cylinder and its piston, said cylinder being open and threaded at its upper end and provided with a seat below said threaded portion, of a cylinder-head shouldered to fit said seat, and a handle threaded to fit the cylinder above the head thereof and hold the latter in position, said handle being recessed at its lower end to form an air-chamber and notched at its extremity to form air-passages between it and the cylinder-head, whereby said air-chamber communicates with the interior of the cylinder, substantially as described.

658,543. PANORAMIC DISPLAY DEVICE. COLEMAN L. FOWLER, Chicago, Ill. Filed Nov. 25, 1898. Serial No. 697,392. (No model.)



Claim.—1. The combination with a case having apertures in one of its sides, of a pair of winding-rollers journaled near the inner sides of the apertures at the center of the case, a single idle roller journaled at the outer side of each aperture, said rollers being in substantially the same plane a scroll one of whose ends is attached to each winding-roller and which is reversed over each idle roller, substantially as described.

2. The combination with a case having apertures in one of its sides, of a winding-roller journaled at the inner side of each aperture and a single idle roller journaled at the outer side thereof, said rollers being in substantially the same plane a scroll having its ends attached one to each winding-roller, and a single guide-roller journaled forward of the winding-rollers, substantially as described.

3. The combination with a case and winding-rollers journaled therein, each having a hollow gudgeon projecting through the case and reduced to expose a key, of a key insertible in the hollow gudgeon, and a pawl surrounding and supported by the gudgeon and having a shoulder to prevent rotation of the key in one direction, substantially as described.

4. The combination with a case and a winding-roller having a hollow gudgeon provided with a keyhole in its end and a reduced portion, of a key adapted to the keyhole and having its end exposed above said reduced portion, and a pawl provided with an opening through which the gudgeon passes to support the pawl and with a slot having an abrupt and a rounded shoulder, substantially as described.

5. The combination with a winding-roller having a hollow gudgeon provided with a keyhole and reduced to expose a key, of a key, and a pawl surrounding and supported by the gudgeon and interposed between the casing and the end of the roller, substantially as described.

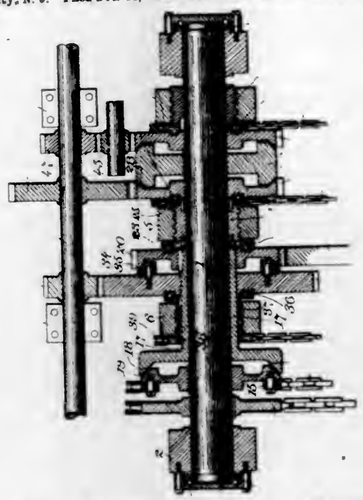
6. The combination with a case having a pair of winding-rollers, each provided with a gudgeon having a reduced portion with oppositely-disposed faces, of a pawl having an opening to receive the gudgeon whereby it is supported, an abrupt shoulder normally in the path of one of the faces of the gudgeon and a round shoulder whereby the pawl is raised by the revolution of the gudgeon, substantially as described.

7. The combination with a case having a pair of alined apertures in one of its sides a single pair of guide-rollers, one at the outer side of each aperture, of a scroll extending from the center of the case across one of the apertures and returning across the other aperture to near the starting-point, rollers journaled in the case at the inner sides of the apertures in substantially the same plane as the guide-rollers upon which the scroll is wound, and a brake mechanism common to the winding-rollers, substantially as described.

8. The combination with a case having a pair of apertures in one of its sides, of a scroll, a pair of gudgeon-rollers journaled in the case near its center, an idle roller journaled in each end of the case, and a brake mechanism composed of a spring-frame having an outwardly-bent pin and inwardly-bent spindles and friction-rollers in contact with the gudgeon-rollers, substantially as described.

9. The combination with a case having a pair of apertures in one side, winding-rollers journaled near the inner ends of the openings, a single pair of idle rollers journaled respectively near the outer ends of the openings, and a single guide-roller journaled between the openings and in advance of the winding-rollers, of a scroll carried by the rollers, and a key for operating the winding-rollers, substantially as described.

658,544. DRIVING MECHANISM. CHARLES D. P. GIBSON, Jersey City, N. J. Filed Dec. 11, 1899. Serial No. 739,916. (No model.)



Claim.—1. The combination of the shaft, the clutch member rigid with the shaft, the coöperating loose clutch member concentric with the shaft but free to slide and turn thereon, the pillow-block having a screw-thread cut therein, the journal-bearing for the shaft having a screw-thread meshing with the thread cut in the pillow-block in which the journal-bearing is mounted, means for rotating said journal-bearing and means whereby its movement along the line of the axis of the shaft produced by such rotation is transmitted to the loose clutch member.

2. The combination of the shaft, the clutch member rigid with the shaft, the coöperating loose clutch member concentric with the shaft but free to slide and turn thereon, the pillow-block having a screw-thread cut therein, the journal-bearing for the shaft having a screw-thread meshing with the thread cut in the pillow-block in which the journal-bearing is mounted, means for rotating said journal-bearing and ball-bearings between the end of the journal-bearing and the loose clutch member.

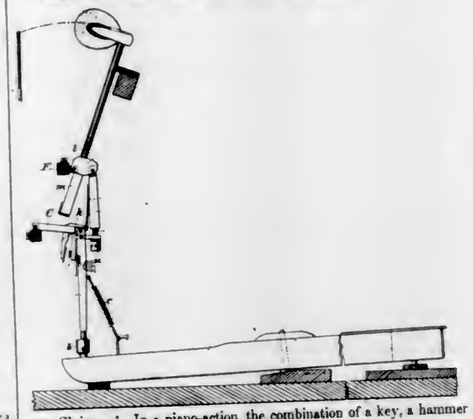
3. The combination of the shaft, the clutch member rigid with the shaft, the coöperating loose clutch member concentric with the shaft but free to slide and turn thereon, the pillow-block having a screw-thread cut therein, the journal-bearing for the shaft having a screw-thread meshing with the thread cut in the pillow-block in which the journal-bearing is mounted, means for rotating said journal-bearing consisting of a sprocket-wheel rigidly fixed to the journal-bearing, and a sprocket-chain engaging therewith, and means whereby its movement along the line of the axis of the shaft produced by such rotation is transmitted to the loose clutch member.

4. The combination of the shaft, the clutch member rigid with the shaft, the coöperating loose clutch member concentric with the shaft but free to slide and turn thereon, the pillow-block having a screw-thread cut therein, the journal-bearing for the shaft having a screw-thread meshing with the thread cut in the pillow-block in which the journal-bearing is mounted, means for rotating said journal-bearing and means whereby its movement along the line of the axis of the shaft produced by such rotation is transmitted to the loose clutch member, together with the end-thrust ball-bearings for the shaft.

5. The combination of the shaft, clutch members rigid with the shaft and having cone-faces of opposite inclination, two loose clutch members coöperating with the rigid members, concentric with the shaft, but free to slide and turn thereon, pillow-blocks having screw-threads cut therein, journal-bearings for the shaft mounted in said pillow-blocks and having screw-threads meshing with the pillow-blocks, means for rotating said journal-bearings, and means whereby the motion along the axis of the shaft so created is transmitted to the two loose clutch members so that as one is thrown into engagement the other is automatically released from engagement.

6. The combination of the shaft, clutch members rigid with the shaft and having cone-faces of opposite inclination, two loose clutch members coöperating with the rigid members, concentric with the shaft but free to slide and turn thereon, pillow-blocks having screw-threads cut therein, journal-bearings for the shaft mounted in said pillow-blocks and having screw-threads meshing with the pillow-blocks, means for rotating said journal-bearings and means whereby the motion along the axis of the shaft so created is transmitted to the two loose clutch members so that as one is thrown into engagement the other is automatically released from engagement, together with the train of gearing conveying motion from one loose clutch member to the other.

658,545. PIANO-ACTION. EMERY M. HAMILTON, New York, N. Y. Filed Nov. 23, 1899. Serial No. 737,991. (No model.)



Claim.—1. In a piano-action, the combination of a key, a hammer and intermediate mechanism between said hammer and key for transmitting motion from one to the other of said parts, said intermediate mechanism comprising a frictional clutch for moving the hammer in the direction of its operating stroke.

2. In a piano-action, the combination of a key, a hammer and intermediate mechanism between said hammer and key for transmitting motion from one to the other of said parts, said intermediate mechanism comprising a frictional clutch for moving the hammer in the direction of its operating stroke and means for automatically releasing said clutch from frictional engagement.

3. In a piano-action, the combination of a key, a hammer and intermediate mechanism between said hammer and key for transmitting motion from one to the other of said parts, said intermediate mechanism comprising a frictional clutch normally in frictional engagement to move the hammer in the direction of its operating stroke and adjustable means coöperating with said frictional clutch for automatically releasing said connection from frictional engagement at any desired point in the forward movement of the hammer.

4. In a piano-action, the combination of a key, a hammer and constantly-connected intermediate mechanism between said hammer and key for transmitting motion from one to the other of said parts, said intermediate mechanism comprising a frictionally-controlled clutch carried by a moving part of the action and adapted to move the hammer in the direction of its operating stroke and an abutment with which said clutch is adapted to contact before the hammer reaches the limit of its movement in the direction of its operating stroke, whereby the clutch will be released and a backward or clearing movement of the hammer will be permitted after it has completed its operating stroke.

5. In a piano-action, the combination of a key, a hammer and intermediate connections between said key and hammer for transmitting motion from one to the other of said parts, said intermediate mechanism comprising a friction-clutch and a jack connected at one end to the hammer and at the other end to said friction-clutch which is normally in engagement with said jack and is adapted to free the jack to permit a movement independent of the clutch before the hammer reaches the limit of its operating stroke.

6. In a piano-action, the combination of a key, a hammer and intermediate connections between said key and hammer for transmitting motion from one to the other of said parts, said intermediate mechanism comprising a pilot, a clamping-plate pivoted to said pilot and having an aper-

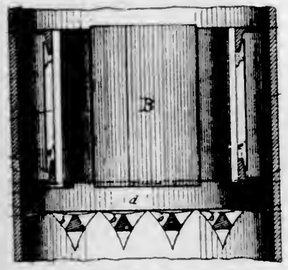
ture therein, a jack connected at one end to the hammer and having an extension at the other end thereof which projects through the aperture in the pivoted clamping-plate so that the plate exerts a binding force upon the extension when the plate is in one position and will permit the jack to move independently thereof when the plate is in another position, means for normally maintaining the plate in the binding position and means for moving the plate to free the jack.

7. In a piano-action, the combination of a key, a hammer and intermediate mechanism between said key and hammer for transmitting motion from one of said parts to the other, said intermediate mechanism comprising a jack connected to one end of the hammer-butt and having an adjustable extension, a clamping-plate carrying an abutment and having an aperture therein through which the extension of the jack projects and which is normally in frictional engagement with the clamping-plate, a spring interposed between said jack and clamping-plate and an abutment which cooperates with the abutment upon the clamping-plate, one of said abutments being adjustable with relation to the other to vary the release of the jack.

8. In a piano-action, the combination of a key, a hammer having an extension which forms a checking member, a spring with which said checking member contacts when the hammer reaches substantially the limit of its operative stroke and intermediate mechanism between said key and hammer for transmitting motion from one of said parts to the other, said intermediate mechanism comprising a jack connected at one end to the hammer-butt and having an adjustable extension, a pilot, a clamping-plate pivoted to the pilot, said plate carrying an abutment and having an aperture therein through which the extension of the jack projects and which is normally in frictional engagement with the clamping-plate, a spring interposed between said jack and the clamping-plate and an abutment which cooperates with the abutment on the clamping-plate, one of said abutments being adjustable with relation to the other to vary the release of the jack.

9. In a piano-action, the combination of a split cylindrical mounting-pin, seated in the aperture of a rail, a pivot secured within the split portion of said pin by the compression of the parts thereof, a movable part of the action connected to said pivot and a set-screw for compressing the split portion of the pin to secure the pivot to the pin and the pin in the adjusted position on the rail.

658,546. FIRE-POT LINING. JOHN F. HOLLINGS, Hartford, Conn. Filed Feb. 13, 1899. Serial No. 705,437. (No model.)



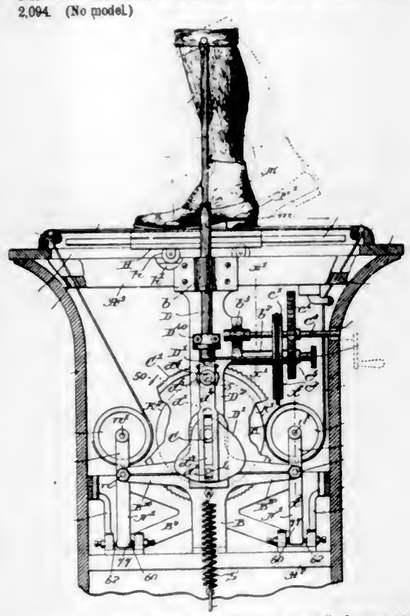
Claim.—1. In a furnace fire-pot, in combination, a grate, a flexible band with interlocking ends supported from said fire-pot, a sectional ring supported on said band, staves interlocking with the ring, and a top ring interlocking the said staves, all substantially as described and for the purposes set forth.

2. In a furnace fire-pot, in combination, a plurality of sectional rings having their sections interlocked by dovetailed joints, an upright rim at the inner edge of each ring, registering mortises in pairs being cut through said rings and rims, and a series of staves extending across the two rings and certain of which have flanges at their ends, webs on their backs, and hooks at the extremities of the webs projecting toward the flanges and engaging over said rims, certain of said staves also standing across the joints between the ring-sections, all parts being proportioned as and for the purpose set forth.

3. In a furnace fire-pot, in combination, a plurality of rings having upright rims at their inner edges provided with registering dovetailed mortises, a series of staves extending across within the rims and having webs on their outer faces, certain of the webs having outwardly-facing hooks at their extremities, and certain other of the staves having webs with dovetailed tenons at their extremities the lower of which has a stop deeper than the mortise and the upper of which is cut away at its sides at a point positioned below the throats of the hooks of the staves just mentioned, all constructed and arranged as and for the purpose set forth.

4. In a furnace fire-pot, in combination, a plurality of rings having upright rims at their inner edges provided with registering dovetailed mortises, a series of staves extending across within the rims and having webs on their outer faces, certain of the webs having outwardly-facing hooks at their extremities, certain of the staves having outwardly-projecting flanges at their ends in addition to said webs and hooks, and certain other of the staves having webs with dovetailed tenons at their extremities the lower of which has a stop deeper than the mortise and the upper of which is cut away, all constructed and arranged as and for the purpose set forth.

658,547. APPARATUS FOR EXHIBITING BOOTS OR SHOES. MICHAEL A. KENNEDY, Boston, Mass. Filed Jan. 20, 1900. Serial No. 2,094. (No model.)



Claim.—1. In an apparatus of the class described, means to support the boot or shoe to be exhibited and to impart movement thereto simulating the act of walking, and a tread-rest to be intermittingly engaged by the tread portion of the boot or shoe and adapted to move in unison therewith when so engaged.

2. In an apparatus of the class described, means to support the boot or shoe to be exhibited and to impart movement thereto simulating the act of walking, a tread-rest to be intermittingly engaged by the tread portion of the boot or shoe and adapted to move in unison therewith when so engaged, and means to thereafter move the tread-rest in the opposite direction.

3. In an apparatus of the class described, means to support the boot or shoe to be exhibited and to raise, lower, and swing the same as in the act of walking, a tread-rest to be engaged by the tread portion of the boot or shoe upon its descent and to move in unison therewith during a portion of its swinging movement, and means to thereafter return the tread-rest into position to again be engaged by the boot or shoe upon its next descent.

4. In an apparatus of the class described, means to support the boot or shoe to be exhibited and to raise, lower, and swing the same as in the act of walking, a tread-rest to be engaged by the tread portion of the boot or shoe upon its descent and to move in unison therewith during a portion of its backward swing, and means operative after the rise of the boot or shoe to return the tread-rest into position to be engaged by the boot or shoe upon its next descent.

5. In an apparatus of the class described, a rising and falling carrier, means operatively connected therewith to support the boot or shoe to be exhibited and to swing the same forward and back, and a tread-rest to be intermittingly engaged by the tread portion of the boot or shoe as the carrier descends and adapted to move therewith when it is swung back, the rising of the carrier disengaging the boot or shoe from the tread-rest and permitting the former to be swung forward.

6. In an apparatus of the class described, a yieldingly-controlled rising and falling carrier to support the boot or shoe to be exhibited, means to intermittingly swing the latter forward and back, a tread-rest to be engaged by the tread portion of the boot or shoe when the carrier descends, and to move therewith during the backward swing, and means to move the tread-rest in the opposite direction after the carrier has risen to disengage the boot or shoe therefrom.

7. In an apparatus of the class described, means to support the boot or shoe to be exhibited and to impart movement thereto simulating the act of walking, a tread-rest to be intermittingly engaged by the tread portion of the boot or shoe upon its descent, and means to move the tread-rest in unison with the backward-swinging boot or shoe when so engaged, and to thereafter move the tread-rest to its initial position.

8. In an apparatus of the class described, a flexible form for the boot or shoe, a rising and falling carrier, means movable therewith and connected with the form, to swing it back and forth, means to raise the carrier when the form is at the end of its backward swing and to lower it when the forward swing has been effected, and a tread-rest to be engaged by the tread portion of the boot or shoe when the form is lowered and to move in unison therewith when it is swung backward.

9. In an apparatus of the class described, a flexible form for the boot or shoe, a rising and falling carrier, means movable therewith and connected with the form, to swing it back and forth, means to raise the carrier when the form is at the end of its backward swing and to lower it when the forward swing has been effected, a tread-rest to support the shoe when the carrier descends, and means to reciprocate the tread-rest in the direction of movement of the form when swung relatively to the carrier.

10. In an apparatus of the class described, an upright carrier, means to reciprocate it vertically, a form for the boot or shoe to be exhibited, an overhanging shaft mounted on the carrier and to which the form is attached, means mounted on the carrier to oscillate said shaft to thereby swing the form relatively to the carrier, and a movable tread-rest to support the shoe when the carrier descends.

11. In an apparatus of the class described, a vertically-movable, tubular carrier, an overhanging shaft mounted on the upper end of the carrier, a form attached to the said shaft, an upright shaft within the carrier and geared to the overhanging shaft, and means partly supported by the carrier to rotate the upright shaft first in one and then in the other direction, said means including a cam to control the vertical movement of the carrier.

12. In an apparatus of the class described, a vertically-movable carrier, a depressing-spring therefor, a cam to lift the carrier and to govern its descent, a form, means movable with the carrier to support the form and to swing it in opposite directions relatively to said carrier, and an eccentric connection between the cam and said means and actuated by the cam to operate the said means.

13. In an apparatus of the class described, a main shaft, a cam thereon, a vertically-movable carrier controlled by the cam, an overhanging shaft mounted on the carrier, a form attached to the shaft, and means actuated by said cam to rock the shaft in opposite directions and thereby swing the form attached thereto.

14. In an apparatus of the class described, a vertically-movable carrier, two shafts movable therewith and geared together, a form attached to one shaft, a bevel-pinion on the other, a meshing pinion supported by the carrier, a swinging arm to rock the latter pinion, a cam to control the vertical movement of the carrier, and a wrist-pin on said cam in sliding engagement with and to swing said arm as the cam rotates.

15. In an apparatus of the class described, means to support the boot or shoe to be exhibited and to impart movement thereto simulating the act of walking, a tread-rest reciprocable below the path of the boot or shoe, guides for the tread-rest, and means to reciprocate the tread-rest during a portion of the movement of the boot or shoe.

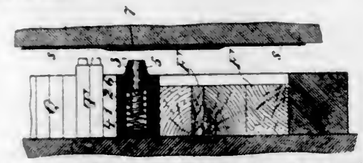
16. In an apparatus of the class described, a reciprocable tread-rest, guides therefor, two oppositely-rotatable drums, a flexible connection between each drum and the tread-rest, and means to rotate first one and then the other drum, to effect the reciprocation of the tread-rest.

17. In an apparatus of the class described, a reciprocable tread-rest, two oppositely-rotatable drums, a spring to resist the rotation of each drum in one direction, connections between the tread-rest and the drums, and means to rotate first one drum and then the other in the direction of its spring, to effect reciprocation of the tread-rest.

18. In an apparatus of the class described, a reciprocable tread-rest, two oppositely-rotatable drums, flexible connections between the tread-rest and the drums, a rotatable shaft, a cam thereon having a high portion to engage said drums alternately and rotate them frictionally in opposite directions, to thereby effect the reciprocation of the tread-rest, and means to adjust the drums relatively to the actuating-cams.

658,548. PUNCH FOR PLATEN PRINTING-PRESSES. ANDREW W. KNOX, New York, N. Y. Filed Sept. 27, 1898. Serial No. 691,985. (No model.)

Claim.—1. In a punching device for use on printing-presses, the combination with a cutting-plate to be secured in position on the platen, of a punch-body adapted to be set in the form with the type and having a depth or thickness commensurable with that of the type, a tubular cutting-punch fixed in said body, a spring-follower in the bore of said cutting-punch, and means for limiting the movement of said follower, substantially as set forth.



2. The combination, in a punch for use on printing-presses, of a punch-body 1, having dimensions commensurable with printing-type and a bore 2, a tubular cutting-punch 3, screwed removably therein, a follower 5, in said cutting-punch and having a stop 6, and spring 4, in the bore behind said follower, substantially as set forth.

3. The combination in a punch for use on platen printing-presses, of a punch-body 1, having dimensions commensurable with printing-type, a cylindrical recess 2 therein which does not extend to the bottom of the body, and a counterbored and screw-threaded recess at the upper end of the recess 2, a tubular, screw-threaded cutting-punch 3, to screw into said recess, a follower 5, in and fitting said cutting-punch, said follower having a stop which engages the inner end of the punch, and a spring 4, behind said follower, substantially as set forth.

658,549. FILE FOR PAPERS, SHEET-MUSIC, &c. ANTON M. KOLDERUP, Bergen, Norway. Filed May 22, 1899. Serial No. 717,831. (No model.)



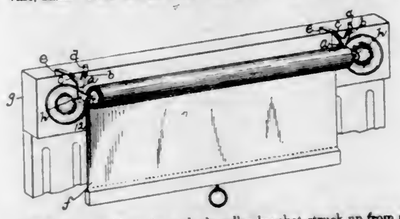
Claim.—In a file for papers, sheet-music and the like the combination with a U-shaped main holder or back, A, having wires or stays, B, across the sides, and small backs or sectional holders, C, provided with paper strips, D, covered with adhesive material, and having angular or curved slots, F, of a spring, G, fixed at one end of the back and extending across the side opening of the same, substantially as described.

658,550. HAME-FASTENER. DANIEL LITTLE, Eagle's Mere, Pa. Filed Feb. 20, 1900. Serial No. 5,984. (No model.)



Claim.—In a hame-fastener the combination of an angular bar having a hook thereto; a stem slidably mounted in a passage in said bar; a screw limiting the movement of the bar; an enlarged eye portion to the stem; a hooked securing-rod; a lever pivoted therein and adapted to engage said eye portion; and a toe to said lever.

658,551. BRACKET OR FIXTURE. EDWARD S. LORD, Somerville, Mass. Filed Oct. 21, 1899. Serial No. 734,334. (No model.)

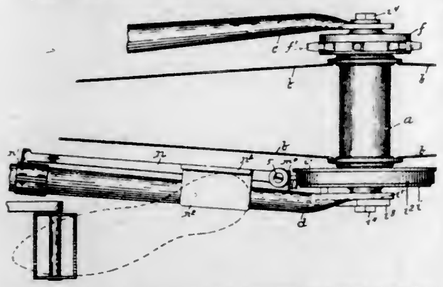


Claim.—1. A blank for a shade-roller bracket struck up from sheet metal in the form of a Y having points at the ends of its diverging arms

and a lateral arm or lug projecting from one side edge of its body, in the plane thereof; substantially as and for the purpose set forth.

2. A shade-roller bracket struck up from sheet metal in the form of a Y, having rearwardly-projecting portions 7, 7, terminating in depending points, and an arm or lug *h* projecting from one side edge of the body portion *a* and bent forwardly on the line of its juncture with the body into a vertical plane at right angles to the plane of the body; substantially as described.

658,552. CLUTCH AND BRAKE. ALCIDE E. MATHEY, Waltham, Mass. Filed Nov. 13, 1899. Serial No. 736,782. (No model.)

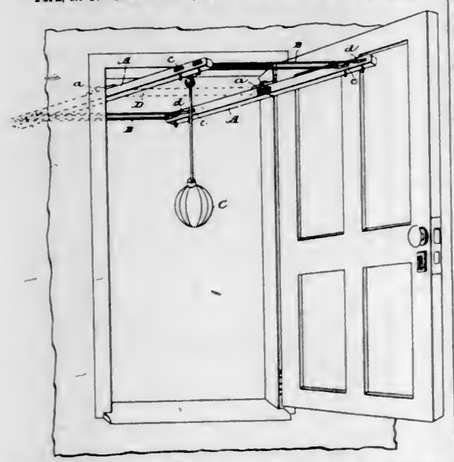


Claim.—1. In a bicycle, a clutch composed of a clutch-ring *e* having ball-receiving recesses *e'* formed with inclined bottoms, a pair of balls contained in each ball-receiving recess, a plate contained in each recess bearing upon said balls, each plate having a spiral spring attached to it which enters a socket in the clutch-ring, an outer ring *f* having thereon sprocket-teeth *f'*, and the ring-like plates *g*, *g*, substantially as described.

2. In a bicycle having a clutch between the crank-shaft and driving-shaft, a brake for the driving-wheel comprising a disk and band on said disk connected at one end to a fixed point and a foot-lever connected to the opposite end of said band, said foot-lever so disposed relatively to one of the pedals as to be engaged by the heel of the rider while his foot is still resting on said pedal and thereby holding said pedal at rest, substantially as described.

3. In a bicycle having a clutch between the crank-shaft and driving-shaft, a brake for the driving-shaft comprising a disk and band on said disk connected at one end to an arm mounted on the axle having a lug which enters a slot or opening in the frame, and a foot-lever connected to the opposite end of said band, said foot-lever so disposed relatively to one of the pedals as to be engaged by the heel of the rider while his foot is still resting on the pedal and the pedal thereby held at rest, substantially as described.

658,553. STRIKING-BAG FRAME. GEORGE MCFADDEN, New York, N. Y. Filed Mar. 27, 1900. Serial No. 10,337. (No model.)



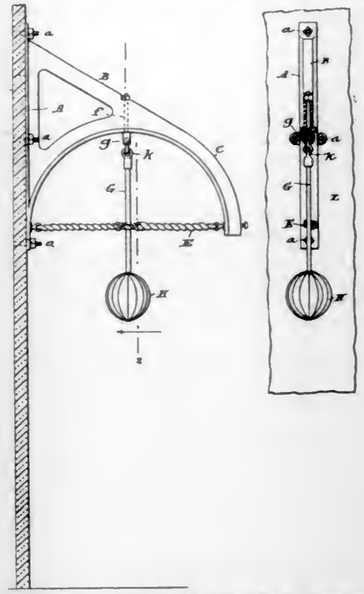
Claim.—1. A striking-bag frame comprising a pair of bars extending parallel with each other, means arranged centrally of said arms by which they may be secured to the door-jamb, and a plurality of receivers at each end of the bars extending parallel with each other between the bars and at right angles thereto.

2. A striking-bag frame comprising a pair of parallel arms each composed of hinged sections and receivers secured to the arms and extending transversely between them, the hinges of the arms being arranged centrally thereof.

3. A striking-bag frame comprising a pair of centrally-hinged arms, means for securing said hinged arms to a stationary object, and receivers at each end of said arms, substantially as described.

4. The combination in a striking-bag frame, of a pair of centrally-hinged arms, a cross-piece fitting into mortises in said arms, and means for securing said arms to a permanent object, substantially as described.

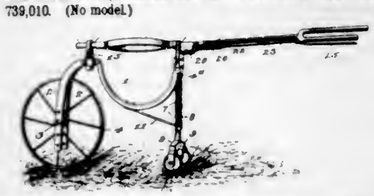
658,554. PUNCHING-BAG SUPPORT. GEORGE MCFADDEN, New York, N. Y. Filed May 4, 1900. Serial No. 15,535. (No model.)



Claim.—1. A punching-bag-suspending device comprising a vertical bracket, an arm extending laterally therefrom forming an arch, a bag-carrying rod suspended at the top of the arch and an intermediate connection to said rod secured to the sides of the arch, substantially as described.

2. A punching-bag-suspending device comprising a vertical bracket, an arm extending laterally from the same having an arched portion, a bag-carrying rod, a swiveled connection between the upper end thereof and the top of the arch and a flexible band extending from side to side of the arch having an intermediate connection to said rod, substantially as described.

658,555. DEVICE FOR TRANSPORTING MOLTEN METAL. SAMUEL R. PERRY, Jeffersonville, Ind. Filed Dec. 2, 1899. Serial No. 739,010. (No model.)



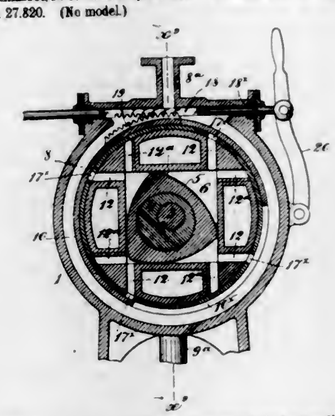
Claim.—1. The combination with a downcurved truck-frame, one end of which is bifurcated and curved downward to form a wheel-support, of a wheel journaled in the bifurcated curved ends, an extensible leg secured to the frame adjacent to the end of the downward curve farthest from the curved bifurcated ends, a brace from the downcurved portion of the frame to the non-extensible portion of the leg, wheels upon the extensible portion, and a ladle-support pivotally mounted upon the frame, substantially as described.

2. The combination with a downcurved truck-frame, one end of which is bifurcated and formed into a wheel-support, of a wheel between the bifurcated ends, a vertically-movable pin pivotally mounted in the frame between the curved and the bifurcated portions, the upper end of which is provided with a shouldered perforated head, a spring around the pin between the frame and the shoulder, a leg, and an open rigid bearing at the opposite side of the curve, a ladle-support, comprising a ring, one end of which is provided with a cylindrical journal longitudinally and rotatably mounted in the bearing of the head of the pin and an angular projection resting in the open rigid bearing, and means for locking the angular projection against removal from its bearing, substantially as described.

3. The combination with a truck-frame bar mounted on wheels and bent into depending semicircular form, of a bearing carried by an upright at one end of the bend, a leg supporting the bar at the other end of the bend, having a notch in its upper end with curved bottom and a bolt-socket below the notch, a ladle-supporting ring above the bend carrying two journals engaging in the notch and bearing, a spring-impelled bolt mounted on the ladle-support, handles for manipulating the ring and an elbow-handle pivoted to the handles and connected to the bolt, substantially as described.

4. The combination with a truck-bar bent into depending semicircular form, and extended horizontally at one end of the bend, a yoke secured to the extension and provided with opposite series of holes in its arms, a wheel straddled by the yoke, a pin or axle in the wheel passing through a pair of said holes, a leg secured to the opposite end of the bend and adjustable in height, wheels carried by said leg, and a ladle-supporting ring carried in bearings above the bend, substantially as described.

658,556. ROTARY ENGINE OR MOTOR. WILLIAM A. PITT Manhasset, N. Y. Filed Apr. 5, 1899. Renewed Aug. 23, 1900. Serial No. 27,820. (No model.)



Claim.—1. A motor comprising a rotatable shaft extending through the center of a square chamber provided with ports for the flow of a fluid under tension, the said chamber, an equilateral-triangular piston within said square chamber, said piston having the proportions respecting said chamber herein specified, and means connecting said shaft and piston for driving one from the other, substantially as set forth.

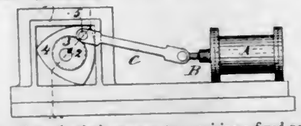
2. A motor comprising a rotatable shaft extending through the center of a square chamber provided with ports for the flow of a fluid under tension, the said chamber, an equilateral-triangular piston within said square chamber, said piston having the proportions respecting said chamber herein specified, and an eccentric fixed on said shaft and fitting an aperture in the center of said piston, substantially as set forth.

3. A motor comprising an engine-body having in it a square chamber, an induction chest or chamber, four induction-ports connecting said chambers, an eduction chest or chamber, four eduction-ports connecting the square chamber with said eduction-chamber, a shaft extending through the center of said square chamber and having tight bearings in the cylinder-heads, ported and rotatable valves in the respective induction and eduction chambers and fixed to said shaft, an equilateral-triangular piston in said square chamber and having the proportions relatively thereto as herein specified, and means connecting said shaft and triangular body for reciprocal driving, substantially as set forth.

4. A motor comprising an engine-body having in it a square chamber 6, an induction-chamber 8, with an inlet, an eduction-chamber 9, with an outlet, four induction-ports connecting the induction-chamber with said chamber 6, and four eduction-ports connecting the eduction-chamber with said chamber 6, a rotatable shaft extending through the center of said chamber 6 and having tight bearings in the heads of the engine-body, induction and eduction valves carried with said shaft and controlling the respective induction and eduction ports, an eccentric 4, on the said shaft and in the chamber 6, and an equilateral-triangular piston 5, in said chamber and embracing said eccentric, the said piston, eccentric and square chamber having the relative proportions herein specified.

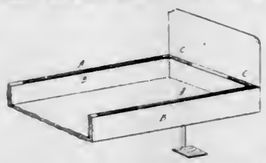
5. A motor comprising a rotatable shaft extending through the center of a closed, square chamber, the said chamber, an equilateral-triangular piston 5, within said chamber and embracing said shaft, an eccentric fixed on said shaft and occupying and fitting an aperture in said piston, a rotary valve controlling the exhaust-ports from said chamber, a rotary, shiftable valve controlling the induction-ports of said chamber and carried by the shaft, a port-plate 17, controlling the induction-ports for reversing, means for shifting the induction-valve with respect to the shaft, for reversing, and means for shifting the said port-plate for reversing, substantially as set forth.

658,557. MECHANICAL MOVEMENT. WILLIAM A. PITT, Manhasset, N. Y. Filed June 16, 1899. Renewed Aug. 23, 1900. Serial No. 27,821. (No model.)



Claim.—A mechanical movement comprising a fixed part having in it a square chamber, a rotatively-mounted shaft which extends through the center of said chamber, an eccentric fixed on said shaft within said chamber, and an equilateral-triangular body, with rounded faces, within said chamber and embracing said eccentric, the center of said triangular body being coincident with the center of said eccentric, substantially as set forth.

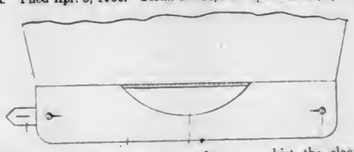
658,558. CARRIAGE CORNER-IRON. EDWARD C. PORTER, New Haven, Conn. Filed Mar. 28, 1900. Serial No. 10,491. (No model.)



Claim.—1. A carriage corner-iron consisting of strips semitubular in transverse section, having inturned edges whereby one of the strips may be held by the heads of screws over which the strip is adapted to be passed, substantially as described.

2. A carriage corner-iron, consisting of two members arranged at right angles to each other, and formed from strips of metal semitubular in transverse section, and having inwardly-turned flanges, one strip provided with screw-holes extending through it, and the other adapted to be secured in position by screws, over the heads of which the strip is adapted to pass, substantially as described.

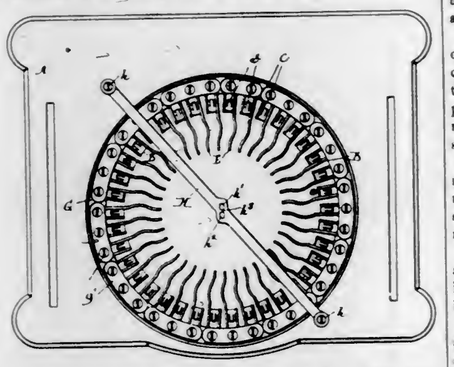
658,559. APPAREL-SHIRT. JOHN RICHARDSON, Horsforth, England. Filed Apr. 5, 1900. Serial No. 11,628. (No model.)



Claim.—As a new article of manufacture, a shirt, the sleeves of which are each provided with a wristband and with a flap attached to the sleeve at the junction of the wristband and sleeve and projecting forward toward the free edge of the wristband, and between which flap and wristband the edge of the cuff is received, substantially as and for the purposes set forth.

658,560. TYPE-WRITING MACHINE. ZALMON G. SHOLES, Evanston, Ill., assignor to the Union Typewriter Company, of New Jersey. Filed Jan. 10, 1898. Serial No. 666,261. (No model.)

Claim.—1. In a type-writing machine, the combination of a type-bar, a pinion fixed to said type-bar, a pivoted yoke or bearing-box whereon said type-bar is revolubly mounted, a hanger wherein said yoke or bearing-box is journaled, one of the arms of the hanger being provided with a curved rack meshing with the teeth of said pinion only at the initial portion of the movement of the type-bar toward the printing-point, whereby the type-bar is caused to revolve in the bearing-box, and means coöperating with the shank of the type-bar for thereafter guiding the type-bar to prevent revolution thereof during the remaining portion of its movement to the printing-point, substantially as described.



2. In a type-writing machine, the combination of a type-bar, a pinion fixed to said type-bar, a pivoted yoke or bearing-box whereon said type-bar is revolubly mounted, a hanger wherein said yoke or bearing-box is journaled, one of the arms of the hanger being provided with laterally-projecting teeth meshing with the teeth of said pinion only at the initial portion of the movement of the type-bar toward the printing-point, whereby the type-bar is caused to revolve in the bearing-box, and means coöperating with the shank of the type-bar for thereafter guiding the type-bar to prevent revolution thereof during the remaining portion of its movement to the printing-point, substantially as described.

3. In a type-writing machine, the combination of a type-bar, a pinion fixed to said type-bar, a yoke or bearing-box wherein said type-bar is revolubly mounted, and a hanger wherein said bearing-box or yoke is journaled, one of the arms of said hanger being extended and provided with a rack-bar adapted to mesh with said pinion to rotate it during the initial swinging movement of said type-bar, and said arm of said hanger being further extended and provided with a depending guide-arm constructed to prevent the revolution of the type-bar when the rack is out of mesh with the pinion, substantially as described.

4. In a type-writing machine, the combination of a type-bar, a pinion fixed to said type-bar and movable therewith, means for swinging the type-bar, a stationary rack for engaging said pinion, and a stationary guide forward of the rack and arranged to act upon a revoluble shank portion of a type-bar to direct its type properly toward the printing-point after the rack has ceased to turn the said pinion, substantially as described.

5. In a type-writing machine, the combination of a bar, a pinion fixed thereto, means for engaging the pinion to rotate it, a yoke or bearing-box whereon said bar is revolubly mounted, a hanger wherein said yoke or bearing-box is journaled, whereby said bar may be swung to the printing-point, a plurality of types arranged on the free end of said bar, and a fixed guide for the types arranged in proximity to the printing-point and including a tapering member, as h^3, constructed to enter the space between the types and thereby aline them, substantially as described.

6. In a type-writing machine, the combination of a bar, a pinion fixed thereto, a yoke or bearing-box whereon said bar is revolubly mounted, a hanger wherein said yoke or bearing-box is journaled whereby the bearing-box and bar may be swung together toward the printing-point, means for engaging the pinion to rotate it during the initial portion of the movement of the bar toward the printing-point, a stationary arm coacting with the shank of the type-bar for preventing revolution of the bar during the latter portion of its movement to the platen, a type fixed upon the free end of the bar, and a fixed guide arranged in proximity to the printing-point for alinement of the type, substantially as described.

7. In a type-writing machine, the combination with a type-bar having a flat side, of a pinion fixed to said type-bar and movable therewith, a rack-bar engaging said pinion, and a guide-arm against which said type-bar will bear as the pinion passes from engagement with the rack-bar, substantially as described.

8. In a type-writing machine, the combination with a type-bar provided with two types, the bodies of which are arranged at a distance apart, of a center guide for said types comprising a bar extending across the type-basket, said bar being provided at its center with two holes for the types, said holes being of a width adapted to snugly inclose the types and thus secure their alinement in one direction and being provided with an intermediate part having downwardly-inclined sides and adapted to snugly fit between the type-bodies, substantially as described.

9. In a type-writing machine, the combination with a series of types, of a curved or annular ink-pad holder arranged exteriorly thereof and open upon its inner side, and an ink-pad arranged within said holder to ink the types upon their return to normal position, said ink-pad holder being provided upon its outer side with an opening for the introduction and removal of said ink-pad, substantially as described.

10. In a type-writing machine, the combination with a series of types, of a curved or annular ink-pad holder arranged exteriorly thereof and open upon its inner side, an ink-pad arranged within said holder to ink the types upon their return to normal position, said ink-pad holder being provided upon its outer side with an opening for the introduction and removal of said ink-pad, and a cover for said opening, substantially as described.

11. In a type-writing machine, the combination of a curved or annular ink-pad holder, and a curved or annular ink-pad provided with a metal strip having bent edges which engage the edges of said ink-pad to stiffen the same so as to permit the ink-pad to be readily inserted into and removed from the holder by endwise movements, substantially as described.

12. In a type-writing machine, the combination of a series of types arranged in a curve or circle, a curved or annular ink-pad holder arranged in proximity to the types, an inking-pad, and mechanical devices for feeding the pad endwise into and out of the holder, substantially as described.

13. In a type-writing machine, the combination of a series of types arranged in a circle, an inking-pad having ends, and an annular pad-holder arranged around the types and in proximity thereto and having an opening from the outside for the insertion of one end of the ink-pad, whereby the pad may be inserted endwise in the holder without bunching the types together or removing them from the machine, substantially as described.

14. In a type-writing machine, the combination of a series of types arranged in a curve or circle, an inking-pad having ends, and a curved or annular pad-holder arranged in proximity to the types and having an opening in that portion which is farthest from the types, whereby the pad may be inserted endwise in the holder without bunching the types or removing them from the machine, substantially as described.

15. In a type-writing machine, the combination of a series of types arranged in a circle, an inking-pad having ends, an annular pad-holder arranged around the types and in proximity thereto and having an opening on the outside for the insertion of the pad whereby the pad may be inserted endwise in the holder without bunching the types together or removing them from the machine, and a cover for said opening to form a support for the pad, substantially as described.

16. In a type-writing machine, the combination with an ink-pad, of a metal strip having toothed edges adapted to be bent over the edges of the pad, whereby said pad is stiffened and whereby one of its edges is provided with a toothed surface to permit the pad to be readily inserted into a holder, substantially as described.

17. A means for inserting an ink-pad into its holder comprising a spur-wheel or pinion, a shaft and crank for operating the same and a bracket for sustaining said shaft, substantially as described.

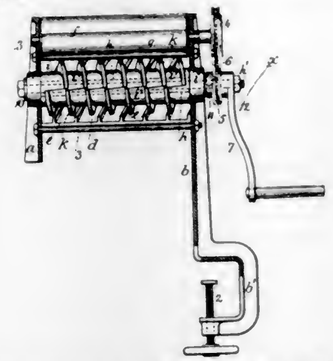
18. In a type-writing machine, the combination with an ink-pad holder having an opening in its upper edge, of a spur-wheel or pinion adapted to enter said opening and engage the pad within the holder, a crank and shaft for turning said spur-wheel or pinion and a suitable support for said crank or shaft, substantially as described.

19. The combination with an ink-pad, of a metal strip having a toothed upper edge, a holder for receiving said ink-pad, a spur-wheel or pinion for engaging the toothed edge of the metal strip, a crank and shaft for turning said pinion and a bracket or support for said shaft, substantially as described.

658,561. PEA-SHELLER. LEWIS A. ASPINWALL, Jackson, Mich., assignor to the Aspinwall Manufacturing Company, same place. Filed Dec. 16, 1899. Serial No. 740,529. (No model.)

Claim.—1. In a pea-sheller, the combination with the frame, of feeding devices, concaves for receiving and advancing the pea-pods, a cylinder having a ribbed surface, ribs in the concaves acting in connection with the ribbed cylinder for causing a rolling and crushing of the pods to open the same and separate the peas from the pods, and means for delivering the peas and pods separately, substantially as set forth.

2. In a pea-sheller, the combination with the frame and an inclined feed-table, of a longitudinally-grooved feed-roller, a cylinder having a ribbed surface, and means for turning the cylinder and the feed-roller together in the same direction, concaves surrounding part of the cylinder and ribs in the concaves acting with the ribbed cylinder for imparting to the pods a rolling action and crushing pressure to open the same and separate the peas from the pods, and means for separately delivering the peas and an extension to one concave over which the pods are delivered, substantially as set forth.



3. The combination in a pea-sheller with the frame and the inclined feed-table, of a longitudinally-grooved feed-roller for receiving the pods sidewise, a cylinder below the feed-roller having a yielding spiral rib, concaves surrounding part of the cylinder and provided with ribs in the same general direction as the rib of the cylinder, means for rotating the feed-roller and the cylinder together and a delivery-incline for the peas, substantially as set forth.

4. In a pea-sheller, the combination with means for feeding the pea-pods, of the concaves d and d', the concave d' being perforated, spirally-arranged ribs e e' upon the inner surfaces of said concaves, said ribs being stepped off or reduced at their forward higher portions, a cylinder between and within the limits of the concaves, a yielding rib arranged spirally upon said cylinder and adapted to act in connection with the ribs of the concaves longitudinally upon the pea-pods to roll, crush and open the same and separate the peas and deliver the peas and the pods separately, substantially as set forth.

5. In a pea-sheller, the combination with the heads and means for feeding the pea-pods sidewise, of the concave d imperforate and having a straight upright portion, the concave d' perforated and having a horizontal portion, the adjacent curved edges of the concaves meeting, spirally-arranged ribs on the inner surface of the concaves and extending upon the straight horizontal portion of the concave d' and between the perforations therein, the forward or advancing end of the said ribs being reduced or stepped off upon the concave d, supports for the concaves in the frames of the machine, a cylinder within the space between the concaves and means substantially as set forth for acting upon the pea-pods to open the same and separate the peas from the pods, substantially as set forth.

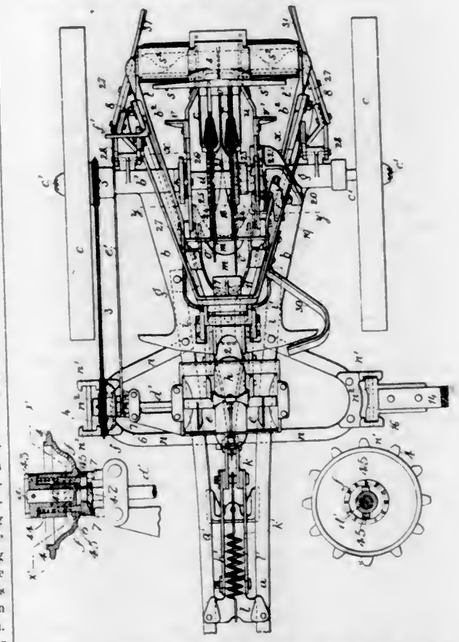
6. In a pea-sheller, the combination with the heads and means for feeding the pea-pods sidewise, of the concave d imperforate and having a straight upright portion, the concave d' perforated and having a straight horizontal portion, the adjacent curved edges of the concave meeting, spirally-arranged ribs on the inner surface of the concaves and extending upon the straight horizontal portion of the concave d' and between the perforations therein, the forward or advancing end of the said ribs being reduced or stepped off upon the concave d, supports for the concaves in the heads of the machine, a cylinder within the space between the concaves and means substantially as set forth and connected with the cylinder for acting upon the pea-pods to open the same and separate the peas from the pods, and a delivery-incline between the heads beneath the perforations of the concave d' for receiving the peas and directing the same into a receptacle, substantially as set forth.

7. In a pea-sheller, the combination with means for feeding the pea-pods sidewise and concaves for receiving the same as delivered, of a cylinder composed of a central shaft, screw-segments i' similar to one another and lapping into one another and mounted upon the said shaft, and a yielding flange fitted between the adjacent edges of the segments and forming a spiral rib around the cylinder, substantially as set forth.

8. In a pea-sheller, the combination with means for feeding the pea-pods sidewise and concaves for receiving the same as delivered, of a cylinder composed of a central shaft, a sleeve h around the shaft, screw-segments i' surrounding the sleeve and made alike, so that the parts of one lap the parts of each adjacent one, a rubber flange k formed of split rings placed between the adjacent faces of the respective screw-segments, means for holding the screw-segments and the said split rings together and form of the split rings the spiral rubber flange k, substantially as set forth.

9. In a pea-sheller, the combination with means for feeding the pea-pods sidewise and concaves for receiving the same as delivered, of a cylinder composed of a central shaft, a sleeve h around the shaft, screw-segments i' surrounding the sleeve and made alike, so that the parts of one lap the parts of each adjacent one, a rubber flange k formed of split rings placed between the adjacent faces of the respective screw-segments, means for holding the screw-segments and the said split rings together upon the sleeve h so as to compact and hold the parts together and form of the split rings the spiral rubber flange k, the periphery of the said flange being corrugated and the end screw-segments forming the cylinder made as bearings for the journals in the frames of the pea-sheller, substantially as set forth.

658,562. POTATO-PLANTER. LEWIS A. ASPINWALL, Jackson, Mich., assignor to the Aspinwall Manufacturing Company, same place. Filed Jan. 29, 1900. Serial No. 3,085. (No model.)



Claim.—1. The combination in a potato-planter with a hopper for a fertilizer and means for delivering the same, of a divided pole and means for attaching the fertilizer devices to the pole so that the same come between and over the two parts of the pole and the fertilizer is delivered to the furrow in the longitudinal center of the machine, substantially as set forth.

2. The combination in a potato-planter, of a fertilizer attachment and supports therefor in the forward part of the machine, means for actuating the fertilizer attachment to deliver the fertilizer to the furrow, a plow in the forward part of the machine in advance of the place of delivery of the fertilizer, and a spreader 11 connected to the support of the plow and coming immediately in the rear of the plow, and a chute for the fertilizer located above the spreader and a chute for the potatoes back of the fertilizer chute and spreader, substantially as set forth.

3. The combination in a potato-planter with a divided pole and a plow, of links pivoted to the forward part of the plow, links pivoted to the divided pole and to the links of the plow, and a spring extending from the divided pole to the pivot of the respective links, the office of which is to assist the driver of the machine in elevating the plow, substantially as set forth.

4. In a potato-planter, the combination with the pole, of a frame secured thereto and extending transversely in the form of a loop, a marker-bar and an adjustable cross-bar connected thereto and means for connecting the marker-bar to the said frame at either side of the potato-planter, substantially as set forth.

5. In a potato-planter, the combination with the pole, of a frame secured thereto and extending transversely in the form of a loop, a marker-bar and an adjustable cross-bar connected thereto and means for connecting the marker-bar to the said frame at either side of the potato-planter,

forked lugs having a cross-pin connected to the frame upon opposite sides of the machine and a U-shaped head connected to the end of the marker-bar whereby the marker-bar may be connected to the forked lugs upon either side of the machine and is inserted in the forked lugs in a vertical position and when turned down for use the U-head of the marker-bar is locked in the forked lugs, substantially as set forth.

6. In a potato-planter, the combination with the frame and a plow for opening the furrow, a hopper for potatoes, and means substantially as set forth, for engaging and delivering the potatoes, of a chute rearward of the plow and fastened to the frame of the machine to receive the potatoes as delivered, an adjustable and extensible end to said chute outside of and connected to the main portion of the chute and adapted to reopen the furrow in the soil to the proper depth for the delivery of the potatoes into the ground, substantially as set forth.

7. In a potato-planter, the combination with the plow, a frame for supporting the same pivoted to the main frame of the machine, a hopper for fertilizer and fertilizer-delivery devices supported upon the pole of the machine and a shaft and devices actuating the same for operating the fertilizer devices to deliver the fertilizer, of an automatic spring-actuated clutch upon the shaft of the fertilizer attachment, an arm and cam-faces connected thereto and a rod extending from the arm and a connection therefrom to the frame of the plow whereby when the plow is raised the clutch is disengaged and the fertilizer device rendered automatically inoperative, substantially as set forth.

8. In a potato-planter, the combination with the plow, a frame pivoted to the main frame and supporting the plow and an arm connected to said frame and extending approximately vertical, of pickers and means for mounting the same upon the axle of the driving-wheels, a clutch upon said axle for engaging the support of the pickers and causing their rotation, a sleeve upon the clutch and an arm connected therewith and engaged and operated by the vertical bar on the plow-frame whereby the rotary movement of the pickers is automatically stopped by the raising of the plow or the pickers are brought into action by the lowering of the plow in the operation of the machine, substantially as set forth.

9. In a potato-planter, the combination with a hopper for holding potatoes, of an agitator in the base of the hopper, edge guides formed with the agitator and inclines below the agitator down which the potatoes pass, gates acting in connection with the inclines for checking the flow of the potatoes, and means, substantially as specified, and operating automatically with each rotation of the driving-wheels for controlling the delivery of the potatoes, substantially as set forth.

10. In a potato-planter, the combination with a hopper for holding potatoes, of an agitator in the base of the hopper, edge guides formed with the agitator and inclines below the agitator down which the potatoes pass, gates acting in connection with the inclines for checking the flow of the potatoes, a plow and a frame carrying the same pivoted to the main frame, a support for the gates and means actuated by the raising of the plow for causing the gates and their frame to remain stationary to shut off the delivery of the potatoes, substantially as set forth.

11. In a potato-planter, the combination with a hopper for holding potatoes, of an agitator in the base of the hopper, edge guides formed with the agitator and inclines below the agitator down which the potatoes pass, gates acting in connection with the inclines for checking the flow of the potatoes, a frame pivoted to the main frame of the machine and carrying the said gates, footpieces or wings also supported by said frame and extending downward into the hopper of the machine whereby the flow of potatoes into the hopper automatically raises the said wings or footpieces and the said gates to shut off the supply of potatoes, substantially as set forth.

12. The combination in a potato-planter with a hopper for containing the supply of potatoes, of an agitator in the lower portion of the hopper having edge guides, an incline below the agitator for delivering the potatoes, gates acting in connection with the inclines for controlling the delivery of the potatoes, a frame pivoted to the main frame of the machine and carrying the said gates, the center of the frame coming below the agitator and supporting the same and a cam on the driving-wheel axle adapted to raise and lower the said frame with every revolution of the driving-wheels and thereby raising the agitator, substantially as set forth.

13. In a potato-planter, the combination with a receptacle for potatoes and means for delivering the same therefrom and into the ground, of coverers, a frame to which the same are connected, the said coverers extending downward and rearward of the potato-planter, a spring connected to the main frame and to the coverer-frame and adapted to hold the coverers down and which yields when the coverers pass over inequalities in the ground, substantially as set forth.

14. In a potato-planter, the combination with a receptacle for potatoes and means for delivering the same therefrom and into the ground, of coverers, a frame to which the same are connected, the said coverers extending downward and rearward of the potato-planter, a spring connected to the main frame and to the coverer-frame and adapted to hold the coverers down and which yields when the coverers pass over inequalities in the ground, and a frame connected to the pivoted frame of the coverers and adapted to swing the coverer-frame and raise the coverers, and a means for holding the forward end of said frame down and the coverers elevated, substantially as set forth.

15. In a potato-planter, the combination with a hopper for holding potatoes, means for delivering said potatoes from the hopper and for removing the same and delivering them into the furrow in the ground, of a yoke-frame, pivots for securing the ends of the yoke-frame to the main frame of the machine closely adjacent to the axle of the driving-wheels, coverers connected to the said yoke-frame and extending downward and rearward and converging at their extreme ends toward one another, and a spring connected at one end to the main frame and at the other end to the yoke-frame and adapted to hold the coverers down against the soil, substantially as set forth.

16. In a potato-planter, the combination with a hopper for holding potatoes, means for delivering said potatoes from the hopper and for removing the same and delivering them into the furrow in the ground, of a yoke-frame, pivot-bolts for securing the ends of the yoke-frame to the main frame of the machine closely adjacent to the axle of the driving-wheels, coverers connected to the said yoke-frame and extending downward and rearward and converging at their extreme ends toward one another, and a spring connected at one end to the main frame and at the other end to the yoke-frame and adapted to hold the coverers down against the soil, a foot-lever connected to the yoke-frame and extending forward, a plow and a frame carrying the same and pivoted to the main frame of the machine and a lifter pivoted to the plow-frame and extending upward and having a hooked portion whereby when the plow is elevated by the lifter and the foot-lever is pressed down to elevate the coverers, the said lifter and foot-lever may be connected by the hook of the lifter and both parts locked in an elevated position, substantially as set forth.

17. In a potato-planter, the combination with a hopper for fertilizer and fertilizer-delivery devices and the support therefor, of a shaft extending through the fertilizer-hopper, a sprocket upon the shaft, a sprocket on the shaft of the driving-wheel and a chain connecting the same, cam-faces, means connected thereto for operating the cam-faces with the movements of the plow and frame for throwing the sprocket on the shaft of the fertilizer devices out of gear, and means for again connecting the said sprocket when the cam-faces return to a normal position, substantially as set forth.

18. In a potato-planter, the combination with a hopper for fertilizer and fertilizer-delivery devices, and a support therefor, of a shaft extending through the fertilizer-hopper, a sleeve loose upon said shaft, a sprocket connected to said sleeve and having part of the teeth of the clutch thereon, slide-bars in ways between the clutch and the sleeve, cam-faces, a rod and means for operating the same by the movement of the plow and frame, and spring-actuated parts moved by the said slide-bars with the action of the cam-faces for separating the teeth of the clutch, substantially as set forth.

19. In a potato-planter, the combination with a hopper for fertilizer and fertilizer-delivery devices and the support therefor, of a shaft extending through the fertilizer-hopper, a sleeve loose upon said shaft, a sprocket connected to said sleeve and having part of the teeth of the clutch thereon, slide-bars in ways between the clutch and the sleeve, cam-faces, a rod and means for operating the same by the movement of the plow and frame, a hub 44 having clutch-teeth on one end adapted to engage the teeth of the sprocket, a sleeve and cross-arms 43 secured to the shaft of the fertilizer devices, a spring between the cross-arms 43 and a flange of the hub 44, whereby the movement of the slide-bars longitudinally by the action of the cam-faces separates the teeth of the clutch to stop the movement of the fertilizer devices, and when the cam-faces return to their normal position, the said spring actuates the part to again engage the clutch-teeth, substantially as set forth.

658,563. BOOKBINDING. LEONARD BAILEY, Wethersfield, Conn. Filed June 11, 1900. Serial No. 19,833. (No model.)



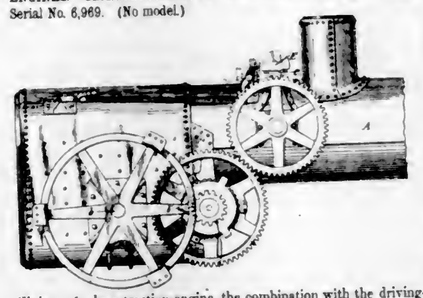
Claim.—1. That improvement in the art of binding books which consists in forming a pad of leaves, fastened together along the back edge of the pad; in laying open the pad upon a book-cover, with a strip of rubber cloth between them; in placing such open pad and cover, with such intermediate strip of rubber cloth, upon a heated form, and in subjecting the same to pressure while so placed, substantially as and for the purpose specified.

2. That improvement in the art of binding books which consists in forming a pad of leaves, held together at the back edge, and a cover fit to be bound upon such pad; in placing such pad upon such cover, both wide open, with a strip of rubber cloth between them; in heating such rubber cloth to the point of softening; and in pressing such opened pad, cover and intermediate heated rubber strip together; substantially as and for the purpose specified.

3. That improvement in the art of bookbinding which consists in placing a pad, which is held together and ready for binding, and a cover, which is fit to be bound upon such pad, in juxtaposition with each other, and with an intermediate strip of rubber cloth; in heating such intermediate rubber cloth to the point of softness; and in pressing such heated cloth between such pad and cover; substantially as and for the purpose specified.

4. That improvement in the art of binding books which consists in placing a strip of rubber cloth in contact both with the leaves of the book, at their back edge, and also with adjacent portions of the back or cover of the book, and in simultaneously heating and pressing together such rubber cloth and contiguous parts of the book; substantially as and for the purpose specified.

658,564. DEVICE FOR HOLDING OR BLOCKING TRACTION-ENGINES. GEORGE F. CONNER, Port Huron, Mich. Filed Mar. 1, 1900. Serial No. 6,969. (No model.)



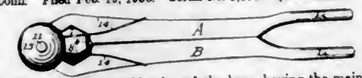
Claim.—1. In a traction-engine, the combination with the driving-gear train, of a fixed arm carried by the engine adjacent the gear, an arm pivoted on said fixed arm, a pawl pivoted on said pivoted arm, a rod connected to said pivoted arm, and a lever to which the opposite end of the rod is connected, said pawl engaging the teeth of one of the gears, substantially as described.

2. In a traction-engine, the combination with the engine-body, of a train of gears for driving the engine forward, an arm fixedly secured to the body, a pivoted arm mounted on said arm adjacent to one of the gears, a pawl or pawls pivotally secured to said pivoted arm and arranged to engage with the teeth of said adjacent gear, and means for rocking said pivoted arm sufficient to lift pawls clear of the gear, and extending to rear of the engine, substantially as described.

3. In a traction-engine, the combination with the engine-body, of a train of driving-gears, a fixed arm mounted on the body adjacent to one of the gears, a pivoted arm mounted on said fixed arm, a pawl carried by said pivoted arm and engaging the adjacent gear, means extending to the rear of the engine for actuating said pivoted arm and a fixed stop for limiting the forward movement of said arm, substantially as described.

4. In a traction-engine, the combination with the engine-body, of a train of driving-gears, a fixed arm mounted on the body adjacent to one of the gears, a pawl supported by said fixed arm and engaging the adjacent gear and automatically locking the same when said gear is run backward, means extending to the rear of the engine for engaging or releasing said pawl, and a fixed stop for limiting the forward movement of said locking-pawl, substantially as described.

658,565. AXLE-NUT WRENCH. JOHN DERBLE, Southington, Conn. Filed Feb. 19, 1900. Serial No. 5,858. (No model.)

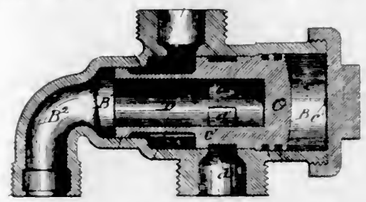


Claim.—1. The combination of the lever having the main portion of the wrench-socket formed thereon, the said socket having two parallel transverse faces and a bottom face, with the companion lever pivoted to the said first lever and having a holding-face opposite the open space between the said two parallel faces for retaining the nut in the socket portion of the said first lever, substantially as described.

2. The combination of the two levers pivoted together as nearly at their ends as is practical and having the wrench-socket and stop-shoulders 16, 17, formed thereon, the said wrench-socket being just inside of the said pivoted ends, with the spring acting to normally close the wrench-socket of the said levers, the said stop-shoulders acting to limit the separation of the said levers, substantially as described.

3. The combination of the two levers A, B, having rounded knuckle-lugs at their extreme outer ends by means of which lugs they are pivoted together, a handle projecting to one side of the said pivotal lugs and serving as a crank, the laterally-projecting wrench-socket formed on the handle portion of the said levers, and means for holding the said wrench-socket on the nut, whereby the crank-handle is at one extreme end of the two levers instead of at the middle portion between their ends, substantially as described.

658,566. FEED-WATER HEATER. JOHN F. DEEMS, Burlington, Iowa. Filed June 18, 1900. Serial No. 20,692. (No model.)



Claim.—1. In a water-heater for locomotive-tanks, the combination of a horizontal valve-casing having therein a steam-induction port communicating with the exhaust of an air-compressing pump, a steam-eduction port and a steam-eduction passage for direct exhaust and for exhaust into a heater located in the water-tank, respectively, a chamber in the casing communicating with the ports and passage, a piston-valve traversing the chamber longitudinally and having an interior chamber, a peripheral channel communicating with the interior chamber and with the steam-induction port and a peripheral passage communicating with the steam induction and eduction ports, a fluid-pressure regulator operated by the temperature of the water in the tank, and a fluid-pressure port at one end of the casing-chamber, for moving the valve by the differential pressure thereon of steam and fluid to change the direction of the eduction or discharge of steam through the valve, substantially as described.

2. In a water-heater for locomotive-tanks, the combination of a horizontal valve-casing having therein a steam-induction port communicating with the exhaust of the air-compressing pump, a steam-eduction port, and a steam-eduction passage for direct exhaust and for exhaust into a heater located in the water-tank, respectively, a chamber in the casing having ends of different diameter, a piston-valve traversing the casing-chamber longitudinally and having ends of different diameters to fit the ends of the casing-chamber, and having an interior chamber, a peripheral channel communicating with the interior chamber and with the steam-induction port and a peripheral passage communicating with the steam induction and eduction ports, a fluid-pressure regulator operated by the temperature of the water in the tank, and a fluid-pressure port at one end of the casing-chamber, for moving the valve by the differential pressure on the ends of steam and fluid to change the direction of the eduction or discharge of steam, substantially as described.

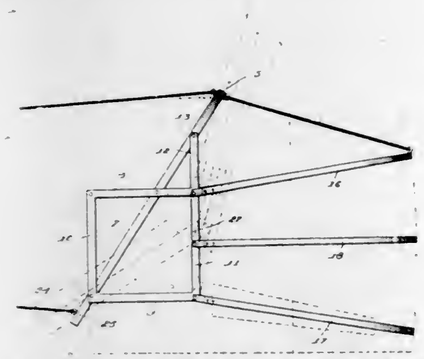
3. In a water-heater for locomotive-tanks, the combination of a horizontal valve-casing, having therein a steam-induction port communicating with the exhaust of the air-compressing chamber, a steam-eduction port and a steam-eduction passage, for direct exhaust and for exhaust into a heater located in the water-tank, respectively, a chamber in the casing having ends of different diameters, a piston-valve traversing the casing-chamber longitudinally and having ends of different diameters to fit the ends of the casing-chamber, a seat on the wall of the chamber and a face on the valve fitting the seat, an interior chamber in the valve, a peripheral channel on the valve, lateral openings from the peripheral channel to the valve-chamber furnishing communication between the induction-port for steam and the valve-chamber, a peripheral passage on the valve furnishing communication between the steam induction and eduction ports, a fluid-pressure regulator operated by the temperature of the water in the tank, and a fluid-pressure port at one end of the casing-chamber admitting fluid-pressure to the chamber, for the valve to be moved by the differential pressure of steam and fluid to change the direction of the eduction or discharge of steam, substantially as described

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658,567. THRESHING-MACHINE ATTACHMENT. ELMER G. HOWARD, Crain Creek, Iowa. Filed Oct. 14, 1899. Serial No. 733,630. (No model.)

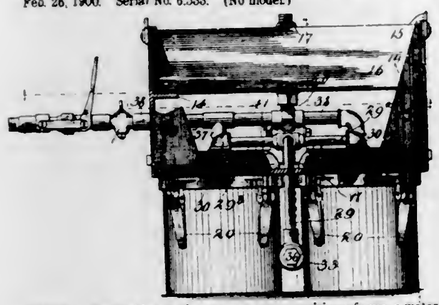
Claim.—1. In an attachment for straw-carriers, the combination, with two frames, of a bow having its ends secured to the frames, and its

middle portion extending above and to the rear thereof, a series of covered bows pivotally secured at their ends to said frames, means for pivotally securing said frames to the sides of a straw-carrier, cords connected with one of the frames and with the top of the bow respectively, substantially as described.



2. In an attachment for straw-carriers, the combination, with two rectangular frames, the rear end bars of each of which is perforated and extends above the top bar of the frame, of a bow, the ends of which are secured respectively diagonally across each frame and to the top of the extended end bars, a series of covered bows pivotally secured to the frames, bolts through the perforations in the end bars for pivotally securing the attachment to the end of a straw-carrier, and cords secured to one of the frames and to the top of the bow, respectively, substantially as described.

658,568. ACETYLENE-GENERATOR. JOHN A. MOSHER, Chicago, Ill., assignor to the Adams & Westlake Company, of Illinois. Filed Feb. 26, 1900. Serial No. 6,533. (No model.)

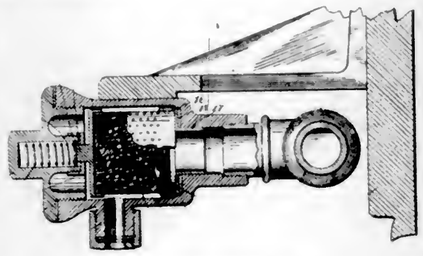


Claim.—A portable acetylene-generator comprising a frame, a water tank supported by the frame, a generating-cell cap fixed to the frame below the water-tank, a cell in jar form, means for detachably securing the cell to the cap, a reticulated carbid-basket within the cell and spaced apart therefrom at the top, bottom and sides, a water-pipe leading from the tank to the cell and entering the latter through the cap, such pipe extending below the cap intermediate of its ends, a check-valve in the depressed portion of the water-pipe, and a gas-pipe leading from the cell and being adapted for attachment to a gas-distributing system.

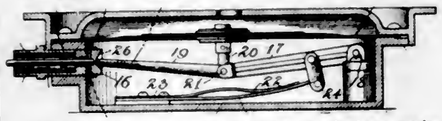
658,569. GAS-STRAINER. JOHN A. MOSHER and WILLIAM S. HAMM, Chicago, Ill., assignors to the Adams & Westlake Company, same place. Original application filed Aug. 7, 1899, Serial No. 726,351. Divided and this application filed Feb. 19, 1900. Serial No. 5,716. (No model.)

Claim.—1. In a gas-strainer, in combination, a case having induction and eduction ports, a receptacle made of perforated material for containing fibrous straining material and adapted to cover one of the ports, an apertured removable cap for the case, a spring bearing upon the receptacle to force it against the port, and a screw-plug in the aperture of the cap bearing upon the spring.

2. In a gas-strainer, in combination, a casing having an induction-port at one side and an eduction-port at one end, a fiber-filled receptacle made of perforated material seated over the eduction-port and having its end adjacent thereto countersunk, a cap for the opposite end of the receptacle and having an outwardly-projecting stem, a screw-plug closing the end of the casing adjacent to such cap and being apertured from within, and a spring fitted within such aperture and pressing upon the stem of the receptacle-cap.



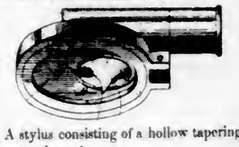
658,570. PRESSURE-REGULATOR. JOHN A. MOSHER and WILLIAM WISHART, Chicago, Ill., assignors to the Adams & Westlake Company, of Illinois. Filed Apr. 16, 1900. Serial No. 13,032. (No model.)



Claim.—1. In a gas-pressure regulator, in combination, a case having induction and eduction ports, a valve for the induction-port, a flexible diaphragm within the case, a lever actuated by the diaphragm and having a thrust-bearing against the valve, and a spring connection between the lever and the valve to hold them in contact.

2. In a gas-pressure regulator, in combination, a case having induction and eduction ports, a flexible diaphragm within the case, a valve applied to the induction-port, a toggle having one member pivotally anchored to the case and its other end having a thrust-bearing against the valve, spring connection between the valve and the toggle to hold them in contact, connection between the diaphragm and the toggle, and a leaf-spring for flexing the toggle and being fixed to a wall of the case and applied to the anchored toggle member.

658,571. GRAPHOPHONE-POINT. JAY W. MOYER, Philadelphia, Pa. Filed June 22, 1900. Serial No. 21,220. (No model.)

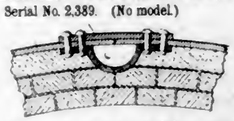


Claim.—1. A stylus consisting of a hollow tapering glass body, and a glass tip on the apex thereof.

2. A stylus consisting of a hollow tapering body and a tip on the apex thereof, said tip projecting from said apex at an angle thereto.

3. A stylus consisting of a hollow tapering body, and a tip on the apex thereof in combination with a reproducer and a diaphragm on the latter, said body being secured to said diaphragm and said diaphragm having an opening which is in communication with the chamber of said body.

658,572. DIGESTER. EDGAR G. MURPHY, Sandy Hill, N. Y. Filed Jan. 22, 1900. Serial No. 2,389. (No model.)



Claim.—1. A digester, the shell of which is constructed of a section or sections of sheet metal, meeting edges of which are provided with an interior butt-strap, a portion of which is arched or bowed inward away from the same, to protect the seam, and a cement lining for the digester, the same being placed in separate and independent masses at the sides of the arched or bowed portions of the said butt-strap, such portions of the butt-strap projecting completely through the cement, to break the continuity thereof.

2. A digester, the shell of which is constructed of a metallic plate or plates, meeting edges of which are joined by a butt strap or straps, portions of which are projected inward from the shell, and a cement lining laid against the shell, the said inwardly-projected portions of the butt strap or straps passing completely through the lining, the butt-straps serving to protect the seam in the digester-shell and also to break the continuity of the cement, which is thus formed into a number of separate and independent masses.

658,573. STRAINER. JOHN J. MURPHY, Vincennes, Ind., assignor to the T. S. Teuscher Commission Company, St. Louis, Mo. Filed July 14, 1900. Serial No. 23,580. (No model.)



Claim.—1. The combination with perforated plates, of a ring 2 for separating the same, fabric arranged externally of, and of less diameter than, said plates, so as to provide a space beyond the edges of the fabric for the reception of spacing-rings, and means for securing said fabric in position; substantially as described.

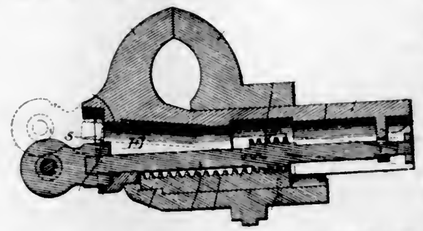
2. The combination with perforated plates, of a ring 2 for separating the same, wire mesh arranged externally said plates, fabric arranged over said wire mesh, said mesh and fabric being of less diameter than the plates so as to leave a space therebeyond for the reception of spacing-rings, means for securing said fabric and mesh in place, and spacing-rings; substantially as described.

3. The herein-described spacing-ring provided with laterally-opening grooves near its periphery, and packing arranged in said grooves and extending beyond the edges of the spacing-ring; substantially as described.

4. The herein-described spacing-ring comprising inner and outer rings secured together, said rings forming seats or grooves which open laterally, and packing in said seats or grooves; substantially as described.

5. The combination with a sieve comprising a hollow body portion, fabric secured in position upon the side faces of said hollow body portion, space being left beyond the outer edges of the fabric for the reception of spacing-rings, and spacing-rings provided with laterally-extending packing to coöperate with the seats in the spaces provided on the sieves for its reception; substantially as described.

658,574. VISE. VINCENT J. MCDONNELL, Philadelphia, Pa. Filed Jan. 30, 1900. Serial No. 3,284. (No model.)



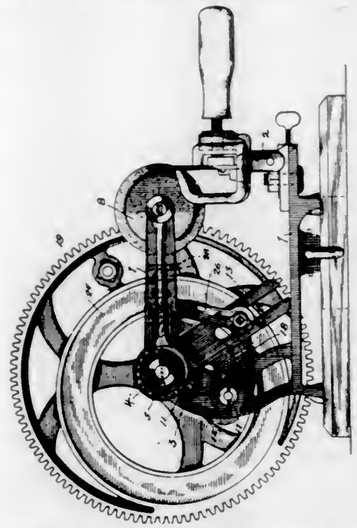
Claim.—1. In a vise, a rotary and sliding operating-shaft for a movable jaw thereof, and gearing for said shaft, said shaft being adapted to be geared and ungeared and shoulders at different altitudes on the wall of the opening which said shaft occupies to support the head of the shaft in elevated and lowered positions.

2. In a vise, a movable jaw, a shaft adapted to operate the latter by rotary and sliding motions, a box on said jaw receiving said shaft, and a depending shoe on the upper wall of the interior of said box on which said shaft rides during the sliding motions of the shaft in the primary adjustment of said jaw.

3. A vise, a stationary jaw, a movable jaw, a box on the latter, a gear-carrying shaft mounted in said box and adapted to be raised and lowered, a head on said shaft, a rack on the bed of the vise with which the gear of the shaft may engage, and shoulders at the forward end of said box, the same being at different altitudes to receive the head of the shaft to support the latter in its geared and ungeared positions.

4. A vise consisting of a stationary jaw, a bed supporting the same, a movable jaw, a box carrying the latter, a rack on said bed, a headed shaft in said box, a gear on said shaft adapted to mesh with said rack, said shaft being adapted to be elevated and lowered and thus disengaged from said rack, shoulders on said box at different altitudes to receive the head of said shaft in its raised and lowered positions respectively and a depending shoe in the upper side of the interior of said box on which said shaft when elevated is adapted to ride.

658,575. GRINDING-MACHINE. JOHN H. MCELROY, Chicago, Ill. Filed Oct. 30, 1899. Serial No. 735,261. (No model.)



Claim.—1. In a machine of the class described, the combination of the driving-wheel having a cam-track thereon, with a swinging frame pivotally mounted in relation to said driving-wheel, a stationary member having a slot therein, and a link having one end connected to the swinging frame and its other end coöperating with said cam-track and said slot.

2. In a machine of the class described, the combination of the driving-wheel having a cam-track thereon, with a swinging frame pivotally mounted in relation to said driving-wheel, a grinding-wheel journaled in said frame, connections between the driving-wheel and the grinding-wheel for rotating the same, a stationary member having a slot therein, and a link having one end pivotally connected to the swinging frame and its other end coöperating with said cam-track through the said slot.

3. In a device of the class described, the combination of the driving-wheel having a cam-track thereon, with a swinging frame pivotally mounted in relation to said driving-wheel, a stationary member having a slot therein, and a link having one end connected to the swinging frame and its other end coöperating with said cam-track and said slot, the connections between said link and the swinging frame being adjustable to vary the length of the swing of said frame.

4. In a device of the class described, the combination of the driving-wheel having a cam-track thereon, with a swinging frame pivotally mounted in relation to said driving-wheel, a stationary frame in which said driving-wheel is mounted, a yoke adjustably mounted on the stationary frame and having a radial slot therein, and a link pivotally connected to the swinging frame and also coöperating with said cam-track and said slot, substantially as and for the purpose described.

5. In a device of the class described, the combination of the driving-wheel having a cam-track thereon, with a swinging frame pivotally mounted in relation to said driving-wheel, a member movably connected to said swinging frame and coöperating with the cam-track, and means for preventing the movement of said member longitudinally of said cam-track.

6. In a device of the class described, the combination of the standard having the driving-wheel mounted therein, with a swinging frame pivotally mounted on said standard relative to the driving-wheel, a grinding-wheel journaled in said frame, connections between the driving-wheel and grinding-wheel for rotating the latter, and mechanism for swinging said frame as the driving-wheel is rotated comprising a cam-track on the driving-wheel for controlling the swinging movement of said frame.

7. In a device of the class described, the combination of the standard,

having the driving-wheel provided with a cam-track mounted thereon, with a swinging frame pivotally mounted in relation to the driving-wheel, a yoke member adjustably secured on the standard, a grinding-wheel journaled in said frame, connections between the driving-wheel and the grinding-wheel for rotating the latter, and mechanism for swinging said frame as the driving-wheel is rotated comprising a pivoted member upon the frame coöperating with the yoke member and the cam-track on the driving-wheel for controlling the swinging of said frame.

8. In a device of the class described, the combination of the standard having the driving-wheel provided with a cam-track mounted thereon, with a swinging frame pivotally mounted in relation to the driving-wheel and having a grinding-wheel mounted therein, connections between the driving-wheel and the grinding-wheel for rotating the latter, and mechanism for swinging said frame as the driving-wheel is rotated comprising a link pivoted to the frame and coöperating with the cam-track and mechanism to prevent it from moving longitudinally thereof.

9. In a device of the class described, the combination of the standard, having the driving-wheel provided with a cam-track mounted thereon, with a swinging frame pivotally mounted in relation to the driving-wheel and the grinding-wheel journaled in said frame, connections between the driving-wheel and the grinding-wheel for rotating the latter, and mechanism for swinging said frame as the driving-wheel is rotated comprising a link pivoted to the frame and coöperating with the cam-track and a stationary slot in connection with the standard.

10. In a device of the class described, the combination with the standard having the driving-wheel with the cam-track thereon mounted therein and means for rotating it, of the swinging frame pivotally mounted in relation to the wheel, a member pivotally connected to said frame and coöperating with the cam-track, connections between the standard and said member to prevent the movement of the latter longitudinally of the cam-track, and for simultaneously disconnecting said member from the cam-track and securing it to the standard.

11. In a device of the class described, the combination with the standard having the driving-wheel with the cam-track thereon mounted therein, and means for rotating the driving-wheel, of the swinging frame pivotally mounted in relation to the wheel, a link pivotally connected to said frame and coöperating with the cam-track, a guide in the standard with which said link coöperates to prevent movement thereof longitudinally of the cam-track, and means for simultaneously disconnecting the link and the cam-track and clamping the link to the standard.

12. In a device of the class described, the combination with the standard having a driving-wheel with the cam-track thereon mounted therein, and means for rotating the driving-wheel, of the swinging frame pivotally mounted in relation to the wheel, a link pivotally connected to said frame and coöperating with the cam-track, a guide in the standard with which said link coöperates to prevent movement thereof longitudinally of the cam-track, and means for simultaneously disconnecting the link and the cam-track and clamping the link to the standard, comprising the bolt 36 screwed into said link and having the antifriction-roller 25 thereon and carrying the washer 37 adapted to clamp the link to the standard when the antifriction-roller is withdrawn from the cam-track.

13. In a device of the class described, the combination of the driving-wheel having the cam-track 24 thereon, with the standard having the slot 27 therein, the swinging frame pivotally mounted upon the standard, the link 26 pivotally connected to the swinging frame and having the bearing-lug 41 passing through the slot 27, and the bolt 36 screwed into the link 26 through the lug 41 and having its outer end provided with the antifriction-roller 25 and the washer 37, substantially as and for the purpose described.

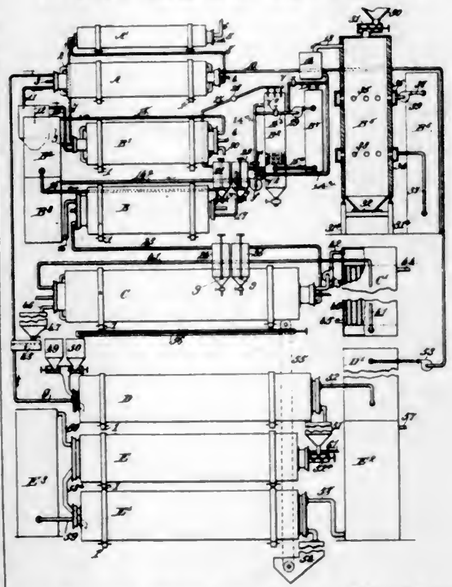
14. In a device of the class described, the combination with the stationary main frame, and the grinding-wheel frame pivotally mounted therein and carrying the grinding-wheel journaled therein, of the driving-wheel for rotating the grinding-wheel, mounted in said main frame and connections between said driving-wheel and the grinding-wheel frame for swinging said frame as the grinding-wheel is rotated, said connections comprising a link, one end of which is adjustable on said grinding-wheel frame to and from the pivotal point thereof so as to vary the arc through which said frame swings.

15. In a device of the class described, the combination with the stationary main frame, and the grinding-wheel frame pivotally mounted therein and carrying the grinding-wheel journaled therein, of the driving-wheel for rotating the grinding-wheel, mounted in said main frame and connections between said driving-wheel and the grinding-wheel frame for swinging said frame automatically as the grinding-wheel is rotated, said connections being separately adjustable to vary the position of the grinding-wheel frame and also to vary the arc through which it swings.

16. In a device of the class described, the combination with the stationary main frame, and the grinding-wheel frame pivotally mounted therein and carrying the grinding-wheel journaled therein, of the driving-wheel for rotating the grinding-wheel, mounted in said main frame and connections between said driving-wheel and the grinding-wheel frame for swinging said frame automatically as the grinding-wheel is rotated, said connections comprising a member, such as a link, the position of one end of which is adjustable to vary the position of the grinding-wheel frame, and the other end of which is adjustable to vary the arc through which said frame swings.

17. In a device of the class described, the combination with the main frame having a driving-wheel journaled therein, of a swinging frame pivotally mounted on said main frame and having a grinding-wheel journaled therein, connections between said driving-wheel and grinding-wheel for rotating the latter, and mechanism connecting said swinging frame with said driving-wheel whereby the rotation of the latter will cause the reciprocation of the frame, said mechanism including a member adjustably connected with said swinging frame at different radial distances from the pivotal point thereof so as to vary the arc through which said frame swings.

658,576. APPARATUS FOR MAKING ALKALIES. PAUL NAEF, New York, N. Y. Filed Mar. 28, 1900. Serial No. 10,506. (No model.)



Claim.—1. In apparatus for manufacture of alkali products and chlorine, and for treatment of liquids with gases, the combination of a chamber A in which a solution of sodium chloride is to be saturated with ammonia, one or more carbonating-chambers B' B² B in which the ammoniated brine is to be treated with carbonic acid, a cooling-chamber C for cooling the liquor from the carbonating-chambers to separate ammonium chloride from said liquor, a chamber D for treating the solid ammonium chloride with hot gas and a suitable oxide to produce ammonia, a pipe for conducting the ammonia from said chamber D to the chamber A for saturating brine, and one or more furnaces E E' for driving off chlorine from the chlorides received from the chamber D, all the said parts of the apparatus being connected to permit a flow through the same, in one direction, of the material being treated and in intimate contact with a flow of gas in the opposite direction.

2. The combination of a chamber in which a solution of sodium chloride is saturated with ammonia, one or more carbonating-chambers in which this saturated solution is treated with cooled carbonic acid to produce bicarbonate of soda and a solution of ammonium chloride, a cooling-chamber in which solid ammonium chloride is separated from said solution, a heating-chamber in which the solid ammonium chloride is treated with hot gas and an oxide to produce ammonia and a chloride, a furnace for decomposing the said chloride to produce chlorine, the said chambers being arranged consecutively, one above another and above said furnace, means for connecting the several chambers and the furnace, for passage through the same, in one direction, of the material being treated and in intimate contact with gas flowing in the opposite direction, and means for conducting the ammonia to the chamber in which the solution of sodium chloride is saturated with ammonia.

3. The combination of a cooling and saturating chamber for cooling a solution of sodium chloride and in which the said solution is simultaneously saturated with ammonia, one or more carbonating-chambers in which this ammonia-saturated solution is treated with cooled carbonic acid to produce bicarbonate of soda and a solution of ammonium chloride, means for cooling the carbonic acid, a cooling-chamber in which solid ammonium chloride is separated from the ammonium-chloride solution, a heating-chamber in which the said solid ammonium chloride is treated with heated inert gas and an oxide to produce ammonia and a chloride, a furnace for decomposing the said chloride by heat to produce chlorine, the said chambers being arranged consecutively, one above another and above said furnace, means for connecting the several chambers and the furnace, for passage through the same, in one direction of the material being treated and in intimate contact with gas flowing in the opposite direction, and a pipe for conducting the liberated ammonia to the chamber in which the solution of sodium chloride is to be saturated with ammonia.

4. The herein-described rotary apparatus for the continuous production of alkali products and chlorine, said apparatus comprising a cooling and saturating chamber for cooling a solution of sodium chloride and simultaneously saturating the same with ammonia, carbonating-chambers for treating said solution with cooled carbonic acid to obtain bicarbonate of soda and chloride of ammonium in solution, means for repeatedly cooling the carbonic acid, a washer for washing the waste gas from the carbonating-chambers with the sodium-chloride solution to be saturated with ammonia, a cooling-chamber in which to cool the liquid flowing from the carbonating-chambers to obtain solid ammonium chloride, means for returning the residual liquor to the chamber in which the solution of sodium chloride is saturated with ammonia, a chamber for heating the solid ammonium chloride with an oxide to obtain ammonia-gas and a chloride, means for causing said ammonia-gas to circulate continuously through the solution of sodium chloride for saturating the same, and a chamber for decomposing chlorides by heated air to obtain chlorine, all the several chambers being rotatable and arranged consecutively, one above another, with connecting devices through which said chambers communicate for passage in one direction of the material being treated and in intimate contact with gas flowing in the opposite direction.

5. In apparatus for treating liquids with gases, the combination with a revolving washer, and means for conducting gas and liquor through said washer in opposite directions, of cooling-pipes extended through the washer, and means for passing a cooling medium through said pipes.

6. In apparatus for treating liquids with gases, the combination with a revolving cylinder provided with means for passing gas and liquor through said cylinder in opposite directions and in intimate contact with each other, of cooling-pipes extended longitudinally through said cylinder, perforated lifting devices arranged in said cylinder, a settling-tank connected with one end of said cylinder and provided with means for separately running off clear liquor and a sludge, and means for conducting liquid from said revolving cylinder to and through said settling-tank.

7. The combination of a series of revolving cylinders, means conducting brine successively through said cylinders, means for conducting ammonia through an upper cylinder in a reverse direction to the flow of brine, means for conducting cooled carbonic-acid gas through the succeeding cylinders in a reverse direction to the flow of ammoniated brine, agitating devices located in the several cylinders, and cooling-pipes extended longitudinally through said cylinders.

8. The combination of a rotary cylinder, means for passing liquids through said cylinder in one direction, means for passing a gas through said cylinder in an opposite direction and in intimate contact with said liquid, cooling-pipes extended through said cylinder, and means for passing a cooling medium through said pipes in an opposite direction to the flow of liquid through the cylinder.

9. The combination with revolving cylinders, and an intermediate absorption vessel B^2, of means for passing liquid continuously through said cylinders and absorption vessel B^2, and means for passing a gaseous fluid through said absorption vessel and cylinders.

10. The combination with a revolving cylinder, and a stationary absorption vessel B^2 provided with means for discharging its contents, of means for passing a liquid through said cylinder and absorption vessel, and means for passing a gas through said absorption vessel in a direction opposite to the flow of liquid.

11. The combination of a revolving cylinder, means for conducting liquor and a gaseous fluid through said cylinder continuously and in reverse directions to each other, pipes extended longitudinally through said cylinder, means for passing a gaseous fluid through said pipes for changing the temperature of said cylinder, and lifting and showering devices located in the cylinder.

12. The combination of a revolving cylinder, means for passing liquid and gaseous fluid through said cylinder in reverse directions, numerous pipes extended through the interior of said cylinder, and means for conducting a gaseous fluid through said pipes.

13. The combination of a series of superposed revolving cylinders, means for conducting brine successively through the same, means for introducing ammonia into an upper cylinder, means for conducting carbonic-acid gas and ammoniated brine through the lower cylinders, and means for conducting the waste gas from the lower cylinders through the first cylinder on a higher level.

14. The combination of a revolving cylinder, means for passing liquor and gas continuously through said cylinder in reverse directions, numerous pipes extended through the interior of said cylinder, means for conducting a cooling fluid through said pipes, and devices for showering the liquor on said pipes.

15. The combination of a revolving cylinder provided at its opposite ends with inlets and outlets for the passage through said cylinder of liquor and gas in reverse directions to each other, cooling-pipes extended longitudinally through said cylinder, a settling-tank in communication with one end of said cylinder, means for continuously passing liquor from said cylinder to and through said tank, and means for withdrawing solid material in the form of sludge from said tank without interrupting the operation of treating the liquor with gas.

16. The combination with a revolving cylinder for treating ammoniated brine with carbonic-acid gas to produce bicarbonate, of a fuel-furnace, means for cooling the waste combustion-gas from said furnace, means for passing said brine and the combustion-gas in reverse directions to each other through said cylinder, and means for repeatedly cooling the combustion-gas and returning it to the brine in said cylinder.

17. The combination of a series of revolving cylinders, means for conducting brine successively through said cylinders, means for conducting waste gas through the cylinder through which the brine passes first, means for conducting ammonia-gas through the second cylinder, and means for conducting carbonic-acid gas through the last cylinder.

18. The combination with a revolving cylinder for producing bicarbonate from brine, said cylinder being provided at its opposite ends with means for passing brine and carbonic-acid gas therethrough in opposite directions and in intimate contact with each other, of a second cylinder, means for cooling the same, and means for running chloride-of-ammonium solution from the first-named cylinder to and through the second cylinder.

19. The combination of a series of superposed cylinders for treating liquor, means for passing brine continuously and successively through said cylinders, means for treating the liquor with ammonia in the first cylinder, means for treating the ammoniated liquor with carbonic-acid gas in the succeeding cylinders, means for cooling ammonium-chloride solution in the next succeeding cylinder, after separation of bicarbonate, a furnace located below the cylinders, and means for conducting ammonium chloride through the same.

20. The combination of a series of superposed cylinders, means for passing brine continuously and successively through the same, means for subjecting the brine in the several cylinders successively to the action of ammonia, carbonic-acid gas and a cooling medium, several superposed furnaces located below said cylinders, means for passing ammonium chloride mixed with oxide through an upper one of said furnaces, and means for conducting the mixture thus obtained through a lower one of said furnaces in the presence of air.

21. The combination of a revolving cylinder, means for passing a liquor and a gas through said cylinder in reverse directions, and corrugated and perforated partitions arranged in said cylinder and alternately immersed in the liquor and exposed to the gas contained in said cylinder.

22. The combination of a revolving cylinder, means for passing a liquid and a gas through said cylinder in reverse directions, and wire-gauze partitions arranged in said cylinder and alternately immersed in the liquid and exposed to the gas contained in said cylinder.

23. The combination with a revolving cylinder and corrugated wire-gauze partitions located in said cylinder, of means for passing a liquid and gas through said cylinder in reverse directions.

24. The combination with a revolving cylinder divided into sections, of radially and longitudinally arranged partitions located in said cylinder, the partitions in each section being radially offset from the partitions in adjacent sections.

25. The combination with a revolving cylinder divided into sections, of longitudinal partitions arranged in the several sections, and vertical cross-partitions between said sections and provided with openings.

26. The combination with a revolving cylinder having at each end an end plate provided with an annular flange, a stationary cover fitted into said flange and provided with inlet and outlet pipes, a system of pipes extended through the cylinder and connected with said inlet and outlet pipes, and other pipes for admitting a fluid and a gas into said cylinder to flow therethrough in opposite directions.

27. The combination with a revolving cylinder having end plates provided with annular flanges, of stationary covers fitted to said annular flanges and provided with inlets and outlets for the passage of liquor and gas in opposite directions through said cylinder, adjustable packing devices between said covers and flanges, and means for cooling the contents of said cylinder.

28. The combination with a rotary cylinder provided with inlets

and outlets for the flow of liquor and gas through said cylinder in opposite directions, of a system of pipes extended through the cylinder for the passage of a gaseous fluid, and lifters arranged in said cylinder for showering liquor onto said pipes.

29. The combination with a revolving cylinder having a hollow ring in each end, of a system of non-perforated pipes communicating with each ring and extending through the cylinder, and centrally-located inlet and outlet pipes in communication with said hollow rings at the ends of the cylinder.

30. The combination with a revolving cylinder, of a number of non-perforated pipes extended longitudinally through said cylinder, an annular pipe at each end of said cylinder and in communication with said non-perforated pipes, a centrally-located pipe in communication with each of said annular pipes, agitating devices in said cylinder, and means for conducting liquor and a gas through said cylinder in opposite directions and in intimate contact with each other.

31. The combination with a revolving cylinder having its opposite ends provided with inlets and outlets for the admission of liquor and a gas to flow through said cylinder in opposite directions and in intimate contact with each other, of non-perforated cooling-pipes extended through said cylinder, and perforated pipes fixed in said cylinder and having their perforations so arranged that liquor will be showered through the cylinder during its whole revolution.

32. The combination with a rotary cylinder, of cooling-pipes extended through said cylinder for the passage of a cooling fluid, said cylinder being provided with inlets for the admission and outlets for the exit from said cylinder of liquid and gas, and perforated pipes arranged longitudinally in said cylinder for lifting and distributing the liquid as the cylinder revolves.

33. The combination of a rotary cylinder having its opposite ends provided with means for the admission to and exit from said cylinder of liquid and gas to flow through said cylinder in opposite directions and in intimate contact with each other, perforated and longitudinally-extended partitions radially arranged in said cylinder, and perforated lifting-pipes for lifting and showering the liquid on said partitions during the whole revolution of the said cylinder.

34. The combination with a rotary cylinder having means for the admission to and exit from said cylinder of liquid and gas to flow through the cylinder in opposite directions, of cooling-pipes in said cylinder through which pipes a cooling fluid flows, longitudinal radially-arranged perforated partitions in said cylinder, and perforated pipes for lifting and showering the liquid on said partitions during the whole revolution of the cylinder.

35. The combination with a revolving cylinder having its opposite ends provided with inlets and outlets for passing liquor and gas through said cylinder in opposite directions, of perforated cross-partitions in said cylinder, and perforated radial and longitudinally-extended partitions for lifting and showering liquor during the whole revolution of the cylinder.

36. The combination with a rotary cylinder provided with means for passing liquid and gas to flow through said cylinder in opposite directions, of cooling-pipes in said cylinder, through which pipes the cooling fluid flows, perforated longitudinal radially-arranged partitions in said cylinder, vertical cross-partitions provided with openings, and means for lifting and showering liquid on the partitions in said cylinder during the whole of its revolution.

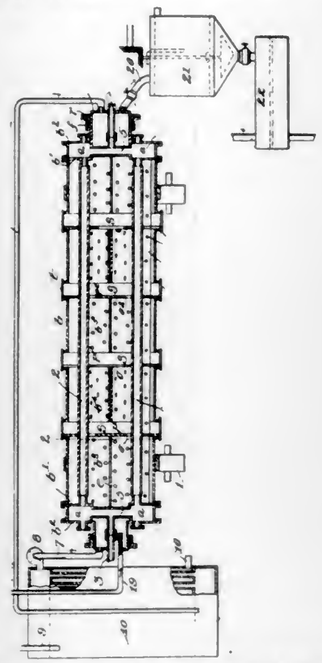
37. The combination with a revolving cylinder provided with means for passing liquor and gas through said cylinder in opposite directions, of radially-arranged and perforated partitions extended longitudinally in said cylinder, and vertical cross-partitions located in said cylinder and provided with holes so arranged as to cause the liquor and gas to pass through said cylinder in zigzag paths.

38. The combination with a rotary cylinder provided with means for passing liquid and gas through said cylinder in opposite directions, of longitudinal radially-arranged partitions arranged in sections in said cylinder, the radial partitions in each of said sections being arranged at an angle to the radial partitions in the adjacent sections.

39. The combination with a rotary cylinder provided at its opposite ends with means for the admission and exit of liquor and gas to flow through said cylinder in opposite directions and in intimate contact with each other, of longitudinally and radially arranged partitions located in said cylinder in separate sections, with spaces between adjacent sections, and perforated cross-partitions at the ends of the several sections.

40. The combination with a rotary cylinder provided with means for passing liquid and gas through said cylinder in opposite directions, of cooling-pipes in said cylinder, through which pipes the cooling fluid flows, perforated longitudinal radially arranged partitions in said cylinder, which radial partitions are arranged in sections with spaces between adjacent sections, the radial partitions in each of which sections being arranged at an angle to the radial partitions of adjacent sections, vertical cross-partitions provided with holes to direct the path of the gas through the cylinder, and perforated pipes for lifting and showering the liquid onto said partitions as the cylinder revolves.

658,577. APPARATUS FOR CRYSTALLIZING SOLIDS FROM LIQUIDS. PAUL NARP, New York, N. Y. Filed June 14, 1900. Serial No. 20,359. (No model.)



Claim.—1. In apparatus for treating liquid with cold gas, for crystallization of solids, the combination of a crystallizing-chamber having a series of cooling-pipes therein, means for causing a cooling fluid to flow through said pipes, an inlet-pipe communicating with one end of said chamber for introducing the liquid to be treated, an outlet-pipe for flow of said liquid from the other end of said chamber, a settling-tank to receive liquid from said outlet-pipe, a gas-cooler, and means for continuously circulating gas through said cooler and crystallizing-chamber, whereby the gas is repeatedly cooled in alternation with its passage through the liquid in said chamber.

2. The combination of a chamber having a series of cooling-pipes therein, means for causing a cooling fluid to flow through said pipes, means for passing through said chamber the liquid to be treated, a settling-tank to receive said liquid from one end of said chamber, a filter in communication with the settling-tank, a gas-cooler, and means for continuously circulating gas through said cooler and through said chamber in a reverse direction to the flow of liquid through the chamber.

3. The combination of a chamber having a series of cooling-pipes therein, means for causing a cooling fluid to flow through said pipes, an inlet-pipe for introducing liquid to be treated into one end of said chamber, an outlet-pipe for flow of said liquid from the other end of said chamber, a settling-tank to receive liquid from said chamber, a gas-cooler, means for continuously circulating gas through said cooler and chamber in intimate contact with the liquid treated, and means for agitating the liquid and gas in said chamber.

4. The combination of a chamber for treating liquid with gas, a series of cooling-pipes extended longitudinally in said chamber, means for causing a cooling fluid to flow through said pipes; an inlet-pipe for introducing liquid to be treated into one end of said chamber, an outlet-pipe for flow of said liquid from the other end of said chamber, agitating devices located in said chamber, a settling-tank to receive liquid from said chamber, a gas-cooler, and means for continuously circulating gas through said cooler and through the liquid in said chamber.

5. The combination of a revolving chamber, perforated partitions arranged in sections within said chamber, each section being radially offset from adjoining sections and with spaces between the several sections, cooling-pipes extended longitudinally in said chamber, inlet and outlet pipes provided with branches communicating with said cooling-pipes through annular spaces at opposite ends of said chamber for continuous flow of cooling fluid through the cooling-pipes, means for causing a flow through said chamber of a liquid to be treated therein with cold gas, a gas-cooler, and means for continuously circulating gas through said cooler and chamber.

6. The combination of several crystallizing vessels forming an endless chain, means for first cooling said vessels, means for washing the crystals in said vessels and means for afterward drying the crystals in said vessels, the whole forming a continuous system.

7. The combination of a crystallizing vessel, means for passing a gas through the same, means for compressing the gas, cooling it in the compressed state and reëxpanding it in a working cylinder before it enters the crystallizing vessel.

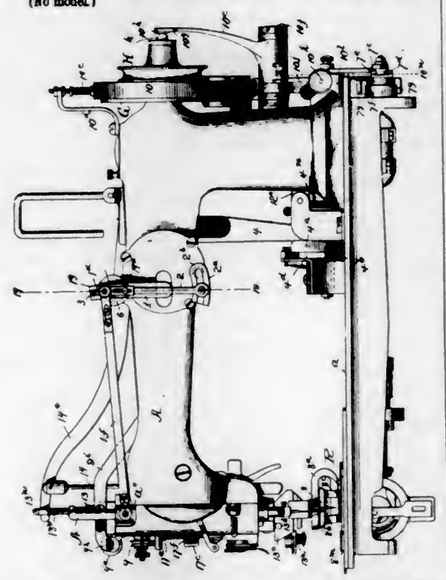
8. The combination of a vessel for containing liquor, means for passing gas through the same, means for compressing the gas leaving the vessel, means for cooling the compressed gas by the liquor running from the vessel, means for expanding it in a working cylinder and returning it to the vessel.

9. The combination of a crystallizing-chamber for containing liquor, means for passing gas through the liquor in said chamber, a gas-compressor to receive gas from said chamber, a gas-cooler in communication with the compressor, a cylinder in which the cooled gas is expanded, and means for returning the expanded gas to the crystallizing-chamber.

10. The combination of a chamber for containing liquor, means for passing gas through the liquor in said chamber, a series of traveling crystallizing vessels, means for conducting liquor from said chamber into the said series of crystallizing vessels, successively, a chamber surrounding said series of vessels, and means for controlling the temperature of said chamber.

11. The combination of a chamber for containing material to be cooled, means for passing gas through said chamber, a gas-compressor to receive gas from said chamber, means for partially cooling the compressed gas, a device for afterward cooling the same gas to a lower temperature by means of the cooled material, a cylinder in which said cooled gas is expanded, and means for conducting the expanded gas from said cylinder to the material in the said chamber.

658,578. BUTTONHOLE-SEWING MACHINE. WILLIAM N. PARKER, New York, N. Y. Filed Sept. 12, 1898. Serial No. 690,777. (No model.)



Claim.—1. In combination in a buttonhole-sewing machine, a stitch-forming mechanism comprising a vertically-reciprocating and laterally-vibrating needle-bar, a feed-wheel and means for operating the same, a work-carrier reciprocated through the movements of the said feed-wheel, and means adapted at a predetermined point in the rotation of the said feed-wheel, to move the working position of the needle-bar laterally.

2. In combination in a buttonhole-sewing machine, a stitch-forming mechanism comprising a vertically-reciprocating and laterally-vibrating needle-bar, a reciprocating work-carrier, means adapted to move the working position of the needle-bar laterally during a predetermined part of the movement of the work-carrier and a predetermined lateral movement of the needle-bar.

3. In combination in a buttonhole-sewing machine, a stitch-forming mechanism comprising a vertically-reciprocating and laterally-vibrating needle-bar, a work-carrier, a rotating feed-wheel, means intermediate the feed-wheel and the work-carrier, the feed-wheel and the needle-bar, whereby the work-carrier is reciprocated and the working position of the needle-bar moved laterally during the change in the direction of the movement of the work-carrier.

4. In combination in a buttonhole-sewing machine, stitching mechanism, feeding mechanism, one of said mechanisms comprising a vibrating part through which the movement for producing the depth and edge stitches along the sides of the holes is produced, a cam, means for operating the said cam, means intermediate the cam and the vibrating part adapting the cam to move laterally the working position of the vibrating part and thereby change the stitching from one side of the buttonhole to the other, and means operated through the movements of the said cam adapted to increase and decrease the extent of the vibrations of the aforesaid vibrating part during the stitching from one side of the buttonhole to the other.

5. In combination in a buttonhole-sewing machine, mechanism for feeding the work, mechanism for stitching buttonholes comprising a vibrating needle-bar, a lever, a connection between said lever and the needle-bar, whereby the extent of the vibrations of the needle-bar is increased and decreased during a lateral movement in one direction of the lever, and means for actuating the said lever when stitching at or near the ends of the buttonholes.

6. In combination in a buttonhole-sewing machine, a stitch-forming mechanism comprising a vertically-reciprocating and laterally-vibrating needle, a feeding mechanism, the cam-lever 3, the lever 4, a connection between the lever 4 and the cam-lever 3, means intermediate the cam-lever 3 and the needle-bar whereby when the said cam-lever is oscillated the vibrations of the needle are increased and decreased, and means for actuating the lever 4.

7. In combination in a buttonhole-sewing machine, a reciprocating work-carrier, a stitch-forming mechanism comprising a vertically-reciprocating and laterally-vibrating needle-bar, means adapted to automatically move during a predetermined part of the movement of the work-carrier, the working position of the needle-bar in one direction laterally and simultaneously therewith a lateral vibration of the needle-bar in an opposite direction.

8. In combination in a buttonhole-sewing machine, a stitch-forming mechanism comprising a vertically-reciprocating needle-bar adapted to move laterally and a device for vibrating the same laterally, a work-carrier, mechanism for reciprocating the work-carrier comprising a feed-wheel, a ratchet-wheel, means intermediate the ratchet-wheel and the aforesaid device, whereby when the ratchet-wheel is rotated the extent of the lateral vibrations of the needle-bar is changed, and means for rotating the ratchet-wheel brought into engagement with the same by the movements of the feed-wheel during a predetermined part of the cycle of feed of the said feed-wheel.

9. In combination in a buttonhole-sewing machine, mechanism for stitching buttonholes comprising a vertically-reciprocating and laterally-vibrating needle-bar, a work-carrier, mechanism comprising a pawl-actuated feed-wheel for operating said work-carrier, a pawl-actuated ratchet-wheel separately mounted from the said pawl-actuated feed-wheel, means intermediate the said pawl-actuated ratchet-wheel and the aforesaid needle-bar, whereby the extent of the lateral vibrations of the needle-bar is increased and decreased during the stitching of a predetermined part of the buttonhole.

10. In combination in a buttonhole-sewing machine having a stitch-forming mechanism comprising a vertically-reciprocating and laterally-vibrating needle-bar, work-moving mechanism comprising a rotating feed-wheel, a device adapted automatically to increase and decrease the extent of the lateral vibrations of the needle during the stitching of a predetermined part of the buttonhole, and means adapting the feed-wheel to turn the said device into action.

11. In combination in a buttonhole-sewing machine, stitching and feeding mechanism for stitching the sides of the buttonholes comprising a feed-wheel, means for stitching the ends of the buttonholes comprising a cam, means intermediate the cam and the feed-wheel, whereby the cam is turned through the movements of the feed-wheel, and means independent of the feed-wheel whereby the cam is actuated during the stitching of the ends of the buttonholes.

12. In combination in a buttonhole-sewing machine, stitching and feeding mechanism for stitching the sides of the buttonholes comprising a feed-wheel, means for stitching the ends of the buttonholes comprising a cam adapted to turn on a pivot, a ratchet-wheel connected with said cam,

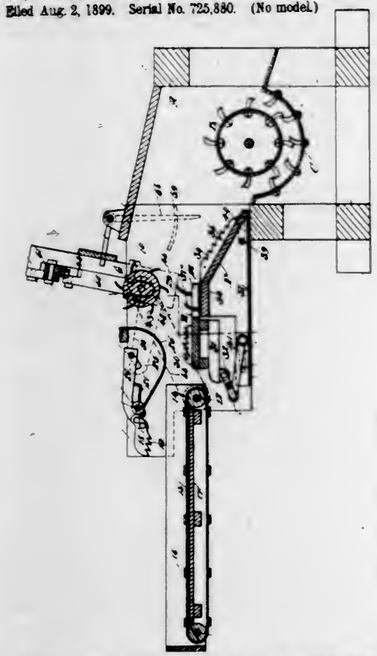
an actuating device normally out of engagement with the teeth of the said ratchet-wheel, and means operated through the movements of the feed-wheel adapted to bring the actuating device into engagement with the teeth of the ratchet-wheel.

13. In combination in a buttonhole-sewing machine, stitching and feeding mechanism comprising a feed-wheel, a device for controlling the stitching at the ends of the buttonholes, a mutilated ratchet-wheel for actuating the said device, a pawl normally out of engagement with the teeth of the said ratchet-wheel, means for actuating the said pawl and means intermediate the feed-wheel and the ratchet-wheel adapted to turn the ratchet-wheel and thereby the teeth of the same into engagement with the pawl.

14. In combination in a buttonhole-sewing machine, stitching mechanism for forming the side stitches of the buttonhole, feeding mechanism comprising a feed-wheel, tacking mechanism comprising a ratchet-wheel, a pawl adapted to engage the said ratchet-wheel normally out of engagement with the teeth of the same, a pawl-lever for carrying said pawl, an eccentric on the lower shaft of the machine, a connection between the same and the pawl-lever, and means for bringing the aforesaid pawl into engagement with the teeth of the ratchet-wheel.

15. The combination in a buttonhole-sewing machine having a vertically-reciprocating needle-bar mounted and adapted to move laterally, of a work-carrier mechanism adapted to actuate the same comprising a feed-wheel, a device adapted to vibrate the needle-bar laterally, and means adapted to actuate said device, a second device adapted to vary the extent of the vibrations of the needle-bar and to bodily move the same laterally, an operative connection between the said second device and the first device, a ratchet-wheel adapted to actuate the second device, an actuating-pawl adapted to actuate the said ratchet-wheel, and means adapting the feed-wheel to turn the teeth of the said ratchet-wheel into engagement with the pawl.

658,579. **BAND-CUTTER AND FEEDER.** WALFRED C. PETERSON, Geneva, Nebr., assignor of one-half to Franklin Skipton, same place. Filed Aug. 2, 1899. Serial No. 725,880. (No model.)



Claim.—1. In a band-cutter and feeder, the combination with an endless bundle-carrier, of a feed-roller mounted in yielding bearings and having a pulley at one end and a gear-wheel at the other, a belt passing around the pulley of the feed-roller and a pulley on one of the drums of the endless bundle-carrier, and a driven shaft provided with a pinion, with which the gear-wheel of the feed-roller meshes, substantially as and for the purpose set forth.

2. In a band-cutter and feeder, the combination with a bundle-carrier, of a feed-roller from which the bundle-carrier is operated, yielding bearings in which the roller is mounted, an equalizing device connecting said bearings, and a driven shaft geared with the roller, substantially as described.

3. In a band-cutter and feeder, the combination with a bundle-carrier, of a frame, connected and spring-pressed slides mounted in the frame, a feed-roller mounted in the slides, means for operating the bundle-carrier from the feed-roller, and a driven shaft geared with the feed-roller, substantially as described.

4. In a band-cutter and feeder, the combination with a bundle-carrier, of a frame having sliding bearings, a feed-roller mounted in the said bearings, an equalizing and pressure-regulating device connecting said bearings, means for operating the bundle-carrier from the feed-roller, and a driven shaft geared with the feed-roller, substantially as described.

5. In a band-cutter and feeder, the combination with a bundle-carrier, of a frame having sliding bearings, a feed-roller mounted in the said bearings and having at one end a belt connection with the bundle-carrier and provided at its other end with a gear-wheel, an equalizing and tension device connecting the said bearings, and a driven shaft provided with a pinion meshing with the gear-wheel of the feed-roller, substantially as described.

6. In a band-cutter and feeder, the combination with a frame, of sliding bearings carried by the frame, a feed-roller mounted in the bearings, and means connecting the slides for equalizing the movement thereof and applying pressure thereto, substantially as described.

7. In a band-cutter and feeder, the combination with a frame, of sliding bearings in the frame, a feed-roller mounted in the bearings, and an equalizing device for the slides, consisting of cross-bars pivoted together at their centers and each having one end secured to the frame and its other end to one of the slides, substantially as described.

8. In a band-cutter and feeder, the combination with a frame, of sliding bearings in the frame, a feed-roller mounted in the bearings, and an equalizing and pressure-regulating device for said slides, consisting of two cross-bars pivoted together at their centers and each having one end secured to a slide and the other to the frame, and a spring having its ends secured to the said bars, substantially as described.

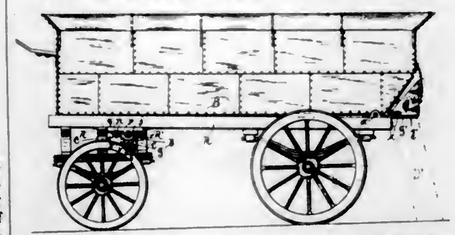
9. In a band-cutter and feeder, the combination with a pivoted frame, of sliding and spring-pressed bearings in the frame, a feed-roller mounted in the bearings, and a lever engaging the frame and by means of which the said frame may be swung upon its pivot, substantially as described.

10. In a band-cutter and feeder, the combination of a sliding toothed feed-board having an inclined front portion and a horizontal rear portion, a sliding shaker-board having its front end projecting over the horizontal rear portion of the feed-board and provided with slots through which the teeth of the said feed-board project, and means for imparting sliding movement to said boards in opposite directions, substantially as described.

11. In a band-cutter and feeder, the combination of a sliding shaker-board having a series of slots in one edge and teeth on the tongues formed by the slots, a sliding feed-board over which the slotted portion of the shaker-board projects and provided with teeth projecting into the slots of the shaker-board, and means for imparting sliding movement to the shaker-board and feed-board in opposite directions, substantially as described.

12. In a band-cutter and feeder, a shaker-board having a slotted edge and teeth on the tongues formed by said slots, and a feed-board having one portion extending beneath the slotted portion of the shaker-board, the feed-board being provided with teeth which extend up through the slots in the shaker-board, a crank-shaft having crank-arms in pairs, the arms of each pair extending in opposite directions, a connection between the corresponding arms of each pair and the shaker-board, and a link connection between the other crank-arms of each pair and the feed-board, for the purpose set forth.

658,580. **DUMPING-WAGON.** CHARLES S. PHARIS, Syracuse, N. Y. Filed Jan. 23, 1900. Serial No. 2,462. (No model.)



Claim.—1. The combination with the running-gear, a frame mounted thereon and the wagon-body pivoted at its rear end directly to said frame, of a right-and-left transverse screw supported revolubly on said frame, carriers movable on said frame, nuts applied to said screw and moving said carriers, and rigidly connected to the carriers, and braces transmitting vertical motion from said carriers to the front end of the body.

2. The combination with the running-gear, a frame mounted thereon, and the wagon-body pivoted at its rear end directly to said frame, of a transverse right-and-left screw supported revolubly on said frame, carriers movable on said frame, nuts applied to said screw and moving said carriers, and rigidly connected to the carriers, and braces crossing each other and transmitting vertical movement from the carriers to the front end of the body at points equidistant from the center of the width thereof.

3. The combination with the running-gear, a frame mounted stationary thereon, and the wagon-body pivoted at its rear end directly to said frame, of a transverse right-and-left screw journaled in bearings on said frame, tracks sustained on said frame parallel with said screw, carriers mounted movably on said tracks, nuts applied to the screw and moving said carriers and rigidly connected to the carriers, and braces extending from the carriers to the body and pivotally connected to said parts.

4. The combination with the running-gear, a frame mounted stationary thereon, and the wagon-body pivoted at its rear end directly to said frame, of a revoluble horizontal right-and-left screw supported transversely on the forward portion of the frame, two pairs of tracks sustained on said frame parallel with the screw, nuts applied to the screw, carriers provided with rollers traveling between said pairs of tracks and moving said carriers, and braces crossing each other and transmitting vertical movement from the carriers to the front end portion of the body as set forth.

5. The combination with the running-gear, a frame mounted stationary thereon, and the wagon-body pivotally supported at its rear end on said frame, of a revoluble right-and-left screw supported transversely on the forward portion of the frame, two pairs of tracks secured to said frame parallel with the screw, carriers provided with rollers traveling between said pairs of tracks, hangers depending from said carriers, nuts rigidly connected to said hangers and mounted on the aforesaid screw, and braces extending from said hangers beneath the screw to the front end portion of the body as set forth.

6. The combination with the running-gear, a frame mounted stationary thereon, and the wagon-body pivotally supported at its rear end on said frame, of a revoluble right-and-left screw, supported transversely on the forward portion of said frame, two pairs of tracks secured to the frame parallel with the screw, carriers provided with rollers traveling between said pairs of tracks, nuts applied to the screw and rigidly connected to said carriers, brackets fastened to the body, a rod tying the brackets to each other, sleeves mounted on said rod, and braces crossing each other and connecting the aforesaid carriers to the sleeves on the opposite ends of the aforesaid rod as set forth.

7. The combination with the running-gear, a frame mounted stationary thereon, and the wagon-body pivotally supported at its rear end on said frame, of a revoluble right-and-left screw supported transversely on the forward portion of the frame, tracks secured to said frame parallel with the screw, carriers riding on said tracks, hangers depending from said carriers, nuts sustained on said hangers and connected to the screw, brackets fastened to the body at opposite sides of the center thereof, sleeves pivotally supported on said brackets, and braces crossing each other and connected to the hangers beneath the nuts and to the aforesaid sleeves as set forth.

8. The combination with the running-gear, a frame mounted thereon, and the wagon-body pivotally mounted at its rear end on said frame, two pairs of tracks secured to said frame, carriers provided with rollers traveling between said pairs of tracks and connected to the front end portion of said body to raise and lower the same, a transverse revoluble right-and-left screw journaled on the frame, and nuts on said screw and moving said carriers and rigidly connected to the same substantially as described.

9. The combination with the running-gear, a frame mounted thereon, and the wagon-body pivoted at its rear end directly to the frame, of two pairs of tracks secured to the frame, carriers provided with rollers traveling between said pairs of tracks, a pair of hangers depending from each of said carriers and provided with openings, a transverse revoluble right-and-left screw journaled on said frame and passing through said openings and independent of the hangers, nuts on said screw and rigidly connected to said hangers, and braces extending from said hangers below the screw, to the body, substantially as described.

10. The combination with the running-gear, a frame mounted thereon, and the wagon-body pivoted at its rear directly to said frame, of two pairs of tracks secured to said frame, carriers provided with rollers traveling between said tracks and connected to the front end portion of the body to raise and lower the same, and means to move said carriers substantially as described.

11. The combination with the running-gear, a frame mounted thereon, and the wagon-body pivoted at its rear end directly to said frame, of two pairs of tracks secured to said frame, carriers provided with rollers traveling between said tracks, hangers depending from said carriers, braces extending from said hangers to the body and pivotally connected to said parts, and means engaging said hangers to transmit motion to said carriers substantially as described.

12. The combination with the running-gear, a frame mounted thereon, and the wagon-body pivotally supported at its rear end on the frame, of tracks secured to said frame, carriers riding on said tracks, hangers depending from said carriers, and provided with openings, a revoluble right-and-left screw journaled on the aforesaid frame and passing through said openings independent of the hangers, nuts between said hangers and applied to the screw, lips formed on said nuts, means on the hangers engaging said lips to prevent said nuts from turning, and braces extending from said hangers to the wagon-body substantially as described.

13. The combination with the wagon-body provided with a discharge-gate, of wings sustained adjustably at the center of the width of said gate to guide the discharge from either side of the body, and provided with means for locking the same in operative position substantially as described.

14. The combination with the wagon-body provided with a discharge-gate, of a rearwardly-extending guide detachably secured to said body at the base of the discharge-opening and having its sides converging rearwardly, wings secured adjustably on said guide to direct the discharge toward either side of the body, and chute-supports on said guide and parallel to the sides thereof substantially as set forth.

15. The combination with the wagon-body provided with a discharge-gate, of a rearwardly-extending guide detachably connected to said body at the base of the discharge-opening and provided at its rear end with a post, wings hinged to said post to direct the discharge toward either side of the body, means to lock the free ends of said wings to the guide, and chute-supports on the under side of said guide, substantially as described.

16. The combination with the wagon-body provided with a discharge-gate, of a guide detachably connected to the body at the base of the discharge-opening and consisting of a plate having its side edges converging rearwardly, and wings pivoted to said guide at the point of convergency to direct the discharge toward either side of the body, and means to lock the free ends of said wings to the guide, substantially as set forth.

17. The combination with the wagon-body provided with a discharge-gate, of a guide detachably connected to the body at the base of the discharge-opening and consisting of a plate having its side edges converging rearwardly, a post secured to said guide at the point of convergency, wings hinged to said post to direct the discharge toward either side of the body, independent means for locking each of the wings in operative position and chute-supports secured to said guide substantially as set forth.

18. The combination with the wagon-body provided with a discharge-gate and a transverse rod secured to the under side thereof, of a rearwardly-extending guide consisting of a plate provided with hooks by which it is detachably connected to said rod, and having its side edges converging rearwardly, a post secured to said guide at the point of convergency, wings hinged to said post to direct the discharge toward either side of the body, rods secured to the under side of said guide and parallel to its side edges to support the chute substantially as set forth.

19. The combination with the wagon-body provided with a discharge-gate, of a rearwardly-extending guide detachably connected to said body at the base of the discharge-opening, means for supporting the rear end of said guide, a post secured to the guide at the center of its width, wings hinged at one of their ends to said post to direct the discharge toward either side of the body, catches for locking the free ends of said wings to the guide, and chute-supports on said guide substantially as set forth.

20. The combination with the wagon-body provided with a discharge-gate, of a rearwardly-extending guide detachably connected to said body at the base of the discharge-opening, a post secured to the rear end of said guide, means connecting said post to the body to support the rear end of the guide, wings hinged to said post to direct the discharge toward either side of the body, means for locking the wings to the guide, and a chute detachably connected to said guide, as set forth.

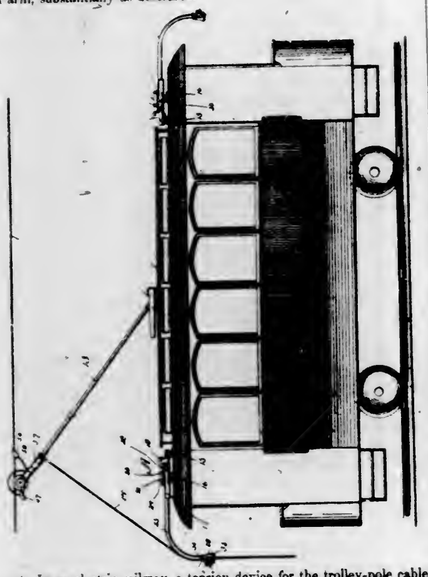
21. The combination with the wagon-body provided with a discharge-gate, of a guide extending across the base of the discharge-opening and having its sides converging rearward, wings sustained over the center of the width of said guide and adjustable to direct the discharge toward either side of the body, and means to lock said wing to the guide and parallel to the sides thereof, substantially as described.

658,581. **TROLLEY.** ALPHONSE PITON, St. Sauveur de Quebec, Canada. Filed Apr. 17, 1900. Serial No. 13,280. (No model.)

Claim.—1. In an electric railway, the combination with a trolley-pole, and a cable, of a spring-repressed arm having detachable connection with said cable and acting in opposition to the spring of said trolley-pole, substantially as and for the purposes set forth.

2. In an electric railway, the combination with a spring-actuated trolley-pole, and a cable, of a spring-repressed tension-arm supported independently of said pole, and means for connecting the cable detachably to said arm, substantially as and for the purposes set forth.

3. In an electric railway, a tension device for the pole-cable comprising a base, a tension-arm mounted thereon, means for normally forcing said tension-arm in one direction, and a cable-connector carried by said arm, substantially as described.



4. In an electric railway, a tension device for the trolley-pole cable comprising a base, a tension-arm pivoted thereon, a spring-actuated finger mounted on the base and having slidable engagement with said arm, and a cable-connector carried by the arm, substantially as described.

5. In an electric railway, a tension device for the trolley-pole cable comprising a base, a tension-arm pivoted thereto, a rock-shaft having a finger engaging slidably with said tension-arm and a spring for normally depressing the finger and the tension-arm, substantially as described.

6. In an electric railway, a tension device for the trolley-pole cable comprising a base, a tension-arm pivoted thereto and provided with a longitudinal groove, a rock-shaft, a finger fast with said shaft and provided with a roller-shoe adapted to the groove of the tension-arm, and a spring, substantially as described.

7. In an electric railway, a tension device for the trolley-pole cable comprising a base provided with a horizontal socket-arm, a tension-arm pivoted to occupy said socket-arm, and a spring operatively related to the tension-arm to normally force the latter toward the socket-arm, substantially as described.

8. In an electric railway, a tension device for the trolley-pole cable, comprising a yieldable arm, a socket-casting at the free end of said arm, and a cord-knob adapted to the socket-casting, substantially as described.

9. In an electric railway, a tension device for the trolley-pole cable comprising a yieldable arm, a socket-casting provided with the communicating slot and socket, and the cord-knob adapted to fit in the socket and to have the cord enter the slot, substantially as described.

10. In an electric railway, a tension device for the trolley-pole cable comprising a yieldable arm, a socket-casting provided with a slot and with guides on opposite sides of the slot, and a cord-knob adapted to the socket in the casting, substantially as described.

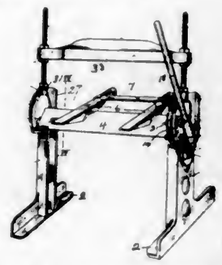
11. In an electric railway, the combination of a trolley-head provided with the extended arms, a wheel, and guard-springs fastened to the head and having their free ends slidably confined in said arms, substantially as described.

12. In an electric railway, the combination of a trolley-head provided with the slotted arms and the capped pins, a wheel, and the guard-springs coiled around said pins, arched above the wheel, and slidably connected to the slotted arms, substantially as described.

13. In an electric railway, the combination of a trolley-head provided with studs, springs coiled around the studs and extended upwardly in advance of said head, a wheel, and a scraper supported by the springs in advance of the wheel, substantially as described.

658,582. SAND-PRESS. WILLIAM M. POTTER, Syracuse, N. Y., assignor to E. C. Stearns & Co., same place. Filed May 21, 1900. Serial No. 17,435. (No model.)

Claim.—1. In combination in a sand-press, supporting-legs, guide-lugs on the outer faces of the legs, a table-bed fitted and secured thereto, a cross-shaft journaled therein under and parallel to the bed, cranks on the ends of the shaft, an operating-lever on one end, and pieces provided with slots to fit the guide-lugs on the legs and with flanges on the inner face of each, draw-bars connecting the upper ends of the end pieces to the cranks, threaded uprights on the end pieces, a presser-head adjustably supported thereon, and an antifriction-roller secured on the outer face of the table-bed engaging with flanges on the inner faces of the end pieces when the latter are turned in a vertical position.



2. In combination in a sand-press, supporting-legs, guide-lugs on their outer faces, a suitable table-bed fitted and secured thereto, a cross-shaft journaled therein under and parallel to the bed, cranks on the ends of the shaft, an operating-lever on one end, end pieces provided with slots to fit the guide-lugs, draw-bars connecting the upper ends of the end pieces to the cranks, threaded uprights on the end pieces, a presser-head adjustably supported thereon, integral arms on the lower ends of the end pieces inwardly extending through openings in the legs and springs connecting said arms to the frame.

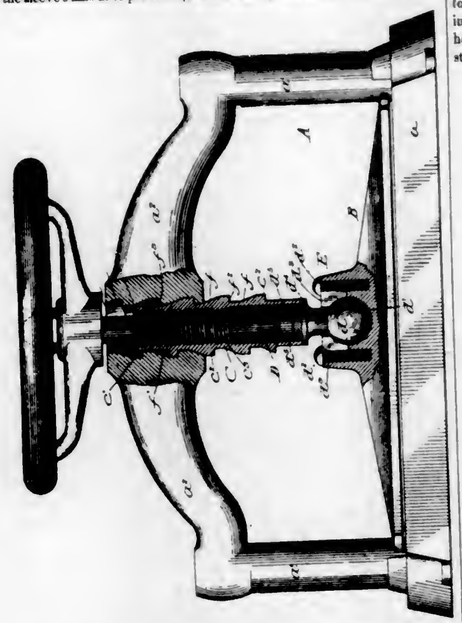
3. In combination in a sand-press, suitable legs, a table-bed secured to the top thereof, integral table-bars on the bed, integral guide-lugs on the outer faces of the legs, antifriction-rollers on the outer surface of frame, washers fitted to the guide-lugs, a cross-shaft journaled under and parallel to the table-bed having integral cranks, and an operating-lever fitted to one end of the shaft, end pieces having slotted lower ends to fit the guide-lugs, integral flanges on the inner faces of the end pieces to engage with antifriction-rollers on the outer faces of the frame, threaded uprights on the end pieces, a presser-head adjustably carried on the uprights, integral arms on the lower ends of the end pieces inwardly extending through openings in the legs on each side and spiral springs connected to the arms and to the frame.

4. In combination in a sand-press, suitable supporting-legs having enlarged bases, openings and flattened tops, a table-bed of inverted-V shape having end plates fitted thereto and secured to the top of said legs, integral cross-bars on said table-bed, an adjustable gage fitted to said cross-bars, integral guide-lugs on the outer faces of the table-legs, antifriction-rollers on the outer faces of said end plates, a shaft journaled in said end plates under and parallel to the table-bed, integral heads and cranks on the ends of the shaft, an integral, cylindrical socket provided with a set-screw on one end thereof, a lever fitted to the socket, corresponding end pieces fitted to the outer faces of the legs having integral ears on the upper ends, slotted lower ends to fit the guide-lugs, outer flanges, inner guide-flanges to engage with the antifriction-rollers when the end pieces are turned into their vertical position, draw-bars journaled to said cranks and to integral ears on the upper ends of the end pieces, threaded uprights secured to the upper end of the end pieces, a presser-head carried on the uprights, nuts fitted thereto for adjusting the position of the presser-head, integral arms on the lower ends of the end pieces inwardly extending through openings in the legs and spiral springs attached to said arms and to fixed studs on the inner faces of the legs to return the presser-head into first position when the operation has been completed.

658,583. PRESS. HENRY E. PRIDMORE, Chicago, Ill. Filed Jan. 31, 1900. Serial No. 3,513. (No model.)

Claim.—1. In a differential screw mechanism for presses, the combination of a screw-spindle having an operating-handle and revolubly connected with the press-platen, and a sleeve through which said spindle is threaded with a low pitch, the sleeve working with a high pitch in a correspondingly-threaded bearing in the press-frame, and the threads of the sleeve and its bearing in the frame having beveled upper surfaces.

2. In a differential screw mechanism for presses, the combination of a screw-spindle having an operating-handle and revolubly connected with the press-platen, and a screw through which said spindle is threaded with a low pitch, the sleeve working with a high pitch in a threaded bearing in the press-frame, and the threads of the sleeve being at such angle to the sleeve's axis as to present a greater bearing-surface on their upper sides.



3. In a differential screw mechanism for presses, the combination of a frame having a screw-thread of high pitch, a sleeve having an external thread of like pitch working therein, and provided with an internal thread of relatively-low pitch, a spindle having an operating-handle and an exterior thread corresponding to the internal thread of the sleeve and working therein, a platen to which said spindle is revolubly connected, and a flange on the spindle adapted to engage the lower end of the sleeve.

4. In a differential screw mechanism for presses, the combination of a frame having a screw-thread of high pitch, a sleeve having an external thread of like pitch working therein, and provided with an internal thread of relatively-low pitch, a spindle having an exterior thread corresponding to the internal thread of the sleeve and working therein, a platen to which said spindle is connected, and a guide ring or collar on the spindle within the sleeve, said sleeve having a plain unthreaded upper exterior portion.

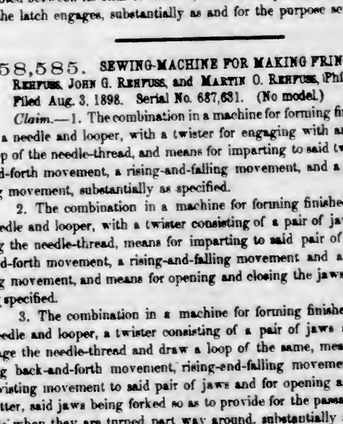
5. In a differential screw mechanism for presses, the combination of a frame having a cross-bar provided with a screw-thread of high pitch, a sleeve having an external thread of like pitch working therein, and provided with an internal thread of relatively-low pitch, a spindle having a hand-wheel on its upper end above the cross-bar and provided with an exterior thread corresponding to the internal thread of the sleeve, and a platen to which said spindle is connected, said spindle being of greater length than the sleeve and extending beyond the latter at both ends a distance sufficient to permit compressing movement of the spindle without contact of the hand-wheel with the frame or sleeve.

6. In a differential screw mechanism for presses, the combination of a sleeve having an external thread of high pitch working in a threaded bearing in a cross-bar of the press-frame, a spindle having an operating-handle above the cross-bar and revolubly connected to the press-platen below the bar, said spindle having an exterior thread of low pitch working through the threaded interior of the sleeve, and an abutment on the spindle with which the sleeve contacts when the spindle is reversed to raise the platen.

658,584. DOOR-LOCKING DEVICE. INGWER F. REDLEFSEN, Texarkana, Ark. Filed June 27, 1900. Serial No. 21,736. (No model.)

Claim.—1. A locking and releasing means for sliding doors, comprising a longitudinally-movable rod, a cylinder into which one end of said rod extends, a piston on the rod within the cylinder, a motive-agent pipe leading into said cylinder, and a door-engaging latch carried by and adapted to be moved out of locking engagement by a movement of the rod, substantially as specified.

2. A locking and releasing device for doors, comprising a vertically-movable rod, a cylinder in which the lower end of said rod engages, a piston on the rod within the cylinder, means for supplying a motive agent to the interior of said cylinder, a hook-latch extended through an opening in said rod and having pivotal connection with the rod, and a fixed plate having an opening into which the inner end of said latch passes, substantially as specified.



3. A door locking and releasing device, comprising a vertically-movable rod, latches extended through openings in said rod and pivoted to the rod, a fixed plate having openings through which the inner ends of said latches pass, a keeper-plate having openings to receive the outer hook ends of said latches, the said keeper-plate being secured to the door, a spring for moving the rod downward, and an air-pressure mechanism for moving the rod upward to release the latches from their locking connection with the door, substantially as specified.

4. A locking and releasing mechanism for doors, comprising a vertically-movable rod, latches having swinging connection with said rod and adapted for engagement with the door, a cylinder in which the lower end of said rod engages, a piston on the rod within the cylinder, a pipe leading into the cylinder below the piston, a valve in said pipe, and a nipple on said pipe between the valve and cylinder and adapted for attachment to a pump, substantially as specified.

5. A locking and releasing device for doors, comprising a cylinder connected with a motive-agent supply, a piston in the cylinder, a sliding rod with which the piston is connected, a latch pivoted to the rod, and a fixed part with which the latch engages to swing it on its pivot when the rod is moved, substantially as described.

6. A locking and releasing device for doors, comprising a cylinder connected with a motive-agent supply, a piston in the cylinder, a sliding and spring-pressed rod having one end connected with the piston, a latch pivoted between its ends to the rod, and a fixed part with which one end of the latch engages, substantially as and for the purpose set forth.

658,585. SEWING-MACHINE FOR MAKING FRINGE. GEORGE RENFUSS, JOHN G. RENFUSS, and MARTIN O. RENFUSS, Philadelphia, Pa. Filed Aug. 3, 1898. Serial No. 687,631. (No model.)

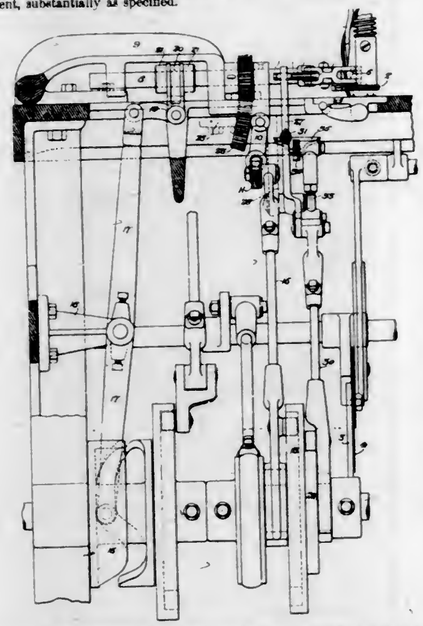
Claim.—1. The combination in a machine for forming finished fringe, of a needle and looper, with a twister for engaging with and drawing a loop of the needle-thread, and means for imparting to said twister a back-and-forth movement, a rising-and-falling movement, and a partial twisting movement, substantially as specified.

2. The combination in a machine for forming finished fringe, of a needle and looper, with a twister consisting of a pair of jaws for engaging the needle-thread, means for imparting to said pair of jaws a back-and-forth movement, a rising-and-falling movement and a partial twisting movement, and means for opening and closing the jaws, substantially as specified.

3. The combination in a machine for forming finished fringe, of a needle and looper, a twister consisting of a pair of jaws adapted to engage the needle-thread and draw a loop of the same, means for imparting back-and-forth movement, rising-and-falling movement and partial twisting movement to said pair of jaws and for opening and closing the latter, said jaws being forked so as to provide for the passage of the needle when they are turned part way around, substantially as specified.

4. The combination in a machine for forming finished fringe, of a needle and looper, a twister consisting of a pair of jaws adapted to engage with the needle-thread and draw a loop of the same, means for moving said jaws back and forth, for raising and lowering the same, and for im-

parting a partial twist to the jaws as they rise and fall, with devices for acting upon the movable jaw both above and below the work-table so as to open the same when the twister is at both extremes of its movement, substantially as specified.

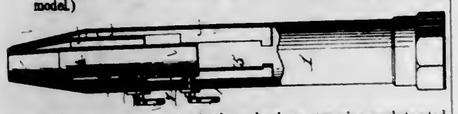


5. The combination in a machine for making finished fringe, of a needle and looper, a twister adapted to engage the needle-thread and draw a loop of the same, means for moving said twister back and forth, and raising and lowering the same, and a rack engaging with a pinion on the stem of the looper as the same rises and falls so as to impart a partial turn thereto, substantially as specified.

6. The combination in a machine for forming finished fringe, of a needle and looper, with a twister adapted to engage the needle-thread and draw a loop of the same, a rod carrying said twister, a pivoted frame in which said rod is guided so as to slide, mechanism for reciprocating said rod and vibrating the frame, and means for partially rotating the twister about the axis of said reciprocated rod, substantially as specified.

7. The combination in a machine for forming finished fringe, of a needle and looper, with a twister consisting of a pair of jaws, mechanism for moving the same to and fro, for raising and lowering them, and for imparting a partial turn to the jaws, with a pair of connected levers operating at right angles to each other and adapted to act upon the movable jaw of the twister, when the same is in its extreme position, substantially as specified.

658,586. FIRE-HOSE. MEINHARD REILING, Fort Wayne, Ind. Filed Aug. 17, 1899. Renewed July 27, 1900. Serial No. 25,048. (No model.)



Claim.—1. A nozzle for fire-hose, having a tapering unobstructed exit end, an open inlet end arranged in alinement, an interior tube-section provided with a tapering exit and an open inlet alined with the exit and inlet of the nozzle-body, and means for shifting the tube-section to move its tapering exit end into the exit of the nozzle-body, substantially as described.

2. A nozzle for fire-hose, consisting of a nozzle-body having an unobstructed exit at its front end, an open inlet at its rear end alined with said exit, an interior tube-section having a front exit end and a rear inlet end in alinement with the said exit and inlet of the nozzle-body, and mechanism having a part thereof extending laterally through the side wall of the nozzle-body for shifting said tube-section longitudinally to move its exit end into or out of the exit of the nozzle-body, substantially as described.

3. A nozzle for fire-hose, consisting of a nozzle-body, having an exit and an inlet end, an interior tube-section having an exit and an inlet end alined with the inlet and exit ends of the nozzle-body, a rack secured to and extending longitudinally of the outer surface of the tube-section, a gear arranged between said tube-section and the nozzle-body, and means for rotating said gear to shift the tube-section longitudinally and place its exit end within the exit of the nozzle-body, substantially as described.

4. A nozzle for a fire-hose, having a tube-section arranged therein, a rack secured to and extending longitudinally of the tube-section, a gear engaging said rack, and means for rotating the gear to shift the tube-section longitudinally and move its front end into or out of the exit of the nozzle, substantially as described.

5. A nozzle for a fire-hose, consisting of a nozzle-body having a lateral orifice, an interior tube-section, a rack secured to and extending longitudinally of the tube-section, a gear arranged between said tube-section and said nozzle-body, and a spindle extending through the lateral orifice in the nozzle-body and connected with said gear to shift the tube-section and move its exit end into or out of the exit of the nozzle-body, substantially as described.

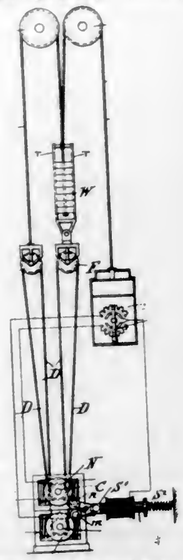
6. The combination with a nozzle for fire-hose, of a plurality of interior, concentric tube-sections having support upon longitudinal ribs, and means for independently adjusting said sections longitudinally, substantially as described.

7. The combination with a nozzle for fire-hose, of one or more interior, concentric, tube-sections supported upon longitudinal ribs, a spur-gear meshing with a rack on each section, and a short spindle passing through the wall of the nozzle to carry said gear, substantially as described.

8. The combination with a nozzle for fire-hose, of one or more interior, concentric tube-sections supported by longitudinal ribs, a spur-gear meshing with a rack on each section, a short spindle passing through the wall of the nozzle to carry said gear, and a handle connected to the outer end of the spindle by a pivot, substantially as described.

9. The combination with a nozzle for fire-hose, of a plurality of interior, concentric tube-sections of successively-reduced diameter supported upon longitudinal ribs, said sections being of different length, spur-gears meshed with racks on said tube-sections and carried by spindles passing through the wall of the nozzle, and handles pivoted to the outer ends of said spindles, substantially as described.

658,587. ELEVATOR. GEORGE H. REYNOLDS, New York, N. Y., assignor to the Otis Elevator Company, same place. Filed July 17, 1900. Serial No. 23,875. (No model.)



Claim.—1. The combination, with an elevator-car and its counterweight, of two motors adapted to be run in opposite directions to each other at the same or at different speeds, connections between said motors, car and counterweight, and a friction device applied to the motor-shafts for synchronizing the speed of the motors when the car is to be stopped and released therefrom when the car is to be put in motion, substantially as set forth.

2. The combination, with an elevator-car and its counterweight, of two motors adapted to be run in opposite directions to each other at the same or at different speeds, connections between said motors, car and counterweight, a synchronizing friction device acting on said motors, and means for operating said friction device so as to synchronize the speed of the motors whenever the car is to be stopped and reëstablish the differential speed of the motors when the car is to be put in motion, substantially as set forth.

3. The combination, with an elevator-car and its counterweight, of two motors adapted to run in opposite directions to each other at the same or at different speeds, connections between said motors, car and counterweight, a synchronizing friction-gear for said motors consisting of friction-disks on the motor-shafts, intermediate friction-disks placed in contact with each other, and mechanism to place the intermediate friction-disks in contact with the motor-disks when the motors are to be synchronized and the car stopped, or to release the intermediate friction-disks from the motor-disks when the motors are to be run at differential speed for moving the car in one or the other direction, substantially as set forth.

658,588. CLOSURE FOR RECEPTACLES. HENRY S. REYNOLDS and EDWARD M. PEACOCK, New York, N. Y., assignors to the Iron Clad Manufacturing Company, same place. Filed Dec. 4, 1899. Serial No. 739,127. (No model.)



Claim.—1. A receptacle comprising a body and a closure, said closure comprising a sheet-metal plate having a flange or rim bent at an angle thereto and extending in parallelism with the wall of said body and adapted to frictionally engage said wall, and an inflatable gasket carried by one of said parts and adapted when inflated to engage the other of said parts and form a tight joint.

2. A receptacle comprising a body and a closure, said closure comprising a plate having a flange or rim extending at an angle to said plate, and an inflatable gasket carried by one of said parts and located at one side of the plane of said closure-plate and adapted when inflated to engage the other of said parts and form a tight joint.

3. A metallic receptacle comprising a body the metal of which is bent or bulged at one part thereof to form an annular groove or recess; a closure comprising a plate having a flange or rim extending at an angle to said plate, and which flange is also bent or bulged at one part thereof to form an annular groove or recess adapted to register with said body groove or recess, and which flange-recess is located at one side of the plane of said plate; and an inflatable gasket carried by the recess or groove of one of said parts and having a valve in position below the upper edge of said body.

4. A receptacle comprising a body and a closure comprising a sheet-metal plate having a flange or rim extending at an angle to said plate and adapted to fit into said body, and an inflatable gasket carried on said flange or rim at one side of the plane of said plate and adapted when inflated to engage the wall of said body and form a tight joint.

5. A receptacle comprising a body; a chambered closure provided with an annular flange or rim adapted to fit into, and extending in parallelism with the wall of, the receptacle-body, and having an opening through said flange from the outer to the inner side thereof; and an inflatable gasket carried on the outer side of said flange and adapted when inflated to engage the wall of said body and form a tight joint, said gasket having a nipple projecting through said opening and into the interior or chamber of said closure and provided with a valve.

6. A receptacle comprising a body and a chambered closure provided with an annular flange adapted to fit into said receptacle, said flange having an annular recess communicating at one point with the interior of said closure by an opening, and an inflatable gasket located in said recess and adapted when inflated to engage the wall of said body and form a tight joint, said gasket having a nipple projecting laterally through said opening and provided with a valve located in said closure-chamber.

7. A metallic receptacle comprising a body the metal at one portion of which is bent or bulged outwardly to form an interiorly-located annular recess; a chambered closure comprising a plate provided with a flange or rim extending at an angle thereto and adapted to fit into said body, and the metal of which flange at one portion thereof is also bent or bulged inwardly into the interior of said closure to form an exteriorly-located annular recess located at one side of the plane of said plate and adapted to register with the annular recess of the body, and which flange-recess is in communication with said closure-chamber by an opening; and an annular inflatable gasket located in said flanged recess and having a nipple projecting laterally through said opening and into the chamber of said closure and provided with a valve normally in position below the edge of said closure.

8. A metallic receptacle comprising a body the metal at one portion of which is bent or bulged outwardly to form an interiorly-located annular recess; a chambered closure comprising a plate provided with a flange or rim extending at an angle thereto and adapted to fit into said body, and the metal of which flange at one portion thereof is also bent or bulged inwardly into the interior of said closure to form an exteriorly-located annular recess located at one side of the plane of said plate and adapted to register with the annular recess of the body, and which flange-recess is in communication with said closure-chamber by an opening, said flange having a laterally-extending rim adapted to extend over the upper edge of said body; and an annular inflatable gasket located in said flange-recess and having a nipple projecting laterally through said opening and into the chamber of said closure and provided with a valve normally in position below the edge of said closure.

9. A chambered closure comprising a plate having a rim extending at an angle thereto, said rim being bent or bulged inwardly to form an annular exteriorly-located recess at one side of the plane of said plate, and provided with an opening communicating with the interior of said closure, and an inflatable gasket located in said recess and having a valved nipple projecting through said opening and into said chamber and normally below the edge of said rim or flange.

658,589. APPARATUS FOR MANUFACTURING GAS. HENRI RICHÉ, Paris, France. Filed June 1, 1900. Serial No. 18,746. (No model.)



Claim.—1. In an apparatus for the manufacture of gas, a furnace, a heating-chamber provided therein, a series of vertical flues in communication with said chamber, a vertical retort arranged in each of said flues and adapted to be heated externally, a conduit *k* in communication with each of said flues and provided with a suitable damper, a separate cylinder connected to the bottom of each of said retorts, a washing-tank, and connections between said tank and cylinders, substantially as described.

2. In an apparatus for the manufacture of gas, a furnace, a heating-chamber provided therein, a series of vertical flues in communication with said chamber, a vertical retort arranged in each of said flues and adapted to be heated externally and further provided with a suitable top or cover, a separate filtering or purifying device connected to the lower end of each of said retorts, a washing-tank, a connection between said tank and filtering device, a series of conduits *k* each provided with a damper, a series of conduits *j* for establishing communication between said conduits *k* and said vertical flues, and a suitable outlet-pipe connection for said tank.

658,590. COMPOSITION OF MATTER FOR WALL-PLASTER. THOMAS A. ROBINSON, Lima, Ohio, assignor to the American Wood Fiber Company, same place. Filed June 22, 1900. Serial No. 21,221. (No specimens.)

Claim.—1. The herein-described composition of matter to be used as a wall-plaster, consisting of calcined gypsum, whiting, sand, wood fiber, cement and argol, substantially as described.

2. The herein-described composition of matter to be used as a wall-plaster, consisting of seven hundred pounds of calcined gypsum, two hun-

dred pounds of whiting, eight hundred pounds of sand, one hundred pounds of wood fiber, one hundred and ninety-eight pounds of cement, and two pounds of a retarder, substantially as described.

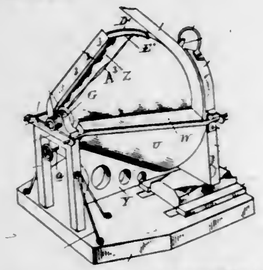
3. The herein-described composition of matter to be used as a wall-plaster, consisting of calcined gypsum, whiting, sand, wood fiber, cement and a retarder.

658,591. CHARRING-TOOL FOR ORNAMENTING WOOD. JOHN SCHLEGEL, New York, N. Y. Filed Nov. 13, 1899. Serial No. 736,784. (No model.)



Claim.—The herein-described charring-stylus, consisting of an approximately-straight tail end, a V-shaped intermediate portion, having branches of unequal length, neither branch being in line with the tail end and a forwardly-bent toe on the longer branch, said parts being practically in one plane, substantially as set forth.

658,592. TWISTING MACHINE. GEORGE P. SCHLEMMER and HENRY J. SCHLEMMER, Ann Arbor, Mich. Filed Dec. 16, 1899. Serial No. 740,515. (No model.)



Claim.—1. In a twisting-machine, the combination with a support, a movable member mounted upon the support having a twisting-surface thereon fashioned to move at different velocities at different distances from its axis of movement, a second member provided with a complementary twisting-surface adjacent and in operative relation to the movable surface, there being a feed-opening leading to the movable surface, said opening being substantially equal in length to the distance between the points of minimum and maximum velocity on the movable surface, and means for actuating the movable member.

2. In a twisting-machine, the combination of a support, a movable member mounted upon the support having a twisting-surface thereon fashioned to move at different velocities at different distances from its axis of movement, a second member provided with a complementary twisting-surface arranged immediately adjacent and in operative relation to the movable surface and having an opening formed therein leading to said movable surface, said opening being substantially equal in length to the distance between the points of minimum and maximum velocity on the movable surface, means for actuating the movable member, and means for adjusting one of the surfaces to or away from the other surface.

3. In a twisting-machine, the combination of a support, a conical member mounted upon the support for rotary movement, a conical housing for said member having a feed-opening formed therein extending its entire length to permit of the insertion therethrough of the article to be twisted, and means for rotating the conical member, substantially as described.

4. In a twisting-machine, the combination of a support, a conical member mounted thereon for rotary movement, a conical housing for said member having a feed-opening formed therein extending the entire length of the housing to permit of the insertion between the twisting-surfaces of a strip of material, means for adjusting the conical housing to vary the distance between the surfaces, and means for rotating said conical member, substantially as described.

5. In a twisting-machine, the combination of the support, uprights at each end of the support, bearings upon the uprights, a conical housing detachably mounted within said bearings, said housing having a radial feed-opening arranged therein extending its entire length, a cone-shaped member within the housing journaled in the uprights for rotary movement, and means for rotating the conical member.

6. In a twisting-machine, the combination of a support, a revoluble member mounted upon the support having a surface formed thereon fashioned to move at different velocities at different distances from its axis of rotation, a stationary member provided with a surface arranged in juxtaposition to the movable surface, said stationary member having a feed-opening formed thereon and extending through its surface, a twister-arm carried by the stationary member projecting within the opening, and means for rotating the movable member.

7. In a twisting-machine, the combination of the support, a conical housing thereon having a feed-opening formed therein, a conical member arranged within the housing, for rotary movement, the base of said member extending to or through the corresponding ends of the housing, a member having a face arranged in juxtaposition to the base of the conical member, and means for rotating said latter member.

8. In a twisting-machine, the combination of the support, a conical housing thereon having a feed-opening formed therein, a conical member arranged within the housing for rotary movement, the base of said member extending to or through the corresponding end of the housing, means for adjusting the conical member within the housing, a stationary member having a slotted face arranged in juxtaposition to the base of the conical member, means for moving said slotted face to or away from the base, and means for rotating the conical member.

9. In a twisting-machine, the combination of the support, a revoluble member mounted upon the support having a surface formed thereon fashioned to move at different velocities at different distances from its axis of rotation, a stationary member provided with a surface arranged in juxtaposition to the movable surface, said stationary member having a feed-opening formed therein extending through its surface, a deflector at one side of said opening, and means for rotating the revoluble member.

658,593. GREEN-YELLOW DYE AND PROCESS OF MAKING SAME. FRANZ SCHOLL, Höchst-on-the-Main, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed Dec. 15, 1897. Serial No. 662,056. (Specimens.)

Claim.—1. The herein-described process of making new greenish-yellow-dyeing dyestuffs, which consists in sulfonating the thio bases obtained by the melting of sulfur with para-toluidin or xylidin and diazotizing the sulfonic acids thus obtained and bringing them into reaction with molecular quantities of aliphatic beta-diketones derived from $CH_3-CO-CH_2.COX$ (X=alphyl, alkyl, alkyloxy and anilid), substantially as set forth.

2. The new dyestuffs derived from diazotized primulinsulfonic acid and beta-diketones, being yellow powders, easily soluble in water with a pure-yellow but not very intense color, the color of the aqueous solution being not changed by an addition of soda or mineral acids, but becoming darker on addition of strong caustic alkali, said dyestuffs dissolving in concentrated sulfuric acid with the same color as in water but with a more vivid hue, and dyeing wool yellow in an acid and cotton in a neutral or alkaline solution, substantially as set forth.

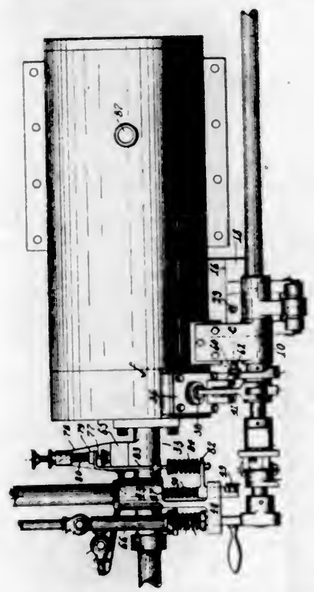
3. The new dyestuffs derived from diazotized primulinsulfonic acid and ethyl acetoacetate, being yellow powders, easily soluble in water with a pure-yellow but not very intense color, the color of the aqueous solution being not altered on addition of soda or mineral acids, getting darker on addition of strong caustic alkali, dissolving in concentrated sulfuric acid with the same color as in water but with a more vivid hue, and without changing color when heated, said dyestuffs dyeing both wool in an acid and cotton in a neutral or alkaline solution yellow with a strong greenish tint, substantially as set forth.

658,594. GAS-ENGINE. CHARLES W. SEARTLE and CHARLES E. MILLER, Middletown, Ohio, assignors to the Middletown Machine Company, same place. Filed Dec. 23, 1899. Serial No. 741,408. (No model.)

Claim.—1. In a gas-engine, the combination, substantially as set forth, of a back cylinder-head, an air-inlet pipe secured thereto, an aperture leading into said inlet-pipe to admit gasolene thereto, a valve controlling such aperture, a gasolene-pump mounted on said inlet-pipe, a discharge-pipe leading from said pump for the supply of gasolene through said aperture, a gas-supply pipe leading to said air-supply pipe between its admission end and said aperture, a valve in said gas-supply pipe, and mechanism for automatically operating said two valves.

2. In a gas-engine, the combination, substantially as set forth, of a cylinder-head, an inlet-pipe connected therewith, a gasolene-box at the side of said inlet-pipe, an aperture placing said box in communication with the interior of said inlet-pipe, a needle-valve engaging said aperture, a spring engaging the stem of said needle-valve and pressing it to closed position, a stop-screw in position to engage the outer end of the stem of the needle-valve and prevent or limit its opening motion, and mechanism for opening said needle-valve against the resistance of said spring.

3. In a gas-engine, the combination, substantially as set forth, of a cylinder-head, an inlet-pipe connected therewith, a gasolene-box at the side of said inlet-pipe, an aperture placing said box in communication with the interior of said inlet-pipe, a needle-valve engaging said aperture, a spring engaging the stem of said needle-valve and pressing it to closed position, a stop-screw in position to engage the outer end of the stem of the needle-valve and prevent or limit its opening motion, a reciprocating part connected with said needle-valve and adapted to open it against the resistance of said spring, and a spring, stronger than said first-mentioned spring, interposed between said reciprocating part and said needle-valve.



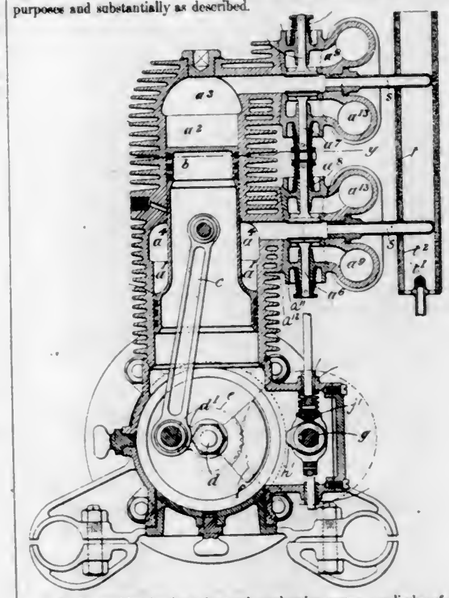
4. In a gas-engine, the combination, substantially as set forth, of an inlet-conduit connected with the cylinder and having independent inlets for air and gas and gasolene, normally-closed independent valves at said gas-inlet and gasolene-inlet, and mechanism for automatically operating said two valves.

5. In a gas-engine, the combination, substantially as set forth, of an inlet-pipe, a gas-inlet conduit leading thereto, a puppet-valve in said conduit, a spring holding said puppet-valve normally closed, a cam adapted to engage the stem of said valve and open the valve against the resistance of said spring, a gasolene-conduit leading to said inlet-pipe, a needle-valve in said conduit and having its axis parallel with that of said puppet-valve, a spring engaging the stem of the needle-valve and holding it normally closed, connections between the stem of the needle-valve and the stem of the puppet-valve to cause opening motion of the latter to be imparted also to the former, and a spring interposed in said connections to permit opening motion of said puppet-valve while the needle-valve is at rest.

658,595. INTERNAL-COMBUSTION MOTOR. WILLIAM E. SIMPSON, London, England. Filed Apr. 26, 1900. Serial No. 14,489. (No model.)

Claim.—1. An internal-combustion motor, having in combination a cylinder of varying bore, a trunk-piston to form with said cylinder working chambers, an inlet-valve for each of the working chambers through which the gaseous explosive charge may be admitted into each of the said chambers, and an exhaust-valve for each of the working chambers, through which the products of combustion may be discharged, and means for holding open one of the exhaust-valves for the whole cycle of operations except and until almost the end of the ordinary compression-stroke, for the purposes and substantially as described.

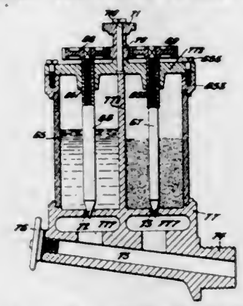
2. An internal-combustion motor in combination a cylinder having the outer end of a larger internal diameter than the inner end, a trunk-piston having its outer end of a larger diameter than its inner end, and of dimensions corresponding to the internal dimensions of the cylinder to form with said cylinder a working chamber at the inner end thereof and a second annular working chamber, an inlet-valve admitting a gaseous explosive charge into said working chambers, and an exhaust-valve through which the products of combustion may be discharged, and means for holding open one of the exhaust-valves for the whole cycle of operations except and until almost the end of the ordinary compression-stroke for the purposes and substantially as described.



3. In combination in an internal-combustion motor, a cylinder of varying bore, a trunk-piston to form with said cylinder working chambers, a connecting-rod and valve mechanism with means for controlling the same to supply the said chambers alternately with fuel or to cut off either chamber from its fuel-supply and to admit a non-explosive charge to the chamber thus cut off which charge is then compressed to maintain the thrust on the connecting-rod substantially as described.

4. In combination in an internal-combustion motor, a cylinder of varying bore, a trunk-piston to form with said cylinder working chambers, a connecting-rod and inlet and outlet valve mechanism with means for controlling the same to cut off either chamber from its fuel-supply and to permit the same to exhaust until almost the end of the ordinary compression-stroke, to maintain the thrust on the connecting-rod, substantially as described.

658,596. LUBRICATOR. WILLIAM E. SIMPSON, London, England. Filed May 23, 1900. Serial No. 17,743. (No model.)



Claim.—1. A lubricator, comprising a body or vessel having two chambers, one for oil the other for graphite, valves controlling the outlets from such chambers, and a transverse passage beneath the chambers, and within the body or vessel into which both the oil and graphite pass upon the opening of the valves, for the purpose and substantially as described.

2. A lubricator, consisting of two chambers, one for oil, the other for graphite, valves controlling the outlets from such chambers, such valves having screwed stems, and pinions at their outer extremities, a central pinion in gear with said pinions, by which the screwed stems of the valves are rotated for the operation of the valves, and a passage beneath the chambers into which both oil and graphite pass upon the opening of the valves, for the purpose and substantially as described.

3. A lubricator consisting of a base part 77, a cylindrical cup 65, forming with the central partition 771 two chambers, one for oil, the other for graphite, a cover, 772 closing said chambers, screwed needle-valves 66 and 67 carried by said cover, closing orifices in the bottom of each of the chambers, means for rotating the valves 66 and 67 to open or close them, and an inclined passage beneath the chambers, for the purpose and substantially as described.

4. A lubricator, consisting of a base part 77 a cylindrical cup 65, forming with the central partition 771 two chambers, one for oil, the other for graphite, a cover 772, closing said chambers, screwed needle-valves 66 and 67 carried by said cover, closing orifices in the bottom of each of the chambers, means for rotating the valves 66 and 67 to open or close them consisting of pinions 68 and 69 and gearing with a central pinion 70, which is provided with a milled bead 71, and an inclined passage beneath the chambers, for the purpose and substantially as described.

5. A lubricator, consisting of two chambers, one for oil, the other for graphite, valves for letting out a constantly-proportioned mixture, and means for simultaneously operating both said valves for the purpose and substantially as described.

6. A lubricator, consisting of two chambers, one for oil, the other for graphite, valves controlling outlets from such chambers and positively geared to operate together.

658,597. **SPINNING-SPINDLE.** CYRUS E. SMITH, Fall River, Mass. Filed Dec. 14, 1899. Serial No. 740,267. (No model.)



Claim.—1. A spindle, and a bolster combined with a clearer to prevent the accumulation of waste to the bearing-surfaces between the spindle and bolster and operating during the relative movement of the spindle and bolster to force any waste outward from the bearing-surfaces.

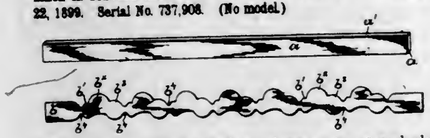
2. A spindle, and a bolster combined with a spiral clearer surrounding the spindle and inclosed by and connected with said bolster.

3. A spindle and a bolster combined with right and left hand spiral clearers surrounding the spindle and inclosed by the bolster.

4. A spindle, and a bolster having slots, combined with right and left hand spiral clearers surrounding the spindle and inclosed by the bolster, the end coils of the spiral clearers being disposed in said slots.

5. A bolster having at its ends spiral springs, combined with a spindle, said springs constituting the lateral bearings between the spindle and bolster.

658,598. **BLANK FOR HINGE-JOINTS OF SPECTACLES.** FREDERICK A. STEVENS and JOHN F. BRADY, Providence, R. I. Filed Nov. 22, 1899. Serial No. 737,908. (No model.)



Claim.—1. As a new article of manufacture, a bar of stock-plate, containing a plurality of blanks consisting of the parts b', b^2, and b^3, adapted to form the hinge-joints of spectacles, said blanks being connected together by contracted necks b^4, all of the exposed surfaces of said bar being covered with the plating metal, as described.

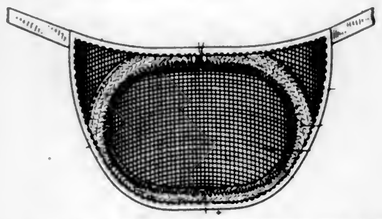
2. A bar of stock-plate, containing one or more blanks, consisting of the parts b', b^2, and b^3, adapted to form the hinge-joints of spectacles, said blanks being connected together by contracted necks b^4, whereby the bar may be kept in stock without injury and the blanks may be readily separated, as described.

658,599. **BUSTLE.** HENRY H. TAYLOR, Bridgeport, Conn. Filed Aug. 21, 1900. Serial No. 27,576. (No model.)

Claim.—1. A bustle made from woven-wire cloth and a coil-spring secured in distended condition to said cloth near the periphery thereof, whereby when released said spring will draw said cloth into a bulging form, substantially as set forth.

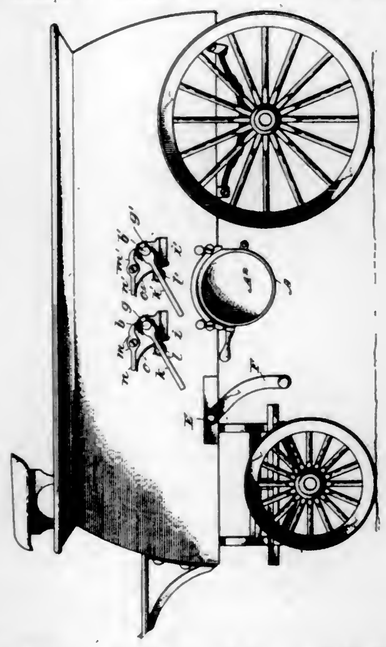
2. A bustle comprising a woven-wire blank of suitable shape and dimensions, and a coil-spring secured in distended condition to said blank around the middle portion thereof, and by its resiliency acting to contract the periphery of said blank whereby a resilient bulging form is produced, substantially as set forth.

3. In a bustle, the combination of a woven-wire blank of suitable shape and dimensions, a flexible pocket secured to said blank at or about the peripheral edges thereof, and a coil-spring within said pocket and by its resiliency acting to contract said edges whereby a resilient bulging form is produced, substantially as set forth.



4. In a bustle, the combination of a woven-wire blank of suitable shape and dimensions, a ring-shaped flexible pocket stitched to the major portions of the upper and lower edges of said blank, and a coil-spring within said pocket and acting by its resiliency to contract the peripheral edges of said blank whereby a bulging form is produced, substantially as set forth.

658,600. **DELIVERY-CHUTE FOR COAL-WAGONS.** SAMUEL W. TAYLOR, Baltimore, Md., assignor of one-half to Charles H. Haeseler, Philadelphia, Pa. Filed Aug. 22, 1899. Serial No. 728,057. (No model.)



Claim.—1. The combination with the wagon or car body, of a transversely-arranged delivery-chute located in the bottom thereof, a screw conveyer located in the said chute for delivering the material sidewise from the vehicle, and means for elevating each end of the vehicle-bottom for gradually feeding the material to the delivery-chute, substantially as described.

2. The combination with the wagon or car body, of a transversely-arranged delivery-chute located in the bottom thereof, a screw conveyer located in said chute, means for operating said conveyer to deliver the material sidewise from the vehicle, and means for simultaneously elevating the bottom sections of the wagon for feeding the material to the delivery-chute, substantially as described.

3. The combination with the wagon or car body, of a transversely-arranged delivery-chute located in the bottom thereof, a front and rear bottom section located on each side of the said chute pivotally mounted at their inner ends to the vehicle-frame, means for elevating the front and rear ends of the said bottom sections, and means located in the chute for feeding the material sidewise from the vehicle simultaneously with the elevating of the bottom sections, substantially as described.

4. The combination with the wagon or car body, of a delivery-chute located in the bottom thereof, bottom sections located on each side of said chute pivotally mounted on shafts journaled in the sides of the wagon-body, a screw conveyer located in the chute, a driving-shaft having gearing connected with the conveyer for operating the same, and gearing connected with the driving-shaft for simultaneously elevating the outer ends of the bottom sections, substantially as described.

5. The combination with the wagon or car body, of a centrally-disposed delivery-chute located therein, pivoted bottoms for said body located on each side of the delivery-chute, a screw conveyer mounted in said chute, a driving-shaft having gearing connected with the conveyer, gearing connected with the driving-shaft for operating the said pivoted bottom sections, and means for disengaging the elevating mechanism from the driving mechanism, substantially as described.

6. The combination with the wagon or car body, of a centrally-disposed delivery-chute arranged transversely in the bottom thereof, a screw conveyer located in said chute, a driving-shaft having gearing connected with the conveyer-shaft, pivoted bottom sections located on each side of the delivery-chute, winding-shafts having mechanism connected with the outer ends of the bottom sections for elevating the same, gearing connecting the said winding-shafts with the conveyer-shaft, and clutch mechanism for disengaging the winding-shafts from the driving-gearing, substantially as described.

7. The combination with the wagon or car body, of a transversely-disposed delivery-chute located in the bottom thereof, a screw conveyer located in said chute, a driving-shaft having gearing connected with the conveyer-shaft, a front and rear bottom section located on each side of the chute pivoted at their inner ends to the vehicle-body, winding-shafts having mechanism for elevating each end of the bottom sections, gearing between the conveyer-shaft and the winding-shafts for operating said winding-shafts, clutches provided on each of the winding-shafts for disengaging them from the driving mechanism, and a ratchet-and-pawl mechanism provided on each of the winding-shafts, for the purpose substantially as described.

8. The combination with the wagon or car body, of a transversely-arranged delivery-chute located in the bottom thereof, bottom sections arranged on each side of said chute pivoted at their inner ends to the side walls of the vehicle-body, a screw conveyer provided in the delivery-chute for discharging the material sidewise from the vehicle, means for operating said conveyer and for simultaneously elevating the bottom sections, and a gate for closing the open end of the delivery-chute, substantially as described.

9. The combination with the winding-shaft for elevating the bottom sections, driving-mechanism for each of said shafts, a ratchet-wheel loosely mounted on each of said winding-shafts keyed thereto so as to revolve therewith, a spring-pressed pawl engaging said ratchets, and a pivoted clutch-lever for each shaft by means of which the said shaft can be moved laterally to disengage them from their driving mechanism, substantially as described.

658,601. **APPLIANCE FOR IMPARTING HEAT AND ELECTRICITY TO THE BODY.** IGNAZ TIMAR, Berlin, Germany. Filed Nov. 10, 1899. Serial No. 736,469. (No model.)



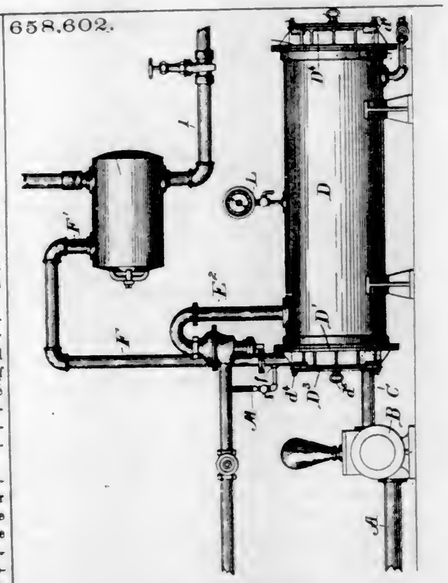
Claim.—1. An appliance for heating and electrifying the body comprising a metallic frame a receptacle attached to one side of said frame, and a heating material soluble in its own water of crystallization contained in said receptacle, as set forth.

2. In an appliance for heating and simultaneously electrifying the body, the combination of a metallic frame having electrical terminals insulating material interposed between the parts of said frame, and a receptacle attached to one side of said frame and adapted to contain a heating medium, substantially as set forth.

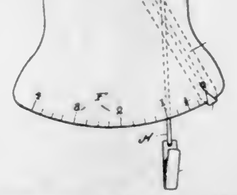
658,602. **DEFECATOR FOR SUGAR-JUICES.** LEO VON TRESCKOW, New Orleans, La. Filed May 21, 1900. Serial No. 17,439. (No model.)

Claim.—An apparatus for heating cane-juice comprising a pump, a heater, provided with double heads with chambers contained between said heads, juice-pipes passing through said heater and connecting said chambers, a steam-pipe for supplying heat to the interior of said heater exterior to said juice-pipes, an air-tight reservoir, a pipe connecting the heater with said reservoir, a delivery-pipe leading from said reservoir, an overflow-pipe from said reservoir, and a lifting relief-valve in said overflow-pipe and normally closing the same, substantially as described.

658,602.



658,603. **ADVERTISING-SCALE.** WILLIAM WARGEL, Philadelphia, Pa., assignor of one-half to Josephus Roberts, same place. Filed Sept. 7, 1899. Serial No. 729,720. (No model.)



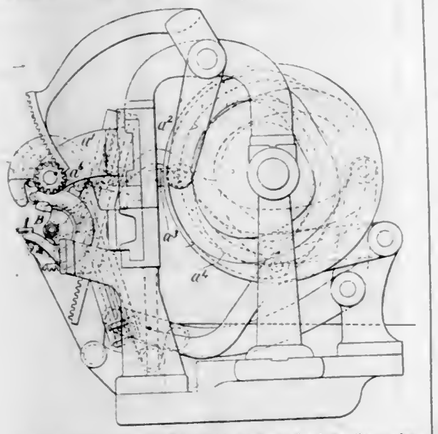
Claim.—1. In combination, a disk having a hole by which it may be suspended, a pointer-bar formed with the disk terminating in a hook-shaped pointer, a bell-shaped dial-plate pivoted centrally of the disk and having its lower edge embraced by the hook of the pointer, a lug struck from the disk adapted to engage the upper edge of the dial-plate to limit the movement thereof in one direction, and a rod carrying a clasp pivoted to the disk between the pointer-bar and the aperture for suspending the disk.

2. In combination, a disk having a hole by which it is suspended, a bell-shaped dial-plate having a series of graduations near its lower edge, said disk having a raised center terminating in a pivotal point on which the dial-plate is hung, a pointer-bar formed with the disk, projecting diagonally therefrom and terminating in a hooked pointer embracing the edge of the dial-plate, and a rod for supporting the matter to be weighed pivoted near the periphery of the disk between the support and the pointer-bar.

658,604. **SHOE-SEWING MACHINE.** GEORGE E. WARREN, Pawtucket, R. I., assignor to the Campbell Machine Company, same place. Filed Oct. 12, 1896. Serial No. 608,568. (No model.)

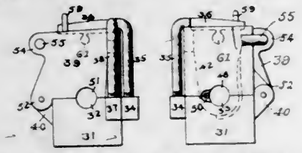
Claim.—1. In a sewing-machine the combination of a hook-needle; a shuttle; a shuttle-holder; a shuttle-driver; a take-up for the needle-thread; mechanism for actuating the needle; mechanism for causing the shuttle and shuttle-driver to move about an axis in the shuttle-holder; mechanism for actuating the take-up to first take up the needle-thread and then

dwell; and mechanism for moving the shuttle-holder away from the preceding stitch while the take-up dwells.



2. In a sewing-machine the combination of a hook-needle; a shuttle; a thread-arm; a thread-eye; mechanism for actuating the needle; mechanism for actuating the shuttle; mechanism to cause the arm and eye to deliver thread to the needle in the form of a bight extending from the hook of the needle over the arm to the work in order to supply slack thread to the needle while the needle is drawing the loop of needle-thread through the work; and mechanism to cause the arm to hold the needle-thread away from the surface of the work while the shuttle is passing through the loop of needle-thread, then drop the loop of needle-thread and return to its position to form a new bight, as the stitch is set.

658,605. CASTING METALLIC BEDSTEADS. GEORGE H. WILLIAMS, Marion, Ind. Filed Sept. 18, 1899. Serial No. 730,955. (No model.)



Claim.—A chill-mold for uniting and forming the head or foot of a metallic bedstead, a chill formed of a main portion 31 provided with ears 34, 37 and 40, the side 41 hinged to the ears 40, the side 39 hinged to one of the ears 40 and having the ear 54 thereon, the portion 42 provided with the extension 45 so formed as to leave a passage-way between it and the main portion 31 for receiving the end rail, the cap 36 with an extension for forming the groove in the casting to support the side rail, the hooks 35, 38 and 55 rotatably secured at one end to the ears 34, 37 and 54 respectively and the clamp 59, an opening through the top and bottom of said chill being left for the reception of the corner-rails of the bedstead.

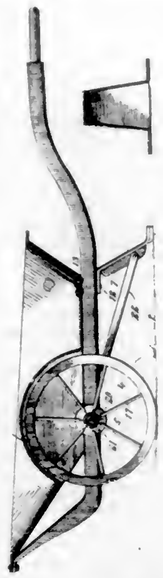
658,606. WHEELBARROW. JASPER B. WILLSEA, Denver, Colo. Filed Apr. 16, 1900. Serial No. 13,068. (No model.)

Claim.—1. A wheelbarrow, comprising handles or side bars having their forward ends curved upward and forward to form striking-bars and to support the edge or flange of the tray, a wheel having its axle-bearings in the side bars between the ends of the body or tray, and a hood in the body or tray extended over the wheel, substantially as specified.

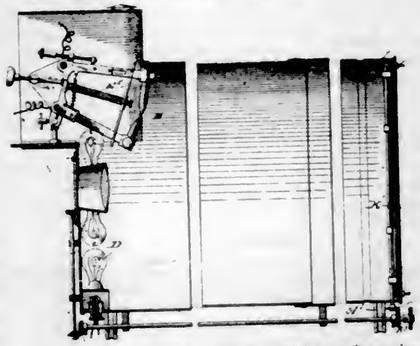
2. A wheelbarrow, comprising tubular handles or side bars, the said handles or side bars being substantially oval in cross-section, the major axis being in a vertical line, a body or tray supported on the side bars, a wheel having its axle-bearings in said side bars between the ends of the body or tray, and a hood in said body or tray extended over the wheel, substantially as specified.

3. A wheelbarrow, comprising handles or side bars, a body portion supported thereon, a wheel having its axle-bearings in the side bars or handles, legs extended from said side bars or handles, and shoes of hardened steel attached to the said legs, the said shoes being curved rearward, substantially as specified.

658,606.



658,607. PROJECTING APPARATUS. FRANK J. ADAMS, New York, N. Y., assignor to the Naturascope Company, same place. Filed Sept. 11, 1899. Serial No. 730,154. (No model.)



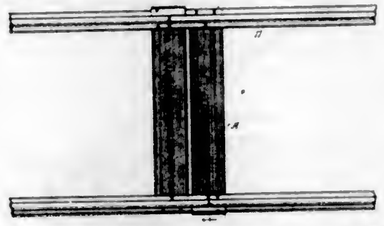
Claim.—1. A projecting apparatus, comprising a casing, a plurality of lenses in the front end of the casing, a plurality of lamps in the front end of said casing and grouped around the lenses in such a manner as to prevent their rays of light from passing directly to the lenses, a dissolving-slide movable over the lenses, and a shutter at the rear end of the casing, for alternately opening and closing a plurality of openings in the rear end of the casing, substantially as shown and described.

2. A projecting apparatus, comprising a casing, a plurality of lenses in the front end of the casing, a plurality of lamps in the front end of said casing and grouped around the lenses in such a manner as to prevent their rays of light from passing directly to the lenses, a dissolving-slide movable over the lenses, a shutter at the rear end of the casing, for alternately opening and closing a plurality of openings in the rear end of the casing, and means for simultaneously actuating the said dissolving-slide and said shutter, substantially as shown and described.

658,608. JOINT FOR PORTABLE RAILWAYS. ALPHONSE H. AILLOUD, Merida, Mexico. Filed June 27, 1900. Serial No. 21,737. (No model.)

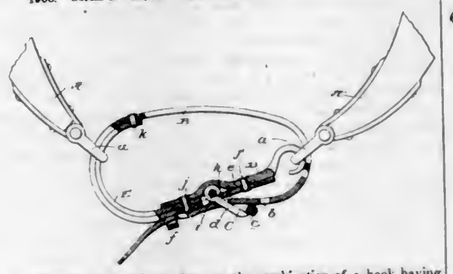
Claim.—1. In a railway, the combination with opposite rails, of sleepers arranged in pairs close together, one end of each sleeper having rigid attachment to a rail, the end attachment of one sleeper being opposite to that of the other sleeper, and a clamp on each sleeper engaging

the ends of two abutting rails opposite the rail to which the sleeper is rigidly attached, substantially as specified.



2. In portable railways, parallel rails, sleepers for the end portions of said rails, one rail end in each end portion of every section of two rails extending to a central transverse point on the end sleeper, while the end of the opposite or connecting rail extends a corresponding distance beyond the outer longitudinal edge of its own sleeper, each end sleeper being secured to both rails and each sleeper being provided with a shoe at one end, which embraces the outer flange of a rail at that end portion of the rail which does not cross the sleeper, as set forth.

658,609. HAME-STRAP. WILLIAM F. AMEND, Dayton, Ohio, assignor of one-half to Jacob M. Amend, same place. Filed June 16, 1900. Serial No. 20,581. (No model.)



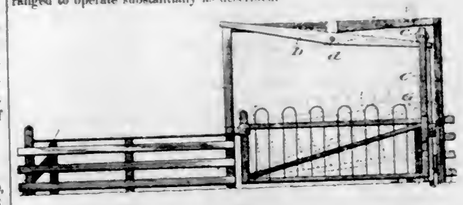
Claim.—1. In a hame-fastener, the combination of a hook having a flat shank, a buckle disposed at one side of the shank of the hook and comprising a body and a tongue pivotally connected to the inner transverse bar of the body, the main leather strap B having one end passed through the body of the buckle and receiving the tongue thereof and directly connected to the flat shank of the hook at a point between the buckle and the hook, the reinforcing-strap E of leather arranged at the inner side of the strap B and having one of its ends connected to said strap B and the shank of the hook at a point between the buckle and rear end of the hook-shank, and a rivet *j* connecting the straps B and E and the hook-shank, substantially as specified.

2. In a hame-fastener, the combination of a hook having a flat shank provided in one side with a transverse depression *g* and a longitudinal depression *h* intersecting depression *g*, a buckle comprising a body having its inner transverse bar seated in the depression *g* of the hook-shank, and a tongue having an eye receiving the inner transverse bar of the body and seated in the depression *h* of the hook-shank, and a leather strap having one end passed through the body of the buckle and receiving the tongue thereof, and connected to the shank of the hook at opposite sides of the buckle, substantially as specified.

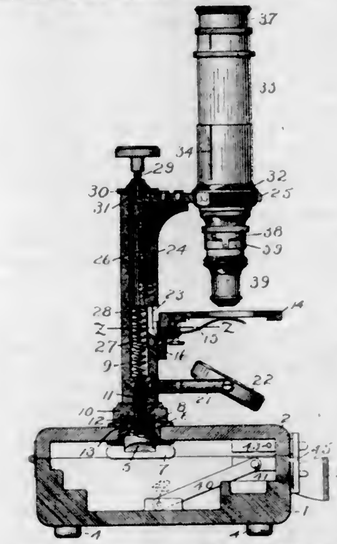
3. In a hame-fastener, the combination of a hook formed of one piece of metal, and having a flat shank provided at one end with a keeper-loop and in one side with a transverse depression *g* and a longitudinal depression *h* intersecting depression *g*, a buckle comprising a body having its inner transverse bar seated in the depression *g* of the hook-shank, and a tongue having an eye receiving the inner transverse bar of the body and seated in the depression *h* of the hook-shank, a main leather strap having one end passed through the keeper-loop, and the body of the buckle and receiving the tongue thereof, and connected to the shank of the hook at one side of the buckle, and a reinforcing-strap of leather arranged at the inner side of the main strap and having one of its ends connected to said main strap and its other end passed through the keeper-loop and interposed between and connected to the main strap and the shank of the hook, substantially as specified.

658,610. SLIDING GATE. JOHN W. BAKER, Tippecanoe City, Ohio. Filed Apr. 24, 1900. Serial No. 14,169. (No model.)

Claim.—In a gate, the combination of two upright gate-posts, the horizontal beam connecting the upper ends of said posts, and the horizontally-disposed vibrating track-rail pivoted to said beam at its center, the stationary track-rail located at one side and slightly in advance of the vibrating track-supporting frame; with a gate, having a hanger-bar connected to its front end and extending upwardly a sufficient distance to project slightly above the rear end of the vibrating rail, a roller *c* attached to the upper end of said hanger, and a similar roller *e* connected to the rear bar of the gate, said roller *e* being designed to travel upon the vibrating rod while the roller *e* travels on the stationary rod; together with a movable upright rod and a bell-crank lever, said rod being connected at one end to said vibrating rail and at its opposite end to one arm of said bell-crank lever, and a long substantially-horizontal arm I connected near its center to the other arm of said bell-crank lever, and two double-bend trip-levers, one attached to each end of the arm I, all constructed and arranged to operate substantially as described.



658,611. MICROSCOPE. EDWARD BAUSCH, Rochester, N. Y., assignor to the Bausch & Lomb Optical Company, same place. Filed Oct. 12, 1898. Serial No. 693,333. (No model.)



Claim.—1. The combination with a microscope or similar instrument having the projecting screw at the lower end of the pillar, of a containing-casing for the instrument having a lid, a nut swiveled to turn freely in the lid of the casing having its upper end extending substantially flush with the upper surface thereof and operable from the inner side of the lid.

2. The combination with a microscope having the projecting screw and dowel on the lower end thereof, of a containing-case, a nut swiveled in the lid of the case and flush with the top thereof adapted to engage the screw and said lid having a recess for the dowel.

3. In a microscope, the combination with the pillar having the slotted bracket, of the stage pivoted at one side of the pillar and having the flange adapted to enter the slot in the bracket.

4. In a microscope, the combination with the pillar having the bracket thereon, of the stage pivoted on the bracket at one side of the pillar and adapted to be turned to fold parallel with the pillar and to be turned down at right angles thereto and to rest upon the bracket when in horizontal position, and a locking device for holding the stage when turned down.

5. In a microscope, the combination with the pillar having the longitudinally-extending recess, and the slot at the front having the bearing-surfaces on the front sides and the keyway in rear thereof, of the arm carrying the tube at its forward portion and sliding on the bearings at the sides of the slot and the laterally-extending portions operating in the keyways, the spring on the recess operating upon the arm, and the adjusting-screw for operating the arm against the spring.

6. In a microscope, the combination with the pillar having the longitudinally-extending recess, the slot at the front, the ways in rear of the slot, the arm carrying the tube at its forward portion extending through the slot and the plate 26 on the arm engaging the ways, of the ring-plate, the tube thereon, the spring in the pillar beneath the arm, and the adjusting-screw for moving the arm against the tension of the spring.

7. In a microscope, the combination with the pillar having the longitudinally-extending recess and the slot, of the arm passing through the slot, the spring arranged in the lower portion of the recess and the thimble at the upper end of the spring engaging the arm and closing the slot in the pillar.

8. In a microscope, the combination with the pillar having the recess, and the slot at the front and the ways at the rear of the slot, the arm operating on the front edge of the slot, and the plate 26 thereon, of the ring-plate 25, the tube carried thereby, the cap 30, the screw 29 operating upon the ring-plate, and the spring in the pillar-recess beneath the arm.

9. In a microscope, the combination with the pillar and the ring-plate mediately supported thereon having the threaded aperture, of the sleeve screwing into the aperture, having the spring-fingers and a clamping member, the lens-tube in the sleeve, and means engaging the clamping member to clamp the tube and also to prevent the movement of the sleeve in the plate.

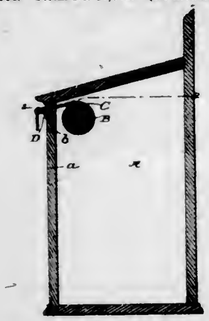
10. In a microscope, the combination with the ring-plate having the threaded aperture the sleeve screwing into the aperture having the tongue 35 and the tube movable through the sleeve, of means on the plate engaging the tongue to prevent rotation of the sleeve and movable toward the tube to cause the tongue to bind thereon.

11. In a microscope, the combination with the ring-plate, the sleeve thereon having the spring-fingers and clamping member, the screw operating in the ring-plate and adapted to engage and move the member against the lens-tube and the lens-tube adjustable in the sleeve.

12. In a microscope, the combination with the ring-plate having the threaded aperture, the sleeve screwing in the aperture having the spring-fingers and the clamp member, the clamping-screw passing through the ring and engaging the clamp member and the lens-tube adjustable in the sleeve.

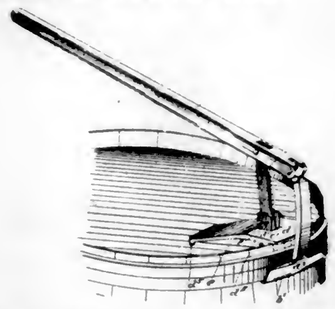
13. In a microscope, the combination with the pillar having the longitudinal recess and the slot at the front provided with inclined edges, of the arm engaging the edges of the slot, the key-plate in the recess, the spring beneath the arm, the cap-plate and the micrometer-screw therein operating upon the arm.

658,612. TELEPHONE-DIRECTORY. WILLIAM J. BELL, Baraboo, Wis., assignor of one-half to Herman Grotophorst, same place. Filed May 24, 1900. Serial No. 17,375. (No model.)



Claim.—The combination with a box provided in one of its walls with a slot; of a spring-roller contained in said box, and having the recess *j* in its periphery, a sheet extending through the slot of the box and bearing the names and telephone-numbers of the subscribers of a telephone system or other desired matter, and the metallic clips *k* arranged in the recess *j* of the roller, and bent upon themselves, and having inner arms connected to the roller, and outer arms equipped with barbs to engage the end of the sheet interposed between the arms, as and for the purpose set forth.

658,613. BARREL-OPENER. JOSEPH A. BERONIO, Memphis, Tenn. Filed Mar. 13, 1900. Serial No. 8,509. (No model.)



Claim.—1. The combination of a hand-lever, a hook mounted on one end thereof, a link pivotally mounted on the lever adjacent to the hook, and a foot carried adjustably on the link.

2. A barrel-opener, having a hand-lever, a hook mounted thereon, a link pivotally carried on the hand-lever adjacent to the hook, and a foot carried by the link and capable of being thrown in either one of two positions for the purpose specified.

3. A barrel-opener, comprising a hand-lever, a hook mounted at one end thereof, a link pivotally mounted on the lever adjacent to the hook, a foot pivotally mounted on the link, and means for securing the foot fast on the link in the desired position.

4. A barrel-opener, comprising a hand-lever, a hook carried thereon, and a foot connected with the lever, the foot having a projecting ledge at one end and a returned flange adjacent thereto.

5. A barrel-opener, having a hand-lever, means thereon for engaging the hoops of a barrel, and a foot carried by the hand-lever and having a projected ledge at one end and a returned flange adjacent thereto.

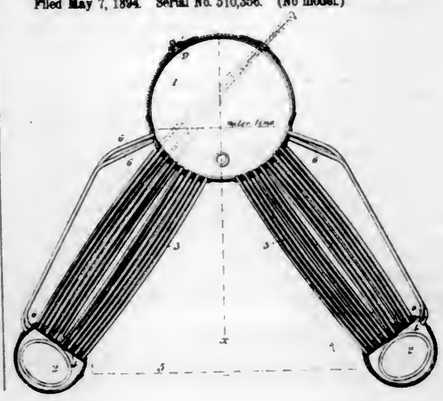
6. A barrel-opener, comprising a hand-lever, means carried thereby to engage the hoops, and a foot carried by the hand-lever and capable of being thrown into either one of two positions, thus facilitating the use of the barrel-opener in connection with a barrel with or without a head.

658,614. PIANOFORTE. KARL BINDER, New York, N. Y. Filed Mar. 13, 1900. Serial No. 8,468. (No model.)



Claim.—The combination, with the sounding-board of a pianoforte, said sounding-board having ribs, of a sounding-board bridge provided with feet separated by suitable recesses and located in front of said ribs, and fastening-screws passing through the ribs, sounding-board and feet, substantially as set forth.

658,615. STEAM-BOILER. ALFRED BLECHYNDEN, Barrow-in-Furness, England; Alfred E. T. Hansmann, administrator of said Blechynden, deceased, assignor to Charles D. Mosher, New York, N. Y. Filed May 7, 1894. Serial No. 510,356. (No model.)



Claim.—1. In combination an upper and lower chamber, a group of curved tubes connecting them, plug-holes in the upper chamber through which the tubes are adapted to pass, and plugs for closing the holes, substantially as described.

2. In combination an upper chamber, a pair of lower chambers, groups of curved tubes connecting the upper with the lower chambers, a row of plug-holes in the upper chamber through which the tubes are adapted to pass, and plugs for closing the holes, substantially as described.

658,616. BROOM-HOLDER. HERMAN BLOME, McMinnville, Oreg. Filed Mar. 8, 1900. Serial No. 7,852. (No model.)



Claim.—1. The combination with the base-plate; of a hinge-plate provided with segmental racks, and clamping-arms provided with pinions to be engaged by said racks whereby the depression of the hinge-plate will actuate the clamping-arms, substantially as and for the purpose set forth.

2. The combination with the base-plate; of a hinge-plate and clamping-arms pivoted upon oblique axes, and a connection between the hinge-plate and the clamping-arms whereby when the hinge-plate is moved the clamping-arms will be swung into engagement with the article to be supported, substantially as and for the purpose set forth.

3. The combination with the base-plate; of a spring-actuated hinge-plate and clamping-arms, and a connection between the hinge-plate and the clamping-arms whereby when the hinge-plate is moved the clamping-arms will be swung into engagement with the article to be supported, substantially as and for the purpose set forth.

4. The combination with the base-plate; of a spring-actuated hinge-plate and clamping-arms pivoted upon oblique axes, and a connection between the hinge-plate and the clamping-arms whereby when the hinge-plate is moved the clamping-arms will be swung into engagement with the article to be supported, substantially as and for the purpose set forth.

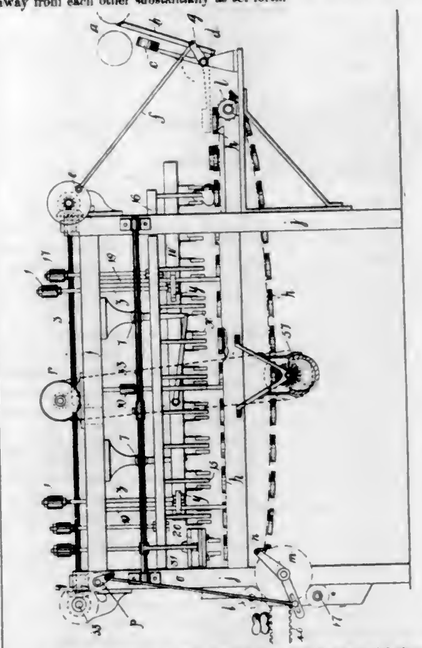
658,617. MACHINE FOR MOLDING DOUGH INTO LOAVES OF BREAD, PASTRY, &c. JOHN CALLOW, Liverpool, England. Filed Nov. 14, 1899. Serial No. 736,986. (No model.)

Claim.—1. In a machine or apparatus for molding dough, pastry or like material, the combination with a series of compressing-rollers by which dough is drawn out into a sheet of uniform thickness, a sloping board or screen over which the dough is conveyed and traveling trays or bowls of one or more circular, square or otherwise shaped cutters pivotally mounted adapted to cut lumps of any desired size and weight out of the sheet of dough as it issues from the rollers down said sloping board or screen and to convey such lumps to the trays or bowls to be molded, and the means whereby such cutters are operated substantially as set forth.

2. In an apparatus for molding dough, pastry or like material, the combination with a series of compressing-rollers feeding the dough, and one or more cutters cutting lumps of dough of any required size and weight, of a series of rotatable trays or bowls to receive the dough from the cutters, such bowls having a toothed wheel adapted to engage with pins fixed to the framework and an endless band or chain carrying said bowls having an intermittent movement, whereby the bowls as they travel along are caused to turn through a part of a revolution substantially as set forth.

3. In an apparatus for molding dough, pastry or like material, the combination with a traveling band or chain, a number of rows of rotatable bowls carried thereby and containing lumps of dough, of a pair of frames *w* having a reciprocating vertical movement and also a reciprocating horizontal movement, each piece of a pair moving in opposite directions horizontally and each piece having suspended therefrom a series of laths arranged in couples, alternative laths being attached to the same piece of the frame, those attached to one piece alternately moving toward and away from those attached to the other piece and the means for operating the frames substantially as set forth.

4. In an apparatus for molding dough, pastry or like material, the combination with the traveling endless chain *k* carrying bowls *h* and frames *w* with laths *x*, of a second frame 16 having a reciprocating vertical movement only, and having attached thereto a series of rams extending right across the machine and moving vertically between the pairs of laths *x* and the means employed whereby such rams at one time press down on the dough and are afterward drawn up to allow of the laths closing in and again descending to prevent the dough sticking to the laths as they move away from each other substantially as set forth.



5. In a machine for molding dough, pastry or like material, the combination with an endless traveling band, bowls carried thereby containing dough, and frames *w* and 16 carrying laths *x* and rams 15 by which the gases are expelled from the dough, and the latter is pressed into the required shape, of a frame carrying a series of molds which, as the bowls with the dough travel along and stop underneath the frame, inclose said dough on all sides and as the frame containing the molds ascends, the sides of each mold are gradually drawn in, thereby reducing the size of such molds, and a series of plungers 38 carried by frame 16 whereby the dough is pressed down on the top at the proper time substantially as set forth.

6. A series of molds consisting of two longitudinal pieces 22 which form the two sides of each square, cross-pieces 23 which form the other two sides, angle-pieces 24 to which the cross-pieces are attached and which angle-pieces are adapted to slide along the tops of pieces 22, pins 27 fixed to angle-pieces 24 and pins 25 fixed to angle-pieces 26 which move with longitudinal pieces 22, sliding plates 29 and 30 having inclined slots engaging the pins 27 and 25 and means for moving such plates in opposite directions horizontally and for moving the frame vertically substantially as set forth.

7. In a machine for molding dough, pastry or like material, the combination with the traveling chain *k*, bowls *h*, frames *w* and 16 with their connections and the frame of molds and plunger 39 of a second traveling endless band 40 onto which the lumps of dough after leaving the square molds and being pressed down by plunger 39 to complete the shaping are deposited, such endless band being mounted at one end on an axle capable of being moved vertically, and having resting on the top a frame with a number of partitions corresponding with the number of loaves in a row being shaped, such frame being lowered into position to receive each shaped piece of dough as they drop out of the bowls and afterward raised again to be clear of the loaf as it moves along to be finally bashed as set forth.

8. In a bread-making machine the cutters *c* and the molder, a series of traveling bands interposed between said cutters and molder along which the dough travels before being deposited on the trays of the molder, whereby the dough has time to aerate or prove after the squeezing action of the rollers *a*.

9. In a machine for molding bread, pastry or like material, the com-

bination of the frame *w*, the laths *x* hinged thereto and provided with projecting strips *x'* and the rams 15 arranged to strike said strips as they ascend, substantially as set forth.

10. The combination of rollers *a*, sloping board *b*, cutters *c*, endless bands *i*, rotatable or bread bowls *h*, traveling chain *k*, frames *w* with laths *x*, frames 16 with rams 15, frame of square molds 20, plungers 38 and 39, traveling table 40, movable frame 50, bashers 56, rotary brush 57 for dusting the bowls *h* with flour and the means by which the various parts are operated substantially as set forth.

658,618. WRENCH. FRED A. CHELLIS, Portland, Me., assignor to Clinton J. Stone, same place. Filed Nov. 13, 1899. Serial No. 737,514. (No model.)



Claim.—1. In a wrench, the combination with a handle, of a removable socket member mounted upon the handle, a hasp pivoted to the handle and adapted to embrace the socket member, and fastening means for locking the free end of the hasp rigidly to the handle, so that said hasp when in locked position will have no independent movement from the handle and will detachably secure the socket member in place, substantially as described.

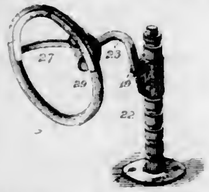
2. In a wrench, the combination with a handle having a bearing seat or recess, a removable socket member rotatably mounted in said seat or recess, a hasp pivoted at one end to the handle and adapted to embrace the socket member, and a catch arranged to lock the free end of the hasp rigidly to the handle so that there will be no independent movement between the handle and the hasp, substantially as described.

3. In a wrench, the combination with a handle having a bearing seat or recess at one end, a rotatable socket member fitting in said seat or recess, a circular hasp pivoted at one end to the handle and adapted to embrace the socket member, and a spring-catch mounted on the handle and adapted to engage with the free end of the hasp, substantially as described.

4. In a wrench, the combination with a handle provided at one end with a head having a bearing seat or recess and having one of its edges bifurcated, a pivoted latch having a beveled catch-shoulder at one end and provided with a finger-boss, said latch being pivoted in the bifurcated edge of the head, a rotatable socket member, a circular hasp pivoted to the head and having an opening which is adapted to be engaged by the pivoted latch, said hasp being adapted to embrace the socket member and hold the same upon the head, substantially as described.

5. In a wrench, the combination with a handle having at one end a head provided therein with an opening and notches at one side of the opening, a socket member rotatably mounted upon the head and having a peripheral ratchet-face, a spring-pressed sliding and rotatable bolt carried by the handle and adapted to engage the ratchet-face of the socket member, an adjusting-collar rigidly secured to the sliding bolt, said collar being located within the opening of the head and of a less width than said opening, and a pin secured to the sliding bolt and adapted to engage in the said notches of the opening, said pin forming a stop and a guide for the sliding bolt, substantially as described.

658,619. TIRE-SUPPORTING FRAME. GEORGE L. CLARK, Warren, Pa. Filed Feb. 2, 1900. Serial No. 3,707. (No model.)

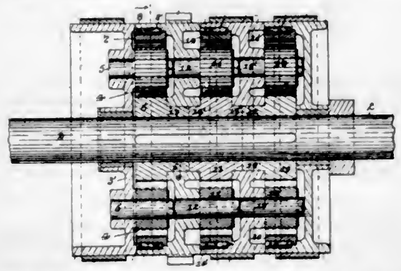


Claim.—1. In a tire-supporting frame a standard provided with circumferential grooves, combined with a sleeve mounted to slide and turn upon the standard, a tire-rest supported by and movable with the sleeve, and a locking device carried by the sleeve to detachably engage the grooves in the standard, substantially as set forth.

2. In a tire-supporting frame, a standard having a series of parallel circumferential grooves, a sleeve slidably mounted on the standard and free to turn thereon, an arm pivoted on the sleeve and having its lower end bent to form a locking-finger to engage in said grooves, and a tire-rest carried by the other end of the arm, substantially as set forth.

3. In a tire-supporting frame, a standard having a series of parallel circumferential grooves, a sleeve slidably mounted on the standard and free to turn thereon, an arm pivoted to the sleeve and having its lower end bent to form a locking-finger to engage in said grooves, the other end of said arm being threaded and provided with a collar, a disk fitted over the threaded end, a plurality of arms radiating from the disk, a segmental tire-rest connected to the outer ends of said arms, and a thumb-nut to clamp the disk against the collar, substantially as set forth.

658,620. DRIVING APPARATUS FOR MOTOR-VEHICLES. LOUIS S. CLARKE, Pittsburg, and JAMES G. HEASLET, Allegheny, Pa., assignors to the Autocar Company, Pittsburg, Pa. Filed Feb. 5, 1900. Serial No. 3,974. (No model.)



Claim.—1. In a driving apparatus, a shaft, three main members loosely mounted around said shaft, an auxiliary member also loosely mounted around said shaft, and three independent power-transmitting mechanisms each including three elements, the three elements of two power-transmitting mechanisms being carried respectively by said shaft, two main members and the auxiliary member, and the three elements of the other power-transmitting mechanism being carried respectively by the shaft and the other main member, and the first elements of each power-transmitting mechanism being fixed to said shaft and the intermediate ones being rotative upon their supports, and means connected to said main members for holding the same.

2. In a driving apparatus, a shaft, three main members loosely mounted around said shaft, an auxiliary member also loosely mounted around said shaft, and three independent power-transmitting mechanisms each including three elements, the three elements of two power-transmitting mechanisms being carried respectively by said shaft, two main members and the auxiliary member, and the three elements of the other power-transmitting mechanism being carried respectively by the shaft and the other main member, and the first elements of each power-transmitting mechanism being fixed to said shaft and the intermediate ones being rotative upon their supports, and means for alternately limiting the motion of the main members.

3. In a driving apparatus, a shaft, three main members loosely mounted around said shaft, an auxiliary member also loosely mounted around said shaft and three independent power-transmitting mechanisms each including three elements, the three elements of two power-transmitting mechanisms being carried respectively by said shaft, two main members and the auxiliary member, and the three elements of the other power-transmitting mechanism being carried respectively by the shaft and the other main member, and the first elements of each power-transmitting mechanism being fixed to said shaft, and the intermediate ones being rotative upon their supports, three brake-bands located to peripherally engage said main members, and means for alternately operating said brake-bands.

4. In a driving apparatus, a shaft, three main members loosely mounted on said shaft, an auxiliary member loosely mounted upon said shaft between two of the main members, and three independent trains of intermeshing gears, the first member of each train of said gears being keyed to said shaft, and the other members of said trains of gears being carried respectively by said auxiliary member and the main members, and means connected to said main members for holding the same.

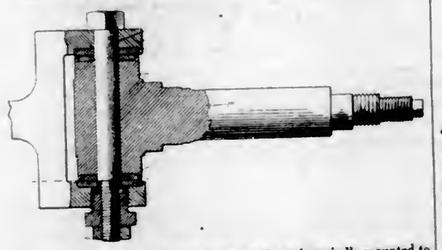
5. In a driving apparatus, a shaft, three main members loosely mounted around said shaft and two of them having an annular gear, an auxiliary or intermediate member loosely mounted around said shaft and located between two of said main members, said auxiliary or intermediate member being provided with an annular gear, three gears meshing respectively with said annular gears, one of them being rotatively carried by said auxiliary or intermediate member, the other ones being rotatively carried by the main members, and gears meshing with said rotatively-carried gears and fixed to said shaft, and means connected to said main members for holding the same.

6. In a driving apparatus, a shaft, three main members loosely mounted around said shaft, two of said members being provided with an inturned annular flange having upon their inside faces an annular gear, an auxiliary member intermediate of two of said members loosely mounted around said shaft and provided with an inturned annular flange having an annular gear upon its inside face, three gears rotatively carried respectively by the auxiliary or intermediate member and by two of the main members and meshing with said annular gears, and gears fixed to said shaft and meshing with said rotatively-carried gears, and means connected to said main members for holding the same.

7. In a driving apparatus, a shaft, three main members loosely mounted around said shaft, two of said members being provided with an inturned annular flange having upon their inside faces an annular gear, an auxiliary member intermediate of two of said members loosely mounted around said shaft and provided with an inturned annular flange having an annular gear upon its inside face, three gears rotatively carried respectively by the auxiliary or intermediate member and by two of the main members and meshing with said annular gears, gears fixed to said shaft and meshing with said rotatively-carried gears, and an annular gear on the face of said auxiliary or intermediate member adapted to mesh with a gear on another or counter shaft, and means connected to said main members for holding the same.

8. In a driving apparatus, a shaft, three main members loosely mounted around said shaft, two of said members being provided with an inturned annular flange having upon their inside faces an annular gear, an auxiliary member intermediate of two of said members loosely mounted around said shaft and provided with an inturned annular flange having an annular gear upon its inside face, three gears rotatively carried respectively by the auxiliary or intermediate member and by two of the main members and meshing with said annular gears, gears fixed to said shaft and meshing with said rotatively-carried gears, an annular gear on the face of said auxiliary or intermediate member adapted to mesh with a gear on another or counter shaft, and a sprocket-wheel on said counter-shaft having a sprocket-chain passing over the same and over a sprocket-wheel on a driven shaft to operate the driven shaft, and means connected to said main members for holding the same.

658,621. AXLE. WILLIAM C. DALZELL, Egremont, Mass. Filed Aug. 3, 1900. Serial No. 25,789. (No model.)



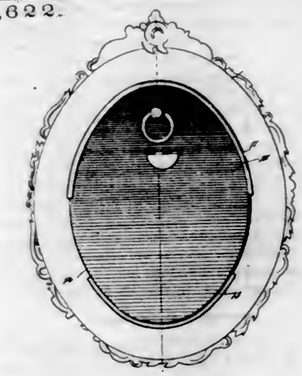
Claim.—1. The combination with an axle and a spindle mounted to swing relatively thereto, of a hub portion for the spindle, hardened-metal bearing-plates seated in recesses in the ends of the spindle, hardened-metal bearing-plates seated in recesses formed in ears or lugs extended from the axle, a king-bolt extended through said ears or lugs and through the hub of the spindle, and a nut with which said king-bolt engages, the said nut also serving to adjust the bearings, substantially as specified.

2. An axle having outwardly-extended ears or lugs, hardened-steel bearing-plates removably seated in recesses in the inner sides of said lugs, a spindle having a hub portion, hardened-steel bearing-plates removably seated in recesses formed in the ends of said hub, a nut having an exterior thread engaging with a threaded opening in the lower ear or lug, a king-bolt passing through the ears or lugs and through the hub and engaging with an interior thread of said nut, and a lock-nut, substantially as specified.

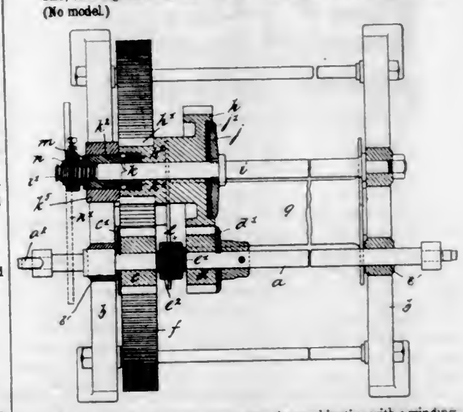
658,622. PICTURE-FRAME. HERMAN DAVIDSON, New York, N. Y. Filed May 26, 1900. Serial No. 18,074. (No model.)

Claim.—In a picture-frame, a retaining-strip extended along the upper portion of the sight-opening of the frame, a flange on said strip, a clamping-strip arranged along the lower portion of said opening, and a back having a spring-yielding peripheral flange, the said back being adapted to engage underneath the flange of the retaining-strip and to have spring-yielding engagement with the clamping-strip.

658,622.



658,623. CRAB-WINCH. WILLIAM T. RADES and EDMUND ALLDAY, Birmingham, England. Filed June 25, 1900. Serial No. 21,535. (No model.)



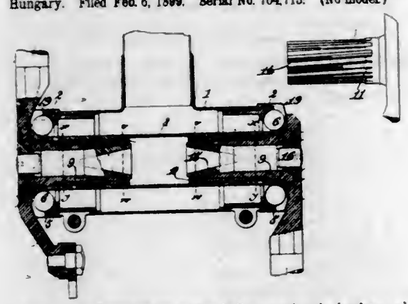
Claim.—1. In a hoisting apparatus, the combination with a winding-drum and means for rotating the same, of a fixed shaft, a brake-wheel loosely mounted and longitudinally movable on said shaft, said brake-wheel being geared to rotate with the drum, an expanding clutch comprising two parts rotatably mounted on said fixed shaft and movable thereon toward and from each other, one of the said clutch elements being rigid with the brake-wheel, stops for limiting the separation of the two clutch elements, a hand-brake nut screwed on the threaded end of the fixed shaft and having a bearing against the free element of the clutch, a weighted handle on the nut operating to normally hold the nut turned to thrust the clutch elements into engagement with each other, and means engaged by the lateral movement of the brake-wheel for controlling the rotation of the latter, substantially as and for the purpose specified.

2. In a hoisting apparatus, the combination with a winding-drum and means for rotating the same, of a fixed shaft, a brake-wheel loosely mounted and longitudinally movable on said shaft and geared to rotate with the drum, a friction-disk fixed on the face of the brake-wheel, a corresponding friction-disk fixed on the fixed shaft adjacent thereto, an expanding clutch comprising two parts rotatably mounted on said fixed shaft and movable thereon toward and from each other, one of said clutch elements being rigid with the brake-wheel, stops for limiting the separation of the two clutch elements, a hand-brake nut screwed on the threaded end of the fixed shaft and having a bearing against the free element of the clutch, and a weighted handle on the nut operating to normally hold the nut turned to thrust the clutch elements into engagement with each other while the drum is being turned to raise a load, the arrangement being such that when the drum is released the clutch elements are automatically thrust apart and the friction-disks forced together to sustain the load, whereupon the contact between the disks, and hence the descent of the load, may be controlled by hand through the medium of the handle on the nut, substantially as described.

3. In a hoisting apparatus, the combination with a winding-drum

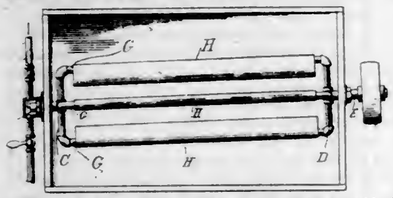
and a gear-wheel arranged to rotate therewith, of a driving-shaft, two pinions *c* and *d* loosely mounted thereon, the pinion *c* gearing directly with the said gear-wheel and intermediate low-speed gearing connecting the pinion *d* with the gear-wheel, the said driving-shaft being threaded between the pinions *c* and *d*, a friction-nut engaging said threaded portion of the driving-shaft and adapted to be moved into frictional engagement with either of the said pinions by the rotation of the driving-shaft, said nut being provided with means for preventing its rotation, and an automatic brake mechanism for controlling said drum when it is released, the arrangement being such that when the driving-shaft is turned in one direction the nut will be forced into frictional engagement with the pinion *c* and cause the latter to directly rotate the drum and when turned in the other direction will force the nut into engagement with the pinion *d* and cause the latter through the intermediate speed-gearing to rotate the drum at a reduced speed, and when turned to move the nut to a point intermediate the said pinions will permit the latter to run free whereupon the brake will operate to control the drum, substantially as described.

658,624. BOTTOM BRACKET. GIUSEPPE EGGER, Triest, Austria-Hungary. Filed Feb. 6, 1899. Serial No. 704,713. (No model.)



Claim.—The combination with a hollow crank-axle having a plurality of alternate ribs and grooves formed internally in its inner ends, said ribs and grooves being slightly oblique and trapezoidal in cross-section, of disks arranged over the opposite ends of said axle and each formed with a crank, hollow cylindrical bosses formed on the inner face of said disks and provided externally with alternate ribs and grooves corresponding in shape and obliquity to and fitted between the ribs and grooves on the interior of the axle, the inner ends of said bosses being slitted endwise and hollowed out conically, conically-headed screws fitted in said hollow bosses, and means for drawing said screws outward to spread the inner ends of the bosses and wedge the ribs thereon between the corresponding ribs on the interior of the axle, substantially as described.

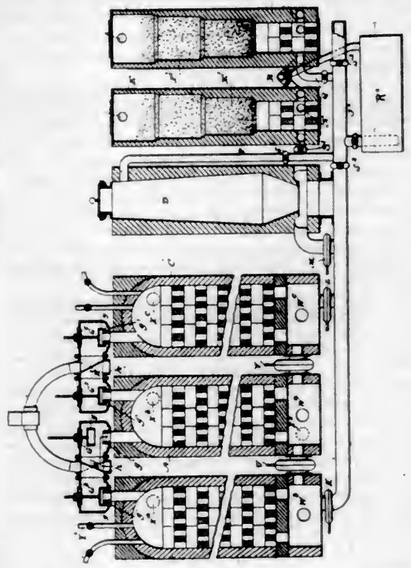
658,625. CREAM-RIPENING APPARATUS. JOHN EICHER and HARLAN COOPER, Winfield, Iowa. Filed Aug. 16, 1899. Renewed July 19, 1900. Serial No. 24,165. (No model.)



Claim.—In a cream-ripening apparatus, the combination with the tank, of a revolving reel therein having hollow arms and having heads which are oblique with respect to the axis of the churn-body, flanges or vanes attached to the arms of the reel, and valve-provided pipes connected to said reel for the purposes of supplying either hot or cold water or steam, as may be required for heating and cooling the contents of the tank, substantially as described.

658,626. PROCESS OF MAKING PURE CARBONIC ACID. HERBERT S. ELWORTHY, London, England. Filed Dec. 22, 1897. Serial No. 663,049. (No specimens.)

Claim.—1. The process of making carbonic acid by so highly superheating the specified oxidizing-gas above the temperature of decomposition that it can compensate for the heat rendered latent in such decomposition, such superheating being effected by the intermittent passage of the said oxidizing-gas over inert surfaces rendered highly incandescent in the intervals of such passage by direct contact with the products of a combustion by the aid of intensely-heated air, bringing the so-highly-superheated oxidizing-gas and carbon in contact with each other to effect the decomposition of said oxidizing-gas and the oxidation of the carbon to carbonic oxid, and passing the products of such decomposition over metallic oxid to effect a complete combustion, substantially as described.



2. The process of making carbonic acid by so highly superheating the specified oxidizing-gas above the temperature of decomposition that it can compensate for the heat rendered latent in such decomposition, such superheating being effected by the intermittent passage of the said oxidizing-gas over inert surfaces rendered highly incandescent in the intervals of such passage by direct contact with the products of a combustion by the aid of intensely-heated air, bringing the so-highly-superheated oxidizing-gas and carbon in contact with each other to effect the decomposition of said oxidizing-gas and the oxidation of the carbon to carbonic oxid, treating the products of such decomposition to remove ammonia or other condensable gas, and then passing the decomposition products so deprived of condensable gas over metallic oxid to effect a complete combustion, substantially as described.

3. The process of making carbonic acid by so highly superheating the specified oxidizing-gas above the temperature of decomposition that it can compensate for the heat rendered latent in such decomposition, such superheating being effected by the intermittent passage of the said oxidizing-gas over inert surfaces rendered highly incandescent in the intervals of such passage by direct contact with the products of a combustion by the aid of intensely-heated air, bringing the so-highly-superheated oxidizing-gas and carbon in contact with each other to effect the decomposition of said oxidizing-gas and the oxidation of the carbon to carbonic oxid, passing the products of such decomposition over metallic oxid to effect a complete combustion, and separating carbonic acid from the products of such combustion by absorption of said carbonic acid in water from which it is afterward recovered, substantially as described.

4. The process of making carbonic acid by so highly superheating the specified oxidizing-gas above the temperature of decomposition that it can compensate for the heat rendered latent in such decomposition, such superheating being effected by the intermittent passage of the said oxidizing-gas over inert surfaces rendered highly incandescent in the intervals of such passage by direct contact with the products of a combustion by the aid of intensely-heated air, bringing the so-highly-superheated oxidizing-gas and carbon in contact with each other to effect the decomposition of said oxidizing-gas and the oxidation of the carbon to carbonic oxid, treating the products of such decomposition to remove ammonia or other condensable gas, passing the decomposition products so deprived of condensable gas over metallic oxid to effect a complete combustion, and separating carbonic acid from the products of such combustion by absorption of said carbonic acid in water from which it is afterward recovered, substantially as described.

5. The process of making liquefied carbonic acid by decomposing the specified oxidizing-gas and carbon with the aid of heat derived from inert surfaces which have been heated by direct contact therewith of the products of a combustion with intensely-heated air and with avoidance of any contact of air with the carbon for decomposing the said oxidizing-gas, effecting a complete combustion of the products of such decomposition by passage over metallic oxid, and liquefying the resulting carbonic acid which is practically free from non-condensable gas, substantially as described.

6. The method of coating refractory material with metallic oxid, by flushing the same and immersing the refractory matter therein, substantially as described.

7. The process of making carbonic acid, by so highly superheating the specified oxidizing-gas in the form in which carbonic acid is an essential constituent thereof so highly above the temperature of decomposition as to compensate for the heat rendered latent in such decomposition, such superheating being effected by the intermittent passage of the said oxidizing-gas over inert surfaces rendered highly incandescent in the intervals of such passage by direct contact with the products of a combustion by the aid of intensely-heated air, bringing the so-highly-superheated oxidizing-gas and carbon in contact with each other to effect the decomposition of said oxidizing-gas and the oxidation of the carbon to carbonic oxid, and passing the products of such decomposition over metallic oxid to effect a complete combustion, substantially as described.

8. The process of making carbonic acid, by so highly superheating the specified oxidizing-gas above the temperature of decomposition that it can compensate for the heat rendered latent in such decomposition, such superheating being effected by the intermittent passage of the said oxidizing-gas over inert surfaces rendered highly incandescent in the intervals of such passage by direct contact with the products of a combustion by the aid of intensely-heated air, bringing the so-highly-superheated oxidizing-gas and a finely-divided diffused form of carbon in contact with each other to effect the decomposition of such oxidizing-gas and the oxidation of the carbon to carbonic oxid, and passing the products of such decomposition over metallic oxid to effect a complete combustion, substantially as described.

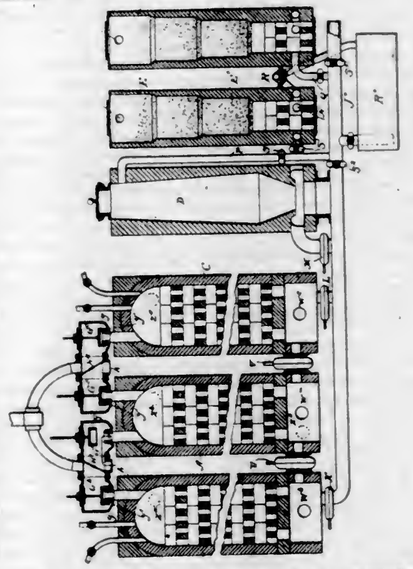
9. The process of making carbonic oxid by so highly superheating the specified oxidizing-gas above the temperature of decomposition that it can compensate for the heat rendered latent in such decomposition, such superheating being effected by the intermittent passage of the said oxidizing-gas over inert surfaces rendered highly incandescent in the intervals of such passage by direct contact with the products of a combustion by the aid of intensely-heated air, and bringing the so-highly-superheated oxidizing-gas and carbon in contact with each other to effect the decomposition of said oxidizing-gas and the oxidation of the carbon to carbonic oxid, substantially as described.

10. The process of making carbonic oxid, which process consists in heating two masses of inert material by combustion of gas in contact with each of said masses alternately by the aid of air heated by passage over the other until said masses have been brought to so high a temperature as to superheat the specified oxidizing-gas sufficiently for it to supply the heat rendered latent in the decomposition thereof with carbon, so superheating the specified oxidizing-gas by passage over one of said so-heated masses of inert material, and bringing the said so-superheated oxidizing-gas into contact with carbon to generate carbonic oxid, substantially as described.

11. The process of making carbonic acid, which process consists in heating two masses of inert material by combustion of gas in contact with each of said masses alternately by the aid of air heated by passage over the other until said masses have been brought to so high a temperature as to superheat the specified oxidizing-gas sufficiently for it to supply the heat rendered latent in the decomposition thereof with carbon, so superheating the specified oxidizing-gas by passage over one of said so-heated masses of inert material, bringing the said so-superheated oxidizing-gas into contact with carbon to generate carbonic oxid, and passing the so-generated carbonic oxid over metallic oxid to convert the said carbonic oxid into carbonic acid, substantially as described.

658,627. APPARATUS FOR MAKING PURE CARBONIC ACID. HERBERT S. ELWORTHY, London, England. Original application filed Dec. 22, 1897, Serial No. 663,049. Divided and this application filed Mar. 31, 1900. Serial No. 10,915. (No model.)

Claim.—1. The combination with an oxidizing-furnace charged with metallic oxid, of a carbonic-oxid generator which excludes air constantly from the decomposing-chamber and which is provided with a regenerative hot-blast stove for supplying to said chamber the specified oxidizing-gas so highly superheated as to compensate for the heat rendered latent in its decomposition with carbon, said stove having inert heating-surfaces and also having passages separate from the oxidizing-gas's inlet and outlet for admitting reheating-gas and air to said stove and for discharging therefrom the products of combustion, and being also provided with means for intensely heating the air preparatory to its admission, substantially as described.



2. A carbonic-oxid generator which excludes air constantly from the decomposing-chamber and which is provided with a regenerative hot-blast stove for supplying to said chamber the specified oxidizing-gas so highly superheated as to compensate for the heat rendered latent in its decomposition with carbon, said stove having inert heating-surfaces and also having passages separate from the oxidizing-gas's inlet and outlet for admitting reheating-gas and air to said stove and for discharging therefrom the products of the combustion and being also provided with means for intensely heating the air preparatory to its admission, substantially as described.

3. The combination with an oxidizing-furnace of a carbonic-oxid generator which is provided with a hot-blast stove having inert heating-surfaces and also having passages for admitting the specified oxidizing-gas and carbon and for discharging the products of the decomposition, and other passages for admitting reheating-gas and air to said stove and for discharging therefrom the products of the combustion, and being also provided with means for intensely heating the air preparatory to its admission, substantially as described.

4. A carbonic-oxid generator which is provided with a hot-blast stove having inert heating-surfaces and also having passages for admitting the specified oxidizing-gas and carbon and for discharging the products of the decomposition, and other passages for admitting reheating-gas and air to said stove and for discharging therefrom the products of the combustion, and being also provided with means for intensely heating the air preparatory to its admission, substantially as described.

5. An apparatus for making carbonic acid, composed of a carbonic-oxid generator, two regenerating hot-blast stoves each consisting of a chamber filled with inert refractory material and provided with an inlet for the admission and an outlet for the escape of the specified oxidizing-gas, and also with inlets for the admission of the reheating-gas and air and an outlet for the escape of the products of combustion, valved flue connections between the oxidizing-gas outlet of each of said stoves and the said generator for connecting said stoves alternately with said generator, two furnaces each charged with material that can be oxidized and deoxidized and provided with inlets for an oxidizing medium and for carbonic oxid respectively and also with outlets for the residual gas and carbonic acid respectively, and valved flue connections between the said carbonic-oxid generator and the carbonic-oxid inlets of each of the said furnaces, for connecting said generator with said furnaces alternately, substantially as described.

6. An apparatus for making carbonic acid, composed of two regenerating hot-blast stoves each consisting of a chamber filled with inert refractory material and provided with inlets for the admission of carbon and of the specified oxidizing-gas, with an outlet for the escape of carbonic oxid, and also with inlets for the admission of the reheating-gas and

air and an outlet for the escape of the products of combustion, two furnaces each charged with material that can be oxidized and deoxidized and provided with inlets for an oxidizing medium and for carbonic oxid respectively and also with outlets for the residual gas and carbonic acid respectively, and valved flue connections between the carbonic-oxid outlet of each of said stoves and the carbonic-oxid inlet of each of said furnaces, substantially as described.

7. An apparatus for making carbonic acid, composed of a carbonic-oxid generator, two regenerating hot-blast stoves each consisting of a chamber filled with inert refractory material and provided with inlets for the admission of carbon and of the specified oxidizing-gas, with an outlet for the escape of carbonic oxid and undecomposed portions of the specified oxidizing-gas, and also with inlets for the admission of the reheating-gas and air and an outlet for the escape of the products of combustion, valved flue connections between the oxidizing-gas outlet of each of said stoves and the said generator for connecting said stoves alternately with said generator, two furnaces each charged with material that can be oxidized and deoxidized and provided with inlets for an oxidizing medium and for carbonic oxid respectively and also with outlets for the residual gas and carbonic acid respectively, and valved flue connections between the said carbonic-oxid generator and the carbonic-oxid inlets and each of the said furnaces, for connecting said generator with said furnaces alternately, substantially as described.

8. The combination with a carbonic-oxid generator, of two regenerating hot-blast stoves each consisting of a chamber filled with inert refractory material and provided with an inlet for the admission and an outlet for the escape of the specified oxidizing-gas, and also with inlets for the admission of the reheating-gas and air and an outlet for the escape of the products of combustion, and valved flue connections between the oxidizing-gas outlet of each of said stoves and the said generator for connecting said stoves alternately with said generator, substantially as described.

9. The combination with a carbonic-oxid generator, of two furnaces each charged with material that can be oxidized and deoxidized and provided with inlets for an oxidizing medium and for carbonic oxid respectively and also with outlets for the residual gas and carbonic acid respectively, and valved flue connections between the said carbonic-oxid generator and the carbonic-oxid inlets of each of the said furnaces, for connecting said generator with said furnaces alternately, substantially as described.

10. A hot-blast apparatus composed of three regenerating-stoves each provided with inlets for the reheating-gas and an air-blast to be heated and outlets for the escape of the products of combustion and the hot blast, and valved flue connections between one of said stoves and each of the other two, said connections opening into all three stoves at the ends which receive the reheating-gas so as to effect hot-blast combustion of the reheating-gas in all three stoves, substantially as described.

11. In combination with a carbonic-oxid generator, a hot-blast apparatus composed of three regenerating-stoves each provided with inlets for the reheating-gas and an air-blast to be heated and outlets for the escape of the products of combustion and the hot blast, and valved flue connections between one of said stoves and each of the other two, said connections opening into all three stoves at the ends which receive the reheating-gas so as to effect hot-blast combustion of the reheating-gas in all three stoves, substantially as described.

12. In combination with a furnace or furnaces charged with material to be oxidized and deoxidized, a hot-blast apparatus composed of three regenerating-stoves each provided with inlets for the reheating-gas and an air-blast to be heated and outlets for the escape of the products of combustion and the hot blast, and valved flue connections between one of said stoves and each of the other two, said connections opening into all three stoves at the ends which receive the reheating-gas so as to effect hot-blast combustion of the reheating-gas in all three stoves, substantially as described.

13. In combination with a carbonic-oxid generator, and a furnace or furnaces connected therewith and charged with an oxidizable and deoxidizable material, a hot-blast apparatus composed of three regenerating-stoves each provided with inlets for the reheating-gas and an air-blast to be heated and outlets for the escape of the products of combustion and the hot blast, and valved flue connections between one of said stoves and each of the other two, said connections opening into all three stoves at the ends which receive the reheating-gas so as to effect hot-blast combustion of the reheating-gas in all three stoves, substantially as described.

14. Two regenerating-stoves having their fuel-inlet ends connected through a valve for establishing intercommunication and provided at the other end with passages leading to opposite sides of a four-way valve which puts said passages in communication with an air-inlet and an outlet respectively, each stove being thereby alternately connected with an air-inlet and an outlet according to the position of said four-way valve, substantially as described.

15. Two regenerating-stoves connected with each other at top and bottom, the connection at one end being through a four-way valve, and at the other, through a valve which opens the passage between the stoves, and an additional valve being placed in one of the passages between said four-way valve and a stove, substantially as described.

16. In combination with a carbonic-oxid-generating apparatus in which is used a set of regenerating hot-blast stoves provided with valves and passages for continuously supplying a hot blast, two furnaces charged with refractory material combined with metallic oxid and provided with means whereby a stream of carbonic oxid from said generating apparatus can be sent through said furnaces alternately and whereby an oxidizing-current can be sent through each furnace when the flow of carbonic oxid is cut off therefrom, substantially as described.

17. A hot-blast apparatus composed of three regenerating hot-blast stoves connected at their fuel-inlet ends through valved passages for establishing intercommunication and provided at the other ends with passages leading to opposite sides of four-way valves each of which puts its own passages in communication with an air-inlet and an outlet respectively, each stove being thereby alternately connected with an air-inlet and an outlet according to the position of the said four-way valves, substantially as described.

18. A hot-blast apparatus composed of three regenerating-chambers connected at one end by valved passages which can establish an open way between two chambers, and at the other end through four-way valves and provided with an additional valve or valves between one or both of said four-way valves and one or both the chambers connected with each valve, substantially as described.

19. A carbonic-acid plant composed of three regenerating-chambers each provided with inlets for reheating-gas and air-blast to be heated and with outlets for the products of combustion and hot-air blast, and two of them further provided with inlets for carbon and the specified oxidizing-gas, a furnace or furnaces charged with oxidizable and deoxidizable material valved flue connections between the said two chambers and the third regenerating-chamber, and valved flue connections between said two regenerating-chambers and the said furnace or furnaces, substantially as described.

20. A carbonic-acid plant composed of three regenerating-chambers each provided with inlets for reheating-gas and air-blast to be heated and with outlets for the products of combustion and hot-air blast, and two of them further provided with inlets for the specified oxidizing-gas, valved flue connections between the said two chambers and the third regenerating-chamber, and valved flue connections between said two regenerating-chambers and the said carbonic-oxid generator, substantially as described.

21. Two regenerating-stoves connected with each other at top and bottom, the connection at one end being through a four-way valve, and at the other by a valved passage which when open establishes communication between the two stoves, and an additional valve being placed in each of the passages between the said four-way valve and a stove, substantially as described.

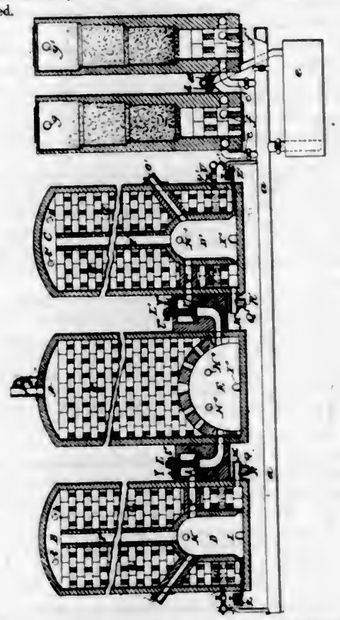
22. A set of three regenerating-stoves connected at the fuel-inlet ends through valved passages for establishing and shutting off intercommunication and at their opposite ends with valved passages for establishing communication for each stove with an air-inlet and an outlet separately and for shutting the communication with both simultaneously, inlets and outlets additional to the foregoing being also provided, substantially as described.

23. The combination with an oxidizing-furnace charged with metallic oxid, a carbonic-oxid generator, and an intermediate conduit between the outlet of said generator and the inlet of said furnace, of a regenerator-stove having an inlet for the specified oxidizing-gas and separate outlets for respectively the products of combustion and the specified oxidizing-gas, a conduit between the oxidizing-gas outlet and the inlet of said generator, a second regenerator-stove, and means for supplying both stoves with gaseous fuel and with highly-heated air, the said means including a conduit between the hot-air outlet of the second-mentioned stove and a hot-air inlet of the first-mentioned stove, said carbonic-oxid generator being constantly closed against ingress of air, substantially as described.

658,628. APPARATUS FOR MAKING PURE CARBONIC ACID. HERBERT S. ELWORTHY, London, England. Filed May 3, 1900. Serial No. 15,397. (No model.)

Claim.—1. A carbonic-oxid generator, composed of a carbon-chamber having a carbonic-oxid outlet, and a heating-chamber communicating with said carbon-chamber and filled with inert material, said heating-chamber having inlets for air and reheating-gas, respectively, both opening into the upper part of said carbon-chamber and being further provided with an inlet for the oxidizing-gas and an outlet for the products of the reheating combustion, substantially as described.

2. A carbonic-oxid generator, composed of a carbon-chamber having a gas-inlet opening into its carbon-space and a carbonic-oxid outlet, and a heating-chamber communicating with said carbon-chamber and filled with inert material, said heating-chamber having inlets for air and reheating-gas, respectively, both opening into the upper part of said carbon-chamber and being further provided with an inlet for the oxidizing-gas and an outlet for the products of the reheating combustion, substantially as described.



3. A carbonic-oxid generator, composed of a carbon-chamber having a carbonic-oxid outlet at the bottom, and a heating-chamber filled with inert material and communicating with said carbon-chamber by a passage intermediate the upper parts of said chambers, said heating-chamber being provided with inlets for air and reheating-gas, respectively, opening into the upper part of said carbon-chamber and an outlet for the products of combustion at the lower part of said heating-chamber and an inlet for the oxidizing-gas at its lower part also, substantially as described.

4. An apparatus for generating carbonic acid, composed of duplicate carbonic-oxid generators, each embodying a carbon-chamber and a heating-chamber inclosing said carbon-chamber and communicating therewith, duplicate oxidizing-furnaces charged with metallic oxid, a flue with valved branches between the carbonic-oxid outlets of said generators and the inlets of said oxidizing-furnaces, and an air-heating chamber communicating by valved passages with the heating-chambers of both said generators, each of the three said heating-chambers being filled with inert material and being provided with inlets and outlets as explained, including an individual outlet for the products of combustion from each and an inlet for the oxidizing-gas for each of those which form part of a carbonic-oxid generator, all substantially as described.

5. An apparatus for generating carbonic oxid, composed of duplicate carbonic-oxid generators, each embodying a carbon-chamber and a heating-chamber inclosing said carbon-chamber and communicating therewith, and an air-heating chamber communicating by valved passages with the heating-chambers of both said generators, each of the three said heating-chambers being filled with inert material and being provided with inlets and outlets as explained, including an individual outlet for the products of combustion from each and an inlet for the oxidizing-gas for each of those which form part of a carbonic-oxid generator, all substantially as described.

6. An apparatus for generating carbonic oxid, composed of a carbon-chamber, a heating-chamber inclosing said carbon-chamber and communicating therewith, and an additional heating-chamber connected by a valved passage with the former, said heating-chambers being filled with inert material and being provided with inlets and outlets as explained, including an individual outlet for the products of combustion from each and an inlet for the oxidizing-gas for each of those which form part of a carbonic-oxid generator, all substantially as described.

7. An apparatus for generating carbonic oxid, composed of a carbon-chamber, and two heating-chambers which communicate with each other through the upper part of said carbon-chamber, said chambers being provided with inlets and outlets as explained, all substantially as described.

8. An apparatus for generating carbonic oxid, composed of a carbon-chamber, a heating-chamber inclosing said carbon-chamber and communicating therewith by a passage between the upper parts of said chambers, and a second heating-chamber connected with the former by a valved passage, said heating-chambers being filled with inert material and having each its individual outlet for products of combustion and other inlets and outlets as explained, all substantially as described.

9. A carbonic-oxid generator, composed of a carbon-chamber having a gas-inlet opening into its carbon-space and a carbonic-oxid outlet, and a heating-chamber inclosing said carbon-chamber and communicating therewith, the said heating-chamber being filled with inert material and being provided with an air-inlet opening into the upper part of said carbon-chamber and an outlet for the products of combustion and also with an inlet for the oxidizing-gas, substantially as described.

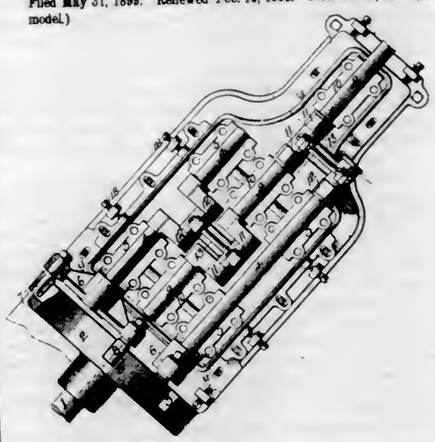
10. A carbonic-oxid generator, composed of a carbon-chamber having a gas-inlet opening into its carbon-space and a carbonic-oxid outlet, and a heating-chamber filled with inert material and communicating with said carbon-chamber by a passage intermediate the upper parts of said chambers, said heating-chambers being provided with an air-inlet and an outlet for the products of combustion arranged for the passage of said products downward through said heating-chamber and with an inlet at its lower part for the introduction of the oxidizing-gas so that it can pass upward in said heating-chamber, substantially as described.

11. A carbonic-oxid generator, composed of a carbon-chamber having a gas-inlet opening into its carbon-space and a carbonic-oxid outlet, and a heating-chamber filled with inert material and communicating with said carbon-chamber by a passage intermediate the upper parts of said chambers, said heating-chambers being provided with an air-inlet opening into the upper part of said carbon-chamber and an outlet for the products of combustion at the lower part of said heating-chamber, and an inlet for the oxidizing-gas at its lower part also, substantially as described.

12. A carbonic-oxid generator, composed of a carbon-chamber having a gas-inlet opening into its carbon-space and a carbonic-oxid outlet, and a heating-chamber inclosing said carbon-chamber and communicating therewith by a passage intermediate the upper parts of said chambers, said heating-chamber being filled with inert material and being provided with an air-inlet, and an outlet for the products of combustion arranged for the passage of said products downward through said heating-chamber and with an inlet at its lower part for the introduction of the oxidizing-gas so that it can pass upward in said heating-chamber, substantially as described.

13. An apparatus for generating carbonic oxid, composed of a carbon-chamber having a gas-inlet opening into its carbon-space and a carbonic-oxid outlet, a heating-chamber filled with inert material and communicating therewith, and another heating-chamber also filled with inert material and communicating by a valved passage with the first-mentioned heating-chamber, the last-mentioned heating-chamber being provided with means whereby the inert material can be heated and air can be introduced into the same for delivery to said first-mentioned heating-chamber, and said first-mentioned heating-chamber having an inlet for the oxidizing-gas and an air-inlet whereby air can be introduced for delivery to the other heating-chamber, substantially as described.

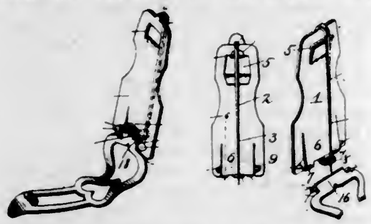
658,629. BOAT PROPULSION. HENRY H. PEVEY, New York, N. Y., assignor to the Multiple Power Company, of West Virginia. Filed May 31, 1899. Renewed Feb. 16, 1900. Serial No. 5,543. (No model.)



Claim.—1. The combination of a drive-shaft, a double-cranked driven shaft arranged in line with the drive-shaft, a multiplying trammel-disk connected with the drive-shaft, and a plurality of double-cranked intermediate shafts coupled with the disk and with the double-cranked driven shaft, substantially as described.

2. The combination of a drive-shaft, a double-cranked driven shaft in line with the drive-shaft, a multiplying trammel-disk connected with the drive-shaft, a plurality of double-cranked intermediate shafts connected with the disk and with the double-cranked driven shaft, and means for longitudinally and laterally adjusting the intermediate and driven shafts, substantially as described.

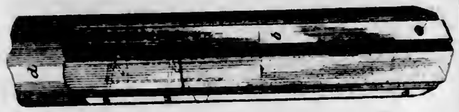
658,630. **SPECTACLE-ATTACHER.** ARTHUR M. FELSON, Gouverneur, N. Y. Filed June 19, 1900. Serial No. 20,870. (No model.)



Claim.—1. In an article attacher or clasp, the combination, substantially as described, of an integral back member, a spring-tongue, lugs on said tongue, pintle-bearings adjacent to said tongue, a hook adapted to secure a pin and formed on said tongue, and a pin, all formed integral with said back member, a front member or loop, a catch adapted to engage said back member, and pintles adapted to fit said pintle-bearings, both formed integral with said front member.

2. In an article attacher or clasp, the combination, substantially as described, of a back member, means for securing said back member to a garment, pintle-bearings in said back member, a loop or front member having a flexible bowed back, and provided with pintles adapted to fit said pintle-bearings, and a catch formed integral with said loop and adapted to engage the edge of an aperture in said back member and to be disengaged therefrom by bowing the back of said loop.

658,631. **BASE FOR POLES OR POSTS.** LEE K. FORSYTHE, Battle Creek, Mich. Filed June 29, 1900. Serial No. 22,057. (No model.)



Claim.—1. The combination of a polygonal base, two or more pairs of diametrically-opposite bars attached to the sides thereof and projecting above the upper end thereof; a pole or post supported on the base and means for fastening the pole to the upper ends of said bars to retain the pole in position upon the base, substantially as described.

2. The combination of the base, and two or more pairs of diametrically-opposite bars each pair of bars being integrally formed and passing beneath the base and projecting above the upper end thereof; with a pole or post supported on the upper end of the base and means for fastening the pole to the upper ends of said bars to retain the pole in position upon the base, substantially as described.

3. The combination of the base and a plurality of pairs of diametrically-opposite bars each pair of bars being integrally formed and passing beneath the base and projecting above the upper end thereof, bolts respectively securing said pairs of bars to the base, a pole resting on the upper end of the base and bolts securing the lower end of the pole to the projecting upper ends of the bars, for the purpose and substantially as described.

4. The combination of the polygonal base, two or more pairs of diametrically-opposite bars attached thereto, the bottom and sides in each pair being integral beneath the base and their upper ends projecting above the same, the pole supported upon said base, and the bolts transfixing the lower end of said pole and diametrically-opposite bars of each pair whereby the pole is securely attached to the base, for the purpose and substantially as described.

5. The combination of the artificial-stone base made in one piece, and two or more pairs of diametrically-opposite bars each pair of bars being integrally formed and passing beneath the base and projecting above the upper end thereof, bolts securing each pair of said bars to the base, a pole resting on the upper end of the base and bolts securing the lower end of the pole to the projecting upper ends of each pair of the bars, for the purpose and substantially as described.

6. The combination of a base, the diametrically-opposite pairs of bars attached thereto, the lower ends of opposite bars being connected beneath the base, and their upper ends projecting above the same, a pole supported upon said base and bolts transfixing the lower end of said pole and diametrically-opposite bars, whereby the pole is securely attached to the base, and the strengthening-rings, for the purpose and substantially as described.

7. The combination of the base, the diametrically-opposite pairs of bars attached thereto, with their upper ends projecting above the same, the pole supported upon said base, the bolts transfixing the lower end of said pole and diametrically-opposite bars, whereby the pole is securely attached to the base, and the rings attached to said base and to said pole to assist in bonding the parts together for the purpose and substantially as described.

8. The combination of the polygonal base, the diametrically-opposite pairs of bars attached thereto, opposite bars being connected beneath the base and their upper ends projecting above the same, the pole supported upon said base, the bolts transfixing the lower end of said pole and diametrically-opposite bars, whereby the pole is securely attached to the base and the rings attached to said base and to said pole to assist in bonding the parts together for the purpose and substantially as described.

658,632. **PROCESS OF MAKING CUPRAMMONIUM SOLUTIONS.** MAX FREMERY, EMIL BRONNERT, and JOHANN URBAN, Oberbruch, Germany. Filed June 29, 1900. Serial No. 22,089. (No specimens.)

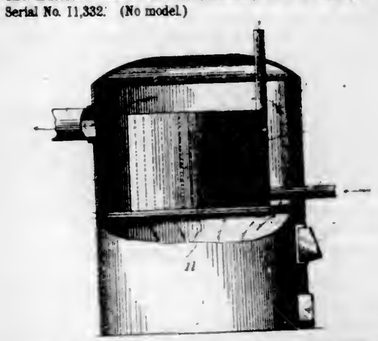
Claim.—Process for the production of cuprammonium solution consisting in treating a mixture of copper and ammonia solution of sixteen-per-cent. strength with air, the said mixture being kept at a temperature below 5° centigrade.

658,633. **FRICTION-HINGE FOR FURNITURE.** CHARLES L. FROST, Grand Rapids, Mich. Filed Sept. 15, 1899. Serial No. 730,633. (No model.)



Claim.—In a friction-hinge for furniture, the combination with a pintle, of the bearing-plate provided with a wedge-shaped depression to positively engage the pintle with a direct and increasing pressure on opposite sides of the pintle, as said plate is drawn forcibly to the pintle by screws passed through the end portions of said plate and into the furniture, substantially as described.

658,634. **COMBINATION HOT-AIR AND STEAM OR HOT-WATER HEATER.** ARTHUR E. GAY, Nashua, N. H. Filed Apr. 3, 1900. Serial No. 11,332. (No model.)



Claim.—1. In a hot-water or steam and air heating apparatus, the combination with a casing, a vertical boiler therein, occupying the center thereof leaving a space for the passage of the products of combustion between the boiler and casing, and a fire-pot below the boiler, of a plate between the boiler and said space and the fire-pot, having suitable openings, and means for opening or closing said openings, whereby the path of the products of combustion may be changed to said space to lessen their effect on the boiler, substantially as described.

2. In a hot-water or steam and air heating apparatus, the combination with a casing, a vertical boiler therein, occupying the center thereof leaving a space for the passage of the products of combustion between the boiler and casing, and a fire-pot below the boiler, of horizontal registering plates between the boiler and said space and the fire-pot, one plate being fixed and the other movable, said plates being provided with openings adapted to be brought into or out of register, whereby the path of the products of combustion may be changed to said space to lessen their effect on the boiler, substantially as described.

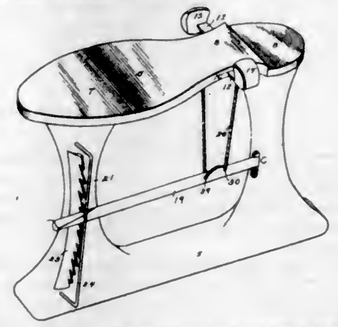
3. In a hot-water or steam and air heating apparatus, the combination with a casing having a boiler-space therein surrounded by an outer space or chamber, and a fire-pot below the boiler-space, of a fixed horizontal plate between said space and the fire-pot, having openings communicating between the fire-pot and either the boiler-space or the outer space or chamber of the casing, a second plate pivotally secured to the first and provided with openings which may be brought into register with either set of openings of the fixed plate for conducting the products of combustion wholly or partially through the boiler-space, or wholly or partially through the outer space or chamber of the casing, substantially as described.

4. In a hot-water or steam and air heating apparatus, the combination with a casing provided with a boiler-space and an outer space or chamber surrounding the same, of a fire-pot below the two spaces, a horizontal plate filling the casing between the two spaces and the fire-pot and provided with openings communicating between the fire-pot and the two spaces respectively, of a damper of a diameter equal to that of the boiler-space pivotally secured to the fixed plate and provided with openings adapted to be brought into register with one set of the openings of the fixed plate to permit the products of combustion to pass into the boiler-space, and an outer annular plate beneath the outer space or chamber provided with openings adapted to be brought into register with the outer set of openings of the fixed plate to permit the products of combustion to pass wholly or partially into the outer space or chamber, substantially as described.

658,635. **PROCESS OF PREPARING FUEL.** WILLIAM M. GILLAN, London, England. Filed Jan. 2, 1900. Serial No. 189. (No specimens.)

Claim.—A process for enriching fuel, which consists in first heating the fuel under pressure to drive out its gaseous constituents without permitting them to escape into the atmosphere, then adding a hydrocarbon in a finely-divided condition to the said gaseous constituents under the said pressure, and finally permitting the fuel to cool under the said pressure, whereby the said hydrocarbon and gaseous constituents as well are absorbed by the fuel, substantially as set forth.

658,636. **SHOE-POLISHING STAND.** JOHN F. GILLILAND, New Vienna, Ohio. Filed May 2, 1900. Serial No. 15,254. (No model.)

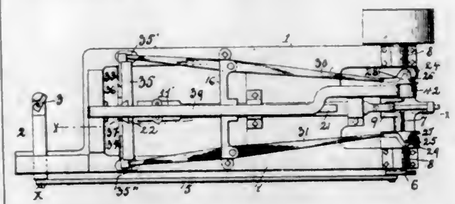


Claim.—1. A device of the class described comprising a shoe-receiving plate, clamping members movably mounted on the plate, guide-pulleys on the plate, a pivoted lever, flexible connections between the clamping members and the lever and passed over the pulleys, means for holding the lever at different points of its pivotal movement to correspondingly hold the clamping members and springs disposed to move the clamping members outwardly and take up the slack of the flexible connection when the lever is released from its holding means.

2. A device of the class described comprising a shoe-receiving plate having transverse slots, a clamping member slidably engaged with each slot and having a clamping-jaw extending above the plate, a pulley in line with each slot, a pivoted lever, a cord having its ends passed over the pulleys and connected with their respective clamping members and having its bight connected with the lever, means for holding the lever at different points of its operative movement to hold the clamping-jaws in different operative positions and springs disposed to return the jaws when the lever is disengaged from its holding means.

3. A device of the class described comprising a base having uprights at its ends, a shoe-supporting plate upon the uprights, said plate having transverse slots in its under face, clamping members engaged with the slots and having jaws extending above the plate, springs disposed between the inner ends of the clamping members and the adjacent ends of the slots to hold the jaws normally projected, pulleys mounted on the plate, a cord having its ends passed over the pulleys and connected to the clamping members, a lever pivoted in one of the uprights and connected with the cord, a rack upon the opposite upright for engagement by the lever to hold it in different positions, and a guard for holding the lever against excessive lateral movement.

658,637. **SPIKE-MAKING MACHINE.** JOHN GRIBBEN, Pittsburg, Pa. Filed Aug. 23, 1899. Serial No. 728,152. (No model.)



Claim.—1. The combination of a header-die, a plurality of laterally-movable dies adapted to compress the sides of the end of the blank preceding the formation of the point thereon, a plurality of vertically-movable dies adapted to compress the blank and form the point of the spike, a head or housing carrying said dies adapted to be adjusted whereby the length of the head on the spike is varied, substantially as set forth.

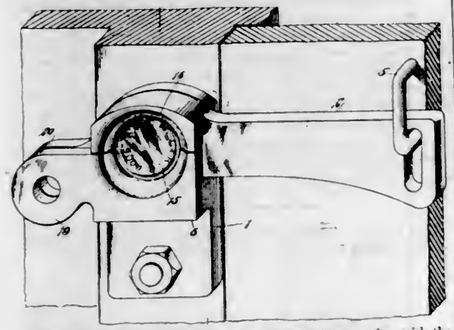
2. The combination of a header-die, a plurality of laterally-movable dies adapted to compress the end of the blank laterally preceding the formation of the point thereon, a plurality of vertically-movable dies adapted to compress the blank and form the point of the spike, a head or housing carrying said dies adapted to be adjusted whereby the length of the head of the spike is varied, and means to sever the completed spike from the bar, substantially as set forth.

3. The combination of a header-die, a plurality of laterally-movable dies adapted to compress the end of the blank laterally preceding the formation of the point thereon, a plurality of vertically-movable dies adapted to compress the blank and form the point on the spike, a head or housing adapted to be adjusted whereby the length of the head of the spike is varied, and means to feed the blank toward the dies, substantially as set forth.

4. In a machine for making spikes, the combination of a plurality of vertically-movable dies, the levers 15 and 21 connected with and adapted to reciprocate the said vertically-movable dies, a plurality of laterally-movable dies, the levers 30 and 31 connected with said laterally-movable dies and adapted to reciprocate the same, a die for forming the head of the spike, means to reciprocate the same, the inner lower end of said die being provided with an incline plane adapted to contact with the inner end of the lever 15 for the purpose of elevating the die connected therewith, and the upper end carrying an arm which projects in a slot reversely inclined to said incline plane for the purpose of causing the die connected with lever 21 to travel downwardly, and the lever 39 adapted to intermittently release and grasp the blank being fed to the die-holder, substantially as set forth.

5. In a machine for making spikes, the combination of a plurality of vertically-movable dies, the levers 15 and 21 adjustably connected with and adapted to reciprocate the said vertically-movable dies, a plurality of laterally-movable dies, the levers 30 and 31 adjustably connected with said laterally-movable dies and adapted to reciprocate the same, a die for forming the head of the spike, a head or housing carrying said vertically and laterally movable dies and adapted to be adjusted for the purpose of changing the length of the head of the spike, means to reciprocate the head-forming die the inner lower end of the carrier of said head-forming die being provided with an incline plane adapted to contact with the inner end of the lever 15 for the purpose of elevating the die connected therewith and the upper end carrying an arm which projects in a slot reversely inclined to said incline plane for the purpose of causing the die connected with a lever 21 to move downward, and the lever 39 adapted to intermittently release and grasp the blank being fed toward the die-holder, substantially as set forth.

658,638. SEAL-LOCK. HENRY M. GROVER, Wallingford, Vt., assignor of one-half to Francis H. Hoadley, same place. Filed Dec. 14, 1899. Serial No. 740,299. (No model.)



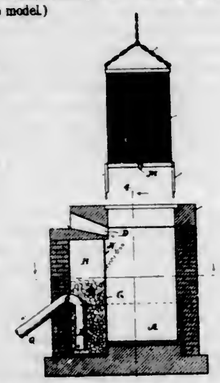
Claim.—1. In a seal-lock, a keeper, a latch for engaging with the keeper and having a seal-receiving depression, the base-wall thereof being convex, a seal having its inner side concave, and a bolt for locking the latch and keeper together, the said seal being held in place by the keeper and the latch engaging with its periphery, substantially as specified.

2. In a seal-lock, a keeper having a socket, the upper portion of the socket-wall being semicircular, a latch provided with a portion for engaging in the socket, the said latch having a depression the base of which is convex, a semicircular flange on the latch and having a channel, a seal concave on its inner side and adapted to engage in said channel and to be held by the flange and the wall of the socket, and a spring-pressed bolt for locking the latch and keeper together, substantially as specified.

3. In a seal-lock, a keeper-plate adapted to be rigidly attached to a car, a latch adapted for swinging connection with a car-door and having a lug for engaging in a socket in the keeper-plate, a spring-pressed locking-bolt movable through an opening in the keeper-plate and into an opening in the latch, and a transparent seal adapted for connection with the latch, the seal being concave on its inner side to receive a projection of the latch, substantially as specified.

4. In a seal-lock, a keeper-plate having a tubular extension, a locking-bolt movable in said extension and into an opening in the keeper-plate, a rib on said bolt for engaging in a channel in the wall of the opening through the keeper-plate, a spring in the extension for pressing the bolt forward, a removable block for the inner end of the extension and against which the spring engages, and a latch adapted for engagement with the keeper and to receive the locking-bolt, substantially as specified.

658,639. SANITARY RECEIVING-BASIN. BERNARD R. GUION, New York, N. Y., assignor of two-thirds to Alexander Lutz, same place, and James E. Walsh, Danbury, Conn. Filed Nov. 24, 1899. Serial No 738,169. (No model.)

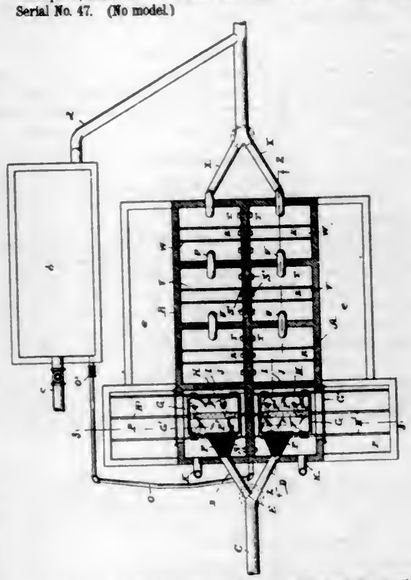


Claim.—1. In a sanitary receiving-basin the combination of the main compartment, an adjacent compartment separated therefrom by means of a screening device and its bottom below the level of the main compartment in a manner to drain the same, a door located in said screening device, a siphoning device leading from said smaller compartment and adapted to automatically drain the water from the basin, a filling of gravel or like material placed around said pipe, a basket suspended within the main compartment and means to permit of said basket being hoisted therefrom.

2. The combination in a receiving-basin of the main compartment, a basket located therein, a collapsible bottom for said basket and means for removing the same from the compartment for discharging its contents, a secondary compartment having its bottom below that of the first compartment in a manner to drain the same, a screen separating the same, a door located in said screen a drain-pipe leading from the compartment in said second compartment and having its inlet below the level of the first compartment in a manner to siphon the water therefrom.

3. A sanitary receiving-basin comprising a main compartment, a basket suspended therein and adapted to receive the deposits and drain the same, means for removing the basket from the compartment, collapsible doors in the bottom of the basket whereby the contents may be discharged, a second compartment adjacent to the first and whose bottom is below that of the first compartment, a filling of gravel in said second compartment, a door leading from one to the other, a siphoning-pipe leading from the second, and lower compartment, whereby the device may be drained.

658,640. APPARATUS FOR PURIFYING SEWAGE. BERNARD R. GUION, New York, N. Y., assignor of two-thirds to Alexander Lutz, same place, and James E. Walsh, Danbury, Conn. Filed Jan. 2, 1900. Serial No. 47. (No model.)



Claim.—1. In a sewage plant of the class described, the combination with a receiving-basin, of a car mounted therein, an adjoining mixing-chamber, means whereby the contents of said car may be dumped in said chamber, a drain for the basin, a series of purifiers through which said drainage passes, vent-pipes for both the basin and purifiers, substantially as described.

2. In a sewage purification and disposing plant, the combination of a basin, a movable receptacle therein, a feed-pipe discharging into said receptacle, a storage-chamber adjacent to said receptacle, and doors in said basin opening into said chamber, a drain for the basin and a filtering device for said drainage.

3. A sewage-disposing apparatus, comprising a catch-basin, a straining-receptacle located therein, an inclined grating, a supply-pipe for said receptacle, a series of purifiers adapted to drain said basin, each successive purifier being situated on a lower plane to insure drainage of one to the other, a lime-reservoir located above the receptacle and adapted to feed the lime down upon the deposits in said receptacle.

4. A sewage-disposing plant consisting of one or more sections A and B, each of which comprises a perforated receiving-car, a basin in which it is supported, a lime-reservoir located above said car and provided with means for feeding said lime into the car, vent-pipes for said basin, a series of purifiers for the drainage of said basin, a filtering-bed Y to receive the drainage from said purifiers, substantially as described.

5. A sewage-disposing apparatus, comprising a movable receptacle adapted to receive the sewage, means to permit of its drainage, means for applying a disinfectant thereto, a series of purifiers through which said drainage passes, means for applying a disinfectant to the deposits in said purifiers, a track upon which said receptacle operates, a storage-chamber connected with said receptacle and means whereby said receptacle may be dumped into said storage-chamber.

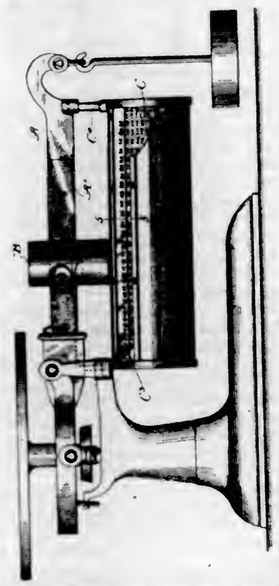
6. The combination in a sewage-disposing apparatus, of a supply-pipe, a car to receive said sewage and having a hinged bottom, a track on which said car is mounted, a receiving-chamber connected by said track, a basin to receive the drainings from the car, ventilator-pipes for said basin and provided with suitable purifying materials, a series of purifiers for the liquid drainings of the car and basin.

7. The combination in a sewage-disposing apparatus, of a car to receive the deposits, means to separate the liquids from the solid while in said car, a track on which to convey said car, a basin in which said car is normally situated, a mixing and receiving chamber adjacent to the basin, doors between the two, means for draining the basin and filtering said drainage as and for the purpose set forth.

8. The combination in a sewage-disposing apparatus, of a perforated receiver, means for transporting and dumping said receiver into a storage-chamber, a basin to catch the drainings from said receiver, a series of purifying-compartments through which said drainings pass, a series of lime-receptacles adapted to supply said compartments, and purify the contents thereof, a water-supply pipe whereby the several compartments of the apparatus may be flushed, substantially as shown and described.

9. A sewage-disposing apparatus, comprising a perforated receiving-car, a basin in which it is located, a door in the side of said basin, a storage-chamber located adjacent to said door, vent-pipes for the basin, one or more purifiers, which comprise a receiving-chamber, a screened-charcoal receptacle through which the drainings pass, a siphon to convey the liquids to the adjoining purifier, and a vent-pipe located above said charcoal-receptacle.

658,641. COMPUTING-SCALE. LEWIS P. HALLADAY, Marion, Ind., assignor to Philip Matter, same place. Filed Jan. 13, 1899. Serial No. 702,050. (No model.)



Claim.—1. A computing-scale, comprising a scale-beam, a poise adapted to move along said beam, a computing mechanism located beneath said beam and connected therewith, a flexible connection between said poise and said computing mechanism, said flexible connection passing through one of the supports by which the computing mechanism is attached to the beam.

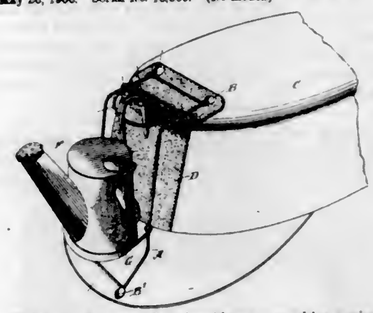
2. A computing-scale, comprising a scale-beam provided on its under side with a groove or opening, a poise associated with said beam and adapted to be moved therealong, a computing mechanism located below the beam and connected therewith, a flexible cord connected with said poise, said cord received into the groove or opening in the beam and passing through one of the supports by which the computing mechanism is attached to said beam so as to be concealed and protected.

3. A computing-scale, comprising a scale-beam having a groove or opening therein, a poise associated therewith and adapted to be moved therealong, a cylinder rotatably mounted in proximity to said beam and supported thereby, said cylinder carrying a series of tabulated figures, a drum connected with one end of said cylinder, a flexible cord connected with said drum and with said poise, said cord passing through one of the supports for the drum and received by the groove or opening in said beam, so as to be concealed and protected, a spiral spring connected with said cylinder and with a fixed part so as to be wound when the poise is moved outwardly along the beam.

4. A computing-scale, comprising a horizontal beam, a poise adapted to move along said beam, a computing mechanism suspended from, substantially parallel with and beneath the beam and comprising an exterior substantially-cylindrical casing, an interior rotating substantially-cylindrical indicator and a flexible connection between the poise and such cylindrical indicator, whereby the latter is rotated when the poise is moved in one direction, and means for moving the indicator toward its initial position when the indication has been made.

5. A computing-scale, comprising a horizontal beam, having a groove along its under side, a poise adapted to move therealong, a computing mechanism, a flexible cord connection attached to the poise, within the same and lying in the groove in the beam, and connected with the computing mechanism so that the cord is concealed at the point of its connection with the poise and through the line of its parallelism with the beam.

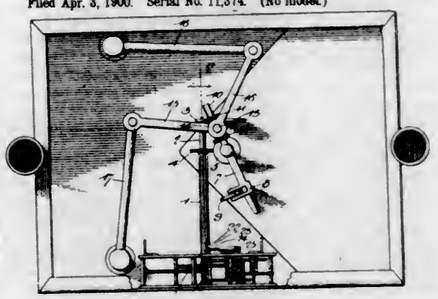
658,642. SUPPORT FOR MINERS' LAMPS. CHRISTIAN J. HECKEL, Pittsburg, Pa., assignor of one-half to Henry J. Pope, Etna, Pa. Filed May 26, 1900. Serial No. 18,069. (No model.)



Claim.—1. A support for miners' lamps, comprising a wire frame bent to fit upon a cap, and provided in its upper portion between the members thereof with an eye to receive the hook of the lamp, a segmental guard projecting horizontally forwardly between the members of the frame and in front of the said eye, and a socket on the lower portion of the frame and in which the lamp-body rests, substantially as described.

2. A support for miners' lamps, consisting of a wire frame having its upper and lower portions bent at an angle and projecting in opposite directions and provided in its upper portion with an eye to receive the hook of a lamp, a segmental guard projecting horizontally forward between the members of the frame and in front of the eye, and a semicircular socket secured to the lower portion of the frame and in which the lamp-body rests, substantially as described.

658,643. GAS-METER. ABEL HENNING, Colorado Springs, Colo. Filed Apr. 3, 1900. Serial No. 11,374. (No model.)



Claim.—In a gas-meter, the combination with an index having a main controlling-gear and mechanism in connection therewith, the said gear having a cylindrical supporting-arm provided with a key, a tubular axle having an open end to fit over the said arm and a slot to receive said key, and a stem projecting through the slot of the axle and secured to said arm, the stem being fixed to the latter in a plane at right angles thereto and having a weight on its outer free end.

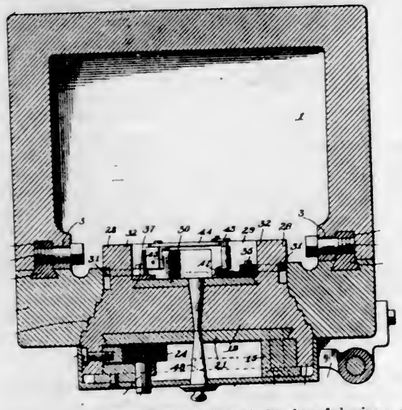
658,644. BUTTON. HENRY HIRSCHBACH, New York, N. Y. Filed Feb. 15, 1900. Serial No. 5,324. (No model.)



Claim.—1. A button, comprising a head and a shank, the latter being in sections, of which one section is fixed to the head and the other section is pivoted at or near its middle to the outer reduced end of said fixed section, the pivoted section having its outer end pointed and its inner end formed with spring-jaws adapted to engage the reduced end of the said fixed section, the said jaws being spaced apart a distance somewhat less than the reduced end, so that when the pivoted section is brought into alinement with the fixed section, then the jaws spring outward and finally snap in upon the sides of the said reduced end, to lock the section in place, the shank being of a uniform diameter throughout its length, substantially as shown and described.

2. A button, comprising a head and a shank, the latter being made in sections of a like diameter, and of which the inner or fixed section projects from the said head and the other or outer section is pivotally connected at or near its middle at the outer reduced end of said fixed section, the pivoted section having its inner end formed with connected spring-jaws to snap in upon the sides of the reduced end of the fixed section, and the outer end of the said section being beveled to form a point located at one side of the pivot, the bevel extending on the side opposite to the one at which the jaws are connected with each other, substantially as shown and described.

658,645. SAFE. JOHN T. HOUGH, Pittsburg, Pa., assignor of one-half to Benjiman S. Law and Malichi G. Leslie, same place. Original application filed May 9, 1899, Serial No. 716,131. Divided and this application filed Dec. 13, 1899. Serial No. 740,185. (No model.)

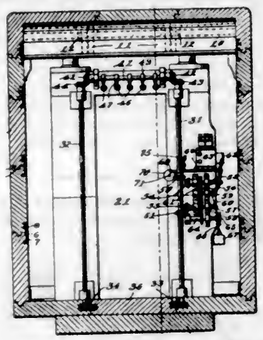


Claim.—1. The combination with the body of a safe having a circular door-opening therein, a circular door adapted to fit and turn in said opening, having a recess in its outer surface forming an annular flange, and interlocking devices on said body and door, of a fixed ring on which the door is supported, located within said recess and inclosed by said flange, a pinion mounted on said ring, a shaft for operating said pinion, and rack-teeth on the inner surface of said flange with which said pinion engages, as and for the purpose set forth.

2. The combination with the body of a safe having a circular door-opening therein, a circular door adapted to fit and turn in said opening, having a recess in its outer surface forming an annular flange, and interlocking devices on said body and door, of a fixed ring on which the door is supported, located within said recess, inclosed by said flange and provided with segmental slots, attaching devices for said ring extending through said slots and secured to said door, a pinion mounted on said ring, a shaft for operating said pinion, and rack-teeth on the inner surface of said flange, with which said pinion engages, as and for the purpose set forth.

3. The combination with the body of a safe having a circular door-opening therein and segmental lugs leading inwardly from the sides of said opening, of a door adapted to fit and rotate in said opening having a recess in its inner surface forming an annular flange which is provided with segmental lugs adapted to interlock with the lugs in said opening, locking-bolts carried by said door extending through radial openings in said flange and adapted to engage the shoulders formed by the ends of the lugs in said door-opening, a ring seated in said recess, capable of a limited degree of rotation and provided with slots having rack-teeth along one edge thereof, rack-bars on the inner ends of said locking-bolts, pinions engaging said rack-bars and the rack-teeth in said slots, a stationary pinion engaging rack-teeth along the inner edge of said ring, a crank-arm connected with said stationary pinion for rotating it, and a lock-bolt connected with said crank-arm for locking the latter, as and for the purpose set forth.

658,646. BANK-VAULT. JOHN T. HOUGH, Pittsburg, Pa., assignor of one-half to Benjiman S. Law and Malichi G. Leslie, same place. Original application filed May 9, 1899, Serial No. 716,132. Divided and this application filed Dec. 13, 1899. Serial No. 740,186. (No model.)



Claim.—1. The combination with a vault, of a sliding door therefor, longitudinally-movable locking-bolts for the door mounted upon a stationary part of the vault, and means actuated by the closing of the door for throwing said bolts into locking engagement with said door.

2. The combination with a vault, of a vertically-movable door therefor, locking-bolts for said door mounted upon a stationary part of the vault means actuated by the closing of the door for throwing said bolts into locking engagement with said door, and a time-lock for releasing said bolts.

3. The combination with a vault, of a sliding door therefor, locking-bolts for said door mounted upon a stationary part of said vault, a rotary shaft for operating said bolts, and means actuated by the closing of the door for rotating said shaft.

4. The combination with a vault, of a sliding door therefor, locking-bolts for said door mounted upon a stationary part of said vault, a rotary shaft having engaging portions thereon for said bolts for operating said bolts simultaneously, means actuated by the closing of said door for rotating said shaft and projecting said bolts into locking positions, and a time-lock for withdrawing said bolts from their locking positions.

5. The combination with a vault, of a vertically-movable door therefor, a sliding block, and means thrown into operation by said door for positively projecting said block beneath said door when the latter is in its raised position, as and for the purpose set forth.

6. The combination with a vault, of a vertically-movable door therefor, a sliding block adapted to be projected beneath said door when the latter is in its raised position, and means actuated by the movement of said door for operating said block to cause it to be positively projected beneath said door.

7. The combination with a vault, of a vertically-movable door therefor having bolt-openings therein, a series of bolts adapted to fit within said openings, a rotary shaft, engaging portions on said shaft for actuating said bolts, and means thrown into operation by the closing of said door for rotating said shaft.

8. The combination with a vault, of a vertically-movable door therefor having bolt-openings therein, bolts adapted to fit within said openings and provided with slots, a rotary shaft having projecting fingers or engaging portions thereon fitting within said slots, and means thrown into operation by the movement of said door for rotating said shaft.

9. The combination with a vault, of a vertically-movable door therefor, a block adapted to be projected beneath said door when the latter is in its raised position, rack-teeth on said block, rotary shafts having pinions thereon engaging said rack-teeth, connections between said shafts, whereby the rotation of one will cause the rotation of the other in the opposite direction, and means thrown into operation by the closing of said door for operating said shafts, as and for the purpose set forth.

10. The combination with a vault, of a vertically-movable door therefor, having bolt-openings therein, bolts adapted to fit within said openings, a rock-shaft having engaging portions thereon for actuating said bolts, a sliding block adapted to be projected beneath said door when the latter is in its raised position, rack-teeth upon the opposite ends of said block, rotary shafts having pinions upon their lower ends meshing with said rack-teeth, and intergeared with said rock-shaft, and means for operating said rotary shafts, as and for the purpose described.

11. The combination with a vault, a sliding door therefor, locking mechanism for said door and a rotary shaft for operating said locking mechanism, of means for rotating said shaft in opposite directions, consisting of a pair of pinions secured thereto, gear-wheels meshing with said pinions, a motor for rotating said gear-wheels, and automatic means for alternately shifting said gear-wheels into and out of mesh with said pinions.

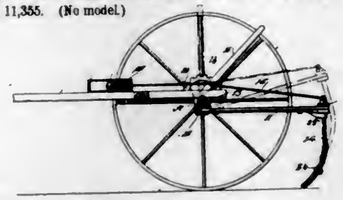
12. The combination with a vault, a sliding door therefor, locking mechanism for said door and a rotary shaft for operating said locking mechanism, of means for rotating said shaft in opposite directions, consisting of a pair of pinions on said shaft, gear-wheels adapted to mesh, respectively, with said pinions, a bell-crank lever connected with said gear-wheels, and means for automatically rocking said bell-crank lever for throwing said gear-wheels alternately into and out of connection with said pinions.

13. The combination with a vault, a sliding door therefor, locking mechanism for said door and a rotary shaft for operating said locking mechanism, of means for rotating said shaft in opposite directions, consisting of a pair of pinions on said shaft, gear-wheels adapted to mesh, respectively, with said pinions, hollow shafts having a spline-and-feather connection with said gear-wheels, a motor for rotating said hollow shafts, rods secured to said pinions and extending through said hollow shafts, a bell-crank lever fulcrumed between said rods and whose arms are connected thereto, and means for automatically shifting said bell-crank lever for alternately throwing said gear-wheels into and out of engagement with said pinions.

14. The combination with a vault, a sliding door therefor, locking mechanism for said door and a rotary shaft for operating said locking mechanism, of means for rotating said shaft in opposite directions, consisting of a pair of pinions on said shaft, gear-wheels adapted to mesh, respectively, with said pinions, hollow shafts having a spline-and-feather connection with said gear-wheels, a motor for rotating said hollow shafts, rods secured to said gear-wheels and extending through said hollow shafts, a bell-crank lever fulcrumed between said rods and having its arms connected, respectively, thereto, a time-lock, and connections between said bell-crank lever and said door and lock, whereby said lever is adapted to be rocked in one direction by said door and in the opposite direction by said lock, as and for the purpose set forth.

15. The combination with a vault, a sliding door therefor, locking mechanism for said door and a rotary shaft for operating said locking mechanism, of means for rotating said shaft in opposite directions, consisting of a pair of pinions on said shaft, gear-wheels adapted to mesh, respectively, with said pinions, hollow shafts having a spline-and-feather connection with said gear-wheels, a motor for rotating said hollow shafts, rods secured to said gear-wheels and extending through said hollow shafts, a bell-crank lever fulcrumed between said rods and having its arms connected, respectively, thereto, a time-lock, connections between said lock and one arm of said bell-crank lever, a lug on said door, a rock-shaft in the door-frame having a crank-arm thereon lying within the path of movement of said lug, and a link eccentrically connected to said rock-shaft and to said bell-crank lever, whereby the closing action of the door will rock said bell-crank lever in one direction and said lock will rock the same in the other direction, as and for the purpose set forth.

658,647. HAY-RAKE. JAMES H. HUGHES, Alicel, Oreg., assignor of one-third to Edward A. Wills, same place. Filed Apr. 3, 1900. Serial No. 11,355. (No model.)

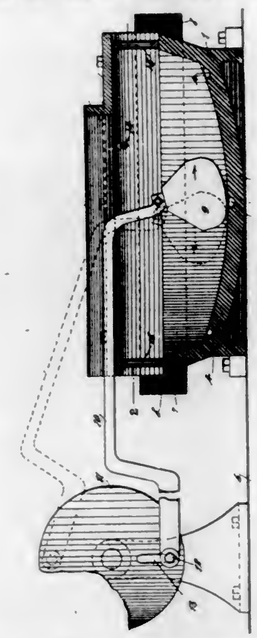


Claim.—1. A wheel-supported axle, a rake-head pivotally mounted on the axle, a pole secured to the axle, a lever movable relatively to the pole, a latch for the lever, a link connection between the lever and the head of the rake, and a spring having a connection with the lever and operating to lift the rake-teeth when the lever is released, substantially as specified.

2. A wheel-supported axle, a rake-head pivotally mounted on the axle, a pole secured to the axle, provided with a lever and a latch for the lever, a link connection between the lever and the head of the rake, and a spring-controlled connecting-rod attached to the lever and mounted to slide in a casing carried by the pole, the said spring operating to lift the teeth when the lever is released as specified.

3. The combination, with a wheel-supported axle, a pole attached to the axle, and a rake-head pivotally mounted on said axle, of a lever fulcrumed upon the pole, a latch for the said lever, a casing located on the pole in advance of the lever, a link connecting the lever with the rake-head, and a rod attached to the lever and extending within the casing, which rod is provided within the casing with a head, and a spring located between the head and the end of the casing through which the rod enters, as specified.

658,648. ORE CRUSHER AND AMALGAMATOR. LOUIS JACQUES, Telluride, Colo. Filed Feb. 8, 1899. Serial No. 704,928. (No model.)



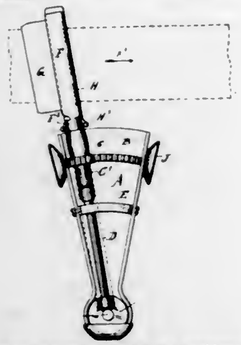
Claim.—An ore crusher and amalgamator, comprising a mortar, a muller movable in the mortar, means for imparting a sliding and rocking movement to the muller, a boxing having a longitudinal opening in its top and provided with upwardly-extending flanges at the sides of said opening, the said boxing being provided at each end with a screen, side strips on said boxing adapted to engage over the sides of the mortar, the ends of the strips projecting beyond the ends of the mortar and clamping-bolts passing through the projecting ends of said strips, substantially as specified.

658,649. MACHINE FOR STROPPING RAZOR-BLADES. FREDERICK KAMPFE, RICHARD KAMPFE, and OTTO KAMPFE, New York, N. Y. Filed July 17, 1900. Serial No. 23,902. (No model.)

Claim.—1. In a razor-blade-stropping device, the combination with a handle-frame, of a segmental rack on said frame, a rod pivoted on said frame concentric with the rack, a pinion mounted loosely on said rod and engaging the rack, a blade-holder connected with the pinion and a friction-plate pivoted to the frame concentric with the pivoted rod on that face of the handle-frame opposite the one on which the rod is mounted and mounted to swing with said rod, substantially as herein set forth.

2. In a razor-blade-stropping device, the combination with a han-

dle-frame, of a segmental rack on said frame, a rod pivoted on said frame concentric with the rack, a pinion mounted loosely on said rod and engaging the rack, a blade-holder connected with the pinion and a friction-plate pivoted to the frame concentric with the pivoted rod, below the blade-holder and in line therewith and mounted to swing with the same, substantially as set forth.



3. In a razor-blade-stropping device, the combination with a handle-frame, of a segmental rack on said frame, a rod pivoted on said frame concentric with the rack, a pinion mounted loosely on said rod and engaging the rack, a blade-holder connected with the pinion and a friction-plate pivoted to the frame concentric with the pivoted rod and having lugs projecting upward at opposite sides of the lower end of the blade-holder, substantially as herein set forth.

4. The combination with a handle-frame, of a segmental rack on said frame, a rod pivoted on said frame, concentric with the rack, a pinion mounted loosely on said rod and engaging the rack, a blade-holder connected with said pinion, and a cross-piece on said frame extending across and over the pivoted rod, substantially as herein set forth.

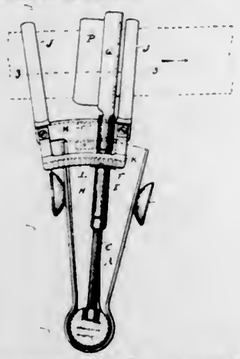
5. The combination with a handle-frame, of a segmental rack on said frame, a rod pivoted detachably on said frame, concentric with the rack, a pinion mounted on said rod and engaging the rack, a blade-holder connected with the pinion and a latch for locking the rod on the frame substantially as herein set forth.

6. The combination with a handle-frame, of a finger-rest upon each side of the same, a palm-rest button on the lower end of the frame, a segmental rack on the frame, a rod pivoted on said frame concentric with the rack, a pinion on said rod engaging the rack and a blade-holder connected with said pinion, substantially as herein set forth.

7. In a stropping device, the combination with a handle-frame, of a finger-rest on each side edge of the same, a button on the lower end, a reversible blade-holder and means for automatically reversing said holder, substantially as herein set forth.

8. A razor-blade holder U-shaped in cross-section and having longitudinal slots in its back along the side edges of the back to increase its resiliency, substantially as herein set forth.

658,650. RAZOR-STROPPING DEVICE. FREDERICK KAMPFE, RICHARD KAMPFE, and OTTO KAMPFE, New York, N. Y. Filed July 17, 1900. Serial No. 23,903. (No model.)



Claim.—1. In a machine for stropping razor-blades, the combination with a handle-frame, of a rod fixed on the frame and extending longitudinally and centrally over the same, a blade-holder mounted rotatively on the upper end of said rod, a pinion connected with the blade-holder, a plate pivoted to the handle-frame and having friction-arms and a rack on said plate engaging the pinion on the blade-holder, substantially as herein set forth.

2. In a machine for stropping razor-blades, the combination with a handle-frame, of a rod fixed on the frame and extending longitudinally and centrally over the same, a blade-holder mounted rotatively on the upper end of said rod, a pinion connected with the blade-holder, a plate pivoted to the handle-frame between said frame and the rod carrying the blade-holder and having friction-arms and a rack on said plate engaging the pinion on the blade-holder substantially as herein set forth.

3. In a machine for stropping razor-blades, the combination with a handle-frame, of a rod fixed on the frame and extending longitudinally and centrally over the same, a blade-holder mounted rotatively on the upper end of said rod, a pinion connected with the blade-holder, a plate pivoted to the handle-frame to swing between said frame and the rod carrying the blade-holder, a friction-arm projecting from the upper end of said plate, on each side of the blade-holder, and a rack on said plate engaging the pinion on the blade-holder, an arm on said plate at the swinging end thereof, and a roller on said arm running on the under side of the handle-frame, at the upper end thereof, substantially as herein set forth.

4. The combination with a handle-frame, of a swinging friction-plate pivoted to the same, a reversible blade-holder mounted on a rod held rigidly on the handle-frame and means for reversing said blade-holder from the swinging plate, substantially as herein set forth.

5. The combination with a handle-frame, of a swinging friction-plate pivoted to the same, a reversible blade-holder on a fixed support on said frame and means for reversing said blade-holder from the swinging plate, substantially as herein shown and described.

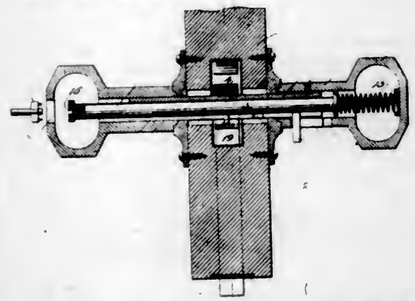
658,651. HERNIAL TRUSS. JOHN C. KEIL, La Porte, Ind. Filed June 28, 1900. Serial No. 21,911. (No model.)



Claim.—1. A truss of the character set forth, comprising longitudinally-extensible sections, a clutch connection between said sections, and a pad mounted upon a member of one of said sections and means for adjusting it toward and from the same and at right angles thereto, substantially as described.

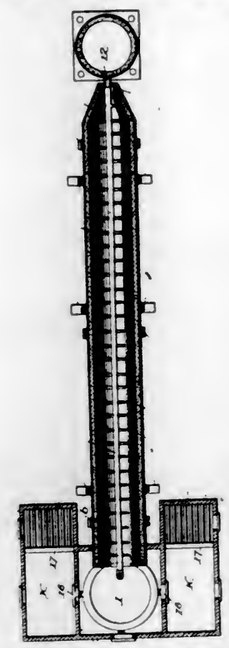
2. A truss comprising extensible sections each consisting of a barrel having a threaded bore and a toothed head, a screw or threaded stem swiveled in the bore of one section and provided with a toothed head cooperating with the toothed heads of the other section, an L-shaped screw or stem having one of its threaded arms swiveled in the bore of the last-named barrel, a connecting-plate having a toothed head cooperating with the toothed head of the first-named barrel, screws adjustably connecting said sets of toothed heads; jam-nuts on the swiveled stems, and a pad swiveled to the other arm of the L-shaped screw, substantially as described.

658,652. LOCK. HENRY L. KELLOGG, Stevens Point, Wis. Filed Sept. 5, 1899. Serial No. 729,524. (No model.)



Claim.—A lock, comprising a bolt, a tumbler engaging with the bolt, a tubular spindle extended through the tumbler, the said spindle having a longitudinal slot and a lateral recess at one side of the slot at a pont at one side of and adjacent to the tumbler, a spindle-rod adapted to rotate and to move longitudinally in the tubular spindle and adapted to receive a removable key at its outer end, a pin having immovable connection with the spindle-rod and extended through the slot in the tubular spindle and adapted to enter the lateral recess and also to engage with the tumbler, a knob-shank secured to the tubular spindle and having a longitudinal slot and a lateral recess at one side of the slot, a finger extended from the spindle-rod through the shank-slot and adapted to enter the lateral recess of said slot and a spring in the knob for moving the spindle-rod in one direction, substantially as specified.

658,653. PUDDLING-FURNACE. SIMON P. KETTERING, Sharon, Pa. Filed Nov. 13, 1899. Serial No. 736,868. (No model.)



Claim.—1. In an apparatus for the manufacture of wrought-iron, the combination of an open-ended cylinder supported to rotate about its axis, means to rotate it, means to deliver molten metal into one end, means to supply fuel to the interior of the cylinder, a covered rotary pan into which the cylinder discharges the metal, and a stack leading from the cover of the pan through which the products of combustion pass from the cylinder, substantially as set forth.

2. In an apparatus for the manufacture of wrought-iron, the combination of an open-ended cylinder supported at an inclination to rotate about its axis, means to rotate it, means to deliver molten metal to the highest end of the cylinder in a substantially continuous and uniform flow, means to supply fuel to the interior of the cylinder, a covered rotary pan into which the cylinder discharges the metal, and a stack leading from the cover of the pan through which the products of combustion pass from the cylinder, substantially as set forth.

3. In an apparatus for the manufacture of wrought-iron, the combination of an open-ended cylinder supported to rotate about its axis, means to rotate it, means to deliver molten metal into one end, means to supply fuel to the interior of the cylinder, a covered pan into which the cylinder discharges the metal, a stack leading from the cover of the pan through which the products of combustion pass from the cylinder, and a balling-furnace adjacent to and communicating with said pan, substantially as set forth.

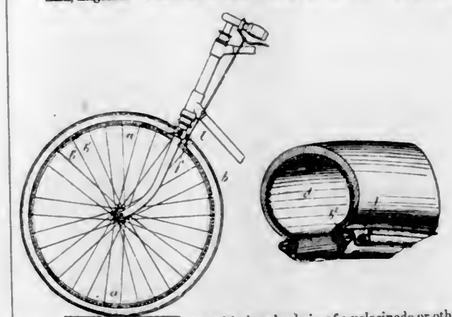
4. In an apparatus for the manufacture of wrought-iron, the combination of an open-ended cylinder supported to turn about its axis, means to turn it, means to deliver molten metal into one end of the cylinder, a water-pipe extending through the cylinder, a fuel-pipe within the water-pipe, discharge-nipples radiating from the fuel-pipe and projecting through the water-pipe, a covered rotary pan into which the cylinder discharges the metal, and a stack leading from the cover of the pan through which the products of combustion pass from the cylinder, substantially as set forth.

5. In an apparatus for the manufacture of wrought-iron, the combination of an open-ended cylinder supported at an inclination to turn about its axis, means to turn it, means to deliver molten metal into the highest end of the cylinder, means to deliver fuel to the interior of the cylinder, means to spray water onto the metal within the cylinder, a covered rotary pan at the lower end of the cylinder into which the latter discharges the metal, and a stack leading from the cover of the pan through which the products of combustion pass from the cylinder, and a balling-furnace adjacent to and communicating with the rotary pan, substantially as set forth.

6. In an apparatus for the manufacture of wrought-iron, the combination of an open-ended cylinder supported to rotate about its axis, means to rotate it, means to deliver molten metal into one end, a pan to receive the metal from the other end, and a fuel-supply pipe within the cylinder about which the cylinder rotates, said pipe having radiating discharge-nipples, substantially as set forth.

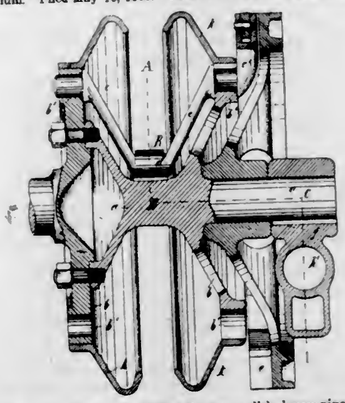
7. In an apparatus for the manufacture of wrought-iron, the combination of an open-ended cylinder supported to rotate about its axis, means to rotate it, means to deliver molten metal into one end, a pan to receive the metal from the other end, a fuel-supply pipe within the cylinder about which the cylinder rotates, said pipe having radiating discharge-nipples, and means to spray water upon the metal within the cylinder, substantially as set forth.

658,654. VELOCIPEDE-BRAKE. HENRY A. LAMPLUGH, Birmingham, England. Filed Dec. 18, 1899. Serial No. 740,767. (No model.)



Claim.—The combination with the wheel-rim of a velocipede or other vehicle, of an expansible brake-rim provided with an arched flange which overhangs one edge of the wheel-rim and by which said brake-rim is detachably connected to the wheel-rim, and means for drawing the two ends of the brake-rim together to cause the flange thereof to grip the wheel-rim, substantially as described.

658,655. VARIABLE-SPEED GEAR. ERNST LANG, Brussels, Belgium. Filed May 10, 1899. Serial No. 716,311. (No model.)



Claim.—1. The combination of a rotary disk, levers pivoted on said disk and provided with belt-engaging devices, and means for turning said

levers to move the belt-engaging devices toward or from the axis of the disk, substantially as described.

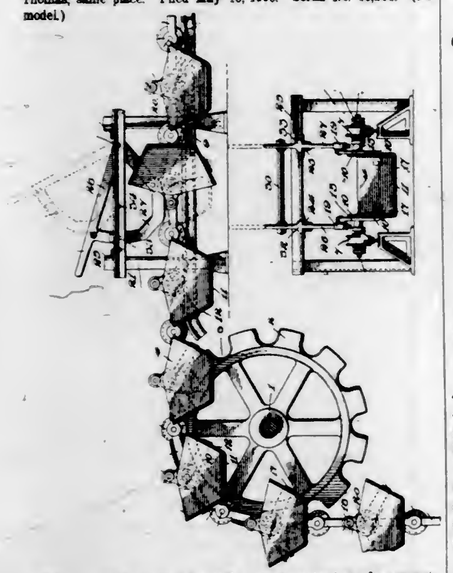
2. The combination of a rotary disk, levers mounted thereon and provided with axially-extending belt-engaging devices, and a ring or disk connecting said levers at a distance from their fulcrum and rotatable relatively to the disk which carries the levers, substantially as described.

3. The combination of a rotary disk, levers pivoted thereon and provided with belt-engaging devices, the disk mounted to turn relatively to the first-named disk, and connected with said levers, a cylinder rigidly connected with the first-mentioned disk and a piston mounted to move in said cylinder and connected with the second-named disk, substantially as described.

4. The combination of rotary disks, and a series of cranked levers pivoted to said disks and provided between the same with belt-engaging portions, and means for turning the said levers on their pivots, substantially as described.

5. The combination of rotary disks, levers pivoted on said disks and provided between the same with belt-engaging portions, flanges projecting inwardly from the disks approximately to the plane of the said belt-engaging portions, and means for turning the levers on their pivots, substantially as described.

658,656. **DUMPING MECHANISM FOR CONVEYERS.** AUGUSTUS L. LE GRAND, West Pittston, Pa., assignor of one-half to John N. Thomas, same place. Filed May 10, 1900. Serial No. 16,201. (No model.)



Claim.—1. The combination with a conveyer-bucket, of a supporting-plate bracing the end of the bucket and engaging the side walls thereof, and a pintle extending from the supporting-plate.

2. In a conveyer, the combination with a pair of chains composed of pivoted links, of pintles comprising connectors for the links, bucket-supporting plates suspended from and integral with the adjacent ends of the pintles, and buckets carried by the bucket-supporting plates and located wholly between the inner ends of the pintles.

3. The combination with a conveyer-bucket, of a supporting-plate having angularly-disposed arms bracing the end of the bucket and engaging the inclined side walls thereof, and a pintle extending from the supporting-plate, whereby the supporting-plate constitutes means for connecting the bucket to its pintle and serves to brace and stiffen the bucket structure.

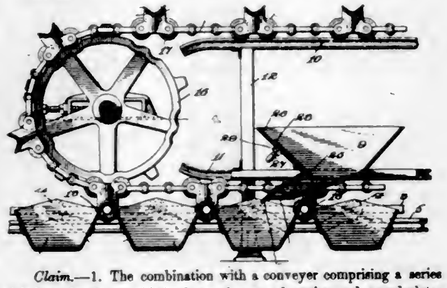
4. The combination with a bucket having straight end walls and inclined side walls, of supporting-plates located against the ends of the bucket, each of said plates comprising a pair of arms having their extremities bent into engagement with the inclined side walls of the bucket and a trip-arm, a pintle rigid with each supporting-plate and extending from the juncture of the arms of said plate, whereby said plates serve to stiffen the bucket structure and to constitute trip devices and connectors between the bucket and pintles.

5. The combination with an endless conveyer comprising supporting-rollers, and a series of pivotally-mounted gravity-buckets, of trip-arms extending upwardly from the ends of each bucket, a dumping-station comprising a supporting-frame under which the conveyer passes, and a pivoted trip comprising a pair of trip-levers provided with depending, cam-shaped trip-bars, and means for retaining said trip in its elevated and depressed positions to permit the passage of said buckets through the loading-station without interference, or to obstruct the path of movement of the trip-arms for the purpose of dumping the contents of the buckets in a direction opposite to the direction of movement of the conveyer.

6. The combination with a conveyer comprising a pair of chains, gravity-buckets located between the chains and provided with terminal pintles constituting link-connecting devices for the chains, rollers mounted upon each of said pintles, trip-arms extending upwardly from the pintles and having terminal antifriction-rollers, a dumping-station comprising a supporting-frame and guide-bars, a pivoted trip comprising a pair of depending trip-bars guided by the guide-bars of the station and arranged to obstruct the path of movement of the trip-rollers, and locking means for retaining the trip in its operative or inoperative positions.

7. The combination with a conveyer comprising a series of buckets, of trip-arms extending upwardly from the ends of each bucket, a dumping-station comprising a supporting-frame under which the conveyer passes, a movable trip provided with depending trip-bars, and means for retaining said trip in its elevated and depressed positions to permit the passage of said buckets through the loading-station without interference, or to obstruct the path of movement of the trip-arms for the purpose of dumping the contents of the buckets.

658,657. **LOADING MECHANISM FOR CONVEYERS.** AUGUSTUS L. LE GRAND, West Pittston, Pa., assignor of one-half to John N. Thomas, same place. Filed May 10, 1900. Serial No. 16,202. (No model.)



Claim.—1. The combination with a conveyer comprising a series of independently-movable buckets, of a guard-carrier, and guard-plates carried by said guard-carrier and bent into angular form to cause the angularly-related edges of said plates to take over the edges of contiguous buckets.

2. The combination with a conveyer comprehending a plurality of spaced buckets, of a guard-carrier, guard-plates supported by the carrier and bent to engage contiguous edges of adjacent buckets for the purpose of guarding the intervening space and to effect a direct cooperative connection between the conveyer and carrier.

3. The combination with a conveyer comprehending spaced and pivotally-supported buckets, of a movable guard-carrier, guard-plates carried by the guard-carrier intermediate of the buckets and engaging contiguous buckets to guard the intervening space to retain the buckets against tilting said guard-plates constituting the sole connecting means between the conveyer and carrier.

4. The combination with a conveyer comprehending a series of pivoted buckets, of a movable guard-carrier, a series of guard-plates supported by the guard-carrier intermediate of the buckets and having a direct engagement with the contiguous edges of said buckets, and means for preventing the yielding of said plates in the direction of their withdrawal from engagement with the buckets.

5. The combination with a conveyer comprehending a series of pivoted buckets, of a guard-carrier, brackets extending laterally from said guard-carrier, guard-plates carried by said brackets and bent into engagement with contiguous buckets, and means for preventing the relative lateral movement of the carrier and conveyer for the purpose of maintaining the effective engagement of the guard-plates with the buckets during the loading of the latter.

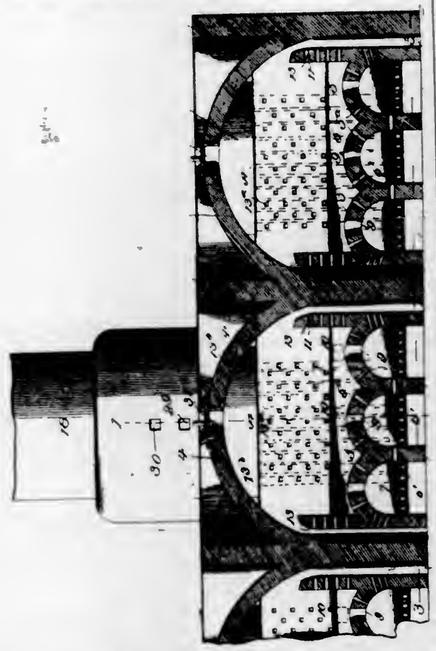
6. The combination with a conveyer comprehending a series of pivoted buckets, of a flexible guard-carrier, guard-plates supported by the carrier in direct engagement with contiguous edges of the buckets, carrier-tracks located at the side of the carrier opposite the guard-plates, and travelers mounted in the carrier directly behind the guard-plates and engaging the carrier-tracks, whereby the guard-plates are retained in rigid engagement with the buckets to prevent tilting of the latter during the operation of loading.

7. The combination with a conveyer comprising a series of spaced and pivotally-mounted buckets, of an endless conveyer comprising side chains and intermediate guard-plates, brackets supporting the guard-plates, link-connectors retaining the brackets, travelers journaled upon said link-connectors, carrier-tracks for the reception of said travelers, and tracks for preventing lateral yielding of the conveyer.

8. The combination with a conveyer comprising a series of spaced buckets, a guard-carrier, and guard-plates supported by the carrier and engaging contiguous edges of the buckets, said guard-plates being formed with angularly-related engaging edges and a curved intermediate breast, a loading-chute mounted above the conveyer, and a leveling-scraper extending below the loading-chute slightly below the horizontal plane of the breasts of the guard-plates to cause said scraper to clear the guard-plates of accumulation and to level the loads in the buckets for the purpose of preventing waste when the guard-plates are moved from engagement with said buckets by the travel of the conveyer.

9. The combination with a conveyer comprising a series of buckets and intermediate guard-plates, of a discharge-chute, and a yielding leveling-scraper extended below the end of the chute to clear the plates and level the load deposited in the conveyer-bucket from the chute.

658,658. **FURNACE FOR BURNING REFUSE MATERIAL.** JAMES F. LESTER, Atlanta, and LINTON A. DEAN, Rome, Ga. Filed Feb. 26, 1900. Serial No. 6,614. (No model.)



Claim.—1. A refuse-burner comprising a preliminary-combustion chamber having a supply-opening in its top, through which the material is deposited, a furnace communicating with said chamber and having its roof forming a floor in the latter and a wall at the rear of said chamber provided with a series of restricted outlets on different levels.

2. A refuse-burner comprising a preliminary-combustion chamber having a supply-opening in its top through which the material is deposited, a furnace communicating with said chamber, the roof of the furnace forming the floor in the chamber and provided with an opening for the passage of the refuse into the furnace and for the outlet of the products of combustion, and a wall at the rear of the preliminary-combustion chamber provided with a series of restricted outlets on different levels.

3. A refuse-burner comprising a combustion-chamber in which the material is to be deposited, and a series of furnaces below said chamber having arched roofs forming the floor of the combustion-chamber, each of said arched roofs having perforations therein which open into the combustion-chamber.

4. A refuse-burner comprising a preliminary-combustion chamber in which the material is to be deposited, and a series of furnaces below said chamber having arched roofs forming the floor of the preliminary-combustion chamber, each of said arched roofs having an opening therein for passage of the refuse into its respective furnace.

5. A refuse-burner comprising a preliminary-combustion chamber in which the material is to be deposited, and a series of furnaces below said chamber having arched roofs forming the floor of the latter, each of said arched roofs having perforations therein opening into the combustion-chamber and also having an opening therein for the passage of the refuse to its respective furnace.

6. A refuse-burner comprising a preliminary-combustion chamber having a fuel-supply inlet, a series of furnaces below and communicating with said chamber, the tops of the furnaces forming the floor of the latter, said preliminary-combustion chamber having restricted outlets at one end above the furnaces, the fuel-inlet being above the restricted outlets and arranged to deliver the refuse matter in the path of the products of combustion from the furnaces.

7. A refuse-burner comprising a preliminary-combustion chamber having a fuel-supply inlet, a series of furnaces below and communicating with said chamber, the tops of the furnaces forming the floor of the latter, said preliminary-combustion chamber having at one end a series of restricted outlets arranged at different levels, the fuel-inlet being above the restricted outlets and arranged to deliver the refuse matter in the path of the products of combustion from the furnaces.

8. A refuse-burner comprising a combustion-chamber having a fuel-supply inlet, a series of furnaces below said chamber, the tops of the furnaces forming the floor of the latter and having perforations therein opening into the combustion-chamber, one wall of said chamber being provided with restricted outlets arranged at different levels, the fuel-inlet being above the restricted outlets and arranged to deliver the refuse matter in the path of the products of combustion from the furnaces.

9. A refuse-burner comprising a preliminary-combustion chamber having a fuel-supply inlet, a series of intercommunicating furnaces below said chamber, the tops of the furnaces forming the floor of the latter, openings being formed in the top of each furnace for the passage of the refuse into its respective furnace and for the outlet of the products of combustion from the furnaces.

10. A refuse-burner comprising a preliminary-combustion chamber in which the material is to be deposited, a series of furnaces below said chamber having arched roofs forming the floor of such chamber, each roof having an opening therein for the passage of the refuse into its respective furnace and for the outlet of the products of combustion from said furnaces.

11. A refuse-burner comprising a preliminary-combustion chamber in which the material is to be deposited, a series of furnaces below said chamber, the tops of the furnaces forming the floor of the latter, a means of communication between the preliminary-combustion chamber and the furnaces, a chimney, a series of vertical flues communicating therewith, said preliminary-combustion chamber being in communication with each of said vertical flues through a series of openings arranged at different levels.

12. A refuse-burner comprising a preliminary-combustion chamber in which material is to be deposited, a series of furnaces below said chamber, the tops of the furnaces forming the floor of the latter, a means of communication between the preliminary-combustion chamber and the furnaces, a chimney, a series of vertical flues, a flue common to said series of vertical flues leading to said chimney, said preliminary-combustion chamber being in communication with each of said vertical flues through a series of openings arranged at different levels.

13. A refuse-burner comprising a casing having a preliminary-combustion chamber, and a series of furnaces below said chamber having arched tops forming the floor of said chamber, said tops having fuel-supply openings near one of the walls of the casing which wall is provided with openings therein in line with said tops, substantially as set forth.

14. A refuse-burner comprising a preliminary-combustion chamber, a series of furnaces under said chamber, the tops of said furnaces forming the floor of the preliminary-combustion chamber, and direct and indirect passages from the furnaces to the chamber, the indirect passages having free communication with the furnaces, substantially as set forth.

15. A refuse-burner comprising a preliminary-combustion chamber, a series of furnaces under said chamber, the tops of said furnaces forming the floor of the latter, and direct and indirect passages from the furnaces to the chamber, the indirect passages having free communication with the furnaces and communicating with the combustion-chamber at different levels, as set forth.

16. A refuse-burner comprising a preliminary-combustion chamber, a series of furnaces below said chamber having communicating openings between said furnaces and air-channels between the side furnaces and the side walls of the chamber, said furnaces having communication with said air-channels, which latter open directly into the combustion-chamber, as set forth.

17. A refuse-burner comprising a preliminary-combustion chamber, a series of furnaces below said chamber, the tops of which are perforated and form the floor of said chamber, a wall at the rear of said furnaces, extending to near the top of the combustion-chamber, a series of outlets in said wall, said outlets being on different levels, a series of flues in rear of said wall extending to near the top thereof and into which said outlets open, a chimney, and a flue common to said series of flues connecting the latter with said chimney.

18. A refuse-burner comprising a preliminary-combustion chamber, a series of furnaces below said chamber, the tops of which furnaces are perforated and form the floor of said chamber, a wall at the rear end of said chamber extending to near the top thereof, a series of vertical flues extending to near the top of said wall, a chimney, a flue common to said vertical flues leading to said chimney, said preliminary-combustion chamber being in communication with each of said vertical flues through a series of openings arranged at different levels.

19. In an apparatus of the class described a preliminary-combustion chamber, having a fuel-inlet, a series of furnaces under the floor of such chamber, a means of communication between the preliminary-combustion chamber and the furnaces, holes being formed in said floor near one end of the chamber for the passage of the refuse into the furnaces and for the outlet of the products of combustion from the latter and the other end of the preliminary-combustion chamber being provided with a series of restricted outlets on different levels, the fuel-inlet being above the restricted outlets and arranged to deliver the refuse matter in the path of the products of combustion from the furnaces, as set forth.

20. In an apparatus of the class described, a preliminary-combustion chamber having a fuel-inlet, a furnace under the floor of such chamber, a hole being formed in said floor at one end of the preliminary-combustion chamber for the passage of the refuse into the furnace and for the outlet of the products of combustion from the latter and a wall at the other end of the preliminary-combustion chamber having a series of restricted outlets arranged on different levels, the fuel-inlet being above the restricted outlets and arranged to deliver the refuse matter in the path of the products of combustion from the furnaces.

21. A refuse-burner comprising a preliminary-combustion chamber in which the material is to be deposited, and a series of furnaces having arched roofs forming the floor in such chamber, said furnaces having a continuous communication with each other, and each furnace communicating with the preliminary-combustion chamber.

22. A refuse-burner comprising a preliminary-combustion chamber having a supply-opening in its top through which the material is deposited, an exit-flue, a furnace having its roof forming a floor in such chamber, the rear wall of the preliminary-combustion chamber having a series of outlets on different levels, the lowest one of the series of outlets being in the most direct line to said exit-flue.

23. A refuse-burner comprising a preliminary-combustion chamber, a series of furnaces below said chamber, the tops of which are perforated and form the floor of said chamber, a series of vertical flues at the rear of said chamber, a chimney, a flue common to said vertical flues leading to said chimney, and a furnace in the flue common to the vertical flues, said preliminary-combustion chamber being in communication with each of said vertical flues through a series of openings arranged on differen levels.

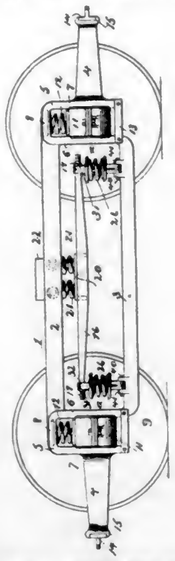
658,659. CAR-TRUCK. JOSEPH L. LEVY, New York, N. Y., assignor to John A. Brill, Philadelphia, Pa. Filed Sept. 14, 1897. Serial No. 651,696. (No model.)

Claim.—1. In a car-truck, the combination with the truck-frame having axle-box pedestals, longitudinally-disposed equalizing-bars located between the pedestals, a bolster-support adapted to swing transversely and securing said equalizing-bars together, and links extending upwardly from the truck-frame and pivotally connected to the latter and to the ends of the equalizing-bars, the equalizing-bars and links swinging bodily with the bolster, substantially as described.

2. In a car-truck, the combination with the truck-frame having axle-box pedestals, longitudinally-disposed equalizing-bars located between the pedestals, a cross-bar transversely disposed and securing said equalizing-bars together, and adapted to swing transversely, springs on the cross-bar, a bolster on the springs, and links extending upwardly from the truck-frame and connected to the ends of the equalizing-bars, substantially as described.

3. In a car-truck, the combination with a truck-frame having axle-box pedestals, a bolster-support adapted to swing transversely and securing said equalizing-bars together, a bolster, thrust-springs between the said bolster and the truck-frame, and links extending upwardly from the truck-frame and pivotally connected to the latter and to the ends of the equalizing-bars, substantially as described.

4. In a car-truck, the combination with the truck-frame, of the equalizing-bars, a bolster supported on the side bars, links having parts movable to or from each other, said links extending upwardly from the truck-frame and which are pivotally connected with said bars and the truck-frame, and springs on said links for opposing the movements of said parts, the links, springs, bars, and bolster being adapted to swing transversely independently of the truck-frame, substantially as described.



5. In a car-truck, the combination with the truck-frame, longitudinally-disposed equalizing-bars, a bolster-support transversely disposed and securing said bars together, the bolster-support being adapted to swing transversely and independently of the truck-frame, links extending upwardly from the truck-frame and pivotally connected to the latter and to the ends of the equalizing-bars, and springs carried by the links arranged to be compressed by the equalizing-bars or truck-frame, substantially as described.

6. In a car-truck, the combination with the truck-frame, of the longitudinally-disposed equalizing-bars arranged between the axles of the truck, a cross-bolster adapted to swing transversely and supported on said equalizing-bars, transversely-swinging connections extending from the truck-frame below the equalizing-bars, each of said connections comprising a part pivoted alike to the truck-frame and each end of each equalizing-bar, and a spring carried by the said parts and arranged to be compressed between them, substantially as described.

7. In a car-truck, the combination with the truck-frame having axle-box pedestals and a chord secured to and extending between the lower part of said pedestals, of the equalizing-bars disposed between said pedestals, a spring-cup pivotally supported on the chord below the end of each of said bars, a cap pivotally hung from the end of each of said bars, connections movably interposed between said cap and cup, a stop to limit such movement and a spring interposed between each of said cups and caps, substantially as described.

8. In a car-truck, the combination with the equalizing-bars adapted to swing transversely and independently of the truck-frame, a frame-chord disposed below the equalizing-bars on each side, a bolster supported on the equalizing-bars and swinging with them, and yielding connections between each of said chords and said bars arranged to be compressed by the downward movement of each of said bars or upward movement of each of said chords, substantially as described.

9. In a car-truck, the combination with the equalizing-bars adapted to swing transversely and independently of the truck-frame, a frame-chord disposed below the equalizing-bars on each side, a bolster supported on the equalizing-bars and swinging with them, a spring between each of said chords and each end of each of the equalizing-bars, and means combined with said springs whereby the upward movement of said chord or the downward movement of said bars will be resisted by said springs, substantially as described.

10. In a car-truck, the combination with the side frames having side bars, the equalizing-bars disposed above the side bars, links diverging upwardly and outwardly from said bars and pivotally connected with the side bars and the ends of the equalizing-bars, and a bolster on said bars, substantially as described.

11. In a car-truck, the combination with the side frames having side bars, the equalizing-bars disposed above the side bars, two-part links diverging upwardly and outwardly from said bars and pivotally connected therewith and the ends of said equalizing-bars, springs interposed between the parts of said links, and a bolster on said bars, substantially as described.

12. In a car-truck, the combination with the truck-frame having axle-box pedestals, longitudinally-disposed equalizing-bars located between the pedestals, a bolster-support transversely disposed and securing said equalizing-bars together, links extending upwardly and outwardly and pivotally supported upon the truck-frame, and pivotally connected with the ends of the equalizing-bars, substantially as described.

13. The combination in a truck, of the longitudinally-disposed equalizing-bars, the collapsible links pivotally supported and extending upwardly from the truck-frame and pivotally connected with the ends of said equalizing-bars, springs interposed in said links to oppose the movements of their parts, and a bolster-support transversely disposed and tying the equalizing-bars together, said links being inflexible between their ends, substantially as described.

14. The combination in a truck, of the side frames, having the top chord 2, lower chord 3, and axle-box yokes 5, of the equalizing-bars longitudinally disposed between the upper and lower chords, the spring-links 26 pivotally secured to the lower chords at one end and pivotally secured to the ends of the equalizing-bars at their upper ends, and a bolster-support tying the equalizing-bars transversely together, substantially as described.

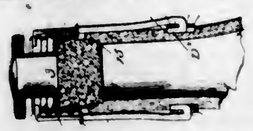
15. The combination in a truck, of the side frames having the top chords, lower chords, and axle-box yokes, of the equalizing-bars longitudinally disposed between the upper and lower chords, the spring-links 26 pivotally secured to the lower chords at one end and pivotally secured to the ends of the equalizing-bars at their upper ends, transoms extending between the top chords, and a bolster supported on the equalizing-bars and extending between the transoms, substantially as described.

16. The combination with the lower chord 3 of the truck-frame, of the follower-plate 35, the chambered lug 36 depending from the follower and pivotally secured on the lower chord, the follower 28^a having the depending rod 33 and apertured lug 29 above the follower, slots 38 formed in the chambered lug 36, a bar 34 passing through the rod 33 and into the slots 38, a spring a interposed between the followers, the longitudinally-disposed equalizing-bars 16 having their ends pivotally secured in the apertured lugs 29, and a cross-bar secured to the equalizing-bars, substantially as described.

17. In a car-truck, a compression-link comprising a plate, and a follower, said plate having a vertically-slotted chamber, and said follower having a rod extending into said chamber, a pin passing through said rod engaging said slots, and a yielding body disposed between said plate and follower, and means for pivotally supporting said link on the truck, substantially as described.

18. In a car-truck, a compression-link comprising the plate 35 and follower 28^a, a chambered lug 36 depending from the plate, a rod 33 depending from the follower 28^a into said lug 36, slots formed in said lug, a bar 34 passing through the rod and into the slots, a spring a interposed between the plate and follower, and means for supporting said link on the truck, and a car-body on said link, substantially as described.

658,660. BOTTLE-STOPPER. PHILIP LINDEMEYR, Baltimore, Md., assignor to the Maryland Stopper Company, same place. Filed Dec. 15, 1899. Serial No. 740,466. (No model.)



Claim.—1. A bottle having in the interior of its neck a shoulder to provide a seat for the end of the cork, and one or more auxiliary shoulders each circumferentially larger than the first-named shoulder to supplement its action and provide space for the lateral expansion of the cork without obstructing its removal.

2. A bottle having in the interior of its neck a shoulder to provide a seat for the end of the cork, and one or more auxiliary shoulders each circumferentially larger than the first-named shoulder to supplement its action and provide space for the lateral expansion of the cork without obstructing its removal, and mechanism to force the cork against the several shoulders.

3. The combination with the holder, a cork screwed therein, a case, a band, and the case and band connecting wires, of a bottle having a shoulder to hold the band, and having within its neck a shoulder to provide a seat for the end of the cork whereby the band, wires and case can be rotated to force a cork upon such seat.

4. The combination with the holder, case, band, and the case and band connecting wires, of a bottle having a shoulder to hold the band, and having within its neck a shoulder to provide a seat for the end of the cork whereby the band, wires and case can be rotated to force a cork upon such seat, and one or more shoulders of greater diameter to supplement the shoulder first named and also provide for the lateral expansion of the cork.

5. The combination of the cork-holder, a cork screwed therein, the holder-case, the closed band entirely surrounding the bottle-neck, and the case and band connecting wires with a bottle having a shoulder to hold the band, substantially as described.

6. In a bottle-stopper, a holder, a holder-case having a screw-thread connection with the holder, and means for fastening the case to a bottle, said holder having a head of larger diameter than the upper end of the case to overhang the same and engage its upper edge on the outside thereof.

7. The combination of the case provided with screw-threads formed in the metal to receive a screw-threaded holder, a cork screwed into said holder, a band, and a connection between the band and case, said band and connection being rotatable about the neck of a bottle and the case rotatable about the cork-holder, said cork-holder being movable against the bottle-lip to seat the cork, all substantially as set forth.

8. In a bottle-stopper, a cork-holder, and a holder-case, both having similar external and internal screw-threads impressed in sheet metal, and a cork screwed into the holder.

9. In a bottle-stopper, the combination of a cork-holder case, a hollow cork-holder movable endwise in the case, a cork screwed into said holder, and a rigid stop to prevent the upward withdrawal of said holder from the case.

10. In a bottle-stopper, the combination of a cork-holder case, a cork-holder movable endwise in the case and a stop to prevent the upward withdrawal of said holder from the case, said stop comprising an inward projection connected to the case, and a recess in the holder.

11. For use in a bottle-stopper, a cork-holder case, a cork-holder having an end portion into which a cork is screwed, and an adjacent portion of less diameter than said end portion to provide an inwardly-projecting shoulder to stop the cork and to engage an inward projection connected with the case to prevent withdrawal of the holder from the case.

12. In a device for stopping bottles, the spool-shaped cork-holder formed from a single piece of sheet metal and having a head and a cork-holding end, and an intermediate connecting part of less diameter than the said cork-holding end.

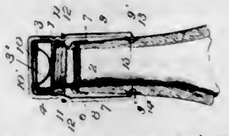
13. A band for supporting by means of wires bottle-stopper devices, said band having offset portions provided with perforations and with flexible lips adjacent said perforations, whereby they may be temporarily enlarged to receive the wire ends.

14. A band for attaching stoppers to bottles having a flexible tongue and openings adjacent its ends and having the metal offset adjacent said openings whereby the tongue can be passed under an offset and through one opening and bent back and its end entered in the other opening and extended behind the proximate offset.

15. In combination the cork-holder, the case, the band, and the connecting-wires having their upper ends bent, said case being provided with ears to receive the wires, and with notches to receive the said wire bends.

16. In combination, the cork-holder and case having movable connection with each other, the band, and the connecting-wires, said wires constituting stops to limit the movements of the holder in the case.

658,661. BOTTLE-STOPPER. PHILIP LINDEMEYR, Baltimore Md., assignor to the Maryland Stopper Company, same place. Filed June 11, 1900. Serial No. 19,792. (No model.)



Claim.—1. For use in closing a vessel, a freely-movable frame, and a cork-holder adapted to be held in said frame and freely movable lengthwise therein and also adapted to be connected therewith at will by rotation thereof.

2. For use in closing a vessel, a freely-movable frame, a cork-holder freely movable lengthwise in the frame and adapted to be connected at will to said frame by a screw-thread connection, and means to lock the holder against rotation on the vessel, the frame being rotatable and adapted to force the holder upon the vessel-mouth.

3. For use in closing a vessel, a rotatable cork-holder case, a cork-

holder in said case and having interior faces to engage faces on the vessel to prevent independent rotation, the holder and case having a screw-thread connection.

4. For use in closing a vessel, a cork-holder having interior faces to engage faces on the vessel to prevent independent rotation, and a movable frame operatively connected to the holder to force the holder on the vessel.

5. For use in closing a vessel, a cork-holder having interior faces to engage faces on the vessel to prevent independent rotation, and a movable frame operatively connected to the holder to force the holder on the vessel, the holder being adapted to be separated from the vessel and moved to a situation in the frame where it is freely movable either lengthwise or rotarily.

6. A vessel having grooves 14 and 15, a band seated in groove 14, a cork-holder-supporting frame having side members provided with pivots 9× passing through the band into groove 15.

7. A vessel having grooves 14 and 15, a band seated in groove 14, a cork-holder-supporting frame having side members provided with pivots 9× passing through the band into groove 15, said band having its ends connected by a tongue lying in said latter groove.

8. A vessel provided with a groove in its neck to receive a frame-supporting band, the frame having pivots, and a cork-holder supported by said frame, and said groove having a groove in its bottom to receive the frame-pivots.

9. A cork-holder, a cork-holder-supporting frame comprising a case for said holder movable with the frame and comprising wires fixed to the sides of the case, said wires having inwardly-turned pivots entering a depression in the neck of a vessel.

10. A cork-holder, a cork-holder-supporting frame comprising a case for said holder movable with the frame and wires fixed to the sides of the case and having pivots to engage the neck of a vessel, said case having perforated case-lugs to receive the wires fixed therein.

11. A cork-holder, a cork-holder-supporting frame comprising a case having screw-thread connection with the holder, and wires adapted to hold the frame to a vessel and fixed to the sides of the case by bends in the wires conforming to the case-threads.

12. For use in closing a vessel, a cork-holder having screw-threads near its top, a holder-supporting case having similar threads near its bottom whereby the holder can be screwed into the case and thereupon forced upon a bottle, said holder-threads being adapted to be disengaged to permit the holder to be freely moved endwise between the case-threads and case-top.

13. For use in closing a vessel, a cork-holder having screw-threads near its top, a holder-supporting case having similar threads near its bottom whereby the holder can be screwed into the case and thereupon forced upon a bottle, said holder-threads being adapted to be disengaged to permit the holder to be freely moved endwise between the case-threads and case-top, and a stop to prevent the holder from removal from the case by unscrewing.

14. The combination of a vessel, a cork-holder, and a cork-holder case, said holder being non-rotatable and the case rotatable when the former is seated on the bottle.

15. The combination of a vessel, a cork-holder, a cork-holder case, said case and holder having a screw-thread connection, means to hold the case to the vessel, and a spring to insure the engagement of the holder-thread with the case-thread when the parts are disengaged and preparatory to screwing them together.

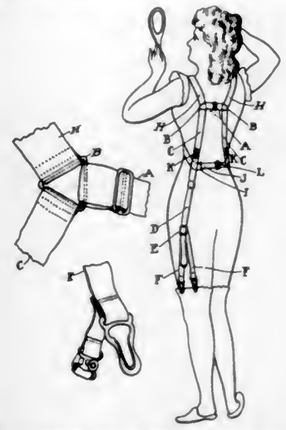
16. A vessel having a circular mouth provided with a plurality of faces about said mouth on its exterior, a cork-holder having corresponding faces, and a rotatable cork-holder case to cause the engagement of the similar bottle and holder-faces and seat the cork.

17. In combination with a cork-holder, a cork-holder case closely embracing the holder and closed at its top to exclude refuse from the connection, said closed holder-case top having a groove in its top to receive a holder-frame wire.

658,662. COMBINED HOSE AND SKIRT SUPPORTER AND SHOULDER-BRACE. MABEL F. LOVING, St. Joseph, Mo. Filed Apr. 9, 1900. Serial No. 12,124. (No model.)

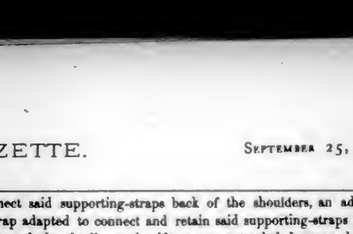
Claim.—1. In a hose and skirt supporter and shoulder and body brace the combination with duplicate straps C C, of adjustable strap A, elastic tapes D D provided with hose connections, shoulder-straps H H extending down the front and diagonally around the sides of the person to connection with said straps C C at the back on a line below the waist, the ends of said straps forming adjustable loop J and adapted to be brought into connection across the back of the person at the hips, and the duplicate skirt-supporting hooks K K attached to straps C C, the entire construction being adapted to hold the body of the wearer in an upright posture, substantially as described.

2. In a combined hose and skirt supporter and brace the combination with the duplicate supporting-straps of an adjustable strap adapted to connect said supporting-straps back of the shoulders, an adjustable loop-strap adapted to connect and retain said supporting-straps back of the hips and the duplicate shoulder-straps extended downward in front and at the sides of the person forming connection with said supporting-straps back of the hips, substantially as described and for the purpose specified.



3. In a combined hose and skirt supporter and brace the combination with the duplicate supporting-straps of an adjustable strap adapted to connect and retain said supporting-straps back of the shoulders, an adjustable loop-strap adapted to connect and retain said supporting-straps back of the hips, and the duplicate shoulder-straps extended downward in front and at the sides of the person and forming connection with said supporting-straps back of the hips, the elastic tapes at the lower ends of said supporting-straps, provided with the necessary hooks, buckles, slides and hose connections, substantially as described and for the purpose specified.

658,663. INSECT-TRAP. WILLIAM H. H. LUNDY, Washington, D. C. Filed June 1, 1900. Serial No. 18,731. (No model.)



Claim.—1. An insect-trap consisting of a box or receptacle having a top with an opening in it, and a food-holder depending into the opening and provided with a food-holding device, and a hood removably secured over the top of the trap.

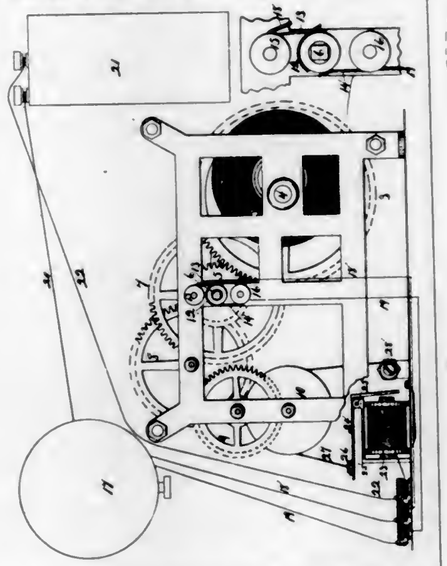
2. An insect-trap consisting of a box or receptacle, having a top with an opening in it, and a hood having dowel-pins of sufficient length to extend through the top and engage the bottom of the box or receptacle to regulate the height of the hood above the top.

3. An insect-trap consisting of a box or receptacle having a top, the sides of which incline to afford a passage-way for insects over them, said top having an opening therein and a food-holder removably held in the opening and provided with an inturned flange in its interior to receive food or bait thereon and a hood removably secured over the top of the trap.

4. In an insect-trap, the combination with a box or receptacle having a sloping top or cover with a flattened apex and a portion of which top or cover comes to a point on a plane with the bottom of the box or receptacle to afford a passage-way for insects thereon, the flattened apex having a hole therein, of a food or bait holder consisting of a thimble fitted in this hole and removable therefrom, this food-holder having an inturned flange at its lower end and an outwardly-extending flange at its upper end whereby to support it, and a hood conforming in shape to the top or cover, substantially, said hood having dowels which enter holes formed therefor in the top or cover as a means for removably holding it in place.

5. An insect-trap consisting of a box or receptacle having an opening in its top, and a cup-shaped device depending through the opening into the box or receptacle, said cup-shaped device extending only part way to the bottom of the box or receptacle whereby to permit insects to enter the box or receptacle and prevent their escape therefrom.

658,664. THERMOSTAT. WILLIAM E. MACK, Oswego, N. Y. Filed Sept. 19, 1899. Serial No. 731,010. (No model.)



Claim.—1. In a thermostat, a base, a train of gearing mounted thereon and provided with suitable driving means, the said train having a terminal brake, and an electromagnet mounted in proximity to said gearing with its cores extending in the same direction as the plane of the base, combined with an armature pivoted above the magnet having an arm extending down in front of the core thereof, and another arm at right angles thereto extending over the magnet; a cord attached to the end of said arm and passing over the brake-wheel, and suitably fastened to the base, means for moving the armature away from the magnet, cores to tighten the cord, and means for supplying energy to the magnet.

2. In a thermostat, a motor-driven train of gearing, a brake-wheel terminal operated by said gearing, a brake-cord passing over said wheel, a drum 28 provided with a screw-thread at one end, a frame 29 into which said screw passes, and a jam-nut 30 placed between the drum and the frame, combined with an angular armature which corresponds to the shape of the magnet, an electromagnet, and a frame which extends over the top of the magnet, and upon which the armature is pivoted, substantially as shown and described.

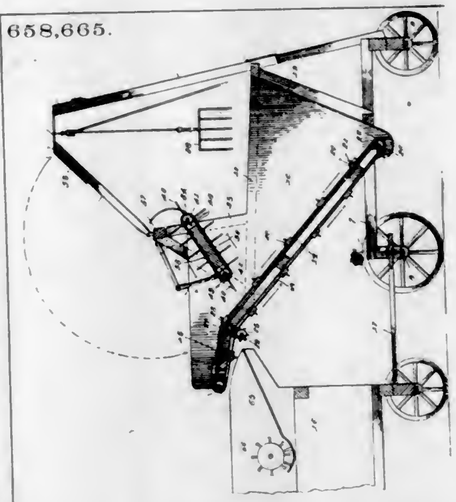
658,665. FEEDER FOR THRESHING-MACHINES. THOMAS E. MAHONEY, Bunker Hill, Kans. Filed May 22, 1899. Serial No. 717,794. (No model.)

Claim.—1. In a feeder for threshers, the combination with a truck provided with a hopper, of conveyer-belts in the hopper, a cross-beam secured above the hopper, two legs pivotally secured to said beam, a plate secured to the upper ends of said legs, provided with a socket, and a third leg detachably secured to the truck and the hopper at one end and fitting removably within said socket at the other, substantially as described.

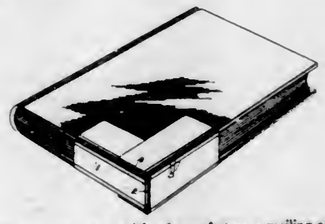
2. The governor-chain herein described comprising a chain of ordinary drive-chain links having links at intervals with distended sides, and teeth consisting of flat strips of metal doubled and formed into Y shape, the double stems forming teeth and the single thick arms secured on the distended links, substantially as described.

3. The combination with the truck and the hopper having top frame, and a cross-beam, of a pair of legs pivoted to the cross-beam and joined together at their outer ends, a metal ring having arms secured to said legs, third arm to said ring having a socket, and a third leg secured removably in said socket and to the hopper frame and truck, substantially as described.

658,665.



658,666. MAILING ATTACHMENT FOR BOOKS. WILLIAM F. MAHONY, Washington, D. C. Filed Jan. 9, 1900. Serial No. 904. (No model.)



Claim.—1. As a new article of manufacture, a mailing or shipping attachment or contrivance, comprising a corner-piece having creases or scores and additional scores or creases paralleling the aforesaid creases or scores, and one portion adapted to be disposed at right angles to the other portion, substantially as described.

2. As a new article of manufacture, a mailing or shipping contrivance or attachment for certain matter comprising corner-pieces, and a uniting portion, creased or scored on lines at right angles to each other, and having additional closely-arranged creases or scores as set forth, substantially as described.

3. As a new article of manufacture, a mailing or shipping contrivance or attachment comprising angular or corner pieces folded on transverse and longitudinal lines, with lateral portions lapping the sides of the article, and connecting portions between said corner-pieces having additional closely-arranged scores or creases, substantially as specified.

4. As a new article of manufacture, the mailing or shipping contrivance or attachment, comprising an angular or corner piece provided with a transverse crease or score and with a series of scores or creases at right angles to the aforesaid score or crease, also with transverse slits or cuts in its lateral lapping portions, intersecting or extending from said series of creases or scores, substantially as set forth.

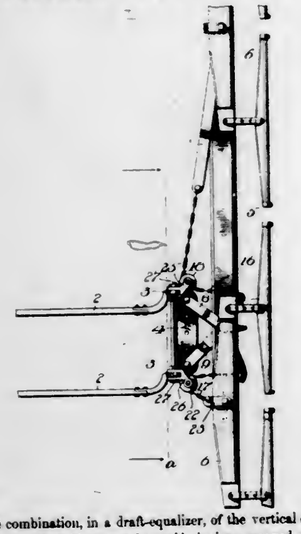
5. As a new article of manufacture, the mailing or shipping contrivance or attachment comprising a corner piece or guard, with its relatively right-angled sections scored or creased on longitudinal lines and their lateral portions adapted to be connected together, substantially as set forth.

6. As a new article of manufacture, a mailing or shipping contrivance or attachment comprising a corner-guard, in a single piece, with one portion or section arranged at right angles to the other portion or section and creased or scored on right-angled lines, substantially as set forth.

658,667. DRAFT-EQUALIZER. JOHN W. MILLER, Bismarck, Ill. Filed Aug. 7, 1900. Serial No. 26,138. (No model.)

Claim.—1. The combination, in a draft-equalizer, of the horizontal clevis, a brace-bar having an elongated opening secured to said clevis, a brace-bar secured at one end to said clevis and having its other end pro-

jecting into said elongated opening, a brace-bar secured to the draw-bar of the whiffletree at one end and having its other extending into said elongated opening, an evener-bar inserted through said opening, a bolt securing said brace-bars and evener-bar together, and means for connecting the arms of said evener-bar to the ends of the draw-bar.

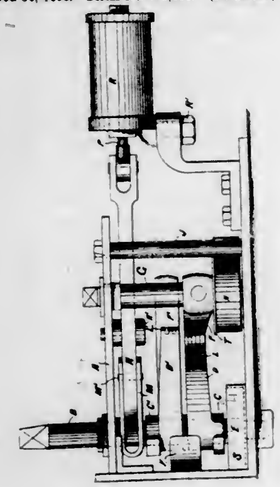


2. The combination, in a draft-equalizer, of the vertical clevises, the angled brackets adjustably secured to said clevises, grooved wheels journaled in said brackets, a horizontal clevis, braces secured to said clevis, an evener-bar pivoted to said braces, a brace connecting said first-named braces and the draw-bar of the whiffletree, and draft-chains connecting the opposite ends of the draw-bar to the opposite ends of the evener-bar.

3. The combination, in a draft-equalizer, of the vertical clevises, the brackets adjustably secured to said clevises, the grooved wheels journaled in said brackets, the whiffletree, the draft-chains connected at one end to the ends of said whiffletree, the horizontal clevis-braces extending from said horizontal clevis, and an evener-bar supported by said braces and having its ends connected to said draft-chains.

4. The combination, in a draft-equalizer, of a brace having its end bent to one side, a brace connected at one end to said first-named brace, a draw-bar resting on said braces, an evener-bar pivoted to said braces, and draft-chains connecting the ends of said evener-bar and the ends of the draw-bar.

658,668. **DOOR CLOSER AND CHECK.** DAVID MORGAN, Bristol, England, assignor of one-half to James Kemp-Welch, London, England. Filed Oct. 30, 1899. Serial No. 735,188. (No model.)



Claim.—1. In an apparatus for closing doors and the like, the combination with a frame, of a spindle mounted therein adapted to be attached to the door or other device, a lever-arm loosely mounted upon said spindle, means carried by said spindle for rotating said lever-arm, and means for applying a constant resilient resistance to the movement of said lever-arm in one direction, substantially as described.

2. In an apparatus for closing doors and the like, the combination with a frame, of a spindle mounted in said frame, adapted to be attached to the door or other device, a lever-arm loosely mounted upon said spindle, a collar rigidly mounted upon said spindle, said collar being provided with a lug adapted to engage with a lug upon said lever-arm, a spring-spindle mounted in said frame, a spring mounted upon said spindle, a curved lever-arm rigidly mounted upon said spring-spindle, and a chain or the like connecting the free ends of said lever-arms, substantially as described.

658,669. **SPECULUM.** JOHN W. MORROW, Nobility, Tex. Filed July 29, 1899. Serial No. 725,533. (No model.)



Claim.—1. A speculum consisting of a plurality of connected members each comprising a wire, bent to form an interior cross-bar, sides, and a laterally-extending flange, a second wire bent into U shape and pivotally connected at its inner ends upon said cross-bar, a connecting-bar between the sides of the U-shaped wire near its inner ends, a threaded wire engaged with said connecting-bar, and passing through the lateral flange substantially as described.

2. In a wire speculum, the combination of the plurality of members, each comprising a wire bent to form a cross-bar sides and lateral flanges, the sides of adjacent members being intertwisted, a second wire forming a pivoted spreading-arm, and exterior means for spreading the arm substantially as described.

3. The herein-described speculum, consisting of a plurality of members, each member comprising a wire bent to form a cross-bar, at its midlength, thence bent inwardly to form sides, said sides being intertwisted with the sides of adjacent members, thence curved outwardly, twisted to form an open space and finally curved back and secured to the first-named curves, a second wire bent into U shape and pivotally connected to the cross-bar, a connecting-bar between the sides of the U near its inner pivotal ends, a threaded wire engaging with the connecting-bar and extending outward through the opening-space formed in the twist of the first piece of wire, and a nut on the threaded wire, all the parts being combined substantially in the manner and for the purpose set forth.

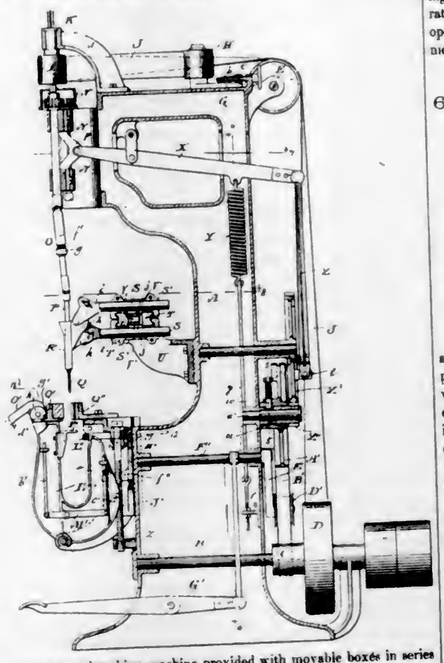
658,670. **WOODWORKING-MACHINE.** JOHN M. NASH, Milwaukee, Wis. Filed Dec. 1, 1899. Serial No. 738,776. (No model.)

Claim.—1. A woodworking-machine provided with a series of universally-adjustable guides, bit-stocks loose in the guides, rotary spindles geared together in clusters, one spindle in each cluster being longitudinally extended, pulleys in spline connection with the extended spindles, idlers and other pulleys in train with the pulleys aforesaid, and a belt run in contact with all the pulleys and idlers.

2. A woodworking-machine provided with a series of universally-adjustable guides, bit-stocks loose in the guides, a head constituting a sliding part of the machine, spindles carried by the head in flexible connection with the bit-stocks and geared together in clusters, one spindle in each cluster being longitudinally extended, pulleys in spline connection with the extended spindles, idlers and other pulleys in train with the pulleys aforesaid, a belt run in contact with all the pulleys and idlers, and means for reciprocating said head.

3. A woodworking-machine provided with a series of universally-adjustable guides, bit-stocks loose in the guides, a head constituting a sliding part of the machine, spindles carried by the head in flexible connection with the bit-stocks and geared together in clusters, drive mechanism in connection with one of the spindles in each cluster, a spring-controlled lever connected to said head, a pinion having an elongated hub loose on a stationary stud, a spur-wheel in mesh with the pinion, a pitman connecting the lever and spur-wheel, a pulley in slip-clutch connection with the pinion-hub, a drive-shaft pulley belted to the pulley aforesaid, and treadle-controlled belt-tightener mechanism.

4. A woodworking-machine provided with a stationary holder comprising a pair of parallel angle-bars, boxes adjustable on the bars longitudinally thereof, pinch-blocks fitting the boxes, wedge mechanism in opposition to the blocks, round shanks in the boxes opposed by the pinch-blocks, guides having pivotally-adjustable connection with ends of said shanks, bit-stocks loose in the guides, and rotatory reciprocative spindles in flexible connection with the bit-stocks.

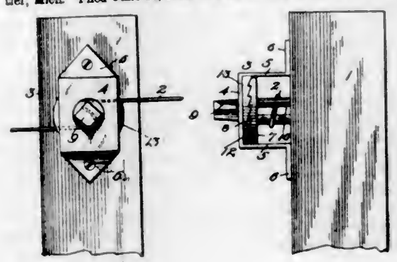


5. A woodworking-machine provided with movable boxes in series alternately disposed on parallel supports, guides having shanks adjustable in the boxes, means for clamping said boxes and guide-shanks in adjusted position, bit-stocks loose in the guides, and rotatory spindles in connection with the bit-stocks.

6. A woodworking-machine provided with movable boxes in series alternately disposed on parallel supports, shanks adjustable in the boxes, means for clamping said boxes and shanks in adjusted position, guides having adjustable connection with ends of the shanks, bit-stocks loose in the guides, and rotatory spindles in connection with the bit-stocks.

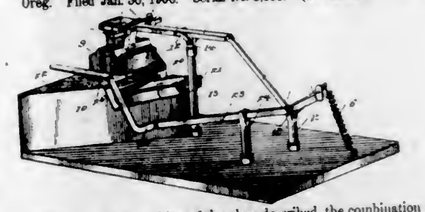
7. A woodworking-machine provided with a series of universally-adjustable guides, bit-stocks loose in the guides, rotatory reciprocative spindles in flexible connection with the bit-stocks, an adjustable frame, a yoke in eccentric pivotal connection with the frame, a bail in connection with said frame, engageable with an arm of the yoke, a bail-trip mechanism, a work-gage adjustable on the other arm of said yoke, a stationary clamp-jaw in connection with the aforesaid frame, a sliding clamp-jaw on the gage-arm of the aforesaid yoke, and a clamp-lever operative to actuate said bail-trip mechanism.

658,671. **WIRE-FENCE TIGHTENER.** SILENCE NORTHRUP, Frontier, Mich. Filed June 28, 1900. Serial No. 21,908. (No model.)



Claim.—In a wire-fence tightener, the combination, with a fence-post provided in its front face with a socket, of a casing provided with an open side facing the post, open ends for the passage of the wire, a top, bottom and an outer side wall, said top and bottom walls being provided with projections for attachment to the post, a winding-key or twister-head comprising a ratchet-disk journaled in the outer side wall of the casing and provided with an exteriorly-projecting head and an inwardly-projecting winding-shank extending within the said socket of the post, and a ratchet-disk fixed to the inner face of the side wall of the casing and cooperating with the said ratchet-disk of the key to prevent retrograde movement of the latter, substantially as described.

658,672. **STAMPING-MACHINE.** CHARLES M. PIERCE, Weston, Oreg. Filed Jan. 30, 1900. Serial No. 3,358. (No model.)



Claim.—1. In a machine of the class described, the combination of a support, a longitudinally-movable bar connected with the support and provided at its front end with laterally-disposed arms, mechanism connected with the longitudinally-movable bar for actuating the same, the forwardly-extending clamp members having openings to receive the laterally-extending arms and provided with means for engaging the same, whereby the clamp members are adapted to be adjusted toward and from each other, and a stamp secured between the clamp members and located in advance of the longitudinally-movable bar, substantially as described.

2. In a machine of the class described, the combination of a base having a fixed support to receive the work, a standard, a longitudinally-movable bar extending in advance and in rear of the standard and connected at a point between its ends with the standard by a link, a stamp located in advance of the standard and connected with the front end of the longitudinally-movable bar, the bell-crank lever fulcrumed at its angle in rear of the standard and having its front arm elongated and connected with the rear end of the longitudinally-movable bar, and a lever arranged approximately parallel with the longitudinally-movable bar and loosely fulcrumed between its ends and having its rear end bent laterally and pivoted to the rear arm of the bell-crank lever, and a spring connected with the latter, substantially as described.

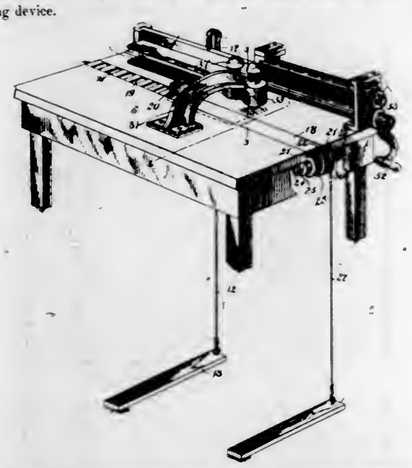
3. In a machine of the class described, the combination of a base, a fixed block mounted on the front portion of the base and adapted to receive the work, a standard rising from the base in rear of the block, a longitudinally-movable bar extending in advance and in rear of the standard and connected at a point between its ends with the standard by a link, a bell-crank lever fulcrumed at its angle in rear of the longitudinally-movable bar and having one of its arms elongated and pivoted to the said bar, a post having a slot or bifurcation, and an operating-lever loosely fulcrumed in the slot or bifurcation and extending longitudinally of the machine and having its rear end bent at an angle and pivoted to the bell-crank lever, substantially as described.

658,673. **MACHINE FOR MOISTENING, CLOSING, AND APPLYING STAMPS TO ENVELOPS.** WILLIAM S. POST, Boston, Mass., assignor to John M. Atwood and Frederick S. Post, same place, and William E. Post, Melrose, Mass. Filed Nov. 6, 1899. Serial No. 735,945. (No model.)

Claim.—1. In a machine of the character described, a moistening-pad and mechanism for pressing the flap of an envelop against said pad, a device for moistening a portion of the surface of the body of said envelop, a stamp-holder, and mechanism for removing a stamp from said stamp-holder and applying it to the moistened surface of the body of said envelop, and a reciprocating slide, whereby said envelop is carried from said moistening to said stamp-attaching device.

2. In a machine of the character described; a moistening-pad and mechanism for pressing the flap of an envelop against said pad, a device for moistening a portion of the surface of the body of said envelop, a stamp-holder, and mechanism for removing a stamp from said stamp-holder and applying it to the moistened surface of the body of said envelop, an envelop-carrying slide, a gage attached thereto and mechanism for imparting a reciprocating motion to said envelop-carrying slide, whereby said envelop is carried from said moistening to said stamp-attaching device.

3. In a machine of the character described, a stamp-holder, a reciprocating stamp-picking device located above said stamp-holder, whereby the stamps in said holder may be removed one at a time therefrom and applied to the moistened surface of an envelop placed under the reciprocating device.



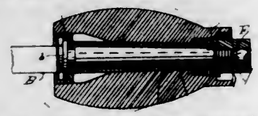
4. In a machine of the character described, a device for moistening a portion of the body of an envelop, a stamp-holder, a reciprocating device located above said stamp-holder whereby the stamps in said holder are removed one at a time therefrom and applied to the moistened surface of an envelop placed therennder and a reciprocating slide, whereby said envelop is carried from said moistening to said stamp-attaching device.

658,674. PROCESS OF BLEACHING. JOHN PULLMAN, London, and EDWARD E. PULLMAN, Surbiton, England. Filed June 19, 1900. Serial No. 20,884. (No specimens.)

Claim.—1. The process of treating vegetable fibers and fibrous materials, which consists in subjecting them to the action of a solution containing calcium chlorid and afterward while wet subjecting them to the action of a solution containing caustic soda, whereby an insoluble precipitate of calcium hydrate is deposited in the substance of the material treated, substantially as described.

2. The process of treating vegetable fibers and fibrous materials which consists in subjecting them to the action of a solution containing about two per cent. of calcium chlorid, subjecting such material or fiber to pressure until there is left therein only about its own weight of such solution and then treating such material with a solution containing about one per cent. of caustic soda, whereby an insoluble precipitate of calcium hydrate is deposited in the substance of the material under treatment, substantially as described.

658,675. NUT-LOCK FOR VEHICLE-WHEELS. EUGENE W. REED, Grand Rapids, Mich., assignor of one-half to Lorenzo D. Steward, same place. Filed July 11, 1900. Serial No. 23,255. (No model.)

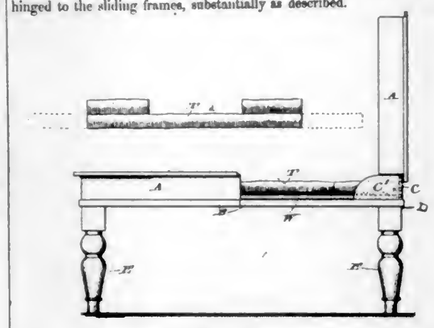


Claim.—1. The combination of a spindle, a chambered nut, a cupped washer, a metallic disk and a solid-rubber spring in the chambered nut back of the disk, the surface of said disk and the end of the spindle in interlocking contact, substantially as and for the purpose set forth.

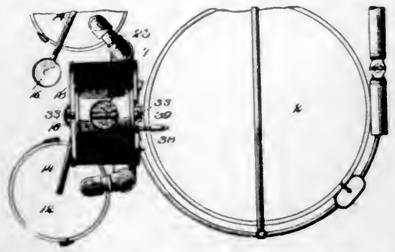
2. The combination of a spindle and a chambered nut, a cupped washer having serrated edge, and a disk and spring within the chambered nut, substantially as and for the purpose set forth.

658,676. COMBINED TABLE AND FOLDING BED. JOHN H. REFORD, Glasgow, Scotland. Filed Jan. 20, 1899. Serial No. 702,862. (No model.)

Claim.—In a table-bedstead, the combination of two sliding frames having legs and provided with grooves in their opposite sides, a fabric applied to each of the said frames, above the grooves, and a third frame sliding in said grooves a fabric applied to said third frame and top sections hinged to the sliding frames, substantially as described.



658,677. ACETYLENE-GAS GENERATOR. EDWIN M. RODENBERGER, Walworth, and JAY S. SEELY, Syracuse, N. Y. Filed June 21, 1899. Serial No. 721,372. (No model.)



Claim.—1. The combination with a pivoted liquid-receptacle having a discharge-aperture at its upper portion, and a projection thereon, of a gas-holder having a movable portion operated by the pressure of the gas, a projection on said movable portion engaging that on the receptacle to tilt the latter, a generating-chamber, and a passage leading to it from the liquid-receptacle.

2. The combination with the pivoted liquid-receptacle having the discharge-aperture, and the guide thereon, of the gas-holder having the movable portion provided with the projection entering the guide to tilt the receptacle, a generator and a passage for conveying liquid spilled from the receptacle to the generator.

3. In a gas apparatus, the combination with the gas-holder having the movable section, and a single liquid-supply controlled by the latter, of two movable generating-chambers removable from the gas-holder, each having gas-pipes movably connected to the holder and provided with liquid-receiving pipes arranged to be moved successively to receive liquid from the supply by a movement of the generating-chambers.

4. In a gas apparatus, the combination with the gas-holder having the movable section, and a single liquid-supply controlled by the latter, of two movable generating-chambers removably connected with the gas-holder and having gas-pipes connected to the holder by liquid-sealed connections and separate receiving-pipes adapted when the receptacles are moved into position to receive liquid successively from the supply.

5. The combination with a gas-holder having the two upwardly-extending gas-pipes leading thereto, the water-chamber around their outer ends, a movable section on said holder, and a single liquid-supply connected to and governed by the latter, of two generating-chambers, each having downwardly-extending gas-pipes coöperating with gas-pipes on the holder, and upwardly-extending water-pipes adapted to be moved successively beneath the water-supply.

6. The combination with a gas-holder having an upwardly-extending gas-pipe, and a water-chamber around its end, of a generator having a downwardly-extending gas-pipe coöperating with the pipe on the holder and extending into the water-chamber around it, a valve governing the passage of gas between the generator and holder and a positive connection between the former and the latter, whereby the valve will be positively closed by the movement of the generator when disconnected from the holder.

7. The combination with a gas-holder having a gas-inlet pipe, a movable generator having a gas-outlet pipe, and a liquid-sealed detachable connection between said pipes, of a valve between the generator and holder, and connections between the valve and generator, whereby as the latter is removed, the former will be positively operated to close the communication with the gas-holder.

8. The combination with the gas-holder having the movable section, a liquid-supply connected to and operated by the movable section and two gas-inlet pipes leading to the holder, of two generators movably and detachably connected to the gas-inlet pipes by liquid-sealed connections, each generator having a liquid-inlet pipe adapted to be brought beneath the liquid-supply, and valves between the generators and holder and connected to the former adapted to close communication between them when the generator is removed from the holder and the sealed connection broken.

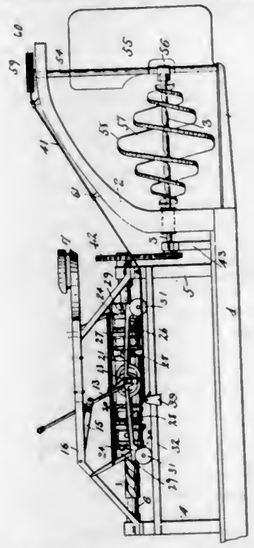
9. The combination with a gas-holder, two vertical gas-pipes leading thereto, a single water-supply, of two generating-chambers removably connected with the gas-holder and pivotally connected with the vertical gas-pipes and provided with liquid-receiving pipes arranged to be moved successively to receive water from the water-supply when the receptacles are moved into position.

10. The combination with the gas-holder, two vertical gas-pipes leading thereto, and a single liquid-supply, of two generating-chambers removably connected with the gas-holder and pivotally connected with the vertical gas-pipes and provided with a water-sealed joint between them, said generators having liquid-receiving pipes and adapted to be moved with the receptacles to successively receive the liquid from the supply.

11. The combination with a gas-holder having a gas-inlet pipe, of a generator having a gas-outlet pipe detachably and pivotally connected to said inlet-pipe, whereby the generator is permitted an independent rotary movement about the latter, a valve for shutting off communication between the generator and holder having a by-pass leading to the external air, and connections between said valve and the generator for automatically causing the positive operation of the former when the generator is removed so as to shut off communication between the generator and holder and to connect the generator with the external air.

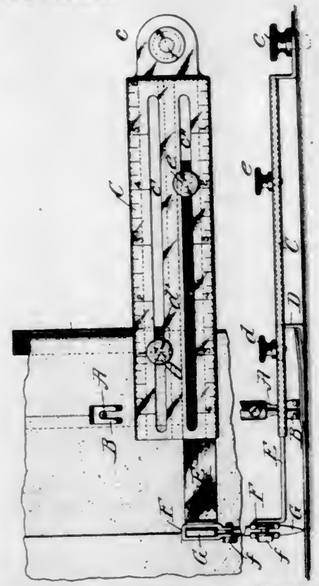
12. In an acetylene-gas apparatus, the combination with the reservoir having the movable section, the water-chamber 24, the pipe 22 leading to the open air, the pipe 26 leading to the reservoir, of the movable pipes 27 and 28 connected at their upper ends, the pipe 31 in the pipe 28 fitting over the pipe 26 and closed at its upper end and terminating above the lower end of the pipe 28, and a connection between the pipes 27 and 28 and the movable section of the reservoir.

658,678. BOAT-PROPELLER. CHARLES T. ROSEBOROUGH, Chicago, Ill. Filed June 8, 1900. Serial No. 19,516. (No model.)



Claim.—The herein-described boat-propelling appliance comprising the actuating-shaft 6 having oppositely-disposed threads thereon, suitable means to support said shaft in its operative position, actuating-thimbles designed to coöperate with the threads upon said shaft, a movable carriage for said thimbles, a central thimble arranged on said shaft between said threads; suitable means to move said carriage and its coöperating barrels and additional means to reverse the movement of said thimbles at will, in combination with propeller blades or screws having a swelled or broadened outer edge and a rudder coöperating with said blades, and means to so connect all of said parts that the boat may be driven forward or reversed at will, all combined substantially as specified and for the purpose set forth.

658,679. TUCK CREASER AND MARKER FOR SEWING-MACHINES. LENA RUEWELER, St. Louis, Mo. Filed Mar. 15, 1900. Serial No. 8,749. (No model.)



Claim.—1. In a sewing-machine attachment, the combination with a slotted overhanging frame, the edges of said frame being turned under to stiffen the same and form guideways, of a strip secured to the under side of the frame, said strip also stiffening the frame by being provided with flanged edges which, with the turned-under edges of the frame, form guideways, a guide-plate mounted in one of said ways and secured in position by a thumb-nut whose shank passes through one of the slots in the frame, a marker-plate mounted in the other of said guideways and secured in an adjusted position by thumb-nut whose shank passes through the other of said slots, and a marker carried by the outer end of said marker-plate; substantially as described.

2. The combination with a frame C provided with slots c', c'', the side edges of said frame being folded under, flanges c^4, c^5, on the under side of said frame, an L-shaped guide-plate formed with a horizontal bent portion d', one end fitting in the guideway formed by the folded edge c^3, and the flange c^4, a thumb-nut d for securing the guide-plate in an adjusted position, a plate E fitting in the guideway formed by the folded edge c^5, and the flange c^6, a thumb-nut e for securing said plate in position, a marker-frame on the outer end of plate E, and a marker carried by said frame; substantially as described.

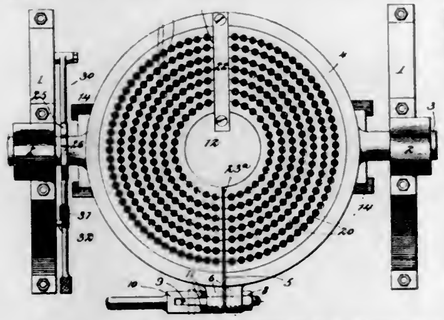
658,680. MACHINE FOR MAKING CRAYONS. JOHN C. SCHEUFLER and BURTON P. SEXTON, Sandusky, Ohio. Filed Mar. 15, 1900. Serial No. 8,776. (No model.)

Claim.—1. In a molding-machine of the character set forth, the combination of a series of vertically-movable molding-rings concentrically arranged and having recesses therein to coincide with similar recesses in adjacent rings, and means for operating the said rings to release the crayons.

2. In a molding-machine of the character set forth, the combination of a series of vertically-movable molding-rings, and means for operating said rings.

3. In a molding-machine of the character set forth, the combination of a surrounding body, a series of molding-rings movably mounted in the said body, the body and rings being cut through or separated at one portion, means for clamping the body and rings, and means for operating the said rings.

4. In a molding-machine of the character set forth, the combination of a plurality of concentric vertically-movable molding-rings, a support or bed in which said rings are movably mounted, and cams arranged to engage alternate series of the said rings.



5. In a molding-machine of the character set forth, the combination of a rotatable support or bed, and a series of vertically-movable concentric rings in the said bed, and having molding-recesses.

6. In a molding-machine of the character set forth, the combination of a bed or support, a series of molding-rings movably mounted and concentrically arranged in the bed or support and having cam-engaging extensions with openings therein, and a cam-shaft extending through the openings of the cam extensions and provided with cams to bear upon portions of said extensions.

7. In a molding-machine of the character set forth, the combination of a bed or support including a body and a central core, a tongue-strip attached to a part of said body and core, and a series of movable molding-rings mounted in the said body and having slots to receive the tongue-strip.

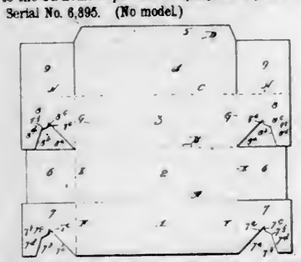
8. In a molding-machine of the character set forth, the combination of a body, a plurality of molding-rings movably mounted in the body, and a tongue-strip to engage portions of the rings to prevent the latter from turning.

9. In a molding-machine of the character set forth, the combination of a body, a central core, the body and core having depending bearing-hangers, parallel bars connected to the said bearing-hangers, a plurality of molding-rings movably mounted in the said body and having depending cam-engaging extensions located between the said bars and provided with openings therethrough, a cam-shaft mounted in the said bearing-hangers, and cams on the said shaft to contact with portions of the said cam-engaging extensions.

10. In a molding-machine of the character set forth, the combination of a clamping-body, a series of molding-rings vertically movable in the said body, the said body having trunnions at diametrically-opposite points, legs in which the said trunnions have bearing to permit the body to be rotated and means for locking the body and parts carried thereby against movement.

11. In a molding-machine of the character set forth, the combination of a rotatable clamping-body, a series of rings movably mounted and concentrically arranged in the said body and cut through a portion thereof, and a tongue-strip engaging the said rings.

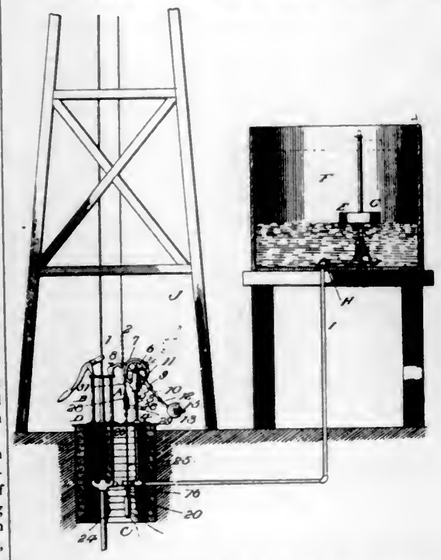
658,681. PAPER BOX. FRANK J. SCHLEICHER, St. Louis, Mo., assignor to the St. Louis Paper Box Company, same place. Filed Mar. 1, 1900. Serial No. 6,895. (No model.)



Claim.—1. A blank for boxes comprising a front part having end flaps, each formed with an upwardly-extending notch having inclined edges and an angular lip projecting inwardly across the notch at the inner end thereof providing an inner deep notch and an outer shallow notch, a bottom part, a back part having end flaps, each formed with an upwardly-extending notch having inclined edges and an angular lip projecting inwardly across the notch at the inner end thereof providing an inner deep notch and an outer shallow notch, a cover part, and interlocking with the angular lip of the adjacent flap and a cover part.

2. A box comprising a front part having end flaps each formed with an upwardly-extending notch having inclined edges and an angular lip projecting inwardly across the notch at the inner end thereof providing an inner deep notch and an outer shallow notch, a bottom part, a back part having end flaps each formed with an upwardly-extending notch having inclined edges and an angular lip projecting inwardly across the notch at the inner end thereof providing an inner deep notch and an outer shallow notch, and interlocking with the angular lip of the adjacent flap and a cover part.

658,682. WINDMILL-REGULATOR. ALBERT T. SCOTT, Defiance, Iowa. Filed Oct. 28, 1899. Serial No. 735,116. (No model.)



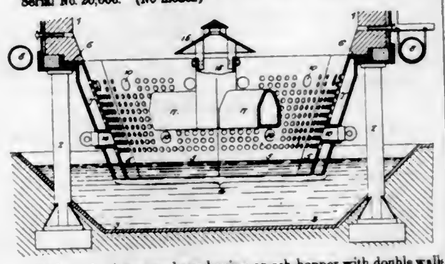
Claim.—1. In mechanism for throwing windmills out of gear, a piston and cylinder coöperatively related and interposed in the length of the pipe connecting the pump with the tank and constituting the regulator, means connecting the movable part of the regulator with the releasing connection, whereby the windmill is thrown out of action, a lever conjunctively related with reference to the regulator and windmill-releasing mechanism and having a curved portion, and a counterbalancing-weight mounted upon the curved portion of the lever, substantially as set forth.

2. In mechanism for throwing windmills out of gear, a piston and cylinder coöperatively related and interposed in the length of the pipe connecting the pump with the tank and constituting the regulator, means connecting the movable part of the regulator with the releasing connection, whereby the windmill is thrown out of action, a wheel provided with a lateral offstanding flange and a radial arm, the wheel and flange being connected with, respectively, the windmill-releasing connection and the movable part of the regulator, a lever attached to the radial arm and having a curved portion, a weight slidably mounted upon the curved part of the lever, and stops adjustably secured to the curved part of the lever to limit the travel of the slidable weight, substantially as specified.

3. In mechanism for throwing windmills out of gear, a piston and cylinder coöperatively related and interposed in the length of the pipe connecting the pump with the tank and constituting the regulator, means connecting the movable part of the regulator with the releasing connection, whereby the windmill is thrown out of action, a bifurcated head, a wheel journaled between the bifurcations of said head and provided with a lateral offstanding flange and radial arm, the latter having lateral extensions radially apertured, said wheel and flange being connected, respectively, with the windmill-releasing connection and the movable part of the regulator, a lever having adjustable connection with the lateral extensions of the aforementioned arm and provided with an outer curved portion, stops having adjustable connection with the curved part of the lever, and a weight slidably mounted upon the curved portion of the said lever and limited in its movement by the stops applied thereto, substantially as set forth.

4. In mechanism for throwing windmills out of action, and in combination with the discharge-pipe connecting the pump with the tank, a pipe pendent from the discharge-pipe and having a piston at its lower end, a cylinder closed at its ends and movable upon the piston and pendent pipe and having vent-openings at its upper end, a standard rising from the discharge-pipe, a head fitted to and closing the upper end of the standard, a wheel journaled to the said head and having connection with the said cylinder and cord or like part of the windmill for throwing it out of action, a lever applied to the said wheel and having a curved portion, and a counterbalancing-weight slidably mounted upon the curved part of the lever, substantially as described.

658,683. GAS-PRODUCER. GEORGE W. SHEN, Camden, N. J., assignor to the Camden Iron Works, same place. Filed June 12, 1900. Serial No. 20,066. (No model.)

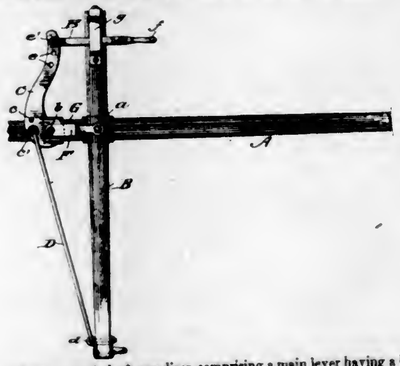


Claim.—1. A gas-producer having an ash-hopper with double walls and intervening air-chamber, the inner wall being perforated, and a sealing-pit into which the ash-hopper and the chamber between its double walls discharge, in combination with means for supplying air to the chamber between the walls of the hopper, substantially as specified.

2. A gas-producer having an ash-hopper with double walls, and intervening air-chamber, the inner wall being perforated and the hopper having openings through it which are cut off from communication with the air-chamber, but permit access from outside of the hopper to the mass within the same, and a sealing-pit into which said hopper projects, substantially as specified.

3. A gas-producer having an ash-hopper with double walls and intervening air-chamber open at the bottom, the inner wall being perforated, a central air-distributer having hollow branches providing communication between said central distributer and the air-chamber of the hopper, and a sealing-pit into which the lower portion of the hopper projects, substantially as specified.

658,684. DRAFT-EQUALIZER. JOHN F. SMITH, Parker, S. D., assignor to Olin Ransom Gould and James Silk Buckingham Cook, Charles City, Iowa. Filed July 6, 1900. Serial No. 22,670. (No model.)

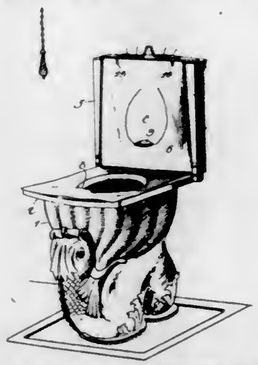


Claim.—1. A draft-equalizer, comprising a main lever having a long arm projecting on one side of its fulcrum, a second compounding-lever arranged close behind the first and provided with enlarged head fulcrumed in rear of the first-named lever, a link connecting this lever immediately behind its fulcrum to the outer end of the main lever-arm, and a draft-link attached to the end of the rear or compounding lever and arranged on the opposite side of the fulcrum of the main lever from its long end substantially as described.

2. A draft-equalizer comprising a main lever having arms of unequal length on opposite sides of its fulcrum, a second compounding-lever arranged close behind the first, and having an enlarged head fulcrumed in rear of the first-named lever, and projecting in the same direction as its short arm, a link connecting the rear lever immediately behind its fulcrum to the outer end of the long arm of the main lever, and a draft-link attached to the end of the rear lever and arranged to cross the short end of the main lever and be supported and guided thereby substantially as described.

3. A draft-equalizer comprising a tongue, lever B fulcrumed thereto at a point outside of its middle, a headed lever C arranged close behind the lever B and fulcrumed to the tongue in rear of lever B, a link-bar D connected to the head of lever C directly in rear of the fulcrum of the latter and also to the long end of lever B, the draft-link connected to lever C and embracing the short end of lever B, and a strap or keeper attached to said lever B and embracing the draft-link substantially as described.

658,685. WATER-CLOSET ATTACHMENT. NELSON STOW, Binghamton, N. Y., assignor of one-half to S. Andral Kilmer, same place. Filed June 21, 1900. Serial No. 21,120. (No model.)



Claim.—1. A lid or cover for a water-closet or the like having a receptacle on the inner side thereof formed by opposite seats having the inner extremities of the retaining portions thereof separated by a greater transverse space between them than at the outer extremities of the same, and a pad removably located in said receptacle and composed of a series of superposed sheets secured exclusively at one end, the secured ends of the sheets being situated in the greater transverse space between the inner extremities of the retaining portions of the seats so that a disengagement of the outer portion of each sheet will cause it to automatically fall over the closet-seat or rest below in operative position.

2. A lid or cover for a water-closet or the like having a receptacle on the inner side thereof formed by opposite seats having the inner extremities of the retaining portions of the same of less transverse extent than the outer extremities of the same, and a pad composed of a series of superposed sheets secured at one end exclusively and slidably and removably mounted in the said seats.

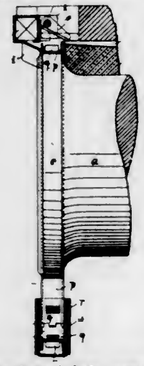
3. A lid or cover for a water-closet or the like having retaining devices on the inner opposite portions thereof which are gradually diminished in width from the outer toward the inner end of the lid or cover, and a pad composed of a plurality of superposed sheets secured at one end exclusively and removably mounted in the retaining devices, the secured ends of the sheets being disposed adjacent the rear end of the closet seat or rest.

4. In a water-closet attachment, the combination with a seat having an opening therein, of a lid or cover having retainers on the inner surface thereof converging toward the outer end of the same, and a pad removably mounted in the retainers and composed of a plurality of sheets having movable tongues.

5. In a water-closet attachment, the combination with a seat having an opening therein, of a lid or cover having retainers on the inner surface thereof converging toward the outer end of the said lid or cover, a pad held by said retainers and composed of a plurality of separable sheets having tongues and connected at the ends adjacent the point of attachment of the lid or cover and free at their opposite ends, and a clip for holding the free ends of the sheets of the pad.

658,686. APPARATUS FOR LUBRICATING AXLES AND SHAFTS. FRANZ SÜRTH, Dortmund, Germany. Filed Mar. 31, 1900. Serial No. 10,897. (No model.)

Claim.—1. A lubricator for axles and shafts, comprising, in combination with the axle or shaft provided with an annular shoulder, a band composed of articulated members trained around and bearing upon the said shoulder, means for retaining the band on said shoulder and an oil-box in which the band dips, substantially as set forth.



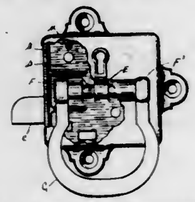
2. A lubricator for axles and shafts, comprising in combination with the axle or shaft, a band composed of articulated members trained over the same, an oil-box in which the band dips, and an oil-leader onto which the oil is thrown by the moving band for conducting the oil to the journal, substantially as set forth.

658,687. **FIRE-ESCAPE.** JESSE M. SWIFT, Selma, Cal. Filed Apr. 12, 1900. Serial No. 12,559. (No model.)



Claim.—A fire-escape, comprising a bridge adapted to connect adjoining buildings and constructed of upper and lower pairs of cables, a network connecting the lower set of cables to each other and to the upper set of cables to form a flooring and side walls, bars arranged at the ends of the bridge alongside said side walls, anchor-posts adapted to be fixed in the walls of the building, sills to which the lower ends of the posts are connected, and means adjustably connecting the cables and the bars with said posts and sills, substantially as set forth.

658,688. **LOCK.** DANIEL W. TOWER, Grand Rapids, Mich. Filed Apr. 23, 1900. Serial No. 13,979. (No model.)



Claim.—1. A lock having its casing provided with alternating half-bearings adapted to receive the axial-handled pin, substantially as set forth.

2. A lock having its casing formed with a plurality of alternating half-bearings and a handled pin or axis held in said half-bearings, substantially as set forth.

3. A lock having its casing formed with a plurality of alternating half-bearings, a latch suitably pivoted or hung in said casing and a handle with its pin or axis adapted to be received by said half-bearings and to engage and actuate said latch, substantially as specified.

4. A lock having its casing provided with a boss or projection, and a spring actuated or held dog provided with limit-holes, beyond its pivot, adapted to engage said projection or boss, and a latch adapted to be engaged by said dog substantially as set forth.

5. In combination with a lock-body suitable ears on said body, a back-plate adapted to slide beneath said ears and a spring integral with the back-plate for retaining the latter in position, substantially as described.

6. In combination with a lock a reversible and adjustable catch provided with a concave base or support, and a curved part fitted to said concave support and suitable means for adjusting said catch, substantially as described.

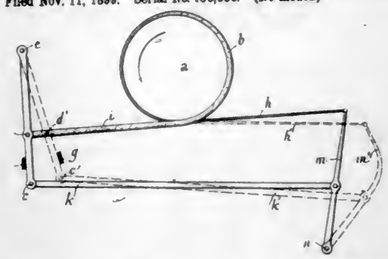
7. In combination with the base S concave in form and provided with a slot, the catch T provided with a slot and a lug, whereby the catch may be adjusted, substantially as described.

8. In combination with a lock, a reversible and adjustable catch having opposite end hooks and a concaved base or support, and a curved part fitted to said concaved support, and means for adjusting said catch, substantially as described.

9. In combination with a lock, a reversible and adjustable catch having a concaved base or support provided with a slot, said catch also having a slot and a lug, substantially as set forth.

10. In combination with a lock, a reversible and adjustable catch having opposite end hooks and a concaved base or support, and a curved part fitted to said concaved support, said catch also having a slot and a lug, substantially as set forth.

658,689. **VEHICLE-BRAKE.** MAURICE VIDIL, Paris, France. Filed Nov. 11, 1899. Serial No. 736,686. (No model.)

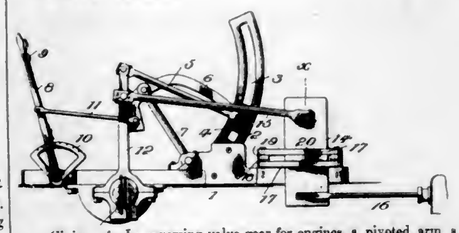


Claim.—1. A rope or band brake for vehicles, consisting of a rope, or band, wound upon a shaft, or drum, one end of said rope or band being connected to a rigid lever, and the other end to a flexible lever, substantially as described.

2. In a vehicle-brake, the combination with a shaft, or drum, of a rope, or band, wound on said shaft or drum, a rigid lever arranged on one side of said shaft connected to one end of said rope or band, and a flexible lever arranged upon the opposite side of said shaft and connected to the other end of said rope or band, substantially as described.

3. The combination with a shaft, or drum, of a rope or band wound thereon, a rigid lever connected to one end of said rope or band on one side of the drum, or shaft, a spring-bar connected to the other end of said rope or band on the other side of the drum or shaft and a rod connecting said spring-bar to the lever, substantially as described.

658,690. **REVERSING VALVE-GEAR.** CHARLES WELLER, Mount Pulaski, and WILLIAM ROMMEL, Latham, Ill. Filed Jan. 16, 1900. Serial No. 1,673. (No model.)



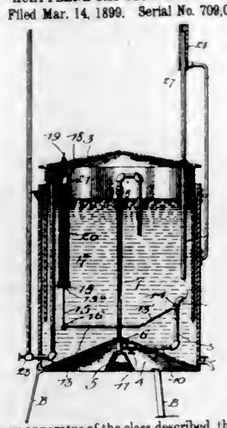
Claim.—1. In reversing valve-gear for engines, a pivoted arm, a lever of approximately elbow form fulcrumed intermediate of said ends to the said pivoted arm, a hand-lever connected with one end of the elbow-lever, a fulcrum-block carried by the opposite end of said elbow-lever, a curved guideway for the fulcrum-block, and intermediate connections between the fulcrum-block and a valve-stem for changing the relation of the valve, substantially as set forth.

2. In reversing valve-gear for engines, a standard provided with a curved guideway, a pivoted arm, a lever of approximately elbow shape fulcrumed intermediate of its ends to the pivoted arm, a fulcrum-block carried by one end of the elbow-lever and cooperating with the aforesaid curved guideway, an operating-lever connected with the opposite end of said elbow-lever, an oscillating arm, a bar pivotally connecting one end of the oscillating arm with the aforementioned fulcrum-block, a slide having the valve-stem attached thereto, and a pitman connecting said slide with the oscillating arm, substantially as set forth.

3. In reversing valve-gear for engines, a guideway composed of four bars or members vertically and laterally spaced, and capable of vertical and lateral adjustment, means for securing said bars in an adjusted position, a slide operating in the vertical space formed between corresponding side bars and having lateral extensions disposed to operate in the horizontal space formed between said corresponding side bars, said slide having a valve-stem connected therewith, and a valve-gear attached to said slide for imparting a reciprocating movement thereto, substantially as set forth.

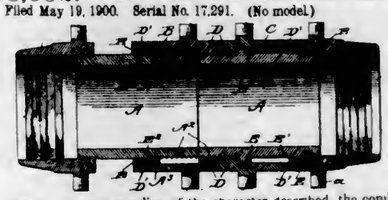
4. In valve-gear for engines, a guideway composed of four bars or members vertically and laterally spaced, transversely-connecting end pieces interposed between the upper and lower bars and composed of a block and wedge, each having corresponding longitudinal slots at one end, the wedge being adjustable, fastenings adjustably clamping corresponding side bars to the extremities of the transversely-connecting pieces in an adjusted position, said slide having the valve-stem connected therewith, and actuating mechanism for imparting a reciprocating movement to the slide, substantially as specified.

658,691. **ACETYLENE-GAS GENERATOR.** PETER WIENS, Bradshaw, Nebr. Filed Mar. 14, 1899. Serial No. 709,073. (No model.)



Claim.—In an apparatus of the class described, the combination with a water-tank having a reëntrant bottom, and a gas-bell, of a carbid container and generator housed by the reëntrant bottom of the tank, an approximately L-shaped water-supply pipe communicating from the tank through the bottom thereof to the generator and having a controlling-valve located within the tank, a horizontal lever located within the tank and having an upwardly bent or angled portion which is operatively fulcrumed to the stem of the valve, and a rod pivoted to the opposite end of the lever and connected to the top of the bell, substantially as and for the purpose set forth.

658,692. **HOSE-COUPLING.** RUFUS WILLIAMS, Walla Walla, Wash. Filed May 19, 1900. Serial No. 17,291. (No model.)



Claim.—1. In a coupling of the character described, the combination of ferrules adapted to be placed end to end and having threaded ends in which the threads extend in the same direction, and coupling-collars working on said threaded ends, each of said collars being adapted to expose the end of the respective ferrule and also to screw on the end of the other ferrule, as set forth.

2. In a coupling of the character described, a ferrule having a threaded end terminating in an annular flange and a body portion devoid of threads on the other side of said flange, a collar adapted to fit over said flange and having an interior flange adapted to screw upon the threaded end of the ferrule, a locking-ring secured to the inner end of said collar and adapted to abut against the flange on the ferrule whereby to limit the outward movement of the collar, and the width of the collar being such that its flange will be out of threaded engagement with the ferrule when the collar is at the outer limit of its movement, whereby to swivel the collar on the ferrule, as set forth.

3. In a coupling of the character described, the combination of the threaded ferrules adapted to be placed end to end and having annular flanges in the rear of their threaded portions, and collars adapted to fit over said flanges and being themselves provided with interior flanges working on the threaded portions of the ferrules and adapted to abut against the flanges of the ferrules to limit the inward movement of the collars, as set forth.

658,693. **COLLAR-BUTTON.** LOUIS C. WITKOWSKI, Washington, D. C. Filed Mar. 10, 1900. Serial No. 8,225. (No model.)



Claim.—1. As an improved article of manufacture, a collar-button which is rigid throughout, and which consists of a suitable base, a vertical shank, and a comparatively-narrow laterally-projecting lever-arm which is substantially oval in cross-section, and which extends from the shank on substantially the same radial line nearly its entire length, and has its outer end turned upwardly, substantially as described.

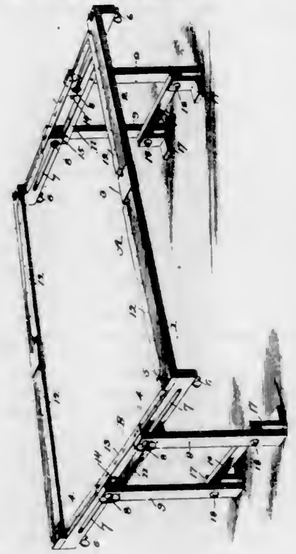
2. As an improved article of manufacture, a collar-button comprising in its construction a suitable base, a vertical shank, and a lever-arm which extends from said shank substantially in the same radial line nearly its entire length, and has its outer end turned upwardly in a spiral manner to facilitate the engagement of the buttonhole of a collar and the passage of a collar onto the shank of the button, substantially as described.

3. As an improved article of manufacture, a collar-button comprising a suitable base, a vertical shank, and a lever-arm which extends from the shank at substantially a right angle thereto in the same radial line nearly its entire length, the outer end of said arm being turned upwardly, and the arm tapering from its inner to its outer end, substantially as described.

4. As an improved article of manufacture, a collar-button comprising in its construction a suitable base, a vertical shank, and a single lever-arm which extends from the shank in substantially the same radial line, and which has its outer end curved upwardly and spirally and provided with an engaging head, substantially as described.

5. As an improved article of manufacture, a collar-button comprising in its construction a base, a shank and a lever-arm, which latter extends from the shank in substantially the same radial line nearly its entire length, said arm being constructed with a passage or opening to receive and retain a portion of the necktie, substantially as described.

658,694. **QUILTING-FRAME.** LUCINDA A. WOLFE, Webb City, Mo. Filed June 22, 1900. Serial No. 21,197. (No model.)

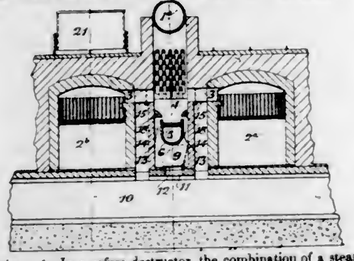


Claim.—1. In a quilting-frame, the combination with end frames proper of the alined end bars adapted to slide toward and from each other, and having dowels, and sockets at their opposing ends as described, and means for clamping said bars, as shown and described.

2. In a quilting-frame, the combination with the end frames proper of alined but separable end bars and extensible straps secured to and arranged to connect their adjacent inner ends, as shown and described.

3. In a quilting-frame, the end portions consisting of horizontal cross-bars and vertical bars, supplemental feet attached to the lower cross-bars, and bolts passing through such feet, the vertical bars, and lower cross-bar, and securing the three together, as shown and described.

658,695. **COMBINED REFUSE-DESTRUCTOR AND STEAM-GENERATOR.** JOHN T. WOOD and JOHN A. BRODIE, Liverpool, England. Filed Dec. 23, 1897. Serial No. 663,135. (No model.)



Claim.—1. In a refuse-destructor, the combination of a steam-generator and its furnace, two destructor-cells, placed on opposite sides of and contiguous to the said generator, a hot flue, passages for establishing communication between each of the said destructor-cells and the combustion-chamber of the said furnace both direct and through the said hot flue, and valves to the said passages for causing the gases of combustion of each of the said cells to pass in either of the directions mentioned as desired.

2. In a refuse-destructor, the combination of a steam-generator and its furnace, two destructor-cells placed on opposite sides of and contiguous to the said generator, a hot flue, passages for establishing communication between each of the said cells and the combustion-chamber of the said furnace and the said hot flue, a passage for establishing communication between the said hot flue and spaces below and lateral to the grate of the said furnace, and valves to the said passages for enabling the gases of combustion of each of the said cells to be passed as desired either directly into the said combustion-chamber or indirectly thereto through the said hot flue and the said spaces.

3. In a refuse-destructor, the combination of a steam-generator and its furnace, two destructor-cells placed on opposite sides of and contiguous to the said generator, a hot flue, the grate of the said furnace being provided with a trough forming the ash-pit thereof and allowing communication between the spaces above and below the said trough, passages for establishing communication between each of the said cells and the combustion-chamber of the said furnace and the said hot flue, a passage for establishing communication between the said hot flue and spaces below and lateral to the grate of the said furnace, and valves to the said passages for enabling the gases of combustion of each of the said cells to be passed as desired either directly into the said combustion-chamber or indirectly thereto through the said hot flue and the said spaces.

4. In a refuse-destructor, the combination of a steam-generator and its furnace, two destructor-cells placed on opposite sides of and contiguous to the said generator, a hot flue, the grate of the said furnace being provided with a trough forming the ash-pit thereof and allowing communication between the spaces above and below the said trough, means for deflecting gases passing up from the space below the said trough to the space above the same so as to bring them into intimate contact with the fuel on the said grate, passages for establishing communication between each of the said cells and the combustion-chamber of the said furnace and the said hot flue, a passage for establishing communication between the said hot flue and the space below the said trough and valves to the said passages for enabling the gases of combustion of each of the said cells to be passed as desired either directly into the said combustion-chamber or indirectly thereto through the said hot flue and the said spaces substantially as set forth.

5. In a refuse-destructor, the combination of two or more steam-generators each provided with a furnace, a destructor-cell at one side of and contiguous to each of the said generators, a hot flue, a cold flue with which each of the said generators communicates, passages for establishing communication between each of the destructor-cells and the combustion-chamber of an adjacent generator-furnace directly, between each of the said cells and the said hot flue, and between the said hot flue and the combustion-chamber of each of the generator-furnaces, and valves to the said passages for causing the gases of combustion of each of the said cells to pass as desired into the combustion-chamber of an adjacent furnace or into the said hot flue, and the gases of combustion in the said hot flue to pass as desired into any of the furnace combustion-chambers.

6. In a refuse-destructor, the combination of two or more steam-generators each provided with a furnace, a destructor-cell at one side of and contiguous to each of the said generators, a hot flue, a cold flue with which each of the said generators communicates, passages for establishing communication between each of the destructor-cells and the combustion-chamber of an adjacent generator-furnace directly, between each of the said cells and the said hot flue, and between the said hot flue and spaces below and lateral to the grate of each of the furnaces, and valves to the said passages for enabling the gases of combustion to be passed as desired into the combustion-chamber of an adjacent furnace or into the said hot flue, and the gases of combustion in the said hot flue to be passed as desired into the said spaces of any of the said furnaces.

7. In a refuse-destructor, the combination of two or more steam-generators each provided with a furnace, a destructor-cell contiguous to and at one side of each of the said generators, a cold flue with which each of the said generators communicates, a hot flue, the grate of each generator-furnace being provided with a trough forming the ash-pit thereof and allowing communication between the spaces above and below the said trough, passages for establishing communication between each of the destructor-cells and the combustion-chamber of an adjacent generator-furnace directly, between each of the said cells and the said hot flue, and between the said hot flue and the space below the trough of each of the said furnaces, and valves to the said passages for enabling the gases of combustion to be passed as desired into the combustion-chamber of an adjacent furnace or into the said hot flue, and the gases of combustion in the said hot flue to be passed as desired into the said spaces of any of the said furnaces.

8. In a refuse-destructor the combination of two or more steam-generators each provided with a furnace, a destructor-cell contiguous to and at one side of each of the said generators, a cold flue with which each of the said generators communicates, a hot flue, the grate of each generator-furnace being provided with a trough forming the ash-pit thereof and allowing communication between the spaces above and below the said trough, means for deflecting the gases passing up from the space below the said trough to the space above the same so as to bring them into intimate contact with the fuel on the said grate, passages for establishing communication between each of the destructor-cells and the combustion-chamber of an adjacent generator-furnace directly, between each of the said cells and the said hot flue, and between the said hot flue and the portion of each of the furnaces below the grate thereof, and valves to the said passages for enabling the gases of combustion to be passed as desired into the combustion-chamber of an adjacent furnace or into the said hot flue, and the gases of combustion in the said hot flue to be passed as desired into the portion of any of the said furnaces below the grate thereof.

9. In a refuse-destructor, the combination of an exit-flue for the products of combustion, a fire-grate in said flue, a trough extending below said fire-grate, forming an ash-pit therefor, and spaced from the walls of said flue so as to allow communication between the space above the fire-grate and that below said trough, a destructor-cell, and means for establishing communication between the said cell and the space below the said trough substantially as described.

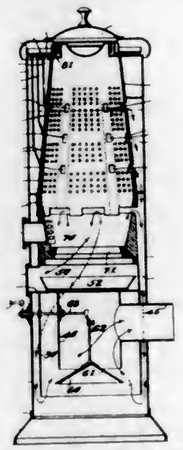
10. In a refuse-destructor, the combination of an exit-flue for the products of combustion, a fire-grate in said flue, a trough extending below said fire-grate, forming an ash-pit therefor, and spaced from the walls of said flue so as to allow communication between the space above the fire-grate and that below said trough, means for deflecting gases passing up from the space below the said trough to the space above the fire-grate so as to bring them into intimate contact with the fuel on the said grate, a destructor-cell, and means for establishing communication between the said cell and the space below the said trough substantially as described.

11. In a refuse-destructor, the combination of two or more steam-generators each provided with a furnace, the furnaces of adjacent generators being at opposite ends of the generators, a destructor-cell at one side of and contiguous to each of the said generators and at the same end of the generator as the furnace thereof, a cold flue with which each of the said generators communicates, two hot flues arranged at opposite ends of the generators, passages for establishing communication between each generator-furnace and an adjacent destructor-cell direct, between each destructor-cell and the adjacent hot flue, and between each furnace combustion-chamber and one of the hot flues, and valves to the said passages for causing the gases of combustion of each of the said cells to pass as desired into the combustion-chamber of an adjacent furnace or into the corresponding hot flue, and the gases of combustion in each of the said hot flues to pass into any of the corresponding furnace combustion-chambers.

12. In a refuse-destructor, the combination of two or more steam-generators each provided with a furnace, the furnaces of adjacent generators being at opposite ends of the generators, two destructor-cells placed on opposite sides of and contiguous to each of the said generators, and at the same end of the generator as the furnace thereof, the two cells between each two adjacent generators being back to back, a cold flue with which each of the said generators communicates, two hot flues arranged at opposite ends of the generators, passages for establishing communication between each generator-furnace and two adjacent destructor-cells direct, between each destructor-cell and the adjacent hot flue, and between each furnace combustion-chamber and one of the hot flues, and valves to the said passages for causing the gases of combustion of each of the said cells to pass as desired into the combustion-chamber of an adjacent furnace or into the corresponding hot flue, and the gases of combustion in each of the said hot flues to pass into any of the corresponding furnace combustion-chambers.

13. In combination with the destructor-cells and steam-generators, the arrangement of the independent furnaces 4 and the troughs 6 and the passages 13 leading from the hot flue 10, whereby the said furnaces in addition to serving as auxiliary furnaces to the steam-generators are also adapted to act as fume-cremators, substantially as described.

658,696. **CONTINUOUS-COMBUSTION STOVE.** FRANZ C. BORMANN, Hamburg, Germany. Filed Jan. 18, 1900. Serial No. 1,911. (No model.)



Claim.—1. In a stove, the combination of a fire-box, a heating-shaft disposed thereover and provided with a series of groups of perforations, each group communicating with an air-passage, a casing surrounding said shaft and forming a channel, and means for closing said air-passages for diminishing the heat-radiating surface.

2. The combination of a fire-box, a shaft disposed thereover and provided with a series of groups of perforations, each group in communication with an air-passage, independent flues for each of said groups of perforations, and means for opening and closing said air-passage for regulating the radiation of the heat.

3. The combination of a fire-box, a dome-shaped shaft disposed thereover, said shaft having groups of perforations, flue-openings for each of said groups and through which the fire heats downwardly, and a damper for closing said openings.

4. In a continuous-combustion stove, a fire-box, a dome having a series of groups of perforations, each in communication with an air-passage, flue-openings for the said groups, means for opening and closing said air-passages to said groups, and a channel communicating with said flue-openings for conveying the products of combustion to a place of exit.

5. In a stove, a fire-box, a shaft disposed thereover and provided with a series of groups of perforations for admitting air thereto, flue-openings arranged in suitable relation to said groups of perforations and adapted to carry off the exhausted gases, means for supplying air to one group of perforations independent of the other, and means for closing said flue-openings.

658,697. **APPARATUS FOR BURNING LIQUID FUEL.** JOHN BOYLE, Peabody, Mass. Filed Oct. 13, 1899. Serial No. 733,485. (No model.)

Claim.—1. In a fuel-burning apparatus, the combination of a burner, a source of fuel-supply, and means operated by an increase of temperature of the burner, for diminishing the fuel-supply.

2. In a fuel-burning apparatus, the combination of a burner, a valve device regulating the flow of fuel thereto, and means operated by variations in temperature of the burner for imparting positive valve opening and closing movements to said device.



3. In a fuel-burning apparatus, the combination of a burner, a valve device regulating the flow of fuel thereto, and means operated by an increase in temperature of the burner for imparting a positive valve-closing movement to said device.

4. In a fuel-burning apparatus, the combination of a burner, a valve device regulating the flow of fuel thereto, and means operated by an increase in temperature of the burner, for imparting a positive valve-opening movement to said device.

5. In a fuel-burning apparatus, the combination of a burner, two valve devices both of which control the flow of fuel to the said burner, a connection whereby a valve-opening movement of one device occurs coincidently with a valve-closing movement of the other device, and a thermostat operatively related to said valve devices and in heating proximity to the burner.

6. In a fuel-burning apparatus, the combination of a burner, a valve device for regulating the flow of fuel thereto, means operated by an increase in the temperature of the burner for imparting a positive valve-opening movement to said device, and means for adjusting said device whereby it may act at any desired degree of temperature.

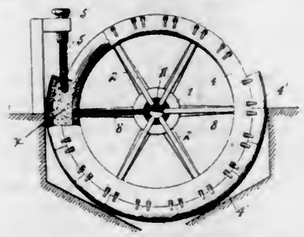
7. In a fuel-burning apparatus, the combination of a burner, a source of fuel-supply, a device operated by an increase of temperature of the burner for decreasing the supply, and means for adjusting said device, whereby it may be actuated for different variations of temperature.

8. In a fuel-burning apparatus, the combination of a thermostatic device subject to movement by variations in temperature, a burner mounted on and movable with said device, a fuel-duct extending through said device and having a valve-seat which moves with the device, and a stationarily-mounted valve coacting with said valve-seat.

9. In a fuel-burning apparatus, the combination of a burner, a thermostat arranged in heating relation thereto, a fuel-duct movable by the thermostat and having a valve-seat, and a stationarily-mounted valve coacting with said valve-seat.

10. In a fuel-burning apparatus, the combination of a burner, a thermostat arranged in heating relation thereto, a fuel-duct movable by the thermostat and having two oppositely-directed valve-seats, and two stationarily-mounted valves coacting with said valve-seats and directed through opposite walls of the duct.

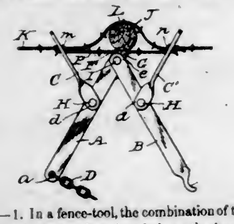
658,698. **ELECTRIC FURNACE.** CHARLES S. BRADLEY New York, N. Y., assignor to the Cyanide Company, Ampere, N. J. Filed Feb. 10, 1900. Serial No. 4,717. (No model.)



Claim.—1. An electric furnace comprising means for delivering current to the furnace, a movable receptacle adapted to contain carbid-producing materials and to present different portions of such materials successively to the action of the current, and gas-delivering means adapted to deliver gas to the receptacle at a definite part of the movement thereof.

2. An electric furnace comprising means for delivering current to the furnace, a movable receptacle adapted to contain carbid-producing materials and to present different portions of such materials successively to the action of the current, and gas-delivering means adapted to deliver gas to the receptacle at a definite part of the movement thereof, and comprising pipe connections to the different parts of the movable receptacle and valve mechanism adapted to control such pipe connections to admit gas successively through such pipe connections to different parts of the receptacle.

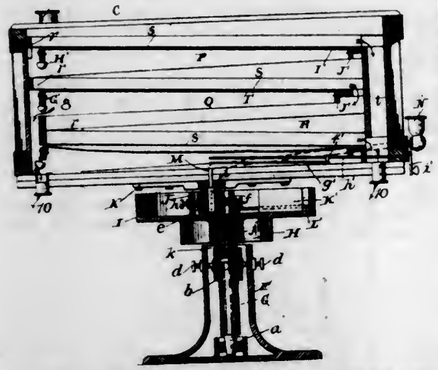
658,699. WIRE-FENCE TOOL. ORA L. BROWN, Norcatur, Kans. Filed Jan. 6, 1900. Serial No. 549. (No model.)



Claim.—1. In a fence-tool, the combination of the lever A, the prongs at one end of said lever, the pivot-hole at the bases of said prongs, the eye at the opposite end of said lever, the link connecting with said eye, the arm C having the axially-twisted end lying against the broader face of said lever and pivoted thereto so that said arm is prevented from dropping below the plane in which said lever operates, the gripping-teeth at the under edge of the portion of said arm which lies beyond said twisted portion, the lever B lying upon said lever A and pivoted thereto at said pivot-hole the hook at the free end of said lever B, the arm C' having the axially-twisted end lying against the broader face of said lever B and pivoted thereto so that said arm is prevented from dropping below the plane in which said lever operates, and the gripping-teeth at the under edge of the portion of said arm C' which lies beyond said twisted portion, said levers and said arms all moving substantially in the same plane, as set forth.

2. In a fence-tool, the combination of the pivoted levers, the coupling-links, and the gripping-arms pivoted to the levers at horizontal faces thereof and each consisting of a bar having notches at one edge thereof and an axial quarter-twist near one end thereof which end is pivoted to the lever and moves only in a radial direction in a horizontal plane with the lever, substantially as set forth.

658,700. FLOUR-BOLTER. ELI T. BUTLER, Philadelphia, Pa. Filed Jan. 27, 1900. Serial No. 3,007. (No model.)

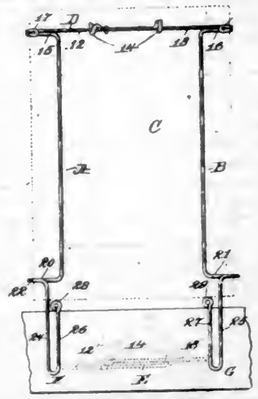


Claim.—1. A bolter comprising a movable member carrying a sieve, means for moving the said member, a weighted vibratory member carried by the movable sieve member, and a snapper-cord connected at one end to one side of the sieve member and connected at its opposite end to the said weighted vibratory member, whereby the movement of the sieve member causes an alternate tightening and slackening of the said snapper-cord through the vibration of the weighted member, substantially as described.

2. A bolter comprising a movable sieve member carrying a sieve, a vibrating member pivoted between its upper and lower edges and carried by the sieve member, the said vibratory member being weighted at one side of its pivotal point, a snapper-cord connected to the weighted member at the opposite side of the pivotal point, the opposite end of the snapper-cord being connected to the opposite end of the sieve member, the parts adapted to operate as described.

3. A bolter comprising a movable box, means for actuating the same, a cloth or sieve carried by the said box, a weighted snapper-cord-actuating device pivoted between its upper and lower edges extending across the sieve or cloth, and a cord passing back and forth from end to end of the cloth or sieve and connected with one end of the cord-actuating member, constituting a plurality of snapper-cords, whereby the cords are automatically operated for cleaning the sieve or cloth by the movement of the bolter box, substantially as described.

658,701. CARD-HOLDER. WALTER S. CONGDON, New Bedford, Mass. Filed Dec. 20, 1899. Serial No. 740,955. (No model.)



Claim.—1. A card-holder including a plurality of wire side pieces having hooks at the upper ends thereof, the wire being extended inward from the hooks and each inwardly-extended portion having an eye to receive the other inwardly-extended portion, and said side pieces having hooks near the lower end thereof, the wire of each side piece being projected downward and then upward below said hooks to form outer jaws of clamping devices, inner jaws, coiled springs uniting the jaws of the respective clamping devices, and inwardly-extending projections at the lower ends of the inner jaws, each having a loop to receive the other projection.

2. A card-holder including a plurality of wire side pieces, each side piece having a plurality of oppositely-facing hooks, the wire being extended inward from the upper hooks and each inwardly-extended portion having an eye to receive the other inwardly-extended portion, and said side pieces having deflected portions near their lower ends, and the wire of each side piece being projected downwardly and then upwardly below the lower hooks to form outer jaws of clamping devices, inner jaws, coiled springs uniting the jaws of the respective clamping devices, and inwardly-extended projections at the lower ends of the inner jaws each having a loop to receive the other projection.

658,702. CAR-FENDER. JOHN L. CONNER, Washington, D. C. Filed May 16, 1900. Serial No. 16,862. (No model.)



Claim.—1. A fender including a frame extending transversely across the front of the vehicle, arms connecting the frame with a support from the vehicle and a pivotal center about which the arms move, a net back of the frame and means whereby the frame is held outward against accidental closing but permitted to automatically recede upon striking a body or obstruction.

2. A fender and means whereby it may swing laterally about a pivotal center, in combination with a flexible connection suspending the front of the fender and freely slidable through guides whereby the fender may swing in lateral planes to direct the body struck toward and beyond the plane of the sides of the vehicle.

3. A fender including a frame having upper and lower horizontal rods and vertical connecting-rods, and vertically-disposed rotatable rollers, means flexibly suspending the frame from the vehicle, horizontal arms connected with said frame, means pivotally securing the inner ends of said arms and about which the latter move in opening and closing, and jointed connections for holding the frame in its advanced position and allowing it to automatically recede upon striking an obstruction.

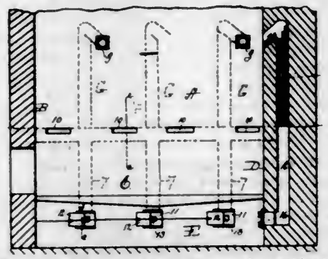
4. In a fender, the combination of a framework adapted to be advanced and to recede in horizontal planes, means flexibly suspending the framework when it is advanced, arms connected with said framework and overlapping each other at their inner ends, means pivotally connecting the arms at a point inside of their inner ends, a net, and means acting on the inner ends of the arms to elevate the forward ends of the arms and the framework when the latter is advanced.

5. In a fender, the combination of a framework and rollers mounted therein, means flexibly suspending the framework, arms connected with the framework and overlapping each other at their inner ends, a pivotal connection for the arms at a point inside of their inner ends and about which the fender may swing in lateral planes, and means including inclined or cam surfaces engaged by the inner ends of the arms to elevate the framework as it is advanced.

6. In a fender, the combination of a framework, rollers mounted therein, a guided chain or rope flexibly suspending the framework when the latter is advanced, a flexible net, arms connecting the framework with the vehicle and means about which said arms turn, and about which the fender may swing in lateral planes, and means for holding the parts in an advanced position and allowing them to automatically collapse on striking an obstruction.

7. In a fender, the combination of a framework movable in horizontal planes, rollers mounted therein, a guided chain or rope flexibly suspending the framework when the latter is advanced, a net suspended between the framework and guided connection, pivotal arms having their inner ends overlapping and their outer portions provided with curved or cam slots, means connecting the framework with said slots whereby the arms open and close with the movements of the framework and the latter assumes a position parallel with the arms when the fender is closed, and means for holding the parts in an advanced position and allowing them to automatically collapse and recede upon striking an obstruction.

658,703. SMOKE-CONSUMING FURNACE. JOHN A. CRAWFORD, Allegheny, Pa. Filed Nov. 4, 1899. Serial No. 735,786. (No model.)

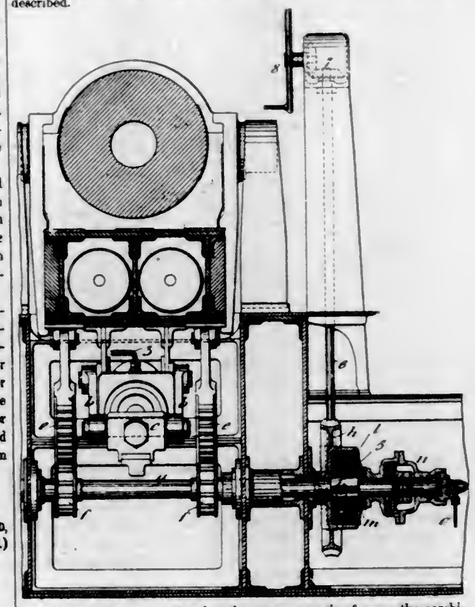


Claim.—1. In a smoke-consuming furnace the combination of the side walls formed with longitudinal gas-channels located above the grate-bars, gas-flues leading from the fire-chamber and intersecting the gas-channels, and air-flues opening from the ash-pit and intersecting the gas-channels intermediate of the gas-flues, air and gas pipes placed above the gas-channels and opening at their base into the gas-channels and registering with the upper ends of the air-flues, and formed with downwardly-inclined branches opening into the fire-chamber, metal boxes in the mouths of the air-flues in the ash-pit, and slides to adjustably close the mouths of the metal boxes, substantially as described.

2. The combination with the side walls formed with longitudinal gas-channels and gas-flues opening therein from the fire-chamber, of the bridge-wall formed with a gas-channel communicating at its ends with the gas-channels in the side walls, gas-flues in the bridge-wall opening from the fire-chamber and intersecting the gas-channel, air-flues opening into the bridge-wall from the ash-pit and intersecting the gas-channel in the bridge-wall, air and gas pipes in the bridge-wall having their bases opening into the gas-channel therein and formed with downwardly-inclined and forwardly-directed ends opening into the fire-chamber, substantially as described.

658,704. MOUNTING FOR TURRET OR BARBETTE GUNS. ARTHUR T. DAWSON, London, and JAMES HORNE, Barrow-in-Furness, England, assignors to the Vickers, Sons & Maxim, Limited, Sheffield, England. Filed Oct. 24, 1899. Serial No. 734,643. (No model.)

Claim.—1. An apparatus for elevating a gun or pair of guns mounted in a turret or barbette, comprising a hydraulic cylinder having a cross-head carried by its piston-rod and connected by a pair of links to an eye on the lower front portion of the gun-cradle, a pair of toothed segments jointed to the gun-cradle and gearing with pinions on a horizontal shaft carrying a worm-wheel driven by a worm connected by a suitable gear to hand-winches, a series of spring-pressed friction-plates adapted to clutch said worm-wheel to said horizontal shaft when said cylinder is not operated, and means for automatically disengaging said plates from their connection with said worm-wheel when said cylinder is operated, substantially as described.



2. In an apparatus for elevating a gun or pair of guns, the combination with a pair of toothed segments, pinions, a shaft and worm-wheel, a spring-pressed friction-plate clutch and a releasing-cylinder therefor, of a hydraulic cylinder adapted to elevate the gun or pair of guns and in communication with a source of pressure-supply, a suitable communication between the two cylinders, and means within said communication for directing the pressure of the elevating-cylinder into the releasing-cylinder, whereby the clutch is released.

658,705. PAPER-FEEDING MACHINE. TALBOT C. DEXTER, Pearl River, N. Y. Filed June 24, 1898. Serial No. 684,347. (No model.)

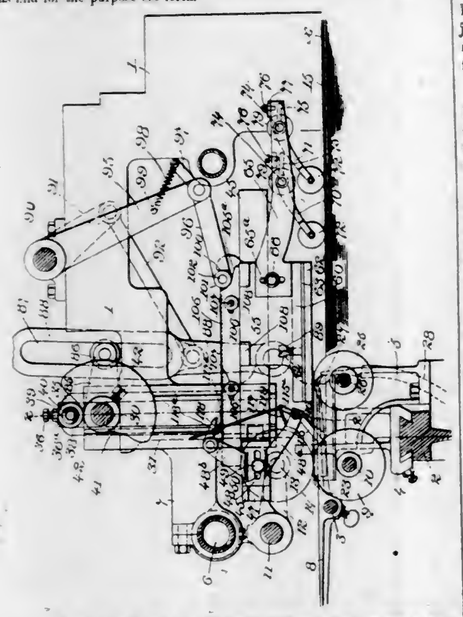
Claim.—1. In a paper-feeding machine, the combination of a support for a pile of sheets, with suitable feeding-off instruments and sheet-separating instruments, the feeding-off and separating instruments being moved simultaneously forward and backward over the pile and arranged to successively or alternately engage the sheet for feeding it from the machine and separating it from any chance underlying sheet, substantially as set forth.

2. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable feeding-off instruments, suitable separating instruments, and a carriage adapted to reciprocate above the pile of sheets and supporting the feeding-off and separating instruments, said feeding-off and separating instruments being arranged to successively or alternately engage the sheets of paper, substantially as and for the purpose set forth.

3. In a paper-feeding machine, the combination of a support for a pile of sheets, with suitable feeding-off and sheet-separating instruments which engage the sheet alternately or successively for feeding it from the machine and separating it from any chance underlying sheet, and means for simultaneously elevating the feeding-off and separating instruments at the end of their forward stroke and lowering said instruments at the end of their rearward stroke, substantially as set forth.

4. In a paper-feeding machine, the combination of a support for a pile of sheets, a feeder-carriage supported above the pile of sheets and adapted to reciprocate thereover, suitable feeding-off instruments and sheet-separating instruments mounted upon the carriage and adapted to engage the sheet alternately or successively, and means for elevating and lower-

ing the carriage and feeding-off and separating instruments, substantially as and for the purpose set forth.



5. In a paper-feeding machine, the combination of a support for a pile of sheets, with a vertically-movable slide, means for elevating and lowering said slide, a track-bar rigidly secured to said slide, a feeder-carriage reciprocating upon said track-bar, suitable feeding-off and sheet-separating instruments mounted upon the carriage and adapted to engage a sheet alternately or successively, and means for operating said feeder-carriage, substantially as set forth.

6. In a paper-feeding machine, the combination of a support for a pile of sheets, a vertically-movable slide, a horizontal track-bar mounted upon said slide, suitable cam mechanism for elevating and lowering the slide, a feeder-carriage mounted upon the track-bar, operating mechanism for the feeder-carriage, suitable feeding-off and sheet-separating instruments mounted upon the carriage and adapted to successively or alternately engage a sheet, and automatic tripping mechanism operated by a passing sheet adapted to arrest the operation of the feeding-off and separating instruments, substantially as set forth.

7. In a paper-feeding machine, the combination of a support for a pile of sheets, a stationary separating bed or member arranged in a horizontal plane slightly higher than the normal plane of the top pile of sheets, a feeder-carriage operating above the pile of sheets and stationary separating member, suitable feeding-off instruments mounted upon the carriage and engaging the sheet upon the pile, and a movable sheet-separating member also mounted upon the carriage and engaging the sheet upon the lower stationary separator member, whereby the feeding-off and movable separating members will alternately or successively engage a sheet and will be moved forward and backward simultaneously, substantially as set forth.

8. In a paper-feeding machine, the combination of a support for a pile of sheets, a stationary separating bed or member arranged in a horizontal plane slightly higher than the normal plane of the top pile of sheets, a feeder-carriage operating above the pile of sheets and stationary separating member, suitable feeding-off instruments mounted upon the carriage and engaging the sheet upon the pile, a movable sheet-separating member also mounted upon the carriage and engaging the sheet upon the lower stationary separator member, and suitable means for elevating the forward edge of the sheet from the plane of the top of the pile to the plane of the lower separator member, substantially as set forth.

9. In a paper-feeding machine, the combination of a support for a pile of sheets, a lower stationary separator member, suitable feeding-off devices, an upper movable separating member operating over the lower stationary separator member, knurled or milled wheels or rollers arranged at the forward edge of the pile and adapted to assist the feed of sheets from the pile to the lower separator member, substantially as set forth.

10. In a paper-feeding machine, the combination of a support for a pile of sheets, a lower stationary separator member, suitable feeding-off devices operating upon the pile of sheets, an upper movable sheet-separating member operating over the lower stationary separator member, knurled or milled wheels or rollers at the forward edge of the pile, and air-jet pipes located at the rear edge of the stationary separator member and adapted to force the forward edge of the sheet up against the lower surface of the upper movable separating member, substantially as set forth.

11. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable feeding-off instruments, a stationary separator-bed, a feeder-carriage, and a removable upper separator member detachably secured to the feeder-carriage by means of a dovetailed cam-groove, substantially as set forth.

12. In a paper-feeding machine, the combination of a support for a pile of sheets, with suitable feeding-off instruments and suitable sheet-separating instruments adapted to engage a sheet successively or alternately with relation to the feeding-off devices and an automatic tripping device operated by a passing sheet and adapted to simultaneously arrest the operation of the feeding-off devices and sheet-separating devices, substantially as set forth.

13. In a paper-feeding machine, the combination of a support for a pile of sheets, a vertically-movable slide, a horizontal track-bar mounted upon said slide, suitable cam mechanism for elevating and lowering the slide, a reciprocating feeder-carriage mounted upon the track-bar and carrying sheet-feeding instruments, and operating mechanism for the feeder-carriage, substantially as set forth.

14. In a paper-feeding machine the combination of a support for a pile of sheets, a vertically-movable slide, a horizontal track-bar mounted upon said slide, suitable cam mechanism for elevating and lowering the slide, a reciprocating feeder-carriage mounted upon the track-bar and carrying sheet-feeding instruments, operating mechanism for the feeder-carriage, and automatic tripping mechanism operated by a passing sheet adapted to arrest the operation of the feeder-carriage, substantially as set forth.

15. In a paper-feeding machine, the combination of a support for a pile of sheets, with suitable feeding-off instruments, suitable sheet-separating instruments, means for reciprocating said feeding-off and sheet-separating instruments simultaneously, suitable automatic tripping devices operated by a passing sheet and adapted to arrest the operation of the feeding-off and sheet-separating devices, and means for lowering and elevating the feeding-off devices, sheet-separating devices and tripping devices simultaneously, substantially as set forth.

16. In a paper-feeding machine, the combination of a support for a pile of sheets, the vertically-movable slide or frame having means for operating it, a feeder-carriage supported by said vertically-movable slide or frame, suitable feeding-off and sheet-separating instruments mounted upon the carriage, means for operating the carriage, and a suitable automatic tripping device operated by a passing sheet for arresting the operation of the feeding-off and separating instruments, said tripping device being mounted upon the vertically-movable slide or frame whereby it will be raised and lowered with the feeder-carriage, substantially as set forth.

17. In a paper-feeding machine, the combination of a support for a pile of sheets, suitable sheet-feeding devices, means for operating the sheet-feeding devices, and means for positively disengaging the operating means from the sheet-feeding devices for causing the arrest of the operation of said feeding devices, substantially as set forth.

18. In a paper-feeding machine, the combination of a support for a pile of sheets, a suitable feeder-carriage adapted to reciprocate above the pile of sheets, feeding instruments mounted upon the carriage and engaging the pile of sheets, an operating-arm engaging the carriage, an automatic device controlled by the sheets fed off and adapted to disengage the operating-arm from the feeder-carriage, whereby the movement of the feeder-carriage will be arrested without interfering with the stroke of the operating-arm, substantially as set forth.

19. In a paper-feeding machine, the combination of a support for a pile of sheets, a reciprocating feeder-carriage formed with a shoulder, an operating-arm engaging said shoulder, and means operated by a sheet fed off for automatically moving said operating-arm out of engagement with the shoulder on the carriage to thereby arrest the feeding operation, substantially as set forth.

20. In a paper-feeding machine, the combination of a support for a pile of sheets, a reciprocating feeder-carriage, supporting a feeding instrument, an operating-arm engaging the carriage, and a cam movably mounted upon the carriage and controlled by a sheet fed off for positively disengaging the operating-arm from the carriage to arrest the feeding operation, substantially as set forth.

21. In a paper-feeding machine, the combination of a support for a pile of sheets, a reciprocating feeder-carriage having a shoulder, an operating-arm engaging the shoulder upon the carriage, a cam longitudinally movable upon the carriage adapted to engage the arm and lift it out of engagement with the shoulder of the carriage, and means operated by a passing sheet for operating said cam, substantially as set forth.

22. In a paper-feeding machine, the combination of a support for a pile of sheets, a reciprocating feeder-carriage supporting a feeding instrument, an operating-arm engaging the carriage, a rack-bar longitudinally movable upon the carriage and formed with a cam end which is adapted to engage the operating-arm, a pawl supported above the rack-bar, and a tripping device actuated by a passing sheet and adapted to move the pawl into engagement with the rack-bar for causing the disengagement of the operating-arm from the carriage and arresting the feeding operation, substantially as set forth.

23. In a paper-feeding machine, the combination of a support for a pile of sheets, a reciprocating feeder-carriage, an operating-arm engaging the carriage, a vertically-movable slide or frame supporting the carriage, a bracket mounted upon said vertically-movable slide or frame, a tripping device comprising a sheet-operated tripping-finger and a pawl controlled thereby mounted upon said bracket, and a rack-bar mounted upon the carriage and formed with an incline or cam end which is adapted to disengage the operating-arm from the carriage when the pawl is tripped, substantially as set forth.

24. In a paper-feeding machine, the combination of a support for a pile of sheets, a sheet-feeding carriage, an operating-arm engaging the carriage for reciprocating it, a rack-bar carried by and longitudinally movable upon the carriage, a pawl adapted to be tripped by a passing sheet to engage the rack-bar, and cause it to move on the carriage, said rack-bar being adapted by its movement to disengage the operating-arm from the carriage to arrest the movement of the carriage, substantially as set forth.

25. In a paper-feeding machine, the combination of a support for a pile of sheets, a feeder-carriage carrying a feeding instrument, a spring-pressed operating-arm engaging the feeder-carriage for reciprocating it, and a suitable automatic tripping device operated by a passing sheet and adapted to disengage the spring-pressed operating-arm from the carriage, substantially as set forth.

26. In a paper-feeding machine, the combination of a support for a pile of sheets, a feeder-carriage supporting a feeding instrument, a spring-pressed operating-arm engaging the carriage, a longitudinally-movable rack-bar formed with an incline or cam end and mounted upon the carriage adjacent to the operating-arm, and automatic sheet-operated tripping devices adapted to engage the rack-bar to cause it to disengage the operating-arm from the carriage, substantially as set forth.

27. In a paper-feeding machine, the combination of a support for a pile of sheets, a feeder-carriage supporting a feeding instrument, a suitably-operated rock-arm, an operating-arm journaled upon the rock-arm and engaging the carriage, a spring tending to force the operating-arm into engagement with the carriage, and a suitable cam controlled by a passing sheet and adapted to disengage the operating-arm from the carriage, substantially as set forth.

28. In a paper-feeding machine, the combination of a support for a pile of sheets, a reciprocating feeder-carriage supporting a feeding instrument, a slotted rock-arm, a rotary crank mounted upon a suitable shaft and engaging the slot of the rock-arm, and means for transmitting the differential forward and backward rocking motion of the rock-arm to the feeder-carriage, whereby the forward feeding motion of the carriage will be rapid and the backward motion relatively slow, substantially as set forth.

29. In a paper-feeding machine, the combination of a support for a pile of sheets, a reciprocating feeding-carriage supporting a feeding instrument, a slotted rock-arm journaled upon the frame of the machine, a rotary crank mounted upon a suitable shaft and engaging the slot of the rock-arm, a rock-shaft supporting an auxiliary rock-arm, an operating-arm mounted upon the auxiliary rock-arm and engaging the carriage, and a suitable connection between the slotted rock-arm and the rock-shaft, substantially as set forth.

30. In a paper-feeding machine, the combination of a support for a pile of sheets, a reciprocating feeder-carriage, a bracket-arm vertically adjustable upon the feeder-carriage, suitable feeding-off instruments mounted upon the bracket-arm, a sheet-separating instrument mounted upon the main part of the carriage, and a stationary lower separator member, whereby the feeding-off instruments can be adjusted vertically with relation to the separator instruments, substantially as set forth.

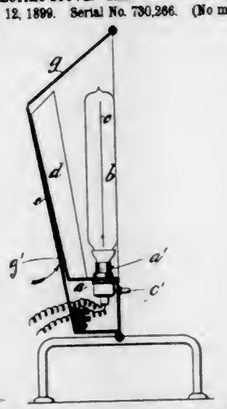
31. In a paper-feeding machine, the combination of a support for a pile of sheets, a reciprocating feeder-carriage, an operating-arm carrying an antifriction-roller which engages the carriage, suitable feeding instruments mounted upon the carriage, and means operated by a passing sheet for disengaging the antifriction-roller from the carriage whereby the movement of the carriage will be arrested and the antifriction-roller will roll upon the carriage to the limit of the stroke of the operating-arm, substantially as set forth.

32. In a paper-feeding machine, the combination of a support for a pile of sheets, a feeder-carriage carrying a feeding instrument, a spring-pressed operating-arm carrying a freely-journaled antifriction-roller which engages the carriage for operating it, a longitudinally-movable cam mounted upon the carriage and adapted to engage the antifriction-roller for disengaging it from the carriage, and means controlled by a passing sheet for causing a relative movement of the cam upon the carriage, substantially as set forth.

33. In a paper-feeding machine, the combination of a support for a pile of sheets, a feeder-carriage supporting a feeding instrument, means for moving said feeder-carriage vertically at the forward and backward limits of its stroke, and a spring-pressed operating-arm engaging the carriage for operating it, substantially as set forth.

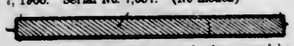
34. In a paper-feeding machine, the combination of a support for a pile of sheets, a reciprocating feeder-carriage, an operating-arm engaging the carriage, a longitudinally-movable rack-bar mounted upon the carriage and adapted to disengage the operating-arm therefrom, a track bar or frame upon which the carriage reciprocates, a bracket adjustably mounted upon the track bar or frame and adapted to be adjusted longitudinally of the track-bar, and a sheet-actuated tripping device mounted upon said adjustable bracket and adapted to actuate the rack-bar upon the carriage for disengaging the operating-arm and arresting the movement of the carriage, substantially as set forth.

658,706. ELECTRIC STOVE. HERBERT J. DOWSING, London, England. Filed Sept. 12, 1899. Serial No. 730,266. (No model.)



Claim.—An electric heating-stove consisting of a suitable casing having an open front and a sloping roof, a reflector-plate located within the casing adjacent to the rear wall thereof and terminating at its upper end at a point below said roof, said reflector-plate being of zigzag form and providing a series of elongated air-channels within the casing, the rear wall of the latter having air-openings therethrough leading into said air-channels, and a plurality of vertically-disposed incandescent electric lamps supported within the casing in front of the reflector-plate, one of said lamps being arranged opposite each ridge or projecting portion of the zigzag reflector-plate, substantially as described.

658,707. VENEER-BARREL-HEADING SELF-FASTENER AND HOLDER COMBINED. MARTIN FERGUSON, Poplar Bluff, Mo. Filed Mar. 7, 1900. Serial No. 7,657. (No model.)



Claim.—1. A barrel-head having an unbroken metal band or ring surrounding it, and points or prongs projecting outward from said band or ring, in a plane parallel to the surface of the head.

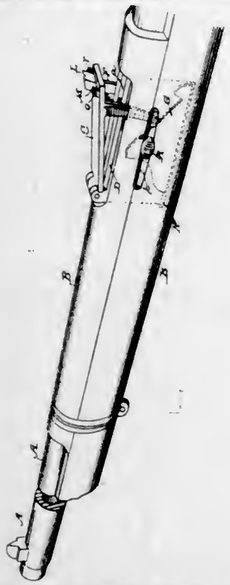
2. A barrel-head having a metal binding-strip secured around its periphery by opposite flanges, and V-shaped prongs extending outward from the binding-strip, substantially as described.

658,708. SIGHT FOR FIREARMS. SOPHIAN E. FISCHER, Hayward, Cal., assignor to Fischer & Bennett, San Francisco, Cal. Filed Nov. 27, 1899. Serial No. 738,463. (No model.)

Claim.—1. A quick-setting sight for firearms consisting of a hinged-leaf sight; a spring adapted to close the hinged leaf; a leg projecting downward from the leaf into a chamber in the fore-stock alongside the gun-barrel; a slide adapted to move lengthwise of the barrel inside said chamber; an inclined plane on the slide adapted to engage with the lower end of the leg, and means for moving the slide in its chamber, substantially as described.

2. In an adjustable back-sight for firearms, a hinged-leaf sight; a spring adapted to close or lower said sight; guiding-legs connected with

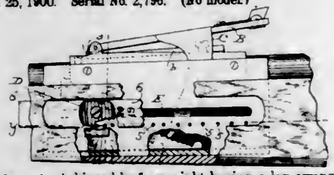
the free end of the sight and passing down on each side of the barrel; a slidable notched triangular plate adapted to move in a pocket or chamber alongside the barrel and engage with one of the legs of the leaf, and a button connecting the plate through a slot in the wall of the chamber by which the plate is moved, substantially as described.



3. In an adjustable back-sight for firearms, a hinged folding-leaf sight; a spring adapted to close or lower said sight; guiding-legs connected with the leaf-sight and passing down on each side of the gun-barrel; a narrow pocket or chamber in the stock alongside the gun-barrel; a metallic track or lining in said chamber; a triangular notched plate adapted to slide on the track in said chamber so that its notched side will engage with one of the legs of the folding leaf, and means for moving the triangular plate in a line with the barrel of the gun, substantially as described.

4. In a back-sight for firearms having a notched triangular plate adapted to move in a pocket or chamber in the gun-stock alongside the barrel of the gun and engage with a leg depending from a hinged folding-leaf sight on top of the barrel; a slot in the wall of the chamber lengthwise of the gun-barrel; a countersink in the gun-stock around the slot, and a button fitting in the countersink and connected through the slot with the triangular plate, substantially as described.

658,709. **QUICK-ADJUSTING GUN-SIGHT.** SOPHIAN E. FISCHER, Hayward, Cal., assignor to Fischer & Bennett, San Francisco, Cal. Filed Jan. 25, 1900. Serial No. 2,796. (No model.)



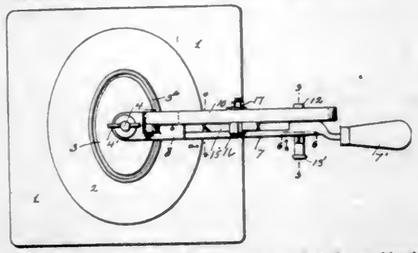
Claim.—1. A hinged-leaf gun-sight having a leg arranged to ride upon a sliding inclined surface; a spring adapted to close said hinged-leaf sight as the inclined slide recedes and the leg rides down the incline; a spring-latch connected with the sliding elevator and adapted to engage with holes or notches in the gun-casing, and a button connected with said spring-latch by a shank which moves in a guiding-slot in the gun-casing, substantially as described.

2. A hinged-leaf gun-sight having a leg arranged to ride upon a sliding inclined surface; a spring adapted to close said hinged-leaf sight as the inclined slide recedes and the leg rides down the incline; a triangular slide adapted to move in a chamber alongside the gun-barrel below the lower end of the leg; a longitudinal slot in the side of the chamber; a button on the outside of the casing connected with the triangular sliding plate by a shank that passes through the longitudinal slot, and a slot-closing plate secured to the shank between the button and sliding elevator so as to move with the button and slide, substantially as described.

3. In a quick-adjusting gun-sight operated by a sliding elevator adapted to move in a chamber alongside the gun-barrel, a longitudinal slot in the outer wall of the chamber; a shank extending from the elevator-plate through the slot; a button on the outer end of the shank, and a slot-closing plate attached to the shank and free to move with the button and shank, said plate being marked to indicate the sight elevation of the hinged-leaf sight, substantially as described.

4. A quick-adjusting gun-sight consisting of a hinged-leaf sight; a spring adapted to press the hinged leaf downward; an elevator adapted to force the sight upward by pressure applied upon or against a longitudinally-sliding button; a latching device connected with said elevating mechanism and adapted to be operated by pressure upon said button, and a sliding plate connected with and operated by the button and graduated to indicate the elevation of the sight, substantially as described.

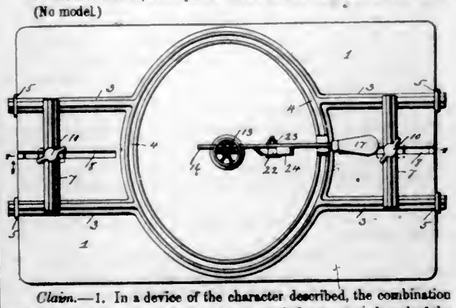
658,710. **APPARATUS FOR CUTTING OVALS FROM CARDBOARD.** WILLIAM H. FORKER, Meadville, Pa., assignor of one-half to M. Torbett Forker, same place. Filed Mar. 6, 1900. Serial No. 7,573. (No model.)



Claim.—1. In a device of the character described, the combination with the base-board, of the oval base-piece removably mounted on said base-board, said base-piece provided in its upper face with an oval groove, a centrally-arranged center post or shank formed integral with the upper face of said base-piece, a sleeve mounted to rotate on said center post or shank, a slotted lever formed integral with said sleeve, a slide adjustably connected to said slotted lever and carrying a pin having a roller to engage in the oval groove in the base-piece, a slotted arm connected to the slotted lever, a spring-catch for holding said arm in engagement with said lever, and a knife adjustably mounted in the slotted arm, substantially as shown and described.

2. The combination of the base-board having the threaded socket therein, the oval base-piece having a threaded stud to engage with said socket, said base-piece having an oval groove in its upper face, the center post or shank carried by said base-piece, the sleeve rotatably mounted on said center post or shank, the wedge-pin engaging the center post or shank to secure the sleeve in position, the slotted lever connected to said sleeve and provided on its free end with a handle, the adjustable slide connected to said lever, the guiding means carried by said slide for engagement with the oval groove in the base-piece, the slotted arm hinged to said slide, means carried by said lever and engaging said arm to secure the lever and arm together, and the adjustable knife carried by said slotted arm, substantially as shown and described.

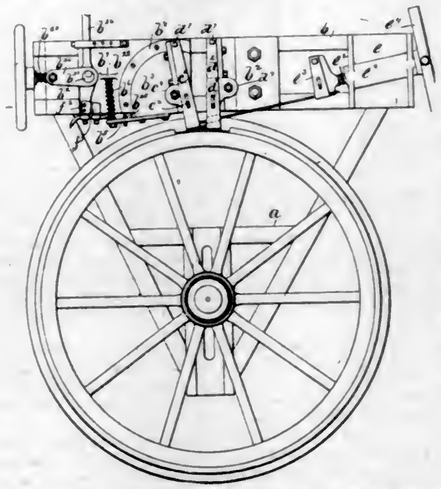
658,711. **APPARATUS FOR CUTTING OVALS FROM CARDBOARD.** WILLIAM H. FORKER, Meadville, Pa., assignor of one-half to M. Torbett Forker, same place. Filed Mar. 6, 1900. Serial No. 7,574. (No model.)



Claim.—1. In a device of the character described, the combination with the base-plate, the slotted guides secured thereto at each end of the plate, and the clamping-frame mounted in said guides, said frame having an oval-shaped groove formed therein, of a center-post removably secured centrally of the base-plate, a sleeve mounted upon said post above the base-plate, a shaft connected to said sleeve, a lever mounted on said shaft, means carried by said lever for engagement with the oval groove of the frame, and a knife adjustably secured in the lever, substantially as shown and described.

2. In a device of the character described, the combination with the base-plate, and the clamping-frame mounted thereon, said frame having an oval groove, of the center-post removably connected to the base-plate centrally of the oval groove in the frame, the sleeve mounted on said center-post, the shaft carried by said sleeve, the slotted lever mounted on said shaft, the adjustable knife carried by said lever, and means carried by the lever for engagement with the oval groove, as and for the purpose described.

658,712. **DEVICE FOR EQUIPPING VEHICLE-WHEELS WITH RUBBER TIRES.** ARTHUR W. GRANT, Springfield, Ohio, assignor, by mesne assignments, to the Consolidated Rubber Tire Company, Jersey City, N. J. Filed Aug. 14, 1897. Serial No. 648,333. (No model.)



Claim.—1. The combination with a stationary clamping device, and an auxiliary clamping device adjacent thereto, said stationary clamping device being provided with an auxiliary opening or openings adjacent to the clamping portions, said auxiliary clamping device being movable in relation to the stationary clamp, and means for holding said auxiliary clamping device in a fixed position, substantially as specified.

2. The combination with a stationary clamp having band-holding jaws and auxiliary openings, as described, a holding device on one side of said jaws, and a movable clamping and tightening device on the opposite side of said jaws, the jaws of said tightening device being adapted to be brought into line or substantially so with the band-holding jaws of the stationary clamp, substantially as and for the purposes specified.

3. In a device for putting on rubber tires, clamping-jaws having reduced portions to extend into the tire-retaining rim and notched holding-faces to engage the tire-retaining band or bands, said band-holding devices being adapted to be moved so as to vary the distance between the same, and means for positively holding said band-holding device in a proper relative position for joining the ends of the retaining band or bands while the tire is in the channel or tire-holding rim, substantially as and for the purpose specified.

4. In a machine, such as described, band-holding jaws having the notched holding-faces and intermediate holding plate or tongue, means for varying the distance between said band-holding jaws and retaining the same in the proper position for uniting the ends of said bands, substantially as specified.

5. The combination with a wheel-support, band-holding devices, a laterally-movable head for supporting one of said band-holding devices, and a tension device having pivotally-mounted clamps or band-holding devices, substantially as specified.

6. The combination with a supporting-bed having two sets of band-holding devices consisting of clamping-jaws as described, and a tension device arranged adjacent to said band-holding devices, and means on said tension device for clamping the band or bands so as to draw the same across the line of one of said band-holding devices, substantially as and for the purposes specified.

7. The combination with a stationary clamp having the reduced clamping ends as described, said clamp being provided with auxiliary openings back of and substantially in line with the holding-faces of said clamp, a tightening device arranged adjacent to said clamp and adapted to move in relation thereto, and means, substantially as described, for holding the said tightening device in a fixed position with reference to said clamp, substantially as specified.

8. The combination with a wheel-support, of band-holding devices arranged adjacent to each other and separable laterally, one of said band-holding devices being adjustable to different angular positions with reference to the other holding device, and a tension device having clamping means whereby the bands encircling the wheels may be tightened while in one position, and the ends thereof secured and moved to a different position for uniting, substantially as specified.

9. In a rubber-tire-setting device, two sets of band-holding devices, one set being angularly adjustable as described, and means for varying the distance between the respective sets of holding devices, a tension device with means for engaging the bands, and the electrical conductors connected to said holding devices, substantially as specified.

10. The combination with a supporting-bed, the band-holding devices as described, one set of band-holding devices being adjustably mounted and adapted to normally stand at an angle to the other set, a movable head for supporting one of said band-holding devices, and means for changing the position of said head to vary the distance between said holding devices, a tension device arranged at an angle to the line of movement of said head and on a line substantially at right angles to the angularly-arranged holding device, said angularly-arranged holding device being adapted to be moved so as to stand parallel with and adjacent to the other holding device, substantially as and for the purpose specified.

11. The combination with the supporting-bed, the band-holding devices each consisting of a stationary jaw and a movable jaw, and an intermediate clamping-plate, a laterally-movable head for supporting one of said holding devices, and an electrical connection to the intermediate plates of each of said holding devices, substantially as specified.

12. The combination with the supporting-bed, the laterally-movable head thereon, a pivoted or swivelly-mounted plate supporting a band-holding device, a spring connected to said plate, and a stop to determine the movement of said plate and a second band-holding device, one of said band-holding devices being mounted on said head, substantially as specified.

13. The combination with the supporting-bed, of independent band-holding devices, one of said band-holding devices being swivelly or pivotally mounted as described, a spring for normally moving said holding device to the normal position, and an adjustable stop to determine the position of said holding device when moved against the tension of said spring, and means, substantially as described, for varying the distance between the respective holding devices, substantially as specified.

14. A supporting-bed, a stationarily-mounted holding device thereon, a pivotally-mounted holding device adjacent thereto, means for varying the distance between said holding devices, a tension device arranged at an angle to the line of movement of said holding devices, one set of said holding devices being cut away on a line with the plane of said tension device, substantially as and for the purpose specified.

15. A supporting-bed, independent band-holding devices thereon, means for varying the distance between said band-holding devices, one of said band-holding devices being angularly movable with reference to the other, a band-tightening device arranged at an angle to the line of travel of said holding devices in moving to or from each other, and auxiliary openings in one of said holding devices on a line with the movement of said tension device, substantially as specified.

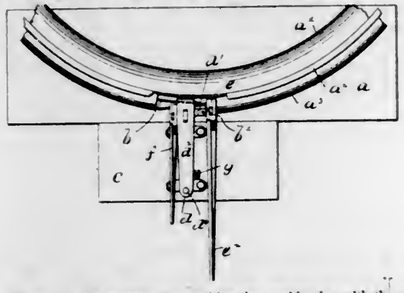
16. A supporting-bed, a stationary band-holding device thereon, a movable head, an auxiliary movable support on said movable head, a pivotally-mounted plate on said auxiliary support, a band-holding device on said plate, means for moving said plate, electrical conductors connecting said band-holding devices and a switch adapted to be operated by the movement of said head to break the circuit of said conductors, substantially as specified.

17. A supporting-bed, a stationarily-mounted holding device thereon, a laterally-movable head and a pivotally-mounted holding device on said head, a hollow shaft forming the pivot of said holding device and electrical connections to said holding devices, one of which extends through said hollow shaft, substantially as specified.

18. The combination with the pivotally-mounted holding device, and a normally-stationary holding device as described, each of said holding devices consisting of a movable and a stationary jaw, and an auxiliary plate between said jaws, a hollow shaft forming a journal for said pivoted holding device, and electrical conductors connected to said auxiliary plates, one of said conductors passing through said hollow shaft or journal, substantially as specified.

19. The combination with the band-holding devices as described, and a band-tightening device arranged at an angle to the plane of said band-holding devices, one of which is provided with auxiliary openings in line with the movement of said tightening device, and an adjustable wheel-support, substantially as and for the purpose specified.

658,713. DEVICE FOR APPLYING RUBBER TIRES TO VEHICLE-WHEELS. ARTHUR W. GRANT, Springfield, Ohio, assignor, by mesne assignments, to the Consolidated Rubber Tire Company, Jersey City, N. J. Filed Feb. 7, 1898. Serial No. 669,336. (No model.)



Claim.—1. In a rubber-tire machine the combination with the stationary jaws having the intermediate tongue, the anxiliary clamping device also having an auxiliary tongue, said auxiliary clamping device being pivoted to permit a reciprocating movement to and from said stationary jaws as described, and clamping-faces on each side of each of said tongues, substantially as specified.

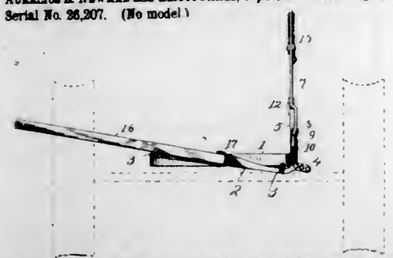
2. The combination with the stationary clamping device having the upper and lower jaws with the intermediate tongue, a projection on said tongue, an auxiliary clamping device having upper and lower jaws and an intermediate tongue, the intermediate tongues of each of said devices being pivoted together, substantially as specified.

3. In a rubber-tire machine the combination with the stationary clamping device consisting of the jaws having reduced ends and band-holding faces, an auxiliary clamping device also having reduced ends and band-holding faces, said auxiliary clamping device being pivoted to permit a reciprocating movement to and from said stationary clamping device and means for holding said auxiliary clamping device with its band-holding faces in substantial alinement with the band-holding faces of the stationary clamp, substantially as specified.

4. The combination with the stationary jaws having the means for clamping and unclamping said jaws, an auxiliary clamping device pivoted adjacent to said stationary jaws, said pivoted clamping device being in the nature of tongs with an extended handle to use as a lever to operate said pivoted clamping device to vary the distance between said clamping devices, means for holding said pivoted clamping device in a clamping position, and a movable stop on said stationary jaws to engage said auxiliary pivoted jaws and hold them against movement, substantially as specified.

5. The combination with the stationary jaws with means for clamping and unclamping the same, the auxiliary clamp in the nature of tongs having extended handles pivoted in proximity to said stationary jaws, said handles being used as a lever to vary the distance between said stationary and auxiliary clamps and a movable holding-clamp also having clamping-jaws adjacent to said stationary jaws, substantially as specified.

658,714. LIFTER FOR MARKER-BARS OF CORN-PLANTERS. AURELIUS E. NEWMAN and ELIOTT JAMES, Ospur, Ill. Filed Aug. 8, 1900. Serial No. 26,207. (No model.)

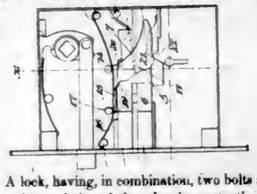


Claim.—1. A tilting marker-bar lifter pivoted between its ends near the transverse center of the rear end of the planter, fingers on the ends of the lifter extending under the marker-bar alternately, and means for tilting the lifter, substantially as described.

2. A marker-bar lifter comprising a cross-bar pivoted on the rear end of a planter-frame approximately coincident with the swivel of the marker-bar, fingers on the ends of the cross-bar extending rearward therefrom and into the path of swing of the marker-bar and a lock-lever to tilt the lifter and hold it tilted, substantially as described.

3. In a marker-bar lifter, the combination of a cross-bar pivoted between its ends on the rear cross-bar of the planter-frame and having on its ends rearward-extended fingers, a lock-lever on a side of the planter, a rearward-extended arm for the lever, and a link connecting the rearward extension of the lock-lever with a sidewise extension of the cross-bar, substantially as described.

658,715. LOCK. EDWARD R. PICKARD, Newburyport, Mass., assignor of two-thirds to Isaac Poor, Jr., same place, and E. Perley Fowle, Tapleyville, Mass. Filed May 23, 1900. Serial No. 17,663. (No model.)



Claim.—1. A lock, having, in combination, two bolts and two keys, one key actuating only one bolt and the other key actuating both bolts in both directions, substantially as described.

2. A lock, provided with a single keyhole, having, in combination, two bolts and two keys, one key actuating only one bolt and the other key actuating both bolts in both directions, substantially as described.

3. A lock, provided with one keyhole, having, in combination, two bolts, the key-engaging portions of which lie side by side, and two keys, the one key constructed to engage and actuate one bolt and not to engage or actuate the other bolt, and the other key constructed to engage and actuate in both directions both bolts simultaneously, substantially as described.

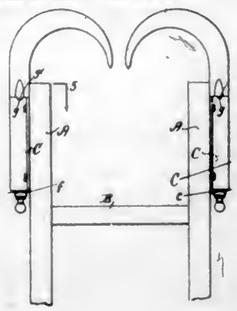
4. A lock, provided with one keyhole, having, in combination, two bolts, arranged one above the other and with their key-engaging portions overlapping each other, and two keys constructed, respectively, the one to engage and actuate one bolt, and the other to engage and actuate both bolts in both directions, substantially as described.

5. A lock, provided with one keyhole, having, in combination, a plurality of bolts arranged one above the other, the key-engaging portions of which lie adjacent to each other, a key constructed to engage and actuate one bolt and another key constructed to engage and actuate all the bolts in both directions, substantially as described.

6. A lock, provided with one keyhole, having, in combination, a plurality of bolts arranged one above the other, the key-engaging portions of which lie adjacent to each other, one of said bolts being provided with a shoulder, a spring-pressed protector constructed to engage the shoulder and hold the bolt in its locked position, and a plurality of keys, one of which is constructed to engage and operate all the bolts in both directions, and to lift the protector, substantially as described.

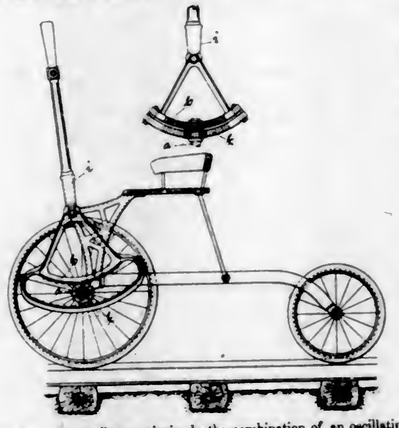
7. A lock having, in combination, two bolts and two keys, one key actuating only one bolt and the other key actuating in both directions both bolts simultaneously, substantially as described.

658,716. SAFETY-HOOK FOR FIREMEN'S LADDERS. CHARLES N. RICHARDSON and EDGAR A. WHITAKER, Providence, R. I. Filed July 21, 1900. Serial No. 24,433. (No model.)



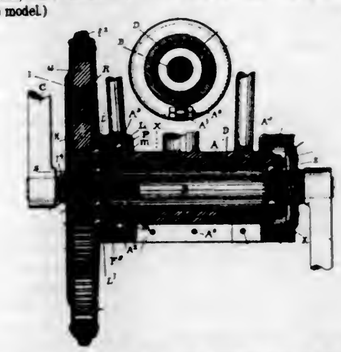
Claim.—The combination of the bracket-piece provided at its upper end with the notches arranged at right angles to each other, with the hook having its shank loosely held in the bracket and adapted for turning movement, the spring for causing the locking engagement of the hook with the said notches, and the limiting-shoulder for the upward movement of the hook, substantially as described.

658,717. MECHANISM FOR PROPELLING RAILWAY-VELOCIPEDES, BOATS, &c. GUNNAR TJERNELD, Carlstad, Sweden. Filed Dec. 28, 1897. Serial No. 663,830. (No model.)



Claim.—In a railway-velocipede the combination of an oscillating hand-lever provided with two concentric gear-wheel sectors, and three ratchet-pinions on the driving-shaft adapted to be moved sidewise along the same, substantially as and for the purpose set forth.

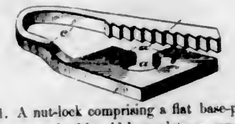
658,718. SPEED MECHANISM FOR BICYCLES. JOHN A. CARDINELL, San Francisco, Cal. Filed Sept. 26, 1898. Serial No. 691,848. (No model.)



Claim.—1. The combination, with a tubular yoke, of the stationary sleeve fixed in said yoke, spur-gear on said sleeve, sprocket-wheel F, having a hub fitted to turn on the sleeve, a flanged rim and internal gear-teeth on the inner face of said rim, the driving-shaft having the circular plate fast thereon, the spur-gears mounted on studs on said plate and arranged around the shaft to mesh with the stationary center gear and with the circle of internal gear-teeth in the sprocket-wheel, the covering-plate secured to the rim of the sprocket-wheel and having a hub fitting around the shaft, the cup-shaped nut L, and the ball-bearings between the shaft and the sleeve, and between the sprocket-wheel hub and the cup-shaped nut, substantially as described.

2. The combination with the stationary yoke having an enlarged end, the sleeve fixed in the yoke and exteriorly threaded within the enlargement, and a cup-shaped nut screwed onto the sleeve, fitting within the enlargement, and having a flanged rim standing at the end of the yoke and provided with radial holes; of the crank-shaft, the sprocket-wheel having a hub within the nut, ball-bearings between this hub and nut and between the hub and sleeve, and connections between the wheel and shaft, substantially as described.

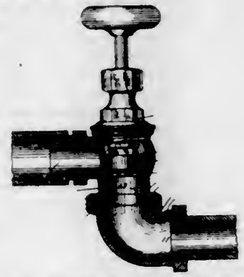
658,719. NUT-LOCK. JEFF D. DOWELL and LAWRENCE M. GALLIHER, Mineola, Tex. Filed Mar. 26, 1900. Serial No. 10,187. (No model.)



Claim.—1. A nut-lock comprising a flat base-plate having a bolt-hole, and having integral with said base-plate an arm extended from the corner of the base-plate, offset to a different plane from the base-plate, and then bent over with a gradual curve to the opposite side of the base-plate from that whence it proceeded, and having serrations adapted to engage the corners of the nut as described.

2. A nut-lock comprising a flat base-plate having a bolt-hole with a section of the base-plate cut away at one corner into the bolt-hole forming sharp-angle corners *b b'*, and having also integral with the base-plate at the adjacent corner an arm offset to a different plane and then bent over with a gradual curve to the opposite side of the base-plate whence it started, and having notches or serrations adapted to engage the corners of the nut substantially as shown and described.

658,720. RADIATOR-VALVE. JOHN T. KELLY, New York, N. Y., assignor of one-half to George M. Jones, Pittsburg, Pa. Filed Mar. 28, 1900. Serial No. 10,463. (No model.)



Claim.—1. In a radiator-valve, the combination of a valve-body formed in two sections, the upper section containing a valve-chamber, valve, and valve-seat, and also provided with a seat on the bottom face thereof, and the lower section having the form of an elbow and having a seat fitting against the bottom seat of the upper section and forming a swivel-joint therewith, and a swivel-nut uniting the two sections.

2. In a radiator-valve, the combination of a valve-body formed of two sections, the upper section containing a valve-chamber, valve, and valve-seat, and also provided with a seat on the bottom face thereof with an annular flange around the same, and the lower section having the form of an elbow and having a seat fitting against the bottom seat of the upper section and a threaded face surrounding such seat, and a swivel-nut engaging with the flange of the upper section and the threaded face of the lower section to unite the two sections.

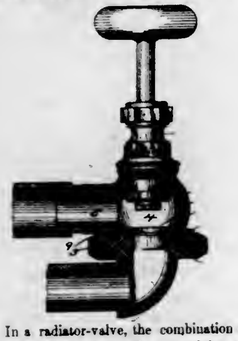
3. In a radiator-valve, the combination of a valve-body formed of two sections, the upper section containing a valve-chamber, valve, and valve-seat, and also provided with a seat on the bottom face thereof and an annular flange around the same, and the lower section having the form of an elbow and having a seat fitting against the bottom of the seat of the upper section and a threaded face surrounding the same, and having a side outlet, the upper edge of which extends above such seat, and a swivel-nut engaging with the flange of the upper section and the threaded face of the lower section to unite the same.

4. In a radiator-valve, the combination of a valve-body formed of two sections, the upper section containing a valve-chamber, valve, and valve-seat, and also provided with a seat on the bottom face thereof with an annular flange around the same, and the lower section having the form of an elbow and having a seat fitting against the bottom seat of the upper section, and a threaded face surrounding the same, and having its body flattened and widened below such seat and provided with a side outlet extending above such flattened and widened portion, and a swivel-nut engaging with the flange of the upper section and the threaded face of the lower section to unite the same.

5. In a radiator-valve, the combination of a valve-body formed in two sections, the upper section containing a valve-chamber, a lining-ring screwing into said upper section and forming the valve-seat and a bottom seat for the lower section, said ring having a flange surrounding said seat, a valve mounted in the valve-chamber and adapted to seat on the valve-seat formed by the ring, a lower section having a seat fitting against the

bottom seat of the ring and a threaded face surrounding the same, and a swivel-nut engaging with the flange of said ring and the threaded face of the lower section.

658,721. RADIATOR-VALVE. JOHN T. KELLY, New York, N. Y., assignor of one-half to George M. Jones, Pittsburg, Pa. Filed Mar. 28, 1900. Serial No. 10,464. (No model.)



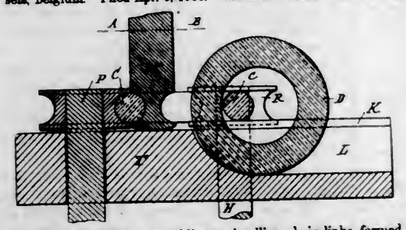
Claim.—1. In a radiator-valve, the combination of a valve-body formed in two sections, the upper section containing a valve-chamber, valve and valve-seat, and also provided with a seat on the bottom face thereof and the lower section provided with a threaded outlet on the side thereof, and having a seat fitted against the lower seat of the upper section and forming a swivel-joint therewith and a swivel-nut uniting the two sections.

2. In a radiator-valve, the combination of a valve-body formed in two sections, the upper section containing a valve-chamber, valve and valve-seat, and also provided with a seat on the bottom face thereof, and a threaded face surrounding said seat, the lower section provided with a threaded outlet on the side thereof and having a seat fitting against the bottom seat of the upper section, and a flange surrounding said seat, and the swivel-nut provided with a flange engaging the flange of the lower section and the threaded face of the upper section to unite the two sections.

3. In a radiator-valve, the combination of a valve-body formed in two sections, the upper section containing a valve-chamber, valve and valve-seat, and also provided with a seat on the bottom face thereof, and a threaded face surrounding such seat, and the lower section having substantially the form of a rectangular box with one side rounded off and provided with a threaded opening in the flat side opposite the rounded side, said lower section also having a seat fitting against the bottom seat of the upper section and forming a swivel-joint therewith, and a swivel-nut carried by the lower section and adapted to engage the threaded face of the upper section to unite the two sections.

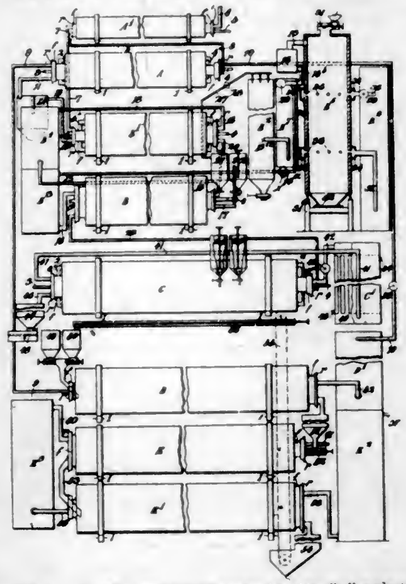
4. In a radiator-valve, the combination of a valve-body formed of two sections, the upper section containing a valve-chamber, valve and valve-seat, and also provided with a seat on the bottom face thereof and a threaded face surrounding said seat, and the lower section having substantially the form of a rectangular box with one side rounded off and provided with a threaded opening in the flat side opposite said rounded side, the corners of said flat side being cut away, said lower section also having a seat fitting against the bottom seat of the upper section and a flange surrounding said seat, and a swivel-nut provided with a flange and engaging the flange of the lower section and the threaded face of the upper section to unite the two sections.

658,722. MANUFACTURE OF CHAINS. ALFRED MARION, Brussels, Belgium. Filed Apr. 9, 1900. Serial No. 12,163. (No model.)



Claim.—The process of welding and rolling chain-links, formed by winding or coiling hoop or wire, consisting in applying a rolling pressure to the interior and exterior of the coiled hoop or wire, while confining the periphery of the coiled ring to prevent enlargement of the ring and to prevent displacement of its convolutions during the welding, and then continuing the rolling without confinement of the ring to enable the ring of welded coils to be rolled out to the desired size and section, substantially as described.

658,723. APPARATUS FOR MAKING ALKALIES. PAUL NAEF, New York, N. Y. Filed Feb. 5, 1900. Serial No. 3,998. (No specimens.)



Claim.—1. The continuous process for obtaining alkali products and chlorine, which consists in cooling a solution of sodium chloride and simultaneously saturating the same with ammonia, repeatedly treating this saturated solution with cooled carbonic-acid gas to produce bicarbonate of soda and a solution of ammoninm chloride, settling the bicarbonate of soda from said solution of ammonium chloride and removing the bicarbonate in succesive stages of the process, cooling the solution of ammonium chloride to thereby obtain solid ammonium chloride from said solution, heating the solid ammonium chloride together with an oxide to produce ammonia-gas and a chloride, passing said ammonia-gas into and through a fresh charge of sodium-chloride solution to saturate the same, and decomposing the said chloride by heated air to produce chlorine and an oxide, substantially as described.

2. The continuous process for obtaining alkali products and chlorine, which consists in cooling a solution of sodium chloride and simultaneously saturating the same with ammonia, passing cooled carbonic-acid gas repeatedly into and through this saturated solution of sodium chloride to obtain bicarbonate of soda and a solution of ammonium chloride, agitating and showering the saturated solution in the presence of the cooled carbonic-acid gas to effect a fine subdivision of said solution and bring it into intimate contact with said gas for obtaining a rapid and complete precipitation of the bicarbonate of soda, removing the bicarbonate in successive stages of the process, cooling the solution of ammonium chloride to thereby obtain solid ammonium chloride from said solution, heating the said solid ammonium chloride together with an oxide to produce ammonia-gas and a chloride, causing said ammonia-gas to circulate through a fresh charge of sodium-chloride solution to saturate the same, and decomposing the said chloride by heated air to produce chlorine and an oxide, substantially as described.

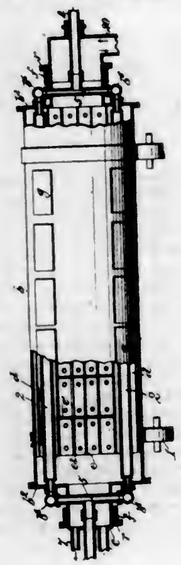
3. The continuous process for obtaining alkali products and chlorine, which consists in cooling a solution of sodium chloride and simultaneously saturating the same with ammonia, repeatedly treating this saturated solution with cooled carbonic-acid gas by alternately cooling said gas and passing it into and through the ammonia-saturated solution of sodium chloride and in intimate contact therewith to obtain bicarbonate of soda and a solution of ammonium chloride, passing a current of cooled air or inert gas through the solution of ammonium chloride to obtain solid ammonium chloride therefrom, returning the residual liquor to be again saturated with ammonia, and heating the solid ammonium chloride with an oxide to obtain ammonia-gas and a chloride, passing said ammonia-gas into and through said returned residual liquor and a fresh charge of sodium chloride to saturate said solution, and decomposing said chloride by heated air to produce chlorine and an oxide, substantially as described.

4. The continuous process for obtaining alkali products and chlorine, which consists in cooling a solution of sodium chloride and simultaneously saturating the same with ammonia, obtaining bicarbonate of soda and ammonium-chloride solution from the solution of sodium chloride and ammonia by treating the latter solution with cooled carbonic-acid gas repeatedly and with an excess of the acid, said gas being alternately cooled and passed into said solution, passing the waste gas from these carbonating operations into and through a fresh charge of sodium-chloride solution, obtaining solid ammonium chloride from the solution of ammonium chloride by continuously circulating a current of cooled air or inert gas through said solution, returning the residual liquor to the fresh charge of sodium-chloride solution, heating the solid ammonium chloride with magnesium oxide or other suitable oxide to obtain ammonia-gas and a chloride, causing said ammonia-gas to circulate continuously through a fresh charge of sodium-chloride solution for saturating the same, decomposing the said chloride by heated air to obtain chlorine and an oxide, and returning this oxide to be again treated with ammonium chloride and heat, substantially as described.

5. The continuous process for obtaining alkali products and chlorine, which consists in cooling a solution of sodium chloride and simultaneously saturating the same with ammonia, treating this saturated solution with cold carbonic-acid gas by repeatedly cooling said gas and passing it into and through said solution to obtain bicarbonate of soda and a solution of ammonium chloride, meanwhile lifting and showering the solution to bring it into a state of fine subdivision and in intimate contact with said gas, settling the bicarbonate of soda from said solution of ammonium chloride and removing the bicarbonate in separate quantities and during successive stages of the process, cooling the solution of ammonium chloride to thereby obtain solid ammonium chloride from said solution, heating the solid ammonium chloride together with an oxide to produce ammonia-gas and a chloride, continuously passing said ammonia-gas into and through a fresh charge of sodium-chloride solution to saturate the same, and decomposing the said chloride by heated air to produce chlorine and an oxide, substantially as described.

6. The method of obtaining bicarbonate, which consists in causing ammoniated brine and cooled carbonic-acid gas to flow in reverse directions to and in intimate contact with each other, agitating the said brine and cooled carbonic-acid gas together and showering the brine through said gas during the whole of the carbonating operation, repeatedly cooling the said carbonic-acid gas to remove the heat evolved by the chemical reaction and alternately passing said repeatedly-cooled gas through said brine, and repeatedly settling and separating from the liquor a thick sludge containing bicarbonate.

658,724. APPARATUS FOR TREATING LIQUIDS WITH GASES. PAUL NAEF, New York, N. Y. Filed Mar. 28, 1900. Serial No. 10,507. (No model.)



Claim.—1. The herein-described revolving cylinder provided at its opposite ends with inlets and outlets for liquor and gas to flow through said cylinder in opposite directions and in contact with each other, in combination with perforated partitions arranged longitudinally in said cylinder and provided with ribs.

2. The herein-described revolving cylinder having a series of pipes extended through the same, inlet and outlet pipes communicating with the said pipes which are extended through the cylinder, inlets and outlets at opposite ends of said cylinder for the passage of liquor and gas through the cylinder in opposite directions, and partitions arranged longitudinally in said cylinder and provided with longitudinal ribs e and cross-ribs e^3.

3. The herein-described revolving cylinder having end plates b^2, pipes 2 extended through said cylinder and its end plates, an inlet-pipe 3 communicating with said pipes 2 at one end of the cylinder, an outlet-pipe 4 communicating with said pipes 2 at the other end of said cylinder, a liquor-inlet pipe 19 and a gas-exit pipe 7 communicating with one end of said cylinder, and a pipe 20 communicating with the other end of said cylinder for the outlet of liquor and inlet of gas.

4. The herein-described revolving cylinder provided at its opposite ends with inlets and outlets for liquor and gas to flow through said cylinder in opposite directions and in contact with each other, in combination with perforated partitions arranged longitudinally in said cylinder and provided with ribs, and devices for lifting the liquor and showering it upon said partitions as the cylinder revolves.

5. The herein-described revolving cylinder provided at its opposite ends with inlets and outlets for liquor and gas to flow through said cylinder in opposite directions and in contact with each other, said cylinder being divided into sections provided with manholes, in combination with perforated partitions arranged longitudinally and vertically in said cylinder and provided with ribs, and lifters for raising the liquid and showering it upon the partitions.

6. The combination with a revolving cylinder provided with means for passing liquor and gas therethrough in opposite directions and in contact with each other, of perforated partitions arranged longitudinally in said cylinder and provided with series of perforated ribs, and perforated lifting devices extended longitudinally in said cylinder near its periphery to discharge liquor onto the said partitions during the whole revolution of the cylinder.

7. The combination with a rotating apparatus, and means for passing liquor and gas therethrough, of perforated partitions located in said apparatus, and numerous perforated ribs carried by said partitions and extended in parallel rows longitudinally and transversely and at right angles to each other.

8. The combination with a rotating apparatus for treating liquor, of longitudinally-arranged perforated partitions located in said apparatus, and perforated lifting devices carried by said partitions to discharge liquor during the whole revolution onto said partitions as the cylinder revolves.

9. The combination of a revolving cylinder, pipes extending therethrough, annular pipes at each end in communication with the pipes that are extended through said cylinder, and a centrally-located pipe in communication with each of said annular pipes.

658,725. APPARATUS FOR TREATING LIQUIDS WITH GASES. PAUL NAEF, New York, N. Y. Filed Mar. 28, 1900. Serial No. 10,508. (No model.)

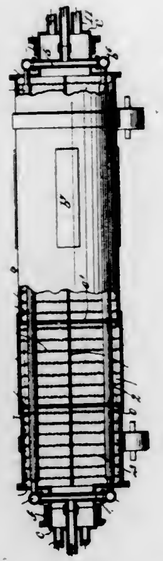
Claim.—1. The herein-described revolving cylinder provided at its opposite ends with inlets and outlets for liquor and gas to flow through said cylinder in opposite directions and in contact with each other, in combination with perforated partitions arranged longitudinally in said cylinder, and wire-gauze partitions arranged across said cylinder.

2. The herein-described revolving cylinder provided at its opposite ends with inlets and outlets for liquor and gas to flow through said cylinder in opposite directions and in contact with each other, said cylinder being divided into sections provided with manholes or doors and each of said sections having arranged therein a number of perforated longitudinally-arranged partitions, and a number of vertically-arranged wire-gauze partitions.

3. The herein-described revolving cylinder divided into sections, each of which is provided with a manhole or door, in combination with a system of pipes extended through said cylinder, perforated longitudinally-arranged partitions in each cylinder-section, and wire-gauze partitions extended transversely across each cylinder-section, in combination with means for causing a flow of liquid and gas through said cylinder in opposite directions and in contact with each other, and means for lifting said liquid and showering it upon said partitions.

4. The combination with a revolving cylinder provided at its opposite ends with inlets and outlets for liquor and gas to flow through said cylinder in opposite directions and in contact with each other, of perforated partitions arranged longitudinally in said cylinder, cross-partitions closing tightly against the cylinder-walls and provided with passages so

located in said cross-partitions as to cause the passage of liquor and gas through said cylinder in a zigzag path, and wire-gauze partitions extended across the interior of the cylinder intermediate the aforesaid cross-partitions.



5. The combination of a revolving cylinder provided at its opposite ends with inlets and outlets for liquor and gas to flow through said cylinder in opposite directions and in contact with each other, of cross-partitions dividing said cylinder into sections, each of said cross-partitions being provided with openings through which the several sections communicate, a manhole or door for each section, perforated longitudinally-arranged partitions in each cylinder-section, wire-gauze partitions extended transversely across each cylinder-section, and perforated lifters extended longitudinally through the several cylinder-sections to shower liquor during the whole revolution of the cylinder.

6. The combination with a revolving cylinder divided transversely into communicating sections and provided at its opposite ends with inlets and outlets for liquor and gas to flow through said cylinder in opposite directions and in contact with each other, of perforated longitudinally-arranged partitions located in each cylinder-section, and numerous perforated cross-partitions in each cylinder-section.

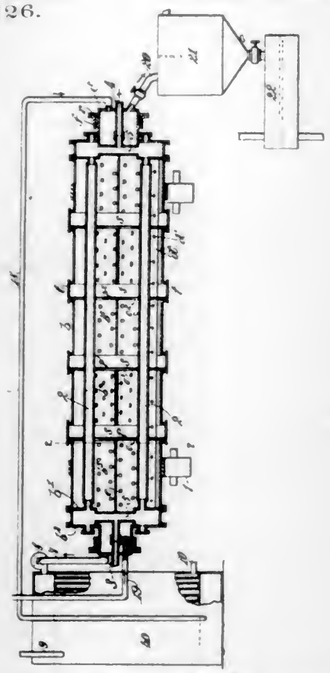
7. The combination with a revolving cylinder provided at its opposite ends with inlets and outlets for liquor and gas to flow through said cylinder in opposite directions and in contact with each other, of perforated longitudinal partitions located in said cylinder, corrugated and perforated cross-partitions also located in said cylinder, a system of pipes extended through the cylinder, and perforated longitudinally-extended lifters for showering liquor onto the several partitions during the whole revolution of the cylinder.

8. The combination with a revolving cylinder, of vertical cross-partitions composed of corrugated wire-gauze, located in said cylinder, and means for passing liquor and gas therethrough.

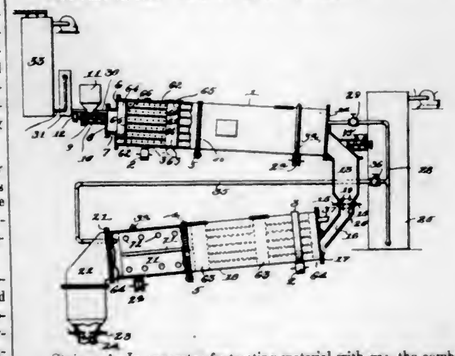
658,726. PROCESS OF CRYSTALLIZING SOLIDS FROM LIQUIDS. PAUL NAEF, New York, N. Y. Original application filed Feb. 5, 1900, Serial No. 3,998. Divided and this application filed Mar. 29, 1900. Serial No. 10,665. (No specimens.)

Claim.—The method of crystallizing solids from a liquid, which consists in causing said liquid to flow in one direction, continuously circulating a cold permanent gas through said liquid in a reverse direction to the flow of the liquid, repeatedly cooling said gas alternately with its passage through said liquid, simultaneously cooling the liquid from the exterior by means independent of said liquid and gas, and separating from said liquid, by settling and filtering, a clear liquor and a sludge containing crystals, as specified.

658,726.



658,727. CHEMICAL APPARATUS. PAUL NAEF, New York, N. Y. Filed June 13, 1900. Serial No. 20,190. (No model.)



Claim.—1. In apparatus for treating material with gas, the combination of a rotary cylinder mounted in a horizontally-inclined position, agitating devices arranged in said cylinder to effect intimate contact of the material and gas passed through said cylinder in reverse directions, conveyer devices for feeding the material into the upper end of said cylinder, means for conducting gas into the lower end of said cylinder, a discharge-hopper in communication with the lower end of the cylinder, for discharge of the treated material, a washer or absorber, and means for conducting gas from the upper end of the cylinder to said washer or absorber.

2. In apparatus for treating material with gas, the combination of a rotary cylinder mounted in a horizontally-inclined position, rollers on which said cylinder is mounted, gearing for rotating said cylinder, agitating devices arranged in said cylinder to effect intimate contact throughout the entire revolution of the cylinder between the material and the gas that are passed through the same in reverse directions, conveyer mechanism for feeding the material into the upper end of the cylinder, a discharge-hopper communicating with the lower end of the cylinder and through which the treated material is to be discharged, means for conducting gas into the lower end of the cylinder, a washer or absorber, and means for conducting gas from the upper end of said cylinder to the absorber or washer.

3. In apparatus for treating material with gas, the combination of an upper rotary cylinder, a lower rotary cylinder, means for mounting said cylinders in reversely-inclined positions with relation to each other, gearing for rotating said cylinders, agitating devices arranged in each cylinder to effect intimate contact between the material and the gas passed through said cylinders in reverse directions, a discharge hopper and chute through which the lower end of the upper cylinder is adapted to communicate with the upper end of the lower cylinder, means for controlling the discharge of material through said hopper from the upper cylinder to the lower cylinder, a discharge-hopper communicating with the lower end of the lower cylinder and provided with means for controlling the discharge of finished material, a gas-heater, and means for conducting gas therefrom into the lower end of each cylinder, respectively.

4. In apparatus for treating material with gas, the combination of an upper rotary cylinder, a lower rotary cylinder, said cylinders being arranged in horizontally-inclined positions and in relatively-reverse directions, conveyer mechanism for feeding material into the upper end of the upper cylinder, discharge devices through which the lower end of the upper cylinder is adapted to communicate with the upper end of the lower cylinder, a discharge-hopper in communication with the lower end of the lower cylinder, for discharge therefrom of finished material, a gas-heater having a pipe for conducting hot gas into the lower end of the upper cylinder to pass therethrough in a reverse direction to the passage through said cylinder of the material under treatment, said heater having also a branch pipe for conducting hot gas into the lower end of the lower cylinder, to pass therethrough in a reverse direction to the passage through said cylinder of the material under treatment, a pipe leading from the lower cylinder to convey away excess of gas, an absorber or washer, and means for conducting gas from the upper end of the upper cylinder to said absorber or washer.

5. In apparatus for treating material with gas, the combination of one or more horizontally-inclined rotary cylinders, conveyer mechanism for conducting the material to be treated into the upper end of the cylinder, a gas-heater, means for conducting gas from said heater into the other end of the cylinder to pass therethrough in a reverse direction to the passage through said cylinder of the material under treatment, an absorber or washer, means for conducting gas from said cylinder to the absorber or washer, and series of perforated partitions extended longitudinally in the cylinder and radially offset from each other to effect agitation and intimate contact between the material and the gas that are passed through the cylinder in reverse directions.

6. In apparatus for treating material with gas, the combination of a rotary horizontally-inclined cylinder, conveyer mechanism for feeding material into one end of said cylinder, a discharge-hopper in communication with the other end of said cylinder, for the discharge of treated material, a furnace or fire-box mounted on said discharge-hopper and provided with means for the combustion of fuel, means for movably mounting said discharge-hopper and furnace, whereby the same may be moved away from the cylinder end to give access to the cylinder, and agitating devices arranged in the cylinder to effect intimate contact between the material and the gas that are passed through said cylinder in reverse directions.

7. In apparatus for treating material with gas, the combination of an upper rotary cylinder, a lower rotary cylinder, conveyer mechanism for feeding the material to be treated into one end of the upper cylinder, a hopper and discharge devices through which one end of the said upper cylinder is adapted to communicate with the adjacent end of the lower cylinder, a furnace or fire-box mounted on said discharge-hopper, means for movably mounting said discharge-hopper and fire-box, whereby they can be moved away from the cylinders to give access to the interior of the same, a discharge-hopper in communication with one end of the lower cylinder, a fire-box mounted on said discharge-hopper and having a flue extended into said cylinder, means for introducing cold air into said discharge-hopper below the said fire-box and its flue, and agitating devices arranged in the cylinders to effect intimate contact of the material and the gas that are passed through said cylinders.

8. In apparatus for treating material with gas, the combination of an upper rotary cylinder, a lower rotary cylinder, conveyer mechanism for feeding the material to be treated, into one end of the upper cylinder, a discharge-hopper through which one end of the upper cylinder is adapted to communicate with the adjacent end of the lower cylinder, a discharge-hopper in communication with the other end of the lower cylinder, for discharge of finished material therefrom, a gas-heater, means for causing a continuous circulation of gas through said gas-heater and the said lower cylinder, whereby the gas is repeatedly heated in alternation with its passage through the material in the said lower cylinder, means for introducing gas into the upper cylinder, and means for conducting gas from said upper cylinder.

9. In apparatus for treating material with gas, the combination of an upper rotary cylinder mounted in a horizontally-inclined position, a lower rotary cylinder mounted in a horizontally-inclined position and in a reverse direction to the upper cylinder, agitating devices arranged in said cylinders to effect intimate contact of material and gas to be passed through the same in reverse directions, conveyer mechanism for feeding the material to be treated into the upper end of the upper rotary cylinder, a discharge-hopper provided with means for controlling the passage of material from the lower end of the upper cylinder to the upper end of the lower cylinder, a discharge-hopper in communication with the lower end of the lower cylinder for discharge of finished material therefrom, a gas-heater, means for conducting gas into said heater, means for causing a continuous circulation of gas through the gas-heater and the said lower cylinder, whereby gas is repeatedly heated in alternation with its passage through the material in said lower cylinder, and means for passing gas through the upper cylinder.

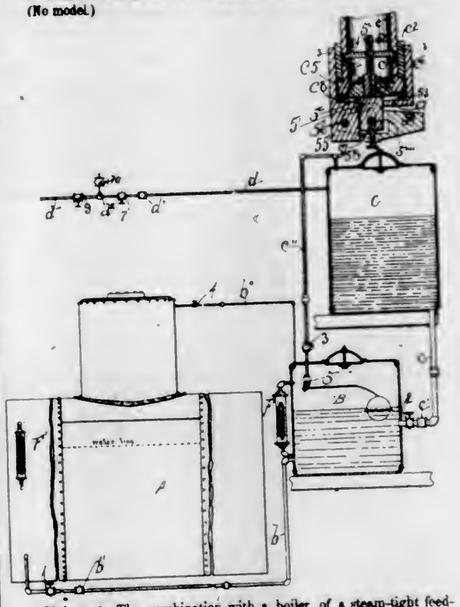
10. In apparatus for treating material with gas, the combination of a rotary horizontally-inclined cylinder, series of perforated agitating devices arranged in said cylinder in several groups or sections, radially offset from each other, with spaces between the several groups or sections of said agitating devices and with spaces beyond the same at the ends of the cylinder, means for feeding into one end of said cylinder the material to be treated, and means for conducting hot gas into the other end of said cylinder, to pass through the same in intimate contact with the material that is passed through said cylinder in a reverse direction.

11. The combination of several superposed rotary furnaces, combustion-chambers communicating with said furnaces, means for conducting material successively through said furnaces, and means for separately collecting and washing the gas from the furnace through which the material first passes.

12. The combination of several furnaces, combustion-chambers on each furnace, means for conducting material into one furnace and successively through the other furnaces, means for collecting and washing the gas from the first furnace separately, and means for introducing another material in the second furnace.

13. The combination of several furnaces, means for passing material successively through them, means for heating and collecting the gas from the first furnace separately, means for continuously circulating the same gas a number of times through the lower furnace, and means for heating said gas before each entrance into the lower cylinder.

658,728. AUTOMATIC GRAVITY BOILER-FEEDER. HENRY C. NEEDHAM, Los Angeles, Cal. Filed Apr. 4, 1898. Serial No. 676,462. (No model.)



Claim.—1. The combination with a boiler, of a steam-tight feed-reservoir extending above the water-level of the boiler: a feed-water pipe leading from said reservoir into the boiler and provided with a check-valve to admit water into the boiler and prevent backflow; a steam-pipe leading from the boiler to the feed-reservoir; a steam-tight supply-reservoir above the feed-reservoir; a supply-pipe leading from the supply-reservoir to the feed-reservoir and provided with a check-valve to admit wa-

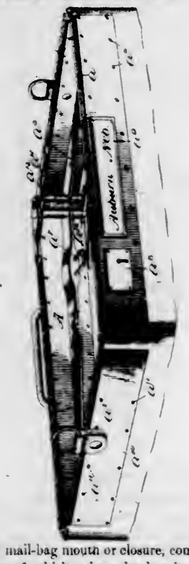
ter by gravity from the supply-reservoir into the feed-reservoir and to prevent backflow; the supply-pressure steam-pipe leading from the feed-reservoir into the supply-reservoir; a float-valve to be operated by the water in the feed-reservoir and arranged to open and close the supply-pressure steam-pipe; and valved means for introducing water into the supply-reservoir when there is no steam-pressure therein.

2. A gravity boiler-feeder comprising a steam-tight feed-reservoir extending above the water-level of the boiler; a feed-pipe leading from the feed-reservoir to the boiler and provided with a check-valve to admit water to the boiler and prevent backflow and also provided with a globe-valve between the check-valve and the boiler; a steam-pipe leading from the boiler to the feed-reservoir and provided with a globe-valve; a steam-tight supply-reservoir above the feed-reservoir; a supply-pipe leading from the supply-reservoir to the feed-reservoir and provided with a check-valve to admit water by gravity from the supply-reservoir into the feed-reservoir and to prevent backflow and said pipe also being provided with a globe-valve between the feed-reservoir and said check-valve; a supply steam-pipe leading from the feed-reservoir into the supply-reservoir and provided with a globe-valve; a float-valve to be operated by the water in the feed-reservoir and arranged to open and close the supply-pressure steam-pipe; and a water-supply pipe with a check-valve to admit water into the supply-reservoir when there is no steam-pressure therein, and to close against the steam-pressure when steam is admitted to the supply-reservoir.

3. The combination of an outlet-pipe; a collar screwed onto the end of the pipe; a valve-seat screwed into the collar; a guide clamped between the valve-seat and the end of the pipe and extending across the pipe; an annular valve seated in the valve-seat; a vent-valve for closing the central opening of the annular valve and provided with a stem extending through the guide and provided with stops to engage the annular valve to move the same, said vent-valve being arranged to provide a vent through the annular valve when the vent-valve is drawn away from the annular valve; a cap screwed onto the collar and provided with steam-inlet to admit steam to the valves and arranged to form a stop to limit the movement of the annular valve; and means for moving the vent-valve to operate the annular valve.

4. The combination of a pipe; a collar screwed onto the end of the pipe; a valve-seat screwed into the collar; an annular valve seated in the valve-seat; a vent-valve to close the opening in the annular valve and provided with stops to limit its movement with relation to the annular valve; a cap screwed onto the collar and provided with inlet admitting to the valve; and a float-lever pivoted to a support and to the vent-valve for operating said valves.

658,729. **MAIL-BAG.** SIMON P. STEELE, Auburn, Nebr. Filed Apr. 24, 1900. Serial No. 14,168. (No model.)



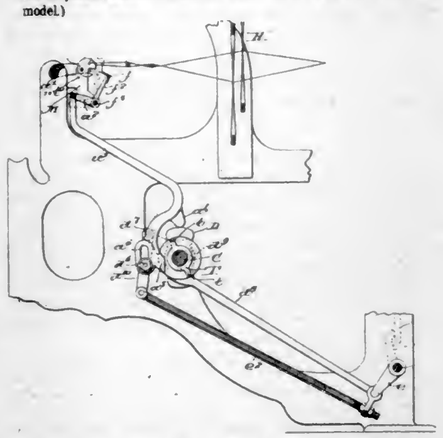
Claim.—1. A mail-bag mouth or closure, comprising four members hinged together, two of which, when the bag is closed, are adapted to lie in a straight line, and the other two at an angle thereto, substantially as described.

2. A mail-bag mouth or closure, comprising four members hinged together, two of which, when the bag is closed, are adapted to lie in a straight line, and the other two at an angle thereto, tenons carried by one side and one end, and mortises provided in the other side and other end, with which the said tenons engage, substantially as described.

3. A mail-bag mouth or closure, comprising four members hinged together, two of which, when the bag is closed, are adapted to lie in a straight line, and the other two at an angle thereto, tenons carried by one side and one end, mortises provided on the other side and other end, with which the tenons engage, a staple carried by one side of the bag, and a lock permanently attached to the other side, with which the staple engages, substantially as described

4. A mail-bag mouth or closure comprising four members hinged together, two of which, when the bag is closed, are adapted to lie in a straight line and the other two at an angle thereto, and a coiled spring held in place by the hinge-pivot at one corner of the closure, said spring operating to cause the mouth normally to remain open, substantially as described.

658,730. **WARP-STOP-MOTION MECHANISM.** WILLIAM E. ALLEN, Salem, Mass., assignor to the Draper Company, Portland, Me., and Hopedale, Mass. Filed June 25, 1900. Serial No. 21,401. (No model.)



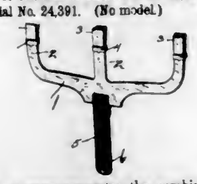
Claim.—1. In apparatus of the class described, a series of thin, flat detectors each having a circular periphery interrupted by a reëntrant portion, and a warp-receiving portion above such opening, a fixed support upon which the detectors are rotatably mounted eccentric to their centers of gravity, and stopping means, including a feeler normally vibratable in a path intersecting the said support and movable into and out of the reëntrant portions of the detectors, the latter being maintained by normal warp-threads with such portions in the feeler-path, a released detector turning to bring its circular edge into the path of and to arrest the feeler, to thereby effect the operation of the stopping means, the support serving as a back-stop for the detector when so engaged.

2. In apparatus of the class described, a series of thin, flat disk-like detectors having each a warp-receiving opening and a notch inwardly extended from its periphery, a fixed support extended loosely through the detectors eccentric to their centers of gravity, stopping means, including a feeler normally vibrating into and out of the notches of the detectors, the latter being maintained in such position by normal warp-threads, a released detector turning to bring its edge into the path of and to arrest the feeler, to thereby effect the operation of the stopping means, and a fixed stop exterior to the detectors, to limit angular movement thereof when released.

3. In apparatus of the class described, a series of thin, flat disk-like detectors having each a warp-receiving opening and a notch inwardly extended from its periphery, a fixed support extended loosely through the detectors eccentric to their centers of gravity, and stopping means, including a feeler normally vibrating into and out of the notches of the detectors, the feeler having a toothed edge, said detectors being maintained by normal warp-threads with their notches in the feeler-path, a released detector turning on its support to bring its periphery into the path of and to be engaged by the toothed edge of the feeler, to stop the latter and thereby effect the operation of the stopping means.

4. In a loom, a series of circular detectors having each a warp-eye and a reëntrant portion extended inward from its periphery toward its support, a fixed axial support extended loosely through the detectors eccentric to their centers of gravity, and stopping means for the loom, including a feeler normally vibratable toward and from the support in the reëntrant portions of the detectors, the latter being maintained by normal warp-threads with their reëntrant portions in the feeler-path, a released detector rotating on its support to bring its circular edge into the path of and to arrest the feeler, to thereby effect the operation of the stopping means.

658,731. **GARMENT-SUPPORT.** LUTHER W. BALLARD, Alliance, Ohio, assignor of one-half to Charles C. Baker, same place. Filed July 21, 1900. Serial No. 24,391. (No model.)



Claim.—In a garment-supporter the combination of a plate provided with upwardly-extending arms, clamps located upon the upper ends of the arms and adapted to engage a shirt, an elastic strap extended downward from about the middle of the plate and adapted to be connected to the pants at its bottom or lower end, substantially as and for the purpose specified.

658,732. **PRICE-SCALE.** CALVIN F. CHRISTOPHER, Washington, D. C., assignor to the Columbian Automatic Computing Scales Company, same place. Filed Mar. 20, 1900. Serial No. 9,426. (No model.)



Claim.—1. A device of the class described comprising a frame, a bearing-ring mounted on the frame and provided with a ball-race, antifriction-balls arranged in the said race, a rotary disk or plate supported by the said balls, a graduated casing arranged in a vertical position on the disk or plate, an exterior indicator arranged to move over the graduations of the casing, a device for receiving the goods to be weighed, and mechanism connected with and actuated by the device for receiving the goods to be weighed, said mechanism being connected with and adapted to actuate the indicator, substantially as described.

2. A device of the class described comprising a frame, a bearing-ring mounted upon the frame, a rotary disk or plate supported upon the bearing-ring, a vertical casing mounted upon the disk or plate, an exterior indicator arranged to move over the graduations of the casing, mechanism located within the casing for actuating the indicator, a device for receiving the goods to be weighed, and connections between such device and the said mechanism, said connections being provided with a joint adapted to permit the rotary disk or plate and the mechanism within the casing to be rotated independently of the device for receiving the goods to be weighed, substantially as described.

3. A device of the class described comprising a frame, a bearing-ring having an upwardly-extending wall or flange and provided within the same with a ball-race, a rotary disk or plate provided with a depending bearing-flange extending into the bearing-ring, antifriction-balls arranged in the ball-race and receiving and supporting the bearing-flange of the disk or plate, a vertical casing provided with graduations and supported by the disk or plate, an exterior indicator, mechanism located within the casing for actuating the indicator, a device for receiving the goods to be weighed, and means for connecting such device with the said mechanism, substantially as described.

4. A device of the class described comprising a frame, a bearing-ring supported by the frame and provided with an upwardly-extending wall or flange and having a ball-race within the same, antifriction-balls arranged within the ball-race, a rotary disk or plate provided with a depending bearing-flange supported by the said balls, said bearing-flange being provided with an annular groove, devices mounted on the wall or flange of the bearing-ring and extending into the annular groove, a vertical casing mounted on the disk or plate and provided with graduations, an exterior indicator arranged to move over the graduations of the casing, gearing located within the casing for actuating the indicator, and means for connecting the gearing with a device for receiving the goods to be weighed, substantially as described.

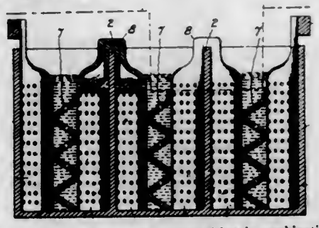
5. A device of the class described comprising a frame, a longitudinal scale-lever provided at one end with a loop and fulcrumed at the other end, a supplemental scale-lever extending through the loop of the said scale-lever, a platform, means for connecting the platform with the scale-lever, a graduated casing mounted upon the frame for rotation, an exterior indicator arranged to move over the graduations of the casing, mechanism within the casing for actuating the indicator, and a connecting bar or rod extending from such mechanism to the supplemental scale-lever, substantially as described.

6. A device of the class described comprising a frame provided with an exterior graduated surface, a longitudinal scale-lever provided at one end with a loop, a supplemental scale-lever extending through the said loop, a platform, means for connecting the platform with the longitudinal scale-lever, a graduated casing mounted for rotation on the frame, an exterior indicator arranged to move over the graduations of the casing, mechanism within the casing for actuating the indicator, a connecting-rod extending from the supplemental scale-lever to the said mechanism and provided with a rack, a pinion meshing with the rack, and an exterior hand connected with the pinion and arranged to move over the graduated surface of the frame, substantially as described.

7. A device of the class described comprising a frame, a longitudinal scale-lever provided with a loop, a supplemental scale-lever extending through the loop, a platform, means for connecting the platform with the longitudinal scale-lever, a bearing-ring mounted upon the frame, a rotary disk or plate extending into the bearing-ring and arranged to rotate on the same, a vertical casing provided with graduations, an exterior indicator arranged to move over the graduations, mechanism within the casing for actuating the indicator, and a connecting rod or bar extending from the said mechanism to the supplemental scale-lever, substantially as described.

8. In a device of the class described, the combination with two members, a vertical cylinder having graduations, and an indicator coöperating with said graduations, one of these members being revoluble with reference to the other about a vertical axis, of a weight-receptacle operatively connected to impart rotation to the revoluble member, and a spring within the cylinder connected to the weight-receptacle and tending to resist the depression of the latter, substantially as described.

658,733. **SECONDARY BATTERY.** CLYDE J. COLEMAN, Chicago, Ill., assignor, by mesne assignments, to the General Electric Storage Battery Company, of New Jersey. Filed Dec. 8, 1899. Serial No. 739,726. (No model.)



Claim.—1. A secondary battery comprising in combination, a partitioned battery-casing, positive and negative electrodes arranged therein, each of said electrodes comprising a series of perforated cylindrical conducting-casings filled with active material and arranged side by side in close relation to mutually support each other, the positive series of such casings being integrally and individually connected by saddle connections with the negative series of such casings, substantially as set forth.

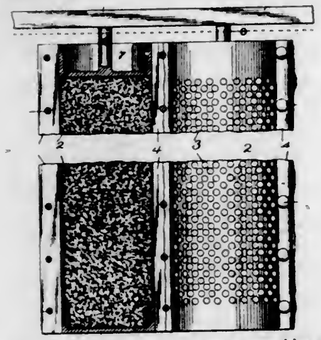
2. A secondary battery comprising in combination a partitioned battery-casing, positive and negative electrodes arranged therein, each of said electrodes comprising a series of perforated cylindrical conducting-casings filled with active material and arranged side by side in close relation to

mutually support each other, and an elastic cushion formed by a perforated and corrugated sheet of rubber or like material arranged between the opposed series of such casings, substantially as set forth.

3. A combined positive and negative electrode for secondary batteries, comprising a pair of perforated tubular conducting-casings containing the active material and united together by a connecting saddle portion integral with said casings and constituting a support for the electrodes within the battery-casing, substantially as set forth.

4. A combined positive and negative electrode for secondary batteries, comprising a pair of perforated tubular conducting-casings containing the active material, and connected together by a flattened formation of the tubular casing to constitute a supporting-saddle for the electrodes within the battery-casing, substantially as set forth.

658,734. **SECONDARY BATTERY.** CLYDE J. COLEMAN, Chicago, Ill., assignor, by mesne assignments, to the General Electric Storage Battery Company, of New Jersey. Filed Oct. 2, 1899. Serial No. 732,353. (No model.)



Claim.—1. A secondary-battery electrode, comprising a perforated casing having a longitudinal cell containing the active material, and formed by a series of longitudinal sections united together by longitudinal flanges at the edges of such sections, and a pair of closure-pieces fitting the respective ends of the cell to afford an easy and convenient manner of introducing the filling of active material into the cell or chamber, substantially as set forth.

2. A secondary-battery electrode, comprising a perforated casing having a series of longitudinal cells containing the active material, and formed by a series of longitudinal sections united together by longitudinal flanges and central longitudinal webs, and pairs of closure-pieces fitting the respective ends of the cells to afford an easy and convenient manner of introducing the filling of active material into said cells, substantially as set forth.

3. A secondary-battery electrode, comprising a perforated casing having a longitudinal cell and formed by a series of longitudinal sections united together by longitudinal flanges at the edges of such sections, a pair of closure-pieces fitting the respective ends of the cell to afford an easy and convenient manner of filling such cells, a connecting-strip having electrical connection with the casing, and a filling of active material, substantially as set forth.

4. A secondary-battery electrode, comprising a perforated casing having a series of longitudinal cells, and formed by a series of longitudinal sections united together by longitudinal flanges and central longitudinal webs, pairs of closure-pieces fitting the respective ends of the cells to afford an easy and convenient manner of filling such cells, a connecting-strip having electrical connection with the casing, and fillings of active material, substantially as set forth.

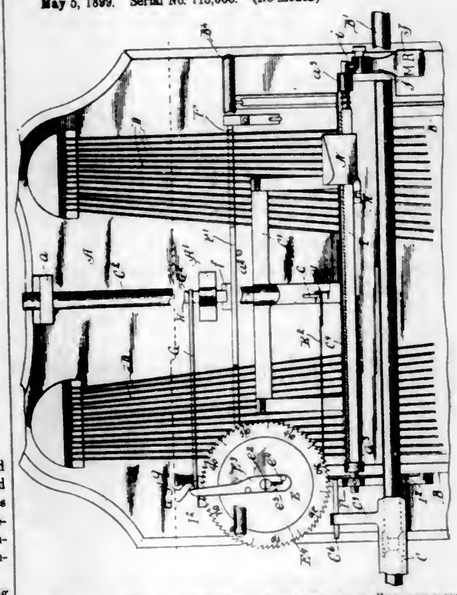
5. In a secondary battery, the combination of a perforated conducting-casing for containing the active material, a cup-shaped connecting-piece fitting the inside of the upper end of the casing, a connecting bar or strip, and a stem connecting the cup-shaped piece with the connecting-bar, substantially as set forth.

6. In a secondary battery, the combination of a perforated conducting-casing comprising a series of cells for containing the active material a series of cup-shaped conducting-pieces fitting the insides of the upper ends of the cells, a connecting bar or strip, and a series of stems connecting the cup-shaped pieces with the connecting-bar, substantially as set forth.

7. In a secondary battery, the combination of a perforated conducting-casing for containing the active material, formed of a series of longitudinal sections united together by longitudinal flanges, and a connecting-strip having electrical connection with the casing, such connection comprising a cup-shaped piece fitting the inside of the upper end of the casing and a connecting-stem, substantially as set forth.

8. In a secondary battery, the combination of a perforated conducting-casing comprising a series of cells for containing the active material and formed of a series of longitudinal sections united together by central longitudinal webs and outer or end flanges, and a connecting-strip having electrical connection with the series of cells of the casing, such connection comprising a series of cup-shaped pieces fitting the insides of the upper ends of the cells, and a series of connecting-stems, substantially as set forth.

658,735. **TYPE-WRITER.** WILLIAM S. CRAIG, Chicago, Ill. Filed May 5, 1899. Serial No. 715,660. (No model.)



Claim.—1. The combination with key-levers, a traveling paper-carriage and a carriage-actuating spring, of a locking-bar arranged transversely of the key-levers and normally disengaged from the same, a rotative stop-arm which is actuated by said spring, a bell-crank lever, one arm of which is operatively connected with said bar and the other arm of which extends into the path of said rotative stop.

2. The combination with key-levers, a traveling paper-carriage and a carriage-actuating spring, of a locking-bar arranged transversely of the key-levers and normally disengaged from the same, a rotative stop-arm which is actuated by said spring, an oscillatory bell-crank lever, one arm of which is operatively connected with said bar and the other arm of which extends into the path of the said rotating stop, said last-mentioned arm being movable in a plane perpendicular to the plane of oscillation of the lever, whereby it may be released from said stop-arm.

3. The combination with key-levers, a traveling paper-carriage and a carriage-actuating spring, of a locking-bar arranged transversely of the key-levers and normally out of engagement with the same, a rotative stop-arm which is actuated by said spring, an oscillatory bell-crank lever, one arm of which is operatively connected with said bar and the other arm of which extends into the path of the rotative stop, said last-mentioned arm being movable in a plane perpendicular to the plane of oscillation of the lever, a spring applied to said arm to normally hold it in the path of the rotative stop, and a release-key connected with said arm and acting in opposition to said spring.

4. The combination with key-levers, a traveling paper-carriage and a carriage-actuating spring, of a locking-bar arranged transversely of the key-levers and normally disengaged from the same, a rotative stop which is actuated by said spring, a bell-crank lever, one arm of which extends into the path of said rotative stop, and a short oscillatory lever, one end of which is connected with the other arm of said bell-crank lever and the other end of which is connected with said locking-bar.

5. The combination with key-levers, a traveling paper-carriage and a carriage-actuating spring, of a rotative disk which is actuated by said spring and is provided with a plurality of peripheral notches, a stop-arm pivoted concentrically on said disk and projecting beyond the periphery thereof, a tooth on said arm adapted to engage the notches of said disk, said stop-arm having longitudinal movement to permit the release of the tooth carried thereby from said notches, and a spring applied to the arm to hold it in its retracted position with said tooth in engagement with one of said notches, and a locking device for said key-levers embracing a lever which projects normally into the path of said stop-arm.

6. The combination with a paper-carriage, of a left-hand margin-stop, means affording engagement of the stop both with the machine-frame and with the carriage, and means acting to disengage the stop from the machine-frame when it is engaged with the carriage, said stop being free to move on the machine-frame when disengaged therefrom.

7. The combination with a paper-carriage, of a left-hand margin-stop which is adjustable on the machine-frame longitudinally of the carriage, means for locking said stop rigidly on the frame, means for effecting engagement of said stop with the carriage, and means for releasing said stop from the frame constructed to automatically effect the engagement of said stop with the carriage.

8. The combination with a paper-carriage of a left-hand marginal stop which is movably supported upon the frame, means by which the said stop is held normally in engagement with the frame, means affording temporary engagement of the stop with the carriage, embracing a spring by which the said stop is held normally free from engagement with the carriage, and a release-key acting against said spring to effect the release of the stop from the frame and its engagement with the carriage.

9. The combination with a paper-carriage, of a rack-bar in the machine-frame, a sliding block on said bar located normally in the path of a stop-arm on the carriage, a tooth or pawl on said block adapted to normally engage said rack-bar, interlocking connections on the block and the carriage, and means for disengaging said pawl or tooth from said rack-bar and temporarily locking the block to the carriage.

10. The combination with a paper-carriage, of a rack-bar in the machine-frame, a sliding block on said bar located normally in the path of a stop-arm on the carriage, a tooth or pawl on said block adapted to normally engage said rack-bar, interlocking connections on said block and carriage, a tripping-pin carried by said block, and a bearing-surface on the machine-frame adapted to be engaged by said pin when the block is partially rotated and to thereby release said tooth or pawl from the rack-bar, said block being when so partially rotated connected with the carriage and free to slide on the rack-bar.

11. The combination with a paper-carriage, of a rack-bar in the machine-frame, a sliding block on said bar located normally in the path of a stop-arm on the carriage, a spring-pressed pawl on the block adapted to normally engage said rack-bar, interlocking connections on said block and carriage, a tripping-pin on said pawl, and a longitudinal bearing-surface on the carriage, said block being adapted to be tilted or partially rotated to carry said pin into engagement with said bearing-surface and at the same time to temporarily lock said block to the carriage.

12. The combination with key-levers, a traveling paper-carriage, and a carriage-actuating spring, of a right-hand margin-stop mechanism comprising a circumferentially-adjustable stop-arm which is actuated by said spring, a locking device for the key-levers which is adapted for actuation by said stop-arm, a left-hand margin-stop mechanism comprising a stop which is normally in the path of the carriage, means affording engagement of said stop with the machine-frame and with the carriage so constructed that when the stop is free from the frame it will be engaged with the carriage, and a key for effecting the release of both of said stop mechanisms.

13. The combination with a paper-carriage, of a rack-bar on the machine-frame, and having rocking movement thereon, a sliding block on said rack-bar, interlocking connections on said block and the carriage, a tooth or pawl on the block adapted to engage said bar, a tripping-pin on said pawl, a bearing-surface on the frame adapted for engagement with said tripping-pin, and a release-key mounted on the frame and acting on said rack-bar to partially rotate the same.

14. The combination with a paper-carriage of a left-hand margin-stop and means affording engagement of said stop with the machine-frame, and carriage so constructed that the stop will be engaged with the frame at one limit of its movement and with the carriage at the opposite limit of its movement, and when in an intermediate position will allow the carriage to pass the same for writing on the left-hand margin.

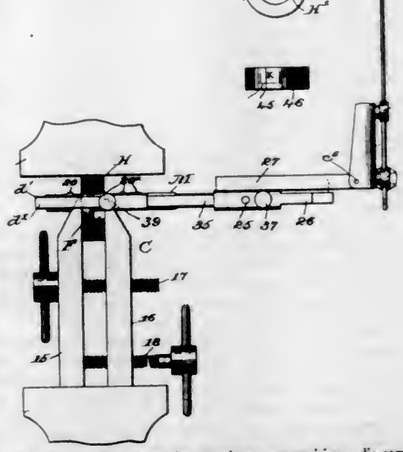
15. The combination with a paper-carriage of a rack-bar on the machine-frame, a sliding block on said bar adapted to be tilted or partially rotated, interlocking connections on the block and carriage, a tooth or pawl on the block adapted to engage the rack-bar, a tripping-pin on the block, a bearing-surface on the frame adapted for engagement with said tripping-pin when the block is in position for interlocking engagement with the carriage, and a stop-arm on the carriage adapted for contact with the block when the latter is disengaged from the carriage, said block and stop-arm being so located that the stop-arm will pass the block without contact therewith when the block is at an intermediate point in its movement.

16. The combination with a paper-carriage, of a rack-bar on the machine-frame, a sliding block on said rack-bar adapted to be tilted or partially rotated, interlocking connections on the block and carriage adapted for engagement when the block is at one limit of its tilting or rocking movement, a tooth or pawl on the block adapted to engage said rack-bar, a tripping-pin on said pawl, a bearing-surface on the frame adapted for engagement with said tripping-pin when the block is in position for interlocking engagement with the carriage, a stop-arm on the carriage adapted for contact with said block when the latter is disengaged from the carriage, but which is adapted to pass the block without contact therewith when said block is in its intermediate position, and a release-key having operative connection with the block for turning the same.

17. The combination with a paper-carriage, of a rack-bar on the machine-frame, a sliding block on said rack-bar adapted to be tilted or partially rotated, interlocking connections on the block and carriage adapted for engagement when the block is at one limit of its tilting or rocking movement, a tooth or pawl on the block adapted to engage said rack-bar, a tripping-pin on said pawl, a bearing-surface on the frame adapted for engagement with said tripping-pin when the block is in position for interlocking engagement with the carriage, a stop-arm on the carriage adapted for contact with said block when the latter is disengaged from the carriage, but which is adapted to pass the block without contact therewith when said block is in its intermediate position, a release-key having operative connection with the block for turning the same, and a stop-pin for limiting the movement of the key, said key being movable on its pivot and adapted to be shifted into and out of position for engagement with said stop-pin.

18. The combination with a paper-carriage, of a rack-bar on the machine-frame having rocking movement thereon, a sliding block on said rack-bar, a pawl on the block provided with a tripping-pin, interlocking connections on the block and carriage, a bearing-surface on the carriage adapted for engagement with said tripping-pin, a stop-arm on the carriage located in position to pass said block when the latter is in an intermediate position, a release-key mounted to slide endwise on a pivot-stud on the machine-frame, and adapted to turn the rack-bar, and a stop-pin located in position for engagement with the release-key when the latter is in one position.

658,736. **RING-STAMPING APPARATUS.** WILLIAM H. FORD, Lowell, Mass., assignor of one-half to Cyrus W. Russell, same place. Filed July 10, 1899. Serial No. 723,263. (No model.)



Claim.—1. A ring-marking attachment, comprising a die-carrying mandrel, means to position and hold a finger-ring in operative position with relation to a die of the mandrel, and a suitable seat for said mandrel.

2. A ring-marking attachment, comprising a die-carrying mandrel, means to support the exterior of said finger-ring, means to seat said mandrel, and means to exert pressure between said ring and mandrel to mark the ring.

3. A ring-marking attachment, comprising a die-carrying mandrel, a seat for the mandrel, and a ring-holder substantially encircling the ring.

4. A ring-marking attachment, comprising a die-carrying mandrel, and a base upon which said mandrel is mounted; combined with means coöperating with said mandrel to aid in positioning the ring over the die to be used.

5. A ring-marking attachment, comprising a die-carrying mandrel, and a base upon which said mandrel is mounted; combined with a position-indicator to indicate the point on the mandrel occupied by the die to be used in marking the ring.

6. A ring-marking attachment, comprising a die-carrying mandrel, and a base in which said mandrel is mounted; combined with adjustable means to locate the ring opposite the die of the mandrel to be used.

7. A ring-marking attachment, comprising a die-carrying mandrel, a holder to hold the ring circumferentially, a clamp to coöperate with said holder, and movable guides located to position the ring relatively to the die to be used.

8. A ring-marking attachment, comprising a die-carrying mandrel, a holder acting on the exterior of the ring, a clamp coöperative with the ring-holder, a seat for the mandrel, and means to force the ring against a die on the mandrel.

9. A ring-marking attachment, comprising a die-carrying mandrel, means to adjust and maintain said ring in desired longitudinal position on said mandrel, means to seat the mandrel, and means to force the ring and mandrel into contact.

10. A ring-marking attachment, comprising a die-carrying mandrel, and a device for circumferentially engaging a ring while a die is acting to mark the ring.

11. A ring-marking attachment, comprising a die-carrying mandrel, a holder for circumferentially engaging a finger-ring, and a position-indicator coöperative with said holder and serving to indicate the position to be occupied by the holder over the mandrel and insure the proper position for the ring to be marked.

12. A ring-marking attachment, comprising a mandrel having a series of dies, a holder adapted to circumferentially engage a finger-ring surrounding said mandrel, said holder having transverse marks upon its periphery, and a position-indicator adjustable to occupy a position opposite any one of the dies on the mandrel.

13. In a ring-marking attachment, a holder encircling the finger-ring to be marked, said holder having a center-mark upon its surface at a distance from its edge to define the position of the mark put upon the ring from the edge of the finger-ring.

14. In a ring-marking attachment, a holder encircling the finger-ring to be marked, said holder having a center-mark upon its surface at a distance from its edge to define the position of the mark put upon the ring from the edge of the finger-ring, and a position-indicator coöperating with said center-mark.

15. In a ring-marking attachment, a ring serving to inclose a finger-ring and having a plurality of transverse grooves constituting indicating-marks to coöperate with the position-indicator to define the distance apart of the marks or impressions made in the ring.

16. In a ring-marking attachment, a clamp to receive between its jaws a finger-ring to be marked, a mandrel surrounded by said ring and provided with a die, means to sustain the exterior of said ring at a point opposite the die of the mandrel, and means to exert pressure upon the clamp to cause the die to act and mark the ring.

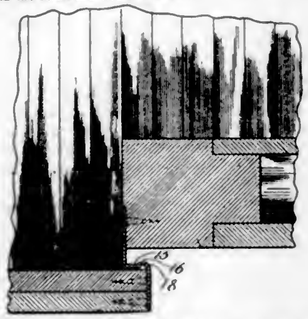
17. A ring-marking attachment, comprising a die-carrying mandrel, and a base upon which said mandrel is mounted; combined with a position-indicator to indicate the point on the mandrel occupied by the die to be used, and guides coöperating with said mandrel to position the ring to be marked.

18. A ring-marking attachment, comprising a base having pivoted upon it a mandrel having suitable dies, said mandrel having pivoted upon it a position-indicator adapted to be adjusted to place its point opposite the die of the mandrel to be used, a holder and a gage supported from said base and adapted to be adjusted relatively each to the other to afford a space for the reception of the ring to be marked.

19. In a ring-marking attachment, a base, a mandrel movably mounted with relation to said base, a plurality of shoulders adapted to occupy a position at one side of the ring to be marked, a plurality of gages adapted to occupy a position at the opposite edge of the ring to be marked, and means to support said shoulders and gages, the mandrel when in working position standing between the individual shoulders and gages, the ring surrounding the mandrel standing between the shoulders on one side and the gages on the other side, the die of the mandrel extending beyond the faces of the mandrel and being thereby to contact with the ring surrounding the mandrel and enable said ring to be seated while the pressure is exerted between the mandrel and the ring to enable the die to mark the ring.

658,737. WEATHER-GUARD FOR FREIGHT-CAR DOORS. JAMES M. HOPKINS, Chicago, Ill., assignor to the Q. & H Company, of Illinois. Filed July 23, 1900. Serial No. 24,529. (No model.)

Claim.—1. In a weather-guard for freight-cars, in combination, a car-body having a doorway and door-post and a bearing for the door projecting beyond the outer face of the post, a plate projecting outwardly from the post and being bent at its outer end backwardly from the doorway, a sliding door for closing the doorway, and a plate projecting inwardly from the rearward end of the door.

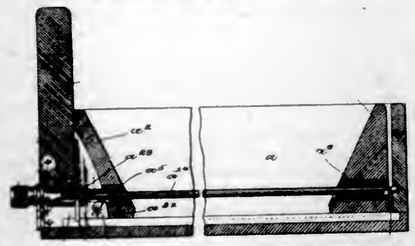


2. In a weather-guard for freight-cars, in combination, a car-body having a doorway and door-post and a bearing for the door projecting beyond the outer face of the post, a plate projecting outwardly from the post and being bent at its outer end backwardly from the doorway and inwardly toward the side of the car-body, a sliding door for closing the doorway, and a plate projecting inwardly from the rearward end of the door.

3. In a weather-guard for freight-cars, in combination, a car-body having a doorway and door-post and a bearing for the door projecting beyond the outer face of the post, a plate projecting outwardly from the post and being bent at its outer end backwardly from the doorway and inwardly toward the side of the car-body, a sliding door for closing the doorway, and a plate projecting inwardly from the rearward end of the door and having the inwardly-projecting portion inclined forwardly.

4. In a weather-guard for freight-cars, in combination, a car-body having a doorway and a door-post flush with the side wall of the body and having its floor extended outwardly across the doorway to serve as a bearing for a sliding door, a plate projecting outwardly from the post and bent at its outer end backwardly from the doorway, a sliding door for closing the doorway, and a plate projecting inwardly from the rearward end of the door.

658,738. LOCK-ROD FOR CARDS. DAVID E. HUNTER, Cambridge, Mass., assignor to the Library Bureau, Boston, Mass. Filed Jan. 27, 1900. Serial No. 2,939. (No model.)



Claim.—1. In a card holder or box, a lock-rod consisting of a single bar or longitudinally-extending member, and coöperating means in the box and on the rod for preventing removal of the latter from the box, said box having upper and lower passages or ways permitting longitudinal movement of said rod in either of them.

2. In a card holder or box, a lock-rod extending longitudinally of the box, an enlargement at the inner end of said rod, and a device slidingly mounted on said rod within the box and against which said enlargement abuts, for preventing the removal of the rod from the box.

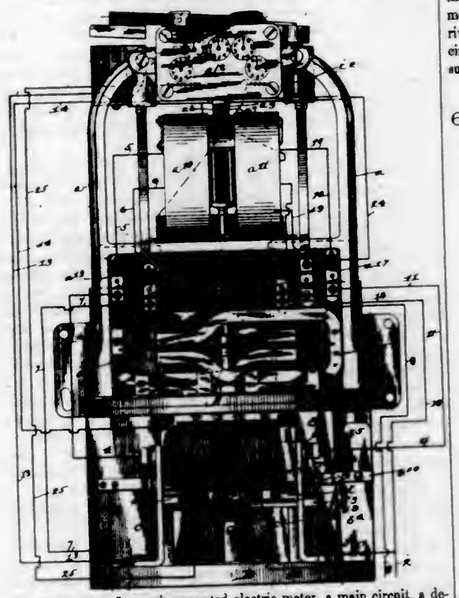
3. In a card holder or box, a lock-rod extending longitudinally of the box, an enlargement at the inner end of said rod, and a device slidingly mounted on said rod, and means retaining said device at the front of the box, said enlargement striking against said device in the operation of the rod, for preventing removal of the latter from the box.

4. In a card-holder, a lock-rod consisting of a single longitudinal wire or member having at its forward end a handle extending outside of the front of the holder and at its rear end a flattened or swaged enlargement.

5. In a card-holder, a lock-rod having secured at its outer end an angularly-shaped hub, and a groove adjacent said hub, said holder having a plate provided with an aperture to receive said hub, and a shoulder or lug to enter said groove, said hub and rod being rotatable in unison, and said hub upon rotation engaging behind said lug to lock said rod in retained position, and a stop adjacent said hub located in said groove coöperating with said lug for limiting the rotary movement of said rod.

6. In a card-holder, a lock-rod movable longitudinally thereof consisting of a single wire or longitudinally-extending part, and an enlargement at the inner end thereof, said holder having an aperture through its front end for the longitudinal movement of said rod, a plate having a vertical switching-slot secured in said front end, a longitudinal way in the bottom of said holder, a vertical slot in the front of the holder communicating with said aperture and said way and in alinement with said switching-slot, and means coöperating with said enlarged end of the rod for preventing removal thereof from the holder.

658,739. COIN-SETTING ELECTRIC METER. FRANK KRAKNER, Chicago, Ill. Filed Nov. 6, 1899. Serial No. 735,946. (No model.)



Claim.—1. In a coin-operated electric meter, a main circuit, a derived circuit adapted to be closed by the instrumentality of a coin, a switch in the main circuit, a magnet for closing said switch, a magnet for operating a toll-measuring device, and a releasing-magnet energized by a circuit closed through the toll-measuring device, substantially as set forth.

2. In a coin-operated electric meter, a main circuit, a derived circuit adapted to be closed by the instrumentality of a coin, a switch in the main circuit, a magnet for closing said switch, and a toll-measuring magnet in a derived circuit, a toll-measuring device and a switch-releasing magnet in another circuit, and a means, operated by the motor mechanism of the meter, for closing the circuit through the said toll-measuring device and the said switch-releasing magnet, substantially as set forth.

3. In a coin-operated electric meter, a main circuit, a switch in the main circuit, a derived circuit containing a switch-closing magnet and a toll-measuring magnet, terminals of said circuit adapted to be electrically connected by a coin, a switch-releasing magnet and a toll-measuring device in a derived circuit, and a traveling circuit-closer operated by the motor mechanism of the meter adapted to close the circuit through the latter derived circuit, substantially as set forth.

4. In a coin-operated electric meter, a main circuit, a switch in the main circuit, a derived circuit containing a switch-closing and a toll-measuring magnet, a derived circuit adapted to be closed and opened by a coin, another derived circuit containing the switch-releasing magnet, and a moving circuit-closer, operated by the motor mechanism of said meter, and adapted to close the circuit through the said switch-releasing magnet, substantially as set forth.

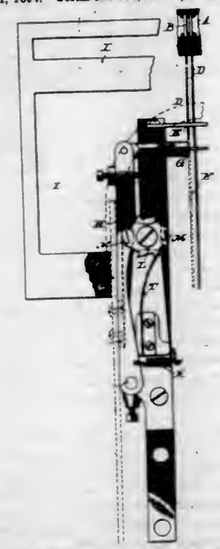
5. In a coin-operated electric meter, a switch-closing magnet, a switch in the main circuit, a toll-setting magnet, an electric circuit containing said magnets, a support for a coin, forming one terminal of said circuit, and a lever within the path of the said coin forming the other terminal of said circuit, said lever adapted to be removed from said path by a magnet in the said circuit when said circuit is closed, substantially as set forth.

6. In a coin-operated electric meter, a main circuit, a switch in the main circuit, a derived circuit, a coin-operated switch for closing said derived circuit, motor mechanism in said derived circuit for closing the switch in the main circuit and for operating a toll-measuring device, another circuit, motor mechanism therein for opening said main-circuit switch, and a traveling contact operated by the index of said meter for closing the latter circuit, substantially as set forth.

7. In a coin-operated electric meter, a main circuit, a switch in the main circuit, a derived circuit containing a switch-closing device, a coin-operated switch for closing said derived circuit, a derived circuit containing a switch-opening device, a circuit containing an indicator, and a circuit-closer adapted to close the latter circuit prior to the time when the circuit containing the switch-opening device is closed, substantially as set forth.

8. In a coin-operated electric meter, a main circuit, a switch in the main circuit, a derived circuit containing switch-closing and meter-setting mechanism, terminals in said circuit adapted to be closed by a coin, a derived circuit containing switch-opening mechanism and terminals in said circuit adapted to be closed by the motor mechanism of the said meter, substantially as set forth.

658,740. LINOTYPE-MACHINE. OTTMAR MERGENTHALER, Baltimore, Md.; the Safe Deposit and Trust Co., Baltimore, and Abner Greenleaf, executors of said Mergenthaler, deceased, assignors, by mesne assignments, to the Mergenthaler Linotype Company, New York, N. Y. Filed May 11, 1897. Serial No. 636,084. (No model.)



Claim.—1. In a linotype-machine two escapement devices for discharging matrices, a single actuating device, and connections with a periodically-operated part of the machine to automatically connect the actuating device with the two escapement devices alternately.

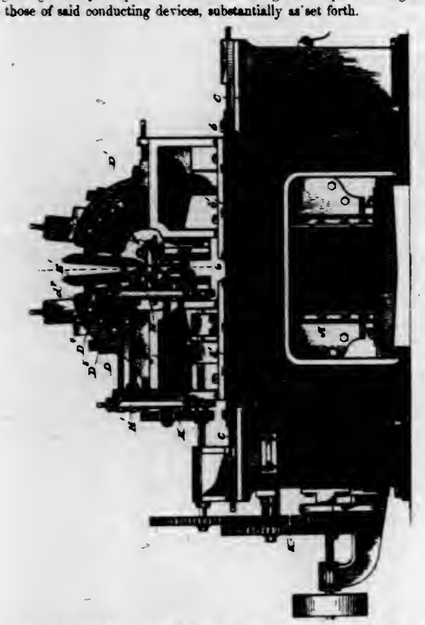
2. In a linotype-machine, two escapement-rods, the single key-bar, the shifting guide and automatic mechanism to move the guide whereby the key-bar is automatically caused to actuate the two escapement-rods alternately.

3. In a linotype-machine, the combination of two escapement-rods, a key-bar, a shifting guide for said bar and automatic connections from said guide to the assembling-elevator.

4. In a linotype-machine, in combination with the key-bar its movable guide, the rock-shaft and arms for moving said guide, the rotary hub and ratchet-wheel for turning the same and pawl connected to the assembling-elevator and acting automatically to turn the ratchet-wheel.

658,741. ELECTRIC WELDING-MACHINE. OTTO PARPART, Cleveland, Ohio, assignor, by mesne assignments, to the Standard Welding Company, same place. Filed Jan. 31, 1898. Serial No. 668,527. (No model.)

Claim.—1. In a tube-welding machine, the combination of two electric-current-conducting devices respectively connected with opposite electric poles and adapted to directly press respectively on the opposite edge portions of the butt-joint of a tube, and two rolls tending to force said butt edges together by compression of the tube along lines of pressure angular to those of said conducting devices, substantially as set forth.



2. In a tube-welding machine, the combination of two electric-current-conducting devices respectively connected with opposite electric poles and adapted to have contact respectively with the opposite edge portions of the butt-joint of a tube while free from contact with such joint, and two rolls located respectively on opposite sides of said conducting devices and tending to force said butt edges together, substantially as set forth.

3. In a tube-welding machine, the combination of two electric-current-conducting devices respectively connected with opposite electric poles and adapted to have contact respectively with the opposite edge portions of the butt-joint of a tube, and two rolls adapted to compress such tube between them and thereby force said joint edges together, such conducting devices and rolls relatively located so that a plane right angular to the line of movement of the tube may pass through them all, substantially as set forth.

4. In a tube-welding machine, the combination of two electric-current-conducting rolls respectively connected with opposite electric poles and tending to press together the opposite edges of the butt-joint of a tube by directly bearing respectively upon such two edge portions but not upon said joint, and two rolls tending to force together said edges by compression of the tube between them along lines of pressure angular to those of said conducting-rolls, substantially as set forth.

5. In a tube-welding machine, the combination of two electric-current-conducting rolls respectively connected with opposite electric poles and adapted to press respectively on the opposite edge portions of the butt-joint of a tube, while free from contact with such joint, and two other rolls located respectively on opposite sides of said conducting-rolls and adapted to compress the tube between them, such four rolls being relatively located so that a plane right angular to the line of movement of the tube may pass through them all, substantially as set forth.

6. In a tube-welding machine, the combination of two electric-current-conducting rolls respectively connected with opposite electric poles and tending to press together the opposite edges of the butt-joint of a tube by directly bearing respectively upon such two edge portions while free from bearing upon such joint, and two other rolls located respectively on opposite sides of said conducting-rolls and tending to force said edges together by compression of the tube between them along lines of pressure angular to those of said conducting-rolls, such four rolls being located so that a plane right angular to the line of movement of the tube may pass through them all; the construction and insulation of said members excluding passage of said electric current otherwise than by said conducting-rolls, each of which latter has contact with only its appropriate one of said two edge portions, and by such edge portions transmitting said current across said joint, substantially as set forth.

7. In a tube-welding machine, the combination of two electric-current-conducting rolls respectively connected with opposite electric poles and adapted to bear respectively upon opposite edge portions of the butt-joint of a tube, but not upon such joint, and two other rolls electrically disconnected from said conducting-rolls and adapted to partially inclose the tube respectively to opposite sides of said conducting-rolls at points farther from the butt-joint than are said conducting-rolls, and adapted to exert feeding force as well as compressing force upon the tube, substantially as set forth.

8. In a tube-welding machine, the combination of two electric-current-conducting rolls respectively connected with opposite electric poles and adapted to have contact respectively with the opposite edge portions of the butt-joint of a tube, and two rolls adapted to compress such tube between them, the axial plane of said conducting-rolls across the line of movement of the tube being before the axial plane of said compression-rolls across such line, substantially as set forth.

9. In a tube-welding machine, the combination of two electric-current-conducting rolls respectively connected with opposite electric poles and adapted to have contact respectively with the opposite edge portions of the butt-joint of a tube, and two rolls adapted to compress such tube between them, the axial plane of said conducting-rolls across the line of movement of the tube being before the axial plane of said compression-rolls across such line, such four rolls being located so that a plane right angular to the line of movement of the tube may pass through them all, substantially as set forth.

10. In a tube-welding machine, the combination of two electric-current-conducting devices having a clear space between each other and respectively connected with opposite electric poles and adapted to have contact respectively with the opposite edge portions of the butt-joint of a tube, and two rolls located respectively on opposite sides of said conducting devices and adapted to compress the tube between them, together with a joint-guide located in a plane passing through said clear space between said conducting devices and adapted by engagement with the joint edges to cause each of such edge portions to have contact with only its appropriate one of said conducting devices, substantially as set forth.

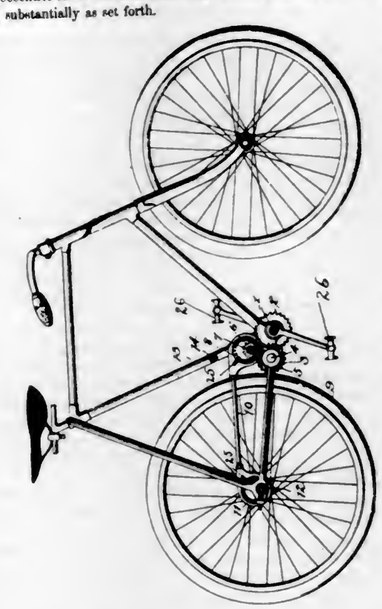
11. In a tube-welding machine, the combination of two electric-current-conducting devices having a clear space between each other and respectively connected with opposite electric poles and adapted to have contact respectively with the opposite edge portions of the butt-joint of a tube, and two rolls located respectively on opposite sides of said conducting devices and adapted to compress the tube between them, together with a joint-guide located before said conducting devices in a plane passing centrally through said clear space between them and adapted by engagement with the joint edges to cause the joint to be maintained in proper position relatively to said conducting devices, substantially as set forth.

12. In a tube-welding machine, the combination of two electric-current-conducting devices respectively connected with opposite electric poles and adapted to have contact respectively with the opposite edge portions of the butt-joint of a tube, two rolls located respectively on opposite sides of said conducting devices and adapted to compress the tube between them, and draft means tending to pass the tube between said compression-rolls, substantially as set forth.

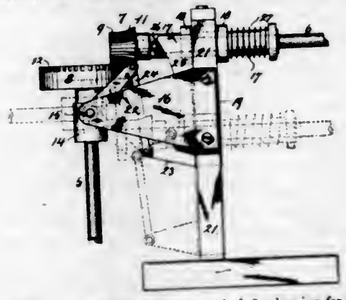
13. In a tube-welding machine, the combination of two electric-current-conducting rolls having a clear space between each other and respectively connected with opposite electric poles and adapted to press respectively on the opposite edge portions of the butt-joint of a tube, two rolls located respectively on opposite sides of said conducting-rolls and adapted to compress the tube between them, a joint-guide located before said conducting-rolls and in a plane passing centrally through said clear space between them and adapted to engage with the joint edges, draft means tending to pass the tube between the compression-rolls, the axial plane of the conducting-rolls across the line of movement of the tube being before the axial plane of the compression-rolls across such line, said four rolls being located so that a plane right angular to the line of movement of the tube may pass through them all, the construction and insulation of said members excluding passage of said electric current otherwise than by said conducting-rolls, each of which latter has contact with only its appropriate one of said two edge portions, and by such edge portions transmitting said current across said joint, substantially as set forth.

658,742. BICYCLE. FRANCIS J. STALLINGS, Effingham, Ill., assignor of one-eighth to Caroline Stallings, same place. Filed Nov. 22, 1897. Serial No. 659,410. (No model.)

Claim.—The combination with a main frame of the machine, a pedal-shaft journaled in the hanger thereof, said pedal-shaft having a drive-gear secured thereon at or near its center, of a counter-shaft having a pinion thereon which meshes with the gear on the pedal-shaft, a shaft having eccentrics on each end thereof, gearing for communicating motion from the counter-shaft to said eccentric-shaft, eccentric-straps surrounding these eccentrics, balls interposed between the peripheries of said eccentrics and the straps, a ring screwed into each eccentric-strap for retaining the balls in place therein, adjustable means secured to the straps and engaging the said rings for retaining them in position, the rear-wheel axle having eccentrics thereon, eccentric-straps, balls, rings screwed in the straps, for retaining the balls in position, means for locking said rings in the straps and pitmen extending from the straps on the rear-wheel axle to the straps on the eccentric-shafts for communicating motion from the latter to the former, substantially as set forth.



658,743. GEAR-WHEEL TRANSMISSION. ERWIN VON TRAUTVETTER, Cincinnati, Ohio, assignor of three-fourths to Charles R. Babbitt, Winthrop S. Sterling, and Christian R. Holmes, same place. Filed Dec. 19, 1898. Renewed July 28, 1900. Serial No. 25,142. (No model.)



Claim.—1. The combination of a shaft 5, a bearing for it, trunnions whereby these two are pivotally supported, a shaft 6, a sleeve in which it is supported, a bearing for this sleeve in which this latter with shaft 6, is supported in a manner to furnish a sliding adjustment for the two in a direction longitudinal with shaft 6, gear-wheels at the ends of the two shafts capable of transmitting motion from one to the other, a general frame structure to which the means supporting the shafts are connected for the purpose of establishing engagement of the gear-wheels at their ends, the attachment of the means supporting one of the shafts having also an additional sliding adjustment for the purpose of maintaining engagement of the gear-wheels in the adjusted positions of the shafts.

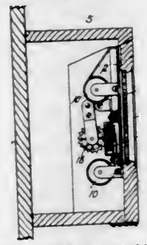
2. A pair of gear-wheels 7 and 8 intended and designed to transmit motion at an adjustable angle, wheel 7 having spur-teeth 9 and bevel-teeth 11 and wheel 8 having crown-teeth 12 and internal teeth 13, the spur-teeth being capable of engaging the internal teeth and the bevel-teeth being capable of engaging the crown-teeth, all as shown and described.

3. In a construction for transmitting motion from one shaft to another by means of gear-wheels where such shafts are supported at an angle to each other which angle is adjustable, the object being to maintain said gear-wheels in engagement during and after adjustment, the combination of a shaft 5, a bearing 14 for it, which latter is pivotally supported, a shaft 6, a sleeve 17 forming a bearing for it, a bearing for sleeve 17 within which the latter is capable of longitudinal movement, a support for this sleeve being free to move with this latter in a direction at right angles to shaft 6, gear-wheels at the adjacent ends of the shafts and means connecting these latter in a manner that pivotal adjustment of shaft 5, or adjustment of shaft 6, causes their adjacent ends to follow each other automatically for the purpose of keeping the gear-wheels thereat in mesh.

4. In a construction for transmitting motion from one shaft to another by means of gear-wheels where such shafts are supported at an angle to each other which angle is adjustable, the object being to maintain said gear-wheels in engagement during adjustment, the combination of a shaft 5, a bearing 14 for it, which latter is pivotally supported, a shaft 6, a sleeve 17 forming a bearing for it, a bearing for sleeve 17, within which the latter is capable of longitudinal movement, a support for this sleeve, being free to move with this latter in a direction at right angles to the shaft supported thereby, gear-wheels at the ends of the adjacent shafts, links connecting their supports in a manner that adjustment of one of these supports causes the other support to adjust itself correspondingly, carrying thereby its shaft with it, engagement of the gear-wheels during such adjustment being maintained by the independent longitudinal adjustment of shaft 6, which is capable of moving in the direction of its axis and curved guides controlling this movement.

5. In a construction for transmitting motion from one shaft to another by means of gear-wheels where such shafts are supported at an angle to each other, which angle is adjustable, the object being to establish engagement of said gear-wheels after adjustment, the combination of two shafts with gear-wheels at their adjacent ends, bearings for these shafts, supports for these bearings, the manner of attachment being as to one bearing to permit pivotal adjustment for it on its support and leaving the other free to move longitudinally within its support, an extension on each of these supports of the shaft-bearings, such two extensions being adjustably connected to each other and means to hold all adjustable parts in their adjusted positions.

658,744. INDICATING DEVICE. CHARLES D. WEAVER, Greeley, Colo. Filed Jan. 15, 1900. Serial No. 1,577. (No model.)



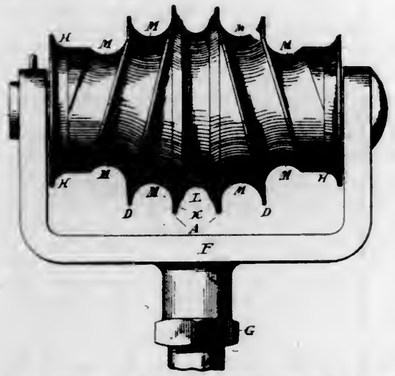
Claim.—1. The combination with a suitable support, of two rollers journaled therein, an intelligencer-strip mounted on the rollers and arranged to travel by turning one of them, a time-indicating device located behind said strip which is provided with an opening through which the said device may be exposed at will.

2. The combination with a suitable support of rolls journaled therein and arranged to be operated from the outside of the support, an intelligencer-strip mounted on said rolls, the support being provided with an opening in front of the strip, a panel attached to the support in the rear of said opening, and in front of which said strip is adapted to move, a dial mounted on said support behind the intelligencer-strip, and provided with movable hands, the intelligencer-strip being provided with an opening to expose the clock-dial when the latter is needed, the arrangement being such that the said dial is concealed at other times.

658,745. TROLLEY-WHEEL. DAVID F. L. JONES, Columbus, Ga. Filed Aug. 12, 1899. Serial No. 727,030. (No model.)

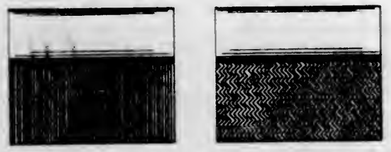
Claim.—1. In grooved trolley-wheels, a conoidal sleeve bored with a central circular hole adapted to receive and fit closely around a tube secured in the center of the side face of a trolley-wheel disk; the larger end of said sleeve being adapted to fit against said disk side face, and the smaller end of said sleeve being encircled by a groove having an outer flange, a flat-

tened bottom and no inner flange; said sleeve being also encircled by a helical channel extending spirally around it from the aforesaid smaller end groove to the larger end of said sleeve; all being so adapted that when said sleeve has been slipped on said tube up to said disk side face, said spiral channel shall extend from the aforesaid smaller end groove into the disk-groove; all substantially as described.



2. In a trolley-wheel, the whole combination, embracing; a trolley-wheel disk encircled by a groove adapted to receive and travel on a wire, a conoid, concentric and turning with and having its larger end secured against one side face of said disk, said conoid having its smaller end encircled by a groove provided with an outer flange, a flattened bottom and no inner flange; said conoid being also surrounded by a right-handed helical spiral channel extending from said end groove into the groove of the aforesaid disk; said end groove being adapted, when by any cause the wire is thrown out from said disk-groove, to catch said wire, to retain it, and to deliver it into the spiral channel aforesaid; and said spiral channel being adapted either to catch said wire when it is thrown off from the disk-groove or to receive it from the end groove, and to return said wire to the disk-groove when the car is running forward or to deliver said wire to the end groove when the car is backing; a conoid, concentric and turning with and having its larger end secured against the other side face of said disk; said conoid having its smaller end encircled by a groove provided with an outer flange, a flattened bottom and no inner flange; said conoid being also surrounded by a left-handed helical spiral channel extending from said end groove into the groove of the aforesaid disk; said end groove being adapted, when by any cause the wire is thrown out from said disk-groove, to catch said wire, to retain it and to deliver it into the spiral channel aforesaid; and said spiral channel being adapted, either to catch said wire when it is thrown off from the disk-groove or to receive it from the end groove, and to return said wire to the disk-groove when the car is running forward or to deliver said wire to the end groove when the car is backing; all substantially as described.

658,746. MERCHANTABLE PRINTED CLOTH OF CHANGEABLE COLOR. CHARLES H. HOPE, Providence, R. I. Filed June 6, 1900. Serial No. 19,323. (Specimens.)

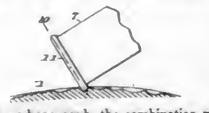


Claim.—1. A merchantable piece of cloth, having a glossy calendered surface, upon which are printed lines of a contrasting color from that of the cloth, and of a sufficient degree of fineness and nearness to each other, to produce the effect of changeable color when the surface of the cloth is viewed at different angles of light and shade, the deposited pigment or coloring-matter of the printed lines being retained above the glossy surface of the cloth, substantially as described.

2. A merchantable piece of cloth, having a glossy calendered surface, upon which are printed lines of a contrasting color from that of the cloth, and of a sufficient degree of fineness and nearness to each other, to produce the effect of changeable color when viewed at different angles of light and shade, the deposited pigment or coloring-matter of the printed lines being retained above the glossy surface, and also having a figured ornamentation printed upon the cloth, substantially as described.

REISSUES.

11,857. PHONOGRAPH. THOMAS A. EDISON, Llewellyn Park, N. J. Filed Aug. 18, 1900. Serial No. 24,246. Original No. 652,457, dated June 26, 1900.



Claim.—1. In a phonograph, the combination with a phonogram having a record thereon formed of a series of more or less connected gouges or waves with rounded sides and bottom, some of said waves representative of fundamental tones and principal overtones being characterized by a greater width than length, of a reproducing device having a curved bearing-surface engaging the bottom and side walls of the record and of a form adapted to enter and accurately track all of such representative waves, substantially as and for the purposes set forth.

2. In a phonograph, the combination with a phonogram having a record thereon formed of a series of more or less connected gouges or waves with rounded sides and bottom, some of said waves representative of fundamental tones and principal overtones being characterized by a greater width than length, of a reproducing device having a curved bearing-surface which engages the record-groove and reduced in its longitudinal dimension, whereby the reproducing-surface may accurately track a wave having a less length than width, substantially as set forth.

3. In a phonograph, the combination with a phonogram having a record thereon formed of a series of more or less connected gouges or waves with rounded sides and bottom, some of the waves representative of fundamental tones and principal overtones being characterized by a greater width than length and said waves differing from each other in the slope of their descending and ascending walls, of a reproducing device having a curved bearing-surface engaging the sides and bottom of the record and of a form adapted to enter and accurately track all of such representative waves, substantially as and for the purposes set forth.

4. In a phonograph, the combination with a phonogram having a record thereon formed of a series of more or less connected gouges or waves with rounded sides and bottom, some of the waves representative of fundamental tones and principal overtones being characterized by a greater width than length, of a reproducing device having a curved bearing-surface engaging the sides and bottom of the record to accurately track all of such representative waves, said reproducing device being of such a form as not to engage simultaneously the descending and ascending slopes of the waves, substantially as set forth.

5. In a phonograph, the combination with a phonogram having a record thereon formed of a series of more or less connected gouges or waves with rounded sides and bottom, some of said waves being characterized by a greater width than length, of a cylindrical reproducing device placed at an angle to the record and with its lower edge engaging the sides and bottom of the record, substantially as set forth.

6. In a phonograph, the combination with a phonogram having a record thereon formed of a series of more or less connected gouges or waves with rounded sides and bottom, some of said waves being characterized by a greater width than length, of a cylindrical reproducing device having a rounded bottom edge which engages the sides and bottom of the record, substantially as set forth.

7. As a new article of manufacture, an improved reproducer for phonographs, having a curved engaging edge, said edge being curved longitudinally of the record in a smaller radius than at right angles thereto, substantially as set forth.

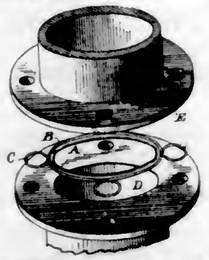
8. As a new article of manufacture, a cylindrical reproducer maintained in an inclined position and having its bottom edge rounded for engagement with the record, substantially as set forth.

9. An improved phonograph-reproducer, consisting of a cylinder having at one end a rounded bead or rib, projecting beyond the periphery of the cylinder, which rib forms the bearing-surface of the reproducer, substantially as set forth.

11,858. GASKET OR PACKING. CHARLES H. MERWARTH, South Bethlehem, Pa., assignor to the Merwarth Metallic Gasket Company, same place. Filed May 5, 1900. Serial No. 15,657. Original No. 605,891, dated June 21, 1898.

Claim.—1. A packing for steam and other joints comprising a portion of soft metal that is adapted to be compressed against the surface to be packed, and a metal holder or retaining portion of a different nature from the soft-metal portion and separate from the part to be packed, substantially as and for the purpose described.

2. A packing for steam and other joints comprising a portion of soft metal that is adapted to be compressed against the surface to be packed, and a portion of metal of different nature from the soft-metal portion and separate from the part to be packed and that sustains the soft metal against any undue pressure, substantially as and for the purpose described.



3. A packing for steam and other joints comprising a portion of soft metal that is adapted to be compressed against the surface to be packed, and a metal holder or retaining portion of a different nature from the soft-metal portion and separate from the part to be packed, the soft-metal portion being unconfined on the side which is exposed to fluid-pressure, substantially as and for the purpose described.

4. A packing for steam and other joints comprising a soft-metal packing-ring, and a metal retaining or holding ring, of a different nature from the soft-metal ring and separate from the part to be packed, substantially as and for the purpose described.

5. A packing for steam and other joints comprising a soft-metal packing-ring and a metal holder or retaining ring, of a different nature from the soft-metal ring and separate from the part to be packed, the packing-ring having greater thickness than the holder or retaining-ring, substantially as and for the purpose described.

6. A packing for steam and other joints comprising a metal inner ring and a metal outer ring, the inner ring being of soft metal and having greater thickness than the outer ring, the outer ring being of a different nature from the inner ring and separate from the part to be packed, substantially as and for the purpose described.

7. A packing for steam and other joints comprising means for packing such joint and a centering eye or eyes attached to said packing means, said eye or eyes being thinner than said packing means, substantially as and for the purpose described.

8. A packing for steam and other joints, comprising a packing-ring, a holder or retaining-ring, and centering means, said holder or retaining-ring being thinner than such packing-ring, substantially as and for the purpose described.

9. A packing for steam and other joints comprising a packing-ring, a holder or retaining-ring, and centering means, said holder or retaining-ring and said centering means being thinner than the packing-ring, substantially as and for the purpose described.

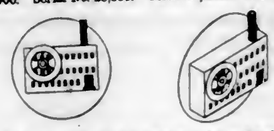
10. A packing for steam and other joints, comprising two soft-metal packing-rings, one placed within the other, and a metal holder or retaining means interposed between the packing-rings and closely encircling the inner packing-ring, substantially as and for the purpose described.

11. A packing for steam and other joints comprising two soft-metal packing-rings, one placed within the other, and a holder or retaining-ring interposed between the packing-rings, said packing-rings being thicker than the holder or retaining-ring, substantially as and for the purpose described.

12. A packing for steam and other joints, comprising two soft-metal packing-rings, one placed within the other, a holder or retaining-ring within which the inner packing-ring is received, and centering-eyes occupying the space between the holder or retaining-ring and the outer packing-ring, substantially as and for the purpose described.

DESIGNS.

33,236. BADGE. SAMUEL MAJOR BEAHR, Cincinnati, Ohio. Filed July 30, 1900. Serial No. 25,355. Term of patent 3½ years.



Claim.—The design for a badge substantially as herein shown and described.

33,237. COVER FOR PUFF-BOXES OR SIMILAR ARTICLES. THEODORE W. FOSTER, Providence, R. I. Filed Aug. 24, 1900. Serial No. 27,954. Term of patent 7 years.



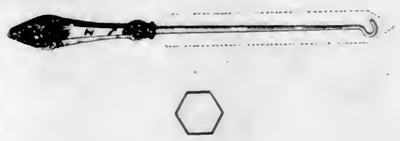
Claim.—The design for the cover of a puff-box or similar article as herein shown and described.

33,238. BACK FOR BRUSHES. THEODORE W. FOSTER, Providence, R. I. Filed Aug. 24, 1900. Serial No. 27,955. Term of patent 7 years.



Claim.—The design for the back of a brush substantially as herein shown and described.

33,239. HANDLE FOR BUTTON-HOOKS OR SIMILAR ARTICLES. THEODORE W. FOSTER, Providence, R. I. Filed Aug. 24, 1900. Serial No. 27,956. Term of patent 7 years.



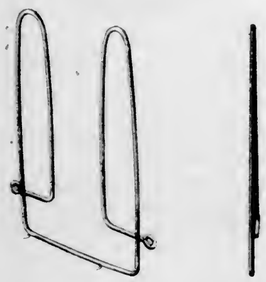
Claim.—The design for the handle of a button-hook or similar article herein shown and described.

33,240. KNIFE. FREDERICK FERDINAND WIEHL, Chattanooga, Tenn. Filed June 14, 1900. Serial No. 20,373. Term of patent 3½ years.



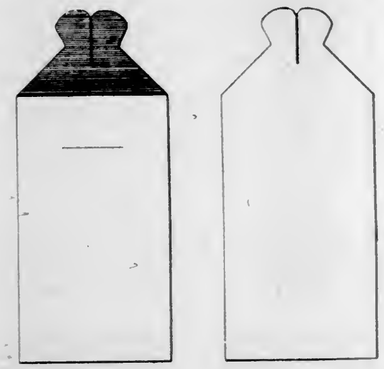
Claim.—The design for a knife, substantially as shown and described.

33,241. NEWSPAPER AND LETTER HOLDER. ELAM A. GROSS, Camden, N. J. Filed Aug. 30, 1900. Serial No. 28,610. Term of patent 14 years.



Claim.—The design for a newspaper and letter holder, herein shown and described.

33,242. ENVELOP. EDWARD E. PINKERTON, Chicago, Ill. Filed Aug. 24, 1900. Serial No. 27,957. Term of patent 14 years.



Claim.—The design for an envelop, substantially as herein shown and described.

33,243. BOW-SPRING FOR EYEGLASSES. LEO F. ADT, Troy, N. Y. Filed Aug. 13, 1900. Serial No. 27,350. Term of patent 14 years.



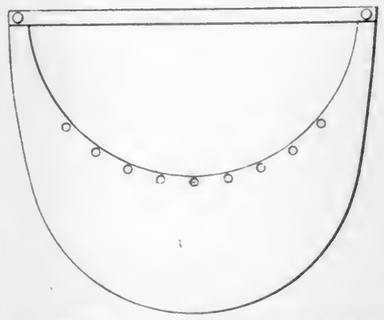
Claim.—The design for a bow-spring for eyeglasses as herein shown and described.

33,244. BOW-SPRING FOR EYEGLASSES. LEO F. ADT, Troy, N. Y. Filed Aug. 13, 1900. Serial No. 27,351. Term of patent 14 years.



Claim.—The design for a bow-spring for eyeglasses, as herein shown and described.

33,245. EYE-SHADE. WILLIAM F. MAHONY, Washington, D. C., assignor of one-third to Charles H. Eldencur, same place. Filed Nov. 23, 1899. Serial No. 738,112. Term of patent 7 years.



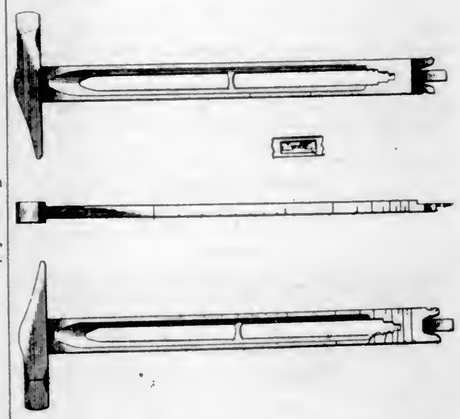
Claim.—The design for an eye-shade substantially as herein shown and described.

33,246. SYRINGE-NOZZLE. WALTER H. PUMPHREY, New York, N. Y. Filed Aug. 10, 1900. Serial No. 26,534. Term of patent 14 years.



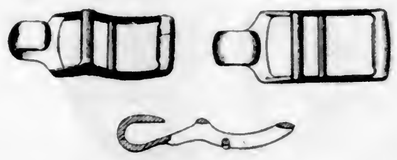
Claim.—The design for syringe-nozzle herein shown and described.

33,247. TOOL. NILS H. CEDERQUIST, Chicago, Ill. Filed Aug. 6, 1900. Serial No. 26,097. Term of patent 3½ years.



Claim.—The design for a tool, substantially as herein shown and described.

33,248. BUCKLE-FRAME. WILLIAM A. SCHLEICHER, Cleveland, Ohio. Filed Apr. 19, 1900. Serial No. 13,544. Term of patent 14 years.



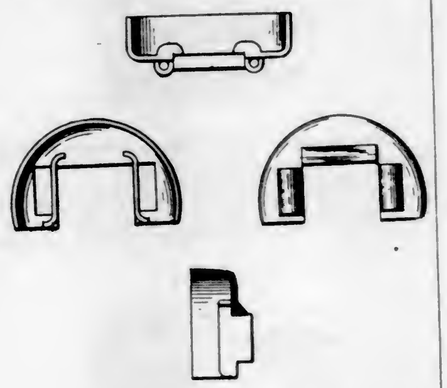
Claim.—The design for a buckle-frame substantially as herein shown and described.

33,249. LUG FOR VEHICLE-TIRES. ELEAZER KEMPSHALL, Newton, Mass., assignor, by mesne assignments, to the Rubber Tire Company of America, New York, N. Y. Filed Aug. 22, 1899. Serial No. 728,130. Term of patent 14 years.



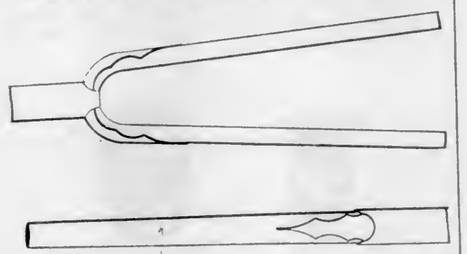
Claim.—The design for a lug for vehicle-tires substantially as shown and described.

33,250. SAND-BAND. WILLIS M. FARR, Dowagiac, Mich. Filed Aug. 18, 1900. Serial No. 27,349. Term of patent 14 years.



Claim.—The design for a sand-band herein shown and described.

33,251. FORK FOR BICYCLES OR LIKE TUBULAR FRAMES. ALBERT M. PRICE, Chicago, Ill., assignor to William H. Fauber, same place. Filed Oct. 7, 1899. Serial No. 732,978. Term of patent 7 years.



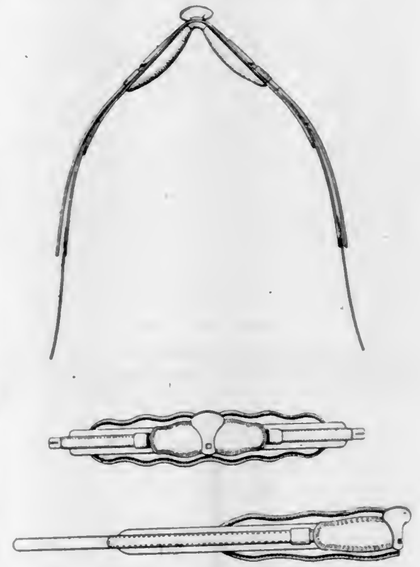
Claim.—The design for a fork for bicycles and like tubular frames, substantially as herein shown and described.

33,252. OIL-CUP. THOMAS WASHINGTON MILLER, Washington, D. C. Filed July 30, 1900. Serial No. 25,354. Term of patent 3½ years.



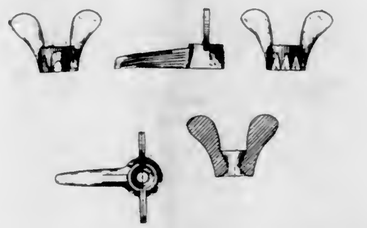
Claim.—The design for an oil-cup substantially as herein shown and described.

33,253. HARNESS-SADDLE. CHARLES M. CRANE, Canton, Ohio, assignor to the Gilliam Manufacturing Company, same place. Filed Aug. 25, 1900. Serial No. 28,078. Term of patent 7 years.



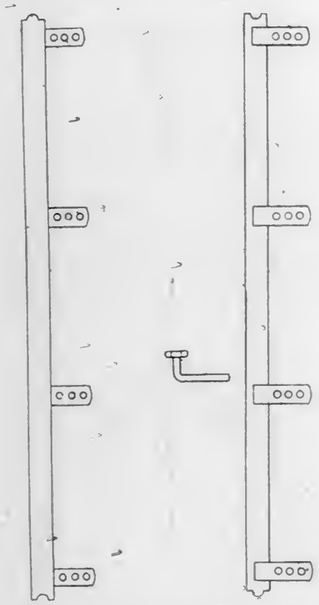
Claim.—The design for a harness-saddle, substantially as herein shown and described.

33,254. LATCHING-LEVER. WILLIAM ARTHUR FEARN, Columbus, Ohio. Filed Aug. 27, 1900. Serial No. 28,260. Term of patent 7 years.



Claim.—The design for a latching-lever, substantially as herein shown and described.

33,255. DOOR-HANGER TRACK. PHILIP A. MYERS, Ashland, Ohio, assignor to F. E. Myers & Brother, same place. Filed July 18, 1900. Serial No. 24,080. Term of patent 14 years.



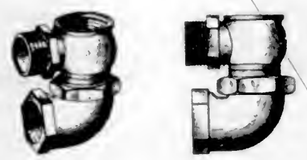
Claim.—The design for a door-hanger track, herein shown and described.

33,256. LAMP-POST. FRED A. MANSFIELD, Philadelphia, Pa. Filed July 5, 1900. Serial No. 22,638. Term of patent 14 years.



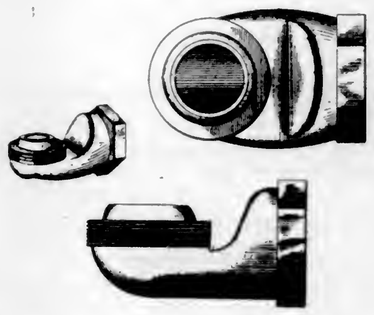
Claim.—The design for a lamp-post substantially as herein shown and described.

33,257. RADIATOR-VALVE BODY. JOHN T. KELLY, New York, N. Y., assignor of one-half to George M. Jones, Pittsburg, Pa. Filed Mar. 28, 1900. Serial No. 10,557. Term of patent 14 years.



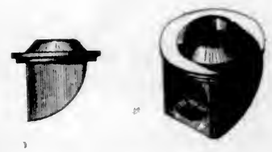
Claim.—The design for a radiator-valve body herein shown and described.

33,258. COUPLING MEMBER FOR RADIATOR-VALVES. JOHN T. KELLY, New York, N. Y., assignor of one-half to George M. Jones, Pittsburg, Pa. Filed Mar. 28, 1900. Serial No. 10,558. Term of patent 14 years.



Claim.—The design for a coupling member for radiator-valves herein shown and described.

33,259. COUPLING MEMBER FOR RADIATOR-VALVES. JOHN T. KELLY, New York, N. Y., assignor of one-half to George M. Jones, Pittsburg, Pa. Filed Mar. 28, 1900. Serial No. 10,559. Term of patent 14 years.



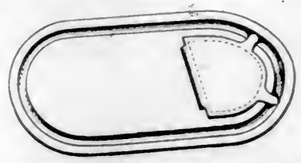
Claim.—The design for a coupling member for radiator-valves herein shown and described.

33,260. COUPLING MEMBER FOR RADIATOR-VALVES. JOHN T. KELLY, New York, N. Y., assignor of one-half to George M. Jones, Pittsburg, Pa. Filed Mar. 28, 1900. Serial No. 10,560 Term of patent 14 years.



Claim.—The design for a coupling member for radiator-valves herein shown and described.

33,261. RANGE-RESERVOIR TOP PLATE. FREDERICK W. JUDD, Cleveland, Ohio, assignor to the Wrought Iron Range Company, St. Louis, Mo. Filed Feb. 26, 1900. Serial No. 6,638. Term of patent 14 years.



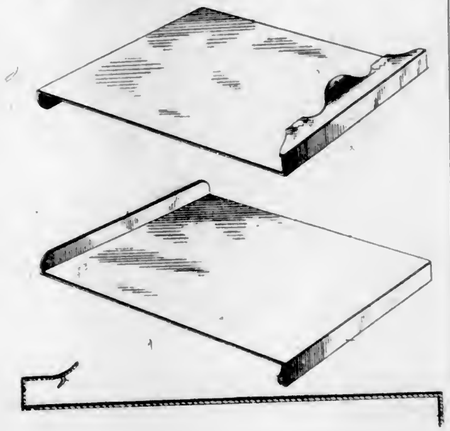
Claim.—The design for a range-reservoir top plate, as herein shown and described.

33,262. STOVE. GEORGE M. COCKE and EMIL SEIDEL, Milwaukee, Wis., assignors to the Fuller-Warren Company, same place. Filed Aug. 27, 1900. Serial No. 28,258. Term of patent 7 years.



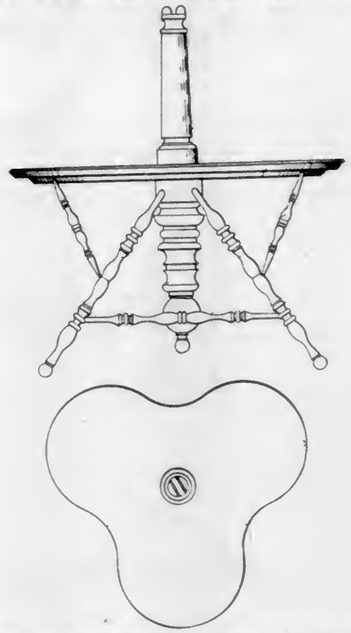
Claim.—The design for a stove as herein shown and described.

33,263. KNEADING-BOARD. FRED W. ARNOLD, Cambridge, Ohio, assignor of one-half to Robert T. Scott, same place. Filed Aug. 21, 1900. Serial No. 27,627. Term of patent 14 years.



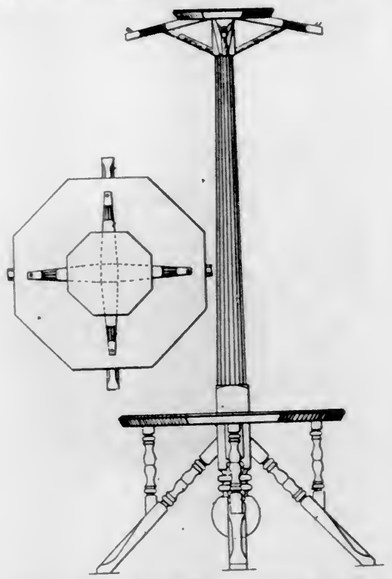
Claim.—The design for a kneading-board as herein shown and described.

33,264. JAR-STAND. MADISON W. REEVES, Sayre, Pa. Filed Aug. 30, 1900. Serial No. 28,608. Term of patent 7 years.



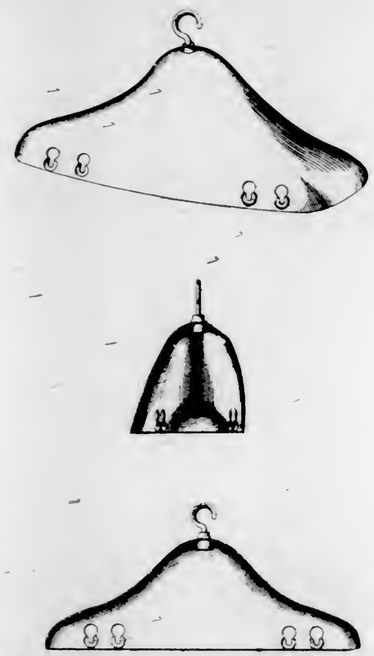
Claim.—The design for a jar-stand substantially as herein shown and described.

33,265. BANANA-STAND. MADISON W. REEVES, Sayre, Pa. Filed Aug. 30, 1900. Serial No. 28,609. Term of patent 7 years.



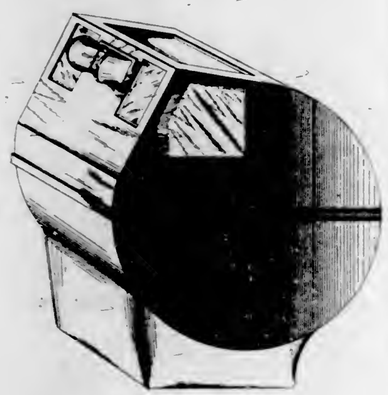
Claim.—The design for a banana-stand substantially as herein shown and described.

33,266. COAT AND PANTS HANGER. HUBERT O. LE BLANC, Springfield, Mo. Filed Aug. 10, 1900. Serial No. 26,536. Term of patent 14 years.



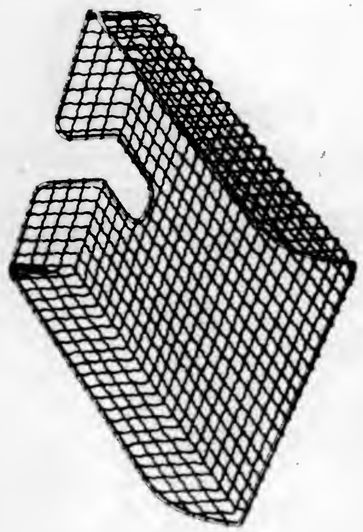
Claim.—The design for a coat and pants hanger, substantially as shown.

33,267. PICTURE-EXHIBITING CABINET. MORRIS BORSODI, Cincinnati, Ohio, assignor to the Leo Canda Company, same place. Filed July 26, 1900. Serial No. 24,949. Term of patent 3½ years.



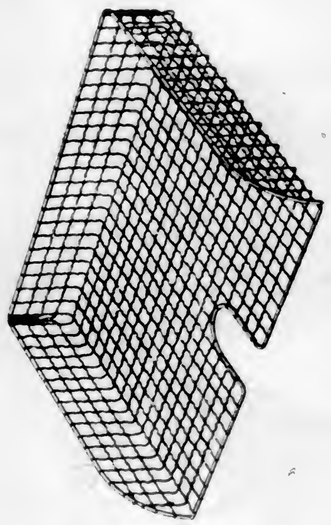
Claim.—The design for a picture-exhibiting cabinet, substantially as shown and described.

33,268. BASKET. GEORGE K. RIX, Chicago, Ill., assignor to the Yawman & Erbe Manufacturing Company, Rochester, N. Y. Filed Aug. 28, 1900. Serial No. 28,361. Term of patent 14 years.



Claim.—The design for a basket substantially as herein shown and described.

33,269. BASKET. GEORGE K. RIX, Chicago, Ill., assignor to the Yawman & Erbe Manufacturing Company, Rochester, N. Y. Filed Aug. 28, 1900. Serial No. 28,362. Term of patent 14 years.



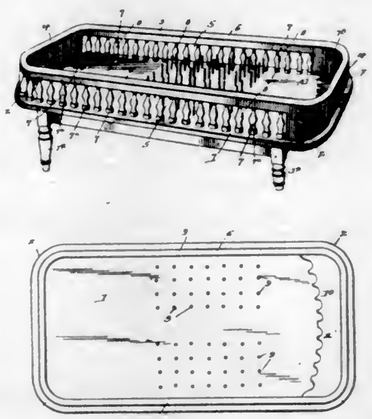
Claim.—The design for a basket substantially as herein shown and described.

33,270. CAT. WASHINGTON I. AVERY, New York, N. Y. Filed Aug. 23, 1900. Serial No. 27,857. Term of patent 7 years.



Claim.—The design for a cat, substantially as shown and described.

33,271. GAME-TABLE. LEVI DE MYERS, Toledo, Ohio. Filed Aug. 18, 1900. Serial No. 27,348. Term of patent 14 years.



Claim.—The design for a game-table, herein shown and described.

33,272. TRIMMING. JAKOB EMIL KIRBERG, Philadelphia, Pa., assignor to the Hensel, Colladay Company, of Pennsylvania. Filed Aug. 11, 1900. Serial No. 26,658. Term of patent 14 years.



Claim.—The design for trimming substantially as shown and described.

33,273. TRIMMING. JAKOB EMIL KIRBERG, Philadelphia, Pa., assignor to the Hensel, Colladay Company, of Pennsylvania. Filed Aug. 11, 1900. Serial No. 26,659. Term of patent 14 years.



Claim.—The design for trimming substantially as shown and described.

33,274. TRIMMING. JAKOB EMIL KIRBERG, Philadelphia, Pa., assignor to the Hensel, Colladay Company, of Pennsylvania. Filed Aug. 11, 1900. Serial No. 26,660. Term of patent 14 years.



Claim.—The design for trimming substantially as shown and described.

TRADE-MARKS

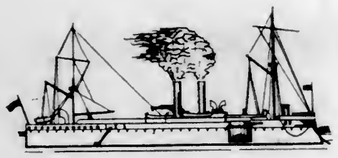
REGISTERED SEPTEMBER 25, 1900.

35,125. CERTAIN NAMED TYPE-WRITER ACCESSORIES. ELBERT ELLSWORTH BUSHNELL, New York, N. Y. Filed July 24, 1900.

TYPEWRITERIUM.

Essential feature.—The word "TYPEWRITERIUM." Used since November, 1895.

35,126. CERTAIN NAMED ASBESTOS GOODS. KEASBEY & MATTISON COMPANY, Ambler, Pa. Filed Aug. 15, 1900.



Essential feature.—The representation of a battle-ship. Used since July 28, 1900.

35,127. BROWN COTTON SHEETING IN BOLTS. JOHN S. BRITTAIN DRY GOODS COMPANY, St. Joseph, Mo. Filed June 29, 1900.



PALMETTO

Essential feature.—The grouping of a Palmetto tree, flag, and water-lily in one design and the word "PALMETTO." Used since June 20, 1900.

35,128. BOOTS AND SHOES. JORDAN, MARSH & CO., Boston, Mass. Filed July 14, 1900.

PILGRIM

Essential feature.—The word "PILGRIM." Used since June 30, 1900.

35,129. CERTAIN NAMED MEDICINAL COMPOUNDS. CHARLES EUGENE COLLARD, Buffalo, N. Y. Filed July 24, 1900.

Cauline

Essential feature.—The word "CAULINE." Used since May 1, 1900.

35,130. CERTAIN NAMED MEDICINAL COMPOUND. LEVIN & NOBLE, St. Louis, Mo. Filed Apr. 13, 1900.

ALVEOLIZER

Essential feature.—The word "ALVEOLIZER." Used since November 5, 1899.

35,131. COUGH-SYRUP. WILLARD G. FLETCHER, Williamsburg, Iowa. Filed July 19, 1900.

CHEREYMEL

Essential feature.—The word "CHEREYMEL." Used since September 15, 1898.

35,132. TONIC-PILLS. ROBERT W. GARDNER, New York, N. Y. Filed May 25, 1898.

HYPO-QUINIDOL

Essential feature.—The compound word "HYPO-QUINIDOL." Used since May 19, 1898.

35,133. REMEDIES FOR CERTAIN NAMED DISEASES. EDGAR O. MITCHELL, Newburg, N. Y. Filed July 18, 1900.

SODEOL

Essential feature.—The word "SODEOL." Used since May, 1895.

35,134. SALVE FOR CERTAIN NAMED DISEASES. JOSEPH M. MALCOM, Altoona, Pa. Filed July 14, 1900.



Essential feature.—The letters "M R" arranged within a circle having a serrated inner edge. Used since June 4, 1900.

35,135. SALVE. SIGMUND MUHLHAUSER, Cleveland, Ohio. Filed June 23, 1900.



Essential feature.—The word "SALVATION" appearing upon a dark or contrasting diagonally-arranged background-forming strip. Used since May 1, 1900.

35,136. EFFERVESCENT SALT. THOMAS W. CHELF, Richmond, Va. Filed May 17, 1900.

C C C C
(4 C's.)

Essential feature.—Four "C's," represented by the four letters "C C C C," with which are associated the chatacters "4 C's." Used since May, 1896.

35,137. DISTILLED WATER. BIRMINGHAM ICE FACTORY COMPANY, Birmingham, Ala. Filed July 17, 1900.

Hydrostil

Essential feature.—The word "HYDROSTIL." Used since June, 1898.

35,138. NON-ALCOHOLIC BEVERAGES. CLARENCE E. WORTHEN, Springfield, Mass. Filed Aug. 9, 1900.

Sherbet-Tade

Essential feature.—The hyphenated word "SHERBET-TADE." Used since September, 1896.

35,139. SMOKING-TOBACCO. RAGSDALE & CROCKETT, Pulaski, Tenn. Filed Aug. 9, 1900.

J. BUGG



Essential feature.—The letter "J." and the name "BUGG," together with the representation of a bug. Used since 1889.

35,140. CIGARS. DUNCAN & MOORHEAD, Philadelphia, Pa. Filed June 6, 1900.

MARCELLO

Essential feature.—The word "MARCELLO." Used since 1886.

35,141. SNUFF. MERIWETHER SNUFF AND TOBACCO COMPANY, Clarksville, Tenn. Filed Feb. 15, 1900.

STAR



Essential feature.—The word "STAR" and the representation of a star. Used since January 22, 1900.

35,142. EGGS. JOHN R. BENSON, West Hoboken, N. J. Filed July 7, 1900.



Essential feature.—The picture of a shield, a box of eggs thereon, a bull and a hog at opposite sides of the shield, and wreaths and scroll thereunder. Used since June 1, 1900.

35,143. CERTAIN NAMED GROCERIES. DURAND & KASPER COMPANY, Chicago, Ill. Filed May 11, 1900



Essential feature.—The representation of a fleur-de-lis-shaped figure formed by three plumes joined by a panel and the arbitrary word "DURKASCO" in characteristic lettering. Used since April 12, 1900.

35,144. CERTAIN NAMED GROCERIES. DURAND & KASPER COMPANY, Chicago, Ill. Filed May 11, 1900.

Probono

Essential feature.—The representation of a fleur-de-lis-shaped figure, formed by three plumes joined by a panel, and the arbitrary word "PROBONO" in characteristic lettering. Used since April 12, 1900.

35,145. CERTAIN NAMED FLOUR. OLIN H. SMITH, Springfield, Mass. Filed June 21, 1900.

FINE GOLD

Essential feature.—The words "FINE GOLD." Used since November 12, 1891

35,146. CONDIMENTS, RELISHES, AND PRESERVES. MANOCKJEE POORJIAJEE & SONS, Bombay, India. Filed Aug. 13, 1900.



Essential feature.—The representation of a ship. Used since 1860.

35,147. LAUNDRY SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Sept. 12, 1899.

ARK

Essential feature.—The word "ARK." Used since September, 1889.

35,148. CLEANSING-POWDERS. ALBERT GEISSERT, Philadelphia, Pa. Filed July 24, 1900.

EPITHEMA

Essential feature.—The word "EPITHEMA." Used since July 16, 1900.

35,149. LUBRICATING-OILS. WILBUR DIXON ELLIS, New York, N. Y. Filed July 26, 1900.

WILBURINE

Essential feature.—The word "WILBURINE." Used since April 5, 1900.

35,150. ROOF-PAINTS. THOMAS JEFFERSON COLBERT, Silver Lake, Ind. Filed Aug. 11, 1900.

PETRIFIED.

Essential feature.—The word "PETRIFIED." Used since April 30, 1894.

35,151. CERTAIN NAMED FIREARMS AND ACCESSORIES. HARRINGTON & RICHARDSON ARMS COMPANY, Worcester, Mass. Filed July 31, 1900.



Essential feature.—The letters "H & R" arranged as a monogram and displayed upon a disk, medallion, or panel surface inclosed within an annulus or circular border. Used since November 1, 1899.

35,152. ROOFING-TIN. JOHN S. HOY, Albany, N. Y. Filed Aug. 8, 1900.

HANDCO

Essential feature.—The word "HANDCO." Used since November 1, 1892.

35,153. ROOFING-TIN. JOHN S. HOY, Albany, N. Y. Filed Aug. 8, 1900.

E
L

Essential feature.—The letters "E" and "L," arranged with the letter "E" above and letter "L" immediately below. Used since November, 1891.

35,154. CERTAIN NAMED ROAD-MAKING MACHINERY. JULIAN SCHOLL & Co., New York, N. Y. Filed Aug. 6, 1900.

UNIVERSAL

Essential feature.—The word "UNIVERSAL." Used since March 1, 1900.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

MECHLIN *v.* HORN, COLCLAZER, AND MUNGEN.

Decided August 17, 1900.

1. INTERFERENCE—FAVORABLE DECISION OF EXAMINER ON MOTION TO DISSOLVE—SUPERVISORY POWER OF COMMISSIONER TO REVIEW DECISION OF EXAMINER.

Upon petition by M that the Commissioner exercise his supervisory power and review the favorable decision of the Examiner on the question of his opponents' right to make the claim, *Held* that under Rule 124 there is no appeal from the decision of the Examiner, and under the well-settled practice of the Office such decision will not be reviewed, either upon appeal or upon petition to the Commissioner, except in an unusual case where it is clear that the Examiner has erred. An inspection of this case shows that it does not present such unusual circumstances and obvious errors by the Examiner as would warrant the exercise of the supervisory power to overrule his action.

2. SAME—MOTION TO AMEND PRELIMINARY STATEMENT—REFUSAL OF EXAMINER TO TRANSMIT.

Upon an appeal by H *et al.* from the decision of the Examiner refusing to transmit the case to the Examiner of Interferences for the consideration of a motion that they be assigned a reasonable time within which to file an amended preliminary statement, *Held* that the Examiner's decision refusing to suspend the proceedings and transmit the motion to the Examiner of Interferences was proper. The case was before him merely for the determination of the motion to dissolve, and the pendency of that motion did not prevent the parties from bringing any other proper motion before the Examiner of Interferences.

ON petition. Appeal on motion.

ELEVATOR.

Application of William H. Mechlin filed June 1, 1899, No. 719,013. Application of Elias Horn, William B. Colclazer, and Preston C. Mungen filed April 18, 1899, No. 713,458.

Mr. E. G. Siggers for Mechlin.

Mr. Geo. R. Hamlin for Horn, Colclazer, and Mungen.

CHAMBERLIN, *Acting Commissioner:*

This case is before me on a petition by Mechlin asking that I exercise my supervisory authority and review the favorable decision of the Primary Examiner on the question of Horn, Colclazer, and Mungen's right to make the claim presented by his motion to dissolve and also on an appeal by Horn, Colclazer, and Mungen from the decision of the Primary Examiner refusing to transmit the case to the Examiner of Interferences for the consideration of their motion that they be assigned a reasonable time within which to file an amended preliminary statement.

On February 23, 1900, there was filed in this Office an affidavit signed by Horn alone, but purporting to be a preliminary statement for Horn, Colclazer, and Mungen, stating that Horn conceived the invention in 1896 and thereafter suggested it to Colclazer and Mungen. The Office thereupon called attention to the fact that the statement should be signed by all of the joint applicants and to the further fact that according to the statement filed Horn appeared to be the sole inventor and that if this were true a statutory bar existed to the grant of a patent to them as joint inventors. A second statement was then filed on March 15, 1900, signed by Horn alone, stating that the three parties first "consulted about the invention" in August, 1897, but failing to state when the invention was conceived. This statement was objected to because not signed by all of the parties, and on April 11, 1900, a statement signed by all three parties was filed and it was approved by the Office on April 14. This statement fails to state definitely when the invention was jointly conceived by the three parties, since it merely refers to the first "consultation" in regard to it, and also fails to state when the invention was disclosed to others.

Mechlin moved to dissolve on the ground that the preliminary statements showed that Horn, Colclazer, and Mungen are not joint inventors, but that Horn is the sole inventor and that therefore there is a statutory bar to the grant of a patent on the joint application. This motion was denied by the Examiner on the ground that the preliminary statements did not show that the parties are not joint inventors. Under Rule 124 there is no appeal from this decision, and under the well-settled practice of the Office such decisions will not be reviewed either upon appeal or on petition except in unusual cases where it is very clear that the Examiner has erred. A mere inspection of this case shows that it does not present such unusual circumstances and such obvious errors by the Examiner as would warrant the exercise of my supervisory authority to overrule his action, but on the contrary shows that his holding is correct. The mere *ex parte* affidavit of one of the alleged joint inventors to the effect that he is the sole inventor is not sufficient to overcome the oath to the application, signed by all three, alleging that they are

joint inventors. One of the parties might even file a sole application covering the invention without affecting the standing of the joint application; but on the contrary the two applications would be placed in interference. (*Kohler* v. *Kohler* and *Chambers*, 43 O. G., 247; *Snyder* v. *Kanneberg*, 58 O. G., 1840.) The statement filed and signed by all of the joint inventors contains no indication that the parties are not joint inventors.

The Examiner's decision refusing to suspend proceedings and transmit to the Examiner of Interferences Horn, Colclazer, and Mungen's motion for leave to file an amended preliminary statement was proper. The case was before him merely for the determination of the motion to dissolve, and the pendency of that motion did not prevent the parties from bringing any other proper motion before the Examiner of Interferences. (*Crocker* v. *Allderdice*, 84 O. G., 1434; *Richards* v. *Macey*, 85 O. G., 288.) The motion for leave to amend the preliminary statement should therefore have been brought in the first instance before the Examiner of Interferences instead of bringing the motion to transmit before the Primary Examiner.

The merits of the motion will not now be decided, since it should be properly presented to and considered by the Examiner of Interferences in the first instance.

The decision of the Primary Examiner refusing to suspend proceedings and transmit the case to the Examiner of Interferences is affirmed.

EX PARTE CHINA AND JAPAN TRADING COMPANY, LIMITED.

Decided September 4, 1900.

DIVISION—CLASS OF MERCHANDISE.

While it is difficult to lay down any hard and fast rule on the subject of division in trade-mark cases, yet each certificate of registration should be confined to commercial classification—such, for instance, as groceries, hardware, dry goods, etc.—and the determination of what particular description of goods is comprised in that class, together with the lines of classification, should be left in the first instance to the discretion of the Examiner of Trade-Marks.

TRADE-MARK FOR METALS, TEXTILE FABRICS, ETC.

APPEAL from Examiner of Trade-Marks.

Application for registration filed December 30, 1899, No. 60,304.

Mr. Herbert M. Lloyd for the appellant.

CHAMBERLIN, *Acting Commissioner:*

The trade-mark here involved is a cross formed by two lines crossing each other at right angles, with the letters "C J T C" in the respective angles. No objection is made to the mark itself, but the application for registration is rejected on the ground that applicant has not complied with the statute and filed a statement—

specifying * * * the class of merchandise and the particular description of goods comprised in such class, to which the particular trade-mark has been appropriated—

but has, on the other hand, named in its amended statement some sixteen or more classes of merchandise, ranging from agricultural implements to toilet articles, and ninety or more particular goods, ranging from lawn-mowers to crackers. In other words, applicant seeks to make one certificate of registration cover all that it is entitled to by virtue of its common-law rights. It bases this action on the Commissioner's decision in *ex parte Silvers*, (67 O. G., 811,) which says:

There is no authority for requiring the subdivision of applications to accord with the Office classification of trades. Registration can be limited by nothing narrower than the actual and lawful use of the mark in the place where the business is located.

I do not find that the United States Supreme Court has ever construed that portion of the statute above quoted. I do find, however, that the various Commissioners have differed as to the intent of Congress in the use of the words "class of merchandise" found in the statute. Personally I am of the opinion that the registration of so-called "department-store" goods in one certificate is not advisable, and in the absence of any direct ruling of a higher authority on the subject I believe that it is best to confine each certificate of registration to what may be termed commercial "classification"—such, for instance, as groceries, hardware, dry goods, etc.

It is difficult to lay down any hard and fast rule on the subject, and I shall not here attempt it. Suffice it to say that each certificate shall contain a reference to but a single class, (on general commercial lines,) and the determination of what particular description of goods is comprised within that class, together with the lines of classification, will be left in the first instance to the discretion of the Examiner of Trade-Marks.

The point may be raised that applicants, not being familiar with the Office practice on this subject, may err by filing too many certificates. This can be easily overcome by applicant resolving any doubts in his own favor, and if the statement filed embodies, in the opinion of the Examiner, more than one class applicant can be advised of that fact and the lines of division be indicated.

The decision of the Examiner of Trade-Marks in this case is affirmed, and he is directed to indicate to applicant the lines of division required. If applicant is dissatisfied with the Examiner's requirement, he has, of course, the right of appeal therefrom.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—First Circuit.

BRESNAHAN *et al. v.* TRIPP GIANT LEVELLER CO., (two cases.)

FULLER *et al. v.* SAME.

Decided June 5, 1900.

1. CUTCHEON—MACHINE FOR BEATING OUT THE SOLES OF BOOTS AND SHOES—INFRINGEMENT.

Claim 1 of Letters Patent No. 384,893, granted to James C. Cutcheon June 19, 1888, for improvements in machines for beating out the soles of boots and shoes, construed to be confined to that portion of the mechanism which lies between the actuating-jacks and the crank-shaft, and infringement of the claim is not avoided by the substitution of mechanism different from that described in claim 4 between the crank-shaft and the source of power.

2. CONSTRUCTION OF CLAIMS—SPECIFIC AND BROAD CLAIMS.

The claims of the patent should be construed, where they reasonably may be, to cover the entire invention of the patentee, and where a patent contains several claims, some of which are limited to details, the others are *prima facie* not to be restricted by insisting that they contain as necessary elements the details which are specifically covered by other claims.

3. INFRINGEMENT—USER OF INFRINGING MACHINE NOT MANUFACTURER.

The fact that a defendant is merely a user of infringing machines and not a manufacturer does not affect the right of complainant to a preliminary injunction unless under exceptional circumstances, as where it appears that his general market is not jeopardized and that he can be made entirely good by the payment of damages equivalent to a license fee.

APPEAL from the Circuit Court of the United States for the district of Massachusetts.

Mr. Frederick P. Fish and *Mr. William Quinby* for the appellants.

Mr. Causten Browne and *Mr. Alexander P. Browne* for the appellee.

Before PUTNAM, WEBB, and ALDRICH, Judges.

PUTNAM, *J.:*

These are appeals from decretal orders granting *ad interim* injunctions in suits on a patent for an invention. The only question relates to infringement, and this depends on the extent of the patentee's invention and the construction to be given to the claim in issue. Consequently the general rules which govern us are those stated by this court in *Hatch Storage-Battery Co.* v. *Electric Storage-Battery Co.*, (C. C. A.; in an opinion passed down on March 16, 1900,) 100 Fed. Rep., 975.

There is so much literature in the courts in this circuit with reference to the patent in suit that we need not state the facts at length. The only claim in issue is the first one, as follows:

1. A machine for beating out the soles of boots and shoes, provided with two jacks, two molds, and means, substantially as described, having provision for automatically moving one jack in one direction while the other is being moved in the opposite direction, whereby the sole of the shoe upon one jack will be under pressure, while the other jack will be in a convenient position for the removal of the shoe therefrom.

For the proper construction of this claim it will be necessary to refer to claim 4, as follows:

4. In a machine for beating out the soles of boots and shoes, the combination of a mold or die; a vertically-movable jack; a crank; a toggle mechanism connecting said crank and jack, and having provision for the movement of the latter; a crank-shaft; a cam secured to said crank-shaft, and provided with an abrupt shoulder; a driving-shaft; gearing for connecting said crank-shaft and said driving-shaft; a rocker-shaft; a stop-arm secured to said rocker-shaft, and engaging with the shoulder upon said cam to stop the machine; a treadle secured to said rocker-shaft; a spring connecting said treadle with a stationary part of the machine; a brake-shoe operated by said treadle, and acting upon said brake-wheel; and a suitable clutch mechanism for applying power to the driving-shaft when the shoe has been released from contact with the brake-wheel, and the stop-arm has been disengaged from the shoulder of said cam.

Claim 1 has relation, by its express terms, to that part of the machine which has a duplicated mechanism. Claim 4 has relation to a part of the machine which does not necessarily involve a duplicated mechanism. Each claim may well cover a distinct invention. To hold that claim 1 necessarily involves the details which are set out in claim 4, which details may be used in a machine with only one jack and one mold, would be to so limit claim 1 that in effect it would be no broader than claim 4. This is practically the substance of the contention of the appellants. If the patentee's invention is broader than that set out in claim 4, the limit which the appellants thus seek to place on claim 1 would be contrary to the rule so steadily applied in this circuit, that claims ought to be construed, where they reasonably may be, to cover the entire invention of the patentee. The contention is also opposed to the general rule of construction, applicable where there are several claims, to the effect that, if some of the claims are limited to details, those which remain are *prima facie* not to be fettered by insisting that they contain, as necessary elements, the particulars which are specifically covered elsewhere.

An examination of the history of the decisions of this court with reference to this patent will show that these rules have been applied by us to the construction of claim 1, and that we have not understood that claim 1 has relation to the mechanism which lies between the crank-shaft spoken of in claim 4 and the source of power. Without detailing the features as to which the appellants claim that their machine differs from the machine covered by the patent in suit, it is sufficient to say that they all relate to the portion last named, and not to those elements which lie between the crank-shaft and the jacks, and which secure the simultaneous motion of one jack in one direction while the other is being moved in the opposite direction, as pointed out in claim 1.

The first decision to which we need refer is that of the circuit court, passed down on September 9, 1892, in *Cutcheon* v. *Herrick*, C. C., (52 Fed. Rep., 147, 148.) In that case there was a decree for the complainant. The case came before this court on appeal in *Herrick* v. *Leveller Co.*, (8 C. C. A., 475; 60 Fed. Rep., 80,) where the opinion was passed down on October 12, 1893. There the decree of the court below was affirmed in a *per curiam*, which adopted its opinion. Those opinions were expressed in such general terms that a question arose with reference to the construction of claim 1, which came before this court again in *Bresnahan* v. *Leveller Co.*, (19 C. C. A., 237; 72 Fed. Rep., 920,) where an opinion was passed down on February 14, 1896. We said, at pages 923, 924, 72 Fed. Rep., and page 241, 19 C. C. A., as follows:

Claim 1 of the patent in suit is a very broad one, and, as we held it valid, it would seem that no method of making the connection between the actuating-jacks and the crank-shaft, by means well known in the arts at the date of the patent, would evade it. We are also unable to perceive that the discussion in relation to the treadles and their connections is pertinent, as there is nothing in the letter of claim 1, or in the opinions of either this court or the circuit court in the former case, which makes any automatic stop movement, or any other stop movement, an element. There was nothing in that case in either court which called for any elements except those stated in the claim; and these, as explained by the circuit court in the extract we have made from its opinion, cover the first device in which both of the operations of compressing and clearing were performed automatically, and specify no elements, except two jacks, two molds, and means for automatically moving one jack in one direction while the other is being moved in another direction.

Then we proceeded to show that the words in claim 1, "substantially as described," did not effectually limit it. The patent was again before us in *Bresnahan* v. *Leveller Co.*, C. C. A., (99 Fed. Rep., 280,) where, in an opinion passed down on January 10, 1900, we firmly adhered to what we had before determined, and stated that the new proofs then

before us "should not narrow the claim as interpreted in" our prior decisions.

There is nothing indefinite in the extracts we have given from our opinions, except the fact that the relations of the word "automatically" in claim 1 were not, in terms, explained, although we think they can be gathered from what we said, so far as the word relates to that claim. The appellants insist that this word, as used in this claim, relates to the entire mechanism intervening between the treadle with which the machine is started, and the lasts; but there is nothing which necessitates this construction. It is plain, on examining our opinion in *Bresnahan* v. *Leveller Co.*, that we regarded the pith of claim 1 as relating to the "method of making the connection between the actuating-jacks and the crank-shaft." We stated that we were unable to perceive that the discussion in relation to the treadles and their connections was pertinent, and this was not limited by the fact that we afterward referred to the stop movement, which had been particularly brought to our attention. Very few machines are perfectly automatic. Occasionally we have had before us a machine in which the mere presentation of the blank to be worked on caused the mechanism to commence its operation and complete it, and then to cease operating, all without any other human intervention; but neither of the machines now before us is automatic, in the entire sense of the word, notwithstanding the contention of the appellants to the contrary. In the patented machine, when constructed with all the details described in the specification and covered by all the claims, not only must the work be presented to the machine, but human intervention is necessary at the treadle to set the machine in operation every time a blank is introduced for compression. It follows that in this machine the word "automatically" is not used in such a strict sense that it may not yield to a just construction of the claims; and therefore it may as well be applied to any part of the patented machine as to the whole of it, when necessary to give full effect to the invention. In the appellants' machine, the portions to which claim 4 relates are so constructed as to require the constant intervention of human agency at the treadle during the entire round of operation. This, however, has no relation to the mechanism between the crank-shaft and the jacks, because, so far as that part of the appellants' machine is concerned, it has "provision for automatically moving one jack in one direction while the other is being moved in the opposite direction," all substantially as described in the patentee's specification, and as covered by claim 1. This "provision" consists of the crank-shaft, with a pair of toggles, or their equivalent, and the incidental details of each, all of which constitute the "means substantially as described" in the claim.

As, therefore, in our previous opinions we have sustained the validity of claim 1, and held it to be broad, and given it substantially the same effect as we now give it, there was not only sufficient in the prior litigation, according to the rules applicable under these circumstances, to justify the court below in granting the injunctions now appealed against, but there was enough, in view of the necessity of giving patents protection during their short terms of existence, to require that the court should have entered the decretal orders which it did enter.

One or more of the pending suits out of which these appeals arose were brought against infringers who were simply users, having purchased machines from the infringing manufacturers. Under these circumstances, these parties rely on the principles announced in *Westinghouse Air-Brake Co.* v. *Burton Stock-Car Co.*, (23 C. C. A., 174; 77 Fed. Rep., 301,) decided by this court on October 9, 1896. An examination of the opinion in that case will show that the circumstances which the court relied on were peculiar. The same was the fact with reference to the other citations made to us by the appellants, the most important of which were referred to in the opinion filed in the circuit court in the same case, *Westinghouse Air-Brake Co.* v. *Burton Stock-Car Co.*, C. C., 70 Fed. Rep., 619,) where it was shown, moreover, that there was no danger that that complainant could not be made entirely good by the payment of damages equivalent to a license fee. There was nothing to indicate that that complainant's market was jeopardized in any general sense. To apply decisions in such special cases to ordinary users would be to destroy the patentee's market, and to ignore the recognized rules which the equity courts so frequently apply in order to protect the substantial values of patents by using in their behalf *ad interim* injunctions.

In each case the judgment is as follows:

The decree of the circuit court is affirmed, and the costs of appeal are awarded to the appellee.

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ABANDONED APPLICATIONS.

(See Reissues.)

1. REISSUE APPLICATION.
A reissue application, like an original application, becomes abandoned, under section 4894 of the Revised Statutes, by a failure to prosecute it within one year from the date of the last Office action.
[*Ex parte* Laughlin and Reuleaux, 2008.

2. SAME.
The statute provides that "all applications for patents" become abandoned by failure to prosecute within one year, and reissue applications clearly come within these broad terms. Even if they did not, however, the provision that reissue applications are subject to revision "in the same manner as original applications" would make the limitation as to the time within which action should be taken applicable. [Id.

3. SAME—REASON FOR DILIGENCE IN PROSECUTION.
The contention that delay in the prosecution of an application for a reissue is not objectionable, since it does not change the time when the invention will become public property by the expiration of the patent, is not well founded, since it is well settled that delay in filing the application is objectionable on account of the possible intervening rights of the public, and the same reasons apply to make an unreasonable delay in the prosecution of an application after it is filed improper and objectionable. [Id.

ABANDONMENT.

(See Interference, 17, 18.)

ACCESS TO FILES AND RECORDS IN THE PATENT OFFICE.

(See Copies of Application Papers; Interference, 33.)

ACCIDENTAL RESULTS.

(See Interference, 11.)

AMENDMENTS.

(See Interference, 17, 18.)

APPEAL FROM AN EXAMINER'S FAVORABLE ACTION.

(See Interference, 39.)

APPEAL TO THE COMMISSIONER OF PATENTS.

(See Interference, 40.)

APPEAL TO THE EXAMINERS-IN-CHIEF.

(See Designs; Examiners-in-Chief, 3.)

REJECTION OF CLAIMS UPON ALLOWED APPLICATION—APPEAL.
It is proper under certain circumstances to reject the claims in an application on an allowed application filed by the same party, and in case of such rejection the applicant's remedy is by an appeal to the Examiners-in-Chief and not by petition.
[*Ex parte* Osborne, 1797.

APPLICATIONS.

(See Abandoned Applications; Copies of Application Papers, 1, 2; Delay in Filing Application; Interference, 29.)

ATTORNEYS.

(See Renewal of Forfeited Cases.)

BAR TO PATENT.

(See Interference, 3.)

BURDEN OF PROOF.

(See Copies of Application Papers, 3; Interference, 12, 19, 28, 29, 31, 32.)

CANCELLATION OF DESCRIPTION AND DRAWINGS.

(See Description.)

CLAIMS.

REFERENCE-LETTERS.
A claim should itself clearly set forth the structure which it is intended to cover, and not merely by the use of reference-letters refer to the drawing and specification for a disclosure of it. A claim which relies entirely upon reference-letters to indicate structure is objectionable.
[*Ex parte* Osborne, 1797.

COMBINATION.

(See Division of Application, 3, 4.)

COMMISSIONER OF PATENTS.

(See Interference, 7, 22, 39.)

CONSTRUCTION OF CLAIMS.

(See Construction of Specifications and Patents, 2.)

CONSTRUCTION OF RULES.

(See Interference, 2, 18, 33, 39.)

CONSTRUCTION OF SPECIFICATIONS AND PATENTS.

(See Infringement; Particular Patents.)

1. USES OF THE INVENTION—RIGHTS OF INVENTORS.
By a well-established rule of the patent law the inventor is entitled to all the uses to which his invention can clearly be put, no matter whether he had conceived the idea of the use or not.
[*Rosell *v.* Allen, 1086.

2. CONSTRUCTION OF CLAIMS—SPECIFIC AND BROAD CLAIMS.
The claims of the patent should be construed, where they reasonably may be, to cover the entire invention of the patentee, and where a patent contains several claims, some of which are limited to details, the others are *prima facie* not to be restricted by insisting that they contain as necessary elements the details which are specifically covered by other claims.
[*Bresnahan *et al.* *v.* Tripp Giant Leveller Co., 2508.

CONSTRUCTION OF STATUTES.

(See Abandoned Applications.)

CONTINUOUS APPLICATIONS.

(See Interference, 29, 30, 31.)

COPIES OF APPLICATION PAPERS.

1. NOT FURNISHED TO LICENSEE.
A party having a mere personal license for certain of the States which is not transferable owns no interest in the invention either legal or equitable and his rights will not be prejudiced by a refusal to allow him to inspect or obtain copies of the application. *Held*, therefore, that he is not entitled to copies.
[*Ex parte* Adam, 190.

2. FURNISHED WHERE REFERRED TO IN PATENTED FILE.
Where a patentee has in the papers of his application referred to a prior application filed by him and the petitioner asking for copies of that prior application for use in a suit shows that the record therein is pertinent, *Held* that he has a *prima facie* right to obtain copies, and if the patentee fails to show good reasons why he has no such right the copies will be furnished.
[*In re* Reed Manufacturing Company, 2001.

3. OPPONENT ENTITLED TO OBTAIN.
R. is entitled to see and obtain copies of an application referred to by B. in a motion to shift the burden of proof; but B. is not required to serve copies upon him, since it is not the practice of the Office to require a party to serve upon his opponent copies of all Office records referred to in a motion made by him.
[Bundy *v.* Rumbarger, 2001.

DECISIONS OF THE COMMISSIONER OF PATENTS AFFIRMED.

(See Interference, 22.)

DEDICATION TO THE PUBLIC.

COPENDING APPLICATIONS—FAILURE TO CLAIM.
The presumption of a dedication to the public is raised by a disclosure of matter in a patent without a claim to it, and while this presumption may under certain circumstances be overcome by having a copending application claiming it, it is not overcome by an application which does not and was not intended to claim it, merely because the claims are inserted therein long after the patent on the other case issues.
[Jones *v.* Larter, 383.

DELAY.

(See Interference, 38.)

DELAY IN FILING APPLICATION.

INTERFERENCE.
Where the appellant took out seven patents on other inventions after the alleged reduction to practice before he filed his present application, *Held* that his delay and apparent indifference in regard to an application until after he saw the patent of the appellee are significant.
[*Kelly *v.* Fynn, 1237.

DELAY IN PROSECUTING AN APPLICATION.

(See Abandoned Applications, 3; Reissues.)

DESCRIPTION.

1. UNNECESSARY DESCRIPTION—CANCELLATION.
It is the well-settled practice of the Office to require unnecessary description and illustration to be canceled.
[*Ex parte* Wadsworth, 1798.

2. SAME—HISTORY OF PRIOR ART.
A party may in his specification distinguish between what is old and what is new, but there is no warrant for permitting a party to recite the history of the art as he understands it, together with statements as to the disadvantages of the several old forms and the advantages of his invention thereover, or to illustrate in his drawings the old devices which he regards as constituting the prior art.
[Id.

DESIGNS.

(See Particular Patents, 2.)

QUESTION OF MERITS—APPEAL TO EXAMINERS-IN-CHIEF.
The holding of the Examiner that the device does not cover proper subject-matter for a design patent because made up of movable parts relates to the merits and is appealable to the Examiners-in-Chief. (*Ex parte Sherman and Harms*, 89 O. G., 2067.)
[*Ex parte* Hale, 1437.

DILIGENCE.

(See Interference, 4, 5, 7, 16; Reissues.)

DISCLAIMERS.

(See Interference, 17, 18.)

DIVISION OF APPLICATION.

(See Interference, 33; Trade-Marks, 12.)

1. MOTOR-VEHICLE.
Held that division was properly required between claims to, first, the steering and controlling devices; second, the motor and means for mounting it; third, the frame, and, fourth, the driving-gear of a motor-vehicle, since the devices are independent of each other in structure and operation and may be used in other relations.
[*Ex parte* Roby, 1085.

2. GRINDING-MACHINE.
Held that division was properly required between claims to a truing device and claims to the grinding mechanism of a machine for grinding knives where the devices are useful in other relations and have acquired a distinct status in art and manufacture.
[*Ex parte* Johnston, 1235.

3. COMBINATION AND SUBCOMBINATION.
It is not broadly true that in all cases where a party makes and is entitled to a combination claim he is also entitled in the same case to claim as many subcombinations or specific elements in that combination as he desires.
[Id.

4. SAME.
Where the specific elements or subcombinations in a general combination are useful in other relations and are mere improvements on independent devices which have acquired a distinct status in art and classification, they cannot properly be retained in the same case as the combination claim.
[Id.

ESTOPPEL.

(See Interference, 38.)

EXAMINATION OF APPLICATIONS.

(See Examiners-in-Chief, 1.)

1. TWO PATENTS TO THE SAME INVENTOR FOR THE SAME INVENTION.
Where an application covering a certain device is pending when another application is filed by the same party covering improvements on it and six months after a patent issues on the first application broad claims which could have been made therein and differ only in scope from those actually made are inserted in the second application, *Held* that the claims cannot be properly allowed, since to allow them would be, in effect, to grant a reissue with broader claims and at the same time extend the term of the patent.
[Jones *v.* Larter, 383.

2. SAME—COPENDING APPLICATIONS—BROAD AND NARROW CLAIMS.
It has been held that where broad claims are made in the case first filed and while that case is held up in the Office through no fault of the applicant a patent on specific improvements is granted a patent subsequently granted on the first case is valid; but the decisions to that effect do not apply and were not intended to apply to a case where the broad claims were not only made in the second application filed, but made therein long after the patent had issued on the first application.
[Id.

EXAMINER OF INTERFERENCES.

(See Interference, 40.)

EXAMINERS.

(See Examiners-in-Chief; Interference, 3, 26, 27, 35, 36, 39, 40.)

EXAMINERS-IN-CHIEF.

(See Designs; Interference, 2.)

1. DECISION OF EXAMINERS-IN-CHIEF—RECOMMENDATIONS NOT BINDING ON EXAMINER.
Rulings and recommendations made by the Examiners-in-Chief on matters not strictly and regularly before them for decision should be very persuasive upon the Examiner and should be followed where any doubt exists in his mind; but they are not absolutely binding upon him to such an extent that he must follow them without exercising his discretion, as in the case of the matter directly before them for decision. (*Painter v. Hall*, 80 O. G., 1124.)
[*Ex parte* Christensen, 1619.

2. SAME—RES ADJUDICATA—QUESTION OF EVIDENCE.
A patent cited as a reference is merely a piece of evidence, and statements made by the Examiners-in-Chief in regard to it in a decision do not make the construction to be placed upon it *res adjudicata*, and it is not believed that it is to the interest of good practice for the Examiners to feel themselves bound to follow such statements without exercising discretion in all cases that thereafter arise involving in any way the question what that patent shows.
[Id.

3. SAME—SAME—CONSTRUCTION OF A REFERENCE.
Where on appeal to the Examiners-in-Chief they stated that the device shown in a reference cited operated in a certain way, *Held* that the Examiner is not bound by that interpretation of the reference in another case presenting different claims where he is honestly of the opinion that the statement was made under a misapprehension and would not be adhered to if the matter again came before them.
[Id.

EXPERIMENTAL MACHINE.

(See Interference, 20, 21.)

EXPERIMENTS.

(See Interference, 16.)

FOREIGN ADOPTION OF TRADE-MARKS.

(See Trade-Marks, 1, 2, 3.)

FORFEITED CASES.

(See Renewal of Forfeited Cases.)

FORMER DECISIONS CONSTRUED.

(See Interference, 36, 37.)

INFRINGEMENT.

(See Trade-Marks, 4, 5.)

USER OF INFRINGING MACHINE NOT MANUFACTURER.
The fact that a defendant is merely a user of infringing machines and not a manufacturer does not affect the right of complainant to a preliminary injunction unless under exceptional circumstances, as where it appears that his general market is not jeopardized and that he can be made entirely good by the payment of damages equivalent to a license fee.
[Bresnahan *et al. v.* Tripp Giant Leveller Co., 2508.

INJUNCTION.

(See Infringement.)

INTERFERENCE.

(See Copies of Application Papers, 2, 3; Delay in Filing Application; Trade-Marks, 1, 2, 3.)

1. PRIORITY—SECOND APPLICATION—LACHES.
W. filed an application on April 13, 1896, which was put in interference on April 20, 1897, with an application of N. filed February 16, 1897. W. actually reduced the invention to practice three months after the filing date of N. That interference was dissolved on October 18, 1897, by the Assistant Commissioner, reversing the action of the Examiner refusing to dissolve. W. then filed an amendment and a new interference was declared, which was also dissolved by the Assistant Commissioner on June 1, 1898, reversing the Examiner. W. then filed a new application on June 13, 1898, and the present interference was declared. *Held* that under this state of facts, leaving out of consideration W.'s actual reduction to practice and relying upon his constructive reduction, as indicated by the second application, he cannot be charged with laches in reducing the invention to practice, and priority is awarded to him.
[Woodward *v.* Newton, 381.

2. BAR TO THE GRANT OF A PATENT—PRIORITY—RULE 126.
Where the Examiners-in-Chief in their decision on priority call attention to the fact under Rule 126 that one party is not entitled to make the claims by reason of a prior patent granted to him, but the record shows him to be the first inventor, *Held* that the interference should not be dissolved without deciding priority, since to do so would be to allow a patent to the other party who is not the first inventor.
[Jones *v.* Larter, 388.

3. SAME—QUESTION OF DISSOLVING INTERFERENCE.
Where a party raises the question of a bar to the grant of his opponent's claims for the first time at final hearing and the alleged bar does not affect his own claims, *Held* that the interference will not be dissolved, but the Examiner directed to act on the question of a bar after the limit of appeal from the decision on priority has expired.
[Id.

4. PRIORITY—REDUCTION TO PRACTICE—DILIGENCE.
Where it is admitted that G. actually reduced the invention to practice in June, 1897, and he is entitled to constructive reduction to practice by filing his application in August, 1897, he is entitled to the decision on priority, even if it be conceded that D. had a conception of the invention prior to that time, since D. has not shown an actual reduction to practice at any time or diligence up to the time when he filed his application a year later.
[*Darnell *v.* Grant, 557.

5. REDUCTION TO PRACTICE—ADMISSION OF OPPOSING COUNSEL.
Where G. testifies to the construction and successful use of certain machines embodying the invention in June and July, 1897, and in order to shorten the matter of taking testimony counsel for the opposing party admitted on the record that the machines were made and used substantially at the time and in the manner testified, *Held* that G. is entitled to the date of June or July for a reduction to practice of the invention.
[*Id.

6. SAME—EXPERIMENTAL MODEL.
Where D. testifies on direct examination that he worked on a full-sized machine from 1896 to 1898 and completed it and successfully operated it in July, 1898, but on cross-examination admits that the machine was far from being complete and operative, and that it had only been used as an illustration and was nothing more than an experimental model, *Held* that it cannot be received as a reduction to practice.
[*Id.

7. DECISION OF THE COMMISSIONER OF PATENTS AFFIRMED.
Where D. may have been the first to conceive the invention, but G. was the first by a year to reduce it to practice and D did not show diligence during his delay, *Held* that the decision of the Commissioner of Patents in favor of G. was correct and will be affirmed.
[*Id.

8. CONSTRUCTION OF THE ISSUE—PROCESS.
Where the issue covers the method of tanning which consists in subjecting the skins to the action of a certain bath and one party discloses a one-bath process using that bath and also a two-bath process which is distinct from the one-bath process, using it as the second bath, and his opponent discloses only a one-bath process, *Held* that the issue is limited to a one-bath process.
[*Rosell *v.* Allen, 1086.

9. SAME—TANNING-BATH.
The second count, which covers "a tanning-bath," *Held* to be broad enough to cover either that used in a one-bath process where it performs the sole function of tanning or the second bath of a two-bath process where it acts first as a reducing agent and then as a supplementary tanning agent.
[*Id.

10. PRIORITY—PROCESS NOT WITHIN THE ISSUE.
Where it is conceded that R. was the first inventor of and the first to use the particular bath, but always as the second bath of a two-bath process and as a reducing and not a tanning bath, *Held* that he is not the first inventor of the process of the first count of the issue, which is construed as limited to a one-bath process of tanning.
[*Id.

11. REDUCTION TO PRACTICE—ACCIDENTAL RESULTS OF INVENTION.
Where R. used the bath only as the second bath of a two-bath process, but discovered that it acted first as a reducing agent and then as a supplementary tanning agent, *Held* that there is no analogy between this certain and direct result of the invention of the bath in issue and those accidental results of inventions which are not understood or appreciated by the inventors and which are held by the courts to be immaterial.
[*Id.

12. BURDEN OF PROOF—APPLICANT AGAINST PATENTEE.
Where one party holds a patent granted before the other's application was filed, he is entitled to insist that every reasonable doubt should be resolved against his opponent. The principle involved is analogous to that raised by the defense of prior invention in a suit in a court for the infringement of a patent.
[Kelly *v.* Fynn, 1233.

13. EVIDENCE—TEST OF MACHINE.
Where the machine which was built was of such a character and nature that others must have assisted in or witnessed the tests, but where the testimony stops short with the construction of the machine and the inventor is not corroborated by any one as to the tests or as to the changes made in the machine after its construction, *Held* that the silence of the witnesses upon this point is very suggestive.
[Id.

14. Unsupported Testimony of the Inventor—Insufficient Evidence.
The unsupported testimony of the party upon whom is the burden of proof is insufficient to prove that his machine would work practically and successfully so as to be considered an actual reduction to practice. [Id.

15. Reduction to Practice—Experimental Machine—Unsuccessful Tests.
The machine belongs to that class that requires something more than mere construction in order to amount to a reduction to practice, and in the absence of any explanation of the nature of the tests, coupled with the fact that the machine was so frequently altered, and also taking into account the absence of any corroboration of the inventor's testimony, *Held* that the machine was experimental in nature and that there was no complete reduction to practice shown. [Id.

16. Priority—Lack of Diligence.
Where the testimony shows beyond a reasonable doubt that Kelly conceived the invention in 1894 and had a machine embodying it made during 1895, prior to any date proven by Fynn, but thereafter did nothing but experiment with it and make changes in it until he was stirred to greater activity by the grant of Fynn's patent, *Held* that Fynn is the prior inventor. [Id.

17. Amendments to Cases in Interference—Cancelation of Claims in Issue.
An amendment canceling the claims involved in interference, but unaccompanied by a disclaimer or abandonment of the invention covered by them, should not be entered during the pendency of the interference.
[Curtis *v.* Marsh, 1236.

18. Same—Same—Disclaimer.
Where each party files an amendment canceling the claims in interference, thus indicating that neither wishes the interference to continue, *Held* that under the rules the amendments cannot be entered. (Rule 130.) Under Rules 107 and 125 they may disclaim or abandon the invention, and thus terminate the proceedings. [Id.

19. Burden of Proof—Applicant Against Patentee.
Where the junior party has a patent to contend with and he was induced to file his application by a perusal of that patent, *Held* that the burden of proving his case beyond a reasonable doubt is upon him.
[*Kelly *v.* Fynn, 1237.

20. Evidence of Reduction to Practice.
Where it appears that a machine of full size was made for the purpose of study and with the expectation that it would be used as a model for others if it was decided to manufacture them and that after it was tested several experimental changes were made in it, but there is no satisfactory evidence that it operated practically and successfully, *Held* that it was not a reduction to practice. [*Id.

21. Same—Experimental Machine.
Where a party's testimony as to the operative character of a machine which he built is not satisfactory and no witnesses are called to corroborate him, although it appears that others must have been familiar with the tests of the machine, *Held* that the almost unavoidable inference, both from the testimony itself and from the omissions in the testimony, is that the machine was experimental and was not a reduction to practice. [*Id.

22. Priority of Invention—Decision of Commissioner Affirmed.
Although the preponderance of evidence may be with the appellant, *Held* that he has not established his case beyond a reasonable doubt, and therefore the decision of the Commissioner of Patents awarding priority of invention to the appellee affirmed. [*Id.

23. In Fact—Different Inventions.
Where the record of the cases, taken in connection with the prior art, shows that the parties started from different positions in the art, were working on different lines, and the features of novelty in the devices produced are different, there can be no interference in fact between the two inventions.
[Valiquet *v.* Johnson, 1795.

24. Same—Same.
Where J.'s whole idea was to so support his diaphragm that it could vibrate substantially equally throughout its area, and this he accomplished by supporting the diaphragm from the middle and leaving it practically free at the periphery from a gasket on either side, and where V.'s invention contemplates only a structure wherein the periphery of the diaphragm is held against a gasket by the stylus-bar, and consequently the diaphragm does not vibrate equally throughout its entire area, *Held* that there is no interference in fact between the inventions. [Id.

25. Same—Same.
Where J.'s construction differs from that of Patent No. 450,740 only in supporting the diaphragm from its center on the stylus-bar, and he expressly disclaims any attempt to cover the construction of Patent No. 394,105, whereas V.'s construction is built squarely upon and differs from Patent No. 394,105 merely in adding a loose gasket, *Held* that there is no interference in fact. [Id.

26. Patentability of the Issue—Question Considered.
The question as to whether either or both parties are entitled to claims as broad as the issue would ordinarily be left to the Examiner, but where the conclusions on the question of interference in fact regularly appealed necessarily involve the question of the right of either applicant to make the claims, *Held* that the question will be considered. [Id.

27. Issue Unpatentable—Examiner Directed to Reject Claims.
Where the issue is in effect broadly for a loose gasket and a patented structure, when operated as the patentee clearly intended that it should be, produces a loose gasket, *Held* that the issue is not patentable and the case remanded to the Examiner, with instructions to reject the claims of the parties involved. (*Bender* v. *Hoffman*, 85 O. G., 1737.) [Id.

28. Motion to Shift the Burden of Proof—Matter Outside of the Record.
The contention that a motion to shift the burden of proof and include in the interference a prior application filed by B. is improper because based upon matter outside of the present record is not well founded, since if there was error in failing to include that application the only way in which it can be corrected is by referring to matter outside of the present record.
[Bundy *v.* Rumbarger, 2001.

29. Same—Earlier Application Disclosing Invention.
Where on a motion to shift the burden of proof and include an earlier pending application it appears that the earlier case clearly discloses the invention in controversy, although there is no statement in either case connecting it with the other and the second includes additional matter not shown in the first, *Held* that the motion should be granted.
[Bundy *v.* Rumbarger, 2002.

30. Same—Continuous Application—Question of Fact.
The question whether the second application is a continuation of the first as to the matter in issue is one of fact which must be determined by the Office without regard to any statement to that effect in the cases themselves. The statement would be a mere notice of the fact; but the fact and not the statement is what would justify action. This Office must take notice of facts shown by its records. [Id.

31. Same—Same—Constructive Reduction to Practice.
If an application involved in interference is a continuation of a prior application such as to give the applicant the benefit of its date for a constructive reduction to practice of the matter in issue, although it is not a continuation for all purposes, *Held* that the applicant is entitled to the benefit of the earlier date on the question of burden of proof. (*Park* v. *Cain*, 83 O. G., 1345.) [Id.

32. Same—Judgment on the Record.
Since the rules provide that the first to file an application clearly disclosing the invention will be presumed to be the first inventor and will be made the senior party and that in the absence of testimony judgment will be rendered on the record against the junior party, *Held* that a party who was the first to file an application disclosing the invention and in so far as the Office records go appears to be the first inventor should not be made the junior party. [Id.

33. Divisional Application—Access to Original Application—Rule 108.
Where in an application involved in an interference there is a statement that it is a division of a prior application, and by reason of the prior application the applicant is made the senior party and his preliminary statement refers to such prior application and it appears that he intends to rely upon it to establish his claim to priority, *Held* that an opposing party is entitled, under Rule 108, to see and obtain copies of the original application. (*In re Swihart*, 90 O. G. 601, cited.)
[*In re* Gillespie, 2159.

34. Motion for Dissolution Based Upon Testimony—Interference in Fact.
The allegation that the testimony taken on the question of priority made clear the meaning of the issue and showed that there is no interference in fact is no excuse for the delay in bringing a motion for dissolution, since the question of interference in fact must be determined from the applications themselves, and this should be done before testimony is taken.
[Felbel *v.* Oliver, 2339.

35. Same—Transmitting Motion to Primary Examiner.
The fact that F. in his testimony placed a different construction on the issue from that given it by O. furnishes us good ground for transmitting to the Primary Examiner a motion to dissolve after the twenty days allowed by the rule have expired and after testimony has been taken. [Id.

36. Motion to Dissolve—Right to Make Claim—Bechman *v.* Wood.
On a motion to dissolve on the ground that S. has no right to make the claims in view of the decision in Bechman *v.* Wood, since he did not make the broad claims in issue until after H.'s application was filed and made them then only upon the suggestion of the Examiner, *Held* that under the clear and explicit statements in the decision itself the Office would not be justified in dissolving the interference at this time.
[Horton *v.* Summer, 2339.

37. Same—Same.
Where to dissolve the interference on the ground that S. has no right to make the claims would make it necessary to allow the broad claims to H., which would dominate S.'s construction, while refusing them to S., although as far as the record goes S. appears to be the first inventor, *Held* that the court clearly did not contemplate or sanction any such action in its decision. [Id.

38. Same—Estoppel—Question of Proofs.
The question of estoppel by delay in making the claim is not a proper one to be raised by a motion for dissolution, since according to the court's decision it can be determined only by the special circumstances as shown by the proofs and it is well settled that motions for dissolution should not be based upon proofs taken. [Id.

39. Favorable Decision of Examiner on Motion to Dissolve—Supervisory Power of Commissioner to Review Decision of Examiner.
Upon petition by M. that the Commissioner exercise his supervisory power and review the favorable decision of the Examiner on the question of his opponents' right to make the claim, *Held* that under Rule 124 there is no appeal from the decision of the Examiner, and under the well-settled practice of the Office such decision will not be reviewed, either upon appeal or upon petition to the Commissioner, except in an unusual case where it is clear that the Examiner has erred. An inspection of this case shows that it does not present such unusual circumstances and obvious errors by the Examiner as would warrant the exercise of the supervisory power to overrule his action.
[Mechlin *v.* Horn, Colclazer, and Mungen, 2507.

40. Motion to Amend Preliminary Statement—Refusal of Examiner to Transmit.
Upon an appeal by H. *et al.* from the decision of the Examiner refusing to transmit the case to the Examiner of Interferences for the consideration of a motion that they be assigned a reasonable time within which to file an amended preliminary statement, *Held* that the Examiner's decision refusing to suspend the proceedings and transmit the motion to the Examiner of Interferences was proper. The case was before him merely for the determination of the motion to dissolve, and the pendency of that motion did not prevent the parties from bringing any other proper motion before the Examiner of Interferences. [Id.

ISSUE IN INTERFERENCE CASES.

(See Interference, 8, 9.)

JUDGMENT ON THE RECORD.

(See Interference, 32.)

LACHES.

(See Interference, 1.)

LICENSEES.

(See Copies of Application Papers, 1.)

LICENSE FEES.

(See Infringement.)

LIMIT OF APPEAL.

(See Interference, 3.)

MACHINES.

(See Interference, 13, 14, 15, 16.)

MECHANICAL EQUIVALENT.

(See Particular Patents, 1.)

MODEL.

(See Interference, 6, 20.)

MOTION TO AMEND PRELIMINARY STATEMENT.

(See Interference, 40.)

MOTION TO DISSOLVE INTERFERENCE.

(See Interference, 34, 35, 36, 37, 38, 40.)

OPERATIVENESS.

(See Interference, 21.)

PARTICULAR PATENTS.

1. Cutcheon—Machine for Beating Out the Soles of Boots and Shoes—No. 384,893—Infringement.
Claim 1 of Letters Patent No. 384,893, granted to James C. Cutcheon June 19, 1888, for improvements in machines for beating out the soles of boots and shoes, construed to be confined to that portion of the mechanism which lies between the actuating-jacks and the crank-shaft, and infringement of the claim is not avoided by the substitution of mechanism different from that described in claim 4 between the crank-shaft and the source of power.
[*Bresnahan *et al. v.* Tripp Giant Leveller Co., 2508.

2. Koenen—Eyeglass-Case—Design No. 29,485—No Invention—Invalid.
Letters Patent No. 29,485, granted to John G. Koenen on October 18, 1898, for a design for an eyeglass-case, *Held* to be void, as a comparison of the patented design with the old form of eyeglass-case shows it to be neither new nor original and not to involve invention.
[*Koenen *v.* Drake *et al.*, 190.

PATENTEE AND APPLICANT.

(See Interference, 19.)

PATENTS.

(See Construction of Specifications and Patents, 1; Particular Patents.)

PETITION.

(See Appeal to the Examiners-in-Chief.)

PETITION FOR RENEWAL OF FORFEITED CASES.

(See Renewal of Forfeited Cases.)

PETITION TO THE COMMISSIONER OF PATENTS.

(See Interference, 39.)

PRELIMINARY STATEMENTS.

(See Interference, 40.)

PRIORITY OF INVENTION.

(See Interference, 9.)

PRIOR PATENTS.

(See Interference, 2, 12.)

PROCESS.

(See Interference, 8, 9.)

RECORDS.

(See Copies of Application Papers, 3; Interference, 30.)

REDUCTION TO PRACTICE.

(See Interference 4, 5, 6, 7, 10, 15, 16, 18, 19, 31.)

REFERENCE LETTERS.

(See Appeal to the Examiners-in-Chief.)

REFERENCES.

(See Examiners-in-Chief, 2, 3.)

REISSUES.

(See Abandoned Applications, 1, 2; Examination of Applications, 1.)

DOUBTS RESOLVED IN FAVOR OF DILIGENCE.
It is believed that the public should be informed at the earliest possible date if a patent is to be altered by reissue, and therefore any and all doubts as to what is intended by the statutes should be resolved in favor of prompt and vigorous prosecution of the application.
[*Ex parte* Laughlin and Reuleaux, 2003.

REJECTED CLAIMS.

(See Appeal to the Examiners-in-Chief.)

RENEWAL OF FORFEITED CASES.

1. PETITION FOR RENEWAL—BY WHOM SIGNED.
The petition for the renewal of a forfeited application cannot properly be signed by the attorney for the applicant, but only by the inventor, discoverer, or assignee.
[*Ex parte* Thomas, 1035.

2. SAME—SIGNATURE OF ATTORNEY—PRACTICE CONTRARY TO LAW.
Although it is claimed that the practice of the Office for many years has been to receive as sufficient petitions for renewals signed by the attorneys who presented the original applications, *Held* that there is no authority of law for the practice. Antiquity of practice cannot justify an illegal act.
[Id.

RES ADJUDICATA.

(See Examiners-in-Chief, 2.)

SECOND APPLICATION.

(See Dedication to the Public; Examination of Applications; Interference, 1.)

SIGNATURES.

(See Renewal of Forfeited Cases.)

SPECIFICATIONS.

(See Description.)

SUBSEQUENT PATENTS.

(See Dedication to the Public; Examination of Applications.)

SUPERVISORY POWERS OF THE COMMISSIONER OF PATENTS.

(See Interference, 39.)

TESTIMONY.

(See Interference, 6, 13, 14, 15, 16, 21, 34, 35.)

TRADE-MARKS

1. INTERFERENCE—PRIORITY—ADOPTION AND USE IN FOREIGN COUNTRY.
In an interference between a registrant and an applicant, the latter being the last to adopt and use the trade-mark in the United States, although having adopted and used it in a foreign country prior to the adoption and use by the registrant in the United States, *Held* that priority of adoption and use must be awarded to the registrant in the absence of any proof of fraud on his part.
[Leprince *v.* Iler & Morris, 189.

2. SAME—SAME—SAME.
I. & M., registrants, filed their application on June 2, 1885, and a certificate of registration was issued to them on July 14, 1885. L., an applicant and junior party, filed his application on November 30, 1898, and proved adoption and use of the mark in France about January 1, 1880. He did not use the mark in the United States prior to June 2, 1885. *Held* that I. & M. on this state of facts are entitled to an award of priority.
[Id.

3. SAME—SAME—SAME.
Where L. insists that he is the lawful owner of the trade-mark in France and that he is entitled under the treaty relating to trade-marks existing between France and the United States to an award of priority and to receive the same privileges in this country as in France, *Held* that he is entitled to no other or further rights because he is a citizen of France than if he were a citizen of the United States, and a citizen of the United States is not entitled to avail himself of foreign adoption and use over another party who has adopted and used the mark in this country.
[Id.

4. INFRINGEMENT—"GOLD DUST" AND "GOLD DROP."
Held that the name "Gold Drop," used by the respondents to designate washing-powder, is an infringement of the plaintiff's trade-mark or trade-name "Gold Dust," notwithstanding a dissimilarity of the labels, character of symbols, and size of packages.
[*N. K. Fairbank Company *v.* Luckel, King & Cake Soap Company, 1437.

5. TRADE-NAMES DISTINGUISHED FROM TRADE-MARKS.
There are two kinds of trade-marks—one of peculiar pictures, labels, or symbols, the other in the use of a name. The first appeals to the eye and the second to the ear. To constitute infringement of a trade-name, it is not necessary that there should be similarity in appearance, but merely such similarity in the names that the ordinary purchaser having no knowledge of the appearance of the package or label would be deceived by the name and induced to purchase an article under one name supposing it to be the other.
[*Id.

6. "HEALTH FOOD"—DESCRIPTIVE.
The term "Health Food" means healthy food or health-producing food, is therefore descriptive of quality, and cannot be a technical trade-mark, either with or without the word "Company," any more than the words "Nutritious Wine" could be a valid trade-mark.
[*Fuller *v.* Huff *et al.*, 1620.

7. UNFAIR COMPETITION.
The law of unfair competition is that when a mark, name, or phrase has been so used by a person in connection with his business or articles of merchandise as to become identified therewith and indicate to the public that such articles emanate from him the law will prohibit others from so using it as to lead purchasers to believe that the articles they sell are his or as to obtain the benefit of the market he has built up thereunder.
[*Id.

8. SAME—LONG-CONTINUED USE.
The courts in considering the use by competitors of the name under which a rival has previously gained a business reputation, although the name is not strictly a trade-mark, have attached great importance to long-continued and exclusive priority of use and have demanded a high order of commercial integrity and have frowned upon all filching attempts to obtain the reputation of another.
[*Id.

9. DIFFERENT STYLE OF PACKAGE.
If a trade-name has been so identified with the business of a manufacturer as to inform the public that the name upon goods means that they are the product of that person and another adopts and displays the name, it is not material that he has not also adopted the particular dress in which his predecessor has presented his goods.
[*Id.

10. UNFAIR COMPETITION—CONTINUANCE AFTER NOTICE.
Although the intent of the defendant when it commenced the use of the name may have been innocent, the continuance after it had learned of the complainant's prior use indicates its deliberate intention to use the name without reference to the complainant's possible prior rights.
[*Id.

11. TRADE-NAME—"HEALTH FOOD COMPANY" AND "SANITARIUM HEALTH FOOD COMPANY"—LIABILITY TO DECEIVE.
The use by the defendant upon goods of the name "Sanitarium Health Food Company," although in connection with the words "Battle Creek, Michigan," is likely to deceive purchasers and make them believe that they are obtaining the goods of the complainant sold under the name "Health Food Company," and therefore an injunction will be granted. It is not necessary to show that a purchaser had actually been deceived where a manifest liability to deception exists.
[*Id.

12. DIVISION—CLASS OF MERCHANDISE.
While it is difficult to lay down any hard and fast rule on the subject of division in trade-mark cases, yet each certificate of registration should be confined to commercial classification—such, for instance, as groceries, hardware, dry goods, etc.—and the determination of what particular description of goods is comprised in that class, together with the lines of classification, should be left in the first instance to the discretion of the Examiner of Trade-Marks.
[*Ex parte* China and Japan Trading Company, Limited, 2508.

USE AND SALE OF PATENTED ARTICLES.

(See Construction of Specifications and Patents, 1.)

VOID PATENTS.

(See Particular Patents, 2.)

WITNESSES.

(See Interference, 13, 14.)

ALPHABETICAL LIST OF PATENTEES

FOR

THE QUARTER ENDING SEPTEMBER 30, 1900.

[Claims and drawings of Designs do not appear in the Monthly Volumes. Separate indexes for Designs, Trade-Marks, Labels, and Prints follow this.]

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Specification.	Drawing.	Volume.	Page.
A. B. Dick Company. (See Dick, Albert B., assignor.)						
A. B. See Manufacturing Company. (See Lindstrom and Cowperthwait, assignors.)						
A. C. Evans Manufacturing Company. (See Frank, William M., assignor.)						
A. L. Ide & Sons. (See Ide, Harry L., assignor.)						
Abbee, Jerome, Reno, Nev. Apparatus for moving houses	654,669	July 31	3851	808	92	839
Abel, Barnard, Titusville, Pa. Clutch-pulley	658,520	Sept. 25	2720	605	92	2407
Abel, Julius, Mannheim, and F. Kalkow, assignors to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Brown cotton dye and process of making same	658,055	Sept. 18	1916	.....	92	2223
Abendroth & Root Manufacturing Company. (See Scott, Seaton M., assignor.)						
Abercrombie, Charles M., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Hemstitch sewing-machine	653,192	July 3	856	201	92	172
Abernathy, Hugh H., Chicago, Ill., assignor of one-half to L. P. Ingersoll, New York, N. Y. Brake	656,574	Aug. 21	2666	614	92	1588
Abraham, Lawrence, New York, N. Y. Means for collecting, conveying, and depositing articles or packages of merchandise	657,261	Sept. 4	369	77	92	1875
Abram Cox Stove Company. (See Rankin, Thomas I., assignor.)						
Abrams, George H., New York, N. Y. Ice-making apparatus	654,576	July 24	3594	809 810	92	769
Abrams, George H., New York, N. Y. Refrigerating-machine	654,577	July 24	3599	810 811	92	770
Abrams, George H., New York, N. Y. Refrigerating apparatus	654,578	July 24	3601	811	92	771
Ach, Fritz. (See Ach, Lorenz and F.)						
Ach, Fritz, Mannheim, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Alkyloxychloropurin and preparing same	654,120	July 24	2609	.....	92	563
Ach, Fritz, Mannheim, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Making alkyl-uric acid	654,121	July 24	2612	.....	92	563
Ach, Fritz and L., Mannheim, assignors to C. F. Boehringer & Soehne, Waldhof, Germany. Formic aldehyde compound of uric acid and making same	654,123	July 24	2616	.....	92	563
Ach, Lorenz. (See Ach, Fritz and L.)						
Ach, Lorenz and F., Mannheim, assignors to C. F. Boehringer & Soehne, Waldhof, Germany. Dichloro-oxypurin and making same	654,122	July 24	2614	.....	92	563
Acker, Andrew W., Lansing, Mich. Land-roller	656,618	Aug. 21	2768	633 634	92	1612
Ackermann, Johann F., New York, N. Y. Electric-arc lamp	655,176	Aug. 7	1	1	92	1041
Acklin, Alfred M., and W. J. Patterson, Pittsburg, Pa. Endless conveyer	657,048	Aug. 28	3508	821	92	1777
Acme Machinery Company. (See Durchschlag, Charles W., assignor.)						
Actien-Gesellschaft für Anilin Fabrikation. (See Herzberg and Hansmann, assignors.)						
Actien-Gesellschaft für Anilin Fabrikation. (See Priebs and Kaltwasser, assignors.)						
Adam, Matthew A., London, England. Controller for water-heaters	652,951	July 3	422	98	92	85
Adams, A. N., *et al.* (See Mead, William M., assignor.)						
Adams, Abraham L., Bridgeport, Conn. Knockdown flume	658,332	Sept. 25	2405	532	92	2345
Adams, Altred C., and N. C. Knutson, Woodstock, Ill. Furnace	653,434	July 10	1331	316	92	276
Adams, B. A., *et al.* (See Mead, William M., assignor.)						
Adams, C. F. (See Farmer, John P., assignor.)						
Adams, Charles J., Milton, Fla. Roller-jewel setter	654,124	July 24	2618	599	92	564
Adams, Ernest K., New York, N. Y. Electric-clock pendulum	652,875	July 3	248	59	92	49
Adams, Frank J., assignor to Naturascope Company, New York, N. Y. Projecting apparatus	658,607	Sept. 25	2897	644 645	92	2442
Adams, Harry H., Jersey City, N. J. Sectional rotary sweeper	656,761	Aug. 28	2996	683	92	1609
Adams, Harry S., and C. E. Wild, Philadelphia, Pa. Inking attachment for job-printing presses	655,177	Aug. 7	2	1	92	1041
Adams, Hayveyand, assignor of one-half to H. F. Cady, Omaha, Nebr. Bag-fastener	655,359	Aug. 7	357	77	92	1109
Adams, Henry A., Sandwich, Ill. Corn-sheller	655,946	Aug. 14	1492	342 343	92	1343
Adams, Henry W., Jr., Elgin, Ill., assignor to Scovill Manufacturing Company, Waterbury, Conn. Inflation-valve support	654,300	July 24	3108	695	92	671
Adams, James H., *et al.* (See Mead, William M., assignor.)						
Adams, John Q., Manchester, Vt. Metallic cross-tie	653,604	July 10	1640	383	92	340
Adams, John W., assignor of one-half to A. P. Diehl, Pinebluff, N. C. Printing-stamp	657,806	Sept. 11	1457	309	92	2116
Adams, Joseph P., Garfield, Wash. Grain-cleaner	657,377	Sept. 4	592	124 125	92	1920
Adams, Lynnly C. (See Redmond and Adams.)						
Adams, Robert F., Horsecreek, Ala. Railway cattle-guard	653,128	July 3	744	175	92	149

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Adams, Walter S. (See Brill and Adams.)						
Adams & Westlake Company. (See Mosher, John A., assignor.)						
Adams & Westlake Company. (See Mosher and Hamm, assignors.)						
Adams & Westlake Company. (See Mosher and Wishart, assignors.)	654,106	July 17	2571	591	92	539
Adams, William T., Reading, Pa. Door-bolt	655,145	July 31	4684	1056	92	1013
Adams, William T., Reading, Pa. Cylinder-lock						
Adams, Wilson W. (See Rugh, Frank G., assignor.)	655,294	Aug. 7	227	51,52	92	1086
Adamson, George, Crider, Ky. Traction-engine						
Addenbrooke, George L., London, England. Electrostatically measuring currents in working circuits	656,076	Aug. 14	1748	405	92	1306
Addressograph Company. (See Duncan, Joseph S., assignor.)	655,808	Aug. 14	1387	320	92	1823
Ade, William F., Jr., Williamsport, Pa. Spring-bed						
Adjustable Sash Weight Co. (See Crull, Eugene S., assignor.)						
Adler, Aaron A. (See Saxl, Heinrich, assignor.)	655,178	Aug. 7	3	1	92	1041
Adt, Leo F., Troy, N. Y. Apparel-collar	656,709	Aug. 28	2908	602	92	1652
Adt, Leo F., Troy, N. Y. Eyeglasses	655,539	Aug. 7	646	148	92	1167
Aegerter, Jacob, San Francisco, Cal. Pick-point	658,417	Sept. 25	2565	569	92	2376
Agesen, John H., Higganum, Conn. Knife-sharpener						
Agust, Joseph. (See Politsky and Agust.)	657,907	Sept. 18	1635	353	92	2165
Ahrens, Joseph, Berlin, Germany. Machine for treating peat to be used as fuel	653,566	July 10	1584	368, 369, 370	92	329
Aiken, Henry, Pittsburg, Pa. Rolling-mill	654,931	July 31	4309	969	92	936
Aiken, Henry, Pittsburg, Pa. Tongs	658,608	Sept. 25	2899	645	92	2442
Ailloud, Alphonse H., Merida, Mexico. Joint for portable railways						
Ajax Metal Company. (See Clamer and Hendrickson, assignors.)						
Ajax Metal Company. (See Hendrickson and Clamer, assignors.)						
Aktiebolaget Radiator. (See Salenius, Erik G. N., assignor.)	656,921	Aug. 28	3351	763	92	1735
Albers, John E., Wisner, Nebr. Windmill-wheel	653,198	July 3	859	201	92	172
Albiez, Joseph, New York, N. Y. Stopper for atomizers or perfumery-bottles						
Albrecht, Friedrich, Melbourne, Victoria. Means for coupling pipes or cocks to fluid mains, branches receptacles, or tanks	657,504	Sept. 11	907	184	92	2007
Alcatraz Company. (See Bell, Arthur F. L., assignor.)						
Alcohol Syndicate. (See Macalpine, Thomas, assignor.)						
Alden Type Machine Company. (See Johnson and Low, assignors.)						
Aldredge, Madison. (See Wilson, George E., assignor.)						
Alefeld, Georg, Darmstadt, assignor to L. W. Gans, Frankfort-on-the-Main, Germany. Manufacture of incandescent materials for electric lighting	656,077	Aug. 14	1753	406	92	1306
Alexander Company. (See Alexander, Philemon W., assignor.)	654,044	July 17	2471	567	92	520
Alexander, Michaelis, Konitz, Germany. Closure for milk or other cans						
Alexander, Philemon W., assignor to Alexander Company, Tifton, Ga. Speed-regulator for dynamos	657,906	Sept. 18	1636	353	92	2165
Alexander Smith & Sons Carpet Company. (See Tymeson and Borland, assignors.)						
Alexander, Theophilus W., Burlington, Iowa. Oil-can	657,804	Sept. 4	447	94	92	1890
Alexander, William E., Langston, La. Car-coupling	656,736	Aug. 28	2953	675	92	1661
Alexander, William E., assignor of one-half to J. C. Dando, Jr., Philadelphia, Pa. Index	653,605	July 10	1642	383	92	341
Alford, Eugene C., Moro, Oreg. Towel or paper rack	658,333	Sept. 25	2406	532	92	2345
Alger, Charles F., Melbourne, Victoria. Windmill	656,922	Aug. 28	3352	763, 764	92	1736
Allard, John, Kewanee, Ill. Extension shade-roller	655,678	Aug. 14	973	221	92	1241
Allday, Edmund. (See Eades and Allday.)						
Allen, Aaron B., Pueblo, Colo. Metallic cross-tie and rail-fastening	656,799	Aug. 28	3007	697	92	1682
Allen, Charles F., Massillon, Ohio. Lamp	656,005	Aug. 14	1624	374, 375	92	1369
Allen, Charles W., Manasquan, N. J. Joint for tool-handles	656,710	Aug. 28	2908	602	92	1652
Allen, David H., Miamisburg, Ohio. Tobacco-pouch	656,078	Aug. 14	1756	406	92	1397
Allen, Frank D., Stone Cliff, W. Va. Charging-car	655,179	Aug. 7	4	1	92	1041
Allen, Frank E., and A. F. Finch, Boone, Iowa. Filler for sight-feed lubricators	653,371	July 10	1230	268	92	256
Allen, Frederick E., assignor of one-half to F. E. H. Gary, Boston, Mass. Clasp	657,752	Sept. 11	1366	289	92	2097
Allen, George E., Buffalo, N. Y. Game apparatus	657,233	Sept. 4	311	66	92	1864
Allen, James B., and C. D. Hall, Providence, R. I. Steam-renovator for fabrics	658,328	Sept. 18	2386	527	92	2315
Allen, Mary L. (See Heine, August, assignor.)						
Allen, William E., Salem, Mass., assignor to Draper Company, Portland, Me., and Hopedale, Mass. Warp-stop-motion mechanism	658,730	Sept. 25	3133	696	92	2488
Allen, William P., Chicago, Ill. Syringe	657,328	Sept. 4	499	104	92	1899
Allison, Edward H., Fort Yates, N. D., assignor of one-half to R. J. Hampton, Chico, Cal. Game or toy	655,667	Aug. 7	951	215	92	1226
Allison, John W., and W. H. Bauer, Sylvia, Kans. Self-measuring faucet	653,835	July 17	2117	481	92	451
Allyne, Edmund E., and L. R. Pomeroy, Cleveland, Ohio. Power mechanism for automobile vehicles	655,749	Aug. 14	1097	253, 254	92	1266
Alm, Hans A., Hankinson, N. D. Permutation-lock	656,157	Aug. 21	1911	439	92	1443
Altman, John B., assignor of one-half to C. W. Trefny, St. Louis, Mo. Screw-propeller	653,979	July 17	2371	546	92	500
Altmann, Charles, Lyons, France. Steam-boiler	653,372	July 10	1231	294	92	257
Alton, Lee T., New York, N. Y. Incandescent gas-burner	655,042	July 31	4503	1015	92	977
Aluminum Plate and Press Company. (See Leary, Jerome W., assignor.)						
Aluminum Plate and Press Company. (See Seymour, Edward C., assignor.)						
Aluminum Plate and Press Company. (See Wishart, George, assignor.)						
Alves, Hugo C. (See Lueder and Alves.)						
Ambrose Machine Company. (See Tripold, Ambrose A., assignor.)						
Amend, Jacob M. (See Amend, William F., assignor.)	658,609	Sept. 25	2900	645	92	2443
Amend, William F., assignor of one-half to J. M. Amend, Dayton, Ohio. Hame-strap						
American Alkali Company. (See Entz, Justus B., assignor.)						
American Automatic Loom Company. (See Fischer, William, Sr. and Jr., assignors.)						
American Automatic Loom Company. (See Kuett, George F., assignor.)						
American Bell Telephone Company. (See Arnold, Chester H., assignor.)						
American Bell Telephone Company. (See Hayes and Cram, assignors.)						
American Bell Telephone Company. (See Hulfish, David S., assignor.)						
American Bell Telephone Company. (See Thompson and Robes, assignors.)						
American Bell Telephone Company. (See Wales, Thomas C., Jr., assignor.)						
American Bicycle Company. (See Copeland, James S., assignor.)						
American Bicycle Company. (See Darling, Robert F., assignor.)						
American Car and Foundry Company. (See Eubank, Thomas, assignor.)						
American Car Sprinkler Company. (See Thomas, Alfred, assignor.)						
American Carbide Lamp Company. (See Pyle, Howard L., assignor.)						
American Construction Company. (See Jefferies, Ebenezer A. W., assignor.)						
American Cotton Company. (See Swenson, Magnus, assignor.)						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
American Dredging Company. (See Bradley, William J., assignor.)						
American Graphophone Company. (See Macdonald, Thomas H., assignor.)						
American Locomotive Sander Company. (See Leach, Henry L., assignor.)						
American Optical Company. (See Young, John A., assignor.)						
American Power Brake Company. (See Theilengerdes, Frederick, assignor.)						
American Process Company. (See Bussells, Josephus F., assignor.)						
American Pulley Company. (See Brinley and Budd, assignors.)						
American Radiator Company. (See Thompson, Charles B., assignor.)						
American Specialty Manufacturing Company. (See Capewell, George J., assignor.)						
American Steel and Wire Company. (See Parsons, Edward L., assignor.)						
American Steel and Wire Company of New Jersey. (See Daniels and Marshall, assignors.)						
American Tap Bush Company. (See Mohn, John, assignor.)						
American Thread Company. (See Palmer, Maro V., assignor.)						
American Toll Telephone Company. (See Foss, William A., assignor.)						
American Wood Fiber Company. (See Askins, Joseph, assignor.)						
American Wood Fiber Company. (See Robinson, Thomas A., assignor.)						
Ames, Charles D., Portland, Ind., assignor to Creamery Package Manufacturing Company, Chicago, Ill. Tub-making machinery	654,822	July 31	4092	920, 921, 922	92	890
Ames, John F., Portland, Oreg. Box-printing machine	656,383	Aug. 21	2328	584	92	1522
Ames, Orville W. (See Wormald and Ames.)						
Amies, Joseph H., Philadelphia, Pa. Making sheet-asphalt pavements	654,216	July 24	2931	.....	92	634
Ampere Electro Chemical Company. (See Jacobs, Charles B., assignor.)						
Andersen, Christian. (See Woolner and Andersen.)						
Andersen, Christian, and A. Woolner, Jr., Peoria, Ill. Rotary drier	653,646	July 10	1746	402	92	361
Andersen, Louis J., Decorah, Iowa. Check-hook	654,582	July 31	3609	813	92	791
Anderson, Charles D., Chicago, Ill. System of electrical distribution	653,784	July 17	2016	460, 461	92	432
Anderson, Charles O. (See Bell, John D., assignor.)						
Anderson, George, Carnoustie, Scotland. Setting diamonds, &c., in metal holders	657,262	Sept. 4	372	78	92	1876
Anderson, George W., Hollansburg, Ohio. Reversing mechanism for engines	657,909	Sept. 18	1639	354	92	2166
Anderson, Henry B. (See Williamson, James E., assignor.)						
Anderson, James C., Jersey City, N. J. Machine for winding and insulating electric coils	654,583	July 31	3610	813, 814, 815, 816	92	791
Anderson, James C., Jersey City, N. J. Winding-machine	654,584	July 31	3623	816	92	793
Anderson, James C., Highland Park, Ill. Autotruck for garbage, ashes, &c	655,320	Aug. 7	274	61, 62	92	1095
Anderson, James C., Highland Park, Ill. Autotruck vehicle	655,321	Aug. 7	277	62, 63	92	1095
Anderson, James P., Anamosa, Iowa. Carbureter	656,495	Aug. 21	2526	582	92	1560
Anderson, John. (See Hardart and Anderson.)						
Anderson, John A. E., Chicago, Ill. Ice-cream freezer	655,387	Aug. 7	403	88	92	1117
Anderson, Louis, Chicago, Ill. Scrubbing-machine	654,932	July 31	4311	969, 970	92	937
Anderson, Martha, Victor, Colo. Dress-glove	653,168	July 3	807	191	92	161
Anderson, Oliver N., Lancaster, Pa. Heat or draft regulating damper	654,045	July 17	2472	567	92	520
Anderson, Samuel C., Springfield, Ohio. Money-drawer	652,991	July 3	496	117	92	100
Anderson Tool Company. (See Lea, Edward S., assignor.)						
Anderson, William G., assignor to H. E. Sargent, Brookline, Mass. Partng-bead for window-sashes	653,540	July 10	1543	358	92	320
Andrade, Cipriano, Jr., Haverford, Pa. Hull for ships or boats	652,876	July 3	249	60, 61	92	50
Andrew Homan Company. (See Homan, William, assignor.)						
Andrews, Everett M. and M. N., Des Moines, and C. M. Conger, Adel, Iowa. Magneto-electric motor	652,952	July 3	424	98	92	86
Andrews, Melvin N. (See Andrews and Conger.)						
Andrews, William S., Schenectady, N. Y., assignor to General Electric Company, of New York. Roentgen-ray apparatus	657,378	Sept. 4	595	125	92	1920
Andziewicz, Antoni, Chicago, Ill. Bicycle-crank	654,560	July 24	3570	805	92	766
Angevine, Zenus C., New York, N. Y. Life-preserver	653,201	July 10	901	218	92	195
Angle, Andrew H. (See Klett, Christian F., assignor.)						
Anglo-American Provision Company. (See Mitchell, John, assignor.)						
Anglo-American Provision Company. (See Northam, Frank R., assignor.)						
Angus, James, Philadelphia, Pa. Dust-arrester	654,866	July 31	4183	943	92	909
Ansboro, Thomas, assignor of one-half to J. Fairie, Glasgow, Scotland. Apparatus for presenting living pictures to the eye	654,585	July 31	3626	817	92	793
Anthony, William W., *et al.* (See Whipple, Archibald M., assignor.)						
Appel, Joseph M. (See Clarke, George W., assignor.)						
Appelgate, Alva, Green Mountain, Iowa. Governor for stacker-blowers	654,933	July 31	4312	970	92	937
Apperson, Elmer. (See Haynes and Apperson.)						
Appleton, Alfred E., Tewkesbury, England. Fastener for windows	658,418	Sept. 25	2566	569	92	2376
Appleton, Edward D., *et al.*, trustees. (See St. John, Rosswell H., assignor.)						
Appleton, George F., Haverstraw, N. Y. Optical device	656,496	Aug. 21	2527	582	92	1560
Appleton, Joseph, Philadelphia, Pa., assignor to Electric Storage Battery Company, Gloucester City, N. J. Means for controlling excitation of boosters or generator-fields	657,722	Sept. 11	1313	277, 278	92	2086
Arbuckle, Charles H. (See Vroom and Arbuckle.)						
Archer, David J., Toronto, Canada. Hair-clipper	657,074	Sept. 4	1	1	92	1801
Archer, William E., London, England. Extinguisher for lamps or the like	658,419	Sept. 25	2568	569	92	2377
Arel, Joseph, Northampton, Mass. Horse-arresting device	658,185	Sept. 18	2056	448	92	2250
Arenson, David, Escanaba, Mich. Car-coupling	657,848	Sept. 11	1533	329, 330	92	2132
Arents, George, Jr. (See Patterson and Arents.)						
Arents, George, Jr., *et al.* (See Tyberg, Olaf, assignor.)						
Argall, Philip, Denver, Colo. Ore-roasting furnace	653,202	July 10	902	218, 219	92	195
Arit, Anton, Bad Sommerstein, Germany. Vaginal syringe	655,540	Aug. 7	647	148	92	1167
Armantrout, Charles A., Seymour, Iowa. Automatic weather-strip for doors	653,606	July 10	1642	384	92	341
Armitage, Albert A. (See Armitage, Homer C., assignor.)						
Armitage, Homer C., assignor of one-half to A. A. Armitage, Kenesaw, Nebr. Stove-pipe attachment	657,723	Sept. 11	1316	278	92	2086
Armour & Co. (See Kirby, Thomas B., assignor.)						
Armour Packing Company. (See Bright, Frederick W., assignor.)						
Armour, William A., Thomaston, Conn. Syringe	653,013	July 3	534	125	92	107
Armstrong, Frank H., Auburn, N. Y. Type-writer	654,217	July 24	2932	657, 658, 659	92	634
Armstrong, William A. (See Mitchell and Armstrong.)						
Armstrong, William Y., Hutchinson, Kans. Rest for folding vehicle-tops	655,679	Aug. 14	974	221	92	1241

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Arndt, Max, Aix-la-Chapelle, Germany. Measuring apparatus for liquids	653,203	July 10	906	219	92	196
Arnold, Andreas, Munich, Germany. Adjustable axle-bearing for band-saws	656,800	Aug. 28	3069	697	92	1682
Arnold, Chester H., assignor to American Bell Telephone Company, Boston, Mass. Means for relieving telephone-lines from deleterious electrical charges	657,305	Sept. 4	448	95	92	1890
Arnold, Christian, Paterson, N. J. Wagon-platform	655,947	Aug. 14	1493	343	92	1313
Arnold, Ernest, Philadelphia, Pa. Measuring-faucet	652,992	July 3	498	117	92	101
Arnold, George W., Girard, Ohio. Barrel-truck	653,129	July 3	745	175	92	149
Arnold, Jesse. (See Howard, Benjamin F., assignor.)						
Arnold, Oliver, Leicester, Mass. Perforating mechanism for card-setting machines	656,335	Aug. 21	2237	513	92	1504
Arnold, Philip C. (See Bevin and Arnold.)						
Arnold, William B. (See Gurney, Eli E., assignor.)						
Arnold, William H., New York, N. Y. Dredger-bucket	652,738	July 3	1	1	92	3
Arsenical Gold Reduction Company. (See Westman, Gustaf M., assignor.)	656,079	Aug. 14	1756	406	92	1397
Arsnean, Edward P., Duluth, Minn. Derrick	654,046	July 17	2474	567	92	520
Arthurs, Anna M., Pittsburg, Pa. Steam-cooker						
Artigues, Joseph E., *et al.* (See Heiny, Anatole, assignor.)						
Asbell, Noah, Thomasville, assignor of one-half to W. Howze, Cairo, Ga. Cane-stripper	655,043	July 31	4506	1016	92	978
Asbell, Sylvester J., Paterson, N. J. Water-closet valve	654,377	July 24	3246	727	92	701
Asbury, T. Henry. (See Mosher, Charles P., assignor.)	654,700	July 31	3854	869	92	810
Asbury, William, New York, N. Y. Electric controller	656,158	Aug. 21	1913	439	92	1443
Ash, Charles F., New York, N. Y. Confiner of wires for electrical connections						
Ashley & Bailey Company. (See Ashley, Dwight, assignor.)						
Ashley, Dwight, assignor to Ashley & Bailey Company, Paterson, N. J. Silkifying cotton	653,014	July 3	535	.....	92	107
Ashley, Frank M., New York, N. Y., assignor to General Electric Company, of New York. Conduit electric-railway system	654,586	July 31	3628	818	92	794
Ashman, David, Baltimore, Md., assignor to Eagle Manufacturing Co. Power-transmitting device	653,636	July 10	1730	399	92	359
Ashman, David, Baltimore, Md., assignor to Eagle Manufacturing Co. Machine-brake	653,637	July 10	1732	399	92	359
Ashton, Joseph. (See Bedford and Ashton.)						
Ashton, Thomas R. R., Middle Brighton, Victoria. Buffer for high-explosive projectiles	654,107	July 17	2572	592	92	539
Ashton, Thomas R. R., London, England. Percussion-fuse for projectiles	654,108	July 17	2573	591 592	92	539
Ashton, Thomas R. R., London, England. Percussion-fuse for projectiles	654,587	July 31	3630	818 819	92	794
Ashworth, Adam. (See Hart and Ashworth.)						
Ashworth, Arthur, Bury, England. Cloth-stretching machine	653,277	July 10	1055	.....	92	224
Ashworth, Arthur, Bury, England. Making black sulfur dye	653,278	July 10	1056	.....	92	224
Ashworth, Arthur, and J. Bürger, Bury, England. Brown sulfur dye	655,595	Aug. 7	767	180	92	1189
Ashworth, Arthur, and J. Bürger, Bury, England. Brown sulfur dye	653,331	July 10	1140	271	92	240
Askins, Joseph, assignor to American Wood Fiber Company, Lima, Ohio. Mechanism for reducing wood to fiber	653,332	July 10	1142	272	92	241
Aspinwall, Lewis A., assignor to Aspinwall Manufacturing Company, Jackson, Mich. Beehive	653,333	July 10	1145	272 273	92	241
Aspinwall, Lewis A., assignor to Aspinwall Manufacturing Company, Jackson, Mich. Potato-sorter	658,561	Sept. 25	2797	621	92	2422
Aspinwall, Lewis A., assignor to Aspinwall Manufacturing Company, Jackson, Mich. Liquid-sprayer	658,562	Sept. 25	2800	621 622	92	2423
Aspinwall, Lewis A., assignor to Aspinwall Manufacturing Company, Jackson, Mich. Pea-sheller						
Aspinwall, Lewis A., assignor to Aspinwall Manufacturing Company, Jackson, Mich. Potato-planter						
Aspinwall Manufacturing Company. (See Aspinwall, Lewis A., assignor.)						
Asquith, John H. S. (See Evans and Asquith.)						
Associated Press. (See Millison, Bert, assignor.)						
Athearn, William E., New York, N. Y. Lightning-arrester	656,780	Aug. 28	3092	690	92	1676
Atkins, James, Montclair, N. J. Nail-machine	654,047	July 17	2475	568 569	92	520
Atkins, James, Montclair, N. J. Nail-machine	654,048	July 17	2479	569 570 571	92	521
Atkinson, Charles W., Hudson, Mich. Carbureter	658,056	Sept. 18	1917	416	92	2223
Atkinson, Henry C., Louisville, Ky. Sausage stuffing and linking machine	658,521	Sept. 25	2797	605 606	92	2408
Atlee, Joshua W., Riverton, N. J. Supporting-cleat	654,338	July 24	3173	711	92	681
Atsatt, John C. F., Mattapoisett, Mass. Poultry-feeder	654,427	July 24	3344	750	92	721
Atwater, Harry R., assignor to Osborn Manufacturing Company, Cleveland, Ohio. Tool-handle	654,588	July 31	3631	819	92	795
Atwood, John M., *et al.* (See Post, William S., assignor.)						
Aue, Joseph E., assignor to De La Vergne Refrigerating Machine Company, New York, N. Y. Can-filler	657,151	Sept. 4	143	33	92	1820
Aue, Joseph E., assignor to De La Vergne Refrigerating Machine Company, New York, N. Y. Can-filler	657,152	Sept. 4	145	33	92	1820
Auer, George, Toledo, Ohio. Hot-air register	657,049	Aug. 28	3569	822	92	1778
Augustine, Bernard W., Alameda, Cal. Painting-machine	656,080	Aug. 14	1758	406	92	1397
Ault, Playfair G. (See Davis, Ault, Bailey, and Wideman.)						
Aumann, Louis A., Chicopee, Mass. Machine for unwinding cylindrical cotton-bales	654,086	July 17	2539	584	92	533
Auslund, C. Fred. (See Lloyd, Daniel, assignor.)						
Austin, Frederick C. (See Brophy, Luke V., assignor.)						
Austin, Frederick C. (See Moats, Ortus E., assignor.)						
Austin, Frederick C. (See Rhodes, Jay B., assignor.)						
Austin, Perry G., Hecla, Ind. Buggy-top attachment	656,159	Aug. 21	1915	439	92	1443
Autocar Company. (See Clarke and Heaslet, assignors.)						
Autocar Company. (See Clarke, Morgan, and Heaslet, assignors.)						
Auto-Electric Air Pump Company. (See Eck, Charles A., assignor.)						
Automatic Electric Clock Company. (See Getty, Fred L., assignor.)						
Automatic Fire Alarm and Extinguisher Company. (See Reeve, Henry E., assignor.)						
Automatic Machine Company. (See Wells, Frederic E. and F. O., assignors.)						
Automatic Racking Machine Company. (See Colby, Harry W., assignor.)						
Avery, Amariah, Manchester, N. H. Attachment for wool-spinning frames	653,836	July 17	2118	481	92	451
Avery Stamping Company. (See Judd, Wallace S., assignor.)						
Avery, Thomas C., Garrison's, N. Y. Ventilator	658,169	Sept. 18	2125	462	92	2265
Axelton, Andrew, Graettinger, Iowa. Staple-puller	656,711	Aug. 28	2910	662	92	1652
Aykroyd, Henry E., Ilkley, and P. Krais, Bradford, England. Mercerizing	657,849	Sept. 11	1534	.....	92	2132
Ayres, Henry S., assignor to A. P. McGraw, McGrawville, N. Y. Ruffling attachment for sewing-machines	655,180	Aug. 7	5	2	92	1042
B. F. Goodrich Company. (See McGuire, John F., assignor.)						
Babb, Charles A., Meadville, Mo. Latch for swinging bins or compartments	658,310	Sept. 18	2359	520	92	2310

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Babbage, Felix, *et al.*, executors. (See Townsend, William, assignor.)						
Babbitt, Charles E., *et al.* (See Trautvetter, Erwin von, assignor.)						
Babcock, W. Irving. (See Gunnell, Elias, assignor.)						
Babcock, William H. (See Bedford and Ashton, assignors.)						
Bachand, Levi N., assignor of one-half to W. J. Garvy, Chicago, Ill. Folding bed	653,409	July 10	1287	306	92	267
Bachmann, Siegmund, Chicago, Ill. Collapsible receptacle	655,680	Aug. 14	975	221	92	1241
Backstrom, Herman, Montpelier, Idaho. Dental articulator	654,109	July 17	2575	592	92	540
Backus, John C., assignor of one-half to W. H. Hungerford, Smethport, Pa. Locking coat-hook	656,688	Aug. 28	2869	653	92	1645
Bacon, Charles A., Lockford, assignor of one-half to S. H. Cohn, Stockton, Cal. Acetylene-gas generator	653,873	July 10	1232	294	92	257
Bacon, George H., Burlington, Vt. Spoon-hook for fishing-tackle	653,204	July 10	908	219	92	196
Bader, Leander, Biencoe, Iowa. Hinge	655,596	Aug. 7	770	181	92	1189
Badger, Arthur C, Boston, Mass. Fire-extinguisher	656,873	Aug. 28	3258	740	92	1718
Badische Anilin and Soda Fabrik. (See Abel and Kalkow, assignors.)						
Badische Anilin and Soda Fabrik. (See Bally, Oscar, assignor.)						
Badische Anilin and Soda Fabrik. (See Bazlen, Max, assignor.)						
Badische Anilin and Soda Fabrik. (See Beyer and Schaar-Rosenberg, assignors.)						
Badische Anilin and Soda Fabrik. (See Julius, Paul, assignor.)						
Badische Anilin and Soda Fabrik. (See Siegelmann, Armand J., assignor.)						
Baeck, Eugene C., Hastings, N. Y. Mold for casting wall-paper-printing rollers	657,807	Sept. 11	1460	310	92	2116
Bagdad Rug Company. (See Corzilius, Jakob, assignor.)						
Bahls, Emil J. (See Freese, Frank, assignor.)						
Bailey, Edward L., *et al.* (See Craw, Joseph T., assignor.)						
Bailey, Herbert L., assignor to Handy Things Company, Chicago, Ill. Door check and closer	652,828	July 3	174	41	92	36
Bailey, James A. (See Macy, Lowell W., assignor.)						
Bailey, Leonard, Wethersfield, Conn. Copying-press	656,313	Aug. 21	2197	502	92	1497
Bailey, Leonard, Wethersfield, Conn. Bookbinding	658,563	Sept. 25	2805	622	92	2424
Bailey, Marion M., Chillicothe, assignor of seventy-one one-hundredths to J. S. Harshman and H. E. Murphy, Springfield, Ohio. Vehicle-wheel	655,948	Aug. 14	1495	343	92	1344
Bailey, Marion M., Chillicothe, assignor of seventy-one one-hundredths to J. S. Harshman and H. E. Murphy, Springfield, Ohio. Vehicle-wheel	655,949	Aug. 14	1498	344	92	1344
Bailey, Robert E., Wylie, Tex. Washboard	653,648	July 17	1779	407	92	387
Bailey, Samuel R., Amesbury, Mass. Body-hanger for carriages	653,607	July 10	1643	384	92	341
Bailey, Samuel R., Amesbury, Mass. Carriage-body	656,006	Aug. 14	1625	375	92	1370
Bailey, Wilber W. (See Davis, Ault, Bailey, and Wideman.)						
Bailey, William. (See Brooker and Bailey.)						
Baird, Aaron D., and O. Schellert, Indianapolis, Ind. Cream-separator	653,980	July 17	2372	546	92	500
Baird, Milton I., Glenfield, Pa. Switchboard for telephones	656,336	Aug. 21	2239	514 515	92	1504
Baird, Milton I., Glenfield, Pa. Switchboard for telephones	656,384	Aug. 21	2329	534 535	92	1522
Baker, Charles A. (See Darby and Baker.)						
Baker, Charles C. (See Ballard, Luther W., assignor.)						
Baker, Charles E., Bloomdale, Ohio. Wire-stretcher	653,055	July 3	606	143	92	123
Baker, Charles W., Montclair, N. J., assignor to M. K. Bowen, Chicago, Ill., deceased; A. D. Bowen, executrix. Wagon-road construction	654,701	July 31	3856	869	92	840
Baker, Elijah E., assignor of one-third to J. E. Baker, Hyde Park, Mass. Self-lubricating axle-spindle	654,702	July 31	3857	870	92	840
Baker, George C., Albany, N. Y. Check-protector	657,475	Sept. 4	774	166 167	92	1954
Baker, Henry R., assignor of one-half to R. F. Simmons Company, Attleborough, Mass. Reduction to hollow wire of tubular shells of gold	654,590	July 31	3633	819 820	92	795
Baker, James E. (See Baker, Elijah E., assignor.)						
Baker, James H., Allegheny, assignor to James H. Baker Manufacturing Company, Pittsburg, Pa. Machine for manufacturing clips for wagons	657,583	Sept. 11	1043	216 217	92	2084
Baker, John, Meacham, Ill. Pneumatic tire	653,497	July 10	1454	340	92	301
Baker, John, Birmingham, England. Preparing etching-grounds	654,867	July 31	4184	943	92	910
Baker, John S., Beverly, Mass., assignor to Beverly Engine and Machine Company, Providence, R. I. Car-brake device	653,056	July 3	607	144	92	123
Baker, John W., Tippecanoe City, Ohio. Sliding gate	658,610	Sept. 25	2901	646	92	2443
Baker, Richard C., London, England. Obtaining hardening or toughening compounds for alloying with iron or steel	652,877	July 3	252	.....	92	50
Baker, William H., Central Falls, R. I., and F. E. Kip, Montclair, N. J. Loom	655,642	Aug. 7	865	200 201	92	1208
Baker, William H., Central Falls, R. I., and F. E. Kip, Montclair, N. J. Loom	655,643	Aug. 7	867	201 202	92	1208
Baker, William H., Central Falls, R. I., and F. E. Kip, Montclair, N. J. Warp stop-motion for looms	655,644	Aug. 7	873	202	92	1210
Baker, William H., Central Falls, R. I., and F. E. Kip, Montclair, N. J. Loom	655,645	Aug. 7	875	203	92	1210
Baker, William H., Central Falls, R. I., and F. E. Kip, Montclair, N. J. Automatic controlling mechanism for looms	655,646	Aug. 7	881	204	92	1212
Baker, William H., Central Falls, R. I., and F. E. Kip, Montclair, N. J. Loom	655,647	Aug. 7	883	204 205	92	1212
Baker, William H., Central Falls, R. I., and F. E. Kip, Montclair, N. J. Loom	655,648	Aug. 7	888	205 206	92	1214
Baker, William H., Central Falls, R. I., and F. E. Kip, Montclair, N. J. Loom	655,649	Aug. 7	895	206 207	92	1216
Baker, William H., Central Falls, R. I., and F. E. Kip, Montclair, N. J. Warp stop mechanism for looms	656,612	Aug. 21	2754	631	92	1609
Baker, William H., Central Falls, R. I., and F. E. Kip, Montclair, N. J. Loom	656,613	Aug. 21	2757	632	92	1609
Baker, William H., Central Falls, R. I., and F. E. Kip, Montclair, N. J. Means for raising pile or nap on fabrics	658,539	Sept. 25	2760	613	92	2414
Bakken, Edward C., Renville, Minn. Stock for holding cattle while dehorning	657,379	Sept. 4	5 8	125	92	1921
Baldwin, Cyrus W., deceased, (M. E. Baldwin, executrix,) and W. D. Baldwin, Yonkers, N. Y., assignors to Otis Elevator Company, East Orange, N. J. Elevator	657,380	Sept. 4	599	125 126	92	1921
Baldwin, Frederic E., New York, N. Y. Acetylene-gas lamp	656,874	Aug. 28	3259	740	92	1719
Baldwin, Leon F. N., Providence, R. I., assignor, by mesne assignments, to Slaymaker-Barry Company, Incorporated, Connellsville, Pa. Device for drying exhaust-steam	652,739	July 3	3	1	92	3
Baldwin, Leon F. N., Providence, R. I., assignor, by mesne assignments, to Slaymaker-Barry Company, Incorporated, Connellsville, Pa. Device for drying exhaust-steam	653,334	July 10	1149	273	92	242
Baldwin, Mary E., executrix. (See Baldwin, Cyrus W. and W. D.)						
Baldwin, Nathaniel G., Washington, Pa. Bottle-stopper	656,689	Aug. 28	2873	654	92	1646
Baldwin, William A., Smith's Falls, and T. Johnston, Kemptville, assignors to J. R. Lavell, Smith's Falls, Canada. Riding-plow	658,334	Sept. 25	2407	532 533 534	92	2345

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Baldwin, William D. (See Baldwin, Cyrus W. and W. D.)						
Ball and Socket Fastener Company. (See Richardson, William S., assignor.)						
Ball, Charles A., *et al.* (See Normand, Joseph E., assignor.)	657,505	Sept. 11	908	184	92	2007
Ball, Edwin J., Hull, England. Automatic photographic apparatus	658,199	Sept. 18	2171	475	92	2273
Ball, Frank H. and F. O., Plainfield, N. J. Steam-engine	658,200	Sept. 18	2173	475	92	2274
Ball, Frank H. and F. O., Plainfield, N. J. Steam-engine	658,201	Sept. 18	2175	476	92	2274
Ball, Frederick O. (See Ball, Frank H. and F. O.)						
Ball, Herman F. (See Waitt and Ball.)						
Ball, Needham E. (See Crawford, Henry N., assignor.)	657,075	Sept. 4	3	1	92	1801
Ball, William E., Zanesville, Ohio. Nut-lock wrench	658,731	Sept. 25	3134	696	92	2489
Ballard, Luther W., assignor of one-half to C. C. Baker, Alliance, Ohio. Garment-support	654,868	July 31	4186	948	92	910
Ballinger, Elum, Laramie, Ohio. Pump	658,895	July 17	2223	505 / 506	92	472
Ballou, Frederick A., Providence, R. I. Collar-button						
Bally, Oscar, assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Mordant-dyeing coloring-matter	654,505	July 24	3485	------	92	750
Bally, Oscar, assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Dye from anthracene-blue	654,506	July 24	3486	------	92	750
Bally, Oscar, Mannheim, assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Sulfonated anthraquinone dye	656,081	Aug. 14	1760	------	92	1398
Balph, Charles A., Pittsburg, Pa. Underground system of electric railways	653,649	July 17	1780	407	92	387
Balser, John P., New York, N. Y. Folding bed or crib	655,950	Aug. 14	1500	344	92	1345
Baltimore Ball Bearing Company of Baltimore City. (See Norwood, John E., assignor.)						
Bamford, John S., administrator. (See McGregor and Locklin.)						
Bammann, Johann, and E. Davidis, Elberfeld, Germany, assignors to Farbenfabriken of Elberfeld Company, New York, N. Y. Blue tetrazo dye and making same	656,619	Aug. 28	2773	------	92	1625
Bammann, Johann, E. Davidis, and W. Vorster, Elberfeld, Germany, assignors to Farbenfabriken of Elberfeld Company, New York, N. Y. Blue-red substantive dye	656,620	Aug. 28	2774	------	92	1625
Bammann, Johann, E. Davidis, and W. Vorster, Elberfeld, Germany, assignors to Farbenfabriken of Elberfeld Company, New York, N. Y. Azo dyestuff and making same.	656,621	Aug. 28	2775	------	92	1625
Bancroft, John S. (See Sellers and Bancroft.)						
Banker, George W., deceased; G. W. Peck, Roselle, N. J., executor. Crate for tilting demijohns	653,396	July 10	1270	302	92	264
Bankers Adding and Recording Machine Company. (See Dennis, Adolphus S., assignor.)						
Banks, Benjamin S. (See Chalmers, Frank A., assignor.)						
Bannies, Emil, Hamburg, Germany, assignor to L. Goetz, New York, N.Y. Advertising-sign	652,878	July 3	253	61	92	50
Banning, Hubert A. (See Corduan, Frank H., assignor.)						
Banning, Thomas A. (See Bond, Oscar W., assignor.)	657,635	Sept. 11	1138	239	92	2052
Barber, John C., St. Paul, Minn. Passenger-car truck	657,910	Sept. 18	1640	------	92	2166
Barber, Ohio C. (See Johnston, William A., assignor.)	654,591	July 31	3635	820	92	796
Barber, Willard F., Wilkes-Barré, Pa. Metallic cement for electric-conductor joints	654,776	July 31	4003	900	92	870
Barber, William J., Honeoye Falls, N. Y. Insect-destroyer						
Barber, William J., Honeoye Falls, N. Y. Stove-leg	654,378	July 24	3348	728	92	701
Barekdall, Daniel, assignor of two-thirds to W. J. Woodward and G. A. Deitch, Indianapolis, Ind. Carbureter	653,541	July 10	1544	359	92	320
Barclay, John J., assignor of one-half to M. Quay, Elizabeth, N. J. Wrench	658,311	Sept. 18	2360	521	92	2311
Barclay, Woodson, Covell, Ill. Unloader for wagons	657,306	Sept. 4	450	95	92	1890
Bardons, George C., and G. W. Drake, Cleveland, Ohio. Turret-lathe	654,934	July 31	4314	970	92	938
Bark, Henry, Yonkers, N. Y. Attachment for feed-bags	653,542	July 10	1545	359	92	320
Barker, Amos M., Bloomington, Nebr. Singletree-coupling						
Barker, Frederick, *et al.* (See McKeever, George F., assignor.)	654,301	July 24	3109	696	92	671
Barnes, Edwin S., assignor of one-half to R. M. Byers, New York, N. Y. Closet-seat	654,589	July 31	3632	819	92	795
Barnes, Joshua B., Springfield, Ill. Exhaust-tip for locomotives	658,228	Sept. 18	2223	486 / 487	92	2284
Barnes, Joshua F., Shannon, Ill. Gate	658,896	July 17	2224	506	92	472
Barnes, Richard, Lauder, Canada. Rein-holder	654,428	July 24	3345	750 / 751	92	721
Barnes, William M., Philadelphia, Pa. Ironing-machine	657,381	Sept. 4	601	126	92	1921
Barnes, William O., Stamford, Conn. Automobile	656,622	Aug. 28	2776	635	92	1625
Barnes, Willis J., assignor to E. A., L. B., and B. E. Phillippi, and F. Brown, Milan, Kans. Combination-tool	653,498	July 10	1455	340	92	302
Barnett, Frank N., Toronto, Canada. Fire-escape	652,879	July 3	254	61	92	50
Barnett, George F., London, England. Apparatus for sharpening razors, knives, or cutting instruments	657,978	Sept. 18	1799	388	92	2200
Barney, Edwin E., Groton, N. Y. Type-writing machine						
Barnhart, Arthur G., *et al.* (See Jones, Edward C., assignor.)	656,762	Aug. 28	2997	683 / 684	92	1669
Baron, Auguste, Asnières, France. Apparatus for taking and reproducing animated scenes and sounds	653,608	July 10	1644	384 / 385	92	341
Barr, Henry G., assignor to T. C. Bates, Worcester, and C. M. Gage, Pepperell, Mass. Sheet-separating machine						
Barr, John H. (See Fyke and Barr.)						
Barr, John W., *et al.* (See Pfautz, Daniel M., assignor.)	655,750	Aug. 14	1104	254 / 255	92	1267
Barr, Mark, Broadheath, assignor to Linotype Company, Limited, London, England. Pantograph engraving-machine	654,592	July 31	3637	820	92	796
Barr, William H., Bury, England. Filtering apparatus	658,312	Sept. 18	2261	521	92	2311
Barratt, William T. (See Hurley and Barratt.)						
Barrett, Charles L., Afton, Va. Base for posts or poles						
Barrett, Glenn J. (See Fox, Barrett, and Ray.)						
Barrett, Mora M. (See Jones and Barrett.)	656,007	Aug. 14	1628	375	92	1370
Barron, John F., Rumford Falls, Me. Scaffold-hanger						
Barron, John R. (See Moore and Jones, assignors.)						
Barron, Walter J., New York, assignor to Densmore Typewriter Company, Syracuse, N. Y. Type-writing machine	656,281	Aug. 21	2141	489	92	1486
Barron, Walter J., New York, assignor to Densmore Typewriter Company, Syracuse, N. Y. Type-writing machine	657,153	Sept. 4	148	34	92	1830
Barry, James H., London, England. Chain	653,374	July 10	1236	294	92	258
Barry, Robert J., assignor of one-half to C. Cullinan, Bangor, Me. Bridge-alarm for trainmen	657,506	Sept. 11	910	185	92	2007
Bartell, Frederick Z., Sioux City, Iowa. Air-actuated pump	657,753	Sept. 11	1368	289	92	2097
Barth, Moritz, Berlin, Germany. Apparatus for successively representing movable or immovable pictures or advertisements	652,947	July 3	418	96	92	85
Barth, Moritz, Berlin, Germany. Folding ladder	652,948	July 3	419	97	92	85
Barthel, Michael, San José, Cal. Musical whistle	653,375	July 10	1238	295	92	258
Barthels, Friedrich W., Hamburg, Germany. Pipe-fitting and making same	653,279	July 10	1057	253	92	224

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Barthels, Friedrich W., Hamburg, Germany. Device for flanging tubes	656,623	Aug. 28	2778	635	92	1626
Barthels, Friedrich W., and W. Schaefer, Hamburg, Germany. Flanged tube	653,280	July 10	1058	253	92	224
Bartholomew, Henry D., Newark, Ohio. Telegraphy	656,852	Aug. 28	3157	715	92	1700
Bartlett, George S., Boise, Idaho. Bicycle	657,352	Sept. 4	606	127	92	1922
Bartlett, Granville, Lexington, Ky. Saw-sharpening machine	657,850	Sept. 11	1535	330	92	2132
Bartlett, Thomas E. E., Atlanta, Ga. Acetylene-gas generator	656,008	Aug. 14	1630	376	92	1370
Bartley, Milton, Polk, assignor of three-tenths to J. M. Murdoch, H. F. McDowell, Pittsburg, and G. L. Weaver, Philadelphia, Pa. Nut-lock	656,151	Aug. 14	1895	436	92	1426
Bartley, Milton, Polk, assignor of three-tenths to J. M. Murdoch, H. F. McDowell, Pittsburg, and G. L. Weaver, Philadelphia, Pa. Nut-lock	656,152	Aug. 14	1896	436	92	1427
Barton, Abner W., New York, N. Y. Automatic flushing apparatus	657,278	Sept. 4	402	84	92	1881
Barton, Henry B., St. Louis, Mo. Tobacco-pipe	657,019	Aug. 28	3510	801	92	1765
Barton, John H., assignor to Ross, Limited, London, England. Prismatic binocular	657,808	Sept. 11	1461	310	92	2116
Bartz, William A. M., Grafton, Iowa. Windlass-winding attachment	654,429	July 24	3350	751	92	723
Bassett, Charles A., Anderson, Ind. Watchmaker's tool	656,160	Aug. 21	1915	440	92	1444
Bassett, Nathan, assignor to Globe Telephone Manufacturing Company, Philadelphia, Pa. Means for connecting cables	654,703	July 31	3858	870	92	840
Batchelder, D. J. (See Cramond, Alexander, assignor.)						
Batcheller, Birney C., Philadelphia, Pa. Carrier for pneumatic tubes	657,076	Sept. 4	4	1	92	1801
Batcheller, Birney C., Philadelphia, Pa. Carrier for pneumatic transmission systems	657,077	Sept. 4	6	1	92	1802
Batcheller, Birney C., Philadelphia, Pa. Packing device for annular joints	657,078	Sept. 4	8	2	92	1802
Batcheller, Birney C., Philadelphia, Pa. Carrier for pneumatic transit-tubes	657,079	Sept. 4	9	2,3	92	1802
Batcheller, Birney C., assignor to W. J. Kelly, Philadelphia, Pa. Planing-machine	654,935	July 31	4315	971	92	938
Batcher, John H., assignor to Schaw, Ingram, Batcher & Co., Sacramento, Cal. Hydraulic plate closing and riveting device	656,801	Aug. 28	3070	698	92	1683
Batdorf, John W., Hollister, Cal. Game	652,880	July 3	255	62	92	50
Bateman, Charles, Gales Creek, Oreg. Throat-frame for mail-bags	653,057	July 3	608	144	92	123
Bateman, Eugene E., Marquez, Tex. Fence	658,001	Sept. 18	1836	397	92	2208
Bates, Adelmer M., Chicago, Ill. Bag-filling machine	655,322	Aug. 7	279	63	92	1096
Bates, Chester M., and H. C. Lutz, Wilkes-Barré, Pa. Heating-drum	653,650	July 17	1782	407	92	387
Bates, Eugene D., Philadelphia, Pa. Flagstaff-bracket	655,951	Aug 14	1501	345	92	1345
Bates, George A., New York, N. Y., assignor to Mergenthaler Linotype Company, of New York. Linotype-machine	652,881	July 3	257	62	92	51
Bates, Henry M. (See Jones and Bates.)						
Bates, Peter S., assignor of one-half to E. W. Loucks, York, Pa. Sound-reproducing instrument	654,099	July 17	2557	588 / 589	92	536
Bates, Robert, Grand Rapids, Wis. Combined metal-working machine	655,597	Aug. 7	771	181 / 182	92	1190
Bates, Theodore C., *et al.* (See Barr, Henry G., assignor.)						
Bath, Abraham, New York, N. Y., assignor to Safety Three Wheel Vehicle Company, of New York. Vehicle-frame	658,329	Sept. 18	2387	527	92	2315
Batt, Charles F., New York, N. Y. Belt	653,699	July 10	1648	385	92	342
Batz, Johanna M., Sun Prairie, Wis. Grease-spot remover	656,802	Aug. 28	3073	699	92	1683
Bauer, Andrew F. (See Steinicke and Bauer.)						
Bauer, William H. (See Allison and Bauer.)						
Bauer, William M., Chicago, Ill. Piano-pedal	655,388	Aug. 7	404	89	92	1118
Bauerle, Frank and G., Chicago, Ill. Means for attaching handles to brushes	655,181	Aug. 7	7	2	92	1042
Bauerle, George. (See Bauerle, Frank and G.)						
Baughman, Nathan, Hammersley Fork, Pa. Mowing-machine seat	656,337	Aug. 21	2242	515	92	1504
Baughn, Samuel G., Jr., Comer, Ky. Nut-lock	657,507	Sept. 11	911	185	92	2008
Baullen, William J., Bridgeport, Conn. Acetylene-gas machine	653,651	July 17	1783	408	92	388
Baumann's Wwe., Firm of Joh. (See Weidner, Johann, assignor.)						
Baumgarten, Albert, Freeport, Ill. Lemon-squeezer	654,503	July 31	3639	821	92	796
Bausch, Edward, assignor to Bausch & Lomb Optical Company, Rochester, N. Y. Microscope	658,611	Sept. 25	2902	646 / 647	92	2443
Bausch & Lomb Optical Company. (See Bausch, Edward, assignor.)						
Bavier, Charles S., and J. R. Hawkes, New York, N. Y. Pneumatic-despatch system	658,102	Sept. 18	2003	436 / 437	92	2240
Bavier, Charles S., and J. R. Hawkes, New York, N. Y. Pneumatic-despatch system	658,103	Sept. 18	2005	437	92	2240
Baxter, John F. (See Shoop, Daniel E., assignor.)						
Bay State Optical Co. (See Sanger, Harry F., assignor.)						
Bay State Shoe Machinery Company. (See Bertrand, Joseph E., assignor.)						
Bayles, Charles N., Uneva, W. Va. Operating mechanism for railway-switches	656,624	Aug. 28	2779	635 / 636	92	1626
Bayles, Edward O. (See Jardine, John S., assignor.)						
Baylor, Mary C., executrix. (See Baylor, Robert W.)						
Baylor, Robert W., deceased; M. C. Baylor, Atlantic City, N. J., executrix. Barrel	657,754	Sept. 11	1369	289	92	2008
Bayly, Hester M., Denver, Colo. Hinge-lock	656,575	Aug. 21	2609	614	92	1588
Bazlen, Max, assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Indigo-white compound and making same	657,307	Sept. 4	452	------	92	1891
Beach, Edward S. (See Tyler, Abel D., Jr., assignor.)						
Beakes, Charles H. C., *et al.* (See Kimber, John B., assignor.)						
Beal, Elizabeth L. (See Beal, Frank J., assignor.)						
Beal, Frank J., assignor to E. L. Beal, Orford, N. H. Mattress-filling machine	656,883	Aug. 28	3159	715 / 716	92	1700
Beal, Samuel T., Conway Springs, assignor of two-thirds to W. H. Beal and R. McKibben, Wichita, Kans. Wire-tightener	658,335	Sept. 25	2413	534	92	2346
Beal, William H., *et al.* (See Beal, Samuel T., assignor.)						
Beall, Albert E., assignor to J. K. Milner & Co., Clinton, Iowa. End-gate	656,398	Aug. 21	2243	516	92	1505
Beall, William L., assignor to Gale Manufacturing Company, Albion, Mich. Pivot-axle cultivator	654,125	July 24	2619	599 / 600	92	564
Beamer, James A., Tyrone, Pa. Turn-table	655,681	Aug. 14	976	222	92	1241
Beard, Clement E., Columbiana, Ohio. Cable-hanger	656,923	Aug. 28	3354	764	92	1736
Beard, J. G., *et al.* (See Galbraith, Oscar B., assignor.)						
Beard, Tobias, Columbiana, Ohio. Gate	653,981	July 17	2374	546	92	500
Beasley, George P., assignor of one-third to J. A. Reed, Maysville, Ky. Thill-coupling	653,837	July 17	2120	481	92	451
Beatty, Charles L. (See Hodgson, William T., assignor.)						
Beatty, Daniel, New Kensington, Pa. Machine for grinding and polishing plate-glass	657,724	Sept. 11	1317	278 / 279	92	2087
Beatty, Ross J., trustee. (See Long, Frederic H., assignor.)						
Beaudin, Mederick, Hartford, Conn. Tool-chest	658,522	Sept. 25	2732	606	92	2409
Beaumont, Frederick J., London, England. Coin-controlled lavatory-lock	656,082	Aug. 14	1761	407	92	1398
Beaunisne, Albert G., Chicago, Ill. Geographical clock	657,686	Sept. 11	1246	264	92	2072
Bechi, Guy de, Paris, France. Treating zinc-bearing complex ores for recovery of zinc or other metals therefrom	656,497	Aug. 21	2528	------	92	1561
Bechman, Henry F., assignor to E. C. Nichols, Battle Creek, Mich. Paper folder and paster	656,924	Aug. 28	3355	765	92	1736

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Beck, Harry J., *et al.* (See Beck, Israel, assignor.)						
Beck, Israel, assignor of two-thirds to H. J. Beck and M. R. Thompson, Philipsburg, Pa. Fruit or vegetable cutter	652,740	July 3	5	2	92	4
Beck, John F., assignor of two-thirds to M. T. Kinsey and S. W. Lord, Atlanta, Ga. Hot-air drum	655,182	Aug. 7	8	2,3	92	1042
Becker, August M., assignor of one-half to M. Steinthal, New York, N. Y. Marine air-power apparatus	655,541	Aug. 7	647	149	92	1167
Becker, B. V. (See Williams, George R. and W. C., assignors.)						
Becker, James W. G., Kansas City, Mo., assignor to United States Headlight Company, Buffalo, N. Y. Electric headlight	653,982	July 17	2375	547	92	501
Becker, Joseph, Washington, D. C., assignor to J. E. Searles, New York, N. Y., and W. C. Lovering, Taunton, Mass. Seamless-tube-rolling machine	653,335	July 10	1150	273, 274, 275, 276, 277, 278	92	243
Becker, Louis A., Chicago, Ill. Cooling-cabinet for liquid-dispensing apparatus	657,383	Sept. 4	608	127	92	1923
Beckerleg, James C., Chicago, Ill. Feed adjustment for lubricators	656,737	Aug. 28	2955	675	92	1662
Bedel, John A., Belleville, Ill. Joint for umbrella ribs and stretchers	653,164	July 3	808	191	92	162
Bedford, Joseph, and J. Ashton, Sheffield, England, assignors of one-half to W. H. Babcock, Washington, D. C. Making compound cutter-bars	653,165 656,240	July 3 Aug. 21	809 2071	191 474	92 92	162 1473
Beebe, Henry B., Jacksonville, Fla. Axle	657,809	Sept. 11	1462	310	92	2116
Beebe, William, assignor to himself and M. B. Mosher, New York, N. Y. Drawer-equalizer	656,314	Aug. 21	2198	502	92	1497
Beerbower, George M., assignor to New York Zoological Society, New York, N. Y. Fence	655,952	Aug. 14	1502	345	92	1345
Beerling, Henry E., Detroit, Mich. Knockdown case	657,687	Sept. 11	1248	264	92	2072
Beers, Alexander W., Bethlehem, Pa. Folding package or pocket-book	657,688	Sept. 11	1250	264, 265	92	2073
Beers, Alexander W., Bethlehem, Pa. Folding box or package	656,385	Aug. 21	2331	535	92	1523
Beese, Richard, Dresden, Germany. Self-igniting gas-burner	657,384	Sept. 4	610	127, 128	92	1923
Beetz, Samuel F., Mendota, Ill. Explosive-engine	653,058	July 3	610	144	92	123
Beggs, Charles S., Asbland, Ill. Gearing for windmills	654,126	July 24	2623	600	92	565
Beghtel, Eli, Huntington, Ind. Hedge fence	656,875	Aug. 28	3264	741	92	1720
Behlen, Charles A., Cincinnati, Ohio. Thill-coupling	657,689	Sept. 11	1251	265	92	2073
Behr, Hans C., San Francisco, Cal., assignor to Fraser & Chalmers, Chicago, Ill. Hoisting apparatus	653,205	July 10	908	219, 220	92	196
Behrend, Samuel K., Washington, D. C. Placer-mining dredge	655,919	Aug. 14	1439	331	92	1334
Behrendt, Barnim L. (See Rose, George P., Jr., assignor.)						
Behrendt, Barnim L., and M. Mayer, New York, N. Y. Revolving hand-fan						
Behrendt, Martin. (See Eibig, Paul, assignor.)						
Béique, Frédéric L., *et al.* (See Coté, Francis A., assignor.)	655,323	Aug. 7	282	63, 64	92	1096
Belanger, Simon, St. Jean Baptiste, Manitoba, Canada. Grain-drill	657,080	Sept. 4	13	3	92	1803
Belden, William C., Ioamosa, Cal. Telltale-funnel	654,218	July 24	2936	659	92	635
Beldin, George D., Marengo, Ill. Currycomb	656,763	Aug. 28	2999	684	92	1670
Belisle, Moses, Ware, Mass. Combination-chair	655,430	Aug. 7	479	106, 107	92	1133
Bell, Arthur F. L., Carpenteria, assignor to Alcatraz Company, San Francisco, Cal. Apparatus for extracting and refining asphaltic material	658,229	Sept. 18	2226	487	92	2284
Bell, John D., assignor of one-third to C. O. Anderson, Arcadia, Kans. Bread-raising apparatus	658,612	Sept. 25	2905	647	92	2444
Bell, William J., assignor of one-half to H. Grotophorst, Baraboo, Wis. Telephone-directory	653,838	July 17	2121	482	92	451
Beloud, Léon G., Stockton, Cal. Device for educating and training the eye and hand	655,542	Aug. 7	649	149	92	1168
Beltz, John A., Buxton, N. D. Draft-equalizer	655,045	July 31	4509	1017	92	979
Bement's Sons, E. (See Hendon, Walter P., assignor.)						
Bender, Frank. (See Whitehead, George W., assignor.)	654,219	July 24	2937	659	92	635
Bender, Sebastian, Allmendingen, Germany. Separator	658,136	Sept. 18	2057	449	92	2250
Bender, William, Jr., Belleville, Ill. Paper box	654,777	July 31	4004	900, 901	92	870
Benefiel, Harry A., Columbus, Ind. Tube-cutter						
Benjamin, Frank, Lansingburg, N. Y. Photographic camera	654,594	July 31	3640	821	92	797
Benjamin, Hiram L., assignor of one-half to W. C. Parker, Reynolds, Nebr. Churn-dasher	655,682	Aug. 14	978	222	92	1242
Bennett, Frederick, New York, N. Y., assignor to Hale & Kilburn Manufacturing Company, Philadelphia, Pa. Car-seat	656,161	Aug. 21	1917	440	92	1444
Bennett, Frederick, New York, N. Y., assignor to Hale & Kilburn Manufacturing Company, of Pennsylvania. Sofa-bed	655,046	July 31	4510	1017, 1018	92	979
Bennett, G. W., *et al.* (See Williams, Daniel S., assignor.)						
Bennor, Joseph N., assignor to Bibb Manufacturing Company, Macon, Ga. Thread-feeding mechanism for straight-knitting machines	653,059	July 3	611	145	92	124
Benson, Oliver, New York, N. Y. Top	658,336	Sept. 25	2414	534	92	2347
Bentley, Edward M., New York, N. Y. Electric railway	655,683	Aug. 14	981	222, 223	92	1242
Bentley, Joseph. (See Cottam and Bentley.)						
Benton, John B., Elizabeth, N. J. Machine for recovering oil from waste	653,698	July 10	1733	399	92	359
Bentz, Lawrence A. (See Rowe and Bentz.)						
Berard, Simeon, Fall River, Mass. Spinning and twisting frame	654,595	July 31	3641	822	92	797
Berg, Ernst J., Schenectady, N. Y., assignor to General Electric Company, of New York. Operating dynamo-electric machines	656,083	Aug. 14	1763	407	92	1398
Berg, Henry. (See Robinson, Henry, assignor.)						
Berger, Joseph A., Chicago, Ill. Puncture-proof pneumatic tire	654,430	July 24	3351	751	92	724
Berger, Joseph A., assignor of one-half to S. Harnstrom, Chicago, Ill. Pneumatic mattress	655,183	Aug. 7	9	3	92	1042
Berger, Joseph A., assignor of one-half to J. P. Larson, Chicago, Ill. Pneumatic-tire fastening	657,385	Sept. 4	615	128	92	1924
Berger, Louis and M., New York, N. Y. Cigar box or packing	656,009	Aug. 14	1632	376	92	1371
Berger, Morris. (See Berger, Louis and M.)						
Bergersen, Peter, Cheyenne, Wyo. Implement for extracting cartridge-shells	655,184	Aug. 7	10	3	92	1043
Bergl Australia. (See Hamilton, James W. C., assignor.)						
Bergmann, Charles, assignor of two-fifths to J. E. O'Shea, Pittsburg, Pa. Automatic brake-setting and signaling apparatus	653,785	July 17	2021	461	92	433
Bergmann, Sigmund, New York, N. Y., assignor to General Incandescent Arc Light Company, of New York. Electric-arc lamp	652,741	July 3	6		92	4
Beringer, Emil, Charlottenburg, Germany. Making hydrocyanic acid	654,823	July 31	4098	922	92	892
Beritzhoff, Mary R., Chicago, Ill. Device for removing ashes or like refuse						

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Berkstresser, Robert H., assignor to C. M. Fulton, York, Pa. Checkrein-hook	658,194	July 3	860	202	92	172
Berliner, Emile, Washington, D. C. Floor-covering	656,162	Aug. 21	1918	440	92	1444
Berliner, Emile, Washington, D. C. Floor-covering	656,163	Aug. 21	1920	440	92	1444
Bernard, William A., assignor to William Schollhorn Company, New Haven, Conn. Divider	655,185	Aug. 7	18	4	92	1045
Bernardi, Joseph A., assignor of one-half to M. Skiff, Salem, Oreg. Combined pipe cap and plug	658,313	Sept. 18	2362	522	92	2311
Bernardin, Alfred L., Evansville, Ind. Bottle-cap	653,610	July 10	1649	385	92	342
Bernheimer, Meyer A., *et al.* (See Davis, Edward, assignor.)						
Bernstein, Max, Berlin, Germany. Device for preventing reports of guns	652,742	July 3	7	2	92	4
Bernstein, Samuel, New York, N. Y. Gas-burner	653,464	July 10	1381	328	92	286
Beronio, Joseph A., Memphis, Tenn. Barrel-opener	658,613	Sept. 25	2906	647	92	2444
Berry, Frederick H., Milwaukee, Wis. Dental engine	654,869	July 31	4188	943, 944	92	910
Bertheau, Henrik A., Stockholm, Sweden. Rear-compression explosive-engine	655,186	Aug. 7	19	4	92	1044
Bertheau, Henrik A., Stockholm, Sweden. Valve-gear for petroleum-engines	655,751	Aug. 14	1105	255	92	1267
Berthet, Stéphane J. M., Sannois, France. Boiler-tube plug	655,187	Aug. 7	20	4	92	1045
Berthold, George, Great Falls, Mont. Making phosphor-tin	658,230	Sept. 18	2228	487	92	2285
Bertrand, Joseph E., Boston, Mass., assignor to Bay State Shoe Machinery Company, Boston, Mass., and Portland, Me. Stitch-separating machine	655,820	Aug. 14	1266	291	92	1301
Besemfelder, Eduard R., Charlottenburg, Germany. Apparatus for manufacturing illuminating-gas	658,015	July 3	537	126	92	107
Best, Andrew W. J., Macon, Ga. Valve-gear for engines	656,164	Aug. 21	1920	441	92	1444
Best, Daniel, San Leandro, Cal. Traveling harvester	653,465	July 10	1383	328	92	286
Betsch, Joseph, Woonsocket, R. I. Warp-beam for looms	656,386	Aug. 21	2332	535	92	1523
Bettendorf, Heinrich, and J. M. Bier, Frankfort-on-the-Main, Germany. Type-writing machine	654,379	July 24	3249	738	92	702
Bettendorf, Joseph W., Davenport, Iowa. Metal rim for wheels	654,049	July 17	2482	571	92	522
Bettendorf, William P., Davenport, Iowa. Sill for underframes of cars	657,154	Sept. 4	153	34	92	1832
Betts, Lewis F., New York, N. Y. Metallic tube	656,241	Aug. 21	2073	475	92	1473
Betz, Charles, St. Louis, Mo. Machine for making pretzels	653,060	July 3	612	145	92	124
Beust, Anton von, Orange, N. J. Means for reproducing multicolor designs	656,084	Aug. 14	1764	407, 408	92	1399
Beverly Engine and Machine Company. (See Baker, John S., assignor.)						
Bevin, Abner A., and P. C. Arnold, assignors to Bevin Brothers Manufacturing Company, East Hampton, Conn. Bell	653,195	July 3	861	202	92	172
Bevin, Abner A., and P. C. Arnold, assignors to Bevin Brothers Manufacturing Company, East Hampton, Conn. Bell	657,386	Sept. 4	616	129	92	1924
Bevin Brothers Manufacturing Company. (See Bevin and Arnold, assignors.)						
Bevington, William P., Escondido, Cal. Pick	656,408	Aug. 21	2532	582	92	1561
Bew, Charles, Chicago, Ill. Fish-hook	657,387	Sept. 4	617	129	92	1924
Beyer, Bruno, Ludwigshafen, Germany, and F. Schaar-Rosenberg, Manchester, England, assignors to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Blue-green oxazin dye	654,087	July 17	2540		92	523
Bezemer, Felix, Velp, and T. J. Bezemer, Wageningen, assignors to themselves, and L. A. Van Schle, Rotterdam, Netherlands. Rotary engine	654,596	July 31	3643	822	92	797
Bezemer, Tammo J. (See Bezemer, Felix and T. J.)						
Bibb, Dandridge H. (See McBride, George H., assignor.)						
Bibb Manufacturing Company. (See Bennor, Joseph N., assignor.)						
Bibby, Arthur W., Liverpool, England. Vessel for carrying passengers	658,202	Sept. 18	2176	476	92	2274
Bicalky, Charles H., Buffalo, N. Y. Pulley	656,339	Aug. 21	2245	516	92	1505
Bick, Emile, and C. H. Hahn, New Haven, Conn. Ornamental object	657,050	Aug. 28	3571	822	92	1778
Bick, Harry, New York, N. Y. Card-case	656,925	Aug. 28	3359	765	92	1737
Bickel, Hiram, Guffey, Pa. Shell	658,231	Sept. 18	2220	488	92	2285
Bickford, Hiram H., Elmira, N. Y. Saw-blade	657,155	Sept. 4	154	34	92	1832
Bickford, John H., Salem, Mass. Electric generating apparatus	656,165	Aug. 21	1922	441	92	1445
Bickley, Lewis S., assignor to Buoyant Clothing Syndicate, Limited, London, England. Life-preserver	657,156	Sept. 4	155	35	92	1832
Bickmeier, Charles, Bellaire, Ohio. Car-coupling	656,926	Aug. 28	3360	765, 766	92	1737
Biddle, John. (See Eaton, Oliver N., assignor.)						
Bidle, William S., Cleveland, Ohio. Making forked eyebars	656,712	Aug. 28	2910	662, 663	92	1653
Biederstaedt, Max. (See Welke and Biederstaedt.)						
Bier, Julius M. (See Bettendorf and Bier.)						
Bierhart, Herman J., South Bend, Ind. Thill-coupling	654,701	July 31	3859	870	92	840
Bigelow, Charles, Delta, Colo. Vehicle-wheel	653,652	July 17	1785	408	92	388
Bigelow, Edward L. and K. K., Everett, Mass. Measuring-spoon	653,466	July 10	1386	328	92	287
Bigelow, Katherine K. (See Bigelow, Edward L. and K. K.)						
Bigsby, Ethel M., Detroit, Mich. Sign-frame	654,936	July 31	4316	971	92	938
Bilgram, Hugo, Philadelphia, Pa. Machine for cutting teeth of geared wheels	656,166	Aug. 21	1926	442, 443	92	1446
Bilgram, Hugo, Philadelphia, Pa. Feed-rolls for paper-feeding machines	656,593	Aug. 21	2715	622, 623	92	1600
Bilgram, Hugo, Philadelphia, Pa., assignor to Eastern Paper Bag Company, of Connecticut. Bag-machine	656,340	Aug. 21	2248	516, 517	92	1506
Bilgram, Hugo, and O. L. Schehl, Philadelphia, Pa., assignors to G. W. Fackler, New York, N. Y. Mechanism for feeding sheets of paper, &c	655,668	Aug. 7	952	215, 216	92	1226
Bill, Edward L. (See Delters and Bill.)						
Billetop, Torben C. (See Watson and Billetop.)						
Billetop, Torben C., assignor of two-thirds to H. B. and J. S. Watson, Newcastle-upon-Tyne, England. High-speed engine	654,127	July 24	2624	601, 602, 603	92	565
Binder, Gottlob, Philadelphia, Pa. Collar-seam-dampening machine	657,388	Sept. 4	619	129	92	1925
Binder, Gottlob, Philadelphia, Pa. Machine for ironing edges of collars or cuffs	657,389	Sept. 4	621	129, 130	92	1925
Binder, Karl, New York, N. Y. Pianoforte	658,614	Sept. 25	2907	647	92	2444
Bingel, Conrad, Jr. (See Grimmell, Howard L., assignor.)						
Bingham, Goundry W., Washington, D. C. Can	657,696	Sept. 11	1143	240	92	2052
Binkin, John, Jr., *et al.* (See Pfautz, Daniel M., assignor.)						
Bloren, James C., Newark, N. J. Bicycle-lock	654,128	July 24	2632	608	92	567
Birch, Charles F., Sr., *et al.* (See Hart, Edward S., assignor.)						
Birchenough, David, assignor of one-fourth to A. R. Smith, Paterson, N. J. Automatic vent and combined tap	655,953	Aug. 14	1504	345	92	1345
Bird, William G., Kansas City, Kans., assignor to J. C. Dold, Kansas City, Mo. Hydrocarbon-lamp	655,188	Aug. 7	21	5	92	1045

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bischof, Gustav, London, England. Converting white lead into oil-paste	654,088	July 17	2541	.....	92	533
Bish, James N. (See Long and Bish.)						
Biver, Mathias A., and A. E. Hénard, Paris, France. Chamber with mirror-walls	656,927	Aug. 28	3361	766	92	1738
Biver, Mathias A., and A. E. Hénard, Paris, France. Mirror-suspending device	656,928	Aug. 28	3362	766, 767, 768	92	1738
Black, Amos R., assignor of one-half to E. R. Black, Lamar, Colo. Railway mail-crane	655,609	Aug. 7	955	216	92	1227
Black, Ellis R. (See Black, Amos R., assignor.)						
Black, Samuel L. (See Searles, Charles P., assignor.)						
Black, Wilbert, New Orleans, La. Packing	653,983	July 17	2376	547	92	501
Blackburn, Arthur H. (See West, Christopher B., assignor.)						
Blackman, Joseph N., East Orange, N. J. Phonograph attachment	654,937	July 31	4318	971	92	938
Blackman, Zachary T., Florala, Ala. Horseshoe-fastening	657,725	Sept. 11	1321	279	92	2087
Blackwell, Arnold G., Wynyard, Tasmania. Railway-car	654,507	July 24	3487	787	92	750
Blagg, Charles W., Sioux City, Iowa. Stopper for mucilage-bottles	657,051	Aug. 28	3572	823	92	1778
Blaha, Nicholas, *et al.* (See Miller, Allen L., assignor.)						
Blair, Thomas H., assignor to Whiting Manufacturing Company, Northborough, Mass. Cash-register	652,829	July 3	175	41, 42	92	36
Blake, Thaleon, Philadelphia, Pa. Toy	656,929	Aug. 28	3364	768	92	1738
Blakeslee, George S., Chicago, Ill. Dish-washing machine	655,474	Aug. 7	559	124, 125	92	1149
Blakey, George G. (See Blakey, Mildred and G. G.)						
Blakey, Mildred, Rome, Ohio, assignor to National Tube Company, New York, N. Y., and McKeesport, Pa. Thread-protector	653,897	July 17	2225	506	92	472
Blakey, Mildred, Rome, Ohio, and G. G. Blakey, Pittsburg, Pa., assignors to National Tube Company, New York, N. Y., and McKeesport, Pa. Thread-protector	653,898	July 17	2227	506	92	473
Blanchard, Frederic W., Holbrook, Mass. Pump	656,834	Aug. 28	3163	716	92	1701
Blanchard, Wesley, Lewiston, Me. Oil-can	653,499	July 10	1457	340	92	902
Blanchet, Joseph, Providence, assignor of one-half to L. Guedesse, Woonsocket, R. I. Picking-motion for looms	657,726	Sept. 11	1322	279	92	2087
Bland, John M. D., Baker City, Oreg. Speed-regulator for pumps	654,824	July 31	4100	922, 923	92	893
Blank, Rosa, Vienna, Austria-Hungary. Bed-pan	657,279	Sept. 4	405	84	92	1881
Blashill, Arthur E., Delaware, Canada. Wire-fence-weaving machine	655,189	Aug. 7	23	5	92	1015
Blatt, Cyril. (See Moon, Darius B., assignor.)						
Blauvelt, Goodwin A., and D. W. Cranston, Nyack, N. Y. Acetylene-gas generator	657,209	Sept. 4	259	56	92	1855
Blechschmidt, Charles E., Bellevue, Ky., assignor to Victor Safe and Lock Company, Cincinnati, Ohio. Multiple punching-machine	655,752	Aug. 14	1107	255	92	1267
Blechynden, Alfred, deceased, Barrow-in-Furness, England; A. E. T. Hansmann, administrator, assignor to C. D. Mosher, New York, N. Y. Steam-boiler	658,615	Sept. 25	2908	648	92	2144
Bléha, William V., assignor of two-thirds to O. F. Stifel and G. A. Pleus, St. Louis, Mo. Firearm	657,052	Aug. 28	3573	823	92	1779
Blessing, John G. (See Vaughn, Blessing, and Tuerk.)						
Blick, Thomas H. (See McCauley, Reuben A., assignor.)						
Blickensderfer, George C., Stamford, Conn. Type-writing machine	656,085	Aug. 14	1767	408, 409, 410	92	1390
Blickensderfer, George C., Stamford, Conn. Type-writer	656,086	Aug. 14	1784	410	92	1405
Bliss, William H. (See Bumpus, Ebenezer F., assignor.)						
Blome, Herman, McMinnville, Oreg. Broom-holder	658,616	Sept. 25	2909	649	92	2145
Blomstrom, Carl H., assignor to Lake Shore Engine Works, Marquette, Mich. Mechanism for propelling boats	657,053	Aug. 28	3574	824	92	1779
Blomstrom, Carl H., assignor to Lake Shore Engine Works, Marquette, Mich. Propelling mechanism for boats	657,054	Aug. 28	3579	825	92	1779
Blomstrom, Carl H., assignor to Lake Shore Engine Works, Marquette, Mich. Starting mechanism for explosive-engines	657,055	Aug. 28	3580	825	92	1780
Blomstrom, Carl H., assignor to Lake Shore Engine Works, Marquette, Mich. Reversing-gear mechanism	657,056	Aug. 28	3581	825, 826	92	1780
Blomstrom, Carl H., assignor to Lake Shore Engine Works, Marquette, Mich. Gear mechanism	657,057	Aug. 28	3584	826	92	1781
Blomstrom, Carl H., assignor to Lake Shore Engine Works, Marquette, Mich. Mechanism for propelling boats	657,058	Aug. 28	3587	827	92	1782
Bloom, Samuel S. (See Rubinson, Bernard, assignor.)						
Bloomer, Reuben H., Council Bluffs, Iowa. Wire fence	658,420	Sept. 25	2570	570	92	2377
Blue, Montgomery G., Lockington, Ohio. Lathe for turning irregular forms	653,786	July 17	2021	461, 462	92	434
Board, James L. (See Holden, Edward P., assignor.)						
Bocorselski, Frank E. (See Jetter, Julius, assignor.)						
Bocorselski, Frank E., Hartford, Conn. Universal joint	656,490	Aug. 21	2533	582, 583	92	1502
Bodèn, Jonas O., Youngstown, Ohio. Stereoscope	658,057	Sept. 18	1920	416	92	2224
Boehringer & Soehne, C. F. (See Ach, Fritz, assignor.)						
Boehringer & Soehne, C. F. (See Ach, Fritz and L., assignors.)						
Boehringer & Soehne, C. F. (See Ach, Lorenz and F., assignors.)						
Boeker, Anton, St. Louis, Mo. Running-gear for wagons	656,803	Aug. 28	3074	699	92	1684
Boemermann, George, New York, N. Y. Means for propelling vessels	653,435	July 10	1334	317	92	276
Boesch, Joseph N., *et al.* (See Kohnle and Kuhns, assignors.)						
Boettler, Adolph, *et al.* (See Farmer, John R., assignor.)						
Boger, Peter, assignor to E. Huber, Marion, Ohio. Straw-stacker	658,002	Sept. 18	1837	397	92	2208
Boggess, Ernest B., and G. D. Hutchison, Fort Madison, Iowa. Hot-box cooler	653,899	July 17	2228	507	92	473
Boggess, Fletcher H., Sr., Dexter, Iowa. Churn	658,421	Sept. 25	2571	570	92	2377
Bohlen, John, assignor of one-third to M. Morrissey, Big Rapids, Mich. Sash-holder	655,543	Aug. 7	652	149	92	1168
Bohn, Emil F., St. Louis, Mo. Filler-frame for egg-cases	654,508	July 24	3488	787	92	750
Bohne, William, Toronto, Canada. Phonograph	657,280	Sept. 4	405	85	92	1881
Bohnert, Mathias, San Diego, Cal. Rein-holder	653,653	July 17	1786	409	92	388
Bohrer, William, and T. Messmer, Montreal, Canada. Auxiliary pedal attachment for pianos	656,625	Aug. 28	2781	636	92	1626
Boisramé, Paul, Paris, France. Means for utilizing tidal force	655,431	Aug. 7	482	107	92	1134
Bokum, William F. (See Toole, Edward, assignor.)						
Bole, John, assignor of one-half to D. R. W. Patterson, Pittsburg, Pa. Apparatus for burning pulverized fuel	653,639	July 10	1735	400	92	360
Bole, John, and D. R. W. Patterson, Pittsburg, Pa. Burning pulverized fuel	653,206	July 10	910	220	92	197
Bolens, Harry W., Port Washington, Wis. Grinding-machine	655,753	Aug. 14	1108	255, 256	92	1268
Bollinger, Simon, South Whitley, Ind. Carpet-fastener	656,387	Aug. 21	2333	535	92	1523
Bolton, George W., Honey Grove, Tex. Washing-machine	655,360	Aug. 7	358	78	92	1109

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bolton, John W. (See Schauffleberger, Marion N., assignor.)						
Bolton, Orrin B., Grand Rapids, Mich. Machine for patching saws	654,431	July 24	3352	752	92	724
Boltz, Oliver H., Sandusky, Ohio. Thread-cutter	658,292	Sept. 18	2280	488	92	2285
Bond, Oscar W., assignor, by mesne assignments, to T. A. Banning, Chicago, Ill. Seat-post for bicycles	654,561	July 24	3370	805	92	766
Bonham, Francis M., Heltonville, Ind. Blower for feed-cutters	654,509	July 24	3489	787	92	751
Bonhoeffer, Otto, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Company, of New York. Propionyl-salicylic acid and making same	656,435	Aug. 21	2423	.....	92	1540
Bonner, James A., Direct, Tex. Non-refillable bottle	654,510	July 24	3490	788	92	751
Bonnot, Louis C., Canton, Ohio. Stone-separator	656,804	Aug. 28	3075	699	92	1684
Bonzano Rail Joint Company. (See Clarke, Thomas C., assignor.)						
Boody, Louis M. (See Boody, Robert M., assignor.)						
Boody, Robert M., Haverhill, assignor to L. M. Boody, Hyannis, Mass. Fire-escape	654,705	July 31	3860	870	92	841
Booker, Thomas, Hamilton, Canada. Bottle-crate	657,300	Sept. 4	622	130	92	1926
Bookmiller, J. (See Conroy, Charles C., assignor.)						
Booth, Alba C., Burlington, Vt. Puzzle	653,061	July 3	614	146	92	124
Borchers, Wilhelm, Aix-la-Chapelle, Germany. Electric furnace	656,930	Aug. 28	3365	768	92	1738
Borchert, William, Carson, Nev. Spring-seat	655,598	Aug. 7	775	182	92	1190
Boreland, W. Lake. (See Hopper, John H., assignor.)						
Boring, Frank M., assignor of one-half to L. Rauh, Dayton, Ohio. Voting-machine	656,713	Aug. 28	2912	663, 664, 665, 666	92	1653
Borland, James H. (See Whitmore, Carlos, assignor.)						
Borland, Reuben. (See Tymeson and Borland.)						
Bormann, Franz C., Hamburg, Germany. Continuous-combustion stove	658,696	Sept. 25	3062	681	92	2475
Borrow, Thomas, E. Wood, and W. Hodgson, Darlington, England. Apparel-hat	654,432	July 24	3353	752	92	724
Boschen, Gustave W., Rahway, assignor of one-half to P. Hildebrandt, Hoboken, N. J. Panoramic attachment for phonographs	654,778	July 31	4007	901, 902	92	871
Bossert Electric Construction Company. (See Bossert, William F., assignor.)						
Bossert, William F., assignor to Bossert Electric Construction Company, Utica, N. Y. Quick-break electric switch	655,047	July 31	4514	1018	92	980
Bostwick, Frederick C. (See Crawford, John, assignor.)						
Bothwell, David, assignor to M. A. Bothwell, Hannibal, N. Y. Milk-cooler	654,220	July 24	3388	659	92	695
Bothwell, Maria A. (See Bothwell, David, assignor.)						
Böttcher, Ernst F., Lengenfeld, Germany. Device for transporting passengers from and onto moving cars	654,825	July 31	4101	923	92	893
Bottomley, Thomas R., J. Longthorpe, and W. Dargue, Copley, England. Apparatus for mordanting, &c	656,315	Aug. 21	2199	502, 503	92	1497
Boucher, Claude, Aine, Cognac, France. Manufacturing bottles, flasks, &c	656,876	Aug. 28	3265	.....	92	1720
Boudreau, Young H., Modesto, Cal. Regulating device for riding-carts	652,882	July 3	258	62	92	51
Boufford, Joseph T., Uxbridge, assignor of one-half to N. Boufford, Taunton, Mass., Miter-box	656,835	Aug. 28	3165	716, 717	92	1702
Boufford, Napoleon. (See Boufford, Joseph T., assignor.)						
Boulden, William M. (See Ebeling, Gustav, assignor.)						
Bourgeois, Stanislas, Manchester, N. H. Trolley-head	657,637	Sept. 11	1144	240	92	2053
Bouvier, Adolphe, Lyons, France. Air compressing and carbureting machine	657,755	Sept. 11	1371	290	92	2098
Bowden, James E., *et al.* (See Walker, Thomas C., assignor.)						
Bowen, Allen D., executrix. (See Baker, Charles W., assignor.)						
Bowen, Emmet T. (See Markey, William A., assignor.)						
Bowers, David, Emaus, Pa. Car-coupling	654,938	July 31	4319	972	92	939
Bowers, George E., San Francisco, Cal. Portable conveyer and elevator	652,911	July 3	304	76	92	61
Bowers, La Mont M., Binghamton, N. Y. Anchor	653,062	July 3	615	146	92	124
Bowker, Ernest S., Chicago, Ill. Corn-harvester	656,714	Aug. 28	2918	666, 667	92	1654
Bowker, William, Sr., Waltham, Mass. Secondary-battery plate	657,638	Sept. 11	1146	240	92	2053
Bowker, William R., and F. P. Sherman, Waltham, Mass. Water-feeding and air-compressing mechanism for motor-vehicles	654,511	July 24	3491	788, 789	92	751
Bowland, John, Princess Anne, Md. Swing	654,779	July 31	4011	903	92	872
Bowler, John R., Sr., assignor to D. H. Thomas, Santa Ana, Cal. Door-stop	654,562	July 24	3572	806	92	766
Bowling, Benjamin S. (See Bowling, Bert F., assignor.)						
Bowling, Bert F., assignor of one-half to B. S. Bowling, Burr Oak, Mich. Acetylene-gas generator	652,883	July 3	260	62, 63	92	51
Bowling, Charles W., Fulton, Mo. Churn	656,010	Aug. 14	1633	377	92	1371
Bowman, Charles M., assignor to Inventors and Investors League of the United States of America, Lebanon, Pa. Clothes-pin	656,805	Aug. 28	3076	699	92	1684
Bowman, Henry C. (See Kearsley and Bowman.)						
Bowman, William O., Fairfield, assignor to Universal Ironing Board Company, San Francisco, Cal. Ironing-board	653,839	July 17	2122	482	92	451
Bown, Charles E., assignor to Bown Machine Works, Battle Creek, Mich. Valve for inflation	652,830	July 3	179	42	92	37
Bown Machine Works. (See Bown, Charles E., assignor.)						
Boyd, Harry H., Philadelphia, Pa. Eyeglasses	654,870	July 31	4191	944	92	911
Boyd, Sanford S., Laurens, S. C. Coin assorting, delivering, and recording apparatus	655,544	Aug. 7	654	149, 150, 151	92	1168
Boyer, Charles H., *et al.* (See Kaine, James, assignor.)						
Boyer, Frank W., *et al.* (See Kaine, James, assignor.)						
Boyer, Seaton M., Allentown, Pa. Water-filter	653,500	July 10	1459	340, 341	92	302
Boyer, Tilghman H., Allentown, Pa. Filter	657,851	Sept. 11	1536	330	92	2132
Boylan, Joseph, Bradford, England. Sheet-feeding apparatus	653,207	July 10	912	220, 221	92	197
Boyle, John, Peabody, Mass. Apparatus for burning liquid fuel	658,697	Sept. 25	3063	682	92	2475
Brabrook, George H., assignor to Reed & Barton Corporation, Taunton, Mass. Jar-closure	653,840	July 17	2123	482	92	451
Brace, George B. (See Ferguson and Brace.) (Reissue.)						
Brachhausen, Gustav A., Rahway, N. J. Mechanical musical instrument	657,081	Sept. 4	15	3, 4	92	1804
Brachhausen, Gustav A., Rahway, N. J. Motor mechanism	657,756	Sept. 11	1372	290	92	2098
Brackebush, Henry, Packwaukee, Wis. Harvesting-machine	656,690	Aug. 28	2875	654	92	1646
Brackney, William H., Fleegar, Pa. Riding attachment for plows	655,846	Aug. 14	1311	300, 301	92	1309
Bradbury, William F., and L. G. Smith, Kansas City, Kans. Vapor-burning lamp	654,380	July 24	3250	729	92	702
Bradbury, William F., Kansas City, Kans., and D. E. Washington, Kansas City, Mo. Tripping cut-off	657,210	Sept. 4	261	56	92	1855

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Braddock, Edward I., Winchester, Mass., assignor to New Process Coating Company, Portland, Me. Galvanizing apparatus	656,500	Aug. 21	2534	583	92	1562
Braddock, Edward I., Winchester, Mass., assignor to New Process Coating Company, Portland, Me. Galvanizing apparatus	656,501	Aug. 21	2535	583	92	1562
Braddock, Edward I., Winchester, Mass., assignor to New Process Coating Company, Portland, Me. Galvanizing apparatus	656,502	Aug. 21	2537	583	92	1562
Bradford, Frank A., Boston, and M. A. Holmes, Newton, assignors to H. E., L. B., and M. A. Holmes, Boston, Mass. Machine for stretching leather	656,504	Aug. 21	2716	623, 624	92	1600
Bradlee, Dudley H., Jr. (See Mitchell, William H., assignor.)						
Bradley, Charles S., Avon, N. Y., assignor to General Electric Company, of New York. Alternating-current generator	656,806	Aug. 28	3077	700	92	1684
Bradley, Charles S., New York, N. Y., assignor to Cyanide Company, Ampere, N. J. Electric furnace	658,698	Sept. 25	3066	682	92	2475
Bradley, Christopher C., Syracuse, N. Y. Thill-coupling	654,339	July 24	3175	712	92	684
Bradley & Hubbard Mfg. Co. (See Jauch, Joseph, assignor.)						
Bradley, William J., assignor to American Dredging Company, Philadelphia, Pa. Hydraulic dredging apparatus	656,503	Aug. 21	2538	584	92	1562
Bradt, Charles E., *et al.* (See Parson, Swen F., assignor.)						
Bradt, Samuel E., *et al.* (See Parson, Swen F., assignor.)	656,504	Aug. 21	2540	584	92	1563
Bradway, Charles P., Stafford, Conn. Governor for water-wheels	654,340	July 24	3176	712	92	681
Bradway, Chattin, Philadelphia, Pa. Trousers-hanger						
Brady, Alford, assignor of one-half to G. Reymershoffer, M. Rosenberger, and M. M. Levy, Galveston, Tex. Bicycle-gear	652,912	July 3	307	76	92	62
Brady, Clyde M., Brunswick, Ga. Siphon	654,597	July 31	3645	822	92	798
Brady, Hugh B., Cobb, Okla. Ter. Type-writer attachment	653,787	July 17	2028	462	92	435
Brady, John, Jr., and N. Chouinard, Fall River, Mass. Stop-motion for carding-machines	658,137	Sept. 18	2059	449	92	2250
Brady, John B. (See Morell, Alfred, assignor.)						
Brady, John F. (See Stevens and Brady.)						
Brady, John F., Chicago, Ill. Steam-turbine	653,788	July 17	2031	463	92	435
Brady, Thomas H., New Britain, Conn. Electric fuse	653,841	July 17	2123	482	92	452
Bragdon, William B., Cumberland Mills, Me., assignor to S. D. Warren & Co., Boston, Mass. Incandescent-lamp socket	654,433	July 24	3354	752	92	724
Bragg, Silas M., Gurdon, Ark. Hay-press	653,789	July 17	2033	463	92	436
Braly, André and L., Lyons, France. Means for detecting falsification of liquid or other products, &c	658,422	Sept. 25	2572	570, 571	92	2378
Braly, Louis. (See Braly, André and L.)	655,190	Aug. 7	27	6	92	1046
Bramson, Louis, Copenhagen, Denmark. Suturating instrument						
Brandeis, Louis D., trustee. (See Cordner, William J., assignor.)						
Brandes, John H., Jr. (See Kreutzberg, Ernst, assignor.)	656,738	Aug. 28	2956	675	92	1662
Branham, Alvin J., Springfield, Mo. Combined hobby-horse and invalid's chair	656,505	Aug. 21	2542	584, 585	92	1563
Brannagan, John J., Steubenville, Ohio, assignor of one-half to F. W. Klages, Pittsburg, Pa. Combined mold and press	657,890	Sept. 11	1602	345	92	2146
Brannon, John W., Otsego, Ohio. Valve-operating mechanism						
Brass Goods Manufacturing Company. (See Jessup and Leffingwell, assignors.)						
Braun, Frederick W. (See Cary, Henry B., assignor.)	655,599	Aug. 7	776	182	92	1191
Braunwalder, John, Davenport, Iowa. Fire-extinguisher	656,877	Aug. 28	3267	741	92	1720
Bray, Mellen, Newton, Mass. Game						
Bray, Thomas J. (See La Voo and Bray.)						
Bray, Thomas J., Pittsburg, Pa., assignor to National Tube Company, Pittsburg, Pa., and New York, N. Y. Forming welded rings	653,900	July 17	2230	507	92	473
Bray, Thomas J., Pittsburg, Pa., assignor to National Tube Company, Pittsburg, Pa., and New York, N. Y. Bar for forming welded rings	653,901	July 17	2231	508	92	473
Bray, Thomas J., Pittsburg, Pa., assignor to National Tube Company, Pittsburg, Pa., and New York, N. Y. Apparatus for forming welded rings	653,902	July 17	2232	508	92	473
Bray, Thomas J., Pittsburg, Pa., assignor to National Tube Company, New York, N. Y., and McKeesport, Pa. Forming wrought-metal bands	653,903	July 17	2234	508	92	474
Bray, Thomas J., Pittsburg, Pa., assignor to National Tube Company, New York, N. Y., and McKeesport, Pa. Wrought-metal band	653,904	July 17	2236	508	92	474
Bray, Thomas R. (See Cates, James L., assignor.)						
Braymer, Fred H. (See Braymer, Harley E., assignor.)						
Braymer, Harley E., Prairie Depot, assignor of one-half to F. H. Braymer, Cygnet, Ohio. Oil-well pump	654,706	July 31	3862	871	92	841
Breeden, Welcome A., McColl, S. C. Fertilizer-distributer	655,048	July 31	4517	1018	92	981
Bremer, Hugo, Neheim, Germany. Carbon rod for electric-arc lamps	658,423	Sept. 25	2575	----	92	2378
Brennan, Patrick H., Syracuse, N. Y. Cycle crank mechanism	658,424	Sept. 25	2576	571	92	2378
Bresee, Aldin, Westford, N. Y. Closure for jars, &c	654,512	July 24	3494	789	92	751
Brestle, George E. (See Brestle, Michael and G. E.)						
Brestle, Michael and G. E., Middletown, Pa. Rotary hearse-table	657,639	Sept. 11	1146	241	92	2053
Bretsnyder, William, *et al.* (See La Pointe, Francois, assignor.)						
Brewer, Horatio J., New York, N. Y. Electrogalvanic battery	653,763	July 17	1976	451	92	425
Brewer, Horatio J., New York, N. Y. Electrogalvanic battery	653,764	July 17	1978	451, 452	92	425
Brewer, Horatio J., New York, N. Y. Electrogalvanic battery	653,765	July 17	1981	452	92	426
Brewer, Horatio J., New York, N. Y. Electrogalvanic battery	654,434	July 24	3356	753	92	724
Brewis, John J., Milwaukee, Wis. Steam-engine for ore-stamps						
Bridgwater, Harry H. (See Haley and Bridgwater.)	658,203	Sept. 18	2177	476	92	2275
Brigham, Albert H., Whitman, Mass. Apparatus for heading nails or tacks						
Bright, Frederick W., assignor to Armour Packing Company, Kansas City, Kans. Preserving meats	654,503	July 24	3573	806, 807	92	766
Brill, John A. (See Levy, Joseph L., assignor.)						
Brill, John A., Philadelphia, Pa. Alarm-gong	656,436	Aug. 21	2423	557, 558	92	1540
Brill, John A., Philadelphia, Pa. Car-truck	656,878	Aug. 28	3269	741, 742	92	1721
Brill, John A., and W. S. Adams, Philadelphia, Pa.; said Adams assignor to said Brill. Differential brake mechanism	655,754	Aug. 14	1111	256, 257	92	1268
Brine, Richard A., Revere, Mass. Means for securing rubber tires to vehicle-wheels	655,191	Aug. 7	28	6	92	1047
Brink, Carl A., assignor to Frank Mossberg Company, Attleborough, Mass. Bell	654,381	July 24	3253	729	92	702
Brinkley, Thomas I., and D. A. Wetrich, Stuart, Iowa. Fender for cultivators	656,242	Aug. 21	2074	475	92	1473
Brinkley, Thomas I., and D. A. Wetrich, Stuart, Iowa. Draft-equalizer	656,243	Aug. 21	2075	475	92	1473
Brinkman, Jno. F. (See McDonald and Davis, assignors.)						
Brinley, Charles A., and E. G. Budd, Philadelphia, Pa., assignors to American Pulley Company, of Pennsylvania. Sheet-metal pulley	653,281	July 10	1059	253	92	234
Brintnall, Thomas M., *et al.* (See Kirk, Seth, assignor.)						
Brissette, Samuel J., Swampscott, assignor to G. A. Emerson, Lynn, Mass. Heel-scarfing machine	653,016	July 3	540	126, 127	92	108

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bristol Company. (See Bristol, William H. and F. B., assignors.)						
Bristol, Franklin B. (See Bristol, William H. and F. B.)						
Bristol, William H., Hoboken, N. J., and F. B. Bristol, Naugatuck, Conn., assignors to Bristol Company, Waterbury, Conn., and New York, N. Y. Damping device for recording instruments	654,341	July 24	3177	712	92	684
Bristol, William S., Flat Rock, Ind. Can topper and wiper	655,545	Aug. 7	660	151	92	1170
Broadhead, William H., Somerville, Mass. Power-transmitting mechanism	654,826	July 31	4102	924	92	853
Broadstreet, Kate R., Grenada, Miss. Curtain-pole	656,506	Aug. 21	2544	585	92	1563
Brock, Pleasant T., Troy, Idaho. Cow-tail holder	653,336	July 10	1171	278	92	244
Brodeur, François X., Lynn, Mass. Combined folding camp chair and stool	654,221	July 24	2938	660	92	695
Brodie, John A. (See Wood and Brodie.)						
Bronnert, Emil. (See Fremery, Bronnert, and Urban.)						
Bronson-Walton Company. (See Culver, Ira, assignor.)						
Bronzefarbenwerke Actien-Gesellschaft, vormals Carl Schlenk. (See Ott and Riffelmacher, assignors.)						
Brooker, Albert, and W. Bailey, Eastleigh, England. Coupling for railway-carriages	654,939	July 31	4321	972, 973	92	939
Brookes, Leonard E., Chicago, Ill., assignor of one-half to S. M. Weir, Cleveland, Ohio. Motor-frame attachment for vehicles	655,670	Aug. 7	958	216	92	1227
Brooklyn and New York Railway Supply Company (See Brownell, Willis L., assignor.)						
Brooks, Edward J., East Orange, N. J. Snap-seal	654,598	July 31	3646	822	92	798
Brooks, Frank, *et al.* (See Rouse, Albion M., assignor.)						
Brooks, Franklin W., Washington, D. C. Portable electric lamp	657,020	Aug. 28	3511	802	92	1766
Brooks, Franklin W., Washington, D. C., assignor to Grant Manufacturing Company, of Virginia. Seal	654,940	July 31	4323	973	92	939
Brooks, George H., Louisville, Ky. Badge-pin	654,513	July 24	3497	789	92	752
Brooks, Mott B., Rochester, N. Y. Spraying apparatus or device	655,954	Aug. 14	1505	346	92	1346
Brooks, Samuel M., assignor of nine-twentieths to J. M. Smith, J. W. Crowder, J. B. Harvey, Louisville, W. T. Gallaher, A. L. May, L. N. Holloway, Roane County, and C. Jones, Wheat, Tenn. Car-coupling	653,611	July 10	1650	385	92	343
Brooks, William D., Baltimore, Md. Machinery for side-seaming cans	653,467	July 10	1387	329	92	287
Brooks, William H., and H. C. Fischer, Cleveland, Ohio. Guard for water-gages	657,329	Sept. 4	501	104	92	1900
Broomell, Albert P., York, Pa. Valve	657,059	Aug. 28	3589	827	92	1782
Brophy, Luke V., assignor, by mesne assignments, to F. C. Austin, Chicago, Ill. Excavating-machine	655,955	Aug. 14	1507	346, 347	92	1346
Brosnihan, Thomas H., Livermore Falls, Me. Wrench	657,391	Sept. 4	623	130	92	1926
Brotherston, John D., Buffalo, N. Y. Water-motor for egg-beaters, &c	652,884	July 3	264	63	92	52
Brouyette, Charles D., assignor to F. Karr, Chicago, Ill. Spring bed-bottom	654,707	July 31	3864	871	92	841
Brower, Julius, assignor to Weiller & Sons, New York, N. Y. Combination pulley and sash buckle	656,931	Aug. 28	3366	768	92	1739
Brown, Albert J., Oakland, Cal. Fountain-syringe	653,842	July 17	2124	483	92	452
Brown, Alexander T., Syracuse, N. Y., assignor to Union Typewriter Company, of New Jersey. Type-writing machine	653,905	July 17	2237	509	92	474
Brown, Amos E., *et al.* (See Trapp, Samuel M., assignor.)						
Brown, Arthur R. (See Brown, Charles R. and A. R.)						
Brown, Berry A., Franklin, Ohio. Envelop	656,932	Aug. 28	3367	769	92	1739
Brown, Charles A., assignor of one-half to A. V. Hageman, Lorain, Ohio. Trolley-pole	654,050	July 17	2483	572	92	522
Brown, Charles M., Chicago, Ill. Projectile	656,933	Aug. 28	3368	769	92	1739
Brown, Charles M., Chicago, Ill. Projectile	656,934	Aug. 28	3370	769	92	1739
Brown, Charles R. and A. R., Weatherby, Mo. Thill or shaft for vehicles	656,087	Aug. 14	1789	411	92	1406
Brown, David R., New Haven, Conn. Window-frame	654,129	July 24	2636	603, 604	92	567
Brown, Edgar W., Dayton, Ohio. Alternating-current motor	653,906	July 17	2239	509	92	475
Brown, Egbert T., Buffalo, N. Y. Bath-tub seat	657,640	Sept. 11	1147	241	92	2053
Brown, F., *et al.* (See Barnes, Willis J., assignor.)						
Brown, George R., assignor of one-half to N. S. Floyd, Pisiger, Tex. Proportionate scale	657,476	Sept. 4	775	167	92	1954
Brown, George W., Hot Springs, Ark. Snap-hook	652,885	July 3	265	63	92	52
Brown, Harold P., Montclair, N. J. Electric bond for railway-rails	657,757	Sept. 11	1374	299	92	2090
Brown, Harrison H., Fond du Lac, Wis. Check-book	658,138	Sept. 18	2060	449	92	2250
Brown, Harry L., Allegheny, assignor of one-half to W. H. Thackeray, Pittsburg, Pa. Air purifier and muffler	653,612	July 10	1652	386	92	343
Brown, Herbert O., and J. R. Donnelly, Fairfield, Me. Sad-iron	656,088	Aug. 14	1790	411	92	1406
Brown, Irving E. (See Manchester and Brown.)						
Brown, John, and T. Haddock, Bolton, England. Expansible boring-bar	655,600	Aug. 7	777	188	92	1191
Brown, John A., Portland, Oreg. Portable conveyer	655,676	Aug. 7	966	219	92	1229
Brown, John H., Reading, Pa. Explosive charge for guns	653,208	July 10	915	221	92	197
Brown, John R., Vancouver, Canada. Can-filling machine	653,068	July 3	616	146, 147, 148	92	125
Brown, Joseph N., Muskegon, Mich. Device for reproducing sounds	653,654	July 17	1787	409	92	388
Brown, Lewis O., assignor to Brown Oil Can Company, Toledo, Ohio. Coffin-case	654,435	July 24	3358	753, 754	92	725
Brown, Mark A., assignor of one-half to W. O. Paxson, Douglas, Ga. Car-coupling	654,941	July 31	4324	973	92	940
Brown, Maurice W., E. A. Byrne, and J. Gilsenan, Newark, N. J. Switch-operating apparatus	657,690	Sept. 11	1253	265	92	2073
Brown Oil Can Company. (See Brown, Lewis O., assignor.)						
Brown, Ora L., Norcatur, Kans. Wire-fence tool	658,699	Sept. 25	3067	683	92	2476
Brown, Oscar P., assignor to W. G. Kendall, Providence, R. I. Cushion-tire	655,049	July 31	4519	1018	92	981
Brown, Oscar P., assignor to W. G. Kendall, Providence, R. I. Cushion-tire	655,050	July 31	4520	1019	92	981
Brown, Perry, Wilmington, Del. Lubricating device for journal-boxes	653,130	July 3	747	175, 176	92	149
Brown, Perry, Wilmington, Del. Dust-guard for journal-boxes	657,082	Sept. 4	19	4, 5	92	1804
Brown, Robert P., *et al.* (See Craw, Joseph T., assignor.)						
Brown, Robert P., and A. Schausten, Washington, D. C. Tripod	654,051	July 17	2485	572	92	522
Brown, Sanger. (See Christy, Henry A., assignor.)						
Brown, Thomas, Allegheny, assignor of one-half to D. A. Wilbert, Pittsburg, Pa. Tool for cutting rivet-heads	658,337	Sept. 25	2420	535	92	2348
Brown, Thomas T., assignor of nineteen twenty-fifths to H. C. Misner, J. S. Chapin, E. A. Fisk, Euclid, and J. F. Montgomery, Angus, Minn. Fire-escape	656,507	Aug. 21	2545	585	92	1564
Brown, William A., Philadelphia, Pa. Berth	657,727	Sept. 11	1323	279, 280	92	2088
Brown, William P., Jr., Minneapolis, Minn. Grain-car door	656,437	Aug. 21	2427	558	92	1540
Brown, William W., Waterville, Me. Coal-screen	657,508	Sept. 11	918	185	92	2008

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Browne, Arthur W., New York, N. Y., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Fountain-spittoon	655,051	July 31	4521	1019, 1020	92	981
Browne, Rollo W. (See Starr, William M., assignor.)						
Browne, Rollo W., Washington, D. C. Hernial truss	655,601	Aug. 7	778	183	92	1101
Browne, William G., Kingston, N. Y. Can-opener	654,089	July 17	2542	585	92	533
Brownell, Willis L., assignor to Brooklyn and New York Railway Supply Company, Elizabeth, N. J. Fare-register	656,935	Aug. 28	3372	770	92	1740
Browning, Ira R., *et al.* (See Grange, Joseph S., assignor.)						
Broyles, James C., Columbus, Miss. Choke attachment for gun-barrels	653,618	July 10	1658	386	92	343
Brubaker, George S. W., and W. S. Twining, Philadelphia, Pa. Circuit-breaker	656,282	Aug. 21	2143	480	92	1486
Brubaker, Reuben C., El Dorado, Ohio. Harvester	657,509	Sept. 11	914	185, 186	92	2008
Bruce, Joseph B., Birmingham, England. Seat for shop assistants, &c	652,886	July 3	266	64	92	52
Bruck, Georg, Berlin, Germany. Roof	653,017	July 3	543	127, 128	92	108
Brucker, Francis. (See Stump and Brucker.)						
Bruff, Wilbur C. (See Reagan, Edgar, assignor.)						
Brüggmann, Andreas K. H., Lubeck, Germany. Gate for railways	653,925	July 17	2270	517	92	481
Brune, Friedrich, Milwaukee, Wis. Punching and riveting machine	654,708	July 31	3865	871, 872	92	842
Brunello, John J., Maybeury, W. Va. Tape-measure	655,052	July 31	4525	1020	92	982
Brunner, Edward C., Cleveland, Ohio. Stationary washtub for laundries	657,308	Sept. 4	453	96	92	1891
Brunner, John A., Westfield, N. J. Hook and eye	655,847	Aug. 14	1313	301	92	1309
Bryan, C. B., *et al.* (See Galbraith, Oscar B., assignor.)						
Bryant, Charles A., Wakefield, Mass., assignor to Scovill Manufacturing Company, Waterbury, Conn. Tack-fastened button	656,508	Aug. 21	2547	586	92	1564
Bryer, Edward R., Roanoke, Va. Stove	656,836	Aug. 28	3167	717	92	1702
Brynie, Jens A., Stavanger, Norway. Register	655,192	Aug. 7	29	6	92	1047
Bryson, James W., New Castle, Pa. Machine for cleaning, burnishing, or polishing tin-plate	656,089	Aug. 14	1791	411, 412	92	1407
Bubb, N. B., *et al.* (See Mann, John L., assignor.)						
Bube, Hans, Hanover, Germany. Cap for measuring-scales	654,222	July 24	2940	660	92	636
Buchanan, John Y., Edinburgh, Scotland. Electric cable	654,871	July 31	4192	944	92	911
Buck, George F., Kenton, Ohio. Combined feed trough and rack	653,209	July 10	916	222	92	197
Buck, Harold W., Schenectady, N. Y., assignor to General Electric Company, of New York. Electric steering-gear	654,130	July 24	2637	604	92	568
Buck, Harry K., Philadelphia, Pa. Shipping package or can	652,831	July 3	180	42	92	37
Buck, Henry A., London, England. Steam-generator	653,436	July 10	1336	317, 318	92	277
Buckeye Manufacturing Company. (See Lambert, John W., assignor.)						
Buckholts, John F., Lois, Ga. Car-coupling	655,755	Aug. 14	1117	257	92	1270
Buckingham, Charles L., and E. Germann, New York, N. Y.; said Germann assignor to said Buckingham. Perforator-keyboard	657,510	Sept. 11	918	186, 187, 188, 189, 190	92	2009
Buckland, Bradford M., Poplar, Cal. Wheel-tire remover	658,479	Sept. 25	2664	591	92	2395
Buckley, Jeremiah, New York, N. Y., assignor of one-half to M. O'Donoghue, St. Louis, Mo. Machine for bending bridle-irons	656,936	Aug. 28	3375	770, 771, 772	92	1740
Buckley, Thomas H., Worcester, Mass. Window-stool for lunch-wagons	658,425	Sept. 25	2578	571	92	2378
Buckley, William, Sheffield, England. Piston-valve	654,382	July 24	3254	729, 730	92	703
Bucklin, Sarah J. (See Prince, Jerome, assignor.)						
Bucknor, William. (See Bushman, Ernst, assignor.)						
Budd Doble Tire Company. (See Lovett, Thomas J., assignor.)						
Budd, Edward G. (See Brinley and Budd.)						
Buddenbohn, Charles L., and W. Speer, Baltimore, Md. Fire-escape	657,641	Sept. 11	1148	241	92	2053
Buddenbohn, Charles L., and W. Speer, Baltimore, Md. Safety mechanism for elevators	657,642	Sept. 11	1152	242	92	2054
Buente, Charles F., Allegheny, Pa. Tile-floor construction	652,748	July 3	7	3	92	4
Buff, David H., Zurich, Switzerland. Post-card	656,132	Aug. 14	1867	429	92	1421
Bufford, George W., assignor to I. H. Williams & Company, New York, N. Y. Chain wrench	653,943	July 17	2308	528	92	488
Bugbee & Laycock. (See Jancey, William L., assignor.)						
Bugbee, Lucian W., assignor to Southbridge Optical Company, Southbridge, Mass. Eyeglasses	656,316	Aug. 21	2203	503	92	1498
Bühne, Friedrich W., Freiburg, and A. Ritz, St. Georgen, Germany. Rotary nut	658,540	Sept. 25	2762	613	92	2415
Bulasky, Louis, New York, N. Y. Folding window-cleaning chair	657,511	Sept. 11	930	191	92	2010
Bulkley, Milton, Oakland, Cal. Packing for air-compressor or other tandem cylinders	653,859	July 17	2153	490	92	458
Bulkley, Milton, Oakland, Cal. Puppet-valve for air-compressors	653,860	July 17	2154	491	92	458
Bullis, Franklin H., New York, N. Y. Marine dumping vessel	656,509	Aug. 21	2548	586	92	1564
Bullivant, William P., London, England. Railway-brake	656,090	Aug. 14	1793	412	92	1407
Bulmer, Charles O., Nooksachk, Wash. Nut-lock	653,210	July 10	917	222	92	198
Bultez, Louis E., Varenne St. Hilaire, France. Oil or other vessel and receptacle	653,944	July 17	2310	528	92	488
Bumpus, Ebenezer F., Boston, assignor of one-half to W. H. Bliss, Newton, Mass. Type-writing machine	653,282	July 10	1060	253, 254	92	224
Bungard, Richard J., London, England. Scaffolding	654,709	July 31	3870	873	92	842
Bunje, Emil T., Hong-Kong, China. Mooring-anchor	657,263	Sept. 4	373	78	92	1876
Bunker, Harman, Barrie, Canada, and G. E. Horn, Cavalier, N. D. Machine for making straw or peat fuel	657,157	Sept. 4	156	35	92	1832
Bunnell, Mass. Tucker, Utah. Tightening device for sagging mattresses	655,084	Aug. 14	982	223	92	1243
Bunnell, Morton G., assignor of forty-nine one-hundredths to J. Cratty, Chicago, Ill. Automobile ditching and grading machine	656,715	Aug. 28	2921	667, 668	92	1654
Bunting, William, Jr., New York, N. Y. Closet-cistern	654,599	July 31	3648	823	92	798
Bunting, William, Jr., New York, N. Y. Waste-valve-operating means	654,600	July 31	3650	823	92	799
Bunting, William, Jr., Brookline, Mass. Urinal	654,601	July 31	3653	823	92	799
Bunting, William, Jr., Brookline, Mass. Mixing and controlling valve for bathing apparatus	654,602	July 31	3655	823, 824	92	800
Buob, Frederick, Cincinnati, Ohio. Spring for upholstered cushions	655,756	Aug. 14	1119	257	92	1270
Buoyant Clothing Syndicate. (See Bickley, Lewis S., assignor.)						
Burchill, Richard D., Grand Ledge, Mich. Fire-escape	654,780	July 31	4012	903	92	872
Burck, John H., Hoosick, assignor to Empire Implement Manufacturing Company, Albany, N. Y. Tool-grinding machine	658,426	Sept. 25	2579	571, 572	92	2378
Burdon, John C., *et al.* (See Shearer, Joseph E., assignor.)						
Burdsall, Frank H., Camden, N. J. Package for pens or the like	655,894	Aug. 14	1388	320	92	1323
Burger, Clarence L., New York, N. Y. Igniting device for gas-burners	656,510	Aug. 21	2550	586	92	1505

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Burger, Franz, assignor of three-fourths to H. M. Williams, Fort Wayne, Ind. Apparatus for converting heat into work	657,392	Sept. 4	624	180, 181	92	1926
Burger, Franz, and H. M. Williams, Fort Wayne, Ind.; said Burger assignor of one-half to said Williams. Urinal	653,437	July 10	1338	318	92	277
Bürger, Joshua. (See Ashworth and Bürger.)						
Burk, Hiram C., Cleveland, Ohio. Scrubbing-machine	657,584	Sept. 11	1045	217	92	2084
Burke, Edward, New York, N. Y., assignor to Union Special Sewing Machine Company, Chicago, Ill. Treadle	655,053	July 31	4526	1020	92	982
Burke, Henry. and D. James, Chicago, Ill. Photographic-print washer	653,766	July 17	1982	452	92	426
Burke, James, New York, N. Y. Commutator-segment	653,945	July 17	2311	589	92	489
Burke, James, Minneapolis, Minn. Pipe-coupling	654,131	July 24	2641	604	92	569
Burke, Robert E., Anderson, Ind. Road-grading machine	656,317	Aug. 21	2204	503, 504, 505	92	1498
Burke, William, and W. H. Thompson, East Stroudsburg, Pa. Apparatus for making hollow ware from pulp	654,608	July 31	3657	824	92	801
Burke, William J., assignor of one-half to H. A. Kaufhold. Scranton, Pa. Rendering anthracite coal conductive, &c	653,468	July 10	1391	329	92	288
Burke, William J., assignor of one-half to H. A. Kaufhold, Scranton, Pa. Manufacture of carbon	655,920	Aug. 14	1441	.....	92	1334
Burkhardt, Levin H. (See Schneider, George, assignor.)						
Burkitt, Edmund D., London, England. Cup-and-ball joint	653,728	July 17	1915	440	92	413
Burleson, Andrew M., Kansas City, Kans. Nut-lock	655,054	July 31	4527	1021	92	982
Burley, Franklin G., Boston, Mass. Cylinder for compound steam-engines	655,685	Aug. 14	983	228	92	1248
Burnett, Edward C., Cagmichaels, Pa. Band or cord tie	656,937	Aug. 28	3378	772	92	1741
Burnham, Frank A., assignor to Chandler & Price Company, Cleveland, Ohio. Rotary milling-cutter	654,436	July 24	3360	754	92	725
Burnham, Frank A., assignor to Chandler & Price Company, Cleveland, Ohio. Printing-press	654,781	July 31	4014	903, 904	92	872
Burns, Joe E., and A. Schemel, Springfield, Mass. Apparel-waist	653,544	July 10	1550	360	92	321
Burns, Robert, New York, N. Y. Fan-blower	655,602	Aug. 7	779	183	92	1192
Burns, Robert J., assignor of five-eighths to L. H. Hall, Avon, and F. C. Granger, Randolph, Mass. Valve-attaching device for bicycle-tires	657,060	Aug. 28	3590	827	92	1782
Burr, Ellis M., Champaign, Ill. Thread-cutting machine	653,543	July 10	1547	359, 360	92	321
Burroughs, William E., *et al.* (See Mayhew, Charles L., assignor.)						
Burt, George H., Milburn, N. J. Pool-ball	652,998	July 3	499	117	92	101
Burt, Merritt, Jacksonville, Fla. Balance-escapement	653,131	July 3	748	176	92	149
Burton, Bethel, assignor to W. G. and H. C. Burton, New York, N. Y. Magazine-gun	656,807	Aug. 28	3079	700, 701	92	1685
Burton, Charles H., assignor to National Pneumatic Service Company, Chicago, Ill. Terminal for pneumatic-despatch tubes	653,438	July 10	1340	318	92	278
Burton, George D., Boston, Mass. Apparatus for separating metals from ores by electricity	657,911	Sept. 18	1642	354, 355	92	2166
Burton, George D., Boston, Mass., and G. W. Steiner, New York, N. Y. Electrically-operated railway-gate	656,091	Aug. 14	1794	413	92	1407
Burton, Henry C., *et al.* (See Burton, Bethel, assignor.)						
Burton, John R., London, England. Case or cabinet	658,480	Sept. 25	2665	592	92	2395
Burton, Smith P., Jr., *et al.* (See Huff, Henry H., assignor.)						
Burton, Travis. (See Cliff and Burton.)						
Burton, Winfield G., *et al.* (See Burton, Bethel, assignor.)						
Burwell, Arthur W. (See Whitlock and Burwell.)						
Burwell, George A., Toledo, Ohio. Lubricator for engine-cylinders	657,643	Sept. 11	1156	242	92	2055
Busell Lasting Machine Company. (See Preston, Albert F., assignor.)						
Bush, Hiram T., Detroit, Mich. Closet-seat	654,942	July 31	4325	973	92	940
Bush, Walter C., Michigan City, Ind. Sprayer attachment for hose	654,132	July 24	2642	604	92	569
Bush, William H. (See Pettijohn, John W., assignor.)						
Bushman, Ernst, assignor of one-fourth to W. Bucknor, New York, N. Y. Composition of matter	656,167	Aug. 21	1929	.....	92	1446
Buss, Julius, London, England. Apparatus for concentrating and separating ores, &c	657,393	Sept. 4	628	181	92	1927
Busse, Charles F. (See Strothenke, Henry, assignor.)						
Bussells, Josephus F., Irvington, Va., assignor to American Process Company, New York, N. Y. Apparatus for making fertilizers	656,595	Aug. 21	2723	624	92	1602
Butcher, George W., San Antonio, Tex. Locomotive-pilot coupling	655,055	July 31	4529	1021	92	983
Butcher, Leopold E., London, and M. G. Wood, Brighton, England. Lighter for cigars, cigarettes, or the like	657,728	Sept. 11	1324	280	92	2088
Butler, Charles J., *et al.* (See Knadler, Godfrey, assignor.)						
Butler, Eli T., Philadelphia, Pa. Flour-bolter	658,700	Sept. 25	3069	688	92	2476
Butler, Emmanuel, Newark, N. J. Handle-fastening	654,943	July 31	4326	974	92	940
Butler, Mary A., Roscoe, N. Y. Puzzle or trick device	652,994	July 3	500	117	92	101
Butler Novelty Company, *et al.* (See Cushman, Amos A., assignor.)						
Butler, Smiley F. (See Turner and Butler.)						
Butler, Thomas J., Kearny, N. J. Bottle-stopper	655,056	July 31	4531	1021	92	983
Butrick, George H., assignor of one-half to J. E. Connor, Worcester, Mass. Combination measuring instrument	653,640	July 10	1738	400	92	360
Butterfield, George F., Stoneham, Mass. Heel for boots or shoes	652,887	July 3	267	64	92	53
Butterfield, George F., Stoneham, Mass. Sole and heel for boots or shoes	652,888	July 3	268	65	92	53
Butterworth, Robert. (See Courtney and Butterworth.)						
Buttler, William, Redkey, Ind. Vehicle driving mechanism	657,281	Sept. 4	408	86	92	1882
Bye, Martin, assignor to Harrington & Richardson Arms Company, Worcester, Mass. Safety mechanism for double-action firearms	658,314	Sept. 18	2363	522	92	2311
Byers, Joseph N., Urbana, Ohio. Vehicle-wheel	658,338	Sept. 25	2421	535	92	2348
Byers, Robert M. (See Barnes, Edwin S., assignor.)						
Byrne, Charles F., *et al.* (See Picken, Archibald, assignor.)						
Byrne, Edwin A. (See Brown, Byrne, and Gilsenan.)						
Byrnes, Joseph E., Newark, N. J. Antirust vessel	653,439	July 10	1342	318	92	278
Byrnes, Thomas F., Utica, N. Y. Sewer-trap	658,339	Sept. 25	2423	535	92	2348
C. & C. Electric Company. (See Elliott and Eskholme, assignors.)						
Cables, James H., Thomaston, Conn. Pocket-knife	656,092	Aug. 14	1795	413	92	1408
Cade, William D., assignor, by mesne assignments, to Enterprise Manufacturing Company of Pennsylvania, Philadelphia, Pa. Movable pattern for molding	653,614	July 10	1655	396	92	344
Cady, Henry F. (See Adams, Hayveyand, assignor.)						
Caesar, Otto, New York, N. Y. Sign	653,545	July 10	1551	360	92	322
Cahill, Arthur T., *et al.*, trustees. (See Cahill, Thaddeus, assignor.)						
Cahill, George F., *et al.*, trustees. (See Cahill, Thaddeus, assignor.)						
Cahill, Mortimer, Chicago, Ill. Burner	658,340	Sept. 25	2424	536	92	2349

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cahill, Thaddeus, Washington, D. C., assignor to J. B. Lambie, E. H. Jackson, G. F. and A. T. Cahill, trustees. Type-writing machine	654,133	July 24	2643	605, 606, 607, 608	92	569
Cahill, Thaddeus, New York, N. Y., assignor to J. B. Lambie, E. H. Jackson, G. F. and A. T. Cahill, trustees. Piano-action or other keyboard instrument	657,477	Sept. 4	776	167, 168	92	1954
Cahill, Thaddeus, Washington, D. C., assignor to J. B. Lambie, E. H. Jackson, G. F. and A. T. Cahill, trustees. Type-writing machine, linotype-machine, type-setting machine, or other keyboard printing instrumentality	657,478	Sept. 4	804	169, 170, 171	92	1965
Cahill, Thaddeus, New York, N. Y., assignor to J. B. Lambie, E. H. Jackson, G. F. and A. T. Cahill, trustees. Type-writing machine or other keyboard printing instrumentality	657,479	Sept. 4	888	171, 172, 173, 174	92	1977
Cahill, Thaddeus, New York, N. Y., assignor to himself, A. J. Cummings, G. F. and A. T. Cahill, and E. H. Jackson, trustees. Type-writing machine	656,576	Aug. 21	2669	615	92	1589
Cahoon, Louis L., Racine, Wis. Bath-cabinet	655,956	Aug. 14	1511	347	92	1347
Cain, John J., Bayonne, N. J. Steam-boiler	657,912	Sept. 18	1644	355	92	2166
Cain, John J., Bayonne, N. J. Steam-boiler	657,913	Sept. 18	1647	356	92	2167
Cairncross, Stewart, Grafton, N. D. Aerial wheel	653,615	July 10	1656	386, 387	92	344
Cairney, William D. (See Ross and Cairney.)						
Caldecott, William A., Johannesburg, South African Republic. Extracting gold from cyanid solutions containing the precious metals	654,437	July 24	3362	------	92	726
Caldwell, Charlie C. (See Goddard, Anson W., assignor.)						
Caldwell, Jack, assignor of one-half to C. Howard, Kansas City, Mo. Lifting-jack	653,283	July 10	1064	254	92	225
Caldwell, John. (See Thomas and Caldwell.)						
Caldwell, Julia. (See Cary, Lewis C., assignor.)						
Caldwell, William E., Dayton, Ky. Cloth-cutter	656,615	Aug. 21	2764	633	92	1611
California Pre-Payment Meter Company. (See Weegmann, Frederick, assignor.)						
Calkins, John H., Columbus, Ohio. Box for spool goods	653,211	July 10	918	222	92	198
Calkins, Seward H., Baltimore, Md. Tile	652,995	July 3	502	118	92	102
Calloch, Charles E., La Flache, France. Multiple-piston petroleum or gas motor	655,475	Aug. 7	560	125	92	1150
Callow, John, New Kamilchi, Wash. Ship's anchor	653,861	July 17	2156	491	92	458
Callow, John, Liverpool, England. Machine for molding dough into loaves of bread, pastry, &c.	658,617	Sept. 25	2910	649, 650, 651	92	2445
Calumet Tire Rubber Company. (See Price, Raymond B., assignor.)						
Camden Iron Works. (See Graves, Erwin, assignor.)						
Camden Iron Works. (See Shem, George W., assignor.)	656,968	Aug. 28	3379	772	92	1741
Cameron, Addison B., Cameron, Mont. Harness-snap	657,264	Sept. 4	374	78	92	1876
Camp, Horace B., Akron, Ohio. Construction for subways	654,782	July 31	4015	904	92	873
Campbell, Alfred G., Sherbrooke, Canada. Log-turning attachment						
Campbell, Charles M. (See Henry, William E., assignor.)						
Campbell, Douglas M., assignor of one-half to S. Taliaferro, Houston, Tex. Bale-band fastening	653,337	July 10	1172	279	92	244
Campbell, George L., assignor to International Electric Traction Company, New York, N. Y. Electric-railway system	656,511	Aug. 21	2551	587	92	1565
Campbell, James, assignor to O. C. Devereux & Co., Providence, R. I. Button or stud	653,655	July 17	1789	409	92	380
Campbell, James, assignor to O. C. Devereux & Co., Providence, R. I. Shirt stud or button	653,656	July 17	1790	410	92	389
Campbell, Leonard H., *et al.* (See Reuterdahl, Arvid, assignor.)						
Campbell Machine Company. (See Warren, George E., assignor.)						
Campbell, Marvin, South Bend, Ind. Currycomb	655,957	Aug. 14	1513	347, 348	92	1347
Campbell, Peter C., New York, N. Y. Window-chair	656,626	Aug. 28	2782	636	92	1626
Campbell, Peter C., McCaskill, S. C. Wheel	658,233	Sept. 18	2231	488	92	2285
Campbell, Robert E., assignor of one-half to T. R. Edwards, San Francisco, Cal. Detachable artificial tooth	656,596	Aug. 21	2724	625	92	1602
Campbell, Solon, O., East Peru, Iowa. Gate	656,512	Aug. 21	2554	587	92	1566
Campbell, Thomas L., *et al.* (See Gordon and Hall, assignors.)						
Campbell, Tillie, Oakland, Cal. Surgical or obstetrical pad	652,889	July 3	269	65	92	53
Canedy, Ernest E., North Adams, Mass. Instep-fastener for use in lasting shoes	657,852	Sept. 11	1589	330	92	2133
Canfield, George W., *et al.* (See Treese, Albert L., assignor.)						
Canfield, Wilbur E., *et al.* (See Treese, Albert L., assignor.)						
Canister Manufacturing Company. (See Hunter, Henry C., assignor.)						
Cann, Thomas B., assignor to Heywood Brothers & Wakefield Company, Wakefield, Mass. Car-seat	657,480	Sept. 4	859	174	92	1985
Cann, Thomas B., assignor to Heywood Brothers & Wakefield Company, Wakefield, Mass. Car-seat	657,481	Sept. 4	860	174	92	1986
Cannan, John J., Rochester, N. Y. Hat-box	657,061	Aug. 28	3591	828	92	1782
Cantrell, Robert B., New York, N. Y. Artificial bait	655,608	Aug. 7	781	184	92	1192
Capewell, George J., assignor to American Specialty Manufacturing Company, Hartford, Conn. Combination-tool	655,324	Aug. 7	284	64	92	1096
Capps, Milton R., Philadelphia, Pa. Machine for brazing can caps and collars together	654,710	July 31	3871	873	92	843
Cardinell, John A., San Francisco, Cal. Speed mechanism for bicycles	658,718	Sept. 25	3104	692	92	2483
Carhart, Winfield S., Telluride, Colo. Protractor	655,848	Aug. 14	1314	301	92	1309
Carleton Electric Company. (See Carleton, Henry G., assignor.)						
Carleton, Henry G., assignor to Carleton Electric Company, New York, N. Y. Circuit-controller	653,182	July 3	749	176	92	149
Carleton, Henry G., assignor to Carleton Electric Company, New York, N. Y. Electric signaling apparatus	653,469	July 10	1392	329, 330	92	288
Carleton, Henry G., assignor to Carleton Electric Company, New York, N. Y. Electric arc lamp	653,984	July 17	2377	547	92	501
Carleton, Henry G., assignor to Carleton Electric Company, New York, N. Y. Fastening device	654,383	July 24	3256	730	92	708
Carleton, Henry G., assignor to Carleton Electric Company, New York, N. Y. Thermostat and alarm-circuit controlled thereby	655,057	July 31	4534	1022	92	984
Carleton, Henry G., assignor to Carleton Electric Company, New York, N. Y. Electric lock	655,476	Aug. 7	562	126	92	1150
Carleton, Henry G., assignor to Carleton Electric Company, New York, N. Y. Lock	656,011	Aug. 14	1634	377	92	1371
Carleton, Henry G., assignor to Carleton Electric Company, New York, N. Y. Lock-controlling device	656,341	Aug. 21	2250	517	92	1506
Carleton, Henry G., assignor to Carleton Electric Company, New York, N. Y. Electric lock	656,808	Aug. 28	3084	701	92	1686
Carleton, Henry G., assignor to Carleton Electric Company, New York, N. Y. Electric lock	657,211	Sept. 4	264	56	92	1856
	657,853	Sept. 11	1539	331	92	2133

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Carlisle, E. A., *et al.* (See Whipple, Archibald M., assignor.)						
Carlson, Albert, Chicago, Ill. Clamp	655,193	Aug. 7	31	7	92	1047
Carlson, Androv (See Stromberg and Carlson.)						
Carlsson, John, Worcester, Mass. Screw-propeller	655,958	Aug. 14	1515	348	92	1348
Carlsson, Oscar C. A., Stockholm, Sweden. Massage apparatus	658,481	Sept. 25	2666	592	92	2395
Carlton, Robert, Jonesborough, Ark. Picture-frame	656,342	Aug. 21	2253	517	92	1506
Carlton, William T., *et al.* (See Orr, William O., assignor.)						
Carmack, John W., assignor of one-fourth to I. H. Dawson, Dyersburg, Tenn. Hay-press	655,058	July 31	4540	1022, 1023, 1024	92	985
Carman, Charles, Madison, Wis. Horseshoe	654,711	July 31	3873	873	92	843
Carman, Charles L., assignor to Gates Iron Works, Chicago, Ill. Tube or pebble mill	653,284	July 10	1066	255	92	225
Carman, Irving E., Ellenville, N. Y. Combined couch and bath-tub	652,744	July 3	8	3, 4	92	4
Carmical, Luther M., Jonesville, Va. Draftman's instrument	652,882	July 3	182	42	92	37
Carmichael, J. G., *et al.* (See Mead, William M., assignor.)						
Carmody, Michael B., Zanesville, Ohio. Gas-burner	654,944	July 31	4328	974	92	940
Carnagy, Alfred, assignor to John A. Roebling's Sons Company, Trenton, N. J. Endless wire rope or cable	654,224	July 24	2943	661	92	696
Carnagy, Alfred D., assignor to John A. Roebling's Sons Company, Trenton, N. J. Mail-bag catcher	654,223	July 24	2941	660	92	696
Carnagy, Alfred D., assignor to John A. Roebling's Sons Company, Trenton, N. J. Making endless wire ropes or cables	654,225	July 24	2944	661	92	696
Carney, George H., Salt Lake City, Utah. Sack-holder	657,644	Sept. 11	1158	242	92	2056
Carney, Sydney H., *et al.* (See Jamieson, Augustus, assignor.)						
Caron, Walther, Barmen, Germany. Button-machine	654,604	July 31	3661	824, 825, 826	92	801
Carpenter, Charles W., *et al.* (See Crowell, Luther C., assignor.)						
Carpenter, Charles W., *et al.* (See McIntyre, Frank R., assignor.)						
Carpenter, Charles W., *et al.* (See Spalckhaver, William, assignor.)						
Carpenter, James H., Reading, Pa., assignor to Carpenter Steel Company, of New Jersey. Apparatus for treating ingots of steel	658,133	July 3	753	176	92	151
Carpenter, Rolla C., Ithaca, N. Y. Alloy and making same	652,893	July 3	184	------	92	98
Carpenter Steel Company. (See Carpenter, James H., assignor.)						
Carragan, George, *et al.* (See Mawbey, George W., assignor.)						
Carraine, Eugene, Philadelphia, Pa. Picture-frame	654,514	July 24	3498	789, 790	92	752
Carrick, Martin, San Francisco, Cal. Metallic lathing and fireproof construction for buildings	658,497	Sept. 25	2688	597	92	2390
Carroll, Albert E., *et al.* (See White, John F., assignor.)						
Carroll, Charles. (See Gustine, Franklin J., assignor.)						
Carroll, Daniel, Columbus, Ohio. Device for straightening chain-links	658,064	July 3	622	148	92	126
Carroll, Frank, *et al.* (See Grange, Joseph S., assignor.)						
Carroll, James H., New York, N. Y. Bouquet-holder	657,585	Sept. 11	1046	217	92	2034
Carroll, Theron S., Winsted, Conn. Wood-sawing machine	656,168	Aug. 21	1930	443, 444	92	1445
Carroll, Thomas, Dayton, Ohio, assignor to National Cash Register Company, Jersey City, N. J. Cash-register	654,226	July 24	2946	661, 662, 663	92	696
Carroll, Thomas F. (See Dooley and Carroll.)						
Carroll, William M., Beaumont, Tex. Cut-off for steam-feeds for sawmills	653,212	July 10	919	222	92	198
Carson, Robert, Etna, assignor to W. Wilson, Sharpsburg, Pa. Cuspidor	656,939	Aug. 28	3381	772	92	1741
Carter, David, Stirchley, England. Valve for rotary engines	654,227	July 24	2954	663	92	698
Carter, Edward D., Brenham, Tex. Roller-compress	653,065	July 3	623	148, 149	92	126
Carter, James I. (See Hester and Carter.)						
Carter, James I., *et al.* (See Hester, Stephen J., assignor.)						
Carter, John, *et al.* (See Harden, Harry, assignor.)						
Carter, Missouri, *et al.* (See Harden, Harry, assignor.)						
Carter, Taylor, and B. Henry, Frankfort, Ky. Ratchet-wrench	657,512	Sept. 11	981	191	92	2011
Carter, William A., *et al.* (See Hester, Stephen J., assignor.)						
Carter, William L., Cedar Falls, Iowa. Register	657,083	Sept. 4	20	5	92	1805
Cartier, Jacob, *et al.* (See Cartier, Noah, assignor.)						
Cartier, Jean M., La Roche, France. Shock-deadening device for boots or shoes	658,234	Sept. 18	2232	488	92	2285
Cartier, Noah, assignor to J. Cartier and A. G. Pelletier, Biddeford, Me. Warp-thread and selvage guide for looms	658,341	Sept. 25	2426	536	92	2340
Caruthers, John I., San Antonio, Tex. Saw	655,059	July 31	4546	1024	92	986
Caruthers, John I., San Antonio, Tex. Lawn-sweeper	656,093	Aug. 14	1797	413	92	1408
Cary, Henry B., assignor to F. W. Braun, Los Angeles, Cal. Open Bunsen burner	653,166	July 3	810	191, 192	92	102
Cary, Lewis C., assignor of one-half to J. Caldwell, El Paso, Tex. Automatic air-brake coupling	653,657	July 17	1700	410	92	380
Cary, William E., Springfield, Vt. Gas-engine	657,810	Sept. 11	1463	311	92	2117
Cascaden, Thomas, Jr., assignor to Davis Gasoline Engine Works Company, Waterloo, Iowa. Grinding-mill	656,809	Aug. 28	3089	702	92	1687
Case, Alfred W., Highland Park, Conn. Hot-draft system	654,302	July 24	3110	696	92	671
Case, Frank E., Schenectady, N. Y., assignor to General Electric Company, of New York. Safety device for electric vehicles	655,389	Aug. 7	406	80	92	1118
Case, Walter D., Granby, Conn. Cattle-stanchion	653,066	July 3	627	149	92	127
Casey, Frank P., Bloomington, Ill. Adjustable window-shade fixture	654,342	July 24	3179	713	92	685
Casey & Hedges Manufacturing Company. (See Casey and Hedges, assignors.)						
Casey, James F., and M. M. Hedges, assignors to Casey & Hedges Manufacturing Company, Chattanooga, Tenn. Water-tube boiler	658,003	Sept. 18	1888	397	92	2208
Cash, Arthur W., assignor to Foster Engineering Company, Newark, N. J. Diaphragm for pressure-regulating valves	655,361	Aug. 7	360	78	92	1110
Cash, James H., assignor to J. B. Rittenhouse, Toronto, Canada. Bicycle seat-post	658,410	July 10	1290	306	92	298
Cassel, Elmer F., Seattle, Wash. Hydraulic motor	654,872	July 31	4192	944, 945	92	911
Cassel, Elmer F., Seattle, Wash. Cipher-code system	657,586	Sept. 11	1047	218	92	2035
Cassel, Elmer F., Seattle, Wash. Cipher-code	657,587	Sept. 11	1049	218	92	2035
Cassidy, Patrick, Salem, Mass. Harness attachment for looms	656,169	Aug. 21	1933	444	92	1447
Cassidy, Patrick F., assignor of one-half to N. F. Doherty, Boston, Mass. Method of and means for wiring bottles	656,513	Aug. 21	2556	587	92	1566
Cassidy, Patrick F., assignor of one-half to N. F. Doherty, Boston, Mass. Bottle-wiring tool	656,514	Aug. 21	2557	588	92	1566
Cassity, Isaac N. and W. J., Holton, Kans. Telescopic drill-shaft	656,515	Aug. 21	2559	588	92	1567

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Cassity, William J. (See Cassity, Isaac N. and W. J.)						
Castera, Charles J., Jr., Los Angeles, Cal. Checking or unchecking device	658,482	Sept. 25	2667	592	92	2395
Casterline, Edwin D., Detroit, Mich. Paper-folding machine	654,515	July 24	3499	790	92	752
Castro, Alberto, San Antonio, Tex. Bit	656,244	Aug. 21	2076	475	92	1474
Caswell, Sheldon H., Newark, N. Y. Cover for cream-separators	652,884	July 3	185	43	92	38
Caswell, William A., Chicago, Ill. Freight-car	657,021	Aug. 28	3513	802	92	1766
Cates, James L., Senatobia, Miss., assignor of one-half to T. R. Bray, Gurdon, Ark. Post-hole digger	654,945	July 31	4329	974	92	941
Catlin, Abel D., Chattanooga, Tenn. Key-seating machine	655,432	Aug. 7	484	108	92	1134
Caudemberg, Charles A. C. de, Nice, France. Composition of matter for paving roads	656,094	Aug. 14	1708	.....	92	1408
Caverly, Edward, Milwaukee, Wis. Moistening or damping device	655,604	Aug. 7	782	184	92	1192
Cawley, Daniel C., Allegheny, Pa. Traction-engine	655,686	Aug. 14	984	224	92	1243
Caywood, Walter L., and J. M. Gasaway, Hume, Mo. Music-leaf turner	653,067	July 3	628	150	92	127
Cederberg, Daniel, Leominster, Mass. Joiner	653,616	July 10	1657	387	92	344
Celluloid Company. (See Gillmore, George C., assignor.)						
Cermak, Rudolph F., Chicago, Ill. Machine for painting moldings	658,427	Sept. 25	2580	572	92	2379
				573		
Cerruti, Antonio, San Francisco, Cal. Domestic boiler	654,712	July 31	3874	874	92	843
Cervello, Vincenzo, Palermo, Italy. Apparatus for volatilizing disinfectants	654,946	July 31	4330	975	92	941
Cessna, William H., assignor of one-half to J. M. Dyson, Macon, Mo. Hame-tug	656,170	Aug. 21	1935	444	92	1448
Chaboche, Marie E. P., Paris, France. Brake for vehicles	655,390	Aug. 7	408	90	92	1119
Chadbourne, Joseph H., *et al.* (See Pierce, John, assignor.)	656,438	Aug. 21	2428	558	92	1541
Chaffee, Edward F., Albany, N. Y. Centering device for car-couplings						
Challenge Windmill and Feedmill Company. (See Todd, James, assignor.)						
Challenger, John E., *et al.* (See Pfautz, Daniel M., assignor.)	654,605	July 31	3663	826	92	802
Chalmers, Frank A., assignor of one-half to B. S. Banks, Philadelphia, Pa. Type-writer	656,012	Aug. 14	1641	377	92	1373
Chamberlain, Jacob C., New York, N. Y. Electric launch						
Chamberlain, William A. (See Howell and Chamberlain.)						
Chambers Brothers Company. (See Chambers, Cyrus, Jr., assignor.)						
Chambers Brothers Company. (See Chambers and King, assignors.)						
Chambers Brothers Company. (See King, Howard K., assignor.)						
Chambers, Cyrus, Jr., Overbrook, assignor to Chambers Brothers Company, Philadelphia, Pa. Re-press brick-machine	656,880	Aug. 28	3278	745	92	1722
				746		
				742		
Chambers, Cyrus, Jr., Overbrook, and H. K. King, assignors to Chambers Brothers Company, Philadelphia, Pa. Re-press brick-machine	656,879	Aug. 28	3271	743	92	1721
				744		
				745		
Chambost, Pierre J. E. E., Liverpool, England. Liquid-fuel furnace	655,757	Aug. 14	1120	257	92	1270
				258		
Champagne, Onesime H., assignor of one-half to J. B. Tanguay, Providence, R. I. Ventilator	656,597	Aug. 21	2725	625	92	1602
Champion, George E., Pleasant Hill, Ky. Gate	653,213	July 10	921	223	92	198
Champlin, Justin F., Buffalo, N. Y. Pigeon-trap	654,947	July 31	4331	975	92	941
Chandler, Horace J., Dummer, N. H. Running-gear for sleighs	655,821	Aug. 14	1270	291	92	1301
Chandler, Irving W., Burlington, Vt. Loom	657,914	Sept. 18	1649	356	92	2168
Chandler & Price Company. (See Burnham, Frank A., assignor.)						
Chandler & Taylor Company. (See Ruef, Elmer E., assignor.)	657,339	Sept. 4	503	104	92	1900
Chandler, Theophilus P., Philadelphia, Pa. Electric railway						
Chaninel, Edward D. (See Sproehnle, Frank J., assignor.)						
Chapin, Jackson S., *et al.* (See Brown, Thomas T., assignor.)	653,376	July 10	1239	295	92	258
Chapman, Alonzo E., Placerville, Cal. Pop-gun						
Chapman, Charles M., assignor of two-thirds to P. Murry and M. Murray, Fort Edward, N. Y. Mop-holder	657,062	Aug. 28	3592	828	92	1788
Chapman, Charles S., assignor to Pittsburg Foundry and Machine Company, Pittsburg, Kans. Shield for furnaces	654,516	July 24	3501	790	92	752
	656,627	Aug. 28	2784	791		
				636	92	1627
Chapman, Joseph A., Bay City, Wis. Toy	657,265	Sept. 4	374	78	92	1876
Chapman, Joseph L., Haddonfield, N. J., assignor to Watson & McDaniel Co., Philadelphia, Pa. Steam-trap						
Charles E. Hancock Company. (See Clarke, George R., assignor.)	657,513	Sept. 11	992	191	92	2011
Chase, Barnard M., Hudson, N. Y. Railway-spike	655,194	Aug. 7	32	7	92	1047
Chase, Franklin K., Taunton, Mass. Stove-shelf	655,325	Aug. 7	285	64	92	1097
Chase, Herbert G., Nashua, N. H. Eyeglasses	656,577	Aug. 21	2084	615	92	1594
Chater, William, Denver, Colo. End-gate for wagon-bodies						
Cheaney, Robert B., *et al.* (See Wigal, James P., assignor.)	657,084	Sept. 4	22	5	92	1805
Cheesman, James E., New York, N. Y. Feed for cotton-gins	658,618	Sept. 25	2914	651	92	2446
Chellis, Fred A., assignor to C. J. Stone, Portland, Me. Wrench						
Chemische Fabrik auf Actien, vormals E. Schering. (See Schmidt and Merling, assignors.)						
Chemische Fabrik von Heyden, Actien-Gesellschaft. (See Uhlmann, Paul, assignor.)						
Cheney, Arthur E. and G. A., and G. W. King, assignors to Marion Steam Shovel Company, Marion, Ohio. Excavator	655,758	Aug. 14	1121	258	92	1270
Cheney, George A. (See Cheney and King.)						
Cheney, George K., assignor to National Gramophone Corporation, New York, N. Y. Gramophone sound-box	655,195	Aug. 7	33	7	92	1048
Cheney, Thomas J., assignor of one-half to W. R. Tucker, Chicago, Ill. Churn	655,391	Aug. 7	410	90	92	1119
Cheney, Walter L., Meriden, Conn. Lathe	656,318	Aug. 21	2206	505	92	1498
Cheswright, Richard C. (See Shantz, Allan B., assignor.)	658,325	Sept. 18	2233	489	92	2285
Cheval, Victor, and J. Lindeman, Brussels, Belgium. Secondary battery	656,940	Aug. 28	3382	773	92	1741
Chevalier, Charles, New York, N. Y. Engraving-machine	654,517	July 24	3503	791	92	753
Chew, Matthias M., Cecil, N. J. Nest-box	653,658	July 17	1702	410	92	390
Chickering, Frank W., assignor of one-half to J. F. Stratton, Hardwick, Vt. Drag	658,058	Sept. 18	1923	417	92	2224
Childress, Benjamin F., Dublin, Va. Copy-holder	653,659	July 17	1703	411	92	390
Chillingworth, Rudolf, Nuremburg, Germany. Belt-pulley						
Chinnock, Harry S., Jr. (See Westerfield and Chinnock.)						
Chipman, D. C., *et al.* (See Leib, Alfa R., assignor.)						
Chipman, Katherine A., *et al.* (See Leib, Alfa R., assignor.)						
Chisholm, James W. (See Faller, Ernest A., assignor.)						
Chorley, John C. (See Comber and Chorley.)						
Chouinard, Napoleon. (See Brady and Chouinard.)	658,204	Sept. 18	2178	476	92	2275
				477		
Christensen, Christ, Oakland, Cal. Voting-machine	657,085	Sept. 4	23	6	92	1806
Christensen, Emille H., New York, N. Y. Tongue-piece for shoes	658,342	Sept. 25	2427	536	92	2349
Christensen, Emille H., New York, N. Y. Shoe	654,228	July 24	2956	663	92	639
				664		
Christensen, Niels A., Milwaukee, Wis. Valve-gear for engines	657,331	Sept. 4	505	105	92	1901
Christensen, Niels A., Milwaukee, Wis. Gage-illuminator						

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Christensen, Niels A., Milwaukee, Wis. Fluid-pressure hoist	657,332	Sept. 4	506	105	92	1901
Christey, Arthur, assignor to E. G. Christey, Buffalo, N. Y. Combined letter-sheet and envelop	653,134	July 3	757	177	92	151
Christey, E. G. (See Christey, Arthur, assignor.)						
Christopher, Calvin F., assignor to Columbian Automatic Computing Scales Company, Washington, D. C. Price-scale	658,732	Sept. 25	3135	696	92	2489
				697		
Christy, Henry A., assignor of one-half to S. Brown, Chicago, Ill. Railway-rail joint	656,810	Aug. 28	3092	703	92	1687
Church, Duane H., Newton, Mass. Mainspring-fastener for watches	654,873	July 31	4196	945	92	912
Church, Elton C. (See McHardy, James A., assignor.)						
Church, Walter A., Pittsburg, Pa. Electric-lamp socket	653,068	July 3	629	150	92	128
Church, William C., Portland, Oreg., and J. B. Mahana, Silver Lake, Wash. Serving apparatus	655,196	Aug. 7	31	8	92	1048
Churchill, Thomas, York County, Va. Lock	655,695	Aug. 7	783	184	92	1192
Cilley, Harry E., and C. S. Gooding; said Gooding assignor to E. C. Judd, Boston, Mass. Machine for leveling shoe-soles	656,764	Aug. 28	3000	684	92	1670
				685		
Cincinnati Shaper Company. (See Steen and March, assignors.)						
Cincinnati Shaper Company. (See Steen and Warner, assignors.)						
Cindel, Eli, McKees Rocks, Pa. Non-refillable bottle	656,388	Aug. 21	2333	536	92	1523
Clairmont, Joseph J., New York, N. Y. Eyeglasses	656,881	Aug. 28	3281	746	92	1722
Clamer, Guilliam H. (See Hendrickson and Clamer.)						
Clamer, Guilliam H., and J. G. Hendricksou, assignors to Ajax Metal Company, Philadelphia, Pa. Alloy	655,392	Aug. 7	411	.....	92	1119
Clapp, Samuel E., Decatur County, Ind. Clod-fender adjuster	657,333	Sept. 4	509	105	92	1902
Clapp, William H., Auburn, N. Y. Grindstone	656,171	Aug. 21	1936	444	92	1448
				445		
Clark, A. B. (See Clark, James, assignor.)						
Clark, Abner G., Fort Recovery, Ohio. Sawbuck	654,134	July 24	3672	608	92	578
Clark, Albert B., Hamburg, N. Y. Invalid's bed	653,440	July 10	1343	319	92	278
Clark, Albert G. (See Saddler, Benjamin, assignor.)						
Clark, Alfred L., Dubuque, Iowa. Awning	652,835	July 3	187	43	92	38
Clark, Benjamin W., Washington, D. C. Dumping-cart body	653,546	July 10	1552	361	92	329
Clark Cycle Tire Company. (See Clark, George H., assignor.)						
Clark, David H., Catlin, Ind. Folding hay-derrick	656,941	Aug. 28	3383	773	92	1742
Clark, Emri W., Nashua, N. H. Snow-guard for roofs	654,438	July 24	3362	754	92	726
Clark, Francis L., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Air-brake	656,516	Aug. 21	2561	589	92	1567
Clark, Francis L., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Hydraulic brake	656,517	Aug. 21	2562	589	92	1568
Clark, Frank. (See Powell, William G., assignor.)						
Clark, Fred W. (See Pratt, Theodore P., assignor.)						
Clark, George D., Plainville, Conn. Caster-support	656,628	Aug. 28	2785	637	92	1627
Clark, George H., Boston, Mass., assignor to Clark Cycle Tire Company, Portland, Me. Pneumatic tire	652,890	July 3	270	65	92	53
Clark, George L., Warren, Pa. Tire-supporting frame	658,619	Sept. 25	2915	651	92	2446
Clark, Henry R., Buffalo, N. Y. Hinge	655,606	Aug. 7	784	184	92	1192
Clark, Horace G., Grinnell, Iowa. Driving-gear for bicycles	653,862	July 17	2157	491	92	459
Clark, James. (See Howe and Clark.)						
Clark, James, Colorado Springs, Colo., assignor of one-half to A. B. Clark, Clarinda, Iowa. Ratchet-brake	656,942	Aug. 28	3384	773	92	1742
Clark, James A. (See Hysert, Frank, assignor.)						
Clark, John S., assignor to Iron Clad Manufacturing Company, New York, N. Y. Closure for receptacles	658,343	Sept. 25	2428	536	92	2350
Clark, Julius S., Melrose, Mass. Sash-cord guide	654,874	July 31	4197	945	92	912
Clark, Melville, Chicago, Ill. Organ	653,214	July 10	922	223	92	198
Clark, Robert L. (See Page, Ellsworth M., assignor.)						
Clark, Rufus J., Franklin, Tenn. Musical instrument	653,135	July 3	758	177	92	151
Clark, William A., Boston, Mass. Split pulley	656,944	Aug. 28	3389	774	92	1743
Clarke, Charles J., Kingsburg, Cal. Combined raisin cleaner and grader	654,135	July 24	2673	608	92	578
Clarke, George R., Providence, R. I., assignor to Charles E. Hancock Company, of Rhode Island. Stud	656,598	Aug. 21	2726	625	92	1603
Clarke, George W., assignor to J. M. Appel, Rochester, N. Y. Cigar-box-lid holder	653,069	July 3	631	150	92	128
Clarke, Ira P., Alameda, Cal. Automatic flusher	658,139	Sept. 18	2062	449	92	2251
Clarke, Louis S., Pittsburg, and J. G. Heaslet, Allegheny, assignors to Autocar Company, Pittsburg, Pa. Driving apparatus for motor-vehicles	658,620	Sept. 25	2916	651	92	2446
				652		
Clarke, Louis S., W. Morgan, Pittsburg, and J. G. Heaslet, Allegheny, Pa., assignors, by mesne assignments, to Autocar Company, of Pennsylvania. Motor-vehicle	653,501	July 10	1460	341	92	308
				342		
Clarke, Marian N., Wilkes-Barré, Pa. Device for cleaning telephone-mouthpieces	652,745	July 3	13	4	92	5
Clarke, Thomas C., New York, N. Y. Wave-power	656,943	Aug. 28	3387	773	92	1742
				774		
Clarke, Thomas C., New York, N. Y., assignor to Bonzano Rail Joint Company, Camden, N. J. Rail-joint	657,811	Sept. 11	1465	311	92	2117
Clarkson, Edward H. N., Lauraville, Md. Bottle-carrier	658,205	Sept. 18	2182	477	92	2276
Classen, Alexander, Aachen, Germany. Converting starch into fermentable sugar	654,439	July 24	3363	.....	92	726
Classen, Alexander, Aachen, Germany. Converting cellulose into sugar	654,518	July 24	3505	.....	92	753
Classen, Alexander, Aix-la-Chapelle, Germany. Making non-coagulable albuminoids	655,060	July 31	4547	1024	92	986
Claveloux, Francis A. (See Collins, James F., assignor.)						
Clawson, Spencer, Salt Lake City, Utah. Letter-sheet	658,344	Sept. 25	2431	537	92	2350
Clayton, Fred, Strines, assignor to J. J., T. F., and J. W. Meldrum, Manchester, England. Furnace	655,759	Aug. 14	1127	258	92	1272
Clayton, John W., Atlanta, Ga. Washing-machine	657,645	Sept. 11	1159	243	92	2056
Clayton, William L., and N. R. Persinger, Central City, Nebr. Attachment for oil-containers	653,985	July 17	2380	547	92	502
Clements, Thomas W., Auburn, N. Y. Feeding attachment for meat-cutters and sausage-stuffers	655,822	Aug. 14	1270	291	92	1301
				292		
Cliff, Edward, Newark, N. J. Combined door check and closer	654,303	July 24	3111	696	92	672
Cliff, Edward, Newark, N. J. Door check and closer	654,304	July 24	3116	697	92	672
Cliff, Edward, Newark, N. J. Door closer and check	654,305	July 24	3119	697	92	673
Cliff, Harold, and T. Burton, Oldham, England. Apparatus for putting on pulley-belts	654,052	July 17	2486	572	92	522
Clifford, Anton, Winnetka, Ill. Sash-lock	654,384	July 24	3259	731	92	704
Clifford, Hersey A., San Francisco, Cal. Vote register and recorder	658,236	Sept. 18	2233	489	92	2280
				490		
Climax Manufacturing Company. (See Leilich, Francis T., assignor.)						
Climenson, William W., and W. D. Winger, Honey Brook, Pa. Torch	653,617	July 10	1658	387	92	344
Cline, Oren R., El Dorado, Kans. Combined telephone signal and jack	657,854	Sept. 11	1543	331	92	2134
Cline, P. P. (See Manuel, William M., assignor.)						
Cline, William G., and W. R. Handy, Gallatin, Mo. Thill-coupling	656,811	Aug. 28	3093	703	92	1687

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Closson, E. W. (See Holcombe, Walter S., assignor.)						
Clotworthy, William P., Baltimore, Md. Packing baking-powders	657,334	Sept. 4	511	106	92	1902
Cloud, Thomas J., Killeen, Tex. Cloth-measuring machine	654,229	July 24	2960	664	92	640
Cloud, Walter A. (See Des Vignes and Cloud.)						
Clough, Otis H., Redkey, Ind. Device for packing jars, bottles, &c	654,385	July 24	3260	731	92	704
Clowes, Mamie B. (See Deming, Ferdinand, assignor.)						
Clum, George W., Columbus, Ohio. Spring-hinge	653,018	July 3	545	128	92	109
Clyde, John, Marion Center, and M. Stuchell, Big Run, Pa. Checkrein-holder	657,915	Sept. 18	1650	357	92	2168
Clymer, Robert S., *et al.* (See Johnston, William G., assignor.)						
Coale, Joseph M., Baltimore, Md. Safety-valve	657,086	Sept. 4	24	6	92	1806
Coale, Penn E., Rutherford, N. J. Device for removing ashes from marine vessels	653,215	July 10	925	223	92	199
Cobb, Alfred L., assiguor of one-half to J. Cowie, Boulder, Colo. Lifting-jack	657,514	Sept. 11	993	191	92	2011
Cobb, Luther F., Providence, R. I. Telephone-bell cut-out	655,849	Aug. 14	1316	301 302	92	1310
Cobb, Sumner S., assignor to Metallic Basket Company, Rochester, N. Y. Metallic wash-tub	657,087	Sept. 4	26	6	92	1806
Cobean, Sarah J., Royal Oak, Mich. Detachable clamp or name-plate	655,197	Aug. 7	86	8	92	1048
Cobleigh, Bennett J., Kingston, Pa. Button-fastener	653,377	July 10	1240	295	92	258
Coburn, Byron, Le Roy, N. Y. Sanitary retort	654,606	July 31	3665	826	92	802
Cochran, Maria H., Denver, Colo. Umbrella-carrying device	652,891	July 3	271	65	92	54
Cochrane, Carolyn M., Buffalo, N. Y. Mandolin pick-holder	655,959	Aug. 14	1515	348	92	1348
Cockerill, Walter G., Greenfield, Ohio. Appliance for automatically actuating farm-gates at predetermined intervals	656,812	Aug. 28	3095	703	92	1688
Code, George, Boston, Mass. Compound rotary engine	655,198	Aug. 7	37	8	92	1048
Cody, Lorenzo J., Duluth, Minn. Steam log-loader	653,618	July 10	1660	388	92	345
Coerver, Michael. (See Wilson, William W. and J. W., assignors.)						
Coffey, Barton H., Philadelphia, Pa. Subaqueous rock-breaker	657,515	Sept. 11	931	192	92	2011
Coffin, Thomas A. (See Haskins and Coffin.)						
Coffman, Ralph B., assignor of one-half to W. S. Weitzell, Chattanooga, Tenn. Washboard	655,687	Aug. 14	986	224	92	1244
Coggeshall, Hooker I., Wortendyke, N. J. Steam-jet flue-cleaner	656,945	Aug. 28	3392	774	92	1743
Cogswell, John H. (See Starr and Cogswell.)						
Cohen, Adolph, and S. Sackheim, Chicago, Ill. Wrench	655,295	Aug. 7	230	52	92	1086
Cohen, Morris I., Chicago, Ill. Instantaneous water-heater	656,813	Aug. 28	3098	704	92	1688
Cohn, Hugo, Moys, Germany. Manufacture of paper or pasteboard	655,850	Aug. 14	1317	.....	92	1310
Cohn, Samuel H. (See Bacon, Charles A., assignor.)						
Cokenour, Franklin O., Allentown, assignor of two-thirds to C. G. Moll, South Bethlehem, and J. A. Moll, Topton, Pa. Combination freight-car	654,306	July 24	3122	698	92	673
Colahan, Charles, Akron, Ohio. Belt-tightener for grain-carriers	658,080	Sept. 18	1971	429	92	2233
Colahan, Charles, Chicago, Ill. Belt-tightener	658,081	Sept. 18	1973	430	92	2234
Colasanti, John. (See Colletti and Colasanti.)						
Colbert, George F., Pittsburg, Pa. Portable looking-glass frame and holder	652,913	July 3	308	76	92	92
Colborne, Oliver, assignor to International Package Machine Company, Chicago, Ill. Punching-press	654,607	July 31	3667	827	92	802
Colborne, Oliver, Chicago, Ill., assignor to Tomlinson Veneer Barrel Company, Indianapolis, Ind. Lining-hoop-attaching machine	654,713	July 31	3675	874	92	844
Colburn, Arthur R., Washington, D. C. Door-check	652,746	July 3	14	4	92	5
Colby, Harry W., assignor to Automatic Racking Machine Company, Chicago, Ill. Racking beer	654,714	July 31	3877	874 875	92	844
Colcord, John H. J. (See Richardson and Colcord.)						
Colcord-Richardson Company. (See Richardson and Colcord, assignors.)						
Coldwell, Joseph. and C. G. Gildard, Fall River, Mass. Electrical warp stop-motion for looms	658,237	Sept. 18	2239	490 491	92	2287
Cole, Charles L., Bushnell, assignor of one-half to W. A. Stine, Peoria, Ill. Clothes-pounder	653,641	July 10	1739	400 401	92	360
Cole, David, assignor to Gates Iron Works, Chicago, Ill. Actuating mechanism for concentrating-tables	653,285	July 10	1067	255	92	236
Cole, Edwin J., Niagara Falls, N. Y. Bicycle-tag	652,747	July 3	17	4	92	5
Cole, Eugene M., Carthage, N. C. Combined cotton and corn planter	653,669	July 17	1794	411	92	390
Cole, Marcellus, Washington, D. C. Filtering apparatus	654,788	July 31	4017	904	92	873
Cole, T. U., *et al.* (See Galbraith, Oscar B., assignor.)						
Coleman, Clyde J., Chicago, Ill., assignor to T. J. Ryan, New York, N. Y. Motor-vehicle	653,167	July 3	812	192	92	162
Coleman, Clyde J., Chicago, Ill., assignor to T. J. Ryan, New York, N. Y. Motor-vehicle	653,168	July 3	814	192	92	163
Coleman, Clyde J., Chicago, Ill., assignor to T. J. Ryan, New York, N. Y. Motor-vehicle	653,169	July 3	816	193	92	163
Coleman, Clyde J., Chicago, Ill., assignor to T. J. Ryan, New York, N. Y. Motor-vehicle	653,170	July 3	818	193	92	164
Coleman, Clyde J., Chicago, Ill., assignor to T. J. Ryan, New York, N. Y. System of refrigeration	653,171	July 3	821	193	92	164
Coleman, Clyde J., Chicago, Ill., assignor to T. J. Ryan, New York, N. Y. Motor-vehicle	653,172	July 3	823	194	92	165
Coleman, Clyde J., Chicago, Ill., assignor to T. J. Ryan, New York, N. Y. Refrigeration apparatus	653,173	July 3	824	194	92	165
Coleman, Clyde J., Chicago, Ill., assignor to T. J. Ryan, New York, N. Y. Secondary battery	654,519	July 24	3506	791	92	753
Coleman, Clyde J., Chicago, Ill., assignor to T. J. Ryan, New York, N. Y. Secondary battery	654,520	July 24	3507	791	92	754
Coleman, Clyde J., Chicago, Ill., assignor, by mesne assignments, to General Automobile Company, of New Jersey. Motor-vehicle	657,516	Sept. 11	937	192	92	2012
Coleman, Clyde J., Chicago, Ill., assignor to T. J. Ryan, New York, N. Y. Frictional driving-gear	657,855	Sept. 11	1545	331	92	2135
Coleman, Clyde J., Chicago, Ill., assignor to T. J. Ryan, New York, N. Y. Motor-vehicle	657,899	Sept. 11	1620	348 349	92	2150
Coleman, Clyde J., assignor of fifty-one one-hundredths to T. J. Ryan, Chicago, Ill. Motor-vehicle	658,238	Sept. 18	2241	491	92	2287
Coleman, Clyde J., Chicago, Ill., assignor to T. J. Ryan, New York, N. Y. Automatic feed-water regulator	658,239	Sept. 18	2243	491	92	2287
Coleman, Clyde J., Chicago, Ill., assignor to T. J. Ryan, New York, N. Y. Oxidizing negative electrodes for primary batteries	658,483	Sept. 25	2668	593	92	2396
Coleman, Clyde J., Chicago, Ill., assignor, by mesne assignments, to General Electric Storage Battery Company, of New Jersey. Secondary battery	658,733	Sept 25	3139	697	92	2489
Coleman, Clyde J., Chicago, Ill., assignor, by mesne assignments, to General Electric Storage Battery Company, of New Jersey. Secondary battery	658,734	Sept. 25	3140	697	92	2490
Coleman, Edward J. F., Barrington, R. I. Bridle attachment or mousing-hook	653,843	July 17	2125	483	92	452
Coleman, Edward J. F., Barrington, R. I. Sheet-leader block	655,851	Aug. 14	1313	302	92	1310
Coleman, Herbert R. S. (See Cruickshank, Coleman, and Cruickshank.)						
Coleman, James. (See Weston, Oliver, assignor.)						
Coleman, John, and H Moore, St. Louis, Mo. Attachment for water-closet bowls	655,088	Aug. 14	987	224	92	1244
Coleman, Richard E., assignor of one-half to H. H. Hewitt, Buffalo, N. Y. Means for identifying metal castings	655,393	Aug.	412	91	92	1119

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Coleman, Watson E. (See Sickel, Charles A., assignor.)						
Colletti, Thomas, and J. Colasanti, New York, N. Y. Door-lock	653,946	July 17	2312	529	92	489
Collier, Barron G. (See Newby, Albert S., assignor.)						
Collins, Cornelius. (See Tyler, Joseph, assignor.)						
Collins, Edward C., Taunton, Mass. Brush	657,335	Sept. 4	512	106	92	1902
Collins Electric Vehicle Company. (See Collins, Patrick J., assignor.)						
Collins, Frank W., Rockland, Me. Package for shipping lobsters, &c	653,567	July 10	1589	370	92	330
Collins, James F., assignor of one-third to F. A. Claveloux, Washington, D. C. Sash-cord fastener	655,607	Aug. 7	786	185	92	1193
Collins, John C., Kane, assignor of two-thirds to R. Huitt, Upper Alton, Ill., and H. Lindenbaum, St. Louis, Mo. Parcel-tying machine	658,206	Sept. 18	2183	477 478	92	2276
Collins, Moses E., Brighton, Ind. Combined lock and latch	655,199	Aug. 7	38	8	92	1049
Collins, Patrick J., assignor to Collins Electric Vehicle Company, Scranton, Pa. Electric motor	655,852	Aug. 14	1319	302	92	1310
Collins, Patrick J., assignor to Collins Electric Vehicle Company, Scranton, Pa. Motor-vehicle	655,853	Aug. 14	1320	302 303	92	1311
Collins, Patrick J., assignor to Collins Electric Vehicle Company, Scranton, Pa. Motor-vehicle	656,389	Aug. 21	2335	536 537	92	1524
Collins, Reuben G., Dollar Bay, Mich. Automatic casting-machine	655,296	Aug. 7	232	52 53	92	1086
Collins, W Webster, Indianapolis, Ind. Band-cutter and feeder	658,345	Sept. 25	2432	54 537 538	92	2350
Collis, John, Des Moines, Iowa, assignor to W. P. Collis, New York, N. Y. Vacuum steam heating apparatus	654,948	July 31	4333	976	92	942
Collis, William P. (See Collis, John, assignor.)						
Collmer, George F., South Bend, Ind. Body-loop for vehicles	654,440	July 24	3364	754	92	726
Colt, James R., Batavia, N. Y. Vehicle-tire fastener	656,172	Aug. 21	1937	445	92	1448
Columbia and Electric Vehicle Company. (See Law, Fred A., assignor.)						
Columbia and Electric Vehicle Company. (See Maxim, Hiram P., assignor.)						
Columbian Automatic Computing Scales Company. (See Christopher, Calvin F., assignor.)						
Columbus Electricitäts-Gesellschaft mit Beschränkter Haftung. (See Heil, Albrecht, assignor.)						
Comber, George, Knutsford, and J. C. Chorley, Warrington, England. Dyeing khaki	655,854	Aug. 14	1323	.....	92	1311
Combs, George E., Chadwicks, N. Y. Feed-trough for horses	655,477	Aug. 7	564	126	92	1151
Combs, Sam M., Mount Sterling, Ky. Level	655,826	Aug. 7	286	64	92	1097
Commisky, John, New York, N. Y. Draft device	657,812	Sept. 11	1467	312	92	2117
Common, Andrew A., London, England. Telescope for sighting ordnance	654,949	July 31	4335	976	92	942
Commoss, Joseph T., assignor to Commoss Process Company, New York, N. Y. Ornamenting surfaces	658,346	Sept. 25	2437	538	92	2351
Commoss Process Company. (See Commoss, Joseph T., assignor.)						
Computing Scale Company. (See Ozias, Orange O., assignor.)						
Comstock, Chester, New York, N. Y. Range-boiler and making same	655,394	Aug. 7	413	91	92	1119
Conant, Roger W., Boston, Mass. Calculating instrument	657,916	Sept. 18	1651	357	92	2168
Conderman, George W., Philadelphia, Pa. Washstand	653,986	July 17	2381	548	92	503
Condict, George H., assignor to Electric Vehicle Company, New York, N. Y. Charging-stand and contact for storage batteries	656,882	Aug. 28	3283	746	92	1723
Condon, Henry F., De Kalb, Ill. Saw	653,947	July 17	2314	530	92	489
Condon, Henry F., De Kalb, Ill. Wireworking-tool	653,948	July 17	2315	530	92	489
Condon, Henry F., De Kalb, Ill. Awning-fixture	656,343	Aug. 21	2255	518	92	1507
Condon, Henry F., De Kalb, Ill. Gate	656,390	Aug. 21	2340	537	92	1525
Condon, Henry F., De Kalb, Ill. Making vehicle-wheels	657,517	Sept. 11	940	193	92	2012
Condron, Mark M., Marshfield, Oreg. Cow-milking machine	655,200	Aug. 7	40	9	92	1049
Congdon, Walter S., New Bedford, Mass. Card-holder	658,701	Sept. 25	3071	684	92	2476
Conger, Charles A., Oakland, Cal., assignor to Conger & MacInnes, New Britain, Conn. Rope-fastening	653,661	July 17	1797	412	92	391
Conger, Charles M. (See Andrews and Conger.)						
Conger & MacInnes. (See Conger, Charles A., assignor.)						
Conkling, Allen, Chicago, Ill. Doffer-blade	657,212	Sept. 4	266	57	92	1856
Conkling, Lucius M., *et al.* (See Wheeler, Jesse, assignor.)						
Conkling, Thomas H., *et al.* (See Wheeler, Jesse, assignor.)						
Conlon, Bartholomew J. (See Winter and Conlon.)						
Conn, John. (See Roettinger and Conn.)						
Conner, George F., Port Huron, Mich. Device for holding or blocking traction-engines	658,564	Sept. 25	2806	623	92	2425
Conner, John L., Washington, D. C. Car-fender	658,702	Sept. 25	3073	684	92	2476
Conner, Theodore M. and T. M., Wabash, Ind. Wire-fence machine	655,760	Aug. 14	1127	258 259	92	1272
Conner, Thompson M. (See Conner, Theodore M. and T. M.)						
Connett, Henry G., Chicago, Ill. Churn	657,588	Sept. 11	1051	218	92	2035
Connolly, Frank H. (See Skinner and Connolly.)						
Connolly, Joseph E., Newark, N. J. Trolley	657,213	Sept. 4	268	57	92	1856
Connor, James E. (See Butrick, George H., assignor.)						
Connor, Thomas G. (See Wilcox, Elmer A., assignor.)						
Conover, Jacob D., Middletown, N. J. Safety-pin	657,088	Sept. 4	27	7	92	1806
Conover, James F., Chicago, Ill. Piano	654,715	July 31	3879	875	92	845
Conrad, John B., San Antonio, Tex. Upholstered furniture	656,391	Aug. 21	2340	538	92	1525
Conrad, John B., assignor to Hewitt-Lindstrom Motor Company, Chicago, Ill. Plate for secondary batteries	656,095	Aug. 14	1799	414	92	1408
Conrad, Justin M., Arlington, Nebr. Whiffletree	657,589	Sept. 11	1052	218	92	2035
Conrader, Rudolph, Erie, Pa. Apparatus for actuating fluid under pressure	657,917	Sept. 18	1653	357 358	92	2168
Conroy, Charles C., Joplin, Mo., assignor to J. Bookmiller, Java, N. Y. Stuffing-box	658,207	Sept. 18	2189	478	92	2277
Consolidated Fastener Company. (See Dowse, William B. H., assignor.)						
Consolidated Rubber Tire Company. (See Grant, Arthur W., assignor.)						
Constantine, George W., Chicago, Ill. Sausage-cleaning machine	658,428	Sept. 25	2582	573	92	2379
Converse, Francis B., Jr., Louisville, Ky., assignor to Converse Manufacturing Company, Cleveland, Ohio. Ejecting mechanism for type machinery	657,282	Sept. 4	408	86	92	1882
Converse, Francis B., Jr., Louisville, Ky., assignor to Converse Manufacturing Company, Cleveland, Ohio. Distributing-machine	657,309	Sept. 4	454	96 97 98	92	1891
Converse Manufacturing Company. (See Converse, Francis B., Jr., assignor.)						
Converse, Morton E., Winchendon, Mass. Toy drum	656,518	Aug. 21	2564	589	92	1568
Conway, John E., Osgood, Iowa. Corn-harvester	658,140	Sept. 18	2064	450	92	2351
Conwell, Robert E., *et al.* (See Fisher, Frederick A., assignor.)						
Conwell, Walter L., *et al.* (See Fisher, Frederick A., assignor.)						
Cook, August D., Lawrenceburg, Ind. Tube-well	654,875	July 31	4199	946	92	913

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cook, David S., Sellersburg, Ind. Automatic weighing-machine	657,856	Sept. 11	1546	331, 332	92	2135
Cook, Frank E. (See Moore and Cook.)						
Cook, George, Louisville, Ky. Automatic fishing device	657,518	Sept. 11	942	193	92	2013
Cook, Henry J., and A. Morris, Boston, Mass. Hoisting apparatus	658,330	Sept. 18	2390	528	92	2316
Cook, Herbert F., Cleveland, Ohio. Tubular boiler	653,502	July 10	1465	342, 343	92	304
Cook, James S. B., *et al.* (See Smith, John F., assignor.)						
Cook, John W., Manchester, England. Traveler for twisting or doubling machines	653,026	July 17	2271	517	92	481
Cook, Joseph, Akron, Ohio. Dish-mold	656,392	Aug. 21	2341	538	92	1525
Cook, Moses G., Lynn, Mass. Pencil-sharpener	653,286	July 10	1069	256	92	226
Cook, Walter H., New Orleans, La. Machine for measuring liquids	654,441	July 24	3365	735	92	726
Cook, Walter H., New Orleans, La. Cooking cotton-seed	657,857	Sept. 11	1518	332	92	2135
Cook, Walter H, New Orleans, La. Centrifugal machine	658,240	Sept. 18	2245	492	92	2288
Cooper, Charles. (See Hurley and Barratt, assignors.)						
Cooper, Edward R., and C. F. Thompson, Lakewood, assignors of one-half to L. C. Hopp, Cleveland, Ohio. Hair-drying comb	655,895	Aug. 14	1389	320	92	1323
Cooper, Harlan. (See Elcher and Cooper.)						
Cooper, Howell C. (See Cowley and Cooper.)						
Cooper, John A., assignor of one-half to A. C. Savage and G. W. Goodhart, Adair, Iowa. Match-safe	655,689	Aug. 14	988	225	92	1244
	657,394	Sept. 4	628	132	92	1927
Cooper, Leonard A., Atchison, Kans. Sliding gate	655,201	Aug. 7	42	9,10	92	1049
Cooper, Leslie A., Springfield, Mass., assignor of one-third to A. H. Sabin, New York, N. Y. Rotary engine	655,608	Aug. 7	788	185	92	1193
Cooper, Leslie A., Springfield, Mass., assignor of one-third to A. H. Sabin, New York, N. Y. Rotary cut-off valve	655,609	Aug. 7	792	185	92	1193
Cooper, Leslie A., Springfield, Mass., assignor of one-third to A. H. Sabin, New York, N. Y. Rotary engine	655,610	Aug. 7	795	185	92	1194
Cooper, Leslie A., Springfield, Mass., assignor of one-third to A. H. Sabin, New York, N. Y. Oil-separating apparatus for steam-engines	654,960	July 31	4326	976	92	942
Coote, Hugh H., Phœnix, Ariz. Ter. Bicycle-support	654,290	July 24	2962	665	92	640
Cooze, Charles J., Carterton, New Zealand. Non-refillable bottle						
Copeland, James S., Hartford, Conn., assignor to American Bicycle Company, Jersey City, N. J., and New York, N. Y. Mechanical joint for vehicle-frames	656,765	Aug. 28	3001	685	92	1671
Copeman, Thorn, assignor of one-third to J. Waite, Edgar Mills, Canada. Railway-switch	656,691	Aug. 28	2876	654	92	1646
Copley, James F., P. S. Marshall, and R. Heaton, Huddersfield, England. Mercerizing apparatus	656,319	Aug. 21	2208	505	92	1498
	654,307	July 24	3123	698	92	673
Coppée, Evence, Brussels, Belgium. Coke-oven	657,918	Sept. 18	1660	358	92	2170
Copping, James L., and G. D. Treece, London, England. Magazine-firearm	656,013	Aug. 14	1642	377, 378	92	1373
Corbin, Clark, Carbon Cliff, Ill. Weight and price scale						
Cordner, William J., London, England, assignor to L. D. Brandeis, trustee, Boston, Mass. Manufacturing composition applicable for electric insulation	654,951	July 31	4337	------	92	943
Cordner, William J., London, England, assignor to L. D. Brandeis, trustee, Boston, Mass. Composite material applicable for electric insulation	654,952	July 31	4338	------	92	943
Cordner, William J., London, England, assignor to L. D. Brandeis, trustee, Boston, Mass. Composition of matter	655,169	July 31	4731	------	92	1022
	656,946	Aug. 28	3393	775	92	1743
Corduan, Frank H., assignor of one-third to H. A. Banning, New York, N. Y. Step-ladder						
Corey, Abbie E. (See Corey, George E., assignor.)	654,110	July 17	2576	592	92	540
Corey, George E., assignor to A. E. Corey, Madison, Minn. Checkrein attachment	653,287	July 10	1070	256	92	226
Corneil, Robert F., Phillipsburg, Mont. Shaft or thill coupling	657,858	Sept. 11	1550	332, 333	92	2135
Cornelius, Louis A., Grand Rapids, Mich. Flexible waste-pipe cleaner						
Cornell Machine Company. (See Kennedy, Thomas C., assignor.)						
Cornier, Nestor J. E., *et al.* (See Merceron-Vicat, Louis H. M., assignor.)	655,921	Aug. 14	1441	331, 332	92	1334
Cornils, Peter V., San Francisco, Cal. Lock						
Cornner, William H., Anderson, Ind. Truck, wheel, and armature exchange for street or other railway cars	656,133	Aug. 14	1868	420	92	1421
Corzilius, Jakob, Paterson, N. J. Indicating device for looms for weaving double-pile fabrics	658,242	Sept. 18	2250	493	92	2288
Corzilius, Jakob, Paterson, N. J., assignor to Bagdad Rug Company, of New Jersey. Loom	658,241	Sept. 18	2248	492	92	2288
Cosmos Company. (See Pond, Goldsbury H., assignor.)	658,498	Sept. 25	2690	597	92	2400
Coston, William F., New York, N. Y. Compartment-box						
Coté, Francis A., assignor of four-fifths to T. G. Coursolles, Ottawa, F. L. Béique and C. F. Sise, Montreal, Canada. Manufacture of electrical fuses or current-arresters	652,748	July 3	17	5	92	6
	652,949	July 3	419	97	92	85
Cotta, Charles, Shannon, Ill. Running-gear for automobiles	657,691	Sept. 11	1254	266, 267	92	2074
Cottam, John C., Bradford, and J. Bentley, Shipley, England. Stop-motion for looms	656,629	Aug. 28	2786	637	92	1627
Cotter, Frank P., Augusta, Ga. Locomotive-tender valve	652,906	July 3	503	118	92	102
Cotter, John S., Sterling, Iowa. Snap-hook						
Cotton, Charles L. (See Spence, John D., assignor.)						
Cottrell, James, assignor of one-half to A. H. Smith, London, England. Driving-gear for velocipedes	657,859	Sept. 11	1551	333	92	2136
Coufalik, Antonin, Krepice, Austria-Hungary. Self-acting feed apparatus for boilers	654,784	July 31	4020	905	92	873
Coufalik, Antonin, Krepice, Austria-Hungary. Self-acting feed apparatus for boilers	654,785	July 31	4021	905	92	874
Coughlin, Thomas W., Binghamton, N. Y. Rest for caskets	655,362	Aug. 7	302	78	92	1110
Coulston, Earl V., Chicago, Ill. Lining for fire-boxes of stoves or ranges	657,758	Sept. 11	1376	291	92	2009
Countryman, Anna E., Marcus, Iowa. Invalid-bed attachment	653,547	July 10	1333	361	92	322
Coursolles, Toussaint G., *et al.* (See Coté, Francis A., assignor.)						
Courtney, Charles F., and R. Butterworth, Broken Hill, New South Wales. Magnetic separator	655,433	Aug. 7	486	108	92	1135
	657,089	Sept. 4	28	7	92	1806
Cousins, Jason L., Warren, Pa. Egg-tray for incubators						
Coutant-Dujour, Raoul, assignor of one-half to E. Salmson, Paris, France. Traction-engine	655,690	Aug. 14	989	225	92	1244
	657,590	Sept. 11	1053	219	92	2035
Couture, Eusebe P., Gualala, Cal. Rotary engine	654,521	July 24	3508	702	92	754
Couture, Eusebe P., assignor of one-half to J. F. Martinez, Gualala, Cal. Wave-motor						
Coventry, Theodore. (See Smith and Coventry.)						
Covert, James C., assignor to Covert Manufacturing Company, Watervliet, N. Y. Lifting-jack	652,886	July 3	189	43	92	39
Covert Manufacturing Company. (See Covert, James C., assignor.)						
Cowey, Leonard E., London, England. Self-closing tap	654,522	July 24	3510	702	92	754
Cowie, James. (See Cobb, Alfred L., assignor.)						
Cowing, John P., Cleveland, Ohio. Gate for drawbridges	653,729	July 17	1916	440	92	413
Cowl, Lindon Y., Chicago, Ill. Lamp-shade supporter and protector	656,096	Aug. 14	1800	414	92	1408

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Pages.
Cowles, Alfred H., Cleveland, Ohio, assignor to Electric Smelting and Aluminum Company, of Illinois. Electric furnace	658,315	Sept. 18	2364	522, 523, 609	92	2311
Cowles, Arthur B., assignor to Rochester Folding Box Company, Rochester, N. Y., and W. H. Maule, Philadelphia, Pa. Paper-box machine	654,136	July 24	2675	610, 611	92	579
Cowles, Edward P., Warren, Ohio. Motor-vehicle	654,716	July 31	3881	876, 877	92	845
Cowles, William B., Cleveland, Ohio. Apparatus for operating bulkhead-doors	656,947	Aug. 28	3394	775	92	1744
Cowley, Charles R., Everett, Mass., and H. C. Cooper, Oil City, Pa. Water-tube boiler	653,216	July 10	925	223	92	199
Cowley, James T., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, Newark, N. J. Pneumatic-despatch-tube apparatus	657,090	Sept. 4	29	7,8	92	1806
Cowley, James T., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, Newark, N. J. Pneumatic-despatch-tube apparatus	657,091	Sept. 4	34	9	92	1808
Cowley, James T., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, Newark, N. J. Pneumatic-despatch-tube apparatus	657,092	Sept. 4	36	9,10	92	1808
Cowperthwait, Allan. (See Lindstrom and Cowperthwait.)						
Cox, John R., G. H. Wright, and W. H. Reynolds, Galveston, Tex. Steam-separating trap	655,611	Aug. 7	797	186	92	1194
Cox, Millard F., Richmond, Va. Piston-packing	655,202	Aug. 7	48	10,11	92	1051
Cox, Robert M., Philadelphia, Pa. Vault-light	656,344	Aug. 21	2256	518	92	1507
Cox, William J., and S. C. Gray, Nashville, Tenn. Lubricator	657,482	Sept. 4	861	174	92	1986
Coyte, Joseph S., New York, N. Y. Garment-pocket	657,310	Sept. 4	462	98	92	1892
Crafts, Fred W., Devils Lake, N. D. Adjustable trace-lock	657,022	Aug. 28	3515	802	92	1766
Craig, Fenton D., Memphis, Tenn. Cabinet	654,308	July 24	3124	698	92	674
Craig, James, Jr., New York, N. Y. Grip mechanism for cable-railways	653,441	July 10	1344	319	92	279
Craig, James, and F. F. Slocomb, Wilmington, Del. Leather-staking machine. (Reissue)	11,843	July 31	4742	1065, 1066	92	1024
Craig, William S., Chicago, Ill. Type-writer	658,735	Sept. 25	3141	697, 698	92	2490
Crain, Charles R., L. C. Evans, and H. E. Dodson, assignors to P. P. Mast & Company, Springfield, Ohio. Grain-drill	654,386	July 24	3260	731	92	704
Cram, Abby F. (See Cram, Alonzo W., assignor.)	653,927	July 17	2272	517	92	481
Cram, Alonzo W., assignor to A. F. Cram, Haverhill, Mass. Hot-air furnace						
Cram, Ernest R. (See Hayes and Cram.)	654,608	July 31	3668	827	92	803
Cramond, Alexander, assignor to D. J. Batchelder, Lyons, Iowa. Lock	654,609	July 31	3671	827, 828	92	803
Cramond, Alexander, assignor to United States Steel Lock Company, Lyons, Iowa. Sliding-door lock						
Cramp, Joseph A. (See Lusby, Comegys C., assignor.)	654,387	July 24	3262	731, 732	92	705
Crampton, Richard L., Chicago, Ill. Multiple certificate, &c	652,997	July 3	504	118	92	102
Crandall, Albert L., Oak's Corners, N. Y. Bicycle-pump						
Crandall, Charles F. (See Tucker, Major, assignor.)						
Crane Company. (See Koester, Henry, assignor.)						
Crane Elevator Company. (See Reynolds, George H., assignor.)						
Crane, Gerard, *et al.* (See Mumford, Lucian C., assignor.)						
Cranston, David W. (See Blauvelt and Cranston.)						
Cratty, Josiah. (See Bunnell, Morton G., assignor.)	653,730	July 17	1918	440	92	413
Craven, James F., Pittsburg, Pa. Telephone-transmitter arm	656,948	Aug. 28	3396	775	92	1744
Craw, Joseph T., Jersey City, N. J., assignor of one-half to R. P. Brown and E. L. Bailey, Philadelphia, Pa. Paper box	656,173	Aug. 21	1938	445	92	1448
Crawford, Henry N., Topisaw, assignor of one-half to N. E. Ball, Magnolia, Miss. Safety-bail for well-buckets	653,411	July 10	1291	------	92	268
Crawford, John, assignor to F. C. Bostwick, Canaan Four Corners, N. Y. Making tobacco-brown wrapping-paper	658,703	Sept. 25	3075	684, 685	92	2477
Crawford, John A., Allegheny, Pa. Smoke-consuming furnace						
Crawford, Robert. (See De Courcy and Crawford.)	653,662	July 17	1798	412	92	391
Creamer, Cyrus F., Glenden, Me. Means for securing cattle						
Creamery Package Manufacturing Company. (See Ames, Charles D., assignor.)						
Creedman, William. (See Weber, Friedrich, assignor.)						
Crehore, Albert C., Hanover, N. H., and G. O. Squier, Fortress Monroe, Va. Telegraphic transmitter and receiver	655,208	Aug. 7	50	11	92	1051
Crepar, Thomas M., Swan River, Minn. Lantern attachment	656,174	Aug. 21	1939	445	92	1448
Creps, George W., Rouzerville, Pa. Horse-detacher	658,141	Sept. 18	2067	450	92	2252
Crigler, Julius W., Bloomington, Ill. Lock	652,749	July 3	19	7	92	6
Cripps, Hamilton D., Waterloo, England. Apparatus for packing eggs	657,729	Sept. 11	1925	280	92	2088
Crissey, Henry K., Iowa Falls, Iowa. End-gate or shoveling-board	657,068	Sept. 4	40	10	92	1809
Cristadoro, Alexander. (See Robinson, Georgiana, assignor.)						
Criswell, James A. E., New York, N. Y. Machine for making matches	656,014	Aug. 14	1645	378, 379	92	1374
Critzer, Augustus B., assignor to Critzer Brothers, San Antonio, Tex. Eyeglasses	654,523	July 24	3512	792	92	755
Critzer Brothers. (See Critzer, Augustus B., assignor.)						
Crocker, Samuel H., London, England. Letter-copying book	657,591	Sept. 11	1054	219	92	2036
Crocker-Wheeler Company. (See Dunn, Gano S., assignor.)	658,170	Sept. 18	2127	463	92	2265
Crockett, Lillian A., Indianapolis, Ind. Stocking or hose supporter						
Crompton & Knowles Loom Works. (See Crompton, Randolph, assignor.)						
Crompton & Knowles Loom Works. (See Eaton, Willie G., assignor.)						
Crompton & Knowles Loom Works. (See Hutchins, George F., assignor.)						
Crompton & Knowles Loom Works. (See Stafford, George W., assignor.)						
Crompton & Knowles Loom Works. (See Wyman, Horace, assignor.)						
Crompton, Randolph, assignor to Crompton & Knowles Loom Works, Worcester, Mass. Warp stop-motion for looms	657,094	Sept. 4	42	10	92	1810
	657,979	Sept. 18	1801	388	92	2200
Crone, Seth A., New York, N. Y. Dust-guard	653,790	July 17	2035	464	92	436
Crook, William H., Ansonia, Conn. Valve-gear for steam-engines						
Crooker, Alfred M., and F. N. McDonald, Boston, Mass., assignors to Galvanic Health Exercising Company, of South Dakota. Electric conductor for exercising apparatus	655,071	Aug. 7	959	217	92	1228
	654,090	July 17	2543	585	92	533
Crosby, Henry T., Coleman, Tex. Cultivator attachment	657,483	Sept. 4	862	175	92	1986
Cross, Alonzo T., Providence, R. I. Fountain-pen	657,919	Sept. 18	1602	350	92	2171
Cross, Andrew J., New York, N. Y. Optometer	656,519	Aug. 21	2565	590	92	1568
Cross, William H., Chicago, Ill. Animal-trap attachment	655,691	Aug. 14	990	226	92	1245
Crossley, William, New Haven, Conn. Factory-car	657,519	Sept. 11	943	193	92	2013
Crossman, Perry L., Joplin, Mo. Apparatus for repairing drills						
Crouse, Clarence B., *et al.* (See Merritt, Arthur A., assignor.)	657,813	Sept. 11	1468	312, 313	92	2118
Crout, George W., Jr., Philadelphia, Pa. Chemical fire-extinguisher						
Crow, J. M., *et al.* (See Mead, William M., assignor.)						
Crow, William M., Lakeview, Cal. Acetylene-gas generator	657,190	Sept. 4	220	49	92	1846

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Crowder, J. W., *et al.* (See Brooks, Samuel M., assignor.)						
Crowell, Luther C., assignor to R. Hoe and C. W. Carpenter, New York, N. Y. Bed-and-cylinder printing-machine	656,345	Aug. 21	2258	518, 519	92	1507
Crowell, Thacher R. C., Fargo, N. D., assignor to National Flax Fiber Company, Boston, Mass. Machine for cleaning and breaking flax	653,663	July 17	1799	412	92	391
Crowley, William F., Holly, Colo. Automobile agricultural machine	658,347	Sept. 25	2438	539	92	2352
Crowley, William F., Holly, Colo. Seed-planter	658,348	Sept. 25	2441	539	92	2352
Crozier, Charles W., New York, N. Y. Shoe-stretcher	657,814	Sept. 11	1469	313	92	2118
Cruickshank, David B., Providence, R. I., and G. C. Luther, Swansea, Mass. Cable conveyer	656,949	Aug. 28	3399	776	92	1745
Cruickshank, George B., Birmingham, H. R. S. Coleman, Smethwick, and P. Cruickshank, Birmingham, England. Apparatus for reclaiming tin and zinc from tinned and zinc scrap	657,646	Sept. 11	1162	243	92	2066
Cruickshank, Percival. (See Cruickshank, Coleman, and Cruickshank.)						
Cruickshanks, Alexander, Richmond, Va. Punching-machine	655,327	Aug. 7	287	65	92	1097
Crull, Eugene S., assignor to Adjustable Sash Weight Co., Davenport, Iowa. Weight	653,067	July 17	2382	584	92	503
Crump, Samuel, Poughkeepsie, N. Y. Manufacture of subsurface-drying paper or other fabrics	653,791	July 17	2038	464	92	437
Crupe, Emmanuel, San Francisco, Cal. Grater	657,191	Sept. 4	222	49.50	92	1846
Cuddihy, Richard S., St. Paul, Minn. Cinder-proof cap or cover	654,958	July 31	4389	976	92	943
Cullinan, Charles. (See Barry, Robert J., assignor.)						
Culp, Samuel R., Webster City, Iowa. Grain cleaner and separator	654,610	July 31	3675	828	92	804
Culver, George O., Quarryville, N. J. Gate	657,395	Sept. 4	630	132	92	1927
Culver, Ira, assignor to Bronson-Walton Company, Cleveland, Ohio. Adjustable die-stock	655,061	July 31	4549	1024	92	987
Culver, Walter L., assignor to Wrought Iron Range Company, St. Louis, Mo. Water-back for ranges or stoves	653,949	July 17	2316	530	92	489
Culver, Walter L., assignor to Wrought Iron Range Company, St. Louis, Mo. Ventilator for ovens	655,761	Aug. 14	1130	259	92	1272
Cummings, Amos J., *et al.*, trustees. (See Cahill, Thaddeus, assignor.)						
Cummings, Charles L., New York, N. Y. Drier	657,860	Sept. 11	1551	333, 334	92	2136
Cummings, John S., New York, assignor to General Aristo Company, Rochester, N. Y. Photographic-printing-frame support	654,827	July 31	4105	924	92	894
Cummings, Montravill D., Columbus, Ohio. Metal fence-post	654,786	July 31	4022	905	92	874
Cummings, Montrovill D., Columbus, Ohio. Mail-sack catching and delivering mechanism	657,234	Sept. 4	312	67	92	1864
Cuninghame, Alexander. (See Loder, John S., assignor.)						
Cunningham, Emma E., Newton, Mass. Skirt-measuring device	655,960	Aug. 14	1517	348	92	1348
Cunningham, Patrick, assignor of three-fourths to F. D. Stanley, New Bedford, and W. A. Whittlesey, Pittsfield, Mass. Universal joint	658,499	Sept. 25	2691	597, 598	92	2401
Cunningham, Richard B., assignor of two-thirds to L. D. York, Portsmouth, Ohio. Automatic engine-stop	655,146	July 31	4685	1056	92	1013
Cunningham, Stewart, Turtle Creek, Pa. Music-leaf turner	653,731	July 17	1919	440	92	414
Curd, William H., and O. V. Hanger, Dearborn, Va. Plow-clip	656,175	Aug. 21	1940	446	92	1449
Curley, George, Salt Lake City, Utah. Scaffold	657,396	Sept. 4	631	132	92	1927
Curran, Arthur D., *et al.* (See Huff, Henry H., assignor.)						
Currier, Bernard P., Chicago, Ill. Guard for eyeglasses	656,176	Aug. 21	1942	446	92	1449
Currin, John, Providence, R. I. Spectacle-frame	652,750	July 3	21	5	92	6
Curry, Joseph W., Adelphi, Iowa. Folding rocking-chair	653,378	July 10	1241	295	92	258
Curtain Supply Company. (See Forsyth, George H., assignor.)						
Curtis, Charles L., assignor, by mesne assignments, to Nordlinger-Charlton Fireworks Company, New York, N. Y. Tube-rolling machine	657,647	Sept. 11	1163	243, 244	92	2057
Curtis, Samuel A., Eaton, N. Y. Cattle-stanchion	657,397	Sept. 4	634	133	92	1928
Curtis, W. D. (See French, Charles A., assignor.)						
Curtiss, William C., Boston, Mass. Non-refillable bottle	657,759	Sept. 11	1378	291	92	2100
Cushing, George H., assignor to Goulds Manufacturing Company, Seneca Falls, N. Y. Bushing for pump-rods	655,395	Aug. 7	416	91	92	1120
Cushman, Amos A., assignor of three-fourths to L. D. Patten, Mansfield, and Butler Novelty Company, Butler, Ohio. Kneading-board	655,855	Aug. 14	1323	303	92	1311
Cushman, George B. and W. F., Kansas City, Mo. Pipe-coupling	655,204	Aug. 7	53	12	92	1051
Cushman, Modestus J., Waterloo, Iowa. Cow-milking machine	654,091	July 17	2543	585, 586	92	534
Cushman, Willan F. (See Cushman, George B. and W. F.)						
Cuthbert, Arthur, Cannes, France. Back-pedaling brake	654,053	July 17	2487	572, 573	92	523
Cutler, Henry H., Chicago, Ill. Self-starter for electric motors	653,470	July 10	1400	330	92	200
Cutler, Henry H., Chicago, Ill. Controller for dynamo-electric machines	653,471	July 10	1403	330	92	201
Cutler, Henry H., Milwaukee, Wis. Controller for dynamos or generators	653,472	July 10	1407	331	92	202
Cutler, Joseph H., Medway, Mass. Chafe-iron for vehicles	653,217	July 10	927	224	92	199
Cutter Electrical and Manufacturing Company. (See Scott, William M., assignor.)						
Cutter, George, assignor to George Cutter Company, Chicago, Ill. Insulated hanger for arc-lamps	655,762	Aug. 14	1132	260	92	1273
Cyanide Company. (See Bradley, Charles S., assignor.)						
Cyanide Company. (See Jacobs, Charles B., assignor.)						
Cyclone Grate Bar Company. (See Truesdale, Henry, assignor.)						
Cypher, David A., and W. L. Dayton, Austin, Tex. Bale-tie	654,828	July 31	4108	924	92	894
D'Oench, William, Jr., *et al.* (See McHale, Edward H., assignor.)						
Dabb, William, Croydon, Victoria. Rotary mop-head	654,231	July 24	2963	665	92	640
Daellenbach, Carl R., Park Gate, Pa. Explosive-engine	653,379	July 10	1242	296	92	259
Daggett, Robert P., Indianapolis, Ind. Knob attachment	652,950	July 3	421	97	92	85
Daggett, William A., Vineland, N. J. Trolley	658,243	Sept. 18	2251	493	92	2289
Daily, Oliver R. (See Six and Daily.)						
Dains, Andrew J. (See Sterrett, Carl, assignor.)						
Dale, Raymond, New Castle, Colo. Saw	657,336	Sept. 4	514	106	92	1908
Dale, Willis F., Ortonville, Minn. Can-opener	653,070	July 3	632	150	92	128
Daly, Henry W., U. S. Army. Ammunition-box	656,520	Aug. 21	2566	540	92	1508
Daly, John A., Washington, D. C. Coating or covering vulcanized plates with metal	652,751	July 3	23	5	92	6
Daly, John A , Washington, D. C. Lining or coating vulcanized plates with metal	652,752	July 3	24	6	92	7
Dalzell, Gilmore & Leighton Company. (See Ebeling, Phillip, assignor.)						
Dalzell, William A. B., Findlay, Ohio. Lamp	658,171	Sept. 18	2129	463	92	2265
Dalzell, William C., Egremont, Mass. Axle	658,021	Sept. 25	2920	652	92	2447
Dambacher, Anton, Munich, Germany. Implement for digging and gathering potatoes	653,136	July 3	759	178	92	151
Damm, José M., Durango, Mexico. Ore mixer and sampler	655,478	Aug. 7	565	126	92	1151
Damon, Sylvester W., Mount Pleasant, Tex. Crate-fastening	658,349	Sept. 25	2443	540	92	2353

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Dana, Frederick I., assignor to Thomas Phillips Company, Providence, R. I. Clip for tentering-machines	655,205	Aug. 7	53	12	92	1052
Dana, George F., and F. M. Snook, Cincinnati, Ohio. Ice-chipping tool	655,692	Aug. 14	992	226	92	1245
Dancyger, Simon, Dayton, Ohio. Mailing-wrapper	653,288	July 10	1071	257	92	227
Dando, Joseph C., Jr. (See Alexander, William E., assignor.)						
Daniels, Frank M., Manchester, Md. Eyeglasses	656,153	Aug. 14	1896	436	92	1427
Daniels, Fred H., and C. S. Marshall, Worcester, Mass., assignors to American Steel and Wire Company of New Jersey. Machine for making bale-ties	652,953	July 3	425	98, 99, 100, 118	92	86
Daniels, Fred H., and C. S. Marshall, Worcester, Mass., assignors to American Steel and Wire Company of New Jersey. Wire-bale-tie machine	652,968	July 3	505	119, 120	92	102
Dannenbaum, Isaac. (See Heimann, Benno, assignor.)						
Dannheiser, Joseph M., Chicago, Ill., assignor to Eugene Dietzgen Company, of Illinois. Drawing-pen	655,612	Aug. 7	799	186	92	1195
Darby, James E., and C. A. Baker, Waukesha, Wis. Fixture for shade-rollers	656,614	Aug. 21	2763	632	92	1611
Dargatz, Gustav E., assignor of one-half to A. S. McCleary, Kansas City, Mo. Surgical-dressing packer	654,564	July 24	3575	807	92	767
Dargue, Walter. (See Bottomley, Longthorpe, and Dargue.)						
Darling, Eva L., administratrix. (See Darling, Robert F.)						
Darling, Robert F., deceased, Syracuse, N. Y.; E. L. Darling, administratrix, assignor to American Bicycle Company, Jersey City, N. J., and New York, N. Y. Handle-bar	653,642	July 10	1741	401	92	360
Darrin, David H., Cranford, N. J. Motor-controller	653,218	July 10	928	224	92	199
Darwin, Horace E. H. Griffiths, and W. C. D. Whetham, Cambridge, England. Electric measuring and indicating apparatus	657,861	Sept. 11	1553	334	92	2136
Dasconaguerre, Arthur, Mexico, Mexico. Centrifugal ore-separator	653,792	July 17	2040	465	92	437
Dashwood, Edith, London, England. Hat-fastener	657,337	Sept. 4	515	107	92	1903
Date, Henry. (See Smith, Walter L., assignor.)						
Daubach, Nicolas, Hermsdorf-unterm-Kynast, Germany. Roofing	654,717	July 31	3888	877	92	847
Daubenspeck, Gustave, London, England. Refractory incandescent mantle or hood	657,235	Sept. 4	314	.....	92	1865
Daugherty, Edward A. (See Welch, Rosia W., assignor.)						
Davault, George W., Jackson, Tenn. Automatic grazing device	656,630	Aug. 28	2788	637	92	1628
Davenport, Joseph, Zoar, Ohio. Propeller	653,219	July 10	931	224, 225	92	200
Daverkosen, Harry, and L. Nielson, Janesville, Wis. Combined plow and harrow	655,062	July 31	4551	1025	92	987
David, Toney, New York, N. Y. Saw-guard	657,520	Sept. 11	944	194	92	2013
Davidge, Frank C. (See Kirby, Horace E., assignor.)						
Davidis, Ernst. (See Bammann and Davidis.)						
Davidis, Ernst. (See Bammann, Davidis, and Vorster.)						
Davidson, Austin J., Douglas City, Cal. Truss-pad	655,206	Aug. 7	54	12	92	1052
Davidson, Herman, New York, N. Y. Picture-frame	658,622	Sept. 25	2921	653	92	2447
Davidson, James E., Butte, Mont. Electric-arc lamp	655,063	July 31	4553	1025, 1026	92	988
Davidson, Lewis W., New York, N. Y. Knockdown trestle	657,648	Sept. 11	1167	244	92	2057
Davidson, William N. L., Southwick, England. Camera for color photography	653,380	July 10	1244	296	92	259
Davie, James, Glasgow, Scotland. Evaporating apparatus	657,521	Sept. 11	946	194, 195	92	2014
Davies, John P. (See Dean, John, assignor.)						
Davis, Benjamin, administrator. (See McAneny, Michael, assignor.)						
Davis, Calvin R., assignor to South Bend Iron Works, South Bend, Ind. Plow	656,393	Aug. 21	2343	538	92	1525
Davis, Calvin R., assignor to South Bend Iron Works, South Bend, Ind. Sulky-plow	657,862	Sept. 11	1556	334, 335	92	2137
Davis, Edward, Boston, Mass., assignor to M. A. Bernheimer and R. W. Gordon, New York, N. Y. Electrical time-recorder	652,753	July 3	26	6, 7	92	7
Davis, Edward, Boston, Mass., assignor to M. A. Bernheimer and R. W. Gordon, New York, N. Y. Register	652,754	July 3	28	7	92	7
Davis, Franklin C., Toccoa, Ga. Cotton-planter and fertilizer-distributer	652,914	July 3	309	77	92	62
Davis Gasoline Engine Works Company. (See Cascaden, Thomas, Jr., assignor.)						
Davis, George R. (See McAneny, Michael, assignor.)						
Davis Glass Company. (See Locke, Joseph, assignor.)						
Davis, Henry G., Darby, Mont. Gate	656,134	Aug. 14	1869	430	92	1421
Davis, Henry J., P. G. Ault, W. W. Bailey, and J. H. Wideman, Birmingham, Ala. Boiler-feeder	655,064	July 31	4556	1026	92	988
Davis, Isaac H., Boston, assignor of one-half to E. D. Mellen, Cambridge, Mass. Electric igniter for explosive-engines	657,760	Sept. 11	1378	291, 292	92	2100
Davis, John, Pittsburg, Pa. Filter	657,158	Sept. 4	159	36	92	1833
Davis, John B. (See McDonald and Davis.)						
Davis, John N., assignor to Weston Paper and Manufacturing Company, Dayton, Ohio. Paper vessel	656,439	Aug. 21	2429	558	92	1541
Davis & Roesch Temperature Controlling Company. (See Roesch, Alfred, assignor.)						
Davis, Samuel, New York, N. Y. Non-refillable bottle	657,863	Sept. 11	1558	335	92	2137
Davis, Sophie E., Cleveland, Ohio. Washboiler attachment	654,442	July 24	3367	735	92	727
Davis, Sophie E., Cleveland, Ohio. Carpet-sweeper	655,806	Aug. 14	1389	321	92	1323
Davis, Walter S., Contoocook, N. H., assignor to Kingsbury & Davis Machine Company, Boston, Mass. Machine for making paper boxes	655,434	Aug. 7	489	109	92	1135
Davis, William J., Jr., Schenectady, N. Y., assignor to General Electric Company, of New York. System of electrical distribution	656,578	Aug. 21	2685	615	92	1594
Davis, William M. (See Stromberg and Davis.)						
Davis, William M., assignor to Stromberg-Carlson Telephone Manufacturing Company, Chicago, Ill. Telephone-repeater. (Reissue)	11,837	July 3	890	215	92	180
Davis, William M., Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company. Annunciator	655,763	Aug. 14	1133	260	92	1273
Davis, William O. (See Howard, Thomas A., assignor.)						
Davis, William T., Battle Creek, Mich. Grinding-mill	653,289	July 10	1072	257	92	227
Davison, Joseph, New York, N. Y. Pulverizer	657,761	Sept. 11	1381	292	92	2100
Daviss, Horatio P. and N. F., Houston, Tex. Machine for making mattresses	652,755	July 3	30	8	92	7
Daviss, Nat F. (See Daviss, Horatio P. and N. F.)						
Dawson, Arthur T., London, and J. Horne, Barrow-in-Furness, assignors to Vickers, Sons & Maxim, Limited, Sheffield, England. Apparatus for supplying ammunition to turret or barbette guns	653,071	July 3	633	151	92	128
Dawson, Arthur T., London, and J. Horne, Barrow-in-Furness, assignors to Vickers, Sons & Maxim, Limited, Sheffield, England. Apparatus for ramming charges of turret or barbette guns	654,448	July 24	3370	755, 756	92	728
Dawson, Arthur T., London, and J. Horne, Barrow-in-Furness, assignors to Vickers, Sons & Maxim, Limited, Sheffield, England. Apparatus for supplying turret or barbette guns with explosive charges	654,444	July 24	3371	756, 757	92	728

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Dawson, Arthur T., London, and J. Horne, Barrow-in-Furness, assignors to Vickers, Sons & Maxim, Limited, Sheffield, England. Apparatus for supplying charges to heavy turret or barbette guns	658,244	Sept. 18	2252	488 494	92	2289
Dawson, Arthur T., London, and J. Horne, Barrow-in-Furness, assignors to Vickers, Sons & Maxim, Limited, Sheffield, England. Mounting for turret or barbette guns	658,704	Sept. 25	3077	685	92	2477
Dawson, Isaac H. (See Carmack, John W., assignor.)	657,288	Sept. 4	411	86	92	1883
Dawson, John W., Scranton, Pa. Attachment for looms	657,398	Sept. 4	636	133	92	1928
Day, Albert A., New York, N. Y. Apparatus for preparing and feeding fuel	657,399	Sept. 4	637	133	92	1928
Dayton Manufacturing Company. (See Kirby, John J., assignor.)						
Dayton, William L. (See Cypher and Dayton.)						
De Courcy, Edward J., and R. Crawford, Belfast, Ireland. Machinery for scutching and cleaning flax	654,955	July 31	4346	978	92	944
De Garmo, George J., New York, N. Y. Combined suspenders and shoulder-brace	653,664	July 17	1801	413	92	391
De La Vergne Refrigerating Machine Company. (See Aue, Joseph E., assignor.)						
De Laski, Albert, Trenton, N. J. Flat-woven tubular fabric	653,918	July 17	2265	514	92	479
De Laski, Albert, Trenton, N. J. Woven tubular fabric	653,919	July 17	2263	515	92	479
De Leo, Ralphael, Lynn, Mass. Shoe	657,095	Sept. 4	43	11	92	1810
De Leon, Thomas C., Washington, D. C. Duplicate-whist apparatus	653,665	July 17	1801	413	92	391
De Long Hook and Eye Company. (See Lamb, Restore B. and W., assignors.)						
De Mont, Wyckoff, Lafayette, Ind., and C. L. Garwick, Morrison, Ill.; said De Mont assignor to said Garwick. Cistern-cleaner	655,479	Aug. 7	566	127	92	1151
De Moulin, Edmund and U. S., Greenville, Ill. Initiating device	654,611	July 31	3678	829	92	805
De Moulin, Ulysses S. (See De Moulin, Edmund and U. S.)						
De Tamble, Henry, Aurora, Ill. Hat-fastener	653,950	July 17	2318	531	92	490
De Tamble, Henry, Aurora, assignor of one-half to C. P. Dorn, Naperville, Ill. Drill-press	653,338	July 10	1174	279	92	245
De Vilbiss, Allen, Jr., Toledo, Ohio. Computing attachment for scales	655,147	July 31	4686	1056 1057	92	1014
De Wallace, Harry, Watertown, N. Y. Train-order signal	657,592	Sept. 11	1055	219 220 221	92	2036
De Witt, Melville L., Sprague's Mill, Me. Mop-wringer	654,130	July 24	2690	613	92	583
De Zeng, Henry L., Geneva, N. Y. Lamp-holder	651,878	July 31	4205	947	92	914
Deacon, William M., New Orleans, La. Garter	653,220	July 10	983	225	92	200
Dean, John, assignor to J. P. Davies, Racine, Wis. Bridle-bit	657,762	Sept. 11	1382	292	92	2100
Dean, John A., Worcester, Mass. Plunger-elevator	654,876	July 31	4200	946	92	913
Dean, Linton A. (See Lester and Dean.)						
Dean, Maurice S. (See Schimmel, Frederick W., assignor.)						
Dean, William V., Valley Mills, Tex. Milk-cooler	653,072	July 3	634	151	92	129
Dean, William W., assignor to Kellogg Switch Board and Supply Company, Chicago, Ill. Central-battery telephone system	657,338	Sept. 4	516	107	92	1903
Dean, William W., assignor to Kellogg Switch Board and Supply Company, Chicago, Ill. Plug and socket for telephone systems	657,339	Sept. 4	520	107	92	1904
Dear, Charles J., London, England. Scutching-machine	657,023	Aug. 28	3515	803	92	1766
Dearnley, Josiah, *et al.* (See Pfautz, Daniel M., assignor.)						
Decker, George W., Newport, Ark. Car-loading apparatus	654,954	July 31	4341	977 978	92	944
Dederick, Peter H., Loudonville, N. Y. Baling-press	654,137	July 24	2686	611 612	92	582
Dedman, James T., Sullivan, Ill. Hame-tug	653,548	July 10	1554	361	92	322
Deeble, John, Southington, Conn. Axle-nut wrench	658,565	Sept. 25	2807	623	92	2425
Deems, John F., Burlington, Iowa. Feed-water heater	658,566	Sept. 25	2809	623	92	2425
Deere & Company. (See Melvin, Charles H., assignor.)						
Deere & Company. (See Poole, Staley D., assignor.)						
Deere & Mansur Company. (See Waterman, Lewis E., assignor.)						
Deering Harvester Company. (See MacPhail, James, assignor.)						
Defiance Machine Works. (See Ensign, George A., assignor.)						
Degge, Kate P., St. Louis, Mo. Ice-creeper	653,473	July 10	1410	331	91	292
Deichler, William M., Lancaster, Pa. Apparatus for sterilizing and filtering liquids	652,907	July 3	296	73	92	59
Deitch, Guilford A., *et al.* (See Barckdall, Daniel, assignor.)						
Deiters, Harry A., and E. L. Bill, Spencer, W. Va. Pliers	656,894	Aug. 21	2344	538	92	1525
Deiters, Harry A., and E. L. Bill, Spencer, W. Va. Game apparatus	657,522	Sept. 11	948	195	92	2014
Delano, Frederic A. (See Smith and Delano.)						
Delaunay-Belleville, Louis M. G., St. Denis, France. Feed-water heater	658,245	Sept. 18	2254	494 495	92	2289
Delay, Gustave, Le Locle, Switzerland. Hardening and draw-tempering steel	654,054	July 17	2490	573	92	523
Delius, George. (See Tatro and Delius.)						
Dembinski, Joseph, Buffalo, N. Y. Luggage-carrier	658,429	Sept. 25	2585	574	92	2380
Demel, John F., *et al.* (See Hamm, Jacob, assignor.)						
Demers, Arthur, St. Julien de Wolfstown, Canada. Saw-frame	658,172	Sept. 18	2130	462	92	2265
Deming, Ferdinand, assignor, by mesne assignments, to M. B. Clowes, Waterbury, Conn. Rotary mold	652,756	July 3	33	8	92	8
Demorest, Thomas J., Garfield, Wash. Compressed-air water-elevator	657,192	Sept. 4	224	50	92	1846
Dempster, Alexander R., and W. D. Rinehart, assignors to Dempster Manufacturing Company, Des Moines, Iowa. Steel-tower bracket	655,693	Aug. 14	993	227	92	1245
Dempster, John T. H., Schenectady, N. Y., assignor to General Electric Company, of New York. Commutator	656,177	Aug. 21	1943	446	92	1449
Dempster Manufacturing Company. (See Dempster and Rinehart, assignors.)						
Demuth, John A., Oberlin, Ohio. Watchman's dialless register	655,694	Aug. 14	994	227 228	92	1246
Demuth, Robert, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Company, New York, N. Y. Violet cotton dye and making same	656,631	Aug. 28	2788	.....	92	1628
Denis, Louis A., West Hoboken, N. J. Vaccinating instrument	652,999	July 3	509	120	92	103
Denmead, John W., Akron, Ohio. Paper-box-making machine	655,695	Aug. 14	998	228 229	92	1246
Denn, Walter G., Philadelphia, Pa. Mercerizing apparatus	655,546	Aug. 7	663	151	92	1170
Denne, Eli, Winnipeg, Canada. Device for unlatching doors	655,764	Aug. 14	1135	260	92	1273
Dennett, Fred A., Sheboygan, assignor to Wisconsin Chair Company, Port Washington, Wis. Combination cobbler and bent-wood roll chair-seat	655,207	Aug. 7	56	12	92	1052
Dennett, William A., Springfield, Mass. Electric-current-grounding device for fire-extinguishing apparatus	654,138	July 24	2689	612	92	582
Dennis, Adolphus S., Des Moines, Iowa, assignor to Bankers Adding and Recording Machine Company, Cleveland, Ohio. Typographical adding-machine	657,266	Sept. 4	377	79, 80	92	1876
Dennis, Samuel K., assignor to Plano Manufacturing Company, Chicago, Ill. Deck for grain-binders	654,232	July 24	2664	665	92	641
Dennis, Samuel K., assignor to Plano Manufacturing Company, Chicago, Ill. Grinder	654,233	July 24	2665	666	92	641

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Dennis, Samuel K., assignor to Plano Manufacturing Company, Chicago, Ill. Grinding-machine	654,234	July 24	2667	666 667	92	642
Dennison Manufacturing Company. (See Swift, George W., Jr., assignor.)						
Densmore Typewriter Company. (See Barron, Walter J., assignor.)						
Densmore Typewriter Company. (See Merritt, Henry W., assignor.)						
Deplanty, Charles F., assignor to J. W. Uncapher and E. E. Wilson, Coffeyville, Kans. Neck-yoke-center-locking device	656,521	Aug. 21	2567	590	92	1568
Derby, John H., Brookline, Mass. Dry-pipe fire-extinguishing apparatus	656,837	Aug. 28	3168	717	92	1702
Derbyshire, William H., Chambersburg, Pa. Hydraulic riveting-machine	656,097	Aug. 14	1802	414 415	92	1408
Déri, Max, Vienna, Austria-Hungary. Apparatus for converting alternating currents into continuous currents	656,522	Aug. 21	2569	590 591 592	92	1569
Derrick, Adam, *et al.* (See Derrick, Thomas, assignor.)						
Derrick, Thomas, assignor of three-fourths to A. Derrick, G. Vandercook, and G. A. Dicker, Lansingburg, N. Y. Electric trolley	653,549	July 10	1555	362	92	322
Derry, Willis O., Saganing, Mich. Jack-screw	655,297	Aug. 7	236	54	92	1087
Dershimer, Titus D., Square Top, Pa. Tread-power	656,178	Aug. 21	1944	446 447	92	1449
Derval, Eugène, Paris, France. Regenerative gas-furnace	653,793	July 17	2041	495	92	437
Des Vignes, George F. G., and W. A. Cloud, London, England. Steam-generator	658,246	Sept. 18	2255	495 496	92	2290
Descher, Henry M. (See Descher, Joseph F. and H. M.)						
Descher, Joseph F. and H. M., Lincoln, Nebr. Wrench	654,524	July 24	3513	702	92	755
Detwiler, Emanuel, Milwaukee, Wis. Steam-generating and water-heating device	655,065	July 31	4558	1026 1027	92	989
Detwiler, John B. (See Herod and Detwiler.)						
Deuther, Lorenz A., Buffalo, N. Y. Truss	655,961	Aug. 14	1518	349	92	1348
Deuther, Lorenz A., Buffalo, N. Y. Machine for making picture-back boards	658,523	Sept. 25	2733	607	92	2409
Devaux, Gaston, Breteuil, and H. Diedrich, Paris, France. Desiccating apparatus	654,877	July 31	4203	946 947	92	914
Devereux & Co., O. C. (See Campbell, James, assignor.)						
Devin, Lee A., Sacramento, Cal. Stove attachment	653,619	July 10	1662	388	92	345
Dexter Folder Company. (See Dexter, Talbot C., assignor.)						
Dexter Folder Company. (See Dexter, Talbot C. and I. H., assignors.)						
Dexter, Irven H. (See Dexter, Talbot C. and I. H.)						
Dexter, Talbot C., Pearl River, N. Y. Paper-feeding machine	654,445	July 24	3372	757 758 759	92	728
Dexter, Talbot C., Pearl River, N. Y. Paper-feeding machine	655,435	Aug. 7	402	110	92	1135
Dexter, Talbot C., Pearl River, N. Y. Paper-feeding machine	656,523	Aug. 21	2572	592 593 594	92	1569
Dexter, Talbot C., Pearl River, N. Y. Paper-feeding machine	656,524	Aug. 21	2579	594	92	1571
Dexter, Talbot C., Pearl River, N. Y. Paper-feeding machine	656,838	Aug. 28	3171	717 718 719 720	92	1703
Dexter, Talbot C., Pearl River, N. Y. Paper-feeding machine	658,705	Sept. 25	3077	686 687 202 203 204 205 206 207 208 209 210 211 212	92	2477
Dexter, Talbot C., assignor to Dexter Folder Company, Pearl River, N. Y. Machine for forming books, &c	653,196	July 3	862		92	173
Dexter, Talbot C., assignor to Dexter Folder Company, Pearl River, N. Y. Paper-registering instrument	655,964	Aug. 14	1535	353 354 355	92	1352
Dexter, Talbot C., Pearl River, assignor to Dexter Folder Company, New York, N. Y. Paper-registering instrument	655,962	Aug. 14	1520	349 350	92	1348
Dexter, Talbot C. and I. H., Pearl River, N. Y., assignors to themselves. Mailing-machine	655,963	Aug. 14	1524	350 351 352 353	92	1349
Deydier, Marie J. A., Nyons, France. Electric-traction balloon	653,221	July 10	934	225	92	200
Dial, Wilbur F. (See Dimond and Dial.)						
Diamond Meter Company. (See Scheeffer, Gustave A., assignor.)						
Diamond Wood Company. (See Hindley and Harding, assignors.)						
Diamond Wood Company of New Jersey. (See Hindley and Harding, assignors.)						
Dick, Albert B., assignor to A. B. Dick Company, Chicago, Ill. Sheet-feeding attachment for stencil printing-machines	657,920	Sept. 18	1666	359 360	92	2171
Dick, Albert B., assignor to A. B. Dick Company, Chicago, Ill. Duplicating apparatus	658,087	Sept. 18	1894	409 410	92	2219
Dicker, George A., *et al.* (See Derrick, Thomas, assignor.)						
Dickerson, Walter H., Newark, N. J., assignor to Tripler Liquid Air Company, New York, N. Y. System of cooling and ventilating	655,148	July 31	4689	1057	92	1014
Dickey, John S., Ethel, Tex. Churn-power	655,765	Aug. 14	1135	260 261	92	1274
Dickey, Lee W., Scottown, Ohio. Sawmill	656,525	Aug. 21	2582	595	92	1572
Dickhaus, Otto, New York, N. Y. Braiding-machine	657,763	Sept. 11	1384	293	92	2101
Dickie, Edward H., assignor of one-third to J. Kane, Bodie, Cal. Leaching ores or tailings	656,395	Aug. 21	2345	.....	92	1525
Dickie, William H., Blacklick Station, Pa. Gate	657,523	Sept. 11	949	195	92	2014
Dickins, Robert S., Enterprise, Fla. Boat propelling and steering mechanism	656,692	Aug. 28	2878	655	92	1647
Dickinson, William H. H., Missoula, Mont. Holder for pictures, stationery, or other articles	656,526	Aug. 21	2583	595	92	1572
Diederichs, Charles G., and M. A. E. Marquelet. Ste. Colombe les Vienne, France. Machine for clearing silk or other textile threads	653,174	July 3	826	194	92	165
Diedrich, Henry. (See Devaux and Diedrich.)						
Diehl, Anthony P. (See Adams, John W., assignor.)						
Diehl, Heinrich L., Darmstadt, assignor to F. von Heyden Nachfolger, Radebeul, Germany. Tar ester of fatty acids and making same	655,208	Aug. 7	57	.....	92	1052

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Diehl, Philip, Elizabeth, N. J., assignor to Singer Manufacturing Company, of New Jersey. Clutch	657,524	Sept. 11	950	196	92	2015
Diehl, Philip, and M. Hemleb, Elizabeth, N. J., assignors to Singer Manufacturing Company, of New Jersey. Ruffling sewing-machine	656,440	Aug. 21	2430	559	92	1541
Diehl, Philip, and M. Hemleb, Elizabeth, N. J., assignors to Singer Manufacturing Company, of New Jersey. Ruffling sewing-machine	656,441	Aug. 21	2432	559, 560	92	1542
Diemer, Frank, Niagara Falls, N. Y. Shoe	654,388	July 24	3265	733	92	705
Dierecke, Hans W., *et al.* (See Miller, Charles F., assignor.)						
Diesel Motor Company of America. (See Diesel, Rudolf, assignor.)						
Diesel, Rudolf, Munich, Germany, assignor to Diesel Motor Company of America, of New York. Apparatus for regulating fuel supply of internal-combustion engines	654,140	July 24	2691	613	92	583
Dietrich, Robert, Merseburg, Germany. Pulp-strainer	656,766	Aug. 28	3005	685	92	1671
Dietrichs, Christian A., assignor of one-half to T. Ortmann, New York, N. Y. Apparatus for preventing premature burial	658,247	Sept. 18	2258	496, 497	92	2290
Dietz, Frederick, assignor to R. E. Dietz Company, New York, N. Y. Tubular lantern	655,328	Aug. 7	290	65	92	1097
Dietz, Hermann, Leipsic, Germany. Bolting-mill	656,346	Aug. 21	2268	520	92	1510
Diezemann, Gustav, Hoboken, assignor to F. G. Otto & Sons, Incorporated, Jersey City, N. J. Star-wheel mechanism for music-boxes	657,096	Sept. 4	44	11	92	1810
Dikeman, Charles S. (See Dikeman, Joseph S., assignor.)						
Dikeman, Joseph S., Torrington, Conn. Seat-post binder	655,766	Aug. 14	1137	261	92	1274
Dikeman, Joseph S., assignor of one-half to C. S. Dikeman, Torrington, Conn. Handle-bar pillar for bicycles	656,950	Aug. 28	3402	776	92	1745
Dill, Charles H. (See Tinder and Dill.)						
Dillon, George F. (See Landrum, Dillon, and Landrum.)						
Dillon, John, Milwaukee, Wis. Rheostat-controller	657,159	Sept. 4	160	36	92	1833
Dimmick, Joseph O., Denver, Colo. Sizer and classifier	653,568	July 10	1590	370, 371	92	330
Dimond, George H., and W. F. Dial, assignors to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Hemstitching sewing-machine	657,400	Sept. 4	638	133, 134	92	1929
Dimond, George H., and W. F. Dial, assignors to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Hemstitching sewing-machine	657,401	Sept. 4	643	134	92	1930
Dineen, John, Chicago, Ill. Device for dispensing beverages	654,879	July 31	4206	947	92	914
Dinkel, Andrew, Auburn, N. Y. Chuck	656,527	Aug. 21	2585	506	92	1572
Dion, Léon, Boston, Mass. Closed-conduit electric railway	657,311	Sept. 4	464	98	92	1803
Dion, Léon, Boston, Mass. Closed-conduit electric railway	657,484	Sept. 4	893	175	92	1986
Diplock, Bramah J., London, England. Wheel	658,004	Sept. 18	1839	396	92	2209
Dirksen Handle Bar Company. (See Rishel, George P., assignor.)						
Diss, Albert B., New York, N. Y. Caster	654,956	July 31	4347	979	92	945
Ditchey, Frederick J., Middleport, Pa. Fishing-pole attachment	655,363	Aug. 7	363	79	92	1110
Dittbenner, Hermann G., Minneapolis, Minn. Steam-feed for sawmills	657,340	Sept. 4	520	107, 108	92	1904
Dix, Dwight R., St. Paul, Minn. Wardrobe	657,593	Sept. 11	1065	221	92	2037
Dix, I. J., *et al.* (See Magie, Wilber R., assignor.)						
Dix, P. A., *et al.* (See Magie, Wilber R., assignor.)						
Dixon, George A., and J. W. Howard, Galena, Kans. Tobacco-cutting machine	653,928	July 17	2274	517	92	482
Dixon, James W., Sheffield, England. Screw-on stopper for drinking-flasks	657,921	Sept. 18	1671	360	92	2172
Dixon, Robert M., East Orange, N. J., assignor to Safety Car Heating and Lighting Company, of New Jersey. Lamp	654,343	July 24	3180	713	92	685
Dixon, William W., Boston, Mass., assignor to Reece Button Hole Machine Company, Portland, Me. Buttonhole sewing and cutting machine	655,650	Aug. 7	899	207, 208	92	1217
Dobbins, Levi N., assignor of one-half to J. J. Stalnaker, Progress, W. Va. Car-coupling	656,179	Aug. 21	1945	447	92	1450
Dodds, Samuel W., and G. H. Robertson, Paducah, Ky. Weighing mechanism for refrigerators	655,066	July 31	4562	1027	92	989
Dodge, Alfred C., Binghamton, N. Y. Machine for printing butter, &c	656,781	Aug. 28	3033	690	92	1676
Dodge, Carroll W., Worcester, Mass. Tape-needle device	654,957	July 31	4349	979	92	945
Dodge, Charles, Davisville, Cal. Baling-press	656,767	Aug. 28	3007	685	92	1671
Dodson, Harry E. (See Crain, Evans, and Dodson.)						
Doehring, Charles F. W., Philadelphia, Pa. Building	656,951	Aug. 28	3403	776, 777	92	1745
Doell, Peter P., New York, N. Y. Fire-escape	654,787	July 31	4023	905	92	874
Doering, Herman, Reedsburg, Wis. Neck-yoke	654,958	July 31	4351	979	92	945
Doerr, John H., Camden, N. J. Non-refilling bottle	658,350	Sept. 25	2444	540	92	2353
Doherty, Nell F. (See Cassidy, Patrick F., assignor.)						
Dold, Jacob C. (See Bird, William G., assignor.)						
Dommer, Fernand, Paris, France. Dyeing	656,015	Aug. 14	1653	------	92	1376
Don, Thomas, and C. M. Fowler, Lowell, Mass; said Don assignor to said Fowler. Meat-tenderer	653,222	July 10	936	226	92	201
Donaldson, E. E. (See Laviers, Henry, assignor.)						
Donaldson, Percy. (See Shultz, Charles H., assignor.)						
Donaldson, William J., Jr., La Grange, Tex. Vehicle air-brake	657,649	Sept. 11	1108	245	92	2058
Donard, Eugène, Paris, France. Removing solvent vapors from wool	656,528	Aug. 21	2588	506	92	1573
Donard, Eugène, Paris, France. Apparatus for extracting oil	656,529	Aug. 21	2590	507	92	1573
Donges, George, Baltimore, Md. Beer-cooler	655,613	Aug. 7	801	186	92	1195
Donnelly, James A., New York, N. Y. Fitting for steam heating apparatus	657,891	Sept. 11	1602	345	92	2146
Donnelly, John R. (See Brown and Donnelly.)						
Donohue, John T., Baltimore, Md. Ball-bearing sheave	656,095	Aug. 14	1654	380	92	1376
Donovan, James, assignor to Roberts Car and Wheel Company, Three Rivers, Mich. Railway cattle-guard	658,352	Sept. 25	2448	541	92	2354
Donovan, James J., Peekskill, N. Y. Ventilating apparatus	658,351	Sept. 25	2446	540	92	2353
Donovan, Michael J., Waterdown, assignor of one-half to D. McNamara, Burlington, Canada. Wheel for vehicles	652,837	July 3	190	41	92	39
Donovan, Peter T., New York, N. Y. Inhaler	657,402	Sept. 4	646	135	92	1930
Dooley, Matthew J., and T. F. Carroll, St. Paul, Minn. Means for checking up loading operations	658,316	Sept. 18	2368	523	92	2312
Dooley, Richard J., Chicago, Ill. Combined bicycle-saddle and tool-carrier	655,209	Aug. 7	58	13	92	1052
Doolittle, Edmund W., Des Moines, Iowa. Carpet-stretcher	656,632	Aug. 28	2790	637	92	1628
Doolittle, Irvin P., Toronto, Canada. Garment-hook	655,856	Aug. 14	1324	303	92	1311
Doolittle, Mary V. (See Doolittle, Reuben, assignor.)						
Doolittle, Reuben, assignor to M. V. Doolittle, Chicago, Ill. Manufacturing carbids	656,599	Aug. 21	2727	625	92	1608
Doolittle, Reuben, assignor to M. V. Doolittle, Chicago, Ill. Means for manufacturing carbids	656,600	Aug. 21	2729	626	92	1608
Doran, Lewis R., and A. Taggart, Glasgow, Scotland. Steam-engine indicator	655,857	Aug. 14	1325	304	92	1312
Doré, Georges. (See Turgan, Louis, assignor.)						
Doren, Henry E., Toledo, Ohio. Sash-lock	654,141	July 24	2693	613	92	583
Döring, Albert, Dresden, Germany. Revolving-hook sewing-machine	657,525	Sept. 11	952	196	92	2015
Dorn, Charlie P. (See De Tamble, Henry, assignor.)						
Dornauf, Georg, Frankfort-on-the-Main, Germany. Cog-wheel with detachable teeth	653,073	July 3	635	152	92	129

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dornheim, Paul E., Philadelphia, Pa. Nurling die-holder for screw-machines	656,952	Aug. 28	3405	777	92	1746
Doron, Aaron L., *et al.* (See Kerns, James, assignor.)						
Doron, William S., *et al.* (See Kerns, James, assignor.)						
Dorsett, Harry L. (See Downing and Dorsett.)						
Dorsey, Thomas J., and N. Mathews, Los Angeles, Cal. Riding attachment for seed-drills	654,525	July 24	3515	733	92	755
Dosch, Peter, Mount Vernon, N. Y. Wood-trimming machine	653,794	July 17	2044	465	92	498
Doty, Walter G., Middletown, Ohio. Cheese-cutter	653,988	July 17	2383	548	92	563
Dougald, Samuel, Pittsburg, Pa. Saw-jointer	655,823	Aug. 14	1273	292	92	1302
Dougherty, William, Fountain, Minn. Grain-sieve	653,020	July 10	1663	388	92	345
Doughty, Parker A., Omaha, Nebr. Boiler-cleaner	656,953	Aug. 28	3405	777	92	1746
Dougine, James T., Chicago, Ill. Motor-vehicle	655,329	Aug. 7	291	65, 66	92	1097
Douglas, George, Wolcott, Ind. Grain-car	655,767	Aug. 14	1138	261	92	1274
Douglas, Sanford V., Bloomington, Nebr. Clothes-drier	656,693	Aug. 28	2870	655	92	1647
Dow, William E., Littleton, N. H. Spraying-pump	654,235	July 24	2672	607	92	643
Dowagiac Manufacturing Company. (See Fowle, Charles L., assignor.)						
Dowdell, Arthur B. C. (See Dowdell, James and A. B. C.)	655,330	Aug. 7	293	66	92	1098
Dowdell, James and A. B. C., St. Helena, Cal. Hop bleaching and drying kiln	658,719	Sept. 25	3106	692	92	2483
Dowell, Jeff D., and L. M. Gallihet, Mineola, Tex. Nut-lock	656,189	Aug. 21	1947	447	92	1450
Downie, James H., Detroit, Mich. Machine for manufacturing nerve-broaches, &c	654,526	July 24	3517	733	92	756
Downing, Elmer T., Napa, Cal. Liquid-mixer	656,530	Aug. 21	2591	507	92	1573
Downing, Horatio E., and H. L. Dorsett, Seward, Okla Ter. Nut-lock	658,541	Sept. 25	2763	614	92	2415
Downing, William A., and J. T. McHugh, Pittsburg, Pa. Bond-tie for electric railways	652,954	July 3	430	100, 101, 102	92	87
Downing, William C., Chicago, Ill. Combination ticket-punch	655,696	Aug. 14	1000	229	92	1247
Dowse, William B. H., Newton, Mass., assignor to Consolidated Fastener Company, Portland, Me. Fastener	658,706	Sept. 25	3087	687, 688	92	2479
Dowsing, Herbert J., London, England. Electric stove	654,612	July 31	3680	829, 830, 831, 832	92	805
Draher, John. (See Field, Marggraff, and Draher.)						
Draher, John, and F. Marggraff, assignors, by mesne assignments, to Shoe Hardware Company, Waterbury, Conn. Metal-working machine for making tacks, &c						
Drake, George W. (See Bardons and Drake.)						
Draper Company. (See Allen, William E., assignor.)						
Draper Company. (See Draper, George O., assignor.)						
Draper Company. (See Marcy, Frank M., assignor.)						
Draper Company. (See Oswalt, John L., assignor.)						
Draper Company. (See Rhoades, Alonzo E., assignor.)						
Draper Company. (See Stafford, Alfred E., assignor.)						
Draper Company. (See Stimpson, Edward S., assignor.)						
Draper, George O., Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., and Portland, Me. Upright loom	654,055	July 17	2491	573	92	523
Draper, George O., Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., and Portland, Me. Spinning apparatus	656,954	Aug. 28	3407	778	92	1746
Draper, Lucius D., assignor of four-ninths to E. W. Phillips, Boston, Mass. Stud for garment-supporters	653,074	July 3	636	152	92	129
Draper, William F., Hopedale, Mass. Shuttle-check for looms	656,181	Aug. 21	1948	447, 448	92	1450
Dreckmann, Johannes, Cassel, Germany. Valve	654,236	July 24	2673	607	92	643
Dressel, Charles H., New York, N. Y., assignor to Dressel Railway Lamp Works, of New York. Lamp-socket	655,208	Aug. 7	237	54	92	1097
Dressel Railway Lamp Works. (See Dressel, Charles H., assignor.)						
Drevon, Louis, Pont-de-Beauvoisin, France. Bottle-stopper for aerated beverages	654,959	July 31	4352	980	92	945
Dreyer, Henry C., Wilkes-Barré, Pa. Universal warping-reed	658,104	Sept. 18	2007	437	92	2240
Driscoll, Martin R., Frisco, Utah. Screen for stamp-mills	656,008	Aug. 14	1804	415	92	1409
Driskill, Theodore F., Corsicana, Tex. Articulating-plate	654,527	July 24	3518	733	92	756
Drohan, Thomas E., assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Electric-arc lamp	657,485	Sept. 4	864	175	92	1986
Drown, Aaron, Barton, Vt. Bob-sled	653,223	July 10	937	226	92	201
Du Brul, Napoleon, Cincinnati, Ohio. Cigar or cigarette	657,403	Sept. 4	648	135	92	1930
Du Brul, Napoleon, Cincinnati, Ohio. Tobacco-cutting machine	658,059	Sept. 18	1924	417, 418	92	2224
Du Pont, Thomas C., Johnstown, Pa., assignor to Lorain Steel Company, of Pennsylvania. Railway-track structure	658,355	Sept. 25	2451	541	92	2354
Du Pont, Thomas C., Johnstown, Pa., assignor to Lorain Steel Company, of Pennsylvania. Railway-track structure	658,356	Sept. 25	2452	542	92	2354
Du Pont, Thomas C., Johnstown, Pa., assignor to Lorain Steel Company, of Pennsylvania. Rail-joint	658,357	Sept. 25	2455	542	92	2355
Duckett, David. (See Eynon and Duckett.)						
Duden, August, Indianapolis, Ind. Knockdown box	653,907	July 17	2242	510	92	475
Dudley, William A., Petersburg, Va. Rock-drill head	658,060	Sept. 18	1926	418	92	2225
Dufau, John T., San Francisco, Cal. Fastening device and padlock	656,245	Aug. 21	2077	476	92	1474
Duff, Edward J., assignor of one-half to United Alkali Company, Limited, Liverpool, England. Apparatus for purifying gas	656,601	Aug. 21	2731	626	92	1604
Duff, Edward J., assignor of one-half to United Alkali Company, Limited, Liverpool, England. Multiple-effect evaporating apparatus	657,900	Sept. 11	1623	349	92	2150
Duffy, Thomas F. (See Ryan, Patrick, assignor.)						
Duffy, Thomas J., Boston, assignor to F. E. Smalley, Chelsea, Mass. Bottle attachment	654,056	July 17	2493	574	92	524
Dulsdieker, Charles H., Pekin, Ill. Pulverizer	658,430	Sept. 25	2588	574	92	2380
Dukes, Catharine T., Huron, S. D. Puzzle	653,990	July 10	1073	257	92	227
Dukes, H. S., *et al.* (See Ettinger, Samuel F., assignor.)						
Duket, Peter P., Bowling Green, Ohio. Car-coupling	652,955	July 3	437	102	92	88
Dumais, Jean B. Z., assignor of one-half to J. B. Galloway, Chicago, Ill. Thread-cutting machine	654,880	July 31	4209	948	92	915
Dun Lany, William P., assignor to International Fac-Similegraph Company, Cleveland, Ohio. Transfer-sheet and composition therefor	655,067	July 31	4563	1027	92	990
Dunbar, Alexander, Liverpool, England. Machinery for trimming, dressing, and planing staves	657,312	Sept. 4	465	99	92	1803
Dunbar, Alexander, Liverpool, England. Machine for dressing staves	658,353	Sept. 25	2449	541	92	2354
Dunbar, Andy L. (See Wilkins, Alexander G., assignor.)						
Dunbar, Clement A., Detroit, Mich. Glass-blower's machine	657,097	Sept. 4	46	11	92	1811
Dunbar, George H., New Orleans, La. Can and means for closing same	655,614	Aug. 7	802	187	92	1195
Duncan, Joseph S., assignor to Addressograph Company, Chicago, Ill. Rubber type	656,442	Aug. 21	2434	560	92	1542

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Duncan, Joseph S., assignor to Addressograph Company, Chicago, Ill. Type-holder	656,443	Aug. 21	2435	560	92	1542
Duncan, Joseph S., assignor to Addressograph Company, Chicago, Ill. Mold for making rubber type	656,444	Aug. 21	2438	561	92	1543
Duncan, Leonard F., Troy, Ohio. Belt-dressing	653,569	July 10	1593	.....	92	330
Duncan, Robert C. (See Kennedy and Duncan.)						
Dundon, Patrick F., San Francisco, Cal. Boiler-brace	653,000	July 3	510	121	92	108
Dundon, Patrick F., San Francisco, Cal. Door for digesters	653,503	July 10	1467	343	92	304
Dunham, Charles L., Centre View, Ohio. Pipe-wrench	656,154	Aug. 14	1897	437	92	1427
Dunham, George H., Quincy, assignor of one-half to E. H. Heath, Boston, Mass. Electric railway-signal	657,730	Sept. 11	1327	281	92	2068
Dunk, Alfred O., Reed City, Mich. Outside stairway	653,442	July 10	1347	320	92	279
Dünkelberg, Rudolf, and G. Gockel, Dusseldorf, Germany. Device for securing straps to knapsacks, &c.	658,354	Sept. 25	2450	541	92	2354
Dunlap, William A., Pittsburg, Pa. Attaching handles to vessels	653,803	July 17	2158	492	92	459
Dunn, Bert. (See O'Neil, Walter T., assignor.)						
Dunn, Gano S., East Orange, N. J., assignor to Crocker-Wheeler Company, of New Jersey. Brake	654,142	July 24	2694	614	92	584
Dunn, George A. and R. F., Dinuba, Cal. Car	658,142	Sept. 18	2068	451	92	2252
Dunn, Henry J., London, England. Making meat-powder	658,248	Sept. 18	2260	.....	92	2201
Dunn, James F., Salt Lake City, Utah. Locomotive-pilot rigging	653,075	July 3	637	152	92	129
Dunn, James F., Salt Lake City, Utah. Locomotive buffer-beam	656,531	Aug. 21	2592	597	92	1574
Dunn, James F., Salt Lake City, Utah. Locomotive buffer-beam	656,532	Aug. 21	2594	597	92	1574
Dunn, Robert F. (See Dunn, George A. and R. F.)						
Dunn, Russell L. (See Van Brocklin, John W., assignor.)						
Dunn, William, New York, N. Y. Golf-club	656,099	Aug. 14	1806	416	92	1409
Dunn, William C., Logansport, Ind. Bicycle	655,697	Aug. 14	1001	229	92	1247
Dunne, Thomas J. (See Koehler, Fred L., assignor.)						
Duplex Car Company. (See Moore, George, assignor.)						
Duplicate Whist Company. (See Ihling, Reinhold, assignor.)						
Dupont, Charles I., Plaquemine, La. Elliptic spring	655,210	Aug. 7	60	13	92	1052
Durand, Henry S., Rochester, N. Y. Stuffing-box	654,881	July 31	4211	948	92	916
Durand, Henry S., Rochester, and Robert K. McLellan, New York, N. Y.; said McLellan assignor to said Durand. Stuffing-box	654,882	July 31	4214	949	92	916
Durand, Norbert, Range, assignor of one-half to G. Gamache and H. Phillips, Amery, Wis. Loom-shuttle	657,098	Sept. 4	49	12	92	1811
Durelschlag, Charles W., assignor to Acme Machinery Company, Cleveland, Ohio. Heading-machine	656,782	Aug. 28	3034	690 691	92	1676
Durel, Paul S., assignor of one-half to Payne & Joubert, New Orleans, La. Power-transmitting mechanism	654,446	July 24	3380	759 760	92	729
Durham, Will J., assignor to United States Canopy Company, Knoxville, Tenn. Mosquito-canopy frame	653,621	July 10	1664	389	92	345
Durner, Michael, *et al.* (See Ricke, George H., assignor.)						
Duryea, Charles E., Peoria, Ill. Speed-governor	655,922	Aug. 14	1444	332	92	1335
Duryea, Charles E., Peoria, Ill. Drive-chain	657,526	Sept. 11	953	196	92	2015
Duryea, Charles E., assignor to Duryea Manufacturing Company, Peoria, Ill. Motor-vehicle	653,224	July 10	938	226 227	92	201
Duryea, Chester B., New York, N. Y. Apparatus for treating starch	658,105	Sept. 18	2008	438	92	2240
Duryea Manufacturing Company. (See Duryea, Charles E., assignor.)						
Dutton, Charles O., Lachine, Canada. Fire-escape	655,923	Aug. 14	1446	332	92	1335
Dutton, Ellis R., Minneapolis, Minn. Storm-sash fastener	656,633	Aug. 28	2791	638	92	1628
Dwight, Arthur S., Kansas City, Mo., and R. Ruetschi, Argentine, Kans. Curtain for dust-collecting apparatus	655,547	Aug. 7	664	152	92	1171
Dyer, Frank L. (See Dyer, Leonard H., assignor.)						
Dyer, Leonard H., Washington, D. C., assignor of one-fourth to F. L. Dyer, Montclair, N. J. Automobile vehicle	657,650	Sept. 11	1170	245 246	92	2058
Dyer, Samuel, assignor of three-fifths to R. E. Evans, Muncie, Ind. Apparatus for separating pith and fiber of cornstalks	657,341	Sept. 4	522	108	92	1905
Dyett, James S., Rome, assignor to Hard Manufacturing Company, Buffalo, N. Y. Folding cot or bed	657,901	Sept. 11	1024	349	92	2151
Dyson, John M. (See Cessna, William H., assignor.)						
E. Jencker Manufacturing Company. (See Rowe and Bentz, assignors.)						
Eades, William T., and E. Allday, Small Heath, near Birmingham, England. Hoist	657,815	Sept. 11	1470	313 314	92	2118
Eades, William T., and E. Allday, Birmingham, England. Crab-winch	658,623	Sept. 25	2921	653	92	2447
Eads, William H., assignor of one-half to H. M. Plaisted, St. Louis, Mo. Motor-pump	657,160	Sept. 4	162	37	92	1834
Eady, Jeffery W. (See Parish, Edward W., assignor.)						
Eagle Manufacturing Co. (See Ashman, David, assignor.)						
Eames, Charles B., St. Louis, Mo. Rail-joint	656,883	Aug. 28	3284	746	92	1723
Eamich, Bruce M. (See Scott and Eamich.)						
Earle, Edward J. V. (See Reid and Earle.)						
Easley, James A., Genoa, Ark. Raker-gage and saw-jointer	656,739	Aug. 28	2958	676	92	1662
Eastern Paper Bag Company. (See Bilgram, Hugo, assignor.)						
Eastwood, Harry, Fresno, Cal. Raisin-cleaner and cap-stemmer	657,602	Sept. 11	1257	287	92	2074
Eastwood, Thomas, Walsden, England. Spinning-machine	655,608	Aug. 14	1002	230	92	1247
Easy Spring Hinge Company. (See Stump and Brucker, assignors.)						
Eaton, Edward C., *et al.* (See Eaton, Ethan W., assignor.)						
Eaton, Ethan W., assignor to J. I., N. P., E. C., W. J., and R. Eaton, Socorro, N. Mex. Ter. Music-leaf turner	658,208	Sept. 18	2191	478 479	92	2277
Eaton & Glover Company. (See Eaton, William S., assignor.)						
Eaton, Harrison H., Cleveland, Ohio. Lacing-hook for shoes	654,237	July 24	2974	667	92	644
Eaton, Homer, *et al.*, trustees. (See St. John, Roswell H., assignor.)						
Eaton, Joseph I., *et al.* (See Eaton, Ethan W., assignor.)						
Eaton, Nestor P., *et al.* (See Eaton, Ethan W., assignor.)						
Eaton, Oliver N., assignor of one-half to J. Biddle, New York, N. Y. Post for piano-backs	654,344	July 24	3182	713	92	685
Eaton, Robert, *et al.* (See Eaton, Ethan W., assignor.)						
Eaton, William J., *et al.* (See Eaton, Ethan W., assignor.)						
Eaton, William S., Sag Harbor, assignor to Eaton & Glover Company, New York, N. Y. Engraving-machine	652,892	July 3	272	66	92	54
Eaton, Willie G., Nashua, N. H., assignor, by mesne assignments, to Crompton & Knowles Loom Works, Worcester, Mass. Loom	653,001	July 3	511	121	92	103
Ebeling, Gustav, assignor of one-half to W. M. Boulden, Chester, Pa. Steam-boiler	653,076	July 3	639	153	92	130
Ebeling, Phillip, assignor to Dalzell, Gilmore & Leighton Company, Findlay, Ohio. Machine for manufacturing glassware	653,412	July 10	1292	307 308	92	268
Eberhardt, Theophilus C., Prattville, Ala. Pneumatic cotton elevator and distributer	655,299	Aug. 7	237	55	92	1087
Eberhart, Frank, and C. A. Schubert, New York, N. Y. Oven-door	656,839	Aug. 28	3182	721	92	1705

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Ebinger, David A., assignor to Vogelgesang Furnace Company, Columbus, Ohio. Gas heating-furnace	654,718	July 31	3889	877	92	847
Ebinger, David A., assignor to Vogelgesang Furnace Company, Columbus, Ohio. Heating-furnace	654,719	July 31	3891	877	92	847
Ebner, Peter, Columbus, Ohio. Fire-shutter	655,965	Aug. 14	1540	355	92	1358
Eccles, Richard, Auburn, N. Y. Thill-coupling	656,955	Aug. 28	3408	778	92	1746
Eck, Charles A., Newark, N. J., assignor to Auto-Electric Air Pump Company, New York, N. Y. Fluid-operated electric switch	656,716	Aug. 28	2923	668	92	1655
Ecke, George, Lawrence, Kans. Tool for making artificial-stone walks	653,795	July 17	2045	466	92	438
Economic Sewing Machine Company. (See Van Vechten, Orville R., assignor.)						
Economy Machine Company. (See Johnson, Albert E., assignor.)						
Eddy, George B., Camden, N. J. Valve-gear for locomotive-engines	657,816	Sept. 11	1472	314	92	2119
Eddy, George W., assignor to Scovill Manufacturing Company, Waterbury, Conn. Air-pump	653,570	July 10	1593	371	92	331
Eddy, Ira A., assignor of one-half to J. Seeman, Burlington, Mich. Grain-sack holder	657,284	Sept. 4	412	86	92	1883
Eden, Samuel, New York, N. Y. Disinfecting-block	653,989	July 17	2385	.....	92	503
Edenborn, William, Chicago, Ill. Wire-fencing machine	653,339	July 10	1175	280	92	245
Edgerton, George L., Guilford College, N. C. Barrel-swing	655,394	Aug. 7	366	79	92	1110
Edison-Johnson Electrical Manufacturing Company. (See Johnson, Edward G., assignor.)	655,480	Aug. 7	568	127	92	1152
Edison, Thomas A., Llewellyn Park, N. J. Phonographic reproducing device	657,527	Sept. 11	954	196	92	2015
Edison, Thomas A., Llewellyn Park, N. J. Making metallic duplicate phonograph-records	657,922	Sept. 18	1671	360	92	2173
Edison, Thomas A., Llewellyn Park, N. J. Apparatus for reheating compressed air for industrial purposes	11,857	Sept. 25	3170	705 706	92	2496
Edison, Thomas A., Llewellyn Park, N. J. Phonograph. (Reissue)						
Edmondson, James M. (See Erickson and Edmondson.)						
Edson, Job A. (See Mertsheimer and Edson.)						
Edward H. Wagner Company. (See Wagner, Edward H., assignor.)						
Edward Miller & Company. (See Williams, Frank T., assignor.)						
Edwards, Frederick, London, England. Pump	657,864	Sept. 11	1559	336 337	92	2138
Edwards, George A., Philadelphia, Pa. Holder for pads	656,283	Aug. 21	2144	489	92	1486
Edwards, John D., and C. B. Timmons, Clarence, Mo. Bed-slat	658,143	Sept. 18	2069	451	92	2252
Edwards, Oliver M., Syracuse, N. Y. Window	655,331	Aug. 7	294	66, 67	92	1098
Edwards, Oliver M., Syracuse, N. Y. Window	655,332	Aug. 7	299	67	92	1099
Edwards, T. R. (See Campbell, Robert E., assignor.)						
Edwards, Victor E., Worcester, Mass. Furnace	653,504	July 10	1468	343 344	92	304
Edwards, Victor E., assignor to Morgan Construction Company, Worcester, Mass. Apparatus for handling band-iron	653,505	July 10	1470	344	92	305
Edwards, Victor E., assignor to Morgan Construction Company, Worcester, Mass. Apparatus for cutting and handling band-iron	653,506	July 10	1471	344	92	305
Edwards, Victor E., assignor to Morgan Construction Company, Worcester, Mass. Feeding mechanism for rolling-mills	653,507	July 10	1474	344	92	306
Edwards, Victor E., and J. R. George, assignors to Morgan Construction Company, Worcester, Mass. Furnace	653,508	July 10	1476	345	92	306
Edwards, Wiley W., Fusky, Miss. Ship's propeller	655,699	Aug. 14	1004	230	92	1248
Efran, Emil, Brünn, Austria-Hungary. Apparatus for charging and feeding fuel to steam-engines	655,700	Aug. 14	1005	231	92	1248
Egbert, James H. (See Hickey and Egbert.)	652,757	July 3	34	9	92	8
Ege, Alexander H., Mechanicsburg, Pa. Dumping-wagon	658,624	Sept. 25	2924	654	92	2448
Egger, Gluseppe, Triest, Austria-Hungary. Bottom bracket	656,783	Aug. 28	3036	691	92	1677
Eggert, Otto, Königsberg, Germany. Pipe clamping and supporting device	657,698	Sept. 11	1260	287	92	2074
Egnell, Fritz, assignor to Nordiska Acetylen-Aktiebolaget, Stockholm, Sweden. Light-reflector	654,309	July 24	3126	690	92	674
Ehebald, Adam, New York, N. Y. Gas-meter	653,413	July 10	1295	.....	92	268
Ehrenreich, James J. (See Joseph and Ehrenreich.)	656,182	Aug. 21	1953	448	92	1451
Ehrensberger, Emil, assignor to F. Krupp, Essen, Germany. Improving armor-plates	657,504	Sept. 11	1066	221	92	2037
Ehrhardt, William G., New York, N. Y. Sound-collector for the ears	656,956	Aug. 28	3410	778	92	1747
Ehrlich, Friedrich E. P., Gohlis, Germany. Organ	656,100	Aug. 14	1807	416	92	1410
Elbee, Carl, New York, N. Y. Pipe-coupling	656,884	Aug. 28	3285	.....	92	1723
Eibig, Paul, assignor to M. Behrendt, Berlin, Germany. Electricity-meter	652,758	July 3	38	9	92	9
Eichelbaum, Georg, Königsberg, assignor to F. Hornig, Taucha, Germany. Adhesive product	658,025	Sept. 25	2925	654	92	2448
Eicher, Harry W., Boynton, Pa. Saw-set	652,838	July 3	191	44	92	39
Eicher, John, and H. Cooper, Winfield, Iowa. Cream-ripening apparatus	655,300	Aug. 7	243	55	92	1089
Eickelberg, Louis E., Waterloo, Iowa. Bucksaw-frame	654,613	July 31	3694	.....	92	807
Einstein, Alfred C., St. Louis, Mo. Acetylene-gas generator						
Eischer, Johann, Munich, Germany. Making paint						
Eisenhuth Horseless Vehicle Company. (See Eisenhuth, John W., assignor.)						
Eisenhuth, John W., assignor, by mesne assignments, to M. G. Read, New York, N. Y. Wheel	654,092	July 17	2548	586	92	534
Eisenhuth, John W., assignor, by mesne assignments, to Eisenhuth Horseless Vehicle Company, New York, N. Y. Motor-vehicle	656,396	Aug. 21	2346	539	92	1525
Eisenwerk, Firm, vormals Nagel & Kaemp, Actien-Gesellschaft. (See Luzatto, Cesare, assignor.)						
Ekström, Axel, Schenectady, N. Y., assignor to General Electric Company, of New York. Cooling brakes	656,445	Aug. 21	2441	561	92	1548
Elbers, Alexander D., Hoboken, N. J. Treating mineral wool	653,077	July 3	640	.....	92	130
Elder, David D., Philadelphia, Pa. Vehicle-brake	653,951	July 17	2319	531	92	490
Eldred, George S., Chicago, Ill. Cigar-cutter	658,291	July 10	1075	257	92	227
Eldred, John F., Chicago, Ill. Graphophone-clock	657,731	Sept. 11	1330	281	92	2089
Electric Smelting and Aluminum Company. (See Cowles, Alfred H., assignor.)						
Electric Storage Battery Company. (See Appleton, Joseph, assignor.)						
Electric Vehicle Company. (See Condict, George H., assignor.)						
Electric Vehicle Company. (See Maxim, Hiram P., assignor.)						
Elfstrand, Gustav, *et al.* (See Hall, Frank, assignor.)						
Elkridge Manufacturing Company. (See Mentzel and Reiser, assignors.)						
Ellenbecker, John, Port Washington, Wis. Revolving chair	655,211	Aug. 7	61	13	92	1053
Ellenbecker, John, Port Washington, Wis. Revolving chair	655,701	Aug. 14	1007	231	92	1248
Ellicott, Joseph R., *et al.* (See Normand, Joseph E., assignor.)						
Ellicott, Edward B., and L. E. Oehring, assignors to Western Electric Company, Chicago, Ill. Electric signaling apparatus	656,957	Aug. 28	3412	779	92	1747
Ellinwood, Augustus E., and F. A. Selberling, assignors to Goodyear Tire and Rubber Company, Akron, Ohio. System for controlling series of vulcanizers	654,389	July 24	3266	733 734	92	706

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Elliott, Arthur H. (See Ihart, John P., assignor.)						
Elliott, Arthur H., New Rochelle, N. Y. Automatic gas-regulator	654,238	July 24	2975	668	92	644
Elliott, Edward E., Chicago, Ill., assignor to M. Field & Co., of Illinois. Skirt	656,814	Aug. 28	3100	704	92	1689
Elliott, Robert B., Hamletsburg, Ill. Fender for cultivators	655,098	July 31	4594	1027	92	990
Elliott, William B., and J. W. Eskholme, Westfield, N. J., assignors to C. & C. Electric Company, of New Jersey. Motor-controller	654,883	July 31	4216	949 950	92	917
Elliott, William S., Pittsburg, Pa. Tube-cleaning apparatus	656,446	Aug. 21	2442	562	92	1543
Ellis, Abram, Augusta, Ga. Ice-making plant	653,668	July 17	1803	413 414	92	892
Ellis, Joah, assignor of one-half to J. C. Sykes, Cleckheaton, England. Building-block	654,614	July 31	3694	882 883	92	808
Ellis, John, Lynn, Mass. Device for attaching filters to faucets, &c	653,002	July 3	513	122	92	104
Ellis, Wilson R., Livermore, Cal. Educational top	658,358	Sept. 25	2456	543	92	2355
Ellsworth, Irvin H., Oak Harbor, Ohio. Bridle-blind brace	656,897	Aug. 21	2350	539	92	1526
Elmore, Francis E., Leeds, England. Apparatus for separating metallic from rocky constituents of ores	653,340	July 10	1178	280	92	245
Elskamp, Cornelius H., Telluride, Colo. Tape-measure attachment	654,960	July 31	4353	980	92	946
Elworthy, Herbert S., London, England. Making pure carbonic acid	658,626	Sept. 25	2926	654	92	2448
Elworthy, Herbert S., London, England. Apparatus for making pure carbonic acid	658,627	Sept. 25	2933	654	92	2449
Elworthy, Herbert S., London, England. Apparatus for making pure carbonic acid	658,628	Sept. 25	2940	655	92	2450
Elworthy, William, London, England. Apparatus for generating ozone	653,078	July 3	642	153	92	130
Ely, Edward O. (See Smith, Cyrus E., assignor.)						
Ely, William, Providence, R. I. Electric switch	654,239	July 24	2977	668	92	644
Emerick, George S., Philadelphia, Pa. Drying and cooling machine	654,093	July 17	2550	587	92	535
Emerson, George A. (See Brissette, Samuel J., assignor.)						
Emerson, Herbert G., assignor to S. F. Harlan, Louisville, Ky. Pool-ball rack	654,447	July 24	3383	760 761	92	730
Emerson Manufacturing Company. (See Waterman, Lewis E., assignor.)						
Emerson, William A., Sorrento, Fla. Wrench	653,767	July 17	1983	459	92	426
Emery, John G., Jr., Muskegon, Mich. Weighing-truck	656,717	Aug. 28	2925	668	92	1656
Emery, Walter E., West Chicago, Ill. Lock	656,958	Aug. 28	3418	779	92	1747
Emmens, Stephen H., New York, N. Y. Refrigerating and refrigerant	652,759	July 3	39	10	92	9
Emmer, Isaac, St. Louis, Mo. Duplex sign and show-case	658,359	Sept. 25	2457	543	92	2356
Emory, Dennis M., deceased, Syracuse, N. Y.; T. Emory, administrator. Envelop	657,214	Sept. 4	270	58	92	1857
Emory, Paschal P., Springfield, Mass. Stuff-chest for paper-mills	654,961	July 31	4354	980	92	946
Emory, Thomas, administrator. (See Emory, Dennis.)						
Empire Implement Manufacturing Company. (See Burck, John H., assignor.)						
Emrick, Asa W. (See Schwerd and Emrick.)						
Ender, Theodor, A. Kleindienst, and J. Procner, Pabianize, Russia. Wool-drying apparatus	658,106	Sept. 18	2010	438	92	2241
Endruweit, Carl, Berlin, Germany. Dynamo-brush	658,431	Sept. 25	2589	574	92	2381
Engel, Henry, assignor of one-half to A. Linn, Cleveland, Ohio. Liquid-tapping apparatus	655,672	Aug. 7	961	217	92	1228
England, William H. (See Légé and England.)						
Englebert, Louis G. M., The Hague, Netherlands. Bicycle-saddle	654,720	July 31	3892	878	92	847
Englebright, Frederick A., Farmington, Iowa. Gate	652,760	July 3	40	10	92	9
English, William J., assignor to J. S. MacCoy, New York, N. Y. Ribbon-feed for type-writers, hand-stamps, &c	657,161	Sept. 4	164	37	92	1834
Enis, Wiley P., Booneville, Miss. Combined scrubbing-brush and mop	654,345	July 24	3183	714	92	686
Enlind, Kanute A., Naugatuk, Conn. Non-slipping pneumatic tire	654,528	July 24	3521	794	92	756
Enloe, G. R. (See Packer, Oren A., assignor.)						
Ennis, Richard W., Buffalo, N. Y. Car-brake	653,443	July 10	1349	320 321	92	280
Enright, Patrick J., *et al.* (See Powers, Frank B., assignor.)						
Ensign, Caleb G., Madison, Ohio. Motor-vehicle wheel	658,249	Sept. 18	2261	497	92	2291
Ensign, George A., assignor to Defiance Machine Works, Defiance, Ohio. Machine for making wooden dishes	657,817	Sept. 11	1474	314 315	92	2119
Enterprise Manufacturing Company. (See Cade, William D., assignor.)						
Enterprise Optical Manufacturing Company. (See Roebuck and McMillan, assignors.)						
Entwisle, Edward B., Johnstown, Pa., assignor to Lorain Steel Company, of Pennsylvania. Railway-track structure	658,360	Sept. 25	2458	543	92	2356
Entz, Justus B., Philadelphia, Pa., assignor to American Alkali Company, of New Jersey. Electrolytic production of caustic soda, &c	652,761	July 3	42	10	92	9
Epstein, Morris, New York, N. Y. Match-box	657,267	Sept. 4	383	80	92	1678
Erb, William B., Chicago, Ill. Lubricator and piston-rod packing	655,212	Aug. 7	63	14	92	1053
Erben, Hermann F. T., and W. B. Potter, Schenectady, N. Y., assignors to General Electric Company, of New York. Brush-holder	655,824	Aug. 14	1273	292	92	1302
Erben, Walter, Philadelphia, Pa. Extracting grease from wool	654,529	July 24	3522	794	92	757
Erben, Walter, Philadelphia, Pa. Apparatus for extracting grease from wool	654,530	July 24	3525	794 795	92	757
Erfmann, Ferdinand R. K., Rotterdam, Netherlands. Chemical apparatus	658,250	Sept. 18	2263	497	92	2291
Erichsen, Henry F., *et al.* (See Miller, Allen L., assignor.)						
Erickson, John, and J. M. Edmondson, assignors to J. Martin, Gardner, N. D. Band-cutter and feeder	656,447	Aug. 21	2444	562	92	1543
Ericson, August, San Francisco, Cal. Door-bolt	654,579	July 24	3604	811	92	772
Ericson, John V. (See Newberry and Ericson.)						
Erisman, Clem, assignor to F. M. Pratt, Decatur, Ill. Extracting oil	653,213	Aug. 7	65	14	92	1053
Erk, William, Philadelphia, Pa. Safety attachment for pocket-books	654,143	July 24	2696	614	92	584
Erwin, W. J., *et al.* (See Galbraith, Oscar B., assignor.)						
Escher, Gustave E., New York, N. Y. Means for suspending or supporting ceilings	657,923	Sept. 18	1673	361	92	2173
Eskholme, John W. (See Elliott and Eskholme.)						
Espey, Eli C., and R. W. Harris, Pleasanton, Kans. Sewing-awl	655,548	Aug. 7	666	152	92	1171
Essex, George B., assignor to Michigan Lubricator Company, Detroit, Mich. Lubricator	657,924	Sept. 18	1674	361	92	2173
Essig, Ozia A., Canton, Ohio. Window	655,897	Aug. 14	1392	321	92	1324
Esterbrook, Mary N., New York, N. Y. Tape-needle	655,333	Aug. 7	301	67	92	1099
Estes, Delbert J., assignor to L. L. Estes, Opdyke, Ill. Wheel and axle-nut wrench	654,240	July 24	2979	668	92	645
Estes, Lettie L. (See Estes, Delbert J., assignor.)						
Estill, Harry V., Moberly, Mo. Meter connection, meter and stop-cock box	654,615	July 31	3695	833	92	808
Etly, David J., Louisville, Ky. Apparatus for curing tobacco artificially	655,214	Aug. 7	66	14, 15	92	1054
Ettinger, Samuel F., Little Rock, Ark. Hitching device	655,858	Aug. 14	1327	304	92	1312
Ettinger, Samuel F., assignor of thirty-three fiftieths to H. S. Dukes and J. A. Williams, Little Rock, Ark. Type-writer-ribbon clamp	653,796	July 17	2047	466	92	438
Eubank, Thomas, assignor to American Car and Foundry Company, St. Louis, Mo. Baggage-car floor	656,448	Aug. 21	2448	563	92	1544
Eugene Dietzgen Company. (See Dannheiser, Joseph M., assignor.)						
Eugert, Charles, New York, N. Y. Folding voting-booth	654,962	July 31	4355	980	92	946

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Eulert, Ernst, and A. Wallenstein, New York, N. Y. Stringed musical instrument	653,550	July 10	1557	362	92	328
Evans, Frederick W., assignor to Evans, Grove & Everett, St. Louis, Mo. Device for promoting growth of hair	655,481	Aug. 7	570	127	92	1152
Evans, George E., assignor to Kingman Plow Company, Peoria, Ill. Cultivator	657,313	Sept. 4	467	99	92	1898
Evans, George H., Oroville, assignor to Risdon Iron and Locomotive Works, San Francisco, Cal. Hydraulic elevator	655,615	Aug. 7	804	187	92	1196
Evans, George W. (See Hamill, Robert J. W., assignor.)						
Evans, Grove & Everett. (See Evans, Frederick W., assignor.)						
Evans, Gustavus A., Nelson, Canada. Perforator	654,963	July 31	4355	981	92	946
Evans, James M., Marquette, Mich. Rotary engine	656,694	Aug. 28	2880	655	92	1647
Evans, James S. (See Farr and Evans.)						
Evans, Jesse C. (See Evans, John P., assignor.)						
Evans, John P., assignor of one-half to J. C. Evans, Charlton, Iowa. Automatic driving-box wedge	653,079	July 3	644	153	92	130
Evans, Joseph G., Waitsburg, Wash. Weed-cutter	655,924	Aug. 14	1447	332 333	92	1386
Evans, Louis C. (See Crain, Evans, and Dodson.)						
Evans, Mary N., administratrix. (See Norman, Hattie M.)						
Evans, Nathan B., assignor to B. K. Smith and F. A. Fairbrother, Jr., Providence, R. I. Apparatus for perforating designs in sheet metal	658,082	Sept. 18	1974	430	92	2234
Evans, Robert D., *et al.* (See Monahan, Richard C., assignor.)						
Evans, Rush E. (See Dyer, Samuel, assignor.)						
Evans, Samuel, assignor of one-half to C. L. Rawson, Chicago, Ill. Illuminated sign	653,008	July 3	514	122	92	104
Evans, Samuel J., Roanoke, Va. Stamp-canceling and postmarking machine	654,144	July 24	2697	615 616	92	584
Evans, Walter, and J. H. S. Asquith, Halifax, England. Fare-box	658,551	July 10	1558	363	92	328
Everett, Otis W., Worcester, Mass. Roller-skate	655,673	Aug. 7	962	217	92	1228
Everson, Ever, Mankato, Kans. Water-motor	657,528	Sept. 11	956	197	92	2016
Ewin, James L. (See Harrison, George R., assignor.)						
Eynon, William H., and D. Duckett, Cleveland, Ohio. Game apparatus	655,768	Aug. 14	1140	262	92	1275
F. H. Gilson Company. (See Gilson, Franklin H., assignor.) (Reissue.)						
F. H. Lummus Sons Company. (See Talton, Vander H., assignor.)						
F. Wesel Manufacturing Company. (See Winter, Hermann, assignor.)						
Fabens, George C. (See Winckfield, George W., assignor.)						
Fackler, George W. (See Bilgram and Schehl, assignors.)						
Fahlstrom, Emil, and F. W. Lusebrink, Bridgeport, Conn. Handle-bar and seat post binder	652,956	July 3	438	103	92	88
Fähndrich, Walther, Hamburg, Germany, assignor to C. W. Kemp, Birmingham, England. Suspension-lamp	657,486	Sept. 4	867	175 176	92	1987
Fahnenfeld, Anton C., von Schloss Thurn, near Laybach, and E. S. von Wolfersgrün, Laybach, Austria-Hungary. Tube-igniter for explosive-engines	653,341	July 10	1179	281	92	246
Fain, Josiah, and M. Herstrom, Denver, Colo. Voting-machine	652,915	July 3	310	77, 78	92	62
Fairbanks, Crawford M., Central Falls, R. I. Gate for open cars	656,183	Aug. 21	1954	448	92	1451
Fairbanks, Morse & Company. (See Hobart, Frank G., assignor.)						
Fairbrother, Frederic A., Jr., *et al.* (See Evans, Nathan B., assignor.)						
Fairchild, Frank J., Wyandotte, Mich. Trolley-catcher	657,342	Sept. 4	525	108	92	1905
Fairchild, George H., assignor to Market Street Railway Company, San Francisco, Cal. Railway-switch	657,099	Sept. 4	51	12	92	1812
Fairchild, Oren J., Jamestown, N. Y. Explosive-engine	656,101	Aug. 14	1809	417	92	1410
Fairfax, Henry. (See Fairfax, John W., assignor.)						
Fairfax, John W., Freestone Point, assignor to H. Fairfax, Aldie, Va. Mail-bag closure	656,898	Aug. 21	2350	540	92	1527
Fairie, John. (See Ausboro, Thomas, assignor.)						
Falcon, Joseph G., Evanston, Ill. Pile-holder for pile-driving machines	657,980	Sept. 18	1803	389	92	2201
Falconer, William, Selma, Cal. Grain-drill attachment	655,334	Aug. 7	302	68	92	1099
Faller, Ernest A., assignor of one-half to J. W. Chisholm, San Francisco, Cal. Multiplex telephony	655,651	Aug. 7	909	208	92	1218
Fancher, George, Greenwich, Ohio. Hernial truss	657,404	Sept. 4	649	135	92	1930
Farbenfabriken of Elberfeld Company. (See Bammann and Davidis, assignors.)						
Farbenfabriken of Elberfeld Company. (See Bammann, Davidis, and Vorster, assignors.)						
Farbenfabriken of Elberfeld Company. (See Bonhoeffer, Otto, assignor.)						
Farbenfabriken of Elberfeld Company. (See Demuth, Robert, assignor.)						
Farbenfabriken of Elberfeld Company. (See Goebel, Ernst, assignor.)						
Farbenfabriken of Elberfeld Company. (See Heymann and Herre, assignors.)						
Farbenfabriken of Elberfeld Company. (See Israel and Kothe, assignors.)						
Farbenfabriken of Elberfeld Company. (See Nastvogel, Oscar, assignor.)						
Farbenfabriken of Elberfeld Company. (See Ott and Volger, assignors.)						
Farbenfabriken of Elberfeld Company. (See Ott, Israel, and Kothe, assignors.)						
Farbenfabriken of Elberfeld Company. (See Schmidt, Robert E., assignor.)						
Farbenfabriken of Elberfeld Company. (See Schmidt and Tust, assignors.)						
Farbenfabriken of Elberfeld Company. (See Unger, Oskar, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Gussmann, Hermann, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Laubmann, Heinrich, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Schmidt, Albrecht, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Scholl, Franz, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Schwan and Zedel, assignors.)						
Farmer, Chester G., Pulaski City, Va. Derrick	652,762	July 3	44	11	92	9
Farmer, John P., Portland, Oreg. Gas-burner	653,571	July 10	1565	371	92	331
Farmer, John P., assignor of one-half to C. F. Adams, Portland, Oreg. Gas-stove burner	653,622	July 10	1663	389	92	346
Farmer, John R., assignor of two-thirds to A. Boettler and H. F. W. Ruhe, St. Louis, Mo. Dough-mixing machine	656,602	Aug. 21	2733	626	92	1604
Farnham, Bion B., New York, N. Y. Expansible pulley	652,763	July 3	46	11	92	10
Farr & Bailey Manufacturing Company. (See Rich, George K., assignor.)						
Farr, John H., and J. S. Evans, Detroit, Ala. Pea sheller and thresher	656,533	Aug. 21	2595	598	92	1574
Farrall, George A., and C. Maul, assignors to Johnston Harvester Company, Batavia, N. Y. Bundle-carrier for harvesters	656,784	Aug. 28	3037	692	92	1677
Farrall, George A., and C. Maul, assignors to Johnston Harvester Company, Batavia, N. Y. Corn-harvester	657,215	Sept. 4	270	58	92	1857
Farrall, George A., and C. Maul, assignors to Johnston Harvester Company, Batavia, N. Y. Corn-harvester	657,651	Sept. 11	1174	246	92	2059
Farrar, Benjamin F., Springfield, Mass. Faucet or valve	653,080	July 3	645	154	92	180
Farrel Foundry and Machine Company. (See Fillingham, Myles P., assignor.)						
Farrell, Owen V., Deposit, N. Y. Ink-well	653,990	July 17	2385	549	92	508
Farwell, George F., *et al.* (See Maxwell, Herbert A., assignor.)						
Fassett, James H., Nashua, and J. E. Warren, Greenfield, N. H. Machine for fastening stiffeners to shanks	656,184	Aug. 21	1955	449	92	1451

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fauck, Albert and Albert, Jr., Marienkowice, Austria-Hungary. Well-boring apparatus	658,144	Sept. 18	2070	451	92	2252
Faulkner, John, Scottdale, Pa. Boot or shoe sole protector	653,552	July 10	1559	363	92	323
Favour, Frank, *et al.* (See Koscialowski, Philip L., assignor.)						
Favour, Frank, assignor, by mesne assignments, of one-half to H. C. Mitchell, Rochester, N. Y. Puzzle	658,083	Sept. 18	1978	431	92	2235
Fawcett, James F., assignor of one-half to J. Hamilton, Pittsburg, Pa. Hoisting device for tin-plate machinery	657,925	Sept. 18	1677	361 362	92	2173
Faxon, William L., assignor of one-half to C. H. Leonard, T. S. Hodgson, Middleborough, and I. Sampson, Lakeville, Mass. Hand weeding-tool	653,019	July 3	546	128	92	109
Fay, John F., assignor of one-half to W. S. Vaughan, Geyserville, Cal. Vineyard-harrow	655,850	Aug. 14	1328	304	92	1312
Faye, John P., Binghamton, assignor to National Car Truck Company, Port Byron, N. Y. Radial car-truck	656,885	Aug. 28	3286	747	92	1723
Featherson, Maurice. (See Philippi, Jacob, assignor.)						
Featherston, Joseph E., *et al.* (See Foster, Abraham G. W., Sr., assignor.)						
Fechtig, Louis R., *et al.* (See Hall, Mary J., assignor.)						
Fedderman, John, Harrisburg, Pa. Corn harvester and shocker	653,081	July 3	646	154	92	131
Fee, Franklin W., assignor of one-half to G. Malion, Cincinnati, Ohio. Huller	656,246	Aug. 21	2079	476	92	1474
Fefel, Henry H., New York, N. Y., assignor to Multiple Power Company, of West Virginia. Overseaming sewing-machine	657,926	Sept. 18	1678	362 363	92	2174
Fefel, Henry H., New York, N. Y., assignor to Multiple Power Company, of West Virginia. Boat propulsion	658,629	Sept. 25	2946	655	92	2451
Felten, Phillip, assignor of five-sixths to G. E. Mittinger, Jr., Cleveland, Ohio. Fat-separating machine	653,137	July 3	760	178 179	92	152
Felbel, Jacob, New York, N. Y. Type-writing machine	657,927	Sept. 18	1681	363 364 365 365	92	2174
Felbel, Jacob, New York, N. Y. Type-writing machine	657,928	Sept. 18	1693	366 367	92	2178
Feldkircher, Louis J., Nashville, Tenn. Refrigerator	657,929	Sept. 18	1712	367 368	92	2184
Feldkircher, Louis J., Nashville, Tenn. Refrigerator	657,930	Sept. 18	1713	368 369	92	2184
Felkins, James M., Americus, Mo. Box-fastener	657,865	Sept. 11	1562	337	92	2138
Felson, Arthur M., Gouverneur, N. Y. Spectacle-attacher	658,630	Sept. 25	2947	656	92	2452
Felton, Ralph P., Minneapolis, Minn. Weighing and recording scale	655,966	Aug. 14	1541	355 356	92	1354
Felton, Ralph P., Minneapolis, Minn. Gate and cut-off for hoppers or storage-bins	655,967	Aug. 14	1546	356	92	1355
Fenley, Harriet R., Dallas, Tex. Adjustable nailless horseshoe	657,405	Sept. 4	649	135	92	1031
Ferguson, Alexander, Odell, Ill. Hay-rack	656,449	Aug. 21	2449	563	92	1544
Ferguson, Arthur C., New York, N. Y. Graphophone	653,667	July 17	1804	414	92	392
Ferguson, Martin, Poplar Bluff, Mo. Veneer-barrel-heading self-fastener and holder combined	658,707	Sept. 25	3088	688	92	2479
Ferguson, Martin D., Knoxville, Tenn. Watch-chain bar	652,764	July 3	47	11	92	10
Ferguson, Thomas, Parkersburg, and G. B. Brace, Cedar Falls, Iowa. Gate. (Reissue)	11,854	Sept. 11	1632	352	92	2153
Fernstrom, Herman, assignor to A. L. Ide & Sons, Springfield, Ill. Bearing	655,396	Aug. 7	417	92	92	1120
Feroe, Alfred E., Tivoli, N. Y. Ale or beer filter	654,788	July 31	4025	906 907	92	874
Ferrandini, Leon, *et al.* (See Schneider, George, assignor.)						
Ferrari, Charles. (See Kleinfeldt, Arthur, assignor.)						
Ferres, Ainslie W. (See Ferres, Jeffrey T. and A. W.)						
Ferres, Jeffrey T., Anderson, Ind. Apparatus for making corrugated paper	657,100	Sept. 4	52	12, 13	92	1812
Ferres, Jeffrey T., Anderson, Ind., assignor to J. W. Sefton Manufacturing Company, Anderson, Ind., and Chicago, Ill. Paper-cutting machine	654,904	July 31	4357	981	92	946
Ferres, Jeffrey T. and A. W., Anderson, Ind. Apparatus for making corrugated paper	654,884	July 31	4225	950	92	919
Ferris, Henry L., Harvard, Ill. Hay-carrier	652,839	July 3	192	44	92	39
Ferris, William J., Woonsocket, R. I. Stop-motion for circular-knitting machines	658,251	Sept. 18	2264	498	92	2291
Ferry, George B., Cleveland, Ohio. Butter-cutter	653,991	July 17	2386	549	92	504
Fesler, Martin, Salt Lake City, Utah. Lunch-carrier	657,589	Sept. 11	958	197	92	2016
Fessenden, Reginald A., Allegheny, Pa. Induction-coil	654,390	July 24	3274	734 735	92	708
Fetters, Charles A., *et al.* (See Miller, Charles F., assignor.)						
Fichter, George, Lynn, Mass. Electric clock	657,694	Sept. 11	1260	268	92	2075
Fickenscher, Fredrick, Lock Haven, Pa. Flue or chimney cap	653,782	July 17	1993	441	92	414
Fickett, James A., *et al.* (See Mayhew, Charles L., assignor.)						
Fiedler, Emil. (See Hertel, Franz J., assignor.)						
Fiedler, Richard, Berlin, Germany. Steam-generator	658,005	Sept. 18	1842	398	92	2209
Field, Albert D., F. Marggraff, and J. Draher, assignors to Shoe Hardware Company, Waterbury, Conn. Metal-working machine	654,616	July 31	3698	834 835 836 837	92	806
Field & Co., Marshall. (See Elliott, Edward E., assignor.)						
Field, Cyrus W. (See Murray and Field.)						
Field, George W., North Branch, N. J. Corking attachment for bottle-filling machines	657,981	Sept. 18	1716	369	92	2185
Fields, Charles C., Baltimore, Md. Letter-carrier's table	653,004	July 3	517	123	92	104
Fieroe, Mary E., *et al.* (See Monand, Ragland, assignor.)						
Fiers, Thomas W., Newark, N. J. Sinker for fish-lines	653,020	July 3	547	128	92	109
Fike, William H., Iberia, Mo. Inhaler	657,866	Sept. 11	1563	337	92	2138
Filer & Stowell Company. (See Neacy, Thomas J., assignor.)						
Fillingham, Myles P., assignor to Farrel Foundry and Machine Company, Ansonia, Conn. Endless-belt press	653,553	July 10	1560	363 364	92	323
Filstrup, L. L. (See Schofield, Henry P., assignor.)						
Filstrup, Lars L., assignor of one-half to H. P. Schofield, Chicago, Ill. Saw-sharpening machine	654,829	July 31	4109	925	92	894
Finch, Abram F. (See Allen and Finch.)						
Fink, Edward, Milwaukee, Wis. Extracting copper or other metals from tailings or ores of such metals	653,414	July 10	1297	.....	92	269
Fink, William P., Caperton, W. Va. Ball-caster	653,381	July 10	1246	266	92	260
Finn, Edwin, assignor to Stimpson Computing Scale Company, Elkhart, Ind. Scale-loop	652,957	July 3	439	103	92	88
Finn, Hugh J., Kansas City, Mo. Curing meat	654,885	July 31	4227	.....	92	919
Fire Extinguisher Manufacturing Company. (See Steck, Ernst F., assignor.)						
Firlinger, Anton. (See Flich and Firlinger.)						
Firm, Joseph L., Jersey City, N. J., assignor to Goss Printing Press Company, Chicago, Ill. Printing-machine	652,765	July 3	48	12	92	10
Firm, Joseph L., Jersey City, N. J., assignor to Goss Printing Press Company, Chicago, Ill. Printing-machine	658,209	Sept. 18	2192	479 480	92	2278

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fischer, August, *et al.* (See Fischer and Vogel, assignors.)						
Fischer, August, *et al.* (See Vogel, William, assignor.)						
Fischer & Bennett. (See Fischer, Sophian E., assignor.)						
Fischer, Bernhard, Mannheim, Germany. Malt-drying apparatus	657,764	Sept. 11	1385	298	92	2101
Fischer, Frank, *et al.* (See Fischer and Vogel, assignors.)						
Fischer, Frank, *et al.* (See Vogel, William, assignor.)						
Fischer, Gustav, Schöneberg, Germany. Brake mechanism for carriages	656,450	Aug. 21	2451	563	92	1545
Fischer, Henry, *et al.* (See Ledvina, George E., assignor.)						
Fischer, Herman C. (See Brooks and Fischer.)						
Fischer Manufacturing Company. (See Vogel, William, assignor.)						
Fischer Manufacturing Company, *et al.* (See Vogel, William, assignor.)						
Fischer, Sophian E., Hayward, assignor to Fischer & Bennett, San Francisco, Cal. Sight for firearms	658,708	Sept. 25	3088	689	92	2479
Fischer, Sophian E., Hayward, assignor to Fischer & Bennett, San Francisco, Cal. Quick-adjusting gun-sight	658,709	Sept. 25	3090	689	92	2480
Fischer, William, Sr., *et al.* (See Vogel, William, assignor.)						
Fischer, William, Sr., and William, Jr., Paterson, N. J., assignors, by mesne assignments, to American Automatic Loom Company, of New Jersey. Loom	653,225	July 10	942	227	92	202
Fischer, William, Sr., and W. Vogel, assignors, by mesne assignments, to W., Sr., F., A., and W. Fischer, Jr., Paterson, N. J. Machine for cutting double-pile fabrics	655,674	Aug. 7	963	218	92	1228
Fishburn, Moses P., Yellville, Ark. Hammock	656,534	Aug. 21	2498	508	92	1575
Fishell, Eugene M., assignor to National Carbon Company, Cleveland, Ohio. Voltaic cell	655,968	Aug. 14	1548	356	92	1355
Fisher, Abel, Wellsville, Ohio. Apparatus for spraying paint	653,292	July 10	1076	258	92	228
Fisher, Arthur H., Melbourne, Victoria. Sash-cord fastener	656,320	Aug. 21	2211	506	92	1409
Fisher, Christian J. (See Gray, William F., assignor.)						
Fisher, Frederick A., assignor of one-half to R. E. and W. L. Conwell, Provincetown, Mass. Stuffing-box for ammonia-compressors	657,343	Sept. 4	527	109	92	1905
Fisher, Henry C., *et al.* (See Foster, Abraham G. W., Sr., assignor.)						
Fisher, Jacob. (See Thomas and Fisher.)						
Fisher, John V. (See Shives, Peter P., assignor.)						
Fisher, Michel J., Utica, N. Y. Knitting-machine	656,535	Aug. 21	2599	598 599	92	1575
Fisher, Robert J., Athens, Tenn., assignor to Fisher Typewriter Company, of Tennessee. Type-writing machine. (Reissue)	11,848	Aug. 21	2769	634	92	1612
Fisher, Robert J., Athens, Tenn., assignor to Fisher Typewriter Company, of Tennessee. Type-writing machine. (Reissue)	11,850	Sept. 4	895	181 182	92	1068
Fisher, S. H., *et al.* (See Mead, William M., assignor.)						
Fisher, Theodore B., Delavan, Ill. Magazine-binder	654,145	July 24	2702	616	92	585
Fisher Typewriter Company. (See Fisher, Robert J., assignor.) (Reissue.)						
Fisher Typewriter Company. (See Laganke, Charles F., assignor.)						
Fisk, Edwin A., *et al.* (See Brown, Thomas T., assignor.)						
Fitts, Mary C., and E. K. Zingg, Salamanca, N. Y. Artificial composite fuel	655,215	Aug. 7	71	.....	92	1055
Fitzgerald, John T., and J. S. Ramsey, Bells, Tex. Seeder	655,397	Aug. 7	420	92	92	1121
Fitzgerald, John W., Kern, Cal. Tamping-roller	654,617	July 31	3711	838	92	811
Fitzgibbons, David, Oswego, N. Y. Boiler	656,536	Aug. 21	2602	599	92	1576
Fjeld, Olnf O., Mayville, N. D. Grain-separator	656,102	Aug. 14	1814	418	92	1411
Flanagan, Thomas J., *et al.* (See Powers, Frank B., assignor.)						
Flanders, George A., Chetek, Wis. Plow attachment	656,847	Aug. 21	2269	520	92	1510
Fleck, Carl J. E., Hamburg, Germany. Counting-board	653,902	July 17	2389	550	92	504
Fleck, Carl J. E., Hamburg, Germany. Signal-bell	656,768	Aug. 28	3009	686	92	1671
Fleisch, Jacob H., New York, N. Y. Display-frame	653,138	July 3	762	179	92	152
Fleischmann, Lionel, Schenectady, N. Y., assignor to General Electric Company, of New York. Automatic circuit-interrupter	656,451	Aug. 21	2452	563	92	1545
Fleming, Henry L., New York, N. Y. Smoke-consuming apparatus	658,482	Sept. 25	2590	575	92	2381
Fleming, John A., London, England. Electric-arc lamp	653,572	July 10	1597	371	92	331
Fleming, John J. (See Phillips and Fleming.)						
Fletcher, James S. (See Fletcher, Sidney S., assignor.)						
Fletcher, Sidney S., assignor to J. S. Fletcher, Chicago, Ill. Shafting for machinery	656,718	Aug. 28	2927	669	92	1656
Flich, Franz, and A. Firlinger, Neunkirchen, Austria-Hungary. Seeding attachment for plows	656,579	Aug. 21	2686	616	92	1594
Flinker, Leon, Columbus, Ohio. Safety-guard attachment for razor-blades. (Reissue)	11,853	Sept. 4	904	183	92	1995
Flint, Frederick W., Chicago, Ill. Fluid-pressure motor	654,721	July 31	3893	878 879	92	848
Florence Manufacturing Company. (See Schwartz, Herman M., assignor.)						
Flowers, Polk H., Centreville, Tenn. Eyeglasses	656,390	Aug. 21	2352	540	92	1527
Floyd, John, Washington, D. C. Switch for suspended electric conductors	655,216	Aug. 7	72	15	92	1055
Floyd, John, Washington, D. C. Crossing for suspended electric conductors	655,217	Aug. 7	73	15	92	1055
Floyd, Nathaniel S. (See Brown, George R., assignor.)						
Foerster, Alice B. S. P., *et al.* (See Vogel, William, assignor.)						
Fogler, George L., assignor of one-half to O. D. Swett, Washington, D. C. Smoke and gas burner	655,925	Aug. 14	1448	333	92	1336
Folsom, Charles G., South Bend, Ind. Letter-box	655,898	Aug. 14	1394	321	92	1324
Fondu, Jean B., Vilvorde, Belgium. Machine for molding articles from molten glass	658,173	Sept. 18	2132	463 464 465	92	2206
Fonseca, Francisco E., New York, N. Y. Wrapper for cigars	655,549	Aug. 7	667	152	92	1171
Foote, Frederick H. (See Gasche and Foote.)						
Foote, James H., Cincinnati, Ohio. Weather-strip	656,634	Aug. 28	2792	638	92	1628
Forbes, John S. (See Waterhouse and Forbes.)						
Forbes, John W., assignor of two-thirds to W. E. Pettit, Binghamton, N. Y. Window-shade fixture	658,317	Sept. 18	2369	523	92	2312
Forbes, Walter T., Atlanta, Ga. Bale-tie	653,226	July 10	945	228	92	202
Force, William A. (See Pickup, George A., assignor.)						
Ford, Albert J., assignor to Fuchs & Lang Manufacturing Company, New York, N. Y. Bronzing-machine	653,952	July 17	2320	531 532	92	490
Ford, Eliot E., assignor of one-half to H. Johnson, Rahway, N. J. Filling-head for bottling apparatus	658,210	Sept. 18	2197	480	92	2278
Ford, Eliot E., assignor of one-half to H. Johnson, Rahway, N. J. Filling-head for bottling apparatus	658,211	Sept. 18	2200	481	92	2279
Ford, George A., Cleveland, Ohio Storage battery	655,769	Aug. 14	1141	262	92	1275
Ford, John C., assignor to W. Winkler, Macon, Mo. Buggy-top raiser	655,770	Aug. 14	1142	262	92	1275
Ford, Stonewall J., Jacksonville, Fla. Bicycle attachment	653,415	July 10	1299	308	92	269
Ford, William B., Decatur, Ill. Right and left basin-cock	658,252	Sept. 18	2267	498	92	2292

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ford, William H., assignor of one-half to C. W. Russell, Lowell, Mass. Ring-stamping apparatus	658,736	Sept. 25	3146	698	92	2491
	658,542	Sept. 25	2765	699	92	2416
Fordyce, Edmond A., Chicago, Ill. Pneumatic hammer	653,768	July 17	1984	614	92	426
Foreaker, John C., Joplin, Mo. Scaffold	656,815	Aug. 28	3100	453	92	1689
Foreman, Stanton, assignor to Schaw, Ingram, Batcher & Co., Sacramento, Cal. Hydraulic riveting apparatus	652,840	July 3	194	705	92	40
Foresman, Harry L., South Williamsport, Pa. Calk-attaching clamp	656,103	Aug. 14	1818	419	92	1412
Forker, M. Torbett. (See Forker, William H., assignor.)	658,710	Sept. 25	3092	689	92	2480
Forker, William, and W. Mitchell, Glenwood Springs, Colo. Miner's or camp stove	658,711	Sept. 25	3093	690	92	2480
Forker, William H., assignor of one-half to M. T. Forker, Meadville, Pa. Apparatus for cutting ovals from cardboard	655,436	Aug. 7	495	111	92	1136
Forker, William H., assignor of one-half to M. T. Forker, Meadville, Pa. Apparatus for cutting ovals from cardboard	655,771	Aug. 14	1143	262	92	1275
Formel, Julius Z., Saratoga Springs, N. Y. Apparatus for purifying natural mineral waters	653,993	July 17	2390	550	92	504
Forney, Elias. (See Strand, John P., assignor.)	652,766	July 3	53	13	92	11
Forney, Matthias N., New York, N. Y., assignor to S. G. Scarritt, St. Louis, Mo. Car-seat	653,227	July 10	946	228	92	202
Forry, George C., St. Louis, Mo., assignor of one-half to R. M. Rogers, Chicago, Ill. Supporting-frame for vehicle-covers	657,268	Sept. 4	385	80	92	1878
Forster, Thomas G., Newton, Kans. Boiler-cleaner	657,269	Sept. 4	387	81	92	1878
Forster, William E., Lynn, Mass., assignor to United Shoe Machinery Company, Paterson, N. J. Shoe-jack	655,675	Aug. 7	965	218	92	1229
Forsyth, George H., Chicago, Ill., assignor, by mesne assignments, to Curtain Supply Company, Chicago, Ill., and Jersey City, N. J. Shade-holding mechanism	657,867	Sept. 11	1565	338	92	2138
Forsyth, George H., Chicago, Ill., assignor, by mesne assignments, to Curtain Supply Company, Chicago, Ill., and Jersey City, N. J. Curtain-fixture	658,631	Sept. 25	2948	656	92	2452
Forsythe, Lee K., Battle Creek, Mich. Fence-post	657,652	Sept. 11	1177	246	92	2060
Forsythe, Lee K., Battle Creek, Mich. Artificial-stone base	655,772	Aug. 14	1144	263	92	1275
Forsythe, Lee K., Battle Creek, Mich. Base for poles or posts	655,909	Aug. 14	1549	357	92	1356
Forsythe, Lee K., Battle Creek, Mich. Feed-mill	658,253	Sept. 18	2268	499	92	2292
Fort Wayne Smelting and Refining Works. (See Goldberger, Maurice, assignor.)	655,616	Aug. 7	805	187	92	1196
Forth, Charles, Elizabeth, assignor to E. P. Reichhelm, Bayonne, N. J. Carbureter	655,617	Aug. 7	809	188	92	1197
Foss, William A., assignor to American Toll Telephone Company, Cleveland, Ohio. Telephone-toll apparatus	655,550	Aug. 7	668	152	92	1171
Foster, Aaron T., Chillicothe, Ohio. Feed-mill	657,100	Sept. 4	228	50	92	1847
Foster, Abraham G. W., Sr., Powellville, assignor to H. C. Fisher and J. E. Featherston, Newnan, Ga. Corn and cotton fender	657,466	Sept. 4	651	136	92	1931
Foster, Charles F., assignor to Foster Machine Company, Westfield, Mass. Spooling-machine	654,057	July 17	2493	514	92	524
Foster, Charles F., assignor to Foster Machine Company, Westfield, Mass. Spooling-machine	658,543	Sept. 25	2767	614	92	2416
Foster Engineering Company. (See Cash, Arthur W., assignor.)	653,668	July 17	1807	414	92	393
Foster Machine Company. (See Foster, Charles F., assignor.)	657,653	Sept. 11	1180	247	92	2060
Foster, Thomas G., Peterborough, Canada. Snap-hook	657,654	Sept. 11	1182	247	92	2060
Fouch, William B., assignor of one-half to G. M. Twilling, Tipton, Ind. Window-bracket	657,695	Sept. 11	1202	268	92	2075
Fouts, Hiram C., Emory, Tex. Fifth-wheel	656,452	Aug. 21	2453	564	92	1545
Fowle, Charles L., assignor to Dowagiac Manufacturing Company, Dowagiac, Mich. Grain-drill	655,652	Aug. 7	925	209	92	1220
Fowle, E. Perley, *et al.* (See Pickard, Edward R., assignor.)	656,959	Aug. 28	3415	779	92	1748
Fowler, Charles M. (See Don and Fowler.)	656,537	Aug. 21	2604	599	92	1576
Fowler, Coleman L., Chicago, Ill. Panoramic display device	653,797	July 17	2048	466	92	438
Fowler, Edward, assignor of one-half to T. B. and J. L. Simmons, Cedar Grove, Ga. Plow	653,798	July 17	2049	467	92	439
Fowler, Edward, assignor of one-half to T. B. and J. L. Simmons, Cedar Grove, Ga. Plow	657,194	Sept. 4	230	51	92	1847
Fowler, Herbert R., Clintonville, Conn. Hand-cultivator	656,785	Aug. 28	3039	692	92	1677
Fowler, John W., Auckland, New Zealand. Means for securing ships' screw-propellers upon their shafts	652,960	July 3	443	104	92	89
Fowler, Jonathan O., Jr., New York, N. Y. Type-writing machine	655,069	July 31	4564	1028	92	990
Fowler, Walter B., Lawrence, Mass. Draft-regulator	657,653	Sept. 11	1180	247	92	2060
Fox, Bonham M. (See Locklin and Fox.)	657,654	Sept. 11	1182	247	92	2060
Fox, Elgie, Rushville, Ind. Conduit for distributing fluids	657,695	Sept. 11	1202	268	92	2075
Fox, Herbert. (See Wooley and Fox.)	656,452	Aug. 21	2453	564	92	1545
Fox Machine Company. (See Fox, Barrett, and Ray, assignors.)	655,652	Aug. 7	925	209	92	1220
Fox Machine Company. (See Fox, William R., assignor.)	656,959	Aug. 28	3415	779	92	1748
Fox, William R., assignor to Fox Machine Company, Grand Rapids, Mich. Trimming machine	656,537	Aug. 21	2604	599	92	1576
Fox, William R., assignor to Fox Machine Company, Grand Rapids, Mich. Tubular rivet	653,797	July 17	2048	466	92	438
Fox, William R., assignor to Fox Machine Company, Grand Rapids, Mich. Fastening device for type-writer covers	653,798	July 17	2049	467	92	439
Fox, William R., G. J. Barrett, and A. D. Ray, assignors to Fox Machine Company, Grand Rapids, Mich. Type-writing machine	657,194	Sept. 4	230	51	92	1847
Foyer, Melvin J., Chicago, Ill. Pneumatic conveyer	656,785	Aug. 28	3039	692	92	1677
Frame, Jacob, assignor to M. L. Frame, Toledo, Ohio. Napkin-ring	652,960	July 3	443	104	92	89
Frame, Marie L. (See Frame, Jacob, assignor.)	655,069	July 31	4564	1028	92	990
France, Jason G., assignor of one-half to J. R. Pearsall, Syracuse, N. Y. Coin-assorting device	657,902	Sept. 11	1624	350	92	2151
Francis, Charles E., Cincinnati, Ohio. Glue-spreader	655,482	Aug. 7	571	127	92	1152
Francis, Edward S., Hartford, Conn. Coupling for electric conduits	657,732	Sept. 11	1332	282	92	2089
Francis, John S., Bloomington, Ill. Car-brake	654,241	July 24	2980	669	92	645
Francis, William H., Swansea, England. Holder for pencil-leads, crayons, leads, &c	654,722	July 31	3896	879	92	848
Francis, William H., Philadelphia, Pa. Disinfecting apparatus	655,070	July 31	4565	1028	92	990
Franck, Emil J., Philadelphia, Pa. Knitting-machine	656,588	Aug. 21	2605	599	92	1576
Frank Mossberg Company. (See Brink, Carl A., assignor.)	655,773	Aug. 14	1151	263	92	1277
Frank, William M., assignor to A. C. Evans Manufacturing Company, Springfield, Ohio. Corn-planter	654,965	July 31	4363	981	92	948
Franke, August H., St. Louis, Mo. Oil-separator						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Frankenberg, Frederick G., Chicago, Ill. Automobile	655,702	Aug. 14	1008	231	92	1248
Franks, Peter A., assignor of two-thirds to H. H. Lininger and F. A. Smith, Galion, Ohio, Door-check	654,723	July 31	3897	889	92	848
Franzheim, Charles W., Wheeling, W. Va. Water-closet	658,484	Sept. 25	2669	593	92	2396
Fraser & Chalmers. (See Behr, Hans C., assignor.)	655,335	Aug. 7	303	68	92	1100
Fraser, Ethelbert M., San Francisco, Cal., assignor, by mesne assignments, to Otis Elevator Company, of New Jersey. Motor-starter	655,336	Aug. 7	309	68	92	1101
Fraser, Ethelbert M., San Francisco, Cal., assignor, by mesne assignments, to Otis Elevator Company, of New Jersey. Controller	655,860	Aug. 14	1330	304	92	1313
Fraser, James, Dundee, J. G. Fraser and H. Walker, Aberdeen, Scotland. Rove-stop mechanism	652,958	July 3	440	305	92	89
Fraser, James G. (See Fraser and Walker.)	658,361	Sept. 25	2459	306	92	2356
Fraser, Peter, Bridgewater, Mass. Centrifugal fountain-spittoon	657,101	Sept. 4	57	13	92	1813
Frazier, Walter S., Jr., assignor to W. S. Frazier & Company, Aurora, Ill. Fifth-wheel	658,362	Sept. 25	2460	544	92	2356
Frederick, John E. (See Ward, Harry, assignor.)	654,058	July 17	2494	574	92	524
Frederick, William R., Fort Wayne, Ind. Exhaust-nozzle	655,926	Aug. 14	1450	333	92	1336
Frederiksen, Anton, Copenhagen, Denmark. Cash-register	657,314	Sept. 4	469	334	92	1894
Fredrickson, August, Meridian, Miss. Oil-cake-sacking machine	653,994	July 17	2391	550	92	506
Freed, Aaron C., Royersford, Pa. Lunch heater and kit	658,038	Sept. 18	1896	410	92	2219
Freedman, Bernard, New York, N. Y. Washing-machine	657,818	Sept. 11	1478		92	2120
Freeman, James A., Belleview, Fla., assignor of one-half to L. L. Hopkins, Danbury, Conn. Plow	658,228	July 10	948	228	92	203
Freeman, Nat. (See Reynolds, Stephen G., assignor.)	658,038	Sept. 18	1896	410	92	2219
Freese, Frank, assignor to himself and E. J. Bahls, Philadelphia, Pa. Nut-lock	657,818	Sept. 11	1478		92	2120
Frega, Giuseppe, Philadelphia, Pa. Tailor's measure	658,632	Sept. 25	2950		92	2452
Fremery, Max, and J. Urban, Oberbruch, Germany. Manufacture of cellulose	655,337	Aug. 7	312	69	92	1101
Fremery, Max, E. Bronnert, and J. Urban, Oberbruch, Germany. Making cuprammonium solutions	657,236	Sept. 4	316	67	92	1865
French, Alfred W., New York, N. Y. Machine for trimming oil-cakes	655,218	Aug. 7	74	15,16	92	1055
French, Charles A., assignor to W. D. Curtis, Madison, Wis. Horse-collar	654,618	July 31	3712	838	92	811
French, De Wilton R., Westport, Wash. Steam-excavator	654,886	July 31	4228	951	92	919
Freschl, Alfred, Chicago, Ill. Upholstery	656,453	Aug. 21	2454	564	92	1545
Freschl, Alfred, Chicago, Ill. Tufted upholstering	658,061	Sept. 18	1926	419	92	2225
Frese, Diedrich. Fontanelle, Iowa. Salt-feeder for stock	654,146	July 24	2703	616	92	585
Frey, Frederick E., Glennville, Ohio. Drying-room	656,104	Aug. 14	1820	419	92	1412
Frey, James H., Findlay, Ohio. Sharpener for lawn-mowers	654,147	July 24	2705	617	92	586
Fricke, Fred H. (See Johnson, George A., assignor.)	658,254	Sept. 18	2269	499	92	2292
Fricot, Jules D., San Francisco, Cal. Regulating means for hydraulic motors	655,970	Aug. 14	1551		92	1356
Friedlander, Jake, Fargo, N. D. Manifolding device	656,539	Aug. 21	2610	601	92	1577
Friedly, Michael, Shelby, Ohio. Insect-escape and ventilator for window-sashes	657,487	Sept. 4	868	176	92	1988
Friese-Greene, William, London, England. Manufacture of paper for electric printing	655,219	Aug. 7	75	16	92	1056
Frisbie, Russell A., Middletown, Conn. Multiple-cylinder gas-engine	656,185	Aug. 21	1958	450	92	1452
Frischmuth, Emmerich, Berlin, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Electric-railway system	653,082	July 3	648	154	92	131
Frischmuth, Emmerich E., Berlin, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. System of electrical distribution	656,284	Aug. 21	2145	490	92	1487
Fritz, Frank W., Dewar, Iowa. Hauling-truck	656,454	Aug. 21	2456	564	92	1546
Froggatt, Edwin L., Spearfish, S. D. Fence-wire lock	658,638	Sept. 25	2951	656	92	2452
Fröschl, Moriz, Vienna, Austria-Hungary, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. System of non-interchangeable contact parts	653,382	July 10	1247	296	92	960
Fröschl, Moriz, Vienna, Austria-Hungary, and R. Hundhausen, Wilmersdorf, Germany, assignors to Siemens & Halske Electric Company of America, Chicago, Ill. System of non-interchangeable electrical contact parts	655,220	Aug. 7	77	297	92	1056
Frost, Charles L., Grand Rapids, Mich. Friction-hinge for furniture	658,255	Sept. 18	2271	17	92	2203
Fry, Ernest. (See Windham and Fry.)				499	92	
Fry, Montgomery B. (See Shade and Fry.)						
Frye, Joseph S. (See Wormald and Ames, assignors.)						
Fuchs & Lang Manufacturing Company. (See Ford, Albert J., assignor.)						
Fuge, Heinrich L., Hanover, Germany. Valve for bottles containing gases or liquids, &c.						
Fugman, Godfrey, Cleveland, Ohio. Glass prism-plate						
Fulgora, Robert, New York N. Y. Apparatus for displaying living pictures						
Fullagar, Hugh F. (See Parsons, Stoney, and Fullagar.)						
Fuller, Charles E. (See Scott, James A., assignor.)	655,890	Aug. 14	1305	321	92	1325
Fuller, Frederick L., Trenton, N. J. Price-scale				322		
Fuller, Mary B., administratrix. (See Miller, Lee A., assignor.)	653,769	July 17	1986	553	92	427
Fuller, Samuel B., Pawtucket, R. I. Car-step	655,703	Aug. 14	1009	232	92	1249
Fuller, Victor G., Toulon, Ill. Device for registering electric currents	658,006	Sept. 18	1843	399	92	2209
Fullerton, Charles E., Helena, Ark. Curtain-pole bracket	653,444	July 10	1351	321	92	280
Fullerton, Rufus. (See Grimm and Fullerton.)	656,017	Aug. 14	1655	380	92	1376
Fullwood, Henry. North Carlton, Victoria. Apparatus for ventilating mines	655,398	Aug. 7	421	92	92	1121
Fulton, Cornelius M. (See Berkstresser, Robert H., assignor.)						
Fulton, George, Roodhouse, Ill. Journal-bearing						
Funk, Ernst, Chicago, Ill. Carbonated beverage						
Funsch, Oliver J. (See Zentner, Joseph, assignor.)						
Furgason, Charles H., assignor of one-half to E. Peterson, Binghamton, N. Y. Electric bell	654,531	July 24	3528	795	92	758
Furness, Frank, assignor of one-third to D. H. Watts, Philadelphia, Pa. Tile	654,532	July 24	3529	795	92	758
Furness, Herbert J. (See Rapson and Furness.)	656,401	Aug. 21	2357	541	92	1528
Fyke, Charles V., Kansas City, Mo. Stamp-canceling and postmarking machine	656,400	Aug. 21	2353	542	92	1527
Fyke, Charles V., Kansas City, Mo., and J. H. Barr, Kansas City, Kans. Stamp-canceling and printing machine	654,619	July 31	3714	543	92	811
Gabel, John C., Jr., Onarga, Ill. Door-hanger and track therefor				540		
Gage, Charles M., *et al.* (See Barr, Henry G., assignor.)				541		
Gage, George A., Chicago, Ill., assignor to International Package Machine Company. Veneer-package divider	654,724	July 31	3899	880	92	848
Gage, Richard A., Pawtucket, R. I. Nut-lock	655,704	Aug. 14	1011	233	92	1249

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gaillard, Zénaïde, La Roche, France. Clothes-washing machine	652,841	July 3	195	45	92	40
Galring, Alfred J., Johnstown, Pa., assignor to Lorain Steel Company, of Pennsylvania. Locking device for armature oil-guards	654,391	July 24	3275	735	92	708
Galbraith, Oscar B., assignor of five-sixths to W. J. Erwin, J. G. Beard, C. B. Bryan, E. O. and J. M. Johnston, T. U. Cole, S. L. and V. Kirby, C. A. Leeman, J. W. Hamilton, and S. W. Gose, Honey Grove, Tex. Box for presses	655,071	July 31	4568	1029	92	991
Gale, Austin. (See Stubblefield, Levi, assignor.)						
Gale, Charles H., Elm Creek, Nebr. Car-loader	653,908	July 17	2245	510	92	476
Gale, Denis, Denver, Colo. Apparatus for separating solid bodies from liquids	655,338	Aug. 7	317	69	92	1102
Gale Manufacturing Company. (See Beall, William L., assignor.)						
Gallagher, Emma G., *et al.* (See Gallagher, George S., assignor.)						
Gallagher, George B., St. Mary's, Ohio. Lifting-jack	655,705	Aug. 14	1012	233	92	1249
Gallagher, George S., assignor to Z. B., E. G., and H. F. Gallagher, New York, N. Y. Smoke-consuming device for furnaces	655,221	Aug. 7	78	17	92	1056
Gallagher, Harry F., *et al.* (See Gallagher, George S., assignor.)						
Gallagher, Zillah B., *et al.* (See Gallagher, George S., assignor.)						
Gallaher, William T., *et al.* (See Brooks, Samuel M., assignor.)						
Gallaher, William T., *et al.* (See Mead, William M., assignor.)						
Galliher, Lawrence M. (See Dowell and Galliher.)						
Galloway, James B. (See Dumais, Jean B. Z., assignor.)						
Galvanic Health Exercising Company. (See Crooker and McDonald, assignors.)						
Gamache, George, *et al.* (See Durand, Norbert, assignor.)						
Gamble, George A. (See Norlund, Olof A., assignor.)						
Gamble, John, assignor to G. A. Reach, Philadelphia, Pa. Punching-bag	653,175	July 3	527	195	92	166
Gamble, Leslie J., Moline, Ill. Gage for use with rules	653,229	July 10	949	229	92	208
Gans, Ludwig W. (See Alefeld, Georg, assignor.)						
Garabaldi, James. (See Hicks, John J., assignor.)						
Garcin, Louis. (See Moniot and Garcin.)						
Gardiner, Charles C. (See Shoecraft, Judson, assignor.)						
Gardiner, William H. (See Jansen, Gardiner, and Kandler.)						
Gardner, Cornelius C., New York, N. Y. Street-sweeper	655,971	Aug. 14	1551	357, 358	92	1356
Gardner, Frank H. Jackson, Mich. Lock for bicycles	653,230	July 10	951	229	92	208
Gardner, George W., Bowling Green, Ky. Extension-ladder	657,932	Sept. 18	1718	369, 370	92	2185
Gardner, Horace C., assignor to himself and G. F. Swift, Chicago, Ill. Air-cooling apparatus	654,725	July 31	3901	881	92	849
Gardner, John, assignor to Winchester Repeating Arms Company, New Haven, Conn. Primer for cartridges	653,953	July 17	2321	532	92	490
Gardner, John H., New Orleans, La. Portable tramway	655,072	July 31	4569	1029, 1030	92	991
Garey, Henry F., Baltimore, Md. Apparatus for massaging by vacuum	653,573	July 10	1568	372	92	334
Garfinkel, Hyman, St. Louis, Mo. Garment-pocket	653,995	July 17	2392	550	92	505
Garland, Herbert, assignor of two-thirds to G. Woolliscroft, West Kirby, and H. Reddin, Church Stretton, England. Chain-lubricator for bicycles, &c	653,445	July 10	1352	321	92	280
Garlock, William H., Cleveland, Ohio. Door-latch	654,242	July 24	2981	670	92	645
Garman, Daniel S., Johnstown, Pa. Wrench	653,954	July 17	2325	533	92	491
Garn, Titus. (See Shively, Martin L., assignor.)						
Garner, Alfred, Mobile, Ala. Stopper-fastener	654,533	July 24	3531	796	92	758
Garner, George E., and S. M. Wade, Andover, Ohio; said Wade assignor to said Garner. Pipe-wrench	655,774	Aug. 14	1156	264	92	1278
Garretson, Frank B., assignor to himself and W. J. Gindele, Worcester, Mass. Protector for electric lamps	656,840	Aug. 28	3182	721	92	1706
Garrett, Frank W., Johnstown, Pa., assignor to Lorain Steel Company, of Pennsylvania. Circuit-breaker	656,105	Aug. 14	1822	419	92	1412
Garrison, James M., Santa Barbara, Cal. Grooving-saw	658,212	Sept. 18	2201	481	92	2279
Garver, David L., Hart, Mich. Pile-truss	655,618	Aug. 7	811	188	92	1197
Garver, Frank R., Pittsburg, Pa. Speed-regulator and brake for cranes	654,620	July 31	3716	838	92	812
Garvey, Owen F., Providence, R. I. Automatic machine-chuck	652,961	July 3	445	104	92	90
Garvin Machine Company. (See McClellan, Edward J., assignor.)						
Garvy, William J. (See Bachand, Levi N., assignor.)						
Garwick, Charles L. (See De Mont and Garwick.)						
Gary, Frank E. H. (See Allen, Frederick E., assignor.)						
Gasaway, John M. (See Caywood and Gasaway.)						
Gasche, Ferd G., and F. H. Foote, Chicago, Ill. Compound blowing-engine	654,966	July 31	4364	982	92	948
Gaskell, John, Port Sunlight, England. Inserting attachment for printing-presses	655,399	Aug. 7	422	93	92	1122
Gaskins, Thomas, Arcadia, Fla. Mail-box	654,534	July 24	3532	796	92	759
Gatermann, William, Newton, Wis. Attachment for finger-bars of mowers or harvesters	655,339	Aug. 7	318	70	92	1102
Gates, Elmer, Chevy Chase, Md., assignor to T. J. Mayer, Washington, D. C. Diamagnetic separation	653,342	July 10	1180	281	92	246
Gates, Elmer, Chevy Chase, Md., assignor to T. J. Mayer, Washington, D. C. Electrostatic separation	653,343	July 10	1182	281	92	246
Gates, Elmer, Chevy Chase, Md., assignor to T. J. Mayer, Washington, D. C. Diamagnetic separation	653,344	July 10	1183	282	92	246
Gates, Elmer, Chevy Chase, Md., assignor to T. J. Mayer, Washington, D. C. Diamagnetic separation	653,345	July 10	1184	282	92	247
Gates, Elmer, Chevy Chase, Md., assignor to T. J. Mayer, Washington, D. C. Magnetic separation	653,346	July 10	1186	282	92	247
Gates, Elmer, Chevy Chase, Md., assignor to T. J. Mayer, Washington, D. C. Apparatus for making radiographs	653,383	July 10	1249	297	92	260
Gates Iron Works. (See Carman, Charles L., assignor.)						
Gates Iron Works. (See Cole, David, assignor.)						
Gatling, Richard J., New York, N. Y. Motor-driven plow	654,243	July 24	2984	670, 671	92	645
Gaul, Max, Frankfort-on-the-Main, Germany. Ventilator	655,861	Aug. 14	1332	306	92	1313
Gay, Arthur E., Nashua, N. H. Combination hot-air and steam or hot-water heater	658,634	Sept. 25	2952	657	92	2452
Gay, William A., Newark, N. J. Flue	655,619	Aug. 7	812	189	92	1197
Gebhardt, William, *et al.* (See Van Riper, David F., assignor.)						
Geddes, Henry B. (See Share, Albert, assignor.)						
Geeck, Nicholas F. (See Soute and Geeck.)						
Geer, Robert T., New York, N. Y. Horse-check	656,960	Aug. 28	3416	779	92	1748
Gehrmann, Charles A., *et al.* (See Walker, Thomas C., assignor.)						
Geib, Charles W. (See Wallman, Otto, assignor.)						
Geier, Karl, Pulkau, Austria-Hungary. Rocking device	658,433	Sept. 25	3591	575	92	2381

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Geigy & Co., John R. (See Grossmann, Eugen, assignor.)						
Geigy & Co., John R. (See Ris and Simon, assignors.)						
Geisel, Theodor R., Springfield, Mass. Game or puzzle	656,886	Aug. 28	3288	748	92	1724
Geisenhöner, Henry, Schenectady, N. Y., assignor to General Electric Company, of New York. Means for securing pole-pieces	656,961	Aug. 28	3417	780	92	1718
Gelsanliter, J. E., *et al.* (See Smythe, Thomas E., assignor.)						
General Aristo Company. (See Cummings, John S., assignor.)						
General Automobile Company. (See Coleman, Clyde J., assignor.)						
General Electric Company. (See Andrews, William S., assignor.)						
General Electric Company. (See Ashley, Frank M., assignor.)						
General Electric Company. (See Berg, Ernst J., assignor.)						
General Electric Company. (See Bradley, Charles S., assignor.)						
General Electric Company. (See Buck, Harold W., assignor.)						
General Electric Company. (See Case, Frank E., assignor.)						
General Electric Company. (See Davis, William J., Jr., assignor.)						
General Electric Company. (See Dempster, John T. H., assignor.)						
General Electric Company. (See Ekström, Axel, assignor.)						
General Electric Company. (See Erben and Potter, assignors.)						
General Electric Company. (See Fleischmann, Lionel, assignor.)						
General Electric Company. (See Geisenhöner, Henry, assignor.)						
General Electric Company. (See Hall, John L., assignor.)						
General Electric Company. (See Harris, Jesse, assignor.)						
General Electric Company. (See Haskins, Caryl D., assignor.)						
General Electric Company. (See Lunt, Alexander D., assignor.)						
General Electric Company. (See Moody, Walter S., assignor.)						
General Electric Company. (See Oxley, Eustace, assignor.)						
General Electric Company. (See Prentiss, Irving R., assignor.)						
General Electric Company. (See Reist, Henry G., assignor.)						
General Electric Company. (See Rice, Edwin W., Jr., assignor.) (Reissue.)						
General Electric Company. (See Thomson, Elihu, assignor.)						
General Electric Company. (See Westerdahl, Anton R., assignor.)						
General Electric Company. (See Wood, James J., assignor.)						
General Electric Storage Battery Company. (See Coleman, Clyde J., assignor.)						
General Incandescent Arc Light Company. (See Bergmann, Sigmund, assignor.)						
Generous, Alexander, Princeton, Minn. Trap-setting device	656,540	Aug. 21	2612	601	92	1578
Genese, David, Baltimore, Md. Acetylene-gas burner	653,347	July 10	1187	283	92	247
Genese, David, Baltimore, Md. Acetylene-gas-generating lamp	654,244	July 24	2989	671	92	647
Gentzsch, Adolf, Vienna, Austria-Hungary. Raising the melting-point of resins, waxes, and similar bodies	657,696	Sept. 11	1264	.....	92	2075
Geo. Borgfeldt & Company. (See Sollmann, Ekko, assignor.)						
Geo. F. Blake Manufacturing Company. (See Wheeler, Frederick M., assignor.)						
Geo. L. Thompson Manufacturing Company. (See Halifax, John B., assignor.)						
George Cutter Company. (See Cutter, George, assignor.)						
George D. Whitcomb Company. (See Millholland, William K., assignor.)						
George, Jerome R. (See Edwards and George.)						
George L. Thompson Manufacturing Company. (See Scovill, James P., assignor.)						
George V. Cresson Company. (See Pessano, Antonio C., assignor.)						
George, William J., Johnstown, Pa. Washing-machine	657,063	Aug. 28	3593	828	92	1783
Georgoff, Jordan, St. Petersburg, Russia. Regulator for atmospheric car-brakes	658,256	Sept. 18	2272	500	92	2293
Germain, Peter J., Quincy Adams, Mass. Non-refillable bottle	658,145	Sept. 18	2071	451	92	2253
Germann, Emil. (See Buckingham and Germann.)						
Germanson, Julius M., Milwaukee, Wis. Chair	657,981	Sept. 18	1806	389	92	2301
Gerow, Arthur M. (See Worns, Edwin C., assignor.)						
Gervais, Frank H. (See Moran, Michael, assignor.)						
Gerwien, William, Chicago, Ill. Spring-hinge	657,982	Sept. 18	1808	389	92	2302
Gessner, David, administrator. (See Gessner, Ernst.)						
Gessner, Ernst, deceased, Aue, Germany; D. Gessner, administrator. Carding-engine	656,402	Aug. 21	2362	543	92	1528
Gessner, Ernst, deceased, Aue, Germany; D. Gessner, administrator. Apparatus for carding wool	656,403	Aug. 21	2364	543, 544	92	1528
Getchell, John A., *et al.* (See Jaquith, Frank S., assignor.)						
Getty, Fred L., Chicago, Ill., assignor to Automatic Electric Clock Company; Kansas City, Mo. Pendulum	654,726	July 31	3902	881	92	849
Getz, August, and W. C. Westall, San Francisco, Cal. Hand-grip for handle-bars	657,697	Sept. 11	1265	268	92	2075
Geywits, David, Rome, and W. Stull, Utica, assignors to M. H. Powers, Rome, N. Y. Electric signal and fire-alarm	654,967	July 31	4366	982, 983	92	949
Gibbon, Thomas H., Philadelphia, Pa. Tram-railway track for public highways	652,767	July 3	55	13	92	12
Gibbs, Gardner A., Livonia, N. Y. Separator	656,719	Aug. 28	2928	609	92	1656
Gibbs, George, Philadelphia, Pa. Electric-motor suspension	656,635	Aug. 28	2793	638	92	1629
Gibbs, George, Philadelphia, Pa. Electric-motor suspension	656,636	Aug. 28	2795	639	92	1629
Gibbs, George, Philadelphia, Pa. Electric-motor suspension	657,765	Sept. 11	1386	294	92	2101
Gibbs, George J., York, England. Belt-driving mechanism	655,927	Aug. 14	1452	334	92	1336
Gibson, Charles D. P., Jersey City, N. J. Valve-gear	655,928	Aug. 14	1453	334	92	1337
Gibson, Charles D. P., Jersey City, N. J. Reciprocating valve	655,929	Aug. 14	1455	335	92	1337
Gibson, Charles D. P., Jersey City, N. J. Piston-valve for engines	656,902	Aug. 28	3419	780, 781, 782	92	1749
Gibson, Charles D. P., Jersey City, N. J. Motor-vehicle	658,544	Sept. 25	2770	614	92	2417
Gibson, Charles D. P., Jersey City, N. J. Driving mechanism						
Gibson, Harrison, Ngaire, assignor to Gibson Patent Brand Company, Limited, New Plymouth, New Zealand. Branding composition. (Reissue)	11,849	Aug. 28	3612	.....	92	1786
Gibson, Lorenzo P., Little Rock, Ark. Fishing-float	657,407	Sept. 4	652	136	92	1931
Gibson Patent Brand Company. (See Gibson, Harrison, assignor.) (Reissue.)						
Giebel, Bernard J., and W. A. Park, Fremont, Ohio. Seal-lock	653,799	July 17	2050	467	92	439
Gielow, Frederick, Sr., Chicago, Ill. Lubricator	657,408	Sept. 4	653	136	92	1931
Gifford, Cyrus P., Erie, Pa. Tool for repairing rubber fabrics	655,222	Aug. 7	80	17	92	1057
Gifford, Ezra N., assignor of two-thirds to G. R. Gott, Chicago, Ill. Wrench	655,900	Aug. 14	1399	322	92	1325
Gifford, Frank V., Niagara Falls, N. Y. Milk-pasteurizing apparatus	656,786	Aug. 28	3041	692, 693	92	1678
Gifford, Harry E., Onset, Mass. Acetylene-gas generator	654,908	July 31	4370	983	92	950
Gilbert, Edward T. (See Phillips, Edward, assignor.)						
Gilbert, Theodore M. (See Gilbert and Nash.)						
Gilbert, William M. and T. M., and W. C. Nash, Neenah, Wis. Automatic wire or felt guide for paper-making machines	653,293	July 10	1079	258	92	228
Gilchrist, David, Concord, N. H. Valve	656,963	Aug. 28	3428	782	92	1750
Gildard, Christopher G. (See Coldwell and Gildard.)						
Giles, William F., Chester, Pa. Mold	658,007	Sept. 18	1844	399	92	2210

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Gilgen, Gertrude. (See Gilgen, Josephine and G.)						
Gilgen, Josephine and G., Chicago, Ill. Case for phonograph-records	653,231	July 10	952	229	92	203
Gill, Joseph H., New Castle, assignor of one-half to H. R. Nye, Sharon, Pa. Heating-furnace	654,909	July 31	4372	983	92	950
Gillam, William M., London, England. Preparing fuel	658,635	Sept. 25	2955	.....	92	2453
Gillespie, Alfred J., Rochester, N. Y. Pencil-pointer	657,595	Sept. 11	1067	222	92	2037
Gilliam Manufacturing Company. (See Miller, Charles W., assignor.)						
Gilliland, John F., New Vienna, Ohio. Shoe-polishing stand	658,636	Sept. 25	2955	657	92	2453
Gillmore, George C., Newark, N. J., assignor to Celluloid Company, New York, N. Y. Stuffing-machine for manufacturing rods and tubes from pyroxylin compounds	655,706	Aug. 14	1014	233 / 234	92	1250
Gilman, Myron A., Westfield, Mass. Trousers-hanger	658,434	Sept. 25	2592	575	92	2381
Gilmore, William H., Greenville, Mich. Potato sorter and cleaner	656,637	Aug. 28	2796	639	92	1629
Gilsenan, John. (See Brown, Byrne, and Gilsenan.)						
Gilson, Franklin H., Wellesley, assignor to F. H. Gilson Company, Boston, Mass. Separable book. (Reissue)	11,846	Aug. 14	1906	438	92	1428
Gilson, Franklin H., Wellesley, assignor to F. H. Gilson Company, Boston, Mass. Separable book. (Reissue)	11,847	Aug. 14	1908	438	92	1429
Gindele, William J. (See Garretson, Frank B., assignor.)						
Ginitty, William H., Nelsonville, Ohio. Extensible piano-stool	654,887	July 31	4229	951	92	920
Ginn, William T., Whiteside, Tenn. Coal-digger	658,435	Sept. 25	2593	575	92	2381
Giroud, Peter G., Newark, N. J., assignor to J. S. MacCoy, New York, N. Y. Time-recording system	657,162	Sept. 4	167	38	92	1835
Giroud, Peter G., Newark, N. J., J. S. MacCoy and W. B. Stambaugh, New York, N. Y.; said Giroud and Stambaugh assignors to said MacCoy. Time-stamp	653,609	July 17	1808	415	92	393
Giroux, Joseph, assignor of one-half to F. Tetreau, New York, N. Y. Steam-generator	654,888	July 31	4231	951	92	920
Glanville, John, *et al.* (See Shearer, Joseph E., assignor.)						
Glass & Prudhomme. (See Johnson, Louis H., assignor.)						
Glasser, Ludwig, Olean, N. Y. Bicycle attachment	654,245	July 24	2991	671	92	647
Gleason, Marshall W., New York, N. Y. Rotary etching-machine	654,621	July 31	3718	839	92	812
Gleason, Merrill, assignor of one-half to F. B. Wilkins, Woonsocket, R. I. Picker-check	653,232	July 10	954	229	92	204
Gleeson, Thomas W. (See Wood, Edward C., assignor.)						
Glenn, Shelby F. (See Whitney and Glenn.)						
Glidden, Joseph F., De Kalb, Ill. Gate	655,551	Aug. 7	669	153	92	1172
Globe Electric Company. (See Heidel, Gustavos, assignor.)						
Globe Telephone Manufacturing Company. (See Bassett, Nathan, assignor.)						
Globe-Wernicke Company. (See Tobey, Fred W., assignor.)						
Glover, Henry C., *et al.* (See Haebler, Anton J., assignor.)	654,595	July 24	3533	796	92	759
Glover, John E., Cloud Chief, Okla. Ter. Folding carriage-step	655,653	Aug. 7	980	209	92	1222
Gnau, George J., Detroit, Mich. Calculator	656,964	Aug. 28	3432	782 / 783	92	1751
Gobbe, Emile, Jumet, Belgium. Kiln, blast-furnace, &c	657,868	Sept. 11	1566	338	92	2139
Gobbe, Emile, Jumet, Belgium. Apparatus for use in compressing air and gas	655,073	July 31	4570	1030	92	991
Gockel, Gustav. (See Dünkelberg and Gockel.)						
Godbout, Louis, Wyandotte, Mich. Leather-crimper	656,106	Aug. 14	1825	420	92	1413
Goddard, Anson W., Farnam, assignor of one-half to C. C. Caldwell, Lincoln, Nebr. Metal-punch	655,223	Aug. 7	81	18	92	1057
Goddu, George, Winchester, Mass., assignor to United Shoe Machinery Company, of New Jersey. Machine for forming screw-threaded wire	653,233	July 10	955	230	92	204
Godfrey, Everett D. (See Roberts, Henry P., assignor.)						
Godward, Ernest R., Invercargill, New Zealand. Egg-beater	653,670	July 17	1811	.....	92	393
Godwin, Le Roy C. (See Lewis and Godwin.)						
Goebel, Ernst, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Company, of New York. Olive cotton-dye and making same	656,285	Aug. 21	2146	490	92	1487
Goebel, George H., Newark, assignor to Pomeroy Brothers Company, Harrison, N. J. Sealing-wax holder	655,149	July 31	4691	1057	92	1015
Goerk, Gustav, assignor to R. Neumann & Company, Newark, N. J. Fastening for bags, satchels, &c	655,150	July 31	4693	1058	92	1015
Goerk, Gustav, assignor to R. Neumann & Company, Newark, N. J. Satchel-fastening	655,151	July 31	4694	1058	92	1015
Goerk, Gustav, assignor to R. Neumann & Company, Newark, N. J. Bag lock and catch	657,024	Aug. 28	3518	803	92	1767
Goetz, Friedrich, Indianapolis, Ind. Feed-roll	653,446	July 10	1353	322	92	280
Goetz, Ludwig. (See Bannies, Emil, assignor.)						
Gohl, Adolf, Wangen, Germany. Inclinometer	653,509	July 10	1478	345	92	307
Goldberger, Maurice, assignor to Fort Wayne Smelting and Refining Works, Fort Wayne, Ind. Cast-metal pile	655,400	Aug. 7	424	93	92	1122
Goldie, William, Wilkinsburg, Pa. Tie-plate	657,344	Sept. 4	528	109	92	1906
Goldsmith, Edwin M., Philadelphia, Pa. Pneumatic gun	654,622	July 31	3719	839	92	812
Goldsmith, Joseph, Jr., Providence, R. I. Cuff-button	653,864	July 17	2159	492	92	459
Goldsmith, William H., Central Falls, R. I. Mule-spinning machine	656,887	Aug. 28	3289	748	92	1724
Golibart, Jerome A., Sykesville, Md. Root-irrigating device	655,775	Aug. 14	1158	264 / 265	92	1278
Gollings, Ellick H., assignor to himself and J. Hewitt, Chicago, Ill. Steam-engine	654,111	July 17	2577	592	92	540
Gomber, George W., assignor to H. Gomber, Conyngham, Pa. Sealing device	654,970	July 31	4373	984	92	950
Gomber, Harry. (See Gomber, George W., assignor.)						
Gooch, Alphonso S., Little Rock, Ark. Compressing and baling apparatus	653,671	July 17	1813	415	92	394
Good, Theodore M. (See Taylor and Good.)						
Goodale, Caroline F., Waltham, Mass. Waist						
Goodchild, John, guardian. (See O'Connor, John, assignor.)						
Goodhart, G. W., *et al.* (See Cooper, John A., assignor.)						
Gooding, Charles S. (See Cilley and Gooding.)						
Gooding, James W., Flat Creek, Mo. Double-shovel cultivator-plow	658,146	Sept. 18	2072	452	92	2273
Goodrich, Harriet D., Augusta, Ga. Bed-pan	657,819	Sept. 11	1479	315	92	2120
Goodridge, Ethan A., Palestine, Tex. End door for cars	653,294	July 10	1082	259	92	229
Goodwin, Alphonso M., Saco, Me. Card-holder for freight-cars	653,672	July 17	1814	416	92	394
Goodwin, Fred. D., *et al.* (See Hays, Eugene D., assignor.)						
Goodwin, Wilbur E. (See Harriman, Frank H., assignor.)						
Goodyear Tire and Rubber Company. (See Ellinwood and Seiberling, assignors.)						
Goodyear Tire and Rubber Company. (See Seiberling and Straus, assignors.)						
Gordon, Alexander, Detroit, Mich. Cigar-bunching machine	657,506	Sept. 11	1069	222	92	2038
Gordon, Charles W., St. Paul, Minn. Apparel-cap	657,530	Sept. 11	958	197	92	2016
Gordon, George, *et al.* (See Gordon and Hall, assignors.)						
Gordon, George W. (See Gordon and Hall.)						
Gordon Hollow Blast Grate Company. (See Van Deinse, Paulus J. A., assignor.)						
Gordon, Ralph W., *et al.* (See Davis, Edward, assignor.)						
Gordon, Thaddeus H. and G. W., and C. E. Hall, assignors, by mesne assignments, to Thaddeus H. and G. Gordon, F. M. Teeguarden, J. B. Himes, and T. L. Campbell, New Castle, Ind. Threshing-machine	653,865	July 17	2160	493	92	459

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Gordon, William J., Philadelphia, Pa. Triple-die press	658,955	July 17	2324	533 / 534 / 535	92	491
Görges, Johannes H. F., Berlin, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Starting device for electric motors	655,340	Aug. 7	321	70	92	1103
Görges, Johannes H. F., Berlin, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. System of alternating-current transmission	655,341	Aug. 7	325	70	92	1104
Gorman, Frank, Mount Oliver, Pa. Mold for making chilled rolls	656,018	Aug. 14	1655	380	92	1376
Gorton, Robert, Newton, Mass. Garment-supporter	653,447	July 10	1354	322	92	281
Gorton, Robert, Newton, Mass. Pin-ticket	654,623	July 31	3720	839	92	812
Gorton, Robert, Newton, Mass. Garment-supporter	654,727	July 31	3904	881 / 882	92	850
Gorton, Samuel, Mount Pleasant, assignor of one-half to E. Warden, Greensburg, Pa. Coal-leveling machine	655,552	Aug. 7	670	153	92	1172
Gose, S. W., *et al.* (See Galbraith, Oscar B., assignor.)						
Goss, John H., assignor to Scovill Manufacturing Company, Waterbury, Conn. Inflation-valve	654,565	July 24	3577	807	92	767
Goss Printing Press Company. (See Firm, Joseph L., assignor.)						
Gosselin, Paul M., Navajoe, Okla. Ter. Animal-poke	654,889	July 31	4235	952	92	920
Goth, Thomas R., San Francisco, Cal. Crushing and pulverizing machinery	657,933	Sept. 18	1720	370	92	2185
Gott, George R. (See Gifford, Ezra N., assignor.)						
Gottlieb, Frederic J., New York, N. Y. Non-refillable bottle	658,107	Sept. 18	2011	438	92	2241
Goughnour, Henry S., Johnstown, Pa., assignor to Lorain Steel Company, of Pennsylvania. Trolley-base	654,448	July 24	3384	761	92	730
Gould, Alexander H., Toledo, Ohio. Rotary engine	657,409	Sept. 4	655	136 / 137	92	1932
Gould, Charles M. (See Richards, Willard F., assignor.)						
Gould Coupler Company. (See Richards, Willard F., assignor.)						
Gould, Edward R., Spokane, Wash. Apparel shirt-collar supporter	653,800	July 17	2051	467	92	439
Gould, John D., New York, N. Y. Reel or spool for electric thermostatic cables	653,448	July 10	1356	322	92	281
Gould, Olin R., *et al.* (See Smith, John F., assignor.)						
Goulding, Anna M., New York, N. Y. Game-scoring apparatus	655,802	Aug. 14	1332	307	92	1313
Goulds Manufacturing Company. (See Cushing, George H., assignor.)						
Graber, Henry W., Dallas, Tex. Mechanism for cleaning seed-cotton	656,107	Aug. 14	1827	420	92	1414
Graf, Adolf O., Demarest, N. J., assignor to Manhattan Optical Company, of New York. Gripping device for camera-fronts	654,790	July 31	4037	908	92	879
Graf, Adolf O., Demarest, N. J., assignor to Manhattan Optical Company, of New York. Side-arm-bracket spring for cameras	654,791	July 31	4038	908	92	879
Graham, Alfred, London, England. Telephonic apparatus	655,620	Aug. 7	813	189 / 190	92	1196
Graham, Francis H., San José, Cal. Instrument for determining amplitude of vision	654,346	July 24	3185	714	92	686
Graham, George S., *et al.* (See Scott, John C., assignor.)	653,234	July 10	956	230	92	204
Graham, James W., Old Fort, N. C. Ax-blade						
Graham, John. (See Plewman and Graham.)						
Graham, Levi P., Decatur, assignor to Sattley Manufacturing Company, Springfield, Ill. Wheel-plow	655,483	Aug. 7	573	128	92	1152
Graham, Thomas W., Dubuque, Iowa. Voting-machine	652,768	July 3	56	13	92	12
Grams, Herman, Dexter, Minn. Traction-engine	654,728	July 31	3907	882	92	850
Grange, Joseph S., assignor of two-thirds to I. R. Browning and F. Carroll, Orangeville, Utah. Implement for laying off and pulverizing ground	656,787	Aug. 28	3044	693	92	1678
Granger, Frank C., *et al.* (See Burns, Robert J., assignor.)						
Grant, Albert L., Philadelphia, Pa. Thill-coupling	652,769	July 3	60	14	92	13
Grant, Armstead M., Cherry Valley, Ark. Horse-detacher and brake	657,531	Sept. 11	959	198	92	2016
Grant, Arthur W., Springfield, Ohio, assignor, by mesne assignments, to Consolidated Rubber Tire Company, Jersey City, N. J. Device for equipping vehicle-wheels with rubber tires	658,712	Sept. 25	3094	690	92	2481
Grant, Arthur W., Springfield, Ohio, assignor, by mesne assignments, to Consolidated Rubber Tire Company, Jersey City, N. J. Device for applying rubber tires to vehicle-wheels	658,713	Sept. 25	3099	691	92	2482
Grant, Charles A., Middleburg, Va. Mailing-card	654,536	July 24	3534	796	92	759
Grant, Donald. (See Trier, John, assignor.)						
Grant Manufacturing Company. (See Brooks, Franklin W., assignor.)						
Graves, Andrew H., Pleasanton, Iowa. Hay rake and stacker	654,059	July 17	2407	575	92	525
Graves, Erwin, assignor to Camden Iron Works, Camden, N. J. Punching-machine	655,074	July 31	4572	1030 / 1031	92	991
Graves, George E. (See Robinson and Graves.)						
Graves, Hiram, St. Paul, Minn. Automatic elevator-regulating brake	656,638	Aug. 28	2798	639	92	1630
Graves, John W., Covington, Tenn. Roller for roller-gins	657,733	Sept. 11	1333	282	92	2089
Graves, John W., Covington, Tenn. Roller cotton-gin	657,734	Sept. 11	1334	282	92	2090
Graves, Alanson M., Elizabeth, N. J. Apparatus for molding wax	659,235	July 10	957	230	92	204
Gray, Edgar S., Greenfield, Ohio. Blower	656,541	Aug. 21	2613	601 / 602	92	1578
Gray, McConnell S. (See Stocum and Lambert, assignors.)						
Gray, Robert D., New York, N. Y. Lens	657,820	Sept. 11	1480	316	92	2120
Gray, Servetus C. (See Cox and Gray.)						
Gray, Vincent. (See Reaben, George B., assignor.)	654,112	July 17	2578	593	92	541
Gray, William, Hartford, Conn. Telephone-call register	656,108	Aug. 14	1829	420 / 421	92	1414
Gray, William F., assignor of one-third to C. J. Fisher, Millersburg, Ohio. Churn	656,186	Aug. 21	1990	450	92	1432
Grear, David, *et al.*, trustees. (See White, George, assignor.)	653,197	July 3	879	212	92	178
Green, James C., Sergeantsville, N. J. Ice-cutting vehicle	656,965	Aug. 28	3434	784	92	1751
Green, John, Treeton, England. Seed-sowing machine	654,729	July 31	3908	882	92	850
Green, John N., Newtown, Ky. Poultry nest and hover	657,532	Sept. 11	961	198	92	2017
Green, Robert D., Cyclone, Pa. Artesian or oil well	655,152	July 31	4696	1058	92	1016
Green, Robert O. (See Green, William W., assignor.)	657,410	Sept. 4	657	137	92	1932
Green, Thomas, Wabash, Ind. Door for dry-kilns	653,189	July 3	762	179 / 180	92	152
Green, Thomas W., assignor to Wilbraham Baker Blower Company, Philadelphia, Pa. Impeller for rotary blowers						
Green, Walter, Williston, S. C. Knot-actuated stop for knitting-machines						
Green, William W., assignor of one-half to R. O. Green, Fort Dodge, Iowa. Eyelet-hole machine						
Greenbank, Margaret. (See Hutt and Stafford, assignors.)						
Greenbaum, Hess, *et al.* (See Schneider, George, assignor.)	655,224	Aug. 7	85	19	92	1058
Greene, Alfred C., Southport, England. Chair						
Greene, Cornelius F. (See Politsky and Agust, assignors.)						
Greenleaf, Abner, *et al.*, executors. (See Mergenthaler, Ottmar.)						
Greenwood, Alexander S., Chicago, Ill. Incandescent vapor-burner	653,910	July 17	2249	511	92	477

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Greenwood, Harry, Barnesborough, Pa. Lamp-burner	654,587	July 24	3585	707	92	759
Greger Manufacturing Company. (See Greger, Thomas P., assignor.)						
Greger, Thomas P., Philadelphia, Pa., assignor to Greger Manufacturing Company, Camden, N. J. Manhole-cover	653,909	July 17	2247	511	92	477
Gregg, William C., Honolulu, Hawaii. Car bumper and coupling	657,766	Sept. 11	1388	294	92	2101
Gregg, William W., Elmira, N. Y. Locomotive	654,060	July 17	2499	575	92	525
Gregory, Cornelius W., assignor to J. L. Jackson and M. E. Rasmussen, Chicago, Ill. Machine for forming and attaching metal edges	656,966	Aug. 28	3435	784	92	1752
Gregory, Emma L., Kosciusko, Miss. Folding crate	654,061	July 17	2502	576	92	526
Gregory, Joseph, New York, N. Y. Lamp	653,449	July 10	1358	322, 323	92	281
Gregory, O. T. (See Laube, Godfried, assignor.)						
Grenier-Villerd, Prosper M. C., Paris, France, assignor to H. E. Howland, New York, N. Y. Coloring photographs	658,257	Sept. 18	2274	.....	92	2294
Gress, George V., Atlanta, Ga. Magazine-phonograph	655,225	Aug. 7	86	19, 20	92	1058
Greyer, Bertha A. (See Greyer, Louis A. and B. A.)						
Greyer, Louis A. and B. A., Boston, Mass. Folding carriage	654,971	July 31	4376	984, 985	92	951
Gribben, John, Pittsburg, Pa. Spike-making machine	658,637	Sept. 25	2957	657, 658	92	2453
Grice, Joseph, Sutton-Coldfield, England. Coin-operated vending-machine	655,437	Aug. 7	497	111	92	1137
Grider, Andrews B., Milwaukee, Wis. Device for overcoming dead-centers	653,176	July 3	828	195	92	1690
Griffen, John D., New York, N. Y. Tobacco-moistener	656,816	Aug. 28	3105	705	92	1690
Griffenberg, John W., *et al.* (See Hays, Eugene D., assignor.)						
Griffin, Thomas, Chicago, Ill. Printer's stick	654,246	July 24	2963	671, 672	92	648
Griffin, William, Kansas City, Mo. Baker's oven	654,538	July 24	3536	797	92	760
Griffith, Asa W., Wilmington, Del., assignor to Luckett Smokeless Fuel Economizer Company, Baltimore, Md. Fuel-feeding mechanism for furnaces	657,869	Sept. 11	1569	338	92	2139
Griffith, Daniel, Wexford, Mich. Steam-engine governor						
Griffith, Plynn A. (See Willis and Griffith.)						
Griffith, Richard H. (See Idris and Griffith.)						
Griffiths, Ebenezer F., Philadelphia, Pa. Prepayment gas-meter	655,438	Aug. 7	499	112	92	1137
Griffiths, Ernest H. (See Darwin, Griffiths, and Whetham.)						
Grimm, Charles F., and R. Fullerton, Oakesdale, Wash. Cultivator	652,842	July 3	196	45	92	40
Grimm, George, Baltimore, Md. Lamp-holder	656,110	Aug. 14	1832	421	92	1415
Grimnell, Howard L., assignor of one-half to C. Bingel, Jr., Buffalo, N. Y. Bath-tub seat	658,084	Sept. 18	1978	431	92	2235
Grinda y Guiol, Louis A., San Gervasio, Barcelona, Spain. Device for preventing derailing of trains	658,174	Sept. 18	2136	466	92	2266
Grisel, Lucien, La Chaux-de-Fonds, Switzerland. Watch-balance tester	653,996	July 17	2393	551	92	505
Griswold, J. Lewis, *et al.* (See Henry, Edward A., assignor.)						
Gross, Felix. (See Wailes and Gross.)						
Grosselin, Nicolas H., Sedan, France, assignor to C. Heap, Rochdale, England. Napping-machine	652,843	July 3	198	45, 46, 47	92	40
Grossmann, Eugen, assignor to J. R. Geigy & Co., Basle, Switzerland. Naphthol prepared with rosin soap	657,767	Sept. 11	1389	.....	92	2102
Grote Bottle Machine Company. (See Grote, Ludwig, assignor.)						
Grote, Ludwig, London, England. Tool-handle	656,321	Aug. 21	2212	506	92	1499
Grote, Ludwig, London, England, assignor to Grote Bottle Machine Company, Jersey City, N. J. Glass-bottle-blowing machine	656,286	Aug. 21	2147	490, 491, 492	92	1487
Grote, Ludwig, London, England, assignor to Grote Bottle Machine Company, Jersey City, N. J. Making glass bottles	656,287	Aug. 21	2153	492	92	288
Grote, Ludwig, London, England, assignor to Grote Bottle Machine Company, Jersey City, N. J. Glass-bottle-blowing machine	656,322	Aug. 21	2213	506	92	1499
Groth, Hans H., Cincinnati, Ohio. Insufflator	658,436	Sept. 25	2564	576	92	2282
Grotophorst, Herman. (See Bell, William J., assignor.)						
Grotz, Albert R., Lazearville, W. Va. Mold for pressed glassware and pottery-ware. (Reissue)	11,838	July 3	893	215	92	181
Grove, John A., Bluffton, Ind. Operating mechanism for washing-machines	658,485	Sept. 25	2671	593	92	2396
Grove, Samuel, Altoona, Pa. Stovepipe	653,384	July 10	1251	297	92	260
Grover, Dalmer C., Reading, Mich. Mud-guard for vehicles	653,574	July 10	1599	372	92	332
Grover, Henry M., assignor of one-half to F. H. Hoadley, Wallingford, Vt. Seal-lock	658,638	Sept. 25	2959	658	92	2454
Grow, Andrew, Queensville, Ind. Feeder attachment for clover-hullers	654,624	July 31	3722	839, 840	92	813
Gruber, Samuel M. (See Whitaker and Gruber.)						
Grubman, Joseph, New York, N. Y. Attachment for embroidering-machines	656,907	Aug. 28	3437	784, 785	92	1752
Grundman, Frederick W., assignor to Star Lamp Company, St. Louis, Mo. Lamp-burner	656,968	Aug. 28	3439	785	92	1752
Grunow, William, Jr., Bridgeport, Conn., assignor to McElroy-Grunow Electric Railway System, Jersey City, N. J. Contact system for electric railways. (Reissue)	11,840	July 10	1769	405, 406	92	396
Grunwald, Gustave, Philadelphia, Pa. Folding and adjustable miter-box	654,449	July 24	3385	761, 762	92	731
Gude, Franz, Ragnit, Germany. Flooring	654,450	July 24	3387	762	92	731
Gwedesse, Louis. (See Blanchet, Joseph, assignor.)						
Guenther, Arthur G. (See Guenther, George G. and A. G.)						
Guenther, George G. and A. G., Orange, Cal. Automatic safety cut-off for elevators	657,195	Sept. 4	231	51	92	1848
Guignes, Albert A., Newark, N. J. Enameling grain side of leather	654,830	July 31	4111	.....	92	885
Guilbert, John M., Philadelphia, Pa. Hook for garments, &c	657,533	Sept. 11	962	198	92	2017
Guilleaume, Theodore, Mülheim-on-the-Rhine, Germany. Submarine cable	657,196	Sept. 4	232	51	92	1848
Guillot, Charles, Paris, France. Apparel-corset	657,237	Sept. 4	317	67	92	1895
Guion, Bernard R., assignor of two-thirds to A. Lutz, New York, N. Y., and J. E. Walsh, Danbury, Conn. Sanitary receiving-basin	658,639	Sept. 25	2960	658, 659	92	2454
Guion, Bernard R., assignor of two-thirds to A. Lutz, New York, N. Y., and J. E. Walsh, Danbury, Conn. Apparatus for purifying sewage	658,640	Sept. 25	2962	659	92	2454
Gulich, Ashley J., assignor to Perfection Knitting Machine Company, Clearfield, Pa. Circular-knitting machine	656,155	Aug. 14	1899	437	92	1427
Gulick, Edward J., assignor of one-half to A. F. Weber, Jamestown, N. Y. Adjustable roller	657,488	Sept. 4	871	176	92	1989
Gulland, Charles, Pittsburg, Pa. Valve	655,342	Aug. 7	328	71	92	1104
Gundlach, Henry, La Crosse, Wis. Hammock	656,639	Aug. 28	2800	640	92	1630
Gunkle, Harry H., *et al.* (See Gunkle, James M., assignor.)						
Gunkle, James M., assignor of one-third to H. H. Gunkle, Denver, and J. H. Means, Colorado Springs, Colo. Brick-kiln	656,640	Aug. 28	2802	640	92	1630

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gunnell, Elias, assignor of one-half to W. I. Babcock, Chicago, Ill. Hose connection	656,187	Aug. 21	1962	451	92	1453
Gunning, Thomas, Pittsburg, Pa. Feed-water heater and purifier	657,238	Sept. 4	318	67	92	1865
Gunther, William A. (See Relay, Alfred, assignor.)						
Gurney, Eli E., assignor of one-half to W. B. Arnold, Abington, Mass. Last	657,908	Sept. 11	1625	350	92	2151
Gussmann, Hermann, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Blue cotton sulfur dye and making same	657,768	Sept. 11	1390	.....	92	2102
Gussmann, Hermann, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Blue cotton sulfur dye and making same	657,769	Sept. 11	1391	.....	92	2102
Gustafson, Emil, Chicago, Ill. Blowpipe	654,560	July 24	3578	807	92	767
Gustafson, Gustaf, New Castle, Colo. Car-ventilator	656,247	Aug. 21	2080	476	92	1474
Gustine, Franklin J., assignor of one-half to C. Carroll, New Orleans, La. Spring-operated mechanical toy or analogous device	655,021	Aug. 7	817	190	92	1198
Guthrie, Ossian, Chicago, Ill. Ice-house	654,148	July 24	2706	617	92	586
Guthrie, Ossian, Chicago, Ill. Facilitating formation of ice	654,149	July 24	2708	617	92	586
Gutowski, Adam. (See Wessnick and Gutowski.)						
Guy, George G., assignor to United States Wind Engine and Pump Company, Batavia, Ill. Pump	657,102	Sept. 4	58	13	92	1813
Gwinn, George W., Baltimore, Md., assignor to Raymond Button Company of Baltimore City, of Maryland. Button-fastener	654,247	July 24	2905	672	92	648
H. B. Camp Company. (See Stripe, Isaac, assignor.)						
H. B. Smith Machine Company. (See Perry, James L., assignor.)						
Haack, Ida A., New York, N. Y. Folding guard-frame for children's beds	654,972	July 31	4378	985	92	951
Haarmann & Reimer. (See Tiemann, Johann C. W. F., assignor.)						
Haberle, Michael, New York, N. Y. Window	657,584	Sept. 11	963	190	92	2017
Hacke, Johann C. C., *et al.* (See Vogel, William, assignor.)						
Hackenberg, Jacob A., Phœnixville, Pa. Commode attachment	657,103	Sept. 4	59	13	92	1813
Hackethal, Louis, Hanover, Germany. Stringing or supporting electrical conductors	657,104	Sept. 4	61	14	92	1814
Hadaway, John B., Brockton, Mass. Stitch-separating machine	652,908	July 3	208	74	92	59
Hadaway, John B., Brockton, Mass. Stitch separating and shaping machine	653,236	July 10	959	230	92	205
Haddock, Thomas. (See Brown and Haddock.)						
Haddox, George W., Winchester, Va. Revoluble ribbon-cabinet	654,062	July 17	2503	576	92	526
Haden, Joseph P. (See Hurn, Edward, assignor.)						
Haehler, Anton J., assignor of thirty-one seventy-fifths to P. H. Thumlert, T. Mackenzie, and H. C. Glover, Baltimore, Md. Spark-arrester	655,825	Aug. 14	1275	202	92	1302
Haeckel, Ernst, Berlin, Germany. Bathing device for producing artificial waves	654,973	July 31	4380	985	92	951
Haegg, C. Pontus. (See Johanson, Emil G., assignor.)	654,890	July 31	4236	952	92	921
Haenichen, Adolph, Paterson, N. J. Spinning-machine						
Haeseler, Charles H. (See Taylor, Samuel W., assignor.)	654,974	July 31	4380	986	92	952
Hafgar, Magnus J., assignor to O. C. S. Olsen, Chicago, Ill. Type-writer desk						
Hagedorn, John J., *et al.* (See Whitaker, Samuel T., assignor.)						
Hagedorn, Zachariah, *et al.* (See Whitaker, Samuel T., assignor.)						
Hageman, Albert V. (See Brown, Charles A., assignor.)						
Hagemann, Carl G., and F. O. C. Zimmermann, Ludwigshafen, Germany. Manufacture of celluloid	657,585	Sept. 11	965	.....	92	2017
Hagen, Claude L., New York, N. Y. Theatrical appliance	653,997	July 17	2394	551	92	505
Hagen, Claude L., New York, N. Y. Stage machinery	656,969	Aug. 28	3440	785, 786	92	1753
Hager, Frederick, Portland, Oreg. Paper-cutting machine	654,248	July 24	2906	672	92	649
Hagey, Robert J., Philadelphia, Pa. Exposure-scale for photographers	658,258	Sept. 18	2275	509	92	2294
Haglin, Charles F. (See Hoff and Haglin.)						
Hagy, Paul A., Reading, Pa. Lead-pencil	653,733	July 17	1921	441	92	414
Hahn, Charles H. (See Bick and Hahn.)						
Haidacher, Vitus V. (See Wynne and Haidacher.)	657,597	Sept. 11	1073	223	92	2039
Hall, Edward L. and G., Providence, R. I. Elevator	656,888	Aug. 28	3291	748	92	1724
Hall, George. (See Hall, Edward L. and G.)	655,439	Aug. 7	500	112	92	1137
Haines, Winfield S., Gladstone, Mich. Engine-valve	655,972	Aug. 14	1554	358	92	1356
Hake, Otto H., assignor of one-half to A. Miller, Washington, Mo. Hose-supporter	655,973	Aug. 14	1557	358	92	1357
Hakewessell, Reinhold, Hartford, and E. C. Henn, Bloomfield, Conn. Clutch	655,974	Aug. 14	1559	358, 359, 360	92	1357
Hakewessell, Reinhold, Hartford, and E. C. Henn, Bloomfield, Conn. Pin clutch mechanism	653,673	July 17	1815	416	92	304
Hakewessell, Reinhold, Hartford, and E. C. Henn, Bloomfield, Conn. Metal-working machine	656,188	Aug. 21	1964	451	92	1453
Hale, Henry S., Philadelphia, Pa. Curtain-fixture	655,075	July 31	4374	1081	92	992
Hale, Henry S., Philadelphia, Pa. Car-seat	658,008	Sept. 18	1844	399	92	2210
Hale & Kilburn Manufacturing Company. (See Bennett, Frederick, assignor.)						
Hale & Kilburn Manufacturing Company. (See Schellenbach, William L., assignor.)						
Hales, Henry W., Ridgewood, N. J. Roll-holding camera	654,451	July 24	3388	762, 763	92	731
Haley, Henry J., Cardiff, Tenn. Mining-machine	654,891	July 31	4240	952	92	922
Haley, Jonathan, and H. H. Bridgwater, Akron, Ohio; said Haley assignor to said Bridgwater. Apparatus for forming hollow glass articles	652,845	July 3	202	47	92	41
Haley, Thomas, Boston, Mass. Controlling-nozzle	652,844	July 3	201	47	92	41
Halifax, John B., Chicago, Ill. Making semisteel bearings, &c	655,226	Aug. 7	93	20, 21	92	1060
Halifax, John B., Chicago, Ill., assignor to Geo. L. Thompson Manufacturing Company, of Illinois. Bearing	656,111	Aug. 14	1833	421, 422	92	1415
Halifax, John B., Chicago, Ill., assignor to Geo. L. Thompson Manufacturing Company, of Illinois. Swaging-machine	655,975	Aug. 14	1567	361	92	1358
Hall, Charles E. (See Gordon and Hall.)						
Hall, Cortez D. (See Allen and Hall.)						
Hall, Emilie C. (See Hogeland, Israel, assignor.)						
Hall, Frank, assignor of three-fourths to G. Elfstrand, C. B. Shove, and C. J. Hedwall, Minneapolis, Minn. Wheel and axle						
Hall, James, Buffalo, N. Y. Rubbish-crematory						
Hall, John A. (See Mullin, Watson, and Hall.)						
Hall, John A., *et al.* (See Hall, Mary J., assignor.)						
Hall, John B., Jr. (See Taylor, Charles J., assignor.)						
Hall, John L., Schenectady, N. Y., assignor to General Electric Company, of New York. Signaling device	654,625	July 31	3723	840	92	813
Hall, Joseph T., Confederate, Ky. End-gate	653,083	July 3	649	155	92	131
Hall, Leslie H., *et al.* (See Burns, Robert J., assignor.)						
Hall, Lewis A., *et al.* (See Leaver, James M., assignor.)						
Hall, Louis H., Hartford, Conn. Violin	655,622	Aug. 7	819	191	92	1199
Hall, Mary J., assignor of two-thirds to J. A. Hall and L. R. Fechtig, Aspen, Colo. Boot-tree	653,575	July 10	1600	372	92	332
Hall, Robert E., Mankato, Kans. Chafing-roller for wagons	657,821	Sept. 11	1482	316	92	2129
Hall, Robert F., Moseley, England. Motor-driven vehicle	653,801	July 17	2052	468	92	439

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hall & Ross Husking Glove Company. (See Wainwright, Ernest, assignor.)						
Hall, Thomas A. (See Hall, Wilton A. and T. A.)	653,237	July 10	961	.....	92	205
Hall, William A., Bellows Falls, Vt. Sizing	658,213	Sept. 18	2203	481	92	2279
Hall, Wilton A. and T. A., assignors to themselves and L. G. Hirth, Fernandina, Fla. Non-refillable bottle				482		
Halladay, Lewis P., assignor to P. Matter, Marion, Ind. Computing-scale	658,641	Sept. 25	2964	659	92	2455
Hallensleben, Otto, Hilden, Germany. Woven pile fabric	655,076	July 31	4577	1032	92	998
Hallett, Joseph, and G. Halliday, London, England. Water-tube boiler	656,019	Aug. 14	1656	380	92	1376
				381		
Halliday, George. (See Hallett and Halliday.)						
Halsey, William S., assignor to Pneumatic Crane Company, Pittsburg, Pa. Means for transmitting fluid under pressure	658,802	July 17	2056	468	92	440
Halstead, James A. (See Hughes, Godfrey, assignor.)						
Haltene, Samuel, assignor of one-half to J. McIntosh, Greenville, Ky. Fire extinguisher and alarm	655,776	Aug. 14	1160	265	92	1278
Ham, Albert W., Lansingburg, assignor to Trojan Button Fastener Company, Incorporated, Troy, N. Y. Sand-box for cars	655,863	Aug. 14	1333	307	92	1313
Ham, Herbert H., assignor to M. F. Ham, New York, N. Y. Ball-bearing spindle for spinning-frames	654,892	July 31	4242	953	92	922
Ham, James L., Huddleston, Va. Tire-tightener	656,542	Aug. 21	2616	602	92	1579
Ham, Mercena F. (See Ham, Herbert H., assignor.)						
Hamill, Robert J. W., assignor of one-half to G. W. Evans, Baltimore, Md. Milk-can lock	654,567	July 24	3579	808	92	767
Hamilton, Charles S., New Haven, Conn. Mooring-line attachment	653,021	July 3	548	129	92	109
Hamilton, Edith L., Fresno, Cal. Pencil-tray attachment for type-writers	657,105	Sept. 4	62	14	92	1814
Hamilton, Emery M., New York, N. Y. Piano-action	658,545	Sept. 25	2772	615	92	2417
Hamilton, J. W., *et al.* (See Galbraith, Oscar B., assignor.)						
Hamilton, James, Newburg, N. Y. Bread or cake knife	655,301	Aug. 7	245	56	92	1089
Hamilton, James W. C., Liverpool, England, assignor of two-thirds to Bergl Australia, Limited, Sydney, New South Wales. Making foods from blood	653,956	July 17	2331	.....	92	492
Hamilton, John. (See Fawcett, James F., assignor.)						
Hamilton, Lloyd E., and J. W. Miller, Hudson, Ind. Ribbon-holder	654,892	July 24	3276	735	92	708
Hamilton, Thomas J., New York, N. Y. Wardrobe-trunk	653,177	July 3	880	195	92	166
Hamlett, Henry H., Providence, R. I. Hammering-press	656,135	Aug. 14	1870	430	92	1421
Hamm, Frank, *et al.* (See Hamm, Jacob, assignor.)						
Hamm, Jacob, Steelburg, assignor of one-half to J. F. Demel and F. Hamm, Steele City, Nebr. Stalk-cutter	657,411	Sept. 4	658	137	92	1932
Hamm, William S. (See Mosher and Hamm.)						
Hammatt, Clarence S. (See Lennig, Albert M., assignor.)	654,696	July 31	3724	840	92	813
Hamner, Willie A., Fairlie, Tex. Fence-post	655,654	Aug. 7	982	209	92	1222
Hammond, Irving L., Lewiston, Me. Air-brake for automobiles	657,412	Sept. 4	660	138	92	1933
Hammond, Irving L., Lewiston, Me. Vaporizing attachment for burners	654,249	July 24	2997	673	92	649
Hammond, Marcus C., Savannah, Ga. Duplicate-whist apparatus						
Hammond, Myron B. (See Taylor and Hammond.)						
Hammond, Wilberforce B. (See Scrimgeour, Charles E., assignor.)						
Hampton Company. (See McConnell, Thomas, assignor.)						
Hampton, Riley J. (See Allison, Edward H., assignor.)						
Hampton, William E. (See Holtgen, August, assignor.)						
Hancox, Henry A. and R. J., Sydney, New South Wales. Rotary engine	658,363	Sept. 25	2463	544	92	2357
				545		
Hancox, Henry A. and R. J., Sydney, New South Wales. Rotary pump	658,364	Sept. 25	2465	545	92	2357
Hancox, Robert J. (See Hancox, Henry A. and R. J.)						
Handschuh, Boyd, Wrightsville, Pa. Padlock	654,627	July 31	3725	841	92	813
Handwerk, Hugo, New York, N. Y. Skate	657,822	Sept. 11	1483	316	92	2121
Handy, James O., Edgeworth, assignor to Pittsburg Testing Laboratory, Limited, Pittsburg, Pa. Treating sludge in water-purifying	654,898	July 24	3277	.....	92	709
Handy, Lucien H., San Francisco, Cal. Device for drawing lager-beer	657,106	Sept. 4	64	14	92	1814
Handy Things Company. (See Bailey, Herbert L., assignor.)						
Handy, William R. (See Cline and Handy.)						
Hanger, Orion V. (See Curd and Hanger.)						
Hangi, Karl P., New York, N. Y. Ship propelling mechanism	652,770	July 3	61	14,15	92	13
Hanhart, Louis J., assignor to J. A. Fay & Egan Company, Cincinnati, Ohio. Offset mechanism for sawmill-carriages	658,108	Sept. 18	2013	439	92	2241
Hanington, Charles F., assignor to Mechanical Door Hinge Check Company, New York, N. Y. Door-check	653,295	July 10	1082	259	92	229
Hanks, Marshall W., assignor to G. Westinghouse, Pittsburg, Pa. Circuit-controller for incandescent lamps and magnetic guide therefor	653,554	July 10	1561	364	92	324
Hanley, John. (See Mulkerins, Thomas M., assignor.)						
Hanlon, John H., Boston, assignor of one-half to W. J. Hanlon, Fitchburg, Mass. Pneumatic device for clearing railway-track-sanding pipes. (Reissue)	11,845	Aug. 14	1904	488	92	1428
Hanlon, William J. (See Hanlon, John H., assignor.) (Reissue.)	654,730	July 31	3910	882	92	851
Hanna, David W., New Castle, Pa. Glove	654,150	July 24	2711	618	92	537
Hanna, Joseph, and E. J. Jedlicka, Chicago, Ill. Tool-handle	657,107	Sept. 4	66	14	92	1815
Hannifin, Michael J., and A. Huck, Milwaukee, Wis. Faucet						
Hannoch, Louis. (See Lasswell, Jesse D., assignor.)						
Hannum, Ellis J. (See Newton and Hannum.)						
Hannum, Henry A., Cazenovia, N. Y. Forming pinking-cutters	655,484	Aug. 7	574	128	92	1153
Hanrahan, Thomas, Bungaree, Victoria. Conveyer and elevator for reaping and binding machines	656,112	Aug. 14	1834	422	92	1415
	656,323	Aug. 21	2215	507	92	1500
Hänsel, Albert, Zeitz, Germany. Electric bicycle						
Hansel, Brüder. (See Hansel and Hornung, assignors.)						
Hansel, Stefan. (See Hornung and Hansel.)						
Hansel, Stefan, and E. Hornung, Vienna, assignors to Brüder Hansel, Bärn, Austria-Hungary. Waterproofing coating	658,437	Sept. 25	2596	.....	92	2282
Hansell, William H., Philadelphia, Pa. Egg-case filler	657,285	Sept. 4	413	87	92	1883
Hansen, Lorenzo M., Moorestown, N. J. Water-bag	655,485	Aug. 7	575	129	92	1153
Hansmann, Alfred E. T., administrator. (See Blechynden, Alfred.)						
Hansmann, Otto. (See Herzberg and Hansmann.)						
Hanson, Oscar B. (See Nebel and Hanson.)						
Harbeck, Charles T., *et al.* (See Mallett, Charles E., assignor.)						
Hard Manufacturing Company. (See Dyett, James S., assignor.)						
Hardart, Frank, and J. Anderson, Philadelphia, Pa. Cutter for butter, &c	655,486	Aug. 7	576	129	92	1153
Harden, Harry, assignor of one-half to J. and M. Carter, London, Ohio. Shaft-support	653,803	July 17	2058	469	92	440
Harden, Harry, assignor of one-half to J. and M. Carter, London, Ohio. Dehorning-knife	653,804	July 17	2060	469	92	440

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Hardenburg, Howard R., Saginaw, Mich. Casing-spear	658,062	Sept. 18	1928	419	92	2225
Hardenburg, Howard R., Saginaw, Mich. Slip-socket	658,063	Sept. 18	1928	419	92	2225
Harder, George D., Cobleskill, N. Y. Silo	653,474	July 10	1410	331	92	292
Harding, Joseph W. (See Hindley and Harding.)	658,438	Sept. 25	2597	.....	92	2382
Hardmeyer, Erhard, Kokomo, Ind. Composition for converting iron into steel	656,113	Aug. 14	1836	422	92	1415
Hardwick, Harry, assignor to Ivins, Dietz & Metzger Company, Philadelphia, Pa. Ingrain carpet fabric	658,365	Sept. 25	2466	428 545	92	2357
Hardy, James W., Bevington, Iowa. Hog or cattle holding rack	652,846	July 3	204	47,48	92	41
Hargreaves, James, Farnworth-in-Widnes, England. Purifying and strengthening brine for use in electrolytic cells	654,394	July 24	3278	736	92	709
Hargreaves, James, Widnes, England. Folding or flexible ladder	655,343	Aug. 7	328	71	92	1104
Hargreaves, James, Widnes, England. Electrolytic cell	655,344	Aug. 7	330	72	92	1105
Hargreaves, James, Widnes, England. Cathode for use in electrolytic cells						
Harlan, Samuel F. (See Emerson, Herbert G., assignor.)	653,929	July 17	2276	518	92	483
Harlow, Cushing C., assignor to C. S. Pierce, Brockton, Mass. Holder for shoe-tops	658,259	Sept. 18	2276	500	92	2294
Harlow, Robert W., Beverly, Mass. Combined blind-hinge and storm-window fastener	657,239	Sept. 4	320	68	92	1866
Harlow, William G., Yazoo City, Miss. Grate-frame						
Harnstrom, Sandfrid. (See Berger, Joseph A., assignor.)	654,831	July 31	4112	925	92	895
Harper, Charles R., Marshalltown, Iowa. Portable forge						
Harper, Richie T. (See Roark, James S., assignor.)	653,576	July 10	1602	373	92	332
Harrell, Andy B., Pilot Mountain, N. C. Tobacco-granulator	653,805	July 17	2061	469	92	441
Harrell, Earle G., Jennings, Fla. Trading-ticket						
Harriman, Frank H., assignor to W. E. Goodwin, Hartford, Conn. Pressure safety device for acetylene-gas generators	655,623	Aug. 7	839	191 195	92	1199
	653,178	July 3	831	196	92	166
Harriman, Henry I., New York, N. Y. Loom						
Harrington, Allen W., assignor to Harris & Harrington, New York, N. Y. Tubular bell for chiming clocks	656,603	Aug. 21	2734	627	92	1604
Harrington, Ford T., Bushnell, Ill. Vehicle-brake	656,641	Aug. 28	2802	640	92	1631
Harrington, Joseph H., Troy, N. Y. Packing-box	657,108	Sept. 4	67	15	92	1815
Harrington & Richardson Arms Company. (See Bye, Martin, assignor.)						
Harris, Benjamin, New York, N. Y. Badge	656,970	Aug. 28	3442	786	92	1758
Harris, Charles R., Williamsport, Pa. Domestic garbage-burner	656,404	Aug. 21	2368	544	92	1529
Harris, Charles R., Williamsport, Pa., assignor to Harris Safety Company, New York, N. Y. Fire-escape	657,735	Sept. 11	1338	282 283	92	2090
Harris, Cynthia S., executrix. (See Harris, Lewis.)	654,628	July 31	3727	841	92	814
Harris, Frank H., Toledo, Ohio. Toy car						
Harris, George T. (See Torbensen, Viggo V., assignor.)						
Harris & Harrington. (See Harrington, Allen W., assignor.)	655,487	Aug. 7	577	129	92	1153
Harris, Isaac L., Jacksonville, Fla. Acetylene-gas generator	658,439	Sept. 25	2598	576	92	2382
Harris, Isaac L., Jacksonville, Fla. Acetylene-gas generator	657,983	Sept. 18	1810	390	92	2202
Harris, Jesse, Lynn, Mass. Electric meter	657,984	Sept. 18	1811	390	92	2203
Harris, Jesse, Lynn, Mass. Electric measuring instrument				564		
Harris, Jesse, Lynn, Mass., assignor to General Electric Company, of New York. Summation-meter	656,455	Aug. 21	2458	565	92	1546
Harris, Lewis, deceased; C. S. Harris, Rome, N. Y., executrix, assignor, by mesne assignments, to C. S. Harris. Hoist and carrier	657,508	Sept. 11	1076	223	92	2039
	656,971	Aug. 28	3443	787	92	1753
Harris, Newton C., Knights, Ala. Cotton-scraper						
Harris, Robert W. (See Espey and Harris.)						
Harris Safety Company. (See Harris, Charles R., assignor.)						
Harris, William, assignor of one-half to I. T. Montgomery, Mound Bayou, Miss. Lamp-burner	655,077	July 31	4578	1032	92	993
	654,975	July 31	4381	986	92	952
Harris, William T., Louisville, Ky. Compound engine	656,543	Aug. 21	2617	602 603	92	1579
Harrison, Enos H., and T. Lawson, Newark, N. J. Pneumatic door-check						
Harrison, George R., Honolulu, Hawaii, assignor to J. L. Ewin, Washington, D. C. Dehydrating and mothproofing composition	653,674	July 17	1817	.....	92	395
	655,078	July 31	4580	1032	92	993
Harrison, Thomas, Bowling Green, Ohio. Car-coupling						
Harshman, J. S., *et al.* (See Bailey, Marion M., assignor.)						
Hart, Edward S., assignor of three-fourths to M. H. Hart, C. F. Birch, Sr., Dunkirk, and T. F. Hart, Muncie, Ind. Lock for sectional glass-molds	653,140	July 3	768	181	92	153
	653,084	July 3	651	155	92	132
Hart, Hubert C., Unionville, Conn. Making washers						
Hart, Isaac C., assignor of one-half to J. W. Herron, Jr., Cincinnati, Ohio, and W. D. McCracken, Sanford, Fla. Mop-wringer	653,450	July 10	1803	323	92	282
Hart, Matthew H., *et al.* (See Hart, Edward S., assignor.)						
Hart, Thomas F., *et al.* (See Hart, Edward S., assignor.)						
Hart, William B., and A. Ashworth, assignors to Solvents Recovery Company, Manchester, England, and J. Marshall, Fall River, Mass. Apparatus for recovering solvents	653,555	July 10	1563	364	92	324
	652,771	July 3	62	15	92	13
Harte, William F., Omaha, Nebr. Hotel room-register	655,624	Aug. 7	821	191	92	1200
Hartman, Charles H., Allegheny, Pa. Bearing for car-trucks	654,731	July 31	3911	883	92	851
Hartman, Gus, Rockwall, Tex. Acetylene-gas generator	653,556	July 10	1566	365	92	324
Hartmann, Charles R., New York, N. Y. Device for making loops in wire	657,109	Sept. 4	68	15	92	1815
Hartmann, William H., Chicago, Ill. Ear-muff						
Hartshorn, Edmund F., Newark, N. J., assignor to Stewart Hartshorn Company, of New Jersey. Spring shade-roller	654,893	July 31	4243	953	92	922
Hartshorn, Edmund F., Newark, N. J., assignor to Stewart Hartshorn Company, of New Jersey. Spring shade-roller	656,288	Aug. 21	2155	493	92	1488
Hartung, Charles C., assignor to E. Walsh, Jr., St. Louis, Mo. Means for forming sheet-glass of the prismatic type	653,238	July 10	902	231	92	205
Hartung, Charles C., assignor to E. Walsh, Jr., St. Louis, Mo. Prismatic rolled sheet-glass	655,401	Aug. 7	426	94	92	1122
Harvey, J. B., *et al.* (See Brooks, Samuel M., assignor.)	658,260	Sept. 18	2277	501	92	2294
Harvey, Thomas, Jr., Hull, Canada. Wire-web guide for paper-making machines	656,289	Aug. 21	2155	493	92	1488
Harvey, William J., assignor of one-half to W. H. Wheaton, Philadelphia, Pa. Cross-head-pin oiler	657,698	Sept. 11	1266	268	92	2076
Hasbrouck, Julian A. H., New York, N. Y. Aging alcoholic liquors	654,894	July 31	4245	953	92	923
Hasbrouck, Stephen A., New York, N. Y. Regulator for gasolene or other like engines	656,642	Aug. 28	2804	641	92	1631
Haseltine, Seward A., Springfield, Mo. Moth-catcher						
Haske, A. J. (See Sulser, Adam H., assignor.)						
Haskell, Henry L., assignor to Ludington Novelty Company, Ludington, Mich. Back-stop for game-boards	654,063	July 17	2505	576	92	526
Haskins, Caryl D., Newton, Mass., assignor to General Electric Company, of New York. Electric meter	653,806	July 17	2063	469	92	441
	654,629	July 31	3728	841 842	92	814
Haskins, William J., and T. A. Coffin, New York N. Y. Conveying apparatus	653,022	July 3	550	129	92	110
Hasselbarth, Carl O., Albany, N. Y. Wire mattress						

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Hassenstab, Francis B., Young America, Minn. Sugar-beet-seed planter	658,440	Sept. 25	2600	576	92	2382
Hastings, Cornelius G., Chicago, Ill. Tunneling-shield	658,366	Sept. 25	2467	546	92	2358
Hastings, Frank N., Meriden, Conn. Glue-heater	655,227	Aug. 7	96	21	92	1060
Hastings, William P., New York, N. Y. Flushing apparatus	653,005	July 3	518	123	92	104
Hatch, George E. (See Middleby, Joseph, Jr., assignor.)						
Hatfield, Charles B., New York, N. Y. Corn-shield	653,998	July 17	2390	551	92	506
Hatfield, Charles B., New York, N. Y. Measuring instrument for lasts, &c	655,228	Aug. 7	97	21	92	1060
Hathaway, George W., Lapeer, Mich. Surgical operating-table	654,832	July 31	4114	925 / 926	92	895
Hatleli, Ole O. (See Ostrem and Hatleli.)						
Hauser, Johann F., Nuremberg, Germany. Feed-water heater	656,248	Aug. 21	2082	476	92	1475
Hautier, Camille, Paris, France. Gas-engine	656,020	Aug. 14	1659	381	92	1377
Haven, Alfred C., Lake Forest, Ill. Bicycle-support	654,452	July 24	3395	768	92	732
Havens, Ernest A., Peoria, Ill. Tool for turning regular forms	658,009	Sept. 18	1846	400	92	2210
Haverstick, John. (See Wiegand, William T., assignor.)						
Hawkes, James R. (See Bavier and Hawkes.)						
Hawkins, Albert W., Cleveland, Ohio. Range, &c	657,536	Sept. 11	966	199	92	2018
Hawkins, David, Bertram, Tex. Car-coupling	655,229	Aug. 7	99	22	92	1061
Hawkins, Millard J., Hoopeston, Ill. Can-wiping machine	657,216	Sept. 4	276	59	92	1858
Hawkins, Thomas, London, England. Safety-fastener for envelops	655,230	Aug. 7	100	22	92	1061
Hawkins, Thomas, London, England. Chamber-pot, &c	655,231	Aug. 7	101	22	92	1061
Hawks, William, Midland, Mich., assignor to T. B. Jeffery and C. F. Stokes, Chicago, Ill. Hydrocarbon illuminating-lamp	654,976	July 31	4383	987	92	952
Hawks, William, Midland, Mich., assignor to T. B. Jeffery and C. F. Stokes, Chicago, Ill. Hydrocarbon-lamp	654,977	July 31	4384	987	92	952
Hawks, William, assignor to T. B. Jeffery and C. F. Stokes, Chicago, Ill. Hydrocarbon-lamp	656,889	Aug. 28	3293	749	92	1724
Hawley, George C. (See Thomson, Walter, assignor.)						
Hay, John F., assignor to J. P. Metcalf, B. J. Walker, and G. R. Metcalf, Erie, Pa. Apparatus for feeding comminuted fuel to furnaces, &c	657,537	Sept. 11	968	199	92	2018
Hayden, Austin B., Chicago, Ill. Computing-scale	656,348	Aug. 21	2271	520 / 521	92	1511
Hayden, Randolph, Haddam, Conn. Wrench	657,655	Sept. 11	1183	247	92	2001
Hayden, William H., Worcester, Mass. Photographic dark room	654,568	July 24	3581	808	92	768
Hayes, Charles J. W., Detroit, Mich. Cord-fastener	656,114	Aug. 14	1838	423	92	1416
Hayes, Eugenio K., Galva, Ill. Shoveling-board	657,110	Sept. 4	68	15	92	1815
Hayes, Eugenio K., Galva, Ill. Swing	657,111	Sept. 4	71	16	92	1816
Hayes, Frank, West Superior, assignor of one-half to Webster Manufacturing Company, South Superior, Wis. Chair-back-bending press	655,153	July 31	4097	1059	92	1016
Hayes, George, Mount Vernon, N. Y. Resiliency device for wheels	657,112	Sept. 4	73	16	92	1816
Hayes, Hammond V., and E. R. Cram, Cambridge, assignors to American Bell Telephone Company, Boston, Mass. Radiophony	654,630	July 31	3731	842	92	815
Hayes, James L., assignor of one-half to G. F. Stodghill, Salida, Colo. Hanger for battery-elements	657,413	Sept. 4	661	138	92	1933
Hayes, Lewis S., Cortland, N. Y. Separable chair	655,488	Aug. 7	578	129	92	1154
Hayes, Stephen A. (See Young and Hayes.)						
Hayes, William L., Otis, Colo. Machine for mixing mortar	658,486	Sept. 25	2672	593	92	2396
Haynes, Elwood, and E. Apperson, Kokomo, Ind. Explosive-engine	658,367	Sept. 25	2469	547 / 548	92	2358
Haynes, William C., Glasgow, Scotland. Mast for steam vessels	655,707	Aug. 14	1015	234 / 235	92	1250
Hays, Eugene D., assignor of two-thirds to J. W. Griffenberg, F. D. Goodwin, and W. C. Hays, Philadelphia, Pa. High or low water alarm for boilers	654,631	July 31	3733	842	92	815
Hays, James M., *et al.* (See McHale, Edward H., assignor.)						
Hays, William C., *et al.* (See Hays, Eugene D., assignor.)						
Haywood, John W., Syracuse, N. Y. Dump-wagon	654,453	July 24	3397	763	92	733
Hazard, Schuyler, Cincinnati, Ohio. Railway-rail and joint	657,870	Sept. 11	1570	339	92	2139
Headson, Frank A., assignor of one-half to L., H., J., and M. Pottlitzer, Lafayette, Ind. Automatic air-valve for radiators	658,368	Sept. 25	2480	548	92	2360
Heap, Charles. (See Grosselin, Nicolas H., assignor.)						
Heard, Richard W., and R. A. L. Snyder, Pittsburg, Pa. Assorting apparatus for sheets of mica, &c	655,553	Aug. 7	672	153 / 154	92	1172
Heard, William H., London, Canada. Spray-pump	654,151	July 24	2712	618	92	587
Heart, Charles, Frankton, assignor of one-half to W. H. H. Quick, Anderson, Ind. Wheel	657,699	Sept. 11	1267	269	92	2076
Heaslet, James G. (See Clarke and Heaslet.)						
Heaslet, James G. (See Clarke, Morgan, and Heaslet.)						
Heath, Elmer H. (See Dunham, George H., assignor.)						
Heaton, Morgan, Norton, Kans. Draft-equalizer	654,792	July 31	4039	908	92	880
Heaton, Richard. (See Copley, Marshall, and Heaton.)						
Heberer, Adam, Alameda, Cal. Smokeless coal-burning furnace	654,250	July 24	2999	673	92	649
Heckel, Christian J., Pittsburg, assignor of one-half to H. J. Pope, Etna, Pa. Support for miners' lamps	658,642	Sept. 25	2966	660	92	2455
Hedges, Mertland M. (See Casey and Hedges.)						
Hedrick, Samuel E., Spencer, Ind. Carbureter	657,770	Sept. 11	1391	294 / 295	92	2102
Hedwall, Charles J., *et al.* (See Hall, Frank, assignor.)	656,189	Aug. 21	1965	451	92	1454
Heerdt, Heinrich W., Aussig, Austria-Hungary. Glass-mold	657,217	Sept. 4	280	59	92	1858
Heeren, William, Pittsburg, Pa. Sign						
Heggie, David, McKeesport, Pa., assignor to National Tube Company, New York, N. Y., and Pittsburg, Pa. Forming rings and couplings	653,911	July 17	2251	512	92	477
Heggie, David, McKeesport, Pa., assignor to National Tube Company, New York, N. Y., and Pittsburg, Pa. Coupling and ring	653,912	July 17	2253	512	92	478
Heggie, David, McKeesport, Pa., assignor to National Tube Company, New York, N. Y., and Pittsburg, Pa. Apparatus for forming pipe-couplings or similar articles	653,913	July 17	2253	512	92	478
Heidel, Gustavos, assignor to Globe Electric Company, St. Louis, Mo. Battery-electrode	654,113	July 17	2580	593	92	541
Heidland, Henry, *et al.* (See Royse, Thomas B., assignor.)						
Heil, Albrecht, Frankfort-on-the-Main, assignor to Columbus Electricitäts-Gesellschaft mit Beschränkter Haftung, Ludwigshafen, Germany. Galvanic battery	653,770	July 17	1988	454	92	427
Heilborn, Franz J., Plainville, Mass. Collar-button	655,079	July 31	4581	1032	92	903
Heiligenstein, Gus, New Bremen, Ohio. Curtain-fixture bracket	654,152	July 24	2716	618	92	588
Heilmann, Jean J., Paris, France. Gear for motor-cars	654,632	July 31	3734	842 / 843	92	816
Heim, C. H., *et al.* (See Mann, John L., assignor.)						
Heiman, Solomon, Little Falls, N. Y. Pocket-atomizer	653,866	July 17	2102	498	92	460

Alphabetical list of patentees, July to September, inclusive—Continued.

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Heimann, Benno, assignor of one-half to I. Dannenbaum, San Francisco, Cal. Self-lighting cigar	655,864	Aug. 14	1335	306	92	1314
Heine, August, assignor to M. L. Allen, Silver Creek, N. Y. Attrition-mill	657,656	Sept. 11	1185	247	92	2061
Heine, August, assignor to L. Heine, Silver Creek, N. Y. Grain-separator	658,109	Sept. 18	2016	439	92	2242
Heine, Lizzie. (See Heine, August, assignor.)						
Heinrich, Thomas. (See O'Connell, James, assignor.)						
Heiny, Anatole, assignor of two-thirds to J. E. Artigues and D. G. Lucien, San Francisco, Cal. Electrical sign and signal and apparatus for operating same	655,777	Aug. 14	1161	266 / 267	92	1279
Heisler, Charles L., Erie, Pa. Pumping-engine	655,232	Aug. 7	103	23, 24	92	1061
Heiss, Gustaff F., Everett, Wash. Copy-holder	657,560	Sept. 11	1078	224	92	2040
Helander, Axel H., Philadelphia, Pa. Condenser	654,633	July 31	3735	843	92	816
Helion Gas Generator Company. (See Weeks, John W., assignor.)						
Helios Upton Company. (See Spencer, Thomas, assignor.)						
Helix Gear Company. (See Johnson, Moses C., assignor.)						
Hellström, Oscar F., Sydney, New South Wales. Combined cornice and curtain hanger	657,538	Sept. 11	971	199	92	2019
Helm, Wilhelm, Berlin, Germany. Chilling butter	658,369	Sept. 25	2481	.....	92	2360
Helman, William H. (See Selter, John, assignor.)						
Hem, Halvor O., Kansas City, Kans. Friction-clutch pulley	653,675	July 17	1818	416	92	395
Hemleb, Martin. (See Diehl and Hemleb.)						
Hénard, Alfred E. (See Biver and Hénard.)						
Henderson, George R., Roanoke, Va. Relief mechanism for piston-valves	655,040	July 31	4581	1033	92	903
Hendon, Walter P., Dallas, Tex., assignor to E. Bement's Sons, Lansing, Mich. Clevis	656,890	Aug. 28	3295	749	92	1725
Hendrickson, Joseph G. (See Clamer and Hendrickson.)						
Hendrickson, Joseph G., and G. H. Clamer, assignors to Ajax Metal Company, Philadelphia, Pa. Alloy for antifriction-bearings, &c	655,402	Aug. 7	427	.....	92	1122
Hendrix, Albert S. (See Johnson and Hendrix.)						
Henn, Edwin C. (See Hakewessell and Henn.)						
Hennessey, Thomas J., *et al* (See Royse, Thomas B., assignor.)	658,643	Sept. 25	2967	660	92	2455
Henning, Abel, Colorado Springs, Colo. Gas-meter	654,634	July 31	3738	843	92	816
Henning, Henry H., Brisbane, Queensland. Automatic pump for pneumatic-tired wheels						
Henricks, Garrett W., assignor to Henricks Novelty Company, Indianapolis, Ind. Magneto-electric generator for gas-engine igniters	653,957	July 17	2332	535	92	492
Henricks Novelty Company. (See Henricks, Garrett W., assignor.)						
Henriod-Schweizer, Fritz, Marin, Switzerland. Transmission device for motor-cars	657,771	Sept. 11	1394	295	92	2102
Henry, Bowen. (See Carter and Henry.)						
Henry, Edward A., assignor to E. A. Henry and J. L. Griswold, Crestline, Kans. Electric motor	656,972	Aug. 28	3444	787	92	1754
Henry, Eugene E., Stamps, Ark. Bicycle-lamp holder	654,978	July 31	4385	988	92	953
Henry, Thomas, Jr., Philadelphia, Pa. Attachment for circular-knitting machines	652,847	July 3	205	48	92	41
Henry, William E., assignor to C. M. Campbell, Washington, D. C. Back-pedaling brake	656,788	Aug. 28	3045	693	92	1678
Henson, William M., Kansas City, Mo. Kitchen-cabinet	655,081	July 31	4583	1033	92	903
Henthorn, Albert S. (See Nickerson, William J., assignor.)						
Hentz, James W., Baltimore, Md. Gas-regulating tip for burners	656,136	Aug. 14	1871	430	92	1422
Hepworth, Friend. (See Leach and Hepworth.)						
Herbert, George, Jr., Glasgow, Scotland. Apparatus for feeding or delivering biscuits for packing	657,657	Sept. 11	1187	248	92	2061
Herbold, Philip, Jr., Galion, Ohio. Burial-casket	658,261	Sept. 18	2279	501	92	2295
Herbst, Wendell E., Hartford, Conn. Rubber heel	658,441	Sept. 25	2601	577	92	2393
Herder, Herman, Philadelphia, Pa. Razor-stropping device	653,914	July 17	2255	513	92	478
Herdman, Frank E., Winnetka, Ill. Elevator	652,893	July 3	273	66, 67	92	54
Herdman, Frank E., Winnetka, Ill. Operative mechanism for elevators	652,894	July 3	276	67, 68	92	55
Herdrich, William F., assignor of one-half to S. Lichtenstein, Chicago, Ill. Latch	657,345	Sept. 4	530	110	92	1906
Herman, Andrew, assignor to F. W. Tatchell, Cheyenne, Wyo. Tool for finishing boots or shoes	656,290	Aug. 21	2157	493	92	1489
Herman, Jesse E., Macon, Miss. Wood-sawing machine	655,708	Aug. 14	1017	235	92	1250
Herman, Rudolph, San Francisco, Cal. Device for excluding water from manholes	656,249	Aug. 21	2082	477	92	1475
Hermance, A. D., *et al.* (See Mann, John L., assignor.)						
Herod, Charles H., and J. B. Detwiler, Brantford, Canada. Mechanical movement	654,158	July 24	2716	619	92	588
Herre, Alfred. (See Heymann and Herre.)						
Herrick, Houghton, Boonville, N. Y. Automatic stamp-affixer	655,865	Aug. 14	1336	308	92	1314
Herrick, Thomas W., *et al.* (See Maxwell, Herbert A., assignor.)						
Herriott, John S., Mount Sterling, Ky. Sample-bag	658,147	Sept. 18	2073	452	92	2253
Herron, John W., Jr., *et al.* (See Hart, Isaac C., assignor.)						
Herstrom, Martin. (See Fain and Herstrom.)						
Hertel, Franz J., Leipsic-Gohlis, assignor to E. Fiedler, Klingenthal, Germany. Incasement or housing for mechanical musical instruments	653,348	July 10	1189	283	92	247
Herzberg, Wilhelm, and O. Hansmann, assignors to Actien-Gesellschaft für Anilin Fabrikation, Berlin, Germany. Brown dye	657,064	Aug. 28	3595	.....	92	1783
Herzberg, Wilhelm, and O. Hansmann, assignors to Actien-Gesellschaft für Anilin Fabrikation, Berlin, Germany. Reddish-brown dye	657,065	Aug. 28	3596	.....	92	1783
Hess, William, New York, N. Y. Billiard-cue-tip fastener	656,973	Aug. 28	3445	787	92	1754
Hester, Stephen J., assignor of one-half to W. A. and J. I. Carter, Mayfield, Ky. Adjustable framing-square	658,262	Sept. 18	2280	501	92	2295
Hester, Stephen J., and J. I. Carter, Mayfield, Ky. Buggy body and seat brace	657,871	Sept. 11	1571	339	92	2139
Heston, William, Homestead, Pa. Piston	657,600	Sept. 11	1080	224	92	2040
Hetherington, Charles. (See Steffens, Mathew J., assignor.)						
Heuck, Henry T. C., Champaign, Ill. Water-closet valve	655,233	Aug. 7	106	24	92	1062
Hewes, Harry. Darby, and S. L. Troupe, Philadelphia, Pa. Shutter bower and fastener	655,806	Aug. 14	1337	308	92	1314
Hewitt, Herbert H. (See Coleman, Richard E., assignor.)						
Hewitt, John. (See Gollings, Ellick H., assignor.)						
Hewitt-Lindstrom Motor Company. (See Conrad, John B., assignor.)						
Hewitt-Lindstrom Motor Company. (See Lindstrom, Charles A., assignor.)						
Hewitt, William R., San Francisco, Cal. Harness-support	656,405	Aug. 21	2270	544	92	1529
Heyde, August auf der, Jersey City, N. J., assignor of one-half to W. Hoffman, New York, N. Y. Workman's time-recorder	655,044	July 31	4567	1016	92	978
Heyden, F. von, Nachfolger. (See Diehl, Heinrich L., assignor.)						
Heymann, Bernhard, and A. Herre, Elberfeld, Germany, assignors to Farbenfabriken of Elberfeld Company, New York, N. Y. Monoacetyl-indoxyl and making same	657,589	Sept. 11	973	.....	92	2020
Heywood Brothers & Wakefield Company. (See Cann, Thomas B., assignor.)						
Heywood Brothers & Wakefield Company. (See Houston, Donald M., assignor.)						
Heywood Brothers & Wakefield Company (See Richardson, Walter E., assignor.)						
Heywood Brothers & Wakefield Company	655,082	July 31	4585	1034	92	904
Hibbs, Henry S., Bristol, Pa. Shutter-fastener	655,083	July 31	4586	1034	92	904
Hibbs, Henry S., Bristol, Pa. Shutter-fastener	658,870	Sept. 25	2482	549	92	2360
Hickey, John S., and J. H. Egbert, Anaconda, Mont. Car-axle						
Hicks, John J., assignor of one-half to J. Garabaldi, Little Rock, Ark. Wagon running-gear	654,251	July 24	3001	673	92	649

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Hicks, William A. B. (See McAuliff and Hicks.)						
Hien, Eugene, Muncie, Ind., assignor, by mesne assignments, to D. S. Wegg, Chicago, Ill. Car-coupling	658,371	Sept. 25	2485	549	92	2360
Higbee, Clinton A., Philadelphia, Pa. Screw-coupling	658,085	Sept. 18	1979	431	92	2235
Higbee, Clinton A., Philadelphia, Pa. Screw-coupling	658,086	Sept. 18	1980	431	92	2235
Higbee, Clinton A., Philadelphia, Pa. Screw-coupling	658,087	Sept. 18	1982	432	92	2236
Higbee, Harold A., Leeds Point, N. J. Combined door-bell and burglar-alarm	653,999	July 17	2397	552	92	506
Higdon, John E., administrator. (See Hoffman, William T.)						
Higgins, Frank L., Toronto, Canada. Pipe for blowing and propelling bubbles	657,163	Sept. 4	169	38	92	1835
Higgins, James H., Whitwell, Tenn. Coal-auger	653,023	July 10	1698	380	92	946
Higgins, Werter C., Norwich, Conn. Grate	655,990	Aug. 14	1456	335	92	1337
Higgins, William H., Jersey City, N. J. Detector-bar	656,974	Aug. 28	3447	{787 788}	92	1754
Hightower, Charles G. (See Scott and Hightower.)						
Hightower, Charles G. (See Scott, Hightower, and Neitzel.)						
Hilbert, Joseph, Dusseldorf, Germany. Document-file	653,239	July 10	964	231	92	206
Hilbig, Frank. (See Paul, Henry C., assignor.)						
Hildebrandt, Philip. (See Boschen, Gustave W., assignor.)						
Hile, John W., Kansas City, Kans. Merry-go-round	654,154	July 24	2719	619	92	589
Hill, John J., Denver, Colo. Plumbing device	652,902	July 3	446	105	92	90
Hill, Jonathan, Jersey City, N. J. Belt-fastener	655,408	Aug. 7	428	94	92	1122
Hill, Joseph B., Ovid, Mich. Applicator	652,848	July 3	206	49	92	42
Hill, Norman N., East Hampton, Conn. Bicycle-bell	657,346	Sept. 4	532	110	92	1907
Hiller, Nicolai H., Carbondale, Pa., and H. Torrance, Jr., Tenafly, N. J. Absorption refrigerating apparatus	654,395	July 24	3279	736	92	709
Hilles, Jesse. (See Huff, Slaughter W., assignor.)						
Hilliker, James W., Traverse City, Mich. Heating-drum	653,676	July 17	1819	{416 417}	92	395
Hilliker, Ryerson W., Kansas City, Kans. Bake-oven for gas or gasolene stoves	654,539	July 24	3538	797	92	760
Hills, Lawrence J., Fruitvale, Cal. Collapsible lunch-box	657,197	Sept. 4	233	52	92	1848
Hillyer, William H., Atlanta, Ga. Game-board	653,085	July 3	652	155	92	132
Hilsinger, Alburtis C., Killawog, assignor to C. A. Stevens, New York, N. Y. Stone or ore crusher	653,771	July 17	1989	{454 455}	92	428
Hilson, Edward, New York, N. Y. Cigar-case	656,349	Aug. 21	2274	521	92	1511
Hilson, Edward, New York, N. Y. Cigarette-box cap	656,350	Aug. 21	2275	521	92	1511
Hilson, Edward, New York, N. Y. Cigar-case	656,351	Aug. 21	2276	522	92	1511
Hilton, Charles H. (See La Bier, Clarence R., assignor.)						
Hilton, Frank M., J. S. and W. W., and R. M. Merriman, Akron, Ohio. Vehicle-wheel	655,709	Aug. 14	1018	235	92	1251
Hilton, John S. (See Hilton and Merriman.)						
Hilton, Walter K., Moscow, Idaho. Hasp	656,817	Aug. 28	3106	705	92	1690
Hilton, William W. (See Hilton and Merriman.)						
Himes, Joseph B., *et al.* (See Gordon and Hall, assignors.)						
Hindley, William, Hoboken, N. J., and J. W. Harding, New York, N. Y., assignors, by mesne assignments, to Diamond Wood Company of New Jersey. Wood-sawing machine	652,772	July 3	64	15, 16	92	14
Hindley, William, Hoboken, N. J., and J. W. Harding, New York, N. Y., assignors, by mesne assignments, to Diamond Wood Company, of New Jersey. Wood-cutting machine	654,635	July 31	3740	844	92	817
Hindley, William, Hoboken, N. J., and J. W. Harding, New York, N. Y., assignors, by mesne assignments, to Diamond Wood Company, of New Jersey. Knotter	655,867	Aug. 14	1338	{308 309 310}	92	1314
Hindman, James T., Anna, Ill. Cistern-cleaner	658,175	Sept. 18	2137	466	92	2267
Hinkelbein, George A., *et al.* (See Mosher, David, assignor.)						
Hipple, Oliver P. (See Van Tassel and Hipple.)						
Hirsch, Hiram H., Philadelphia, Pa. Bedstead-fastener	656,456	Aug. 21	2460	565	92	1547
Hirsch, Isaac, Chicago, Ill. Knife	656,457	Aug. 21	2461	565	92	1547
Hirsch, Ludwig, New York, N. Y. Oiler	656,975	Aug. 28	3449	788	92	1754
Hirschbach, Henry, New York, N. Y. Button	658,644	Sept. 25	2968	660	92	2456
Hirsching, Henry, Salt Lake City, Utah, assignor to Mineral Union, Limited, Phœnix, Ariz. Ter. Treating gold and silver ores	656,544	Aug. 21	2618	603	92	1579
Hirt, Ludwig, Grevenbroich, Germany. Apparatus for cleansing and cooling gas	652,773	July 3	66	16	92	14
Hirt, Ludwig, assignor to Machinenfabrik Grevenbroich, Grevenbroich, Germany. Washing-machine for beets, &c	654,793	July 31	4041	909	92	880
Hirt, Ludwig, assignor to Maschinenfabrik Grevenbroich, Grevenbroich, Germany. Apparatus for drying sugar	655,710	Aug. 14	1020	236	92	1251
Hirth, Louis G. (See Hall, Wilton A. and T. A., assignors.)						
Hiser, Charles H., and E. N. Lupfer, assignors to Springfield Metallic Casket Company, Springfield, Ohio. Grave-vault	654,155	July 24	2722	619	92	589
Hislop, George R., Paisley, Scotland. Charging-hopper for gas-producers	655,931	Aug. 14	1458	335	92	1337
Hitchcock, Dexter, Norwalk, Conn. Mud-guard for vehicles	658,442	Sept. 25	2602	577	92	2383
Hitchcock, Murray S. (See Montgomery, James A., assignor.)						
Hitchins, Harry J., and A. Mayhew, London, England. Gimbaled cot or couch	657,286	Sept. 4	415	87	92	1883
Hitz, Stephen T., Indianapolis, Ind. Elevator safety-gate	654,396	July 24	3281	736	92	709
Hoadley, Francis H. (See Grover, Henry M., assignor.)						
Hoadley, Horace G. (See Williams and Hoadley.)						
Hoadley, Horace G., Waterbury, Conn. Wrench	656,643	Aug. 28	2806	641	92	1631
Hoaglen, George W., Chicago, Ill. Adjustable holder for copy-slips, &c	654,636	July 31	3743	844	92	817
Hobart, Frank G., Beloit, Wis., assignor to Fairbanks, Morse & Company, Chicago, Ill. Clutch mechanism	655,440	Aug. 7	502	112	92	1137
Hobart, John H., assignor of one-half to E. R. Philipps, El Paso, Tex. Fuel-economizer	652,895	July 3	279	68	92	56
Hobbs, George W., assignor of one-half to A. J. Partridge, Los Angeles, Cal. Nail or tack driver	653,772	July 17	1992	455	92	428
Hobbs, John E. (See Mathen, William, assignor.)						
Hobbs, John E., North Berwick, Me. Attachable sleigh-runner	654,637	July 31	3744	{844 845}	92	817
Hodge, Homer W., Atlanta, Ga. Broom	656,976	Aug. 28	3450	788	92	1755
Hodges Fiber Carpet Company. (See Stevenson, William M., assignor.)						
Hodgson, Henry E., *et al.* (See Worsnop, Charles H., assignor.)						
Hodgson, Thomas S., *et al.* (See Faxon, William L., assignor.)						
Hodgson, William. (See Borrow, Wood, and Hodgson.)						
Hodgson, William T., assignor of one-half to C. L. Beatty, Sioux City, Iowa. Grinding attachment for sewing-machines	653,240	July 10	964	231	92	206
Hoe, Robert, *et al.* (See Crowell, Luther C., assignor.)						
Hoe, Robert, *et al.* (See McIntyre, Frank R., assignor.)						
Hoe, Robert, *et al.* (See Spalckhaver, William, assignor.)						
Hoeffer, Albert, *et al.* (See Lind, Charles H., assignor.)						
Hoelscher, Christian, Warren, Ohio. Incandescent lamp	656,115	Aug. 14	1840	423	92	1416

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Hoerle, William M., Allegheny, assignor to Pittsburgh Lamp and Brass Company, Pittsburg, Pa. Chimney-raising device	656,891	Aug. 28	3295	749	92	1725
Hoerner, John S., Highland, Ill. Embossing	655,084	July 31	4587	1034	92	994
Hoerr, Louis A., St. Louis, Mo. Car-door	654,979	July 31	4586	988	92	958
Hoff, George W., Rochester, N. Y. Wave-motor	656,645	Aug. 28	2807	{641 642}	92	1632
Hoff, Olaf, Minneapolis, Minn. Pivotal bearing for turn-tables	655,489	Aug. 7	580	130	92	1154
Hoff, Olaf, and C. F. Haglin, Minneapolis, Minn. Concrete pile	654,897	July 24	3282	{736 737}	92	710
Hoffer, Fredrick, assignor of one-half to H. Trost, Cohoes, N. Y. Convertible open and closed car	653,958	July 17	2337	536	92	493
Hoffman, Addison F., Tifton, Ga. Door or window fastener	656,116	Aug. 14	1841	423	92	1416
Hoffman, Carl. (See Johnson, John W., assignor.)						
Hoffman, Frank E. (See Love, Lafayette, assignor.)						
Hoffman, William. (See Heyde, August auf der, assignor.)						
Hoffman, William T., deceased, Kansas City, Mo.; J. E. Higdon, administrator. Water-wheel	652,774	July 3	68	16	92	15
Hoffmann, August von, Munich, Germany. Submarine apparatus	657,218	Sept. 4	281	59, 60	92	1858
Hoffmann, Emil, Chicago, Ill. Acetylene-gas lamp	657,480	Sept. 4	872	177	92	1989
Hoffmann, Ernst G., Chelmsford, England. Thrust-bearing for shafts	655,711	Aug. 14	1021	236	92	1251
Hoffmann, Ernst W. G. C., Charlottenburg, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Switch	656,291	Aug. 21	2158	494	92	1489
Hoffmann, Otto A., Csepel, assignor to Waffen-und Maschinenfabriks Actiengesellschaft, Buda-Pesth, Austria-Hungary. Magazine-pistol	658,010	Sept. 18	1848	400	92	2211
Hoffmann, Peter C. F., Kiel, Germany. Electrically-operated submarine torpedo	656,292	Aug. 21	2160	494	92	1489
Hofstetter, Andrew, Philadelphia, Pa. Combined pencil-holder and penknife	653,807	July 17	2064	470	92	441
Hogan, Daniel W., Medford, Mass. Advertising device	658,241	July 10	967	231	92	206
Hogan, James T., Jersey City, N. J., assignor to National Machine Company, of New York. Button-clamp for sewing-machines	653,808	July 17	2065	470	92	441
Hogan, James T., Jersey City, N. J., assignor to National Machine Company, Troy, N. Y. Machine for sewing buttons to fabrics	656,458	Aug. 21	2402	{565 566}	92	1547
Hogan, James T., Jersey City, N. J., assignor to National Machine Company, of New York. Work-clamp for buttonhole-sewing machines	657,540	Sept. 11	974	200	92	2020
Hogan, Thomas J., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Fluid-pressure-regulating device	654,599	July 24	3582	{808 809}	92	768
Höge, Carl. (See Jentzen and Höge.)						
Hogeland, Israel, Chicago, Ill., assignor to E. C. Hall, South Haven, Mich. Lung tester and developer	657,658	Sept. 11	1188	248	92	2062
Hogg, Alexander, Elgin, Scotland. Apparatus for trimming sides of roads	653,510	July 10	1479	345	92	307
Hohner, Hans, Trossingen, Germany. Mouth-harmonica	653,451	July 10	1303	323	92	283
Hoisington, Daniel J., and J. W. Kessinger, assignors of one-half to M. E. Hoisington, Crescent, and D. S. Perkins, Bowman, Okla. Ter. Reversing-valve	658,524	Sept. 25	2738	608	92	2410
Hoisington, Mary E., *et al.* (See Hoisington and Kessinger, assignors.)	654,540	July 24	3539	798	92	760
Hoke, Henry H., Frederick, Md. Machine for cutting green corn from the cobs	656,190	Aug. 21	1966	452	92	1454
Holahan, Richard J., *et al.* (See Stephens, Daniel, assignor.)				{466 467}		
Holcombe, Walter S., assignor of one-third to E. W. Closson, Lambertville, N. J. Grapple	658,176	Sept. 18	2139		92	2267
Holden, Edward P., assignor to J. L. Board, Chicago, Ill. Can-soldering machine	653,023	July 3	550	129	92	110
Holden, Liberty D., Cleveland, Ohio. Golf-club	653,773	July 17	1994	456	92	428
Holdredge, Romaine C., Janesville, Wis. Fastening device for pockets	656,644	Aug. 28	2806	641	92	1631
Holland-Letz, Louis, Crown Point, Ind. Endless feed belt and apron and carrying-shaft for same	655,490	Aug. 7	581	130	92	1154
Hollem, Rudolph, Sioux City, Iowa. Muscle-kneader	654,308	July 24	3284	737	92	710
Holling, Lilian B. (See Sheffield, George P., assignor.)	658,546	Sept. 25	2775	615	92	2418
Hollings, Ernest, Chorlton-Cum-Hardy, England. Guncotton-press	658,500	Sept. 25	2693	598	92	2401
Hollings, John F., Hartford, Conn. Fire-pot lining	655,976	Aug. 14	1568	361	92	1358
Hollingsworth, W. T. P. (See Weaver, William, assignor.)						
Holloway, William H., Oakdale, Cal. Wear-adjusting nut for vehicle-axles	657,541	Sept. 11	974	200	92	2020
Holloway, John R., Westville, N. J., and H. S. Jacobs, Philadelphia, Pa.; said Holloway assignor to said Jacobs. Bait or other net	657,113	Sept. 4	75	17	92	1816
Holloway, L. N., *et al.* (See Brooks, Samuel M., assignor.)	656,324	Aug. 21	2216	507	92	1500
Holloway, L. N., *et al.* (See Mead, William M., assignor.)						
Hollub, Louis J. P., and H. Mignal, Paris, France. Device for fixing incandescent electric lamps	657,772	Sept. 11	1306	{295 296}	92	2103
Holm, Lars N., Des Moines, Iowa. Steam-engine						
Holmes, Arthur B., Liverpool, England. Controlling electrical currents						
Holmes, Christian R., *et al.* (See Trautvetter, Erwin von, assignor.)						
Holmes, Edward L., Chicago, Ill. Bicycle propelling mechanism	654,541	July 24	3542	799	92	761
Holmes, Harriet E., *et al.* (See Bradford and Holmes, assignors.)	654,542	July 24	3544	799	92	761
Holmes, Lena B., *et al.* (See Bradford and Holmes, assignors.)						
Holmes, Merton A. (See Bradford and Holmes.)						
Holmes, Thomas H., Wilkes-Barré, Pa. Rod-packing	658,734	July 17	1925	441	92	415
Holmes, Thomas H., Wilkes-Barré, Pa. Metallic packing	653,735	July 17	1926	441	92	415
Holmes, Watson M. (See Lowry and Holmes.)	656,352	Aug. 21	2277	522	92	1512
Holmes, Watson M., Boston, Mass., assignor to Planters Compress Company, of West Virginia. Feeder for presses	653,242	July 10	968	232	92	206
Holmes, Watson M., Hoosick Falls, N. Y., assignor to Planters Compress Company, Boston, Mass. Apparatus for compressing fibrous or other material	657,700	Sept. 11	1268	269	92	2076
Holmes, William, assignor to Morgan & Wright, Chicago, Ill. Basin-stopper	653,930	July 17	2277	518	92	483
Holt, Albert T., Springfield, Ohio. Apparatus for placing lining in openings in plastic material						
Holt, Benjamin, Stockton, Cal. Traveling harvester						
Holt, Johann von, Hamburg, Germany. Fender for tramways or like vehicles						
Holt, Joseph. (See Levy and Holt.)						
Holt, Walter L. (See Wetmore, Silas M., assignor.)						
Holtgen, August, assignor of one-half to W. E. Hampton, San Francisco, Cal. Apparatus for cutting metal shavings	655,808	Aug. 14	1347	310	92	1316
Homan, William, assignor to Andrew Homan Company, New York, N. Y. Cabinet	657,347	Sept. 4	535	110	92	1907
Homeier, George P., Niles, Ohio. Envelop	658,443	Sept. 25	2903	577	92	2383
Homestead Valve Manufacturing Company. (See Rylands, James J., assignor.)						
Hood, Hiram Q., Carthage, Mo. Cooking-stove	654,543	July 24	3545	799	92	761
Hookham, George, Birmingham, England. Electricity-meter	656,545	Aug. 21	2662	{603 604}	92	1579
Hooper, Harry J., *et al.* (See Reenstierna, Gustaf L., assignor.)						
Hoover, Harry M., Allegheny, Pa. Folding box	656,250	Aug. 21	2084	477	92	1475

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hoover, Henry H. (See Slocum, Ebenezer N., assignor.)						
Hoover, Jacob D., Winchester, Va. Car-replacer	655,778	Aug. 14	1167	267	92	1279
Hoover, Morris T. (See Hoover, Oliver S. and M. T.)						
Hoover, Oliver S., Stanford University, and M. T. Hoover, Mount View, Cal. Device for gathering prunes	654,399	July 24	3286	737, 738	92	710
Hope, Charles H., Providence, R. I. Merchantable printed cloth of changeable color	658,746	Sept. 25	3169	705	92	2496
Hopkins, Charles H., Manchester, N. H. Apparatus for lining engines	656,400	Aug. 21	2371	545	92	1529
Hopkins, Henry C., Lithonia, Ga. Trousers-hanger	658,372	Sept. 25	2486	550	92	2361
Hopkins, James M., Chicago, Ill., assignor to Q. & H. Company, of Illinois. Door-hanger	655,869	Aug. 14	1348	310	92	1316
Hopkins, James M., Chicago, Ill., assignor to Q and H Company, of Illinois. Weather-guard for freight-car doors	658,737	Sept. 25	3150	699	92	2492
Hopkins, Lewis L. (See Freeman, James A., assignor.)						
Hopkinson, Bertram, London, England. Switch for alternating electric currents	658,064	Sept. 18	1930	419, 420	92	2226
Hopp, Lewis C. (See Cooper and Thompson, assignors.)						
Hopper, John H., assignor of one-half to W. L. Boreland, Paterson, N. J. Combined compasses and calipers	658,011	Sept. 18	1850	400	92	2211
Horn, Christian, Philadelphia, Pa. Extension-table	656,293	Aug. 21	2162	494	92	1499
Horn, George E. (See Bunker and Horn.)						
Horn, Wilbur F., Carlisle, Pa. Pneumatic safety-gate	657,066	Aug. 28	3597	829	92	1783
Horn, William O., New York, N. Y. Neckwear-retainer	658,177	Sept. 18	2140	468	92	2267
Hornaday, S. M. (See Kernodle, James A., assignor.)						
Horne, James. (See Dawson and Horne.)						
Horner, Arthur L., *et al.* (See La Fleur, Charles E., assignor.)						
Horner, George A., *et al.* (See La Fleur, Charles E., assignor.)	657,872	Sept. 11	1573	339	92	2140
Horner, John W., Des Moines, Iowa. Metal door-mat						
Hornich, William, Jr., Newark, N. J., assignor to Whitehead & Hoag Company, of New Jersey. Bill-hook	653,206	July 10	1085	259	92	230
Hornig, Friedrich. (See Eichelbaum, Georg, assignor.)						
Hornung, Eugen. (See Hansel and Hornung.)						
Hornung, Eugen, and R. Liebl, Vienna, Austria-Hungary. Compound as substitute for caoutchouc, gutta-percha, or the like	656,191	Aug. 21	1907	.....	92	1454
Hornung, Eugen, and S. Hansel, Vienna, Austria-Hungary. Treating india-rubber, gutta-percha, and their compositions	657,240	Sept. 4	321	.....	92	1866
Horry, William S., New York, N. Y. Producing carbid of calcium, &c	656,156	Aug. 14	1903	438	92	1427
Horry, William S., New York, assignor to Union Carbide Company, Niagara Falls, N. Y. Control of electric furnaces	655,779	Aug. 14	1168	267	92	1280
Horry, William S., New York, N. Y., assignor to Union Carbide Company, Chicago, Ill. Electric furnace	655,780	Aug. 14	1171	268	92	1280
Horry, William S., Sault Ste. Marie, Mich., assignor to Union Carbide Company, Chicago, Ill. Electric furnace	657,736	Sept. 11	1342	284	92	2091
Horsley, Sidney, Hoosick Falls, N. Y., assignor to Planters Compress Company, Boston, Mass. Feeding device for presses	653,736	July 17	1928	442	92	416
Horton, Charles M., Portsmouth, N. H., assignor to Morley Button Manufacturing Company, Saco, Me., and Boston, Mass. Button	656,407	Aug. 21	2373	545	92	1530
Horton, James A., New Castle, Pa. Toy safe	654,638	July 31	3747	845	92	818
Horton, Thomas, Groveland, Iowa. Automatic hog-watering trough	657,164	Sept. 4	171	38	92	1835
Horwitz, Leo, Berlin, Germany. Electric lamp for miners' use	656,977	Aug. 28	3451	788, 789	92	1755
Hosford, Charles L., Haydenville, Mass. Indicator-lock	657,773	Sept. 11	1397	296	92	2103
Hossfeld, George V., Topeka, Kans. Trunk	656,546	Aug. 21	2625	605	92	1580
Hostetter, Aaron. (See Spangler, John A., assignor.)						
Hough, David M. (See Olds and Hough.)	658,645	Sept. 25	2969	661	92	2456
Hough, John T., assignor of one-half to B. S. Law and M. G. Leslie, Pittsburg, Pa. Safe.	658,646	Sept. 25	2971	661, 662	92	2456
Hough, John T., assignor of one-half to B. S. Law and M. G. Leslie, Pittsburg, Pa. Bank-vault	657,067	Aug. 28	3598	829	92	1784
Houghton, Alfred N., Boston, Mass. Bottle-seal	654,454	July 24	3397	764	92	733
Houghton, Willard P., Eastport, Me. Spool-stand	654,347	July 24	3186	714	92	686
Houseman, Harry A., Philadelphia, Pa., assignor to Standard Machine Company, of Pennsylvania. Circular-knitting machine	658,263	Sept. 18	2283	502	92	2295
Houser, David A., Ottawa, Kans. Wheel-plow	654,732	July 31	3913	883	92	852
Houser, John W. (See Larraway and Houser.)						
Housh, Frank E., Boston, Mass. Wrapper	657,490	Sept. 4	874	177	92	1990
Houston, Donald M., assignor to Heywood Brothers & Wakefield Company, Wakefield, Mass. Car-seat	653,086	July 3	653	155	92	132
Houts, Michael L., St. Louis, Mo. Display-box	654,980	July 31	4387	988, 989	92	953
Howard, Abram F., Munising, Mich. Logging-exhibition apparatus						
Howard, Albert H., London, England. Manufacture of pipes or conduits for electrical conductors	656,192	Aug. 21	1908	452	92	1454
Howard, Benjamin F., assignor of one-half to J. Arnold, North Manchester, Ind. Broadcast seed-sower	658,318	Sept. 18	2370	523, 524	92	2312
Howard, Charles. (See Caldwell, Jack, assignor.)						
Howard, Clarence H. (See Schaffer and Howard.)						
Howard, Elmer G., Crain Creek, Iowa. Threshing-machine attachment	658,567	Sept. 25	2812	624	92	2425
Howard, Fred. (See Young, James A., assignor.)						
Howard, John W. (See Dixon and Howard.)						
Howard, Leon D., Marston, S. D. Sulky attachment for harrows	654,000	July 17	2398	532	92	506
Howard, Leonard D., St. Johnsbury, Vt. Power-hammer	657,114	Sept. 4	77	17, 18	92	1817
Howard, Lincoln, St. Joseph, Mo. Heating-stove	656,978	Aug. 28	3453	789	92	1755
Howard, Thomas A., assignor of one-third to W. O. Davis, Baltimore, Md. Feed-bag	655,085	July 31	4588	1034	92	904
Howarth, Josef, and W. Pruszkowski, Schodnica, Austria-Hungary. Boring apparatus	654,981	July 31	4389	989	92	954
Howe, James H. (See Johnson, Wallace C., assignor.)						
Howe, John K., and J. Clark, Albany, N. Y. Mechanism for holding and moving hulls of vessels on water	653,475	July 10	1411	331, 332	92	292
Howe, Randolph M., and L. A. Leavitt, Old Town, Me.; said Howe assignor to said Leavitt. Boat attachment	655,234	Aug. 7	107	24	92	1062
Howe, Thomas B., and C. E. Wetmore, Scranton, Pa. Apparatus for forming glass or vitreous pipe or tubular bodies	655,235	Aug. 7	109	24, 25	92	1062
Howell, James H. (See King, Anthony D. W., assignor.)						
Howell, John E., and W. A. Chamberlain, Montague, Cal. Potato-cutter	653,385	July 10	1252	297	92	260
Hower, Aten B. (See Schaub, Jacob, assignor.)						
Howie, James F. (See Patrick, Marcus C., assignor.)						
Howland, Henry E. (See Grenier-Villerd, Prosper M. C., assignor.)						
Howze, William. (See Asbell, Noah, assignor.)						
Hoyt, Frank A. (See Wilhite and Hoyt.)						
Hoyt, George E., San Francisco, Cal. Rear-compression gas-engine	657,934	Sept. 18	1722	370	92	2186

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Huber, Bernhard. (See Kempf, Carl, assignor.)						
Huber, Edward. (See Boger, Peter, assignor.)	656,841	Aug. 28	3184	721, 722	92	1706
Huber, Sigmund V., Pittsburg, Pa. Mechanism for piling plates or bars						
Huck, Albert. (See Hannifin and Huck.)						
Hudson, Edwin, Agosta, Ohio. Pan-lifter	656,547	Aug. 21	2626	605	92	1580
Huether, Ernst, New York, N. Y. Combination table and seat	654,639	July 31	3749	845	92	818
Huff, Henry H., assignor of two-thirds to A. D. Curran, Boston, and S. P. Burton, Jr., Reading, Mass. Exhaust mechanism for locomotives	652,903	July 3	447	105	92	90
Huff, Henry H., assignor of two-thirds to A. D. Curran, Boston, and S. P. Burton, Jr., Reading, Mass. Automatic blower	652,904	July 3	449	106	92	90
Huff, Henry H., assignor of two-thirds to A. D. Curran, Boston, and S. P. Burton, Jr., Reading, Mass. Sanding apparatus for locomotives	658,331	Sept. 18	2392	528, 529	92	2317
Huff, Slaughter W., assignor of one-half to J. Hilles, Baltimore, Md. Electric controller	653,087	July 3	654	156, 157	92	133
Hughes, Godfrey, assignor of one-half to J. A. Halstead, El Paso, Tex. Calcining-furnace	654,640	July 31	3750	846	92	819
Hughes, Henry A., Philadelphia, Pa. Jar or bottle closure	656,548	Aug. 21	2627	605	92	1580
Hughes, James G., Port Arthur, Tex. Splint	653,179	July 3	835	196, 197	92	167
Hughes, James H., assignor of one-third to E. A. Wills, Alicel, Oreg. Hay-rake	658,647	Sept. 25	2976	662	92	2457
Hughes, James R., Bellefonte, Pa. Educational game	656,117	Aug. 14	1841	424	92	1416
Hughes, John V., Dallas, Tex. Nailless horseshoe	656,979	Aug. 28	3455	789	92	1756
Hughes, Robert, assignor to J. Knickerbocker, Waterford, N. Y. Fire-hydrant	655,781	Aug. 14	1174	268	92	1281
Hughes, William B., Newark, N. J., and J. C. Rae, New York, N. Y. Smoke-cooler and nicotin-extractor for tobacco-pipes	658,178	Sept. 18	2141	468	92	2267
Huitt, Richard, *et al.* (See Collins, John C., assignor.)						
Hulett, George H., assignor of one-half to Webster, Camp & Lane Machine Company, Akron, Ohio. Bridge-conveyer	654,455	July 24	3399	704, 705	92	733
Hulett, George H., Cleveland, assignor of one-half to Webster, Camp & Lane Machine Company, Akron, Ohio. Car-dumping machine	654,544	July 24	3547	800	92	761
Hulfish, David S., Chicago, Ill., assignor to American Bell Telephone Company, Boston, Mass. Telephone switching apparatus	657,315	Sept. 4	471	100	92	1894
Hulfish, David S., Chicago, Ill., assignor to American Bell Telephone Company, Boston, Mass. Telephone trunk-circuit	657,316	Sept. 4	478	100	92	1895
Hull, Burt, Auburn, Ind. Mail supplying and delivering apparatus	658,373	Sept. 25	2487	550	92	2361
Hull, Daniel O., Port Clinton, Ohio. Alternating-current regulator	632,775	July 3	70	17	92	15
Hull, Henry A., *et al.* (See Urmson, William G., assignor.)						
Hull, William L., Alpha, Minn. Post-extractor	654,001	July 17	2399	552	92	506
Humberger, Alonzo, North Platte, Nebr. Force-blast elevator	654,252	July 24	3002	673	92	650
Humes, Harry S., assignor of one-half to S. M. Morrison, Denver, Colo. Wall-tie	654,733	July 31	3914	883	92	852
Humphrey, Harry B., *et al.* (See Locke, Charles S., assignor.)						
Humphrey, Horace, *et al.* (See Locke, Charles S., assignor.)						
Humphrey, Horace F., *et al.* (See Locke, Charles S., assignor.)						
Hundhausen, Rudolf. (See Fröschl and Hundhausen.)						
Hundhausen, Rudolf, Wilmersdorf, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Junction or connection box	654,310	July 24	3129	699, 700	92	674
Hundhausen, Rudolf, Wilmersdorf, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Fuse	657,414	Sept. 4	632	138	92	1933
Hungerford, Henry H., assignor to F. M. Peters, Chicago, Ill. Cake-machine	652,965	July 3	450	106	92	91
Hungerford, William H. (See Backus, John C., assignor.)						
Hunn, Albert B., assignor to New Departure Bell Company, Bristol, Conn. Bell	658,501	Sept. 25	2694	598	92	2401
Hunold, Ernest, Providence, R. I. Skate	658,148	Sept. 18	2074	452	92	2253
Hunt, Charles W., New York, N. Y. Friction-wheel	658,444	Sept. 25	2604	577	92	2383
Hunt, Philip B., Minneapolis, Minn. Baking preparation	654,570	July 24	3586	.....	92	769
Hunt, Philip B., Minneapolis, Minn. Phosphate baking-powder	654,571	July 24	3588	.....	92	769
Hunt, Philip B., Minneapolis, Minn. Phosphoric-acid baking-powder	654,572	July 24	3589	.....	92	769
Hunt, Philip B., Minneapolis, Minn. Baking-powder	654,573	July 24	3590	.....	92	769
Hunter, Andrew, San Francisco, Cal. Bicycle-carrier for street-cars	653,396	July 10	1253	268	92	260
Hunter, David E., Cambridge, assignor to Library Bureau, Boston, Mass. Drawer for card-indexes	657,415	Sept. 4	664	138	92	1934
Hunter, David E., Cambridge, assignor to Library Bureau, Boston, Mass. Lock-rod for cards	658,738	Sept. 25	3151	699	92	2402
Hunter, Henry C., Hamilton, Canada, assignor, by mesne assignments, to Canister Manufacturing Company, Phillipsburg, Pa. Machine for making cans	654,253	July 24	3005	674, 675, 676	92	650
Hunter, Henry C., Hamilton, Canada, assignor, by mesne assignments, to Canister Manufacturing Company, Phillipsburg, Pa. Machine for making seaming-strips	654,254	July 24	3013	676, 677	92	652
Hunter, Henry C., Hamilton, Canada, assignor, by mesne assignments, to Canister Manufacturing Company, Phillipsburg, Pa. Packing-can and making same	654,255	July 24	3016	677	92	653
Hunter, Henry C., Hamilton, Canada, assignor, by mesne assignments, to Canister Manufacturing Company, Phillipsburg, Pa. Roll-press for forming weakened lines in can-heads	654,256	July 24	3018	677, 678	92	653
Hunter, Henry C., Hamilton, Canada, assignor, by mesne assignments, to Canister Manufacturing Company, Phillipsburg, Pa. Can-heading machine	654,257	July 24	3019	678	92	654
Hunter, Henry H., Berkeley Springs, W. Va. Rotary grate	655,086	July 31	4589	1035	92	904
Hunter, Murray M., Milwaukee, Wis. Safety device for elevators	653,297	July 10	1066	259, 260	92	230
Hunter, Rudolph M., Philadelphia, Pa. Producing photographic negatives	656,769	Aug. 28	3009	686	92	1672
Huntley, Stephen A., Elk Point, S. D. Firearm	654,895	July 31	4247	953, 954, 955	92	923
Hurd, Arthur J., Baraboo, Wis. Bag-holder	655,236	Aug. 7	112	25	92	1003
Hurd, Asa C., Corwin, Pa. Combined socket and stake for logging-cars	652,776	July 3	72	18	92	15
Hurford, Alvin, Canton, Ohio. Trap-door for mines	657,985	Sept. 18	1818	391	92	2203
Hurley, Daniel, and W. T. Barratt, assignors to C. Cooper, Bennington, Vt. Straight-rib-knitting machine	654,982	July 31	4393	990	92	955
Hurn, Edward, assignor to J. P. Haden, Trowbridge, England. Air-compressor	657,025	Aug. 28	3519	803, 804	92	1767
Hurrell, Mark H., Wimbledon, England. Dynamo-electric machine	658,012	Sept. 18	1852	401	92	2211
Huse, Edward C., Somerville, Mass. Platform-car	658,525	Sept. 25	2741	608	92	2411
Hussey, Patrick L., Dayton, Ohio. Bicycle-tube clamp	653,243	July 10	970	232	92	207
Husson, Albert, Parrentruy, Switzerland. Acetylene-gas generator	658,264	Sept. 18	2284	502	92	2296
Huston, Charles L., Coatesville, Pa. Roll-relieving device for rolling-mills	655,554	Aug. 7	677	154	92	1173
Huston, Charles L., Coatesville, Pa. Adjusting mechanism for universal mills	657,823	Sept. 11	1484	316, 317	92	2121

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Hutchins, George F., assignor to Crompton & Knowles Loom Works, Worcester, Mass. Loom	657,115	Sept. 4	79	18,19	92	1817
Hutchison, George D. (See Boggess and Hutchison.)						
Hutin, Maurice, and M. Leblanc, Paris, France. Apparatus for exciting alternating-current dynamo-electric machines	653,088	July 3	664	158	92	134
Hutin, Maurice, and M. Leblanc, Paris, France. Exciter for alternating-current dynamo-electric machines	653,089	July 3	671	159, 160	92	136
Hutin, Maurice, and M. Leblanc, Paris, France. Apparatus for transforming alternating currents into continuous currents, and vice versa	655,237	Aug. 7	113	25, 26	92	1064
Hutin, Maurice, and M. Leblanc, assignors to Société Anonyme pour la Transmission de la Force par l'Électricité, Paris, France. Transforming alternating currents into continuous currents, and vice versa	655,238	Aug. 7	120	26, 27	92	1064
Hutt, Frederic C., and T. S. Stafford, assignors of one-third to M. Greenbank, Kenneth, Ind. Wrench	653,476	July 10	1415	332	92	293
Hutten, Herman H. (See Schulz, Louis, assignor.)						
Huxley, Charles E., Quincy, Ill. Package receiving and delivering device	655,901	Aug. 14	1400	322, 323	92	1326
Huyck, Francis P., Swanton, Ohio. Sewing-machine motor attachment	657,165	Sept. 4	172	39	92	1836
Hyatt, Clark C., H. W. Watson, W. Wildanger, and C. B. Sanderson, Flint, Mich. Vehicle	653,511	July 10	1482	346	92	307
Hyde, James C., West Haven, Conn. Cable-hanger	654,983	July 31	4395	991	92	955
Hyndman, Frank T., Allegheny, Pa. Hub-liner for railway-wheels	654,641	July 31	3752	846	92	819
Hysert, Frank, assignor of one-half to J. A. Clark, Buffalo, N. Y. Curtain-fixture	656,604	Aug. 21	2738	627	92	1605
I. B. Kleinert Rubber Company. (See Kleinert, Isaac B., assignor.)						
I. H. Williams & Company. (See Bufford, George W., assignor.)						
Ibert, Frank, New York, N. Y. Pipe-nozzle	653,677	July 17	1822	417	92	396
Icke, Henry A., Pietermaritzburg, Natal. Water-gate	657,774	Sept. 11	1400	296, 297	92	2104
Iddings, Frederick T., and D. H. Washburn, Washington, D. C.; said Iddings assignor to said Washburn. Locating concealed water-pipes	658,013	Sept. 18	1853	401	92	2212
Ide, Harry L., assignor to A. L. Ide & Sons, Springfield, Ill. Governor	653,416	July 10	1300	308	92	270
Ide & Sons, A. L. (See Fernstrom, Herman, assignor.)						
Ideal Cash Register Company. (See Spaulding, Elijah F., assignor.)						
Idris, Thomas H. W., and R. H. Griffith, London, England. Siphon for aerated liquids	653,417	July 10	1302	309	92	270
Ihart, John P., assignor of one-half to A. H. Elliott, New York, N. Y. Separating water from emulsions, &c	654,258	July 24	3024	678	92	655
Ihlder, John D., Yonkers, N. Y., assignor, by mesne assignments, to Otis Elevator Company, East Orange, N. J. Speed-controller for electric elevators	657,416	Sept. 4	666	139	92	1934
Ihling, Reinhold, assignor, by mesne assignments, to Duplicate Whist Company, Kalamazoo, Mich. Duplicate-whist tray	657,737	Sept. 11	1344	284	92	2092
Ill, Henry. (See Ogden, Frederick H., assignor.)						
Illinois Malleable Iron Company. (See Wayman, William O., assignor.)						
Imboden, Carl, Murgenthal, Switzerland. Machine for filling tubular casings	657,935	Sept. 18	1724	370, 371	92	2187
Imboden, Samuel A. (See Moss and Imboden.)						
Implement Manufacturing Company. (See Jarmin, James B., assignor.)						
Improved Street Sweeper Company. (See Kane and List, assignors.)						
Independent Manufacturing Company. (See Scotford, Louis K., assignor.)						
Inderlied, Edward C., and C. B. Rumsey, Binghamton, N. Y.; said Rumsey assignor to said Inderlied. Heating apparatus	653,867	July 17	2163	491	92	460
Ingersoll, Alfred M., South Bend, Ind. Sand-band	657,542	Sept. 11	975	200	92	2020
Ingersoll, L. P. (See Abernathy, Hugh H., assignor.)						
Ingersoll, Stephen A. (See Shanklin, Philip A., assignor.)	653,090	July 3	676	160	92	136
Ingersoll, Worthington H., Hamburg, N. J. Boiler-tube cleaner	653,512	July 10	1483	346	92	308
Ingersoll, Worthington H., Hamburg, N. J. Steam-jet tube or flue cleaner	654,002	July 17	2400	552	92	506
Ingersoll, Worthington H., Hamburg, N. J. Boiler-tube scraper	658,445	Sept. 25	2604	578	92	2383
Ingraham, Arnold A., Lowell, Mass. Electric car	657,417	Sept. 4	670	139	92	1934
Inman, Horace, Amsterdam, N. Y. Box-covering machine	657,418	Sept. 4	672	140, 141, 142	92	1935
Intensified Gas Light Company. (See Tatham, James E., assignor.)						
International Electric Traction Company. (See Campbell, George L., assignor.)						
International Fac-Simile graph Company. (See Dun Lany, William P., assignor.)						
International Package Machine Company. (See Colborne, Oliver, assignor.)						
International Package Machine Company. (See Gage, George A., assignor.)						
International Postal Supply Company of New York. (See Jahn, Frederick G., assignor.)						
Interstate Electric Company. (See Melzer, Joseph, assignor.)						
Inventors and Investors League of the United States of America. (See Bowman, Charles M., assignor.)	657,986	Sept. 18	1726	371	92	2187
Irby, William H., Memphis, Tenn. Vapor-lamp						
Iron Clad Manufacturing Company. (See Clark, John S., assignor.)						
Iron Clad Manufacturing Company. (See Reynolds and Peacock, assignors.)						
Irvin, Watson D. (See Shortridge, Myers, and Irvin.)	657,543	Sept. 11	976	200	92	2020
Irvine, Percy R., Port Chester, N. Y. Guide for sewing-machines						
Israel, Adolf. (See Ott, Israel, and Kothe.)						
Israel, Adolf, and R. Kothe, Elberfeld, Germany, assignors to Farbenfabriken of Elberfeld Company, of New York. Thio-urea compound and making same	653,678	July 17	1823	------	92	396
Israel, Adolf, and R. Kothe, Elberfeld, Germany, assignors to Farbenfabriken of Elberfeld Company, New York, N. Y. Urea derivative of amidonaphthol sulfonic acid and making same	656,646	Aug. 28	2810	------	92	1632
Israel, Samuel A., New York, N. Y. Apparel-shirt	658,214	Sept. 18	2205	482	92	2280
Ives, Frederic E., Philadelphia, Pa. Photochromoscopic apparatus	655,712	Aug. 14	1023	236, 237	92	1251
Ivins, Dietz & Metzger Company. (See Hardwick, Harry, assignor.)						
Ivins, Eugene. (See Ivins, Walter S., assignor.)	657,116	Sept. 4	81	19	92	1817
Ivins, Walter S., assignor to E. Ivins, Philadelphia, Pa. Display-box	658,179	Sept. 18	2143	468	92	2208
Ivory, James W., Philadelphia, Pa. Rubber-dam clamp						
J. A. Fay & Egan Company. (See Hanhart, Louis J., assignor.)						
J. W. Sefton Manufacturing Company. (See Ferres, Jeffrey T., assignor.)						
J. W. Sefton Manufacturing Company. (See Schmidt, Theodore F. W., assignor.)						
J. W. Sefton Manufacturing Company. (See Shipley, Columbus G., Jr., assignor.)						
Jaccard, Eugene G. E., *et al.* (See Smith, Thomas, assignor.)	655,870	Aug. 14	1350	311	92	1316
Jackson, Ambrose F., Rock Island, Ill. Plow attachment	657,219	Sept. 4	283	60	92	1859
Jackson, Byron, San Francisco, Cal. Lubricator	653,513	July 10	1484	346	92	308
Jackson, Charles E., Rockford, Ill. Wheeled plow						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Jackson, Claude D., Amarillo, Tex. Spur	655,555	Aug. 7	678	154	92	1173
Jackson, E. Hilton, *et al.*, trustees. (See Cahill, Thaddeus, assignor.)	656,459	Aug. 21	2466	567	92	1548
Jackson, George W., Philadelphia, Pa. Bung and tap	655,625	Aug. 7	824	191	92	1200
Jackson, James, Mansfield, Ohio. Banana-shipping case						
Jackson, John L., *et al.* (See Gregory, Cornelius W., assignor.)	656,355	Aug. 21	2280	522, 523	92	1512
Jacobs, Arthur I., assignor to Smyth Manufacturing Company, Hartford, Conn. Pasting-machine	656,353	Aug. 21	2278	------	92	1512
Jacobs, Charles B., assignor to Ampere Electro-Chemical Company, Ampere, N. J. Alkaline-earth silicid	656,354	Aug. 21	2280	------	92	1512
Jacobs, Charles B., East Orange, assignor to Ampere Electro-Chemical Company, Ampere, N. J. Compound of silicon and hydrogen	657,937	Sept. 18	1738	371	92	2187
Jacobs, Charles B., East Orange, N. J., assignor, by mesne assignments, to Cyanide Company, of New Jersey. Manufacturing nitrogen compounds	657,938	Sept. 18	1740	------	92	2188
Jacobs, Charles B., East Orange, assignor to Ampere Electro Chemical Company, Ampere, N. J. Manufacturing compounds of nitrogen	652,777	July 3	73	18	92	15
Jacobs, Frank F., Indianapolis, Ind. Calk attachment for horseshoes	658,149	Sept. 18	2075	452, 453	92	2253
Jacobs, Henry, Lexington, Ill. Wire-stretcher	658,150	Sept. 18	2078	453	92	2254
Jacobs, Henry, Lexington, Ill. Wire-splicing machine	653,809	July 17	2060	470	92	442
Jacobs, Henry S. (See Holloway and Jacobs.)	658,648	Sept. 25	2977	602	92	2457
Jacobsohn, Nicholas, St. Petersburg, Russia. Filtering material	656,695	Aug. 28	2882	656	92	1648
Jacques, Louis, Telluride, Colo. Ore crusher and amalgamator	657,544	Sept. 11	979	201	92	2021
Jacques, Maximilien A., Salome, France. Apparatus for degreasing wool	653,091	July 3	677	160	92	137
Jaeger, Christian, Philadelphia, Pa. Easel-album	657,419	Sept. 4	677	142	92	1986
Jaeger, Willy, Berlin, Germany. Automatic supply-machine	657,545	Sept. 11	980	201	92	2021
Jäger, Wilhelm, Könkendorf, Germany. Machine for distributing manure	654,734	July 31	3915	883	92	852
Jagielski, Wladislaw F., Hanover, Germany, assignor to Singer Manufacturing Company, Elizabeth, N. J. Buttonhole-sewing machine	657,939	Sept. 18	1731	372, 373, 374, 375	92	2188
Jahn, August H., Homestead, Pa. Electric-commutator cleaner	653,092	July 3	678	161	92	137
Jahn, Frederick G., New York, N. Y., assignor, by mesne assignments, to International Postal Supply Company of New York, of New York. Mail-matter-marking machine						
James, Arthur F., Chadville, Pa. Necktie-fastener						
James, David. (See Burke and James.)						
James, David, Henllys, and A. Pearson, Upper Cwmbran, England. Safety-spike for suspending underground safety-lamps	657,491	Sept. 4	876	177	92	1990
James, Dudley A., Union Mills, Iowa. Tool-box	652,778	July 3	74	18	92	16
James, Elliott. (See Newman and James.)						
James H. Baker Manufacturing Company. (See Baker, James H., assignor.)	654,642	July 31	3753	846	92	819
James, Justin C., Chicago, Ill. Soap-bubble pipe						
James, R. C. (See Seeger, Robert, assignor.)						
Jameson, Kelly. (See Johnson and Jameson.)						
Jamieson, Augustus, Elizabeth, N. J., assignor of three-fifths to S. H. Carney, H. E. Knox, and W. Watt, New York, N. Y. Secondary battery	657,659	Sept. 11	1189	249	92	2002
Jamieson, Walter, New York, N. Y. Sectional floating dock	655,441	Aug. 7	504	112, 113	92	1138
Jamieson, Walter, New York, N. Y. Floating sectional dry dock	657,660	Sept. 11	1190	249	92	2062
Jamieson, Walter, New York, N. Y. Floating sectional dry dock	652,779	July 3	75	19	92	16
Jamison, Robert D., Cameron, Mo. Lamp-chimney	656,193	Aug. 21	1970	452, 453	92	1454
Jancey, William L., assignor to Bugbee & Laycock, Chicago, Ill. Water-tube boiler	658,265	Sept. 18	2286	503	92	2296
Janczarski, Constantin, Hughesovka, Russia. Pneumatic propelling and steering device for ships	652,966	July 3	452	106, 107	92	91
Jandus Electric Company. (See Stowe, Bernard A., assignor.)						
Jandus, William, Cleveland, Ohio. Filter	656,194	Aug. 21	1971	453	92	1455
Janney, John F. (See McNelly, Janney, and McNelly.)	655,977	Aug. 14	1570	361, 362	92	1859
Janney, Robert E. L., New York, N. Y. Dry closet	658,110	Sept. 18	2018	439, 440	92	2242
Jansen, Thomas, W. H. Gardiner, and E. Kandler, Chicago, Ill.; said Kandler assignor to said Jansen and Gardiner. Apparatus for recording papers or writings						
Janson, Ernest N., Washington, D. C. Steam-boiler	654,311	July 24	3131	700	92	675
Janssen, Gerrit. (See Van den Berg and Janssen.)						
Jaquith, Frank S., assignor to J. A. Getchell, H. E. and M. G. Jaquith, Des Moines, Iowa. Chicken-brooder						
Jaquith, Harriet E., *et al.* (See Jaquith, Frank S., assignor.)						
Jaquith, Mary G., *et al.* (See Jaquith, Frank S., assignor.)						
Jardine, John S., Philadelphia, Pa., assignor to E. O. Bayles, Aberdeen, Md. Stair-carpet fastener	657,270	Sept. 4	390	82	92	1879
Jarmin, James B., assignor to Implement Manufacturing Company, Davenport, Iowa. Automatic check-row corn-planter	655,655	Aug. 7	933	209, 210	92	1222
Jarmin, James B., assignor to Implement Manufacturing Company, Davenport, Iowa. Automatic check-row corn-planter	655,656	Aug. 7	936	211	92	1223
Jauch, Joseph, assignor to Bradley & Hubbard Mfg. Co., Meriden, Conn. Lamp-burner	652,780	July 3	76	19	92	16
Jaycox, John W., Elkhorn, Kans. Windmill	657,420	Sept. 4	679	143	92	1936
Jedlicka, Edward J. (See Hanna and Jedlicka.)						
Jeffcott, Lewis B., New York, N. Y. Folding bed	656,980	Aug. 28	3457	790	92	1756
Jefferies, Ebenezer A. W., Detroit, Mich. Gas-producer	654,456	July 24	3401	765	92	734
Jefferies, Ebenezer A. W., Detroit, Mich. Gas-producer	654,457	July 24	3402	765	92	734
Jefferies, Ebenezer A. W., assignor to American Construction Company, Detroit, Mich. Railway-tie	657,492	Sept. 4	877	177	92	1990
Jeffery, Thomas B., *et al.* (See Hawks, William, assignor.)	656,137	Aug. 14	1871	430	92	1422
Jeffery, Thomas B., Chicago, Ill. Grip	653,006	July 3	523	123, 124	92	105
Jenckes, Joseph S., Jr., Terre Haute, Ind. Railway-crossing						
Jenkins, Charles H., assignor of one-half to Kendrick & Davis, Lebanon, N. H. Ring-cutting tool	653,557	July 10	1567	365	92	325
Jenkins, Edward W., Norristown, Pa. Grain-binder	654,883	July 31	4117	926	92	895
Jenkins, Edy, Cullison, Kans. Self-operating wagon-brake	657,220	Sept. 4	284	61	92	1859
Jenkins, Newell S., Dresden, Germany. Portable melting apparatus	653,007	July 3	525	124	92	105
Jenkins, Thomas G., and J. B. Wills, Wheeling, W. Va. Slide-fastening for grippers and gripper extension-rods	654,259	July 24	3025	670	92	655
Jenner, Ernst G., Chicago, Ill. Belt-shifter	653,868	July 17	2165	494	92	461
Jenney, Robert T., London, England. Conveying apparatus	657,824	Sept. 11	1486	317	92	2121
Jennings, Kimsey M., Philadelphia, Pa. Greenhouse	658,180	Sept. 18	2143	468	92	2268
Jennison, Walter R., Atlanta, Ga. Water-cooler	653,418	July 10	1303	309	92	271

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Jensen, Andreas C., Niederrad, assignor to Vereinigte Chininfabriken, Zimmer & Co., Gesellschaft mit Beschränkter Haftung, Frankfort-on-the-Main, Germany. Obtaining vanillin derivatives	658,446	Sept. 25	2605	.....	92	2384
Jentzen, Rudolph, and C. Höge, Altona, Germany. Lock	654,008	July 17	2401	553	92	507
Jespersen, Thomas, Neenah, Wis. Bleaching by electrolytic chlorin water	655,289	Aug. 7	126	27	92	1005
Jessen, Henry L., Watsonville, Cal. Carbureter for explosive-engines	657,788	Sept. 11	1345	285	92	2092
Jessup, James J., Van Pelt Manor, N. Y., and E. K. Leffingwell, Upper Montclair, N. J., assignors to Brass Goods Manufacturing Company, New York, N. Y. Tube-compressor	657,775	Sept. 11	1402	297	92	2104
Jetter, Julius, Hartford, Conn. Device for automatically clamping and locking turrets to slides of screw-machines	657,241	Sept. 4	322	68	92	1866
Jetter, Julius, assignor to F. E. Bocorselski, Hartford, Conn. Universal joint	658,065	Sept. 18	1982	420	92	2226
Jewell, Omar H., Chicago, Ill. Filter	653,737	July 17	1930	442	92	416
Jewell, Omar H. and W. M., Chicago, Ill. Apparatus for purifying water	653,738	July 17	1934	442 443	92	417
Jewell, William M. (See Jewell, Omar H. and W. M.)						
Jewell, William M., Chicago, Ill. Purifying water	653,739	July 17	1936	443	92	417
Jewell, William M., Chicago, Ill. Purifying water	653,740	July 17	1938	443	92	417
Jewell, William M., Chicago, Ill. Purifying water	653,741	July 17	1940	443	92	418
Jewell, William M., Chicago, Ill. Purifying water	653,742	July 17	1942	444	92	418
Jewell, William M., Chicago, Ill. Apparatus for purifying water	653,743	July 17	1945	444	92	419
Jewell, William M., Chicago, Ill. Controller	653,744	July 17	1947	444	92	419
Jewell, William M., Chicago, Ill. Apparatus for purifying water	653,745	July 17	1948	444	92	420
Jewell, William M., Chicago, Ill. Making reagents for purifying water	653,746	July 17	1950	445	92	420
Jewell, William M., Chicago, Ill. Apparatus for producing purifying reagents	657,873	Sept. 11	1573	339	92	2140
Jewett, John H., Koss, Mich. Insertible cutter or tooth for rotary saws	656,251	Aug. 21	2084	477 478	92	1475
Johansen, Hans, Chicago, Ill. Beehive	655,240	Aug. 7	127	28	92	1065
Johanson, Emil G., assignor to C. P. Haegg, Rockford, Ill. Corn-planter	654,004	July 17	2402	553	92	507
Johansson, Frans J. E., Stockholm, Sweden. Driving means for bicycles	657,701	Sept. 11	1271	269	92	2076
Johansson, Frans J. E., Stockholm, Sweden. Driving mechanism for cycles						
John A. Roebling's Sons Company. (See Carnagy, Alfred D., assignor.)						
John A. Roebling's Sons Company. (See Newbury, Frank J., assignor.)						
Johnson, Abner B., Springfield, Mo. Churn	655,871	Aug. 14	1352	311	92	1317
Johnson, Albert E., Brockton, Mass., assignor to Economy Machine Company, Brockton, Mass., and Portland, Me. Insole-channeling and lip-setting machine	656,842	Aug. 28	3185	722 723	92	1706
Johnson, Albert E., Brockton, Mass., assignor to Economy Machine Company, Brockton, Mass., and Portland, Me. Machine for reinforcing insoles	656,843	Aug. 28	3187	723 724	92	1707
Johnson, Alfred E., Victor, Colo. Calcining or roasting furnace	656,580	Aug. 21	2688	616 617	92	1595
Johnson, Alpheus M., *et al.* (See Johnson, Matthew H., assignor.)						
Johnson, Alva W. B., Mount Vernon, Ill. Duplex label	654,545	July 24	3549	800	92	762
Johnson, Asher R., and J. H. Lepsch, Carrollton, N. Y. Device for jogging baby-carriages	652,896	July 3	280	69	92	57
Johnson, Bjarni J., and T. Peterson, Spanish Fork, Utah. Beet-knife	653,558	July 10	1569	365	92	325
Johnson, Carl A., Madison, Wis. Turret-lathe	657,242	Sept. 4	326	70	92	1867
Johnson, Charles E., Chicago, Ill. Propeller-wheel	657,348	Sept. 4	537	111	92	1908
Johnson, Charles G., assignor of one-half to A. Petterson, West Superior, Wis. Trunk-lock	658,141	July 3	769	181	92	154
Johnson, Charles H., Springfield, Ill. Riveting-machine	657,904	Sept. 11	1627	350	92	2151
Johnson, Charles H., Chicago Heights, assignor to Johnson, Parfitt Tool Company, Springfield, Ill. Pneumatic hammer	655,902	Aug. 14	1400	323	92	1327
Johnson, Charles H., Chicago Heights, assignor to Johnson, Parfitt Tool Company, Springfield, Ill. Throttle-valve for motive-fluid tools	656,195	Aug. 21	1973	453	92	1455
Johnson, Charles H., Chicago Heights, assignor to Johnson, Parfitt Tool Company, Springfield, Ill. Throttle-valve for fluid-operated tools	656,981	Aug. 28	3458	790	92	1756
Johnson, Charles J., Paso Robles, Cal. Baling-press	657,287	Sept. 4	416	87,88	92	1884
Johnson, Edgar H., Marion, Ind., assignor to Johnson Manufacturing Company, of Indiana. Machine for making toothpicks	654,260	July 24	3026	679	92	655
Johnson, Edward G., Brigantine, N. J., assignor to Edison-Johnson Electrical Manufacturing Company, of New York. Trolley-harp	654,348	July 24	3190	715	92	688
Johnson, Eldridge R., Philadelphia, Pa. Sound recording and reproducing machine	655,557	Aug. 7	682	155	92	1174
Johnson, Eldridge R., Camden, N. J., assignor, by mesne assignments, of one-half to T. S. Parvin, Philadelphia, Pa. Sound recording and reproducing machine	655,566	Aug. 7	679	155	92	1174
Johnson, Elias M., New York, N. Y. Producing steel	654,984	July 31	4396	991	92	955
Johnson, George A., assignor of one-half to F. H. Fricke, Park Ridge, Ill. Curtain or portière fixture	655,241	Aug. 7	129	28	92	1065
Johnson, Gustaf W. (See Williams and Johnson.)						
Johnson, Hans G., Waukon, Iowa. Pump-operating device	654,643	July 31	3755	847	92	819
Johnson, Henry. (See Ford, Eliot E., assignor.)						
Johnson, Henry, assignor to Standard Railroad Signal Company, Arlington, N. J. Switch and signal interlocking mechanism	653,950	July 17	2339	536 537 538	92	494
Johnson, Henry D., Piermont, N. Y. Device for heating wheel-tires	652,781	July 3	78	19	92	16
Johnson, Henry H., *et al.* (See Johnson, Matthew H., assignor.)						
Johnson, Henry M., Minden, La. Hernial truss	655,365	Aug. 7	367	79	92	1110
Johnson, Jacob T., Knoxville, Tenn. Canopy frame or support	654,156	July 24	2723	619	92	500
Johnson, Jacob T., Knoxville, Tenn. Bottle	655,872	Aug. 14	1353	311	92	1317
Johnson, Jacob T., Knoxville, Tenn. Canopy frame or support	655,873	Aug. 14	1353	312	92	1317
Johnson, Jacob T., Knoxville, Tenn. Canopy-support	655,874	Aug. 14	1355	312	92	1317
Johnson, Jacob T., Knoxville, Tenn. Canopy-frame	655,875	Aug. 14	1357	312 313	92	1317
Johnson, Jesse W., Buffalo, and A. S. Hendrix, Thornton, Tex.; said Hendrix assignor to said Johnson. Artificial stone	656,606	Aug. 28	2884	.....	92	1648
Johnson, John N., Prescot, Ariz. Ter. Street-car advertising device	658,374	Sept. 25	2489	550	92	2361
Johnson, John W., Leavenworth, Kans., assignor of one-half to C. Hoffman, Kansas City, Mo. Valve for hydraulic motors	656,740	Aug. 28	2950	676	92	1602
Johnson, Louis H., Eugene, assignor of one-half to Glass & Prudhomme, Portland, Oreg. Trial or daily balance sheet	658,266	Sept. 18	2287	508	92	2297
Johnson, Louis K., and A. A. Low, assignors to Alden Type Machine Company, New York, N. Y. Type-setting apparatus	653,142	July 3	770	181	92	154
Johnson, Louis K., and A. A. Low, assignors to Alden Type Machine Company, New York, N. Y. Type-setting apparatus	657,546	Sept. 11	983	201 202	92	2022
Johnson, Louis K., and A. A. Low, assignors to Alden Type Machine Company, New York, N. Y. Type-containing channel	657,874	Sept. 11	1576	340	92	2140
Johnson Manufacturing Company. (See Johnson, Edgar H., assignor.)						
Johnson, Matthew H., assignor to A. M. and H. H. Johnson, Concord, N. H. Road breaking and gouging machine	655,404	Aug. 7	429	94, 95	92	1123

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Johnson, Moses C., assignor to Helix Gear Company, Hartford, Conn. Variable-speed mechanism	655,558	Aug. 7	684	155 156	92	1175
Johnson, Parfitt Tool Company. (See Johnson, Charles H., assignor.)						
Johnson, Parfitt Tool Company. (See Prange, Herman H., assignor.)						
Johnson, Samuel H., and H. L. Sulman, assignors to S. H. Johnson & Company, Limited, London, England. Extracting metals from ores or slimes	652,849	July 3	207	49	92	42
Johnson, Samuel W., Newport News, Va. Chair	657,875	Sept. 11	1577	340	92	2140
Johnson, Sieve T., Trinidad, Cal. Ax	654,349	July 24	3191	715	92	688
Johnson, Simond, and K. Jameson, Spanish Fork, Utah. Geographical clock	657,117	Sept. 4	81	20	92	1818
Johnson, Sinclair J., Nutley, N. J. Car-door	652,931	July 3	347	85	92	69
Johnson, Sinclair J., Nutley, N. J. Door	652,932	July 3	353	86	92	70
Johnson, Sinclair J., Nutley, N. J. Car-door	652,933	July 3	356	86, 87	92	71
Johnson, Sinclair J., Nutley, N. J. Freight-car	654,806	July 31	4253	955	92	924
Johnson, Thomas S. (See Wood, William R., assignor.)						
Johnson, Wallace C., assignor of one-half to J. H. Howe, Bolivar, Mo. Labeling-machine	656,789	Aug. 28	3048	694	92	1679
Johnson, William T., Standish, Mo. Shoo-fly attachment for doors	655,242	Aug. 7	131	28	92	1066
Johnston, E. O., *et al.* (See Galbraith, Oscar B., assignor.)						
Johnston Harvester Company. (See Farrall and Maul, assignors.)						
Johnston, J. M., *et al.* (See Galbraith, Oscar B., assignor.)						
Johnston, John S., assignor to Pottier & Stymus Company, New York, N. Y. Striker-arm for car-seats	657,198	Sept. 4	234	52	92	1848
Johnston, Robert, Philadelphia, Pa. Woven fabric	657,940	Sept. 18	1745	375	92	2189
Johnston, Robert, Philadelphia, Pa. Woven fabric	658,181	Sept. 18	2145	469	92	2268
Johnston, Samuel J., Leesburg, Va. Sash-fastener	652,762	July 3	78	19	92	17
Johnston, Thomas. (See Baldwin and Johnston.)						
Johnston, William A., assignor of one-half to O. C. Barber, Barberton, Ohio. Building-block	656,138	Aug. 14	1872	431	92	1422
Johnston, William F., Richmond, Va. Lubricator attachment for steam-engines	657,941	Sept. 18	1745	375	92	2190
Johnston, William G. (See Williams, Claude H., assignor.)						
Johnston, William G., assignor to R. S. Clymer and Practical Machine and Printing Company, Woodbury, N. J. Printing-press for printing envelops	654,157	July 24	2725	620	92	500
Johnston, William G., assignor to R. S. Clymer and Practical Machine and Printing Company, Woodbury, N. J. Printing-press	654,158	July 24	2727	620 621	92	500
Jones & Barrett. (See Jones and Barrett, assignors.)						
Jones, Cam, *et al.* (See Mead, William M., assignor.)						
Jones, Camel, *et al.* (See Brooks, Samuel M., assignor.)	657,349	Sept. 4	538	111	92	1908
Jones, Charles M., Philadelphia, Pa. Worm-gearing	658,745	Sept. 25	3167	705	92	2495
Jones, David F. L., Columbus, Ga. Trolley-wheel	657,166	Sept. 4	174	39, 40	92	1886
Jones, Edward C., assignor of one-half to A. M. Morgan and A. G. Barnhart, Kansas City, Mo. Elevated trolley-way	656,118	Aug. 14	1843	425	92	1417
Jones, Edward C., and M. M. Barrett, assignors to Jones & Barrett, San Francisco, Cal. Automatic gas-lighter	655,442	Aug. 7	506	113	92	1138
Jones, Elie, Reagan, Tenn. Pitman connection						
Jones, George M. (See Kelly, John T., assignor.)						
Jones, Harvey P., assignor to Jones Perpetual Ledger Company, Chicago, Ill. Leaf for ledgers, &c	656,119	Aug. 14	1845	425	92	1417
Jones, Herbert H., assignor to Twentieth Century Manufacturing Company, St. Louis, Mo. Garment-supporter	654,644	July 31	3757	847	92	820
Jones, James R., Johnstown, Pa. Means for retaining sand in molds	656,021	Aug. 14	1660	381 382	92	1377
Jones, James R., Johnstown, Pa. Molder's flask	656,022	Aug. 14	1661	382	92	1378
Jones, John A., Cincinnati, Ohio. Pneumatic tire	652,967	July 3	455	107	92	92
Jones, John A., Cincinnati, Ohio. Mileage-book and conductor's check	654,201	July 24	3028	680	92	656
Jones, John B., assignor of one-half to B. F. Smith, Chicago, Ill. Boister-roll	654,114	July 17	2580	593	92	541
Jones Perpetual Ledger Company. (See Jones, Harvey P., assignor.)	655,087	July 31	4591	1035 1036	92	995
Jones, Peter, London, England. Pillow						
Jones, Robert D. (See Moore and Jones.)	658,068	Sept. 18	1983	432	92	2236
Jones, Stephen, Dunmore, Pa. Apparatus for molding glass pipes	654,965	July 31	4397	991	92	955
Jones, Theodore B., Harrogate, England. Leaf-holder	653,244	July 10	972	232	92	207
Jones, Warrick O., Deering, Me. Device for fastening ferry-boats	653,349	July 10	1189	.....	92	248
Jones, William P., St. Martins, and H. M. Bates, London, England. Match						
Jonsen, Gustav W. (See Klövstad and Jonsen.)	658,014	Sept. 18	1855	402	92	2212
Jönsson, Mathias, Wisby, Sweden. Steam-motor	658,447	Sept 25	2607	578	92	2384
Jordan, Amzie E. and C. A., Buel, Kans. Drilling-machine						
Jordan, Charles A. (See Jordan, Amzie E. and C. A.)	654,735	July 31	3917	884	92	852
Jordan, Linwood F., Portland, Me. Coupling	655,718	Aug. 14	1025	237	92	1252
Jordan, Oswald F., Jackson, Mich. Seal	657,421	Sept. 4	680	148	92	1930
Jorres, Ralph W., St. Louis, Mo., assignor to W. A. Williamson, Newark, N. J. Cork-screw	656,892	Aug. 28	3297	749	92	1725
Joseph, Sheldon, Columbus, Ohio. Gas'ene-gas-generating device	655,491	Aug. 7	582	131	92	1154
Joseph, Theodore H. and J. J. Ehrenreich, New York, N. Y. Electrically-driven machine						
Judd, Edward C. (See Cilley and Gooding, assignors.)	657,422	Sept. 4	681	148	92	1936
Judd, Wallace S., assignor to Avery Stamping Company, Cleveland, Ohio. Shovel						
Julius, Paul, assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Blue monoazo dye	654,064	July 17	2505	.....	92	526
Julius, Paul, assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Blue-violet monoazo dye	654,065	July 17	2506	.....	92	526
Julius, Paul, assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Yellow azo dye and making same	656,120	Aug. 14	1846	.....	92	1417
Jurwick, Max, Demarest, N. J. Roll-holding camera	657,942	Sept. 18	1748	376	92	2190
Kabisch, Carl F., New York, N. Y. Eyeglass-holder	654,005	July 17	2403	553	92	507
Kade, Charles F., assignor to I. F. Kade and K. F. Winter, Sheboygan, Wis. Refrigerator	652,783	July 3	80	19, 20	92	17
Kade, Charles F., assignor to I. F. Kade and K. F. Winter, Sheboygan, Wis. Soda-water-dispensing apparatus	655,782	Aug. 14	1175	299	92	1281
Kade, Isabella F., *et al.* (See Kade, Charles F., assignor.)						
Kahler, Ferdinand. (See Seymour and Kahler.)						
Kahler, Ferdinand. (See Seymour and Kahler.) (Reissue.)	652,784	July 3	81	20	92	17
Kahn, Albert L., Madison, Ind. Convertible trunk	655,826	Aug. 14	1276	292	92	1303
Kahrs, Friman, New York, N. Y. Glue-pot	656,121	Aug. 14	1847	425	92	1417
Kaine, James, assignor of two-thirds to C. H. and F. W. Boyer, New York, N. Y. Pipe-boiler	658,006	Sept. 18	1934	420 421	92	2226
Kaiser, John. Senaca Falls, N. Y. Railway mail-bag catcher						
Kalkow, Fritz (See Abel and Kalkow)						
Kallenbach, Ferdinand J., New York, N. Y. Reduction-frame for lithographic work	655,302	Aug. 7	245	56	92	1089

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Kaltwasser, Oskar. (See Priebs and Kaltwasser.)						
Kamm, Jacob W., Atwood, Ill. Unloading apparatus	657,547	Sept. 11	984	202, 203	92	2022
Kampfe, Frederick, R., and O., New York, N. Y. Stropping-machine	656,818	Aug. 28	3108	706	92	1690
Kampfe, Frederick, R., and O., New York, N. Y. Machine for stropping razor-blades	658,649	Sept. 25	2977	662	92	2457
Kampfe, Frederick, R., and O., New York, N. Y. Razor-stropping device	658,650	Sept. 25	2979	663	92	2458
Kampfe, Otto. (See Kampfe, Frederick, R., and O.)						
Kampfe, Richard. (See Kampfe, Frederick, R., and O.)						
Kandler, Edmund. (See Jansen, Gardiner, and Kandler.)						
Kane, James. (See Dickie, Edward H., assignor.)						
Kane, Joseph C., and A. J. List, Allegheny, assignors to Improved Street Sweeper Company, Pittsburg, Pa. Street-sweeper	653,477	July 10	1416	333	92	293
Kane, Maurice, Austin, Ill. Mowing-machine	654,419	July 10	1305	309	92	271
Kane, Thomas H., New York, N. Y. Self-centering pipe	655,088	July 31	4592	1086	92	995
Kaplan, Samuel W., McKeesport, Pa. Toy	658,182	Sept. 18	2146	469	92	2268
Karger, Heymann, New York, N. Y. Clothes-line hanger	654,312	July 24	3133	700	92	675
Karr, Francis. (See Brouyette, Charles D., assignor.)						
Karr, Henry H. (See Keefer and Karr.)						
Kasschau, Jean H., New York, N. Y. Box	653,514	July 10	1485	347	92	308
Kaufhold, Henry A. (See Burke, William J., assignor.)						
Kaufman, Nathan M. (See Ludington, Albert C., assignor.)						
Kautzmann, Gottlob Newark, N. J. Finger-ring	657,776	Sept. 11	1404	297	92	2104
Kearney, Dennis B., Keene, N. H. Manifolding sales-book	655,876	Aug. 14	1361	313	92	1318
Kearney, William E., Shamokin, Pa. Shade-roller bracket	655,089	July 31	4594	1086	92	995
Kearsley, Albert E., and H. C. Bowman, Manchester, England. Lamp-shade holder	656,647	Aug. 28	2812	642	92	1632
Keeling, Charles H., Waverly, Iowa. Weather-strip	656,356	Aug. 21	2282	523	92	1513
Keefer, John, and H. H. Karr, Farmer City, Ill.; said Karr assignor to said Keefer. Fruit-gatherer	657,118	Sept. 4	83	20	92	1818
Keeley, George H., Milford, Ill. Mud or dust protector for buggies	657,601	Sept. 11	1081	224	92	2041
Keen, Otto, Berlin, Wis. Bicycle-pump	656,122	Aug. 14	1849	426	92	1418
Keen, William N., New Orleans, La. Cooling apparatus for steamships	654,546	July 24	3350	801	92	762
Keene, Joseph, Chicago, Ill. Spring-hinge	654,400	July 24	3201	738, 739	92	711
Keeney, Benjamin F., Watertown, S. D., assignor of one-half to A. L. Shore, Minneapolis, Minn. Boiler washout device	655,559	Aug. 7	687	156, 157	92	1175
Keeney, Charles H., Hartford, Conn. Exhauster and blower	656,023	Aug. 14	1662	382	92	1378
Keeney, Marble D., Holyoke, Mass. Deckle-strap	653,245	July 10	973	233	92	208
Keep, William J., Detroit, Mich. Stove	653,960	July 17	2344	538	92	494
Keil, John C., La Porte, Ind. Hernial truss	658,051	Sept. 25	2980	663	92	2458
Keiller, David C., Stockholm, Sweden. Pitchfork	654,645	July 31	3758	848	92	820
Keith, Horace M., Commerce, Mich. Lubricator for windmills	652,785	July 3	83	21	92	17
Keith, James, London, England. Sectional boiler	653,246	July 10	975	233	92	208
Keith, Lorin A., Mansfield, Ohio. Fuse-block	655,243	Aug. 7	133	29	92	1066
Keithley, Herbert R., Buffalo, N. Y. Car-truck	658,448	Sept. 25	2909	579	92	2384
Keithley, Herbert R., Buffalo, N. Y. Car-truck	658,449	Sept. 25	2910	579	92	2384
Kelch, Wallace M. (See Ohmer, Kelly, and Kelch.)						
Keller, Frank C., Milwaukee, Wis. Bottle-filling machine	655,443	Aug. 7	508	113, 114	92	1139
Keller, George J., assignor, by mesne assignments, to J. O'Donovan, G. J. Keller, Pittsburg, and W. O'Donovan, Crafton, Pa. Vehicle-tire	654,897	July 31	4257	955	92	925
Keller, Henry, Fort Wayne, Ind. End-gate fastener	656,720	Aug. 28	2981	699	92	1657
Keller, Jules C., Pottsville, Pa. Metal-cap expander	654,006	July 17	2405	553	92	507
Kellerman, William L., Fort Scott, Kans. Attachment for riveting-machines	652,850	July 3	210	50	92	43
Kelley, Alexander, Camden, N. J., assignor to Ruby Match Company, Wilmington, Del. Match-making machine	654,794	July 31	4043	909, 910, 911	92	880
Kellner, Carl, Vienna, Austria-Hungary. Electrolytic apparatus for decomposing metallic salts	655,783	Aug. 14	1176	269, 270	92	1281
Kellogg, George W., Bakersfield, Cal. Tool for perforating pipes	657,777	Sept. 11	1405	297	92	2104
Kellogg, Henry L., Stevens Point, Wis. Lock	658,652	Sept. 25	2982	663	92	2458
Kellogg, Luke L., Leon, N. Y. Washing-machine	655,626	Aug. 7	824	192	92	1200
Kellogg Switch Board and Supply Company. (See Dean, William W., assignor.)						
Kelly, Anthony A. (See Smithers, Charles W. H., assignor.)						
Kelly, George T., Des Moines, Iowa. Lacing-string	654,898	July 31	4258	955	92	926
Kelly, John T., New York, N. Y., assignor of one-half to G. M. Jones, Pittsburg, Pa. Radiator-valve	658,720	Sept. 25	3107	693	92	2483
Kelly, John T., New York, N. Y., assignor of one-half to G. M. Jones, Pittsburg, Pa. Radiator-valve	658,721	Sept. 25	3109	693	92	2484
Kelly, Joseph N. (See Ohmer, Kelly, and Kelch.)						
Kelly, William J. (See Batcheller, Birney C., assignor.)	657,548	Sept. 11	986	203	92	2022
Kelsey, Sidney E., Kansas City, Mo. Piston-packing	656,844	Aug. 28	3189	724	92	1707
Kelso, Joseph, assignor to McConway & Torley Company, Pittsburg, Pa. Car-coupling	656,024	Aug. 14	1664	383	92	1378
Kemnitz, Franz, Berlin, Germany. Construction of ceilings and walls for buildings or other structures						
Kemp, Clifford W. (See Fühndrich, Walther, assignor.)						
Kemp-Welch, James. (See Morgan, David, assignor.)						
Kemper, Peter C., and W. E. Rader, Columbia, Mo. Saw-set	655,714	Aug. 14	1027	237	92	1252
Kempf, Carl, Milwaukee, Wis. Can-opener	656,139	Aug. 14	1873	431	92	1422
Kempf, Carl, assignor of one-half to C. Mueller, Jr., Milwaukee, Wis. Toy bank	654,736	July 31	3919	884	92	853
Kempf, Carl, assignor of one-half to B. Huber, Milwaukee, Wis. Apparatus for refining lard	656,123	Aug. 14	1850	426	92	1418
Kendall, Edward, Cambridge, Mass. Steam-boiler	653,810	July 17	2067	471	92	442
Kendall, Edward D., New York, N. Y. Electrolytically treating scrap-tin	656,982	Aug. 28	3460	------	92	1756
Kendall, John A., Cameron, Mo. Wood-fuel stove	656,025	Aug. 14	1667	383	92	1378
Kendall, Webber G. (See Brown, Oscar P., assignor.)						
Kendrick & Davis. (See Jenkins, Charles H., assignor.)						
Kenevel, Jeannot W., Chicago, Ill., assignor to Tennessee Coal, Coke and By Product Company, Harriman, Tenn. Apparatus for treating coal and ores	656,893	Aug. 28	3208	750, 751	92	1725
Kennedy, Ann E. (See Kennedy, Margaret and A. E.)						
Kennedy, Burr A., Chicago, Ill. Thumb-latch for adjustment-levers	656,140	Aug. 14	1874	431	92	1422
Kennedy, Carrie B. (See Payson, Joseph R., Jr., assignor.)						
Kennedy, George R., Allegheny, Pa. Telephone transmitter-arm	657,288	Sept. 4	420	88	92	1885
Kennedy, Henrique C., Philadelphia, Pa. Clutch mechanism	656,549	Aug. 21	2628	605	92	1580
Kennedy, Julian. (See Morrison, Thomas, assignor.)						
Kennedy, Julian, Pittsburg, Pa. Hot-blast stove	653,515	July 10	1480	347	92	306
Kennedy, Margaret and A. E., Mexico, Mexico. Heating-drum	656,460	Aug. 21	2467	567	92	1548

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Kennedy-McGregor, John A., London, England. Advertising apparatus	655,627	Aug. 7	828	192, 193, 194	92	1201
Kennedy-McGregor, John A., London, England. Advertising apparatus	658,375	Sept. 25	2491	551	92	2362
Kennedy, Michael A., Boston, Mass. Apparatus for exhibiting boots or shoes	658,547	Sept. 25	2777	616	92	2418
Kennedy, Thomas C., assignor, by mesne assignments, to Cornell Machine Company, Chicago, Ill. Gasolene-engine fuel-oil feeder	658,267	Sept. 18	2289	503, 504	92	2297
Kennedy, Walter, Allegheny, Pa. Hoisting apparatus for blasting-furnaces	656,461	Aug. 21	2468	567, 568	92	1548
Kennedy, William M., and R. C. Duncan, Franklin, Pa. Soft-tread horseshoe	655,628	Aug. 7	832	194	92	1201
Kent, Alexander W., Boston, Mass. Vehicle-wheel rim	658,487	Sept. 25	2673	594	92	2397
Kent, Benjamin F., Eugene, Oreg. Lamp-bracket	657,423	Sept. 4	682	143, 144	92	1937
Kent, Henry A., London, England. Gas lamp or burner	654,458	July 24	3403	766	92	734
Kenyon, Bertrand P., Grand Rapids, Mich. Vapor-burner	654,459	July 24	3404	766	92	735
Kenyon, Samuel, Doncaster, England. Cord-retainer	657,825	Sept. 11	1488	318	92	2122
Keplinger, Frank E. D., *et al.* (See Youngen, John H., assignor.)	657,876	Sept. 11	1578	340	92	2141
Kepner, Erastus P., Nora, Ill. Hedge fence	653,350	July 10	1190	283, 284	92	248
Kepp, Ferdinand, Allegheny, Pa. Gear-molding machine	653,811	July 17	2069	471	92	442
Kerkhoff, John, Cincinnati, Ohio. Reversing mechanism	654,899	July 31	4259	956	92	926
Kernodle, James A., assignor of one-half to S. M. Hornaday, Burlington, N. C. Churn	656,983	Aug. 28	3461	790, 791	92	1757
Kerns, James, assignor of one-half to W. S. and A. L. Doron, Celina, Ohio. Baling-press	652,908	July 3	455	107, 108	92	92
Kerr, Edward, Pittsburg, Pa. Metallurgical furnace	652,897	July 3	282	69	92	57
Kershaw, Abram. (See Riley and Kershaw.)						
Kershner, Nathan, Reading, Pa. Spark-catcher	654,547	July 24	3551	801	92	763
Kessinger, John W. (See Holsington and Kessinger.)	655,715	Aug. 14	1028	238	92	1252
Kessler, Henry H., Jr., Cleveland, Ohio. Umbrella-support	655,244	Aug. 7	134	29	92	1066
Kessler, William F., Auburn, Ind. Flower-stand	657,424	Sept. 4	684	144	92	1937
Kesting, Paul F., Ottawa, Kans. Collapsible packing-case	658,653	Sept. 25	2983	664	92	2459
Ketchum, Charles B., Cody, Wyo. Wrench	658,450	Sept. 25	2611	579	92	2385
Kettering, Simon P., Sharon, Pa. Puddling-furnace	655,560	Aug. 7	690	157	92	1176
Kettler, Henry C., Mount Clemens, Mich. Seed-planter	657,778	Sept. 11	1407	298	92	2105
Keyes, Martin L., assignor to F. E. Robinson, Carthage, N. Y. Burial-case	657,892	Sept. 11	1604	346	92	2146
Keyser, Nelson B., Philadelphia, Pa., assignor to M. B. May, Winchester, Mass. Safety device for elevators	654,795	July 31	4050	911, 912	92	882
Keyser, Nelson B., Philadelphia, Pa., assignor to M. B. May, Winchester, Mass. Electrically-actuated safety device for elevators	658,067	Sept. 18	1935	421	92	2227
Kidder, Charles L., New York, N. Y. Can attachment	657,549	Sept. 11	988	203	92	2022
Kielberg, Carl J., Copenhagen, Denmark. Apparatus for making cement pipes	656,581	Aug. 21	2600	617	92	1595
Kiff, Arthur L., Corning, N. Y. Acetylene-gas generator	655,629	Aug. 7	834	195	92	1202
Kiler, William H., Pomona, Cal. Irrigating water-gate	657,789	Sept. 11	1347	285	92	2092
Killman, Thomas A., assignor of one-half to A. E. Potter, Liberty, Tenn. Computing-scale	657,740	Sept. 11	1348	285	92	2093
Kilmer, S. Andral. (See Stow, Nelson, assignor.)	657,948	Sept. 18	1750	376	92	2190
Kiltz, George, Marengo, Ill. Vaporizer for petroleum-engines	656,894	Aug. 28	3301	752	92	1726
Kiltz, George, Marengo, Ill. Carbureter for gas-engines	655,245	Aug. 7	135	29	92	1067
Kimball, Franklin R., Salem, Mass. Tide-motor	654,460	July 24	3405	766	92	735
Kimber, Annie M., *et al.* (See Kimber, John B., assignor.)	654,007	July 17	2406	554	92	508
Kimber, John B., assignor to A. M. Kimber, Middletown, and C. H. C. Beakes, New York, N. Y. Elastic milk-bottle fastener	653,679	July 17	1824	417	92	396
Kimberlin, David D., Hudson, Ohio. Milk-aerator	653,247	July 10	976	233, 234	92	208
Kimble, Andrew, Zanesville, Ohio. Fifth-wheel	653,248	July 10	981	235, 236	92	210
Kimble, James E., Vicksburg, Mich. Steam-engine governor	657,425	Sept. 4	685	144	92	1937
Kimble, Smith W., New York, N. Y. Machine for crushing ores, &c	653,387	July 10	1254	298, 299	92	261
Kimman, Henry J., Chicago, Ill. Pneumatic hammer	653,388	July 10	1256	299	92	261
Kimman, Henry J., Chicago, Ill. Engine for portable pneumatic drills	653,478	July 10	1421	333, 334	92	294
Kimple, Roscoe. (See Turner, William H., assignor.)	656,895	Aug. 28	3302	752	92	1726
Kimsey, James C., Philadelphia, Pa. Combined skirt-supporter and waist-holder	655,784	Aug. 14	1179	270, 271	92	1282
King, Anthony D. W., London, assignor of one-half to J. H. Howell, Bristol, England. Apparatus for top fermentation of beers not in vacuo	657,167	Sept. 4	177	40	92	1837
King, Anthony D. W., London, assignor of one-half to J. H. Howell, Bristol, England. Closed refrigerator	654,401	July 24	3293	739	92	711
King Charles G. Y., Chicago, Ill. Governor mechanism for engines	654,402	July 24	3294	739	92	712
King, Frederick L., Philadelphia, Pa. Combined damper-regulator and ventilator	656,896	Aug. 28	3303	752, 753, 754	92	1726
King, George W. (See Cheney and King.)	656,897	Aug. 28	3308	754	92	1727
King, George W., Marion, Ohio. Excavator	656,898	Aug. 28	3311	755	92	1727
King, Henry, St. Leonards-on-Sea, England. Time-indicating device	656,899	Aug. 28	3312	755	92	1728
King, Henry N., Adrian, Mich. Mail-holder for letter-boxes	656,770	Aug. 28	3013	686	92	1672
King, Henry N., Adrian, Mich. Fastener for attaching mail-boxes to posts	658,298	July 10	1089	260	92	230
King, Howard K. (See Chambers and King.)	653,024	July 3	551	129	92	110
King, Howard K., assignor to Chambers Brothers Company, Philadelphia, Pa. Re-press brick machine	653,093	July 3	681	161	92	138
King, Howard K., assignor to Chambers Brothers Company, Philadelphia, Pa. Paper-folding machine	655,402	Aug. 7	584	131	92	1155
King, Howard K., assignor to Chambers Brothers Company, Philadelphia, Pa. Packing device for folding-machines						
King, Howard K., assignor to Chambers Brothers Company, Philadelphia, Pa. Device for conveying sheets of paper						
King, John H., Deckerville, Mich. Combined hay and stock rack						
King, Lewis C. (See Mote and King.)						
King, Warner A., Marysville, Ohio. Transplanter						
King, William H., Newark, N. J. Ornamenting hollow ware						
King, William W., Huntsburg, Ohio. Apparatus for supplying currents of predetermined voltage from main lines of higher voltage						
Kingman Plow Company. (See Evans, George E., assignor.)						
Kingsbury & Davis Machine Company. (See Davis, Walter S., assignor.)						
Kingsbury, Herbert W., Winona, Minn. Safety-grating						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kingsley, Alba T., Millport, N. Y. Extension-ladder	655,246	Aug. 7	137	29	92	1007
Kinzzett, Charles T., London, England. Fumigating device	653,680	July 17	1827	418	92	397
Kinkade & Liggett Company. (See Liggett, William K., assignor.)						
Kinnard Manufacturing Company. (See Kinnard, Will M., assignor.)						
Kinnard Manufacturing Company. (See Knobeloch, Frank, assignor.)						
Kinnard, Will M., assignor to Kinnard Manufacturing Company, Dayton, Ohio. Paper vessel	654,159	July 24	2730	621	92	591
Kinnear Manufacturing Company. (See Kinnear, William R., assignor.)						
Kinnear Manufacturing Company. (See Martindale, Edward S., assignor.)						
Kinnear, William R., assignor to Kinnear Manufacturing Company, Columbus, Ohio. Storage or show case	657,661	Sept. 11	1193	250	92	2002
	656,124	Aug. 14	1851	426	92	1418
Kinnison, Ulysses G., Aberdeen, Wash. Dental mallet or plugger	653,915	July 17	2256	513	92	478
Kinsey, Mary T., *et al.* (See Beck, John F., assignor.)						
Kinyon, Robert D., Chicago, Ill. Machine for branding hams, &c	657,877	Sept. 11	1580	341	92	2141
Kip, Frederic E. (See Baker and Kip.)						
Kirby, Horace E., Rock Bay, assignor to F. C. Davidge, Victoria, Canada. Curing and smoking fish	654,160	July 24	2731	{621 622	{92	591
Kirby, John, Jr., assignor to Dayton Manufacturing Company, Dayton, Ohio. Water-closet	654,161	July 24	2736	622	92	592
Kirby, John, Jr., assignor to Dayton Manufacturing Company, Dayton, Ohio. Water-closet						
Kirby, S. L., *et al.* (See Galbraith, Oscar B., assignor.)						
Kirby, Thomas B., assignor to Armour & Co., Chicago, Ill. Refrigerator-car	656,462	Aug. 21	2470	{568 569	{92	1549
Kirby, Vance, *et al.* (See Galbraith, Oscar B., assignor.)						
Kirchhoffer, George W., New York, N. Y. Hanging cabinet, &c	657,779	Sept. 11	1409	{298 299	{92	2105
Kirk, Frank. (See Thompson and Kirk.)						
Kirk, Seth, Akron, assignor to T. M. Brintnall, Medina, J. B. Parsons and C. H. Tucker, Cleveland, Ohio. Wire-spring-coiling machine	657,878	Sept. 11	1581	341	92	2141
Kirkland, Charles C., Burlington, Mich. Sheep-shears	654,008	July 17	2408	554	92	508
Kirkman, Daniel, Philadelphia, Pa. Hydraulic air-compressor	653,094	July 3	684	{161 162	{92	138
Kirkpatrick, Charles A. L. (See Shackelford and Kirkpatrick.)						
Kissel, Henry, Jr., Union Hill, and G. Nagel, Grand View, N. J. Bobbin-winder	655,877	Aug. 14	1363	313	92	1318
Kitsee, Isidor, assignor to C. E. Wilson, Philadelphia, Pa. Telegraphic relay	655,716	Aug. 14	1030	238	92	1253
Kitsee, Isidor, assignor to C. E. Wilson, Philadelphia, Pa. Static relay	657,221	Sept. 4	286	61	92	1859
Kitsee, Isidor, assignor to C. E. Wilson, Philadelphia, Pa. Wireless or space telegraphy	657,222	Sept. 4	286	61	92	1860
Kitsee, Isidor, assignor to C. E. Wilson, Philadelphia, Pa. Receiving device for telegraphy	657,223	Sept. 4	287	61	92	1860
Kitsee, Isidor, assignor to C. E. Wilson, Philadelphia, Pa. Wireless or space telegraphy	657,224	Sept. 4	289	62	92	1860
Kitson, Arthur, Philadelphia, Pa., assignor to Kitson Hydrocarbon Heating and Incandescent Lighting Company, Philadelphia, Pa., and Charleston, W. Va. Incandescent-mantle support	654,094	July 17	2551	387	92	535
Kitson, Arthur, Philadelphia, Pa., assignor to Kitson Hydrocarbon Heating and Incandescent Lighting Company, Philadelphia, Pa., and Charleston, W. Va. Vapor-tube heater. (Reissue)	11,851	Sept. 4	901	182	92	1994
Kitson Hydrocarbon Heating and Incandescent Lighting Company. (See Kitson, Arthur, assignor.)						
Kitson Hydrocarbon Heating and Incandescent Lighting Company. (See Kitson, Arthur, assignor.) (Reissue.)						
Kitson Hydrocarbon Heating and Incandescent Lighting Company. (See Scott, George D., assignor.)						
Kittinger, Frank, and F. Mottinger, Akron, Ohio. Automatic cut-off	654,009	July 17	2410	554	92	508
Kittleson, Ole O., Lee, Ill. Automatic lubricator	655,090	July 31	4595	{1036 1037	{92	996
Klages, F. W. (See Brannagan, John J., assignor.)						
Kleimeier, Theodor, Covington, Ky. Car-coupling	656,984	Aug. 28	3463	791	92	1757
Kleindienst, Alexander. (See Ender, Kleindienst, and Procner.)						
Kleinert, Isaac B., assignor to I. B. Kleinert Rubber Company, New York, N. Y. Duplex stocking-supporter	655,154	July 31	4700	1059	92	1016
Kleinfeldt, Arthur, assignor to C. Ferrari, New York, N. Y. Beer-siphon	653,516	July 10	1487	347	92	308
Kleinschmidt, Henry F. A., Johnstown, Pa., assignor to Lorain Steel Company, of Pennsylvania. Bond for track-rails	656,125	Aug. 14	1854	{426 427	{92	1419
Kleinsteuber, Franz G., Berlin, Germany. Dissolving resins	654,646	July 31	3758	------	92	820
Kleinsteuber, Franz G., Pankow-Berlin, Germany. Compound for dissolving resins	656,252	Aug. 21	2090	------	92	1476
Kleinvogel, Friedrich, Newport, Ky. Lever-driven mechanism	653,452	July 10	1364	{323 324	{92	283
Klepetko, Frank, and J. T. Morrow, Great Falls, Mont. Refining copper from solutions containing antimony as an impurity	657,119	Sept. 4	84	------	92	1818
Klett, Christian F., assignor of one-half to A. H. Angle, Philadelphia, Pa. Pencil-sharpener	657,780	Sept. 11	1411	299	92	2106
Kleucker, George M., Brunswick, Germany. Apparatus for deaerating water	656,550	Aug. 21	2029	606	92	1581
Kline, John A., Reading, Pa. Letter-box	652,916	July 3	317	78, 79	92	54
Kline, Theo. D. (See Prendergast, William H., assignor.)						
Klinefelter, William, Pittsburg, Pa. Pipe-welding machine	653,961	July 17	2345	539	92	495
Klingele, John W., Quincy, Ill. Cultivator	653,095	July 3	686	162	92	139
Klingenberg, Ernest J., Chicago, Ill. Embroidering-machine	657,944	Sept. 18	1751	377	92	2190
Klipfel, William D., Chicago, Ill. Automatic air-valve	655,785	Aug. 14	1182	271	92	1282
Klövstad, Jörgen, and G. W. Jonsen, Christiania, Norway. Carriage	655,247	Aug. 7	138	30	92	1067
Kluge, Ernst, Chicago, Ill. Ash-sifter	657,986	Sept. 18	1815	391	92	2203
Kluge, Franz. (See Staffelstein and Kluge.)						
Knabe, Ernst J., Jr. (See Phillips, Richard T., assignor.)	654,900	July 31	4261	{956 957	{92	926
Knadler, Godfrey, assignor of seven-eighths to A. G. Seiberling and C. J. Butler, Peoria, Ill. Forming pneumatic tires	656,819	Aug. 28	3109	706	92	1691
Knapp, Edwin R., Red Bank, N. J. Skate	658,451	Sept. 25	2613	579	92	2385
Knapp, John D. C., Minneapolis, Minn. Seal-lock	655,091	July 31	4596	1037	92	996
Knauber, Walter H., Milwaukee, Wis. Envelop and stamp moistener						
Knebel, Henry F. (See Neely, Samuel L., assignor.)						
Knickerbacker, John. (See Hughes, Robert, assignor.)						
Knight, Carrie E., *et al.* (See Taber, William D., assignor.)	655,345	Aug. 7	361	72	92	1105
Knight, Hiram A., Alameda, Cal. Bottle faucet attachment	653,351	July 10	1200	285	92	250
Knight, Rhobey, *et al.* (See Taber, William D., assignor.)						
Knlphuisen, Thomas F. and W. P., Clymer, N. Y. Elastic rocker attachment	655,444	Aug. 7	514	114	92	1140
Kniphuisen, William P. (See Kniphuisen, Thomas F. and W. P.)						
Knittel, Paul, Crefeld, Germany. Tongue-rail fastening for railways						

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Knobeloch, Frank, assignor to Kinnard Manufacturing Company, Dayton, Ohio. Paper box or lid	657,120	Sept. 4	85	20	92	1818
Knobeloch, John P., Philadelphia, Pa. Stair-carpet retainer	656,551	Aug. 21	2631	606	92	1581
Knobloch, Barney F., Cleveland, Ohio. Axle-gage	657,602	Sept. 11	1083	225	92	2041
Knowlton, Daniel S., Perry, N. Y. Paddle-wheel	657,741	Sept. 11	1349	{235 280	{92	2093
Knox, Andrew W., New York, N. Y. Punch for platen printing-presses	658,548	Sept. 25	2781	616	92	2419
Knox, Henry E., *et al.* (See Jamieson, Augustus, assignor.)						
Knutson, Nute C. (See Adams and Knutson.)						
Koch & Robertson. (See Robertson, Harry, assignor.)	654,574	July 24	3591	809	92	709
Koch, Victor, Scranton, Pa. Trolley-track for electric railways	654,706	July 31	4051	912	92	882
Koegler, August J., Milwaukee, Wis. Tempering-gage for tools						
Koehler, Fred L., Chicago, Ill., assignor of one-third to T. J. Dunne, Dubuque, Iowa. Spring-bearing for bicycles or other vehicles	655,445	Aug. 7	515	114	92	1140
Koelsch, Frank, and J. P. Kramer, Scranton, Pa. Bushing-protector for use in pitching lager-beer kegs	657,702	Sept. 11	1272	270	92	2077
Koester, Henry, assignor to Crane Company, Chicago, Ill. Pipe-threading machine	654,461	July 24	3407	{766 767	{92	735
Kohnle, Frederick and J. P. Kuhns, assignors to J. P. Kuhns and J. N. Boesch, Dayton, Ohio. Pin-ticket	656,721	Aug. 28	2983	670	92	1657
Kolderup, Anton M., Bergen, Norway. File for papers, sheet-music, &c	658,549	Sept. 25	2782	617	92	2419
Konig, Christian J., Alton, Ill. Machine for finishing necks of bottles	654,737	July 31	3919	{884 885 886	{92	853
König, Eduard, Aschersleben, Germany. Valve-gear for engines	653,916	July 17	2259	514	92	479
König, Eduard, Aschersleben, Germany. Expansion compensating device for steam-cylinders	658,015	Sept. 18	1858	402	92	2212
Köppelmann, Eugene, New York, N. Y. Washing fibrous materials	654,647	July 31	3760	848	92	820
Köppelmann, Eugene, New York, N. Y. Machine for washing fibrous or loose material	655,717	Aug. 14	1081	{238 239	{92	1253
Köpping, Carl F. F., Chemnitz, Germany. Device for removing pitch from tuns or casks	655,092	July 31	4598	1037	92	996
Kops, Daniel, New York, N. Y. Apparel-corset	654,403	July 24	3295	739	92	712
Korn, Oscar, New York, N. Y. Toy	652,786	July 3	85	21	92	18
Korner, George A. (See Saner, Charles A., assignor.)						
Kornhuber, Emil, Libau, Russia. Apparatus for hackling and drawing	654,648	July 31	3762	849	92	821
Koscialowski, Philip L., assignor to F. Favour and H. C. Mitchell, Rochester, N. Y. Top.	656,771	Aug. 28	3015	686	92	1672
Kothe, Richard. (See Israel and Kothe.)						
Kothe, Richard. (See Ott, Israel, and Kothe.)						
Koyl, Charles H., New York, N. Y. Purifying water	653,008	July 3	525	------	92	106
Koyl, Charles H., New York, N. Y. Apparatus for purifying water	653,009	July 3	527	124	92	106
Koyl, Charles H., New York, N. Y. Apparatus for purifying water	653,010	July 3	528	{124 125	{92	106
Koyl, Charles H., New York, N. Y. Apparatus for purifying water	653,011	July 3	531	125	92	106
Koyl, Charles H., New York, N. Y. Apparatus for purifying water	653,012	July 3	533	125	92	107
Koyl, Charles H., New York, N. Y. Apparatus for purifying water	658,739	Sept. 25	3153	{700 701 702	{92	2403
Kraemer, Frank, Chicago, Ill. Coin-setting electric meter	657,603	Sept. 11	1084	{225 226	{92	2041
Kraemer, William, Chicago, Ill. Stamping-machine	655,248	Aug. 7	139	30	92	1067
Krafft, Gustav, Schwelm, Germany. Apparatus for making soap-bubbles						
Kraft, Henry P. (See Schrader and Kraft.)						
Krais, Paul. (See Aykroyd and Krais.)						
Kramer, Joseph P. (See Koelsch and Kramer.)	657,987	Sept. 18	1815	392	92	2203
Kramer, Judson A., Marion, Iowa. Greenhouse construction	656,357	Aug. 21	2283	523	92	1513
Kramer, Louis F., Oklahoma, Okla. Ter. Chuck for bit-braces	656,722	Aug. 28	2684	670	92	1657
Kraus, Johann, Schwabmünchen, Germany. Tooth for harrows						
Krause Manufacturing Company. (See Krause, Roswell F., assignor.)						
Krause, Roswell F., assignor to Krause Manufacturing Company, Chicago, Ill. Grass-carrier for lawn-mowers	657,289	Sept. 4	420	88	92	1885
Krauth, Wilhelm, Griesheim-on-the-Main, Germany. Making ionone	652,969	July 3	457	------	92	92
Krauth, Wilhelm, Griesheim, Germany. Making allo citral	654,649	July 31	3763	------	92	821
Krebs, George W., assignor of one-half to F. Powe, Conway Springs, Kans. Game	658,319	Sept. 18	2371	521	92	2312
Kreisher, Solomon, Shamokin, Pa. Pipe-wrench	653,096	July 3	688	162	92	139
Kreller, Louis J. (See Robinson, Frank T., assignor.)						
Kremer, Frank, Duluth, Minn. Train-anchor	654,262	July 24	3030	680	92	656
Kress, August, *et al.* (See Mawbey, George W., assignor.)						
Kress, Carl F., Jr., Johnstown, Pa., assignor to Lorain Steel Company, of Pennsylvania. Railway-frog	654,462	July 24	3410	768	92	736
Kress, Carl F., Jr., Johnstown, Pa., assignor to Lorain Steel Company, of Pennsylvania. Railway-track structure	658,376	Sept. 25	2493	551	92	2362
Kresser, Friedrich. (See Montag and Kresser.)	656,648	Aug. 28	2812	------	92	1633
Kreuter, Gustav, Luckenwalde, Germany. Treatment of silk rags	653,097	July 3	689	163	92	139
Kreutzberg, Ernst, assignor of one-half to J. H. Brandes, Jr., Marine, Ill. Ventilator for chimneys	654,650	July 31	3764	849	92	821
Krogmann, Peter N., New York, N. Y. Account-book	656,026	Aug. 14	1669	384	92	1379
Kronenberg, Jacob, New York, N. Y. Horseshoe-pad	654,986	July 31	4398	{991 992	{92	956
Krueger, Theodore F., New York, N. Y. Hand-operated motor						
Krupp, Fried. (See Ehrensberger, Emil, assignor.)						
Krupp, Fried. (See Kurig, Josef, assignor.)						
Krutsch, Willis W., Little Rock, assignor of one-half to L. H. Stevens, Fort Smith, Ark. Cotton-press	655,346	Aug. 7	332	72, 73	92	1105
Kübler, Reinhold, Berlin, Germany. Telegraphic type-writer	655,240	Aug. 7	140	30	92	1068
Kuebler, John M., Wausau, Wis. Matching-machine	656,027	Aug. 14	1670	384	92	1379
Kuett, George F. (See Slingland and Kuett.)						
Kuett, George F., Paterson, N. J., assignor to American Automatic Loom Company, of New Jersey. Loom	653,249	July 10	989	{236 237 238	{92	211
Kuett, George F., Paterson, N. J., assignor to American Automatic Loom Company, New York, N. Y. Loom	657,604	Sept. 11	1087	{226 227	{92	2042
Kuhlewind, Cornelius, Knoxville, Pa. Pressure-relieving device	656,141	Aug. 14	1875	{431 432	{92	1422
Kuhn, Frederick L., Fitchburg, Mass. Friction-clutch	654,162	July 24	2739	623	92	592
Kuhns, John P. (See Kohnle and Kuhns.)						
Kulman, Oscar S., Savannah, Ga. Antiseptic broom	657,426	Sept. 4	687	144	92	1938
Kundtz, Theodor, Cleveland, Ohio. Cabinet for sewing-machines, &c	654,788	July 31	3923	886	92	854

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Künstner, Josef, Obersedlitz-Aussegg, Austria-Hungary. Making sodium-carbonate crystals	656,253	Aug. 21	2091	478	92	1476
Kunz, Johann C. H., Cronberg, Germany. Tire-setter	653,774	July 17	1905	456	92	429
Kurig, Josef, assignor to F. Krupp, Essen, Germany. Level-quadrant for high-elevation guns	655,561	Aug. 7	693	158	92	1176
Kurtzeborn, Louis G., St. Louis, Mo. Game-counter	653,517	July 10	1489	347	92	309
Kutter, Herman L., Hamilton, Ohio, assignor of one-half to F. C. Trowbridge. Paper-making machine	654,651	July 31	3765	850	92	821
La Bier, Clarence R., assignor of one-half to C. H. Hilton, Terre Haute, Ind. Thermo-electric-light cup	653,577	July 10	1603	373	92	333
La Bonté, Adolphus, Worcester, Mass. Apparatus for flushing water-closets	655,303	Aug. 7	247	56, 57	92	1089
La Compagnie Electro-Métallurgique des Procédés Gin & Leleux. (See Leleux, Henri, assignor.)	653,812	July 17	2070	472	92	443
La Fleur, Charles E., assignor to G. A. and A. L. Horner, Baltimore, Md. Egg-case						
La Pointe, Francois, assignor of two-thirds to A. G. Scherer and W. Bretsnyder, Chicago, Ill. Lift-bridge	657,122	Sept. 4	89	21	92	1819
La Roche, Fredrick A., New York, N. Y. Controlling means for explosive-engines	657,662	Sept. 11	1194	250	92	2063
La Société Chimique des Usines du Rhône, Anciennement Gilliard, P. Monnet et Cartier. (See Trillat, Jean J. A., assignor.)	652,787	July 3	86	21	92	18
La Veine, Edward N., Kansas City, Mo. Cuff-holder						
La Voo, George W., and T. J. Bray, Pittsburg, Pa., assignors to National Tube Company, Pittsburg, Pa., and New York, N. Y. Rolls for welding coupling-blanks	653,869	July 17	2168	495	92	461
La Voo, George W., and T. J. Bray, Pittsburg, Pa., assignors to National Tube Company, Pittsburg, Pa., and New York, N. Y. Rolls for welding coupling-blanks	653,870	July 17	2169	495	92	462
Lackey, James T., Gosport, Iowa. Apparatus for distributing water	653,852	July 10	1200	285	92	250
Lacy, William, Los Angeles, Cal. Coated metal pipe	657,695	Sept. 11	1091	227	92	2042
Lafayette, Edgar F., Sedro, Wash. Guide and support for drag-saws	655,030	Aug. 7	838	195	92	1202
Laffan, Daniel, Dublin, Ireland. Production of marbled surfaces upon glass	654,404	July 24	3297	----	92	712
Lafond, Georges, Paris, France. Register	653,250	July 10	992	238 / 239	92	212
Laganke, Charles F., assignor to Fisher Typewriter Company, Athens, Tenn. Platen for type-writing machines	657,121	Sept. 4	86	21	92	1818
Lahaie, Victor, Montreal, Canada. Wainscoting	653,251	July 10	997	239	92	213
Lahay, Delore J., Nadeau, Mich. Tire-separator	655,250	Aug. 7	143	31	92	1008
Lahr, Peter, Prescott, Iowa. Gate	653,025	July 3	553	130	92	110
Laidlaw, John E., Vancouver, Canada. Non-reclosable bottle	653,098	July 3	691	163	92	140
Laird, John M., Huntingdon, Pa. Gutter-hanger	658,502	Sept. 25	2096	598	92	2401
Lake, Frank H., and S. W. Sims, Loyalton, Cal. Hame-fastener	654,652	July 31	3767	850	92	822
Lake Shore Engine Works. (See Blomstrom, Carl H., assignor.)	652,970	July 3	458	108 / 109	92	92
Lake, Simon, Baltimore, Md. Apparatus for recovering cargoes from sunken vessels	655,093	July 31	4599	1038	92	996
Lake, Vincent F., Pleasantville, N. J. Rotary motor	655,094	July 31	4601	1038	92	997
Lamb, John L., Chetopa, Kans. Quilting-frame						
Lamb, Restore B., Mount Holly, N. J., and W. Lamb, Philadelphia, Pa., assignors to De Long Hook and Eye Company, of West Virginia. Shirt-waist holder and skirt-supporter	655,498	Aug 7	585	131	92	1155
Lamb, Walter. (See Lamb, Restore B. and W.)						
Lamb, Walter, Philadelphia, Pa. Skirt-supporter and shirt-waist holder	658,526	Sept. 25	2742	608	92	2411
Lamberg, Frederick A., Hot Springs, Ark. Bit-guide	654,010	July 17	2411	554 / 555	92	509
Lambert, Frank W. (See Stocum and Lambert.)	653,917	July 17	2260	514	92	479
Lambert, John C., Tonica, Ill. Wagon-tongue support						
Lambert, John W., assignor to Buckeye Manufacturing Company, Anderson, Ind. Gas-engine governor-valve	656,408	Aug. 21	2375	545 / 546	92	1530
Lambie, James B., *et al.*, trustees. (See Cahill, Thaddeus, assignor.)	658,527	Sept. 25	2743	609	92	2411
Lamboy, Philip, Amsterdam, N. Y. Broom-corn cleaner						
Lambrecht, Charles, assignor to E. Walsh, Jr., St. Louis, Mo. Machine for configuring glass-making rolls	653,299	July 10	1093	261	92	231
Lamplugh, Henry A., Birmingham, England. Velocipede-brake	658,654	Sept. 25	2986	604 / 605	92	2459
Lamson Consolidated Store Service Company. (See Cowley, James T., assignor.)	657,317	Sept. 4	480	101	92	1896
Lancaster, Clarence E. N., Boston, Mass. File for proof, copy, &c	654,739	July 31	3925	886 / 887	92	854
Lancaster, James H., New York, N. Y. Hoisting and conveying apparatus	655,095	July 31	4602	1039	92	997
Land, Henry S., London, England. Lathe-tool	655,657	Aug. 7	987	212	92	1223
Lander, Frederick J., Rochester, N. Y. Syringe	656,649	Aug. 28	2814	----	92	1633
Landfried, Emil, Meran, Austria-Hungary. Filter-cartridge for tobacco-pipes, &c	654,894	July 31	4122	926	92	897
Landgraf, George H., Waterloo, Wis. Secret telegraph-sounder	654,313	July 24	3134	701	92	676
Landis, Abraham B., Waynesborough, Pa. Grinding-machine	654,314	July 24	3136	701 / 702	92	676
Landis, Abraham B., Waynesborough, Pa. Grinding-machine	657,200	Sept. 4	422	88	92	1885
Landis, Edward M., Toledo, Ohio. Adjustable handle-bar	653,099	July 3	692	163	92	140
Landrum, John E., Sr., G. F. Dillon, and John E. Landrum, Jr., Centreburg, Ohio. Acetylene-gas generator	658,528	Sept. 25	2744	609	92	2412
Lane, Edwin, Johnstown, Pa. Rail joint or chair	657,168	Sept. 4	178	40	92	1837
Lane, Francis L., and W. Rainforth, Leeds, England. Hydraulic or other valve	655,978	Aug. 14	1575	363	92	1359
Lane, William J., assignor to Lane Brothers Company, Poughkeepsie, N. Y. Door-hanger	658,655	Sept. 25	2987	605	92	2459
Lane Brothers Company. (See Lane, William J., assignor.)	656,582	Aug. 21	2692	617 / 618	92	1506
Lang, Arthur. (See Lang, William A., assignor.)	657,498	Sept. 4	878	178	92	1900
Lang, Ernst, Brussels, Belgium. Variable-speed gear	653,100	July 3	694	164 / 165	92	140
Lang, Frederick C., Hoboken, N. J. Dry dock	655,786	Aug. 14	1184	271	92	1282
Lang, William A., assignor to A. Lang, New York, N. Y. Tuning-stem for stringed instruments	654,901	July 31	4203	957	92	927
Lang, William J., Oyens, Iowa. Corn-harvester	656,552	Aug. 21	2633	----	92	1581
Lanino, Giusto, Turin, Italy. Vehicle	657,427	Sept. 4	688	145	92	1938
Lanpher, Charles W., Norwich, N. Y. Chute				593 / 594		
Lanser, Nicholas, Allegheny, Pa. Filtering material				595 / 596		
Lansing, Frederick A., New York, N. Y. Form for boiling meats	654,115	July 17	2581	597	92	541
Lanston, Tolbert, Washington, D. C. Machine for perforating strips	658,268	Sept. 18	2291	504	92	2297
Lantz, David E., Farmer City, Ill. Necktie-support						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lantz, Elmer G., Marion, Ind. Pitcher	654,163	July 24	2742	623	92	593
Lantz, Lester R., Wyalusing, Pa. Bale-tie	656,028	Aug. 14	1671	384	92	1379
Lanz, John, Pittsburg, Pa. Apparatus for swaging axles	655,718	Aug. 14	1034	239 / 240	92	1253
Lanz, John, Pittsburg, Pa. Apparatus for handling forgings	655,719	Aug. 14	1040	240 / 241	92	1254
Lanz, John, Pittsburg, Pa. Preparing and handling forgings	655,720	Aug. 14	1044	241	92	1255
Lanz, John, Pittsburg, Pa. Swaging articles of varying cross-section	655,721	Aug. 14	1046	242	92	1255
Lanz, William, Chicago, Ill. Canteen	655,979	Aug. 14	1576	363	92	1360
Lapish, Joseph S., Salt Lake City, Utah. Retaining-valve	654,987	July 31	4100	992	92	956
Laraway, Fredrick A., and J. W. Houser, Cleveland, N. Y. Carbureter	656,409	Aug. 21	2377	546	92	1531
Large, Frank A., Pittsburg, Pa. Governor cut-off valve for engines	655,096	July 31	4604	1039	92	997
Larimer, William H., Terre Haute, Ind. Animal-trap	657,291	Sept. 4	423	89	92	1885
Larkin, George F., Newark, N. J. Hat-pouncing machine	656,294	Aug. 21	2163	494 / 495	92	1490
Larsen, Chres, Council Bluffs, Iowa. Carpenter's scale	657,169	Sept. 4	179	41	92	1837
Larsen, Christian H., Fowler, Ind. Grain drier and cleaner	658,151	Sept. 18	2081	453	92	2254
Larsen, Nils, New York, N. Y. Wrench	656,410	Aug. 21	2379	546	92	1531
Larson, John P. (See Berger, Joseph A., assignor.)	657,603	Sept. 11	1200	250	92	2064
Lartigne, Emmanuel, Candéran, France. Acetylene-gas generator	656,142	Aug. 14	1877	432	92	1423
Lasswell, Jesse D., assignor of one-half to L. Hannoch, Newark, N. J. Printing-press	657,550	Sept. 11	991	204	92	2023
Latham, Chester A., Wichita, Kans. Bearing	656,254	Aug. 21	2092	478	92	1477
Lathrop, Edward K., Springfield, Mass. Combined stamp and court-plaster receptacle	654,548	July 24	3353	801	92	763
Latisnère, Etienne, Gayon, France. Planter-regulating attachment	655,631	Aug. 7	840	196	92	1203
Latshaw, Charles E., Lincoln, Nebr. Baby-exerciser	657,170	Sept. 4	181	41	92	1837
Lattig, Jacob W., West Bethlehem, Pa. Automatic railway-signal system	655,097	July 31	4606	1039	92	998
Lattin, Judson, assignor to Northwestern Grass Twine Company, St. Paul, Minn. Machine for making grass twine	654,653	July 31	3768	850	92	822
Laubach, Joseph. (See Lisby, Joseph E., assignor.)						
Laube, Godfried, Huron, S. D., assignor of one-half to O. T. Gregory, Paducah, Ky. Trace-holder	656,463	Aug. 21	2473	----	92	1549
Laubmann, Heinrich, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Tetraoxyanthraquinone disulfonic acid and making same	654,066	July 17	2500	577	92	526
Lauck, Robert E., Kansas City, Mo. Retort-furnace	657,551	Sept. 11	992	204	92	2023
Laughlin, Elmyr A. (See Moore, Charles E., assignor.)	658,089	Sept. 18	1984	432	92	2236
Laughlin, Howard E., Cleveland, Ohio. Spring bed-bottom	656,845	Aug. 28	3191	721	92	1707
Laurin, Robert, Chicago, Ill. Nut-lock	654,405	July 24	3298	740	92	713
Laursen, Jens, Hamilton, Ill. Hoisting device						
Lauterback, George, Baltimore, Md. Reinforcing device for packing and storing vessels.						
Lavell, John R. (See Baldwin and Johnston, assignors.)	655,932	Aug. 14	1459	336	92	1338
Laviers, Henry, assignor of one-half to E. E. Donaldson, Wellston, Ohio. Pumping attachment for pneumatic tires	655,722	Aug. 14	1049	243	92	1256
Law, Benjiman S., *et al.* (See Hough, John T., assignor.)	655,723	Aug. 14	1050	243	92	1256
Law, Carrie A., Philadelphia, Pa. Claw bottle carrier, holder, or hanger						
Law, Carrie A., Philadelphia, Pa. Claw shade support or holder	658,353	July 10	1201	285	92	250
Law, Fred A., Hartford, Conn., assignor, by mesne assignments, to Columbia and Electric Vehicle Company, Jersey City, N. J. Igniter for explosive-engines	657,664	Sept. 11	1202	251	92	2064
Law, William H., Toronto, Canada. Hydrant	655,366	Aug. 7	369	80	92	1111
Lawlor, Simeon C., Duluth, Minn. Window-cleaner	654,164	July 24	2743	623	92	593
Lawrence, Henry J., Elmore, Minn. Expansion-drill	654,654	July 31	3769	850	92	822
Lawrence, Henry T., Lyndon Station, Wis. Water-wheel	655,632	Aug. 7		840	196 / 197	92	1303
Lawrence, James W., Minneapolis, Minn. Acetylene-gas generator	655,446	Aug. 7		516	115	92	1140
Lawrence, John, Columbus, Ohio. Acetylene-gas generator	654,797	July 31		4052	912	92	882
Lawson, Henry J., London, England. Motor-vehicle	658,068	Sept. 18		1987	421 / 422	92	2227
Lawson, Henry J., London, England. Motor-vehicle							
Lawson, Thomas. (See Harrison and Lawson.)							
Lawton, Albert L. (See Lawton, Charles F., A. L., and A. W.)							
Lawton, Arthur W. (See Lawton, Charles F., A. L., and A. W.)	657,199	Sept. 4		235	52	92	1818
Lawton, Byron E., Providence, R. I. Electric lamp for dental purposes	658,252	July 10		997	240	92	213
Lawton, Charles F., A. L., and A. W., New York, N. Y. Tile	655,251	Aug. 7		144	31	92	1068
Lay, Frank R., Ridgeville, Ind. Broom	657,988	Sept. 18		1818	302 / 303	92	2204
Lazier, Arthur A., Buffalo, N. Y. Valve for gas-engines	656,985	Aug. 28		3465	791	92	1757
Le Barron, Walter J., Barre, Vt. Driving apparatus	652,788	July 3		87	21, 22	92	18
Le Blond, Richard K., Cincinnati, Ohio. Machine-tool	655,983	Aug. 14		1460	336	92	1338
Le Cron, Daniel O., M., St. Louis, Mo. Dental appliance							
Le Fevre, Eugene R. (See Ritchie, Samuel, assignor.)							
Le Grand, Augustus L., assignor of one-half to J. N. Thomas, West Pittston, Pa. Dumping mechanism for conveyers	658,656	Sept. 25		2987	665	92	2460
Le Grand, Augustus L., assignor of one-half to J. N. Thomas, West Pittston, Pa. Loading mechanism for conveyers	658,657	Sept. 25		2990	665	92	2460
Lea, Edward S., Elwood, assignor to Anderson Tool Company, Anderson, Ind. Universal grinding-machine	657,905	Sept. 11		1638	350 / 351	92	2152
Leach, Henry L., Cambridge, Mass., assignor to American Locomotive Sander Company, Camden, N. J. Track-sander for locomotives	656,553	Aug. 21		2633	606 / 607	92	1581
Leach, Jabez, and F. Hepworth, Huddersfield, England. Machinery for carding wool	658,188	Sept. 18		2147	469	92	2268
Leach, Orville L., Providence, R. I. Cushion-tire	655,098	July 31		4608	1040	92	999
Leadbeater, Frederick, Detroit, Mich. Electric low-water alarm	654,067	July 17		2509	577	92	526
Leadbetter, George D., Detroit, Mich. Perambulator	655,787	Aug. 14		1185	272	92	1282
Leader, Adam H., *et al.* (See Thamsen, Harry C., assignor.)							
Leary, Jerome W., Plainfield, N. J., assignor to Aluminum Plate and Press Company, Plainfield, N. J., and New York, N. Y. Counting device for printing-presses	657,781	Sept. 11		1412	299	92	2106
Leary, John J., assignor of two-thirds to F. F. Wells, Rochester, and C. P. H. Vary, Newark, N. Y. Reversing mechanism	654,798	July 31		4053	912	92	883
Lease, Herman J., assignor to L. M. Lease, Madisonville, Ohio. Soap	654,740	July 31		3991	----	92	856
Lease, Lizzie M. (See Lease, Herman J., assignor.)	656,554	Aug. 21		2636	607	92	1582
Leathers, George H., Mount Vernon, Mo. Boxing for vehicle-axles	656,741	Aug. 28		2961	676 / 677	92	1663
Leaver, James M., assignor to L. A. Hall and R. H. Munson, Bay Mills, Mich. Door							
Leaver, James M., assignor to L. A. Hall and R. H. Munson, Bay Mills, Mich. Apparatus for manufacturing articles from pulp materials	656,742	Aug. 28		2962	677	92	1663
Leaver, James M., assignor to L. A. Hall and R. H. Munson, Bay Mills, Mich. Door	656,772	Aug. 28		3016	687	92	1673
Leavitt, Lewis A. (See Howe and Leavitt.)							
Lebiedzinski, Thomas, Chicago, Ill. Safety device for elevators	657,026	Aug. 28		3520	804	92	1767

*Alphabetical list of patentees, **July** to September, inclusive*—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Lebioda, Georg F., Boulogne-sur-Seine, France. Apparatus for impregnating wood	655,788	Aug. 14	1186	272	92	1283
Leblanc, Maurice. (See Hutin and Leblanc.)						
Leclere, Joseph D., deceased; M. P. Leclere, Plaistow, N. H., administratrix. Device for sharpening horseshoes	658,152	Sept. 18	2083	454	92	2254
Leclere, Mary P., administratrix. (See Leclere, Joseph D.)						
Lederer, Leonhard, Sulzbach, Germany. Making acetyl cellulose	654,988	July 31	4408	------	92	957
Ledvina, Emanuel B., *et al.* (See Ledvina, George E., assignor.)						
Ledvina, George E., assignor of one-half to J. C. Müller, New York, N. Y., E. B. Ledvina, Princeton, Ind., and H. Fischer, Mount Vernon, N. Y. Rotary engine	657,826	Sept. 11	1489	318	92	2122
Ledvina, George E., New York, N. Y., assignor of one-fifth to H. Fischer, Mount Vernon, Ind. Boiler	657,906	Sept. 11	1631	352	92	2152
Lee, Harry S., Tecumseh, Mich. Vehicle-body	653,578	July 10	1604	373	92	333
Lee, James P., Hartford, Conn. Cartridge-clip	653,389	July 10	1257	299	92	261
Lee, John C. (See Shaw and Lee.)						
Lee, Joseph L., Evant, Tex. Bridle-bit	658,377	Sept. 25	2495	551	92	2363
Lee, Robert G., Augusta, Wis. Combined bicycle prop and lock	653,681	July 17	1828	418	92	397
Lee, Thomas, Home City, Ohio. Dust-separator	656,255	Aug. 21	2093	478	92	1477
Lee, Walter T., and N. Mellor, Philadelphia, Pa. Journal-bearing	655,633	Aug. 7	843	197	92	1203
Lee, William L., assignor of one-fourth to L. L. Northrup, Iola, Kans. Shoe-lace fastener	657,606	Sept. 11	1092	228	92	2043
Leece, Thomas E., Bishop, Cal. Apparatus for working ores of valuable metals	654,315	July 24	3139	702	92	677
Leeman, C. A., *et al.* (See Galbraith, Oscar B., assignor.)						
Leeper, Joseph M. (See Young, Dan M., assignor.)						
Leeson, Joseph R. (See Wardwell, Simon W., Jr., assignor.)						
Leffingwell, Everett K. (See Jessup and Leffingwell.)						
Legate, Henry R., *et al.* (See Reenstierna, Gustaf L., assignor.)						
Légé, Annibal, and W. H. England, London, England. Apparatus for color photography	655,789	Aug. 14	1189	273 274	92	1283
Leggett, Joseph P., Carthage, Mo. Sectional bed-bottom	656,411	Aug. 21	2380	546 547	92	1531
Lehman, Otto, New York, N. Y., assignor, by mesne assignments, to Standard Incandescent Burner Company, Portland, Me. Incandescent-lamp burner	653,253	July 10	999	240	92	213
Lehman, Otto, New York, N. Y., assignor, by mesne assignments, to Standard Incandescent Burner Company, Portland, Me. Incandescent-lamp burner	653,254	July 10	1003	240 241	92	214
Lehmann, Franz, and A. Van Kempen, Berlin, Germany. Machine for measuring and marking cloth	656,846 657,292	Aug. 28 Sept. 4	3192 424	725 89	92 92	1708 1896
Lehner, John F., Baltimore, Md. Hand-stamp						
Lehr Agricultural Company. (See Wolfe, James H., assignor.)						
Leib, Alfa R., assignor of one-half to D. C. and K. A. Chipman, Anderson, Ind. Dust-pan	657,243	Sept. 4	328	70	92	1807
Leib, Charles, Philadelphia, Pa. Hook and eye	658,184	Sept. 18	2148	470	92	2269
Leilich, Francis T., assignor to Climax Manufacturing Company, San Francisco, Cal. Clamp mechanism for button-sewing machines	658,016	Sept. 18	1860	403	92	2213
Leinweber, Pedernales. (See Parker, Joseph A., assignor.)						
Leisenring, Henry G., Wayne, Nebr. Tilting table or chair	656,256	Aug. 21	2095	479	92	1477
Leitelt, Adolph, Jr., Grand Rapids, Mich., assignor to A. S. Nichols, Chicago, Ill. Flexible joint for pipes	652,789	July 3	91	22	92	19
Leleux, Henri, assignor to La Compagnie Electro-Métallurgique des Procédés Gin & Leleux, Paris, France. Electric furnace	654,463	July 24	3411	708	92	736
Lennig, Albert M., assignor, by mesne assignments, to C. S. Hammatt, Jacksonville, Fla. Wood-filler composition	653,101	July 3	702	------	92	141
Lennox, Walter D. (See Richard and Lennox.)						
Lentz, George W., Adrian, Mo. Wagon attachment for carrying axes	656,820	Aug. 28	3111	706	92	1691
Leonard, Cornelius H., *et al.* (See Faxon, William L., assignor.)						
Leonard, Harry W., New York, N. Y. Means for controlling energy delivered to electrical translating devices	656,821	Aug. 28	3112	706	92	1691
Leonard, Harry W., New York, N. Y. Electrical rheostat	657,708	Sept. 11	1273	270	92	2077
Leonard, William F., Columbus, Ohio. Elevator	658,378	Sept. 25	2496	552	92	2363
Lepore, Felix M., Denver, Colo. Invalid's bed	654,165	July 24	2744	623	92	598
Lepsch, Joseph H. (See Johnson and Lepsch.)						
Leschander, Peter J., assignor of one-half to J. J. Stafford, Rochester, N. Y. Machine for making cigarettes	655,634	Aug. 7	845	197	92	1204
Leslie, Malichi G., *et al.* (See Hough, John T., assignor.)						
Lester, James F., Atlanta, and L. A. Dean, Rome, Ga. Furnace for burning refuse material	658,658	Sept. 25	2993	666	92	2461
Leto, Vito, Newark, N. J. Automatic indicator	652,790	July 3	92	23	92	19
Leto, Vito, Newark, N. J. Electric automatic controller and indicator for railways	656,029	Aug. 14	1672	385 386	92	1380
Lettré, Philipp H., assignor to T. I. Smith & Co., Attleborough, Mass. Shirt-stud	654,902	July 31	4265	957	92	927
Levalley, Christopher W., Milwaukee, Wis. Chain	657,945	Sept. 18	1753	377	92	2191
Levalley, Christopher W., Milwaukee, Wis. Drive-chain	658,017	Sept. 18	1861	403	92	2213
Leveque, Cyrille, Toronto, Canada. Manifold sales-book	654,166	July 24	2746	624	92	594
Levett, Morris H., New York, N. Y. Display device	654,799	July 31	4055	913	92	883
Levi, Harry, Philadelphia, Pa. Go-cart	655,099	July 31	4609	1040	92	999
Levi, Isaac W., Syracuse, N. Y. Buckle	658,185	Sept. 18	2150	470	92	2269
Levin, Adolph L., Denver, Colo. Portable folding chair	656,588	Aug. 21	2095	618	92	1596
Levinstein, Ivan, and C. Mensching, assignors to Levinstein, Limited, Manchester, England. Black azo dye and making same	654,167	July 24	2747	------	92	594
Levinstein, Ivan, and C. Mensching, assignors to Levinstein, Limited, Manchester, England. Black azo dye and making same	654,168	July 24	2748	------	92	594
Levinstein, Limited. (See Levinstein and Mensching, assignors.)						
Levy, Heiman H., Baltimore, Md. Branding	652,791	July 3	95	23	92	19
Levy, Joseph L., New York, N. Y., assignor to J. A. Brill, Philadelphia, Pa. Car-truck	656,900	Aug. 28	3314	755	92	1728
Levy, Joseph L., New York, N. Y., assignor to J. A. Brill, Philadelphia, Pa. Car-truck	658,659	Sept. 25	2997	666	92	2402
Levy, Kalman. (See Levy, Nathan B. and K.)						
Levy, M. M., *et al.* (See Brady, Alford, assignor.)						
Levy, Nathan B. and K., Scranton, Pa. Display-tray	658,488	Sept. 25	2674	594	92	2397
Levy, Richard W., and J. Holt, Paterson, N. J. Convertible tub	655,980	Aug. 14	1578	363	92	1360
Levy, William M., St. Louis, Mo. Single-trigger mechanism for breakdown guns	656,822	Aug. 28	3116	707	92	1692
Lewis, Daniel L., Cygnet, Ohio. Oil or other Artesian well pump-valve	654,316	July 24	3141	702	92	677
Lewis, David D., Lorain, Ohio. Feed-roll for rolling-mills	654,406	July 24	3299	740	92	713
Lewis, Ebenezer W., *et al.* (See Miller, Charles F., assignor.)						
Lewis, Edward G., St. Louis, Mo. Addressing-machine	654,263	July 24	3082	680 681	92	657
Lewis, Frederick H., Philadelphia, Pa. Feeding pulverized fuel	658,069	Sept. 18	1941	422	92	2228
Lewis, George E. M. (See Lewis, John and G. E. M.)						
Lewis, George I., assignor of two-thirds to W. W. Sanborn and J. S. Stimson, Lawler, Iowa. Drill-grab	656,555	Aug. 21	2637	608	92	1582

Alphabetical list of patentees, July to September, inclusive—Continued.

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Lewis, George W., assignor of two-thirds to W. R. Robinson and S. M. Lewis, Portsmouth, Va. Seal-lock	657,742	Sept. 11	1351	286	92	2008
Lewis, George W., and L. C. Godwin, Portsmouth, assignors of one-third to C. A. Nash, Norfolk, Va. Journal-box	654,116	July 17	2599	597	92	545
Lewis, John, Brownville, Me., and G. E. M. Lewis, Lewiston, Canada. Machine for making shoe-pegs	654,011	July 17	2413	555	92	509
Lewis, John F., Scranton, Pa. Lubricator	653,420	July 10	1307	310	92	271
Lewis, Joseph D., St. Paul, Minn. Garment-supporter	653,747	July 17	1951	445	92	420
Lewis, Robert, Chihuahua, Mexico. Bit-brace	654,012	July 17	2414	556	92	509
Lewis, Russell H., Providence, R. I., assignor to S. & B. Lederer Company, of Rhode Island. Button	657,271	Sept. 4	391	82	92	1879
Lewis, S. M., *et al.* (See Lewis, George W., assignor.)						
Lewis, Samuel A., Salem, Mass. Blind-fastener	656,847	Aug. 28	3194	726	92	1708
Libbey, Hosea W., Boston, Mass. Automobile vehicle	652,851	July 3	211	50	92	43
Libbey, Hosea W., Boston, Mass. Motor-wheel for vehicles	652,852	July 3	213	50	92	43
Libbey, Hosea W., Boston, Mass. Motor-vehicle	654,741	July 31	3932	888	92	856
Libbey, Hosea W., Boston, Mass. Automobile truck	654,742	July 31	3933	888	92	856
Libbey, Hosea W., Boston, Mass. Car-wheel	657,123	Sept. 4	90	22	92	1819
Libbey, Hosea W., Boston, Mass. Automobile vehicle	657,124	Sept. 4	91	22	92	1819
Liberty Bell Company. (See Rockwell, Edward D., assignor.)						
Library Bureau. (See Hunter, David E., assignor.)						
Lichtenstein, Simon. (See Herdrich, William F., assignor.)						
Lichtenwalner, Edwin J. (See Schaffer, Morris T., assignor.)						
Lidgerwood Manufacturing Company. (See Mattson, Samuel, assignor.)						
Lieb, Charles A., New York, N. Y. Motor-vehicle	653,102	July 3	703	165 166	92	141
Liebau, John, New York, N. Y. Traction-engine	655,724	Aug. 14	1051	243	92	1256
Liebert, Henry, Milnrow, England. Machine for milling screws, &c.	655,878	Aug. 14	1364	313 314	92	1318
Liebl, Rudolf. (See Hornung and Liebl.)						
Lietz, Charles, Aurora, Ill. Display-rack	655,981	Aug. 14	1579	363 364	92	1360
Liggett, William K., assignor to Kinkade & Liggett Company, Columbus, Ohio. Clutch	657,244	Sept. 4	329	70	92	1867
Light, Samuel E., Lebanon, Pa. Sectional steam-generator	655,252	Aug. 7	145	31, 32	92	1098
Light, William W., Racine, Wis. Neck-yoke center	652,898	July 3	283	69	92	57
Lilipop, Jesse M., Kyana, Ind. Tail-gate for wagons	657,946	Sept. 18	1755	378	92	2191
Lincoln, Isabelle C., Columbus, Ohio. Spool-stand	658,186	Sept. 18	2150	470	92	2269
Lind, Charles H., assignor to A. M. McCarty, A. Hoeffer, and A. C. McDowell, Canton, Ohio. Dental cabinet	656,556	Aug. 21	2638	608	92	1582
Lindeman, Joseph. (See Cheval and Lindeman.)	653,108	July 3	704	166	92	141
Lindeman, Julius A., Atlanta, Ga. Cushioned runner for rocking-chairs or the like	654,655	July 31	3770	851	92	822
Lindemann, Eduard, Munich, Germany. Means for reducing skin-friction of ships	658,600	Sept. 25	3001	667	92	2463
Lindemeyr, Philip, assignor to Maryland Stopper Company, Baltimore, Md. Bottle-stopper	658,661	Sept. 25	3008	667	92	2463
Lindemeyr, Philip, assignor to Maryland Stopper Company, Baltimore, Md. Bottle-stopper	656,986	Aug. 28	3466	702 703	92	1758
Lindenbaum, Harry, *et al.* (See Collins, John C., assignor.)	657,125	Sept. 4	92	22	92	1820
Lindenthal, Gustav, New York, N. Y. Construction of railway-tracks	657,245	Sept. 4	331	70 71	92	1868
Lindsay, Alexander, Wheeling, W. Va. Egg-separator	657,246	Sept. 4	334	71	92	1869
Lindsay, Leroy J., assignor to J. T. Phillips, Seymour, Iowa. Check-row corn-planter	658,379	Sept. 25	2499	552 553	92	2363
Lindsay, Leroy J., assignor to J. T. Phillips, Seymour, Iowa. Automatic check-row corn-planter	658,215	Sept. 18	2206	482	92	2280
Lindsay, William B., and W. E. Tonner, Steubenville, Ohio. Filter	655,502	Aug. 7	695	158	92	1177
Lindsey, John, Sandersville, Miss. Logging-truck	655,503	Aug. 7	696	159	92	1177
Lindstrom, Charles A., assignor to Hewitt-Lindstrom Motor Company, Chicago, Ill. Brake for electric motors	654,656	July 31	3772	851	92	822
Lindstrom, Charles A., assignor to Hewitt-Lindstrom Motor Company, Chicago, Ill. Electric carriage	657,879	Sept. 11	1583	341	92	2142
Lindstrom, Nils O., and A. Cowperthwait, New York, N. Y., assignors to A. B. See Manufacturing Co. Elevator-controller	657,126	Sept. 4	93	22	92	1820
Lindt, Frederick C. (See Nyland and Lindt.)	657,552	Sept. 11	993	204	92	2024
Lingenfelter, David C., Plainview, Nebr. Pitman connection						
Lingle, Charles L., Belchertville, Tex. Portable door-fastener						
Linhart, William, New York, N. Y. Axle-oiler						
Lininger, Horrace H., *et al.* (See Franks, Peter A., assignor.)						
Linn, Adam. (See Engel, Henry, assignor.)						
Linotype Company. (See Barr, Mark, assignor.)						
Linthicum, Charles W. (See Linthicum, George S., assignor.)						
Linthicum, George S., assignor of one-half to C. W. Linthicum, Baltimore, Md. Non-refillable bottle	658,624	July 10	1670	390	92	347
Linton, Charles E., Saginaw, Mich. Rotary engine	655,175	July 31	4740	1095	92	1024
Lisby, Joseph E., assignor of one-half to J. Laubach, Nebraska City, Nebr. Grain-door	653,844	July 17	2126	483	92	452
Lisk, George W., Clifton Springs, N. Y. Hose-tip	655,879	Aug. 14	1366	314	92	1319
Lissau, Samuel M., Philadelphia, Pa. Concentrating ores anhydrously	655,494	Aug. 7	586	132	92	1155
Lissau, Samuel M., Philadelphia, Pa. Concentrating ores anhydrously	655,495	Aug. 7	587	132	92	1155
Lissau, Samuel M., Philadelphia, Pa. Means for concentrating ores anhydrously	655,496	Aug. 7	589	133	92	1156
Lissau, Samuel M., Philadelphia, Pa. Means for concentrating ores anhydrously	655,497	Aug. 7	590	133	92	1156
List, Anthony J. (See Kane and List.)	658,550	Sept. 25	2783	617	92	2419
Little, Daniel, Eagle's Mere, Pa. Hame-fastener	653,682	July 17	1830	418	92	397
Little, Joseph J., *et al.*, trustees. (See St. John, Roswell H., assignor.)	656,823	Aug. 28	3121	707 708	92	1693
Little, Owen J., and C. T. Van Sickle, Deckertown, N. J. Sanitary washable bucket for stock	654,549	July 24	3554	802	92	763
Little, Robert H., assignor of one-half to S. W. Straus, Chicago, Ill. Air or gas engine	655,135	July 31	4701	1059	92	1017
Littlefield, Sylvanus C., Jr., Brunswick, Ga. Propeller	654,657	July 31	3774	851	92	823
Littlepage, Hardin B., assignor of one-half to W. B. Matthews, Washington, D. C. Cord-clamp	654,800	July 31	4056	913	92	883
Littlewood, Dick, Manchester, England. Belt-fastener	657,428	Sept. 4	689	145 146	92	1938
Livengood, Gabriel. (See Livengood, Winfield S. and G.)						
Livengood, Winfield S. and G., Kansas City, Kans. Baling-press						
Livingston, Robert, and W. Rodger, Dysart, assignors to said Livingston, W. J. Normand, Edinburgh, and P. H. Normand, Aberdour, Scotland. Machine for measuring, marking, and rolling cloth						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Livingstone, William, assignor to R. Murray, trustee, New York, N. Y. Wheel for casters, &c.	656,358	Aug. 21	2285	523	92	1513
	652,792	July 3	96	23	92	20
Lloyd, Daniel, assignor of one-half to C. F. Auslund, Cambridge, Md. Sash-lock	658,269	Sept. 18	2202	504 505	92	2207
Lloyd, Walter J., Birmingham, England. Back-pedaling brake	652,959	July 3	442	104	92	80
Llu Frio, Henry C., Providence, R. I. Button	658,380	Sept. 25	2500	553 554 555	92	2063
Lochman, Emil, St. Louis, Mo. Carving-machine	653,026	July 3	556	130	92	111
Locke, Charles S., assignor to H., H. F., and H. B. Humphrey, Joliet, Ill. Rotary cutter	656,557	Aug. 21	2640	608	92	1583
Locke, John G., New York, N. Y. Match-box	656,295	Aug. 21	2169	496	92	1491
Locke, Joseph, assignor to Davis Glass Company, Pittsburg, Pa. Manufacture of wire-glass	656,296	Aug. 21	2171	496	92	1491
Locke, Joseph, assignor to Davis Glass Company, Pittsburg, Pa. Apparatus for producing wire-glass	655,253	Aug. 7	146	32	92	1099
Locklin, George C., and B. M. Fox, Chicago, Ill. Woven-wire fabric						
Locklin, Samuel B. (See McGregor and Locklin.)						
Lockwood, John S., *et al.* (See Monahan, Richard C., assignor.)						
Lockwood, Rhodes, *et al.* (See Upton, Henry J., assignor.)						
Lockwood, Rhodes G., *et al.* (See Upton, Henry J., assignor.)						
Lockwood, William N., *et al.* (See Upton, Henry J., assignor.)						
Locomobile Company of America. (See Mudge, Richard C., assignor.)						
Loder, John S., Ouray, Colo., assignor of three-fourths to A. Cuninghame, Birmingham, Ala. Ore-classifying apparatus	657,553	Sept. 11	994	204 205	92	2024
	654,743	July 31	3086	888	92	857
Loeper, Felix F., Dresden, Germany. Stone-cutting machine	658,255	July 10	1005	241	92	214
Loetzer, Christian E., Sayre, Pa. Automatic air-valve for water-mains	653,688	July 17	1881	419	92	397
Loewenbach, Hugo, Milwaukee, Wis. Tablet and file holder	656,558	Aug. 21	2641	609	92	1583
Loiselet, Gérôme, Paris, France. Electrolytic apparatus	656,080	Aug. 14	1676	386	92	1380
Lombard-Gerin, Louis, Lyons, France. Trolley for electrically-driven vehicles	653,104	July 3	705	166	92	141
Long, Eugene M., Washington, D. C. Pocket-recorder						
Long, Frederic H., Chicago, Ill., assignor to R. J. Beatty, trustee, Muncie, Ind. Metallurgical filter	653,684	July 17	1882	419	92	398
Long, James N. (See McInerney, Michael H., assignor.)						
Long, John C. F., and J. N. Bish, St. Mary's, Ohio. Adjustable screw-jack	656,464	Aug. 21	2475	569	92	1549
Long, John E., Chillicothe, Ohio. Collapsible bolster	655,790	Aug. 14	1201	274	92	1287
Long, Louise S., San Francisco, Cal. Shoulder-brace	658,111	Sept. 18	2021	440	92	2243
Longenecker, Frank. (See Longenecker, Harvey and F.)						
Longenecker, Harvey and F., Beamsville, Ohio. Duplex penholder	654,989	July 31	4404	992	92	957
Longthorpe, Jeshurun. (See Bottomley, Longthorpe, and Dargue.)						
Looby, Hiram R., Lorain, Tex. Stock-weaner	654,068	July 17	2511	577	92	527
Loomis, Allen, Jackson, Mich. Power transmission	654,903	July 31	4266	957	92	927
Loomis, Harry T., New York, N. Y. Display-receptacle	656,723	Aug. 28	2934	670	92	1658
Loose, Hugo, and G. Schreyer, Karsten-Centrum-Grube, Germany. Lubricating means	657,554	Sept. 11	997	205	92	2024
Lorain Steel Company. (See Du Pont, Thomas C., assignor.)						
Lorain Steel Company. (See Entwisle, Edward B., assignor.)						
Lorain Steel Company. (See Gairing, Alfred J., assignor.)						
Lorain Steel Company. (See Garrett, Frank W., assignor.)						
Lorain Steel Company. (See Goughnour, Henry S., assignor.)						
Lorain Steel Company. (See Kleinschmidt, Henry F. A., assignor.)						
Lorain Steel Company. (See Kress, Carl F., Jr., assignor.)						
Lorain Steel Company. (See Merrick and Stull, assignors.)						
Lorain Steel Company. (See Nicewaner, Edwin G., assignor.)						
Lorain Steel Company. (See O'Shea, Henry, assignor.)						
Lorain Steel Company. (See Stormer, Peter G., assignor.)	658,551	Sept. 25	2784	617	92	2419
Lord, Edward S., Somerville, Mass. Bracket or fixture	657,272	Sept. 4	892	82	92	1879
Lord, Peter, New Bedford, Mass. Punching, shearing, and shaping machine						
Lord, Samuel W., *et al.* (See Beck, John F., assignor.)	653,421	July 10	1309	310 311	92	271
Lorey, William, Philadelphia, Pa. Filter						
Loucks, Edwin W. (See Bates, Peter S., assignor.)						
Loucks, Menzo. (See Marshall and Loucks.)						
Louderbough, Harry, Jersey City, N. J. Paint for ships' bottoms	652,971	July 3	461	------	92	93
Love, Lafayette, assignor of one-third to F. E. Hoffman, Hamilton, Ohio. Treating leaf-tobacco	655,791	Aug. 14	1201	------	92	1287
	656,196	Aug. 21	1974	453	92	1456
Lovejoy, Frederick C., Lodi, Ohio. Carpet-fastener						
Lovering, William C., *et al.* (See Becker, Joseph, assignor.)						
Lovett, Thomas J., Chicago, Ill., assignor to Budd Doble Tire Company, New York, N. Y. Cushioned horseshoe	655,827	Aug. 14	1279	293	92	1303
Lovett, Thomas J., Chicago, Ill., assignor to Budd Doble Tire Company, New York, N. Y. Soft-tread attachment for horseshoes	655,828	Aug. 14	1281	294	92	1304
Lovett, Thomas J., Chicago, Ill., assignor to Budd Doble Tire Company, New York, N. Y. Cushioned horseshoe	655,829	Aug. 14	1283	294	92	1304
Loving, Leslie W., Paris, Tenn. Nut-lock	654,744	July 31	3937	889	92	857
Loving, Mabel F., St. Joseph, Mo. Combined hose and skirt supporter and shoulder-brace	658,602	Sept. 25	3005	667	92	2464
Low, Abbot A. (See Johnson and Low.)						
Low, Abbot A., New York, N. Y. Cap for closing vessels	652,793	July 3	97	23	92	20
Low, Abbot A., New York, N. Y. Sap-pail cover	658,089	Sept. 18	1897	410	92	2219
Low, Abbot A., New York, N. Y. Sap-pail	658,040	Sept. 18	1898	411	92	2219
Low, Abbot A., New York, N. Y. Cap for closing vessels	658,381	Sept. 25	2511	555	92	2965
Low, Abbot A., New York, N. Y. Closing-cap for vessels	658,382	Sept. 25	2512	555	92	2966
Low, Abbot A., New York, N. Y. Sealing-cap for vessels	658,383	Sept. 25	2512	555	92	2966
Low, Abbot A., New York, N. Y. Coloring photographs	653,570	July 10	1605	373	92	393
Lowe, Charles A., Bloomington, Ill. Coupling-bolt	652,794	July 3	98	24	92	20
Lowe, Enoch L., assignor to S. Lowe, San Francisco, Cal. Home-hammock motor	657,893	Sept. 11	1606	346	92	2147
Lowe, Francis J., New York, N. Y.						
Lowe, Susanna. (See Lowe, Enoch L., assignor.)	653,931	July 17	2278	518	92	483
Lowres, George, Newark, N. J. Eyeglasses or spectacles						
Lowry, George A., Chicago, Ill., assignor to Northwestern Grass Twine Company, St. Paul, Minn. Apparatus for preparing grass	654,990	July 31	4405	993	92	957
Lowry, George A., Chicago, Ill., assignor to Northwestern Grass Twine Company, St. Paul, Minn. Machine for making grass twine	654,991	July 31	4406	993 994 995	92	958
Lowry, George A., and W. M. Holmes, Boston, Mass., assignors to Planters Compress Company, of West Virginia. Bale-stay	653,748	July 17	1953	445	92	420
	657,555	Sept. 11	997	205	92	2025
Lubin, Siegmund, Philadelphia, Pa. Kinetographic film						

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lucas, D. D. (See Walber, James, assignor.)						
Lucien, Dominique G., *et al.* (See Heiny, Anatole, assignor.)						
Luckett Smokeless Fuel Economizer Company. (See Griffith, Asa W., assignor.)						
Ludington, Albert C., assignor of one-half to N. M. Kaufman, Marquette, Mich. Telephone-test set	658,422	July 10	1311	312	92	272
Ludington, Frank J., Waterbury, Conn. Cigarette-machine	655,254	Aug. 7	148	32 33 34	92	1069
Ludington Novelty Company. (See Haskell, Henry L., assignor.)						
Ludlow, John H., Franklin, Nebr. Wire-reel	654,350	July 24	3555	802	92	763
Ludwig & Co. (See Salyer, Harry M., assignor.)						
Ludwig, Jacob E., San Francisco, Cal. Axle-lubricator	655,347	Aug. 7	335	73	92	1105
Lueder, Otto F., Plymouth, and H. C. Alves, Sheboygan Falls, Wis. Air-cooling and ventilating system	654,264	July 24	3035	681	92	657
	655,792	Aug. 14	1202	275	92	1287
Lugviel, Fritz, Oconomowoc, Wis. Bottle-washing machine						
Lumbert, Daniel, assignor to W. S. and H. F. Lumbert, Centreville, Mass. Cranberry-gatherer	654,013	July 17	2415	556	92	510
Lumbert, Harrie F., *et al.* (See Lumbert, Daniel, assignor.)						
Lumbert, William S., *et al.* (See Lumbert, Daniel, assignor.)						
Lumière, Auguste and L., Lyons, France. Carbureter for petroleum or other engines	656,197	Aug. 21	1975	454	92	1456
Lumière, Louis. (See Lumière, Auguste and L.)						
Lundell, Robert, New York, N. Y. Means for regulating electric motors	654,551	July 24	3556	802	92	763
Lundquist, Emil, Chicago, Ill. Combined ash pan and sifter	653,871	July 17	2171	495	92	462
Lundy, William H. H., Washington, D. C. Insect-trap	658,663	Sept. 25	3007	668	92	2464
Lunken, Edmund H., Denver, Colo., assignor to Lunkenheimer Company, Cincinnati, Ohio. Renewable-seat valve	653,300	July 10	1095	261	92	232
Lunken, Edmund H., Denver, Colo., assignor to Lunkenheimer Company, Cincinnati, Ohio. Renewable-seat valve	653,301	July 10	1096	261	92	232
Lunken, Edmund H., Denver, Colo., assignor to Lunkenheimer Company, Cincinnati, Ohio. Valve	653,302	July 10	1098	262	92	232
Lunken, Edmund H., Denver, Colo., assignor to Lunkenheimer Company, Cincinnati, Ohio. Renewable-seat valve	653,423	July 10	1314	312	92	273
Lunken, Edmund H., Denver, Colo., and H. Ritter, Delhi, assignors to Lunkenheimer Company, Cincinnati, Ohio. Graphite lubricator	653,027	July 3	558	130	92	112
Lunkenheimer Company. (See Lunken, Edmund H., assignor.)						
Lunkenheimer Company. (See Lunken and Ritter, assignors.)						
Lunkenheimer Company. (See Moyer, Samuel L., assignor.)						
Lunt, Alexander D., Schenectady, N. Y., assignor to General Electric Company, of New York. Speed-equalizing device	653,424	July 10	1316	312	92	273
Lunt, Alexander D., Schenectady, N. Y., assignor to General Electric Company, of New York. System of electrical distribution	656,650	Aug. 28	2814	642	92	1633
Lupfer, Edgar N. (See Hiser and Lupfer.)	655,496	Aug. 7	592	134	92	1156
Lusby, Comegys C., assignor of one-half to J. A. Cramp, Philadelphia, Pa. Handpiece	652,972	July 3	461	109	92	93
Lusebrink, Frederick W. (See Fahlstrom and Lusebrink.)						
Lusebrink, Frederick W., Bridgeport, Conn. Locking device for cycle sprocket-wheels	656,987	Aug. 28	3468	798	92	1758
Luther, Gardner C. (See Cruickshank and Luther.)	657,556	Sept. 11	998	205	92	2025
Luther, Gardner C., Swansea, Mass. Scoop-bucket	655,405	Aug. 7	431	95	92	1123
Luther, William H., Providence, R. I. Campaign badge or button						
Luttgens, Henry A., Paterson, N. J. Locomotive						
Lutz, Alexander, *et al.* (See Guion, Bernard R., assignor.)	654,407	July 24	3300	740	92	713
Lutz, Horace C. (See Bates and Lutz.)						
Luyckx, Albert C., Detroit, Mich. Barrel-setting-up form						
Luzatto, Cesare, Milan, Italy, assignor of one-half to Firm Eisenwerk, vormals Nagel & Kaemp, Actien-Gesellschaft, Hamburg, Germany. Apparatus for forming cakes of food for cattle, &c.	657,607	Sept. 11	1093	228	92	2043
Lyday, Joseph H., Newton, Iowa. Portable egg-case	655,564	Aug. 7	700	159	92	1177
Lyman, George C., New York, N. Y. Dissolving copal gums	655,499	Aug. 7	594	------	92	1157
Lynch, Hector E. (See Seelig, Carl H., assignor.)						
Lynch, John H., New York, N. Y., assignor to Mergenthaler Linotype Company, of New York. Linotype-machine	657,429	Sept. 4	692	146	92	1939
	654,658	July 31	3775	851 852	92	823
Lyncker, Gustav A., Munich, Germany. Electric railway	653,872	July 17	2172	496	92	462
Lynn, David, Athens, Pa. Ornamenting wood	656,773	Aug. 28	3018	687	92	1073
Lyon, Charles W., Thornhill-Lees, near Dewsbury, England. Tipping wagon						
Lyons, Alfred. (See Lyons, James, A., and G.)						
Lyons, George. (See Lyons, James, A., and G.)	654,265	July 24	3037	681	92	658
Lyons, Hugh, Lansing, Mich. Hand for display-forms	655,447	Aug. 7	517	115	92	1141
Lyons, James, A., and G., Manchester, England. Tray for storing eggs	655,255	Aug. 7	152	34, 35	92	1070
Lyouns, Herbert F. W., Boston, Mass. Exhibition structure						
Maatschappy ter Exploitatie Vaude Constructiewinkel de Bromo. (See Verwoblt, Heinrieh L., assignor.)	657,782	Sept. 11	1413	299 300	92	2106
Mabbs, John W., Chicago, Ill. Electric elevator	656,198	Aug. 21	1977	454 455	92	1456
MacColl, James R., Pawtucket, R. I. Lappet-loom	656,199	Aug. 21	1981	455 456 457	92	1456
MacColl, James R., Pawtucket, R. I. Lappet-loom						
MacCoy, James S. (See English, William J., assignor.)						
MacCoy, James S. (See Giroud, Peter G., assignor.)						
MacCoy, James S. (See Giroud, MacCoy, and Stambaugh.)	652,795	July 3	99	24	92	20
MacDonald, Parish J., Zacatecas, Mexico. Safety cut-off for water-gages	657,947	Sept. 18	1756	378	92	2191
MacGill, William H., Louisville, Ky. Combined cane and tripod	656,848	Aug. 28	3194	726 727	92	1708
MacLauchlan, James H., assignor to Waterbury Machine Company, Waterbury, Conn. Threading-machine	653,105	July 3	707	167	92	142
MacLeay, Alexander, Richmond, Canada. Locomotive-seat						
MacPhail, James, Blue Island, assignor to Plano Manufacturing Company, Chicago, Ill. Mowing-machine	656,257	Aug. 21	2096	479	92	1477
MacPhail, James, Blue Island, Ill., assignor to Deering Harvester Company. Device for attaching slats to canvases	657,948	Sept. 18	1757	378	92	2192
MacPherson Automobile Company. (See MacPherson, John G., assignor.)						
MacPherson, John G., Philadelphia, Pa., assignor to MacPherson Automobile Company, of New Jersey. Fifth-wheel for vehicles	655,256	Aug. 7	153	35	92	1070
MacPherson, John G., Philadelphia, Pa., assignor to MacPherson Automobile Company, of New Jersey. Electric sparker for gasolene-engines	655,406	Aug. 7	433	95	92	1123

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MacPherson, John G., Philadelphia, Pa., assignor to MacPherson Automobile Company, of New Jersey. Vaporizer for gasolene-engines	655,407	Aug. 7	434	96	92	1124
Macalester, John C., Glasgow, Scotland. Hand-stamp	654,464	July 24	3413	769	92	736
Macalpine, Thomas, assignor to Alcohol Syndicate, Limited, London, England. Refining mineral oils	655,500	Aug. 7	595	.....	92	1157
Macbeth-Evans Glass Company. (See Rott, Christian Z. F., assignor.)	653,303	July 10	1099	262	92	232
Macdonald, Annie C. B., Toronto, Canada. Game	654,317	July 24	3142	703	92	678
Macdonald, Thomas H., Bridgeport, Conn., assignor to American Graphophone Company, Washington, D. C. Graphophone	658,153	Sept. 18	2085	454	92	2255
Macey, Frank, assignor of two-thirds to F. Macey and C. W. Matheson, Grand Rapids, Mich. Card-index	654,465	July 24	3414	769	92	737
Macey, Fred, *et al.* (See Macey, Frank, assignor.)	653,354	July 10	1202	286	92	251
Macey, Fred, Grand Rapids, Mich. Garment-hook	658,664	Sept. 25	3008	668	92	2465
Maciejewski, Wladyslaw, Sielce, Russia. Means for manufacturing corrugated tubes	653,749	July 17	1954	445, 446	92	421
Mack, William E., Oswego, N. Y. Thermostat	654,408	July 24	3301	740, 741	92	718
Mackay, William R., Meriden, Conn. Toy rapid-fire cannon	653,198	July 3	880	213	92	178
Mackenzie, Thomas, *et al.* (See Haebler, Anton J., assignor.)	652,796	July 3	100	24	92	21
Mackey, Samuel P., Ridgefield, Wash. Liquid-weighing machine	654,408	July 24	3301	740, 741	92	718
Mackey, Samuel W., Baltimore, Md. Spring-clamp for treating hoof-cracks	654,169	July 24	2749	624	92	594
Macklin, Athol B., New York, N. Y. Hydrocarbon incandescent lamp	655,448	Aug. 7	518	115	92	1141
Macmillan, George. (See Ramage and Macmillan.)	654,466	July 24	3415	769	92	737
Macneil, Paul H., Washington, D. C. Wheel	654,467	July 24	3416	769	92	737
Maconochie, Archibald W., assignor to Maconochie Brothers, London, England. Tin for inclosing preserved provisions or foods, &c	653,304	July 10	1100	262	92	233
Maconochie Brothers. (See Maconochie, Archibald W., assignor.)	655,100	July 31	4611	1040	92	999
Mactear, James, London, England. Making cyanids	657,989	Sept. 18	1820	393	92	2204
Mactear, James, London, England. Furnace for heating and treating gaseous mixtures	654,117	July 17	2601	508	92	545
Macwilliam, Hugh G., New York, N. Y. Suspenders	654,014	July 17	2417	556	92	510
Macy, Lowell W., assignor of one-half to J. A. Bailey, Lincoln, Nebr. Bracket	655,408	Aug. 7	435	96	92	1124
Madden, Patrick J., Chicago, Ill. Water-closet	657,557	Sept. 11	999	206	92	2025
Maddocks, Henry B., Duncansville, Pa. Coal-bucket	656,988	Aug. 28	3469	793	92	1758
Madison, Walter R., Springfield, Mass. Anchor-iron	653,355	July 10	1203	286	92	251
Madsen, Mads H., Kimballton, Iowa. Corn-husking machine	652,853	July 3	215	50	92	43
Maegaard, Peter, Kenosha, Wis. Harness-saddle	656,698	Aug. 28	3466	668, 669	92	2465
Magazine Hammer Company. (See Savage, Arthur W., assignor.)	658,665	Sept. 25	3009	669	92	2465
Magee, Jefferson D., Bassfield, Miss. Combined harrow and cultivator	658,666	Sept. 25	3010	669	92	2465
Magie, Wilber R., Paulding, Ohio, assignor of one-half to P. A. and I. J. Dix. Feed-tank	655,880	Aug. 14	1367	314, 315	92	1319
Magill, William F., Dufur, Oreg. Cultivator	658,041	Sept. 18	1899	411	92	2219
Maginn, Felix. (See Stevenson and Maginn.)	656,901	Aug. 28	3316	756	92	1729
Mahana, John B. (See Church and Mahana.)	654,170	July 24	2751	624, 625	92	594
Mahoney, Thomas E., Bunker Hill, Kans. Feeder for threshing-machines	653,305	July 10	1101	262, 263	92	233
Mahony, William F., Washington, D. C. Mailing attachment for books	656,697	Aug. 28	2885	656, 657	92	1648
Maier, Charles, New York, N. Y. Organ	658,090	Sept. 18	1985	432	92	2236
Main, De Witt C., Davenport, Iowa. Display-rack for rugs	657,225	Sept. 4	291	62	92	1860
Main, George A., Plainfield, N. J. Printing-press	652,797	July 3	102	25	92	21
Maize, Charles F., *et al.* (See Pfautz, Daniel M., assignor.)	653,873	July 17	2173	496	92	462
Malard, Georges, Tourcoing, France. Wool-washing machine	654,835	July 31	4124	927	92	897
Mallard, William S., Darien, Ga. Bag-filling appliance	657,171	Sept. 4	182	41	92	1838
Mallet, Anatole, Paris, France. Four-cylinder locomotive-engine	657,172	Sept. 4	183	41	92	1838
Mallett, Charles E., New York, N. Y. Bale-tie	653,256	July 10	1007	241, 242	92	215
Mallett, Charles E., assignor of one-half to E. Urquhart, New York, and C. T. Harbeck, Islip, N. Y. Cotton-compress	654,171	July 24	2755	625	92	595
Mallinson, George, Caroline, R. I. Apparatus for dyeing, &c	653,028	July 3	559	131	92	112
Mallon, Guy. (See Fee, Franklin W., assignor.)	656,743	Aug. 28	2967	678	92	1668
Malone, James A., assignor of one-half to W. D. Malone, Grayson, Ky. Propelling-gear	654,095	July 17	2552	587	92	535
Malone, W. D. (See Malone, James A., assignor.)	656,989	Aug. 28	3470	794	92	1758
Manchester, Frederic H., and I. E. Brown, Providence, R. I. Incandescent-lamp socket	653,962	July 17	2348	540	92	495
Mancourt, Frederick C. (See Poorbaugh, Phillip F., assignor.)	654,835	July 31	4124	927	92	897
Mandl, Ludwig, Vienna, Austria-Hungary. Cycle-saddle	656,465	Aug. 21	2476	569, 570	92	1550
Manhattan Oil Motor Company. (See Torbensen, Viggo V., assignor.)	653,750	July 17	1956	446	92	421
Manhattan Optical Company. (See Graf, Adolf O., assignor.)	654,469	July 24	3419	770, 771	92	737
Mann, Alfred, and P. Stumpe, Barmen, Germany. Fabric for collar-stiffeners	656,698	Aug. 28	2886	657	92	1648
Mann, Alfred, and P. Stumpe, Barmen, Germany. Dress-protector	654,904	July 31	4267	958	92	929
Mann, Charles H., Orange, N. J. Gravity-balance	654,468	July 24	3417	770	92	737
Mann, John L., Burrows, assignor of three-fourths to C. H. Heim, Kane, N. B. Bubb and A. D. Hermance, Williamsport, Pa. Lampblack-machine	657,608	Sept. 11	1096	229	92	2043
Mansfield, Samuel M., U. S. Army, and F. S. Mason, Malden, Mass. Disappearing-gun carriage	654,659	July 31	3777	852, 853	92	823
Manton, Frank S., Providence, R. I. Capstan	657,494	Sept. 4	879	178	92	1960
Manton, Joseph P. (See Marsh, Frank, assignor.)						
Manuel, William M., assignor to P. P. Cline, Gallatin, Mo. Neck-yoke attachment						
Maranville, Frank, and W. Warden, Akron, Ohio. Exhaust-head						
Marburg, Franz, Jr., New York, N. Y. Turbine pumping mechanism						
Marcellus, Charles N., Toledo, Ohio. Water-closet-flushing apparatus						
March, Alfred, New Brunswick, N. J. Knitting-machine						
March, Perrin G. (See Steen and March.)						
Marchand, Charles, New York, N. Y. Bottle-stopper						
Marchant, George F., Chicago, Ill. Weeding device						
Marcy, Frank M., Worcester, Mass., assignor to Draper Company, Portland, Me., and Hopedale, Mass. Spinning-ring						
Marek, Rudolph W., Summit, N. J. Combined pick and reed-book						
Marggraff, Fredrick. (See Draher and Marggraff.)						
Marggraff, Fredrick. (See Field, Marggraff, and Draher.)						
Marggraff, Fredrick, assignor, by mesne assignments, to Shoe Hardware Company, Waterbury, Conn. Automatic stop mechanism for metal-working machines						
Marick, John J., Chicago, Ill. Plow						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Marion Steam Shovel Company. (See Cheney and King, assignors.)						
Market Street Railway Company. (See Fairchild, George H., assignor.)						
Markey, William A., Saginaw, Mich., assignor to E. T. Bowen. Treating porous material used for electrical purposes	656,651	Aug. 28	2815	.....	92	1638
Markey, William A., Saginaw, Mich., assignor to E. T. Bowen. Carbon brush	656,652	Aug. 28	2817	642	92	1638
Markham, William F., Plymouth, Mich. Air-gun	655,170	July 31	4732	1064	92	1022
Markline, George H., Meridian, Miss. Postal-examination practice-cabinet	654,660	July 31	3782	853, 854	92	835
Markus, Jacob, Harrison, S. D. Veterinary obstetrical instrument	655,257	Aug. 7	154	85	92	1070
Marlay, Le Roy, *et al.* (See Smythe, Thomas E., assignor.)						
Marles Carved Moulding Company. (See Marles, Henry, assignor.)						
Marles Carved Moulding Company. (See Marles, Henry, assignor.) (Reissue.)						
Marles, Henry, London, England, assignor, by mesne assignments, to Marles Carved Moulding Company, of West Virginia. Carving-machine. (Reissue)	11,839	July 3	895	215, 216, 217	92	181
Marles, Henry, London, England, assignor to Marles Carved Moulding Company, Philadelphia, Pa. Carving-machine	658,818	July 17	2072	472, 473	92	443
Marles, Henry, London, England, assignor to Marles Carved Moulding Company, Philadelphia, Pa. Brush attachment for woodworking-machines	658,270	Sept. 18	2293	505	92	2206
Marmon, Walter C., assignor to Nordyke & Marmon Company, Indianapolis, Ind. Separating and bolting machine	655,881	Aug. 14	1369	315, 316	92	1319
Marmonier, Marius F., Lyons, France. Multiple-piston explosive-motor	657,226	Sept. 4	295	63, 64	92	1861
Marquelet, Marie A. E. (See Diederichs and Marquelet.)	654,905	July 31	4268	958	92	928
Marsden, Mark W., Philadelphia, Pa. Building material	657,173	Sept. 4	184	42	92	1838
Marsden, Thomas W., Ilion, N. Y. Gas-holder	654,906	July 31	4270	958	92	928
Marsh, Daniel B., Blackheath, Canada. Apparatus for examining condition of the lungs and heart	656,900	Aug. 28	3471	794	92	1759
Marsh, Frank, assignor to J. P. Manton, Providence, R. I. Insect-trap	658,384	Sept. 25	2513	556	92	2366
Marsh, Richard F., East Maitland, New South Wales. Rotary motor	656,559	Aug. 21	2642	609	92	1583
Marsh, Richard G., New York, N. Y. Garment-trimming						
Marshall & Brothers, James. (See Marshall, John, assignor.)						
Marshall, Clinton S. (See Daniels and Marshall.)						
Marshall, Ellis H., Fort Madison, Iowa. Apparatus for removing and applying various devices	653,775	July 17	1996	456	92	429
Marshall, Holmes, Cleveland, Ohio, assignor to National Addograph Company, Jersey City, N. J. Combined type-writing and computing machine	654,992	July 31	4417	995	92	960
Marshall, James, *et al.* (See Hart and Ashworth, assignors.)						
Marshall, James, *et al.* (See Mumford, Lucian C., assignor.)						
Marshall, John, assignor to J. Marshall & Brothers, Fall River, Mass. Hat-clearing machine	653,856	July 10	1205	286	92	251
Marshall, John, assignor to J. Marshall & Brothers, Fall River, Mass. Hat-sizing apparatus	653,890	July 10	1261	300	92	262
Marshall, John D., and M. Loucks, Pawtucket, R. I. Nut-lock	656,359	Aug. 21	2286	524	92	1513
Marshall, Percy S. (See Copley, Marshall, and Heaton.)	657,665	Sept. 11	1204	251, 252, 253	92	2065
Marsóvszky, Emerich von, Buda-Pesth, Austria-Hungary. Cylinder-lock	653,751	July 17	1957	446, 447	92	421
Martin, Bernard S. D. S., McPherson, Kans. Storm-curtain for vehicles	653,257	July 10	1011	242	92	216
Martin, Jacob S. (See Medbery, Nelson H., assignor.)	653,453	July 10	1366	324	92	283
Martin, James, Howard Lake, Minn. Device for overcoming dead-centers	653,143	July 3	772	181	92	154
Martin, James E., Fairfield, Ill. Window-shade adjuster						
Martin, Jens C., Spokane, Wash. Hose-coupling						
Martin, John. (See Erickson and Edmondson, assignors.)						
Martin, John W. (See Martin, Stephen S., assignor.)	657,704	Sept. 11	1276	270	92	2078
Martin, Robert, assignor to E. Sandow and E. Williams, London, England. Safety-pin	653,518	July 10	1490	348	92	309
Martin, Stephen S., assignor of one-half to J. W. Martin, Evergreen, Colo. Spark-arrester	655,903	Aug. 14	1408	323, 324	92	1327
Martin, William, New York, N. Y. Machine for edging sheet-metal roofing-plates	655,904	Aug. 14	1411	324	92	1328
Martin, William, New York, N. Y. Machine for edging metallic roofing-plates	656,200	Aug. 21	1985	457	92	1457
Martin, William J., Danville, Pa. Potato separator and cleaner	654,998	July 31	4423	996	92	961
Martin, William L., Rancocas, N. J. Carriage-curtain	654,069	July 17	2512	578	92	527
Martindale, Edward S., assignor to Kinnear Manufacturing Company, Limited, Warren, Pa. Acetylene-gas generator	652,854	July 3	217	51	92	44
Martinez, Joseph F. (See Couture, Eusebe P., assignor.)	653,144	July 3	773	182	92	154
Marublo, Angelo, assignor to himself and D. Rocca, Chicago, Ill. Cock or faucet						
Marwitz, Charles, Oak Park, Ill. Milk-can washer						
Maryland Stopper Company. (See Lindemeyr, Philip, assignor.)						
Maschinenfabrik Grevenbroich. (See Hirt, Ludwig, assignor.)	658,722	Sept. 25	3110	698	92	2484
Masion, Alfred, Brussels, Belgium. Manufacture of chains	655,101	July 31	4612	1040, 1041	92	999
Mason, Alexander, Fort Madison, Iowa. Sliding gate	658,154	Sept. 18	2086	454, 455	92	2255
Mason, Arthur, Raynham, Mass. Spinning and twisting frame	654,266	July 24	3037	681	92	658
Mason, Frank S. (See Mansfield and Mason.)						
Mason, Harold B., Peterborough, Canada. Non-refillable bottle						
Mason Machine Works. (See Sargent, Edward L., assignor.)						
Mason, Sidney, Philadelphia, Pa., assignor to Welsbach Light Company, Gloucester City, N. J. Bunsen burner	654,409	July 24	3303	741	92	713
Masters, Marshall A., Monrose, Colo. Bicycle-repair jack	653,519	July 10	1492	348	92	309
Matchless Gas Igniting Company. (See Wiegand, Andrew J., assignor.)						
Mathen, William, Brockville, Canada, assignor of one-half to J. E. Hobbs, North Berwick, Me. Combination hose-nozzle	658,155	Sept. 18	2089	455	92	2256
Mather, William, Manchester, England. Apparatus for dyeing	653,580	July 10	1605	374	92	333
Mather, William, Manchester, England. Apparatus for dyeing	653,581	July 10	1606	375	92	333
Mather, William, Manchester, England. Evaporating apparatus	654,470	July 24	3422	771, 772	92	738
Matheson, Charles W., *et al.* (See Macey, Frank, assignor.)						
Mathews, Newell. (See Dorsey and Mathews.)						
Mathewson, Arthur W., assignor of one-half to H. L. Pratt, Lewiston, Me. Railway-head	655,934	Aug. 14	1462	336, 337, 338	92	1338
Mathewson, Fannie B., New York, N. Y. Garment-fastener	655,982	Aug. 14	1581	364	92	1361
Mathey, Alcide E., Waltham, Mass. Clutch and brake	658,532	Sept. 25	2784	617, 618	92	2420

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Mathieu, George, Fall River, Mass. Harness stop-motion for looms	654,172	July 24	2756	625, 626	92	595
Matter, Philip. (See Halladay, Lewis P., assignor.)						
Matthews, James F., El Reno, Okla. Ter. Clothes-pin	656,724	Aug. 28	2986	670	92	1658
Matthews, William B. (See Littlepage, Hardin B., assignor.)						
Mattson, Samuel, New York, N. Y., assignor to Lidgerwood Manufacturing Company, of New York. Winch-head	652,798	July 3	104	25	92	21
Maul, Christian. (See Farrall and Maul.)						
Maule, William H., *et al.* (See Cowles, Arthur B., assignor.)						
Maun, John C., McConnellsburg, Pa. Cloth-cleaning device for sieves in bolting-machines	658,385	Sept. 25	2515	556, 557	92	2366
Mawbey, George W., Jersey City, assignor to A. Kress and G. Carragan, Bayonne, N. J. Compound for sealing vessels	655,935	Aug. 14	1472	.....	92	1339
Max, William, New York, N. Y. Strapping-tool	653,106	July 3	708	167	92	142
Maxim, Hiram P., Hartford, Conn., assignor, by mesne assignments, to Columbia and Electric Vehicle Company, Jersey City, N. J. Electric cut-out	653,685	July 17	1834	419, 420	92	398
Maxim, Hiram P., Hartford, Conn., assignor to Electric Vehicle Company, Jersey City, N. J., and New York, N. Y. Running-frame for vehicles	657,430	Sept. 4	694	147	92	1939
Maxim, Hiram S., assignor to Vickers, Sons & Maxim, Limited, London, England. Powder-grain	654,471	July 24	3423	772	92	738
Maxstadt, Francis W., Chicago, Ill. Wire joint and manufacturing same	655,905	Aug. 14	1412	324	92	1328
Maxwell, Herbert A., assignor of two-thirds to T. W. Herrick and G. F. Farwell, Boston, Mass. Clasp for garments	655,882	Aug. 14	1371	316	92	1320
May, A. L., *et al.* (See Brooks, Samuel M., assignor.)						
May, Abe L., *et al.* (See Mead, William M., assignor.)	653,258	July 10	1012	242	92	216
May, Edward S., Washington, D. C. Arm-rest	658,320	Sept. 18	2372	.....	92	2313
May, Jacob, Nashville, Tenn. Removing fiber from and finishing knit goods	654,994	July 31	4424	996, 997	92	992
May, Leopold, Ungarisch-Ostra, Austria-Hungary. Centrifugal machine						
May, Marcus B. (See Keyser, Nelson B., assignor.)						
Mayer, Esrom, Freeport, Ill. Book of account	656,031	Aug. 14	1677	386	92	1380
Mayer, George A., Homestead, Pa. Hub-attaching device	654,472	July 24	3424	772	92	738
Mayer, Max. (See Behrendt and Mayer.)						
Mayer, Theodore J. (See Gates, Elmer, assignor.)						
Mayhew, Athol. (See Hitchins and Mayhew.)						
Mayhew, Charles L., Newark, N. J., assignor of two-thirds to J. A. Fickett and W. E. Burroughs, New York, N. Y. Gas-motor	652,909	July 3	300	74, 75	92	60
McAllister, William F., Merchantville, N. J. Stripping-machine attachment	658,218	Sept. 18	2212	483	92	2281
McAneny, Michael, Denver, Colo., assignor to G. R. Davis, Chicago, Ill. Combined change-maker, cash-register, and indicator	653,626	July 10	1675	391, 392, 393	92	348
McAneny, Michael, Denver, Colo., assignor to B. Davis, Chicago, Ill., administrator of G. R. Davis, deceased. Combined change-maker, cash-register, and indicator	653,647	July 10	1749	402, 403, 404, 405	92	362
McAuliff, Daniel O., and W. A. B. Hicks, Toronto, Canada. Handle-bar for bicycles	655,570	Aug. 7	710	162	92	1179
McBerty, Frank R., Downer's Grove, assignor to Western Electric Company, Chicago, Ill. Supervisory signal for telephone-switchboards	654,747	July 31	3941	890	92	858
McBerty, Frank R., Downer's Grove, assignor to Western Electric Company, Chicago, Ill. Telephone toll apparatus	654,748	July 31	3944	890	92	858
McBerty, Frank R., Downer's Grove, and J. L. McQuarrie, assignors to Western Electric Company, Chicago, Ill. Signal appliance for telephone-switchboards	654,749	July 31	3950	890	92	860
McBerty, Frank R., Evanston, assignor to Western Electric Company, Chicago, Ill. Switchboard for telephone-lines	654,750	July 31	3953	891	92	860
McBerty, Frank R., Evanston, assignor to Western Electric Company, Chicago, Ill. Supervisory signal for telephone-switchboards	656,996	Aug. 28	3477	795	92	1960
McBerty, Frank R., Evanston, assignor to Western Electric Company, Chicago, Ill. Signal for telephone trunk-lines	656,997	Aug. 28	3479	796	92	1760
McBrair, Henry C., Middletown, N. Y. Electric furnace	657,202	Sept. 4	243	53	92	1850
McBride, George H., assignor of fifty-one one-hundredths to D. H. Bibb, San Francisco, Cal. Bed-bottom	658,503	Sept. 25	2666	509	92	2401
McCabe, William, Pittsburg, Pa. Collar for shafting and pulleys	656,564	Aug. 21	2650	611	92	1584
McCain, Theodore H., Monroe, Wash. Stump-puller	654,862	July 31	4058	914	92	884
McCall, Charles S., *et al.* (See McLean, Silamon, assignor.)						
McCall, William, San Francisco, Cal. Metal-lath attachment and support	657,827	Sept. 11	1498	319	92	2123
McCallum, Charles B., Stoughton, Wis. Miter-plane	658,092	Sept. 18	1988	433	92	2237
McCariston, James S., Corning, Ohio. Rod-jack	658,276	Sept. 18	2301	507	92	2299
McCarthy, James W., Ware, Mass. Thread-tier	655,571	Aug. 7	712	162	92	1179
McCarty, Andrew M., *et al.* (See Lind, Charles H., assignor.)						
McCaslin, Elton W., assignor to Morgan & Wright, Chicago, Ill. Pneumatic-tired wheel	654,101	July 17	2563	580	92	538
McCaslin, Elton W., assignor to Morgan & Wright, Chicago, Ill. Valve for pneumatic tires	655,451	Aug. 7	521	116	92	1141
McCaslin, Elton W., assignor to Morgan & Wright, Chicago, Ill. Velocipede wheel-rim and attachment	658,093	Sept. 18	1989	433	92	2237
McCauley, Reuben A., assignor of one-half to T. H. Blick, Baltimore, Md. Dumping coal-wagon	655,572	Aug. 7	713	163	92	1179
McCausland, William, New York, N. Y. Measuring-faucet	658,456	Sept. 25	2621	581	92	2387
McCaw, William J., Providence, R. I. Aspirator	657,440	Sept. 4	711	151	92	1942
McCay, John F., Prosperity, assignor of one-half to J. and C. D. Raymond, Webb City, Mo. Apparatus for loading or unloading mine cages or buckets	654,270	July 24	3043	683	92	659
McCleary, A. S. (See Dargatz, Gustav E., assignor.)						
McClellan, Edward J., New York, N. Y., assignor to Garvin Machine Company, of New York. Belt-tightener	655,157	July 31	4704	1060	92	1017
McClintock, Joseph. (See Parry and McClintock.)						
McCloskey, William, Windsor, Canada. Spacer-bar for wire fences	657,128	Sept. 4	97	23	92	1821
McClun, John G., *et al.* (See Sneller, William, assignor.)						
McCollister, Benjamin F., California, Mo. Roller-truck	657,129	Sept. 4	99	23	92	1821
McCollum, Peter, Fayette, Mo. Gate	653,392	July 10	1265	301	92	263
McConnell, Thomas, Chester, Pa., assignor to Hampton Company, East Hampton, Mass. Mercerizing-machine	657,705	Sept. 11	1277	270, 271	92	2078
McConway & Torley Company. (See Kelso, Joseph, assignor.)						
McCormack, Hermond L., Menard, assignor of one-half to W. A. Storm, Neoga, Ill. Jeweler's brazing-lamp	656,654	Aug. 28	2820	643	92	1634
McCormick, Richard C., Graceville, Minn. Draft-evener for gang-plows	656,505	Aug. 21	2651	611	92	1585
McCowan, Duncan, Neihart, Mont. Safety device for mines	656,204	Aug. 21	1992	458	92	1458
McCoy, Alexander C., Service, Pa. Mowing-machine knife	656,363	Aug. 21	2292	525	92	1515

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McCracken, William D., *et al.* (See Hart, Isaac C., assignor.)						
McCrea, Henry, Washington, D. C. Croquet-golf mallet	653,483	July 10	1430	335	92	296
McCulloch, Thomas, Huddersfield, England. Check or dividend-warrant and bank-transactions book	656,325	Aug. 21	2218	507, 508	92	1500
McCullough, Fred. (See McCullough, Richard, assignor.)						
McCullough, Richard, assignor of one-third to F. McCullough, Pittsburg, Pa. Curtain-fixture	653,484	July 10	1432	336	92	297
McCurdy, Benjamin F., Chicago, Ill. Frog-basket for fishermen	656,635	Aug. 28	2821	643	92	1634
McDaniel, James, Minneapolis, Minn. Grain-drier	653,032	July 3	565	132, 133	92	113
McDonald, Frank N. (See Crooker and McDonald.)						
McDonald, Robert B. (See Seitters and McDonald.)						
McDonald, William, Luxora, Ark. Car-coupling	655,263	Aug. 7	170	38	92	1073
McDonald, Winfield S., and J. B. Davis, Dayton, Ohio, assignors of one-third to J. F. Brinkman, Terre Haute, Ind. Bicycle attachment for leading bicycles	656,908	Aug. 28	3482	796	92	1761
McDonnell, Alexander R., Littleton, Me. Horse-brush	654,751	July 31	3956	891	92	861
McDonnell, Vincent J., Philadelphia, Pa. Vise	658,574	Sept. 25	2830	626	92	2427
McDougall, Alexander, Duluth, Minn. Dredging apparatus	653,690	July 17	1841	421	92	399
McDougall, Charles J., *et al.* (See Pfautz, Daniel M., assignor.)	657,247	Sept. 4	337	72	92	1869
McDowell, Adam C., *et al.* (See Lind, Charles H., assignor.)						
McDowell, Harry F., *et al.* (See Bartley, Milton, assignor.)						
McDowell, John G., Pittsburg, Pa. Wall-tie	656,364	Aug. 21	2293	525	92	1515
McDowell, John G., Pittsburg, Pa. Wall-plug	656,365	Aug. 21	2294	525	92	1515
McElroy-Grunow Electric Railway System. (See Grunow, William, Jr., assignor.) (Reissue.)	658,575	Sept. 25	2821	626, 627	92	2427
McElroy, John H., Chicago, Ill. Grinding-machine	658,553	Sept. 25	2786	618	92	2420
McEwan, Thomas, Jr. (See McGurty, James H., assignor.)						
McFadden, George, New York, N. Y. Striking-bag frame	658,554	Sept. 25	2787	618	92	2420
McFadden, George, New York, N. Y. Punching-bag support						
McFadden, William H., Pittsburg, Pa. Caisson	656,850	Aug. 28	3199	727, 728, 729, 730	92	1709
McGahan, Alexander W., Los Gatos, Cal. Water-closet tank	657,706	Sept. 11	1279	271	92	2078
McGaw, Benjamin F., Columbia, Tenn. Gin-saw cleaner	656,206	Aug. 21	1994	450	92	1459
McGaw, Benjamin F., Columbia, assignor of two-thirds to J. M. and Z. A. Parker, Pulaski, Tenn. Saw-gin	656,205	Aug. 21	1993	458	92	1458
McGee, David. (See McGee, Walter and D.)	656,085	Aug. 14	1682	387	92	1381
McGee, Susan, Jackson, Mich. Skirt	654,351	July 24	3194	715, 716	92	689
McGee, Walter and D., Paisley, Scotland. Machine for balling yarn	654,789	July 31	4028	907, 908	92	875
McGill, Daniel, Wellington, New Zealand, and F. W. Tannett-Walker, Leeds, England. Refrigerating-machine	656,506	Aug. 21	2652	611	92	1585
McGinnis, David L. (See Schmitt and McGinnis.)	653,858	July 10	1207	287	92	252
McGinty, Bernard, Doylestown, Pa. Tympan-gage						
McGowen, Joseph A., Gallion, La. Gin-saw-filing machine						
McGraw, Albert P. (See Ayres, Henry S., assignor.)						
McGregor, Daniel S., deceased, J. S. Bamford, administrator, and S. B. Locklin, Boston, Mass. Furnace	654,175	July 24	2760	627	92	596
McGuire, John F., assignor to B. F. Goodrich Company, Akron, Ohio. Hose	655,507	Aug. 7	603	136	92	1158
McGurty, James H., Jersey City, N. J. Speed-governor for electrical controllers	652,856	July 3	221	52	92	44
McGurty, James H., assignor of forty-nine one-hundredths to T. McEwan, Jr., Jersey City, N. J. Speed-governor attachment for electrical apparatus	654,752	July 31	3956	891	92	861
McHaffie, William, New York, N. Y. Power-transmitter for sewing-machines	656,469	Aug. 21	2482	571	92	1551
McHale, Edward H., assignor of one-half to W. D'Oench, Jr., and J. M. Hays, Louisville, Ky. Burnishing-wax holder and feeder	656,609	Aug. 21	2749	630	92	1607
McHardy, James A., assignor of fifty-one one-hundredths to E. C. Church, Providence, R. I. Rasp-punching machine	652,803	July 3	114	28, 29	92	23
McHardy, Rudolph H., Providence, R. I. Knob attachment	654,102	July 17	2564	590	92	538
McHenry, Edwin H., St. Paul, Minn. Track-gage	653,809	July 10	1106	264	92	234
McHugh, James B., assignor to J. McLean, Lockport, N. Y. Peanut-holder	652,919	July 3	320	79	92	65
McHugh, James T. (See Downing and McHugh.)						
McIlwraith, John G., Anderson, Ind. Packing-box for tin-plate	654,918	July 31	4279	961	92	989
McInerney, Michael H., assignor of two-thirds to J. N. Long, McKeesport, Pa. Column or pole	653,752	July 17	1959	447	92	421
McIntire, Charles H., Newark, N. J. Wire sleeve or connector	653,033	July 3	567	133	92	114
McIntire, Charles H., New York, N. Y. Cloth-cutting apparatus	653,111	July 3	717	160	92	144
McIntosh, Harry M., Chicago, Ill. Ventilating-hatch for refrigerator-cars	657,441	Sept. 4	712	151, 152	92	1942
McIntosh, John. (See Haltene, Samuel, assignor.)	652,857	July 3	222	52	92	45
McIntyre, Angus, Duluth, Minn. Tobacco-pipe						
McIntyre, Frank R., assignor to R. Hoe and C. W. Carpenter, New York, N. Y. Dispensing-can	656,417	Aug. 21	2395	550	92	1534
McIntyre, George P., Chicago, Ill. Mailing-tube	656,825	Aug. 28	3130	709	92	1695
McKeever, George F., Allegheny, assignor of two-thirds to F. Barker and J. McKeever, Jr., Pittsburg, Pa. Packing barrel, keg, or tierce	655,103	July 31	4615	1041	92	1000
McKeever, James, Jr., *et al.* (See McKeever, George F., assignor.)						
McKell, George A., assignor of one-half to Withington & Cooley Manufacturing Company, Jackson, Mich. Oil-cup	654,271	July 24	3045	684	92	659
McKelvey, Thomas, Trail, Canada. Saw-set	656,999	Aug. 28	3483	796	92	1761
McKenna, John I. (See Metcalf, Charles W., assignor.)						
McKenzie, Joel B. L., Rahway, N. J. Bicycle-seat-post clamp	656,567	Aug. 21	2654	612	92	1585
McKibben, Robert, *et al.* (See Beal, Samuel T., assignor.)						
McKim, George W., Martin's Ferry, Ohio. Metallic measuring vessel	657,000	Aug. 28	3485	796	92	1761
McKinney, Charles W., Butte, Mont. Automatic railway-frog	657,668	Sept. 11	1214	254	92	2066
McKnight, Walter J., Buffalo, N. Y. Electric device for indicating the awakening of persons buried alive	652,934	July 3	363	87	92	73
McLain, William R., assignor of one-half to T. E. O'Brien, Chicago, Ill. Reversible rail for bedsteads	653,753	July 17	1959	447	92	422
McLaren, Laura, Ottawa, Canada. Device for teaching music	657,953	Sept. 18	1762	379, 380	92	2103
McLaughlin, William D., Merriam, Kans. Chimney-crown	656,258	Aug. 21	2007	479	92	1478
McLean, John. (See McHugh, James B., assignor.)						
McLean, Silamon, Bingham, assignor of two-thirds to C. S. McCall, Bennettsville, and J. L. Medlin, Clio, S. C. Cotton-press	655,000	July 31	4435	999, 1000	92	964

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
McLellan, Robert K. (See Durand and McLellan.)						
McLin, Elam E., Fairfield, Ill. Grain-separator	653,777	July 17	1999	457	92	420
McMichael, William, Woonsocket, R. I. Loom	653,456	July 10	1372	325	92	284
McMillan, Frank. (See Roebuck and McMillan.)						
McMurry, Graves Y., Silver City, Ga. Ditching-machine	657,954	Sept. 18	1764	380	92	2193
McMurtrey, Alexander T., Medford, Oreg. Quartz-mill	655,793	Aug. 14	1204	275 / 276	92	1288
McNalley, Micheal, St. Louis, Mo. Bit	655,508	Aug. 7	604	136	92	1159
McNally, Robert J., Philadelphia, Pa. Filter	654,479	July 24	3442	776	92	742
McNamara, Daniel. (See Donovan, Michael J., assignor.)						
McNamara, Richard H. (See Morgan, David G., assignor.)						
McNelly, Hugh. (See McNelly, Janney, and McNelly.)						
McNelly, Oren H., J. F. Janney, and H. McNelly, Richland Centre, Wis. Pipe-wrench	654,176	July 24	2761	627	92	596
McQuarrie, James L. (See McBerty and McQuarrie.)						
McQuilkin, Charles M., Denison, Victoria. Pianoforte-hammer	654,914	July 31	4280	962	92	930
McSherry Manufacturing Company. (See Moehring, Christ, assignor.)						
McVoy, Edmund C., Philadelphia, Pa. Moistening-pad	654,480	July 24	3444	776	92	742
McWane, Henry E. (See Wiley, Edgar C., assignor.)						
McWilliams, James D. V., Alert, Okla. Ter. Elevating or lowering device for harvester-platforms	652,804	July 3	120	29, 30	92	24
Mead, Chancy J., New Windsor, Ill. Valve for pneumatic tires	657,431	Sept. 4	605	147	92	1939
Mead, Glen G., Erie, Pa. Portable swing	656,360	Aug. 21	2287	524	92	1514
Mead, Theodore H., *et al.* (See Spalckhaver, William, assignor.)						
Mead, William M., assignor of part to B. A. Adams, J. G. Carmichael, S. H. Fisher, R. L. Russell, J. F. Taylor, W. T. Russell, J. M. Crow, C. Jones, A. N. Adams, L. N. Holloway, Wheat, Tenn., J. H. Adams, A. L. May, M. Waller, and W. T. Gallaher. Car-coupling	654,745	July 31	3039	889	92	857
Meagher, Edward F., Glendale, Ohio. Shade-roller for windows, porches, or the like	658,091	Sept. 18	1987	433	92	2236
Meagher, Francis C., Orlando, Okla. Ter. Hen's nest	658,112	Sept. 18	2022	441	92	2243
Meahl, Philip J., Chicago, Ill. Music recorder and duplicator	654,473	July 24	3426	772 / 773	92	739
Means, John H., *et al.* (See Gunkle, James M., assignor.)	655,983	Aug. 14	1582	364	92	1361
Mease, Lewis E., Upper Sandusky, Ohio. Hoe						
Mechanical Door Hinge Check Company. (See Hannington, Charles F., assignor.)						
Medbery, Nelson H., Providence, assignor to J. S. Martin, East Greenwich, R. I. Switch-cock for gas-machines	654,905	July 31	4425	997	92	962
Medlin, James L., *et al.* (See McLean, Silamon, assignor.)						
Meeker, William P., Newark, N. J. Manufacture of dovetailed tiles	657,174	Sept. 4	185	42	92	1838
Mehring, Charles, Charlottesville, Va. Car-coupling	653,686	July 17	1896	420	92	398
Mehrtens, Johann H., Haspe, Germany. Fire-grate	654,318	July 24	3143	703	92	678
Meinhardt, George, Donnellson, Iowa. Disk-sharpener	652,917	July 3	318	79	92	64
Melby, John C., Red Cliff, Wis., assignor of one-eighth to J. T. Watson, Duluth, Minn., Lumber-delivering machine	657,666	Sept. 11	1209	253 / 254	92	2065
Meldrum, James J., *et al.* (See Clayton, Fred, assignor.)						
Meldrum, John W., *et al.* (See Clayton, Fred, assignor.)						
Meldrum, Thomas F., *et al.* (See Clayton, Fred, assignor.)						
Mellen, E. D. (See Davis, Isaac H., assignor.)						
Mellor, Norman. (See Lee and Mellor.)						
Melvin, Charles H., assignor to Deere & Company, Moline, Ill. Rolling colter	657,300	Sept. 4	235	53	92	1848
Melvin, Charles H., assignor to Deere & Company, Moline, Ill. Disk-bearing	657,301	Sept. 4	237	53	92	1849
Melvin, Charles H., assignor to Deere & Company, Moline, Ill. Disk-bearing	657,894	Sept. 11	1607	346	92	2147
Melvin, Samuel D., Freytown, Pa. Ash-sifter	657,558	Sept. 11	1000	206	92	2025
Melzer, Joseph, assignor to Interstate Electric Company, Cleveland, Ohio. Electric-arc lamp	657,432	Sept. 4	697	147 / 148	92	1939
Melzer, Joseph, assignor to Interstate Electric Company, Cleveland, Ohio. Electric-arc lamp	657,433	Sept. 4	702	148	92	1940
Mendel, Michael, Manchester, England. Umbrella-stick and billiard-cue grip	658,042	Sept. 18	1900	411 / 412	92	2220
Mendenhall, Alexander D., assignor of one-half to M. V. Mendenhall, Newport, Ky. Bubble-blowing device	657,609	Sept. 11	1097	229	92	2043
Mendenhall, Edgar C., Mendenhall, Ark. Shoulder-brace	654,173	July 24	2757	626	92	595
Mendenhall, Mary V. (See Mendenhall, Alexander D., assignor.)						
Mennes, Wilhelm J., Amsterdam, Netherlands. Device for supporting hands of piano-players	653,814	July 17	2075	473	92	443
Mensching, Carl. (See Levinstein and Mensching.)						
Mentzel, Henry D., and J. Reiser, assignors to Elkridge Manufacturing Company, Baltimore, Md. Marking bread	653,982	July 17	2279	519	92	483
Menuez, Vincent A., Memphis, Tenn. Vapor-lamp	655,258	Aug. 7	155	35, 36	92	1070
Menzies, William. (See Morgan and Menzies.)						
Mercer, Henry C., Doylestown, Pa. Pottery article	654,474	July 24	3429	773	92	740
Mercer, John B., Wilmington, N. C. Coin-holder	655,565	Aug. 7	702	160	92	1178
Merceron-Vicat, Louis H. M., assignor to himself, N. J. E. Cornier, Grenoble, and M. J. L. Valla, Marseilles, France. Artificial cement	655,501	Aug. 7	507	134	92	1157
Merchant, Clarke. (See Montross, Levi H., assignor.)						
Merchant, Clarke, *et al.* (See Scott, John C., assignor.)						
Meredith, Edward, assignor to Pennsylvania Globe Gas Light Company, Philadelphia, Pa. Filler-cap for reservoirs	656,201	Aug. 21	1987	457	92	1457
Meredith, Jacob F., Newark, Ohio. Baking-pan	656,032	Aug. 14	1678	387	92	1381
Mergenthaler Linotype Company. (See Bates, George A., assignor.)						
Mergenthaler Linotype Company. (See Lynch, John H., assignor.)						
Mergenthaler Linotype Company. (See Mergenthaler, Ottmar, assignor.)						
Mergenthaler Linotype Company. (See Muehleisen, Carl, assignor.)						
Mergenthaler, Ottmar, deceased, Baltimore, Md.; Safe Deposit and Trust Co., Baltimore, and A. Greenleaf, executors, assignors, by mesne assignments, to Mergenthaler Linotype Company, New York, N. Y. Linotype-machine	658,740	Sept. 25	3157	702	92	2493
Merling, George. (See Schmidt and Merling.)						
Mermod, Frères. (See Vernaz, Alexis, assignor.)						
Merrick, Frank A., and E. W. Stull, Johnstown, Pa., assignors to Lorain Steel Company, of Pennsylvania. Apparatus for controlling electric motors	654,410	July 24	3305	741 / 742	92	714
Merrick, Frank W., Boston, Mass. Stitch-separating mechanism for sewing-machines	653,145	July 3	776	182	92	155
Merrill, Sherburn M., Brookline, Mass., assignor to Morley Button Manufacturing Company, Saco, Me., and Boston, Mass. Button	656,412	Aug. 21	2381	547	92	1531
Merriman, Robert M. (See Hilton and Merriman.)						
Merritt, Arthur A., Cohoes, assignor, by mesne assignments, to W. P. and H. White and C. B. Crouse, Utica, N. Y. Machine for sewing on flat buttons	655,658	Aug. 7	988	212 / 213	92	1223
Merritt, Frank W., New Brunswick, N. J. Clothes-sprinkler	653,582	July 10	1607	376	92	333
Merritt, Henry W., Springfield, Mass., assignor to Densmore Typewriter Company, Syracuse, N. Y. Type-writing machine	658,156	Sept. 18	2089	455 / 456	92	2256

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Merritt, Henry W., Springfield, Mass., assignor to Densmore Typewriter Company, Syracuse, N. Y. Type-writing machine	658,157	Sept. 18	2100	456	92	2250
Merryman, Eli S. (See Requard and Merryman.)						
Mertes, John, Milwaukee, Wis. Feed-water heater	657,627	Aug. 28	3521	805	92	1768
Mertsheimer, Frederick, and J. A. Edson, Kansas City, Mo. Grading-machine	654,836	July 31	4125	927 / 928	92	897
Mertz, Edgar F., Milwaukee, Wis. Ice-velocipede	653,454	July 10	1367	324	92	283
Merwarth, Charles H., assignor to Merwarth Metallic Gasket Company, South Bethlehem, Pa. Gasket or packing. (Reissue)	11,858	Sept. 25	3173	706	92	2496
Merwarth Metallic Gasket Company. (See Merwarth, Charles H., assignor.) (Reissue.)						
Messerer Automobile Company. (See Messerer, Stephen, assignor.)						
Messerer, Stephen, Newark, N. J., assignor to Messerer Automobile Company, of New Jersey. Gasolene-motor	654,906	July 31	4426	997 / 998	92	902
Messinger, Albert F., Phœnix, Ariz. Ter. Picture-frame	655,502	Aug. 7	598	185	92	1157
Messmer, Theobald. (See Bohrer and Messmer.)						
Metal Bound Package Company. (See Stuckenberg, William S., assignor.)						
Metal Fabric Company. (See Robertson, James H., assignor.)						
Metallic Basket Company. (See Cobb, Sumner S., assignor.)						
Metcalf, Charles W., assignor of one-half to J. I. McKenna, El Paso, Tex. Acetylene-gas-generating apparatus	654,350	July 24	3192	715	92	688
Metcalf, G. R., *et al.* (See Hay, John F., assignor.)						
Metcalf, J. P., *et al.* (See Hay, John F., assignor.)						
Metzler, Abraham B., *et al.* (See Pfautz, Daniel M., assignor.)						
Metzler, Christian E., *et al.* (See Pfautz, Daniel M., assignor.)						
Meurk, Claes O., Chicago, Ill. Window-ventilator	657,949	Sept. 18	1757	378	92	2192
Meux, Charles O., Pensacola, Fla. Accountant's ruler	656,413	Aug. 21	2382	547	92	1532
Meyer, Edward A., Fruitvale, Cal. Wood-filling compound	658,271	Sept. 18	2294	------	92	2298
Meyer, Ernst F., Waverly Park, N. J. Wagon-brake	655,936	Aug. 14	1473	338	92	1339
Meyer, John W. (See Pries and Meyer.)						
Meyer, Svend M., New York, N. Y. Device for lighting lamps by electricity	656,744	Aug. 28	2968	678	92	1664
Meyerott, Louis C., Evansville, Ill. Dust-collector	654,997	July 31	4429	998	92	963
Michigan Lubricator Company. (See Essex, George B., assignor.)						
Michigan Washing Machine Company. (See Shaffer, Charles H., assignor.)						
Middleby, Joseph, Jr., Malden, assignor of one-half to G. E. Hatch, Quincy, Mass. Receptacle for secondary batteries	655,883	Aug. 14	1372	316 / 317	92	1320
Middleditch, Walter, Detroit, Mich. Pill-making machine	653,687	July 17	1838	420 / 421	92	399
Middleditch, Walter, Detroit, Mich. Pill-making machine	654,907	July 31	4271	959	92	929
Middleditch, Walter, Detroit, Mich. Machine for rolling pipes or strips of pill mass	654,908	July 31	4272	960	92	929
Middletown Machine Company. (See Shartle and Miller, assignors.)						
Midgley, Thomas, Columbus, Ohio. Metallic tubing	655,304	Aug. 7	250	57	92	1090
Mieden, Adam, Seattle, Wash. Attachment for traveling-bags	654,207	July 24	3038	682	92	658
Mieher, Charles. (See Mieher, Henry F., C., and G. H.)						
Mieher, Gustavus H. (See Mieher, Henry F., C., and G. H.)	653,029	July 3	561	131	92	112
Mieher, Henry F., C., and G. H., Carlinville, Ill. Draft-equalizer						
Miehle Printing Press and Manufacturing Company. (See Miehle, Robert, assignor.)						
Miehle, Robert, assignor to Miehle Printing Press and Manufacturing Company, Chicago, Ill. Printing-press	657,881	Sept. 11	1586	342	92	2142
Miflin, Charles C., South Bend, Ind. Hub	655,081	Aug. 14	1583	364	92	1361
Mignal, Henri. (See Hollub and Mignal.)	657,434	Sept. 4	704	149	92	1940
Milam, Nathan, Greensborough, N. C. Hasp-fastener						
Miles, Henry D., Detroit, Mich., assignor to Union Switch and Signal Company, Swissvale, Pa. Switch-lock	656,361	Aug. 21	2288	524	92	1514
Millen, Thomas, New York, N. Y. Dashboard-sign for street-railway cars	658,158	Sept. 18	2106	456	92	2260
Miller, Allen L., assignor of two-thirds to N. Blaha and H. F. Erichsen, Chicago, Ill. Vehicle-tire	658,815	July 17	2077	474	92	444
Miller, Arthur. (See Hake, Otto H., assignor.)	657,743	Sept. 11	1354	286 / 287	92	2004
Miller, August, St. Louis, Mo., assignor to Miller Supply Company. Car-ventilator						
Miller, Carey W. (See Miller, Grove E. and C. W.)						
Miller, Charles E. (See Shartle and Miller.)						
Miller, Charles F., assignor to C. A. Fetters, E. W. Lewis, and H. W. Dierecke, Cincinnati, Ohio. Apparel-shirt	657,273	Sept. 4	393	82	92	1879
Miller, Charles J., Minneapolis, Minn. Parcel-carrier attachment	654,015	July 17	2418	556	92	510
Miller, Charles W., assignor to Gilliam Manufacturing Company, Canton, Ohio. Harness-saddle	653,559	July 10	1569	365	92	325
Miller, Frederick A., Fort Wayne, Ind. Back-pedaling brake	652,799	July 3	105	26	92	22
Miller, Grove E. and C. W., Ada, Ohio. Governor	653,816	July 17	2078	474	92	444
Miller, Harriet B., *et al.*, executors. (See Townsend, William, assignor.)						
Miller, Harvey R., Bloomington, Ill. Street and station indicator	657,175	Sept. 4	187	42	92	1839
Miller, Isabella, Union Ridge, W. Va. Awning	656,033	Aug. 14	1680	387	92	1381
Miller, James A., New Haven, Conn. Pipe-bending mechanism	655,259	Aug. 7	160	36	92	1071
Miller, John W. (See Hamilton and Miller.)						
Miller, John W., Bismarck, Ill. Draft-equalizer	658,667	Sept. 25	3012	669 / 670	92	2465
Miller, Lee A., Milwaukee, assignor to S. B. Fuller, deceased. Watertown, Wis.; M. B. Fuller, administratrix. Tension for sewing-machines	657,350	Sept. 4	539	111	92	1908
Miller, Lee A., Milwaukee, assignor to S. B. Fuller, deceased, Watertown, Wis.; M. B. Fuller, administratrix. Tension for sewing-machines	657,351	Sept. 4	541	112	92	1908
Miller, Major, Lowell, Wis. Adjustable book-rest or table	653,107	July 3	709	167	92	142
Miller, Samuel C., Louisville, Ky. Bottle-filling machine	654,016	July 17	2419	557	92	510
Miller & Son, H. F. (See Moore, William H., assignor.)						
Miller, Stephen S., Akron, Ohio. Apparatus for placing inner tubes of pneumatic tires on mandrels	656,605	Aug. 21	2740	627	92	1605
Miller Supply Company. (See Miller, August, assignor.)						
Miller, Thomas, Jr., New York, N. Y. Machine for making briquets for testing purposes	657,950	Sept. 18	1758	379	92	2192
Miller, Truman W. (See Townsend, William, assignor.)						
Milliholland, William K., Chicago, Ill., assignor to George D. Whitcomb Company, of Illinois. Tripod and clamp for rock-drills	653,306	July 10	1102	263	92	233
Milliholland, William K., Chicago, Ill., assignor to George D. Whitcomb Company, of Illinois. Drill-supporting column and column-clamp	653,307	July 10	1104	263	92	233
Milligan, Thomas P., Elizabeth, N. J. Sizing composition	653,776	July 17	1998	------	92	429
Milliken, Frederic L. (See Milliken, John H., assignor.)						
Milliken, Harry M. (See Shelden and Milliken.)						
Milliken, John H., Malden, assignor of one-half to F. L. Milliken, Milton, Mass. Interconvertible easel or other article of furniture	658,272	Sept. 18	2295	505 / 506	92	2298

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Millison, Bert, New York, N. Y., assignor to Associated Press, New York, N. Y., and Chicago, Ill. Apparatus for printing from embossed sheets	654,208	July 24	3040	682	92	658
Mills, Anson, Washington, D. C., and T. C. Orndorff, Worcester, Mass. Cartridge-belt	654,475	July 24	3431	773	92	740
Mills, John A., Gainesville, Tex. Means for automatically inflating pneumatic tires	654,017	July 17	2424	557	92	511
Mills, John Y., Peoria, Ills. Ink-well	652,973	July 3	463	109	92	93
Mills, Stephen G., Wichita, Kans. Nozzle-holder	658,452	Sept. 25	2615	580	92	2385
Mills, Victor O., Chicago, Ill. Hook and eye	655,884	Aug. 14	1373	317	92	1320
Mills, Virgel H., Hubbard City, Tex. Bicycle-frame	657,667	Sept. 11	1212	254	92	2066
Milner & Co., J. K. (See Beall, Albert E., assignor.)						
Mineral Union. (See Hirsching, Henry, assignor.)						
Minor, James E., New Haven, Conn. Tank-valve	656,849	Aug. 28	3198	727	92	1709
Minor, John C., New York, N. Y. Improving mineral wells	656,466	Aug. 21	2479	570	92	1550
Minshall, Charles, Terre Haute, Ind. Felly-plate	657,435	Sept. 4	705	149	92	1941
Miotke, Joseph. (See Schowalter, Rosenbauer, and Miotke.)						
Miotke, Joseph, Milwaukee, Wis. Garment-stretcher	656,467	Aug. 21	2480	570	92	1551
Miranda, Abraham R., Boston, Mass. Hair-dresser's cabinet	654,746	July 31	3940	889	92	858
Misner, Harvey C., *et al.* (See Brown, Thomas T., assignor.)						
Mitchell, Ferris A., New York, N. Y. Corner strip or bead	658,386	Sept. 25	2516	557	92	2366
Mitchell, Ferris A., New York, N. Y. Corner strip or bead	658,387	Sept. 25	2519	557	92	2367
Mitchell Gas Generator and Burner Company. (See Mitchell, Willis, assignor.)						
Mitchell, Harold C. (See Favour, Frank, assignor.)						
Mitchell, Harold C., *et al.* (See Koscialowski, Philip L., assignor.)						
Mitchell, John, Ayr, Scotland, assignor to Anglo-American Provision Company, Chicago, Ill. Coating meats	654,118	July 17	2602	.....	92	545
Mitchell, John F., Topeka, Kans. Ore-separator	654,661	July 31	3785	854	92	825
Mitchell, John F., Topeka, Kans. Ore-separating machine	654,662	July 31	3786	854	92	826
Mitchell, Jonas L., Galesburg, assignor to Sullivan Machinery Company, Chicago, Ill. Mining-machine	656,414	Aug. 21	2384	547, 548, 549	92	1532
Mitchell Vance Company. (See Robb, James T., assignor.)						
Mitchell, William. (See Forker and Mitchell.)						
Mitchell, William, Coldwater, Mich. Ice-cream mold	657,610	Sept. 11	1098	229	92	2044
Mitchell, William H., St. Louis, and W. A. Armstrong, Doniphan, Mo. Acetylene-gas generator	656,560	Aug. 21	2643	610	92	1583
Mitchell, William H., Boston, assignor of one-half to D. H. Bradlee, Jr., Medford, Mass. Tire	657,495	Sept. 4	883	178	92	1991
Mitchell, Willis, Malden, Mass., assignor, by mesne assignments, to Mitchell Gas Generator and Burner Company, of New Jersey. Vapor-burning lamp	657,127	Sept. 4	95	23	92	1820
Mittinger, George E., Jr. (See Felten, Phillip, assignor.)						
Mivelaz, Louis L., Memphis, Tenn. Apparatus for molding and cutting butter	656,745	Aug. 28	2999	678	92	1664
Moats, James E., Daleville, Ind. Rotary engine	657,559	Sept. 11	1001	206, 207	92	2025
Moats, Ortus E., Harvey, assignor to F. C. Austin, Chicago, Ill. Machine for making and repairing roads	655,260	Aug. 7	162	36, 37, 38	92	1072
Mockabee, George W., Washington, D. C. Railway-switch-setting mechanism	658,108	July 3	711	167, 168	92	142
Model Bottling Machinery Company. (See Wagner, Edward, assignor.)						
Moe, Hiram G. (See Trumble, Chauncey B., assignor.)						
Moeckel, Aratine G., Detroit, Mich. Railway-switch	655,449	Aug. 7	519	116	92	1141
Moehring, Christ, assignor to McSherry Manufacturing Company, Middletown, Ohio. Transplanter	653,425	July 10	1317	312, 313	92	273
Moeller, Andrew, Fern Ridge, Mo. Sprinkling apparatus	654,476	July 24	3432	774	92	740
Moeller, Ferdinand, *et al.* (See Peters, Charles, assignor.)						
Moeller, Henry, *et al.* (See Peters, Charles, assignor.)						
Moffett, Robert W., Chicago, Ill. Billiard-table	655,503	Aug. 7	509	135	92	1157
Mohn, John, assignor to American Tap Bush Company, Detroit, Mich. Beer-tap	655,450	Aug. 7	520	116	92	1141
Mohr, Henry and O., Milwaukee, Wis. Draw-press	658,187	Sept. 18	2151	470, 471	92	2270
Mohr, Otto. (See Mohr, Henry and O.)						
Moll, Charles G., *et al.* (See Cokenour, Franklin O., assignor.)						
Moll, John A., *et al.* (See Cokenour, Franklin O., assignor.)						
Moltrup, James T., Beaver Falls, Pa. Soap-saving device	655,937	Aug. 14	1475	339	92	1339
Momand, Annie, *et al.* (See Momand, Ragland, assignor.)						
Momand, Ragland, assignor to M. E. Fierce and A. Momand, New York, N. Y. Incandescent gas-lamp	654,801	July 31	4057	913	92	883
Monahan, Richard C., Everett, assignor to R. D. Evans and J. S. Lockwood, Boston, Mass. Machine for cutting articles of curvilinear outline from sheet material	654,837	July 31	4120	928, 929, 930	92	898
Mondeng, Charles, Minneapolis, Minn. Honey-box machine	655,938	Aug. 14	1476	339, 340	92	1340
Moniot, Frank, and L. Garcin, New York, N. Y. Kinetoscope attachment for stereoscopes	653,520	July 10	1497	348, 349	92	310
Monroe, Chalmers L., Geneva, W. Va. Adjustable post-hole digger	654,909	July 31	4273	959	92	929
Monroe, Charles E. (See Plummer and Monroe.)						
Montag, Georg, and F. Kresser, Mannheim, Germany. Converting earth or soil into fuel	655,102	July 31	4614	.....	92	1000
Montgomery, Harry C., Cleveland, Ohio. Flushing apparatus for closets, &c	658,453	Sept. 25	2616	580	92	2386
Montgomery, Henry S., Topeka, Kans. Gramophone sound-box	652,800	July 3	107	26	92	22
Montgomery, Isaiah T. (See Harris, William, assignor.)						
Montgomery, James A., assignor of one-half to M. S. Hitchcock, Brookwood, Ala. Coal-jigger	653,357	July 10	1206	287	92	251
Montgomery, John F., *et al.* (See Brown, Thomas T., assignor.)						
Montoya, Manuel, New York, N. Y. Musical instrument	653,521	July 10	1498	349	92	311
Montross, Levi H., Camden, N. J., assignor to C. Merchant, Philadelphia, Pa. Metallic roofing-tile	654,998	July 31	4431	998, 999	92	963
Moody, Manville L., Phillipsburg, Mont. Sounding wheeled toy	653,688	July 17	1889	421	92	399
Moody, Walter S., Schenectady, N. Y., assignor to General Electric Company, of New York. Electric regulating device	654,603	July 31	3787	854	92	826
Moody, Walter S., Schenectady, N. Y., assignor to General Electric Company, of New York. Electric motor	654,999	July 31	4433	999	92	964
Moon, Darius B., assignor of one-half to C. Blatt, Lansing, Mich. Combined match-safe and cigar-tip cutter	655,171	July 31	4733	1064	92	1022
Moon, George R., Columbus, Ohio. Baking-oven	658,188	Sept. 18	2153	471	92	2270
Mooney, William, Atlantic Highlands, N. J. Treating deep wells, &c	657,951	Sept. 18	1760	379	92	2192
Mooney, William P. (See Torst, William, Jr., assignor.)						
Moore, Albert C., Victor, Md. Hair-curler	657,952	Sept. 18	1762	379	92	2193

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Moore Carving Machine Company. (See Yarnell, Charles S., assignor.)						
Moore, Charles B., Rochester, Ind. Insect-destroyer	656,774	Aug. 28	3019	687, 688	92	1673
Moore, Charles B., Rochester, Ind. Vehicle-seat	656,775	Aug. 28	3021	688	92	1674
Moore, Charles E., assignor to E. A. Laughlin, Chicago, Ill. Motor-car truck	656,606	Aug. 21	2741	628, 629	92	1606
Moore, Charles E., assignor to E. A. Laughlin, Chicago, Ill. Car-axle-box lid	656,607	Aug. 21	2746	629	92	1607
Moore, Charles E., assignor to E. A. Laughlin, Chicago, Ill. Brake mechanism	656,608	Aug. 21	2747	629, 630	92	1607
Moore, Edward J., Philadelphia, Pa. Side plate for steam-boilers	654,070	July 17	2515	578	92	528
Moore, Edwin, Newark, N. J. Push-pin	654,319	July 24	3144	703	92	678
Moore, Elisha, Meductic, Canada. Mechanism for imparting successive or alternating movements	658,388	Sept. 25	2521	557, 558	92	2367
Moore, George, Boston, Mass., assignor to Duplex Car Company, New York, N. Y. Street-railway car	655,566	Aug. 7	704	160, 161	92	1178
Moore, George A., Bromborough, England. Acetylene-gas lamp	655,261	Aug. 7	166	38	92	1073
Moore, Gideon J., and F. E. Cook, Eureka, Cal. Windmill-gear	653,109	July 3	714	168	92	143
Moore, Henry. (See Coleman and Moore.)						
Moore, James A., Central Falls, R. I. Adjustable bracket for curtain-fixtures	658,113	Sept. 18	2023	441	92	2243
Moore, James E., Bozeman, Mont. Farm-gate	658,454	Sept. 25	2617	580	92	2386
Moore, John T., Langley, England. Chair	652,801	July 3	110	26, 27	92	22
Moore, John W., and J. A. White, Philadelphia, Pa. Reel for paper-making machines	653,583	July 10	1608	376	92	334
Moore, Joseph A., Paauhau, Hawaii. Clutch	655,906	Aug. 14	1413	325	92	1328
Moore, Langdon W., Boston, Mass., assignor to F. Thompson, West Swanzey, N. H. Yielding sling for hammocks	654,910	July 31	4274	960	92	929
Moore, Luther E., Marietta, Ga. Package for medicines, &c	658,273	Sept. 18	2297	506	92	2298
Moore, Moses M., Chicago Heights, assignor to Q & C Company, Chicago, Ill. Lifting-jack	655,907	Aug. 14	1415	325	92	1329
Moore, Orlando W. (See Taylor and Moore.)						
Moore, Stuart B., New York, N. Y. Developing-tray	653,146	July 3	779	183	92	155
Moore, Walter B., *et al.* (See Pierce, John, assignor.)						
Moore, William H., assignor to H. F. Miller & Son, Baltimore, Md. Metal box	655,848	Aug. 7	336	73	92	1106
Moore, William W., and R. D. Jones, assignors to J. R. Barron, Rockhill, S. C. Humidifier	656,902	Aug. 28	3318	756	92	1720
Moorefield, Armistead Y., Waco, Tex. Window display and advertising device	656,202	Aug. 21	1988	457	92	1457
Moran, Harry E. (See Thomas, George H., assignor.)						
Moran, Michael, assignor of one-half to F. H. Gervais, St. Louis, Mo. Nut-lock	657,436	Sept. 4	706	149	92	1941
Mordey, William M., London, England. Dynamo-electric machine	653,963	July 17	2350	540, 541	92	496
Moreland, William A., Pittsburg, Pa. Rail-joint	657,852	Sept. 4	542	112	92	1908
Morell, Alfred, assignor of one-half to J. B. Brady, Millbury, Mass. Loom	655,262	Aug. 7	168	38	92	1074
Morford, Anita H., Cambridge, Mass. Apparel-corset	653,455	July 10	1369	325	92	284
Morgan, Alfred W., Burlington, Iowa. Top-spinner	658,489	Sept. 25	2675	594	92	2397
Morgan, Annie M., *et al.* (See Jones, Edward C., assignor.)						
Morgan, Charles H., assignor to Morgan Construction Company, Worcester, Mass. Reverberatory furnace	653,479	July 10	1423	334	92	294
Morgan, Charles H., assignor to Morgan Construction Company, Worcester, Mass. Furnace	653,480	July 10	1426	334, 335	92	295
Morgan, Charles H., assignor to Morgan Construction Company, Worcester, Mass. Mechanism for feeding billets from the charging to the delivery ends of furnaces	653,481	July 10	1428	335	92	296
Morgan Construction Company. (See Edwards, Victor E., assignor.)						
Morgan Construction Company. (See Edwards and George, assignors.)						
Morgan Construction Company. (See Morgan, Charles H., assignor.)						
Morgan Construction Company. (See Morgan, Ralph L., assignor.)						
Morgan, David, Bristol, assignor of one-half to J. Kemp-Welch, London, England. Door closer and check	658,668	Sept. 25	3013	670	92	2466
Morgan, David G., assignor of one-half to R. H. McNamara, Quartz Mountain, Cal. Machine for spreading, truing, and gaging drills	656,415	Aug. 21	2390	540	92	1533
Morgan, Doctor F., Chicago, Ill. Combined air, water, and check valve	656,746	Aug. 28	2972	679	92	1664
Morgan Engineering Company. (See Morgan and Taylor, assignors.)						
Morgan, Jesse T., and W. Menzies, Wilkes-Barré, Pa. Dyeing-machine	657,293	Sept. 4	427	89, 90	92	1886
Morgan, John, Atlantic, Iowa, assignor of one-half to E. Whiteway, Chicago, Ill. Plant-planting machine	653,625	July 10	1671	390, 391	92	347
Morgan, Lewis, Reading, Pa. Rolling-mill spring appliance	658,389	Sept. 25	2523	558	92	2367
Morgan, Lewis H., Plainfield, N. J. Quartering and turning machine for crank-pins and eccentrics	656,903	Aug. 28	3319	756, 757	92	1720
Morgan, Milford G., Dixon, Cal. Safety-lock for harvesters	653,817	July 17	2079	474	92	444
Morgan, Rachel, administratrix. (See Williams and Morgan.)						
Morgan, Ralph L., assignor to Morgan Construction Company, Worcester, Mass. Piston for single-acting engines	653,482	July 10	1429	335	92	296
Morgan, Stephen A., Baltimore, Md. Meat-broiler	658,189	Sept. 18	2154	471	92	2270
Morgan, Thomas J., Kingston, Pa. Lubricator	654,661	July 31	3788	855	92	826
Morgan, Thomas J., Kingston, Pa. Car-axle box	657,744	Sept. 11	1355	287	92	2094
Morgan, William. (See Clarke, Morgan, and Heaslet.)						
Morgan, William, deceased. (See Williams and Morgan.)						
Morgan, William H., and C. L. Taylor; said Taylor assignor to Morgan Engineering Company, Alliance, Ohio. Crane	655,367	Aug. 7	371	80, 81	92	1111
Morgan, William H., and C. L. Taylor; said Taylor assignor to Morgan Engineering Company, Alliance, Ohio. Ingot-extracting apparatus	656,416	Aug. 21	2392	550	92	1533
Morgan & Wright. (See Holmes, William, assignor.)						
Morgan & Wright. (See McCaslin, Elton W., assignor.)						
Morgenthaler, Frank, Riesel, Tex. Fence-post extractor	656,747	Aug. 28	2974	679	92	1664
Morin, Joseph, Seattle, Wash. Gage for crosscut-saws	658,274	Sept. 18	2298	506	92	2299
Morison, Robert R., San Francisco, Cal. Electric heater	654,320	July 24	3145	704	92	678
Moritz, Réné, Lille, France. Electrode for electrolyzing apparatus	653,933	July 17	2280	519	92	488
Morley Button Manufacturing Company. (See Horton, Charles M., assignor.)						
Morley Button Manufacturing Company. (See Merrill, Sherburn M., assignor.)						
Morley Button Manufacturing Company. (See Oldfield, Frederick, assignor.)						
Morley, Joseph D., Lake Pleasant, N. Y. Focusing-camera	657,437	Sept. 4	707	149, 150	92	1941
Morris, Abraham R., Philadelphia, Pa., assignor to Morris Tablet Machine Company, Philadelphia, Pa., and Camden, N. J. Granulating-machine	656,297	Aug. 21	2172	496	92	1491
Morris, Alexander. (See Cook and Morris.)						
Morris, Edmond D., Nashville, Ga. Pea huller and cleaner	653,874	July 17	2175	496	92	463
Morris, Isaiah, Memphis, Ohio. Manger for feeding live stock	656,653	Aug. 28	2819	643	92	1634
Morris, James, New York, N. Y. Feed-rack	655,504	Aug. 7	600	135	92	1158
Morris, Marion A., assignor to Scovill Manufacturing Company, Waterbury, Conn. Inflation-valve	654,552	July 24	3559	802	92	764

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Name, residence, and invention.	No	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Morris Tablet Machine Company. (See Morris, Abraham R., assignor.)						
Morris, Thomas J., Dorchester, Nebr. Hame-fastener	654,477	July 24	3434	774	92	740
Morrison, John, Dubuque, Iowa. Cock	656,991	Aug. 28	3472	794	92	1759
Morrison, Singleton M. (See Humes, Harry S., assignor.)						
Morrison, Thomas, Braddock, Pa. Apparatus for feeding stock to furnaces	653,110	July 3	715	168	92	143
Morrison, Thomas, Braddock, Pa. Rolling flanged sections	654,071	July 17	2517	578, 579	92	528
Morrison, Thomas, Braddock, assignor, by mesne assignments, to J. Kennedy, Pittsburg, Pa. Apparatus for rolling flanged sections	654,100	July 17	2561	589	92	537
	654,911	July 31	4275	960, 961	92	929
Morrissey, James J., Chicago, Ill. Nail-making machine						
Morrissey, Michael. (See Bohlen, John, assignor.)						
Morrow, John T. (See Klepetko and Morrow.)						
Morrow, John W., Nobility, Tex. Speculum	658,669	Sept. 25	3015	671	92	2466
Morrow, Lloyd S., Smithton, Pa. End-gate fastener for mining-cars	655,505	Aug. 7	601	135, 136	92	1158
Morse, Edwin, Stockton, Ill. Nut-lock	653,808	July 10	1105	263	92	234
Morse, Orville M., Jackson, Mich. Dust-collector	655,635	Aug. 7	846	197	92	1204
Morse, Walter H., Lynn, Mass. Ratchet-wrench	655,908	Aug. 14	1418	326	92	1329
Mortimer, James L., and J. H. Williams, Liverpool, England. Disinfectant	656,992	Aug. 28	3473	794	92	1759
Morton, Hezekiah, Thomasville, N. C. Chair-seat support	655,506	Aug. 7	602	136	92	1158
Morton, William M., New Haven, Conn. Thill-coupling	653,689	July 17	1840	421	92	399
Moseley, Fredrick W., Clinton, Iowa. Cream-separator	658,455	Sept. 25	2618	581	92	2386
Moses, William F., Huntington, Ind. Cylinder drain-cock	653,147	July 3	782	183	92	156
Mosher, Charles D. (See Blechynden, Alfred, assignor.)						
Mosher, Charles D., New York, N. Y. Steam-boiler	657,783	Sept. 11	1417	300	92	2107
Mosher, Charles P., assignor of one-half to T. H. Asbury, Philadelphia, Pa. Keyboard mechanism for type-writers	657,438	Sept. 4	708	150	92	1041
Mosher, David, assignor of one-half to P. A. Wagner and G. A. Hinkelbein, San Francisco, Cal. Gold solvent for refractory ores	654,838	July 31	4132	.....	92	898
Mosher, John A., Chicago, Ill., assignor to Adams & Westlake Company, of Illinois. Acetylene-gas generator	652,974	July 3	465	109, 110	92	93
Mosher, John A., Chicago, Ill., assignor to Adams & Westlake Company, of Illinois. Acetylene-generator	658,568	Sept. 25	2813	624	92	2426
Mosher, John A., and W. S. Hamm, assignors to Adams & Westlake Company, Chicago, Ill. Gas-strainer	658,569	Sept. 25	2814	625	92	2426
Mosher, John A., and W. Wishart, Chicago, Ill., assignors to Adams & Westlake Company, of Illinois. Pressure-regulator	658,570	Sept. 25	2815	625	92	2426
Mosher, Martha B. (See Beebe, William, assignor.)						
Moshier, Henry C., Galesburg, Ill. Baling-press	657,358	Sept. 4	543	112	92	1909
Moss, Calvin F., and S. A. Imboden, Leeper, Mo. Rotary engine	658,190	Sept. 18	2155	471, 472	92	2270
Mossman, Harry A., Manderson, S. D. Wire-grip	656,993	Aug. 28	3474	795	92	1759
Mostiller, Henry C. (See Tynan and Mostiller.)						
Mote, John E., and L. C. King, Richmond, Ind. Dust removing and collecting machine	655,156	July 31	4703	1090	92	1017
Mottinger, Frank. (See Kittinger and Mottinger.)						
Mower, Edwin F., Boston, Mass., assignor to United Shoe Machinery Company, Paterson, N. J. Work-gage	656,725	Aug. 28	2936	671	92	1658
Moye, Andrew D., Wrightsville, Ga. Quilting-frame	655,567	Aug. 7	706	161	92	1178
Moyer, Edward A., *et al.* (See Stephens, Daniel, assignor.)						
Moyer, Jay W., Philadelphia, Pa. Graphophone-point	658,571	Sept. 25	2816	625	92	2426
Moyer, Samuel L., assignor to Lunkenheimer Company, Cincinnati, Ohio. Lubricator	654,665	July 31	3790	855	92	826
Moyer, Samuel L., assignor to Lunkenheimer Company, Cincinnati, Ohio. Low-water alarm for steam-boilers	656,908	Aug. 21	1990	458	92	1458
Muckerheide, Joseph H., North Milwaukee, assignor to E. F. Van Vechten, Milwaukee, Wis. Chain-repair link	652,918	July 3	319	79	92	64
Mudd, George W., Moberly, Mo. Track-sanding device	655,305	Aug. 7	251	57	92	1090
Mudge, Richard C., assignor to Locomobile Company of America, New York, N. Y. Flue construction for steam-carriages	658,114	Sept. 18	2024	441	92	2243
Muehleisen, Carl, Baltimore, Md., assignor to Mergenthaler Linotype Company, of New York. Linotype-machine	652,355	July 3	218	51, 52	92	44
Mueller, Charles, Jr. (See Kempf, Carl, assignor.)						
Mueller, Henry, Decatur, Ill. Tapping-machine	654,209	July 24	3042	682, 683	92	950
Mueller, Joseph, St. Louis, Mo. Fly-screen	653,584	July 10	1611	377	92	334
Muenich, John O., Jefferson, Wis. Office envelop-fastener	657,439	Sept. 4	710	151	92	1941
Mulkerins, Thomas M., Chicago, Ill., assignor to J. Hanley, St. Joseph, Mich. Apparatus for cutting altar-bread	655,409	Aug. 7	438	96, 97	92	1125
Mulkerins, Thomas M., Chicago, Ill., assignor to J. Hanley, St. Joseph, Mich. Altar-bread box	655,410	Aug. 7	441	97	92	1125
Müllecker, Peter, New York, N. Y. Measuring-tank	653,080	July 3	563	132	92	113
Mullen, William, Elizabethtown, Pa. Steam-shovel	653,391	July 10	1262	300, 301	92	902
Müller, Caroline H. (See Müller, Jacob, assignor.)						
Müller, Fritz, Berlin, Germany. Sack-cleaning machine	655,508	Aug. 7	707	161	92	1178
Müller, Henry, assignor to Polyphon Werke, Wahren, near Leipsic, Germany. Mechanical musical instrument	657,560	Sept. 11	1003	207	92	2025
Müller, Jacob, assignor to C. H. Müller, New York, N. Y. Barrel washing machine	657,354	Sept. 4	546	113	92	1909
Müller, Julius C., *et al.* (See Ledvina, George E., assignor.)	656,468	Aug. 21	2481	571	92	1551
Mullin, Michael, I. N. Watson, and J. A. Hall, Columbus, Ohio. Scraper						
Multiple Power Company. (See Fefel, Henry H., assignor.)						
Mumford, Edgar H. (See Tabor and Mumford.)	657,176	Sept. 4	189	43	92	1839
Mumford, James T., Cromwell, Iowa. Broom-holder	655,725	Aug. 14	1052	244	92	1256
Mumford, Lucian C., assignor of one-half to G. Crane, New York, and J. Marshall, Somers, N. Y. Cork-extractor	658,216	Sept. 18	2207	482, 483	92	2280
Munger, Elbert E., Spencer, Iowa. Bed	658,217	Sept. 18	2210	483	92	2281
Munger, Elbert E., Spencer, Iowa. Lifting device for hospital-beds	656,994	Aug. 28	3475	795	92	1759
Munn, Herbert F., New York, N. Y. Apparatus for removing material from below the surface	653,199	July 3	883	213, 214	92	179
Munson, John H., Chicago, Ill. Motor-vehicle	654,478	July 24	3435	774, 775, 776	92	741
Munson, John H., Chicago, Ill. Motor-cycle	653,200	July 3	887	214	92	179
Munson, John H., assignor of one-half to W. F. Roberts, La Porte, Ind. Independent motor-vehicle						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Munson, Robert H., *et al.* (See Leaver, James M., assignor.)						
Munton, James, Maywood, Ill. Automatic car-coupling	656,824	Aug. 28	3128	709	92	1694
Murdoch, Alexander, *et al.* (See Thamsen, Harry C., assignor.)						
Murdoch, James M., *et al.* (See Bartley, Milton, assignor.)						
Murdock, William J., Boston, Mass. Telephone-receiver	655,726	Aug. 14	1053	244	92	1256
Murmann, Ernst, and A. Opawski, Vienna, Austria-Hungary. Heating appliance for canned food	654,174	July 24	2758	626	92	596
Murnane, Daniel J., Tuxedo Park, Mo. Absorbing the surplus mercury in the manufacture of mercury mirrors	658,821	Sept. 18	2315	.....	92	2313
	654,912	July 31	4278	961	92	930
Murphy, Charles J., Annapolis, Md. Gas-screen						
Murphy, Charles W. (See Richard and Lennox, assignors.)	656,561	Aug. 21	2644	610	92	1583
Murphy, Daniel, assignor of one-half to F. J. Reilly, Richmond, Va. Apparel-coat	658,572	Sept. 25	2817	625	92	2426
Murphy, Edgar G., Sandy Hill, N. Y. Digester						
Murphy, Edward E., Boston, Mass., assignor to New Era Carbonator Company, Charlestown, W. Va. Carbonating apparatus	655,727	Aug. 14	1055	244	92	1257
Murphy, Edward E., Somerville, Mass., assignor to New Era Carbonator Company, Charlestown, W. Va. Charging liquids with gas	656,694	Aug. 14	1080	387	92	1381
Murphy, Edward E., Somerville, Mass., assignor to New Era Carbonator Company, Charlestown, W. Va. Carbonating apparatus	657,882	Sept. 11	1591	343	92	2113
Murphy, H. E., *et al.* (See Bailey, Marion M., assignor.)	652,802	July 3	111	27	92	23
Murphy, James M., Pittsburg, Pa. Rolling-mill appliance						
Murphy, John J., Vincennes, Ind., assignor to T. S. Teuscher Commission Company, St. Louis, Mo. Strainer	658,573	Sept. 25	2818	626	92	2427
Murphy, John P. (See Strong, George S., assignor.)						
Murray, Donald, assignor to Postal Telegraph-Cable Company, New York, N. Y. Page-printing telegraph	653,934	July 17	2282	519, 520, 521	92	483
Murray, Donald, assignor to Postal Telegraph-Cable Company, New York, N. Y. Page-printing telegraph	653,935	July 17	2287	521, 522	92	484
Murray, Donald, assignor to Postal Telegraph-Cable Company, New York, N. Y. Page-printing telegraph	653,936	July 17	2290	522, 523, 524	92	485
Murray, Frederick H., *et al.* (See Van Riper, David F., assignor.)						
Murray, James D. B., Chicago, Ill. Blanket-fastener	658,115	Sept. 18	2026	442	92	2244
Murray, John W., and C. W. Field, Toledo, Ohio. Molding-machine	656,362	Aug. 21	2289	524, 525	92	1514
Murray, Mary, *et al.* (See Chapman, Charles M., assignor.)						
Murray, Robert. (See Livingstone, William, assignor.)						
Murry, Patrick, *et al.* (See Chapman, Charles M., assignor.)	655,569	Aug. 7	709	161, 162	92	1179
Musgrave, Walter M., Bolton, England. Valve-gear	658,275	Sept. 18	2300	506, 507	92	2299
Musser, Frank P., Kent, Ohio. Extension-table	656,995	Aug. 28	3476	795	92	1760
Myers, Fannie L., New York, N. Y. Device for filling and shaping cushions	653,031	July 3	564	132	92	118
Myers, Samuel J. (See Shortridge, Myers, and Irvin.)	656,562	Aug. 21	2646	610	92	1584
Myers, William D., Humboldt, Iowa. Device for adjusting finger-bars	656,563	Aug. 21	2648	610	92	1584
Myers, William H., New York, N. Y. Packing-ring for pistons	655,728	Aug. 14	1057	244	92	1257
Myers, William H., New York, N. Y. Piston packing-ring	653,426	July 10	1320	313, 314	92	274
Mygatt, Otis A., New York, N. Y. Constructing lamp-shades						
Nadeau, Louis A., St. Athanase, Canada. Wagon-pole tip	652,858	July 3	223	53	92	45
Nadorff, Henry, Louisville, Ky. Bung and bushing therefor	653,034	July 3	568	133	92	114
Nadorff, Henry, Louisville, Ky. Tapping device	654,481	July 24	3445	777	92	742
Nadorff, Henry, Louisville, Ky. Tapping device	658,576	Sept. 25	2824	627	92	2428
Naef, Paul, New York, N. Y. Apparatus for making alkalies	658,577	Sept. 25	2832	627, 628	92	2430
Naef, Paul, New York, N. Y. Apparatus for crystallizing solids from liquids	658,723	Sept. 25	3112	693, 694	92	2484
Naef, Paul, New York, N. Y. Apparatus for making alkalies	658,724	Sept. 25	3118	694	92	2485
Naef, Paul, New York, N. Y. Apparatus for treating liquids with gases	658,725	Sept. 25	3120	694	92	2485
Naef, Paul, New York, N. Y. Apparatus for treating liquids with gases	658,726	Sept. 25	3122	694	92	2486
Naef, Paul, New York, N. Y. Crystallizing solids from liquids	658,727	Sept. 25	3124	695	92	2486
Naef, Paul, New York, N. Y. Chemical apparatus						
Nagel, George. (See Kissel and Nagel.)	657,355	Sept. 4	550	114	92	1910
Nagler, Joseph, Toronto, Canada. Tide-motor	653,112	July 3	718	169	92	144
Nalley, George A. (See Philpott, James S., assignor.)						
Nance, Turner H., Talladega, Ala. Gin-saw cleaner	658,670	Sept. 25	3016	671, 672, 673	92	2406
Nash, Camillus A. (See Lewis and Godwin, assignors.)						
Nash, John M., Milwaukee, Wis. Woodworking-machine	658,504	Sept. 25	2998	.....	92	2402
Nash, William C. (See Gilbert and Nash.)						
Nastvogel, Oscar, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Company, of New York. Blue diphenylnaphthylmethane dye and making same						
National Addograph Company. (See Marshall, Holmes, assignor.)						
National Automatic Knitter Company. (See Wright, Alfred G., assignor.)						
National Car Truck Company. (See Faye, John P., assignor.)						
National Carbon Company. (See Fishell, Eugene M., assignor.)						
National Carbon Company. (See Richmond, Charles T., assignor.)						
National Carbon Company. (See Richmond and Zellers, assignors.)						
National Carbon Company. (See Whitlock and Burwell, assignors.)						
National Cash Register Company. (See Carroll, Thomas, assignor.)						
National Flax Fiber Company. (See Crowell, Thacher R. C., assignor.)						
National Gramophone Corporation. (See Cheney, George K., assignor.)						
National Machine Company. (See Hogan, James T., assignor.)						
National Malleable Castings Company. (See Willison, John, assignor.)						
National Pneumatic Service Company. (See Burton, Charles H., assignor.)						
National Tube Company. (See Blakey, Mildred, assignor.)						
National Tube Company. (See Blakey, Mildred and G. G., assignors.)						
National Tube Company. (See Bray, Thomas J., assignor.)						
National Tube Company. (See Heggie, David, assignor.)						
National Tube Company. (See La Voo and Bray, assignors.)						
Natural Body Brace Company. (See Rash, Howard C., assignor.)						
Naturascope Company. (See Adams, Frank J., assignor.)						
Neacy, Thomas J., assignor to Filer & Stowell Company, Milwaukee, Wis. Log-dogging apparatus	655,573	Aug. 7	714	168	92	1180

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Neal, Charles L. and W. A., Bungers, W. Va. Folding coop	657,561	Sept. 11	1004	207, 208	92	2026
Neal, Lemuel C., Lewiston, Idaho. Arm rest or support	655,885	Aug. 14	1375	317	92	1321
Neal, William A. (See Neal, Charles L. and W. A.)						
Neal, William A., Bungers, W. Va. Elastic stirrup	652,805	July 3	122	30	92	24
Nebel, Oscar H., and O. B. Hanson, Austin, Minn. Combined vise and apparatus for raising or lowering well-tubes	655,909	Aug. 14	1419	326	92	1330
Nebelthau, Fredrick W., Minneapolis, Minn. Fire-escape	654,482	July 24	3447	777	92	743
Needham, Henry C., Los Angeles, Cal. Automatic gravity boiler-feeder	658,728	Sept. 25	3129	695	92	2487
Neely, Samuel L., assignor of one-half to H. F. Knebel, Pierron, Ill. Contact-brush	653,585	July 10	1612	377	92	335
Nef, John J., New York, N. Y. Air-brake	657,669	Sept. 11	1215	254, 255	92	2067
Neff, Charles W., Cherokee, Iowa. Bicycle handle-bar	654,483	July 24	3449	777	92	743
Neldich, Samuel A., Philadelphia, Pa. Ink-ribbon mechanism	655,985	Aug. 14	1584	365	92	1361
Neitzel, Frank E. (See Scott, Hightower, and Neitzel.)						
Nell, Louis F., assignor of one-half to W. M. Watkins, Denver, Colo. Drill-tool shaper	654,072	July 17	2519	579	92	528
Nelles, Rudolf, Hamburg, Germany. Phonograph erasing device	656,956	Aug. 21	2295	526	92	1515
Nelson, Axel, Grand Rapids, Mich. Veneer-trimmer	656,656	Aug. 28	2822	643	92	1634
Nelson, Scott, and E. Wood, Brookston, Ind. Lock	657,442	Sept. 4	716	152	92	1042
Neugebauer, Fritz, New York, N. Y. Coin-controlled X-ray apparatus	658,018	Sept. 18	1802	403	92	2213
Neumeier, William, Jr., Muscatine County, Iowa. Veterinary forceps	657,203	Sept. 4	245	53	92	1851
Neumeyer, Horace F., Macungie, Pa. Wall-hydrant	657,562	Sept. 11	1006	208	92	2026
Neuss, Robert, Aix-la-Chapelle, Germany. Simultaneously providing pin-shafts with heads of glass	658,457	Sept. 25	2622	581	92	2387
Nevenzel, Gerrit, Grand Rapids, Mich. Box-lifter	658,458	Sept. 25	2623	582	92	2387
Neville, Asa G., Wellsburg, W. Va. Machine for spreading blown glassware	653,586	July 10	1613	377	92	335
New, Anthony G., Woking, England. Incandescent igniter for gas-engines	656,143	Aug. 14	1880	433	92	1423
New Departure Bell Company. (See Hunn, Albert B., assignor.)						
New Departure Bell Company. (See Rockwell, Albert F., assignor.)						
New England Automatic Weighing Machine Company. (See Nickerson, William E., assignor.)						
New Era Carbonator Company. (See Murphy, Edward E., assignor.)	656,036	Aug. 14	1683	388	92	1382
New, John W., Philadelphia, Pa. Cigar-holder						
New Process Coating Company. (See Braddock, Edward I., assignor.)						
New York Zoological Society (See Beerbower, George M., assignor.)						
Newall, John W., London, England. Machine for cutting hair or wool	657,784	Sept. 11	1420	301	92	2107
Newberry, Thomas J., and J. V. Ericson, Chicago, Ill. Railway freight-car	653,859	July 10	1209	288	92	252
Newbury, Frank J., assignor to John A. Roebling's Sons Company, Trenton, N. J. Rubber-covered article or tubing and making same	652,975	July 3	468	110	92	94
Newby, Albert S., Kansas City, Mo., assignor to himself, and B. G. Collier, Memphis, Tenn. Oil-gas lamp	656,326	Aug. 21	2220	508	92	1501
Newby, Albert S., Kansas City, Mo., assignor to himself, and B. G. Collier, Memphis, Tenn. Oil-gas lamp	656,327	Aug. 21	2222	508, 509	92	1501
Newell, Charles C., Salem, Mo. Pruning implement	656,037	Aug. 14	1684	388	92	1382
Newell, George H., Grand Rapids, Mich. Making projectiles	654,272	July 24	3046	684	92	660
Newell, William C., Jersey City, N. J. Crucible-tongs	653,587	July 10	1615	377	92	335
Newhall, Ezra A., Portland, Me. Alarm-bell	656,851	Aug. 28	3204	731	92	1710
Newman, Aurelius E., and E. James, Ospur, Ill. Lifter for marker-bars of corn-planters	658,714	Sept. 25	3100	691	92	2482
Newman, Frederick S. (See Wood, William P., assignor.)						
Newman, Frederick S., Springfield, Mass. Diaphragm device for operating valves, &c	652,859	July 3	224	53	92	45
Newton, Albert S., Providence, R. I. Sanitary trap	653,457	July 10	1373	325	92	284
Newton, Charles C., assignor to Newton Machine Tool Works, Incorporated, Philadelphia, Pa. Milling-machine	655,104	July 31	4616	1041, 1042	92	1000
Newton, Charles C., and E. J. Hannum, assignors to Newton Machine Tool Works, Incorporated, Philadelphia, Pa. Radial planing-machine	658,277	Sept. 18	2302	507, 508	92	2209
Newton, Charles L., Pueblo, Colo. Spirit-level	657,443	Sept. 4	717	153	92	1043
Newton, Charles W., Baltimore, Md. Sectional steam-generator	655,636	Aug. 7	848	198	92	1204
Newton, Henry E., Los Angeles, Cal. Eye-shade	656,088	Aug. 14	1685	388	92	1382
Newton, Herbert B. (See Webster, Harold A., assignor.)						
Newton, James E., Fall River, Mass. Golf-tee	654,666	July 31	3791	855	92	827
Newton Machine Tool Works. (See Newton, Charles C., assignor.)						
Newton Machine Tool Works. (See Newton and Hannum, assignors.)						
Ney, Jacob, assignor to V. L. Ney Company, Canton, Ohio. Hay-sling pulley	654,758	July 31	3959	891	92	762
Nicewaner, Edwin G., Johnstown, Pa., assignor to Lorain Steel Company, of Pennsylvania. Car-truck	658,390	Sept. 25	2524	558	92	2368
Nichol, Arthur G. R., New York, N. Y. Sign or signal for calling cabs	655,264	Aug. 7	172	39	92	1074
Nichols, Aaron S. (See Leitelt, Adolph, Jr., assignor.)						
Nichols, Edwin C. (See Bechman, Henry F., assignor.)						
Nichols, Henry B., Philadelphia, Pa. Railway-track structure	655,349	Aug. 7	337	73, 74	92	1106
Nichols & Shepard Company. (See Rolfe, Thomas H., assignor.)						
Nickel, Adam, New York, N. Y. Repeating action for grand pianos	657,177	Sept. 4	190	43	92	1840
Nickerson, Benjamin F., Webster City, Iowa. Spindle-protector for vehicles	654,754	July 31	3961	892	92	862
Nickerson, William E., Cambridge, Mass., assignor, by mesne assignments, to New England Automatic Weighing Machine Company, Portland, Me. Apparatus for automatic weighing	657,178	Sept. 4	192	43, 44	92	1840
Nickerson, William J., assignor of one-half to A. S. Henthorn, New Orleans, La. Cover and binder	654,553	July 24	3559	803	92	764
Niclausse, Albert. (See Niclausse, Jules and A.)						
Niclausse, Jules and A., Paris, France. Boiler-tube	658,391	Sept. 25	2525	559	92	2368
Niedermeyer, August, Milwaukee, Wis. Fireproof-window	654,273	July 24	3048	684	92	660
Nielson, Lues. (See Daverkosen and Nielson.)						
Nieting, August. (See Schmidt, William, assignor.)						
Nightingale, Josiah E., Danvers, Mass. Machine for measuring areas of surfaces	657,444	Sept. 4	718	153, 154	92	1043
Niles, George C., Bayside, Cal. Cable-grip	658,219	Sept. 18	2213	484	92	2281
Nisbett, George H., Huyton, England. Electric cable	655,265	Aug. 7	173	39	92	1074
Nixon, William C. (See O'Dowd, Michael, assignor.)						
Noble, Donald, London, England, assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Overseam-eyelet	653,113	July 3	719	169	92	144
Noble, Donald, assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Overseaming sewing-machine	656,852	Aug. 28	3206	731, 732	92	1710
Noble, Donald, London, England, assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Friction-clutch	656,853	Aug. 28	3213	732, 733	92	1711
Noble, Edward, Oso Station, Canada. Bag-holder	653,035	July 3	570	133, 134	92	114
Noble, Truman, Ithaca, N. Y. Binder for loose sheets	656,568	Aug. 21	2055	512	92	1586

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Nolan, Thomas J., Albany, N. Y. Puzzle	656,089	Aug. 14	1687	388	92	1382
Norballe, Hans J. (See Thiersant and Norballe.)	657,294	Sept. 4	429	90	92	1887
Norcross, William A., Detroit, Minn. Device for handling bricks	654,852	July 24	3195	716	92	689
Norcross, William M., Philadelphia, Pa. Car-seat	657,745	Sept. 11	1356	287	92	2095
Norcross, William M., Philadelphia, Pa. Folding chair	656,854	Aug. 28	3218	733	92	1712
Nord, Julius, Amersfort, Netherlands. Cycle-saddle						
Nordiska Acetylen-Aktiebolaget. (See Egnell, Fritz, assignor.)						
Nordlinger-Charlton Fireworks Company. (See Curtis, Charles L., assignor.)						
Nordyke & Marmon Company. (See Marmon, Walter C., assignor.)						
Norlund, Olof A., assignor of one-half to G. A. Gamble, Cedar Run, Pa. Nut-lock	653,691	July 17	1842	422	92	400
Norman, Hattie M., deceased, Sandusky, Ohio; M. N. Evans, administratrix. Bicycle-saddle	653,588	July 10	1616	378	92	336
Norman, Joseph M., assignor of one-half to G. W. Reichard, Springfield, Ohio. Tool-holder	653,754	July 17	1960	447	92	422
Normand, Joseph E., Watertown, assignor of one-half to J. R. Ellicott, Nyack, and C. A. Ball, New York, N. Y. Steam-engine for pumps	657,670	Sept. 11	1219	256	92	2067
Normand, Patrick H., *et al.* (See Livingston and Rodger, assignors.)						
Normand, William J., *et al.* (See Livingston and Rodger, assignors.)						
Norrington, Henry H., West Bay City, Mich. Reversible inking-pad	653,964	July 17	2352	541	92	496
Norrington, Henry H., West Bay City, Mich. Inking-pad	653,965	July 17	2353	541	92	496
North & Judd Manufacturing Company. (See Smith, Clarence E., assignor.)						
Northam, Frank R., assignor to Anglo-American Provision Company, Chicago, Ill. Car-truck bearing	653,522	July 10	1499	349, 350	92	311
Northcott, William P., Chicago, Ill. Temporary binder	656,367	Aug. 21	2296	526	92	1515
Northcott, William P., Chicago, Ill. Temporary binder	656,368	Aug. 21	2298	526	92	1516
Northcutt, Bertha and J. M., Maryville, Mo. Churn	657,611	Sept. 11	1099	229	92	2044
Northcutt, Joseph M. (See Northcutt, Bertha and J. M.)						
Northey, Percy W., Box, England. Engine-governor	655,105	July 31	4617	1042	92	1000
Northrup, Lewis L. (See Lee, William L., assignor.)						
Northrup, Silence, Frontier, Mich. Wire-fence tightener	658,671	Sept. 25	3019	673	92	2467
Northwestern Grass Twine Company. (See Lattin, Judson, assignor.)						
Northwestern Grass Twine Company. (See Lowry, George A., assignor.)						
Norton, George W., Boston, Mass. Plaque-holder	652,976	July 3	470	111	92	94
Norton, Robert P., St. Thomas, N. D. Car-coupling	655,886	Aug. 14	1376	317	92	1321
Norwood, John E., Baltimore, Md., assignor to Baltimore Ball Bearing Company of Baltimore City, of Maryland. Side ball-bearing for cars	654,755	July 31	3961	892	92	862
Nott, Charles C., and F. G. Ward, Washington, D. C. Furnace-door	657,612	Sept. 11	1101	230	92	2044
Novarine, John L., New York, N. Y. Making borax	654,667	July 31	3792	.....	92	827
Novelty Tufting Machine Company. (See Staples, John A., assignor.)						
Nowotny, John S., Madisonville, Ohio. Electric-arc lamp	655,266	Aug. 7	175	30	92	1074
Nubar, Boghos P., Cairo, Egypt. Machine for plowing and cultivating land	658,459	Sept. 25	2624	582	92	2388
Nubar, Boghos P., Cairo, Egypt. Machine for plowing and cultivating	658,460	Sept. 25	2625	582, 583	92	2388
Nugent, Otis J., Hiawatha, Kans. Side-delivery hay-rake	653,310	July 10	1107	264	92	234
Nuhring, Charles. (See Thompson and Nuhring.)						
Nuttall, Richard M., Pittsburg, Pa. Lathe	655,986	Aug. 14	1588	366	92	1362
Nyburg, Samuel, *et al.* (See Picken, Archibald, assignor.)						
Nydahl, Ernst F., Stockholm, Sweden. Automatic type-distributing machine	652,899	July 3	284	69, 70	92	57
Nye, Horace R. (See Gill, Joseph H., assignor.)						
Nygren, Oscar, Lake City, Minn. Check-valve	654,484	July 24	3450	778	92	743
Nyland, Richard H., and F. C. Lindt, St. Cloud, Minn. Automatic dust-guard	655,306	Aug. 7	253	57	92	1091
O'Brien, John T., Philadelphia, Pa. Scaffolding	656,208	Aug. 21	2174	497	92	1492
O'Brien, Lucius, Crookston, Minn. Composition of matter for blackboards, &c	657,001	Aug. 28	3486	.....	92	1761
O'Brien, Thomas E. (See McLain, William R., assignor.)						
O'Brien, William, Taunton, Mass. Machine for setting lacing-hooks	655,987	Aug. 14	1590	366, 367	92	1363
O'Brien, William M. (See Post and O'Brien.)						
O'Connell, James, assignor of one-half to T. Heinrich, Mount Sterling, Ky. Shaft-tug	653,036	July 3	571	134	92	115
O'Connell, Joseph J., assignor to Western Electric Company, Chicago, Ill. Signaling apparatus for telephone-switchboards	652,977	July 3	470	111	92	95
O'Connell, Joseph J., assignor to Western Electric Company, Chicago, Ill. Apparatus for telephone-switchboards	654,758	July 31	3964	893	92	863
O'Connor, George P., assignor to C. Place, Cambridge, Mass. Embossing-machine	658,505	Sept. 25	2699	599	92	2402
O'Connor, James, San Francisco, Cal. Device for drawing steam-beer, &c	656,418	Aug. 21	2366	551	92	1535
O'Connor, John, assignor of one-half to J. Goodchild, guardian, New York, N. Y. Bottle or similar receptacle	655,887	Aug. 14	1377	318	92	1321
C'Connor, John K., Newark, N. J. Scale-grinding machine	653,937	July 17	2296	524	92	486
O'Crowley, James J., Jersey City, N. J. Valve for pumps	654,321	July 24	3146	704	92	678
O'Donnell, John B., Lee's Summit, Mo. Duplex steam-engine	654,759	July 31	3969	893, 894	92	863
O'Donoghue, Michael. (See Buckley, Jeremiah, assignor.)						
O'Donovan, John, *et al.* (See Keller, George J., assignor.)						
O'Donovan, William, *et al.* (See Keller, George J., assignor.)						
O'Dowd, Michael, Chillicothe, assignor of one-half to W. C. Nixon, Chicago, Ill. Railway-switch	654,274	July 24	3049	685	92	660
O'Keenan, Charles E., Paris, France. Electrical battery	655,368	Aug. 7	373	81	92	1112
O'Meara, Jeremiah, New York, N. Y. Electrical detector for heat or cold	655,411	Aug. 7	444	98	92	1126
O'Meara, Jeremiah, New York, N. Y. Circuit-closer	655,412	Aug. 7	445	98	92	1126
O'Neil, Walter T., assignor of one-half to B. Dunn, Etna Mills, Cal. Apparatus for cleaning and flushing waste-pipes	655,888	Aug. 14	1379	318	92	1321
O'Neill, Frank, Wallaceburg, Canada. Machine for manufacturing glass articles	653,523	July 10	1500	350, 351	92	311
O'Shea, Henry, Johnstown, Pa., assignor to Lorain Steel Company, of Pennsylvania. Railway-track structure	653,845	July 17	2127	484	92	452
O'Shea, J. E. (See Bergmann, Charles, assignor.)						
Ober, John J., Kibbey, Mont. Gate-hinge	655,106	July 31	4622	1042	92	1001
Obermeyer, Alexander, Barmen-Rittershausen, Germany. Machine-tool for punching, stamping, &c	655,267	Aug. 7	179	39, 40	92	1075
Obermier, John G., Canton, Ohio. Lathe for forming collars upon vehicle-axles	654,756	July 31	3963	892	92	862
Obermier, John G., Canton, Ohio. Stop-block for lathes	654,757	July 31	3964	892	92	862
Ochs, Karl, Berlin, Germany. Manufacturing homogeneous mixtures for filaments of incandescent electric lamps	653,875	July 17	2176	.....	92	463
Ocumpaugh, Charles H., Brighton, N. Y. Door-check	655,001	July 31	4437	1000	92	965
Oefinger, Elias. (See Oefinger, John and E.)						
Oefinger, John and E., Meriden, Conn. Pitch or tuning pipe	655,452	Aug. 7	522	116	92	1142

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Oehring, Louis E. (See Ellicott and Oehring.)						
Oelschläger, Ernst G. P., Charlottenburg, and C. O. F. Schrottke, Berlin, Germany, assignors to Siemens & Halske Electric Company of America, Chicago, Ill. Electric motor	655,268	Aug. 7	181	40	92	1075
Oeste, Henry, Allegheny, Pa. Time-recorder	655,453	Aug. 7	523	117	92	1142
Ofeldt, George, New York, N. Y. Steam-boiler	653,360	July 10	1211	288	92	252
Ogden, Charles G., Milan, Tenn. Fence	653,361	July 10	1212	288	92	253
Ogden, Frederick H., assignor of one-half to H. Ill, Newark, N. J. Door-check	655,107	July 31	4023	1043	92	1001
Ogilvy, David J., Cincinnati, Ohio. Making ink	657,179	Sept. 4	195	------	92	1841
Oglesby, George W. (See Taylor and Oglesby.)						
Ohmer, John F., and H. Tyler, Dayton, Ohio; said Tyler assignor to said Ohmer. Fare-register. (Reissue)	11,842	July 17	2605	598	92	546
Ohmer, Wilfred I., J. N. Kelly, and W. M. Kelch, Dayton, Ohio; said Kelly and Kelch assignors to said Ohmer. Printing and registering machine	653,627	July 10	1609	393 394 395 163 164 165	92	353
Okell, John R., Philadelphia, Pa. Package making and filling machine	655,574	Aug. 7	716	166 167 168 169	92	1180
Oldfield, Edwin, Norwich, Conn. Shuttle	653,114	July 3	720	170	92	144
Oldfield, Edwin, Norwich, Conn. Shuttle	653,148	July 3	783	183	92	156
Oldfield, Edwin, Norwich, Conn. Weft stop-motion for looms	655,910	Aug. 14	1429	326	92	1330
Oldfield, Frederick, Portsmouth, N. H., assignor to Morley Button Manufacturing Company, Saco, Me., and Boston, Mass. Button	656,419	Aug. 21	2399	551	92	1535
Oldham, Thomas, Leipsic, Ind. Cultivator	654,353	July 24	3198	717	92	690
Oldham, Thomas, Leipsic, Ind. Cultivator	654,354	July 24	3201	717	92	690
Olds, Ransom E., Lansing, Mich. Vehicle-tire	658,461	Sept. 25	2027	584	92	2388
Olds, Wallace S., and D. M. Hough, St. Louis, Mich. Carbureter	655,172	July 31	4735	1064	92	1023
Olin, Fred C., assignor to Olin Gas Engine Company, Buffalo, N. Y. Gas-engine	653,876	July 17	2177	496 497	92	463
Olin Gas Engine Company. (See Olin, Fred C., assignor.)						
Olinger, Jacob M., Springfield, Ohio. Pipe-coupling	654,073	July 17	2520	579	92	529
Oliver, James R., McMinnville, Tenn. Spring-motor for sewing-machines	657,318	Sept. 4	481	101	92	1896
Olmsted, William A., Bala, Pa. Vehicle-axle lubricator	657,130	Sept. 4	100	23	92	1821
Olsen, Olaf C. S. (See Hafgar, Magnus J., assignor.)						
Olson, Haldora, Duluth, Minn. Obstetrical appliance	655,509	Aug. 7	605	137	92	1159
Olsted, Christian, Lawrence, Kans. Hot-air furnace	657,131	Sept. 4	101	24	92	1821
Onion, William H., New Orleans, La. Scraper	653,115	July 3	722	170	92	144
Opawski, August. (See Murmann and Opawski.)	655,002	July 31	4439	1000	92	965
Orcutt, Guy H., Worcester, Mass. Clothes-drier	655,794	Aug. 14	1206	276 277 278	92	1288
Orcutt, Jerome, assignor to Union Metallic Cartridge Company, Bridgeport, Conn. Weighing-machine	655,889	Aug. 14	1380	318	92	1322
Ordway, Albert H., South Framingham, Mass. Shaping wood	656,040	Aug. 14	1687	389	92	1382
Ordway, Albert H., South Framingham, Mass. Making wood or ratan ropes	657,356	Sept. 4	552	114	92	1910
Orendorff, Oliver H., Blooming Grove, Ill. Mail-box						
Orndorff, Thomas C. (See Mills and Orndorff.)						
Orr, William O., assignor of two-thirds to J. S. Whitacre and W. T. Carlton, Pioneer, Tex. Lever-operated cutter mechanism	656,610	Aug. 21	2751	690	92	1608
Ortmann, Theodore. (See Dietrichs, Christian A., assignor.)						
Osborn Manufacturing Company. (See Atwater, Harry R., assignor.)						
Osborne, Albert E., assignor to Underwood & Underwood, New York, N. Y. Educational system	656,569	Aug. 21	2658	612	92	1586
Osborne, Henry A., Plainville, Conn. Trolley-wheel	656,207	Aug. 21	1995	459	92	1459
Osburn, Harry G., Chicago, Ill. Flexible electrical conduit	652,806	July 3	123	30	92	25
Osgood, Herman D., Concord, Mass. Dental impression-cup	657,002	Aug. 28	3487	797	92	1761
Osgood, Ralph R., Lansingburg, N. Y. Anchoring device for dredges	656,369	Aug. 21	2299	526 527	92	1516
Osler, Arthur E., *et al.* (See Wooley and Fox, assignors.)						
Ostergren, Oscar P., New York, N. Y. Air compressor and cooler	658,322	Sept. 18	2376	524	92	2313
Ostrem, Andrew H., and O. O. Hatleli, assignors of one-third to H. J. Ostrem, Fosston, Minn. Pneumatic straw-conveyer	657,068	Aug. 28	3601	820 830	92	1784
Ostrem, Herman J. (See Ostrem and Hatleli, assignors.)						
Oswalt, John L., Spray, N. C., assignor to Draper Company, Portland, Me., and Hopedale, Mass. Thin-place detector for looms	653,589	July 10	1617	378	92	336
Otis Elevator Company. (See Baldwin, Cyrus W. and W. D., assignors.)						
Otis Elevator Company. (See Fraser, Ethelbert M., assignor.)						
Otis Elevator Company. (See Ihlder, John D., assignor.)						
Otis Elevator Company. (See Reynolds, George H., assignor.)						
Otis Elevator Company. (See Southgate, Louis W., assignor.)						
Otis Elevator Company. (See Venn, Isaac H., assignor.)						
Ott, Leonhardt, and H. Riffelmacher, assignors to Bronzefarbenwerke Actien-Gesellschaft, vormals Carl Schlenk, Roth, Germany. Manufacturing bronze-powder	657,883	Sept. 11	1593	------	92	2144
Ott, Philipp, A. Israel, and R. Kothe, Elberfeld, Germany, assignors to Farbenfabriken of Elberfeld Company, of New York. Brown dye and making same	658,506	Sept. 25	2703	------	92	2403
Ott, Philipp, and F. Volger, Elberfeld, Germany, assignors to Farbenfabriken of Elberfeld Company, of New York. Brown azo dye and making same	658,507	Sept. 25	2704	------	92	2403
Otto, Edward C. F. and Edward C. F., Jr., Honor Oak, England. Brake	653,692	July 17	1843	422	92	400
Otto, Edward C. F. and Edward C. F., Jr., Honor Oak, England. Bicycle-brake	654,411	July 24	3309	742	92	715
Otto, Emil, Elmhurst, Ill. Invalid-bed	653,259	July 10	1013	243	92	216
Otto & Sons, F. G. (See Diezemann, Gustav, assignor.)	655,510	Aug. 7	606	137	92	1159
Oubre, Evariste, Burnside, La. Fertilizer-distributer						
Ough, Joseph M. (See Waltenbaugh, George W., assignor.)						
Overbaugh, Charles B., New York, N. Y. Non-refillable bottle	656,259	Aug. 21	2098	480	92	1478
Overcashier, Alfred L., Pittsburg, Pa. Shoe-polishing cabinet	652,807	July 3	125	30	92	25
Overton, Ellen H., Frankfort, Ky. Folding box	655,989	Aug. 14	1479	340	92	1340
Owen, Thomas R., Los Angeles, Cal. Hygienic appliance for sound-transmitter mouthpieces	654,096	July 17	2353	587	92	535
Owings, George W. (See Spickelmier, Asa M., assignor.)						
Oxley, Eustace, Lynn, Mass., assignor to General Electric Company, of New York. System of multiple-rate metering	657,828	Sept. 11	1494	319	92	2123
Oxley, Eustace, Lynn, Mass., assignor to General Electric Company, of New York. Multi-rate meter	657,829	Sept. 11	1497	319 320	92	2124

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ozias, Orange O., Dayton, Ohio, assignor to Computing Scale Company, of Ohio. Price-scale	655,729	Aug. 14	1059	245	92	1258
P. P. Mast & Company. (See Crain, Evans, and Dodson, assignors.)						
Pabst, Friedrich G., Hamburg, Germany. Shoe or boot stretcher	653,778	July 17	2001	457	92	429
Pace, Jefferson D., Shreveport, La. Ironing-table	654,760	July 31	3974	894	92	864
Pace, Richard R., Homer, La. Cotton-press	657,028	Aug. 28	3523	805	92	1768
Packer, George W., Chicago, Ill. Metal-wheel machine	653,362	July 10	1213	289 290	92	253
Packer, Oren A., assignor of one-half to G. R. Enloe, Sour Lake, Tex. Screw-gearing	658,116	Sept. 18	2027	442	92	2244
Page, Ellsworth M., Buffalo, assignor of two-thirds to R. L. Clark, Munnsville, N. Y. Book-cover	653,393	July 10	1266	301 302	92	263
Page, Israel, Montreal, Canada. Window-support	655,003	July 31	4440	1000 1001	92	965
Paidassy, Macarius, St. Petersburg, Russia. Hydraulic door-shutting device	656,699	Aug. 28	2887	657 658	92	1649
Paige, Jeremiah A., Manchester, N. H. Apparatus for sweeping and cleaning streets	653,149	July 3	785	184	92	157
Paliwetz, Franz, Moscow, Russia. Tuning-peg for stringed instruments	653,966	July 17	2355	542	92	496
Paller, Robert R. von, Nuremberg, Germany. Starting device for explosive-engines	655,269	Aug. 7	182	40	92	1075
Palm, George, Butler, Pa. Combined steam and explosive engine	654,761	July 31	3975	894 895	92	864
Palmer, Charles J., London, England. Rim for detachable pneumatic tires	655,890	Aug. 14	1381	319	92	1322
Palmer, Chester M., Fond du Lac, Wis. Animal-shearing machine	658,094	Sept. 18	1990	423	92	2237
Palmer, Edward H., assignor of one-half to E. A. Wiggin, Detroit, Mich. Incandescent lamp	655,158	July 31	4705	1060	92	1017
Palmer, Harvey D., Chicago, Ill. Soft-tread horseshoe	656,144	Aug. 14	1883	433	92	1424
Palmer, Isaac E., Middletown, Conn. Apparatus for dyeing	653,485	July 10	1433	336	92	297
Palmer, Maro V., Willimantic, Conn., assignor to American Thread Company, Jersey City, N. J., and New York, N. Y. Slack-thread controller for sewing-machines	655,575	Aug. 7	732	169	92	1183
Palmer, Thomas, Washington, D. C. Coin-operated device for bicycle-pumps	655,108	July 31	4620	1043	92	1001
Palmquist, Eric W., assignor to Shickle, Harrison & Howard Iron Company, St. Louis, Mo. Tender-coupling	657,496	Sept. 4	884	179	92	1991
Palmquist, Eric W., assignor to Shickle, Harrison & Howard Iron Company, St. Louis, Mo. Body-bolster for railway-cars	657,746	Sept. 11	1358	287	92	2095
Pangle, Jesse L., Atbol, Idaho. Horse-detacher	653,394	July 10	1268	305	92	263
Panyard, Thomas A., Milwaukee, Wis. Caliper attachment	656,260	Aug. 21	2100	480	92	1478
Paquette, Herman A., Chicago, Ill. Sash-lock	653,458	July 10	1374	326	92	284
Paradice, Frank H., Denver, Colo. Water-closet	653,524	July 10	1506	351	92	313
Paragon Laundry and Machine Company. (See Riesenweber, Charles, assignor.)						
Parette, John, Montreal, Canada. India-rubber water-bag	656,657	Aug. 28	2824	644	92	1635
Parish, Edward W., assignor of one-half to J. W. Eady, London, England. Apparatus for cooking, heating, &c	657,497	Sept. 4	884	179	92	1991
Park, Franklin F., New Castle, Colo. Grass-board	657,884	Sept. 11	1594	343	92	2144
Park, William A. (See Giebel and Park.)						
Parke, John Y., Philadelphia, Pa. Electric gas-lighter	654,355	July 24	3208	718	92	691
Parker, Edward M., Washington, D. C. Glycerinized vaccine lymph	657,003	Aug. 28	3488	------	92	1762
Parker, Floyd J., Rochester, N. Y. Heel for boots or shoes	653,395	July 10	1269	302	92	263
Parker, George S., Janesville, Wis. Fountain-pen	653,818	July 17	2081	475	92	444
Parker, James M., *et al.* (See McGaw Benjamin F., assignor.)						
Parker, John E., Chicago, Ill. Pipe-bending machine	652,808	July 3	127	31, 32	92	25
Parker, Joseph A., assignor of one-half to P. Leinneweber, Dripping Springs, Tex. Pneumatic conveyer and cleaner	653,363	July 10	1219	291	92	255
Parker, Joseph A., assignor to himself and P. Leinneweber, Dripping Springs, Tex. Cotton-distributer	653,525	July 10	1507	351 352	92	313
Parker, W. C. (See Benjamin, Hiram L., assignor.)						
Parker, William E., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Door-knob rose	658,693	July 17	1845	422	92	400
Parker, Zachariah A., *et al.* (See McGaw, Benjamin F., assignor.)						
Parkes, William N., New York, N. Y. Stop-motion device for sewing-machines	653,938	July 17	2298	525 526	92	486
Parkes, William N., New York, N. Y. Work-clamp for buttonhole-sewing machines	656,370	Aug. 21	2301	527	92	1517
Parkes, William N., New York, N. Y. Buttonhole-sewing machine	658,578	Sept. 25	2835	628 629 630	92	2431
Parks, Fred B., Grand Rapids, Mich. Pliers	653,920	July 17	2263	515	92	479
Parks, John N., Rochester, N. Y. Back-pedal brake and coaster	656,041	Aug. 14	1688	389	92	1382
Parkyn, Herbert A., Chicago, Ill. Magnetic drinking-cup	655,418	Aug. 7	448	99	92	1127
Parpart, Otto, assignor, by mesne assignments, to Standard Welding Company, Cleveland, Ohio. Electric welding-machine	658,741	Sept. 25	3158	702 703	92	2403
Parry Manufacturing Company. (See Parry and McClintock, assignors.)						
Parry, Thomas H., and J. McClintock, assignors to Parry Manufacturing Company, Indianapolis, Ind. Machine for shaping fabrics	653,846	July 17	2128	484	92	453
Parshall, Horace F., London, England. Automatic maximum-speed governor for electrically-propelled vehicles	658,117	Sept. 18	2028	442	92	2244
Parson, Henry E., New York, N. Y. Spraying attachment for steam-boiler furnaces	654,485	July 24	3451	778	92	743
Parson, Swen F., assignor to M. D. Shipman, C. E. and S. E. Bradt, De Kalb, Ill. Spring-wagon gear	656,570	Aug. 21	2660	612 613	92	1587
Parsons, Avery H., Somerville, Texas. Low-pressure air-brake alarm	656,261	Aug. 21	2101	480	92	1478
Parsons, Charles A., Newcastle-upon-Tyne, and A. A. C. Swinton, London, England. Reversing steam-turbine	656,208	Aug. 21	1997	459	92	1459
Parsons, Charles A., G. G. Stoney, and H. F. Fullagar, Newcastle-upon-Tyne, England; said Stoney and Fullagar assignors to said Parsons. Steam-turbine ring of blades	655,414	Aug. 7	448	99 100	92	1127
Parsons, Edward I., San Francisco, Cal. Traveling-cable grip. (Reissue)	11,841	July 10	1776	406	92	367
Parsons, Edward I., San Francisco, Cal., assignor to American Steel and Wire Company, Chicago, Ill. Manufacture of flat wire cable	658,118	Sept. 18	2029	442 443	92	2244
Parsons, J. B., *et al.* (See Kirk, Seth, assignor.)						
Parsons, John W., *et al.* (See Urmson, William G., assignor.)						
Parsons, William H., Great Western Mine, Cal. Bicycle-brake	658,119	Sept. 18	2031	443	92	2245
Partington, Clarence R., Richmond, Va. Blow-off for steam-boilers	655,988	Aug. 14	1595	367	92	1363
Parton, William H., Syracuse, Nebr. Automatic valve	658,628	July 10	1708	395	92	355
Partridge, Albert J. (See Hobbs, George W., assignor.)						
Parvin, Thomas S. (See Johnson, Eldridge R., assignor.)						
Pascale, Pasquale C., New York, N. Y. Window	658,116	July 3	724	170	92	145
Pasternak, Albert. (See Whalen, Michael J., assignor.)						
Pasteur-Chamberland Filter Company. (See Wuichet, Walter G., assignor.)						
Patent Button Company. (See White, Franklin R., assignor.)						
Paterson, Bertie, London, England. Coin-freed gas-meter	656,042	Aug. 14	1690	389	92	1388

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Paterson, William, London, England. Filter	656,043	Aug. 14	1693	309	92	1384
Patrick, Marcus C., assignor of one-half to J. F. Howie, Seattle, Wash. Lock and latch combined	657,885	Sept. 11	1594	343	92	2144
Patrick, William W., Olive Hill, Tenn. Razor-stropping machine	658,490	Sept. 25	2678	594 595	92	2397
Patten, James S., Baltimore, Md. Antifriction-bearing for car-trucks	657,445	Sept. 4	722	155	92	1943
Patten, Lorenzo D., *et al.* (See Cushman, Amos A., assignor.)						
Patterson, David R. W. (See Bole, John, assignor.)						
Patterson, David R. W. (See Bole and Patterson.)						
Patterson, Joseph E., Wilkes-Barré, Pa. Structure for calcining stone	654,177	July 24	2762	627 628	92	596
Patterson, Rufus L., *et al.* (See Tyberg, Oluf, assignor.)						
Patterson, Rufus L., and G. Arents, Jr., New York, N. Y. Cigar-machine	654,178	July 24	2765	628 629	92	597
Patterson, William J. (See Acklin and Patterson.)						
Patterson, William J., Pittsburg, Pa. Casting metal	657,069	Aug. 28	3602	830	92	1784
Patterson, William J., Pittsburg, Pa. Casting metal	657,070	Aug. 28	3605	831	92	1785
Patterson, William J., Pittsburg, Pa. Apparatus for casting metal	657,071	Aug. 28	3607	831	92	1785
Patterson, William J., Pittsburg, Pa. Apparatus for casting metal	657,072	Aug. 28	3609	831 832	92	1786
Patton, Joseph E., Camden, N. J. Tongs for cleaning drains or the like	658,392	Sept. 25	2526	559	92	2368
Paul, Arthur, Nashville, Tenn. Tailor's measure for trousers	653,560	July 10	1570	366	92	325
Paul, Henry C., assignor of one-half to F. Hilbig, St. Louis, Mo. Match-box	658,398	Sept. 25	2527	559	92	2368
Pauly, Peter J., Jr., St. Louis, Mo. Locking device for jail or similar doors	654,275	July 24	3051	685	92	660
Paxson, William O. (See Brown, Mark A., assignor.)						
Paxton, Robert B., Clifton Forge, Va. Locomotive feed-water strainer	655,795	Aug. 14	1212	278	92	1289
Payne, Brigham. (See West and Payne.)						
Payne & Joubert. (See Durel, Paul S., assignor.)						
Payne, Oma E., St. Louis, Mo. Graphophone drive mechanism	654,018	July 17	2426	557	92	511
Payson, Joseph R., Jr., assignor of one-half to C. B. Kennedy, Chicago, Ill. Metallic hatchet	656,299	Aug. 21	2176	497	92	1493
Peacock, Christopher, Altman, Colo. Miner's candlestick	656,209	Aug. 21	1998	460	92	1459
Peacock, Edward M. (See Reynolds and Peacock.)						
Pearsall, Albert W., assignor to Pearsall Pneumatic Tube and Power Company, New York, N. Y. Pneumatic-despatch-tube system	657,886	Sept. 11	1597	344	92	2145
Pearsall, James R. (See France, Jason G., assignor.)						
Pearsall Pneumatic Tube and Power Company. (See Pearsall, Albert W., assignor.)						
Pearson, Alfred. (See James and Pearson.)						
Pearson, James J., New York, N. Y. Ventilated boot or shoe	655,576	Aug. 7	734	170	92	1183
Peck, George W., executor. (See Banker, George W.)						
Pederson, Ole, assignor of one-half to T. M. Raygosa, Los Angeles, Cal. Lens-polisher	654,486	July 24	3452	778	92	744
Pederson, Ole, assignor of one-half to T. M. Raygosa, Los Angeles, Cal. Sweeping-machine	654,487	July 24	3453	778	92	744
Pedigo, Richard E., Chariton, Iowa. Apparatus for warming sponge, raising bread, &c.	656,126	Aug. 14	1856	427	92	1419
Peet, Ruey, La Harpe, Kans. Fan attachment for doors	658,278	Sept. 18	2304	508	92	2300
Peeters, Jean, Schaerbeek, Belgium. Making yeast extracts	652,910	July 3	304	.....	92	61
Pell, William, Flemington, and I. Wheeldon, Elsternwick, Victoria, assignors to said Wheeldon. Gun attachment	655,577	Aug. 7	736	170	92	1183
Pelletier, Arthur G., *et al.* (See Cartier, Noah, assignor.)						
Pender, John V., Falth, Ky. Evaporating-pan	652,920	July 3	322	80	92	65
Pendergast, Thomas, assignor to E. G. Smith, Lancaster, Pa. Faucet-bushing	658,070	Sept. 18	1943	423	92	2228
Penfield, Samuel L., New Haven, Conn. Contact-goniometer	655,004	July 31	4441	1001	92	966
Penfield, Samuel L., New Haven, Conn. Contact-goniometer	655,005	July 31	4443	1001	92	966
Penney, William L., Foxborough, assignor of one-half to A. H. Spencer, Boston, Mass. Fence-post	656,611	Aug. 21	2753	631	92	1609
Pennsylvania Globe Gas Light Company. (See Meredith, Edward, assignor.)						
Pennsylvania Globe Gas Light Company. (See Shaw, Arthur E., assignor.)						
Pennsylvania Manufacturing Light and Power Company. (See Stevens, Arthur L., assignor.)						
Peoples, Jethero, Byers, Kans. Wire-stretcher	655,989	Aug. 14	1597	367	92	1364
Pepperell, William S., Boston, Mass. Photographic-printing frame	655,159	July 31	4706	1060	92	1018
Perfect Sliding Door Company. (See Schuyler, Daniel, assignor.)						
Perfection Knitting Machine Company. (See Gulich, Ashley J., assignor.)						
Pergande, Frank, Milwaukee, Wis. Letter-holder	654,638	July 31	3793	855	92	827
Perham, Alfred C. (See Washburn and Perham.)						
Perham, Charles F. (See Sawyer, Orren A., assignor.)						
Perham, Charles F., Lowell, Mass. Loom	654,915	July 31	4281	962	92	931
Perham, Charles F., Lowell, Mass. Shuttle-binder	654,916	July 31	4283	963	92	931
Perham, Charles F., Lowell, Mass. Clutch mechanism	654,917	July 31	4285	963	92	932
Perillat, Charles, Boston, Mass. Hydrocarbon-burner	654,669	July 31	3794	856	92	827
Perin, Louis, St. Amand-les-Eaux, France. Manufacture of molded blocks of steel or other material	652,980	July 3	479	.....	92	97
Perkins, Daniel S., *et al.* (See Hoisington and Kessinger, assignors.)						
Perkins, Franklin J., Woburn, Mass., assignor to Vaughn Machine Company, Portland, Me. Leather-splitting machine	655,730	Aug. 14	1063	245	92	1258
Perkins, James C., Inwood, Iowa. Thill or pole coupling	657,446	Sept. 4	723	155	92	1944
Perkins, Thomas S., Idlewood, Pa., assignor to Westinghouse Electric and Manufacturing Company, of Pennsylvania. Controller for electric motors	656,571	Aug. 21	2662	613	92	1587
Perreault, Mederic, St. Thomas de Joliette, Canada. Snow-plow	654,670	July 31	3797	856 857	92	828
Perret, Frank A., assignor to Perret Storage Battery Company, New York, N. Y. Motor-carriage	658,877	July 17	2184	497 498	92	461
Perret Storage Battery Company. (See Perret, Frank A., assignor.)						
Perrin, Thomas J., Dayton, Ohio. Detachable taper-cutting attachment for lathes	652,860	July 3	225	53, 54	92	45
Perrine, Casclus R., Goldfield, Colo. Signaling apparatus	656,584	Aug. 21	2698	619	92	1597
Perrine, Harmanus, L., Milwaukee, Wis. Duplex steam-pump	654,918	July 31	4286	963 964	92	982
Perry, David, St. Paul, Minn. Dental root-canal drier	656,300	Aug. 21	2178	497	92	1493
Perry, George R., New York, N. Y. Garment-supporting device	653,260	July 10	1015	243	92	216
Perry, Ira D., and J. B. Weir, Chicago, Ill. Fluid-discharge valve	656,262	Aug. 21	2103	480	92	1479
Perry, James A., Pine, Fla. Fountain-pen	658,279	Sept. 18	2306	509	92	2300
Perry, James C., New York, N. Y. Thill-coupling	656,145	Aug. 14	1884	433	92	1424
Perry, James L., assignor to H. B. Smith Machine Company, Smithville, N. J. Sandpapering-machine	657,357	Sept. 4	553	114 115 116	92	1911
Perry, James L., assignor to H. B. Smith Machine Company, Smithville, N. J. Sandpapering-machine	657,358	Sept. 4	558	116	92	1912

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Perry, Judson D., Detroit, Mich. Soil-pulverizer	658,462	Sept. 25	2629	584	92	2388
Perry, Samuel R. Jeffersonville, Ind. Device for transporting molten metal	658,555	Sept. 25	2787	618 619	92	2420
Perry, Thomas O., Chicago, Ill. Wind-wheel	655,270	Aug. 7	183	41, 42	92	1076
Persinger, Newton R. (See Clayton and Persinger.)						
Pessano, Antonio C., Philadelphia, Pa., assignor to George V. Cresson Company, of Pennsylvania. Journal-box	654,276	July 24	3054	685 686	92	661
Pessano, Antonio C., Philadelphia, Pa., assignor to George V. Cresson Company, of Pennsylvania. Shifter for clutches, &c	655,415 658,180	Aug. 7 July 3	450 838	100 197	92 92	1127 168
Peterman, Frank H., New York, N. Y. Raisin-seeder						
Petermann, Julius, Crimmitzschau, Germany. Apparatus for raising water by compressed air	656,572	Aug. 21	2664	614	92	1588
Peters, Charles, assignor to C. Peters, H. and F. Moeller, New York, N. Y. Hygienic beer-pressure apparatus	657,498 658,037	Sept. 4 July 3	886 572	179 134	92 92	1992 115
Peters, David, Homer, Ill. Gate						
Peters, Frank M. (See Hungerford, Henry H., assignor.)						
Peters, Frank M., Chicago, Ill. Wrapping-machine	656,826	Aug. 28	3131	709 710 711 712	92	1695
Peters, Heber C., Boston, Mass. Looper mechanism for sewing-machines	656,585	Aug. 21	2700	619	92	1597
Peters, John J., Lincoln, Ill. Money-purse	658,394	Sept. 25	2527	559	92	2368
Petersen, Hugo, Lazyhütte, Germany. Enriching metallic sulfids	657,955	Sept. 18	1766	.....	92	2193
Peterson, Alfred, Duluth, Minn. Ratchet-wrench	657,499	Sept. 4	888	180	92	1992
Peterson, Bengt, Dassel, Minn. Flue-cleaner	654,488	July 24	3454	779	92	744
Peterson, Eric. (See Furgason, Charles H., assignor.)						
Peterson, Thorstein. (See Johnson and Peterson.)						
Peterson, Walferd C., assignor of one-half to F. Skipton, Geneva, Nebr. Band-cutter and feeder	658,579	Sept. 25	2845	630 631	92	2432
Petit, Ademor N., Newark, N. J. Phonograph	657,785	Sept. 11	1421	301	92	2108
Petit, Ademor N., Newark, N. J. Graphophone-cylinder	657,956	Sept. 18	1766	380	92	2193
Petsche, Gustav B., assignor to Southwark Foundry and Machine Company, Philadelphia, Pa. Pump-valve-actuating mechanism	657,671	Sept. 11	1220	257	92	2067
Pettegrew, Swithen C., Morantown, Kans. Device for oiling windmills	657,563	Sept. 11	1009	208	92	2027
Petterner, August, Siebenhirten, Austria-Hungary. Protective device against burglary	657,672	Sept. 11	1222	257	92	2068
Petterson, Alfred. (See Johnson, Charles G., assignor.)						
Pettijohn, John W., assignor of one-half to W. H. Bush, Montesano, Wash. Coupling	653,397	July 10	1272	303	92	264
Pettit, William E. (See Forbes, John W., assignor.)						
Petzenbürger, Arthur, Berlin, Germany. Conductor and collector for electric railways	657,830	Sept. 11	1499	320 321	92	2124
Pevey, Benjamin M., Worcester, Mass. Heating attachment	653,878	July 17	2186	498	92	465
Pfautz, Daniel M., assignor of three-fourths to C. F. Maize, J. Dearnley, J. F. Reichardt, B. D. Rearick, J. E. Challenger, J. Binkin, Jr., C. J. McDougall, A. B. Metzler, J. W. Barr, Philadelphia, and C. E. Metzler, Lansdale, Pa. Hand-propelled boat	658,043 658,395	Sept. 18 Sept. 25	1901 2528	412 560	92 92	2220 2369
Pfeiffer, Charles, Akron, Ohio. Step-ladder	655,911	Aug. 14	1423	327	92	1331
Pfeiffer, Elizabeth H., Pensacola, Fla. Store-service apparatus	658,463	Sept. 25	2631	585 586	92	2389
Pfeiffer, George F., Buffalo, N. Y. Folding-machine						
Pfeiffer, Helen W. (See Pfeiffer, Louis E., assignor.)						
Pfeiffer, Louis E., assignor to H. W. Pfeiffer, Philadelphia, Pa. Window-cleaner	656,301	Aug. 21	2179	498	92	1493
Pfeiffer, William H., York, Pa. Impact-motor	655,271	Aug. 7	190	42	92	1077
Pfeil, Philip, Chicago, Ill. Stovepipe-elbow	653,311	July 10	1109	264	92	235
Pflueger, Joseph E., Akron, Ohio. Harness-rosette	655,511	Aug. 7	608	137	92	1159
Pharis, Charles S., Syracuse, N. Y. Dumping-wagon	658,580	Sept. 25	2849	631	92	2432
Phelps, Augustus, Newark, N. J. Badge-button and pin-back therefor	653,150	July 3	788	185	92	157
Phelps, James H., *et al.* (See Radke, Louis, assignor.)						
Phelps, James H., Sharon, Wis. Type-writer	656,658	Aug. 28	2826	644	92	1696
Phelps, James H., assignor to J. H. Phelps and L. Radke, Sharon, Wis. Housing and hanger-track for sliding doors	657,900 653,870	Sept. 18 July 17	1823 2187	393 498	92 92	2205 465
Phelps, Lucius J., Melrose, Mass. Motor-vehicle						
Philadelphia Textile Machinery Company. (See Proctor, Josiah K., assignor.)						
Philippi, Frederick, St. Louis, Mo. Water gage and indicator	653,755	July 17	1962	448	92	422
Philippi, Jacob, assignor of one-half to M. Featherson, New York, N. Y. Machine for separating rock-asphalt	655,416	Aug. 7	452	100 101	92	1127
Philipps, Edwin R. (See Hobart, John H., assignor.)						
Phillippi, B. E., *et al.* (See Barnes, Willis J., assignor.)						
Phillippi, E. A., *et al.* (See Barnes, Willis J., assignor.)						
Phillippi, L. B., *et al.* (See Barnes, Willis J., assignor.)						
Phillips, David E., Mahanoy City, Pa. Dust-guard for car-windows	653,880	July 17	2188	498	92	465
Phillips, Edward, assignor to E. T. Gilbert, Detroit, Mich. Screw-cutting machine	658,396	Sept. 25	2530	560 561	92	2369
Phillips, Edward W. (See Draper, Lucius D., assignor.)						
Phillips, Hugh, *et al.* (See Durand, Norbert, assignor.)						
Phillips, J. T. (See Lindsay, Leroy J., assignor.)						
Phillips, John M., and J. J. Fleming, Pittsburg, Pa., assignors to said Phillips. Coal-dumping apparatus	654,019	July 17	2428	558	92	512
Phillips, Richard T., assignor of one-half to E. J. Knabe, Jr., Baltimore, Md. Buffer-block for illuminating-projectiles	657,248	Sept. 4	340	72	92	1870
Phillips, Ross M. G., Los Angeles, Cal. Combination pocket-gun and cartridge-holder	653,779	July 17	2002	457 458	92	430
Philpott, James S., assignor of one-half to G. A. Nalley, Windsor, Cal. Grape crusher and stemmer	654,839	July 31	4133	930	92	899
Pickard, Edward R., assignor of two-thirds to I. Poor, Jr., Newburyport, and E. P. Fowle, Tapleyville, Mass. Lock	658,715	Sept. 25	3101	691	92	2482
Pickel, John W., Crystal City, Mo. Rotary engine	654,412	July 24	3311	742 743	92	715
Picken, Archibald, assignor of one-half to C. F. Byrne, Roanoke, Va., and S. Nyburg, New York, N. Y. Lock	654,322	July 24	3147	704	92	679
Pickup, George A., Baltimore, Md., assignor to W. A. Force, New York, N. Y. Manufacture of endless bands for rubber stamps	657,500	Sept. 4	890	180	92	1992
Pieper, Henri, Fils, Liege, Belgium. Electric-arc lamp	654,277	July 24	3055	686	92	662
Pierce, Charles M., Weston, Oreg. Stamping-machine	658,672	Sept. 25	3020	673	92	2467
Pierce, Charles S. (See Harlow, Cushing C., assignor.)						
Pierce, John, Milton, assignor of two-thirds to J. H. Chadbourne, Watertown, and W. B. Moore, Swampscott, Mass. Machine for setting lacing-hooks	657,673	Sept. 11	1224	257 258	92	2008
Pierce, Percy E., Galion, Ohio. Fountain-pen	655,731	Aug. 14	1065	245	92	1259

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Pierce, William W. (See Robson, William, assignor.)						
Pierpont, Frank H., assignor to Typograph Gesellschaft mit Beschränkter Haftung, Berlin, Germany. Line-casting machine	653,151	July 3	789	185	92	157
	657,613	Sept. 11	1102	230	92	2044
Pierrepont, Evelyn, London, England. Artificial tooth						
Pierron, Léon, Brussels, Belgium. Igniting-body for automatic ignition of combustible gases	657,004	Aug. 28	3489	.....	92	1762
Pimlott, Charles H., assignor of one-half to J. Reese, Johnstown, Pa. Cover for cooking utensils	656,855	Aug. 28	3219	733	92	1713
	658,120	Sept. 18	2082	443	92	2245
Pinder, Joseph W., Groveland, Cal. Concentrator						
Pine, James K. P. (See Pine, Warren A., assignor.)						
Pine, Warren A., assignor to J. K. P. Pine, Lansingburg, N. Y. Apparel-collar	655,272	Aug. 7	192	42	92	1077
Pinkerton, George M., York, Pa. Machine for molding and cutting ice-cream	656,044	Aug. 14	1697	390	92	1884
Pinnell, Bluford F., Vienna, Mo. Can-opener	655,273	Aug. 7	192	43	92	1077
Pinney, Hiram M., assignor of one-half to G. F. and M. F. Vosler, Alma, N. Y. Combined check-valve and stop-cock	656,146	Aug. 14	1884	434	92	1424
	652,921	July 3	323	80	92	65
Piskur, Anton, Remetincez, Austria-Hungary. Coupling for railway-vehicles	656,210	Aug. 21	2000	460 461	92	1460
Piton, Alphonse, Quebec, Canada. Street-sweeper	658,581	Sept. 25	2852	632 633	92	2433
Piton, Alphonse, St. Sauveur de Quebec, Canada. Trolley	655,109	July 31	4628	1044	92	1002
Pitt, Robert, St. Lewis, N. C. Toy musical instrument	658,556	Sept. 25	2789	619	92	2421
Pitt, William A., Manhasset, N. Y. Rotary engine or motor	658,557	Sept. 25	2791	620	92	2421
Pitt, William A., Manhasset, N. Y. Mechanical movement	655,891	Aug. 14	1382	319	92	1322
Pitt, William R., New Rochelle, N. Y. Gate-operating mechanism	653,864	July 10	1220	291	92	255
Pittavino, Giovanni B., New York, N. Y. Pliers						
Pittsburg Coal Mine Supply Company. (See Poorbaugh, Phillip F., assignor.)						
Pittsburg Foundry and Machine Company. (See Chapman, Charles S., assignor.)						
Pittsburg Testing Laboratory. (See Handy, James O., assignor.)						
Pittsburg Transformer Co. (See Sutter, Frederick C., assignor.)						
Pittsburgh Electrical and Machine Works. (See Schuster, Carl, assignor.)						
Pittsburgh Lamp and Brass Company. (See Hoerle, William M., assignor.)						
Place, Charles. (See O'Connor, George P., assignor.)						
Place, George E., Chicago, Ill. Ironing-machine	656,371	Aug. 21	2303	528	92	1517
Plaistel, Harold M. (See Eads, William H., assignor.)						
Plano Manufacturing Company. (See Dennis, Samuel K., assignor.)						
Plano Manufacturing Company. (See Macphail, James, assignor.)						
Planters Compress Company. (See Holmes, Watson M., assignor.)						
Planters Compress Company. (See Horsley, Sidney, assignor.)						
Planters Compress Company. (See Lowry and Holmes, assignors.)						
Plastik, Gesellschaft für Holz und Steinbildnerei mit Beschränkter Haftung. (See Wenzel, Alexander, assignor.)	657,614	Sept. 11	1103	230	92	2044
Platt, John, Westfield, N. J. Water-tube boiler	657,615	Sept. 11	1106	230 231	92	2045
Platt, John, Westfield, N. J. Water-tube boiler	657,616	Sept. 11	1109	231	92	2046
Platt, John, Westfield, N. J. Water-tube boiler	658,397	Sept. 25	2533	561	92	2370
Platt, Oscar H., Chico, Cal. Thill-coupling	656,856	Aug. 28	3220	734	92	1713
Platte, Emilie, New York, N. Y. Curtain-pole attachment	653,698	July 3	573	135	92	115
Plechati, Josef, Berlin, Germany. Incandescent electric lamp	655,110	July 31	4629	1044	92	1002
Plecher, Andrew, Savannah, Ga. Gas-battery	655,111	July 31	4631	1044	92	1002
Plecher, Andrew, Savannah, Ga. Electrolytic apparatus	655,112	July 31	4633	1044	92	1002
Plecher, Andrew, Savannah, Ga. Calcium-wick lamp	655,113	July 31	4634	1045	92	1003
Plecher, Andrew, Savannah, Ga. Electromagnetic telephone	656,904	Aug. 28	3326	758	92	1731
Pletcher, Thomas M., Indianapolis, Ind. Capo tasto						
Pleus, Gustav A., *et al.* (See Bléha, William V., assignor.)						
Plewman, William H., and J. Graham, Bedford, England. Chair for railways	656,827	Aug. 28	3142	712 713	92	1697
Plumley, Gardner L., New York, N. Y. Holder for snell fly-hooks	657,786	Sept. 11	1424	301 302	92	2109
Plummer, Frank O. (See Plummer and Monroe, assignors.)						
Plummer, Osgood, Worcester, and C. E. Monroe, assignors to F. O. Plummer, Boston, Mass. Telephone-switch	652,922	July 3	324	80, 81	92	65
Pneumatic Crane Company. (See Halsey, William S., assignor.)						
Pneumatic Tool Improvement Company. (See Tynan, Joseph J., assignor.)						
Pneumatic Tool Improvement Company. (See Tynan and Mostiller, assignors.)						
Poché, Joseph A., New Orleans, La. Overhead-wire lightning-protector	652,861	July 3	226	54	92	46
	652,978	July 3	476	111 112	92	96
Pohl, Josef, Jr., Deutz, Germany. Boring and drilling machine	656,302	Aug. 21	2180	498	92	1493
Polhemus, Martin D., Dobbs Ferry, N. Y. Paper bag	657,447	Sept. 4	725	155	92	1944
Politsky, Simon A., and J. Agust, assignors of one-third to C. F. Greene, Boston, Mass. Hydrocarbon-vaporizing burner	653,881	July 17	2180	499	92	465
Pollak, Anton, Buda-Pesth, Austria-Hungary. Mirror-indicator for amplifying movements of bodies	655,677	Aug. 7	968	219	92	1229
Pollak, Anton, and J. Virag, Buda-Pesth, Austria-Hungary. Photographic recording apparatus for vibratory rays of light	656,328	Aug. 21	2224	509 510 511	92	1502
Pollard, Edward T., London, England. Machine for filling boxes						
Polson Iron Works. (See Wedgewood, Josiah, assignor.)						
Polyphon Werke. (See Müller, Henry, assignor.)						
Pomeroy Brothers Company. (See Goebel, George H., assignor.)						
Pomeroy, Le Dru R. (See Allyne and Pomeroy.)						
Pomeroy, Silas H. (See Voigtmann and Pomeroy.)						
Pond, Goldsbury H., Ashburnham, Mass., assignor to Cosmos Company, of New Jersey. Disintegrating-machine	653,312	July 10	1110	265	92	235
Pond, Samuel N., Chicago, Ill. Carrier for pneumatic-despatch tubes	652,979	July 3	476	112	92	96
Ponton, Archibald W., Ottawa, Canada. Roller-bearing	654,179	July 24	2780	629	92	603
Poole, Staley D., assignor to Deere & Company, Moline, Ill. Disk-bearing	657,204	Sept. 4	247	54	92	1851
Poor, Isaac, Jr., *et al.* (See Pickard, Edward R., assignor.)						
Poorbaugh, Phillip F., Allegheny, assignor of one-half to F. C. Mancourt, Belleview, Pa. Slate and coal separating device	655,161	July 31	4711	1061	92	1018
Poorbaugh, Phillip F., Allegheny, Pa., assignor to Pittsburg Coal Mine Supply Company, of Pennsylvania. Mineral-screen	655,160	July 31	4709	1061	92	1018
Poorbaugh, Phillip F., Allegheny, Pa., assignor to Pittsburg Coal Mine Supply Company, of Pennsylvania. Coke-breaker	655,162	July 31	4713	1061	92	1019
Poorbaugh, Phillip F., Allegheny, Pa., assignor to Pittsburg Coal Mine Supply Company, of Pennsylvania. Steel-car construction	655,163	July 31	4715	1061	92	1019

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pope, Edwin B., Shrewsbury, Mo. Night-signal for railway-trains	656,726	Aug. 28	2939	671	92	1658
Pope, Henry J. (See Heckel, Christian J., assignor.)						
Pope, John L., Cleveland, Ohio. Device for preventing creeping of rails	656,470	Aug. 21	2485	571	92	1552
Pope, John L., Cleveland, Ohio. Device for preventing creeping of rails	657,205	Sept. 4	429	90, 91	92	1887
Poppe, Max, Bielefeld, Germany. Product for use in making margarin	658,529	Sept. 25	2745	.....	92	2412
Porteous, James. (See Scanlon, Thomas, assignor.)						
Porteous, James. (See Willis, Glenn T., assignor.)						
Porter, Edward C., New Haven, Conn. Carriage corner-iron	658,558	Sept. 25	2792	620	92	2421
Porter, Henry H., Dowagiac, Mich. Wheel	652,862	July 3	228	54	92	46
Porter, James A., Nevada, Iowa. Rotary engine	654,119	July 17	2608	598	92	546
Porter, Samuel A. S., Pickens, S. C. Rotary engine	652,809	July 3	133	33	92	27
Porter, Stanley S., Melrose, Mass. Electric-lamp-supporting bracket for desks	656,211	Aug. 21	2002	461	92	1460
	656,212	Aug. 21	2003	462	92	1460
Posch, Joseph, St. Paul, Minn. Filter	655,732	Aug. 14	1066	246	92	1260
Post, Amos, and W. J. O'Brien, Catskill, N. Y. Acetylene-gas generator	653,590	July 10	1619	378	92	336
Post, Edward R., Newburg, N. Y. Primary battery						
Post, Frederick S., *et al.* (See Post, William S., assignor.)						
Post, William E., *et al.* (See Post, William S., assignor.)						
Post, William S., assignor to J. M. Atwood, F. S. Post, Boston, and W. E. Post, Melrose, Mass. Machine for moistening, closing, and applying stamps to envelops	658,673	Sept. 25	3022	673	92	2467
Postage Advertising Machine Company. (See Ricketts, James M., assignor.)						
Postal Telegraph-Cable Company. (See Murray, Donald, assignor.)						
Postlethwaite, Robert H., assignor to Risdon Iron and Locomotive Works, San Francisco, Cal. Gold-saving apparatus	652,900	July 3	286	71	92	57
Potter, Alvin E. (See Killman, Thomas A., assignor.)						
Potter, Gideon. (See Vail and Potter.)						
Potter, William B. (See Erben and Potter.)						
Potter, William M., assignor to E. C. Stearns & Co., Syracuse, N. Y. Sand-press	658,582	Sept. 25	2855	633	92	2434
Pottier & Stymus Company. (See Johnston, John S., assignor.)						
Pottlitzer, Herman, *et al.* (See Headson, Frank A., assignor.)						
Pottlitzer, Julius, *et al.* (See Headson, Frank A., assignor.)						
Pottlitzer, Leo, *et al.* (See Headson, Frank A., assignor.)						
Pottlitzer, Max, *et al.* (See Headson, Frank A., assignor.)						
Poupart, Henry, Cohoes, N. Y. Beer-faucet	653,591	July 10	1620	378 379	92	336
Powe, Frank. (See Krebs, George W., assignor.)						
Powell, Edward. (See Powell, John G., assignor.)						
Powell, John G., assignor of one-half to E. Powell, Philadelphia, Pa. Knit fabric	653,308	July 10	1273	303	92	264
Powell, Luther P., *et al.* (See Scofield, William E., assignor.)						
Powell, Samuel L., Newberry, S. C. Shutter-worker	657,448	Sept. 4	727	155 156	92	1945
Powell, William G., assignor of one-half to F. Clark, Jacksonville, Fla. Calculating-machine	657,674	Sept. 11	1226	258	92	2068
Power, John, New York, N. Y. Lubricator	658,019	Sept. 18	1863	404	92	2213
Powers, Frank B., assignor to P. J. Enright, Chicopee Falls, and T. J. Flanagan, Holyoke, Mass Means for automatically supplying water to fire-hose from suitable sources	654,413	July 24	3316	743	92	716
Powers, Michael H. (See Geywits and Still, assignors.)						
Powers, Victor, assignor to Victor Light Syndicate, Limited, London, England. Acetylene-gas generator	657,831	Sept. 11	1501	321	92	2125
Poynter, David C., Mount Vernon, Ky. Vehicle-spoke	655,783	Aug. 14	1070	246	92	1260
Practical Machine and Printing Company, *et al.* (See Johnston, William G., assignor.)						
Prager, Anton, South Omaha, Nebr. Bicycle	655,830	Aug. 14	1284	294	92	1304
Prahar, Louis B., New York, N. Y. Frame for bags, purses, satchels, &c	655,512	Aug. 7	609	137	92	1159
Prall, Edgar F. (See Prall, William E. and E. F.)						
Prall, William E. and E. F., New York, N. Y. Piston-impact engine	655,114	July 31	4635	1045 1046	92	1003
Prange, Herman H., Akron, Ohio, assignor to Johnson, Parfitt Tool Company, Springfield, Ill. Pneumatic riveter	657,449	Sept. 4	729	156	92	1945
Prat, Louise, Lyons, France. Apparatus for projecting heated air	656,213	Aug. 21	2005	462	92	1461
Pratt, Albert B., Somerville, Mass. Measuring device	657,249	Sept. 4	840	73	92	1870
Pratt, Albert B., Somerville, Mass. Carton or shipping-package for piston-packings	657,250	Sept. 4	843	73	92	1870
Pratt, Charles T., Clayville, N. Y. Radiator construction	657,564	Sept. 11	1010	209	92	2027
Pratt, Frank M. (See Erisman, Clem, assignor.)						
Pratt, Herbert L. (See Mathewson, Arthur W., assignor.)						
Pratt, Ralph W., Orwell, N. Y. Velocipede-handle	652,981	July 3	479	112	92	97
Pratt, Ross H., Portland, Oreg. Gaged feeding-jogger	656,776	Aug. 28	3022	688	92	1674
Pratt, Theodore P., assignor to F. W. Clark, Boston, Mass. Electric lock	655,006	July 31	4444	1002	92	966
Prendergast, William H., assignor of one-half to T. D. Kline, Savannah, Ga. Locomotive-exhaust and means for regulating draft	654,074	July 17	2521	579 580	92	529
Prentis, John F. (See State, Thomas L., assignor.)						
Prentiss, Irving R., Lynn, Mass., assignor to General Electric Company, of New York. Electric-arc lamp	657,450	Sept. 4	731	156	92	1945
	658,220	Sept. 18	2214	484	92	2282
Prescott, Loren L., Marinette, Wis. Pressure-transmitter						
Preston, Albert F., assignor to Busell Lasting Machine Company, Boston, Mass. Tack-driving machine	654,840	July 31	4184	980 981	92	899
Preston, South G., Catlettsburg, Ky. Guard for shaft or pole ends	655,734	Aug. 14	1070	246	92	1260
Preusser, Richard F., Washington, D. C. Wheel-guard	652,803	July 3	229	55	92	46
Preusser, Richard F., Washington, D. C. Car-fender	657,180	Sept. 4	197	44	92	1841
Price, Gomer W., San Francisco, Cal. Pump	654,323	July 24	3149	704	92	679
Price, Raymond B., assignor to Calumet Tire Rubber Company, Chicago, Ill. Rubber vehicle-tire	657,787	Sept. 11	1425	302	92	2109
Price, Raymond B., Cambridge, Mass., assignor to Calumet Tire Rubber Company, of Illinois. Vehicle-tire	657,882	Sept. 11	1502	321	92	2125
	655,309	Aug. 7	374	81	92	1112
Price, William C., Blackfoot, Idaho. Broom	658,583	Sept. 25	2857	683	92	2434
Pridmore, Henry E., Chicago, Ill. Press						
Priebs, Bernhard, and O. Kaltwasser, assignors to Actien-Gesellschaft für Anilin Fabrikation, Berlin, Germany. Black sulfur dye	655,659	Aug. 7	940	.....	92	1224
Pries, Herman. (See Williamson and Pries.)						
Pries, Herman, and J. W. Meyer, Michigan City, Ind. Car-door	657,617	Sept. 11	1112	231 232	92	2047
Priest, Joseph K., Nashua, N. H. Clipping-machine	655,796	Aug. 14	1213	278 279	92	1290
Prince, Jerome, Milford, assignor to S. J. Bucklin, Andover, Mass. Billiard-cue tip	655,990	Aug. 14	1598	367	92	1864
Printz, Emanuel. (See Roeske, Henry, assignor.)						
Prinz, William H., Austin, assignor to Saladin Pneumatic Malting Construction Company, Chicago, Ill. Apparatus for drying malt	657,788	Sept. 11	1427	302 303	92	2109

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Prior, Matthew, Watertown, Mass. Cotton-gin	655,167	July 31	4722	1003	92	1021
Prior, Matthew, Watertown, Mass. Roller or brush card	655,168	July 31	4726	1003	92	1021
Procner, Jan. (See Ender, Kleindienst, and Procner.)						
Proctor, Josiah K., assignor to Philadelphia Textile Machinery Company, Philadelphia, Pa. Machine for softening tobacco	655,513	Aug. 7	610	138	92	1160
Prouty, Theodore C., Midland, Mich. Trolley-track	657,132	Sept. 4	103	24	92	1822
Pruden, Clarence D., Minneapolis, Minn. Metallic window frame and sash	656,659	Aug. 28	2828	645	92	1636
Pruden, Clarence D., Minneapolis, Minn. Metallic window frame and sash	656,660	Aug. 28	2829	645	92	1637
Prudhomme, Peter A., Bermuda, La. Trace-carrier	658,121	Sept. 18	2034	443	92	2245
Pruit, Trose P. (See Watkins and Pruit.)	655,454	Aug. 7	527	118	92	1143
Prüss, Emil, Berlin, Germany. Facing for walls, &c						
Pruszkowski, Wladyslaw. (See Howarth and Pruszkowski.)	655,173	July 31	4736	1064	92	1023
Puddefoot, Charles, Detroit, Mich. Bail-ear	653,592	July 10	1623	379	92	337
Puddington, Thomas E., Somerville, Mass. Furnace	654,278	July 24	3060	686	92	662
Pugsley, William E., Lincoln, Nebr. Armor or shield for pneumatic tires						
Pullen Battery and Electrical Manufacturing Company. (See Pullen, Leon W., assignor.)						
Pullen, Leon W., Camden, N. J., assignor to Pullen Battery and Electrical Manufacturing Company, of New Jersey. Battery-box	656,700	Aug. 28	2888	658	92	1649
Pullman, Edward E. (See Pullman, John and E. E.)	654,324	July 24	3151	705	92	679
Pullman, Herbert S., Meriden, Conn. Bell	658,674	Sept. 25	3024	-----	92	2468
Pullman, John, London, and E. E. Pullman, Surbiton, England. Bleaching	656,748	Aug. 28	2976	679	92	1665
Pult, Casper J., Tonawanda, Pa. Sod crusher or pulverizer						
Purdie, James. (See Taft, Edward E., assignor.)	653,117	July 3	726	170	92	145
Purnell, Richard H., Rosedale, Miss. Plow-beam	655,115	July 31	4637	1046	92	1004
Purnell, Richard H., Rosedale, Miss. Plow	655,455	Aug. 7	528	119	92	1143
Purvis, William B., Philadelphia, Pa. Electric railway						
Putnam Nail Company. (See Williams, Henry A., assignor.)	656,420	Aug. 21	2400	551	92	1536
Pye, Frank, Philadelphia, Pa. Water-purifier for steam-boilers						
Pyle, Howard L., Wilmington, Del., assignor to American Carbide Lamp Company, Philadelphia, Pa. Acetylene-gas generator	657,967	Sept. 18	1767	381	92	2194
Q & C Company. (See Moore, Moses M., assignor.)						
Q. & H. Company. (See Hopkins, James M., assignor.)	653,694	July 17	1845	422 423	92	400
Quarrier, Gustavus B., Los Angeles, Cal. Car-fender						
Quay, Milton. (See Barclay, John J., assignor.)	653,181	July 3	839	197	92	168
Quick, Hiram M., Paterson, N. J. Running-gear for automobiles						
Quick, William H. H. (See Heart, Charles, assignor.)	653,182	July 3	841	198	92	168
Quigley, Charles A., Salt Lake City, Utah. Wagon-body	657,675	Sept. 11	1228	259	92	2069
Quinby, George F., Boston, Mass. Spirit-level and plumb						
Quinn, B. B., trustee. (See Washburn, George A., assignor.)	653,118	July 3	726	171	92	145
Quinn, John N., Cincinnati, Ohio. Furnace	657,005	Aug. 28	3490	797	92	1762
Quirin, Emil J. F., Tioga Centre, N. Y. Leather-wringing machine	654,020	July 17	2429	558	92	512
Quist, Irving E., Atwater, Minn. Adjustable eccentric or gear						
R. E. Dietz Company. (See Dietz, Frederick, assignor.)						
R. F. Simmons Company. (See Baker, Henry R., assignor.)						
R. Neumann & Company. (See Goerk, Gustav, assignor.)	657,181	Sept. 4	200	45	92	1842
Raasloff, Harald de, New York, N. Y. Separating precious metals from their ores	654,180	July 24	2782	629	92	603
Raber, Charles R., Stuart, Iowa. Harrow-truck	656,214	Aug. 21	2007	462	92	1461
Radcliffe, Charles, Newark, N. J. Button						
Radcliffe, Harry C. (See Reiff, William H., assignor.)						
Rader, William E. (See Kemper and Rader.)						
Radke, Louis, *et al.* (See Phelps, James H., assignor.)						
Radke, Louis, assignor to L. Radke and J. H. Phelps, Sharon, Wis. Housing and hanger for sliding doors	657,991	Sept. 18	1824	394	92	2205
Rae, John C. (See Hughes and Rae.)	656,045	Aug. 14	1699	390	92	1385
Rae, William F., London, England. Tire and rim for vehicle-wheels	653,695	July 17	1848	423	92	401
Raff, Edward S., Canton, Ohio. Mucilage-stand	657,029	Aug. 28	3528	805 806	92	1769
Rafter, John H., Jersey City, N. J. Voting-booth	653,313	July 10	1112	265	92	365
Raifsnyder, William H. F., Sackett, Pa. Split disk for holding pulleys to shafts						
Rainforth, William. (See Lane and Rainforth.)	655,007	July 31	4447	1002	92	967
Rairigh, William K., Kittanning, Pa. Combination-tool	655,991	Aug. 14	1598	368	92	1364
Ralph, James G., Aurora, Ill. Combined storm and fly-screen construction	656,661	Aug. 28	2830	645	92	1637
Ralston, Leander D., North Lawrence, Ohio. Railway-track fastening	657,565	Sept. 11	1011	209	92	2027
Ramage, Alexander G., Leith, and G. Macmillan, Edinburgh, Scotland. Wheel	654,356	July 24	3206	718	92	691
Rambaud, Jean, Lyons, France. Gas or petroleum motor	653,526	July 10	1511	352	92	314
Ramsdell, Alvah T., Dover, N. H. Elevator-car	655,274	Aug. 7	193	43	92	1078
Ramsden, Robert, Philadelphia, Pa. Steam-generator						
Ramsey, John S. (See Fitzgerald and Ramsey.)						
Ranald, John, London, England. Extracting bismuth from ores containing bismuth oxids, &c	657,030	Aug. 28	3530	-----	92	1637
Rand, James H., Tonawanda, N. Y. Account-book	656,662	Aug. 28	2831	645 646	92	1637
Rand, Nellie E., South Windham, Me. Cake-box	655,116	July 31	4638	1046	92	1004
Randall, Egbert J., Evart, Mich. Shoe-horn	655,417	Aug. 7	454	101	92	1128
Randle, George S., Pratt, Kans. Stock-waterer	658,280	Sept. 18	2307	509	92	2200
Randolph, William J., Jennings, La. Pneumatic straw-stacker	656,701	Aug. 28	2889	659	92	1649
Rankin, Thomas I., assignor to Abram Cox Stove Company, Philadelphia, Pa. Core-drying car	656,471	Aug. 21	2485	572	92	1552
Ransley, William, East Orange, N. J. Soda-fountain	654,489	July 24	3455	779	92	744
Rapp, John W., New York, N. Y. Sash and sash-frame	653,399	July 10	1275	308	92	264
Rapp, John W., New York, N. Y. Fireproof door	653,400	July 10	1276	304	92	265
Rapson, Thomas A., and H. J. Furness, Filion, Mich. Combined hay and stock rack	654,357	July 24	3207	718	92	692
Raschig, Fritz, Ludwigshafen, Germany. Separating meta and para cresol	655,117	July 31	4639	-----	92	1004
Raschig, Fritz, Ludwigshafen, Germany. Separating cresols	656,263	Aug. 21	2105	-----	92	1479
Rasco, Charles A., and J. T. Taylor, Americus, Ga. Seal-lock	654,021	July 17	2430	558	92	512
Rash, Howard C., assignor to Natural Body Brace Company, Salina, Kans. Umbilical truss	655,008	July 31	4448	1002	92	967
Rash, Howard C., assignor to Natural Body Brace Company, Salina, Kans. Umbilical truss	655,514	Aug. 7	612	138	92	1160
Rasmussen, M. E., *et al.* (See Gregory, Cornelius W., assignor.)	655,992	Aug. 14	1600	368	92	1364
Rathvon, William R., Florence, Colo. Indicating device for telephone-receivers	654,575	July 24	3502	809	92	769
Rauh, Leopold. (See Boring, Frank M., assignor.)	653,401	July 10	1277	304	92	265
Rauh, Leopold, Dayton, Ohio. Carbon-paper holder	654,279	July 24	3060	687	92	662
Rausch, Isaac, Black River Falls, Wis. Stove-lid lifter						
Ravich, Natin, Chicago, Ill. Combination-overalls						

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Raw, Charles, Graytown, Ohio. Churn	655,009	July 31	4449	1002	92	967
Rawe, William H., Pawtucket, R. I. Stop and waste cock	657,819	Sept. 4	483	101 102	92	1897
Rawlinson, Alfred, Rugby, England. Motor-car driving-gear and gear-changing device	656,215	Aug. 21	2009	463	92	1461
Rawson, Bruce (See Rawson, George W., assignor.)						
Rawson, Charles L. (See Evans, Samuel, assignor.)						
Rawson, George W., assignor of one-third to B. Rawson, Belleville, Ill. Churn	653,183	July 3	842	198	92	169
Ray, Albert D. (See Fox, Barrett, and Ray.)						
Ray, George W., assignor to Ray Manufacturing Company, Loudonville, Ohio. Trace-connector	653,527	July 10	1515	352	92	315
Ray, Joseph, Emery, Ill. Tank for watering poultry	656,727	Aug. 28	2940	671	92	1658
Ray Manufacturing Company. (See Ray, George W., assignor.)						
Raygosa, Timothy M. (See Pederson, Ole, assignor.)						
Raymond Button Company of Baltimore City. (See Gwinn, George W., assignor.)						
Raymond, Claud D., *et al.* (See McKay, John F., assignor.)						
Raymond, Freeborn F., 2d, Newton, Mass, assignor, by mesne assignments, to United Shoe Machinery Company, of New Jersey. Nailing-machine	654,762	July 31	3979	895 896	92	865
Raymond, John, *et al.* (See McKay, John F., assignor.)	657,451	Sept. 4	732	156	92	1946
Rea, Samuel W., Rushville, Ind. Cooling means for explosive-engines						
Reaben, George B., Summit, Miss., assignor to V. Gray, New Orleans, La. Automatic hotel call-bell	653,459	July 10	1375	326	92	284
Reach, George A. (See Gamble, John, assignor.)						
Read, Mamie G. (See Eisenhuth, John W., assignor.)	657,676	Sept. 11	1229	259 260	92	2069
Reagan, Edgar, assignor of one-half to W. C. Bruff, Floresville, Tex. Roller-press						
Rearick, Bertram D., *et al.* (See Pfautz, Daniel M., assignor.)	655,797	Aug. 14	1215	279	92	1290
Reason, Walter M., Pontiac, Mich. Bicycle-pump						
Red Jacket Manufacturing Company. (See Stebbins, Timothy, assignor.)						
Reddin, Henry, *et al.* (See Garland, Herbert, assignor.)						
Redding, William H. (See Smith and Redding.)						
Redfield, Casper L. (See Simpson and Redfield.)	654,075	July 17	2522	580	92	529
Redfield, Charles T., Glenhaven, N. Y. Saw	657,133	Sept. 4	105	25	92	1822
Redick, Jennie A., St. Louis, Mo. Apparel-corset	654,414	July 24	3318	744	92	716
Redington, William H., Chicago, Ill. Paste-brush	658,584	Sept. 25	2859	633	92	2435
Redlefsen, Ingwer F., Texarkana, Ark. Door-locking device	653,921	July 17	2264	515	92	480
Redmond, Jerymiah B., and L. C. Adams, Vicksburg, Miss. Separable friction-hanger	658,508	Sept. 25	2706	600	92	2404
Redpath, George O., Frankfort, Ky. Needle for weaving cane fabrics						
Reece Button Hole Machine Company. (See Dixon, William W., assignor.)						
Reece Folding Machine Company. (See Reece, George, assignor.)						
Reece, George, Wollaston, Mass., assignor to Reece Folding Machine Company, Portland, Me., and Boston, Mass. Mechanism for folding collar-blanks	658,323	Sept. 18	2377	524 525	92	2313
Reece, John, deceased; M. Reece and F. A. Shea, administrators, Brookline, Mass. Buttonhole sewing and cutting machine	655,637	Aug. 7	850	198 199	92	1205
Reece, Marietta, *et al.*, administrators. (See Reece, John.)						
Reeck, Wilhelm, Cöslin, Germany. Step-frame for carriage box-seats	655,016	July 31	4450	1003	92	968
Reed, Adam, St. Joseph, Mo. Cushion-shoe	656,472	Aug. 21	2487	572	92	1552
Reed & Barton Corporation. (See Brabrook, George H., assignor.)						
Reed, Charles, assignor of one-half to J. R. Reed, Portland, Ind. Hoop-racking machine	653,528	July 10	1516	352 353	92	315
Reed, Charles J., Philadelphia, Pa. Electric controller	656,473	Aug. 21	2488	573	92	1552
Reed, Eli S., Hill City, Tenn. Ball-bearing	653,184	July 3	843	198	92	169
Reed, Eugene W., assignor of one-half to L. D. Steward, Grand Rapids, Mich. Nut-lock for vehicle-wheels	658,675	Sept. 25	3025	674	92	2468
Reed, Franklin M., assignor to Reed Smokeless Furnace Company, Indianapolis, Ind. Smokeless furnace	652,923	July 3	327	81	92	66
Reed, Franklin M., and R. R. Spain, assignors to Reed Smokeless Furnace Company, Indianapolis, Ind. Smokeless furnace	652,924	July 3	329	81, 82	92	66
Reed, John A. (See Beasley, George P., assignor.)						
Reed, John R. (See Reed, Charles, assignor.)						
Reed Smokeless Furnace Company. (See Reed, Franklin M., assignor.)						
Reed Smokeless Furnace Company. (See Reed and Spain, assignors.)						
Reed, Walter F., Camden, S. C. Mowing-machine	653,185	July 3	844	199	92	169
Reenstierna, Gustaf L., Winchester, Mass. Steering mechanism for vehicles	655,660	Aug. 7	941	213	92	1224
Reenstierna, Gustaf L., Winchester, Mass. Fuel-receptacle for gasolene-engines	655,661	Aug. 7	943	213	92	1224
Reenstierna, Gustaf L., assignor of one-half to H. R. Legate, Boston, Mass., and H. J. Hooper, Dover, N. H. Self-lighting cigar	654,490	July 24	3458	779	92	745
Reese, Joseph. (See Pimlott, Charles H., assignor.)						
Reese, Thomas, Jr., Newark, N. J. Valve	657,707	Sept. 11	1281	271 272	92	2079
Reeve, Henry E., assignor to Automatic Fire Alarm and Extinguisher Company, Limited, New York, N. Y. Thermostat	657,359	Sept. 4	560	116	92	1912
Reeves, Jeremiah E., Canal Dover, Ohio. Pair and sheet furnace	653,756	July 17	1905	448	92	423
Reeves, Rufus H., Asheville, N. C. Refrigerator	653,119	July 3	728	171	92	145
Reford, John H., Glasgow, Scotland. Combined table and folding bed	658,676	Sept. 25	3026	674	92	2468
Regout, Louis H. W., Maestricht, Netherlands. Muffle furnace or oven	653,819	July 17	2082	475	92	444
Rehfuss, George, J. G., and M. O., Philadelphia, Pa. Sewing-machine for making fringe	658,585	Sept. 25	2860	634	92	2435
Rehfuss, John G. (See Rehfuss, George, J. G., and M. O.)						
Rehfuss, Martin O. (See Rehfuss, George, J. G., and M. O.)						
Rehkopf, Henry C., Texarkana, Tex. Mattress-stuffing machine	655,578	Aug. 7	738	170 171	92	1184
Rehmann, Gustave, Newark, N. J. Instrument or other case	657,708	Sept. 11	1286	272	92	2081
Reichard, George W. (See Normand, Joseph M., assignor.)						
Reichardt, Ferdinand A., Elizabeth, N. J. Sharpening-machine	653,882	July 17	2191	499	92	466
Reichardt, John F., *et al.* (See Pfautz, Daniel M., assignor.)						
Reichenbach, Henry M., and J. Schadeli, assignors to Reichenbach, Morey & Will Company, Rochester, N. Y. Photographic shutter	657,883	Sept. 11	1505	321 322	92	2126
Reichenbach, Morey & Will Company. (See Reichenbach and Schadeli, assignors.)						
Reichhelm, E. P. (See Forth, Charles, assignor.)						
Reichow, William, Princeton, Minn. Spark-arrester	655,708	Aug. 14	1216	279	92	1291
Reid, Alban H., Philadelphia, Pa. Pasteurizing apparatus	653,120	July 3	730	171	92	146
Reid, Pettis A., Richmond, Ind. Wire fence	655,307	Aug. 7	254	58	92	1091
Reid, Walter F., Addlestone, and E. J. V. Earle, London, assignors to Velvril Company, Limited, London, England. Manufacture of enameled leather	655,735	Aug. 14	1071	-----	92	1260
Reiff, William H., assignor of one-half to H. C. Radcliffe, Philadelphia, Pa. Burglar-alarm and door-check	656,586	Aug. 21	2701	619	92	1598
Reiling, Meinhard, Fort Wayne, Ind. Fire-hose	658,586	Sept. 25	2862	634	92	2436

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Reilly, Francis J. (See Murphy, Daniel, assignor.)						
Reinherz, Therese, Munich, Germany. Manufacture of stucco flowers	657,006	Aug. 28	3493	797	92	1762
Reinli, Edward, Murgenthal, Switzerland. Apparatus for teaching children to walk	658,464	Sept. 25	2640	586	92	2390
Reis, John C., West Union, Ohio. Nut-lock	655,118	July 31	4641	1046	92	1004
Reis, Joseph L. M. A., Antwerp, Belgium. Composition for preventing boiler incrustations	655,119	July 31	4642	.....	92	1005
Reiser, John. (See Mentzel and Reiser.)						
Reisert, Eduard, Hennef, Germany. Fountain-pen	655,736	Aug. 14	1072	247	92	1260
Reist, Henry G., Schenectady, N. Y., assignor to General Electric Company, of New York. Brush-holder ring	656,421	Aug. 21	2401	552	92	1536
Relay, Alfred, assignor of one-third to W. A. Gunther, South Norwalk, Conn. Rail-joint	655,370	Aug. 7	376	81	92	1112
Reminger, Theodore, New Washington, Ohio. Cue-tip	656,702	Aug. 28	2896	659	92	1659
Remington, W. H., *et al.* (See Trapp, Samuel M., assignor.)						
Renno, Heinrich, Hoerde, Germany. Compressor for refrigerating-machines	655,120	July 31	4643	1047	92	1005
Requard, Edward L., and E. S. Merryman, Baltimore, Md. Combined wheel-fender and emergency-brake	658,530	Sept. 25	2746	609	92	2412
Reuter, Herman, Warsaw, Ill. Wind-wheel regulator	658,898	Sept. 25	2834	561 / 562	92	2370
Reuterdahl, Arvid, assignor of two-thirds to L. H. Campbell and G. F. Weston, Providence, R. I. Secondary battery	653,888	July 17	2193	499 / 500	92	466
Revel, Justinien, Ellicott City, Md. Skein-holder	656,264	Aug. 21	2106	481	92	1479
Rey, Henri, Brussels, Belgium. Carbureter	658,020	Sept. 18	1866	404	92	2214
Reymershoffer, Gus, *et al.* (See Brady, Alford, assignor.)						
Reynard, David W., Morris, Pa. Power-machine	655,011	July 31	4452	1003	92	968
Reynolds, Alleyne, Sheffield, England. Blast and cupola furnace	657,081	Aug. 28	3531	806	92	1769
Reynolds, Edwin, Milwaukee, Wis. Crushing-machine	657,958	Sept. 18	1770	381	92	2194
Reynolds, Edwin, Milwaukee, Wis. Crushing-machine	658,071	Sept. 18	1944	423	92	2228
Reynolds, George H., assignor to Crane Elevator Company, Chicago, Ill. Elevator	655,012	July 31	4453	1004	92	968
Reynolds, George H., assignor to Otis Elevator Company, New York, N. Y. Elevator	658,587	Sept. 25	2864	635	92	2436
Reynolds, Henry S., and E. M. Peacock, assignors to Iron Clad Manufacturing Company, New York, N. Y. Closure for receptacles	658,588	Sept. 25	2866	635	92	2437
Reynolds, Leander E., Grand Rapids, Mich. File-box	655,799	Aug. 14	1217	279	92	1291
Reynolds, Lewis G., Dayton, Ohio. Manifolding sales-book	655,456	Aug. 7	529	119	92	1143
Reynolds, Stephen G., assignor of one-half to N. Freeman, Easton, Pa. Trolley-wheel	654,803	July 31	4060	914	92	884
Reynolds, William H. (See Cox, Wright, and Reynolds.)						
Reynoldson, George W., Menson, Iowa. Screen-wire rack	654,671	July 31	3799	857	92	828
Rhoades, Alonzo E., Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., and Portland, Me. Lease-forming mechanism	655,579	Aug. 7	740	171	92	1184
Rhodes, Jay B., Harvey, assignor to F. C. Austin, Chicago, Ill. Dumping-car	653,314	July 10	1114	235 / 266	92	235
Rhodes, Jay B., Harvey, assignor to F. C. Austin, Chicago, Ill. Fluid-actuated valve	655,737	Aug. 14	1073	247	92	1260
Rhodes, Jay B., Harvey, assignor to F. C. Austin, Chicago, Ill. Dumping-car	657,618	Sept. 11	1113	232	92	2047
Ricard, Joseph A., Manchester, N. H. Knitting-machine	656,216	Aug. 21	2011	463 / 464 / 465	92	1462
Rice, Edwin W., Jr., Schenectady, N. Y., assignor to General Electric Company, of New York. System of train control. (Reissue)	11,852	Sept. 4	902	183	92	1995
Rich, George K., Philadelphia, Pa. Drawing-board	658,072	Sept. 18	1946	423	92	2229
Rich, George K., Philadelphia, Pa., assignor to Farr & Bailey Manufacturing Company, Camden, N. J. Machine for connecting webs of fabric	656,308	Aug. 21	2181	498	92	1494
Rich, George N., *et al.* (See Whipple, Archibald M., assignor.)						
Rich, Harry T., Lynn, Mass. Bicycle-lock	654,672	July 31	3799	857	92	828
Richard, Henry J., and W. D. Lennox, assignors of one-third to C. W. Murphy, Danbury, Conn. Fluid-cooler	653,884	July 17	2197	500	92	467
Richards, Charles W., Cleveland, Ohio. Automatic piano or organ player	653,529	July 10	1518	353 / 354	92	316
Richards, Hubert P., New Britain, Conn. Sewing-machine	652,985	July 3	364	87 / 88 / 89	92	74
Richards, Morris P., Utica, N. Y. Automatic cocking-indicator	654,280	July 24	3061	687	92	662
Richards, Morris P., Utica, N. Y. Vegetable or fruit separator	654,281	July 24	3062	687	92	662
Richards, Willard F., Buffalo, assignor to C. M. Gould, New York, N. Y. Casing for electric car-lighting apparatus	653,885	July 17	2199	500 / 501	92	467
Richards, Willard F., Buffalo, assignor to C. M. Gould, New York, N. Y. Automatic switch for electric car-lighting apparatus	654,325	July 24	3152	705	92	680
Richards, Willard F., Buffalo, assignor to Gould Coupler Company, New York, N. Y. Car-coupling	658,073	Sept. 18	1949	424	92	2229
Richardson, Amasa A., assignor of one-half to H. C. Schmidt, Oregon, Mo. Pin-holder	656,663	Aug. 28	2883	646	92	1637
Richardson, Arthur S., and J. H. J. Colcord, assignors to Colcord-Richardson Company, Danvers, Mass. Holder for barrel-caps	655,940	Aug. 14	1480	340	92	1341
Richardson, Charles G., New York, N. Y., assignor of one-half to D. Wistar, Philadelphia, Pa. Incandescent element	658,696	July 17	1850	423	92	401
Richardson, Charles N. (See Whitaker, Edgar A., assignor.)						
Richardson, Charles N., and E. A. Whitaker, Providence, R. I. Safety-hook for firemen's ladders	658,716	Sept. 25	3103	692	92	2482
Richardson, Frank H., Pueblo, Colo. Centrifugal water-clarifier	656,474	Aug. 21	2490	573 / 574	92	1553
Richardson, John, Horsforth, England. Apparel-shirt	658,559	Sept. 25	2793	620	92	2421
Richardson, John R., Scranton, Pa. Coal-separator	655,580	Aug. 7	741	171	92	1184
Richardson, Walter E., Reading, assignor to Heywood Brothers & Wakefield Company, Wakefield, Mass. Car-seat cushion	657,501	Sept. 4	891	180	92	1092
Richardson, William S., Boston, Mass., assignor to Ball and Socket Fastener Company, Boston, Mass., and Nashua, N. H. Fastener for garments, suspenders, &c	653,315	July 10	1115	266	92	236
Richardson, William S., Boston, Mass., assignor to Ball and Socket Fastener Company, Boston, Mass., and Nashua, N. H. Fastener for gloves, &c	656,475	Aug. 21	2492	574	92	1553
Riché, Henri, Paris, France. Apparatus for manufacturing gas	658,589	Sept. 25	2868	635 / 636	92	2437
Riches, William, Jarvis-Brook, England. Wheel for bicycles	654,673	July 31	3801	858	92	829
Richmond, Charles T., assignor to National Carbon Company, Cleveland, Ohio. Voltaic cell	653,530	July 10	1524	354	92	317
Richmond, Charles T., and M. M. Zellers, Cleveland, Ohio., assignors to National Carbon Company, Trenton, N. J. Machine for grinding carbon diaphragms	653,531	July 10	1525	355	92	317
Richmond, John W., Fishkill-on-the-Hudson, N. Y. Safety-trolley	653,402	July 10	1277	304	92	265
Richmond, Thomas, Jesup, Iowa. Combination-tricycle for land, water, and ice	656,265	Aug. 21	2107	481	92	1479
Richmond, William. (See Wortman and Richmond.)						
Richter, Emil, Dresden, Germany. Fertilizer and making same	658,021	Sept. 18	1867	.....	92	2214

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Richter, Franz, Cologne, Germany. Valve for pneumatic tires of bicycles	657,007	Aug. 28	3495	796	92	1763
Rickard, George M., Alliance, Ohio. Computing device	654,674	July 31	3802	858	92	829
Ricke, George H., assignor of two-thirds to M. Durner, Cincinnati, and F. P. Thomas, Evanston, Ohio. Cask, barrel, or keg	657,134	Sept. 4	106	25	92	1823
Rickersberg, Emanuel, Cleveland, Ohio. Stop and waste cock	657,895	Sept. 11	1610	346	92	2148
Ricketts, James M., San José, assignor to Postage Advertising Machine Company, San Francisco, Cal. Coin-exhibitor for coin-controlled mechanism	653,847	July 17	2130	485	92	453
Rickman, John H., Gladstone, N. D. Windmill	657,959	Sept. 18	1772	381 / 382	92	2195
Rider, Charles E., Rochester, N. Y. Parquetry	657,990	Sept. 18	1774	382	92	2195
Riehlé, Frederick A., Philadelphia, Pa. Holding device for tensile-test specimens	657,566	Sept. 11	1012	209	92	2028
Ries, Henry, Bowling Green, Ohio. Straw-stacker	658,095	Sept. 18	1991	434	92	2237
Riesenweber, Charles, assignor to Paragon Laundry and Machine Company, St. Louis, Mo. Ironing-machine	658,074	Sept. 18	1950	424 / 425	92	2230
Riess, Anna M. J. (See Riess, Peter U. and A. M. J.)						
Riess, Peter U. and A. M. J., New York, N. Y. Life-boat	655,993	Aug. 14	1601	368 / 369	92	1364
Riess, Peter U. and A. M. J., New York, N. Y. Marine vessel	655,994	Aug. 14	1602	369	92	1365
Riess, Peter U. and A. M. J., New York, N. Y. Marine propulsion	656,046	Aug. 14	1700	391	92	1385
Riffelmacher, Hans. (See Ott and Riffelmacher.)						
Rigg, Gilbert, Swansea, England. Obtaining oxid and carbonate of zinc from materials containing zinc	654,804	July 31	4061	.....	92	884
Rightmyer, Homer W., Rowlesburg, W. Va. Toy pistol	653,697	July 17	1851	423	92	401
Riker, Andrew L., New York, N. Y. Guard for controller-brushes	656,372	Aug. 21	2305	528	92	1518
Riley, John, New York, N. Y. Soft-tread horseshoe	658,221	Sept. 18	2215	484	92	2282
Riley, Willie, Bradford, and A. Kershaw, Leeds, England. Apparatus for making and storing oxygen	653,261	July 10	1016	243 / 244	92	216
Rimington, Ernest C., London, England. Maximum-electrical-current indicator and recorder	658,022	Sept. 18	1868	404	92	2214
Rinehart, William D. (See Dempster and Rinehart.)						
Rinn, Mary, Chicago, Ill. Fire-escape	654,415	July 24	3319	744	92	716
Rinsche, Frank C., assignor to Universal Accountant Machine Company, St. Louis, Mo., Calculating-machine	654,181	July 24	2784	630 / 631 / 632 / 633 / 634	92	603
Ripley, Henry C. (See Woods, Charles O., assignor.)						
Ripper, William, Sheffield, England. Apparatus for indicating effective pressures of steam in steam-engine cylinders	658,531	Sept. 25	2748	610	92	2412
Ris, Christopher, and C. Simon, assignors to J. R. Geigy & Co., Basle, Switzerland. Making green trisazo dyes	655,018	July 31	4457	.....	92	969
Risdon Iron and Locomotive Works. (See Evans, George H., assignor.)						
Risdon Iron and Locomotive Works. (See Postlethwaite, Robert H., assignor.)						
Rishel, Clinton D., *et al.* (See Stephens, Daniel, assignor.)						
Rishel, George P., assignor to Dirksen Handle Bar Company, Hornellsville, N. Y. Adjustable handle-bar	655,581	Aug. 7	742	171	92	1184
Rister, Ezariah, and W. A. Wood, Omaha, Ill. Churn	657,008	Aug. 28	3497	798	92	1763
Ritchel, Charles F., Bridgeport, Conn. Postage-scale	655,850	Aug. 7	388	74	92	1106
Ritchie, Foster, London, England. Telautographic apparatus	656,828	Aug. 28	3148	713 / 714	92	1697
Ritchie, Samuel, assignor of one-third to E. R. Le Fevre, Tomahawk Lake, Wis. Combined lock and burglar-alarm	658,309	Sept. 25	2585	592	92	2370
Rittenhouse, James B. (See Cash, James H., assignor.)						
Rittenhouse, James F. (See Rittenhouse, Silas B. and J. F.)						
Rittenhouse, Silas B. and J. F., Liberty Mills, Ind. Mole-trap	655,995	Aug. 14	1604	396	92	1365
Ritter, Frank, Rochester, N. Y. Dental chair	657,360	Sept. 4	561	117	92	1913
Ritter, Henry. (See Lunken and Ritter.)						
Ritter, Jacob. (See Ritter, Louis and J.)						
Ritter, Louis and J., New York, N. Y. Belt-buckle	655,371	Aug. 7	376	82	92	1112
Ritz, August. (See Bühne and Ritz.)						
Ritz, August N., Milwaukee, Wis. Vent-nozzle	657,274	Sept. 4	395	83	92	1880
Roach, Harry F., St. Louis, Mo. System of electrical distribution	656,366	Aug. 21	2108	481	92	1480
Roach, Harry F., St. Louis, Mo. Means for maintaining a given direction of rotation of shafts	656,422	Aug. 21	2403	552	92	1536
Roark, James S., assignor of one-half to R. T. Harper, Americus, Ga. Blower for grates	653,365	July 10	1221	291	92	255
Robb, James T., assignor to Mitchell Vance Company, New York, N. Y. Electric switch	658,698	July 17	1852	424	92	402
Robbins, John A. (See Salzman, Christian A., assignor.)						
Robbins, John C., Waltham, Mass. Crank-shaft and bearing	655,515	Aug. 7	614	138	92	1161
Robbins, John C., Waltham, Mass., assignor to Waltham Manufacturing Company, of Maine. Bicycle	655,516	Aug. 7	615	138 / 139	92	1161
Robbins, William W., Brownsville, Pa. Fountain-pen filler	655,517	Aug. 7	617	139	92	1161
Roberton, Charles G., Glasgow, Scotland, and J. J. Roberton, Leeds, England, assignors of one-third to G. E. Roberton, Montreal, Canada. Tire	654,919	July 31	4288	964	92	932
Roberton, George E. (See Roberton, Charles G. and J. J., assignors.)						
Roberton, James J. (See Roberton, Charles G. and J. J.)						
Roberts Car and Wheel Company. (See Donovan, James, assignor.)						
Roberts, Henry, Pittsburg, Pa. Wire-rod mill	653,643	July 10	1742	401	92	361
Roberts, Henry P., Boston, assignor to E. D. Godfrey, Taunton, Mass. Voice-concealing attachment for telephones	654,326	July 24	3154	705	92	680
Roberts, James L., Pontiac, Ill. Car-loader	655,831	Aug. 14	1285	295	92	1304
Roberts, John E., assignor to Straight Manufacturing Company, Jamestown, N. Y. Crank-hanger	658,400	Sept. 25	2586	592	92	2370
Roberts, Josephus. (See Waegel, William, assignor.)						
Roberts, Lottie A., San Francisco, Cal. Needle	658,886	July 17	2202	501	92	468
Roberts, Thomas, Green Cove Springs, Fla. Inking-pad	657,961	Sept. 18	1777	382	92	2195
Roberts, William F. (See Munson, John H., assignor.)						
Robertson, George H. (See Dodds and Robertson.)						
Robertson, Harry, assignor to Koch & Robertson, New York, N. Y. Apparatus for carbonating and dispensing liquids	652,810	July 3	134	33	92	27
Robertson, James H., assignor to Metal Fabric Company, New York, N. Y. Metal-coated fibrous material	658,887	July 17	2204	.....	92	468
Robes, Ernest C. (See Thompson and Robes.)						
Robin, Joseph T., New York, N. Y. Apparel-belt	658,888	July 17	2205	501	92	468
Robinson, Arthur W., Milwaukee, Wis. Suction-pipe for dredges	657,567	Sept. 11	1013	209 / 210	92	2028
Robinson, Arthur W., Milwaukee, Wis. Mouthpiece or drag for suction-pipes for dredges	657,568	Sept. 11	1015	210	92	2028

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfg.	Official Gazette. Vol.	Official Gazette. Page.
Robinson, Cyrus, assignor to Westinghouse Machine Company, Pittsburg, Pa. Means for operating and governing engines	656,873	Aug. 21	2300	528, 529	92	1518
Robinson, Frank T., assignor to L. J. Kreller, Chicago, Ill. Pedal-rubber	657,275	Sept. 4	306	83	92	1889
Robinson, Franklin E. (See Keyes, Martin L., assignor.)						
Robinson, Georgiana, Orange, N. J., assignor to A. Cristadoro, New York, N. Y. Cording attachment	653,408	July 10	1279	304	92	265
Robinson, Harriet B., Milford Center, Ohio. Acetylene-gas generator	654,491	July 24	3459	780	92	745
Robinson, Harry C., Cincinnati, Ohio. Separating ore	656,728	Aug. 28	2941	671	92	1659
Robinson, Henry, New York, N. Y., assignor of one-half to H. Berg, Orange Valley, N. J. Hat-pinning machine	654,022	July 17	2431	558, 559	92	512
Robinson, John, Gateshead, and G. E. Graves, Newcastle-upon-Tyne, England. Work-support	658,191	Sept. 18	2159	472	92	2271
Robinson, John W., Pittsborough, Ind. Blacksmith's blower	653,486	July 10	1435	336	92	297
Robinson, Julius G., Brooklyn, Ala. Fence-post	655,638	Aug. 7	859	199	92	1207
Robinson, Lowell M., Celina, Ohio. Hat-cabinet	653,699	July 17	1854	424	92	402
Robinson, S. M. (See Robinson, William H., assignor.)						
Robinson, Thomas. (See White and Robinson.)						
Robinson, Thomas A., assignor to American Wood Fiber Company, Lima, Ohio. Composition of matter for wall-plaster	658,590	Sept. 25	2899	.....	92	2487
Robinson, W. R., *et al.* (See Lewis, George W., assignor.)						
Robinson, William, Boston, Mass. Car-spring	655,738	Aug. 14	1076	248	92	1261
Robinson, William, Boston, Mass. Electric-railway system	658,075	Sept. 18	1955	425, 426	92	2239
Robinson, William H., assignor to S. M. Robinson, Alameda, Cal. Rotary brush	656,374	Aug. 21	2310	529	92	1519
Robinson, William W., Chicago, Ill. Table-mat	655,808	Aug. 7	255	58	92	1091
Robson, William, Toronto, Canada, assignor to W. W. Pierce, Buffalo, N. Y. Cover-fastening for fruit-jars	656,777	Aug. 28	3024	689	92	1674
Rocca, Dominick. (See Marubio, Angelo, assignor.)						
Rochester Folding Box Company *et al.* (See Cowles, Arthur B., assignor.)						
Rochlitz, William, Chicago, Ill. Water-heating apparatus	655,351	Aug. 7	339	74	92	1106
Rocke, John, Meadows, Ill. Grain dump and elevator	655,800	Aug. 14	1219	280	92	1291
Rockhill, Edward A., *et al.* (See Youngen, John H., assignor.)						
Rockwell, Albert F., assignor to New Departure Bell Company, Bristol, Conn. Cyclometer attachment	656,476	Aug. 21	2493	574	92	1554
Rockwell, Edward D., assignor to Liberty Bell Company, Bristol, Conn. Bell-striker	655,352	Aug. 7	341	74	92	1107
Rockwell, Irvin E., Chicago, Ill. Letter-file	655,372	Aug. 7	377	82	92	1112
Roden, Ernest K., Scranton, Pa. Life-preserver	655,373	Aug. 7	379	82	92	1112
Rodenberger, Edwin M., Walworth, and J. S. Seely, Syracuse, N. Y. Acetylene-gas generator	658,677	Sept. 25	3027	674	92	2468
Roderwald, Otto, Chicago, Ill. Beer-cooler	654,358	July 24	3209	719	92	692
Rodger, William. (See Livingston and Rodger.)						
Rodliger, William, Chicago, Ill. Muellage-bottle	653,262	July 10	1017	244	92	217
Roe, Van D., Maury City, Tenn. Automatic oiler for vehicle-wheels	655,518	Aug. 7	618	139	92	1161
Roeber, Ernest A., Philadelphia, Pa. Pin-holder	652,901	July 3	288	71, 72	92	58
Roeber, Ernest A., Philadelphia, Pa. Pin-package	653,152	July 3	700	185	92	158
Roebuck, Alvah C., and F. McMillan, assignors to Enterprise Optical Manufacturing Company, Chicago, Ill. Generating apparatus for hydrocarbon-lamps	656,749	Aug. 28	2977	679	92	1665
Roebuck, Alvah C., and F. McMillan, assignors to Enterprise Manufacturing Company, Chicago, Ill. Generating apparatus for hydrocarbon-vapor lamps	656,750	Aug. 28	2979	680	92	1665
Roehr, Charles, Bucyrus, Ohio. Car	657,902	Sept. 18	1777	382, 383	92	2195
Roesch, Alfred, Bridgeport, Conn., assignor to Davis & Roesch Temperature Controlling Company, of New Jersey. Automatic temperature-regulator	657,677	Sept. 11	1232	260	92	2069
Roeske, Henry, assignor to E. Printz, Philadelphia, Pa. Leather-staking machine	657,361	Sept. 4	503	118	92	1913
Roettinger, William, Newport, and J. Conn, Bellevue; said Roettinger assignor of one-fourth to W. D. Roettinger, Newport, Ky. Apparatus for manufacturing coreless can-ice	656,217	Aug. 21	2027	465	92	1464
Roettinger, William D. (See Roettinger and Conn, assignors.)						
Rogers, Felix J., Crafton, Pa. Trolley	655,014	July 31	4457	1005	92	969
Rogers, George H., Birmingham, Ala. Door-stop	658,122	Sept. 18	2035	444	92	2246
Rogers, Joseph W., Collomsville, Pa. Vehicle-brake	656,375	Aug. 21	2311	529	92	1519
Rogers, Robert M. (See Forry, George C., assignor.)						
Rohlf, Claus H., New Fountain, Tex. Windmill-regulator	658,401	Sept. 25	2537	562	92	2370
Rolfe, Thomas H., assignor to Nichols & Shepard Company, Battle Creek, Mich. Feeder attachment for threshing-machines	657,009	Aug. 28	3408	798	92	1763
Rolph, Henry E., St. Paul, Minn. Wagon-brake	656,047	Aug. 14	1701	391	92	1385
Rom, Adolf, Lian, Norway. Machine for treating peat	658,281	Sept. 18	2308	509	92	2300
Rommel, William. (See Weller and Rommel.)						
Roosevelt, Cornelius L. A., New York, N. Y. Ventilator for railway-cars	657,789	Sept. 11	1428	308	92	2110
Root, Elvina, Coquille, Oreg. Coffee or tea pot	654,675	July 31	3803	858	92	820
Root, Hiram J. (See Vandegrift, Theodore F., assignor.)						
Rose, George P., Jr., Dubuque, Iowa, assignor to B. L. Behrendt, New York, N. Y. Secondary electric clock	657,678	Sept. 11	1235	261	92	2070
Rose, John, Volney, Iowa. Horse-detacher	653,700	July 17	1855	424	92	402
Roseborough, Charles T., Chicago, Ill. Boat-propeller	658,678	Sept. 25	3030	675	92	2469
Rosenbauer, George A. (See Schowalter, Rosenbauer, and Miotke.)						
Rosenberger M., *et al.* (See Brady, Alford, assignor.)						
Rosenthal, Jacob, Rochester, N. Y. Folding go-cart	658,123	Sept. 18	2036	444	92	2246
Rosentreter, Frank L., Rochester, N. Y. Door-stop	658,465	Sept. 25	2641	586	92	2390
Ross, Charles F. (See Scovel and Ross.)						
Ross, Delmar C., Detroit, Mich. Car-roof	655,941	Aug. 14	1482	340, 341	92	1341
Ross, Ernest S., Hobart, Tasmania. Handle for converting kerosene-tins or the like into buckets	654,492	July 24	3402	781	92	746
Ross, Frank A., Chicago, Ill. Roller-skate	657,790	Sept. 11	1429	304	92	2110
Ross, Henry A., Kansas City, Mo. Self-heating soldering-iron	658,532	Sept. 25	2749	610	92	2412
Ross, Joseph, and W. D. Cairney, Glasgow, Scotland. Blasting-powder	655,382	Aug. 14	1286	.....	92	1304
Ross, Joseph, and W. D. Cairney, Glasgow, Scotland. Explosive and making same	656,048	Aug. 14	1702	.....	92	1386
Ross, Limited. (See Barton, John H., assignor.)						
Rossier, Konrad, Fort Worth, Tex. Shears-sharpener	657,619	Sept. 11	1115	233	92	2047
Roth, Edward B., St. Louis, Mo. Grinding-machine	656,664	Aug. 28	2833	646	92	1638
Roth, Henry G., Minneapolis, Minn. Cabinet	655,275	Aug. 7	196	43	92	1078
Roth, Henry G., Minneapolis, Minn. Cutting-scale for cheese	657,620	Sept. 11	1116	233	92	2048
Roth, Henry G., Minneapolis, Minn. Calculating cheese-cutter	657,621	Sept. 11	1118	233, 234	92	2048
Roth, Leonhard, Canth, Germany. Brush	655,833	Aug. 14	1287	295	92	1305

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfg.	Official Gazette. Vol.	Official Gazette. Page.
Rothaermel, John E., Toronto, Canada. Parcel-carrier for bicycles	657,135	Sept. 4	107	25	92	1823
Rothberg, Mathew E., Johnstown, Pa. Making magnesia-alumina	657,452	Sept. 4	733	.....	92	1946
Rothberg, Mathew E., Johnstown, Pa. Obtaining alumina	657,453	Sept. 4	734	.....	92	1946
Rothwell, Charles F. S. (See Thornton and Rothwell.)						
Rott, Christian Z. F., assignor to Macbeth-Evans Glass Company, Pittsburg, Pa. Glass-finishing machine	658,466	Sept. 25	2642	586, 587	92	2390
Rough, John W., Orleans, Ind. Burglar-alarm	655,834	Aug. 14	1288	295, 296	92	1305
Rounds, Arthur H. (See Stowell and Rounds.)						
Rouse, Albion M., assignor of one-half to W. G. Shedd and F. Brooks, Denver, Colo. Apparatus for electrolyzing ores	657,032	Aug. 28	3532	807	92	1770
Routzahn, Veniah C., Mansfield, Ohio. Temporary binder and pad-holder	655,309	Aug. 7	256	58	92	1091
Rowe, Ellis L., Troy, N. Y. Air-controlling valve	657,896	Sept. 11	1611	347	92	2148
Rowe, James E., and L. A. Bentz, assignors to E. Jencker Manufacturing Company, Pawtucket, R. I. Knitting-machine	656,218	Aug. 21	2028	466	92	1464
Rowell, Benton C., Chicago, Ill., assignor to Rowell Potter Safety Stop Company, Portland, Me. Block system for railways	658,509	Sept. 25	2707	600, 601	92	2404
Rowell, Granville, Auburn, Me. Brush	658,089	July 3	574	135	92	115
Rowell Potter Safety Stop Company. (See Rowell, Benton C., assignor.)						
Rowlandson, William, Liverpool, England. Centrifugal machine	655,015	July 31	4459	1005	92	969
Royse, Thomas B., assignor of one-half to T. J. Hennessey, San Miguel, and H. Heidland, San Francisco, Cal. Gas-engine	658,040	July 3	575	135	92	116
Rubart, Jasper M., Urbana, Ohio. Wire-stretcher	658,402	Sept. 25	2538	563	92	2371
Rubel, Benjamin F., Chicago, Ill. Trunk	653,889	July 17	2206	502	92	468
Rubinson, Bernard, assignor to S. S. Bloom, Philadelphia, Pa. Artificial tooth	656,267	Aug. 21	2111	481	92	1480
Ruby Match Company. (See Kelley, Alexander, assignor.)						
Ruch, Emile A., Paris, France. Purifying glycerin	654,023	July 17	2433	559	92	513
Rudd, Robert J., Croydon, England. Striking apparatus for clocks	655,801	Aug. 14	1222	280, 281	92	1292
Rudolf, Josef, Gera, Germany. Waterproofing and finishing textile material	653,701	July 17	1856	.....	92	402
Rudolf, Josef, Gera, Germany. Apparatus for waterproofing and finishing textile material	653,702	July 17	1856	424	92	402
Rudolph, Charles, Paris, France. Flexible metallic tubing	653,487	July 10	1436	337	92	298
Ruef, Elmer E., assignor to Chandler & Taylor Company, Indianapolis, Ind. Bearing	654,416	July 24	3321	744, 745	92	717
Ruetschi, Rudolf. (See Dwight and Ruetschi.)						
Rueweler, Lena, St. Louis, Mo. Tuck creaser and marker for sewing-machines	658,679	Sept. 25	2033	675	92	2469
Rugh, Frank G., Briar Bluff, assignor of one-fourth to W. W. Adams, Atkinson, Ill. Telephone system	656,703	Aug. 28	2897	660	92	1650
Ruhe, Henry F. W., *et al.* (See Farmer, John R., assignor.)						
Rumsey, Charles B. (See Inderlied and Rumsey.)						
Runtz, Henry, Chicago, Ill. Display device for neckties	655,739	Aug. 14	1077	248	92	1261
Rupsch, Henry, New York, N. Y. Chain-adjuster and hub for bicycles	654,182	July 24	2808	634	92	909
Rusden, Ethelbert A., Warren, R. I. Chainless continuous-fabric steamer	657,362	Sept. 4	564	118	92	1914
Rushton, Walter, *et al.* (See White, John F., assignor.)						
Russell, Cyrus W. (See Ford, William H., assignor.)						
Russell & Erwin Manufacturing Company. (See Parker, William E., assignor.)						
Russell, James V., Chicago, Ill. Curette	654,763	July 31	3982	896	92	866
Russell, R. L., *et al.* (See Mead, William M., assignor.)						
Russell, Robert C., Hillman, Mich. Washboard	653,598	July 10	1624	380	92	337
Russell, Thomas J., Woodville, Tex. Fireplace-fender	652,925	July 3	330	82	92	66
Russell, W. T., *et al.* (See Mead, William M., assignor.)						
Russell, William H., Watertown, Mass. Trolley	653,316	July 10	1116	266	92	236
Russell, Willis W., Amsterdam, N. Y. Printing-cylinder	655,802	Aug. 14	1224	281	92	1292
Russell, Winfield S., New York, N. Y. Calendar-holder	658,510	Sept. 25	2709	601	92	2404
Russell, Winfield S., New York, N. Y. Calendar-holder	658,511	Sept. 25	2710	601	92	2404
Ruttman, Charles F., Valparaiso, Nebr. Office-indicator	657,834	Sept. 11	1508	323	92	2126
Ryan, Eugene T., New York, N. Y. Fire-escape	654,359	July 24	3210	719	92	692
Ryan, John, Wanda, Ill. Potato-planting machine	657,747	Sept. 11	1358	288	92	2095
Ryan, Patrick, New York, N. Y. Machine for making fireproof coverings for walls or ceilings	654,024	July 17	2435	559, 560	92	513
Ryan, Patrick, assignor of one-half to T. F. Duffy, New York, N. Y. Auxiliary car-mover	656,477	Aug. 21	2495	574	92	1554
Ryan, Thomas J. (See Coleman, Clyde J., assignor.)						
Rykovskoff, Eugraphus, Moscow, Russia. Cattle-car	657,454	Sept. 4	735	157, 158	92	1946
Rylands, James J., assignor to Homestead Valve Manufacturing Company, Homestead, Pa. Valve	655,996	Aug. 14	1605	369	92	1365
Rystrom, Charles, *et al.* (See Smith, Charles H., assignor.)						
S. & B. Lederer Company. (See Lewis, Russell H., assignor.)						
S. H. Johnson & Company. (See Johnson and Sulman, assignors.)						
S. S. White Dental Manufacturing Company. (See Browne, Arthur W., assignor.)						
Sabin, Alvah H. (See Cooper, Leslie A., assignor.)						
Sabin-MacDonald, Anna, Harveysburg, Ohio. Easel and artist's cabinet	654,841	July 31	4136	931	92	899
Sachse, Paul C., St. Louis, Mo. Truss-bar for meeting-rails of window-sashes	654,282	July 24	3064	688	92	663
Sackett, Homer M., Denver, Colo. Friction-grip	655,519	Aug. 7	619	140	92	1162
Sackheim, Simon. (See Cohen and Sackheim.)						
Sacksteder, Joseph F., Dayton, Ohio. Stovepipe-thimble	658,460	July 10	1377	327	92	285
Sadtler, Benjamin, Denver, Colo., assignor to A. G. Clark, Cincinnati, Ohio. Treating ores for recovery of metallic ingredients	656,268	Aug. 21	2112	.....	92	1480
Safe Deposit and Trust Co. *et al.*, executors. (See Mergenthaler, Ottmar.)						
Safety Car Heating and Lighting Company. (See Dixon, Robert M., assignor.)						
Safety Three Wheel Vehicle Company. (See Bath, Abraham, assignor.)						
Saller, John M., Janesville, Wis. Feeder and band-cutter for threshing-machines	654,417	July 24	3322	745	92	717
Saller, John M., Janesville, Wis. Signal	658,282	Sept. 18	2309	509	92	2301
Saller, John M., Janesville, Wis. (See Verdel and Saino.)						
Saino, Felix L. (See Verdel and Saino.)						
Saladin Pneumatic Malting Construction Company. (See Prinz, William H., assignor.)						
Salenius, Erik G. N., Albano, Sweden. Refrigerating device for centrifugal apparatus	655,016	July 31	4460	1005, 1006	92	969
Salenius, Erik G. N., assignor to Aktiebolaget Radiator, Albano, Sweden. Centrifugal cream-separator	656,423	Aug. 21	2405	552	92	1537
Salmon, James N., Lathrop, Cal. Gate	655,374	Aug. 7	380	82	92	1113
Salmond, Colin, San Francisco, Cal. Sound transmitting and receiving device	652,926	July 3	331	82	92	66
Salmson, Emile. (See Coutant-Dujour, Raoul, assignor.)						
Salquist, Gustave, Denver, Colo. Awning	657,078	Aug. 28	3611	832	92	1786
Salyer, Harry M., assignor to Ludwig & Co., New York, N. Y. Self-playing attachment for key musical instruments	653,263	July 10	1018	244, 245	92	217

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Salzman, Christian A., assignor of one-half to J. A. Robbins, Hamilton, Ohio. Convertible apparatus	653,317	July 10	1119	267	92	237
Sammons, Jacob S., Marshalltown, Iowa. Bill-file	657,455	Sept. 4	737	158	92	1946
Sampson, Isaac, *et al.* (See Faxon, William L., assignor.)						
Samuel Cupples Envelope Company. (See West, James, assignor.)						
Samuel, Henri. (See Tobler and Samuel.)						
Sanborn, Lauren M., Gardiner, Me. Rein-guard	653,561	July 10	1571	366	92	826
Sanborn, Winfield W., *et al.* (See Lewis, George L., assignor.)						
Sanderson, Cyrus B. (See Hyatt, Watson, Wildanger, and Sanderson.)						
Sanderson, James G., Scranton, Pa. Furnace	657,679	Sept. 11	1237	261, 262	92	2070
Sanderson, John W., Oakland, Cal. Sprinkling device	657,363	Sept. 4	567	119	92	1914
Sandmayer, Jean, Saarburg, Germany. Collapsible post, beam, &c	656,424	Aug. 21	2406	552	92	1537
Sandow, Eugen, *et al.* (See Martin, Robert, assignor.)						
Sandow, Eugen, London, England. Dumb-bell	654,097	July 17	2555	588	92	536
Sandstrom, Edward, Wilmington, Del. Dish-washing machine	657,251	Sept. 4	344	73	92	1870
Saner, Charles A., assignor of one-half to G. A. Korner, Powhatan Point, Ohio. Package-carrier	656,049	Aug. 14	1703	391	92	1386
Sanford, Charles H., Cedar Rapids, Iowa. Table	657,033	Aug. 28	3533	807	92	1770
Sanger Handle Bar and Plating Company. (See Schowalter, Rosenbauer, and Miotke, assignors.)						
Sanger, Harry F., Lima, N. Y., assignor to Bay State Optical Co. Eyeglasses	656,269	Aug. 21	2113	482	92	1480
Sansone, Antonio and J., Keokuk, Iowa. Banana-crate	655,017	July 31	4461	1006	92	970
Sansone, John. (See Sansone, Antonio and J.)						
Santa Cruz, George J., Mobile, Ala. False floor for cars	658,159	Sept. 18	2106	456, 457	92	2260
Sargent, Edward L., assignor to Mason Machine Works, Taunton, Mass. Shuttle-box motion for looms	654,920	July 31	4290	964, 965	92	993
Sargent, Hannah E. (See Anderson, William G., assignor.)						
Sarvis, Richard H., London, Canada. Mechanical toy	656,665	Aug. 28	2835	647	92	1638
Sasgen, Michael J., St. Matthias, Minn. Wagon-box and hay-rack lifter	654,842	July 31	4140	931	92	900
Sattler, George, Elkhart, Wis. Insect-screen	656,050	Aug. 14	1704	392	92	1386
Sattler, George, Sheboygan, Wis. Insect-screen	658,044	Sept. 18	1902	413	92	2220
Sattley Manufacturing Company. (See Graham, Levi P., assignor.)						
Sauvage, William H., assignor of one-third to H. N. Wood, Denver, Colo. Automatic brake-shoe	654,805	July 31	4063	914	92	885
Sauvage, William H., assignor of two-thirds to C. C. Welch and H. N. Wood, Denver, Colo. Emergency-brake-setting mechanism	653,780	July 17	2004	458	92	430
Sauvage, William H., assignor of two-thirds to H. N. Wood and C. C. Welch, Denver, Colo. Automatic brake-block	654,806	July 31	4065	915	92	885
Sauvage, William H., assignor of two-thirds to H. N. Wood and C. C. Welch, Denver, Colo. Automatic brake-block	654,807	July 31	4066	915	92	886
Sauvage, William H., assignor of two-thirds to H. N. Wood and C. C. Welch, Denver, Colo. Automatic brake-block	654,808	July 31	4067	915	92	886
Sauvage, William H., assignor of two-thirds to H. N. Wood and C. C. Welch, Denver, Colo. Automatic brake-block	654,809	July 31	4068	915	92	886
Savage, A. C., *et al.* (See Cooper, John A., assignor.)						
Savage, Aaron Z., Canoe Station, Ala. Boring-machine	657,835	Sept. 11	1510	323	92	2126
Savage, Arthur W., assignor to Magazine Hammer Company, Utica, N. Y. Magazine-hammer	653,890	July 17	2207	502	92	469
Savage, Theodore S., Oakland, Cal. Automatic switch	654,327	July 24	3155	706	92	680
Savery, William H., Wilmington, Del. Forming composite metal structures	655,457	Aug. 7	531	119	92	1144
Sawin, Abraham J., Springville, Cal. Pipe-wrench	654,283	July 24	3065	688	92	663
Sawyer, Andrew B. C., Albany, N. Y. Device for adjusting truss-pads	658,467	Sept. 25	2645	587	92	2391
Sawyer-Boss Manufacturing Company. (See Sawyer, Willard W., assignor.)						
Sawyer, Harry, Muskegon, Mich. Weighing-truck	656,729	Aug. 28	2942	672	92	1659
Sawyer, Orren A., assignor to C. F. Perham, Lowell, Mass. Checking device for looms	654,921	July 31	4294	965	92	934
Sawyer, Willard W., assignor to Sawyer-Boss Manufacturing Company, New York, N. Y. Numbering-machine	654,676	July 31	3804	858	92	820
Saxl, Heinrich, assignor of one-half to A. A. Adler, San Francisco, Cal. Making superphosphates	655,458	Aug. 7	533	119	92	1144
Sayre, Louis A., Madison, N. J. Punch	654,183	July 24	2809	635	92	609
Scanlon, Thomas, assignor to J. Porteus, Fresno County, Cal. Orchard-plow	655,375	Aug. 7	381	83	92	1113
Scarritt, Sanford G. (See Forney, Matthias N., assignor.)						
Schaar-Rosenberg. (See Beyer and Schaar-Rosenberg.)						
Schadeli, John. (See Reichenbach and Schadeli.)						
Schaefer, Wilhelm. (See Barthels and Schaefer.)						
Schaeffer, Daniel W., Dayton, Ohio. Respiratory mask	658,468	Sept. 25	2647	587	92	2391
Schaffer, John P., Pittsburg, Pa. Hot-air furnace	653,890	July 17	2084	475, 476	92	445
Schaffer, Lewis C., and E. F. Whartenby, Philadelphia, Pa. Music-holder	656,478	Aug. 21	2406	575	92	1554
Schaffer, Morris T., Bethlehem, assignor of one-half to E. J. Lichtenwalner, Allentown, Pa. Trolley	656,790	Aug. 28	3052	694	92	1679
Schaffer, Morse B., and C. H. Howard, St. Louis, Mo. Brake-gear for railway-cars	655,376	Aug. 7	383	83, 84	92	1113
Schaffstädt, Heinrich, Giessen, Germany. Graduator	655,121	July 31	4643	1047	92	1005
Schaffter, Florian, New Orleans, La. Music-leaf turner	658,283	Sept. 18	2310	510	92	2301
Schall, Charles. (See Wolff, George, assignor.)						
Schärd, Andreas, Munich, Germany. Punching-machine	654,025	July 17	2441	561	92	513
Schaub, Jacob, assignor of one-half to A. B. Hower, Logan, Utah. Photographic camera	657,569	Sept. 11	1016	210, 211	92	2028
Schauffleberger, Marion N., assignor of one-third to J. W. Bolton, Bristol, Va. Pneumatic water-elevator	654,764	July 31	3986	896	92	866
Schausten, August. (See Brown and Schausten.)						
Schaw, Ingram, Batcher & Co. (See Batcher, John H., assignor.)						
Schaw, Ingram, Batcher & Co. (See Foreman, Stanton, assignor.)						
Scheeffer, Gustave A., assignor to Diamond Meter Company, Peoria, Ill. Journal-bearing	658,512	Sept. 25	2711	601	92	2405
Schehl, Oscar L. (See Bilgram and Schehl.)						
Scheidler, Reinhard, Newark, Ohio. Steam-boiler	655,018	July 31	4462	1006	92	970
Schellenbach, George W., Joplin, Mo. Toothpick	656,479	Aug. 21	2498	575	92	1554
Schellenbach, William L., assignor to Hale & Kilburn Manufacturing Company, Philadelphia, Pa. Seat structure	656,219	Aug. 21	2032	466, 467	92	1465
Schellert, Otto. (See Baird and Schellert.)						
Schemel, Abe. (See Burns and Schemel.)						
Schemmel, Robert C., Union City, Ind. Device for turning backstays	655,582	Aug. 7	744	172	92	1184
Schenck, George, Le Roy, Kans. Trace-support	654,328	July 24	3157	706	92	680

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Schenkel, Julius, Dortmund, Germany. Impregnating wood	655,459	Aug. 7	534	.....	92	1144
Scherer, Albert G., *et al.* (See La Pointe, Francois, assignor.)						
Scheuber, August W., assignor to M. Zinn, New York, N. Y. Safety-razor	657,010	Aug. 28	3499	798	92	1763
Scheuer, Max, New York, N. Y. Apparel-belt	656,666	Aug. 28	2837	647	92	1638
Scheufler, John C., and B. P. Sexton, Sandusky, Ohio. Machine for making crayons	658,680	Sept. 25	3034	676	92	2469
Schies, John, Anderson, Ind. Mechanical movement	657,456	Sept. 4	739	158	92	1947
Schiff, Ludwig, Wilmersdorf, Germany. Alarm-clock	654,677	July 31	3805	859	92	829
Schiffin, Charles, assignor of one-half to C. F. Wildey, Jr., New York, N. Y. Water-closet bowl	658,222	Sept. 18	2216	484	92	2282
Schilling, Fritz, and J. Schurz, Nuremberg, Germany. Apparatus for enlarging ajutages of metal tubes	656,425	Aug. 21	2407	553	92	1537
Schilling, Robert P., Berkley, Va. Coin-controlled vending-machine	653,488	July 10	1437	337	92	298
Schilz, Mary E., Philadelphia, Pa. Manicure-tool	657,011	Aug. 28	3500	799	92	1763
Schimmel, Annie B., administratrix. (See Schimmel, Frederick W.)						
Schimmel, Frederick W., deceased; A. B. Schimmel, Portland, Oreg., administratrix, assignor to M. S. Dean, Parkersburg, W. Va. Fastening for rail-joints	653,532	July 10	1527	355	92	317
Schindler, Charles, Toledo, Ohio. Soap-bubble pipe	657,791	Sept. 11	1431	304	92	2110
Schinneller, Jacob, Pittsburg, Pa. Filter	656,376	Aug 21	2313	530	92	1519
Schipkowsky, Julius, Milwaukee, Wis. Table-desk	654,922	July 31	4294	965	92	934
Schlegel, John, New York, N. Y. Charring-tool for ornamenting wood	658,591	Sept. 25	2870	636	92	2438
Schleicher, Frank J., assignor to St. Louis Paper Box Company, St. Louis, Mo. Paper box	658,681	Sept. 25	3037	676	92	2470
Schlemmer, George P. and H. J., Ann Arbor, Mich. Twisting-machine	658,592	Sept. 25	2872	637	92	2438
Schlemmer, Henry J. (See Schlemmer, George P. and H. J.)						
Schlichter, Enos F., Philadelphia, Pa. Silo or tank	653,967	July 17	2356	542	92	497
Schlickeysen, Carl, Rixdorf, Germany. Purifying oils or fats	353,781	July 17	2007	458	92	431
Schlinck, Heinrich, Ludwigshafen, Germany. Purifying oils or fats	653,041	July 3	577	.....	92	116
Schloerb, Henry, New York, N. Y. Toy bank	653,939	July 17	2302	526	92	487
Schmeisser, Konrad, Hersfeld, Germany. Post for boundaries	655,377	Aug. 7	385	84	92	1114
Schmid, Wolfgang, Munich, Germany. Flexible metal pipe-coupling	656,667	Aug. 28	2837	647	92	1638
Schmidt, Albrecht, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Rhodolalkyletherester	656,426	Aug. 21	2408	.....	92	1538
Schmidt, Albrecht, and G. Merling, assignors to Chemische Fabrik auf Actien, vormals E. Schering, Berlin, Germany. Compound of vinyldiaceton-alkamins and making same	657,880	Sept. 11	1584	.....	92	2142
Schmidt, Friedrich, Milwaukee, Wis. Violin shoulder-rest	654,678	July 31	3806	859	92	830
Schmidt, Gustave, Newark, N. J. Vehicle-lamp	656,480	Aug. 21	2408	575, 576	92	1554
Schmidt, Henry C. (See Richardson, Amasa A., assignor.)						
Schmidt, Paul, Vienna, Austria-Hungary. Shuttle-guiding device	652,864	July 3	230	55	92	46
Schmidt, Robert E., Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Company, New York, N. Y. Blue anthrarufin dye and making same	656,668	Aug. 28	2839	.....	92	1639
Schmidt, Robert E., Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Company, New York, N. Y. Blue chrysazin dye and making same	656,669	Aug. 28	2839	.....	92	1639
Schmidt, Robert E., Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Company, of New York. Blue chrysazin dye and making same	658,513	Sept. 25	2712	.....	92	2405
Schmidt, Robert E., Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Company, of New York. Anthrarufin dye and making same	658,514	Sept. 25	2713	.....	92	2405
Schmidt, Robert E., and P. Tust, Elberfeld, Germany, assignors to Farbenfabriken of Elberfeld Company, New York, N. Y. Blue anthrarufin dye and making same	656,670	Aug. 28	2840	.....	92	1639
Schmidt, Robert E., and P. Tust, Elberfeld, Germany, assignors to Farbenfabriken of Elberfeld Company, New York, N. Y. Blue chrysazin dye and making same	656,730	Aug. 28	2945	.....	92	1660
Schmidt, Theodore F. W., Anderson, Ind., assignor of one-half to J. W. Sefton Manufacturing Company, Anderson, Ind., and Chicago, Ill. Hat-box	655,019	July 31	4464	1007	92	970
Schmidt, William, assignor of one-half to A. Nieting, Lowden, Iowa. Calculator for educational purposes	654,554	July 24	3560	808	92	764
Schmitt, William, and D. L. McGinnis, Paterson, N. J. Non-freezing valve	656,731	Aug. 28	2946	673	92	1660
Schmitz, Frank, Chicago, Ill. Bicycle hub and axle	656,905	Aug. 28	3328	758	92	1731
Schmitz, Henry. (See Weiner, Wilhelm, assignor.)						
Schneemann, Carl, Bremen, Germany. Boat-lowering mechanism	653,121	July 3	731	172, 173	92	146
Schneible, Joseph, New York, N. Y. Apparatus for charging liquids with gas	655,378	Aug. 7	386	84	92	1114
Schneider, Charles, Cold Spring, Ky. Scholar's companion	655,639	Aug. 7	860	190	92	1207
Schneider, Emanuel L., Ann Arbor, Mich. Attachment for screw-drivers	657,457	Sept. 4	741	158	92	1947
Schneider, George, assignor of one-half to L. H. Burkhardt, Baltimore, Md. Device for cutting off the flow of water through flexible pipes	653,629	July 10	1710	395	92	355
Schneider, George, assignor of two-thirds to L. Ferrandini and H. Greenbaum, Baltimore, Md. Combined scale and wagon	654,320	July 24	3158	706	92	681
Schneider, Louis H., New York, N. Y. Door-check	652,982	July 3	480	118	92	97
Schock, Gustav, New York, N. Y. Apparatus for washing barrels	653,821	July 17	2085	476	92	445
Schoenfeld, Morris, Rorschach, Switzerland. Perforating device for embroidering-machines	653,782	July 17	2008	459	92	431
Schoenhut, Albert, Philadelphia, Pa. Toy piano	658,284	Sept. 18	2314	510	92	2302
Schoenthal, Fredrick C., Buffalo, N. Y. Chainless bicycle	653,968	July 17	2358	542, 543	92	497
Schofield, Albert B., New York, N. Y. Seal	656,906	Aug. 28	3329	758	92	1732
Schofield, Henry P. (See Filstrup, Lars L., assignor.)						
Schofield, Henry P., assignor of one-half to L. L. Filstrup, Chicago, Ill. Saw support and guide	654,843	July 31	4141	932, 933	92	900
Schofield, Henry P., assignor of one-half to L. L. Filstrup, Chicago, Ill. Saw-sharpening machine	654,844	July 31	4142	932, 933	92	900
Schofield, Henry P., assignor of one-half to L. L. Filstrup, Chicago, Ill. Saw-support	654,845	July 31	4146	933	92	902
Scholl, Franz, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Yellow dye and making same	656,857	Aug. 28	3221	.....	92	1713
Scholl, Franz, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Orange dye and making same	656,858	Aug. 28	3222	.....	92	1713
Scholl, Franz, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Yellow azo dye and making same	656,859	Aug. 28	3222	.....	92	1713
Scholl, Franz, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Green-yellow dye and making same	658,593	Sept. 25	2874	.....	92	2438
Scholtz, Luis R., Caracas, Venezuela. Tobacco-separating machine	656,481	Aug. 21	2500	576	92	1554
Scholz, Adolph F., West Chester, Ohio. Beating-engine	653,318	July 10	1120	267	92	237
Scholz, Louis A., Roanoke, Va. Bowling-alley	655,583	Aug. 7	745	172	92	1185
Schoolfield, William M., Pocomoke City, Md. Barrel-former	652,811	July 3	185	33	92	27
Schoonmaker, Herbert, Roseton, N. Y. Brick-machine with sander attachment	654,846	July 31	4148	934	92	902
Schoonmaker, Herbert, Roseton, N. Y. Brick-mold-sanding machine	655,740	Aug. 14	1078	248	92	1261

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Schoonover, William J., Des Moines, Iowa. Gate-latch	658,469	Sept. 25	2048	587	92	2391
Schoop, Paul, Wildegg, Switzerland. Apparatus for electrolysis	657,012	Aug. 28	3500	709	92	1764
Schopf, Emil, Berlin, Germany. Sounding-board support	654,360	July 24	3213	719	92	693
Schopp, Andrew. (See Tolson and Schopp.)						
Schorr, Robert, San Francisco, Cal. Furnace	655,418	Aug. 7	454	101	92	1128
Schott, Theodore P., Chicago, Ill. Non-refillable bottle	654,361	July 24	3213	720	92	693
Schougaard, Sören, Copenhagen, Denmark. Making artificial stone	657,290	Sept. 4	430	.....	92	1887
Schowalter, Joseph P., G. A. Rosenbauer, and J. Miotke, assignors to Sanger Handle Bar and Plating Company, Milwaukee, Wis. Making bicycle-handle-bar heads	656,482	Aug. 21	2503	576 577	92	1555
Schrader, George H. F., New York, N. Y. Fountain-syringe or other cap	657,570	Sept. 11	1020	211	92	2029
Schrader, George H. F., New York, N. Y. Cap for tire-valves, &c	657,571	Sept. 11	1022	212	92	2029
Schrader, George H. F., New York, N. Y. Tire-valve and cap	657,572	Sept. 11	1024	212	92	2030
Schrader, George H. F., and H. P. Kraft, New York, N. Y.; said Kraft assignor to said Schrader. Valve for pneumatic pillows, &c	656,220	Aug. 21	2034	467	92	1465
Schratwieser, Jacob, New York, N. Y. Machine for manufacturing metal lath	654,765	July 31	3086	896 897	92	867
Schreyer, Gustav. (See Loose and Schreyer.)						
Schroeder, Charles, Detroit, Mich. Means for operating file-cabinets	655,020	July 31	4466	1007	92	971
Schroeder, Justus. (See Sommerfeld, Heinrich, assignor.)						
Schroeter, George H., St. Louis, Mo. Rotatable center for dining-tables	657,968	Sept. 18	1778	381	92	2196
Schrottke, Carl O. F. (See Oelschläger and Schrottke.)						
Schrottke, Carl O. F., Berlin, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Attachment for instruments of precision	654,103	July 17	2565	590	92	538
Schrottke, Carl O. F., Berlin, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Meter	655,353	Aug. 7	342	75	92	1107
Schrottke, Franz, Berlin, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Measuring instrument	655,276	Aug. 7	197	44	92	1079
Schrottke, Karl O. F., Berlin, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Measuring instrument	654,104	July 17	2567	590	92	538
Schubert, August, assignor to Schubert Bros. Gear Company, Oneida, N. Y. Spring-vehicle	658,285	Sept. 18	2315	510	92	2302
Schubert Bros. Gear Company. (See Schubert, August, assignor.)						
Schubert, Charles A. (See Eberhart and Schubert.)						
Schulte-Blome, Rudolf, Sieveringsen, Germany. Manure and seed distributer	656,329	Aug. 21	2228	511	92	1502
Schultz, August L., Cleveland, Ohio. Combination-tool	657,136	Sept. 4	109	25, 26	92	1823
Schultz, Henry E., Wharton, Tex. Windmill-regulator	655,122	July 31	4645	1047	92	1005
Schultz, Wilhelm, assignor to B. Wesselmann, Berlin, Germany. Horseshoe	654,076	July 17	2594	580	92	530
Schultze, Paul, Berlin, Germany. Marine velocimeter	655,520	Aug. 7	621	140	92	1162
Schulz, Louis, assignor of one-third to H. H. Hutten, New Orleans, La. Engine	657,458	Sept. 4	742	159	92	1947
Schulz, Richard, Herne, Germany. Clutch mechanism for mine cages or lifts	658,940	July 17	2303	526	92	487
Schulz, Richard, Berlin, Germany. Water-tube boiler	655,803	Aug. 14	1227	282	92	1292
Schulz, Richard, Berlin, Germany. Steam-turbine	657,709	Sept. 11	1289	272 273	92	2081
Schurz, Johann. (See Schilling and Schurz.)						
Schuster, Albert, Berlin, Germany. Machine for filling and closing match-boxes	657,573	Sept. 11	1027	212 213 214	92	2030
Schuster, Carl, assignor to Pittsburgh Electrical and Machine Works, Pittsburg, Pa. Electric-arc lamp	654,679	July 31	3807	859	92	880
Schütze, Hermann, Bremerhaven, Germany. Throttle	658,160	Sept. 18	2109	457 458	92	2261
Schuyler, Daniel, San Diego, assignor to Perfect Sliding Door Company, Los Angeles, Cal. Door-check	658,533	Sept. 25	2750	610 611	92	2413
Schuyler, Philip N., Bellevue, Ohio. Necktie-fastener	654,362	July 24	3215	720	92	694
Schwan, Nikolaus, and W. Zedel, assignors to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Brown sulfur dye and making same	658,286	Sept. 18	2316	.....	92	2302
Schwartz, Herman M., assignor to Florence Manufacturing Company, Northampton, Mass. Brush-machine	654,184	July 24	2810	635	92	609
Schwartz, Nicholas, Aurora, Ind. Combined roller and harrow	655,584	Aug. 7	747	172 173	92	1185
Schwarz, Arthur, Steglitz, Germany. Sensitized photographic paper	656,751	Aug. 28	2980	680	92	1666
Schwerd, Albert F., and A. W. Emrick, Allegheny, Pa. Wooden column	657,836	Sept. 11	1511	323	92	2127
Scofield, William E., assignor of two-thirds to L. P. Powell and J. W. Thorne, Augusta, Ga. Acetylene-gas generator	657,364	Sept. 4	568	119	92	1914
Scollay, George W., New York, N. Y. Treatment of tobacco-leaf	654,680	July 31	3808	.....	92	880
Scotford, Louis K., assignor to Independent Manufacturing Company, Chicago, Ill. Hand-stamp	655,379	Aug. 7	387	85	92	1114
Scott, Albert T., Defiance, Iowa. Windmill-regulator	658,682	Sept. 25	3088	676 677	92	2470
Scott, Charles D., and B. M. Eamich, Morrisonville, Va. Wrench	658,470	Sept. 25	2649	588	92	2391
Scott, Eben M., assignor to Warner Brothers Company, Bridgeport, Conn. Knockdown paper box	652,812	July 3	137	34	92	28
Scott, George D., Birmingham, Ala., assignor to Kitson Hydrocarbon Heating and Incandescent Lighting Company, Philadelphia, Pa. Lamp-post	654,923	July 31	4238	966	92	934
Scott, James A., Boston, assignor of one-half to C. E. Fuller, Somerville, Mass. Folding paper box and blank therefor	655,521	Aug. 7	622	140 141	92	1162
Scott, John C., Chicago, Ill. Portable fire-escape	656,732	Aug. 28	2947	673	92	1660
Scott, John C., assignor, by mesne assignments, to C. Merchant and G. S. Graham, Philadelphia, Pa. Valve	655,741	Aug. 14	1080	248 249	92	1262
Scott, John T., and C. G. Hightower, San Francisco, Cal. Tube grinder and facer	653,703	July 17	1858	425	92	403
Scott, John T., C. G. Hightower, and F. E. Neltzel, San Francisco, Cal. Metal-bending machine	653,704	July 17	1860	425	92	403
Scott, Lewis L., Glasford, Ill. Check-row corn-planter	653,705	July 17	1863	426	92	404
Scott, Lothian K., Farnborough, England. Sight for ordnance	658,287	Sept. 18	2317	511 512	92	2302
Scott, Morse P., Yonkers, assignor to C. M. Thompson, New York, N. Y. Cotton-seed planter	656,270	Aug. 21	2115	482 483	92	1481
Scott, Robert P., Cadiz, Ohio. Road-cart	653,264	July 10	1027	245	92	219
Scott, Robert W., Philadelphia, L. N. D. Williams, Ashbourne, and H. Swinglehurst, Jr., Philadelphia, Pa. Circular-knitting machine	653,562	July 10	1572	366 367	92	326
Scott, Seaton M., assignor to Abendroth & Root Manufacturing Company, New York, N. Y. Exhaust-head	657,748	Sept. 11	1860	288	92	2096
Scott, Walter, Plainfield, N. J. Delivery apparatus for printing-machines	654,284	July 24	3066	688	92	663
Scott, Walter, Plainfield, N. J. Printing-machine	655,354	Aug. 7	345	75	92	1107
Scott, Walter, Plainfield, N. J. Printing-machine	655,355	Aug. 7	347	75, 76	92	1108
Scott, Walter, Plainfield, N. J. Printing-machine	655,356	Aug. 7	352	76, 77	92	1108

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Scott, Walter, Plainfield, N. J. Motor-vehicle	656,483	Aug. 21	2504	577	92	1555
Scott, William M., Philadelphia, Pa., assignor to Cutter Electrical and Manufacturing Company, of New Jersey. Automatic circuit-breaker	654,847	July 31	4150	984 985	92	903
Scott, William M., Philadelphia, Pa., assignor to Cutter Electrical and Manufacturing Company, of New Jersey. Automatic magnetic circuit-breaker	654,848	July 31	4152	985	92	903
Scovel, Edwards J., and C. F. Ross, Scovel, Ill. Turbine	656,051	Aug. 14	1706	392	92	1387
Scovill, James P., assignor to George L. Thompson Manufacturing Company, Chicago, Ill. Velocipede crank-axle	652,865	July 3	231	55	92	46
Scovill Manufacturing Company. (See Adams, Henry W., Jr., assignor.)						
Scovill Manufacturing Company. (See Bryant, Charles A., assignor.)						
Scovill Manufacturing Company. (See Eddy, George W., assignor.)						
Scovill Manufacturing Company. (See Goss, John H., assignor.)						
Scovill Manufacturing Company. (See Morris, Marion A., assignor.)						
Scovill Manufacturing Company.	654,285	July 24	3068	688 689	92	663
Scriba, Emil, Heilbronn, Germany. Fuse for explosive projectiles	658,319	July 10	1121	267	92	237
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Supervisory and busy-test appliance for telephone-lines	654,924	July 31	4299	966	92	935
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Switchboard for telephone-lines	655,164	July 31	4717	1062	92	1020
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Connection-counter for telephone-lines	654,681	July 31	3809	859 860	92	830
Scringeour, Charles E., Lewiston, Me., assignor of one-half to W. B. Hammond, Cambridge, Mass. Differential pulley	657,887	Sept. 11	1598	344	92	2145
Scullen, James F., Chicago, Ill. Electric train-signal device	657,888	Sept. 11	1599	344	92	2145
Scullen, James F., Chicago, Ill. Joint for railway-ralls	654,849	July 31	4154	986	92	904
Scully, Michael V., New York, N. Y. Grate	655,021	July 31	4467	1008	92	971
Seaburg, Edward A., Seattle, Wash. Furniture-spring	656,271	Aug. 21	2118	483	92	1481
Seaman, Charles H., St. Joseph, Mo. Stove	657,964	Sept. 18	1779	383 384	92	2196
Seaman, Joseph S., Pittsburg, Pa. Manufacture of ralls	656,377	Aug. 21	2317	531	92	1520
Seamans, Edward W., Grand Rapids, Mich. Mold for cement curbs and gutters	656,791	Aug. 28	3053	694 695	92	1680
Search, Charles J., New York, N. Y. Vapor-stove	656,792	Aug. 28	3055	695	92	1680
Search, Charles J., New York, N. Y. Vapor-stove	657,887	Sept. 11	1512	323 324	92	2127
Searle, Joseph M., Pittsburg, Pa. Water-tube boiler	656,052	Aug. 14	1706	392	92	1387
Searles, Charles P., assignor to S. L. Black, Columbus, Ohio. Wringer	654,286	July 24	3069	689	92	664
Searles, John E., *et al.* (See Becker, Joseph, assignor.)						
Sears, William A., Mechanicsville, Iowa. Ankle-brace	655,022	July 31	4468	1008	92	971
Seaver, David W., New York, N. Y. Nut-lock						
Seaver, John W. (See Wellman and Seaver.)						
Seaver, John W., and S. T. Wellman, assignors to Wellman-Seaver Engineering Company, Cleveland, Ohio. Crane	655,522	Aug. 7	624	141 142	92	1168
Sechler, Daniel M., Cincinnati, Ohio. Thill-coupling	655,804	Aug. 14	1228	283	92	1293
Sedgwick, Isham, Richmond, Ind. Steam-boiler	658,006	Sept. 18	1994	434	92	2298
Sedore, Carmi N. (See Williams, Amos C., assignor.)						
Seeger, Robert, St. Paul, Minn., assignor to R. C. James, Philadelphia, Pa. Vapor-burner	654,287	July 24	3070	689	92	664
Seeger, Robert, St. Paul, Minn., assignor to R. C. James, Philadelphia, Pa. Vapor-burner	654,288	July 24	3072	689	92	664
Seeger, Robert, St. Paul, Minn., assignor to R. C. James, Philadelphia, Pa. Vapor-burner	654,289	July 24	3073	690	92	665
Seelig, Carl H., assignor to H. E. Lynch, Watertown, Mass. Bottle-stopper	657,450	Sept. 4	744	159	92	1947
Seely, Jay S. (See Rodenberger and Seely.)						
Seeman, Joseph. (See Eddy, Ira A., assignor.)	657,205	Sept. 4	250	54	92	1852
Seevers, Thomas, Oskaloosa, Iowa. Drill-jar and coupling						
Seiberling, Alton G., *et al.* (See Knadler, Godfrey, assignor.)						
Seiberling, Frank A. (See Ellinwood and Seiberling.)	652,813	July 3	138	34	92	28
Seiberling, Frank A., Akron, Ohio. Multiple press-vulcanizer	658,472	Sept. 25	2651	588 589	92	2392
Seiberling, Frank A., Akron, Ohio. Vulcanizer						
Seiberling, Frank A., Akron, Ohio, and A. Straus, New York, N. Y.; said Straus assignor to Goodyear Tire and Rubber Company, Akron, Ohio. Vulcanizing-press	658,471	Sept. 25	2650	588	92	2392
Selter, John, assignor of one-fourth to W. H. Helman, East Palestine, Ohio. Lubricating device for axles	653,922	July 17	2265	515	92	480
Seitters, Jacob, and R. B. McDonald, McMinnville, Oreg. Portable bed	653,401	July 10	1281	305	92	265
Selby, Pearl E., Portsmouth, Ohio. Machine for marking shoe-uppers	655,023	July 31	4469	1008	92	971
Selchow, Elisha G., *et al.*, trustees. (See White, George, assignor.)						
Selle, Gustav, Bradenburg-on-the-Havel, Germany. Production of colored photographs	654,766	July 31	3088	897	92	867
Sellers, William, and J. S. Bancroft, Philadelphia, Pa., assignors to William Sellers & Company, Incorporated, of Pennsylvania. Lasting-machine	658,042	July 3	578	136 137	92	116
Sellinger, George M., Rochester, N. Y. Head and shoulder rest	655,912	Aug. 14	1425	327	92	1331
Sellman, Frederick R., St. Louis, Mo. Furnace	653,533	July 10	1528	355 356	92	318
Sellman, Frederick R., St. Louis, Mo. Furnace for kilns	653,891	July 17	2209	502 503	92	469
Semple, William W., Pendleton, Oreg. Combined buckle and snap-hook	658,124	Sept. 18	2037	444	92	2246
Senderling, Martin L., Jersey City, N. J. Running-gear for vehicles	653,489	July 10	1440	337	92	208
Seng Company. (See Seng, Julius T., assignor.)						
Seng, Julius T., assignor to Seng Company, Chicago, Ill. Couch-head hinge	658,125	Sept. 18	2039	445	92	2246
Senior, George, Manchester, England. Fly-catcher	656,378	Aug. 21	2318	531	92	1520
Sergeson, James C., Philadelphia, Pa., assignor to Warren Webster & Company, of New Jersey. Steam heating apparatus	653,969	July 17	2360	543	92	497
Serrell, William C., Philadelphia, Pa. Loom-shuttle	653,265	July 10	1029	245	92	220
Sessions, Henry H., Chicago, Ill., assignor to Standard Coupler Company, New York, N. Y. Draft-rigging for railway-cars	653,822	July 17	2087	477	92	446
Settlemyre, Daniel S., Connelly Springs, N. C. Baby-walker	658,126	Sept. 18	2041	445	92	2247
Setzer, Michael, Helena, Mont. Combination square and bevel	652,814	July 3	140	35	92	28
Sewell, Charles T., Sargent, Ga. Scraper	653,320	July 10	1125	268	92	238
Sexton, Burton P. (See Scheufler and Sexton.)						
Seybold, Charles, Dayton, Ohio. Table-shears	654,925	July 31	4302	906	92	935
Seymour, Edmound J., Benton, La. Producing artificial stone	656,221	Aug. 21	2036	467	92	1466
Seymour, Edward C., Detroit, Mich., assignor to Aluminum Plate and Press Company, New York, N. Y., and Plainfield, N. J. Sheet-counting device for printing-presses	657,792	Sept. 11	1432	304 219 220	92	2116 1230
Seymour, George E., and F. Kahler, New Albany, Ind. Extension-platform. (Reissue)	11,844	Aug. 7	970			

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Seymour, George E., and F. Kahler, New Albany, Ind. Brake	656,379	Aug. 21	2319	531	92	1520
Shackelford, Tiffin J., Warsaw, and C. A. L. Kirkpatrick, Fort Wayne, Ind. Adjustable surgical chair	653,321	July 10	1125	268	92	238
Shadbolt, William O., New York, N. Y. Wagon	655,835	Aug. 14	1290	206 207	92	1305
Shade, Frederick L., and M. B. Fry, Linfield, Pa. Eyelet for shoes or the like	657,708	Sept. 11	1434	305	92	2111
Shaffer, Charles H., assignor to Michigan Washing Machine Company, Muskegon, Mich. Gearing for washing-machines	657,838	Sept. 11	1516	325	92	2128
Shaffer, Henry E., Rochester, N. Y. Gas-burner	654,682	July 31	3810	860	92	830
Shaffer, William T., Evanston, Wyo. Clothes-line prop	656,053	Aug. 14	1707	393	92	1387
Shaler, Ira A., New York, N. Y. Concrete construction	654,688	July 31	3811	860	92	831
Shanz, Chow L., Macao, China. Calculator	654,026	July 17	2444	561	92	515
Shanklin, Philip A., assignor of one-half to S. A. Ingersoll, Sandoval, Ill. Bicycle-support	658,023	Sept. 18	1870	405	92	2214
Shantz, Albert L., Reading, Pa. Necktie-fastener	650,573	Aug. 21	2665	614	92	1588
Shantz, Allan B., Caledonia, assignor of one-half to R. C. Cheswright, Seaforth, Canada. Combined heater-shield and ventilator	655,585	Aug. 7	748	173	92	1185
Shapiro, Morris, New York, N. Y. Water-tank	658,161	Sept. 18	2111	458	92	2261
Share, Albert, assignor of one-half to H. B. Geddes, Baltimore, Md. Bottle-stopper fastening	656,587	Aug. 21	2703	620	92	1598
Sharman, Isaac H., Sinking Springs, Pa. Portable fence	653,563	July 10	1579	367	92	327
Sharp, Milton S., Heckmondwike, England. Fixing the finish on cotton piece goods	654,330	July 24	3159	707	92	681
Sharpless, John O., Fairhaven, Wash. Fish-trap	657,460	Sept. 4	745	159	92	1948
Shartle, Charles W., and C. E. Miller, assignors to Middletown Machine Company, Middletown, Ohio. Gas-engine	658,594	Sept. 25	2875	637 638	92	2438
Shaw, Arthur E., assignor to Pennsylvania Globe Gas Light Company, Philadelphia, Pa. Street-lamp	656,222	Aug. 21	2037	467 468	92	1466
Shaw, Drury P., Mansfield, Tex. Stalk-breaker	653,504	July 10	1580	367	92	327
Shaw, Edward T., Arlington, Vt. Hose-coupling	658,045	Sept. 18	1904	413	92	2220
Shaw, James T., Philadelphia, Pa., assignor to Singer Manufacturing Company, of New Jersey. Feller for sewing-machines	656,427	Aug. 21	2411	553	92	1538
Shaw, Lorenzo D. B., New York, N. Y. Hydraulic engine	653,461	July 10	1378	327	92	285
Shaw, Thaxter, and J. C. Lee, Medford, Wis. Crusher and pulverizer	658,288	Sept. 18	2324	512	92	2303
Shaw, Thomas P., Montreal, Canada. Water-heater	657,794	Sept. 11	1435	305	92	2111
Shaw, William, Rapid City, S. D. Sewing-machine	657,680	Sept. 11	1240	262	92	2071
Shea, Francis A., *et al.*, administrators. (See Reece, John.)	652,927	July 3	332	83	92	67
Sheak, Andrew G., Binghamton, N. Y. Water-filter	655,460	Aug. 7	535	120	92	1144
Shearer, Joseph and W. J., Reading, Pa. Potato-planter						
Shearer, Joseph E., assignor to J. C. Burdon, Chico, and J. Glanville, Sacramento, Cal. Carbureter	653,534	July 10	1533	356	92	318
Shearer, Joseph E., assignor to J. C. Burdon, Chico, and J. Glanville, Sacramento, Cal. Carbureting air or gas	656,484	Aug. 21	2507	578	92	1556
Shearer, William J. (See Shearer, Joseph and W. J.)	654,498	July 24	3463	781	92	746
Sheble, Horace, Philadelphia, Pa. Attachment for phonographs	655,742	Aug. 14	1082	249	92	1202
Shedd, William G., *et al.* (See Rouse, Albion M., assignor.)	657,207	Sept. 4	431	91	92	1887
Sheen, Daniel R., Peoria, Ill. Propelling mechanism for boats	656,798	Aug. 28	3058	695	92	1680
Sheffield, George P., assignor of one-half to L. B. Holling, Rochester, N. Y. Threaded coupling-bolt	654,494	July 24	3465	781	92	746
Shelby Steel Tube Company. (See Wickstrom, Malcolm, assignor.)	657,276	Sept. 4	397	83	92	1880
Sheldon, Edgar H., Oak Park, Ill. Bench-vise	654,027	July 17	2445	561	92	515
Sheldon, Frank, and H. M. Milliken, Cheboygan, assignors of one-third to J. B. Stimpson, Mackinaw City, Mich. Car-coupling	655,805	Aug. 14	1230	283	92	1258
Sheldon, William A., Chicago, Ill. Apparatus for preserving	657,013	Aug. 28	3502	799	92	1764
Shellabarger, Joshua, assignor of one-fourth to J. W. Smith, Rockford, Ohio. Pneumatic wheel	657,461	Sept. 4	746		92	1948
Shellabarger, Lucien C., Decatur, Ill. Grinding-mill	658,683	Sept. 25	3041	677	92	2471
Shelly, Silas A., Harrisburg, Pa. Cigar-rolling board	658,289	Sept. 18	2326	512	92	2304
Shelton, James K. P., Cuba, Ala. Composition of matter	656,485	Aug. 21	2510	578	92	1556
Shem, George, W., assignor to Camden Iron Works, Camden, N. J. Gas-producer	653,848	July 17	2132	485	92	454
Shepherd, John M., Mottville, N. Y. Apparatus for cleaning the wire webs in paper-making machines	653,849	July 17	2134	485	92	454
Sheppard, Howard R., Philadelphia, Pa. Gas and coal range	653,850	July 17	2136	486	92	454
Sheppard, Joseph W., New York, N. Y. Conduit for molten glass	656,428	Aug. 21	2412	553	92	1538
Sheppard, Joseph W., New York, N. Y. Device for casting sheet-glass	658,515	Sept. 25	2714	602	92	2405
Sheppard, Joseph W., New York, N. Y. Device for casting wire-glass						
Sherd, William S., Belview, Minn. Twine-tension device						
Sheridan, Philip L., Cleveland, Ohio. Sliding door						
Sherman, Frank P. (See Bowker and Sherman.)	653,206	July 10	1092	246	92	220
Sherwood, Levi S., West Bay City, Mich. Spike	656,272	Aug. 21	2120	483	92	1482
Shibley, Harvey, Fonda, N. Y. Holdback						
Shickle, Harrison & Howard Iron Company. (See Palmquist, Eric W., assignor.)	654,850	July 31	4155	936	92	904
Shields, Fredrick, Erie, Pa. Revolving pistol	654,331	July 24	3161	707 708 709	92	681
Shimer, Elmer S., Milton, Pa. Ribbon-feeding mechanism for type-writing machines	654,028	July 17	2447	561 562	92	516
Shimer, Elmer S., Milton, Pa. Spacing-escapement and carriage-feeding mechanism for type-writing machines	654,029	July 17	2448	562	92	516
Shimer, Elmer S., Milton, Pa. Line-spacing mechanism for type-writing machines	654,030	July 17	2450	562	92	516
Shimer, Porter W., Easton, Pa. Combustion-crucible	653,823	July 17	2091	477	92	447
Shipley, Columbus G., Jr., Dayton, Ohio, assignor to J. W. Sefton Manufacturing Company, Anderson, Ind., and Chicago, Ill. Paper pail or vessel	655,024	July 31	4471	1008 1009	92	972
Shipman, Madison D., *et al.* (See Parson, Swen F., assignor.)						
Shirkey, John J., Chicago, Ill. Ice-removing mechanism for railway-rails	657,622	Sept. 11	1122	235	92	2049
Shirkey, John J., Chicago, Ill. Ice-removing trolley for electric railways	657,623	Sept. 11	1123	235	92	2049
Shively, Martin L., assignor of one-half to T. Garn, Helena, Ohio. Nut-lock	657,137	Sept. 4	110	26	92	1824
Shives, Peter P., Dickey's Mountain, Pa., assignor of one-half to J. V. Fisher, Brunswick, Md. Message-delivering device for trains	655,165	July 31	4719	1002	92	1020
Shoe Hardware Company. (See Draher and Marggraff, assignors.)						
Shoe Hardware Company. (See Field, Marggraff, and Draher, assignors.)						
Shoe Hardware Company. (See Marggraff, Fredrick, assignor.)						
Shoecraft, Judson, Eskridge, assignor to C. C. Gardiner, Bradford, Kans. Semaphore-operating mechanism	654,851	July 31	4156	936	92	904
Sholes, Zalmon G., Evanston, Ill., assignor to Union Typewriter Company, of New Jersey. Type-writing machine	658,560	Sept. 25	2794	620 621	92	2421

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Shonle, Charles L., Tuscola, Ill. Metal bench-saw	653,122	July 3	735	173	92	147
Shoop, Daniel E., Turtle Creek, assignor of one-half to J. F. Baxter, Pittsburg, Pa. Electric-railway appliance	654,105	July 17	2570	590 591	92	589
Shore, Anthony L. (See Keeney, Benjamin F., assignor.)	655,523	Aug. 7	625	142	92	1163
Shore, Anthony L., Minneapolis, Minn. Portable door-lock and alarm	653,706	July 17	1866	426	92	404
Short, Guy H., Stillwell, Ill. Egg-crate						
Short, Joseph B., Newark, N. J., assignor to Whitehead & Hoag Company, of New Jersey. Identification-tag	653,267	July 10	1083	246	92	220
Short, Lacrota L., Russellville, Mo. Folding device for buggy-tops	658,162	Sept. 18	2112	458	92	2261
Shortridge, Edwin G., S. J. Myers, and W. D. Irvin, Kokomo, Ind. Saw-swage	653,824	July 17	2093	478	92	447
Shoup, Calvin T., Parsons, Kans. Motor-vehicle	658,046	Sept. 18	1905	413	92	2220
Shove, C. B., *et al.* (See Hall, Frank, assignor.)						
Shuart, Austin E. (See Shuart, Henry, assignor.)						
Shuart, Henry, assignor of one-half to A. E. Shuart, Buffalo, N. Y. Revolving ascending and descending observatory-platform	657,034	Aug. 28	3534	807	92	1770
Shultz, Charles H., assignor of one-half to P. Donaldson, Baltimore, Md. Faucet	654,810	July 31	4069	916	92	886
Shuster, Franklin B., New Haven, Conn. Metal barrel-hoop	653,707	July 17	1867	427	92	404
Sibbett, Emma W., Chicago, Ill. Gas-stove	658,491	Sept. 25	2680	595	92	2398
Sickel, Charles A., assignor of one-half to W. E. Coleman, Washington, D. C. Percolator for coffee-pots	656,223	Aug. 21	2038	468	92	1466
Siebenhaar, Otto W., Ladoga, Wis. Spring-tread horseshoe	657,298	Sept. 4	432	91	92	1887
Siemens & Halske Electric Company of America. (See Drohan, Thomas E., assignor.)						
Siemens & Halske Electric Company of America. (See Frischmuth, Emmerich E., assignor.)						
Siemens & Halske Electric Company of America. (See Fröschl, Moriz, assignor.)						
Siemens & Halske Electric Company of America. (See Fröschl and Hundhausen, assignors.)						
Siemens & Halske Electric Company of America. (See Görges, Johannes H. F., assignor.)						
Siemens & Halske Electric Company of America. (See Hoffmann, Ernst W. G. C., assignor.)						
Siemens & Halske Electric Company of America. (See Hundhausen, Rudolf, assignor.)						
Siemens & Halske Electric Company of America. (See Oelschläger and Schrottke, assignors.)						
Siemens & Halske Electric Company of America. (See Schrottke, Carl O. F., assignor.)						
Siemens & Halske Electric Company of America. (See Schrottke, Franz, assignor.)						
Sikes, Simeon R. (See Sikes, Thomas E. and S. R.)	653,757	July 17	1906	448	92	423
Sikes, Thomas E., Dodge County, and S. R. Sikes, Helena, Ga. Baling-press						
Silfversparre, Arent, Bofors, Sweden. Extractor for priming cartridges in breech-loading guns	657,905	Sept. 18	1781	384	92	2190
Silsby, Eugene W., Chicago, Ill. Press for making buttons	653,788	July 17	2010	459	92	431
Silsby, Eugene W., Chicago, Ill. Device for uniting celluloid to photographic prints	657,749	Sept. 11	1362	288	92	2096
Simmonds, John J., Devon, Kans. Gas or gasolene engine	658,127	Sept. 18	2042	445 446	92	2247
Simmons Hardware Company. (See Stewart, Elijah F., assignor.)						
Simmons, Jesse L., *et al.* See Fowler, Edward, assignor.)						
Simmons, Jessey L., *et al.* (See Fowler, Edward, assignor.)						
Simmons, Thomas B., *et al.* (See Fowler, Edward, assignor.)	655,123	July 31	4646	1048	92	1005
Simms, Alonzo H., Birmingham, Ala. Dry-kiln						
Simon, Charles. (See Ris and Simon.)	654,418	July 24	3325	745 746	92	718
Simon, Ernst, Chicago, Ill. Safety-envelop	654,419	July 24	3327	746	92	718
Simon, Ernst, Chicago, Ill. Safety-envelop	655,586	Aug. 7	750	173 174	92	1186
Simon, Richard, Nottingham, England. Drying-machine	655,025	July 31	4473	1009	92	972
Simon, William F., West Hoboken, N. J. Bracelet	657,365	Sept. 4	570	119	92	1915
Simons, Johann J., Aix-la-Chapelle, Germany. Nut-lock	657,462	Sept. 4	747	159	92	1948
Simpkins, William N., Streator, Ill. Gate	657,463	Sept. 4	749	160	92	1949
Simpson, Charlotte G., New York, N. Y. Portable cabinet	656,794	Aug. 28	3060	695	92	1681
Simpson, Harry P., Pittsburg, Pa. Gas-stove	656,733	Aug. 28	2948	673 674	92	1660
Simpson, Peter L., and C. L. Redfield, Chicago, Ill.; said Redfield assignor to said Simpson. Brick-press	655,277	Aug. 7	200	44	92	1079
Simpson, William, Battle Creek, Mich. Machine for blanching peanuts	658,595	Sept. 25	2879	638 639	92	2439
Simpson, William E., London, England. Internal-combustion motor	658,596	Sept. 25	2881	639	92	2439
Simpson, William E., London, England. Lubricator	655,918	Aug. 14	1426	327	92	1331
Sims, Merrell H., Milledgeville, Ga. Bridle-bit						
Sims, Stephen W. (See Lake and Sims.)						
Sinclair-Scott Company. (See Tuttle, James W., assignor.)	657,574	Sept. 11	1030	214	92	2031
Sinding-Larsen, Alf, Fredriksvaern, Norway. High-voltage insulator						
Singer Manufacturing Company. (See Diehl, Philip, assignor.)						
Singer Manufacturing Company. (See Diehl and Hemleb, assignors.)						
Singer Manufacturing Company. (See Jagielski, Wladislaw F., assignor.)						
Singer Manufacturing Company. (See Shaw, James T., assignor.)	654,767	July 31	3989	897	92	867
Sipe, Albert L., Cardington, Ohio. Wagon-rack	658,290	Sept. 18	2327	513	92	2304
Sise, Charles F., *et al.* (See Coté, Francis A., assignor.)						
Six, William M., and O. R. Daily, Lebanon, Ind. Train-indicator	653,866	July 10	1223	292	92	255
Skiff, Mark. (See Bernardi, Joseph A., assignor.)	654,863	July 24	3216	720 721 722 723	92	694
Skinner, Charles A., Homer, N. Y. Stamp-mutilator						
Skinner, Halcyon, and F. H. Connolly, Yonkers, N. Y. Loom for weaving tufted pile fabrics						
Skipton, Franklin. (See Peterson, Walferd C., assignor.)	653,941	July 17	2305	527	92	487
Skirrow, John F., East Orange, N. J. Telegraph switching apparatus	657,035	Aug. 28	3536	806	92	1771
Skorkowsky, Otto W., Harrah, Okla. Ter. Seat attachment for harrows	657,839	Sept. 11	1517	325	92	2128
Slaton, Robert M., Madisonville, Ky. Rotary-disk harrow	657,252	Sept. 4	345	73	92	1871
Slauson, William G., Olean, N. Y. Printer's quoin	657,253	Sept. 4	347	74	92	1871
Slauson, William G., Olean, N. Y. Printer's quoin	657,254	Sept. 4	348	74	92	1871
Slauson, William G., Olean, N. Y. Printer's furniture	657,209	Sept. 4	433	91, 92	92	1887
Slauson, William G., Middletown, N. Y. Printer's furniture						
Slaymaker-Barry Company. (See Baldwin, Leon F. N., assignor.)	653,825	July 17	2098	478	92	448
Sledge, Clarence L., Kyle, Tex. Coin-holder						
Sleeman, Nathaniel, New Haven, Conn., assignor to G. S. Terry, trustee, New York, N. Y. Gas-regulator	658,585	July 10	1536	357	92	319
Sleicher, John A., New York, N. Y. Sign	655,524	Aug. 7	627	142	92	1163
Sleigh, Charles F., Nelsonville, Ohio. Speed-governor	654,332	July 24	3165	709	92	682

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Slingland, Charles, and G. F. Kuett, Paterson, N. J. Warping-machine	655,461	Aug. 7	536	120	92	1145
Sloan, Elgan S., Elk City, Pa. Reversing-gear	657,464	Sept. 4	751	160	92	1949
Slocomb, Frank F. (See Craig and Slocomb.) (Reissue.)						
Slocum, Ebenezer N., assignor of two-thirds to H. H. Hoover, Fort Smith, Ark. Locomotive-exhaust	652,902	July 3	290	72	92	58
Smalley, Florence E. (See Duffy, Thomas J., assignor.)	656,617	Aug. 21	2767	688	92	1611
Smallman, James W., Camp Hill Grange, near Nuneaton, England. Haulage-clip	657,575	Sept. 11	1031	214	92	2031
Smerdoff, Vladimir, Warsaw, Russia. Knapsack	657,138	Sept. 4	111	26	92	1824
Smethurst, William, Dolgelly, England. Furnace	655,857	Aug. 7	354	77	92	1109
Smillie, George W., Newark, N. J. Car-coupling						
Smith, Adam T., Danville, assignor of three-fourths to W. C. Sykes and E. P. Smith, North Danville, Va. Folding table	653,851	July 17	2138	486	92	454
Smith, Alba P., Jr., Brockton, Mass. Roller chafe-iron	656,486	Aug. 21	2511	578	92	1556
Smith, Albert E., Potwin, Kans. Hay-loader	656,330	Aug. 21	2229	511	92	1502
Smith, Albert R. (See Birchenough, David, assignor.)						
Smith, Alfred H. (See Cottrell, James, assignor.)						
Smith, Alice, Wilkinsburg, Pa. Cooking utensil	655,462	Aug. 7	538	120	92	1145
Smith, Bangs K., *et al.* (See Evans, Nathan B., assignor.)						
Smith, Benjamin F. (See Jones, John B., assignor.)						
Smith, Charles, New York, N. Y. Cistern-valve for water-closets	654,364	July 24	3226	723	92	696
Smith, Charles A., New Philadelphia, Ohio. Stovepipe	657,992	Sept. 18	1825	394	92	2206
Smith, Charles A., Buffalo, N. Y. Puzzle	658,097	Sept. 18	1996	435	92	2238
Smith, Charles E., Chattanooga, Tenn. Apparatus for operating stone-saws	654,852	July 31	4160	937	92	905
Smith, Charles H., Jersey City, N. J. Dredging-bucket	656,224	Aug. 21	2089	468 / 469	92	1466
Smith, Charles H., assignor of two-thirds to R. M. Vickers, Owatonna, Minn., and C. Rystrom, Rockford, Ill. Nut	653,852	July 17	2141	487	92	455
Smith, Clarence E., New Britain, Conn., assignor to North & Judd Manufacturing Company, of Connecticut. Fastening device	652,903	July 3	291	72	92	58
Smith, Clarence W., Cambridge, Mass. Circulating apparatus for rotary digesters, &c.	653,186	July 3	845	199	92	169
Smith, Clinton F., Northampton, Mass. Tobacco-curing process	658,047	Sept. 18	1907	413	92	2221
Smith & Co., T. I. (See Lettré, Philipp H., assignor.)						
Smith, Conrad E., Plainfield, Ill. Guide-marker for planters	657,897	Sept. 11	1615	347	92	2149
Smith & Coventry. (See Smith and Coventry, assignors.)						
Smith, Cyrus E., Fall River, Mass. Spinning-spindle	658,597	Sept. 25	2883	639	92	2440
Smith, Cyrus E., Fall River, assignor of one-half to E. O. Ely, Boston, Mass. Sprinkler-head	654,853	July 31	4162	937	92	905
Smith, Daniel, Wolverhampton, England. Machine for curling or beading edges of metal sheets or plates	654,495	July 24	3467	782	92	746
Smith, Earnest K. (See Stukes and Smith.)						
Smith, Edward F., Cincinnati, Ohio. Acetylene-gas generator	655,310	Aug. 7	258	58	92	1092
Smith, Eli P., *et al.* (See Smith, Adam T., assignor.)						
Smith, Emma C., *et al.* (See Wheeler, Jesse, assignor.)	657,710	Sept. 11	1290	273	92	2081
Smith, Emmet L., Chicago, Ill. Atomizer						
Smith, Eugene G. (See Pendergast, Thomas, assignor.)						
Smith, Frank A., *et al.* (See Franks, Peter A., assignor.)						
Smith, Frank A., *et al.* (See Smythe, Thomas E., assignor.)						
Smith, Fred P., Albany, N. Y. Dry closet and incinerator	655,419	Aug. 7	458	102	92	1129
Smith, George D., Paterson, N. J. Car-fender	654,854	July 31	4164	938	92	906
Smith, George E. (See Tyler and Smith.)						
Smith, George P., Jerseyville, Ill. Power-transmitter	656,380	Aug. 21	2320	532	92	1521
Smith, George S. (See Thornton and Smith.)						
Smith, Hamilton E., Philadelphia, Pa. Washing-machine	655,587	Aug. 7	751	174	92	1186
Smith, Harry B., New York, N. Y. Device for corrugating and creasing paper-board	658,024	Sept. 18	1871	405 / 406	92	2215
Smith, Harry B., New York, N. Y. Machine for cutting and scoring paper-board	658,025	Sept. 18	1876	406	92	2215
Smith, Harry N., Deer Creek, Ill. Hog-trap	658,128	Sept. 18	2045	446	92	2248
Smith, Harry W., and W. H. Redding, Worcester, Mass. Electric-circuit closer for looms	657,795	Sept. 11	1438	305	92	2112
Smith, Hinsdale, Springfield, Mass. Gas-engine	657,576	Sept. 11	1033	215	92	2031
Smith, J. M., *et al.* (See Brooks, Samuel M., assignor.)	654,855	July 31	4165	938 / 939	92	906
Smith, James A., Lutherville, Md. Corn-harvester						
Smith, John F., Parker, S. D., assignor to O. R. Gould and J. S. B. Cook, Charles City, Iowa. Draft-equalizer	658,684	Sept. 25	3042	677	92	2471
Smith, John J., Dwight, Ill. Disk-sharpener	652,815	July 3	141	35	92	29
Smith, John W. (See Shellabarger, Joshua, assignor.)						
Smith, Joseph K., Pittsburg, Pa. Valve for hydraulic machinery	653,187	July 3	847	199	92	170
Smith, Joseph R., assignor to Waterbury Button Company, Waterbury, Conn. Buckle	657,577	Sept. 11	1035	215	92	2032
Smith, Joseph W., Weaverville, Cal. Deflector for hydraulic nozzles	658,516	Sept. 25	2716	602	92	2405
Smith, Levi G. (See Bradbury and Smith.)						
Smith, Lowell, Wheeler, Mich. Wrench	655,026	July 31	4474	1009	92	972
Smith, Lucy M., Lynn, Mass. Skirt-hanger	656,487	Aug. 21	2511	578	92	1557
Smith, Norman C., Waterloo, Iowa. Fifth-wheel	655,836	Aug. 14	1292	297	92	1306
Smith, Paul H., Columbus, Ohio. Attachment for trunks or the like	654,684	July 31	3813	861	92	831
Smith, Richard H., Springfield, Mass. Steam-condenser and feed-water heater	657,306	Sept. 4	571	120	92	1915
Smith, Robert D., and F. A. Delano, Chicago, Ill. Car-door fastener	656,860	Aug. 28	3223	734	92	1713
Smith, Rufus H., Schuyler, N. Y. Onion-pulling machine	658,048	Sept. 18	1908	414	92	2221
Smith, Seth, Castana, Iowa. Listed-corn cultivator	657,840	Sept. 11	1518	325 / 326	92	2128
Smith, Thomas, Hopewell, N. Mex. Ter., assignor of one-half to E. G. E. Jaccard and A. C. Sweet, Kansas City, Mo. Ore-crusher	655,311	Aug. 7	260	59	92	1092
Smith, Thomas M., Baltimore, Md. Combined pen holder and extractor	654,098	July 17	2556	588	92	536
Smith, Walter L., Chicago, assignor to H. Date, Austin, Ill. Memorandum-file	655,124	July 31	4647	1048	92	1006
Smith, Walter S., Brookline, Mass. Computing device	655,027	July 31	4475	1009 / 1010	92	973
Smith, Walton, Ridley Park, Pa., assignor to J. S. Thompson, North Tonawanda, N. Y. Telephone-exchange system	652,928	July 3	335	83, 84	92	67
Smith & Wesson. (See Wesson, Joseph H., assignor.)						
Smith, Willard P., New York, N. Y. Tobacco-holder	654,081	July 17	2451	563	92	516
Smith, William D. F., and T. Coventry, assignors to Smith & Coventry, Limited, Manchester, England. Chuck	658,473	Sept. 25	2954	689	92	2392
Smith, William E., Johnstown, Pa. Valve protector and fastener for pneumatic tires	656,054	Aug. 14	1708	393	92	1387
Smith, William F., Crockett, Tex. Trace-carrier	658,492	Sept. 25	2681	595	92	2308
Smith, William M., London, England. Centrifugal machine	656,055	Aug. 14	1709	393 / 394	92	1387
Smith, Willis S., Chicago, Ill. Safety-pin	655,166	July 31	4722	1092	92	1021

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Smithers, Charles W. H., assignor of one-half to A. A. Kelly, Fond du Lac, Wis. Roll-film drier	655,662	Aug. 7	944	214	92	1225
Smyth, David M. and J. E., Pasadena, Cal. Ore-stamp	654,420	July 24	3829	746	92	718
Smyth, George, Hamilton, Canada. Barrel-bung	658,049	Sept. 18	1909	414	92	2221
Smyth, Joseph E. (See Smyth, David M. and J. E.)						
Smyth Manufacturing Company. (See Jacobs, Arthur I., assignor.)						
Smyth, Samuel M., Strathroy, Canada. Table-leg fastener	655,358	Aug. 7	355	77	92	1109
Smythe, Theodore F., Philadelphia, Pa. Household-tongs	655,463	Aug. 7	539	121	92	1145
Smythe, Thomas E., assignor to R. C. Tracht, L. Marlay, J. E. Gelsanliter, and F. A. Smith, Galion, Ohio. Wrench	655,312	Aug. 7	261	59	92	1092
Sneller, William, Ionia, assignor of one-half to J. G. McClun and L. Viergiver, Cawker City, Kans. Rotary draw-block hammer	655,028	July 31	4479	1010	92	973
Snook, Frank M. (See Dana and Snook.)						
Snowden, Lewis W., Tilden, Tex. Cactus-burner	657,036	Aug. 28	3537	808	92	1771
Snyder, Max, Beatty, Pa. Pipe-union	652,816	July 3	142	35	92	29
Snyder, Max, Beatty, Pa. Printing-press attachment	657,796	Sept. 11	1440	305	92	2112
Snyder, Richard A. L. (See Heard and Snyder.)						
Snyder, Samuel C., Scranton, Pa. Making separable matrices for seamless tooth-crowns	655,525	Aug. 7	628	142	92	1163
Snyder, William D., Gracedale, Pa. Combined sash fastener and lift	656,704	Aug. 28	2900	660	92	1651
Société Anonyme pour la Transmission de la Force par l'Electricité. (See Hutin and Leblanc, assignors.)						
Sollmann, Ekko, Hoboken, N. J., assignor to Geo. Borgfeldt & Company, New York, N. Y. Electric-railway track	658,970	July 17	2361	543	92	498
Soltmann, Edward G., New York, N. Y. Photographic-printing frame	654,421	July 24	3830	747	92	718
Solvents Recovery Company *et al.* (See Hart and Ashworth, assignors.)						
Sommer, John, Peoria, Ill. Gear-cutting machine	656,304	Aug. 21	2184	498 / 499	92	1494
Sommerfeld, August, St. Louis, Mo. Non-refillable bottle	656,671	Aug. 28	2841	648	92	1639
Sommerfeld, Heinrich, Canton, Kans., assignor of one-half to J. Schroeder, Kansas City, Mo. Fan-motor	656,752	Aug. 28	2882	680	92	1666
Sonn, Anson L., Lansingburg, N. Y. Brush	654,092	July 17	2451	563	92	516
Sorge, Augustus G., *et al.* (See Vroom and Arbuckle, assignors.)						
Sorge, James H., *et al.* (See Vroom and Arbuckle, assignors.)						
Souder, Jacob J., Washington, D. C. Dumping-car	652,929	July 3	342	84	92	68
Souder, Jacob J., Washington, D. C. Dumping-car	652,930	July 3	345	84	92	68
Soule, Jonathan H., and N. F. Geeck, Owosso, Mich. Truck	653,826	July 17	2090	478	92	448
Soule, Jonathan H., and N. F. Geeck, Owosso, Mich. Machine for stretching wire cloth	655,914	Aug. 14	1427	327 / 328	92	1331
South Bend Iron Works. (See Davis, Calvin R., assignor.)						
Southbridge Optical Company. (See Bugbee, Lucian W., assignor.)						
Souther, Peter, Pine Bluff, Ark. Draft-rigging	657,993	Sept. 18	1826	394	92	2206
Southgate, Louis W., Worcester, Mass., assignor to Otis Elevator Company, East Orange, N. J. Elevator-controller	657,465	Sept. 4	752	160 / 161	92	1949
Southwark Foundry and Machine Company. (See Petsche, Gustav B., assignor.)						
Southwick, Plin C., Sandwich, Ill. Baling-press	656,429	Aug. 21	2413	554 / 555	92	1538
Spain, Richard R. (See Reed and Spain.)						
Spalckhaver, William, assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Cutting, folding, and collecting mechanism	652,817	July 3	144	35	92	29
Spalckhaver, William, assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Cutting, folding, and collecting mechanism	653,188	July 3	850	199	92	170
Spangler, John A., Sell's Station, assignor of one-half to A. Hostetter, Hanover, Pa. Fifth-wheel	657,681	Sept. 11	1240	268	92	2071
Sparks, Charles F., Alton, Ill. Cloth-cutter	658,474	Sept. 25	2955	689	92	2393
Sparrow, James, Reading, England. Railway	656,753	Aug. 28	2883	680	92	1666
Spaulding, Elijah F., assignor to Ideal Cash Register Company, Bound Brook, N. J. Cash-register	657,624	Sept. 11	1124	235	92	2040
Spaulding, Ronelio S., Shawmut, Me. Wrench	657,625	Sept. 11	1126	236	92	2049
Spear, Frank N., Los Angeles, Cal. Fuel-feeder for furnaces	655,464	Aug. 7	540	121	92	1146
Speer, William. (See Buddenbohn and Speer.)						
Speidel, Friedrich, Pforzheim, Germany. Blowpipe	658,291	Sept. 18	2328	513	92	2304
Spence, John D., Somerville, assignor to C. L. Cotton, Dedham, Mass. Dynamo-electric machine	656,127	Aug. 14	1857	427 / 428	92	1419
Spence, John D., Somerville, assignor to C. L. Cotton, Dedham, Mass. Regulating dynamo-electric machines	656,128	Aug. 14	1861	428	92	1420
Spencer, Albert H. (See Penney, William L., assignor.)						
Spencer, Thomas, assignor to Helios Upton Company, Philadelphia, Pa. Electric-arc lamp	655,526	Aug. 7	620	143	92	1163
Sperry, Herbert B., Springfield, Ohio. Needle-operating mechanism for grain-binders	653,405	July 10	1282	305	92	266
Sperry, Herbert B., Springfield, Ohio. Needle-operating mechanism for grain-binders	653,406	July 10	1284	305	92	266
Spickelmier, Asa M., Tualitin, assignor of one-half to G. W. Owings, Woodville, Oreg. Hose-coupling	657,037	Aug. 28	3539	808	92	1771
Spier, Charles, New York, N. Y. Pocket-book, satchel, &c.	655,029	July 31	4481	1010	92	974
Spitzer, Maurice, Albany, N. Y. Blind-stitch sewing-machine	657,255	Sept. 4	350	74	92	1871
Sprague, Austin V. M., New York, N. Y. Method of therapeutical treatment of parts of the human body and apparatus therefor	654,185	July 24	3812	635 / 636	92	610
Sprenger, Frank A., Chicago, Ill. Animal-releasing device	656,672	Aug. 28	2842	648	92	1639
Springfield Elastic Tread Company. (See Wolf, Elmer E., assignor.)						
Springfield Metallic Casket Company. (See Hiser and Lupfer, assignors.)						
Sprochnle, Frank J., assignor of one-half to E. D. Chaninel, Philadelphia, Pa. Gasolene-engine	653,971	July 17	2361	543 / 544	92	498
Spurlock, John W., Ty Ty, assignor of one-half to E. C. Tift, Tifton, Ga. Automatic air-pipe coupling	655,997	Aug. 14	1600	370	92	1366
Squier, George O. (See Crehore and Squier.)	655,278	Aug. 7	201	44	92	1079
St. Clair, William R., Nashville, Tenn. Piano-action						
St. John, Roswell H., Cleveland, Ohio, assignor to J. J. Little, E. D. Appleton, and H. Eaton, trustees, New York, N. Y. Spacing or justifying device for type-bar or matrix machines	657,039	Aug. 28	3541	809	92	1772
St. John, Roswell H., Cleveland, Ohio, assignor to J. J. Little, E. D. Appleton, and H. Eaton, trustees, New York, N. Y. Type-bar machine	657,040	Aug. 28	3542	809 / 810	92	1772
St. John, Roswell H., Cleveland, Ohio, assignor to J. J. Little, E. D. Appleton, and H. Eaton, trustees, New York, N. Y. Type-bar machine	657,041	Aug. 28	3547	811 / 812 / 813 / 814	92	1773

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St. John, Roswell H., Cleveland, Ohio, assignor to J. J. Little, E. D. Appleton, and H. Eaton, trustees, New York, N. Y. Type-bar machine	657,042	Aug. 28	3554	815, 816, 817, 818, 819	92	1774
St. John, Roswell H., Cleveland, Ohio, assignor to J. J. Little, E. D. Appleton, and H. Eaton, trustees, New York, N. Y. Type-bar machine	657,043	Aug. 28	3560	819, 820	92	1775
St. Louis Paper Box Company. (See Schleicher, Frank J., assignor.)						
Staffelstein, Adolf, Albersdorf, and F. Kluge, Leipsic-Gohlis, Germany. Spiral note-sheet	657,682	Sept. 11	1241	263	92	2071
Stafford, Alfred E., Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., and Portland, Me. Brake mechanism for looms	653,153	July 3	791	186	92	158
Stafford, George W., Providence, R. I., assignor to Crompton & Knowles Loom Works, Worcester, Mass. Harness-frame-operating device for looms	654,077	July 17	2525	580, 581	92	530
Stafford, James J. (See Leschander, Peter J., assignor.)						
Stafford, Thomas S. (See Hutt and Stafford.)						
Staleup, Jesse B., Waynesville, N. C. Corundum-separator	655,125	July 31	4648	1048	92	1006
Stallings, Caroline. (See Stallings, Francis J., assignor.)						
Stallings, Francis J., assignor of one-eighth to C. Stallings, Effingham, Ill. Bicycle	658,742	Sept. 25	3162	704	92	2494
Stalnaker, J. J. (See Dobbins, Levi N., assignor.)						
Stambaugh, William B. (See Giroud, MacCoy, and Stambaugh.)						
Standard Coupler Company. (See Sessions, Henry H., assignor.)						
Standard Incandescent Burner Company. (See Lehman, Otto, assignor.)						
Standard Machine Company. (See Houseman, Harry A., assignor.)						
Standard Machine Company. (See Wilcomb, Frank, assignor.)						
Standard Railroad Signal Company. (See Johnson, Henry, assignor.)						
Standard Welding Company. (See Parpart, Otto, assignor.)						
Stanger, Johann J., Ulm, Germany. Hydro-electrotherapeutic apparatus	653,708	July 17	1868	427, 428	92	404
Stanley Automobile Company. (See Stanley, Francis E. and F. O., assignors.)						
Stanley, Francis E. and F. O., Newton, Mass., assignors to Stanley Automobile Company, of New York. Motor-vehicle	657,711	Sept. 11	1291	273, 274	92	2081
Stanley, Fred D., *et al.* (See Cunningham, Patrick, assignor.)						
Stanley, Freelan O. (See Stanley, Francis E. and F. O.)						
Stansbury, William D., Jenkintown, Pa. Shutter-fastener	657,139	Sept. 4	112	27	92	1824
Staples, John A., Newburg, N. Y., assignor to Novelty Tufting Machine Company, Chicago, Ill. Upholstering apparatus	654,685	July 31	3814	861	92	831
Star Lamp Company. (See Grundman, Frederick W., assignor.)						
Starck, Philip, New York, N. Y. Device for operating shutter-slats	657,967	Sept. 4	575	121	92	1916
Stark, Benjamin F. (See Thomas and Stark.)						
Starr, George W., and J. H. Cogswell, Havana, Ill. Explosive-gas engine	657,140	Sept. 4	113	27, 28	92	1824
Starr, William M., assignor of one-half to R. W. Browne, Washington, D. C. Bicycle-saddle	656,588	Aug. 21	2708	620	92	1598
Starz, Charles, Mount Vernon, Ill. Hair-fastener	656,430	Aug. 21	2416	555	92	1539
State, Thomas L., assignor of one-half to J. F. Prentis, Detroit, Mich. Railway-car	654,926	July 31	4303	967	92	985
Staton, Carle. (See Staton, Oliver and C.)						
Staton, Oliver and C., Gadsden, Ind. Vehicle-tongue support	656,673	Aug. 28	2844	648	92	1640
Stearns & Co., E. C. (See Potter, William M., assignor.)						
Stearns, Thomas J., Boston, Mass. Pile-spreader	657,368	Sept. 4	578	121, 122	92	1916
Stebbins, Albert H., Little Rock, Ark. Ore-concentrator	654,290	July 24	3076	699	92	665
Stebbins, Albert H., Little Rock, Ark. Ore-concentrating agitator	656,674	Aug. 28	2845	648, 649	92	1640
Stebbins, Timothy, assignor to Red Jacket Manufacturing Company, Davenport, Iowa. Pump	654,811	July 31	4070	916	92	887
Steber, Bernard T., Utica, N. Y. Yarn-holder for knitting-machines	654,812	July 31	4073	916	92	887
Steber, Bernard T., Utica, N. Y. Needle-depressing mechanism for knitting-machines	654,813	July 31	4074	917	92	887
Steber, Bernard T., Utica, N. Y. Circular-knitting machine	657,182	Sept. 4	202	45, 46	92	1842
Steck, Ernst F., Chicago, Ill., assignor to Fire Extinguisher Manufacturing Company, New York, N. Y. Water-tower	654,814	July 31	4077	917	92	888
Steedman, George F., St. Louis, Mo. Air-hoist	652,983	July 3	481	113, 114	92	97
Steele, Clarence M., Statesville, N. C. Brick-press	656,056	Aug. 14	1711	394, 395	92	1388
Steele, Martha E., Cowden, Ill. Combined support and catamenial sack	654,856	July 31	4168	939	92	907
Steele, Simon P., Auburn, Nebr. Mail-bag	658,729	Sept. 25	3131	695	92	2488
Steele, Wilbur F., New York, N. Y. Carbureter	654,686	July 31	3816	861, 862	92	831
Steely, Harry G., Piqua, Ohio. Corset-cover	656,754	Aug. 28	2984	681	92	1666
Steen, James C., Cincinnati, and P. G. March, Fernbank, assignors to Cincinnati Shaper Company, Cincinnati, Ohio. Shaping-machine	654,857	July 31	4169	939, 940	92	907
Steen, James C., and C. L. Warner, assignors to Cincinnati Shaper Company Cincinnati, Ohio. Shaping or planing machine	656,795	Aug. 28	3061	696	92	1681
Steffens, Mathew J., assignor of one-half to C. Hetherington, Chicago, Ill. Mobile toy	658,026	Sept. 18	1878	406	92	2216
Steiger, Andrew W., Boston, Mass. Mailing-card	653,594	July 10	1625	380	92	337
Steiger, Andrew W., Boston, Mass. Therapeutic device	658,027	Sept. 18	1878	406	92	2216
Steiger, Andrew W., Boston, Mass. Calendar	658,028	Sept. 18	1879	407	92	2216
Steiner, August, Homewood, Ill. Corn-harvesting machine	656,675	Aug. 28	2848	649	92	1641
Steiner, George W. (See Burton and Steiner.)						
Steiner, Josef, and W. H. Tuck, New York, N. Y., assignors to Western Electric Company, Chicago, Ill. Telephone signaling appliance for party telephone-lines	656,907	Aug. 28	3331	758	92	1732
Steinicke, William G., and A. F. Bauer, St. Louis, Mo. Kitchen-cabinet	656,861	Aug. 28	3224	734	92	1713
Steinthal, Martin. (See Becker, August M., assignor.)						
Stenhouse, Andrew, and E. A. Whitehead, Broken Hill, New South Wales. Time-valve-operating mechanism	654,186	July 24	2815	636	92	610
Stephens, Daniel, assignor of three-fourths to R. J. Holahan, E. A. Moyer, and C. D. Rishel, Pottsville, Pa. Rail-joint	656,589	Aug. 21	2705	620	92	1598
Stephens, Edward G., Philadelphia, Pa. Illuminated sign and letter therefor	658,403	Sept. 25	2540	563	92	2371
Stephens, Peter S., Washburn, Ill. Wheel-holder	656,057	Aug. 14	1713	395	92	1388
Sterling, Winthrop S., *et al.* (See Trautvetter, Erwin von, assignor.)						
Sterrett, Carl, assignor of one-half to A. J. Dains, Manhattan, Kans. Neck-yoke	654,555	July 24	3562	803	92	764
Sterzing, Albert A. E., New York, N. Y. Safety appliance for elevators	655,837	Aug. 14	1294	297, 298	92	1306
Steude, Edward, Chicago, Ill. Windmill	658,129	Sept. 18	2046	446	92	2248
Stevens, Arthur L., New York, N. Y., assignor to Pennsylvania Manufacturing, Light and Power Company, of New Jersey. Electrical safety-fuse	654,187	July 24	2819	637	92	611

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Stevens, Calvin A. (See Hilsinger, Alburtis C., assignor.)						
Stevens, Edward G., New York, N. Y. Eye-protector	657,188	Sept. 4	208	47	92	1843
Stevens, Frederick A., and J. F. Brady, Providence, R. I. Blank for hinge-joints of spectacles	658,508	Sept. 25	2884	639	92	2440
Stevens, Irving D., Joliet, Ill. Force-feed end-gate broadcast seeder	657,797	Sept. 11	1441	306	92	2112
Stevens, Jenny W., Fitchburg, Mass. Dress-shield fastener	656,225	Aug. 21	2040	469	92	1466
Stevens, L. H. (See Krutsch, Willis W., assignor.)						
Stevenson, Albert H., and F. Maginn, Manchester, England. Manufacture of boxes	656,488	Aug 21	2513	579	92	1557
Stevenson, Charles E. (See Watson and Stevenson.)						
Stevenson, Henry M., Barnet, Vt. Curtain-fixture	657,014	Aug. 28	3503	799	92	1764
Stevenson, William M., Springfield, Mass. Woven fabric	658,203	Sept. 18	2330	513	92	2305
Stevenson, William M., Indian Orchard, Mass., assignor to Hodges Fiber Carpet Company, Indian Orchard, Mass., and Portland, Me. Woven fabric	653,595	July 10	1626	380	92	337
Stevenson, William M., Springfield, Mass., assignor to Hodges Fiber Carpet Company, Springfield, Mass., and Portland, Me. Woven fabric	658,202	Sept. 18	2329	513	92	2305
Steward, John F., Chicago, Ill. Three-horse equalizer	657,088	Aug. 28	3540	806	92	1772
Steward, Lorenzo D. (See Reed, Eugene W., assignor.)						
Stewart, Alexander, Jr. (See Stewart, William C., assignor.)						
Stewart, Burdick A., Pittsfield, Mass. Winding-machine	655,279	Aug. 7	202	44, 45, 46	92	1089
Stewart, Elijah F., assignor to Simmons Hardware Company, St. Louis, Mo. Water-filter	654,033	July 17	2452	563	92	516
Stewart, Elwood A., Cincinnati, Ohio. Coal-washer	657,184	Sept. 4	210	47	92	1844
Stewart, Frank H., Camden, N. J. Cord-adjuster for electric lights	656,431	Aug. 21	2417	555	92	1539
Stewart Hartshorn Company. (See Hartshorn, Edmund F., assignor.)						
Stewart, Jesse S., Tyrone, Pa. Incubator	656,973	Aug. 21	2121	484	92	1482
Stewart, Richard F., Mount Pleasant, N. Y. Butter-cutter	657,227	Sept. 4	209	64	92	1802
Stewart, Stanley H. G., New York, N. Y. Cultivating fruits or vegetables	657,966	Sept. 18	1782	384	92	2197
Stewart, Warren W., Sterling County, Tex. Pipe-clamp	656,755	Aug. 28	2985	681	92	1666
Stewart, William C., assignor to A. Stewart, Jr., Lynn, Mass. Counter-skiving machine	653,892	July 17	2214	503, 504	92	470
Stewart, William J., Minneapolis, Minn. Knife-guard	655,280	Aug. 7	207	46	92	1081
Stickney, Laura V., Atlantic City, N. J. Garment-hook	657,015	Aug. 28	3504	800	92	1764
Stiegelmann, Armand J., assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Stable indigo-white and making same	657,320	Sept. 4	485	.....	92	1897
Stiel, Werner F., Cologne, Germany. Apparatus for manufacturing plates	657,626	Sept. 11	1128	236	92	2050
Stifel, Otto F., *et al.* (See Bléha, William V., assignor.)	653,367	July 10	1224	292	92	255
Stiles, Norman C., Watertown, N. Y. Roller copying-press	656,331	Aug. 21	2230	512	92	1502
Still, William. (See Geywits and Still.)	656,676	Aug. 28	2852	650	92	1642
Stillman, Howard, Sacramento, Cal. Apparatus for purifying water	655,126	July 31	4651	1049	92	1007
Stillman, Oscar B., New York, N. Y. Cane-mill	658,180	Sept. 18	2047	447	92	2248
Stillwell, Richard, Kingsland, Ark. Cutter-head						
Stimers, George R. L., Loyalton, Cal. Detachable saw-handle						
Stimpson Computing Scale Company. (See Finn, Edwin, assignor.)						
Stimpson, Edward S., Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., and Portland, Me. Filling-changing mechanism for looms	658,324	Sept. 18	2378	525	92	2314
Stimpson, John B. (See Sheldon and Milliken, assignors.)						
Stimpson, Walter F., Milan, Mich. Scale	658,404	Sept. 25	2541	563	92	2371
Stimson, Judson S., *et al.* (See Lewis, George I., assignor.)						
Stine, William A. (See Cole, Charles L., assignor.)	657,300	Sept. 4	435	92	92	1888
Stiner, Frank, Lawrence, Mass. Pneumatic cloth-finishing machine	654,291	July 24	3078	699	92	666
Stingel, Jacob A. (See Tolliver and Stingel.)	655,127	July 31	4652	1049	92	1007
Stith, Henry T., Ottawa, Kans. Traction-wheel	654,815	July 31	4078	917, 918	92	888
Stock, Josef, London, England. Fastening for wearing-apparel	653,972	July 17	2363	544	92	498
Stocking, Edgar B., Washington, D. C. Match-making machine	653,189	July 3	852	200	92	171
Stocks, Zachary T., Everett, Wash. Collapsible shipping-crate	655,806	Aug. 14	1292	283	92	1293
Stockstrom, Charles A. (See Stockstrom, Louis, assignor.)	656,756	Aug. 28	2987	681	92	1667
Stockstrom, Louis, assignor of one-half to C. A. Stockstrom, St. Louis, Mo. Vapor-stove	653,407	July 10	1286	305	92	266
Stockton, Harris C., Honey Grove, Tex. Buggy-top attachment	658,029	Sept. 18	1882	407	92	2216
Stockton, James S., Honey Grove, Tex. Rein-holder for cultivators	658,475	Sept. 25	2657	590	92	2393
Stocum, Thomas L., and F. W. Lambert; said Lambert assignor to M. S. Gray, Davenport, Nebr. Feed-cooker and tank-heater	658,517	Sept. 25	2717	602, 603	92	2400
Stodghill, George F. (See Hayes, James L., assignor.)	658,163	Sept. 18	2113	458	92	2202
Stokes, Charles F., *et al.* (See Hawks, William, assignor.)	655,807	Aug. 14	1234	284	92	1244
Stokes, John S., Moorestown, N. J. Metal-edge-box-making machine						
Stoll, John H., Hutchinson, Kans. Windmill						
Stone, Clinton J. (See Chellis, Fred A., assignor.)						
Stone, David K., Bloomingdale, Mich. Coin-controlled vending-machine						
Stone, Elmer H., Detroit, Mich. Indicating-tablet						
Stone, Frank P., Chicago, Ill. Vehicle						
Stoney, George G. (See Parsons, Stoney, and Fullagar.)	653,709	July 17	1869	429	92	405
Stopple, John J., Goliad, Tex. Baling-press	654,816	July 31	4081	918	92	889
Storey, Imle E., Trenton, N. J. Electrical transmission of power	658,476	Sept. 25	2659	590	92	2394
Storey, Imle E., Trenton, N. J. Dynamo regulation	654,496	July 24	3469	782	92	747
Storey, Joseph, Bradford, England. Whisking or beating machine						
Storm, William A. (See McCormack, Hermond L., assignor.)						
Stormer, Peter G., Johnstown, Pa., assignor to Lorain Steel Company, of Pennsylvania. Railway-track structure	658,405	Sept. 25	2543	563	92	2372
Stover Manufacturing Company. (See Ziegler, Oscar J., assignor.)	654,492	July 24	3332	747	92	719
Stover, William B., South Bend, Ind. Wagon-brake	658,635	Sept. 25	3043	678	92	2471
Stow, Nelson, assignor of one-half to S. A. Kilmer, Binghamton, N. Y. Water-closet attachment	655,808	Aug. 14	1293	284, 285	92	1294
Stowe, Bernard A., assignor to Jandus Electric Company, Cleveland, Ohio. Electric-arc lamp	654,365	July 24	3228	723	92	696
Stowell, Arthur L., and A. H. Rounds, Gays Mills, Wis. Flooring-clamp	656,677	Aug. 28	2853	650	92	1642
Straight Manufacturing Company. (See Roberts, John E., assignor.)	658,043	July 3	584	137	92	118
Straker, Herbert J., assignor of G. K. Webster, Attleborough, Mass. Chain	655,030	July 31	4482	1011	92	974
Strand, John P., assignor of one-half to E. Forney, Alta, Iowa. Nut-lock	656,678	Aug. 28	2854	.....	92	1642
Strång, Henrik C., Chicago, Ill. Rod-packing	654,858	July 31	4171	940	92	907
Stransky, John A., Pukwana, S. D. Smokeless powder	656,489	Aug. 21	2514	579	92	1557
Strassheim, Christopher, Chicago, Ill. Bung						
Strater, Herman, Boston, Mass. Apparatus for charging receptacles with measured quantities of liquid						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Strattner, Frederick, Salisbury, Md. Throttle-valve	653,596	July 10	1627	380	92	338
Stratton, Henry H., San Francisco, Cal. Window-shade hanger	654,078	July 17	2526	581	92	530
Stratton, James F. (See Chickering, Frank W., assignor.)						
Stratton, William H., Hartford, Conn. Automatic sprinkler	654,188	July 24	2820	637	92	611
Straub, Oscar I., U. S. Army. Interlocking bicycle	658,406	Sept. 25	2544	564	92	2372
Straus, Alexander. (See Seiberling and Straus.)						
Straus, Simon W. (See Little, Robert H., assignor.)						
Strauss, Henriette A., Melbourne, Victoria. Portable mosquito and fly guard for beds, &c	657,369	Sept. 4	581	122	92	1917
Strauss, Joseph B., assignor of one-half to E. B. Tuteur, Chicago, Ill. Parlor compartment-car	655,892	Aug. 14	1383	319	92	1822
Straussberg, Marcus, Newark, N. J. Corn-shield	656,802	Aug. 28	3225	734	92	1714
Streeter, Herbert A., Chicago, Ill. Clip for steel building construction, &c	656,274	Aug. 21	2123	484	92	1482
Streeter, Herbert A., Chicago, Ill. Metal clip for uniting and spacing beams and bars in steel building construction, &c	656,275	Aug. 21	2124	484	92	1483
Stripe, Isaac, assignor to H. B. Camp Company, Aultman, Ohio. Device for perforating tiles	658,534	Sept. 25	2753	611	92	2413
Stroh, George, Detroit, Mich. Hose-coupling	652,904	July 3	202	72	92	58
Stroh, George, Detroit, Mich. Tap	655,380	Aug. 7	390	85	92	1115
Strom, Axel A., Austin, assignor to Strom Manufacturing Company, Chicago, Ill. Railway-switch	657,044	Aug. 28	3502	820	92	1776
Strom, Axel A., Austin, assignor to Strom Manufacturing Company, Chicago, Ill. Railway-switch	658,294	Sept. 18	2331	514	92	2305
Strom Manufacturing Company. (See Strom, Axel A., assignor.)						
Stromberg, Alfred, and A. Carlson, assignors to Stromberg-Carlson Telephone Manufacturing Company, Chicago, Ill. Signaling apparatus and circuit therefor	655,809	Aug. 14	1242	285	92	1295
Stromberg, Alfred, and W. M. Davis, assignors to Stromberg-Carlson Telephone Manufacturing Company, Chicago, Ill. Telephone-exchange system	655,810	Aug. 14	1244	285	92	1296
Stromberg, Alfred, and W. M. Davis, assignors to Stromberg-Carlson Telephone Manufacturing Company, Chicago, Ill. Telephone-exchange system	655,811	Aug. 14	1250	286	92	1298
Stromberg-Carlson Telephone Manufacturing Company. (See Davis, William M., assignor.)						
Stromberg-Carlson Telephone Manufacturing Company. (See Davis, William M., assignor.) (Reissue.)						
Stromberg-Carlson Telephone Manufacturing Company. (See Stromberg and Carlson, assignors.)						
Stromberg-Carlson Telephone Manufacturing Company. (See Stromberg and Davis, assignors.)						
Stromeyer, Julius, Philadelphia, Pa. Brake-shoe	655,381	Aug. 7	392	85	92	1115
Strong, George S., New York, N. Y. Boiler	655,588	Aug. 7	752	175, 176	92	1186
Strong, George S., New York, N. Y. Boiler	655,589	Aug. 7	754	176, 177	92	1187
Strong, George S., New York, N. Y., assignor to J. P. Murphy, Philadelphia, Pa. Controlling mechanism for engines	653,268	July 10	1034	246, 247	92	221
Strong, John, Waterville, Me. Tucking-guide for sewing-machines	653,322	July 10	1127	268	92	238
Strothenke, Henry, assignor of one-half to C. F. Busse, St. Louis, Mo. Barrel-bung	656,734	Aug. 28	2951	674	92	1661
Strzoda, Wilhelm, Falenze, Germany. Electrolytically extracting zinc from ores	656,305	Aug. 21	2186	499	92	1495
Stubblefield, Levi, assignor of one-half to A. Gale. Echo, Oreg. Hay-stacking device	653,758	July 17	1968	449	92	423
Stubbs, Jesse, Mount Pleasant, Iowa. Wheeled scraper	657,321	Sept. 4	486	102	92	1897
Stuchell, Milton. (See Clyde and Stuchell.)						
Stuckenberg, William S., Indianapolis, Ind., assignor to Metal Bound Package Company, Chicago, Ill. Manufacturing package material	653,323	July 10	1128	269	92	238
Stuebner, Gustavus L., New York, N. Y. Bucket conveyer	653,324	July 10	1129	269, 270	92	238
Stuebner, Gustavus L., New York, N. Y. Car-truck	655,465	Aug. 7	542	121	92	1146
Stukes, John M., and E. K. Smith, Snyder, Tex. Double-acting pump	658,325	Sept. 18	2330	525	92	2314
Stull, Emmett W. (See Merrick and Stull.)						
Stump, Abraham L., and F. Brucker, assignors to Easy Spring Hinge Company, Shelby, Ohio. Spring-hinge	655,812	Aug. 14	1253	286	92	1299
Stumpe, Paul. (See Mann and Stumpe.)						
Stürenberg, Bernhard, Alfhausen, Germany. Rail-joint	656,226	Aug. 21	2041	469	92	1467
Sturges, Lee, Elmhurst, Ill. Handle-fastening	654,423	July 24	3333	747	92	719
Sucker State Drill Company. (See Tolson and Schopp, assignors.)						
Sugg, Charles E., *et al.* (See Wigal, James P., assignor.)	654,927	July 31	4304	908	92	935
Sugg, William T., London, England. Burner for incandescent gas-lighting	658,295	Sept. 18	2334	514	92	2305
Sullivan, Isaac W., near Pelham, Tenn. Combined safety andirons and screen	653,154	July 3	792	186	92	158
Sullivan, James, Boston, Mass. Car-fender	656,058	Aug. 14	1715	395	92	1389
Sullivan, Jeremiah J., Louisville, Ky. Brake-application valve for train-pipes						
Sullivan Machinery Company. (See Mitchell, Jonas L., assignor.)						
Sulman, Henry L. (See Johnson and Sulman.)	658,164	Sept. 18	2114	459	92	2292
Sulser, Adam H., assignor of one-half to A. J. Haske, Washington, D. C. Box-couch	655,281	Aug. 7	207	46	92	1081
Sundt, Oscar, Cleveland, Ohio. Rope transmission device	653,827	July 17	2101	479	92	448
Suppes, Maximilian M., Elyria, Ohio. Switch for endless conveyers	658,407	Sept. 25	2548	564, 565	92	2373
Suppes, Maxmilian M., Elyria, Ohio. Casting plant	653,408	Sept. 25	2549	565, 566	92	2373
Suppes, Maxmilian M., Elyria, Ohio. Apparatus for handling and crushing coal	658,686	Sept. 25	3045	678	92	2471
Sürth, Franz, Dortmund, Germany. Apparatus for lubricating axles and shafts	656,432	Aug. 21	2418	555	92	1539
Suter, Ernst, Paterson, N. J. Shuttle-driving mechanism for looms	654,687	July 31	3818	862	92	882
Suter, Heinrich, Kappel, Switzerland. Aerial railway	654,694	July 17	2453	563	92	517
Sutliff, John, Sr., Mount Airy, Mo. Tension mechanism for fence-building apparatus						
Sutter, Frederick C., Pittsburg, assignor to Pittsburg Transformer Co., Allegheny County, Pa. Electric conductor	658,192	Sept. 18	2160	472	92	2271
Sutton, John R. (See Vaughan, Charles W., assignor.)						
Sutton, John W., New York, N. Y. Machine for plucking pelts	655,031	July 31	4484	1011, 1012	92	974
Sutton, John W., New York, N. Y. Gait-straightening attachment	657,798	Sept. 11	1446	306	92	2114
Svenson, Daniel, Twin Valley, Minn. Grain-erecting attachment for harvesters	652,818	July 3	146	36	92	30
Svenson, Daniel, Twin Valley, Minn. Hog-catcher	653,973	July 17	2305	544	92	498
Swales, Frank, London, England. Curb-hook for bridles	652,905	July 3	203	73	92	59
Swan, Henry C., Oshkosh, Wis. King-bolt socket	653,269	July 10	1037	248	92	221
Swan, Henry C., Oshkosh, Wis. Fifth-wheel	653,974	July 17	2306	545	92	499
Swan, Thomas, Flint, Mich. Seat	653,710	July 17	1872	470	92	405
Swan, Willis A., Providence, R. I. Support for electric lamps	657,502	Sept. 4	891	180	92	1093
Swank, Elizabeth S., Wolcottville, Ind. Hat-fastener	653,536	July 10	1538	357	92	319

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Swanson, Swan F., Pueblo, Colo. Metallic railway-tie	658,131	Sept. 18	2049	447	92	2249
Swearingen, Samuel H., Hedrick, Iowa. Hame and trace connector	657,683	Sept. 11	1242	263	92	2071
Sweeney, Arthur, Providence, R. I. Machine for cutting sheets of unvulcanized rubber	653,828	July 17	2102	479	92	448
Sweet, Arthur C., *et al.* (See Smith, Thomas, assignor.)						
Sweet, Benjamin F., Fond du Lac, Wis. Hub for vehicles	654,366	July 24	3229	724	92	697
Sweet, George, Indianapolis, Ind. Hood for pneumatic-stacker chutes	656,679	Aug. 28	2855	650	92	1642
Swenson, John, Boonton, N. J. Violin	654,859	July 31	4173	940, 941	92	908
Swenson, Magnus, Chicago, Ill., assignor, by mesne assignments, to American Cotton Company, New York, N. Y. Cotton-press	658,050	Sept. 18	1910	414	92	2222
Swett, Otis D. (See Fogler, George L., assignor.)						
Swift, George W., Jr., Bordentown, N. J., assignor to Dennison Manufacturing Company, Boston, Mass. Machine for making tags	658,076	Sept. 18	1961	426, 427, 428	92	2232
Swift, Gustavus F. (See Gardner, Horace C., assignor.)	658,687	Sept. 25	3046	678	92	2472
Swift, Jesse M., Selma, Cal. Fire-escape						
Swinglehurst, Harry, Jr. (See Scott, Williams, and Swinglehurst.)						
Swinton, Alan A. C. (See Parsons and Swinton.)						
Sykes, John C. (See Ellis, Joah, assignor.)						
Sykes, William C., *et al.* (See Smith, Adam T., assignor.)	654,556	July 24	3563	804	92	764
Sykes, William E., Canal Dover, Ohio. Flue-stopper						
Symonds, Arthur F. (See Symonds, Herbert, assignor.)						
Symonds, Herbert, assignor of one-fourth to A. F. Symonds, East St. Louis, Ill. Hot-air register	658,165	Sept. 18	2117	459, 460	92	2262
T. S. Teuscher Commission Company. (See Murphy, John J., assignor.)						
Taber, William D., assignor to C. E. and R. Knight, Cranston, R. I. Wall-paper trimming, pasting, and matching machine	657,466	Sept. 4	754	161	92	1950
Tabor, Harris, Elizabeth, and E. H. Mumford, Plainfield, assignors to Tabor Manufacturing Company, Elizabeth, N. J. Molding machinery	654,292	July 24	3081	691, 692	92	666
Tabor Manufacturing Company. (See Tabor and Mumford, assignors.)						
Taft, Edward E., assignor of one-half to J. Purdie, Mount Pleasant, Iowa. Pipe-hanger	654,817	July 31	4086	919	92	889
Tagert, William H., Anise, Pa. Snow-plow	657,808	Sept. 11	1616	348	92	2149
Taggart, Arthur. (See Doran and Taggart.)						
Taggart, William P., Reading, Pa., assignor to Zwoyer Fuel Company, of New Jersey. Producing artificial fuel	655,282	Aug. 7	209		92	1082
Taisey, Freo R., Indianapolis, Ind. Automatic switch for pneumatic carriers	653,044	July 3	586	137, 138	92	118
Talbert, Charles S., Minneapolis, Minn. Artificial tooth	658,193	Sept. 18	2161	472	92	2272
Talbot, William H., San Francisco, Cal. Lock mechanism for reversible windows	655,382	Aug. 7	392	86	92	1115
Taliaferro, Sinclair. (See Campbell, Douglas M., assignor.)						
Taliaferro, Thomas W., South Omaha, Nebr. Fat-skimming machine	657,322	Sept. 4	488	102	92	1897
Talton, Vander H., assignor to F. H. Lummus Sons Company, Columbus, Ga. Seed-cotton cleaner and feeder	654,079	July 17	2528	581	92	530
Tanguay, John B. (See Champagne, Onesime B., assignor.)						
Tank, Henry, near Fremont, Nebr. Feeder attachment for threshing-machines	657,467	Sept. 4	757	162	92	1950
Tanner, Harry C., Richmond, Ind. Tile refrigerator	653,853	July 17	2142	487	92	455
Tannert, Charles C., New York, N. Y. Shoe-last	653,537	July 10	1538	357	92	319
Tannett-Walker, Frederick W. (See McGill and Tannett-Walker.)						
Tatchell, Fred W. (See Herman, Andrew, assignor.)						
Tatham, James E., assignor to Intensified Gas Light Company, Limited, London, England. Gas-burner	655,527	Aug. 7	631	143	92	1164
Tatro, Charles P. and G. Delius, Seattle, Wash. Extracting precious metals	653,325	July 10	1131		92	239
Taylor, Albert H., and T. M. Good, Morrisonville, N. Y. Ribbon-holder	658,051	Sept. 18	1912	415	92	2222
Taylor, Charles J., assignor of one-half to J. B. Hall, Jr., Chicago, Ill. Bookbinding	657,503	Sept. 4	893	181	92	1903
Taylor, Charles P., and G. W. Oglesby, Elberton, Ga. Car-mover	655,128	July 31	4053	1049	92	1070
Taylor, Clarence L. (See Morgan and Taylor.)						
Taylor, Edgar G., Philadelphia, Pa. Hat-finishing device	658,206	Sept. 18	2334	514, 515	92	2305
Taylor, George, Dallas, Tex. Baling-press	655,968	Aug. 14	1608	370, 371, 372	92	1366
Taylor, Harry, Sullivan, Me. Skate	652,986	July 3	371	89	92	75
Taylor, Henry H., Bridgeport, Conn. Bustle	658,599	Sept. 25	2885	640	92	2440
Taylor, Henry H., and M. B. Hammond, Bridgeport, Conn. Combined corset-steel lock and garment-supporting hook	653,190	July 3	854	200	92	171
Taylor, J. F., *et al.* (See Mead, William M., assignor.)						
Taylor, James L., Royal Centre, Ind. Friction-clutch	657,185	Sept. 4	211	47	92	1844
Taylor, John, Tomago, New South Wales. Washboard	654,293	July 24	3088	692	92	668
Taylor, John C., Findlay, Ohio. Windmill-pump connection	657,468	Sept. 4	758	162	92	1951
Taylor, John T. (See Rasco and Taylor.)						
Taylor, John W., Atlanta, Ga., assignor to Taylor Manufacturing Company, Lynchburg, Va. Water-wheel	658,297	Sept. 18	2336	515, 516	92	2306
Taylor, Lauren J., Baltimore, Md. Centrifugal machine	656,908	Aug. 28	3333	759	92	1732
Taylor, Lauren J., Baltimore, Md. Kitchen utensil	656,909	Aug. 28	3335	759	92	1732
Taylor Manufacturing Company. (See Taylor, John W., assignor.)						
Taylor, Minor W., Waterloo, Iowa. Railway-crossing signal	658,409	Sept. 25	2551	566	92	2374
Taylor, Nancy A., McCoy, Oreg. Fence-post	658,208	Sept. 18	2338	516	92	2306
Taylor, Samuel W., Baltimore, Md., assignor of one-half to C. H. Haeseler, Philadelphia, Pa. Delivery-chute for coal-wagons	658,600	Sept. 25	2886	640, 641	92	2440
Taylor, Thomas H., Luzerne, N. Y. Trap	654,928	July 31	4306	908	92	936
Taylor, Warren H., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Combined door check and closer	658,518	Sept. 25	2720	603, 604	92	2406
Taylor, Warren H., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Door check and closer	658,519	Sept. 25	2723	604	92	2407
Taylor, Zane B., and O. W. Moore, Orhisonia, Pa. Folding crate	655,283	Aug. 7	211	46	92	1082
Teague, Webster W., Wabash, Ind. Mechanical motor	658,223	Sept. 18	2217	485	92	2283
Teal, Henry W., St. Louis, Mo. Clothes-line pulley	653,490	July 10	1442	338	92	399
Teeguarden, F. M., *et al.* (See Gordon and Hall, assignors.)						
Tefft, Charles E., Pawtucket, R. I. Separator for spinning-frames	656,227	Aug. 21	2042	469, 470	92	1467
Tench, Charles E., Abbeville, S. C. Air-brake attachment	654,189	July 24	2822	637	92	612
Tennant, George P., assignor of one-half to C. O. Towles, Frostburg, Md. Grave-coping	654,860	July 31	4174	941	92	908
Tennessee Coal, Coke and By Product Company. (See Kenevel, Jeannot W., assignor.)						
Terrell, Clark M. and O. C., Grants Pass, Oreg. Fiber-forming machine	657,206	Sept. 4	252	54, 55	92	1853

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Terrell, Oliver C. (See Terrell, Clark M. and O. C.)						
Terriere, David E. (See Warlich, Oscar, assignor.)						
Terry, George S., trustee. (See Sleeman, Nathaniel, assignor.)						
Terry, George W., assignor of one-half to I. E. Terry, Pontiac, Mich. Vehicle-axle nut	658,410	Sept. 25	2553	566	92	2374
Terry, Isaac E. (See Terry, George W., assignor.)						
Tesla, Nikola, New York, N. Y. Insulating electric conductors	655,838	Aug. 14	1295	298	92	1306
Tetreau, Frederic. (See Giroux, Joseph, assignor.)						
Thacher, John B., Albany, N. Y. Car-step	655,839	Aug. 14	1299	298	92	1307
Thackeray, William H. (See Brown, Harry L., assignor.)						
Thamsen, Harry C., assignor of two-thirds to A. Murdoch, Hamburg, and A. H. Leader, Reading, Pa. Sparking igniter for explosive-engines	654,818	July 31	4087	919	92	890
Thardy, Antoine, Lyons, France. Loom for weaving double-piece figured velvet	655,999	Aug. 14	1615	372	92	1367
Thayer & Chandler. (See Wold, Olaus C., assignor.)						
Theilengerdes, Frederick, assignor to American Power Brake Company, Memphis, Tenn. Car-brake	658,326	Sept. 18	2382	526 / 527	92	2314
Thelring, Andrew J., Cincinnati, Ohio. Roller-bearing	652,819	July 3	148	36	92	30
Thickins, John C., Pittsfield, Mass. Apparatus for dyeing	657,323	Sept. 4	491	103	92	1898
Thier, Friedrich H., Koenigstein, Germany. Hand-rest	655,284	Aug. 7	212	47	92	1092
Thiersant, Henri de, and H. J. Norballe, London, England. Electric gas-lighter	658,299	Sept. 18	2389	516	92	2307
Thoburn, James M., Canton, Ohio. Bottle-finisher	654,768	July 31	3991	897	92	867
Thoelliden, Anton E. H. J., Ansonia, Conn. Driving mechanism	653,123	July 3	738	174	92	147
Thoens, Burchard, New Orleans, La. Cotton-press	653,597	July 10	1629	381	92	338
Thomas, Albert N., and J. Caldwell, Avalon, Mo. Threshing-machine	655,915	Aug. 14	1429	328	92	1332
Thomas, Alfred, assignor to American Car Sprinkler Company, Worcester, Mass. Sprinkling-car	655,129	July 31	4655	1050	92	1007
Thomas, Benjiman K., Alexandria, Nebr. Coupling for vehicles, wagons, &c	656,829	Aug. 28	3152	714	92	1699
Thomas, Daniel H. (See Bowler, John R., Sr., assignor.)						
Thomas, Edwin E., assignor to Union Iron Works, Minneapolis, Minn. Band-saw mill	658,166	Sept. 18	2118	460	92	2293
Thomas, Francis, Cincinnati, Ohio. Machine for bending sheet metal	658,077	Sept. 18	1966	428	92	2282
Thomas, Frank P., *et al.* (See Ricke, George H., assignor.)						
Thomas, George H., assignor of one-half to H. E. Moran, Washington, D. C. Combined union and elbow for coupling pipes	657,712	Sept. 11	1293	274	92	2082
Thomas, Henry A., Laclede County, Mo. Wire-reel	654,497	July 24	3470	783	92	747
Thomas, John N. (See Le Grand, Augustus L., assignor.)						
Thomas, John O., and B. F. Stark, Homestead, Pa. Window-screen	655,590	Aug. 7	757	177	92	1187
Thomas Phillips Company. (See Dana, Frederick L., assignor.)						
Thomas, Richard H., Chicago, Ill. Air-purifying apparatus	655,285	Aug. 7	213	47	92	1092
Thomas, William A., and J. Fisher, Niles, Ohio. Twyer	655,528	Aug. 7	632	143	92	1164
Thomas, William E., Fontanelle, Iowa. Derrick attachment for handling drill-rod sections of well-augers	655,743	Aug. 14	1084	249	92	1293
Thompson, Charles B., Chicago, Ill., assignor to American Radiator Company, of New Jersey. Furnace for heaters	657,713	Sept. 11	1294	274	92	2082
Thompson, Charles F. (See Cooper and Thompson.)						
Thompson & Co. (See Thompson, John, assignor.)						
Thompson, Colin M. (See Scott, Morse P., assignor.)						
Thompson, Frank. (See Moore, Langdon W., assignor.)						
Thompson, George K. Malden, and E. C. Robes, Medford, assignors to American Bell Telephone Company, Boston, Mass. Signal-receiving relay	656,796	Aug. 28	3062	696	92	1681
Thompson, George W., Enion, Ill. Farm-gate	657,967	Sept. 18	1783	385	92	2197
Thompson, James S. (See Smith, Walton, assignor.)						
Thompson, John, assignor to Thompson & Co., New York, N. Y. Bed-couch	657,469	Sept. 4	760	162	92	1951
Thompson, Luther C., Cuyahoga Falls, and F. Kirk, Akron, Ohio. Antivibrating car-truck	656,381	Aug. 21	2322	532	92	1521
Thompson, Mac. R., *et al.* (See Beck, Israel, assignor.)	655,130	July 31	4656	------	92	1007
Thompson, Robert M., Sutton, Nebr. Treating wurtzilite	655,131	July 31	4658	------	92	1007
Thompson, Robert M., Sutton, Nebr. Wurtzilite method and product	654,190	July 24	3824	638	92	612
Thompson, Thomas, Jewell, Iowa. Stock-barrier	658,300	Sept. 18	2342	516	92	2307
Thompson, Walter M., and C. Nuhring, Cincinnati, Ohio. Steam-boiler						
Thompson, William H. (See Burke and Thompson.)						
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company, of New York. System of distribution	654,367	July 24	3832	724	92	697
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company, of New York. Rectifying alternating currents	655,032	July 31	4487	1012	92	975
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company, of New York. System of electrical distribution	656,680	Aug. 28	2856	650	92	1642
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company, of New York. Circuit-breaker	656,681	Aug. 28	2858	651	92	1642
	657,016	Aug. 28	3506	800 / 801	92	1764
Thomson, George, Chicago, Ill. Hot-air furnace	658,182	Sept. 18	2050	447	92	2249
Thomson, Rollins, Jr., Eyrie, Tex. Wire-stretcher	654,035	July 17	2455	564	92	517
Thomson, Walter, assignor to G. C. Hawley, Albany, N. Y. Account-book						
Thorne, Chester, *et al.* (See Trapp, Samuel M., assignor.)						
Thorne, Jacob W., *et al.* (See Scofield, William E., assignor.)	657,324	Sept. 4	495	108	92	1899
Thornton, Edward, and G. S. Smith, Coitsville, Ohio. Smoke-consuming furnace						
Thornton, John E., and C. F. S. Rothwell, Manchester, England. Substitute for celluloid, &c., and manufacturing same	654,688	July 31	3819	------	92	832
Thornton, John E., and C. F. S. Rothwell, Manchester, England. Article applicable for various purposes, together with process of manufacturing same	654,689	July 31	3820	------	92	832
	657,968	Sept. 18	1785	385	92	2197
Thornycroft, John I., London, England. Separator for steam-generators	657,141	Sept. 4	118	------	92	1825
Thowless, Orlando M., Newark, N. J. Incandescent mantle	657,142	Sept. 4	119	------	92	1825
Thowless, Orlando M., Newark, N. J. Reinforcing incandescent gas-mantles	653,711	July 17	1873	430	92	405
Thrasher, Samuel P., New Haven, Conn. Clock	653,712	July 17	1877	430 / 431	92	406
Thrasher, Samuel P., New Haven, Conn. Clock	653,713	July 17	1882	432 / 433	92	407
Thrasher, Samuel P., New Haven, Conn. Electric clock	653,124	July 3	739	174	92	148
Thumler, Robert K., New York, N. Y. Pedal-action						
Thumlert, Peter H., *et al.* (See Haebler, Anton J., assignor.)	656,059	Aug. 14	1716	396	92	1389
Thurell, John, North Adams, Mass. Steam-boiler furnace	656,490	Aug. 21	2517	579	92	1558
Thurlow, Clarence E., Brookline, Mass. Tine-spreader	653,714	July 17	1887	433	92	408
Thurman, Lilly W., Harrisburg, Pa. Sterilizing-sink						
Tice, Josiah, *et al.* (See Urmson, William G., assignor.)						
Tiemann, Johann C. W. F., Berlin, assignor to Haarmann & Reimer, Holzminden, Germany. Ionone derivative and making same	658,411	Sept. 25	2554	------	92	2374
	658,194	Sept. 18	2163	473	92	2272
Tiffany, Carroll, Scranton, Pa. Pruning implement						
Tift, Eliza C. (See Spurlock, John W., assignor.)						
Tilden, Marshall, Willimantic, Conn. Coil-spring	653,155	July 3	793	186	92	158

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Tilton, George S., Bristol, N. H. Wrench	654,709	July 31	3992	808	92	868
Timar, Ignaz, Berlin, Germany. Appliance for imparting heat and electricity to the body	658,601	Sept. 25	2889	641	92	2441
Timmons, Charles B. (See Edwards and Timmons.)						
Tinder, Simeon M., and C. H. Dill, Danville, Ind. Station-indicator	654,434	July 24	3334	748	92	719
Tingley, Nelson, Scranton, Pa. Blast-producing apparatus for forges	655,591	Aug. 7	758	178	92	1187
Tinker, Matthew, Baltimore, Md. Hand-stamp	654,191	July 24	2825	638	92	612
Tinkham, Clarence H. (See Washburn and Tinkham.)						
Tipton, Charles M., Rapidan, Va. Nut and bolt lock	657,256	Sept. 4	354	74	92	1872
Tisdale, Albert A., assignor to Whitney Reed Chair Company, Leominster, Mass. Apparatus for making up wheels	654,036	July 17	2459	564	92	517
Tise, Charles H. (See Tise, Thomas H. and C. H.)						
Tise, Thomas H. and C. H., Winston, N. C., assignors to T. H. Tise. Water-hoist	657,841	Sept. 11	1521	326 / 327	92	2129
Titus, Edward S., Hempstead, N. Y. Making acetylene gas	656,863	Aug. 28	3226	735	92	1714
Titus, Edward S., Hempstead, N. Y. Acetylene-gas generator	656,864	Aug. 28	3229	736	92	1714
Tjerneld, Gunnar, Carlstad, Sweden. Mechanism for propelling railway-velocipedes, boats, &c	658,717	Sept. 25	3109	692	92	2483
Tobey, Fred W., assignor to Globe-Wernicke Company, Cincinnati, Ohio. Door-equalizer	657,017	Aug. 28	3508	801	92	1765
Tobler, Alfred, and H. Samuel, Paris, France. Elastic tire for wheels	656,805	Aug. 28	3233	737	92	1715
Todd, James, assignor to Challenge Windmill and Feedmill Company, Batavia, Ill. Silo	655,466	Aug. 7	543	121 / 122	92	1146
Toliver, John L., Cortner, Tenn. Grain-scourer	654,192	July 24	2826	638 / 639	92	612
Tolliver, John C., and J. A. Stingel, Patricksburg, Ind. Rein-holder	657,969	Sept. 18	1786	385	92	2198
Tolman, Edgar B., Chicago, Ill. Gun-sight	656,866	Aug. 28	3236	737	92	1715
Tolman, Edgar B., Chicago, Ill. Rear sight for firearms	656,867	Aug. 28	3242	738	92	1716
Tolson, Stephen B., and A. Schopp, assignors to Sucker State Drill Company, Belleville, Ill. Disk attachment for grain-drills	654,037	July 17	2462	565	92	518
Tombeur, Joseph, Brussels, Belgium. Fire-extinguishing compound	657,970	Sept. 18	1787	------	92	2198
Tomlinson Veneer Barrel Company. (See Colborne, Oliver, assignor.)						
Tommasi, Donato, Paris, France. Secondary battery	654,557	July 24	3564	804	92	765
Tompkins, Roney P., Albany, N. Y. Churn	657,143	Sept. 4	120	28	92	1825
Tonkin Th., Juan, Iquique, Chile. Wave-power	653,270	July 10	1038	248 / 249	92	221
Tonkin Th., Juan, Iquique, Chile. Wave-power	653,271	July 10	1043	249	92	222
Tonner, William E. (See Lindsay and Tonner.)						
Toole, Edward, Gloucester City, N. J., assignor of one-half to W. F. Bokum, Philadelphia, Pa. Friction-clutch	655,132	July 31	4659	1050 / 639	92	1008
Torbeck, Fred, Gatch, Ill. Straw-stacker	654,193	July 24	2830	640	92	613
Torbensen, Viggo V., Westville, assignor, by mesne assignments, to Manhattan Oil Motor Company, Newark, N. J. Oil-engine	653,854	July 17	2142	487	92	455
Torbensen, Viggo V., Bloomfield, N. J., assignor to G. T. Harris, Philadelphia, Pa. Motor-vehicle	653,855	July 17	2144	487 / 488	92	456
Torchia, Rosario, New York, N. Y. Making oxychlorid of mercury	657,325	Sept. 4	496	------	92	1899
Tornauw, Nicolas, St. Petersburg, Russia. Preparing maps, drawings, &c	655,813	Aug. 14	1255	------	92	1299
Torrance, Henry, Jr. (See Hiller and Torrance.)						
Torsch, Edward L., Baltimore, Md. Device for casting door checks or seals	653,491	July 10	1443	338	92	299
Torst, William, Jr., Los Angeles, assignor of one-half to W. P. Mooney, San Pedro, Cal. System for individual service on electrical party-lines	655,916	Aug. 14	1430	328	92	1332
Tower, Daniel W., Grand Rapids, Mich. Lock	658,688	Sept. 25	3047	678 / 679	92	2472
Towles, Clarance O. (See Tennant, George P., assignor.)						
Town, Frederic E., Glencarlyn, Va. Electric-metering system	654,498	July 24	3471	788	92	747
Towne, Nathan P., Philadelphia, Pa. Boiler	655,420	Aug. 7	461	102 / 103	92	1129
Townsend, Claude L., Scranton, Pa. Fifth-wheel	656,332	Aug. 21	2232	513	92	1503
Townsend, David, Philadelphia, Pa. Plate-straightening machine	654,080	July 17	2529	582 / 583	92	531
Townsend, William, Champaign, assignor to T. W. Miller, Chicago, Ill., deceased; H. B. Miller and F. Babbage, executors. Pneumatic-despatch tube	654,690	July 31	3822	862 / 863	92	832
Toxey, Elliott, Mobile, Ala. Apparatus for transmitting sounds	658,156	July 3	794	186	92	159
Tracht, R. C., *et al.* (See Smythe, Thomas E., assignor.)						
Trainer, David E. and P. B. M., assignors to O. I. and P. B. M. Trainer, Philadelphia, Pa., and H. I. Trainer, New York, N. Y. Closure for buckets or pails	657,045	Aug. 28	3563	820	92	1776
Trainer, Harry I., *et al.* (See Trainer, David E. and P. B. M., assignors.)						
Trainer, Olive I., *et al.* (See Trainer, David E. and P. B. M., assignors.)						
Trainer, Paul B. M. (See Trainer, David E. and P. B. M.)						
Trapp, Samuel M., assignor of three-fourths to W. H. Remington, C. Thorne, and A. E. Brown, Tacoma, Wash. Burning pulverized and liquid hydrocarbons for fuel and heating	657,228	Sept. 4	301	64, 65	92	1863
Trautvetter, Erwin von, assignor of three-fourths to C. E. Babbitt, W. S. Sterling, and C. R. Holmes, Cincinnati, Ohio. Gear-wheel transmission	658,743	Sept. 25	3164	704	92	2495
Travis, George E., Henry, Ill. Belt-tightener	657,301	Sept. 4	438	93	92	1888
Treadgold, George H., Port Huron, Mich. Fountain-spittoon	655,640	Aug. 7	862	200	92	1207
Treece, George D. (See Copping and Treece.)						
Treese, Albert L., assignor to himself, W. E. and G. W. Canfield, Jennings, Okla. Ter. Cotton-press	653,191	July 3	855	200 / 201	92	171
Trefny, Charles W. (See Altman, John B., assignor.)						
Trench, Frederick J., Dublin, Ireland. Means for securing resilient tires to wheels	656,060	Aug. 14	1718	396 / 397	92	1389
Trenchard, Henry, Jr., New York, N. Y. Envelop	657,018	Aug. 28	3509	801	92	1765
Trenckmann, Bruno, Berlin, Germany. Leather	653,829	July 17	2105	------	92	449
Trenckmann, Bruno, Berlin, Germany. Manufacture of leather	653,830	July 17	2107	------	92	449
Tresckow, Leo von, New Orleans, La. Defecator for sugar-juices	658,602	Sept. 25	2800	641 / 642	92	2441
Trier, John, Chicago, Ill., assignor, by mesne assignments, to D. Grant. Multiple-motor system for automobiles	657,046	Aug. 28	3564	820 / 821	92	1776
Trigwell, James R., London, England. Joint for cycle-frames	658,493	Sept. 25	2682	595	92	2398
Trillat, Jean J. A., Paris, assignor to La Société Chimique des Usines du Rhône, Anciennement Gilliard, P. Monnet et Cartier, Lyons, France. Producing formaldehyde vapors.	656,061	Aug. 14	1720	397	92	1390
Tripler Liquid Air Company. (See Dickerson, Walter H., assignor.)						
Tripold, Ambrose A., assignor to Ambrose Machine Company, New York, N. Y. Packing for pistons	653,408	July 10	1287	306	92	267
Tripp, Charles A., Hudson, Mass. Changeable-speed gearing	655,133	July 31	4660	1050	92	1008
Tripp, Charles A., Hudson, Mass. Making printing-surfaces	655,134	July 31	4662	1050	92	1008

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Trojan Button Fastener Company. (See Ham, Albert W., assignor.)						
Trost, Henry. (See Hoffer, Fredrick, assignor.)						
Troupe, Samuel L. (See Hewes and Troupe.)						
Trowbridge, Frank C. (See Kutter, Herman L., assignor.)						
Troy, Rebecca K., Cincinnati, Ohio. Flat-iron holder	654,368	July 24	3233	724	92	608
True, Alice. (See True, David, assignor.)						
True, David, assignor to A. True, Amesbury, Mass. Oil-can	656,306	Aug. 21	2187	499	92	1495
Truesdell, Henry, assignor to Cyclone Grate Bar Company, Limited, Toronto, Canada. Furnace-grate	655,663	Aug. 7	945	214	92	1225
Trullinger, Mattie. (See Woods, Grant, assignor.)						
Trumble, Chauncey B., assignor to H. G. Moe, Groton, N. Y. Animal-trap	656,500	Aug. 21	2706	621	92	1598
Tschieky, Oscar, New York, N. Y. Door-check	653,368	July 10	1227	292	92	256
Tuck, William H. (See Steiner and Tuck.)						
Tucker, C. H., *et al.* (See Kirk, Seth, assignor.)	655,313	Aug. 7	262	59	92	1093
Tucker, Lee V., Chicago, Ill. Flue-scraper						
Tucker, Major, assignor of one-half to C. F. Crandall, Brockton, N. Y. Cover-clamp and handle for baskets	653,125	July 3	741	174	92	148
Tucker, William R. (See Cheney, Thomas J., assignor.)	658,195	Sept. 18	2164	473	92	2272
Tudor, Henry, Boston, Mass. Solar heater						
Tuerk, Albert. (See Vaughn, Blessing, and Tuerk.)	658,052	Sept. 18	1913	415	92	2222
Tullis, David K., Kilbowie, Scotland. Journal-box for washing-machines	652,866	July 3	233	55,56	92	47
Turgan, Louis, assignor to G. Doré, Paris, France. Water-tube boiler	654,691	July 31	3827	893	92	893
Turubow, John T., Crossland, Ky. Steam-boiler	655,135	July 31	4068	1051	92	1008
Turner, George W., and S. F. Butler, Gloucester City, N. J. Automatic stop for engines	655,529	Aug. 7	633	.....	92	1164
Turner, Joseph, Huddersfield, England. Amido sulfonic acid	653,538	July 10	1340	357, 358	92	320
Turner, Nathaniel L., Salmon City, Idaho. Electrolytic apparatus	653,157	July 3	796	187	92	159
Turner, William G., French Camp, Cal. Trousers	657,627	Sept. 11	1130	237	92	2050
Turner, William H., assignor of one-half to R. Kimple, Converse, Ind. Portable fence						
Turney Drier Company. (See Turney, John E., assignor.)						
Turney, John E., Louisville, Ky., assignor to Turney Drier Company, Chicago, Ill. Filter-press plate	657,628	Sept. 11	1130	237	92	2050
Tust, Paul. (See Schmidt and Tust.)						
Tuteur, Edwin B. (See Strauss, Joseph B., assignor.)						
Tuttle, James W., assignor to Sinclair-Scott Company, Baltimore, Md. Machine for filling liquids into cans	652,820	July 3	150	36, 37	92	31
	657,470	Sept. 4	761	162, 163	92	1951
Tweeddale, William, Topeka, Kans. Apparatus for purifying water						
Twentieth Century Manufacturing Company. (See Jones, Herbert H., assignor.)						
Twilling, George M. (See Fouch, William B., assignor.)						
Twining, William S. (See Brubaker and Twining.)	657,889	Sept. 11	1600	345	92	2145
Twitchell, Augustus B., Syracuse, N. Y. Fence	654,194	July 24	2831	640	92	613
Twohy, William H., Helena, Mont. Wringer-roll	654,195	July 24	2833	640	92	613
Tyberg, Oluf, assignor to R. L. Patterson and G. Arents, Jr., New York, N. Y. Cigar-machine				641		
Tyberg, Oluf, assignor to R. L. Patterson and G. Arents, Jr., New York, N. Y. Cigar-machine	654,196	July 24	2840	641, 642	92	615
Tyberg, Oluf, assignor to R. L. Patterson and G. Arents, Jr., New York, N. Y. Cigar-machine	654,197	July 24	2848	643	92	617
Tyberg, Oluf, assignor to R. L. Patterson and G. Arents, Jr., New York, N. Y. Cigar-machine	654,198	July 24	2853	643, 644	92	618
Tyberg, Oluf, assignor to R. L. Patterson and G. Arents, Jr., New York, N. Y. Cigar-machine	654,199	July 24	2860	644, 645	92	620
Tyberg, Oluf, assignor to R. L. Patterson and G. Arents, Jr., New York, N. Y. Cigar-machine	654,200	July 24	2866	646	92	621
Tyberg, Oluf, assignor to R. L. Patterson and G. Arents, Jr., New York, N. Y. Cigar-machine	654,201	July 24	2873	647, 648	92	622
Tyberg, Oluf, assignor to R. L. Patterson and G. Arents, Jr., New York, N. Y. Cigar-machine	654,202	July 24	2880	648, 649, 650	92	624
Tyberg, Oluf, assignor to R. L. Patterson and G. Arents, Jr., New York, N. Y. Cigar-machine	654,203	July 24	2890	651, 652	92	626
Tyden, Emil, Hastings, Mich. Extension table	653,326	July 10	1132	270	92	289
Tyden, Emil, Hastings, Mich. Metal dowel-pin	653,327	July 10	1134	270	92	289
Tyden, Emil, Hastings, Mich. Dowel-pin	653,328	July 10	1136	270	92	289
Tyden, Emil, Hastings, Mich. Press-feed mechanism	656,910	Aug. 28	3335	759, 760	92	1733
Tyler, Abel D., Jr., Brockton, assignor to E. S. Beach, Boston, Mass. Transversely-divided boot or shoe last	655,314	Aug. 7	264	59, 60	92	1093
Tyler, Hiram. (See Ohmer and Tyler.) (Reissue.)						
Tyler, Joseph, assignor of one-half to C. Collins, Pittsburg, Pa. Oil and gas burner for furnaces	656,307	Aug. 21	2189	499	92	1495
	655,421	Aug. 7	466	103, 104	92	1131
Tyler, Joseph L., Lynn, Mass. Mitering-machine	655,422	Aug. 7	469	104	92	1131
Tyler, Joseph L., Lynn, Mass. Mitering-machine	654,692	July 31	3829	864	92	883
Tyler, William H., and G. E. Smith, Shelburne, Vt. Golf-tee	653,831	July 17	2109	479	92	449
Tymeson, Eugene, and R. Borland, assignors to Alexander Smith & Sons Carpet Company, Yonkers, N. Y. Winding apparatus	653,832	July 17	2112	480	92	450
Tymeson, Eugene, and R. Borland, assignors to Alexander Smith & Sons Carpet Company, Yonkers, N. Y. Spooled yarn	654,861	July 31	4175	941	92	908
Tynan, Joseph J., Philadelphia, Pa., assignor, by mesne assignments, to Pneumatic Tool Improvement Company, Philadelphia, Pa., and Camden, N. J. Boring-tool	656,228	Aug. 21	2043	470	92	1467
Tynan, Joseph J., and H. C. Mostiller, Philadelphia, Pa., assignors, by mesne assignments, to Pneumatic Tool Improvement Company, Philadelphia, Pa., and Camden, N. J. Riveting apparatus	653,492	July 10	1444	.....	92	209
Typograph Gesellschaft mit Beschränkter Haftung. (See Pierpont, Frank H., assignor.)	655,467	Aug. 7	544	122	92	1146
Uhlmann, Paul, Dresden, assignor to Chemische Fabrik Von Heyden, Actien-Gesellschaft, Radebeul, Germany. Beta-naphthoquinone dye and making same	658,133	Sept. 18	2051	447	92	2249
Ulbrich, Richard C., Boston, Mass. Humidifier	655,468	Aug. 7	546	122	92	1147
Ullmann, Ernst, Dominium Buchholz-near-Drossen, Germany. Stock-raising device for reaping-machines						
Ulrich, Max J., Holyoke, Mass. Cut-off for duplex steam-pumps						
Uncapher, Joseph W., *et al.* (See Deplanty, Charles F., assignor.)						
Underwood & Underwood. (See Osborne, Albert E., assignor.)						
Unger, Oskar, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Company, of New York. Blue anthraquinone dye and making same	654,294	July 24	3089	.....	92	668

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Unger, Oskar, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Company, of New York. Green anthraquinone dye and making same	654,295	July 24	3090	.....	92	668
Union Carbide Company. (See Horry, William S., assignor.)						
Union Iron Works. (See Thomas, Edwin E., assignor.)						
Union Metallic Cartridge Company. (See Orcutt, Jerome, assignor.)						
Union Special Sewing Machine Company. (See Burke, Edward, assignor.)						
Union Special Sewing Machine Company. (See Woodward, Russel G., assignor.)						
Union Switch and Signal Company. (See Miles, Henry D., assignor.)						
Union Typewriter Company. (See Brown, Alexander T., assignor.)						
Union Typewriter Company. (See Sholes, Zalmon G., assignor.)						
United Alkali Company. (See Duff, Edward J., assignor.)						
United Shoe Machinery Company. (See Forster, William E., assignor.)						
United Shoe Machinery Company. (See Goddu, George, assignor.)						
United Shoe Machinery Company. (See Mower, Edwin F., assignor.)						
United Shoe Machinery Company. (See Raymond, Freeborn F., 2d, assignor.)						
United States Canopy Company. (See Durham, Will J., assignor.)						
United States Headlight Company. (See Becker, James W. G., assignor.)						
United States Steel Lock Company. (See Cramond, Alexander, assignor.)						
United States Wind Engine and Pump Company. (See Guy, George G., assignor.)						
Universal Accountant Machine Company. (See Rinsche, Frank C., assignor.)						
Universal Ironing Board Company. (See Bowman, William O., assignor.) (Reissue.)	658,030	Sept. 18	1883	407	92	2217
Universal Winding Company. (See Wardwell, Simon W., Jr., assignor.)	655,592	Aug. 7	761	179	92	1188
Unterbrink, Ignatius L., Botkins, Ohio. Combined file-case and index	653,126	July 3	742	174	92	148
Upham, Charles C., New York, N. Y. Automatic circulating system for steam-boilers	655,423	Aug. 7	469	104	92	1131
Uppercu, Inglis M., Newark, N. J. Pressure-generator						
Upton, Henry J., Somerville, assignor to R., R. G., and W. N. Lockwood, Boston, Mass. Fountain-pen	655,641	Aug. 7	863	200	92	1207
Urban, Johann. (See Fremery and Urban.)						
Urban, Johann. (See Fremery, Bronnert, and Urban.)						
Urgellés, José M., New York, N. Y. Non-refillable bottle	658,301	Sept. 18	2343	517	92	2307
Urmson, William G., assignor of three-fourths to J. W. Parsons, H. A. Hull, and J. Tice, New Brunswick, N. J. Telephone-relay	652,821	July 3	153	37, 38	92	31
Urquhart, Edmund, *et al.* (See Mallett, Charles E., assignor.)						
V. L. Ney Company. (See Ney, Jacob, assignor.)						
Vail, Edward M., and G. Potter, Kewanee, Ill. Stamp-canceling machine	655,664	Aug. 7	947	214	92	1225
Valentine, Harry J., assignor to W. Vogel & Brothers, New York, N. Y. Faucet and filler for receptacles	656,491	Aug. 21	2518	580, 581	92	1558
Valentine, Waldo, W., New York, N. Y. Automobile vehicle	655,744	Aug. 14	1085	250	92	1263
Valentine, Washington S., New York, N. Y. Syringe	656,229	Aug. 21	2045	.....	92	1468
Valentiner, Friedrich, Leipsic-Plagwitz, Germany. Aromatic fluoro-hydrocarbon						
Valla, Marius J. L., *et al.* (See Merceron-Vicat, Louis H. M., assignor.)						
Van Brocklin, John W., Seattle, Wash., assignor of one-sixteenth to R. L. Dunn, San Francisco, Cal. Hydraulic air-compressor	656,147	Aug. 14	1886	434	92	1425
Van Deinse, Paulus J. A., assignor to Gordon Hollow Blast Grate Company, Greenville, Mich. Corn-planter	657,714	Sept. 11	1296	274	92	2083
Van den Berg, Roelof, and G. Janssen, Druten, Netherlands. Automatic machine for manufacturing bricks or artificial stone	656,308	Aug. 21	2190	500	92	1495
Van Dorn, William T., Chicago, Ill. Railway-car	658,031	Sept. 18	1885	408	92	2217
Van Dorn, William T., Chicago, Ill. Means for cleaning flues for furnaces or the like	658,477	Sept. 25	2660	591	92	2394
	657,471	Sept. 4	763	163, 164, 165	92	1952
Van Dusen, Frank L., Ottawa, Canada. Match-machine	654,204	July 24	2907	652	92	630
Van Every, Chauncey M., Jr., Bronson, Mich. Adjustable holder for stationers' tools	653,715	July 17	1888	433, 434	92	409
Van Gestel, Jean T., New York, N. Y. Apparatus for electrically treating fabrics for waterproofing or other purposes	653,716	July 17	1893	435	92	409
Van Gestel, Jean T., New York, N. Y. Waterproofing fabrics	658,302	Sept. 18	2347	517	92	2306
Van Gyn, Casper, Willemsoord, Netherlands. Disconnecting-gear for shaft-couplings	656,062	Aug. 14	1722	397, 398	92	1390
Van Kannel Revolving Door Company. (See Van Kannel, Theophilus, assignor.)						
Van Kannel, Theophilus, New York, N. Y., assignor to Van Kannel Revolving Door Company, Charleston, W. Va. Revolving door						
Van Kempen, Anton. (See Lehmann and Van Kempen.)	655,286	Aug. 7	214	47	92	1092
Van Nest, James E., Martinsville, N. J. Vehicle-tire	655,917	Aug. 14	1432	329	92	1332
Van Riper, David F., assignor of two-thirds to F. H. Murray and W. Gebhardt, Meadville, Pa. Lantern	653,856	July 17	2147	489	92	450
Van Ryzin, Martin P., Appleton, Wis. Paper-stock-refining engine						
Van Schie, Leonardus A. (See Bezemer, Felix and T. J., assignors.)						
Van Sickle, Clarence T. (See Little and Van Sickle.)	656,868	Aug. 28	3248	738	92	1716
Van Slyke, James, Shell Rock, Iowa. Car-door	655,840	Aug. 14	1300	298	92	1307
Van Tassel, James H., and O. P. Hipple, Elmira, N. Y. Acetylene-gas lamp	652,937	July 3	373	90	92	75
Van Tuyl, George E., Detroit, Mich. Collar						
Van Vechten, Edwin F. (See Muckerheide, Joseph H., assignor.)	654,770	July 31	3994	898	92	868
Van Vechten, Edwin F., Milwaukee, Wis. Automatic valve-closing mechanism	654,771	July 31	3997	898	92	869
Van Vechten, Edwin F., Milwaukee, Wis. Valve mechanism	653,630	July 10	1711	395	92	356
Van Vechten, Orville R., assignor to Economic Sewing Machine Company, New York, N. Y. Guide for blindstitching sewing-machines	655,136	July 31	4665	1051	92	1009
Vandegrift, Theodore F., assignor of one-half to H. J. Root, Shelbyville, Ind. Shaft-coupling	655,033	July 31	4489	1013	92	975
Vandercook, George, *et al.* (See Derrick, Thomas, assignor.)	656,309	Aug. 21	2191	500	92	1496
Vanderman, William, Willimantic, Conn. Expansion-coupling for pipes	657,799	Sept. 11	1447	.....	92	2114
Vandevelde, Paul V., New York, N. Y. Electric burglar-alarm	654,333	July 24	3167	709	92	682
Varney, William W., Baltimore, Md. Making asphaltic composition powder	657,472	Sept. 4	768	165	92	1953
Vary, Calvin P. H., *et al.* (See Leary, John J., assignor.)	655,315	Aug. 7	266	60	92	1093
Vasquez, Pablo, Half Moon Bay, Cal. Wagon dumping-gear	653,975	July 17	2367	545	92	499
Vauclain, Samuel M., Philadelphia, Pa. Relief-valve for locomotives	654,499	July 24	3474	783, 784, 785	92	748
Vaughan, Charles W., assignor of one-fourth to J. R. Sutton, Hillsdale, Mich. Swivel pipe-joint	656,230	Aug. 21	2046	470	92	1468
Vaughan, David F., Haddonfield, N. J. Guard-rail fastener	654,580	July 24	3605	812	92	772
Vaughan, William S. (See Fay, John F., assignor.)						
Vaughn, Lindsey, J. G. Blessing, and A. Tuerk, Chicago, Ill.; said Vaughn and Blessing assignors to said Tuerk. Time-stamp						
Vaughn Machine Company. (See Perkins, Franklin J., assignor.)						
Vedder, Amasa B., Sedalia, Mo. Heating attachment for stoves						
Velvril Company. (See Reid and Earle, assignors.)						
Venable, Henry H., Redondo, Cal. Automatic lamp-filler and measuring-can						

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Venn, Isaac H., assignor to Otis Elevator Company, Yonkers, N. Y. Means for converting rotary into reciprocating motion	657,842	Sept. 11	1523	327	92	2129
Verbruggen, Gustave, Tamise, Belgium. Mixing-machine for hair, &c	656,433	Aug. 21	2419	556	92	1539
Verdel, Emile F., and F. L. Saino, Memphis, Tenn. Fireproof shutter	658,976	July 17	2368	545	92	499
Vereinigte Chinenfabriken, Zimmer & Co., Gesellschaft mit Beschränkter Haftung. (See Jensen, Andreas C., assignor.)						
Verity, John, Liverpool, England. Manufacture of chain cables	655,814	Aug. 14	1256	286	92	1209
Vernaz, Alexis, assignor to Mermod Frères, Ste. Croix, Switzerland. Speed regulator and compensator for motors	655,815	Aug. 14	1257	286	92	1209
Vernier, Charles P., Hudson, Mich. Punch	657,800	Sept. 11	1449	307	92	2114
Vernon, William G., Wallingford, Pa. Lawn-mower journal-bearing	657,715	Sept. 11	1299	275	92	2083
Vernsten, Swan J., Chicago, Ill. Metal-cutting machine	655,424	Aug. 7	471	105	92	1132
Verstraete, Edmond, Chicago, Ill. Bowling-alley	655,034	July 31	4490	1013	92	975
Verwer, Cornelis, Krommenie, Netherlands. Acetylene-gas generator	655,287	Aug. 7	215	48	92	1083
Verwohlt, Heinrich L., assignor to Maatschappy 'er Exploitatie Vaude Constructiewinkel de Bromo, Pasoeroean, Island of Java. Machine for treating Liberian coffee-fruit before shelling same	655,085	July 31	4493	1013	92	976
Vetter, Philip, Springfield, Ohio. Bake-oven	653,272	July 10	1045	249 / 250	92	222
Vick, Arne, Chicago, Ill. Miter-box	658,078	Sept. 18	1968	429	92	2233
Vickers, Ross M., *et al.* (See Smith, Charles H., assignor.)						
Vickers, Sons & Maxim. (See Dawson and Horne, assignors.)						
Vickers, Sons & Maxim. (See Maxim, Hiram S., assignor.)						
Victinghoff-Scheel, Karl von, Berlin, Germany. Automatic gas-lighter	657,991	Sept. 18	1829	395	92	2206
Victor Light Syndicate. (See Powers, Victor, assignor.)						
Victor Safe and Lock Company. (See Blechschmidt, Charles E., assignor.)						
Vidal, Adolph E., London, England. Tanning apparatus	656,063	Aug. 14	1726	399	92	1391
Vidal, Adolph E., London, England. Tanning apparatus	656,064	Aug. 14	1729	399 / 400	92	1392
Vidie, Manrice, Paris, France. Vehicle-brake	658,689	Sept. 25	3049	679	92	2472
Vierengel, Matthew, New York, N. Y. Bag-machine	657,257	Sept. 4	356	75, 76	92	1873
Viergiver, Leonard, *et al.* (See Sneller, William, assignor.)						
Vignon-Danto, Jean M. J. E., Lyons, France. Electrical drying apparatus	652,867	July 3	235	56	92	47
Vilinch, Joseph, Paterson, N. J. Eyeglasses or spectacles	655,469	Aug. 7	551	123	92	1148
Virag, Josef. (See Pollak and Virag.)						
Vis, Gerhard N., Schweizerhalle, Switzerland. Purifying brine	658,303	Sept. 18	2348	.....	92	2308
Vis, Gerhard N., Schweizerhalle, Switzerland. Obtaining magnesium sulfate from brine	658,327	Sept. 18	2385	.....	92	2315
Visel, August, Coldwater, Mich. Hat-rack	657,629	Sept. 11	1132	237	92	2051
Vogel & Brothers, William. (See Valentine, Harry J., assignor.)						
Vogel & Brothers, William. (See Vogel, Henry J., assignor.)						
Vogel, Eugene W., assignor to D S. Wegg, Chicago, Ill. Combined visible and audible signal	656,434	Aug. 21	2421	557	92	1540
Vogel, Henri P. de, Surbiton, England. Comb	655,816	Aug. 14	1259	287	92	1209
Vogel, Henry J., assignor to W. Vogel & Brothers, New York, N. Y. Screw-cap sheet-metal can	656,911	Aug. 28	3338	760	92	1733
Vogel, Louis D., Omaha, Nebr. Woodworking-machine	654,296	July 24	3092	692 / 693	92	668
Vogel, William. (See Fischer and Vogel.)						
Vogel, William, assignor, by mesne assignments, to Fischer Manufacturing Company, Paterson, N. J. Pancake-turner	657,801	Sept. 11	1450	307	92	2114
Vogel, William, New York, N. Y., assignor to J. C. C. Hacke, Hamburg, A. B. S. P. Foerster, Gross Flottbek, Germany, and Fischer Manufacturing Company, Paterson, N. J. Can-opener	652,988	July 3	373	90	92	75
Vogel, William, assignor, by mesne assignments, to W. Fischer, Sr. and Jr., and F. and A. Fischer, Paterson, N. J. Holder for asparagus, &c	656,492	Aug. 21	2521	581	92	1559
Vogelgesang Furnace Company. (See Ebinger, David A., assignor.)						
Voigtmann, Frank, Chicago, Ill. Sheet-metal flooring	657,995	Sept. 18	1830	395	92	2206
Voigtmann, Frank, and S. H. Pomeroy, Chicago, Ill. Weatherproof window	654,295	July 24	2909	652	92	630
Voigtmann, Frank, and S. H. Pomeroy, Chicago, Ill. Fireproof window	657,996	Sept. 18	1830	395	92	2206
Volger, Franz. (See Ott and Volger.)						
Voorhees, Emory B., Ovid, Mich. Gasket-lowering apparatus	655,137	July 31	4666	1051	92	1009
Voorheis, Louis E., Cincinnati, Ohio. Workman's time-Indicator	652,822	July 3	164	39	92	35
Vorreiter, Ansbert E., Aix-la-Chapelle, Germany. Cooling apparatus for motor-carriages	657,684	Sept. 11	1243	268	92	2071
Vorster, Walter. (See Bammann, Davidis, and Vorster.)						
Vose, Charles L., Westerly, R. I. Device for moistening and sealing envelops	656,912	Aug. 28	3339	760	92	1733
Vosler, Gottlieb F., *et al.* (See Pinney, Hiram M., assignor.)						
Vosler, Martin F., *et al.* (See Pinney, Hiram I., assignor.)						
Vossbeck, Marie, Trinidad, Colo. Bread or cake pan	655,530	Aug. 7	634	144	92	1164
Vought, George W., New York, N. Y. Bottle	657,971	Sept. 18	1788	396	92	2198
Vroom, Oler P., and C. H. Arbuckle, assignors of one-half to A. G. and J. H. Sorge, Winigan, Mo. Hay-stacker	656,065	Aug. 14	1731	400	92	1392
W. S. Frazier & Company. (See Frazier, Walter S., Jr., assignor.)						
Waddington, Frederick, Keighley, England. Loom shedding mechanism	652,984	July 3	485	114 / 115	92	98
Wade, Alzira H., Minneapolis, Minn. Apparel-corset	656,913	Aug. 28	3340	760 / 761	92	1733
Wade, Sedgwick M. (See Garner and Wade.)						
Wadell, Fredrick, Louisville, Ky. Cabinet	653,539	July 10	1541	358	92	320
Wadleigh, George C., Haverhill, Mass. Coupon-ticket book	655,425	Aug. 7	472	105	92	1132
Waegel, William, assignor of one-half to J. Roberts, Philadelphia, Pa. Advertising-scale	658,603	Sept. 25	2891	642	92	2441
Waffen-und Maschinenfabriks Actiengesellschaft. (See Hoffmann, Otto A., assignor.)						
Wagner, Bernhard, Rahway, N. J. Device for removing corns	654,581	July 24	3607	812	92	772
Wagner, Edward, assignor to Model Bottling Machinery Company, St. Louis, Mo. Apparatus for pasteurizing beer	654,309	July 24	3234	725	92	698
Wagner, Edward H., New York, N. Y., assignor to Edward H. Wagner Company, of New Jersey. Pyrotechnic device	653,273	July 10	1047	250	92	222
Wagner, John, Portage, Wis. Corn-harvester	658,585	Sept. 25	2751	611	92	2413
Wagner, Peter A., *et al.* (See Mosher, David, assignor.)						
Wagnitz, John A., Dayton, Ohio. Paper box	657,047	Aug. 28	3566	821	92	1777
Wagnitz, John A., Dayton, Ohio. Paper box	657,473	Sept. 4	769	165	92	1953
Wahl, Joseph, Cincinnati, Ohio. Vent for casks	657,630	Sept. 11	1133	237	92	2051
Wahrer, Otto J., Dayton, Ohio. Calipers	654,370	July 24	3226	725	92	698
Walles, John W., Whitley, England. Apparatus for punching or shearing chains, &c	655,036	July 31	4491	1013 / 1014	92	976
Walles, John W., and F. Gross, Newcastle-upon-Tyne, England. Machine for manufacturing weldless chains	655,383	Aug. 7	394	86 / 87	92	1115

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wainwright, Ernest, assignor to Hall & Ross Husking Glove Company, Chicago, Ill. Glove-fastener	653,427	July 10	1321	314	92	274
Waite, Fred, Otley, England. Relief stamping and printing machine	657,144	Sept. 4	123	28, 29	92	1825
Waite, Guy B., Hoboken, N. J. Center for fireproof arches	655,426	Aug. 7	473	105	92	1132
Walte, Joseph. (See Copeman, Thorn, assignor.)						
Waitt, Arthur M., Yonkers, N. Y., and H. F. Ball, Cleveland, Ohio. Key for car journal-boxes	658,224	Sept. 18	2218	485	92	2283
Wakefield, John E., Worcester, Mass. Wrench	657,326	Sept. 4	497	103	92	1889
Walber, James, assignor of one-half to D. D. Lucas, Vineland, N. J. Non-refilling bottle	656,148	Aug. 14	1889	435	92	1425
Walden, Edwin, Lynn, Mass. Detachable reservoir for pens	654,500	July 24	3480	786	92	749
Walden, William, New York, N. Y. Artificial leather	656,869	Aug. 28	3249	.....	92	1717
Walder, Lobe, Chicago, Ill. Dust-collector	655,384	Aug. 7	397	87	92	1116
Wale, Alfred E., Elmdon, England. Wire mesh for cycle-seats	656,231	Aug. 21	2048	470 / 471	92	1468
Wale, George, Jr., Everett, Mass. Mechanical toy	653,127	July 3	743	175	92	148
Wales, Alfred B., Abington, Mass. Shifter for belts	653,320	July 10	1137	271	92	240
Wales, Charles M., New York, N. Y. Mandrel	653,428	July 10	1322	314	92	274
Wales, Thomas C., Jr., Newton, assignor to American Bell Telephone Company, Boston, Mass. Telephone-switchboard apparatus	656,333	Aug. 21	2233	513	92	1503
Waller, Joseph C., Syracuse, N. Y. Machine for molding confections	655,918	Aug. 14	1433	329 / 330 / 331	92	1332
Walker, B. J., *et al.* (See Hay, John F., assignor.)						
Walker, Frederick W., Utica, N. Y. Corner-coupling for metallic beds	653,158	July 3	796	187	92	159
Walker, Hugh. (See Fraser and Walker.)						
Walker, John H., Charters Towers, Queensland. Syringe, injector, &c	652,985	July 3	488	115	92	99
Walker, Millard F., Flatonia, Tex. Bale-tie	654,206	July 24	2910	653	92	631
Walker, Milton, La Harpe, Ill. Vehicle-spindle	656,066	Aug. 14	1733	401	92	1393
Walker, Thomas C., assignor of two-thirds to J. E. Bowden, Denver, and C. A. Gehrmann, Idaho Springs, Colo. Cylindrical roller-crusher	655,745	Aug. 14	1087	250 / 251	92	1264
Walkins, Louis E., Springfield, Mass. Electric-railway system	656,276	Aug. 21	2125	485	92	1483
Wall, Patrick, Allegheny, Pa. Oil-can	656,000	Aug. 14	1617	373	92	1368
Wallace, Franklin D., Wheatland, Ind. Burglar or fire alarm	655,427	Aug. 7	475	106	92	1133
Wallace, James C., Colorado City, Colo. Filter barrel or tank	653,031	July 10	1715	396	92	357
Wallace, Paul, Philadelphia, Pa. Spinning-machine	654,081	July 17	2532	583	92	531
Wallenstein, Adolf. (See Eulert and Wallenstein.)						
Waller, Marshal, *et al.* (See Mead, William M., assignor.)						
Wallman, Otto, assignor of one-half to C. W. Gelb, Spokane, Wash. Device for fastening cords	655,531	Aug. 7	635	144	92	1164
Walpuski, Theodore G., New York, N. Y. Silver or cutlery chest	653,498	July 10	1445	338	92	299
Walsh, Edward, Jr. (See Hartung, Charles C., assignor.)						
Walsh, Edward, Jr. (See Lambrecht, Charles, assignor.)						
Walsh, James E., *et al.* (See Guion, Bernard R., assignor.)						
Walsh, Ralph, Washington, D. C. Vaccine-point carrier	656,914	Aug. 28	3342	761	92	1734
Walsh, Robert F. B., New York, N. Y. Protective armor for hulls of vessels	656,001	Aug. 14	1618	373	92	1368
Waltenbaugh, George W., assignor of one-half to J. M. Ough, San Francisco, Cal. Variable-speed gearing	653,632	July 10	1716	396	92	357
Waltenbaugh, George W., assignor of one-half to J. M. Ough, San Francisco, Cal. Variable-speed gearing	653,633	July 10	1721	396 / 397	92	357
Walter, Frank. (See Walter, Waldemar and F.)						
Walter, Waldemar and F., Philadelphia, Pa. Ash or coal sifter	653,045	July 3	590	138	92	119
Waltham Manufacturing Company. (See Robbins, John C., assignor.)						
Wambold, Harry E., Appleton, Wis. Vat for screening paper-pulp	657,186	Sept. 4	212	47	92	1844
Wannenwetsch, Andrew T., Buffalo, N. Y. Automatic device for holding, delivering, and igniting matches	655,746	Aug. 14	1090	251	92	1264
Wappler Electric Controller Company. (See Wappler, Reinhold H., assignor.)						
Wappler, Reinhold H., assignor to Wappler Electric Controller Company, New York, N. Y. Electric switch	656,870	Aug. 28	3251	738	92	1717
Warburton, Frederic J., Newcastle-upon-Tyne, England. Bearing for shafts	656,310	Aug. 21	2192	501	92	1496
Ward, Daniel O., Oak Park, Ill. Rail-joint	653,565	July 10	1581	368	92	328
Ward, Francis G. (See Nott and Ward.)						
Ward, George C., Fort Worth, Tex. Penholder	657,370	Sept. 4	582	122	92	1917
Ward, Harry, assignor of one-half to J. E. Frederick, Kokomo, Ind. Wire-fence machine	654,425	July 24	3337	748 / 749	92	720
Ward, Thomas J., Dubuque, Iowa. Mud-guard	657,972	Sept. 18	1789	386	92	2198
Warden, Eugene. (See Gorton, Samuel, assignor.)						
Warden, William. (See Maranville and Warden.)						
Warder, Shadrack M., Winters, Cal. Automatic adjustment for harvester-reels	657,229	Sept. 4	303	65	92	1863
Wardwell, Simon W., Jr., Providence, R. I. Cop	653,718	July 17	1896	436	92	410
Wardwell, Simon W., Jr., assignor to J. R. Leeson, Boston, Mass. Tension for sewing-machines	653,717	July 17	1895	435	92	410
Wardwell, Simon W., Jr., Providence, R. I., assignor, by mesne assignments, to Universal Winding Company, Portland, Me. Apparatus for winding cops or balls. (Reissue)	11,855	Sept. 18	2304	529 / 530	92	2317
Wardwell, Simon W., Jr., Providence, R. I., assignor, by mesne assignments, to Universal Winding Company, Portland, Me. Winding cops. (Reissue)	11,856	Sept. 18	2309	530 / 531	92	2318
Wardwell, Theodore E., Stamford, Conn. Hand-strap for street-cars	655,428	Aug. 7	476	106	92	1133
Warlich, Oscar, assignor of one-third to D. E. Terriere, Chicago, Ill. Garment-supporter	652,980	July 3	489	115	92	99
Warner Brothers Company. (See Scott, Eben M., assignor.)						
Warner Brothers Company. (See Warner, De Ver H., assignor.)						
Warner, Charles L. (See Steen and Warner.)						
Warner, Charles W., Melrose, Mass. Seed-planter	656,705	Aug. 28	2905	660 / 661	92	1651
Warner, Charles W., Middletown, Conn. Bicycle-stand	657,973	Sept. 18	1790	386	92	2198
Warner, De Ver H., assignor to Warner Brothers Company, Bridgeport, Conn. Stud or button for garment-supporters	654,334	July 24	3168	709	92	683
Warner, Mathias, Jonesburg, Mo. End-gate	656,915	Aug. 28	3343	761	92	1734
Warren & Co., S. D. (See Bragdon, William B., assignor.)						
Warren, David B., West Plains, Mo. Knockdown camp-stove	657,631	Sept. 11	1134	238	92	2051
Warren, George E., assignor to Campbell Machine Company, Pawtucket, R. I. Shoe-sewing machine	658,604	Sept. 25	2892	642 / 643 / 644	92	2441
Warren, John E. (See Fassett and Warren.)						
Warren Webster & Company. (See Serrell, William C., assignor.)						
Wartenberger, Franz W., Altona, Germany. Combined tanning and dyeing process	658,092	Sept. 18	1885	.....	92	2217
Washburn, Calvin L., and A. C. Perham, Paris, Me. Wooden rim for wheels	653,046	July 3	591	138	92	119

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Washburn, Dwight H. (See Iddings and Washburn.)						
Washburn, George A., assignor to B. B. Quinn, trustee, Cleveland, Ohio. Apparatus for curing meat	657,207	Sept. 4	255	55	92	1858
Washburn, George A., Elyria, assignor to B. B. Quinn, trustee, Cleveland, Ohio. Curing meat	657,258	Sept. 4	365	76	92	1874
Washburn, Julia B. (See Washburn, William H., assignor.)						
Washburn, Samuel D., Boston, and C. H. Tinkham, Cambridge, Mass. Incandescent lamp	654,207	July 24	2911	653	92	631
Washburn, Samuel D., Boston, and C. H. Tinkham, Cambridge, Mass. Incandescent electric lamp	654,208	July 24	2912	653	92	631
Washburn, William H., Oroville, Wash., assignor of one-half to J. B. Washburn, Baker City, Oreg. Concentrator	655,470	Aug. 7	553	123	92	1148
Washburne, James V., Waterbury, Conn. Strap-holder for safety-pins	654,038	July 17	2463	565	92	518
Washburne, James V., Waterbury, Conn. Garment-supporter	657,302	Sept. 4	440	93	92	1889
Washington, Dixon E. (See Bradbury and Washington.)						
Washington, William D., New York, N. Y. Building subways	654,426	July 24	3342	749, 750	92	721
Washington, William D., New York, N. Y. Apparatus for constructing lines of excavation	655,532	Aug. 7	636	144	92	1165
Waterbury Button Company. (See Smith, Joseph R., assignor.)						
Waterbury Machine Company. (See MacLauchlan, James H., assignor.)						
Waterhouse, Addison G., and J. S. Forbes, Philadelphia, Pa., assignors to said Forbes. Apparatus for heating and sterilizing fluids	655,665	Aug. 7	948	215	92	1225
Waterloo Gasoline Engine Company. (See Witry, Louis, assignor.)						
Waterman, Lewis E., assignor to Deere & Mansur Company, Moline, Ill. Corn-planter	653,923	July 17	2265	516	92	480
Waterman, Lewis E., Moline, assignor to Emerson Manufacturing Company, Rockford, Ill. Corn-planter	657,474	Sept. 4	771	166	92	1953
Waters, Fred R., *et al.* (See Williams, Daniel S., assignor.)						
Waters, Silas B., Cincinnati, Ohio. Laundry-rack	653,977	July 17	2369	545	92	409
Wathen, Samuel S., *et al.* (See Wigal, James P., assignor.)						
Watkins, Alfred, Hereford, England Photographic-exposure meter	657,685	Sept. 11	1244	264	92	2072
Watkins, William D., and T. P. Pruit, Brownwood, Tex. Baling-press	658,304	Sept. 18	2350	517	92	2308
Watkins, William M. (See Nell, Louis F., assignor.)						
Watson, Christopher H., Riverside, Cal. Cement-curb mold	657,802	Sept. 11	1452	307, 308	92	2114
Watson, David R., Washington, D. C. Cigar-pipe and inhaler	652,987	July 3	490	116	92	99
Watson, Harry W. (See Hyatt, Watson, Mildanger, and Sanderson.)						
Watson, Henry B., *et al.* (See Billetop, Torben C., assignor.)						
Watson, Henry B. and J. S., and T. C. Billetop, Newcastle-upon-Tyne, England. Filter	655,841	Aug. 14	1302	299	92	1307
Watson, Isaac N. (See Mullin, Watson, and Hall.)						
Watson, James T. (See Melby, John C., assignor.)						
Watson, John S. (See Watson and Billetop.)						
Watson, John S., *et al.* (See Billetop, Torben C., assignor.)						
Watson & McDaniel Co. (See Chapman, Joseph L., assignor.)						
Watson, Robert, and C. E. Stevenson, Nanaimo, Canada. Hoisting apparatus	656,067	Aug. 14	1734	401	92	1303
Watson, William D., Chicago, Ill. Window-fastener	654,371	July 24	3237	725	92	699
Watt, Charles M., Holt, Ohio. Tongue attachment for sleds	656,002	Aug. 14	1620	373	92	1308
Watt, William, *et al.* (See Jamieson, Augustus, assignor.)						
Watters, John H., Anniston, Ala. Track-sanding device	658,494	Sept. 25	2683	596	92	2398
Watts, David H. (See Furness, Frank, assignor.)						
Waugh, Daniel S., Marion, Ohio. Automatic hammer	657,716	Sept. 11	1300	275	92	2083
Waylan, William J., Sutton, England. Plumber's shave-hook	655,817	Aug. 14	1259	287	92	1300
Wayman, William O., assignor to Illinois Malleable Iron Company, Chicago, Ill. Automatic tank	655,288	Aug. 7	217	48	92	1083
Weaver, Charles D., Greeley, Colo. Indicating device	658,744	Sept. 25	3166	705	92	2495
Weaver, George L., *et al.* (See Bartley, Milton, assignor.)						
Weaver, Robert T., New York, N. Y. Granular-bed filter	653,759	July 17	1970	449, 450	92	424
Weaver, William, Norwalk, Conn., assignor of seven-twelfths to W. T. P. Hollingsworth, New York, N. Y. Loom	653,274	July 10	1048	250, 251, 252	92	223
Webb, Asa W., South Union, Ky. Nut-lock	656,068	Aug. 14	1735	401	92	1303
Webb, George B., Westfield, N. J., assignor to Wyckoff, Seamens & Benedict, Hion, N. Y. Type-writing machine	657,187	Sept. 4	213	48	92	1844
Webb, John G., Washburn, W. Va. Combined reclining-chair and clothes-rack	655,593	Aug. 7	763	179	92	1188
Webber, Wesley, New York, N. Y. Coin-controlled gas-vending machine	657,308	Sept. 4	441	93, 94	92	1889
Weber, Adam F. (See Gulick, Edward J., assignor.)						
Weber, Bernard F., Chicago, Ill. Hydrocarbon-burner	655,942	Aug. 14	1484	341	92	1341
Weber, Friedrich, assignor of one-half to W. Creedman, Cleveland, Ohio. Bicycle	656,311	Aug. 21	2193	501	92	1496
Weber, George A., Stamford, Conn., assignor to Weber Railway Joint Manufacturing Company, of West Virginia. Angle chair or fitting	658,098	Sept. 18	1997	435	92	2228
Weber, Joseph P., St. Paul, Minn. Grate	652,823	July 3	165	39	92	35
Weber Railway Joint Manufacturing Company. (See Weber, George A., assignor.)						
Weber, William H., Chicago, Ill. Wagon-reach clamp	657,997	Sept. 18	1891	396	92	2207
Webjörnsen, Christian, Christiania, Norway. Means for packing semifluid substances	653,760	July 17	1973	450	92	424
Wèbre, Dorifor, Vacherie, La. Carrier and feeder	657,371	Sept. 4	583	122, 123	92	1918
Webster, Camp & Lane Company. (See Hulett, George H., assignor.)						
Webster, Charles C., Asbury Park, N. J. Circuit-controller	658,225	Sept. 18	2219	485	92	2283
Webster, George K. (See Straker, Herbert J., assignor.)						
Webster, George S., Minneapolis, Minn. Feed-valve for lubricators	656,616	Aug. 21	2766	633	92	1611
Webster, Harold A., assignor of one-half to H. B. Newton, Haverhill, Mass. Counter-skiving machine	652,824	July 3	167	39, 40	92	35
Webster Manufacturing Company. (See Hayes, Frank, assignor.)						
Webster, Warren, Merchantville, N. J. Valve for steam-heating systems	653,369	July 10	1227	293	92	256
Wedge, Utley, Bayonne, N. J. Roasting-furnace	654,335	July 24	3169	710, 711	92	683
Wedgewood, Josiah, Brampton, assignor of one-half to Polson Iron Works, Toronto, Canada. Grate for furnaces or stoves	657,803	Sept. 11	1454	308	92	2115
Weegmann, Frederick, assignor to California Pre-Payment Meter Company, San Francisco, Cal. Prepayment-meter	655,842	Aug. 14	1303	299	92	1308
Weeks, John W., assignor to Helion Gas Generator Company, Providence, R. I. Acetylene-gas generator	658,033	Sept. 18	1886	408	92	2217
Wegelin, Hugo, Augsburg, Germany. Electrical igniter for hydrocarbon-engines	654,693	July 31	3830	864	92	833
Wegg, David S. (See Hien, Eugene, assignor.)						
Wegg, David S. (See Vogel, Eugene W., assignor.)						
Weidman, Almon, Albany, N. Y. Ash-sifter	654,209	July 24	2913	653	92	631

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Weidner, Johann, assignor to Firm of J. Baumann's Wwe., Amberg, Germany. Appliance for securing covers of culinary vessels in closed position	656,008	Aug. 14	1621	374	92	1309
Weigel, Louis, Helena, Mont. Label and label-holder	655,843	Aug. 14	1306	300	92	1308
Weiller & Sons. (See Brower, Julius, assignor.)						
Weimer, Samuel H., Boston, Pa. Knockdown box	657,750	Sept. 11	1364	288	92	2097
Weiner, Wilhelm, assignor of one-half to H. Schmitz, Wymore, Nebr. Pump-motor	653,275	July 10	1052	252	92	223
Weir, James, Paisley, Scotland. Marine-engine governor	657,208	Sept. 4	258	55	92	1854
Weir, John B. (See Perry and Weir.)						
Weir, Sidney M. (See Brookes, Leonard E., assignor.)						
Weisenborn, George P. A., Quincy, Ill. Wire-fence machine	653,719	July 17	1899	436, 437	92	410
Weisenburger, Leo, Mount Vernon, N. Y. Hat-tip	656,706	Aug. 28	2905	661	92	1652
Weisenhorn, August, Helena, Mont., assignor of one-third to W. Weisenhorn, Quincy, Ill. Brace-head for boring-tools	656,069	Aug. 14	1736	402	92	1308
Weisenhorn, William. (See Weisenhorn, August, assignor.)						
Weisse, Paul R., Chicago, Ill. Machine for whipping furs	653,276	July 10	1054	252	92	223
Weitzel, Isaac N., Rochester, N. Y. Pencil-sharpener	653,720	July 17	1900	437	92	410
Weitzell, W. S. (See Coffman, Ralph B., assignor.)						
Welch, Charles C., *et al.* (See Sauvage, William H., assignor.)						
Welch, Charles H., Hindsborough, Ill. Check-row planter	653,330	July 10	1139	271	92	240
Welch, Frank H., New York, N. Y. Mud-guard for bicycles	655,316	Aug. 7	267	69	92	1004
Welch, Horace, Selma, Ala. Lumber-truck	655,138	July 31	4667	1052	92	1009
Welch, Rosia W., assignor of one-half to E. A. Daugherty, Baltimore, Md. Rice-decorticating machine	654,558	July 24	3566	804	92	765
Welke, William R., and M. Biederstaedt, Dallas, Tex. Churn	652,906	July 3	295	73	92	59
Welker, Louis, Sr., and W. N., Williamsport, Pa. Hinge	653,370	July 10	1229	293	92	256
Welker, William N. (See Welker, Louis, Sr., and W. N.)						
Weller, Charles, Mount Pulaski, and W. Rommel, Latham, Ill. Reversing valve-gear	658,690	Sept. 25	3050	679	92	2472
Wellman, Charles H. (See Wellman and Seaver.)						
Wellman, Harlan P., Ashland, Ky. Electric headlight-lamp	653,159	July 3	797	187, 188, 189	92	160
Wellman, Samuel T. (See Seaver and Wellman.)						
Wellman, Samuel T. and C. H., and J. W. Seaver, Cleveland, Ohio. Open-hearth furnace	655,139	July 31	4668	1052, 1053	92	1009
Wellman, Samuel T. and C. H., and J. W. Seaver, assignors to Wellman-Seaver Engineering Company, Cleveland, Ohio. Crane	655,533	Aug. 7	638	144, 145	92	1165
Wellman-Seaver Engineering Company. (See Seaver and Wellman, assignors.)						
Wellmen-Seaver Engineering Company. (See Wellman and Seaver, assignors.)						
Wellner, Julius, Jersey City, N. J. Tune-sheet feeder	658,034	Sept. 18	1889	408	92	2218
Wellner, Julius, Jersey City, N. J. Tune-sheet holder	658,035	Sept. 18	1891	408	92	2218
Wells, Carl B., Chelsea, Mass. Bicycle-crank	652,988	July 3	491	116	92	99
Wells, Frank. (See Wells, James F., assignor.)						
Wells, Frank F., *et al.* (See Leary, John J., assignor.)						
Wells, Frank O. (See Wells, Frederic E. and F. O.)						
Wells, Frank R., Springfield, Ohio. Clothes-wringer	655,534	Aug. 7	640	145, 146	92	1165
Wells, Frederic E. and F. O., assignors to Automatic Machine Company, Greenfield, Mass. Cam-wheel	655,535	Aug. 7	641	146	92	1166
Wells, James F., assignor to F. Wells, St. Louis, Mo. Mower	658,305	Sept. 18	2352	518	92	2309
Wells, James L., El Paso, Tex. Apparatus for utilizing hot slag for heating purposes	657,843	Sept. 11	1524	327, 328	92	2130
Welsbach Light Company. (See Mason, Sidney, assignor.)						
Welshe, Annie M., Auburn, N. Y. Trunk-cover	656,707	Aug. 28	2906	661	92	1652
Wendell, Ferdinand J., New York, N. Y. Manufacture of stereotype-plates	656,312	Aug. 21	2195	502	92	1496
Wendler, Friedrich, New York, N. Y. Drag-brake for marine vessels	655,140	July 31	4670	1053	92	1010
Wenzel, Alexander, assignor to Plastik, Gesellschaft für Holz und Steinbildnerei mit Beschränkter Haftung, Berlin, Germany. Sculpture-copying machine	653,494	July 10	1447	338, 339	92	299
Werner, Anton, Jr., New Braunfels, Tex. Corn-husking machine	652,825	July 3	169	40	92	35
Werner, Harry C., Wheeling, W. Va. Wire-stretcher	654,772	July 31	3999	899	92	869
Werner, Leopold A., New York, N. Y. Apparatus for utilizing power of the winds	653,047	July 3	592	139	92	120
Wernert, Charles F. J., Evansville, Ind. Register	657,578	Sept. 11	1036	215	92	2032
Werth, John, Chester, Va. Thill-coupling	653,598	July 10	1630	381	92	338
Wesselmann, Bruno. (See Schultz, Wilhelm, assignor.)						
Wesselmann, Bruno, Berlin, Germany. Metal-shearing machine	654,082	July 17	2533	583	92	532
Wessnick, Adolf, and A. Gutowski, Nuremberg, Germany. Bicycle locking device	656,334	Aug. 21	2226	513	92	1503
Wesson, Joseph H., assignor to Smith & Wesson, Springfield, Mass. Revolver	655,844	Aug. 14	1307	300	92	1308
West, Christopher B., assignor of one-third to A. H. Blackburn, Baltimore, Md. Railway freight-car	656,591	Aug. 21	2707	621	92	1599
West, James, assignor to Samuel Cupples Envelope Company, St. Louis, Mo. Envelop	653,509	July 10	1632	381, 382	92	339
West, James L., Omaha, Nebr. Telephone-transmitter	653,721	July 17	1901	437	92	411
West, Jonathan B., Rochester, N. Y. Sprocket-chain	653,462	July 10	1379	327	92	285
West, Jonathan B., Rochester, N. Y. Indicator for pump-actions	654,372	July 24	3288	725	92	690
West, William F., and B. Payne, Woonsocket, R. I. Stop-motion for circular-knitting machines	656,493	Aug. 21	2522	581	92	1550
Westall, William C. (See Getz and Westall.)						
Westaway, James, London, England. Apparatus for compressing pulp	656,682	Aug. 28	2860	651	92	1643
Westerdahl, Anton R., New York, N. Y., assignor to General Electric Company, of New York. Tip for commutator-segments	657,804	Sept. 11	1455	308	92	2115
Westerfield, Joseph C., Arlington, and H. S. Chinnock, Jr., Belleville, N. J. Car-brake lever	658,226	Sept. 18	2221	486	92	2284
Western Electric Company. (See Ellicott and Oehring, assignors.)						
Western Electric Company. (See McBerty, Frank R., assignor.)						
Western Electric Company. (See McBerty and McQuarrie, assignors.)						
Western Electric Company. (See O'Connell, Joseph J., assignor.)						
Western Electric Company. (See Scribner, Charles E., assignor.)						
Western Electric Company. (See Steiner and Tuck, assignors.)						
Westinghouse Air Brake Company. (See Clark, Francis L., assignor.)						
Westinghouse Air Brake Company. (See Hogan, Thomas J., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Perkins, Thomas S., assignor.)						
Westinghouse, George. (See Hanks, Marshall W., assignor.)						
Westinghouse, Henry H., Pittsburg, Pa. Railway-brake	656,282	Aug. 21	2049	471	92	1468
Westinghouse, Henry H., Pittsburg, Pa. Railway-brake	656,382	Aug. 21	2324	582, 583, 584	92	1521
Westinghouse Machine Company. (See Robinson, Cyrus, assignor.)						
Westlake, William, New York, N. Y. Snow-compressor	658,167	Sept. 18	2122	461	92	2264

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Westman, Gustaf M., New York, N. Y., assignor to Arsenical Gold Reduction Company, Newark, N. J. Treating ores	658,412	Sept. 25	2556	567	92	2375
Westman, Gustaf M., New York, N. Y., assignor to Arsenical Gold Reduction Company, Newark, N. J. Apparatus for treating ores	658,536	Sept. 25	2755	612	92	2413
Weston, Charles J., Philadelphia, Pa. Motor mechanism for mills	654,088	July 17	2534	583	92	582
Weston, Edward B., Dayton, Ohio. Toilet-paper fixture	653,644	July 10	1743	402	92	361
Weston, George F., *et al.* (See Reuterdahl, Arvid, assignor.)						
Weston, Oliver, assignor of one-half to J. Coleman, Montreal, Canada. Bicycle-support	656,129	Aug. 14	1803	428	92	1420
Weston Paper and Manufacturing Company. (See Davis, John N., assignor.)						
Wetherwax, Charles, Best, N. Y. Apparatus for use in treating flax-straw	655,174	July 31	4737	1065	92	1023
Wetmore, Charles E. (See Howe and Wetmore.)						
Wetmore, Silas M., assignor of one-half to W. L. Holt, Fayetteville, N. C. Stop-motion for drawing-frames	655,141	July 31	4671	1053	92	1010
Wetrich, Daniel A. (See Brinkley and Wetrich.)						
Weyl, Theodor, Charlottenburg, Germany. Ozonized-soap preparation	652,826	July 3	171	.....	92	36
Wezel, Julius, Leipsic, Germany. Stoking device	657,632	Sept. 11	1136	238	92	2051
Whalen, Michael J., assignor to himself and A. Pasternak, New York, N. Y. Tool for assorting and bunching nails	658,537	Sept. 25	2757	612	92	2414
Whartenby, Edwin F. (See Schaffer and Whartenby.)						
Wharton, John C., Nashville, Tenn. Making phosphates	657,717	Sept. 11	1308	275	92	2084
Wharton, William, Jr., assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa. Spring-box for frogs, switches, &c	654,039	July 17	2464	565	92	518
Wheaton, William H. (See Harvey, William J., assignor.)						
Wheeldon, Isaac. (See Pell and Wheeldon.)	652,989	July 3	493	116	92	99
Wheeler, Charles H., Akron, Ohio. Rubber tire for vehicles						
Wheeler, Frederick M., Montclair, N. J., assignor to Geo. F. Blake Manufacturing Company, New York, N. Y. Pump	655,037	July 31	4496	1014	92	976
Wheeler, Jesse, assignor of one-half to L. M. and T. H. Conkling and E. C. Smith, St. Louis, Mo. Wagon-brake	656,494	Aug. 21	2525	581	92	1500
Wheeler & Wilson Manufacturing Company. (See Abercrombie, Charles M., assignor.)						
Wheeler & Wilson Manufacturing Company. (See Dimond and Dial, assignors.)						
Wheeler & Wilson Manufacturing Company. (See Noble, Donald, assignor.)						
Whetham, William C. D. (See Darwin, Griffiths, and Whetham.)						
Whipple, Archibald M., assignor of three-fourths to W. W. Anthony, G. N. Rich, North Adams, and E. A. Carlisle, Boston, Mass. Window	656,130	Aug. 14	1864	428	92	1420
Whipple, James C., Chicago, Ill. Lace-curtain stretcher	655,088	July 31	4497	1014	92	977
Whitacre, J. S., *et al.* (See Orr, William O., assignor.)						
Whitaker, Edgar A. (See Richardson and Whitaker.)						
Whitaker, Edgar A., assignor to C. N. Richardson, Providence, R. I. Play-pipe for firemen's hose	655,142	July 31	4674	1054	92	1011
	658,413	Sept. 25	2558	567	92	2375
Whitaker, John H., Davenport, Iowa. Automatically-operating door						
Whitaker, Samuel T., assignor of one-half to Z. Hagedorn, West Point, Ga., and J. J. Hagedorn, Philadelphia, Pa. Inkstand	656,688	Aug. 28	2862	652	92	1643
Whitaker, William J., and S. M. Gruber, Dravosburg, Pa. Rail-joint	657,751	Sept. 11	1365	289	92	2097
Whitcher & Co., Frank W. (See Whitcher, Frank W., assignor.)						
Whitcher, Frank W., assignor to F. W. Whitcher & Co., Boston, Mass. Rubber sole	657,277	Sept. 4	400	84	92	1881
Whitcher, Frank W., assignor of one-half to F. W. Whitcher & Co., Boston, Mass. Rubber sole	657,259	Sept. 4	367	76	92	1874
Whitcomb, Charles E., South Granby, N. Y. Rein-guide	655,429	Aug. 7	478	106	92	1133
Whitcomb, Hiram K., Everett, Mass. Shutter-worker	656,277	Aug. 21	2127	485	92	1483
Whitcomb, William A., Downs, Ill. Gate						
White, Edward L. (See White, John H. and E. L.)						
White, Franklin R., assignor to Patent Button Company, Waterbury, Conn. Garment-fastener	652,939	July 3	375	90	92	76
White, George, Jersey City, N. J., assignor to D. Grear and E. G. Selchow, trustees, New York, N. Y. Fuel injector and burner	657,579	Sept. 11	1038	215	92	2082
White, Henry A., Chicago, and R. C. White, Geneseo, Ill.; said Henry A. White assignor to said R. C. White. Filling-machine	656,278	Aug. 21	2129	486 487	92	1483
White, Hugh, *et al.* (See Merritt, Arthur A., assignor.)						
White, John F., assignor to W. Rushton, Providence, R. I., and A. E. Carroll, Boston, Mass. Under screen for carding-engines	656,871	Aug. 28	3252	739	92	1717
	652,868	July 3	296	56, 57	92	47
White, John H. and E. L., Washington, D. C. Apparatus for making paper tubes						
White, Joseph A. (See Moore and White.)						
White, Joseph R., St. Joseph, Mo. Apparel-drawers	656,916	Aug. 28	3344	761	92	1734
White, Paul E., Los Angeles, Cal. Advertising device	656,131	Aug. 14	1866	429	92	1420
White, Royal C. (See White, Henry A. and R. C.)						
White, Ruben H., Princeton, Ky. Vehicle-brake	656,070	Aug. 14	1738	402	92	1393
White, W. Pierrepont, *et al.* (See Merritt, Arthur A., assignor.)						
White, William, and T. Robinson, Zanesville, Ohio. Glass-mold ring	653,463	July 10	1380	327	92	285
White, William L., Hedon, England. Apparatus for sugar-coating confectionery	658,168	Sept. 18	2124	462	92	2265
White, William R., Bloomington, Ill. Gate-hinge	652,869	July 3	239	57	92	48
White, William R., Bloomington, Ill. Swinging gate	652,870	July 3	240	57	92	48
White, William R., Bloomington, Ill. Gate	654,210	July 24	2914	654	92	631
Whitehead, Benjamin S., Newark, N. J. Badge-button	654,297	July 24	3098	694	92	669
Whitehead, Edwin A. (See Stenhouse and Whitehead.)						
Whitehead, George W., assignor of one-half to F. Bender, Montezuma, Iowa. Wagon-reach coupling	654,773	July 31	4000	899	92	869
Whitehead & Hoag Company. (See Hornich, William, Jr., assignor.)						
Whitehead & Hoag Company. (See Short, Joseph B., assignor.)						
Whiteway, Edwin. (See Morgan, John, assignor.)	656,757	Aug. 28	2988	682	92	1667
Whitham, Fredric E., Sowerby Bridge, England. Fastener for driving belts or straps						
Whiting Manufacturing Company. (See Blair, Thomas H., assignor.)						
Whitlock, Elliott H., and A. W. Burwell, assignors to National Carbon Company, Cleveland, Ohio. Gas-generating apparatus	653,495	July 10	1448	339	92	300
	658,184	Sept. 18	2052	448	92	2249
Whitlock, John W., Rising Sun, Ind. Self-playing musical instrument						
Whitmore, Carlos, assignor of one-half to J. H. Borland, San Francisco, Cal. Railway-rail joint	656,071	Aug. 14	1740	402	92	1394
	656,233	Aug. 21	2052	471	92	1469
Whitney, Charles A., Stevensville, Pa. Snap-hook	656,830	Aug. 28	3154	714 715	92	1699
Whitney, Charles H., Cookeville, and S. F. Glenn, Cassville, Tenn. Harvester for peas, beans, &c	658,196	Sept. 18	2165	473	92	2272
Whitney, George E., Stamford, Conn. Endless screen for gate-houses	652,940	July 3	376	90 91 92	92	76
Whitney, George E., assignor to Whitney Motor Wagon Company, Boston, Mass. Motor-vehicle	652,941	July 3	390	92, 93	92	78
Whitney, George E., assignor to Whitney Motor Wagon Company, Boston, Mass. Motor-vehicle	652,942	July 3	400	94	92	81

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Whitney, George E., assignor to Whitney Motor Wagon Company, Boston, Mass. Motor-vehicle	652,943	July 3	407	94, 95	92	83
Whitney, George E., assignor to Whitney Motor Wagon Company, Boston, Mass. Motor-vehicle	652,944	July 3	413	95	92	84
Whitney Motor Wagon Company. (See Whitney, George E., assignor.)						
Whitney Reed Chair Company. (See Tisdale, Albert A., assignor.)						
Whitten, John D., Kingsley, Oreg. Harrow attachment	658,306	Sept. 18	2353	518	92	2309
Whittingham, George H., Baltimore, Md. Automatic resistance-reducing device	656,004	Aug. 14	1622	374	92	1369
Whittlesey, William A., *et al.* (See Cunningham, Patrick, assignor.)						
Wiard, Frederick H., East Avon, N. Y. Washing-machine	653,429	July 10	1324	314 315	92	275
Wiard, Frederick H., East Avon, N. Y. Washing-machine	653,430	July 10	1326	315	92	275
Wiborg, Charles G., Galesburg, Ill. Welding	654,819	July 31	4067	.....	92	890
Wicht, William, Cleveland, Ohio. Finger-guide for musical instruments	656,917	Aug. 28	3344	762	92	1734
Wickes, Robert E., London, England. Game	658,197	Sept. 18	2166	473 474	92	2272
Wickes, Robert E., London, England. Coin-controlled mechanism	658,198	Sept. 18	2169	474	92	2273
Wideman, James H. (See Davis, Ault, Bailey, and Wideman.)						
Wiederhold, Oscar, East Orange, N. J. Gas-burner	658,099	Sept. 18	1998	435	92	2238
Wiegand, Andrew J., Baltimore, Md., assignor to Matchless Gas Igniting Company. Gas-cock	654,559	July 24	3567	805	92	765
Wiegand, William T., assignor of one-half to J. Haverstick, Philadelphia, Pa. Machine for printing oil-cloth	656,284	Aug. 21	2053	472	92	1469
	658,691	Sept. 25	3052	680	92	2473
Wiens, Peter, Bradshaw, Nebr. Acetylene-gas generator	655,471	Aug. 7	554	123	92	1148
Wieser, Harry, Philadelphia Pa. Kitchen utensil	657,974	Sept. 18	1791	387	92	2199
Wiest, Daniel C., Mohrsville, Pa. Saw-set						
Wigal, James P., assignor of three-fourths to C. E. Sugg, S. S. Wathen, and R. B. Cheaney, Henderson, Ky. Means for disjointing pipes	653,978	July 17	2370	546	92	499
Wigg, Curtis, New York, N. Y. Support for rubber-tired vehicle-wheels	653,048	July 3	594	139	92	120
Wigg, Curtis, New York, N. Y. Vehicle-brake	656,797	Aug. 28	3065	696	92	1682
Wiggin, Effie A. (See Palmer, Edward H., assignor.)						
Wiggins, John L., Duluth, Minn. Fence-post	657,145	Sept. 4	125	30	92	1826
Wiggins, John W., Savannah, Ga. Joint for piping	657,372	Sept. 4	585	128	92	1918
Wighard, Amand, Jersey City, N. J. Apparel-belt	656,918	Aug. 28	3346	702	92	1734
Wightman, Daniel A., Pittsburg, Pa. Locomotive-frame	657,230	Sept. 4	306	65	92	1863
Wikstrom, Malcolm, Shelby, Ohio, assignor to Shelby Steel Tube Company, Pittsburg, Pa. Tube-bending machine	654,373	July 24	3239	726	92	699
Wilbert, David A. (See Brown, Thomas, assignor.)						
Wilbraham Baker Blower Company. (See Green, Thomas W., assignor.)						
Wilbur, Alphonso V., Stockton, Cal. Plow	652,871	July 3	242	58	92	48
Wilbur, Alphonso V., Stockton, Cal. Seeder	653,883	July 17	2114	480	92	450
Wilcke, Henry, Liverpool, England. Self-propelled vehicle	657,260	Sept. 4	367	77	92	1874
Wilcomb, Frank, Pawtucket, R. I., assignor to Standard Machine Company, of Pennsylvania. Tubular fabric and constructing same	654,694	July 31	3832	864 865	92	893
Wilcomb, Frank, Pawtucket, R. I., assignor to Standard Machine Company, of Pennsylvania. Knitting-machine	654,695	July 31	3834	865 866 867	92	894
Wilcox, Charles M., New Paris, Ohio. Tooth-shell slitter	657,633	Sept. 11	1136	238	92	2051
Wilcox, Elmer A., Davenport, Iowa. Rubber-pad horseshoe	657,718	Sept. 11	1306	275	92	2084
Wilcox, Elmer A., assignor to T. G. Connor, Chicago, Ill. Shoe-holder	657,634	Sept. 11	1137	239	92	2052
Wilcox, Frank E., Mechanicsburg, Pa. Fifth-wheel	657,231	Sept. 4	308	66	92	1864
Wild, Charles E. (See Adams and Wild.)						
Wild, Joseph O., Holyoke, Mass. Soda-water apparatus	656,072	Aug. 14	1741	403	92	1394
Wildanger, William. (See Hyatt, Watson, Wildanger, and Sanderson.)						
Wilder, Leslie S., Springfield, Mass. Electric temperature-indicator	655,317	Aug. 7	269	61	92	1094
Wilder, William H., Gardner, Mass. Oil-burner	653,893	July 17	2218	504	92	471
Wilder, William H., Gardner, Mass. Oil-stove	653,894	July 17	2221	505	92	472
Wildey, Charles F., Jr. (See Schiffiin, Charles, assignor.)						
Wildey, Edward M., Sydney, New South Wales. Manifold sales-book	658,307	Sept. 18	2354	519	92	2310
Wiley, Dora, Dublin, Tex. Steam-heater	656,684	Aug. 28	2863	652	92	1643
Wiley, Edgar C., Radford, assignor of one-half to H. E. McWane, Lynchburg, Va. Gate-valve for hydrants	653,600	July 10	1633	382	92	339
	656,685	Aug. 28	2864	652	92	1644
Wilhelm, Louis, Southbridge, Mass. Machine for grinding edges of lenses	655,039	July 31	4499	1014	92	977
Wilhite, Bertnie M., and F. A. Hoyt, Gordon, Nebr. Trunk-handle	654,336	July 24	3171	711	92	683
Wilkin, James C., Cedar Rapids, Iowa. Firearm	654,040	July 17	2466	565	92	519
Wilkins, Alexander G., assignor of one-half to A. L. Dunbar, Meadville, Pa. Clamp for patching or coupling hose						
Wilkins, Fred. B. (See Gleason, Merrill, assignor.)						
Willey, Charles W., Winterport, Me. Combined carpet stretcher and tacker	654,696	July 31	3848	867	92	838
William Schollhorn Company. (See Bernard, William A., assignor.)						
William Sellers & Company. (See Sellers and Bancroft, assignors.)						
William Wharton, Jr., & Company, Incorporated. (See Wharton, William, Jr., assignor.)						
Williams, Adolph A., Duluth, Minn., and G. W. Johnson, Superior, Wis. Reversible propeller	657,844	Sept. 11	1527	328	92	2130
Williams, Alfred S. (See Wood and Williams.)						
Williams, Amos C., assignor of one-half to C. N. Sedore, Tuckahoe, N. Y. Rail-clamp	656,758	Aug. 28	2989	682	92	1667
Williams, Claude H., San Francisco, assignor of one-half to W. G. Johnston, Ben Lomond, Cal. Gate	657,719	Sept. 11	1307	276	92	2085
Williams, Daniel S., assignor of two-thirds to F. R. Waters and G. W. Bennett, Salida, Colo. Ratchet-drill	652,827	July 3	171	40	92	36
Williams, Edward, *et al.* (See Martin, Robert, assignor.)						
Williams, Frank T., Meriden, Conn., assignor to Edward Miller & Company, of Connecticut. Lamp-burner	656,235	Aug. 21	2064	473	92	1471
	658,605	Sept. 25	2804	644	92	2442
Williams, George H., Marion, Ind. Casting metallic bedsteads	653,431	July 10	1327	315	92	275
Williams, George M., Santa Rosa, Cal. Truck	656,872	Aug. 28	3254	739 740	92	1718
Williams, George R. and W. C., New York, N. Y., assignors, by mesne assignments, to B. V. Becker. Automatic mechanism for feeding sheets of paper	657,327	Sept. 4	498	104	92	1899
Williams, George W., New York, N. Y. Bottle-collar						
Williams, Harvey D., Ithaca, N. Y., and H. G. Hoadley, Waterbury, Conn.; said Williams assignor to said Hoadley. Mechanical movement	658,478	Sept. 25	2963	591	92	2395
Williams, Henry A., Quincy, assignor to Putnam Nail Company, Boston, Mass. Machine for finishing horseshoe-nails	655,818	Aug. 14	1261	287 288 289 290	92	1300
Williams, Henry A. (See Burger, Franz, assignor.)						
Williams, Henry M. (See Burger and Williams.)						
Williams, Herbert E., San José, Cal. Horizontal earth-drill	658,495	Sept. 25	2685	596	92	2399

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Williams, Hopkins J., and W. Morgan, deceased: R. Morgan, administratrix, Nanticoke, Pa. Car-brake	653,722	July 17	1902	437	92	411
Williams, J. A., *et al.* (See Ettinger, Samuel F., assignor.)						
Williams, John H. (See Mortimer and Williams.)						
Williams, Louis N. D. (See Scott, Williams, and Swinglehurst.)						
Williams, Milton F., St. Louis, Mo. Separator	657,998	Sept. 18	1832	396	92	2207
Williams, Rufus, Walla Walla, Wash. Hose-coupling	658,692	Sept. 25	3054	680	92	2473
Williams, Samuel H., Barnardsville, Tenn. Pea thresher and cleaner	657,373	Sept. 4	586	123	92	1918
Williams, Septimus T., Beaver Dam, Ky. Road-making machine	657,374	Sept. 4	588	123 124	92	1919
Williams, William C. (See Williams, George R. and W. C.)						
Williams, William H., Concord, N. H. Lead-wire for blasting	657,375	Sept. 4	590	124	92	1919
Williams, William M., Bland, Va. Cigar-box	658,414	Sept. 25	2560	567	92	2375
Williamson Brothers Company. (See Williamson, William C. and J. D., Jr., assignors.)						
Williamson, Daniel, Sunbury, Pa. Pump for automatically inflating pneumatic tires	653,723	July 17	1904	438	92	411
Williamson, Elmer S., Pittsburg, Pa. Sprocket-wheel	655,943	Aug. 14	1485	341	92	1342
Williamson, Henry C., and H. Pries, Michigan City, Ind. Car-bolster	658,227	Sept. 18	2222	486	92	2284
Williamson, James E., assignor to H. B. Anderson, New York, N. Y. Filter	653,160	July 3	801	189	92	160
Williamson, James E., assignor to H. B. Anderson, New York, N. Y. Apparatus for filtration	657,146	Sept. 4	126	30	92	1826
Williamson, John D., Jr. (See Williamson, William C. and J. D., Jr.)						
Williamson, Russell B., Clifton Springs, N. Y. Combined spraying device and torch	653,049	July 3	595	139	92	120
Williamson, William A. (See Jorres, Ralph W., assignor.)						
Williamson, William C. and J. D., Jr., assignors to Williamson Brothers Company, Philadelphia, Pa. Tiller steering-gear for vessels	653,601	July 10	1635	382	92	339
Willis, Frank J., and P. A. Griffith, Onondaga, Mich. Baggage-loader	653,942	July 17	2306	528	92	487
Willis, George R., Brighton, England. Printing, folding, and delivery mechanism	657,147	Sept. 4	133	31	92	1828
Willis, Glenn T., assignor to J. Porteous, Fresno, Cal. Wagon or truck gear	658,496	Sept. 25	2087	596	92	2399
Willison, John, assignor to National Malleable Castings Company, Cleveland, Ohio. Coupling-unlocking device	655,040	July 31	4500	1015	92	977
Willox, David, Glasgow, Scotland. Centrifugal machine	655,536	Aug. 7	642	146 147	92	1166
Wills, Edward A. (See Hughes, James H., assignor.)						
Wills, John B. (See Jenkins and Wills.)						
Willsea, Jasper B., Denver, Colo. Wheelbarrow	658,606	Sept. 25	2866	644	92	2442
Willson, Henry, Chicago, Ill. Sign-letter	654,862	July 31	4178	942	92	909
Willson, Henry, Chicago, Ill. Sticker-pin	654,863	July 31	4178	942	92	909
Wilmot, Frank A., assignor to Wilmot & Hobbs Manufacturing Company, Bridgeport, Conn. Bicycle-frame	656,735	Aug. 28	2952	674	92	1661
Wilmot & Hobbs Manufacturing Company. (See Wilmot, Frank A., assignor.)						
Wilson, Charles E. (See Kitsee, Isidor, assignor.)						
Wilson, Charles H., New York, N. Y. Handsaw	656,778	Aug. 28	3025	689	92	1674
Wilson, Charles H., New York, N. Y. Handsaw	656,779	Aug. 28	3029	689 690	92	1675
Wilson, Clark, Topeka, Kans. Shingle-gage	658,538	Sept. 25	2759	612	92	2414
Wilson, Edwin H., Globe Village, Mass. Sand-shield for vehicle-axles	654,374	July 24	3242	726	92	700
Wilson, Elmer E., *et al.* (See Deplanty, Charles F., assignor.)						
Wilson, George E., assignor of one-half to M. Aldredge, St. Clairsville, Ohio. Grapple or tongs	654,697	July 31	3849	868	92	838
Wilson, George T., Moline, Ill. Attachment for carriage-boots	654,501	July 24	3182	786	92	749
Wilson, Jerome B., Lansing, Mich. Wear-tip for plow-points	655,385	Aug. 7	397	87	92	1116
Wilson, John F., Jetmore, Kans. Regulator for ball-bearings	654,375	July 24	3243	727	92	700
Wilson, John T., Jersey Shore, Pa. Piston-packing	654,211	July 24	2015	654	92	631
Wilson, John T., Jersey Shore, Pa. Piston-valve for engines	654,212	July 24	2017	654 655	92	632
Wilson, John W. (See Wilson, William W. and J. W.)						
Wilson, John W., Shaner, Okla. Ter. Pipe-cutting device	654,213	July 24	2020	655	92	632
Wilson, Ransford C., Abilene, Kans. Machine for harvesting seed from corn, &c.	656,073	Aug. 14	1743	403 404	92	1395
Wilson, Thomas H., Plainfield, N. J. Apparel-sleeve protector	653,761	July 17	1974	450	92	424
Wilson, Wallace, Philadelphia, Pa. Obtaining bicolored hosiery	654,864	July 31	4180	------	92	909
Wilson, William. (See Carson, Robert, assignor.)						
Wilson, William A., Murphysborough, Ill. Self-acting mining-dog	656,279	Aug. 21	2130	488	92	1485
Wilson, William W. and J. W., assignors of one-fourth to M. Coerver, Dallas, Tex. Preheating means for vapor-burners	653,924	July 17	2269	516	92	481
Wilt, George B., Gibsonburg, Ohio. Engine-tie	654,502	July 24	3482	786	92	749
Wily, Charles A., Miles City, Mont. Photographic camera	656,798	Aug. 28	3066	696	92	1682
Winans, Edwin, New York, N. Y. Power-transmitting mechanism	655,318	Aug. 7	271	61	92	1094
Winch, Allen, Chicago, Ill. Acetylene-gas-generating lamp	655,944	Aug. 14	1487	341	92	1342
Winchester Repeating Arms Company. (See Gardner, John, assignor.)						
Winckfield, George W., assignor of one-fourth to G. C. Fabens, Alameda, Cal. Electro-medical vacuum apparatus	655,747	Aug. 14	1091	251	92	1264
Windham, Francis, and E. Fry, London, England; said Fry assignor to said Windham. Acetylene-gas generator	654,084	July 17	2335	584	92	532
Windom, Charles E., Sterling, Ill. Cooling-board	653,762	July 17	1975	451	92	425
Wing, Dwight R., Little Rock, Ark. Shaft-hanger	655,319	Aug. 7	272	61	92	1094
Wing, Lingan C., New York, N. Y. Machine for addressing and wrapping articles	654,214	July 24	2021	655 656	92	633
Winger, William D. (See Clemenson and Winger.)						
Winkler, William. (See Ford, John C., assignor.)						
Winslow, Alson G., Memphis, Tenn. Churn	653,834	July 17	2116	480	92	450
Winter, Augustus G., Owensborough, Ky. Fireproofing cellulose	655,845	Aug. 14	1310	300	92	1309
Winter, George J., Buffalo, N. Y. Door	653,432	July 10	1329	316	92	275
Winter, Henry W., and B. J. Conlon, Lawrence, Mass. Protector-setting machine for boots or shoes	654,298	July 24	3100	694	92	670
Winter, Hermann, assignor to F. Wesel Manufacturing Company, New York, N. Y. Machine for trimming stereotype-plates	652,050	July 3	596	140 141 142	92	120
Winter, Katharine F., *et al.* (See Kade, Charles F., assignor.)						
Wirt, Reuben D., Independence, Mo. Automatic hose-valve	656,759	Aug. 28	2900	682	92	1667
Wisconsin Chair Company. (See Dennett, Fred A., assignor.)						
Wise, Edgar H., Johnstown, Pa. Electrical controller	653,857	July 17	2148	489 490	92	456
Wishart, Edward, Waterford, Pa. Elevated pleasure-railway	652,872	July 3	244	58	92	48
Wishart, George, New York, N. Y., assignor to Aluminum Plate and Press Company, New York, N. Y., and Plainfield, N. J. Plate-graining machine	655,472	Aug. 7	555	123 124	92	1149

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wishart, William. (See Mosher and Wishart)						
Wistar, Dillwyn. (See Richardson, Charles G., assignor.)	652,945	July 3	415	96	92	84
Witherwax, Henry, Guilderland, N. Y. Mortising-tool	658,603	Sept. 25	3055	680	92	2473
Withington & Cooley Manufacturing Company. (See McKeil, George A., assignor.)						
Witkowski, Louis C., Washington, D. C. Collar-button	655,289	Aug. 7	220	48	92	1084
Witry, Louis, assignor to Waterloo Gasoline Engine Company, Waterloo, Iowa. Igniter for explosive-engines	657,188	Sept. 4	216	48	92	1845
Witter, William S., Ridott, Ill. Chair-swing	657,975	Sept. 18	1793	387	92	2190
Wittkowsky, Carl, Berlin, Germany. Manufacturing articles from veneers	655,290	Aug. 7	221	49	92	1084
Wohlgemuth, Anton, Munich, Germany. Construction of walls and ceilings	657,845	Sept. 11	1529	328	92	2131
Wolbrecht, John M., Los Angeles, Cal. Pneumatic-tired wheel	653,496	July 10	1450	339	92	300
Wold, Olaus C., assignor to Thayer & Chandler, Chicago, Ill. Air-brush	653,161	July 3	803	190	92	161
Wolf, Elmer E., Springfield, Ohio, assignor to Springfield Elastic Tread Company, of Ohio. Elastic tread for boots or shoes	657,846	Sept. 11	1530	329	92	2131
Wolf, Joseph D., New Brighton, Pa. Music-leaf turner	656,686	Aug. 28	2866	653	92	1644
Wolf, Julius, New York, N. Y. Street-broom	657,720	Sept. 11	1808	276	92	2085
Wolfe, James H., assignor to Lehr Agricultural Company, Fremont, Ohio. Cotton-seed planter	658,694	Sept. 25	3057	680 681	92	2473
Wolfe, Lucinda A., Webb City, Mo. Quilting-frame	654,929	July 31	4307	968	92	986
Wolfersgrün, Ernst S. von. (See Fahnenfeld and Wolfersgrün.)	655,666	Aug. 7	950	215	92	1226
Wolff, Carl, New York, N. Y. Apparatus for cutting glue	654,041	July 17	2467	566	92	519
Wolff, George, North Bergen, assignor of one-half to C. Schall, West Hoboken, N. J. Comb	657,721	Sept. 11	1310	277	92	2085
Wolff, Henry, Groveland, N. Y. Hoof-clipper	655,473	Aug. 7	557	124	92	1140
Wood, Charles F., Richmond, Va. Weighing-machine	656,236	Aug. 21	2065	473	92	1472
Wood, Edward C., Somerville, assignor of one-half to T. W. Gleeson, Boston, Mass. Gas-engine	658,308	Sept. 18	2355	519	92	2310
Wood, Edwin. (See Borrow, Wood, and Hodgson.)	657,180	Sept. 4	219	48,49	92	1845
Wood, Edwin A. and W. E., Utica, N. Y. Safety-valve	652,990	July 3	495	116	92	100
Wood, Elijah. (See Nelson and Wood.)	654,299	July 24	3104	695	92	670
Wood, George M., Decatur, Ill. Running-gear for vehicles	658,100	Sept. 18	1999	435 436	92	2239
Wood, George, and A. S. Williams, London, England. Cattle-pen, &c	658,695	Sept. 25	3058	681	92	2474
Wood, Henry, and A. S. Williams, London, England. Cattle-pen, &c	658,724	July 17	1905	438	92	411
Wood, Henry N. (See Sauvage, William H., assignor.)	656,074	Aug. 14	1745	404	92	1395
Wood, Henry N., *et al.* (See Sauvage, William H., assignor.)						
Wood, James J., Fort Wayne, Ind. Electric transformer						
Wood, James J., Fort Wayne, Ind. Starting mechanism for alternating-current motors						
Wood, James J., Fort Wayne, Ind., assignor to General Electric Company, of New York. Armature for multipolar dynamos						
Wood, John T., and J. A. Brodie, Liverpool, England. Combined refuse-destructor and steam-generator						
Wood, Jonathan F., Clarksville, Tenn. Fence-joining tool						
Wood, Leonard C., Alden, Iowa. Wagon-loading device	656,687	Aug. 28	2867	653	92	1644
Wood, Marshall G. (See Butcher and Wood.)	654,774	July 31	4001	899	92	870
Wood, Walter J., Atlanta, Ga. Water-back for stoves or ranges	655,819	Aug. 14	1266	290	92	1301
Wood, Wilfred R., London, England. Combustion-furnace						
Wood, Wilfred R., London, England. Mechanical stoker						
Wood, William A. (See Rister and Wood.)						
Wood, William E. (See Wood, Edwin A. and W. E.)	656,237	Aug. 21	2067	473 474	92	1472
Wood, William E., Utica, N. Y. Safety valve and muffler	656,149	Aug. 14	1890	435	92	1425
Wood, William P., Holyoke, assignor to F. S. Newman, Springfield, Mass. Paper-winding machine	657,148	Sept. 4	135	31,32	92	1828
Wood, William R., St. Paul, Minn. Apparatus for handling locomotives or other heavy bodies	653,602	July 10	1637	383	92	340
Wood, William R., assignor of one-half to T. S. Johnson, Lewistown, Pa. Ax-forging die	656,150	Aug. 14	1892	435	92	1426
Wood, William T., Nashville, Tenn. Vapor-lamp	655,537	Aug. 7	643	147	92	1166
Woodeson, William A., Gateshead, England. Steam-actuated valve	655,291	Aug. 7	222	49	92	1084
Woodruff, Eugene R., Groton, N. Y. Bridge	654,503	July 24	3483	786	92	749
Woods, Charles O., assignor to H. C. Ripley, Owego, N. Y. Pipe-wrench	653,051	July 3	602	142	92	122
Woods, Charles W., Cowen, W. Va. Paint-brush holder	655,386	Aug. 7	398	88	92	1116
Woods, Edwin S., Chicago, Ill. Car-truck frame	657,376	Sept. 4	591	124	92	1919
Woods, Grant, assignor to M. Trullinger, Bakersfield, Cal. Gas-generator	656,760	Aug. 28	2992	682	92	1668
Woods, Granville T., New York, N. Y. Incubator	654,504	July 24	3484	787	92	750
Woods, Joseph M., Chicago, Ill. Carbureting-lamp	658,036	Sept. 18	1892	409	92	2218
Woodward, Charles R., Campbell, N. Y. Gate for railway-crossings	653,725	July 17	1907	438	92	411
Woodward, Daniel C., Hartford, Conn. Electric motor	655,143	July 31	4675	1054 1055	92	1011
Woodward, Russel G., Waukegan, assignor to Union Special Sewing Machine Company, Chicago, Ill. Ruffling sewing machine						
Woodward, Willis J., *et al.* (See Barckdall, Daniel, assignor.)	657,999	Sept. 18	1834	396	92	2207
Woodworth, Mary E., Montgomery, Ala. Shutter-protector	653,634	July 10	1728	397	92	358
Woodworth, Silas F., Clipper Gap, Cal. Apparatus for automatically applying car-brakes	654,820	July 31	4088	919	92	890
Woodworth, William M., Sycamore, Ind. Railway cross-tie	657,580	Sept. 11	1040	216	92	2033
Woolery, John T., Fort Worth, Tex. Cotton picking and cleaning machine	655,748	Aug. 14	1093	252 253	92	1265
Wooley, Thomas A., and H. Fox, assignors of one-half to A. Zimmerman, Hamilton, Canada. Machine for shocking grain	656,280	Aug. 21	2138	488	92	1485
Wooley, Thomas A., and H. Fox, assignors of one-half to A. Zimmerman, Hamilton, and A. E. Osler, Toronto, Canada. Machine for shocking grain						
Woolliscroft, George, *et al.* (See Garland, Herbert, assignor.)	653,645	July 10	1745	------	92	361
Woolner, Adolph, Jr. (See Andersen and Woolner.)	657,149	Sept. 4	138	32	92	1828
Woolner, Adolph, Jr., and C. Andersen, Peoria, Ill. Treating distillery-slop	654,215	July 24	2927	656 657	92	634
Woolner, Adolph, Jr., and C. Andersen, Peoria, Ill. Combined planter and fertilizer-distributer						
Wootten, Augustus H., Louisville, Ga. Combined planter and fertilizer-distributer						
Worden, Charles A., deceased; M. L. Worden, Denver, Colo., administratrix. Sharpening-machine						
Worden, Mary L., administratrix. (See Worden, Charles A.)	657,150	Sept. 4	140	32,33	92	1829
Wormald, Joseph E., and O. W. Ames, assignors of one-third to J. S. Frye, Spokane, Wash. Acetylene-gas generator	656,919	Aug. 28	3047	702	92	1734
Worns, Edwin C., assignor of one-half to A. M. Gerow, New York, N. Y. Apparatus for impregnating water with gas	656,288	Aug. 21	2070	------	92	1472
Worsnop, Charles H., assignor to himself, Worsnop & Company, Limited, Halifax, and H. E. Hodgson, Cleckheaton, England. Composition of matter for making gas	655,538	Aug. 7	645	147 148	92	1167
Worsnop & Company *et al.* (See Worsnop, Charles H., assignor.)	657,976	Sept. 18	1796	387	92	2199
Worth, John S., Coatesville, Pa. Machine for cutting elliptical holes	652,873	July 3	245	59	92	49
Worthington, Charles C., Irvington, N. Y. Pump	657,581	Sept. 11	1042	216	92	2033
Wortman, William H., London, and W. Richmond, Blythe, Canada. Pea-harvester						
Wrhen, Charles A., Oil City, Pa. Curtain-fixture bracket						

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wright, Abner B., Gilbert Station, Iowa. Automatic apparatus for weighing and delivering milk	658,053	Sept. 18	1914	415, 416	92	2222
Wright, Alfred G., assignor to National Automatic Knitter Company, Philadelphia, Pa. Attachment for automatic circular-knitting machines	658,415	Sept. 25	2561	567, 568	92	2376
Wright, Frank W., Wichita, Kans. Combined undershirt and suspensory bandage	657,582	Sept. 11	1043	216	92	2033
Wright, George H. (See Cox, Wright, and Reynolds.)						
Wright, George M., Winneconne, Wis. Thill-coupling	653,858	July 17	2152	490	92	457
Wright, Harold A., Chicago, Ill. Puzzle	652,946	July 3	416	96	92	84
Wright, Martin, San Antonio, Tex. Flash-light system	654,821	July 31	4089	919, 920	92	890
Wrought Iron Range Company. (See Culver, Walter L., assignor.)						
Wuichet, Walter G., assignor to Pasteur-Chamberland Filter Company, Dayton, Ohio. Filter	654,775	July 31	4002	900	92	870
Wulbern, Louis G., Birmingham, Ala. Spring tension device for valve-gear	658,054	Sept. 18	1916	416	92	2223
Wyekoff, Seamens & Benedict. (See Webb, George B., assignor.)						
Wyman, Horace, assignor to Crompton & Knowles Loom Company, Worcester, Mass. Loom	656,592	Aug. 21	2709	621, 622	92	1599
Wynne, John, Plymouth, and V. V. Haldacher, Wilkes-Barré, Pa. Mining-drill	655,292	Aug. 7	223	49, 50	92	1065
Wyvell, James, Breckenridge, Minn. Organ	655,594	Aug. 7	764	179, 180	92	1189
Yale, Frank W., Aurora, Ill. Polishing-brush	658,416	Sept. 25	2564	568	92	2376
Yale & Towne Manufacturing Company. (See Taylor, Warren H., assignor.)						
Yarnell, Charles S., assignor to Moore Carving Machine Company, Minneapolis, Minn. Abrading or polishing machine	652,874	July 3	246	59	92	49
Yarnell, Charles S., assignor to Moore Carving Machine Company, Minneapolis, Minn. Means for operating abrading or polishing machines	653,726	July 17	1910	438, 439	92	412
Yarnell, Jefferson M., Coshocton, Ohio. Pocket record-book	654,698	July 31	3850	868	92	839
Yates, Charles E., near Mill Grove, Mo. Churn	657,805	Sept. 11	1456	308, 309	92	2115
Yeatman, Samuel P., Beatrice, Nebr. Clothes-line tightener	654,337	July 24	3172	711	92	683
York, Levi D. (See Cunningham, Richard B., assignor.)						
Youlden, George A., Providence, R. I. Window-screen	656,831	Aug. 28	3156	715	92	1700
Young, Charles W., Milford, Mass. Hat-shaping machine	656,708	Aug. 28	2907	661	92	1652
Young, Charley H., Wilkeson, Wash. Automatic railway-gate	654,065	July 17	2536	584	92	582
Young, Dan M., assignor of one-third to J. M. Leeper, Newburg, N. Y. Shoe-fasteuer	656,075	Aug. 14	1747	404	92	1306
Young, David, Paterson, N. J. Picker stop mechanism for looms	658,101	Sept. 18	2001	436	92	2239
Young, James A., assignor of one-half to F. Howard, St. Paul, Minn. Upholsterer's button	658,000	Sept. 18	1835	396	92	2207
Young, James P., Coin, Iowa. Lace or embroidery measuring machine	653,603	July 10	1638	383	92	340
Young, John A., Chicago, Ill. Book case or rack	657,847	Sept. 11	1531	329	92	2131
Young, John A., assignor to American Optical Company, Southbridge, Mass. Fastening metallic parts together	654,042	July 17	2468	566	92	519
Young, Laurence C., Goose Creek, Ky. Cultivator	656,920	Aug. 28	3340	763	92	1735
Young, William H., and S. A. Hayes, Sanford, Fla. Light especially adapted for electric headlights for locomotives	655,041	July 31	4502	1015	92	977
Youngberg, Frank A., Garfield, Wash. Weed-turning attachment for cultivators	653,052	July 3	603	142	92	122
Youngen, John H., assignor of two-thirds to E. A. Rockhill and F. E. D. Keplinger, Canton, Ohio. Neck-yoke	658,079	Sept. 18	1970	429	92	2223
Younger, William T., St. Louis, Mo. Envelop	654,865	July 31	4181	942	92	909
Yurgae, Otto P. and R. H., assignors to Yurgae Signalphone Manufacturing Company, Milwaukee, Wis. Electric-signal-registering system	655,144	July 31	4682	1055, 1056	92	1013
Yurgae, Robert H. (See Yurgae, Otto P. and R. H.)						
Yurgae Signalphone Manufacturing Company. (See Yurgae, Otto P. and R. H., assignors.)						
Zachrisson, Adolf, Perth Centre, Canada. Calendar	658,309	Sept. 18	2356	519, 520	92	2310
Zedel, Wilhelm. (See Schwan and Zedel.)						
Zeiller, Robert, Munich, Germany. Furnace	653,433	July 10	1330	316	92	276
Zellers, Mahlon M. (See Richmond and Zellers.)						
Zent, George S., Little River, Kans. Mechanical motor	654,930	July 31	4308	968	92	936
Zentner, Joseph, assignor of one-half to O. J. Funsch, St. Louis, Mo. Combined pool and billiard table	653,727	July 17	1913	439	92	412
Ziegler, Edward E., Philadelphia, Pa. Back-pedaling brake	655,945	Aug. 14	1490	342	92	1343
Ziegler, John F., Toledo, Ohio. Filter	654,043	July 17	2469	566	92	519
Ziegler, Oscar J., assignor to Stover Manufacturing Company, Freeport, Ill. Windmill	657,977	Sept. 18	1708	387	92	2200
Zimmerman, Abraham M., New Holland, Pa. Mill-frame	655,298	Aug. 7	225	50, 51	92	1085
Zimmerman, Adam. (See Wooley and Fox, assignors.)						
Zimmerman, Adam, *et al.* (See Wooley and Fox, assignors.)						
Zimmerman, Harry, Frederick, Md. Device for weaning calves	657,232	Sept. 4	310	66	92	1864
Zimmerman, Simon R., Amazonia, Mo. Side-board fastener for wagon-beds	656,239	Aug. 21	2070	474	92	1472
Zimmermann, Friedrich O. C. (See Hagemann and Zimmermann.)						
Zimmermann, Jakob, Munich, Germany. Implement for pulling up potato-plants	653,635	July 10	1729	398	92	358
Zingg, Ella K. (See Fitts and Zingg.)						
Zink, George, Shady Bower, Md. Apparatus for raising or lowering pump-pipes	654,376	July 24	3241	727	92	700
Zinn, Mary. (See Scheuber, August W., assignor.)						
Zöllner, Carl. (See Zöllner, Matthes and C.)						
Zöllner, Matthes and C., Fate, Tex. Seeding-machine	653,053	July 3	604	143	92	122
Zöllner, Matthes and C., Fate, Tex. Draft-equalizer	653,054	July 3	605	143	92	122
Zöllner, Matthes and C., Blackland, Tex. Cultivator	653,102	July 3	805	190	92	161
Zwoyer Fuel Company. (See Taggart, William P., assignor.)						

ALPHABETICAL LIST OF PATENTEES OF DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Volume.	Official Gazette. Page.
A. M. Collins Manufacturing Company. (See Odgers, John P., assignor.)				
Adams, George E., New Britain, Conn. Suspender-end body	33,065	Aug. 14	92	1430
Adams, William H. (See Ball, William E., assignor.)				
Adt, Leo F., Troy, N. Y. Bow-spring for eyeglasses	33,243	Sept. 25	92	2498
Adt, Leo F., Troy, N. Y. Bow-spring for eyeglasses	33,244	Sept. 25	92	2498
Akers, Earl C., Port Huron, Mich. Ship's-level case	33,034	July 31	92	1028
American Encaustic Tiling Company. (See Köhler, Emil, assignor.)				
American Hard Rubber Company. (See Gurnee, Isaac Q., assignor.)				
American Lithographic Company. (See Witsch, Nicholas, assignor.)				
American Radiator Company. (See Downe, George E., assignor.)				
American Specialty Company. (See Kerr, Mathew M., assignor.)				
American Stopper Company. (See Lindemeyr, Phillp, assignor.)				
Anderson, James A. (See Maxwell and Anderson.)	32,893	July 3	92	182
Andrews, Samuel A., Tacoma, Wash. Badge	33,263	Sept. 25	92	2501
Arcliarena Company. (See Williams, Edgar L., assignor.)	33,095	Aug. 21	92	1613
Arnold, Fred W., assignor of one-half to R. T. Scott, Cambridge, Ohio. Kneading-board	32,990	July 24	92	774
Atkin, Samuel T., Georgetown, Tex. Shoe-scraper	33,270	Sept. 25	92	2503
Attleboro Manufacturing Co. (See Straker, Herbert J., assignor.)	33,177	Sept. 4	92	2000
Atwood, Lewis J., assignor to Plume & Atwood Manufacturing Company, Waterbury, Conn. Reservoir or oil-pot for lamps	33,050	Aug. 7	92	1231
Atwood, Lewis J., assignor to Plume & Atwood Manufacturing Company, Waterbury, Conn. Reservoir or oil-pot for lamps	32,935	July 10	92	373
Avery, Washington I., New York, N. Y. Cat	33,038	July 31	92	1029
Baldwin, Edward S., Peabody, assignor to Boston Pump Company, Boston, Mass. Switch-lever for electric circuits	33,169	Sept. 4	92	1999
Ball, William E., Zanesville, assignor to W. H. Adams, Muskingum County, Ohio. Nut-lock washer	32,898	July 3	92	183
Bandman, Isidor C., New York, N. Y. Trimming	33,073	Aug. 14	92	1432
Barkalow, Zebulon E., Reading, Pa. Charging-block	33,236	Sept. 25	92	2497
Barnes, Harry A., Milwaukee, Wis., assignor to Premier Manufacturing Company, Hartford, Conn. Upper member for fifth-wheels	33,022	July 31	92	1026
Barnhart, Herschel J. M., What Cheer, Iowa. Rein-guide	33,008	July 24	92	778
Bassett, Laura, Princeton, Minn. Pastry-mixer	32,923	July 10	92	370
Beahr, Samuel M., Cincinnati, Ohio. Badge	33,029	July 31	92	1027
Beall, Asa B., Sewickley, Pa. Nut-lock washer	33,002	July 24	92	776
Beattie, Herbert W., Quincy, Mass., assignor to Sill Stove Works, Rochester, N. Y. Heating-stove	33,120	Aug. 28	92	1788
Beck, Frederick. (See Hanshammer, Franz, assignor.)	33,151	Sept. 4	92	1996
Becking, George, Chattanooga, Tenn. Water-tank casing	33,267	Sept. 25	92	2502
Beede, Herbert G., Pawtucket, R. I. Guide-wire for thread-twisting machines	32,977	July 24	92	772
Bell, Charles T. (See Green, Surry L., assignor.)	33,106	Aug. 21	92	1615
Billings, Frederic C., Hartford, Conn. Running-gear frame for vehicles	32,976	July 17	92	553
Bittner, William H., assignor to Consolidated Safety Pin Company, Bloomfield, N. J. Safety-pin	33,195	Sept. 11	92	2156
Boggis, Henry, Philadelphia, Pa. Game-board	33,028	July 31	92	1027
Bonfield, Edwin A. (See Nokes, Charles W., assignor.)	33,232	Sept. 18	92	2323
Borsodi, Morris, assignor to Leo Canda Company, Cincinnati, Ohio. Picture-exhibiting cabinet	33,247	Sept. 25	92	2498
Boston Pump Company. (See Baldwin, Edward S., assignor.)	33,053	Aug. 7	92	1232
Brown, Andrew J., Baltimore, Md. Advertising-apron	33,217	Sept. 18	92	2320
Brown, Lewis S., assignor to L. S. Brown and W. W. Buckley, Columbus, Ohio. Gas-burner	33,014	July 24	92	779
Brown, Louis H., assignor to M. J. Whittall, Worcester, Mass. Carpet-border	33,228	Sept. 18	92	2322
Buckley, William W., *et al.* (See Brown, Lewis S., assignor.)	33,172	Sept. 4	92	1999
Butler, John D., Giles Mills, assignor of one-half to E. F. Young, Dunn, N. C. Cabinet	33,262	Sept. 25	92	2501
Button, John F., Ardmore, Ind. Ter. Harness-loop	32,915	July 10	92	368
Buzzacott, Francis H., Chicago, Ill. Camp-stove	33,096	Aug. 21	92	1613
Capen, Thomas W. (See Gates and Capen.)	33,141	Aug. 28	92	1792
Cederquist, Nils H., Chicago, Ill. Tool	33,234	Sept. 18	92	2323
Charity, Thomas, Burlington, Kans. Cultivator-shovel	33,140	Aug. 28	92	1794
Chevrier, Maxime, assignor to Universal Wooden Ware Company, Harrisville, N. Y. Wooden dish	33,101	Aug. 21	92	1614
Chicago Handle Bar Company. (See Larsen, Ivert, assignor.)	33,153	Sept. 4	92	1996
Clapp, George D., Boston, Mass. Welt-strip	32,967	July 17	92	552
Clark, Has, Kansas City, Kans. Horse-collar	33,146	Aug. 28	92	1793
Cliff, Edward, Newark, N. J., assignor to Cliff & Guibert Company, New York, N. Y. Side frame for hose-brackets	33,139	Aug. 28	92	1792
Cliff & Guibert Company. (See Cliff, Edward, assignor.)	33,253	Sept. 25	92	2499
Cocke, George M., and E. Seidel, assignors to Fuller-Warren Company, Milwaukee, Wis. Stove.				
Codman, William C., assignor to Gorham Manufacturing Company, Providence, R. I. Handle for spoons, forks, or similar articles				
Cohen, Joseph, New York, N. Y. Pin				
Conner, George F., Port Huron, Mich. Road-roller wheel				
Consolidated Safety Pin Company. (See Bittner, William H., assignor.)				
Cope, Henry P., Detroit, Mich. Heating-stove				
Cope, Henry P., Detroit, Mich., assignor to Gem City Stove Company, Dayton, Ohio. Heating-stove				
Co-Operative Foundry Company. (See Kennedy, Thomas R., assignor.)				
Co-Operative Foundry Company. (See Kennedy and King, assignors.)				
Corcoran, John C., St. Paul, Minn. Bottle-stopper				
Cornell, George V., Bound Brook, N. J. Casing for a game apparatus				
Cotter, John F., Kansas City, Mo. Closet-bowl				
Council, Clifford, Williamsville, Ill. Body member for a plate-lifter				
Cox, Robert M., Philadelphia, Pa. Vault-light				
Crane, Charles M., assignor to Gilliam Manufacturing Company, Canton, Ohio. Harness-saddle				

Alphabetical list of patentees of designs, July to September, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Crary, William P., New York, N. Y. Lamp-bracket member	33,191	Sept. 11	92	2155
Craven, Lydia A., Spokane, Wash. Dress-shield safety-pin	33,046	Aug. 7	92	1231
Crawford, Benjamin, Danville, Ill. Fence-post	32,964	July 17	92	550
Crawford, William. (See Edwards, John, assignor.)				
Curtis, Edmund A., Chicago, Ill. Car-truck frame	32,929	July 10	92	371
Curtis, Edmund A., Chicago, Ill. Car-truck frame	32,930	July 10	92	371
Daly, Timothy G., Revere, assignor to G. E. Smith, Boston, Mass. Advertising-case	33,175	Sept. 4	92	2000
Darling, David H., Jr., Rye, assignor to United States Battery Company, New York, N. Y. Battery-cell	33,131	Aug. 28	92	1790
Darmann, Gustav, Wald, Germany. Padlock-case	33,194	Sept. 11	92	2156
Davenport, William H., Norwich, Conn. Plate for thumb-screws	33,075	Aug. 14	92	1432
Davis, Benjamin F. (See Mertz and Davis.)				
Dayton, Charles M., Bowling Green, Ky. Badge	32,983	July 24	92	773
De Blois, Edward A. (See Williams, Harry R., assignor.)				
De Gallez, Abram, Albany, N. Y. Type-writing-machine-eraser holder	32,988	July 24	92	774
De Myers, Levi, Toledo, Ohio. Game-table	33,271	Sept. 25	92	2503
Dennis, Samuel K., assignor to Plano Manufacturing Company, Chicago, Ill. Stationary jaw for tying-bills	33,190	Sept. 11	92	2155
Devennie, Mary F., Philadelphia, Pa. Bed-pan	32,989	July 24	92	774
Dewar, William H., New York, N. Y. Nozzle	33,171	Sept. 4	92	1999
Diacont, Frank J., assignor to Waite, Thresher Company, Providence, R. I. Handle for button-hooks, &c	32,946	July 17	92	547
Diacont, Frank J., assignor to Waite, Thresher Company, Providence, R. I. Handle for button-hooks or similar articles	32,987	July 24	92	774
Dixon, Sista L., Kansas City, Mo. Compartment-pan	33,218	Sept. 18	92	2321
Dodd, Willis G., San Francisco, Cal. Ore-concentrating table	33,011	July 24	92	779
Donaghy, Charles, Philadelphia, Pa. Coal-hod or similar article	33,202	Sept. 11	92	2158
Downe, George E., Chicago, Ill., assignor to American Radiator Company, of New Jersey. Heater	33,203	Sept. 11	92	2158
Downe, George E., Chicago, Ill., assignor to American Radiator Company, of New Jersey. Section for vertical heaters	33,233	Sept. 18	92	2323
Duffy, James F., Chicago, Ill. Hatchet-head	33,137	Aug. 28	92	1791
Duguid, William, Seattle, Wash. Canopy-cover frame	33,235	Sept. 18	92	2323
Durant, Samuel. (See Liljegvest and Durant.)				
E. & T. Fairbanks & Company. (See Hazen, Perley F., assignor.)				
E. & T. Fairbanks & Company. (See Sargent, Willis H., assignor.)				
Eaton, Harrison H., Cleveland, Ohio. Lacing-hook	33,108	Aug. 21	92	1615
Eddy, George W., assignor to Scovill Manufacturing Company, Waterbury, Conn. Air-pump body	32,981	July 10	92	372
Edwards, John, assignor to W. Crawford, New York, N. Y. Dress-shield	33,161	Sept. 4	92	1997
Eggers, Anton C., assignor to Goodyear's India Rubber Glove Manufacturing Company, New York, N. Y. Water-bottle	33,102	Aug. 21	92	1614
Elliott, James R., London, Canada. Luggage-carrier	32,899	July 3	92	183
Ericson, Amanda C., Victoria, Ill. Cake-turner or similar article	32,918	July 10	92	369
Eschelbacher, Joseph, New York, N. Y. Badge-frame	33,156	Sept. 4	92	1997
Fahys Watch Case Company. (See Habensack, Fred, assignor.)				
Fair, George W., Primrose, Pa. Grate	32,968	July 17	92	552
Fariss, John B., Greensborough, N. C. Standard for fruit-cutters	33,135	Aug. 28	92	1791
Farr, Willis M., Dowagiac, Mich. Sand-band	33,250	Sept. 25	92	2499
Fauber, William H. (See Price, Albert M., assignor.)				
Fearn, William A., Columbus, Ohio. Latching-lever	33,254	Sept. 25	92	2499
Feigl, Richard, Chicago, Ill. Puzzle-board	32,933	July 10	92	372
Fenner, Joseph, Brockton, Mass. Inner sole	33,162	Sept. 4	92	1998
Ferrell, Lena F., La Monte, Mo. Shoe-lace fastener	33,180	Sept. 11	92	2153
Finn, Edwin, Elkhart, Ind. Scale-poise	33,109	Aug. 21	92	1616
Fletcher, Charles T., Worcester, Mass., assignor to Locomobile Company of America, New York, N. Y. Pump-casing	33,051	Aug. 7	92	1231
Foster, Theodore W., Providence, R. I. Cover for puff-boxes or similar articles	33,237	Sept. 25	92	2497
Foster, Theodore W., Providence, R. I. Back for brushes	33,238	Sept. 25	92	2497
Foster, Theodore W., Providence, R. I. Handle for button-hooks or similar articles	33,239	Sept. 25	92	2497
Fox, Mary E., Baltimore, Md. Supporter for infants' diapers	32,934	July 10	92	373
Franz, Charles, assignor to A. A. Vantine & Co., New York, N. Y. Woven fabric	33,093	Aug. 14	92	1436
French, Richmon E., Medina, Ohio. Bottle or similar article	32,947	July 17	92	547
Fritsche, John, Philadelphia, Pa. Puzzle-board	33,099	Aug. 21	92	1613
Fritz, Clinton E., New Oxford, Pa. Hook	33,163	Sept. 4	92	1998
Fuller-Warren Company. (See Cocke and Seidel, assignors.)				
Fulmer, Joseph H. (See Messinger and Fulmer.)				
Gahan, William H., *et al.* (See Rousseaux, William G., assignor.)	32,910	July 3	92	185
Gaisman, Henry J., New York, N. Y. Belt-body	33,001	July 24	92	776
Gallaher, Edward B., New York, N. Y. Side frame for vehicle-seats	33,066	Aug. 14	92	1431
Ganter, Max, Buffalo, N. Y. Inkstand				
Gates, Albert J., and T. W. Capen, assignors to Gates Iron Works, Chicago, Ill. Ore-crusher frame	32,908	July 3	92	184
Gates Iron Works. (See Gates and Capen, assignors.)				
Geer, Edgar S., Dixborough, Mich. Member for a cow-tail holder	33,136	Aug. 28	92	1791
Gem City Stove Company. (See Cope, Henry P., assignor.)				
Georg, William F. (See Smithers, Charles W. H., assignor.)				
George V. Cresson Company. (See Pessano, Antonio C., assignor.)				
Gilfillan, Essington N., Chicago, Ill. Pen or pencil holder	33,044	Aug. 7	92	1230
Gilliam Manufacturing Company. (See Crane, Charles M., assignor.)				
Goodyear's India Rubber Glove Manufacturing Company. (See Eggers, Anton C., assignor.)				
Gorham Manufacturing Company. (See Codman, William C., assignor.)				
Gorton, James S., assignor to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Feed-bar shoe for sewing-machines	33,219	Sept. 18	92	2321
Graf, Otto C., Pittsburg, Pa. Fork	32,913	July 10	92	368
Graham, Samuel, Lebeck, Mo. Spike	32,958	July 17	92	549
Grall, Joseph G., assignor to R. Mitchell, Detroit, Mich. Polishing-iron	33,176	Sept. 4	92	2000
Grant, Albert L., Philadelphia, Pa. Spring for thill or shaft couplings	32,961	July 17	92	550
Grant, Harriott, Syracuse, N. Y. Garment-hook	33,019	July 31	92	1026
Gray, James, Allegheny, Pa. Water-heater case or shell	33,006	July 24	92	777
Green, Surry L., assignor of one-half to C. T. Bell, Fort Worth, Tex. Hose-supporter	33,094	Aug. 21	92	1613
Greene, William H., Alexander City, Ala. Sash-lock member	32,994	July 24	92	775
Griswold, Matthew, Jr., Erie, Pa. Gas heating-stove	33,092	Aug. 14	92	1436
Gross, Elam A., Camden, N. J. Newspaper and letter holder	33,241	Sept. 25	92	2498
Gumbinner, Paul, New York, N. Y. Trimming	32,906	July 3	92	184
Gurley, Frank, High Point, N. C. Pen-wiper	33,098	Aug. 21	92	1613

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Gurnee, Isaac Q., Butler, N. J., assignor to American Hard Rubber Company, of New York. Atomizer-casing	33,126	Aug. 28	92	1789
H. D. Smith & Company. (See Ward, William S., assignor.)				
Habensack, Fred, Sag Harbor, assignor to Fahys Watch Case Company, New York, N. Y. Spoon or fork handle	32,914	July 10	92	368
Hall, Jesse F., Grenola, Kans. Nut-lock washer	32,995	July 24	92	775
Hallock, Alfred A., Farmingdale, N. Y. Coffin-handling hook	33,035	July 31	92	1028
Hamilton, Henry A., Emlenton, Pa. Brush	33,070	Aug. 14	92	1431
Hanlon, William W., Barnesville, Ohio. Fan	32,911	July 3	92	185
Hanshammer, Franz, Concord, N. H., assignor to F. Beck, New York, N. Y. Decorative frieze	32,937	July 10	92	373
Hanshammer, Franz, Concord, N. H., assignor to F. Beck, New York, N. Y. Decorative frieze	32,938	July 10	92	373
Hanshammer, Franz, Concord, N. H., assignor to F. Beck, New York, N. Y. Decorative frieze	32,939	July 10	92	374
Hanshammer, Franz, Concord, N. H., assignor to F. Beck, New York, N. Y. Decorative frieze	32,940	July 10	92	374
Harper, Reuben S., Milford, Mich. Knife	33,031	July 31	92	1028
Harris, Robert C. (See Hunt, Arthur E., assignor.)				
Harshner, Darius L., Etna Green, Ind. Member of a window-lock	33,023	July 31	92	1026
Hart, Henry M., and J. L. Shook, New Brighton, Pa. Nut	33,198	Sept. 11	92	2157
Hathaway, Wick, Madison, Ohio. Paper-cutter	33,150	Sept. 4	92	1996
Haviland, Charles E., Limoges, France. Plate or similar article	33,071	Aug. 14	92	1431
Haviland, Charles E., Limoges, France. Plate	33,072	Aug. 14	92	1432
Hawkins, Edmund A., Yaphank, N. Y. Game-board	33,152	Sept. 4	92	1996
Hazen, Perley F., assignor to E. & T. Fairbanks & Company, St. Johnsbury, Vt. Scale-beam-stand member	33,000	July 24	92	776
Hazen, Perley F., assignor to E. & T. Fairbanks & Company, St. Johnsbury, Vt. Scale-weight	33,084	Aug. 14	92	1434
Heinz, Henry J., Pittsburg, Pa. Bottle	32,917	July 10	92	369
Hendon, Walter P., Dallas, Tex. Plow-beam for triple-disk plows	33,112	Aug. 21	92	1617
Hendon, Walter P., Dallas, Tex. Plow-beam for double-disk plows	33,113	Aug. 21	92	1617
Hendon, Walter P., Dallas, Tex. Plow-beam for disk plows	33,114	Aug. 21	92	1617
Hensel, Colladay Company. (See Hensel, George S., assignor.)				
Hensel, Colladay Company. (See Kirberg, Jakob E., assignor.)				
Hensel, George S., Philadelphia, Pa., assignor to Hensel, Colladay Company, of Pennsylvania. Skirt or garment protector	32,975	July 17	92	553
Herrick, William, assignor to Morgan & Wright, Chicago, Ill. Hair-shedder	33,088	Aug. 14	92	1435
Hertlein, Christopher E. (See Seidel, Christian, assignor.)				
Higgins, Arthur S., New York, N. Y. Plate	33,032	July 31	92	1028
Hilder, Jacob, New York, N. Y. Belt-body	33,209	Sept. 18	92	2319
Hilder, Julius, New York, N. Y. Bodice-belt ornament	33,210	Sept. 18	92	2319
Hilton, Julius C., Neenah, Wis. Button	33,064	Aug. 14	92	1430
Hinckley, Robert, Washington, D. C. Baby's cap	33,211	Sept. 18	92	2320
Hoenstine, Zigler. (See Sumner and Hoenstine.)				
Hoerr, Louis A., St. Louis, Mo. Draft-lug	32,998	July 24	92	776
Hogan, Daniel, assignor to Meinecke & Company, New York, N. Y. Douche-pan	35,049	Aug. 7	92	1231
Holland, Frank F., Portland, Me. Receptacle	32,981	July 24	92	777
Holtz, William H., New York, N. Y. Picture-frame	33,127	Aug. 28	92	1789
Homan Silver Plate Company. (See Leavenworth, Seth H., assignor.)				
Horne, Carl R., Williamsburg, Kans. Latch-piece for snap-hooks	32,956	July 17	92	549
Hornich, William, Jr., Newark, N. J. Badge-bar	32,941	July 17	92	547
Howard, William E. (See Van Pelt, George S., assignor.)				
Huelster, William W., Grand Rapids, Mich. Hinge member	32,900	July 3	92	183
Huelster, William W., Grand Rapids, Mich. Hinge member	32,901	July 3	92	183
Huggins, Ulysses S., Wellsburg, W. Va. Bottle	32,895	July 3	92	182
Hughes, Henry S. (See Walker, James B., assignor)				
Hunn, Albert B., assignor to New Departure Bell Company, Bristol, Conn. Gong	32,920	July 10	92	369
Hunt, Arthur E., assignor of one-half to R. C. Harris, Nicholas, N. Y. Pump-base	33,005	July 24	92	777
Hutchinson, Joseph G., Attleborough, Mass. Display show-case	32,980	July 24	92	773
Ievers, Henry, New York, N. Y. Gas-flame spreader	32,955	July 17	92	549
International Silver Company. (See Prétat, Frederick, assignor.)				
Jackson, Peter L., Boonton, N. J. Toy	32,982	July 24	92	773
James E. Blake Company. (See Saart, William H., assignor.)				
Johnston, John D., Newport, R. I. Shelf-bracket	33,168	Sept. 4	92	1998
Joinville, David O., Detroit, Mich. Filtering vessel	33,174	Sept. 4	92	2000
Jones, George M. (See Kelly, John T., assignor.)				
Judd, Frederick W., Cleveland, Ohio, assignor to Wrought Iron Range Company, St. Louis, Mo. Range reservoir top plate	33,261	Sept. 25	92	2501
Judson, Fenton E., Antigo, Wis. Autirattler	33,223	Sept. 18	92	2321
Kabisch, Carl F., New York, N. Y. Badge or similar article	33,182	Sept. 11	92	2153
Kalkbrenner, George, New York, N. Y. Link cuff-holder	33,160	Sept. 4	92	1997
Keeler, Herbert E., New York, N. Y. Screw	32,924	July 10	92	370
Keiper, Henry B., Lancaster, Pa., assignor to Star Ball Retainer Company, Lancaster, Pa., and Jersey City, N. J. Badge frame or holder	32,984	July 24	92	773
Kelly, John, Chicago, Ill. Valve-casing	32,922	July 10	92	370
Kelly, John T., New York, N. Y., assignor of one-half to G. M. Jones, Pittsburg, Pa. Radiator-valve body	33,257	Sept. 25	92	2500
Kelly, John T., New York, N. Y., assignor of one-half to G. M. Jones, Pittsburg, Pa. Coupling member for radiator-valves	33,258	Sept. 25	92	2500
Kelly, John T., New York, N. Y., assignor of one-half to G. M. Jones, Pittsburg, Pa. Coupling member for radiator-valves	33,259	Sept. 25	92	2500
Kelly, John T., New York, N. Y., assignor of one-half to G. M. Jones, Pittsburg, Pa. Coupling member for radiator-valves	33,260	Sept. 25	92	2500
Kempshall, Eleazer, Newton, Mass., assignor, by mesne assignments, to Rubber Tire Company of America, New York, N. Y. Lug for vehicle-tires	33,249	Sept. 25	92	2499
Kennedy, John T., Carl, Kans. Neck-yoke bracket	32,962	July 17	92	550
Kennedy, Thomas R., assignor to Co-Operative Foundry Company, Rochester, N. Y. Heating-stove	33,007	July 24	92	778
Kennedy, Thomas R., and E. J. King, assignors to Co-Operative Foundry Company, Rochester, N. Y. Cooking-stove	33,041	July 31	92	1029
Kennedy, William J., Pottsville, Pa. Stove-lid lifter	33,147	Aug. 28	92	1793
Kent, William J., New York, N. Y. Hoof-pad	33,089	Aug. 14	92	1435
Kerr, Mathew M., assignor to American Specialty Company, Detroit, Mich. Nerve-broach	32,945	July 17	92	547
Kimmell, William E., Seymour, Ind. Display-form	32,978	July 24	92	773
King, Edward J. (See Kennedy and King.)				
Kingsbury, Harry T., Keene, N. H. Body-blank for toy hook-and-ladder trucks	32,932	July 10	92	372
Kingsbury, Harry T., Keene, N. H. Body-blank for toy wagons	32,973	July 17	92	553
Kinnicutt, Ambrose, Albany, N. Y. Puzzle-board	33,123	Aug. 28	92	1788
Kirberg, Jakob E., Philadelphia, Pa., assignor to Hensel, Colladay Company, of Pennsylvania. Trimming	33,272	Sept. 25	92	2503

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Kirberg, Jakob E., Philadelphia, Pa., assignor to Hensel, Colladay Company, of Pennsylvania. Trimming	33,273	Sept. 25	92	2508
Kirberg, Jakob E., Philadelphia, Pa., assignor to Hensel, Colladay Company, of Pennsylvania. Trimming	33,274	Sept. 25	92	2508
Klaber, Augustus D., New York, N. Y. Envelop-blank	32,894	July 3	92	182
Köhler, Emil, assignor to American Encaustic Tiling Company, Limited, New York, N. Y. Tile.	32,188	Sept. 11	92	2155
Kraemer, William, Chicago, Ill. Stamping-machine frame	33,004	July 24	92	777
Kurtz, Stewart S., assignor to Paar Double-Cushion Horse Shoe Company, Canton, Ohio. Horse-shoe-frame	33,090	Aug. 14	92	1435
La Du, Duane, Warner's, N. Y. Type-holder	33,167	Sept. 4	92	1998
Lapaugh, Louis T., and A. R. Leiff, Utica, N. Y. Part for a pedal-clip	33,226	Sept. 18	92	2322
Larsen, Ivert, assignor to Chicago Handle Bar Company, Chicago, Ill. Handle-bar member	33,025	July 31	92	1027
Lawler, James J., Mount Vernon, N. Y. Pipe-coupling	33,179	Sept. 4	92	2000
Le Blanc, Hubert O., Springfield, Mo. Coat and pants hanger	33,266	Sept. 25	92	2502
Leader, Adam H., *et al.* (See Thamsen, Harry C., assignor.)	33,115	Aug. 21	92	1617
Leavenworth, Seth H., assignor to Homan Silver Plate Company, Cincinnati, Ohio. Home-altar.	32,979	July 24	92	773
Lehner, George, Pittsburg, Pa. Display-stand for clocks	33,077	Aug. 14	92	1432
Leiff, Arthur R. (See Lapaugh and Leiff.)	33,083	July 31	92	1028
Lemon, Uriah E., Fairfield, Wash. Hinge-leaf	33,110	Aug. 21	92	1616
Leo Canda Company. (See Borsodi, Morris, assignor.)	32,963	July 17	92	550
Leo, James, Jersey City, N. J. Covered box	33,086	Aug. 14	92	1434
Lesher, Thomas J., Lansing, Mich., assignor to Norwich Nickel and Brass Company, Norwich, Conn. Display-frame	33,120	Aug. 28	92	1790
Levering, Mark S., Philadelphia, Pa., assignor to Standard Hose Mender and Pipe Coupler Company, Camden, N. J. Member for hose-couplings	33,097	July 31	92	1028
Levering, Mark S., Philadelphia, Pa., assignor to Standard Hose Mender and Pipe Coupler Company, Camden, N. J. Member for hose-couplings	32,957	July 17	92	549
Levering, Mark S., Philadelphia, Pa., assignor to Standard Hose Mender and Pipe Coupler Company, Camden, N. J. Member for an air-brake coupling	33,183	Sept. 11	92	2153
Levitin, Jakob, and J. Rosen, Chicago, Ill. Clothes-pounder	33,024	July 31	92	1027
Lewis, Edwin C., Ionia, Mich. Holding-spring	32,916	July 10	92	369
Libenow, Ferdinand E., Spokane, Wash., assignor of two-thirds to D. J. Munn, New Westminster, Canada. Badge	33,173	Sept. 4	92	2000
Liljegvest, Oran, and S. Durant, Wausau, Wis. Crank-arm repair-tip	32,997	July 24	92	775
Lindemeyr, Philip, Baltimore, Md., assignor to American Stopper Company, New York, N. Y. Vessel-cap	33,130	Aug. 28	92	1790
Linke, Theodore, New York, N. Y. Filter-body	33,061	Aug. 14	92	1430
Littmann, Max, St. Louis, Mo. Hame-hook	33,062	Aug. 14	92	1430
Locomobile Company of America. (See Fletcher, Charles T., assignor.)	33,055	Aug. 7	92	1232
Locomobile Company of America. (See MacAlman, John H., assignor.)	33,081	Aug. 14	92	1433
Locomobile Company of America. (See Macker, George A., assignor.)	33,245	Sept. 25	92	2498
Louch, John H., Lithia Springs, Ga. Liquid container or vessel	32,925	July 10	92	370
Lynchard, William H., Council Bluffs, Iowa. Badge	33,256	Sept. 25	92	2500
Lynchard, William H., Council Bluffs, Iowa. Badge	32,959	July 17	92	550
MacAlman, John H., Somerville, Mass., assignor to Locomobile Company of America, New York, N. Y. Motor-vehicle body	32,902	July 3	92	183
Macker, George A., Westborough, Mass., assignor to Locomobile Company of America, New York, N. Y. Tool-carrier for vehicles	33,067	Aug. 14	92	1431
Mahony, William F., assignor of one-third to C. H. Ridenour, Washington, D. C. Eye-shade	33,103	Aug. 21	92	1614
Malone, John F., Bement, Ill. Tire-setting device	33,104	Aug. 21	92	1614
Mansfield, Fred A., Philadelphia, Pa. Lamp-post	33,106	Sept. 11	92	2156
Manton, Frank S., Providence, R. I. Capstan	33,107	Sept. 11	92	2156
Marchand, Louis, Jr., Pittsburg, Pa. Bassinet-stand	33,048	Aug. 7	92	1231
Mardock, James H., assignor of one-half to J. A. Shoultz, Fruitland, Iowa. Napkin-holder	33,229	Sept. 18	92	2322
Martien, Benjamin F., Ashland, Ohio. Chaffer or sieve slat	33,030	July 31	92	1027
Martien, Benjamin F., Ashland, Ohio. Chaffer or sieve slat	33,212	Sept. 18	92	2320
Martien, Benjamin F., Ashland, Ohio. Chaffer or sieve slat	33,155	Sept. 4	92	1997
Martien, Benjamin F., Ashland, Ohio. Chaffer or sieve slat	33,009	July 24	92	778
Maxwell, John, and J. A. Anderson, Oneida, N. Y. Casket	32,904	July 3	92	184
McDonald, William H., Titusville, Pa. Garden-hoe	33,013	July 24	92	779
McIntyre, William, and D. L. Nichols, Hartford, Conn. Link for wire mattresses	33,207	Sept. 18	92	2319
Meinecke, Christian W., Jersey City, N. J. Baby-comforter	33,252	Sept. 25	92	2499
Meinecke & Company. (See Hogan, Daniel, assignor.)	32,951	July 17	92	548
Mertz, John H., and B. F. Davis, Chicago, Ill. Badge	32,969	July 17	92	552
Messinger, Franklin, and J. H. Fulner, Nazareth, Pa. Snow-guard for roofs	33,205	Sept. 18	92	2318
Meyer, Francis T., Montclair, N. J., assignor to Meyer-Sniffen Company, Limited, New York, N. Y. Pedestal-urinal	33,105	Aug. 21	92	1615
Meyer-Sniffen Company. (See Meyer, Francis T., assignor.)	33,140	Aug. 28	92	1792
Migel, Moses C., New York, N. Y. Pattern for silk fabric	32,985	July 24	92	773
Miller, Lee R., and E. T. Richert, Akron, Ohio. Billiard-cue head	32,966	July 17	92	551
Miller, Thomas W., Washington, D. C. Oil-cup	33,111	Aug. 21	92	1616
Mills, Herbert S., Chicago, Ill. Dial-frame	33,255	Sept. 25	92	2500
Miner, Benjamin D., Indianapolis, Ind. Chair	32,960	July 17	92	550
Mitchell, Robert. (See Grall, Joseph G., assignor.)	32,974	July 17	92	553
Molloy, Joseph M., Spalding, Idaho. Badge	33,124	Aug. 28	92	1788
Moody, Asa, Hawarden, Iowa. Broiler	33,042	July 31	92	1030
Morgan & Wright. (See Herrick, William, assignor.)	33,076	Aug. 14	92	1432
Morss, Stephen B., Rahway, N. J. Curb and gutter block				
Munn, Daniel J. (See Libenow, Ferdinand E., assignor.)				
Munson, Corydon W. (See Shepler, Pius L., assignor.)				
Murdoch, Alexander, *et al.* (See Thamsen, Harry C., assignor.)				
Musselman, Ephraim, Celina, Ohio. Necktie-holder				
Myers & Bro., F. E. (See Myers, Philip A., assignor.)				
Myers & Brother, F. E. (See Myers, Philip A., assignor.)				
Myers, Philip A., assignor to F. E. Myers & Bro., Ashland, Ohio. Pump-body				
Myers, Philip A., assignor to F. E. Myers & Bro., Ashland, Ohio. Pump-body				
Myers, Philip A., assignor to F. E. Myers & Brother, Ashland, Ohio. Door-hanger track				
Naery, John S., Lafayette, Ind. Gasket				
Naramore, Frank J. (See Pyle, Edwin L., assignor.)				
Neitzel, Paul J., South Bend, Ind. Game-board				
New Departure Bell Company. (See Hunn, Albert B., assignor.)				
New Haven Novelty Machine Company. (See Thompson, Henry G., assignor.)				
Newell, Edgar G., Glen Ridge, N. J. Baby's ball pattern				
Newman, Alney G., Wauneta, Kans. Subsoil attachment for corn or cotton listers				
Nichols, Delbert L. (See McIntyre and Nichols.)				
Nichols, George F., Woodsborough, Md. Window-fastener				

Alphabetical list of patentees of designs, July to September, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Nokes, Charles W., Cleveland, Ohio, assignor of one-half to E. A. Bonfield, Savannah, Ga. Gas-burner tip	33,220	Sept. 18	92	2321
Nokes, Charles W., Cleveland, Ohio, assignor of one-half to E. A. Bonfield, Savannah, Ga. Gas-burner tip	33,221	Sept. 18	92	2321
Norwich Nickel and Brass Company. (See Lesher, Thomas J., assignor.)	33,187	Sept. 11	92	2154
Odell, Wallace, North Tarrytown, N. Y. Puzzle-board	33,059	Aug. 14	92	1429
Odgers, John P., assignor to A. M. Collins Manufacturing Company, Philadelphia, Pa. Card-mount	33,040	July 31	92	1029
Paar Double-Cushion Horse Shoe Company. (See Kurtz, Stewart S., assignor.)	33,027	July 31	92	1027
Pannill, Henry, assignor to Virginia Coal Saving and Heat Regulating Company, Petersburg, Va. Fireplace regulating-plate	33,067	Aug. 14	92	1434
Pardee, William H., Antigo, Wis. Antirattler for thill-couplings	33,186	Sept. 11	92	2154
Parsell, Henry V. A., Jr., and A. J. Weed, New York, N. Y. Engine-frame	33,184	Sept. 11	92	2154
Partridge, William T., New York, N. Y. Cover for pen-wipers or similar articles	33,057	Aug. 14	92	1429
Pattison, Sam W., *et al.* (See Rousseaux, William G., assignor.)	33,047	Aug. 7	92	1231
Peirce, Hiram H., Peoria, Ill. Campaign-badge	33,010	July 24	92	778
Pennell, Charles B., Duncannon, Pa. Game-board	32,926	July 10	92	370
Perry, Howard B., Wakefield, R. I. Easel	33,181	Sept. 11	92	2153
Perry, Thomas O., Chicago, Ill. Wind-wheel	33,128	Aug. 28	92	1789
Pessano, Antonio C., assignor to George V. Cresson Company, Philadelphia, Pa. Drop-hanger for journal-boxes	33,242	Sept. 25	92	2498
Petrone, Joseph, New York, N. Y. Heel for boots or shoes	33,054	Aug. 7	92	1232
Piersol, Daniel, Lancaster, Pa. Ornamental frame	33,157	Sept. 4	92	1997
Pinkerton, Edward E., Chicago, Ill. Envelop	33,154	Sept. 4	92	1996
Pitkin & Brooks. (See Shanley, William H., assignor.)	33,251	Sept. 25	92	2499
Plano Manufacturing Company. (See Dennis, Samuel K., assignor.)	33,138	Aug. 28	92	1792
Platt, Clarence D., Bridgeport, Conn. Connector for electric wires	32,952	July 17	92	549
Plume & Atwood Manufacturing Company. (See Atwood, Lewis J., assignor.)	33,052	Aug. 7	92	1232
Poalk, James L., Merchantville, N. J. Lace-fastener	33,246	Sept. 25	92	2498
Premier Manufacturing Company. (See Barnes, Harry A., assignor.)	33,204	Sept. 18	92	2318
Prétat, Frederick, Waterbury, assignor to International Silver Company, Meriden, Conn. Handle for a spoon or similar article	33,080	Aug. 14	92	1433
Price, Albert M., assignor to W. H. Fauber, Chicago, Ill. Fork for bicycles or like tubular frames	33,227	Sept. 18	92	2322
Price, Thomas R., Knoxville, Tenn. Mantel	33,090	Aug. 14	92	1430
Pride, William H., Springfield, Ill. Finger-hammer for musical instruments	33,264	Sept. 25	92	2501
Pritchett, Joseph J., Mason City, Ill. Hopple	33,265	Sept. 25	92	2501
Pumphrey, Walter H., New York, N. Y. Syringe-nozzle	33,214	Sept. 18	92	2320
Pyle, Edwin L., assignor of one-half to F. J. Naramore, Bridgeport, Conn. Game-board	33,039	July 31	92	1029
Quackenbush, Henry M., Herkimer, N. Y. Tack or nail extractor	33,060	Aug. 14	92	1430
Quirk, Edward, Fulton, N. Y. Wearing-plate for wagon-reaches	32,943	July 17	92	547
Racine Paper Goods Co. (See Shedd, Hugh E., assignor.)	33,268	Sept. 25	92	2502
Reeves, Madison W., Sayre, Pa. Jar-stand	33,269	Sept. 25	92	2502
Reeves, Madison W., Sayre, Pa. Banana-stand	33,036	July 31	92	1029
Rheinauer, Moritz, New York, N. Y. Bottle	33,069	Aug. 14	92	1431
Richardson, Dwight S., New York, N. Y. Fire-pot				
Richert, Emanuel T. (See Miller and Richert.)				
Richmond, Henry E., North Bennington, Vt., assignor to E. and B. E. Underwood, Summit, N. J. Stereoscopic-picture holder				
Ridenour, Charles H. (See Mahony, William F., assignor.)				
Ritter, Jacob. (See Ritter, Louis and J.)				
Ritter, Louis and J., New York, N. Y. Belt-buckle				
Rix, George K., Chicago, Ill., assignor to Yawmann & Erbe Manufacturing Company, Rochester, N. Y. Basket				
Rix, George K., Chicago, Ill., assignor to Yawmann & Erbe Manufacturing Company, Rochester, N. Y. Basket				
Roche, William, Jersey City, N. J. Electric-lamp holder				
Rosen, Jacob. (See Levitin and Rosen.)				
Ross, Archia L., New York, N. Y. Skirt-hanger				
Rousseaux, William G., assignor of one-half to S. W. Pattison, W. H. Gahan, and L. M. Sprague, Baltimore, Md. Hook				
Rozell, Charles, Hutchinson, Kans. Hitch-rein loop				
Rubber Tire Company of America. (See Kempshall, Eleazer, assignor.)				
Rugg, Ephriam T., Newark, Ohio. Halter-ring				
Russell, Josephine, Tabor, Iowa. Badge				
Ryan, William J., Philadelphia, Pa. Hat-pin tip				
Saart, William H., assignor to James E. Blake Company, Attleborough, Mass. Handle for button-hooks or similar articles				
Sanders, Louis, New York, N. Y. Belt				
Santomene, Frank, New York, N. Y. Garment-pattern				
Sargent, Willis H., assignor to E. & T. Fairbanks & Company, St. Johnsbury, Vt. Brace for platform-scales				
Sargent, Willis H., assignor to E. & T. Fairbanks & Company, St. Johnsbury, Vt. Beam-standard for platform-scales				
Schiess, Theodore, New York, N. Y. Fabric-trimming				
Schleicher, William A., Cleveland, Ohio. Buckle-frame				
Schloerb, Henry, New York, N. Y. Toy bank				
Schultz, Christ J., Merrill, Iowa. Railway-spike				
Scott, Charles P., New York, N. Y. Casing for pendent ceiling cut-outs				
Scott, Robert T. (See Arnold, Fred W., assignor.)				
Scovill Manufacturing Company. (See Eddy, George W., assignor.)				
Scranton, Frederick A., East Hampton, Conn. Bell				
Scriven, Jeremiah A., New York, N. Y. Bifurcated nether garment				
Sears, Edward H., Collinsville, Conn. Plowshare-blade				
Seidel, Christian, assignor to C. E. Hertlein, New York, N. Y. Skirt-protector				
Seidel, Christian, assignor to C. E. Hertlein, New York, N. Y. Skirt-protector				
Seidel, Emil. (See Cocke and Seidel.)				
Sekora, Joseph A., Ann Arbor, Mich. Carriage-pole tip				
Shanklin, Harry A. (See Withington and Shanklin.)				
Shanley, William H., assignor to Pitkin & Brooks, Chicago, Ill. Glass vessel or similar article				
Shedd, Hugh E., Red Wing, Minn., assignor to Racine Paper Goods Co., Racine, Wis. Multiple wrapper				
Shedd, Hugh E., Red Wing, Minn., assignor to Racine Paper Goods Co., Racine, Wis. Wrapper				
Shepard, Margaret L., Watertown, N. Y. Skirt-supporting belt				
Shepler, Pius L., assignor of one-fifth to C. W. Munson, Toledo, Ohio. Guard-finger for harvesters				

Alphabetical list of patentees of designs, July to September, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Shook, Jacob L. (See Hart and Shook.)				
Shoultz, John A. (See Mardock, James H., assignor.)				
Sill Stove Works. (See Beattie, Herbert W., assignor.)				
Simons Bro. & Co. (See Weihman, Henry A., assignor.)				
Smith, Charles W., Detroit, Mich. Whip-top	32,971	July 17	92	552
Smith, George E. (See Daly, Timothy G., assignor.)				
Smith, William H. (See Yost and Smith.)				
Smith, William K., Philadelphia, Pa. Rug	32,936	July 10	92	373
Smithers, Charles W. H., assignor to W. F. Georg, Fond-du-Lac, Wis. Bicycle-frame	33,144	Aug. 28	92	1793
Sonley, Richard S., Essex, Canada. Cobbler's last	33,132	Aug. 28	92	1790
Sparks, James H., Chicago, Ill. Shoe	33,118	Aug. 28	92	1787
Spencer, George G., Chicago, Ill. Bicycle seat-post	33,199	Sept. 11	92	2157
Spencer, John N., South Berwick, Me. Hinge member	33,222	Sept. 18	92	2821
Sprague, Lewis M., *et al.* (See Rousseaux, William G., assignor.)				
Standard Advertising Company. (See Strope, Ben B., assignor.)				
Standard Hose Mender and Pipe Coupler Company. (See Levering, Mark S., assignor.)				
Star Ball Retainer Company. (See Keiper, Henry B., assignor.)				
Starrett, Laroy S., Athol, Mass. Tool-stock	33,083	Aug. 14	92	1434
Stephenson, Thomas B., Jr., Bristol, Conn. Badge	33,045	Aug. 7	92	1230
Steuerwald, Kate, New York, N. Y. Belt-body	33,017	July 31	92	1025
Stevens, Frank N., Rutherford, N. J. Mud-guard brace for bicycles	33,082	Aug. 14	92	1434
Stevens, Frederick A., Providence, R. I. Nose-bridge for spectacle-frames	32,944	July 17	92	547
Stocker, George, North Pasadena, Cal. Cane	33,206	Sept. 18	92	2319
Stockham, James H., Des Moines, Iowa. Badge or similar article	32,912	July 10	92	368
Stockham, James H., Des Moines, Iowa. Badge or similar article	33,003	Aug. 14	92	1430
Straker, Herbert J., North Attleborough, assignor to Attleboro Manufacturing Co., Attleborough, Mass. Handle for paper-cutters or similar articles	33,185	Sept. 11	92	2151
Strom, Axel A., Austin, assignor to Strom Manufacturing Company, Chicago, Ill. Switch-chair or brace	33,200	Sept. 11	92	2157
Strom Manufacturing Company. (See Strom, Axel A., assignor.)				
Strope, Ben B., assignor to Standard Advertising Company, Coshocton, Ohio. Glass-holding tray	32,950	July 17	92	548
Sumner, James A., and Z. Hoenstine, Louisville, Nebr. Trace-carrier	32,996	July 24	92	775
Swales, Frank, London, England. Curb-hook	32,896	July 3	92	182
Swan, Henry C., Oshkosh, Wis. Lower fifth-wheel	32,927	July 10	92	371
Swan, Henry C., Oshkosh, Wis. Body-hanger for vehicles	32,928	July 10	92	371
Taft, Frank, New York, N. Y. Binder-tab	33,166	Sept. 4	92	1998
Taylor, Warren H., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Casing for door-checks	32,993	July 24	92	775
Thamsen, Harry C., assignor of two-thirds to A. Murdoch, Hamburg, and A. H. Leader, Reading, Pa. Atomizer-casing	33,189	Sept. 11	92	2155
Thompson, Henry G., assignor to New Haven Novelty Machine Company, New Haven, Conn. Angle-coupling	33,224	Sept. 18	92	2322
Thompson, Henry G., assignor to New Haven Novelty Machine Company, New Haven, Conn. Pipe-coupling	33,225	Sept. 18	92	2322
Towne, Henry R., New York, N. Y., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Padlock-case	32,921	July 10	92	369
True, Hiram L., McConnellsville, Ohio. Inhaler	33,125	Aug. 28	92	1789
Truesdell, Henry, Toronto, Canada. Grate-bar	33,201	Sept. 11	92	2157
Turnbull, Walter J., New Orleans, La. Cleaner for kitchen utensils	32,919	July 10	92	369
Turner, George T., Philadelphia, Pa. Automobile-frame	33,003	July 24	92	777
Turner, George T., Philadelphia, Pa. Automobile-frame	33,034	July 31	92	1030
Underwood, Bert E., *et al.* (See Richmond, Henry E., assignor.)				
Underwood, Elmer, *et al.* (See Richmond, Henry E., assignor.)				
Ungfeldt, Albert, New York, N. Y. Safety pin	33,018	July 31	92	1026
United States Battery Company. (See Darling, David H., Jr., assignor.)				
Universal Wooden Ware Company. (See Chevrier, Maxime, assignor.)				
Van Buren, Jafew S., Albany, N. Y. Water front for stoves	33,148	Aug. 28	92	1794
Van Pelt, George S., assignor to W. C. Howard, New York, N. Y. Water-bag	33,215	Sept. 18	92	2320
Van Pelt, George S., assignor to W. C. Howard, New York, N. Y. Fountain-syringe bag	33,216	Sept. 18	92	2320
Vantine & Co., A. A. (See Franz, Charles, assignor.)				
Verbeek, Pieter H., Herrnhut, Germany. Lantern-body	33,074	Aug. 14	92	1432
Vinson, Henry M., Thornton, Tex. Clothes-line section	33,133	Aug. 28	92	1791
Virginia Coal Saving and Heat Regulating Company. (See Pannill, Henry, assignor.)				
Voorhees, William H., Columbus, Ohio. Light for illuminated signs	33,192	Sept. 11	92	2156
Vose, Charles L., Westerly, R. I. Envelop-sealer	33,097	Aug. 21	92	1613
Waite, Thresher Company. (See Diacont, Frank J., assignor.)				
Walker, James B., assignor of one-half to H. S. Hughes, Rush Springs, Ind. Ter. Clothes-pin	32,905	July 3	92	181
Walter, Henry E. (See Walter, Jacob and H. E.)				
Walter, Jacob and H. E., Buffalo, N. Y. Clamp member	33,026	July 31	93	1027
Walters, Charles F., Prospect, N. Y. Campaign-lantern	32,992	July 24	92	775
Ward, William S., assignor to H. D. Smith & Company, Plantsville, Conn. Member for carpenters' pincers	33,079	Aug. 14	92	1433
Warren, Alva F., Providence, R. I. Ornamental pin	32,942	July 17	92	547
Weed, Arthur J. (See Parsell and Weed.)				
Weihman, Henry A., assignor to Simons Bro. & Co., Philadelphia, Pa. Back for brushes or similar articles	33,121	Aug. 28	92	1788
Weihman, Henry A., assignor to Simons Bro. & Co., Philadelphia, Pa. Handle for spoons or similar articles	33,122	Aug. 28	92	1788
White, William A., Phelps, N. Y. Fastener for harness-nets	33,107	Aug. 21	92	1615
Whitehouse, Francis H., Sheffield, England. Shirt-front	32,909	July 3	92	185
Whittall, Matthew J. (See Brown, Louis H., assignor.)				
Wiehl, Frederick F., Chattanooga, Tenn. Knife	33,240	Sept. 25	92	2498
Wilcox, Frank A., Erie, Pa. Bicycle-pedal rubber	33,143	Aug. 28	92	1793
Willcox & Gibbs Sewing Machine Company. (See Gorton, James S., assignor.)				
Williams, Edgar L., assignor to Archarena Company, Peoria, Ill. Spinning-top	33,056	Aug. 14	92	1429
Williams, Edgar L., assignor to Archarena Company, Peoria, Ill. Game-board	33,100	Aug. 21	92	1614
Williams Electric Company. (See Williams, Joseph A., assignor.)				
Williams, Harry R., assignor, by mesne assignments, to E. A. De Blois, Hartford, Conn. Trousers-hanger	33,020	July 31	92	1026
Williams, Joseph A., assignor to Williams Electric Company, Cleveland, Ohio. Frame for telephone-calls	32,953	July 17	92	549
Wilmot, Frank A., assignor to Wilmot & Hobbs Manufacturing Company, Bridgeport, Conn. Bicycle-frame	33,145	Aug. 28	92	1793
Wilmot & Hobbs Manufacturing Company. (See Wilmot, Frank A., assignor.)				
Wirsing, Thomas R., New Castle, Pa. Plate	32,949	July 17	92	548
Withington, Wallace H., and H. A. Shanklin, Toledo, Iowa. Cabinet	33,178	Sept. 4	92	2000

Alphabetical list of patentees of designs, July to September, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Witsch, Nicholas, Jersey City, N. J., assignor to American Lithographic Company, New York, N. Y. Label	33,058	Aug. 14	92	1429
Wood, George, Providence, R. I. Cuff-button	33,016	July 31	92	1025
Wood, Hubert K., Hartford, Conn. Food-chopper frame	33,134	Aug. 28	92	1791
Woolman, Augustus C., Bellefontaine, Ohio. Hip-strap buckle	32,897	July 3	92	183
Wrought Iron Range Company. (See Judd, Frederick W., assignor.)				
Yale & Towne Manufacturing Company. (See Taylor, Warren H., assignor.)				
Yale & Towne Manufacturing Company. (See Towne, Henry R., assignor.)				
Yawmann & Erbe Manufacturing Company. (See Rix, George K., assignor.)				
Yoder, John R. S., Freemansburg, Pa. Buttonhole-opener	33,159	Sept. 4	92	1997
Yost, Ernest F., and W. H. Smith, New York, N. Y. Electric-cell body	33,220	Sept. 18	92	2323
Yost, Ernest F., and W. H. Smith, New York, N. Y. Electric-cell body	33,221	Sept. 18	92	2323
Young, Ernest F. (See Butler, John D., assignor.)				
Ziegel, Fred, Hazelhurst, Miss. Support for chimney-caps	33,078	Aug. 14	92	1433
Zorn, William H., Harrisburg, Nebr. Clothes-pin	32,970	July 17	92	552

ALPHABETICAL LIST OF REGISTRANTS OF TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Aeolian Company, Meriden, Conn., and New York, N. Y. Organs and pianos and parts thereof	35,039	Sept. 18	92	2328
Aeolian Company, Meriden, Conn., and New York, N. Y. Organs and pianos and parts thereof	35,040	Sept. 18	92	2328
Alaska Packers Association, San Francisco, Cal. Canned fish	34,904	July 17	92	555
Alaska Packers Association, San Francisco, Cal. Canned fish	34,905	July 17	92	555
Alaska Packers Association, San Francisco, Cal. Canned fish	34,906	July 17	92	555
Alaska Packers Association, San Francisco, Cal. Fish in hermetically-sealed tins	34,978	July 31	92	1032
Alaska Packers Association, San Francisco, Cal. Fish in hermetically-sealed tins	34,979	July 31	92	1032
Alma Portland Cement Company, Wellston, Ohio. Portland cement	34,852	July 3	92	188
American Bicycle Company, New York, N. Y. Automobile	34,894	July 10	92	380
American Brewing Company, St. Louis, Mo. Beer	34,941	July 24	92	781
American Snuff Company, Jersey City, N. J., and New York, N. Y. Snuff	34,842	July 3	92	187
American Snuff Company, Jersey City, N. J., and New York, N. Y. Snuff	34,912	July 17	92	555
American Tobacco Company, Newark, N. J., and New York, N. Y. Cigarettes and smoking and chewing tobacco	34,999	Aug. 21	92	1618
American Tobacco Company, New York, N. Y. Fonts of type	34,849	July 3	92	188
American Type Founders Company, Jersey City, N. J.; Boston, Mass.; New York, N. Y.; Philadelphia, Pa., and Chicago, Ill. Metal type	34,923	July 17	92	556
Annex Shoe Company, Columbus, Ohio. Shoes	35,093	Sept. 18	92	2333
Archer, Charles S., Portland, Oreg. Certain named proprietary medicines	35,097	Sept. 18	92	2334
Artura Photo Paper Co., Columbus, Ohio. Photograph developing and printing paper	34,933	July 24	92	781
Ashton, Hoare & Company, Limited, Manchester, England. Unbleached-cotton piece goods not figured or printed	34,835	July 3	92	186
Astoria Silk Works, New York, N. Y. Woven silk fabrics and ribbons	34,896	July 17	92	554
Azevedo, Jacob C. d', New York, N. Y. Refined petroleum	34,954	July 24	92	783
Ball, Webster C., Cleveland, Ohio. Watches and portable clocks	35,047	Sept. 18	92	2328
Barclay & Fry, Limited, London, England. Chocolate	35,110	Sept. 18	92	2336
Barnhart, Roy S., Grand Rapids, Mich. Certain named furniture	34,958	July 24	92	783
Barnhart, Roy S., Grand Rapids, Mich. Certain named furniture	34,959	July 24	92	783
Barthel, Elizabeth M., London, England. Medicated soap	35,032	Sept. 18	92	2327
Barton Brothers, Kansas City, Mo. Boots and shoes	34,968	July 31	92	1031
Barton Brothers, Kansas City, Mo. Boots and shoes	34,969	July 31	92	1031
Barton Brothers, Kansas City, Mo. Certain named boots and shoes	35,058	Sept. 18	92	2329
Benda, Firm of George, New York, N. Y. Bronze powder and bronze liquid	34,882	July 10	92	378
Benson, John R., West Hoboken, N. J. Eggs	35,142	Sept. 25	92	2505
Berliner, Emile, Washington, D. C. Gramophones	34,890	July 10	92	379
Biggar, Irvine W., Kansas City, Kans. Laundry powder	35,034	Sept. 18	92	2327
Bill & Caldwell, New York, N. Y. Hats and caps	34,966	July 31	92	1031
Bippart & Co., Newark, N. J. Certain named art-metal goods	34,901	July 17	92	554
Birmingham Ice Factory Company, Birmingham, Ala. Distilled water	35,137	Sept. 25	92	2505
Boehm, Wendelin, Pittsburg, Pa. Noodles and vermicelli	34,980	July 31	92	1032
Bovine, Limited, London, England. Foods for sheep, horses, and poultry	35,075	Sept. 18	92	2331
Bowers Rubber Company, San Francisco, Cal. Rubber hose	34,975	July 31	92	1032
Brandon, George T., Cleveland, Ohio. Preparations for the complexion	35,078	Sept. 18	92	2332
Buckeye Fish Company, Cleveland, Ohio. Caviar	34,839	July 3	92	186
Buckeye Fish Company, Cleveland, Ohio. Canned fresh-water fish	34,903	July 17	92	555
Bush, Howard H., New York, N. Y. Certain named toilet preparations	34,873	July 10	92	377
Bushnell, Elbert E., New York, N. Y. Certain named type-writer accessories	35,125	Sept. 25	92	2504
Butler, Frank T., New York, N. Y. Certain named photographs	34,971	July 31	92	1032
C. & E. Shoe Company, Columbus, Ohio. Shoes	34,930	July 24	92	780
C. Howard Hunt Pen Manufacturing Company, Camden, N. J. Pens	34,848	July 3	92	187
C. L. Centlivre Brewing Company, Fort Wayne, Ind. Bottled beer	35,025	Sept. 18	92	2326
Camis, Emile V., Paris, France. Certain named articles for mural decoration	34,884	July 10	92	379
Capital Brewing Company of Olympia, Olympia, Wash. Lager-beer	35,067	Sept. 18	92	2331
Carborundum Company, Niagara Falls, N. Y. Abradant	34,950	July 24	92	782
Carlson, Frank F., Minneapolis, Minn. Germicides or disinfectants	34,989	July 31	92	1033
Catton, Bell & Co., San Francisco, Cal. Canned meats, fish, fruits, and vegetables	34,866	July 10	92	377
Cellular Insulating Company, Cincinnati, Ohio. Insulating material	34,955	July 24	92	783
Century Telephone Construction Company, Cleveland, Ohio. Telephones and telephone supplies	34,973	July 31	92	1032
Cervello, Vincenzo, Palermo, Italy. Disinfectants	35,088	Sept. 18	92	2332
Chadwick & Co., W. L., Liverpool, England. Certain named preserved goods	35,071	Sept. 18	92	2331
Charles Robin Collas & Company, Limited, Paspebiac, Canada. Canned, cured, and fresh fish	34,867	July 10	92	377
Charles Wright Chemical Company, Detroit, Mich. Dentifrice	34,914	July 17	92	555
Chelf, Thomas W., Richmond, Va. Effervescent salt	35,136	Sept. 25	92	2405
Christian, George C., Minneapolis, Minn. Wheat-flour	34,840	July 3	92	186
Church & Dwight Company, New York, N. Y. Baking-soda and baking-powder	35,112	Sept. 18	92	2336
Clapp, George E., Otsego, Mich. Washing-powder	35,115	Sept. 18	92	2337
Colbert, Thomas J., Silver Lake, Ind. Roof-paints	35,150	Sept. 25	92	2506
Collard, Charles E., Buffalo, N. Y. Certain named medicinal compounds	35,120	Sept. 25	92	2504
Collins, James M., New York, N. Y. Medical compound	34,987	July 31	92	1033
Consolidated Fastener Company, Boston, Mass. Ball-and-socket fasteners	35,121	Sept. 18	92	2338
Cook, Channing H., New York, N. Y. Certain named food compounds	34,843	July 3	92	187
Copperthite, Henry, Washington, D. C. Pies	35,070	Sept. 18	92	2331
Cordley & Hayes, New York, N. Y. Ice-cream freezers and cabinets	34,889	July 10	92	379
Cornette & Co., H., Paris, France. Certain named toilet preparations and articles	34,991	July 31	92	1033
Corona Kid Company, Boston, Mass. Finished or dressed leather	34,917	July 17	92	556
Cosby, Louisa, Quincy, Ill. Proprietary medicine for certain named diseases	34,943	July 24	92	782
Crosby, Warren B., Cincinnati, Ohio. Ointment	35,103	Sept. 18	92	2335
Crown Distilleries Company, San Francisco, Cal., New York, N. Y., and Cincinnati, Ohio. Brandy	34,939	July 24	92	781
Crown Distilleries Company, San Francisco, Cal., New York, N. Y., and Cincinnati, Ohio. Cocktails	34,940	July 24	92	781
Cygolf Shoe Company, Brockton and Boston, Mass., and New York, N. Y. Leather boots and shoes	34,859	July 10	92	376

Alphabetical list of registrants of trade-marks, July to September, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Davies, Charles W. T., New York, N. Y. Soap	34,911	July 17	92	555
Davies, Samuel M., Albany, N. Y. Wood and metal polish	34,952	July 24	92	783
De Puy, William, Indianapolis, Ind. Compresses	35,059	Sept. 18	92	2330
De Zeubault, Juano, L., Birmingham, Mich. Breath-wash	35,081	Sept. 18	92	2332
Dressel Railway Lamp Works, New York, N. Y. Certain named lamps and lanterns	35,123	Sept. 18	92	2338
Duncan & Moorhead, Philadelphia, Pa. Cigars	35,140	Sept. 25	92	2505
Dunham & Co., James H., New York, N. Y. Certain named underwear	34,927	July 24	92	780
Dunn, John D., New York, N. Y. Golf-clubs	34,956	July 24	92	783
Duprey, Augustus F., Napa, Cal. Preparation for treating the hair and the scalp	34,875	July 10	92	377
Duquesne Distributing Company, Incorporated, Harmarville, Pa. Mineral waters	35,004	Sept. 18	92	2330
Duquesne Distributing Company, Incorporated, Harmarville, Pa. Mineral waters	35,005	Sept. 18	92	2330
Duquesne Distributing Company, Incorporated, Harmarville, Pa. Certain named liquid beverages	35,006	Sept. 18	92	2330
Durand & Kasper Company, Chicago, Ill. Certain named groceries	35,143	Sept. 25	92	2505
Durand & Kasper Company, Chicago, Ill. Certain named groceries	35,144	Sept. 25	92	2506
Earl & Wilson, Troy, N. Y. Gentlemen's shirts	35,052	Sept. 18	92	2329
Eastman & Specht, Chicago, Ill. Suspenders	35,051	Sept. 18	92	2329
Eaton-Hurlbut Paper Company, Pittsfield, Mass. Writing-paper and envelops	34,887	July 10	92	379
Eclipse Starch Company, Kansas City, Mo. Starch	35,073	Sept. 18	92	2331
Ellis, Wilbur D., New York, N. Y. Lubricating-oils	35,149	Sept. 25	92	2506
Eschwege, Hermann, Forest Hill, England. Coffee extract	34,869	July 10	92	377
Evans, John Z., Avery, Iowa. Coal	34,913	July 17	92	555
Excelsior Shoe Company, Portsmouth, Ohio. Men's, boys', youths', and little gents' boots and shoes	34,860	July 10	92	376
Faatz Felting Co., Lestershire, N. Y. Certain named saddlery goods	34,838	July 3	92	186
Fairchild Bros. & Foster, Elizabeth, N. J., and New York, N. Y. Dyspepsia remedy	35,030	Sept. 18	92	2327
Fawcett, Hughes, New York, N. Y. Linen, cotton and silk threads, yarns, and shoe-laces	35,056	Sept. 18	92	2329
Fear, Fred, New York, N. Y. Certain named prepared foods	34,936	July 24	92	781
Ferrante, Frank G., Union, N. J. Certain named medicinal compound	34,945	July 24	92	782
Fletcher, Willard G., Williamsburg, Iowa. Cough-syrup	35,131	Sept. 25	92	2504
Forbes & Coxe Drug Co., Lumpkin, Ga. Certain named medical compounds	34,992	July 31	92	1033
Ford, Robert J., Boston, Mass. Infants' shirts	34,928	July 24	92	780
Foster-Milburn Company, Buffalo, N. Y. Specific for certain named diseases	35,101	Sept. 18	92	2335
Francoz, Gabrielle P., Grenoble, France. Shoes	35,057	Sept. 18	92	2329
Fuchs & Lang Manufacturing Company, New York, N. Y. Printing and lithographic ink	34,888	July 10	92	379
Gardner, Robert W., New York, N. Y. Tonic pills	35,132	Sept. 25	92	2504
Gardner, William J., Cleveland, Ohio. Certain named medical compounds	35,090	Sept. 18	92	2334
Geissert, Albert, Philadelphia, Pa. Cleansing-powders	35,148	Sept. 25	92	2506
General Electric Company, Schenectady, N. Y. Certain named machinery, electrical apparatus, and supply parts therefor	35,089	Sept. 18	92	2333
Gennert, Firm of G., New York, N. Y. Photographic developers	34,972	July 31	92	1032
George Close Company, Cambridge, Mass. Certain named confectionery	34,908	July 17	92	555
German-American Portland Cement Works, Chicago, Ill. Portland cement	34,995	July 31	92	1034
German-American Portland Cement Works, Chicago, Ill. Portland cement	34,996	July 31	92	1034
Glendale Elastic Fabrics Company, Easthampton and Boston, Mass. Elastic goring for boots and shoes	35,043	Sept. 18	92	2328
Glucose Sugar Refining Company, Jersey City, N. J., and Chicago, Ill. Syrup	35,069	Sept. 18	92	2331
Gober, Newton N., Atlanta, Ga. Remedies for skin diseases	35,031	Sept. 18	92	2327
Green-Wheeler Shoe Company, Fort Dodge, Iowa. Shoes	35,092	Sept. 18	92	2333
Groppler, Robert, Berlin, Germany. Medical and pharmaceutical preparations for veterinary purposes	34,878	July 10	92	378
H. Herrmann Lumber Company, New York, N. Y. Certain named furniture	34,851	July 3	92	188
Hansen & Dieckmann, New York, N. Y. Caviar and preserved fish	34,937	July 24	92	781
Harrington & Richardson Arms Company, Worcester, Mass. Certain named firearms and accessories	35,151	Sept. 25	92	2506
Harris Safety Company, New York, N. Y. Fire-extinguishers	34,963	July 24	92	784
Harrison, John W., Pueblo, Colo. Thermo-electric generators	35,037	Sept. 18	92	2327
Hill, John, Jr., Chicago, Ill. Chewing-gum	35,090	Sept. 18	92	2330
Hill, John, Jr., Chicago, Ill. Chewing-gum	35,091	Sept. 18	92	2330
Hill, Melvin G. Tempe, Ariz. Ter. Certain named toilet preparations	35,077	Sept. 18	92	2332
Hill's Son & Co., Edward, New York, N. Y. Kauri gum	35,116	Sept. 18	92	2337
Hoople, William H., New York, N. Y. Liquids for polishing or burnishing metals	35,086	Sept. 18	92	2333
Hoy, John S., Albany, N. Y. Roofing-tin	35,152	Sept. 25	92	2506
Hoy, John S., Albany, N. Y. Roofing-tin	35,153	Sept. 25	92	2506
Hull, William J., Cambridge City, Ind. Liniment	34,944	July 24	92	782
Hutchens, Howe & Withington, Chicago, Ill. Certain named articles of apparel	35,053	Sept. 18	92	2329
Ideal Rubber Company, New York, N. Y. Druggists' rubber goods, except dental rubber	34,976	July 31	92	1032
Igelstroem, John, St. Louis, Mo. Paper and paper signs	35,045	Sept. 18	92	2328
J. T. Robertson Company, Manchester, Conn. Shaving and toilet soap	35,114	Sept. 18	92	2337
James, William T., Hamilton, Bermuda. Arrowroot	35,111	Sept. 18	92	2336
Janesville Hay Tool Company, Janesville, Wis. Agricultural implements	34,997	July 31	92	1034
John S. Brittain Dry Goods Company, St. Joseph, Mo. Brown cotton sheeting in bolts	35,127	Sept. 25	92	2504
Johnson & Co., J. F., Racine, Wis. Vessels	34,998	July 31	92	1034
Johnston Harvester Company, Batavia, N. Y. Knife-sections for mowers, reapers, and binders	34,892	July 10	92	379
Jordan, Marsh & Co., Boston, Mass. Boots and shoes	35,091	Sept. 18	92	2333
Jordan, Marsh & Co., Boston, Mass. Boots and shoes	35,128	Sept. 25	92	2504
Joseph Campbell Preserve Company, Camden, N. J. Prepared foods	35,109	Sept. 18	92	2336
Judge & Dolph Pharmaceutical Company, St. Louis, Mo. Remedy for certain named diseases	34,988	July 31	92	1033
Juergens Bros., New York, N. Y. Jewel-stone	35,095	Sept. 18	92	2327
Keasbey & Mattison Company, Ambler, Pa. Certain named asbestos goods	35,126	Sept. 25	92	2504
Kenneweg Company, Cumberland, Md. Wheat-flour	35,113	Sept. 18	92	2336
Keystone Motor Co., Philadelphia, Pa. Automatically-propelled wheeled vehicles and parts thereof	35,124	Sept. 18	92	2338
Klingholz & Co., R., Manitowoc, Wis. Stomach bitters	34,942	July 24	92	781
Knofler & Co., O., Plötzensee, Germany. Certain named drugs	35,029	Sept. 18	92	2327
Köhne, Gustav, Hanover, Germany. Pharmaceutical preparations for lung tuberculosis	34,846	July 3	92	187
Kops Bros., New York, N. Y. Corsets	34,929	July 24	92	780
L. E. Waterman Company, New York, N. Y. Fountain-pens	35,048	Sept. 18	92	2328
La Roche, Fredrick A., New York, N. Y. Motor-vehicles	35,087	Sept. 18	92	2333
Lang, Charles H., Baltimore, Md. Breakfast-bacon	34,907	July 17	92	555
Leek, John J., San Francisco, Cal. Certain named remedies	35,082	Sept. 18	92	2332
Lehmann, William C., New York, N. Y. Eye-wash	34,874	July 10	92	377
Levin & Noble, St. Louis, Mo. Certain named medicinal compound	35,130	Sept. 25	92	2504
Levy, A. & M., New York, N. Y. Velvet ribbons	34,836	July 3	92	186
Lipps, Frederick W., Baltimore, Md. Sticky fly-paper	34,879	July 10	92	378
Lloyd & Lloyd, Limited, Birmingham, England. Metal tubes of all descriptions	35,088	Sept. 18	92	2333

Alphabetical list of registrants of trade-marks, July to September, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Low, Abbot A., New York, N. Y. Wood fuel	34,872	July 10	92	377
Lucke & Co., J. H., Cincinnati, Ohio. Cigars	35,026	Sept. 18	92	2326
Lyons Shoe Co., Rochester and Lyons, N. Y. Shoes	34,970	July 31	92	1031
M. M. Rhodes & Sons Company, Taunton, Mass. Plastic composition	34,883	July 10	92	378
Maddocks, John, Bradford, England, and New York, N. Y. Boiler-cleansing compounds	34,953	July 24	92	783
Maize Products Company, New York, N. Y. Toilet oil	35,079	Sept. 18	92	2332
Malcolm, Joseph M., Altoona Pa. Salve for certain named diseases	35,134	Sept. 25	92	2505
Martin H. Smith Company, New York, N. Y. Certain named proprietary medicines	34,877	July 10	92	378
Martin, Torrence F., Carmi, Ill. Heating-stoves	34,925	July 17	92	556
Mayer, Jacob J., Cleveland, Ohio. Beer-dispensing apparatus	34,924	July 17	92	556
McCormick Harvesting Machine Company, Chicago, Ill. Binding-twine	34,920	July 17	92	556
McCormick, Laurence, Philadelphia, Pa. Whisky	34,938	July 24	92	781
McCormick, Laurence, Philadelphia, Pa. Whisky	34,984	July 31	92	1033
McCormick, Laurence, Philadelphia, Pa. Whisky	35,000	Sept. 18	92	2324
McCormick, Laurence, Philadelphia, Pa. Whisky	35,001	Sept. 18	92	2324
McCormick, Laurence, Philadelphia, Pa. Whisky	35,002	Sept. 18	92	2324
McCormick, Laurence, Philadelphia, Pa. Whisky	35,003	Sept. 18	92	2324
McCormick, Laurence, Philadelphia, Pa. Whisky	35,004	Sept. 18	92	2324
McCormick, Laurence, Philadelphia, Pa. Whisky	35,005	Sept. 18	92	2324
McCormick, Laurence, Philadelphia, Pa. Whisky	35,006	Sept. 18	92	2324
McCormick, Laurence, Philadelphia, Pa. Whisky	35,007	Sept. 18	92	2325
McCormick, Laurence, Philadelphia, Pa. Whisky	35,008	Sept. 18	92	2325
McCormick, Laurence, Philadelphia, Pa. Whisky	35,009	Sept. 18	92	2325
McCormick, Laurence, Philadelphia, Pa. Whisky	35,010	Sept. 18	92	2325
McCormick, Laurence, Philadelphia, Pa. Whisky	35,011	Sept. 18	92	2325
McCormick, Laurence, Philadelphia, Pa. Whisky	35,012	Sept. 18	92	2325
McCormick, Laurence, Philadelphia, Pa. Whisky	35,013	Sept. 18	92	2325
McCormick, Laurence, Philadelphia, Pa. Whisky	35,014	Sept. 18	92	2325
McCormick, Laurence, Philadelphia, Pa. Whisky	35,015	Sept. 18	92	2325
McCormick, Laurence, Philadelphia, Pa. Whisky	35,016	Sept. 18	92	2325
McCormick, Laurence, Philadelphia, Pa. Whisky	35,017	Sept. 18	92	2325
McCormick, Laurence, Philadelphia, Pa. Whisky	35,018	Sept. 18	92	2326
McCormick, Laurence, Philadelphia, Pa. Whisky	35,019	Sept. 18	92	2326
McCormick, Laurence, Philadelphia, Pa. Whisky	35,020	Sept. 18	92	2326
McCormick, Laurence, Philadelphia, Pa. Whisky	35,021	Sept. 18	92	2326
McCormick, Laurence, Philadelphia, Pa. Whisky	35,022	Sept. 18	92	2326
McCormick, Laurence, Philadelphia, Pa. Whisky	35,023	Sept. 18	92	2326
McCormick, Laurence, Philadelphia, Pa. Whisky	35,054	Sept. 18	92	2329
McGraw, Albert P., New York, N. Y. Certain named wearing-apparel	34,986	July 31	92	1033
Merck & Co., New York, N. Y. Certain named stomachic and appetizer	35,141	Sept. 25	92	2505
Meriwether Snuff and Tobacco Company, Clarksville, Tenn. Snuff	34,864	July 10	92	376
Merrell-Soule Company, Syracuse, N. Y. Certain named food preparations	34,982	July 31	92	1033
Meyer Bros. Gum Company, Indianapolis, Ind. Chewing-gum	34,863	July 10	92	376
Michigan Sugar Company, Bay City and Essexville, Mich. Granulated-sugar	35,055	Sept. 18	92	2329
Mirsky & Co., M. D., New York, N. Y. Certain named wearing-apparel	35,133	Sept. 25	92	2505
Mitchell, Edgar O., Newburg, N. Y. Remedies for certain named diseases	34,847	July 3	92	187
Mittag & Volger, Park Ridge, N. J. Carbon-paper	34,922	July 17	92	556
Mossberg Co., Frank, Attleborough, Mass. Certain named bells	35,135	Sept. 25	92	2505
Muhlhauser, Sigmund, Cleveland, Ohio. Salve	35,038	Sept. 18	92	2328
Myers, Frederick, New York, N. Y. Graphophones	35,147	Sept. 25	92	2506
N. K. Fairbank Company, Chicago, Ill. Laundry soap	35,108	Sept. 18	92	2336
National Biscuit Company, Jersey City, N. J., and Chicago, Ill. Certain named bakery products and confectionery	34,919	July 17	92	556
New Jersey Car Spring and Rubber Company, Jersey City, N. J. Hose	34,931	July 24	92	780
New Process Raw Hide Company, Syracuse, N. Y. Prepared rawhide	35,046	Sept. 18	92	2328
New York Consolidated Card Company, New York, N. Y. Playing-cards	34,947	July 24	92	782
Newbro Drug Company, Butte, Mont. Hair-tonic	34,962	July 24	92	784
Newhall, Henry B., New York, N. Y. Chains, chain accessories, and forgings	35,036	Sept. 18	92	2327
Nobels Explosives Company, Limited, Glasgow, Scotland. Ammunition	34,990	July 31	92	1033
Nolzen, Eugen, Stadtkyll, Germany. Eye-water	34,893	July 10	92	375
Norden, Hermann, New York, N. Y. Cotton flannels	34,854	July 10	92	375
Norden, Hermann, New York, N. Y. Cotton flannels	34,855	July 10	92	375
Norden, Hermann, New York, N. Y. Cotton flannels	34,856	July 10	92	375
Norden, Hermann, New York, N. Y. Cotton flannels	34,857	July 10	92	376
Norden, Hermann, New York, N. Y. Sheetings and drills	34,964	July 31	92	1031
Norton Emery Wheel Company, Worcester, Mass. Stones and wheels of abrasive material	34,893	July 10	92	380
Nutshell Remedy Co., Georgetown, Ill. Certain named medicinal preparations	35,098	Sept. 18	92	2334
Oakdale Manufacturing Company, Providence, R. I. Oleomargarin and butterin	34,841	July 3	92	186
Ohio Coffee and Spice Company, Columbus, Ohio. Roasted coffee	34,909	July 17	92	555
"Orlow" Gesellschaft für Elektrische Beleuchtung, mit Beschränkter Haftung, Berlin, Germany. Illuminating articles and parts thereof and incandescent threads for electric lighting	34,850	July 3	92	188
Orr Cotton Mills, Anderson, S. C. Sheetings and drills	34,900	July 17	92	554
Otis Company, Palmer and Ware, Mass. Cotton dress goods	34,897	July 17	92	554
Otis Company, Palmer and Ware, Mass. Cotton dress goods	34,898	July 17	92	554
Otis Company, Palmer and Ware, Mass. Cotton dress goods	34,899	July 17	92	554
Otto H. Oppenheimer Company, Newark, N. J. Bookbinders' and pocket-book leather	35,042	Sept. 18	92	2328
Pacific Coast Condensed Milk Co., Seattle, Wash. Certain named canned goods	35,072	Sept. 18	92	2331
Paris Medicine Company, St. Louis, Mo. Ointment	34,946	July 24	92	782
Patrick, Caroline W., Norwalk, Ohio. Ointments	35,104	Sept. 18	92	2335
Patterson, Andrew S., New York, N. Y. Books and pamphlets	35,090	Sept. 18	92	2333
Peerless Rubber Manufacturing Company, New York, N. Y. Certain named rubber goods	34,974	July 31	92	1032
Peerless Rubber Manufacturing Company, New York, N. Y. Rubber belting, gaskets, hose, and packing	35,095	Sept. 18	92	2334
Pillsbury-Washburn Flour Mills Company, Limited, Minneapolis, Minn. Wheat-flour	35,074	Sept. 18	92	2331
Platinum Photographic Paper Company, St. Paul, Minn. Photographic paper	34,886	July 10	92	379
Poonjiajee & Sons, Manockjee, Bombay, India. Condiments, relishes, and preserves	35,146	Sept. 25	92	2506
Preferrbeer Co., New York, N. Y. Beer	34,871	July 10	92	377
Preston B. Keith Shoe Company, Brockton, Mass. Leather footwear	34,837	July 3	92	186
Pyke, Frederick P., Anderson, Ind. Headache cure	35,102	Sept. 18	92	2335
R. T. Davis Mill and Manufacturing Company, St. Joseph, Mo. Wheat-flour	34,862	July 10	92	376
Ragsdale & Crockett, Pulaski, Tenn. Smoking-tobacco	35,139	Sept. 25	92	2505
Ramey, William W., Fullerton, Nebr. Mineral polish	34,921	July 17	92	556
Reeves & Son, Paul S., Philadelphia, Pa. Metals	34,960	July 24	92	784
Regan, James B., New York, N. Y. Certain named alcoholic liquors	35,024	Sept. 18	92	2326
Regás, Joaquin C., Mataro, Barcelona, Spain. Hats and bonnets of all kinds	34,895	July 17	92	554
Rice & Hutchins, Incorporated, Boston, Mass. Boots, shoes, and leather	34,967	July 31	92	1031

Alphabetical list of registrants of trade-marks, July to September, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Rice, William S., Adams, N. Y. Trusses	34,916	July 17	92	556
Rightmire, Elizabeth H., New York, N. Y. Horse-radish	34,868	July 10	92	377
Rochester Candy Works, Rochester, N. Y. Candy	34,981	July 31	92	1033
Rosalowsky, Firm of A., Berlin, Germany. Certain named polishing compound	34,951	July 24	92	782
Rucker & Witten Tobacco Company, Martinsville, Va. Chewing-tobacco	34,983	July 31	92	1033
Rutter & Witten Tobacco Company, Martinsville, Va. Chewing-tobacco	34,948	July 24	92	782
Ryan, Thomas E., San Francisco, Cal. Pipe-wrenches	34,961	July 24	92	784
Scheer, Louis, New York, N. Y. Medical compound for treatment of toothache	35,028	Sept. 18	92	2327
Schnurman, Henry, Richmond, Va. Certain named medicinal toilet preparations	35,080	Sept. 18	92	2332
Scholl & Co., Julian, New York, N. Y. Certain named road-making machinery	35,154	Sept. 25	92	2506
Sharood & Crooks, St. Paul, Minn. Shoes	34,858	July 10	92	376
Sharood & Crooks, St. Paul, Minn. Boots, shoes, and slippers	35,044	Sept. 18	92	2328
Simonds Manufacturing Company, Fitchburg, Mass., and Chicago, Ill. Handsaws	35,122	Sept. 18	92	2338
Small, Herbert E., Boston, Mass. Certain named medicines	35,096	Sept. 18	92	2334
Smith Bros., Fresno, Cal. Internal remedy for catarrh	34,915	July 17	92	556
Smith Brothers Company, Limited, New Orleans, La. Coffee	35,068	Sept. 18	92	2331
Smith, John T., San Diego, Cal. Internal remedies for certain named diseases	35,100	Sept. 18	92	2335
Smith, Olin H., Springfield, Mass. Certain named flour	35,145	Sept. 25	92	2506
Smith, William H., Kansas City, Mo. Polishing compound	35,084	Sept. 18	92	2332
Snow, George L., Boston, Mass. Blackings, dressings, and polishes for boots and shoes	34,861	July 10	92	376
Sprüngli, Firm of E., Zurich, Switzerland, and Manila, P. I. Cigars	35,092	Sept. 18	92	2330
Sprüngli, Firm of E., Zurich, Switzerland, and Manila, P. I. Cigars	35,093	Sept. 18	92	2330
Steinfeld, Albert, Tucson, Ariz. Certain named groceries	34,865	July 10	92	376
Sterling Remedy Company, Jersey City, N. J. Medicated gum	35,027	Sept. 18	92	2326
Stoecker, William F., Omaha, Nebr. Confection	35,107	Sept. 18	92	2335
Stony Brook Paper Co., South Hadley, Mass. Paper for industrial purposes	34,934	July 24	92	781
Taylor & Lockett, New York, N. Y. Certain named fabrics	34,965	July 31	92	1031
Taylor & Williams, Louisville, Ky. Whisky	34,985	July 31	92	1033
Thayer-Milne Company, Philadelphia, Pa. Soap, soap powders, and soap compounds	35,033	Sept. 18	92	2327
Tochtermann & Company, Incorporated, New York, N. Y. Certain named artistic productions	34,932	July 24	92	780
Trostel & Sons, Albert, Milwaukee, Wis. Certain named leathers	35,041	Sept. 18	92	2328
Union Sand Paper Company, Portland, Me.; Boston, Mass., and Chicago, Ill. Sand and emery paper and cloth	35,094	Sept. 18	92	2334
United Danish Butter Preserving Company, Copenhagen, Denmark. Butter	35,106	Sept. 18	92	2335
Varley Duplex Magnet Company, Jersey City, N. J. Helices or coils for electrical purposes	35,120	Sept. 18	92	2337
Venesta, Limited, London, England. Certain prepared wood and boxes made therefrom	34,957	July 24	92	783
Virginia Portland Cement Company, New York, N. Y. Portland cement	35,117	Sept. 18	92	2337
Walker, Henry M., Baltimore, Md. Whisky	34,910	July 17	92	555
Waring & Co., Baltimore, Md. Toilet powder	35,076	Sept. 18	92	2332
Warner, William D., Providence, R. I. Paint-powder	34,994	July 31	92	1034
Waterman & Sons, Joseph S., Boston, Mass. Burial-caskets and cases therefor	34,891	July 10	92	379
Wells, Herring & Co., Townsend, Del. Canned tomatoes	34,902	July 17	92	554
Whitman & Barnes Manufacturing Company, Akron, Ohio. Rubber packing	34,918	July 17	92	556
Whitman, Charles H., Omaha, Nebr. Phosphorized elixir of strychnia compound	34,876	July 10	92	378
Whittier Coburn Company, San Francisco, Cal. Cleaning and polishing soap	35,085	Sept. 18	92	2333
Wilhelmsburger Chemische Fabrik, Hamburg, Germany. Certain named chemical products and fertilizers	34,880	July 10	92	378
Wilhelmsburger Chemische Fabrik, Hamburg, Germany. Certain named chemical products and fertilizers	34,881	July 10	92	378
Wilhoft, Victoria A., New York, N. Y. Syringes	34,977	July 31	92	1032
Wilhoft, Victoria A., New York, N. Y. Syringes	35,118	Sept. 18	92	2337
William Hall & Company, Limited, Redditch, England. Needles, pins, bodkins, and crochet-hooks	34,926	July 24	92	780
William S. Haines Company, Camden, N. J.; Philadelphia and Pittsburg, Pa.; New York, N. Y.; Chicago, Ill., and Boston, Mass. Certain named thermic apparatus	35,119	Sept. 18	92	2337
Wilson, John C., Houston, Tex. Tonic	34,844	July 3	92	187
Wilson, John C., Houston, Tex. Tonic	34,845	July 3	92	187
Winterbottom Book Cloth Company, Limited, Manchester, England. Tracing-cloth	34,885	July 10	92	379
Worcester, Leonard A., Lowell, Mass. Bread-crumbs	34,935	July 24	92	781
Worthen, Clarence E., Springfield, Mass. Non-alcoholic beverages	35,138	Sept. 25	92	2505
Wulfing, August, New York, N. Y. Bronzing liquids, varnish, and lacquer	34,993	July 31	92	1034
Yochim Bros., New Orleans, La. Spirituous liquors	35,105	Sept. 18	92	2335
York, Chauncey F., Warriorsmark, Pa. Soap and soap-powders	34,949	July 24	92	782
Zechnowitz, Samuel, New York, N. Y. Mixed teas	34,870	July 10	92	377
Zeiss, Firm of Carl, Jena, Germany. Certain named optical instruments	35,049	Sept. 18	92	2328
Zeiss, Firm of Carl, Jena, Germany. Certain named optical instruments	35,050	Sept. 18	92	2329

ALPHABETICAL LIST OF REGISTRANTS OF LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Alvord, E. I., Chicago, Ill. "Old Virginia Corn Relish in-Oil." (For a Relish)	7,787	Sept. 18	92	2163
Anniston Cordage Company, Anniston, Ala. "Old Glory." (For Rope, Cord, and Twine)	7,728	Aug. 7	92	1039
Arbuckle Bros., New York, N. Y., and Chicago, Ill. "Anona Chop Japan Tea." (For Tea)	7,683	July 10	92	193
Arnold, D. J., and C. D. Cannon, Omaha, Nebr. "Digestive Juices of the Fowl for Dyspepsia." (For a Medicine)	7,707	July 17	92	385
B. J. Kay Medical Company, Saratoga Springs, N. Y. "Dr. Kay's Kidneycura." (For a Medicine)	7,694	July 10	92	193
Badger Canning Company, Oshkosh, Wis. "Palette." (For Canned Tomatoes)	7,701	July 17	92	385
Balloon Baking Powder Co., Louisville, Ky. "Balloon Baking Powder." (For Baking-Powder)	7,782	Aug. 14	92	1239
Bouton, Charles W., New York, N. Y. "Sunbeam Metal Polish." (For a Polish)	7,796	Sept. 25	92	2343
Bower & Co., G. W., Olney, Ill. "The Republic." (For Cigars)	7,703	July 17	92	385
Brown & Brown, Baltimore, Md. "Jno. W. Daniel." (For Cigars)	7,782	Sept. 18	92	2163
Burkard Blacking and Oil Company, Baltimore, Md. "Blackine." (For a Polish for Black Shoes)	7,727	Aug. 7	92	1039
Cameron, De Lancey A., Caledonia, N. Y. "Without New York, 16 to 1." (For a Game)	7,780	Sept. 18	92	2163
Cannon, C. D. (See Arnold and Cannon.)				
Carmeliter Stomach Bitters Company, New York, N. Y. "Carmeliter Bitters." (For Bitters)	7,677	July 3	92	1
Century Chemical Company, New York, N. Y. "Apollotonic." (For a Hair-Tonic)	7,760	Aug. 28	92	1623
City Mills Company, Columbus, Ga. "Pearce's Old Style Water Ground Meal." (For Cornmeal)	7,772	Sept. 4	92	1799
Confectioners and Bakers Supply Company, Chicago, Ill. "Sang-A-Lee." (For a Flavor)	7,767	Sept. 4	92	1799
Coshland, G. F., New York, N. Y. "Constellation Pure Rye Whiskey." (For Whisky)	7,704	July 17	92	385
Crabb, John A., Eminence, Ky. "The Banker." (For Cigars)	7,686	July 10	92	193
Crabb, John A., Eminence, Ky. "Banker's Best." (For Cigars)	7,702	July 17	92	385
Dinet & Delfosse, Chicago, Ill. "Ferrinoids." (For a Medicine)	7,785	Sept. 18	92	2163
Direct Shoe Co., Boston, Mass. "The Equality." (For Shoes)	7,751	Aug. 28	92	1623
Disinfectine Co., Canton, Ohio. "Physicians', Surgeons' and Dentists' Toilet Disinfectine Soap." (For Soap)	7,680	July 3	92	1
Dismuke, Ed. E., Waco, Tex. "Cream of Mexican Cactus." (For Complexion-Cream)	7,687	July 10	92	193
Dodge & Camfield, Providence, R. I. "Tonic Wine Bitters." (For Wine Bitters)	7,794	Sept. 25	92	2343
Dr. B. J. Kay Medical Company, Saratoga Springs, N. Y. "Dr. Kay's Uticure." (For a Medicine)	7,764	Aug. 28	92	1623
Dubrow, John H., Columbus, Ohio. "New Era Mantle." (For Mantles)	7,698	July 10	92	193
Dunn & Co., T. J., Philadelphia, Pa. "Pete Dalley." (For Cigars)	7,725	Aug. 7	92	1039
Duroy & Haines Company, Sandusky, Ohio. "Duroy Brand." (For Fruit Syrups and Juices)	7,756	Aug. 28	92	1623
Egert, Philip M., Holland Patent, N. Y. "Anti-Scours for Calves." (For a Remedy)	7,695	July 10	92	193
Engel, Stephen L., New York, N. Y. "El Gato Grande." (For Cigars, Cigarettes, &c.)	7,721	July 31	92	789
Fred Miller Brewing Company, Milwaukee, Wis. "Miller's Buffet." (For Bottled Beer)	7,773	Sept. 4	92	1799
Gollings, Oliver W., Chicago, Ill. "Purgo." (For a Washing Compound)	7,700	July 17	92	385
Gonzales, Mora & Co., Tampa, Fla. "La Defensa." (For Cigars)	7,724	Aug. 7	92	1039
Gordon Medicine Co., Dunellen, N. J. "Dr. Gordon's Liver Pills." (For Liver-Pills)	7,690	July 10	92	193
Gorman, John D., Jersey City, N. J. "C. W. C. Ginger Ale." (For Ginger-Ale)	7,753	Aug. 28	92	1623
Gowans Bros., Detroit, Mich. "Barrie's Nature's Health Spray." (For a Medicinal Substance)	7,731	Aug. 14	92	1239
Hake Manufacturing Co., Ph., New York, N. Y. "Silk Fibre Bond." (For Writing-Paper and Envelops)	7,729	Aug. 14	92	1239
Hallwood Cash Register Company, Jersey City, N. J. "The Hallwood." (For Cigars)	7,757	Aug. 28	92	1623
Heekin & Co., James, Cincinnati, Ohio. "Fortress." (For Coffee)	7,684	July 10	92	193
Heekin & Co., James, Cincinnati, Ohio. "Fountain Square." (For Coffee)	7,685	July 10	92	193
Henise, Lewis J., York, Pa. "Silver Lustra." (For a Polish)	7,797	Sept. 25	92	2343
Hot Springs Bottling Works, Hot Springs, S. D. "Minnekahta Mineral Water." (For Bottled Mineral Water)	7,720	July 31	92	789
Hunter Co., J. B., Zanesville, Ohio. "Gold Bond Shoes for Men." (For Boots and Shoes)	7,719	July 31	92	789
Huyler's, New York, N. Y. "Huyler's American Drops." (For Candy)	7,752	Aug. 28	92	1623
Illinois Canning Co., Hoopeston, Ill. "Mogul Sugar Corn." (For Corn)	7,783	Aug. 14	92	1239
Iowa Mantle Manufacturing Company, Davenport, Iowa. "Utaka Sunburst Mantle." (For Light-Mantles)	7,697	July 10	92	193
Just-Right Metal Polish Co., Webster, Mass. "Just-Right Metal Polish." (For Metal-Polish)	7,798	Sept. 25	92	2343
Kelly & Co., Anthony, Minneapolis, Minn. "Red Owl Chop." (For Tea)	7,743	Aug. 21	92	1441
Kendrick, W. T., Montgomery, Ala. "Kendrick's Prophylaxis." (For a Medicine)	7,692	July 10	92	193
Kent, Tyler G., Wytheville, Va. "Inadore." (For a Lotion)	7,675	July 3	92	1
Knight & Son, H. W., Seneca Falls, N. Y. "Red Jacket Mineral Water." (For Mineral Water)	7,708	July 17	92	385
Knubel Tobacco Company, New York, N. Y. "Gold Seal." (For Cigarettes)	7,758	Aug. 28	92	1623
Knubel Tobacco Company, New York, N. Y. "Ben Ali." (For Cigarettes)	7,777	Sept. 11	92	2005
Koons, Samuel B., Philadelphia, Pa. "Little Dixie." (For Cheese)	7,744	Aug. 21	92	1441
Levi, Ike W., Syracuse, N. Y. "Stay There." (For Buckles)	7,750	Aug. 28	92	1623
Lindemann, Adolf D., New York, N. Y. "Gloria Pastilles." (For a Medicine)	7,693	July 10	92	193
Liquid Carbonic Acid Manufacturing Company, Chicago, Ill. "Grape Kola." (For Soda-Water Syrup)	7,778	Sept. 11	92	2005
Lloyd, Thomas, New York, N. Y. "Lloyd Fireworks." (For Fireworks)	7,709	July 17	92	385
Loewenstein, Meier G., Arkville, N. Y. "Eureka Eye Water." (For Eye-Water)	7,705	July 17	92	385
Lytle, Carter, Baltimore, Md. "Carter Lytle's Tooth Jelline." (For a Preparation for Toothache)	7,788	Sept. 25	92	2343
Manila Fruit Co., Canastota, N. Y. "Manila Fruit." (For Canned Fruit)	7,676	July 3	92	1
Marsilliot, Augustus S., Des Moines, Iowa. "Jewelers' Lustre." (For a Preparation for Polishing Metals, Glass, &c.)	7,759	Aug. 28	92	1623
Maumee Brewery Company, Toledo, Ohio. "Cloister Beer." (For Bottled Beer)	7,739	Aug. 21	92	1441
Maumee Brewery Company, Toledo, Ohio. "Olympia Beer." (For Bottled Beer)	7,740	Aug. 21	92	1441
Maumee Brewery Company, Toledo, Ohio. "St. George Ale." (For Bottled Ale)	7,741	Aug. 21	92	1441
McCormick, Laurence, Philadelphia, Pa. "Yale University Special Blend Whiskey." (For Whisky)	7,681	July 3	92	1
McFarland Drug Co., John C., Dallas, Tex. "Balm-E-Oil." (For Medicine)	7,678	July 3	92	1
McLoughlin Brothers, New York, N. Y. "A Trip to Paris and Exposition Game." (For Game Apparatus)	7,713	July 24	92	561

Alphabetical list of registrants of labels, July to September, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
McLoughlin Brothers, New York, N. Y. "Game of Manila." (For a Game)	7,714	July 24	92	561
McLoughlin Brothers, New York, N. Y. "Game of Stars and Stripes or Red, White and Blue." (For a Game)	7,715	July 24	92	561
Mesmin Chemical Co., Detroit, Mich. "Arnica Tooth Powder." (For Tooth-Powder)	7,716	July 24	92	561
Mesmin Chemical Co., Detroit, Mich. "Arnica Tooth Paste." (For Tooth-Paste)	7,717	July 24	92	561
Meyers, Abraham, New York, N. Y. "U. S. Army and Navy Tablets." (For a Medicine)	7,748	Aug. 21	92	1441
Mishkin, Jacob, Philadelphia, Pa. "Crow in Your Throat." (For Cough-Lozenges)	7,784	Sept. 18	92	2163
Moeller & Littauer, New York, N. Y. "Warranted Pure Homespun Machine Twist." (For Thread)	7,711	July 24	92	561
Muhlhauser, Sigmund, Cleveland, Ohio. "Salvation Salve for Sores." (For a Salve)	7,706	July 17	92	385
National Phonograph Company, New York, N. Y. "Edison Concert Record." (For Boxes Containing Phonograph-Records)	7,710	July 17	92	385
National Soap Works, Titusville, Pa. "Sunnyside Soap." (For Soap)	7,766	Sept. 4	92	1799
Navena Co., Milton, Mass. "Navena." (For Beverages)	7,783	Sept. 18	92	2163
Northwestern Cereal Company, Minneapolis, Minn. "North Star Rolled Oats." (For Rolled Oats)	7,768	Sept. 4	92	1799
Northwestern Cereal Company, Minneapolis, Minn. "Minnesota Rolled White Oats." (For Rolled White Oats)	7,769	Sept. 4	92	1799
Paley, Samuel, Chicago, Ill. "Chicago American." (For Cigars)	7,781	Sept. 18	92	2163
Penolia Food Company, New Haven, Conn. "Penolia Candies." (For Peanut-Butter Candy)	7,726	Aug. 7	92	1039
Phœnix Melon Growers' Association, Phœnix, Ariz. Ter. "Arizona Khakis." (For Melons)	7,696	July 10	92	193
Pillsbury-Washburn Flour Mills Company, Limited, Minneapolis, Minn. "Acme Rolled White Oats." (For Rolled White Oats)	7,770	Sept. 4	92	1799
Pillsbury-Washburn Flour Mills Company, Limited, Minneapolis, Minn. "Plymouth Rolled Oats." (For Rolled Oats)	7,789	Sept. 18	92	2163
Pinless Waist, Skirt and Belt Holder Manufacturing Co., Syracuse, N. Y. "The Pinless." (For Skirt-Supporters)	7,675	July 3	92	1
Pressing & Orr, Pittsburg, Pa. "Winorr." (For Canned Corn)	7,775	Sept. 11	92	2005
Quentell, William P., New York, N. Y. "Golf Cup." (For a Beverage)	7,730	Aug. 14	92	1239
Quick, J. B., Seattle, Wash. "Quick Grip Cure." (For a Medicine)	7,779	Sept. 11	92	2005
Richardson-Weber Cigar and Tobacco Company, Syracuse, N. Y. "All Union." (For Cigars)	7,738	Aug. 21	92	1441
Robinson & Crawford, Philadelphia, Pa. "Gold Seal." (For Canned Corn)	7,745	Aug. 21	92	1441
Robinson & Crawford, Philadelphia, Pa. "Gold Seal." (For Canned Tomatoes)	7,771	Sept. 4	92	1799
Robinson-Danforth Milling Company, St. Louis, Mo. "Ralston Hominy Grits." (For Grits)	7,788	Sept. 18	92	2163
Robinson-Danforth Milling Company, St. Louis, Mo. "Ralston." (For Farinaceous Food Products)	7,790	Sept. 18	92	2163
Robinson-Danforth Milling Company, St. Louis, Mo. "Purina Pankake Flour." (For Mixed Flour)	7,791	Sept. 18	92	2163
Robinson-Danforth Milling Company, St. Louis, Mo. "Purina Health Flour." (For Flours and Like Articles)	7,792	Sept. 18	92	2163
Root, Edward L., Denver, Colo. "Mucilage on a Stick." (For Mucilage)	7,737	Aug. 21	92	1441
Rosenberg & Sons, New Orleans, La. "Proteus." (For Cartons for Shoes)	7,712	July 24	92	561
Rosenheim, I. A., Parkersburg, W. Va. "River Mills." (For Rye Whisky)	7,754	Aug. 28	92	1623
Royal & Co., R. T., Louisville, Ky. "Royal's Soda." (For Bicarbide of Soda)	7,699	July 17	92	385
Russian American Tube Co., New York, N. Y. "Best Cigarette Pasteless Tubes." (For Cigarette-Tubes)	7,774	Sept. 4	92	1799
Samuels & Co., J., New York, N. Y. "Tisanold Rye Whisky." (For Whisky)	7,795	Sept. 25	92	2343
Sanitarium Supply Co., Scranton, Pa. "Kompound Kamphor Pills." (For Pills)	7,749	Aug. 21	92	1441
Schulman & Co., Lewis, New York, N. Y. "Blackberry Brand." (For Confectionery)	7,734	Aug. 14	92	1239
Silverman, H., Atlanta, Ga. "Private Seal." (For Liquors)	7,742	Aug. 21	92	1441
Smith, Ashley L., Sacramento, Cal. "Silver Clean." (For a Cleaning Preparation or Powder)	7,799	Sept. 25	92	2343
Smith, Edward F., Trenton, N. J. "Savoy Hair-Restorer." (For Hair-Restorer)	7,723	July 31	92	789
Smoot, Robert T., Paris, Tex. "House's Baby Mixture." (For a Medicine)	7,765	Aug. 28	92	1623
Spangler, B. F., York, Pa. "Eureka Whooping Cough Remedy." (For Whooping-Cough Remedy)	7,722	July 31	92	789
Specht, Charles, New York, N. Y. "Eureka Hair Restorer." (For Hair-Restorer)	7,688	July 10	92	193
Stocker Co., A., Des Moines, Iowa. "Mothers Preparator." (For a Medicine)	7,747	Aug. 21	92	1441
Strauss Brothers, Baltimore, Md. "Dixie Moire Finish Percaline." (For Percaline)	7,735	Aug. 21	92	1441
Strauss Brothers, Baltimore, Md. "Dixie Silesia." (For Silesia)	7,736	Aug. 21	92	1441
Strock, Delbert A., Buffalo, N. Y. "Vaxo." (For a Medical Compound)	7,761	Aug. 28	92	1623
Talley, E., Clinton, Iowa. "Dr. Talley's Wonderful Discovery Live Animal Hoof Catarrh Cure." (For a Medicine)	7,718	July 24	92	561
Tielkemeyer, Henry, St. Louis, Mo. "Dr. Washington's American Life Bitters." (For Bitters)	7,691	July 10	92	193
United States Printing Company, New York, N. Y. "Cream Corn." (For Canned Corn)	7,776	Sept. 11	92	2005
United States Printing Company, Cincinnati, Ohio, and New York, N. Y. "Strawberry Beets." (For Canned Beets)	7,746	Aug. 21	92	1441
W. J. Roberts Medicine Co., Coldwater, Mich. "Sunflower Cholera Cure." (For a Medicine)	7,786	Sept. 18	92	2163
Westheimer & Sons, Ferdinand, Cincinnati, Ohio. "Red Top Rye." (For Whisky.)	7,755	Aug. 28	92	1623
Wills, J. T., Oakland, Cal. "Diamond Star Embrocation." (For Rubbing)	7,689	July 10	92	193
Winn & Hubbard, New York, N. Y. "Anti Gon." (For a Medicine)	7,763	Aug. 28	92	1623
Woodrow, James A. S., Boston, Mass. "Woodrow's Electric Straw Cleaner." (For Cleaning Straw Hats)	7,682	July 10	92	193
Worlds Electro-Medical Institute, Columbus, Ohio. "Madam Sherman's Vegetable Compound." (For a Medicine)	7,762	Aug. 28	92	1623

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
American Malt Cream Company, Mishawaka, Ind. "Malt Cream." (For Malt Cream)	257	Aug. 28	92	1623
C. Howard Hunt Pen Manufacturing Company, Camden, N. J. "Round Pointed Pens." (For Pens)	241	July 3	92	1
Carey & Co., New York, N. Y. "Carbolo." (For an Antiseptic and Germicide)	256	Aug. 28	92	1623
Du Bois, Orin B., Jersey City, N. J. "Who Nose Me." (For a Game)	255	Aug. 28	92	1623
Egolf, W. D., Mena, Ark. "Fosfo" (For a Tonic Drink)	254	Aug. 21	92	1441
Havana American Company, New York, N. Y. "Jacks On Square." (For Cigars)	244	July 24	92	561
Henise, Lewis J., York, Pa. "Silver Lustra." (For a Polish)	261	Sept. 25	92	2343
Irwin, Samuel M., Seattle, Wash. "The White Pass and Yukon Route Playing Cards." (For Playing-Cards)	247	July 31	92	789
Jones, Tom, Denver, Colo. "Paris Exposition Souvenir Playing Cards." (For Playing-Cards)	262	Sept. 18	92	2163
Knubel Tobacco Company, New York, N. Y. "Ilderim." (For Cigarettes)	261	Sept. 18	92	2163
Loudenber, F. W., Chattanooga, Tenn. "Big Horn Chief Cigar." (For Cigars)	242	July 17	92	385
McCart-Christy Company, Cleveland, Ohio. "Colonial." (For Stomach-Bitters)	258	Sept. 4	92	1799
Miller, Du Brul & Peters Manufacturing Company, Cincinnati, Ohio. "Cigar Mold Code and Size List." (For Cigar-Molds)	251	Aug. 7	92	1039
National Computing Scale Company, Cleveland, Ohio. "Cut No. 10, National Platform Computing Scale." (For Computing-Scales)	249	July 31	92	789
National Computing Scale Company, Cleveland, Ohio. "Cut No. 11, National Platform Computing Scale." (For Computing-Scales)	250	July 31	92	789
Pansy Tooth Ache Gum Co., Atlanta, Ga. "Fill Your Teeth." (For Toothache-Gum)	265	Sept. 25	92	2343
Robinson, Anthony, New Bedford, Mass. "Board of Trade." (For Tobacco, Cigars, and Cigarettes)	260	Sept. 11	92	2005
Schlueter & Co., A., Milwaukee, Wis. "Nervbrew." (For Carbonated Beverages)	245	July 31	92	789
Shaving Cream Manufacturing Company, Jersey City, N. J., and New York, N. Y. "A Razorless Shave." (For a Chemical Compound)	246	July 31	92	789
Shindler & Bro., J. I., Red Lion, Pa. "Our New Capitol Cigar." (For Cigars)	252	Aug. 14	92	1239
Stevens, Charles W., Harvey, Ill. "Litholite." (For Artificial Stone)	263	Sept. 18	92	2163
Texas Arm and Pin Company, Beaumont, Tex. "Texas Arm and Pin Co." (For Arms, Pins, and Brackets	253	Aug. 14	92	1239
Tindle & Jackson, Buffalo, N. Y. "Slack Cooperage Stock." (For Cooperage Stock)	240	July 3	92	1
United States Playing Card Company, Cincinnati, Ohio. "Locomobile Series Bicycle Playing Cards." (For Playing-Cards)	243	July 24	92	561
Waters Souvenir Company, San Francisco, Cal. "The Nation's Capital Washington, D. C. Souvenir Playing Cards." (For Playing-Cards)	248	July 31	92	789
Werner & Co., A., New York, N. Y. "Split." (For Wines, Liquors, &c.)	259	Sept. 11	92	2005

DISCLAIMER.

Name, residence, and invention.	No.	Filed.	Official Gazette. Volume.	Page.
Roe, Charles, and Henry Roe, Aston, and Horace Knight, Coventry, England; disclaimer filed by patentees. Power-transmitting mechanism for motor-vehicles	626,808	Aug. 1 ,1900	92	1623

ALPHABETICAL LIST OF INVENTIONS.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Abrading or polishing machine	C. S. Yarnell	652,874	July 3	246	59	92	49
Abrading or polishing machines. Means for operating	C. S. Yarnell	653,726	July 17	1910	438 439	92	412
Acetylene-generator	J. A. Mosher	658,568	Sept. 25	2813	624	92	2426
Acid. Amido sulfonic	J. Turner	655,529	Aug. 7	633	------	92	1164
Acid and making same. Formic aldehyde compound of uric	F. and L. Ach	654,123	July 24	2616	------	92	563
Acid and making same. Propionyl-salicylic	O. Bonhoeffer	656,485	Aug. 21	2423	------	92	1540
Acid and making same. Tetraoxyanthraquinone disulfonic	H. Laubmann	656,463	Aug. 21	2473	------	92	1549
Acid and making same. Urea derivative of amido-napthol sulfonic	A. Israel and R. Kothe	656,646	Aug. 28	2810	------	92	1632
Acid. Apparatus for making pure carbonic	H. S. Elworthy	658,627	Sept. 25	2933	654	92	2449
Acid. Apparatus for making pure carbonic	H. S. Elworthy	658,628	Sept. 25	2940	655	92	2450
Acid. Making alkyl-uric	F. Ach	654,121	July 24	2612	------	92	563
Acid. Making hydrocyanic	E. Beringer	652,741	July 3	6	------	92	4
Acid. Making pure carbonic	H. S. Elworthy	658,626	Sept. 25	2926	654	92	2448
Adding-machine. Typographical	A. S. Dennis	657,266	Sept. 4	377	79, 80	92	1876
Addressing and wrapping articles. Machine for	L. C. Wing	654,214	July 24	2921	655 656	92	633
Addressing-machine	E. G. Lewis	654,263	July 24	3032	680 681	92	657
Adhesive product	G. Eichelbaum	656,884	Aug. 28	3285	------	92	1723
Adjustable roller	E. J. Gulick	657,488	Sept. 4	871	176	92	1989
Advertising apparatus	J. A. Kennedy-McGregor	655,627	Aug. 7	828	192 193 194	92	1201
Advertising apparatus	J. A. Kennedy-McGregor	658,375	Sept. 25	2491	551	92	2362
Advertising device	D. W. Hogan	653,241	July 10	967	231	92	206
Advertising device	P. E. White	656,131	Aug. 14	1866	429	92	1430
Advertising device. Street-car	J. N. Johnson	658,374	Sept. 25	2489	550	92	2361
Advertising-scale	W. Waegel	658,608	Sept. 25	2891	642	92	2441
Aerator. Milk-	D. D. Kimberlin	655,245	Aug. 7	135	29	92	1067
Aerial wheel	S. Cairncross	653,615	July 10	1656	386 387	92	341
Aging alcoholic liquors	J. A. H. Hasbrouck	657,698	Sept. 11	1266	268	92	2076
Agricultural machine. Automobile	W. F. Crowley	658,347	Sept. 25	2438	539	92	2352
Air and gas compressing apparatus	E. Gobbe	657,868	Sept. 11	1566	398	92	2139
Air. Apparatus for projecting heated	L. Prat	656,218	Aug. 21	2005	462	92	1461
Air-brake	F. L. Clark	656,516	Aug. 21	2561	589	92	1567
Air-brake	J. J. Nef	657,669	Sept. 11	1215	254 255	92	2067
Air-brake alarm. Low-pressure	A. H. Parsons	656,261	Aug. 21	2101	480	92	1478
Air-brake attachment	C. E. Tench	654,189	July 24	2822	637	92	612
Air-brake. Automobile	I. L. Hammond	655,654	Aug. 7	932	209	92	1222
Air-brake coupling. Automatic	L. C. Cary	658,657	July 17	1790	410	92	389
Air-brake. Vehicle	W. J. Donaldson, Jr	657,649	Sept. 11	1168	245	92	2058
Air compressing and carbureting machine	A. Bouvier	657,755	Sept. 11	1371	290	92	2098
Air-compressor	E. Hurn	657,025	Aug. 28	3519	803 804	92	1767
Air compressor and cooler	O. P. Ostergren	658,322	Sept. 18	2376	524	92	2313
Air-compressor. Hydraulic	D. Kirkman	653,094	July 3	684	161 162	92	138
Air-compressor. Hydraulic	J. W. Van Brocklin	656,147	Aug. 14	1886	434	92	1425
Air-cooling and ventilating system	O. F. Lueder and H. C. Alves	654,264	July 24	3035	681	92	657
Air-cooling apparatus	H. C. Gardner	654,725	July 31	3901	881	92	849
Air for industrial purposes. Apparatus for reheating compressed	T. A. Edison	657,922	Sept. 18	1671	360	92	2173
Air or gas engine	R. H. Little	656,823	Aug. 28	3121	707 708	92	1693
Air-pipe coupling. Automatic	J. W. Spurlock	655,997	Aug. 14	1606	370	92	1366
Air-power apparatus. Marine	A. M. Becker	655,541	Aug. 7	647	149	92	1167
Air purifier and muffler	H. L. Brown	653,612	July 10	1652	386	92	343
Air-purifying apparatus	R. H. Thomas	655,285	Aug. 7	213	47	92	1082
Alarm: *See* Air-brake alarm. Burglar or fire alarm. Bridge-alarm. High or low water alarm. Burglar-alarm. Low-water alarm.							
Album. Easel-	C. Jaeger	657,544	Sept. 11	979	201	92	2021
Albuminoids. Making non-coagulable	A. Classen	655,060	July 31	4547	1024	92	986
Alkalies. Apparatus for making	P. Naef	658,576	Sept. 25	2834	627	92	2428
Alkalies. Apparatus for making	P. Naef	658,723	Sept. 25	3112	693 694	92	2484
Alkaline-earth silicid	C. B. Jacobs	656,353	Aug. 21	2278	------	92	1512
Alkyloxychloropurin and preparing same	F. Ach	654,120	July 24	2609	------	92	563
Allo citral. Making	W. Krauth	654,649	July 31	3763	------	92	821
Alloy	G. H. Clamer and J. G. Hendrickson	655,392	Aug. 7	411	------	92	1119
Alloy and making same	R. C. Carpenter	652,833	July 3	184	------	92	38
Alloy for antifriction-bearings, &c	J. G. Hendrickson and G. H. Clamer	655,402	Aug. 7	427	------	92	1122

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Alloying with iron or steel. Obtaining hardening or toughening compounds for	R. C. Baker	652,877	July 3	252	------	92	50
Alumina. Obtaining	M. E. Rothberg	657,453	Sept. 4	734	------	92	1946
Ammunition-box	H. W. Daly	653,062	July 3	615	146	92	1568
Anchor	L. M. Bowers	654,014	July 17	2417	556	92	510
Anchor-iron	W. R. Madison	657,263	Sept. 4	373	78	92	1876
Anchor. Mooring	E. T. Bunje	653,861	July 17	2156	491	92	458
Anchor. Ship's	J. Callow	658,295	Sept. 18	2234	514	92	2305
Andirons and screen. Combined safety	I. W. Sullivan	658,098	Sept. 18	1997	435	92	2238
Angle chair or fitting	G. A. Weber	657,291	Sept. 4	423	89	92	1885
Animal-trap	W. H. Larimer	656,590	Aug. 21	2706	621	92	1598
Animal-trap	C. B. Trumble	656,519	Aug. 21	2595	590	92	1568
Animal-trap attachment	W. H. Cross	654,286	July 24	3069	689	92	604
Ankle-brace	W. A. Sears	655,763	Aug. 14	1133	260	92	1273
Annunciator	W. M. Davis	653,775	July 17	1996	456	92	429
Apparatus for removing and applying various devices.	E. H. Marshall H. F. Munn	656,994	Aug. 28	3475	795	92	1759
Apparatus for removing material from below the surface.	J. B. Hill	652,848	July 3	206	49	92	42
Applicator	E. S. May	653,258	July 10	1012	242	92	216
Arm-rest	L. C. Neal	655,885	Aug. 14	1375	317	92	1321
Arm rest or support	J. J. Wood	658,100	Sept. 18	1999	{435 436	92	2239
Armature for multipolar dynamos	A. J. Galring E. Ehrensberger	654,391	July 24	3275	735	92	708
Armature oil-guards. Locking device for	J. E. Thornton and C. F. S. Rothwell.	653,413	July 10	1295	------	92	268
Armor-plates. Improving	T. F. Driskill	654,689	July 31	3820	------	92	832
Article applicable for various purposes, together with process of manufacturing same.	E. Lundquist	654,527	July 24	3518	793	92	756
Articulating-plate	M. R. Beritzhoff	653,871	July 17	2171	495	92	462
Ash pan and sifter. Combined	P. E. Coale	654,823	July 31	4098	922	92	892
Ashes, &c. Device for removing	W. Vogel	653,215	July 10	925	223	92	199
Ashes from marine vessels. Device for removing	J. Philippi	656,492	Aug. 21	2521	581	92	1559
Asparagus, &c. Holder for	W. W. Varney	655,416	Aug. 7	452	{100 101	92	1127
Asphalt. Machine for separating rock-	A. F. L. Bell	657,799	Sept. 11	1447	------	92	2114
Asphaltic composition powder. Making	W. J. McCaw	655,430	Aug. 7	479	{106 107	92	1133
Asphaltic material. Apparatus for extracting and refining	E. L. Smith	657,440	Sept. 4	711	151	92	1942
Aspirator	S. Helman	657,710	Sept. 11	1290	273	92	2081
Atomizer	A. Heine	653,866	July 17	2162	493	92	460
Atomizer. Pocket	J. H. Higgins	657,656	Sept. 11	1185	247	92	2061
Attrition-mill	V. Leto	653,623	July 10	1668	389	92	346
Auger. Coal	O. O. Kittleson	652,790	July 3	92	23	92	19
Automatic indicator	W. H. Stratton	655,090	July 31	4595	{1096 1097	92	996
Automatic lubricator	T. S. Savage	654,188	July 24	2820	637	92	611
Automatic sprinkler	W. O. Wayman	654,327	July 24	3155	706	92	680
Automatic switch	W. O. Barnes	655,288	Aug. 7	217	48	92	1083
Automatic tank	F. G. Frankenberg	657,381	Sept. 4	601	126	92	1921
Automobile	C. Cotta	655,702	Aug 14	1008	{231 232	92	1248
Automobile	H. M. Quick	652,949	July 3	419	97	92	85
Automobile running-gear	H. W. Libbey	653,181	July 3	889	197	92	168
Automobile running-gear	L. H. Dyer	654,742	July 31	3993	888	92	856
Automobile truck	H. W. Libbey	657,650	Sept. 11	1170	{245 246	92	2058
Automobile vehicle	H. W. Libbey	652,851	July 3	211	50	92	43
Automobile vehicle	H. W. Libbey	657,124	Sept. 4	91	22	92	1819
Automobile vehicle	W. W. Valentine	656,491	Aug. 21	2518	{580 581	92	1558
Automobile vehicle	E. E. Allyne and L. R. Pomeroy	655,749	Aug. 14	1097	{253 254	92	1266
Automobile vehicles. Power mechanism for	J. Trier	657,046	Aug. 28	3564	{820 821	92	1776
Automobiles. Multiple motor system for	J. C. Anderson	655,320	Aug. 7	274	61, 62	92	1095
Autotruck for garbage, ashes, &c.	E. C. Espey and R. W. Harris	655,548	Aug. 7	666	152	92	1171
Awl. Sewing	A. L. Clark	652,835	July 3	187	43	92	38
Awning	I. Miller	656,033	Aug. 14	1680	387	92	1381
Awning	G. Salquist	657,073	Aug. 28	3611	832	92	1786
Awning	H. F. Condon	656,343	Aug. 21	2255	518	92	1507
Awning-fixture	S. T. Johnson	654,349	July 24	3191	715	92	688
Ax	J. W. Graham	653,234	July 10	956	220	92	204
Ax-blade	W. R. Wood	653,602	July 10	1637	383	92	340
Ax-forging die	H. B. Beebe	656,240	Aug. 21	2071	474	92	1473
Axle	W. C. Dalzell	658,621	Sept. 25	2920	652	92	2147
Axle	T. J. Morgan	657,744	Sept. 11	1355	287	92	2094
Axle box. Car	C. E. Moore	656,607	Aug. 21	2746	629	92	1607
Axle-box lid. Car	G. H. Leathers	656,554	Aug. 21	2626	607	92	1582
Axle boxing. Vehicle	J. S. Hickey and J. H. Egbert	658,370	Sept. 25	2482	549	92	2360
Axle. Car	B. F. Knobloch	657,602	Sept. 11	1083	225	92	2041
Axle-gage	J. Selter	653,922	July 17	2265	515	92	480
Axle-lubricating device	J. E. Ludwig	655,347	Aug. 7	335	73	92	1105
Axle-lubricator	W. A. Olmsted	657,130	Sept. 4	100	23	92	1821
Axle lubricator. Vehicle	E. H. Wilson	654,374	July 24	3242	726	92	700
Axle sand-shield. Vehicle	E. E. Baker	654,702	July 31	3857	870	92	840
Axle-spindle. Self-lubricating	J. Lanz	655,718	Aug. 14	1084	{239 240	92	1258
Axle-swaging apparatus	J. P. Scovill	652,865	July 3	231	55	92	46
Axle. Velocipede crank	C. E. Latshaw	655,631	Aug. 7	840	196	92	1203
Baby-exerciser	D. S. Settlemyre	658,126	Sept. 18	2041	445	92	2247
Baby-walker	J. N. Parks	656,041	Aug. 14	1688	389	92	1382
Back-pedal brake or coaster	A. Cuthbert	651,053	July 17	2487	{572 573	92	523
Back-pedaling brake	W. E. Henry	656,788	Aug. 28	3045	693	92	1678
Back-pedaling brake	W. J. Lloyd	658,269	Sept. 18	2292	{504 505	92	2297
Back-pedaling brake	F. A. Miller	652,799	July 3	105	26	92	22
Back-pedaling brake	E. E. Ziegler	655,945	Aug. 14	1490	342	92	1843
Badge	B. Harris	656,970	Aug. 28	3442	786	92	1755
Badge or button. Campaign	W. H. Luther	657,556	Sept. 11	998	205	92	2025
Badge-pin	G. H. Brooks	654,513	July 24	3497	789	92	752
Bag: *See* Feed-bag. Punching-bag. Mail-bag. Sample-bag. Paper-bag. Water-bag.							
Bag-fastener	H. Adams	655,359	Aug. 7	357	77	92	1109
Bag-filling appliance	W. S. Mallard	653,305	July 10	1101	{262 263	92	233
Bag-filling machine	A. M. Bates	655,322	Aug. 7	279	63	92	1096
Bag-holder	A. J. Hurd	655,236	Aug. 7	112	25	92	1063
Bag-holder	E. Noble	653,035	July 3	570	{133 134	92	114
Bag lock and catch	G. Goerk	655,151	July 31	4694	1058	92	1015
Bag-machine	H. Bilgram	656,340	Aug. 21	2248	{516 517	92	1506
Bag-machine	M. Vierengel	657,237	Sept. 4	356	75, 76	92	1873
Bags, purses, satchels, &c. Frame for	L. B. Prahar	655,512	Aug. 7	609	137	92	1159
Bags, satchels, &c. Fastening for	G. Goerk	655,149	July 31	4691	1057	92	1015
Bail-ear	C. Puddefoot	655,173	July 31	4736	1064	92	1023
Bait. Artificial	R. B. Cantrell	655,603	Aug. 7	781	184	92	1192
Baking-pan	J. F. Meredith	656,032	Aug. 14	1678	387	92	1381
Baking-powder	P. B. Hunt	654,573	July 24	3500	------	92	769
Baking-powder. Phosphate	P. B. Hunt	654,571	July 24	3588	------	92	769
Baking-powder. Phosphoric-acid	P. B. Hunt	654,572	July 24	3589	------	92	769
Baking-powders. Packing	W. P. Clotworthy	657,334	Sept. 4	511	106	92	1902
Baking preparation	P. B. Hunt	654,570	July 24	3586	------	92	769
Balance-escapement	M. Burt	653,131	July 3	748	176	92	140
Balance. Gravity	C. H. Mann	653,256	July 10	1007	{241 242	92	215
Balance sheet. Trial or daily	L. H. Johnson	658,266	Sept. 18	2287	553	92	2297
Bale-band fastening	D. M. Campbell	653,337	July 10	1172	279	92	244
Bale-stay	G. A. Lowry and W. M. Holmes	653,748	July 17	1953	445	92	420
Bale-tie	D. A. Cypher and W. L. Dayton	654,828	July 31	4108	924	92	894
Bale-tie	W. T. Forbes	653,226	July 10	945	228	92	202
Bale-tie	L. R. Lantz	656,028	Aug. 14	1671	384	92	1379
Bale-tie	C. E. Mallett	658,000	Sept. 18	1985	432	92	2236
Bale-tie	M. F. Walker	654,206	July 24	2910	653	92	631
Bale-tie machine. Wire	F. H. Daniels and C. S. Marshall	652,908	July 3	505	{118 119 120 98	92	102
Bale-tie-making machine	F. H. Daniels and C. S. Marshall	652,953	July 3	425	{99 100	92	86
Bales. Machine for unwinding cylindrical cotton-	L. A. Aumann	654,086	July 17	2539	584	92	532
Baling-press	P. K. Dederick	654,137	July 24	2686	{611 612	92	582
Baling-press	C. Dodge	656,767	Aug. 28	3007	685	92	1671
Baling-press	C. J. Johnson	657,287	Sept. 4	416	87, 88	92	1884
Baling-press	J. Kerns	656,988	Aug. 28	3461	{790 791	92	1757
Baling-press	W. S. and G. Livengood	654,800	July 31	4056	913	92	883
Baling-press	H. C. Moshier	657,353	Sept. 4	543	112	92	1909
Baling-press	T. E. and S. R. Sikes	653,757	July 17	1966	448	92	423
Baling-press	P. C. Southwick	656,429	Aug. 21	2413	{554 555	92	1538
Baling-press	J. J. Stopple	653,709	July 17	1869	429	92	405
Baling-press	G. Taylor	655,908	Aug. 14	1608	{370 371 372	92	1366
Baling-press	W. D. Watkins and T. P. Pruit	658,304	Sept. 18	2350	517	92	2308
Ball: *See* Pool-ball.							
Balloon. Electric-traction	M. J. A. Deydier	653,221	July 10	934	225	92	200
Banana-shipping case	J. Jackson	655,625	Aug. 7	824	191	92	1200
Band-cutter and feeder	W. W. Collins	658,345	Sept. 25	2432	{537 538	92	2350
Band-cutter and feeder	J. Erickson and J. M. Edmondson	656,447	Aug. 21	2444	502	92	1544
Band-cutter and feeder	W. C. Peterson	658,579	Sept. 25	2845	{630 631	92	2432
Band or cord tie	E. C. Burnett	656,997	Aug. 28	3378	772	92	1741
Barrel	R. W. Baylor	657,754	Sept. 11	1369	289	92	2068
Barrel-cap holder	A. S. Richardson and J. H. J. Colcord.	655,940	Aug. 14	1480	340	92	1341
Barrel-former	W. M. Schoolfield	652,811	July 3	135	33	92	27
Barrel-heading self-fastener and holder combined.	M. Ferguson	658,707	Sept. 25	3088	688	92	2479
Veneer-							
Barrel-hoop. Metal	F. B. Shuster	653,707	July 17	1867	427	92	404
Barrel, keg, or tierce. Packing	G. F. McKeever	655,103	July 31	4615	1041	92	1000
Barrel-opener	J. A. Beronio	658,613	Sept. 25	2906	647	92	2444
Barrel-setting-up form	A. C. Luyckx	654,407	July 24	3300	740	92	713
Barrel-swing	G. L. Edgerton	655,364	Aug. 7	366	79	92	1110
Barrel-washing apparatus	G. Schock	653,821	July 17	2085	476	92	445
Barrel-washing machine	J. Müller	657,354	Sept. 4	546	113	92	1909
Basin. Sanitary receiving	B. R. Guion	658,639	Sept. 25	2960	{658 659	92	2454
Basin-stopper	W. Holmes	656,352	Aug. 21	2277	522	92	1512
Basket cover-clamp and handle	M. Tucker	653,125	July 3	741	174	92	148
Basket. Fisherman's frog	B. F. McCurdy	656,655	Aug. 28	2821	643	92	1684
Bath-cabinet	L. L. Cahoon	655,956	Aug. 14	1511	347	92	1347
Bath-tub seat	E. T. Brown	657,640	Sept. 11	1147	241	92	2053

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Bath-tub seat	H. L. Grimmell	658,084	Sept. 18	1978	431	92	2235
Bathing device for producing artificial waves	E. Haeckel	654,973	July 31	4380	985	92	951
Batteries. Charging-stand and contact for storage.	G. H. Condict	656,882	Aug. 28	3383	746	92	1723
Battery:							
See Electrical battery. Gas-battery. Electrogalvanic battery. Primary battery. Secondary battery. Galvanic battery. Storage battery.							
Battery-box	L. W. Pullen	656,700	Aug. 28	2888	658	92	1649
Battery-element hanger	J. L. Hayes	657,413	Sept. 4	601	138	92	1033
Battery plate. Secondary	J. B. Conrad	656,095	Aug. 14	1799	414	92	1408
Battery plate. Secondary	W. Bowker, Sr	657,638	Sept. 11	1146	240	92	2053
	J. Middleby, Jr	655,883	Aug. 14	1372	316 317	92	1320
Battery receptacle. Secondary	H. Fernstrom	655,896	Aug. 7	417	92	92	1120
Bearing	J. B. Halifax	652,841	July 3	201	47	92	41
Bearing	C. A. Latham	657,550	Sept. 11	991	204	92	2023
Bearing		654,416	July 24	3321	744 745	92	717
Bearing	E. E. Ruef	653,184	July 3	843	198	92	169
Bearing. Ball	E. S. Reed	657,201	Sept. 4	237	53	92	1849
Bearing. Disk	C. H. Melvin	657,894	Sept. 11	1607	346	92	2147
Bearing. Disk	C. H. Melvin	657,204	Sept. 4	247	54	92	1851
Bearing. Disk	S. D. Poole	655,445	Aug. 7	515	114	92	1140
Bearing for bicycles, &c. Spring	F. L. Koehler	654,375	July 24	3243	727	92	700
Bearing regulator. Ball	J. F. Wilson	654,179	July 24	2780	629	92	693
Bearing. Roller	A. W. Ponton	652,819	July 3	148	36	92	30
Bearing. Roller	A. J. Theiring	656,310	Aug. 21	2192	501	92	1496
Bearing. Shaft	F. J. Warburton	655,711	Aug. 14	1021	236	92	1251
Bearing. Shaft thrust	E. G. Hoffmann	652,845	July 3	202	47	92	41
Bearings, &c. Making semisteel	J. B. Halifax	653,318	July 10	1120	277	92	237
Beating-engine	A. F. Scholz	658,216	Sept. 18	2207	482 483	92	2280
Bed	E. E. Munger	653,547	July 10	1553	361	92	922
Bed attachment. Invalid	A. E. Countryman	658,503	Sept. 25	2696	599	92	2401
Bed-bottom	G. H. McBride	656,411	Aug. 21	2380	546 547	92	1531
Bed-bottom. Sectional	J. P. Leggett	654,707	July 31	3864	871	92	841
Bed-bottom. Spring	C. D. Brouyette	657,551	Sept. 11	992	204	92	2023
Bed-bottom. Spring	H. E. Laughlin	653,158	July 3	796	187	92	159
Bed corner-coupling. Metallic	F. W. Walker	657,469	Sept. 4	760	162	92	1951
Bed-couch	J. Thompson	653,409	July 10	1287	306	92	267
Bed. Folding	L. N. Bachand	656,980	Aug. 28	3457	790	92	1756
Bed. Folding	L. B. Jeffcott	653,440	July 10	1343	319	92	278
Bed. Invalid	A. B. Clark	654,165	July 24	2744	623	92	593
Bed. Invalid	F. M. Lepore	653,259	July 10	1013	243	92	216
Bed. Invalid	E. Otto	658,217	Sept. 18	2210	483	92	2281
Bed-lifting device. Hospital	E. E. Munger	655,950	Aug. 14	1500	344	92	1345
Bed or crib. Folding	J. P. Balser	657,279	Sept. 4	405	84	92	1881
Bed-pan	R. Blank	657,819	Sept. 11	1479	315	92	2120
Bed-pan	H. D. Goodrich	653,404	July 10	1281	305	92	265
Bed. Portable	J. Seitters and R. B. McDonald	658,143	Sept. 18	2069	451	92	2252
Bed-slat	J. D. Edwards and C. B. Timmons	656,161	Aug. 21	1917	440	92	1444
Bed. Sofa	F. Bennett	655,893	Aug. 14	1387	320	92	1323
Bed. Spring	W. F. Ade, Jr	654,972	July 31	4378	985	92	951
Beds. Folding guard-frame for children's	I. A. Haack	656,456	Aug. 21	2460	565	92	1547
Bedstead-fastener	H. H. Hirsch	653,753	July 17	1959	447	92	422
Bedstead reversible rail	W. R. McLain	658,605	Sept. 25	2894	644	92	2442
Bedsteads. Casting metallic	G. H. Williams	653,331	July 10	1140	271	92	240
Beehive	L. A. Aspinwall	656,251	Aug. 21	2184	477 478	92	1475
Beehive	H. Johansen	655,613	Aug. 7	801	186	92	1195
Beer-cooler	G. Donges	654,358	July 24	3209	719	92	692
Beer-cooler	O. Roderwald	656,418	Aug. 21	2396	551	92	1535
Beer, &c. Device for drawing steam	J. O'Connor	657,106	Sept. 4	64	14	92	1814
Beer-drawing device. Lager	L. H. Handy	654,369	July 24	3234	725	92	696
Beer-pasteurizing apparatus	E. Wagner	657,498	Sept. 4	886	179	92	1992
Beer-pressure apparatus. Hygienic	C. Peters	653,387	July 10	1254	298 299	92	261
Beers not in vacuo. Apparatus for top fermentation of	A. D. W. King	653,558	July 10	1569	365	92	325
Beet-knife	B. J. Johnson and T. Peterson	653,195	July 3	861	202	92	172
Bell	A. A. Bevin and P. C. Arnold	657,386	Sept. 4	616	120	92	1924
Bell	A. A. Bevin and P. C. Arnold	654,381	July 24	3253	720	92	702
Bell	C. A. Brink	658,501	Sept. 25	2694	598	92	2401
Bell	A. B. Hunn	654,324	July 24	3151	705	92	679
Bell	H. S. Pullman	656,851	Aug. 28	3204	731	92	1710
Bell. Alarm	F. A. Newhall	653,999	July 17	2397	552	92	506
Bell and burglar-alarm. Combined door	H. A. Higbee	653,459	July 10	1375	326	92	284
Bell. Automatic hotel call	G. B. Reaben	657,346	Sept. 4	532	110	92	1907
Bell. Bicycle	N. N. Hill	654,531	July 24	3528	795	92	758
Bell. Electric	C. H. Furgason	656,768	Aug. 28	3009	686	92	1671
Bell. Signal	C. J. E. Fleck	655,352	Aug. 7	341	74	92	1107
Bell-striker	E. D. Rockwell	653,609	July 10	1648	385	92	342
Belt	C. F. Batt	656,644	Aug. 28	2806	641	92	1631
Belt and apron and carrying-shaft for same. Endless feed	L. Holland-Letz	658,888	July 17	2205	501	92	468
Belt. Apparel	J. T. Robin	656,666	Aug. 28	2837	647	92	1638
Belt. Apparel	M. Scheuer	656,918	Aug. 28	3346	762	92	1734
Belt. Apparel	A. Wighard	653,569	July 10	1503	------	92	330
Belt-dressing	L. F. Duncan	657,765	Sept. 11	1386	294	92	2101
Belt-driving mechanism	G. J. Gibbs	655,403	Aug. 7	428	94	92	1122
Belt-fastener	J. Hill	654,657	July 31	3774	851	92	823
Belt-fastener	D. Littlewood	656,757	Aug. 28	2988	682	92	1667
Belt or strap fastener. Driving	F. E. Whitham	653,868	July 17	2165	494	92	461
Belt-shifter	E. G. Jenner	653,329	July 10	1137	271	92	240
Belt-shifter	A. B. Wales	658,081	Sept. 18	1973	430	92	2234
Belt-tightener	C. Colahan						

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Belt-tightener	E. J. McClellan	655,157	July 31	4704	1060	92	1017
Belt-tightener	G. E. Travis	657,301	Sept. 4	438	93	92	1888
Belt-tightener. Grain-carrier	C. Colahan	658,080	Sept. 18	1971	429	92	2233
Belts. Apparatus for putting on pulley	H. Cliff and T. Burton	654,052	July 17	2486	572	92	522
Berth	W. A. Brown	657,727	Sept. 11	1823	279 280	92	2088
Beverage-dispensing device	J. Dineen	654,879	July 31	4206	947	92	914
Bicycle	G. S. Bartlett	657,382	Sept. 4	606	127	92	1922
Bicycle	W. C. Dunn	655,697	Aug. 14	1001	229	92	1247
Bicycle	A. Prager	655,890	Aug. 14	1284	294	92	1301
Bicycle	J. C. Robbins	655,516	Aug. 7	615	138 139	92	1161
Bicycle	F. J. Stallings	658,742	Sept. 25	3162	704	92	2494
Bicycle	F. Weber	656,311	Aug. 21	2193	501	92	1496
Bicycle	S. J. Ford	653,415	July 10	1299	308	92	269
Bicycle attachment	L. Glasser	654,245	July 24	2901	671	92	647
Bicycle attachment	W. S. McDonald and J. B. Davis	656,908	Aug. 28	3482	796	92	1761
Bicycle attachment for leading bicycles	E. C. F. and E. C. F. Otto, Jr	654,411	July 24	3309	742	92	715
Bicycle-brake	W. H. Parsons	658,119	Sept. 18	2031	443	92	2215
Bicycle-brake	H. Rupsch	654,182	July 24	2808	634	92	609
Bicycle chain-adjuster and hub	F. C. Schoenthal	653,968	July 17	2358	542 543	92	497
Bicycle. Chainless	A. Andziewicz	654,560	July 24	3570	805	92	766
Bicycle-crank	C. B. Wells	652,988	July 3	491	116	92	99
Bicycle-crank	H. G. Clark	653,862	July 17	2157	491	92	459
Bicycle driving-gear	F. J. E. Johansson	654,004	July 17	2402	553	92	507
Bicycle driving means	A. Hänsel	656,323	Aug. 21	2215	507	92	1500
Bicycle. Electric	V. H. Mills	657,667	Sept. 11	1212	254	92	2066
Bicycle-frame	F. A. Wilmot	656,735	Aug. 28	2952	674	92	1661
Bicycle-frame	A. Brady	652,912	July 3	307	76	92	62
Bicycle-gear	D. O. McAuliff and W. A. B. Hicks	655,570	Aug. 7	710	162	92	1179
Bicycle handle-bar	C. W. Neff	654,483	July 24	3449	777	92	743
Bicycle handle-bar	J. P. Schowalter, G. A. Rosenbauer, and J. Miotke	656,482	Aug. 21	2503	576	92	1555
Bicycle handle-bar heads. Making	J. S. Dikeman	656,950	Aug. 28	3402	776	92	1745
Bicycle handle-bar pillar	F. Schmitz	656,905	Aug. 28	3328	758	92	1731
Bicycle hub and axle	O. I. Straub	658,406	Sept. 25	2541	564	92	2372
Bicycle. Interlocking	E. E. Henry	654,978	July 31	4385	988	92	953
Bicycle-lamp holder	J. C. Bioren	654,128	July 24	2632	603	92	567
Bicycle-lock	F. H. Gardner	653,230	July 10	951	220	92	206
Bicycle-lock	H. T. Rich	654,672	July 31	3799	857	92	828
Bicycle locking device	A. Wessnick and A. Gutowski	656,334	Aug. 21	2226	513	92	1503
Bicycle mud-guard	F. H. Welch	655,316	Aug. 7	267	60	92	1094
Bicycle parcel-carrier	J. E. Rothaermel	657,135	Sept. 4	107	25	92	1823
Bicycle prop and lock. Combined	R. G. Lee	653,681	July 17	1828	418	92	397
Bicycle propelling mechanism	E. L. Holmes	657,772	Sept. 11	1396	295 296	92	2103
Bicycle-pump	A. L. Crandall	652,997	July 3	504	118	92	102
Bicycle-pump	O. Keen	656,122	Aug. 14	1849	426	92	1418
Bicycle-pump	W. M. Reason	655,707	Aug. 14	1215	279	92	1290
Bicycle-repair jack	M. A. Masters	653,519	July 10	1492	348	92	309
Bicycle-saddle	L. G. M. Englebert	654,720	July 31	3892	878	92	847
Bicycle-saddle	H. M. Norman	653,588	July 10	1616	378	92	336
Bicycle-saddle	W. M. Starr	656,588	Aug. 21	2703	620	92	1598
Bicycle-saddle and tool-carrier. Combined	R. J. Dooley	655,209	Aug. 7	58	13	92	1052
Bicycle seat-post	O. W. Bond	654,561	July 24	3570	805	92	766
Bicycle seat-post	J. H. Cash	653,410	July 10	1290	306	92	268
Bicycle seat-post clamp	J. B. L. McKenzie	656,507	Aug. 21	2654	612	92	1585
Bicycle speed mechanism	J. A. Cardinell	658,718	Sept. 25	3104	692	92	2483
Bicycle-stand	C. W. Warner	657,973	Sept. 18	1790	386	92	2198
Bicycle-support	H. H. Coote	654,950	July 31	4386	976	92	942
Bicycle-support	A. C. Haven	654,452	July 24	3395	768	92	732
Bicycle-support	P. A. Shanklin	658,023	Sept. 18	1870	405	92	2214
Bicycle-support	O. Weston	656,129	Aug. 14	1863	428	92	1420
Bicycle-support	P. L. Hussey	653,243	July 10	970	232	92	207
Bicycle tube-clamp	W. Riches	654,673	July 31	3801	858	92	820
Bicycle-wheel	W. Hornich, Jr	653,206	July 10	1085	259	92	230
Bill-hook	J. Prince	655,900	Aug. 14	1598	367	92	1364
Billiard-cue tip	W. Hess	656,973	Aug. 28	3445	787	92	1754
Billiard-cue-tip fastener	R. W. Moffett	655,503	Aug. 7	599	135	92	1157
Billiard-table	V. C. Routzahn	655,309	Aug. 7	256	58	92	1091
Binder and pad-holder. Temporary	T. Noble	656,568	Aug. 21	2655	612	92	1586
Binder. Loose-sheet	T. B. Fisher	654,145	July 24	2702	616	92	585
Binder. Magazine	W. P. Northcott	656,367	Aug. 21	2296	526	92	1515
Binder. Temporary	W. P. Northcott	656,368	Aug. 21	2298	526	92	1516
Binder. Temporary	J. H. Barton	657,808	Sept. 11	1461	310	92	2116
Binocular. Prismatic	G. Herbert, Jr	657,657	Sept. 11	1187	248	92	2061
Biscuits for packing. Apparatus for feeding or delivering	J. Ranald	657,030	Aug. 28	3530	------	92	1769
Bismuth from ores containing bismuth oxids, &c. Extracting							
Bit:							
See Bridle-bit.							
Bit	A. Castro	656,244	Aug. 21	2076	475	92	1474
Bit	M. McNalley	655,508	Aug. 7	604	136	92	1150
Bit-brace	R. Lewis	654,012	July 17	2414	556	92	509
Bit-guide	F. A. Lamberg	654,010	July 17	2411	554 555	92	509
Blackboards, &c. Composition of matter for	L. O'Brien	657,001	Aug. 28	3486	------	92	1761
Blanket-fastener	J. D. B. Murray	658,115	Sept. 18	2026	442	92	2244
Blast and cupola furnace	A. Reynolds	657,031	Aug. 28	3531	806	92	1769
Blasting. Lead-wire for	W. H. Williams	657,375	Sept. 4	590	124	92	1919
Bleaching by electrolytic chlorin water	T. Jespersen	655,239	Aug. 7	126	27	92	1065
Bleaching process	J. and E. E. Pullman	658,674	Sept. 25	3024	------	92	2468
Blind-fastener	S. A. Lewis	656,847	Aug. 28	3194	726	92	1708

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g	Official Gazette. Vol.	Official Gazette. Page.
Block: *See* Brake-block. Building-block. Sheet-leader block.							
Blower	E. S. Gray	656,541	Aug. 21	2613	601, 602	92	1578
Blower. Automatic	H. H. Huff	652,964	July 3	449	106	92	90
Blower. Blacksmith's	J. W. Robinson	653,486	July 10	1435	396	92	297
Blower. Fan	R. Burns	655,602	Aug. 7	779	183	92	1192
Blower. Grate	T. W. Green	653,365	July 10	1221	291	92	255
Blowers. Impeller for rotary	J. S. Roark	655,152	July 31	4696	1058	92	1016
Blowing-engine. Compound	F. G. Gasche and F. H. Foote	654,966	July 31	4364	982	92	948
Blowpipe	E. Gustafson	654,566	July 24	3578	807	92	767
Blowpipe	F. Speidel	658,291	Sept. 18	2328	513	92	2304
Board: *See* Counting-board. Ironing-board. Kneading-board. Shoveling-board. Washboard.							
Boat attachment	R. M. Howe and L. A. Leavitt	655,234	Aug. 7	107	24	92	1092
Boat-fastening device. Ferry	W. O. Jones	653,244	July 10	972	232	92	207
Boat. Hand-propelled	D. M. Pfautz	658,043	Sept. 18	1901	412	92	2220
Boat. Life	P. U. and A. M. J. Riess	655,993	Aug. 14	1601	368, 369	92	1364
Boat-lowering mechanism	C. Schneemann	653,121	July 3	731	172, 173	92	146
Boiler: *See* Domestic boiler. Pipe-boiler. Range-boiler. Sectional boiler. Steam-boiler. Tubular boiler. Washboiler. Water-tube boiler.							
Boiler	D. Fitzgibbons	656,536	Aug. 21	2602	599	92	1576
Boiler	G. E. Ledvina	657,906	Sept. 11	1631	352	92	2152
Boiler	G. S. Strong	655,588	Aug. 7	752	175, 176	92	1186
Boiler	G. S. Strong	655,589	Aug. 7	754	176, 177	92	1187
Boiler	N. P. Towne	655,420	Aug. 7	461	102, 103	92	1129
Boiler	C. R. Partington	655,968	Aug. 14	1595	367	92	1363
Boiler blow-off. Steam	P. F. Dundon	653,000	July 3	510	121	92	103
Boiler-brace	P. A. Doughty	656,953	Aug. 28	3405	777	92	1746
Boiler-cleaner	T. G. Forster	652,766	July 3	53	13	92	11
Boiler-cleaner	J. Thurell	656,059	Aug. 14	1716	396	92	1389
Boiler furnace. Steam	J. L. M. A. Reis	655,119	July 31	4642	----	92	1005
Boiler incrustations. Composition for preventing	E. J. Moore	654,070	July 17	2515	578	92	928
Boiler slide plate. Steam	J. and A. Niclausse	658,391	Sept. 25	2525	559	92	2308
Boiler-tube	W. H. Ingersoll	653,090	July 3	676	160	92	136
Boiler-tube cleaner	S. J. M. Berthet	655,187	Aug. 7	20	4	92	1045
Boiler-tube plug	W. H. Ingersoll	654,002	July 17	2400	552	92	906
Boiler-tube scraper	B. F. Keeney	655,550	Aug. 7	687	156, 157	92	1175
Boiler washout device	F. Pye	656,420	Aug. 21	2400	551	92	1536
Boiler water-purifier. Steam	C. C. Upham	655,502	Aug. 7	761	179	92	1188
Boilers. Automatic circulating system for steam	F. A. Lansing	657,427	Sept. 4	688	145	92	1038
Boiling meats. Form for	J. E. Long	655,790	Aug. 14	1201	274	92	1287
Bolster. Collapsible	J. B. Jones	654,114	July 17	2580	593	92	541
Bolster-roll							
Bolt: *See* Coupling-bolt. Door-bolt.							
Bolt socket. King	H. C. Swan	653,269	July 10	1037	248	92	221
Bolting-machines. Cloth-cleaning device for sieves in	J. C. Maun	658,386	Sept. 25	2515	556, 557	92	2306
Bolting-mill	H. Dietz	656,346	Aug. 21	2268	520	92	1510
Book. Account	P. N. Krogmann	654,650	July 31	3764	849	92	821
Book. Account	E. Mayer	656,031	Aug. 14	1677	386	92	1380
Book. Account	J. H. Rand	656,662	Aug. 28	2831	645, 646	92	1637
Book. Account	W. Thomson	654,035	July 17	2455	564	92	517
Bookbinding	L. Bailey	658,563	Sept. 25	2805	622	92	2424
Bookbinding	C. J. Taylor	657,503	Sept. 4	893	181	92	1003
Book case or rack	J. A. Young	657,847	Sept. 11	1531	329	92	2131
Book. Check or dividend-warrant and bank-transactions	T. McCulloch	656,325	Aug. 21	2218	507, 508	92	1500
Book-cover	E. M. Page	653,393	July 10	1206	301, 302	92	263
Book. Manifold sales	C. Leveque	654,166	July 24	2746	624	92	594
Book. Manifold sales	E. M. Wildey	658,307	Sept. 18	2354	519	92	2310
Book. Manifolding sales	D. B. Kearney	655,876	Aug. 14	1361	313	92	1318
Book. Manifolding sales	L. G. Reynolds	655,456	Aug. 7	529	119	92	1143
Book. Pocket record	J. M. Yarnell	654,698	July 31	3850	868	92	839
Book-rest or table. Adjustable	M. Miller	653,107	July 3	709	167	92	142
Book. Separable	F. H. Gilson. (Reissue)	11,846	Aug. 14	1906	438	92	1428
Book. Separable	F. H. Gilson. (Reissue)	11,847	Aug. 14	1908	438	92	1429
Books, &c. Machine for forming	T. C. Dexter	653,196	July 3	862	202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212	92	173
Boosters or generator-fields. Means for controlling excitation of	J. Appleton	657,722	Sept. 11	1313	277, 278	92	2086
Boot or shoe finishing tool	A. Herman	656,290	Aug. 21	2157	493	92	1489

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g	Official Gazette. Vol.	Official Gazette. Page.
Boot or shoe shock-deadening device	J. M. Cartier	658,234	Sept. 18	2232	488	92	2285
Boot or shoe. Ventilated	J. J. Pearson	655,576	Aug. 7	734	170	92	1183
Boot-tree	M. J. Hall	653,575	July 10	1600	372	92	332
Boots or shoes. Elastic tread for	E. E. Wolf	653,161	July 3	808	190	92	161
Boots or shoes. Protector-setting machine for	H. W. Winter and B. J. Conlon	654,398	July 24	3100	694	92	670
Borax. Making	J. L. Novarine	654,667	July 31	3792	----	92	827
Boring and drilling machine	J. Pohl, Jr	652,978	July 3	476	111, 112	92	96
Boring apparatus	J. Howarth and W. Pruszkowski	654,961	July 31	4389	989	92	954
Boring-bar. Expansible	J. Brown and T. Haddock	655,600	Aug. 7	777	183	92	1191
Boring-machine	A. Z. Savage	657,835	Sept. 11	1510	323	92	2126
Boring-tool	J. J. Tynan	654,861	July 31	4175	941	92	908
Boring-tool brace-head	A. Weisenhorn	556,069	Aug. 14	1736	402	92	1368
Bottle	J. T. Johnson	655,872	Aug. 14	1353	311	92	1317
Bottle	G. W. Vought	657,971	Sept. 18	1788	386	92	2198
Bottle attachment	T. J. Duffy	654,056	July 17	2493	574	92	524
Bottle-cap	A. L. Bernardin	653,610	July 10	1649	385	92	342
Bottle-carrier	E. H. N. Clarkson	658,205	Sept. 18	2182	477	92	2276
Bottle carrier, holder, or hanger. Claw	C. A. Law	655,722	Aug. 14	1049	243	92	1256
Bottle-collar	G. W. Williams	657,327	Sept. 4	498	104	92	1009
Bottle fastener. Elastic milk	J. B. Kimber	656,894	Aug. 28	3301	762	92	1726
Bottle-filling machine	F. C. Keller	655,443	Aug. 7	508	113, 114	92	1139
Bottle-filling machine	S. C. Miller	654,016	July 17	2419	557	92	510
Bottle-filling-machine corking attachment	G. W. Field	657,931	Sept. 18	1716	369	92	2185
Bottle-finisher	J. M. Thoburn	654,768	July 31	3991	897	92	867
Bottle. Mucilage	W. Rodiger	653,262	July 10	1017	244	92	217
Bottle-neck-finishing machine	C. J. Konig	654,737	July 31	3919	881, 885, 886	92	853
Bottle. Non-reclosable	J. E. Laidlaw	653,098	July 3	691	163	92	140
Bottle. Non-refillable	J. A. Bonner	654,510	July 24	3490	788	92	751
Bottle. Non-refillable	E. Ciudel	656,388	Aug. 21	2333	536	92	1523
Bottle. Non-refillable	C. J. Cooze	654,230	July 24	2962	665	92	640
Bottle. Non-refillable	W. C. Curtiss	657,759	Sept. 11	1378	291	92	2100
Bottle. Non-refillable	S. Davis	657,863	Sept. 11	1558	335	92	2137
Bottle. Non-refillable	P. J. Germain	658,145	Sept. 18	2071	451	92	2253
Bottle. Non-refillable	F. J. Gottlieb	658,107	Sept. 18	2011	438	92	2241
Bottle. Non-refillable	W. A. and T. A. Hall	658,213	Sept. 18	2203	481, 482	92	2279
Bottle. Non-refillable	G. S. Linthicum	653,624	July 10	1670	390	92	347
Bottle. Non-refillable	H. B. Mason	654,266	July 24	3037	681	92	658
Bottle. Non-refillable	C. B. Overbaugh	656,259	Aug. 21	2098	480	92	1478
Bottle. Non-refillable	T. P. Schott	654,361	July 24	3218	720	92	698
Bottle. Non-refillable	A. Sommerfeld	656,671	Aug. 28	2841	648	92	1639
Bottle. Non-refillable	J. M. Urgellés	655,641	Aug. 7	863	200	92	1207
Bottle. Non-refillable	J. H. Doerr	658,350	Sept. 25	2444	540	92	2323
Bottle. Non-refilling	J. Walber	656,148	Aug. 14	1880	435	92	1425
Bottle. Non-refilling	J. O'Connor	655,887	Aug. 14	1377	318	92	1321
Bottle or similar receptacle	N. G. Baldwin	656,080	Aug. 28	2873	654	92	1646
Bottle-stopper	T. J. Butler	655,056	July 31	4531	1021	92	983
Bottle-stopper	P. Lindemeyr	658,660	Sept. 25	3001	667	92	2463
Bottle-stopper	P. Lindemeyr	658,661	Sept. 25	3003	667	92	2463
Bottle-stopper	C. Marchand	656,698	Aug. 28	2886	657	92	1648
Bottle-stopper	C. H. Seelig	657,459	Sept. 4	744	159	92	1047
Bottle-stopper	A. Share	656,587	Aug. 21	2703	620	92	1598
Bottle-stopper fastening	L. Drevon	654,959	July 31	4352	980	92	945
Bottle-stopper for aerated beverages	C. W. Blagg	657,051	Aug. 28	3572	823	92	1778
Bottle stopper. Mucilage	F. Lugviel	655,792	Aug. 14	1202	275	92	1287
Bottle-washing machine	P. F. Cassidy	656,514	Aug. 21	2557	588	92	1566
Bottle-wiring tool	C. Boucher, Aîné	656,876	Aug. 28	3265	----	92	1720
Bottles, flasks, &c. Manufacturing	P. F. Cassidy	656,513	Aug. 21	2556	587	92	1566
Bottles. Method of and means for wiring	E. E. Ford	658,210	Sept. 18	2197	480	92	2278
Bottling-apparatus filling-head	E. E. Ford	658,211	Sept. 18	2200	481	92	2279
Bottling-apparatus filling-head	G. Egger	658,624	Sept. 25	2904	654	92	2448
Bottom bracket	K. Schmeisser	655,377	Aug. 7	385	84	92	1114
Boundary-post	J. H. Carroll	657,585	Sept. 11	1046	217	92	2034
Bouquet-holder	L. A. Scholz	655,583	Aug. 7	745	172	92	1185
Bowling-alley	E. Verstracte	655,084	July 31	4490	1013	92	975
Box: *See* Ammunition-box. Bread-box. Cake-box. Cigar-box. Compartment-box. Display-box. Fare-box. File-box. Folding box. Hat-box. Knockdown box. Letter-box. Lunch-box. Mail-box. Match-box. Metal box. Miter-box. Nest-box. Packing-box. Paper box. Press-box. Spool-goods box. Stuffing-box. Tin-plate-packing box. Tool-box.							
Box	J. H. Kasschau	653,514	July 10	1485	347	92	306
Box-covering machine	H. Inman	657,417	Sept. 4	670	139, 140	92	1034
Box-fastener	J. M. Felkins	657,865	Sept. 11	1562	337	92	2138
Box-filling machine	E. T. Pollard	656,328	Aug. 21	2224	509, 510, 511	92	1502
Box-lifter	G. Nevenzel	658,458	Sept. 25	2623	582	92	2387
Box machine. Honey-	C. Mondeng	655,988	Aug. 14	1476	339, 340	92	1340
Box-making machine. Metal-edge-	J. S. Stokes	658,029	Sept. 18	1882	407	92	2216
Boxes. Manufacture of	A. H. Stevenson and F. Maginn	656,488	Aug. 21	2513	579	92	1557

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Brace: *See* Ankle-brace. Bit-brace. Shoulder-brace.							
Bracelet	W. F. Simon	655,025	July 31	4473	1009	92	972
Bracket: *See* Bottom bracket. Curtain-fixture bracket. Curtain-pole bracket. Flagstaff-bracket. Lamp-bracket. Lamp-supporting bracket. Shade-roller bracket. Steel-tower bracket. Window-bracket.							
Bracket	L. W. Macy	655,100	July 31	4611	1040	92	999
Bracket or fixture	E. S. Lord	658,551	Sept. 25	2784	617	92	2119
Braiding-machine	O. Diekhaus	657,793	Sept. 11	1384	293	92	2101
Brake: *See* Air-brake. Back-pedaling brake. Bicycle-brake. Car-brake. Electric-motor brake. Elevator regulating-brake. Hydraulic brake. Machine-brake. Railway-brake. Ratchet-brake. Vehicle-brake. Velocipede-brake. Wagon-brake.							
Brake	H. H. Abernathy	656,574	Aug. 21	2666	614	92	1588
Brake	G. S. Dunn	654,142	July 24	2694	614	92	584
Brake	E. C. F. and E. C. F. Otto, Jr	653,692	July 17	1843	422	92	400
Brake	G. E. Seymour and F. Kahler	656,379	Aug. 21	2319	531	92	1520
Brake-application valve for train-pipes	J. J. Sullivan	656,058	Aug. 14	1715	395	92	1389
Brake-block. Automatic	W. H. Sauvage	654,806	July 31	4065	915	92	885
Brake-block. Automatic	W. H. Sauvage	654,807	July 31	4066	915	92	885
Brake-block. Automatic	W. H. Sauvage	654,808	July 31	4067	915	92	886
Brake-block. Automatic	W. H. Sauvage	654,809	July 31	4068	915	92	886
Brake mechanism	C. E. Moore	656,608	Aug. 21	2747	629, 630	92	1607
Brake mechanism. Differential	J. A. Brill and W. S. Adams	655,754	Aug. 14	1111	256, 257	92	1268
Brake-setting and signaling apparatus. Automatic	C. Bergmann	655,184	Aug. 7	10	3	92	1043
Brake-setting mechanism. Emergency	W. H. Sauvage	653,780	July 17	2004	458	92	430
Brake-shoe	J. Stromeyer	655,381	Aug. 7	392	85	92	1115
Brake-shoe. Automatic	W. H. Sauvage	654,805	July 31	4063	914	92	885
Brakes. Cooling	A. Ekström	656,445	Aug. 21	2441	561	92	1543
Branding	H. H. Levy	652,701	July 3	95	23	92	19
Branding composition	H. Gibson. (Reissue)	11,849	Aug. 28	3612	.....	92	1786
Brazing-lamp. Jeweler's	H. L. McCormack	656,654	Aug. 28	2820	643	92	1634
Bread. Apparatus for cutting altar-	T. M. Mulkerins	655,409	Aug. 7	438	96, 97	92	1125
Bread box. Altar-	T. M. Mulkerins	655,410	Aug. 7	441	97	92	1125
Bread. Marking	H. D. Mentzel and J. Reiser	653,932	July 17	2279	519	92	483
Bread or cake knife	J. Hamilton	655,301	Aug. 7	245	56	92	1089
Bread or cake pan	M. Vossbeck	655,530	Aug. 7	634	144	92	1164
Bread-raising apparatus	J. D. Bell	658,220	Sept. 18	2226	487	92	2284
Brick-handling device	W. A. Norcross	657,204	Sept. 4	429	90	92	1887
Brick-kiln	J. M. Gunkle	656,640	Aug. 28	2802	640	92	1630
Brick-machine. Re-press	C. Chambers, Jr.	656,880	Aug. 28	3278	745, 746	92	1792
Brick-machine. Re-press	C. Chambers, Jr., and H. K. King	656,879	Aug. 28	3271	742, 743, 744, 745	92	1721
Brick-machine. Re-press	H. K. King	656,896	Aug. 28	3303	752, 753, 754	92	1736
Brick-machine with sander attachment	H. Schoonmaker	654,846	July 31	4148	934	92	902
Brick-mold-sanding machine	H. Schoonmaker	655,740	Aug. 14	1078	248	92	1261
Brick-press	P. L. Simpson and C. L. Redfield	656,733	Aug. 28	2948	673, 674	92	1660
Brick-press	C. M. Steele	656,056	Aug. 14	1711	394, 395	92	1388
Brick, tile, or pipe molding machine	C. Schlickeysen	653,781	July 17	2007	458	92	431
Bricks or artificial stone. Automatic machine for manufacturing	R. van den Berg and G. Janssen	656,308	Aug. 21	2190	500	92	1495
Bridge	E. R. Woodruff	655,291	Aug. 7	222	49	92	1084
Bridge-alarm for trainmen	R. J. Barry	657,506	Sept. 11	910	185	92	2007
Bridge gate. Draw-	J. P. Cowing	653,729	July 17	1916	440	92	413
Bridge. Lift-	F. La Pointe	657,122	Sept. 4	89	21	92	1819
Bridle attachment or mousing-hook	E. J. F. Coleman	653,843	July 17	2125	483	92	452
Bridle-bit	J. Dean	657,702	Sept. 11	1382	292	92	2100
Bridle-bit	J. L. Lee	658,377	Sept. 25	2495	551	92	2203
Bridle-bit	M. H. Sims	655,913	Aug. 14	1426	327	92	1331
Bridle-blind brace	I. H. Ellsworth	656,397	Aug. 21	2350	539	92	1526
Bridle curb-hook	F. Swales	652,905	July 3	293	73	92	59
Bridle-irons. Machine for bending	J. Buckley	656,936	Aug. 28	3375	770, 771, 772	92	1740
Brine. Purifying	G. N. Vis	658,303	Sept. 18	2348	.....	92	2206
Briquets for testing purposes. Machine for making	T. Miller, Jr	657,950	Sept. 18	1758	379	92	2192
Broiler. Meat-	S. A. Morgan	658,189	Sept. 18	2154	471	92	2270
Bronze-powder. Manufacturing	L. Ott and H. Riffelmacher	657,883	Sept. 11	1593	.....	92	2144
Bronzing-machine	A. J. Ford	653,952	July 17	2329	531, 532	92	490
Brooder. Chicken-	F. S. Jaquith	654,811	July 24	3131	700	92	675
Broom	H. W. Hodge	656,976	Aug. 28	3450	788	92	1755
Broom	F. R. Lay	655,251	Aug. 7	144	31	92	1068
Broom	W. C. Price	655,369	Aug. 7	374	81	92	1112
Broom. Antiseptic	O. S. Kulman	657,426	Sept. 4	687	144	92	1938
Broom-corn cleaner	P. Lamboy	658,527	Sept. 25	2743	609	92	2411

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Broom-holder	H. Blome	658,616	Sept. 25	2809	649	92	2445
Broom-holder	J. T. Mumford	657,176	Sept. 4	180	48	92	1839
Broom. Street-	J. Wolf	656,686	Aug. 28	2866	653	92	1644
Brush	E. C. Collins	657,835	Sept. 4	512	106	92	1902
Brush	L. Roth	655,833	Aug. 14	1287	295	92	1305
Brush	G. Rowell	653,039	July 3	574	135	92	115
Brush	A. L. Sonn	654,082	July 17	2451	563	92	516
Brush	O. C. Wold	653,496	July 10	1450	339	92	300
Brush. Air-	W. P. Enis	654,345	July 24	3183	714	92	686
Brush and mop. Combined scrubbing-	F. and G. Bauerle	655,181	Aug. 7	7	2	92	1042
Brush-handles. Means for attaching	H. F. T. Erben and W. B. Potter	655,824	Aug. 14	1273	292	92	1302
Brush-holder	C. W. Woods	653,051	July 3	602	142	92	122
Brush holder. Paint-	H. G. Reist	656,421	Aug. 21	2401	552	92	1536
Brush-holder ring	A. R. McDonnell	654,751	July 31	3956	891	92	861
Brush. Horse-	H. M. Schwartz	654,184	July 24	2810	635	92	609
Brush-machine	W. H. Redington	654,414	July 24	3318	744	92	716
Brush. Paste-	F. W. Yale	658,416	Sept. 25	2564	568	92	2376
Brush. Polishing-	W. H. Robinson	656,374	Aug. 21	2310	528, 529	92	1519
Brush. Rotary	F. L. Higgins	657,163	Sept. 4	169	38	92	1835
Bubble blowing and propelling pipe	A. D. Mendenhall	657,699	Sept. 11	1097	229	92	2043
Bubble-blowing device	J. C. James	654,642	July 31	3753	846	92	819
Bubble pipe. Soap-	C. Schindler	657,791	Sept. 11	1431	304	92	2110
Bubble pipe. Soap-	G. Krafft	655,248	Aug. 7	139	30	92	1067
Bubbles. Apparatus for making soap-	O. J. Little and C. T. Van Sickle	653,682	July 17	1830	418	92	397
Bucket for stock. Sanitary washable	D. E. and P. B. M. Trainer	657,045	Aug. 28	3563	820	92	1776
Bucket or pail closure	H. N. Crawford	656,173	Aug. 21	1938	445	92	1448
Bucket safety-bail. Well-	G. C. Luther	656,987	Aug. 28	3468	793	92	1758
Bucket. Scoop-	I. W. Levi	658,185	Sept. 18	2159	470	92	2269
Buckle	J. R. Smith	657,577	Sept. 11	1035	215	92	2032
Buckle	W. W. Semple	658,124	Sept. 18	2037	444	92	2246
Buckle and snap-hook. Combined	L. and J. Ritter	655,871	Aug. 7	376	82	92	1112
Buckle. Belt-	J. Brower	656,931	Aug. 28	3360	768	92	1739
Buckle. Combination pulley and sash	S. J. Hester and J. I. Carter	657,871	Sept. 11	1571	339	92	2130
Buggy body and seat brace	G. H. Keeley	657,601	Sept. 11	1081	224	92	2041
Buggy mud or dust protector	P. G. Austin	656,159	Aug. 21	1915	439	92	1443
Buggy-top attachment	H. C. Stockton	655,895	Aug. 14	1292	283	92	1293
Buggy-top attachment	L. L. Short	658,162	Sept. 18	2112	458	92	2261
Buggy-top-folding device	J. C. Ford	655,770	Aug. 14	1142	262	92	1275
Buggy-top raiser	C. F. W. Doehring	656,951	Aug. 28	3403	776, 777	92	1745
Building	J. Ellis	654,614	July 31	3694	882, 883	92	808
Building-block	W. A. Johnston	656,138	Aug. 14	1872	431	92	1422
Building-block	M. W. Marsden	654,905	July 31	4268	958	92	928
Building material	W. B. Cowles	656,947	Aug. 28	3394	775	92	1744
Bulkhead-doors. Apparatus for operating	C. Strassheim	654,858	July 31	4171	940	92	907
Bung	H. Nadorff	652,858	July 3	223	53	92	45
Bung and bushing therefor	G. W. Jackson	656,459	Aug. 21	2466	567	92	1548
Bung and tap	G. Smyth	658,040	Sept. 18	1909	414	92	2221
Bung. Barrel-	H. Strothenke	656,734	Aug. 28	2951	674	92	1661
Bung. Barrel-	S. Mason	654,409	July 24	3303	741	92	718
Bunsen burner	H. B. Cary	653,166	July 3	810	191, 192	92	162
Bunsen burner. Open	J. W. Rough	655,831	Aug. 14	1288	295, 296	92	1305
Burglar-alarm	W. H. Reiff	656,586	Aug. 21	2701	619	92	1598
Burglar-alarm and door-check	P. V. Vandevelde	656,809	Aug. 31	2191	500	92	1496
Burglar-alarm. Electric	F. D. Wallace	655,427	Aug. 7	475	106	92	1133
Burglar or fire alarm	A. Petternel	657,672	Sept. 11	1222	257	92	2068
Burglary. Protective device against	C. A. Dietrichs	658,247	Sept. 18	2258	496, 497	92	2220
Burial. Apparatus for preventing premature	M. L. Keyes	655,560	Aug. 7	690	157	92	1176
Burial-case	P. Herbold, Jr	658,261	Sept. 18	2279	501	92	2205
Burial-casket	W. J. McKnight	652,934	July 3	363	87	92	73
Buried alive. Electric device for indicating the awakening of persons							
Burner: *See* Bunsen burner. Cactus-burner. Garbage-burner. Gas-burner. Gas-lighting burner. Hydrocarbon-burner. Hydrocarbon-vaporizing burner. Oil-burner. Smoke and gas burner. Vapor-burner.							
Burner	M. Cahill	658,340	Sept. 25	2424	536	92	2349
Burning liquid fuel. Apparatus for	J. Boyle	658,607	Sept. 25	3063	682	92	2475
Burning pulverized and liquid hydrocarbons for fuel and heating	S. M. Trapp	657,228	Sept. 4	801	64, 65	92	1863
Burning pulverized fuel	J. Bole and D. R. W. Patterson	653,206	July 10	910	220	92	197
Burning pulverized fuel. Apparatus for	J. Bole	653,639	July 10	1735	400	92	360
Bushing. Faucet-	T. Pendergast	658,070	Sept. 18	1943	423	92	2228
Bushing-protector for use in pitching lager-beer kegs	F. Koelsch and J. P. Kramer	657,702	Sept. 11	1272	270	92	2077
Bustle	H. H. Taylor	658,599	Sept. 25	2885	640	92	2440
Butter. Chilling	W. Helm	658,369	Sept. 25	2481	.....	92	2360
Butter-cutter	G. B. Ferry	653,991	July 17	2386	549	92	504
Butter, &c., cutter	F. Hardart and J. Anderson	655,486	Aug. 7	576	129	92	1153
Butter-cutter	R. F. Stewart	657,227	Sept. 4	299	64	92	1862
Butter, &c. Machine for printing	A. C. Dodge	656,781	Aug. 28	3033	690	92	1676
Butter molding and cutting apparatus	L. L. Mivelaz	656,745	Aug. 28	2969	678	92	1664
Button	H. Hirschbach	658,644	Sept. 25	2968	680	92	2456
Button	C. M. Horton	656,407	Aug. 21	2373	545	92	1530
Button	R. H. Lewis	657,271	Sept. 4	391	82	92	1879
Button	H. C. Liu Frio	652,959	July 3	442	104	92	89
Button	S. M. Merrill	656,412	Aug. 21	2381	547	92	1531
Button	F. Oldfield	656,419	Aug. 21	2390	551	92	1535
Button	C. Radcliffe	656,214	Aug. 21	2007	462	92	1461

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Button and pin-back therefor. Badge-	A. Phelps	653,150	July 3	788	185	92	157
Button. Badge-	B. S. Whitehead	654,397	July 24	3098	694	92	669
Button. Collar-	F. A. Ballou	653,895	July 17	2223	505 506	92	472
Button. Collar-	F. J. Heilborn	655,079	July 31	4581	1032	92	968
Button. Collar-	L. C. Witkowski	658,693	Sept. 25	3055	680	92	2473
Button. Cuff-	J. Goldsmith, Jr	654,622	July 31	3719	839	92	812
Button-fastener	B. J. Cobleigh	658,377	July 10	1240	295	92	256
Button-fastener	G. W. Gwinn	654,247	July 24	2995	672	92	648
Button-machine	W. Caron	654,604	July 31	3661	824 825 826	92	801
Button-making press	E. W. Silsby	653,783	July 17	2010	459	92	431
Button or stud	J. Campbell	653,655	July 17	1789	409	92	389
Button. Tack-fastened	C. A. Bryant	656,508	Aug. 21	2547	586	92	1564
Button. Upholsterer's	J. A. Young	658,000	Sept. 18	1835	396	92	2207
Cabinet	F. D. Craig	654,308	July 24	3124	698	92	674
Cabinet	W. Homan	657,347	Sept. 4	535	110	92	1907
Cabinet	H. G. Roth	655,275	Aug. 7	196	43	92	1078
Cabinet	F. Wadell	653,539	July 10	1541	358	92	320
Cabinet, &c. Hanging	G. W. Kirchhoffer	657,779	Sept. 11	1409	298 299	92	2105
Cabinet. Kitchen-	W. M. Henson	655,081	July 31	4583	1033	92	968
Cabinet. Kitchen-	W. G. Steinicke and A. F. Bauer	656,861	Aug. 28	3224	734	92	1713
Cabinet. Portable	C. G. Simpson	657,463	Sept. 4	749	160	92	1949
Cabinet. Revoluble ribbon-	G. W. Haddox	654,002	July 17	2508	576	92	526
Cable-grip	G. C. Niles	658,219	Sept. 18	2213	484	92	2281
Cable grip. Traveling-	E. I. Parsons. Reissue	11,841	July 10	1776	406	92	367
Cable-hanger	C. E. Beard	656,923	Aug. 28	3354	764	92	1736
Cable-hanger	J. C. Hyde	654,983	July 31	4395	991	92	955
Cable. Submarine	T. Guilleaume	657,196	Sept. 4	282	51	92	1848
Cables. Manufacture of chain	J. Verity	655,814	Aug. 14	1256	286	92	1299
Cables. Means for connecting	N. Bassett	654,706	July 31	3858	870	92	840
Cactus-burner	L. W. Snowden	657,036	Aug. 28	3537	808	92	1771
Caisson	W. H. McFadden	656,850	Aug. 28	3199	727 728 729 730	92	1709
Cake-box	N. E. Rand	655,116	July 31	4638	1046	92	1004
Cake-machine	H. H. Hungerford	652,965	July 3	450	106	92	91
Cake turner. Pan-	W. Vogel	657,801	Sept. 11	1450	307	92	2114
Calcining-furnace	G. Hughes	654,640	July 31	3750	846	92	819
Calcining or roasting furnace	A. E. Johnson	656,580	Aug. 21	3688	616 617	92	1595
Calcium, &c. Producing carbid of	W. S. Horry	656,156	Aug. 14	1908	438	92	1427
Calculating instrument	R. W. Conant	657,916	Sept. 18	1651	357	92	2168
Calculating-machine	W. G. Powell	657,674	Sept. 11	1226	258 630	92	2068
Calculating-machine	F. C. Rinche	654,181	July 24	2784	631 632 633 634	92	603
Calculator	G. J. Gnau	655,653	Aug. 7	980	209	92	1222
Calculator	C. L. Shang	654,026	July 17	2444	561	92	515
Calculator for educational purposes	W. Schmidt	654,554	July 24	3560	803	92	764
Calendar	A. W. Steiger	658,028	Sept. 18	1879	407	92	2216
Calendar	A. Zachrisson	658,309	Sept. 18	2356	519 520	92	2310
Calendar-holder	W. S. Russell	658,510	Sept. 25	2709	601	92	2404
Calendar-holder	W. S. Russell	658,511	Sept. 25	2710	601	92	2404
Caliper attachment	T. A. Panyard	656,260	Aug. 21	2100	480	92	1478
Calipers	O. J. Wahrer	654,870	July 24	3236	725	92	698
Calk-attaching clamp	H. L. Foresman	652,840	July 3	194	45	92	40
Cam-wheel	F. E. and F. O. Wells	655,535	Aug. 7	641	146	92	1166
Camera. Focusing-	J. D. Morley	657,437	Sept. 4	707	149 150	92	1941
Camera for color photography	W. N. L. Davidson	653,380	July 10	1244	296	92	250
Camera-front-gripping device	A. O. Graf	654,790	July 31	4037	908	92	879
Camera. Photographic	F. Benjamin	654,777	July 31	4004	900 901	92	870
Camera. Photographic	J. Schaub	657,569	Sept. 11	1016	210 211	92	2028
Camera. Photographic	C. A. Wiley	656,708	Aug. 28	3066	696	92	1682
Camera. Roll-holding	H. W. Hales	655,075	July 31	4574	1031	92	992
Camera. Roll-holding	M. Juruick	657,942	Sept. 18	1748	376	92	2190
Camera side-arm-bracket spring	A. O. Graf	654,791	July 31	4038	908	92	879
Camp chair and stool. Combined folding	F. X. Brodeur	654,221	July 24	2988	660	92	635
Can: *See* Dispensing-can. Packing-can. Oil-can. Sheet-metal can.							
Can	G. W. Bingham	657,636	Sept. 11	1143	240	92	2052
Can and means for closing same	G. H. Dunbar	655,614	Aug. 7	802	187	92	1195
Can attachment	C. L. Kidder	654,795	July 31	4050	911 912	92	882
Can caps and collars together. Machine for brazing	M. R. Capps	654,710	July 31	3871	873	92	843
Can closure. Milk or other	M. Alexander	654,044	July 17	2471	567	92	520
Can-filler	J. E. Aue	657,151	Sept. 4	143	33	92	1829
Can-filler	J. E. Aue	657,152	Sept. 4	145	33	92	1830
Can-filling machine	J. R. Brown	653,063	July 3	616	146 147 148	92	125
Can-heading machine	H. C. Hunter	654,257	July 24	3019	678	92	654
Can-heads. Roll-press for forming weakened lines in	H. C. Hunter	654,256	July 24	3018	677 678	92	653
Can lock. Milk-	R. J. W. Hamill	654,567	July 24	3579	808	92	767

Alphabetical list of inventions. July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Can-making machine	H. C. Hunter	654,253	July 24	3005	674 675 676	92	650
Can-opener	W. G. Browne	654,080	July 17	2542	585	92	583
Can-opener	W. F. Dale	658,070	July 3	632	150	92	128
Can-opener	C. Kempf	656,130	Aug. 14	1873	431	92	1422
Can-opener	B. F. Pinnell	655,273	Aug. 7	192	43	92	1077
Can-opener	W. Vogel	652,988	July 3	373	90	92	75
Can-opener	W. S. Bristol	655,545	Aug. 7	660	151	92	1170
Can topper and wiper	C. Marwitz	653,144	July 3	773	182	92	154
Can washer. Milk-	M. J. Hawkins	657,216	Sept. 4	276	59	92	1858
Can-wiping machine	J. W. Tuttle	652,820	July 3	150	36,37	92	31
Cans. Machine for filling liquids into	E. Murmann and A. Opawski	654,174	July 24	2758	626	92	596
Canned food. Heating appliance for	S. J. Evans	654,144	July 24	2697	615 616	92	584
Canceling and postmarking machine. Stamp-	C. V. Fyke	656,401	Aug. 21	2357	451 452 453	92	1528
Canceling and postmarking machine. Stamp-	C. V. Fyke and J. H. Barr	656,400	Aug. 21	2353	540 541	92	1527
Canceling and printing machine. Stamp-	E. M. Vail and G. Potter	652,821	July 3	153	37,38	92	31
Canceling machine. Stamp-	C. Peacock	656,209	Aug. 21	1908	460	92	1450
Candlestick. Miner's	W. H. MacGill	657,947	Sept. 18	1756	378	92	2191
Cane and tripod. Combined	O. B. Stillman	656,676	Aug. 28	2852	650	92	1642
Cane-mill	N. Asbell	655,043	July 31	4506	1016	92	978
Cane-stripper	J. T. Johnson	655,875	Aug. 14	1357	312 313	92	1317
Canopy-frame	J. T. Johnson	654,156	July 24	2723	619	92	590
Canopy frame or support	J. T. Johnson	655,873	Aug. 14	1353	312	92	1317
Canopy frame or support	J. T. Johnson	655,874	Aug. 14	1355	312	92	1317
Canopy-support	W. Lanz	655,979	Aug. 14	1576	363	92	1360
Canteen	E. Hornung and R. Liebl	656,191	Aug. 21	1907	.....	92	1454
Caoutchouc, gutta-percha, &c. Compound as substitute for	C. W. Gordon	657,536	Sept. 11	958	197	92	2016
Cap. Apparel-	J. C. Keller	654,006	July 17	2405	553	92	507
Cap expander. Metal-	A. A. Low	652,793	July 3	97	23	92	20
Cap for closing vessels	A. A. Low	658,381	Sept. 25	2511	555	92	2365
Cap for closing vessels	A. A. Low	658,382	Sept. 25	2512	555	92	2366
Cap for closing vessels	T. M. Pletcher	656,904	Aug. 28	3226	758	92	1731
Capo tasto	F. S. Manton	656,748	Aug. 28	2967	678	92	1663
Capstan	G. A. and R. F. Dunn	658,142	Sept. 18	2068	451	92	2252
Car	C. Roehr	657,962	Sept. 18	1777	382 383	92	2195
Car	A. Hunter	658,886	July 10	1253	298	92	260
Car bicycle-carrier. Street-	E. W. Palmquist	657,746	Sept. 11	1358	287	92	2005
Car body-bolster. Railway-	H. C. Williamson and H. Pries	658,227	Sept. 18	2222	486	92	2284
Car-bolster	R. W. Ennis	653,443	July 10	1349	320 321	92	280
Car-brake	J. S. Francis	654,241	July 24	2980	669 670	92	645
Car-brake	F. Theilengerdes	658,326	Sept. 18	2382	526 527	92	2314
Car-brake	H. J. Williams and W. Morgan	653,722	July 17	1902	437	92	411
Car-brake	J. S. Baker	653,050	July 3	607	144	92	123
Car-brake device	M. B. Schaffer and C. H. Howard	655,376	Aug. 7	383	83,84	92	1113
Car brake-gear. Railway-	J. C. Westerfield and H. S. Chinnock.	658,226	Sept. 18	2221	486	92	2284
Car-brake lever	S. F. Woodworth	653,634	July 10	1728	307	92	958
Car-brakes. Apparatus for automatically applying	J. Georgoff	658,256	Sept. 18	2272	500	92	2293
Car-brakes. Regulator for atmospheric	W. C. Gregg	657,766	Sept. 11	1388	294	92	2101
Car bumper and coupling	A. M. Goodwin	653,672	July 17	1814	416	92	894
Car card-holder. Freight-	E. Rykovskoff	657,454	Sept. 4	735	157 158	92	1946
Car. Cattle-	F. D. Allen	655,179	Aug. 7	4	1	92	1041
Car. Charging-	F. O. Cokenour	654,306	July 24	3122	698	92	673
Car. Combination freight-	P. F. Poorbaugh	655,163	July 31	4715	1061	92	1019
Car construction. Steel-	F. Hoffer	653,958	July 17	2397	536	92	493
Car. Convertible open and closed	W. E. Alexander	656,736	Aug. 28	2953	675	92	1661
Car-coupling	D. Arenson	657,848	Sept. 11	1533	329 330	92	2132
Car-coupling	C. Bickmeier	656,926	Aug. 28	3360	765 766	92	1737
Car-coupling	D. Bowers	654,938	July 31	4319	972	92	939
Car-coupling	S. M. Brooks	653,611	July 10	1650	385	92	342
Car-coupling	M. A. Brown	654,941	July 31	4321	973	92	940
Car-coupling	J. F. Buckholts	655,755	Aug. 14	1117	257	92	1270
Car-coupling	L. N. Dobbins	656,179	Aug. 21	1945	447	92	1450
Car-coupling	P. P. Duket	652,955	July 3	437	102	92	88
Car-coupling	T. Harrison	655,078	July 31	4580	1032	92	993
Car-coupling	D. Hawkins	655,229	Aug. 7	99	23	92	1061
Car-coupling	E. Hien	658,371	Sept. 25	2485	549	92	2360
Car-coupling	J. Kelso	656,844	Aug. 28	3189	724	92	1707
Car-coupling	T. Kleimeier	656,984	Aug. 28	3463	791	92	1757
Car-coupling	W. McDonald	655,263	Aug. 7	170	38	92	1073
Car-coupling	W. M. Mead	654,745	July 31	3939	889	92	857
Car-coupling	C. Mehring	653,686	July 17	1836	420	92	398
Car-coupling	R. P. Norton	658,895	Aug. 14	1376	317	92	1821
Car-coupling	W. F. Richards	658,073	Sept. 18	1949	424	92	2220
Car-coupling	F. Sheldon and H. M. Milliken	654,494	July 24	3465	781	92	746
Car-coupling	G. W. Smillie	655,357	Aug. 7	354	77	92	1109
Car-coupling	J. Munton	656,824	Aug. 28	3128	709	92	1694
Car-coupling. Automatic	E. F. Chaffee	656,438	Aug. 21	2428	558	92	1541
Car-coupling centering device	L. A. Hoerr	654,979	July 31	4386	988	92	953
Car-door	S. J. Johnson	652,931	July 3	347	85	92	60

Alphabetical list of inventions. July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Car-door	H. Pries and J. W. Meyer	657,617	Sept. 11	1112	231	92	2047
Car-door	J. Van Slyke	656,868	Aug. 28	3248	728	92	1716
Car-door fastener	R. D. Smith and F. A. Delano	656,860	Aug. 28	3223	734	92	1713
Car door. Grain-	W. P. Brown, Jr	656,437	Aug. 21	2427	558	92	1540
Car doors. Weather-guard for freight-	J. M. Hopkins	658,737	Sept. 25	3150	699	92	2402
Car draft-rigging. Railway-	H. H. Sessions	653,822	July 17	2067	477	92	446
Car driving-gear and gear-changing device. Motor-	A. Rawlinson	656,215	Aug. 21	2009	463	92	1461
Car. Dumping-	J. B. Rhodes	658,314	July 10	1114	265	92	235
Car. Dumping-	J. B. Rhodes	657,618	Sept. 11	1113	232	92	2047
Car. Dumping-	J. J. Souder	652,929	July 3	342	84	92	68
Car. Dumping-	J. J. Souder	652,930	July 3	345	84	92	68
Car. Dumping-	G. H. Hulett	654,544	July 24	3547	800	92	761
Car-dumping machine	A. A. Ingraham	658,445	Sept. 25	2601	578	92	2383
Car. Electric	E. A. Goodridge	653,294	July 10	1082	259	92	229
Car end door	L. S. Morrow	655,505	Aug. 7	601	135	92	1158
Car end-gate fastener. Mining-	W. Crossley	655,691	Aug. 14	990	206	92	1245
Car. Factory-	G. J. Santa Cruz	658,159	Sept. 18	2106	456 457	92	2260
Car false floor	J. L. Conner	658,702	Sept. 25	3073	684	92	2476
Car-fender	R. F. Preusser	657,180	Sept. 4	197	44	92	1841
Car-fender	G. B. Quarrier	653,694	July 17	1845	422 423	92	400
Car-fender	G. D. Smith	654,854	July 31	4164	938	92	906
Car-fender	J. Sullivan	653,154	July 3	792	186	92	158
Car-fender	T. Eubank	656,448	Aug. 21	2448	563	92	1544
Car floor. Baggage-	W. A. Caswell	657,021	Aug. 28	3513	802	92	1766
Car. Freight-	S. J. Johnson	654,896	July 31	4253	955	92	994
Car. Freight-	C. M. Fairbanks	656,183	Aug. 21	1954	448	92	1451
Car gate. Open-	J. J. Heilmann	654,632	July 31	3734	842 843	92	816
Car gear. Motor-	G. Douglas	655,767	Aug. 14	1138	261	92	1274
Car. Grain-	T. E. Wardwell	655,428	Aug. 7	476	106	92	1133
Car hand-strap. Street-	A. M. Waltt and H. F. Ball	658,224	Sept. 18	2218	485	92	2283
Car-journal-box key	W. F. Richards	654,325	July 24	3152	705	92	680
Car-lighting apparatus. Automatic switch for electric	W. F. Richards	653,885	July 17	2199	500 501	92	467
Car-lighting apparatus. Casing for electric	C. H. Gale	653,908	July 17	2245	510	92	476
Car-loader	J. L. Roberts	655,881	Aug. 14	1285	295	92	1304
Car-loader	G. W. Decker	654,954	July 31	4341	977 978	92	944
Car-loading apparatus	C. P. Taylor and G. W. Oglesby	655,128	July 31	4653	1049	92	1007
Car-mover	P. Ryan	656,477	Aug. 21	2405	574	92	1554
Car-mover. Auxiliary	J. B. Strauss	655,892	Aug. 14	1383	319	92	1322
Car. Parlor compartment-	E. C. Huse	658,525	Sept. 25	2741	608	92	2411
Car. Platform-	A. G. Blackwell	654,507	July 24	3487	787	92	750
Car. Railway-	T. L. State	654,926	July 31	4303	997	92	935
Car. Railway-	W. T. Van Dorn	658,031	Sept. 18	1885	408	92	2217
Car. Railway-	T. J. Newberry and J. V. Ericson	655,359	July 10	1209	288	92	252
Car. Railway freight-	C. B. West	656,591	Aug. 21	2707	621	92	1599
Car. Railway freight-	J. D. Hoover	655,778	Aug. 14	1167	267	92	1279
Car-replacer	D. C. Ross	655,941	Aug. 14	1482	340 341	92	1311
Car-roof	A. W. Ham	655,863	Aug. 14	1333	307	92	1313
Car sand-box	F. Bennett	655,682	Aug. 14	978	222	92	1242
Car-seat	T. B. Cann	657,480	Sept. 4	859	174	92	1985
Car-seat	T. B. Cann	657,481	Sept. 4	860	174	92	1986
Car-seat	M. N. Forney	655,771	Aug. 14	1143	262	92	1275
Car-seat	H. S. Hale	656,188	Aug. 21	1964	451	92	1453
Car-seat	D. M. Houston	657,490	Sept. 4	874	177	92	1990
Car-seat	W. M. Norcross	654,352	July 24	3195	716	92	689
Car-seat	W. E. Richardson	657,501	Sept. 4	891	180	92	1992
Car-seat cushion	J. S. Johnston	657,198	Sept. 4	234	52	92	1848
Car-seat striker-arm	J. E. Norwood	654,755	July 31	3961	892	92	862
Car side ball-bearing	W. Robinson	655,738	Aug. 14	1076	248	92	1261
Car-spring	S. B. Fuller	653,769	July 17	1986	453	92	427
Car-step	J. B. Thacher	655,839	Aug. 14	1299	298	92	1307
Car-step	G. Moore	655,566	Aug. 7	704	160 161	92	1178
Car. Street-railway	F. Henriod-Schweizer	657,771	Sept. 11	1394	295	92	2102
Car transmission device. Motor-	W. P. Bettendorf	657,154	Sept. 4	153	34	92	1832
Car underframe-sill	G. Gustafson	656,247	Aug. 21	2080	476	92	1474
Car-ventilator	A. Miller	657,743	Sept. 11	1354	286 287	92	2094
Car-ventilator	C. L. A. Roosevelt	657,789	Sept. 11	1428	303	92	2110
Car ventilator. Railway-	H. W. Libbey	657,123	Sept. 4	90	22	92	1819
Car-wheel	D. E. Phillips	653,880	July 17	2188	498	92	465
Car-window dust-guard	T. Millen	658,158	Sept. 18	2106	456	92	2260
Cars. Dashboard-sign for street-railway	E. F. Böttcher	654,825	July 31	4101	923	92	803
Cars. Device for transporting passengers from and onto moving	R. Doolittle	656,599	Aug. 21	2727	625	92	1603
Carbids. Manufacturing	R. Doolittle	656,600	Aug. 21	2729	626	92	1603
Carbids. Means for manufacturing	W. A. Markey	656,652	Aug. 8	2817	642	92	1633
Carbon brush	C. T. Richmond and M. M. Zellers	653,531	July 10	1525	355	92	317
Carbon diaphragms. Machine for grinding	W. J. Burke	655,020	Aug. 14	1441	.....	92	1334
Carbon. Manufacture of	H. Bremer	658,423	Sept. 25	2575	.....	92	2378
Carbon rod for electric-arc lamps	E. Funk	655,398	Aug. 7	421	92	92	1121
Carbonated beverage	H. Robertson	652,810	July 3	134	33	92	27
Carbonating and dispensing apparatus. Liquid	E. E. Murphy	655,727	Aug. 14	1055	244	92	1257
Carbonating apparatus	E. E. Murphy	657,882	Sept. 11	1591	343	92	2143
Carbonating apparatus	J. P. Anderson	656,495	Aug. 21	2526	582	92	1560
Carbureter	C. W. Atkinson	658,056	Sept. 18	1917	416	92	2223
Carbureter	D. Barkdall	654,378	July 24	3248	728	92	701
Carbureter	C. Forth	657,652	Sept. 11	1177	246	92	2060
Carbureter	S. E. Hedrick	657,770	Sept. 11	1391	294 295	92	2102
Carbureter	F. A. Laraway and J. W. Houser	656,409	Aug. 21	2377	546	92	1531
Carbureter	W. S. Olds and D. M. Hough	655,172	July 31	4735	1064	92	1023
Carbureter	H. Rey	658,020	Sept. 18	1866	404	92	2214
Carbureter	J. E. Shearer	653,534	July 10	1533	356	92	318
Carbureter	W. F. Steele	654,686	July 31	3816	861 862	92	831
Carbureter for explosive-engines	H. L. Jessen	657,738	Sept. 11	1345	285	92	2092
Carbureter for gas-engines	G. Kiltz	657,740	Sept. 11	1348	285	92	2093
Carbureter for petroleum or other engines	A. and L. Lumière	656,197	Aug. 21	1975	454	92	1456
Carbureting air or gas	J. E. Shearer	656,484	Aug. 21	2507	578	92	1556
Cardboard. Apparatus for cutting ovals from	W. H. Forker	658,710	Sept. 25	3092	689	92	2480
Cardboard. Apparatus for cutting ovals from	W. H. Forker	658,711	Sept. 25	3093	689 690	92	2480
Card-case	H. Bick	656,925	Aug. 28	3359	765	92	1737
Card-holder	W. S. Congdon	658,701	Sept. 25	3071	684	92	2476
Card-lock rod	D. E. Hunter	658,738	Sept. 25	3151	699	92	2492
Card. Roller or brush	M. Prior	655,168	July 31	4726	1068	92	1021
Card-setting-machine perforating mechanism	O. Arnold	656,835	Aug. 21	2237	513	92	1504
Carding apparatus. Wool-	E. Gessner	656,403	Aug. 21	2364	543 544	92	1528
Carding-engine	E. Gessner	656,402	Aug. 21	2362	543	92	1528
Carding-engine under screen	J. F. White	656,871	Aug. 28	3252	739	92	1717
Carding-machine stop-motion	J. Brady, Jr., and N. Chouinard	658,187	Sept. 18	2059	449	92	2250
Carding machinery. Wool-	J. Leach and F. Hepworth	658,188	Sept. 18	2147	469	92	2268
Carpet fabric. Ingrain	H. Hardwick	656,113	Aug. 14	1836	422 423	92	1415
Carpet-fastener	S. Bollinger	656,387	Aug. 21	2333	535	92	1523
Carpet-fastener	F. C. Lovejoy	656,196	Aug. 21	1974	453	92	1456
Carpet fastener. Stair-	J. S. Jardine	657,270	Sept. 4	390	82	92	1870
Carpet retainer. Stair-	J. P. Knobeloch	656,551	Aug. 21	2631	606	92	1581
Carpet-stretcher	E. W. Doolittle	656,632	Aug. 28	2790	637	92	1628
Carpet stretcher and tacker. Combined	C. W. Willey	654,696	July 31	3848	867	92	838
Carpet-sweeper	S. E. Davis	655,896	Aug. 14	1389	321	92	1323
Carriage	J. Klövstad and G. W. Jonsen	655,247	Aug. 7	138	30	92	1067
Carriage-body	S. R. Balley	656,606	Aug. 14	1625	375	92	1370
Carriage-body hanger	S. R. Balley	653,607	July 10	1643	384	92	341
Carriage-boot attachment	G. T. Wilson	654,501	July 24	3482	786	92	749
Carriage box-seats. Step-frame for	W. Reeck	655,010	July 31	4450	1003	92	968
Carriage brake mechanism	G. Fischer	656,450	Aug. 21	2451	563	92	1545
Carriage cooling apparatus. Motor-	A. E. Vorreiter	657,684	Sept. 11	1243	263	92	2071
Carriage corner-iron	E. C. Porter	658,558	Sept. 25	2792	620	92	2421
Carriage-curtain	W. L. Martin	654,998	July 31	4423	996	92	961
Carriage. Electric	C. A. Lindstrom	655,563	Aug. 7	696	159	92	1177
Carriage flue construction. Steam-	R. C. Mudge	658,114	Sept. 18	2024	441	92	2243
Carriage. Folding	L. A. and B. A. Greyer	654,971	July 31	4376	984 985	92	951
Carriage. Motor-	F. A. Perret	653,877	July 17	2184	497 498	92	464
Carriage-step. Folding	J. E. Glover	654,535	July 24	3533	796	92	759
Carriages. Device for jogging baby-	A. R. Johnson and J. H. Lepsch	652,896	July 3	280	69	92	57
Carrier: *See* Bottle-carrier. Luggage-carrier. Lunch-carrier. Package-carrier. Trace-carrier.							
Carrier and feeder	D. Wèbre	657,371	Sept. 4	583	122 123	92	1918
Cart body. Dumping-	B. W. Clark	653,546	July 10	1532	361	92	322
Cart. Road-	R. P. Scott	653,264	July 10	1027	245	92	219
Carts. Regulating device for riding-	Y. H. Boudreau	652,882	July 3	258	62	92	51
Cartridge-belt	A. Mills and T. C. Orndorff	654,475	July 24	3431	773	92	740
Cartridge-clip	J. P. Lee	653,389	July 10	1257	299	92	261
Cartridge-primer	J. Gardner	653,953	July 17	2321	532	92	490
Cartridge-shells. Implement for extracting	P. Bergersen	656,009	Aug. 14	1632	376	92	1371
Carving-machine	E. Lochman	658,380	Sept. 25	2500	553 554 555	92	2363
Carving-machine	H. Marles. (Reissue)	11,839	July 3	805	215 216 217	92	181
Carving-machine	H. Marles	653,813	July 17	2072	472 473	92	443
Case: *See* Banana-shipping case. Bookcase. Burial-case. Card-case. Cigar-case. Egg-case. File-case. Instrument or other case. Knockdown case. Packing-case. Sign and show-case. Storage or show case.							
Case or cabinet	J. R. Burton	658,480	Sept. 25	2665	592	92	2365
Cash-register	T. H. Blair	652,829	July 3	175	41, 42	92	36
Cash-register	T. Carroll	654,226	July 24	2946	661 662 663	92	636
Cash-register	A. Frederiksen	658,362	Sept. 25	2460	544	92	2356
Cash-register	E. F. Spaulding	657,684	Sept. 11	1124	235	92	2049
Casing-spear	H. R. Hardenburg	658,062	Sept. 18	1928	419	92	2225
Cask, barrel, or keg	G. H. Ricke	657,134	Sept. 4	106	25	92	1823
Casket-lowering apparatus	E. B. Voorhees	655,137	July 31	4666	1051	92	1009
Casket-rest	T. W. Coughlin	655,362	Aug. 7	362	78	92	1110
Caster	A. B. Diss	654,956	July 31	4347	979	92	945

Alphabetical list of inventions. July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Caster. Ball-	W. P. Fink	653,381	July 10	1246	206	92	260
Caster-support	G. D. Clark	656,628	Aug. 28	2785	637	92	1627
Casting apparatus. Metal-	W. J. Patterson	657,071	Aug. 28	3607	831	92	1785
Casting apparatus. Metal-	W. J. Patterson	657,072	Aug. 28	3609	831, 832	92	1786
Casting door checks or seals. Device for	E. L. Torsch	653,491	July 10	1443	388	92	399
Casting-machine. Automatic	R. G. Collins	655,296	Aug. 7	232	52, 53, 54	92	1066
Casting metal	W. J. Patterson	657,069	Aug. 28	3602	830	92	1784
Casting metal	W. J. Patterson	657,070	Aug. 28	3605	831	92	1785
Casting plant	M. M. Suppes	658,407	Sept. 25	2548	564, 565	92	2373
Castings. Means for identifying metal	R. E. Coleman	655,393	Aug. 7	412	91	92	1119
Cattle. Means for securing	C. F. Creamer	653,662	July 17	1798	412	92	391
Ceilings and walls for buildings, &c. Construction of	F. Kemnitz	656,024	Aug. 14	1664	383	92	1378
Ceilings. Means for suspending or supporting	G. E. Escher	657,923	Sept. 18	1673	361	92	2173
Celluloid, &c., and manufacturing same. Substitute for	J. E. Thornton and C. F. S. Rothwell.	654,688	July 31	3819	.....	92	882
Celluloid. Manufacture of	C. G. Hagemann and F. O. C. Zimmermann.	657,535	Sept. 11	965	.....	92	2017
Cellulose. Fireproofing	A. G. Winter	655,845	Aug. 14	1310	300	92	1309
Cellulose. Making acetyl	L. Lederer	654,988	July 31	4403	.....	92	957
Cellulose. Manufacture of	M. Fremery and J. Urban	657,818	Sept. 11	1478	.....	92	2120
Cement. Artificial	L. H. M. Merceron-Vicat	655,501	Aug. 7	597	134	92	1157
Cement-pipe-making apparatus	C. J. Kielberg	658,067	Sept. 18	1935	421	92	2227
Centrifugal machine	W. H. Cook	658,240	Sept. 18	2245	492	92	2288
Centrifugal machine	L. May	654,994	July 31	4424	996, 997	92	962
Centrifugal machine	W. Rowlandson	655,015	July 31	4459	1005	92	969
Centrifugal machine	W. M. Smith	656,055	Aug. 14	1709	393, 394	92	1387
Centrifugal machine	L. J. Taylor	656,908	Aug. 28	3333	759	92	1732
Centrifugal machine	D. Willox	655,536	Aug. 7	642	146, 147	92	1166
Certificate, &c. Multiple	R. L. Crampton	654,387	July 24	3262	731, 732	92	705
Chafe-iron. Roller	A. P. Smith, Jr	656,486	Aug. 21	2511	578	92	1556
Chain	J. H. Barry	653,874	July 10	1230	294	92	258
Chain	C. W. Levalley	657,945	Sept. 18	1753	377	92	2191
Chain	H. J. Straker	656,677	Aug. 28	2853	650	92	1642
Chain	M. D. Ferguson	652,764	July 3	47	11	92	10
Chain bar. Watch-	C. E. Duryea	657,526	Sept. 11	953	196	92	2015
Chain. Drive-	C. W. Levalley	658,017	Sept. 18	1861	403	92	2213
Chain. Drive-	D. Carroll	653,064	July 3	622	148	92	126
Chain-link-straightening device	H. Garland	653,445	July 10	1352	321	92	280
Chain-lubricator for bicycles, &c	J. H. Muckerheide	652,918	July 3	319	70	92	64
Chain-repair link	J. B. West	653,462	July 10	1379	327	92	285
Chain. Sprocket-	G. W. Bufford	653,943	July 17	2308	528	92	488
Chain wrench	J. W. Walles and F. Gross	655,393	Aug. 7	394	86, 87	92	1115
Chains. Machine for manufacturing weldless	A. Masion	658,722	Sept. 25	3110	693	92	2484
Chair: *See* Camp-chair. Combination-chair. Dental chair. Folding chair. Reclining-chair. Revolving chair. Rocking-chair. Separable chair. Surgical chair. Window-chair. Window-cleaning chair.							
Chair	J. M. Germanson	657,981	Sept. 18	1806	389	92	2201
Chair	A. C. Greene	655,224	Aug. 7	35	19	92	1058
Chair	S. W. Johnson	657,875	Sept. 11	1577	340	92	2140
Chair	J. T. Moore	652,801	July 3	110	26, 27	92	22
Chair	F. Hayes	655,153	July 31	4697	1059	92	1016
Chair-back-bending press	F. A. Dennett	655,207	Aug. 7	56	12	92	1052
Chair-seat. Combination cobbler and bent-wood roll	H. Morton	655,506	Aug. 7	602	136	92	1158
Chair-seat support	J. A. Lindeman	653,108	July 3	704	166	92	141
Chairs, &c. Cushioned runner for rocking-	T. Hawkins	655,231	Aug. 7	101	22	92	1061
Chamber-pot, &c	M. McAneny	653,626	July 10	1675	391, 392, 393	92	348
Change-maker, cash-register, and indicator. Combined	M. McAneny	653,647	July 10	1749	402, 403, 404, 405	92	362
Check-hook	L. J. Andersen	654,582	July 31	3609	813	92	791
Check-hook	H. H. Brown	658,138	Sept. 18	2060	449	92	2250
Check-protector	G. C. Baker	657,475	Sept. 4	774	166, 167	92	1954
Checkrein attachment	G. E. Corey	654,110	July 17	2576	592	92	540
Checkrein-holder	J. Clyde and M. Stuchell	657,915	Sept. 18	1650	357	92	2168
Checkrein-hook	R. H. Berkstresser	653,194	July 3	860	202	92	172
Checking or unchecking device	C. J. Castera, Jr	658,482	Sept. 25	2607	592	92	2395
Cheese-cutter	W. G. Doty	653,988	July 17	2383	548	92	503
Cheese-cutter. Calculating	H. G. Roth	657,621	Sept. 11	1118	233, 234	92	2048
Chemical apparatus	F. R. K. Erfmann	658,250	Sept. 18	2263	497	92	2291
Chemical apparatus	P. Naef	658,727	Sept. 25	3124	695	92	2486
Chest. Silver or cutlery	T. G. Walpuski	653,498	July 10	1445	338	92	209
Chest. Tool-	M. Beaudin	658,522	Sept. 25	2732	606	92	2409
Chimney-crown	W. D. McLaughlin	656,258	Aug. 21	2097	479	92	1478
Chimney-raising device	W. M. Hoerle	656,891	Aug. 28	3295	749	92	1725
Chimney-ventilator	E. Kreutzberg	653,097	July 3	689	163	92	139
Chuck	A. Dinkel	656,527	Aug. 21	2585	596	92	1572

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Invention	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Chuck	W. D. F. Smith and T. Coventry	658,473	Sept. 25	2654	589	92	2382
Chuck. Automatic machine	O. F. Garvey	652,961	July 3	445	104	92	90
Chuck. Bit-brace	L. F. Kramer	656,357	Aug. 21	2283	523	92	1518
Churn	F. H. Boggess, Sr	658,421	Sept. 25	2571	570	92	2377
Churn	C. W. Bowling	656,010	Aug. 14	1633	377	92	1371
Churn	T. J. Cheney	655,391	Aug. 7	410	90	92	1119
Churn	H. G. Connett	657,588	Sept. 11	1051	218	92	2035
Churn	W. F. Gray	656,108	Aug. 14	1829	420, 421	92	1414
Churn	A. B. Johnson	655,871	Aug. 14	1352	311	92	1317
Churn	J. A. Kernodle	654,899	July 31	4259	956	92	926
Churn	B. and J. M. Northcutt	657,611	Sept. 11	1099	229	92	2044
Churn	C. Raw	655,009	July 31	4449	1002	92	967
Churn	G. W. Rawson	653,183	July 3	842	198	92	169
Churn	E. Rister and W. A. Wood	657,668	Aug. 28	3497	798	92	1763
Churn	R. P. Tompkins	657,148	Sept. 4	120	28	92	1825
Churn	W. R. Welke and M. Biederstaedt	652,906	July 3	295	73	92	50
Churn	A. G. Winslow	653,834	July 17	2116	480	92	450
Churn	C. E. Yates	657,805	Sept. 11	1456	308, 309	92	2115
Churn	H. L. Benjamin	654,594	July 31	3840	821	92	797
Churn-dasher	J. S. Dickey	655,765	Aug. 14	1135	260, 261	92	1274
Churn-power	C. W. Lanpher	654,901	July 31	4263	957	92	927
Chute	S. W. Taylor	658,600	Sept. 25	2886	640, 641	92	2440
Chute. Coal-wagon delivery	W. M. Williams	658,414	Sept. 25	2560	567	92	2375
Cigar-box	G. W. Clarke	653,069	July 3	631	150	92	128
Cigar-box-lid holder	L. and M. Berger	657,385	Sept. 4	615	128	92	1924
Cigar box or packing	A. Gordon	657,596	Sept. 11	1069	222	92	2038
Cigar-bunching machine	E. Hilson	656,349	Aug. 21	2274	521	92	1511
Cigar-case	E. Hilson	656,351	Aug. 21	2276	522	92	1511
Cigar-case	G. S. Eldred	653,291	July 10	1073	257	92	227
Cigar-cutter	J. W. New	656,036	Aug. 14	1683	388	92	1382
Cigar-holder	R. L. Patterson and G. Arents, Jr	654,178	July 24	2765	628, 629	92	597
Cigar-machine	O. Tyberg	654,195	July 24	2833	640, 641	92	618
Cigar-machine	O. Tyberg	654,196	July 24	2840	641, 642	92	615
Cigar-machine	O. Tyberg	654,197	July 24	2848	643	92	617
Cigar-machine	O. Tyberg	654,198	July 24	2853	643, 644	92	618
Cigar-machine	O. Tyberg	654,199	July 24	2860	644, 645	92	620
Cigar-machine	O. Tyberg	654,200	July 24	2866	646	92	621
Cigar-machine	O. Tyberg	654,201	July 24	2873	647, 648	92	622
Cigar-machine	O. Tyberg	654,202	July 24	2880	648, 649	92	624
Cigar-machine	O. Tyberg	654,203	July 24	2890	650, 651, 652	92	626
Cigar or cigarette	N. Du Brul	657,403	Sept. 4	648	135	92	1930
Cigar-pipe and inhaler	D. R. Watson	652,987	July 3	490	116	92	99
Cigar-rolling board	S. A. Shelly	657,013	Aug. 28	3502	799	92	1764
Cigar. Self-lighting	B. Heimann	655,864	Aug. 14	1335	308	92	1314
Cigar. Self-lighting	G. L. Reenstierna	654,490	July 24	3458	779	92	745
Cigar-wrapper	F. E. Fonseca	655,549	Aug. 7	607	152	92	1171
Cigars, cigarettes, &c. Lighter for	L. E. Butcher and M. G. Wood	657,738	Sept. 11	1324	280	92	2088
Cigarette-box cap	E. Hilson	656,350	Aug. 21	2275	521	92	1511
Cigarette-machine	F. J. Ludington	655,254	Aug. 7	148	33, 34	92	1069
Cigarette-making machine	P. J. Leschander	655,634	Aug. 7	845	197	92	1204
Cir ler-proof cap or cover	R. S. Cuddihy	654,953	July 31	4339	976	92	943
Cipher-code	E. F. Cassel	657,587	Sept. 11	1049	218	92	2035
Cipher-code system	E. F. Cassel	657,586	Sept. 11	1047	218	92	2035
Circuit-breaker	G. S. W. Brubaker and W. S. Twining.	656,992	Aug. 21	2143	489	92	1486
Circuit-breaker	F. W. Garrett	656,105	Aug. 14	1822	419	92	1412
Circuit-breaker	E. Thomson	656,681	Aug. 28	2858	651	92	1642
Circuit-breaker. Automatic	W. M. Scott	654,847	July 31	4150	934, 935	92	903
Circuit-breaker. Automatic magnetic	W. M. Scott	654,848	July 31	4152	935	92	903
Circuit-closer	J. O'Meara	655,412	Aug. 7	445	98	92	1126
Circuit-controller	H. G. Carleton	653,132	July 3	749	176	92	149
Circuit-controller	C. C. Webster	658,225	Sept. 18	2219	485	92	2283
Circuit-controller	L. Fleischmann	656,451	Aug. 21	2452	563	92	1544
Circuit-interrupter. Automatic	W. De Mont and C. L. Garwick	655,479	Aug. 7	566	127	92	1151
Cistern-cleaner	J. T. Hudman	658,175	Sept. 18	2137	466	92	2267
Cistern-cleaner	A. Carlson	655,193	Aug. 7	31	7	92	1047
Clamp: *See* Basket cover-clamp. Bicycle tube-clamp. Calk-attaching clamp. Cord-clamp. Detachable clamp. Flooring-clamp. Pipe-clamp. Rail-clamp. Rubber-dam clamp. Sewing-machine button-clamp. Type-writer-ribbon clamp. Wagon-reach clamp.							
Clamp	F. E. Allen	657,752	Sept. 11	1366	289	92	2097
Clasp: *See* Garment-clasp.							
Clasp							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cleaner:							
See Boiler-cleaner. Flue-cleaner.							
Boiler-tube cleaner. Gin-saw cleaner.							
Broom-corn cleaner. Grain-cleaner.							
Cistern-cleaner. Pipe-cleaner.							
Commutator-cleaner. Raisin-cleaner.							
Tube or flue cleaner.							
Cotton-cleaner. Window-cleaner.							
Cleat. Supporting	J. W. Atlee	654,388	July 24	3173	711	92	684
Clevis	W. P. Hendon	656,890	Aug. 28	3295	749	92	1725
Clip:							
See Haulage-clip. Plow-clip.							
Clipper. Hair	D. J. Archer	657,074	Sept. 4	1	1	92	1801
Clipping-machine	J. K. Priest	655,796	Aug. 14	1213	278, 279	92	1290
Clock	S. P. Thrasher	653,711	July 17	1873	430	92	405
Clock	S. P. Thrasher	653,712	July 17	1877	430, 431	92	406
Clock. Alarm	L. Schiff	654,677	July 31	3805	859	92	829
Clock. Electric	G. Fichter	657,694	Sept. 11	1260	268	92	2075
Clock. Electric	S. P. Thrasher	653,713	July 17	1882	432, 433	92	407
Clock. Geographical	A. G. Beaunisne	657,686	Sept. 11	1246	264	92	2072
Clock. Geographical	S. Johnson and K. Jameson	657,117	Sept. 4	81	19, 20	92	1818
Clock. Graphophone	J. F. Eldred	657,731	Sept. 11	1330	281	92	2089
Clock pendulum. Electric	E. K. Adams	652,875	July 3	248	59	92	49
Clock. Secondary electric	G. P. Rose, Jr	657,678	Sept. 11	1235	261	92	2070
Clock-striking apparatus	R. J. Rudd	655,801	Aug. 14	1222	280, 281	92	1292
Clocks. Tubular bell for chiming	A. W. Harrington	656,608	Aug. 21	2734	627	92	1604
Clod-fender adjuster	S. E. Clapp	657,333	Sept. 4	509	105	92	1902
Closet:							
See Dry closet. Water-closet.							
Closet-cistern	W. Bunting, Jr	654,599	July 31	3648	823	92	798
Closet-seat	E. S. Barnes	654,801	July 24	3109	696	92	671
Closet-seat	H. T. Bush	654,942	July 31	4325	973	92	940
Closet-seat	W. E. Caldwell	656,615	Aug. 21	2764	633	92	1611
Cloth-cutter	C. F. Sparks	658,474	Sept. 25	2955	589	92	2393
Cloth-cutter	C. H. McIntire	653,111	July 3	717	169	92	144
Cloth-cutting apparatus	F. Stiner	657,300	Sept. 4	435	92	92	1888
Cloth-finishing machine. Pneumatic	C. H. Hope	658,746	Sept. 25	3169	705	92	2496
Cloth of changeable color. Merchantable printed	A. Ashworth	654,587	July 31	3630	818, 819	92	794
Cloth-stretching machine	S. V. Douglas	656,698	Aug. 28	2879	655	92	1647
Clothes-drier	G. H. Orcutt	655,002	July 31	4439	1000	92	965
Clothes-drier	H. Karger	654,312	July 24	3133	700	92	675
Clothes-line hanger	W. T. Shaffer	656,053	Aug. 14	1707	393	92	1387
Clothes-line prop	H. W. Teal	653,490	July 10	1442	338	92	309
Clothes-line pulley	S. P. Yeatman	654,337	July 24	3172	711	92	683
Clothes-line tightener	C. M. Bowman	656,805	Aug. 28	3076	699	92	1684
Clothes-pin	J. F. Matthews	656,724	Aug. 28	2936	670	92	1658
Clothes-pin	C. L. Cole	653,641	July 10	1739	400, 401	92	360
Clothes-pounder	F. W. Merritt	653,582	July 10	1607	376	92	333
Clothes-sprinkler	F. R. Wells	655,534	Aug. 7	640	145, 146	92	1165
Clothes-wringer	A. Grow	654,624	July 31	3722	839, 840	92	813
Clover-huller feeder attachment	P. Diehl	657,524	Sept. 11	950	196	92	2015
Clutch	R. Hakewessell and E. C. Henn	655,972	Aug. 14	1554	358	92	1356
Clutch	W. K. Liggett	657,244	Sept. 4	329	70	92	1807
Clutch	J. A. Moore	655,906	Aug. 14	1413	325	92	1328
Clutch and brake	A. E. Mathey	658,592	Sept. 25	2784	617, 618	92	2490
Clutch. Friction	F. L. Kuhn	654,162	July 24	2739	623	92	592
Clutch. Friction	D. Noble	656,853	Aug. 28	3213	732, 733	92	1711
Clutch. Friction	J. L. Taylor	657,185	Sept. 4	211	47	92	1844
Clutch. Friction	E. Toole	655,132	July 31	4650	1050	92	1008
Clutch. Friction	F. G. Hobart	655,440	Aug. 7	502	112	92	1137
Clutch mechanism	H. C. Kennedy	656,549	Aug. 21	2628	605	92	1580
Clutch mechanism	C. F. Perham	654,917	July 31	4285	963	92	932
Clutch mechanism	R. Hakewessell and E. C. Henn	655,973	Aug. 14	1557	358	92	1357
Clutch mechanism. Pin	A. C. Pessano	655,415	Aug. 7	450	100	92	1127
Clutches, &c. Shifter for	J. W. Kenevel	656,808	Aug. 28	3298	750, 751	92	1725
Coal and ores. Apparatus for treating	H. B. Maddocks	654,117	July 17	2601	598	92	545
Coal-bucket	W. J. Burke	653,468	July 10	1391	329	92	288
Coal conductive, &c. Rendering anthracite	W. T. Ginn	658,435	Sept. 25	2593	575	92	2381
Coal-digger	J. M. Phillips and J. J. Fleming	654,019	July 17	2428	558	92	512
Coal-dumping apparatus	M. M. Suppes	658,408	Sept. 25	2549	565, 566	92	2373
Coal handling and crushing apparatus	J. A. Montgomery	653,357	July 10	1206	287	92	251
Coal-jigger	S. Gorton	655,552	Aug. 7	670	153	92	1172
Coal-leveling machine	W. W. Brown	657,508	Sept. 11	913	185	92	2008
Coal-screen	J. R. Richardson	655,580	Aug. 7	741	171	92	1184
Coal-separator	E. A. Stewart	657,184	Sept. 4	210	47	92	1844
Coal-washer	D. Murphy	656,561	Aug. 21	2644	610	92	1583
Coat. Apparel	J. C. Backus	656,688	Aug. 28	2869	653	92	1645
Coat-hook. Locking	J. Morrison	656,991	Aug. 28	3472	794	92	1759
Cock	W. F. Moses	653,147	July 3	782	183	92	156
Cock. Cylinder drain	A. J. Wiegand	654,559	July 24	3567	805	92	765
Cock. Gas	N. H. Medbery	654,995	July 31	4425	997	92	962
Cock. Gas-machine switch	A. Marublo	652,854	July 3	217	51	92	44
Cock or faucet	W. B. Ford	658,252	Sept. 18	2267	498	92	2292
Cock. Right and left basin							

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Invention.	Name.	No	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cock. Stop and waste	W. H. Rawe	657,319	Sept. 4	483	101, 102	92	1897
Cock. Stop and waste	E. Rickersberg	657,805	Sept. 11	1610	346	92	2148
Cocking-indicator. Automatic	M. P. Richards	654,280	July 24	3061	687	92	662
Coffee-fruit before shelling same. Machine for treating Liberian	H. L. Verwohlt	655,035	July 31	4498	1013	92	976
Coffee or tea pot	E. Root	654,675	July 31	3803	858	92	829
Coffin-case	L. O. Brown	654,435	July 24	3358	753, 754	92	725
Cog-wheel with detachable teeth	G. Dornauf	653,073	July 3	635	152	92	129
Coil-spring	M. Tilden	653,155	July 3	793	186	92	158
Coin assorting, delivering, and recording apparatus	S. S. Boyd	655,544	Aug. 7	654	149, 150, 151	92	1168
Coin-assorting device	J. G. France	657,902	Sept. 11	1624	350	92	2151
Coin-controlled mechanism	R. E. Wickes	658,198	Sept. 18	2169	474	92	2273
Coin-controlled-mechanism coin-exhibitor	J. M. Ricketts	653,847	July 17	2130	485	92	453
Coin-holder	C. L. Sledge	655,565	Aug. 7	702	160	92	1178
Coin-holder	T. Palmer	655,108	July 31	4626	1013	92	1001
Coin-operated device for bicycle-pumps	P. F. Poorbaugh	655,162	July 31	4713	1061	92	1019
Coke-breaker	E. Coppée	654,307	July 24	3123	698	92	678
Coke-oven	J. Sandmayer	656,424	Aug. 21	2406	552	92	1537
Collapsible post, beam, &c	G. E. Van Tuyl	652,937	July 3	373	90	92	75
Collar	L. F. Adt	655,178	Aug. 7	3	1	92	1041
Collar. Apparel	W. A. Pine	655,272	Aug. 7	192	42	92	1077
Collar. Apparel	G. Reece	658,323	Sept. 18	2377	524, 525	92	2313
Collar-blank-folding mechanism	C. A. French	657,296	Sept. 4	316	67	92	1805
Collar. Horse	G. Binder	657,388	Sept. 4	619	129	92	1925
Collar-seam-dampening machine	A. Mann and P. Stumpe	657,171	Sept. 4	182	41	92	1838
Collar-stiffener fabric	E. R. Gould	653,800	July 17	2051	467	92	439
Collar supporter. Apparel shirt	O. Bally	654,505	July 24	3485	.....	92	750
Coloring-matter. Mordant-dyeing	C. H. Melvin	657,200	Sept. 4	235	53	92	1848
Colter. Rolling	M. H. McInerney	653,752	July 17	1959	447	92	421
Column or pole	A. F. Schwerd and A. W. Emrick	657,896	Sept. 11	1511	323	92	2127
Column. Wooden							
Comb:							
See Hair-drying comb.							
Comb	H. P. De Vogel	655,816	Aug. 14	1259	287	92	1299
Comb	G. Wolff	655,666	Aug. 7	950	215	92	1226
Combination-chair	M. Bellsle	656,763	Aug. 28	2999	684	92	1670
Combustion-furnace	W. R. Wood	654,774	July 31	4001	899	92	870
Commode attachment	J. A. Hackenberg	657,103	Sept. 4	59	13	92	1813
Commutator	J. T. H. Dempster	656,177	Aug. 21	1948	446	92	1449
Commutator cleaner. Electric	A. H. Jahn	654,734	July 31	3915	889	92	852
Commutator-segment	J. Burke	658,945	July 17	2311	529	92	489
Commutator-segment tip	A. R. Westerdahl	657,804	Sept. 11	1455	308	92	2115
Compartment-box	W. F. Coston	658,498	Sept. 25	2690	597	92	2400
Compasses and calipers. Combined	J. H. Hopper	658,011	Sept. 18	1850	400	92	2211
Composition of matter	E. Bushman	656,167	Aug. 21	1929	.....	92	1446
Composition of matter	W. J. Cordner	655,169	July 31	4731	.....	92	1022
Composition of matter	J. K. P. Shelton	657,461	Sept. 4	746	.....	92	1948
Compound engine	W. T. Harris	654,975	July 31	4381	986	92	952
Compress. Roller	E. D. Carter	653,005	July 3	623	148, 149	92	126
Compressing and baling apparatus	A. S. Gooch	654,970	July 31	4373	984	92	950
Compressing fibrous or other material. Apparatus for	W. M. Holmes	653,735	July 17	1926	441	92	415
Computing device	G. M. Rickard	654,674	July 31	3802	858	92	829
Computing device	W. S. Smith	655,027	July 31	4475	1009, 1010	92	973
Concentrating-table actuating mechanism	D. Cole	653,285	July 10	1067	255	92	226
Concentrator	J. W. Pinder	658,120	Sept. 18	2132	443	92	2245
Concentrator	W. H. Washburn	655,470	Aug. 7	553	123	92	1148
Concrete construction	I. A. Shaler	654,683	July 31	3811	860	92	831
Condenser	A. H. Helander	654,633	July 31	3735	843	92	806
Condenser and feed-water heater. Steam	R. H. Smith	657,366	Sept. 4	571	120	92	1915
Conduit for distributing fluids	E. Fox	656,587	Aug. 21	2604	599	92	1576
Confection-molding machine	J. C. Waller	655,918	Aug. 14	1433	329, 330, 331	92	1332
Confectionery sugar-coating apparatus	W. L. White	658,168	Sept. 18	2124	462	92	2265
Contact-brush	S. L. Neely	653,585	July 10	1612	377	92	335
Contact-goniometer	S. L. Penfield	655,004	July 31	4441	1001	92	966
Contact-goniometer	S. L. Penfield	655,005	July 31	4443	1001	92	966
Contact parts. System of non-interchangeable	M. Fröschl	656,284	Aug. 21	2145	490	92	1487
Controller	E. M. Fraser	655,336	Aug. 7	809	68	92	1101
Controller	W. M. Jewell	653,743	July 17	1945	444	92	419
Controller-brush guard	A. L. Riker	656,372	Aug. 21	2305	528	92	1518
Convertible apparatus	C. A. Salzman	653,317	July 10	1119	267	92	237
Convertible tub	R. W. Levy and J. Holt	655,980	Aug. 14	1578	363	92	1360
Conveyer and cleaner. Pneumatic	J. A. Parker	653,363	July 10	1219	291	92	255
Conveyer and elevator. Portable	G. E. Bowers	652,911	July 3	304	76	92	61
Conveyer. Bridge	G. H. Hulett	654,455	July 24	3399	764, 765	92	733
Conveyer. Bucket	G. L. Stuebner	653,324	July 10	1129	269, 270	92	238
Conveyer. Cable	D. B. Cruickshank and G. C. Luther	656,949	Aug. 28	3399	776	92	1745
Conveyer dumping mechanism	A. L. Le Grand	658,656	Sept. 25	2987	665	92	2460
Conveyer. Endless	A. M. Acklin and W. J. Patterson	657,048	Aug. 28	3568	821	92	1777
Conveyer loading mechanism	A. L. Le Grand	658,657	Sept. 25	2990	665	92	2460
Conveyer. Pneumatic	M. J. Foyer	652,960	July 3	448	104	92	89
Conveyer. Portable	J. A. Brown	655,676	Aug. 7	966	219	92	1229
Conveyer switch. Endless	M. M. Suppes	658,827	July 17	2101	479	92	448
Conveying apparatus	W. J. Haskins and T. A. Coffin	654,629	July 31	3728	841, 842	92	814

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Conveying apparatus	R. T. Jenney	657,824	Sept. 11	1486	317	92	2121
Cooker and tank-heater. Feed-	T. L. Stocum and F. W. Lambert	658,407	July 10	1286	305	92	266
Cooker. Steam-	A. M. Arthurs	654,046	July 17	2474	567	92	520
Cooking cotton-seed	W. H. Cook	657,857	Sept. 11	1548	332	92	2131
Cooking, heating, &c. Apparatus for	E. W. Parish	657,497	Sept. 4	884	179	92	1991
Cooking utensil	A. Smith	655,462	Aug. 7	538	120	92	1145
Cooler:							
See Beer-cooler. Fluid-cooler. Hot-box cooler. Milk-cooler. Water-cooler.							
Cooling and ventilating system	W. H. Dickerson	655,148	July 31	4689	1057	92	1014
Cooling-board	C. E. Windom	653,762	July 17	1975	451	92	425
Coop. Folding	C. L. and W. A. Neal	657,561	Sept. 11	1004	207 / 208	92	2026
Cop	S. W. Wardwell, Jr	653,718	July 17	1896	436	92	410
Copal gums. Dissolving	G. C. Lyman	655,499	Aug. 7	594	.....	92	1157
Copper from solutions containing antimony as an impurity. Refining	F. Klepetko and J. T. Morrow	657,119	Sept. 4	84	.....	92	1818
Copper or other metals from tailings or ores of such metals. Extracting	E. Fink	653,414	July 10	1297	.....	92	369
Copy-holder	B. F. Childress	658,058	Sept. 18	1923	417	92	2224
Copy-holder	G. F. Helss	657,599	Sept. 11	1078	224	92	2040
Copy-slips, &c. Adjustable holder for	G. W. Hoaglen	654,636	July 31	3743	841	92	817
Copying book. Letter-	S. H. Crocker	657,591	Sept. 11	1054	219	92	2036
Copying-press	L. Bailey	656,313	Aug. 21	2197	502	92	1497
Copying-press. Roller	N. C. Stiles	653,367	July 10	1224	292	92	255
Cord-clamp	H. B. Littlepage	655,155	July 31	4701	1059	92	1017
Cord-fastener	C. J. W. Hayes	656,114	Aug. 14	1898	423	92	1416
Cord-fastening device	O. Wallman	655,531	Aug. 7	695	144	92	1164
Cord-retainer	S. Kenyon	657,825	Sept. 11	1488	318	92	2122
Cording attachment	G. Robinson	653,403	July 10	1279	304	92	265
Core-drying car	T. I. Rankin	650,471	Aug. 21	2485	572	92	1552
Cork-extractor	L. C. Mumford	655,725	Aug. 14	1052	244	92	1256
Corkscrew	R. W. Jorres	657,421	Sept. 4	680	143	92	1936
Corn and cotton fender	A. G. W. Foster, Sr	658,253	Sept. 18	2268	499	92	2292
Corn from cobs. Machine for cutting green	H. H. Hoke	654,540	July 24	3539	798	92	760
Corn-husking machine	M. H. Madsen	655,408	Aug. 7	435	96	92	1124
Corn-husking machine	A. Werner, Jr	652,825	July 3	169	40	92	35
Corn-removing device	B. Wagner	654,581	July 24	3607	812	92	772
Corn-sheller	H. A. Adams	655,946	Aug. 14	1492	342 / 343	92	1343
Corn-shield	C. B. Hatfield	653,998	July 17	2396	551	92	506
Corn-shield	M. Straussberg	656,862	Aug. 28	3225	734	92	1714
Corner strip or bead	F. A. Mitchell	658,386	Sept. 25	2516	557	92	2366
Corner strip or bead	F. A. Mitchell	658,387	Sept. 25	2519	557	92	2367
Cornice and curtain-hanger. Combined	O. B. Hellström	657,538	Sept. 11	971	199	92	2019
Corset. Apparel-	C. Guillot	657,237	Sept. 4	317	67	92	1865
Corset. Apparel-	D. Kops	654,408	July 24	3395	780	92	712
Corset. Apparel-	A. H. Morford	653,455	July 10	1369	325	92	284
Corset. Apparel-	J. A. Redick	657,133	Sept. 4	105	25	92	1822
Corset. Apparel-	A. H. Wade	656,913	Aug. 28	3340	760 / 761	92	1733
Corset-cover	H. G. Steely	656,754	Aug. 28	2984	681	92	1666
Corset-steel lock and garment-supporting hook. Combined	H. H. Taylor and M. B. Hammond	653,190	July 3	854	200	92	171
Corundum-separator	J. B. Stalcup	655,125	July 31	4648	1048	92	1006
Cot or bed. Folding	J. S. Dyett	657,901	Sept. 11	1024	349	92	2151
Cot or couch. Gimbaled	H. J. Hitchins and A. Mayhew	657,286	Sept. 4	415	87	92	1883
Cotton cleaner and feeder. Seed-	V. H. Talton	654,079	July 17	2528	581	92	530
Cotton-cleaning mechanism. Seed-	H. W. Graber	656,107	Aug. 14	1827	420	92	1414
Cotton-compress	C. E. Mallett	657,225	Sept. 4	291	62	92	1860
Cotton-distributer	J. A. Parker	653,525	July 10	1507	351 / 352	92	318
Cotton elevator and distributer. Pneumatic	T. C. Eberhardt	655,209	Aug. 7	237	55	92	1087
Cotton-gin	M. Prior	655,167	July 31	4722	1033	92	1021
Cotton-gin feed	J. E. Cheesman	657,084	Sept. 4	22	5	92	1805
Cotton-gin. Roller	J. W. Graves	657,734	Sept. 11	1334	282	92	2000
Cotton picking and cleaning machine	J. T. Woolery	657,580	Sept. 11	1040	216	92	2033
Cotton piece goods. Fixing the finish on	M. S. Sharp	654,330	July 24	3159	707	92	681
Cotton-press	W. W. Krutsch	655,346	Aug. 7	332	72, 73	92	1105
Cotton-press	S. McLean	655,000	July 31	4435	999 / 1000	92	964
Cotton-press	R. R. Pace	657,028	Aug. 28	3523	805	92	1768
Cotton-press	M. Swenson	658,050	Sept. 18	1910	414	92	2222
Cotton-press	B. Thoens	653,597	July 10	1629	381	92	338
Cotton-press	A. L. Treese	653,191	July 3	855	200 / 201	92	171
Cotton. Silkifying	D. Ashley	653,014	July 3	535	.....	92	107
Couch and bath-tub. Combined	I. E. Carman	652,744	July 3	8	3, 4	92	4
Couch. Box-	A. H. Sulser	658,164	Sept. 18	2114	459	92	2262
Counter-skiving machine	W. C. Stewart	653,892	July 17	2214	503 / 504	92	470
Counter-skiving machine	H. A. Webster	652,824	July 3	167	39, 40	92	35
Counting-board	C. J. E. Fleck	653,992	July 17	2389	550	92	504
Coupling:							
See Air-brake coupling. Air-pipe coupling. Car-coupling. Hose-coupling. Locomotive-pilot coupling. Pipe-coupling. Railway-carriage coupling. Railway-vehicle coupling. Screw-coupling. Shaft-coupling. Shaft or thill coupling. Singletree-coupling. Tender-coupling. Thill-coupling. Thill or pole coupling. Wagon-reach coupling.							
Coupling	L. F. Jordan	654,735	July 31	3917	884	92	852

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Coupling	J. W. Pettijohn	653,397	July 10	1272	303	92	264
Coupling and ring	D. Heggie	653,912	July 17	2253	512	92	478
Coupling-bolt	E. L. Lowe	652,794	July 3	98	24	92	30
Coupling-bolt. Threaded	G. P. Sheffield	657,297	Sept. 4	431	91	92	1887
Coupling for vehicles, wagons, &c.	B. K. Thomas	656,829	Aug. 28	3152	714	92	1699
Coupling-unlocking device	J. Willison	655,040	July 31	4500	1015	92	977
Cover and binder	W. J. Nickerson	654,553	July 24	3559	803	92	764
Cover for cooking utensils	C. H. Pimlott	656,855	Aug. 28	3219	733	92	1713
Covers of culinary vessels in closed position. Appliance for securing	J. Weidner	656,003	Aug. 14	1621	374	92	1369
Cow-tail holder	P. T. Brock	653,336	July 10	1171	278	92	244
Cranberry-gatherer	D. Lumbert	654,013	July 17	2415	556	92	510
Crane	W. H. Morgan and C. L. Taylor	655,367	Aug. 7	371	80, 81	92	1111
Crane	J. W. Seaver and S. T. Wellman	655,522	Aug. 7	624	141 / 142	92	1163
Crane	S. T. and C. H. Wellman and J. W. Seaver.	655,533	Aug. 7	638	144 / 145	92	1165
Cranes. Speed-regulator and brake for	F. R. Garver	654,620	July 31	3716	838	92	812
Crank-hanger	J. E. Roberts	658,400	Sept. 25	2536	562	92	2370
Crank-pins and eccentrics. Quartering and turning machine for	L. H. Morgan	656,903	Aug. 28	3319	756 / 757	92	1729
Crate. Banana-	A. and J. Sansone	655,017	July 31	4461	1006	92	970
Crate. Bottle-	T. Booker	657,390	Sept. 4	622	130	92	1926
Crate. Collapsible shipping-	Z. T. Stocks	653,972	July 17	2363	544	92	498
Crate. Egg-	G. H. Short	653,706	July 17	1866	426	92	404
Crate-fastening	S. W. Damon	658,349	Sept. 25	2443	540	92	2353
Crate. Folding	E. L. Gregory	654,061	July 17	2502	576	92	526
Crate. Folding	Z. B. Taylor and O. W. Moore	655,283	Aug. 7	211	46	92	1082
Crate for tilting demijohns	G. W. Banker	653,396	July 10	1270	302	92	264
Crayon-making machine	J. C. Scheufler and B. P. Sextou	658,689	Sept. 25	3084	676	92	2469
Cream-ripening apparatus	J. Eicher and H. Cooper	658,625	Sept. 25	2025	654	92	2448
Cream-separator	A. D. Baird and O. Schellert	653,980	July 17	2372	546	92	500
Cream-separator	F. W. Moseley	658,455	Sept. 25	2618	581	92	2380
Cream-separator. Centrifugal	E. G. N. Salenius	656,423	Aug. 21	2405	532	92	1537
Cream-separator cover	S. H. Caswell	652,834	July 3	185	43	92	38
Crematory. Rubbish-	J. Hall	655,975	Aug. 14	1567	361	92	1358
Cresol. Separating meta and para	F. Raschig	655,117	July 31	4639	.....	92	1001
Cresols. Separating	F. Raschig	656,263	Aug. 21	2105	.....	92	1479
Cross-tie and rail-fastening. Metallic	A. B. Allen	656,799	Aug. 28	3067	697	92	1682
Cross-tie. Metallic	J. Q. Adams	653,604	July 10	1640	383	92	340
Crucible. Combustion-	P. W. Shimer	653,923	July 17	2091	477	92	447
Crucible-tongs	W. C. Newell	653,587	July 10	1615	377	92	335
Crusher:							
See Cylindrical roller-crusher. Grape-crusher. Ore-crusher. Sod-crusher. Stone or ore crusher.							
Crusher and pulverizer	T. Shaw and J. C. Lee	658,288	Sept. 18	2324	512	92	2303
Crushing and pulverizing machinery	T. R. Goth	657,933	Sept. 18	1720	370	92	2185
Crushing-machine	E. Reynolds	657,958	Sept. 18	1770	381	92	2194
Crushing-machine	E. Reynolds	658,071	Sept. 18	1944	423	92	2228
Crushing ores, &c. Machine for	S. W. Kimble	653,679	July 17	1824	417	92	396
Cue-tip	T. Reminger	656,702	Aug. 28	2896	659	92	1650
Cuff-holder	E. N. La Veine	652,787	July 3	86	21	92	18
Cultivating fruits or vegetables	S. H. G. Stewart	657,966	Sept. 18	1782	384	92	2197
Cultivator	G. E. Evans	657,313	Sept. 4	467	99	92	1893
Cultivator	C. F. Grimm and R. Fullerton	652,842	July 3	196	45	92	40
Cultivator	J. W. Klingele	653,095	July 3	680	102	92	139
Cultivator	W. F. Magill	652,853	July 3	215	50	92	43
Cultivator	T. Oldham	654,353	July 24	3198	717	92	690
Cultivator	T. Oldham	654,354	July 24	3201	717	92	690
Cultivator	L. C. Young	656,920	Aug. 28	3349	763	92	1735
Cultivator	M. and C. Zöllner	653,102	July 3	805	190	92	161
Cultivator	H. T. Crosby	654,090	July 17	2548	585	92	533
Cultivator attachment	T. I. Brinkley and D. A. Wetrich	656,242	Aug. 21	2074	475	92	1473
Cultivator-fender	R. B. Elliott	655,068	July 31	4564	1027	92	990
Cultivator-fender	H. R. Fowler	657,695	Sept. 11	1202	268	92	2075
Cultivator. Hand-	S. Smith	657,840	Sept. 11	1518	325 / 326	92	2128
Cultivator. Listed-corn	W. L. Beall	654,125	July 24	2619	599 / 600	92	564
Cultivator. Pivot-axle	F. A. Youngberg	653,052	July 3	603	142	92	122
Cultivator weed-turning attachment							
Cup:							
See Drinking-cup.							
Cup-and-ball joint	E. D. Burkitt	653,728	July 17	1915	440	92	413
Cuprammonium solutions. Making	M. Fremery, E. Bronnert, and J. Urban.	658,632	Sept. 25	2950	.....	92	2452
Curb mold. Cement-	C. H. Watson	657,802	Sept. 11	1452	307 / 308	92	2114
Curette	J. V. Russell	654,763	July 31	3982	896	92	866
Curler. Hair-	A. C. Moore	657,952	Sept. 18	1762	379	92	2193
Current generator. Alternating-	C. S. Bradley	656,806	Aug. 28	3077	700	92	1684
Current motor. Alternating-	E. W. Brown	653,906	July 17	2230	509	92	475
Current motors. Starting mechanism for alternating-	J. J. Wood	654,299	July 24	3104	695	92	670
Current regulator. Alternating-	D. O. Hull	652,775	July 3	70	17	92	15
Current transmission. System of alternating-	J. H. F. Görges	655,341	Aug. 7	325	70	92	1104
Currents. Apparatus for converting alternating into continuous	M. Déri	656,522	Aug. 21	2569	590 / 591 / 592	92	1569
Currents into continuous currents, and vice versa. Apparatus for transforming alternating	M. Hutin and M. Leblanc	655,237	Aug. 7	113	25, 26	92	1064
Currents into continuous currents, and vice versa. Transforming alternating	M. Hutin and M. Leblanc	655,238	Aug. 7	120	26, 27	92	1064
Currents. Rectifying alternating	E. Thomson	655,032	July 31	4487	1012	92	975
Currycomb	G. D. Beldin	654,218	July 24	2936	659	92	635

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Currycomb	M. Campbell	655,957	Aug. 14	1513	347, 348	92	1347
Curtain-fixture	G. H. Forsyth	657,269	Sept. 4	387	81	92	1878
Curtain-fixture	H. S. Hale	653,673	July 17	1815	416	92	394
Curtain fixture	F. Hysert	656,604	Aug. 21	2738	627	92	1605
Curtain-fixture	R. McCullough	653,484	July 10	1432	390	92	297
Curtain-fixture	H. M. Stevenson	657,014	Aug. 28	3503	799	92	1764
Curtain-fixture	G. Heiligenstein	654,152	July 24	2716	618	92	588
Curtain-fixture bracket	C. A. Wrhen	657,581	Sept. 11	1042	216	92	2033
Curtain-fixture bracket	J. A. Moore	658,113	Sept. 18	3023	441	92	2243
Curtain-fixture bracket. Adjustable	G. A. Johnson	655,241	Aug. 7	129	28	92	1065
Curtain or portière fixture	K. R. Broadstreet	656,506	Aug. 21	2544	585	92	1563
Curtain-pole	E. Platte	656,856	Aug. 28	3320	734	92	1713
Curtain-pole attachment	C. E. Fullerton	658,006	Sept. 18	1843	399	92	2269
Curtain-pole bracket	J. C. Whipple	655,088	July 31	4497	1014	92	977
Curtain stretcher. Lace-							
Cushion: *See* Car-seat cushion.							
Cushion filling and shaping device	F. L. Myers	656,995	Aug. 28	3476	795	92	1760
Cushion spring. Upholstered-	F. Buob	655,756	Aug. 14	1119	257	92	1270
Cuspidor	R. Carson	656,939	Aug. 28	3381	772	92	1741
Cut-off. Automatic	F. Kittinger and F. Mottinger	654,009	July 17	2410	554	92	508
Cut-off for water-gages. Safety	P. J. MacDonald	652,795	July 3	99	24	92	20
Cut-off. Tripping	W. F. Bradbury and D. E. Washington.	657,210	Sept. 4	261	56	92	1855
Cutter: *See* Band-cutter. Butter-cutter. Cheese-cutter. Cigar-cutter. Cloth-cutter. Fruit or vegetable cutter. Milling-cutter. Potato-cutter. Rotary cutter. Stalk-cutter. Thread-cutter. Tube-cutter. Weed-cutter.							
Cutter-bars. Making compound	J. Bedford and J. Ashton	653,165	July 3	809	191	92	162
Cutter-head	R. Stillwell	655,126	July 31	4651	1049	92	1007
Cutter mechanism. Lever-operated	W. O. Orr	656,610	Aug. 21	2751	630	92	1608
Cutting articles of curvilinear outline from sheet material. Machine for	R. C. Monahan	654,837	July 31	4129	928, 929, 930	92	898
Cutting elliptical holes. Machine for	J. S. Worth	655,538	Aug. 7	645	147, 148	92	1167
Cutting, folding, and collecting mechanism	W. Spalckhaver	652,817	July 3	144	35	92	29
Cutting, folding, and collecting mechanism	W. Spalckhaver	653,188	July 3	850	199	92	170
Cyanids. Making	J. Mactear	654,466	July 24	3415	769	92	737
Cycle crank mechanism	P. H. Brennan	658,424	Sept. 25	2576	571	92	2378
Cycle driving mechanism	F. J. E. Johansson	657,701	Sept. 11	1271	269	92	2076
Cycle-frame joint	J. R. Trigwell	658,493	Sept. 25	2682	595	92	2398
Cycle. Motor-	J. H. Munson	654,478	July 24	3435	774, 775, 776	92	741
Cycle-saddle	L. Mandl	654,835	July 31	4124	927	92	897
Cycle-saddle	J. Nord	656,854	Aug. 28	3218	723	92	1712
Cycle-seats. Wire mesh for	A. E. Wale	656,231	Aug. 21	2048	470, 471	92	1468
Cycle sprocket-wheels. Locking device for	F. W. Lusebrink	652,972	July 3	461	109	92	93
Cyclometer attachment	A. F. Rockwell	656,476	Aug. 21	2493	574	92	1554
Cylinder-lock	W. T. Adams	655,145	July 31	4684	1056	92	1013
Cylinder-lock	E. von Marsóvszky	657,665	Sept. 11	1204	251, 252, 253	92	2065
Cylindrical roller-crusher	T. C. Walker	655,745	Aug. 14	1087	250, 251	92	1264
Damper. Heat or draft regulating	O. N. Anderson	654,045	July 17	2472	567	92	520
Damper-regulator and ventilator. Combined	F. L. King	656,806	Aug. 28	3302	752	92	1726
Dead-centers. Device for overcoming	A. B. Grider	653,176	July 3	828	195	92	166
Dead-centers. Device for overcoming	J. Martin	653,257	July 10	1011	242	92	216
Deckle-strap	M. D. Keeney	653,245	July 10	973	233	92	208
Dehorning-knife	H. Harden	653,804	July 17	2060	469	92	440
Dehorning. Stock for holding cattle while	E. C. Bakken	657,379	Sept. 4	598	125	92	1921
Dehydrating and mothproofing composition	G. R. Harrison	653,674	July 17	1817	.....	92	395
Dental appliance	D. O. M. Le Cron	655,933	Aug. 14	1460	336	92	1338
Dental articulator	H. Backstrom	654,109	July 17	2575	592	92	540
Dental cabinet	C. H. Lind	656,556	Aug. 21	2638	606	92	1582
Dental chair	F. Ritter	657,360	Sept. 4	561	117	92	1913
Dental engine	F. H Berry	654,869	July 31	4188	943, 944	92	910
Dental impression-cup	H. D. Osgood	657,002	Aug. 28	3487	797	92	1761
Dental mallet or plugger	U. G. Kinnison	656,124	Aug. 14	1851	426	92	1418
Dental purposes. Electric lamp for	B. E. Lawton	657,199	Sept. 4	235	52	92	1848
Dental root-canal drier	D. Perry	656,300	Aug. 21	2178	497	92	1493
Derrick	E. P. Arsnean	656,079	Aug. 14	1756	406	92	1393
Derrick	C. G. Farmer	652,762	July 3	44	11	92	9
Desiccating apparatus	G. Devaux and H. Diedrich	654,877	July 31	4202	946, 947	92	914
Designs. Means for reproducing multicolor	A. von Beust	656,084	Aug. 14	1764	407, 408	92	1399
Desk. Table-	J. Schipkowsky	654,922	July 31	4294	965	92	934
Detachable clamp or name-plate	S. J. Cobean	655,197	Aug. 7	36	8	92	1048
Detector-bar	W. H. Higgins	656,974	Aug. 28	3447	787, 788	92	1754
Developing-tray	S. B. Moore	653,146	July 3	779	183	92	155
Diamagnetic separation	E. Gates	653,342	July 10	1180	281	92	246
Diamagnetic separation	E. Gates	653,344	July 10	1183	282	92	246
Diamagnetic separation	E. Gates	653,345	July 10	1184	282	92	247
Diamonds, &c., in metal holders. Setting	G. Anderson	657,262	Sept. 4	372	78	92	1876
Dichloro-oxypurin and making same	L. and F. Ach	654,122	July 24	2614	.....	92	563

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Die: *See* Ax-forging die.							
Die press. Triple-	W. J. Gordon	653,955	July 17	2324	533, 534, 535	92	491
Die-stock. Adjustable	I. Culver	655,061	July 31	4549	1024	92	987
Digester	E. G. Murphy	658,572	Sept. 25	2817	625	92	2426
Digester-door	P. F. Dundon	653,503	July 10	1467	343	92	304
Digesters, &c. Circulating apparatus for rotary	C. W. Smith	653,186	July 3	845	199	92	169
Digger: *See* Coal-digger. Post-hole digger.							
Dish-mold	J. Cook	656,392	Aug. 21	2341	538	92	1525
Dish-washing machine	G. S. Blakeslee	655,474	Aug. 7	559	124, 125	92	1149
Dish-washing machine	E. Sandstrom	657,251	Sept. 4	344	73	92	1870
Disinfectant	J. L. Mortimer and J. H. Williams	656,992	Aug. 28	3473	794	92	1759
Disinfectants. Apparatus for volatilizing	V. Cervello	654,946	July 31	4330	975	92	941
Disinfecting apparatus	W. H. Francis	655,070	July 31	4565	1028	92	990
Disinfecting-block	S. Eden	653,989	July 17	2385	.....	92	503
Disintegrating-machine	G. H. Pond	653,312	July 10	1110	265	92	235
Dispensing-can	F. R. McIntyre	656,417	Aug. 21	2395	550	92	1534
Display and advertising device. Window	A. Y. Moorefield	656,202	Aug. 21	1988	457	92	1457
Display-box	M. L. Houts	653,086	July 3	653	155	92	132
Display-box	W. S. Ivins	657,116	Sept. 4	81	19	92	1817
Display device	M. H. Levett	654,799	July 31	4055	913	92	883
Display device. Necktie-	H. Runtz	655,739	Aug. 14	1077	248	92	1261
Display device. Panoramic	C. L. Fowler	658,548	Sept. 25	2767	614	92	2416
Display-forms. Hand for	H. Lyons	654,265	July 24	3097	681	92	658
Display-frame	J. H. Fleisch	653,138	July 3	702	179	92	152
Display-rack	C. Lietz	655,981	Aug. 14	1579	363, 364	92	1360
Display rack. Rug-	D. C. Main	658,041	Sept. 18	1899	411	92	2219
Display-receptacle	H. T. Loomis	656,723	Aug. 28	2384	670	92	1658
Display-tray	N. B. and K. Levy	658,488	Sept. 25	2674	594	92	2397
Distillery-slop. Treating	A. Woolner, Jr., and C. Andersen	658,645	July 10	1715	.....	92	961
Distributing-machine	F. B. Converse, Jr.	657,309	Sept. 4	454	96, 97, 98	92	1891
Distribution system	E. Thomson	654,367	July 24	3232	724	92	697
Ditching and grading machine. Automobile	M. G. Bunnell	656,715	Aug. 28	2921	667, 668	92	1654
Ditching-machine	G. Y. McMurry	657,954	Sept. 18	1764	380	92	2193
Dividers	W. A. Bernard	655,185	Aug. 7	18	4	92	1044
Dock. Dry	F. C. Lang	656,582	Aug. 21	2692	617, 618	92	1596
Dock. Floating sectional dry	W. Jamieson	657,660	Sept. 11	1190	249	92	2062
Dock. Sectional floating	W. Jamieson	655,441	Aug. 7	504	112, 113	92	1138
Doffer-blade	A. Conkling	657,212	Sept. 4	266	57	92	1856
Domestic boiler	A. Cerruti	654,712	July 31	3874	874	92	843
Door	S. J. Johnson	652,982	July 3	353	86	92	70
Door	J. M. Leaver	656,741	Aug. 28	2961	676, 677	92	1663
Door	J. M. Leaver	656,772	Aug. 28	3016	687	92	1673
Door	G. J. Winter	653,432	July 10	1329	316	92	275
Door. Automatically-operating	J. H. Whitaker	658,413	Sept. 25	2358	567	92	2375
Door-bolt	W. T. Adams	654,106	July 17	2571	591	92	539
Door-bolt	A. Ericson	654,579	July 24	3604	811	92	772
Door. Car-	S. J. Johnson	652,933	July 3	356	86, 87	92	71
Door-check	A. R. Colburn	652,746	July 3	14	4	92	5
Door-check	P. A. Franks	654,723	July 31	3897	880	92	848
Door-check	C. F. Hanington	653,235	July 10	1082	259	92	229
Door-check	C. H. Ocumpaugh	655,001	July 31	4437	1000	92	965
Door-check	F. H. Ogden	655,107	July 31	4623	1043	92	1001
Door-check	L. H. Schneider	652,982	July 3	480	113	92	97
Door-check	D. Schuyler	658,533	Sept. 25	2750	610, 611	92	2413
Door-check	O. Tschieky	653,368	July 10	1227	292	92	256
Door-check	H. L. Balley	652,828	July 3	174	41	92	36
Door check and closer	E. Cliff	654,304	July 24	3116	697	92	672
Door check and closer	W. H. Taylor	658,519	Sept. 25	2723	604	92	2407
Door check and closer. Combined	E. Cliff	654,303	July 24	3111	696	92	672
Door check and closer. Combined	W. H. Taylor	658,518	Sept. 25	2720	603, 604	92	2406
Door-check. Pneumatic	E. H. Harrison and T. Lawson	656,543	Aug. 21	2617	602, 603	92	1579
Door closer and check	E. Cliff	654,305	July 24	3119	697	92	673
Door closer and check	D. Morgan	658,668	Sept. 25	3015	670	92	2466
Door-equalizer	F. W. Tobey	657,017	Aug. 28	3508	801	92	1765
Door fan attachment	R. Peet	658,278	Sept. 18	2304	508	92	2300
Door-fastener. Portable	C. L. Lingle	657,126	Sept. 4	93	22	92	1820
Door. Grain-	J. E. Lisby	653,844	July 17	2126	483	92	452
Door-hanger	J. M. Hopkins	655,869	Aug. 14	1348	310	92	1316
Door-hanger	W. J. Lane	655,978	Aug. 14	1575	363	92	1359
Door-hanger and track therefor	J. C. Gabel, Jr.	654,619	July 31	3714	838	92	811
Door-lock	T. Colletti and J. Colasanti	653,946	July 17	2312	520	92	489
Door-lock and alarm. Portable	A. L. Shore	655,523	Aug. 7	625	142	92	1163
Door lock. Sliding	A. Cramond	654,609	July 31	3671	827, 828	92	803
Door-mat. Metal	J. W. Horner	657,872	Sept. 11	1573	339	92	2140
Door or window fastener	A. F. Hoffman	656,116	Aug. 14	1841	423	92	1416
Door. Revolving	T. Van Kannel	656,062	Aug. 14	1722	397, 398	92	1390
Door shoo-fly attachment	W. T. Johnson	655,242	Aug. 7	131	28	92	1066
Door-shutting device. Hydraulic	M. Paldassy	656,699	Aug. 28	2887	657, 658	92	1649

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Invention	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Door. Sliding	P. L. Sheridan	658,515	Sept. 25	2714	602	92	2405
Door-stop	J. R. Bowler, Sr	654,562	July 24	3572	802	92	766
Door-stop	G. H. Rogers	658,122	Sept. 18	2035	444	92	2246
Door-stop	F. L. Rosentreter	658,465	Sept. 25	2641	586	92	2390
Door-stop	E. Denne	655,764	Aug. 14	1135	260	92	1273
Door-unlatching device	L. Radke	657,991	Sept. 18	1824	394	92	2245
Doors. Housing and hanger for sliding	J. H. Phelps	657,990	Sept. 18	1823	393	92	2205
Doors. Housing and hanger-track for sliding							
Dough into loaves of bread, pastry, &c. Machine for molding	J. Callow	658,617	Sept. 25	2910	649 650 651	92	2445
Dough-mixing machine	J. R. Farmer	656,602	Aug. 21	2733	626	92	1604
Dowel-pin	E. Tyden	653,328	July 10	1136	270	92	239
Dowel-pin. Metal	E. Tyden	653,327	July 10	1134	270	92	239
Draft device	J. Comminsky	657,812	Sept. 11	1466	312	92	2117
Draft-equalizer	J. A. Beltz	655,542	Aug. 7	649	149	92	1168
Draft-equalizer	T. I. Brinkley and D. A. Wetrich	656,243	Aug. 21	2075	475	92	1473
Draft-equalizer	M. Heaton	654,792	July 31	4039	908	92	880
Draft-equalizer	H. F., C., and G. H. Mieher	653,029	July 3	561	131	92	112
Draft-equalizer	J. W. Miller	658,667	Sept. 25	3012	669 670	92	2465
Draft-equalizer	J. F. Smith	658,684	Sept. 25	3042	677	92	2471
Draft-equalizer	M. and C. Zöllner	653,054	July 3	605	143	92	122
Draft-equalizer	R. C. McCormick	656,565	Aug. 21	2651	611	92	1585
Draft-evener. Gang-plow	W. B. Fowler	656,959	Aug. 28	3415	779	92	1748
Draft-regulator	P. Souther	657,963	Sept. 18	1826	394	92	2206
Draft-rigging	L. M. Carmical	652,882	July 3	182	42	92	37
Draftsman's instrument	F. W. Chickering	653,658	July 17	1792	410	92	300
Drag	H. and O. Mohr	658,187	Sept. 18	2151	470 471	92	2270
Draw-press	W. Beebe	657,809	Sept. 11	1462	310	92	2116
Drawer-equalizer	D. E. Hunter	657,415	Sept. 4	664	138	92	1934
Drawer for card-indexes	S. C. Anderson	652,991	July 3	496	117	92	100
Drawer. Money-	J. R. White	656,916	Aug. 28	3344	761	92	1734
Drawers. Apparel-	G. K. Rich	658,072	Sept. 18	1946	423	92	2220
Drawing-board	S. M. Wetmore	655,141	July 31	4071	1053	92	1010
Drawing-frame stop-motion	R. R. Osgood	656,369	Aug. 21	2299	526 527	92	1516
Dredge anchoring device	A. W. Robinson	657,567	Sept. 11	1013	209 210	92	2028
Dredge suction-pipe	A. W. Robinson	657,568	Sept. 11	1015	210	92	2028
Dredge suction-pipe mouthpiece or drag	W. H. Arnold	652,738	July 3	1	1	92	3
Dredger-bucket	A. McDougall	657,247	Sept. 4	337	72	92	1869
Dredging apparatus	W. J. Bradley	656,503	Aug. 21	2538	584	92	1562
Dredging apparatus. Hydraulic	C. H. Smith	656,224	Aug. 21	2089	468 469	92	1466
Dredging-bucket	A. Mann and P. Stumpe	657,172	Sept. 4	183	41	92	1838
Dress-protector	J. W. Stevens	656,225	Aug. 21	2040	469	92	1466
Dress-shield fastener							
Drier: *See* Clothes-drier. Grain-drier. Film-drier. Rotary drier.							
Drier	C. L. Cummings	657,869	Sept. 11	1551	333 334	92	2136
Dry closet	R. E. L. Janney	656,194	Aug. 21	1971	453	92	1455
Dry closet and incinerator	F. P. Smith	655,419	Aug. 7	458	102	92	1129
Dry-kiln	A. H. Simms	655,123	July 31	4016	1048	92	1005
Dry-kiln door	T. Green	657,532	Sept. 11	961	198	92	2017
Drying and cooling machine	G. S. Emerick	654,093	July 17	2550	587	92	535
Drying apparatus. Electrical	J. M. J. E. Vignon-Danto	652,867	July 3	235	56	92	47
Drying-machine	R. Simon	655,586	Aug. 7	750	173 174	92	1186
Drying-room	F. E. Frey	658,061	Sept. 18	1926	419	92	2225
Drill: *See* Earth-drill. Mining-drill. Expansion-drill. Ratchet-drill. Grain-drill.							
Drill-grab	G. I. Lewis	656,555	Aug. 21	2637	608	92	1582
Drill-jar and coupling	T. Seevers	657,205	Sept. 4	250	54	92	1852
Drill-press	H. De Tamble	658,398	July 10	1174	279	92	245
Drill-repairing apparatus	P. L. Crossman	657,519	Sept. 11	943	193	92	2013
Drill-shaft. Telescopic	I. N. and W. J. Cassity	656,515	Aug. 21	2559	588	92	1567
Drill spreading, truing, and gaging machine	D. G. Morgan	656,415	Aug. 21	2390	549	92	1533
Drill-supporting column and column-clamp	W. K. Millholland	653,307	July 10	1104	263	92	233
Drill-tool shaper	L. F. Nell	654,072	July 17	2519	579	92	528
Drilling-machine	A. E. and C. A. Jordan	658,447	Sept. 25	2607	578	92	2381
Drinking-cup. Magnetic	H. A. Parkyn	655,413	Aug. 7	448	99	92	1127
Driving apparatus	W. J. Le Barron	656,985	Aug. 28	3465	791	92	1757
Driving mechanism	C. D. P. Gibson	658,544	Sept. 25	2770	614	92	2417
Driving mechanism	A. E. H. J. Thoellden	653,123	July 3	738	174	92	147
Drum. Heating-	C. M. Bates and H. C. Lutz	653,650	July 17	1782	407	92	387
Drum. Heating-	J. W. Hilliker	653,676	July 17	1819	416 417	92	395
Drum. Heating-	M. and A. E. Kennedy	656,460	Aug. 21	2467	567	92	1548
Drum. Hot-air	J. F. Beck	655,182	Aug. 7	8	2, 3	92	1042
Dumb-bell	E. Sandow	654,097	July 17	2555	588	92	536
Duplicating apparatus	A. B. Dick	658,087	Sept. 18	1894	409 410	92	2219
Dust-arrester	J. Angus	654,866	July 31	4183	943	92	909
Dust-collecting apparatus. Curtain for	A. S. Dwight and R. Ruetschi	655,547	Aug. 7	664	152	92	1171
Dust-collector	L. C. Meyerott	654,997	July 31	4429	998	92	963
Dust-collector	O. M. Morse	655,635	Aug. 7	816	197	92	1204
Dust-collector	L. Walder	655,384	Aug. 7	807	87	92	1116
Dust-collector	S. A. Crone	657,979	Sept. 18	1801	388	92	2200
Dust-guard.	R. H. Nyland and F. C. Lindt	655,306	Aug. 7	258	57	92	1091
Dust-guard. Automatic	A. R. Leib	657,243	Sept. 4	328	70	92	1867
Dust-pan	J. E. Mote and L. C. King	655,156	July 31	4703	1060	92	1017
Dust removing and collecting machine	T. Lee	656,255	Aug. 21	2093	478	92	1477
Dust-separator							

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Invention	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Dye and making same. Anthrarufin	R. E. Schmidt	658,514	Sept. 25	2713	.....	92	2405
Dye and making same. Beta-naphthoquinone	P. Uhlmann	658,492	July 10	1444	.....	92	299
Dye and making same. Black azo	I. Levinstein and C. Mensching	654,167	July 24	2747	.....	92	594
Dye and making same. Black azo	I. Levinstein and C. Mensching	654,168	July 24	2748	.....	92	594
Dye and making same. Blue anthraquinone	O. Unger	654,294	July 24	3089	.....	92	668
Dye and making same. Blue anthrarufin	R. E. Schmidt	656,668	Aug. 28	2839	.....	92	1639
Dye and making same. Blue anthrarufin	R. E. Schmidt and P. Tust	656,670	Aug. 28	2840	.....	92	1639
Dye and making same. Blue chrysazin	R. E. Schmidt	656,669	Aug. 28	2839	.....	92	1639
Dye and making same. Blue chrysazin	R. E. Schmidt and P. Tust	656,780	Aug. 28	2945	.....	92	1660
Dye and making same. Blue chrysazin	R. E. Schmidt	658,513	Sept. 25	2712	.....	92	2405
Dye and making same. Blue chrysazin	H. Gussmann	657,768	Sept. 11	1390	.....	92	2102
Dye and making same. Blue cotton sulfur	H. Gussmann	657,769	Sept. 11	1391	.....	92	2102
Dye and making same. Blue cotton sulfur	O. Nastvogel	658,504	Sept. 25	2698	.....	92	2402
Dye and making same. Blue diphenylnaphthylmethane	J. Bammann and E. Davidis	656,619	Aug. 28	2773	.....	92	1625
Dye and making same. Blue tetrazo	P. Ott, A. Israel, and R. Kothe	658,506	Sept. 25	2703	.....	92	2403
Dye and making same. Brown	P. Ott and F. Volger	658,507	Sept. 25	2704	.....	92	2403
Dye and making same. Brown azo	J. Abel and F. Kalkow	658,055	Sept. 18	1916	.....	92	2223
Dye and making same. Brown cotton	N. Schwan and W. Zedel	658,286	Sept. 18	2316	.....	92	2302
Dye and making same. Brown sulfur	O. Unger	654,295	July 24	3090	.....	92	668
Dye and making same. Green anthraquinone	F. Scholl	658,503	Sept. 25	2674	.....	92	2398
Dye and making same. Green-yellow	E. Goebel	653,670	July 17	1811	.....	92	393
Dye and making same. Olive cotton	F. Scholl	656,858	Aug. 28	3229	.....	92	1718
Dye and making same. Orange	R. Demuth	656,631	Aug. 28	2788	.....	92	1628
Dye and making same. Violet cotton	F. Scholl	656,857	Aug. 28	3221	.....	92	1713
Dye and making same. Yellow	P. Julius	656,120	Aug. 14	1846	.....	92	1417
Dye and making same. Yellow azo	F. Scholl	656,859	Aug. 28	3222	.....	92	1713
Dye and making same. Yellow azo	B. Priebs and O. Kaltwasser	655,659	Aug. 7	940	.....	92	1224
Dye. Black surfur	B. Beyer and F. Schaar-Rosenberg	654,087	July 17	2540	.....	92	533
Dye. Blue-green oxazin	P. Julius	654,064	July 17	2505	.....	92	526
Dye. Blue monoazo	J. Bammann, E. Davidis, and W. Vorster.	656,620	Aug. 28	2774	.....	92	1625
Dye. Blue-red substantive	P. Julius	654,065	July 17	2506	.....	92	526
Dye. Blue-violet monoazo	W. Herzberg and O. Hansmann	657,004	Aug. 28	3595	.....	92	1783
Dye. Brown	A. Ashworth and J. Bürger	653,278	July 10	1056	.....	92	224
Dye. Brown sulfur	O. Bally	654,596	July 24	3486	.....	92	750
Dye from anthracene-blue	A. Ashworth and J. Bürger	653,277	July 10	1055	.....	92	224
Dye. Making black sulfur	W. Herzberg and O. Hansmann	657,065	Aug. 28	3596	.....	92	1783
Dye. Reddish-brown	O. Bally	656,081	Aug. 14	1760	.....	92	1398
Dye. Sulfonated anthraquinone	C. Ris and C. Simon	655,013	July 31	4457	.....	92	1060
Dyes. Making green trisazo	J. Bammann, E. Davidis, and W. Vorster.	656,621	Aug. 28	2775	.....	92	1625
Dyestuff and making same. Azo	F. Dommer	656,015	Aug. 14	1653	.....	92	1376
Dyeing	W. Mather	653,580	July 10	1605	374	92	333
Dyeing apparatus	W. Mather	653,581	July 10	1606	375	92	333
Dyeing apparatus	I. E. Palmer	653,485	July 10	1433	336	92	297
Dyeing apparatus	J. C. Thickins	657,323	Sept. 4	491	108	92	1898
Dyeing apparatus	G. Mallinson	652,797	July 3	102	25	92	21
Dyeing, &c. Apparatus for	G. Comber and J. C. Chorley	655,854	Aug. 14	1323	.....	92	1311
Dyeing khaki	J. T. Morgan and W. Menzies	657,206	Sept. 4	427	89, 90	92	1886
Dyeing-machine	C. Endruweit	658,481	Sept. 25	2589	574	92	2381
Dynamo-brush	H. H. Cutler	653,472	July 10	1407	331	92	292
Dynamo or generator controller	I. E. Storey	658,476	Sept. 25	2659	590	92	2394
Dynamo regulation	P. W. Alexander	657,908	Sept. 18	1696	353	92	2165
Dynamo speed-regulator	W. H. Hartmann	657,109	Sept. 4	68	15	92	1815
Ear-muff	W. G. Ehrhardt	656,182	Aug. 21	1953	448	92	1451
Ears. Sound-collector for the	H. E. Williams	658,495	Sept. 25	2685	590	92	2399
Earth-drill. Horizontal	A. Sabin-MacDonald	654,841	July 31	4136	931	92	899
Easel and artist's cabinet	J. H. Milliken	658,272	Sept. 18	2295	505 506	92	2208
Easel or other article of furniture. Interconvertible	I. E. Quist	654,020	July 17	2489	558	92	512
Eccentric or gear. Adjustable	L. G. Beloud	653,838	July 17	2121	482	92	451
Educating and training the eye and hand. Device for	A. E. Osborne	656,569	Aug. 21	2658	612	92	1586
Educational system	W. R. Ellis	658,358	Sept. 25	2450	543	92	2355
Educational top	E. R Godward	653,233	July 10	965	230	92	204
Egg-beater	C. E. La Fleur	653,812	July 17	2070	472	92	443
Egg-case	W. H Hansell	657,285	Sept. 4	413	87	92	1883
Egg-case filler	E. F Bohn	654,508	July 24	3488	787	92	750
Egg-case filler-frame	J. H Lyday	655,564	Aug. 7	700	159	92	1177
Egg-case. Portable	H. D Cripps	657,729	Sept. 11	1325	280	92	2088
Egg-packing apparatus	A. Lindsay	657,125	Sept. 4	92	22	92	1820
Egg-separator	J., A., and G. Lyons	655,447	Aug. 7	517	115	92	1141
Egg-storing tray	J. Y. Buchanan	654,871	July 31	4192	944	92	911
Electric cable	G. H. Nisbett	655,265	Aug. 7	173	39	92	1074
Electric cable	J. C. Anderson	654,583	July 31	3610	813 814 815 816	92	791
Electric-coil winding and insulating machine	F. C. Sutter	658,192	Sept. 18	2160	472	92	2271
Electric conductor	J. Floyd	655,217	Aug. 7	73	15	92	1055
Electric-conductor crossing. Suspended	W. F. Barber	657,910	Sept. 18	1640	.....	92	2166
Electric-conductor joints. Metallic cement for	J. Floyd	655,216	Aug. 7	72	15	92	1055
Electric-conductor switch. Suspended	E. S. Francis	657,732	Sept. 11	1332	282	92	2089
Electric-conduit coupling	W. Asbury	654,709	July 31	3854	869	92	840
Electric controller	S. W. Huff	653,087	July 3	654	156 157	92	133
Electric controller	C. J. Reed	656,473	Aug. 21	2488	573	92	1552
Electric controller	V. G. Fuller	655,706	Aug. 14	1009	232	92	1240
Electric-current-registering device	B. Hopkinson	658,064	Sept. 18	1930	419 420	92	2220
Electric-current switch. Alternating-	H. P. Maxim	653,685	July 17	1834	419 420	92	398
Electric cut-out	J. W. Mabbs	657,782	Sept. 11	1413	299 300	92	2106
Electric elevator	W. Borchers	656,930	Aug. 28	3365	768	92	1738
Electric furnace	C. S. Bradley	658,698	Sept. 25	3066	682	92	2475
Electric furnace							

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Electric furnace	A. H. Cowles	658,315	Sept. 18	2364	522, 523	92	2311
Electric furnace	W. S. Horry	655,780	Aug. 14	1171	268	92	1280
Electric furnace	W. S. Horry	657,736	Sept. 11	1342	284	92	2091
Electric furnace	H. Leleux	654,468	July 24	3411	768	92	786
Electric furnace	H. C. McBrair	657,202	Sept. 4	243	53	92	1850
Electric furnace	J. H. Bickford	656,165	Aug. 21	1922	441	92	1445
Electric generating apparatus	R. R. Morison	654,320	July 24	3145	704	92	678
Electric heater	F. H. Stewart	656,431	Aug. 21	2417	555	92	1539
Electric-light cord-adjuster	G. Alefeld	656,077	Aug. 14	1753	406	92	1396
Electric lighting. Manufacture of incandescent materials for	H. G. Carleton	655,476	Aug. 7	502	126	92	1150
Electric lock	H. G. Carleton	657,211	Sept. 4	264	56	92	1856
Electric lock	H. G. Carleton	657,853	Sept. 11	1539	331	92	2133
Electric lock	T. P. Pratt	655,006	July 31	4444	1002	92	966
Electric lock	H. H. Cutler	653,471	July 10	1403	330	92	991
Electric-machine controller. Dynamo-	M. H. Hurrell	658,012	Sept. 18	1852	401	92	2211
Electric machine. Dynamo-	W. M. Mordey	653,963	July 17	2350	540, 541	92	496
Electric machine. Dynamo-	J. D. Spence	656,127	Aug. 14	1857	427, 428	92	1419
Electric machines. Apparatus for exciting alternating-current dynamo-	M. Hutin and M. Leblanc	653,088	July 3	664	158	92	134
Electric machines. Exciter for alternating-current dynamo-	M. Hutin and M. Leblanc	653,089	July 3	671	159, 160	92	136
Electric machines. Operating dynamo-	E. J. Berg	654,595	July 31	3641	822	92	797
Electric machines. Regulating dynamo-	J. D. Spence	656,128	Aug. 14	1861	428	92	1420
Electric meter	J. Harris	657,983	Sept. 18	1810	390	92	2202
Electric meter	C. D. Haskins	653,806	July 17	2003	469	92	441
Electric meter. Coin-setting	F. Kraemer	658,739	Sept. 25	3153	700, 701, 702	92	2103
Electric-metering system	F. E. Town	654,498	July 24	3471	783	92	747
Electric motor	P. J. Collins	655,852	Aug. 14	1319	302	92	1310
Electric motor	E. A. Henry	656,972	Aug. 28	3444	787	92	1754
Electric motor	W. S. Moody	654,909	July 31	4433	999	92	964
Electric motor	E. G. P. Oelschläger and C. O. F. Schrottke.	655,268	Aug. 7	181	40	92	1075
Electric motor	D. C. Woodward	653,725	July 17	1907	438	92	411
Electric-motor brake	C. A. Lindstrom	655,562	Aug. 7	695	158	92	1177
Electric-motor controller	T. S. Perkins	656,571	Aug. 21	2662	618	92	1587
Electric-motor controlling apparatus	F. A. Merrick and E. W. Stull	654,410	July 24	3305	741, 742	92	714
Electric-motor self-starter	H. H. Cutler	653,470	July 10	1400	330	92	990
Electric-motor-starting device	J. H. F. Görges	655,340	Aug. 7	321	70	92	1103
Electric-motor suspension	G. Gibbs	656,635	Aug. 28	3703	638	92	1629
Electric-motor suspension	G. Gibbs	656,636	Aug. 28	3705	639	92	1629
Electric motors. Means for regulating	R. Lundell	654,551	July 24	3356	802	92	763
Electric regulating device	W. S. Moody	654,663	July 31	3787	854	92	826
Electric signal and fire-alarm	D. Geywits and W. Still	654,967	July 31	4366	982, 983	92	949
Electric-signal-registering system	O. P. and R. H. Yurgae	655,144	July 31	4682	1055, 1056	92	1013
Electric switch	W. Ely	654,239	July 24	2977	668	92	644
Electric switch	J. T. Robb	653,698	July 17	1852	424	92	402
Electric switch	R. H. Wappler	656,870	Aug. 28	3251	738	92	1717
Electric switch. Fluid-operated	C. A. Eck	656,716	Aug. 28	2923	668	92	1655
Electric switch. Quick-break	W. F. Bossert	655,047	July 31	4514	1018	92	980
Electric thermostatic cables. Reel or spool for	J. D. Gould	653,448	July 10	1356	322	92	281
Electric transformer	J. J. Wood	652,990	July 3	495	116	92	100
Electrical battery	C. E. O'Keenan	655,368	Aug. 7	373	81	92	1112
Electrical conductor pipes or conduits. Manufacture of	A. H. Howard	656,192	Aug. 21	1968	452	92	1451
Electrical conductors. Stringing or supporting	L. Hackethal	657,104	Sept. 4	61	14	92	1814
Electrical conduit. Flexible	H. G. Osburn	652,806	July 3	123	30	92	25
Electrical connections. Confiner of wires for	C. F. Ash	656,158	Aug. 21	1913	439	92	1443
Electrical contact parts. System of non-interchangeable	M. Fröschl and R. Hundhausen	656,454	Aug. 21	2456	564	92	1546
Electrical controller	E. H. Wise	653,857	July 17	2148	489, 490	92	456
Electrical-current indicator and recorder. Maximum-	E. C. Rimington	658,022	Sept. 18	1868	404	92	2214
Electrical currents. Controlling	A. B. Holmes	656,324	Aug. 21	2216	507, 460	92	1500
Electrical-distribution system	C. D. Anderson	653,784	July 17	2016	461	92	432
Electrical-distribution system	W. J. Davis, Jr	656,578	Aug. 21	2685	615	92	1594
Electrical-distribution system	E. E. Frischmuth	655,219	Aug. 7	75	16	92	1056
Electrical-distribution system	A. D. Lunt	656,650	Aug. 28	2814	642	92	1633
Electrical-distribution system	H. F. Roach	656,266	Aug. 21	2108	481	92	1480
Electrical-distribution system	E. Thomson	656,680	Aug. 28	2856	650	92	1642
Electrical party-lines. System for individual service on	W. Torst, Jr	655,916	Aug. 14	1430	328	92	1332
Electrical purposes. Treating porous material used for	W. A. Markey	656,651	Aug. 28	2815	------	92	1633
Electrical translating devices. Means for controlling energy delivered to	H. W. Leonard	656,821	Aug. 28	3112	706	92	1691
Electrical transmission of power	I. E. Storey	654,816	July 31	4084	918	92	889
Electrically-driven machine	T. H. Joseph and J. J. Ehrenreich	655,491	Aug. 7	582	131	92	1154
Electricity-meter	P. Eibig	656,100	Aug. 14	1807	416	92	1410
Electricity-meter	G. Hookham	656,545	Aug. 21	2622	603, 604	92	1579
Electrode. Battery-	G. Heidel	654,113	July 17	2580	593	92	541
Electrode for electrolyzing apparatus	R. Moritz	653,933	July 17	2280	519	92	483
Electrodes for primary batteries. Oxidizing negative	C. J. Coleman	658,483	Sept. 25	2668	593	92	2396
Electrogalvanic battery	H. J. Brewer	653,763	July 17	1976	451	92	425

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Electrogalvanic battery	H. J. Brewer	653,764	July 17	1978	451, 452	92	425
Electrogalvanic battery	H. J. Brewer	653,765	July 17	1981	452	92	426
Electrolysis apparatus	P. Schoop	657,012	Aug. 28	3500	799	92	1764
Electrolytic apparatus	G. Lolselet	656,558	Aug. 21	2641	609	92	1583
Electrolytic apparatus	A. Plecher	655,111	July 31	4631	1044	92	1002
Electrolytic apparatus	N. L. Turner	653,538	July 10	1540	357, 358	92	320
Electrolytic cell	J. Hargreaves	655,843	Aug. 7	328	71	92	1104
Electrolytic cells. Cathode for use in	J. Hargreaves	655,344	Aug. 7	330	72	92	1105
Electrolytic cells. Purifying and strengthening brine for use in	J. Hargreaves	652,846	July 3	204	47, 48	92	41
Electromedical vacuum apparatus	G. W. Winckfield	655,747	Aug. 14	1091	251	92	1264
Electrostatic separation	E. Gates	653,343	July 10	1182	281	92	246
Elevator: *See* Cotton-elevator. Electric elevator. Force-blast elevator. Hydraulic elevator. Water-elevator.	C. W. and W. D. Baldwin	657,380	Sept. 4	599	125, 126	92	1921
Elevator	E. L. and G. Hall	657,597	Sept. 11	1073	223	92	2039
Elevator	F. E. Herdman	652,808	July 3	273	66, 67	92	54
Elevator	W. F. Leonard	658,378	Sept. 25	2496	552	92	2363
Elevator	G. H. Reynolds	655,012	July 31	4453	1004	92	968
Elevator	G. H. Reynolds	658,587	Sept. 25	2864	635	92	2436
Elevator	A. T. Ramsdell	653,526	July 10	1511	352	92	314
Elevator-car	N. O. Lindstrom and A. Cowperthwait.	654,656	July 31	3772	851	92	822
Elevator-controller	L. W. Southgate	657,465	Sept. 4	752	160, 161	92	1949
Elevator operative mechanism	F. E. Herdman	652,894	July 3	276	67, 68	92	55
Elevator-regulating brake. Automatic	H. Graves	656,638	Aug. 28	2798	639	92	1630
Elevator safety appliance	A. A. E. Sterzing	655,837	Aug. 14	1294	297, 298	92	1306
Elevator safety device	M. M. Hunter	653,297	July 10	1086	259, 260	92	230
Elevator safety device	N. B. Keyser	657,778	Sept. 11	1407	298	92	2105
Elevator safety device	T. Lebiedzinski	657,026	Aug. 28	3520	804	92	1767
Elevator safety-gate	S. T. Hitz	654,396	July 24	3281	736	92	709
Elevator safety mechanism	C. L. Buddenbohn and W. Speer	657,642	Sept. 11	1752	242	92	2054
Elevator speed-controller. Electric-	J. D. Ihlder	657,416	Sept. 4	666	139	92	1934
Elevators. Automatic safety cut-off for	G. G. and A. G. Guenther	657,195	Sept. 4	231	51	92	1848
Elevators. Electrically-actuated safety device for	N. B. Keyser	657,892	Sept. 11	1604	346	92	2146
Elliptic spring	C. I. Dupont	655,210	Aug. 7	60	13	92	1052
Embossing	J. S. Hoerner	655,084	July 31	4587	1034	92	994
Embossing-machine	G. P. O'Connor	658,505	Sept. 25	2690	599	92	2403
Embroidering-machine	E. J. Klingenberg	657,944	Sept. 18	1751	377	92	2190
Embroidering-machine attachment	J. Grubman	656,967	Aug. 28	3437	784, 785	92	1752
Embroidering-machine perforating device	M. Schoenfeld	653,782	July 17	2008	459	92	431
End-gate	A. E. Beall	656,338	Aug. 21	2243	516	92	1505
End-gate	J. T. Hall	653,083	July 3	649	155	92	131
End-gate	M. Warner	656,915	Aug. 28	3343	761	92	1734
End-gate	H. Keller	656,720	Aug. 28	2931	609	92	1657
End-gate fastener	H. K. Crissey	657,063	Sept. 4	40	10	92	1809
End-gate or shoveling-board	W. Chater	656,577	Aug. 21	2084	615	92	1594
End-gate. Wagon-body	M. P. Fillingham	653,553	July 10	1560	363, 364	92	323
Endless-belt press	L. Schulz	657,458	Sept. 4	742	159	92	1947
Engine: *See* Air or gas engine. Beating-engine. Blowing-engine. Carding-engine. Compound engine. Dental engine. Explosive-engine. Gas-engine. Gas or gasolene engine. Gasolene-engine. High-speed engine. Hydraulic engine. Locomotive-engine. Oil-engine. Piston-impact engine. Pumping-engine. Rotary engine. Steam-engine. Steam and explosive engine. Traction-engine.	G. S. Strong	653,268	July 10	1034	246, 247	92	221
Engine controlling mechanism	S. W. Rea	657,451	Sept. 4	732	156	92	1946
Engine-cooling means. Explosive-	F. G. Burley	655,685	Aug. 14	983	223	92	1243
Engine-cylinder. Compound steam-	G. A. Burwell	657,643	Sept. 11	1150	242	92	2055
Engine-cylinder lubricator	W. Ripper	658,531	Sept. 25	2748	610	92	2412
Engine cylinders. Apparatus for indicating effective pressures of steam in steam-	H. J. Kimman	653,248	July 10	981	235, 236	92	210
Engine for portable pneumatic drills	T. C. Kennedy	658,267	Sept. 18	2289	503, 504	92	2297
Engine fuel-oil feeder. Gasolene-	F. A. Law	653,353	July 10	1201	285	92	250
Engine igniter. Explosive-	L. Witry	655,289	Aug. 7	220	48	92	1084
Engine igniter. Explosive-	G. W. Henricks	653,957	July 17	2332	535	92	492
Engine igniters. Magneto-electric generator for gas-	L. R. Doran and A. Taggart	655,857	Aug. 14	1325	304	92	1312
Engine indicator. Steam-	W. F. Johnston	657,941	Sept. 18	1745	375	92	2190
Engine lubricator attachment. Steam-	C. Robinson	656,373	Aug. 21	2306	528, 529	92	1518
Engine operating and governing means	R. L. Morgan	653,482	July 10	1429	335	92	296
Engine piston. Single-acting-	G. W. Anderson	657,909	Sept. 18	1639	354	92	2166
Engine reversing mechanism	R. R. von Paller	655,269	Aug. 7	182	40	92	1075
Engine-starting device. Explosive-	C. H. Blomstrom	657,055	Aug. 28	3580	825	92	1780
Engine starting mechanism. Explosive-	R. B. Cunningham	655,146	July 31	4685	1056	92	1013
Engine-stop. Automatic	G. W. Turner and S. F. Butler	655,135	July 31	4663	1051	92	1008
Engine-stop. Automatic							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Engine-tie	G. B. Wilt	654,502	July 24	3482	786	92	749
Engine tube-igniter. Explosive	A. C. von Fahnenfeld and E. S. von Wolfersgrün.	653,341	July 10	1179	281	92	246
Engine vaporizer. Gasolene	J. G. MacPherson	655,407	Aug. 7	434	96	92	1124
Engine vaporizer. Petroleum	G. Kiltz	657,739	Sept. 11	1347	285	92	2092
Engines. Apparatus for charging and feeding fuel to steam-	E. Efran	655,700	Aug. 14	1005	231	92	1248
Engines. Apparatus for lining	C. H. Hopkins	656,406	Aug. 21	2371	545	92	529
Engines. Apparatus for regulating fuel-supply of internal-combustion	R. Diesel	654,140	July 24	2691	613	92	588
Engines. Controlling means for explosive	F. A. La Roche	657,662	Sept. 11	1194	250	92	2003
Engines. Device for holding or blocking traction-	G. F. Conner	658,564	Sept. 25	2806	623	92	2425
Engines. Electric igniter for explosive	I. H. Davis	657,760	Sept. 11	1378	291 / 292	92	2100
Engines. Electric sparker for gasolene	J. G. MacPherson	655,406	Aug. 7	433	95	92	1123
Engines. Electrical igniter for hydrocarbon	H. Wegelin	654,693	July 31	3880	864	92	833
Engines. Fuel-receptacle for gasolene	G. L. Reenstierna	655,661	Aug. 7	943	213	92	1224
Engines. Incandescent igniter for gas	A. G. New	656,143	Aug. 14	1880	433	92	1423
Engines. Oil-separating apparatus for steam	L. A. Cooper	655,610	Aug. 7	795	185	92	1194
Engines. Regulator for gasolene or other like	S. A. Hasbrouck	654,894	July 31	4245	953	92	923
Engines. Sparking igniter for explosive	H. C. Thamsen	654,818	July 31	4087	919	92	890
Engraving-machine	C. Chevalier	656,940	Aug. 28	3382	773	92	1741
Engraving-machine	W. S. Eaton	652,892	July 3	272	66	92	54
Engraving-machine. Pantograph	M. Barr	655,750	Aug. 14	1104	254 / 255	92	1267
Envelop	B. A. Brown	656,932	Aug. 28	3367	769	92	1739
Envelop	D. M. Emory	657,214	Sept. 4	270	58	92	1857
Envelop	G. P. Homeier	658,443	Sept. 25	2603	577	92	2383
Envelop	H. Trenchard, Jr	657,018	Aug. 28	3509	801	92	1765
Envelop	J. West	653,599	July 10	1632	381 / 382	92	339
Envelop	W. T. Younger	654,865	July 31	4181	942	92	909
Envelop	J. O. Muenich	657,439	Sept. 4	710	151	92	1941
Envelop-fastener. Office	E. Simon	654,418	July 24	3325	745 / 746	92	718
Envelop. Safety	E. Simon	654,419	July 24	3327	746	92	718
Envelop. Safety	T. Hawkins	655,230	Aug. 7	100	322	92	1061
Envelop safety-fastener	J. F. Steward	657,098	Aug. 28	3540	808	92	1772
Equalizer. Three-horse	J. Baker	654,897	July 31	4184	943	92	910
Etching-grounds. Preparing	M. W. Gleason	654,621	July 31	3718	839	92	812
Etching-machine. Rotary	J. Davie	657,521	Sept. 11	946	194 / 195	92	2014
Evaporating apparatus	W. Mather	654,470	July 24	3422	771 / 772	92	738
Evaporating apparatus. Multiple-effect	E. J. Duff	657,900	Sept. 11	1623	349	92	2150
Evaporating-pan	J. V. Pender	652,920	July 3	322	80	92	65
Excavating-machine	L. V. Brophy	655,955	Aug. 14	1507	346 / 347	92	1346
Excavation. Apparatus for constructing lines of	W. D. Washington	655,532	Aug. 7	636	144	92	1165
Excavator	A. E. and G. A. Cheney and G. W. King.	655,758	Aug. 14	1121	258	92	1270
Excavator	G. W. King	655,784	Aug. 14	1179	270 / 271	92	1282
Excavator. Steam	D. R. French	655,218	Aug. 7	74	15, 16	92	1055
Exercising apparatus. Electric conductor for	A. M. Crooker and F. N. McDonald	655,671	Aug. 7	959	217	92	1228
Exhaust-head	F. Maranville and W. Warden	656,382	Aug. 28	3470	794	92	1758
Exhaust-head	S. M. Scott	657,748	Sept. 11	1360	288	92	2096
Exhauster and blower	C. H. Keeney	656,023	Aug. 14	1662	382	92	1378
Exhibiting boots or shoes. Apparatus for	M. A. Kennedy	658,547	Sept. 25	2777	616	92	2418
Exhibition structure	H. F. W. Lyouns	655,255	Aug. 7	152	34, 35	92	1070
Expansion-drill	H. J. Lawrence	654,104	July 24	2743	623	92	593
Explosive and making same	J. Ross and W. D. Cairney	656,048	Aug. 14	1702		92	1386
Explosive-engine	S. F. Beetz	657,884	Sept. 4	610	127 / 128	92	1923
Explosive-engine	C. R. Daellenbach	653,379	July 10	1242	296	92	259
Explosive-engine	O. J. Fairchild	656,101	Aug. 14	1809	417	92	1410
Explosive-engine	E. Haynes and E. Apperson	658,367	Sept. 25	2469	547 / 548	92	2358
Explosive-engine. Rear-compression	H. A. Bertheau	655,186	Aug. 7	19	4	92	1044
Explosive-motor. Multiple-piston	M. F. Marmonier	657,226	Sept. 4	295	63 / 64	92	1861
Extension-platform	G. E. Seymour and F. Kahler. (Reissue.)	11,844	Aug. 7	970	219 / 220	92	1230
Extension-table	C. Horn	656,298	Aug. 21	2162	494	92	1489
Extension-table	F. P. Musser	658,275	Sept. 18	2300	506 / 507	92	2299
Extension-table	E. Tyden	653,326	July 10	1132	270	92	239
Extractor: *See* Cork-extractor. Post-extractor. Fence-post extractor.							
Eyebars. Making forked	W. S. Bidle	656,712	Aug. 28	2910	662 / 663	92	1653
Eyeglass-guard	B. P. Currier	656,176	Aug. 21	1942	446	92	1449
Eyeglass-holder	C. F. Kabisch	654,005	July 17	2403	553	92	597
Eyeglasses	L. F. Adt	656,709	Aug. 28	2908	662	92	1652
Eyeglasses	H. H. Boyd	654,870	July 31	4191	944	92	911
Eyeglasses	L. W. Bugbee	656,316	Aug. 21	2203	503	92	1498
Eyeglasses	H. G. Chase	655,325	Aug. 7	285	64	92	1097
Eyeglasses	J. J. Clairmont	656,881	Aug. 28	3281	746	92	1722
Eyeglasses	A. B. Critzer	654,523	July 24	3512	792	92	755
Eyeglasses	F. M. Daniels	656,153	Aug. 14	1896	436	92	1427
Eyeglasses	P. H. Flowers	656,309	Aug. 21	2352	540	92	1527
Eyeglasses	H. F. Sanger	656,269	Aug. 21	2113	482	92	1490
Eyeglasses	G. Lowres	653,931	July 17	2278	518	92	483
Eyeglasses or spectacles	J. Vilanch	655,469	Aug. 7	551	123	92	1148
Eyeglasses or spectacles	E. G. Stevens	657,183	Sept. 4	208	47	92	1843
Eye-protector	H. E. Newton	656,038	Aug. 14	1685	388	92	1382
Eyelet for shoes, &c	F. I. Shade and M. B. Fry	657,793	Sept. 11	1434	305	92	2111
Eyelet-hole machine	W. W. Green	653,139	July 3	762	179 / 180	92	152
Eyelet. Overseam	D. Noble	653,113	July 3	719	169	92	144
Fabric: *See* Carpet fabric. Tubular fabric. Collar-stiffener fabric. Wire fabric. Knit fabric. Woven fabric. Pile fabric. Woven tubular fabric.							
Fabric-renovator. Steam	J. B. Allen and C. D. Hall	658,328	Sept. 18	2386	527	92	2315
Fabric-shaping machine	T. H. Parry and J. McClintock	653,846	July 17	2128	484	92	453
Fabrics. Means for raising pile or nap on	W. H. Baker and F. E. Kip	658,539	Sept. 25	2760	613	92	2414
Fan-motor	H. Sommerfeld	656,752	Aug. 28	2982	680	92	1666
Fan. Revolving hand	B. L. Behrendt and M. Mayer	655,919	Aug. 14	1430	331	92	1334
Fare-box	W. Evans and J. H. S. Asquith	653,551	July 10	1558	363	92	328
Fare-register	W. L. Brownell	656,935	Aug. 28	3372	770	92	1740
Fare-register	J. F. Ohmer and H. Tyler. (Reissue.)	11,842	July 17	2605	598	92	546
Farm-gate	J. E. Moore	658,454	Sept. 25	2617	580	92	2386
Farm-gate	G. W. Thompson	657,907	Sept. 18	1783	385	92	2197
Fastener	W. B. H. Dowse	655,696	Aug. 14	1000	229	92	1247
Fastening device	H. G. Carleton	654,383	July 24	3256	730	92	703
Fastening device	C. E. Smith	652,908	July 3	291	72	92	58
Fastening device and padlock	J. T. Dufau	656,245	Aug. 21	2077	476	92	1474
Fastening for wearing-apparel	J. Stock	655,127	July 31	4052	1049	92	1007
Fat-separating machine	P. Felten	653,137	July 3	760	178 / 179	92	152
Fat-skinning machine	T. W. Taliaferro	657,322	Sept. 4	488	102	92	1897
Faucet	M. J. Hannifin and A. Huck	657,107	Sept. 4	66	14	92	1815
Faucet	C. H. Shultz	654,810	July 31	4069	916	92	886
Faucet and filler for receptacles	H. J. Valentine	655,664	Aug. 7	947	214	92	1225
Faucet attachment. Bottle	H. A. Knight	655,345	Aug. 7	331	72	92	1105
Faucet. Beer	H. Poupart	653,591	July 10	1620	378 / 379	92	336
Faucet. Measuring	E. Arnold	652,992	July 3	498	117	92	101
Faucet. Measuring	W. McCausland	658,456	Sept. 25	2921	581	92	2387
Faucet or valve	B. F. Farrar	653,080	July 3	645	154	92	130
Faucet. Self-measuring	J. W. Allison and W. H. Bauer	653,885	July 17	2117	481	92	451
Feed apparatus for boilers. Self-acting	A. Coufalik	654,784	July 31	4020	905	92	873
Feed apparatus for boilers. Self-acting	A. Coufalik	654,785	July 31	4021	905	92	874
Feed-bag	T. A. Howard	655,085	July 31	4588	1034	92	904
Feed-bag attachment	H. Bark	654,934	July 31	4314	970	92	938
Feed-cutter blower	F. M. Bonham	654,509	July 24	3489	787	92	751
Feed-mill	A. T. Foster	655,969	Aug. 14	1549	357	92	1356
Feed-rack	J. Morris	655,504	Aug. 7	600	135	92	1158
Feed-roll	F. Goetz	657,024	Aug. 28	3518	803	92	1767
Feed-tank	W. R. Magie	653,355	July 10	1203	286	92	251
Feed trough and rack. Combined	G. F. Buck	653,209	July 10	916	222	92	197
Feed-trough for horses	G. E. Combs	655,477	Aug. 7	564	126	92	1151
Feed-water heater	J. F. Deems	658,566	Sept. 25	2890	623	92	2425
Feed-water heater	L. M. G. Delaunay-Belleville	658,245	Sept. 18	2254	494 / 495	92	2289
Feed-water heater	J. F. Hauser	656,248	Aug. 21	2082	476	92	1475
Feed-water heater	J. Mertes	657,027	Aug. 28	3521	805	92	1768
Feed-water heater and purifier	T. Gunning	657,238	Sept. 4	318	68	92	1865
Feed-water regulator. Automatic	C. J. Coleman	658,230	Sept. 18	2243	491	92	2287
Feed-water strainer. Locomotive	R. B. Paxton	655,795	Aug. 14	1212	278	92	1280
Feeder. Automatic gravity boiler	H. C. Needham	658,728	Sept. 25	3129	695	92	2487
Feeder. Boiler	H. J. Davis, P. G. Ault, W. W. Bailey, and J. H. Wideman.	655,064	July 31	4556	1026	92	988
Feeder for stock. Salt	D. Frese	656,453	Aug. 21	2454	504	92	1545
Feeder. Poultry	J. C. F. Atsatt	654,427	July 24	3344	750	92	721
Feeding live stock. Manger for	I. Morris	656,653	Aug. 28	2819	643	92	1034
Felly-plate	C. Minshall	657,435	Sept. 4	705	149	92	1941
Fence	E. E. Bateman	658,001	Sept. 18	1836	397	92	2208
Fence	G. M. Beerbower	656,314	Aug. 21	2198	502	92	1497
Fence	C. G. Ogden	653,361	July 10	1212	288	92	253
Fence	A. B. Twitchell	657,889	Sept. 11	1600	345	92	2145
Fence	J. Sutliff, Sr	654,034	July 17	2453	563	92	517
Fence-building apparatus. Tension mechanism for	E. Beghtel	654,126	July 24	2623	600	92	565
Fence. Hedge	E. P. Kepner	657,876	Sept. 11	1578	340	92	2141
Fence. Hedge	J. F. Wood	653,724	July 17	1905	438	92	411
Fence-joining tool	T. M. and T. M. Conner	655,760	Aug. 14	1127	259 / 260	92	1272
Fence machine. Wire	H. Ward	654,425	July 24	3337	748 / 749	92	720
Fence machine. Wire	G. P. A. Weisenborn	653,719	July 17	1899	436 / 437	92	410
Fence machine. Wire	I. H. Sharman	653,563	July 10	1579	367	92	327
Fence. Portable	W. H. Turner	657,627	Sept. 11	1130	237	92	2050
Fence. Portable	L. K. Forsythe	655,675	Aug. 7	905	218	92	1229
Fence-post	W. A. Hammer	654,626	July 31	3724	840	92	813
Fence-post	W. L. Penney	656,611	Aug. 21	2753	631	92	1609
Fence-post	J. G. Robinson	655,638	Aug. 7	859	199	92	1207
Fence-post	N. A. Taylor	658,208	Sept. 18	2338	516	92	2306
Fence-post	J. L. Wiggins	657,145	Sept. 4	125	30	92	1826
Fence-post	F. Morganthaler	657,747	Aug. 28	2974	679	92	1664
Fence-post extractor	M. D. Cummings	654,786	July 31	4022	905	92	874
Fence-post. Metal	W. McCloskey	657,128	Sept. 4	97	23	92	1821
Fence spacer-bar. Wire	S. Northrup	658,671	Sept. 25	3019	673	92	2467
Fence tightener. Wire	O. L. Brown	658,690	Sept. 25	3007	683	92	2476
Fence tool. Wire	A. E. Blashill	655,180	Aug. 7	23	5	92	1045
Fence-weaving machine. Wire	R. H. Bloomer	658,420	Sept. 25	2570	570	92	2377
Fence. Wire	P. A. Reid	655,307	Aug. 7	254	58	92	1091
Fence. Wire							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fence-wire lock	E. L. Froggatt	658,082	July 3	648	154	92	131
Fencing machine. Wire-	W. Edenborn	658,339	July 10	1175	280	92	245
Fender: *See* Car-fender. Corn and cotton fender. Cultivator-fender. Fireplace-fender. Wheel-fender.							
Fertilizer and making same	E. Richter	658,021	Sept. 18	1867	.....	92	2214
Fertilizer-distributer	W. A. Breeden	655,048	July 31	4517	1018	92	981
Fertilizer-distributer	E. Oubre	655,510	Aug. 7	606	137	92	1159
Fertilizers. Apparatus for making	J. F. Bussells	656,595	Aug. 21	2723	624	92	1602
Fiber-forming machine	C. M. and O. C. Terrell	657,206	Sept. 4	252	54, 55	92	1853
Fibrous material. Metal-coated	J. H. Robertson	658,887	July 17	2204	.....	92	468
Fifth-wheel	H. C. Fouts	657,406	Sept. 4	651	136	92	1931
Fifth-wheel	W. S. Frazier, Jr	658,361	Sept. 25	2459	543	92	2356
Fifth-wheel	A. Kimble	654,460	July 24	3405	766	92	735
Fifth-wheel	N. C. Smith	655,836	Aug. 14	1292	297	92	1306
Fifth-wheel	J. A. Spangler	657,681	Sept. 11	1240	261	92	2071
Fifth-wheel	H. C. Swan	653,974	July 17	2366	545	92	499
Fifth-wheel	C. L. Townsend	656,332	Aug. 21	2232	513	92	1503
Fifth-wheel	F. E. Wilcox	657,231	Sept. 4	308	66	92	1854
Fifth-wheel. Vehicle	J. G. MacPherson	655,256	Aug. 7	153	35	92	1070
File. Bill-	J. S. Sammons	657,455	Sept. 4	737	158	92	1946
File-box	L. E. Reynolds	655,799	Aug. 14	1217	279	92	1291
File-cabinets. Means for operating	C. Schroeder	655,020	July 31	4466	1007	92	971
File-case and index. Combined	I. L. Unterbrink	658,030	Sept. 18	1883	407	92	2217
File. Document-	J. Hilbert	653,239	July 10	964	231	92	206
File for papers, sheet-music, &c	A. M. Kolderup	658,549	Sept. 25	2782	617	92	2419
File for proof, copy, &c	C. E. N. Lancaster	657,317	Sept. 4	480	101	92	1896
File. Letter-	I. E. Rockwell	655,372	Aug. 7	377	82	92	1112
File. Memorandum-	W. L. Smith	655,124	July 31	4647	1048	92	1006
Filling-machine	H. A. and R. C. White	656,278	Aug. 21	2129	486 / 487	92	1483
Film drier. Roll-	C. W. H. Smithers	655,602	Aug. 7	944	214	92	1225
Filter	T. H. Boyer	657,851	Sept. 11	1536	330	92	2132
Filter	J. Davis	657,158	Sept. 4	159	36	92	1833
Filter	W. Jandus	652,966	July 3	452	106 / 107	92	91
Filter	O. H. Jewell	653,737	July 17	1930	442	92	416
Filter	W. B. Lindsay and W. E. Tonner	658,379	Sept. 25	2499	552 / 553	92	2363
Filter	W. Lorey	653,421	July 10	1309	310 / 311	92	271
Filter	R. J. McNally	654,479	July 24	3442	776	92	742
Filter	W. Paterson	656,043	Aug. 14	1693	390	92	1384
Filter	J. Posch	656,212	Aug. 21	2003	462	92	1460
Filter	J. Schinneller	656,376	Aug. 21	2313	530	92	1519
Filter	H. B. and J. S. Watson and T. C. Billetop.	655,841	Aug. 14	1302	299	92	1307
Filter	J. E. Williamson	653,160	July 3	801	189	92	160
Filter	W. G. Wuichet	654,775	July 31	4002	900	92	870
Filter	J. F. Ziegler	654,043	July 17	2469	566	92	519
Filter. Ale or beer	A. E. Feroe	654,788	July 31	4025	906 / 907	92	874
Filter barrel or tank	J. C. Wallace	653,631	July 10	1715	396	92	357
Filter. Granular-bed	R. T. Weaver	653,752	July 17	1970	449 / 450	92	424
Filter. Metallurgical	F. H. Long	653,684	July 17	1882	419	92	398
Filter-press plate	J. E. Turney	657,028	Sept. 11	1130	237	92	2050
Filter. Water-	S. M. Boyer	653,500	July 10	1459	340 / 341	92	302
Filter. Water-	A. G. Sheak	652,927	July 3	332	83	92	67
Filter. Water-	E. F. Stewart	654,033	July 17	2452	563	92	516
Filters to faucets, &c. Device for attaching	J. Ellis	653,002	July 3	513	122	92	104
Filtering apparatus	W. H. Barr	654,592	July 31	3637	830	92	796
Filtering apparatus	M. Cole	654,783	July 31	4017	904	92	873
Filtering material	N. Jacobsohn	653,809	July 17	2066	470	92	442
Filtering material	N. Lanser	656,552	Aug. 21	2633	.....	92	1581
Filtration apparatus	J. E. Williamson	657,146	Sept. 4	126	30	92	1826
Finger-bar adjusting device	W. D. Myers	653,031	July 3	564	132	92	113
Finger-ring	G. Kautzmann	657,776	Sept. 11	1404	297	92	2104
Firearm	W. V. Bléha	657,052	Aug. 28	3573	823	92	1779
Firearm	S. A. Huntley	654,895	July 31	4247	953 / 954 / 955	92	923
Firearm	J. C. Wilkin	654,336	July 24	3171	711	92	683
Firearm	J. L. Copping and G. D. Treece	657,918	Sept. 18	1660	358	92	2170
Firearm. Magazine-	E. B. Tolman	656,867	Aug. 28	3242	738	92	1716
Firearm rear sight	M. Bye	658,314	Sept. 18	2363	522	92	2311
Firearm safety mechanism. Double-action-	S. E. Fischer	658,708	Sept. 25	3088	688	92	2479
Firearm-sight	F. N. Barnett	653,498	July 10	1455	340	92	302
Fire-escape	R. M. Boody	654,705	July 31	3860	870	92	841
Fire-escape	T. T. Brown	656,507	Aug. 21	2545	585	92	1564
Fire-escape	C. L. Buddenbohn and W. Speer	657,641	Sept. 11	1148	241	92	2053
Fire-escape	R. D. Burchill	654,780	July 31	4012	903	92	872
Fire-escape	P. P. Doell	654,787	July 31	4023	905	92	874
Fire-escape	C. O. Dutton	655,923	Aug. 14	1446	332	92	1335
Fire-escape	C. R. Harris	657,735	Sept. 11	1338	292 / 293	92	2090
Fire-escape	F. W. Nebelthau	654,482	July 24	3447	777	92	743
Fire-escape	M. Rinn	654,415	July 24	3319	744	92	716
Fire-escape	E. T. Ryan	654,359	July 24	3210	719	92	692
Fire-escape	J. M. Swift	658,657	Sept. 25	3046	678	92	2472
Fire-escape. Portable	J. C. Scott	656,732	Aug. 28	2947	673	92	1660
Fire-extinguisher	A. C. Badger	656,873	Aug. 28	3258	740	92	1718
Fire-extinguisher	J. Braunwalder	655,599	Aug. 7	776	182	92	1191
Fire extinguisher and alarm	S. Haltene	655,776	Aug. 14	1160	265	92	1278

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fire-extinguisher. Chemical	G. W. Crout, Jr	657,813	Sept. 11	1468	312 / 313	92	2118
Fire-extinguishing apparatus. Dry-pipe	J. H. Derby	656,837	Aug. 28	3168	717	92	1702
Fire-extinguishing apparatus. Electric-current-grounding device for	W. A. Dennett	654,188	July 24	2689	612	92	582
Fire-extinguishing compound	J. Tombeur	657,970	Sept. 18	1787	.....	92	2198
Fire-hose	M. Relling	658,586	Sept. 25	2802	634	92	2436
Fire-hose from suitable sources. Means for automatically supplying water to	F. B. Powers	654,413	July 24	3316	748	92	716
Fire-hydrant	R. Hughes	655,781	Aug. 14	1174	268	92	1281
Firemen's hose. Play-pipe for	E. A. Whitaker	655,142	July 31	4674	1054	92	1011
Fireplace-fender	T. J. Russell	652,925	July 3	330	82	92	66
Fire-pot lining	J. F. Hollings	658,546	Sept. 25	2775	615	92	2418
Fireproof-arch center	G. B. Waite	655,426	Aug. 7	473	105	92	1132
Fireproof coverings for walls or ceilings. Machine for making	P. Ryan	654,024	July 17	2435	559 / 560	92	513
Fireproof door	J. W. Rapp	653,400	July 10	1276	304	92	265
Fireproof shutter	E. F. Verdel and F. L. Saino	653,976	July 17	2368	545	92	499
Fireproof window	A. Niedermeyer	654,273	July 24	3048	684	92	660
Fireproof window	F. Voigtmann and S. H. Pomeroy	657,996	Sept. 18	1880	395	92	2206
Fire-shutter	P. Ebner	655,965	Aug. 14	1540	355	92	1353
Fish. Curing and smoking	H. E. Kirby	657,877	Sept. 11	1580	341	92	2141
Fish-hook	C. Bew	657,387	Sept. 4	617	129	92	1924
Fish-line sinker	T. W. Fiers	653,020	July 3	547	128	92	109
Fish-trap	J. O. Sharpless	657,460	Sept. 4	745	159	92	1948
Fishing device. Automatic	G. Cook	657,518	Sept. 11	942	198	92	2013
Fishing-float	L. P. Gibson	657,407	Sept. 4	652	136	92	1931
Fishing-pole attachment	F. J. Ditchey	655,363	Aug. 7	363	79	92	1110
Fishing-tackle spoon-hook	G. H. Bacon	653,204	July 10	908	219	92	196
Flagstaff-bracket	E. D. Bates	655,651	Aug. 14	1501	345	92	1345
Flanged tube	F. W. Barthels and W. Schaefer	653,280	July 10	1058	253	92	224
Flash-light system	M. Wright	654,821	July 31	4089	919 / 920	92	890
Flask: *See* Molder's flask.							
Flat-iron holder	R. K. Troy	654,368	July 24	3233	724	92	698
Flax cleaning and breaking machine	T. R. C. Crowell	653,663	July 17	1799	412	92	391
Flax scutching and cleaning machinery	E. J. De Courcy and R. Crawford	654,955	July 31	4346	978	92	944
Flax-straw. Apparatus for use in treating	C. Wetherwax	655,174	July 31	4737	1065	92	1023
Floor-covering	E. Berliner	656,162	Aug. 21	1918	440	92	1444
Floor-covering	E. Berliner	656,163	Aug. 21	1920	440	92	1444
Flooring	F. Gude	654,450	July 24	3387	762	92	731
Flooring-clamp	A. L. Stowell and A. H. Rounds	654,865	July 24	3228	723	92	690
Flooring. Sheet-metal	F. Voigtmann	657,995	Sept. 18	1890	395	92	2206
Flour-bolter	E. T. Butler	658,700	Sept. 25	3069	683	92	2476
Flower-stand	W. F. Kessler	655,715	Aug. 14	1028	238	92	1252
Flue	W. A. Gay	655,619	Aug. 7	812	189	92	1197
Flue-cleaner	B. Peterson	654,488	July 24	3454	779	92	744
Flue-cleaner. Steam-jet	H. I. Coggeshall	656,945	Aug. 28	3392	774	92	1748
Flue or chimney cap	F. Fickenscher	653,732	July 17	1920	441	92	414
Flue-scraper	L. V. Tucker	655,313	Aug. 7	262	59	92	1093
Flue-stopper	W. E. Sykes	654,556	July 24	3563	804	92	764
Flues for furnaces, &c. Means for cleaning	W. T. Van Dorn	658,477	Sept. 25	2660	591	92	2394
Fluid-cooler	H. J. Richard and W. D. Lennox	653,884	July 17	2197	500	92	467
Fluid heating and sterilizing apparatus	A. G. Waterhouse and J. S. Forbes	655,665	Aug. 7	948	215	92	1225
Fluid-pressure motor	F. W. Flint	654,721	July 31	3893	878 / 879	92	848
Fluid-pressure-regulating device	T. J. Hogan	654,560	July 24	3582	808 / 809	92	768
Fluid under pressure. Apparatus for actuating	R. Conrader	657,917	Sept. 18	1653	357 / 358	92	2168
Fluid under pressure. Means for transmitting	W. S. Halsey	653,802	July 17	2056	468	92	440
Flume. Knockdown	A. L. Adams	658,332	Sept. 25	2405	532	92	2345
Fluoro-hydrocarbon. Aromatic	F. Valentiner	656,229	Aug. 21	2045	.....	92	1468
Flusher. Automatic	I. P. Clarke	658,139	Sept. 18	2062	449	92	2251
Flushing apparatus	W. P. Hastings	653,005	July 3	518	123	92	104
Flushing apparatus. Automatic	A. W. Barton	657,278	Sept. 4	402	84	92	1881
Flushing apparatus for closets, &c	H. C. Montgomery	658,453	Sept. 25	2616	580	92	2386
Fly-catcher	G. Senior	656,378	Aug. 21	2318	531	92	1520
Fly-screen	J. Mueller	653,584	July 10	1611	377	92	334
Folding box	H. M. Hoover	656,250	Aug. 21	2084	477	92	1475
Folding box	E. H. Overton	655,939	Aug. 14	1479	340	92	1340
Folding box or package	A. W. Beers	657,688	Sept. 11	1250	264 / 265	92	2073
Folding chair	W. M. Norcross	657,745	Sept. 11	1356	287	92	2095
Folding chair. Portable	A. L. Levin	656,583	Aug. 21	2695	618	92	1596
Folding-machine	G. F. Pfeiffer	658,463	Sept. 25	2631	585 / 586	92	2389
Folding-machine packing device	H. K. King	656,898	Aug. 28	3311	755	92	1727
Folding table	A. T. Smith	653,851	July 17	2138	486	92	454
Food for cattle, &c. Apparatus for forming cakes of	C. Luzatto	657,607	Sept. 11	1093	228	92	2043
Foods from blood. Making	J. W. C. Hamilton	653,956	July 17	2331	.....	92	492
Force-blast elevator	A. Humberger	654,262	July 24	3002	673	92	650
Forge. Portable	C. R. Harper	654,831	July 31	4112	925	92	895
Forges. Blast-producing apparatus for	N. Tingley	655,591	Aug. 7	758	178	92	1187
Forgings. Apparatus for handling	J. Lanz	655,719	Aug. 14	1040	240 / 241	92	1254
Forgings. Preparing and handling	J. Lanz	655,720	Aug. 14	1044	241	92	1255
Fork: *See* Pitchfork.							
Formaldehyde vapors. Producing	J. J. A. Trillat	656,061	Aug. 14	1720	307	92	1390
Fountain: *See* Soda-fountain.							
Frame: *See* Picture-frame. Quilting-frame. Striking-bag frame. Tire-supporting frame.							
Friction-wheel	C. W. Hunt	658,444	Sept. 25	2604	577	92	2383

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Frogs, switches, &c. Spring-box for	W. Wharton, Jr	654,089	July 17	2464	565	92	518
Fruit-gatherer	J. Keefer and H. H. Karr	657,118	Sept. 4	83	20	92	1818
Fruit or vegetable cutter	I. Beck	652,740	July 3	5	2	92	4
Fuel. Artificial composite	M. C. Fitts and E. K. Zingg	655,215	Aug. 7	71		92	1055
Fuel. Converting earth or soil into	G. Montag and F. Kresser	655,102	July 31	4614		92	1000
Fuel-economizer	J. H. Hobart	652,895	July 3	279	68	92	56
Fuel. Feeding pulverized	F. H. Lewis	658,069	Sept. 18	1941	422	92	2228
Fuel injector and burner	G. White	657,579	Sept. 11	1068	215	92	2032
Fuel. Machine for making straw or peat	H. Bunker and G. E. Horn	657,157	Sept. 4	156	35	92	1892
Fuel. Preparing	W. M. Gillam	658,635	Sept. 25	2955		92	2453
Fuel preparing and feeding apparatus	A. A. Day	657,398	Sept. 4	636	133	92	1928
Fuel preparing and feeding apparatus	A. A. Day	657,399	Sept. 4	637	133	92	1928
Fuel. Producing artificial	W. P. Taggart	655,282	Aug. 7	209		92	1082
Fuel to furnaces, &c. Apparatus for feeding comminuted	J. F. Hay	657,537	Sept. 11	968	199	92	2018
Fumigating device	C. T. Kingzett	653,680	July 17	1827	418	92	397
Funnel. Telltale	W. C. Belden	657,080	Sept. 4	13	3	92	1803
Fur-whipping machine	P. R. Weisse	653,276	July 10	1054	252	92	223
Furnace: *See* Blast and cupola furnace. Boiler-furnace. Calcining-furnace. Calcining or roasting furnace. Combustion-furnace. Electric furnace. Gas-furnace. Heater-furnace. Heating-furnace. Hot-air furnace. Kiln-furnace. Liquid-fuel furnace. Metallurgical furnace. Muffle-furnace. Open-hearth furnace. Ore-roasting furnace. Pair and sheet furnace. Puddling-furnace. Retort-furnace. Reverberatory furnace. Roasting-furnace. Smoke-consuming furnace. Smokeless furnace. Smokeless coal-burning furnace.							
Furnace	A. C. Adams and N. C. Knutson	653,434	July 10	1331	316	92	276
Furnace	F. Clayton	655,759	Aug. 14	1127	258	92	1272
Furnace	V. E. Edwards	653,504	July 10	1468	344	92	304
Furnace	V. E. Edwards and J. B. George	653,508	July 10	1476	345	92	306
Furnace	D. S. McGregor and S. B. Locklin	654,175	July 24	2760	627	92	596
Furnace	C. H. Morgan	653,480	July 10	1426	334 335	92	295
Furnace	T. E. Puddington	653,592	July 10	1621	379	92	337
Furnace	J. N. Quinn	653,118	July 3	726	171	92	145
Furnace	J. G. Sanderson	657,679	Sept. 11	1237	261 262	92	2070
Furnace	R. Schorr	655,418	Aug. 7	454	101	92	1128
Furnace	F. R. Sellman	653,533	July 10	1528	355 356	92	318
Furnace	W. Smethurst	657,188	Sept. 4	111	26	92	1824
Furnace	R. Zeiller	653,433	July 10	1330	316	92	276
Furnace	C. C. Nott and F. G. Ward	657,612	Sept. 11	1101	230	92	2044
Furnace-door	J. F. Lester and L. A. Dean	658,658	Sept. 25	2993	666	92	2461
Furnace for burning refuse material	J. Mactear	654,467	July 24	3416	769	92	737
Furnace for heating and treating gaseous mixtures	F. N. Spear	655,464	Aug. 7	540	121	92	1146
Furnace fuel-feeder	A. W. Griffith	654,538	July 24	3536	797	92	760
Furnace fuel-feeding mechanism	H. Truesdell	655,663	Aug. 7	945	214	92	1225
Furnace-grate	W. Kennedy	656,461	Aug. 21	2468	507 508	92	1548
Furnace hoisting apparatus. Blasting-	J. Wedgewood	657,803	Sept. 11	1454	308	92	2115
Furnace or stove grate	C. S. Chapman	654,516	July 24	3501	790 791	92	752
Furnace-shield	T. Morrison	653,110	July 3	715	168	92	143
Furnaces. Apparatus for feeding stock to	W. S. Horry	655,779	Aug. 14	1168	267	92	1280
Furnaces. Control of electric	C. H. Morgan	653,481	July 10	1428	335	92	296
Furnaces. Mechanism for feeding billets from the charging to the delivery ends of	J. Tyler	656,307	Aug. 21	2189	499	92	1495
Furnaces. Oil and gas burner for	H. E. Parson	654,485	July 24	3451	778	92	743
Furnaces. Spraying attachment for steam-boiler	E. A. Seaburg	655,021	July 31	4467	1008	92	971
Furniture-spring	J. B. Conrad	656,391	Aug. 21	2340	538	92	1525
Furniture. Upholstered	R. Hundhausen	657,414	Sept. 4	662	138	92	1933
Fuse	L. A. Keith	655,243	Aug. 7	153	29	92	1066
Fuse-block	T. H. Brady	653,841	July 17	2123	482	92	452
Fuse. Electric	A. L. Stevens	654,187	July 24	2819	637	92	611
Fuse. Electrical safety-	E. Scriba	654,285	July 24	3068	688 689	92	663
Fuse for explosive projectiles	T. R. R. Ashton	654,108	July 17	2573	591 592	92	589
Fuse. Projectile percussion-	F. A. Coté	652,748	July 3	17	5	92	6
Fuses or current-arresters. Manufacture of electrical							
Gage: *See* Axle-gage. Raker-gage. Saw-gage. Shingle-gage. Tempering-gage. Track-gage. Tympan-gage. Water-gage. Work-gage.							
Gage for use with rules	L. J. Gamble	653,229	July 10	949	229	92	203
Gage-illuminator	N. A. Christensen	657,331	Sept. 4	505	105	92	1901
Gait-straightening attachment	J. W. Sutton	657,798	Sept. 11	1446	306	92	2114
Galvanic battery	A. Heil	653,770	July 17	1988	454	92	427
Galvanizing apparatus	E. I. Braddock	656,500	Aug. 21	2334	583	92	1562
Galvanizing apparatus	E. I. Braddock	656,501	Aug. 21	2335	583	92	1562
Galvanizing apparatus	E. I. Braddock	656,502	Aug. 21	2337	583	92	1562
Galvanizing apparatus	J. W. Batdorf	652,880	July 3	255	62	92	50
Game	M. Bray	656,877	Aug. 28	3267	741	92	1720
Game	G. W. Krebs	658,319	Sept. 18	2371	524	92	2312
Game	A. C. B. Macdonald	653,303	July 10	1099	262	92	232

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Game	R. E. Wickes	658,197	Sept. 18	2166	473 474	92	2272
Game apparatus	G. E. Allen	657,233	Sept. 4	311	66	92	1864
Game apparatus	H. A. Delters and E. L. Bill	657,522	Sept. 11	948	195	92	2014
Game apparatus	W. H. Eynon and D. Duckett	655,768	Aug. 14	1140	262	92	1275
Game-board	W. H. Hillyer	653,065	July 3	652	155	92	132
Game-board back-stop	H. L. Haskell	654,063	July 17	2505	576	92	526
Game-counter	L. G. Kurtzeborn	658,517	July 10	1489	347	92	306
Game. Educational	J. R. Hughes	656,117	Aug. 14	1841	424	92	1416
Game or puzzle	T. R. Geisel	656,886	Aug. 28	3288	748	92	1724
Game or toy	E. H. Allison	655,667	Aug. 7	951	215	92	1226
Game-scoring apparatus	A. M. Goulding	655,862	Aug. 14	1332	307	92	1318
Garbage-burner. Domestic	C. R. Harris	656,404	Aug. 21	2368	544	92	1529
Garment-clasp	H. A. Maxwell	655,882	Aug. 14	1371	316	92	1320
Garment-fastener	F. B. Mathewson	655,982	Aug. 14	1581	364	92	1361
Garment-fastener	F. R. White	652,939	July 3	375	90	92	76
Garment-fastener	I. P. Doolittle	655,856	Aug. 14	1324	308	92	1311
Garment-hook	F. Macey	654,465	July 24	3414	769	92	737
Garment-hook	L. V. Stickney	657,015	Aug. 28	3504	800	92	1764
Garment-hook	J. Miotke	656,467	Aug. 21	2480	570	92	1551
Garment-stretcher	L. W. Ballard	658,731	Sept. 25	3134	696	92	2489
Garment-support	R. Gorton	653,447	July 10	1354	322	92	281
Garment-supporter	R. Gorton	654,727	July 31	3904	881 882	92	850
Garment-supporter	H. H. Jones	654,644	July 31	3757	847	92	820
Garment-supporter	J. D. Lewis	653,747	July 17	1951	445	92	420
Garment-supporter	O. Warlich	652,986	July 3	489	115	92	99
Garment-supporter	J. V. Washburne	657,302	Sept. 4	440	93	92	1889
Garment-supporting device	G. R. Perry	653,260	July 10	1015	243	92	216
Garments, suspenders, &c. Fastener for	W. S. Richardson	653,315	July 10	1115	266	92	236
Garter	W. M. Deacon	653,220	July 10	933	225	92	200
Gas-battery	A. Plecher	655,110	July 31	4629	1044	92	1002
Gas-burner	S. Bernstein	653,464	July 10	1381	328	92	286
Gas-burner	M. B. Carmody	654,944	July 31	4328	974	92	940
Gas-burner	J. P. Farmer	653,571	July 10	1595	371	92	331
Gas-burner	H. E. Shaffer	654,682	July 31	3810	860	92	890
Gas-burner	J. E. Tatham	655,527	Aug. 7	631	143	92	1164
Gas-burner	O. Wiederhold	658,099	Sept. 18	1998	435	92	2228
Gas burner. Acetylene-	D. Genese	653,347	July 10	1187	283	92	247
Gas-burner-igniting device	C. L. Burger	656,510	Aug. 21	2359	586	92	1565
Gas-burner. Incandescent	L. T. Alton	655,042	July 31	4503	1015	92	977
Gas-burner. Self-igniting	R. Beese	656,385	Aug. 21	2331	585	92	1523
Gas cleansing and cooling apparatus	L. Hirt	652,773	July 3	66	16	92	14
Gas. Composition of matter for making	C. H. Worsnop	656,288	Aug. 21	2070		92	1472
Gas-engine	W. E. Cary	657,810	Sept. 11	1463	311	92	2117
Gas-engine	C. Hautier	656,020	Aug. 14	1659	381	92	1377
Gas-engine	F. C. Olin	653,876	July 17	2177	496 497	92	463
Gas-engine	T. B. Royse	653,040	July 3	575	135	92	116
Gas-engine	C. W. Shartle and C. E. Miller	658,594	Sept. 25	2875	637 638	92	2488
Gas-engine	H. Smith	657,576	Sept. 11	1033	215	92	2031
Gas-engine	E. C. Wood	655,473	Aug. 7	557	124	92	1149
Gas engine. Explosive-	G. W. Starr and J. H. Cogswell	657,140	Sept. 4	113	27, 28	92	1824
Gas-engine. Multiple-cylinder	R. A. Frisble	656,539	Aug. 21	2610	601	92	1577
Gas-engine. Rear-compression	G. E. Hoyt	657,934	Sept. 18	1722	370	92	2186
Gas-furnace. Regenerative	E. Derval	653,793	July 17	2041	465	92	437
Gas-generating apparatus	E. H. Whitlock and A. W. Burwell	653,495	July 10	1448	339	92	300
Gas-generating apparatus. Acetylene-	C. W. Metcalf	654,350	July 24	3192	715	92	688
Gas-generating device. Gasolene-	S. Joseph	656,892	Aug. 28	3297	749	92	1725
Gas-generator	G. Woods	657,376	Sept. 4	591	124	92	1919
Gas generator. Acetylene-	C. A. Bacon	653,373	July 10	1232	294	92	257
Gas generator. Acetylene-	T. E. E. Bartlett	656,008	Aug. 14	1630	376	92	1370
Gas generator. Acetylene-	G. A. Blauvelt and D. W. Cranston	657,209	Sept. 4	259	56	92	1855
Gas generator. Acetylene-	B. F. Bowling	652,883	July 3	260	62, 63	92	51
Gas generator. Acetylene-	W. M. Crow	657,190	Sept. 4	220	49	92	1846
Gas generator. Acetylene-	A. C. Einstein	655,300	Aug. 7	243	55	92	1089
Gas generator. Acetylene-	H. E. Gifford	654,968	July 31	4370	989	92	950
Gas generator. Acetylene-	I. L. Harris	655,487	Aug. 7	577	129	92	1153
Gas generator. Acetylene-	I. L. Harris	658,480	Sept. 25	2998	676	92	2382
Gas generator. Acetylene-	G. Hartman	654,731	July 31	3911	883	92	851
Gas generator. Acetylene-	A. Husson	658,204	Sept. 18	2284	502	92	2296
Gas generator. Acetylene-	A. L. Kliff	657,540	Sept. 11	988	203	92	2022
Gas generator. Acetylene-	J. E Landrum, Sr., G. F. Dillon, and J. E. Landrum, Jr.	653,099	July 3	692	163	92	140
Gas generator. Acetylene-	E. Lartigne	657,663	Sept. 11	1200	250	92	2064
Gas generator. Acetylene-	J. Lawrence	655,446	Aug. 7	516	115	92	1140
Gas generator. Acetylene-	J. W. Lawrence	655,632	Aug. 7	840	196 197	92	1203
Gas generator. Acetylene-	E. S. Martindale	654,069	July 17	2512	578	92	527
Gas generator. Acetylene-	W. H. Mitchell and W. A. Armstrong.	656,560	Aug. 21	2643	610	92	1583
Gas generator. Acetylene-	J. A. Mosher	652,974	July 3	465	109 110	92	93
Gas generator. Acetylene-	A. Post and W. M. O'Brien	655,732	Aug. 14	1066	246	92	1260
Gas generator. Acetylene-	V. Powers	657,831	Sept. 11	1501	321	92	2125
Gas generator. Acetylene-	H. L. Pyle	657,957	Sept. 18	1767	381	92	2194
Gas generator. Acetylene-	H. B. Robinson	654,491	July 24	3459	780	92	745
Gas generator. Acetylene-	E. M. Rodenberger and J. S. Seely	658,677	Sept. 25	3027	674	92	2468
Gas generator. Acetylene-	W. E. Scofield	657 364	Sept. 4	508	119	92	1914
Gas generator. Acetylene-	E. F. Smith	655,310	Aug. 7	258	58	92	1092
Gas generator. Acetylene-	E. S. Titus	656,864	Aug. 28	3220	730	92	1714
Gas generator. Acetylene-	C. Verwer	655,287	Aug. 7	215	48	92	1083
Gas generator. Acetylene-	J. W. Weeks	658,033	Sept. 18	1886	408	92	2217
Gas generator. Acetylene-	P. Wiens	658,691	Sept. 25	3052	690	92	2473
Gas generator. Acetylene-	F. Windham and E. Fry	654,084	July 17	2535	584	92	592

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gas generator. Acetylene-	J. E. Wormald and O. W. Ames	657,150	Sept. 4	140	32,33	92	1829
Gas generators. Pressure safety device for acetylene-	F. H. Harriman	655,623	Aug. 7	820	191	92	1199
Gas-holder	T. W. Marsden	657,173	Sept. 4	184	42	92	1838
Gas-lighter. Automatic	E. C. Jones and M. M. Barrett	656,118	Aug. 14	1843	425	92	1417
Gas-lighter. Automatic	K. von Victinghoff-Scheel	657,994	Sept. 18	1829	395	92	2206
Gas-lighter. Electric	J. Y. Parke	654,355	July 24	3208	718	92	691
Gas-lighter. Electric	H. de Thiersant and H. J. Norballe	658,299	Sept. 18	2339	516	92	2307
Gas-lighting burner. Incandescent	W. T. Sugg	654,927	July 31	4304	968	92	935
Gas machine. Acetylene-	W. J. Baulieu	653,651	July 17	1788	408	92	388
Gas. Making acetylene	E. S. Titus	656,863	Aug. 28	3226	735	92	1714
Gas-mantles. Reinforcing incandescent	O. M. Thowless	657,142	Sept. 4	119		92	1825
Gas-manufacturing apparatus	H. Riché	658,589	Sept. 25	2868	{635 636	{92	2137
Gas-manufacturing apparatus. Illuminating-	E. R. Besemfelder	653,015	July 3	537	126	92	107
Gas-meter	A. Ehebald	654,809	July 24	3128	699	92	674
Gas-meter	A. Henning	658,643	Sept. 25	2967	660	92	2455
Gas-meter. Coin-freed	B. Paterson	656,042	Aug. 14	1660	389	92	1388
Gas-meter. Prepayment	E. F. Griffiths	655,438	Aug. 7	499	112	92	1137
Gas-motor	C. L. Mayhew	652,909	July 3	300	74, 75	92	60
Gas or gasolene engine	J. J. Simmonds	658,127	Sept. 18	2042	{445 446	{92	2247
Gas or petroleum motor	J. Rambaud	654,356	July 24	3206	718	92	691
Gas-producer	E. A. W. Jefferies	654,456	July 24	3401	765	92	734
Gas-producer	E. A. W. Jefferies	654,457	July 24	3402	765	92	734
Gas-producer	G. W. Shem	658,663	Sept. 25	3041	677	92	2471
Gas-producer	G. R. Hislop	655,931	Aug. 14	1458	332	92	1337
Gas-producer charging-hopper	E. J. Duff	656,601	Aug. 21	2731	626	92	1604
Gas-purifying apparatus	J. W. Hentz	656,136	Aug. 14	1871	430	92	1422
Gas-regulating tip for burners	N. Sleeman	653,535	July 10	1536	357	92	319
Gas-regulator	A. H. Elliott	654,238	July 24	2975	668	92	644
Gas-regulator. Automatic	C. J. Murphy	654,912	July 31	4278	961	92	980
Gas-screen	J. A. Mosher and W. S. Hamm	658,569	Sept. 25	2814	625	92	2426
Gas-strainer	W. Webber	657,308	Sept. 4	441	93, 94	92	1889
Gas-vending machine. Coin-controlled	L. Pierron	657,004	Aug. 28	3489		92	1762
Gases. Igniting-body for automatic ignition of combustible	C. H. Merwarth. (Reissue)	11,858	Sept. 25	3173	706	92	2496
Gasket or packing	F. J. Sproehnle	653,971	July 17	2361	{543 544	{92	498
Gasolene-engine	S. Messerer	654,996	July 31	4426	{997 998	{92	902
Gasolene-motor	J. F. Barnes	658,228	Sept. 18	2223	{486 487	{92	2284
Gate	T. Beard	653,961	July 17	2374	576	92	500
Gate	S. O. Campbell	656,512	Aug. 21	2554	587	92	1566
Gate	G. E. Champion	653,213	July 10	921	223	92	198
Gate	H. F. Condon	656,390	Aug. 21	2340	537	92	1525
Gate	G. O. Culver	657,395	Sept. 4	630	132	92	1927
Gate	H. G. Davis	656,134	Aug. 14	1869	430	92	1421
Gate	W. H. Dickie	657,523	Sept. 11	949	195	92	2014
Gate	F. A. Englebright	652,760	July 3	40	10	92	9
Gate	T. Ferguson and G. B. Brace. (Reissue.)	11,854	Sept. 11	1632	352	92	2153
Gate	J. F. Glidden	655,551	Aug. 7	669	153	92	1172
Gate	P. Lahr	653,025	July 3	553	120	92	110
Gate	P. McCollum	653,392	July 10	1265	301	92	263
Gate	D. Peters	653,087	July 3	572	134	92	115
Gate	J. N. Salmon	655,374	Aug. 7	380	82	92	1113
Gate	W. N. Simpkins	657,462	Sept. 4	747	159	92	1948
Gate	W. A. Whitcomb	656,277	Aug. 21	2127	485	92	1483
Gate	W. R. White	654,210	July 24	2914	654	92	631
Gate	C. H. Williams	657,719	Sept. 11	1307	276	92	2085
Gate	G. E. Whitney	658,196	Sept. 18	2165	473	92	2272
Gate	W. R. Pitt	655,891	Aug. 14	1382	319	92	1322
Gate-houses. Endless screen for	W. G. Cockerill	656,812	Aug. 28	3095	703	92	1688
Gate-operating mechanism	J. Sommer	656,304	Aug. 21	2184	{498 499	{92	1494
Gates at predetermined intervals. Appliance for automatically actuating farm-	C. J. Coleman	657,855	Sept. 11	1545	331	92	2135
Gear-cutting machine	C. H. Blomstrom	657,057	Aug. 28	3584	826	92	1781
Gear. Frictional driving	C. H. Blomstrom	657,056	Aug. 28	3581	{825 826	{92	1780
Gear mechanism	F. Kepp	653,350	July 10	1190	{283 284	{92	248
Gear mechanism. Reversing	E. S. Sloan	657,464	Sept. 4	751	160	92	1949
Gear-molding machine	E. Lang	658,655	Sept. 25	2987	665	92	2459
Gear. Reversing	E. von Trautvetter	658,743	Sept. 25	3164	704	92	2495
Gear. Variable-speed	H. Bilgram	656,166	Aug. 21	1926	{441 442	{92	1446
Gear-wheel transmission	C. A. Tripp	655,133	July 31	4660	1050	92	1008
Geared wheels. Machine for cutting teeth of	O. A. Packer	658,116	Sept. 18	2027	442	92	2244
Gearing. Changeable-speed	G. W. Waltenbaugh	653,632	July 10	1716	396	92	357
Gearing. Screw	G. W. Waltenbaugh	653,633	July 10	1721	{396 397	{92	357
Gearing. Variable-speed	C. M. Jones	657,349	Sept. 4	538	111	92	1908
Gearing. Variable-speed							
Gearing. Worm							
Generator: *See* Acetylene-generator. Current-generator. Gas-generator. Pressure-generator. Steam-generator.							
Gin. Saw	B. F. McGaw	656,205	Aug. 21	1998	458	92	1478

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gin-saw cleaner	B. F. McGaw	656,206	Aug. 21	1904	459	92	1459
Gin-saw cleaner	T. H. Nance	653,112	July 3	718	169	92	144
Gin-saw-filing machine	J. A. McGowen	653,358	July 10	1207	287	92	252
Gins. Roller for roller-	J. W. Graves	657,733	Sept. 11	1333	282	92	2089
Glass. Apparatus for producing wire-	J. Locke	656,206	Aug. 21	2171	496	92	1491
Glass articles. Apparatus for forming hollow	J. Haley and H. H. Bridgwater	654,451	July 24	3388	{762 763	{92	731
Glass articles. Machine for manufacturing	F. O'Neill	653,523	July 16	1500	{350 351	{92	311
Glass-blower's machine	C. A. Dunbar	657,097	Sept. 4	46	11	92	1811
Glass-bottle-blowing machine	L. Grote	656,286	Aug. 21	2147	{490 491 492	{92	1487
Glass-bottle-blowing machine	L. Grote	656,322	Aug. 21	2213	506	92	1499
Glass bottles. Making	L. Grote	656,287	Aug. 21	2153	492	92	1488
Glass. Conduit for molten	J. W. Sheppard	653,848	July 17	2182	485	92	454
Glass. Device for casting sheet-	J. W. Sheppard	653,849	July 17	2134	485	92	454
Glass. Device for casting wire-	J. W. Sheppard	653,850	July 17	2136	486	92	454
Glass-finishing machine	C. Z. F. Rott	658,466	Sept. 25	2642	{586 587	{92	2390
Glass grinding and polishing machine. Plate-	D. Beatty	657,724	Sept. 11	1317	{278 279 463	{92	2087
Glass. Machine for molding articles from molten	J. B. Fondu	658,173	Sept. 18	2132	{464 465	{92	2266
Glass-making rolls. Machine for configuring	C. Lambrecht	653,299	July 10	1093	261	92	231
Glass. Manufacture of wire-	J. Locke	656,295	Aug. 21	2160	496	92	1491
Glass-mold	H. W. Heerdt	656,189	Aug. 21	1955	451	92	1454
Glass-mold ring	W. White and T. Robinson	653,463	July 10	1380	327	92	285
Glass-molds. Lock for sectional	E. S. Hart	653,140	July 3	768	181	92	153
Glass of the prismatic type Means for forming sheet-	C. C. Hartung	653,238	July 10	962	231	92	205
Glass or vitreous pipe or tubular bodies. Apparatus for forming	T. B. Howe and C. E. Wetmore	655,235	Aug. 7	109	24, 25	92	1002
Glass-pipe-molding machine	S. Jones	658,088	Sept. 18	1983	432	92	2236
Glass prism-plate	G. Fugman	655,220	Aug. 7	77	17	92	1056
Glass. Prismatic rolled sheet-	C. C. Hartung	655,401	Aug. 7	426	94	92	1122
Glass. Production of marbled surfaces upon	D. Laffan	654,404	July 24	3207	.....	92	712
Glassware and pottery-ware. Mold for pressed	A. R. Grotz. (Reissue)	11,838	July 3	893	215	92	181
Glassware. Machine for spreading blown	A. G. Neville	653,586	July 10	1618	377	92	335
Glassware-manufacturing machine	P. Ebeling	653,412	July 10	1292	{307 308	{92	268
Glove	D. W. Hanna	654,730	July 31	3910	882	92	851
Glove. Dress-	M. Anderson	653,163	July 3	807	191	92	161
Glove-fastener	E. Wainwright	653,427	July 10	1321	314	92	274
Gloves, &c. Fastener for	W. S. Richardson	656,475	Aug. 21	2492	574	92	1553
Glue-cutting apparatus	C. Wolff	654,929	July 31	4307	968	92	936
Glue-heater	F. N. Hastings	655,227	Aug. 7	96	21	92	1060
Glue-pot	F. Kahrs	655,826	Aug. 14	1276	293	92	1308
Glue-spreader	C. E. Francis	655,482	Aug. 7	571	{127 128	{92	1152
Glycerin. Purifying	E. A. Ruch	654,023	July 17	2433	559	92	513
Go-cart	H. Levi	655,090	July 31	4609	1040	92	999
Go-cart. Folding	J. Rosenthal	658,123	Sept. 18	2096	444	92	2246
Gold and silver ores. Treating	H. Hirsching	656,544	Aug. 21	2618	608	92	1579
Gold from cyanid solutions containing the precious metals. Extracting	W. A. Caldecott	654,437	July 24	3362	.....	92	726
Gold-saving apparatus	R. H. Postlethwaite	652,900	July 3	286	71	92	57
Gold solvent for refractory ores	D. Mosher	654,838	July 31	4182	.....	92	898
Golf-club	W. Dunn	656,099	Aug. 14	1806	416	92	1409
Golf-club	L. D. Holden	653,023	July 3	550	129	92	110
Golf-tee	J. E. Newton	654,666	July 31	3791	855	92	827
Golf-tee	W. H. Tyler and G. E. Smith	654,092	July 31	3829	864	92	833
Gong. Alarm-	J. A. Brill	656,436	Aug. 21	2423	{557 558	{92	1540
Governor	H. L. Ide	653,416	July 10	1300	308	92	270
Governor	G. E. and C. W. Miller	653,816	July 17	2078	474	92	444
Governor attachment for electrical apparatus. Speed-	J. H. McGurty	654,752	July 31	3956	891	92	861
Governor. Engine-	P. W. Northey	655,105	July 31	4617	1042	92	1000
Governor for electrical controllers. Speed-	J. H. McGurty	652,856	July 3	221	52	92	44
Governor. Marine-engine	J. Weir	657,208	Sept. 4	258	55	92	1854
Governor mechanism. Engine	C. G. Y. King	653,478	July 10	1421	{333 334	{92	294
Governor. Speed-	C. E. Duryea	655,922	Aug. 14	1444	332	92	1335
Governor. Speed-	C. F. Sleigh	654,332	July 24	3165	709	92	682
Governor. Steam-engine	D. Griffith	657,869	Sept. 11	1569	388	92	2139
Governor. Steam-engine	J. E. Kimble	654,007	July 17	2406	554	92	508
Grading-machine	F. Mertsheimer and J. A. Edson	654,836	July 31	4125	{927 928	{92	897
Grading machine. Road-	R. E. Burke	656,317	Aug. 21	2204	{503 504 505	{92	1498
Graduator	H. Schaffstädt	655,121	July 31	4643	1047	92	1005
Grain-binder	E. W. Jenkins	654,833	July 31	4117	926	92	895
Grain-binder deck	S. K. Dennis	654,232	July 24	2964	665	92	641
Grain-binder needle-operating mechanism	H. B. Sperry	653,405	July 10	1282	305	92	266
Grain-binder needle-operating mechanism	H. B. Sperry	653,406	July 10	1284	305	92	266
Grain-cleaner	J. P. Adams	657,377	Sept. 4	592	{124 125	{92	1920
Grain cleaner and separator	S. R. Culp	654,610	July 31	3675	828	92	804
Grain-drier	J. McDaniel	653,032	July 3	565	{132 133	{92	113
Grain drier and cleaner	C. H. Larsen	658,151	Sept. 18	2081	453	92	2254
Grain-drill	S. Belanger	655,323	Aug. 7	282	63, 64	92	1096

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Grain-drill	C. R. Crain, L. C. Evans, and H. E. Dodson.	654,386	July 24	3260	731	92	704
Grain-drill	C. L. Fowle	654,057	July 17	2493	574	92	524
Grain-drill attachment	W. Falconer	655,334	Aug. 7	302	68	92	1099
Grain-drill disk attachment	S. B. Tolson and A. Schopp	654,037	July 17	2462	565	92	518
Grain dump and elevator	J. Rocke	655,800	Aug. 14	1219	280	92	1291
Grain-sack holder	I. A. Eddy	657,284	Sept. 4	412	86	92	1883
Grain-scourer	J. L. Toliver	654,192	July 24	2896	638 639	92	612
Grain-separator	O. O. Field	656,102	Aug. 14	1814	418	92	1411
Grain-separator	A. Heine	658,109	Sept. 18	2016	439	92	2242
Grain-separator	E. E. McLin	653,777	July 17	1999	457	92	429
Grain-shocking machine	T. A. Wooley and H. Fox	655,748	Aug. 14	1093	252 253	92	1265
Grain-shocking machine	T. A Wooley and H. Fox	656,280	Aug. 21	2138	488	92	1485
Graining machine. Plate	G. Wishart	655,472	Aug. 7	555	123 124	92	1149
Gramophone sound-box	G. K. Cheney	655,195	Aug. 7	33	7	92	1048
Gramophone sound-box	H. S. Montgomery	652,800	July 3	107	26	92	22
Granulating-machine	A. R. Morris	656,297	Aug. 21	2172	496	92	1491
Grape crusher and stemmer	J. S. Philpott	654,389	July 31	4133	930	92	899
Graphite lubricator	E. H. Lunken and H. Ritter	653,027	July 3	558	130	92	112
Graphophone	A. C. Ferguson	653,667	July 17	1804	414	92	392
Graphophone	T. H. Macdonald	654 317	July 24	3142	703	92	678
Graphophone-cylinder	A. N. Petit	657,956	Sept. 18	1796	390	92	2193
Graphophone drive mechanism	O. E. Payne	654,018	July 17	2426	557	92	511
Graphophone-point	J. W. Moyer	658,571	Sept. 25	2816	625	92	2426
Grapple	W. S. Holcombe	656,190	Aug. 21	1966	452	92	1454
Grapple or tongs	G. E. Wilson	654,697	July 31	3849	868	92	838
Grass-board	F. F. Park	657,884	Sept. 11	1594	343	92	2144
Grass-preparing apparatus	G. A. Lowry	654,960	July 31	4405	993	92	957
Grate	W. C. Higgins	655,980	Aug. 14	1456	335	92	1337
Grate	M. V. Scully	654,849	July 31	4154	930	92	904
Grate	J. P. Weber	652,823	July 3	165	39	92	35
Grate	J. H. Mehrtens	654,318	July 24	3143	703	92	678
Grate. Fire	W. G. Harlow	657,239	Sept. 4	320	68	92	1866
Grate-frame	H. H. Hunter	655,086	July 31	4589	1035	92	994
Grate. Rotary	E. Crupe	657,191	Sept. 4	222	49, 50	92	1846
Grater	H. W. Kingsbury	655,492	Aug. 7	584	131	92	1155
Grating. Safety	G. P. Tennant	654,860	July 31	4174	941	92	908
Grave-coping	G. W. Davault	656,630	Aug. 28	2788	637	92	1628
Grazing device. Automatic	J. M. Batz	656,802	Aug. 28	3073	699	92	1683
Grease-spot remover	K. M. Jennings	658,180	Sept. 18	2143	468	92	2268
Greenhouse	J. A. Kramer	657,987	Sept. 18	1815	392	92	2203
Greenhouse construction	S. K. Dennis	654,233	July 24	2965	666	92	641
Grinder	H. W. Bolens	655,753	Aug. 14	1108	255 256	92	1268
Grinding-machine	S. K. Dennis	654,234	July 24	2967	666 667	92	642
Grinding-machine	A. B. Landis	654,313	July 24	3134	701	92	676
Grinding-machine	A. B. Landis	654,314	July 24	3136	701 702	92	676
Grinding-machine	J. H. McElroy	658,575	Sept. 25	2821	626 627	92	2427
Grinding-machine	E. B. Roth	656,664	Aug. 28	2833	646	92	1638
Grinding machine. Tool	J. H. Burck	658,426	Sept. 25	2579	571 572	92	2378
Grinding-machine. Universal	E. S. Lea	657,905	Sept. 11	1628	350 351	92	2152
Grinding-mill	T. Cascaden, Jr.	656,809	Aug. 28	3089	702	92	1687
Grinding-mill	W. T. Davis	653,289	July 10	1072	257	92	227
Grinding-mill	L. C. Shellabarger	655,805	Aug. 14	1230	288	92	1293
Grindstone	W. H. Clapp	656,171	Aug. 21	1936	444 445	92	1448
Grip	T. B. Jeffery	656,137	Aug. 14	1871	430	92	1422
Grip. Friction	H. M. Sackett	655,510	Aug. 7	619	140	92	1162
Grippers and gripper extension-rods. Slide-fastening for	T. G. Jenkins and J. B. Wills	654,259	July 24	3025	679	92	655
Gun. Air	W. F. Markham	655,170	July 31	4732	1064	92	1022
Gun and cartridge-holder. Combination pocket	R. M. G. Phillips	653,779	July 17	2002	457 458	92	430
Gun attachment	W. Pell and I. Wheeldon	655,577	Aug. 7	736	170	92	1183
Gun-barrel choke attachment	J. C. Broyles	653,618	July 10	1053	386	92	343
Gun carriage. Disappearing	S. M. Mansfield and F. S. Mason	653,028	July 3	559	131	92	112
Gun. Magazine	B. Burton	656,807	Aug. 28	3079	700 701	92	1685
Gun mounting. Turret or barbette	A. T. Dawson and J. Horne	658,704	Sept. 25	3077	685	92	2477
Gun. Pneumatic	E. M. Goldsmith	657,344	Sept. 4	528	109	92	1906
Gun-sight	E. B. Tolman	656,866	Aug. 28	3226	737	92	1715
Gun-sight. Quick-adjusting	S. E. Fischer	658,709	Sept. 25	3090	689	92	2480
Guns. Apparatus for ramming charges of turret or barbette	A. T. Dawson and J. Horne	654,443	July 24	3370	755 756	92	728
Guns. Apparatus for supplying ammunition to turret or barbette	A. T. Dawson and J. Horne	653,071	July 3	633	151	92	128
Guns. Apparatus for supplying charges to heavy turret or barbette	A. T. Dawson and J. Horne	658,244	Sept. 18	2252	493 494	92	2289
Guns. Device for preventing reports of	M. Bernstein	652,742	July 3	7	2	92	4
Guns. Explosive charge for	J. H. Brown	653,208	July 10	915	221	92	197
Guns. Extractor for priming cartridges in breech-loading	A. Silfversparre	657,965	Sept. 18	1781	384	92	2196
Guns. Level-quadrant for high-elevation	J. Kurig	655,561	Aug. 7	693	158	92	1176
Guns. Single-trigger mechanism for breakdown	W. M. Levy	656,822	Aug. 28	3116	707	92	1692
Guns with explosive charges. Apparatus for supplying turret or barbette	A. T. Dawson and J. Horne	654,444	July 24	3371	756 757	92	728
Guncotton-press	E. Hollings	654,398	July 24	3284	737	92	710
Gutter-hanger	J. M. Laird	658,502	Sept. 25	3096	508	92	2401

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hackling and drawing apparatus	E. Kornhuber	654,648	July 31	3762	849	92	821
Hair. Device for promoting growth of	F. W. Evans	655,481	Aug. 7	570	127	92	1152
Hair-dresser's cabinet	A. R. Miranda	654,746	July 31	3940	889	92	858
Hair-drying comb	E. R. Cooper and C. F. Thompson	655,895	Aug. 14	1389	320	92	1329
Hair-fastener	C. Starz	656,480	Aug. 21	2416	555	92	1539
Hair, &c. Mixing-machine for	G. Verbruggen	656,433	Aug. 21	2419	556	92	1539
Hair or wool cutting machine	J. W. Newall	657,784	Sept. 11	1420	301	92	2107
Hame and trace connector	S. H. Swearingen	657,683	Sept. 11	1942	403	92	2071
Hame-fastener	F. H. Lake and S. W. Sims	654,652	July 31	3767	850	92	822
Hame-fastener	D. Little	658,550	Sept. 25	2783	617	92	2419
Hame-fastener	T. J. Morris	654,477	July 24	3434	774	92	740
Hame-fastener	W. F. Amend	658,600	Sept. 25	2900	645	92	2443
Hame-strap	D. S. Waugh	657,716	Sept. 11	1300	275	92	2083
Hammer. Automatic	A. W. Savage	653,890	July 17	2207	502	92	469
Hammer. Magazine	E. A. Fordyce	658,542	Sept. 25	2765	614	92	2416
Hammer. Pneumatic	C. H. Johnson	655,902	Aug. 14	1406	323	92	1327
Hammer. Pneumatic	H. J. Kimman	653,247	July 10	976	233 234	92	208
Hammer. Power	L. D. Howard	657,114	Sept. 4	77	17, 18	92	1817
Hammer. Rotary draw-block	W. Sneller	655,028	July 31	4479	1010	92	973
Hammering-press	H. H. Hamlett	656,135	Aug. 14	1870	430	92	1421
Hammock	M. P. Fishburn	656,544	Aug. 21	2398	598	92	1575
Hammock	H. Gundlach	656,639	Aug. 28	2800	640	92	1630
Hammock motor. Home	F. J. Lowe	657,893	Sept. 11	1606	346	92	2147
Hammock yielding sling	L. W. Moore	654,910	July 31	4274	960	92	929
Hams, &c. Machine for branding	R. D. Kinyon	653,915	July 17	2256	513	92	478
Hand-operated motor	T. F. Krueger	654,986	July 31	4398	991 992	92	956
Handpiece	C. C. Lusby	655,498	Aug. 7	592	134	92	1156
Hand-rest	F. H. Thler	655,284	Aug. 7	212	47	92	1082
Handle. *See* Saw-handle. Trunk-handle. Tool-handle.	R. F. Darling	653,642	July 10	1741	401	92	960
Handle-bar	E. M. Landis	657,290	Sept. 4	492	88	92	1885
Handle-bar. Adjustable	G. P. Rishel	655,581	Aug. 7	742	171	92	1184
Handle-bar. Adjustable	E. Fahlstrom and F. W. Lusebrink	652,956	July 3	438	103	92	88
Handle-bar and seat post binder	A. Getz and W. C. Westall	657,697	Sept. 11	1265	268	92	2075
Handle-bar hand-grip	E. Butler	654,943	July 31	4326	974	92	940
Handle-fastening	L. Sturges	654,423	July 24	3333	747	92	719
Handle-fastening	E. S. Ross	654,492	July 24	3462	781	92	746
Handle for converting kerosene-tins, &c., into buckets	W. A. Dunlap	653,863	July 17	2158	492	92	459
Handles to vessels. Attaching	H. Hohner	653,451	July 10	1363	323	92	288
Hanger: *See* Cable-hanger. Separable friction-hanger. Clothes-line hanger. Shade-hanger. Crank-hanger. Shaft-hanger. Door-hanger. Skirt-hanger. Gutter-hanger. Trousers-hanger. Pipe-hanger. Scaffold-hanger.	J. E. Pflueger	655,511	Aug. 7	608	137	92	1159
Harmonica. Mouth	W. R. Hewitt	656,405	Aug. 21	2370	544	92	1529
Harness-rosette	J. D. Magee	656,988	Aug. 28	3469	793	92	1758
Harness-support	J. D. Whitten	658,300	Sept. 18	2353	518	92	2309
Harrow and cultivator. Combined	R. M. Slaton	657,839	Sept. 11	1517	325	92	2128
Harrow attachment	O. W. Skorkowsky	657,035	Aug. 28	3536	808	92	1771
Harrow. Rotary-disk	L. D. Howard	654,000	July 17	2398	552	92	506
Harrow-seat attachment	J. Kraus	656,722	Aug. 28	2934	670	92	1657
Harrow sulky attachment	C. R. Raber	654,180	July 24	2782	629	92	608
Harrow-tooth	J. F. Fay	655,859	Aug. 14	1328	304	92	1312
Harrow-truck	R. C. Brubaker	657,509	Sept. 11	914	185 186	92	2008
Harrow. Vineyard	J. Fedderman	653,081	July 3	646	154	92	131
Harvester	G. A. Farrall and C. Maul	656,784	Aug. 28	3037	692	92	1677
Harvester and shocker. Corn	E. S. Bowker	656,714	Aug. 28	2918	666 667	92	1654
Harvester bundle-carrier	J. E. Conway	658,140	Sept. 18	2064	450	92	2251
Harvester. Corn	G. A. Farrall and C. Maul	657,215	Sept. 4	270	58	92	1857
Harvester. Corn	G. A. Farrall and C. Maul	657,651	Sept. 11	1174	246	92	2059
Harvester. Corn	W. J. Lang	653,100	July 3	694	164 165	92	140
Harvester. Corn	J. A. Smith	654,885	July 31	4165	938 939	92	906
Harvester. Corn	J. Wagner	658,535	Sept. 25	2754	611	92	2413
Harvester for peas, beans, &c	C. H. Whitney and S. F. Glenn	656,830	Aug. 28	3154	714 715	92	1699
Harvester. Pea	W. H. Wortman and W. Richmond	652,873	July 3	245	50	92	49
Harvester platform elevating or lowering device	J. D. V. McWilliams	652,804	July 3	120	29, 30	92	24
Harvester-reel automatic adjustment	S. M. Warder	657,229	Sept. 4	303	65	92	1863
Harvester safety-lock	M. G. Morgan	653,817	July 17	2079	474	92	444
Harvester. Traveling	D. Best	653,465	July 10	1393	328	92	286
Harvester. Traveling	B Holt	657,700	Sept. 11	1268	269	92	2076
Harvesters. Grain-erecting attachment for	D. Svenson	652,818	July 3	146	36	92	30
Harvesting-machine	H. Brackebush	656,690	Aug. 28	2875	654	92	1646
Harvesting machine. Corn	A. Steiner	656,675	Aug. 28	2848	649	92	1641
Harvesting seed from corn, &c. Machine for	R C. Wilson	656,078	Aug. 14	1748	403 404	92	1395
Hasp	W. K. Hilton	656,817	Aug. 28	3106	705	92	1690
Hasp-fastener	N. Milam	657,434	Sept. 4	704	149	92	1940
Hat. Apparel	T. Borrow, E. Wood, and W. Hodgson.	654,432	July 24	3353	752	92	724
Hat-box	J. J. Cannan	657,061	Aug. 28	3591	828	92	1782
Hat-box	T. F. W. Schmidt	655,019	July 31	4464	1007	92	970
Hat-cabinet	L. M. Robinson	653,699	July 17	1854	424	92	402

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hat-clearing machine	J. Marshall	653,356	July 10	1205	286	92	251
Hat-fastener	E. Dashwood	657,337	Sept. 4	515	107	92	1903
Hat-fastener	H. De Tamble	653,950	July 17	2318	531	92	490
Hat-fastener	E. S. Swank	653,536	July 10	1538	357	92	319
Hat-finishing device	E. G. Taylor	658,206	Sept. 18	2334	514, 515	92	2305
Hat-pinning machine	H. Robinson	654,022	July 17	2431	558, 559	92	512
Hat-pouncing machine	G. F. Larkin	656,294	Aug. 21	2163	494, 495	92	1490
Hat-rack	A. Visel	657,629	Sept. 11	1132	237	92	2051
Hat-shaping machine	C. W. Young	656,708	Aug. 28	2907	661	92	1652
Hat-sizing apparatus	J. Marshall	653,390	July 10	1261	300	92	262
Hat-tip	L. Weisenburger	656,706	Aug. 28	2905	661	92	1652
Hatchet. Metallic	J. R. Payson, Jr	656,299	Aug. 21	2176	497	92	1493
Haulage-clip	J. W. Smallman	656,617	Aug. 21	2767	633	92	1611
Hay and stock rack. Combined	J. H. King	656,770	Aug. 28	3013	686	92	1672
Hay and stock rack. Combined	T. A. Rapson and H. J. Furness	654,357	July 24	3207	718	92	692
Hay-carrier	H. L. Ferris	652,839	July 3	192	44	92	39
Hay-derrick. Folding	D. H. Clark	656,941	Aug. 28	3383	773	92	1742
Hay-loader	A. E. Smith	656,390	Aug. 21	2229	511	92	1502
Hay-press	S. M. Bragg	653,789	July 17	2033	463	92	436
Hay-press	J. W. Carmack	655,058	July 31	4540	1022, 1023, 1024	92	985
Hay-rack	A. Ferguson	656,449	Aug. 21	2449	563	92	1544
Hay-rake	J. H. Hughes	658,647	Sept. 25	2976	692	92	2457
Hay rake and stacker	A. H. Graves	654,059	July 17	2497	575	92	525
Hay-rake. Side-delivery	O. J. Nugent	653,310	July 10	1107	264	92	234
Hay-sling pulley	J. Ney	654 753	July 31	3959	891	92	862
Head and shoulder rest	G. M. Sellinger	655,912	Aug. 14	1425	327	92	1331
Heading-machine	C. W. Durchschlag	656,782	Aug. 28	3034	690, 691	92	1676
Headlight. Electric	J. W. G. Becker	653,982	July 17	2375	547	92	501
Headlight-lamp. Electric	H. P. Wellman	653,159	July 3	797	187, 188, 189	92	160
Headlights for locomotives. Light especially adapted for electric	W. H. Young and S. A. Hayes	655,041	July 31	4502	1015	92	977
Hearse-table. Rotary	M. and G. E. Brestle	657,639	Sept. 11	1146	241	92	2053
Heat and electricity to the body. Appliance for imparting	I. Timar	658,601	Sept. 25	2880	641	92	2441
Heat into work. Apparatus for converting	F. Burger	657,892	Sept. 4	624	130, 131	92	1926
Heat or cold. Electrical detector for	J. O'Meara	655,411	Aug. 7	444	98	92	1126
Heater: *See* Electric heater. Feed-water heater. Glue-heater. Lunch-heater. Solar heater. Steam-heater. Vapor-tube heater. Water-heater.							
Heater. Combination hot-air and steam or hot-water	A. E. Gay	658,634	Sept. 25	2952	657	92	2452
Heater-furnace	C. B. Thompson	657,718	Sept. 11	1294	274	92	2082
Heater-shield and ventilator. Combined	A. B. Shantz	655,585	Aug. 7	748	173	92	1185
Heating apparatus	E. C. Inderlied and C. B. Rumsey	653,867	July 17	2163	494	92	460
Heating apparatus. Fitting for steam	J. A. Donnelly	657,891	Sept. 11	1602	345	92	2146
Heating apparatus. Steam	W. C. Serrell	653,265	July 10	1029	245	92	220
Heating apparatus. Vacuum steam	J. Collis	654,948	July 31	4333	976	92	942
Heating attachment	B. M. Pevey	653,878	July 17	2186	498	92	465
Heating-furnace	D. A. Ebinger	654,719	July 31	3891	877	92	847
Heating-furnace	J. H. Gill	654,909	July 31	4372	983	92	950
Heating-furnace. Gas	D. A. Ebinger	654,718	July 31	3889	877	92	847
Heating purposes. Apparatus for utilizing hot slag for	J. L. Wells	657,843	Sept. 11	1594	327, 328	92	2130
Heel. Boot or shoe	G. F. Butterfield	652,887	July 3	267	64	92	53
Heel. Boot or shoe	F. J. Parker	653,395	July 10	1269	302	92	293
Heel-scarfing machine	S. J. Brissette	653,016	July 3	540	126, 127	92	108
High or low water alarm for boilers	E. D. Hays	654,631	July 31	3733	842	92	815
High-speed engine	T. C. Billetop	654,127	July 24	2624	601, 602, 603	92	565
Hinge	L. Bader	655,596	Aug. 7	770	181	92	1180
Hinge	H. R. Clark	655,606	Aug. 7	784	184	92	1192
Hinge	L., Sr., and W. N. Welker	658,370	July 10	1229	293	92	256
Hinge and storm-window fastener. Combined blind-	R. W. Harlow	658,259	Sept. 18	2276	500	92	2294
Hinge. Couch-head	J. T. Seng	658,125	Sept. 18	2039	445	92	2246
Hinge for furniture. Friction-	C. L. Frost	658,633	Sept. 25	2951	656	92	2452
Hinge. Gate-	J. J. Ober	655,106	July 31	4622	1042	92	1001
Hinge. Gate-	W. R. White	652,869	July 3	239	57	92	48
Hinge-lock	H. M. Bayly	656,575	Aug. 21	2669	614	92	1588
Hinge. Spring	G. W. Clum	653,018	July 3	545	128	92	109
Hinge. Spring-	W. Gerwien	657,982	Sept. 18	1808	389	92	2202
Hinge. Spring-	J. Keene	654,400	July 24	3201	738, 739	92	711
Hinge. Spring-	A. L. Stump and F. Brucker	655,812	Aug. 14	1253	286	92	1299
Hitching device	S. F. Ettinger	655,858	Aug. 14	1327	304	92	1312
Hobby-horse and invalid's chair. Combined	A. J. Branham	656,738	Aug. 28	2956	675	92	1692
Hoe	L. E. Mease	655,983	Aug. 14	1582	364	92	1361
Hog-catcher	D. Svenson	653,973	July 17	2365	544	92	498
Hog or cattle holding rack	J. W. Hardy	658,365	Sept. 25	2466	545	92	2357
Hog-trap	H. N. Smith	658,128	Sept. 18	2045	446	92	2248
Holst	W. T. Eades and E. Allday	657,815	Sept. 11	1470	313, 314	92	2118

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hoist. Air-	G. F. Steedman	652,983	July 3	481	113, 114	92	97
Hoist and carrier	L. Harris	657,598	Sept. 11	1076	223	92	2039
Hoist. Fluid-pressure	N. A. Christensen	657,332	Sept. 4	506	105	92	1901
Hoisting and conveying apparatus	J. H. Lancaster	654,739	July 31	3925	886, 887	92	854
Hoisting apparatus	H. C. Behr	657,689	Sept. 11	1251	265	92	2073
Hoisting apparatus	H. J. Cook and A. Morris	658,330	Sept. 18	2390	528	92	2316
Hoisting apparatus	R. Watson and C. E. Stevenson	656,067	Aug. 14	1734	401	92	1393
Hoisting apparatus	J. Laursen	656,845	Aug. 28	3191	724	92	1707
Hoisting device	H. Shibley	656,272	Aug. 21	2120	488	92	1482
Holdback	W. H. King	653,024	July 3	551	129	92	110
Hollow ware. Ornamenting	H. Wolff	654,041	July 17	2467	566	92	519
Hoof-clipper	S. W. Mackey	652,796	July 3	100	24	92	21
Hoof-cracks. Spring-clamp for treating							
Hook: *See* Bill-hook. Bridle curb-hook. Check-hook. Checkrein-hook. Coat-hook. Fish-hook. Garment-hook. Lacing-hook. Ladder safety-hook. Plumber's shave-hook. Snap-hook.							
Hook and eye	J. A. Brunner	655,847	Aug. 14	1313	301	92	1309
Hook and eye	C. Leib	658,184	Sept. 18	2148	470	92	2269
Hook and eye	V. O. Mills	655,884	Aug. 14	1373	317	92	1320
Hook for garments, &c	J. M. Guilbert	657,533	Sept. 11	962	198	92	2017
Hooks. Holder for snell fly-	G. L. Plumley	657,786	Sept. 11	1424	301, 302	92	2100
Hoop: *See* Barrel-hoop.							
Hoop-racking machine	C. Reed	658,528	July 10	1516	352, 353	92	315
Hop bleaching and drying kiln	J. and A. B. C. Dowdell	655,330	Aug. 7	693	66	92	1098
Hopper or storage-bin gate and cut-off	R. P. Felton	655,967	Aug. 14	1546	356	92	1355
Horse-arresting device	J. Arel	658,135	Sept. 18	2056	448	92	2250
Horse-check	R. T. Geer	656,960	Aug. 28	3416	779	92	1748
Horse-detacher	G. W. Creps	658,141	Sept. 18	2067	450	92	2252
Horse-detacher	J. L. Pangle	653,394	July 10	1268	302	92	263
Horse-detacher	J. Rose	653,700	July 17	1855	424	92	402
Horse-detacher	A. M. Grant	657,531	Sept. 11	959	198	92	2016
Horse-detacher and brake	C. Carman	654,711	July 31	3873	873	92	843
Horseshoe	W. Schultz	654,076	July 17	2524	580	92	530
Horseshoe	H. R. Fenley	657,405	Sept. 4	649	135	92	1931
Horseshoe. Adjustable nailless	F. F. Jacobs	652,777	July 3	73	18	92	15
Horseshoe calk attachment	T. J. Lovett	655,827	Aug. 14	1279	293	92	1303
Horseshoe. Cushioned	T. J. Lovett	655,829	Aug. 14	1283	294	92	1304
Horseshoe. Cushioned	Z. T. Blackman	657,725	Sept. 11	1321	279	92	2087
Horseshoe-fastening	H. A. Williams	655,818	Aug. 14	1261	287, 288, 289, 290	92	1300
Horseshoe-nail-finishing machine	J. V. Hughes	656,979	Aug. 28	3455	789	92	1756
Horseshoe. Nailless	J. Kronenberg	656,026	Aug. 14	1669	384	92	1379
Horseshoe-pad	E. A. Wilcox	657,718	Sept. 11	1306	275	92	2084
Horseshoe. Rubber-pad	J. D. Leclere	658,152	Sept. 18	2083	454	92	2254
Horseshoe-sharpening device	W. M. Kennedy and R. C. Duncan	655,628	Aug. 7	882	194	92	1201
Horseshoe. Soft-tread	H. D. Palmer	656,144	Aug. 14	1693	433	92	1424
Horseshoe. Soft-tread	J. Riley	658,221	Sept. 18	2215	484	92	2282
Horseshoe. Soft-tread	T. J. Lovett	655,828	Aug. 14	1281	294	92	1304
Horseshoe soft-tread attachment	O. W. Siebenhaar	657,208	Sept. 4	432	91	92	1887
Horseshoe. Spring-tread	J. F. McGuire	655,507	Aug. 7	603	136	92	1158
Hose	M. F. Loving	658,662	Sept. 25	3005	667	92	2464
Hose and skirt supporter and shoulder-brace. Combined	E. Gunnell	656,187	Aug. 21	1902	451	92	1453
Hose connection	J. C. Martin	658,143	July 3	772	181	92	154
Hose-coupling	E. T. Shaw	658,045	Sept. 18	1904	413	92	2220
Hose-coupling	A. M. Spickelmier	657,037	Aug. 28	3339	808	92	1771
Hose-coupling	G. Stroh	652,904	July 3	262	72	92	58
Hose-coupling	R. Willams	658,692	Sept. 25	3054	680	92	2473
Hose-coupling	W. Mathen	658,155	Sept. 18	2089	455	92	2256
Hose-nozzle. Combination	A. G. Wilkins	654,040	July 17	2466	565	92	519
Hose patching or coupling clamp	W. C. Bush	654,132	July 24	2642	604	92	569
Hose sprayer attachment	O. H. Hake	655,489	Aug. 7	500	112	92	1137
Hose-supporter	G. W. Lisk	655,879	Aug. 14	1366	314	92	1319
Hose-tip	W. Wilson	654,864	July 31	4180		92	990
Hosiery. Obtaining bicolored	A. W. Cram	653,927	July 17	2272	517	92	481
Hot-air furnace	C. Olsted	657,131	Sept. 4	101	24	92	1821
Hot-air furnace	J. P. Schaffer	653,820	July 17	2084	475, 476	92	445
Hot-air furnace	G. Thomson	657,016	Aug. 28	3506	800, 801	92	1764
Hot-air furnace	G. Auer	657,049	Aug. 28	3569	822	92	1778
Hot-air register	H. Symonds	658,165	Sept. 18	2117	459, 460	92	2262
Hot-air register	E. B. Boggess and G. D. Hutchison	653,899	July 17	2228	507	92	473
Hot-box cooler	A. W. Case	654,302	July 24	3110	696	92	671
Hot-draft system	W. F. Harte	652,771	July 3	62	15	92	13
Hotel room-register							
House: *See* Greenhouse.							
House-moving apparatus	J. Abbee	654,699	July 31	3851	868	92	830
Hub	C. C. Mifflin	655,984	Aug. 14	1583	364	92	1361
Hub-attaching device	G. A. Mayer	654,472	July 24	3424	772	92	738
Hub. Vehicle-	B. F. Sweet	654,366	July 24	3229	724	92	697
Huller: *See* Pea-huller. Peanut-huller.							
Huller	F. W. Fee	656,246	Aug. 21	2079	476	92	1474

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Humidifier	W. W. Moore and R. D. Jones	656,902	Aug. 28	3318	756	92	1729
Humidifier	R. C. Ulbrich	655,467	Aug. 7	544	122	92	1146
Hydrant	W. H. Law	657,664	Sept. 11	1202	251	92	2064
Hydrant. Wall-	H. F. Neumeyer	657,562	Sept. 11	1006	208	92	2026
Hydraulic brake	F. L. Clark	656,517	Aug. 21	2562	589	92	1568
Hydraulic elevator	G. H. Evans	655,615	Aug. 7	804	187	92	1196
Hydraulic engine	L. D. B. Shaw	653,461	July 10	1378	327	92	285
Hydraulic motor	E. F. Cassel	654,872	July 31	4192	944 945	92	911
Hydraulic-motor-regulating means	J. D. Fricot	656,104	Aug. 14	1820	419	92	1412
Hydrocarbon-burner	C. Perillat	654,669	July 31	3794	856	92	827
Hydrocarbon-burner	B. F. Weber	655,942	Aug. 14	1484	341	92	1341
Hydrocarbon-vaporizing burner	S. A. Politsky and J. Agust	657,447	Sept. 4	725	155	92	1044
Hydro-electrotherapeutic apparatus	J. J. Stanger	653,708	July 17	1808	427 428	92	404
Hygienic appliance for sound-transmitter mouthpieces.	T. R. Owen	654,096	July 17	2553	587	92	595
Ice. Apparatus for manufacturing coreless can-	W. Roettinger and J. Conn	656,217	Aug. 21	2027	465	92	1464
Ice-chipping tool	G. F. Dana and F. M. Snook	655,692	Aug. 14	992	226	92	1245
Ice-cream freezer	J. A. E. Anderson	655,387	Aug. 7	403	88	92	1117
Ice-cream mold	W. Mitchell	657,610	Sept. 11	1098	220	92	2044
Ice-cream molding and cutting machine	G. M. Pinkerton	656,044	Aug. 14	1697	390	92	1384
Ice-creeper	K. P. Degge	653,473	July 10	1410	331	92	292
Ice-cutting vehicle	J. C. Green	656,186	Aug. 21	1960	450	92	1452
Ice. Facilitating formation of	O. Guthrie	654,149	July 24	2708	617	92	586
Ice-house	O. Guthrie	654,148	July 24	2706	617	92	586
Ice-making apparatus	G. H. Abrams	654,576	July 24	3594	809 810	92	769
Ice-making plant	A. Ellis	653,666	July 17	1803	413 414	92	392
Impact-motor	W. H. Pfeiffer	655,271	Aug. 7	190	42	92	1077
Incandescent element	C. G. Richardson	653,696	July 17	1850	423	92	401
Incandescent mantle	O. M. Thowless	657,141	Sept. 4	118	------	92	1825
Incandescent mantle or hood. Refractory	G. Daubenspeck	657,285	Sept. 4	314	------	92	1865
Incandescent-mantle support	A. Kitson	654,094	July 17	2351	587	92	535
Inclinometer	A. Gohl	653,446	July 10	1353	322	92	240
Incubator	J. S. Stewart	656,373	Aug. 21	2121	484	92	1482
Incubator	G. T. Woods	656,760	Aug. 28	2992	682	92	1668
Incubator egg-tray	J. L. Cousins	657,089	Sept. 4	28	7	92	1806
Index	W. E. Alexander	653,605	July 10	1642	383	92	341
Index. Card-	F. Macey	658,153	Sept. 18	2085	454	92	2255
Indicating device	C. D. Weaver	658,744	Sept. 25	3166	705	92	2405
Indicating-tablet	E. H. Stone	658,163	Sept. 18	2113	458	92	2262
Indicator: *See* Automatic indicator. Cocking-indicator. Electrical current-indicator. Engine-indicator. Mirror-indicator. Office-indicator. Pump-action indicator. Station-indicator. Street and station indicator. Temperature-indicator. Time-indicator. Train-indicator.	C. L. Hosford	657,773	Sept. 11	1397	296	92	2103
Indicator-lock	A. J. Stiegelmann	657,320	Sept. 4	485	------	92	1897
Indigo-white and making same. Stable	M. Bazlen	657,307	Sept. 4	452	------	92	1891
Indigo-white compound and making same	R. A. Fessenden	654,390	July 24	3274	734 735	92	708
Induction-coil	W. H. Morgan and C. L. Taylor	656,416	Aug. 21	2392	550	92	1523
Ingot-extracting apparatus	P. T. Donovan	657,402	Sept. 4	646	135	92	1969
Inhaler	W. H. Fike	657,866	Sept. 11	1503	337	92	2138
Inhaler	E. and U. S. De Moulin	654,611	July 31	3678	829	92	805
Initiating device	D. J. Ogilvy	657,179	Sept. 4	195	------	92	1841
Ink. Making	S. A. Neidich	655,985	Aug. 14	1581	365	92	1361
Ink-ribbon mechanism	O. V. Farrell	653,990	July 17	2285	540	92	503
Ink-well	J. Y. Mills	652,973	July 3	463	109	92	93
Ink-well	H. H. Norrington	653,965	July 17	2353	541	92	496
Inking-pad	T. Roberts	657,961	Sept. 18	1777	382	92	2195
Inking-pad	H. H. Norrington	653,964	July 17	2352	541	92	496
Inking-pad. Reversible	S. T. Whitaker	656,683	Aug. 28	2992	652	92	1643
Inkstand	W. J. Barber	654,591	July 31	3635	820	92	706
Insect-destroyer	C. B. Moore	656,774	Aug. 28	3019	687 688	92	1673
Insect-destroyer	M. Friedly	658,254	Sept. 18	2269	499	92	2292
Insect-escape and ventilator for window-sashes	G. Sattler	656,050	Aug. 14	1704	392	92	1386
Insect-screen	G. Sattler	658,044	Sept. 18	1902	413	92	2220
Insect-screen	W. H. H. Lundy	658,663	Sept. 25	3007	668	92	2461
Insect-trap	F. Marsh	656,990	Aug. 28	3471	794	92	1759
Insect-trap	A. E. Johnson	656,842	Aug. 28	3185	722 723	92	1706
Insole-channeling and lip-setting machine	A. E. Johnson	656,843	Aug. 28	3187	723 724	92	1707
Insole-reinforcing machine	G. Rehmann	657,708	Sept. 11	1286	272	92	2061
Instrument or other case	C. O. F. Schrottke	654,103	July 17	2565	590	92	538
Instruments of precision. Attachment for	H. H. Groth	658,436	Sept. 25	2594	576	92	2382
Insufflator	G. Cutter	655,702	Aug. 14	1132	260	92	1273
Insulated hanger for arc-lamps	N. Tesla	655,838	Aug. 14	1295	298	92	1306
Insulating electric conductors	W. J. Cordner	654,952	July 31	4338	------	92	943
Insulation. Composite material applicable for electric	W. J. Cordner	654,951	July 31	4337	------	92	943
Insulation. Manufacturing composition applicable for electric	A. Sinding-Larsen	657,574	Sept. 11	1030	214	92	2031
Insulator. High-voltage	W. E. Simpson	658,595	Sept. 25	2879	638 639	92	2439
Internal-combustion motor	J. C. W. F. Tiemann	658,411	Sept. 25	2554	------	92	2374
Ionone derivative and making same	W. Krauth	652,969	July 3	457	------	92	92
Ionone. Making							

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Iron: *See* Carriage corner-iron. Sad-iron. Soldering-iron.	V. E. Edwards	653,506	July 10	1471	344	92	305
Iron. Apparatus for cutting and handling band-	V. E. Edwards	653,505	July 10	1470	344	92	305
Iron. Apparatus for handling band-	E. Hardmeyer	658,438	Sept. 25	2597	------	92	2382
Iron into steel. Composition for converting	W. O. Bowman	653,839	July 17	2122	482	92	451
Ironing-board	W. M. Barnes	654,428	July 24	3345	750 751	92	721
Ironing-machine	G. G. Place	656,371	Aug. 21	2303	528	92	1517
Ironing-machine	C. Riesenweber	658,074	Sept. 18	1950	424 425	92	2230
Ironing-machine	G. Binder	657,389	Sept. 4	921	129 130	92	1925
Ironing-machine. Collar or cuff edge	J. D. Pace	654,760	July 31	3974	894	92	864
Ironing-table	J. A. Gollbart	656,887	Aug. 28	3289	748	92	1724
Irrigating device. Root-	W. H. Kiler	656,581	Aug. 21	2090	617	92	1505
Irrigating water-gate							
Jack: *See* Bicycle-repair jack. Lifting-jack. Rod-jack. Screw-jack. Shoe-jack.							
Jar: *See* Drill-jar.	G. H. Brabrook	653,840	July 17	2123	482	92	451
Jar-closure	W. Robson	656,777	Aug. 28	3024	689	92	1674
Jar-cover fastening. Fruit-	H. A. Hughes	656,548	Aug. 21	2627	605	92	1580
Jar or bottle closure	O. H. Clough	654,385	July 24	3260	731	92	704
Jars, bottles, &c. Device for packing	A. Bresee	654,512	July 24	3404	780	92	751
Jars, &c. Closure for	C. J. Adams	654,124	July 24	2618	590	92	564
Jewel setter. Roller-	R. H. Pratt	656,776	Aug. 28	3022	688	92	1674
Jogger. Gaged feeding-	D. Cederberg	653,616	July 10	1657	387	92	344
Joiner							
Joint: *See* Cup-and-ball joint. Cycle-frame joint. Pipe-joint. Piping-joint. Rail-joint. Railway-joint. Railway-rail joint. Tool-handle joint. Universal joint.	G. Fulton	656,017	Aug. 14	1655	380	92	1376
Journal-bearing	W. T. Lee and N. Mellor	655,633	Aug. 7	843	197	92	1203
Journal-bearing	G. A. Scheeffer	658,512	Sept. 25	2711	601	92	2405
Journal-bearing	G. W. Lewis and L. C. Godwin	654,116	July 17	2599	597	92	545
Journal-box	A. C. Pessano	653,276	July 24	3054	685 686	92	661
Journal-box	P. Brown	657,082	Sept. 4	19	4,5	92	1804
Journal-box dust-guard	P. Brown	653,130	July 3	747	175 176	92	149
Journal-box-lubricating device	R. Hundhausen	654,310	July 24	3129	699 700	92	674
Junction or connection box	A. D. Catlin	655,432	Aug. 7	434	108	92	1134
Key-seating machine	E. Gobbe	656,964	Aug. 28	3432	782 783	92	1751
Kiln: *See* Brick-kiln. Dry-kiln.	F. R. Sellman	653,891	July 17	2209	502 503	92	469
Kiln, blast-furnace, &c	S. Lubin	657,555	Sept. 11	997	205	92	2025
Kiln-furnace	L. J. Taylor	656,909	Aug. 28	3335	759	92	1732
Kinetographic film	H. Wieser	655,471	Aug. 7	554	123	92	1148
Kitchen utensil	V. Smerdoff	657,575	Sept. 11	1031	214	92	2031
Kitchen utensil	A. A. Cushman	655,855	Aug. 14	1323	303	92	1311
Knapsack							
Kneading-board							
Knife: *See* Beet-knife. Bread or cake knife. Dehorning-knife. Pocket-knife.	I. Hirsch	656,457	Aug. 21	2461	565	92	1547
Knife	W. J. Stewart	655,280	Aug. 7	207	46	92	1081
Knife-guard	J. G. Powell	653,398	July 10	1273	303	92	264
Knit fabric	J. May	658,320	Sept. 18	2372	------	92	2313
Knit goods. Removing fiber from and finishing	M. J. Fisher	656,585	Aug. 21	2599	598 599	92	1575
Knitting-machine	E. J. Franck	656,588	Aug. 21	2605	599 600	92	1576
Knitting-machine	A. March	654,469	July 24	3419	770 771	92	737
Knitting-machine	J. A. Ricard	656,216	Aug. 21	2011	463 464 465	92	1462
Knitting-machine	J. E. Rowe and L. A. Bentz	656,218	Aug. 21	2028	466 865	92	1464
Knitting-machine	F. Wilcomb	654,695	July 31	3834	866 867	92	884
Knitting-machine attachment. Automatic circular-	A. G. Wright	658,415	Sept. 25	2561	567 568	92	2376
Knitting-machine attachment. Circular-	T. Henry, Jr.	652,847	July 3	205	48	92	41
Knitting machine. Circular-	A. J. Gulich	656,155	Aug. 14	1899	437	92	1427
Knitting machine. Circular-	H. A. Houseman	654,347	July 24	3186	714	92	686
Knitting machine. Circular-	R. W. Scott, L. N. D. Williams, and H. Swinglehurst, Jr.	653,502	July 10	1572	366 367	92	326
Knitting machine. Circular-	B. T. Steber	657,182	Sept. 4	202	45,46	92	1842
Knitting-machine knot-actuated stop	W. Green	657,410	Sept. 4	657	137	92	1932
Knitting-machine needle-depressing mechanism	B. T. Steber	654,813	July 31	4074	917	92	887
Knitting-machine stop-motion. Circular-	W. J. Ferris	658,251	Sept. 18	2264	498	92	2291
Knitting-machine stop-motion. Circular-	W. F. West and B. Payne	656,493	Aug. 21	2522	581	92	1559
Knitting machine. Straight-rib-	D. Hurley and W. T. Barratt	654,982	July 31	4393	960	92	955
Knitting-machine yarn-holder	B. T. Steber	654,812	July 31	4073	916	92	887
Knitting machines. Thread-feeding mechanism for straight-	J. N. Bennor	655,046	July 31	4510	1017 1018	92	979

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Drg.	Official Gazette. Vol.	Page.
Knob attachment	R. P. Daggett	652,950	July 3	421	97	92	85
Knob attachment	R. H. McHardy	654,102	July 17	2564	590	92	538
Knob rose. Door-	W. E. Parker	653,693	July 17	1845	422	92	400
Knockdown box	A. Duden	653,907	July 17	2242	510	92	475
Knockdown box	S. H. Welmer	657,750	Sept. 11	1364	288	92	2097
Knockdown case	H. E. Beerling	655,952	Aug. 14	1502	345	92	1345
Knotter	W. Hindley and J. W. Harding	655,867	Aug. 14	1338	308 / 309 / 310	92	1314
Label and label-holder	L. Weigel	655,843	Aug. 14	1306	300	92	1308
Label. Duplex	A. W. B. Johnson	654,545	July 24	3549	800	92	762
Labeling-machine	W. C. Johnson	656,789	Aug. 28	3048	694	92	1679
Lace fastener. Shoe-	W. L. Lee	657,606	Sept. 11	1092	228	92	2043
Lacing-hook-setting machine	W. O'Brien	655,987	Aug. 14	1590	366 / 367	92	1363
Lacing-hook-setting machine	J. Pierce	657,673	Sept. 11	1224	257 / 258	92	2068
Lacing hook. Shoe-	H. H. Eaton	654,237	July 24	2974	667	92	644
Lacing-string	G. T. Kelly	654,898	July 31	4258	955	92	926
Ladder. Extension-	G. W. Gardner	657,982	Sept. 18	1718	369 / 370	92	2185
Ladder. Extension-	A. T. Kingsley	655,246	Aug. 7	137	29	92	1067
Ladder. Folding	M. Barth	652,948	July 3	419	97	92	85
Ladder. Folding or flexible	J. Hargreaves	654,894	July 24	3278	736	92	709
Ladder safety-hook. Fireman's-	C. N. Richardson and E. A. Whitaker.	658,716	Sept. 25	3103	692	92	2482
Ladder. Step-	F. H. Corduan	656,946	Aug. 28	3393	775	92	1743
Ladder. Step-	C. Pfeiffer	658,395	Sept. 25	2528	560	92	2369
Lamp	C. F. Allen	656,005	Aug. 14	1624	374 / 375	92	1369
Lamp	W. A. B. Dalzell	658,171	Sept. 18	2129	463	92	2265
Lamp	R. M. Dixon	654,343	July 24	3180	713	92	685
Lamp	J. Gregory	653,449	July 10	1358	322 / 323	92	281
Lamp	F. E. Baldwin	656,874	Aug. 28	3239	740	92	1719
Lamp. Acetylene-gas	E. Hoffmann	657,489	Sept. 4	872	177	92	1089
Lamp. Acetylene-gas	G. A. Moore	655,261	Aug. 7	166	38	92	1073
Lamp. Acetylene-gas	J. H. Van Tassel and O. P. Hipple.	655,840	Aug. 14	1309	298	92	1307
Lamp. Acetylene-gas	D. Genese	654,244	July 24	2969	671	92	647
Lamp. Acetylene-gas-generating	A. Winch	655,944	Aug. 14	1487	341	92	1342
Lamp. Acetylene-gas-generating	B. F. Kent	657,423	Sept. 4	682	143 / 144	92	1937
Lamp-bracket	H. Greenwood	654,537	July 24	3535	797	92	759
Lamp-burner	F. W. Grundman	656,968	Aug. 28	3439	785	92	1752
Lamp-burner	W. Harris	655,077	July 31	4578	1032	92	993
Lamp-burner	J. Jauch	652,780	July 3	76	19	92	16
Lamp-burner	F. T. Williams	656,235	Aug. 21	2064	478	92	1471
Lamp-burner	O. Lehman	653,253	July 10	999	240	92	213
Lamp burner. Incandescent-	O. Lehman	653,254	July 10	1003	240 / 241	92	214
Lamp burner. Incandescent-	A. Plecher	655,112	July 31	4633	1044	92	1002
Lamp. Calcium-wick	J. M. Woods	654,504	July 24	3484	787	92	750
Lamp. Carbureting-	R. D. Jamison	652,779	July 3	75	18	92	16
Lamp-chimney	J. F. Ackermann	655,176	Aug. 7	1	1	92	1041
Lamp. Electric-arc	S. Bergmann	653,785	July 17	2021	461	92	433
Lamp. Electric-arc	H. G. Carleton	653,984	July 17	2377	547	92	501
Lamp. Electric-arc	J. E. Davidson	655,063	July 31	4553	1025 / 1026	92	988
Lamp. Electric-arc	T. E. Drohan	657,485	Sept. 4	864	175	92	1986
Lamp. Electric-arc	J. A. Fleming	653,572	July 10	1597	371	92	331
Lamp. Electric-arc	J. Melzer	657,432	Sept. 4	697	147 / 148	92	1989
Lamp. Electric-arc	J. Melzer	657,433	Sept. 4	702	148	92	1940
Lamp. Electric-arc	J. S. Nowotny	655,266	Aug. 7	175	39	92	1074
Lamp. Electric-arc	H. Pieper, Fils	654,277	July 24	3055	686	92	662
Lamp. Electric-arc	I. R. Prentiss	657,450	Sept. 4	731	156	92	1945
Lamp. Electric-arc	C. Schuster	654,679	July 31	3807	859	92	830
Lamp. Electric-arc	T. Spencer	655,526	Aug. 7	629	143	92	1163
Lamp. Electric-arc	B. A. Stowe	655,808	Aug. 14	1235	284 / 285	92	1294
Lamp-filler and measuring-can. Automatic	H. H. Venable	654,580	July 24	3805	812	92	772
Lamp for miners' use. Electric	L. Horwitz	656,977	Aug. 28	3451	788 / 789	92	1755
Lamp generating apparatus. Hydrocarbon-	A. C. Roebuck and F. McMillan	656,749	Aug. 28	2977	679	92	1665
Lamp generating apparatus. Hydrocarbon-vapor-	A. C. Roebuck and F. McMillan	656,750	Aug. 28	2979	680	92	1665
Lamp-holder	H. L. De Zeng	654,878	July 31	4205	947	92	914
Lamp-holder	G. Grimm	656,110	Aug. 14	1832	421	92	1415
Lamp. Hydrocarbon-	W. G. Bird	655,188	Aug. 7	21	5	92	1045
Lamp. Hydrocarbon-	W. Hawks	654,977	July 31	4384	987	92	952
Lamp. Hydrocarbon-	W. Hawks	656,889	Aug. 28	3293	749	92	1724
Lamp. Hydrocarbon illuminating-	W. Hawks	654,976	July 31	4383	987	92	952
Lamp. Hydrocarbon incandescent-	A. B. Macklin	654,408	July 24	3301	740 / 741	92	713
Lamp. Incandescent	C. Hoelscher	656,115	Aug. 14	1840	423	92	1416
Lamp. Incandescent	E. H. Palmer	655,158	July 31	4705	1060	92	1017
Lamp. Incandescent	S. D. Washburn and C. H. Tinkham.	654,307	July 24	2911	653	92	631
Lamp. Incandescent electric	J. Plechati	653,698	July 3	573	135	92	115
Lamp. Incandescent electric	S. D. Washburn and C. H. Tinkham	654,308	July 24	2912	653	92	631
Lamp. Incandescent gas-	R. Momand	654,801	July 31	4057	913	92	883
Lamp. Oil-gas	A. S. Newby	656,326	Aug. 21	2220	508	92	1501
Lamp. Oil-gas	A. S. Newby	656,327	Aug. 21	2222	508 / 509	92	1501
Lamp or burner. Gas	H. A. Kent	654,458	July 24	3403	766	92	734
Lamp. Portable electric	F. W. Brooks	657,020	Aug. 28	3511	802	92	1766
Lamp-post	G. D. Scott	654,923	July 31	4298	966	92	934
Lamp protector. Electric-	F. B. Garretson	656,840	Aug. 28	3182	721	92	1706

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Drg.	Official Gazette. Vol.	Page.
Lamp-shade holder	A. E. Kearsley and H. C. Bowman.	656,647	Aug. 28	2812	642	92	1632
Lamp-shade supporter and protector	L. Y. Cowl	656,096	Aug. 14	1800	414	92	1408
Lamp-shades. Constructing	O. A. Mygatt	655,728	Aug. 14	1057	244	92	1257
Lamp-socket	C. H. Dressel	655,208	Aug. 7	237	54	92	1087
Lamp socket. Electric-	W. A. Church	653,069	July 3	629	150	92	128
Lamp socket. Incandescent-	W. B. Bragdon	654,433	July 24	3354	752	92	724
Lamp socket. Incandescent-	F. H. Manchester and I. E. Brown.	653,962	July 17	2348	510	92	495
Lamp. Street-	A. E. Shaw	656,222	Aug. 21	2037	467 / 468	92	1466
Lamp support. Electric-	W. A. Swan	657,502	Sept. 4	891	180	92	1993
Lamp support. Miner's-	C. J. Heckel	658,642	Sept. 25	2966	660	92	2455
Lamp-supporting bracket for desks. Electric-	S. S. Porter	656,211	Aug. 21	2002	461	92	1460
Lamp. Suspension-	W. Fähndrich	657,486	Sept. 4	867	175 / 176	92	1987
Lamp. Vapor-	W. H. Irby	657,936	Sept. 18	1726	371	92	2187
Lamp. Vapor-	V. A. Menuez	655,258	Aug. 7	153	35, 36	92	1070
Lamp. Vapor-	W. T. Wood	656,150	Aug. 14	1892	435	92	1426
Lamp. Vapor-	W. F. Bradbury and L. G. Smith	654,380	July 24	3250	729	92	702
Lamp. Vapor-burning	W. Mitchell	657,127	Sept. 4	95	23	92	1820
Lamp. Vapor-burning	G. Schmidt	656,480	Aug. 21	2498	575 / 576	92	1554
Lamp. Vehicle-	M. W. Hanks	653,554	July 10	1561	364	92	324
Lamps and magnetic guide therefor. Circuit-controller for incandescent	S. M. Meyer	656,744	Aug. 28	2968	678	92	1664
Lamps by electricity. Device for lighting	L. J. P. Hollub and H. Mignal	657,541	Sept. 11	974	200	92	2020
Lamps. Device for fixing incandescent electric	W. E. Archer	658,419	Sept. 25	2568	509	92	2377
Lamps, &c. Extinguisher for	K. Ochs	653,875	July 17	2176	------	92	463
Lamps. Manufacturing homogeneous mixtures for filaments of incandescent electric	D. James and A. Pearson	657,491	Sept. 4	876	177	92	1990
Lamps. Safety-spike for suspending underground safety-	J. L. Mann	654,171	July 24	2755	625	92	595
Lampblack-machine	A. W. Acker	656,618	Aug. 21	2768	633 / 634	92	1612
Land-roller	D. F. Van Riper	655,917	Aug. 14	1492	329	92	1332
Lantern	T. M. Crepar	656,174	Aug. 21	1939	445	92	1448
Lantern attachment	F. Dietz	655,328	Aug. 7	290	65	92	1097
Lantern, Tubular	C. Kempf	656,123	Aug. 14	1850	426	92	1418
Lard-refining apparatus	E. E. Gurney	657,903	Sept. 11	1625	350	92	2151
Last	C. C. Tannert	658,537	July 10	1588	357	92	319
Last. Shoe-	A. D. Tyler, Jr	655,314	Aug. 7	204	59, 60	92	1093
Last. Transversely-divided boot or shoe	W. Sellers and J. S. Bancroft	653,042	July 3	578	136 / 137	92	116
Lasting-machine	E. E. Canedy	657,852	Sept. 11	1539	330	92	2133
Lasting shoes. Instep-fastener for use in	W. F. Herdrich	657,345	Sept. 4	530	110	92	1906
Latch	W. H. Garlock	654,242	July 24	2983	670	92	645
Latch. Door-	B. A. Kennedy	656,140	Aug. 14	1874	431	92	1422
Latch for adjustment-levers. Thumb-	C. A. Babb	658,310	Sept. 18	2359	520	92	2310
Latch for swinging bins or compartments	W. J. Schoonover	658,469	Sept. 25	2618	587	92	2391
Latch. Gate-	W. McCall	657,827	Sept. 11	1493	319	92	2123
Lath attachment and support. Metal-	J. Schratwieser	654,765	July 31	3986	896 / 897	92	867
Lath. Machine for manufacturing metal	M. Carrick	658,497	Sept. 25	2688	597	92	2399
Lathing and fireproof construction for buildings. Metallic	W. L. Cheney	656,318	Aug. 21	2206	505	92	1498
Lathe	R. M. Nuttall	655,986	Aug. 14	1588	396	92	1362
Lathe	J. G. Obermier	654,756	July 31	3963	892	92	862
Lathe for forming collars upon vehicle-axles	M. G. Blue	653,786	July 17	2021	461 / 462	92	434
Lathe for turning irregular forms	J. G. Obermier	654,757	July 31	3964	892	92	862
Lathe stop-block	H. S. Land	655,095	July 31	4002	1039	92	997
Lathe-tool	G. C. Bardons and G. W. Drake	657,306	Sept. 4	450	95	92	1890
Lathe. Turret-	C. A. Johnson	657,242	Sept. 4	326	70	92	1867
Lathe. Turret-	T. J. Perrin	652,860	July 3	225	53, 54	92	45
Lathes. Detachable taper-cutting attachment for	J. C. Chamberlain	656,012	Aug. 14	1641	377	92	1373
Launch. Electric	S. B. Waters	653,977	July 17	2369	545	92	499
Laundry-rack	F. J. Beaumont	656,682	Aug. 14	1761	407	92	1398
Lavatory-lock. Coin-controlled	J. I. Caruthers	656,693	Aug. 14	1797	413	92	1408
Lawn-sweeper	J. S. Grange	656,787	Aug. 28	3044	693	92	1678
Laying off and pulverizing ground. Implement for	G. Bischof	654,088	July 17	2541	------	92	533
Lead into oil-paste. Converting white	T. B. Jones	654,985	July 31	4397	991	92	955
Leaf-holder	A. E. Rhoades	655,579	Aug. 7	740	171	92	1184
Lease-forming mechanism	B. Trenckmann	653,820	July 17	2105	------	92	449
Leather	W. Walden	656,809	Aug. 28	3240	------	92	1717
Leather. Artificial	L. Godbout	655,073	July 31	4570	1030	92	991
Leather-crimper	A. A. Guigues	654,890	July 31	4111	------	92	895
Leather. Enameling grain side of	B. Trenckmann	653,890	July 17	2107	------	92	449
Leather. Manufacture of	W. F. Reid and E. J. V. Earle	655,785	Aug. 14	1071	------	92	1260
Leather. Manufacture of enameled	F. J. Perkins	655,730	Aug. 14	1063	245	92	1259
Leather-splitting machine	J. Craig and F. F. Slocomb. (Reissue.)	11,843	July 31	4742	1065 / 1066	92	1024
Leather-staking machine	H. Roeske	657,361	Sept. 4	563	118	92	1913
Leather-staking machine	F. A. Bradford and M. A. Holmes.	656,594	Aug. 21	2716	623 / 624	92	1699
Leather-stretching machine	E. J. F. Quirin	657,005	Aug. 28	3490	797	92	1762
Leather-wringing machine	H. P. Jones	656,119	Aug. 14	1845	425	92	1417
Ledgers, &c. Leaf for	A. Baumgarten	654,593	July 31	3939	821	92	796
Lemon-squeezer	R. D. Gray	657,820	Sept. 11	1480	316	92	2120
Lens	L. Wilhelm	656,685	Aug. 28	2861	652	92	1644
Lens edges. Machine for grinding	O. Pederson	654,486	July 24	3452	778	92	744
Lens-polisher	C. G. Folsom	655,898	Aug. 14	1994	821	92	1324
Letter-box	J. A. Kline	652,916	July 3	317	78, 79	92	64
Letter-box	H. N. King	654,401	July 24	3293	739	92	711
Letter-box mail-holder	C. C. Fields	653,004	July 3	517	123	92	101
Letter-carrier's table	F. Pergande	654,668	July 31	3793	855	92	827
Letter-holder	S. Clawson	658,344	Sept. 25	2481	537	92	2350
Letter-sheet	A. Christey	653,134	July 3	757	177	92	151
Letter-sheet and envelop. Combined							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Letter. Sign-	H. Willson	654,862	July 31	4178	942	92	909
Level	S. M. Combs	655,326	Aug. 7	286	64	92	1097
Level and plumb. Spirit-	G. F. Quinby	657,675	Sept. 11	1228	259	92	2069
Level. Spirit-	C. L. Newton	657,443	Sept. 4	717	153	92	1943
Lever-driven mechanism	F. Kleinvogel	653,452	July 10	1364	323 / 324	92	283
Life-preserver	Z. C. Angevine	653,201	July 10	901	218	92	195
Life-preserver	L. S. Bickley	657,156	Sept. 4	155	35	92	1832
Life-preserver	E. K. Roden	655,373	Aug. 7	379	82	92	1112
Lifter: *See* Box-lifter. Pan-lifter. Stove-lid lifter.							
Lifting-jack	J. Caldwell	653,283	July 10	1064	254	92	225
Lifting-jack	A. L. Cobb	657,514	Sept. 11	993	191	92	2011
Lifting-jack	J. C. Covert	652,836	July 3	189	43	92	39
Lifting-jack	G. B. Gallagher	655,705	Aug. 14	1012	233	92	1249
Lifting-jack	M. M. Moore	655,907	Aug. 14	1415	325	92	1320
Lifting-jack	W. E. Athearn	656,780	Aug. 28	3062	690	92	1676
Lightning-arrester	J. A. Poché	653,151	July 3	789	185	92	157
Lightning-protector. Overhead-wire	F. H. Pierpont	654,713	July 31	3875	874	92	844
Line-casting machine	O. Colborne	652,881	July 3	257	62	92	51
Lining-hoop-attaching machine	G. A. Bates	657,420	Sept. 4	692	146	92	1939
Linotype-machine	J. H. Lynch	658,740	Sept. 25	3157	702	92	2493
Linotype-machine	O. Mergenthaler	652,855	July 3	218	51.52	92	44
Linotype-machine	C. Muehleisen	656,489	Aug. 21	2514	579	92	1557
Liquid. Apparatus for charging receptacles with measured quantities of	H. Strater	657,883	Sept. 4	608	127	92	1923
Liquid-dispensing apparatus. Cooling-cabinet for-	L. A. Becker	655,757	Aug. 14	1120	257 / 258	92	1270
Liquid-fuel furnace	P. J. E. E. Chambost	658,422	Sept. 25	2572	570 / 571	92	2378
Liquid, &c. Means for detecting falsification of	A. and L. Braly	654,526	July 24	3517	703	92	756
Liquid-mixer	E. T. Downing	658,577	Sept. 25	2832	627 / 628	92	2430
Liquids. Apparatus for crystallizing solids from	P. Naef	655,338	Aug 7	317	69	92	1102
Liquids. Apparatus for separating solid bodies from	D. Gale	658,726	Sept. 25	3122	604	92	2486
Liquids. Crystallizing solids from	P. Naef	655,378	Aug. 7	386	84	92	1114
Liquids with gas. Apparatus for charging	J. Schneible	656,034	Aug. 14	1080	387	92	1381
Liquids with gas. Charging	E. E. Murphy	658,724	Sept. 25	3118	694	92	2485
Liquids with gases. Apparatus for treating	P. Naef	658,725	Sept. 25	3120	694	92	2485
Liquids with gases. Apparatus for treating	P. Naef	655,302	Aug. 7	245	56	92	1089
Lithographic work. Reduction-frame for	F. J. Kallenbach	653,042	July 17	2306	528	92	487
Loader. Baggage-	F. J. Willis and P. A. Griffith	656,074	Aug. 14	1745	404	92	1395
Loading device. Wagon-	L. C. Wood	658,316	Sept. 18	2368	523	92	2312
Loading operations. Means for checking up	M. J. Dooley and T. F. Carroll						
Lock: *See* Bag-lock. Bicycle-lock. Can-lock. Cylinder-lock. Door-lock. Electric lock. Hinge-lock. Indicator-lock. Lavatory-lock. Nut-lock. Nut and bolt lock. Permutation-lock. Sash-lock. Seal-lock. Trace-lock. Trunk-lock.							
Lock	H. G. Carleton	656,011	Aug. 14	1634	377	92	1371
Lock	H. G. Carleton	656,808	Aug. 28	3084	701	92	1686
Lock	T. Churchill	655,605	Aug. 7	783	184	92	1192
Lock	P. V. Cornils	655,921	Aug. 14	1441	331 / 332	92	1334
Lock	A. Cramond	654,608	July 31	3668	827	92	803
Lock	J. W. Crigler	652,749	July 3	19	5	92	6
Lock	W. E. Emery	656,958	Aug. 28	3418	779	92	1747
Lock	R. Jentzen and C. Höge	654,003	July 17	2401	533	92	507
Lock	H. L. Kellogg	658,652	Sept. 25	2982	693	92	2458
Lock	S. Nelson and E. Wood	657,442	Sept. 4	716	152	92	1942
Lock	E. R. Pickard	658,715	Sept. 25	3101	691	92	2482
Lock	A. Picken	654,322	July 24	3147	704	92	679
Lock	D. W. Tower	658,688	Sept. 25	3047	678 / 679	92	2472
Lock and burglar-alarm. Combined	S. Ritchie	658,399	Sept. 25	2535	562	92	2370
Lock and latch. Combined	M. E. Collins	655,199	Aug. 7	38	8	92	1049
Lock and latch combined	M. C. Patrick	657,885	Sept. 11	1594	343	92	2144
Lock-controlling device	H. G. Carleton	656,841	Aug. 21	2250	517	92	1506
Locking device. Door-	I. F. Redlefsen	658,584	Sept. 25	2859	633	92	2435
Locking device for jail or similar doors	P. J. Pauly, Jr.	654,275	July 24	3051	685	92	660
Locomotive	W. W. Gregg	654,060	July 17	2490	575	92	525
Locomotive	H. A. Luttgens	655,405	Aug. 7	431	95	92	1123
Locomotive buffer-beam	J. F. Dunn	656,531	Aug. 21	2592	597	92	1571
Locomotive buffer-beam	J. F. Dunn	656,532	Aug. 21	2594	597	92	1574
Locomotive-engine. Four-cylinder	A. Mallet	656,697	Aug. 28	2885	656 / 657	92	1648
Locomotive-exhaust	E. N. Slocum	652,902	July 3	290	72	92	58
Locomotive-exhaust and means for regulating draft	W. H. Prendergast	654,074	July 17	2521	579 / 580	92	529
Locomotive exhaust mechanism	H. H. Huff	652,963	July 3	447	105	92	90
Locomotive exhaust-tip	J. B. Barnes	654,589	July 31	3632	819	92	795
Locomotive-frame	D. A. Wightman	657,230	Sept. 4	306	65	92	1863
Locomotive-pilot coupling	G. W. Butcher	655,055	July 31	4529	1021	92	983
Locomotive-pilot rigging	J. F. Dunn	653,075	July 3	637	152	92	129
Locomotive sanding apparatus	H. H. Huff	658,331	Sept. 18	2392	528 / 529	92	2317
Locomotive-seat	A. MacLeay	653,105	July 3	707	167	92	142
Locomotives, &c. Apparatus for handling	W. R. Wood	657,148	Sept. 4	135	31.32	92	1828
Log-dogging apparatus	T. J. Neacy	655,573	Aug. 7	714	163	92	1180
Log-loader. Steam	L. J. Cody	653,618	July 10	1660	388	92	345

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Log-turning attachment	A. G. Campbell	654,782	July 31	4015	904	92	873
Logging-cars. Combined socket and stake for	A. C. Hurd	652,776	July 3	72	18	92	15
Logging-exhibition apparatus	A. F. Howard	654,980	July 31	4387	988 / 989	92	953
Logging-truck	J. Lindsey	658,215	Sept. 18	2206	482	92	2280
Looking-glass frame and holder. Portable	G. F. Colbert	652,913	July 3	308	76	92	62
Loom	W. H. Baker and F. E. Kip	655,642	Aug. 7	865	200 / 201	92	1208
Loom	W. H. Baker and F. E. Kip	655,643	Aug. 7	867	201 / 202	92	1208
Loom	W. H. Baker and F. E. Kip	655,645	Aug. 7	875	203	92	1210
Loom	W. H. Baker and F. E. Kip	655,647	Aug. 7	883	204 / 205	92	1212
Loom	W. H. Baker and F. E. Kip	655,648	Aug. 7	888	205 / 206	92	1214
Loom	W. H. Baker and F. E. Kip	655,649	Aug. 7	895	206 / 207	92	1216
Loom	W. H. Baker and F. E. Kip	656,613	Aug. 21	2757	632	92	1609
Loom	I. W. Chandler	657,914	Sept. 18	1649	356	92	2168
Loom	J. Corzillius	658,241	Sept. 18	2248	492	92	2288
Loom	W. G. Eaton	653,001	July 3	511	121	92	103
Loom	W., Sr., and W. Fisher, Jr	653,225	July 10	942	227	92	202
Loom	H. I. Harriman	653,178	July 3	831	195 / 196	92	166
Loom	G. F. Hutchins	657,115	Sept. 4	79	18, 19	92	1817
Loom	G. F. Kuett	653,249	July 10	980	226 / 227 / 228	92	211
Loom	G. F. Kuett	657,604	Sept. 11	1087	226 / 227	92	2042
Loom	W. McMichael	653,456	July 10	1372	325	92	284
Loom	A. Morell	655,262	Aug. 7	168	38	92	1073
Loom	C. F. Perham	654,915	July 31	4281	962	92	931
Loom	W. Weaver	653,274	July 10	1048	250 / 251 / 252	92	223
Loom	H. Wyman	656,592	Aug. 21	2709	621 / 622	92	1599
Loom attachment	J. W. Dawson	657,288	Sept. 4	411	86	92	1883
Loom automatic controlling mechanism	W. H. Baker and F. E. Kip	655,646	Aug. 7	881	204	92	1212
Loom brake mechanism	A. E. Stafford	653,158	July 3	791	180	92	158
Loom checking device	O. A. Sawyer	654,921	July 31	4294	965	92	934
Loom electric-circuit closer	H. W. Smith and W. H. Redding	657,705	Sept. 11	1488	305	92	2112
Loom filling-changing mechanism	E. S. Stimpson	658,824	Sept. 18	2378	525	92	2314
Loom for weaving double-piece figured velvet	A. Thardy	655,999	Aug. 14	1615	372	92	1367
Loom for weaving tufted pile fabrics	H. Skinner and F. H. Connolly	654,363	July 24	3216	720 / 721 / 722 / 723	92	694
Loom harness attachment	P. Cassidy	656,169	Aug. 21	1983	444	92	1447
Loom harness-frame-operating device	G. W. Stafford	654,077	July 17	2525	580 / 581	92	530
Loom harness stop-motion	G. Mathieu	654,172	July 24	2756	625 / 626	92	595
Loom. Lappet-	J. R. MacColl	656,198	Aug. 21	1977	454 / 455	92	1456
Loom. Lappet-	J. R. MacColl	656,199	Aug. 21	1981	455 / 456 / 457	92	1456
Loom picker stop mechanism	D. Young	658,101	Sept. 18	2001	436	92	2239
Loom picking-motion	J. Blanchet	657,726	Sept. 11	1322	270	92	2087
Loom shedding mechanism	F. Waddington	652,984	July 3	485	114 / 115	92	98
Loom-shuttle	N. Durand	657,098	Sept. 4	49	12	92	1851
Loom-shuttle	J. C. Sergeson	653,969	July 17	2360	548	92	497
Loom shuttle-box motion	E. L. Sargent	654,920	July 31	4290	964 / 965	92	933
Loom shuttle-check	W. F. Draper	656,181	Aug. 21	1948	447 / 448	92	1450
Loom shuttle-driving mechanism	E. Suter	656,482	Aug. 21	2418	555	92	1539
Loom stop-motion	J. C. Cottam and J. Bentley	657,691	Sept. 11	1254	266 / 267	92	2074
Loom thin-place detector	J. L. Oswalt	653,580	July 10	1617	378	92	336
Loom. Upright	G. O. Draper	654,055	July 17	2491	573	92	528
Loom warp-beam	J. Betsch	656,386	Aug. 21	2332	535	92	1523
Loom warp stop mechanism	W. H. Baker and F. E. Kip	656,612	Aug. 21	2754	631	92	1609
Loom warp stop-motion	W. H. Baker and F. E. Kip	655,644	Aug. 7	873	202	92	1210
Loom warp stop-motion	R. Crompton	657,094	Sept. 4	42	10	92	1819
Loom warp-thread and selvage guide	N. Cartier	658,841	Sept. 25	2426	536	92	2349
Loom weft stop-motion	E. Oldfield	655,910	Aug. 14	1420	326	92	1330
Looms. Electrical warp stop-motion for	J. Coldwell and C. G. Gildard	658,237	Sept. 18	2239	490 / 491	92	2287
Looms for weaving double-pile fabrics. Indicating device for	J. Corzillus	658,242	Sept. 18	2250	493	92	2288
Low-water alarm. Electric	F. Leadbeater	654,067	July 17	2509	577	92	526
Low-water alarm for steam-boilers	S. L. Moyer	656,203	Aug. 21	1990	458	92	1458
Lubricating apparatus. Axle and shaft	F. Sürth	658,686	Sept. 25	3045	678	92	2471
Lubricating means	H. Loose and G. Schreyer	657,554	Sept. 11	997	205	92	2024
Lubricator: *See* Automatic lubricator. Axle lubricator. Chain-lubricator. Engine-cylinder lubricator. Graphite lubricator. Windmill-lubricator.							
Lubricator	W. J. Cox and S. C. Gray	657,482	Sept. 4	861	174	92	1985
Lubricator	G. B. Essex	657,924	Sept. 18	1674	361	92	2173
Lubricator	F. Gielow, Sr	657,408	Sept. 4	653	136	92	1931

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lubricator	B. Jackson	657,219	Sept. 4	283	60	92	1859
Lubricator	J. F. Lewis	653,420	July 10	1307	310	92	271
Lubricator	T. J. Morgan	654,664	July 31	3788	855	92	826
Lubricator	S. L. Moyer	654,665	July 31	3790	855	92	826
Lubricator	J. Power	658,019	Sept. 18	1803	404	92	2213
Lubricator	W. E. Simpson	658,596	Sept. 25	2881	639	92	2439
Lubricator	W. B. Erb	655,212	Aug. 7	63	14	92	1053
Lubricator and piston-rod packing	J. C. Beckerleg	656,737	Aug. 28	2955	675	92	1602
Lubricator feed adjustment	G. S. Webster	656,616	Aug. 21	2766	638	92	1611
Lubricator feed-valve	F. E. Allen and A. F. Finch	653,371	July 10	1230	293	92	256
Lubricator filler. Sight-feed	J. Dembinski	658,429	Sept. 25	2585	574	92	2380
Luggage-carrier	J. C. Melby	657,666	Sept. 11	1209	253 254	92	2065
Lumber-delivering machine	L. J. Hills	657,197	Sept. 4	233	52	92	1848
Lunch-box. Collapsible	M. Fesler	657,529	Sept. 11	958	197	92	2016
Lunch-carrier	A. C. Freed	655,926	Aug. 14	1450	333	92	1336
Lunch heater and kit	I. Hogeland	657,658	Sept. 11	1188	248	92	2002
Lung tester and developer	D. B. Marsh	654,906	July 31	4270	958	92	928
Lungs and heart. Apparatus for examining condition of the	D. Ashman	653,687	July 10	1782	399	92	359
Machine-brake	M. E. Rothberg	657,452	Sept. 4	733	------	92	1946
Magnesia-alumina. Making	G. N. Vis	658,327	Sept. 18	2385	------	92	2315
Magnesium sulfate from brine. Obtaining	E. Gates	653,346	July 10	1186	282	92	247
Magnetic separation	C. F. Courtney and R. Butterworth	655,433	Aug. 7	486	108	92	1135
Magnetic separator	E. M. and M. N. Andrews and C. M. Conger.	652,952	July 3	424	98	92	86
Magneto-electric motor	S. P. Steele	658,729	Sept. 25	3131	695	92	2488
Mail-bag	A. D. Carnagy	654,223	July 24	2941	660	92	696
Mail-bag catcher	J. Kaiser	658,066	Sept. 18	1934	420 421	92	2226
Mail-bag catcher. Railway	J. W. Fairfax	656,398	Aug. 21	2350	540	92	1527
Mail-bag closure	C. Bateman	653,057	July 3	608	144	92	123
Mail-bag throat-frame	T. Gaskins	654,534	July 24	3532	796	92	759
Mail-box	O. H. Orendorff	657,356	Sept. 4	552	114	92	1910
Mail-box	H. N. King	654,402	July 24	3294	739	92	712
Mail-boxes to posts. Fastener for attaching	A. R. Black	655,669	Aug. 7	955	216	92	1227
Mail-crane. Railway	F. G. Jahn	657,989	Sept. 18	1731	372 373 374 375	92	2188
Mail-matter-marking machine	M. D. Cummings	657,234	Sept. 4	312	67	92	1864
Mail-sack catching and delivering mechanism	B. Hull	658,373	Sept. 25	2487	550	92	2361
Mail supplying and delivering apparatus	W. F. Mahony	658,666	Sept. 25	3010	669	92	2465
Mailing attachment. Book	C. A. Grant	654,596	July 24	3534	796	92	759
Mailing-card	A. W. Steiger	653,594	July 10	1625	380	92	337
Mailing-card	T. C. and I. H. Dexter	655,963	Aug. 14	1524	350 351 352 353	92	1319
Mailing-machine	G. P. McIntyre	656,825	Aug. 28	3130	709	92	1695
Mailing-tube	H. McCrea	653,483	July 10	1430	335	92	296
Mallet. Croquet-golf	B. Fischer	657,764	Sept. 11	1385	293	92	2101
Malt-drying apparatus	W. H. Prinz	657,788	Sept. 11	1427	302 303	92	2100
Malt-drying apparatus	C. M. Cochrane	655,959	Aug. 14	1515	348	92	1348
Mandolin pick-holder	C. M. Wales	653,428	July 10	1322	314	92	274
Mandrel	T. P. Greger	653,909	July 17	2247	511	92	477
Manhole-cover	R. Herman	656,249	Aug. 21	2082	477	92	1475
Manholes. Device for excluding water from	M. E. Schilz	657,011	Aug. 28	3500	799	92	1763
Manicure-tool	J. Friedlander	654,147	July 24	2705	617	92	586
Manifolding device	R. Schulte-Blome	656,320	Aug. 21	2228	511	92	1502
Manure and seed distributer	W. Jäger	657,419	Sept. 4	677	142	92	1936
Manure-distributing machine	N. Tornauw	655,813	Aug. 14	1255	------	92	1299
Maps, drawings, &c. Preparing	M. Poppe	658,529	Sept. 25	2745	------	92	2412
Margarin. Product for use in making	O. C. A. Carlsson	658,481	Sept. 25	2666	592	92	2395
Massage apparatus	H. F. Garey	653,573	July 10	1598	372	92	331
Massaging by vacuum. Apparatus for	W. C. Haynes	655,707	Aug. 14	1015	234 235	92	1250
Mast. Steam-vessel	W. P. Jones and H. M. Bates	653,349	July 10	1189	------	92	248
Mat: *See* Door-mat. Table-mat.	M. Epstein	657,267	Sept. 4	383	80	92	1878
Match	J. G. Locke	656,557	Aug. 21	2640	608	92	1583
Match-box	H. C. Paul	658,308	Sept. 25	2527	559	92	2368
Match-box	A. Schuster	657,573	Sept. 11	1027	212 213 214	92	2030
Match-box filling and closing machine	F. L. Van Dusen	657,471	Sept. 4	763	163 164 165	92	1952
Match-machine	J. A. E. Criswell	656,014	Aug. 14	1645	378 379	92	1374
Match-making machine	A. Kelley	654,794	July 31	4043	909 910 911	92	880
Match-making machine	E. B. Stocking	654,815	July 31	4078	917 918	92	888
Match-safe	J. A. Cooper	655,689	Aug. 14	988	225	92	1244
Match-safe and cigar-tip cutter. Combined	D. B. Moon	655,171	July 31	4733	1064	92	1022
Matches. Automatic device for holding, delivering, and igniting	A. T. Wannenwetsch	655,746	Aug. 14	1090	251	92	1264
Matching-machine	J. M. Kuebler	656,027	Aug. 14	1670	384	92	1379
Mattress-filling machine	F. J. Beal	656,883	Aug. 28	3159	715 716	92	1700
Mattress-making machine	H. P. and N. F. Daviss	652,755	July 3	30	8	92	7
Mattress. Pneumatic	J. A. Berger	654,430	July 24	3351	751	92	724

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Mattress-stuffing machine	H. C. Rehkopf	655,578	Aug. 7	738	170 171	92	1184
Mattress-tightening device. Sagging	M. Bunnell	655,684	Aug. 14	982	223	92	1948
Mattress. Wire	C. O. Hasselbarth	653,022	July 3	550	129	92	110
Measure attachment. Tape	C. H. Elskamp	654,960	July 31	4353	980	92	946
Measure for trousers. Tailor's	A. Paul	653,590	July 10	1570	366	92	325
Measure. Tailor's	G. Frega	658,038	Sept. 18	1890	410	92	2219
Measure. Tape	J. J. Brunello	655,052	July 31	4525	1020	92	982
Measuring and indicating apparatus. Electric	H. Darwin, E. H. Griffiths, and W. C. D. Whetham.	657,861	Sept. 11	1553	334	92	2136
Measuring and marking machine. Cloth	F. Lehmann and A. van Kempen	656,846	Aug. 28	3192	725	92	1708
Measuring apparatus. Liquid	M. Arndt	653,203	July 10	906	219	92	196
Measuring areas of surfaces. Machine for	J. E. Nightingale	657,444	Sept. 4	718	153 154	92	1943
Measuring currents in working circuits. Electrostatically	G. L. Addenbrooke	656,076	Aug. 14	1748	405	92	1396
Measuring device	A. B. Pratt	657,249	Sept. 4	340	73	92	1870
Measuring device. Skirt	E. E. Cunningham	655,960	Aug. 14	1517	348	92	1348
Measuring instrument	F. Schrottke	655,276	Aug. 7	197	44	92	1079
Measuring instrument	K. O. F. Schrottke	654,104	July 17	2567	590	92	538
Measuring instrument. Combination	G. H. Butrick	653,640	July 10	1738	400	92	360
Measuring instrument. Electric	J. Harris	657,984	Sept. 18	1811	390	92	2203
Measuring instrument for lasts, &c	C. B. Hatfield	655,228	Aug. 7	97	21	92	1060
Measuring machine. Cloth	T. J. Cloud	654,229	July 24	2960	684	92	640
Measuring machine. Lace or embroidery	J. P. Young	652,603	July 10	1638	383	92	340
Measuring machine. Liquid	W. H. Cook	654,441	July 24	3365	755	92	726
Measuring, marking, and rolling machine. Cloth	R. Livingston and W. Rodger	657,428	Sept. 4	689	145 146	92	1938
Measuring-tank	P. Müllecker	653,030	July 3	563	132	92	113
Measuring vessel. Metallic	G. W. McKim	657,000	Aug. 28	3485	796	92	1761
Meat. Curing	G. A. Washburn	657,258	Sept. 4	365	76	92	1874
Meat-curing apparatus	G. A. Washburn	657,207	Sept. 4	255	55	92	1853
Meat-cutters and sausage-stuffers. Feeding attachment for	T. W. Clements	655,822	Aug. 14	1270	291 292	92	1301
Meat-powder. Making	H. J. Dunn	658,248	Sept. 18	2260	------	92	2201
Meat-tenderer	T. Don and C. M. Fowler	653,222	July 10	936	220	92	201
Meats. Coating	J. Mitchell	654,118	July 17	2602	------	92	545
Meats. Curing	H. J. Finn	654,885	July 31	4227	------	92	919
Meats. Preserving	F. W. Bright	654,563	July 24	3573	806 807	92	766
Mechanical motor	W. W. Teague	658,223	Sept. 18	2217	485	92	2283
Mechanical motor	G. S. Zent	654,930	July 31	4308	968	92	936
Mechanical movement	C. H. Herod and J. B. Detwiler	654,153	July 24	2716	619	92	588
Mechanical movement	W. A. Pitt	658,557	Sept. 25	2791	620	92	2421
Mechanical movement	J. Schies	657,456	Sept. 4	739	158	92	1947
Mechanical movement	H. D. Williams and H. G. Hoadley	658,478	Sept. 25	2663	591	92	2395
Melting apparatus. Portable	N. S. Jenkins	653,007	July 3	525	124	92	105
Mercerizing	H. E. Aykroyd and P. Krais	657,849	Sept. 11	1534	------	92	2132
Mercerizing apparatus	J. F. Copley, P. S. Marshall, and R. Heaton.	656,319	Aug. 21	2208	505	92	1498
Mercerizing apparatus	W. G. Denn	655,546	Aug. 7	663	151	92	1170
Mercerizing-machine	T. McConnell	657,705	Sept. 11	1277	270 271	92	2078
Merchandise. Means for collecting, conveying, and depositing articles or packages of	L. Abraham	657,261	Sept. 4	309	77	92	1875
Mercury. Making oxychlorid of	R. Torchia	657,325	Sept. 4	496	------	92	1899
Merry-go-round	J. W. Hile	654,154	July 24	2719	619	92	589
Message-delivering device for trains	P. P. Shives	655,165	July 31	4719	1002	92	1020
Metal band. Wrought	T. J. Bray	653,904	July 17	2236	508	92	474
Metal bands. Forming wrought	T. J. Bray	653,903	July 17	2234	508	92	474
Metal-bending machine	J. T. Scott, C. G. Hightower, and F. E. Neitzel.	653,704	July 17	1860	425	92	403
Metal box	W. H. Moore	655,348	Aug. 7	336	73	92	1106
Metal-cutting machine	S. J. Vernsten	655,424	Aug. 7	471	105	92	1132
Metal. Device for transporting molten	S. R. Perry	658,555	Sept. 25	2787	618 619	92	2420
Metal edges. Machine for forming and attaching	C. W. Gregory	656,966	Aug. 28	3435	784	92	1752
Metal pipe. Coated	W. Lacy	657,605	Sept. 11	1091	227	92	2042
Metal shavings. Apparatus for cutting	A. Holtgen	655,868	Aug. 14	1347	310	92	1316
Metal-shearing machine	B. Wesselmann	654,062	July 17	2533	583	92	532
Metal sheets or plates. Machine for curling or beading edges of	D. Smith	654,495	July 24	3467	782	92	746
Metal structures. Forming composite	W. H. Savery	655,457	Aug. 7	531	119	92	1144
Metal-working machine	A. D. Field, F. Marggraff, and J. Draher.	654,616	July 31	3698	834 835 836 837	92	808
Metal-working machine	R. Hakewessell and E. C. Henn	655,974	Aug. 14	1559	358 359 360	92	1357
Metal-working machine. Combined	R. Bates	655,597	Aug. 7	771	181 182	92	1190
Metal-working machine for making tacks, &c	J. Draber and F. Marggraff	654,612	July 31	3680	829 830 831 832	92	805
Metal-working machines. Automatic stop mechanism for	F. Marggraff	654,659	July 31	3777	852 853	92	823
Metals from ores by electricity. Apparatus for separating	G. D. Burton	657,911	Sept. 18	1642	354 355	92	2166
Metals from ores or slimes. Extracting	S. H. Johnson and H. L. Sulman	652,849	July 3	207	49	92	42
Metallic parts together. Fastening	J. A. Young	654,042	July 17	2468	566	92	519
Metallic salts. Electrolytic apparatus for decomposing	C. Kellner	655,788	Aug. 14	1176	269 270	92	1281
Metallic sulfids. Enriching	H. Petersen	657,955	Sept. 18	1766	------	92	2193
Metallic tube	L. F. Betts	656,241	Aug. 21	2073	475	92	1473

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Metallurgical furnace	E. Kerr	652,968	July 3	455	107, 108	92	92
Meter: *See* Electric meter. Electricity-meter. Gas-meter. Prepayment-meter. Rate-meter. Summation-meter.							
Meter	C. O. F. Schrottke	655,353	Aug. 7	342	75	92	1107
Meter connection, meter and stop-cock box	H. V. Estill	654,615	July 31	3695	833	92	808
Mica, &c. Assorting apparatus for sheets of	R. W. Heard and R. A. L. Snyder	655,558	Aug. 7	672	153, 154	92	1172
Microscope	E. Bausch	658,611	Sept. 25	2902	646, 647	92	2443
Mileage-book and conductor's check	J. A. Jones	654,261	July 24	3028	680	92	656
Milk. Automatic apparatus for weighing and delivering	A. B. Wright	658,053	Sept. 18	1914	415, 416	92	2222
Milk-cooler	D. Bothwell	654,220	July 24	2938	659	92	635
Milk-cooler	W. V. Dean	653,072	July 3	634	152	92	129
Milk-pasteurizing apparatus	F. V. Gifford	656,786	Aug. 28	3041	692, 693	92	1678
Milking-machine	A. Shiels	654,331	July 24	3161	707, 708, 709	92	681
Milking machine. Cow-	M. M. Condron	655,200	Aug. 7	40	9	92	1049
Milking machine. Cow-	M. J. Cushman	654,091	July 17	2543	585, 586	92	534
Mill: *See* Attrition-mill. Bolting-mill. Cane-mill. Feed-mill. Grinding-mill. Quartz-mill. Rolling-mill. Sawmill. Tube or pebble mill. Windmill. Wire-rod mill.							
Mill-adjusting mechanism. Universal	C. L. Huston	657,823	Sept. 11	1484	316, 317	92	2121
Mill-frame	A. M. Zimmerman	655,293	Aug. 7	225	50, 51	92	1085
Mill motor mechanism	C. J. Weston	654,083	July 17	2534	583	92	582
Milling-cutter. Rotary	F. A. Burnham	654,436	July 24	3360	754	92	725
Milling-machine	C. C. Newton	655,104	July 31	4616	1041, 1042	92	1000
Milling screws, &c. Machine for	H. Liebert	655,878	Aug. 14	1364	313, 314	92	1318
Mine cages or buckets. Apparatus for loading or unloading	J. F. McKay	654,270	July 24	3043	688	92	659
Mine cages or lifts. Clutch mechanism for	R. Schulz	653,940	July 17	2303	526	92	487
Mine safety device	D. McCowan	656,204	Aug. 21	1992	458	92	1458
Mine trap-door	A. Hurford	657,985	Sept. 18	1813	391	92	2203
Mine-ventilating apparatus	H. Fullwood	658,444	July 10	1351	321	92	280
Mining-dog. Self-acting	W. A. Wilson	656,279	Aug. 21	2136	488	92	1485
Mining dredge. Placer-	S. K. Behrend	653,205	July 10	908	219, 220	92	196
Mining-drill	J. Wynne and V. V. Haidacher	655,292	Aug. 7	223	49, 50	92	1085
Mining-machine	H. J. Haley	658,008	Sept. 18	1844	399	92	2210
Mining-machine	J. L. Mitchell	656,414	Aug. 21	2384	547, 548, 549	92	1532
Mineral-screen	P. F. Poorbaugh	655,160	July 31	4709	1061	92	1018
Mineral waters. Apparatus for purifying natural	J. Z. Formei	655,436	Aug. 7	495	111	92	1136
Mineral wool. Treating	A. D. Elbers	653,077	July 3	640	------	92	130
Mirror-indicator for amplifying movements of bodies.	A. Pollak	653,881	July 17	2189	499	92	465
Mirror-suspending device	M. A. Biver and A. E. Hénard	656,928	Aug. 28	3362	766, 767, 768	92	1738
Mirror-walls. Chamber with	M. A. Biver and A. E. Hénard	656,927	Aug. 28	3361	766	92	1738
Mirrors. Absorbing the surplus mercury in the manufacture of mercury	D. J. Murnane	658,321	Sept. 18	2375	------	92	2313
Miter-box	J. T. Boufford	656,835	Aug. 28	3165	716, 717	92	1702
Miter-box	A. Vick	658,078	Sept. 18	1908	429	92	2233
Miter-box. Folding and adjustable	G. Grunwald	654,449	July 24	3385	761, 762	92	731
Mitering-machine	J. L. Tyler	655,421	Aug. 7	466	103, 104	92	1131
Mitering-machine	J. L. Tyler	655,422	Aug. 7	469	104	92	1131
Mixer: *See* Liquid-mixer. Ore-mixer.							
Moistener. Envelop and stamp	W. H. Knauber	655,091	July 31	4596	1037	92	906
Moistening and sealing envelops. Device for	C. L. Vose	656,912	Aug. 28	3339	760	92	1733
Moistening, closing, and applying stamps to envelops. Machine for	W. S. Post	658,673	Sept. 25	3022	673	92	2467
Moistening or damping device	E. Caverly	655,604	Aug. 7	782	184	92	1192
Moistening-pad	E. C. McVoy	654,480	July 24	3444	776	92	742
Mold: *See* Curb-mold. Dish-mold. Glass-mold. Ice-cream mold. Rotary mold.							
Mold	W. F. Giles	658,007	Sept. 18	1844	399	92	2210
Mold and press. Combined	J. J. Brannagan	656,505	Aug. 21	2542	584, 585	92	1563
Mold for cement curbs and gutters	E. W. Seamans	656,377	Aug. 21	2317	531	92	1520
Mold for making chilled rolls	F. Gorman	656,018	Aug. 14	1655	380	92	1376
Molds. Means for retaining sand in	J. R. Jones	656,021	Aug. 14	1660	381	92	1377
Molder's flask	J. R. Jones	656,022	Aug. 14	1661	381, 382	92	1378
Molding-machine	J. W. Murray and C. W. Field	656,362	Aug. 21	2289	524, 525	92	1514

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Molding machinery	H. Tabor and E. H. Mumford	654,238	July 24	3081	691, 692	92	666
Molding-pattern. Movable	W. D. Cade	658,614	July 10	1655	386	92	844
Mole-trap	S. B. and J. F. Rittenhouse	655,995	Aug. 14	1604	369	92	1365
Monoacetyl-indoxyl and making same	B. Heymann and A. Herre	657,589	Sept. 11	973	------	92	2020
Mooring-line attachment	C. S. Hamilton	653,021	July 3	548	120	92	100
Mop-head. Rotary	W. Dabb	654,231	July 24	2963	665	92	640
Mop-holder	C. M. Chapman	657,002	Aug. 28	3592	828	92	1783
Mop-wringer	M. L. De Witt	654,139	July 24	2990	618	92	583
Mop-wringer	I. C. Hart	653,450	July 10	1363	323	92	282
Mordanting, &c. Apparatus for	T. R. Bottomley, J. Longthorpe, and W. Dargue.	656,315	Aug. 21	2199	502, 503	92	1497
Mortar-mixing machine	W. L. Hayes	658,486	Sept. 25	2672	503	92	2396
Mortising-tool	H. Witherwax	652,945	July 3	415	96	92	84
Mosquito and fly guard for beds, &c. Portable	H. A. Strauss	657,369	Sept. 4	581	122	92	1917
Mosquito-canopy frame	W. J. Durham	658,621	July 10	1664	389	92	345
Moth-catcher	S. A. Haseltine	656,642	Aug. 28	2804	641	92	1631
Motion. Means for converting rotary into reciprocating	I. H. Venn	657,842	Sept. 11	1523	327	92	2129
Motor: *See* Current-motor. Electric motor. Explosive-motor. Fan-motor. Fluid-pressure motor. Gas-motor. Gas or petroleum motor. Gasolene-motor. Hammock-motor. Hand-operated motor. Hydraulic motor. Impact-motor. Internal-combustion motor. Magneto-electric motor. Mechanical motor. Petroleum or gas motor. Pump-motor. Rotary motor. Sewing-machine spring-motor. Steam-motor. Tide-motor. Water-motor. Wave-motor.							
Motor-controller	D. H. Darrin	658,218	July 10	928	224	92	199
Motor-controller	W. B. Elliott and J. W. Eskholme	654,883	July 31	4216	949, 950	92	917
Motor mechanism	G. A. Brachhausen	657,756	Sept. 11	1372	290	92	2008
Motor-starter	E. M. Fraser	655,335	Aug. 7	303	68	92	1100
Movements. Mechanism for imparting successive or alternating	E. Moore	658,388	Sept. 25	2521	557, 558	92	2367
Mower	J. F. Wells	658,305	Sept. 18	2352	518	92	2209
Mower grass-catcher. Lawn-	R. F. Krause	657,289	Sept. 4	420	88	92	1885
Mower journal-bearing. Lawn-	W. G. Vernon	657,715	Sept. 11	1299	275	92	2083
Mower or harvester finger-bar attachment	W. Gatermann	655,330	Aug. 7	318	70	92	1102
Mowing-machine	M. Kane	653,419	July 10	1305	309	92	271
Mowing-machine	J. Macphail	656,257	Aug. 21	2096	479	92	1477
Mowing-machine	W. F. Reed	653,185	July 3	844	190	92	169
Mowing-machine knife	A. C. McCoy	656,363	Aug. 21	2292	525	92	1515
Mowing-machine seat	N. Baughman	656,337	Aug. 21	2242	515	92	1504
Mucilage-stand	E. S. Raff	653,695	July 17	1848	423	92	401
Mud-guard	T. J. Ward	657,972	Sept. 18	1789	386	92	2198
Muffle furnace or oven	L. H. W. Regout	653,819	July 17	2082	475	92	444
Muscle-kneader	R. Hollem	655,490	Aug. 7	581	130	92	1154
Music-box star-wheel mechanism	G. Diezemann	657,096	Sept. 4	44	11	92	1810
Music-holder	L. C. Schaffer and E. F. Whartenby	656,478	Aug. 21	2406	575	92	1554
Music-leaf turner	W. L. Caywood and J. M. Gasaway	653,097	July 3	628	150	92	127
Music-leaf turner	S. Cunningham	653,781	July 17	1919	440	92	414
Music-leaf turner	E. W. Eaton	658,206	Sept. 18	2191	478, 479	92	2277
Music-leaf turner	F. Schaffter	658,283	Sept. 18	2310	510	92	2301
Music-leaf turner	J. D. Wolf	657,846	Sept. 11	1530	329	92	2131
Music recorder and duplicator	P. J. Meahl	654,473	July 24	3426	772, 773	92	739
Musical instrument	R. J. Clark	653,135	July 3	758	177	92	151
Musical instrument	M. Montoya	653,521	July 10	1498	349	92	311
Musical-instrument finger-guide	W. Wicht	656,917	Aug. 28	3344	762	92	1734
Musical instrument. Mechanical	G. A. Brachhausen	657,081	Sept. 4	15	3, 4	92	1804
Musical instrument. Mechanical	H. Müller	657,560	Sept. 11	1003	207	92	2025
Musical instrument. Self-playing	J. W. Whitlock	658,134	Sept. 18	2052	448	92	2249
Musical instrument. Stringed	E. Eulert and A. Wallenstein	653,550	July 10	1557	362	92	323
Musical instruments. Incasement or housing for mechanical	F. J. Hertel	653,348	July 10	1189	283	92	247
Musical instruments. Self-playing attachment for key	H. M. Salyer	653,263	July 10	1018	244, 245	92	217
Nail assorting and bunching tool	M. J. Whalen	658,537	Sept. 25	2757	612	92	2414
Nail-machine	J. Atkins	654,047	July 17	2475	568, 569	92	520
Nail-machine	J. Atkins	654,048	July 17	2479	569, 570, 571	92	521
Nail-making machine	J. J. Morrissey	654,911	July 31	4275	960, 961	92	929
Nail or tack driver	G. W. Hobbs	653,772	July 17	1992	455	92	428
Nail or tack heading apparatus	A. H. Brigham	658,208	Sept. 18	2177	476	92	2275
Nailing-machine	F. F. Raymond, 2d	654,762	July 31	3979	895, 896	92	865
Naphthol prepared with rosin soap	E. Grossmann	657,767	Sept. 11	1389	------	92	2102
Napkin-ring	J. Frame	655,069	July 31	4564	1028	92	990
Napping-machine	N. H. Grosselin	652,848	July 3	198	45, 46, 47	92	40
Necktie-fastener	A. F. James	658,092	July 3	678	161	92	137
Necktie-fastener	P. N. Schuyler	654,362	July 24	3215	720	92	691
Necktie-fastener	A. L. Shantz	656,573	Aug. 21	2065	614	92	1583
Necktie-support	D. E. Lantz	658,268	Sept. 18	2291	504	92	2297

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Neckwear-retainer	W. O. Horn	658,177	Sept. 18	2140	468	92	2267
Needle	L. A. Roberts	653,886	July 17	2202	501	92	468
Needle device. Tape-	C. W. Dodge	654,957	July 31	4349	979	92	945
Needle for weaving cane fabrics	G. O. Redpath	658,508	Sept. 25	2706	600	92	2404
Needle. Tape-	M. N. Esterbrook	655,333	Aug. 7	301	67	92	1099
Nerve-broaches, &c. Machine for manufacturing	J. H. Downie	656,180	Aug. 21	1947	447	92	1450
Nest and hover. Poultry	J. N. Green	656,965	Aug. 28	3434	784	92	1751
Nest-box	M. M. Chew	654,517	July 24	3503	791	92	753
Nest. Hen's	F. C. Meagher	658,112	Sept. 18	2022	441	92	2243
Net. Bait or other	J. R. Holloway and H. S. Jacobs	655,976	Aug. 14	1568	361	92	1358
Nitrogen compounds. Manufacturing	C. B. Jacobs	657,937	Sept. 18	1728	371	92	2187
Nitrogen compounds. Manufacturing	C. B. Jacobs	657,938	Sept. 18	1730	.....	92	2188
Note-sheet. Spiral	A. Staffelstein and F. Kluge	657,682	Sept. 11	1241	263	92	2071
Nozzle. Controlling-	T. Haley	654,891	July 31	4240	952	92	922
Nozzle deflector. Hydraulic-	J. W. Smith	658,516	Sept. 25	2716	602	92	2405
Nozzle. Exhaust-	W. R. Frederick	657,101	Sept. 4	57	13	92	1813
Nozzle-holder	S. G. Mills	658,452	Sept. 25	2615	580	92	2385
Nozzle. Pipe-	F. Ibert	653,677	July 17	1822	417	92	396
Nozzle. Vent-	A. N. Ritz	657,274	Sept. 4	395	83	92	1880
Numbering-machine	W. W. Sawyer	654,676	July 31	3804	858	92	829
Nu-	C. H. Smith	653,852	July 17	2141	487	92	455
Nut and bolt lock	C. M. Tipton	657,256	Sept. 4	354	74	92	1872
Nut for vehicle-axles. Wear-adjusting	W. H. Holliway	658,500	Sept. 25	2603	598	92	2401
Nut-lock	M. Bartley	656,151	Aug. 14	1895	436	92	1426
Nut-lock	M. Bartley	656,152	Aug. 14	1896	436	92	1427
Nut-lock	S. C. Baughn, Jr	657,507	Sept. 11	911	185	92	2008
Nut-lock	C. O. Bulmer	653,210	July 10	917	222	92	198
Nut-lock	A. M. Burleson	655,054	July 31	4527	1021	92	982
Nut-lock	J. D. Dowell and L. M. Gallilher	658,719	Sept. 25	3106	692	92	2483
Nut-lock	H. E. Downing and H. L. Dorsett	656,530	Aug. 21	2591	597	92	1573
Nut-lock	F. Freese	653,228	July 10	948	228	92	203
Nut-lock	R. A. Gage	655,704	Aug. 14	1011	233	92	1249
Nut-lock	R. Laurin	658,089	Sept. 18	1984	432	92	2236
Nut-lock	L. W. Loving	654,744	July 31	3967	889	92	857
Nut-lock	J. D. Marshall and M. Loucks	656,359	Aug. 21	2286	524	92	1513
Nut-lock	M. Moran	657,436	Sept. 4	706	149	92	1941
Nut-lock	E. Morse	653,308	July 10	1105	263	92	234
Nut-lock	O. A. Norlund	659,691	July 17	1842	422	92	400
Nut-lock	J. C. Reis	655,118	July 31	4641	1046	92	1004
Nut-lock	D. W. Seaver	655,022	July 31	4468	1008	92	971
Nut-lock	M. L. Shively	657,137	Sept. 4	110	26	92	1824
Nut-lock	J. J. Simons	657,365	Sept. 4	570	119	92	1915
Nut-lock	J. P. Strand	653,043	July 3	584	137	92	118
Nut-lock	A. W. Webb	656,068	Aug. 14	1735	401	92	1393
Nut-lock	E. W. Reed	658,675	Sept. 25	3025	674	92	2468
Nut-lock. Vehicle-wheel	W. E. Ball	657,075	Sept. 4	3	1	92	1801
Nut-lock wrench	F. W. Bühne and A. Ritz	658,540	Sept. 25	2762	613	92	2415
Nut. Rotary	G. W. Terry	658,410	Sept. 25	2553	566	92	2374
Nut. Vehicle-axle	J. Deeble	658,565	Sept. 25	2807	623	92	2425
Nut wrench. Axle-	H. Shuart	657,034	Aug. 28	3534	807	92	1770
Observatory-platform. Revolving, ascending, and descending	H. Olson	655,509	Aug. 7	605	137	92	1159
Obstetrical appliance	C. F. Ruttman	657,834	Sept. 11	1508	328	92	2126
Office-indicator	W. H. Wilder	653,898	July 17	2218	504	92	471
Oil-burner	A. Fredrickson	654,058	July 17	2494	574	92	524
Oil-cake-sacking machine	A. W. French	655,337	Aug. 7	312	69	92	1101
Oil-cake-trimming machine	T. W. Alexander	657,304	Sept. 4	447	94	92	1890
Oil-can	W. Blanchard	653,499	July 10	1457	340	92	302
Oil-can	D. True	656,306	Aug. 21	2187	499	92	1495
Oil-can	P. Wall	656,000	Aug. 14	1617	373	92	1368
Oil-can	W. L. Clayton and N. R. Persinger	653,985	July 17	2380	547	92	502
Oil-container attachment	G. A. McKell	654,271	July 24	3045	684	92	659
Oil-cup	V. V. Torbensen	653,854	July 17	2142	487	92	455
Oil-engine	C. Erisman	655,213	Aug. 7	65	14	92	1053
Oil. Extracting	E. Donard	656,529	Aug. 21	2560	597	92	1573
Oil-extracting apparatus	J. B. Benton	655,683	Aug. 14	981	222 223	92	1242
Oil from waste. Machine for recovering	L. E. Bultez	653,944	July 17	2310	528	92	488
Oil or other vessel and receptacle	A. H. Franke	654,965	July 31	4363	981	92	948
Oil-separator	H. Schlinck	653,041	July 3	577	.....	92	116
Oils or fats. Purifying	T. Macalpine	655,500	Aug. 7	595	.....	92	1157
Oils. Refining mineral	L. Hirsch	656,975	Aug. 28	3449	788	92	1754
Oiler	W. Linhart	657,552	Sept. 11	998	204	92	2024
Oiler. Axle-	W. J. Harvey	656,289	Aug. 21	2155	493	92	1488
Oiler. Cross-head-pin	V. D. Roe	655,518	Aug. 7	618	139	92	1161
Oiler for vehicle-wheels. Automatic	S. C. Pettegrew	657,563	Sept. 11	1009	208	92	2027
Oiling device. Windmill-	R. H. Smith	658,048	Sept. 18	1908	414	92	2221
Onion-pulling machine	S. T. and C. H. Wellman and J. W. Seaver.	655,139	July 31	4668	1052 1053	92	1009
Open-hearth furnace	G. F. Appleton	656,496	Aug. 21	2527	582	92	1560
Optical device	A. J. Cross	657,919	Sept. 18	1602	359	92	2171
Optometer	L. K. Scott	658,287	Sept. 18	2317	511 512	92	2202
Ordnance-sight	A. A. Common	654,949	July 31	4335	976	92	942
Ordnance. Telescope for sighting	J. S. Loder	657,553	Sept. 11	994	204 205	92	2024
Ore-classifying apparatus	A. H. Stebbins	656,674	Aug. 28	2845	648 649	92	1640
Ore-concentrating agitator	A. H. Stebbins	654,290	July 24	3076	690	92	665
Ore-concentrator	T. Smith	655,311	Aug. 7	260	59	92	1092
Ore-crusher	L. Jacques	658,648	Sept. 25	2977	662	92	2457
Ore crusher and amalgamator	A. M. Rouse	657,082	Aug. 28	3532	807	92	1770
Ore-electrolyzing apparatus	J. M. Damm	655,478	Aug. 7	565	126	92	1151
Ore mixer and sampler	P. Argall	653,202	July 10	902	218 219	92	195
Ore-roasting furnace	J. F. Mitchell	654,662	July 31	3786	854	92	826
Ore-separating machine	J. F. Mitchell	654,661	July 31	3785	854	92	825
Ore-separator	A. Dasconaguerre	653,792	July 17	2040	465	92	437
Ore-separator. Centrifugal	G. M. Westman	658,536	Sept. 25	2755	612	92	2413
Ore-treating apparatus	S. M. Lissau	655,494	Aug. 7	586	132	92	1155
Ores anhydrously. Concentrating	S. M. Lissau	655,495	Aug. 7	587	132	92	1155
Ores anhydrously. Concentrating	S. M. Lissau	655,496	Aug. 7	589	133	92	1156
Ores anhydrously. Means for concentrating	S. M. Lissau	655,497	Aug. 7	590	133	92	1156
Ores anhydrously. Means for concentrating	J. Buss	657,393	Sept. 4	628	131	92	1927
Ores, &c. Apparatus for concentrating and separating	F. E. Elmore	653,340	July 10	1178	280	92	245
Ores. Apparatus for separating metallic from rocky constituents of	B. Sadtler	656,268	Aug. 21	2112	.....	92	1480
Ores for recovery of metallic ingredients. Treating	T. E. Leece	654,315	July 24	3139	702	92	977
Ores of valuable metals. Apparatus for working	E. H. Dickie	656,395	Aug. 21	2345	.....	92	1525
Ores or tailings. Leaching	W. Robinson	656,728	Aug. 28	2941	671	92	1659
Ores. Separating	G. M. Westman	658,412	Sept. 25	2556	567	92	2375
Ores. Treating	M. Clark	653,214	July 10	922	223	92	198
Organ	F. E. P. Ehrlich	657,594	Sept. 11	1066	221	92	2087
Organ	C. Maier	655,880	Aug. 14	1367	314 315	92	1319
Organ	J. Wyvell	655,594	Aug. 7	764	179 180	92	1189
Ornamental object	E. Bick and C. H. Hahn	657,050	Aug. 28	3571	822	92	1778
Ornamenting surfaces	J. T. Commoss	658,346	Sept. 25	2437	538	92	2351
Oven. Bake-	P. Vetter	653,272	July 10	1045	249 250	92	922
Oven. Baker's	W. Griffin	654,246	July 24	2968	671 672	92	618
Oven. Baking-	G. R. Moon	658,188	Sept. 18	2153	471	92	2270
Oven-door	F. Eberhart and C. A. Schubert	656,839	Aug. 28	3182	721	92	1705
Oven-ventilator	W. L. Culver	655,761	Aug. 14	1130	259	92	1272
Overalls. Combination-	N. Ravich	654,279	July 24	3069	687	92	662
Oxygen. Apparatus for making and storing	W. Riley and A. Kershaw	653,261	July 10	1016	243 244	92	216
Ozone-generating apparatus	W. Elworthy	653,078	July 3	642	153	92	130
Package-carrier	C. A. Saner	656,049	Aug. 14	1703	391	92	1358
Package for medicines, &c	L. E. Moore	658,273	Sept. 18	2297	506	92	2208
Package for shipping lobsters, &c.	F. W. Collins	653,567	July 10	1589	370	92	330
Package making and filling machine	J. R. Okell	655,574	Aug. 7	716	163 164 165 166 167 168 169	92	1189
Package material. Manufacturing	W. S. Stuckenberg	653,323	July 10	1128	269	92	238
Package or can. Shipping	H. K. Buck	652,831	July 3	180	42	92	37
Package or pocket-book. Folding	A. W. Beers	657,687	Sept. 11	1248	264	92	2072
Package receiving and delivering device	C. E. Huxley	655,901	Aug. 14	1400	322 323	92	1326
Packing	W. Black	653,983	July 17	2376	547	92	501
Packing-box	J. H. Harrington	657,108	Sept. 4	37	15	92	1815
Packing-can and making same	H. C. Hunter	654,255	July 24	3016	677	92	653
Packing-case. Collapsible	P. F. Kesting	655,244	Aug. 7	134	29	92	1066
Packing device for annular joints	B. C. Batcheller	657,078	Sept. 4	8	2	92	1802
Packing for air-compressor or other tandem cylinders.	M. Bulkley	653,859	July 17	2153	490	92	458
Packing. Metallic	T. H. Holmes	654,542	July 24	3344	799	92	761
Packing. Piston-	M. F. Cox	655,202	Aug. 7	48	10,11	92	1051
Packing. Piston-	S. E. Kelsey	657,548	Sept. 11	986	203	92	2022
Packing. Piston-	A. A. Tripold	658,408	July 10	1287	306	92	267
Packing. Piston-	J. T. Wilson	654,211	July 24	2915	654	92	631
Packing. Piston-	W. H. Myers	656,562	Aug. 21	2646	610	92	1584
Packing-ring. Piston	W. H. Myers	656,563	Aug. 21	2648	610	92	1584
Packing-ring. Piston	T. H. Holmes	654,541	July 24	3542	799	92	761
Packing. Rod-	H. C. Strång	655,080	July 31	4482	1011	92	974
Packing. Rod-	C. Webjörnsen	653,760	July 17	1973	450	92	424
Packing semifluid substances. Means for	A. B. Pratt	657,250	Sept. 4	343	73	92	1870
Packings. Carton or shipping-package for piston-	G. A. Edwards	656,283	Aug. 21	2144	489	92	1486
Pad: *See* Inking-pad. Moistening-pad.	D. S. Knowlton	657,741	Sept. 11	1349	285 286	92	2003
Pad-holder	B. Handschuh	654,627	July 31	3725	841	92	813
Paddle-wheel	A. A. Low	658,039	Sept. 18	1897	410	92	2219
Padlock	A. A. Low	658,040	Sept. 18	1898	411	92	2219
Pail cover. Sap-	H. Louderbough	652,971	July 3	461	.....	92	92
Pail. Sap-	J. Elscher	654,618	July 31	3694	.....	92	807
Paint for ships' bottoms	A. Fisher	653,302	July 10	1076	258	92	228
Paint. Making	B. W. Augustine	656,080	Aug. 14	1758	406	92	1397
Paint-spraying apparatus	R. F. Cermak	658,427	Sept. 25	2580	572 573	92	2379
Painting-machine	J. E. Reeves	653,756	July 17	1965	448	92	423
Painting machine. Molding-	E. Hudson	656,547	Aug. 21	2626	605	92	1580
Pair and sheet furnace	J. T. Ferres	657,100	Sept. 4	52	12, 13	92	1812
Pan: *See* Baking-pan. Dust-pan. Bed-pan. Evaporating-pan Bread or cake pan.	J. T. and A. W. Ferres	654,884	July 31	4225	950	92	919
Pan-lifter	G. R. and W. C. Williams	656,872	Aug. 28	3254	739 740	92	1718
Paper. Apparatus for making corrugated	M. D. Polhemus	656,302	Aug. 21	2180	498	92	1498
Paper. Apparatus for making corrugated	H. B. Smith	658,024	Sept. 18	1871	405 406	92	2215
Paper. Automatic mechanism for feeding sheets of	H. B. Smith	658,025	Sept. 18	1876	406	92	2215
Paper bag							
Paper-board corrugating and creasing device							
Paper-board cutting and scoring machine							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Paper box	W. Bender, Jr	654,219	July 24	2087	650	92	635
Paper box	J. T. Craw	656,948	Aug. 28	3396	775	92	1744
Paper box	F. J. Schleicher	658,681	Sept. 25	3087	676	92	2470
Paper box	J. A. Wagnitz	657,047	Aug. 28	3566	821	92	1777
Paper box	J. A. Wagnitz	657,473	Sept. 4	769	165	92	1953
Paper box and blank therefor. Folding	J. A. Scott	655,521	Aug. 7	622	140, 141	92	1162
Paper-box-blank-making machine	H. Inman	657,418	Sept. 4	672	140, 141, 142	92	1935
Paper box. Knockdown	E. M. Scott	652,812	July 3	137	34	92	28
Paper-box machine	A. B. Cowles	654,136	July 24	2675	609, 610, 611	92	579
Paper-box-making machine	W. S. Davis	655,434	Aug. 7	489	109	92	1135
Paper-box-making machine	J. W. Denmead	655,695	Aug. 14	998	228, 229	92	1246
Paper box or lid	F. Knobeloch	657,120	Sept. 4	85	20	92	1818
Paper-cutting machine	J. T. Ferres	654,964	July 31	4357	981	92	946
Paper-cutting machine	F. Hager	654,248	July 24	2906	672	92	649
Paper. Device for conveying sheets of	H. K. King	656,899	Aug. 28	3312	755	92	1728
Paper-feeding machine	T. C. Dexter	654,445	July 24	3372	757, 758, 759	92	728
Paper-feeding machine	T. C. Dexter	655,435	Aug. 7	492	110	92	1135
Paper-feeding machine	T. C. Dexter	656,523	Aug. 21	2572	592, 593, 594	92	1569
Paper-feeding machine	T. C. Dexter	656,524	Aug. 21	2579	594	92	1571
Paper-feeding machine	T. C. Dexter	656,838	Aug. 28	3171	717, 718, 719, 720	92	1703
Paper-feeding machine	T. C. Dexter	658,705	Sept. 25	3077	686, 687	92	2477
Paper-feeding-machine feed-rolls	H. Bilgram	656,593	Aug. 21	2715	622, 623	92	1600
Paper fixture. Toilet	E. B. Weston	653,644	July 10	1743	402	92	861
Paper folder and paster	H. F. Bechman	656,924	Aug. 28	3355	765	92	1736
Paper-folding machine	E. D. Casterline	654,515	July 24	3499	790	92	752
Paper-folding machine	H. K. King	656,897	Aug. 28	3368	754	92	1727
Paper for electric printing. Manufacture of	W. Friese-Greene	655,970	Aug. 14	1551	------	92	1356
Paper holder. Carbon	L. Rauh	654,575	July 24	3592	809	92	769
Paper-making machine	H. L. Kutter	654,651	July 31	3765	850	92	821
Paper-making-machine reel	J. W. Moore and J. A. White	653,583	July 10	1608	376	92	334
Paper-making machines. Apparatus for cleaning the wire webs in	J. M. Shepherd	658,289	Sept. 18	2326	512	92	2304
Paper-making machines. Automatic wire or felt guide for	W. M. and T. M. Gilbert and W. C. Nash.	653,293	July 10	1079	258	92	228
Paper. Making tobacco-brown wrapping	T. Harvey, Jr	658,260	Sept. 18	2277	501	92	2294
Paper, &c. Manufacture of subsurface-drying	J. Crawford	653,411	July 10	1291	------	92	268
Paper, &c. Mechanism for feeding sheets of	S. Crump	653,791	July 17	2038	464, 215	92	437
Paper-mill stuff-chest	H. Bilgram and O. L. Schehl	655,668	Aug. 7	952	216	92	1226
Paper or pasteboard. Manufacture of	P. P. Emory	654,961	July 31	4354	980	92	946
Paper pail or vessel	H. Cohn	655,850	Aug. 14	1317	------	92	1310
Paper-pulp-screening vat	C. G. Shipley, Jr	655,024	July 31	4471	1008, 1009	92	972
Paper-registering instrument	H. E. Wambold	657,186	Sept. 4	212	47	92	1844
Paper-registering instrument	T. C. Dexter	655,902	Aug. 14	1520	349, 350	92	1348
Paper. Sensitized photographic	T. C. Dexter	655,904	Aug. 14	1535	353, 354, 355	92	1352
Paper-stock-refining engine	A. Schwarz	656,751	Aug. 28	2980	680	92	1666
Paper trimming, pasting, and matching machine. Wall-	M. P. Van Ryzin	653,856	July 17	2147	480	92	456
Paper-tube-making apparatus	W. D. Taber	657,466	Sept. 4	754	161	92	1050
Paper vessel	J. H. and E. L. White	652,868	July 3	236	56.57	92	47
Paper vessel	J. N. Davis	656,439	Aug. 21	2429	558	92	1511
Paper-winding machine	W. M. Kinnard	654,159	July 24	2730	621	92	501
Parcel-carrier attachment	W. P. Wood	656,149	Aug. 14	1890	435	92	1425
Parquetry	C. J. Miller	654,015	July 17	2418	556	92	510
Pasteurizing apparatus	C. E. Rider	657,900	Sept. 18	1774	382	92	2195
Pasting-machine	A. H. Reid	653,120	July 3	730	171	92	146
Pavements. Making sheet-asphalt	A. I. Jacobs	656,355	Aug. 21	2280	522, 523	92	1512
Paving roads. Composition of matter for	J. H. Amies	654,216	July 24	2081	------	92	634
Pea huller and cleaner	C. A. C. de Caudemberg	656,094	Aug. 14	1798	------	92	1408
Pea-sheller	E. D. Morris	653,874	July 17	2175	496	92	468
Pea sheller and thresher	L. A. Aspinwall	658,561	Sept. 25	2797	621	92	2422
Peanut-blanching machine	J. H. Farr and J. S. Evans	656,533	Aug. 21	2595	596	92	1574
Peanut-huller	W. Simpson	655,277	Aug. 7	200	44	92	1079
Peat. Machine for treating	J. B. McHugh	652,919	July 3	320	79	92	65
Peat to be used as fuel. Machine for treating	A. Rom	658,281	Sept. 18	2308	509	92	2300
Pedal-action	J. Ahrens	657,907	Sept. 18	1635	353	92	2165
Pedal-rubber	R. K. Thumler	653,124	July 3	739	174	92	148
Pegs. Machine for making shoe	F. T. Robinson	657,275	Sept. 4	396	83	92	1880
Pelt-plucking machine	J. and G. E. M. Lewis	654,011	July 17	2413	555	92	509
Pen, &c. Cattle	J. W. Sutton	655,081	July 31	4481	1011, 1012	92	974
Pen. Drawing	H. Wood and A. S. Williams	657,189	Sept. 4	219	48, 49	92	1845
Pen filler. Fountain	J. M. Dannheiser	655,612	Aug. 7	799	186	92	1195
Pen. Fountain	W. W. Robbins	655,517	Aug. 7	617	139	92	1161
Pen. Fountain	A. T. Cross	657,483	Sept. 4	862	175	92	1986
	G. S. Parker	653,818	July 17	2081	475	92	444

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pen. Fountain	J. A. Perry	658,279	Sept. 18	2306	509	92	2300
Pen. Fountain	P. E. Pierce	655,731	Aug. 14	1065	245	92	1250
Pen. Fountain	E. Reisert	655,736	Aug. 14	1072	247	92	1260
Pen. Fountain	H. J. Upton	655,423	Aug. 7	469	104	92	1131
Pen. Fountain	G. C. Ward	657,370	Sept. 4	582	122	92	1917
Penholder	T. M. Smith	654,098	July 17	2356	588	92	536
Pen holder and extractor. Combined	H. and F. Longenecker	651,969	July 31	4404	992	92	957
Penholder. Duplex	E. Walden	654,500	July 24	3480	786	92	749
Pen-reservoir. Detachable	F. H. Burdsall	655,894	Aug. 14	1388	320	92	1328
Pens, &c. Package for	A. Hofstetter	658,807	July 17	2064	470	92	441
Pencil-holder and penknife. Combined	P. A. Hagy	653,733	July 17	1921	441	92	414
Pencil. Lead	W. H. Francis	654,722	July 31	3896	879	92	848
Pencil-leads, crayons, leads, &c. Holder for	A. J. Gillespie	657,595	Sept. 11	1067	222	92	2037
Pencil-pointer	M. G. Cook	653,286	July 10	1069	256	92	226
Pencil-sharpener	C. F. Klett	657,780	Sept. 11	1411	299	92	2106
Pencil-sharpener	I. N. Weitzel	653,720	July 17	1900	437	92	410
Pencil-sharpener	F. I. Getty	654,726	July 31	3902	881	92	849
Pendulum	G. D. Leadbetter	655,787	Aug. 14	1185	272	92	1282
Perambulator	C. A. Sickel	656,923	Aug. 21	2038	468	92	1466
Percolator. Coffee-pot	T. Lanston	654,115	July 17	2581	593, 594, 595, 596, 597	92	541
Perforating machine. Strip	G. A. Evans	654,963	July 31	4355	981	92	946
Perforator	C. L. Buckingham and E. Germann	657,510	Sept. 11	918	186, 187, 188, 189, 190	92	2009
Perforator-keyboard	H. A. Alm	656,157	Aug. 21	1911	439	92	1443
Permutation-lock	C. E. Calloch	655,475	Aug. 7	560	125	92	1150
Petroleum or gas motor. Multiple-piston	W. Bohne	657,280	Sept. 4	405	85	92	1881
Phonograph	T. A. Edison. (Reissue)	11,857	Sept. 25	3170	705, 706	92	2496
Phonograph	A. N. Petit	657,785	Sept. 11	1421	301	92	2108
Phonograph	J. N. Blackman	654,937	July 31	4318	971	92	938
Phonograph attachment	H. Sheble	654,408	July 24	3468	781	92	746
Phonograph attachment	R. Nelles	656,366	Aug. 21	2295	526	92	1515
Phonograph erasing device	G. V. Gress	655,225	Aug. 7	86	19, 20	92	1058
Phonograph. Magazine	G. W. Boschen	654,778	July 31	4007	901, 902	92	871
Phonograph panoramic attachment	J. and G. Gilgen	653,231	July 10	952	229	92	203
Phonograph-record case	T. A. Edison	657,527	Sept. 11	954	196	92	2015
Phonograph-records. Making metallic duplicate	T. A. Edison	655,480	Aug. 7	568	127	92	1152
Phonographic reproducing device	J. C. Wharton	657,717	Sept. 11	1303	275	92	2084
Phosphates. Making	F. E. Ives	655,712	Aug. 14	1023	236, 237	92	1251
Photochromoscopic apparatus	R. J. Hagey	658,258	Sept. 18	2275	500	92	2294
Photographer's exposure-scale	E. J. Ball	657,505	Sept. 11	908	184	92	2007
Photographic apparatus. Automatic	W. H. Hayden	654,568	July 24	3581	808	92	768
Photographic dark room	A. Watkins	657,685	Sept. 11	1244	264	92	2072
Photographic-exposure meter	R. M. Hunter	658,769	Aug. 28	3009	686	92	1672
Photographic negatives. Producing	H. Burke and D. James	653,766	July 17	1982	452	92	426
Photographic-print washer	E. W. Silsby	657,749	Sept. 11	1362	288	92	2096
Photographic prints. Device for uniting celluloid to	W. S. Pepperell	655,159	July 31	4706	1060	92	1018
Photographic-printing frame	E. G. Soltmann	654,421	July 24	3330	747	92	718
Photographic-printing frame	J. S. Cummings	654,827	July 31	4105	924	92	894
Photographic-printing-frame support	A. Pollak and J. Virag	655,677	Aug. 7	968	219	92	1229
Photographic recording apparatus for vibratory rays of light	H. M. Reichenbach and J. Schadeli	657,883	Sept. 11	1505	321, 322	92	2126
Photographic shutter	P. M. C. Grenier-Villerd	658,257	Sept. 18	2274	------	92	2294
Photographs. Coloring	C. A. Lowe	653,519	July 10	1605	373	92	333
Photographs. Coloring	G. Selle	654,766	July 31	3958	897	92	867
Photographs. Production of colored	A. Légé and W. H. England	655,789	Aug. 14	1189	273, 274	92	1283
Photography. Apparatus for color	J. F. Conover	651,715	July 31	3879	875	92	845
Piano	E. M. Hamilton	658,545	Sept. 25	2772	615	92	2417
Piano-action	W. R. St. Clair	655,278	Aug. 7	201	44	92	1079
Piano-action	T. Cahill	657,477	Sept. 4	776	167, 168	92	1951
Piano-action or other keyboard instrument	W. Bohrer and T. Messmer	656,625	Aug. 28	2781	636	92	1620
Piano auxiliary pedal attachment	O. N. Eaton	654,344	July 24	3182	713	92	685
Piano-back post	K. Binder	658,614	Sept. 25	2907	647	92	2444
Pianoforte	C. M. McQuilkin	654,914	July 31	4280	962	92	930
Pianoforte-hammer	C. W. Richards	658,529	July 10	1518	333, 334	92	316
Piano or organ player. Automatic	W. M. Bauer	655,388	Aug. 7	404	89	92	1118
Piano-pedal	W. J. Mennes	653,814	July 17	2075	473	92	443
Piano-players hands. Device for supporting	A. Nickel	657,177	Sept. 4	190	43	92	1840
Piano repeating action. Grand	W. P. Bevington	656,498	Aug. 21	2532	582	92	1561
Pick	R. W. Marek	657,608	Sept. 11	1066	220	92	2043
Pick and reed-hook. Combined	J. Aegerter	655,589	Aug. 7	646	148	92	1167
Pick-point	M. Gleason	653,232	July 10	951	220	92	204
Picker-check	L. A. Deuther	658,523	Sept. 25	2783	607	92	2409
Picture-back boards. Machine for making	R. Carlton	656,842	Aug. 21	2253	517	92	1506
Picture-frame	E. Carraine	654,514	July 24	3498	789, 790	92	752
Picture-frame	H. Davidson	658,622	Sept. 25	2921	653	92	2447
Picture-frame	A. F. Messinger	655,502	Aug. 7	598	135	92	1157
Pictures. Apparatus for displaying living	R. Fulgora	658,255	Sept. 18	2271	490	92	2283
Pictures or advertisements. Apparatus for successively representing movable or immovable	M. Barth	652,947	July 3	418	96	92	85
Pictures, stationery, &c. Holder for	W. H. H. Dickinson	656,526	Aug. 21	2583	595	92	1572

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pictures to the eye. Apparatus for presenting living	T. Ansboro	654,585	July 31	3026	817	92	793
Pigeon-trap	J. F. Champlin	654,947	July 31	4331	975	92	941
Pile. Cast-metal	M. Goldberger	653,509	July 10	1478	345	92	307
Pile. Concrete	O. Hoff and C. F. Haglin	654,397	July 24	3282	736 737	92	710
Pile-driving-machine pile-holder	J. G. Falcon	657,980	Sept. 18	1803	389	92	2201
Pile fabric. Woven	O. Hallensleben	655,076	July 31	4577	1032	92	966
Pile fabrics. Device for cutting double	W. Fischer, Sr., and W. Vogel	655,674	Aug. 7	963	218	92	1228
Pile-spreader	T. J. Stearns	657,368	Sept. 4	578	121 122	92	1916
Pill-making machine	W. Middleditch	653,687	July 17	1898	420 421	92	399
Pill-making machine	W. Middleditch	654,907	July 31	4271	959	92	929
Pill mass. Machine for rolling pipes or strips of	W. Middleditch	654,908	July 31	4272	959	92	929
Pillow	P. Jones	655,087	July 31	4591	1035 1036	92	995
Pin: *See* Badge-pin. Clothes-pin. Dowel-pin. Push-pin. Safety-pin. Sticker-pin.							
Pin-holder	A. A. Richardson	656,663	Aug. 28	2883	646	92	1637
Pin-holder	E. A. Roeber	652,901	July 3	288	71,72	92	58
Pin-package	E. A. Roeber	653,152	July 3	790	185	92	158
Pin-shafts with heads of glass. Simultaneously providing	R. Neuss	658,457	Sept. 25	2922	581	92	2387
Pinking-cutters. Forming	H. A. Hannum	655,484	Aug. 7	574	128	92	1153
Pipe: *See* Blowpipe. Bubble-pipe. Cigar-pipe. Metal pipe. Pitch or tuning pipe. Self-centering pipe. Tobacco-pipe.							
Pipe-bending machine	J. E. Parker	652,806	July 3	127	31,32	92	25
Pipe-bending mechanism	J. A. Miller	655,259	Aug. 7	160	36	92	1071
Pipe-boiler	J. Kaine	656,121	Aug. 14	1847	425	92	1417
Pipe cap and plug. Combined	J. A. Bernardi	658,313	Sept. 18	2362	522	92	2311
Pipe-clamp	W. W. Stewart	656,755	Aug. 28	2985	681	92	1666
Pipe clamping and supporting device	O. Eggert	656,789	Aug. 28	3036	691	92	1677
Pipe cleaner. Flexible waste	L. A. Cornelius	657,858	Sept. 11	1550	332 333	92	2135
Pipe-coupling	J. Burke	654,131	July 24	2641	604	92	509
Pipe-coupling	G. B. and W. F. Cushman	655,204	Aug. 7	53	12	92	1051
Pipe-coupling	C. Elbee	656,956	Aug. 28	3410	778	92	1747
Pipe-coupling	J. M. Olinger	654,073	July 17	2520	579	92	529
Pipe-coupling	W. Vanderman	655,083	July 31	4489	1018	92	975
Pipe-coupling. Expansion	W. Schmid	656,667	Aug. 28	2837	647	92	1638
Pipe-coupling. Flexible metal	D. Heggie	653,913	July 17	2253	512	92	478
Pipe-couplings, &c. Apparatus for forming	J. W. Wilson	654,213	July 24	2690	655	92	632
Pipe-cutting device	F. W. Barthels	653,279	July 10	1057	253	92	224
Pipe-fitting and making same	E. E. Taft	654,817	July 31	4086	919	92	889
Pipe-hanger	A. Leitelt, Jr	652,789	July 3	91	22	92	19
Pipe-joint. Flexible	C. W. Vaughan	655,315	Aug. 7	206	60	92	1093
Pipe-joint. Swivel	G. W. Kellogg	657,777	Sept. 11	1405	297	92	2104
Pipe-perforating tool	H. Koester	654,461	July 24	3407	766 767	92	735
Pipe-threading machine	M. Snyder	652,816	July 3	142	35	92	29
Pipe-union	W. Klinefelter	653,961	July 17	2345	539	92	495
Pipe-welding machine	C. L. Dunham	656,154	Aug. 14	1897	437	92	1427
Pipe-wrench	G. E. Garner and S. M. Wade	655,774	Aug. 14	1156	264	92	1278
Pipe-wrench	S. Kreisher	653,096	July 3	688	162	92	139
Pipe-wrench	O. H. McNelly, J. F. Janney, and H. McNelly.	654,176	July 24	2761	627	92	506
Pipe-wrench	A. J. Sawin	654,283	July 24	3065	688	92	663
Pipe-wrench	C. O. Woods	654,503	July 24	3483	786	92	749
Pipes. Combined union and elbow for coupling	G. H. Thomas	657,712	Sept. 11	1293	274	92	2062
Pipes. Locating concealed water	F. T. Iddings and D. H. Washburn	658,018	Sept. 18	1853	401	92	2212
Pipes. Means for disjointing	J. P. Wigal	653,978	July 17	2370	516	92	499
Pipes or cocks to fluid mains, branches, receptacles, or tanks. Means for coupling	F. Albrecht	657,504	Sept. 11	907	184	92	2007
Piping-joint	J. W. Wiggins	657,372	Sept. 4	585	123	92	1918
Pistol. Magazine	O. A. Hoffmann	658,010	Sept. 18	1848	400	92	2211
Pistol. Revolving	F. Shields	654,850	July 31	4155	906	92	904
Piston	W. Heston	657,600	Sept. 11	1080	224	92	2040
Piston-impact engine	W. E. and E. F. Prall	655,114	July 31	4635	1045 1046	92	1003
Pitch or tuning pipe	J. and E. Oefinger	655,452	Aug. 7	522	116	92	1142
Pitcher	E. G. Lantz	654,163	July 24	2742	623	92	593
Pitchfork	D. C. Keiller	654,645	July 31	3758	848	92	820
Pith and fiber of cornstalks. Apparatus for separating	S. Dyer	657,341	Sept. 4	522	108	92	1905
Pitman connection	E. Jones	655,442	Aug. 7	506	113	92	1138
Pitman connection	D. C. Lingenfelter	657,879	Sept. 11	1583	341	92	2142
Plane. Miter	C. B. McCallum	658,092	Sept. 18	1988	433	92	2237
Planing-machine	B. C. Batcheller	654,935	July 31	4315	971	92	938
Planing-machine. Radial	C. C. Newton and E. J. Hannum	658,277	Sept. 18	2302	507 508	92	2209
Planter and fertilizer-distributer. Combined	A. H. Wootten	657,149	Sept. 4	138	32	92	1828
Planter and fertilizer-distributer. Cotton	F. C. Davis	652,914	July 3	309	77	92	62
Planter. Automatic check-row corn	J. B. Jarmin	655,655	Aug. 7	983	209 210	92	1222
Planter. Automatic check-row corn	J. B. Jarmin	655,656	Aug. 7	986	211	92	1223
Planter. Automatic check-row corn	L. J. Lindsay	657,246	Sept. 4	334	71	92	1869
Planter. Check-row	C. H. Welch	659,330	July 10	1139	271	92	240
Planter. Check-row corn	L. J. Lindsay	657,245	Sept. 4	331	70,71	92	1868
Planter. Check-row corn	L. L. Scott	658,705	July 17	1803	426	92	404
Planter. Combined cotton and corn	E. M. Cole	653,660	July 17	1794	411	92	390

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Planter. Corn	P. J. A. van Deinse	657,714	Sept. 11	1296	274	92	2083
Planter. Corn	W. M. Frank	655,778	Aug. 14	1151	263 264	92	1277
Planter. Corn	E. G. Johanson	655,240	Aug. 7	127	28	92	1065
Planter. Corn	L. E. Waterman	653,923	July 17	2265	516	92	480
Planter. Corn	L. E. Waterman	657,474	Sept. 4	771	166	92	1953
Planter. Cotton-seed	M. P. Scott	656,270	Aug. 21	2115	482 483	92	1481
Planter. Cotton-seed	J. H. Wolfe	657,720	Sept. 11	1308	276	92	2085
Planter guide-marker	C. E. Smith	657,897	Sept. 11	1615	347	92	2149
Planter marker-bars. Lifter for corn	A. E. Newman and E. James	653,714	Sept. 25	3100	691	92	2482
Planter. Potato	L. A. Aspinwall	658,562	Sept. 25	2800	621 622	92	2423
Planter. Potato	J. and W. J. Shearer	655,460	Aug. 7	535	120	92	1144
Planter-regulating attachment	E. Latisnière	654,548	July 24	3353	801	92	763
Planter. Seed	W. F. Crowley	658,348	Sept. 25	2441	589	92	2352
Planter. Seed	H. C. Kettler	658,450	Sept. 25	2611	579	92	2385
Planter. Seed	C. W. Warner	656,705	Aug. 28	2901	660 661	92	1651
Planter. Sugar-beet-seed	F. B. Hassenstab	658,440	Sept. 25	2600	576	92	2382
Planting machine. Plant	J. Morgan	653,625	July 10	1671	390 391	92	347
Planting machine. Potato	J. Ryan	657,747	Sept. 11	1358	288	92	2095
Plaque-holder	G. W. Norton	652,976	July 3	470	111	92	94
Plaster. Composition of matter for wall	T. A. Robinson	658,590	Sept. 25	2869	.....	92	2437
Plastic material. Apparatus for placing linings in openings in	A. T. Holt	653,242	July 10	968	232	92	206
Plate closing and riveting device. Hydraulic	J. H. Batcher	656,801	Aug. 28	3070	698	92	1688
Plate-manufacturing apparatus	W. F. Stiel	657,626	Sept. 11	1128	236	92	2050
Plate-straightening machine	D. Townsend	654,080	July 17	2529	582 583	92	531
Plates or bars. Mechanism for piling	S. V. Huber	656,841	Aug. 28	3184	721 722	92	1706
Platform: *See* Extension-platform.							
Pliers	H. A. Deiters and E. L. Bill	656,394	Aug. 21	2344	538	92	1525
Pliers	F. B. Parks	654,920	July 17	2263	515	92	479
Pliers	G. B. Pistavino	653,364	July 10	1220	291	92	255
Pliers	C. R. Davis	656,393	Aug. 21	2343	538	92	1525
Plow	E. Fowler	653,608	July 17	1807	414	92	393
Plow	E. Fowler	657,653	Sept. 11	1180	247	92	2060
Plow	E. Fowler	657,654	Sept. 11	1182	247	92	2060
Plow	J. A. Freeman	653,994	July 17	2301	550	92	505
Plow	J. J. Marick	657,494	Sept. 4	879	178	92	1990
Plow	R. H. Purnell	655,115	July 31	4637	1046	92	1004
Plow	A. V. Wilbur	652,871	July 3	242	58	92	48
Plow and harrow. Combined	H. Daverkosen and L. Nielson	655,002	July 31	4551	1025	92	987
Plow attachment	G. A. Flanders	656,847	Aug. 21	2269	520	92	1510
Plow attachment	A. F. Jackson	655,870	Aug. 14	1350	311	92	1316
Plow-beam	R. H. Purnell	653,117	July 3	726	170	92	145
Plow-clip	W. H. Curd and O. V. Hanger	656,175	Aug. 21	1940	446	92	1449
Plow. Double-shovel cultivator	J. W. Gooding	658,146	Sept. 18	2072	452	92	2258
Plow. Motor-driven	R. J. Gatling	654,243	July 24	2984	670 671	92	645
Plow. Orchard	T. Scanlon	655,375	Aug. 7	381	83	92	1113
Plow-point wear-tip	J. B. Wilson	655,385	Aug. 7	397	87	92	1116
Plow. Riding	W. A. Baldwin and T. Johnston	658,334	Sept. 25	2407	532 533 534	92	2345
Plow riding attachment	W. H. Brackney	655,846	Aug. 14	1311	300 301	92	1309
Plow seeding attachment	F. Flich and A. Firlinger	656,579	Aug. 21	2686	616	92	1594
Plow. Sulky	C. R. Davis	657,802	Sept. 11	1556	334 335	92	2137
Plow. Wheel	L. P. Graham	655,488	Aug. 7	573	128	92	1152
Plow. Wheel	D. A. Houser	658,263	Sept. 18	2283	502	92	2205
Plow. Wheeled	C. E. Jackson	653,518	July 10	1484	346	92	308
Plowing and cultivating land. Machine for	B. P. Nubar	658,459	Sept. 25	2634	582	92	2388
Plowing and cultivating machine	B. P. Nubar	658,460	Sept. 25	2625	582 583	92	2388
Plumber's shave-hook	W. J. Waylan	655,817	Aug. 14	1259	287	92	1300
Plumbing device	J. J. Hill	652,962	July 3	446	105	92	90
Plunger-elevator	J. A. Dean	654,876	July 31	4200	961	92	918
Pneumatic carriers. Automatic switch for	F. R. Taisey	653,044	July 3	586	137 138	92	118
Pneumatic-despatch system	C. S. Bavier and J. R. Hawkes	658,102	Sept. 18	2003	436 437	92	2240
Pneumatic-despatch system	C. S. Bavier and J. R. Hawkes	658,103	Sept. 18	2005	437	92	2240
Pneumatic-despatch tube	W. Townsend	654,090	July 31	3822	862 863	92	882
Pneumatic-despatch-tube apparatus	J. T. Cowley	657,090	Sept. 4	29	7,8	92	1806
Pneumatic-despatch-tube apparatus	J. T. Cowley	657,091	Sept. 4	34	9	92	1808
Pneumatic-despatch-tube apparatus	J. T. Cowley	657,092	Sept. 4	36	9,10	92	1808
Pneumatic-despatch-tube carrier	S. N. Pond	652,979	July 3	476	112	92	96
Pneumatic-despatch-tube system	A. W. Pearsall	657,886	Sept. 11	1597	344	92	2145
Pneumatic-despatch-tube terminal	C. H. Burton	653,438	July 10	1340	318	92	278
Pneumatic-tired wheel	E. W. McCaslin	654,101	July 17	2563	589	92	538
Pneumatic-transit-tube carrier	B. C. Batcheller	657,079	Sept. 4	9	2,3	92	1802
Pneumatic-transmission-system carrier	B. C. Batcheller	657,077	Sept. 4	6	1	92	1802
Pneumatic-tube carrier	B. C. Batcheller	657,076	Sept. 4	4	1	92	1801
Pneumatic wheel	J. Shellabarger	654,027	July 17	2445	561	92	515
Pocket-book safety attachment	W. Erk	654,143	July 24	2696	614	92	584
Pocket-book, satchel, &c	C. Spier	655,029	July 31	4481	1010	92	974
Pocket-fastening device	R. C. Holdredge	658,778	July 17	1994	456	92	428
Pocket. Garment	J. S. Coyte	657,310	Sept. 4	462	98	92	1892
Pocket. Garment	H. Garfinkel	653,995	July 17	2392	550	92	505

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol	Official Gazette. Page.
Pocket-knife	J. H. Cables	656,092	Aug. 14	1795	413	92	1408
Pocket-recorder	E. M. Long	653,104	July 3	705	166	92	141
Poke, Animal-	P. M. Gosselin	654,889	July 31	4235	952	92	920
Pole or post base	L. K. Forsythe	658,631	Sept. 25	2948	656	92	2452
Pole-pieces. Means for securing	H. Geisenhöner	656,961	Aug. 28	3417	780	92	1748
Pole tip. Wagon-	L. A. Nadeau	653,426	July 10	1320	313 / 314	92	274
Pool and billiard table. Combined	J. Zentner	653,727	July 17	1918	439	92	412
Pool-ball	G. H. Burt	652,993	July 3	490	117	92	101
Pool-ball rack	H. G. Emerson	654,447	July 24	3383	760 / 761	92	730
Pop-gun	A. E. Chapman	653,376	July 10	1239	295	92	258
Post: *See* Boundary-post. Fence-post. Collapsible post. Lamp-post.							
Post-card	D. H. Buff	656,132	Aug. 14	1867	429	92	1421
Post-extractor	W. L. Hull	654,001	July 17	2399	552	92	506
Post-hole digger	J. L. Cates	654,945	July 31	4329	974	92	941
Post-hole digger. Adjustable	C. L. Monroe	654,909	July 31	4273	959	92	929
Post or pole base	C. L. Barrett	658,312	Sept. 18	2361	521	92	2311
Postal-examination practice-cabinet	G. H. Markline	654,660	July 31	3782	853 / 854	92	825
Pot: *See* Coffee or tea pot. Glue-pot.							
Potato-cutter	J. E. Howell and W. A. Chamberlain.	653,385	July 10	1252	297	92	260
Potato digging and gathering implement	A. Dambacher	653,136	July 3	759	178	92	151
Potato-plants. Implement for pulling up	J. Zimmermann	653,635	July 10	1720	398	92	358
Potato separator and cleaner	W. J. Martin	656,200	Aug. 21	1985	457	92	1457
Potato-sorter	L. A. Aspinwall	653,332	July 10	1142	272	92	241
Potato sorter and cleaner	W. H. Gilmore	656,637	Aug. 28	2796	639	92	1629
Pottery article	H. C. Mercer	654,474	July 24	3429	773	92	740
Powder. Blasting-	J. Ross and W. D. Cairney	655,882	Aug. 14	1286	------	92	1304
Powder-grain	H. S. Maxim	654,471	July 24	3423	772	92	738
Powder. Smokeless	J. A. Stransky	656,678	Aug. 28	2854	------	92	1642
Power: *See* Churn-power. Wave-power. Tread-power.							
Power-machine	D. W. Reynard	655,011	July 31	4452	1008	92	968
Power transmission	A. Loomis	654,908	July 31	4266	957	92	927
Power-transmitter	G. P. Smith	656,380	Aug. 21	2320	532	92	1521
Power-transmitting device	D. Ashman	653,636	July 10	1739	399	92	359
Power-transmitting mechanism	W. H. Broadhead	654,826	July 31	4102	924	92	893
Power-transmitting mechanism	P. S. Durel	654,446	July 24	3380	759 / 760	92	729
Power-transmitting mechanism	E. Winans	655,318	Aug. 7	271	61	92	1094
Precious metals. Extracting	C. P. Tatro and G. Delius	653,325	July 10	1131	------	92	239
Precious metals from their ores. Separating	H. de Raasloff	657,181	Sept. 4	200	45	92	1842
Prepayment-meter	F. Weegmann	655,842	Aug. 14	1303	299	92	1306
Preserving apparatus	W. A. Sheldon	657,276	Sept. 4	397	83	92	1880
Press: *See* Baling-press. Endless-belt press. Brick-press. Guncotton-press. Button-making press. Hammering-press. Hay-press. Copying-press. Printing-press. Cotton-press Punching-press. Die-press. Roller-press. Draw-press. Sand-press. Drill-press. Vulcanizing-press.							
Press	H. E. Pridmore	658,583	Sept. 25	2857	633	92	2434
Press-box	O. B. Galbraith	655,071	July 31	4568	1029	92	991
Press feed mechanism	E. Tyden	656,910	Aug. 28	3335	759 / 760	92	1733
Press-feeder	W. M. Holmes	653,734	July 17	1925	441	92	415
Press feeding device	S. Horsley	653,736	July 17	1928	442	92	416
Pressure-generator	I. M. Uppercu	653,126	July 3	742	174	92	148
Pressure-regulator	J. A. Mosher and W. Wishart	658,570	Sept. 25	2815	625	92	2426
Pressure-relieving device	C. Kuhlewind	656,141	Aug. 14	1875	431 / 432	92	1422
Pressure-transmitter	L. L. Prescott	658,220	Sept. 18	2214	484	92	2282
Pretzel-making machine	C. Betz	653,060	July 3	612	145	92	124
Primary battery	E. R. Post	653,500	July 10	1619	378	92	336
Printer's furniture	W. G. Slauson	657,254	Sept. 4	348	74	92	1871
Printer's furniture	W. G. Slauson	657,299	Sept. 4	433	91, 92	92	1887
Printer's furniture	W. G. Slauson	657,252	Sept. 4	345	73	92	1871
Printer's quoin	W. G. Slauson	657,253	Sept. 4	347	74	92	1871
Printer's quoin	W. G. Slauson	656,109	Aug. 14	1830	421	92	1414
Printer's stick	T. Griffin	653,627	July 10	1699	393 / 394 / 395	92	353
Printing and registering machine	W. I. Ohmer, J. N. Kelly, and W. M. Kelch.						
Printing-cylinder	W. W. Russell	655,802	Aug. 14	1224	281	92	1292
Printing, folding, and delivery mechanism	G. R. Willis	657,147	Sept. 4	133	31	92	1828
Printing from embossed sheets. Apparatus for	B. Millison	654,208	July 24	3010	682	92	658
Printing-machine	J. L. Firm	652,765	July 3	48	12	92	10
Printing-machine	J. L. Firm	658,209	Sept. 18	2192	479 / 480	92	2278
Printing-machine	W. Scott	655,354	Aug. 7	345	75	92	1107
Printing-machine	W. Scott	655,355	Aug. 7	347	75, 76	92	1108
Printing-machine	W. Scott	655,356	Aug. 7	352	76, 77	92	1108
Printing-machine. Bed-and-cylinder	L. C. Crowell	656,345	Aug. 21	2258	518 / 519	92	1507
Printing machine. Box-	J. F. Ames	656,388	Aug. 21	2328	531	92	1522
Printing-machine delivery apparatus	W. Scott	654,284	July 24	3006	688	92	663
Printing machine. Oil-cloth-	W. T. Wiegand	656,284	Aug. 21	2053	472	92	1469

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Printing-machines. Sheet-feeding attachment for stencil	A. B. Dick	657,920	Sept. 18	1666	359 / 360	92	2171
Printing-press	F. A. Burnham	654,781	July 31	4014	903 / 904	92	872
Printing-press	W. G. Johnston	654,158	July 24	2727	620 / 621	92	590
Printing-press	J. D. Lasswell	656,142	Aug. 14	1877	432	92	1423
Printing-press	G. A. Main	656,901	Aug. 28	3316	756	92	1729
Printing-press	R. Miehle	657,881	Sept. 11	1586	342	92	2142
Printing-press	M. Snyder	657,796	Sept. 11	1440	305	92	2112
Printing-press attachment	J. W. Leary	657,781	Sept. 11	1412	299	92	2106
Printing-press counting device	W. G. Johnston	654,157	July 24	2725	620	92	590
Printing-press for printing envelops	H. S. Adams and C. E. Wild	655,177	Aug. 7	2	1	92	1041
Printing-press inking attachment. Job-	J. Gaskell	655,390	Aug. 7	422	93	92	1122
Printing-press insetting attachment	A. W. Knox	658,548	Sept. 25	2781	616	92	2419
Printing-press punch. Platen	E. C. Seymour	657,792	Sept. 11	1432	304	92	2110
Printing-press sheet-counting device	E. C. Baeck	657,807	Sept. 11	1460	310	92	2116
Printing rollers. Mold for casting wall-paper-	J. W. Adams	657,806	Sept. 11	1457	309	92	2116
Printing-stamp	C. A. Tripp	655,134	July 31	4602	1050	93	1008
Printing-surfaces. Making	C. M. Brown	656,933	Aug. 28	3308	760	92	1730
Projectile	C. M. Brown	656,934	Aug. 28	3370	760	92	1730
Projectile	R. T. Phillips	657,248	Sept. 4	340	72	92	1870
Projectiles. Buffer-block for illuminating-	T. R. R. Ashton	654,107	July 17	2572	591	92	530
Projectiles. Buffer for high-explosive	G. H. Newell	654,272	July 24	3046	681	92	690
Projectiles. Making	F. J. Adams	658,607	Sept. 25	2897	644 / 645	92	2442
Projecting apparatus	J. Davenport	653,219	July 10	931	224 / 225	92	200
Propeller	S. C. Littlefield, Jr	654,549	July 24	3554	802	93	768
Propeller	C. T. Roseborough	658,678	Sept. 25	3030	673	92	2469
Propeller. Boat-	A. A. Williams and G. W. Johnson.	657,844	Sept. 11	1527	328	92	2130
Propeller. Reversible	J. B. Altman	653,979	July 17	2371	546	92	500
Propeller. Screw-	J. Carlsson	655,668	Aug. 14	1515	348	92	1348
Propeller. Screw-	W. W. Edwards	655,696	Aug. 14	1004	230	92	1248
Propeller. Ship's	C. E. Johnson	657,348	Sept. 4	537	111	92	1908
Propeller-wheel	J. W. Fowler	656,452	Aug. 21	2453	564	92	1545
Propellers upon their shafts. Means for securing ships' screw-	C. Janczarski	658,265	Sept. 18	2286	503	92	2296
Propelling and steering device for ships. Pneumatic	R. S. Dickins	656,692	Aug. 28	2878	655	92	1647
Propelling and steering mechanism. Boat	J. A. Malone	653,873	July 17	2173	496	92	462
Propelling-gear	C. H. Blomstrom	657,053	Aug. 28	3374	824	92	1779
Propelling mechanism. Boat-	C. H. Blomstrom	657,054	Aug. 28	3379	825	92	1779
Propelling mechanism. Boat-	C. H. Blomstrom	657,058	Aug. 28	3387	827	92	1782
Propelling mechanism. Boat-	D. R. Sheen	655,742	Aug. 14	1082	249	92	1269
Propelling mechanism. Boat-	K. P. Hangl	652,770	July 3	61	14, 15	92	13
Propelling mechanism. Ship-	G. Tjerneld	658,717	Sept. 25	3103	692	92	2483
Propelling railway-velocipedes, boats, &c. Mechanism for	G. Boemermann	653,435	July 10	1334	317	92	276
Propelling vessels. Means for	H. H. Fefel	658,629	Sept. 25	2946	635	92	2451
Propulsion. Boat-	P. U. and A. M. J. Riess	650,046	Aug. 14	1700	301	92	1885
Propulsion. Marine	W. S. Carhart	655,848	Aug. 14	1314	301	92	1309
Protractor	O. S. and M. T. Hoover	654,399	July 24	3286	737 / 738	92	710
Prune-gathering device	C. C. Newell	656,037	Aug. 14	1684	388	92	1382
Pruning implement	C. Tiffany	658,194	Sept. 18	2163	473	92	2272
Pruning implement	S. P. Kettering	658,653	Sept. 25	2983	664	92	2459
Puddling-furnace							
Puller: *See* Staple-puller. Stump-puller.							
Pulley	C. H. Bicalky	656,339	Aug. 21	2245	516	92	1505
Pulley. Belt-	R. Chillingworth	653,659	July 17	1793	411	92	390
Pulley. Clutch-	B. Abel	658,520	Sept. 25	2726	605	92	2407
Pulley. Differential	C. E. Scrimgeour	654,681	July 31	3809	859 / 860	92	830
Pulley. Expansible	B. B. Farnham	652,763	July 3	46	11	92	10
Pulley. Friction-clutch	H. O. Hem	653,675	July 17	1818	416	92	395
Pulley. Sheet-metal	C. A. Brinley and E. G. Budd	653,281	July 10	1059	253	92	224
Pulley. Split	W. A. Clark	656,944	Aug. 28	3389	774	92	1743
Pulleys to shafts. Split disk for holding	W. H. F. Raifsnyder	653,313	July 10	1112	265	92	235
Pulp. Apparatus for making hollow ware from	W. Burke and W. H. Thompson	654,603	July 31	3657	824	92	801
Pulp-compressing apparatus	J. Westaway	656,682	Aug. 28	2860	651	92	1648
Pulp materials. Apparatus for manufacturing articles from	J. M. Leaver	656,742	Aug. 28	2902	677	92	1663
Pulp-strainer	R. Dietrich	656,766	Aug. 28	3005	685	92	1671
Pulverizer	J. Davison	657,701	Sept. 11	1381	292	92	2100
Pulverizer	C. H. Duisdieker	658,430	Sept. 25	2588	574	92	2380
Pulverizer. Soil-	J. D. Perry	658,462	Sept. 25	2629	584	92	2388
Pump	E. Ballinger	654,868	July 31	4186	943	92	910
Pump	F. W. Blanchard	656,834	Aug. 28	3163	716	92	1701
Pump	F. Edwards	657,864	Sept. 11	1559	336 / 337	92	2138
Pump	G. G. Guy	657,102	Sept. 4	58	13	92	1818
Pump	G. W. Price	654,323	July 24	3149	704	92	679
Pump	T. Stebbins	654,811	July 31	4070	916	92	887
Pump	F. M. Wheeler	655,037	July 31	4406	1014	92	976
Pump	C. C. Worthington	657,976	Sept. 18	1790	387	92	2199
Pump-action indicator	J. B. West	654,372	July 24	3238	725	92	699
Pump. Air-	G. W. Eddy	653,570	July 10	1503	371	92	331
Pump. Air-actuated	F. Z. Bartell	657,753	Sept. 11	1368	289	92	2097
Pump cut-off. Duplex-steam-	M. J. Ulrich	655,468	Aug. 7	546	122	92	1147
Pump. Double-acting	J. M. Stukes and E. K. Smith	658,325	Sept. 18	2380	525	92	2314
Pump. Duplex steam-	H. L. Perrine	654,918	July 31	4286	963 / 964	92	932
Pump for pneumatic-tired wheels. Automatic	H. H. Henning	654,634	July 31	3788	843	92	816
Pump. Motor-	W. H. Eads	657,160	Sept. 4	162	37	92	1834
Pump-motor	W. Weiner	653,275	July 10	1052	252	92	223

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Dr'g.	Official Gazette. Vol.	Page.
Pump. Oil-well	H. E. Braymer	654,706	July 31	3862	871	92	841
Pump-operating device	H. G. Johnson	654,643	July 31	3755	847	92	819
Pump-pipe raising or lowering apparatus	G. Zink	654,376	July 24	3244	727	92	700
Pump-rod bushing	G. H. Cushing	655,395	Aug. 7	416	91	92	1120
Pump. Rotary	H. A. and R. J. Hancox	658,364	Sept. 25	2465	545	92	2357
Pump speed-regulator	J. M. D. Bland	654,824	July 31	4100	922, 923	92	803
Pump. Spray	W. H. Heard	654,151	July 24	2712	618	92	587
Pump. Spraying	W. E. Dow	654,321	July 24	3146	704	92	678
Pump-valve	J. J. O'Crowley	657,671	Sept. 11	1220	257	92	2007
Pump-valve-actuating mechanism	G. B. Petsche	654,316	July 24	3141	702	92	677
Pump-valve. Oil or other Artesian well	D. L. Lewis	655,232	Aug. 7	103	23, 24	92	1061
Pumping-engine	C. L. Heisler	656,465	Aug. 21	2476	569, 570	92	1550
Pumping mechanism. Turbine	F. Marburg, Jr	654,183	July 24	2809	635	92	609
Punch	L. A. Sayre	657,800	Sept. 11	1449	307	92	2114
Punch	C. P. Vernier	652,954	July 3	430	100, 101, 102	92	87
Punch. Combination ticket	W. C. Downing	656,106	Aug. 14	1825	420	92	1413
Punch. Metal	A. W. Goddard	654,708	July 31	3865	871, 872	92	842
Punching and riveting machine	F. Brune	653,175	July 3	827	195	92	166
Punching-bag	J. Gamble	658,554	Sept. 25	2787	618	92	2420
Punching-bag support	G. McFadden	655,327	Aug. 7	287	65	92	1097
Punching-machine	A. Cruickshanks	655,074	July 31	4572	1030, 1031	92	991
Punching-machine	E. Graves	654,025	July 17	2441	561	92	513
Punching-machine	A. Schärff	655,752	Aug. 14	1107	255	92	1267
Punching-machine. Multiple	C. E. Blechschmidt	652,803	July 3	114	28, 29	92	23
Punching machine. Rasp	J. A. McHardy	655,036	July 31	4494	1013, 1014	92	976
Punching or shearing chains, &c. Apparatus for	J. W. Walles	654,607	July 31	3667	827	92	802
Punching-press	O. Colborne	657,272	Sept. 4	392	82	92	1879
Punching, shearing, and shaping machine	P. Lord	655,267	Aug. 7	179	39, 40	92	1075
Punching, stamping, &c. Machine-tool for	A. Obermeyer	653,746	July 17	1050	445	92	420
Purifying reagents. Apparatus for producing	W. M. Jewell	658,304	Sept. 25	2527	559	92	2308
Purse. Money	J. J. Peters	654,319	July 24	3144	703	92	678
Push-pin	E. Moore	653,061	July 3	614	146	92	124
Puzzle	A. C. Booth	653,290	July 10	1073	257	92	227
Puzzle	C. T. Dukes	658,083	Sept. 18	1978	431	92	2235
Puzzle	F. Favour	656,039	Aug. 14	1687	388	92	1382
Puzzle	T. J. Nolan	658,097	Sept. 18	1996	435	92	2238
Puzzle	C. A. Smith	652,946	July 3	416	96	92	84
Puzzle	H. A. Wright	652,994	July 3	500	117	92	101
Puzzle	M. A. Butler	653,273	July 10	1047	250	92	222
Puzzle or trick device	E. H. Wagner	655,706	Aug. 14	1014	233, 234	92	1250
Pyrotechnic device	G. C. Gillmore	655,793	Aug. 14	1204	275, 276	92	1288
Pyroxylin compounds. Stuffing-machine for manufacturing rods and tubes from	A. T. McMurtrey	655,094	July 31	4601	1038	92	997
Quartz-mill	J. L. Lamb	655,567	Aug. 7	706	161	92	1178
Quilting-frame	A. D. Moye	658,694	Sept. 25	3057	680, 681	92	2472
Quilting-frame	L. A. Wolfe						

Rack:
See Display-rack. Feed-rack. Hat-rack. Hay-rack. Hay and stock rack. Hog or cattle holding rack. Laundry-rack. Pool-ball rack. Screen-wire rack. Towel or paper rack. Wagon-rack.

Racking beer	H. W. Colby	654,714	July 31	3877	874, 875	92	844
Radiator construction	C. T. Pratt	657,564	Sept. 11	1010	209	92	2027
Radiator-valve	J. T. Kelly	658,720	Sept. 25	3107	693	92	2483
Radiator-valve	J. T. Kelly	658,721	Sept. 25	3109	693	92	2484
Radiator-valve	F. A. Headson	658,368	Sept. 25	2480	548	92	2360
Radiators. Automatic air-valve for	E. Gates	658,393	July 10	1249	297	92	260
Radiographs. Apparatus for making	H. V. Hayes and E. R. Cram	654,630	July 31	3781	842	92	815
Radiophony	G. Kreuter	656,648	Aug. 28	2812		92	1633
Rags. Treatment of silk	H. F. A. Kleinschmidt	656,125	Aug. 14	1854	426, 427	92	1419
Rail bond. Track	A. C. Williams	656,758	Aug. 28	2089	682	92	1667
Rail-clamp	D. F. Vaughan	653,975	July 17	2367	545	92	499
Rail fastener. Guard	T. C. Clarke	657,811	Sept. 11	1465	311	92	2117
Rail-joint	T. C. Du Pont	658,357	Sept. 25	2455	542	92	2355
Rail-joint	C. B. Eames	656,883	Aug. 28	3284	746	92	1723
Rail-joint	W. A. Moreland	657,352	Sept. 4	542	112	92	1908
Rail-joint	A. Relay	655,370	Aug. 7	376	81	92	1112
Rail-joint	D. Stephens	656,589	Aug. 21	2705	620	92	1598
Rail-joint	B. Stürenberg	656,226	Aug. 21	2041	469	92	1467
Rail-joint	D. O. Ward	653,505	July 10	1581	368	92	328
Rail-joint	W. J. Whitaker and S. M. Gruber	657,751	Sept. 11	1365	289	92	2097
Rail-joint fastening	F. W. Schimmel	653,532	July 10	1527	355	92	317
Rail joint or chair	E. Lane	658,528	Sept. 25	2744	609	92	2412
Rails. Device for preventing creeping of	J. L. Pope	656,470	Aug. 21	2485	571	92	1532
Rails. Device for preventing creeping of	J. L. Pope	657,295	Sept. 4	429	90, 91	92	1887
Rails. Manufacture of	J. S. Seaman	657,904	Sept. 18	1779	384	92	2196
Railway	J. Sparrow	656,753	Aug. 28	2083	680	92	1666
Railway. Aerial	H. Suter	654,687	July 31	3818	862	92	832
Railway appliance. Electric	D. E. Shoop	654,105	July 17	2570	590, 591	92	539
Railway block system	B. C. Rowell	658,509	Sept. 25	2707	600, 601	92	2404
Railway bond-tie. Electric	W. A. Downing and J. T. McHugh	658,541	Sept. 25	2763	614	92	2415

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Dr'g.	Official Gazette. Vol.	Page.
Railway-brake	W. P. Bullivant	656,090	Aug. 14	1793	412	92	1407
Railway-brake	H. H. Westinghouse	656,232	Aug. 21	2049	471	92	1468
Railway-brake	H. H. Westinghouse	656,382	Aug. 21	2324	532, 533, 534	92	1521
Railway-carriage coupling	A. Brooker and W. Bailey	654,939	July 31	4321	972, 973	92	939
Railway cattle-guard	R. F. Adams	653,128	July 3	744	175	92	140
Railway cattle-guard	J. Donovan	658,352	Sept. 25	2448	541	92	2354
Railway-chair	W. H. Plewman and J. Graham	656,827	Aug. 28	3142	712, 713	92	1697
Railway. Closed-conduit electric	L. Dion	657,311	Sept. 4	464	98	92	1803
Railway. Closed-conduit electric	L. Dion	657,484	Sept. 4	863	175	92	1986
Railway conductor and collector. Electric	A. Petzenbürger	657,830	Sept. 11	1499	320, 321	92	2124
Railway contact system. Electric	W. Grunow, Jr. (Reissue)	11,840	July 10	1769	405, 406	92	366
Railway cross-tie	W. M. Woodworth	654,820	July 31	4088	919	92	890
Railway-crossing	J. S. Jenckes, Jr	653,006	July 3	523	123, 124	92	105
Railway-crossing gate	C. R. Woodward	658,086	Sept. 18	1892	409	92	2218
Railway-crossing signal	M. W. Taylor	658,409	Sept. 25	2551	566	92	2374
Railway. Electric	E. M. Bentley	658,336	Sept. 25	2414	534	92	2347
Railway. Electric	T. P. Chandler	657,330	Sept. 4	508	104	92	1900
Railway. Electric	G. A. Lyncker	654,658	July 31	3775	851, 852	92	823
Railway. Electric	W. B. Purvis	655,455	Aug. 7	528	119	92	1143
Railway. Elevated pleasure	E. Wishart	652,872	July 3	244	58	92	48
Railway-frog	C. F. Kress, Jr	654,462	July 24	3410	768	92	736
Railway-frog. Automatic	C. W. McKinney	657,668	Sept. 11	1214	254	92	2066
Railway-gate	A. K. H. Brüggmann	653,925	July 17	2270	517	92	481
Railway-gate. Automatic	C. H. Young	654,085	July 17	2596	584	92	532
Railway-gate. Electrically-operated	G. D. Burton and G. W. Steiner	656,091	Aug. 14	1794	418	92	1407
Railway grip mechanism. Cable	J. Craig, Jr	653,441	July 10	1344	319	92	279
Railway-head	A. W. Mathewson	655,934	Aug. 14	1462	336, 337, 338	92	1388
Railway-joint. Portable	A. H. Ailloud	658,608	Sept. 25	2899	645	92	2442
Railway-rail and joint	S. Hazard	657,870	Sept. 11	1570	339	92	2139
Railway-rail electric bond	H. P. Brown	657,757	Sept. 11	1374	290	92	2099
Railway-rail joint	H. A. Christy	656,810	Aug. 28	3092	708	92	1687
Railway-rail joint	J. F. Scullen	657,888	Sept. 11	1599	344	92	2145
Railway-rail joint	C. Whitmore	656,071	Aug. 14	1740	402	92	1394
Railway-rail joint	J. J. Shirkey	657,622	Sept. 11	1122	235	92	2049
Railway-rails. Ice-removing mechanism for	G. H. Dunham	657,730	Sept. 11	1327	281	92	2088
Railway signal. Electric	J. W. Lattig	657,170	Sept. 4	181	41	92	1837
Railway-signal system. Automatic	B. M. Chase	657,513	Sept. 11	932	191	92	2011
Railway-spike	T. Copeman	656,691	Aug. 28	2876	654	92	1646
Railway-switch	G. H. Fairchild	657,099	Sept. 4	51	12	92	1812
Railway-switch	A. G. Moeckel	655,449	Aug. 7	519	116	92	1141
Railway-switch	M. O'Dowd	654,274	July 24	3049	685	92	660
Railway-switch	A. A. Strom	657,044	Aug. 28	3562	820	92	1776
Railway-switch	A. A. Strom	658,294	Sept. 18	2331	514	92	2305
Railway-switch-operating mechanism	C. N. Bayles	656,624	Aug. 28	2779	636, 637	92	1626
Railway-switch-setting mechanism	G. W. Mockabee	653,108	July 3	711	167, 168	92	142
Railway system. Conduit electric	F. M. Ashley	654,586	July 31	3628	818	92	794
Railway system. Electric	G. L. Campbell	656,511	Aug. 21	2551	587	92	1565
Railway system. Electric	E. Frischmuth	657,487	Sept. 4	868	176	92	1988
Railway system. Electric	W. Robinson	658,075	Sept. 18	1955	425, 426	92	2230
Railway system. Electric	L. E. Walkins	656,276	Aug. 21	2125	486	92	1483
Railway system. Underground electric	C. A. Balph	653,649	July 17	1780	407	92	887
Railway-tie	E. A. W. Jefferies	657,492	Sept. 4	877	177	92	1990
Railway-tie. Metallic	S. F. Swanson	658,131	Sept. 18	2040	447	92	2249
Railway tongue-rail fastening	P. Knittel	655,444	Aug. 7	514	114	92	1140
Railway track. Electric	E. Sollmann	653,970	July 17	2361	543	92	498
Railway-track fastening	D. D. Ralston	656,661	Aug. 28	2830	645	92	1637
Railway track for public highways. Tram	T. H. Gibbon	652,767	July 3	55	13	92	12
Railway-track-sanding pipes. Pneumatic device for clearing	J. H. Hanlon. (Reissue)	11,845	Aug. 14	1904	438	92	1428
Railway-track structure	T. C. Du Pont	658,355	Sept. 25	2451	541	92	2351
Railway-track structure	T. C. Du Pont	658,356	Sept. 25	2452	542	92	2354
Railway-track structure	E. B. Entwisle	658,360	Sept. 25	2458	543	92	2356
Railway-track structure	C. F. Kress, Jr	658,376	Sept. 25	2493	551	92	2362
Railway-track structure	H. B. Nichols	655,349	Aug. 7	337	73, 74	92	1106
Railway-track structure	H. O'Shea	653,845	July 17	2127	484	92	452
Railway-track structure	P. G. Stormer	658,405	Sept. 25	2543	563	92	2372
Railway-tracks. Construction of	G. Lindentbal	656,986	Aug. 28	3466	702, 703	92	1758
Railway-train night-signal	E. B. Pope	656,726	Aug. 28	2089	671	92	1658
Railway-vehicle coupling	A. Piskur	652,921	July 3	323	80	92	65
Railway-wheel hub-liner	F. T. Hyndman	654,641	July 31	3752	846	92	819
Railways. Electric automatic controller and indicator for	V. Leto	656,029	Aug. 14	1672	385, 386	92	1380
Railways. Ice-removing trolley for electric	J. J. Shirkey	657,623	Sept. 11	1123	235	92	2049
Raisin-cleaner and cap-stemmer	H. Eastwood	657,692	Sept. 11	1257	267	92	2074
Raisin cleaner and grader. Combined	C. J. Clarke	654,135	July 24	2673	606	92	578
Raisin-seeder	F. H. Peterman	653,180	July 3	838	197	92	168

Rake:
See Hay-rake.

Raker-gage and saw-jointer	J. A. Easley	656,739	Aug. 28	2958	676	92	1662
Range, &c	A. W. Hawkins	657,536	Sept. 11	966	199	92	2018
Range-boiler and making same	C. Comstock	655,394	Aug. 7	418	91	92	1119
Range. Gas and coal	H. R. Sheppard	656,485	Aug. 21	2510	578	92	1556

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Drg.	Official Gazette. Vol.	Page.
Range or stove water-back	W. L. Culver	658,949	July 17	2316	530	92	489
Ratchet-brake	J. Clark	656,942	Aug. 28	3384	773	92	1742
Ratchet-drill	D. S. Williams	652,827	July 3	171	40	92	36
Ratchet-wrench	T. Carter and B. Henry	657,512	Sept. 11	931	191	92	2011
Ratchet-wrench	W. H. Morse	655,908	Aug. 14	1418	320	92	1329
Ratchet-wrench	A. Peterson	657,499	Sept. 4	888	180	92	1992
Ratchet-wrench	E. Oxley	657,829	Sept. 11	1497	319 320	92	2124
Rate meter. Multi-	E. Oxley	657,828	Sept. 11	1494	319	92	2123
Rate metering. System of multiple-	L. Flinker. (Reissue)	11,853	Sept. 4	904	183	92	1995
Razor-blade safety-guard attachment	A. W. Scheuber	657,010	Aug. 28	3499	798	92	1763
Razor. Safety-	H. Herder	653,914	July 17	2255	513	92	478
Razor-stropping device	F., R., and O. Kampfe	658,650	Sept. 25	2979	663	92	2458
Razor-stropping device	F., R., and O. Kampfe	658,649	Sept. 25	2977	662	92	2457
Razor-stropping machine	W. W. Patrick	658,490	Sept. 25	2678	594 595	92	2397
Razor-stropping machine	T. Hanrahan	656,112	Aug. 14	1834	422	92	1415
Reaping and binding machines. Conveyer and elevator for	E. Ullmann	658,133	Sept. 18	2051	447	92	2240
Reaping-machine stalk-raising device	J. S. Clark	658,348	Sept. 25	2428	536	92	2350
Receptacle-closure	H. S. Reynolds and E. M. Peacock	658,588	Sept. 25	2866	635	92	2437
Receptacle-closure	S. Bachmann	655,680	Aug. 14	975	221	92	1241
Receptacle. Collapsible	J. G. Webb	655,598	Aug. 7	763	179	92	1188
Reclining-chair and clothes-rack. Combined							
Recorder: *See* Music-recorder. Time-recorder. Pocket-recorder.							
Recording-instrument damping device	W. H. and F. B. Bristol	654,341	July 24	3177	712	92	684
Recording papers or writings. Apparatus for	T. Jansen, W. H. Gardiner, and E. Kandler.	655,977	Aug. 14	1570	361 362	92	1359
Reed. Universal warping-	H. C. Dreyer	658,104	Sept. 18	2007	437	92	2240
Reel: *See* Wire-reel.							
Reflector. Light-	F. Egnell	657,693	Sept. 11	1260	267	92	2074
Refrigerating and refrigerant	S. H. Emmens	652,759	July 3	39	10	92	9
Refrigerating apparatus	G. H. Abrams	654,578	July 24	3001	811	92	771
Refrigerating apparatus. Absorption	N. H. Hiller and H. Torrance, Jr	654,395	July 24	3279	736	92	709
Refrigerating device for centrifugal apparatus	E. G. N. Salenius	655,016	July 31	4460	1005 1006	92	969
Refrigerating-machine	G. H. Abrams	654,577	July 24	3599	810 811	92	770
Refrigerating-machine	D. McGill and F. W. Tannett-Walker	654,789	July 31	4028	907 908	92	875
Refrigerating-machine compressor	H. Renno	655,120	July 31	4643	1047	92	1005
Refrigeration apparatus	C. J. Coleman	653,173	July 3	824	194	92	165
Refrigeration system	C. J. Coleman	653,171	July 3	821	193	92	164
Refrigerator	L. J. Feldkircher	657,929	Sept. 18	1712	367 368	92	2184
Refrigerator	L. J. Feldkircher	657,930	Sept. 18	1713	368 369	92	2184
Refrigerator	C. F. Kade	652,783	July 3	80	19, 20	92	17
Refrigerator	R. H. Reeves	653,119	July 3	728	171	92	145
Refrigerator-car	T. B. Kirby	656,462	Aug. 21	2470	568 569	92	1540
Refrigerator-car ventilating-hatch	H. M. McIntosh	657,441	Sept. 4	712	151 152	92	1942
Refrigerator. Closed	A. D. W. King	653,388	July 10	1256	299	92	201
Refrigerator. Tile	H. C. Tanner	653,853	July 17	2142	487	92	455
Refuse-destructor and steam-generator. Combined	J. T. Wood and J. A. Brodie	658,095	Sept. 25	3058	681	92	2474
Register: *See* Cash-register. Telephone-call register. Fare-register. Vote-register. Hot-air register. Watchman's dialless Hotel room-register. register.							
Register	J. A. Brynie	655,192	Aug. 7	29	0	92	1047
Register	W. L. Carter	657,063	Sept. 4	20	5	92	1805
Register	E. Davis	652,754	July 3	28	7	92	7
Register	G. Lafond	653,250	July 10	992	238 239	92	212
Register	C. F. J. Wernert	657,578	Sept. 11	1036	215	92	2032
Regulator: *See* Current-regulator. Speed-regulator. Draft-regulator. Windmill-regulator. Gas-regulator. Wind-wheel regulator. Pressure-regulator.							
Rein-guard	L. M. Sanborn	653,561	July 10	1571	366	92	326
Rein-guide	C. E. Whitcomb	657,259	Sept. 4	367	76	92	1874
Rein-holder	R. Barnes	653,896	July 17	2224	506	92	472
Rein-holder	M. Bohnert	653,633	July 17	1786	409	92	388
Rein-holder	J. C. Tolliver and J. A. Stuggi	657,969	Sept. 18	1786	385	92	2108
Rein-holder for cultivators	J. S. Stockton	656,756	Aug. 28	2987	681	92	1667
Relay. Signal-receiving	G. K. Thompson and E. C. Robes	656,796	Aug. 28	3002	696	92	1681
Relay. Static	I. Kitsee	657,221	Sept. 4	286	61	92	1859
Releasing device. Animal-	F. A. Sprenger	656,672	Aug. 28	2842	648	92	1639
Reservoir filler-cap	E. Meredith	656,201	Aug. 21	1987	457	92	1457
Resins. Compound for dissolving	F. G. Kleinsteuber	656,252	Aug. 21	2090	------	92	1476
Resins. Dissolving	F. G. Kleinsteuber	654,646	July 31	3758	------	92	820
Resins, waxes, &c. Raising the melting-point of	A. Gentzsch	657,696	Sept. 11	1264	------	92	2075
Resistance-reducing device. Automatic	G. H. Whittingham	656,004	Aug. 14	1622	374	92	1369
Respiratory mask	D. W. Schaeffer	658,468	Sept. 25	3047	587	92	2351
Retort-furnace	R. E. Lauck	654,066	July 17	2506	577	92	526
Retort. Sanitary	B. Coburn	654,606	July 31	3665	826	92	892
Reverberatory furnace	C. H. Morgan	653,479	July 10	1423	334	92	294
Reversing mechanism	J. Kerkhoff	653,811	July 17	2099	471	92	442
Reversing mechanism	J. J. Leary	654,708	July 31	4053	912	92	883
Revolver	J. H. Wesson	655,844	Aug. 14	1307	300	92	1308

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Drg.	Official Gazette. Vol.	Page.
Revolving chair	J. Ellenbecker	655,211	Aug. 7	61	13	92	1053
Revolving chair	J. Ellenbecker	655,701	Aug. 14	1007	231	92	1248
Rheostat-controller	J. Dillon	657,159	Sept. 4	160	36	92	1893
Rheostat. Electrical	H. W. Leonard	657,708	Sept. 11	1273	270	92	2077
Rhodolalkyletherester	A. Schmidt	656,426	Aug. 21	2406	------	92	1538
Ribbon-holder	L. E. Hamilton and J. W. Miller	654,392	July 24	3276	735	92	708
Ribbon-holder	A. H. Taylor and T. M. Good	658,051	Sept. 18	1912	415	92	2222
Rice-decorticating machine	R. W. Welch	654,558	July 24	3566	805	92	765
Ring: *See* Brush-holder ring. Napkin-ring. Finger-ring. Packing-ring.							
Ring-cutting tool	C. H. Jenkins	658,557	July 10	1567	365	92	325
Ring-stamping apparatus	W. H. Ford	658,736	Sept. 25	3146	698 699	92	2491
Rings and couplings. Forming	D. Heggie	658,911	July 17	2251	512	92	477
Rivet-head-cutting tool	T. Brown	658,337	Sept. 25	2420	535	92	2348
Rivet. Tubular	W. R. Fox	658,798	July 17	2049	467	92	439
Riveter. Pneumatic	H. H. Prange	657,449	Sept. 4	729	156	92	1945
Riveting apparatus	J. J. Tynan and H. C. Mostiller	656,228	Aug. 21	2048	470	92	1467
Riveting apparatus. Hydraulic	S. Foreman	656,815	Aug. 28	3100	704 705	92	1689
Riveting-machine	C. H. Johnson	657,904	Sept. 11	1627	350	92	2151
Riveting-machine attachment	W. L. Kellerman	652,850	July 3	210	50	92	42
Riveting-machine. Hydraulic	W. H. Derbyshire	656,097	Aug. 14	1802	414 415	92	1408
Road breaking and gouging machine	M. H. Johnson	655,404	Aug. 7	429	94, 95	92	1123
Road construction. Wagon-	C. W. Baker	654,701	July 31	3856	869	92	840
Road making and repairing machine	O. E. Moats	655,260	Aug. 7	162	36 37 38	92	1072
Road-making machine	S. T. Williams	657,374	Sept. 4	588	123 124	92	1919
Roads. Apparatus for trimming sides of	A. Hogg	653,510	July 10	1479	345	92	807
Roasting-furnace	U. Wedge	654,335	July 24	3169	710 711	92	683
Rock-breaker. Subaqueous	B. H. Coffey	657,515	Sept. 11	934	192	92	2011
Rock-drill head	W. A. Dudley	658,060	Sept. 18	1926	418	92	2225
Rock-drill tripod and clamp	W. K. Millholland	653,306	July 10	1102	263	92	238
Rocker attachment. Elastic	T. F. and W. P. Kniphuisen	653,351	July 10	1200	289	92	250
Rocking-chair. Folding	J. W. Curry	653,378	July 10	1241	295	92	258
Rocking device	K. Geier	658,433	Sept. 25	2591	575	92	2381
Rod: *See* Carbon rod. Card-lock rod.							
Rod-jack	J. S. McCariston	658,276	Sept. 18	2301	507	92	2209
Roentgen-ray apparatus	W. S. Andrews	657,378	Sept. 4	566	125	92	1920
Roller: *See* Adjustable roller. Shade-roller. Land-roller. Tamping-roller.							
Roller and harrow. Combined	N. Schwartz	655,584	Aug. 7	747	172 173	92	1185
Roller-press	E. Reagan	657,676	Sept. 11	1229	250 260	92	2069
Rolling flanged sections	T. Morrison	654,071	July 17	2517	578 579	92	528
Rolling flanged sections. Apparatus for	T. Morrison	654,100	July 17	2561	589	92	537
Rolling machine. Seamless-tube	J. Becker	653,335	July 10	1150	273 274 275 276 277 278	92	248
Rolling machine. Tube-	C. L. Curtis	657,647	Sept. 11	1163	243 244	92	2057
Rolling-mill	H. Aiken	653,566	July 10	1584	368 369 370	92	320
Rolling-mill appliance	J. M. Murphy	652,802	July 3	111	27	92	23
Rolling-mill feed-roll	D. D. Lewis	654,406	July 24	3299	740	92	713
Rolling-mill feeding mechanism	V. E. Edwards	653,507	July 10	1474	344	92	306
Rolling-mill roll-relieving device	C. L. Huston	655,554	Aug. 7	677	154	92	1173
Rolling-mill spring appliance	L. Morgan	658,389	Sept. 25	2523	558	92	2367
Roof	G. Bruck	653,017	July 3	543	127 128	92	108
Roofing	N. Daubach	654,717	July 31	3888	877	92	847
Roofing-plates. Machine for edging metallic	W. Martin	655,904	Aug. 14	1411	324	92	1328
Roofing-plates. Machine for edging sheet-metal	W. Martin	655,903	Aug. 14	1408	323 324	92	1327
Rope-fastening	C. A. Conger	658,661	July 17	1797	412	92	301
Rope transmission device	O. Sundt	655,281	Aug. 7	207	46	92	1081
Ropes. Making wood or ratan	A. H. Ordway	656,040	Aug. 14	1687	389	92	1382
Rotary cutter	C. S. Locke	653,026	July 3	556	130	92	111
Rotary drier	C. Andersen and A. Woolner, Jr	658,646	July 10	1746	402	92	361
Rotary engine	F. and T. J. Bezemer	654,596	July 31	3643	822	92	797
Rotary engine	L. A. Cooper	655,201	Aug. 7	42	9, 10	92	1049
Rotary engine	L. A. Cooper	655,609	Aug. 7	702	185	92	1193
Rotary engine	E. P. Couture	657,590	Sept. 11	1053	219	92	2035
Rotary engine	J. M. Evans	656,694	Aug. 28	2880	655	92	1647
Rotary engine	A. H. Gould	657,409	Sept. 4	655	136 137	92	1932
Rotary engine	H. A. and R. J. Hancox	658,863	Sept. 25	2463	544 545	92	2357
Rotary engine	G. E. Ledvina	657,826	Sept. 11	1489	318	92	2122
Rotary engine	C. E. Linton	655,175	July 31	4740	1065	92	1024
Rotary engine	J. E. Moats	657,559	Sept. 11	1001	206 207	92	2025

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Rotary engine	C. F. Moss and S. A. Imboden	658,190	Sept. 18	2155	471, 472	92	2270
Rotary engine	J. W. Pickel	654,412	July 24	3311	742, 743	92	715
Rotary engine	J. A. Porter	654,119	July 17	2608	598	92	546
Rotary engine	S. A. S. Porter	652,809	July 3	133	33	92	27
Rotary engine	G. Code	655,198	Aug. 7	37	8	92	1048
Rotary engine. Compound	W. A. Pitt	658,556	Sept. 25	2789	619	92	2421
Rotary engine or motor	F. Deming	652,756	July 3	33	8	92	8
Rotary mold	V. F. Lake	655,008	July 31	4599	1068	92	996
Rotary motor	R. F. Marsh	658,384	Sept. 25	2513	556	92	2366
Rotary motor	J. and J. G. Fraser and H. Walker	655,860	Aug. 14	1390	304, 305, 306	92	1313
Rove-stop mechanism	F. J. Newbury	652,975	July 3	468	110	92	94
Rubber-covered article or tubing and making same	J. W. Ivory	658,179	Sept. 18	2143	468	92	2268
Rubber-dam clamp	C. P. Gifford	655,222	Aug. 7	80	17	92	1057
Rubber fabrics. Tool for repairing	E. Hornung and S. Hansel	657,240	Sept. 4	321	------	92	1866
Rubber, gutta-percha, and their compositions. Treating india-	W. E. Herbst	658,441	Sept. 25	2601	577	92	2385
Rubber heel	A. Sweeney	653,828	July 17	2102	479	92	448
Rubber. Machine for cutting sheets of unvulcanized	F. W. Whitcher	657,277	Sept. 4	400	84	92	1881
Rubber sole	G. A. Pickup	657,500	Sept. 4	890	180	92	1902
Rubber stamps. Manufacture of endless bands for	J. S. Duncan	656,442	Aug. 21	2434	560	92	1542
Rubber type	J. S. Duncan	656,444	Aug. 21	2438	561	92	1543
Rubber type. Mold for making	C. O. Meux	656,413	Aug. 21	2382	547	92	1532
Ruler. Accountant's	F. Müller	655,568	Aug. 7	707	161	92	1178
Sack-cleaning machine	G. H. Carney	657,644	Sept. 11	1158	242	92	2056
Sack-holder	H. O. Brown and J. R. Donnelly	656,098	Aug. 14	1790	411	92	1406
Sad-iron	P. Maegaard	657,537	Sept. 11	999	206	92	2025
Saddle. Harness-	C. W. Miller	653,559	July 10	1569	365	92	325
Saddle. Harness-	J. T. Hough	658,645	Sept. 25	2969	661	92	2456
Safe	W. F. Horn	657,066	Aug. 28	3597	829	92	1788
Safety-gate. Pneumatic	J. D. Conover	657,088	Sept. 4	27	7	92	1806
Safety-pin	R. Martin	657,704	Sept. 11	1276	270	92	2078
Safety-pin	W. S. Smith	655,166	July 31	4722	1062	92	1021
Safety-pin	J. V. Washburne	654,088	July 17	2463	565	92	518
Safety-pin strap-holder	J. S. Herriott	658,147	Sept. 18	2073	452	92	2253
Sample-bag	A. M. Ingersoll	657,542	Sept. 11	975	200	92	2020
Sand-band	J. L. Perry	657,357	Sept. 4	553	114, 115, 116	92	1911
Sandpapering-machine	J. L. Perry	657,358	Sept. 4	558	116	92	1912
Sandpapering-machine	W. M. Potter	658,582	Sept. 25	2855	633	92	2434
Sand-press	A. S. Newton	653,457	July 10	1373	325	92	284
Sanitary trap	J. W. Rapp	653,399	July 10	1275	308	92	264
Sash and sash-frame	J. F. Collins	655,607	Aug. 7	786	185	92	1193
Sash-cord fastener	A. H. Fisher	656,320	Aug. 21	2211	506	92	1499
Sash-cord fastener	J. S. Clark	654,874	July 31	4197	945	92	912
Sash-cord guide	S. J. Johnston	652,782	July 3	78	19	92	17
Sash-fastener	W. D. Snyder	656,704	Aug. 28	2900	660	92	1651
Sash fastener and lift combined	E. R. Dutton	656,633	Aug. 28	2791	638	92	1628
Sash fastener. Storm-	J. Bohlen	655,543	Aug. 7	652	149	92	1168
Sash-holder	A. Clifford	654,384	July 24	3259	731	92	704
Sash-lock	H. E. Doren	654,141	July 24	2808	613	92	583
Sash-lock	D. Lloyd	652,792	July 3	96	23	92	20
Sash-lock	H. A. Paquette	653,458	July 10	1374	326	92	284
Sash-lock	W. G. Anderson	653,540	July 10	1543	358	92	320
Sashes. Parting-bead for window-	P. C. Sachse	654,282	July 24	3064	688	92	603
Sashes. Truss-bar for meeting-rails of window-	G. Goerk	655,150	July 31	4693	1058	92	1015
Satchel-fastening	G. W. Constantine	658,428	Sept. 25	2582	573	92	2379
Sausage-cleaning machine	H. C. Atkinson	658,521	Sept. 25	2727	605, 606	92	2408
Sausage stuffing and linking machine	J. I. Caruthers	655,059	July 31	4546	1024	92	996
Saw	H. F. Condon	653,947	July 17	2314	530	92	489
Saw	R. Dale	657,336	Sept. 4	514	106	92	1908
Saw	C. T. Redfield	654,075	July 17	2522	580	92	529
Saw	H. H. Bickford	657,155	Sept. 4	154	34	92	1882
Saw-blade	A. G. Clark	654,134	July 24	2672	608	92	578
Sawbuck	A. Demers	658,172	Sept. 18	2130	463	92	2265
Saw-frame	L. E. Eickelberg	652,838	July 3	101	44	92	39
Saw frame. Buck-	J. Morin	658,274	Sept. 18	2208	506	92	2290
Saw gage. Crosscut-	J. M. Garrison	658,212	Sept. 18	2201	481	92	2279
Saw. Grooving-	T. David	657,520	Sept. 11	944	194	92	2013
Saw-guard	E. F. Lafayette	655,690	Aug. 7	838	195	92	1202
Saw guide and support. Drag-	C. H. Wilson	656,778	Aug. 28	3025	589, 590	92	1674
Saw. Hand-	C. H. Wilson	656,779	Aug. 28	3029	589, 590	92	1675
Saw. Hand-	G. R. L. Stimers	658,130	Sept. 18	2047	447	92	2248
Saw-handle. Detachable	S. Dougald	655,823	Aug. 14	1273	292	92	1302
Saw-jointer	C. L. Shonle	653,122	July 3	735	173	92	147
Saw. Metal bench-	L. W. Dickey	656,525	Aug. 21	2582	595	92	1572
Sawmill	E. E. Thomas	658,166	Sept. 18	2118	460	92	2263
Saw mill. Band-	L. J. Hanhart	658,108	Sept. 18	2013	439	92	2241
Sawmill-carriage offset mechanism	H. G. Dittbenner	657,340	Sept. 4	520	107, 108	92	1904
Sawmill steam-feed	W. M. Carroll	653,212	July 10	919	222	92	198
Sawmill steam-feeds. Cut-off for	O. B. Bolton	654,431	July 24	3352	752	92	724
Saw-patching machine	H. W. Eicher	652,758	July 3	38	9	92	9
Saw-set	P. C. Kemper and W. E. Rader	655,714	Aug. 14	1027	237	92	1252
Saw-set	C. McDonner	653,690	July 17	1841	421	92	399
Saw-set	T. McKelvey	656,909	Aug. 28	3483	796	92	1761
Saw-set	D. C. Wiest	657,974	Sept. 18	1791	396	92	2199
Saw-set	G. Bartlett	657,850	Sept. 11	1535	330	92	2132
Saw-sharpening machine	L. L. Filstrup	654,829	July 31	4109	925	92	894

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Saw-sharpening machine	H. P. Schofield	654,844	July 31	4142	982, 983	92	900
Saw-support	H. P. Schofield	654,845	July 31	4146	983	92	902
Saw support and guide	H. P. Schofield	654,843	July 31	4141	982	92	900
Saw-swage	E. G. Shortridge, S. J. Myers, and W. D. Irvin.	653,824	July 17	2093	478	92	447
Saws. Adjustable axle-bearing for band-	A. Arnold	656,800	Aug. 28	3069	697	92	1682
Saws. Insertible cutter or tooth for rotary	J. H. Jewett	657,873	Sept. 11	1573	339	92	2140
Sawing machine. Wood-	T. S. Carroll	656,168	Aug. 21	1930	443, 444	92	1446
Sawing machine. Wood-	J. E. Herman	655,708	Aug. 14	1017	235	92	1250
Sawing machine. Wood-	W. Hindley and J. W. Harding	652,772	July 3	64	15, 16	92	14
Sawing machine. Wood-	G. Curley	657,896	Sept. 4	631	132	92	1927
Scaffold	J. C. Foreaker	653,768	July 17	1984	453	92	426
Scaffold	J. F. Barron	656,007	Aug. 14	1628	375	92	1370
Scaffold-hanger	R. J. Bungard	654,709	July 31	3870	873	92	842
Scaffolding	J. T. O'Brien	656,298	Aug. 21	2174	497	92	1492
Scaffolding	W. F. Stimpson	658,404	Sept. 25	2541	583	92	2371
Scale	G. Schneider	651,320	July 24	3158	706	92	681
Scale and wagon. Combined	H. Bube	654,222	July 24	2940	660	92	636
Scale cap. Measuring-	C. Larsen	657,169	Sept. 4	179	41	92	1837
Scale. Carpenter's	L. P. Halladay	658,641	Sept. 25	2964	650, 660	92	2455
Scale. Computing-	A. B. Hayden	656,848	Aug. 21	2271	520, 521	92	1511
Scale. Computing-	T. A. Killman	655,920	Aug. 7	834	105	92	1202
Scale. Computing-	A. De Vilbiss, Jr.	655,147	July 31	4686	1056, 1057	92	1014
Scale computing attachment	H. G. Roth	657,620	Sept. 11	1116	233	92	2048
Scale for cheese. Cutting-	J. R. O'Connor	653,937	July 17	2206	524	92	486
Scale-grinding machine	E. Finn	652,957	July 3	439	108	92	88
Scale-loop	C. F. Ritchel	655,350	Aug. 7	338	74	92	1106
Scale. Postage-	C. F. Christopher	658,732	Sept. 25	3135	696, 697	92	2489
Scale. Price-	F. L. Fuller	655,899	Aug. 14	1395	321, 322	92	1325
Scale. Price-	O. O. Ozias	655,729	Aug. 14	1059	245	92	1258
Scale. Price-	G. R. Brown	657,476	Sept. 4	775	167	92	1954
Scale. Proportionate	R. P. Felton	655,966	Aug. 14	1541	355, 356	92	1354
Scale. Weighing and recording	C. Corbin	656,013	Aug. 14	1642	377, 378	92	1378
Scale. Weight and price	A. Baron	656,762	Aug. 28	2097	683, 684	92	1669
Scenes and sounds. Apparatus for taking and reproducing animated	C. Schneider	655,639	Aug. 7	860	199	92	1207
Scholar's companion	M. Mullin, I. N. Watson, and J. A. Hall.	656,468	Aug. 21	2481	571	92	1551
Scourer: *See* Grain-scourer.	W. H. Onion	658,115	July 3	722	170	92	144
Scraper	C. T. Sewell	653,320	July 10	1125	268	92	238
Scraper	N. C. Harris	656,971	Aug. 28	3443	787	92	1753
Scraper. Cotton-	J. Stubbs	657,321	Sept. 4	486	102	92	1897
Scraper. Wheeled							
Screen: *See* Coal-screen. Fly-screen. Gas-screen. Insect-screen. Mineral-screen. Stamp-mill screen. Window-screen.	J. G. Ralph	655,991	Aug. 14	1598	368	92	1304
Screen construction. Combined storm and fly	G. W. Reynoldson	654,671	July 31	3799	857	92	828
Screen-wire rack	C. A. Higbee	658,085	Sept. 18	1979	431	92	2235
Screw-coupling	C. A. Higbee	658,086	Sept. 18	1980	431	92	2235
Screw-coupling	C. A. Higbee	658,087	Sept. 18	1982	432	92	2236
Screw-coupling	E. Phillips	658,396	Sept. 25	2530	560, 561	92	2360
Screw-cutting machine	E. L. Schneider	657,457	Sept. 4	741	158	92	1947
Screw-driver attachment	W. O. Derry	655,297	Aug. 7	256	54	92	1087
Screw, Jack-	J. C. F. Long and J. N. Bish	656,464	Aug. 21	2475	569	92	1549
Screw-jack. Adjustable	P. E. Dornheim	656,952	Aug. 28	3405	777	92	1746
Screw-machine nurling-die holder	J. Jetter	657,241	Sept. 4	322	68, 69	92	1866
Screw-machines. Device for automatically clamping and locking turrets to slides of	J. W. Dixon	657,921	Sept. 18	1671	360	92	2172
Screw-on-stopper. Drinking-flask	L. Anderson	654,932	July 31	4311	969, 970	92	987
Scrubbing-machine	H. C. Burk	657,584	Sept. 11	1045	217	92	2034
Scrubbing-machine	A. Wenzel	653,494	July 10	1447	338, 339	92	299
Sculpture-copying machine	C. J. Dear	657,023	Aug. 28	3515	803	92	1766
Scutching-machine	F. W. Brooks	654,940	July 31	4323	973	92	989
Seal	O. F. Jordan	655,718	Aug. 14	1025	237	92	1252
Seal	A. B. Schofield	656,906	Aug. 28	3329	758	92	1732
Seal	A. N. Houghton	657,067	Aug. 28	3598	829	92	1784
Seal. Bottle-	B. J. Giebel and W. A. Park	653,799	July 17	2050	467	92	430
Seal-lock	H. M. Grover	658,688	Sept. 25	2959	658	92	2454
Seal-lock	J. D. C. Knapp	658,451	Sept. 25	2618	579	92	2385
Seal-lock	G. W. Lewis	657,742	Sept. 11	1351	296	92	2008
Seal-lock	C. A. Rasco and J. T. Taylor	654,021	July 17	2480	558	92	512
Seal-lock	E. J. Brooks	654,596	July 31	3646	822	92	798
Seal. Snap-	A. A. Low	658,388	Sept. 25	2512	555	92	2360
Sealing-cap. Vessel	G. W. Mawbey	655,935	Aug. 14	1472	------	92	1330
Sealing compound. Vessel-	G. W. Gomber	654,111	July 17	2577	592	92	540
Sealing device	W. D. Brooks	653,467	July 10	1387	329	92	287
Seaming cans. Machinery for side-	H. C. Hunter	654,254	July 24	3013	676, 677	92	652
Seaming-strips. Machine for making	T. Swan	653,710	July 17	1872	429	92	405
Seat: *See* Bath-tub seat. Spring-seat.							
Seat							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Seat for shop assistants, &c	J. B. Bruce	652,886	July 3	266	64	92	52
Seat-post binder	J. S. Dikeman	655,766	Aug. 14	1137	261	92	1274
Seat structure	W. L. Schellenbach	656,219	Aug. 21	2032	466 467	92	1465
Secondary battery	V. Cheval and J. Lindeman	658,235	Sept. 18	2233	489	92	2285
Secondary battery	C. J. Coleman	654,519	July 24	3506	791	92	753
Secondary battery	C. J. Coleman	654,520	July 24	3507	791	92	754
Secondary battery	C. J. Coleman	658,733	Sept. 25	3139	697	92	2489
Secondary battery	C. J. Coleman	658,734	Sept. 25	3140	697	92	2490
Secondary battery	C. J. Coleman	657,659	Sept. 11	1189	249	92	2092
Secondary battery	A. Jamieson	658,883	July 17	2193	499 500	92	466
Secondary battery	A. Reuterdahl	654,557	July 24	3564	804	92	765
Sectional boiler	D. Tommasi	653,246	July 10	975	233	92	208
Seed-drill riding attachment	J. Keith	654,525	July 24	3515	793	92	755
Seeder	T. J. Dorsey and N. Mathews	655,397	Aug. 7	420	92	92	1121
Seeder	J. T. Fitzgerald and J. S. Ramsey	653,833	July 17	2114	480	92	450
Seeder	A. V. Wilbur	657,797	Sept. 11	1441	306	92	2112
Seeder. Force-feed end-gate broadcast	I. D. Stevens	653,053	July 3	604	143	92	122
Seeding-machine	M. and C. Zöllner	655,088	July 31	4592	1036	92	965
Self-centering pipe	T. H. Kane	654,851	July 31	4156	936	92	904
Semaphore-operating mechanism	J. Shoecraft	655,488	Aug. 7	578	129	92	1154
Separable chair	L. S. Hayes	653,021	July 17	2264	515	92	480
Separable friction-hanger	J. B. Redmond and L. C. Adams	655,881	Aug. 14	1309	315 316	92	1319
Separating and bolting machine	W. C. Marmon						
Separator: *See* Coal-separator. Corundum-separator. Cream-separator. Dust-separator. Egg-separator. Grain-separator. Magnetic separator. Oil-separator. Ore-separator. Potato-separator. Spinning-frame separator. Stone-separator. Vegetable or fruit separator.							
Separator	S. Bender	655,045	July 31	4509	1017	92	979
Separator	G. A. Gibbs	656,710	Aug. 28	2928	669	92	1656
Separator	M. F. Williams	657,998	Sept. 18	1832	396	92	2207
Serving apparatus	W. C. Church and J. B. Mahana	655,196	Aug. 7	34	8	92	1048
Sewage-purifying apparatus	B. R. Guoin	658,640	Sept. 25	2902	659	92	2454
Sewer-trap	T. F. Byrnes	658,339	Sept. 25	2423	535	92	2348
Sewing and cutting machine. Buttonhole	W. W. Dixon	655,650	Aug. 7	899	207 208	92	1217
Sewing and cutting machine. Buttonhole	J. Reece	655,637	Aug. 7	850	198 199	92	1205
Sewing buttons to fabrics. Machine for	J. T. Hogan	656,458	Aug. 21	2462	565 566	92	1547
Sewing-machine	H. P. Richards	652,985	July 3	364	87 88 89	92	74
Sewing-machine	W. Shaw	657,680	Sept. 11	1240	292	92	2071
Sewing-machine. Blind-stitch	M. Spitzer	657,255	Sept. 4	350	74	92	1871
Sewing-machine button-clamp	J. T. Hogan	653,808	July 17	2095	470	92	441
Sewing-machine. Buttonhole-	W. F. Jaglelski	657,545	Sept. 11	980	201	92	2021
Sewing machine. Buttonhole-	W. N. Parkes	658,578	Sept. 25	2835	628 629 630	92	2431
Sewing-machine clamp mechanism. Button-	F. T. Leilich	658,016	Sept. 18	1860	408	92	2213
Sewing-machine feller	J. T. Shaw	656,427	Aug. 21	2411	553	92	1538
Sewing-machine for making fringe	G. J. G. and M. O. Rehfuss	658,585	Sept. 25	2860	634	92	2435
Sewing-machine grinding attachment	W. T. Hodgson	653,240	July 10	964	231	92	206
Sewing-machine guide	P. R. Irvine	657,543	Sept. 11	976	200	92	2020
Sewing-machine guide. Blindstitching-	O. R. Van Vechten	653,630	July 10	1711	395	92	356
Sewing-machine. Hemstitch	C. M. Abercrombie	653,192	July 3	856	201	92	172
Sewing-machine. Hemstitching	G. H. Dimond and W. F. Dial	657,400	Sept. 4	638	133 134	92	1929
Sewing-machine. Hemstitching	G. H. Dimond and W. F. Dial	657,401	Sept. 4	643	134	92	1930
Sewing-machine looper mechanism	H. C. Peters	656,585	Aug. 21	2700	610	92	1597
Sewing-machine motor attachment	F. P. Huyck	657,165	Sept. 4	172	39	92	1836
Sewing-machine. Overseaming	H. H. Fefel	657,926	Sept. 18	1678	362 363	92	2174
Sewing-machine. Overseaming	D. Noble	656,852	Aug. 28	3206	731 732	92	1710
Sewing-machine power-transmitter	W. McHaffie	656,469	Aug. 21	2482	571	92	1551
Sewing-machine. Revolving-hook	A. Döring	657,525	Sept. 11	962	196	92	2015
Sewing-machine. Ruffling	P. Diehl and M. Hemleb	656,440	Aug. 21	2430	559	92	1541
Sewing-machine. Ruffling	P. Diehl and M. Hemleb	656,441	Aug. 21	2432	559 560	92	1542
Sewing machine. Ruffling	R. G. Woodward	655,143	July 31	4675	1054 1055	92	1011
Sewing-machine ruffling attachment	H. S. Ayres	655,180	Aug. 7	5	2	92	1042
Sewing machine. Shoe-	G. E. Warren	658,604	Sept. 25	2892	642 643 644	92	2441
Sewing-machine slack-thread controller	M. V. Palmer	655,575	Aug. 7	732	169	92	1183
Sewing-machine spring-motor	J. R. Oliver	657,318	Sept. 4	481	101	92	1896
Sewing-machine stitch-separating mechanism	F. W. Merrick	653,145	July 3	776	182	92	155
Sewing-machine stop-motion device	W. N. Parkes	653,938	July 17	2298	525 526	92	486
Sewing-machine tension	L. A. Miller	657,350	Sept. 4	539	111	92	1908
Sewing-machine tension	L. A. Miller	657,351	Sept. 4	541	112	92	1908
Sewing-machine tension	S. W. Wardwell, Jr.	653,747	July 17	1895	435	92	410
Sewing-machine tuck creaser and marker	L. Rueweler	658,679	Sept. 25	3083	675	92	2469
Sewing-machine tucking-gulde	J. Strong	653,322	July 10	1127	268	92	238
Sewing-machine work-clamp. Buttonhole-	J. T. Hogan	657,540	Sept. 11	974	200	92	2020
Sewing-machine work-clamp. Buttonhole-	W. N. Parkes	656,370	Aug. 21	2301	527	92	1517
Sewing-machines, &c. Cabinet for	T. Kundtz	654,738	July 31	3923	886	92	854

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sewing on flat buttons. Machine for	A. A. Merritt	655,658	Aug. 7	988	212 213	92	1223
Shade adjuster. Window-	J. E. Martin	653,453	July 10	1366	324	92	283
Shade fixture. Adjustable window-	F. P. Casey	654,342	July 24	3179	713	92	685
Shade fixture. Window-	J. W. Forbes	658,317	Sept. 18	2369	523	92	2312
Shade hanger. Window-	H. H. Stratton	654,078	July 17	2526	581	92	530
Shade-holding mechanism	G. H. Forsyth	657,268	Sept. 4	385	80	92	1878
Shade-roller bracket	W. E. Kearney	655,089	July 31	4594	1036	92	995
Shade-roller. Extension	J. Allard	655,678	Aug. 14	973	221	92	1241
Shade-roller fixture	J. E. Darby and C. A. Baker	656,614	Aug. 21	2763	632	92	1611
Shade-roller for windows, porches, &c	E. F. Meagher	658,091	Sept. 18	1987	433	92	2236
Shade-roller. Spring	E. F. Hartshorn	654,898	July 31	4243	953	92	922
Shade-roller. Spring	E. F. Hartshorn	656,288	Aug. 21	2155	493	92	1488
Shade support or holder. Claw	C. A. Law	655,723	Aug. 14	1050	243	92	1256
Shaft and bearing. Crank-	J. C. Robbins	655,515	Aug. 7	614	138	92	1161
Shaft-coupling	T. F. Vandegrift	655,136	July 31	4665	1051	92	1009
Shaft-coupling disconnecting-gear	C. Van Gyn	658,302	Sept. 18	2347	517	92	2308
Shaft-hanger	D. R. Wing	655,819	Aug. 7	272	61	92	1064
Shaft or pole end guard	S. G. Preston	655,734	Aug. 14	1070	246	92	1260
Shaft or thill coupling	R. F. Corneil	653,287	July 10	1070	256	92	220
Shaft-support	H. Harden	653,808	July 17	2058	469	92	440
Shafts. Means for maintaining a given direction of rotation of	H. F. Roach	656,422	Aug. 21	2403	552	92	1536
Shafting and pulley collar	W. McCabe	656,564	Aug. 21	2650	611	92	1584
Shafting. Machinery	S. S. Fletcher	656,718	Aug. 28	2927	669	92	1656
Shank-stiffeners. Machine for fastening	J. H. Fassett and J. E. Warren	656,184	Aug. 21	1955	449	92	1451
Shaping-machine	J. C. Steen and P. G. March	654,857	July 31	4169	939 940	92	907
Shaping or planing machine	J. C. Steen and C. L. Warner	656,795	Aug. 28	3061	696	92	1681
Sharpener. Disk-	G. Meinhardt	652,917	July 3	318	79	92	64
Sharpener. Disk-	J. J. Smith	652,815	July 3	141	35	92	29
Sharpener. Knife-	J. H. Agesen	658,417	Sept. 25	2565	569	92	2376
Sharpener. Lawn-mower	J. H. Frey	654,146	July 24	2708	616	92	586
Sharpener. Shears-	K. Rossler	657,619	Sept. 11	1115	233	92	2047
Sharpening-machine	F. A. Reichardt	653,882	July 17	2191	499	92	466
Sharpening-machine	C. A. Worden	654,215	July 24	2627	656 657	92	634
Sharpening razors, knives, or cutting instruments. Apparatus for	G. F. Barnett	652,879	July 3	254	61	92	50
Shears: *See* Sheep-shears. Table-shears.							
Shearing machine. Animal-	C. M. Palmer	658,094	Sept. 18	1990	433	92	2237
Sheave. Ball-bearing	J. T. Donohue	656,016	Aug. 14	1654	380	92	1376
Sheep-shears	C. C. Kirkland	654,008	July 17	2408	554	92	508
Sheet-feeding apparatus	J. Boylan	653,207	July 10	912	220 221	92	197
Sheet-leader block	E. J. F. Coleman	655,851	Aug. 14	1318	302	92	1310
Sheet metal. Apparatus for perforating designs in	N. B. Evans	658,082	Sept. 18	1974	430	92	2234
Sheet-metal-bending machine	F. Thomas	658,077	Sept. 18	1966	428	92	2232
Sheet-metal can. Screw-cap	H. J. Vogel	656,911	Aug. 28	3338	760	92	1733
Sheet-separating machine	H. G. Barr	653,608	July 10	1644	384 385	92	341
Shell	H. Bickel	658,231	Sept. 18	2229	488	92	2285
Sheller: *See* Corn-sheller. Pea-sheller.							
Shingle-gage	C. Wilson	658,538	Sept. 25	2759	612	92	2414
Ship cooling apparatus. Steam-	W. N. Keen	654,546	July 24	3550	801	92	762
Ships. Means for reducing skin-friction of	E. Lindemann	654,655	July 31	3770	851	92	822
Ships or boats. Hull for	C. Andrade, Jr	652,876	July 3	249	60, 61	92	50
Shirt. Apparel-	S. A. Israel	658,214	Sept. 18	2305	482	92	2280
Shirt. Apparel-	C. F. Miller	657,273	Sept. 4	398	82	92	1879
Shirt. Apparel-	J. Richardson	658,559	Sept. 25	2798	620	92	2421
Shirt-waist holder and skirt-supporter	R. B. and W. Lamb	655,408	Aug. 7	585	131	92	1155
Shoe	E. H. Christensen	658,342	Sept. 25	2427	536	92	2349
Shoe	R. De Leo	657,095	Sept. 4	43	11	92	1810
Shoe	F. Diemer	654,888	July 24	3265	733	92	705
Shoe. Cushion-	A. Reed	656,472	Aug. 21	2487	572	92	1552
Shoe-fastener	D. M. Young	656,075	Aug. 14	1747	404	92	1396
Shoe holder	E. A. Wilcox	657,634	Sept. 11	1137	239	92	2052
Shoe-horn	E. J. Randall	655,417	Aug. 7	454	101	92	1128
Shoe jack	W. E. Forster	653,227	July 10	946	228	92	202
Shoe or boot stretcher	F. G. Pabst	653,778	July 17	2001	457	92	429
Shoe polishing cabinet	A. L. Overcashier	652,807	July 3	125	30	92	25
Shoe polishing stand	J. F. Gilliland	658,636	Sept. 25	2965	657	92	2453
Shoe stretcher	C. W. Crozier	657,814	Sept. 11	1469	312	92	2118
Shoe tongue-piece	E. H. Christensen	657,085	Sept. 4	23	7	92	1806
Shoe-top holder	C. C. Harlow	653,929	July 17	2276	483	92	483
Shoe-uppers. Machine for marking	P. E. Selby	655,023	July 31	4469	1008	92	971
Shoulder-brace	L. S. Long	658,111	Sept. 18	2021	440	92	2243
Shoulder brace	E. C. Mendenhall	654,173	July 24	2757	626	92	595
Shovel: *See* Steam-shovel.							
Shovel	W. S. Judd	657,422	Sept. 4	681	143	92	1936
Shoveling-board	E. K. Hayes	657,110	Sept. 4	68	15	92	1815
Shutter bower and fastener	H. Hewes and S. L. Troupe	655,866	Aug. 14	1337	308	92	1314
Shutter-fastener	H. S. Hibbs	655,082	July 31	4585	1034	92	994
Shutter-fastener	H. S. Hibbs	655,083	July 31	4586	1034	92	994
Shutter-fastener	W. D. Stansbury	657,139	Sept. 4	112	27	92	1824
Shutter-protector	M. E. Woodworth	657,999	Sept. 18	1834	396	92	2207
Shutter-slat-operating device	P. Starck	657,307	Sept. 4	575	121	92	1916
Shutter-worker	S. L. Powell	657,448	Sept. 4	727	155 156	92	1945
Shutter-worker	H. K. Whitcomb	655,429	Aug. 7	478	106	92	1133
Shuttle	E. Oldfield	653,114	July 3	720	170	92	144
Shuttle	E. Oldfield	653,148	July 3	783	188	92	156
Shuttle-binder	C. F. Perham	654,916	July 31	4283	963	92	981

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Shuttle-guiding device	P. Schmidt	652,804	July 3	230	55	92	46
Sieve. Grain-	W. Dougherty	653,620	July 10	1663	388	92	345
Sifter. Ash-	E. Kluge	657,986	Sept. 18	1815	391	92	2268
Sifter. Ash-	S. D. Melvin	657,558	Sept. 11	1000	206	92	2025
Sifter. Ash-	A. Weidman	654,209	July 24	2913	653	92	631
Sifter. Ash-	W. and F. Walter	653,045	July 3	590	138	92	119
Sifter. Ash or coal	O. Caesar	653,545	July 10	1551	360	92	322
Sign	W. Heeren	657,217	Sept. 4	280	50	92	1858
Sign	J. A. Sleicher	655,524	Aug. 7	627	142	92	1163
Sign	E. Bannies	652,878	July 3	253	61	92	50
Sign. Advertising-	E. G. Stephens	658,403	Sept. 25	2540	563	92	2371
Sign and letter therefor. Illuminated	I. Emmer	658,359	Sept. 25	2457	543	92	2356
Sign and show-case. Duplex	A. Heiny	655,777	Aug. 14	1161	{266 / 267}	92	1279
Sign and signal and apparatus for operating same. Electrical	E. M. Bigsby	654,986	July 31	4316	971	92	688
Sign-frame	S. Evans	653,003	July 3	514	122	92	104
Sign. Illuminated	A. G. R. Nichol	655,264	Aug. 7	172	39	92	1074
Sign or signal for calling cabs							
Signal: *See* Electric signal. Railway-signal. Railway-crossing signal. Railway-train night-signal. Telephone-signal. Telephone trunk-line signal. Train-order signal. Visible and audible signal.							
Signal	J. M. Saller	658,282	Sept. 18	2309	509	92	2301
Signaling apparatus	C. R. Perrine	656,584	Aug. 21	2698	619	92	1597
Signaling apparatus and circuit therefor	A. Stromberg and A. Carlson	655,809	Aug. 14	1242	285	92	1295
Signaling apparatus. Electric	H. G. Carleton	653,469	July 10	1392	{329 / 330}	92	288
Signaling apparatus. Electric	E. B. Ellicott and L. E. Oehring	656,957	Aug. 28	3412	779	92	1747
Signaling device	J. L. Hall	654,625	July 31	3723	840	92	813
Silicon and hydrogen. Compound of	C. B. Jacobs	656,854	Aug. 21	2280	------	92	1512
Silo	G. D. Harder	653,474	July 10	1410	331	92	292
Silo	J. Todd	655,466	Aug. 7	543	{121 / 122}	92	1146
Silo or tank	E. F. Schlichter	653,967	July 17	2356	542	92	497
Singletree-coupling	A. M. Barker	653,542	July 10	1545	359	92	320
Siphon	C. M. Brady	654,597	July 31	3645	822	92	798
Siphon. Beer-	A. Kleinfeldt	653,516	July 10	1487	347	92	308
Siphon for aerated liquids	T. H. W. Idris and R. H. Griffith	653,417	July 10	1302	309	92	270
Sizer and classifier	J. O. Dimmick	653,568	July 10	1590	{370 / 371}	92	330
Sizing	W. A. Hall	653,237	July 10	961	------	92	205
Sizing composition	T. P. Milligan	653,776	July 17	1998	------	92	420
Skate	H. Handwerk	657,822	Sept. 11	1483	316	92	2121
Skate	E. Hunold	658,148	Sept. 18	2074	452	92	2253
Skate	E. R. Knapp	656,819	Aug. 28	3109	706	92	1691
Skate	H. Taylor	652,986	July 3	371	89	92	75
Skate	O. W. Everett	655,673	Aug. 7	902	217	92	1228
Skate. Roller-	F. A. Ross	657,790	Sept. 11	1429	304	92	2110
Skate. Roller-	J. Revel	656,264	Aug. 21	2106	481	92	1479
Skein-holder	E. E. Elliott	656,814	Aug. 28	3100	704	92	1689
Skirt	S. McGee	656,035	Aug. 14	1682	387	92	1381
Skirt	L. M. Smith	656,487	Aug. 21	2511	578	92	1557
Skirt-hanger	W. Lamb	658,596	Sept. 25	2742	608	92	2411
Skirt-supporter and shirt-waist holder	J. C. Kimsey	657,425	Sept. 4	685	144	92	1937
Skirt-supporter and waist-holder. Combined	P. F. Poorbaugh	655,161	July 31	4711	1061	92	1018
Slate and coal separating device	J. MacPhail	657,948	Sept. 18	1757	378	92	2192
Slats to canvases. Device for attaching	A. Drown	653,223	July 10	937	226	92	201
Sled. Bob-	T. H. Wilson	653,761	July 17	1974	450	92	424
Sleeve protector. Apparel-	J. E. Hobbs	654,637	July 31	3744	{844 / 845}	92	817
Sleigh-runner. Attachable	H. J. Chandler	655,821	Aug. 14	1270	291	92	1301
Sleigh running-gear	J. W. Baker	658,610	Sept. 25	2901	646	92	2443
Sliding gate	L. A. Cooper	657,304	Sept. 4	628	132	92	1927
Sliding gate	A. Mason	655,101	July 31	4612	{1040 / 1041}	92	996
Sliding gate	H. R. Hardenburg	658,063	Sept. 18	1928	419	92	2225
Slip-socket	G. L. Fogler	655,925	Aug. 14	1448	333	92	1336
Smoke and gas burner	H. L. Fleming	658,432	Sept. 25	2590	575	92	2381
Smoke-consuming apparatus	G. S. Gallagher	655,221	Aug. 7	78	17	92	1056
Smoke-consuming device. Furnace	J. A. Crawford	658,708	Sept. 25	3075	{684 / 685}	92	2477
Smoke-consuming furnace	E. Thornton and G. S. Smith	657,324	Sept. 4	495	108	92	1899
Smoke-consuming furnace	A. Heberer	654,250	July 24	2999	673	92	649
Smokeless coal-burning furnace	F. M. Reed	652,923	July 3	327	81	92	66
Smokeless furnace	F. M. Reed and R. R. Spain	652,924	July 3	320	81.82	92	66
Smokeless furnace	A. B. Cameron	656,938	Aug. 28	3379	772	92	1741
Snap. Harness-	G. W. Brown	652,885	July 3	265	63	92	52
Snap-hook	J. S. Cotter	652,996	July 3	503	118	92	102
Snap-hook	T. G. Foster	655,550	Aug. 7	998	152	92	1171
Snap-hook	C. A. Whitney	656,233	Aug. 21	2052	471	92	1469
Snap-hook	W. Westlake	658,167	Sept. 18	2122	461	92	2264
Snow-compressor	E. W. Clark	654,438	July 24	3362	754	92	726
Snow-guard. Roof	M. Perreault	654,670	July 31	3797	{856 / 857}	92	828
Snow-plow	W. H. Tagert	657,898	Sept. 11	1616	348	92	2149
Snow-plow	H. J. Lease	654,740	July 31	3981	------	92	856
Soap	T. Weyl	652,826	July 3	171	------	92	36
Soap preparation. Ozonized-	J. T. Moltrup	655,937	Aug. 14	1475	339	92	1389
Soap-saving device	J. B. Entz	652,761	July 3	42	10	92	9
Soda, &c. Electrolytic production of caustic	W. Ransley	654,489	July 24	3455	779	92	744
Soda-fountain	J. O. Wild	656,072	Aug. 14	1741	408	92	1394
Soda-water apparatus	C. F. Kade	655,782	Aug. 14	1175	269	92	1281
Soda-water-dispensing apparatus	J. Künstner	656,253	Aug. 21	2091	478	92	1476
Sodium-carbonate crystals. Making	C. J. Pult	656,748	Aug. 28	2976	679	92	1665
Soil crusher or pulverizer							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Solar heater	H. Tudor	658,195	Sept. 18	2164	473	92	2272
Soldering-iron. Self-heating	H. A. Ross	658,532	Sept. 25	2749	610	92	2412
Soldering machine. Can-	E. P. Holden	658,176	Sept. 18	2139	{466 / 467}	92	2267
Sole and heel. Boot or shoe	G. F. Butterfield	652,888	July 3	268	65	92	53
Sole-leveling machine. Shoe-	H. E. Cilley and C. S. Gooding	656,764	Aug. 28	3000	{684 / 685}	92	1670
Sole protector. Boot or shoe	J. Faulkner	658,552	July 10	1559	363	92	323
Solvents. Apparatus for recovering	W. B. Hart and A. Ashworth	658,555	July 10	1563	364	92	324
Sound recording and reproducing machine	E. R. Johnson	655,556	Aug. 7	679	155	92	1174
Sound recording and reproducing machine	E. R. Johnson	655,557	Aug. 7	682	155	92	1174
Sound-reproducing instrument	P. S. Bates	654,099	July 17	2557	{588 / 589}	92	536
Sound transmitting and receiving device	C. Salmond	652,926	July 3	331	82	92	66
Sound-transmitting apparatus	E. Toxey	653,156	July 3	794	186	92	159
Sounds. Device for reproducing	J. N. Brown	653,654	July 17	1787	409	92	388
Sounding-board support	E. Schopf	654,360	July 24	3213	719	92	693
Sower. Broadcast seed-	B. F. Howard	658,818	Sept. 18	2370	{523 / 524}	92	2312
Sowing machine. Seed-	J. Green	653,197	July 3	879	212	92	178
Spark-arrester	A. J. Haebler	655,825	Aug. 14	1275	292	92	1302
Spark-arrester	S. S. Martin	653,518	July 10	1450	348	92	309
Spark-arrester	W. Reichow	655,798	Aug. 14	1216	279	92	1291
Spark-catcher	N. Kershner	652,897	July 3	282	69	92	57
Spectacle-attacher	A. M. Felson	658,680	Sept. 25	2947	656	92	2452
Spectacle-frame	J. Currin	652,750	July 3	21	5	92	6
Spectacle hinge-joints. Blank for	F. A. Stevens and J. F. Brady	658,508	Sept. 25	2884	639	92	2440
Speculum	J. W. Morrow	658,669	Sept. 25	3015	671	92	2466
Speed-equalizing device	A. D. Lunt	653,424	July 10	1316	312	92	278
Speed mechanism. Variable-	M. C. Johnson	655,558	Aug. 7	684	{155 / 156}	92	1175
Speed regulator and compensator for motors	A. Vernaz	655,815	Aug. 14	1257	286	92	1299
Spike	L. S. Sherwood	653,266	July 10	1032	246	92	220
Spike-making machine	J. Gribben	658,637	Sept. 25	2957	{657 / 658}	92	2453
Spindle: *See* Axle-spindle. Vehicle-spindle.							
Spinning and twisting frame	S. Berard	653,638	July 10	1733	399	92	359
Spinning and twisting frame	A. Mason	658,154	Sept. 18	2086	{454 / 455}	92	2253
Spinning apparatus	G. O. Draper	656,954	Aug. 28	3407	778	92	1746
Spinning-frame attachment. Wool-	A. Avery	655,836	July 17	2118	481	92	451
Spinning-frame ball-bearing spindle	H. H. Ham	654,892	July 31	4242	953	92	992
Spinning-frame separator	C. E. Tefft	656,227	Aug. 21	2042	{469 / 470}	92	1467
Spinning-machine	T. Eastwood	655,698	Aug. 14	1002	230	92	1247
Spinning-machine	A. Haenichen	654,890	July 31	4236	952	92	991
Spinning-machine	P. Wallace	654,081	July 17	2532	583	92	531
Spinning machine. Mule-	W. H. Goldsmith	653,864	July 17	2159	492	92	459
Spinning-ring	F. M. Marcy	654,498	July 24	3417	770	92	737
Spinning-spindle	C. E. Smith	658,597	Sept. 25	2883	639	92	2440
Spittoon. Centrifugal fountain-	P. Fraser	652,958	July 3	440	103	92	89
Spittoon. Fountain-	A. W. Browne	655,051	July 31	4521	{1019 / 1020}	92	981
Spittoon. Fountain-	G. H. Treadgold	655,640	Aug. 7	882	200	92	1207
Splint	J. G. Hughes	653,179	July 3	835	{196 / 197}	92	167
Spoke. Vehicle-	D. C. Poynter	655,733	Aug. 14	1070	246	92	1260
Spool-goods box	J. H. Calkins	653,211	July 10	918	222	92	198
Spool-stand	W. P. Houghton	654,454	July 24	3397	764	92	733
Spool-stand	I. C. Lincoln	658,186	Sept. 18	2150	470	92	2269
Spooling-machine	C. F. Foster	655,616	Aug. 7	805	{187 / 188}	92	1196
Spooling-machine	C. F. Foster	655,617	Aug. 7	809	188	92	1197
Spoon. Measuring-	E. L. and K. K. Bigelow	653,466	July 10	1386	328	92	287
Sprayer. Liquid-	L. A. Aspinwall	653,333	July 10	1145	{272 / 273}	92	241
Spraying apparatus or device	M. B. Brooks	655,954	Aug. 14	1505	346	92	1346
Spraying device and torch. Combined	R. B. Williamson	653,049	July 3	595	139	92	120
Spring: *See* Car-spring. Coil-spring. Cushion-spring. Elliptic spring. Furniture-spring.							
Spring-seat	W. Borchert	655,598	Aug. 7	775	182	92	1190
Sprinkler: *See* Automatic sprinkler. Clothes-sprinkler.							
Sprinkler-head	C. E. Smith	654,853	July 31	4162	937	92	905
Sprinkling apparatus	A. Moeller	654,476	July 24	3432	774	92	740
Sprinkling-car	A. Thomas	655,120	July 31	4635	1050	92	1007
Sprinkling device	J. W. Sanderson	657,363	Sept. 4	567	119	92	1914
Sprocket-wheel	E. S. Williamson	655,943	Aug. 14	1485	341	92	1342
Spur	C. D. Jackson	655,555	Aug. 7	678	154	92	1173
Square. Adjustable framing-	S. J. Hester	658,262	Sept. 18	2280	501	92	2295
Square and bevel. Combination	M. Setzer	652,814	July 3	140	35	92	28
Stacker-blower governor	A. Appelgate	654,983	July 31	4312	970	92	937
Stacker chutes. Hood for pneumatic	G. Sweet	656,679	Aug. 28	2855	650	92	1642
Stacker. Hay-	O. P. Vroom and C. H. Arbuckle	656,065	Aug. 14	1731	400	92	1392
Stacker. Pneumatic straw-	W. J. Randolph	656,701	Aug. 28	2889	659	92	1649
Stacker. Straw-	P. Boger	658,002	Sept. 18	1837	397	92	2208
Stacker. Straw-	H. Ries	658,095	Sept. 18	1901	434	92	2237
Stacker. Straw-	F. Torbeck	654,198	July 24	2880	{639 / 640}	92	613
Stacking device. Hay-	L. Stubblefield	653,758	July 17	1968	449	92	423
Stage machinery	C. L. Hagen	656,969	Aug. 28	3440	{785 / 786}	92	1753

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Stairway. Outside	A. O. Dunk	653,442	July 10	1347	320	92	279
Stalk-breaker	D. P. Shaw	653,564	July 10	1580	367	92	327
Stalk-cutter	J. Hamm	657,411	Sept. 4	658	137	92	1932
Stamp-affixer. Automatic	H. Herrick	655,865	Aug. 14	1336	308	92	1314
Stamp and court-plaster receptacle. Combined	E. K. Lathrop	656,254	Aug. 21	2092	478	92	1477
Stamp. Hand	J. F. Lehner	657,202	Sept. 4	424	89	92	1886
Stamp. Hand	J. C. Macalester	654,464	July 24	3413	769	92	736
Stamp. Hand	L. K. Scotford	655,379	Aug. 7	387	85	92	1114
Stamp. Hand	M. Tinker	654,191	July 24	2825	638	92	612
Stamp. Hand	M. R. Driscoll	656,098	Aug. 14	1804	415	92	1409
Stamp-mill screen	C. A. Skinner	653,366	July 10	1223	292	92	255
Stamp-mutilator	D. M. and J. E. Smyth	654,420	July 24	3329	746	92	718
Stamp. Ore	P. G. Giroud, J. S. MacCoy, and W. B. Stambaugh.	653,669	July 17	1808	415	92	398
Stamp. Time	L. Vaughn, J. G. Blessing, and A. Tuerk.	654,499	July 24	3474	783, 784, 785	92	748
Stamp. Time	F. Waite	657,144	Sept. 4	123	28, 29	92	1825
Stamping and printing machine. Relief	W. Kraemer	657,603	Sept. 11	1084	225, 229	92	2041
Stamping-machine	C. M. Pierce	658,672	Sept. 25	3020	673	92	2467
Stamping-machine	W. D. Case	653,066	July 3	627	149	92	127
Stanchion. Cattle	S. A. Curtis	657,397	Sept. 4	634	133	92	1928
Stanchion. Cattle							
Stand: *See* Flower-stand. Spool-stand. Shoe-polishing stand. Washstand.							
Staple-puller	A. Axelton	656,711	Aug. 28	2910	662	92	1652
Starch-treating apparatus	C. B. Duryea	658,105	Sept. 18	2008	438	92	2240
Station-indicator	S. M. Tinder and C. H. Dill	654,494	July 24	3334	748	92	719
Stave-dressing machine	A. Dunbar	658,353	Sept. 25	2449	541	92	2354
Stave trimming, dressing, and planing machine	A. Dunbar	657,312	Sept. 4	465	99	92	1856
Steam and explosive engine. Combined	G. Palm	654,761	July 31	3975	894, 895	92	864
Steam-boiler	C. Altmann	653,372	July 10	1231	294	92	257
Steam-boiler	A. Blechynden	658,615	Sept. 25	2908	648	92	2444
Steam-boiler	J. J. Cain	657,912	Sept. 18	1644	355	92	2166
Steam-boiler	J. J. Cain	657,913	Sept. 18	1647	356	92	2167
Steam-boiler	G. Ebeling	653,076	July 3	639	153	92	130
Steam-boiler	E. N. Janson	658,110	Sept. 18	2018	439, 440	92	2242
Steam-boiler	E. Kendall	653,810	July 17	2067	471	92	442
Steam-boiler	C. D. Mosher	657,788	Sept. 11	1417	300	92	2107
Steam-boiler	G. Ofeldt	653,360	July 10	1211	268	92	252
Steam-boiler	R. Scheidler	655,018	July 31	4462	1006	92	970
Steam-boiler	I. Sedgwick	658,096	Sept. 18	1994	434	92	2238
Steam-boiler	W. M. Thompson and C. Muhring	658,300	Sept. 18	2342	516	92	2307
Steam-boiler	J. T. Turnbow	654,691	July 31	3827	863	92	833
Steam-boiler	E. König	658,015	Sept. 18	1858	402	92	2212
Steam-cylinders. Expansion compensating device for	L. F. N. Baldwin	652,739	July 3	3	1	92	3
Steam. Device for drying exhaust	L. F. N. Baldwin	653,334	July 10	1149	273	92	242
Steam. Device for drying exhaust	F. H. and F. O. Ball	658,199	Sept. 18	2171	475	92	2273
Steam-engine	F. H. and F. O. Ball	658,200	Sept. 18	2173	475	92	2274
Steam-engine	F. H. and F. O. Ball	658,201	Sept. 18	2175	476	92	2274
Steam-engine	E. H. Gollings	655,775	Aug. 14	1158	264, 265	92	1278
Steam-engine	L. N. Holm	657,113	Sept. 4	75	17	92	1816
Steam-engine. Duplex	J. B. O'Donnell	654,759	July 31	3969	893, 894	92	863
Steam-engine for ore-stamps	J. J. Brewis	654,434	July 24	3356	753	92	724
Steam-engine for pumps	J. E. Normand	657,670	Sept. 11	1219	256	92	2067
Steam-generating and water-heating device	E. Detwiler	655,065	July 31	4558	1026, 1027	92	989
Steam-generator	H. A. Buck	653,486	July 10	1336	317, 318	92	277
Steam-generator	G. F. G. Des Vignes and W. A. Cloud	658,246	Sept. 18	2255	495, 496	92	2290
Steam-generator	R. Fiedler	658,005	Sept. 18	1842	398	92	2209
Steam-generator	J. Giroux	654,888	July 31	4231	951	92	920
Steam-generator	R. Ramsden	655,274	Aug. 7	193	43	92	1078
Steam-generator	S. E. Light	655,252	Aug. 7	145	31, 32	92	1068
Steam-generator. Sectional	C. W. Newton	655,636	Aug. 7	848	198	92	1204
Steam-generator. Sectional	J. I. Thornycroft	657,968	Sept. 18	1785	385	92	2197
Steam-generator separator	D. Wiley	656,684	Aug. 28	2863	652	92	1643
Steam-heater	M. Jönsson	658,014	Sept. 18	1855	402	92	2212
Steam-motor	J. R. Cox, G. H. Wright, and W. H. Reynolds.	655,611	Aug. 7	797	186	92	1194
Steam-separating trap	W. Mullen	653,391	July 10	1262	300, 301	92	262
Steam-shovel	J. L. Chapman	657,205	Sept. 4	374	78	92	1876
Steam-trap	E. A. Rusden	657,302	Sept. 4	564	118	92	1914
Steamer. Chainless continuous-fabric	H. A. Streeter	656,274	Aug. 21	2123	484	92	1482
Steel building construction, &c. Clip for	H. A. Streeter	656,275	Aug. 21	2124	484	92	1483
Steel building construction, &c. Metal clip for uniting and spacing beams and bars in	G. Delay	654,054	July 17	2490	573	92	523
Steel. Hardening and draw-tempering	J. H. Carpenter	653,133	July 3	755	176	92	151
Steel ingots. Apparatus for treating	L. Perin	652,980	July 3	479	------	92	97
Steel or other material. Manufacture of molded blocks of	E. M. Johnson	654,984	July 31	4396	991	92	955
Steel. Producing	A. R. Dempster and W. D. Rinehart	655,698	Aug. 14	993	227	92	1245
Steel-tower bracket	H. W. Buck	654,130	July 24	2637	604	92	568
Steering-gear. Electric	W. C. and J. D. Williamson, Jr	658,601	July 10	1635	382	92	339
Steering-gear for vessels. Tiller	J. O. Bodén	656,499	Aug. 21	2533	582, 583	92	1562
Stereoscope	F. Moniot and L. Garcin	658,520	July 10	1497	348, 349	92	310
Stereoscope kinetoscope attachment							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Stereotype-plate-trimming machine	H. Winter	653,050	July 3	596	140, 141, 142	92	120
Stereotype plates. Manufacture of	F. J. Wendell	656,312	Aug. 21	2195	502	92	1496
Sterilizing and filtering apparatus. Liquid	W. M. Deichler	652,907	July 3	296	73	92	59
Sterilizing-sink	L. W. Thurman	653,714	July 17	1887	433	92	408
Sticker-pin	H. Willson	654,863	July 31	4178	942	92	909
Stirrup. Elastic	W. A. Neal	652,805	July 3	122	30	92	24
Stitch separating and shaping machine	J. B. Hadaway	653,296	July 10	959	230	92	205
Stitch-separating machine	J. E. Bertrand	655,820	Aug. 14	1256	291	92	1801
Stitch-separating machine	J. B. Hadaway	652,908	July 3	298	74	92	59
Stitch-separating machine	T. Thompson	654,190	July 24	2824	638	92	612
Stock-barrier	L. A. Crockett	658,170	Sept. 18	2127	463	92	2265
Stocking or hose supporter	I. B. Klienert	655,154	July 31	4700	1059	92	1016
Stocking-supporter. Duplex	W. R. Wood	655,819	Aug. 14	1266	290	92	1801
Stoker. Mechanical	J. Wezel	657,632	Sept. 11	1136	238	92	2051
Stoking device	J. W. Johnson and A. S. Hendrix	656,696	Aug. 28	2884	------	92	1648
Stone. Artificial	L. K. Forsythe	657,867	Sept. 11	1565	388	92	2138
Stone base. Artificial	F. F. Loeper	654,743	July 31	3936	888	92	857
Stone-cutting machine	S. Schougaard	657,206	Sept. 4	430	------	92	1887
Stone. Making artificial	A. C. Hilsinger	653,771	July 17	1989	454, 455	92	428
Stone or ore crusher	E. J. Seymour	656,221	Aug. 21	2036	467	92	1466
Stone. Producing artificial	C. E. Smith	654,852	July 31	4160	937	92	905
Stone-saw-operating apparatus	L. C. Bonnot	656,804	Aug. 28	3075	699	92	1684
Stone-separator	J. E. Patterson	654,177	July 24	2762	627, 628	92	590
Stone. Structure for calcining	G. Ecke	653,795	July 17	2045	466	92	438
Stone walks. Tool for making artificial	W. H. Ginitty	654,887	July 31	4229	951	92	920
Stool. Extensible piano	T. H. Buckley	658,425	Sept. 25	2578	571	92	2378
Stool for lunch-wagons. Window							
Stopper: *See* Basin-stopper. Flue-stopper. Bottle-stopper. Screw-on stopper.							
Stopper-fastener	A. Garner	654,533	July 24	3581	796	92	758
Stopper for atomizers or perfumery-bottles	J. Albiez	653,198	July 3	859	201	92	172
Storage battery	G. A. Ford	655,769	Aug. 14	1141	262	92	1275
Storage or show case	W. R. Kinnear	657,661	Sept. 11	1103	250	92	2062
Store-service apparatus	E. H. Pfeiffer	655,911	Aug. 14	1423	327	92	1331
Stove	E. R. Bryer	656,890	Aug. 28	3167	717	92	1702
Stove	W. J. Keep	653,960	July 17	2344	538	92	494
Stove	C. H. Seaman	656,271	Aug. 21	2118	483	92	1481
Stove	L. A. Devin	653,619	July 10	1662	388	92	345
Stove attachment	J. P. Farmer	653,622	July 10	1665	389	92	346
Stove burner. Gas	F. C. Bormann	658,696	Sept. 25	3002	681	92	2475
Stove. Continuous-combustion	H. Q. Hood	654,543	July 24	3545	799	92	761
Stove. Cooking	H. J. Dowsing	658,706	Sept. 25	3067	687, 688	92	2479
Stove. Electric	E. W. Sibbett	658,491	Sept. 25	2680	595	92	2308
Stove. Gas	H. P. Simpson	656,794	Aug. 28	3060	695	92	1681
Stove. Gas	L. Howard	656,978	Aug. 28	3453	789	92	1755
Stove. Heating	A. B. Vedder	656,230	Aug. 21	2046	470	92	1468
Stove heating attachment	J. Kennedy	653,515	July 10	1486	347	92	308
Stove. Hot-blast	D. B. Warren	657,631	Sept. 11	1134	238	92	2051
Stove. Knockdown camp	W. J. Barber	654,776	July 31	4003	900	92	870
Stove-leg	I. Rausch	653,401	July 10	1277	304	92	265
Stove-lid lifter	W. Forker and W. Mitchell	656,108	Aug. 14	1818	419	92	1412
Stove. Miner's or camp	W. H. Wilder	658,894	July 17	2221	505	92	472
Stove. Oil	E. V. Coulston	657,758	Sept. 11	1376	291	92	2099
Stove or range fire-box lining	W. J. Wood	656,687	Aug. 28	2867	653	92	1644
Stove or range water-back	S. Grove	653,384	July 10	1257	297	92	260
Stovepipe	C. A. Smith	657,992	Sept. 18	1825	394	92	2206
Stovepipe	H. C. Armitage	657,723	Sept. 11	1316	278	92	2086
Stovepipe attachment	P. Pfeil	653,311	July 10	1109	264	92	235
Stovepipe-elbow	J. F. Sacksteder	653,460	July 10	1377	327	92	285
Stovepipe-thimble	F. K. Chase	655,194	Aug. 7	32	7	92	1047
Stove-shelf	C. J. Search	656,791	Aug. 28	3053	694, 695	92	1680
Stove. Vapor	C. J. Search	656,792	Aug. 28	3055	695	92	1680
Stove. Vapor	L. Stockstrom	653,189	July 3	852	200	92	171
Stove. Vapor	J. A. Kendall	656,025	Aug. 14	1667	383	92	1378
Stove. Wood-fuel	R. W. Hilliker	654,539	July 24	3538	797	92	760
Stoves. Bake-oven for gas or gasolene	J. J. Murphy	658,573	Sept. 25	2818	626	92	2427
Strainer							
Strap: *See* Deckle-strap. Hame-strap.	R. Dünkelberg and G. Gockel	658,354	Sept. 25	2450	541	92	2354
Straps to knapsacks, &c. Device for securing	W. Max	653,106	July 3	708	167	92	142
Strapping-tool	A. H. Ostrem and O. O. Hatleli	657,068	Aug. 28	3601	829, 830	92	1784
Straw-conveyer. Pneumatic	H. R. Miller	657,175	Sept. 4	187	42	92	1839
Street and station indicator	C. C. Gardner	655,971	Aug. 14	1551	357, 358	92	1856
Street-sweeper	J. C. Kane and A. J. List	653,477	July 10	1416	333	92	293
Street-sweeper	A. Piton	656,210	Aug. 21	2000	460, 461	92	1460
Street-sweeper	J. A. Paige	653,140	July 3	785	184	92	157
Street sweeping and cleaning apparatus	G. McFadden	658,553	Sept. 25	2786	618	92	2490
Striking-bag frame	W. F. McAllister	658,218	Sept. 18	2212	483	92	2281
Stripping-machine attachment	F., R., and O. Kampfe	656,818	Aug. 28	3108	706	92	1690
Stropping-machine	T. Reinherz	657,006	Aug. 28	3493	797	92	1762
Stucco flowers. Manufacture of	G. R. Clarke	656,598	Aug. 21	2726	625	92	1608
Stud	L. D. Draper	653,074	July 3	636	152	92	129
Stud for garment-supporters	D. H. Warner	654,334	July 24	3168	709	92	683
Stud or button for garment-supporters	J. Campbell	653,656	July 17	1790	410	92	389
Stud or button. Shirt	P. H. Lettré	654,902	July 31	4265	957	92	927
Stud. Shirt	C. C. Conroy	658,207	Sept. 18	2189	478	92	2277
Stuffing-box	H. S. Durand	654,881	July 31	4211	948	92	916
Stuffing-box							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Dr'g.	Official Gazette. Vol.	Page.
Stuffing-box	H. S. Duraad and R. K. McLellan	654,882	July 31	4214	949	92	916
Stuffing-box for ammonia-compressors	F. A. Fisher	657,343	Sept. 4	527	109	92	1905
Stump-puller	T. H. McCain	654,802	July 31	4058	914	92	884
Submarine apparatus	A. von Hoffmann	657,218	Sept. 4	281	59, 60	92	1858
Subway construction	H. B. Camp	657,204	Sept. 4	374	78	92	1876
	W. D. Washington	654,426	July 24	3342	749, 750	92	721
Subways. Building		654,518	July 24	3505	------	92	753
Sugar. Converting cellulose into	A. Classen	654,439	July 24	3363	------	92	726
Sugar. Converting starch into fermentable	A. Classen	655,710	Aug. 14	1020	236	92	1251
Sugar-drying apparatus	L. Hirt	658,602	Sept. 25	2890	641, 642	92	2441
Sugar-juice defecator	L. von Treseckow	656,455	Aug. 21	2458	564, 565	92	1546
Summation-meter	J. Harris	655,458	Aug. 7	533	119	92	1144
Superphosphates. Making	H. Saxl	653,091	July 3	677	160	92	137
Supply-machine. Automatic	W. Jaeger	654,856	July 31	4168	989	92	907
Support and catamenial sack. Combined	M. E. Steele	653,321	July 10	1125	268	92	238
Surgical chair. Adjustable	T. J. Shackelford and C. A. L. Kirkpatrick.	654,564	July 24	3575	807	92	767
Surgical-dressing packer	G. E. Dargatz	654,882	July 31	4114	925, 926	92	895
Surgical operating-table	G. W. Hathaway	652,889	July 3	269	65	92	53
Surgical or obstetrical pad	T. Campbell	653,304	July 10	1100	262	92	233
Suspenders	H. G. Macwilliam	653,664	July 17	1801	413	92	391
Suspenders and shoulder-brace. Combined	G. J. De Garmo	655,190	Aug. 7	27	6	92	1046
Suturating instrument	L. Bramson	656,721	Aug. 14	1046	242	92	1255
Swaging articles of varying cross-section	J. Lanz	655,226	Aug. 7	93	20, 21	92	1060
Swaging-machine	J. B. Halifax	656,761	Aug. 28	2096	683	92	1669
Sweeper. Sectional rotary	H. H. Adams	654,487	July 24	3453	778	92	744
Sweeping-machine	O. Pederson	654,779	July 31	4011	903	92	872
Swing	J. Bowland	657,111	Sept. 4	71	16	92	1816
Swing	E. K. Hayes	657,188	Sept. 4	216	48	92	1845
Swing. Chair	W. S. Witter	656,360	Aug. 21	2287	524	92	1514
Swing. Portable	G. G. Mead	652,870	July 3	240	57	92	48
	W. R. White						
Swinging gate							
Switch: *See* Automatic switch. Electric switch. Electric-current switch. Railway-switch. Telephone-switch.							
Switch	E. W. G. C. Hoffmann	656,291	Aug. 21	2158	494	92	1489
	H. Johnson	653,959	July 17	2339	536, 537, 538	92	494
Switch and signal interlocking mechanism	H. D. Miles	656,361	Aug. 21	2288	524	92	1514
Switch-lock	M. W. Brown, E. A. Byrne, and J. Gilsenan.	657,690	Sept. 11	1253	905	92	2073
Switch-operating apparatus	W. P. Allen	657,328	Sept. 4	499	104	92	1899
Syringe	W. A. Armour	653,013	July 3	534	125	92	107
Syringe	F. J. Lander	655,657	Aug. 7	937	212	92	1223
Syringe	W. S. Valentine	655,744	Aug. 14	1085	250	92	1263
Syringe	A. J. Brown	653,842	July 17	2124	483	92	452
Syringe. Fountain	J. H. Walker	652,985	July 3	488	115	92	99
Syringe, injector, &c	G. H. F. Schrader	657,570	Sept. 11	1020	211	92	2029
Syringe or other cap. Fountain	A. Arlt	655,540	Aug. 7	647	148	92	1167
Syringe. Vaginal							
Table: *See* Billiard-table. Extension-table. Folding table. Ironing-table. Letter-carrier's table. Pool and billiard table. Surgical operating-table. Tilting table.							
Table	C. H. Sanford	657,033	Aug. 28	3533	807	92	1770
Table and folding bed. Combined	J. H. Reford	658,676	Sept. 25	3026	674	92	2468
Table and seat. Combination	E. Huether	654,639	July 31	3749	845	92	818
Table-leg fastener	S. M. Smyth	655,858	Aug. 7	355	77	92	1109
Table-mat	W. W. Robinson	655,308	Aug. 7	255	58	92	1091
Table-shears	C. Seybold	654,925	July 31	4302	966	92	935
Tables. Rotatable center for dining	G. H. Schroeter	657,963	Sept. 18	1778	383	92	2196
Tablet and file holder	H. Loewenbach	653,688	July 17	1831	419	92	397
Tack-driving machine	A. F. Preston	654,840	July 31	4131	930, 931	92	899
Tag. Bicycle	E. J. Cole	652,747	July 3	17	4	92	5
Tag. Identification	J. B. Short	653,267	July 10	1092	246	92	220
Tag-making machine	G. W. Swift, Jr	658,076	Sept. 18	1961	426, 427, 428	92	2232
Tamping-roller	J. W. Fitzgerald	654,617	July 31	3711	888	92	811
Tank: *See* Automatic tank. Feed-tank. Measuring-tank. Water-tank. Watering-tank.							
Tanning and dyeing process. Combined	F. W. Wartenberger	658,032	Sept. 18	1885	------	92	2217
Tanning apparatus	A. E. Vidal	656,063	Aug. 14	1736	399	92	1391
Tanning apparatus	A. E. Vidal	656,064	Aug. 14	1729	399, 400	92	1392
Tap	G. Stroh	655,380	Aug. 7	390	85	92	1115
Tap. Beer	J. Mohn	655,450	Aug. 7	520	116	92	1141
Tap. Self-closing	L. E. Cowey	654,322	July 24	3510	792	92	754
Tapping apparatus. Liquid	H. Engel	655,672	Aug. 7	961	217	92	1228
Tapping device	H. Nadorff	653,034	July 3	568	133	92	114
Tapping device	H. Nadorff	654,481	July 24	3445	777	92	742
Tapping-machine	H. Mueller	654,269	July 24	3042	682, 683	92	659
Tar esters of fatty acids and making same	H. L. Diehl	655,206	Aug. 7	57	------	92	1052
Teaching children to walk. Apparatus for	E. Reinli	658,464	Sept. 25	2640	586	92	2390
Teaching device. Music	L. McLaren	657,953	Sept. 18	1762	379, 380	92	2193

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Dr'g.	Official Gazette. Vol.	Page.
Telautographic apparatus	F. Ritchie	656,828	Aug. 28	3143	718, 714, 519	92	1697
Telegraph. Page-printing	D. Murray	653,984	July 17	2282	520, 521	92	483
Telegraph. Page-printing	D. Murray	653,985	July 17	2287	521, 522	92	484
Telegraph. Page-printing	D. Murray	653,986	July 17	2290	523, 524	92	485
Telegraph-sounder. Secret	G. H. Landgraf	654,834	July 31	4123	926	92	897
Telegraph switching apparatus	J. F. Skirrow	653,941	July 17	2305	527	92	487
Telegraphic relay	I. Kitsee	655,716	Aug. 14	1030	238	92	1253
Telegraphic transmitter and receiver	A. C. Crehore and G. O. Squier	655,203	Aug. 7	50	11	92	1051
Telegraphy	H. D. Bartholomew	656,832	Aug. 28	3157	715	92	1700
Telegraphy receiving device	I. Kitsee	657,223	Sept. 4	287	61	92	1860
Telegraphy. Wireless or space	I. Kitsee	657,222	Sept. 4	286	61	92	1860
Telegraphy. Wireless or space	I. Kitsee	657,224	Sept. 4	289	62	92	1860
Telephone-bell cut-out	L. F. Cobb	655,849	Aug. 14	1316	301, 302	92	1310
Telephone-call register	W. Gray	654,112	July 17	2578	593	92	541
Telephone-directory	W. J. Bell	658,612	Sept. 25	2905	647	92	2444
Telephone. Electromagnetic	A. Plecher	655,113	July 31	4034	1045	92	1008
Telephone-exchange system	W. Smith	652,928	July 3	335	83, 84	92	67
Telephone-exchange system	A. Stromberg and W. M. Davis	655,810	Aug. 14	1244	285	92	1206
Telephone-exchange system	A. Stromberg and W. M. Davis	655,811	Aug. 14	1250	286	92	1208
Telephone-exchange system	C. E. Scribner	655,164	July 31	4717	1062	92	1020
Telephone-line connection-counter	F. R. McBerty	654,750	July 31	3953	891	92	860
Telephone-line switchboard	C. E. Scribner	654,924	July 31	4209	966	92	935
Telephone-line switchboard	C. H. Arnold	657,305	Sept. 4	448	95	92	1890
Telephone-lines from deleterious electrical charges. Means for relieving	C. E. Scribner	653,319	July 10	1121	267	92	237
Telephone-lines. Supervisory and busy-test appliance for	M. N. Clarke	652,745	July 3	13	4	92	5
Telephone-mouthpieces. Device for cleaning	W. J. Murdock	655,726	Aug. 14	1058	244	92	1256
Telephone-receiver	W. R. Rathvon	655,992	Aug. 14	1600	868	92	1364
Telephone-receiver indicating device	W. G. Urmson	658,301	Sept. 18	2343	517	92	2307
Telephone-relay	W. M. Davis. (Reissue)	11,837	July 3	890	215	92	180
Telephone-repeater	O. R. Cline	657,854	Sept. 11	1543	331	92	2184
Telephone signal and jack. Combined	J. Steiner and W. H. Tuck	656,907	Aug. 28	3331	758	92	1732
Telephone signaling appliance for party telephone-lines	O. Plummer and C. E. Monroe	652,922	July 3	324	80, 81	92	65
Telephone-switch	M. I. Baird	656,336	Aug. 21	2239	514, 515	92	1504
Telephone-switchboard	M. I. Baird	656,384	Aug. 21	2329	534, 535	92	1522
Telephone-switchboard	J. J. O'Connell	654,758	July 31	3964	893	92	863
Telephone-switchboard apparatus	T. C. Wales, Jr	656,333	Aug. 21	2233	513	92	1503
Telephone-switchboard signal appliance	F. R. McBerty and J. L. McQuarrie	654,749	July 31	3950	890	92	860
Telephone-switchboard signaling apparatus	J. J. O'Connell	652,977	July 3	470	111	92	95
Telephone-switchboard supervisory signal	F. R. McBerty	654,747	July 31	3941	890	92	858
Telephone-switchboard supervisory signal	F. R. McBerty	656,996	Aug. 28	3477	795	92	1760
Telephone switching apparatus	D. S. Hulfish	657,315	Sept. 4	471	100	92	1894
Telephone system	F. G. Rugh	656,703	Aug. 28	2897	660	92	1650
Telephone system. Central-battery	W. W. Dean	657,338	Sept. 4	516	107	92	1903
Telephone-system plug and socket	W. W. Dean	657,339	Sept. 4	520	107	92	1904
Telephone-test set	A. C. Ludington	658,422	July 10	1311	312	92	272
Telephone toll apparatus	W. A. Foss	655,772	Aug. 14	1144	263	92	1275
Telephone toll apparatus	F. R. McBerty	654,748	July 31	3944	890	92	858
Telephone-transmitter	J. L. West	653,721	July 17	1901	437	92	411
Telephone transmitter-arm	J. F. Craven	653,730	July 17	1918	440	92	413
Telephone transmitter-arm	G. R. Kennedy	657,288	Sept. 4	420	88	92	1885
Telephone transmitter-arm	D. S. Hulfish	657,316	Sept. 4	478	100	92	1895
Telephone trunk-circuit	F. R. McBerty	656,997	Aug. 28	3479	796	92	1760
Telephone trunk-line signal	H. P. Roberts	654,326	July 24	3154	705	92	680
Telephone voice-concealing attachment	A. Graham	655,620	Aug. 7	813	189, 190	92	1198
Telephonic apparatus	E. A. Faller	655,651	Aug. 7	909	208	92	1218
Telephony. Multiple	L. S. Wilder	655,317	Aug. 7	269	61	92	1094
Temperature-indicator. Electric	A. Roesch	657,677	Sept. 11	1232	260	92	2009
Temperature-regulator. Automatic	A. J. Koegler	654,796	July 31	4051	912	92	882
Tempering gage. Tool	E. W. Palmquist	657,496	Sept. 4	884	179	92	1997
Tender-coupling	F. I. Dana	655,295	Aug. 7	53	12	92	1052
Tentering-machine clip	F. A. Riehle	657,566	Sept. 11	1012	209	92	2028
Test specimens. Holding device for tensile	C. L. Hagen	653,997	July 17	2394	551	92	505
Theatrical appliance	A. W. Steiger	658,027	Sept. 18	1878	406	92	2216
Therapeutic device	A. V. M. Sprague	654,185	July 24	2812	635, 636	92	610
Therapeutical treatment of parts of the human body and apparatus therefor. Method of	C. R. La Bier	653,577	July 10	1603	373	92	333
Thermo-electric-light cup	W. E. Mack	658,664	Sept. 25	3008	668	92	2465
Thermostat	H. E. Reeve	657,359	Sept. 4	560	116	92	1912
Thermostat	H. G. Carleton	655,057	July 31	4534	1022	92	984
Thermostat and alarm-circuit controlled thereby	G. P. Beasley	653,837	July 17	2120	481	92	451
Thill-coupling	C. A. Behlen	656,875	Aug. 28	3264	741	92	1720
Thill-coupling	H. J. Bierhart	654,704	July 31	3859	870	92	840
Thill-coupling	C. C. Bradley	654,339	July 24	3175	712	92	684
Thill-coupling	W. G. Cline and W. R. Handy	656,811	Aug. 28	3093	703	92	1687
Thill-coupling	R. Eccles	656,955	Aug. 28	3408	778	92	1746
Thill-coupling	A. L. Grant	652,769	July 3	60	14	92	13
Thill-coupling	W. M. Morton	653,689	July 17	1840	421	92	399
Thill-coupling	J. C. Perry	656,145	Aug. 14	1884	433	92	1424
Thill-coupling	O. H. Platt	658,397	Sept. 25	2533	561	92	2370
Thill-coupling	D. M. Sechler	655,804	Aug. 14	1228	283	92	1203
Thill-coupling	J. Werth	653,598	July 10	1630	381	92	388
Thill-coupling	G. M. Wright	653,858	July 17	2152	490	92	457
Thill or pole coupling	J. C. Perkins	657,446	Sept. 4	723	155	92	1944

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Thill or shaft. Vehicle	C. R. and A. R. Brown	656,087	Aug. 14	1789	411	92	1406
Thio-urea compound and making same	A. Israel and R. Kothe	653,678	July 17	1823	.....	92	396
Thread-cutter	O. H. Boltz	658,282	Sept. 18	2230	488	92	2285
Thread-cutting machine	E. M. Burr	653,543	July 10	1547	359, 360	92	321
Thread-cutting machine	J. B. Z. Dumais	654,880	July 31	4209	948	92	915
Thread-protector	M. Blakey	653,897	July 17	2225	506	92	472
Thread-protector	M. and G. G. Blakey	653,898	July 17	2227	506	92	473
Thread-tier	J. W. McCarthy	655,571	Aug. 7	712	162	92	1179
Threads. Machine for clearing silk or other textile	C. G. Diederichs and M. A. E. Marquelet.	653,174	July 3	826	194	92	165
Threading-machine	J. H. MacLauchlan	656,848	Aug. 28	3194	726, 727	92	1708
Thresher and cleaner. Pea	S. H. Williams	657,373	Sept. 4	586	123	92	1918
Threshing-machine	T. H. and G. W. Gordon and C. E. Hall.	653,865	July 17	2160	493	92	459
Threshing-machine	A. N. Thomas and J. Caldwell	655,915	Aug. 14	1429	328	92	1332
Threshing-machine attachment	E. G. Howard	658,567	Sept. 25	2812	624	92	2425
Threshing-machine feeder	T. E. Mahoney	658,665	Sept. 25	3009	668, 669	92	2465
Threshing-machine feeder and band-cutter	J. M. Sailer	654,417	July 24	3322	745	92	717
Threshing-machine feeder attachment	T. H. Rolfe	657,009	Aug. 28	3498	798	92	1763
Threshing-machine feeder attachment	H. Tank	657,467	Sept. 4	757	162	92	1959
Throttle	H. Schütze	658,160	Sept. 18	2109	457, 458	92	2261
Ticket book. Coupon	G. C. Wadleigh	655,425	Aug. 7	472	105	92	1132
Ticket. Pin	R. Gorton	654,623	July 31	3720	889	92	812
Ticket. Pin	F. Kohnle and J. P. Kuhns	656,721	Aug. 28	2993	670	92	1657
Ticket. Trading	E. G. Harrell	653,805	July 17	2061	469	92	441
Tidal force. Means for utilizing	P. Boisramé	655,431	Aug. 7	492	107	92	1134
Tide-motor	F. R. Kimball	657,948	Sept. 18	1750	376	92	2190
Tide-motor	J. Nagler	657,355	Sept. 4	550	114	92	1910
Tie: *See* Bale-tie, Cross-tie, Engine-tie, Railway-tie, Railway bond-tie, Railway cross-tie, Wall-tie.							
Tie-plate	W. Goldie	655,400	Aug. 7	424	93	92	1122
Tile	S. H. Calkins	652,995	July 3	502	118	92	102
Tile	F. Furness	654,582	July 24	3529	795	92	758
Tile	C. F., A. L., and A. W. Lawton	653,252	July 10	997	240	92	213
Tile	C. F. Buente	652,743	July 3	7	3	92	4
Tile-floor construction	L. H. Montross	654,996	July 31	4431	998, 999	92	963
Tile. Metallic roofing	I. Stripe	658,534	Sept. 25	2753	611	92	2413
Tile-perforating device	W. P. Meeker	657,174	Sept. 4	185	42	92	1838
Tiles. Manufacture of dovetailed	H. G. Leisenring	656,256	Aug. 21	2005	479	92	1477
Tilting table or chair	H. King	657,167	Sept. 4	177	40	92	1837
Time-indicating device	L. E. Voorheis	652,822	July 3	164	39	92	35
Time-indicator. Workman's	H. Oeste	655,453	Aug. 7	523	117	92	1142
Time-recorder	E. Davis	653,753	July 3	26	6, 7	92	7
Time-recorder. Electrical	A. auf der Heyde	655,044	July 31	4507	1016	92	978
Time-recorder. Workman's	P. G. Giroud	657,162	Sept. 4	167	38	92	1835
Time-recording system	G. B. Cruickshank, H. R. S. Coleman, and P. Cruickshank.	657,646	Sept. 11	1162	243	92	2056
Tin and zinc from tinned and zinc scrap. Apparatus for reclaiming	E. D. Kendall	656,982	Aug. 28	3460	.....	92	1756
Tin. Electrolytically treating scrap	A. W. Maconochie	655,448	Aug. 7	518	115	92	1141
Tin for inclosing preserved provisions, foods, &c	G. Berthold	658,230	Sept. 18	2228	487	92	2285
Tin. Making phosphor	J. W. Bryson	656,089	Aug. 14	1791	411, 412	92	1407
Tin-plate cleaning, burnishing, or polishing machine	J. F. Fawcett	657,925	Sept. 18	1677	361, 362	92	2173
Tin-plate machinery. Hoisting device for	J. G. McIlwraith	654,913	July 31	4279	961	92	930
Tin-plate-packing box	C. E. Thurlow	656,490	Aug. 21	2517	579	92	1558
Tine-spreader	W. H. Mitchell	657,495	Sept. 4	883	178	92	1991
Tire	C. G. and J. J. Roberton	654,919	July 31	4288	964	92	932
Tire	W. F. Rae	656,045	Aug. 14	1699	390	92	1385
Tire and rim. Vehicle-wheel	W. E. Pugsley	654,278	July 24	3059	686	92	662
Tire armor or shield. Pneumatic	O. P. Brown	655,049	July 31	4519	1018	92	981
Tire. Cushion	O. P. Brown	655,050	July 31	4520	1019	92	981
Tire. Cushion	O. L. Leach	655,098	July 31	4608	1040	92	999
Tire. Cushion	A. Tobler and H. Samuel	656,865	Aug. 28	3233	737	92	1715
Tire. Elastic wheel	J. R. Colt	656,172	Aug. 21	1937	445	92	1448
Tire fastener. Vehicle	J. A. Berger	655,183	Aug. 7	9	3	92	1042
Tire fastening. Pneumatic	C. H. Wheeler	652,989	July 3	493	116	92	99
Tire for vehicles. Rubber	H. D. Johnson	652,781	July 3	78	19	92	16
Tire-heating device. Wheel	S. S. Miller	656,606	Aug. 21	2740	627	92	1605
Tire inner tubes on mandrels. Apparatus for placing pneumatic	K. A. Enlind	654,528	July 24	3521	794	92	756
Tire. Non-slipping pneumatic	J. Baker	653,497	July 10	1454	340	92	301
Tire. Pneumatic	G. H. Clark	652,890	July 3	270	65	92	53
Tire. Pneumatic	J. A. Jones	652,967	July 3	455	107	92	92
Tire. Pneumatic	H. Laviers	655,932	Aug. 14	1459	336	92	1338
Tire pumping attachment. Pneumatic	J. A. Berger	656,083	Aug. 14	1763	407	92	1398
Tire. Puncture-proof pneumatic	B. M. Buckland	658,479	Sept. 25	2664	591	92	2395
Tire remover. Wheel	R. B. Price	657,787	Sept. 11	1425	302	92	2109
Tire. Rubber vehicle	D. J. Lahay	655,250	Aug. 7	143	31	92	1068
Tire-separator	J. C. H. Kunz	653,774	July 17	1995	456	92	429
Tire-setter	G. L. Clark	658,619	Sept. 25	2915	651	92	2446
Tire-supporting frame	J. L. Ham	656,542	Aug. 21	2616	602	92	1579
Tire-tightener	G. H. F. Schrader	657,572	Sept. 11	1024	212	92	2030
Tire-valve and cap	E. W. McCaslin	655,451	Aug. 7	521	116	92	1141
Tire valve. Pneumatic	C. J. Mead	657,431	Sept. 4	695	147	92	1939
Tire valve. Pneumatic	W. E. Smith	656,054	Aug. 14	1708	393	92	1387
Tire-valve protector and fastener. Pneumatic	G. H. F. Schrader	657,571	Sept. 11	1022	212	92	2029
Tire-valves, &c. Cap for	G. J. Keller	654,897	July 31	4257	955	92	925
Tire. Vehicle	A. L. Miller	658,815	July 17	2077	474	92	444
Tire. Vehicle	R. E. Olds	658,461	Sept. 25	2627	584	92	2378
Tire. Vehicle	R. B. Price	657,832	Sept. 11	1502	321	92	2125
Tire. Vehicle	J. E. Van Nest	655,286	Aug. 7	214	47	92	1082
Tire. Vehicle	A. W. Grant	658,712	Sept. 25	3094	690	92	2481
Tires. Device for equipping vehicle-wheels with rubber	G. Knadler	654,900	July 31	4261	956, 957	92	926
Tires. Forming pneumatic	J. A. Mills	654,017	July 17	2424	557	92	511
Tires. Means for automatically inflating pneumatic	D. Williamson	653,723	July 17	1904	438	92	411
Tires. Pump for automatically inflating pneumatic	C. J. Palmer	655,890	Aug. 14	1381	319	92	1322
Tires. Rim for detachable pneumatic	A. W. Grant	658,718	Sept. 25	3099	691	92	2482
Tires to vehicle-wheels. Device for applying rubber	R. A. Brine	655,191	Aug. 7	28	6	92	1047
Tires to vehicle-wheels. Means for securing rubber	F. J. Trench	656,060	Aug. 14	1718	396, 397	92	1389
Tires to wheels. Means for securing resilient	R. J. Burns	657,060	Aug. 28	3590	827	92	1782
Tires. Valve-attaching device for bicycle	F. Richter	657,007	Aug. 28	3495	798	92	1763
Tires. Valve for pneumatic bicycle	D. J. Ely	655,214	Aug. 7	66	14, 15	92	1054
Tobacco artificially. Apparatus for curing	C. F. Smith	658,047	Sept. 18	1907	413	92	2221
Tobacco-curing process	G. A. Dixon and J. W. Howard	653,928	July 17	2274	517	92	482
Tobacco-cutting machine	N. Du Brul	658,059	Sept. 18	1924	417, 418	92	2224
Tobacco-granulator	A. B. Harrell	653,576	July 10	1602	373	92	332
Tobacco-holder	W. P. Smith	654,031	July 17	2451	563	92	516
Tobacco-leaf. Treatment of	G. W. Scollay	654,680	July 31	3808	.....	92	830
Tobacco-moistener	J. D. Griffen	656,816	Aug. 28	3105	705	92	1690
Tobacco-pipe	H. B. Barton	657,019	Aug. 28	3510	801	92	1765
Tobacco-pipe	A. McIntyre	652,857	July 3	222	52	92	45
Tobacco-pipes, &c. Filter-cartridge for	E. Landfried	656,649	Aug. 28	2814	.....	92	1633
Tobacco-pipes. Smoke-cooler and nicotin-extractor for	W. B. Hughes and J. C. Rae	658,178	Sept. 18	2141	468	92	2267
Tobacco-pouch	D. H. Allen	656,078	Aug. 14	1756	406	92	1397
Tobacco-separating machine	L. R. Scholtz	656,481	Aug. 21	2500	576	92	1554
Tobacco-softening machine	J. K. Proctor	655,513	Aug. 7	610	138	92	1160
Tobacco. Treating leaf	L. Love	655,791	Aug. 14	1201	.....	92	1287
Tongs	H. Aiken	654,931	July 31	4309	969	92	936
Tongs for cleaning drains, &c	J. E. Patton	658,392	Sept. 25	2526	559	92	2368
Tongs. Household	T. F. Smythe	655,463	Aug. 7	539	121	92	1145
Tongue attachment. Sled	C. M. Watt	656,002	Aug. 14	1620	373	92	1368
Tongue support. Vehicle	O. and C. Staton	656,673	Aug. 28	2844	648	92	1640
Tongue support. Wagon	J. C. Lambert	653,917	July 17	2260	514	92	479
Tool-box	D. A. James	652,778	July 3	74	18	92	16
Tool. Combination	W. J. Barnes	656,622	Aug. 28	2776	635	92	1625
Tool. Combination	G. J. Capewell	655,824	Aug. 7	284	64	92	1096
Tool. Combination	W. K. Raleigh	655,007	July 31	4447	1002	92	967
Tool. Combination	A. L. Schultz	657,136	Sept. 4	109	25, 26	92	1823
Tool-handle	H. R. Atwater	654,588	July 31	3931	819	92	795
Tool-handle	L. Grote	656,821	Aug. 21	2212	506	92	1499
Tool-handle	J. Hanna and E. J. Jedlicka	654,150	July 24	2711	618	92	587
Tool-handle joint	C. W. Allen	656,710	Aug. 28	2908	662	92	1652
Tool-holder	J. M. Normand	653,754	July 17	1960	447	92	422
Tool. Machine	R. K. Le Blond	652,788	July 3	87	21, 22	92	18
Tools. Adjustable holder for stationers'	C. M. Van Every, Jr	654,204	July 24	2907	652	92	630
Tooth. Artificial	E. Pierrepont	657,613	Sept. 11	1102	230	92	2044
Tooth. Artificial	B. Rubinson	656,267	Aug. 21	2111	481	92	1480
Tooth. Artificial	C. S. Talbert	658,193	Sept. 18	2161	472	92	2272
Tooth-crowns. Making separable matrices for seamless	S. C. Snyder	655,525	Aug. 7	628	142	92	1163
Tooth. Detachable artificial	R. E. Campbell	656,596	Aug. 21	2724	625	92	1602
Toothpick	G. W. Schellenbach	656,479	Aug. 21	2498	575	92	1554
Toothpick-making machine	E. H. Johnson	654,260	July 24	3026	670	92	655
Tooth-shell slitter	C. M. Wilcox	657,633	Sept. 11	1186	238	92	2051
Top	O. Benson	653,059	July 3	611	145	92	124
Top	P. L. Koscialowski	656,771	Aug. 28	3015	686	92	1672
Top-spinner	A. W. Morgan	658,489	Sept. 25	2675	594	92	2397
Torch	W. W. Climenson and W. D. Winger	653,617	July 10	1658	387	92	344
Torpedo. Electrically-operated submarine	P. C. F. Hoffmann	656,292	Aug. 21	2160	494	92	1489
Towel or paper rack	E. C. Alford	658,333	Sept. 25	2406	532	92	2345
Toy	T. Blake	656,929	Aug. 28	3364	768	92	1738
Toy	J. A. Chapman	656,627	Aug. 28	2784	636	92	1627
Toy	S. W. Kaplan	658,182	Sept. 18	2146	469	92	2268
Toy	O. Korn	652,786	July 3	85	21	92	18
Toy bank	C. Kempf	654,786	July 31	3919	884	92	853
Toy bank	H. Schloerb	653,939	July 17	2302	526	92	487
Toy car	F. H. Harris	654,628	July 31	3727	841	92	814
Toy drum	M. E. Converse	656,518	Aug. 21	2564	589	92	1568
Toy. Mechanical	R. H. Sarvis	656,605	Aug. 28	2885	647	92	1638
Toy. Mechanical	G. Wale, Jr	653,127	July 3	743	175	92	148
Toy. Mobile	M. J. Steffens	658,026	Sept. 18	1878	406	92	2216
Toy musical instrument	R. Pitt	655,109	July 31	4628	1044	92	1002
Toy piano	A. Schoenhut	658,284	Sept. 18	2314	510	92	2302
Toy pistol	H. W. Rightmyer	653,097	July 17	1851	423	92	401
Toy rapid-fire cannon	W. R. Mackay	653,749	July 17	1954	445, 446	92	421
Toy safe	J. A. Horton	654,688	July 31	3747	845	92	818
Toy. Sounding wheeled	M. L. Moody	653,688	July 17	1839	421	92	399
Toy, &c. Spring-actuated mechanical	F. J. Gustine	655,621	Aug. 7	817	190	92	1196
Trace-carrier	P. A. Prudhomme	658,121	Sept. 18	2084	443	92	2245
Trace-carrier	W. F. Smith	658,492	Sept. 25	2681	595	92	2398
Trace-connector	G. W. Ray	653,527	July 10	1515	352	92	315
Trace-holder	G. Laube	654,653	July 31	3768	850	92	892
Trace-lock. Adjustable	F. W. Crafts	657,022	Aug. 28	3515	802	92	1766
Trace-support	G. Schenck	654,828	July 24	3157	706	92	680
Track-gage	E. H. McHenry	653,309	July 10	1106	264	92	234
Track-sander. Locomotive	H. L. Leach	656,535	Aug. 21	2633	606, 607	92	1581

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Track-sanding device	G. W. Mudd	655,305	Aug. 7	251	57	92	1090
Track-sanding device	J. H. Watters	658,494	Sept. 25	2683	596	92	2398
Traction-engine	G. Adamson	655,294	Aug. 7	227	51,52	92	1086
Traction-engine	D. C. Cawley	655,686	Aug. 14	984	224	92	1243
Traction-engine	R. Coutant-Dujour	655,690	Aug. 14	989	225	92	1244
Traction-engine	H. Grams	654,728	July 31	3907	882	92	850
Traction-engine	J. Liebau	655,724	Aug. 14	1051	243	92	1256
Traction-engine	H. T. Stith	654,291	July 24	3078	691	92	666
Traction-wheel	F. Kremer	654,262	July 24	3039	680	92	656
Train-anchor	E. W. Rice, Jr. (Reissue)	11,852	Sept. 4	902	183	92	1995
Train-control system	W. M. Six and O. R. Daily	658,290	Sept. 18	2327	513	92	2304
Train-indicator	H. De Wallace	657,592	Sept. 11	1055	219, 220, 221	92	2036
Train-order signal	J. F. Scullen	657,887	Sept. 11	1598	344	92	2145
Train-signal device. Electric	L. A. Grinda y Guiol	658,174	Sept. 18	2136	466	92	2266
Trains. Device for preventing derailing of	J. H. Gardner	655,072	July 31	4569	1029, 1030	92	991
Tramway. Portable	W. P. Dun Lany	655,067	July 31	4563	1027	92	990
Transfer-sheet and composition therefor	W. A. King	653,298	July 10	1089	260	92	230
Transplanter	C. Moehring	653,425	July 10	1317	312, 313	92	273
Transplanter							
Trap: *See* Animal-trap, Fish-trap, Hog-trap, Insect-trap, Mole-trap, Pigeon-trap, Sanitary trap, Sewer-trap, Steam-trap, Steam-separating trap.							
Trap	T. H. Taylor	654,928	July 31	4306	968	92	936
Trap-setting device	A. Generous	650,540	Aug. 21	2612	601	92	1578
Traveling-bag attachment	A. Mieden	654,207	July 24	3038	682	92	658
Tread-power	T. D. Dershimer	656,178	Aug. 21	1944	446, 447	92	1449
Treadle	E. Burke	655,053	July 31	4526	1020	92	982
Trestle. Knockdown	L. W. Davidson	657,648	Sept. 11	1167	244	92	2057
Tricycle for land, water, and ice. Combination-	T. Richmond	656,365	Aug. 21	2107	481	92	1479
Trimmer: *See* Veneer-trimmer.							
Trimming. Garment-	R. G. Marsh	656,559	Aug. 21	2642	609	92	1583
Trimming-machine	W. R. Fox	653,797	July 17	2048	466, 467	92	438
Tripod	R. P. Brown and A. Schausten	654,051	July 17	2485	572	92	522
Trolley	J. E. Connolly	657,213	Sept. 4	268	57	92	1856
Trolley	W. A. Daggett	658,243	Sept. 18	2251	493	92	2289
Trolley	A. Piton	658,581	Sept. 25	2852	632, 633	92	2433
Trolley	F. J. Rogers	655,014	July 31	4457	1005	92	969
Trolley	W. H. Russell	653,316	July 10	1116	266	92	236
Trolley	M. T. Schaffer	656,790	Aug. 28	3052	694	92	1679
Trolley	H. S. Goughnour	654,448	July 24	3384	761	92	780
Trolley-base	F. J. Fairchild	657,342	Sept. 4	525	108	92	1905
Trolley-catcher	T. Derrick	653,549	July 10	1535	362	92	322
Trolley. Electric	L. Lombard-Gerin	656,030	Aug. 14	1676	386	92	1380
Trolley for electrically-driven vehicles	E. G. Johnson	654,348	July 24	3190	715	92	688
Trolley-harp	S. Bourgeois	657,637	Sept. 11	1144	240	92	2053
Trolley-head	C. A. Brown	654,050	July 17	2483	572	92	522
Trolley-pole	J. W. Richmond	653,402	July 10	1277	304	92	265
Trolley. Safety	T. C. Prouty	657,132	Sept. 4	103	24	92	1822
Trolley-track	V. Koch	654,574	July 24	3591	809	92	769
Trolley-track for electric railways	E. C. Jones	657,166	Sept. 4	174	39,40	92	1836
Trolley-way. Elevated	D. F. L. Jones	658,745	Sept. 25	3167	705	92	2405
Trolley-wheel	H. A. Osborne	656,207	Aug. 21	1995	459	92	1459
Trolley-wheel	S. G. Reynolds	654,803	July 31	4060	914	92	884
Trough: *See* Feed-trough. Watering-trough.							
Trousers	W. G. Turner	653,157	July 3	796	187	92	159
Trousers-hanger	C. Bradway	654,340	July 24	3176	712	92	684
Trousers-hanger	M. A. Gilman	658,434	Sept. 25	2592	575	92	2381
Trousers-hanger	H. C. Hopkins	658,372	Sept. 25	2486	550	92	2361
Truck	J. H. Soule and N. F. Geeck	653,826	July 17	2099	478	92	448
Truck	G. M. Williams	653,431	July 10	1327	315	92	275
Truck antifriction-bearing. Car-	J. S. Patten	657,445	Sept. 4	722	155	92	1948
Truck. Antivibrating car-	L. C. Thompson and F. Kirk	656,381	Aug. 21	2322	532	92	1521
Truck. Barrel-	G. W. Arnold	653,129	July 3	745	175	92	149
Truck bearing. Car-	C. H. Hartman	655,624	Aug. 7	821	191	92	1200
Truck bearing. Car-	F. R. Northam	653,522	July 10	1499	349, 350	92	311
Truck. Car-	J. A. Brill	656,878	Aug. 28	3269	741, 742	92	1721
Truck. Car-	H. R. Keithley	658,448	Sept. 25	2609	579	92	2384
Truck. Car-	H. R. Keithley	658,449	Sept. 25	2610	579	92	2384
Truck. Car-	J. L. Levy	656,900	Aug. 28	3314	755	92	1728
Truck. Car-	J. L. Levy	658,659	Sept. 25	2997	666	92	2462
Truck. Car-	E. G. Nicewaner	658,390	Sept. 25	2524	558	92	2368
Truck. Car-	G. L. Stuebner	655,465	Aug. 7	542	121	92	1146
Truck. Car-	E. S. Woods	655,386	Aug. 7	308	88	92	1116
Truck frame. Car-	F. W. Fritz	656,185	Aug. 21	1958	450	92	1452
Truck. Hauling-	H. Welch	655,188	July 31	4667	1052	92	1009
Truck. Lumber-	C. E. Moore	656,606	Aug. 21	2741	628, 629	92	1606
Truck. Motor-car	J. C. Barber	657,635	Sept. 11	1138	239	92	2052
Truck. Passenger-car	J. P. Faye	656,885	Aug. 28	3246	747	92	1723
Truck. Radial car-	B. F. McCollister	657,129	Sept. 4	99	23	92	1821
Truck. Roller-	J. G. Emery, Jr	656,717	Aug. 28	2925	668	92	1656
Truck. Weighing-	H. Sawyer	656,729	Aug. 28	2942	672	92	1659
Truck. Weighing-	W. H. Cornner	656,133	Aug. 14	1868	429	92	1421
Truck, wheel, and armature exchange for street or other railway cars.	G. V. Hossfeld	656,546	Aug. 21	2625	605	92	1580
Trunk	B. F. Rubel	653,880	July 17	2206	502	92	408
Trunk	A. L. Kahn	652,784	July 3	81	20	92	17
Trunk. Convertible	A. M. Welshe	656,707	Aug. 28	2906	661	92	1632
Trunk-cover	B. M. Wilhite and F. A. Hoyt	655,089	July 31	4499	1014	92	977
Trunk-handle	C. G. Johnson	653,141	July 3	769	181	92	154
Trunk-lock	T. J. Hamilton	653,177	July 3	896	105	92	166
Trunk. Wardrobe	P. H. Smith	654,684	July 31	8813	861	92	831
Trunks, &c. Attachment for	L. A. Deuther	655,961	Aug. 14	1518	349	92	1348
Truss	R. W. Browne	655,601	Aug. 7	778	183	92	1191
Truss. Hernial	G. Fancher	657,404	Sept. 4	649	135	92	1930
Truss. Hernial	H. M. Johnson	655,365	Aug. 7	367	79	92	1110
Truss. Hernial	J. C. Keil	658,651	Sept. 25	2980	663	92	2458
Truss. Hernial	A. J. Davidson	655,206	Aug. 7	54	12	92	1052
Truss-pad	A. B. C. Sawyer	658,467	Sept. 25	2645	587	92	2391
Truss-pad-adjusting device	D. L. Garver	655,618	Aug. 7	811	188	92	1197
Truss. Pile-	H. C. Rash	655,008	July 31	4448	1002	92	907
Truss. Umbilical	H. C. Rash	655,514	Aug. 7	612	138	92	1160
Truss. Umbilical							
Tub: *See* Convertible tub, Washtub.	C. D. Ames	654,822	July 31	4002	920, 921, 922	92	890
Tub-making machinery							
Tube: *See* Boiler-tube, Flanged tube, Mailing-tube, Metallic tube.							
Tube-bending machine	M. Wikstrom	654,373	July 24	3239	726	92	699
Tube-cleaning apparatus	W. S. Elliott	656,446	Aug. 21	2442	562	92	1548
Tube-compressor	J. J. Jessup and E. K. Leffingwell	657,775	Sept. 11	1402	207	92	2104
Tube-cutter	H. A. Benefiel	658,136	Sept. 18	2057	449	92	2250
Tube-flanging device	F. W. Barthels	656,623	Aug. 28	2778	635	92	1626
Tube grinder and facer	J. T. Scott and C. G. Hightower	653,708	July 17	1858	425	92	408
Tube or flue cleaner. Steam-jet	W. H. Ingersoll	653,512	July 10	1483	346	92	308
Tube or pebble mill	C. L. Carman	653,284	July 10	1066	255	92	225
Tubes. Apparatus for enlarging ajutages of metal	F. Schilling and J. Schurz	656,425	Aug. 21	2407	553	92	1537
Tubes. Means for manufacturing corrugated	W. Maciejewski	653,354	July 10	1202	286	92	251
Tubing. Flexible metallic	C. Rudolph	653,487	July 10	1436	337	92	298
Tubing. Metallic	T. Midgley	655,304	Aug. 7	250	57	92	1090
Tubular boiler	H. F. Cook	653,502	July 10	1465	342, 343	92	304
Tubular casings. Machine for filling	C. Imboden	657,985	Sept. 18	1724	370, 371	92	2187
Tubular fabric and constructing same	F. Wilcomb	654,694	July 31	3832	864, 865	92	833
Tug. Hame-	W. H. Cessna	656,170	Aug. 21	1935	444	92	1448
Tug. Hame-	J. T. Dedman	653,548	July 10	1554	361	92	322
Tug. Shaft-	J. O'Connell	653,036	July 3	571	134	92	115
Tune-sheet feeder	J. Wellner	658,084	Sept. 18	1889	408	92	2218
Tune-sheet holder	J. Wellner	658,085	Sept. 18	1891	408	92	2218
Tuning-peg for stringed instruments	F. Pallwetz	653,966	July 17	2355	542	92	496
Tuning-stem for stringed instruments	W. A. Lang	657,493	Sept. 4	878	178	92	1960
Tunneling-shield	C. G. Hastings	658,360	Sept. 25	2467	546	92	2358
Tuns or casks. Device for removing pitch from	C. F. F. Köpping	655,092	July 31	4508	1037	92	996
Turbine	E. J. Scovel and C. F. Ross	656,051	Aug. 14	1706	392	92	1357
Turbine. Reversing steam-	C. A. Parsons and A. A. C. Swinton	656,208	Aug. 21	1997	459	92	1459
Turbine ring of blades. Steam-	C. A. Parsons, G. G. Stoney, and H. F. Fullagar.	655,414	Aug. 7	448	99, 100	92	1127
Turbine. Steam-	J. F. Brady	653,788	July 17	2031	463	92	435
Turbine. Steam-	R. Schulz	657,709	Sept. 11	1289	272, 273	92	2081
Turn-table	J. A. Beamer	655,681	Aug. 14	976	222	92	1241
Turn-tables. Pivotal bearing for	O. Hoff	655,489	Aug. 7	580	130	92	1154
Turning backstays. Device for	R. C. Schemmel	655,582	Aug. 7	744	172	92	1184
Turning regular forms. Tool for	E. A. Havens	658,009	Sept. 18	1846	400	92	2210
Twine. Machine for making grass	J. Lattin	655,097	July 31	4606	1039	92	998
Twine. Machine for making grass	G. A. Lowry	654,991	July 31	4406	993, 994, 995	92	958
Twine-tension device	W. S. Sherd	656,428	Aug. 21	2412	553	92	1538
Twisting-machine	G. P. and H. J. Schlemmer	658,592	Sept. 25	2872	637	92	2438
Twisting or doubling machine traveler	J. W. Cook	653,926	July 17	2271	517	92	481
Twyer	W. A. Thomas and J. Fisher	655,528	Aug. 7	632	143	92	1164
Tying machine. Parcel-	J. C. Collins	658,206	Sept. 18	2189	477, 478	92	2276
Tympan-gage	B. McGinty	656,566	Aug. 21	2652	611	92	1585
Type-bar machine	R. H. St. John	657,040	Aug. 28	3542	809, 810, 811	92	1772
Type-bar machine	R. H. St. John	657,041	Aug. 28	3547	812, 813, 814, 815, 816	92	1773
Type-bar machine	R. H. St. John	657,042	Aug. 28	3554	817, 818, 819	92	1774
Type-bar machine	R. H. St. John	657,043	Aug. 28	3560	819, 820	92	1775
Type-bar or matrix machines. Spacing or justifying device for	R. H. St. John	657,039	Aug. 28	3541	809	92	1772
Type-containing channel	L. K. Johnson and A. A. Low	657,874	Sept. 11	1576	340	92	2140
Type-distributing machine. Automatic	E. F. Nydahl	652,899	July 3	284	69,70	92	57
Type-holder	J. S. Duncan	656,443	Aug. 21	2435	560	92	1542
Type-machinery ejecting mechanism	F. B. Converse, Jr	657,282	Sept. 4	408	86	92	1882

Alphabetical list of inventions, July to September, inclusive—Continued.

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Type-setting apparatus	L. K. Johnson and A. A. Low	653,142	July 3	770	181	92	154
Type-setting apparatus	L. K. Johnson and A. A. Low	657,546	Sept. 11	983	201 202	92	2022
Type-writer	F. H. Armstrong	654,217	July 24	2082	657 658 659	92	634
Type-writer	G. C. Blickensderfer	656,086	Aug. 14	1784	410	92	1405
Type-writer	F. A. Chalmers	654,605	July 31	3603	826	92	802
Type-writer	W. S. Craig	658,735	Sept. 25	3141	697 698	92	2490
Type-writer	J. H. Phelps	656,658	Aug. 28	2826	644	92	1636
Type-writer	H. B. Brady	653,787	July 17	2028	462	92	435
Type-writer attachment	W. R. Fox	657,194	Sept. 4	230	51	92	1847
Type-writer-cover-fastening device	M. J. Hafgar	654,974	July 31	4380	986	92	952
Type-writer desk	C. P. Mosher	657,438	Sept. 4	708	150	92	1941
Type-writer keyboard mechanism	E. L. Hamilton	657,105	Sept. 4	62	14	92	1814
Type-writer pencil-tray attachment	S. F. Ettinger	653,796	July 17	2047	466	92	438
Type-writer-ribbon clamp	R. Kübler	655,249	Aug. 7	140	30	92	1008
Type-writer. Telegraphic	W. J. English	657,161	Sept. 4	164	37	92	1834
Type-writers, hand-stamps, &c. Ribbon-feed for	H. Marshall	654,992	July 31	4417	995	92	960
Type-writing and computing machine. Combined					169		
Type-writing, linotype, and type-setting machine or other keyboard printing instrumentality.	T. Cahill	657,478	Sept. 4	804	170 171	92	1965
Type-writing machine	E. E. Barney	657,978	Sept. 18	1799	388	92	2200
Type-writing machine	W. J. Barron	656,281	Aug. 21	2141	489	92	1486
Type-writing-machine	W. J. Barron	657,153	Sept. 4	148	34	92	1889
Type-writing machine	H. Bettendorf and J. M. Bier	654,379	July 24	3249	728	92	702
Type-writing machine	G. C. Blickensderfer	656,085	Aug. 14	1767	408 409 410	92	1399
Type-writing machine	A. T. Brown	653,905	July 17	2237	509	92	474
Type-writing machine	E. F. Bumpus	653,282	July 10	1060	253 254	92	224
Type-writing machine	T. Cahill	654,133	July 24	2643	605 606 607 608	92	509
Type-writing machine	T. Cahill	656,576	Aug. 21	2669	615	92	1589
Type-writing machine	J. Felbel	657,927	Sept. 18	1681	363 364 365	92	2174
Type-writing machine	J. Felbel	657,928	Sept. 18	1698	365 366 367	92	2178
Type-writing machine	R. J. Fisher. (Reissue)	11,848	Aug. 21	2769	634	92	1612
Type-writing machine	R. J. Fisher. (Reissue)	11,850	Sept. 4	895	181 182	92	1993
Type-writing machine	J. O. Fowler, Jr	655,652	Aug. 7	925	209	92	1220
Type-writing machine	W. R. Fox, G. J. Barrett, and A. D. Ray.	656,785	Aug. 28	3039	692	92	1677
Type-writing machine	H. W. Merritt	658,156	Sept. 18	2089	455 456	92	2256
Type-writing machine	H. W. Merritt	658,157	Sept. 18	2100	456	92	2259
Type-writing machine	Z. G. Sholes	658,560	Sept. 25	2794	620 621	92	2421
Type-writing machine	G. B. Webb	657,187	Sept. 4	213	48	92	1844
Type-writing-machine line-spacing mechanism	E. S. Shimer	654,030	July 17	2450	502	92	516
Type-writing machine or other keyboard printing instrumentality.	T. Cahill	657,479	Sept. 4	838	171 172 173 174	92	1977
Type-writing machine. Platen	C. F. Laganke	657,121	Sept. 4	86	21	92	1818
Type-writing-machine ribbon-feeding mechanism	E. S. Shimer	654,028	July 17	2447	501 502	92	516
Type-writing machines. Spacing-escapement and carriage-feeding mechanism for	E. S. Shimer	654,029	July 17	2448	502	92	516
Umbrella-carrying device	M. H. Cochran	652,801	July 3	271	65	92	54
Umbrella rib and stretcher joint	J. A. Bedel	653,164	July 3	808	191	92	162
Umbrella-stick and billiard-cue grip	M. Mendel	658,042	Sept. 18	1900	411 412	92	2220
Umbrella-support	H. H. Kessler, Jr	654,547	July 24	3551	801	92	763
Undershirt and suspensory bandage. Combined	F. W. Wright	657,582	Sept. 11	1043	216	92	2033
Universal joint	F. E. Bocorselski	658,057	Sept. 18	1920	416	92	2224
Universal joint	P. Cunningham	658,409	Sept. 25	2091	597 598	92	2401
Universal joint	J. Jetter	658,065	Sept. 18	1932	420	92	2226
Unloading apparatus	J. W. Kamm	657,547	Sept. 11	984	202 203	92	2022
Upholstering apparatus	J. A. Staples	654,685	July 31	3814	861	92	831
Upholstering. Tufted	A. Freschl	654,896	July 31	4228	951	92	919
Upholstery	A. Freschl	654,618	July 31	3712	838	92	811
Urinal	W. Bunting, Jr	654,601	July 31	3653	823	92	799
Urinal	F. Burger and H. M. Williams	653,437	July 10	1338	318	92	277
Vaccinating instrument	L. A. Denis	652,990	July 3	509	120	92	103
Vaccine lymph. Glycerinized	E. M. Parker	657,003	Aug. 28	3488		92	1762
Vaccine-point carrier	R. Walsh	656,914	Aug. 28	3342	761	92	1734
Valve	A. P. Broomell	657,059	Aug. 28	3589	827	92	1782
Valve	J. Dreckmann	654,296	July 24	2973	667	92	643
Valve	D. Gilchrist	656,903	Aug. 28	3428	782	92	1750
Valve	C. Gulland	655,342	Aug. 7	328	71	92	1104
Valve	E. H. Lunken	653,302	July 10	1098	262	92	232
Valve	T. Reese, Jr	657,707	Sept. 11	1281	271 272	92	2079
Valve	J. J. Rylands	655,996	Aug. 14	1605	369	92	1365
Valve	J. C. Scott	655,741	Aug. 14	1080	248 249	92	1262

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Valve. Air-compressor puppet	M. Bulkley	653,860	July 17	2154	490 491	92	458
Valve. Air-controlling	E. L. Rowe	657,896	Sept 11	1611	347	92	2148
Valve and muffler. Safety	W. E. Wood	656,237	Aug. 21	2067	473 474	92	1472
Valve and stop-cock. Combined check	H. M. Pinney	656,140	Aug 14	1884	434	92	1424
Valve. Automatic	W. H. Parton	653,628	July 10	1708	395	92	355
Valve. Automatic air	W. D. Klipfel	655,785	Aug. 4	1182	271	92	1282
Valve. Automatic hose	R. D. Wirt	656,759	Aug. 28	2900	682	92	1667
Valve. Check	O. Nygren	654,484	July 24	3450	778	92	743
Valve-closing mechanism. Automatic	E. F. Van Vechten	654,770	July 31	3994	898	92	868
Valve. Combined air, water, and check	D. F. Morgan	656,746	Aug. 28	2972	679	92	1604
Valve. Engine	W. S. Haines	656,888	Aug. 28	3201	748	92	1724
Valve. Engine piston	C. D. P. Gibson	655,929	Aug. 14	1455	335	92	1337
Valve. Engine piston	J. T. Wilson	654,212	July 24	2917	654 655	92	632
Valve. Fluid-actuated	J. B. Rhodes	655,737	Aug. 14	1073	247	92	1260
Valve. Fluid-discharge	I. D. Perry and J. B. Weir	656,262	Aug. 21	2103	480	92	1479
Valve for bathing apparatus. Mixing and controlling	W. Bunting, Jr	654,602	July 31	3655	823 824	92	800
Valve for bottles containing gases, liquids, &c	H. L. Fuge	653,382	July 10	1247	296 297	92	260
Valve for engines. Governor cut-off	F. A. Large	655,096	July 31	4604	1039	92	997
Valve for fluid-operated tools. Throttle	C. H. Johnson	656,981	Aug. 28	3458	790	92	1756
Valve for motive-fluid tools. Throttle	C. H. Johnson	656,195	Aug. 21	1973	453	92	1455
Valve for pneumatic pillows, &c	G. H. F. Schrader and H. P. Kraft	656,220	Aug. 21	2054	467	92	1465
Valve for steam-heating systems	W. Webster	653,309	July 10	1227	293	92	256
Valve for water-mains. Automatic air	C. E. Loetzer	653,255	July 10	1005	241	92	214
Valve. Gas-engine	A. A. Lazier	657,988	Sept. 18	1818	392 393	92	2204
Valve. Gas-engine governor	J. W. Lambert	656,408	Aug. 21	2375	545 546	92	1530
Valve-gear	C. D. P. Gibson	655,927	Aug. 14	1452	334	92	1336
Valve-gear	W. M. Musgrave	655,569	Aug. 7	709	161 162	92	1179
Valve-gear. Engine	A. W. J. Best	656,164	Aug. 21	1920	441	92	1444
Valve-gear. Engine	N. A. Christensen	654,228	July 24	2956	663 664	92	639
Valve-gear. Engine	E. König	653,916	July 17	2259	514	92	479
Valve-gear. Locomotive-engine	G. B. Eddy	657,816	Sept. 11	1472	314	92	2119
Valve-gear. Petroleum-engine	H. A. Bertheau	655,751	Aug. 14	1105	255	92	1267
Valve-gear. Reversing	C. Weller and W. Rommel	658,690	Sept. 25	3050	679	92	2472
Valve-gear spring tension device	L. G. Wulbern	658,054	Sept. 18	1916	416	92	2223
Valve-gear. Steam-engine	W. H. Crook	653,790	July 17	2035	464	92	436
Valve. Hydrant gate	E. C. Wiley	653,600	July 10	1633	382	92	339
Valve. Hydraulic machinery	J. K. Smith	653,187	July 3	847	199	92	170
Valve. Hydraulic motor	J. W. Johnson	656,740	Aug. 28	2959	676	92	1602
Valve. Hydraulic or other	F. L. Lane and W. Rainforth	657,168	Sept. 4	178	40	92	1837
Valve. Inflation	C. E. Bown	658,830	July 3	179	42	92	37
Valve. Inflation	J. H. Goss	654,565	July 24	3577	807	92	767
Valve. Inflation	M. A. Morris	654,552	July 24	3559	802	92	764
Valve. Locomotive relief	S. M. Vauclain	657,472	Sept. 4	768	165	92	1953
Valve. Locomotive-tender	F. P. Cotter	656,629	Aug. 28	2786	637	92	1627
Valve mechanism	E. F. Van Vechten	654,771	July 31	3997	898	92	869
Valve. Non-freezing	W. Schmitt and D. L. McGinnis	656,731	Aug. 28	2946	673	92	1660
Valve-operating means. Waste	W. Bunting, Jr	654,600	July 31	3650	823	92	799
Valve-operating mechanism	J. W. Brannon	657,890	Sept. 11	1602	345	92	2146
Valve-operating mechanism. Time	A. Stenhouse and E. A. Whitehead	654,186	July 24	2815	636	92	610
Valve Piston	W. Buckley	654,882	July 24	3254	729 730	92	703
Valve. Reciprocating	C. D. P. Gibson	655,928	Aug. 14	1453	334	92	1337
Valve relief mechanism. Piston	G. R. Henderson	655,080	July 31	4581	1063	92	993
Valve. Renewable-seat	E. H. Lunken	653,300	July 10	1095	261	92	232
Valve. Renewable-seat	E. H. Lunken	653,301	July 10	1096	261	92	232
Valve. Renewable-seat	E. H. Lunken	653,423	July 10	1314	312	92	273
Valve. Retaining	J. S. Lapish	654,987	July 31	4400	992	92	956
Valve. Reversing	D. J. Hoisington and J. W. Kessinger.	658,524	Sept. 25	2738	608	92	2410
Valve. Rotary cut-off	L. A. Cooper	655,608	Aug. 7	788	185	92	1193
Valve. Rotary-engine	D. Carter	654,227	July 24	2954	663	92	638
Valve. Safety	J. M. Coale	657,086	Sept. 4	24	6	92	1806
Valve. Safety	E. A. and W. E. Wood	656,236	Aug. 21	2065	473	92	1472
Valve. Steam-actuated	W. A. Woodeson	655,537	Aug. 7	643	147	92	1166
Valve support. Inflation	H. W. Adams, Jr	654,300	July 24	3108	695	92	671
Valve. Tank	J. E. Minor	656,849	Aug. 28	3198	727	92	1709
Valve. Throttle	F. Strattner	653,596	July 10	1627	380	92	338
Valves, &c. Diaphragm device for operating	F. S. Newman	652,859	July 3	224	53	92	45
Valves. Diaphragm for pressure-regulating	A. W. Cash	655,361	Aug. 7	360	78	92	1110
Vanillin derivatives. Obtaining	A. C. Jensen	658,446	Sept. 25	2605		92	2384
Vapor-burner	B. P. Kenyon	654,459	July 24	3404	766	92	735
Vapor-burner	R. Seeger	654,287	July 24	3070	689	92	664
Vapor-burner	R. Seeger	654,288	July 24	3072	689	92	664
Vapor-burner	R. Seeger	654,289	July 24	3073	690	92	665
Vapor-burner. Incandescent	A. S. Greenwood	653,910	July 17	2249	511	92	477
Vapor-burners. Preheating means for	W. W. and J. W. Wilson	653,924	July 17	2269	516	92	481
Vapor-tube heater	A. Kitson. (Reissue)	11,851	Sept. 4	901	182	92	1994
Vaporizing attachment for burners	I. L. Hammond	657,412	Sept. 4	660	138	92	1933
Vault. Bank	J. T. Hough	658,646	Sept. 25	2971	661 662	92	2456
Vault. Grave	C. H. Hiser and E. N. Lupfer	654,155	July 24	2722	619	92	589
Vault-light	R. M. Cox	656,344	Aug. 21	2256	518	92	1507
Vegetable or fruit separator	M. P. Richards	654,281	July 24	3062	687	92	662
Vehicle	C. C. Hyatt, H. W. Watson, W. Wildanger, and C. B. Sanderson.	658,511	July 10	1482	346	92	307
Vehicle	G. Lanino	655,786	Aug. 14	1184	271	92	1282
Vehicle	F. P. Stone	655,807	Aug. 14	1234	284	92	1294

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Invention.	Name.	No	Date.	Monthly volume		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Vehicle. Autotruck	J. C. Anderson	655,321	Aug. 7	277	62, 63	92	1095
Vehicle-body	H. S. Lee	653,578	July 10	1604	373	92	333
Vehicle body-loop	G. F. Colimer	654,440	July 24	3364	754	92	726
Vehicle-brake	M. E. P. Chaboche	655,390	Aug. 7	408	90	92	1119
Vehicle-brake	D. D. Elder	653,951	July 17	2319	531	92	490
Vehicle-brake	F. T Harrington	656,641	Aug. 28	2802	640	92	1631
Vehicle-brake	J. W. Rogers	656,375	Aug 21	2311	529	92	1519
Vehicle-brake	M. Vidie	658,689	Sept 25	3049	679	92	2472
Vehicle-brake	R. H. White	656,070	Aug. 14	1738	402	92	1398
Vehicle-brake	C. Wigg	656,797	Aug 28	3005	696	92	1682
Vehicle-brake	J. H. Cutler	653,217	July 10	927	224	92	199
Vehicle chafe-iron	G. C. Forry	653,998	July 17	2390	550	92	504
Vehicle-cover-supporting frame	L. S. Clarke and J. G. Heaslet	658,620	Sept. 25	2916	651, 652	92	2446
Vehicle-driving apparatus. Motor-	W. Buttler	657,281	Sept. 4	408	86	92	1882
Vehicle driving mechanism	A. Bath	658,329	Sept. 18	2387	527	92	2315
Vehicle-frame	J. S. Copeland	656,765	Aug. 28	3004	685	92	1671
Vehicle-frame mechanical joint	J. H. Munson	653,200	July 3	887	214	92	179
Vehicle. Independent motor-	L. S. Clarke, W. Morgan, and J. G Heaslet.	653,501	July 10	1460	341, 342	92	303
Vehicle. Motor-	C. J. Coleman	653,167	July 3	812	192	92	162
Vehicle. Motor-	C. J. Coleman	653,168	July 3	814	192	92	163
Vehicle. Motor-	C. J. Coleman	653,169	July 3	816	193	92	163
Vehicle. Motor-	C. J. Coleman	653,170	July 3	818	193	92	164
Vehicle. Motor-	C. J. Coleman	653,172	July 3	823	194	92	165
Vehicle. Motor-	C. J. Coleman	657,516	Sept. 11	937	192	92	2012
Vehicle. Motor-	C. J. Coleman	657,899	Sept. 11	1020	348, 349	92	2150
Vehicle. Motor	C. J. Coleman	658,238	Sept. 18	2241	491	92	2287
Vehicle. Motor-	P. J. Collins	655,853	Aug. 14	1320	302, 303	92	1311
Vehicle. Motor-	P. J. Collins	656,389	Aug. 21	2335	536, 537	92	1524
Vehicle. Motor-	E. P. Cowles	654,716	July 31	3881	876, 877	92	845
Vehicle. Motor-	J. T. Dougine	655,329	Aug. 7	291	65, 66	92	1097
Vehicle. Motor-	C. E. Duryea	653,224	July 10	938	226, 227	92	201
Vehicle. Motor-	J. W. Eisenhuth	656,396	Aug. 21	2346	539	92	1525
Vehicle. Motor-	C. D. P. Gibson	656,932	Aug. 28	3419	780, 781, 782	92	1749
Vehicle. Motor-	H. J. Lawson	654,797	July 31	4052	912	92	882
Vehicle. Motor-	H. J. Lawson	658,068	Sept. 18	1987	421, 422	92	2227
Vehicle. Motor-	H. W. Libbey	654,741	July 31	3982	888	92	856
Vehicle. Motor-	C. A. Lieb	653,102	July 3	703	165, 166	92	141
Vehicle. Motor-	J. H. Munson	653,199	July 3	883	213, 214	92	179
Vehicle. Motor-	L. J. Phelps	653,879	July 17	2187	498	92	465
Vehicle. Motor-	W. Scott	656,483	Aug. 21	2504	577	92	1555
Vehicle. Motor-	C. T. Shoup	658,046	Sept. 18	1905	413	92	2220
Vehicle. Motor-	F. E. and F. O. Stanley	657,711	Sept. 11	1291	273, 274	92	2081
Vehicle. Motor-	V. V. Torbensen	653,855	July 17	2144	487, 488	92	456
Vehicle. Motor-	G. E. Whitney	652,940	July 3	376	90, 91, 92	92	76
Vehicle. Motor	G. E. Whitney	652,941	July 3	390	92, 93	92	78
Vehicle. Motor-	G. E. Whitney	652,942	July 3	400	94	92	81
Vehicle. Motor-	G. E. Whitney	652,943	July 3	407	94, 95	92	83
Vehicle. Motor-	G. E. Whitney	652,944	July 3	413	95	92	84
Vehicle. Motor-driven	R. F. Hall	653,801	July 17	2052	468	92	439
Vehicle motor-frame attachment	L. E. Brookes	655,670	Aug. 7	958	216	92	1227
Vehicle motor-wheel	H. W. Libbey	652,852	July 3	213	50	92	43
Vehicle mud-guard	D. C. Grover	653,574	July 10	1509	372	92	332
Vehicle mud-guard	D. Hitchcock	658,442	Sept. 25	2602	577	92	2383
Vehicle. Pneumatic-tired	J. M. Wolbrecht	657,845	Sept. 11	1529	328	92	2131
Vehicle running-frame	H. P. Maxim	657,430	Sept. 4	694	147	92	1939
Vehicle running-gear	M. L. Senderling	653,489	July 10	1440	337	92	298
Vehicle running-gear	G. M. Wood	658,308	Sept. 18	2355	519	92	2310
Vehicle-seat	C. B. Moore	656,775	Aug. 28	3021	688	92	1674
Vehicle. Self-propelled	H. Wilcke	657,260	Sept. 4	367	77	92	1874
Vehicle-spindle	M. Walker	656,066	Aug. 14	1733	401	92	1393
Vehicle spindle-protector	B. F. Nickerson	654,754	July 31	3961	892	92	862
Vehicle. Spring-	A. Schubert	658,285	Sept. 18	2315	510	92	2302
Vehicle steering mechanism	G. L. Reenstierna	655,660	Aug. 7	941	213	92	1224
Vehicle storm-curtain	B. S. D. S. Martin	653,751	July 17	1957	446, 447	92	421
Vehicle-top rest. Folding-	W. Y. Armstrong	655,679	Aug. 14	974	221	92	1241
Vehicle-wheel	M. M. Bailey	655,948	Aug. 14	1495	343	92	1344
Vehicle-wheel	M. M. Bailey	655,949	Aug. 14	1498	344	92	1344
Vehicle-wheel	C. Bigelow	653,652	July 17	1785	408	92	388
Vehicle-wheel	J. N. Byers	658,338	Sept. 25	2421	535	92	2348
Vehicle-wheel	M. J. Donovan	652,837	July 3	190	44	92	39
Vehicle-wheel	F. M., J. S., and W. W. Hilton and R. M. Merriman.	655,709	Aug. 14	1018	235	92	1251
Vehicle wheel. Motor-	C. G. Ensign	658,249	Sept. 18	2261	497	92	2291
Vehicles. Automatic maximum-speed governor for electrically-propelled	H. F. Parshall	658,117	Sept. 18	2028	442	92	2244
Vehicles. Fender for tramway or like	J. von Hôlt	653,930	July 17	2277	518	92	483
Vehicles. Safety device for electric	F. E. Case	655,389	Aug. 7	406	89	92	1118
Vehicles. Water-feeding and air-compressing mechanism for motor-	W. R. Bowker and F. P. Sherman	654,511	July 24	3491	788, 789	92	751

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Velocimeter. Marine	P. Schultze	655,520	Aug. 7	621	140	92	1162
Velocipede-brake	H. A. Lamplugh	658,654	Sept. 25	2986	664, 665	92	2459
Velocipede driving-gear	J. Cottrell	657,850	Sept. 11	1551	333	92	2136
Velocipede-handle	R. W. Pratt	652,981	July 3	479	112	92	97
Velocipede. Ice-	E. F. Mertz	653,454	July 10	1367	324	92	283
Velocipede wheel-rim and attachment	E. W. McCaslin	658,093	Sept. 18	1989	433	92	2237
Vending-machine. Coin-controlled	R. P. Schilling	653,488	July 10	1437	337	92	208
Vending-machine. Coin-controlled	D. K. Stone	658,517	Sept. 25	2717	602, 603	92	2406
Vending-machine. Coin-operated	J. Grice	655,437	Aug. 7	497	111	92	1137
Veneer-package divider	G. A. Gage	654,724	July 31	3899	880	92	848
Veneer-trimmer	A. Nelson	656,656	Aug. 28	2822	648	92	1634
Veneers. Manufacturing articles from	C. Wittkowsky	657,975	Sept. 18	1793	387	92	2199
Vent and combined tap. Automatic	D. Birchenough	655,953	Aug. 14	1504	345	92	1345
Vent. Cask-	J. Wahl	657,630	Sept. 11	1133	237	92	2051
Ventilating apparatus	J. J. Donovan	658,351	Sept. 25	2446	540	92	2353
Ventilator: *See* Car-ventilator. Oven-ventilator. Chimney-ventilator. Window-ventilator.							
Ventilator	T. C. Avery	658,169	Sept. 18	2125	462	92	2265
Ventilator	O. H. Champagne	656,597	Aug. 21	2725	695	92	1602
Ventilator	M. Gaul	655,861	Aug. 14	1332	306	92	1313
Vessel. Antirust	J. E. Byrnes	653,439	July 10	1342	318	92	278
Vessel drag-brake. Marine	F. Wendler	655,140	July 31	4070	1053	92	1010
Vessel for carrying passengers	A. W. Bibby	658,202	Sept. 18	2176	476	92	2274
Vessel-hulls on water. Mechanism for holding and moving	J. K. Howe and J. Clark	653,475	July 10	1411	331, 332	92	202
Vessel-hulls. Protective armor for	R. F. B. Walsh	656,001	Aug. 14	1618	378	92	1368
Vessel. Marine	P. U. and A. M. J. Riess	655,904	Aug. 14	1602	369	92	1365
Vessel. Marine dumping	F. H. Bullis	656,509	Aug. 21	2548	586	92	1564
Vessels. Apparatus for recovering cargoes from sunken	S. Lake	652,970	July 3	458	108, 109	92	92
Vessels. Reinforcing device for packing and storing	G. Lauterback	654,405	July 24	3298	740	92	718
Veterinary forceps	W. Neumeier, Jr	657,203	Sept. 4	245	58	92	1851
Veterinary obstetrical instrument	J. Markus	655,257	Aug. 7	154	35	92	1070
Vinyldiaceton-alkamins and making same. Compound of	A. Schmidt and G. Merling	657,880	Sept. 11	1584	.....	92	2142
Violin	L. H. Hall	655,622	Aug. 7	819	191	92	1199
Violin	J. Swenson	654,859	July 31	4173	940, 941	92	908
Violin shoulder-rest	F. Schmidt	654,678	July 31	3806	859	92	830
Vise	V. J. McDonnell	658,574	Sept. 25	2820	626	92	2427
Vise. Bench-	E. H. Sheldon	656,793	Aug. 28	3058	695	92	1680
Visible and audible signal. Combined	E. W. Vogel	656,434	Aug. 21	2421	557	92	1540
Vision. Instrument for determining amplitude of	F. M. Graham	654,846	July 24	3185	714	92	686
Voltage from main lines of higher voltage. Apparatus for supplying currents of predetermined	W. W. King	653,093	July 3	681	161	92	138
Voltaic cell	E. M. Fishell	655,968	Aug. 14	1548	356	92	1355
Voltaic cell	C. T. Richmond	658,530	July 10	1524	334	92	317
Vote register and recorder	H. A. Clifford	658,236	Sept. 18	2233	489, 490	92	2286
Voting-booth	J. H. Rafter	657,029	Aug. 28	3528	805, 806	92	1769
Voting-booth. Folding	C. Eugert	654,962	July 31	4355	980	92	946
Voting-machine	F. M. Boring	656,718	Aug. 28	2912	663, 664, 665, 666	92	1653
Voting-machine	C. Christensen	658,204	Sept. 18	2178	476, 477	92	2275
Voting-machine	J. Fain and M. Herstrom	652,915	July 3	310	77, 78	92	62
Voting-machine	T. W. Graham	652,768	July 3	56	13	92	12
Vulcanized plates with metal. Coating or covering	J. A. Daly	652,751	July 3	23	5	92	6
Vulcanized plates with metal. Lining or coating	J. A. Daly	652,752	July 3	24	6	92	7
Vulcanizer	F. A. Seiberling	658,472	Sept. 25	2651	588, 589	92	2392
Vulcanizer. Multiple press-	F. A. Seiberling	652,813	July 3	138	34	92	28
Vulcanizers. System for controlling series of	A. E. Ellinwood and F.A.Seiberling	654,389	July 24	3266	733, 734	92	706
Vulcanizing-press	F. A. Seiberling and A. Straus	658,471	Sept. 25	2650	588	92	2392
Wagon	W. O. Shadbolt	655,835	Aug. 14	1290	296, 297	92	1305
Wagon attachment for carrying axes	G. W. Lentz	656,820	Aug. 28	3111	706	92	1691
Wagon-bed side-board fastener	S. R. Zimmerman	656,289	Aug. 21	2070	474	92	1472
Wagon-body	C. A. Quigley	653,182	July 3	841	198	92	108
Wagon-box and hay-rack lifter	M. J. Sasgen	654,842	July 31	4140	981	92	900
Wagon-brake	E. F. Meyer	655,986	Aug. 14	1473	338	92	1339
Wagon-brake	H. E. Rolph	656,047	Aug. 14	1701	391	92	1385
Wagon-brake	W. B. Stover	654,422	July 24	3332	747	92	719
Wagon-brake	J. Wheeler	656,494	Aug. 21	2525	581	92	1560
Wagon-brake. Self-operating	E. Jenkins	657,220	Sept. 4	284	61	92	1859
Wagon chafing-roller	R. E. Hall	657,821	Sept 11	1482	316	92	2120
Wagon-clip-manufacturing machine	J. H. Baker	657,583	Sept. 11	1048	216, 217	92	2084
Wagon. Dump-	J. W. Haywood	654,453	July 24	3397	763	92	733
Wagon. Dumping-	A. H. Ege	652,757	July 3	34	9	92	8
Wagon. Dumping-	C. S. Pharis	658,580	Sept. 25	2849	631	92	2432
Wagon. Dumping coal-	R. A. McCauley	655,572	Aug. 7	713	163	92	1179
Wagon dumping-gear	P. Vasquez	654,333	July 24	3167	709	92	682
Wagon gear. Spring-	S. F. Parson	656,570	Aug. 21	2660	612, 613	92	1587
Wagon or truck gear	G. T. Willis	658,496	Sept. 25	2987	596	92	2399
Wagon-platform	C. Arnold	655,047	Aug. 14	1498	343	92	1348

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wagon-rack	A. L. Sipe	654,707	July 31	3989	897	92	867
Wagon-reach clamp	W. H. Weber	657,997	Sept. 18	1831	396	92	2207
Wagon-reach coupling	G. W. Whitehead	654,773	July 31	4000	899	92	869
Wagon running-gear	A. Boeker	656,803	Aug. 28	3074	699	92	1684
Wagon running-gear	J. J. Hicks	654,251	July 24	3001	673	92	649
Wagon tail-gate	J. M. Lillpop	657,946	Sept. 18	1755	378	92	2191
Wagon. Tipping	C. W. Lyon	656,773	Aug. 28	3018	687	92	1673
Wagon-unloader	W. Barclay	658,811	Sept. 18	2390	521	92	2311
Wainscoting	V. Lahaie	653,251	July 10	997	239	92	213
Waist	C. F. Goodale	653,671	July 17	1813	415	92	394
Waist. Apparel	J. E. Burns and A. Schemel	653,544	July 10	1550	360	92	321
Wall-plug	J. G. McDowell	656,365	Aug. 21	2294	525	92	1515
Wall-tie	H. S. Humes	654,733	July 31	3914	883	92	852
Wall-tie	J. G. McDowell	656,364	Aug. 21	2293	525	92	1515
Walls and ceilings. Construction of	A. Wohlgemuth	655,290	Aug. 7	221	49	92	1084
Walls, &c. Facing for	E. Prüss	655,454	Aug. 7	527	118	92	1143
Wardrobe	D. R. Dix	657,593	Sept. 11	1065	221	92	2007
Warming sponge, raising bread, &c. Apparatus for	R. E. Pedigo	656,126	Aug. 14	1856	427	92	1419
Warp-stop-motion mechanism	W. E. Allen	658,730	Sept. 25	3133	696	92	2488
Warping-machine	C. Slingland and G. F. Kuett	655,461	Aug. 7	536	120	92	1145
Washboard	R. E. Bailey	653,648	July 17	1779	407	92	387
Washboard	R. B. Coffman	655,087	Aug. 14	986	224	92	1244
Washboard	R. C. Russell	653,593	July 10	1024	380	92	337
Washboard	J. Taylor	654,206	July 24	3088	692	92	668
Washboiler attachment	S. E. Davis	654,442	July 24	3367	755	92	727
Washer: *See* Can-washer.							
Washers. Making	H. C. Hart	653,084	July 3	651	155	92	132
Washing fibrous material	E. Köppelmann	654,647	July 31	3760	848	92	820
Washing fibrous or loose material. Machine for	E. Köppelmann	655,717	Aug. 14	1031	238 / 239	92	1253
Washing-machine	G. W. Bolton	655,360	Aug. 7	358	78	92	1109
Washing-machine	J. W. Clayton	657,645	Sept. 11	1159	243	92	2056
Washing-machine	B. Freedman	657,314	Sept. 4	469	99 / 100	92	1894
Washing-machine	W. J. George	657,063	Aug. 28	3593	828	92	1783
Washing-machine	L. L. Kellogg	655,626	Aug. 7	824	192	92	1200
Washing-machine	H. E. Smith	655,587	Aug. 7	751	174	92	1186
Washing-machine	F. H. Wiard	653,429	July 10	1324	314 / 315	92	275
Washing-machine	F. H. Wiard	653,430	July 10	1326	315	92	275
Washing-machine	Z. Gaillard	652,841	July 3	195	45	92	40
Washing machine. Clothes	L. Hirt	654,703	July 31	4041	909	92	880
Washing-machine for beets, &c	C. H. Shaffer	657,838	Sept. 11	1516	325	92	2128
Washing-machine gearing	D. K. Tullis	658,052	Sept. 18	1913	415	92	2222
Washing-machine journal-box	J. A. Grove	658,485	Sept. 25	3671	593	92	2396
Washing-machine-operating mechanism	G. W. Conderman	653,986	July 17	2381	548	92	503
Washstand	E. C. Brunner	657,308	Sept. 4	453	96	92	1891
Washtub for laundries. Stationary	S. S. Cobb	657,067	Sept. 4	26	6	92	1806
Washtub. Metallic	W. T. O'Neil	655,888	Aug. 14	1379	318	92	1321
Waste-pipe cleaning and flushing apparatus	L. Grisel	653,996	July 17	2393	551	92	505
Watch-balance tester	D. H. Church	654,873	July 31	4196	945	92	912
Watch mainspring-fastener	C. A. Bassett	656,160	Aug. 21	1915	440	92	1444
Watchmaker's tool	J. A. Demuth	655,694	Aug. 14	994	227 / 228	92	1246
Watchman's dialless register	L. M. Hansen	655,485	Aug. 7	575	129	92	1153
Water-bag	J. Parette	656,657	Aug. 28	2824	644	92	1635
Water-bag. India-rubber	J. Petermann	656,572	Aug. 21	2664	614	92	1588
Water by compressed air. Apparatus for raising	F. H. Richardson	656,474	Aug. 21	2490	573 / 574	92	1553
Water-clarifier. Centrifugal	C. W. Franzheim	658,484	Sept. 25	2669	593	92	2396
Water-closet	J. Kirby, Jr	654,160	July 24	2731	621 / 622	92	591
Water-closet	J. Kirby, Jr	654,161	July 24	2736	622	92	592
Water-closet	P. J. Madden	657,989	Sept. 18	1820	393	92	2204
Water-closet	F. H. Paradice	653,524	July 10	1506	351	92	313
Water-closet attachment	N. Stow	658,685	Sept. 25	3043	678	92	2471
Water-closet bowl	C. Schiffilin	658,222	Sept. 18	2216	484	92	2282
Water-closet-bowl attachment	J. Coleman and H. Moore	655,688	Aug. 14	987	224	92	1244
Water-closet cistern-valve	C. Smith	654,364	July 24	3226	723	92	606
Water-closet-flushing apparatus	A. La Bonté	655,303	Aug. 7	247	56, 57	92	1089
Water-closet-flushing apparatus	C. N. Marcellus	653,750	July 17	1956	446	92	421
Water-closet tank	A. W. McGahan	657,706	Sept. 11	1279	271	92	2078
Water-closet valve	S. J. Asbell	654,377	July 24	3246	727	92	701
Water-closet valve	H. T. G. Heuck	655,233	Aug. 7	106	24	92	1092
Water-cooler	W. R. Jennison	653,418	July 10	1303	309	92	271
Water-deaerating apparatus	G. M. Kleucker	656,550	Aug. 21	2629	606	92	1581
Water-distributing apparatus	J. T. Lackey	653,352	July 10	1200	285	92	250
Water-elevator. Compressed-air	T. J. Demorest	657,192	Sept. 4	224	50	92	1846
Water-elevator. Pneumatic	M. N. Schauffleberger	654,764	July 31	3986	896	92	866
Water from emulsions, &c. Separating	J. P. Ihart	654,258	July 24	3024	678	92	655
Water gage and indicator	F. Philippi	653,755	July 17	1962	448	92	422
Water-gage guard	W. H. Brooks and H. C. Fischer	657,329	Sept. 4	501	104	92	1900
Water-gate	H. A. Icke	657,774	Sept. 11	1400	296 / 297	92	2104
Water-heater	T. P. Shaw	657,704	Sept. 11	1435	305	92	2111
Water-heater controller	M. A. Adam	652,951	July 3	422	98	92	85
Water-heater. Instantaneous	M. I. Cohen	656,813	Aug. 28	3066	704	92	1688
Water-heating apparatus	W. Rochlitz	655,351	Aug. 7	339	74	92	1106
Water-hoist	T. H. and C. H. Tise	657,841	Sept. 11	1521	326 / 327	92	2129
Water. Making reagents for purifying	W. M. Jewell	653,745	July 17	1948	444	92	420
Water-motor	E. Everson	657,528	Sept. 11	956	197	92	2016
Water-motor for egg-beaters, &c	J. D. Brotherston	652,884	July 3	264	63	92	52
Waterproofing and finishing textile material	J. Rudolf	653,701	July 17	1856	.....	92	402

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Waterproofing and finishing textile material. Apparatus for	J. Rudolf	653,702	July 17	1856	424	92	402
Waterproofing, &c. Apparatus for electrically treating fabrics for	J. T. Van Gestel	653,715	July 17	1888	433 / 434	92	409
Waterproofing coating	S. Hansel and E. Hornung	658,437	Sept. 25	2596	.....	92	2382
Waterproofing fabrics	J. T. Van Gestel	653,716	July 17	1893	435	92	409
Water. Purifying	W. M. Jewell	653,739	July 17	1936	443	92	417
Water. Purifying	W. M. Jewell	653,740	July 17	1938	443	92	417
Water. Purifying	W. M. Jewell	653,741	July 17	1940	443	92	418
Water. Purifying	C. H. Koyl	653,008	July 3	525	.....	92	106
Water-purifying apparatus	O. H. and W. M. Jewell	653,738	July 17	1934	442 / 443	92	417
Water-purifying apparatus	W. M. Jewell	653,742	July 17	1942	444	92	418
Water-purifying apparatus	W. M. Jewell	653,744	July 17	1947	444	92	419
Water-purifying apparatus	C. H. Koyl	653,009	July 3	527	124	92	106
Water-purifying apparatus	C. H. Koyl	653,010	July 3	528	124 / 125	92	106
Water-purifying apparatus	C. H. Koyl	653,011	July 3	531	125	92	106
Water-purifying apparatus	C. H. Koyl	653,012	July 3	533	125	92	107
Water-purifying apparatus	H. Stillman	656,331	Aug. 21	2230	512	92	1502
Water-purifying apparatus	W. Tweeddale	657,470	Sept. 4	761	162 / 163	92	1951
Water-purifying. Treating sludge in	J. O. Handy	654,393	July 24	3277	.....	92	709
Water-tank	M. Shapiro	658,161	Sept. 18	2111	458	92	2261
Water through flexible pipes. Device for cutting off the flow of	G. Schneider	658,629	July 10	1710	395	92	355
Water-tower	E. F. Steck	654,814	July 31	4077	917	92	888
Water-tube boiler	J. F. Casey and M. M. Hedges	658,008	Sept. 18	1838	397	92	2208
Water-tube boiler	C. R. Cowley and H. C. Cooper	653,216	July 10	925	223	92	199
Water-tube boiler	J. Hallett and G. Halliday	656,019	Aug. 14	1656	380 / 381	92	1376
Water-tube boiler	W. L. Jancey	656,198	Aug. 21	1970	452 / 453	92	1454
Water-tube boiler	J. Platt	657,614	Sept. 11	1103	230	92	2044
Water-tube boiler	J. Platt	657,615	Sept. 11	1106	230 / 231	92	2045
Water-tube boiler	J. Platt	657,616	Sept. 11	1109	231	92	2046
Water-tube boiler	R. Schulz	655,803	Aug. 14	1227	282	92	1292
Water tube boiler	J. M. Searle	657,837	Sept. 11	1512	323 / 324	92	2127
Water-tube boiler	L. Turgan	652,866	July 3	233	55, 56	92	47
Water-tube boiler	W. T. Hoffman	652,774	July 3	68	16	92	15
Water-wheel	H. T. Lawrence	654,654	July 31	3769	850	92	822
Water wheel	J. W. Taylor	658,297	Sept. 18	2336	515 / 516	92	2306
Water-wheel governor	C. P. Bradway	656,504	Aug. 21	2540	584	92	1563
Water with gas. Apparatus for impregnating	E. C. Worns	656,919	Aug. 28	3347	762	92	1734
Waterer. Stock	G. S. Randle	658,280	Sept. 18	2307	509	92	2300
Watering tank Poultry	J. Ray	656,727	Aug. 28	2940	671	92	1658
Watering trough. Automatic hog	T. Horton	657,164	Sept. 4	171	38	92	1835
Wave-motor	E. P. Couture	654,521	July 24	3508	792	92	754
Wave-motor	G. W. Hoff	656,645	Aug. 28	2807	641 / 642	92	1632
Wave-power	T. C. Clarke	656,943	Aug. 28	3387	773 / 774	92	1742
Wave-power	J. Tonkin Th	653,270	July 10	1038	248 / 249	92	221
Wave-power	J. Tonkin Th	653,271	July 10	1043	249	92	222
Wax holder and feeder. Burnishing	E. H. McHale	656,609	Aug. 21	2749	630	92	1607
Wax holder. Sealing	G. H. Goebel	656,285	Aug. 21	2146	490	92	1487
Wax-molding apparatus	A. M. Gray	653,235	July 10	957	230	92	204
Weaner. Stock	H. R. Looby	654,068	July 17	2511	577	92	527
Weaning device. Calf	H. Zimmerman	657,232	Sept. 4	810	66	92	1864
Weather-strip	J. H. Foote	656,634	Aug. 28	2792	638	92	1628
Weather-strip	C. H. Keding	656,356	Aug. 21	2282	523	92	1513
Weather-strip	C. A. Armantrout	653,606	July 10	1642	381	92	341
Weather-strip for doors. Automatic	G. K. Rich	656,303	Aug. 21	2151	498	92	1494
Webs of fabrics. Machine for connecting	J. P. Evans	653,079	July 3	644	153	92	130
Wedge. Automatic driving-box	J. G. Evans	655,924	Aug. 14	1447	332 / 333	92	1336
Weed-cutter	G. F. Marchant	654,904	July 31	4267	958	92	927
Weeding device	W. L. Faxon	653,019	July 3	546	128	92	109
Weeding-tool. Hand	W. E. Nickerson	657,178	Sept. 4	192	43, 44	92	1840
Weighing apparatus. Automatic	J. Orcutt	655,794	Aug. 14	1206	276 / 277 / 278	92	1288
Weighing-machine	C. F. Wood	657,721	Sept. 11	1310	227	92	2085
Weighing-machine. Automatic	D. S. Cook	657,856	Sept. 11	1546	331 / 332	92	2135
Weighing machine. Liquid	S. P. Mackey	658,198	July 3	880	213	92	178
Weighing mechanism for refrigerators	S. W. Dodds and G. H. Robertson	655,066	July 31	4562	1027	92	989
Weight	E. S. Crull	653,987	July 17	2382	548	92	503
Welded rings. Apparatus for forming	T. J Bray	653,902	July 17	2222	508	92	473
Welded rings. Bar for forming	T. J. Bray	653,901	July 17	2221	508	92	473
Welded rings. Forming	T. J. Bray	653,900	July 17	2220	507	92	473
Welding	C. G. Wiborg	654,819	July 31	4087	.....	92	900
Welding coupling-blanks. Rolls for	G. W. La Voo and T. J. Bray	653,869	July 17	2168	495	92	461
Welding coupling-blanks. Rolls for	G. W. La Voo and T. J. Bray	653,870	July 17	2169	495	92	462
Welding-machine. Electric	O. Parpart	658,741	Sept. 25	3158	703 / 708	92	2498
Well. Artesian or oil	R. D. Green	654,729	July 31	3908	882	92	850
Well augers. Derrick attachment for handling drill-rod sections of	W. E. Thomas	655,743	Aug. 14	1084	249	92	1263
Well-boring apparatus	A. and A. Fauck, Jr	658,144	Sept. 18	2070	451	92	2252
Well. Tube	A. D. Cook	654,875	July 31	4199	946	92	918

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Well-tubes. Combined vise and apparatus for raising or lowering	O. H. Nebel and O. B. Hanson	655,909	Aug. 14	1419	326	92	1330
Wells. Improving mineral	J. C. Minor	656,466	Aug. 21	2479	570	92	1550
Wells, &c. Treating deep	W. Mooney	657,951	Sept. 18	1760	379	92	2192
Wheel: *See* Aerial wheel, Bicycle-wheel, Cam-wheel, Car-wheel, Cog-wheel, Fifth-wheel, Friction-wheel, Paddle wheel, Pneumatic wheel, Pneumatic-tired wheel, Propeller-wheel, Sprocket-wheel, Traction-wheel, Trolley-wheel, Vehicle-wheel, Vehicle motor-wheel, Water-wheel, Wind-wheel, Windmill-wheel.							
Wheel	P. C. Campbell	658,233	Sept. 18	2231	488	92	2285
Wheel	B. J. Diplock	658,004	Sept. 18	1839	398	92	2200
Wheel	J. W. Eisenhuth	654,092	July 17	2548	586	92	534
Wheel	C. Heart	657,699	Sept. 11	1267	269	92	2076
Wheel	P. H. Macnell	654,169	July 24	2740	624	92	594
Wheel	H. H. Porter	652,862	July 3	228	54	92	46
Wheel	A. G. Ramage and G. Macmillan	657,565	Sept. 11	1011	209	92	2027
Wheel and axle	F. Hall	656,111	Aug. 14	1833	421, 422	92	1415
Wheel and axle-nut wrench	D. J. Estes	654,240	July 24	2979	668	92	645
Wheel-fender and emergency-brake. Combined	E. L. Requard and E. S. Merryman	658,530	Sept. 25	2746	609	92	2412
Wheel for casters, &c	W. Livingstone	656,358	Aug. 21	2285	523	92	1513
Wheel-guard	R. F. Preusser	652,803	July 3	229	55	92	46
Wheel-holder	P. S. Stephens	656,057	Aug. 14	1713	395	92	1388
Wheel machine. Metal	G. W. Packer	653,362	July 10	1213	289, 290	92	253
Wheel resiliency device	G. Hayes	657,112	Sept. 4	73	16	92	1816
Wheel-rim. Metal	J. W. Bettendorf	654,049	July 17	2482	571	92	522
Wheel rim. Vehicle	A. W. Kent	658,487	Sept. 25	2673	594	92	2307
Wheel-rim. Wooden	C. L. Washburn and A. C. Perham	653,046	July 3	591	138	92	119
Wheels. Apparatus for making up	A. A. Tisdale	654,096	July 17	2459	564	92	517
Wheels. Making vehicle	H. F. Condon	657,517	Sept. 11	940	198	92	2012
Wheels. Support for rubber-tired vehicle	C. Wigg	653,048	July 3	594	139	92	120
Wheelbarrow	J. B. Willsea	658,606	Sept. 25	2896	644	92	2442
Whiffletree	J. M. Conrad	657,589	Sept. 11	1052	218	92	2035
Whisking or beating machine	J. Story	654,496	July 24	3469	782	92	747
Whist apparatus. Duplicate	T. C. De Leon	653,665	July 17	1801	413	92	391
Whist apparatus. Duplicate	M. C. Hammond	654,249	July 24	2997	673	92	649
Whist tray. Duplicate	R. Ihling	657,737	Sept. 11	1344	284	92	2092
Whistle. Musical	M. Barthel	653,375	July 10	1238	295	92	258
Winch. Crab	W. T. Eades and E. Allday	658,623	Sept. 25	2921	653	92	2447
Winch-head	S. Mattson	652,798	July 3	104	25	92	21
Wind-power-utilizing apparatus	L. A. Werner	653,047	July 3	592	139	92	120
Wind-wheel	T. O. Perry	655,270	Aug. 7	183	41, 42	92	1076
Wind-wheel regulator	H. Reuter	658,398	Sept. 25	2534	561, 562	92	2370
Winder. Bobbin	H. Kissel, Jr., and G. Nagel	655,877	Aug. 14	1363	313	92	1318
Winding apparatus	E. Tymeson and R. Borland	653,831	July 17	2109	479	92	449
Winding cops	S. W. Wardwell, Jr. (Reissue)	11,856	Sept. 18	2399	530, 531	92	2318
Winding cops or balls. Apparatus for	S. W. Wardwell, Jr. (Reissue)	11,855	Sept. 18	2394	529, 530	92	2317
Winding-machine	J. C. Anderson	654,584	July 31	3023	816	92	793
Winding-machine	B. A. Stewart	655,279	Aug. 7	202	44, 45, 46	92	1080
Windlass-winding attachment	W. A. M. Bartz	654,429	July 24	3350	751	92	723
Windmill	C. F. Alger	656,922	Aug. 28	3352	763, 764	92	1736
Windmill	J. W. Jaycox	657,420	Sept. 4	679	143	92	1936
Windmill	J. H. Rickman	657,959	Sept. 18	1772	381, 382	92	2195
Windmill	E. Steude	658,129	Sept. 18	2046	446	92	2248
Windmill	J. H. Stoll	658,475	Sept. 25	2657	590	92	2393
Windmill	O. J. Ziegler	657,977	Sept. 18	1798	387	92	2200
Windmill	G. J. Moore and F. E. Cook	653,109	July 3	714	168	92	143
Windmill-gear	C. S. Beggs	653,058	July 3	610	144	92	123
Windmill-gearing	H. M. Keith	652,785	July 3	89	21	92	17
Windmill-lubricator	J. C. Taylor	657,468	Sept. 4	758	169	92	1951
Windmill-pump connection	C. H. Rohlf	658,401	Sept. 25	2537	563	92	2370
Windmill-regulator	H. E. Schultz	655,122	July 31	4645	1047	92	1005
Windmill-regulator	A. T. Scott	658,682	Sept. 25	3038	676, 677	92	2470
Windmill-wheel	J. E. Albers	656,921	Aug. 28	3351	763	92	1735
Window	O. M. Edwards	655,331	Aug. 7	294	66, 67	92	1098
Window	O. M. Edwards	655,332	Aug. 7	299	67	92	1099
Window	O. A. Essig	655,897	Aug. 14	1392	321	92	1324
Window	M. Haberle	657,534	Sept. 11	903	199	92	2017
Window	P. C. Pascale	658,116	July 3	724	170	92	145
Window	A. M. Whipple	656,130	Aug. 14	1864	428	92	1420
Window-bracket	W. B. Fouch	657,193	Sept. 4	228	50	92	1847
Window-chair	P. C. Campbell	656,626	Aug. 28	2782	636	92	1626
Window-cleaner	S. C. Lawlor	655,366	Aug. 7	369	80	92	1111
Window-cleaner	L. E. Pfeiffer	656,301	Aug. 21	2179	498	92	1498
Window-cleaning chair. Folding	L. Bulasky	657,511	Sept. 11	980	191	92	2010
Window-fastener	A. E. Appleton	658,418	Sept. 25	2506	569	92	2376
Window-fastener	W. D. Watson	654,371	July 24	3237	725	92	699
Window-frame	D. R. Brown	654,129	July 24	2636	603, 604	92	567
Window frame and sash. Metallic	C. D. Pruden	656,659	Aug. 28	2828	645	92	1636

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Window frame and sash. Metallic	C. D. Pruden	656,660	Aug. 28	2829	645	92	1637
Window lock mechanism. Reversible	W. H. Talbot	655,382	Aug. 7	302	86	92	1115
Window-screen	J. O. Thomas and B. F. Stark	655,590	Aug. 7	757	177	92	1187
Window-screen	G. A. Youlden	656,831	Aug. 28	3156	715	92	1700
Window-support	I. Page	655,003	July 31	4440	1000, 1001	92	965
Window-ventilator	C. O. Meurk	657,949	Sept. 18	1737	378	92	2192
Window. Weatherproof	F. Voightmann and S. H. Pomeroy	654,205	July 24	2909	652	92	630
Wire cable. Manufacture of flat	E. I. Parsons	658,118	Sept. 18	2029	442, 443	92	2244
Wire-cloth-stretching machine	J. H. Soule and N. F. Geeck	655,914	Aug. 14	1427	327, 328	92	1331
Wire. Device for making loops in	C. R. Hartmann	653,556	July 10	1566	365	92	324
Wire fabric. Woven	G. C. Lockiln and B. M. Fox	655,253	Aug. 7	146	32	92	1069
Wire-grip	H. A. Mossman	656,903	Aug. 28	3474	705	92	1759
Wire-joint and manufacturing same	F. W. Maxstadt	655,905	Aug. 14	1412	324	92	1328
Wire. Machine for forming screw-threaded	G. Goddu	655,923	Aug. 7	81	18	92	1057
Wire of tubular shells of gold. Reduction to hollow	H. R. Baker	654,590	July 31	3688	819, 820	92	795
Wire-reel	J. H. Ludlow	654,550	July 24	3555	802	92	763
Wire-reel	H. A. Thomas	654,497	July 24	3470	783	92	747
Wire-rod mill	H. Roberts	653,643	July 10	1742	401	92	361
Wire rope or cable. Endless	A. Carnagy	654,224	July 24	2943	661	92	636
Wire ropes or cables. Making endless	A. D. Carnagy	654,225	July 24	2944	661	92	636
Wire sleeve or connector	C. H. McIntire	653,033	July 3	567	133	92	114
Wire-splicing machine	H. Jacobs	658,150	Sept. 18	2078	433	92	2254
Wire-spring-coiling machine	S. Kirk	657,878	Sept. 11	1581	341	92	2141
Wire-stretcher	C. E. Baker	653,055	July 3	606	143	92	123
Wire-stretcher	H. Jacobs	658,140	Sept. 18	2075	452, 453	92	2253
Wire-stretcher	J. Peoples	655,989	Aug. 14	1597	367	92	1364
Wire-stretcher	J. M. Rubart	658,402	Sept. 25	2538	563	92	2371
Wire-stretcher	R. Thomson, Jr	658,132	Sept. 18	2150	447	92	2249
Wire-stretcher	H. C. Werner	654,772	July 31	3999	869	92	869
Wire-stretcher	S. T. Beal	658,385	Sept. 25	2413	534	92	2346
Wire-tightener	H. F. Condon	653,948	July 17	2315	530	92	489
Wireworking-tool	J. Schlegel	658,591	Sept. 25	2870	636	92	2438
Wood. Charring-tool for ornamenting	W. Hindley and J. W. Harding	654,635	July 31	3740	844	92	817
Wood-cutting machine	A. M. Lennig	653,101	July 3	702	------	92	141
Wood-filler composition	E. A. Meyer	658,271	Sept. 18	2294	------	92	2208
Wood-filling compound	J. Schenkel	655,459	Aug. 7	534	------	92	1144
Wood. Impregnating	G. F. Lebloda	655,788	Aug. 14	1186	272	92	1283
Wood-impregnating apparatus	D. Lynn	658,872	July 17	2172	496	92	462
Wood. Ornamenting	A. H. Ordway	655,889	Aug. 14	1380	318	92	1322
Wood. Shaping	J. Askins	655,595	Aug. 7	767	180	92	1189
Wood to fiber. Mechanism for reducing	P. Dosch	653,794	July 17	2044	465	92	438
Wood-trimming machine	J. M. Nash	658,670	Sept. 25	3016	671, 672, 673	92	2466
Woodworking-machine	L. D. Vogel	654,296	July 24	3092	692, 693	92	668
Woodworking-machine brush attachment	H. Marles	658,270	Sept. 18	2293	505	92	2208
Wooden dishes. Machine for making	G. A. Ensign	657,817	Sept. 11	1474	314, 315	92	2119
Wool. Apparatus for extracting grease from	W. Erben	654,530	July 24	3525	794, 795	92	757
Wool-degreasing apparatus	M. A. Jacques	656,695	Aug. 28	2882	656	92	1648
Wool-drying apparatus	T. Ender, A. Kleindienst, and J. Procner.	658,106	Sept. 18	2010	438	92	2241
Wool. Extracting grease from	W. Erben	654,529	July 24	3522	794	92	757
Wool. Removing solvent vapors from	E. Donard	656,528	Aug. 21	2588	596	92	1573
Wool-washing machine	G. Malard	654,170	July 24	2751	624, 625	92	594
Work-gage	E. F. Mower	656,725	Aug. 28	2936	671	92	1658
Work-support	J. Robinson and G. E. Graves	658,191	Sept. 18	2159	472	92	2271
Woven fabric	R. Johnston	657,940	Sept. 18	1745	375	92	2189
Woven fabric	R. Johnston	658,181	Sept. 18	2145	469	92	2268
Woven fabric	W. M. Stevenson	653,595	July 10	1626	380	92	337
Woven fabric	W. M. Stevenson	658,202	Sept. 18	2329	513	92	2305
Woven fabric	W. M. Stevenson	658,203	Sept. 18	2330	513	92	2305
Woven fabric	A. De Laski	653,919	July 17	2263	515	92	479
Woven tubular fabric	A. De Laski	653,918	July 17	2262	514	92	479
Woven tubular fabric. Flat	F. E. Housh	654,732	July 31	3913	883	92	852
Wrapper	S. Dancyger	653,288	July 10	1071	257	92	227
Wrapper. Mailing	F. M. Peters	656,826	Aug. 28	3131	709, 710, 711, 712	92	1695
Wrapping-machine							
Wrench: *See* Chain wrench, Nut-wrench, Nut-lock wrench, Pipe-wrench, Ratchet-wrench, Wheel and axle-nut wrench.							
Wrench	J. J. Barclay	653,541	July 10	1544	359	92	320
Wrench	T. H. Brosnihan	657,391	Sept. 4	623	130	92	1926
Wrench	F. A. Chellis	658,618	Sept. 25	2914	651	92	2446
Wrench	A. Cohen and S. Sackheim	655,295	Aug. 7	230	52	92	1086
Wrench	J. F. and H. M. Descher	654,524	July 24	3513	792	92	755
Wrench	W. A. Emerson	653,767	July 17	1983	453	92	426
Wrench	D. S. Garman	653,954	July 17	2323	533	92	491
Wrench	E. N. Gifford	655,900	Aug. 14	1399	322	92	1325
Wrench	R. Hayden	657,655	Sept. 11	1183	247	92	2061
Wrench	H. G. Hoadley	656,643	Aug. 28	2806	641	92	1631
Wrench	F. C. Hutt and T. S. Stafford	653,476	July 10	1415	332	92	293
Wrench	C. B. Ketchum	657,424	Sept. 4	684	144	92	1937
Wrench	N. Larsen	656,410	Aug. 21	2379	546	92	1531

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wrench	C. D. Scott and B. M. Eamich	658,470	Sept. 25	2649	588	92	2391
Wrench	L. Smith	655,026	July 31	4474	1009	92	972
Wrench	T. E. Smythe	655,312	Aug. 7	261	59	92	1092
Wrench	R. S. Spaulding	657,625	Sept. 11	1126	236	92	2049
Wrench	G. S. Tilton	654,769	July 31	3902	898	92	868
Wrench	J. E. Wakefield	657,326	Sept. 4	497	103	92	1899
Wringer. *See* Clothes-wringer. Mop-wringer.							
Wringer	C. P. Searles	656,052	Aug. 14	1706	392	92	1387
Wringer-roll	W. H. Twohy	654,194	July 24	2831	640	92	613
Wurtzilite method and product	R. M. Thompson	655,131	July 31	4656	.....	92	1007
Wurtzilite. Treating	R. M. Thompson	655,130	July 31	4656	.....	92	1007
X-ray apparatus. Coin-controlled	F. Neugebauer	658,018	Sept. 18	1802	408	92	2213
Yarn-balling machine	W. and D. McGee	654,351	July 24	3194	715 716	92	689
Yarn. Spooled	E. Tymeson and R. Borland	653,832	July 17	2112	480	92	450
Yeast extracts. Making	J. Peeters	652,910	July 3	304	.....	92	61
Yoke attachment. Neck-	W. M. Manuel	654,095	July 17	2552	587	92	535
Yoke-center-locking device. Neck-	C. F. Deplanty	656,521	Aug. 21	2567	500	92	1568
Yoke center. Neck-	W. W. Light	652,898	July 3	283	69	92	57
Yoke. Neck-	H. Doering	654,958	July 31	4351	979	92	945
Yoke. Neck-	C. Sterrett	654,555	July 24	3502	803	92	764
Yoke. Neck-	J. H. Youngen	658,079	Sept. 18	1970	429	92	2233
Zinc-bearing complex ores for recovery of zinc or other metals therefrom. Treating	G. de Bechi	656,497	Aug. 21	2528	.....	92	1561
Zinc from materials containing zinc. Obtaining oxid and carbonate of	G. Rigg	654,804	July 31	4061	.....	92	884
Zinc from ores. Electrolytically extracting	W. Strzoda	656,305	Aug. 21	2186	499	92	1495

ALPHABETICAL LIST OF DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Volume.	Official Gazette. Page.
Advertising-case	T. G. Daly	33,175	Sept. 4	92	2000
Advertising-spoon	A. J. Brown	32,977	July 24	92	772
Air-brake-coupling member	M. S. Levering	33,129	Aug. 28	92	1790
Altar. Home-	S. H. Leavenworth	33,115	Aug. 21	92	1617
Angle-coupling	H. G. Thompson	33,224	Sept. 18	92	2322
Antirattler	F. E. Judson	33,223	Sept. 18	92	2321
Atomizer-casing	I. Q. Gurnee	33,126	Aug. 28	92	1789
Atomizer-casing	H. C. Thamsen	33,189	Sept. 11	92	2155
Automobile-frame	G. T. Turner	33,008	July 24	92	777
Automobile-frame	C. W. Meinecke	33,043	July 31	92	1030
Baby comforter	S. A. Andrews	33,212	Sept. 18	92	2320
Badge	S. M. Beahr	32,893	July 3	92	182
Badge	C. M. Dayton	33,236	Sept. 25	92	2497
Badge	F. E. Libenow	32,983	July 24	92	773
Badge	W. H. Lynchard	33,183	Sept. 11	92	2153
Badge	W. H. Lynchard	33,061	Aug. 14	92	1430
Badge	J. H. Mertz and B. F. Davis	33,062	Aug. 14	92	1430
Badge	J. M. Molloy	33,155	Sept. 4	92	1997
Badge	J. Russell	33,205	Sept. 18	92	2318
Badge	T. B. Stephenson, Jr	33,015	July 31	92	1025
Badge	J. H. Stockham	33,045	Aug. 7	92	1230
Badge, &c	W. Hornich, Jr	33,063	Aug. 14	92	1430
Badge-bar	H. H. Peirce	32,941	July 17	92	547
Badge. Campaign	J. Eschelbacher	33,184	Sept. 11	92	2154
Badge-frame	H. B. Keiper	33,156	Sept. 4	92	1997
Badge frame or holder	C. F. Kabisch	32,984	July 24	92	773
Badge or similar article	J. H. Stockham	33,182	Sept. 11	92	2153
Badge or similar article	E. G. Newell	32,912	July 10	92	368
Ball pattern. Baby's	M. W. Reeves	33,124	Aug. 28	92	1788
Banana-stand	G. K. Rix	33,265	Sept. 25	92	2501
Basket	G. K. Rix	33,268	Sept. 25	92	2502
Basket	L. Marchand, Jr	33,269	Sept. 25	92	2502
Bassinet-stand	D. H. Darling, Jr	32,902	July 3	92	183
Battery-cell	M. F. Devennie	33,131	Aug. 28	92	1790
Bed-pan	F. A. Scranton	32,989	July 24	92	774
Bell	L. Sanders	33,142	Aug. 28	92	1792
Belt	H. J. Gaisman	33,208	Sept. 18	92	2319
Belt-body	J. Hilder	32,910	July 3	92	185
Belt-body	K. Steuerwald	33,209	Sept. 18	92	2319
Belt-body	J. Hilder	33,017	July 31	92	1025
Belt ornament. Bodice	M. L. Shepard	33,210	Sept. 18	92	2319
Belt Skirt-supporting	C. W. H. Smithers	33,119	Aug. 28	92	1787
Bicycle-frame	F. A. Wilmot	33,144	Aug. 28	92	1793
Bicycle-frame	F. N. Stevens	33,145	Aug. 28	92	1793
Bicycle mud-guard brace	F. A. Wilcox	33,082	Aug. 14	92	1434
Bicycle pedal rubber	G. G. Spencer	33,143	Aug. 28	92	1793
Bicycle seat-post	A. M. Price	33,199	Sept. 11	92	2157
Bicycles or like tubular frames. Fork for	L. R. Miller and E. T. Richert	33,251	Sept. 25	92	2499
Billiard-cue head	S. K. Dennis	33,207	Sept. 18	92	2319
Bills. Stationary jaw for tying	F. Taft	33,190	Sept. 11	92	2155
Binder-tab	H. J. Heinz	33,166	Sept. 4	92	1998
Bottle	U. S. Huggins	32,917	July 10	92	369
Bottle	M. Rheinauer	32,895	July 3	92	182
Bottle	R. E. French	33,214	Sept. 18	92	2320
Bottle or similar article	J. C. Corcoran	32,947	July 17	92	547
Bottle-stopper	A. C. Eggers	33,101	Aug. 21	92	1614
Bottle. Water-	J. Leo	33,102	Aug. 21	92	1614
Box. Covered	T. W. Foster	33,033	July 31	92	1028
Boxes, &c. Cover for puff-	A. Moody	33,237	Sept. 25	92	2497
Broiler	H. A. Hamilton	33,105	Aug. 21	92	1615
Brush	T. W. Foster	33,070	Aug. 14	92	1431
Brush-back	H. A. Wellman	33,238	Sept. 25	92	2497
Brushes, &c. Back for	L. and J. Ritter	33,121	Aug. 28	92	1788
Buckle. Belt-	W. A. Schleicher	32,943	July 17	92	547
Buckle-frame	A. C. Woolman	33,248	Sept. 25	92	2499
Buckle. Hip-strap	J. C. Hilton	32,897	July 3	92	183
Button	G. Wood	33,064	Aug. 14	92	1430
Button. Cuff-	J. R. S. Yoder	33,016	July 31	92	1025
Buttonhole-opener	F. J. Diacont	33,159	Sept. 4	92	1997
Button-hooks, &c. Handle for	F. J. Diacont	32,946	July 17	92	547
Button-hooks, &c. Handle for	T. W. Foster	32,987	July 24	92	774
Button-hooks, &c. Handle for	W. H. Saart	33,239	Sept. 25	92	2497
Cabinet	J. D. Butler	33,068	Aug. 14	92	1431
Cabinet	W. H. Withington and H. A. Shanklin.	33,195	Sept. 11	92	2156
Cake-turner or similar article	A. C. Ericson	33,178	Sept. 4	92	2000
Cane	G. Stocker	32,918	July 10	92	369
Canopy-cover frame	W. Duguid	33,206	Sept. 18	92	2319
Cap Baby's	R. Hinckley	33,235	Sept. 18	92	2323
Capstan	F. S. Manton	33,211	Sept. 18	92	2320
Card-mount	J. P. Odgers	32,959	July 17	92	550
		33,059	Aug. 14	92	1429

Alphabetical list of designs, July to September, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Carpet-border	L. H. Brown	32,976	July 17	92	553
Casket	J. Maxwell and J. A. Anderson	33,048	Aug. 7	92	1231
Cat	W. I. Avery	33,270	Sept. 25	92	2503
Chaffer or sieve slat	B. F. Martien	33,103	Aug. 21	92	1614
Chaffer or sieve slat	B. F. Martien	33,104	Aug. 21	92	1614
Chaffer or sieve slat	B. F. Martien	33,196	Sept. 11	92	2156
Chaffer or sieve slat	B. F. Martien	33,197	Sept. 11	92	2156
Chair	B. D. Miner	32,969	July 17	92	552
Charging-block	Z. E. Barkalow	33,038	July 31	92	1029
Chimney-cap support	F. Ziegel	33,078	Aug. 14	92	1433
Chopper frame. Food-	H. K. Wood	33,134	Aug. 28	92	1791
Clamp member	J. and H. E. Walter	33,026	July 31	92	1027
Closet-bowl	J. F. Cotter	32,967	July 17	92	552
Clothes-line section	H. M. Vinson	33,133	Aug. 28	92	1791
Clothes-pin	J. B. Walker	32,905	July 3	92	184
Clothes-pin	W. H. Zorn	32,970	July 17	92	552
Clothes-pounder	J. Levitin and J. Rosen	33,037	July 31	92	1029
Coal-hod or similar article	C. Donaghy	33,202	Sept. 11	92	2158
Coat and pants hanger	H. O. Le Blanc	33,266	Sept. 25	92	2502
Coffin-handling hook	A. A. Hallock	33,035	July 31	92	1028
Collar. Horse-	H. Clark	33,228	Sept. 18	92	2282
Cow-tail-holder member	E. S. Geer	33,136	Aug. 28	92	1791
Crank-arm repair-tip	O. Liljegvest and S. Durant	33,024	July 31	92	1027
Cuff-holder. Link	G. Kalkbrenner	33,160	Sept. 4	92	1997
Cultivator-shovel	T. Charity	33,053	Aug. 7	92	1232
Curb and gutter block	S. B. Morss	33,140	Aug. 28	92	1792
Cut-outs. Casing for pendent ceiling	C. P. Scott	33,193	Sept. 11	92	2156
Dial frame	H. S. Mills	32,951	July 17	92	543
Diaper supporter. Infant's-	M. E. Fox	32,934	July 10	92	372
Display-form	W. E. Kimmell	32,978	July 24	92	773
Display-frame	T. J. Lesher	33,110	Aug. 21	92	1616
Display show-case	J. G. Hutchinson	32,980	July 24	92	773
Display-stand for clocks	G. Lehner	32,979	July 24	92	773
Door-check casing	W. H. Taylor	32,998	July 24	92	775
Door-hanger track	P. A. Myers	33,255	Sept. 25	92	2500
Douche-pan	D. Hogan	33,049	Aug. 7	92	1231
Dress-shield	J. Edwards	33,161	Sept. 4	92	1997
Easel	H. B. Perry	33,047	Aug. 7	92	1231
Electric-cell body	E. F. Yost and W. H. Smith	33,230	Sept. 18	92	2283
Electric-cell body	E. F. Yost and W. H. Smith	33,231	Sept. 18	92	2283
Electric-circuit switch-lever	E. S. Baldwin	33,177	Sept. 4	92	2000
Electric-wire connector	C. D. Platt	33,054	Aug. 7	92	1232
Engine-frame	H. V. A. Parsell, Jr., and A. J. Weed	33,087	Aug. 14	92	1434
Envelop	E. E. Pinkerton	33,242	Sept. 25	92	2498
Envelop-blank	A. D. Klaber	32,894	July 3	92	182
Eye-shade	W. F. Mahony	33,245	Sept. 25	92	2498
Eyeglass bow-spring	L. F. Adt	33,243	Sept. 25	92	2498
Eyeglass bow-spring	L. F. Adt	33,244	Sept. 25	92	2498
Fabric pattern. Silk-	M. C. Migel	33,013	July 24	92	779
Fabric. Woven	C. Franz	33,093	Aug. 14	92	1436
Fan	W. W. Hanlon	32,911	July 3	92	185
Fence-post	B. Crawford	32,964	July 17	92	550
Fifth-wheel. Lower	H. C. Swan	32,927	July 10	92	371
Fifth-wheel upper member	H. A. Barnes	33,169	Sept. 4	92	1999
Filter-body	T. Linke	33,173	Sept. 4	92	2000
Filtering vessel	D. O. Joinville	33,174	Sept. 4	92	2000
Fireplace regulating-plate	H. Pannill	33,040	July 31	92	1029
Fire-pot	D. S. Richardson	33,039	July 31	92	1029
Fork	O. C. Graf	32,913	July 10	92	368
Frame. Ornamental	D. Piersol	33,128	Aug. 28	92	1789
Frieze. Decorative	F. Hanshammer	32,937	July 10	92	373
Frieze. Decorative	F. Hanshammer	32,938	July 10	92	373
Frieze. Decorative	F. Hanshammer	32,939	July 10	92	374
Frieze. Decorative	F. Hanshammer	32,940	July 10	92	374
Fruit-cutter standard	J. B. Fariss	33,135	Aug. 28	92	1791
Game-apparatus casing	G. V. Cornell	33,153	Sept. 4	92	1996
Game-board	H. Boggis	33,151	Sept. 4	92	1996
Game-board	E. F. Hawkins	33,152	Sept. 4	92	1996
Game-board	P. J. Neltzel	32,974	July 17	92	553
Game-board	C. B. Pennell	33,057	Aug. 14	92	1429
Game-board	E. I. Pyle	33,204	Sept. 18	92	2318
Game-board	E. L. Williams	33,100	Aug. 21	92	1614
Game-table	L. De Myers	33,271	Sept. 25	92	2503
Garment. Bifurcated nether	J. A. Scriven	33,021	July 31	92	1026
Gas-burner	L. S. Brown	33,106	Aug. 21	92	1615
Gas-burner tip	C. W. Nokes	33,220	Sept. 18	92	2321
Gas-burner tip	C. W. Nokes	33,221	Sept. 18	92	2321
Gas-flame spreader	H. Ievers	32,955	July 17	92	549
Gasket	J. S. Naery	32,990	July 17	92	550
Glass vessel or simliar article	W. H. Shanley	32,948	July 17	92	548
Gong	A. B. Hunn	32,920	July 10	92	369
Grate	G. W. Fair	32,968	July 17	92	552
Grate-bar	H. Truesdell	33,201	Sept. 11	92	2157
Hair-shedder	W. Herrick	33,088	Aug. 14	92	1435
Halter-ring	E. T. Rugg	33,164	Sept. 4	92	1998
Handle-bar member	I. Larsen	33,025	July 31	92	1027
Harness-loop	J. F. Button	33,028	July 31	92	1027
Harness-net fastener	W. A. White	33,107	Aug. 21	92	1615
Harness-saddle	C. M. Crane	33,253	Sept. 25	92	2499
Harvester guard-finger	P. L. Shepler	32,965	July 17	92	551
Hat-pin tip	W. J. Ryan	33,158	Sept. 4	92	1997
Hatchet-head	J. F. Duffy	33,137	Aug. 28	92	1791
Heater	G. E. Downe	33,203	Sept. 11	92	2158
Heater-section. Vertical	G. E. Downe	33,233	Sept. 18	92	2323
Heel. Boot or shoe	J. Petrone	33,181	Sept. 11	92	2153
Hinge-leaf	U. E. Lemon	33,077	Aug. 14	92	1432

Alphabetical list of designs, July to September, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Hinge member	W. W. Huelster	32,900	July 3	92	183
Hinge member	W. W. Huelster	32,901	July 3	92	183
Hinge member	J. N. Spencer	33,222	Sept. 18	92	2282
Hoe. Garden-	W. H. McDonald	33,229	Sept. 18	92	2282
Hoof-pad	W. J. Kent	33,089	Aug. 14	92	1435
Hook	C. E. Fritz	33,163	Sept. 4	92	1998
Hook	W. G. Rousseaux	32,986	July 24	92	774
Hook	F. Swales	32,896	July 3	92	182
Hook. Curb-	H. Grant	33,019	July 31	92	1026
Hook. Garment-	M. Littmann	32,997	July 24	92	775
Hook. Hame-	H. H. Eaton	33,108	Aug. 21	92	1615
Hook. Lacing-	C. R. Horne	32,956	July 17	92	540
Hook latch-piece. Snap-	J. J. Pritchett	33,052	Aug. 7	92	1232
Hopple	S. S. Kurtz	33,090	Aug. 14	92	1435
Horseshoe-frame	E. Cliff	33,172	Sept. 4	92	1999
Hose-bracket side frame	M. S. Levering	32,963	July 17	92	550
Hose-coupling member	M. S. Levering	33,086	Aug. 14	92	1434
Hose-coupling member	S. L. Green	33,094	Aug. 21	92	1618
Hose-supporter	H. L. True	33,125	Aug. 28	92	1789
Inhaler	M. Ganter	33,096	Aug. 14	92	1431
Inkstand	J. Fenner	33,162	Sept. 4	92	1998
Inner sole	M. W. Reeves	33,264	Sept. 25	92	2501
Jar-stand	A. C. Pessano	32,926	July 10	92	370
Journal-box drop-hanger	W. J. Turnbull	32,919	July 10	92	369
Kitchen-utensil cleaner	F. W. Arnold	33,263	Sept. 25	92	2501
Kneading-board	R. S. Harper	33,031	July 31	92	1028
Knife	F. F. Wiehl	33,240	Sept. 25	92	2498
Knife	N. Witsch	33,058	Aug. 14	92	1429
Label	J. L. Poalk	33,157	Sept. 4	92	1997
Lace-fastener	L. F. Ferrell	33,180	Sept. 11	92	2153
Lace fastener. Shoe-	W. P. Crary	33,191	Sept. 11	92	2155
Lamp-bracket member	W. Roche	33,036	July 31	92	1029
Lamp holder. Electric-	F. A. Mansfield	33,256	Sept. 25	92	2500
Lamp-post	L. J. Atwood	32,990	July 24	92	774
Lamp-reservoir or oil-pot	L. J. Atwood	32,991	July 24	92	774
Lamp-reservoir or oil-pot	P. H. Verbeek	33,074	Aug. 14	92	1432
Lantern-body	C. F. Walters	32,992	July 24	92	775
Lantern. Campaign-	R. S. Sonley	33,132	Aug. 28	92	1790
Last. Cobbler's	E. C. Akers	33,034	July 31	92	1028
Level case. Ship's-	W. A. Fearn	33,254	Sept. 25	92	2499
Lever. Latching-	J. H. Louch	33,130	Aug. 28	92	1790
Liquid container or vessel	A. G. Newman	33,042	July 31	92	1030
Listers. Subsoil attachment for corn or cotton	L. A. Hoerr	32,988	July 24	92	776
Lug. Draft-	J. R. Elliott	32,890	July 3	92	183
Luggage-carrier	T. R. Price	33,133	Aug. 28	92	1792
Mantel	W. McIntyre and D. L. Nichols	33,030	July 31	92	1027
Mattress link. Wire-	W. H. Pride	32,952	July 17	92	549
Musical-instrument finger-hammer	J. H. Mardock	33,067	Aug. 14	92	1431
Napkin-holder	E. Musselman	32,985	July 24	92	773
Necktie-holder	M. M. Kerr	32,945	July 17	92	547
Nerve-broach	E. A. Gross	33,241	Sept. 25	92	2498
Newspaper and letter holder	W H. Dewar	33,171	Sept. 4	92	1999
Nozzle	H. M. Hart and J. L. Shook	33,198	Sept. 11	92	2157
Nut	W. E. Ball	33,050	Aug. 7	92	1231
Nut-lock washer	A. B. Beall	33,022	July 31	92	1026
Nut-lock washer	J. F. Hall	32,995	July 24	92	775
Nut-lock washer	T. W. Miller	33,252	Sept. 25	92	2499
Oil-cup	W. G. Dodd	33,011	July 24	92	770
Ore-concentrating table	A. J. Gates and T. W. Capen	32,903	July 3	92	184
Ore-crusher frame	G. Darmann	33,194	Sept. 11	92	2156
Padlock-case	H. R. Towne	32,921	July 10	92	369
Padlock-case	S. L. Dixon	33,218	Sept. 18	92	2321
Pan. Compartment-	W. Hathaway	33,150	Sept. 4	92	1996
Paper-cutter	H. J. Straker	33,185	Sept. 11	92	2154
Paper-cutters or similar articles. Handle for	L. Bassett	33,073	Aug. 14	92	1432
Pastry-mixer	F. Santomene	33,213	Sept. 18	92	2320
Pattern. Garment-	L. T. Lapaugh and A. R. Leiff	33,226	Sept. 18	92	2322
Pedal-clip. Part for a	E. N. Gilfillan	33,044	Aug. 7	92	1230
Pen or pencil holder	F. Gurley	33,098	Aug. 21	92	1613
Pen-wiper	W. T. Partridge	33,186	Sept. 11	92	2154
Pen-wipers, &c. Cover for	M. Borsodi	33,267	Sept. 25	92	2502
Picture-exhibiting cabinet	W. H. Holtz	33,127	Aug. 28	92	1789
Picture-frame	J. Cohen	33,096	Aug. 21	92	1613
Pin	L. A. Craven	33,046	Aug. 7	92	1231
Pin. Dress-shield safety-	A. F. Warren	32,942	July 17	92	547
Pin. Ornamental	W. H. Bittner	33,120	Aug. 28	92	1788
Pin. Safety-	A. Ungfeldt	33,018	July 31	92	1026
Pin. Safety-	W. S. Ward	33,070	Aug. 14	92	1433
Pincers. Member for carpenters'	J. J. Lawler	33,179	Sept. 4	92	2000
Pipe-coupling	H. G. Thompson	33,225	Sept. 18	92	2322
Pipe-coupling	C. E. Haviland	33,072	Aug. 14	92	1431
Plate	A. S. Higgins	33,032	July 31	92	1028
Plate	T. R. Wirsing	32,949	July 17	92	548
Plate	C. Council	33,146	Aug. 28	92	1793
Plate-lifter body member	C. E. Haviland	33,071	Aug. 14	92	1431
Plate or similar article	W. P. Hendon	33,114	Aug. 21	92	1617
Plow-beam for disk plows	W. P. Hendon	33,113	Aug. 21	92	1617
Plow-beam for double-disk plows	W. P. Hendon	33,112	Aug. 21	92	1617
Plow-beam for triple-disk plows	E. H. Sears	32,999	July 24	92	776
Plowshare-blade	J. A. Sekora	33,091	Aug. 14	92	1435
Pole tip. Carriage-	J. G. Grall	33,176	Sept. 4	92	2000
Polishing-iron	A. E. Hunt	33,005	July 24	92	777
Pump-base	P. A. Myers	32,966	July 17	92	551
Pump-body	P. A. Myers	33,111	Aug. 21	92	1616
Pump body. Air-	G. W. Eddy	32,931	July 10	92	372

Alphabetical list of designs, July to September, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Pump-casing	C. T. Fletcher	33,051	Aug. 7	92	1231
Puzzle-board	R. Feigl	32,933	July 10	92	372
Puzzle-board	J. Fritsche	33,099	Aug. 21	92	1613
Puzzle-board	A. Kinnicutt	33,123	Aug. 28	92	1788
Puzzle-board	W. Odell	33,187	Sept. 11	92	2154
Puzzle-board	J. T. Kelly	33,257	Sept. 25	92	2500
Radiator-valve body	J. T. Kelly	33,258	Sept. 25	92	2500
Radiator-valve coupling member	J. T. Kelly	33,259	Sept. 25	92	2500
Radiator-valve coupling member	J. T. Kelly	33,260	Sept. 25	92	2500
Radiator-valve coupling member	C. J. Schultz	33,170	Sept. 4	92	1999
Railway-spike	F. W. Judd	33,261	Sept. 25	92	2501
Range-reservoir top plate	F. F. Holland	32,981	July 24	92	773
Receptacle	H. J. M. Barnhart	32,898	July 3	92	183
Rein-guide	C. Rozell	33,165	Sept. 4	92	1998
Rein loop. Hitch-	G. F. Conner	33,141	Aug. 28	92	1792
Road-roller wheel	W. K. Smith	32,936	July 10	92	373
Rug	W. M. Farr	33,250	Sept. 25	92	2499
Sand-band	W. H. Greene	32,994	July 24	92	775
Sash-lock member	P. F. Hazen	33,000	July 24	92	776
Scale-beam-stand member	W. H. Sargent	33,085	Aug. 14	92	1434
Scale beam-standard. Platform-	W. H. Sargent	32,954	July 17	92	549
Scale brace. Platform-	E. Finn	33,100	Aug. 21	92	1616
Scale-poise	P. F. Hazen	33,084	Aug. 14	92	1434
Scale-weight	H. E. Keeler	32,924	July 10	92	370
Screw	W. H. Davenport	33,075	Aug. 14	92	1432
Screw plate. Thumb-	C. L. Vose	33,097	Aug. 21	92	1613
Sealer. Envelop-	J. S. Gorton	33,219	Sept. 18	92	2321
Sewing-machine feed-bar shoe	J. D. Johnston	33,168	Sept. 4	92	1998
Shelf-bracket	F. H. Whitehouse	32,909	July 3	92	185
Shirt-front	J. H. Sparks	33,118	Aug. 28	92	1787
Shoe	S. T. Atkin	33,095	Aug. 21	92	1613
Shoe-scraper	W. H. Voorhees	33,192	Sept. 11	92	2116
Sign light. Illuminated-	A. L. Ross	33,069	Aug. 14	92	1458
Skirt-hanger	G. S. Hensel	32,975	July 17	92	553
Skirt or garment protector	C. Seidel	32,907	July 3	92	184
Skirt-protector	C. Seidel	32,908	July 3	92	184
Skirt-protector	F. Messinger and J. H. Fulmer	33,009	July 24	92	778
Snow-guard. Roof	F. A. Stevens	32,944	July 17	92	547
Spectacle-frame nose-bridge	S. Graham	32,958	July 17	92	549
Spike	F. Habensack	32,914	July 10	92	368
Spoon or fork handle	F. Prétat	33,154	Sept. 4	92	1996
Spoon or similar article. Handle for a	W. C. Codman	32,915	July 10	92	368
Spoons, forks, &c. Handle for	H. A. Weihman	33,122	Aug. 28	92	1788
Spoons, &c. Handle for	E. C. Lewis	32,957	July 17	92	549
Spring. Holding-	W. Kraemer	33,004	July 24	92	777
Stamping-machine frame	H. E. Richmond	33,060	Aug. 14	92	1430
Stereoscopic-picture holder	G. M. Cocke and E. Seidel	33,232	Sept. 25	92	2501
Stove	F. H. Buzzacott	33,232	Sept. 18	92	2323
Stove. Camp-	T. R. Kennedy and E. J. King	33,041	July 31	92	1029
Stove. Cooking-	M. Griswold, Jr	33,092	Aug. 14	92	1436
Stove. Gas heating-	M. W. Beattie	33,008	July 24	92	778
Stove. Heating-	H. P. Cope	33,149	Aug. 28	92	1794
Stove. Heating-	H. P. Cope	33,234	Sept. 18	92	2323
Stove. Heating-	T. R. Kennedy	33,007	July 24	92	778
Stove. Heating-	W. J. Kennedy	33,147	Aug. 28	92	1793
Stove-lid lifter	J. S. Van Buren	33,148	Aug. 28	92	1794
Stove water-front	G. E. Adams	33,065	Aug. 14	92	1430
Suspender-end body	A. A. Strom	33,200	Sept. 11	92	2157
Switch chair or brace	G. S. Van Pelt	33,216	Sept. 18	92	2320
Syringe bag. Fountain-	W. H. Pumphrey	33,246	Sept. 25	92	2498
Syringe-nozzle	H. M. Quackenbush	33,080	Aug. 14	92	1433
Tack or nail extractor	J. A. Williams	32,953	July 17	92	549
Telephone-call frame	W. H. Pardee	33,027	July 31	92	1027
Thill-coupling antirattler	A. L. Grant	32,961	July 17	92	550
Thill or shaft coupling spring	E. Köhler	33,188	Sept. 11	92	2155
Tile	E. Kempshall	33,249	Sept. 25	92	2499
Tire lug. Vehicle-	J. F. Malone	32,925	July 10	92	370
Tire-setting device	N. H. Cederquist	33,247	Sept. 25	92	2498
Tool	L. S. Starrett	33,083	Aug. 14	92	1434
Tool-stock	E. L. Williams	33,056	Aug. 14	92	1429
Top. Spinning-	C. W. Smith	32,971	July 17	92	552
Top. Whip-	P. L. Jackson	32,982	July 24	92	773
Toy	H. Schloerb	32,972	July 17	92	552
Toy bank	H. T. Kingsbury	32,932	July 10	92	372
Toy hook-and-ladder trucks. Body-blank for	H. T. Kingsbury	32,973	July 17	92	553
Toy-wagon body-blank	J. A. Sumner and Z. Hoenstine	32,996	July 24	92	775
Trace-carrier	B. B. Strope	32,950	July 17	92	548
Tray. Glass-holding	I. C. Bandman	32,935	July 10	92	373
Trimming	P. Gumbinner	32,906	July 3	92	184
Trimming	J. E. Kirberg	33,272	Sept. 25	92	2503
Trimming	J. E. Kirberg	33,273	Sept. 25	92	2503
Trimming	J. E. Kirberg	33,274	Sept. 25	92	2503
Trimming	T. Schiess	33,012	July 24	92	779
Trimming. Fabric-	H. R. Williams	33,020	July 31	92	1026
Trousers-hanger	E. A. Curtis	32,929	July 10	92	371
Truck frame. Car-	E. A. Curtis	32,930	July 10	92	371
Truck frame. Car-	H. G. Beede	33,029	July 31	92	1027
Twisting-machine guide-wire. Thread-	D. La Du	33,187	Sept. 4	92	1998
Type-holder	A. Le Gallez	32,988	July 24	92	774
Type-writing-machine-eraser holder	F. T. Meyer	32,904	July 3	92	184
Urinal. Pedestal-	J. Kelly	32,922	July 10	92	370
Valve-casing	R. M. Cox	33,139	Aug. 28	92	1792
Vault-light	H. C. Swan	32,928	July 10	92	371
Vehicle body-hanger	J. H. MacAlman	33,055	Aug. 7	92	1232
Vehicle body. Motor-	F. C. Billings	33,002	July 24	92	776
Vehicle-running-gear frame	E. B. Gallaher	33,001	July 24	92	776
Vehicle-seat side frame	G. A. Macker	33,081	Aug. 14	92	1433
Vehicle-tool carrier	P. Lindemeyr	32,916	July 10	92	369
Vessel-cap	E. Quirk	33,227	Sept. 18	92	2322
Wagon-reach wearing-plate	G. S. Van Pelt	33,215	Sept. 18	92	2320
Water-bag	J. Gray	33,006	July 24	92	777
Water-heater case or shell	G. Beckling	32,923	July 10	92	370
Water-tank casing	G. D. Clapp	33,014	July 24	92	779
Welt-strip	T. O. Perry	33,010	July 24	92	778
Wind-wheel	G. F. Nichols	33,076	Aug. 14	92	1432
Window-fastener	D. L. Harshner	33,023	July 31	92	1026
Window-lock member	M. Chevrier	33,217	Sept. 18	92	2320
Wooden dish	H. E. Shedd	33,117	Aug. 28	92	1787
Wrapper	H. E. Shedd	33,116	Aug. 28	92	1787
Wrapper. Multiple	J. T. Kennedy	32,962	July 17	92	550
Yoke bracket. Neck-					

Alphabetical list of designs, July to September, inclusive—Continued.

ALPHABETICAL LIST OF TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Abradant	Carborundum Company	34,950	July 24	92	782
Abrasive material. Stones and wheels of	Norton Emery Wheel Company	34,893	July 10	92	380
Agricultural implements	Janesville Hay Tool Company	34,997	July 31	92	1094
Ammunition	Nobles Explosives Company	35,036	Sept. 18	92	2327
Apparel. Certain named articles of	Hutchens, Howe & Withington	35,053	Sept. 18	92	2329
Apparel. Certain named wearing	A. P. McGraw	35,054	Sept. 18	92	2329
Apparel. Certain named wearing	M. D. Mirsky & Co	35,055	Sept. 18	92	2329
Arrowroot	W. T. James	35,111	Sept. 18	92	2336
Art-metal goods. Certain named	Bippart & Co	34,901	July 17	92	554
Artistic productions. Certain named	Tochtermann & Company	34,932	July 24	92	780
Asbestos goods. Certain named	Keasbey & Mattison Company	35,126	Sept. 25	92	2505
Automobiles	American Bicycle Company	34,894	July 10	92	380
Bacon. Breakfast	C. H. Lang	34,907	July 17	92	555
Bakery products and confectionery. Certain named	National Biscuit Company	35,108	Sept. 18	92	2336
Ball-and-socket fasteners	Consolidated Fastener Company	35,121	Sept. 18	92	2338
Beer	American Brewing Company	34,941	July 24	92	781
Beer	Preferrbeer Co	34,871	July 10	92	377
Beer. Bottled	C. L. Centlivre Brewing Company	35,025	Sept. 18	92	2326
Beer-dispensing apparatus	J. J. Mayer	34,924	July 17	92	556
Beer. Lager	Capital Brewing Company of Olympia.	35,067	Sept. 18	92	2331
Bells. Certain named	F. Mossberg Co	34,922	July 17	92	556
Beverages. Certain named liquid	Duquesne Distributing Company	35,066	Sept. 18	92	2330
Beverages. Non-alcoholic	C. F. Worthen	35,138	Sept. 25	92	2505
Bitters. Stomach	R. Klingholz & Co	34,942	July 24	92	781
Blackings, dressings, and polishes for boots and shoes	G. L. Snow	34,861	July 10	92	376
Boiler-cleansing compounds	J. Maddocks	34,953	July 24	92	783
Books and pamphlets	A. S. Patterson	35,090	Sept. 18	92	2333
Boots and shoes	Barton Brothers	34,968	July 31	92	1031
Boots and shoes	Barton Brothers	34,969	July 31	92	1031
Boots and shoes	Jordan, Marsh & Co	35,091	Sept. 18	92	2333
Boots and shoes	Jordan, Marsh & Co	35,128	Sept. 25	92	2501
Boots and shoes	Barton Brothers	35,058	Sept. 18	92	2329
Boots and shoes. Certain named	Glendale Elastic Fabrics Company	35,048	Sept. 18	92	2328
Boots and shoes. Elastic goring for	Cygolf Shoe Company	34,859	July 10	92	376
Boots and shoes. Leather	Excelsior Shoe Company	34,860	July 10	92	376
Boots and shoes. Men's, boys', youths', and little gents'	Rice & Hutchins	34,967	July 31	92	1031
Boots, shoes, and leather	Sharood & Crooks	35,044	Sept. 18	92	2328
Boots, shoes, and slippers	Crown Distilleries Company	34,939	July 24	92	781
Brandy	L. A. Worcester	34,935	July 24	92	781
Bread-crumbs	J. L. De Zeabault	35,081	Sept. 18	92	2332
Breath-wash	Firm of G. Benda	34,882	July 10	92	378
Bronze powder and bronze liquid	A. Wulfing	34,903	July 31	92	1031
Bronzing liquids, varnish, and lacquer	J. S. Waterman & Sons	34,891	July 10	92	379
Burial-caskets and cases therefor	United Danish Butter Preserving Company.	35,106	Sept. 18	92	2335
Butter	Rochester Candy Works	34,981	July 31	92	1033
Candy	Alaska Packers Association	34,904	July 17	92	555
Canned fish	Alaska Packers Association	34,905	July 17	92	555
Canned fish	Alaska Packers Association	34,906	July 17	92	555
Canned fish	Alaska Packers Association	34,903	July 17	92	555
Canned fresh-water fish	Buckeye Fish Company	35,072	Sept. 18	92	2331
Canned goods. Certain named	Pacific Coast Condensed Milk Co	34,866	July 10	92	377
Canned meats, fish, fruits, and vegetables	Catton, Bell & Co	34,902	July 17	92	554
Canned tomatoes	Wells, Herring & Co	35,046	Sept. 18	92	2328
Cards. Playing	New York Consolidated Card Company.	34,889	July 3	92	186
Caviar	Buckeye Fish Company	34,937	July 24	92	781
Caviar and preserved fish	Hansen & Dieckmann	34,852	July 3	92	188
Cement. Portland	Alma Portland Cement Company	34,995	July 31	92	1034
Cement. Portland	German-American Portland Cement Works.	34,996	July 31	92	1034
Cement. Portland	German-American Portland Cement Works.	35,117	Sept. 18	92	2337
Chains, chain accessories, and forgings	Virginia Portland Cement Company.	34,962	July 24	92	784
Chemical products and fertilizers. Certain named	H. B. Newhall	34,880	July 10	92	378
Chemical products and fertilizers. Certain named	Wilhelmsburger Chemische Fabrik.	34,881	July 10	92	378
Chocolate	Wilhelmsburger Chemische Fabrik.	35,110	Sept. 18	92	2336
Cigarettes and smoking and chewing tobacco	Barclay & Fry	34,999	Aug. 21	92	1618
Cigars	American Tobacco Company	35,140	Sept. 25	92	2505
Cigars	Duncan & Moorhead	35,062	Sept. 18	92	2330
Cigars	Firm of E. Sprüngli	35,063	Sept. 18	92	2330
Cigars	Firm of E. Sprüngli	35,026	Sept. 18	92	2326
Cleansing-powders	J. H. Lucke & Co	35,148	Sept. 25	92	2506
Coal	A. Geissert	34,913	July 17	92	555
Cocktails	J. Z. Evans	34,940	July 24	92	781
Coffee	Crown Distilleries Company	35,068	Sept. 18	92	2331
Coffee extract	Smith Brothers Company	34,869	July 10	92	377
Coffee. Roasted	H. Eschwege	34,909	July 17	92	555
	Ohio Coffee and Spice Company				

Alphabetical list of trade-marks, July to September, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Compresses	W. De Puy	35,059	Sept. 18	92	2330
Condiments, relishes, and preserves	M. Poonjiajee & Sons	35,146	Sept. 25	92	2506
Confection	W. F. Strocker	35,107	Sept. 18	92	2335
Confectionery. Certain named	George Close Company	34,908	July 17	92	555
Corsets	Kops Bros	34,929	July 24	92	780
Cotton dress goods	Otis Company	34,897	July 17	92	554
Cotton dress goods	Otis Company	34,898	July 17	92	554
Cotton dress goods	Otis Company	34,899	July 17	92	554
Cotton flannels	H. Norden	34,853	July 10	92	375
Cotton flannels	H. Norden	34,854	July 10	92	375
Cotton flannels	H. Norden	34,855	July 10	92	375
Cotton flannels	H. Norden	34,856	July 10	92	375
Cotton flannels	H. Norden	34,857	July 10	92	376
Cotton piece goods not figured or printed. Unbleached	Ashton, Hoare & Company	34,885	July 3	92	186
Cough-syrup	W. G. Fletcher	35,131	Sept. 25	92	2504
Decoration. Certain named articles of mural	E. V. Camis	34,884	July 10	92	379
Dentifrice	Charles Wright Chemical Company	34,914	July 17	92	555
Disinfectants	V. Cervello	35,083	Sept. 18	92	2332
Drugs. Certain named	O. Knöffler & Co	35,029	Sept. 18	92	2327
Effervescent salt	T. W. Chelf	35,136	Sept. 25	92	2505
Eggs	J. R. Benson	35,142	Sept. 25	92	2505
Electric lighting. Illuminating articles and parts thereof and incandescent threads for	"Orlow" Gesellschaft für Elektriche Beleuchtung, mit Beschränkter Haftung.	34,850	July 3	92	188
Eye-wash	W. C. Lehmann	34,874	July 10	92	377
Eye-water	E. Nolzen	34,990	July 31	92	1033
Fabrics and ribbons. Woven silk	Astoria Silk Works	34,896	July 17	92	554
Fabrics. Certain named	Taylor & Lockett	34,995	July 31	92	1031
Firearms and accessories. Certain named	Harrington & Richardson Arms Company.	35,151	Sept. 25	92	2506
Fire-extinguishers	Harris Safety Company	34,963	July 24	92	784
Fish. Canned, cured, and fresh	Charles Robin Collas & Company	34,867	July 10	92	377
Fish in hermetically-sealed tins	Alaska Packers Association	34,978	July 31	92	1032
Fish in hermetically-sealed tins	Alaska Packers Association	34,979	July 31	92	1032
Flour. Certain named	O. H. Smith	35,145	Sept. 25	92	2506
Flour. Wheat	G. C. Christian	34,840	July 3	92	186
Flour. Wheat	R. T. Davis Mill and Manufacturing Company.	34,802	July 10	92	376
	Kenneweg Company	35,113	Sept. 18	92	2336
Flour. Wheat	Pillsbury-Washburn Flour Mills Company.	35,074	Sept. 18	92	2331
Fly-paper. Sticky	F. W. Lipps	34,879	July 10	92	378
Food compounds. Certain named	C. H. Cook	34,843	July 3	92	187
Food preparations. Certain named	Merrell-Soule Company	34,864	July 10	92	376
Foods. Certain named prepared	F. Fear	34,986	July 24	92	781
Foods for sheep, horses, and poultry	Bovine, Limited	35,075	Sept. 18	92	2331
Foods. Prepared	Joseph Campbell Preserve Company.	35,109	Sept. 18	92	2335
Footwear. Leather	Preston B. Keith Shoe Company	34,837	July 3	92	186
Fuel. Wood	A. A. Low	34,872	July 10	92	377
Furniture. Certain named	R. S. Barnhart	34,958	July 24	92	783
Furniture. Certain named	R. S. Barnhart	34,959	July 24	92	783
Furniture. Certain named	H. Herrmann Lumber Company	34,851	July 3	92	188
Germicides or disinfectants	F. F. Carlson	34,989	July 31	92	1033
Golf-clubs	E. Berliner	34,956	July 24	92	783
Gramophones	J. D. Dunn	34,890	July 10	92	379
Graphophones	T. Myers	35,088	Sept. 18	92	2328
Groceries. Certain named	Durand & Kasper Company	35,143	Sept. 25	92	2505
Groceries. Certain named	Durand & Kasper Company	35,144	Sept. 25	92	2506
Groceries. Certain named	A. Steinfeld	34,865	July 10	92	376
Gum. Chewing	J. Hill, Jr	35,060	Sept. 18	92	2330
Gum. Chewing	J. Hill, Jr	35,061	Sept. 18	92	2330
Gum. Chewing	Meyer Bros. Gum Company	34,982	July 31	92	1033
Gum. Kauri	E. Hill's Son & Co	35,116	Sept. 18	92	2337
Hair and scalp. Preparation for treating the	A. F. Duprey	34,875	July 10	92	377
Hair-tonic	Newbro Drug Company	34,947	July 24	92	782
Hats and bonnets of all kinds	J. C. Regás	34,895	July 17	92	554
Hats and caps	Bill & Caldwell	34,966	July 31	92	1031
Headache cure	F. P. Pyke	35,102	Sept. 18	92	2325
Helices or coils for electrical purposes	Varley Duplex Magnet Company	35,120	Sept. 18	92	2327
Horse-radish	E. H. Rightmire	34,868	July 10	92	377
Hose	New Jersey Car Spring and Rubber Company.	34,919	July 17	92	556
Ice-cream freezers and cabinets	Cordley & Hayes	34,889	July 10	92	379
Ink. Printing and lithographic	Fuchs & Lang Manufacturing Company.	34,888	July 10	92	379
Insulating material	Cellular Insulating Company	34,955	July 24	92	783
Jewel-stone	Juergens Bros	35,085	Sept. 18	92	2327
Lamps and lanterns. Certain named	Dressel Railway Lamp Works	35,123	Sept. 18	92	2328
Laundry powder	I. W. Biggar	35,084	Sept. 18	92	2327
Leather. Bookbinders' and pocket-book	Otto H. Oppenheimer Company	35,042	Sept. 18	92	2328
Leather. Certain named	A. Trostel & Sons	35,041	Sept. 18	92	2328
Leather. Finished or dressed	Corona Kid Company	34,917	July 17	92	556
Liniment	W. J. Hull	34,944	July 24	92	782
Liquors. Certain named alcoholic	J. B. Regan	35,024	Sept. 18	92	2326
Liquors. Spirituous	Yochim Bros	35,105	Sept. 18	92	2335
Machinery, electrical apparatus, and supply parts therefor. Certain named	General Electric Company	35,089	Sept. 18	92	2333
Medical compound	J. M. Collins	34,987	July 31	92	1033
Medical compounds. Certain named	Forbes & Coxe Drug Co	34,992	July 31	92	1033
Medical compounds. Certain named	W. J. Gardner	35,099	Sept. 18	92	2334
Medical compounds for treatment of toothache	L. Scheer	35,028	Sept. 18	92	2327
Medicated gum	Sterling Remedy Company	35,027	Sept. 18	92	2326
Medicated soap	E. M. Barthel	35,032	Sept. 18	92	2327
Medicinal compound. Certain named	F. G. Ferrante	34,945	July 24	92	782
Medicinal compound. Certain named	Levin & Noble	35,130	Sept. 25	92	2504

Alphabetical list of trade-marks, July to September, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Medicinal compounds. Certain named	C. E. Collard	35,120	Sept. 25	92	2504
Medicinal preparations. Certain named	Nutshell Remedy Co	35,098	Sept. 18	92	2334
Medicinal toilet preparations. Certain named	H. Schnurman	35,080	Sept. 18	92	2332
Medicine for certain named diseases. Proprietary	L. Cosby	34,943	July 24	92	782
Medicines. Certain named	H. E. Small	35,096	Sept. 18	92	2334
Medicines. Certain named proprietary	C. S. Archer	35,097	Sept. 18	92	2334
Medicines. Certain named proprietary	Martin H. Smith Company	34,877	July 10	92	378
Metal tubes of all descriptions	Lloyd & Lloyd	35,088	Sept. 18	92	2333
Metals	P. S. Reeves & Son	34,960	July 24	92	784
Mineral waters	Duquesne Distributing Company	35,064	Sept. 18	92	2330
Mineral waters	Duquesne Distributing Company	35,065	Sept. 18	92	2330
Mowers, reapers, and binders. Knife-sections for	Johnston Harvester Company	34,892	July 10	92	379
Needles, pins, bodkins, and crochet-hooks	William Hall & Company	34,926	July 24	92	780
Noodles and vermicelli	W. Boehm	34,980	July 31	92	1032
Oil. Toilet	Maize Products Company	35,070	Sept. 18	92	2332
Oils. Lubricating	W. D. Ellis	35,149	Sept. 25	92	2506
Ointment	W. B. Crosby	35,103	Sept. 18	92	2335
Ointment	Paris Medicine Company	34,946	July 24	92	782
Ointments	C. W. Patrick	35,104	Sept. 18	92	2335
Oleomargarin and butterin	Oakdale Manufacturing Company	34,841	July 3	92	186
Optical instruments. Certain named	Firm of C. Zeiss	35,049	Sept. 18	92	2328
Optical instruments. Certain named	Firm of C. Zeiss	35,050	Sept. 18	92	2329
Organs and pianos and parts thereof	Aeolian Company	35,089	Sept. 18	92	2328
Organs and pianos and parts thereof	Aeolian Company	35,040	Sept. 18	92	2328
Packing. Rubber	Whitman & Barnes Manufacturing Company.	34,918	July 17	92	556
Paint-powder	W. D. Warner	34,994	July 31	92	1034
Paints. Roof	T. J. Colbert	35,150	Sept. 25	92	2506
Paper and envelops. Writing	Eaton-Hurlbut Paper Company	34,887	July 10	92	379
Paper and paper signs	J. Igelstroem	35,045	Sept. 18	92	2328
Paper. Carbon	Mittag & Volger	34,847	July 3	92	187
Paper for industrial purposes	Stony Brook Paper Co	34,934	July 24	92	781
Paper. Photograph developing and printing	Artura Photo Paper Co	34,933	July 24	92	781
Paper. Photographic	Platinum Photographic Paper Company.	34,886	July 10	92	379
Pens	C. Howard Hunt Pen Manufacturing Company.	34,848	July 3	92	187
Pens. Fountain	L. E. Waterman Company	35,048	Sept. 18	92	2328
Petroleum. Refined	J. C. d'Azevedo	34,954	July 24	92	783
Pharmaceutical preparations for lung tuberculosis	G. Köhne	34,846	July 3	92	187
Photographic developers	Firm of G. Gennert	34,972	July 31	92	1032
Photographs. Certain named	F. T. Butler	34,971	July 31	92	1032
Pies	H. Copperthite	35,070	Sept. 18	92	2331
Pills. Tonic	R. W. Gardner	35,132	Sept. 25	92	2504
Pipe-wrenches	T. E. Ryan	34,961	July 24	92	784
Plastic composition	M. M. Rhodes & Sons Company	34,883	July 10	92	378
Polish. Mineral	W. W. Ramey	34,921	July 17	92	556
Polish. Wood and metal	S. M. Davies	34,952	July 24	92	783
Polishing compound. Certain named	Firm of A. Rosalowsky	34,951	July 24	92	782
Polishing compounds	W. H. Smith	35,084	Sept. 18	92	2332
Polishing or burnishing metals. Liquids for	W. H. Hoople	35,086	Sept. 18	92	2333
Preparations for the complexion	G. T. Brandon	35,078	Sept. 18	92	2332
Preserved goods. Certain named	W. L. Chadwick & Co	35,071	Sept. 18	92	2331
Rawhide. Prepared	New Process Raw Hide Company	34,931	July 24	92	780
Remedies. Certain named	J. J. Leek	35,082	Sept. 18	92	2332
Remedies for certain named diseases	E. O. Mitchell	35,133	Sept. 25	92	2505
Remedies for certain named diseases. Internal	J. T. Smith	35,100	Sept. 18	92	2335
Remedies for skin diseases	N. N. Gober	35,081	Sept. 18	92	2327
Remedy. Dyspepsia	Fairchild Bros. & Foster	35,030	Sept. 18	92	2327
Remedy for catarrh. Internal	Smith Bros	34,915	July 17	92	556
Remedy for certain named diseases	Judge & Dolph Pharmaceutical Company.	34,988	July 31	92	1033
Ribbons. Velvet	A. & M. Levy	34,836	July 3	92	186
Road-making machinery. Certain named	J. Scholl & Co	35,154	Sept. 25	92	2506
Rubber belting, gaskets, hose, and packing	Peerless Rubber Manufacturing Company.	35,095	Sept. 18	92	2334
Rubber goods. Certain named	Peerless Rubber Manufacturing Company.	34,974	July 31	92	1032
Rubber goods, except dental rubber. Druggists'	Ideal Rubber Company	34,976	July 31	92	1032
Rubber hose	Bowers Rubber Company	34,975	July 31	92	1032
Saddlery goods. Certain named	Faatz Felting Co	34,838	July 3	92	186
Salve	S. Muhlhauser	35,135	Sept. 25	92	2505
Salve for certain named diseases	J. M. Malcolm	35,134	Sept. 25	92	2505
Sand and emery paper and cloth	Union Sand Paper Company	35,094	Sept. 18	92	2334
Saws. Hand	Simonds Manufacturing Company	35,122	Sept. 18	92	2338
Sheeting in bolts. Brown cotton	John S. Brittain Dry Goods Company.	35,127	Sept. 25	92	2504
Sheetings and drills	H. Norden	34,964	July 31	92	1031
Sheetings and drills	Orr Cotton Mills	34,900	July 17	92	554
Shirts. Gentlemen's	Earl & Wilson	35,052	Sept. 18	92	2329
Shirts. Infants'	R. J. Ford	34,928	July 24	92	780
Shoes	Annex Shoe Company	35,093	Sept. 18	92	2333
Shoes	C. & E. Shoe Company	34,930	July 24	92	780
Shoes	G. P. Francoz	35,057	Sept. 18	92	2329
Shoes	Green-Wheeler Shoe Company	35,092	Sept. 18	92	2333
Shoes	Lyons Shoe Co	34,970	July 31	92	1031
Shoes	Sharood & Crooks	34,858	July 10	92	376
Shoes	American Snuff Company	34,842	July 3	92	187
Snuff	American Snuff Company	34,912	July 17	92	555
Snuff	Meriwether Snuff and Tobacco Company.	35,141	Sept. 25	92	2505
Snuff	C. W. T. Davies	34,911	July 17	92	555
Soap	C. F. York	34,949	July 24	92	782
Soap and soap-powders	Whittier Coburn Company	35,085	Sept. 18	92	2333
Soap. Cleaning and polishing	N. K. Fairbank Company	35,147	Sept. 25	92	2506
Soap. Laundry	J. T. Robertson Company	35,114	Sept. 18	92	2337
Soap. Shaving and toilet					

Alphabetical list of trade-marks, July to September, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Soap, soap powders, and soap compounds	Thayer-Milne Company	35,088	Sept. 18	92	2327
Soda and baking-powder. Baking-	Church & Dwight Company	35,112	Sept. 18	92	2336
Specific for certain named diseases	Foster-Milburn Company	35,101	Sept. 18	92	2335
Starch	Eclipse Starch Company	35,073	Sept. 18	92	2331
Stomachic and appetizer. Certain named	Merck & Co	34,986	July 31	92	1033
Stoves. Heating-	T. F. Martin	34,925	July 17	92	556
Strychnia compound. Phosphorized elixir of	C. H. Whitman	34,876	July 10	92	378
Sugar. Granulated	Michigan Sugar Company	34,863	July 10	92	376
Suspenders	Eastman & Specht	35,051	Sept. 18	92	2329
Syringes	V. A. Wilhoft	34,977	July 31	92	1032
Syringes	V. A. Wilhoft	35,118	Sept. 18	92	2337
Syrup	Glucose Sugar Refining Company	35,069	Sept. 18	92	2331
Teas. Mixed	S. Zechnowitz	34,870	July 10	92	377
Telephones and telephone supplies	Century Telephone Construction Company.	34,973	July 31	92	1032
Thermic apparatus. Certain named	William S. Haines Company	35,119	Sept. 18	92	2337
Thermo-electric generators	J. W. Harrison	35,037	Sept. 18	92	2327
Threads, yarns, and shoe-laces. Linen, cotton, and silk	H. Fawcett	35,056	Sept. 18	92	2329
Tin. Roofing-	J. S. Hoy	35,152	Sept. 25	92	2506
Tin. Roofing-	J. S. Hoy	35,153	Sept. 25	92	2506
Tin. Roofing-	J. S. Hoy	35,154	Sept. 25	92	2506
Tobacco. Chewing-	Rucker & Witten Tobacco Company.	34,948	July 24	92	782
Tobacco. Chewing-	Rucker & Witten Tobacco Company.	34,983	July 31	92	1033
Tobacco. Smoking-	Ragsdale & Crockett	35,139	Sept. 25	92	2505
Toilet powder	Waring & Co	35,076	Sept. 18	92	2332
Toilet preparations and articles. Certain named	H. Cornette & Co	34,991	July 31	92	1033
Toilet preparations. Certain named	H. H. Bush	34,873	July 10	92	377
Toilet preparations. Certain named	M. G. Hill	35,077	Sept. 18	92	2332
Tonic	J. C. Wilson	34,844	July 3	92	187
Tonic	J. C. Wilson	34,845	July 3	92	187
Tracing-cloth	Winterbottom Book Cloth Company.	34,885	July 10	92	379
Trusses	W. S. Rice	34,916	July 17	92	556
Twine. Binding-	McCormick Harvesting Machine Company.	34,920	July 17	92	556
Type. Fonts of	American Type Founders' Company.	34,849	July 3	92	188
Type. Metal	American Type Founders Company.	34,923	July 17	92	556
Type-writer accessories. Certain named	E. E. Bushnell	35,125	Sept. 25	92	2504
Underwear. Certain named	J. H. Dunham & Co	34,927	July 24	92	780
Vehicles and parts thereof. Automatically-propelled wheeled	Keystone Motor Co	35,124	Sept. 18	92	2338
Vehicles. Motor-	F. A. La Roche	35,087	Sept. 18	92	2333
Vessels	J. F. Johnson & Co	34,998	July 31	92	1034
Veterinary purposes. Medical and pharmaceutical preparations for	R. Groppler	34,878	July 10	92	378
Washing-powder	G. E. Clapp	35,115	Sept 18	92	2337
Watches and portable clocks	W. C. Ball	35,047	Sept. 18	92	2328
Water. Distilled	Birmingham Ice Factory Company.	35,137	Sept. 25	92	2505
Whisky	L. McCormick	34,968	July 24	92	781
Whisky	L. McCormick	34,984	July 31	92	1033
Whisky	L. McCormick	35,000	Sept. 18	92	2324
Whisky	L. McCormick	35,001	Sept. 18	92	2324
Whisky	L. McCormick	35,002	Sept. 18	92	2324
Whisky	L. McCormick	35,003	Sept. 18	92	2324
Whisky	L. McCormick	35,004	Sept. 18	92	2324
Whisky	L. McCormick	35,005	Sept. 18	92	2324
Whisky	L. McCormick	35,006	Sept. 18	92	2324
Whisky	L. McCormick	35,007	Sept. 18	92	2324
Whisky	L. McCormick	35,008	Sept. 18	92	2325
Whisky	L. McCormick	35,009	Sept. 18	92	2325
Whisky	L. McCormick	35,010	Sept. 18	92	2325
Whisky	L. McCormick	35,011	Sept. 18	92	2325
Whisky	L. McCormick	35,012	Sept. 18	92	2325
Whisky	L. McCormick	35,013	Sept. 18	92	2325
Whisky	L. McCormick	35,014	Sept. 18	92	2325
Whisky	L. McCormick	35,015	Sept. 18	92	2325
Whisky	L. McCormick	35,016	Sept 18	92	2325
Whisky	L. McCormick	35,017	Sept. 18	92	2325
Whisky	L. McCormick	35,018	Sept. 18	92	2326
Whisky	L. McCormick	35,019	Sept. 18	92	2326
Whisky	L. McCormick	35,020	Sept. 18	92	2326
Whisky	L. McCormick	35,021	Sept. 18	92	2326
Whisky	L. McCormick	35,022	Sept. 18	92	2326
Whisky	L. McCormick	35,023	Sept. 18	92	2326
Whisky	Taylor & Williams	34,985	July 31	92	1033
Whisky	H. M. Walker	34,910	July 17	92	555
Whisky	Venesta, Limited	34,957	July 24	92	783
Wood and boxes made therefrom. Certain prepared					

ALPHABETICAL LIST OF LABELS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
"A Trip to Paris and Exposition Game." (For Game Apparatus.)	McLoughlin Brothers	7,718	July 24	92	561
"Acme Rolled White Oats." (For Rolled White Oats)	Pillsbury-Washburn Flour Mills Company.	7,770	Sept. 4	92	1799
"All Union." (For Cigars)	Richardson-Weber Cigar and Tobacco Company.	7,738	Aug. 21	92	1441
"Anona Chop Japan Tea." (For Tea)	Arbuckle Bros	7,683	July 10	92	193
"Anti Gon." (For a Medicine)	Winn & Hubbard	7,763	Aug. 28	92	1623
"Anti-Scours for Calves." (For a Remedy)	P. M. Egert	7,695	July 10	92	193
"Apollotonic." (For a Hair-Tonic)	Century Chemical Company	7,760	Aug. 28	92	1623
"Arizona Khakis." (For Melons)	Phœnix Melon Growers' Association.	7,696	July 10	92	193
"Arnica Tooth Paste." (For Tooth-Paste)	Mesmin Chemical Co	7,717	July 24	92	561
"Arnica Tooth-Powder." (For Tooth-Powder)	Mesmin Chemical Co	7,716	July 24	92	561
"Balloon Baking Powder." (For Baking-Powder)	Balloon Baking Powder Co	7,732	Aug. 14	92	1239
"Balm-E-Oil." (For Medicine)	J. C. McFarland Drug Co	7,678	July 3	92	1
"Banker's Best." (For Cigars)	J. A. Crabb	7,702	July 17	92	385
"Barrie's Nature's Health Spray." (For a Medicinal Substance.)	Gowans Bros	7,731	Aug. 14	92	1239
"Ben All." (For Cigarettes)	Knubel Tobacco Company	7,777	Sept. 11	92	2005
"Best Cigarette Pasteless Tubes." (For Cigarette-Tubes)	Russian American Tube Co	7,774	Sept. 4	92	1799
"Blackberry Brand." (For Confectionery)	L. Schulman & Co	7,784	Aug. 14	92	1239
"Blackine." (For a Polish for Black Shoes)	Burkard Blacking and Oil Company.	7,727	Aug. 7	92	1039
"C. W. C. Ginger Ale." (For Ginger-Ale)	J. D. Gorman	7,753	Aug. 28	92	1623
"Carmeliter Bitters." (For Bitters)	Carmeliter Stomach Bitters Company.	7,677	July 3	92	1
"Carter Lytle's Tooth Jelline." (For a Preparation for Toothache.)	C. Lytle	7,703	Sept. 25	92	2343
"Chicago American." (For Cigars)	S. Paley	7,781	Sept. 18	92	2163
"Cloister Beer." (For Bottled Beer)	Maumee Brewery Company	7,739	Aug. 21	92	1441
"Constellation Pure Rye Whiskey." (For Whisky)	G. F. Coshland	7,704	July 17	92	385
"Cream Corn." (For Canned Corn)	United States Printing Company	7,776	Sept. 11	92	2005
"Cream of Mexican Cactus." (For Complexion-Cream)	E. E. Dismuke	7,687	July 10	92	193
"Crow in Your Throat." (For Cough-Lozenges)	J. Mishkin	7,784	Sept. 18	92	2163
"Diamond Star Embrocation." (For Rubbing)	J. T. Wills	7,689	July 10	92	193
"Digestive Juices of the Fowl for Dyspepsia." (For a Medicine.)	D. J. Arnold and C. D. Cannon	7,707	July 17	92	385
"Dixie Moire Finish Percaline." (For Percaline)	Strauss Brothers	7,735	Aug. 21	92	1441
"Dixie Silesia." (For Silesia)	Strauss Brothers	7,736	Aug. 21	92	1441
"Dr. Gordon's Liver Pills." (For Liver-Pills)	Gordon Medicine Co	7,690	July 10	92	193
"Dr. Kay's Kidneycura." (For a Medicine)	B. J. Kay Medical Company	7,694	July 10	92	193
"Dr. Kay's Uticure." (For a Medicine)	Dr. B. J. Kay Medical Company	7,764	Aug. 28	92	1623
"Dr. Talley's Wonderful Discovery Live Animal Hoof Catarrh Cure." (For a Medicine.)	E. Talley	7,718	July 24	92	561
"Dr. Washington's American Life Bitters." (For Bitters)	H. Tiefkemeyer	7,691	July 10	92	193
"Duroy Brand." (For Fruit Syrups and Juices)	Duroy & Haines Company	7,756	Aug. 28	92	1623
"Edison Concert Record." (For Boxes Containing Phonograph-Records.)	National Phonograph Company	7,710	July 17	92	385
"El Gato Grande." (For Cigars, Cigarettes, &c.)	S. L. Engel	7,721	July 31	92	780
"Eureka Eye Water." (For Eye-Water)	M. G. Loewenstein	7,705	July 17	92	385
"Eureka Hair Restorer." (For Hair-Restorer)	C. Specht	7,688	July 10	92	193
"Eureka Whooping Cough Remedy." (For Whooping-Cough Remedy.)	B. F. Spangler	7,722	July 31	92	789
"Ferrinoids." (For a Medicine)	Dinet & Delfosse	7,785	Sept. 18	92	2163
"Fortress." (For Coffee)	J. Heekin & Co	7,684	July 10	92	193
"Fountain Square." (For Coffee)	J. Heekin & Co	7,685	July 10	92	193
"Game of Manila." (For a Game)	McLoughlin Brothers	7,714	July 24	92	561
"Game of Stars and Stripes or Red, White and Blue." (For a Game.)	McLoughlin Brothers	7,715	July 24	92	561
"Gloria Pastilles." (For a Medicine)	A. D. Lindemann	7,698	July 10	92	193
"Gold Bond Shoes for Men." (For Boots and Shoes)	J. B. Hunter Co	7,719	July 31	92	789
"Gold Seal." (For Canned Corn)	Robinson & Crawford	7,745	Aug. 21	92	1441
"Gold Seal." (For Canned Tomatoes)	Robinson & Crawford	7,771	Sept. 4	92	1799
"Gold Seal." (For Cigarettes)	Knubel Tobacco Company	7,758	Aug. 28	92	1623
"Golf Cup." (For a Beverage)	W. P. Quentell	7,730	Aug. 14	92	1239
"Grape Kola." (For Soda-Water Syrup)	Liquid Carbonic Acid Manufacturing Company.	7,778	Sept. 11	92	2005
"House's Baby Mixture." (For a Medicine)	R. T. Smoot	7,765	Aug. 28	92	1623
"Huyler's American Drops." (For Candy)	Huyler's	7,752	Aug. 28	92	1623
"Inadore." (For a Lotion)	T. G. Kent	7,679	July 3	92	1
"Jewelers' Lustre." (For a Preparation for Polishing Metals, Glass, &c.)	A. S. Marsilliot	7,759	Aug. 28	92	1623
"Jno. W. Daniel." (For Cigars)	Brown & Brown	7,782	Sept. 18	92	2163
"Just-Right Metal Polish." (For Metal-Polish)	Just-Right Metal Polish Co	7,798	Sept. 25	92	2343
"Kendrick's Prophylaxis." (For a Medicine)	W. T. Kendrick	7,692	July 10	92	193
"Kompound Kamphor Pills." (For Pills)	Sanitarium Supply Co	7,749	Aug. 21	92	1441
"La Defensa." (For Cigars)	Gonzales, Mora & Co	7,724	Aug. 7	92	1039
"Little Dixie." (For Cheese)	S. B. Koons	7,744	Aug. 21	92	1441
"Lloyd Fireworks." (For Fireworks)	T. Lloyd	7,709	July 17	92	385
"Madam Sherman's Vegetable Compound." (For a Medicine.)	Worlds Electro-Medical Institute	7,762	Aug. 28	92	1623
"Manila Fruit." (For Canned Fruit)	Manila Fruit Co	7,676	July 3	92	1

Alphabetical list of labels, July to September, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol	Page
"Miller's Buffet." (For Bottled Beer)	Fred Miller Brewing Company	7,773	Sept. 4	92	1799
"Minnekahta Mineral Water." (For Bottled Mineral Water.)	Hot Springs Bottling Works	7,720	July 31	92	789
"Minnesota Rolled White Oats." (For Rolled White Oats)	Northwestern Cereal Company	7,769	Sept. 4	92	1709
"Mogul Sugar Corn." (For Corn)	Illinois Canning Co	7,733	Aug. 14	92	1239
"Mothers Preparator." (For a Medicine)	A. Stocker & Co	7,747	Aug. 21	92	1441
"Mucilage on a Stick." (For Mucilage)	E. I. Root	7,737	Aug. 21	92	1441
"Navena." (For Beverages)	Navena Co	7,783	Sept. 18	92	2163
"New Era Mantle." (For Mantles)	J. H. Dubrow	7,698	July 10	92	193
"North Star Rolled Oats." (For Rolled Oats)	Northwestern Cereal Company	7,768	Sept. 4	92	1799
"Old Glory." (For Rope, Cord, and Twine)	Anniston Cordage Company	7,728	Aug. 7	92	1039
"Old Virginia Corn Relish in-Oil." (For a Relish)	E. I. Alvord	7,787	Sept. 18	92	2163
"Olympia Beer." (For Bottled Beer)	Maumee Brewery Company	7,740	Aug. 21	92	1441
"Palette." (For Canned Tomatoes)	Badger Canning Company	7,701	July 17	92	385
"Pearce's Old Style Water Ground Meal." (For Cornmeal)	City Mills Company	7,772	Sept. 4	92	1799
"Penolia Candies." (For Peanut-Butter Candy)	Penolia Food Company	7,726	Aug. 7	92	1039
"Pete Dailey." (For Cigars)	T. J. Dunn & Co	7,725	Aug. 7	92	1039
"Physicians', Surgeons' and Dentists' Toilet Disinfectine Soap." (For Soap.)	Disinfectine Co	7,680	July 3	92	1
"Plymouth Rolled Oats." (For Rolled Oats)	Pillsbury-Washburn Flour Mills Company.	7,789	Sept. 18	92	2163
"Private Seal." (For Liquors)	H. Silverman	7,742	Aug. 21	92	1441
"Proteus." (For Cartons for Shoes)	B. Rosenberg & Sons	7,712	July 24	92	561
"Purgo." (For a Washing Compound)	O. W Gollings	7,700	July 17	92	385
"Purina Health Flour." (For Flour and Like Articles)	Robinson-Danforth Milling Company.	7,792	Sept. 18	92	2163
"Purina Pankake Flour." (For Mixed Flour)	Robinson-Danforth Milling Company.	7,791	Sept. 18	92	2163
"Quick Grip Cure." (For a Medicine)	J. B. Quick	7,779	Sept. 11	92	2005
"Ralston." (For Farinaceous Food Products)	Robinson-Danforth Milling Company.	7,790	Sept. 18	92	2163
"Ralston Hominy Grits." (For Grits)	Robinson-Danforth Milling Company.	7,788	Sept. 18	92	2163
"Red Jacket Mineral Water." (For Mineral Water)	H. W. Knight & Son	7,708	July 17	92	385
"Red Owl Chop." (For Tea)	A. Kelly & Co	7,743	Aug. 21	92	1441
"Red Top Rye." (For Whisky)	F. Westheimer & Sons	7,755	Aug. 28	92	1623
"River Mills." (For Rye Whisky)	I. A. Rosenheim	7,754	Aug. 28	92	1623
"Royal's Soda." (For Bicarbide of Soda)	R. T. Royal & Co	7,699	July 17	92	385
"Salvation Salve for Sores." (For a Salve)	S. Muhlhauser	7,706	July 17	92	385
"Sang-A-Lee." (For a Flavor)	Confectioners and Bakers Supply Company.	7,767	Sept. 4	92	1799
"Savoy Hair Restorer." (For Hair-Restorer)	E. F. Smith	7,723	July 31	92	789
"Silk Fibre Bond." (For Writing-Paper and Envelops)	P. Hake Manufacturing Co	7,739	Aug. 14	92	1239
"Silver Clean." (For a Cleaning Preparation or Powder)	A. L. Smith	7,709	Sept. 25	92	2343
"Silver Lustra." (For a Polish)	L. J. Henise	7,797	Sept. 25	92	2343
"Sunbeam Metal Polish." (For a Polish)	C. W. Bouton	7,796	Sept. 25	92	2343
"Sunflower Cholera Cure." (For a Medicine)	W. J. Roberts Medicine Co	7,786	Sept. 18	92	2163
"Sunnyside Soap." (For Soap)	National Soap Works	7,706	Sept. 4	92	1799
"St. George Ale." (For Bottled Ale)	Maumee Brewery Company	7,741	Aug. 21	92	1441
"Stay There." (For Buckles)	I. W. Levi	7,750	Aug. 28	92	1623
"Strawberry Beets." (For Canned Beets)	United States Printing Company	7,746	Aug. 21	92	1441
"The Banker." (For Cigars)	J. A. Crabb	7,686	July 10	92	193
"The Equality." (For Shoes)	Direct Shoe Co	7,751	Aug. 28	92	1623
"The Hallwood." (For Cigars)	Hallwood Cash Register Company	7,757	Aug. 28	92	1623
"The Pinless." (For Skirt-Supporters)	Pinless Waist, Skirt and Belt Holder Manufacturing Co.	7,675	July 3	92	1
"The Republic." (For Cigars)	G. W. Bower & Co	7,703	July 17	92	385
"Tisanold Rye Whisky." (For Whisky)	J. Samuels & Co	7,795	Sept. 25	92	2343
"Tonic Wine Bitters." (For Wine Bitters)	Dodge & Camfield	7,794	Sept. 25	92	2343
"U. S. Army and Navy Tablets." (For a Medicine)	A. Meyers	7,748	Aug. 21	92	1441
"Utaka Sunburst Mantle." (For Light-Mantles)	Iowa Mantle Manufacturing Company.	7,697	July 10	92	193
"Vaxo." (For a Medical Compound)	D. A. Strock	7,761	Aug. 28	92	1623
"Warranted Pure Homespun Machine Twist." (For Thread.)	Moeller & Littauer	7,711	July 24	92	561
"Winorr." (For Canned Corn)	Pressing & Orr	7,775	Sept. 11	92	2005
"Without New York, 16 to 1." (For a Game)	D. A. Cameron	7,780	Sept. 18	92	2163
"Woodrow's Electric Straw Cleaner." (For Cleaning Straw Hats.)	J. A. S. Woodrow	7,682	July 10	92	193
"Yale University Special Blend Whiskey." (For Whisky)	L. McCormick	7,681	July 3	92	1

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
"A Razorless Shave." (For a Chemical Compound)	Shaving Cream Manufacturing Company.	246	July 31	92	789
"Big Horn Chief Cigar." (For Cigars)	F. W. Loudenber	242	July 17	92	385
"Board of Trade." (For Tobacco, Cigars, and Cigarettes)	A. Robinson	260	Sept. 11	92	2005
"Carbolo." (For an Antiseptic and Germicide)	Carey & Co	256	Aug. 28	92	1623
"Cigar Mold Code and Size List." (For Cigar-Molds)	Miller, Du Brul & Peters Manufacturing Company.	251	Aug. 7	92	1039
"Colonial." (For Stomach-Bitters)	McCart-Christy Company	258	Sept. 4	92	1799
"Cut No. 10, National Platform Computing Scale." (For Computing-Scales.)	National Computing Scale Company.	249	July 31	92	789
"Cut No. 11, National Platform Computing Scale." (For Computing-Scales.)	National Computing Scale Company.	250	July 31	92	789
"Fill Your Teeth." (For Toothache-Gum)	Pansy Tooth Ache Gum Co	265	Sept. 25	92	2343
"Fosfo." (For a Tonic Drink)	W. D. Egolf	254	Aug. 21	92	1441
"Ilderim." (For Cigarettes)	Knubel Tobacco Company	261	Sept. 18	92	2163
"Jacks On Square." (For Cigars)	Havana American Company	244	July 24	92	561
"Litholite." (For Artificial Stone)	C. W. Stevens	263	Sept. 18	92	2163
"Locomobile Series Bicycle Playing Cards." (For Playing-Cards.)	United States Playing Card Company.	243	July 24	92	561
"Malt Cream." (For Malt Cream)	American Malt Cream Company	257	Aug. 28	92	1623
"Nervbrew." (For Carbonated Beverages)	A. Schlueter & Co	245	July 31	92	789
"Our New Capitol Cigar." (For Cigars)	J. I. Shindler & Bro	252	Aug. 14	92	1239
"Paris Exposition Souvenir Playing Cards." (For Playing-Cards.)	T. Jones	262	Sept. 18	92	2163
"Round Pointed Pens." (For Pens)	C. Howard Hunt Pen Manufacturing Company.	241	July 3	92	1
"Silver Lustra." (For a Polish)	L. J. Henise	264	Sept. 25	92	2343
"Slack Cooperage Stock." (For Cooperage Stock)	Tindle & Jackson	240	July 3	92	1
"Split." (For Wines, Liquors, &c.)	A. Werner & Co	259	Sept. 11	92	2005
"Texas Arm and Pin Co." (For Arms, Pins, and Brackets)	Texas Arm and Pin Company	253	Aug. 14	92	1239
"The Nation's Capital Washington, D. C. Souvenir Playing Cards." (For Playing-Cards.)	Waters Souvenir Company	248	July 31	92	789
"The White Pass and Yukon Route Playing Cards." (For Playing-Cards.)	S. M. Irwin	247	July 31	92	789
"Who Nose Me." (For a Game)	O. B. Du Bois	255	Aug. 28	92	1623

DISCLAIMER.

Invention.	Patentee.	No. of patent.	Date of patent.	Disclaimer filed.	Official Gazette. Volume.	Page.
Power-transmitting mechanism for motor-vehicles.	Charles Roe, Henry Roe, and Horace Knight.	626,808	May 30, 1899	Aug. 18, 1900	92	1623

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